Prepared by

HDR

Renew Harbor Island

Work today, protect tomorrow.

4th Quarter 2025 Groundwater Monitoring Report

For Michigan Part 115 CCR Solid Waste Regulations

Former J.B. Sims Generating Station

January 30, 2026

CONTENTS

FIGURES

TABLES

APPENDICES

1.0 Introduction

The former J.B. Sims Generating Station was a coal-fired, steam-generating power facility with a net capacity of approximately 70.5 megawatts that was operated by the Grand Haven Board of Light and Power (GHBLP). The facility is located at 1231 North 3rd Street, on Harbor Island, in Grand Haven, Michigan (**Figure 1**) (the Site). The coal combustion residuals (CCR) generated at the former Site were stored in two CCR units: (1) the inactive Units 1/2 Impoundment and (2) the former Unit 3A/B Impoundments (**Figure 2**). Operations at the Site ceased in February 2020 and the plant subsequently was decommissioned. During deconstruction, wastewater from boiler and infrastructure cleanout was sent to Unit 3A/B. The waste disposal into Unit 3A/B ceased in July 2020.

The U.S. Environmental Protection Agency's (EPA) final CCR Rule 40 CFR §257 and Michigan's Part 115 Solid Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451 (Part 115), establish a comprehensive set of requirements for the management and disposal of CCR (or coal ash). Pursuant to these requirements, federal and state groundwater monitoring programs are performed concurrently for the Site. The current groundwater monitoring network for the CCR units was established in 2022. Background data collection occurred between November 2022 and August 2023 for the current monitoring network and background wells. The first sample event after the background monitoring period using the updated monitoring network occurred in October 2023. The October 2023 sampling event was considered both a detection and assessment monitoring event based on the prior status of the Site in assessment monitoring before the well network was updated. Both statistically significant increases (SSI) of constituents in groundwater above the background values and statistically significant levels (SSLs) of constituents over groundwater protection standards (GPS) were identified from the October 2023 sample event. Therefore, the status of the groundwater monitoring program for both CCR units is assessment monitoring and evaluation of potential remedies. The Site initiated assessment of corrective measures, pursuant to Part 115 R299.4443, on May 1, 2024, following the identification of SSIs at one or more monitoring wells. The Assessment of Corrective Measures was published August 5, 2024, and additional data collection will continue through 2025 and 2026 to further support the remedy selection process.

This Groundwater Monitoring Report presents the activities completed in the fourth quarter of 2025.

1.1 Background

The former Unit 3A/B Impoundments were engineered, clay-lined, above-ground units and ceased receiving CCR material in July 2020. In 2017, a Groundwater Monitoring System Certification was first developed for the 3A/B Impoundments, which consisted of one background well (MW-07), four (4) downgradient detection monitoring wells (MW-01R, MW-02, MW-03, and MW-04), and an additional assessment monitoring well (MW-09) (ERM, 2017). Groundwater monitoring conducted in 2017 by GHBLP identified statistically significant increases (SSIs) of constituents in groundwater, and therefore the GHBLP implemented assessment monitoring (Golder, 2018). Assessment monitoring identified SSLs over the GPS at the Site, and therefore GHBLP stated that they were initiating assessment of corrective measures for the Site; however, that document was completed prior to the inclusion of Units 1/2 Impoundment CCR unit and therefore only represents the status of Unit 3A/B Impoundments (Golder, 2018a). The inactive CCR Units 1/2 Impoundment was a depression in the ground where sluiced ash was disposed. The inactive Units 1/2 Impoundment ceased receiving CCR material in 2012. After adding monitoring wells to the network to address the Units 1/2 Impoundment, the Updated Notice of Groundwater Protection Standard Exceedance was issued to document SSLs over GPS for both Units 1/2 Impoundment and Unit 3A/B Impoundments on July 22, 2021.

In 2021, to better understand the groundwater flow on the Island, and to verify that the monitoring network in place at the time was adequate, 22 piezometers, six (6) staff gauges, and 3 stilling wells were installed. These additional monitoring locations resulted in a better understanding of groundwater flow. The Field Summary Report of Results from Approved Work Plan - Piezometer Installation and Additional Data Collection suggested that MW-07 may be an inappropriate location for a background well due to the potential for groundwater to flow from the Units 1/2 Impoundment toward MW-07 (Golder, 2022). Therefore, in 2022 a new groundwater monitoring network was selected for the CCR units, including new background wells.

Background data collection for the updated monitoring network and new background wells occurred between November 2022 and August 2023. The first sample event after the updated background monitoring period occurred in October 2023, and quarterly monitoring was conducted in 2024 and all four quarters of 2025.

Figure 1 | Site Vicinity Map

Renew Harbor Island
Work today, protect tomorrow.

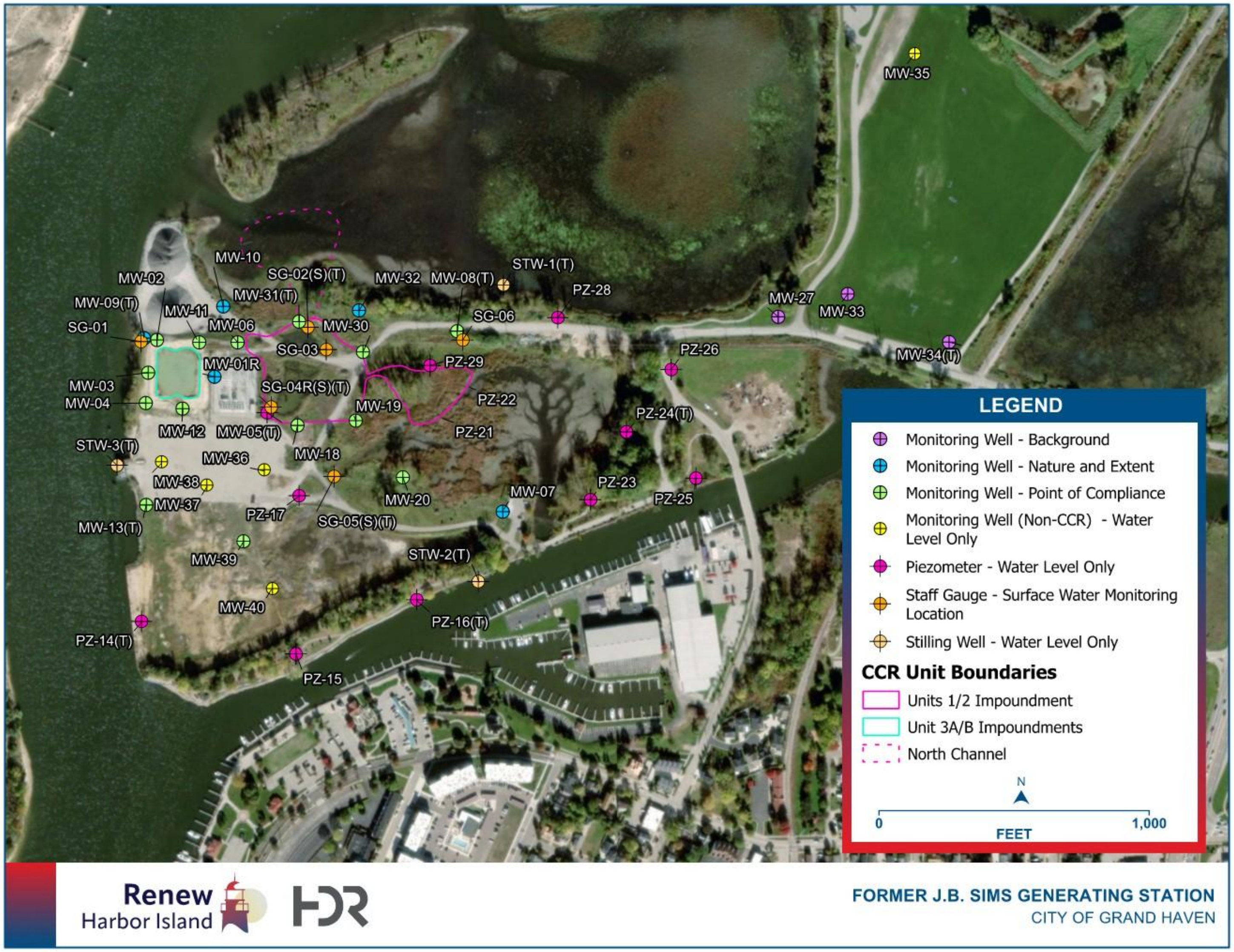


Figure 2 | Former J.B. Sims CCR Units and Monitoring Wells

2.0 Facility Description

2.1 Units 1/2 Impoundment

The inactive CCR Units 1/2 Impoundment was a depression in the ground where sluiced ash was disposed. The inactive Units 1/2 Impoundment ceased receiving CCR materials in 2012. Due to the abstract size and lack of defined boundaries, Units 1/2 Impoundment was delineated by Golder in the 2019 report *CCR Impoundment Ash Delineation at the J.B. Sims Generating Station* (Golder, 2019). Following the submission of the delineation report, a boundary of the inactive Units 1/2 Impoundment was agreed upon by GHBLP, EPA, and EGLE, which includes an area of sluiced ash disposal to the east of MW-30 into the Internal Wetland (**Figure 2**). The parties also agreed that the North Channel (**Figure 2**) adjacent to the Units 1/2 Impoundment would be evaluated for potential inclusion in the revised boundary of the Units 1/2 Impoundment. After field investigation of the North Channel area to delineate coal ash, and submittal of the investigation data and proposed additional data collection, EGLE and EPA determined that the coal ash associated with the North Channel is not associated with Units 1/2 Impoundment. EGLE and EPA indicated that the North Channel coal ash will be evaluated as a potential CCR Management Unit under the EPA CCR Legacy Rule (40 CFR §257.95) (**Figure 2**).

2.2 Unit 3A/B Impoundments

The former CCR Unit 3A/B Impoundments were constructed as two above-ground surface impoundments underlain by a clay liner; however, the engineered clay liner did not meet Part 115 CCR surface impoundment liner criteria (**Figure 2**). Golder (2020) stated that the former 3A/B Impoundments were built over a “field of ash” that was generated from Boiler Units 1 & 2. Although the former coal-fired power generation facility ceased operations in February 2020, the Site continued to use the Unit 3A/B Impoundments to store cleanout materials from the hoppers, vessels, etc. prior to demolition of the buildings. The impoundments ceased receiving waste on July 30, 2020. Removal of CCR from the impoundments was completed on November 6, 2020 and the liner remains in place. Following the CCR removal, Golder conducted coal ash removal verification that was ultimately denied by EGLE. Further coal ash delineation was conducted in 2025 to define the extent of any residual CCR on roadways adjacent to the Unit 3A/B Impoundments from coal ash removal construction trucks.

2.3 Hydrogeology

The uppermost aquifer across Harbor Island consists of fine sand with gravel and silt lenses, clay, peat, coal ash, and municipal solid waste located between the surface and 39 feet below surface. The bottom of the aquifer is believed to consist of continuous clay observed between 20.8 and 39.0 feet below surface. The clay has been observed between these depths in borings MW-12, MW-17, PZ-16, PZ-26, PZ-24, PZ-25, and MW-30.

The Grand River is located on the western side of Harbor Island, and the South Channel of the Grand River is located on the south side of Harbor Island. The northern side of Harbor Island is bordered by the Northern wetland, which is typically embayed by the Grand River during high river stages. The center of Harbor Island is the Internal Wetland. Other influences to groundwater flow on the Island include:

- Fill materials observed in boring logs
- Surface water features, such as the inactive Units 1/2 Impoundment and Internal Wetland
- The former coal pile area, which may have lower infiltration rates than other areas on the Island due to compaction from heavy equipment and former stockpiling of coal.

These features influence the groundwater velocity and flow direction and are very localized. Boring logs contained in the *Field Summary Report of Results from Approved Work Plan - Piezometer Installation and Additional Data Collection* show the observed fill materials encountered during well installation (Golder, 2022).

Groundwater mounding is typically present around monitoring well MW-01R, consistent with observations made by Golder in 2021 (Golder, 2022). A groundwater contour map from the fourth quarter 2025 sampling is in **Appendix C**. The map shows groundwater flow beneath Unit 3A/B Impoundments is consistently west toward the Grand River. Groundwater flow beneath Units 1/2 Impoundment is generally radial: northward toward the Northern Wetland, east from the ponds of Units 1/2 Impoundment toward the Internal Wetland, and potentially south near MW-05 (**Appendix C**). The Internal Wetland east of the Units 1/2 Impoundment provides hydraulic separation between the CCR impoundments and the wells and piezometers located to the east (PZ-23 through PZ-26, MW-27, MW-33, and MW-34).

Groundwater was encountered between 5 and 15 feet below ground surface within the unconsolidated fill material. In 2021, Golder performed slug tests at monitoring wells MW-01R, MW-02, MW-04, MW-05, MW-07, MW-08, PZ-17, PZ-20, PZ-26, and MW-31. Hydraulic conductivity values observed across the Site range from 0.19 to 18.76 feet per day (Golder, 2022). Higher conductivity values of 172.51 feet per day at MW-17 and 242.25 feet per day at MW-20 were observed in wells near the Internal Wetland (Golder, 2022). Additional slug tests were performed in July and August 2024 at wells MW-10, MW-12, PZ-15, MW-16, MW-32, MW-36, and MW-40, while re-testing wells MW-17 and MW-20; and new monitoring wells installed in November 2025 were slug tested in December 2025. Excluding wells MW-17 and MW-20, the hydraulic conductivity values ranged from 0.36 to 24.4 feet per day, which is a similar range measured by Golder (2022). Tests at wells MW-17 and MW-20 confirmed the anomalously high conductivity values that were 53% and 35% higher than measured in 2022. Additional information about groundwater velocity is included in Section 4.1.

2.4 Monitoring Well Network

The monitoring well network consists of the monitoring wells (MW-#) and piezometers (PZ-#) listed in **Table 1** and shown in **Figure 2**. The monitoring wells are sampled for water quality and water levels are monitored. The piezometers are monitored only for water levels. Note that if water quality monitoring is initiated at a piezometer, the designation of the monitoring point is changed (i.e., PZ-13 had been re-designated as MW-13). The monitoring network for each impoundment is described below.

Units 1/2 Impoundment

Due to the size of Units 1/2 Impoundment compared to the limits of Harbor Island, and variable groundwater flow direction, a traditional upgradient/downgradient groundwater monitoring system is not possible. Further detail explaining the locations and justification of each well location is provided in the Hydrogeologic Monitoring Plan (HMP - HDR, 2024). The following wells are utilized as the groundwater monitoring network:

- Background Wells: MW-27, MW-33, and MW-34
- Point of Compliance Wells (i.e. waste boundary wells): MW-06, MW-08, MW-18, MW-19, MW-20, MW-30, and MW-31
- Nature and Extent Wells: MW-07, MW-10, MW-16, MW-17, MW-28, MW-32, MW-36, and MW-37.

In November 2025, new monitoring wells MW-42 and MW-43 were installed as nature and extent wells for the Units 1/2 Impoundment. The wells were sampled for the first time in December 2025. The analytical results have not been received and validated in time to include in this report, and will be included in the first quarter 2026 Quarterly Monitoring Report. Further details regarding the well installation and testing are discussed in the Remedy Selection Progress Update (Section 5.0).

Unit 3A/B Impoundments

The monitoring well network justification for the Unit 3A/B Impoundments is provided in the Hydrologic Monitoring Plan (HDR, 2024). The well network is as follows:

- Background Wells: MW-27, MW-33, and MW-34
- Point of Compliance Wells (i.e. waste boundary wells): MW-02, MW-03, MW-04, MW-11, and MW-12
- Nature and Extent Wells: MW-01R, MW-09, MW-10, MW-13, MW-38, and MW-39

In November 2025, new monitoring wells MW-41 and MW-09B were installed as nature and extent wells for Unit 3A/B Impoundments. Also in November 2025, new monitoring wells MW-04R and MW-01RB were installed as potential replacement wells for MW-04 and MW-01R due to coal ash in the screened interval of these two existing monitoring wells. The wells were sampled for the first time in December 2025. The analytical results have not been received and validated in time to include in this report, and will be included in the first quarter 2026 Quarterly Monitoring Report. Further details regarding the installation and testing of these new wells are discussed in the Remedy Selection Progress Update (Section 5.0).

Water Level Wells

The following piezometers are monitored for water level only and are not sampled: MW-05, PZ-14, PZ-15, PZ-21, PZ-22, PZ-23, PZ-24, PZ-25, PZ-26, PZ-29, MW-35, and MW-40, shown on **Figure 2**. Piezometers PZ-21, PZ-22, and PZ-29 were installed within the wetland and are inaccessible at times and therefore are monitored less frequently.

In November 2025, new wells MW-44, MW-44B, and piezometer PZ-15B were installed to evaluate non-CCR impacts and to monitor water levels at the groundwater-surface water interface near the Internal Wetland and the South Channel. In December 2025, water quality samples were collected for non-CCR parameters, and water samples were collected from piezometer PZ-15B for CCR constituents. Wells MW-44, MW-44B, and piezometer PZ-15B will be monitored for water level only in future monitoring events for the CCR compliance monitoring program. The analytical results have not been received and validated in time to include in this report and will be included in the first quarter 2026 Quarterly Monitoring Report. Further details regarding the installation and testing of these new wells are discussed in the Remedy Selection Progress Update (Section 5.0).

Transducers are installed in the monitoring wells, stilling wells, and staff gauges that are marked on **Figure 2** with (T) next to the location ID. The transducers measure and record groundwater elevations at one-hour intervals and are described in further detail in Section 4.1.

No wells were repaired or abandoned in the fourth quarter of 2025.

3.0 Monitoring

3.1 Groundwater Monitoring

Table 1 provides well identification numbers, well locations, the dates samples were collected during Quarter 4 2025, and whether a sample was required by the CCR Rule for background sampling, detection monitoring or assessment monitoring programs. Any deviation in sample collection from the Hydrogeologic Monitoring Plan (HDR, 2024) is outlined in **Section 3.3**. Sampling for the fourth quarter began on October 20, 2025. Water levels across the network were measured on the same day.

Table 1. Dates of Groundwater Monitoring in Fourth Quarter 2025

Monitoring Well I.D.	Date Sampled	Monitoring Purpose
Background Monitoring Wells		
MW-27	10/23/2025	Assessment Monitoring
MW-33	10/20/2025	Assessment Monitoring
MW-34	10/20/2025	Assessment Monitoring
Units 1/2 Compliance Monitoring Wells		
MW-06	10/23/2025	Detection Monitoring/Initial Assessment Monitoring
MW-08	10/22/2025	Detection Monitoring/Initial Assessment Monitoring
MW-18	10/22/2025	Detection Monitoring/Initial Assessment Monitoring
MW-19	10/22/2025	Detection Monitoring/Initial Assessment Monitoring
MW-20	10/22/2025	Detection Monitoring/Initial Assessment Monitoring
MW-30	10/21/2025	Detection Monitoring/Initial Assessment Monitoring
MW-31	10/21/2025	Detection Monitoring/Initial Assessment Monitoring
Unit 3A/B Compliance Monitoring Wells		
MW-02	10/22/2025	Detection Monitoring/Initial Assessment Monitoring
MW-03	10/22/2025	Detection Monitoring/Initial Assessment Monitoring

Table 1. Dates of Groundwater Monitoring in Fourth Quarter 2025		
Monitoring Well I.D.	**Date Sampled**	**Monitoring Purpose**
MW-04	10/22/2025	Detection Monitoring/Initial Assessment Monitoring
MW-11	10/23/2025	Detection Monitoring/Initial Assessment Monitoring
MW-12	10/22/2025	Detection Monitoring/Initial Assessment Monitoring
Nature and Extent Wells		
MW-01R	10/22/2025	Detection Monitoring/Initial Assessment Monitoring
MW-07	10/22/2025	Detection Monitoring/Initial Assessment Monitoring
MW-09	10/20/2025	Detection Monitoring/Initial Assessment Monitoring
MW-10	10/20/2025	Detection Monitoring/Initial Assessment Monitoring
MW-13	10/21/2025	Detection Monitoring/Initial Assessment Monitoring
MW-16	10/21/2025	Detection Monitoring/Initial Assessment Monitoring
MW-17	10/22/2025	Detection Monitoring/Initial Assessment Monitoring
MW-28	10/23/2025	Detection Monitoring/Initial Assessment Monitoring
MW-32	10/21/2025	Detection Monitoring/Initial Assessment Monitoring
MW-36	10/21/2025	Detection Monitoring/Initial Assessment Monitoring
MW-37	10/21/2025	Detection Monitoring/Initial Assessment Monitoring
MW-38	10/21/2025	Detection Monitoring/Initial Assessment Monitoring
MW-39	10/21/2025	Water Level Only
Water Level Only Wells		
MW-05	10/20/2025	Water Level Only
PZ-14	10/20/2025	Water Level Only
PZ-15	10/20/2025	Water Level Only
PZ-23	10/20/2025	Water Level Only
PZ-24	10/20/2025	Water Level Only
PZ-25	10/20/2025	Water Level Only
PZ-26	10/20/2025	Water Level Only
PZ-29	10/20/2025	Water Level Only
MW-35	10/20/2025	Water Level Only
MW-40	10/20/2025	Water Level Only

3.2 Surface Water Monitoring

Surface water monitoring coincides with the groundwater sampling. The stilling wells (STW-1, STW-2, STW-3), as well as staff gauges SG-01, SG-03, and SG-06, are monitored for water levels only. Staff gauges SG-02, SG-04R, SG-05, SG-07 are monitored for water levels and surface water quality (**Figure 2**), but in October 2025 only one surface water sample was collected (SG-07) due to dry conditions at SG-02, SG-04R, and SG-05. Surface water monitoring dates are shown in **Table 2**. Deviations from the work plan are outlined in **Section 3.3**.

Table 2. Dates of Surface Water Monitoring in Fourth Quarter 2025	
Well ID	Monitoring Date
SG-01	10/20/2025[1]
SG-02	10/20/2025[1]
SG-03	10/20/2025[1]
SG-04R	10/20/2025[1]
SG-05	10/20/2025[1]
SG-06	10/20/2025[1]
SG-07	10/22/2025
STW-1	10/20/2025[1]
STW-2	10/20/2025
STW-3	10/20/2025

1 – Monitoring location was dry, no surface water level was measured at the gauge.

3.3 Water Level and Sample Collection

Monitoring wells were purged with a peristaltic pump until field parameters (pH, turbidity, conductivity, dissolved oxygen, temperature, and oxidation reduction potential) stabilized. The results of field measurements were recorded on a field data form, which is maintained as part of the field records and provided in **Appendix A**. After water quality parameters stabilized, samples were collected and tested for the parameters listed in **Table 3**. For quality control, one field duplicate sample was collected for each CCR unit per sampling event (two duplicate samples total per event; collected at monitoring wells MW-33 and MW-36). The following deviations from the Hydrogeologic Monitoring Plan for CCR Compliance were noted during the fourth quarter 2025 sampling event:

Water levels were not measured in October 2025 at piezometers PZ-21 and PZ-22 due to inaccessibility.

In October 2025, water levels were not measured at staff gauges SG-01, SG-02, SG-03, SG-04R, SG-05, SG-06, and at stilling well STW-1 due to low surface water conditions leaving the staff gauges and stilling well dry. Stilling well STW-1 was replaced in the fourth quarter with a paired shallow groundwater drive point (STW-1DP) and a stilling well (STW-1SW). The stilling well is currently dry, as the nearly entire North Wetland is currently dry.

The PVC casing at stilling well STW-2 was replaced with steel casing in the fourth quarter 2025, but a new transducer could not be installed due to river ice. The PVC casing at stilling well STW-3 was broken due to ice flow of the river and will be replaced with a steel casing in 2026. Grand River water levels were measured during the quarterly event as depths from the top of the PVC casing at each location.

3.4 Analytical Testing

Samples from the wells listed in **Table 1** were analyzed for the constituents listed in **Table 3**.

Table 3. Constituents of Interest	
Constituents for Assessment Monitoring	
Antimony	Mercury
Arsenic	Molybdenum
Barium	Nickel
Beryllium	Radium-226
Boron	Radium-226/228
Cadmium	Radium-228
Calcium	Selenium
Chloride	Silver
Chromium	Sulfate
Cobalt	Thallium
Copper	Total Dissolved Solids (TDS)
Fluoride	Vanadium
Iron	Zinc
Lead	**Additional Parameters**
Lithium	Total Suspended Solids (TSS)

3.5 Data Validation and Management

Data validation and data management tasks were performed pursuant to the Hydrogeologic Monitoring Plan. Data validation was performed for sampling dates provided in **Table 1**. Data validation was conducted to eliminate any data that did not meet validation criteria and to designate a data qualifier for any data quality limitation discovered.

Samples and quality control (QC) data for the reporting period were reviewed and evaluated, and no samples were rejected. Most QC analyses were within reportable limits; however, when QC was outside control limits, samples were reported as estimated. Data analyses required minimal qualifications, and the data were usable, even when qualified. Data validation reports are contained in **Appendix B**.

4.0 Monitoring Results

4.1 Water Levels and Groundwater Flow Direction

A potentiometric contour map was developed for the fourth quarter 2025 sampling event using the data provided in **Table 4**. The map displays the groundwater elevations and inferred potentiometric contours, and is provided in **Appendix C**. A hydrograph illustrating groundwater levels in monitoring wells near the Units 1/2 Impoundment for the November

2022 through October 2025 monitoring period is shown in **Figure 3.** Groundwater around the perimeter of the impoundment has ranged from approximately 578.30 (MW-31) to 581.32 (MW-05) feet above mean sea level (ft AMSL) during this period. A hydrograph illustrating groundwater levels in perimeter wells surrounding the Units 3A/B Impoundments (**Figure 4)** indicates groundwater elevation beneath the impoundment ranged from 578.93 (MW-03) to 582.35 (MW-12) ft ASML during the November 2022 through October 2025 monitoring period.

Groundwater beneath the former CCR impoundments is inferred to be generally radial, flowing toward the Grand River, the North Channel, and the Internal Wetland. Potentiometric contours created from the groundwater elevations in **Table 4** show north and northwestern flow beneath Unit 3A/B Impoundments toward the Grand River, consistent with previous observations. Flow beneath the Units 1/2 Impoundment is generally eastward toward the Internal Wetland, with the Internal Wetland having been consistently shown to be a hydraulic sink for Harbor Island. Groundwater flow near the North Channel outlet between SG-02 toward MW-31 has been inferred to be towards the north.

Groundwater flow observed at background wells MW-27, MW-33, and MW-34 is consistent with previous observations. Because groundwater typically converges on the Internal Wetland from both the west side, where the impoundments are located, and from the east side, where the background wells are located, it can be inferred that groundwater under the CCR impoundments cannot flow to the background monitoring well locations east of the Internal Wetland.

Table 4. Groundwater and Surface Water Elevations in Fourth Quarter 2025

Well ID	Groundwater Elevation (10/20/2025)
MW-01R	579.90
MW-02	578.80
MW-03	578.84
MW-04	578.91
MW-05	579.48
MW-06	579.55
MW-07	578.93
MW-08	579.20
MW-09	578.61
MW-10	579.50
MW-11	579.43
MW-12	579.79
MW-13	578.86
PZ-14	578.90
PZ-15	579.24
MW-16	578.73
MW-17	579.31
MW-18	579.50

Table 4. Groundwater and Surface Water Elevations in Fourth Quarter 2025	
Well ID	**Groundwater Elevation (10/20/2025)**
MW-19	579.30
MW-20	579.31
PZ-21	Inaccessible
PZ-22	Inaccessible
PZ-23	578.91
PZ-24	578.70
PZ-25	578.75
PZ-26	578.98
MW-27	579.31
MW-28	579.01
PZ-29	Inaccessible
MW-30	578.98
MW-31	578.95
MW-32	578.94
MW-33	579.22
MW-34	578.78
MW-35	579.73
MW-36	579.81
MW-37	579.32
MW-38	579.27
MW-39	579.32
MW-40	579.22
SG-01	DRY
SG-02	DRY
SG-03	DRY
SG-04R	DRY
SG-05	DRY
SG-06	DRY
SG-07	578.52
STW-1	DRY
STW-2	578.51
STW-3	578.49

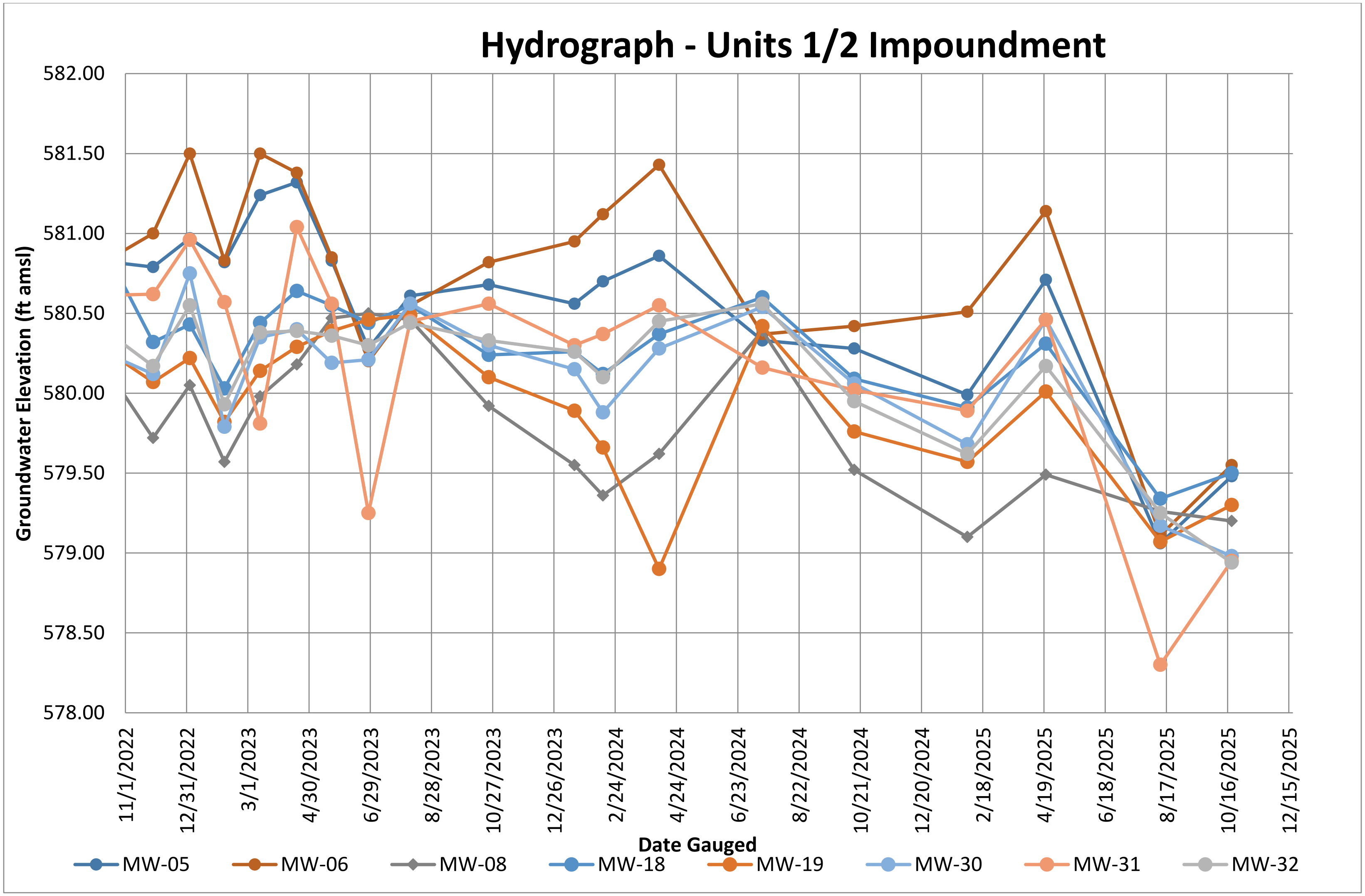


Figure 3 | Hydrograph of Wells Near Units 1/2 Impoundment

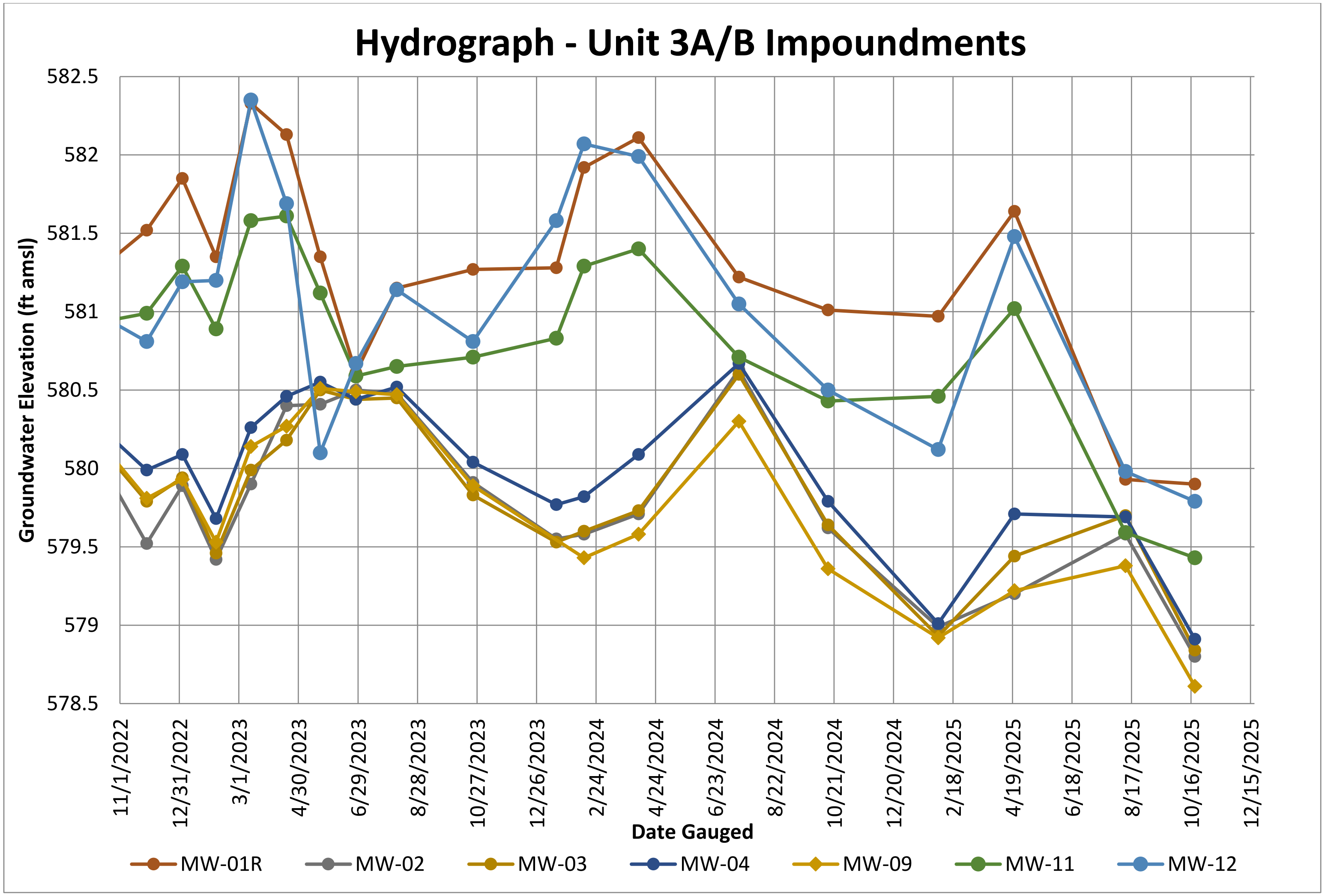


Figure 4 | Hydrograph of Wells and Piezometers Near Unit 3A/B Impoundments

Pressure transducers were installed at the locations shown in **Figure 5**. Transducer data has been collected from December 21, 2023 through the most recent download on October 23, 2025. Of note, six of the 17 transducers are not currently recording usable data due to the following:

- The staff gauge SG-05 cable was severed by wildlife.
- The stilling well STW-2 cable and PVC stilling well were severed by ice flows in the Grand River. The water level at STW-2, however, could still be measured manually from the reference point at the top of the remaining PVC casing (**Table 4**).
- The stilling well STW-3 transducer experienced an internal memory failure, and the PVC stilling well was severed by ice. The water level at STW-3, however, could still be measured manually from the reference point at the top of the remaining PVC casing (**Table 4**).
- The monitoring well MW-09 transducer is logging, but appears to have an internal sensor error recording anomalous data.
- The stilling well STW-1 transducer is functioning but the monitoring point is dry due to low river stage in the Northern Wetland.
- The staff gauge SG-07 transducer is recording data but cannot be downloaded. Additionally, the gauge may have shifted due to ice shove and should be re-surveyed.

Trends observed from the limited dataset are as follows:

- Groundwater at monitoring well MW-31 has been lower than the surface water elevation at staff gauge SG-02 since May 2025. A transducer reading of 579.6 ft amsl is the elevation where the staff gauge reads 0.00 and the pond is effectively dry. The impoundment pond monitored by SG-02 has been effectively dry since June 2025, and the groundwater elevation at MW-31 has been as much as 1.5 feet below the wetland sediment surface. A hydrograph of the measurements is shown on **Figure 6**.
- The groundwater elevation at monitoring well MW-05 is higher than the surface water elevation at staff gauge SG-04R, during periods of significant precipitation. However, for the majority of the time, and in particular since May 2025, the groundwater elevation at MW-05 is below the surface of the impoundment, indicating that precipitation falling on, or collecting on the impoundment infiltrates to groundwater. A transducer reading of 580.4 ft amsl is the elevation where the staff gauge reads 0 and the pond is effectively dry. A hydrograph of the measurements is shown on **Figure 7.**
- Groundwater at well MW-16, located on the south side of the Island near the South Channel, is higher than surface water at stilling well STW-2 through the fall, winter and spring, indicating groundwater flow is toward the South Channel for the majority of the year. Due to the loss of the STW-2 transducer in October 2024, the Lake Michigan stage

data has been used to supplement the approximate stage of the Grand River[1]. Through the summer of 2024, the MW-16 groundwater elevation was approximately equal to the South Channel stage at STW-2, meaning that there is limited groundwater flow from the Island to the river. Beyond the end of the STW-2 transducer record, the MW-16 water levels parallel the Lake Michigan record. A hydrograph of the measurements is shown on **Figure 8**.

- The surface water elevation at SG-07 is generally lower than groundwater at PZ-24, except for the summer months when it is higher than groundwater to the east of the Internal Wetland. The lack of correlation between the surface water and groundwater elevations appears to indicate little hydraulic connection between the Internal Wetland and piezometer PZ-24, despite their close proximity. A hydrograph of the measurements is shown on **Figure 9**.
- On the western side of the Island, a comparison of stilling well STW-3, monitoring well MW-13, and piezometer PZ-14 indicates that groundwater discharges to the Grand River the majority of the time. A hydrograph of the measurements is shown on **Figure 10.**
- A comparison of monitoring well MW-08 and staff gauge SG-07 evaluates groundwater-surface water interactions on the north side of the Internal Wetland (at MW-08). Well MW-08 was typically higher in elevation generally between December 2023 and May 2024, indicating groundwater discharge to the Internal Wetland. Between June and September 2024, the Internal Wetland water surface was higher than groundwater at MW-08, indicating surface water in the wetland may infiltrate to groundwater, and flow north toward the North Wetland. A hydrograph of the measurements is shown on **Figure 11**.

[1] National Oceanic and Atmospheric Administration (NOAA) Tides and Currents website, station 9087031 (Holland, MI) - Water Levels - NOAA Tides & Currents

Figure 5 | Transducer Deployment Map

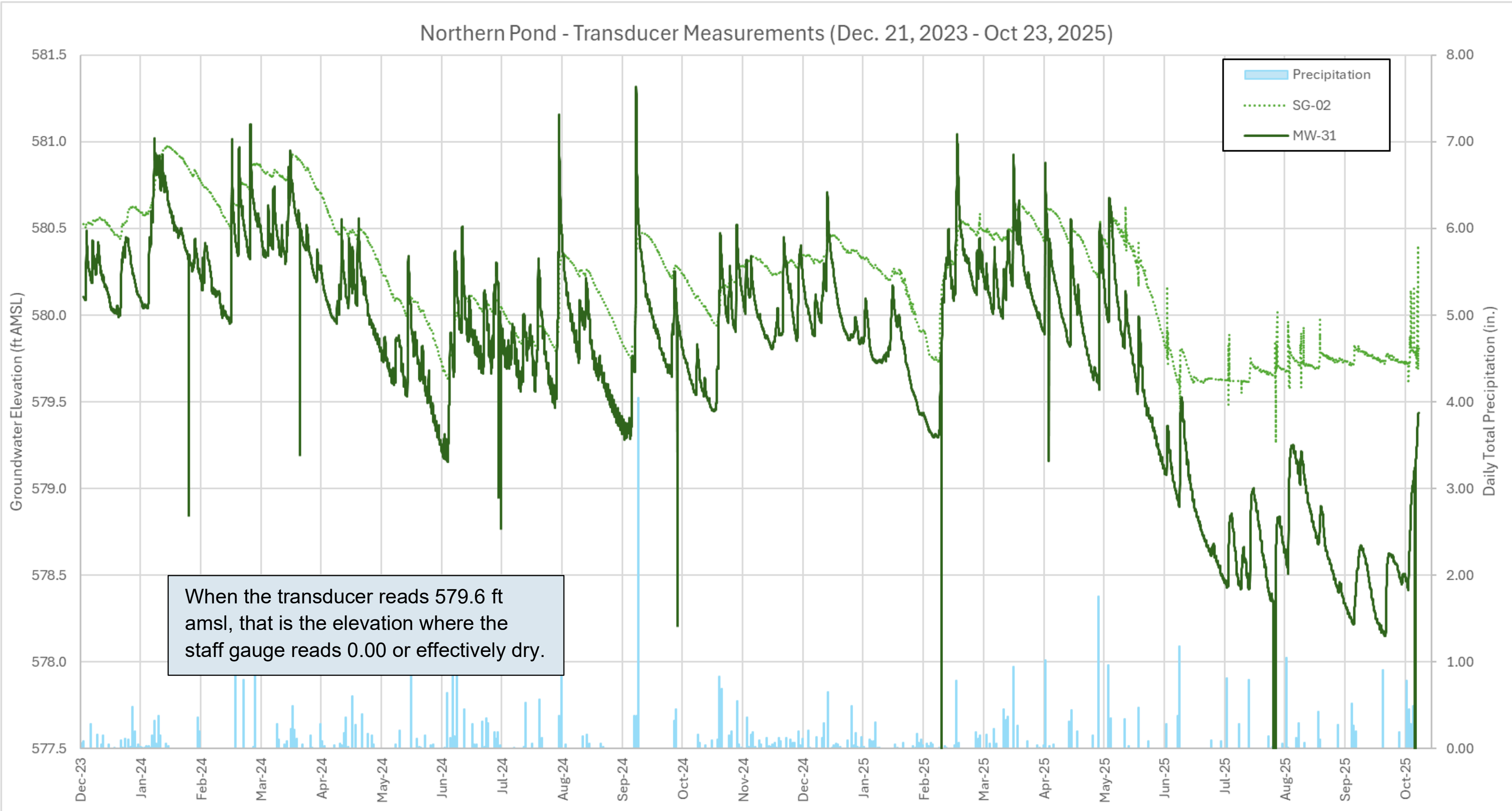


Figure 6 | Transducer Measurement Graph: Staff Gauge SG-02 and Monitoring Well MW-31

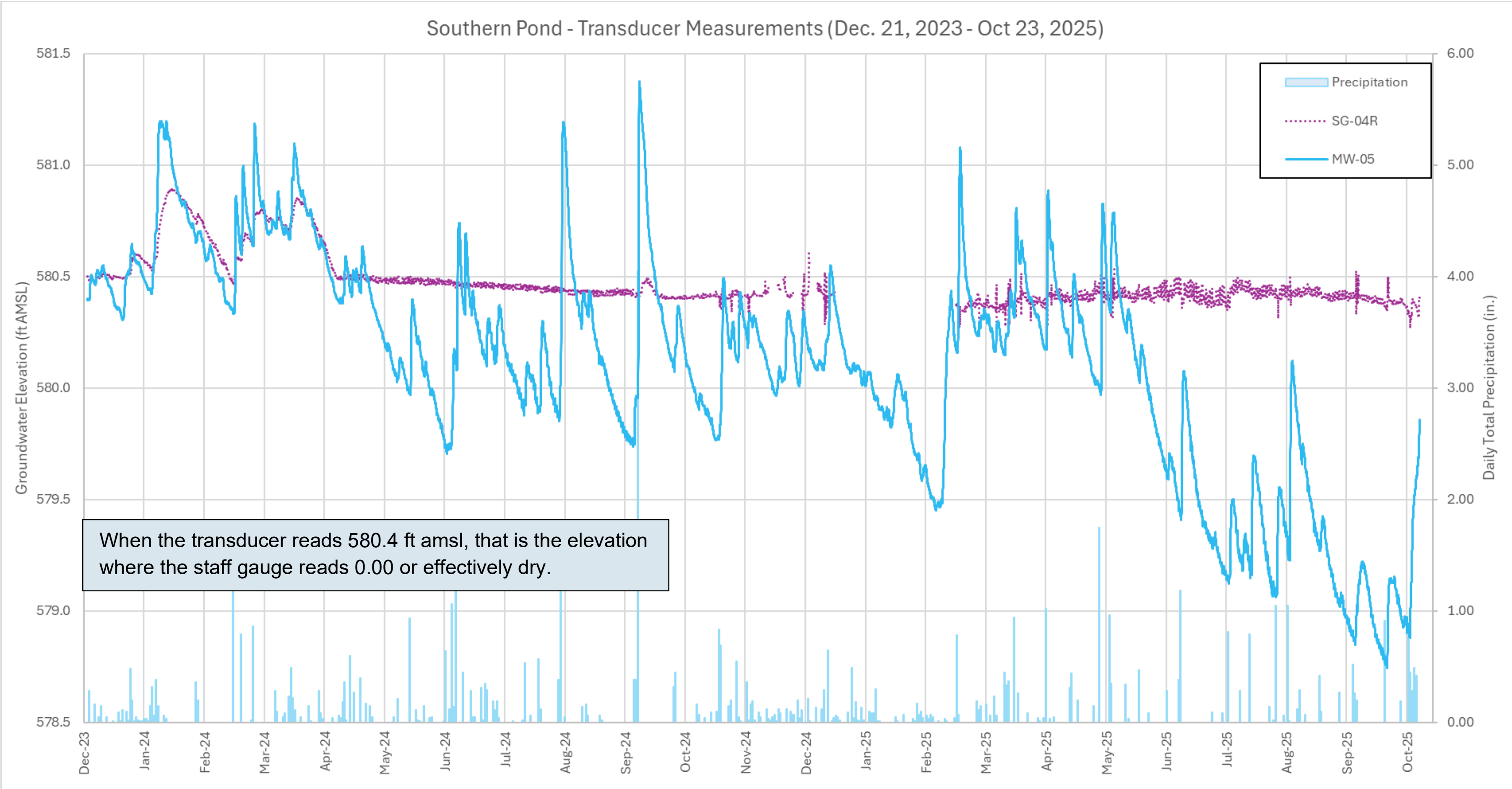


Figure 7 | Transducer Measurement Hydrograph: Staff Gauge SG-04R and Monitoring Well MW-05

Renew Harbor Island
Work today, protect tomorrow.

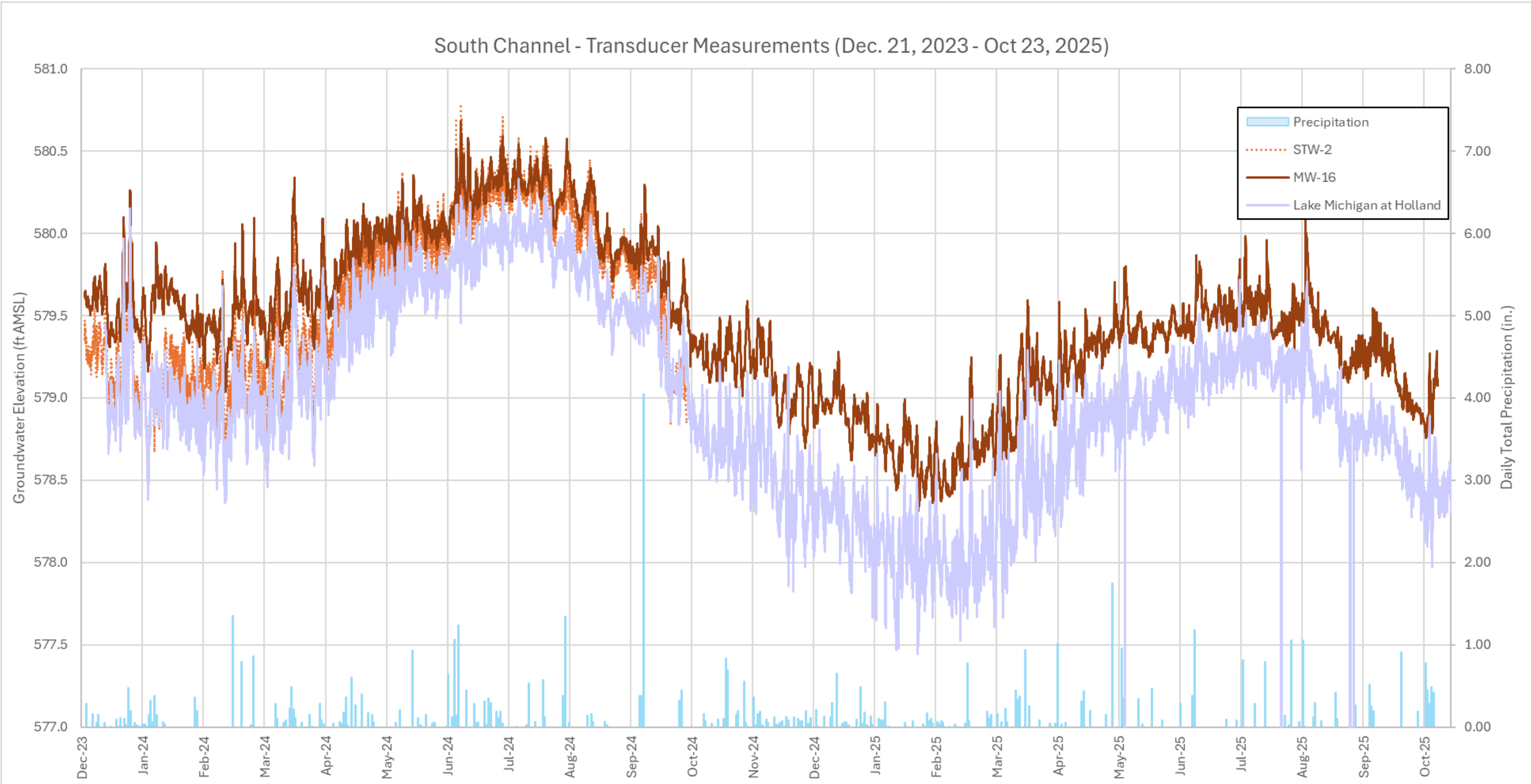


Figure 8 | Transducer Measurement Hydrograph: Stilling Well STW-2, Monitoring Well MW-16, and Lake Michigan at Holland (NOAA)

Renew Harbor Island
Work today, protect tomorrow.

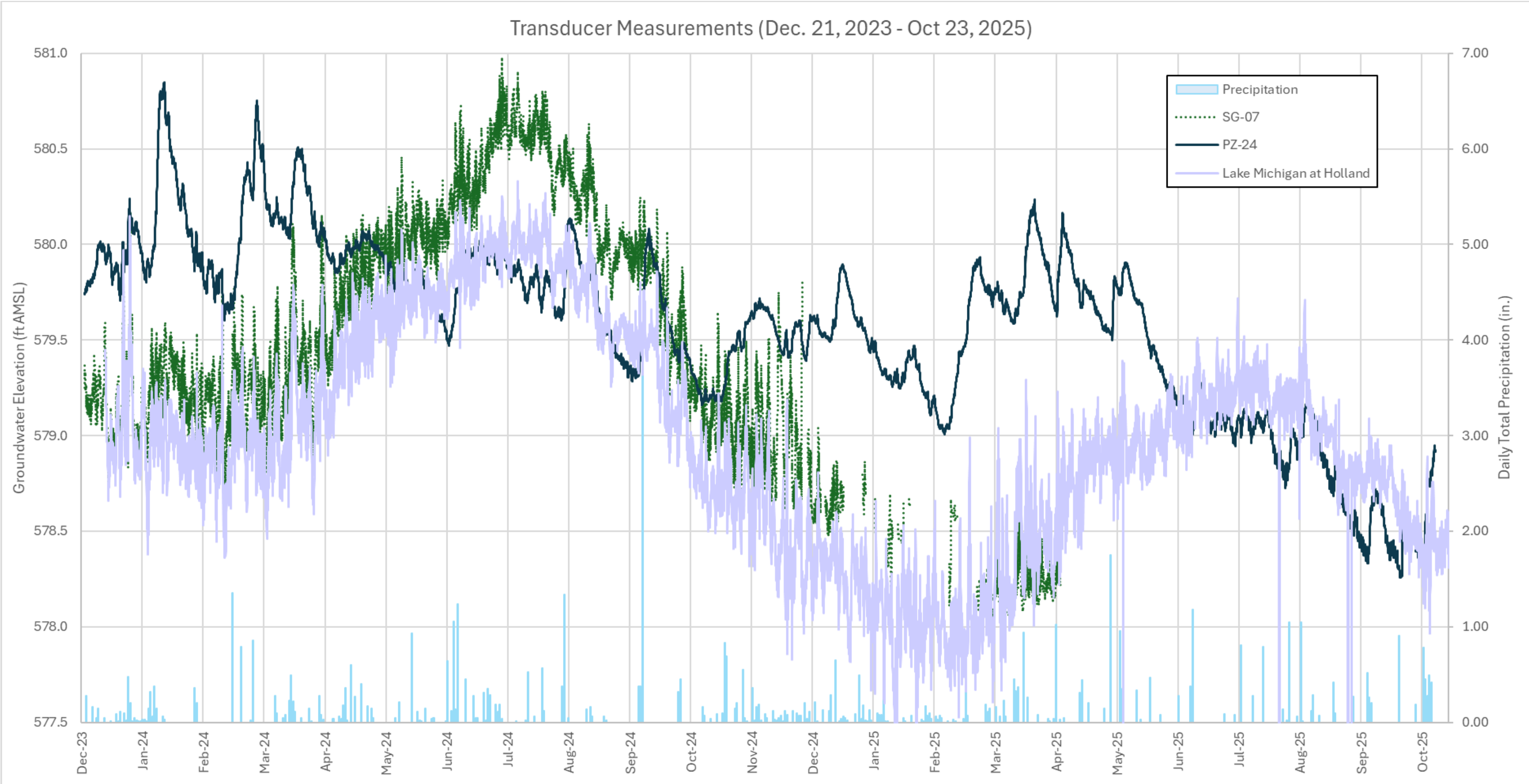


Figure 9 | Transducer Measurement Hydrograph: Staff Gauge SG-07, Piezometer PZ-24, and Lake Michigan at Holland (NOAA)

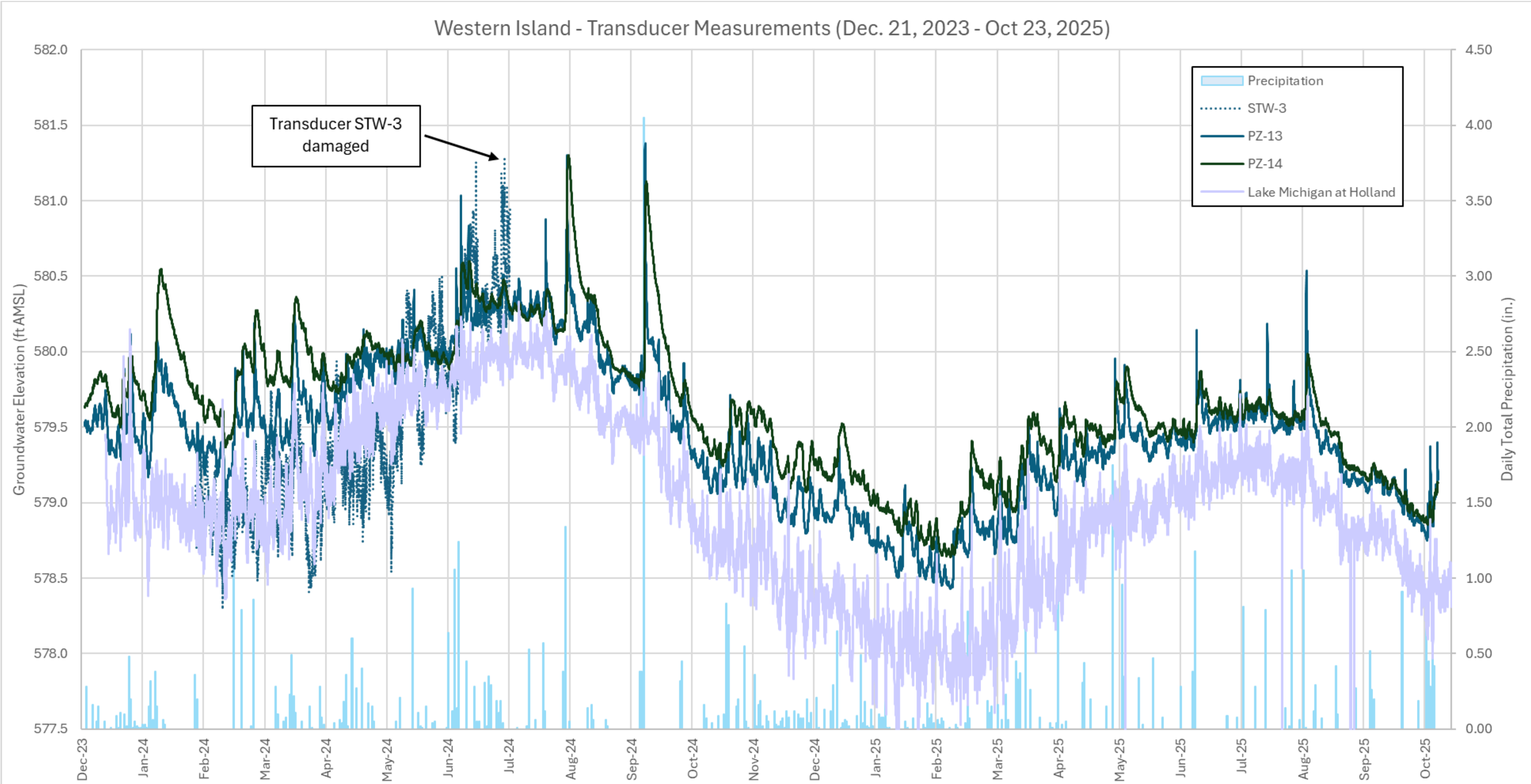


Figure 10 | Transducer Measurement Hydrograph: Stilling Well STW-3, Monitoring Well MW-13 Piezometer PZ-14, and Lake Michigan at Holland (NOAA)

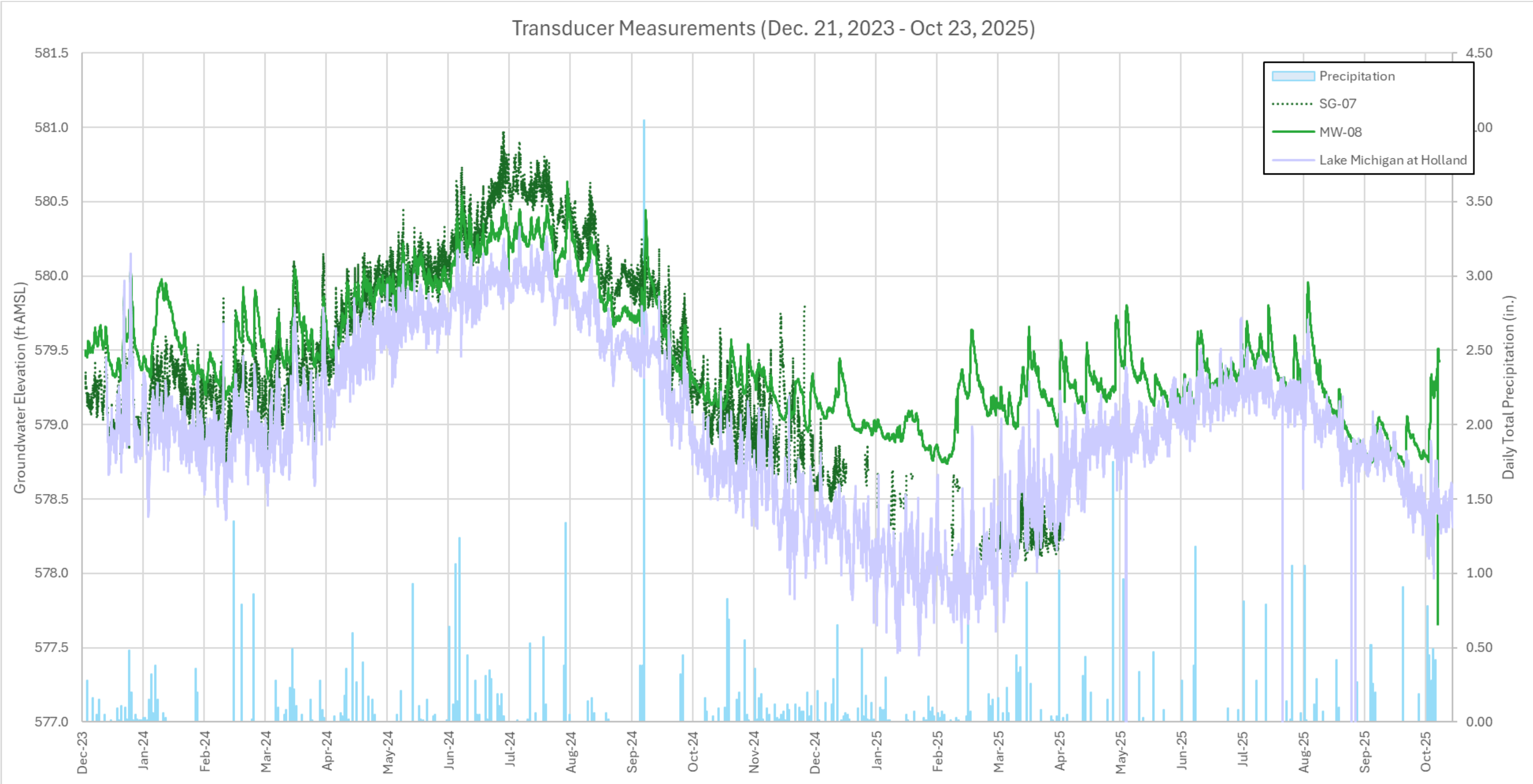


Figure 11 | Transducer Measurement Hydrograph: Staff Gauge SG-07, Monitoring Well MW-08, and Lake Michigan at Holland (NOAA)

4.2 Water Quality

In October 2025, an assessment monitoring event was conducted and the monitoring network provided in **Table 1** was sampled for the COIs contained in **Table 3**. The water quality data collected to date is presented in **Appendix D** and laboratory reports are provided in **Appendix E**.

4.2.1 Groundwater Protection Standards (GPS)

As required in Michigan Rule R 299.4441(9), the owner must establish GPS for each hazardous substance detected in the groundwater when in assessment monitoring. The background value (95% upper tolerance limit [UTL]), maximum contaminant level (MCLs), applicable state cleanup criteria, and Site GPS for both CCR units are provided in **Table 5** from the HMP (HDR, 2024).

Table 5. Background Values and State Groundwater Protection Standards for both Units 1/2 Impoundment and Unit 3A/B Impoundments

Parameter**	Site-Specific Background Level (UTL) (mg/L)	MCL (mg/L)	State Non-Res. Drinking Water Cleanup Criteria for Groundwater (mg/L)*	GSI (mg/L)*	GPS (mg/L)
Antimony	0.0012	0.0060	0.0060	0.13	0.0060
Arsenic	0.0040	0.010	0.010	0.010	0.010
Barium	0.58	2.0	2.0	1.3[1]	1.3
Beryllium	0.000059	0.0040	0.0040	0.036[1]	0.0040
Boron	4.0	NV	0.50	7.20	4.0
Cadmium	0.00015	0.0050	0.0050	0.0025[1]	0.0025[1]
Calcium	250	NV	N/A	N/A	250
Chloride	120	NV	250	50	120
Chromium	0.042	0.10	0.10	0.12[1]	0.10
Cobalt	0.0021	0.0060	0.10	0.10	0.0060
Copper	0.020	1.30	1.0	0.021[1]	0.021[1]
Fluoride	0.45	4.0	2.0	NV	2.0
Iron	83	0.30	0.30	NV	83
Lead	0.0016	0.015	0.0040	0.014[1]	0.0040
Lithium	0.10	0.040	0.35	0.44	0.10
Mercury	0.00016[2]	0.0020	0.0020	0.0000013	0.0000013
Molybdenum	0.0093	0.10	0.210	3.2	0.10
Nickel	0.023	NV	0.10	0.12[1]	0.10
Radium 226 and 228 combined (pCi/L)	2.6	5.0	NV	NV	5.0
Selenium	0.00089	0.050	0.050	0.0050	0.0050
Silver	0.00011	0.10	0.098	0.00020	0.00020
Sulfate	100	250	250	NV	250
Thallium	0.000075	0.0020	0.0020	0.0037	0.0020
Total Dissolved Solids	950	500	500	500	950
Vanadium	0.00093	NV	0.0062	0.027	0.0062
Zinc	0.038	5.00	5.00	0.27[1]	0.27[1]

*Cleanup Criteria Requirements for Response Activity (Formerly the Part 201 Generic Cleanup Criteria and Screening Levels) found in R 299.44 Generic groundwater cleanup criteria.
**Metals data is analyzed and reported as total metals.
NV=no value
[1]Per Footnote G of Table 1 Cleanup Criteria Requirements for Response Activity (Formerly the Part 201 Generic Cleanup Criteria and Screening Levels) of the Groundwater Surface Water (GSI) criteria list, values noted are calculated based on the hardness (expressed as CaCO3) of the receiving waters. Surface water sample from the Grand River (SG-01) had a hardness of 270 mg/L that was used in the calculation of specific GSI values. The Grand River discharges into Lake Michigan, thus the GSI Criteria for Surface Water Protected for Drinking Water Use, is provided above.
[2]Based on comments provided by EGLE on the Hydrogeologic Monitoring Plan (HMP), future monitoring events will have lower analytical detection limits for mercury, which will address the background concentration relative to the GSI.

4.2.2 Identification of Groundwater Protection Standard (GPS) Exceedances

The October 2025 sampling data from compliance wells was compared to the GPS values provided in **Table 5**, and several COIs were found to exceed GPS at both CCR units. To determine if an exceedance of a GPS value was statistically significant, the 95% lower confidence limit (95LCL) was calculated for each of the downgradient wells. The statistical output files are in **Appendix F**. Analytical data tables are contained in **Appendix D**.

Units 1/2 Impoundment

Concentrations that exceeded GPS at SSLs are provided in **Table 6** for Units 1/2 Impoundment. The wells with SSLs over GPS following the October 2025 sampling event are generally consistent with previous well and constituent observations, with the exception that barium at monitoring well MW-06 statistically exceeded the GPS for the first time.

Table 6. October 2025 LCLs that Exceed GPS for the Units 1/2 Impoundment

Well	Constituent*	Unit	95% LCL	State GPS
MW-06	Barium	mg/L	1.4	1.3
	Boron	mg/L	8.7	4.0
	Lithium	mg/L	0.16	0.10
	Total Dissolved Solids	mg/L	1200	950
MW-07	Boron	mg/L	11	4.0
MW-08	Arsenic	mg/L	0.031	0.010
	Boron	mg/L	5.4	4.0
MW-10	Boron	mg/L	15	4.0
	Chloride (as Cl)	mg/L	240	120
	Fluoride	mg/L	4.6	2.0
	Lithium	mg/L	0.84	0.10
	Sulfate (as SO4)	mg/L	420	250
	Total Dissolved Solids	mg/L	1900	950
MW-18	Arsenic	mg/L	0.025	0.010
	Calcium	mg/L	300	250
	Fluoride	mg/L	3.7	2.0

Table 6. October 2025 LCLs that Exceed GPS for the Units 1/2 Impoundment				
Well	**Constituent***	**Unit**	**95% LCL**	**State GPS**
MW-18	Sulfate (as SO4)	mg/L	690	250
	Total Dissolved Solids	mg/L	1300	950
MW-19	Calcium	mg/L	440	250
	Sulfate (as SO4)	mg/L	910	250
	Total Dissolved Solids	mg/L	1700	950
MW-30	Calcium	mg/L	430	250
	Lithium	mg/L	0.12	0.10
	Sulfate (as SO4)	mg/L	780	250
	Total Dissolved Solids	mg/L	2200	950
MW-31	Boron	mg/L	4.5	4.0
	Fluoride	mg/L	4.5	2.0
MW-32	Lithium	mg/L	0.12	0.10

*Mercury LCLs appear greater than the GPS at all wells although no detections were reported and the LCL is based on the reporting limit. Beginning in the second quarter of 2025 (April 2025 sampling event), the low-level mercury sampling and analysis protocol has been employed to achieve reporting limits of 0.0013 ug/L, below the current LCL of 0.16 ug/L based on the reporting limit.

Unit 3A/B Impoundments

Concentrations that exceed GPS at SSLs are provided in **Table 7** for Unit 3A/B Impoundments. The wells with SSLs over GPS following the October 2025 sampling event are generally consistent with previous well and constituent observations, with the following exceptions:

- The 95% LCL sulfate concentration (previously 260 mg/L) at well MW-03 declined to below the GPS (250 mg/L).
- The 95% LCL chloride concentration (previously 130 mg/L) at well MW-04 declined to the GPS (120 mg/L).

Table 7. October 2025 LCLs that Exceed GPS for Unit 3A/B Impoundments				
Well	**Constituent***	**Unit**	**95% LCL**	**State GPS**
MW-01R	Boron	mg/L	96	4.0
	Fluoride	mg/L	11	2.0
	Lithium	mg/L	2.1	0.10
	Sulfate (as SO4)	mg/L	280	250
	Total Dissolved Solids	mg/L	2300	950
MW-02	Boron	mg/L	96	4.0
	Chloride (as Cl)	mg/L	140	120
	Fluoride	mg/L	9.4	2.0
	Lithium	mg/L	1.3	0.10
	Total Dissolved Solids	mg/L	1800	950
MW-03	Calcium	mg/L	350	250
	Chloride (as Cl)	mg/L	130	120

Table 7. October 2025 LCLs that Exceed GPS for Unit 3A/B Impoundments				
Well	Constituent*	Unit	95% LCL	State GPS
MW-03	Total Dissolved Solids	mg/L	1800	950
MW-04	Calcium	mg/L	340	250
	Sulfate (as SO4)	mg/L	520	250
	Total Dissolved Solids	mg/L	1800	950
MW-09	Boron	mg/L	5.5	4.0
	Calcium	mg/L	360	250
	Fluoride	mg/L	2.4	2.0
	Lithium	mg/L	0.29	0.10
	Sulfate (as SO4)	mg/L	400	250
	Total Dissolved Solids	mg/L	1300	950
MW-10	Boron	mg/L	15	4.0
	Chloride (as Cl)	mg/L	240	120
	Fluoride	mg/L	4.6	2.0
	Lithium	mg/L	0.84	0.10
	Sulfate (as SO4)	mg/L	420	250
	Total Dissolved Solids	mg/L	1900	950
MW-11	Boron	mg/L	4.7	4.0

*Mercury LCLs after the October 2025 sample event appear greater than the GPS at all wells. When a mercury concentration is not detected, the value used to calculate the LCL is based on the reporting limit. Beginning in the second quarter of 2025 (April 2025 sampling event), low-level mercury sampling and analysis protocol was employed to achieve reporting limits of 1.3 ng/L. The method detection limit in since the second quarter 2025 has been 0.5 ng/L. The prior reporting limit was 160 ng/L. However, the LCL value is calculated using all of the sample data collected to date. Therefore it will take additional monitoring events for the statistical LCL value to reflect the lower reporting limit initiated in April 2025, which will better reflect that groundwater is not impacted by mercury.

Surface Water Monitoring

The surface water samples collected during the October 2025 sampling event were analyzed for the same list of analytes as the groundwater monitoring locations. For comparison purposes only, the surface water sample results were compared to the GPS, even though groundwater standards are not applicable to surface water. The list of constituents that exceeded the GPS is provided in **Table 8**.

Table 8. Surface Water Sample Summary			
Surface Water Sample Location	Date Sampled	Waterbody Monitored	Constituents that Exceeded GPS*
SG-02	No sample – insufficient water	Units 1/2 Impoundment	--
SG-04R	No sample – insufficient water	Units 1/2 Impoundment	--
SG-05	No sample – insufficient water	Internal Wetland West	--
SG-07	October 22, 2025	Internal Wetland South	No exceedances

*GPS criteria not for regulatory compliance, only used as a reference value for comparison to groundwater concentrations.

Based on the single sampling result, surface water collected at SG-07 did not have concentrations exceeding GPS values.

5.0 Remedy Selection Progress Update

5.1 2025 Investigative Activities

The Remedial Investigation Site Specific Data Collection Work Plan was approved in August 2025 to assist in the remediation alternatives feasibility assessment and remedy selection process (HDR 2025). Several tasks under this Work Plan were performed in the fourth quarter 2025, including:

Unit 3A/B Road Coal Ash Delineation

During the coal ash cleanout of Unit 3AB in 2020, access paths were created around the perimeter of Unit 3AB to facilitate cleanout activities (i.e., excavating and loading) using heavy equipment. Coal ash was reportedly spilled on these paths during cleanout activities. To address the reported presence of residual coal ash on these paths, an investigation was initiated in September 2025 to visually characterize potential ash at or near the ground surface around the periphery of Unit 3AB. The results of the investigation will guide the method selected to remove any potential remaining CCR in the target area. In September 2025, approximately 90 shallow borings were completed using a combination of hand auger, soil shovel, and pick axe to expose shallow soils for observation (**Figure 12**). In November 2025, an additional 17 borings were completed using a Geoprobe direct-push rig to observe soils where hand tools could not be penetrate. Findings will be compiled in a report, with figures illustrating where residual coal ash was observed at or near the ground surface. The report is anticipated to be completed in the first quarter of 2026.

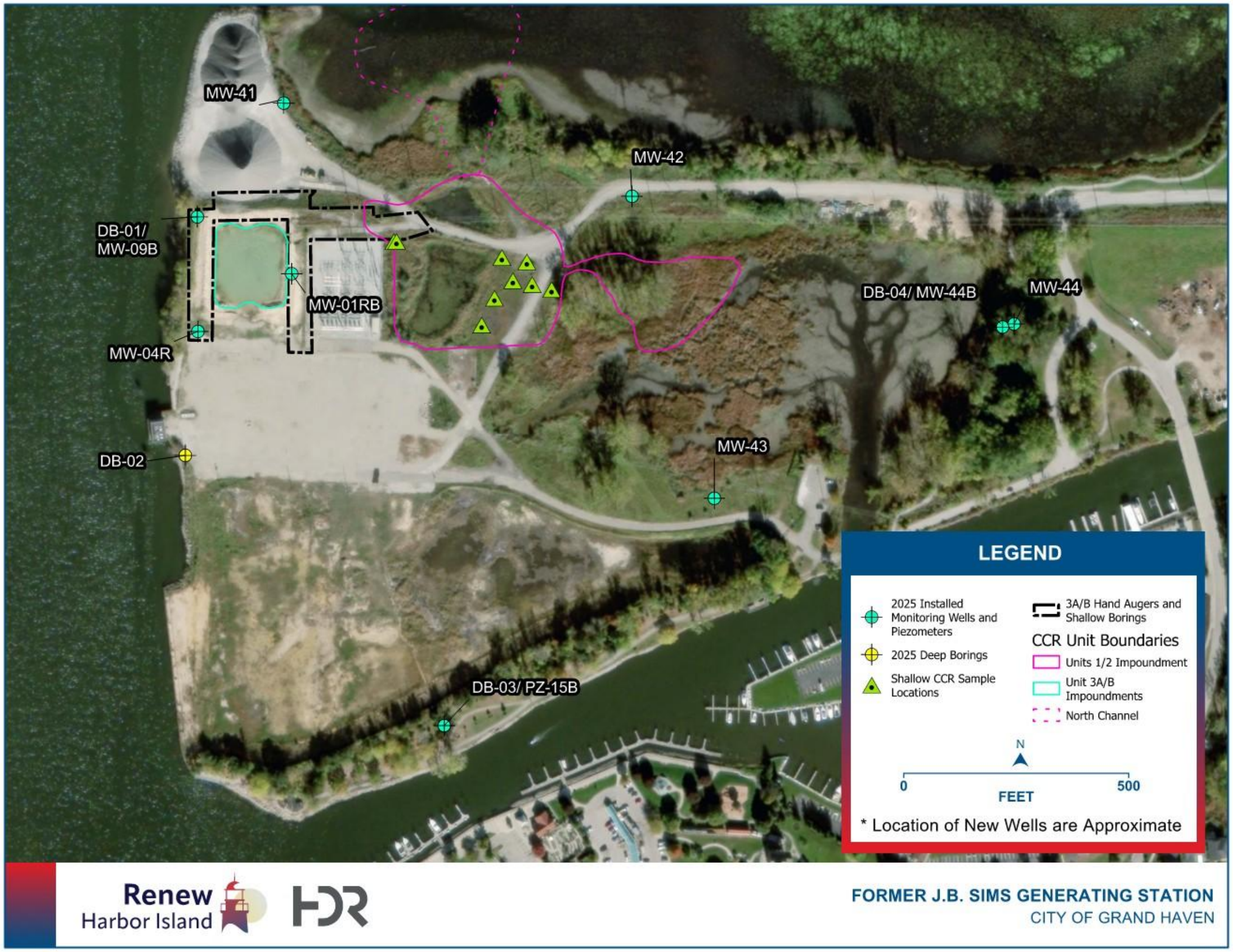


Figure 12 | Remedial Investigation Locations

Bottom Ash Characterization

Nine bottom ash samples from the Units 1/2 Impoundment were collected in December 2025 and submitted to Trace Analytical Laboratory for analysis of CCR total metals (**Figure 12**). Additionally, the coal ash samples were analyzed via Synthetic Precipitation Leaching Procedure (SPLP) and Toxicity Characteristic Leaching Procedure (TCLP) methods. The analytical results have not been received and validated in time to include in this report. The findings of the ash characterization may be used for closure of the CCR Units 1/2 Impoundment.

Exploratory Borings and Monitoring Wells

Four deep soil borings (DB-01 to DB-04) were drilled in November 2025 to measure the depth to an underlying low-conductivity unit (clay or silty clay) at four locations on Harbor Island (**Figure 12**). The hydraulic characteristics of the low-conductivity unit were evaluated through the collection of undisturbed, 30-inch long geotechnical samples (Shelby tubes) collected at deep borings DB-01 and DB-03 at depths of 54 to 56 feet bgs. The samples were delivered to Soil & Material Engineers (SME) to measure grain size and in-situ hydraulic conductivity.

Two of the four deep soil borings were completed as deep monitoring wells (MW-44B and MW-09B), and one was completed as a deep piezometer (PZ-15B), as discussed below. Additionally, a slug test was completed to estimate the hydraulic conductivity of clay at well MW-44B. The depths and hydraulic characteristics of the clay unit will inform a potential containment wall design. The findings will be summarized in the Monitoring Well Installation Report.

The deep wells (MW-09B and MW-44B) and deep piezometer (PZ-15B) were installed to evaluate the vertical extent of contaminated groundwater and vertical components of groundwater flow. Well MW-09B is located near Unit 3AB, adjacent to shallow monitoring well MW-09 (screened 7 to 12 feet bgs). Well MW-09B was screened at the base of the unconsolidated sand aquifer at 31 to 36 feet bgs. Piezometer PZ-15B is located near the South Channel Grand River, and also screened at the base of the unconsolidated sand aquifer at 30 to 35 feet bgs. Piezometer PZ-15B is paired with PZ-15, screened 15 to 20 feet bgs. Well MW-44B was installed east of the Internal Wetland and screened from 39 to 44 feet bgs, approximately 14 feet into a fat clay unit for the purpose of evaluating the hydraulic properties of the clay. Well MW-44B is paired with new well MW-44, screened 5 to 10 feet bgs, Water quality samples were collected in December 2025. The analytical results have not been received and validated in time to include in this report

Replacement Monitoring Wells

Two new wells were installed near the Unit 3AB Impoundments, adjacent to MW-01R and MW-04, as potential replacement wells for MW-01R and MW-04 (Section 2.4). Coal ash had previously been logged in the screened intervals of wells MW-01R and MW-04. Coal ash was also observed in the borings for the new wells, but the borings were extended to locate the well screens below the coal ash. New well MW-01RB is located approximately 20 feet from MW-01R and screened at a depth of 26 to 31 feet bgs, compared to MW-01R, screened from 4 to 9 feet bgs. Well MW-04R was located approximately 25 feet from well MW-04 and screened at a depth of 10 to 15 feet bgs. Well MW-04 is also screened from 10 to 15 feet bgs, but at a surface grade approximately 3 feet higher in elevation. In December 2025, slug tests were completed at both new wells, and water quality samples were collected. The analytical results have not been received and validated in time to include in this report. Pending analytical findings and EGLE approval, well MW-04 may potentially be abandoned due to the presence of coal ash in its screened interval, and be replaced by MW-04R in the monitoring network. Monitoring well MW-01RB may potentially be added to the monitoring network as a deep well adjacent to MW-01R to help define the vertical extent of contamination.

New Shallow Monitoring Wells

Three new shallow wells (MW-41, MW-42, and MW-43) were installed to further define groundwater flow direction and to delineate the CCR-related impacts to groundwater The monitoring wells were screened just below the water table. Slug tests were completed and water quality samples were collected in December 2025. The analytical results have not been received and validated in time to include in this report.

New Shallow Monitoring Well – East of Internal Wetland

Monitoring well MW-44 was installed to evaluate PFAS concentrations and groundwater flow at the groundwater-surface water interface on the east side of the Internal Wetland. Well MW-44 was screened across the water table, from 5 to 10 feet bgs. A slug test was completed and water quality samples were collected in December 2025. The analytical results have not been received and validated in time to include in this report.

5.2 Next Steps

Implementation of the Remedial Investigation Data Collection Work Plan (HDR, 2025) will continue in the first and second quarters of 2026, including:

- A topographic and bathymetric survey of Harbor Island will be completed. The majority of the survey will consist of LiDAR data collected by Unmanned Aircraft Systems (UAS, or drone technology). Bathymetry data of the Main and South Channels of the Grand River will be collected using sonar, and shallow areas will be measured manually with traditional surveying equipment. The purpose of the topographic and bathymetric survey is to inform the design of remedial options such as excavation and disposal.
- A Wetland Functional Assessment and Wetland Type Determination will be completed to evaluate the quality and ecological functions of the onsite wetlands, ensuring that mitigation measures comply with legal requirements for in-kind replacement.
- An aquifer test (pumping test) will be conducted to characterize the aquifer and help determine pumping rates for groundwater extraction and treatment alternatives. A 6-inch diameter pumping well will be installed for the test.
- A three-dimensional (3D) groundwater flow model will be developed for the Site to simulate potential remediation alternatives.

6.0 Summary

The following observations are based on CCR Rule compliance groundwater monitoring during the fourth quarter 2025:

- One groundwater sampling event was conducted during the fourth quarter 2025, in October 2025.
- Groundwater flow measured in the fourth quarter 2025 in the vicinity of Units 1/2 Impoundment is generally radial, with components flowing eastward toward the Internal wetland, north toward SG-02, south toward MW-05, and west toward the Grand River.
- Groundwater flow measured in the fourth quarter in the vicinity of Unit 3A/B Impoundments is primarily west to northwest toward the Grand River.
- The PVC-cased stilling well STW-2 was replaced with a steel-cased STW-2 in the fourth quarter 2025.
- The PVC-cased stilling well STW-1 was replaced with a paired with a shallow groundwater drive point (STW-1DP) and new stilling well (STW-1-SW). A transducer has been placed in drive point STW-1DP to monitor shallow groundwater levels, and a transducer will be placed in stilling well STW-1SW when surface water returns to the Northern Wetland.
- Transducer data from the ponds within Units 1/2 Impoundments indicate that from May through October 2025, precipitation falling on, or collecting in the dry pond bed infiltrates and recharges groundwater, with the groundwater table being as much as 1.5 feet below the wetland surface.
- Groundwater on the south and eastern sides of the Island appears to be discharging to surface water (Grand River South Channel).
- The LCLs for the Units 1/2 Impoundment were re-calculated after the October 2025 assessment monitoring event and were compared to GPS values. Similar SSLs were identified for Units 1/2 Impoundment as in previous monitoring events, with the exception of barium added to the list of GPS exceedances at well MW-06.
- The LCLs for the Unit 3AB Impoundment were re-calculated after the October 2025 assessment monitoring event and were compared to GPS values. Similar SSLs were identified for the Unit 3A/B Impoundments as in previous monitoring events, with the exception of sulfate being delisted as a GPS exceedance at well MW-03; and chloride being delisted as a GPS exceedance at well WM-04.
- Investigative activities in the fourth quarter of 2025 included a coal ash investigation on roads around the perimeter of Unit 3AB; the collection of bottom ash samples for laboratory analysis; the drilling of exploratory soil borings and geotechnical testing (grain size and permeameter testing) of the fine-grained unit underlying the shallow aquifer; the installation of nine observation wells; slug testing; and the collection of groundwater samples for laboratory analysis.
- The analytical results of groundwater samples collected from the new monitoring wells have not been received and validated in time for this report, but will be included in the first quarter 2026 Quarterly Monitoring Report.

7.0 References

ERM, 2017. Groundwater Monitoring System Certification for the Grand Haven Board of Light and Power, Environmental Resources Management Michigan, Inc. November 2017.

Golder Associates, Inc., 2018. 2017 Annual Groundwater Monitoring and Corrective Action Report. January 30, 2018.

Golder Associates, Inc., 2018a. Notice of Groundwater Protection Standard Exceedance. October 15, 2018.

Golder Associates, Inc., 2019. CCR Impoundment Ash Delineation at the J.B. Sims Generating Station. October 14, 2019.

Golder Associates, Inc., 2020. 2019 Annual Groundwater Monitoring & Corrective Action Report. January 31, 2020.

Golder Associates, Inc., 2022. Field Summary Report of Results from Approved Work Plan -Piezometer Installation and Additional Data Collection. February 15, 2022.

HDR, 2024, Hydrogeologic Monitoring Plan. November 1, 2024.

HDR, 2024a., Former J.B. Sims Generating Station Determination of Statistically Significant Increases over Background per §257.93(h)(2) and R 299.4440(8) of the Michigan Part 115 Rules. January 24, 2024.

HDR, 2025. Former J.B. Sims Generating Station Remedial Investigation Data Collection Work Plan. July 8, 2025.

Appendix A

Field Data Sheets

Water Level Sweep – Measurement and Inspection Form

Site: Grand Haven Harbor Island

Sample Event: Q4 2025

Field Personnel: F. Davis Ray

Date: 10/20/25

Well I.D.	Date	Well Type (e.g., Flush Mount, Stickup, Other)	Well Diameter (e.g., 1 inch, 2 inch, 4 inch)	Well Pad Condition (e.g., good, average, bad)	*Prior Date* Depth to Water (ft, btoc)	Current Depth to Water (ft, btoc)	Total Depth (ft, btoc)	Notes/Comments
MW-01R	10/20/25	Stickup	2"	average		8.55	—	
MW-02	10/20/25	Stickup	2"	Average		16.84	—	
MW-03	10/20/25	Stickup	2"	average		14.24	—	
MW-04	10/20/25	Stickup	2"	Average		12.58	—	
MW-05	10/20/25	Stickup	2"	average		8.14	—	
MW-06	10/20/25	Stickup	2"	Average		10.85	—	
MW-07	10/20/25	Stickup	2"	Average		7.56	—	
MW-08	10/20/25	Stickup	2"	average		6.14	—	
MW-09	10/20/25	Stickup	2"	average			—	
MW-10	10/20/25	Stickup	2"	average		7.23	—	
MW-11	10/20/25	Stickup	2"	average		15.84	—	
MW-12	10/20/25	Stick up	2"	average		8.14	—	
MW-13	10/20/25	Stickup	2"	average		7.08		
MW-14	10/20/25	Stickup	2"	average		7.41	—	
MW-15	10/20/25	Stickup	2"	Good		13.14	—	
MW-16	10/20/25	Stickup	2"	Good		6.18	—	
MW-17	10/20/25	Stickup	2"	n/a		7.71	—	
MW-18	10/20/25	Stickup	2"	average		7.72	—	
MW-19	10/20/25	Stickup	2"	Average		6.56		
MW-20	10/20/25	Stickup	2"	Average		6.43	—	
* MW-21	—	—	—	—	—	—	—	
* MW-22	—	—	—	—	—	—	—	
MW-23	10/20/25	Stickup	2"	average		8.30	—	
MW-24	10/20/25	Stickup	2"	average		8.55		
MW-25	10/20/25	Stickup	2"	average		7.62	—	

Water Level Sweep – Measurement and Inspection Form

Site: ______________________ Sample Event: ______________________

Field Personnel: ______________________ Date: ______________________

Well I.D.	Date	Well Type (e.g., Flush Mount, Stickup, Other)	Well Diameter (e.g., 1 inch, 2 inch, 4 inch)	Well Pad Condition (e.g., good, average, bad)	*Prior Date Depth to Water* (ft, btoc)	Current Depth to Water (ft, btoc)	Total Depth (ft, btoc)	Notes/Comments
MW-26	10/20/25	Stickup	2"	average		7.29	–	
MW-27	10/20/25	Stickup	2"	average		5.78	–	
MW-28	10/20/25	Stick up	2"	average		9.06	–	
* MW-29	–	–	–	–	–	–	–	
MW-30	10/20/25	Stickup	2"	Average		6.820	–	
MW-31	10/20/25	Stickup	2"	average		6.78		
MW-32	10/20/25	Stickup	2"	average		7.32		
MW-33	10/20/25	Flush mount	2"	n/a		3.59	–	Not flooded
MW-34	10/20/25	Flush mount	2"	n/a		5.59	–	
MW-35	10/20/25	Flush mount	2"	n/a		9.99	–	
MW-36	10/20/25	Stickup	2"	n/a		9.81	–	
MW-37	10/20/25	Stickup	2"	n/a		10.30	–	
MW-38	10/20/25	Stickup	2"	~~average~~ n/a		11.24	–	
MW-39	10/20/25	Stick up	2"	average		8.04	–	
MW-40	10/20/25	Stickup	2"	average		7.56	–	
SG-01	10/20/25	Staff Gauge		n/a				
SG-02	10/20/25	Staff gauge		n/a		Dry		
SG-03	10/20/25	Staff gauge		n/a		Dry		
SG-04	10/20/25	Staff gauge		n/a		Dry		
SG-05	10/20/25	Staff gauge		n/a		Dry		
SG-06	10/20/25	Staff gauge		n/a		Dry		
SG-07	10/20/25	Staff gauge		n/a		1.10-1.20?		
STW-1	10/20/25	Stickup	2"	n/a		5.42	–	
STW-2	10/20/25	Stickup	2"	n/a		7.65	–	
STW-3	10/20/25	Stickup	2"	n/a		14.00	–	

Water Sample Collection Field Data Sheet

Site Name: GHH1 Well I.D.: MW-01R

Sample I.D. (match bottle and COC form exactly): MW-01R

Personnel: AB Date: 10/22/2025

Static Depth to Water (ft, btoc): 8.12 Well Total Depth (ft, btoc): ——

Date/Time Sample Collected (match bottle and COC form exactly): 10/22/2025, 1016

Sample Method: LF Peri

Water level meter, pump, and tubing decontaminated prior: Yes No

Sample QC: Field Duplicate Yes No Duplicate Sample I.D.: ——

Sample QC: Equipment Blank Yes No Equip. Blank Sample I.D.: ——

Well Purging Data (Fill in All Blanks):

Depth of Sample Collection (pump intake depth; ft, btoc): dedicated tubing

Time Completed: ______ Total Purge: ______ Units: L

Field Measurements:

Time (24-hour)	Amount Purged (L)	pH	COND. (µS/cm)	TURB. (NTU)	DO (mg/L)	TEMP (C°)	ORP (mV)	Water Depth (ft, btoc)	Flow Rate (mL/min)
940									
944		7.55	3372	3.75	0.16	16.5	-225.2	8.31	
948		7.55	3359	3.01	0.15	16.6	-228.7	8.33	
952		7.52	3295	5.36	0.12	16.5	-248.7	8.35	
956		7.61	3284	3.39	0.15	16.4	-260.9	8.38	
1000		7.62	3276	1.77	0.15	16.4	-269.1	8.38	
1004		7.63	3275	0.02	0.14	16.3	-271.1	8.38	
1008		7.63	3271	1.03	0.13	16.3	-274.0	8.38	

Flow Rate: ~250 mL/min

Pump Controller Setting: ______

General Comments:

Water Sample Collection Field Data Sheet

Site Name: GHHT Well I.D.: MW-02

Sample I.D. (match bottle and COC form exactly): MW-02

Personnel: FDR Date: 10/22/25

Static Depth to Water (ft, btoc): 16.84 Well Total Depth (ft, btoc): ____________

Date/Time Sample Collected (match bottle and COC form exactly): 10/22/25 1415

Sample Method: Peristaltic

Water level meter, pump, and tubing decontaminated prior: Yes No

Sample QC: Field Duplicate Yes No Duplicate Sample I.D.: ____________

Sample QC: Equipment Blank Yes No Equip. Blank Sample I.D.: ____________

Well Purging Data (Fill in All Blanks):

Depth of Sample Collection (pump intake depth; ft, btoc): Dedicated tubing

Time Completed: 1500 Total Purge: 16.5 Units: L

Field Measurements:

Time (24-hour)	Amount Purged (L)	pH	COND. (µS/cm)	TURB. (NTU)	DO (mg/L)	TEMP (C°)	ORP (mV)	Water Depth (ft, btoc)	Flow Rate (mL/min)
1240	2.5	7.24	4079	54.3	0.53	13.4	-111.0	17.52	250
1250	4.5	7.22	4065	42.1	0.11	13.4	-117.2	17.90	200
1300	6.0	7.23	4022	18.7	0.13	13.1	-129.4	17.78	150
1310	7.5	7.22	4046	29.1	0.13	13.2	-132.7	17.95	150
1320	9.0	7.21	4039	28.2	0.13	13.1	-132.0	17.94	150
1325	9.75	7.21	4045	27.7	0.13	13.1	-133.9	17.95	150
1330	10.5	7.21	4042	23.8	0.14	13.2	-137.6	17.9	150
1335	11.25	7.21	4050	18.2	0.13	13.2	-140.7	17.96	150
1340	12.0	7.21	4060	17.6	0.12	13.2	-143.3	17.95	150
1345	12.75	7.21	4061	17.3	0.12	13.2	-144.7	17.96	150
1350	13.5	7.21	4056	15.1	0.11	13.2	-147.6	17.97	150
1355	14.25	7.20	4075	13.6	0.08	13.2	-151.6	17.98	150
1400	15.0	7.20	4067	9.63	0.11	13.3	-154.1	17.97	150
1405	15.75	7.20	4096	8.42	0.12	13.3	-156.0	17.98	150
1410	16.5	7.20	408	10.1	0.08	13.3	-159.6	17.99	150

Flow Rate: ~150 mL/min

Pump Controller Setting: 45%

General Comments:

Water Sample Collection Field Data Sheet

Site Name: GHHI Well I.D.: MW-03

Sample I.D. (match bottle and COC form exactly): MW-03

Personnel: AB Date: 10/22/25

Static Depth to Water (ft, btoc): 13.96 Well Total Depth (ft, btoc): —

Date/Time Sample Collected (match bottle and COC form exactly): 10/22/25; 1350

Sample Method: LF Peri

Water level meter, pump, and tubing decontaminated prior: Yes No

Sample QC: Field Duplicate Yes No Duplicate Sample I.D.: —

Sample QC: Equipment Blank Yes No Equip. Blank Sample I.D.: —

Well Purging Data (Fill in All Blanks):

Depth of Sample Collection (pump intake depth; ft, btoc): dedicated tubing

Time Completed: ______ Total Purge: ______ Units: L

Field Measurements:

Time (24-hour)	Amount Purged (L)	pH	COND. (µS/cm)	TURB. (NTU)	DO (mg/L)	TEMP (C°)	ORP (mV)	Water Depth (ft, btoc)	Flow Rate (mL/min)
1314		7.26	2820	2.27	0.53	14.6	-132.8	14.32	
1318		7.28	2878	1.12	0.34	14.5	-151.3	14.43	
1322		7.29	2857	0.89	0.27	14.5	-163.5	14.52	slow pump
1326		7.29	2842	2.11	0.25	14.3	-172.7	14.54	
1330		7.28	2855	0.02	0.25	14.2	-179.7	14.56	
1334		7.28	2851	0.02	0.34	14.4	-182.5	14.58	
1338		7.28	2853	0.02	0.31	14.5	-186.4	14.61	
1342		7.28	2860	1.03	0.26	14.4	-190.1	14.62	
1346		7.28	2861	0.02	0.25	14.4	-193.2	14.62	
1350		7.28	2857	0.02	0.25	14.3	-195.7	14.62	

Flow Rate: ______

Pump Controller Setting: ______

General Comments:

Water Sample Collection Field Data Sheet

Site Name: GHHI Well I.D.: MW-04

Sample I.D. (match bottle and COC form exactly): MW-04

Personnel: AB Date: 10/22/25

Static Depth to Water (ft, btoc): 12.26 Well Total Depth (ft, btoc): —

Date/Time Sample Collected (match bottle and COC form exactly): 10/22/25; 1506

Sample Method: LF Peri

Water level meter, pump, and tubing decontaminated prior: Yes No

Sample QC: Field Duplicate Yes No Duplicate Sample I.D.: —

Sample QC: Equipment Blank Yes No Equip. Blank Sample I.D.: —

Well Purging Data (Fill in All Blanks):

Depth of Sample Collection (pump intake depth; ft, btoc): dedicated tubing

Time Completed: ______ Total Purge: ______ Units: L

Field Measurements:

Time (24-hour)	Amount Purged (L)	pH	COND. (µS/cm)	TURB. (NTU)	DO (mg/L)	TEMP (C°)	ORP (mV)	Water Depth (ft, btoc)	Flow Rate (mL/min)
1430	—	—	— START		—	—	—	—	—
1434		6.75	2677	0.02	0.47	16.1	-109.8	12.74	
1438		6.74	2674	0.02	0.36	16.1	-110.7	12.81	
1442		6.74	2664	0.02	0.30	16.1	-112.4	12.90	
1446		6.75	2661	0.02	0.24	15.9	-114.4	12.98	
1450		6.75	2660	0.02	0.23	16.0	-116.5	13.04	
1454		6.76	2665	0.02	0.21	15.9	-118.3	13.09	
1458		6.77	2670	0.02	0.20	15.9	-121.4	13.11	
1502		6.78	2671	0.02	0.19	15.8	-123.3	13.13	
1506								13.14	

Flow Rate: ~200 mL/min

Pump Controller Setting: ______

General Comments:

Water Sample Collection Field Data Sheet

Site Name: GHHI Well I.D.: MW-06

Sample I.D. (match bottle and COC form exactly): MW-06

Personnel: AB Date: 10/23/2025

Static Depth to Water (ft, btoc): 10.38 Well Total Depth (ft, btoc): —

Date/Time Sample Collected (match bottle and COC form exactly): 10/23/25, 1050

Sample Method: LF Peri

Water level meter, pump, and tubing decontaminated prior: Yes No

Sample QC: Field Duplicate Yes No Duplicate Sample I.D.: —

Sample QC: Equipment Blank Yes No Equip. Blank Sample I.D.: —

Well Purging Data (Fill in All Blanks):

Depth of Sample Collection (pump intake depth; ft, btoc): dedicated tubing

Time Completed: ______ Total Purge: ______ Units: L

Field Measurements:

Time (24-hour)	Amount Purged (L)	pH	COND. (µS/cm)	TURB. (NTU)	DO (mg/L)	TEMP (C°)	ORP (mV)	Water Depth (ft, btoc)	Flow Rate (mL/min)
1016									
1020		7.24	2572	2.27	0.33	15.9	-137.9	10.52	
1024		7.23	2521	4.52	0.32	16.0	-142.5	10.54	
1028		7.24	2449	8.24	0.25	16.2	-143.5	10.54	
1032		7.25	2381	2.10	0.23	16.3	-144.9	10.55	
1036		7.26	2315	3.18	0.19	16.3	-146.1	10.55	
1040		7.26	2265	3.14	0.18	16.4	-147.3	10.55	
1044		7.26	2225	3.16	0.17	16.4	-148.4	10.55	
1048		7.26	2195	1.27	0.16	16.4	-148.9	10.55	

Flow Rate: ______

Pump Controller Setting: ______

General Comments:

Water Sample Collection Field Data Sheet

Site Name: GHHI Well I.D.: MW-07

Sample I.D. (match bottle and COC form exactly): MW-07

Personnel: FDR Date: 10/22/25

Static Depth to Water (ft, btoc): 7.56 Well Total Depth (ft, btoc): –

Date/Time Sample Collected (match bottle and COC form exactly): 10/22/25 1000

Sample Method: Peristaltic

Water level meter, pump, and tubing decontaminated prior: Yes No

Sample QC: Field Duplicate Yes No Duplicate Sample I.D.: ____________

Sample QC: Equipment Blank Yes No Equip. Blank Sample I.D.: ____________

Well Purging Data (Fill in All Blanks):

Depth of Sample Collection (pump intake depth; ft, btoc): Dedicated tubing

Time Completed: 1015 Total Purge: 7.5 Units: L

Field Measurements:

Time (24-hour)	Amount Purged (L)	pH	COND. (µS/cm)	TURB. (NTU)	DO (mg/L)	TEMP (C°)	ORP (mV)	Water Depth (ft, btoc)	Flow Rate (mL/min)
0935	1.5	6.91	1074	7.24	1.24	14.0	-61.9	7.38	300
0940	3.0	6.91	1079	6.64	0.09	14.3	-101.7	7.39	300
0945	4.5	6.91	1081	4.77	0.04	14.3	-111.6	7.40	300
0950	6.0	6.91	1082	4.50	0.07	14.3	-116.0	7.38	300
0955	7.5	6.91	1083	5.47	0.12	14.2	-119.2	7.39	300

Flow Rate: ~300 mL/min

Pump Controller Setting: 60-65%

General Comments:

Water Sample Collection Field Data Sheet

Site Name: UHHI Well I.D.: MW-08

Sample I.D. (match bottle and COC form exactly): MW-08

Personnel: AB Date: 10/22/2025

Static Depth to Water (ft, btoc): 5.95 Well Total Depth (ft, btoc): —

Date/Time Sample Collected (match bottle and COC form exactly): 10/22/2025, 1610

Sample Method: LF Peri

Water level meter, pump, and tubing decontaminated prior: Yes No

Sample QC: Field Duplicate Yes No Duplicate Sample I.D.: —

Sample QC: Equipment Blank Yes No Equip. Blank Sample I.D.: —

Well Purging Data (Fill in All Blanks):

Depth of Sample Collection (pump intake depth; ft, btoc): dedicated tubin

Time Completed: ______ Total Purge: ______ Units: L

Field Measurements:

Time (24-hour)	Amount Purged (L)	pH	COND. (µS/cm)	TURB. (NTU)	DO (mg/L)	TEMP (C°)	ORP (mV)	Water Depth (ft, btoc)	Flow Rate (mL/min)
1538	—	—	—	—	START	—	—	—	—
1542				21.9				6.13	Fix YSI
1546		7.14	1181	11.3	0.22	15.2	-113.1	6.13	
1550		7.12	1176	6.81	0.17	15.2	-124.1	6.13	
1554		7.11	1176	2.82	0.16	15.2	-129.0	6.13	
1558		7.10	1177	0.02	0.14	15.2	-131.6	6.13	
1602		7.10	1178	1.17	0.14	15.2	-133.2	6.13	
1606		7.10	1179	2.92	0.14	15.2	-134.3	6.13	
1610		7.10	1179	0.02	0.14	15.2	-135.5	6.13	

Flow Rate: ______

Pump Controller Setting: ______

General Comments:

Water Sample Collection Field Data Sheet

Site Name: GHH1 Well I.D.: MW-09

Sample I.D. (match bottle and COC form exactly): MW-09

Personnel: AB Date: 10/20/2025

Static Depth to Water (ft, btoc): 10.91 Well Total Depth (ft, btoc): ~~10.91~~

Date/Time Sample Collected (match bottle and COC form exactly): 10/20/2025, 1320

Sample Method: LF Peri

Water level meter, pump, and tubing decontaminated prior: Yes No

Sample QC: Field Duplicate Yes No Duplicate Sample I.D.: —

Sample QC: Equipment Blank Yes No Equip. Blank Sample I.D.: —

Well Purging Data (Fill in All Blanks):

Depth of Sample Collection (pump intake depth; ft, btoc): dedicated tubing

Time Completed: ______ Total Purge: ______ Units: L

Field Measurements:

Time (24-hour)	Amount Purged (L)	pH	COND. (µS/cm)	TURB. (NTU)	DO (mg/L)	TEMP (C°)	ORP (mV)	Water Depth (ft, btoc)	Flow Rate (mL/min)
1252			START						
1256		6.83	2308	44.0	0.25	15.8	-87.9	11.19	
1300		6.84	2300	31.6	0.20	15.9	-93.3	11.32	
1304		6.85	2300	30.4	0.22	15.9	-100.6	11.43	
1308		6.86	2308	20.4	0.22	15.8	-103.1	11.47	
1312		6.86	2306	11.7	0.23	15.9	-106.0	11.50	
1316		6.87	2312	7.98	0.23	15.8	-107.9	11.52	
1320		6.88	2311	5.82	0.23	15.8	-109.9	11.52	

Flow Rate: ~200 mL/min

Pump Controller Setting: 45%

General Comments:

Water Sample Collection Field Data Sheet

Site Name: GHHI Well I.D.: MW-10

Sample I.D. (match bottle and COC form exactly): MW-10

Personnel: AB Date: 10/20/2025

Static Depth to Water (ft, btoc): 7.18 Well Total Depth (ft, btoc): —

Date/Time Sample Collected (match bottle and COC form exactly): 10/20/2025; 1430

Sample Method: LF Peri

Water level meter, pump, and tubing decontaminated prior: Yes No

Sample QC: Field Duplicate Yes No Duplicate Sample I.D.: MWT-10

Sample QC: Equipment Blank Yes No Equip. Blank Sample I.D.: —

Well Purging Data (Fill in All Blanks):

Depth of Sample Collection (pump intake depth; ft, btoc): dedicated tubing

Time Completed: ______ Total Purge: ______ Units: L

Field Measurements:

Time (24-hour)	Amount Purged (L)	pH	COND. (µS/cm)	TURB. (NTU)	DO (mg/L)	TEMP (C°)	ORP (mV)	Water Depth (ft, btoc)	Flow Rate (mL/min)
1400									
1404		7.26	3895	3.42	0.18	16.7	-120.1	7.46	
1408		7.25	3648	7.72	0.15	16.9	-133.9	7.47	
1412		7.26	3605	11.1	0.13	17.0	-141.2	7.47	
1416		7.27	3600	6.18	0.12	17.0	-145.7	7.47	
1420		7.30	3592	4.18	0.10	17.0	-149.9	7.47	
1424		7.34	3586	0.03	0.09	17.0	-155.8	7.47	
1428		7.36	3581	0.02	0.09	17.0	-158.5	7.47	

Flow Rate: ~200 mL/min

Pump Controller Setting: 45%

General Comments:

Water Sample Collection Field Data Sheet

Site Name: GHHI Well I.D.: MW-11

Sample I.D. (match bottle and COC form exactly): MW-11

Personnel: AB Date: 10/23/2025

Static Depth to Water (ft, btoc): 15.54 Well Total Depth (ft, btoc): —

Date/Time Sample Collected (match bottle and COC form exactly): 10/23/25; 940

Sample Method: LF Peri

Water level meter, pump, and tubing decontaminated prior: Yes No

Sample QC: Field Duplicate Yes No Duplicate Sample I.D.: —

Sample QC: Equipment Blank Yes No Equip. Blank Sample I.D.: —

Well Purging Data (Fill in All Blanks):

Depth of Sample Collection (pump intake depth; ft, btoc): dedicated tubing

Time Completed: ______ Total Purge: ______ Units: L

Field Measurements:

Time (24-hour)	Amount Purged (L)	pH	COND. (µS/cm)	TURB. (NTU)	DO (mg/L)	TEMP (C°)	ORP (mV)	Water Depth (ft, btoc)	Flow Rate (mL/min)
850									
900		7.13	1996	24.7	0.58	14.7	-66.7	15.82	
904		7.15	1912	15.2	0.42	14.8	-82.3	15.82	
908		7.17	1808	2.36	0.29	14.8	-101.0	15.82	
912		7.19	1724	1.67	0.23	14.9	-114.9	15.82	
916		7.19	1678	0.43	0.21	14.9	-122.1	15.82	
920		7.20	1649	5.35	0.20	14.9	-127.2	15.82	
924		7.21	1617	6.44	0.19	15.0	-133.8	15.82	
928		7.22	1578	3.83	0.18	15.0	-139.2	15.82	
932		7.22	1562	5.22	0.18	15.0	-143.1	15.82	
936		7.23	1540	5.59	0.17	15.0	-146.7	15.82	
940		7.23	1537	3.95	0.18	14.9	-147.6	15.82	

Flow Rate: ~200 mL/min

Pump Controller Setting: 45%

General Comments:

Water Sample Collection Field Data Sheet

Site Name: GHHI Well I.D.: MW-12

Sample I.D. (match bottle and COC form exactly): MW-12

Personnel: AB Date: 10/22/25

Static Depth to Water (ft, btoc): 8.16 Well Total Depth (ft, btoc): —

Date/Time Sample Collected (match bottle and COC form exactly): 10/22/2025, 1140

Sample Method: LF Peri

Water level meter, pump, and tubing decontaminated prior: Yes No

Sample QC: Field Duplicate Yes No Duplicate Sample I.D.: —

Sample QC: Equipment Blank Yes No Equip. Blank Sample I.D.: —

Well Purging Data (Fill in All Blanks):

Depth of Sample Collection (pump intake depth; ft, btoc): dedicated tubing

Time Completed: ______ Total Purge: ______ Units: L

Field Measurements:

Time (24-hour)	Amount Purged (L)	pH	COND. (µS/cm)	TURB. (NTU)	DO (mg/L)	TEMP (C°)	ORP (mV)	Water Depth (ft, btoc)	Flow Rate (mL/min)
1110			START						
1114		7.26	668	12.9	0.86	17.0	-104.7	8.48	
1118		7.32	655	10.1	0.49	17.0	-98.0	8.48	
1122		7.33	659	9.54	0.31	17.1	-95.3	8.48	
1126		7.32	667	7.11	0.22	16.8	-93.5	8.48	
1130		7.32	683	5.02	0.23	17.1	-94.1	8.48	
1134		7.32	677	0.02	0.21	17.1	-92.6	8.48	
1138		7.32	669	0.02	0.20	17.1	-90.1	8.48	

Flow Rate: ~200 mL/min

Pump Controller Setting: 45%

General Comments:

Water Sample Collection Field Data Sheet

Site Name: GHH1 Well I.D.: MW-13

Sample I.D. (match bottle and COC form exactly): MW-13

Personnel: AB Date: 10/21/25

Static Depth to Water (ft, btoc): 6.95 Well Total Depth (ft, btoc): —

Date/Time Sample Collected (match bottle and COC form exactly): 10/21/25, 1510

Sample Method: LF Peri

Water level meter, pump, and tubing decontaminated prior: Yes No

Sample QC: Field Duplicate Yes No Duplicate Sample I.D.: —

Sample QC: Equipment Blank Yes No Equip. Blank Sample I.D.: —

Well Purging Data (Fill in All Blanks):

Depth of Sample Collection (pump intake depth; ft, btoc): dedicated tubing

Time Completed: ____ Total Purge: ____ Units: L

Field Measurements:

Time (24-hour)	Amount Purged (L)	pH	COND. (µS/cm)	TURB. (NTU)	DO (mg/L)	TEMP (C°)	ORP (mV)	Water Depth (ft, btoc)	Flow Rate (mL/min)
1418	START								
1422		7.32	1307	2.79	0.20	18.3	-168.7	7.02	
1426		7.32	1364	0.02	0.18	18.3	-179.4	7.02	
1430		7.34	1272	0.02	0.14	18.3	-196.7	7.02	
1434		7.35	1250	0.02	0.12	18.3	-209.6	7.02	
1438		7.35	1251	0.02	0.12	18.3	-222.2	7.02	
1442		7.35	1260	0.02	0.12	18.3	-230.6	7.02	
1446		7.35	1271	0.02	0.12	18.3	-240.1	7.02	
1450		7.35	1283	0.02	0.11	18.3	-265.4	7.02	
1454		7.35	1282	0.02	0.11	18.3	-272.3	7.02	
1458		7.36	1281	0.02	0.11	18.3	-278.6	7.02	
1502		7.36	1280	0.02	0.11	18.3	-287.2	7.02	
1506		7.36	1285	0.02	0.12	18.3	-291.3	7.02	
1510		7.36	1287	0.02	0.12	18.3	-296.4	7.02	

Flow Rate: ~200 mL/min
Pump Controller Setting: 457
General Comments:

Water Sample Collection Field Data Sheet

Site Name: GAHHI Well I.D.: MW-16

Sample I.D. (match bottle and COC form exactly): MW-16

Personnel: ~~5.98~~ AB Date: 10/21/25

Static Depth to Water (ft, btoc): 5.98 Well Total Depth (ft, btoc): ____________

Date/Time Sample Collected (match bottle and COC form exactly): 10/21/25; 1130

Sample Method: LF Peri

Water level meter, pump, and tubing decontaminated prior: Yes No

Sample QC: Field Duplicate Yes No Duplicate Sample I.D.: —

Sample QC: Equipment Blank Yes No Equip. Blank Sample I.D.: —

Well Purging Data (Fill in All Blanks):

Depth of Sample Collection (pump intake depth; ft, btoc): dedicated tubing

Time Completed: ____________ Total Purge: ____________ Units: L

Field Measurements:

Time (24-hour)	Amount Purged (L)	pH	COND. (µS/cm)	TURB. (NTU)	DO (mg/L)	TEMP (C°)	ORP (mV)	Water Depth (ft, btoc)	Flow Rate (mL/min)
1100	—	—	—	START	—	—	—	—	—
1104		6.78	1126	10.4	0.29	18.4	-99.0	6.19	
1108		6.79	1139	6.95	0.22	18.4	-107.7	6.21	
1112		6.77	1154	5.26	0.23	18.3	-106.8	6.21	
1116		6.77	1159	8.44	0.22	18.3	-107.2	6.21	
1120		6.78	1168	3.39	0.24	18.3	-107.7	6.21	
1124		6.78	1175	1.92	0.23	18.3	-109.1	6.21	
1128		6.77	1181	1.07	0.24	18.2	-110.2	6.21	

Flow Rate: ~250 mL/min

Pump Controller Setting: 45%

General Comments:

Water Sample Collection Field Data Sheet

Site Name: GHHI Well I.D.: MW -17

Sample I.D. (match bottle and COC form exactly): MW -17

Personnel: AB Date: 10/22/25

Static Depth to Water (ft, btoc): 7.58 Well Total Depth (ft, btoc): —

Date/Time Sample Collected (match bottle and COC form exactly): 10/22/25, 910

Sample Method: LF Peri

Water level meter, pump, and tubing decontaminated prior: Yes No

Sample QC: Field Duplicate Yes No Duplicate Sample I.D.: —

Sample QC: Equipment Blank Yes No Equip. Blank Sample I.D.: —

Well Purging Data (Fill in All Blanks):

Depth of Sample Collection (pump intake depth; ft, btoc): dedicated tubing

Time Completed: ________ Total Purge: ________ Units: L

Field Measurements:

Time (24-hour)	Amount Purged (L)	pH	COND. (µS/cm)	TURB. (NTU)	DO (mg/L)	TEMP (C°)	ORP (mV)	Water Depth (ft, btoc)	Flow Rate (mL/min)
836									
840		7.26	1102	5.27	0.25	18.0	-125.2	7.63	
844		7.30	1103	4.88	0.23	18.2	-136.7	7.63	
848		7.34	1103	4.93	0.18	18.3	-149.5	7.63	
852		7.36	1104	6.10	0.15	18.2	-155.9	7.63	
856		7.36	1106	6.31	0.15	18.1	-156.3	7.63	
900		7.39	1104	4.94	0.14	18.1	-163.3	7.63	
904		7.41	1103	3.06	0.13	18.3	-165.9	7.63	
908		7.42	1102	1.07	0.12	18.1	-169.0	7.63	

Flow Rate: ________

Pump Controller Setting: ________

General Comments:

Water Sample Collection Field Data Sheet

Site Name: GHHI Well I.D.: MW-18

Sample I.D. (match bottle and COC form exactly): MW-18

Personnel: FDR Date: 10/22/25

Static Depth to Water (ft, btoc): 7.72 Well Total Depth (ft, btoc): —

Date/Time Sample Collected (match bottle and COC form exactly): 10/22/25 1650

Sample Method: Peristaltic

Water level meter, pump, and tubing decontaminated prior: Yes No

Sample QC: Field Duplicate Yes No Duplicate Sample I.D.: ____

Sample QC: Equipment Blank Yes No Equip. Blank Sample I.D.: ____

Well Purging Data (Fill in All Blanks):

Depth of Sample Collection (pump intake depth; ft, btoc): Dedicated tubing

Time Completed: 1705 Total Purge: 10.5 Units: L

Field Measurements:

Time (24-hour)	Amount Purged (L)	pH	COND. (µS/cm)	TURB. (NTU)	DO (mg/L)	TEMP (C°)	ORP (mV)	Water Depth (ft; btoc)	Flow Rate (mL/min)
1625	1.75	7.45	1078	21.0	0.61	16.0	-105.3	7.61	350
1630	3.5	7.37	1075	20.8	0.40	16.1	-106.6	7.61	350
1635	5.25	7.30	1073	10.7	0.34	16.0	-97.5	7.61	350
1640	7.0	7.29	1073	5.44	0.26	16.1	-97.0	7.61	350
1645	8.75	7.29	1069	3.32	0.24	15.9	-99.7	7.61	350
1650	10.5	7.29	1067	5.24	0.25	15.9	-101.1	7.60	350

Flow Rate: ~350

Pump Controller Setting: 75%

General Comments:

Water Sample Collection Field Data Sheet

Site Name: GHHI Well I.D.: MW-19

Sample I.D. (match bottle and COC form exactly): MW-19

Personnel: FDR Date: 10/22/25

Static Depth to Water (ft, btoc): 6.56 Well Total Depth (ft, btoc): —

Date/Time Sample Collected (match bottle and COC form exactly): 10/22/25 1555

Sample Method: Peristaltic

Water level meter, pump, and tubing decontaminated prior: Yes No

Sample QC: Field Duplicate Yes No Duplicate Sample I.D.: —

Sample QC: Equipment Blank Yes No Equip. Blank Sample I.D.: —

Well Purging Data (Fill in All Blanks):

Depth of Sample Collection (pump intake depth; ft, btoc): Dedicated tubing

Time Completed: 1610 Total Purge: 9 Units: L

Field Measurements:

Time (24-hour)	Amount Purged (L)	pH	COND. (µS/cm)	TURB. (NTU)	DO (mg/L)	TEMP (C°)	ORP (mV)	Water Depth (ft, btoc)	Flow Rate (mL/min)
1525	1.5	6.66	1640	19.0	0.67	15.0	-25.5	6.44	300
1530	3.0	6.67	1650	18.0	0.37	15.0	-28.6	6.45	300
1535	4.5	6.65	1632	12.2	0.18	15.0	-28.4	6.44	300
1540	6.0	6.66	1642	6.78	0.24	15.0	-32.5	6.45	300
1545	7.5	6.66	1645	6.50	0.38	15.0	-34.2	6.46	300
1550	9.0	6.67	1648	3.82	0.14	15.0	-35.7	6.45	300

Flow Rate: ~300 mL/min
Pump Controller Setting: 60%
General Comments:

Water Sample Collection Field Data Sheet

Site Name: GI14T Well I.D.: MW-20

Sample I.D. (match bottle and COC form exactly): MW-20

Personnel: FDR Date: 10/22/25

Static Depth to Water (ft, btoc): 6.43 Well Total Depth (ft, btoc): —

Date/Time Sample Collected (match bottle and COC form exactly): 10/22/25 1115

Sample Method: Peristaltic

Water level meter, pump, and tubing decontaminated prior: Yes No

Sample QC: Field Duplicate Yes No Duplicate Sample I.D.: ____

Sample QC: Equipment Blank Yes No Equip. Blank Sample I.D.: ____

Well Purging Data (Fill in All Blanks):

Depth of Sample Collection (pump intake depth; ft, btoc): Dedicated tubing

Time Completed: 1140 Total Purge: 10.5 Units: L

Field Measurements:

Time (24-hour)	Amount Purged (L)	pH	COND. (µS/cm)	TURB. (NTU)	DO (mg/L)	TEMP (C°)	ORP (mV)	Water Depth (ft, btoc)	Flow Rate (mL/min)
1040	1.5	7.04	1165	70.4	0.96	15.1	-92.7	6.30	300
1045	3.0	7.14	1007	28.1	0.70	15.3	-102.4	6.31	300
1050	4.5	7.17	997	14.1	0.38	15.4	-110.9	6.30	300
1055	6.0	7.18	1000	11.0	0.69	15.4	-117.3	6.31	300
1100	7.5	7.18	995	8.61	0.18	15.4	-119.2	6.30	300
1105	9.0	7.20	996	7.92	0.21	15.6	-121.5	6.31	300
1110	10.5	7.21	995	7.33	0.12	15.6	-124.4	6.30	300

Flow Rate: ~300 mL/min

Pump Controller Setting: ____

General Comments:

Water Sample Collection Field Data Sheet

Site Name: GHHI Well I.D.: MW-27

Sample I.D. (match bottle and COC form exactly): MW-27

Personnel: FDR Date: 10/23/25

Static Depth to Water (ft, btoc): 5.78 Well Total Depth (ft, btoc): —

Date/Time Sample Collected (match bottle and COC form exactly): 10/23/25 1115

Sample Method: Peristaltic

Water level meter, pump, and tubing decontaminated prior: Yes No

Sample QC: Field Duplicate Yes No Duplicate Sample I.D.: ____

Sample QC: Equipment Blank Yes No Equip. Blank Sample I.D.: ____

Well Purging Data (Fill in All Blanks):

Depth of Sample Collection (pump intake depth; ft, btoc): Dedicated tubing

Time Completed: 1135 Total Purge: 11.75 Units: L

Field Measurements:

Time (24-hour)	Amount Purged (L)	pH	COND. (µS/cm)	TURB. (NTU)	DO (mg/L)	TEMP (C°)	ORP (mV)	Water Depth (ft, btoc)	Flow Rate (mL/min)
1030	1.5	6.92	3259	40.8	0.21	15.9	-46.6	5.71	300
1035	3.0	6.89	3260	46.5	0.08	16.2	-54.3	5.78	300
1040	4.25	6.86	3281	34.3	0.09	16.1	-73.5	5.75	250
1045	5.5	6.85	3287	19.3	0.34	16.1	-84.2	5.76	250
1050	6.75	6.85	3292	13.8	0.06	16.1	-89.1	5.75	250
1055	8.0	6.84	3308	12.7	0.10	16.2	-94.8	5.76	250
1100	9.25	6.83	3298	7.40	0.26	16.2	-98.0	5.75	250
1105	10.5	6.83	3300	8.53	0.06	16.2	-99.8	5.76	250
1110	11.75	6.83	3307	7.75	0.04	16.3	-101.9	5.75	250

Flow Rate: ~250

Pump Controller Setting: 55-60%

General Comments:

Water Sample Collection Field Data Sheet

Site Name: GHHI Well I.D.: MW-28

Sample I.D. (match bottle and COC form exactly): MW-28

Personnel: FDR Date: 10/23/25

Static Depth to Water (ft, btoc): 9.06 Well Total Depth (ft, btoc): ____________

Date/Time Sample Collected (match bottle and COC form exactly): 10/23/25 1225

Sample Method: Peristaltic

Water level meter, pump, and tubing decontaminated prior: Yes No

Sample QC: Field Duplicate Yes No Duplicate Sample I.D.: ____________

Sample QC: Equipment Blank Yes No Equip. Blank Sample I.D.: ____________

Well Purging Data (Fill in All Blanks):

Depth of Sample Collection (pump intake depth; ft, btoc): Dedicated tubing

Time Completed: 1245 Total Purge: 6.25 Units: L

Field Measurements:

Time (24-hour)	Amount Purged (L)	pH	COND. (µS/cm)	TURB. (NTU)	DO (mg/L)	TEMP (C°)	ORP (mV)	Water Depth (ft; btoc)	Flow Rate (mL/min)
1200	1.25	6.84	1439	4.98	0.69	16.1	-106.9	9.49	250
1205	2.5	6.93	1381	4.11	0.23	16.0	-127.6	9.48	250
1210	3.75	6.96	1370	3.77	0.29	16.2	-137.3	9.47	250
1215	5.0	6.97	1369	5.17	0.22	16.2	-141.5	9.47	250
1220	6.25	6.97	1363	6.05	0.20	16.0	-143.3	9.48	250

Flow Rate: ~250 mL/min

Pump Controller Setting: 65-70%

General Comments:

HDR

Water Sample Collection Field Data Sheet

Site Name: GHHI Well I.D.: MW-30

Sample I.D. (match bottle and COC form exactly): MW-30

Personnel: FDR Date: 10/21/25

Static Depth to Water (ft, btoc): 6.20 Well Total Depth (ft, btoc): —

Date/Time Sample Collected (match bottle and COC form exactly): 10/21/25 1055

Sample Method: Peristaltic

Water level meter, pump, and tubing decontaminated prior: Yes No

Sample QC: Field Duplicate Yes No Duplicate Sample I.D.: ____

Sample QC: Equipment Blank Yes No Equip. Blank Sample I.D.: ____

Well Purging Data (Fill in All Blanks):

Depth of Sample Collection (pump intake depth; ft,btoc): Dedicated tubing

Time Completed: 1110 Total Purge: 21 Units: L

Field Measurements:

Time (24-hour)	Amount Purged (L)	pH	COND. (µS/cm)	TURB. (NTU)	DO (mg/L)	TEMP (C°)	ORP (mV)	Water Depth (ft, btoc)	Flow Rate (mL/min)
0955	1.75	6.85	3795	4.52	0.81	15.8	-58.2	6.10	350
1000	3.50	6.96	4127	6.04	0.02	15.9	-110.7	6.12	350
1005	5.27	6.99	4178	4.60	0.05	15.9	-140.8	6.11	350
1010	7.0	7.00	4192	3.56	0.11	15.9	-157.5	6.12	350
1015	8.75	7.00	4227	3.91	0.07	15.8	-183.9	6.12	350
1020	10.5	7.01	4246	0.02	0.06	15.8	-200.3	6.12	350
1025	12.25	7.00	4245	3.60	0.08	15.8	-213.1	6.13	350
1030	14.0	7.00	4252	6.25	0.04	15.8	-221.7	6.14	350
1035	15.75	7.00	4248	3.24	0.05	15.8	-228.9	6.13	350
1040	17.5	7.01	4245	3.43	0.05	15.8	-235.9	6.14	350
1045	19.25	7.02	4236	3.51	0.05	15.8	-241.4	6.13	350
1050	21.0	7.03	4248	0.59	0.06	15.8	-245.8	6.12	350

Flow Rate: ~350 mL/min

Pump Controller Setting: 75%

General Comments:

Water Sample Collection Field Data Sheet

Site Name: GHHI Well I.D.: MW-31

Sample I.D. (match bottle and COC form exactly): MW-31

Personnel: FDR Date: 10/21/25

Static Depth to Water (ft, btoc): 6.78 Well Total Depth (ft, btoc): —

Date/Time Sample Collected (match bottle and COC form exactly): 10/21/25 1615

Sample Method: Peristaltic

Water level meter, pump, and tubing decontaminated prior: Yes No

Sample QC: Field Duplicate Yes No Duplicate Sample I.D.: ___

Sample QC: Equipment Blank Yes No Equip. Blank Sample I.D.: ___

Well Purging Data (Fill in All Blanks):

Depth of Sample Collection (pump intake depth; ft, btoc): Dedicated tubing

Time Completed: 1750 Total Purge: 11.75 Units: L

Field Measurements:

Time (24-hour)	Amount Purged (L)	pH	COND. (µS/cm)	TURB. (NTU)	DO (mg/L)	TEMP (C°)	ORP (mV)	Water Depth (ft, btoc)	Flow Rate (mL/min)
1345	0.25	7.80	1523	10.5	0.62	15.1	-208.8	7.45	100
1350	0.75	7.82	1478	6.57	0.27	14.8	-256.1	7.93	100
1355	1.25	7.88	1438	7.67	0.27	14.9	-264.8	8.18	100
1400	1.75	7.94	1361	10.3	0.27	14.8	-261.1	8.39	100
1405	2.25	8.00	1296	13.6	0.31	14.8	-245.5	8.74	100
1410	2.75	8.03	1248	11.4	0.38	14.8	-236.1	9.02	100
1415	3.25	8.09	1144	6.67	0.68	14.7	-215.5	9.45	100
1420	3.75	8.13	1156	8.51	1.71	15.2	-181.6	9.94	100
1425	4.25	8.17	1128	9.14	2.31	15.0	-139.6	10.27	100
1430	4.75	8.17	1166	8.14	2.97	14.9	-111.1	10.62	100
1435	5.25	8.15	1203	9.34	2.54	15.1	-97.4	10.96	100
1440	5.75	8.17	1209	8.78	5.00	14.7	-77.0	11.11	100
1445	6.25	8.06	1377	7.73	4.99	14.4	-110.6	11.33	100
1450	6.75	8.13	1239		5.24	14.4	-69.0	—	100
1455	No discharge — stop pump + lower tubing								
1500	Resume purging								
1505	7.25	8.20	1172	20.8	0.13	14.4	-33.7	11.38	100

Flow Rate: ~100 mL/min

Pump Controller Setting: 25-30%

General Comments:

HDR Well I.D.: MW-31 Date: 10/21/25

Time (24-hour)	Amount Purged (L)	pH	COND. (µS/cm)	TURB. (NTU)	DO (mg/L)	TEMP (C°)	ORP (mV)	Water Depth (ft, btoc)	Flow Rate (mL/min)
1545	Restart		pump						
1550	9.25	8.10	1238	16.7	0.11	14.1	-15.8	8.99	100
1555	9.75	8.12	1186	16.0	2.04	14.2	-17.7	9.38	100
1600	10.25	8.11	1156	17.3	2.02	14.2	-19.3	9.71	100
1605	10.75	8.09	1132	12.2	1.86	14.3	-37.4	10.29	100
1610	11.25	8.08	1144	11.6	1.94	14.4	-42.7	10.51	100
1615	11.75	8.08	1151	12.3	2.01	14.4	-43.4	10.79	100

Water Sample Collection Field Data Sheet

Site Name: GHHI Well I.D.: MW-32

Sample I.D. (match bottle and COC form exactly): MW-32

Personnel: FDR Date: 10/21/25

Static Depth to Water (ft, btoc): 7.32 Well Total Depth (ft, btoc): —

Date/Time Sample Collected (match bottle and COC form exactly): 10/21/25 1245

Sample Method: Peristaltic

Water level meter, pump, and tubing decontaminated prior: Yes No

Sample QC: Field Duplicate Yes No Duplicate Sample I.D.: —

Sample QC: Equipment Blank Yes No Equip. Blank Sample I.D.: —

Well Purging Data (Fill in All Blanks):

Depth of Sample Collection (pump intake depth; ft, btoc): Dedicated tubing

Time Completed: 1305 Total Purge: 11.25 Units: L

Field Measurements:

Time (24-hour)	Amount Purged (L)	pH	COND. (µS/cm)	TURB. (NTU)	DO (mg/L)	TEMP (C°)	ORP (mV)	Water Depth (ft, btoc)	Flow Rate (mL/min)
1145	1.75	7.44	1208	9.53	0.13	14.9	-142.3	7.30	350
1150	3.0	7.47	1155	15.2	0.14	15.2	-169.0	7.31	250
1155	4.25	7.49	1109	8.25	0.15	15.2	-178.6	7.31	250
1200	5.5	7.52	1072	—	0.15	15.1	-189.6	—	250
1205	Stop pump - standby rain								
1215	Resume purging								
1220	6.25	7.48	1135	—	0.42	14.5	-140.1	7.30	250
1225	7.5	7.52	1053	7.97	0.37	14.9	-178.2	7.30	250
1230	8.75	7.52	1056	7.51	0.23	15.2	-184.6	7.31	250
1235	10.0	7.52	1051	7.22	0.27	15.1	-188.4	7.30	250
1240	11.25	7.53	1050	7.07	0.19	15.2	-191.3	7.31	250

Flow Rate: ~250 mL/min

Pump Controller Setting: 60%

General Comments:

Water Sample Collection Field Data Sheet

Site Name: GHH1 Well I.D.: MW-33

Sample I.D. (match bottle and COC form exactly): MW-33

Personnel: AB Date: 10/20/25

Static Depth to Water (ft, btoc): 3.55 Well Total Depth (ft, btoc): —

Date/Time Sample Collected (match bottle and COC form exactly): 10/20/25; 1200

Sample Method: LF Peri

Water level meter, pump, and tubing decontaminated prior: Yes No

Sample QC: Field Duplicate Yes No Duplicate Sample I.D.: —

Sample QC: Equipment Blank Yes No Equip. Blank Sample I.D.: —

Well Purging Data (Fill in All Blanks):

Depth of Sample Collection (pump intake depth; ft, btoc): dedicated tubing

Time Completed: Total Purge: Units: L

Field Measurements:

Time (24-hour)	Amount Purged (L)	pH	COND. (µS/cm)	TURB. (NTU)	DO (mg/L)	TEMP (C°)	ORP (mV)	Water Depth (ft, btoc)	Flow Rate (mL/min)
1122	—	—	—	— START		—			
1126							14.3		
1130		6.36	1849	32.6	1.23	16.9	-7.1	3.93	
1134		6.41	1818	14.2	0.71	16.9	-65.4	3.92	
1138		6.44	1816	7.63	0.44	16.9	-85.6	3.91	
1142		6.46	1786	4.72	0.34	16.9	-94.8	3.91	
1146		6.48	1731	3.15	0.31	16.9	-102.1	3.91	
1150		6.49	1688	1.79	0.31	16.9	-105.7	3.91	
1154		6.50	1641	2.21	0.32	16.9	-109.0	3.91	
1158		6.50	1601	2.65	0.31	16.9	-112.2	3.91	

Flow Rate: ~300 mL/min

Pump Controller Setting: 45%

General Comments:

Water Sample Collection Field Data Sheet

Site Name: GHHI Well I.D.: MW-34

Sample I.D. (match bottle and COC form exactly): MW-34

Personnel: AB Date: 10/20/2025

Static Depth to Water (ft, btoc): 5.44 Well Total Depth (ft, btoc): —

Date/Time Sample Collected (match bottle and COC form exactly): 10/20/2025 ; 1630

Sample Method: LF Peri

Water level meter, pump, and tubing decontaminated prior: Yes No

Sample QC: Field Duplicate Yes No Duplicate Sample I.D.: —

Sample QC: Equipment Blank Yes No Equip. Blank Sample I.D.: —

Well Purging Data (Fill in All Blanks):

Depth of Sample Collection (pump intake depth; ft, btoc): dedicated tubing

Time Completed: ______ Total Purge: ______ Units: L

Field Measurements:

Time (24-hour)	Amount Purged (L)	pH	COND. (µS/cm)	TURB. (NTU)	DO (mg/L)	TEMP (C°)	ORP (mV)	Water Depth (ft, btoc)	Flow Rate (mL/min)
1608				START					
1612		6.68	2191	15.4	0.41	15.3	-100.2	5.55	
1616		6.61	2124	20.7	0.21	15.6	-101.9	5.56	
1620		6.59	2112	16.2	0.22	15.6	-103.0	5.56	
1624		6.57	2095	10.4	0.21	15.5	-104.0	5.56	
1628		6.56	2032	7.81	0.21	15.5	-104.9	5.56	

Flow Rate: ~200 mL/min

Pump Controller Setting: 45%

General Comments:

Water Sample Collection Field Data Sheet

Site Name: GHHI Well I.D.: MW-36

Sample I.D. (match bottle and COC form exactly): MW-36

Personnel: AB Date: 10/21/25

Static Depth to Water (ft, btoc): 9.66 Well Total Depth (ft, btoc): ——

Date/Time Sample Collected (match bottle and COC form exactly): 10/21/25; 1620

Sample Method: LF Peri

Water level meter, pump, and tubing decontaminated prior: Yes No

Sample QC: Field Duplicate Yes No Duplicate Sample I.D.: ——

Sample QC: Equipment Blank Yes No Equip. Blank Sample I.D.: ——

Well Purging Data (Fill in All Blanks):

Depth of Sample Collection (pump intake depth; ft, btoc): dedicated tubing

Time Completed: ______ Total Purge: ______ Units: L

Field Measurements:

Time (24-hour)	Amount Purged (L)	pH	COND. (µS/cm)	TURB. (NTU)	DO (mg/L)	TEMP (C°)	ORP (mV)	Water Depth (ft, btoc)	Flow Rate (mL/min)
1550	—	—	—	START	—	—	—	—	—
1554		8.73	803	70.1	0.20	17.5	-257.6	9.73	
1558		7.50	784	13.8	0.17	17.6	-187.7	9.73	
1602		7.34	798	2.48	0.13	17.6	-192.8	9.73	
1606		7.13	821	2.64	0.12	17.7	-190.4	9.73	
1610		7.13	818	1.54	0.11	17.7	-192.1	9.73	
1614		7.02	831	0.80	0.10	17.7	-189.2	9.73	
1618		7.07	828	1.37	0.11	17.7	-192.3	9.73	
~~1622~~									
~~1626~~									

Flow Rate: ~250 mL/min

Pump Controller Setting: 50%

General Comments:

Water Sample Collection Field Data Sheet

Site Name: GHHI Well I.D.: MW-37

Sample I.D. (match bottle and COC form exactly): MW-37

Personnel: AB Date: 10/21/2025

Static Depth to Water (ft, btoc): 10.22 Well Total Depth (ft, btoc): ——

Date/Time Sample Collected (match bottle and COC form exactly): 10/21/25, 902

Sample Method: LF Peri

Water level meter, pump, and tubing decontaminated prior: Yes No

Sample QC: Field Duplicate Yes No Duplicate Sample I.D.: MWT-37

Sample QC: Equipment Blank Yes No Equip. Blank Sample I.D.: ——

Well Purging Data (Fill in All Blanks):

Depth of Sample Collection (pump intake depth; ft, btoc): dedicated tubing

Time Completed: ______ Total Purge: ______ Units: L

Field Measurements:

Time (24-hour)	Amount Purged (L)	pH	COND. (µS/cm)	TURB. (NTU)	DO (mg/L)	TEMP (C°)	ORP (mV)	Water Depth (ft, btoc)	Flow Rate (mL/min)
838									
842		7.10	1013	89.8	0.31	17.5	-54.2	10.29	
846		7.20	958	345	0.19	17.6	-68.9	10.31	hit bot
850		7.22	959	101	0.17	17.8	-79.0	10.31	
854		7.23	960	16.2	0.18	17.5	-83.9	10.30	
858		7.23	961	5.05	0.17	17.5	-87.9	10.30	
902		7.24	957	0.87	0.18	17.5	-90.6	10.30	

Flow Rate: ~200 mL/min

Pump Controller Setting: 35%

General Comments:

Water Sample Collection Field Data Sheet

Site Name: GHHI Well I.D.: MW-38

Sample I.D. (match bottle and COC form exactly): MW-38

Personnel: AB Date: 10/21/25

Static Depth to Water (ft, btoc): 11.15 Well Total Depth (ft, btoc): —

Date/Time Sample Collected (match bottle and COC form exactly): 10/21/25; 1010

Sample Method: LF Peri

Water level meter, pump, and tubing decontaminated prior: Yes No

Sample QC: Field Duplicate Yes No Duplicate Sample I.D.: —

Sample QC: Equipment Blank Yes No Equip. Blank Sample I.D.: —

Well Purging Data (Fill in All Blanks):

Depth of Sample Collection (pump intake depth; ft, btoc): dedicated tubing

Time Completed: ____ Total Purge: ____ Units: L

Field Measurements:

Time (24-hour)	Amount Purged (L)	pH	COND. (µS/cm)	TURB. (NTU)	DO (mg/L)	TEMP (C°)	ORP (mV)	Water Depth (ft, btoc)	Flow Rate (mL/min)
814	~~START~~							~~11.56~~	
818		9.68	942	47.7	0.43	16.9	-187.5	11.56	
822		9.75	881	10.9	0.21	17.2	-209.0	12.89	
826		9.55	878	21.7	0.22	16.2	-195.2	13.33	DRY
~~830~~									
1010		9.59	891	11.4	0.24	16.7	-200.1	—	

Flow Rate: ~ 50 mL/min

Pump Controller Setting: as low as allowable

General Comments:

returned for recharge throughout day

Water Sample Collection Field Data Sheet

Site Name: GHHI Well I.D.: MW-39

Sample I.D. (match bottle and COC form exactly): MW-39

Personnel: AB Date: 10/21/25

Static Depth to Water (ft, btoc): 7.89 Well Total Depth (ft, btoc): ——

Date/Time Sample Collected (match bottle and COC form exactly): 10/21/25, 1330

Sample Method: LF Peri

Water level meter, pump, and tubing decontaminated prior: Yes No

Sample QC: Field Duplicate Yes No Duplicate Sample I.D.: ——

Sample QC: Equipment Blank Yes No Equip. Blank Sample I.D.: ——

Well Purging Data (Fill in All Blanks):

Depth of Sample Collection (pump intake depth; ft, btoc): dedicated tubin

Time Completed: ______ Total Purge: ______ Units: L

Field Measurements:

Time (24-hour)	Amount Purged (L)	pH	COND. (µS/cm)	TURB. (NTU)	DO (mg/L)	TEMP (C°)	ORP (mV)	Water Depth (ft, btoc)	Flow Rate (mL/min)
1302	—	—	—	START	—	—	—	—	—
1306		7.15	1449	193	0.22	18.1	-110.7	8.28	
1310		7.17	1411	85.4	0.24	18.0	-94.6	8.28	
1314		7.21	1329	49.7	0.23	17.9	-99.2	8.28	
1318		7.20	1324	33.7	0.19	17.9	-111.1	8.28	
1322		7.19	1320	11.4	0.17	18.0	-134.4	8.28	
1326		7.20	1303	8.20	0.16	18.0	-139.2	8.28	
1330		7.20	1293	9.02	0.15	18.0	-142.6	8.28	

Flow Rate: ~200 mL/min

Pump Controller Setting: 45%

General Comments:

Water Sample Collection Field Data Sheet

Site Name: GHHI Well I.D.: Sh-02

Sample I.D. (match bottle and COC form exactly): ——

Personnel: AB Date: 10/22/25

Static Depth to Water (ft, btoc): DRY Well Total Depth (ft, btoc): ——

Date/Time Sample Collected (match bottle and COC form exactly): ——

Sample Method: ——

Water level meter, pump, and tubing decontaminated prior: Yes No

Sample QC: Field Duplicate Yes No Duplicate Sample I.D.: ——

Sample QC: Equipment Blank Yes No Equip. Blank Sample I.D.: ——

Well Purging Data (Fill in All Blanks):

Depth of Sample Collection (pump intake depth; ft, btoc): ——

Time Completed: ______ Total Purge: ______ Units: ______

Field Measurements:

Time (24-hour)	Amount Purged (L)	pH	COND. (µS/cm)	TURB. (NTU)	DO (mg/L)	TEMP (C°)	ORP (mV)	Water Depth (ft, btoc)	Flow Rate (mL/min)

DRY

Flow Rate: ______

Pump Controller Setting: ______

General Comments:

Water Sample Collection Field Data Sheet

Site Name: GHHI Well I.D.: SG-03

Sample I.D. (match bottle and COC form exactly): —

Personnel: AB Date: 10/22/25

Static Depth to Water (ft, btoc): DRY Well Total Depth (ft, btoc): —

Date/Time Sample Collected (match bottle and COC form exactly): —

Sample Method: —

Water level meter, pump, and tubing decontaminated prior: Yes No

Sample QC: Field Duplicate Yes No Duplicate Sample I.D.: —

Sample QC: Equipment Blank Yes No Equip. Blank Sample I.D.: —

Well Purging Data (Fill in All Blanks):

Depth of Sample Collection (pump intake depth; ft, btoc): —

Time Completed: ____ Total Purge: ____ Units: ____

Field Measurements:

Time (24-hour)	Amount Purged (L)	pH	COND. (µS/cm)	TURB. (NTU)	DO (mg/L)	TEMP (C°)	ORP (mV)	Water Depth (ft, btoc)	Flow Rate (mL/min)

DRY

Flow Rate: ____

Pump Controller Setting: ____

General Comments:

Water Sample Collection Field Data Sheet

Site Name: GHHI Well I.D.: SG-04R

Sample I.D. (match bottle and COC form exactly): SG-04R

Personnel: AB Date: 10/22/2025

Static Depth to Water (ft, btoc): DRY Well Total Depth (ft, btoc): —

Date/Time Sample Collected (match bottle and COC form exactly): —

Sample Method: —

Water level meter, pump, and tubing decontaminated prior: Yes No

Sample QC: Field Duplicate Yes No Duplicate Sample I.D.: —

Sample QC: Equipment Blank Yes No Equip. Blank Sample I.D.: —

Well Purging Data (Fill in All Blanks):

Depth of Sample Collection (pump intake depth; ft, btoc): —

Time Completed: ______ Total Purge: ______ Units: ______

Field Measurements:

Time (24-hour)	Amount Purged (L)	pH	COND. (µS/cm)	TURB. (NTU)	DO (mg/L)	TEMP (C°)	ORP (mV)	Water Depth (ft, btoc)	Flow Rate (mL/min)
		DRY							

Flow Rate: ______

Pump Controller Setting: ______

General Comments:

Water Sample Collection Field Data Sheet

Site Name: GHHI Well I.D.: SG-05

Sample I.D. (match bottle and COC form exactly): SG-05

Personnel: AB Date: 10/22/25

Static Depth to Water (ft, btoc): DRY Well Total Depth (ft, btoc): —

Date/Time Sample Collected (match bottle and COC form exactly): —

Sample Method: —

Water level meter, pump, and tubing decontaminated prior: Yes No

Sample QC: Field Duplicate Yes No Duplicate Sample I.D.: —

Sample QC: Equipment Blank Yes No Equip. Blank Sample I.D.: —

Well Purging Data (Fill in All Blanks):

Depth of Sample Collection (pump intake depth; ft, btoc): —

Time Completed: ______ Total Purge: ______ Units: ______

Field Measurements:

Time (24-hour)	Amount Purged (L)	pH	COND. (µS/cm)	TURB. (NTU)	DO (mg/L)	TEMP (C°)	ORP (mV)	Water Depth (ft, btoc)	Flow Rate (mL/min)

DRY

Flow Rate: ______

Pump Controller Setting: ______

General Comments:

Water Sample Collection Field Data Sheet

Site Name: GHHI Well I.D.: SG-07

Sample I.D. (match bottle and COC form exactly): SG-07

Personnel: AB Date: 10/22/25

Static Depth to Water (ft, btoc): ——— Well Total Depth (ft, btoc): ———

Date/Time Sample Collected (match bottle and COC form exactly): 10/22/25 ; 1705

Sample Method: ~6" below surface grab

Water level meter, pump, and tubing decontaminated prior: Yes No

Sample QC: Field Duplicate Yes No Duplicate Sample I.D.: ———

Sample QC: Equipment Blank Yes No Equip. Blank Sample I.D.: ———

Well Purging Data (Fill in All Blanks):

Depth of Sample Collection (pump intake depth; ft, btoc): ~6" below surface

Time Completed: ______ Total Purge: ______ Units: L

Field Measurements:

Time (24-hour)	Amount Purged (L)	pH	COND. (µS/cm)	TURB. (NTU)	DO (mg/L)	TEMP (C°)	ORP (mV)	Water Depth (ft, btoc)	Flow Rate (mL/min)
1705		8.07	676	9.44	9.19	11.4	29.0		

SW SAMPLE

Flow Rate: ______

Pump Controller Setting: ______

General Comments:

Appendix B

Data Validation Reports

Data Verification & Validation Report

Grand Haven-Harbor Island

Sampling Event (dates and purpose): Quarterly Assessment Monitoring

Data Package Number: 25J1475, 25J1477 — Lab Report Date: 11/10/2025, 12/3/2025
Data Validator: Andrew Bertapelle — Data Validation Completion Date: 12/8/2025

General Overall Assessment:
_____ Data are usable without qualification.
__X__ Data are usable with qualification (as noted below).
_____ Some or all data are unusable (as noted below).

Wells planned for sampling:

Unit 3A/B	Unit 1/2	Well Designation	Well ID	Planned for Sampling
✓	✓	Nature & Extent	MW-01R	X
✓		Point of Compliance	MW-02	X
✓		Point of Compliance	MW-03	X
✓		Point of Compliance	MW-04	X
	✓	Point of Compliance	MW-06	X
✓	✓	Nature & Extent	MW-07	X
	✓	Point of Compliance	MW-08	X
✓	✓	Nature & Extent	MW-09	X
✓	✓	Nature & Extent	MW-10	X
✓		Point of Compliance	MW-11	X
✓		Point of Compliance	MW-12	X
✓		Nature & Extent	MW-13	X
	✓	Nature & Extent	MW-16	X
	✓	Nature & Extent	MW-17	X
	✓	Point of Compliance	MW-18	X
	✓	Point of Compliance	MW-19	X
	✓	Point of Compliance	MW-20	X
✓	✓	Background	MW-27	X
	✓	Nature & Extent	MW-28	X
	✓	Point of Compliance	MW-30	X
	✓	Point of Compliance	MW-31	X
✓	✓	Nature & Extent	MW-32	X
✓	✓	Background	MW-33	X
✓	✓	Background	MW-34	X
	✓	Nature & Extent	MW-36	X
	✓	Nature & Extent	MW-37	X
✓		Nature & Extent	MW-38	X
✓		Nature & Extent	MW-39	X
✓	✓	Surface Water	SG-02	X
✓	✓	Surface Water	SG-04R	X
✓	✓	Surface Water	SG-05	X
✓	✓	Surface Water	SG-07	X

Data Summary

Sample ID	Matrix	Lab ID	Date Collected	Metals	Mercury	Part 115 Metals	Alkalinity/ Anions	TDS TSS	Rad-226 Rad-228	Diss. Metals
MW-04	GW	25J147521	10/22/2025	X	X	X	X	X	X	
MW-30	GW	25J147514	10/21/2025	X	X	X	X	X	X	X
MW-32	GW	25J147515	10/21/2025	X	X	X	X	X	X	
MW-17	GW	25J147517	10/22/2025	X	X	X	X	X	X	
MW-18	GW	25J147529	10/22/2025	X	X	X	X	X	X	
MW-19	GW	25J147528	10/22/2025	X	X	X	X	X	X	
MW-27	GW	25J147532	10/23/2025	X	X	X	X	X	X	
MW-31	GW	25J147516	10/21/2025	X	X	X	X	X	X	X
MW-33	GW	25J147501	10/20/2025	X	X	X	X	X	X	
MW-34	GW	25J147505	10/20/2025	X	X	X	X	X	X	
MW-36	GW	25J147512	10/21/2025	X	X	X	X	X	X	
MW-37	GW	25J147507	10/21/2025	X	X	X	X	X	X	
MWT-37	GW	25J147535	10/21/2025	X	X	X	X	X	X	
MW-38	GW	25J147508	10/21/2025	X	X	X	X	X	X	X
MW-01R	GW	25J147518	10/22/2025	X	X	X	X	X	X	
MW-02	GW	25J147527	10/22/2025	X	X	X	X	X	X	X
MW-03	GW	25J147520	10/22/2025	X	X	X	X	X	X	
MW-07	GW	25J147525	10/22/2025	X	X	X	X	X	X	
MW-09	GW	25J147502	10/20/2025	X	X	X	X	X	X	
MW-12	GW	25J147519	10/22/2025	X	X	X	X	X	X	
MW-13	GW	25J147511	10/21/2025	X	X	X	X	X	X	
MW-16	GW	25J147509	10/21/2025	X	X	X	X	X	X	
MW-20	GW	25J147526	10/22/2025	X	X	X	X	X	X	
MW-39	GW	25J147510	10/21/2025	X	X	X	X	X	X	
SG-07	GW	25J147523	10/22/2025	X	X	X	X	X	X	
MW-10	GW	25J147503	10/20/2025	X	X	X	X	X	X	
MWT-10	GW	25J147504	10/20/2025	X	X	X	X	X	X	
MW-11	GW	25J147531	10/23/2025	X	X	X	X	X	X	
MW-06	SW	25J147530	10/23/2025	X	X	X	X	X	X	
MW-08	SW	25J147522	10/22/2025	X	X	X	X	X	X	
MW-28	SW	25J147533	10/23/2025	X	X	X	X	X	X	
LLHG-TB-10202025	AQ	25J147506	10/20/2025		X					
LLHG-TB-10212025	AQ	25J147513	10/21/2025		X					
LLHG-TB-10222025	AQ	25J147524	10/22/2025		X					
LLHG-TB-10232025	AQ	25J147534	10/23/2025		X					

Other analytes requested for analysis: Na, Mg, K, HCO_3, CO_3, hardness

Any planned sampling or analysis NOT completed? If yes, explain: Surface water samples were not collected at SG-02, SG-04R, or SG-05 sampling locations as the field conditions remained dry for the duration of the sampling event.

Data Verification & Validation Checklist

Review Category	Verify Complete		Validation Criteria	Criteria Met?			Description of Nonconformance and Qualification (if applicable)
	Yes	No		Yes	No	N/A	
Field Data							
Sample Collection Field Forms	X		Purging performed as required in the Groundwater Monitoring Plan	X			See below.
Field Calibration Records	X		Field instruments calibrated daily according to manufacturer specifications	X			
Chain of Custody	X		Accurately reflect samples, collection dates/times, analyses, bottles, etc.	X			
Field decontamination documentation	X		Record of decontamination for non-dedicated sampling equipment	X			
Drilling logs	X		N/A	-	-	-	
Well construction logs	X		N/A	-	-	-	
Well development field forms	X		N/A	-	-	-	
Analytical Data Package							
Cover Sheet	X		N/A	-	-	-	
Case Narrative	X		Summarizes sample receipt and any exceptions to QC acceptance criteria	X			
Internal Laboratory Chain of Custody forms	X		Analyses as requested; accurate transcription of field COC	X			
Sample Chronology and Consistency	X		Accurate representation of dates, times of receipt, preparation, and analysis	X			
Communication Records with Lab	X		E-mail records saved with final report	X			
EDD Format Consistency	X		EDD format and content as requested	X			
Sample Identification, Results Nomenclature, and Data Qualifier Consistency	X		All included in final report	X			
Method Detection Limit Consistency	X		MDLs consistent between samples		X		Dilution varies between samples.
Instrument Calibration Records	X		Present and no nonconformance noted	X			
Laboratory Report Complete	X		Includes QC component	X			
Holding Times	X		Analyses performed within allowed holding time		X		pH required qualification in 24 samples.

Review Category	Verify Complete		Validation Criteria	Criteria Met?			Description of Nonconformance and Qualification (if applicable)
	Yes	No		Yes	No	N/A	
Method	X		Method as requested	X			
Reporting Limits	X		RLs as requested	X			RLs for the following were not met: B – 7 samples (results > RL) Ca – 28 samples (results > RL) Fe – 31 samples (results > RL) Mg – 5 samples (results > RL) K – 2 samples (results > RL) Na – 6 samples (results > RL) SO4 – 9 samples (results > RL) TDS – 31 samples (results > RL) TSS – 22 samples (9 ND results).
			MDLs<RLs	X			MDLs = RLs for silver and TDS
			MDLs<GPS	X			
QC Validation							
Evaluate Accuracy							
Matrix Spike (Recovery)	X		See “Minimum QC Procedures for Project Parameters” table	X			
Laboratory Control Sample (Recovery)	X		See “Minimum QC Procedures for Project Parameters” table	X			
Evaluate Precision							
Matrix Spike Duplicate (RPD)	X		See “Minimum QC Procedures for Project Parameters” table	X			
Field Duplicate (RPD)	X		RPD ≤ 20%		X		See Below.
Evaluate Representativeness							
Equipment Blanks (if applicable)	N/A		Non-detect (<RL)	X			
QC Verification							
Verify Instrument Calibration & Analytical Process							
Initial Calibration Verification	X		Laboratory-determined	-	-	-	
Continuing Calibration Verification	X		Laboratory-determined	-	-	-	
Initial Calibration Blank	X		Laboratory-determined	-	-	-	
Continuing Calibration Blank	X		Laboratory-determined	-	-	-	
Serial Dilutions	X		Laboratory-determined	-	-	-	
Post-Digestion Spikes	X		Laboratory-determined	-	-	-	
Internal Standards	X		Laboratory-determined	-	-	-	
Laboratory Duplicate (RPD)	X		Laboratory-determined	-	-	-	
Method Blanks	X		Laboratory-determined	-	-	-	
Evaluate Completeness (# usable measurements/ # unusable measurements)							
Completeness	X		100%	X			

Comments:

Turbidity in MW-02, MW-31, and MW-38 did not stabilize under 10 NTU by the end of purging. Field filtered samples were collected at MW-02, MW-31, and MW-38 and were analyzed for dissolved metals.

pH in 24 samples required qualification as estimated (J) due to analysis outside the EPA-established 24-hour hold time.

The RPD of zinc and beryllium between parent sample MW-10 and field duplicate MWT-10 were outside of control limits. Zinc and beryllium required qualification as estimated with high bias (J+) in parent sample MW-10 and as estimated with low bias (J-) in field duplicate MWT-10.

Radium-226 was detected in parent sample MW-10 but was not detected in field duplicate MWT-10. Radium-226 required qualification as estimated with high bias (J+) in parent sample MW-10 and as estimated but not detected (UJ) in field duplicate MWT-10.

The RPD of nickel, copper, vanadium, zinc, mercury, lead, and chromium between parent sample MW-37 and field duplicate MWT-37 were outside of control limits. Nickel, copper, vanadium, zinc, mercury, lead, and chromium required qualification as estimated with high bias (J+) in parent sample MW-37 and as estimated with low bias (J-) in field duplicate MWT-37.

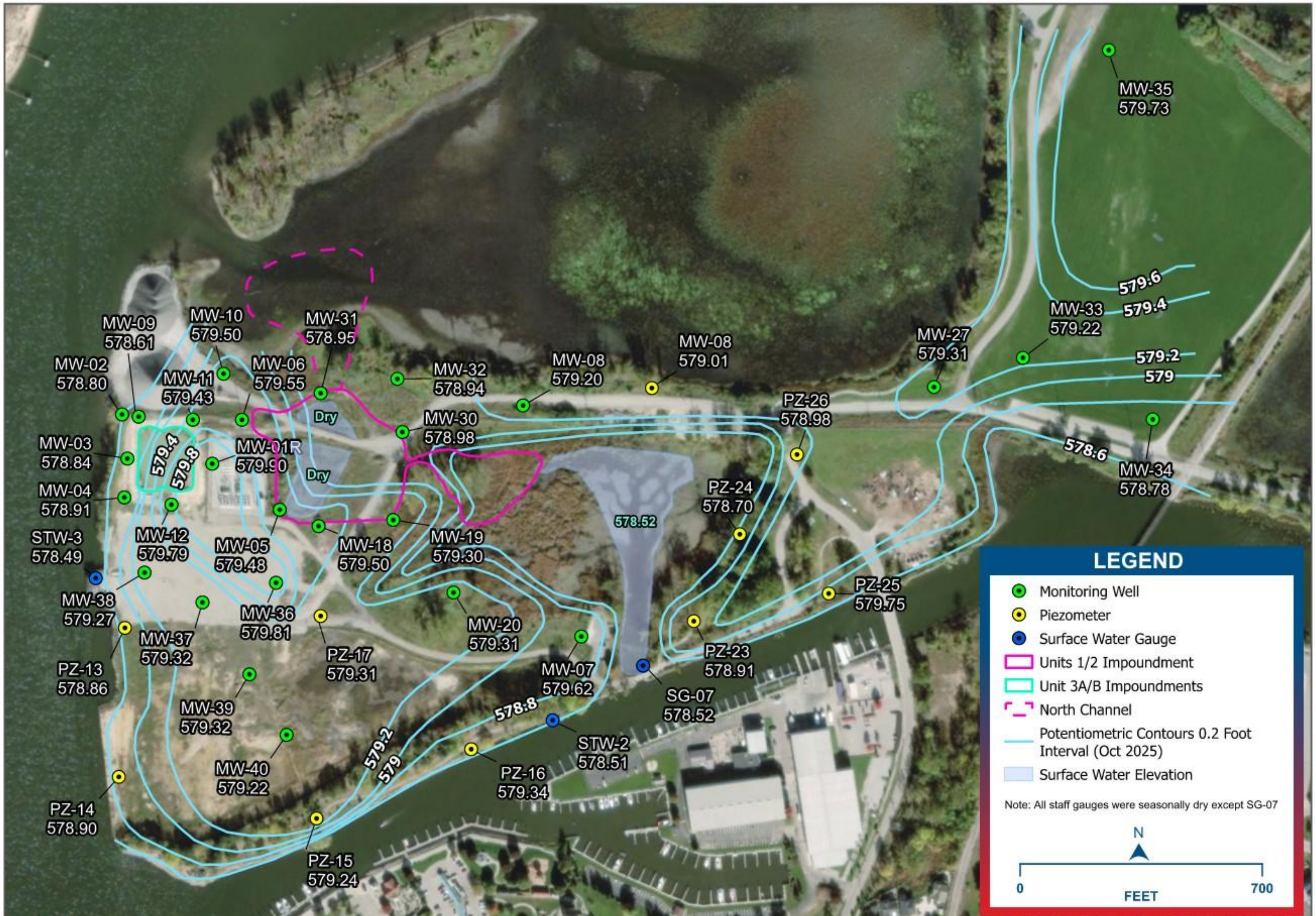
Antimony was detected in parent sample MW-37 but was not detected in field duplicate (MWT-37). Antimony required qualification as estimated with high bias (J+) in parent sample MW-37 and as estimated but not detected (UJ) in field duplicate MWT-37.

TSS, radium-228, and radium-226/228 were not detected in parent sample MW-37 but were detected in field duplicate MWT-37. TSS, radium-228, and radium-226/228 required qualification as estimated but not detected (UJ) in parent sample MW-37 and as estimated with high bias (J+) in field duplicate MWT-37.

Appendix C

Groundwater Contour Map

October 20, 2025 Measurements



Renew Harbor Island

HDR

FORMER J.B. SIMS GENERATING STATION
CITY OF GRAND HAVEN

Appendix D

Analytical Data Tables

Sample Location:		MW-01R	MW-01R	MW-01R	MW-01R	MW-01R	MW-01R	MW-01R	MW-01R	MW-01R	MW-01R	MW-01R	MW-01R	MW-01R	MW-01R	MW-01R	MW-01R	MW-01R
Compliance Phase:		Background	Background	Background	Background	Background	Background	Background	Background	AM	AM	AM	AM	AM	AM	AM	AM	AM
Sample Date:		11/29/2022	1/3/2023	2/8/2023	3/14/2023	4/18/2023	5/23/2023	6/28/2023	8/8/2023	10/24/2023	2/13/2024	4/10/2024	7/18/2024	10/16/2024	2/25/2025	4/20/2025	8/13/2025	10/22/2025
Sample Type:		Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample
Unit:		Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2
Sample Matrix:		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Constituent	**Unit**																	
Field Parameters																		
Conductivity	mS/cm	2.39	3.06	2.731	2.595	3	3.1	3.23	3.22	3.13	2.51	2.87	3.13	2.89	2.97	2.71	3.09	3.27
Dissolved Oxygen	mg/L	0.08	0.05	0.07	0.28	0.11	0.03	0.01	0.01	0.03	0.22	1.35	0.01	0.01	0.02	0.05	0.06	0.13
Oxidation Reduction Potential	mV	42.3	3.6	-155.6	-185.5	-202.3	-210.1	-163.8	-165.1	-126.2	-57.3	-197.9	-316.1	7.7	-80.5	-203.4	-23.4	-274
pH	su	7.74	6.02	7.75	7.76	7.75	7.8	7.81	7.68	7.71	7.52	7.58	7.73	7.72	7.75	7.81	7.72	7.63
Temperature	deg c	12.5	9	6.9	5.9	7.2	10.7	13.5	17.2	16.1	6.1	7.5	16.3	17	7.4	8.6	18.4	16.3
Turbidity	NTU	0.02	0.26	0.17	0.02	0.02	0.02	0.02	1.33	0.95	1.79	0.02	0.02	1.36	0.02	0.02	1.39	1.03
Appendix III																		
Boron	mg/L	100	110	73	70	78	110	150 J+	140	160	38	64	150	130	120	100	140	160
Calcium	mg/L	240	200	290	310	280	240	210	160	130	400	350	160	160	190	260	170	140
Chloride	mg/L	150	160	52	120	130	150	170	180	210	49	67	170	150	120	94	130	150
Fluoride	mg/L	14	14	9.5	8.1	8.8	10	15	14	14	4.8	6.7	15	16	14	11	16	17
Sulfate (as SO4)	mg/L	590	400	350	780	780	540	290	110	8.8	980	810	100	130	310	570	160	47
Total Dissolved Solids	mg/L	2400 J-	2300	2200	2100	2400	2400	2400	2400	2600	2200	2300	2500	2300	2400	2300	2400	2500
Appendix IV																		
Antimony	mg/L	0.00033	0.00023 J	< 0.00025 U	0.00034	0.0012	< 0.00050 U	0.00071 J	0.00025	0.00022 J	< 0.00050 U	0.00017 J	0.00018 J	0.00019 J	0.00021 J	0.00018 J	0.00025	0.00032
Arsenic	mg/L	0.0020	0.0015	0.0013	0.0013	0.00077	0.00073	0.0019 J+	0.0017	0.0013	0.0041	0.0013	0.0014	0.0015	0.0013	0.0013	0.0015	0.0012
Barium	mg/L	0.30	0.30	0.25	0.22	0.21	0.29	0.29	0.38	0.56	0.54	0.20	0.33	0.42	0.38	0.40	0.55	0.81
Beryllium	mg/L	0.00021 J	0.00032	0.00020 J	0.00020 J	0.00012 J	0.00020 J	0.00036 J+	0.00035	0.00026	0.00015 J	< 0.000052 U	0.00013 J	< 0.000052 U	0.00012 J	0.00017 J	0.00031	0.00031
Cadmium	mg/L	0.00011 J	0.000062 J	< 0.00016 U	< 0.000032 U	< 0.00016 U	< 0.00038 U	0.00034 J+	< 0.000075 U	< 0.000075 U	< 0.00038 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	0.00014 J
Chromium, Total	mg/L	0.0013	0.0024	0.0016	0.0016	0.0013	0.0019	0.0043	0.0037	0.0022	0.022	0.0013	0.0033	0.0021	0.0019	0.0017	0.0025	0.0028
Cobalt	mg/L	0.0011	0.0012	0.0011	0.0023	0.0017	0.00081	0.0045 J+	0.0016	0.001	0.0040	0.00064	0.0011	0.00095	0.0011	0.00098	0.0012	0.0020
Fluoride	mg/L	14	14	9.5	8.1	8.8	10	15	14	14	4.8	6.7	15	16	14	11	16	17
Lead	mg/L	0.0014	0.00082	< 0.0011 U	0.00044 J	< 0.0011 U	0.00080 J	0.0053 J+	0.0010 J	0.00074	0.0017 J	0.00035 J	0.00062 J	0.00069 J	0.00087 J	0.00038 J	0.00063	0.0016
Lithium	mg/L	2.2	2.8	1.6	1.7	1.5	2.3	3.2	3.3	3.4	0.77	1.5	2.9	2.6	2.7	2.1	3.1	3.0
Mercury	mg/L	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00000016 U	0.00000052	0.00000087
Molybdenum	mg/L	0.0011 J	0.00062 J	0.00076 J	0.0020	< 0.0031 U	0.00033 J	0.00077 J+	0.00082 J	0.00074 J	0.0056	0.0016	0.00037 J	0.00034 J	0.00068 J	< 0.00025 U	0.00064 J	0.00038 J
Radium 226 and 228	pCi/L	< 0.656 UJ	< 0.828 U	1.06	1.28	< 0.737 U	< 1.1 U	0.601	1.26	< 0.674 U	1.09	< 0.682 U	< 1.23 U	1.48	< 0.84 U	< 0.914 U	< 0.957 U	< 0.982 U
Radium-226	pCi/L	< 0.176 UJ	< 0.125 U	< 0.139 U	< 0.212 U	< 0.233 U	< 0.322 U	< 0.164 U	0.152	< 0.182 U	< 0.137 U	< 0.21 U	0.218	< 0.268 U	0.32	< 0.306 U	< 0.454 U	< 0.312 U
Radium-228	pCi/L	< 0.656 UJ	< 0.828 U	0.982	1.23	< 0.737 U	< 1.1 UJ	< 0.534 U	1.11	< 0.674 U	1.05	< 0.682 U	< 1.23 UG	1.37 G	< 0.84 U	< 0.914 U	< 0.957 U	< 0.982 U
Selenium	mg/L	0.00060	0.00059	0.00058	0.00097	0.00056	0.00030 J	0.00076 J+	0.00066	0.00073	0.0018	0.00050	0.00079	0.00073	0.00064	0.00045 J	0.00068	0.00074
Thallium	mg/L	< 0.000075 U	< 0.000075 U	< 0.00038 U	< 0.000075 U	< 0.00038 U	< 0.00038 U	< 0.00038 UJ	< 0.00038 U	< 0.000075 U	< 0.00038 U	< 0.000075 U	< 0.00038 U	< 0.00038 U	< 0.00038 U	< 0.000075 U	< 0.000075 U	< 0.000075 U
Total Suspended Solids	mg/L	3.0 J	2.0 J	5.0	2.0 J	2.0 J	< 4.0 U	2.0 J	3.0 J	< 4 U	< 4.0 U	< 4.0 U	< 4.0 U	5.0	< 4.0 U	< 4.0 U	< 4.0 U	< 4.3 U
Michigan CCR Part 115																		
Copper	mg/L	0.00027	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	0.0013 B	0.00045	0.00029	0.0010	0.00029	0.00029	0.00030	0.00042	< 0.00020 U	0.00031	0.00035
Iron	mg/L	0.75	1.1	0.55	0.50	0.59	0.79	0.48	0.16	0.22	0.85	1.0	0.088	0.093	0.13	0.090	0.059	0.16
Nickel	mg/L	0.0015	0.0025	0.0016	0.0026	0.0018	0.0013	0.0053	0.0027	0.0021	0.022	0.0012	0.0020	0.0019	0.0018	0.0018	0.0023	0.0030
Silver	mg/L	< 0.000050 U	< 0.000050 U	< 0.00025 U	< 0.000050 U	< 0.00025 U	< 0.00025 U	< 0.000050 U	< 0.000050 U	< 0.00005 U	< 0.00025 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U
Vanadium	mg/L	0.00069 J	0.00067 J	< 0.00062 U	< 0.00062 U	0.0013	0.0016	0.0046	0.0035	0.0018	0.0018	0.0014	0.0041	0.0020	0.0019	0.0021	0.0035	0.0037
Zinc	mg/L	0.014	0.0012	0.0012	0.0018	0.013	< 0.0012 U	0.0085	0.0012	0.0013	0.0016	< 0.0012 U	< 0.0012 U	0.023	0.033	0.0012	0.028	0.0032
Additional Parameters																		
Bicarbonate Alkalinity	mg/L	1100	1200	870	830	920	1100	1300	1400	1700	560	820	1500	1400	1300	1000	1500	1600
Carbonate Alkalinity	mg/L	< 1.6 U	< 1.6 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.31 U	< 0.31 U	< 0.16 U	< 0.31 U	< 0.31 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.31 U	< 0.16 U
Magnesium	mg/L	110	92	110	110	120	110	100	96	100	110	120	100	99	120	110	90	110
Potassium	mg/L	69	66	50	43	60 J	65	89	90	98	34	50	86	86	85	64	91	100
Sodium	mg/L	330	370	250	240	280	380	430	430	500	140	220	430	400	410	310	440	470
Total Alkalinity	mg/L	1100	1200	870	830	920	1100	1300	1400	1700	560	820	1500	1400	1300	1000	1500	1600

Notes:

ug/l - micrograms per liter.

mg/l = milligrams per liter.

su - standard pH units (pH is a field parameter)

pCi/L = picocuries per liter.

All metals were analyzed as total unless otherwise indicated.

Qualifiers:

U The analyte was analyzed for, but was not detected at, a level greater than or equal to the level of the adjusted reporting limit (RL) for the sample and method.

J The analyte was positively identified, and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain QC criteria were not met, or to the concentration of the analyte being below the RL).

J+ Same as J, and the reported concentration is potentially biased high.

J– Same as J, and the reported concentration is potentially biased low.

UJ The analyte was not detected at a level greater than or equal to the adjusted method detection limit (MDL). However, the reported adjusted MDL is approximate and might be inaccurate or imprecise.

R The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte might or might not be present in the sample.

Sample Location:		MW-02	MW-02	MW-02	MW-02	MW-02	MW-02	MW-02	MW-02	MW-02	MW-02	MW-02	MW-02	MW-02	MW-02	MW-02	MW-02	MW-02
Compliance Phase:		Background	Background	Background	Background	Background	Background	Background	Background	AM	AM	AM	AM	AM	AM	AM	AM	AM
Sample Date:		11/28/2022	1/4/2023	2/8/2023	3/14/2023	4/18/2023	5/23/2023	6/27/2023	8/8/2023	10/24/2023	2/13/2024	4/10/2024	7/17/2024	10/15/2024	2/25/2025	4/19/2025	8/13/2025	10/22/2025
Sample Type:		Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample
Unit:		Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B
Sample Matrix:		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Constituent	**Unit**																	
Field Parameters																		
Conductivity	mS/cm	3.36	4.1	3.07	2.616	3.66	3.524	4.17	4.07	4.21	3.4	3.89	4.42	4.2	5.22	3.03	3.86	4.08
Dissolved Oxygen	mg/L	0.28	0.49	0.2	0.41	0.08	0.06	0.07	0.1	0.03	0.26	0.15	0.45	0.85	0.99	0.38	0.04	0.08
Oxidation Reduction Potential	mV	89.4	-215.7	-185.2	-169.9	-135.7	-138.9	-137.4	-133.8	-166.8	-146.1	-140.3	-135.6	-158.6	104.7	-100.8	-154.8	-159.6
pH	su	7.11	7.06	7.33	7.35	7.13	7.45	7.29	7.21	7.11	7.25	7.26	7.13	7.15	7.11	7.15	7.18	7.2
Temperature	deg c	12.8	12	11.2	9.6	10.2	11.7	12.1	14	15	10.3	11.4	15	13.4	10.7	10.3	15.4	13.3
Turbidity	NTU	0.02	0.02	0.02	0.49	3.66	5.05	6.89	3.3	8.78	5.11	9.03	0.02	9.7	4.15	0.02	15.5	9.1
Appendix III																		
Boron	mg/L	88	86	100	98	73	95	110 J+	99	110	100	110	110	110	170	170	120	59
Calcium	mg/L	210	180	210	240	190	210	210	180	190	220	210	200	190	180	200	170	190
Chloride	mg/L	150	140	67	140	150	140	140	130	140	140	140	160	150	150	150	160	150
Fluoride	mg/L	9.2	10	4.5	9.4	8.7	9.2	10	9.7	9.7	9.5	10	10	11	16	13	12	13
Sulfate (as SO4)	mg/L	0.86 J	2.2 J	< 0.41 U	1.1 J	< 0.41 U	< 0.41 U	< 0.41 U	0.93 J	< 0.41 U	< 0.41 U	< 5.5 U	< 2.2 U	1.8 J	< 2.2 U	< 2.2 U	1.3 J	1.9 J
Total Dissolved Solids	mg/L	1700	1800	1900	1700	1700	1800	2100 J	1900	1600	1800	2000	2100	2000	2600	2000	2000	2200
Appendix IV																		
Antimony	mg/L	0.00015 J	0.00016 J	< 0.00025 U	0.00019 J	0.00063 J	< 0.00050 U	0.00024 J	0.00018 J	0.00029	< 0.00010 U	0.00024 J	0.00015 J	0.00019 J	0.00027	0.00026	0.00014 J	0.00022 J
Arsenic	mg/L	0.0082	0.0076	0.0086	0.0078	0.0083	0.012	0.0096 J+	0.0086	0.0074	0.00044 J	0.0075	0.0061	0.0066	0.0095	0.0059	0.0055	0.0065
Barium	mg/L	0.51	0.53	0.55	0.51	0.38	0.48	0.47	0.45	0.42	0.73	0.46	0.33	0.32	0.35	0.50	0.45	0.52
Beryllium	mg/L	0.00028	0.00034	0.00042	0.00029	0.00015 J	0.00021 J	0.00032 J+	0.00043	0.00052	< 0.000052 U	0.00012 J	0.00019 J	0.00018 J	0.00022 J	0.00032	0.00016 J	0.00026
Cadmium	mg/L	< 0.000032 U	0.000046 J	< 0.00016 U	0.000041 J	< 0.00016 U	< 0.00038 U	< 0.000075 UJ	< 0.000075 U	0.00049	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	0.000078 J	0.000078 J	< 0.000075 U	< 0.000075 U
Chromium, Total	mg/L	0.022	0.054	0.057	0.046	0.019	0.030	0.068	0.054	0.032	0.00038	0.039	0.047	0.033	0.063	0.068	0.033	0.045
Cobalt	mg/L	0.0038	0.0060	0.0080	0.0066	0.0031	0.0039	0.0089 J+	0.0076	0.0063	0.00024 J	0.0061	0.0063	0.0055	0.0097	0.0095	0.0056	0.0085
Fluoride	mg/L	9.2	10	4.5	9.4	8.7	9.2	10	9.7	9.7	9.5	10	10	11	16	13	12	13
Lead	mg/L	0.0010	0.0024	0.0030	0.0027	0.0018 J	0.0041	0.0039 J+	0.0017	0.002	< 0.00010 U	0.0056	0.0023 J	0.0020 J	0.006	0.0050	0.0012 J	0.0023
Lithium	mg/L	1.2	1.5	1.5	1.6	0.87	1.2	1.7	1.4	1.2	1.4	1.5	1.3	1.3	2.3	2	1.5	1.5
Mercury	mg/L	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	0.0000054	0.0000023	0.0000016
Molybdenum	mg/L	0.0052	0.0062	0.011	0.011	0.0088	0.0064	0.0062 J+	0.0052	0.0051	0.0038	0.0052	0.0045	0.0048	0.016	0.013	0.0052	0.0072
Radium 226 and 228	pCi/L	< 2.18 U	< 2.8 U	3.35	1.56	< 0.686 U	1.67	1.67	2.45	1.16	1.95	2.24	< 1.21 U	1.33	--	< 1.1 U	1.87	2.35
Radium-226	pCi/L	< 0.547 U	0.781	0.642	0.398	< 0.302 U	0.58	0.714	0.743	< 0.354 U	1.07	< 0.432 U	0.488	0.772	--	0.565	< 0.813 U	0.732
Radium-228	pCi/L	< 2.18 UJ	< 2.8 UG	< 3.21 UG	< 1.24 UG	< 0.686 U	< 1.2 UJ	0.957	1.71 G	< 0.897 U	0.882	1.83 G	< 1.21 UG	< 1.1 UG	--	< 1.1 UG	1.35 G	< 1.94 UG
Selenium	mg/L	0.0010	0.0012	0.0012	0.00095	0.00050	0.0010	0.0014 J+	0.0012	0.0018	0.00056	0.0014	0.0014	0.0014	0.0023	0.0017	0.0012	0.0018
Thallium	mg/L	< 0.000075 U	< 0.000075 U	< 0.00038 U	< 0.000075 U	< 0.00038 U	< 0.00038 U	< 0.000075 UJ	< 0.000075 U	0.00062	< 0.000075 U	< 0.000075 U	< 0.00038 U	< 0.00038 U	< 0.00038 U	< 0.000075 U	< 0.00038 U	< 0.000075 U
Total Suspended Solids	mg/L	67	58	58	56	100	90	20	16	6.1	59	40	53	6.0	8.0	70	18	6.3
Michigan CCR Part 115																		
Copper	mg/L	0.00081	0.0018	0.0025	0.0020	0.0011	0.0014	0.0026 B	0.0018	0.0025	0.00023 J	0.0028	0.0020	0.0015	0.0044	0.0037	0.0010	0.0023
Iron	mg/L	23	22	24	30	27	27	24	20	18	31	25	22	19	21	28	22	18
Nickel	mg/L	0.015	0.023	0.042	0.035	0.017	0.014	0.025	0.022	0.018	0.00093 J	0.025	0.018	0.018	0.053	0.042	0.023	0.034
Silver	mg/L	< 0.000050 U	< 0.000050 U	< 0.00025 U	< 0.000050 U	< 0.00025 U	< 0.00025 U	< 0.000050 U	< 0.000050 U	< 0.00005 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U
Vanadium	mg/L	0.0014	0.0036	0.0035	0.0032	0.0013	0.0026	0.0067	0.0049	0.0044	< 0.00062 U	0.0062	0.0057	0.0035	0.0049	0.0069	0.0027	0.0050
Zinc	mg/L	0.023	0.0030	0.0033	0.0022	0.025	0.0019	0.0027	0.0041	0.0036	0.0020	0.0033	0.0024	0.020	0.036	0.0036	0.0016	0.0027
Additional Parameters																		
Bicarbonate Alkalinity	mg/L	1900	2000	1900	1800	1800	1900	460	2100	2300	1800	2000	2200	2200	2700	2100	2300	2400
Carbonate Alkalinity	mg/L	< 1.6 U	< 1.6 U	< 0.16 U	< 0.16 U	< 0.31 U	< 0.31 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.31 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.39 U	< 0.16 U
Magnesium	mg/L	63	59	70	78	68	71	62	58	57	77	68	63	60	56	75	60	55
Potassium	mg/L	50	44	53	45	41	44	56 J	46	47	50	53	48	48	70	61	49	50
Sodium	mg/L	250	250	260	260	220	280	320	310	310	280	300	320	310	470	410	320	360
Total Alkalinity	mg/L	1900	2000	1900	1800	1800	1900	460	2100	2300	1800	2000	2200	2200	2700	2100	2300	2400

Notes:

ug/l - micrograms per liter.

mg/l = milligrams per liter.

su - standard pH units (pH is a field parameter)

pCi/L = picocuries per liter.

All metals were analyzed as total unless otherwise indicated.

Qualifiers:

U The analyte was analyzed for, but was not detected at, a level greater than or equal to the level of the adjusted reporting limit (RL) for the sample and method.

J The analyte was positively identified, and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain QC criteria were not met, or to the concentration of the analyte being below the RL).

J+ Same as J, and the reported concentration is potentially biased high.

J– Same as J, and the reported concentration is potentially biased low.

UJ The analyte was not detected at a level greater than or equal to the adjusted method detection limit (MDL). However, the reported adjusted MDL is approximate and might be inaccurate or imprecise.

R The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte might or might not be present in the sample.

Sample Location:		MW-03	MW-03	MW-03	MW-03	MW-03	MW-03	MW-03	MW-03	MW-03	MW-03	MW-03	MW-03	MW-03	MW-03	MW-03	MW-03	MW-03
Compliance Phase:		Background	Background	Background	Background	Background	Background	Background	Background	AM	AM	AM	AM	AM	AM	AM	AM	AM
Sample Date:		11/28/2022	1/4/2023	2/7/2023	3/14/2023	4/18/2023	5/23/2023	6/28/2023	8/7/2023	10/24/2023	2/14/2024	4/7/2024	7/18/2024	10/15/2024	2/26/2025	4/21/2025	8/13/2025	10/22/2025
Sample Type:		Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample
Unit:		Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B
Sample Matrix:		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Constituent	**Unit**																	
Field Parameters																		
Conductivity	mS/cm	0.344	3.52	3.43	2.459	3.15	3.08	3.19	3.19	3.03	2.98	2.81	2.87	2.69	2.7	2.6	2.37	2.96
Dissolved Oxygen	mg/L	0.16	0.26	0.2	0.21	0.03	0.01	0.05	0.09	0.06	0.2	0.02	0.02	0.31	0.09	0.12	0.14	0.25
Oxidation Reduction Potential	mV	-180	-139.7	-212.9	-184.2	-92.8	-194.3	-129.6	-110.7	-116.1	-194.1	-220.8	-30.3	-106.1	-49.8	-178.7	-215	-195.7
pH	su	7.31	7.32	7.2	7.45	7.26	7.59	7.44	7.31	7.28	7.44	7.46	7.3	7.38	7.33	7.4	7.38	7.28
Temperature	deg c	13.3	11.4	9.2	7.3	9.3	11.8	12.5	14.9	14.9	9.6	10.1	15	14	9.3	9.1	16.4	14.3
Turbidity	NTU	0.02	0.68	2.4	0.02	1.4	0.02	0.02	0.21	0.26	2.12	0.02	0.02	0.31	0.02	0.02	0.33	0.02
Appendix III																		
Boron	mg/L	4.4	3.3	4.2	4.3	3.9	4.1	4.3 J+	4.1	4.3	4.5	3.9	3.9	4.4	3.7	4.5	4.1	4.0
Calcium	mg/L	390	290	400	410	360	400	430	350	380	360	350	340	330	320	340	360	350
Chloride	mg/L	300	190	240	190	150	140	160	170	180	140	99	120	120	110	94	110	130
Fluoride	mg/L	0.65	1.6	0.62	0.52	0.60	0.54	0.54	0.61	0.6	0.61	0.6	0.62	0.62	0.65	0.7	0.83	0.87
Sulfate (as SO4)	mg/L	42	460	230	550	760	690	510	480	380	310	360	310	170	34	240	130	55
Total Dissolved Solids	mg/L	2200 J-	1700	2300	2300	2300	2300	2300	2300	2200	2000	1900	1900	1800	1700	1700	1800	1700
Appendix IV																		
Antimony	mg/L	0.000087 J	0.000092 J	< 0.00025 U	0.00011 J	0.00045 J	< 0.00050 U	< 0.00050 U	< 0.00010 U	< 0.0001 U	< 0.00050 U	0.00016 J	< 0.00010 U	< 0.00010 U	0.00013 J	< 0.00010 U	< 0.00010 U	< 0.00010 U
Arsenic	mg/L	0.00084	0.0011	0.0012 J	0.0011	0.00050 J	0.00049 J	0.00091 J+	0.00076	0.0011	0.00097	0.0014	0.00077	0.00087	0.0011	0.0013	0.00071	0.00058
Barium	mg/L	0.43	0.13	0.50	0.30	0.34	0.43	0.38	0.38	0.41	0.42	0.36	0.27	0.27	0.33	0.37	0.37	0.40
Beryllium	mg/L	< 0.000052 U	< 0.000052 U	< 0.00026 U	0.000053 J	< 0.000052 U	< 0.000052 U	< 0.000052 UJ	< 0.000052 U	0.00015 J	0.000057 J	0.00018 J	0.000054 J	< 0.000052 UJ	< 0.000052 U	< 0.000052 U	0.000074 J	< 0.000052 U
Cadmium	mg/L	< 0.000032 U	< 0.000032 U	< 0.00016 U	< 0.000032 U	< 0.00016 U	< 0.00038 U	< 0.000075 UJ	< 0.000075 U	0.00011 J	< 0.00038 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U
Chromium, Total	mg/L	0.0046	0.0061	0.0049	0.0073	0.0033	0.0037	0.0060	0.0053	0.003	0.0037	0.0052	0.0045	0.0034 J-	0.0034	0.0050	0.0040	0.0035
Cobalt	mg/L	0.00088	0.00044 J	0.00081 J	0.00097	0.00044 J	0.00050 J	0.0012 J+	0.0011	0.0013	0.00037 J	0.0013	0.00059	0.00061 J-	0.00059	0.00056	0.00070	0.00070
Fluoride	mg/L	0.65	1.6	0.62	0.52	0.60	0.54	0.54	0.61	0.6	0.61	0.6	0.62	0.62	0.65	0.7	0.83	0.87
Lead	mg/L	< 0.00022 U	< 0.00022 U	< 0.0011 U	< 0.0011 U	< 0.0011 U	< 0.00050 U	< 0.00050 UJ	< 0.00050 U	0.00022 J	< 0.00050 U	< 0.00010 U	< 0.00050 U	< 0.00050 U	< 0.00010 U	< 0.00010 U	< 0.00010 U	< 0.00010 U
Lithium	mg/L	0.044	0.065	0.039	0.045	0.037	0.035	0.050	0.041	0.035	0.033	0.029	0.031	0.035	0.031	0.03	0.033	0.030
Mercury	mg/L	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	0.00024	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	0.00000077	0.00000039 J	< 0.00000016 U
Molybdenum	mg/L	< 0.00062 U	0.00072 J	< 0.0031 U	< 0.00062 U	< 0.0031 U	< 0.00025 U	< 0.00025 UJ	< 0.00025 U	0.00085 J	< 0.00025 U	0.0011 J	< 0.00025 U	0.00039 J	< 0.00025 U	< 0.00025 U	< 0.00025 U	< 0.00025 U
Radium 226 and 228	pCi/L	1.92	< 1.32 U	0.75	1.76	0.81	1.38	1.26	0.996	1.34	1.48	1.5	0.786	1.7 J-	0.92	--	1.34	< 1.32 U
Radium-226	pCi/L	0.583	0.526	0.242	< 0.217 U	0.268	0.574	< 0.209 U	0.417	< 0.312 U	0.466	< 0.288 U	0.22	0.348	< 0.16 U	--	0.758	< 0.426 U
Radium-228	pCi/L	1.34	< 1.32 UG	< 0.67 U	1.55	< 0.767 U	< 1.15 UJ	1.18	< 0.763 U	1.08	1.02	1.42 G	< 0.609 U	1.36 J-	0.77	--	< 0.825 U	< 1.32 UG
Selenium	mg/L	0.00042 J	< 0.00022 U	< 0.0011 U	0.00040 J	< 0.00022 U	0.00017 J	0.00042 J+	0.00034 J	0.00053	0.00062	0.00049 J	0.00038 J	0.00051	0.00040 J	0.00041 J	0.00036 J	0.00034 J
Thallium	mg/L	< 0.000075 U	< 0.000075 U	< 0.00038 U	< 0.00038 U	< 0.00038 U	< 0.00038 U	< 0.00038 UJ	< 0.00038 U	0.00018 J	< 0.00038 U	< 0.000075 U	< 0.00038 U	< 0.00038 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U
Total Suspended Solids	mg/L	4.0	15	4.0	1.0 J	< 4.0 U	< 4.0 U	< 4.0 U	3.0 J	< 4 U	< 4.0 U	< 4.0 U	< 4.0 U	< 4.0 U	< 4.0 U	< 4.0 U	< 4.0 U	< 4.1 U
Michigan CCR Part 115																		
Copper	mg/L	< 0.00020 U	< 0.00020 U	< 0.0010 U	< 0.00020 U	< 0.00020 U	0.00025	0.00030 B	0.00024 J	0.00091	0.00025	0.0010	0.00030	0.00086 J+	< 0.00020 U	< 0.00020 U	0.00022 J	< 0.00020 U
Iron	mg/L	3.7	5.9	2.5	1.6	2.0	0.78	0.31	0.28	0.43	1.4	0.48	0.27	0.12	0.63	1.2	0.098	0.16
Nickel	mg/L	0.0016	0.015	< 0.0032 U	0.0018	0.00085 J	0.00087 J	0.0016	0.0015	0.0017	0.00094 J	0.0022	0.0011 J	0.0012 J-	0.0012	0.0014	0.0013	0.0012
Silver	mg/L	< 0.000050 U	< 0.000050 U	< 0.00025 U	< 0.000050 U	< 0.00025 U	< 0.00025 U	< 0.000050 U	< 0.000050 U	< 0.00005 U	< 0.00025 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U
Vanadium	mg/L	< 0.00062 U	< 0.00062 U	< 0.0031 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	0.0012	< 0.00062 U	0.0022	0.0018	0.0015 J-	0.0012	0.0014	0.0015	0.0014
Zinc	mg/L	0.019	< 0.0012 U	< 0.0059 U	< 0.0012 U	0.018	< 0.0012 U	0.0019	< 0.0012 U	0.002	< 0.0012 U	0.0013	< 0.0012 U	0.013	< 0.0012 U	< 0.0012 U	0.018	0.00059 J
Additional Parameters																		
Bicarbonate Alkalinity	mg/L	1800	690	1600	1200	1100	1100	1300	1300	1400	1300	1200	1300	1400	1500	1300	1500	1500
Carbonate Alkalinity	mg/L	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.31 U	< 0.31 U	< 0.16 U	< 0.31 U	70	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.31 U	< 0.16 U
Magnesium	mg/L	210	91	220	220	210	220	210	200	200	210	200	190	180	190	200	180	170
Potassium	mg/L	20	18	20	15	20	17	20	18	18	19	16	17	17	18	17	18	17
Sodium	mg/L	130	74	120	110	100	110	100	110	100	110	90	89	89	88	92	85	87
Total Alkalinity	mg/L	1800	690	1600	1200	1100	1100	1300	1300	1400	1300	1200	1300	1400	1500	1300	1500	1500

Notes:

ug/l - micrograms per liter.

mg/l = milligrams per liter.

su - standard pH units (pH is a field parameter)

pCi/L = picocuries per liter.

All metals were analyzed as total unless otherwise indicated.

Qualifiers:

U The analyte was analyzed for, but was not detected at, a level greater than or equal to the level of the adjusted reporting limit (RL) for the sample and method.

J The analyte was positively identified, and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain QC criteria were not met, or to the concentration of the analyte being below the RL).

J+ Same as J, and the reported concentration is potentially biased high.

J– Same as J, and the reported concentration is potentially biased low.

UJ The analyte was not detected at a level greater than or equal to the adjusted method detection limit (MDL). However, the reported adjusted MDL is approximate and might be inaccurate or imprecise.

R The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte might or might not be present in the sample.

	Sample Location:	MW-04	MW-04	MW-04	MW-04	MW-04	MW-04	MW-04	MW-04	MW-04	MW-04	MW-04	MW-04	MW-04	MW-04	MW-04	MW-04	MW-04
	Compliance Phase:	Background	Background	Background	Background	Background	Background	Background	Background	AM	AM	AM	AM	AM	AM	AM	AM	AM
	Sample Date:	11/28/2022	1/4/2023	2/7/2023	3/14/2023	4/19/2023	5/23/2023	6/28/2023	8/7/2023	10/24/2023	2/14/2024	4/7/2024	7/18/2024	10/15/2024	2/26/2025	4/21/2025	8/11/2025	10/22/2025
	Sample Type:	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample
	Unit:	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B
	Sample Matrix:	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Constituent	**Unit**																	
Field Parameters																		
Conductivity	mS/cm	0.237	2.47	2.56	2.044	2.81	2.82	2.81	2.74	2.52	2.55	2.78	2.79	2.44	2.39	2.33	2.6	2.67
Dissolved Oxygen	mg/L	0.15	0.1	0.07	0.79	0.15	0.06	0.05	0.16	0.14	0.3	0.06	0.05	0.07	0.09	0.16	0.25	0.19
Oxidation Reduction Potential	mV	-137.4	-113.2	-175.9	-126.6	43.2	-91.9	-113.3	-130.1	-133.3	-96.7	-170.1	-82.9	-143.4	-40.9	-123.3	-75.5	-123.3
pH	su	7.34	7.39	7.23	7.45	7.35	7.66	7.43	7.34	7.26	7.4	7.43	7.25	7.26	7.22	7.39	7.24	6.78
Temperature	deg c	13.1	10.5	8.7	6.5	7.2	10.5	13.1	16.4	16.1	8	8.8	16.1	16.7	8.4	8.1	17.6	15.8
Turbidity	NTU	1.95	0.02	0.02	0.02	0.02	0.02	0.28	2.98	1.42	1.83	0.38	0.02	0.21	0.02	0.02	0.02	0.02
Appendix III																		
Boron	mg/L	4.0	3.9	3.8	3.8	3.5	4.3	4.1 J+	4.0	4.7J	4.1	4.2	4.4	4.7 J-	3.7	3.7	4.0	2.6
Calcium	mg/L	310	360	350	390	340	400	410	330	360	350	430	380	340 J-	360	250	370	560
Chloride	mg/L	180	300	200	220	220	200	190	160	150	130	120	120	96	90	21	91	45
Fluoride	mg/L	1.2	0.76	1.3	1.4	1.3	1.3	1.2	1.4	1.9	1.4	1.3	1.4	1.5	1.1	2.3	1.6	1.4
Sulfate (as SO4)	mg/L	410	1.8 J	530	580	700	690	610	610	630	640	810	810	590	660	360	760	1100
Total Dissolved Solids	mg/L	1700	2100	1700	1800	1900	2100	2000	1900	1800	1800	2100	2100	1700	1800	1200	2100	2200
Appendix IV																		
Antimony	mg/L	0.000071 J	< 0.000050 U	< 0.00025 U	< 0.000050 U	0.00041 J	< 0.00050 U	< 0.00050 U	0.00012 J+	< 0.0001 U	< 0.00050 U	< 0.00010 U	< 0.00010 U	< 0.00010 U	0.00014 J	0.00046	< 0.00010 U	0.00042
Arsenic	mg/L	0.0012	0.00078	0.0012	0.0012	0.00060	0.00047 J	0.00092 J+	0.00088	0.001	0.00058	0.0012	0.00086	0.00088	0.0028	0.0014	0.0010	0.0013
Barium	mg/L	0.11	0.46	0.13	0.12	0.10	0.12	0.15	0.12	0.12	0.11	0.12	0.084	0.085	0.16	0.025	0.15 J+	0.12
Beryllium	mg/L	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 UJ	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	0.000066 J	0.000054 J	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U
Cadmium	mg/L	< 0.000032 U	< 0.000032 U	< 0.00016 U	< 0.000032 U	< 0.00016 U	< 0.00038 U	< 0.000075 UJ	< 0.000075 U	< 0.000075 U	< 0.00038 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U
Chromium, Total	mg/L	0.0027	0.0060	0.0047	0.0049	0.0026	0.0031	0.0046	0.0044	0.0027	0.0026	0.0041	0.0047	0.0051	0.0028	0.0010	0.0038	0.0021
Cobalt	mg/L	0.00035 J	0.00093	0.00062	0.00065	0.00031 J	0.00036 J	0.00074 J+	0.00062	0.00045 J	0.00018 J	0.00034 J	0.00024 J	0.00032 J	0.00035 J	0.00011 J	0.00030 J	0.0025
Fluoride	mg/L	1.2	0.76	1.3	1.4	1.3	1.3	1.2	1.4	1.9	1.4	1.3	1.4	1.5	1.1	2.3	1.6	1.4
Lead	mg/L	< 0.00022 U	< 0.00022 U	< 0.0011 U	< 0.00022 U	< 0.0011 U	< 0.00050 U	< 0.00050 UJ	< 0.00010 U	< 0.0001 U	< 0.00050 U	< 0.00010 U	< 0.00050 U	< 0.00050 UJ	< 0.00010 U	0.00026 J	< 0.00050 U	0.00016 J
Lithium	mg/L	0.067	0.047	0.061	0.074	0.054	0.061	0.074	0.074	0.066	0.048	0.062	0.068	0.074	0.031	0.055	0.060	0.055
Mercury	mg/L	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 UJ	< 0.00016 U	< 0.00016 U	< 0.00016 U	0.0000029	0.00000021 J	0.00000076
Molybdenum	mg/L	0.0013	< 0.00062 U	0.00074 J	0.00086 J	< 0.0031 U	0.00041 J	0.00044 J+	0.0012	0.0015	0.00037 J	0.00097 J	0.0014	0.0015	0.0023	0.011	0.0011 J	0.0099
Radium 226 and 228	pCi/L	1.43	1.08	1.55	1.23	< 0.752 U	1.49	1.2	1.29	1.2	< 0.868 U	1.11 J-	< 0.691 U	0.796	< 0.56 U	< 0.614 U	1.75	< 1.29 U
Radium-226	pCi/L	< 0.206 U	0.159	0.175	< 0.198 U	< 0.189 U	< 0.214 U	0.232	0.152 J-	0.275	< 0.155 U	0.176 J-	0.243	< 0.235 U	0.37	< 0.457 U	< 0.482 U	< 0.427 U
Radium-228	pCi/L	1.28	0.916	1.38	1.16	< 0.752 U	1.33 J	0.963	1.14	0.924	< 0.868 U	0.936 J-	< 0.691 U	0.693	< 0.56 U	< 0.614 U	1.3 G	< 1.29 UG
Selenium	mg/L	< 0.00022 U	0.00041 J	< 0.00022 U	< 0.00022 U	< 0.00022 U	< 0.00010 U	0.00017 J+	0.00021 J+	0.00024 J	0.00043 J	0.00021 J	0.00023 J	0.00031 J	0.00019 J	0.0012	0.00019 J	0.00035 J
Thallium	mg/L	< 0.000075 U	< 0.000075 U	< 0.00038 U	< 0.000075 U	< 0.00038 U	< 0.00038 U	< 0.00038 UJ	< 0.000075 U	< 0.000075 U	< 0.00038 U	< 0.000075 U	< 0.00038 U	< 0.00038 U	< 0.000075 U	< 0.000075 U	< 0.00038 U	< 0.000075 U
Total Suspended Solids	mg/L	10	8.0	11	10	11	12	8.1	< 4.0 UJ	8	< 4.0 U	15	5.0	4.0	8.0	< 4.0 U	9.0	8.2
Michigan CCR Part 115																		
Copper	mg/L	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	0.00027	< 0.00020 U	0.00032	< 0.00020 U	< 0.00020 U	< 0.00020 U	0.00099	< 0.00020 U	0.0011
Iron	mg/L	4.7	6.3	5.6	6.3	6.1	6.8	6.8	5.0	5.6	5.5	6.8	5.7	4.8	0.62	0.19	5.1	3.5
Nickel	mg/L	0.012	0.0019	0.018	0.019	0.011	0.013	0.022	0.019	0.013	0.010	0.016	0.018	0.019	0.012	0.0028	0.013	0.014
Silver	mg/L	< 0.000050 U	< 0.000050 U	< 0.00025 U	< 0.000050 U	< 0.00025 U	< 0.00025 U	< 0.000050 U	< 0.000050 U	< 0.00005 U	< 0.00025 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U
Vanadium	mg/L	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	0.00097 J	0.0011 J	0.0012	0.00075 J	0.0011 J	0.00084 J	0.00071 J
Zinc	mg/L	0.0044	< 0.0012 U	< 0.0012 U	< 0.0012 U	0.0059	< 0.0012 U	< 0.0012 U	< 0.0012 UJ	0.0015	< 0.0012 U	< 0.0012 U	< 0.0012 U	0.0051	< 0.0012 U	0.0025	0.0015	0.0051
Additional Parameters																		
Bicarbonate Alkalinity	mg/L	800	1800	720	690	720	740	730	750	780	680	700	710	740	760	91	800	620
Carbonate Alkalinity	mg/L	< 0.16 U	< 1.6 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.31 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.31 U	< 0.16 U
Magnesium	mg/L	96	200	110	120	120	140	130	120	120	120	140	130	110	120	36	120	78
Potassium	mg/L	21	20	20	18	21	24	26	23	24	21	23	24	23 J-	18	7.9	22	12
Sodium	mg/L	83	110	84	83	89	100	93	87	83	80	90	84	74	65	23	68	35
Total Alkalinity	mg/L	800	1800	720	690	720	740	730	750	780	680	700	710	740	760	91	800	620

Notes:

ug/l - micrograms per liter.

mg/l = milligrams per liter.

su - standard pH units (pH is a field parameter)

pCi/L = picocuries per liter.

All metals were analyzed as total unless otherwise indicated.

Qualifiers:

U The analyte was analyzed for, but was not detected at, a level greater than or equal to the level of the adjusted reporting limit (RL) for the sample and method.

J The analyte was positively identified, and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain QC criteria were not met, or to the concentration of the analyte being below the RL).

J+ Same as J, and the reported concentration is potentially biased high.

J– Same as J, and the reported concentration is potentially biased low.

UJ The analyte was not detected at a level greater than or equal to the adjusted method detection limit (MDL). However, the reported adjusted MDL is approximate and might be inaccurate or imprecise.

R The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte might or might not be present in the sample.

Sample Location:		MW-06	MW-06	MW-06	MW-06	MW-06	MW-06	MW-06	MW-06	MW-06	MW-06	MW-06	MW-06	MW-06	MW-06	MW-06	MW-06	MW-06
Compliance Phase:		Background	Background	Background	Background	Background	Background	Background	Background	AM	AM	AM	AM	AM	AM	AM	AM	AM
Sample Date:		11/29/2022	1/3/2023	2/6/2023	3/14/2023	4/18/2023	5/23/2023	6/28/2023	8/8/2023	10/24/2023	2/13/2024	4/7/2024	7/18/2024	10/16/2024	2/26/2025	4/20/2025	8/14/2025	10/23/2025
Sample Type:		Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample
Unit:		Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2
Sample Matrix:		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Constituent	**Unit**																	
Field Parameters																		
Conductivity	mS/cm	1.78	2.13	2.16	1.973	2	2.05	2.04	2	2.02	1.63	1.92	1.91	1.9	1.93	1.88	2.07	2.20
Dissolved Oxygen	mg/L	0.1	0.6	0.07	0.14	0.35	0.08	0.24	0.38	0.24	0.15	0.07	0.01	0.05	0.28	0.13	0.12	0.16
Oxidation Reduction Potential	mV	38.1	-139	-193.2	-148.9	-173.5	-184.3	-182.7	-80.3	-176.8	145.9	-139.9	-234.1	-171.6	88.1	-193.1	70.2	-148.9
pH	su	7.33	7.26	6.42	7.21	7.28	7.36	7.27	7.17	7.26	7.2	7.18	7.39	7.29	7.49	7.38	7.4	7.26
Temperature	deg c	13.9	10.9	7.6	8.1	8.4	11.2	13.4	16.8	16.6	8.8	9.5	16	17.5	8.2	9.4	16.6	16.4
Turbidity	NTU	0.02	1.13	2.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.07	1.4	8.36	0.54	1.93	1.27
Appendix III																		
Boron	mg/L	12	9.5	10	9.5	7.5	8.6	9.7 J+	9.9	11	7.3	6.4	8.3	11	9.8	6.9	11	12
Calcium	mg/L	220	230	250	310	250	270	290	230	240	280	310	250	220	200	210	230	210
Chloride	mg/L	160	120	110	82	57	73	71	76	79	18	13	31	57	59	29	57	80
Fluoride	mg/L	1.3	1.4	1.1	1.0	1.1	1.0	1.1	1.4	1.2	0.98	1.1	0.99	1.6	1.2	1.2	1.5	1.5
Sulfate (as SO4)	mg/L	16	9.6	20	7.3	9.4	20	16	0.98 J	< 0.41 U	1.5 J	9.2	< 2.2 U	2.9 J	30	15	5.1 J	11
Total Dissolved Solids	mg/L	1300	1200	1300	1200	1200	1200	1300	1200	1100	1100	1200	1200	1100	1200	1200	1200	1200
Appendix IV																		
Antimony	mg/L	0.000075 J	< 0.000050 U	< 0.00025 U	< 0.000050 U	0.00036 J	< 0.00050 U	< 0.00010 U	< 0.00010 U	< 0.0001 U	< 0.00050 U	< 0.00010 U	< 0.00010 U	< 0.00010 U	< 0.00010 U	< 0.00010 U	< 0.00010 U	< 0.00010 U
Arsenic	mg/L	0.00080	0.00065	0.00058	0.00054 J	0.00047 J	0.00065	0.00062 J+	0.00082	0.001	0.00057	0.00068	0.00098	0.00082	0.00051 J	0.00051 J	0.00056	0.00099
Barium	mg/L	1.5	1.5	1.6	1.4	0.99	1.3	1.4	1.4	1.5	1.4	1.3	1.7	1.6	1.3	1.4	1.5	1.4
Beryllium	mg/L	< 0.000054 U	< 0.000052 U	0.000052 J	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 UJ	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U
Cadmium	mg/L	< 0.000032 U	< 0.000032 U	< 0.00016 U	< 0.000032 U	< 0.00016 U	< 0.00038 U	< 0.000075 UJ	< 0.000075 U	< 0.000075 U	< 0.00038 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U
Chromium, Total	mg/L	0.0015	0.0021	0.0021	0.0030	0.0014	0.0012	0.0020	0.0023	0.0015	0.0012	0.0011	0.0014	0.0013	0.0011	0.00095	0.0014	0.0016
Cobalt	mg/L	0.00048 J	0.00057	0.00067	0.00073	0.00050 J	0.00046 J	0.00080 J+	0.00067	0.00047 J	0.00035 J	0.00042 J	0.00037 J	0.00042 J	0.00039 J	0.00033 J	0.00045 J	0.00043 J
Fluoride	mg/L	1.3	1.4	1.1	1.0	1.1	1.0	1.1	1.4	1.2	0.98	1.1	0.99	1.6	1.2	1.2	1.5	1.5
Lead	mg/L	0.00035 J	0.00025 J	< 0.0011 U	< 0.00022 U	< 0.0011 U	< 0.00050 U	0.00027 J+	< 0.00010 U	< 0.0001 U	< 0.00050 U	< 0.00010 U	< 0.00010 U	0.00012 J	0.00018 J	< 0.00010 U	0.00023 J	0.00018 J
Lithium	mg/L	0.23	0.22	0.20	0.23	0.15	0.15	0.19	0.22	0.19	0.13	0.11	0.14	0.17	0.17	0.12	0.19	0.18
Mercury	mg/L	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	0.00000070	0.00000053	0.00000087
Molybdenum	mg/L	< 0.00064 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.0031 U	0.00026 J	0.00027 J+	< 0.00025 U	0.00025 J	< 0.00025 U	< 0.00025 U	0.00028 J	0.00043 J	0.00056 J	< 0.00025 U	< 0.00025 U	0.00030 J
Radium 226 and 228	pCi/L	0.864	0.637	< 0.715 U	1.91	< 0.646 U	0.92	0.824	0.938	1.58	0.965	2.23	< 0.619 U	2.87	1.02	2.13	1.47	2.31
Radium-226	pCi/L	0.419	0.238	0.24	< 0.212 U	0.402	0.259	0.331	0.465	0.432	0.358	0.383	0.288	0.36	< 0.28 U	< 0.326 U	< 0.412 U	< 0.434 U
Radium-228	pCi/L	< 0.449 U	< 0.631 U	< 0.715 U	1.7	< 0.646 U	< 0.772 U	< 0.606 U	< 0.735 U	1.15	< 0.85 U	1.85	< 0.619 U	2.51	0.77	1.8 G	1.09	1.91 G
Selenium	mg/L	< 0.00022 U	< 0.00022 U	< 0.00022 U	< 0.00022 U	< 0.00022 U	0.00020 J	0.00022 J+	0.00019 J	0.0002 J	0.00047 J	0.00023 J	0.00020 J	0.00029 J	0.00022 J	0.00016 J	0.00022 J	0.00023 J
Thallium	mg/L	< 0.000076 U	< 0.000075 U	< 0.00038 U	< 0.000075 U	< 0.00038 U	< 0.00038 U	< 0.000075 UJ	< 0.000075 U	< 0.000075 U	< 0.00038 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U
Total Suspended Solids	mg/L	36	45	42	65	53	43	41	37	48	73	54	27	34	12	42	13	8.2
Michigan CCR Part 115																		
Copper	mg/L	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.0002 U	0.00028	< 0.00020 U	0.00038	0.00025	< 0.00020 U	< 0.00020 U	0.00029	< 0.00020 U
Iron	mg/L	15	17	16	26	19	18	18	14	19	31	26	17	12	4.6	14	6.2	7.5
Nickel	mg/L	0.0011 J	0.0011 J	0.0012	0.00092 J	< 0.00065 U	< 0.00065 U	0.0010 J	0.00090 J	0.00079 J	< 0.00065 U	< 0.00065 U	< 0.00065 U	0.00095 J	0.00091 J	< 0.00065 U	0.00083 J	0.0011 J
Silver	mg/L	< 0.000051 U	< 0.000050 U	< 0.00025 U	< 0.000050 U	< 0.00025 U	< 0.00025 U	< 0.000050 U	< 0.000050 U	< 0.00005 U	< 0.00025 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U
Vanadium	mg/L	< 0.00064 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	0.00064 J	< 0.00062 U	< 0.00062 U	< 0.00062 U	0.00070 J	0.00054 J
Zinc	mg/L	0.060	0.0019	0.0018	0.0012	0.094	< 0.0012 U	0.0018	0.0013	0.0018	< 0.0012 U	0.0012	0.0013	0.058	0.0014	0.0017	0.081	0.0020
Additional Parameters																		
Bicarbonate Alkalinity	mg/L	1100	1100	1000	1100	1100	990	1100	1100	1000	980	1100	1100	1000	1100	1100	1100	1100
Carbonate Alkalinity	mg/L	< 1.6 U	< 1.6 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.31 U	< 0.31 U	< 0.16 U	< 0.31 U	< 0.31 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.31 U	< 0.16 U
Magnesium	mg/L	110	95	100	96	90	100	100	90	89	81	78	81	97	110	80	90	100
Potassium	mg/L	32	24	23	20	20	23	26	24	26	20	18	22	25	25	19	26	26
Sodium	mg/L	110	78	84	69	63	82	87	77	71	49	49	64	88	100	73	85	88
Total Alkalinity	mg/L	1100	1100	1000	1100	1100	990	1100	1100	1000	980	1100	1100	1000	1100	1100	1100	1100

Notes:

ug/l - micrograms per liter.

mg/l = milligrams per liter.

su - standard pH units (pH is a field parameter)

pCi/L = picocuries per liter.

All metals were analyzed as total unless otherwise indicated.

Qualifiers:

U The analyte was analyzed for, but was not detected at, a level greater than or equal to the level of the adjusted reporting limit (RL) for the sample and method.

J The analyte was positively identified, and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain QC criteria were not met, or to the concentration of the analyte being below the RL).

J+ Same as J, and the reported concentration is potentially biased high.

J– Same as J, and the reported concentration is potentially biased low.

UJ The analyte was not detected at a level greater than or equal to the adjusted method detection limit (MDL). However, the reported adjusted MDL is approximate and might be inaccurate or imprecise.

R The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte might or might not be present in the sample.

Sample Location:		MW-07	MW-07	MW-07	MW-07	MW-07	MW-07	MW-07	MW-07	MW-07	MW-07	MW-07	MW-07	MW-07	MW-07	MW-07	MW-07	MW-07
Compliance Phase:		Background	Background	Background	Background	Background	Background	Background	Background	AM	AM	AM	AM	AM	AM	AM	AM	AM
Sample Date:		11/30/2022	1/4/2023	2/7/2023	3/13/2023	4/18/2023	5/23/2023	6/27/2023	8/7/2023	10/24/2023	2/13/2024	4/8/2024	7/17/2024	10/15/2024	2/26/2025	4/21/2025	8/13/2025	10/22/2025
Sample Type:		Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample
Unit:		Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2
Sample Matrix:		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Constituent	**Unit**																	
Field Parameters																		
Conductivity	mS/cm	0.46	1.21	1.206	1.209	1.25	1.24	1.25	1.25	1.23	1.25	1.27	1.29	1.24	1.25	0.899	1.10	1.08
Dissolved Oxygen	mg/L	0.12	0.3	0.08	0.21	0.03	0.23	0.43	0.72	0.22	0.2	0.26	0.04	0.36	0.01	0.33	0.35	0.12
Oxidation Reduction Potential	mV	57.2	-88	-103.1	-143.9	-68	-109.4	-140.5	-15.7	-141	-74.7	-60.1	-176.7	-134.1	-34.2	-56.9	-128.8	-119.2
pH	su	6.88	7.04	6.93	6.58	6.86	6.93	6.88	6.65	6.88	7.02	7.05	6.95	6.87	6.84	6.87	6.91	6.91
Temperature	deg c	12.2	11	10	8.6	9.6	11.3	13	14.8	14.6	9.7	10.2	14.8	15	9.9	9.9	14.6	14.2
Turbidity	NTU	5.89	4.2	4.07	0.02	2.94	1.5	0.02	0.72	0.74	9.13	0.74	0.02	0.02	3.07	8.68	0.02	5.47
Appendix III																		
Boron	mg/L	13	11	12	11	10	12	11 J+	11	12	11	13	10	11	11	8.8	10	12
Calcium	mg/L	140	140	140	150	130	150	160	120	150	140	160	150	130	160	150	160	160
Chloride	mg/L	15	15	14	14	14	13	13	13	14	14	14	14	15	16	17	17	16
Fluoride	mg/L	0.14	0.070 J	0.12	< 0.055 U	0.14	0.11	0.080 J	0.083 J	0.14	0.068 J	0.080 J	0.19 J	< 0.055 U	< 0.11 U	0.14	< 0.11 U	0.22
Sulfate (as SO4)	mg/L	29	30	33	20	17	15	18	19	26	32	36	15	34	37	20	28	33
Total Dissolved Solids	mg/L	660	470	650	500	620	660	720	620	620	680	710	720	680	710	720	740	670
Appendix IV																		
Antimony	mg/L	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	0.000071 J	< 0.00010 U	< 0.00010 U	< 0.00010 U	< 0.0001 U	< 0.00010 U	< 0.00010 U	< 0.00010 U	< 0.00010 U	< 0.00010 U	< 0.00010 U	< 0.00010 U	< 0.00010 U
Arsenic	mg/L	0.00023 J	0.00021 J	0.00023 J	0.00018 J	0.00013 J	0.00023 J	0.00020 J+	0.00020 J	0.00029 J	0.00021 J	0.00024 J	0.00023 J	0.00022 J	0.00018 J	0.00020 J	0.00016 J	0.00019 J
Barium	mg/L	0.33	0.34	0.36	0.30	0.25	0.34	0.35	0.34	0.38	0.35	0.34	0.36	0.37	0.42	0.40	0.38	0.43
Beryllium	mg/L	< 0.000052 U	< 0.000052 U	0.000062 J	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 UJ	0.000066 J	0.000055 J	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	0.000055 J
Cadmium	mg/L	< 0.000032 U	< 0.000032 U	< 0.000032 U	< 0.000032 U	< 0.000032 U	< 0.000075 U	< 0.000075 UJ	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U
Chromium, Total	mg/L	0.00038	0.00030	0.00037	0.00042	0.00028	0.00029	0.00033	0.00032	0.00036	0.00032	0.00034	0.00074	0.00041	0.00028	0.00041	0.00031	0.00034
Cobalt	mg/L	0.00071	0.00088	0.00099	0.00099	0.00087	0.00095	0.0011 J+	0.00098	0.00098	0.00074	0.00083	0.00080	0.0010	0.00086	0.0011	0.00097	0.00097
Fluoride	mg/L	0.14	0.070 J	0.12	< 0.055 U	0.14	0.11	0.080 J	0.083 J	0.14	0.068 J	0.080 J	0.19 J	< 0.055 U	< 0.11 U	0.14	< 0.11 U	0.22
Lead	mg/L	< 0.00022 U	< 0.00022 U	< 0.00022 U	< 0.00022 U	< 0.00022 U	< 0.00010 U	< 0.00010 UJ	< 0.00010 U	< 0.0001 U	< 0.00010 U	< 0.00010 U	< 0.00010 U	< 0.00010 U	< 0.00010 U	< 0.00010 U	< 0.00010 U	< 0.00010 U
Lithium	mg/L	0.0054	0.0070	0.0052	0.0067	0.0083	0.0055	0.010	0.0042	0.0062	0.0031	0.0057	0.0057	0.0056	0.0054	0.0069	0.0066	0.0053
Mercury	mg/L	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00000016 U	0.00000024 J	< 0.00000016 U
Molybdenum	mg/L	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00025 U	< 0.00025 UJ	< 0.00025 U	< 0.00025 U	< 0.00025 U	< 0.00025 U	< 0.00025 U	< 0.00025 U	< 0.00025 U	< 0.00025 U	< 0.00025 U	< 0.00025 U
Radium 226 and 228	pCi/L	1.12	1.26 J+	1.03	1.12	0.674	< 0.928 U	< 0.697 U	2.36	1.76	0.937	2.75	1.46	1.29	1.44	1.38	1.49	1.44
Radium-226	pCi/L	0.444	0.53	0.333	0.38	0.475	0.309	0.341	0.665	0.475	0.495	0.508	0.551	0.333	0.53	0.681	0.61	0.405
Radium-228	pCi/L	0.676	0.729 J+	0.693	< 0.835 U	< 0.559 U	< 0.928 U	< 0.697 U	1.7	1.28	< 0.789 U	2.25	< 0.965 U	0.959	0.91	< 0.778 U	< 1.05 UG	1.03 G
Selenium	mg/L	< 0.00022 U	< 0.00022 U	< 0.00022 U	< 0.00022 U	< 0.00022 U	0.00010 J	< 0.00010 UJ	< 0.00010 U	< 0.0001 U	0.00023 J	< 0.00010 U	0.00011 J	0.00017 J	0.00013 J	0.00011 J	0.00012 J	0.00012 J
Thallium	mg/L	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 UJ	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U
Total Suspended Solids	mg/L	44	36	35	33	33	39	39	41	38	29	32	46	43	44	57	47	39
Michigan CCR Part 115																		
Copper	mg/L	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	0.00027	< 0.00020 U	0.00024 J	0.00021 J	< 0.00020 U	0.00062	< 0.00020 U	< 0.00020 U	< 0.00020 U
Iron	mg/L	16	13	13	15	14	19	17	14	18	15	15	17	17	19	21	19	16
Nickel	mg/L	< 0.00065 U	< 0.00065 U	< 0.00065 U	< 0.00065 U	< 0.00065 U	< 0.00065 U	< 0.00065 U	< 0.00065 U	< 0.00065 U	< 0.00065 U	< 0.00065 U	< 0.00065 U	0.00071 J	< 0.00065 U	< 0.00065 U	0.00016 J	0.00024 J
Silver	mg/L	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.00005 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U
Vanadium	mg/L	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	0.00079 J	0.00095 J	< 0.00062 U	0.00077 J	0.00075 J	0.00084 J
Zinc	mg/L	0.016	< 0.0012 U	< 0.0012 U	< 0.0012 U	0.025	< 0.0012 U	< 0.0012 U	< 0.0012 U	0.0035	< 0.0012 U	< 0.0012 U	< 0.0012 U	0.016	0.0013	< 0.0012 U	0.022	0.00075 J
Additional Parameters																		
Bicarbonate Alkalinity	mg/L	660	580	630	610	640	630	620	620	600	610	630	640	620	650	680	670	630
Carbonate Alkalinity	mg/L	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.31 U	< 0.31 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.31 U	< 0.16 U
Magnesium	mg/L	37	37	37	38	38	40	36	35	38	38	40	36	35	39	39	37	39
Potassium	mg/L	5.4	5.4	5.2	5.7	4.8	4.4	4.7	5.1	4.9	4.7	4.7	4.5	4.1	4.5	4.6	4.5	4.5
Sodium	mg/L	53	47	47	47	59	57	56	48	51	52	57	55	47	44	44	44	46
Total Alkalinity	mg/L	660	580	630	610	640	630	620	620	600	610	630	640	620	650	680	670	630

Notes:

ug/l - micrograms per liter.

mg/l = milligrams per liter.

su - standard pH units (pH is a field parameter)

pCi/L = picocuries per liter.

All metals were analyzed as total unless otherwise indicated.

Qualifiers:

U The analyte was analyzed for, but was not detected at, a level greater than or equal to the level of the adjusted reporting limit (RL) for the sample and method.

J The analyte was positively identified, and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain QC criteria were not met, or to the concentration of the analyte being below the RL).

J+ Same as J, and the reported concentration is potentially biased high.

J– Same as J, and the reported concentration is potentially biased low.

UJ The analyte was not detected at a level greater than or equal to the adjusted method detection limit (MDL). However, the reported adjusted MDL is approximate and might be inaccurate or imprecise.

R The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte might or might not be present in the sample.

Sample Location:		MW-08	MW-08	MW-08	MW-08	MW-08	MW-08	MW-08	MW-08	MW-08	MW-08	MW-08	MW-08	MW-08	MW-08	MW-08	MW-08	MW-08
Compliance Phase:		Background	Background	Background	Background	Background	Background	Background	Background	AM	AM	AM	AM	AM	AM	AM	AM	AM
Sample Date:		12/1/2022	1/5/2023	2/7/2023	3/14/2023	4/18/2023	5/23/2023	6/27/2023	8/8/2023	10/24/2023	2/13/2024	4/7/2024	7/18/2024	10/16/2024	2/26/2025	4/20/2025	8/14/2025	10/22/2025
Sample Type:		Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample
Unit:		Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2
Sample Matrix:		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Constituent	**Unit**																	
Field Parameters																		
Conductivity	mS/cm	1.06	1.13	1.133	0.787	1.03	0.99	1.03	1.02	0.87	0.89	0.9	0.99	1.11	1.01	0.91	1.19	1.18
Dissolved Oxygen	mg/L	0.2	0.09	0.05	0.55	0.06	0.09	0.04	0.09	1.53	0.3	0.1	0.05	0.17	0.01	0.14	0.12	0.14
Oxidation Reduction Potential	mV	-159.3	-119.3	-133.9	-149.9	-121.2	-145.3	-103.6	-127.6	-180.6	-141.1	-164.6	-133.3	-138.6	-35.9	-125.6	-131.5	-135.5
pH	su	7.17	6.21	7.16	7.51	7.25	7.33	7.24	7.26	7.27	7.34	7.41	7	7.15	7.23	7.28	7.13	7.1
Temperature	deg c	9.6	6.9	6.2	5.2	7.3	11.6	14	16.7	14.7	6.2	7.4	15.8	16.2	5	8.3	16.1	15.2
Turbidity	NTU	0.02	0.02	0.66	0.02	1.04	0.02	2.11	5.63	0.02	2.79	1.03	0.02	0.02	0.51	0.02	1.05	0.02
Appendix III																		
Boron	mg/L	2.5	4.4	9.3	7.1	6.6	7.0	7.8 J+	7.1	4.1	7	6.5	7.9	4.7	4.1	3.8	7.2	8.2
Calcium	mg/L	150	160	150	150	130	140	150	120	130	120	130	120	130	140	120	160	130
Chloride	mg/L	17	23	35	30	28	25	29	30	17	25	24	30	99	39	36	110	77
Fluoride	mg/L	0.40	0.56	1.1	1.3	1.1	0.92	1	1	0.55	1	1.2	1.1	0.93	0.61	0.9	0.94	1.1
Sulfate (as SO4)	mg/L	13	25	5.3	26	2.0 J	< 0.41 U	< 0.41 U	< 0.41 U	1.7 J	5.6	7	< 2.2 U	21	48	65	32	0.60 J
Total Dissolved Solids	mg/L	560	480	630	480	560	550	610	530	440	530	510	550	660	590	520	780	650
Appendix IV																		
Antimony	mg/L	0.000095 J	0.000054 J	0.00020 J	0.00016 J	0.00028	< 0.00010 U	0.00011 J	< 0.00010 U	< 0.0001 U	< 0.00010 U	< 0.00010 U	< 0.00010 U	0.00011 J	0.00016 J	< 0.00010 U	< 0.00010 U	< 0.00010 U
Arsenic	mg/L	0.0069	0.021	0.049	0.045	0.050	0.041	0.038 J+	0.029	0.011	0.030	0.047	0.044	0.030	0.033	0.046	0.049	0.057
Barium	mg/L	1.2	1.3	1.5	1.4	1.1	1.2	1.4	1.2	0.98	1	1.1	1.3	1.3	0.94	0.75	1.4	1.5
Beryllium	mg/L	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 UJ	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	0.00012 J	< 0.000052 U	< 0.000052 U	< 0.000052 U
Cadmium	mg/L	< 0.000032 U	< 0.000032 U	< 0.000032 U	< 0.000032 U	< 0.000032 U	< 0.000075 U	< 0.000075 UJ	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	0.00011 J	< 0.000075 U	< 0.000075 U	< 0.000075 U
Chromium, Total	mg/L	0.00067	0.00093	0.0015	0.0011	0.00084	0.0011	0.00094	0.00087	0.00061	0.00070	0.00075	0.00071	0.00063	0.00065	0.00059	0.00043	0.00047
Cobalt	mg/L	0.00034 J	0.00045 J	0.00070	0.00060	0.00051 J	0.00059	0.00062 J+	0.00058	0.00034 J	0.00034 J	0.00037 J	0.00037 J	0.00034 J	0.00098	0.00026 J	0.00076	0.00060
Fluoride	mg/L	0.40	0.56	1.1	1.3	1.1	0.92	1	1	0.55	1	1.2	1.1	0.93	0.61	0.9	0.94	1.1
Lead	mg/L	< 0.00022 U	< 0.00022 U	0.00086	< 0.00022 U	0.00022 J	< 0.00010 U	< 0.00010 UJ	< 0.00010 U	< 0.0001 U	0.00011 J	< 0.00010 U	< 0.00010 U	0.0029	0.00022 J	0.00010 J+	< 0.00010 U	< 0.00010 U
Lithium	mg/L	0.063	0.11	0.14	0.14	0.11	0.11	0.13	0.12	0.076	0.097	0.098	0.11	0.082	0.075	0.070	0.069	0.088
Mercury	mg/L	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 UJ	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00000016 U	0.00000065	< 0.00000016 U
Molybdenum	mg/L	0.0024	0.0018	0.0015	0.0028	0.00095 J	0.00068 J	0.00039 J+	0.00036 J	0.0016	0.0017	0.0020	0.00031 J	0.00095 J	0.0020	0.0029	< 0.00025 U	0.00065 J
Radium 226 and 228	pCi/L	1.43	1.62 J+	< 0.836 U	1.13	1.18	1.14	< 0.606 U	2.1	0.891	< 0.848 U	1.86 J-	0.879	2.11	0.98	1.35	1.61	< 0.707 U
Radium-226	pCi/L	0.277	0.31	0.286	< 0.255 U	0.32	0.396	0.19	0.358	< 0.234 U	< 0.126 U	0.177 J-	0.232	0.367	0.32	0.263	0.521	0.285
Radium-228	pCi/L	1.16	1.31 J+	< 0.836 U	< 1 UG	0.858	< 0.835 U	< 0.606 U	1.74 G	< 0.744 U	< 0.848 U	1.68 J+	0.646	1.75	0.66	1.08	1.09	< 0.707 U
Selenium	mg/L	< 0.00022 U	< 0.00022 U	< 0.00022 U	< 0.00022 U	< 0.00022 U	0.00016 J	0.00014 J+	0.00014 J	0.00015 J	0.00034 J	0.00012 J	0.00012 J	0.00018 J	0.00030 J	0.00014 J	< 0.00010 U	0.00011 J
Thallium	mg/L	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 UJ	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	0.00013 J	< 0.000075 U	< 0.000075 U	< 0.000075 U
Total Suspended Solids	mg/L	62	55	49	42	36	31	30	20	43	46	36	18	31	44	45	18	11
Michigan CCR Part 115																		
Copper	mg/L	< 0.00020 U	< 0.00020 U	0.00043	< 0.00020 U	0.00045	0.00034	< 0.00020 U	< 0.00020 U	0.00021 J	0.00035	0.00025	0.00047	0.00064	0.00080	0.00028 J+	0.00029	< 0.00020 U
Iron	mg/L	32	30	21	22	18	18	15	13	22	22	19	14	15	21	19	10	9.5
Nickel	mg/L	0.00093 J	0.0013	0.0015	0.0013	0.0011 J	0.0011 J	0.0011 J	0.0010 J	0.00085 J	0.0026	0.0032	0.0013	0.013	0.0052	0.0030	0.0047	0.0036
Silver	mg/L	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.00005 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U
Vanadium	mg/L	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	0.00091 J	< 0.00062 U	0.00029 J	0.00030 J
Zinc	mg/L	0.054	< 0.0012 U	0.0040	0.0013	0.12	0.0014	0.0018	< 0.0012 U	0.0025	< 0.0012 U	0.0017	0.0015	0.16	0.0037	0.0016	0.083	0.0016
Additional Parameters																		
Bicarbonate Alkalinity	mg/L	540	510	560	470	510	490	480	480	460	440	440	460	410	400	350	550	480
Carbonate Alkalinity	mg/L	< 1.6 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.31 U	< 0.31 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.31 U	< 0.16 U
Magnesium	mg/L	27	30	33	27	29	28	26	26	22	23	24	25	24	22	20	28	27
Potassium	mg/L	8.8	12	14	7.6 J	12	11	12	12	8.6	8.6	9.0	11	9.1	7.7	7.4	10	11
Sodium	mg/L	21	27	38	33	35	35	40	36	23	32	32	36	41	30	29	80	61
Total Alkalinity	mg/L	540	510	560	470	510	490	480	480	460	440	440	460	410	400	350	550	480

Notes:

ug/l - micrograms per liter.

mg/l = milligrams per liter.

su - standard pH units (pH is a field parameter)

pCi/L = picocuries per liter.

All metals were analyzed as total unless otherwise indicated.

Qualifiers:

U The analyte was analyzed for, but was not detected at, a level greater than or equal to the level of the adjusted reporting limit (RL) for the sample and method.

J The analyte was positively identified, and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain QC criteria were not met, or to the concentration of the analyte being below the RL).

J+ Same as J, and the reported concentration is potentially biased high.

J– Same as J, and the reported concentration is potentially biased low.

UJ The analyte was not detected at a level greater than or equal to the adjusted method detection limit (MDL). However, the reported adjusted MDL is approximate and might be inaccurate or imprecise.

R The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte might or might not be present in the sample.

Sample Location:		MW-09	MW-09	MW-09	MW-09	MW-09	MW-09	MW-09	MW-09	MW-09	MW-09	MW-09	MW-09	MW-09	MW-09	MW-09	MW-09	MW-09
Compliance Phase:		Background	Background	Background	Background	Background	Background	Background	Background	AM	AM	AM	AM	AM	AM	AM	AM	AM
Sample Date:		11/28/2022	1/4/2023	2/6/2023	3/14/2023	4/18/2023	5/23/2023	6/27/2023	8/8/2023	10/24/2023	2/13/2024	4/7/2024	7/17/2024	10/17/2024	2/25/2025	4/19/2025	8/13/2025	10/20/2025
Sample Type:		Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample
Unit:		Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2
Sample Matrix:		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Constituent	**Unit**																	
Field Parameters																		
Conductivity	mS/cm	1.33	1.49	1.593	1.472	2.02	1.95	1.95	1.92	1.63	2.03	2.2	2.16	1.82	2.36	1.618	2.02	2.31
Dissolved Oxygen	mg/L	0.19	0.2	1.89	0.35	0.08	0.07	0.05	0.17	0.07	0.34	0.27	0.01	0.17	3.08	1.66	0.14	0.23
Oxidation Reduction Potential	mV	42	-183.9	-138.4	-131.5	-112.3	-107.1	-117	-114.7	-69.3	-106.1	-160.4	-155.1	-137.5	58.3	-72.1	-138.9	-109.9
pH	su	7.2	7.22	7.22	7.4	7.22	7.52	7.28	7.21	7.16	7.14	7.25	7.2	7.12	7	7.12	7.15	6.88
Temperature	deg c	12.7	10.5	8.5	6.8	7.7	10.6	12.1	15	15.7	7.7	8.8	15.2	16.3	9.1	8.7	15.8	15.8
Turbidity	NTU	0.02	0.02	1.04	0.02	0.55	0.66	0.71	2.01	0.49	1.89	2.01	4.56	0.02	0.73	1.94	1.41	5.82
Appendix III																		
Boron	mg/L	6.0	5.8	6.1	5.1	4.9	5.9	6.3 J+	5.7	6.9	5.3	5.5	5.9	6.2	5.1	4.9	5.5	6.2
Calcium	mg/L	270	230	300	400	390	410	430	330	310	420	500	430	310	510	450	500	500
Chloride	mg/L	15	17	18	16	12	11	11	12	12	18	25	25	25	67	57	41	41
Fluoride	mg/L	2.1	2.4	2.6	2.5	2.5	2.7	2.9	2.9	2.8	2.2	2.3	2.6	2.9	2.4	2.4	2.7	2.1
Sulfate (as SO4)	mg/L	110	83	210	480	650	580	500	450	210	610	720	630	270	790	930	810	680
Total Dissolved Solids	mg/L	960	740	1100	1400	1600	1600	1500	1400	1100	1600	1700	1700	1300	1900	2000	1900	1800
Appendix IV																		
Antimony	mg/L	0.000073 J	< 0.000050 U	0.00023 J	0.000092 J	0.00037 J	< 0.00050 U	< 0.00010 U	< 0.00010 U	< 0.0001 U	< 0.00050 U	< 0.00010 U	0.00012 J	< 0.00010 U	< 0.00010 U	< 0.00010 U	< 0.00010 U	< 0.00010 U
Arsenic	mg/L	0.0025	0.0023	0.0023	0.0023	0.0013	0.0013	0.0027 J+	0.0024	0.0023	0.0015	0.0030	0.0025	0.0025	0.0015	0.0016	0.0022	0.0025
Barium	mg/L	0.59	2.4	0.36	0.38	0.18	0.20	0.17	0.20	0.28	0.31	0.20	0.20	0.23	0.097	0.10	0.12	0.14
Beryllium	mg/L	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	0.000058 J	< 0.000052 UJ	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	0.000057 J	< 0.000052 U	0.00015 J	< 0.000052 U	< 0.000052 U	0.000085 J
Cadmium	mg/L	< 0.000032 U	< 0.000032 U	< 0.000032 U	< 0.000032 U	< 0.00016 U	< 0.00038 U	< 0.000075 UJ	< 0.000075 U	< 0.000075 U	< 0.00038 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U
Chromium, Total	mg/L	0.0022	0.0028	0.0032	0.0030	0.0018	0.0019	0.0031	0.0027	0.0018	0.0016	0.0026	0.0021	0.0027	0.0020	0.0024	0.0021	0.0024
Cobalt	mg/L	0.00035 J	0.00046 J	0.00058	0.00099	0.00053	0.00037 J	0.00069 J+	0.00075	0.00024 J	0.00058	0.00076	0.00024 J	0.00023 J	0.00043 J	0.00053	0.00024 J	0.00037 J
Fluoride	mg/L	2.1	2.4	2.6	2.5	2.5	2.7	2.9	2.9	2.8	2.2	2.3	2.6	2.9	2.4	2.4	2.7	2.1
Lead	mg/L	< 0.00022 U	< 0.00022 U	< 0.0011 U	< 0.00022 U	< 0.0011 U	< 0.00050 U	< 0.00010 UJ	< 0.00010 U	< 0.0001 U	< 0.00050 U	< 0.00010 U	< 0.00050 U	< 0.00010 U	< 0.00050 U	< 0.00010 U	< 0.00010 U	< 0.00050 U
Lithium	mg/L	0.29	0.34	0.33	0.31	0.26	0.29	0.34	0.33	0.29	0.26	0.29	0.30	0.27	0.33	0.31	0.31	0.29
Mercury	mg/L	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	0.0024	< 0.00016 U	0.0021	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00000016 U	0.00000032 J	< 0.00000016 U
Molybdenum	mg/L	0.028	0.033	0.029	0.021	0.020	0.012	0.019 J+	0.019	0.021	0.0097	0.021	0.016	0.028	0.023	0.025	0.028	0.023
Radium 226 and 228	pCi/L	0.789	< 0.678 U	< 0.642 UJ	< 0.796 U	< 0.688 U	< 0.912 U	< 0.742 U	< 0.821 U	< 0.688 U	< 0.98 U	< 0.743 U	< 0.771 U	< 0.851 U	< 0.45 U	< 0.778 U	< 0.782 U	20.3
Radium-226	pCi/L	< 0.16 U	< 0.0959 U	< 0.125 UJ	< 0.223 U	< 0.184 U	< 0.22 U	< 0.186 U	< 0.163 U	< 0.237 U	< 0.12 U	< 0.17 U	< 0.135 U	< 0.185 U	< 0.24 U	< 0.218 U	< 0.383 U	0.504
Radium-228	pCi/L	0.69	< 0.678 U	< 0.642 UJ	< 0.796 U	< 0.688 U	< 0.912 U	< 0.742 U	< 0.821 U	< 0.688 U	< 0.98 U	< 0.743 U	< 0.771 U	< 0.851 U	< 0.45 U	< 0.778 U	< 0.782 U	19.8
Selenium	mg/L	0.00026 J	< 0.00022 U	0.00028 J	0.00024 J	< 0.00022 U	0.00012 J	0.00027 J+	0.00026 J	0.00023 J	0.00024 J	0.00033 J	0.00029 J	0.00040 J	0.00064	0.00038 J	0.00027 J	0.00034 J
Thallium	mg/L	< 0.000075 U	< 0.000075 U	< 0.00038 U	< 0.000075 U	< 0.00038 U	< 0.00038 U	< 0.000075 UJ	< 0.000075 U	< 0.000075 U	< 0.00038 U	< 0.000075 U	< 0.00038 U	< 0.000075 U	< 0.00038 U	< 0.000075 U	< 0.000075 U	< 0.00038 U
Total Suspended Solids	mg/L	45	51	52	50	56	52	46	48	39	47	50	57	47	33	64	64	60
Michigan CCR Part 115																		
Copper	mg/L	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	0.00043	< 0.0002 U	< 0.00020 U	0.00029	0.0013	0.00029	0.00034	< 0.00020 U	< 0.00020 U	0.00024 J
Iron	mg/L	17	19	19	24	25	25	19	16	15	22	26	20	16	13	26	24	23
Nickel	mg/L	0.00088 J	0.0020	0.0020	0.0033	0.0018	0.0010 J	0.0012	0.0012	0.00072 J	0.0060	0.0072	0.0099	0.0020	0.10	0.0044	0.0046	0.024
Silver	mg/L	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.00025 U	< 0.00025 U	< 0.000050 U	< 0.000050 U	< 0.00005 U	< 0.00025 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U
Vanadium	mg/L	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	0.00047 J	0.00071 J
Zinc	mg/L	0.025	0.0015	< 0.0012 UJ	< 0.0012 U	0.018	< 0.0012 U	< 0.0012 U	< 0.0012 U	< 0.0012 U	< 0.0012 U	< 0.0012 U	0.0017	0.0091	0.016	0.0045	0.0071	0.0019
Additional Parameters																		
Bicarbonate Alkalinity	mg/L	750	710	750	620	610	400	720	660	780	610	600	630	790	670	610	590	680
Carbonate Alkalinity	mg/L	< 1.6 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.31 U	< 0.31 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.31 U	< 0.16 U
Magnesium	mg/L	38	36	44	50	53	53	47	46	41	55	64	53	44	69	67	62	65
Potassium	mg/L	13	16	16	10 J	15	14	16	17	15	13	14	15	14	16	14	15	16
Sodium	mg/L	29	28	26	26	26	29	30	27	27	26	31	28	26	34	33	30	32
Total Alkalinity	mg/L	750	710	750	620	610	400	720	660	780	610	600	630	790	670	610	590	680

Notes:

ug/l - micrograms per liter.

mg/l = milligrams per liter.

su - standard pH units (pH is a field parameter)

pCi/L = picocuries per liter.

All metals were analyzed as total unless otherwise indicated.

Qualifiers:

U The analyte was analyzed for, but was not detected at, a level greater than or equal to the level of the adjusted reporting limit (RL) for the sample and method.

J The analyte was positively identified, and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain QC criteria were not met, or to the concentration of the analyte being below the RL).

J+ Same as J, and the reported concentration is potentially biased high.

J– Same as J, and the reported concentration is potentially biased low.

UJ The analyte was not detected at a level greater than or equal to the adjusted method detection limit (MDL). However, the reported adjusted MDL is approximate and might be inaccurate or imprecise.

R The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte might or might not be present in the sample.

Sample Location:		MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10
Compliance Phase:		Background	Background	Background	Background	Background	Background	Background	Background	AM	AM	AM	AM	AM	AM	AM	AM	AM
Sample Date:		11/29/2022	1/4/2023	2/6/2023	3/14/2023	4/18/2023	5/23/2023	6/27/2023	8/8/2023	10/23/2023	2/13/2024	4/7/2024	7/17/2024	10/16/2024	2/26/2025	4/20/2025	8/14/2025	10/20/2025
Sample Type:		Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample
Unit:		Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2
Sample Matrix:		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Constituent	**Unit**																	
Field Parameters																		
Conductivity	mS/cm	1.96	2.48	2.34	2.16	2.51	2.18	2.83	3.19	2.68	2.37	3.62	3.62	4	2.87	2.73	3.79	3.58
Dissolved Oxygen	mg/L	0.08	0.04	0.07	0.05	0.02	0.03	0.11	0.02	0.07	0.18	0.03	0.03	0.07	0.17	0.12	0.1	0.09
Oxidation Reduction Potential	mV	-20.3	-245.6	-222.9	-200.2	-189.2	-197.6	-216.2	-168	-149.1	-116.1	-162.4	-193.2	-144.8	99	-151.2	72.1	-158.5
pH	su	7.85	7.79	7.05	8.19	7.96	8.81	7.85	7.74	7.47	7.8	7.8	7.42	7.53	7.76	7.77	7.53	7.36
Temperature	deg c	11.1	7.7	5.9	4.6	6.5	10.3	13.4	17	14.8	5.3	7.1	16.9	16.5	5.5	7	17.3	17
Turbidity	NTU	0.02	0.02	0.65	0.02	0.29	2.21	0.02	1.01	0.02	3.61	0.02	0.02	1.48	3.3	3.96	0.35	0.02
Appendix III																		
Boron	mg/L	25	14	9.7	4.5	9.2	17	26 J+	28	23	8.7	6.4	15	21	23	22	28	30
Calcium	mg/L	220	220	280	460	280	210	210	160	190	310	590	430	360	300	270	250	270
Chloride	mg/L	220	170	130	92	140	160	320	430	310	140	240	420	670	350	330	700	600
Fluoride	mg/L	7.1	5.7	4.0	2.7	4.6	6.5	7.3	7.7	6	3.3	2.7	4.2	5.2	5.9	5.7	6.2	5.2
Sulfate (as SO4)	mg/L	490	620	880	360	950	410	200	140	330	840	1700	1000	690	390	450	270	270
Total Dissolved Solids	mg/L	1700	1800	1800	2400	1900	1500	1700	1900	1600	1800	3200	2700	2800	1900	1800	2300	2200
Appendix IV																		
Antimony	mg/L	0.00013 J	< 0.000050 U	< 0.00025 U	< 0.000050 U	0.00034 J	< 0.00050 U	0.00011 J	0.00011 J	< 0.0001 UJ	< 0.00050 U	< 0.00010 U	< 0.00010 U	< 0.00010 U	< 0.00010 U	< 0.00010 U	< 0.00010 U	< 0.00010 U
Arsenic	mg/L	0.00049 J	0.00034 J	0.00038 J	0.00037 J	0.00020 J	0.00055	0.00073 J+	0.0011	0.00094	0.00025 J	0.00085	0.0012	0.0020	0.00053 J	0.00074	0.0016	0.0017
Barium	mg/L	0.32	0.57	0.28	0.23	0.14	0.16	0.23	0.28	0.46	0.32	0.27	0.19	0.23	0.38	0.32	0.36	0.64
Beryllium	mg/L	< 0.000054 U	0.000071 J	< 0.000052 U	0.000054 J	< 0.000052 U	0.00022 J	0.000092 J+	0.00015 J	0.000052 J-	< 0.000052 U	< 0.000052 U	< 0.000052 U	0.000063 J	< 0.000052 U	0.000069 J	0.00012 J	0.000082 J+
Cadmium	mg/L	< 0.000032 U	< 0.000032 U	< 0.00016 U	< 0.000032 U	< 0.00016 U	< 0.00038 U	< 0.000075 UJ	< 0.000075 U	< 0.000075 U	< 0.00038 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U
Chromium, Total	mg/L	0.0040	0.0050	0.0026	0.0018	0.0019	0.0042	0.0070	0.0085	0.0042	0.0013	0.0016	0.0028	0.0031	0.0045	0.0048	0.0041	0.0049
Cobalt	mg/L	0.00038 J	0.00040 J	0.00041 J	0.00053	0.00030 J	0.0018	0.00068 J+	0.00090	0.00038 J-	< 0.00010 U	0.00010 J	0.00025 J	0.00042 J	0.00029 J	0.00027 J	0.00053	0.00055
Fluoride	mg/L	7.1	5.7	4.0	2.7	4.6	6.5	7.3	7.7	6	3.3	2.7	4.2	5.2	5.9	5.7	6.2	5.2
Lead	mg/L	< 0.00023 U	< 0.00022 U	< 0.0011 U	< 0.0011 U	< 0.0011 U	< 0.00050 U	< 0.00010 UJ	0.00012 J	0.00017 J	< 0.00050 U	< 0.00010 U	< 0.00050 U	< 0.00050 U	< 0.00010 U	< 0.00010 U	< 0.00010 U	< 0.00010 U
Lithium	mg/L	0.92	0.83	0.54	1.6	0.99	0.83	1.1	1.2	0.94	0.56	0.76	0.94	1	0.97	0.83	0.99	0.98
Mercury	mg/L	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 UJ	< 0.00016 U	0.0019	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00000016 U	0.00000037 J	< 0.00000016 U
Molybdenum	mg/L	0.0072	0.0033	0.0048	0.0036	0.0035 J	0.0056	0.0019 J+	0.0028	0.0027	0.00080 J	0.0015	0.0037	0.0035	0.00065 J	0.0016	0.0022	0.0019
Radium 226 and 228	pCi/L	< 0.775 U	< 0.645 U	1.36	< 1.09 U	< 0.605 UJ	< 0.801 U	< 0.752 U	< 0.736 U	< 0.897 UJ	1.22	< 0.59 U	< 0.698 U	1.96	< 0.83 U	< 1.12 UJ	2.06	< 1.15 U
Radium-226	pCi/L	< 0.171 U	< 0.119 U	< 0.121 U	< 0.231 U	< 0.155 UJ	< 0.248 U	< 0.179 U	< 0.142 U	< 0.229 UJ	0.206	< 0.149 U	0.185	0.417	0.62	< 0.29 UJ	0.495	0.389 J+
Radium-228	pCi/L	< 1 U	< 0.645 U	1.31	< 1.09 UG	< 0.605 UJ	< 0.801 U	< 0.752 U	< 0.736 U	< 0.897 UJ	1.01	< 0.59 U	< 0.698 U	1.54	< 0.83 U	< 1.12 UJ	1.57	< 1.15 UG
Selenium	mg/L	0.00031 J	0.00028 J	0.00031 J	0.00046 J	< 0.00022 U	0.00039 J	0.00036 J+	0.00041 J	0.00036 J	0.00083	0.00030 J	0.00034 J	0.00032 J	0.00019 J	0.00026 J	0.00034 J	0.00039 J
Thallium	mg/L	< 0.000076 U	< 0.000075 U	< 0.00038 U	< 0.00038 U	< 0.00038 U	< 0.00038 U	< 0.000075 UJ	< 0.000075 U	< 0.000075 U	< 0.00038 U	< 0.000075 U	< 0.00038 U	< 0.00038 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U
Total Suspended Solids	mg/L	4.0	4.0	1.0 J	9.0	8.0 J+	2.0 J	< 4.0 U	2.0 J	< 4 U	< 4.0 U	6.0	20	11	14	13	< 4.0 U	< 4.1 U
Michigan CCR Part 115																		
Copper	mg/L	0.00049	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	0.0013	< 0.00020 U	< 0.00020 U	0.00038 J-	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U
Iron	mg/L	3.7	3.7	3.9	7.2	7.3	6.2	4.5	3.2	2.4	3.7	6.0	5.9	5.2	7.0	7.7	3.4	2.3
Nickel	mg/L	0.00089 J	0.00087 J	< 0.00065 U	< 0.00065 U	< 0.00065 U	0.0018	0.00088 J	0.0012	0.00076 J-	< 0.00065 U	< 0.00065 U	< 0.00065 U	0.00085 J	< 0.00065 U	0.00079 J	0.00092 J	0.0011 J
Silver	mg/L	< 0.000051 U	< 0.000050 U	< 0.00025 U	< 0.000050 U	< 0.00025 U	< 0.00025 U	< 0.000050 U	< 0.000050 U	< 0.00005 U	< 0.00025 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U
Vanadium	mg/L	< 0.00064 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	0.0013	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	0.00089 J	0.0010 J	< 0.00062 U	< 0.00062 U	0.0012	0.0014
Zinc	mg/L	0.014	0.0012	< 0.0012 U	< 0.0012 U	0.013	0.0018	0.0012	0.0014	0.0025 J-	< 0.0012 U	< 0.0012 U	< 0.0012 U	0.014	< 0.0012 U	< 0.0012 U	0.019	0.0016 J+
Additional Parameters																		
Bicarbonate Alkalinity	mg/L	680	580	320	140	340	540	720	770	700	240	220	410	560	850	680	730	710
Carbonate Alkalinity	mg/L	< 1.6 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.31 U	< 0.31 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.31 U	< 0.16 U
Magnesium	mg/L	85	86	91	95	76	63	59	58	61	86	120	100	91	110	100	76	79
Potassium	mg/L	44	33	31	40	42	36	46	48	45	41	60	63	62	42	38	50	56
Sodium	mg/L	220	160	120	140	160	190	310	390	300	120	130	250	360	230	220	440	390
Total Alkalinity	mg/L	680	580	320	140	340	540	720	770	700	240	220	410	560	850	680	730	710

Notes:

ug/l - micrograms per liter.

mg/l = milligrams per liter.

su - standard pH units (pH is a field parameter)

pCi/L = picocuries per liter.

All metals were analyzed as total unless otherwise indicated.

Qualifiers:

U The analyte was analyzed for, but was not detected at, a level greater than or equal to the level of the adjusted reporting limit (RL) for the sample and method.

J The analyte was positively identified, and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain QC criteria were not met, or to the concentration of the analyte being below the RL).

J+ Same as J, and the reported concentration is potentially biased high.

J– Same as J, and the reported concentration is potentially biased low.

UJ The analyte was not detected at a level greater than or equal to the adjusted method detection limit (MDL). However, the reported adjusted MDL is approximate and might be inaccurate or imprecise.

R The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte might or might not be present in the sample.

	Sample Location:	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11
	Compliance Phase:	Background	Background	Background	Background	Background	Background	Background	Background	AM	AM	AM	AM	AM	AM	AM	AM	AM
	Sample Date:	11/29/2022	1/3/2023	2/8/2023	3/14/2023	4/18/2023	5/23/2023	6/28/2023	8/8/2023	10/24/2023	2/13/2024	4/7/2024	7/18/2024	10/16/2024	2/25/2025	4/20/2025	8/14/2025	10/23/2025
	Sample Type:	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample
	Unit:	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B
	Sample Matrix:	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Constituent	**Unit**																	
Field Parameters																		
Conductivity	mS/cm	1.38	1.4	1.9	1.413	1.77	1.76	1.85	1.68	1.4	1.38	1.63	1.72	1.56	1.71	0.979	1.94	1.54
Dissolved Oxygen	mg/L	0.1	0.31	0.25	0.19	0.23	0.09	0.13	0.22	0.31	0.07	0.25	0.09	0.23	0.44	0.2	0.14	0.18
Oxidation Reduction Potential	mV	76.8	-142.4	-161.7	-121	-157.9	-136.5	-64.7	-27.6	-179.4	140.9	-148.2	-78	-142.4	50.6	-82.3	60.7	-147.6
pH	su	7.28	7.32	7.4	7.47	7.33	7.34	7.31	7.22	7.44	7.33	7.38	7.13	7.24	7.09	7.28	7.2	7.23
Temperature	deg c	13.6	11.7	9.9	7.5	7.8	10.6	13.2	15.3	15.9	9.2	9.4	15.4	16.1	9.6	9.3	15	14.9
Turbidity	NTU	0.02	1.53	0.02	0.02	0.02	1.25	5.01	0.02	0.02	0.02	1.6	0.02	0.08	1.36	0.69	3.11	3.95
Appendix III																		
Boron	mg/L	8.5	13	4.8 B	2.8	1.5	2.0	3.0 J+	7.2	12	8.1	3.2	4.8	7.1	5.2	4.5	6.4	12
Calcium	mg/L	240	130	300	380	320	320	350	240	150	230	290	270	190	270	220	290	200
Chloride	mg/L	95	84	78	62	52	53	72	73	88	62	38	59	73	71	39	95	72
Fluoride	mg/L	0.81	1.4	0.37	0.32	0.21	0.22	0.25	0.69	1.2	0.75	0.61	0.47	0.9	0.45	0.69	0.64	0.92
Sulfate (as SO4)	mg/L	13 J	10	42	180	210	87	17	1.8 J	< 0.41 U	< 0.41 U	14	< 2.2 U	< 1.1 U	< 2.2 U	< 2.2 U	5.4 J	17
Total Dissolved Solids	mg/L	970 J-	680	1200	1100	1200	1200	1100	930	1800	880	960	1000	890	1000	870	1100	850
Appendix IV																		
Antimony	mg/L	0.000082 J	0.00069	< 0.000050 U	< 0.000050 U	0.00028 J	< 0.00050 U	< 0.00010 U	< 0.00010 U	< 0.0001 U	< 0.00010 U	0.00028	< 0.00010 U	< 0.00010 U	< 0.00010 U	< 0.00010 U	< 0.00010 U	0.00030
Arsenic	mg/L	0.0017	0.0041	0.0016	0.0011	0.00061	0.0010	0.0012 J+	0.0019	0.0023	0.0012	0.0013	0.0015	0.0016	0.0014	0.0020	0.0022	0.0044
Barium	mg/L	0.74	1.2	0.59	0.60	0.36	0.41	0.50	0.57	0.87	0.83	0.53	0.56	0.78	0.57	0.57	0.68	0.66
Beryllium	mg/L	< 0.000052 U	0.000091 J	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 UJ	< 0.000052 U	< 0.000052 U	< 0.000052 U	0.00044	< 0.000052 U	0.000088 J	< 0.000052 U	< 0.000052 U	< 0.000052 U	0.000054 J
Cadmium	mg/L	< 0.000032 U	0.00073	< 0.000032 U	< 0.000032 U	< 0.00016 U	< 0.00038 U	< 0.000075 UJ	< 0.000075 U	< 0.000075 U	< 0.000075 U	0.00016 J	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	0.00035
Chromium, Total	mg/L	0.00080	0.0086	0.0010	0.00087	0.00045	0.00052	0.0012	0.0018	0.00063	0.00062	0.00078	0.0010	0.00091	0.00086	0.0010	0.0013	0.0036
Cobalt	mg/L	0.00036 J	0.0012	0.00061	0.00072	0.00040 J	0.00040 J	0.00066 J+	0.00061	0.00023 J	0.00026 J	0.0024	0.00028 J	0.00032 J	0.00035 J	0.00027 J	0.00049 J	0.0026
Fluoride	mg/L	0.81	1.4	0.37	0.32	0.21	0.22	0.25	0.69	1.2	0.75	0.61	0.47	0.9	0.45	0.69	0.64	0.92
Lead	mg/L	0.0025	0.068	0.0018 J	< 0.00022 U	< 0.0011 U	< 0.00050 U	0.0038 J+	0.00017 J	0.00036 J	0.00031 J	0.00043 J	0.00018 J	0.00041 J	0.00042 J	0.0012	0.0089	0.034
Lithium	mg/L	0.10	0.22	0.052	0.028	0.0059	0.0084	0.022	0.095	0.15	0.077	0.028	0.042	0.065	0.051	0.055	0.057	0.10
Mercury	mg/L	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	0.0011	< 0.00016 U	< 0.00016 U	< 0.00016 U	0.00000088	0.0000027	0.0000011
Molybdenum	mg/L	0.0017	0.0029	0.0015	< 0.00062 U	< 0.00062 U	0.00043 J	0.00066 J+	0.0013	0.0015	0.00066 J	0.0030	0.0010 J	0.00062 J	0.00095 J	0.00099 J	0.0022	0.0039
Radium 226 and 228	pCi/L	1.19	1.32	< 0.91 U	1.07	1.67	0.812	< 1 U	1.76	0.764	1.13	< 0.775 U	< 0.575 U	2.61	1.35	--	1.1	< 1.43 U
Radium-226	pCi/L	0.445	0.422	0.352	0.304	0.406	0.228	0.243	0.409	0.469	0.514	0.205	0.275	0.319	0.61	--	< 0.391 U	0.547
Radium-228	pCi/L	0.75	0.903	< 0.91 U	< 0.84 U	1.26	< 0.721 U	< 1 U	1.35	< 0.624 U	< 0.765 U	< 0.775 U	< 0.575 U	2.3	0.74	--	0.832	< 1.43 UG
Selenium	mg/L	0.00022 J	0.00031 J	< 0.00022 U	< 0.00022 U	< 0.00022 U	0.00014 J	0.00016 J+	0.00021 J	0.0002 J	0.00071	0.00041 J	0.00017 J	0.00015 J	0.00018 J	0.00015 J	0.00023 J	0.00033 J
Thallium	mg/L	< 0.000075 U	< 0.000075 U	< 0.00038 U	< 0.000075 U	< 0.00038 U	< 0.00038 U	< 0.000075 UJ	< 0.000075 U	< 0.000075 U	< 0.000075 U	0.00021 J	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U
Total Suspended Solids	mg/L	21	35	10	11	4.0	< 4.0 U	4.0	6.0	19	9.0	4.0	4.0	28	22	16	22	19
Michigan CCR Part 115																		
Copper	mg/L	0.00043	0.019	0.00047	< 0.00020 U	< 0.00020 U	0.00024 J	0.00056 B	0.0016	< 0.0002 U	0.00020 J	0.0021	0.00031	0.00028	0.00025	< 0.00020 U	0.00077	0.0064
Iron	mg/L	8.7	10	4.9	6.1	3.6	3.8	4.2	6.7	11	8.5	5.6	7.1	9.5	8.2	7.6	10	7.3
Nickel	mg/L	0.0013	0.0094	0.0015	0.0012	0.00065 J	0.00068 J	0.0013	0.0018	0.0015	0.0011 J	0.0028	0.00098 J	0.0015	0.0015	0.0013	0.0019	0.015
Silver	mg/L	< 0.000050 U	0.00014	< 0.000050 U	< 0.000050 U	< 0.00025 U	< 0.00025 U	< 0.000050 U	< 0.000050 U	< 0.00005 U	< 0.000050 U	0.00017	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	0.00015
Vanadium	mg/L	< 0.00062 U	0.00062 J	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	0.0030	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	0.00068 J	0.0010 J
Zinc	mg/L	0.032	0.10	0.0085	< 0.0012 U	0.033	< 0.0012 U	0.0049	0.0031	0.0018	< 0.0012 U	0.0035	< 0.0012 U	0.032	0.041	0.0027	0.042	0.047
Additional Parameters																		
Bicarbonate Alkalinity	mg/L	840	600	860	810	800	840	890	800	660	760	840	820	770	900	810	880	700
Carbonate Alkalinity	mg/L	< 1.6 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.31 U	< 0.31 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.31 U	< 0.16 U
Magnesium	mg/L	60	55	63	67	60	55	55	56	52	61	55	49	48	58	47	55	55
Potassium	mg/L	15	19	11	8.5	5.7	5.5	8.1	14	18	14	7.2	9.2	12	11	9.8	13	18
Sodium	mg/L	57	70	37	25	21	26	38	50	67	51	28	36	45	44	32	49	64
Total Alkalinity	mg/L	840	600	860	810	800	840	890	800	660	760	840	820	770	900	810	880	700

Notes:

ug/l - micrograms per liter.

mg/l = milligrams per liter.

su - standard pH units (pH is a field parameter)

pCi/L = picocuries per liter.

All metals were analyzed as total unless otherwise indicated.

Qualifiers:

U The analyte was analyzed for, but was not detected at, a level greater than or equal to the level of the adjusted reporting limit (RL) for the sample and method.

J The analyte was positively identified, and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain QC criteria were not met, or to the concentration of the analyte being below the RL).

J+ Same as J, and the reported concentration is potentially biased high.

J– Same as J, and the reported concentration is potentially biased low.

UJ The analyte was not detected at a level greater than or equal to the adjusted method detection limit (MDL). However, the reported adjusted MDL is approximate and might be inaccurate or imprecise.

R The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte might or might not be present in the sample.

Sample Location:		MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12
Compliance Phase:		Background	Background	Background	Background	Background	Background	Background	Background	AM	AM	AM	AM	AM	AM	AM	AM	AM
Sample Date:		11/28/2022	1/3/2023	2/7/2023	3/13/2023	4/19/2023	5/23/2023	6/27/2023	8/7/2023	10/23/2023	2/13/2024	4/8/2024	7/17/2024	10/16/2024	2/26/2025	4/21/2025	8/13/2025	10/22/2025
Sample Type:		Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample
Unit:		Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B
Sample Matrix:		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Constituent	**Unit**																	
Field Parameters																		
Conductivity	mS/cm	0.459	0.387	0.542	0.311	0.52	0.44	0.55	0.67	0.64	0.33	0.345	0.57	0.55	0.471	0.345	0.58	0.67
Dissolved Oxygen	mg/L	1.62	8.72	8.46	10.31	1.03	2.93	0.12	0.08	0.16	11.12	8.25	0.17	0.11	2.07	4.03	0.15	0.2
Oxidation Reduction Potential	mV	93.4	47.4	-14.8	87.6	26.2	131	54.9	-30.1	-118.7	36.8	125.4	-2.2	-38	-18.7	-21.7	-97.4	-90.1
pH	su	7.67	7	7.8	8.16	7.92	7.77	7.52	7.47	7.46	8.32	7.91	7.46	7.33	7.73	7.64	7.39	7.32
Temperature	deg c	8.8	3.3	1.3	3	9.7	13.9	17.5	20.9	15.9	3.5	6.5	19.5	17.6	3.7	8.2	21.6	17.1
Turbidity	NTU	0.02	0.02	0.02	0.02	0.02	1.92	0.02	0.02	0.31	0.02	0.02	0.02	0.02	0.02	0.02	7.13	0.02
Appendix III																		
Boron	mg/L	0.39	0.24	0.26	0.19	0.20	0.27	0.33 J+	0.36	0.42	0.22	0.25	0.41	0.4	0.36	0.23	0.44	0.62
Calcium	mg/L	77	46	78	77	55	63	64	95	95	40	40	74	79	59	41	69	99
Chloride	mg/L	24	16	27	18	16	15	17	22	26	17	12	18	18	27	15	16	17
Fluoride	mg/L	0.54	0.43	0.23	0.48	0.23	0.22	0.26	0.28	0.26	0.46	0.41	0.29	0.31	0.2	0.27	0.31	0.3
Sulfate (as SO4)	mg/L	180	130	180	120	110	99	110	130	130	84	68	62	52	100	61	53	58
Total Dissolved Solids	mg/L	360	210	340	200	260	270	330	420	200	100	210	380	330	300	200	350	400
Appendix IV																		
Antimony	mg/L	0.00071	0.0011	0.00076	0.00053	0.00094	0.00092	0.00064	0.00040	0.00041	0.00035	0.00053	0.00040	0.00084	0.0015	0.00068	0.00024 J	0.00017 J
Arsenic	mg/L	0.0028	0.0019	0.0018	0.0014	0.0019	0.0024	0.0029 J+	0.0034	0.0031	0.0016	0.0017	0.0032	0.0030	0.0015	0.0016	0.0052	0.0064
Barium	mg/L	0.030	0.017	0.024	0.025	0.022	0.032	0.043	0.053	0.06	0.022	0.025	0.071	0.10	0.051	0.038	0.11	0.14
Beryllium	mg/L	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 UJ	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U
Cadmium	mg/L	0.00067	0.00078	0.0014	0.00062	0.0012	0.0016	0.0024 J+	0.0022	0.0011	0.00054	0.00082	0.0032	0.0028	0.0012	0.0015	0.011	0.0051
Chromium, Total	mg/L	0.00034	0.00048	0.00046	0.00067	0.00054	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.0002 U	0.00099	0.00095	< 0.00020 UJ	0.00025	0.00041	0.00095	< 0.00020 U	0.00021 J
Cobalt	mg/L	0.00019 J	< 0.00010 U	0.00014 J	< 0.00010 U	< 0.00010 U	0.00026 J	0.00050 J+	0.00053	0.00038 J	< 0.00010 U	< 0.00010 U	0.00056	0.00093	0.00011 J	0.00015 J	0.0013	0.0028
Fluoride	mg/L	0.54	0.43	0.23	0.48	0.23	0.22	0.26	0.28	0.26	0.46	0.41	0.29	0.31	0.2	0.27	0.31	0.3
Lead	mg/L	< 0.00022 U	< 0.00022 U	< 0.00022 U	< 0.00022 U	< 0.00022 U	0.00015 J	0.00014 J+	0.00021 J	0.00021 J	< 0.00010 U	0.00039 J	0.00038 J	0.00047 J	0.00015 J	0.00051 J	0.00026 J	0.00020 J
Lithium	mg/L	0.0037	0.0033	0.0022 J	0.0025 J+	0.0037	0.0043	0.0064	0.0042	0.0048	0.0023 J	0.0019 J	0.0047	0.0059	0.0020 J	0.0019 J	0.0055	0.0047
Mercury	mg/L	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	0.00016 J	< 0.00016 U	0.00023	< 0.00016 U	< 0.00016 U	< 0.00016 U	0.00000083	0.0000010	0.0000012
Molybdenum	mg/L	0.0087	0.0072	0.0067	0.0056	0.0057	0.0069	0.0082 J+	0.0088	0.0096	0.0051	0.0046	0.0064	0.018	0.0087	0.0059	0.0083	0.0080
Radium 226 and 228	pCi/L	< 0.543 U	< 0.459 U	< 0.685 U	< 0.619 U	0.809	1.09	< 0.59 UJ	< 0.578 UJ	< 0.517 U	< 0.749 U	0.769	< 0.602 UJ	1.07	< 0.86 U	0.589	1.12	0.989
Radium-226	pCi/L	< 0.13 U	< 0.0702 U	< 0.0727 U	< 0.126 U	< 0.129 U	< 0.136 U	< 0.124 U	< 0.106 UJ	< 0.212 U	< 0.116 U	< 0.146 U	0.119	< 0.148 U	< 0.3 U	< 0.306 U	< 0.325 U	0.233
Radium-228	pCi/L	< 0.543 U	< 0.459 U	< 0.685 U	< 0.619 U	0.793	1.07	< 0.59 UJ	< 0.578 UJ	< 0.517 U	< 0.749 U	0.729	< 0.602 UJ	1.07	< 0.86 U	< 0.487 U	0.943	0.756
Selenium	mg/L	0.0015	0.0022	0.0023	0.00093	0.0017	0.00076	0.00021 J+	0.00013 J	0.00029 J	0.00089	0.0012	0.00014 J	0.00043 J	0.0043	0.0017	0.00028 J	0.00017 J
Thallium	mg/L	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 UJ	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U
Total Suspended Solids	mg/L	< 4.0 U	< 4.0 U	2.0 J	< 4.0 U	1.0 J	< 4.0 U	< 4.0 UJ	0.98 J+	< 4 U	< 4.0 U	< 4.0 U	< 3.9 U	< 4.0 U	< 4.0 U	< 4.0 U	6.0	< 4.1 U
Michigan CCR Part 115																		
Copper	mg/L	0.00055	0.00092	0.0010	0.0010	0.0015	0.0016	0.0012 B	0.00094	0.00071	0.0012	0.0013	0.0014	0.0019	0.0034	0.0022	0.0018	0.00088
Iron	mg/L	< 0.26 U	< 0.026 U	0.033 J	0.027 J	< 0.026 U	< 0.026 U	0.051	0.064	0.037 J	< 0.026 UJ	< 0.026 UJ	0.068	0.15	0.021 J	0.047 J	0.40	0.92
Nickel	mg/L	0.0025	0.0023	0.0035	0.0016	0.0021	0.0025	0.0031	0.0035	0.0026	0.0014	0.0014	0.0029	0.0034	0.0029	0.0019	0.0062	0.0073
Silver	mg/L	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.00005 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U
Vanadium	mg/L	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	0.00085 J	0.0013	0.0012	0.00095 J	< 0.00062 U	< 0.00062 U	0.00087 J	0.0016	0.0021	0.00074 J	0.0010 J	0.00096 J	0.00046 J
Zinc	mg/L	0.0068	0.0080	0.0095	0.0037	0.0090	0.0074	0.0085	0.010	0.008	0.0027	0.0050	0.011	0.017	0.0073	0.0080	0.023	0.022
Additional Parameters																		
Bicarbonate Alkalinity	mg/L	86	55	52	46	85	95	140	140	190	47	86	200	220	98	100	250	290
Carbonate Alkalinity	mg/L	< 1.6 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.31 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.31 U	< 0.16 U
Magnesium	mg/L	17	12	2.4	12	13	15	14	19	22	11	13	21	19	18	12	23	29
Potassium	mg/L	1.3	0.70	0.74	0.82	1.0	1.3	1.3	1.8	1.7	0.62	0.60	1.3	1.8	0.62	0.86	1.8	1.7
Sodium	mg/L	13	11	14	9.9	9.4	11	11	14	16	9.8	8.8	12	18	15	9.1	13	13
Total Alkalinity	mg/L	86	55	52	46	85	95	140	140	190	47	86	200	220	98	100	250	290

Notes:

ug/l - micrograms per liter.

mg/l = milligrams per liter.

su - standard pH units (pH is a field parameter)

pCi/L = picocuries per liter.

All metals were analyzed as total unless otherwise indicated.

Qualifiers:

U The analyte was analyzed for, but was not detected at, a level greater than or equal to the level of the adjusted reporting limit (RL) for the sample and method.

J The analyte was positively identified, and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain QC criteria were not met, or to the concentration of the analyte being below the RL).

J+ Same as J, and the reported concentration is potentially biased high.

J– Same as J, and the reported concentration is potentially biased low.

UJ The analyte was not detected at a level greater than or equal to the adjusted method detection limit (MDL). However, the reported adjusted MDL is approximate and might be inaccurate or imprecise.

R The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte might or might not be present in the sample.

Sample Location:		MW-13	MW-13
Compliance Phase:		AM	AM
Sample Date:		8/13/2025	10/21/2025
Sample Type:		Field Sample	Field Sample
Unit:			
Sample Matrix:		Groundwater	Groundwater
Constituent	**Unit**		
Field Parameters			
Conductivity	mS/cm	1.46	1.29
Dissolved Oxygen	mg/L	0.15	0.12
Oxidation Reduction Potential	mV	17.3	-296.4
pH	su	7.45	7.36
Temperature	deg c	19.8	18.3
Turbidity	NTU	0.81	0.02
Appendix III			
Boron	mg/L	1.2	0.93
Calcium	mg/L	310	270
Chloride	mg/L	10	12
Fluoride	mg/L	0.73	0.44
Sulfate (as SO4)	mg/L	480	290
Total Dissolved Solids	mg/L	1100	940
Appendix IV			
Antimony	mg/L	< 0.00010 U	< 0.00010 U
Arsenic	mg/L	0.00025 J	0.00024 J
Barium	mg/L	0.088	0.095
Beryllium	mg/L	< 0.000052 U	< 0.000052 U
Cadmium	mg/L	< 0.000075 U	< 0.000075 U
Chromium, Total	mg/L	0.0015	0.0018
Cobalt	mg/L	< 0.00010 U	0.00013 J
Fluoride	mg/L	0.73	0.44
Lead	mg/L	< 0.00010 U	< 0.00010 U
Lithium	mg/L	0.047	0.036
Mercury	mg/L	0.00000028 J	< 0.00000016 U
Molybdenum	mg/L	0.0028	0.0019
Radium 226 and 228	pCi/L	< 0.796 U	0.804
Radium-226	pCi/L	< 0.353 U	< 0.21 U
Radium-228	pCi/L	< 0.796 U	< 0.668 U
Selenium	mg/L	0.00010 J	0.00011 J
Thallium	mg/L	< 0.000075 U	< 0.000075 U
Total Suspended Solids	mg/L	< 4.0 U	< 4.0 U
Michigan CCR Part 115			
Copper	mg/L	< 0.00020 U	< 0.00020 U
Iron	mg/L	0.25	0.079
Nickel	mg/L	0.0024	0.00086 J
Silver	mg/L	< 0.000050 U	< 0.000050 U
Vanadium	mg/L	0.00064 J	0.00072 J
Zinc	mg/L	0.0058	< 0.00048 U
Additional Parameters			
Bicarbonate Alkalinity	mg/L	370	430
Carbonate Alkalinity	mg/L	< 0.31 U	< 0.16 U
Magnesium	mg/L	16	14
Potassium	mg/L	11	11
Sodium	mg/L	25	26
Total Alkalinity	mg/L	370	430

Notes:

ug/l - micrograms per liter.

mg/l = milligrams per liter.

su - standard pH units (pH is a field parameter)

pCi/L = picocuries per liter.

All metals were analyzed as total unless otherwise indicated.

Qualifiers:

U The analyte was analyzed for, but was not detected at, a level greater than or equal to the level of the adjusted reporting limit (RL) for the sample and method.

J The analyte was positively identified, and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain QC criteria were not met, or to the concentration of the analyte being below the RL).

J+ Same as J, and the reported concentration is potentially biased high.

J– Same as J, and the reported concentration is potentially biased low.

UJ The analyte was not detected at a level greater than or equal to the adjusted method detection limit (MDL). However, the reported adjusted MDL is approximate and might be inaccurate or imprecise.

R The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte might or might not be present in the sample.

Sample Location:		MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16
Compliance Phase:		AM	AM	AM	AM	AM	AM	AM
Sample Date:		4/8/2024	7/18/2024	10/17/2024	2/25/2025	4/21/2025	8/13/2025	10/21/2025
Sample Type:		Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample
Unit:		Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2
Sample Matrix:		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Constituent	**Unit**							
Field Parameters								
Conductivity	mS/cm	1.1	1.36	1.36	1.36	1.25	1.34	1.18
Dissolved Oxygen	mg/L	0.04	0.18	0.19	0.06	0.17	0.09	0.24
Oxidation Reduction Potential	mV	-90.4	-15.6	-135.9	-51.2	-111.6	-7.7	-110.2
pH	su	7.29	6.53	6.93	7.29	7.3	6.77	6.77
Temperature	deg c	7.1	17.6	18.2	4.5	8.1	20.8	18.2
Turbidity	NTU	0.02	0.02	0.02	0.59	0.02	0.02	1.07
Appendix III								
Boron	mg/L	0.22	0.43	0.39	0.27	0.29	0.50	0.42
Calcium	mg/L	190	250	230	280	230	260	230
Chloride	mg/L	14	21	20	18	17	23	22
Fluoride	mg/L	0.14	0.19 J	< 0.055 U	0.15 J	0.18	0.13 J	0.19 J
Sulfate (as SO4)	mg/L	60	< 2.2 U	< 1.1 U	90	140	8.7	1.1 J
Total Dissolved Solids	mg/L	680	830	790	910	850	790	700
Appendix IV								
Antimony	mg/L	< 0.00010 U	< 0.00010 U	0.00011 J	< 0.00010 U	< 0.00010 U	< 0.00010 U	< 0.00010 U
Arsenic	mg/L	0.0052	0.0034	0.017	0.0012	0.0045	0.0035	0.023
Barium	mg/L	0.18	0.28	0.29	0.18	0.21	0.22	0.26
Beryllium	mg/L	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U
Cadmium	mg/L	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U
Chromium, Total	mg/L	0.00064	0.00085	0.0013	0.00051	0.00062	0.0015	0.0022
Cobalt	mg/L	0.00021 J	0.00017 J	0.00030 J	0.00039 J	0.00019 J	0.00018 J	0.00016 J
Fluoride	mg/L	0.14	0.19 J	< 0.055 U	0.15 J	0.18	0.13 J	0.19 J
Lead	mg/L	< 0.00010 U	< 0.00010 U	0.00013 J	0.00019 J	< 0.00010 U	< 0.00010 U	0.00028 J
Lithium	mg/L	0.016	0.025	0.024	0.020	0.020	0.027	0.025
Mercury	mg/L	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00000016 U	0.00000043 J	< 0.00000016 U
Molybdenum	mg/L	< 0.00025 U	< 0.00025 U	< 0.00025 U	< 0.00025 U	< 0.00025 U	< 0.00025 U	< 0.00025 U
Radium 226 and 228	pCi/L	1.01	< 0.623 U	2.31	< 0.62 U	1.09	1.84	< 1.16 U
Radium-226	pCi/L	< 0.199 U	0.296	0.371	< 0.24 U	< 0.33 U	< 0.574 U	< 0.343 U
Radium-228	pCi/L	0.902	< 0.623 U	1.94	< 0.62 U	0.836	1.6	< 1.16 UG
Selenium	mg/L	0.00012 J	0.00011 J	0.00015 J	< 0.00010 U	0.00013 J	0.00015 J	0.00025 J
Thallium	mg/L	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U
Total Suspended Solids	mg/L	16	11	40	4	17	< 4.0 U	31
Michigan CCR Part 115								
Copper	mg/L	0.00025	< 0.00020 U	< 0.00020 U	0.00031	< 0.00020 U	< 0.00020 U	0.00030
Iron	mg/L	7.1	6.7	13	4.7	6.7	0.99	12
Nickel	mg/L	0.00065 J	< 0.00065 U	0.0010 J	0.0028	0.0017	0.00055 J	0.0060
Silver	mg/L	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U
Vanadium	mg/L	< 0.00062 U	0.00066 J	0.00076 J	< 0.00062 U	< 0.00062 U	0.0010 J	0.0011 J
Zinc	mg/L	< 0.0012 U	< 0.0012 U	0.012	0.016	0.0012	0.013	0.00087 J
Additional Parameters								
Bicarbonate Alkalinity	mg/L	550	710	760	720	620	710	620
Carbonate Alkalinity	mg/L	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.31 U	< 0.16 U
Magnesium	mg/L	23	27	26	33	28	26	21
Potassium	mg/L	3.9	5.1	5.2	5.2	5.0	5.6	4.8
Sodium	mg/L	17	23	21	25	21	25	14
Total Alkalinity	mg/L	550	710	760	720	620	710	620

Notes:

ug/l - micrograms per liter.

mg/l = milligrams per liter.

su - standard pH units (pH is a field parameter)

pCi/L = picocuries per liter.

All metals were analyzed as total unless otherwise indicated.

Qualifiers:

U The analyte was analyzed for, but was not detected at, a level greater than or equal to the level of the adjusted reporting limit (RL) for the sample and method.

J The analyte was positively identified, and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain QC criteria were not met, or to the concentration of the analyte being below the RL).

J+ Same as J, and the reported concentration is potentially biased high.

J– Same as J, and the reported concentration is potentially biased low.

UJ The analyte was not detected at a level greater than or equal to the adjusted method detection limit (MDL). However, the reported adjusted MDL is approximate and might be inaccurate or imprecise.

R The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte might or might not be present in the sample.

Sample Location:		MW-17	MW-17	MW-17	MW-17	MW-17	MW-17	MW-17
Compliance Phase:		AM	AM	AM	AM	AM	AM	AM
Sample Date:		4/8/2024	7/17/2024	10/16/2024	2/3/2025	4/20/2025	8/12/2025	10/22/2025
Sample Type:		Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample
Unit:		Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2
Sample Matrix:		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Constituent	**Unit**							
Field Parameters								
Conductivity	mS/cm	1.12	0.95	1.03	1.02	0.655	1.05	1.10
Dissolved Oxygen	mg/L	0.06	0.02	0.03	0.01	0.14	0.14	0.12
Oxidation Reduction Potential	mV	-157.2	-197.6	-194.5	-74.4	-128.6	-208.2	-169
pH	su	7.88	7.31	7.52	7.69	7.75	7.54	7.42
Temperature	deg c	9.1	20.3	18.6	6.7	9	20.7	18.1
Turbidity	NTU	0.02	0.21	1.02	3.69	1.01	0.02	1.07
Appendix III								
Boron	mg/L	0.79	0.75	0.89	0.58	0.52	1.0	0.92
Calcium	mg/L	160	140	130	130	120	150	150
Chloride	mg/L	43	33	47	34	34	36	32
Fluoride	mg/L	0.48	0.56	0.67	0.38	0.54	0.65	0.75
Sulfate (as SO4)	mg/L	4.8 J	33	7.3	27	4.4 J	0.79 J	< 0.58 U
Total Dissolved Solids	mg/L	620	620	580	600	560	620	620
Appendix IV								
Antimony	mg/L	< 0.00010 U	0.00016 J	< 0.00010 U	< 0.00010 U	< 0.00010 U	< 0.00010 U	< 0.00010 U
Arsenic	mg/L	0.0018	0.0026	0.0024	0.0012	0.0013	0.0023	0.0020
Barium	mg/L	0.70	0.53	0.65	0.55	0.60	0.9	0.86
Beryllium	mg/L	< 0.000052 U	< 0.000052 U	< 0.000052 U	0.000069 J	< 0.000052 U	< 0.000052 U	< 0.000052 U
Cadmium	mg/L	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U
Chromium, Total	mg/L	0.00076	0.0011	0.00081	0.00066	0.00090	0.00059	0.00055
Cobalt	mg/L	0.00033 J	0.00044 J	0.00052	0.00048 J	0.00030 J	0.00033 J	0.00033 J
Fluoride	mg/L	0.48	0.56	0.67	0.38	0.54	0.65	0.75
Lead	mg/L	0.00019 J	0.00042 J	0.00017 J	0.00077	0.00045 J	0.00014 J	< 0.00010 U
Lithium	mg/L	0.035	0.033	0.036	0.028	0.027	0.043	0.036
Mercury	mg/L	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00000016 U	0.00000029 J	< 0.00000016 U
Molybdenum	mg/L	0.00079 J	0.0031	0.00077 J	0.00093 J	0.00078 J	0.00052 J	0.00042 J
Radium 226 and 228	pCi/L	0.656	< 0.918 U	1.56	0.58	1.3	1.3	1.88
Radium-226	pCi/L	< 0.185 U	0.315	0.334	< 0.53 U	< 0.357 U	0.448	0.427
Radium-228	pCi/L	< 0.571 U	< 0.918 U	1.22	0.58	1.3 G	< 0.849 U	1.46
Selenium	mg/L	0.00014 J	0.00021 J	0.00013 J	0.00011 J	0.00021 J	0.00018 J	0.00017 J
Thallium	mg/L	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U
Total Suspended Solids	mg/L	9.0	9.0	12	10	14	4.0	< 4.1 U
Michigan CCR Part 115								
Copper	mg/L	0.00088	0.0016	0.00049	0.0010	0.0011	0.00033	< 0.00020 U
Iron	mg/L	6.6	3.5	3.8	4.1	4.8	4.7	4.4
Nickel	mg/L	0.0011 J	0.0020	0.0015	0.0011 J	0.0012	0.00092 J	0.00085 J
Silver	mg/L	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U
Vanadium	mg/L	0.00084 J	0.0013	0.00089 J	0.00077 J	0.00065 J	0.00060 J	0.00051 J
Zinc	mg/L	0.0026	0.0059	0.027	0.044	0.0087	0.0029	0.0020
Additional Parameters								
Bicarbonate Alkalinity	mg/L	530	460	500	480	500	550	530
Carbonate Alkalinity	mg/L	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U
Magnesium	mg/L	30	24	24	24	24	27	25
Potassium	mg/L	15	16	16	12	12	17	15
Sodium	mg/L	59	39	56	49	47	56	48
Total Alkalinity	mg/L	530	460	500	480	500	550	530

Notes:

ug/l - micrograms per liter.

mg/l = milligrams per liter.

su - standard pH units (pH is a field parameter)

pCi/L = picocuries per liter.

All metals were analyzed as total unless otherwise indicated.

Qualifiers:

U The analyte was analyzed for, but was not detected at, a level greater than or equal to the level of the adjusted reporting limit (RL) for the sample and method.

J The analyte was positively identified, and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain QC criteria were not met, or to the concentration of the analyte being below the RL).

J+ Same as J, and the reported concentration is potentially biased high.

J– Same as J, and the reported concentration is potentially biased low.

UJ The analyte was not detected at a level greater than or equal to the adjusted method detection limit (MDL). However, the reported adjusted MDL is approximate and might be inaccurate or imprecise.

R The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte might or might not be present in the sample.

Sample Location:		MW-18	MW-18	MW-18	MW-18	MW-18	MW-18	MW-18	MW-18	MW-18	MW-18	MW-18	MW-18	MW-18	MW-18	MW-18	MW-18	MW-18
Compliance Phase:		Background	Background	Background	Background	Background	Background	Background	Background	AM	AM	AM	AM	AM	AM	AM	AM	AM
Sample Date:		11/30/2022	1/5/2023	2/8/2023	3/13/2023	4/18/2023	5/22/2023	6/27/2023	8/8/2023	10/24/2023	2/13/2024	4/10/2024	7/17/2024	10/16/2024	2/26/2025	4/21/2025	8/12/2025	10/22/2025
Sample Type:		Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample
Unit:		Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2
Sample Matrix:		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Constituent	**Unit**																	
Field Parameters																		
Conductivity	mS/cm	1.54	2.06	1.788	1.554	1.4	1.52	1.62	1.46	1.6	1.51	1.69	1.64	1.69	1.85	1.49	1.30	1.07
Dissolved Oxygen	mg/L	0.09	0.19	0.72	0.22	0.34	0.15	0.29	0.05	0.3	0.05	0.4	0.04	0.02	0.47	0.42	0.16	0.25
Oxidation Reduction Potential	mV	66.8	-126.8	-70.8	-69.8	-31.3	-22.1	-88.4	-92.8	-80	132.6	-114.3	-143.3	-123.7	79.4	-86.7	-138.7	-101.1
pH	su	7.05	7.02	7.2	7.12	7.19	7.16	7.16	7.25	7.16	7.27	7.18	7.31	7.17	7.18	7.27	7.31	7.29
Temperature	deg c	9.9	6.5	5.2	3.8	6.3	11.3	17.2	17.8	15.3	5.5	7	17.3	16	5.3	7.3	18.7	15.9
Turbidity	NTU	0.02	0.02	0.09	0.02	0.52	0.02	0.02	7.06	0.59	0.02	0.02	4.07	1.39	4.55	2.18	0.02	5.24
Appendix III																		
Boron	mg/L	2.2	2.0	2.3	1.9	1.8	2.6	2.7 J+	2.3	3	3.5	4	3.9	3.9	4.4	3.7	4.2	4.4
Calcium	mg/L	450	410	380	330	270	340	240	250	360	370	350	330	330	410	270	250	240
Chloride	mg/L	28	26	22	19	16	19	24	27	22	24	16	27	24	32	19	26	23
Fluoride	mg/L	3.5	3.3	3.5	3.8	3.8	3.9	4.4	5.1	4.5	3.4	2.7	4.5	4.8	3.2	3.3	4.7	5
Sulfate (as SO4)	mg/L	1200	1200	480	740	660	780	760	620	800	980	790	750	740	1100	770	570	370
Total Dissolved Solids	mg/L	1800	1700	1600	1200	1200	1400	1400	1100	1400	1400	1400	1300	1300	1600	1200	1100	860
Appendix IV																		
Antimony	mg/L	0.00012 J	0.00013 J	0.00032 J	0.00014 J	0.00030	< 0.00050 U	0.00012 J	< 0.00010 U	0.00013 J	< 0.00050 U	0.00018 J	0.00011 J	0.00012 J	0.00023 J	0.00017 J	0.00010 J	0.0010
Arsenic	mg/L	0.029	0.020	0.023	0.019	0.021	0.015	0.029 J+	0.030	0.041	0.024	0.029	0.031	0.044	0.028	0.027	0.036	0.033
Barium	mg/L	0.021	0.018	0.015	0.012	0.013	0.023	0.024	0.023	0.025	0.015	0.014	0.022	0.028	0.018	0.013	0.021	0.034
Beryllium	mg/L	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 UJ	< 0.000052 U	< 0.000052 U	< 0.000052 U	0.000059 J	< 0.000052 U	< 0.000052 U	0.000053 J	< 0.000052 U	< 0.000052 U	0.000054 J
Cadmium	mg/L	0.00022 J	0.00030	< 0.00016 U	0.00018 J	0.00018 J	0.00044 J	0.00030 J+	0.000089 J	< 0.000075 U	< 0.00038 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	0.00011 J	0.00010 J	< 0.000075 U	0.00090
Chromium, Total	mg/L	< 0.00018 U	< 0.00018 U	< 0.00018 U	< 0.00018 U	< 0.00018 U	0.00025 J+	< 0.00020 U	< 0.00020 U	< 0.0002 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	0.00063	< 0.00020 U	< 0.00020 U
Cobalt	mg/L	0.0060	0.0054	0.0048	0.0032	0.0020	0.0019	0.0032 J+	0.0023	0.0017	0.0023	0.0020	0.0014	0.0016	0.0023	0.0019	0.0011	0.0017
Fluoride	mg/L	3.5	3.3	3.5	3.8	3.8	3.9	4.4	5.1	4.5	3.4	2.7	4.5	4.8	3.2	3.3	4.7	5
Lead	mg/L	< 0.00022 U	< 0.00022 U	< 0.0011 U	< 0.00022 U	< 0.00022 U	< 0.00050 U	0.00016 J+	0.00032 J	0.00014 J	< 0.00050 U	< 0.00010 U	0.00015 J	0.00014 J	< 0.00010 U	< 0.00010 U	0.00025 J	0.00026 J
Lithium	mg/L	0.044	0.042	0.029	0.027	0.026	0.029	0.041	0.045	0.039	0.02	0.030	0.041	0.042	0.032	0.028	0.043	0.038
Mercury	mg/L	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00000016 U	0.00000086	0.00000099
Molybdenum	mg/L	0.013	0.012	0.011	0.013	0.014	0.0090	0.019 J+	0.021	0.02	0.011	0.013	0.018	0.021	0.015	0.014	0.019	0.028
Radium 226 and 228	pCi/L	0.618	< 0.478 U	< 0.501 U	< 0.592 U	1.27	< 0.701 UJ	< 0.872 U	0.73	< 0.625 U	< 0.578 U	0.927	< 0.621 U	1.01	0.93	< 0.555 U	0.817	1.16
Radium-226	pCi/L	< 0.131 U	< 0.0981 U	< 0.083 U	< 0.202 U	< 0.137 U	< 0.122 UJ	< 0.124 U	< 0.105 U	< 0.209 U	< 0.114 U	< 0.191 U	< 0.1 U	< 0.149 U	< 0.23 U	< 0.352 U	< 0.459 U	< 0.285 U
Radium-228	pCi/L	0.584	< 0.478 U	< 0.501 U	< 0.592 U	1.24	< 0.701 UJ	< 0.872 U	0.713	< 0.625 U	< 0.578 U	0.906	< 0.621 U	0.991	0.83	< 0.555 U	< 0.562 U	1.16
Selenium	mg/L	0.00031 J	0.00041 J	0.00034 J	0.00086	0.00079	0.00016 J	0.00018 J+	0.00016 J	0.00082	0.0012	0.0020	0.00016 J	0.00014 J	0.00053	0.0011	0.00015 J	0.0023
Thallium	mg/L	< 0.000075 U	< 0.000075 U	< 0.00038 U	< 0.000075 U	< 0.000075 U	< 0.00038 U	< 0.000075 UJ	< 0.000075 U	< 0.000075 U	< 0.00038 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	0.00016 J
Total Suspended Solids	mg/L	12	4.0	13	2.0 J	6.0	6.0	11	7.9	11	< 4.0 U	100	15	14	4	11	12	9.3
Michigan CCR Part 115																		
Copper	mg/L	0.00043	0.00043	0.00043	0.00043	0.00062	0.00055	0.00088 B	0.0015	0.00047	0.00033	0.00048	0.00062	0.0017	0.00039	0.00047	0.00087	0.0021
Iron	mg/L	10	8.6	6.8	5.4	4.3	5.3	5.8	4.9	7	7.7	7.0	6.2	6.9	8.1	5.8	5.3	3.3
Nickel	mg/L	0.011	0.011	0.0094	0.0074	0.0051	0.0050	0.0075	0.0049	0.0047	0.0056	0.0053	0.0037	0.0049	0.0058	0.0056	0.0032	0.010
Silver	mg/L	< 0.000050 U	< 0.000050 U	< 0.00025 U	< 0.000050 U	< 0.000050 U	< 0.00025 U	< 0.000050 U	< 0.000050 U	< 0.00005 U	< 0.00025 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U
Vanadium	mg/L	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00028 U	0.00036 J
Zinc	mg/L	0.074	0.088	0.060	0.068	0.043	0.038	0.061	0.028	0.054	0.042	0.038	0.017	0.031	0.045	0.048	0.016	0.21
Additional Parameters																		
Bicarbonate Alkalinity	mg/L	160	110	100	130	140	130	150	200	200	120	120	180	220	100	120	220	270
Carbonate Alkalinity	mg/L	< 1.6 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.31 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U
Magnesium	mg/L	37	36	33	26	22	29	28	21	30	42	39	33	35	50	36	30	26
Potassium	mg/L	11	12	11	9.4	8.7	10	11	11	11	8.9	9.1	10	10	8.4	7.1	8.9	8.6
Sodium	mg/L	21	20	21	17	15	18	20	20	20	24	23	23	23	31	22	22	22
Total Alkalinity	mg/L	160	110	100	130	140	130	150	200	200	120	120	180	220	100	120	220	270

Notes:

ug/l - micrograms per liter.

mg/l = milligrams per liter.

su - standard pH units (pH is a field parameter)

pCi/L = picocuries per liter.

All metals were analyzed as total unless otherwise indicated.

Qualifiers:

U The analyte was analyzed for, but was not detected at, a level greater than or equal to the level of the adjusted reporting limit (RL) for the sample and method.

J The analyte was positively identified, and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain QC criteria were not met, or to the concentration of the analyte being below the RL).

J+ Same as J, and the reported concentration is potentially biased high.

J– Same as J, and the reported concentration is potentially biased low.

UJ The analyte was not detected at a level greater than or equal to the adjusted method detection limit (MDL). However, the reported adjusted MDL is approximate and might be inaccurate or imprecise.

R The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte might or might not be present in the sample.

Sample Location:		MW-19	MW-19	MW-19	MW-19	MW-19	MW-19	MW-19	MW-19	MW-19	MW-19	MW-19	MW-19	MW-19	MW-19	MW-19	MW-19	MW-19
Compliance Phase:		Background	Background	Background	Background	Background	Background	Background	Background	AM	AM	AM	AM	AM	AM	AM	AM	AM
Sample Date:		11/30/2022	1/3/2023	2/8/2023	3/13/2023	4/18/2023	5/22/2023	6/28/2023	8/7/2023	10/24/2023	2/13/2024	4/8/2024	7/18/2024	10/16/2024	2/26/2025	4/21/2025	8/12/2025	10/22/2025
Sample Type:		Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample
Unit:		Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2
Sample Matrix:		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Constituent	**Unit**																	
Field Parameters																		
Conductivity	mS/cm	1.91	2.56	2.493	2.196	2.31	2.29	1.98	20.4	2.2	1.77	2.11	2.04	1.97	1.99	1.162	1.71	1.65
Dissolved Oxygen	mg/L	0.12	0.41	1.03	0.13	0.02	0.09	0.32	0.4	0.26	0.05	0.06	0.02	0.3	0.32	0.27	0.35	0.14
Oxidation Reduction Potential	mV	68.7	-134.8	-70.2	-77.1	-7.9	-118.4	-112.9	-36.8	-109.1	141.9	19.4	-152	-71.9	91.2	-19.3	-93.6	-35.7
pH	su	7	6.39	6.98	6.9	6.92	7.07	6.9	6.82	6.88	6.73	6.85	6.85	6.75	6.7	6.74	6.81	6.67
Temperature	deg c	9.2	7.3	6.3	5.7	8	11.4	13.9	16.7	15.8	5.9	8.5	16.6	15.9	5.2	7.6	15.8	15
Turbidity	NTU	0.02	1.6	2.27	0.02	2.59	0.02	0.02	0.02	0.02	2.48	0.02	0.02	0.02	2.98	0.02	0.02	3.82
Appendix III																		
Boron	mg/L	2.6	2.0	2.2	1.5	1.6	1.8	2.3 J+	1.9	2.6	1.8	1.5	2.0	2.5	2.4	1.6	2.7	3.4
Calcium	mg/L	530	510	550	510	450 E	480	460	360	470	490	480	440	400	470	370	450	410
Chloride	mg/L	75	64	66	46	42	40	37	38	50	39	23	34	40	27	21	37	37
Fluoride	mg/L	2.2	2.3	1.9	1.7	1.8	1.9	1.9	2.2	2	1.6	1.5	1.7	2.1	1.4	1.5	1.9	2
Sulfate (as SO4)	mg/L	1300	1300	600	1100	1200	1100	800	830	1100	1000	1000	940	850	960	890	910	860
Total Dissolved Solids	mg/L	2200 J-	2200	2200	2100	2000	2000	1600	1600	1900	1800	1700	1700	1600	1700	1600	1800	1600
Appendix IV																		
Antimony	mg/L	< 0.000050 U	< 0.000050 U	< 0.00025 U	< 0.000050 U	0.00072 J	< 0.00050 U	< 0.00010 U	< 0.00010 U	< 0.0001 U	< 0.00050 U	< 0.00010 U	< 0.00010 U	< 0.00010 U	0.00046	0.00019 J	0.00011 J	0.00043
Arsenic	mg/L	0.0061	0.0055	0.0055	0.0043	0.0032	0.0031	0.0069 J+	0.0073	0.0067	0.0026	0.0044	0.0065	0.0069	0.0042	0.0037	0.0024	0.0026
Barium	mg/L	0.046	0.050	0.047	0.036	0.030	0.040	0.040	0.037	0.044	0.037	0.034	0.036	0.039	0.036	0.033	0.039	0.042
Beryllium	mg/L	< 0.000052 U	0.000063 J	< 0.00026 U	0.000061 J	0.000057 J	0.000071 J	0.000077 J+	0.000072 J	< 0.000052 U	0.000086 J	0.000085 J	0.000085 J	0.00011 J	0.000058 J	0.00012 J	0.000098 J	0.00011 J
Cadmium	mg/L	< 0.000032 U	< 0.000032 U	< 0.00016 U	< 0.000032 U	< 0.00016 U	< 0.00038 U	< 0.000075 UJ	< 0.000075 U	< 0.000075 U	< 0.00038 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	0.00030
Chromium, Total	mg/L	0.00027	0.00053	< 0.00088 U	0.00037	< 0.00018 U	< 0.00020 U	0.00031	0.00029	< 0.0002 U	< 0.00020 U	0.00025	0.00027	0.00027	0.00020 J	0.00027	0.00022 J	0.00024 J
Cobalt	mg/L	0.00046 J	0.00069	0.00078 J	0.00096	0.00069	0.00042 J	0.00050 J+	0.00044 J	0.00013 J	0.00023 J	0.00046 J	< 0.00010 U	0.00021 J	0.0012	0.00092	0.00018 J	0.0013
Fluoride	mg/L	2.2	2.3	1.9	1.7	1.8	1.9	1.9	2.2	2	1.6	1.5	1.7	2.1	1.4	1.5	1.9	2
Lead	mg/L	< 0.00022 U	< 0.00022 U	< 0.0011 U	< 0.0011 U	< 0.0011 U	< 0.00050 U	< 0.00010 UJ	< 0.00010 U	< 0.0001 U	< 0.00050 U	< 0.00010 U	< 0.00050 U	< 0.00050 U	< 0.00010 U	< 0.00010 U	< 0.00050 U	< 0.00010 U
Lithium	mg/L	0.099	0.11	0.099	0.090	0.11	0.085	0.090	0.098	0.089	0.073	0.074	0.090	0.087	0.084	0.073	0.088	0.085
Mercury	mg/L	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00000016 U	0.00000026 J	< 0.00000016 U
Molybdenum	mg/L	0.013	0.011	0.0095	0.011	0.0090	0.0051	0.012 J+	0.013	0.01	0.0039	0.0099	0.0081	0.013	0.019	0.019	0.0097	0.021
Radium 226 and 228	pCi/L	< 0.589 U	0.626	1.03	1.08	0.933	0.904	< 0.561 U	1.17	< 1.13 U	0.779	1.32	< 0.528 U	< 0.592 U	< 0.7 U	< 0.708 U	1.14	< 0.928 U
Radium-226	pCi/L	0.235	0.222	0.266	0.171	< 0.183 U	0.216	< 0.129 U	0.179	< 0.156 U	0.219	< 0.184 U	0.157	0.221	< 0.29 U	< 0.284 U	< 0.388 U	0.318
Radium-228	pCi/L	< 0.589 U	< 0.503 U	0.761	0.911	0.818	0.688	< 0.561 U	0.993	< 1.13 UG	0.561	1.15	< 0.528 U	< 0.592 U	< 0.7 U	< 0.708 U	0.82	< 0.928 U
Selenium	mg/L	< 0.00022 U	< 0.00022 U	< 0.0011 U	< 0.00022 U	< 0.00022 U	< 0.00010 U	< 0.00010 UJ	< 0.00010 U	< 0.0001 U	0.00012 J	< 0.00010 U	0.00012 J	0.00020 J	0.00013 J	0.00015 J	< 0.00010 U	0.00070
Thallium	mg/L	< 0.000075 U	< 0.000075 U	< 0.00038 U	< 0.00038 U	< 0.00038 U	< 0.00038 U	< 0.000075 UJ	< 0.000075 U	< 0.000075 U	< 0.00038 U	< 0.000075 U	< 0.00038 U	< 0.00038 U	< 0.000075 U	< 0.000075 U	< 0.00038 U	0.00012 J
Total Suspended Solids	mg/L	27	25	16	6.0	23	19	29	33	26	17	6.0	34	37	15	18	22	14
Michigan CCR Part 115																		
Copper	mg/L	< 0.00020 U	< 0.00020 U	< 0.0010 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.0002 U	< 0.00020 U	0.00022 J	0.00035	< 0.00020 U	< 0.00020 U	< 0.00020 U	0.00040	0.00023 J
Iron	mg/L	15	18	16	13	12	13	16	15	24	20	17	21	21	17	14	14	8.2
Nickel	mg/L	0.0024	0.0028	< 0.0032 U	0.0024	0.0017	0.0011 J	0.0015	0.0015	0.0012	0.0012	0.0025	0.017	0.0039	0.0026	0.0029	0.0033	0.014
Silver	mg/L	< 0.000050 U	< 0.000050 U	< 0.00025 U	< 0.000050 U	< 0.00025 U	< 0.00025 U	< 0.000050 U	< 0.000050 U	< 0.00005 U	< 0.00025 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U
Vanadium	mg/L	< 0.00062 U	< 0.00062 U	< 0.0031 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	0.00067 J	0.00055 J	0.00094 J
Zinc	mg/L	0.0023	< 0.0012 U	< 0.0059 U	< 0.0012 U	0.0042	< 0.0012 U	< 0.0012 U	< 0.0012 U	< 0.0012 U	< 0.0012 U	< 0.0012 U	< 0.0012 U	0.0019	0.0046	0.0042	0.0017	0.10
Additional Parameters																		
Bicarbonate Alkalinity	mg/L	330	340	310	280	240	260	340	330	270	290	270	300	260	280	280	300	270
Carbonate Alkalinity	mg/L	< 1.6 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.31 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U
Magnesium	mg/L	49	42	45	38	43	45	32	30	39	39	35	33	36	37	31	39	38
Potassium	mg/L	18	22	16	20	16	16	15	17	16	15	14	14	14	15	13	15	15
Sodium	mg/L	48	40	44	37	38	38	36	31	37	33	30	29	30	32	25	32	32
Total Alkalinity	mg/L	330	340	310	280	240	260	340	330	270	290	270	300	260	280	280	300	270

Notes:

ug/l - micrograms per liter.

mg/l = milligrams per liter.

su - standard pH units (pH is a field parameter)

pCi/L = picocuries per liter.

All metals were analyzed as total unless otherwise indicated.

Qualifiers:

U The analyte was analyzed for, but was not detected at, a level greater than or equal to the level of the adjusted reporting limit (RL) for the sample and method.

J The analyte was positively identified, and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain QC criteria were not met, or to the concentration of the analyte being below the RL).

J+ Same as J, and the reported concentration is potentially biased high.

J– Same as J, and the reported concentration is potentially biased low.

UJ The analyte was not detected at a level greater than or equal to the adjusted method detection limit (MDL). However, the reported adjusted MDL is approximate and might be inaccurate or imprecise.

R The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte might or might not be present in the sample.

	Sample Location:	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20
	Compliance Phase:	Background	Background	Background	Background	Background	Background	Background	Background	AM	AM	AM	AM	AM	AM	AM	AM	AM
	Sample Date:	11/30/2022	1/4/2023	2/7/2023	3/13/2023	4/18/2023	5/23/2023	6/28/2023	8/7/2023	10/24/2023	2/13/2024	4/8/2024	7/17/2024	10/16/2024	2/26/2025	4/21/2025	8/13/2025	10/22/2025
	Sample Type:	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample
	Unit:	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2
	Sample Matrix:	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Constituent	**Unit**																	
Field Parameters																		
Conductivity	mS/cm	1.2	1.24	1.232	1.218	1.37	1.41	1.17	1.18	1.26	1.17	1.45	1.12	1.09	0.95	0.64	0.97	1.00
Dissolved Oxygen	mg/L	0.24	0.1	0.02	0.12	0.16	0.05	0.32	0.26	0.72	0.21	0.03	0.01	0.83	0.02	0.26	0.13	0.12
Oxidation Reduction Potential	mV	-142	-148.2	-153.3	-153	-162.4	-159.7	-174.4	-105.9	-179.7	-128.7	-117.8	-178.3	-193.1	-38.1	-113.7	-165.2	-124.4
pH	su	7.23	7.5	7.29	7.2	7.44	7.45	7.3	7.14	7.33	7.45	7.45	7.34	7.34	7.44	7.43	7.31	7.21
Temperature	deg c	9.7	7.2	6.7	5.7	7.2	10.8	13.1	19.6	14.8	6.5	8.3	17	16.2	6.3	7.8	17.8	15.6
Turbidity	NTU	0.02	0.02	1.91	0.02	0.02	0.02	0.02	0.02	0.02	1.14	0.02	0.02	2.11	2.04	0.02	2.03	7.33
Appendix III																		
Boron	mg/L	1.1	0.83	0.87	0.82	0.80	0.92	1.1 J+	1.1	1.1	0.72	0.76	1.1	1.3	0.82	0.87	1.4	1.4
Calcium	mg/L	130	120	140	170	130	130	58	110	130	120	140	120	120	110	110	150	150
Chloride	mg/L	70	66	62	60	88	92	71	70	70	41	77	62	44	29	29	35	33
Fluoride	mg/L	0.55	0.26	0.24	0.26	0.21	0.21	0.22	0.23	0.23	0.25	0.27	0.29	0.12	0.22	0.29	0.3	0.25
Sulfate (as SO4)	mg/L	42	78	120	110	85	76	30	19	33	78	62	18	24	38	52	50	88
Total Dissolved Solids	mg/L	660	660	690	680	760	770	650	570	650	640	840	640	560	510	540	620	660
Appendix IV																		
Antimony	mg/L	0.000096 J	0.000054 J	0.000066 J	0.000062 J	0.00016 J	< 0.00010 U	0.00011 J	0.00014 J	< 0.0001 U	< 0.00010 U	< 0.00010 U	0.00010 J	0.00012 J	0.00012 J	< 0.00010 U	< 0.00010 U	0.00065
Arsenic	mg/L	0.0015	0.0012	0.0012	0.0012	0.0013	0.0015	0.0016 J+	0.0017	0.0017	0.0011	0.0013	0.0018	0.0019	0.0010	0.0011	0.0019	0.0015
Barium	mg/L	0.94	0.61	0.47	0.37	0.31	0.42	0.43	0.49	0.53	0.42	0.45	0.46	0.82	0.48	0.46	0.67	0.54
Beryllium	mg/L	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 UJ	< 0.000052 U	< 0.000052 U	0.000059 J	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U
Cadmium	mg/L	< 0.000032 U	< 0.000032 U	< 0.000032 U	< 0.000032 U	< 0.000032 U	< 0.000075 U	< 0.000075 UJ	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	0.00039
Chromium, Total	mg/L	0.00019 J	< 0.00018 U	0.00025	0.00029	0.00021 J	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.0002 U	0.00022 J	0.00026	0.00021 J	0.00022 J	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U
Cobalt	mg/L	0.0013	0.0013	0.0016	0.0016	0.0014	0.0013	0.0014 J+	0.0011	0.00095	0.0011	0.0011	0.00089	0.0010	0.00069	0.00080	0.00091	0.0018
Fluoride	mg/L	0.55	0.26	0.24	0.26	0.21	0.21	0.22	0.23	0.23	0.25	0.27	0.29	0.12	0.22	0.29	0.3	0.25
Lead	mg/L	0.0023	0.0016	0.0016	0.0016	0.0028	0.0023	0.0028 J+	0.0023	0.0018	0.0013	0.0014	0.0020	0.0017	0.0018	0.0012	0.0022	0.0078
Lithium	mg/L	0.074	0.065	0.049	0.055	0.060	0.062	0.083	0.079	0.071	0.029	0.053	0.064	0.058	0.035	0.034	0.062	0.052
Mercury	mg/L	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	0.0000051	0.0000053	0.0000019
Molybdenum	mg/L	0.0041	0.0039	0.0041	0.0038	0.0036	0.0048	0.0048 J+	0.0051	0.0047	0.0045	0.0033	0.0048	0.0058	0.0052	0.0035	0.0040	0.0046
Radium 226 and 228	pCi/L	1.47	0.822 J+	< 0.499 U	< 0.536 U	0.591	< 0.59 U	< 0.467 U	1.08	< 0.581 U	< 0.894 U	1.31	< 0.58 U	1	--	0.847	0.486	< 1.18 U
Radium-226	pCi/L	< 0.153 U	0.198	0.134	0.161	< 0.166 U	0.193	< 0.122 U	0.118	< 0.19 U	0.195	< 0.141 U	0.152	0.227	--	< 0.326 U	< 0.306 U	< 0.435 U
Radium-228	pCi/L	1.32	0.624 J+	< 0.499 U	< 0.536 U	0.541	< 0.59 U	< 0.467 U	0.958	< 0.581 U	< 0.894 U	1.18	< 0.58 U	0.775	--	0.746	< 0.479 U	< 1.18 UG
Selenium	mg/L	< 0.00022 U	< 0.00022 U	< 0.00022 U	< 0.00022 U	< 0.00022 U	0.00013 J	0.00011 J+	0.00010 J	0.00011 J	0.00026 J	0.00013 J	< 0.00010 U	< 0.00010 U	< 0.00010 U	< 0.00010 U	< 0.00010 U	0.00043 J
Thallium	mg/L	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 UJ	< 0.000075 U	< 0.000075 U	0.00011 J	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U
Total Suspended Solids	mg/L	40	42	33	37	44	42	37	37	38	33	43	34	38	26	29	41	24
Michigan CCR Part 115																		
Copper	mg/L	0.00034	0.00023 J	0.00023 J	< 0.00020 U	0.00024 J	0.00029	0.00036 B	0.00053	0.00025	0.00040	0.00034	0.00053	0.00082	< 0.00020 U	0.00020 J	0.00025	0.0033
Iron	mg/L	21	19	18	19	21	22	18	16	20	18	22	16	18	14	14	19	12
Nickel	mg/L	0.0091	0.0091	0.0095	0.0099	0.0092	0.0094	0.0098	0.0078	0.0066	0.0061	0.0077	0.0080	0.0067	0.0045	0.0063	0.0084	0.034
Silver	mg/L	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.00005 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U
Vanadium	mg/L	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00028 U	< 0.00028 U
Zinc	mg/L	0.071	0.024	0.028	0.029	0.060	0.028	0.030	0.025	0.024	0.016	0.024	0.020	0.056	0.015	0.013	0.058	0.11
Additional Parameters																		
Bicarbonate Alkalinity	mg/L	540	470	470	460	520	540	470	460	560	460	570	470	500	430	440	460	480
Carbonate Alkalinity	mg/L	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.31 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.31 U	< 0.16 U
Magnesium	mg/L	57	53	52	56	57	62	47	48	53	45	55	41	41	36	37	40	43
Potassium	mg/L	13	13	11	12	13	12	13	13	12	8.5	11	10	9.1	6.9	6.9	7.0	7.7
Sodium	mg/L	65	59	57	56	63	79	67	57	61	48	80	57	47	43	41	37	45
Total Alkalinity	mg/L	540	470	470	460	520	540	470	460	560	460	570	470	500	430	440	460	480

Notes:

ug/l - micrograms per liter.

mg/l = milligrams per liter.

su - standard pH units (pH is a field parameter)

pCi/L = picocuries per liter.

All metals were analyzed as total unless otherwise indicated.

Qualifiers:

U The analyte was analyzed for, but was not detected at, a level greater than or equal to the level of the adjusted reporting limit (RL) for the sample and method.

J The analyte was positively identified, and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain QC criteria were not met, or to the concentration of the analyte being below the RL).

J+ Same as J, and the reported concentration is potentially biased high.

J– Same as J, and the reported concentration is potentially biased low.

UJ The analyte was not detected at a level greater than or equal to the adjusted method detection limit (MDL). However, the reported adjusted MDL is approximate and might be inaccurate or imprecise.

R The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte might or might not be present in the sample.

Sample Location:		MW-27	MW-27	MW-27	MW-27	MW-27	MW-27	MW-27	MW-27	MW-27	MW-27	MW-27	MW-27	MW-27	MW-27	MW-27	MW-27	MW-27	MW-27
Compliance Phase:		Background	Background	Background	Background	Background	Background	Background	Background	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM
Sample Date:		11/30/2022	1/5/2023	2/7/2023	3/13/2023	4/18/2023	5/22/2023	6/27/2023	8/7/2023	10/23/2023	2/13/2024	4/8/2024	7/18/2024	10/17/2024	2/27/2025	4/21/2025	4/22/2025	8/12/2025	10/23/2025
Sample Type:		Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample
Unit:		Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2
Sample Matrix:		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Constituent	**Unit**																		
Field Parameters																			
Conductivity	mS/cm	2.46	2.01	1.651	1.047	1.04	1.65	2.5	2.57	2.99	1.65	1.06	2.79	3.47	2.32	0.955	0.955	3.36	3.31
Dissolved Oxygen	mg/L	1.35	0.17	0.24	0.93	0.07	0.19	0.04	0.23	0.05	1.64	0.12	0.03	0.24	1.5	0.29	0.29	0.18	0.04
Oxidation Reduction Potential	mV	-87.3	-137.6	-79.1	-134.3	-52.1	-80.9	-89	-104.5	-191.3	-62.8	-140.2	-129.9	-80.3	155.8	-46.2	-46.2	-53	-101.9
pH	su	6.86	6.92	6.81	6.95	6.81	6.77	6.86	6.78	6.77	6.93	6.99	6.87	6.66	6.79	6.89	6.89	6.82	6.83
Temperature	deg c	8.7	6.7	5	4.5	7.2	11.7	16.5	20.8	15.2	5.6	7.5	19.6	16.9	4	7.6	7.6	20.3	16.3
Turbidity	NTU	0.02	0.73	1.33	0.02	4.08	3.32	3.55	8.15	9.71	3.01	2.31	7.9	9.44	6.08	1.77	1.77	1.72	7.75
Appendix III																			
Boron	mg/L	0.31	0.17	0.16	0.14	0.14	0.20	0.45 J+	0.44	0.32	0.16	0.18	0.44	0.5	0.21	0.27	--	0.54	0.54
Calcium	mg/L	200	180	180	180	100	130	180	150	190	160	130	170	170	210	130	--	170	190
Chloride	mg/L	120	84	69	60	38	52	110	100	110	44	17	89	120	97	86	--	120	120
Fluoride	mg/L	0.37	0.29	0.31	0.41	0.42	0.35	0.36	0.41	0.43	0.4	0.71	0.48	0.23	0.25	0.44	--	0.58	0.55
Sulfate (as SO4)	mg/L	6.8	41	58	47	14	1.8 J	0.56 J	3	2.4 J	72	41	2.3 J	1.4 J	40	27	--	1.0 J	2.9 J
Total Dissolved Solids	mg/L	920	710	790	620	460	590	790	690	870	1300	560	890	910	900	640	--	900	930
Appendix IV																			
Antimony	mg/L	0.00013 J	0.000075 J	0.000099 J	0.000060 J	0.00028	< 0.00010 U	< 0.00010 U	< 0.00010 U	< 0.0001 U	< 0.00010 U	< 0.00010 U	< 0.00010 U	0.00010 J	0.00012 J	< 0.00010 U	--	< 0.00010 U	< 0.00010 U
Arsenic	mg/L	0.00086	0.00070	0.00069	0.00069	0.00095	0.00096	0.0010 J+	0.0012	0.0011	0.00082	0.0012	0.0011	0.0012	0.00070	0.0011	--	0.0013	0.0012
Barium	mg/L	0.21	0.17	0.16	0.12	0.074	0.15	0.25	0.25	0.31	0.16	0.10	0.28	0.32	0.25	0.14	--	0.31	0.34
Beryllium	mg/L	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 UJ	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	--	< 0.000052 U	0.000058 J
Cadmium	mg/L	< 0.000032 U	< 0.000032 U	< 0.000032 U	< 0.000032 U	< 0.000032 U	< 0.000075 U	< 0.000075 UJ	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	--	< 0.000075 U	< 0.000075 U
Chromium, Total	mg/L	0.018	0.016	0.0097	0.0099	0.0083	0.025	0.027	0.034	0.028	0.0090	0.0073	0.033	0.050	0.014	0.011	--	0.041	0.059
Cobalt	mg/L	0.00063	0.00056	0.00052	0.00043 J	0.00024 J	0.00063	0.00092 J+	0.00083	0.00075	0.00037 J	0.00016 J	0.00074	0.0011	0.00046 J	0.00035 J	--	0.00096	0.0014
Fluoride	mg/L	0.37	0.29	0.31	0.41	0.42	0.35	0.36	0.41	0.43	0.4	0.71	0.48	0.23	0.25	0.44	--	0.58	0.55
Lead	mg/L	< 0.00022 U	< 0.00022 U	< 0.00022 U	< 0.00022 U	< 0.00022 U	< 0.00010 U	< 0.00010 UJ	< 0.00010 U	< 0.0001 U	< 0.00010 U	< 0.00010 U	< 0.00010 U	< 0.00010 U	< 0.00010 U	< 0.00010 U	--	< 0.00010 U	0.00012 J
Lithium	mg/L	0.0086	0.0088	0.0067	0.0073	0.0075	0.0073	0.017	0.0093	0.0099	0.0050	0.0058	0.0099	0.0092	0.0058	0.0055	--	0.0093	0.0086
Mercury	mg/L	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	--	< 0.00000016 U	0.00000057	< 0.00000016 U
Molybdenum	mg/L	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	0.00041 J	< 0.00025 UJ	< 0.00025 U	< 0.00025 U	< 0.00025 U	< 0.00025 U	< 0.00025 U	0.00026 J	< 0.00025 U	< 0.00025 U	--	< 0.00025 U	0.00058 J
Radium 226 and 228	pCi/L	0.823	< 0.639 UJ	< 0.729 U	< 0.889 U	1.15	1.61	0.84	1.76	< 0.857 U	< 0.774 U	1.25	0.876	< 1.24 U	--	1.07	--	2.24	1.6
Radium-226	pCi/L	0.367	0.23	< 0.127 U	< 0.197 U	< 0.171 U	< 0.325 U	0.458	0.477	0.464	0.22	0.549	0.429	0.34	--	< 0.559 U	--	0.545	0.396
Radium-228	pCi/L	< 0.679 U	< 0.639 UJ	< 0.729 U	< 0.889 U	1.03	1.47 J	< 0.578 U	1.28	< 0.857 U	< 0.774 U	< 0.85 U	< 0.709 U	< 1.24 UG	--	0.826	--	1.7	1.2
Selenium	mg/L	0.00023 J	< 0.00022 U	< 0.00022 U	< 0.00022 U	< 0.00022 U	0.00016 J	0.00021 J+	0.00022 J	0.0002 J	0.00053	0.00014 J	0.00027 J	0.00032 J	0.00024 J	0.00020 J	--	0.00029 J	0.00029 J
Thallium	mg/L	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 UJ	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	--	< 0.000075 U	< 0.000075 U
Total Suspended Solids	mg/L	34	27	22	14	5.0	11	19	11	22	23	9.0	6.0	26	20	13	--	11	4.2
Michigan CCR Part 115																			
Copper	mg/L	0.00030	< 0.00020 U	0.0016	< 0.00020 U	0.00022 J	0.00032	< 0.00020 U	0.00023 J	0.00024 J	< 0.00020 U	0.00039	< 0.00020 U	0.00022 J	< 0.00020 U	0.00037	--	0.00020 J	0.00024 J
Iron	mg/L	13	11	11	8.3	5.5	7.6	9.4	8.0	11	9.9	7.7	8.4	8.1	11	6.4	--	8.1	7.4
Nickel	mg/L	0.00077 J	0.0010 J	0.0010 J	0.00077 J	< 0.00065 U	0.00087 J	0.00067 J	0.00075 J	< 0.00065 U	0.00076 J	0.00073 J	< 0.00065 U	0.00094 J	0.00081 J	0.00089 J	--	0.00084 J	0.00098 J
Silver	mg/L	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.00005 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	--	< 0.000050 U	< 0.000050 U
Vanadium	mg/L	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	0.00082 J	0.00093 J	< 0.00062 U	< 0.00062 U	0.00071 J	0.0018	0.0024	0.0010 J	0.0011 J	--	0.0020	0.0023
Zinc	mg/L	0.0096	< 0.0012 U	0.0016	< 0.0012 U	0.0079	0.0013	< 0.0012 U	< 0.0012 U	< 0.0012 U	< 0.0012 U	< 0.0012 U	< 0.0012 U	0.012	< 0.0012 U	< 0.0012 U	--	0.0027	0.00058 J
Additional Parameters																			
Bicarbonate Alkalinity	mg/L	1200	880	800	590	480	770	1100	1100	1400	790	520	1300	1700	1100	650	--	1500	1700
Carbonate Alkalinity	mg/L	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.31 U	< 0.16 U	< 0.31 U	< 0.31 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	--	< 0.31 U	< 0.16 U
Magnesium	mg/L	45	45	47	44	26	31	33	35	40	55	39	45	44	52	39	--	45	44
Potassium	mg/L	7.6	7.3	6.2	5.8	4.1	6.5	11	12	11	4.9	3.5	9.8	11	8.0	5.1	--	12	12
Sodium	mg/L	92	68	59	61	41	52	75	80	82	59	41	72	82	99	69	--	90	90
Total Alkalinity	mg/L	1200	880	800	590	480	770	1100	1100	1400	790	520	1300	1700	1100	650	--	1500	1700

Notes:

ug/l - micrograms per liter.

mg/l = milligrams per liter.

su - standard pH units (pH is a field parameter)

pCi/L = picocuries per liter.

All metals were analyzed as total unless otherwise indicated.

Qualifiers:

U The analyte was analyzed for, but was not detected at, a level greater than or equal to the level of the adjusted reporting limit (RL) for the sample and method.

J The analyte was positively identified, and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain QC criteria were not met, or to the concentration of the analyte being below the RL).

J+ Same as J, and the reported concentration is potentially biased high.

J– Same as J, and the reported concentration is potentially biased low.

UJ The analyte was not detected at a level greater than or equal to the adjusted method detection limit (MDL). However, the reported adjusted MDL is approximate and might be inaccurate or imprecise.

R The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte might or might not be present in the sample.

Sample Location:		MW-28	MW-28	MW-28	MW-28	MW-28	MW-28	MW-28
Compliance Phase:		AM	AM	AM	AM	AM	AM	AM
Sample Date:		4/7/2024	7/18/2024	10/17/2024	2/27/2025	4/21/2025	8/14/2025	10/23/2025
Sample Type:		Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample
Unit:		Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2
Sample Matrix:		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Constituent	**Unit**							
Field Parameters								
Conductivity	mS/cm	1.18	1.46	1.22	1.83	1.005	1.56	1.36
Dissolved Oxygen	mg/L	0.08	0.01	0.17	0.16	0.29	0.07	0.2
Oxidation Reduction Potential	mV	-118.7	-158.8	-133.4	-32	-53.5	-121.5	-143.3
pH	su	7.02	6.94	6.84	6.9	6.98	6.89	6.97
Temperature	deg c	8.1	16.8	16	6.3	7.4	18.3	16
Turbidity	NTU	3.17	4.11	0.02	6.58	1.57	3.78	6.05
Appendix III								
Boron	mg/L	2.2	6.1	3.8	2.7	2.0	5.6	5.1
Calcium	mg/L	170	160	180	230	160	210	170
Chloride	mg/L	18	67	170	240	180	170	160
Fluoride	mg/L	0.9	1.5	1.4	0.94	0.97	1.4	2
Sulfate (as SO4)	mg/L	11	< 2.2 U	< 1.1 U	41	57	0.67 J	0.65 J
Total Dissolved Solids	mg/L	610	690	920	1100	900	920	820
Appendix IV								
Antimony	mg/L	0.00028	0.00016 J	0.00020 J	0.00073	0.00036	0.00018 J	0.00014 J
Arsenic	mg/L	0.0011	0.0014	0.0019	0.0020	0.0014	0.0038	0.0011
Barium	mg/L	0.34	0.70	0.76	0.75	0.42	0.75	0.75
Beryllium	mg/L	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U
Cadmium	mg/L	< 0.000075 U	< 0.000075 U	< 0.000075 U	0.000091 J	0.000080 J	< 0.000075 U	< 0.000075 U
Chromium, Total	mg/L	0.017	0.0092	0.015	0.0075	0.0078	0.0093	0.0044
Cobalt	mg/L	0.00064	0.00046 J	0.00041 J	0.0020	0.0031	0.0013	0.00024 J
Fluoride	mg/L	0.9	1.5	1.4	0.94	0.97	1.4	2
Lead	mg/L	0.0011	0.0013	0.00088	0.0052	0.0015	0.0041	0.00034 J
Lithium	mg/L	0.050	0.15	0.12	0.084	0.054	0.13	0.15
Mercury	mg/L	0.00024	< 0.00016 U	< 0.00016 U	< 0.00016 U	0.0000075	0.0000041	0.00000055
Molybdenum	mg/L	0.00087 J	0.00054 J	0.0020	0.0027	0.0020	0.0021	0.0087
Radium 226 and 228	pCi/L	0.909	1.29	1.27	--	< 0.964 U	1.93	1.3
Radium-226	pCi/L	0.282	0.273	< 0.218 U	--	< 0.416 U	0.408	< 0.463 U
Radium-228	pCi/L	< 0.842 U	1.02	1.06	--	< 0.964 U	1.52	< 1.26 UG
Selenium	mg/L	0.00032 J	0.00024 J	0.00028 J	0.00029 J	0.00028 J	0.00026 J	0.00030 J
Thallium	mg/L	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U
Total Suspended Solids	mg/L	44	86	120	75	66	110	98
Michigan CCR Part 115								
Copper	mg/L	0.00052	0.00090	0.00037	0.0013	0.0015	0.00055	< 0.00020 U
Iron	mg/L	30	37	47	43	26	47	39
Nickel	mg/L	0.0036	0.00072 J	0.0024	0.0073	0.0073	0.0017	0.00046 J
Silver	mg/L	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U
Vanadium	mg/L	0.00063 J	0.00074 J	0.00080 J	< 0.00062 U	< 0.00062 U	0.00071 J	0.00050 J
Zinc	mg/L	0.0090	0.0067	0.031	0.083	0.11	0.047	0.0014
Additional Parameters								
Bicarbonate Alkalinity	mg/L	560	600	590	550	480	590	510
Carbonate Alkalinity	mg/L	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.31 U	< 0.16 U
Magnesium	mg/L	27	27	33	39	29	28	32
Potassium	mg/L	12	13	14	13	10	14	12
Sodium	mg/L	29	66	51	80	65	74	82
Total Alkalinity	mg/L	560	600	590	550	480	590	510

Notes:

ug/l - micrograms per liter.

mg/l = milligrams per liter.

su - standard pH units (pH is a field parameter)

pCi/L = picocuries per liter.

All metals were analyzed as total unless otherwise indicated.

Qualifiers:

U The analyte was analyzed for, but was not detected at, a level greater than or equal to the level of the adjusted reporting limit (RL) for the sample and method.

J The analyte was positively identified, and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain QC criteria were not met, or to the concentration of the analyte being below the RL).

J+ Same as J, and the reported concentration is potentially biased high.

J– Same as J, and the reported concentration is potentially biased low.

UJ The analyte was not detected at a level greater than or equal to the adjusted method detection limit (MDL). However, the reported adjusted MDL is approximate and might be inaccurate or imprecise.

R The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte might or might not be present in the sample.

Sample Location:		MW-30	MW-30	MW-30	MW-30	MW-30	MW-30	MW-30	MW-30	MW-30	MW-30	MW-30	MW-30	MW-30	MW-30	MW-30	MW-30	MW-30
Compliance Phase:		Background	Background	Background	Background	Background	Background	Background	Background	AM	AM	AM	AM	AM	AM	AM	AM	AM
Sample Date:		11/30/2022	1/3/2023	2/6/2023	3/13/2023	4/18/2023	5/22/2023	6/27/2023	8/8/2023	10/23/2023	2/12/2024	4/7/2024	7/18/2024	10/16/2024	2/25/2025	4/20/2025	8/11/2025	10/21/2025
Sample Type:		Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample
Unit:		Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2
Sample Matrix:		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Constituent	**Unit**																	
Field Parameters																		
Conductivity	mS/cm	2.26	3.18	3.025	2.273	2.73	2.66	2.85	2.67	2.21	2.68	2.61	2.93	3.06	5.15	3.38	4.41	4.25
Dissolved Oxygen	mg/L	0.12	0.39	0.04	0.35	0.29	0.05	0.01	0.12	0.41	0.14	0.03	0	0.06	0.01	0.26	0.1	0.06
Oxidation Reduction Potential	mV	-55.7	-281.2	-134.9	-148.7	-151.8	-86.8	-105.6	-92.7	-301.7	-73.8	-71.3	-198.6	-313.1	-21.4	-29.4	-192.5	-245.8
pH	su	7.07	6.48	7.16	7.25	7.17	7.16	7.21	6.94	7.05	7.18	7.15	7.06	7.02	6.82	7.02	6.96	7.03
Temperature	deg c	10.1	7.2	6.4	4.8	6.6	10.7	13.6	17	15	6.2	7.3	16.9	16	5.7	7.4	18.3	15.8
Turbidity	NTU	0.02	0.02	1.21	0.02	0.02	0.5	0.02	0.02	0.02	0.02	0.02	0.92	0.02	1.15	0.02	0.02	0.59
Appendix III																		
Boron	mg/L	2.2	1.7	2.1	3.5	1.7	1.9	1.9 J+	1.8	2.1	1.9	1.6	1.9	1.9	1.4	1.8	2.0	1.5
Calcium	mg/L	470	460 E	480	960	430	430	460	400	390	440	470	500	440	700	710	610	62
Chloride	mg/L	190	190	190	140	120	98	110	98	97	110J+	82	190	430	1200	1100	1100	1000
Fluoride	mg/L	1.0	1.4	1.0	1.2	1.1	1.1	0.91	1.1	1.2	1.1	1.2	1.1	1.2	0.57	1.1	1.2	0.83
Sulfate (as SO4)	mg/L	780	1000	830	940	970	850	940	860	610	820	980	960	440	980	1000	840	580
Total Dissolved Solids	mg/L	2200 J	2400	2000	2300	2200	2100	2800 J	2300	1800	2100	2200	2300	2200	4000	4000	4300	3200
Appendix IV																		
Antimony	mg/L	< 0.000050 U	< 0.000050 U	< 0.00025 U	< 0.000050 U	0.00040 J	< 0.00050 U	< 0.00050 U	< 0.00010 U	< 0.0001 U	< 0.00050 U	< 0.00010 U	< 0.00010 U	< 0.00010 U	0.00065 J	< 0.00010 U	< 0.00010 U	0.0012
Arsenic	mg/L	0.00046 J	0.00070	< 0.00050 U	0.00039 J	< 0.00010 U	0.00012 J	0.00027 J+	0.00043 J	0.00063	0.00021 J-	0.00044 J	0.00058	0.00097	0.0022 J	0.0030	0.0011	0.0080
Barium	mg/L	0.10	0.089	0.10	0.045	0.047	0.058	0.066	0.048	0.058	0.067 J-	0.051	0.041	0.079	0.098	0.071	0.062 J+	0.074
Beryllium	mg/L	< 0.000052 U	0.000053 J	< 0.00026 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 UJ	< 0.000052 U	< 0.000052 U	0.00011 J+	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.00026 U	< 0.000052 U	0.000062 J	0.000069 J
Cadmium	mg/L	< 0.000032 U	< 0.000032 U	< 0.00016 U	< 0.000032 U	< 0.00016 U	< 0.00038 U	< 0.000075 UJ	< 0.000075 U	< 0.000075 U	< 0.00038 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.00038 U	< 0.000075 U	< 0.000075 U	0.00032
Chromium, Total	mg/L	0.014	0.012	0.0087	0.010	0.0058	0.0052	0.012	0.013	0.0081	0.0049 J-	0.0075	0.010	0.012	0.0031	0.0065	0.0080	0.023
Cobalt	mg/L	0.00091	0.0044	0.00096 J	0.0028	0.0011	0.00054	0.0013 J+	0.0011	0.00053	0.0011	0.0015	0.00077	0.00047 J	0.046	0.0021	0.00047 J	0.00094
Fluoride	mg/L	1.0	1.4	1.0	1.2	1.1	1.1	0.91	1.1	1.2	1.1	1.2	1.1	1.2	0.57	1.1	1.2	0.83
Lead	mg/L	< 0.00022 U	< 0.00022 U	< 0.0011 U	< 0.0011 U	< 0.0011 U	< 0.00050 U	< 0.00050 UJ	< 0.00050 U	< 0.0001 U	< 0.00050 UJD	< 0.00010 U	< 0.00050 U	0.0017 J	< 0.00050 U	< 0.00050 U	< 0.00050 U	0.058
Lithium	mg/L	0.13	0.15	0.12	0.27	0.11	0.11	0.12	0.14	0.12	0.1	0.11	0.13	0.12	0.16	0.19	0.18	0.086
Mercury	mg/L	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	0.00039	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00000016 U	< 0.00000016 U	< 0.00000016 U
Molybdenum	mg/L	< 0.00062 U	0.0036	< 0.0031 U	0.0017	< 0.0031 U	0.00032 J	0.00082 J+	0.0011 J	0.00061 J	0.00073 J+	0.0013	0.00089 J	0.00051 J	0.019	0.0037	0.0012	0.032
Radium 226 and 228	pCi/L	< 0.873 UJ	0.445 J	< 0.624 UJ	< 0.659 U	0.875	< 0.783 U	0.586 J+	0.911	< 0.526 U	0.793 J+	< 0.559 U	0.68	< 1.12 U	1.05	< 0.695 U	1.43	< 0.769 U
Radium-226	pCi/L	< 0.238 UJ	0.139 J	< 0.0915 UJ	< 0.2 U	< 0.141 U	< 0.194 U	0.0986 J+	< 0.163 UJ	< 0.228 U	< 0.117 UJ	0.133	0.199	< 0.219 U	0.53	< 0.149 U	0.381	< 0.241 U
Radium-228	pCi/L	< 0.873 UJ	< 0.443 UJ	< 0.624 UJ	< 0.659 U	0.844	< 0.783 U	< 0.566 UJ	0.82	< 0.526 U	0.721 J+	< 0.559 U	< 0.537 U	< 1.12 UG	0.52	< 0.695 U	1.05	< 0.769 U
Selenium	mg/L	< 0.00022 U	< 0.00022 U	< 0.0011 U	< 0.00022 U	< 0.00022 U	< 0.00010 U	0.00011 J+	0.00012 J	0.00013 J	0.00039 J-	0.00010 J	0.00017 J	0.00024 J	< 0.00050 U	0.00014 J	0.00013 J	0.0015
Thallium	mg/L	< 0.000075 U	< 0.000075 U	< 0.00038 U	< 0.00038 U	< 0.00038 U	< 0.00038 U	< 0.00038 UJ	< 0.00038 U	< 0.000075 U	< 0.00038 U	< 0.000075 U	< 0.00038 U	< 0.00038 U	< 0.00038 U	< 0.000075 U	< 0.00038 U	< 0.000075 U
Total Suspended Solids	mg/L	4.0	11	< 4.0 UJ	5.0	6.0	4.0	< 4.0 U	5.0	4	< 4.0 U	5.1	18	8.0	8.0	38	15	5.1
Michigan CCR Part 115																		
Copper	mg/L	< 0.00020 U	0.00037 J+	< 0.0010 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	0.00054	0.00024 J-	0.00028	< 0.00020 U	< 0.00020 U	< 0.0010 U	0.00020 J	< 0.00020 U	0.013
Iron	mg/L	0.87	3.6	0.99	8.8	4.1	2.4	2.9	2.9	1.4	2	4.9	5.9	2.1	2.5	17	4.5	1.2
Nickel	mg/L	0.00080 J	0.0045	< 0.0032 U	0.0041	0.0018	0.00070 J	0.0021	0.0011 J	< 0.00065 U	0.0018 J-	0.0019	0.0017	< 0.00065 U	0.11	0.0053	0.0013	0.012
Silver	mg/L	< 0.000050 U	< 0.000050 U	< 0.00025 U	< 0.000050 U	< 0.00025 U	< 0.00025 U	< 0.000050 U	< 0.000050 U	< 0.00005 U	< 0.00025 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.00025 U	< 0.000050 U	< 0.000050 U	0.00012
Vanadium	mg/L	< 0.00062 U	< 0.00062 U	< 0.0031 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 UJ	< 0.00062 U	< 0.0031 U	< 0.00062 U	0.00047 J	0.024
Zinc	mg/L	0.0053	< 0.0012 U	< 0.0059 U	< 0.0012 U	0.0049	< 0.0012 U	< 0.0012 U	< 0.0012 U	< 0.0012 U	< 0.0012 UJ	< 0.0012 U	< 0.0012 U	0.0033	0.1	0.0027	0.0011 J	0.027
Additional Parameters																		
Bicarbonate Alkalinity	mg/L	930	760	880	660	630	640	< 0.16 U	690	780	690	570	630	770	550	540	660	740
Carbonate Alkalinity	mg/L	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.31 U	< 0.31 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U
Magnesium	mg/L	110	120	120	250	120	110	120	100	95	110	120	110	99	190	180	150	5.4
Potassium	mg/L	12	15	16	17	12	9.6	11	13	10	10	8.9	11	11	18	18	19	74
Sodium	mg/L	120	110	120	220	98	95	95	88	82	89	73	82	120	330	400	330	81
Total Alkalinity	mg/L	930	760	880	660	630	640	< 0.16 U	690	780	690	570	630	770	550	540	660	740

Notes:

ug/l - micrograms per liter.

mg/l = milligrams per liter.

su - standard pH units (pH is a field parameter)

pCi/L = picocuries per liter.

All metals were analyzed as total unless otherwise indicated.

Qualifiers:

U The analyte was analyzed for, but was not detected at, a level greater than or equal to the level of the adjusted reporting limit (RL) for the sample and method.

J The analyte was positively identified, and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain QC criteria were not met, or to the concentration of the analyte being below the RL).

J+ Same as J, and the reported concentration is potentially biased high.

J– Same as J, and the reported concentration is potentially biased low.

UJ The analyte was not detected at a level greater than or equal to the adjusted method detection limit (MDL). However, the reported adjusted MDL is approximate and might be inaccurate or imprecise.

R The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte might or might not be present in the sample.

Sample Location:		MW-31	MW-31	MW-31	MW-31	MW-31	MW-31	MW-31	MW-31	MW-31	MW-31	MW-31	MW-31	MW-31	MW-31	MW-31	MW-31	MW-31	MW-31
Compliance Phase:		Background	Background	Background	Background	Background	Background	Background	Background	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM
Sample Date:		12/1/2022	1/4/2023	2/7/2023	3/14/2023	4/18/2023	5/22/2023	6/27/2023	8/8/2023	10/23/2023	2/12/2024	4/8/2024	7/17/2024	7/18/2024	10/15/2024	2/25/2025	4/20/2025	8/12/2025	10/21/2025
Sample Type:		Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample
Unit:		Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2
Sample Matrix:		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Constituent	**Unit**																		
Field Parameters																			
Conductivity	mS/cm	1.35	1.4	1.327	1.23	1.28	1.21	1.24	1.41	1.23	1.1	1.26	1.32	1.32	1.26	1.15	0.996	1.38	1.15
Dissolved Oxygen	mg/L	1.65	0.09	0.21	0.11	0.11	0.09	1.39	0.05	0.15	0.05	0.04	0.23	0.23	0.66	0.2	0.14	2.34	2.01
Oxidation Reduction Potential	mV	-150	-262.2	-129.3	-214.9	-274.4	-220	-113.9	-55.8	-82.4	149.7	-130.1	-117.3	-117.3	-73	-41.8	-105	123.2	-43.4
pH	su	7.84	7.7	7.85	7.76	7.87	7.85	8	7.78	7.67	7.8	8.01	7.74	7.74	7.82	8.02	7.73	7.8	8.08
Temperature	deg c	8.7	7.6	6.3	4	6.5	13.2	14.4	17.8	14.9	7	10.2	19	19	14.1	6.3	10.4	16.2	14.4
Turbidity	NTU	2.61	0.02	1.27	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.97	0.02	22.1	12.3
Appendix III																			
Boron	mg/L	4.8	3.8	4.2	4.0	3.6	4.5	5.4 J+	4.8	5.1	4.4	4.5	5.4	--	5.8	4.5	4.4	6.4	7.0
Calcium	mg/L	180	190	170	200	170	160	130	150	170	170	200	170	--	150	150	200	160	130
Chloride	mg/L	120	100	110	97	94	92	110	110	100	99J+	87	--	100	110	110	100	170	170
Fluoride	mg/L	4.6	4.9	4.7	4.6	5.1	5.2	4.7	5.1	4.6	4.5	4.7	--	4.7	4.5	4.1	4.5	4	3.3
Sulfate (as SO4)	mg/L	180	250	200	250	250	160	120	100	72	150	170	--	120	45	71	240	60	19
Total Dissolved Solids	mg/L	850	940 J	780	860	810	760	760	860	730	810	810	--	780	730	740	960	910	770
Appendix IV																			
Antimony	mg/L	0.000069 J	< 0.000050 U	0.000080 J	0.00012 J	0.00013 J	< 0.00010 U	< 0.00010 U	0.00012 J	< 0.0001 U	< 0.00010 U	< 0.00010 U	0.00038	--	0.00039	0.00069	< 0.00010 U	0.0011	0.00043
Arsenic	mg/L	0.0018	0.0013	0.0012	0.0010	0.0011	0.0014	0.0016 J+	0.0016	0.0012	0.0010	0.0012	0.0012	--	0.00095	0.0012	0.00073	0.0019	0.0015
Barium	mg/L	0.21	0.14	0.19	0.15	0.12	0.13	0.23	0.16	0.16	0.13	0.13	0.18	--	0.29	0.20	0.099	0.25	0.38
Beryllium	mg/L	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 UJ	< 0.000052 U	< 0.000052 U	0.000054 J	< 0.000052 U	< 0.000052 U	--	0.000096 J	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U
Cadmium	mg/L	< 0.000032 U	< 0.000032 U	< 0.000032 U	< 0.000032 U	< 0.000032 U	< 0.000075 U	< 0.000075 UJ	< 0.000075 U	< 0.000075 U	0.000084 J	< 0.000075 U	< 0.000075 U	--	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U
Chromium, Total	mg/L	0.0021	0.0018	0.0024	0.0019	0.0019	0.0029	0.0023	0.0023	0.0025	0.0022	0.0017	0.0029	--	0.0041	0.0020	0.0031	0.0018	0.0040
Cobalt	mg/L	0.00015 J	0.00015 J	0.00020 J	0.00018 J	0.00016 J	0.00021 J	0.00018 J+	0.00018 J	0.00013 J	0.00028 J	< 0.00010 U	0.00010 J	--	0.00036 J	< 0.00010 U	< 0.00010 U	0.00016 J	0.00022 J
Fluoride	mg/L	4.6	4.9	4.7	4.6	5.1	5.2	4.7	5.1	4.6	4.5	4.7	--	4.7	4.5	4.1	4.5	4	3.3
Lead	mg/L	< 0.00022 U	< 0.00022 U	< 0.00022 U	< 0.00022 U	< 0.00022 U	0.00031 J	< 0.00010 UJ	< 0.00010 U	< 0.0001 U	< 0.00010 U	< 0.00010 U	0.00025 J	--	< 0.00010 U	< 0.00010 U	< 0.00010 U	0.00025 J	0.00045 J
Lithium	mg/L	0.052	0.048	0.052	0.054	0.046	0.053	0.056	0.054	0.049	0.039	0.039	0.052	--	0.063	0.043	0.030	0.051	0.058
Mercury	mg/L	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	--	< 0.00016 U	< 0.00016 U	0.00000071	0.0000017	0.0000014
Molybdenum	mg/L	0.0021	0.0013	0.0013	0.0011 J	0.0011 J	0.0012	0.0018 J+	0.0011 J	0.0013	0.0011 J	0.00052 J	0.00083 J	--	0.0011 J	0.0015	0.00040 J	0.0091	0.0033
Radium 226 and 228	pCi/L	0.753	< 0.641 U	0.717	< 0.725 U	0.592	1.14	0.58	1.23	< 0.497 U	1.01	0.754	0.991	--	< 0.736 U	< 0.56 U	< 0.644 U	0.576	< 0.852 U
Radium-226	pCi/L	0.187	0.203	0.187	< 0.189 U	0.254	0.184	0.27	0.262 J+	< 0.208 U	0.171	0.345	0.274	--	0.27	< 0.24 U	< 0.14 U	< 0.277 U	< 0.26 U
Radium-228	pCi/L	0.566	< 0.641 U	0.53	< 0.725 U	< 0.527 U	0.959	< 0.489 U	0.97	< 0.497 U	0.842	< 0.502 U	0.717	--	< 0.736 U	< 0.56 U	< 0.644 U	< 0.573 U	< 0.852 U
Selenium	mg/L	< 0.00022 U	< 0.00022 U	< 0.00022 U	< 0.00022 U	< 0.00022 U	0.00011 J	0.00012 J+	0.00015 J	0.00014 J	0.00074	0.00013 J	0.00016 J	--	0.00010 J	< 0.00010 U	0.00012 J	0.00024 J	0.00022 J
Thallium	mg/L	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 UJ	< 0.000075 U	< 0.000075 U	0.000088 J	< 0.000075 U	< 0.000075 U	--	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U
Total Suspended Solids	mg/L	2.0 J	4.0	< 4.0 U	< 4.0 U	< 4.0 U	< 4.0 U	< 4.0 U	1.0 J	< 4 U	< 4.0 U	< 3.9 U	--	< 4.0 U	< 4.0 U	< 4.0 U	< 4.0 U	< 4.0 U	< 4.1 U
Michigan CCR Part 115																			
Copper	mg/L	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	0.00027	< 0.00020 U	< 0.00020 U	< 0.0002 U	0.00023 J	0.00044	0.00029	--	0.00031	< 0.00020 U	< 0.00020 U	0.00033	0.0017
Iron	mg/L	2.5	1.4	1.5	1.1	0.77	1.2	0.92	0.21	0.13	0.19	0.12	0.14	--	0.23	0.22	0.15	0.84	0.39
Nickel	mg/L	< 0.00065 U	< 0.00065 U	< 0.00065 U	< 0.00065 U	< 0.00065 U	< 0.00065 U	< 0.00065 U	< 0.00065 U	< 0.00065 U	0.0023	< 0.00065 U	0.0021	--	0.0027	0.023	0.0014	0.24	0.068
Silver	mg/L	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.00005 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	--	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U
Vanadium	mg/L	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	0.00064 J	--	0.00083 J	< 0.00062 U	0.00076 J	0.00045 J	0.00059 J
Zinc	mg/L	0.0082	< 0.0012 U	< 0.0012 U	< 0.0012 U	0.010	0.0014	< 0.0012 U	< 0.0012 U	< 0.0012 U	< 0.0012 U	< 0.0012 U	< 0.0012 U	--	0.010	0.013	0.0016	0.0022	0.0018
Additional Parameters																			
Bicarbonate Alkalinity	mg/L	410	340	350	320	290	320	340	410	440	340	350	--	410	450	410	410	500	450
Carbonate Alkalinity	mg/L	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.31 U	< 0.31 U	< 0.16 U	--	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U
Magnesium	mg/L	37	36	38	42	36	33	34	38	35	36	38	38	--	38	37	37	51	52
Potassium	mg/L	9.9	11	11	11	10	9.9	12	12	11	9.6	10	12	--	11	9.6	9.9	13	12
Sodium	mg/L	60	46	51	48	50	53	64	56	56	54	53	54	--	61	57	51	71	80
Total Alkalinity	mg/L	410	340	350	320	290	320	340	410	440	340	350	--	410	450	410	410	500	450

Notes:

ug/l - micrograms per liter.

mg/l = milligrams per liter.

su - standard pH units (pH is a field parameter)

pCi/L = picocuries per liter.

All metals were analyzed as total unless otherwise indicated.

Qualifiers:

U The analyte was analyzed for, but was not detected at, a level greater than or equal to the level of the adjusted reporting limit (RL) for the sample and method.

J The analyte was positively identified, and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain QC criteria were not met, or to the concentration of the analyte being below the RL).

J+ Same as J, and the reported concentration is potentially biased high.

J– Same as J, and the reported concentration is potentially biased low.

UJ The analyte was not detected at a level greater than or equal to the adjusted method detection limit (MDL). However, the reported adjusted MDL is approximate and might be inaccurate or imprecise.

R The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte might or might not be present in the sample.

	Sample Location:	MW-32	MW-32	MW-32	MW-32	MW-32	MW-32	MW-32	MW-32	MW-32	MW-32	MW-32	MW-32	MW-32	MW-32	MW-32	MW-32	MW-32
	Compliance Phase:	Background	Background	Background	Background	Background	Background	Background	Background	AM	AM	AM	AM	AM	AM	AM	AM	AM
	Sample Date:	11/30/2022	1/4/2023	2/8/2023	3/14/2023	4/18/2023	5/22/2023	6/27/2023	8/8/2023	10/23/2023	2/12/2024	4/7/2024	7/17/2024	10/16/2024	2/25/2025	4/20/2025	8/11/2025	10/21/2025
	Sample Type:	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample
	Unit:	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2
	Sample Matrix:	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Constituent	**Unit**																	
Field Parameters																		
Conductivity	mS/cm	1.29	1.29	1.258	1.175	1.29	1.2	1.05	0.99	1.14	0.96	1.21	0.99	1.07	1.07	0.758	0.897	1.05
Dissolved Oxygen	mg/L	0.07	0.08	0.08	0.1	0.1	0.33	0.12	0.13	0.29	0.09	0.04	0.18	0.11	0.01	0.11	0.09	0.19
Oxidation Reduction Potential	mV	-184.5	-222.8	-184.7	-188.5	-199.5	-221.7	-209.8	-141.4	-186.3	138.7	-178.6	-196	-197.4	-122.6	-143.2	-211.1	-191.3
pH	su	7.69	7.5	7.57	7.53	7.67	7.75	7.65	7.52	7.53	7.64	7.63	7.58	7.59	7.67	7.67	7.57	7.53
Temperature	deg c	10.2	8.3	6.6	6.3	7.4	11.1	13	15.9	14.9	7	8.1	15.6	15.8	7.3	8.5	16.7	15.2
Turbidity	NTU	0.02	0.02	2.17	0.02	0.02	0.02	0.02	0.02	0.02	4.52	0.02	0.02	0.02	5.04	4.21	0.02	7.07
Appendix III																		
Boron	mg/L	3.8	3.0	3.0	2.9	2.6	3.1	3.9 J+	3.7	5	3	3.1	4.0	5.6	3.0	2.8	5.1	5.7
Calcium	mg/L	200	180	190	220	190	190	150	130	150	180	190	140	160	160	160	150	170
Chloride	mg/L	47	50	50	50	45	42	41	44	47	39J+	38	42	50	50	46	53	61
Fluoride	mg/L	1.5	1.5	1.4	1.6	1.4	1.5	1.4	1.6	1.8	1.5	1.6	1.5	1.9	1.2	1.4	1.5	1.2
Sulfate (as SO4)	mg/L	100	110	54	170	190	140	48	17	17	83	130	9.5	5.9	27	110	6.4	6
Total Dissolved Solids	mg/L	790	700	730	770	800	790	600	550	640	680	770	560	580	650	690	610	680
Appendix IV																		
Antimony	mg/L	0.000067 J	< 0.000050 U	< 0.000050 U	0.000072 J	0.00014 J	< 0.00010 U	< 0.00010 U	< 0.00010 U	< 0.0001 U	0.00070	< 0.00010 U	< 0.00010 U	< 0.00010 U	< 0.00010 U	< 0.00010 U	< 0.00010 U	< 0.00010 U
Arsenic	mg/L	0.00061	0.00045 J	0.00052 J	0.00047 J	0.00044 J	0.00055	0.00058 J+	0.00062	0.00058	0.0024	0.00046 J	0.00059	0.00064	0.00039 J	0.00042 J	0.00051 J	0.00048 J
Barium	mg/L	0.62	0.60	0.57	0.41	0.29	0.34	0.37	0.41	0.85	0.059	0.57	0.63	1.3	0.97	0.84	1.1	1.4
Beryllium	mg/L	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 UJ	< 0.000052 U	< 0.000052 U	0.000070 J	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U
Cadmium	mg/L	< 0.000032 U	< 0.000032 U	< 0.000032 U	< 0.000032 U	< 0.000032 U	< 0.000075 U	< 0.000075 UJ	< 0.000075 U	< 0.000075 U	0.00019 J	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U
Chromium, Total	mg/L	0.00046	0.00065	0.00057	0.00055	0.00039	0.00038	0.00032	0.00031	0.00031	0.0030	0.00038	0.00036	0.00050	0.00033	0.00035	0.00035	0.00040
Cobalt	mg/L	0.00034 J	0.00036 J	0.00039 J	0.00041 J	0.00031 J	0.00037 J	0.00068 J+	0.00058	0.00038 J	0.0019	0.00021 J	0.00046 J	0.00058	0.00022 J	0.00032 J	0.00052	0.00051 J
Fluoride	mg/L	1.5	1.5	1.4	1.6	1.4	1.5	1.4	1.6	1.8	1.5	1.6	1.5	1.9	1.2	1.4	1.5	1.2
Lead	mg/L	< 0.00022 U	< 0.00022 U	< 0.00022 U	< 0.00022 U	< 0.00022 U	0.00012 J	0.00014 J+	< 0.00010 U	< 0.0001 U	0.00038 J	< 0.00010 U	< 0.00010 U	0.00042 J	< 0.00010 U	< 0.00010 U	0.00039 J	< 0.00010 U
Lithium	mg/L	0.15	0.14	0.12	0.11	0.094	0.10	0.13	0.14	0.19	0.1	0.098	0.13	0.2	0.12	0.094	0.16	0.17
Mercury	mg/L	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	0.0019	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00000016 U	0.0000012	0.00000064
Molybdenum	mg/L	0.0051	0.0043	0.0038	0.0032	0.0034	0.0045	0.0047 J+	0.0046	0.0045	0.0073	0.0034	0.0038	0.0045	0.0025	0.0026	0.0026	0.0011 J
Radium 226 and 228	pCi/L	0.614	< 0.497 U	< 0.601 U	< 0.732 U	0.877	0.847	< 0.607 U	0.985	< 0.589 U	< 0.53 U	< 0.545 U	< 0.57 U	0.732	0 J-	< 0.639 U	1.6	1.09
Radium-226	pCi/L	< 0.184 U	0.219	0.152	< 0.195 U	< 0.164 U	0.206	< 0.0916 U	0.403 J+	< 0.18 U	< 0.156 U	< 0.137 U	0.172	0.172	0 J-	0.217	0.573	0.339
Radium-228	pCi/L	0.492	< 0.497 U	< 0.601 U	< 0.732 U	0.773	0.641	< 0.607 U	< 0.848 U	< 0.589 U	< 0.53 U	< 0.545 U	< 0.57 U	< 0.603 U	-0.04 J-	< 0.639 U	1.02	0.749
Selenium	mg/L	< 0.00022 U	< 0.00022 U	< 0.00022 U	< 0.00022 U	< 0.00022 U	< 0.00010 U	< 0.00010 UJ	< 0.00010 U	< 0.0001 U	0.0010	0.00013 J	< 0.00010 U	0.00014 J	< 0.00010 U	< 0.00010 U	< 0.00010 U	0.00010 J
Thallium	mg/L	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 UJ	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U
Total Suspended Solids	mg/L	42	43	39	40	39	31	29	11	23	32	34	23	20	29	36	26	48
Michigan CCR Part 115																		
Copper	mg/L	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	0.00020 J	< 0.00020 U	< 0.00020 U	0.00041	0.016	< 0.00020 U	0.00031	0.00035	0.00023 J	< 0.00020 U	0.00030	< 0.00020 U
Iron	mg/L	20	18	18	19	18	17	15	11	11	17	16	12	13	14	15	15	21
Nickel	mg/L	0.0013	0.0016	0.0012	0.0012	0.00096 J	0.00088 J	0.0012	0.00086 J	0.00077 J	0.023	0.00095 J	0.00082 J	0.0010 J	0.00068 J	0.0019	0.00089 J	0.00080 J
Silver	mg/L	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.00005 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U
Vanadium	mg/L	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00028 U	< 0.00028 U
Zinc	mg/L	0.031	0.0022	0.0026	0.0025	0.030	0.0037	0.0026	0.0030	0.0035	0.0049	0.0024	0.0024	0.058	0.068	0.0047	0.0046	0.0034
Additional Parameters																		
Bicarbonate Alkalinity	mg/L	560	490	500	450	440	430	440	440	520	440	470	440	510	480	470	500	550
Carbonate Alkalinity	mg/L	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.31 U	< 0.31 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U
Magnesium	mg/L	38	34	35	37	34	34	28	28	30	32	33	26	31	29	28	31	35
Potassium	mg/L	13	13	12	11	9.8	9.7	12	13	13	9.1	9.2	11	13	9.2	8.2	12	13
Sodium	mg/L	36	29	29	30	27	30	33	32	35	30	28	30	36	29	25	34	36
Total Alkalinity	mg/L	560	490	500	450	440	430	440	440	520	440	470	440	510	480	470	500	550

Notes:

ug/l - micrograms per liter.

mg/l = milligrams per liter.

su - standard pH units (pH is a field parameter)

pCi/L = picocuries per liter.

All metals were analyzed as total unless otherwise indicated.

Qualifiers:

U The analyte was analyzed for, but was not detected at, a level greater than or equal to the level of the adjusted reporting limit (RL) for the sample and method.

J The analyte was positively identified, and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain QC criteria were not met, or to the concentration of the analyte being below the RL).

J+ Same as J, and the reported concentration is potentially biased high.

J– Same as J, and the reported concentration is potentially biased low.

UJ The analyte was not detected at a level greater than or equal to the adjusted method detection limit (MDL). However, the reported adjusted MDL is approximate and might be inaccurate or imprecise.

R The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte might or might not be present in the sample.

Sample Location:		MW-33	MW-33	MW-33	MW-33	MW-33	MW-33	MW-33	MW-33	MW-33	MW-33	MW-33	MW-33	MW-33	MW-33	MW-33	MW-33	MW-33
Compliance Phase:		Background	Background	Background	Background	Background	Background	Background	Background	AM	AM	AM	AM	AM	AM	AM	AM	AM
Sample Date:		12/1/2022	1/5/2023	2/8/2023	3/15/2023	4/18/2023	5/22/2023	6/27/2023	8/7/2023	10/23/2023	2/12/2024	4/9/2024	7/18/2024	10/17/2024	2/3/2025	4/19/2025	8/12/2025	10/20/2025
Sample Type:		Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample
Unit:		Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2
Sample Matrix:		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Constituent	**Unit**																	
Field Parameters																		
Conductivity	mS/cm	1.1	0.99	0.949	0.859	0.91	0.92	0.901	0.98	1	0.78	0.85	1.21	1.11	0.716	0.631	1.16	1.60
Dissolved Oxygen	mg/L	0.81	1.02	0.75	0.2	0.23	0.06	0.05	0.01	0.02	0.4	0.23	0.01	0.1	0.49	0.26	0.26	0.31
Oxidation Reduction Potential	mV	-28.5	-72.8	-61.2	-37.4	-63.6	-86.2	-106.6	-121.9	-107.1	-11.1	-43	-185.9	-16.9	42	-48.4	12.4	-112.2
pH	su	7.12	6.49	7.14	6.96	7.04	7.02	7.03	6.98	6.86	7.27	7.16	6.95	6.86	7.25	6.8	6.83	6.5
Temperature	deg c	8.3	4.8	2.4	3.6	8.8	10.7	13.7	17.2	15.8	7.1	7.5	16.4	16.4	6.8	7.8	17.8	16.9
Turbidity	NTU	0.02	0.02	1.17	0.02	3.44	0.55	0.02	1.07	3.25	3.07	4.13	1.49	2.13	1.72	0.02	0.02	2.65
Appendix III																		
Boron	mg/L	0.18	0.091	0.086	0.067	0.082	0.085	0.11 J+	0.12	0.16	0.078	0.065	0.10	0.15	0.056	0.21	0.16	0.17
Calcium	mg/L	200	170	170	190	150	160	150	150	180	150	170	200	180	120	160	190	310
Chloride	mg/L	58	51	50	39	27	17	20	23	45	35J+	20	36	64	35	41	47	48
Fluoride	mg/L	0.29	0.24	0.21 J	0.23	0.28	0.25	0.26	0.27	0.24	0.27	< 0.28 U	0.28	0.26	0.29	0.31	0.41	0.3
Sulfate (as SO4)	mg/L	100	58	65	42	23	1.9 J	4.3	1.6 J	69	20	17	3.7 J	98	22	22	41	370
Total Dissolved Solids	mg/L	750 J	630	680	590	580	600	600	570	690	550	600	740	760	500	640	720	1100
Appendix IV																		
Antimony	mg/L	0.00098	0.00088	0.00079	0.00059	0.0012	0.00017 J	0.00020 J	0.00015 J	0.00048	< 0.00050 U	0.00068	0.00035	0.0013	0.0011	0.00036	0.00042	0.00024 J
Arsenic	mg/L	0.0031	0.0014	0.0016	0.0017	0.0040	0.0038	0.0032 J+	0.0027	0.0027	0.0012	0.0030	0.021	0.0011	0.0012	0.0056	0.0087	0.0018
Barium	mg/L	0.084	0.086	0.092	0.076	0.073	0.095	0.088	0.098	0.09	0.44	0.063	0.16	0.087	0.043	0.10	0.18	0.24
Beryllium	mg/L	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.00026 U	< 0.000052 U	< 0.000052 UJ	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U
Cadmium	mg/L	0.000049 J	0.00010 J	0.00014 J	0.00015 J	< 0.00016 U	< 0.000075 U	< 0.000075 UJ	< 0.000075 U	0.00023 J	< 0.00038 U	0.00023 J	< 0.000075 U	0.00010 J	< 0.000075 UJ	< 0.000075 U	< 0.000075 U	< 0.000075 U
Chromium, Total	mg/L	0.0021	0.0028	0.0029	0.0027	0.0029	0.0039	0.0050	0.0059	0.0029	0.019	0.0032	0.011	0.0024	0.0035	0.0056	0.0093	0.0088
Cobalt	mg/L	0.00075	0.00049 J	0.00082	0.0017	0.0020 J	0.00083	0.00039 J+	0.00041 J	0.00053	0.0012	0.0022	0.00058	0.00064	0.00040 J	0.0031	0.00060	0.00069
Fluoride	mg/L	0.29	0.24	0.21 J	0.23	0.28	0.25	0.26	0.27	0.24	0.27	< 0.28 U	0.28	0.26	0.29	0.31	0.41	0.3
Lead	mg/L	< 0.00022 U	< 0.00022 U	< 0.00022 U	< 0.00022 U	< 0.0011 U	0.00026 J	0.00015 J+	0.00015 J	0.00037 J	0.0014 J	0.00043 J	0.00013 J	0.00018 J	< 0.00010 U	0.00012 J	0.00017 J	0.00012 J
Lithium	mg/L	0.0051	0.0069	0.0043	0.0047	0.0061	0.0052	< 0.0094 U	0.0041	0.0054	0.0028	0.0046	0.0069	0.0053	0.0030	0.0049	0.0063	0.0050
Mercury	mg/L	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 UJ	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	0.0000029	0.0000016	0.0000060
Molybdenum	mg/L	0.0047	0.0037	0.0031	0.0031	0.0060 J	0.0026	0.00068 J+	0.00052 J	0.0032	0.00027 J	0.0030	0.0014	0.0067	0.0057	0.0048	0.0017	0.0015
Radium 226 and 228	pCi/L	0.825	< 0.587 U	0.949	< 0.852 U	< 0.815 U	1.61	0.828	1.15	< 0.621 U	< 0.892 U	< 0.846 U	0.915	< 0.964 U	0.31 J-	< 1.46 U	1.11	7.89
Radium-226	pCi/L	< 0.267 U	< 0.14 U	< 0.125 U	< 0.204 U	< 0.232 U	< 0.256 U	0.154	0.276 J+	< 0.282 UJ	< 0.162 U	< 0.328 U	< 0.144 U	< 0.226 U	-0.03 J-	< 0.346 U	0.0278 J-	0.918
Radium-228	pCi/L	0.794	< 0.587 U	0.833	< 0.852 U	< 0.815 U	1.48 J	< 0.768 U	0.875	< 0.621 UJ	< 0.892 U	< 0.846 U	0.773	< 0.964 U	0.31 J-	< 1.46 UG	1.08	6.98
Selenium	mg/L	0.00089	0.00076	0.00055	0.00038 J	< 0.0011 U	0.00033 J	0.00033 J+	0.00029 J	0.00059	0.00054	0.00053	0.00058	0.0010	0.00098	0.00053	0.00052	0.00048 J
Thallium	mg/L	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.00038 U	< 0.000075 U	< 0.000075 UJ	< 0.000075 U	< 0.000075 U	< 0.00038 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U
Total Suspended Solids	mg/L	2.0 J	5.0	10	1.0 J	9.0	17	21	22	10	6.0	5.0	80	< 4.0 U	< 4.0 U	27	70	57
Michigan CCR Part 115																		
Copper	mg/L	0.0079	0.016	0.016	0.020	0.0067	0.0017	0.0011 B	0.00079	0.0032	0.00099	0.013	0.00085	0.015	0.032	0.0042	0.00090	0.0011
Iron	mg/L	1.2	2.5	2.8	2.5	4.6	7.4	7.7	8.7	4.4	1.1	1.2	29	0.067	0.078	8.9	25	20
Nickel	mg/L	0.020	0.016	0.017	0.019	0.023	0.014	0.0081	0.0049	0.0077	0.0036	0.026	0.014	0.014	0.018	0.028	0.012	0.0097
Silver	mg/L	< 0.000050 U	< 0.000050 U	< 0.000050 U	0.00011	< 0.00025 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.00005 U	< 0.00025 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U
Vanadium	mg/L	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.0031 U	< 0.00062 U	0.00065 J	0.00079 J	< 0.00062 U	< 0.00062 U	0.00097 J	0.0033	0.0014	0.00088 J	0.00095 J	0.0015	0.0013
Zinc	mg/L	0.0071	0.0036	0.0050	0.0053	0.012	0.0014	< 0.0012 U	< 0.0012 U	0.018	0.0035	0.0072	0.0017	0.011	0.0059	0.0092	0.0029 J+	0.0033
Additional Parameters																		
Bicarbonate Alkalinity	mg/L	460	430	400	390	440	480	440	480	420	330	430	550	390	320	460	520	440
Carbonate Alkalinity	mg/L	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.31 U	< 0.31 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.31 U	< 0.16 U
Magnesium	mg/L	22	19	18	17	16	18	16	16	19	16	19	21	17	12	18	19	25
Potassium	mg/L	3.8	5.4	4.6	4.1	4.0	4.1	4.4	5.1	4.9	3.4	3.1	5.7	4.6	2.4	4.5	6.1	6.1
Sodium	mg/L	38	25	24	26	22	22	23	22	30	25	17	21	26	19	20	24	25
Total Alkalinity	mg/L	460	430	400	390	440	480	440	480	420	330	430	550	390	320	460	520	440

Notes:

ug/l - micrograms per liter.

mg/l = milligrams per liter.

su - standard pH units (pH is a field parameter)

pCi/L = picocuries per liter.

All metals were analyzed as total unless otherwise indicated.

Qualifiers:

U The analyte was analyzed for, but was not detected at, a level greater than or equal to the level of the adjusted reporting limit (RL) for the sample and method.

J The analyte was positively identified, and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain QC criteria were not met, or to the concentration of the analyte being below the RL).

J+ Same as J, and the reported concentration is potentially biased high.

J– Same as J, and the reported concentration is potentially biased low.

UJ The analyte was not detected at a level greater than or equal to the adjusted method detection limit (MDL). However, the reported adjusted MDL is approximate and might be inaccurate or imprecise.

R The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte might or might not be present in the sample.

Sample Location:		MW-34	MW-34	MW-34	MW-34	MW-34	MW-34	MW-34	MW-34	MW-34	MW-34	MW-34	MW-34	MW-34	MW-34	MW-34	MW-34	MW-34
Compliance Phase:		Background	Background	Background	Background	Background	Background	Background	Background	AM	AM	AM	AM	AM	AM	AM	AM	AM
Sample Date:		12/1/2022	1/5/2023	2/8/2023	3/15/2023	4/18/2023	5/22/2023	6/27/2023	8/7/2023	10/23/2023	2/12/2024	4/9/2024	7/18/2024	10/17/2024	2/26/2025	4/21/2025	8/12/2025	10/20/2025
Sample Type:		Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample
Unit:		Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2	Unit 3A/B & 1/2
Sample Matrix:		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Constituent	**Unit**																	
Field Parameters																		
Conductivity	mS/cm	2.14	1.07	1.96	1.49	1.86	1.89	2.05	2.05	1.93	1.82	1.8	2	1.9	1.83	1.86	1.98	2.03
Dissolved Oxygen	mg/L	0.87	1.19	0.29	0.45	1.05	2.73	0.09	0.97	0.7	1.92	0.05	0.33	0.82	0.14	0.15	0.29	0.21
Oxidation Reduction Potential	mV	-120.5	-104.4	-119.7	-95	-63.4	-100.5	-113.8	-124.6	-163.1	-98.9	-72.8	-139	-122.7	-30.7	-83.9	-71.8	-109.9
pH	su	6.65	7.66	6.78	6.68	6.53	6.6	6.75	6.69	6.62	6.63	6.61	6.7	6.49	6.59	6.62	6.65	6.56
Temperature	deg c	12.9	4.9	9.4	7.8	8	10.3	12.4	14.6	14.8	9.8	8.9	14.2	15.2	9	8.8	6.3	15.5
Turbidity	NTU	4.96	0.02	5.58	2.11	5.87	0.02	0.02	3.15	1.77	4.76	1.39	1.6	2.76	3.11	1.26	6.32	7.81
Appendix III																		
Boron	mg/L	3.2	2.7	1.9 B	1.8	1.6	2.5	4.0 J+	3.6	4.1	1.9	1.8	2.9	2.2	2.1	1.9	2.6	3.9
Calcium	mg/L	220	190	220	210	210	210	220	190	220	210	230	220	200	220	210	220	240
Chloride	mg/L	33	27	24	23	23	22	23	24	25	20J+	16	22	20	19	21	21	22
Fluoride	mg/L	0.35	0.20	0.23	0.24	0.21	0.23	0.26	0.29	0.28	0.21	0.22	0.31	0.096 J	0.22	0.32	0.4	0.38
Sulfate (as SO4)	mg/L	2.5 J	1.9 J	< 0.41 U	0.87 J	0.56 J	< 0.41 U	< 0.41 U	< 0.41 U	< 0.41 U	< 0.41 U	< 1.1 U	< 2.2 U	< 1.1 U	< 2.2 U	< 2.2 U	0.65 J	1.1 J
Total Dissolved Solids	mg/L	820	750	800	790	700	760	820	770	800	730	730	760	710	720	750	720	790
Appendix IV																		
Antimony	mg/L	0.00023 J	0.00011 J	0.000095 J	0.00013 J	0.00091 J	0.00010 J	0.00016 J	0.00015 J	0.00014 J	< 0.00050 U	0.00013 J	0.00029	0.00021 J	0.00019 J	0.00013 J	0.00013 J	0.00015 J
Arsenic	mg/L	0.0016	0.0010	0.00088	0.00090	0.00089 J	0.0010	0.0013 J+	0.0012	0.0013	0.00017 J-	0.00085	0.0010	0.0010	0.00072	0.00075	0.00092	0.0011
Barium	mg/L	0.54	0.54	0.58	0.50	0.17	0.49	0.53	0.49	0.52	0.066J-	0.46	0.52	0.48	0.47	0.54	0.57	0.52
Beryllium	mg/L	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.00026 U	0.000059 J	< 0.000052 UJ	< 0.000052 U	< 0.000052 U	< 0.000052 UJ	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U
Cadmium	mg/L	0.000036 J	< 0.000032 U	< 0.000032 U	< 0.000032 U	< 0.00016 U	< 0.000075 U	< 0.000075 UJ	< 0.000075 U	< 0.000075 U	< 0.00038 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U
Chromium, Total	mg/L	0.024	0.022	0.025	0.029	< 0.00088 U	0.027	0.034	0.028	0.019	0.0050 J+	0.026	0.023	0.023	0.018	0.025	0.024	0.025
Cobalt	mg/L	0.0015	0.0013	0.0013	0.0013	< 0.00050 U	0.0014	0.0018 J+	0.0016	0.0013	0.00061	0.0011	0.0010	0.0012	0.00090	0.0010	0.0011	0.0013
Fluoride	mg/L	0.35	0.20	0.23	0.24	0.21	0.23	0.26	0.29	0.28	0.21	0.22	0.31	0.096 J	0.22	0.32	0.4	0.38
Lead	mg/L	0.0069	0.0016	0.00059	0.00094	< 0.0011 U	0.00074	0.00087 J+	0.00091	0.00063	< 0.00050 UJ	0.00038 J	0.00047 J	0.00049 J	0.00041 J	0.00028 J	0.00054 J	0.00058
Lithium	mg/L	0.077	0.086	0.053	0.012	0.046	0.065	0.088	0.10	0.099	0.043	0.057	0.079	0.065	0.057	0.056	0.073	0.086
Mercury	mg/L	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	0.0000016	0.0000020	0.0000015
Molybdenum	mg/L	0.0018	0.00081 J	< 0.00062 U	< 0.00062 U	0.0079	0.0018	0.00030 J+	< 0.00025 U	< 0.00025 U	< 0.00025 UJ	< 0.00025 U	< 0.00025 U	0.00041 J	< 0.00025 U	< 0.00025 U	< 0.00025 U	< 0.00025 U
Radium 226 and 228	pCi/L	2.02	1.15	1.28	1.34	1.99	1.81	2.79	1.24	2.4	1.86 J+	2.2	1.76	2.07	--	2.62	1.7	1.55
Radium-226	pCi/L	0.57	0.534	0.654	0.558	0.396	0.561	0.357	0.637 J+	0.699	0.527	0.602	0.427	0.369	--	< 0.656 U	< 0.391 U	0.59
Radium-228	pCi/L	1.45	< 0.849 U	< 0.918 U	0.78	1.59	1.25 J	2.44	< 0.862 U	1.7	1.33 J+	1.59 G	1.33	1.7 G	--	2.12 G	1.35	< 1.12 UG
Selenium	mg/L	0.00034 J	0.00025 J	0.00027 J	0.00023 J	< 0.0011 U	0.00029 J	0.00030 J+	0.00027 J	0.00031 J	0.00039 J-	0.00028 J	0.00028 J	0.00030 J	0.00026 J	0.00026 J	0.00024 J	0.00029 J
Thallium	mg/L	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.00038 U	< 0.000075 U	< 0.000075 UJ	< 0.000075 U	< 0.000075 U	< 0.00038 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U
Total Suspended Solids	mg/L	110	52	83	44	160	160	170	130	150	120	160	150	140	97	160	140	130
Michigan CCR Part 115																		
Copper	mg/L	0.0034	0.00075	0.00033	0.0085	< 0.0010 U	0.00069	0.00045 B	0.00043	0.00045	0.00024 J	0.00040	0.00058	0.00055	0.00029	0.00028	0.00026	0.00049
Iron	mg/L	73	70	83	78	75	77	77	64	70	72	76	65	59	64	69	72	55
Nickel	mg/L	0.0016	0.0013	0.0012	0.0013	< 0.0032 U	0.0016	0.0020	0.0018	0.0015	0.00089 J	0.011	0.019	0.028	0.041	0.012	0.011	0.0090
Silver	mg/L	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.00025 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.00005 U	< 0.00025 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U
Vanadium	mg/L	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.00062 U	< 0.0031 U	0.00065 J	0.00069 J	< 0.00062 U	< 0.00062 U	< 0.00062 U	0.00090 J	0.0011 J	0.0012	0.00078 J	0.0010 J	0.0010 J	0.0011 J
Zinc	mg/L	0.031	0.0019	0.0023	0.0023	0.020	0.0015	0.0018	0.0017	0.0021	< 0.0012 UJ	0.0014	0.0033	0.021	0.0036	0.0026	0.0025	0.0021
Additional Parameters																		
Bicarbonate Alkalinity	mg/L	1100	950	920	890	880	950	970	970	1000	830	950	960	920	900	930	950	510
Carbonate Alkalinity	mg/L	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.31 U	< 0.16 U	< 0.31 U	< 0.31 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.31 U	< 0.16 U
Magnesium	mg/L	30	23	22	21	20	24	27	26	29	23	25	25	22	23	24	25	26
Potassium	mg/L	11	13	9.5	8.5	8.4	8.9	12	13	13	8.8	8.0	10	8.6	8.3	8.2	9.7	12
Sodium	mg/L	34	30	28	22	23	30	38	33	38	26	25	29	25	26	24	27	31
Total Alkalinity	mg/L	1100	950	920	890	880	950	970	970	1000	830	950	960	920	900	930	950	510

Notes:

ug/l - micrograms per liter.

mg/l = milligrams per liter.

su - standard pH units (pH is a field parameter)

pCi/L = picocuries per liter.

All metals were analyzed as total unless otherwise indicated.

Qualifiers:

U The analyte was analyzed for, but was not detected at, a level greater than or equal to the level of the adjusted reporting limit (RL) for the sample and method.

J The analyte was positively identified, and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain QC criteria were not met, or to the concentration of the analyte being below the RL).

J+ Same as J, and the reported concentration is potentially biased high.

J– Same as J, and the reported concentration is potentially biased low.

UJ The analyte was not detected at a level greater than or equal to the adjusted method detection limit (MDL). However, the reported adjusted MDL is approximate and might be inaccurate or imprecise.

R The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte might or might not be present in the sample.

Sample Location:		MW-36	MW-36	MW-36	MW-36	MW-36	MW-36	MW-36
Compliance Phase:		AM	AM	AM	AM	AM	AM	AM
Sample Date:		4/8/2024	7/17/2024	10/16/2024	2/26/2025	4/21/2025	8/12/2025	10/21/2025
Sample Type:		Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample
Unit:		Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2
Sample Matrix:		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Constituent	**Unit**							
Field Parameters								
Conductivity	mS/cm	0.658	0.66	0.7	0.614	0.4807	0.78	0.83
Dissolved Oxygen	mg/L	0.08	0.02	0.01	0.06	0.12	0.06	0.11
Oxidation Reduction Potential	mV	-207.1	-331.7	-230.1	130.6	-223	-18.2	-192.3
pH	su	10.42	9.89	8.79	9.54	8.95	8.97	7.07
Temperature	deg c	8.4	19.1	18.3	5.4	8.2	20.8	17.7
Turbidity	NTU	5.41	2.01	1.11	2.82	0.02	0.67	1.37
Appendix III								
Boron	mg/L	0.28	0.41	0.61	0.25	0.41	0.54	0.54
Calcium	mg/L	67	61	61	56	72	73	81
Chloride	mg/L	34	39	38	34	32	32	29
Fluoride	mg/L	0.61	0.65	0.92	0.61	0.72	0.9	0.68
Sulfate (as SO4)	mg/L	5.7 J	21	10	10	6.8	5.9 J	17
Total Dissolved Solids	mg/L	330	460	390	400	450	480	470
Appendix IV								
Antimony	mg/L	0.00076	0.0015	0.00075	0.0029	0.00076	0.00080	0.0020
Arsenic	mg/L	0.029	0.029	0.013	0.012	0.0093	0.012	0.0071
Barium	mg/L	0.15	0.17	0.20	0.13	0.25	0.25	0.23
Beryllium	mg/L	0.000059 J	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U
Cadmium	mg/L	0.00032	0.00082	0.00019 J	0.00046	0.000094 J	0.00020 J	0.00015 J
Chromium, Total	mg/L	0.0013	0.0031	0.0018	0.0021	0.0011	0.0015	0.00097
Cobalt	mg/L	0.00027 J	0.00027 J	0.00018 J	0.00028 J	0.00018 J	0.00017 J	0.00016 J
Fluoride	mg/L	0.61	0.65	0.92	0.61	0.72	0.9	0.68
Lead	mg/L	0.025	0.051	0.012	0.032	0.0060	0.016	0.010
Lithium	mg/L	0.0057	0.0089	0.012	0.0042	0.010	0.014	0.012
Mercury	mg/L	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	0.0000063	0.0000099	0.0000039
Molybdenum	mg/L	0.019	0.042	0.034	0.037	0.017	0.025	0.022
Radium 226 and 228	pCi/L	< 0.861 U	< 1.4 UJ	1.08	--	< 0.933 U	< 0.892 U	< 1.12 U
Radium-226	pCi/L	0.467	< 0.207 UJ	< 0.194 U	--	< 0.319 U	0.117 J+	< 0.353 U
Radium-228	pCi/L	< 0.861 U	< 1.4 UJ	0.959	--	< 0.933 U	0.151 J-	< 1.12 UG
Selenium	mg/L	0.00060	0.00072	0.00065	0.00064	0.00049 J	0.00049 J	0.00046 J
Thallium	mg/L	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U
Total Suspended Solids	mg/L	38	4.0 J+	< 4.0 U	5.0	< 4.0 U	< 4.0 U	< 4.1 U
Michigan CCR Part 115								
Copper	mg/L	0.0077	0.019	0.0086	0.011	0.0025	0.0041	0.0031
Iron	mg/L	0.40	0.35	0.44	0.39	1.1	0.80	0.91
Nickel	mg/L	0.011	0.0084	0.0054	0.0066	0.0056	0.0048	0.0032
Silver	mg/L	0.00021	0.00057	0.00011	0.00023	0.000051	0.00011	0.000077
Vanadium	mg/L	0.0024	0.0052	0.0025	0.0052	0.0037	0.0032	0.0029
Zinc	mg/L	0.0088	0.020	0.014	0.013	0.0042	0.0054	0.0038
Additional Parameters								
Bicarbonate Alkalinity	mg/L	78	160	270	200	320	380	390
Carbonate Alkalinity	mg/L	120	110	34	97	39	< 0.31 UJ	< 0.16 U
Magnesium	mg/L	6.9	7.5	9.3	6.1	13	11	12
Potassium	mg/L	52	45	30	46	33	36	34
Sodium	mg/L	61	65	57	62	56	61	60
Total Alkalinity	mg/L	200	260	310	300	350	380	390

Notes:

ug/l - micrograms per liter.

mg/l = milligrams per liter.

su - standard pH units (pH is a field parameter)

pCi/L = picocuries per liter.

All metals were analyzed as total unless otherwise indicated.

Qualifiers:

U The analyte was analyzed for, but was not detected at, a level greater than or equal to the level of the adjusted reporting limit (RL) for the sample and method.

J The analyte was positively identified, and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain QC criteria were not met, or to the concentration of the analyte being below the RL).

J+ Same as J, and the reported concentration is potentially biased high.

J– Same as J, and the reported concentration is potentially biased low.

UJ The analyte was not detected at a level greater than or equal to the adjusted method detection limit (MDL). However, the reported adjusted MDL is approximate and might be inaccurate or imprecise.

R The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte might or might not be present in the sample.

Sample Location:		MW-37	MW-37	MW-37	MW-37	MW-37	MW-37	MW-37
Compliance Phase:		AM	AM	AM	AM	AM	AM	AM
Sample Date:		4/8/2024	7/17/2024	10/15/2024	2/3/2025	4/20/2025	8/12/2025	10/21/2025
Sample Type:		Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample
Unit:		Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2	Unit 1/2
Sample Matrix:		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Constituent	**Unit**							
Field Parameters								
Conductivity	mS/cm	1.16	1.24	1	1.09	1	1.05	0.957
Dissolved Oxygen	mg/L	1.04	0.04	0.01	0.89	0.14	0.18	0.18
Oxidation Reduction Potential	mV	-19	65	6.7	74.1	-72.7	-8.9	-90.6
pH	su	7.47	7.15	7.21	7.16	7.42	7.28	7.24
Temperature	deg c	9	17.8	18.1	7.9	9.3	19.5	17.5
Turbidity	NTU	0.02	0.02	7.46	0.02	0.5	1.21	0.87
Appendix III								
Boron	mg/L	5.2	3.9	1.9	5.9	4.8	4.0	2.8
Calcium	mg/L	160	160	120	160	140	140	140
Chloride	mg/L	22	29	40	15	15	15	18
Fluoride	mg/L	0.63	0.39	0.5	0.4	0.5	0.6	0.58
Sulfate (as SO4)	mg/L	210	260	110	270	260	230	110
Total Dissolved Solids	mg/L	790	840	630	780	700	720	620
Appendix IV								
Antimony	mg/L	0.00064	0.00040	0.00023 J	0.00011 J	0.00017 J	0.00017 J	0.00016 J+
Arsenic	mg/L	0.00055	0.00046 J	0.00046 J	0.00074	0.00061	0.00073	0.0011
Barium	mg/L	0.040	0.046	0.044	0.074	0.067	0.070	0.082
Beryllium	mg/L	< 0.000052 U	< 0.000052 U	< 0.000052 U	0.000076 J	< 0.000052 U	< 0.000052 U	< 0.000052 U
Cadmium	mg/L	0.00012 J	0.00013 J	0.00011 J	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U
Chromium, Total	mg/L	0.00039	0.00054	0.00027	0.00028	0.00036	0.00026	0.0015 J+
Cobalt	mg/L	0.00075	0.00053	0.00051 J	0.00076	0.00038 J	0.00044 J	0.00056
Fluoride	mg/L	0.63	0.39	0.5	0.4	0.5	0.6	0.58
Lead	mg/L	0.00017 J	0.00013 J	< 0.00010 U	< 0.00010 U	0.00058	0.00052 J	0.010 J+
Lithium	mg/L	0.020	0.022	0.019	0.0093	0.0097	0.016	0.014
Mercury	mg/L	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	0.0000016	0.0000018	0.0000065 J+
Molybdenum	mg/L	0.015	0.0075	0.0064	0.012	0.013	0.0094	0.0064
Radium 226 and 228	pCi/L	< 0.569 U	< 0.764 U	< 0.96 UJ	0.95	1.09	< 0.572 U	< 0.774 UJ
Radium-226	pCi/L	< 0.142 U	0.104	< 0.226 UJ	0.67	< 0.319 U	< 0.289 U	< 0.331 U
Radium-228	pCi/L	< 0.569 U	< 0.764 U	< 0.96 UJ	< 0.43 U	1.09	< 0.572 U	< 0.774 UJ
Selenium	mg/L	0.0046	0.0030	0.0018	0.00065	0.00091	0.0011	0.00069
Thallium	mg/L	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U
Total Suspended Solids	mg/L	< 4.0 U	3.9 J	< 4.0 U	< 4.0 U	< 4.0 U	< 4.0 U	< 4.1 UJ
Michigan CCR Part 115								
Copper	mg/L	0.013	0.014	0.014	0.0067	0.0088	0.012	0.041 J+
Iron	mg/L	0.16	< 0.026 U	0.026 J	2.1	1.7	0.90	2.3
Nickel	mg/L	0.0046	0.0052	0.0039	0.0029	0.0029	0.0037	0.0035 J+
Silver	mg/L	< 0.000050 U	< 0.000050 U	0.00017 J+	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U
Vanadium	mg/L	< 0.00062 U	< 0.00062 U	< 0.00062 U	0.00067 J	< 0.00062 U	0.00039 J	0.00073 J+
Zinc	mg/L	0.017	0.017	0.011	0.015	0.0097	0.011	0.018 J+
Additional Parameters								
Bicarbonate Alkalinity	mg/L	310	340	350	340	290	330	360
Carbonate Alkalinity	mg/L	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.31 U	< 0.16 U
Magnesium	mg/L	13	12	9.8	12	9.9	11	9.6
Potassium	mg/L	18	20	18	13	19	20	19
Sodium	mg/L	100	98	57	68	58	49	46
Total Alkalinity	mg/L	310	340	350	340	290	330	360

Notes:

ug/l - micrograms per liter.

mg/l = milligrams per liter.

su - standard pH units (pH is a field parameter)

pCi/L = picocuries per liter.

All metals were analyzed as total unless otherwise indicated.

Qualifiers:

U The analyte was analyzed for, but was not detected at, a level greater than or equal to the level of the adjusted reporting limit (RL) for the sample and method.

J The analyte was positively identified, and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain QC criteria were not met, or to the concentration of the analyte being below the RL).

J+ Same as J, and the reported concentration is potentially biased high.

J– Same as J, and the reported concentration is potentially biased low.

UJ The analyte was not detected at a level greater than or equal to the adjusted method detection limit (MDL). However, the reported adjusted MDL is approximate and might be inaccurate or imprecise.

R The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte might or might not be present in the sample.

Sample Location:		MW-38	MW-38	MW-38	MW-38	MW-38	MW-38	MW-38
Compliance Phase:		AM	AM	AM	AM	AM	AM	AM
Sample Date:		4/8/2024	7/17/2024	10/16/2024	2/26/2025	4/20/2025	8/12/2025	10/21/2025
Sample Type:		Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample
Unit:		Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B	Unit 3A/B
Sample Matrix:		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Constituent	**Unit**							
Field Parameters								
Conductivity	mS/cm	1.27	1.18	1.3	0.91	0.587	0.64	0.891
Dissolved Oxygen	mg/L	0.4	0.17	0.13	0.33	1.51	0.27	0.24
Oxidation Reduction Potential	mV	-207.4	-25.1	-69.8	-5.7	-102.8	12	-200.1
pH	su	10	9.23	9	9.12	9.17	8.33	9.59
Temperature	deg c	11.7	20.6	16.9	6	8.1	23.2	16.7
Turbidity	NTU	7.83	0.02	0.02	8.46	3.32	2.01	11.4
Appendix III								
Boron	mg/L	1.6	2.4	3	1.2	0.47	2.1	1.9
Calcium	mg/L	150	96	110	74	72	91	560
Chloride	mg/L	51	57	58	42	11	34	31
Fluoride	mg/L	0.79	1	1.8	0.83	0.63	1.2	0.88
Sulfate (as SO4)	mg/L	280	170	210	130	210	120	110
Total Dissolved Solids	mg/L	840	850	980	350	460	580	620
Appendix IV								
Antimony	mg/L	0.00068	0.0017	0.0011	0.0018	0.0013	0.00031	< 0.00010 U
Arsenic	mg/L	0.0050	0.0071	0.0033	0.0057	0.0050	0.0025	0.0023
Barium	mg/L	0.16	0.12	0.17	0.070	0.036	0.11	0.073
Beryllium	mg/L	< 0.000052 U	0.000067 J	0.000090 J	< 0.000052 U	< 0.000052 U	< 0.000052 U	0.000055 J
Cadmium	mg/L	0.000096 J	0.00037	0.00015 J	0.00049	< 0.000075 U	< 0.000075 U	< 0.000075 U
Chromium, Total	mg/L	0.0040	0.016	0.0072	0.013	0.0039	0.0044	0.012
Cobalt	mg/L	0.00053	0.00071	0.00055	0.00079	0.00025 J	0.00029 J	0.00049 J
Fluoride	mg/L	0.79	1	1.8	0.83	0.63	1.2	0.88
Lead	mg/L	0.015	0.086	0.023	0.060	0.0076	0.0053	< 0.00050 U
Lithium	mg/L	0.12	0.098	0.12	0.094	0.047	0.12	0.14
Mercury	mg/L	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	0.0000093	0.000021	0.000032
Molybdenum	mg/L	0.0097	0.014	0.0095	0.023	0.025	0.0064	0.0010 J
Radium 226 and 228	pCi/L	1.21	< 1.72 U	2.12	--	< 2.65 U	< 1.03 U	< 1.5 U
Radium-226	pCi/L	0.492	< 0.314 U	0.278	--	< 0.988 U	< 0.469 U	< 0.456 U
Radium-228	pCi/L	< 1.08 UG	< 1.72 UG	1.84	--	< 2.65 UG	< 1.03 UG	< 1.5 UG
Selenium	mg/L	0.00073	0.00095	0.00059	0.0010	0.0015	0.00046 J	0.00012 J
Thallium	mg/L	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.00038 U
Total Suspended Solids	mg/L	160	53	< 4.0 U	45	7.0	< 4.0 U	< 4.0 U
Michigan CCR Part 115								
Copper	mg/L	0.0031	0.020	0.0063	0.018	0.0037	0.00098	< 0.00020 U
Iron	mg/L	0.39	1.0	0.51	1.4	0.13	0.26	3.3
Nickel	mg/L	0.0053	0.0096	0.0067	0.0083	0.0038	0.0038	0.00071 J
Silver	mg/L	< 0.000050 U	0.00019	0.000065	0.00015	< 0.000050 U	< 0.000050 U	< 0.000050 U
Vanadium	mg/L	0.0066	0.010	0.0053	0.015	0.014	0.0081	< 0.00028 U
Zinc	mg/L	0.0066	0.020	0.015	0.021	0.0039	0.0038	< 0.00048 U
Additional Parameters								
Bicarbonate Alkalinity	mg/L	270	300	380	230	55	260	150
Carbonate Alkalinity	mg/L	12	50	60	75	43	< 0.31 U	90
Magnesium	mg/L	18	13	18	7.4	1.3	10	120
Potassium	mg/L	91	86	88	82	44	75	15
Sodium	mg/L	97	100	100	96	36	74	290
Total Alkalinity	mg/L	280	350	440	300	98	260	240

Notes:

ug/l - micrograms per liter.

mg/l = milligrams per liter.

su - standard pH units (pH is a field parameter)

pCi/L = picocuries per liter.

All metals were analyzed as total unless otherwise indicated.

Qualifiers:

U The analyte was analyzed for, but was not detected at, a level greater than or equal to the level of the adjusted reporting limit (RL) for the sample and method.

J The analyte was positively identified, and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain QC criteria were not met, or to the concentration of the analyte being below the RL).

J+ Same as J, and the reported concentration is potentially biased high.

J– Same as J, and the reported concentration is potentially biased low.

UJ The analyte was not detected at a level greater than or equal to the adjusted method detection limit (MDL). However, the reported adjusted MDL is approximate and might be inaccurate or imprecise.

R The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte might or might not be present in the sample.

Sample Location:		MW-39	MW-39
Compliance Phase:		AM	AM
Sample Date:		8/13/2025	10/21/2025
Sample Type:		Field Sample	Field Sample
Unit:			
Sample Matrix:		Groundwater	Groundwater
Constituent	**Unit**		
Field Parameters			
Conductivity	mS/cm	1.21	1.29
Dissolved Oxygen	mg/L	0.14	0.15
Oxidation Reduction Potential	mV	74.5	-142.6
pH	su	7.3	7.2
Temperature	deg c	20.4	18
Turbidity	NTU	8.5	9.02
Appendix III			
Boron	mg/L	1.4	1.3
Calcium	mg/L	200	200
Chloride	mg/L	13	12
Fluoride	mg/L	0.49	0.36
Sulfate (as SO4)	mg/L	48	37
Total Dissolved Solids	mg/L	710	760
Appendix IV			
Antimony	mg/L	0.00013 J	0.00012 J
Arsenic	mg/L	0.0012	0.00082
Barium	mg/L	0.11	0.14
Beryllium	mg/L	< 0.000052 U	< 0.000052 U
Cadmium	mg/L	0.00013 J	< 0.000075 U
Chromium, Total	mg/L	0.0069	0.0062
Cobalt	mg/L	0.00037 J	0.00037 J
Fluoride	mg/L	0.49	0.36
Lead	mg/L	0.00015 J	0.00013 J
Lithium	mg/L	0.023	0.020
Mercury	mg/L	0.0000017	0.0000012
Molybdenum	mg/L	0.00026 J	0.00033 J
Radium 226 and 228	pCi/L	1.2	< 1.12 U
Radium-226	pCi/L	< 0.452 U	< 0.353 U
Radium-228	pCi/L	1.03	< 1.12 UG
Selenium	mg/L	0.00030 J	0.00027 J
Thallium	mg/L	< 0.000075 U	< 0.000075 U
Total Suspended Solids	mg/L	14	< 4.0 U
Michigan CCR Part 115			
Copper	mg/L	0.00047	0.00028
Iron	mg/L	6.0	3.2
Nickel	mg/L	0.0021	0.0018
Silver	mg/L	< 0.000050 U	< 0.000050 U
Vanadium	mg/L	0.00097 J	0.00095 J
Zinc	mg/L	0.0091	0.0015
Additional Parameters			
Bicarbonate Alkalinity	mg/L	580	670
Carbonate Alkalinity	mg/L	< 0.31 U	< 0.16 U
Magnesium	mg/L	33	36
Potassium	mg/L	9.7	9.2
Sodium	mg/L	25	25
Total Alkalinity	mg/L	580	670

Notes:

ug/l - micrograms per liter.

mg/l = milligrams per liter.

su - standard pH units (pH is a field parameter)

pCi/L = picocuries per liter.

All metals were analyzed as total unless otherwise indicated.

Qualifiers:

U The analyte was analyzed for, but was not detected at, a level greater than or equal to the level of the adjusted reporting limit (RL) for the sample and method.

J The analyte was positively identified, and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain QC criteria were not met, or to the concentration of the analyte being below the RL).

J+ Same as J, and the reported concentration is potentially biased high.

J– Same as J, and the reported concentration is potentially biased low.

UJ The analyte was not detected at a level greater than or equal to the adjusted method detection limit (MDL). However, the reported adjusted MDL is approximate and might be inaccurate or imprecise.

R The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte might or might not be present in the sample.

Sample Location:		SG-02	SG-02	SG-02	SG-02	SG-02	SG-02	SG-02	SG-02	SG-02	SG-02	SG-02	SG-02	SG-02	SG-02	SG-02	SG-02	SG-02
Compliance Phase:		Background	Background	Background	Background	Background	Background	Background	Background	AM	AM	AM	AM	AM	Background	AM	Background	Background
Sample Date:		12/2/2022	1/5/2023	2/6/2023	3/14/2023	4/19/2023	5/23/2023	6/28/2023	8/8/2023	10/24/2023	2/14/2024	4/10/2024	7/17/2024	10/17/2024	2/3/2025	4/22/2025	8/11/2025	10/20/2025
Sample Type:		Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample
Unit:		Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water
Sample Matrix:		Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water
Constituent	**Unit**			**DRY**											**DRY**		**DRY**	**DRY**
Field Parameters																		
Conductivity	mS/cm	1.42	1	--	0.898	0.93	1.03	1.56	1.66	1.47	0.84	0.99	1.57	1.45	--	0.69	--	--
Dissolved Oxygen	mg/L	5.28	9.57	--	4.27	10.32	7.83	8.9	9.54	8.29	14.38	9.31	7.69	8.44	--	9.53	--	--
Oxidation Reduction Potential	mV	147.3	-25.2	--	131.1	13.3	16.1	25.6	69.3	-44.9	135.6	-32.5	-39.7	78.5	--	33.2	--	--
pH	su	8.02	8.38	--	8	8.23	9.14	8.52	8.7	8.15	8.01	8.38	7.86	7.67	--	8.38	--	--
Temperature	deg c	2.8	3.5	--	2.7	8.9	26.6	26.2	29.6	17.5	3.6	14.8	28.2	12.4	--	14.8	--	--
Turbidity	NTU	1.62	0.02	--	1.2	2.41	6.62	4.2	3.26	6.09	0.46	3.59	1.34	7.03	--	9.08	--	--
Appendix III																		
Boron	mg/L	4.0	2.2	--	2.1	2.0	2.8	5.6 J+	6.9	7	3.5	3.1	8.1	7.3	--	2.6	--	--
Calcium	mg/L	210	140	--	140	130	150	210	170	180	140	140	170	160	--	100	--	--
Chloride	mg/L	75	46	--	41	37	40	86	120	99	52	36	120	110	--	54	--	--
Fluoride	mg/L	2.6	1.9	--	2.3	2.6	3.3	4.6	5.1	3.6	2.2	2.1	4.5	3.7	--	2.5	--	--
Sulfate (as SO4)	mg/L	620	360	--	350	400	430	620	640	530	380	340	540	490	--	270	--	--
Total Dissolved Solids	mg/L	1100	660	--	580	680	740	1200	1400	1100	690	690	1100	1100	--	560	--	--
Appendix IV																		
Antimony	mg/L	0.00051	0.00043	--	0.00066	0.00058 J	0.0012	0.00085	0.0011	0.00061	0.00038	0.00088	0.0011	0.00076	--	0.00079	--	--
Arsenic	mg/L	0.0019	0.0012	--	0.0018	0.0017 J	0.0032	0.0037	0.0091	0.0023	0.0012	0.0017	0.0086	0.0020	--	0.0014	--	--
Barium	mg/L	0.049	0.033	--	0.034	0.22	0.080	0.13	0.11	0.06	0.037	0.045	0.12	0.060	--	0.049	--	--
Beryllium	mg/L	0.000060 J	< 0.000052 U	--	< 0.000052 U	< 0.00027 U	< 0.000052 U	0.00029	0.00014 J	< 0.000052 U	< 0.000052 U	< 0.000052 U	0.000057 J	< 0.000052 U	--	0.000078 J	--	--
Cadmium	mg/L	< 0.000032 U	< 0.000032 U	--	< 0.000032 U	< 0.00017 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	--	< 0.000075 U	--	--
Chromium, Total	mg/L	0.00038	0.00024 J	--	0.00057	< 0.00091 U	0.00046	0.00091	0.00080	0.00036	0.00025	0.00045	0.00064	0.00034	--	0.00036	--	--
Cobalt	mg/L	0.00021 J	0.00022 J	--	0.00028 J	< 0.00052 U	0.00035 J	0.00040 J	0.00057	0.00015 J	0.00012 J	0.00017 J	0.00034 J	< 0.00010 U	--	0.00012 J	--	--
Fluoride	mg/L	2.6	1.9	--	2.3	2.6	3.3	4.6	5.1	3.6	2.2	2.1	4.5	3.7	--	2.5	--	--
Lead	mg/L	0.0013	0.00081	--	0.0012	0.0020 J	0.0011	0.00050 J	0.0012	0.00064	0.00061	0.0011	0.00083	0.00043 J	--	0.00063	--	--
Lithium	mg/L	0.046	0.032	--	0.035	0.038	0.053	0.067	0.085	0.058	0.042	0.043	0.086	0.072	--	0.046	--	--
Mercury	mg/L	< 0.00016 U	< 0.00016 U	--	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	0.00022	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	--	0.0000064	--	--
Molybdenum	mg/L	0.0069	0.0060	--	0.011	0.0062 J	0.016	0.0072	0.012	0.0081	0.0069	0.013	0.011	0.0097	--	0.014	--	--
Radium 226 and 228	pCi/L	< 0.342 U	0.712 J+	--	< 0.551 U	1.42	1.49	1.44	1.28	< 0.532 U	< 1 U	0.722	< 0.916 U	< 0.7 U	--	0.658	--	--
Radium-226	pCi/L	0.151	< 0.121 U	--	< 0.177 U	0.266	0.229	0.456	0.329	< 0.265 U	< 0.18 U	0.206	0.466	0.175	--	0.382	--	--
Radium-228	pCi/L	< 0.342 U	0.627 J+	--	< 0.551 U	1.15	1.26	0.981	0.954	< 0.532 U	< 1 U	< 0.601 U	< 0.916 U	< 0.7 U	--	< 0.565 U	--	--
Selenium	mg/L	0.00073	0.00059	--	0.0010	< 0.0011 U	0.0013	0.0013	0.0014	0.0008	0.0018	0.0014	0.0015	0.00078	--	0.0014	--	--
Thallium	mg/L	< 0.000075 U	< 0.000075 U	--	< 0.000075 U	< 0.00039 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	--	< 0.000075 U	--	--
Total Suspended Solids	mg/L	< 4.0 U	3.0 J	--	1.0 J	0.99 J	1.0 J	30	14	< 3.9 U	< 4.0 U	< 4.0 U	17	< 4.0 U	--	11	--	--
Michigan CCR Part 115																		
Copper	mg/L	0.0010	0.00085	--	0.011	0.0011 J	0.0014	0.0012	0.0010	0.00047	0.00089	0.0016	0.00083	0.00061	--	0.0015	--	--
Iron	mg/L	0.20	0.15	--	0.20	0.23	0.16	0.27	0.48	0.28	0.14	0.16	0.48	0.21	--	0.10	--	--
Nickel	mg/L	0.0023	0.0020	--	0.0023	< 0.0034 U	0.0027	0.0036	0.0040	0.0034	0.0020	0.0024	0.0037	0.0035	--	0.0021	--	--
Silver	mg/L	< 0.000050 U	< 0.000050 U	--	< 0.000050 U	< 0.00026 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.00005 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	--	< 0.000050 U	--	--
Vanadium	mg/L	< 0.00062 U	< 0.00062 U	--	< 0.00062 U	< 0.0032 U	0.0019	0.0014	0.0052	0.00072 J	< 0.00062 U	0.0014	0.0055	0.0020	--	0.0012	--	--
Zinc	mg/L	0.0041	0.0031	--	0.0029	0.029	0.0014	0.0024	0.0028	0.005	0.0013	0.0020	0.0024	0.0033	--	0.0016	--	--
Additional Parameters																		
Bicarbonate Alkalinity	mg/L	96	76	--	62	71	35	73	65	130	93	79	94	110	--	85	--	--
Carbonate Alkalinity	mg/L	< 0.16 U	< 0.16 U	--	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	19	< 0.31 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	--	< 0.16 U	--	--
Magnesium	mg/L	48	31	--	28	28	33	53	63	57	37	34	61	56	--	28	--	--
Potassium	mg/L	13	9.1	--	8.0	7.3	6.8	18	21	16	9.1	8.2	20	13	--	6.7	--	--
Sodium	mg/L	40	24	--	22	21	27	52	62	58	31	28	66	60	--	27	--	--
Total Alkalinity	mg/L	96	76	--	62	71	35	73	83	130	93	79	94	110	--	85	--	--

Notes:

ug/l - micrograms per liter.

mg/l = milligrams per liter.

su - standard pH units (pH is a field parameter)

pCi/L = picocuries per liter.

All metals were analyzed as total unless otherwise indicated.

Qualifiers:

U The analyte was analyzed for, but was not detected at, a level greater than or equal to the level of the adjusted reporting limit (RL) for the sample and method.

J The analyte was positively identified, and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain QC criteria were not met, or to the concentration of the analyte being below the RL).

J+ Same as J, and the reported concentration is potentially biased high.

J– Same as J, and the reported concentration is potentially biased low.

UJ The analyte was not detected at a level greater than or equal to the adjusted method detection limit (MDL). However, the reported adjusted MDL is approximate and might be inaccurate or imprecise.

R The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte might or might not be present in the sample.

Sample Location:		SG-04R	SG-04R	SG-04R	SG-04R	SG-04R	SG-04R	SG-04R	SG-04R	SG-04R	SG-04R	SG-04R	SG-04R	SG-04R	SG-04R	SG-04R	SG-04R	SG-04R
Compliance Phase:		Background	Background	Background	Background	Background	Background	Background	Background	AM	AM	AM	AM	AM	Background	AM	Background	Background
Sample Date:		12/2/2022	1/5/2023	2/6/2023	3/14/2023	4/19/2023	5/23/2023	6/28/2023	8/8/2023	10/24/2023	2/14/2024	4/8/2024	7/17/2024	10/17/2024	2/3/2025	4/22/2025	8/11/2025	10/20/2025
Sample Type:		Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample
Unit:		Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water
Sample Matrix:		Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water
Constituent	**Unit**			**DRY**											**DRY**		**DRY**	**DRY**
Field Parameters																		
Conductivity	mS/cm	1	1.64	--	1.404	1.96	1.79	2.56	2.56	2.12	1.41	1.64	2.39	2	--	1.074	--	--
Dissolved Oxygen	mg/L	6.42	9.64	--	10.26	10.46	7.17	6.62	8.21	8.36	11.92	9.24	6.23	9.56	--	7.13	--	--
Oxidation Reduction Potential	mV	125.3	-34.8	--	-34	91.5	29.9	368	58.7	-33.8	155.6	20.8	-6.5	55.1	--	44.8	--	--
pH	su	8.03	8.44	--	8.05	8.21	8.3	8.24	8.68	8.36	7.2	8.46	8.74	8.35	--	7.56	--	--
Temperature	deg c	3.3	4	--	5.9	8.2	25.6	25.9	23.8	17.1	2.7	14.7	27.5	13.1	--	15.4	--	--
Turbidity	NTU	7.25	1.1	--	3.22	1.04	5.27	10.6	2.28	5.92	8.1	3.75	4.11	8.89	--	7.77	--	--
Appendix III																		
Boron	mg/L	3.0	2.1	--	2.6	2.4	3.2	5.0 J+	5.4	5.4	4.5	4.4	6.8	5.6	--	3.5	--	--
Calcium	mg/L	430	300	--	370	310	390	600	580E	500	340	370	510	390	--	410	--	--
Chloride	mg/L	27	22	--	21	20	22	33	38	35	23	20	38	42	--	71	--	--
Fluoride	mg/L	2.6	2.0	--	2.3	2.7	3.5	5	5.3	3.7	2.3	2.7	4.2	3.7	--	1.6	--	--
Sulfate (as SO4)	mg/L	1200	890	--	750	880	1000	1600	1800	820	890	890	1500	1200	--	750	--	--
Total Dissolved Solids	mg/L	1800	1200	--	1200	1400	1600	2500	2700	2200	1400	1400	2200	1900	--	1900	--	--
Appendix IV																		
Antimony	mg/L	0.00059	0.00052	--	0.00069	0.0011 J	0.00064 J	0.0013	0.0011	0.00089	< 0.00050 U	0.0010	0.00046	0.00052	--	< 0.00010 U	--	--
Arsenic	mg/L	0.00099	0.00091	--	0.0016	0.0026 J	0.0012	0.0043	0.0058	0.0017	0.0019	0.0016	0.0028	0.0018	--	0.0014	--	--
Barium	mg/L	0.022	0.019	--	0.023	0.040	0.039	0.04	0.029	0.029	0.027	0.025	0.024	0.026	--	0.12	--	--
Beryllium	mg/L	< 0.000052 U	< 0.000052 U	--	< 0.000052 U	< 0.00026 U	< 0.000052 U	0.00012 J	0.000066 J	< 0.000052 U	0.000057 J	< 0.000052 U	< 0.000052 U	< 0.000052 U	--	< 0.000052 U	--	--
Cadmium	mg/L	< 0.000032 U	< 0.000032 U	--	< 0.000032 U	< 0.00016 U	< 0.00038 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.00038 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	--	< 0.000075 U	--	--
Chromium, Total	mg/L	0.00019 J	0.00028	--	0.00035	< 0.00088 U	0.00040	0.0010	0.00028	0.00063	0.00060	0.00028	0.00026	< 0.00020 U	--	0.0044	--	--
Cobalt	mg/L	0.00024 J	0.00028 J	--	0.00037 J	< 0.00050 U	0.00032 J	0.0011	0.00083	0.00063	0.00029 J	0.00012 J	0.00020 J	< 0.00010 U	--	0.00024 J	--	--
Fluoride	mg/L	2.6	2.0	--	2.3	2.7	3.5	5	5.3	3.7	2.3	2.7	4.2	3.7	--	1.6	--	--
Lead	mg/L	0.00033 J	0.00027 J	--	0.00047 J	0.0011 J	0.0013 J	0.0025 J	0.00054 J	0.00022 J	0.0015 J	0.00071	< 0.00050 U	< 0.00010 U	--	< 0.00010 U	--	--
Lithium	mg/L	0.044	0.039	--	0.0089	0.043	0.056	0.072	0.084	0.064	0.049	0.059	0.091	0.076	--	0.056	--	--
Mercury	mg/L	< 0.00016 U	< 0.00016 U	--	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	--	< 0.00000016 U	--	--
Molybdenum	mg/L	0.0078	0.0066	--	0.0073	0.010	0.0072	0.013	0.016	0.016	0.0091	0.015	0.013	0.014	--	0.00096 J	--	--
Radium 226 and 228	pCi/L	< 0.408 U	< 0.497 U	--	< 0.672 U	< 0.809 U	< 0.803 U	1.82	< 0.788 U	< 0.641 U	0.651	< 0.564 U	< 0.892 U	< 0.591 U	--	< 0.535 U	--	--
Radium-226	pCi/L	< 0.11 U	< 0.109 U	--	< 0.167 U	< 0.213 U	0.264	0.233	< 0.133 U	< 0.2 U	0.186	< 0.213 U	0.25	< 0.14 U	--	< 0.326 U	--	--
Radium-228	pCi/L	< 0.408 U	< 0.497 U	--	< 0.672 U	< 0.809 U	< 0.803 U	1.59	< 0.788 U	< 0.641 U	< 0.639 U	< 0.564 U	< 0.892 U	< 0.591 U	--	< 0.535 U	--	--
Selenium	mg/L	0.0015	0.0014	--	0.0016	0.0013 J	0.0012	0.0023	0.0028	0.0024	0.0023	0.0024	0.0022	0.0034	--	0.00020 J	--	--
Thallium	mg/L	< 0.000075 U	< 0.000075 U	--	< 0.000075 U	< 0.00038 U	< 0.00038 U	< 0.00038 U	< 0.00038 U	< 0.000075 U	< 0.00038 U	0.000075 J	< 0.00038 U	< 0.000075 U	--	< 0.000075 U	--	--
Total Suspended Solids	mg/L	5.0	< 4.0 U	--	3.0 J	1.0 J	5.0	23	9.0	< 4 U	14	< 4.0 U	15	7.0	--	21	--	--
Michigan CCR Part 115																		
Copper	mg/L	0.00047	0.00048	--	0.012	0.0012	0.00056	0.0018	0.00071	0.00086	0.0013	0.0011	0.00082	0.00063	--	< 0.00020 U	--	--
Iron	mg/L	0.055	0.11	--	0.11	0.13	0.19	0.31	0.089	0.05	0.36	0.10	0.045 J	0.022 J	--	7	--	--
Nickel	mg/L	0.0025	0.0028	--	0.0027	< 0.0032 U	0.0022	0.0055	0.0041	0.0035	0.0037	0.0038	0.0030	0.0024	--	0.013	--	--
Silver	mg/L	< 0.000050 U	< 0.000050 U	--	< 0.000050 U	< 0.00025 U	< 0.00025 U	< 0.000050 U	< 0.000050 U	< 0.00005 U	< 0.00025 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	--	< 0.000050 U	--	--
Vanadium	mg/L	< 0.00062 U	< 0.00062 U	--	< 0.00062 U	< 0.0031 U	0.00094 J	0.0041	0.0065	< 0.00062 U	0.00097 J	0.0013	0.0038	0.0013	--	0.00094 J	--	--
Zinc	mg/L	0.0037	0.0023	--	0.0033	0.0061 J	0.0012	0.0070	0.0019	0.0086	0.0062	0.0020	0.0023	0.0026	--	< 0.0012 U	--	--
Additional Parameters																		
Bicarbonate Alkalinity	mg/L	110	87	--	98	100	62	50	30	61	100	93	42	46	--	670	--	--
Carbonate Alkalinity	mg/L	< 0.16 U	< 0.16 U	--	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	13	< 0.31 U	< 0.16 U	< 0.16 U	0.80 J	< 0.16 U	--	< 0.16 U	--	--
Magnesium	mg/L	41	30	--	33	29	35	53	62	57	44	43	61	55	--	140	--	--
Potassium	mg/L	15	10	--	9.8	9.1	10	17	21	12	9.1	8.9	8.4	8.4	--	20	--	--
Sodium	mg/L	24	20	--	21	19	22	39	40	34	26	26	39	34	--	74	--	--
Total Alkalinity	mg/L	110	87	--	98	100	62	50	43	61	100	93	43	46	--	670	--	--

Notes:

ug/l - micrograms per liter.

mg/l = milligrams per liter.

su - standard pH units (pH is a field parameter)

pCi/L = picocuries per liter.

All metals were analyzed as total unless otherwise indicated.

Qualifiers:

U The analyte was analyzed for, but was not detected at, a level greater than or equal to the level of the adjusted reporting limit (RL) for the sample and method.

J The analyte was positively identified, and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain QC criteria were not met, or to the concentration of the analyte being below the RL).

J+ Same as J, and the reported concentration is potentially biased high.

J– Same as J, and the reported concentration is potentially biased low.

UJ The analyte was not detected at a level greater than or equal to the adjusted method detection limit (MDL). However, the reported adjusted MDL is approximate and might be inaccurate or imprecise.

R The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte might or might not be present in the sample.

Sample Location:		SG-05	SG-05	SG-05	SG-05	SG-05	SG-05	SG-05	SG-05	SG-05	SG-05	SG-05	SG-05	SG-05	SG-05	SG-05	SG-05	SG-05
Compliance Phase:		Background	Background	Background	Background	Background	Background	Background	Background	AM	AM	AM	AM	AM	Background	AM	Background	Background
Sample Date:		12/2/2022	1/5/2023	2/6/2023	3/14/2023	4/19/2023	5/23/2023	6/28/2023	8/8/2023	10/24/2023	2/14/2024	4/8/2024	7/17/2024	10/17/2024	2/3/2025	4/22/2025	8/11/2025	10/20/2025
Sample Type:		Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Sample
Unit:		Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water
Sample Matrix:		Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water
Constituent	**Unit**			**DRY**											**DRY**		**DRY**	**DRY**
Field Parameters																		
Conductivity	mS/cm	0.731	0.98	--	0.742	1.11	0.75	0.61	0.359	0.91	0.75	0.8	0.465	1.06	--	0.898	--	--
Dissolved Oxygen	mg/L	6.85	13.1	--	15.74	6.77	7.83	11.25	11.39	11.73	0.59	8.37	7.51	4.59	--	10.6	--	--
Oxidation Reduction Potential	mV	142	-44.6	--	6.4	18.3	16.3	153.3	39.2	-28.7	134.6	34.6	-29	57.7	--	31.7	--	--
pH	su	7.44	8.02	--	8.28	7.88	8.31	6.73	9.19	7.87	7.67	8.4	9.4	7.51	--	8.22	--	--
Temperature	deg c	4.1	4	--	9.8	7.6	27.8	23.4	28.9	19.5	5.2	17.3	26.7	13.8	--	16.5	--	--
Turbidity	NTU	9.38	8.02	--	9.83	26.6	6.8	7.84	4.36	29.3	41.6	14.9	2.68	48.3	--	6.11	--	--
Appendix III																		
Boron	mg/L	0.59	0.60	--	0.48	0.57	0.36	0.46 J+	0.39	0.72	0.45	0.53	0.34	0.68	--	1.2	--	--
Calcium	mg/L	140	120	--	120	120	81	34	34	120	130	99	22	140	--	160	--	--
Chloride	mg/L	79	51	--	61	50	54	64	29	54	54	37	52	46	--	46	--	--
Fluoride	mg/L	0.73	0.98	--	0.94	0.69	0.30	0.42	0.45	0.79	0.68	0.83	0.32	0.65	--	1.1	--	--
Sulfate (as SO4)	mg/L	8.4 J	150	--	38 J	110	43	38	11	12	7.2	83	13	6	--	240	--	--
Total Dissolved Solids	mg/L	620	630	--	460	570	400	320	210	510	520	440	240	630	--	750	--	--
Appendix IV																		
Antimony	mg/L	0.00018 J	0.000093 J	--	0.00030	0.0010 J	0.00029	0.0010	0.00044	0.00016 J	0.00011 J	0.00024 J	0.00030	0.00039	--	0.00027	--	--
Arsenic	mg/L	0.00084	0.00056	--	0.00071	0.0026 J	0.0017	0.0024	0.0013	0.00088	0.0010	0.00094	0.0017	0.0016	--	0.0012	--	--
Barium	mg/L	0.58	0.23	--	0.35	0.039	0.20	0.11	0.16	0.51	0.50	0.26	0.10	0.63	--	0.37	--	--
Beryllium	mg/L	< 0.000052 U	< 0.000052 U	--	< 0.000052 U	< 0.00026 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	< 0.000052 U	0.000062 J	--	< 0.000052 U	--	--
Cadmium	mg/L	< 0.000032 U	< 0.000032 U	--	< 0.000032 U	< 0.00016 U	< 0.000075 U	0.00011 J	0.00075	0.000094 J	0.00041	0.00013 J	< 0.000075 U	0.00067	--	< 0.000075 U	--	--
Chromium, Total	mg/L	0.00036	0.00024 J	--	0.00048	< 0.00088 U	0.00035	0.00049	0.0017	0.00039	0.0020	0.00056	0.00043	0.0038	--	0.00050	--	--
Cobalt	mg/L	0.00037 J	0.00025 J	--	0.00029 J	< 0.00050 U	0.00025 J	0.00032 J	0.00033 J	0.00027 J	0.00046 J	0.00024 J	0.00013 J	0.00085	--	0.00029 J	--	--
Fluoride	mg/L	0.73	0.98	--	0.94	0.69	0.30	0.42	0.45	0.79	0.68	0.83	0.32	0.65	--	1.1	--	--
Lead	mg/L	0.00023 J	0.00038 J	--	0.00045 J	0.0012 J	0.0022	0.0040	0.0095	0.0031	0.011	0.0031	0.0019	0.016	--	0.0011	--	--
Lithium	mg/L	0.038	0.033	--	0.0045	0.029	0.016	0.022	0.027	0.039	0.016	0.023	0.014	0.042	--	0.044	--	--
Mercury	mg/L	< 0.00016 U	< 0.00016 U	--	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	0.00017 J	< 0.00016 U	< 0.00016 U	< 0.00016 U	< 0.00016 U	--	0.0000019	--	--
Molybdenum	mg/L	0.00077 J	0.0029	--	0.0013	0.0090	0.0083	0.0087	0.0015	0.00085 J	0.00058 J	0.0024	0.0039	0.00078 J	--	0.0054	--	--
Radium 226 and 228	pCi/L	0.851	< 0.537 U	--	< 0.776 U	0.858	< 0.758 U	< 0.818 U	< 0.82 U	< 0.771 U	< 0.889 U	0.971	< 1.12 U	< 0.773 U	--	< 0.852 U	--	--
Radium-226	pCi/L	0.308	< 0.122 U	--	< 0.188 U	0.306	< 0.219 U	< 0.154 U	< 0.147 U	< 0.286 U	0.216	< 0.204 U	< 0.17 U	< 0.244 U	--	< 0.499 U	--	--
Radium-228	pCi/L	0.543	< 0.537 U	--	< 0.776 U	< 0.798 U	< 0.758 U	< 0.818 U	< 0.82 U	< 0.771 U	< 0.889 U	0.845	< 1.12 UG	< 0.773 U	--	< 0.852 U	--	--
Selenium	mg/L	< 0.00022 U	< 0.00022 U	--	< 0.00022 U	0.0013 J	0.00022 J	0.00038 J	0.00027 J	0.00017 J	0.00054	0.00014 J	0.00027 J	0.00039 J	--	0.00022 J	--	--
Thallium	mg/L	< 0.000075 U	< 0.000075 U	--	< 0.000075 U	< 0.00038 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	< 0.000075 U	--	< 0.000075 U	--	--
Total Suspended Solids	mg/L	5.0	7.9	--	8.0	17	6.0	14	73	12	120	8.0	4.0	74	--	17	--	--
Michigan CCR Part 115																		
Copper	mg/L	0.00029	0.00036	--	0.0089	0.0011 J	0.00084	0.0028	0.0066	0.0012	0.0063	0.0021	0.0015	0.011	--	0.00071	--	--
Iron	mg/L	3.0	1.5	--	2.7	3.2	1.1	0.74	1.1	2.9	7.2	1.9	1.0	7.2	--	1.6	--	--
Nickel	mg/L	0.0013	0.0015	--	0.0012	< 0.0032 U	0.0026	0.0034	0.0026	0.0012	0.0024	0.0017	0.0020	0.0047	--	0.0024	--	--
Silver	mg/L	< 0.000050 U	< 0.000050 U	--	0.000053	< 0.00025 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.00005 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	--	< 0.000050 U	--	--
Vanadium	mg/L	< 0.00062 U	< 0.00062 U	--	< 0.00062 U	< 0.0031 U	< 0.00062 U	0.0012	0.00069 J	< 0.00062 U	< 0.00062 U	0.00071 J	0.00090 J	0.0020	--	0.0011 J	--	--
Zinc	mg/L	0.030	0.0018	--	0.0022	0.0060 J	0.0024	0.0090	0.019	0.043	0.019	0.0065	0.0033	0.055	--	0.0031	--	--
Additional Parameters																		
Bicarbonate Alkalinity	mg/L	490	270	--	290	290	240	65	96	400	400	240	63	490	--	320	--	--
Carbonate Alkalinity	mg/L	< 0.16 U	< 0.16 U	--	< 0.16 U	< 0.16 U	< 0.16 U	46	16	< 0.31 U	< 0.16 U	< 0.16 U	42	< 0.16 U	--	< 0.16 U	--	--
Magnesium	mg/L	27	23	--	26	26	25	21	12	24	26	23	19	29	--	33	--	--
Potassium	mg/L	8.1	6.5	--	7.9	6.8	4.3	0.31	0.79	8.5	7.9	5.1	0.32	7.8	--	8.6	--	--
Sodium	mg/L	43	30	--	38	34	37	44	21	40	43	30	30	45	--	45	--	--
Total Alkalinity	mg/L	490	270	--	290	290	240	110	110	400	400	240	100	490	--	320	--	--

Notes:

ug/l - micrograms per liter.

mg/l = milligrams per liter.

su - standard pH units (pH is a field parameter)

pCi/L = picocuries per liter.

All metals were analyzed as total unless otherwise indicated.

Qualifiers:

U The analyte was analyzed for, but was not detected at, a level greater than or equal to the level of the adjusted reporting limit (RL) for the sample and method.

J The analyte was positively identified, and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain QC criteria were not met, or to the concentration of the analyte being below the RL).

J+ Same as J, and the reported concentration is potentially biased high.

J– Same as J, and the reported concentration is potentially biased low.

UJ The analyte was not detected at a level greater than or equal to the adjusted method detection limit (MDL). However, the reported adjusted MDL is approximate and might be inaccurate or imprecise.

R The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte might or might not be present in the sample.

Sample Location:		SG-07	SG-07	SG-07	SG-07
Compliance Phase:		Background	AM	AM	AM
Sample Date:		2/3/2025	4/22/2025	8/13/2025	10/22/2025
Sample Type:		Field Sample	Field Sample	Field Sample	Field Sample
Unit:		Surface Water			
Sample Matrix:		Surface Water	Surface Water	Surface Water	Surface Water
Constituent	**Unit**	**DRY**			
Field Parameters					
Conductivity	mS/cm	--	0.4727	0.623	0.676
Dissolved Oxygen	mg/L	--	12.98	2.46	9.19
Oxidation Reduction Potential	mV	--	20.4	10.7	29
pH	su	--	8.44	8.33	8.07
Temperature	deg c	--	13.1	20.1	11.4
Turbidity	NTU	--	5.03	9.02	9.44
Appendix III					
Boron	mg/L	--	0.076	0.088	0.11
Calcium	mg/L	--	68	48	70
Chloride	mg/L	--	51	79	77
Fluoride	mg/L	--	0.16	0.16 J	0.26
Sulfate (as SO4)	mg/L	--	44	45	54
Total Dissolved Solids	mg/L	--	360	390	390
Appendix IV					
Antimony	mg/L	--	0.00013 J	0.00020 J	0.00018 J
Arsenic	mg/L	--	0.00091	0.0023	0.00099
Barium	mg/L	--	0.057	0.055	0.061
Beryllium	mg/L	--	< 0.000052 U	< 0.000052 U	< 0.000052 U
Cadmium	mg/L	--	< 0.000075 U	< 0.000075 U	< 0.000075 U
Chromium, Total	mg/L	--	0.00051	0.00042	0.00063
Cobalt	mg/L	--	0.00020 J	0.00020 J	0.00030 J
Fluoride	mg/L	--	0.16	0.16 J	0.26
Lead	mg/L	--	0.00049 J	0.00040 J	0.00075
Lithium	mg/L	--	0.0035	0.0048	0.0040
Mercury	mg/L	--	0.0000019	0.00000093	< 0.00000016 U
Molybdenum	mg/L	--	0.0017	0.0039	0.0021
Radium 226 and 228	pCi/L	--	< 0.833 U	1.1	< 1.05 U
Radium-226	pCi/L	--	< 0.457 U	0.416	< 0.314 U
Radium-228	pCi/L	--	< 0.833 U	0.687	< 1.05 UG
Selenium	mg/L	--	0.00027 J	0.00019 J	0.00018 J
Thallium	mg/L	--	< 0.000075 U	< 0.000075 U	< 0.000075 U
Total Suspended Solids	mg/L	--	14	12	10
Michigan CCR Part 115					
Copper	mg/L	--	0.0016	0.0024	0.0018
Iron	mg/L	--	0.32	0.15	0.38
Nickel	mg/L	--	0.0012	0.0016	0.0017
Silver	mg/L	--	< 0.000050 U	< 0.000050 U	< 0.000050 U
Vanadium	mg/L	--	0.00067 J	0.00086 J	0.00084 J
Zinc	mg/L	--	0.0034	0.0060	0.0035
Additional Parameters					
Bicarbonate Alkalinity	mg/L	--	210	170	200
Carbonate Alkalinity	mg/L	--	6.3	< 0.31 U	< 0.16 U
Magnesium	mg/L	--	20	21	23
Potassium	mg/L	--	3.3	3.8	4.1
Sodium	mg/L	--	27	43	45
Total Alkalinity	mg/L	--	210	170	200

Notes:

ug/l - micrograms per liter.

mg/l = milligrams per liter.

su - standard pH units (pH is a field parameter)

pCi/L = picocuries per liter.

All metals were analyzed as total unless otherwise indicated.

Qualifiers:

U The analyte was analyzed for, but was not detected at, a level greater than or equal to the level of the adjusted reporting limit (RL) for the sample and method.

J The analyte was positively identified, and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain QC criteria were not met, or to the concentration of the analyte being below the RL).

J+ Same as J, and the reported concentration is potentially biased high.

J– Same as J, and the reported concentration is potentially biased low.

UJ The analyte was not detected at a level greater than or equal to the adjusted method detection limit (MDL). However, the reported adjusted MDL is approximate and might be inaccurate or imprecise.

R The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte might or might not be present in the sample.

Appendix E

Laboratory Reports

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

November 10, 2025

Ms. Molly Reeves
HDR Michigan Inc.
1000 Oakbrook Dr., Suite 200
Ann Arbor, MI 48104

RE: Trace Project 25J1475
Client Project City of Grand Haven - Harbor Island

Dear Ms. Reeves:

Enclosed are your analytical results. The results of this report relate only to the samples listed in the body of this report.

All reports were examined through Trace's validation process to ensure that requirements for quality and completeness were satisfied. All reported analytical results were obtained in accordance with the methods referenced on the reports. Every practical effort was made to meet the reporting limit specifications for this work, however, some results may have raised reporting limits to correct for percent solids.

If you have questions concerning this report, please contact me at 231.773.5998 or by email at jmink@trace-labs.com.

Sincerely,

Jon Mink
Senior Project Manager
Enclosures

PJLA Testing Accreditation# 1031

Wisconsin Accreditation No. FID: 998044080 / TNI EL V1:2016

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

SAMPLE SUMMARY

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID	Sample ID	Matrix	Collected By	Date Collected	Date Received
25J1475-01	MW-33	Ground Water	AB/FDR	10/20/25 12:00	10/22/25 07:55
25J1475-02	MW-09	Ground Water	AB/FDR	10/20/25 13:20	10/22/25 07:55
25J1475-03	MW-10	Ground Water	AB/FDR	10/20/25 14:30	10/22/25 07:55
25J1475-04	MWT-10	Ground Water	AB/FDR	10/20/25 14:30	10/22/25 07:55
25J1475-05	MW-34	Ground Water	AB/FDR	10/20/25 16:30	10/22/25 07:55
25J1475-06	LLHG-TB-10202025	Ground Water	AB/FDR	10/20/25 17:15	10/22/25 07:55
25J1475-07	MW-37	Ground Water	AB/FDR	10/21/25 09:02	10/22/25 07:55
25J1475-08	MW-38	Ground Water	AB/FDR	10/21/25 10:10	10/22/25 07:55
25J1475-09	MW-16	Ground Water	AB/FDR	10/21/25 11:30	10/22/25 07:55
25J1475-10	MW-39	Ground Water	AB/FDR	10/21/25 13:30	10/22/25 07:55
25J1475-11	MW-13	Ground Water	AB/FDR	10/21/25 15:10	10/22/25 07:55
25J1475-12	MW-36	Ground Water	AB/FDR	10/21/25 16:20	10/22/25 07:55
25J1475-13	LLHG-TB-10212025	Ground Water	AB/FDR	10/21/25 17:15	10/22/25 07:55
25J1475-14	MW-30	Ground Water	AB/FDR	10/21/25 10:55	10/22/25 07:55
25J1475-15	MW-32	Ground Water	AB/FDR	10/21/25 12:45	10/22/25 07:55
25J1475-16	MW-31	Ground Water	AB/FDR	10/21/25 16:15	10/23/25 14:40
25J1475-17	MW-17	Ground Water	AB/FDR	10/22/25 09:10	10/23/25 14:40
25J1475-18	MW-01R	Ground Water	AB/FDR	10/22/25 10:10	10/23/25 14:40
25J1475-19	MW-12	Ground Water	AB/FDR	10/22/25 11:40	10/23/25 14:40
25J1475-20	MW-03	Ground Water	AB/FDR	10/22/25 13:50	10/23/25 14:40
25J1475-21	MW-04	Ground Water	AB/FDR	10/22/25 15:06	10/23/25 14:40
25J1475-22	MW-08	Ground Water	AB/FDR	10/22/25 16:10	10/23/25 14:40
25J1475-23	SG-07	Ground Water	AB/FDR	10/22/25 17:00	10/23/25 14:40
25J1475-24	LLHG-TB-10222025	Ground Water	AB/FDR	10/22/25 17:15	10/23/25 14:40
25J1475-25	MW-07	Ground Water	AB/FDR	10/22/25 17:00	10/23/25 14:40
25J1475-26	MW-20	Ground Water	AB/FDR	10/22/25 11:15	10/23/25 14:40
25J1475-27	MW-02	Ground Water	AB/FDR	10/22/25 14:15	10/23/25 14:40
25J1475-28	MW-19	Ground Water	AB/FDR	10/22/25 15:55	10/23/25 14:40
25J1475-29	MW-18	Ground Water	AB/FDR	10/22/25 16:50	10/23/25 14:40
25J1475-30	MW-06	Ground Water	AB/FDR	10/23/25 10:50	10/23/25 14:40
25J1475-31	MW-11	Ground Water	AB/FDR	10/23/25 09:40	10/23/25 14:40
25J1475-32	MW-27	Ground Water	AB/FDR	10/23/25 11:15	10/23/25 14:40
25J1475-33	MW-28	Ground Water	AB/FDR	10/23/25 12:25	10/23/25 14:40
25J1475-34	LLHG-TB-10232025	Ground Water	AB/FDR	10/23/25 13:35	10/23/25 14:40
25J1475-35	MWT-37	Ground Water	AB/FDR	10/21/25 09:02	10/22/25 07:55

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-01 Date Collected: 10/20/25 12:00 Matrix: Ground Water
Sample ID: MW-33 Date Received: 10/22/25 07:55

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 1631E									
Batch: T175246									
Mercury	**6.0 ng/L**	**0.50**	**1**	**10/28/25**	**drm**	**10/30/25**	**drm**		
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175334									
Boron	**0.17 mg/L**	**0.0088**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.0051**
Calcium	**310 mg/L**	**2.6**	**10**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.37**
Lithium	**0.0050 mg/L**	**0.0025**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**	**N**	**0.0019**
Magnesium	**25 mg/L**	**0.10**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.010**
Potassium	**6.1 mg/L**	**0.25**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.036**
Sodium	**25 mg/L**	**0.12**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.088**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175334									
Antimony	**0.00024 mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Arsenic	**0.0018 mg/L**	**0.00055**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Barium	**0.24 mg/L**	**0.0025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00030**
Beryllium	<0.000052 mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.000052
Cadmium	<0.000075 mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.000075
Chromium	**0.0088 mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00020**
Cobalt	**0.00069 mg/L**	**0.00052**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Lead	**0.00012 mg/L**	**0.00055**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Molybdenum	**0.0015 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00025**
Selenium	**0.00048 mg/L**	**0.00050**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Thallium	<0.000075 mg/L	0.00038	1	10/31/25	ejb	11/06/25	ckd		0.000075
WET CHEMISTRY									
Analysis Method: EPA 300.0 Rev. 2.1									
Batch: T174965									
Fluoride	**0.30 mg/L**	**0.20**	**10**	**10/22/25**	**aeo**	**10/22/25**	**aeo**	**N**	**0.11**
Chloride	**48 mg/L**	**1.5**	**10**	**10/22/25**	**aeo**	**10/22/25**	**aeo**		**1.2**
Sulfate as SO4	**370 mg/L**	**15**	**25**	**10/22/25**	**aeo**	**10/23/25**	**aeo**		**1.4**

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-01 Date Collected: 10/20/25 12:00 Matrix: Ground Water
Sample ID: MW-33 Date Received: 10/22/25 07:55

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
WET CHEMISTRY									
Analysis Method: SM 2320 B-21									
Batch: T174938									
Bicarbonate Alkalinity as CaCO3 at pH 4.5	**440 mg/L**	**5.0**	**1**	**10/22/25**	**eam**	**10/22/25**	**eam**	**N**	**0.16**
Carbonate Alkalinity as CaCO3 at pH 8.2	<0.16 mg/L	5.0	1	10/22/25	eam	10/22/25	eam	N	0.16
Total Alkalinity as CaCO3 at pH 4.5	**440 mg/L**	**5.0**	**1**	**10/22/25**	**eam**	**10/22/25**	**eam**		**0.16**
Analysis Method: SM 2540 C-20									
Batch: T174983									
Total Dissolved Solids	**1100 mg/L**	**50**	**5**	**10/22/25**	**cp**	**10/22/25**	**cp**		
Analysis Method: SM 2540 D-20									
Batch: T174964									
Total Suspended Solids	**57 mg/L**	**4.0**	**1.010101**	**10/22/25**	**cp**	**10/22/25**	**cp**		**4.0**
Analysis Method: SM 4500-H+ B-11									
Batch: T175129									
pH	**6.67 pH Units**		**1**	**10/20/25**	**mj**	**10/22/25**	**mcr**	**H04, PH01s**	

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-02	Date Collected:	10/20/25 13:20	Matrix:	Ground Water
Sample ID:	MW-09	Date Received:	10/22/25 07:55		

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 1631E									
Batch: T175246									
Mercury	< ng/L	0.50	1	10/28/25	drm	10/30/25	drm		
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175334									
Boron	**6.2 mg/L**	**0.0088**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.0051**
Calcium	**500 mg/L**	**2.6**	**10**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.37**
Lithium	**0.29 mg/L**	**0.0025**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**	**N**	**0.0019**
Magnesium	**65 mg/L**	**0.10**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.010**
Potassium	**16 mg/L**	**0.25**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.036**
Sodium	**32 mg/L**	**0.12**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.088**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175334									
Antimony	<0.00010 mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.00010
Arsenic	**0.0025 mg/L**	**0.00055**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Barium	**0.14 mg/L**	**0.0025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00030**
Beryllium	**0.000085 mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.000052**
Cadmium	<0.000075 mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.000075
Chromium	**0.0024 mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00020**
Cobalt	**0.00037 mg/L**	**0.00052**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Lead	<0.00050 mg/L	0.0028	5	10/31/25	ejb	11/06/25	ckd	DL02	0.00050
Molybdenum	**0.023 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00025**
Selenium	**0.00034 mg/L**	**0.00050**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Thallium	<0.00038 mg/L	0.0019	5	10/31/25	ejb	11/06/25	ckd	DL02	0.00038
WET CHEMISTRY									
Analysis Method: EPA 300.0 Rev. 2.1									
Batch: T174965									
Fluoride	**2.1 mg/L**	**0.20**	**10**	**10/22/25**	**aeo**	**10/22/25**	**aeo**	**N**	**0.11**
Chloride	**41 mg/L**	**1.5**	**10**	**10/22/25**	**aeo**	**10/22/25**	**aeo**		**1.2**
Sulfate as SO4	**680 mg/L**	**30**	**50**	**10/22/25**	**aeo**	**10/23/25**	**aeo**		**2.9**

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-02	Date Collected:	10/20/25 13:20	Matrix: Ground Water
Sample ID: MW-09	Date Received:	10/22/25 07:55	

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
WET CHEMISTRY									
Analysis Method: SM 2320 B-21									
Batch: T174938									
Bicarbonate Alkalinity as CaCO3 at pH 4.5	**680 mg/L**	**5.0**	**1**	**10/22/25**	**eam**	**10/22/25**	**eam**	**N**	**0.16**
Carbonate Alkalinity as CaCO3 at pH 8.2	<0.16 mg/L	5.0	1	10/22/25	eam	10/22/25	eam	N	0.16
Total Alkalinity as CaCO3 at pH 4.5	**680 mg/L**	**5.0**	**1**	**10/22/25**	**eam**	**10/22/25**	**eam**		**0.16**
Analysis Method: SM 2540 C-20									
Batch: T174983									
Total Dissolved Solids	**1800 mg/L**	**50**	**5**	**10/22/25**	**cp**	**10/22/25**	**cp**		
Analysis Method: SM 2540 D-20									
Batch: T174964									
Total Suspended Solids	**60 mg/L**	**4.0**	**1**	**10/22/25**	**cp**	**10/22/25**	**cp**		**4.0**
Analysis Method: SM 4500-H+ B-11									
Batch: T175129									
pH	**6.84 pH Units**		**1**	**10/20/25**	**mj**	**10/22/25**	**mcr**	**H04, PH01u**	

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-03 Date Collected: 10/20/25 14:30 Matrix: Ground Water
Sample ID: MW-10 Date Received: 10/22/25 07:55

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 1631E									
Batch: T175246									
Mercury	< ng/L	0.50	1	10/28/25	drm	10/30/25	drm		
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175334									
Boron	**30 mg/L**	**0.088**	**10**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.051**
Calcium	**270 mg/L**	**2.6**	**10**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.37**
Lithium	**0.98 mg/L**	**0.0025**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**	**N**	**0.0019**
Magnesium	**79 mg/L**	**0.10**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.010**
Potassium	**56 mg/L**	**0.25**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.036**
Sodium	**390 mg/L**	**1.2**	**10**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.88**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175334									
Antimony	<0.00010 mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.00010
Arsenic	**0.0017 mg/L**	**0.00055**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Barium	**0.64 mg/L**	**0.0025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00030**
Beryllium	**0.000082 mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.000052**
Cadmium	<0.000075 mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.000075
Chromium	**0.0049 mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00020**
Cobalt	**0.00055 mg/L**	**0.00052**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Lead	<0.00010 mg/L	0.00055	1	10/31/25	ejb	11/06/25	ckd		0.00010
Molybdenum	**0.0019 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00025**
Selenium	**0.00039 mg/L**	**0.00050**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Thallium	<0.000075 mg/L	0.00038	1	10/31/25	ejb	11/06/25	ckd		0.000075
WET CHEMISTRY									
Analysis Method: EPA 300.0 Rev. 2.1									
Batch: T174965									
Fluoride	**5.2 mg/L**	**0.20**	**10**	**10/22/25**	**aeo**	**10/22/25**	**aeo**	**N**	**0.11**
Chloride	**600 mg/L**	**7.5**	**50**	**10/22/25**	**aeo**	**10/23/25**	**aeo**		**6.0**
Sulfate as SO4	**270 mg/L**	**30**	**50**	**10/22/25**	**aeo**	**10/23/25**	**aeo**		**2.9**

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-03	Date Collected:	10/20/25 14:30	Matrix:	Ground Water
Sample ID:	MW-10	Date Received:	10/22/25 07:55		

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
WET CHEMISTRY									
Analysis Method: SM 2320 B-21									
Batch: T174938									
Bicarbonate Alkalinity as CaCO3 at pH 4.5	**710 mg/L**	**5.0**	**1**	**10/22/25**	**eam**	**10/22/25**	**eam**	**N**	**0.16**
Carbonate Alkalinity as CaCO3 at pH 8.2	<0.16 mg/L	5.0	1	10/22/25	eam	10/22/25	eam	N	0.16
Total Alkalinity as CaCO3 at pH 4.5	**710 mg/L**	**5.0**	**1**	**10/22/25**	**eam**	**10/22/25**	**eam**		**0.16**
Analysis Method: SM 2540 C-20									
Batch: T174983									
Total Dissolved Solids	**2200 mg/L**	**50**	**5**	**10/22/25**	**cp**	**10/22/25**	**cp**		
Analysis Method: SM 2540 D-20									
Batch: T174964									
Total Suspended Solids	<4.1 mg/L	4.1	1.030928	10/22/25	cp	10/22/25	cp		4.1
Analysis Method: SM 4500-H+ B-11									
Batch: T175129									
pH	**7.41 pH Units**		**1**	**10/20/25**	**mj**	**10/22/25**	**mcr**	**H04, PH01u**	

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-04 Date Collected: 10/20/25 14:30 Matrix: Ground Water
Sample ID: MWT-10 Date Received: 10/22/25 07:55

PARAMETERS	RESULTS	UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL										
Analysis Method: EPA 1631E										
Batch: T175246										
Mercury	<	ng/L	0.50	1	10/28/25	drm	10/30/25	drm		
Analysis Method: EPA 200.7 Rev. 4.4										
Batch: T175334										
Boron	**29**	**mg/L**	**0.088**	**10**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.051**
Calcium	**260**	**mg/L**	**2.6**	**10**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.37**
Lithium	**0.94**	**mg/L**	**0.0025**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**	**N**	**0.0019**
Magnesium	**78**	**mg/L**	**0.10**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.010**
Potassium	**54**	**mg/L**	**0.25**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.036**
Sodium	**380**	**mg/L**	**1.2**	**10**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.88**
Analysis Method: EPA 200.8 Rev. 5.4										
Batch: T175334										
Antimony	<0.00010	mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.00010
Arsenic	**0.0017**	**mg/L**	**0.00055**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Barium	**0.61**	**mg/L**	**0.0025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00030**
Beryllium	**0.000065**	**mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.000052**
Cadmium	<0.000075	mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.000075
Chromium	**0.0050**	**mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00020**
Cobalt	**0.00056**	**mg/L**	**0.00052**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Lead	<0.00010	mg/L	0.00055	1	10/31/25	ejb	11/07/25	ckd		0.00010
Molybdenum	**0.0019**	**mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00025**
Selenium	**0.00038**	**mg/L**	**0.00050**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Thallium	<0.000075	mg/L	0.00038	1	10/31/25	ejb	11/07/25	ckd		0.000075
WET CHEMISTRY										
Analysis Method: EPA 300.0 Rev. 2.1										
Batch: T174965										
Fluoride	**5.2**	**mg/L**	**0.20**	**10**	**10/22/25**	**aeo**	**10/22/25**	**aeo**	**N**	**0.11**
Chloride	**600**	**mg/L**	**7.5**	**50**	**10/22/25**	**aeo**	**10/23/25**	**aeo**		**6.0**
Sulfate as SO4	**270**	**mg/L**	**30**	**50**	**10/22/25**	**aeo**	**10/23/25**	**aeo**		**2.9**

CERTIFICATE OF ANALYSIS

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-04	Date Collected:	10/20/25 14:30	Matrix:	Ground Water
Sample ID:	MWT-10	Date Received:	10/22/25 07:55		

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
WET CHEMISTRY									
Analysis Method: SM 2320 B-21									
Batch: T174938									
Bicarbonate Alkalinity as CaCO3 at pH 4.5	**720 mg/L**	**5.0**	**1**	**10/22/25**	**eam**	**10/22/25**	**eam**	**N**	**0.16**
Carbonate Alkalinity as CaCO3 at pH 8.2	<0.16 mg/L	5.0	1	10/22/25	eam	10/22/25	eam	N	0.16
Total Alkalinity as CaCO3 at pH 4.5	**720 mg/L**	**5.0**	**1**	**10/22/25**	**eam**	**10/22/25**	**eam**		**0.16**
Analysis Method: SM 2540 C-20									
Batch: T174983									
Total Dissolved Solids	**2200 mg/L**	**50**	**5**	**10/22/25**	**cp**	**10/22/25**	**cp**		
Analysis Method: SM 2540 D-20									
Batch: T174964									
Total Suspended Solids	<4.1 mg/L	4.1	1.020408	10/22/25	cp	10/22/25	cp		4.1
Analysis Method: SM 4500-H+ B-11									
Batch: T175129									
pH	**7.49 pH Units**		**1**	**10/20/25**	**mj**	**10/22/25**	**mcr**	**H04, PH01v**	

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-05 Date Collected: 10/20/25 16:30 Matrix: Ground Water
Sample ID: MW-34 Date Received: 10/22/25 07:55

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 1631E									
Batch: T175248									
Mercury	**1.5 ng/L**	**0.50**	**1**	**10/30/25**	**drm**	**10/31/25**	**drm**		
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175334									
Boron	**3.9 mg/L**	**0.0088**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.0051**
Calcium	**240 mg/L**	**2.6**	**10**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.37**
Lithium	**0.086 mg/L**	**0.0025**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**	**N**	**0.0019**
Magnesium	**26 mg/L**	**0.10**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.010**
Potassium	**12 mg/L**	**0.25**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.036**
Sodium	**31 mg/L**	**0.12**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.088**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175334									
Antimony	**0.00015 mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Arsenic	**0.0011 mg/L**	**0.00055**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Barium	**0.52 mg/L**	**0.0025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00030**
Beryllium	<0.000052 mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.000052
Cadmium	<0.000075 mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.000075
Chromium	**0.025 mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00020**
Cobalt	**0.0013 mg/L**	**0.00052**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Lead	**0.00058 mg/L**	**0.00055**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Molybdenum	<0.00025 mg/L	0.0012	1	10/31/25	ejb	11/06/25	ckd		0.00025
Selenium	**0.00029 mg/L**	**0.00050**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Thallium	<0.000075 mg/L	0.00038	1	10/31/25	ejb	11/06/25	ckd		0.000075
WET CHEMISTRY									
Analysis Method: EPA 300.0 Rev. 2.1									
Batch: T174965									
Fluoride	**0.38 mg/L**	**0.20**	**10**	**10/22/25**	**aeo**	**10/22/25**	**aeo**	**N**	**0.11**
Chloride	**22 mg/L**	**1.5**	**10**	**10/22/25**	**aeo**	**10/22/25**	**aeo**		**1.2**
Sulfate as SO4	**1.1 mg/L**	**6.0**	**10**	**10/22/25**	**aeo**	**10/22/25**	**aeo**	**J**	**0.58**

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-05 | Date Collected: 10/20/25 16:30 | Matrix: Ground Water
Sample ID: MW-34 | Date Received: 10/22/25 07:55

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
WET CHEMISTRY									
Analysis Method: SM 2320 B-21									
Batch: T174938									
Bicarbonate Alkalinity as CaCO3 at pH 4.5	**510 mg/L**	**5.0**	**1**	**10/22/25**	**eam**	**10/22/25**	**eam**	**N**	**0.16**
Carbonate Alkalinity as CaCO3 at pH 8.2	<0.16 mg/L	5.0	1	10/22/25	eam	10/22/25	eam	N	0.16
Total Alkalinity as CaCO3 at pH 4.5	**510 mg/L**	**5.0**	**1**	**10/22/25**	**eam**	**10/22/25**	**eam**		**0.16**
Analysis Method: SM 2540 C-20									
Batch: T174983									
Total Dissolved Solids	**790 mg/L**	**50**	**5**	**10/22/25**	**cp**	**10/22/25**	**cp**		
Analysis Method: SM 2540 D-20									
Batch: T174964									
Total Suspended Solids	**130 mg/L**	**4.1**	**1.020408**	**10/22/25**	**cp**	**10/22/25**	**cp**		**4.1**
Analysis Method: SM 4500-H+ B-11									
Batch: T175129									
pH	**6.65 pH Units**		**1**	**10/20/25**	**mj**	**10/22/25**	**mcr**	**H04, PH01w**	

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-06	Date Collected:	10/20/25 17:15	Matrix:	Ground Water
Sample ID:	LLHG-TB-10202025	Date Received:	10/22/25 07:55		

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 1631E									
Batch: T175246									
Mercury	< ng/L	0.20	1	10/28/25	drm	10/30/25	drm		

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-07	Date Collected:	10/21/25 09:02	Matrix:	Ground Water
Sample ID:	MW-37	Date Received:	10/22/25 07:55		

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 1631E									
Batch: T175246									
Mercury	**6.5 ng/L**	**0.50**	**1**	**10/28/25**	**drm**	**10/30/25**	**drm**		
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175334									
Boron	**2.8 mg/L**	**0.0088**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.0051**
Calcium	**140 mg/L**	**2.6**	**10**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.37**
Lithium	**0.014 mg/L**	**0.0025**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**	**N**	**0.0019**
Magnesium	**9.6 mg/L**	**0.10**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.010**
Potassium	**19 mg/L**	**0.25**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.036**
Sodium	**46 mg/L**	**0.12**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.088**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175334									
Antimony	**0.00016 mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Arsenic	**0.0011 mg/L**	**0.00055**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Barium	**0.082 mg/L**	**0.0025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00030**
Beryllium	<0.000052 mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.000052
Cadmium	<0.000075 mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.000075
Chromium	**0.0015 mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00020**
Cobalt	**0.00056 mg/L**	**0.00052**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Lead	**0.010 mg/L**	**0.00055**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Molybdenum	**0.0064 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00025**
Selenium	**0.00069 mg/L**	**0.00050**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Thallium	<0.000075 mg/L	0.00038	1	10/31/25	ejb	11/06/25	ckd		0.000075
WET CHEMISTRY									
Analysis Method: EPA 300.0 Rev. 2.1									
Batch: T174965									
Fluoride	**0.58 mg/L**	**0.20**	**10**	**10/22/25**	**aeo**	**10/22/25**	**aeo**	**N**	**0.11**
Chloride	**18 mg/L**	**1.5**	**10**	**10/22/25**	**aeo**	**10/22/25**	**aeo**		**1.2**
Sulfate as SO4	**110 mg/L**	**6.0**	**10**	**10/22/25**	**aeo**	**10/22/25**	**aeo**		**0.58**

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-07	Date Collected:	10/21/25 09:02	Matrix:	Ground Water
Sample ID:	MW-37	Date Received:	10/22/25 07:55		

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
WET CHEMISTRY									
Analysis Method: SM 2320 B-21									
Batch: T174938									
Bicarbonate Alkalinity as CaCO3 at pH 4.5	**360 mg/L**	**5.0**	**1**	**10/22/25**	**eam**	**10/22/25**	**eam**	**N**	**0.16**
Carbonate Alkalinity as CaCO3 at pH 8.2	<0.16 mg/L	5.0	1	10/22/25	eam	10/22/25	eam	N	0.16
Total Alkalinity as CaCO3 at pH 4.5	**360 mg/L**	**5.0**	**1**	**10/22/25**	**eam**	**10/22/25**	**eam**		**0.16**
Analysis Method: SM 2540 C-20									
Batch: T174983									
Total Dissolved Solids	**620 mg/L**	**50**	**5**	**10/22/25**	**cp**	**10/22/25**	**cp**		
Analysis Method: SM 2540 D-20									
Batch: T175014									
Total Suspended Solids	<4.1 mg/L	4.1	1.020408	10/23/25	cp	10/23/25	cp		4.1
Analysis Method: SM 4500-H+ B-11									
Batch: T175129									
pH	**7.35 pH Units**		**1**	**10/21/25**	**mj**	**10/22/25**	**mcr**	**H02, PH01x**	

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-08	Date Collected:	10/21/25 10:10	Matrix:	Ground Water
Sample ID:	MW-38	Date Received:	10/22/25 07:55		

PARAMETERS	RESULTS	UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL										
Analysis Method: EPA 1631E										
Batch: T175246										
Mercury	**32**	**ng/L**	**0.50**	**1**	**10/28/25**	**drm**	**10/30/25**	**drm**		
Analysis Method: EPA 200.7 Rev. 4.4										
Batch: T175334										
Boron	**1.9**	**mg/L**	**0.0088**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.0051**
Calcium	**560**	**mg/L**	**13**	**50**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**1.8**
Lithium	**0.14**	**mg/L**	**0.0025**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**	**N**	**0.0019**
Magnesium	**120**	**mg/L**	**2.5**	**50**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.50**
Potassium	**15**	**mg/L**	**0.25**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.036**
Sodium	**290**	**mg/L**	**6.2**	**50**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**4.4**
Analysis Method: EPA 200.8 Rev. 5.4										
Batch: T175334										
Antimony	<0.00010	mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.00010
Arsenic	**0.0023**	**mg/L**	**0.00055**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Barium	**0.073**	**mg/L**	**0.0025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00030**
Beryllium	**0.000055**	**mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.000052**
Cadmium	<0.000075	mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.000075
Chromium	**0.012**	**mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00020**
Cobalt	**0.00049**	**mg/L**	**0.00052**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Lead	<0.00050	mg/L	0.0028	5	10/31/25	ejb	11/06/25	ckd	DL02	0.00050
Molybdenum	**0.0010**	**mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00025**
Selenium	**0.00012**	**mg/L**	**0.00050**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Thallium	<0.00038	mg/L	0.0019	5	10/31/25	ejb	11/06/25	ckd	DL02	0.00038
METALS, DISSOLVED										
Analysis Method: EPA 200.7 Rev. 4.4										
Batch: T175228										
Boron	**1.4**	**mg/L**	**0.050**	**1**	**10/28/25**	**cma**	**10/29/25**	**cma**	**N**	
Calcium	**47**	**mg/L**	**1.0**	**1**	**10/28/25**	**cma**	**10/29/25**	**cma**	**N**	
Lithium	**0.088**	**mg/L**	**0.025**	**1**	**10/28/25**	**cma**	**10/29/25**	**cma**	**N**	
Magnesium	**2.9**	**mg/L**	**1.0**	**1**	**10/28/25**	**cma**	**10/29/25**	**cma**	**N**	

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-08	Date Collected:	10/21/25 10:10	Matrix:	Ground Water
Sample ID:	MW-38	Date Received:	10/22/25 07:55		

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, DISSOLVED									
Potassium	**75 mg/L**	**1.0**	**1**	**10/28/25**	**cma**	**10/29/25**	**cma**	**N**	
Sodium	**79 mg/L**	**1.0**	**1**	**10/28/25**	**cma**	**10/29/25**	**cma**	**N**	
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T174784									
Antimony	**0.0020 mg/L**	**0.0020**	**1**	**10/23/25**	**drm**	**10/23/25**	**jma**	**N**	
Arsenic	**0.0074 mg/L**	**0.0010**	**1**	**10/23/25**	**drm**	**10/23/25**	**jma**	**N**	
Cadmium	< mg/L	0.00050	1	10/23/25	drm	10/23/25	jma	N	
Chromium	< mg/L	0.050	1	10/23/25	drm	10/23/25	jma	N	
Cobalt	< mg/L	0.010	1	10/23/25	drm	10/23/25	jma	N	
Lead	**0.028 mg/L**	**0.0010**	**1**	**10/23/25**	**drm**	**10/23/25**	**jma**	**N**	
Molybdenum	**0.022 mg/L**	**0.010**	**1**	**10/23/25**	**drm**	**10/23/25**	**jma**	**N**	
Selenium	**0.0034 mg/L**	**0.0020**	**1**	**10/23/25**	**drm**	**10/23/25**	**jma**	**N**	
Thallium	< mg/L	0.0020	1	10/23/25	drm	10/23/25	jma	N	
WET CHEMISTRY									
Analysis Method: EPA 300.0 Rev. 2.1									
Batch: T174965									
Fluoride	**0.88 mg/L**	**0.20**	**10**	**10/22/25**	**aeo**	**10/22/25**	**aeo**	**N**	**0.11**
Chloride	**31 mg/L**	**1.5**	**10**	**10/22/25**	**aeo**	**10/22/25**	**aeo**		**1.2**
Sulfate as SO4	**110 mg/L**	**6.0**	**10**	**10/22/25**	**aeo**	**10/22/25**	**aeo**		**0.58**
Analysis Method: SM 2320 B-21									
Batch: T174938									
Bicarbonate Alkalinity as CaCO3 at pH 4.5	**150 mg/L**	**5.0**	**1**	**10/22/25**	**eam**	**10/22/25**	**eam**	**N**	**0.16**
Carbonate Alkalinity as CaCO3 at pH 8.2	**90 mg/L**	**5.0**	**1**	**10/22/25**	**eam**	**10/22/25**	**eam**	**N**	**0.16**
Total Alkalinity as CaCO3 at pH 4.5	**240 mg/L**	**5.0**	**1**	**10/22/25**	**eam**	**10/22/25**	**eam**		**0.16**
Analysis Method: SM 2540 C-20									
Batch: T174983									
Total Dissolved Solids	**620 mg/L**	**50**	**5**	**10/22/25**	**cp**	**10/22/25**	**cp**		
Analysis Method: SM 2540 D-20									
Batch: T175014									
Total Suspended Solids	<4.0 mg/L	4.0	1.010101	10/23/25	cp	10/23/25	cp		4.0

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-08	Date Collected:	10/21/25 10:10	Matrix:	Ground Water
Sample ID:	MW-38	Date Received:	10/22/25 07:55		

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
WET CHEMISTRY									
Analysis Method: SM 4500-H+ B-11									
Batch: T175129									
pH	**9.24 pH Units**		**1**	**10/21/25**	**mj**	**10/22/25**	**mcr**	**H02, PH01y**	

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-09	Date Collected:	10/21/25 11:30	Matrix:	Ground Water
Sample ID:	MW-16	Date Received:	10/22/25 07:55		

PARAMETERS	RESULTS	UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL										
Analysis Method: EPA 1631E										
Batch: T175246										
Mercury	<	ng/L	0.50	1	10/28/25	drm	10/30/25	drm		
Analysis Method: EPA 200.7 Rev. 4.4										
Batch: T175334										
Boron	**0.42**	**mg/L**	**0.0088**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.0051**
Calcium	**230**	**mg/L**	**2.6**	**10**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.37**
Lithium	**0.025**	**mg/L**	**0.0025**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**	**N**	**0.0019**
Magnesium	**21**	**mg/L**	**0.10**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.010**
Potassium	**4.8**	**mg/L**	**0.25**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.036**
Sodium	**14**	**mg/L**	**0.12**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.088**
Analysis Method: EPA 200.8 Rev. 5.4										
Batch: T175334										
Antimony	<0.00010	mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.00010
Arsenic	**0.023**	**mg/L**	**0.00055**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Barium	**0.26**	**mg/L**	**0.0025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00030**
Beryllium	<0.000052	mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.000052
Cadmium	<0.000075	mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.000075
Chromium	**0.0022**	**mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00020**
Cobalt	**0.00016**	**mg/L**	**0.00052**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Lead	**0.00028**	**mg/L**	**0.00055**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Molybdenum	<0.00025	mg/L	0.0012	1	10/31/25	ejb	11/06/25	ckd		0.00025
Selenium	**0.00025**	**mg/L**	**0.00050**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Thallium	<0.000075	mg/L	0.00038	1	10/31/25	ejb	11/06/25	ckd		0.000075
WET CHEMISTRY										
Analysis Method: EPA 300.0 Rev. 2.1										
Batch: T174965										
Fluoride	**0.19**	**mg/L**	**0.20**	**10**	**10/22/25**	**aeo**	**10/22/25**	**aeo**	**J, N**	**0.11**
Chloride	**22**	**mg/L**	**1.5**	**10**	**10/22/25**	**aeo**	**10/22/25**	**aeo**		**1.2**
Sulfate as SO4	**1.1**	**mg/L**	**6.0**	**10**	**10/22/25**	**aeo**	**10/22/25**	**aeo**	**J**	**0.58**

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-09 Date Collected: 10/21/25 11:30 Matrix: Ground Water
Sample ID: MW-16 Date Received: 10/22/25 07:55

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
WET CHEMISTRY									
Analysis Method: SM 2320 B-21									
Batch: T174938									
Bicarbonate Alkalinity as CaCO3 at pH 4.5	**620 mg/L**	**5.0**	**1**	**10/22/25**	**eam**	**10/22/25**	**eam**	**N**	**0.16**
Carbonate Alkalinity as CaCO3 at pH 8.2	<0.16 mg/L	5.0	1	10/22/25	eam	10/22/25	eam	N	0.16
Total Alkalinity as CaCO3 at pH 4.5	**620 mg/L**	**5.0**	**1**	**10/22/25**	**eam**	**10/22/25**	**eam**		**0.16**
Analysis Method: SM 2540 C-20									
Batch: T174983									
Total Dissolved Solids	**700 mg/L**	**50**	**5**	**10/22/25**	**cp**	**10/22/25**	**cp**		
Analysis Method: SM 2540 D-20									
Batch: T175014									
Total Suspended Solids	**31 mg/L**	**4.1**	**1.020408**	**10/23/25**	**cp**	**10/23/25**	**cp**		**4.1**
Analysis Method: SM 4500-H+ B-11									
Batch: T175129									
pH	**6.74 pH Units**		**1**	**10/21/25**	**mj**	**10/22/25**	**mcr**	**H02, PH01z**	

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-10 | Date Collected: 10/21/25 13:30 | Matrix: Ground Water
Sample ID: MW-39 | Date Received: 10/22/25 07:55

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 1631E									
Batch: T175246									
Mercury	**1.2 ng/L**	**0.50**	**1**	**10/28/25**	**drm**	**10/30/25**	**drm**		
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175334									
Boron	**1.3 mg/L**	**0.0088**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.0051**
Calcium	**200 mg/L**	**2.6**	**10**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.37**
Lithium	**0.020 mg/L**	**0.0025**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**	**N**	**0.0019**
Magnesium	**36 mg/L**	**0.10**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.010**
Potassium	**9.2 mg/L**	**0.25**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.036**
Sodium	**25 mg/L**	**0.12**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.088**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175334									
Antimony	**0.00012 mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Arsenic	**0.00082 mg/L**	**0.00055**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Barium	**0.14 mg/L**	**0.0025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00030**
Beryllium	<0.000052 mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.000052
Cadmium	<0.000075 mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.000075
Chromium	**0.0062 mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00020**
Cobalt	**0.00037 mg/L**	**0.00052**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Lead	**0.00013 mg/L**	**0.00055**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Molybdenum	**0.00033 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00025**
Selenium	**0.00027 mg/L**	**0.00050**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Thallium	<0.000075 mg/L	0.00038	1	10/31/25	ejb	11/06/25	ckd		0.000075
WET CHEMISTRY									
Analysis Method: EPA 300.0 Rev. 2.1									
Batch: T174965									
Fluoride	**0.36 mg/L**	**0.20**	**10**	**10/22/25**	**aeo**	**10/22/25**	**aeo**	**N**	**0.11**
Chloride	**12 mg/L**	**1.5**	**10**	**10/22/25**	**aeo**	**10/22/25**	**aeo**		**1.2**
Sulfate as SO4	**37 mg/L**	**6.0**	**10**	**10/22/25**	**aeo**	**10/22/25**	**aeo**		**0.58**

CERTIFICATE OF ANALYSIS

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-10	Date Collected:	10/21/25 13:30	Matrix:	Ground Water
Sample ID:	MW-39	Date Received:	10/22/25 07:55		

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
WET CHEMISTRY									
Analysis Method: SM 2320 B-21									
Batch: T174938									
Bicarbonate Alkalinity as CaCO3 at pH 4.5	**670 mg/L**	**5.0**	**1**	**10/22/25**	**eam**	**10/22/25**	**eam**	**N**	**0.16**
Carbonate Alkalinity as CaCO3 at pH 8.2	<0.16 mg/L	5.0	1	10/22/25	eam	10/22/25	eam	N	0.16
Total Alkalinity as CaCO3 at pH 4.5	**670 mg/L**	**5.0**	**1**	**10/22/25**	**eam**	**10/22/25**	**eam**		**0.16**
Analysis Method: SM 2540 C-20									
Batch: T174983									
Total Dissolved Solids	**760 mg/L**	**50**	**5**	**10/22/25**	**cp**	**10/22/25**	**cp**		
Analysis Method: SM 2540 D-20									
Batch: T175014									
Total Suspended Solids	<4.0 mg/L	4.0	1.010101	10/23/25	cp	10/23/25	cp		4.0
Analysis Method: SM 4500-H+ B-11									
Batch: T175129									
pH	**7.26 pH Units**		**1**	**10/21/25**	**mj**	**10/22/25**	**mcr**	**PH01aa**	

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-11 Date Collected: 10/21/25 15:10 Matrix: Ground Water
Sample ID: MW-13 Date Received: 10/22/25 07:55

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 1631E									
Batch: T175246									
Mercury	< ng/L	0.50	1	10/28/25	drm	10/30/25	drm		
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175334									
Boron	**0.93 mg/L**	**0.0088**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.0051**
Calcium	**270 mg/L**	**2.6**	**10**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.37**
Lithium	**0.036 mg/L**	**0.0025**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**	**N**	**0.0019**
Magnesium	**14 mg/L**	**0.10**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.010**
Potassium	**11 mg/L**	**0.25**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.036**
Sodium	**26 mg/L**	**0.12**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.088**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175334									
Antimony	<0.00010 mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.00010
Arsenic	**0.00024 mg/L**	**0.00055**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Barium	**0.095 mg/L**	**0.0025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00030**
Beryllium	<0.000052 mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.000052
Cadmium	<0.000075 mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.000075
Chromium	**0.0018 mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00020**
Cobalt	**0.00013 mg/L**	**0.00052**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Lead	<0.00010 mg/L	0.00055	1	10/31/25	ejb	11/06/25	ckd		0.00010
Molybdenum	**0.0019 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00025**
Selenium	**0.00011 mg/L**	**0.00050**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Thallium	<0.000075 mg/L	0.00038	1	10/31/25	ejb	11/06/25	ckd		0.000075
WET CHEMISTRY									
Analysis Method: EPA 300.0 Rev. 2.1									
Batch: T174965									
Fluoride	**0.44 mg/L**	**0.20**	**10**	**10/22/25**	**aeo**	**10/22/25**	**aeo**	**N**	**0.11**
Chloride	**12 mg/L**	**1.5**	**10**	**10/22/25**	**aeo**	**10/22/25**	**aeo**		**1.2**
Sulfate as SO4	**290 mg/L**	**15**	**25**	**10/22/25**	**aeo**	**10/23/25**	**aeo**		**1.4**

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-11	Date Collected: 10/21/25 15:10	Matrix: Ground Water	
Sample ID: MW-13	Date Received: 10/22/25 07:55		

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
WET CHEMISTRY									
Analysis Method: SM 2320 B-21									
Batch: T174938									
Bicarbonate Alkalinity as CaCO3 at pH 4.5	**430 mg/L**	**5.0**	**1**	**10/22/25**	**eam**	**10/22/25**	**eam**	**N**	**0.16**
Carbonate Alkalinity as CaCO3 at pH 8.2	<0.16 mg/L	5.0	1	10/22/25	eam	10/22/25	eam	N	0.16
Total Alkalinity as CaCO3 at pH 4.5	**430 mg/L**	**5.0**	**1**	**10/22/25**	**eam**	**10/22/25**	**eam**		**0.16**
Analysis Method: SM 2540 C-20									
Batch: T174983									
Total Dissolved Solids	**940 mg/L**	**50**	**5**	**10/22/25**	**cp**	**10/22/25**	**cp**		
Analysis Method: SM 2540 D-20									
Batch: T175014									
Total Suspended Solids	<4.0 mg/L	4.0	1.010101	10/23/25	cp	10/23/25	cp		4.0
Analysis Method: SM 4500-H+ B-11									
Batch: T175129									
pH	**7.41 pH Units**		**1**	**10/21/25**	**mj**	**10/22/25**	**mcr**	**PH01ab**	

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE
ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-12	Date Collected:	10/21/25 16:20	Matrix:	Ground Water
Sample ID:	MW-36	Date Received:	10/22/25 07:55		

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 1631E									
Batch: T175246									
Mercury	**3.9 ng/L**	**0.50**	**1**	**10/28/25**	**drm**	**10/30/25**	**drm**		
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175334									
Boron	**0.54 mg/L**	**0.0088**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.0051**
Calcium	**81 mg/L**	**0.26**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.037**
Lithium	**0.012 mg/L**	**0.0025**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**	**N**	**0.0019**
Magnesium	**12 mg/L**	**0.10**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.010**
Potassium	**34 mg/L**	**0.25**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.036**
Sodium	**60 mg/L**	**0.12**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.088**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175334									
Antimony	**0.0020 mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Arsenic	**0.0071 mg/L**	**0.00055**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Barium	**0.23 mg/L**	**0.0025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00030**
Beryllium	<0.000052 mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.000052
Cadmium	**0.00015 mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.000075**
Chromium	**0.00097 mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00020**
Cobalt	**0.00016 mg/L**	**0.00052**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Lead	**0.010 mg/L**	**0.00055**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Molybdenum	**0.022 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00025**
Selenium	**0.00046 mg/L**	**0.00050**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Thallium	<0.000075 mg/L	0.00038	1	10/31/25	ejb	11/06/25	ckd		0.000075
WET CHEMISTRY									
Analysis Method: EPA 300.0 Rev. 2.1									
Batch: T174965									
Fluoride	**0.68 mg/L**	**0.20**	**10**	**10/22/25**	**aeo**	**10/22/25**	**aeo**	**N**	**0.11**
Chloride	**29 mg/L**	**1.5**	**10**	**10/22/25**	**aeo**	**10/22/25**	**aeo**		**1.2**
Sulfate as SO4	**17 mg/L**	**6.0**	**10**	**10/22/25**	**aeo**	**10/22/25**	**aeo**		**0.58**

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-12 Date Collected: 10/21/25 16:20 Matrix: Ground Water
Sample ID: MW-36 Date Received: 10/22/25 07:55

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
WET CHEMISTRY									
Analysis Method: SM 2320 B-21									
Batch: T174938									
Bicarbonate Alkalinity as CaCO3 at pH 4.5	**390 mg/L**	**5.0**	**1**	**10/22/25**	**eam**	**10/22/25**	**eam**	**N**	**0.16**
Carbonate Alkalinity as CaCO3 at pH 8.2	<0.16 mg/L	5.0	1	10/22/25	eam	10/22/25	eam	N	0.16
Total Alkalinity as CaCO3 at pH 4.5	**390 mg/L**	**5.0**	**1**	**10/22/25**	**eam**	**10/22/25**	**eam**		**0.16**
Analysis Method: SM 2540 C-20									
Batch: T174983									
Total Dissolved Solids	**470 mg/L**	**50**	**5**	**10/22/25**	**cp**	**10/22/25**	**cp**		
Analysis Method: SM 2540 D-20									
Batch: T175014									
Total Suspended Solids	<4.1 mg/L	4.1	1.020408	10/23/25	cp	10/23/25	cp		4.1
Analysis Method: SM 4500-H+ B-11									
Batch: T175129									
pH	**8.16 pH Units**		**1**	**10/21/25**	**mj**	**10/22/25**	**mcr**	**PH01ac**	

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-13	Date Collected:	10/21/25 17:15	Matrix:	Ground Water
Sample ID:	LLHG-TB-10212025	Date Received:	10/22/25 07:55		

PARAMETERS	RESULTS	UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL										
Analysis Method: EPA 1631E										
Batch: T175246										
Mercury	<	ng/L	0.20	1	10/28/25	drm	10/30/25	drm		

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-14	Date Collected:	10/21/25 10:55	Matrix:	Ground Water
Sample ID:	MW-30	Date Received:	10/22/25 07:55		

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 1631E									
Batch: T175246									
Mercury	< ng/L	0.50	1	10/28/25	drm	10/30/25	drm		
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175334									
Boron	**1.5 mg/L**	**0.0088**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.0051**
Calcium	**62 mg/L**	**0.26**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.037**
Lithium	**0.086 mg/L**	**0.0025**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**	**N**	**0.0019**
Magnesium	**5.4 mg/L**	**0.10**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.010**
Potassium	**74 mg/L**	**0.25**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.036**
Sodium	**81 mg/L**	**0.12**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.088**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175334									
Antimony	**0.0012 mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Arsenic	**0.0080 mg/L**	**0.00055**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Barium	**0.074 mg/L**	**0.0025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00030**
Beryllium	**0.000069 mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.000052**
Cadmium	**0.00032 mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.000075**
Chromium	**0.023 mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00020**
Cobalt	**0.00094 mg/L**	**0.00052**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Lead	**0.058 mg/L**	**0.00055**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Molybdenum	**0.032 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00025**
Selenium	**0.0015 mg/L**	**0.00050**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Thallium	<0.000075 mg/L	0.00038	1	10/31/25	ejb	11/06/25	ckd		0.000075
METALS, DISSOLVED									
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175228									
Boron	**2.0 mg/L**	**0.050**	**1**	**10/28/25**	**cma**	**10/29/25**	**cma**	**N**	
Calcium	**590 mg/L**	**5.0**	**10**	**10/28/25**	**cma**	**10/29/25**	**cma**	**N**	
Lithium	**0.17 mg/L**	**0.025**	**1**	**10/28/25**	**cma**	**10/29/25**	**cma**	**N**	
Magnesium	**130 mg/L**	**1.0**	**1**	**10/28/25**	**cma**	**10/29/25**	**cma**	**N**	

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-14 | Date Collected: 10/21/25 10:55 | Matrix: Ground Water
Sample ID: MW-30 | Date Received: 10/22/25 07:55

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, DISSOLVED									
Potassium	**18 mg/L**	**1.0**	**1**	**10/28/25**	**cma**	**10/29/25**	**cma**	**N**	
Sodium	**330 mg/L**	**5.0**	**10**	**10/28/25**	**cma**	**10/29/25**	**cma**	**N**	
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T174784									
Antimony	< mg/L	0.0020	1	10/23/25	drm	10/23/25	jma	N	
Arsenic	**0.0069 mg/L**	**0.0010**	**1**	**10/23/25**	**drm**	**10/23/25**	**jma**	**N**	
Cadmium	< mg/L	0.00050	1	10/23/25	drm	10/23/25	jma	N	
Chromium	< mg/L	0.050	1	10/23/25	drm	10/23/25	jma	N	
Cobalt	< mg/L	0.010	1	10/23/25	drm	10/23/25	jma	N	
Lead	< mg/L	0.0020	5	10/23/25	drm	10/23/25	jma	DL02, N	
Molybdenum	< mg/L	0.010	1	10/23/25	drm	10/23/25	jma	N	
Selenium	**0.020 mg/L**	**0.0020**	**1**	**10/23/25**	**drm**	**10/23/25**	**jma**	**N**	
Thallium	< mg/L	0.0020	5	10/23/25	drm	10/23/25	jma	DL02, N	
WET CHEMISTRY									
Analysis Method: EPA 300.0 Rev. 2.1									
Batch: T174965									
Fluoride	**0.83 mg/L**	**0.20**	**10**	**10/22/25**	**aeo**	**10/23/25**	**aeo**	**N**	**0.11**
Chloride	**1000 mg/L**	**7.5**	**50**	**10/22/25**	**aeo**	**10/23/25**	**aeo**		**6.0**
Sulfate as SO4	**580 mg/L**	**30**	**50**	**10/22/25**	**aeo**	**10/23/25**	**aeo**		**2.9**
Analysis Method: SM 2320 B-21									
Batch: T174938									
Bicarbonate Alkalinity as CaCO3 at pH 4.5	**740 mg/L**	**5.0**	**1**	**10/22/25**	**eam**	**10/22/25**	**eam**	**N**	**0.16**
Carbonate Alkalinity as CaCO3 at pH 8.2	<0.16 mg/L	5.0	1	10/22/25	eam	10/22/25	eam	N	0.16
Total Alkalinity as CaCO3 at pH 4.5	**740 mg/L**	**5.0**	**1**	**10/22/25**	**eam**	**10/22/25**	**eam**		**0.16**
Analysis Method: SM 2540 C-20									
Batch: T174983									
Total Dissolved Solids	**3200 mg/L**	**50**	**5**	**10/22/25**	**cp**	**10/22/25**	**cp**		
Analysis Method: SM 2540 D-20									
Batch: T175014									
Total Suspended Solids	**5.1 mg/L**	**4.1**	**1.020408**	**10/23/25**	**cp**	**10/23/25**	**cp**		**4.1**

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-14	Date Collected:	10/21/25 10:55	Matrix:	Ground Water
Sample ID:	MW-30	Date Received:	10/22/25 07:55		

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
WET CHEMISTRY									
Analysis Method: SM 4500-H+ B-11									
Batch: T175129									
pH	**6.97 pH Units**		**1**	**10/21/25**	**mj**	**10/22/25**	**mcr**	**H02, PH01ad**	

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-15	Date Collected:	10/21/25 12:45	Matrix:	Ground Water
Sample ID:	MW-32	Date Received:	10/22/25 07:55		

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 1631E									
Batch: T175246									
Mercury	**0.64 ng/L**	**0.50**	**1**	**10/28/25**	**drm**	**10/30/25**	**drm**		
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175334									
Boron	**5.7 mg/L**	**0.0088**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.0051**
Calcium	**170 mg/L**	**2.6**	**10**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.37**
Lithium	**0.17 mg/L**	**0.0025**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**	**N**	**0.0019**
Magnesium	**35 mg/L**	**0.10**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.010**
Potassium	**13 mg/L**	**0.25**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.036**
Sodium	**36 mg/L**	**0.12**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.088**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175334									
Antimony	<0.00010 mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.00010
Arsenic	**0.00048 mg/L**	**0.00055**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Barium	**1.4 mg/L**	**0.025**	**10**	**10/31/25**	**ejb**	**11/07/25**	**ckd**		**0.0030**
Beryllium	<0.000052 mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.000052
Cadmium	<0.000075 mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.000075
Chromium	**0.00040 mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00020**
Cobalt	**0.00051 mg/L**	**0.00052**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Lead	<0.00010 mg/L	0.00055	1	10/31/25	ejb	11/06/25	ckd		0.00010
Molybdenum	**0.0011 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00025**
Selenium	**0.00010 mg/L**	**0.00050**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Thallium	<0.000075 mg/L	0.00038	1	10/31/25	ejb	11/06/25	ckd		0.000075
WET CHEMISTRY									
Analysis Method: EPA 300.0 Rev. 2.1									
Batch: T174965									
Fluoride	**1.2 mg/L**	**0.20**	**10**	**10/22/25**	**aeo**	**10/23/25**	**aeo**	**N**	**0.11**
Chloride	**61 mg/L**	**1.5**	**10**	**10/22/25**	**aeo**	**10/23/25**	**aeo**		**1.2**
Sulfate as SO4	**6.0 mg/L**	**6.0**	**10**	**10/22/25**	**aeo**	**10/23/25**	**aeo**		**0.58**

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-15	Date Collected:	10/21/25 12:45	Matrix:	Ground Water
Sample ID:	MW-32	Date Received:	10/22/25 07:55		

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
WET CHEMISTRY									
Analysis Method: SM 2320 B-21									
Batch: T174938									
Bicarbonate Alkalinity as CaCO3 at pH 4.5	**550 mg/L**	**5.0**	**1**	**10/22/25**	**eam**	**10/22/25**	**eam**	**N**	**0.16**
Carbonate Alkalinity as CaCO3 at pH 8.2	<0.16 mg/L	5.0	1	10/22/25	eam	10/22/25	eam	N	0.16
Total Alkalinity as CaCO3 at pH 4.5	**550 mg/L**	**5.0**	**1**	**10/22/25**	**eam**	**10/22/25**	**eam**		**0.16**
Analysis Method: SM 2540 C-20									
Batch: T174983									
Total Dissolved Solids	**680 mg/L**	**50**	**5**	**10/22/25**	**cp**	**10/22/25**	**cp**		
Analysis Method: SM 2540 D-20									
Batch: T175014									
Total Suspended Solids	**48 mg/L**	**4.2**	**1.041667**	**10/23/25**	**cp**	**10/23/25**	**cp**		**4.2**
Analysis Method: SM 4500-H+ B-11									
Batch: T175129									
pH	**7.24 pH Units**		**1**	**10/21/25**	**mj**	**10/22/25**	**mcr**	**PH01ae**	

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-16 Date Collected: 10/21/25 16:15 Matrix: Ground Water
Sample ID: MW-31 Date Received: 10/23/25 14:40

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 1631E									
Batch: T175246									
Mercury	**1.4 ng/L**	**0.50**	**1**	**10/28/25**	**drm**	**10/30/25**	**drm**		
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175334									
Boron	**7.0 mg/L**	**0.0088**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.0051**
Calcium	**130 mg/L**	**2.6**	**10**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.37**
Lithium	**0.058 mg/L**	**0.0025**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**	**N**	**0.0019**
Magnesium	**52 mg/L**	**0.10**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.010**
Potassium	**12 mg/L**	**0.25**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.036**
Sodium	**80 mg/L**	**0.12**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.088**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175334									
Antimony	**0.00043 mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Arsenic	**0.0015 mg/L**	**0.00055**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Barium	**0.38 mg/L**	**0.0025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00030**
Beryllium	<0.000052 mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.000052
Cadmium	<0.000075 mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.000075
Chromium	**0.0040 mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00020**
Cobalt	**0.00022 mg/L**	**0.00052**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Lead	**0.00045 mg/L**	**0.00055**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Molybdenum	**0.0033 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00025**
Selenium	**0.00022 mg/L**	**0.00050**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Thallium	<0.000075 mg/L	0.00038	1	10/31/25	ejb	11/06/25	ckd		0.000075
METALS, DISSOLVED									
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175228									
Boron	**7.1 mg/L**	**0.050**	**1**	**10/28/25**	**cma**	**10/29/25**	**cma**	**N**	
Calcium	**93 mg/L**	**1.0**	**1**	**10/28/25**	**cma**	**10/29/25**	**cma**	**N**	
Lithium	**0.051 mg/L**	**0.025**	**1**	**10/28/25**	**cma**	**10/29/25**	**cma**	**N**	
Magnesium	**41 mg/L**	**1.0**	**1**	**10/28/25**	**cma**	**10/29/25**	**cma**	**N**	

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-16 | Date Collected: 10/21/25 16:15 | Matrix: Ground Water
Sample ID: MW-31 | Date Received: 10/23/25 14:40

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, DISSOLVED									
Potassium	**10 mg/L**	**1.0**	**1**	**10/28/25**	**cma**	**10/29/25**	**cma**	**N**	
Sodium	**66 mg/L**	**1.0**	**1**	**10/28/25**	**cma**	**10/29/25**	**cma**	**N**	
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175583									
Antimony	< mg/L	0.0020	1	11/04/25	jma	11/07/25	jma	N	
Arsenic	**0.0022 mg/L**	**0.0010**	**1**	**11/04/25**	**jma**	**11/07/25**	**jma**	**N**	
Cadmium	< mg/L	0.00050	1	11/04/25	jma	11/07/25	jma	N	
Chromium	< mg/L	0.050	1	11/04/25	jma	11/07/25	jma	N	
Cobalt	< mg/L	0.010	1	11/04/25	jma	11/07/25	jma	N	
Lead	< mg/L	0.0010	1	11/04/25	jma	11/07/25	jma	N	
Molybdenum	< mg/L	0.010	1	11/04/25	jma	11/07/25	jma	N	
Selenium	< mg/L	0.0020	1	11/04/25	jma	11/07/25	jma	N	
Thallium	< mg/L	0.0020	1	11/04/25	jma	11/07/25	jma	N	
WET CHEMISTRY									
Analysis Method: EPA 300.0 Rev. 2.1									
Batch: T175051									
Fluoride	**3.3 mg/L**	**0.20**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**	**N**	**0.11**
Chloride	**170 mg/L**	**1.5**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**		**1.2**
Sulfate as SO4	**19 mg/L**	**6.0**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**		**0.58**
Analysis Method: SM 2320 B-21									
Batch: T175245									
Bicarbonate Alkalinity as CaCO3 at pH 4.5	**450 mg/L**	**5.0**	**1**	**10/28/25**	**aeo**	**10/29/25**	**aeo**	**N**	**0.16**
Carbonate Alkalinity as CaCO3 at pH 8.2	<0.16 mg/L	5.0	1	10/28/25	aeo	10/29/25	aeo	N	0.16
Total Alkalinity as CaCO3 at pH 4.5	**450 mg/L**	**5.0**	**1**	**10/28/25**	**aeo**	**10/29/25**	**aeo**		**0.16**
Analysis Method: SM 2540 C-20									
Batch: T175110									
Total Dissolved Solids	**770 mg/L**	**49**	**4.878049**	**10/24/25**	**ans**	**10/24/25**	**ans**		
Analysis Method: SM 2540 D-20									
Batch: T175197									
Total Suspended Solids	<4.1 mg/L	4.1	1.020408	10/27/25	cp	10/27/25	cp		4.1

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-16	Date Collected:	10/21/25 16:15	Matrix:	Ground Water
Sample ID:	MW-31	Date Received:	10/23/25 14:40		

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
WET CHEMISTRY									
Analysis Method: SM 4500-H+ B-11									
Batch: T175139									
pH	**8.08 pH Units**		**1**	**10/21/25**	**mj**	**10/24/25**	**sab**	**H04, PH01q**	

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-17 | Date Collected: 10/22/25 09:10 | Matrix: Ground Water
Sample ID: MW-17 | Date Received: 10/23/25 14:40

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 1631E									
Batch: T175246									
Mercury	< ng/L	0.50	1	10/28/25	drm	10/30/25	drm		
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175334									
Boron	**0.92 mg/L**	**0.0088**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.0051**
Calcium	**150 mg/L**	**2.6**	**10**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.37**
Lithium	**0.036 mg/L**	**0.0025**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**	**N**	**0.0019**
Magnesium	**25 mg/L**	**0.10**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.010**
Potassium	**15 mg/L**	**0.25**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.036**
Sodium	**48 mg/L**	**0.12**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.088**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175334									
Antimony	<0.00010 mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.00010
Arsenic	**0.0020 mg/L**	**0.00055**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Barium	**0.86 mg/L**	**0.0025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00030**
Beryllium	<0.000052 mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.000052
Cadmium	<0.000075 mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.000075
Chromium	**0.00055 mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00020**
Cobalt	**0.00033 mg/L**	**0.00052**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Lead	<0.00010 mg/L	0.00055	1	10/31/25	ejb	11/06/25	ckd		0.00010
Molybdenum	**0.00042 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00025**
Selenium	**0.00017 mg/L**	**0.00050**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Thallium	<0.000075 mg/L	0.00038	1	10/31/25	ejb	11/06/25	ckd		0.000075
WET CHEMISTRY									
Analysis Method: EPA 300.0 Rev. 2.1									
Batch: T175051									
Fluoride	**0.75 mg/L**	**0.20**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**	**N**	**0.11**
Chloride	**32 mg/L**	**1.5**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**		**1.2**
Sulfate as SO4	<0.58 mg/L	6.0	10	10/23/25	aeo	10/24/25	aeo		0.58

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-17 | Date Collected: 10/22/25 09:10 | Matrix: Ground Water
Sample ID: MW-17 | Date Received: 10/23/25 14:40

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
WET CHEMISTRY									
Analysis Method: SM 2320 B-21									
Batch: T175245									
Bicarbonate Alkalinity as CaCO3 at pH 4.5	**530 mg/L**	**5.0**	**1**	**10/28/25**	**aeo**	**10/29/25**	**aeo**	**N**	**0.16**
Carbonate Alkalinity as CaCO3 at pH 8.2	<0.16 mg/L	5.0	1	10/28/25	aeo	10/29/25	aeo	N	0.16
Total Alkalinity as CaCO3 at pH 4.5	**530 mg/L**	**5.0**	**1**	**10/28/25**	**aeo**	**10/29/25**	**aeo**		**0.16**
Analysis Method: SM 2540 C-20									
Batch: T175110									
Total Dissolved Solids	**620 mg/L**	**50**	**5**	**10/24/25**	**ans**	**10/24/25**	**ans**		
Analysis Method: SM 2540 D-20									
Batch: T175197									
Total Suspended Solids	<4.1 mg/L	4.1	1.030928	10/27/25	cp	10/27/25	cp		4.1
Analysis Method: SM 4500-H+ B-11									
Batch: T175139									
pH	**7.38 pH Units**		**1**	**10/22/25**	**mj**	**10/24/25**	**sab**	**H04, PH01**	

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE
ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-18	Date Collected:	10/22/25 10:10	Matrix:	Ground Water
Sample ID:	MW-01R	Date Received:	10/23/25 14:40		

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 1631E									
Batch: T175246									
Mercury	**0.87 ng/L**	**0.50**	**1**	**10/28/25**	**drm**	**10/30/25**	**drm**		
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175334									
Boron	**160 mg/L**	**0.44**	**50**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.26**
Calcium	**140 mg/L**	**13**	**50**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**1.8**
Lithium	**3.0 mg/L**	**0.0025**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**	**N**	**0.0019**
Magnesium	**110 mg/L**	**2.5**	**50**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.50**
Potassium	**100 mg/L**	**12**	**50**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**1.8**
Sodium	**470 mg/L**	**6.2**	**50**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**4.4**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175334									
Antimony	**0.00032 mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Arsenic	**0.0012 mg/L**	**0.00055**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Barium	**0.81 mg/L**	**0.0025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00030**
Beryllium	**0.00031 mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.000052**
Cadmium	**0.00014 mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.000075**
Chromium	**0.0028 mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00020**
Cobalt	**0.0020 mg/L**	**0.00052**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Lead	**0.0016 mg/L**	**0.00055**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Molybdenum	**0.00038 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00025**
Selenium	**0.00074 mg/L**	**0.00050**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Thallium	<0.000075 mg/L	0.00038	1	10/31/25	ejb	11/06/25	ckd		0.000075
WET CHEMISTRY									
Analysis Method: EPA 300.0 Rev. 2.1									
Batch: T175051									
Fluoride	**17 mg/L**	**0.20**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**	**N**	**0.11**
Chloride	**150 mg/L**	**1.5**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**		**1.2**
Sulfate as SO4	**47 mg/L**	**6.0**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**		**0.58**

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE
ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-18	Date Collected:	10/22/25 10:10	Matrix:	Ground Water
Sample ID:	MW-01R	Date Received:	10/23/25 14:40		

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
WET CHEMISTRY									
Analysis Method: SM 2320 B-21									
Batch: T175245									
Bicarbonate Alkalinity as CaCO3 at pH 4.5	**1600 mg/L**	**5.0**	**1**	**10/28/25**	**aeo**	**10/29/25**	**aeo**	**N**	**0.16**
Carbonate Alkalinity as CaCO3 at pH 8.2	<0.16 mg/L	5.0	1	10/28/25	aeo	10/29/25	aeo	N	0.16
Total Alkalinity as CaCO3 at pH 4.5	**1600 mg/L**	**5.0**	**1**	**10/28/25**	**aeo**	**10/29/25**	**aeo**		**0.16**
Analysis Method: SM 2540 C-20									
Batch: T175110									
Total Dissolved Solids	**2500 mg/L**	**50**	**5**	**10/24/25**	**ans**	**10/24/25**	**ans**		
Analysis Method: SM 2540 D-20									
Batch: T175197									
Total Suspended Solids	<4.3 mg/L	4.3	1.06383	10/27/25	cp	10/27/25	cp		4.3
Analysis Method: SM 4500-H+ B-11									
Batch: T175139									
pH	**7.69 pH Units**		**1**	**10/22/25**	**mj**	**10/24/25**	**sab**	**H04, PH01j**	

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-19	Date Collected:	10/22/25 11:40	Matrix:	Ground Water
Sample ID:	MW-12	Date Received:	10/23/25 14:40		

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 1631E									
Batch: T175246									
Mercury	**1.2 ng/L**	**0.50**	**1**	**10/28/25**	**drm**	**10/30/25**	**drm**		
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175334									
Boron	**0.62 mg/L**	**0.0088**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.0051**
Calcium	**99 mg/L**	**2.6**	**10**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.37**
Lithium	**0.0047 mg/L**	**0.0025**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**	**N**	**0.0019**
Magnesium	**29 mg/L**	**0.10**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.010**
Potassium	**1.7 mg/L**	**0.25**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.036**
Sodium	**13 mg/L**	**0.12**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.088**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175334									
Antimony	**0.00017 mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Arsenic	**0.0064 mg/L**	**0.00055**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Barium	**0.14 mg/L**	**0.0025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00030**
Beryllium	<0.000052 mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.000052
Cadmium	**0.0051 mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.000075**
Chromium	**0.00021 mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00020**
Cobalt	**0.0028 mg/L**	**0.00052**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Lead	**0.00020 mg/L**	**0.00055**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Molybdenum	**0.0080 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00025**
Selenium	**0.00017 mg/L**	**0.00050**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Thallium	<0.000075 mg/L	0.00038	1	10/31/25	ejb	11/06/25	ckd		0.000075
WET CHEMISTRY									
Analysis Method: EPA 300.0 Rev. 2.1									
Batch: T175051									
Fluoride	**0.30 mg/L**	**0.20**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**	**N**	**0.11**
Chloride	**17 mg/L**	**1.5**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**		**1.2**
Sulfate as SO4	**58 mg/L**	**6.0**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**		**0.58**

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-19 Date Collected: 10/22/25 11:40 Matrix: Ground Water
Sample ID: MW-12 Date Received: 10/23/25 14:40

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
WET CHEMISTRY									
Analysis Method: SM 2320 B-21									
Batch: T175245									
Bicarbonate Alkalinity as CaCO3 at pH 4.5	**290 mg/L**	**5.0**	**1**	**10/28/25**	**aeo**	**10/29/25**	**aeo**	**N**	**0.16**
Carbonate Alkalinity as CaCO3 at pH 8.2	<0.16 mg/L	5.0	1	10/28/25	aeo	10/29/25	aeo	N	0.16
Total Alkalinity as CaCO3 at pH 4.5	**290 mg/L**	**5.0**	**1**	**10/28/25**	**aeo**	**10/29/25**	**aeo**		**0.16**
Analysis Method: SM 2540 C-20									
Batch: T175110									
Total Dissolved Solids	**400 mg/L**	**50**	**5**	**10/24/25**	**ans**	**10/24/25**	**ans**		
Analysis Method: SM 2540 D-20									
Batch: T175197									
Total Suspended Solids	<4.1 mg/L	4.1	1.030928	10/27/25	cp	10/27/25	cp		4.1
Analysis Method: SM 4500-H+ B-11									
Batch: T175139									
pH	**7.41 pH Units**		**1**	**10/22/25**	**mj**	**10/24/25**	**sab**	**H04, PH01i**	

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-20 Date Collected: 10/22/25 13:50 Matrix: Ground Water
Sample ID: MW-03 Date Received: 10/23/25 14:40

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 1631E									
Batch: T175248									
Mercury	< ng/L	0.50	1	10/30/25	drm	10/31/25	drm		
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175334									
Boron	**4.0 mg/L**	**0.0088**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.0051**
Calcium	**350 mg/L**	**2.6**	**10**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.37**
Lithium	**0.030 mg/L**	**0.0025**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**	**N**	**0.0019**
Magnesium	**170 mg/L**	**0.50**	**10**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.10**
Potassium	**17 mg/L**	**0.25**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.036**
Sodium	**87 mg/L**	**0.12**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.088**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175334									
Antimony	<0.00010 mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.00010
Arsenic	**0.00058 mg/L**	**0.00055**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Barium	**0.40 mg/L**	**0.0025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00030**
Beryllium	<0.000052 mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.000052
Cadmium	<0.000075 mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.000075
Chromium	**0.0035 mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00020**
Cobalt	**0.00070 mg/L**	**0.00052**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Lead	<0.00010 mg/L	0.00055	1	10/31/25	ejb	11/06/25	ckd		0.00010
Molybdenum	<0.00025 mg/L	0.0012	1	10/31/25	ejb	11/06/25	ckd		0.00025
Selenium	**0.00034 mg/L**	**0.00050**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Thallium	<0.000075 mg/L	0.00038	1	10/31/25	ejb	11/06/25	ckd		0.000075
WET CHEMISTRY									
Analysis Method: EPA 300.0 Rev. 2.1									
Batch: T175051									
Fluoride	**0.87 mg/L**	**0.20**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**	**N**	**0.11**
Chloride	**130 mg/L**	**1.5**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**		**1.2**
Sulfate as SO4	**55 mg/L**	**6.0**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**		**0.58**

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-20	Date Collected: 10/22/25 13:50	Matrix: Ground Water	
Sample ID: MW-03	Date Received: 10/23/25 14:40		

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
WET CHEMISTRY									
Analysis Method: SM 2320 B-21									
Batch: T175245									
Bicarbonate Alkalinity as CaCO3 at pH 4.5	**1500 mg/L**	**5.0**	**1**	**10/28/25**	**aeo**	**10/29/25**	**aeo**	**N**	**0.16**
Carbonate Alkalinity as CaCO3 at pH 8.2	<0.16 mg/L	5.0	1	10/28/25	aeo	10/29/25	aeo	N	0.16
Total Alkalinity as CaCO3 at pH 4.5	**1500 mg/L**	**5.0**	**1**	**10/28/25**	**aeo**	**10/29/25**	**aeo**		**0.16**
Analysis Method: SM 2540 C-20									
Batch: T175110									
Total Dissolved Solids	**1700 mg/L**	**49**	**4.878049**	**10/24/25**	**ans**	**10/24/25**	**ans**		
Analysis Method: SM 2540 D-20									
Batch: T175197									
Total Suspended Solids	<4.1 mg/L	4.1	1.020408	10/27/25	cp	10/27/25	cp		4.1
Analysis Method: SM 4500-H+ B-11									
Batch: T175139									
pH	**7.35 pH Units**		**1**	**10/22/25**	**mj**	**10/24/25**	**sab**	**H04, PH01r**	

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-21 | Date Collected: 10/22/25 15:06 | Matrix: Ground Water
Sample ID: MW-04 | Date Received: 10/23/25 14:40

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 1631E									
Batch: T175248									
Mercury	**0.76 ng/L**	**0.50**	**1**	**10/30/25**	**drm**	**10/31/25**	**drm**		
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175334									
Boron	**2.6 mg/L**	**0.0088**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.0051**
Calcium	**560 mg/L**	**13**	**50**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**1.8**
Lithium	**0.055 mg/L**	**0.0025**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**	**N**	**0.0019**
Magnesium	**78 mg/L**	**0.10**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.010**
Potassium	**12 mg/L**	**0.25**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.036**
Sodium	**35 mg/L**	**0.12**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.088**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175334									
Antimony	**0.00042 mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Arsenic	**0.0013 mg/L**	**0.00055**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Barium	**0.12 mg/L**	**0.0025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00030**
Beryllium	<0.000052 mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.000052
Cadmium	<0.000075 mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.000075
Chromium	**0.0021 mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00020**
Cobalt	**0.0025 mg/L**	**0.00052**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Lead	**0.00016 mg/L**	**0.00055**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Molybdenum	**0.0099 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00025**
Selenium	**0.00035 mg/L**	**0.00050**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Thallium	<0.000075 mg/L	0.00038	1	10/31/25	ejb	11/06/25	ckd		0.000075
WET CHEMISTRY									
Analysis Method: EPA 300.0 Rev. 2.1									
Batch: T175051									
Fluoride	**1.4 mg/L**	**0.20**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**	**N**	**0.11**
Chloride	**45 mg/L**	**1.5**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**		**1.2**
Sulfate as SO4	**1100 mg/L**	**60**	**100**	**10/23/25**	**aeo**	**10/25/25**	**aeo**		**5.8**

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-21 Date Collected: 10/22/25 15:06 Matrix: Ground Water
Sample ID: MW-04 Date Received: 10/23/25 14:40

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
WET CHEMISTRY									
Analysis Method: SM 2320 B-21									
Batch: T175245									
Bicarbonate Alkalinity as CaCO3 at pH 4.5	**620 mg/L**	**5.0**	**1**	**10/28/25**	**aeo**	**10/29/25**	**aeo**	**N**	**0.16**
Carbonate Alkalinity as CaCO3 at pH 8.2	<0.16 mg/L	5.0	1	10/28/25	aeo	10/29/25	aeo	N	0.16
Total Alkalinity as CaCO3 at pH 4.5	**620 mg/L**	**5.0**	**1**	**10/28/25**	**aeo**	**10/29/25**	**aeo**		**0.16**
Analysis Method: SM 2540 C-20									
Batch: T175110									
Total Dissolved Solids	**2200 mg/L**	**49**	**4.878049**	**10/24/25**	**ans**	**10/24/25**	**ans**		
Analysis Method: SM 2540 D-20									
Batch: T175197									
Total Suspended Solids	**8.2 mg/L**	**4.1**	**1.020408**	**10/27/25**	**cp**	**10/27/25**	**cp**		**4.1**
Analysis Method: SM 4500-H+ B-11									
Batch: T175139									
pH	**6.91 pH Units**		**1**	**10/22/25**	**mj**	**10/24/25**	**sab**	**H02, PH01b**	

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-22 Date Collected: 10/22/25 16:10 Matrix: Ground Water
Sample ID: MW-08 Date Received: 10/23/25 14:40

PARAMETERS	RESULTS	UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL										
Analysis Method: EPA 1631E										
Batch: T175248										
Mercury	<	ng/L	0.50	1	10/30/25	drm	10/31/25	drm		
Analysis Method: EPA 200.7 Rev. 4.4										
Batch: T175334										
Boron	**8.2**	**mg/L**	**0.0088**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.0051**
Calcium	**130**	**mg/L**	**2.6**	**10**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.37**
Lithium	**0.088**	**mg/L**	**0.0025**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**	**N**	**0.0019**
Magnesium	**27**	**mg/L**	**0.10**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.010**
Potassium	**11**	**mg/L**	**0.25**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.036**
Sodium	**61**	**mg/L**	**0.12**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.088**
Analysis Method: EPA 200.8 Rev. 5.4										
Batch: T175334										
Antimony	<0.00010	mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.00010
Arsenic	**0.057**	**mg/L**	**0.00055**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Barium	**1.5**	**mg/L**	**0.025**	**10**	**10/31/25**	**ejb**	**11/07/25**	**ckd**		**0.0030**
Beryllium	<0.000052	mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.000052
Cadmium	<0.000075	mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.000075
Chromium	**0.00047**	**mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00020**
Cobalt	**0.00060**	**mg/L**	**0.00052**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Lead	<0.00010	mg/L	0.00055	1	10/31/25	ejb	11/06/25	ckd		0.00010
Molybdenum	**0.00065**	**mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00025**
Selenium	**0.00011**	**mg/L**	**0.00050**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Thallium	<0.000075	mg/L	0.00038	1	10/31/25	ejb	11/06/25	ckd		0.000075
WET CHEMISTRY										
Analysis Method: EPA 300.0 Rev. 2.1										
Batch: T175051										
Fluoride	**1.1**	**mg/L**	**0.20**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**	**N**	**0.11**
Chloride	**77**	**mg/L**	**1.5**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**		**1.2**
Sulfate as SO4	**0.60**	**mg/L**	**6.0**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**	**J**	**0.58**

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-22	Date Collected:	10/22/25 16:10	Matrix:	Ground Water
Sample ID:	MW-08	Date Received:	10/23/25 14:40		

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
WET CHEMISTRY									
Analysis Method: SM 2320 B-21									
Batch: T175245									
Bicarbonate Alkalinity as CaCO3 at pH 4.5	**480 mg/L**	**5.0**	**1**	**10/28/25**	**aeo**	**10/29/25**	**aeo**	**N**	**0.16**
Carbonate Alkalinity as CaCO3 at pH 8.2	<0.16 mg/L	5.0	1	10/28/25	aeo	10/29/25	aeo	N	0.16
Total Alkalinity as CaCO3 at pH 4.5	**480 mg/L**	**5.0**	**1**	**10/28/25**	**aeo**	**10/29/25**	**aeo**		**0.16**
Analysis Method: SM 2540 C-20									
Batch: T175110									
Total Dissolved Solids	**650 mg/L**	**49**	**4.878049**	**10/24/25**	**ans**	**10/24/25**	**ans**		
Analysis Method: SM 2540 D-20									
Batch: T175197									
Total Suspended Solids	**11 mg/L**	**4.0**	**1**	**10/27/25**	**cp**	**10/27/25**	**cp**		**4.0**
Analysis Method: SM 4500-H+ B-11									
Batch: T175139									
pH	**7.07 pH Units**		**1**	**10/22/25**	**mj**	**10/24/25**	**sab**	**H02, PH01p**	

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-23 Date Collected: 10/22/25 17:00 Matrix: Ground Water
Sample ID: SG-07 Date Received: 10/23/25 14:40

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 1631E									
Batch: T175248									
Mercury	< ng/L	0.50	1	10/30/25	drm	10/31/25	drm		
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175369									
Boron	**0.11 mg/L**	**0.0088**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.0051**
Calcium	**70 mg/L**	**0.26**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.037**
Lithium	**0.0040 mg/L**	**0.0025**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**	**N**	**0.0019**
Magnesium	**23 mg/L**	**0.10**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.010**
Potassium	**4.1 mg/L**	**0.25**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.036**
Sodium	**45 mg/L**	**0.12**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.088**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175369									
Antimony	**0.00018 mg/L**	**0.00025**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Arsenic	**0.00099 mg/L**	**0.00055**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Barium	**0.061 mg/L**	**0.0025**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00030**
Beryllium	<0.000052 mg/L	0.00025	1	11/03/25	ejb	11/06/25	ckd		0.000052
Cadmium	<0.000075 mg/L	0.00025	1	11/03/25	ejb	11/06/25	ckd		0.000075
Chromium	**0.00063 mg/L**	**0.00025**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00020**
Cobalt	**0.00030 mg/L**	**0.00052**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Lead	**0.00075 mg/L**	**0.00055**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Molybdenum	**0.0021 mg/L**	**0.0012**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00025**
Selenium	**0.00018 mg/L**	**0.00050**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Thallium	<0.000075 mg/L	0.00038	1	11/03/25	ejb	11/06/25	ckd		0.000075
WET CHEMISTRY									
Analysis Method: EPA 300.0 Rev. 2.1									
Batch: T175051									
Fluoride	**0.26 mg/L**	**0.20**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**	**N**	**0.11**
Chloride	**77 mg/L**	**1.5**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**		**1.2**
Sulfate as SO4	**54 mg/L**	**6.0**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**		**0.58**

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE
ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-23	Date Collected:	10/22/25 17:00	Matrix:	Ground Water
Sample ID:	SG-07	Date Received:	10/23/25 14:40		

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
WET CHEMISTRY									
Analysis Method: SM 2320 B-21									
Batch: T175245									
Bicarbonate Alkalinity as CaCO3 at pH 4.5	**200 mg/L**	**5.0**	**1**	**10/28/25**	**aeo**	**10/29/25**	**aeo**	**N**	**0.16**
Carbonate Alkalinity as CaCO3 at pH 8.2	<0.16 mg/L	5.0	1	10/28/25	aeo	10/29/25	aeo	N	0.16
Total Alkalinity as CaCO3 at pH 4.5	**200 mg/L**	**5.0**	**1**	**10/28/25**	**aeo**	**10/29/25**	**aeo**		**0.16**
Analysis Method: SM 2540 C-20									
Batch: T175110									
Total Dissolved Solids	**390 mg/L**	**50**	**5**	**10/24/25**	**ans**	**10/24/25**	**ans**		
Analysis Method: SM 2540 D-20									
Batch: T175197									
Total Suspended Solids	**10 mg/L**	**4.1**	**1.020408**	**10/27/25**	**cp**	**10/27/25**	**cp**		**4.1**
Analysis Method: SM 4500-H+ B-11									
Batch: T175139									
pH	**8.12 pH Units**		**1**	**10/22/25**	**mj**	**10/24/25**	**sab**	**H02, PH01o**	

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-24	Date Collected:	10/22/25 17:15	Matrix:	Ground Water
Sample ID:	LLHG-TB-10222025	Date Received:	10/23/25 14:40		

PARAMETERS	RESULTS	UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL										
Analysis Method: EPA 1631E										
Batch: T175248										
Mercury	<	ng/L	0.20	1	10/30/25	drm	10/31/25	drm		

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-25 | Date Collected: 10/22/25 17:00 | Matrix: Ground Water
Sample ID: MW-07 | Date Received: 10/23/25 14:40

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 1631E									
Batch: T175248									
Mercury	< ng/L	0.50	1	10/30/25	drm	10/31/25	drm		
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175369									
Boron	**12 mg/L**	**0.088**	**10**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.051**
Calcium	**160 mg/L**	**2.6**	**10**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.37**
Lithium	**0.0053 mg/L**	**0.0025**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**	**N**	**0.0019**
Magnesium	**39 mg/L**	**0.10**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.010**
Potassium	**4.5 mg/L**	**0.25**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.036**
Sodium	**46 mg/L**	**0.12**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.088**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175369									
Antimony	<0.00010 mg/L	0.00025	1	11/03/25	ejb	11/06/25	ckd		0.00010
Arsenic	**0.00019 mg/L**	**0.00055**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Barium	**0.43 mg/L**	**0.0025**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00030**
Beryllium	**0.000055 mg/L**	**0.00025**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.000052**
Cadmium	<0.000075 mg/L	0.00025	1	11/03/25	ejb	11/06/25	ckd		0.000075
Chromium	**0.00034 mg/L**	**0.00025**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00020**
Cobalt	**0.00097 mg/L**	**0.00052**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Lead	<0.00010 mg/L	0.00055	1	11/03/25	ejb	11/06/25	ckd		0.00010
Molybdenum	<0.00025 mg/L	0.0012	1	11/03/25	ejb	11/06/25	ckd		0.00025
Selenium	**0.00012 mg/L**	**0.00050**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Thallium	<0.000075 mg/L	0.00038	1	11/03/25	ejb	11/06/25	ckd		0.000075
WET CHEMISTRY									
Analysis Method: EPA 300.0 Rev. 2.1									
Batch: T175051									
Fluoride	**0.22 mg/L**	**0.20**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**	**N**	**0.11**
Chloride	**16 mg/L**	**1.5**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**		**1.2**
Sulfate as SO4	**33 mg/L**	**6.0**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**		**0.58**

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-25 | Date Collected: 10/22/25 17:00 | Matrix: Ground Water
Sample ID: MW-07 | Date Received: 10/23/25 14:40

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
WET CHEMISTRY									
Analysis Method: SM 2320 B-21									
Batch: T175245									
Bicarbonate Alkalinity as CaCO3 at pH 4.5	**630 mg/L**	**5.0**	**1**	**10/28/25**	**aeo**	**10/29/25**	**aeo**	**N**	**0.16**
Carbonate Alkalinity as CaCO3 at pH 8.2	<0.16 mg/L	5.0	1	10/28/25	aeo	10/29/25	aeo	N	0.16
Total Alkalinity as CaCO3 at pH 4.5	**630 mg/L**	**5.0**	**1**	**10/28/25**	**aeo**	**10/29/25**	**aeo**		**0.16**
Analysis Method: SM 2540 C-20									
Batch: T175110									
Total Dissolved Solids	**670 mg/L**	**51**	**5.128205**	**10/24/25**	**ans**	**10/24/25**	**ans**		
Analysis Method: SM 2540 D-20									
Batch: T175197									
Total Suspended Solids	**39 mg/L**	**4.2**	**1.041667**	**10/27/25**	**cp**	**10/27/25**	**cp**		**4.2**
Analysis Method: SM 4500-H+ B-11									
Batch: T175139									
pH	**6.95 pH Units**		**1**	**10/22/25**	**mj**	**10/24/25**	**sab**	**H02, PH01m**	

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-26 Date Collected: 10/22/25 11:15 Matrix: Ground Water
Sample ID: MW-20 Date Received: 10/23/25 14:40

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 1631E									
Batch: T175248									
Mercury	**1.9 ng/L**	**0.50**	**1**	**10/30/25**	**drm**	**10/31/25**	**drm**		
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175369									
Boron	**1.4 mg/L**	**0.0088**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.0051**
Calcium	**150 mg/L**	**2.6**	**10**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.37**
Lithium	**0.052 mg/L**	**0.0025**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**	**N**	**0.0019**
Magnesium	**43 mg/L**	**0.10**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.010**
Potassium	**7.7 mg/L**	**0.25**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.036**
Sodium	**45 mg/L**	**0.12**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.088**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175369									
Antimony	**0.00065 mg/L**	**0.00025**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Arsenic	**0.0015 mg/L**	**0.00055**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Barium	**0.54 mg/L**	**0.0025**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00030**
Beryllium	<0.000052 mg/L	0.00025	1	11/03/25	ejb	11/06/25	ckd		0.000052
Cadmium	**0.00039 mg/L**	**0.00025**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.000075**
Chromium	<0.00020 mg/L	0.00025	1	11/03/25	ejb	11/06/25	ckd		0.00020
Cobalt	**0.0018 mg/L**	**0.00052**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Lead	**0.0078 mg/L**	**0.00055**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Molybdenum	**0.0046 mg/L**	**0.0012**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00025**
Selenium	**0.00043 mg/L**	**0.00050**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Thallium	<0.000075 mg/L	0.00038	1	11/03/25	ejb	11/06/25	ckd		0.000075
WET CHEMISTRY									
Analysis Method: EPA 300.0 Rev. 2.1									
Batch: T175051									
Fluoride	**0.25 mg/L**	**0.20**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**	**N**	**0.11**
Chloride	**33 mg/L**	**1.5**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**		**1.2**
Sulfate as SO4	**88 mg/L**	**6.0**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**		**0.58**

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-26	Date Collected:	10/22/25 11:15	Matrix:	Ground Water
Sample ID:	MW-20	Date Received:	10/23/25 14:40		

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
WET CHEMISTRY									
Analysis Method: SM 2320 B-21									
Batch: T175245									
Bicarbonate Alkalinity as CaCO3 at pH 4.5	**480 mg/L**	**5.0**	**1**	**10/28/25**	**aeo**	**10/29/25**	**aeo**	**N**	**0.16**
Carbonate Alkalinity as CaCO3 at pH 8.2	<0.16 mg/L	5.0	1	10/28/25	aeo	10/29/25	aeo	N	0.16
Total Alkalinity as CaCO3 at pH 4.5	**480 mg/L**	**5.0**	**1**	**10/28/25**	**aeo**	**10/29/25**	**aeo**		**0.16**
Analysis Method: SM 2540 C-20									
Batch: T175110									
Total Dissolved Solids	**660 mg/L**	**50**	**5**	**10/24/25**	**ans**	**10/24/25**	**ans**		
Analysis Method: SM 2540 D-20									
Batch: T175197									
Total Suspended Solids	**24 mg/L**	**4.0**	**1.010101**	**10/27/25**	**cp**	**10/27/25**	**cp**		**4.0**
Analysis Method: SM 4500-H+ B-11									
Batch: T175139									
pH	**7.15 pH Units**		**1**	**10/22/25**	**mj**	**10/24/25**	**sab**	**H04, PH01f**	

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-27	Date Collected:	10/22/25 14:15	Matrix:	Ground Water
Sample ID:	MW-02	Date Received:	10/23/25 14:40		

METALS, TOTAL

Analysis Method: EPA 1631E
Batch: T175248

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
Mercury	**1.6 ng/L**	**0.50**	**1**	**10/30/25**	**drm**	**10/31/25**	**drm**		

Analysis Method: EPA 200.7 Rev. 4.4
Batch: T175369

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
Boron	**59 mg/L**	**0.18**	**20**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.10**
Calcium	**190 mg/L**	**2.6**	**10**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.37**
Lithium	**1.5 mg/L**	**0.025**	**10**	**11/03/25**	**ejb**	**11/05/25**	**cma**	**N**	**0.019**
Magnesium	**55 mg/L**	**0.50**	**10**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.10**
Potassium	**50 mg/L**	**2.5**	**10**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.36**
Sodium	**360 mg/L**	**1.2**	**10**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.88**

Analysis Method: EPA 200.8 Rev. 5.4
Batch: T175369

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
Antimony	**0.00022 mg/L**	**0.00025**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Arsenic	**0.0065 mg/L**	**0.00055**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Barium	**0.52 mg/L**	**0.0025**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00030**
Beryllium	**0.00026 mg/L**	**0.00025**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.000052**
Cadmium	<0.000075 mg/L	0.00025	1	11/03/25	ejb	11/06/25	ckd		0.000075
Chromium	**0.045 mg/L**	**0.00025**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00020**
Cobalt	**0.0085 mg/L**	**0.00052**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Lead	**0.0023 mg/L**	**0.00055**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Molybdenum	**0.0072 mg/L**	**0.0012**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00025**
Selenium	**0.0018 mg/L**	**0.00050**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Thallium	<0.000075 mg/L	0.00038	1	11/03/25	ejb	11/06/25	ckd		0.000075

METALS, DISSOLVED

Analysis Method: EPA 200.7 Rev. 4.4
Batch: T175228

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
Boron	**140 mg/L**	**0.35**	**10**	**10/28/25**	**cma**	**10/29/25**	**cma**	**N**	
Calcium	**170 mg/L**	**1.0**	**1**	**10/28/25**	**cma**	**10/29/25**	**cma**	**N**	
Lithium	**1.6 mg/L**	**0.025**	**1**	**10/28/25**	**cma**	**10/29/25**	**cma**	**N**	
Magnesium	**52 mg/L**	**1.0**	**1**	**10/28/25**	**cma**	**10/29/25**	**cma**	**N**	

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-27	Date Collected:	10/22/25 14:15	Matrix:	Ground Water
Sample ID:	MW-02	Date Received:	10/23/25 14:40		

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, DISSOLVED									
Potassium	**51 mg/L**	**1.0**	**1**	**10/28/25**	**cma**	**10/29/25**	**cma**	**N**	
Sodium	**370 mg/L**	**5.0**	**10**	**10/28/25**	**cma**	**10/29/25**	**cma**	**N**	
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175583									
Antimony	< mg/L	0.0020	1	11/04/25	jma	11/07/25	jma	N	
Arsenic	**0.0056 mg/L**	**0.0010**	**1**	**11/04/25**	**jma**	**11/07/25**	**jma**	**N**	
Cadmium	< mg/L	0.00050	1	11/04/25	jma	11/07/25	jma	N	
Chromium	< mg/L	0.050	1	11/04/25	jma	11/07/25	jma	N	
Cobalt	< mg/L	0.010	1	11/04/25	jma	11/07/25	jma	N	
Lead	**0.0012 mg/L**	**0.0010**	**1**	**11/04/25**	**jma**	**11/07/25**	**jma**	**N**	
Molybdenum	< mg/L	0.010	1	11/04/25	jma	11/07/25	jma	N	
Selenium	**0.0026 mg/L**	**0.0020**	**1**	**11/04/25**	**jma**	**11/07/25**	**jma**	**N**	
Thallium	< mg/L	0.0020	1	11/04/25	jma	11/07/25	jma	N	
WET CHEMISTRY									
Analysis Method: EPA 300.0 Rev. 2.1									
Batch: T175051									
Fluoride	**13 mg/L**	**0.20**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**	**N**	**0.11**
Chloride	**150 mg/L**	**1.5**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**		**1.2**
Sulfate as SO4	**1.9 mg/L**	**6.0**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**	**J**	**0.58**
Analysis Method: SM 2320 B-21									
Batch: T175245									
Bicarbonate Alkalinity as CaCO3 at pH 4.5	**2400 mg/L**	**5.0**	**1**	**10/28/25**	**aeo**	**10/29/25**	**aeo**	**N**	**0.16**
Carbonate Alkalinity as CaCO3 at pH 8.2	<0.16 mg/L	5.0	1	10/28/25	aeo	10/29/25	aeo	N	0.16
Total Alkalinity as CaCO3 at pH 4.5	**2400 mg/L**	**5.0**	**1**	**10/28/25**	**aeo**	**10/29/25**	**aeo**		**0.16**
Analysis Method: SM 2540 C-20									
Batch: T175110									
Total Dissolved Solids	**2200 mg/L**	**91**	**9.090909**	**10/24/25**	**ans**	**10/24/25**	**ans**		
Analysis Method: SM 2540 D-20									
Batch: T175197									
Total Suspended Solids	**6.3 mg/L**	**4.2**	**1.041667**	**10/27/25**	**cp**	**10/27/25**	**cp**		**4.2**

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-27	Date Collected:	10/22/25 14:15	Matrix:	Ground Water
Sample ID:	MW-02	Date Received:	10/23/25 14:40		

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
WET CHEMISTRY									
Analysis Method: SM 4500-H+ B-11									
Batch: T175139									
pH	**7.21 pH Units**		**1**	**10/22/25**	**mj**	**10/24/25**	**sab**	**H04, PH01n**	

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-28 | Date Collected: 10/22/25 15:55 | Matrix: Ground Water
Sample ID: MW-19 | Date Received: 10/23/25 14:40

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 1631E									
Batch: T175248									
Mercury	< ng/L	0.50	1	10/30/25	drm	10/31/25	drm		
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175369									
Boron	**3.4 mg/L**	**0.0088**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.0051**
Calcium	**410 mg/L**	**2.6**	**10**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.37**
Lithium	**0.085 mg/L**	**0.0025**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**	**N**	**0.0019**
Magnesium	**38 mg/L**	**0.10**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.010**
Potassium	**15 mg/L**	**0.25**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.036**
Sodium	**32 mg/L**	**0.12**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.088**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175369									
Antimony	**0.00043 mg/L**	**0.00025**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Arsenic	**0.0026 mg/L**	**0.00055**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Barium	**0.042 mg/L**	**0.0025**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00030**
Beryllium	**0.00011 mg/L**	**0.00025**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.000052**
Cadmium	**0.00030 mg/L**	**0.00025**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.000075**
Chromium	**0.00024 mg/L**	**0.00025**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00020**
Cobalt	**0.0013 mg/L**	**0.00052**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Lead	<0.00010 mg/L	0.00055	1	11/03/25	ejb	11/06/25	ckd		0.00010
Molybdenum	**0.021 mg/L**	**0.0012**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00025**
Selenium	**0.00070 mg/L**	**0.00050**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Thallium	**0.00012 mg/L**	**0.00038**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.000075**
WET CHEMISTRY									
Analysis Method: EPA 300.0 Rev. 2.1									
Batch: T175051									
Fluoride	**2.0 mg/L**	**0.20**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**	**N**	**0.11**
Chloride	**37 mg/L**	**1.5**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**		**1.2**
Sulfate as SO4	**860 mg/L**	**60**	**100**	**10/23/25**	**aeo**	**10/25/25**	**aeo**		**5.8**

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-28 | Date Collected: 10/22/25 15:55 | Matrix: Ground Water
Sample ID: MW-19 | Date Received: 10/23/25 14:40

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
WET CHEMISTRY									
Analysis Method: SM 2320 B-21									
Batch: T175245									
Bicarbonate Alkalinity as CaCO3 at pH 4.5	**270 mg/L**	**5.0**	**1**	**10/28/25**	**aeo**	**10/29/25**	**aeo**	**N**	**0.16**
Carbonate Alkalinity as CaCO3 at pH 8.2	<0.16 mg/L	5.0	1	10/28/25	aeo	10/29/25	aeo	N	0.16
Total Alkalinity as CaCO3 at pH 4.5	**270 mg/L**	**5.0**	**1**	**10/28/25**	**aeo**	**10/29/25**	**aeo**		**0.16**
Analysis Method: SM 2540 C-20									
Batch: T175110									
Total Dissolved Solids	**1600 mg/L**	**50**	**5**	**10/24/25**	**ans**	**10/24/25**	**ans**		
Analysis Method: SM 2540 D-20									
Batch: T175197									
Total Suspended Solids	**14 mg/L**	**4.0**	**1**	**10/27/25**	**cp**	**10/27/25**	**cp**		**4.0**
Analysis Method: SM 4500-H+ B-11									
Batch: T175139									
pH	**6.77 pH Units**		**1**	**10/22/25**	**mj**	**10/24/25**	**sab**	**H02, PH01h**	

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE
ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-29 | Date Collected: 10/22/25 16:50 | Matrix: Ground Water
Sample ID: MW-18 | Date Received: 10/23/25 14:40

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 1631E									
Batch: T175248									
Mercury	**0.99 ng/L**	**0.50**	**1**	**10/30/25**	**drm**	**10/31/25**	**drm**		
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175369									
Boron	**4.4 mg/L**	**0.0088**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.0051**
Calcium	**240 mg/L**	**2.6**	**10**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.37**
Lithium	**0.038 mg/L**	**0.0025**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**	**N**	**0.0019**
Magnesium	**26 mg/L**	**0.10**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.010**
Potassium	**8.6 mg/L**	**0.25**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.036**
Sodium	**22 mg/L**	**0.12**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.088**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175369									
Antimony	**0.0010 mg/L**	**0.00025**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Arsenic	**0.033 mg/L**	**0.00055**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Barium	**0.034 mg/L**	**0.0025**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00030**
Beryllium	**0.000054 mg/L**	**0.00025**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.000052**
Cadmium	**0.00090 mg/L**	**0.00025**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.000075**
Chromium	<0.00020 mg/L	0.00025	1	11/03/25	ejb	11/06/25	ckd		0.00020
Cobalt	**0.0017 mg/L**	**0.00052**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Lead	**0.00026 mg/L**	**0.00055**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Molybdenum	**0.028 mg/L**	**0.0012**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00025**
Selenium	**0.0023 mg/L**	**0.00050**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Thallium	**0.00016 mg/L**	**0.00038**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.000075**
WET CHEMISTRY									
Analysis Method: EPA 300.0 Rev. 2.1									
Batch: T175051									
Fluoride	**5.0 mg/L**	**0.20**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**	**N**	**0.11**
Chloride	**23 mg/L**	**1.5**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**		**1.2**
Sulfate as SO4	**370 mg/L**	**15**	**25**	**10/23/25**	**aeo**	**10/25/25**	**aeo**		**1.4**

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-29	Date Collected:	10/22/25 16:50	Matrix:	Ground Water
Sample ID:	MW-18	Date Received:	10/23/25 14:40		

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
WET CHEMISTRY									
Analysis Method: SM 2320 B-21									
Batch: T175245									
Bicarbonate Alkalinity as CaCO3 at pH 4.5	**270 mg/L**	**5.0**	**1**	**10/28/25**	**aeo**	**10/29/25**	**aeo**	**N**	**0.16**
Carbonate Alkalinity as CaCO3 at pH 8.2	<0.16 mg/L	5.0	1	10/28/25	aeo	10/29/25	aeo	N	0.16
Total Alkalinity as CaCO3 at pH 4.5	**270 mg/L**	**5.0**	**1**	**10/28/25**	**aeo**	**10/29/25**	**aeo**		**0.16**
Analysis Method: SM 2540 C-20									
Batch: T175110									
Total Dissolved Solids	**860 mg/L**	**40**	**4**	**10/24/25**	**ans**	**10/24/25**	**ans**		
Analysis Method: SM 2540 D-20									
Batch: T175197									
Total Suspended Solids	**9.3 mg/L**	**4.1**	**1.030928**	**10/27/25**	**cp**	**10/27/25**	**cp**		**4.1**
Analysis Method: SM 4500-H+ B-11									
Batch: T175139									
pH	**7.28 pH Units**		**1**	**10/22/25**	**mj**	**10/24/25**	**sab**	**H02, PH01e**	

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-30 Date Collected: 10/23/25 10:50 Matrix: Ground Water
Sample ID: MW-06 Date Received: 10/23/25 14:40

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 1631E									
Batch: T175248									
Mercury	**0.87 ng/L**	**0.50**	**1**	**10/30/25**	**drm**	**10/31/25**	**drm**		
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175369									
Boron	**12 mg/L**	**0.088**	**10**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.051**
Calcium	**210 mg/L**	**2.6**	**10**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.37**
Lithium	**0.18 mg/L**	**0.0025**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**	**N**	**0.0019**
Magnesium	**100 mg/L**	**0.50**	**10**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.10**
Potassium	**26 mg/L**	**0.25**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.036**
Sodium	**88 mg/L**	**0.12**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.088**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175369									
Antimony	<0.00010 mg/L	0.00025	1	11/03/25	ejb	11/06/25	ckd		0.00010
Arsenic	**0.00099 mg/L**	**0.00055**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Barium	**1.4 mg/L**	**0.025**	**10**	**11/03/25**	**ejb**	**11/07/25**	**ckd**		**0.0030**
Beryllium	<0.000052 mg/L	0.00025	1	11/03/25	ejb	11/06/25	ckd		0.000052
Cadmium	<0.000075 mg/L	0.00025	1	11/03/25	ejb	11/06/25	ckd		0.000075
Chromium	**0.0016 mg/L**	**0.00025**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00020**
Cobalt	**0.00043 mg/L**	**0.00052**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Lead	**0.00018 mg/L**	**0.00055**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Molybdenum	**0.00030 mg/L**	**0.0012**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00025**
Selenium	**0.00023 mg/L**	**0.00050**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Thallium	<0.000075 mg/L	0.00038	1	11/03/25	ejb	11/06/25	ckd		0.000075
WET CHEMISTRY									
Analysis Method: EPA 300.0 Rev. 2.1									
Batch: T175051									
Fluoride	**1.5 mg/L**	**0.20**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**	**N**	**0.11**
Chloride	**80 mg/L**	**1.5**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**		**1.2**
Sulfate as SO4	**11 mg/L**	**6.0**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**		**0.58**

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-30 | Date Collected: 10/23/25 10:50 | Matrix: Ground Water
Sample ID: MW-06 | Date Received: 10/23/25 14:40

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
WET CHEMISTRY									
Analysis Method: SM 2320 B-21									
Batch: T175245									
Bicarbonate Alkalinity as CaCO3 at pH 4.5	**1100 mg/L**	**5.0**	**1**	**10/28/25**	**aeo**	**10/29/25**	**aeo**	**N**	**0.16**
Carbonate Alkalinity as CaCO3 at pH 8.2	<0.16 mg/L	5.0	1	10/28/25	aeo	10/29/25	aeo	N	0.16
Total Alkalinity as CaCO3 at pH 4.5	**1100 mg/L**	**5.0**	**1**	**10/28/25**	**aeo**	**10/29/25**	**aeo**		**0.16**
Analysis Method: SM 2540 C-20									
Batch: T175110									
Total Dissolved Solids	**1200 mg/L**	**49**	**4.878049**	**10/24/25**	**ans**	**10/24/25**	**ans**		
Analysis Method: SM 2540 D-20									
Batch: T175197									
Total Suspended Solids	**8.2 mg/L**	**4.1**	**1.030928**	**10/27/25**	**cp**	**10/27/25**	**cp**		**4.1**
Analysis Method: SM 4500-H+ B-11									
Batch: T175139									
pH	**7.25 pH Units**		**1**	**10/23/25**	**mj**	**10/24/25**	**sab**	**PH01I**	

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-31 | Date Collected: 10/23/25 09:40 | Matrix: Ground Water
Sample ID: MW-11 | Date Received: 10/23/25 14:40

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 1631E									
Batch: T175248									
Mercury	**1.1 ng/L**	**0.50**	**1**	**10/30/25**	**drm**	**10/31/25**	**drm**		
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175369									
Boron	**12 mg/L**	**0.088**	**10**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.051**
Calcium	**200 mg/L**	**2.6**	**10**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.37**
Lithium	**0.10 mg/L**	**0.0025**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**	**N**	**0.0019**
Magnesium	**55 mg/L**	**0.10**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.010**
Potassium	**18 mg/L**	**0.25**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.036**
Sodium	**64 mg/L**	**0.12**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.088**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175369									
Antimony	**0.00030 mg/L**	**0.00025**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Arsenic	**0.0044 mg/L**	**0.00055**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Barium	**0.66 mg/L**	**0.0025**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00030**
Beryllium	**0.000054 mg/L**	**0.00025**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.000052**
Cadmium	**0.00035 mg/L**	**0.00025**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.000075**
Chromium	**0.0036 mg/L**	**0.00025**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00020**
Cobalt	**0.0026 mg/L**	**0.00052**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Lead	**0.034 mg/L**	**0.00055**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Molybdenum	**0.0039 mg/L**	**0.0012**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00025**
Selenium	**0.00033 mg/L**	**0.00050**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Thallium	<0.000075 mg/L	0.00038	1	11/03/25	ejb	11/06/25	ckd		0.000075
WET CHEMISTRY									
Analysis Method: EPA 300.0 Rev. 2.1									
Batch: T175051									
Fluoride	**0.92 mg/L**	**0.20**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**	**N**	**0.11**
Chloride	**72 mg/L**	**1.5**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**		**1.2**
Sulfate as SO4	**17 mg/L**	**6.0**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**		**0.58**

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-31	Date Collected:	10/23/25 09:40	Matrix:	Ground Water
Sample ID:	MW-11	Date Received:	10/23/25 14:40		

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
WET CHEMISTRY									
Analysis Method: SM 2320 B-21									
Batch: T175245									
Bicarbonate Alkalinity as CaCO3 at pH 4.5	**700 mg/L**	**5.0**	**1**	**10/28/25**	**aeo**	**10/29/25**	**aeo**	**N**	**0.16**
Carbonate Alkalinity as CaCO3 at pH 8.2	<0.16 mg/L	5.0	1	10/28/25	aeo	10/29/25	aeo	N	0.16
Total Alkalinity as CaCO3 at pH 4.5	**700 mg/L**	**5.0**	**1**	**10/28/25**	**aeo**	**10/29/25**	**aeo**		**0.16**
Analysis Method: SM 2540 C-20									
Batch: T175110									
Total Dissolved Solids	**850 mg/L**	**48**	**4.761905**	**10/24/25**	**ans**	**10/24/25**	**ans**		
Analysis Method: SM 2540 D-20									
Batch: T175197									
Total Suspended Solids	**19 mg/L**	**4.1**	**1.030928**	**10/27/25**	**cp**	**10/27/25**	**cp**		**4.1**
Analysis Method: SM 4500-H+ B-11									
Batch: T175139									
pH	**7.10 pH Units**		**1**	**10/23/25**	**mj**	**10/24/25**	**sab**	**H02, PH01k**	

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-32 | Date Collected: 10/23/25 11:15 | Matrix: Ground Water
Sample ID: MW-27 | Date Received: 10/23/25 14:40

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 1631E									
Batch: T175248									
Mercury	< ng/L	0.50	1	10/30/25	drm	10/31/25	drm		
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175477									
Boron	**0.54 mg/L**	**0.0088**	**1**	**11/04/25**	**ejb**	**11/05/25**	**cma**		**0.0051**
Calcium	**190 mg/L**	**2.6**	**10**	**11/04/25**	**ejb**	**11/05/25**	**cma**		**0.37**
Lithium	**0.0086 mg/L**	**0.0025**	**1**	**11/04/25**	**ejb**	**11/05/25**	**cma**	**N**	**0.0019**
Magnesium	**44 mg/L**	**0.10**	**1**	**11/04/25**	**ejb**	**11/05/25**	**cma**		**0.010**
Potassium	**12 mg/L**	**0.25**	**1**	**11/04/25**	**ejb**	**11/05/25**	**cma**		**0.036**
Sodium	**90 mg/L**	**1.2**	**10**	**11/04/25**	**ejb**	**11/05/25**	**cma**		**0.88**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175477									
Antimony	<0.00010 mg/L	0.00025	1	11/04/25	ejb	11/06/25	ckd		0.00010
Arsenic	**0.0012 mg/L**	**0.00055**	**1**	**11/04/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Barium	**0.34 mg/L**	**0.0025**	**1**	**11/04/25**	**ejb**	**11/06/25**	**ckd**		**0.00030**
Beryllium	**0.000058 mg/L**	**0.00025**	**1**	**11/04/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.000052**
Cadmium	<0.000075 mg/L	0.00025	1	11/04/25	ejb	11/06/25	ckd		0.000075
Chromium	**0.059 mg/L**	**0.00025**	**1**	**11/04/25**	**ejb**	**11/06/25**	**ckd**		**0.00020**
Cobalt	**0.0014 mg/L**	**0.00052**	**1**	**11/04/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Lead	**0.00012 mg/L**	**0.00055**	**1**	**11/04/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Molybdenum	**0.00058 mg/L**	**0.0012**	**1**	**11/04/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00025**
Selenium	**0.00029 mg/L**	**0.00050**	**1**	**11/04/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Thallium	<0.000075 mg/L	0.00038	1	11/04/25	ejb	11/06/25	ckd		0.000075
WET CHEMISTRY									
Analysis Method: EPA 300.0 Rev. 2.1									
Batch: T175051									
Fluoride	**0.55 mg/L**	**0.20**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**	**N**	**0.11**
Chloride	**120 mg/L**	**1.5**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**		**1.2**
Sulfate as SO4	**2.9 mg/L**	**6.0**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**	**J**	**0.58**

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-32	Date Collected:	10/23/25 11:15	Matrix: Ground Water
Sample ID: MW-27	Date Received:	10/23/25 14:40	

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
WET CHEMISTRY									
Analysis Method: SM 2320 B-21									
Batch: T175245									
Bicarbonate Alkalinity as CaCO3 at pH 4.5	**1700 mg/L**	**5.0**	**1**	**10/28/25**	**aeo**	**10/29/25**	**aeo**	**N**	**0.16**
Carbonate Alkalinity as CaCO3 at pH 8.2	<0.16 mg/L	5.0	1	10/28/25	aeo	10/29/25	aeo	N	0.16
Total Alkalinity as CaCO3 at pH 4.5	**1700 mg/L**	**5.0**	**1**	**10/28/25**	**aeo**	**10/29/25**	**aeo**		**0.16**
Analysis Method: SM 2540 C-20									
Batch: T175110									
Total Dissolved Solids	**930 mg/L**	**45**	**4.545455**	**10/24/25**	**ans**	**10/24/25**	**ans**		
Analysis Method: SM 2540 D-20									
Batch: T175197									
Total Suspended Solids	**4.2 mg/L**	**4.2**	**1.052632**	**10/27/25**	**cp**	**10/27/25**	**cp**		**4.2**
Analysis Method: SM 4500-H+ B-11									
Batch: T175139									
pH	**6.97 pH Units**		**1**	**10/23/25**	**mj**	**10/24/25**	**sab**	**PH01g**	

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-33 Date Collected: 10/23/25 12:25 Matrix: Ground Water
Sample ID: MW-28 Date Received: 10/23/25 14:40

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 1631E									
Batch: T175248									
Mercury	**0.55 ng/L**	**0.50**	**1**	**10/30/25**	**drm**	**10/31/25**	**drm**		
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175369									
Boron	**5.1 mg/L**	**0.0088**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.0051**
Calcium	**170 mg/L**	**2.6**	**10**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.37**
Lithium	**0.15 mg/L**	**0.0025**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**	**N**	**0.0019**
Magnesium	**32 mg/L**	**0.10**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.010**
Potassium	**12 mg/L**	**0.25**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.036**
Sodium	**82 mg/L**	**0.12**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.088**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175369									
Antimony	**0.00014 mg/L**	**0.00025**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Arsenic	**0.0011 mg/L**	**0.00055**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Barium	**0.75 mg/L**	**0.0025**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00030**
Beryllium	<0.000052 mg/L	0.00025	1	11/03/25	ejb	11/06/25	ckd		0.000052
Cadmium	<0.000075 mg/L	0.00025	1	11/03/25	ejb	11/06/25	ckd		0.000075
Chromium	**0.0044 mg/L**	**0.00025**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00020**
Cobalt	**0.00024 mg/L**	**0.00052**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Lead	**0.00034 mg/L**	**0.00055**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Molybdenum	**0.0087 mg/L**	**0.0012**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00025**
Selenium	**0.00030 mg/L**	**0.00050**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Thallium	<0.000075 mg/L	0.00038	1	11/03/25	ejb	11/06/25	ckd		0.000075
WET CHEMISTRY									
Analysis Method: EPA 300.0 Rev. 2.1									
Batch: T175051									
Fluoride	**2.0 mg/L**	**0.20**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**	**N**	**0.11**
Chloride	**160 mg/L**	**1.5**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**		**1.2**
Sulfate as SO4	**0.65 mg/L**	**6.0**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**	**J**	**0.58**

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-33 | Date Collected: 10/23/25 12:25 | Matrix: Ground Water
Sample ID: MW-28 | Date Received: 10/23/25 14:40

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
WET CHEMISTRY									
Analysis Method: SM 2320 B-21									
Batch: T175245									
Bicarbonate Alkalinity as CaCO3 at pH 4.5	**510 mg/L**	**5.0**	**1**	**10/28/25**	**aeo**	**10/29/25**	**aeo**	**N**	**0.16**
Carbonate Alkalinity as CaCO3 at pH 8.2	<0.16 mg/L	5.0	1	10/28/25	aeo	10/29/25	aeo	N	0.16
Total Alkalinity as CaCO3 at pH 4.5	**510 mg/L**	**5.0**	**1**	**10/28/25**	**aeo**	**10/29/25**	**aeo**		**0.16**
Analysis Method: SM 2540 C-20									
Batch: T175110									
Total Dissolved Solids	**820 mg/L**	**50**	**5**	**10/24/25**	**ans**	**10/24/25**	**ans**		
Analysis Method: SM 2540 D-20									
Batch: T175197									
Total Suspended Solids	**98 mg/L**	**4.2**	**1.041667**	**10/27/25**	**cp**	**10/27/25**	**cp**		**4.2**
Analysis Method: SM 4500-H+ B-11									
Batch: T175139									
pH	**6.87 pH Units**		**1**	**10/23/25**	**mj**	**10/24/25**	**sab**	**H04, PH01c**	

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-34	Date Collected:	10/23/25 13:35	Matrix:	Ground Water
Sample ID:	LLHG-TB-10232025	Date Received:	10/23/25 14:40		

PARAMETERS	RESULTS	UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL										
Analysis Method: EPA 1631E										
Batch: T175248										
Mercury	<	ng/L	0.20	1	10/30/25	drm	10/31/25	drm		

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-35 | Date Collected: 10/21/25 09:02 | Matrix: Ground Water
Sample ID: MWT-37 | Date Received: 10/22/25 07:55

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 1631E									
Batch: T175248									
Mercury	**0.70 ng/L**	**0.50**	**1**	**10/30/25**	**drm**	**10/31/25**	**drm**		
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175369									
Boron	**3.1 mg/L**	**0.0088**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.0051**
Calcium	**150 mg/L**	**2.6**	**10**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.37**
Lithium	**0.014 mg/L**	**0.0025**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**	**N**	**0.0019**
Magnesium	**9.9 mg/L**	**0.10**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.010**
Potassium	**21 mg/L**	**0.25**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.036**
Sodium	**49 mg/L**	**0.12**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.088**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175369									
Antimony	<0.00010 mg/L	0.00025	1	11/03/25	ejb	11/06/25	ckd		0.00010
Arsenic	**0.0010 mg/L**	**0.00055**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Barium	**0.085 mg/L**	**0.0025**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00030**
Beryllium	<0.000052 mg/L	0.00025	1	11/03/25	ejb	11/06/25	ckd		0.000052
Cadmium	<0.000075 mg/L	0.00025	1	11/03/25	ejb	11/06/25	ckd		0.000075
Chromium	**0.00041 mg/L**	**0.00025**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00020**
Cobalt	**0.00046 mg/L**	**0.00052**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00010**
Lead	**0.0020 mg/L**	**0.00055**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Molybdenum	**0.0065 mg/L**	**0.0012**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00025**
Selenium	**0.00070 mg/L**	**0.00050**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00010**
Thallium	<0.000075 mg/L	0.00038	1	11/03/25	ejb	11/06/25	ckd		0.000075
WET CHEMISTRY									
Analysis Method: EPA 300.0 Rev. 2.1									
Batch: T175051									
Fluoride	**0.74 mg/L**	**0.20**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**	**N**	**0.11**
Chloride	**18 mg/L**	**1.5**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**		**1.2**
Sulfate as SO4	**110 mg/L**	**6.0**	**10**	**10/23/25**	**aeo**	**10/24/25**	**aeo**		**0.58**

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-35	Date Collected:	10/21/25 09:02	Matrix:	Ground Water
Sample ID:	MWT-37	Date Received:	10/22/25 07:55		

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
WET CHEMISTRY									
Analysis Method: SM 2320 B-21									
Batch: T175245									
Bicarbonate Alkalinity as CaCO3 at pH 4.5	**350 mg/L**	**5.0**	**1**	**10/28/25**	**aeo**	**10/29/25**	**aeo**	**N**	**0.16**
Carbonate Alkalinity as CaCO3 at pH 8.2	<0.16 mg/L	5.0	1	10/28/25	aeo	10/29/25	aeo	N	0.16
Total Alkalinity as CaCO3 at pH 4.5	**350 mg/L**	**5.0**	**1**	**10/28/25**	**aeo**	**10/29/25**	**aeo**		**0.16**
Analysis Method: SM 2540 C-20									
Batch: T175110									
Total Dissolved Solids	**600 mg/L**	**42**	**4.166667**	**10/24/25**	**ans**	**10/24/25**	**ans**		
Analysis Method: SM 2540 D-20									
Batch: T175197									
Total Suspended Solids	**10 mg/L**	**4.0**	**1.010101**	**10/27/25**	**cp**	**10/27/25**	**cp**		**4.0**
Analysis Method: SM 4500-H+ B-11									
Batch: T175139									
pH	**7.41 pH Units**		**1**	**10/21/25**	**mj**	**10/24/25**	**sab**	**H04, PH01d**	

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

QUALITY CONTROL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

QC Batch: T175246	Analysis Description: Mercury, Total, Low Level
QC Batch Method: EPA 1631E	Analysis Method: EPA 1631E

METHOD BLANK: T175246-BLK1

Parameter	Units	Blank Result	Reporting Limit	Notes
Mercury	ng/L	<0.50	0.50	

METHOD BLANK: T175246-BLK2

Parameter	Units	Blank Result	Reporting Limit	Notes
Mercury	ng/L	<0.50	0.50	

METHOD BLANK: T175246-BLK3

Parameter	Units	Blank Result	Reporting Limit	Notes
Mercury	ng/L	<0.50	0.50	

LABORATORY CONTROL SAMPLE: T175246-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Mercury	ng/L	5.00	4.78	96	77-123	

MATRIX SPIKE / MATRIX SPIKE DUPLICATE: T175246-MSD1

Original: **25J1475-04**

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Notes
Mercury	ng/L	0	10.0	8.72	8.00	87	80	71-125	9	24	

MATRIX SPIKE / MATRIX SPIKE DUPLICATE: T175246-MSD2

Original: **25J1475-12**

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Notes
Mercury	ng/L	3.88	10.0	11.8	12.5	79	86	71-125	9	24	

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

QC Batch: T175248	Analysis Description: Mercury, Total, Low Level
QC Batch Method: EPA 1631E	Analysis Method: EPA 1631E

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

METHOD BLANK: T175248-BLK1

Parameter	Units	Blank Result	Reporting Limit	Notes
Mercury	ng/L	<0.50	0.50	

METHOD BLANK: T175248-BLK2

Parameter	Units	Blank Result	Reporting Limit	Notes
Mercury	ng/L	<0.50	0.50	

METHOD BLANK: T175248-BLK3

Parameter	Units	Blank Result	Reporting Limit	Notes
Mercury	ng/L	<0.50	0.50	

LABORATORY CONTROL SAMPLE: T175248-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Mercury	ng/L	5.00	5.84	117	77-123	

MATRIX SPIKE / MATRIX SPIKE DUPLICATE: T175248-MSD1 Original: **25J1475-21**

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Notes
Mercury	ng/L	0.756	10.0	11.3	12.7	105	120	71-125	13	24	

MATRIX SPIKE / MATRIX SPIKE DUPLICATE: T175248-MSD2 Original: **25J1475-22**

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Notes
Mercury	ng/L	0	10.0	10.0	10.6	100	106	71-125	6	24	

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

QC Batch: T175228	Analysis Description: Lithium, Dissolved
QC Batch Method:	Analysis Method: EPA 200.7 Rev. 4.4

METHOD BLANK: T175228-BLK1

Parameter	Units	Blank Result	Reporting Limit	Notes
Boron	mg/L	<0.050	0.050	
Calcium	mg/L	<1.0	1.0	
Potassium	mg/L	<1.0	1.0	
Lithium	mg/L	<0.025	0.025	

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

METHOD BLANK: T175228-BLK1

Parameter	Units	Blank Result	Reporting Limit	Notes
Magnesium	mg/L	<1.0	1.0	
Sodium	mg/L	<1.0	1.0	

LABORATORY CONTROL SAMPLE: T175228-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Boron	mg/L	1.00	0.985	98	85-115	
Calcium	mg/L	10.0	9.82	98	85-115	
Potassium	mg/L	10.0	9.77	98	85-115	
Lithium	mg/L	0.500	0.494	99	85-115	
Magnesium	mg/L	10.0	9.76	98	85-115	
Sodium	mg/L	10.0	9.75	97	85-115	

Trace Project ID: 25J1475

Client Project ID: City of Grand Haven - Harbor Island

QC Batch: T175334	Analysis Description: Boron, Total
QC Batch Method: EPA 200.2	Analysis Method: EPA 200.7 Rev. 4.4

METHOD BLANK: T175334-BLK1

Parameter	Units	Blank Result	Reporting Limit	Notes
Boron	mg/L	<0.0088	0.0088	
Calcium	mg/L	<0.26	0.26	
Potassium	mg/L	<0.25	0.25	
Lithium	mg/L	<0.0025	0.0025	
Magnesium	mg/L	<0.10	0.10	
Sodium	mg/L	<0.12	0.12	

LABORATORY CONTROL SAMPLE: T175334-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Boron	mg/L	1.60	1.56	98	85-115	
Calcium	mg/L	16.0	16.5	103	85-115	
Potassium	mg/L	16.0	15.4	96	85-115	
Lithium	mg/L	1.60	1.50	94	85-115	
Magnesium	mg/L	16.0	15.9	99	85-115	
Sodium	mg/L	16.0	15.8	99	85-115	

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

MATRIX SPIKE: T175334-MS1 Original: **25J1475-01**

Parameter	Units	Original Result	Spike Conc.	MS Result	MS % Rec	% Rec Unit	Notes
Boron	mg/L	0.165	1.60	1.75	99	70-130	
Calcium	**mg/L**	**312**	**16.0**	308	**-25**	**70-130**	**MS09**
Potassium	mg/L	6.07	16.0	21.1	94	70-130	
Lithium	mg/L	0	1.60	1.49	93	70-130	
Magnesium	mg/L	24.9	16.0	39.8	93	70-130	
Sodium	mg/L	25.0	16.0	39.9	93	70-130	

MATRIX SPIKE: T175334-MS2 Original: **25J1475-02**

Parameter	Units	Original Result	Spike Conc.	MS Result	MS % Rec	% Rec Unit	Notes
Boron	mg/L	6.19	1.60	7.49	81	70-130	
Calcium	**mg/L**	**496**	**16.0**	481	**-93**	**70-130**	**MS09**
Potassium	mg/L	15.7	16.0	30.3	91	70-130	
Lithium	mg/L	0.289	1.60	1.78	93	70-130	
Magnesium	mg/L	65.0	16.0	79.1	88	70-130	
Sodium	mg/L	32.3	16.0	46.3	87	70-130	

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

QC Batch: T175369 — Analysis Description: Potassium, Total
QC Batch Method: EPA 200.2 — Analysis Method: EPA 200.7 Rev. 4.4

METHOD BLANK: T175369-BLK1

Parameter	Units	Blank Result	Reporting Limit	Notes
Boron	mg/L	<0.0088	0.0088	
Calcium	mg/L	<0.26	0.26	
Potassium	mg/L	<0.25	0.25	
Lithium	mg/L	<0.0025	0.0025	
Magnesium	mg/L	<0.10	0.10	
Sodium	mg/L	<0.12	0.12	

LABORATORY CONTROL SAMPLE: T175369-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Boron	mg/L	1.60	1.57	98	85-115	
Calcium	mg/L	16.0	16.3	102	85-115	
Potassium	mg/L	16.0	15.2	95	85-115	
Lithium	mg/L	1.60	1.47	92	85-115	

LABORATORY CONTROL SAMPLE: T175369-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Magnesium	mg/L	16.0	15.8	98	85-115	
Sodium	mg/L	16.0	15.6	98	85-115	

MATRIX SPIKE: T175369-MS1 Original: **25J1475-23**

Parameter	Units	Original Result	Spike Conc.	MS Result	MS % Rec	% Rec Unit	Notes
Boron	mg/L	0.107	1.60	1.69	99	70-130	
Calcium	mg/L	69.8	16.0	87.5	110	70-130	
Potassium	mg/L	4.13	16.0	19.1	94	70-130	
Lithium	mg/L	0	1.60	1.44	90	70-130	
Magnesium	mg/L	22.7	16.0	38.6	99	70-130	
Sodium	mg/L	45.3	16.0	60.9	97	70-130	

MATRIX SPIKE: T175369-MS2 Original: **25J1475-25**

Parameter	Units	Original Result	Spike Conc.	MS Result	MS % Rec	% Rec Unit	Notes
Boron	**mg/L**	**11.7**	**1.60**	12.3	**43**	**70-130**	**MS09**
Calcium	**mg/L**	**162**	**16.0**	163	**6**	**70-130**	**MS09**
Potassium	mg/L	4.54	16.0	19.2	91	70-130	
Lithium	mg/L	0	1.60	1.45	91	70-130	
Magnesium	mg/L	38.9	16.0	52.0	82	70-130	
Sodium	mg/L	46.4	16.0	58.0	73	70-130	

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

QC Batch: T175477
QC Batch Method: EPA 200.2
Analysis Description: Boron, Total
Analysis Method: EPA 200.7 Rev. 4.4

METHOD BLANK: T175477-BLK1

Parameter	Units	Blank Result	Reporting Limit	Notes
Boron	mg/L	<0.0088	0.0088	
Calcium	mg/L	<0.26	0.26	
Potassium	mg/L	<0.25	0.25	
Lithium	mg/L	<0.0025	0.0025	
Magnesium	mg/L	<0.10	0.10	
Sodium	mg/L	<0.12	0.12	

LABORATORY CONTROL SAMPLE: T175477-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Boron	mg/L	1.60	1.55	97	85-115	
Calcium	mg/L	16.0	16.5	103	85-115	
Potassium	mg/L	16.0	15.4	97	85-115	
Lithium	mg/L	1.60	1.50	94	85-115	
Magnesium	mg/L	16.0	16.0	100	85-115	
Sodium	mg/L	16.0	15.9	99	85-115	

MATRIX SPIKE: T175477-MS1 Original: **25J1475-32**

Parameter	Units	Original Result	Spike Conc.	MS Result	MS % Rec	% Rec Unit	Notes
Boron	mg/L	0.545	1.60	2.13	99	70-130	
Calcium	**mg/L**	**194**	**16.0**	203	**58**	**70-130**	**MS09**
Potassium	mg/L	12.0	16.0	27.2	95	70-130	
Lithium	mg/L	0.00858	1.60	1.51	94	70-130	
Magnesium	mg/L	44.4	16.0	60.4	100	70-130	
Sodium	mg/L	89.9	16.0	104	91	70-130	

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

QC Batch: T174784
QC Batch Method:

Analysis Description: Antimony, Dissolved
Analysis Method: EPA 200.8 Rev. 5.4

METHOD BLANK: T174784-BLK1

Parameter	Units	Blank Result	Reporting Limit	Notes
Arsenic	mg/L	<0.0010	0.0010	
Cadmium	mg/L	<0.00050	0.00050	
Cobalt	mg/L	<0.010	0.010	
Chromium	mg/L	<0.050	0.050	
Molybdenum	mg/L	<0.010	0.010	
Lead	mg/L	<0.0010	0.0010	
Antimony	mg/L	<0.0020	0.0020	
Selenium	mg/L	<0.0020	0.0020	
Thallium	mg/L	<0.0020	0.0020	

LABORATORY CONTROL SAMPLE: T174784-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Arsenic	mg/L	0.0600	0.0600	100	85-115	

LABORATORY CONTROL SAMPLE: T174784-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Cadmium	mg/L	0.0600	0.0605	101	85-115	
Cobalt	mg/L	0.0600	0.0602	100	85-115	
Chromium	mg/L	0.0600	0.0599	100	85-115	
Molybdenum	mg/L	0.0600	0.0603	101	85-115	
Lead	mg/L	0.0600	0.0593	99	85-115	
Antimony	mg/L	0.0600	0.0604	101	85-115	
Selenium	mg/L	0.0600	0.0609	102	85-115	
Thallium	mg/L	0.0600	0.0586	98	85-115	

MATRIX SPIKE: T174784-MS1 Original: **25J1475-08**

Parameter	Units	Original Result	Spike Conc.	MS Result	MS % Rec	% Rec Unit	Notes
Arsenic	mg/L	0.00738	0.0500	0.0567	99	70-130	
Cadmium	mg/L	0.000171	0.0500	0.0493	98	70-130	
Cobalt	mg/L	0.000450	0.0500	0.0522	104	70-130	
Chromium	mg/L	0.00594	0.0500	<0.050	85	70-130	
Molybdenum	mg/L	0.0225	0.0500	0.0614	78	70-130	
Lead	mg/L	0.0282	0.0500	0.0846	113	70-130	
Antimony	mg/L	0.00202	0.0500	0.0619	120	70-130	
Selenium	mg/L	0.00339	0.0500	0.0459	85	70-130	
Thallium	mg/L	0	0.0500	0.0422	84	70-130	

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

QC Batch: T175334
QC Batch Method: EPA 200.2
Analysis Description: Molybdenum, Total
Analysis Method: EPA 200.8 Rev. 5.4

METHOD BLANK: T175334-BLK1

Parameter	Units	Blank Result	Reporting Limit	Notes
Arsenic	mg/L	<0.00055	0.00055	
Barium	mg/L	<0.0025	0.0025	
Beryllium	mg/L	<0.00025	0.00025	
Cadmium	mg/L	<0.00025	0.00025	
Cobalt	mg/L	<0.00052	0.00052	
Chromium	mg/L	<0.00025	0.00025	
Molybdenum	mg/L	<0.0012	0.0012	
Lead	mg/L	<0.00055	0.00055	
Antimony	mg/L	<0.00025	0.00025	

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

METHOD BLANK: T175334-BLK1

Parameter	Units	Blank Result	Reporting Limit	Notes
Selenium	mg/L	<0.00050	0.00050	
Thallium	mg/L	<0.00038	0.00038	

LABORATORY CONTROL SAMPLE: T175334-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Arsenic	mg/L	0.100	0.101	101	85-115	
Barium	mg/L	1.60	1.68	105	85-115	
Beryllium	mg/L	0.200	0.193	97	85-115	
Cadmium	mg/L	0.0500	0.0522	104	85-115	
Cobalt	mg/L	1.60	1.58	99	85-115	
Chromium	mg/L	0.0500	0.0504	101	85-115	
Molybdenum	mg/L	1.60	1.62	101	85-115	
Lead	mg/L	0.100	0.106	106	85-115	
Antimony	mg/L	0.100	0.0975	98	85-115	
Selenium	mg/L	0.100	0.0977	98	85-115	
Thallium	mg/L	0.100	0.106	106	85-115	

MATRIX SPIKE: T175334-MS1 Original: **25J1475-01**

Parameter	Units	Original Result	Spike Conc.	MS Result	MS % Rec	% Rec Unit	Notes
Arsenic	mg/L	0.00180	0.100	0.104	102	70-130	
Barium	mg/L	0.236	1.60	1.89	104	70-130	
Beryllium	mg/L	0	0.200	0.199	99	70-130	
Cadmium	mg/L	0	0.0500	0.0501	100	70-130	
Cobalt	mg/L	0.000694	1.60	1.63	102	70-130	
Chromium	mg/L	0.00880	0.0500	0.0624	107	70-130	
Molybdenum	mg/L	0.00151	1.60	1.66	103	70-130	
Lead	mg/L	0	0.100	0.108	108	70-130	
Antimony	mg/L	0	0.100	0.0953	95	70-130	
Selenium	mg/L	0.000482	0.100	0.0950	95	70-130	
Thallium	mg/L	0	0.100	0.109	109	70-130	

MATRIX SPIKE: T175334-MS2 Original: **25J1475-02**

Parameter	Units	Original Result	Spike Conc.	MS Result	MS % Rec	% Rec Unit	Notes
Arsenic	mg/L	0.00253	0.100	0.106	104	70-130	
Barium	mg/L	0.144	1.60	1.86	107	70-130	
Beryllium	mg/L	0	0.200	0.205	103	70-130	

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

MATRIX SPIKE: T175334-MS2 Original: **25J1475-02**

Parameter	Units	Original Result	Spike Conc.	MS Result	MS % Rec	% Rec Unit	Notes
Cadmium	mg/L	0	0.0500	0.0493	99	70-130	
Cobalt	mg/L	0	1.60	1.68	105	70-130	
Chromium	mg/L	0.00237	0.0500	0.0615	118	70-130	
Molybdenum	mg/L	0.0233	1.60	1.71	106	70-130	
Lead	mg/L	0	0.100	0.110	110	70-130	
Antimony	mg/L	0	0.100	0.0973	97	70-130	
Selenium	mg/L	0	0.100	0.0935	94	70-130	
Thallium	mg/L	0	0.100	0.114	114	70-130	

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

QC Batch: T175369
QC Batch Method: EPA 200.2
Analysis Description: Antimony, Total
Analysis Method: EPA 200.8 Rev. 5.4

METHOD BLANK: T175369-BLK1

Parameter	Units	Blank Result	Reporting Limit	Notes
Arsenic	mg/L	<0.00055	0.00055	
Barium	mg/L	<0.0025	0.0025	
Beryllium	mg/L	<0.00025	0.00025	
Cadmium	mg/L	<0.00025	0.00025	
Cobalt	mg/L	<0.00052	0.00052	
Chromium	mg/L	<0.00025	0.00025	
Molybdenum	mg/L	<0.0012	0.0012	
Lead	mg/L	<0.00055	0.00055	
Antimony	mg/L	<0.00025	0.00025	
Selenium	mg/L	<0.00050	0.00050	
Thallium	mg/L	<0.00038	0.00038	

LABORATORY CONTROL SAMPLE: T175369-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Arsenic	mg/L	0.100	0.0963	96	85-115	
Barium	mg/L	1.60	1.73	108	85-115	
Beryllium	mg/L	0.200	0.184	92	85-115	
Cadmium	mg/L	0.0500	0.0445	89	85-115	
Cobalt	mg/L	1.60	1.44	90	85-115	
Chromium	mg/L	0.0500	0.0454	91	85-115	
Molybdenum	mg/L	1.60	1.52	95	85-115	

LABORATORY CONTROL SAMPLE: T175369-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Lead	mg/L	0.100	0.101	101	85-115	
Antimony	mg/L	0.100	0.103	103	85-115	
Selenium	mg/L	0.100	0.0944	94	85-115	
Thallium	mg/L	0.100	0.102	102	85-115	

MATRIX SPIKE: T175369-MS1 Original: **25J1475-23**

Parameter	Units	Original Result	Spike Conc.	MS Result	MS % Rec	% Rec Unit	Notes
Arsenic	mg/L	0.000994	0.100	0.100	99	70-130	
Barium	mg/L	0.0610	1.60	1.82	110	70-130	
Beryllium	mg/L	0	0.200	0.188	94	70-130	
Cadmium	mg/L	0	0.0500	0.0443	89	70-130	
Cobalt	mg/L	0	1.60	1.47	92	70-130	
Chromium	mg/L	0	0.0500	0.0472	94	70-130	
Molybdenum	mg/L	0.00209	1.60	1.59	99	70-130	
Lead	mg/L	0.000752	0.100	0.106	105	70-130	
Antimony	mg/L	0	0.100	0.104	104	70-130	
Selenium	mg/L	0	0.100	0.0935	94	70-130	
Thallium	mg/L	0	0.100	0.106	106	70-130	

MATRIX SPIKE: T175369-MS2 Original: **25J1475-25**

Parameter	Units	Original Result	Spike Conc.	MS Result	MS % Rec	% Rec Unit	Notes
Arsenic	mg/L	0	0.100	0.0962	96	70-130	
Barium	mg/L	0.430	1.60	2.13	106	70-130	
Beryllium	mg/L	0	0.200	0.182	91	70-130	
Cadmium	mg/L	0	0.0500	0.0422	84	70-130	
Cobalt	mg/L	0.000974	1.60	1.41	88	70-130	
Chromium	mg/L	0	0.0500	0.0456	91	70-130	
Molybdenum	mg/L	0	1.60	1.57	98	70-130	
Lead	mg/L	0	0.100	0.106	106	70-130	
Antimony	mg/L	0	0.100	0.103	103	70-130	
Selenium	mg/L	0	0.100	0.0885	88	70-130	
Thallium	mg/L	0	0.100	0.106	106	70-130	

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

QC Batch: T175477	Analysis Description: Thallium, Total
QC Batch Method: EPA 200.2	Analysis Method: EPA 200.8 Rev. 5.4

METHOD BLANK: T175477-BLK1

Parameter	Units	Blank Result	Reporting Limit	Notes
Arsenic	mg/L	<0.00055	0.00055	
Barium	mg/L	<0.0025	0.0025	
Beryllium	**mg/L**	**0.0000772**	**0.00025**	**J**
Cadmium	mg/L	<0.00025	0.00025	
Cobalt	mg/L	<0.00052	0.00052	
Chromium	mg/L	<0.00025	0.00025	
Molybdenum	mg/L	<0.0012	0.0012	
Lead	mg/L	<0.00055	0.00055	
Antimony	mg/L	<0.00025	0.00025	
Selenium	mg/L	<0.00050	0.00050	
Thallium	**mg/L**	**0.0000872**	**0.00038**	**J**

LABORATORY CONTROL SAMPLE: T175477-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Arsenic	mg/L	0.100	0.104	104	85-115	
Barium	mg/L	1.60	1.71	107	85-115	
Beryllium	mg/L	0.200	0.209	104	85-115	
Cadmium	mg/L	0.0500	0.0524	105	85-115	
Cobalt	mg/L	1.60	1.62	101	85-115	
Chromium	mg/L	0.0500	0.0527	105	85-115	
Molybdenum	mg/L	1.60	1.65	103	85-115	
Lead	mg/L	0.100	0.108	108	85-115	
Antimony	mg/L	0.100	0.0992	99	85-115	
Selenium	mg/L	0.100	0.0996	100	85-115	
Thallium	mg/L	0.100	0.107	107	85-115	

MATRIX SPIKE: T175477-MS1 Original: **25J1475-32**

Parameter	Units	Original Result	Spike Conc.	MS Result	MS % Rec	% Rec Unit	Notes
Arsenic	mg/L	0.00120	0.100	0.104	102	70-130	
Barium	mg/L	0.338	1.60	2.03	106	70-130	
Beryllium	mg/L	0	0.200	0.209	105	70-130	
Cadmium	mg/L	0	0.0500	0.0508	102	70-130	
Cobalt	mg/L	0.00136	1.60	1.66	104	70-130	
Chromium	mg/L	0.0586	0.0500	0.102	86	70-130	

MATRIX SPIKE: T175477-MS1 Original: **25J1475-32**

Parameter	Units	Original Result	Spike Conc.	MS Result	MS % Rec	% Rec Unit	Notes
Molybdenum	mg/L	0	1.60	1.69	105	70-130	
Lead	mg/L	0	0.100	0.111	111	70-130	
Antimony	mg/L	0	0.100	0.0968	97	70-130	
Selenium	mg/L	0	0.100	0.0931	93	70-130	
Thallium	mg/L	0	0.100	0.111	111	70-130	

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

QC Batch: T175583
QC Batch Method:

Analysis Description: Arsenic, Dissolved
Analysis Method: EPA 200.8 Rev. 5.4

LABORATORY CONTROL SAMPLE: T175583-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Arsenic	mg/L	0.0600	0.0557	93	85-115	
Cadmium	mg/L	0.0600	0.0571	95	85-115	
Cobalt	mg/L	0.0600	0.0563	94	85-115	
Chromium	mg/L	0.0600	0.0565	94	85-115	
Molybdenum	mg/L	0.0600	0.0657	109	85-115	
Lead	mg/L	0.0600	0.0590	98	85-115	
Antimony	mg/L	0.0600	0.0581	97	85-115	
Selenium	mg/L	0.0600	0.0560	93	85-115	
Thallium	mg/L	0.0600	0.0587	98	85-115	

MATRIX SPIKE: T175583-MS1 Original: **25J1475-16**

Parameter	Units	Original Result	Spike Conc.	MS Result	MS % Rec	% Rec Unit	Notes
Arsenic	mg/L	0.00220	0.0500	0.0525	101	70-130	
Cadmium	mg/L	0	0.0500	0.0493	99	70-130	
Cobalt	mg/L	0.000359	0.0500	0.0501	99	70-130	
Chromium	mg/L	0.00323	0.0500	0.0565	107	70-130	
Molybdenum	mg/L	0.00325	0.0500	0.0580	110	70-130	
Lead	mg/L	0	0.0500	0.0487	97	70-130	
Antimony	mg/L	0.000635	0.0500	0.0526	104	70-130	
Selenium	mg/L	0	0.0500	0.0468	94	70-130	
Thallium	mg/L	0	0.0500	0.0494	99	70-130	

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

QC Batch: T174985	Analysis Description: Filtration for Dissolved Metals
QC Batch Method:	Analysis Method: Dissolved Metals

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

QC Batch: T175130	Analysis Description: Filtration for Dissolved Metals
QC Batch Method:	Analysis Method: Dissolved Metals

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

QC Batch: T174965	Analysis Description: Sulfate
QC Batch Method: IC Prep W	Analysis Method: EPA 300.0 Rev. 2.1

METHOD BLANK: T174965-BLK1

Parameter	Units	Blank Result	Reporting Limit	Notes
Chloride	mg/L	<0.15	0.15	
Fluoride	mg/L	<0.020	0.020	
Sulfate as SO4	mg/L	<0.60	0.60	

LABORATORY CONTROL SAMPLE: T174965-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Chloride	mg/L	5.00	4.79	96	90-110	
Fluoride	mg/L	1.00	0.938	94	90-110	
Sulfate as SO4	mg/L	5.00	4.86	97	90-110	

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

QC Batch: T175051	Analysis Description: Sulfate
QC Batch Method: IC Prep W	Analysis Method: EPA 300.0 Rev. 2.1

METHOD BLANK: T175051-BLK1

Parameter	Units	Blank Result	Reporting Limit	Notes
Chloride	mg/L	<0.15	0.15	
Fluoride	mg/L	<0.020	0.020	
Sulfate as SO4	mg/L	<1.0	1.0	

LABORATORY CONTROL SAMPLE: T175051-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes

LABORATORY CONTROL SAMPLE: T175051-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Chloride	**mg/L**	**5.00**	**<10**	**96**	**90-110**	**J**
Fluoride	mg/L	1.00	1.05	105	90-110	
Sulfate as SO4	mg/L	5.00	4.92	98	90-110	

MATRIX SPIKE: T175051-MS1 Original: **25J1475-25**

Parameter	Units	Original Result	Spike Conc.	MS Result	MS % Rec	% Rec Unit	Notes
Chloride	mg/L	16.1	50.0	66.1	100	80-120	
Fluoride	mg/L	0.216	10.0	10.1	99	80-120	
Sulfate as SO4	mg/L	33.1	50.0	82.4	99	80-120	

MATRIX SPIKE: T175051-MS2 Original: **25J1475-26**

Parameter	Units	Original Result	Spike Conc.	MS Result	MS % Rec	% Rec Unit	Notes
Chloride	mg/L	32.9	50.0	84.2	103	80-120	
Fluoride	mg/L	0.252	10.0	9.95	97	80-120	
Sulfate as SO4	mg/L	88.2	50.0	139	101	80-120	

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

QC Batch: T174938	Analysis Description: Alkalinity, Total
QC Batch Method: SM 2320 B-21	Analysis Method: SM 2320 B-21

LABORATORY CONTROL SAMPLE: T174938-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Bicarbonate Alkalinity as CaCO3 at pH 4.5	mg/L	100	98.1	98	88-112	
Carbonate Alkalinity as CaCO3 at pH 8.2	mg/L	100	98.1	98	88-112	
Total Alkalinity as CaCO3 at pH 4.5	mg/L	100	98.1	98	88-112	

SAMPLE DUPLICATE: T174938-DUP1 Original: **25J1475-01**

Parameter	Units	Original Result	DUP Result	RPD	Max RPD	Notes
Bicarbonate Alkalinity as CaCO3 at pH 4.5	mg/L	444	490	10	20	
Carbonate Alkalinity as CaCO3 at pH 8.2	mg/L	0	<10		20	
Total Alkalinity as CaCO3 at pH 4.5	mg/L	444	490	10	20	

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

QC Batch: T175245
QC Batch Method: SM 2320 B-21

Analysis Description: Alkalinity, Total
Analysis Method: SM 2320 B-21

LABORATORY CONTROL SAMPLE: T175245-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Bicarbonate Alkalinity as CaCO3 at pH 4.5	mg/L	100	92.5	93	88-112	
Carbonate Alkalinity as CaCO3 at pH 8.2	mg/L	100	92.5	93	88-112	
Total Alkalinity as CaCO3 at pH 4.5	mg/L	100	92.5	93	88-112	

SAMPLE DUPLICATE: T175245-DUP1

Original: **25J1475-16**

Parameter	Units	Original Result	DUP Result	RPD	Max RPD	Notes
Bicarbonate Alkalinity as CaCO3 at pH 4.5	mg/L	455	456	0.4	20	
Carbonate Alkalinity as CaCO3 at pH 8.2	mg/L	0	<10		20	
Total Alkalinity as CaCO3 at pH 4.5	mg/L	455	456	0.4	20	

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

QC Batch: T174983
QC Batch Method: SM 2540 C-20

Analysis Description: Total Dissolved Solids
Analysis Method: SM 2540 C-20

METHOD BLANK: T174983-BLK1

Parameter	Units	Blank Result	Reporting Limit	Notes
Total Dissolved Solids	**mg/L**	**3.26**	**11**	**J**

LABORATORY CONTROL SAMPLE: T174983-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Total Dissolved Solids	mg/L	500	505	101	80-120	

SAMPLE DUPLICATE: T174983-DUP1

Original: **25J1475-03**

Parameter	Units	Original Result	DUP Result	RPD	Max RPD	Notes
Total Dissolved Solids	mg/L	2220	2220	0	10	

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

QC Batch: T175110	Analysis Description: Total Dissolved Solids
QC Batch Method: SM 2540 C-20	Analysis Method: SM 2540 C-20

METHOD BLANK: T175110-BLK1

Parameter	Units	Blank Result	Reporting Limit	Notes
Total Dissolved Solids	mg/L	<10	10	

LABORATORY CONTROL SAMPLE: T175110-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Total Dissolved Solids	mg/L	500	458	92	80-120	

SAMPLE DUPLICATE: T175110-DUP1 Original: **25J1475-16**

Parameter	Units	Original Result	DUP Result	RPD	Max RPD	Notes
Total Dissolved Solids	mg/L	771	770	0.09	10	

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

QC Batch: T174964	Analysis Description: Total Suspended Solids
QC Batch Method: SM 2540 D-20	Analysis Method: SM 2540 D-20

METHOD BLANK: T174964-BLK1

Parameter	Units	Blank Result	Reporting Limit	Notes
Total Suspended Solids	mg/L	<4.0	4.0	

LABORATORY CONTROL SAMPLE: T174964-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Total Suspended Solids	mg/L	100	88.2	88	85-115	

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

QC Batch: T175014	Analysis Description: Total Suspended Solids
QC Batch Method: SM 2540 D-20	Analysis Method: SM 2540 D-20

METHOD BLANK: T175014-BLK1

Parameter	Units	Blank Result	Reporting Limit	Notes
Total Suspended Solids	mg/L	<4.0	4.0	

LABORATORY CONTROL SAMPLE: T175014-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Total Suspended Solids	mg/L	100	104	104	85-115	

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

QC Batch: T175197	Analysis Description: Total Suspended Solids
QC Batch Method: SM 2540 D-20	Analysis Method: SM 2540 D-20

METHOD BLANK: T175197-BLK1

Parameter	Units	Blank Result	Reporting Limit	Notes
Total Suspended Solids	mg/L	<4.1	4.1	

LABORATORY CONTROL SAMPLE: T175197-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Total Suspended Solids	mg/L	100	93.7	94	85-115	

SAMPLE DUPLICATE: T175197-DUP1 Original: **25J1475-16**

Parameter	Units	Original Result	DUP Result	RPD	Max RPD	Notes
Total Suspended Solids	mg/L	0	<10		10	

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

QC Batch: T175129	Analysis Description: pH, SM 4500
QC Batch Method: *** DEFAULT PREP ***	Analysis Method: SM 4500-H+ B-11

SAMPLE DUPLICATE: T175129-DUP1 Original: **25J1475-01**

Parameter	Units	Original Result	DUP Result	RPD	Max RPD	Notes
pH	**pH Units**	**6.67**	**6.72**	**0.7**	**20**	**PH01t**

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

QC Batch: T175139	Analysis Description: pH, SM 4500
QC Batch Method: *** DEFAULT PREP ***	Analysis Method: SM 4500-H+ B-11

SAMPLE DUPLICATE: T175139-DUP1 Original: **25J1475-17**

Parameter	Units	Original Result	DUP Result	RPD	Max RPD	Notes
pH	**pH Units**	**7.38**	**7.26**	**2**	**20**	**PH01a**

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

AN EXPLANATION OF TERMS AND SYMBOLS WHICH MAY OCCUR IN THIS REPORT

DEFINITIONS

LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MS	Matrix Spike
MSD	Matrix Spike Duplicate
RPD	Relative Percent Difference
DUP	Matrix Duplicate
LOQ	Limit of Quantitation
LOD	Limit of Detection
TIC	Tentatively Identified Compound
<, ND or U	Indicates the compound was analyzed for but not detected
*	Indicates a result that exceeds its associated MCL or Surrogate control limits
N	Indicates that the compound has not been evaluated by NELAC
NA	Indicates that the compound is not available.

NOTE: Samples for volatiles that have been extracted with a water miscible solvent were corrected for the total volume of the solvent/water mixture.
Solid matrices Method Blanks are at 100% solids as such results are the same wet or dry.

DATA QUALIFIERS

Trace ID: 25J1475-01

Analysis: SM 4500-H+ B-11

pH	Note H04 : The sample was received and, therefore, analyzed beyond the established EPA hold time. The result must be considered estimated.
pH	Note PH01s : The pH was analyzed at 11:30

Trace ID: 25J1475-02

Analysis: EPA 200.8 Rev. 5.4

Lead	Note DL02 : The reporting limit was raised due to a dilution required because of chromatographic/matrix interference with the internal standards.
Thallium	Note DL02 : The reporting limit was raised due to a dilution required because of chromatographic/matrix interference with the internal standards.

Analysis: SM 4500-H+ B-11

pH	Note H04 : The sample was received and, therefore, analyzed beyond the established EPA hold time. The result must be considered estimated.
pH	Note PH01u : The pH was analyzed at 11:32

Trace ID: 25J1475-03

Analysis: SM 4500-H+ B-11

pH	Note H04 : The sample was received and, therefore, analyzed beyond the established EPA hold time. The result must be considered estimated.
pH	Note PH01u : The pH was analyzed at 11:32

Trace ID: 25J1475-04

Analysis: SM 4500-H+ B-11

pH	Note H04 : The sample was received and, therefore, analyzed beyond the established EPA hold time. The result must be considered estimated.
pH	Note PH01v : The pH was analyzed at 11:33

Trace ID: 25J1475-05

Analysis: SM 4500-H+ B-11

pH	Note H04 : The sample was received and, therefore, analyzed beyond the established EPA hold time. The result must be considered estimated.
pH	Note PH01w : The pH was analyzed at 11:34

Trace ID: 25J1475-07

Analysis: SM 4500-H+ B-11

pH	Note H02 : The sample result and reporting limit must be considered estimated. The analysis was performed beyond the analyte EPA established hold time.
pH	Note PH01x : The pH was analyzed at 11:35

Trace ID: 25J1475-08

Analysis: EPA 200.8 Rev. 5.4

Lead	Note DL02 : The reporting limit was raised due to a dilution required because of chromatographic/matrix interference with the internal standards.
Thallium	Note DL02 : The reporting limit was raised due to a dilution required because of chromatographic/matrix interference with the internal standards.

Analysis: SM 4500-H+ B-11

pH	Note H02 : The sample result and reporting limit must be considered estimated. The analysis was performed beyond the analyte EPA established hold time.
pH	Note PH01y : The pH was analyzed at 11:36

Trace ID: 25J1475-09

Analysis: SM 4500-H+ B-11

pH	Note H02 : The sample result and reporting limit must be considered estimated. The analysis was performed beyond the analyte EPA established hold time.
pH	Note PH01z : The pH was analyzed at 11:37

Trace ID: 25J1475-10

Analysis: SM 4500-H+ B-11

pH	Note PH01aa : The pH was analyzed at 11:38

Trace ID: 25J1475-11

Analysis: SM 4500-H+ B-11

pH	Note PH01ab : The pH was analyzed at 11:39

Trace ID: 25J1475-12

Analysis: SM 4500-H+ B-11

pH	Note PH01ac : The pH was analyzed at 11:40

Trace ID: 25J1475-14

Analysis: EPA 200.8 Rev. 5.4

Lead	Note DL02 : The reporting limit was raised due to a dilution required because of chromatographic/matrix interference with the internal standards.
Thallium	Note DL02 : The reporting limit was raised due to a dilution required because of chromatographic/matrix interference with the internal standards.

Analysis: SM 4500-H+ B-11

pH	Note H02 : The sample result and reporting limit must be considered estimated. The analysis was performed beyond the analyte EPA established hold time.
pH	Note PH01ad : The pH was analyzed at 11:41

Trace ID: 25J1475-15

Analysis: SM 4500-H+ B-11

pH	Note PH01ae : The pH was analyzed at 11:42

Trace ID: 25J1475-16

Analysis: SM 4500-H+ B-11

pH	Note H04 : The sample was received and, therefore, analyzed beyond the established EPA hold time. The result must be considered estimated.
pH	Note PH01q : The pH was analyzed at 10:21

Trace ID: 25J1475-17

Analysis: SM 4500-H+ B-11

pH	Note H04 : The sample was received and, therefore, analyzed beyond the established EPA hold time. The result must be considered estimated.
pH	Note PH01 : The pH was analyzed at 09:58

Trace ID: 25J1475-18

Analysis: SM 4500-H+ B-11

pH	Note H04 : The sample was received and, therefore, analyzed beyond the established EPA hold time. The result must be considered estimated.
pH	Note PH01j : The pH was analyzed at 10:12

Trace ID: 25J1475-19

Analysis: SM 4500-H+ B-11

pH	Note H04 : The sample was received and, therefore, analyzed beyond the established EPA hold time. The result must be considered estimated.
pH	Note PH01i : The pH was analyzed at 10:11

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

Trace ID: 25J1475-20

Analysis: SM 4500-H+ B-11

pH	Note H04 : The sample was received and, therefore, analyzed beyond the established EPA hold time. The result must be considered estimated.
pH	Note PH01r : The pH was analyzed at 10:22

Trace ID: 25J1475-21

Analysis: SM 4500-H+ B-11

pH	Note H02 : The sample result and reporting limit must be considered estimated. The analysis was performed beyond the analyte EPA established hold time.
pH	Note PH01b : The pH was analyzed at 10:02

Trace ID: 25J1475-22

Analysis: SM 4500-H+ B-11

pH	Note H02 : The sample result and reporting limit must be considered estimated. The analysis was performed beyond the analyte EPA established hold time.
pH	Note PH01p : The pH was analyzed at 10:20

Trace ID: 25J1475-23

Analysis: SM 4500-H+ B-11

pH	Note H02 : The sample result and reporting limit must be considered estimated. The analysis was performed beyond the analyte EPA established hold time.
pH	Note PH01o : The pH was analyzed at 10:18

Trace ID: 25J1475-25

Analysis: SM 4500-H+ B-11

pH	Note H02 : The sample result and reporting limit must be considered estimated. The analysis was performed beyond the analyte EPA established hold time.
pH	Note PH01m : The pH was analyzed at 10:16

Trace ID: 25J1475-26

Analysis: SM 4500-H+ B-11

pH	Note H04 : The sample was received and, therefore, analyzed beyond the established EPA hold time. The result must be considered estimated.
pH	Note PH01f : The pH was analyzed at 10:07

Trace ID: 25J1475-27

Analysis: SM 4500-H+ B-11

pH	Note H04 : The sample was received and, therefore, analyzed beyond the established EPA hold time. The result must be considered estimated.
pH	Note PH01n : The pH was analyzed at 10:17

Trace ID: 25J1475-28

Analysis: SM 4500-H+ B-11

pH	Note H02 : The sample result and reporting limit must be considered estimated. The analysis was performed beyond the analyte EPA established hold time.
pH	Note PH01h : The pH was analyzed at 10:10

Trace ID: 25J1475-29

Analysis: SM 4500-H+ B-11

pH	Note H02 : The sample result and reporting limit must be considered estimated. The analysis was performed beyond the analyte EPA established hold time.
pH	Note PH01e : The pH was analyzed at 10:06

Trace ID: 25J1475-30

Analysis: SM 4500-H+ B-11

pH	Note PH01l : The pH was analyzed at 10:14

Trace ID: 25J1475-31

Analysis: SM 4500-H+ B-11

pH	Note H02 : The sample result and reporting limit must be considered estimated. The analysis was performed beyond the analyte EPA established hold time.
pH	Note PH01k : The pH was analyzed at 10:13

Trace ID: 25J1475-32

Analysis: SM 4500-H+ B-11

pH	Note PH01g : The pH was analyzed at 10:08

Trace ID: 25J1475-33

Analysis: SM 4500-H+ B-11

pH	Note H04 : The sample was received and, therefore, analyzed beyond the established EPA hold time. The result must be considered estimated.
pH	Note PH01c : The pH was analyzed at 10:04

Trace ID: 25J1475-35

Analysis: SM 4500-H+ B-11

pH	Note H04 : The sample was received and, therefore, analyzed beyond the established EPA hold time. The result must be considered estimated.
pH	Note PH01d : The pH was analyzed at 10:05

Trace ID: T175129-DUP1

Analysis: SM 4500-H+ B-11

pH	Note PH01t : The pH was analyzed at 11:31

Trace ID: T175139-DUP1

Analysis: SM 4500-H+ B-11

pH	Note PH01a : The pH was analyzed at 09:59

Trace ID: T175334-MS1

Analysis: EPA 200.7 Rev. 4.4

Calcium	Note MS09 : The MS recovery was out of control. Because the background concentration of this analyte is greater than 4X the spike amount, no data require qualification.

Trace ID: T175334-MS2

Analysis: EPA 200.7 Rev. 4.4

Calcium	Note MS09 : The MS recovery was out of control. Because the background concentration of this analyte is greater than 4X the spike amount, no data require qualification.

Trace ID: T175369-MS2

Analysis: EPA 200.7 Rev. 4.4

Boron	Note MS09 : The MS recovery was out of control. Because the background concentration of this analyte is greater than 4X the spike amount, no data require qualification.
Calcium	Note MS09 : The MS recovery was out of control. Because the background concentration of this analyte is greater than 4X the spike amount, no data require qualification.

Trace ID: T175477-MS1

Analysis: EPA 200.7 Rev. 4.4

Calcium	Note MS09 : The MS recovery was out of control. Because the background concentration of this analyte is greater than 4X the spike amount, no data require qualification.

TRACE ANALYTICAL LABORATORIES, INC.

CHAIN-OF-CUSTODY RECORD

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

Phone 231.773.5998
Fax 888.979.4469
www.trace-labs.com

Page 1 of 2

Trace ID No. 25J1475

Report Results To:

Company Name: HDR
Report To: Andrew Byks/Molly Reeves
Mailing Address: 1000 Oakbrook Dr, Suite 200
City, State, Zip Code: Ann Arbor, MI 48104
Office Phone:
Cell Phone:
Email Address: andrew.byks@hdrinc.com

Bill To:

PO#: 10337505.006
Contact Name: Lara Zawaideh
Billing Address (if different):
City, State, Zip Code:
Phone Number:
Billing Email Address: lara.zawaideh@hdrinc.com

Trace Use:

Logged By: NE
Checked By: MT
Soil Volatiles Preserved (circle if applicable): MeOH Low Level Lab
Sampling Time:

Turnaround Requirements:

☒ Standard, 5-10 Days
☐ 3 Day*
☐ 1 Day*

*Results provided end of business day, requires prior approval.

Matrix Key:

S = Soil / Solid
W = Water
SL = Sludge
OI = Oil
WI = Wipes
LW = Liquid Waste
A = Air
D = Drinking Water

Project Name: GHHI
Sampled By: AB/FDR

Trace No.	Date Collected	Time Collected	Client Sample ID	Metals Field Filtered (Y/N)	Matrix	Number of Containers	Preservation: Cool	HCl	HNO_3	H_2SO_4	NaOH	Other	40 CFR Part 257 App III	40 CFR Part 257 Part IV	MI Part 115 Metals	TSS	Low Level Hg	Dissolved Metals						Remarks
1	10/20/25	1200	MW-33	N	W	4	4		2				X	X	X	X	X							copy previous event
2	10/20/25	1320	MW-09	N	W	4	4		2				X	X	X	X	X							
3	10/20/25	1420	MW-10	N	W	4	4		2				X	X	X	X	X							
4	10/20/25	1430	MWT-10	N	W	4	4		2				X	X	X	X	X							
5	10/20/25	1630	MW-34	N	W	4	4		2				X	X	X	X	X							
6	10/20/25	1715	LLHG-TB-10202025	N	W	1	1										X							
7	10/21/25	902	MW-37	N	W	4	4		2				X	X	X	X	X							
8	10/21/25	1010	MW-38	N	W	5	6		2				X	X	X	X	X	X						
9	10/21/25	1130	MW-16	N	W	4	4		2				X	X	X	X	X							
10	10/21/25	1330	MW-39	N	W	4	4		2				X	X	X	X	X							

Possible Health Hazards?

Please Sign	Released By	Received By	Date	Time	Released By	Received By	Date	Time
	1) Andrew J Byks	[illegible signature]	10/22/2025	2:55	2)			
	3)				4)			

In executing this Chain of Custody, the client acknowledges the terms as set forth at www.trace-labs.com/terms-of-agreement.

☐ Check this box if you would not like your samples analyzed if received outside of the conditions outlined in the Trace Sample Acceptance Policy at www.trace-labs.com/downloads.

Form 70-Z.1

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

TRACE ANALYTICAL LABORATORIES, INC.

CHAIN-OF-CUSTODY RECORD

Page 2 of 2

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

Phone 231.773.5998
Fax 888.979.4469
www.trace-labs.com

Trace ID No. 25J1475

Report Results To:
Company Name: See Page 1
Report To:
Mailing Address:
City, State, Zip Code:
Office Phone: Cell Phone:
Email Address:

Bill To:
PO #:
Contact Name:
Billing Address (if different):
City, State, Zip Code:
Phone Number:
Billing Email Address:

Trace Use:
Logged By: NC
Checked By: MJ
Soil Volatiles Preserved (circle if applicable): MeOH Low Level Lab
Sampling Time:

Turnaround Requirements:
☒ Standard, 5-10 Days
☐ 3 Day*
☐ 1 Day*
*Results provided end of business day, requires prior approval.

Matrix Key:
S = Soil / Solid WI = Wipes
W = Water LW = Liquid Waste
SL = Sludge A = Air
OI = Oil D = Drinking Water

Project Name: GHHI
Sampled By: AB/FDR

Trace No.	Date Collected	Time Collected	Client Sample ID	Metals Field Filtered (Y / N)	Matrix	Number of Containers	Cool	HCl	HNO_3	H_2SO_4	NaOH	Other	40 CFR Part 257 App III	40 CFR Part 257 App IV	MI Part 115 Metals	TSS	Low Level Hg	Dissolved Metals	Remarks
11	10/21/25	1510	MW-13	N	W	4	4		2				X	X	X	X	X		copy last event
12	10/21/25	1020	MW-36	N	W	4	4		2				X	X	X	X	X		
13	10/21/25	1715	LLHG-TB-10212025	N	W	1	1										X		
14	10/21/25	1055	MW-30	N	W	5	5		2				X	X	X	X	X	X	
15	10/21/25	1245	MW-32	N	W	4	4		2				X	X	X	X	X		

AB

Possible Health Hazards?

Please Sign

	Released By	Received By	Date	Time		Released By	Received By	Date	Time
1)	Andrew [signature]	[signature]	10/22/2025	7:55	2)				
3)					4)				

In executing this Chain of Custody, the client acknowledges the terms as set forth at www.trace-labs.com/terms-of-agreement.

☐ Check this box if you would not like your samples analyzed if received outside of the conditions outlined in the Trace Sample Acceptance Policy at www.trace-labs.com/downloads.

Form 70-Z.1

CERTIFICATE OF ANALYSIS

CHAIN-OF-CUSTODY RECORD

TRACE ANALYTICAL LABORATORIES, INC.

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

Phone 231.773.5998
Fax 888.979.4469
www.trace-labs.com

Page 1 of 2

Trace ID No. ~~25J1746~~ NE 10/23/25
25J1475

Report Results To:

Company Name: HDR	
Report To: Molly Reeves / Andrew Byks	
Mailing Address: 1000 Oakbrook Drive, Suite 200	
City, State, Zip Code: Ann Arbor, MI 48104	
Office Phone:	Cell Phone:
Email Address: andrew.byks@hdrinc.com	

Bill To:

PO#: 10337505.006
Contact Name: Lara Zawaiden
Billing Address (if different):
City, State, Zip Code:
Phone Number:
Billing Email Address: lara-zawaiden@hdrinc.com

Trace Use:

Logged By: NE
Checked By: MJ
Soil Volatiles Preserved (circle if applicable): MeOH Low Level Lab
Sampling Time:

Turnaround Requirements:
- ☒ Standard, 5-10 Days
- ☐ 3 Day*
- ☐ 1 Day*

*Results provided end of business day, requires prior approval.

Matrix Key:
S = Soil / Solid, W = Water, SL = Sludge, OI = Oil, WI = Wipes, LW = Liquid Waste, A = Air, D = Drinking Water

Project Name: Grand Haven
Sampled By: AB/FDR

Trace No.	Date Collected	Time Collected	Client Sample ID	Metals Field Filtered (Y / N)	Matrix	Number of Containers	Cool	HCl	HNO_3	H_2SO_4	NaOH	Other	40 CFR Part 257 App III	40 CFR Part 257 App IV	MI Part 115 Metals	TSS	Low Level Hg	Dissolved Metals					Remarks	Possible Health Hazards?
16	10/21/25	1615	MW-31	N	W	5	5		2				X	X	X	X	X	X					copy last event	
17	10/22/25	910	MW-17	N	W	4	4		2				X	X	X	X	X							
18	10/22/25	1010	MW-01R	N	W	4	4		2				X	X	X	X	X							
19	10/22/25	1140	MW-12	N	W	4	4		2				X	X	X	X	X							
20	10/22/25	1350	MW-03	N	W	4	4		2				X	X	X	X	X							
21	10/22/25	1506	MW-04	N	W	4	4		2				X	X	X	X	X							
22	10/22/25	1610	MW-08	N	W	4	4		2				X	X	X	X	X							
23	10/22/25	1700	SG-07	N	W	4	4		2				X	X	X	X	X							
24	10/22/25	1715	LLHG-TB-10222025	N	W	1	1										X							
25	10/22/25	1000	MW-07	N	W	4	4		2				X	X	X	X	X							

Please Sign

	Released By	Received By	Date	Time		Released By	Received By	Date	Time
1)	[signature]	[signature]	10/23/25	1440	2)				
3)					4)				

In executing this Chain of Custody, the client acknowledges the terms as set forth at www.trace-labs.com/terms-of-agreement.

☐ Check this box if you would not like your samples analyzed if received outside of the conditions outlined in the Trace Sample Acceptance Policy at www.trace-labs.com/downloads.

Form 70-Z.1

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

CHAIN-OF-CUSTODY RECORD

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

Phone 231.773.5998
Fax 888.979.4469
www.trace-labs.com

Page 2 of 2

Trace ID No. 25J1746 NC 10/23/25

Report Results To:

Company Name: HDR
Report To: Molly Reeves / Andrew Byks
Mailing Address: 1000 Oakbrook Drive, Suite 200
City, State, Zip Code: Ann Arbor, MI 48104
Office Phone:
Cell Phone:
Email Address: andrew.byks@hdrinc.com

Bill To:

PO #: 10337805.006
Contact Name: Lara Zawaideh
Billing Address (if different):
City, State, Zip Code:
Phone Number:
Billing Email Address: lara.zawaideh@hdrinc.com

Trace Use:

Logged By: NC
Checked By: MJ
Soil Volatiles Preserved (circle if applicable): MeOH Low Level Lab
Sampling Time:

Turnaround Requirements:

- [x] Standard, 5-10 Days
- [ ] 3 Day*
- [ ] 1 Day*

*Results provided end of business day, requires prior approval.

Matrix Key:

S = Soil / Solid
W = Water
SL = Sludge
OI = Oil
WI = Wipes
LW = Liquid Waste
A = Air
D = Drinking Water

Project Name: Grand Haven
Sampled By: AB / FOR

Trace No.	Date Collected	Time Collected	Client Sample ID	Metals Field Filtered (Y / N)	Matrix	Number of Containers	Preservation: Cool	HCl	HNO_3	H_2SO_4	NaOH	Other	40 CFR Part 257 App III	40 CFR Part 257 App IV	Mi Part 115 Metals	TSS	Low Level Hg	Dissolved Metals					Remarks	Possible Health Hazards?
26	10/22/25	1115	MW-20	N	W	4	4		2				X	X	X	X	X						copy last	
27	10/22/25	1415	MW-02	N	W	5	5		2				X	X	X	X	X	X					event	
28	10/22/25	1555	MW-19	N	W	4	4		2				X	X	X	X	X							
29	10/22/25	1650	MW-18	N	W	4	4		2				X	X	X	X	X							
30	10/23/25	1050	MW-06	N	W	4	4		2				X	X	X	X	X							
31	10/23/25	940	MW-11	N	W	4	4		2				X	X	X	X	X							
32	10/23/25	1115	MW-27	N	W	4	4		2				X	X	X	X	X							
33	10/23/25	1225	MW-28	N	W	4	4		2				X	X	X	X	X							
34	10/23/25	1335	LLHG-TB-10232025	N	W	1	1										X							

AB

Please Sign	Released By	Received By	Date	Time		Released By	Received By	Date	Time
1)		[signature]	10/23/25	14:40	2)				
3)					4)				

In executing this Chain of Custody, the client acknowledges the terms as set forth at www.trace-labs.com/terms-of-agreement.

- [ ] Check this box if you would not like your samples analyzed if received outside of the conditions outlined in the Trace Sample Acceptance Policy at www.trace-labs.com/downloads.

Form 70-Z.1

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

25J1475
HDR Michigan Inc.
Project Manager: Jon Mink

Sample Log In Checklist

Date: 10/22/25
Time: 9:24
Initials: SAB
Package Description: Cooler

	Original Observation	Corrected Temperature	IR-9 (CF: 0.0°C)	IR-12 (CF: 0.0°C)	IR-13 (CF: -0.5°C)	IR-14 (CF: -1.1°C)	SR1 (CF: -0.2°C)	SR2 (CF: -0.3°C)	Temp Blank	Client Sample
Package Temp °C	-0.2	-0.7			/					
Representative Sample Temp °C	11.5	11.0			/					/

Sample Receipt

Yes	No	
[x]	[ ]	Received on ice or other coolant
[x]	[ ]	Ice still present upon receipt
[ ]	[x]	Custody seals present

[ ] Yes [ ] No Custody seals intact (if applicable)

[x] Trace Courier [ ] Client Drop-off [ ] UPS [ ] Fed Ex [ ] US Mail [ ] Other

Sample Condition

Yes	No	N/A	
[x]	[ ]	[ ]	All sample containers arrived unbroken and labeled
[x]	[ ]	[ ]	Sufficient sample to run requested analyses
[x]	[ ]	[ ]	Correct chemical preservative added to samples
[ ]	[x]	[ ]	Samples preserved at Trace
[x]	[ ]	[ ]	Chemical preservation verified, check EMD pH test strip used (if applicable)
[ ]	[ ]	[x]	Air bubbles absent from VOAs (no bubble grater than 6mm)

[x] pH 0-2.5 (Lot: HC461264) [ ] pH 11.0-13.0 (Lot: HC022540) [ ] Other

Chain of Custody (COC)

Yes	No	
[x]	[ ]	All bottle labels agree with COC
[x]	[ ]	COC filled out properly
[x]	[ ]	COC signed by client

Notes:

Form 70-A.59
Effective 8/20/25

TRACE Analytical Laboratories, I

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE
ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

25J1475
HDR Michigan Inc.
Project Manager: Jon Mink

Sample Log In Checklist

	Original Observation	Corrected Temperature	IR-9 (CF: 0.0°C)	IR-12 (CF: 0.0°C)	IR-13 (CF: -0.5°C)	IR-14 (CF: -1.1°C)	SR1 (CF: -0.2°C)	SR2 (CF: -0.3°C)	Temp Blank	Client Sample
Date: 10/24/25										
Time: 9:00										
Initials: MJ										
Package Description: Cooler										
Package Temp °C	0.0	0.0		/						
Representative Sample Temp °C	2.1	2.1		/						/

Sample Receipt

Yes	No	
[x]	[ ]	Received on ice or other coolant
[x]	[ ]	Ice still present upon receipt
[ ]	[x]	Custody seals present

[ ] Yes [ ] No Custody seals intact (if applicable)

[x] Trace Courier [ ] Client Drop-off [ ] UPS [ ] Fed Ex [ ] US Mail [ ] Other

Sample Condition

Yes	No	N/A	
[x]	[ ]	[ ]	All sample containers arrived unbroken and labeled
[x]	[ ]	[ ]	Sufficient sample to run requested analyses
[x]	[ ]	[ ]	Correct chemical preservative added to samples
[ ]	[x]	[ ]	Samples preserved at Trace
[x]	[ ]	[ ]	Chemical preservation verified, check EMD pH test strip used (if applicable)
[ ]	[ ]	[ ]	Air bubbles absent from VOAs (no bubble grater than 6mm)

[ ] pH 0-2.5 (Lot: HC461264) [ ] pH 11.0-13.0 (Lot: HC022540) [ ] Other

Chain of Custody (COC)

Yes	No	
[x]	[ ]	All bottle labels agree with COC
[x]	[ ]	COC filled out properly
[x]	[ ]	COC signed by client

Notes:

MWT-37
MW-11
MW-06
MW-08
SG-07
MW-20

Form 70-A.59
Effective 3/20/25

TRACE Analytical Laboratories, Inc.

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE
ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

25J1475
HDR Michigan Inc.
Project Manager: Jon Mink

Sample Log In Checklist

	Original Observation	Corrected Temperature	IR-9 (CF: 0.0°C)	IR-12 (CF: 0.0°C)	IR-13 (CF: -0.5°C)	IR-14 (CF: -1.1°C)	SR1 (CF: -0.2°C)	SR2 (CF: -0.3°C)	Temp Blank	Client Sample
Date: 10/24/25										
Time: 9:00										
Initials: MJ										
Package Description: Cooler										
Package Temp °C	0.0	0.0		✓						
Representative Sample Temp °C	2.1	2.1		✓						✓

Sample Receipt

Yes	No	
☑	☐	Received on ice or other coolant
☑	☐	Ice still present upon receipt
☐	☑	Custody seals present

☐ Yes ☐ No Custody seals intact (if applicable)

☑ Trace Courier ☐ Client Drop-off ☐ UPS ☐ Fed Ex ☐ US Mail ☐ Other

Sample Condition

Yes	No	N/A	
☑	☐	☐	All sample containers arrived unbroken and labeled
☑	☐	☐	Sufficient sample to run requested analyses
☑	☐	☐	Correct chemical preservative added to samples
☐	☑	☐	Samples preserved at Trace
☑	☐	☐	Chemical preservation verified, check EMD pH test strip used (if applicable)

☐ pH 0-2.5 (Lot: HC461264) ☐ pH 11.0-13.0 (Lot: HC022540) ☐ Other

Yes	No	N/A	
☐	☐	☐	Air bubbles absent from VOAs (no bubble grater than 6mm)

Chain of Custody (COC)

Yes	No	
☑	☐	All bottle labels agree with COC
☑	☐	COC filled out properly
☑	☐	COC signed by client

Notes:
MW-07
MW-02
MW-31
MW-03
MW-01R
MW-17

Form 70-A.59
Effective 3/20/25

25J1475
HDR Michigan Inc.
Project Manager: Jon Mink

Sample Log In Checklist

	Original Observation	Corrected Temperature	IR-9 (CF: 0.0°C)	IR-12 (CF: 0.0°C)	IR-13 (CF: -0.5°C)	IR-14 (CF: -1.1°C)	SR1 (CF: -0.2°C)	SR2 (CF: -0.3°C)	Temp Blank	Client Sample
Date: 10/24/25										
Time: 9:00										
Initials: MJ										
Package Description: Cooler										
Package Temp °C	0.0	0.0		✓						
Representative Sample Temp °C	2.1	2.1		✓						✓

Sample Receipt

Yes	No	
☒	☐	Received on ice or other coolant
☒	☐	Ice still present upon receipt
☐	☒	Custody seals present

☐ Yes ☐ No Custody seals intact (if applicable)

☒ Trace Courier ☐ Client Drop-off ☐ UPS ☐ Fed Ex ☐ US Mail ☐ Other

Sample Condition

Yes	No	N/A	
☒	☐	☐	All sample containers arrived unbroken and labeled
☒	☐	☐	Sufficient sample to run requested analyses
☒	☐	☐	Correct chemical preservative added to samples
☐	☒	☐	Samples preserved at Trace
☒	☐	☐	Chemical preservation verified, check EMD pH test strip used (if applicable)
☐	☐	☐	Air bubbles absent from VOAs (no bubble grater than 6mm)

☐ pH 0-2.5 (Lot: HC461264) ☐ pH 11.0-13.0 (Lot: HC022540) ☐ Other

Chain of Custody (COC)

Yes	No	
☒	☐	All bottle labels agree with COC
☒	☐	COC filled out properly
☒	☐	COC signed by client

Notes:

MW-12
MW-04
MW-28
MW-27
MW-19
MW-18
LLHg-TB-10222025

Form 70-A.59
Effective 3/20/25

TRACE Analytical Laboratories, Inc.

Date: 10/23/25

Project: GHHI

Client: City of Grand Haven

Equipment Information: YSI Pro Plus / Geotech Turbidimeter

Time	Temperature	Calibration Standard	Reading	Notes	Lot Number	Expiration Date
1250	11.6	pH 4.0	4.07			
1252	11.3	pH 7.0	7.08			
1254	11.8	pH 10.0	10.14			
1256	11.6	Specific Conductivity 1413 (mS/cm)	1047			
1258	13.3	ORP 220 (mV)	175.4	Values gradually increasing		
1300		Dissolved Oxygen	1.68	746.5 mmHg		
1301		<0.10 NTU	0.71			
1302		20.0 NTU	25.6			
1303		100 NTU	104			
1304		800 NTU	801			

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE
ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

November 10, 2025

Ms. Molly Reeves
HDR Michigan Inc.
1000 Oakbrook Dr., Suite 200
Ann Arbor, MI 48104

RE: Trace Project 25J1475
Client Project City of Grand Haven - Harbor Island

Dear Ms. Reeves:

Enclosed are your analytical results. The results of this report relate only to the samples listed in the body of this report.

All reports were examined through Trace's validation process to ensure that requirements for quality and completeness were satisfied. All reported analytical results were obtained in accordance with the methods referenced on the reports. Every practical effort was made to meet the reporting limit specifications for this work, however, some results may have raised reporting limits to correct for percent solids.

If you have questions concerning this report, please contact me at 231.773.5998 or by email at jmink@trace-labs.com.

Sincerely,

Jon Mink
Senior Project Manager
Enclosures

PJLA
Testing
Accreditation# 1031

Wisconsin Accreditation No. FID: 998044080 / TNI EL V1:2016

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

SAMPLE SUMMARY

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID	Sample ID	Matrix	Collected By	Date Collected	Date Received
25J1475-01	MW-33	Ground Water	AB/FDR	10/20/25 12:00	10/22/25 07:55
25J1475-02	MW-09	Ground Water	AB/FDR	10/20/25 13:20	10/22/25 07:55
25J1475-03	MW-10	Ground Water	AB/FDR	10/20/25 14:30	10/22/25 07:55
25J1475-04	MWT-10	Ground Water	AB/FDR	10/20/25 14:30	10/22/25 07:55
25J1475-05	MW-34	Ground Water	AB/FDR	10/20/25 16:30	10/22/25 07:55
25J1475-07	MW-37	Ground Water	AB/FDR	10/21/25 09:02	10/22/25 07:55
25J1475-08	MW-38	Ground Water	AB/FDR	10/21/25 10:10	10/22/25 07:55
25J1475-09	MW-16	Ground Water	AB/FDR	10/21/25 11:30	10/22/25 07:55
25J1475-10	MW-39	Ground Water	AB/FDR	10/21/25 13:30	10/22/25 07:55
25J1475-11	MW-13	Ground Water	AB/FDR	10/21/25 15:10	10/22/25 07:55
25J1475-12	MW-36	Ground Water	AB/FDR	10/21/25 16:20	10/22/25 07:55
25J1475-14	MW-30	Ground Water	AB/FDR	10/21/25 10:55	10/22/25 07:55
25J1475-15	MW-32	Ground Water	AB/FDR	10/21/25 12:45	10/22/25 07:55
25J1475-16	MW-31	Ground Water	AB/FDR	10/21/25 16:15	10/23/25 14:40
25J1475-17	MW-17	Ground Water	AB/FDR	10/22/25 09:10	10/23/25 14:40
25J1475-18	MW-01R	Ground Water	AB/FDR	10/22/25 10:10	10/23/25 14:40
25J1475-19	MW-12	Ground Water	AB/FDR	10/22/25 11:40	10/23/25 14:40
25J1475-20	MW-03	Ground Water	AB/FDR	10/22/25 13:50	10/23/25 14:40
25J1475-21	MW-04	Ground Water	AB/FDR	10/22/25 15:06	10/23/25 14:40
25J1475-22	MW-08	Ground Water	AB/FDR	10/22/25 16:10	10/23/25 14:40
25J1475-23	SG-07	Ground Water	AB/FDR	10/22/25 17:00	10/23/25 14:40
25J1475-25	MW-07	Ground Water	AB/FDR	10/22/25 17:00	10/23/25 14:40
25J1475-26	MW-20	Ground Water	AB/FDR	10/22/25 11:15	10/23/25 14:40
25J1475-27	MW-02	Ground Water	AB/FDR	10/22/25 14:15	10/23/25 14:40
25J1475-28	MW-19	Ground Water	AB/FDR	10/22/25 15:55	10/23/25 14:40
25J1475-29	MW-18	Ground Water	AB/FDR	10/22/25 16:50	10/23/25 14:40
25J1475-30	MW-06	Ground Water	AB/FDR	10/23/25 10:50	10/23/25 14:40
25J1475-31	MW-11	Ground Water	AB/FDR	10/23/25 09:40	10/23/25 14:40
25J1475-32	MW-27	Ground Water	AB/FDR	10/23/25 11:15	10/23/25 14:40
25J1475-33	MW-28	Ground Water	AB/FDR	10/23/25 12:25	10/23/25 14:40
25J1475-35	MWT-37	Ground Water	AB/FDR	10/21/25 09:02	10/22/25 07:55

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-01	Date Collected:	10/20/25 12:00	Matrix:	Ground Water
Sample ID:	MW-33	Date Received:	10/22/25 07:55		

PARAMETERS	RESULTS	UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL										
Analysis Method: EPA 200.7 Rev. 4.4										
Batch: T175334										
Iron	**20**	**mg/L**	**0.050**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.0075**
Analysis Method: EPA 200.8 Rev. 5.4										
Batch: T175334										
Copper	**0.0011**	**mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00020**
Nickel	**0.0097**	**mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00015**
Silver	<0.000050	mg/L	0.000050	1	10/31/25	ejb	11/07/25	ckd		0.000050
Vanadium	**0.0013**	**mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00028**
Zinc	**0.0033**	**mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00048**

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-02	Date Collected:	10/20/25 13:20	Matrix:	Ground Water
Sample ID:	MW-09	Date Received:	10/22/25 07:55		

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175334									
Iron	**23 mg/L**	**0.050**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.0075**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175334									
Copper	**0.00024 mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00020**
Nickel	**0.024 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00015**
Silver	<0.000050 mg/L	0.000050	1	10/31/25	ejb	11/07/25	ckd		0.000050
Vanadium	**0.00071 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00028**
Zinc	**0.0019 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00048**

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-03	Date Collected:	10/20/25 14:30	Matrix:	Ground Water
Sample ID:	MW-10	Date Received:	10/22/25 07:55		

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175334									
Iron	**2.3 mg/L**	**0.050**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.0075**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175334									
Copper	<0.00020 mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.00020
Nickel	**0.0011 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00015**
Silver	<0.000050 mg/L	0.000050	1	10/31/25	ejb	11/07/25	ckd		0.000050
Vanadium	**0.0014 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00028**
Zinc	**0.0016 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00048**

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-04	Date Collected:	10/20/25 14:30	Matrix:	Ground Water
Sample ID:	MWT-10	Date Received:	10/22/25 07:55		

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175334									
Iron	**2.3 mg/L**	**0.050**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.0075**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175334									
Copper	<0.00020 mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.00020
Nickel	**0.0013 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00015**
Silver	<0.000050 mg/L	0.000050	1	10/31/25	ejb	11/07/25	ckd		0.000050
Vanadium	**0.0014 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00028**
Zinc	**0.0010 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00048**

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-05 Date Collected: 10/20/25 16:30 Matrix: Ground Water
Sample ID: MW-34 Date Received: 10/22/25 07:55

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175334									
Iron	**55 mg/L**	**0.050**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.0075**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175334									
Copper	**0.00049 mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00020**
Nickel	**0.0090 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00015**
Silver	<0.000050 mg/L	0.000050	1	10/31/25	ejb	11/07/25	ckd		0.000050
Vanadium	**0.0011 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00028**
Zinc	**0.0021 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00048**

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-07	Date Collected:	10/21/25 09:02	Matrix:	Ground Water
Sample ID:	MW-37	Date Received:	10/22/25 07:55		

PARAMETERS	RESULTS	UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL										
Analysis Method: EPA 200.7 Rev. 4.4										
Batch: T175334										
Iron	**2.3**	**mg/L**	**0.050**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.0075**
Analysis Method: EPA 200.8 Rev. 5.4										
Batch: T175334										
Copper	**0.041**	**mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00020**
Nickel	**0.0035**	**mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00015**
Silver	<0.000050	mg/L	0.000050	1	10/31/25	ejb	11/07/25	ckd		0.000050
Vanadium	**0.00073**	**mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00028**
Zinc	**0.018**	**mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00048**

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-08	Date Collected:	10/21/25 10:10	Matrix: Ground Water
Sample ID: MW-38	Date Received:	10/22/25 07:55	

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175334									
Iron	**3.3 mg/L**	**0.050**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.0075**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175334									
Copper	<0.00020 mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.00020
Nickel	**0.00071 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00015**
Silver	<0.000050 mg/L	0.000050	1	10/31/25	ejb	11/07/25	ckd		0.000050
Vanadium	<0.00028 mg/L	0.0012	1	10/31/25	ejb	11/06/25	ckd		0.00028
Zinc	<0.00048 mg/L	0.0012	1	10/31/25	ejb	11/06/25	ckd		0.00048
METALS, DISSOLVED									
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175228									
Iron	**0.35 mg/L**	**0.10**	**1**	**10/28/25**	**cma**	**10/29/25**	**cma**	**N**	
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T174784									
Copper	< mg/L	0.025	1	10/23/25	drm	10/23/25	jma	N	
Nickel	< mg/L	0.050	1	10/23/25	drm	10/23/25	jma	N	
Silver	< mg/L	0.00050	1	10/23/25	drm	10/23/25	jma	N	
Vanadium	**0.020 mg/L**	**0.010**	**1**	**10/23/25**	**drm**	**10/23/25**	**jma**	**N**	
Zinc	< mg/L	0.010	1	10/23/25	drm	10/23/25	jma	N	

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-09 | Date Collected: 10/21/25 11:30 | Matrix: Ground Water
Sample ID: MW-16 | Date Received: 10/22/25 07:55

PARAMETERS	RESULTS	UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL										
Analysis Method: EPA 200.7 Rev. 4.4										
Batch: T175334										
Iron	**12**	**mg/L**	**0.050**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.0075**
Analysis Method: EPA 200.8 Rev. 5.4										
Batch: T175334										
Copper	**0.00030**	**mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00020**
Nickel	**0.0060**	**mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00015**
Silver	<0.000050	mg/L	0.000050	1	10/31/25	ejb	11/07/25	ckd		0.000050
Vanadium	**0.0011**	**mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00028**
Zinc	**0.00087**	**mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00048**

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-10	Date Collected:	10/21/25 13:30	Matrix:	Ground Water
Sample ID:	MW-39	Date Received:	10/22/25 07:55		

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175334									
Iron	**3.2 mg/L**	**0.050**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.0075**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175334									
Copper	**0.00028 mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00020**
Nickel	**0.0018 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00015**
Silver	<0.000050 mg/L	0.000050	1	10/31/25	ejb	11/07/25	ckd		0.000050
Vanadium	**0.00095 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00028**
Zinc	**0.0015 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00048**

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-11	Date Collected: 10/21/25 15:10	Matrix: Ground Water	
Sample ID: MW-13	Date Received: 10/22/25 07:55		

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175334									
Iron	**0.079 mg/L**	**0.050**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.0075**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175334									
Copper	<0.00020 mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.00020
Nickel	**0.00086 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00015**
Silver	<0.000050 mg/L	0.000050	1	10/31/25	ejb	11/07/25	ckd		0.000050
Vanadium	**0.00072 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00028**
Zinc	<0.00048 mg/L	0.0012	1	10/31/25	ejb	11/06/25	ckd		0.00048

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-12	Date Collected:	10/21/25 16:20	Matrix:	Ground Water
Sample ID:	MW-36	Date Received:	10/22/25 07:55		

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175334									
Iron	**0.91 mg/L**	**0.050**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.0075**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175334									
Copper	**0.0031 mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00020**
Nickel	**0.0032 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00015**
Silver	**0.000077 mg/L**	**0.000050**	**1**	**10/31/25**	**ejb**	**11/07/25**	**ckd**		**0.000050**
Vanadium	**0.0029 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00028**
Zinc	**0.0038 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00048**

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-14 Date Collected: 10/21/25 10:55 Matrix: Ground Water
Sample ID: MW-30 Date Received: 10/22/25 07:55

PARAMETERS	RESULTS	UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL										
Analysis Method: EPA 200.7 Rev. 4.4										
Batch: T175334										
Iron	**1.2**	**mg/L**	**0.050**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.0075**
Analysis Method: EPA 200.8 Rev. 5.4										
Batch: T175334										
Copper	**0.013**	**mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00020**
Nickel	**0.012**	**mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00015**
Silver	**0.00012**	**mg/L**	**0.000050**	**1**	**10/31/25**	**ejb**	**11/07/25**	**ckd**		**0.000050**
Vanadium	**0.024**	**mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00028**
Zinc	**0.027**	**mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00048**
METALS, DISSOLVED										
Analysis Method: EPA 200.7 Rev. 4.4										
Batch: T175228										
Iron	<	mg/L	0.10	1	10/28/25	cma	10/29/25	cma	N	
Analysis Method: EPA 200.8 Rev. 5.4										
Batch: T174784										
Copper	<	mg/L	0.025	1	10/23/25	drm	10/23/25	jma	N	
Nickel	<	mg/L	0.050	1	10/23/25	drm	10/23/25	jma	N	
Silver	<	mg/L	0.00050	1	10/23/25	drm	10/23/25	jma	N	
Vanadium	<	mg/L	0.010	1	10/23/25	drm	10/23/25	jma	N	
Zinc	<	mg/L	0.010	1	10/23/25	drm	10/23/25	jma	N	

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-15	Date Collected:	10/21/25 12:45	Matrix:	Ground Water
Sample ID:	MW-32	Date Received:	10/22/25 07:55		

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175334									
Iron	**21 mg/L**	**0.050**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.0075**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175334									
Copper	<0.00020 mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.00020
Nickel	**0.00080 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00015**
Silver	<0.000050 mg/L	0.000050	1	10/31/25	ejb	11/07/25	ckd		0.000050
Vanadium	<0.00028 mg/L	0.0012	1	10/31/25	ejb	11/06/25	ckd		0.00028
Zinc	**0.0034 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00048**

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-16 | Date Collected: 10/21/25 16:15 | Matrix: Ground Water
Sample ID: MW-31 | Date Received: 10/23/25 14:40

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175334									
Iron	**0.39 mg/L**	**0.050**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.0075**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175334									
Copper	**0.0017 mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00020**
Nickel	**0.068 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00015**
Silver	<0.000050 mg/L	0.000050	1	10/31/25	ejb	11/07/25	ckd		0.000050
Vanadium	**0.00059 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00028**
Zinc	**0.0018 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00048**
METALS, DISSOLVED									
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175228									
Iron	< mg/L	0.10	1	10/28/25	cma	10/29/25	cma	N	
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175583									
Copper	< mg/L	0.025	1	11/04/25	jma	11/07/25	jma	N	
Nickel	< mg/L	0.050	1	11/04/25	jma	11/07/25	jma	N	
Silver	< mg/L	0.00050	1	11/04/25	jma	11/07/25	jma	N	
Vanadium	< mg/L	0.010	1	11/04/25	jma	11/07/25	jma	N	
Zinc	**0.012 mg/L**	**0.010**	**1**	**11/04/25**	**jma**	**11/07/25**	**jma**	**N**	

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-17 | Date Collected: 10/22/25 09:10 | Matrix: Ground Water
Sample ID: MW-17 | Date Received: 10/23/25 14:40

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175334									
Iron	**4.4 mg/L**	**0.050**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.0075**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175334									
Copper	<0.00020 mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.00020
Nickel	**0.00085 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00015**
Silver	<0.000050 mg/L	0.000050	1	10/31/25	ejb	11/07/25	ckd		0.000050
Vanadium	**0.00051 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00028**
Zinc	**0.0020 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00048**

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-18 Date Collected: 10/22/25 10:10 Matrix: Ground Water
Sample ID: MW-01R Date Received: 10/23/25 14:40

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175334									
Iron	**0.16 mg/L**	**0.050**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.0075**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175334									
Copper	**0.00035 mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00020**
Nickel	**0.0030 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00015**
Silver	<0.000050 mg/L	0.000050	1	10/31/25	ejb	11/07/25	ckd		0.000050
Vanadium	**0.0037 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00028**
Zinc	**0.0032 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00048**

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-19	Date Collected:	10/22/25 11:40	Matrix:	Ground Water
Sample ID:	MW-12	Date Received:	10/23/25 14:40		

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175334									
Iron	**0.92 mg/L**	**0.050**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.0075**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175334									
Copper	**0.00088 mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00020**
Nickel	**0.0073 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00015**
Silver	<0.000050 mg/L	0.000050	1	10/31/25	ejb	11/07/25	ckd		0.000050
Vanadium	**0.00046 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00028**
Zinc	**0.022 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00048**

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-20	Date Collected:	10/22/25 13:50	Matrix:	Ground Water
Sample ID:	MW-03	Date Received:	10/23/25 14:40		

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175334									
Iron	**0.16 mg/L**	**0.050**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.0075**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175334									
Copper	<0.00020 mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.00020
Nickel	**0.0012 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00015**
Silver	<0.000050 mg/L	0.000050	1	10/31/25	ejb	11/07/25	ckd		0.000050
Vanadium	**0.0014 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00028**
Zinc	**0.00059 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00048**

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-21 | Date Collected: 10/22/25 15:06 | Matrix: Ground Water
Sample ID: MW-04 | Date Received: 10/23/25 14:40

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175334									
Iron	**3.5 mg/L**	**0.050**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.0075**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175334									
Copper	**0.0011 mg/L**	**0.00025**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00020**
Nickel	**0.014 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00015**
Silver	<0.000050 mg/L	0.000050	1	10/31/25	ejb	11/07/25	ckd		0.000050
Vanadium	**0.00071 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00028**
Zinc	**0.0051 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00048**

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-22 | Date Collected: 10/22/25 16:10 | Matrix: Ground Water
Sample ID: MW-08 | Date Received: 10/23/25 14:40

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175334									
Iron	**9.5 mg/L**	**0.050**	**1**	**10/31/25**	**ejb**	**11/05/25**	**cma**		**0.0075**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175334									
Copper	<0.00020 mg/L	0.00025	1	10/31/25	ejb	11/06/25	ckd		0.00020
Nickel	**0.0036 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00015**
Silver	<0.000050 mg/L	0.000050	1	10/31/25	ejb	11/07/25	ckd		0.000050
Vanadium	**0.00030 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00028**
Zinc	**0.0016 mg/L**	**0.0012**	**1**	**10/31/25**	**ejb**	**11/06/25**	**ckd**		**0.00048**

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-23 | Date Collected: 10/22/25 17:00 | Matrix: Ground Water
Sample ID: SG-07 | Date Received: 10/23/25 14:40

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175369									
Iron	**0.38 mg/L**	**0.050**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.0075**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175369									
Copper	**0.0018 mg/L**	**0.00025**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00020**
Nickel	**0.0017 mg/L**	**0.0012**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00015**
Silver	<0.000050 mg/L	0.000050	1	11/03/25	ejb	11/06/25	ckd		0.000050
Vanadium	**0.00084 mg/L**	**0.0012**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00028**
Zinc	**0.0035 mg/L**	**0.0012**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00048**

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-25	Date Collected:	10/22/25 17:00	Matrix:	Ground Water
Sample ID:	MW-07	Date Received:	10/23/25 14:40		

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175369									
Iron	**16 mg/L**	**0.050**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.0075**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175369									
Copper	<0.00020 mg/L	0.00025	1	11/03/25	ejb	11/06/25	ckd		0.00020
Nickel	**0.00024 mg/L**	**0.0012**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00015**
Silver	<0.000050 mg/L	0.000050	1	11/03/25	ejb	11/06/25	ckd		0.000050
Vanadium	**0.00084 mg/L**	**0.0012**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00028**
Zinc	**0.00075 mg/L**	**0.0012**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00048**

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE
ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-26 | Date Collected: 10/22/25 11:15 | Matrix: Ground Water
Sample ID: MW-20 | Date Received: 10/23/25 14:40

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175369									
Iron	**12 mg/L**	**0.050**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.0075**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175369									
Copper	**0.0033 mg/L**	**0.00025**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00020**
Nickel	**0.034 mg/L**	**0.0012**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00015**
Silver	<0.000050 mg/L	0.000050	1	11/03/25	ejb	11/06/25	ckd		0.000050
Vanadium	<0.00028 mg/L	0.0012	1	11/03/25	ejb	11/06/25	ckd		0.00028
Zinc	**0.11 mg/L**	**0.0012**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00048**

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-27	Date Collected:	10/22/25 14:15	Matrix:	Ground Water
Sample ID:	MW-02	Date Received:	10/23/25 14:40		

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175369									
Iron	**18 mg/L**	**0.50**	**10**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.075**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175369									
Copper	**0.0023 mg/L**	**0.00025**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00020**
Nickel	**0.034 mg/L**	**0.0012**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00015**
Silver	<0.000050 mg/L	0.000050	1	11/03/25	ejb	11/06/25	ckd		0.000050
Vanadium	**0.0050 mg/L**	**0.0012**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00028**
Zinc	**0.0027 mg/L**	**0.0012**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00048**
METALS, DISSOLVED									
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175228									
Iron	**7.9 mg/L**	**0.10**	**1**	**10/28/25**	**cma**	**10/29/25**	**cma**	**N**	
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175583									
Copper	< mg/L	0.025	1	11/04/25	jma	11/07/25	jma	N	
Nickel	< mg/L	0.050	1	11/04/25	jma	11/07/25	jma	N	
Silver	< mg/L	0.00050	1	11/04/25	jma	11/07/25	jma	N	
Vanadium	< mg/L	0.010	1	11/04/25	jma	11/07/25	jma	N	
Zinc	**0.012 mg/L**	**0.010**	**1**	**11/04/25**	**jma**	**11/07/25**	**jma**	**N**	

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-28 Date Collected: 10/22/25 15:55 Matrix: Ground Water
Sample ID: MW-19 Date Received: 10/23/25 14:40

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175369									
Iron	**8.2 mg/L**	**0.050**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.0075**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175369									
Copper	**0.00023 mg/L**	**0.00025**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00020**
Nickel	**0.014 mg/L**	**0.0012**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00015**
Silver	<0.000050 mg/L	0.000050	1	11/03/25	ejb	11/06/25	ckd		0.000050
Vanadium	**0.00094 mg/L**	**0.0012**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00028**
Zinc	**0.10 mg/L**	**0.0012**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00048**

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-29 Date Collected: 10/22/25 16:50 Matrix: Ground Water
Sample ID: MW-18 Date Received: 10/23/25 14:40

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175369									
Iron	**3.3 mg/L**	**0.050**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.0075**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175369									
Copper	**0.0021 mg/L**	**0.00025**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00020**
Nickel	**0.010 mg/L**	**0.0012**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00015**
Silver	<0.000050 mg/L	0.000050	1	11/03/25	ejb	11/06/25	ckd		0.000050
Vanadium	**0.00036 mg/L**	**0.0012**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00028**
Zinc	**0.21 mg/L**	**0.0012**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00048**

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-30	Date Collected:	10/23/25 10:50	Matrix:	Ground Water
Sample ID:	MW-06	Date Received:	10/23/25 14:40		

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175369									
Iron	**7.5 mg/L**	**0.050**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.0075**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175369									
Copper	<0.00020 mg/L	0.00025	1	11/03/25	ejb	11/06/25	ckd		0.00020
Nickel	**0.0011 mg/L**	**0.0012**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00015**
Silver	<0.000050 mg/L	0.000050	1	11/03/25	ejb	11/06/25	ckd		0.000050
Vanadium	**0.00054 mg/L**	**0.0012**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00028**
Zinc	**0.0020 mg/L**	**0.0012**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00048**

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-31 Date Collected: 10/23/25 09:40 Matrix: Ground Water
Sample ID: MW-11 Date Received: 10/23/25 14:40

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175369									
Iron	**7.3 mg/L**	**0.050**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.0075**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175369									
Copper	**0.0064 mg/L**	**0.00025**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00020**
Nickel	**0.015 mg/L**	**0.0012**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00015**
Silver	**0.00015 mg/L**	**0.000050**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.000050**
Vanadium	**0.0010 mg/L**	**0.0012**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00028**
Zinc	**0.047 mg/L**	**0.0012**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00048**

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-32	Date Collected:	10/23/25 11:15	Matrix:	Ground Water
Sample ID:	MW-27	Date Received:	10/23/25 14:40		

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175477									
Iron	**7.4 mg/L**	**0.050**	**1**	**11/04/25**	**ejb**	**11/05/25**	**cma**		**0.0075**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175477									
Copper	**0.00024 mg/L**	**0.00025**	**1**	**11/04/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00020**
Nickel	**0.00098 mg/L**	**0.0012**	**1**	**11/04/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00015**
Silver	<0.000050 mg/L	0.000050	1	11/04/25	ejb	11/07/25	ckd		0.000050
Vanadium	**0.0023 mg/L**	**0.0012**	**1**	**11/04/25**	**ejb**	**11/06/25**	**ckd**		**0.00028**
Zinc	**0.00058 mg/L**	**0.0012**	**1**	**11/04/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00048**

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID: 25J1475-33 | Date Collected: 10/23/25 12:25 | Matrix: Ground Water
Sample ID: MW-28 | Date Received: 10/23/25 14:40

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175369									
Iron	**39 mg/L**	**0.050**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.0075**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175369									
Copper	<0.00020 mg/L	0.00025	1	11/03/25	ejb	11/06/25	ckd		0.00020
Nickel	**0.00046 mg/L**	**0.0012**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00015**
Silver	<0.000050 mg/L	0.000050	1	11/03/25	ejb	11/06/25	ckd		0.000050
Vanadium	**0.00050 mg/L**	**0.0012**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00028**
Zinc	**0.0014 mg/L**	**0.0012**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00048**

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

ANALYTICAL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace ID:	25J1475-35	Date Collected:	10/21/25 09:02	Matrix:	Ground Water
Sample ID:	MWT-37	Date Received:	10/22/25 07:55		

PARAMETERS	RESULTS UNITS	LOQ	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	LOD
METALS, TOTAL									
Analysis Method: EPA 200.7 Rev. 4.4									
Batch: T175369									
Iron	**2.2 mg/L**	**0.050**	**1**	**11/03/25**	**ejb**	**11/05/25**	**cma**		**0.0075**
Analysis Method: EPA 200.8 Rev. 5.4									
Batch: T175369									
Copper	**0.011 mg/L**	**0.00025**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00020**
Nickel	**0.0025 mg/L**	**0.0012**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00015**
Silver	<0.000050 mg/L	0.000050	1	11/03/25	ejb	11/06/25	ckd		0.000050
Vanadium	**0.00043 mg/L**	**0.0012**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**	**J**	**0.00028**
Zinc	**0.010 mg/L**	**0.0012**	**1**	**11/03/25**	**ejb**	**11/06/25**	**ckd**		**0.00048**

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

QUALITY CONTROL RESULTS

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

QC Batch: T175228	Analysis Description: Iron, Dissolved
QC Batch Method:	Analysis Method: EPA 200.7 Rev. 4.4

METHOD BLANK: T175228-BLK1

Parameter	Units	Blank Result	Reporting Limit	Notes
Iron	mg/L	<0.10	0.10	

LABORATORY CONTROL SAMPLE: T175228-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Iron	mg/L	10.0	9.90	99	85-115	

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

QC Batch: T175334	Analysis Description: Iron, Total
QC Batch Method: EPA 200.2	Analysis Method: EPA 200.7 Rev. 4.4

METHOD BLANK: T175334-BLK1

Parameter	Units	Blank Result	Reporting Limit	Notes
Iron	mg/L	<0.050	0.050	

LABORATORY CONTROL SAMPLE: T175334-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Iron	mg/L	16.0	15.3	96	85-115	

MATRIX SPIKE: T175334-MS1 Original: **25J1475-01**

Parameter	Units	Original Result	Spike Conc.	MS Result	MS % Rec	% Rec Unit	Notes
Iron	mg/L	20.2	16.0	35.0	93	70-130	

MATRIX SPIKE: T175334-MS2 Original: **25J1475-02**

Parameter	Units	Original Result	Spike Conc.	MS Result	MS % Rec	% Rec Unit	Notes
Iron	mg/L	23.0	16.0	37.7	92	70-130	

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

QC Batch: T175369	Analysis Description: Iron, Total
QC Batch Method: EPA 200.2	Analysis Method: EPA 200.7 Rev. 4.4

METHOD BLANK: T175369-BLK1

Parameter	Units	Blank Result	Reporting Limit	Notes
Iron	mg/L	<0.050	0.050	

LABORATORY CONTROL SAMPLE: T175369-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Iron	mg/L	16.0	15.2	95	85-115	

MATRIX SPIKE: T175369-MS1 Original: **25J1475-23**

Parameter	Units	Original Result	Spike Conc.	MS Result	MS % Rec	% Rec Unit	Notes
Iron	mg/L	0.378	16.0	15.4	94	70-130	

MATRIX SPIKE: T175369-MS2 Original: **25J1475-25**

Parameter	Units	Original Result	Spike Conc.	MS Result	MS % Rec	% Rec Unit	Notes
Iron	mg/L	15.8	16.0	29.8	87	70-130	

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

QC Batch: T175477	Analysis Description: Iron, Total
QC Batch Method: EPA 200.2	Analysis Method: EPA 200.7 Rev. 4.4

METHOD BLANK: T175477-BLK1

Parameter	Units	Blank Result	Reporting Limit	Notes
Iron	mg/L	<0.050	0.050	

LABORATORY CONTROL SAMPLE: T175477-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Iron	mg/L	16.0	15.4	96	85-115	

MATRIX SPIKE: T175477-MS1 Original: **25J1475-32**

Parameter	Units	Original Result	Spike Conc.	MS Result	MS % Rec	% Rec Unit	Notes
Iron	mg/L	7.36	16.0	22.6	96	70-130	

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

QC Batch: T174784	Analysis Description: Vanadium, Dissolved
QC Batch Method:	Analysis Method: EPA 200.8 Rev. 5.4

METHOD BLANK: T174784-BLK1

Parameter	Units	Blank Result	Reporting Limit	Notes
Silver	mg/L	<0.00050	0.00050	
Copper	mg/L	<0.00080	0.00080	
Nickel	mg/L	<0.050	0.050	
Vanadium	mg/L	<0.010	0.010	
Zinc	mg/L	<0.010	0.010	

LABORATORY CONTROL SAMPLE: T174784-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Silver	mg/L	0.0600	0.0601	100	85-115	
Copper	mg/L	0.0600	0.0597	100	85-115	
Nickel	mg/L	0.0600	0.0609	102	85-115	
Vanadium	mg/L	0.0600	0.0603	101	85-115	
Zinc	mg/L	0.0600	0.0604	101	85-115	

MATRIX SPIKE: T174784-MS1 Original: **25J1475-08**

Parameter	Units	Original Result	Spike Conc.	MS Result	MS % Rec	% Rec Unit	Notes
Silver	mg/L	0.0000891	0.0500	0.0625	125	70-130	
Copper	mg/L	0.00593	0.0500	0.0620	112	70-130	
Nickel	mg/L	0.00680	0.0500	0.0533	93	70-130	
Vanadium	mg/L	0.0204	0.0500	0.0844	128	70-130	
Zinc	mg/L	0.00977	0.0500	0.0721	125	70-130	

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

QC Batch: T175334	Analysis Description: Vanadium, Total
QC Batch Method: EPA 200.2	Analysis Method: EPA 200.8 Rev. 5.4

METHOD BLANK: T175334-BLK1

Parameter	Units	Blank Result	Reporting Limit	Notes
Silver	mg/L	<0.000050	0.000050	
Copper	mg/L	<0.00025	0.00025	

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

METHOD BLANK: T175334-BLK1

Parameter	Units	Blank Result	Reporting Limit	Notes
Nickel	mg/L	<0.0012	0.0012	
Vanadium	mg/L	<0.0012	0.0012	
Zinc	mg/L	<0.0012	0.0012	

LABORATORY CONTROL SAMPLE: T175334-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Silver	mg/L	0.0500	0.0568	114	85-115	
Copper	mg/L	1.60	1.56	98	85-115	
Nickel	mg/L	1.60	1.61	100	85-115	
Vanadium	mg/L	1.60	1.64	102	85-115	
Zinc	mg/L	1.60	1.61	101	85-115	

MATRIX SPIKE: T175334-MS1 Original: **25J1475-01**

Parameter	Units	Original Result	Spike Conc.	MS Result	MS % Rec	% Rec Unit	Notes
Silver	mg/L	0	0.0500	0.0527	105	70-130	
Copper	mg/L	0.00106	1.60	1.53	96	70-130	
Nickel	mg/L	0.00967	1.60	1.62	101	70-130	
Vanadium	mg/L	0.00135	1.60	1.80	112	70-130	
Zinc	mg/L	0.00329	1.60	1.49	93	70-130	

MATRIX SPIKE: T175334-MS2 Original: **25J1475-02**

Parameter	Units	Original Result	Spike Conc.	MS Result	MS % Rec	% Rec Unit	Notes
Silver	mg/L	0	0.0500	0.0520	104	70-130	
Copper	mg/L	0	1.60	1.54	96	70-130	
Nickel	mg/L	0.0235	1.60	1.65	102	70-130	
Vanadium	mg/L	0	1.60	1.89	118	70-130	
Zinc	mg/L	0.00192	1.60	1.46	91	70-130	

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

QC Batch: T175369
QC Batch Method: EPA 200.2

Analysis Description: Vanadium, Total
Analysis Method: EPA 200.8 Rev. 5.4

METHOD BLANK: T175369-BLK1

Parameter	Units	Blank Result	Reporting Limit	Notes

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE
ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

METHOD BLANK: T175369-BLK1

Parameter	Units	Blank Result	Reporting Limit	Notes
Silver	mg/L	<0.000050	0.000050	
Copper	mg/L	<0.00025	0.00025	
Nickel	mg/L	<0.0012	0.0012	
Vanadium	mg/L	<0.0012	0.0012	
Zinc	mg/L	<0.0012	0.0012	

LABORATORY CONTROL SAMPLE: T175369-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Silver	mg/L	0.0500	0.0526	105	85-115	
Copper	mg/L	1.60	1.40	87	85-115	
Nickel	mg/L	1.60	1.44	90	85-115	
Vanadium	mg/L	1.60	1.51	95	85-115	
Zinc	mg/L	1.60	1.47	92	85-115	

MATRIX SPIKE: T175369-MS1 Original: **25J1475-23**

Parameter	Units	Original Result	Spike Conc.	MS Result	MS % Rec	% Rec Unit	Notes
Silver	mg/L	0	0.0500	0.0512	102	70-130	
Copper	mg/L	0.00181	1.60	1.39	86	70-130	
Nickel	mg/L	0.00174	1.60	1.44	90	70-130	
Vanadium	mg/L	0	1.60	1.56	98	70-130	
Zinc	mg/L	0.00346	1.60	1.45	91	70-130	

MATRIX SPIKE: T175369-MS2 Original: **25J1475-25**

Parameter	Units	Original Result	Spike Conc.	MS Result	MS % Rec	% Rec Unit	Notes
Silver	mg/L	0	0.0500	0.0482	96	70-130	
Copper	mg/L	0	1.60	1.31	82	70-130	
Nickel	mg/L	0	1.60	1.38	86	70-130	
Vanadium	mg/L	0	1.60	1.54	96	70-130	
Zinc	mg/L	0	1.60	1.36	85	70-130	

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

QC Batch: T175477	Analysis Description: Copper, Total
QC Batch Method: EPA 200.2	Analysis Method: EPA 200.8 Rev. 5.4

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

METHOD BLANK: T175477-BLK1

Parameter	Units	Blank Result	Reporting Limit	Notes
Silver	mg/L	<0.000050	0.000050	
Copper	mg/L	<0.00025	0.00025	
Nickel	mg/L	<0.0012	0.0012	
Vanadium	mg/L	<0.0012	0.0012	
Zinc	mg/L	<0.0012	0.0012	

LABORATORY CONTROL SAMPLE: T175477-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Silver	mg/L	0.0500	0.0568	114	85-115	
Copper	mg/L	1.60	1.63	102	85-115	
Nickel	mg/L	1.60	1.67	104	85-115	
Vanadium	mg/L	1.60	1.71	107	85-115	
Zinc	mg/L	1.60	1.66	104	85-115	

MATRIX SPIKE: T175477-MS1 Original: **25J1475-32**

Parameter	Units	Original Result	Spike Conc.	MS Result	MS % Rec	% Rec Unit	Notes
Silver	mg/L	0	0.0500	0.0539	108	70-130	
Copper	mg/L	0	1.60	1.55	97	70-130	
Nickel	mg/L	0.000979	1.60	1.64	102	70-130	
Vanadium	mg/L	0.00227	1.60	1.79	112	70-130	
Zinc	mg/L	0	1.60	1.53	95	70-130	

Trace Project ID: 25J1475
Client Project ID: City of Grand Haven - Harbor Island

QC Batch: T175583	Analysis Description: Silver, Dissolved
QC Batch Method:	Analysis Method: EPA 200.8 Rev. 5.4

LABORATORY CONTROL SAMPLE: T175583-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Silver	mg/L	0.0600	0.0566	94	85-115	
Copper	mg/L	0.0600	0.0549	91	85-115	
Nickel	mg/L	0.0600	0.0544	91	85-115	
Vanadium	mg/L	0.0600	0.0569	95	85-115	
Zinc	mg/L	0.0600	0.0557	93	85-115	

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

MATRIX SPIKE: T175583-MS1 Original: **25J1475-16**

Parameter	Units	Original Result	Spike Conc.	MS Result	MS % Rec	% Rec Unit	Notes
Silver	mg/L	0.0000588	0.0500	0.0440	88	70-130	
Copper	mg/L	0.000581	0.0500	0.0454	90	70-130	
Nickel	mg/L	0.0269	0.0500	0.0735	93	70-130	
Vanadium	mg/L	0.000972	0.0500	0.0568	112	70-130	
Zinc	mg/L	0.0122	0.0500	0.0556	87	70-130	

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

AN EXPLANATION OF TERMS AND SYMBOLS WHICH MAY OCCUR IN THIS REPORT

DEFINITIONS

LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MS	Matrix Spike
MSD	Matrix Spike Duplicate
RPD	Relative Percent Difference
DUP	Matrix Duplicate
LOQ	Limit of Quantitation
LOD	Limit of Detection
TIC	Tentatively Identified Compound
<, ND or U	Indicates the compound was analyzed for but not detected
*	Indicates a result that exceeds its associated MCL or Surrogate control limits
N	Indicates that the compound has not been evaluated by NELAC
NA	Indicates that the compound is not available.

NOTE: Samples for volatiles that have been extracted with a water miscible solvent were corrected for the total volume of the solvent/water mixture.
Solid matrices Method Blanks are at 100% solids as such results are the same wet or dry.

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

TRACE ANALYTICAL LABORATORIES, INC.

CHAIN-OF-CUSTODY RECORD

Page 1 of 2

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

Phone 231.773.5998
Fax 888.979.4469
www.trace-labs.com

Trace ID No. 25J1475

Report Results To:

Company Name: HDR
Report To: Andrew Byks / Molly Reeves
Mailing Address: 1000 Oakbrook Dr, Suite 200
City, State, Zip Code: Ann Arbor, MI 48104
Office Phone:
Cell Phone:
Email Address: andrew.byks@hdrinc.com

Bill To:

PO#: 10337505.006
Contact Name: Lara Zawaideh
Billing Address (if different):
City, State, Zip Code:
Phone Number:
Billing Email Address: lara.zawaideh@hdrinc.com

Trace Use:

Logged By: NC
Checked By: MT
Soil Volatiles Preserved (circle if applicable): MeOH Low Level Lab
Sampling Time:

Turnaround Requirements:

- [x] Standard, 5-10 Days
- [ ] 3 Day*
- [ ] 1 Day*

*Results provided end of business day, requires prior approval.

Matrix Key:

S = Soil / Solid
W = Water
SL = Sludge
OI = Oil
WI = Wipes
LW = Liquid Waste
A = Air
D = Drinking Water

Project Name: GHH
Sampled By: AB / FDR

Trace No.	Date Collected	Time Collected	Client Sample ID	Metals Field Filtered (Y / N)	Matrix	Number of Containers	Preservation: Cool	HCl	HNO_3	H_2SO_4	NaOH	Other	40 CFR Part 257 App III	40CFR Part 257 Part IV	MI Part 115 Metals	TSS	Low Level Hg	Dissolved Metals	Remarks
1	10/20/25	1200	MW-33	N	W	4	4		2				X	X	X	X	X		copy previous
2	10/20/25	1320	MW-09	N	W	4	4		2				X	X	X	X	X		event
3	10/20/25	1420	MW-10	N	W	4	4		2				X	X	X	X	X		
4	10/20/25	1430	MWT-10	N	W	4	4		2				X	X	X	X	X		
5	10/20/25	1630	MW-34	N	W	4	4		2				X	X	X	X	X		
6	10/20/25	1715	LLHG-TB-10202025	N	W	1	1										X		
7	10/21/25	902	MW-37	N	W	4	4		2				X	X	X	X	X		
8	10/21/25	1010	MW-38	N	W	5	6		2				X	X	X	X	X	X	
9	10/21/25	1130	MW-16	N	W	4	4		2				X	X	X	X	X		
10	10/21/25	1330	MW-39	N	W	4	4		2				X	X	X	X	X		

Possible Health Hazards?

Please Sign

	Released By	Received By	Date	Time		Released By	Received By	Date	Time
1)	Andrew J. Byks	[signature]	10/22/2025	2:55	2)				
3)					4)				

In executing this Chain of Custody, the client acknowledges the terms as set forth at www.trace-labs.com/terms-of-agreement.

- [ ] Check this box if you would not like your samples analyzed if received outside of the conditions outlined in the Trace Sample Acceptance Policy at www.trace-labs.com/downloads.

Form 70-Z.1

CERTIFICATE OF ANALYSIS

TRACE ANALYTICAL LABORATORIES, INC.

CHAIN-OF-CUSTODY RECORD

Page 2 of 2

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

Phone 231.773.5998
Fax 888.979.4469
www.trace-labs.com

Trace ID No. 25J1475

Report Results To:

Company Name: See Page 1
Report To:
Mailing Address:
City, State, Zip Code:
Office Phone: | Cell Phone:
Email Address:

Bill To:

PO #:
Contact Name:
Billing Address (if different):
City, State, Zip Code:
Phone Number:
Billing Email Address:

Trace Use:

Logged By: NC
Checked By: MJ
Soil Volatiles Preserved (circle if applicable): MeOH Low Level Lab
Sampling Time:

Turnaround Requirements:

☒ Standard, 5-10 Days
☐ 3 Day*
☐ 1 Day*

Results provided end of business day, requires prior approval.

Matrix Key:

S = Soil / Solid | WI = Wipes
W = Water | LW = Liquid Waste
SL = Sludge | A = Air
OI = Oil | D = Drinking Water

Project Name: GHHI
Sampled By: AB/FDR

Analysis Requested

Trace No.	Date Collected	Time Collected	Client Sample ID	Metals Field Filtered (Y / N)	Matrix	Number of Containers	Cool	HCl	HNO_3	H_2SO_4	NaOH	Other	40 CFR Part 257 App III	40 CFR Part 257 App IV	MI Part 115 Metals	TSS	Low Level Hg	Dissolved Metals					Remarks	Possible Health Hazards?
11	10/21/25	1510	MW-13	N	W	4	4		2				X	X	X	X	X						copy last event	
12	10/21/25	1620	MW-36	N	W	4	4		2				X	X	X	X	X							
13	10/21/25	1715	LLHG-TB-10212025	N	W	1	1										X							
14	10/21/25	1055	MW-30	N	W	5	5		2				X	X	X	X	X	X						
15	10/21/25	1245	MW-32	N	W	4	4		2				X	X	X	X	X							

AB

Please Sign

	Released By	Received By	Date	Time		Released By	Received By	Date	Time
1)	Andre [illegible]	[illegible]	10/22/2025	7:55	2)				
3)					4)				

In executing this Chain of Custody, the client acknowledges the terms as set forth at www.trace-labs.com/terms-of-agreement.

☐ Check this box if you would not like your samples analyzed if received outside of the conditions outlined in the Trace Sample Acceptance Policy at www.trace-labs.com/downloads.

Form 70-Z.1

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

TRACE ANALYTICAL LABORATORIES, INC.

CHAIN-OF-CUSTODY RECORD

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

Phone 231.773.5998
Fax 888.979.4469
www.trace-labs.com

Page 1 of 2

Trace ID No. ~~25J1746~~ NE 10/23/25
25J1475

Report Results To:

Company Name:	HDR
Report To:	Molly Reeves / Andrew Byks
Mailing Address:	1000 Oakbrook Drive, Suite 200
City, State, Zip Code:	Ann Arbor, MI 48104
Office Phone:	Cell Phone:
Email Address:	andrew.byks@hdrinc.com

Bill To:

PO#:	10337505.006
Contact Name:	Lara Zawaiden
Billing Address (if different):	
City, State, Zip Code:	
Phone Number:	
Billing Email Address:	lara-zawaiden@hdrinc.com

Trace Use:

Logged By:	NE
Checked By:	MJ
Soil Volatiles Preserved (circle if applicable): MeOH Low Level Lab	
Sampling Time:	

Turnaround Requirements:

- [x] Standard, 5-10 Days
- [ ] 3 Day*
- [ ] 1 Day*

*Results provided end of business day, requires prior approval.

Matrix Key:
S = Soil / Solid; W = Water; SL = Sludge; OI = Oil; WI = Wipes; LW = Liquid Waste; A = Air; D = Drinking Water

Project Name: Grand Haven
Sampled By: AB/FDR

Analysis Requested

Trace No.	Date Collected	Time Collected	Client Sample ID	Metals Field Filtered (Y / N)	Matrix	Number of Containers	Cool	HCl	HNO_3	H_2SO_4	NaOH	Other	40 CFR Part 257 App III	40 CFR Part 257 App IV	MI Part 115 Metals	TSS	Low Level Hg	Dissolved Metals					Remarks
16	10/21/25	1615	MW-31	N	W	5	5		2				X	X	X	X	X	X					copy last event
17	10/22/25	910	MW-17	N	W	4	4		2				X	X	X	X	X						
18	10/22/25	1010	MW-01R	N	W	4	4		2				X	X	X	X	X						
19	10/22/25	1140	MW-12	N	W	4	4		2				X	X	X	X	X						
20	10/22/25	1350	MW-03	N	W	4	4		2				X	X	X	X	X						
21	10/22/25	1506	MW-04	N	W	4	4		2				X	X	X	X	X						
22	10/22/25	1610	MW-08	N	W	4	4		2				X	X	X	X	X						
23	10/22/25	1700	SG-07	N	W	4	4		2				X	X	X	X	X						
24	10/22/25	1715	LLHG-TB-10222025	N	W	1	1										X						
25	10/22/25	1000	MW-07	N	W	4	4		2				X	X	X	X	X						

Possible Health Hazards?

Please Sign

	Released By	Received By	Date	Time		Released By	Received By	Date	Time
1)	[signature]	[signature]	10/23/25	1440	2)				
3)					4)				

In executing this Chain of Custody, the client acknowledges the terms as set forth at www.trace-labs.com/terms-of-agreement.

☐ Check this box if you would not like your samples analyzed if received outside of the conditions outlined in the Trace Sample Acceptance Policy at www.trace-labs.com/downloads.

Form 70-Z.1

CHAIN-OF-CUSTODY RECORD

Page 2 of 2

TRACE ANALYTICAL LABORATORIES, INC.

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

Phone 231.773.5998
Fax 888.979.4469
www.trace-labs.com

Trace ID No. NC 10/23/25 25J1746

Report Results To:

Company Name: HDR
Report To: Molly Reeves / Andrew Byks
Mailing Address: 1000 Oakbrook Drive, Suite 200
City, State, Zip Code: Ann Arbor, MI 48104
Office Phone:
Cell Phone:
Email Address: andrew.byks@hdrinc.com

Bill To:

PO #: 10337505.006
Contact Name: Lara Zawaideh
Billing Address (if different):
City, State, Zip Code:
Phone Number:
Billing Email Address: lara.zawaideh@hdrinc.com

Trace Use:

Logged By: NC
Checked By: MJ
Soil Volatiles Preserved (circle if applicable): MeOH Low Level Lab
Sampling Time:

Turnaround Requirements:

- ☒ Standard, 5-10 Days
- ☐ 3 Day*
- ☐ 1 Day*

*Results provided end of business day, requires prior approval.

Matrix Key:

S = Soil / Solid
W = Water
SL = Sludge
OI = Oil
WI = Wipes
LW = Liquid Waste
A = Air
D = Drinking Water

Project Name: Grand Haven
Sampled By: AB / FDR

Analysis Requested

Trace No.	Date Collected	Time Collected	Client Sample ID	Metals Field Filtered (Y / N)	Matrix	Number of Containers	Cool	HCl	HNO_3	H_2SO_4	NaOH	Other	40 CFR Part 257 App III	40 CFR Part 257 App IV	Mi Part 115 Metals	TSS	Low Level Hg	Dissolved Metals	Remarks	Possible Health Hazards?
26	10/22/25	1115	MW-20	N	W	4	4		2				X	X	X	X	X		copy last	
27	10/22/25	1415	MW-02	N	W	5	5		2				X	X	X	X	X	X	event	
28	10/22/25	1555	MW-19	N	W	4	4		2				X	X	X	X	X			
29	10/22/25	1650	MW-18	N	W	4	4		2				X	X	X	X	X			
30	10/23/25	1050	MW-06	N	W	4	4		2				X	X	X	X	X			
31	10/23/25	940	MW-11	N	W	4	4		2				X	X	X	X	X			
32	10/23/25	1115	MW-27	N	W	4	4		2				X	X	X	X	X			
33	10/23/25	1225	MW-28	N	W	4	4		2				X	X	X	X	X			
34	10/23/25	1335	LLHG-TB-10232025	N	W	1	1										X			

AB

Please Sign	Released By	Received By	Date	Time	Released By	Received By	Date	Time
	1)	[signature]	10/23/25	14:40	2)			
	3)				4)			

In executing this Chain of Custody, the client acknowledges the terms as set forth at www.trace-labs.com/terms-of-agreement.

☐ Check this box if you would not like your samples analyzed if received outside of the conditions outlined in the Trace Sample Acceptance Policy at www.trace-labs.com/downloads.

Form 70-Z.1

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

25J1475
HDR Michigan Inc.
Project Manager: Jon Mink

Sample Log In Checklist

	Original Observation	Corrected Temperature	IR-9 (CF: 0.0°C)	IR-12 (CF: 0.0°C)	IR-13 (CF: -0.5°C)	IR-14 (CF: -1.1°C)	SR1 (CF: -0.2°C)	SR2 (CF: -0.3°C)	Temp Blank	Client Sample
Date: 10/22/25										
Time: 9:24										
Initials: SAB										
Package Description: Cooler										
Package Temp °C	-0.2	-0.7			/					
Representative Sample Temp °C	11.5	11.0			/					/

Sample Receipt

Yes	No	
☑	☐	Received on ice or other coolant
☑	☐	Ice still present upon receipt
☐	☑	Custody seals present

☐ Yes ☐ No Custody seals intact (if applicable)

☑ Trace Courier ☐ Client Drop-off ☐ UPS ☐ Fed Ex ☐ US Mail ☐ Other

Sample Condition

Yes	No	N/A	
☑	☐	☐	All sample containers arrived unbroken and labeled
☑	☐	☐	Sufficient sample to run requested analyses
☑	☐	☐	Correct chemical preservative added to samples
☐	☑	☐	Samples preserved at Trace
☑	☐	☐	Chemical preservation verified, check EMD pH test strip used (if applicable)

☑ pH 0-2.5 (Lot: HC461264) ☐ pH 11.0-13.0 (Lot: HC022540) ☐ Other

Yes	No	N/A	
☐	☐	☑	Air bubbles absent from VOAs (no bubble grater than 6mm)

Chain of Custody (COC)

Yes	No	
☑	☐	All bottle labels agree with COC
☑	☐	COC filled out properly
☑	☐	COC signed by client

Notes:

Form 70-A.59
Effective 8/20/25

TRACE Analytical Laboratories, I

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

25J1475
HDR Michigan Inc.
Project Manager: Jon Mink

Sample Log In Checklist

	Original Observation	Corrected Temperature	IR-9 (CF: 0.0°C)	IR-12 (CF: 0.0°C)	IR-13 (CF: -0.5°C)	IR-14 (CF: -1.1°C)	SR1 (CF: -0.2°C)	SR2 (CF: -0.3°C)	Temp Blank	Client Sample
Date: 10/24/25										
Time: 9:00										
Initials: MJ										
Package Description: Cooler										
Package Temp °C	0.0	0.0								
Representative Sample Temp °C	2.1	2.1								

Sample Receipt

Yes No
[x] [ ] Received on ice or other coolant
[x] [ ] Ice still present upon receipt
[ ] [x] Custody seals present
[ ] Yes [ ] No Custody seals intact (if applicable)
[x] Trace Courier [ ] Client Drop-off [ ] UPS [ ] Fed Ex [ ] US Mail [ ] Other

Sample Condition

Yes No N/A
[x] [ ] [ ] All sample containers arrived unbroken and labeled
[x] [ ] [ ] Sufficient sample to run requested analyses
[x] [ ] [ ] Correct chemical preservative added to samples
[ ] [x] [ ] Samples preserved at Trace
[x] [ ] [ ] Chemical preservation verified, check EMD pH test strip used (if applicable)
[ ] pH 0-2.5 (Lot: HC461264) [ ] pH 11.0-13.0 (Lot: HC022540) [ ] Other
[ ] [ ] [ ] Air bubbles absent from VOAs (no bubble grater than 6mm)

Chain of Custody (COC)

Yes No
[x] [ ] All bottle labels agree with COC
[x] [ ] COC filled out properly
[x] [ ] COC signed by client

Notes:
MWT-37
MW-11
MW-06
MW-08
SG-07
MW-20

Form 70-A.59
Effective 3/20/25

TRACE Analytical Laboratories, Inc.

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE
ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

25J1475
HDR Michigan Inc.
Project Manager: Jon Mink

Sample Log In Checklist

		Original Observation	Corrected Temperature	IR-9 (CF: 0.0°C)	IR-12 (CF: 0.0°C)	IR-13 (CF: -0.5°C)	IR-14 (CF: -1.1°C)	SR1 (CF: -0.2°C)	SR2 (CF: -0.3°C)	Temp Blank	Client Sample
Date: 10/24/25											
Time: 9:00											
Initials: MJ											
Package Description: Cooler											
Package Temp °C		0.0	0.0		✓						
Representative Sample Temp °C		2.1	2.1		✓						✓

Sample Receipt

Yes	No	
☒	☐	Received on ice or other coolant
☒	☐	Ice still present upon receipt
☐	☒	Custody seals present

☐ Yes ☐ No Custody seals intact (if applicable)

☒ Trace Courier ☐ Client Drop-off ☐ UPS ☐ Fed Ex ☐ US Mail ☐ Other

Sample Condition

Yes	No	N/A	
☒	☐	☐	All sample containers arrived unbroken and labeled
☒	☐	☐	Sufficient sample to run requested analyses
☒	☐	☐	Correct chemical preservative added to samples
☐	☒	☐	Samples preserved at Trace
☒	☐	☐	Chemical preservation verified, check EMD pH test strip used (if applicable)
☐	☐	☐	Air bubbles absent from VOAs (no bubble grater than 6mm)

☐ pH 0-2.5 (Lot: HC461264) ☐ pH 11.0-13.0 (Lot: HC022540) ☐ Other

Chain of Custody (COC)

Yes	No	
☒	☐	All bottle labels agree with COC
☒	☐	COC filled out properly
☒	☐	COC signed by client

Notes:

MW-07
MW-02
MW-31
MW-03
MW-01R
MW-17

Form 70-A.59
Effective 3/20/25

CERTIFICATE OF ANALYSIS

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE
ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

25J1475
HDR Michigan Inc.
Project Manager: Jon Mink

Sample Log In Checklist

	Original Observation	Corrected Temperature	IR-9 (CF: 0.0°C)	IR-12 (CF: 0.0°C)	IR-13 (CF: -0.5°C)	IR-14 (CF: -1.1°C)	SR1 (CF: -0.2°C)	SR2 (CF: -0.3°C)	Temp Blank	Client Sample
Date: 10/24/25										
Time: 9:00										
Initials: MJ										
Package Description: Cooler										
Package Temp °C	0.0	0.0		✓						
Representative Sample Temp °C	2.1	2.1		✓						✓

Sample Receipt

Yes	No	
☒	☐	Received on ice or other coolant
☒	☐	Ice still present upon receipt
☐	☒	Custody seals present

☐ Yes ☐ No Custody seals intact (if applicable)

☒ Trace Courier ☐ Client Drop-off ☐ UPS ☐ Fed Ex ☐ US Mail ☐ Other

Sample Condition

Yes	No	N/A	
☒	☐	☐	All sample containers arrived unbroken and labeled
☒	☐	☐	Sufficient sample to run requested analyses
☒	☐	☐	Correct chemical preservative added to samples
☐	☒	☐	Samples preserved at Trace
☒	☐	☐	Chemical preservation verified, check EMD pH test strip used (if applicable)
☐	☐	☐	Air bubbles absent from VOAs (no bubble grater than 6mm)

☐ pH 0-2.5 (Lot: HC461264) ☐ pH 11.0-13.0 (Lot: HC022540) ☐ Other

Chain of Custody (COC)

Yes	No	
☒	☐	All bottle labels agree with COC
☒	☐	COC filled out properly
☒	☐	COC signed by client

Notes:

MW-12
MW-04
MW-28
MW-27
MW-19
MW-18
LLHg-TB-10222025

Form 70-A.59
Effective 3/20/25

TRACE Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Date: 10/23/25

Project: GHHI

Client: City of Grand Haven

Equipment Information: YSI Pro Plus / Geotech Turbidimeter

Time	Temperature	Calibration Standard	Reading	Notes	Lot Number	Expiration Date
1250	11.6	pH 4.0	4.07			
1252	11.3	pH 7.0	7.08			
1254	11.8	pH 10.0	10.14			
1256	11.6	Specific Conductivity 1413 (mS/cm)	1047			
1258	13.3	ORP 220 (mV)	175.4	Values gradually increasing		
1300		Dissolved Oxygen	1.68	746.5 mmHg		
1301		<0.10 NTU	0.71			
1302		20.0 NTU	25.6			
1303		100 NTU	104			
1304		800 NTU	801			

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE
ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

December 03, 2025

Ms. Molly Reeves
HDR Michigan Inc.
1000 Oakbrook Dr., Suite 200
Ann Arbor, MI 48104

RE: Trace Project 25J1477
Client Project City of Grand Haven - Harbor Island

Dear Ms. Reeves:

Enclosed are your analytical results. The results of this report relate only to the samples listed in the body of this report.

All reports were examined through Trace's validation process to ensure that requirements for quality and completeness were satisfied. All reported analytical results were obtained in accordance with the methods referenced on the reports. Every practical effort was made to meet the reporting limit specifications for this work, however, some results may have raised reporting limits to correct for percent solids.

The results were obtained from Eurofins Eaton East Analytical.

If you have questions concerning this report, please contact me at 231.773.5998 or by email at jmink@trace-labs.com.

Sincerely,

Jon Mink
Senior Project Manager

Enclosures

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

SAMPLE SUMMARY

Trace Project ID: 25J1477
Client Project ID: City of Grand Haven - Harbor Island

Trace ID	Sample ID	Matrix	Collected By	Date Collected	Date Received
25J1477-01	MW-33	Ground Water	AB/FDR	10/20/25 12:00	10/22/25 07:55
25J1477-02	MW-09	Ground Water	AB/FDR	10/20/25 13:20	10/22/25 07:55
25J1477-03	MW-10	Ground Water	AB/FDR	10/20/25 14:30	10/22/25 07:55
25J1477-04	MWT-10	Ground Water	AB/FDR	10/20/25 14:30	10/22/25 07:55
25J1477-05	MW-34	Ground Water	AB/FDR	10/20/25 16:30	10/22/25 07:55
25J1477-06	MW-37	Ground Water	AB/FDR	10/21/25 09:02	10/22/25 07:55
25J1477-07	MW-38	Ground Water	AB/FDR	10/21/25 09:02	10/22/25 07:55
25J1477-08	MW-16	Ground Water	AB/FDR	10/21/25 11:30	10/22/25 07:55
25J1477-09	MW-39	Ground Water	AB/FDR	10/21/25 13:30	10/22/25 07:55
25J1477-10	MW-13	Ground Water	AB/FDR	10/21/25 15:10	10/22/25 07:55
25J1477-11	MW-36	Ground Water	AB/FDR	10/21/25 16:20	10/22/25 07:55
25J1477-12	MW-30	Ground Water	AB/FDR	10/21/25 10:55	10/22/25 07:55
25J1477-13	MW-32	Ground Water	AB/FDR	10/21/25 12:45	10/22/25 07:55
25J1477-14	MW-31	Ground Water	AB/FDR	10/21/25 16:15	10/23/25 14:40
25J1477-15	MW-17	Ground Water	AB/FDR	10/22/25 09:10	10/23/25 14:40
25J1477-16	MW-01R	Ground Water	AB/FDR	10/22/25 10:10	10/23/25 14:40
25J1477-17	MW-12	Ground Water	AB/FDR	10/22/25 11:40	10/23/25 14:40
25J1477-18	MW-03	Ground Water	AB/FDR	10/22/25 13:50	10/23/25 14:40
25J1477-19	MW-04	Ground Water	AB/FDR	10/22/25 15:06	10/23/25 14:40
25J1477-20	MW-08	Ground Water	AB/FDR	10/22/25 16:10	10/23/25 14:40
25J1477-21	SG-07	Ground Water	AB/FDR	10/22/25 17:00	10/23/25 14:40

25J1477-22	MW-07	Ground Water	AB/FDR	10/22/25 10:00	10/23/25 14:40
25J1477-23	MW-20	Ground Water	AB/FDR	10/22/25 11:15	10/23/25 14:40
25J1477-24	MW-02	Ground Water	AB/FDR	10/22/25 14:15	10/23/25 14:40
25J1477-25	MW-19	Ground Water	AB/FDR	10/22/25 15:55	10/23/25 14:40
25J1477-26	MW-18	Ground Water	AB/FDR	10/22/25 16:50	10/23/25 14:40
25J1477-27	MW-06	Ground Water	AB/FDR	10/23/25 10:50	10/23/25 14:40
25J1477-28	MW-11	Ground Water	AB/FDR	10/23/25 09:40	10/23/25 14:40
25J1477-29	MW-27	Ground Water	AB/FDR	10/23/25 11:15	10/23/25 14:40
25J1477-30	MW-28	Ground Water	AB/FDR	10/23/25 12:25	10/23/25 14:40
25J1477-31	MWT-37	Ground Water	AB/FDR	10/21/25 09:02	10/22/25 07:55

eurofins Environment Testing

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

ANALYTICAL REPORT

PREPARED FOR

Attn: Jon Mink
Trace Analytical Laboratories
2241 Black Creek Road
Muskegon, Michigan 49444

Generated 12/3/2025 4:32:59 PM

JOB DESCRIPTION

25J1477

JOB NUMBER

810-169585-1

Eurofins Eaton Analytical South Bend
110 S Hill Street
South Bend IN 46617

See page two for job notes and contact information.

myEOL

Eurofins Eaton Analytical South Bend

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Eaton Analytical, LLC Project Manager.

Authorization

Karen Fullmer

Generated
12/3/2025 4:32:59 PM

Authorized for release by
Karen Fullmer, Project Manager
Karen.Fullmer@et.eurofinsus.com
(574)233-4777

Table of Contents

Client: Trace Analytical Laboratories
Job ID: 810-169585-1
Project/Site: 25J1477

Qualifiers

Rad

Qualifier	Qualifier Description
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 810-169585-1 — Eurofins Eaton Analytical South Bend

Job Narrative
810-169585-1

The analytical test results presented in this report meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page, unless otherwise noted. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable. Regulated compliance samples (e.g. SDWA, NPDES) must comply with associated agency requirements/permits.

- Matrix-specific batch QC (e.g., MS, MSD, SD) may not be reported when insufficient sample volume is available or when site-specific QC samples are not submitted. In such cases, a Laboratory Control Sample Duplicate (LCSD) may be analyzed to provide precision data for the batch.
- For samples analyzed using surrogate and/or isotope dilution analytes, any recoveries falling outside of established acceptance criteria are re-prepared and/or re-analyzed to confirm results, unless the deviation is due to sample dilution or otherwise explained in the case narrative.

Receipt
The samples were received on 10/28/2025 8:40 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice.

Receipt Exceptions
The reference method requires samples to be preserved to a pH of less than 2. The following samples were received with insufficient preservation at a pH of 9: MW-34 (810-169585-5), MW-32 (810-169585-13), MW-01R (810-169585-16), MW-03 (810-169585-18), MW-04 (810-169585-19) and MW-02 (810-169585-24). The samples were preserved to the appropriate pH in the laboratory.

The container label for the following sample ID did not match the information listed on the Chain-of-Custody (COC): MWT-37 (810-169585-31).
The container label lists MWT-37, while MWTT-37 was logged. By looking at the container label we can deternmine that this is the correct sample.

Gas Flow Proportional Counter
Method 904.0: Radium-228 batch 743267
The detection goal was not met for the following samples due to the reduced sample volume for prep attributed to the presence of matrix interferences: MW-10 (810-169585-3), MWT-10 (810-169585-4), MW-34 (810-169585-5), MW-38 (810-169585-7), MW-16 (810-169585-8), MW-39 (810-169585-9), MW-36 (810-169585-11), MW-03 (810-169585-18), MW-04 (810-169585-19), SG-07 (810-169585-21) and MW-07 (810-169585-22). Analytical results are reported with the detection limit achieved.

Method 904.0: Radium-228 batch 743668
The detection goal was not met for the following samples due to the reduced sample volume used for prep attributed to the presence of matrix interferences: MW-02 (810-169585-24), MW-06 (810-169585-27), MW-11 (810-169585-28), MW-28 (810-169585-30) and MWT-37 (810-169585-31). Analytical results are reported with the detection limit achieved.

Method 904.0: Radium-228 batch 743668
The MDC for the following sample is flagged as failing; The laboratory considers the detection goal (requested limit) met when rounding to the appropriate place value

MW-20 (810-169585-23)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Rad
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Trace Analytical Laboratories — Job ID: 810-169585-1
Project/Site: 25J1477

Client Sample ID: MW-33 — Lab Sample ID: 810-169585-1

No Detections.

Client Sample ID: MW-09 — Lab Sample ID: 810-169585-2

No Detections.

Client Sample ID: MW-10 — Lab Sample ID: 810-169585-3

No Detections.

Client Sample ID: MWT-10 — Lab Sample ID: 810-169585-4

No Detections.

Client Sample ID: MW-34 — Lab Sample ID: 810-169585-5

No Detections.

Client Sample ID: MW-37 — Lab Sample ID: 810-169585-6

No Detections.

Client Sample ID: MW-38 — Lab Sample ID: 810-169585-7

No Detections.

Client Sample ID: MW-16 — Lab Sample ID: 810-169585-8

No Detections.

Client Sample ID: MW-39 — Lab Sample ID: 810-169585-9

No Detections.

Client Sample ID: MW-13 — Lab Sample ID: 810-169585-10

No Detections.

Client Sample ID: MW-36 — Lab Sample ID: 810-169585-11

No Detections.

Client Sample ID: MW-30 — Lab Sample ID: 810-169585-12

No Detections.

Client Sample ID: MW-32 — Lab Sample ID: 810-169585-13

No Detections.

Client Sample ID: MW-31 — Lab Sample ID: 810-169585-14

No Detections.

Client Sample ID: MW-17 — Lab Sample ID: 810-169585-15

No Detections.

Client Sample ID: MW-01R — Lab Sample ID: 810-169585-16

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-12
Lab Sample ID: 810-169585-17

No Detections.

Client Sample ID: MW-03
Lab Sample ID: 810-169585-18

No Detections.

Client Sample ID: MW-04
Lab Sample ID: 810-169585-19

No Detections.

Client Sample ID: MW-08
Lab Sample ID: 810-169585-20

No Detections.

Client Sample ID: SG-07
Lab Sample ID: 810-169585-21

No Detections.

Client Sample ID: MW-07
Lab Sample ID: 810-169585-22

No Detections.

Client Sample ID: MW-20
Lab Sample ID: 810-169585-23

No Detections.

Client Sample ID: MW-02
Lab Sample ID: 810-169585-24

No Detections.

Client Sample ID: MW-19
Lab Sample ID: 810-169585-25

No Detections.

Client Sample ID: MW-18
Lab Sample ID: 810-169585-26

No Detections.

Client Sample ID: MW-06
Lab Sample ID: 810-169585-27

No Detections.

Client Sample ID: MW-11
Lab Sample ID: 810-169585-28

No Detections.

Client Sample ID: MW-27
Lab Sample ID: 810-169585-29

No Detections.

Client Sample ID: MW-28
Lab Sample ID: 810-169585-30

No Detections.

Client Sample ID: MWT-37
Lab Sample ID: 810-169585-31

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-33
Lab Sample ID: 810-169585-1

Date Collected: 10/20/25 12:00
Matrix: Water
Date Received: 10/28/25 08:40

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.918		0.323	0.334	1.00	0.326	pCi/L	10/31/25 15:13	12/02/25 20:06	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*79.2*		*30 - 110*	*10/31/25 15:13*	*12/02/25 20:06*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	6.98		1.10	1.27	1.00	0.853	pCi/L	10/31/25 15:21	12/01/25 09:59	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*79.2*		*30 - 110*	*10/31/25 15:21*	*12/01/25 09:59*	*1*
Y Carrier	*78.5*		*30 - 110*	*10/31/25 15:21*	*12/01/25 09:59*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	7.89		1.15	1.31	5.00	0.853	pCi/L		12/03/25 11:04	1

Client Sample ID: MW-09
Lab Sample ID: 810-169585-2

Date Collected: 10/20/25 13:20
Matrix: Water
Date Received: 10/28/25 08:40

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.504		0.219	0.224	1.00	0.254	pCi/L	10/31/25 15:13	12/02/25 20:06	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*79.2*		*30 - 110*	*10/31/25 15:13*	*12/02/25 20:06*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	19.8		1.51	2.37	1.00	0.626	pCi/L	10/31/25 15:21	12/01/25 09:59	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*79.2*		*30 - 110*	*10/31/25 15:21*	*12/01/25 09:59*	*1*
Y Carrier	*75.9*		*30 - 110*	*10/31/25 15:21*	*12/01/25 09:59*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	20.3		1.53	2.38	5.00	0.626	pCi/L		12/03/25 11:04	1

Client Sample ID: MW-10
Lab Sample ID: 810-169585-3
Date Collected: 10/20/25 14:30
Matrix: Water
Date Received: 10/28/25 08:40

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.389**		0.239	0.242	1.00	0.312	pCi/L	10/31/25 15:46	12/02/25 20:01	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*77.5*		*30 - 110*	*10/31/25 15:46*	*12/02/25 20:01*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.523	U G	0.691	0.692	1.00	1.15	pCi/L	10/31/25 15:51	12/01/25 13:07	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*77.5*		*30 - 110*	*10/31/25 15:51*	*12/01/25 13:07*	*1*
Y Carrier	*81.5*		*30 - 110*	*10/31/25 15:51*	*12/01/25 13:07*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.912	U	0.731	0.733	5.00	1.15	pCi/L		12/03/25 11:04	1

Client Sample ID: MWT-10
Lab Sample ID: 810-169585-4
Date Collected: 10/20/25 14:30
Matrix: Water
Date Received: 10/28/25 08:40

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.313	U	0.229	0.230	1.00	0.329	pCi/L	10/31/25 15:46	12/02/25 20:01	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.9*		*30 - 110*	*10/31/25 15:46*	*12/02/25 20:01*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.508	U G	0.640	0.642	1.00	1.06	pCi/L	10/31/25 15:51	12/01/25 13:07	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.9*		*30 - 110*	*10/31/25 15:51*	*12/01/25 13:07*	*1*
Y Carrier	*81.1*		*30 - 110*	*10/31/25 15:51*	*12/01/25 13:07*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.821	U	0.680	0.682	5.00	1.06	pCi/L		12/03/25 11:04	1

Client Sample ID: MW-34
Lab Sample ID: 810-169585-5
Date Collected: 10/20/25 16:30
Matrix: Water
Date Received: 10/28/25 08:40

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.590**		0.308	0.312	1.00	0.411	pCi/L	10/31/25 15:46	12/02/25 20:02	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.2*		*30 - 110*	*10/31/25 15:46*	*12/02/25 20:02*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.962	U G	0.725	0.730	1.00	1.12	pCi/L	10/31/25 15:51	12/01/25 13:06	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.2*		*30 - 110*	*10/31/25 15:51*	*12/01/25 13:06*	*1*
Y Carrier	*77.8*		*30 - 110*	*10/31/25 15:51*	*12/01/25 13:06*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	**1.55**		0.788	0.794	5.00	1.12	pCi/L		12/03/25 11:04	1

Client Sample ID: MW-37
Lab Sample ID: 810-169585-6
Date Collected: 10/21/25 09:02
Matrix: Water
Date Received: 10/28/25 08:40

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0311	U	0.163	0.163	1.00	0.331	pCi/L	10/31/25 15:46	12/02/25 20:02	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*82.6*		*30 - 110*	*10/31/25 15:46*	*12/02/25 20:02*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.132	U	0.435	0.435	1.00	0.774	pCi/L	10/31/25 15:51	12/01/25 13:06	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*82.6*		*30 - 110*	*10/31/25 15:51*	*12/01/25 13:06*	*1*
Y Carrier	*80.7*		*30 - 110*	*10/31/25 15:51*	*12/01/25 13:06*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.132	U	0.465	0.465	5.00	0.774	pCi/L		12/03/25 11:04	1

Client Sample ID: MW-38
Lab Sample ID: 810-169585-7

Date Collected: 10/21/25 10:10
Matrix: Water
Date Received: 10/28/25 08:40

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.127	U	0.257	0.257	1.00	0.456	pCi/L	10/31/25 15:46	12/02/25 19:59	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*62.4*		*30 - 110*	*10/31/25 15:46*	*12/02/25 19:59*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.691	U G	0.902	0.904	1.00	1.50	pCi/L	10/31/25 15:51	12/01/25 13:06	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*62.4*		*30 - 110*	*10/31/25 15:51*	*12/01/25 13:06*	*1*
Y Carrier	*73.6*		*30 - 110*	*10/31/25 15:51*	*12/01/25 13:06*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.818	U	0.938	0.940	5.00	1.50	pCi/L		12/03/25 11:04	1

Client Sample ID: MW-16
Lab Sample ID: 810-169585-8

Date Collected: 10/21/25 11:30
Matrix: Water
Date Received: 10/28/25 08:40

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.183	U	0.211	0.212	1.00	0.343	pCi/L	10/31/25 15:46	12/02/25 19:59	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*72.6*		*30 - 110*	*10/31/25 15:46*	*12/02/25 19:59*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0525	U G	0.636	0.636	1.00	1.16	pCi/L	10/31/25 15:51	12/01/25 13:07	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*72.6*		*30 - 110*	*10/31/25 15:51*	*12/01/25 13:07*	*1*
Y Carrier	*81.9*		*30 - 110*	*10/31/25 15:51*	*12/01/25 13:07*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.236	U	0.670	0.670	5.00	1.16	pCi/L		12/03/25 11:04	1

Client: Trace Analytical Laboratories
Project/Site: 25J1477

Job ID: 810-169585-1

Client Sample ID: MW-39

Lab Sample ID: 810-169585-9

Date Collected: 10/21/25 13:30
Matrix: Water
Date Received: 10/28/25 08:40

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.281	U	0.233	0.234	1.00	0.353	pCi/L	10/31/25 15:46	12/02/25 22:01	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*82.1*		*30 - 110*	*10/31/25 15:46*	*12/02/25 22:01*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.197	U G	0.587	0.588	1.00	1.12	pCi/L	10/31/25 15:51	12/01/25 13:06	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*82.1*		*30 - 110*	*10/31/25 15:51*	*12/01/25 13:06*	*1*
Y Carrier	*86.4*		*30 - 110*	*10/31/25 15:51*	*12/01/25 13:06*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.281	U	0.632	0.633	5.00	1.12	pCi/L		12/03/25 11:04	1

Client Sample ID: MW-13

Lab Sample ID: 810-169585-10

Date Collected: 10/21/25 15:10
Matrix: Water
Date Received: 10/28/25 08:40

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.169	U	0.141	0.142	1.00	0.210	pCi/L	10/31/25 15:46	12/02/25 22:01	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.2*		*30 - 110*	*10/31/25 15:46*	*12/02/25 22:01*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.635	U	0.442	0.445	1.00	0.668	pCi/L	10/31/25 15:51	12/01/25 13:06	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.2*		*30 - 110*	*10/31/25 15:51*	*12/01/25 13:06*	*1*
Y Carrier	*85.6*		*30 - 110*	*10/31/25 15:51*	*12/01/25 13:06*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	**0.804**		0.464	0.467	5.00	0.668	pCi/L		12/03/25 11:04	1

Client Sample Results

Client: Trace Analytical Laboratories — Job ID: 810-169585-1
Project/Site: 25J1477

Client Sample ID: MW-36 — Lab Sample ID: 810-169585-11

Date Collected: 10/21/25 16:20 — **Matrix: Water**
Date Received: 10/28/25 08:40

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.240	U	0.228	0.229	1.00	0.353	pCi/L	10/31/25 15:46	12/02/25 22:02	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*74.1*		*30 - 110*	*10/31/25 15:46*	*12/02/25 22:02*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.304	U G	0.645	0.645	1.00	1.12	pCi/L	10/31/25 15:51	12/01/25 13:06	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*74.1*		*30 - 110*	*10/31/25 15:51*	*12/01/25 13:06*	*1*
Y Carrier	*77.4*		*30 - 110*	*10/31/25 15:51*	*12/01/25 13:06*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.544	U	0.684	0.684	5.00	1.12	pCi/L		12/03/25 11:04	1

Client Sample ID: MW-30 — Lab Sample ID: 810-169585-12

Date Collected: 10/21/25 10:55 — **Matrix: Water**
Date Received: 10/28/25 08:40

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.115	U	0.146	0.146	1.00	0.241	pCi/L	10/31/25 15:46	12/02/25 22:02	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*78.1*		*30 - 110*	*10/31/25 15:46*	*12/02/25 22:02*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.507	U	0.480	0.483	1.00	0.769	pCi/L	10/31/25 15:51	12/01/25 13:06	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*78.1*		*30 - 110*	*10/31/25 15:51*	*12/01/25 13:06*	*1*
Y Carrier	*86.0*		*30 - 110*	*10/31/25 15:51*	*12/01/25 13:06*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.622	U	0.502	0.505	5.00	0.769	pCi/L		12/03/25 11:04	1

Client Sample Results

Client: Trace Analytical Laboratories
Project/Site: 25J1477

Job ID: 810-169585-1

Client Sample ID: MW-32

Lab Sample ID: 810-169585-13

Date Collected: 10/21/25 12:45
Date Received: 10/28/25 08:40

Matrix: Water

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.339**		0.170	0.172	1.00	0.204	pCi/L	10/31/25 15:46	12/02/25 22:02	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.9*		*30 - 110*	*10/31/25 15:46*	*12/02/25 22:02*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.749**		0.448	0.454	1.00	0.660	pCi/L	10/31/25 15:51	12/01/25 13:06	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.9*		*30 - 110*	*10/31/25 15:51*	*12/01/25 13:06*	*1*
Y Carrier	*86.7*		*30 - 110*	*10/31/25 15:51*	*12/01/25 13:06*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	**1.09**		0.479	0.485	5.00	0.660	pCi/L		12/03/25 11:04	1

Client Sample ID: MW-31

Lab Sample ID: 810-169585-14

Date Collected: 10/21/25 16:15
Date Received: 10/28/25 08:40

Matrix: Water

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.130	U	0.158	0.158	1.00	0.260	pCi/L	10/31/25 15:46	12/02/25 22:02	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*74.6*		*30 - 110*	*10/31/25 15:46*	*12/02/25 22:02*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.182	U	0.483	0.483	1.00	0.852	pCi/L	10/31/25 15:51	12/01/25 13:03	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*74.6*		*30 - 110*	*10/31/25 15:51*	*12/01/25 13:03*	*1*
Y Carrier	*81.9*		*30 - 110*	*10/31/25 15:51*	*12/01/25 13:03*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.312	U	0.508	0.508	5.00	0.852	pCi/L		12/03/25 15:13	1

Client Sample Results

Client: Trace Analytical Laboratories
Job ID: 810-169585-1
Project/Site: 25J1477

Client Sample ID: MW-17
Lab Sample ID: 810-169585-15
Date Collected: 10/22/25 09:10
Matrix: Water
Date Received: 10/28/25 08:40

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.427**		0.209	0.212	1.00	0.256	pCi/L	10/31/25 15:46	12/02/25 22:02	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*78.3*		*30 - 110*	*10/31/25 15:46*	*12/02/25 22:02*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**1.46**		0.579	0.594	1.00	0.748	pCi/L	10/31/25 15:51	12/01/25 13:04	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*78.3*		*30 - 110*	*10/31/25 15:51*	*12/01/25 13:04*	*1*
Y Carrier	*81.9*		*30 - 110*	*10/31/25 15:51*	*12/01/25 13:04*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	**1.88**		0.616	0.631	5.00	0.748	pCi/L		12/03/25 15:13	1

Client Sample ID: MW-01R
Lab Sample ID: 810-169585-16
Date Collected: 10/22/25 10:10
Matrix: Water
Date Received: 10/28/25 08:40

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0503	U	0.164	0.164	1.00	0.312	pCi/L	10/31/25 15:46	12/02/25 22:08	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*80.1*		*30 - 110*	*10/31/25 15:46*	*12/02/25 22:08*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.562	U	0.604	0.606	1.00	0.982	pCi/L	10/31/25 15:51	12/01/25 13:04	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*80.1*		*30 - 110*	*10/31/25 15:51*	*12/01/25 13:04*	*1*
Y Carrier	*80.7*		*30 - 110*	*10/31/25 15:51*	*12/01/25 13:04*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.612	U	0.626	0.628	5.00	0.982	pCi/L		12/03/25 15:13	1

Client Sample ID: MW-12 — Lab Sample ID: 810-169585-17

Date Collected: 10/22/25 11:40 — **Matrix: Water**

Date Received: 10/28/25 08:40

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.233**		0.165	0.167	1.00	0.231	pCi/L	10/31/25 15:46	12/02/25 22:08	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*80.6*		*30 - 110*	*10/31/25 15:46*	*12/02/25 22:08*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.756**		0.472	0.477	1.00	0.696	pCi/L	10/31/25 15:51	12/01/25 13:03	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*80.6*		*30 - 110*	*10/31/25 15:51*	*12/01/25 13:03*	*1*
Y Carrier	*87.9*		*30 - 110*	*10/31/25 15:51*	*12/01/25 13:03*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	**0.989**		0.500	0.505	5.00	0.696	pCi/L		12/03/25 15:13	1

Client Sample ID: MW-03 — Lab Sample ID: 810-169585-18

Date Collected: 10/22/25 13:50 — **Matrix: Water**

Date Received: 10/28/25 08:40

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.231	U	0.262	0.263	1.00	0.426	pCi/L	10/31/25 15:46	12/02/25 22:08	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*68.9*		*30 - 110*	*10/31/25 15:46*	*12/02/25 22:08*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.264	U G	0.686	0.687	1.00	1.32	pCi/L	10/31/25 15:51	12/01/25 13:04	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*68.9*		*30 - 110*	*10/31/25 15:51*	*12/01/25 13:04*	*1*
Y Carrier	*85.6*		*30 - 110*	*10/31/25 15:51*	*12/01/25 13:04*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.231	U	0.734	0.736	5.00	1.32	pCi/L		12/03/25 15:13	1

Client Sample Results

Client: Trace Analytical Laboratories
Job ID: 810-169585-1
Project/Site: 25J1477

Client Sample ID: MW-04
Lab Sample ID: 810-169585-19
Date Collected: 10/22/25 15:06
Matrix: Water
Date Received: 10/28/25 08:40

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.194	U	0.255	0.256	1.00	0.427	pCi/L	10/31/25 15:46	12/02/25 22:08	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*69.2*		*30 - 110*	*10/31/25 15:46*	*12/02/25 22:08*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.331	U G	0.746	0.746	1.00	1.29	pCi/L	10/31/25 15:51	12/01/25 13:04	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*69.2*		*30 - 110*	*10/31/25 15:51*	*12/01/25 13:04*	*1*
Y Carrier	*86.0*		*30 - 110*	*10/31/25 15:51*	*12/01/25 13:04*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.525	U	0.788	0.789	5.00	1.29	pCi/L		12/03/25 15:13	1

Client Sample ID: MW-08
Lab Sample ID: 810-169585-20
Date Collected: 10/22/25 16:10
Matrix: Water
Date Received: 10/28/25 08:40

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.285**		0.169	0.171	1.00	0.226	pCi/L	10/31/25 15:46	12/02/25 22:08	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.9*		*30 - 110*	*10/31/25 15:46*	*12/02/25 22:08*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.280	U	0.420	0.420	1.00	0.707	pCi/L	10/31/25 15:51	12/01/25 13:03	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.9*		*30 - 110*	*10/31/25 15:51*	*12/01/25 13:03*	*1*
Y Carrier	*87.5*		*30 - 110*	*10/31/25 15:51*	*12/01/25 13:03*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.565	U	0.453	0.453	5.00	0.707	pCi/L		12/03/25 15:13	1

Client Sample Results

Client: Trace Analytical Laboratories
Job ID: 810-169585-1
Project/Site: 25J1477

Client Sample ID: SG-07
Lab Sample ID: 810-169585-21
Date Collected: 10/22/25 17:00
Matrix: Water
Date Received: 10/28/25 08:40

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0525	U	0.164	0.164	1.00	0.314	pCi/L	10/31/25 15:46	12/02/25 22:08	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*76.1*		*30 - 110*	*10/31/25 15:46*	*12/02/25 22:08*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0895	U G	0.578	0.578	1.00	1.05	pCi/L	10/31/25 15:51	12/01/25 13:03	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*76.1*		*30 - 110*	*10/31/25 15:51*	*12/01/25 13:03*	*1*
Y Carrier	*84.5*		*30 - 110*	*10/31/25 15:51*	*12/01/25 13:03*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.142	U	0.601	0.601	5.00	1.05	pCi/L		12/03/25 15:13	1

Client Sample ID: MW-07
Lab Sample ID: 810-169585-22
Date Collected: 10/22/25 10:00
Matrix: Water
Date Received: 10/28/25 08:40

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.405**		0.240	0.243	1.00	0.307	pCi/L	10/31/25 15:46	12/02/25 22:08	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*79.5*		*30 - 110*	*10/31/25 15:46*	*12/02/25 22:08*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**1.03**	**G**	0.674	0.681	1.00	1.01	pCi/L	10/31/25 15:51	12/01/25 13:03	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*79.5*		*30 - 110*	*10/31/25 15:51*	*12/01/25 13:03*	*1*
Y Carrier	*85.6*		*30 - 110*	*10/31/25 15:51*	*12/01/25 13:03*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	**1.44**		0.715	0.723	5.00	1.01	pCi/L		12/03/25 15:13	1

Client Sample ID: MW-20

Lab Sample ID: 810-169585-23

Date Collected: 10/22/25 11:15
Date Received: 10/28/25 08:40

Matrix: Water

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.140	U	0.246	0.247	1.00	0.435	pCi/L	11/04/25 08:22	12/02/25 22:05	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*39.9*		*30 - 110*	*11/04/25 08:22*	*12/02/25 22:05*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.309	U G	0.676	0.677	1.00	1.18	pCi/L	11/04/25 08:26	12/01/25 12:08	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*39.9*		*30 - 110*	*11/04/25 08:26*	*12/01/25 12:08*	*1*
Y Carrier	*81.9*		*30 - 110*	*11/04/25 08:26*	*12/01/25 12:08*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.449	U	0.719	0.721	5.00	1.18	pCi/L		12/03/25 15:13	1

Client Sample ID: MW-02

Lab Sample ID: 810-169585-24

Date Collected: 10/22/25 14:15
Date Received: 10/28/25 08:40

Matrix: Water

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.732**		0.478	0.482	1.00	0.674	pCi/L	11/04/25 08:22	12/02/25 22:05	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*63.5*		*30 - 110*	*11/04/25 08:22*	*12/02/25 22:05*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.62	U G	1.24	1.25	1.00	1.94	pCi/L	11/04/25 08:26	12/01/25 12:08	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*63.5*		*30 - 110*	*11/04/25 08:26*	*12/01/25 12:08*	*1*
Y Carrier	*81.5*		*30 - 110*	*11/04/25 08:26*	*12/01/25 12:08*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	**2.35**		1.33	1.34	5.00	1.94	pCi/L		12/03/25 15:13	1

Client Sample ID: MW-19
Lab Sample ID: 810-169585-25

Date Collected: 10/22/25 15:55
Matrix: Water
Date Received: 10/28/25 08:40

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.318**		0.221	0.223	1.00	0.300	pCi/L	11/04/25 08:22	12/02/25 22:07	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*53.6*		*30 - 110*	*11/04/25 08:22*	*12/02/25 22:07*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.137	U	0.518	0.518	1.00	0.928	pCi/L	11/04/25 08:26	12/01/25 12:04	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*53.6*		*30 - 110*	*11/04/25 08:26*	*12/01/25 12:04*	*1*
Y Carrier	*82.2*		*30 - 110*	*11/04/25 08:26*	*12/01/25 12:04*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.456	U	0.563	0.564	5.00	0.928	pCi/L		12/03/25 15:13	1

Client Sample ID: MW-18
Lab Sample ID: 810-169585-26

Date Collected: 10/22/25 16:50
Matrix: Water
Date Received: 10/28/25 08:40

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.107	U	0.104	0.104	1.00	0.285	pCi/L	11/04/25 08:22	12/02/25 22:07	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*62.7*		*30 - 110*	*11/04/25 08:22*	*12/02/25 22:07*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**1.16**		0.535	0.546	1.00	0.712	pCi/L	11/04/25 08:26	12/01/25 12:04	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*62.7*		*30 - 110*	*11/04/25 08:26*	*12/01/25 12:04*	*1*
Y Carrier	*81.5*		*30 - 110*	*11/04/25 08:26*	*12/01/25 12:04*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	**1.16**		0.545	0.556	5.00	0.712	pCi/L		12/03/25 15:13	1

Client Sample Results

Client: Trace Analytical Laboratories
Job ID: 810-169585-1
Project/Site: 25J1477

Client Sample ID: MW-06

Lab Sample ID: 810-169585-27

Date Collected: 10/23/25 10:50
Matrix: Water
Date Received: 10/28/25 08:40

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.399	U	0.311	0.313	1.00	0.434	pCi/L	11/04/25 08:22	12/02/25 22:07	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*43.6*		*30 - 110*	*11/04/25 08:22*	*12/02/25 22:07*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**1.91**	**G**	1.04	1.05	1.00	1.48	pCi/L	11/04/25 08:26	12/01/25 12:04	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*43.6*		*30 - 110*	*11/04/25 08:26*	*12/01/25 12:04*	*1*
Y Carrier	*83.4*		*30 - 110*	*11/04/25 08:26*	*12/01/25 12:04*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	**2.31**		1.09	1.10	5.00	1.48	pCi/L		12/03/25 15:13	1

Client Sample ID: MW-11

Lab Sample ID: 810-169585-28

Date Collected: 10/23/25 09:40
Matrix: Water
Date Received: 10/28/25 08:40

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.547**		0.357	0.360	1.00	0.476	pCi/L	11/04/25 08:22	12/02/25 22:07	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*46.2*		*30 - 110*	*11/04/25 08:22*	*12/02/25 22:07*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.395	U G	0.820	0.821	1.00	1.43	pCi/L	11/04/25 08:26	12/01/25 12:04	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*46.2*		*30 - 110*	*11/04/25 08:26*	*12/01/25 12:04*	*1*
Y Carrier	*80.4*		*30 - 110*	*11/04/25 08:26*	*12/01/25 12:04*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.941	U	0.894	0.896	5.00	1.43	pCi/L		12/03/25 15:13	1

Client Sample ID: MW-27
Lab Sample ID: 810-169585-29

Date Collected: 10/23/25 11:15
Matrix: Water
Date Received: 10/28/25 08:40

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.396**		0.277	0.279	1.00	0.385	pCi/L	11/04/25 08:22	12/02/25 22:07	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*62.7*		*30 - 110*	*11/04/25 08:22*	*12/02/25 22:07*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**1.20**		0.684	0.693	1.00	0.976	pCi/L	11/04/25 08:26	12/01/25 12:05	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*62.7*		*30 - 110*	*11/04/25 08:26*	*12/01/25 12:05*	*1*
Y Carrier	*82.2*		*30 - 110*	*11/04/25 08:26*	*12/01/25 12:05*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	**1.60**		0.738	0.747	5.00	0.976	pCi/L		12/03/25 15:14	1

Client Sample ID: MW-28
Lab Sample ID: 810-169585-30

Date Collected: 10/23/25 12:25
Matrix: Water
Date Received: 10/28/25 08:40

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0630	U	0.239	0.239	1.00	0.463	pCi/L	11/04/25 08:22	12/02/25 22:07	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*48.4*		*30 - 110*	*11/04/25 08:22*	*12/02/25 22:07*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.24	U G	0.843	0.851	1.00	1.26	pCi/L	11/04/25 08:26	12/01/25 12:05	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*48.4*		*30 - 110*	*11/04/25 08:26*	*12/01/25 12:05*	*1*
Y Carrier	*83.4*		*30 - 110*	*11/04/25 08:26*	*12/01/25 12:05*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	**1.30**		0.876	0.884	5.00	1.26	pCi/L		12/03/25 15:14	1

Client Sample ID: MWT-37

Lab Sample ID: 810-169585-31

Date Collected: 10/21/25 09:02

Matrix: Water

Date Received: 10/28/25 08:40

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.420	U	0.366	0.368	1.00	0.546	pCi/L	11/04/25 08:22	12/02/25 22:07	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*39.6*		*30 - 110*	*11/04/25 08:22*	*12/02/25 22:07*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**1.96**	**G**	1.15	1.16	1.00	1.66	pCi/L	11/04/25 08:26	12/01/25 12:05	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*39.6*		*30 - 110*	*11/04/25 08:26*	*12/01/25 12:05*	*1*
Y Carrier	*77.8*		*30 - 110*	*11/04/25 08:26*	*12/01/25 12:05*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	**2.38**		1.21	1.22	5.00	1.66	pCi/L		12/03/25 15:14	1

Tracer/Carrier Summary

Client: Trace Analytical Laboratories
Job ID: 810-169585-1
Project/Site: 25J1477

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(30-110)
810-169585-1	MW-33	79.2
810-169585-2	MW-09	79.2
810-169585-3	MW-10	77.5
810-169585-4	MWT-10	86.9
810-169585-5	MW-34	85.2
810-169585-6	MW-37	82.6
810-169585-7	MW-38	62.4
810-169585-8	MW-16	72.6
810-169585-9	MW-39	82.1
810-169585-10	MW-13	91.2
810-169585-10 DU	MW-13	78.1
810-169585-11	MW-36	74.1
810-169585-12	MW-30	78.1
810-169585-13	MW-32	92.9
810-169585-14	MW-31	74.6
810-169585-15	MW-17	78.3
810-169585-16	MW-01R	80.1
810-169585-17	MW-12	80.6
810-169585-18	MW-03	68.9
810-169585-19	MW-04	69.2
810-169585-20	MW-08	96.9
810-169585-21	SG-07	76.1
810-169585-22	MW-07	79.5
810-169585-23	MW-20	39.9
810-169585-23 DU	MW-20	53.0
810-169585-24	MW-02	63.5
810-169585-25	MW-19	53.6
810-169585-26	MW-18	62.7
810-169585-27	MW-06	43.6
810-169585-28	MW-11	46.2
810-169585-29	MW-27	62.7
810-169585-30	MW-28	48.4
810-169585-31	MWT-37	39.6
LCS 160-743258/2-A	Lab Control Sample	87.2
LCS 160-743266/2-A	Lab Control Sample	81.2
LCS 160-743667/2-A	Lab Control Sample	74.6
MB 160-743258/1-A	Method Blank	86.3
MB 160-743266/1-A	Method Blank	86.6
MB 160-743667/1-A	Method Blank	77.2

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
810-169585-1	MW-33	79.2	78.5

Method: 904.0 - Radium-228 (GFPC) (Continued)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
810-169585-2	MW-09	79.2	75.9
810-169585-3	MW-10	77.5	81.5
810-169585-4	MWT-10	86.9	81.1
810-169585-5	MW-34	85.2	77.8
810-169585-6	MW-37	82.6	80.7
810-169585-7	MW-38	62.4	73.6
810-169585-8	MW-16	72.6	81.9
810-169585-9	MW-39	82.1	86.4
810-169585-10	MW-13	91.2	85.6
810-169585-10 DU	MW-13	78.1	77.4
810-169585-11	MW-36	74.1	77.4
810-169585-12	MW-30	78.1	86.0
810-169585-13	MW-32	92.9	86.7
810-169585-14	MW-31	74.6	81.9
810-169585-15	MW-17	78.3	81.9
810-169585-16	MW-01R	80.1	80.7
810-169585-17	MW-12	80.6	87.9
810-169585-18	MW-03	68.9	85.6
810-169585-19	MW-04	69.2	86.0
810-169585-20	MW-08	96.9	87.5
810-169585-21	SG-07	76.1	84.5
810-169585-22	MW-07	79.5	85.6
810-169585-23	MW-20	39.9	81.9
810-169585-23 DU	MW-20	53.0	84.9
810-169585-24	MW-02	63.5	81.5
810-169585-25	MW-19	53.6	82.2
810-169585-26	MW-18	62.7	81.5
810-169585-27	MW-06	43.6	83.4
810-169585-28	MW-11	46.2	80.4
810-169585-29	MW-27	62.7	82.2
810-169585-30	MW-28	48.4	83.4
810-169585-31	MWT-37	39.6	77.8
LCS 160-743259/2-A	Lab Control Sample	87.2	80.4
LCS 160-743267/2-A	Lab Control Sample	81.2	84.1
LCS 160-743668/2-A	Lab Control Sample	74.6	83.4
MB 160-743259/1-A	Method Blank	86.3	81.1
MB 160-743267/1-A	Method Blank	86.6	81.9
MB 160-743668/1-A	Method Blank	77.2	83.0

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-743258/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 747566 — **Prep Batch: 743258**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.05132	U	0.120	0.120	1.00	0.221	pCi/L	10/31/25 15:13	12/02/25 17:27	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.3*		*30 - 110*	*10/31/25 15:13*	*12/02/25 17:27*	*1*

Lab Sample ID: LCS 160-743258/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 747566 — **Prep Batch: 743258**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226	9.57	8.517		1.06	1.00	0.219	pCi/L	89	75 - 125

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*87.2*		*30 - 110*

Lab Sample ID: MB 160-743266/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 747566 — **Prep Batch: 743266**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.08227	U	0.0985	0.0987	1.00	0.245	pCi/L	10/31/25 15:46	12/02/25 20:01	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.6*		*30 - 110*	*10/31/25 15:46*	*12/02/25 20:01*	*1*

Lab Sample ID: LCS 160-743266/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 747566 — **Prep Batch: 743266**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226	9.57	10.33		1.27	1.00	0.284	pCi/L	108	75 - 125

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*81.2*		*30 - 110*

Lab Sample ID: 810-169585-10 DU — **Client Sample ID: MW-13**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 747580 — **Prep Batch: 743266**

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-226	0.169	U	0.3540		0.188	1.00	0.226	pCi/L	0.56	1

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: 810-169585-10 DU | **Client Sample ID: MW-13**
Matrix: Water | **Prep Type: Total/NA**
Analysis Batch: 747580 | **Prep Batch: 743266**

Carrier	*DU %Yield*	*DU Qualifier*	*Limits*
Ba Carrier	*78.1*		*30 - 110*

Lab Sample ID: MB 160-743667/1-A | **Client Sample ID: Method Blank**
Matrix: Water | **Prep Type: Total/NA**
Analysis Batch: 747566 | **Prep Batch: 743667**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.04540	U	0.126	0.126	1.00	0.237	pCi/L	11/04/25 08:22	12/02/25 22:10	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*77.2*		*30 - 110*	*11/04/25 08:22*	*12/02/25 22:10*	*1*

Lab Sample ID: LCS 160-743667/2-A | **Client Sample ID: Lab Control Sample**
Matrix: Water | **Prep Type: Total/NA**
Analysis Batch: 747566 | **Prep Batch: 743667**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226	9.57	10.03		1.26	1.00	0.338	pCi/L	105	75 - 125

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*74.6*		*30 - 110*

Lab Sample ID: 810-169585-23 DU | **Client Sample ID: MW-20**
Matrix: Water | **Prep Type: Total/NA**
Analysis Batch: 747562 | **Prep Batch: 743667**

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-226	0.140	U	-0.05790	U	0.213	1.00	0.440	pCi/L	0.43	1

Carrier	*DU %Yield*	*DU Qualifier*	*Limits*
Ba Carrier	*53.0*		*30 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-743259/1-A | **Client Sample ID: Method Blank**
Matrix: Water | **Prep Type: Total/NA**
Analysis Batch: 747376 | **Prep Batch: 743259**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.2298	U	0.396	0.396	1.00	0.675	pCi/L	10/31/25 15:21	12/01/25 09:54	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.3*		*30 - 110*	*10/31/25 15:21*	*12/01/25 09:54*	*1*

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: MB 160-743259/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 747376
Prep Batch: 743259

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	81.1		30 - 110	10/31/25 15:21	12/01/25 09:54	1

Lab Sample ID: LCS 160-743259/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 747376
Prep Batch: 743259

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-228	7.89	8.895		1.26	1.00	0.550	pCi/L	113	75 - 125

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	87.2		30 - 110
Y Carrier	80.4		30 - 110

Lab Sample ID: MB 160-743267/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 747368
Prep Batch: 743267

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.5406	U	0.407	0.411	1.00	0.629	pCi/L	10/31/25 15:51	12/01/25 12:06	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	86.6		30 - 110	10/31/25 15:51	12/01/25 12:06	1
Y Carrier	81.9		30 - 110	10/31/25 15:51	12/01/25 12:06	1

Lab Sample ID: LCS 160-743267/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 747367
Prep Batch: 743267

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-228	7.89	9.888		1.47	1.00	0.777	pCi/L	125	75 - 125

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	81.2		30 - 110
Y Carrier	84.1		30 - 110

Lab Sample ID: 810-169585-10 DU
Client Sample ID: MW-13
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 747367
Prep Batch: 743267

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-228	0.635	U	0.3769	U	0.520	1.00	0.870	pCi/L	0.27	1

Client: Trace Analytical Laboratories
Project/Site: 25J1477

Job ID: 810-169585-1

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: 810-169585-10 DU
Matrix: Water
Analysis Batch: 747367

Client Sample ID: MW-13
Prep Type: Total/NA
Prep Batch: 743267

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	78.1		30 - 110
Y Carrier	77.4		30 - 110

Lab Sample ID: MB 160-743668/1-A
Matrix: Water
Analysis Batch: 747376

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 743668

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.08253	U	0.319	0.319	1.00	0.579	pCi/L	11/04/25 08:26	12/01/25 12:07	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	77.2		30 - 110	11/04/25 08:26	12/01/25 12:07	1
Y Carrier	83.0		30 - 110	11/04/25 08:26	12/01/25 12:07	1

Lab Sample ID: LCS 160-743668/2-A
Matrix: Water
Analysis Batch: 747376

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 743668

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-228	7.89	7.345		1.15	1.00	0.589	pCi/L	93	75 - 125

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	74.6		30 - 110
Y Carrier	83.4		30 - 110

Lab Sample ID: 810-169585-23 DU
Matrix: Water
Analysis Batch: 747376

Client Sample ID: MW-20
Prep Type: Total/NA
Prep Batch: 743668

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-228	0.309	U G	0.3250	U	0.516	1.00	0.877	pCi/L	0.01	1

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	53.0		30 - 110
Y Carrier	84.9		30 - 110

Rad

Prep Batch: 743258

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
810-169585-1	MW-33	Total/NA	Water	PrecSep-21	
810-169585-2	MW-09	Total/NA	Water	PrecSep-21	
MB 160-743258/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-743258/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 743259

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
810-169585-1	MW-33	Total/NA	Water	PrecSep_0	
810-169585-2	MW-09	Total/NA	Water	PrecSep_0	
MB 160-743259/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-743259/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Prep Batch: 743266

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
810-169585-3	MW-10	Total/NA	Water	PrecSep-21	
810-169585-4	MWT-10	Total/NA	Water	PrecSep-21	
810-169585-5	MW-34	Total/NA	Water	PrecSep-21	
810-169585-6	MW-37	Total/NA	Water	PrecSep-21	
810-169585-7	MW-38	Total/NA	Water	PrecSep-21	
810-169585-8	MW-16	Total/NA	Water	PrecSep-21	
810-169585-9	MW-39	Total/NA	Water	PrecSep-21	
810-169585-10	MW-13	Total/NA	Water	PrecSep-21	
810-169585-11	MW-36	Total/NA	Water	PrecSep-21	
810-169585-12	MW-30	Total/NA	Water	PrecSep-21	
810-169585-13	MW-32	Total/NA	Water	PrecSep-21	
810-169585-14	MW-31	Total/NA	Water	PrecSep-21	
810-169585-15	MW-17	Total/NA	Water	PrecSep-21	
810-169585-16	MW-01R	Total/NA	Water	PrecSep-21	
810-169585-17	MW-12	Total/NA	Water	PrecSep-21	
810-169585-18	MW-03	Total/NA	Water	PrecSep-21	
810-169585-19	MW-04	Total/NA	Water	PrecSep-21	
810-169585-20	MW-08	Total/NA	Water	PrecSep-21	
810-169585-21	SG-07	Total/NA	Water	PrecSep-21	
810-169585-22	MW-07	Total/NA	Water	PrecSep-21	
MB 160-743266/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-743266/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
810-169585-10 DU	MW-13	Total/NA	Water	PrecSep-21	

Prep Batch: 743267

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
810-169585-3	MW-10	Total/NA	Water	PrecSep_0	
810-169585-4	MWT-10	Total/NA	Water	PrecSep_0	
810-169585-5	MW-34	Total/NA	Water	PrecSep_0	
810-169585-6	MW-37	Total/NA	Water	PrecSep_0	
810-169585-7	MW-38	Total/NA	Water	PrecSep_0	
810-169585-8	MW-16	Total/NA	Water	PrecSep_0	
810-169585-9	MW-39	Total/NA	Water	PrecSep_0	
810-169585-10	MW-13	Total/NA	Water	PrecSep_0	
810-169585-11	MW-36	Total/NA	Water	PrecSep_0	
810-169585-12	MW-30	Total/NA	Water	PrecSep_0	
810-169585-13	MW-32	Total/NA	Water	PrecSep_0	

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Rad (Continued)

Prep Batch: 743267 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
810-169585-14	MW-31	Total/NA	Water	PrecSep_0	
810-169585-15	MW-17	Total/NA	Water	PrecSep_0	
810-169585-16	MW-01R	Total/NA	Water	PrecSep_0	
810-169585-17	MW-12	Total/NA	Water	PrecSep_0	
810-169585-18	MW-03	Total/NA	Water	PrecSep_0	
810-169585-19	MW-04	Total/NA	Water	PrecSep_0	
810-169585-20	MW-08	Total/NA	Water	PrecSep_0	
810-169585-21	SG-07	Total/NA	Water	PrecSep_0	
810-169585-22	MW-07	Total/NA	Water	PrecSep_0	
MB 160-743267/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-743267/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
810-169585-10 DU	MW-13	Total/NA	Water	PrecSep_0	

Prep Batch: 743667

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
810-169585-23	MW-20	Total/NA	Water	PrecSep-21	
810-169585-24	MW-02	Total/NA	Water	PrecSep-21	
810-169585-25	MW-19	Total/NA	Water	PrecSep-21	
810-169585-26	MW-18	Total/NA	Water	PrecSep-21	
810-169585-27	MW-06	Total/NA	Water	PrecSep-21	
810-169585-28	MW-11	Total/NA	Water	PrecSep-21	
810-169585-29	MW-27	Total/NA	Water	PrecSep-21	
810-169585-30	MW-28	Total/NA	Water	PrecSep-21	
810-169585-31	MWT-37	Total/NA	Water	PrecSep-21	
MB 160-743667/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-743667/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
810-169585-23 DU	MW-20	Total/NA	Water	PrecSep-21	

Prep Batch: 743668

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
810-169585-23	MW-20	Total/NA	Water	PrecSep_0	
810-169585-24	MW-02	Total/NA	Water	PrecSep_0	
810-169585-25	MW-19	Total/NA	Water	PrecSep_0	
810-169585-26	MW-18	Total/NA	Water	PrecSep_0	
810-169585-27	MW-06	Total/NA	Water	PrecSep_0	
810-169585-28	MW-11	Total/NA	Water	PrecSep_0	
810-169585-29	MW-27	Total/NA	Water	PrecSep_0	
810-169585-30	MW-28	Total/NA	Water	PrecSep_0	
810-169585-31	MWT-37	Total/NA	Water	PrecSep_0	
MB 160-743668/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-743668/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
810-169585-23 DU	MW-20	Total/NA	Water	PrecSep_0	

Client Sample ID: MW-33
Lab Sample ID: 810-169585-1
Date Collected: 10/20/25 12:00
Matrix: Water
Date Received: 10/28/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			743258	AMS	EET SL	10/31/25 15:13
Total/NA	Analysis	903.0		1	747580	FLC	EET SL	12/02/25 20:06
Total/NA	Prep	PrecSep_0			743259	AMS	EET SL	10/31/25 15:21
Total/NA	Analysis	904.0		1	747226	FLC	EET SL	12/01/25 09:59
Total/NA	Analysis	Ra226_Ra228 Pos		1	747729	FLC	EET SL	12/03/25 11:04

Client Sample ID: MW-09
Lab Sample ID: 810-169585-2
Date Collected: 10/20/25 13:20
Matrix: Water
Date Received: 10/28/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			743258	AMS	EET SL	10/31/25 15:13
Total/NA	Analysis	903.0		1	747580	FLC	EET SL	12/02/25 20:06
Total/NA	Prep	PrecSep_0			743259	AMS	EET SL	10/31/25 15:21
Total/NA	Analysis	904.0		1	747226	FLC	EET SL	12/01/25 09:59
Total/NA	Analysis	Ra226_Ra228 Pos		1	747729	FLC	EET SL	12/03/25 11:04

Client Sample ID: MW-10
Lab Sample ID: 810-169585-3
Date Collected: 10/20/25 14:30
Matrix: Water
Date Received: 10/28/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			743266	AMS	EET SL	10/31/25 15:46
Total/NA	Analysis	903.0		1	747566	FLC	EET SL	12/02/25 20:01
Total/NA	Prep	PrecSep_0			743267	AMS	EET SL	10/31/25 15:51
Total/NA	Analysis	904.0		1	747367	FLC	EET SL	12/01/25 13:07
Total/NA	Analysis	Ra226_Ra228 Pos		1	747729	FLC	EET SL	12/03/25 11:04

Client Sample ID: MWT-10
Lab Sample ID: 810-169585-4
Date Collected: 10/20/25 14:30
Matrix: Water
Date Received: 10/28/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			743266	AMS	EET SL	10/31/25 15:46
Total/NA	Analysis	903.0		1	747566	FLC	EET SL	12/02/25 20:01
Total/NA	Prep	PrecSep_0			743267	AMS	EET SL	10/31/25 15:51
Total/NA	Analysis	904.0		1	747367	FLC	EET SL	12/01/25 13:07
Total/NA	Analysis	Ra226_Ra228 Pos		1	747729	FLC	EET SL	12/03/25 11:04

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Lab Chronicle

Client: Trace Analytical Laboratories
Job ID: 810-169585-1
Project/Site: 25J1477

Client Sample ID: MW-34
Lab Sample ID: 810-169585-5
Date Collected: 10/20/25 16:30
Matrix: Water
Date Received: 10/28/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			743266	AMS	EET SL	10/31/25 15:46
Total/NA	Analysis	903.0		1	747566	FLC	EET SL	12/02/25 20:02
Total/NA	Prep	PrecSep_0			743267	AMS	EET SL	10/31/25 15:51
Total/NA	Analysis	904.0		1	747367	FLC	EET SL	12/01/25 13:06
Total/NA	Analysis	Ra226_Ra228 Pos		1	747729	FLC	EET SL	12/03/25 11:04

Client Sample ID: MW-37
Lab Sample ID: 810-169585-6
Date Collected: 10/21/25 09:02
Matrix: Water
Date Received: 10/28/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			743266	AMS	EET SL	10/31/25 15:46
Total/NA	Analysis	903.0		1	747566	FLC	EET SL	12/02/25 20:02
Total/NA	Prep	PrecSep_0			743267	AMS	EET SL	10/31/25 15:51
Total/NA	Analysis	904.0		1	747367	FLC	EET SL	12/01/25 13:06
Total/NA	Analysis	Ra226_Ra228 Pos		1	747729	FLC	EET SL	12/03/25 11:04

Client Sample ID: MW-38
Lab Sample ID: 810-169585-7
Date Collected: 10/21/25 10:10
Matrix: Water
Date Received: 10/28/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			743266	AMS	EET SL	10/31/25 15:46
Total/NA	Analysis	903.0		1	747580	FLC	EET SL	12/02/25 19:59
Total/NA	Prep	PrecSep_0			743267	AMS	EET SL	10/31/25 15:51
Total/NA	Analysis	904.0		1	747367	FLC	EET SL	12/01/25 13:06
Total/NA	Analysis	Ra226_Ra228 Pos		1	747729	FLC	EET SL	12/03/25 11:04

Client Sample ID: MW-16
Lab Sample ID: 810-169585-8
Date Collected: 10/21/25 11:30
Matrix: Water
Date Received: 10/28/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			743266	AMS	EET SL	10/31/25 15:46
Total/NA	Analysis	903.0		1	747580	FLC	EET SL	12/02/25 19:59
Total/NA	Prep	PrecSep_0			743267	AMS	EET SL	10/31/25 15:51
Total/NA	Analysis	904.0		1	747367	FLC	EET SL	12/01/25 13:07
Total/NA	Analysis	Ra226_Ra228 Pos		1	747729	FLC	EET SL	12/03/25 11:04

Lab Chronicle

Client: Trace Analytical Laboratories
Project/Site: 25J1477

Job ID: 810-169585-1

Client Sample ID: MW-39

Lab Sample ID: 810-169585-9
Date Collected: 10/21/25 13:30
Matrix: Water
Date Received: 10/28/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			743266	AMS	EET SL	10/31/25 15:46
Total/NA	Analysis	903.0		1	747580	FLC	EET SL	12/02/25 22:01
Total/NA	Prep	PrecSep_0			743267	AMS	EET SL	10/31/25 15:51
Total/NA	Analysis	904.0		1	747367	FLC	EET SL	12/01/25 13:06
Total/NA	Analysis	Ra226_Ra228 Pos		1	747729	FLC	EET SL	12/03/25 11:04

Client Sample ID: MW-13

Lab Sample ID: 810-169585-10
Date Collected: 10/21/25 15:10
Matrix: Water
Date Received: 10/28/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			743266	AMS	EET SL	10/31/25 15:46
Total/NA	Analysis	903.0		1	747580	FLC	EET SL	12/02/25 22:01
Total/NA	Prep	PrecSep_0			743267	AMS	EET SL	10/31/25 15:51
Total/NA	Analysis	904.0		1	747367	FLC	EET SL	12/01/25 13:06
Total/NA	Analysis	Ra226_Ra228 Pos		1	747729	FLC	EET SL	12/03/25 11:04

Client Sample ID: MW-36

Lab Sample ID: 810-169585-11
Date Collected: 10/21/25 16:20
Matrix: Water
Date Received: 10/28/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			743266	AMS	EET SL	10/31/25 15:46
Total/NA	Analysis	903.0		1	747580	FLC	EET SL	12/02/25 22:02
Total/NA	Prep	PrecSep_0			743267	AMS	EET SL	10/31/25 15:51
Total/NA	Analysis	904.0		1	747367	FLC	EET SL	12/01/25 13:06
Total/NA	Analysis	Ra226_Ra228 Pos		1	747729	FLC	EET SL	12/03/25 11:04

Client Sample ID: MW-30

Lab Sample ID: 810-169585-12
Date Collected: 10/21/25 10:55
Matrix: Water
Date Received: 10/28/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			743266	AMS	EET SL	10/31/25 15:46
Total/NA	Analysis	903.0		1	747580	FLC	EET SL	12/02/25 22:02
Total/NA	Prep	PrecSep_0			743267	AMS	EET SL	10/31/25 15:51
Total/NA	Analysis	904.0		1	747367	FLC	EET SL	12/01/25 13:06
Total/NA	Analysis	Ra226_Ra228 Pos		1	747729	FLC	EET SL	12/03/25 11:04

Client Sample ID: MW-32 — Lab Sample ID: 810-169585-13

Date Collected: 10/21/25 12:45 — **Matrix: Water**

Date Received: 10/28/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			743266	AMS	EET SL	10/31/25 15:46
Total/NA	Analysis	903.0		1	747580	FLC	EET SL	12/02/25 22:02
Total/NA	Prep	PrecSep_0			743267	AMS	EET SL	10/31/25 15:51
Total/NA	Analysis	904.0		1	747367	FLC	EET SL	12/01/25 13:06
Total/NA	Analysis	Ra226_Ra228 Pos		1	747729	FLC	EET SL	12/03/25 11:04

Client Sample ID: MW-31 — Lab Sample ID: 810-169585-14

Date Collected: 10/21/25 16:15 — **Matrix: Water**

Date Received: 10/28/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			743266	AMS	EET SL	10/31/25 15:46
Total/NA	Analysis	903.0		1	747580	FLC	EET SL	12/02/25 22:02
Total/NA	Prep	PrecSep_0			743267	AMS	EET SL	10/31/25 15:51
Total/NA	Analysis	904.0		1	747375	FLC	EET SL	12/01/25 13:03
Total/NA	Analysis	Ra226_Ra228 Pos		1	747729	FLC	EET SL	12/03/25 15:13

Client Sample ID: MW-17 — Lab Sample ID: 810-169585-15

Date Collected: 10/22/25 09:10 — **Matrix: Water**

Date Received: 10/28/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			743266	AMS	EET SL	10/31/25 15:46
Total/NA	Analysis	903.0		1	747580	FLC	EET SL	12/02/25 22:02
Total/NA	Prep	PrecSep_0			743267	AMS	EET SL	10/31/25 15:51
Total/NA	Analysis	904.0		1	747375	FLC	EET SL	12/01/25 13:04
Total/NA	Analysis	Ra226_Ra228 Pos		1	747729	FLC	EET SL	12/03/25 15:13

Client Sample ID: MW-01R — Lab Sample ID: 810-169585-16

Date Collected: 10/22/25 10:10 — **Matrix: Water**

Date Received: 10/28/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			743266	AMS	EET SL	10/31/25 15:46
Total/NA	Analysis	903.0		1	747566	FLC	EET SL	12/02/25 22:08
Total/NA	Prep	PrecSep_0			743267	AMS	EET SL	10/31/25 15:51
Total/NA	Analysis	904.0		1	747375	FLC	EET SL	12/01/25 13:04
Total/NA	Analysis	Ra226_Ra228 Pos		1	747729	FLC	EET SL	12/03/25 15:13

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Client Sample ID: MW-12
Lab Sample ID: 810-169585-17
Date Collected: 10/22/25 11:40
Matrix: Water
Date Received: 10/28/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			743266	AMS	EET SL	10/31/25 15:46
Total/NA	Analysis	903.0		1	747566	FLC	EET SL	12/02/25 22:08
Total/NA	Prep	PrecSep_0			743267	AMS	EET SL	10/31/25 15:51
Total/NA	Analysis	904.0		1	747375	FLC	EET SL	12/01/25 13:03
Total/NA	Analysis	Ra226_Ra228 Pos		1	747729	FLC	EET SL	12/03/25 15:13

Client Sample ID: MW-03
Lab Sample ID: 810-169585-18
Date Collected: 10/22/25 13:50
Matrix: Water
Date Received: 10/28/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			743266	AMS	EET SL	10/31/25 15:46
Total/NA	Analysis	903.0		1	747566	FLC	EET SL	12/02/25 22:08
Total/NA	Prep	PrecSep_0			743267	AMS	EET SL	10/31/25 15:51
Total/NA	Analysis	904.0		1	747375	FLC	EET SL	12/01/25 13:04
Total/NA	Analysis	Ra226_Ra228 Pos		1	747729	FLC	EET SL	12/03/25 15:13

Client Sample ID: MW-04
Lab Sample ID: 810-169585-19
Date Collected: 10/22/25 15:06
Matrix: Water
Date Received: 10/28/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			743266	AMS	EET SL	10/31/25 15:46
Total/NA	Analysis	903.0		1	747566	FLC	EET SL	12/02/25 22:08
Total/NA	Prep	PrecSep_0			743267	AMS	EET SL	10/31/25 15:51
Total/NA	Analysis	904.0		1	747375	FLC	EET SL	12/01/25 13:04
Total/NA	Analysis	Ra226_Ra228 Pos		1	747729	FLC	EET SL	12/03/25 15:13

Client Sample ID: MW-08
Lab Sample ID: 810-169585-20
Date Collected: 10/22/25 16:10
Matrix: Water
Date Received: 10/28/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			743266	AMS	EET SL	10/31/25 15:46
Total/NA	Analysis	903.0		1	747566	FLC	EET SL	12/02/25 22:08
Total/NA	Prep	PrecSep_0			743267	AMS	EET SL	10/31/25 15:51
Total/NA	Analysis	904.0		1	747375	FLC	EET SL	12/01/25 13:03
Total/NA	Analysis	Ra226_Ra228 Pos		1	747729	FLC	EET SL	12/03/25 15:13

Lab Chronicle

Client: Trace Analytical Laboratories | Job ID: 810-169585-1
Project/Site: 25J1477

Client Sample ID: SG-07 | Lab Sample ID: 810-169585-21

Date Collected: 10/22/25 17:00 | **Matrix: Water**
Date Received: 10/28/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			743266	AMS	EET SL	10/31/25 15:46
Total/NA	Analysis	903.0		1	747566	FLC	EET SL	12/02/25 22:08
Total/NA	Prep	PrecSep_0			743267	AMS	EET SL	10/31/25 15:51
Total/NA	Analysis	904.0		1	747375	FLC	EET SL	12/01/25 13:03
Total/NA	Analysis	Ra226_Ra228 Pos		1	747729	FLC	EET SL	12/03/25 15:13

Client Sample ID: MW-07 | Lab Sample ID: 810-169585-22

Date Collected: 10/22/25 10:00 | **Matrix: Water**
Date Received: 10/28/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			743266	AMS	EET SL	10/31/25 15:46
Total/NA	Analysis	903.0		1	747566	FLC	EET SL	12/02/25 22:08
Total/NA	Prep	PrecSep_0			743267	AMS	EET SL	10/31/25 15:51
Total/NA	Analysis	904.0		1	747375	FLC	EET SL	12/01/25 13:03
Total/NA	Analysis	Ra226_Ra228 Pos		1	747729	FLC	EET SL	12/03/25 15:13

Client Sample ID: MW-20 | Lab Sample ID: 810-169585-23

Date Collected: 10/22/25 11:15 | **Matrix: Water**
Date Received: 10/28/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			743667	AMS	EET SL	11/04/25 08:22
Total/NA	Analysis	903.0		1	747562	FLC	EET SL	12/02/25 22:05
Total/NA	Prep	PrecSep_0			743668	AMS	EET SL	11/04/25 08:26
Total/NA	Analysis	904.0		1	747376	FLC	EET SL	12/01/25 12:08
Total/NA	Analysis	Ra226_Ra228 Pos		1	747729	FLC	EET SL	12/03/25 15:13

Client Sample ID: MW-02 | Lab Sample ID: 810-169585-24

Date Collected: 10/22/25 14:15 | **Matrix: Water**
Date Received: 10/28/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			743667	AMS	EET SL	11/04/25 08:22
Total/NA	Analysis	903.0		1	747562	FLC	EET SL	12/02/25 22:05
Total/NA	Prep	PrecSep_0			743668	AMS	EET SL	11/04/25 08:26
Total/NA	Analysis	904.0		1	747376	FLC	EET SL	12/01/25 12:08
Total/NA	Analysis	Ra226_Ra228 Pos		1	747729	FLC	EET SL	12/03/25 15:13

Client Sample ID: MW-19
Lab Sample ID: 810-169585-25
Date Collected: 10/22/25 15:55
Matrix: Water
Date Received: 10/28/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			743667	AMS	EET SL	11/04/25 08:22
Total/NA	Analysis	903.0		1	747562	FLC	EET SL	12/02/25 22:07
Total/NA	Prep	PrecSep_0			743668	AMS	EET SL	11/04/25 08:26
Total/NA	Analysis	904.0		1	747368	FLC	EET SL	12/01/25 12:04
Total/NA	Analysis	Ra226_Ra228 Pos		1	747729	FLC	EET SL	12/03/25 15:13

Client Sample ID: MW-18
Lab Sample ID: 810-169585-26
Date Collected: 10/22/25 16:50
Matrix: Water
Date Received: 10/28/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			743667	AMS	EET SL	11/04/25 08:22
Total/NA	Analysis	903.0		1	747562	FLC	EET SL	12/02/25 22:07
Total/NA	Prep	PrecSep_0			743668	AMS	EET SL	11/04/25 08:26
Total/NA	Analysis	904.0		1	747368	FLC	EET SL	12/01/25 12:04
Total/NA	Analysis	Ra226_Ra228 Pos		1	747729	FLC	EET SL	12/03/25 15:13

Client Sample ID: MW-06
Lab Sample ID: 810-169585-27
Date Collected: 10/23/25 10:50
Matrix: Water
Date Received: 10/28/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			743667	AMS	EET SL	11/04/25 08:22
Total/NA	Analysis	903.0		1	747562	FLC	EET SL	12/02/25 22:07
Total/NA	Prep	PrecSep_0			743668	AMS	EET SL	11/04/25 08:26
Total/NA	Analysis	904.0		1	747368	FLC	EET SL	12/01/25 12:04
Total/NA	Analysis	Ra226_Ra228 Pos		1	747729	FLC	EET SL	12/03/25 15:13

Client Sample ID: MW-11
Lab Sample ID: 810-169585-28
Date Collected: 10/23/25 09:40
Matrix: Water
Date Received: 10/28/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			743667	AMS	EET SL	11/04/25 08:22
Total/NA	Analysis	903.0		1	747562	FLC	EET SL	12/02/25 22:07
Total/NA	Prep	PrecSep_0			743668	AMS	EET SL	11/04/25 08:26
Total/NA	Analysis	904.0		1	747368	FLC	EET SL	12/01/25 12:04
Total/NA	Analysis	Ra226_Ra228 Pos		1	747729	FLC	EET SL	12/03/25 15:13

Client Sample ID: MW-27 **Lab Sample ID: 810-169585-29**
Date Collected: 10/23/25 11:15 **Matrix: Water**
Date Received: 10/28/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			743667	AMS	EET SL	11/04/25 08:22
Total/NA	Analysis	903.0		1	747562	FLC	EET SL	12/02/25 22:07
Total/NA	Prep	PrecSep_0			743668	AMS	EET SL	11/04/25 08:26
Total/NA	Analysis	904.0		1	747368	FLC	EET SL	12/01/25 12:05
Total/NA	Analysis	Ra226_Ra228 Pos		1	747729	FLC	EET SL	12/03/25 15:14

Client Sample ID: MW-28 **Lab Sample ID: 810-169585-30**
Date Collected: 10/23/25 12:25 **Matrix: Water**
Date Received: 10/28/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			743667	AMS	EET SL	11/04/25 08:22
Total/NA	Analysis	903.0		1	747562	FLC	EET SL	12/02/25 22:07
Total/NA	Prep	PrecSep_0			743668	AMS	EET SL	11/04/25 08:26
Total/NA	Analysis	904.0		1	747368	FLC	EET SL	12/01/25 12:05
Total/NA	Analysis	Ra226_Ra228 Pos		1	747729	FLC	EET SL	12/03/25 15:14

Client Sample ID: MWT-37 **Lab Sample ID: 810-169585-31**
Date Collected: 10/21/25 09:02 **Matrix: Water**
Date Received: 10/28/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			743667	AMS	EET SL	11/04/25 08:22
Total/NA	Analysis	903.0		1	747562	FLC	EET SL	12/02/25 22:07
Total/NA	Prep	PrecSep_0			743668	AMS	EET SL	11/04/25 08:26
Total/NA	Analysis	904.0		1	747368	FLC	EET SL	12/01/25 12:05
Total/NA	Analysis	Ra226_Ra228 Pos		1	747729	FLC	EET SL	12/03/25 15:14

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-27
ANAB	Dept. of Defense ELAP	L2305	04-06-27
ANAB	Dept. of Energy	L2305.01	04-06-27
ANAB	ISO/IEC 17025	L2305	04-06-27
Arizona	State	AZ0813	12-08-25
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	07-01-26
Connecticut	State	PH-0241	03-31-27
Florida	NELAP	E87689	06-30-26
HI - RadChem Recognition	State	n/a	06-30-26
Illinois	NELAP	200023	11-30-25 *
Iowa	State	373	12-01-26
Kansas	NELAP	E-10236	10-31-26
Kentucky (DW)	State	KY90125	12-31-25
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-25
Louisiana (All)	NELAP	106151	06-30-26
Louisiana (DW)	State	LA011	12-31-25
Maryland	State	310	10-01-26
Massachusetts	State	M-MO054	06-30-26
MI - RadChem Recognition	State	9005	06-30-26
Missouri	State	780	06-30-28
Nevada	State	MO00054	07-31-26
New Jersey	NELAP	MO002	06-30-26
New Mexico	State	MO00054	06-30-26
New York	NELAP	11616	03-31-26
North Carolina (DW)	State	29700	06-30-26
North Dakota	State	R-207	06-30-25 *
Oklahoma	NELAP	9997	12-31-25
Oregon	NELAP	4157	09-01-26
Pennsylvania	NELAP	68-00540	02-28-26
South Carolina	State	85002	06-30-26
Texas	NELAP	T104704193	07-31-26
US Fish & Wildlife	US Federal Programs	058448	07-31-26
USDA	US Federal Programs	525-23-138-94730	05-18-26
Utah	NELAP	MO00054	07-31-26
Virginia	NELAP	460230	06-14-26
Washington	State	C592	08-31-26
West Virginia DEP	State	381	11-30-26

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method	Method Description	Protocol	Laboratory
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
Ra226_Ra228 Pos	Combined Radium-226 and Radium-228	TAL-STL	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL

Protocol References:

EPA = US Environmental Protection Agency

None = None

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Trace Analytical Laboratories
Project/Site: 25J1477

Job ID: 810-169585-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
810-169585-1	MW-33	Water	10/20/25 12:00	10/28/25 08:40	Michigan
810-169585-2	MW-09	Water	10/20/25 13:20	10/28/25 08:40	Michigan
810-169585-3	MW-10	Water	10/20/25 14:30	10/28/25 08:40	Michigan
810-169585-4	MWT-10	Water	10/20/25 14:30	10/28/25 08:40	Michigan
810-169585-5	MW-34	Water	10/20/25 16:30	10/28/25 08:40	Michigan
810-169585-6	MW-37	Water	10/21/25 09:02	10/28/25 08:40	Michigan
810-169585-7	MW-38	Water	10/21/25 10:10	10/28/25 08:40	Michigan
810-169585-8	MW-16	Water	10/21/25 11:30	10/28/25 08:40	Michigan
810-169585-9	MW-39	Water	10/21/25 13:30	10/28/25 08:40	Michigan
810-169585-10	MW-13	Water	10/21/25 15:10	10/28/25 08:40	Michigan
810-169585-11	MW-36	Water	10/21/25 16:20	10/28/25 08:40	Michigan
810-169585-12	MW-30	Water	10/21/25 10:55	10/28/25 08:40	Michigan
810-169585-13	MW-32	Water	10/21/25 12:45	10/28/25 08:40	Michigan
810-169585-14	MW-31	Water	10/21/25 16:15	10/28/25 08:40	Michigan
810-169585-15	MW-17	Water	10/22/25 09:10	10/28/25 08:40	Michigan
810-169585-16	MW-01R	Water	10/22/25 10:10	10/28/25 08:40	Michigan
810-169585-17	MW-12	Water	10/22/25 11:40	10/28/25 08:40	Michigan
810-169585-18	MW-03	Water	10/22/25 13:50	10/28/25 08:40	Michigan
810-169585-19	MW-04	Water	10/22/25 15:06	10/28/25 08:40	Michigan
810-169585-20	MW-08	Water	10/22/25 16:10	10/28/25 08:40	Michigan
810-169585-21	SG-07	Water	10/22/25 17:00	10/28/25 08:40	Michigan
810-169585-22	MW-07	Water	10/22/25 10:00	10/28/25 08:40	Michigan
810-169585-23	MW-20	Water	10/22/25 11:15	10/28/25 08:40	Michigan
810-169585-24	MW-02	Water	10/22/25 14:15	10/28/25 08:40	Michigan
810-169585-25	MW-19	Water	10/22/25 15:55	10/28/25 08:40	Michigan
810-169585-26	MW-18	Water	10/22/25 16:50	10/28/25 08:40	Michigan
810-169585-27	MW-06	Water	10/23/25 10:50	10/28/25 08:40	Michigan
810-169585-28	MW-11	Water	10/23/25 09:40	10/28/25 08:40	Michigan
810-169585-29	MW-27	Water	10/23/25 11:15	10/28/25 08:40	Michigan
810-169585-30	MW-28	Water	10/23/25 12:25	10/28/25 08:40	Michigan
810-169585-31	MWT-37	Water	10/21/25 09:02	10/28/25 08:40	Michigan

810-169585 Chain of Custody

eurofins

Eaton Analytical

110
Sou
T: 1.
F: 1.

www.EurofinsUS.com/Eaton

CHAIN OF CUSTODY RECORD

Page 1 of 3

Shaded area for EEA use only

REPORT TO:
Jon Mink, Tim Brewer (jmink@trace-labs.com, tbrewer@trace-labs.com) Trace Analytical Laboratories, Inc., 2241 Black Creek Rd., Muskegon, MI 49444 231-773-5998

BILL TO:
Accounts Payable, Trace Analytical Laboratories, Inc., 2241 Black Creek Rd., Muskegon, MI 49444

SAMPLER (Signature):

COMPLIANCE MONITORING: Yes X No

PWS ID #:
POPULATION SERVED:
STATE (sample origin): MI
SOURCE WATER:
PROJECT NAME: 25J1477
PO#: 25J1477

#	LAB Number	COLLECTION DATE	TIME	AM	PM	SAMPLING SITE	TEST NAME	SAMPLE REMARKS	CHLORINATED YES	CHLORINATED NO	# OF CONTAINERS	MATRIX CODE	TURNAROUND TIME
1		10/20/25	12:00		X	MW-33	Radium 226/226				1	GW	SW
2		10/20/25	13:20		X	MW-09	Radium 226/226				1	GW	SW
3		10/20/25	14:30		X	MW-10	Radium 226/226				1	GW	SW
4		10/20/25	14:30		X	MWT-10	Radium 226/226				1	GW	SW
5		10/20/25	16:30		X	MW-34	Radium 226/226				1	GW	SW
6		10/21/25	9:02	X		MW-37	Radium 226/226				1	GW	SW
7		10/21/25	10:10	X		MW-38	Radium 226/226				1	GW	SW
8		10/21/25	11:30	X		MW-16	Radium 226/226				1	GW	SW
9		10/21/25	13:30		X	MW-39	Radium 226/226				1	GW	SW
10		10/21/25	15:10		X	MW-13	Radium 226/226				1	GW	SW
11		10/21/25	16:20		X	MW-36	Radium 226/226				1	GW	SW
12		10/21/25	10:55	X		MW-30	Radium 226/226				1	GW	SW
13		10/21/25	12:45		X	MW-32	Radium 226/226				1	GW	SW
14		10/21/25	16:15		X	MW-31	Radium 226/226				1	GW	SW

RELINQUISHED BY:(Signature)	DATE	TIME	RECEIVED BY:(Signature)	DATE	TIME
Michelle Johnson	10/24/25	17:00 PM	Fedex		
Fedex			M. Pilotte	10/28/25	0840 AM
			RECEIVED FOR LABORATORY BY:		

LAB RESERVES THE RIGHT TO RETURN UNUSED PORTIONS OF NON-AQUEOUS SAMPLES TO CLIENT

LAB COMMENTS
Level IV Data Package for St. Louis EDD

CONDITIONS UPON RECEIPT (check one):
___ Iced: Wet/Blue ___ Ambient ___ °C Upon Receipt ___ N/A

MATRIX CODES:
DW-DRINKING WATER
RW-REAGENT WATER
GW-GROUND WATER
EW-EXPOSURE WATER
SW-SURFACE WATER
PW-POOL WATER
WW-WASTE WATER

TURN-AROUND TIME (TAT) - SURCHARGES

SW = Standard Written: (15 working days)	0%	IV* = Immediate Verbal: (3 working days)	100%
RV* = Rush Verbal: (5 working days)	50%	IW* = Immediate Written: (3 working days)	125%
RW* = Rush Written: (5 working days)	75%	SP* = Weekend, Holiday	CALL
		STAT* = Less than 48 hours	CALL

* Please call, expedited service not available for all testing

Samples received unannounced with less than 48 hours holding time remaining may be subject to additional charges.

06-LO-F0435 Issue 6.0 Effective Date: 2016-09-20

Sample analysis will be provided according to the standard EEA/Water Services Terms, which are available upon request. Any other terms proposed by Customer are deemed material alterations and are rejected unless expressly agreed to in writing by EEA.

eurofins | Eaton Analytical

110 S. Hill Street
South Bend, IN 46617
T: 1.800.332.4345
F: 1.574.233.8207

Order #
Batch #

www.EurofinsUS.com/Eaton

CHAIN OF CUSTODY RECORD

Page 2 of 3

Shaded area for EEA use only

REPORT TO:
Jon Mink, Tim Brewer (jmink@trace-labs.com, tbrewer@trace-labs.com) Trace Analytical Laboratories, Inc., 2241 Black Creek Rd., Muskegon, MI 49444 231-773-5998

BILL TO:
Accounts Payable, Trace Analytical Laboratories, Inc., 2241 Black Creek Rd., Muskegon, MI 49444

SAMPLER (Signature):

COMPLIANCE MONITORING: Yes: x | No:

PWS ID #: | STATE (sample origin): MI | POPULATION SERVED: | SOURCE WATER:

PROJECT NAME: 25J1477 | PO#: 25J1477

LAB Number	COLLECTION DATE	TIME	AM	PM	SAMPLING SITE	TEST NAME	SAMPLE REMARKS	CHLORINATED YES	NO	# OF CONTAINERS	MATRIX CODE	TURNAROUND TIME
1	10/22/25	9:10	X		MW-17	Radium 226/226				1	GW	SW
2	10/22/25	10:10	X		MW-01R	Radium 226/226				1	GW	SW
3	10/22/25	11:40	X		MW-12	Radium 226/226				1	GW	SW
4	10/22/25	13:50		X	MW-03	Radium 226/226				1	GW	SW
5	10/22/25	15:06		X	MW-04	Radium 226/226				1	GW	SW
6	10/22/25	16:10		X	MW-08	Radium 226/226				1	GW	SW
7	10/22/25	17:00		X	SG-07	Radium 226/226				1	GW	SW
8	10/22/25	10:00	X		MW-07	Radium 226/226				1	GW	SW
9	10/22/25	11:15	X		MW-20	Radium 226/226				1	GW	SW
10	10/22/25	14:15		X	MW-02	Radium 226/226				1	GW	SW
11	10/22/25	15:55		X	MW-19	Radium 226/226				1	GW	SW
12	10/22/25	16:50		X	MW-18	Radium 226/226				1	GW	SW
13	10/23/25	10:50	X		MW-06	Radium 226/226				1	GW	SW
14	10/23/25	9:40	X		MW-11	Radium 226/226				1	GW	SW

RELINQUISHED BY:(Signature)	DATE	TIME	RECEIVED BY:(Signature)	DATE	TIME
Michelle Johnson	10/24/25	17:00 PM	Fedex		
Fedex			M. Pinotte	10/28/25	0810 AM
			RECEIVED FOR LABORATORY BY:		

LAB RESERVES THE RIGHT TO RETURN UNUSED PORTIONS OF NON-AQUEOUS SAMPLES TO CLIENT

LAB COMMENTS
Level IV Data Package for St. Louis EDD

CONDITIONS UPON RECEIPT (check one):
___ Iced: Wet/Blue ___ Ambient ___ °C Upon Receipt ___ N/A

MATRIX CODES:
DW-DRINKING WATER
RW-REAGENT WATER
GW-GROUND WATER
EW-EXPOSURE WATER
SW-SURFACE WATER
PW-POOL WATER
WW-WASTE WATER

TURN-AROUND TIME (TAT) - SURCHARGES

SW = Standard Written: (15 working days)	0%
RV* = Rush Verbal: (5 working days)	50%
RW* = Rush Written: (5 working days)	75%
IV* = Immediate Verbal: (3 working days)	100%
IW* = Immediate Written: (3 working days)	125%
SP* = Weekend, Holiday	CALL
STAT* = Less than 48 hours	CALL

* Please call, expedited service not available for all testing

Samples received unannounced with less than 48 hours holding time remaining may be subject to additional charges.

06-LO-F0435 Issue 6.0 Effective Date: 2016-09-20

Sample analysis will be provided according to the standard EEA/Water Services Terms, which are available upon request. Any other terms proposed by Customer are deemed material alterations and are rejected unless expressly agreed to in writing by EEA.

eurofins | Eaton Analytical

110 S. Hill Street
South Bend, IN 46617
T: 1.800.332.4345
F: 1.574.233.8207

Order #

Batch # ______

www.EurofinsUS.com/Eaton

CHAIN OF CUSTODY RECORD

Page 3 of 3

Shaded area for EEA use only

REPORT TO:	SAMPLER (Signature)		PWS ID #	STATE (sample origin)	PROJECT NAME	PO#
Jon Mink, Tim Brewer (jmink@trace-labs.com, tbrewer@trace-labs.com) Trace Analytical Laboratories, Inc., 2241 Black Creek Rd., Muskegon, MI 49444 231-773-5998				MI	25J1477	25J1477
BILL TO: Accounts Payable, Trace Analytical Laboratories, Inc., 2241 Black Creek Rd., Muskegon, MI 49444	COMPLIANCE MONITORING	Yes: X / No:	POPULATION SERVED	SOURCE WATER		

	LAB Number	COLLECTION DATE	COLLECTION TIME	AM	PM	SAMPLING SITE	TEST NAME	SAMPLE REMARKS	CHLORINATED YES	CHLORINATED NO	# OF CONTAINERS	MATRIX CODE	TURNAROUND TIME
1		10/23/25	11:15	X		MW-27	Radium 226/226				1	GW	SW
2		10/23/25	12:25		X	MW-28	Radium 226/226				1	GW	SW
3		10/21/25	9:02	X		MWT-37	Radium 226/226				1	GW	SW
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													

RELINQUISHED BY:(Signature)	DATE	TIME	RECEIVED BY:(Signature)	DATE	TIME
Michelle Johnson	10/24/25	17:00 AM PM	Fedex		AM PM
RELINQUISHED BY:(Signature) Fedex	DATE	TIME AM PM	RECEIVED BY:(Signature) M. Purette	DATE 10/28/25	TIME 0840 AM PM
RELINQUISHED BY:(Signature)	DATE	TIME AM PM	RECEIVED FOR LABORATORY BY:	DATE	TIME AM PM

LAB RESERVES THE RIGHT TO RETURN UNUSED PORTIONS OF NON-AQUEOUS SAMPLES TO CLIENT

LAB COMMENTS

Level IV Data Package for St. Louis EDD

CONDITIONS UPON RECEIPT (check one):

____ Iced: Wet/Blue ____ Ambient ______ °C Upon Receipt ____ N/A

MATRIX CODES:

DW-DRINKING WATER
RW-REAGENT WATER
GW-GROUND WATER
EW-EXPOSURE WATER
SW-SURFACE WATER
PW-POOL WATER
WW-WASTE WATER

TURN-AROUND TIME (TAT) - SURCHARGES

SW = Standard Written: (15 working days)	0%	IV* = Immediate Verbal: (3 working days)	100%
RV* = Rush Verbal: (5 working days)	50%	IW* = Immediate Written: (3 working days)	125%
RW* = Rush Written: (5 working days)	75%	SP* = Weekend, Holiday	CALL
		STAT* = Less than 48 hours	CALL

* Please call, expedited service not available for all testing

Samples received unannounced with less than 48 hours holding time remaining may be subject to additional charges.

06-LO-F0435 Issue 6.0 Effective Date: 2016-09-20

Sample analysis will be provided according to the standard EEA/Water Services Terms, which are available upon request. Any other terms proposed by Customer are deemed material alterations and are rejected unless expressly agreed to in writing by EEA.

Eurofins Eaton Analytical South Bend
110 S Hill Street
South Bend, IN 46617
Phone: 574-233-4777 Fax: 574-233-8207

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler: N/A	Lab PM: Fullmer, Karen	Carrier Tracking No(s): N/A	COC No: 810-63191.1
Client Contact: Shipping/Receiving	Phone: N/A	E-Mail: Karen.Fullmer@et.eurofinsus.com	State of Origin: Michigan	Page: Page 1 of 4
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State - Michigan		Job #: 810-169585-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 12/3/2025	**Analysis Requested**		Preservation Codes: -
City: Earth City	TAT Requested (days): N/A			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #: N/A			
Email: N/A	WO #: N/A			
Project Name: 25J1477	Project #: 81000263			
Site: N/A	SSOW#: N/A			Other: N/A

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	903.0/PrecSep_21EPA 903.0 - Radium 226 (St. Louis)	904.0/PrecSep_0EPA 904.0 - Radium 228 (St. Louis)	Ra226_228GFPC_PCombined Radium-226 and Radium-228	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-33 (810-169585-1)	10/20/25	12:00 Eastern	G	Water			X	X	X	1	
MW-09 (810-169585-2)	10/20/25	13:20 Eastern	G	Water			X	X	X	1	
MW-10 (810-169585-3)	10/20/25	14:30 Eastern	G	Water			X	X	X	1	
MWT-10 (810-169585-4)	10/20/25	14:30 Eastern	G	Water			X	X	X	1	
MW-34 (810-169585-5)	10/20/25	16:30 Eastern	G	Water			X	X	X	1	
MW-37 (810-169585-6)	10/21/25	09:02 Eastern	G	Water			X	X	X	1	
MW-38 (810-169585-7)	10/21/25	10:10 Eastern	G	Water			X	X	X	1	
MW-16 (810-169585-8)	10/21/25	11:30 Eastern	G	Water			X	X	X	1	
MW-39 (810-169585-9)	10/21/25	13:30 Eastern	G	Water			X	X	X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Eaton Analytical, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Eaton Analytical, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Eaton Analytical, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Eaton Analytical, LLC.

Possible Hazard Identification *Unconfirmed*		***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For ______ Months*	
Deliverable Requested: I, II, III, IV, Other (specify)	Primary Deliverable Rank: 2	Special Instructions/QC Requirements:	
Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		

Ver: 10/10/2024

Eurofins Eaton Analytical South Bend
110 S Hill Street
South Bend, IN 46617
Phone: 574-233-4777 Fax: 574-233-8207

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler: N/A	Lab PM: Fullmer, Karen	Carrier Tracking No(s): N/A	COC No: 810-63191.2
Client Contact: Shipping/Receiving	Phone: N/A	E-Mail: Karen.Fullmer@et.eurofinsus.com	State of Origin: Michigan	Page: Page 2 of 4
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State - Michigan		Job #: 810-169585-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 12/3/2025			Preservation Codes: -
City: Earth City	TAT Requested (days): N/A			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #: N/A			
Email: N/A	WO #: N/A			
Project Name: 25J1477	Project #: 81000263			
Site: N/A	SSOW#: N/A			Other: N/A

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	903.0/PrecSep_21EPA 903.0 - Radium 226 (St. Louis)	904.0/PrecSep_0EPA 904.0 - Radium 228 (St. Louis)	Ra226_228GFPC_PCombined Radium-226 and Radium-228	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-13 (810-169585-10)	10/21/25	15:10 Eastern	G	Water			X	X	X	1	
MW-36 (810-169585-11)	10/21/25	16:20 Eastern	G	Water			X	X	X	1	
MW-30 (810-169585-12)	10/21/25	10:55 Eastern	G	Water			X	X	X	1	
MW-32 (810-169585-13)	10/21/25	12:45 Eastern	G	Water			X	X	X	1	
MW-31 (810-169585-14)	10/21/25	16:15 Eastern	G	Water			X	X	X	1	
MW-17 (810-169585-15)	10/22/25	09:10 Eastern	G	Water			X	X	X	1	
MW-01R (810-169585-16)	10/22/25	10:10 Eastern	G	Water			X	X	X	1	
MW-12 (810-169585-17)	10/22/25	11:40 Eastern	G	Water			X	X	X	1	
MW-03 (810-169585-18)	10/22/25	13:50 Eastern	G	Water			X	X	X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Eaton Analytical, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Eaton Analytical, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Eaton Analytical, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Eaton Analytical, LLC.

Possible Hazard Identification *Unconfirmed*		*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)* ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For ______ Months*			
Deliverable Requested: I, II, III, IV, Other (specify)	Primary Deliverable Rank: 2	Special Instructions/QC Requirements:			
Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:			

Ver: 10/10/2024

Eurofins Eaton Analytical South Bend
110 S Hill Street
South Bend, IN 46617
Phone: 574-233-4777 Fax: 574-233-8207

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler: N/A	Lab PM: Fullmer, Karen	Carrier Tracking No(s): N/A	COC No: 810-63191.3
Client Contact: Shipping/Receiving	Phone: N/A	E-Mail: Karen.Fullmer@et.eurofinsus.com	State of Origin: Michigan	Page: Page 3 of 4
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State - Michigan		Job #: 810-169585-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 12/3/2025	Analysis Requested		Preservation Codes: -
City: Earth City	TAT Requested (days): N/A			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #: N/A			
Email: N/A	WO #: N/A			
Project Name: 25J1477	Project #: 81000263			Other: N/A
Site: N/A	SSOW#: N/A			

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	903.0/PrecSep_21EPA 903.0 - Radium 226 (St. Louis)	904.0/PrecSep_0EPA 904.0 - Radium 228 (St. Louis)	Ra226_228GFPC_PCombined Radium-226 and Radium-228	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-04 (810-169585-19)	10/22/25	15:06 Eastern	G	Water			X	X	X	1	
MW-08 (810-169585-20)	10/22/25	16:10 Eastern	G	Water			X	X	X	1	
SG-07 (810-169585-21)	10/22/25	17:00 Eastern	G	Water			X	X	X	1	
MW-07 (810-169585-22)	10/22/25	10:00 Eastern	G	Water			X	X	X	1	
MW-20 (810-169585-23)	10/22/25	11:15 Eastern	G	Water			X	X	X	1	
MW-02 (810-169585-24)	10/22/25	14:15 Eastern	G	Water			X	X	X	1	
MW-19 (810-169585-25)	10/22/25	15:55 Eastern	G	Water			X	X	X	1	
MW-18 (810-169585-26)	10/22/25	16:50 Eastern	G	Water			X	X	X	1	
MW-06 (810-169585-27)	10/23/25	10:50 Eastern	G	Water			X	X	X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Eaton Analytical, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Eaton Analytical, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Eaton Analytical, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Eaton Analytical, LLC.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For ______ Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 10/10/2024

Eurofins Eaton Analytical South Bend
110 S Hill Street
South Bend, IN 46617
Phone: 574-233-4777 Fax: 574-233-8207

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler: N/A	Lab PM: Fullmer, Karen	Carrier Tracking No(s): N/A	COC No: 810-63191.4
Client Contact: Shipping/Receiving	Phone: N/A	E-Mail: Karen.Fullmer@et.eurofinsus.com	State of Origin: Michigan	Page: Page 4 of 4
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State - Michigan		Job #: 810-169585-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 12/3/2025	Analysis Requested		Preservation Codes: -
City: Earth City	TAT Requested (days): N/A			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #: N/A			
Email: N/A	WO #: N/A			
Project Name: 25J1477	Project #: 81000263			
Site: N/A	SSOW#: N/A			Other: N/A

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	903.0/PrecSep_21EPA 903.0 - Radium 226 (St. Louis)	904.0/PrecSep_0EPA 904.0 - Radium 228 (St. Louis)	Ra226_228GFPC_PCombined Radium-226 and Radium-228	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-11 (810-169585-28)	10/23/25	09:40 Eastern	G	Water			X	X	X	1	
MW-27 (810-169585-29)	10/23/25	11:15 Eastern	G	Water			X	X	X	1	
MW-28 (810-169585-30)	10/23/25	12:25 Eastern	G	Water			X	X	X	1	
MWTT-37 (810-169585-31)	10/21/25	09:02 Eastern	G	Water			X	X	X	1	

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ________ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 10/10/2024

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Login Sample Receipt Checklist

Client: Trace Analytical Laboratories

Job Number: 810-169585-1

Login Number: 169585

List Source: Eurofins Eaton Analytical South Bend

List Number: 1

Creator: Blackburn, Kelly

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
Samples were received on ice.	False	Thermal preservation not required.
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	False	Thermal preservation not required.
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Samples do not require splitting or compositing.	True	
Were samples preserved to correct pH upon receipt, if applicable?	True	
Container provided by EEA	True	

Login Sample Receipt Checklist

Client: Trace Analytical Laboratories

Job Number: 810-169585-1

Login Number: 169585
List Number: 2
Creator: Worthington, Sierra M

List Source: Eurofins St. Louis
List Creation: 10/29/25 07:01 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673
231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

TRACE ANALYTICAL LABORATORIES, INC.

CHAIN-OF-CUSTODY RECORD

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

Phone 231.773.5998
Fax 888.979.4469
www.trace-labs.com

Page 1 of 2

Trace ID No. 25J1477

Report Results To:

Company Name: HDR
Report To: Andrew Byks / Molly Reeves
Mailing Address: 1000 Oakbrook Dr, Suite 200
City, State, Zip Code: Ann Arbor, MI 48104
Office Phone:
Cell Phone:
Email Address: andrew.byks@hdrinc.com

Bill To:

PO#: 10337505.006
Contact Name: Lara Zawaideh
Billing Address (if different):
City, State, Zip Code:
Phone Number:
Billing Email Address: lara.zawaideh@hdrinc.com

Trace Use:

Logged By: NC
Checked By: MJ
Soil Volatiles Preserved (circle if applicable): MeOH Low Level Lab
Sampling Time:

Turnaround Requirements:

- ☒ Standard, 5-10 Days
- ☐ 3 Day*
- ☐ 1 Day*

*Results provided end of business day, requires prior approval.

Matrix Key:

S = Soil / Solid
W = Water
SL = Sludge
OI = Oil
WI = Wipes
LW = Liquid Waste
A = Air
D = Drinking Water

Project Name: GHHI
Sampled By: AB / FDR

Trace No.	Date Collected	Time Collected	Client Sample ID	Metals Field Filtered (Y / N)	Matrix	Number of Containers	Preservation: Cool	HCl	HNO_3	H_2SO_4	NaOH	Other	40 CFR Part 257 App III	40CFR Part 257 Part IV	MI Part 115 Metals	TSS	Low Level Hg	Dissolved Metals	Remarks
1	10/20/25	1200	MW-33	N	W	4	4		2				X	X	X	X	X		copy previous
2	10/20/25	1320	MW-09	N	W	4	4		2				X	X	X	X	X		event
3	10/20/25	1420	MW-10	N	W	4	4		2				X	X	X	X	X		
4	10/20/25	1430	MWT-10	N	W	4	4		2				X	X	X	X	X		
5	10/20/25	1630	MW-34	N	W	4	4		2				X	X	X	X	X		
	10/20/25	1715	LLHG-TB-10202025	N	W	1	1										X		
6	10/21/25	902	MW-37	N	W	4	4		2				X	X	X	X	X		
7	10/21/25	1010	MW-38	N	W	5	6		2				X	X	X	X	X	X	
8	10/21/25	1130	MW-16	N	W	4	4		2				X	X	X	X	X		
9	10/21/25	1330	MW-39	N	W	4	4		2				X	X	X	X	X		

Possible Health Hazards?

Please Sign

	Released By	Received By	Date	Time		Released By	Received By	Date	Time
1)	Andrew J Byks	[signature]	10/22/2025	7:55	2)				
3)					4)				

In executing this Chain of Custody, the client acknowledges the terms as set forth at www.trace-labs.com/terms-of-agreement.

☐ Check this box if you would not like your samples analyzed if received outside of the conditions outlined in the Trace Sample Acceptance Policy at www.trace-labs.com/downloads.

Form 70-Z.1

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

CHAIN-OF-CUSTODY RECORD

Page 2 of 2

TRACE ANALYTICAL LABORATORIES, INC.

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

Phone 231.773.5998
Fax 888.979.4469
www.trace-labs.com

Trace ID No. 25J1477

Report Results To:

Company Name: See Page 1
Report To:
Mailing Address:
City, State, Zip Code:
Office Phone: Cell Phone:
Email Address:

Bill To:

PO #:
Contact Name:
Billing Address (if different):
City, State, Zip Code:
Phone Number:
Billing Email Address:

Trace Use:

Logged By: NC
Checked By: MJ
Soil Volatiles Preserved (circle if applicable): MeOH Low Level Lab
Sampling Time:

Turnaround Requirements:

- ☒ Standard, 5-10 Days
- ☐ 3 Day*
- ☐ 1 Day*

*Results provided end of business day, requires prior approval.

Matrix Key:

S = Soil / Solid; W = Water; SL = Sludge; OI = Oil; WI = Wipes; LW = Liquid Waste; A = Air; D = Drinking Water

Project Name: GHHI
Sampled By: AB/FDR

Trace No.	Date Collected	Time Collected	Client Sample ID	Metals Field Filtered (Y / N)	Matrix	Number of Containers	Cool	HCl	HNO_3	H_2SO_4	NaOH	Other	40 CFR Part 257 App III	40 CFR Part 257 App IV	MI Part 115 Metals	TSS	Low Level Hg	Dissolved Metals	Remarks
10	10/21/25	1510	MW-13	N	W	4	4		2				X	X	X	X	X		copy last
11	10/21/25	1620	MW-36	N	W	4	4		2				X	X	X	X	X		event
	10/21/25	1715	LLHG-TB-10212025	N	W	1	1										X		
12	10/21/25	1055	MW-30	N	W	5	5		2				X	X	X	X	X	X	
13	10/21/25	1245	MW-32	N	W	4	4		2				X	X	X	X	X		

AB

Possible Health Hazards?

Please Sign

	Released By	Received By	Date	Time	Released By	Received By	Date	Time
1)	Andre [signature]	[signature]	10/22/2025	7:55	2)			
3)					4)			

In executing this Chain of Custody, the client acknowledges the terms as set forth at www.trace-labs.com/terms-of-agreement.

☐ Check this box if you would not like your samples analyzed if received outside of the conditions outlined in the Trace Sample Acceptance Policy at www.trace-labs.com/downloads.

Form 70-Z.1

TRACE ANALYTICAL LABORATORIES, INC.

CHAIN-OF-CUSTODY RECORD

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

Phone 231.773.5998
Fax 888.979.4469
www.trace-labs.com

Page 1 of 2

Trace ID No. ~~25J1746~~ NE 10/23/25
25J1477

Report Results To:

Company Name: HDR
Report To: Molly Reeves / Andrew Byks
Mailing Address: 1000 Oakbrook Drive, Suite 200
City, State, Zip Code: Ann Arbor, MI 48104
Office Phone:
Cell Phone:
Email Address: andrew.byks@hdrinc.com

Bill To:

PO#: 10337505.006
Contact Name: Lara Zawaideh
Billing Address (if different):
City, State, Zip Code:
Phone Number:
Billing Email Address: lara-zawaideh@hdrinc.com

Trace Use:

Logged By: NE
Checked By: MJ
Soil Volatiles Preserved (circle if applicable): MeOH Low Level Lab
Sampling Time:

Turnaround Requirements:

- [x] Standard, 5-10 Days
- [ ] 3 Day*
- [ ] 1 Day*

*Results provided end of business day, requires prior approval.

Matrix Key:

S = Soil / Solid
W = Water
SL = Sludge
OI = Oil
WI = Wipes
LW = Liquid Waste
A = Air
D = Drinking Water

Project Name: Grand Haven
Sampled By: AB/FDR

	Trace No. NE 10/23/25	Date Collected	Time Collected	Client Sample ID	Metals Field Filtered (Y/N)	Matrix	Number of Containers	Preservation: Cool	HCl	HNO_3	H_2SO_4	NaOH	Other	40 CFR Part 257 App III	40 CFR Part 257 App IV	MI Part 115 Metals	TSS	Low Level Hg	Dissolved Metals					Remarks
14	16	10/21/25	1615	MW-31	N	W	5	5		2				X	X	X	X	X	X					copy last event
15	17	10/22/25	910	MW-17	N	W	4	4		2				X	X	X	X	X						
16	18	10/22/25	1010	MW-01R	N	W	4	4		2				X	X	X	X	X						
17	19	10/22/25	1140	MW-12	N	W	4	4		2				X	X	X	X	X						
18	20	10/22/25	1350	MW-03	N	W	4	4		2				X	X	X	X	X						
19	21	10/22/25	1506	MW-04	N	W	4	4		2				X	X	X	X	X						
20	22	10/22/25	1610	MW-08	N	W	4	4		2				X	X	X	X	X						
21	23	10/22/25	1700	SW-07	N	W	4	4		2				X	X	X	X	X						
	24	10/22/25	1715	LLHG-TB-10222025	N	W	1	1										X						
22	24 25	10/22/25	1000	MW-07	N	W	4	4		2				X	X	X	X	X						

Possible Health Hazards?

Please Sign	Released By	Received By	Date	Time	Released By	Received By	Date	Time
NE 10/23/25 1)	[signature]	[signature]	10/23/25	1440	2)			
3)					4)			

In executing this Chain of Custody, the client acknowledges the terms as set forth at www.trace-labs.com/terms-of-agreement.

- [ ] Check this box if you would not like your samples analyzed if received outside of the conditions outlined in the Trace Sample Acceptance Policy at www.trace-labs.com/downloads.

Form 70-Z.1

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

CHAIN-OF-CUSTODY RECORD

TRACE ANALYTICAL LABORATORIES, INC.

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

Phone 231.773.5998
Fax 888.979.4469
www.trace-labs.com

Page 2 of 2

Trace ID No. NC 10/23/25 25J1746 25J1477

Report Results To:

Company Name: HDR
Report To: Molly Reeves / Andrew Byks
Mailing Address: 1000 Oakbrook Drive, Suite 200
City, State, Zip Code: Ann Arbor, MI 48104
Office Phone:
Cell Phone:
Email Address: andrew.byks@hdrinc.com

Bill To:

PO#: 10337805.006
Contact Name: Lara Zawaideh
Billing Address (if different):
City, State, Zip Code:
Phone Number:
Billing Email Address: lara.zawaideh@hdrinc.com

Trace Use:

Logged By: NC
Checked By:
Soil Volatiles Preserved (circle if applicable): MeOH Low Level Lab
Sampling Time:

Turnaround Requirements:

- [X] Standard, 5-10 Days
- [ ] 3 Day*
- [ ] 1 Day*

*Results provided end of business day, requires prior approval.

Matrix Key:

S = Soil / Solid, W = Water, SL = Sludge, OI = Oil, WI = Wipes, LW = Liquid Waste, A = Air, D = Drinking Water

Project Name: Grand Haven
Sampled By: AB / FDR

Trace No.	Date Collected	Time Collected	Client Sample ID	Metals Field Filtered (Y / N)	Matrix	Number of Containers	Cool	HCl	HNO_3	H_2SO_4	NaOH	Other	40 CFR Part 257 App III	40 CFR Part 257 App IV	MI Part 115 Metals	TSS	Low Level Hg	Dissolved Metals	Remarks
23	10/22/25	1115	MW-20	N	W	4	4		2				X	X	X	X	X		copy last
24	10/22/25	1415	MW-02	N	W	5	5		2				X	X	X	X	X	X	event
25	10/22/25	1555	MW-19	N	W	4	4		2				X	X	X	X	X		
26	10/22/25	1650	MW-18	N	W	4	4		2				X	X	X	X	X		
27	10/23/25	1050	MW-06	N	W	4	4		2				X	X	X	X	X		
28	10/23/25	940	MW-11	N	W	4	4		2				X	X	X	X	X		
29	10/23/25	1115	MW-27	N	W	4	4		2				X	X	X	X	X		
30	10/23/25	1225	MW-28	N	W	4	4		2				X	X	X	X	X		
—	10/23/25	1335	LLHG-TB-10232025	N	W	1	1										X		

AB

Possible Health Hazards?

Please Sign

	Released By	Received By	Date	Time		Released By	Received By	Date	Time
1)		[signature]	10/23/25	14:40	2)				
3)					4)				

In executing this Chain of Custody, the client acknowledges the terms as set forth at www.trace-labs.com/terms-of-agreement.

- [ ] Check this box if you would not like your samples analyzed if received outside of the conditions outlined in the Trace Sample Acceptance Policy at www.trace-labs.com/downloads.

Form 70-Z.1

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

TRACE
ANALYTICAL LABORATORIES, INC.

25J1477
HDR Michigan Inc.
Project Manager: Jon Mink

Sample Log In Checklist

Date: 10/22/25
Time: 9:24
Initials: SAB
Package Description: Cooler

	Original Observation	Corrected Temperature	IR-9 (CF: 0.0°C)	IR-12 (CF: 0.0°C)	IR-13 (CF: -0.5°C)	IR-14 (CF: -1.1°C)	SR1 (CF: -0.2°C)	SR2 (CF: -0.3°C)	Temp Blank	Client Sample
Package Temp °C	-0.2	-0.7			/					
Representative Sample Temp °C	11.5	11.0			/					/

Sample Receipt

Yes No
☑ ☐ Received on ice or other coolant
☑ ☐ Ice still present upon receipt
☐ ☑ Custody seals present
☐ Yes ☐ No Custody seals intact (if applicable)
☑ Trace Courier ☐ Client Drop-off ☐ UPS ☐ Fed Ex ☐ US Mail ☐ Other

Sample Condition

Yes No N/A
☑ ☐ ☐ All sample containers arrived unbroken and labeled
☑ ☐ ☐ Sufficient sample to run requested analyses
☑ ☐ ☐ Correct chemical preservative added to samples
☐ ☑ ☐ Samples preserved at Trace
☐ ☐ ☑ Chemical preservation verified, check EMD pH test strip used (if applicable)
☐ pH 0-2.5 (Lot: HC461264) ☐ pH 11.0-13.0 (Lot: HC022540) ☐ Other
☐ ☐ ☑ Air bubbles absent from VOAs (no bubble grater than 6mm)

Chain of Custody (COC)

Yes No
☑ ☐ All bottle labels agree with COC
☑ ☐ COC filled out properly
☑ ☐ COC signed by client

Notes:

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

TRACE
ANALYTICAL LABORATORIES, INC.

25J1477
HDR Michigan Inc.
Project Manager: Jon Mink

Sample Log In Checklist

	Original Observation	Corrected Temperature	IR-9 (CF: 0.0°C)	IR-12 (CF: 0.0°C)	IR-13 (CF: -0.5°C)	IR-14 (CF: -1.1°C)	SR1 (CF: -0.2°C)	SR2 (CF: -0.3°C)	Temp Blank	Client Sample
Date: 10/24/25										
Time: 9:00										
Initials: MJ										
Package Description: Cooler										
Package Temp °C	0.0	0.0								
Representative Sample Temp °C	2.1	2.1								

Sample Receipt

Yes	No	
[x]	[ ]	Received on ice or other coolant
[x]	[ ]	Ice still present upon receipt
[ ]	[x]	Custody seals present

[ ] Yes [ ] No Custody seals intact (if applicable)

[x] Trace Courier [ ] Client Drop-off [ ] UPS [ ] Fed Ex [ ] US Mail [ ] Other

Sample Condition

Yes	No	N/A	
[x]	[ ]	[ ]	All sample containers arrived unbroken and labeled
[x]	[ ]	[ ]	Sufficient sample to run requested analyses
[x]	[ ]	[ ]	Correct chemical preservative added to samples
[ ]	[x]	[ ]	Samples preserved at Trace
[x]	[ ]	[ ]	Chemical preservation verified, check EMD pH test strip used (if applicable)
[ ]	[ ]	[ ]	Air bubbles absent from VOAs (no bubble grater than 6mm)

[ ] pH 0-2.5 (Lot: HC461264) [ ] pH 11.0-13.0 (Lot: HC022540) [ ] Other

Chain of Custody (COC)

Yes	No	
[x]	[ ]	All bottle labels agree with COC
[x]	[ ]	COC filled out properly
[x]	[ ]	COC signed by client

Notes:

MWT-37
MW-11
MW-06
MW-08
SG-07
MW-20

Form 70-A.59
Effactive 8/20/25

TRACE Analytical Laboratories, Ir

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE
ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

25J1477
HDR Michigan Inc.
Project Manager: Jon Mink

Sample Log In Checklist

	Original Observation	Corrected Temperature	IR-9 (CF: 0.0°C)	IR-12 (CF: 0.0°C)	IR-13 (CF: -0.5°C)	IR-14 (CF: -1.1°C)	SR1 (CF: -0.2°C)	SR2 (CF: -0.3°C)	Temp Blank	Client Sample
Date: 10/24/25										
Time: 9:00										
Initials: MJ										
Package Description: Cooler										
Package Temp °C	0.0	0.0		✓						
Representative Sample Temp °C	2.1	2.1		✓						✓

Sample Receipt

Yes No
- [x] Yes [ ] No Received on ice or other coolant
- [x] Yes [ ] No Ice still present upon receipt
- [ ] Yes [x] No Custody seals present
- [x] Trace Courier [ ] Client Drop-off

[ ] Yes [ ] No Custody seals intact (if applicable)
[ ] UPS [ ] Fed Ex [ ] US Mail [ ] Other

Sample Condition

Yes No N/A
- [x] Yes [ ] No [ ] N/A All sample containers arrived unbroken and labeled
- [x] Yes [ ] No [ ] N/A Sufficient sample to run requested analyses
- [x] Yes [ ] No [ ] N/A Correct chemical preservative added to samples
- [ ] Yes [x] No [ ] N/A Samples preserved at Trace
- [x] Yes [ ] No [ ] N/A Chemical preservation verified, check EMD pH test strip used (if applicable)
  - [ ] pH 0-2.5 (Lot: HC461264) [ ] pH 11.0-13.0 (Lot: HC022540) [ ] Other
- [ ] Yes [ ] No [ ] N/A Air bubbles absent from VOAs (no bubble grater than 6mm)

Chain of Custody (COC)

Yes No
- [x] Yes [ ] No All bottle labels agree with COC
- [x] Yes [ ] No COC filled out properly
- [x] Yes [ ] No COC signed by client

Notes:

MW-07
MW-02
MW-31
MW-03
MW-01R
MW-17

Form 70-A.59
Effective 8/20/25

TRACE Analytical Laboratories, Inc

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673

TRACE ANALYTICAL LABORATORIES, INC.

231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

25J1477
HDR Michigan Inc.
Project Manager: Jon Mink

Sample Log In Checklist

	Original Observation	Corrected Temperature	IR-9 (CF: 0.0°C)	IR-12 (CF: 0.0°C)	IR-13 (CF: -0.5°C)	IR-14 (CF: -1.1°C)	SR1 (CF: -0.2°C)	SR2 (CF: -0.3°C)	Temp Blank	Client Sample
Date: 10/24/25										
Time: 9:00										
Initials: MJ										
Package Description: Cooler										
Package Temp °C	0.0	0.0		✓						
Representative Sample Temp °C	2.1	2.1								✓

Sample Receipt

Yes	No	
☒	☐	Received on ice or other coolant
☒	☐	Ice still present upon receipt
☐	☒	Custody seals present

☐ Yes ☐ No Custody seals intact (if applicable)

☒ Trace Courier ☐ Client Drop-off ☐ UPS ☐ Fed Ex ☐ US Mail ☐ Other

Sample Condition

Yes	No	N/A	
☒	☐	☐	All sample containers arrived unbroken and labeled
☒	☐	☐	Sufficient sample to run requested analyses
☒	☐	☐	Correct chemical preservative added to samples
☐	☒	☐	Samples preserved at Trace
☒	☐	☐	Chemical preservation verified, check EMD pH test strip used (if applicable)
☐	☐	☐	Air bubbles absent from VOAs (no bubble grater than 6mm)

☐ pH 0-2.5 (Lot: HC461264) ☐ pH 11.0-13.0 (Lot: HC022540) ☐ Other

Chain of Custody (COC)

Yes	No	
☒	☐	All bottle labels agree with COC
☒	☐	COC filled out properly
☒	☐	COC signed by client

Notes:

MW-12
MW-04
MW-28
MW-27
MW-19
MW-18
LLHg-TB-10222025

Form 70-A.59
Effective 8/20/25

TRACE Analytical Laboratories, Inc

Appendix F

Statistical Outputs

Table 1: Summary Statistics, Non-Detects Included

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit[a]	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	Skewness
11_2_3_105	MW-01R	Appendix III	Boron	mg/L	17	0	0%	2022-11-29 to 2025-10-22	Gamma; Lognormal; Normal	Normal	111	110	38.0	160	37.0	0.333	-0.374
11_2_3_107	MW-01R	Appendix III	Calcium	mg/L	17	0	0%	2022-11-29 to 2025-10-22	Gamma; Lognormal; Normal	Normal	229	210	130	400	77.5	0.339	0.728
11_2_3_108	MW-01R	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-11-29 to 2025-10-22	Normal	Normal	132	150	49.0	210	45.1	0.341	-0.556
11_2_3_112	MW-01R	Appendix III	Fluoride	mg/L	17	0	0%	2022-11-29 to 2025-10-22	Normal	Normal	12.2	14.0	4.80	17.0	3.63	0.297	-0.648
11_2_3_120	MW-01R	Appendix III	pH (field)	su	17	0	0%	2022-11-29 to 2025-10-22	Nonparametric	Nonparametric	7.62	7.73	6.02	7.81	0.419	0.0550	-3.89
11_2_3_124	MW-01R	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	2022-11-29 to 2025-10-22	Gamma; Lognormal; Normal	Gamma	409	350	8.80	980	304	0.744	0.394
11_2_3_126	MW-01R	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-11-29 to 2025-10-22	Gamma; Lognormal; Normal	Normal	2359	2400	2100	2600	123	0.0520	-0.230
11_2_4_101	MW-01R	Appendix IV	Antimony	mg/L	17	3	18%	2022-11-29 to 2025-10-22	Nonparametric	Nonparametric	0.000355	0.000250	0.000170	0.00120	0.000262	0.737	2.46
11_2_4_102	MW-01R	Appendix IV	Arsenic	mg/L	17	0	0%	2022-11-29 to 2025-10-22	Nonparametric	Nonparametric	0.00154	0.00130	0.000730	0.00410	0.000735	0.479	2.84
11_2_4_103	MW-01R	Appendix IV	Barium	mg/L	17	0	0%	2022-11-29 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.378	0.330	0.200	0.810	0.160	0.423	1.33
11_2_4_104	MW-01R	Appendix IV	Beryllium	mg/L	17	2	12%	2022-11-29 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.000207	0.000200	0.0000520	0.000360	0.0000983	0.475	0.0717
11_2_4_106	MW-01R	Appendix IV	Cadmium	mg/L	17	13	76%	2022-11-29 to 2025-10-22		Nonparametric	0.000139	0.0000750	0.0000320	0.000380	0.000114	0.821	1.54
11_2_4_109	MW-01R	Appendix IV	Chromium, Total	mg/L	17	0	0%	2022-11-29 to 2025-10-22	Lognormal	Lognormal	0.00341	0.00210	0.00130	0.0220	0.00487	1.43	3.91
11_2_4_110	MW-01R	Appendix IV	Cobalt	mg/L	17	0	0%	2022-11-29 to 2025-10-22	Nonparametric	Nonparametric	0.00160	0.00110	0.000640	0.00450	0.00109	0.677	1.97
11_2_4_113	MW-01R	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-11-29 to 2025-10-22	Normal	Normal	12.2	14.0	4.80	17.0	3.63	0.297	-0.648
11_2_4_115	MW-01R	Appendix IV	Lead	mg/L	17	2	12%	2022-11-29 to 2025-10-22	Gamma; Lognormal	Gamma	0.00115	0.000820	0.000350	0.00530	0.00114	0.992	3.34
11_2_4_116	MW-01R	Appendix IV	Lithium	mg/L	17	0	0%	2022-11-29 to 2025-10-22	Gamma; Lognormal; Normal	Normal	2.39	2.60	0.770	3.40	0.766	0.320	-0.542
11_2_4_117	MW-01R	Appendix IV	Mercury	ng/L	17	15	88%	2022-11-29 to 2025-10-22		Nonparametric	132	160	0.160	160	62.7	0.475	-1.87
11_2_4_118	MW-01R	Appendix IV	Molybdenum	mg/L	17	2	12%	2022-11-29 to 2025-10-22	Lognormal	Lognormal	0.00118	0.000740	0.000250	0.00560	0.00135	1.14	2.59
11_2_4_121	MW-01R	Appendix IV	Radium 226 and 228	pCi/L	17	11	65%	2022-11-29 to 2025-10-22	Gamma; Lognormal; Normal	Nonparametric	0.919	0.914	0.601	1.28	0.222	0.241	0.253
11_2_4_122	MW-01R	Appendix IV	Selenium	mg/L	17	0	0%	2022-11-29 to 2025-10-22	Lognormal	Lognormal	0.000711	0.000660	0.000300	0.00180	0.000318	0.448	2.65
11_2_4_125	MW-01R	Appendix IV	Thallium	mg/L	17	17	100%	2022-11-29 to 2025-10-22		Nonparametric	0.000236	0.000380	0.0000750	0.000380	0.000157	0.664	-0.130
11_2_5_111	MW-01R	Part 115	Copper	mg/L	17	6	35%	2022-11-29 to 2025-10-22	Lognormal	Lognormal	0.000381	0.000290	0.000200	0.00130	0.000304	0.799	2.46
11_2_5_114	MW-01R	Part 115	Iron	mg/L	17	0	0%	2022-11-29 to 2025-10-22	Gamma; Lognormal	Gamma	0.448	0.480	0.0590	1.10	0.352	0.787	0.479
11_2_5_119	MW-01R	Part 115	Nickel	mg/L	17	0	0%	2022-11-29 to 2025-10-22	Nonparametric	Nonparametric	0.00338	0.00200	0.00120	0.0220	0.00489	1.45	3.89
11_2_5_123	MW-01R	Part 115	Silver	mg/L	17	17	100%	2022-11-29 to 2025-10-22		Nonparametric	0.0000971	0.0000500	0.0000500	0.000250	0.0000874	0.901	1.37
11_2_5_128	MW-01R	Part 115	Vanadium	mg/L	17	2	12%	2022-11-29 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.00211	0.00180	0.000620	0.00460	0.00129	0.612	0.623
11_2_5_129	MW-01R	Part 115	Zinc	mg/L	17	3	18%	2022-11-29 to 2025-10-22	Nonparametric	Nonparametric	0.00799	0.00160	0.00120	0.0330	0.0106	1.32	1.46
12_2_3_105	MW-02	Appendix III	Boron	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Lognormal	Lognormal	106	100	59.0	170	28.3	0.266	1.12
12_2_3_107	MW-02	Appendix III	Calcium	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	199	200	170	240	17.6	0.0887	0.511
12_2_3_108	MW-02	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Nonparametric	Nonparametric	141	140	67.0	160	20.6	0.146	-3.13
12_2_3_112	MW-02	Appendix III	Fluoride	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Nonparametric	Nonparametric	10.3	10.0	4.50	16.0	2.39	0.233	0.152
12_2_3_120	MW-02	Appendix III	pH (field)	su	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	7.20	7.18	7.06	7.45	0.105	0.0145	0.881
12_2_3_124	MW-02	Appendix III	Sulfate (as SO4)	mg/L	17	10	59%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Nonparametric	1.45	1.10	0.410	5.50	1.28	0.883	2.06
12_2_3_126	MW-02	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	1935	1900	1600	2600	240	0.124	1.22
12_2_4_101	MW-02	Appendix IV	Antimony	mg/L	17	3	18%	2022-11-28 to 2025-10-22	Gamma; Lognormal	Gamma	0.000245	0.000220	0.000100	0.000630	0.000133	0.545	2.0
12_2_4_102	MW-02	Appendix IV	Arsenic	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Normal	Normal	0.00742	0.00760	0.000440	0.0120	0.00240	0.324	-1.20
12_2_4_103	MW-02	Appendix IV	Barium	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.468	0.470	0.320	0.730	0.0975	0.208	0.814
12_2_4_104	MW-02	Appendix IV	Beryllium	mg/L	17	1	6%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.000262	0.000260	0.0000520	0.000520	0.000122	0.464	0.419
12_2_4_106	MW-02	Appendix IV	Cadmium	mg/L	17	12	71%	2022-11-28 to 2025-10-22	Lognormal	Nonparametric	0.000121	0.0000750	0.0000320	0.000490	0.000124	1.02	2.40
12_2_4_109	MW-02	Appendix IV	Chromium, Total	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Normal	Normal	0.0418	0.0450	0.000380	0.0680	0.0184	0.441	-0.471
12_2_4_110	MW-02	Appendix IV	Cobalt	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Normal	Normal	0.00621	0.00630	0.000240	0.00970	0.00248	0.399	-0.713

(Table continues on next page)

[a] Non-detects are excluded from goodness-of-fit tests.

Table 1: Summary Statistics, Non-Detects Included *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit[a]	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	Skewness
12_2_4_113	MW-02	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Nonparametric	Nonparametric	10.3	10.0	4.50	16.0	2.39	0.233	0.152
12_2_4_115	MW-02	Appendix IV	Lead	mg/L	17	1	6%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.00277	0.00230	0.000100	0.00600	0.00164	0.592	0.632
12_2_4_116	MW-02	Appendix IV	Lithium	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	1.47	1.50	0.870	2.30	0.325	0.221	0.940
12_2_4_117	MW-02	Appendix IV	Mercury	ng/L	17	14	82%	2022-11-28 to 2025-10-22		Nonparametric	132	160	1.60	160	61.7	0.466	-1.87
12_2_4_118	MW-02	Appendix IV	Molybdenum	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Lognormal	Lognormal	0.00734	0.00620	0.00380	0.0160	0.00344	0.469	1.38
12_2_4_121	MW-02	Appendix IV	Radium 226 and 228	pCi/L	16	5	31%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	1.60	1.40	0.686	3.35	0.769	0.480	0.932
12_2_4_122	MW-02	Appendix IV	Selenium	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.00129	0.00120	0.000500	0.00230	0.000449	0.347	0.274
12_2_4_125	MW-02	Appendix IV	Thallium	mg/L	17	16	94%	2022-11-28 to 2025-10-22		Nonparametric	0.000233	0.0000750	0.0000750	0.000620	0.000181	0.779	0.538
12_2_5_111	MW-02	Part 115	Copper	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.00203	0.00200	0.000230	0.00440	0.00104	0.513	0.573
12_2_5_114	MW-02	Part 115	Iron	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	23.6	23.0	18.0	31.0	3.97	0.168	0.360
12_2_5_119	MW-02	Part 115	Nickel	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Normal	Normal	0.0250	0.0230	0.000930	0.0530	0.0127	0.507	0.545
12_2_5_123	MW-02	Part 115	Silver	mg/L	17	17	100%	2022-11-28 to 2025-10-22		Nonparametric	0.0000853	0.0000500	0.0000500	0.000250	0.0000786	0.921	1.87
12_2_5_128	MW-02	Part 115	Vanadium	mg/L	17	1	6%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.00395	0.00360	0.000620	0.00690	0.00188	0.476	-0.114
12_2_5_129	MW-02	Part 115	Zinc	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Nonparametric	Nonparametric	0.00826	0.00330	0.00160	0.0360	0.0106	1.28	1.70
13_2_3_105	MW-03	Appendix III	Boron	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	4.11	4.10	3.30	4.50	0.312	0.0759	-1.05
13_2_3_107	MW-03	Appendix III	Calcium	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	362	360	290	430	35.6	0.0983	0.0540
13_2_3_108	MW-03	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	155	140	94.0	300	53.6	0.345	1.38
13_2_3_112	MW-03	Appendix III	Fluoride	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Nonparametric	Nonparametric	0.693	0.620	0.520	1.60	0.251	0.362	3.30
13_2_3_120	MW-03	Appendix III	pH (field)	su	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	7.36	7.33	7.20	7.59	0.0954	0.0130	0.658
13_2_3_124	MW-03	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	336	310	34.0	760	219	0.652	0.338
13_2_3_126	MW-03	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Nonparametric	Nonparametric	2024	2000	1700	2300	259	0.128	-0.0974
13_2_4_101	MW-03	Appendix IV	Antimony	mg/L	17	11	65%	2022-11-28 to 2025-10-22	Gamma; Lognormal	Nonparametric	0.000205	0.000100	0.0000870	0.000500	0.000167	0.814	1.22
13_2_4_102	MW-03	Appendix IV	Arsenic	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.000924	0.000910	0.000490	0.00140	0.000270	0.292	-0.0423
13_2_4_103	MW-03	Appendix IV	Barium	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.358	0.370	0.130	0.500	0.0837	0.234	-1.14
13_2_4_104	MW-03	Appendix IV	Beryllium	mg/L	17	11	65%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Nonparametric	0.0000793	0.0000520	0.0000520	0.000260	0.0000597	0.753	2.33
13_2_4_106	MW-03	Appendix IV	Cadmium	mg/L	17	16	94%	2022-11-28 to 2025-10-22		Nonparametric	0.000115	0.0000750	0.0000320	0.000380	0.000106	0.918	2.08
13_2_4_109	MW-03	Appendix IV	Chromium, Total	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.00452	0.00450	0.00300	0.00730	0.00119	0.264	0.787
13_2_4_110	MW-03	Appendix IV	Cobalt	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.000768	0.000700	0.000370	0.00130	0.000307	0.399	0.613
13_2_4_113	MW-03	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Nonparametric	Nonparametric	0.693	0.620	0.520	1.60	0.251	0.362	3.30
13_2_4_115	MW-03	Appendix IV	Lead	mg/L	17	16	94%	2022-11-28 to 2025-10-22		Nonparametric	0.000439	0.000500	0.000100	0.00110	0.000358	0.816	0.991
13_2_4_116	MW-03	Appendix IV	Lithium	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal	Gamma	0.0378	0.0350	0.0290	0.0650	0.00919	0.243	1.82
13_2_4_117	MW-03	Appendix IV	Mercury	ng/L	17	14	82%	2022-11-28 to 2025-10-22		Nonparametric	137	160	0.160	240	67.7	0.496	-1.43
13_2_4_118	MW-03	Appendix IV	Molybdenum	mg/L	17	13	76%	2022-11-28 to 2025-10-22		Nonparametric	0.000750	0.000250	0.000250	0.00310	0.000922	1.23	2.25
13_2_4_121	MW-03	Appendix IV	Radium 226 and 228	pCi/L	16	2	12%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	1.08	0.978	0.540	1.92	0.393	0.364	0.759
13_2_4_122	MW-03	Appendix IV	Selenium	mg/L	17	3	18%	2022-11-28 to 2025-10-22	Gamma; Normal	Normal	0.000431	0.000400	0.000170	0.00110	0.000207	0.480	2.14
13_2_4_125	MW-03	Appendix IV	Thallium	mg/L	17	16	94%	2022-11-28 to 2025-10-22		Nonparametric	0.000243	0.000380	0.0000750	0.000380	0.000152	0.627	-0.199
13_2_5_111	MW-03	Part 115	Copper	mg/L	17	8	47%	2022-11-28 to 2025-10-22	Nonparametric	Nonparametric	0.000396	0.000240	0.000200	0.00100	0.000316	0.797	1.37
13_2_5_114	MW-03	Part 115	Iron	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal	Gamma	1.29	0.630	0.0980	5.90	1.55	1.20	2.01
13_2_5_119	MW-03	Part 115	Nickel	mg/L	17	1	6%	2022-11-28 to 2025-10-22	Nonparametric	Nonparametric	0.00227	0.00140	0.000850	0.0150	0.00333	1.46	3.93
13_2_5_123	MW-03	Part 115	Silver	mg/L	17	17	100%	2022-11-28 to 2025-10-22		Nonparametric	0.0000971	0.0000500	0.0000500	0.000250	0.0000874	0.901	1.37
13_2_5_128	MW-03	Part 115	Vanadium	mg/L	17	9	53%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Nonparametric	0.00119	0.00120	0.000620	0.00310	0.000704	0.590	1.38
13_2_5_129	MW-03	Part 115	Zinc	mg/L	17	9	53%	2022-11-28 to 2025-10-22	Gamma; Lognormal	Nonparametric	0.00525	0.00120	0.000590	0.0190	0.00691	1.32	1.38

(Table continues on next page)

[a] Non-detects are excluded from goodness-of-fit tests.

Table 1: Summary Statistics, Non-Detects Included *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit[a]	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	Skewness
14_2_3_105	MW-04	Appendix III	Boron	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	3.97	4.00	2.60	4.70	0.484	0.122	-1.13
14_2_3_107	MW-04	Appendix III	Calcium	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	370	360	250	560	63.8	0.173	1.39
14_2_3_108	MW-04	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	149	150	21.0	300	70.6	0.474	0.140
14_2_3_112	MW-04	Appendix III	Fluoride	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Lognormal	Lognormal	1.40	1.40	0.760	2.30	0.329	0.235	1.13
14_2_3_120	MW-04	Appendix III	pH (field)	su	17	0	0%	2022-11-28 to 2025-10-22	Nonparametric	Nonparametric	7.32	7.34	6.78	7.66	0.177	0.0242	-1.44
14_2_3_124	MW-04	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Normal	Normal	617	630	1.80	1100	229	0.371	-0.758
14_2_3_126	MW-04	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	1882	1900	1200	2200	243	0.129	-1.25
14_2_4_101	MW-04	Appendix IV	Antimony	mg/L	17	11	65%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Nonparametric	0.000234	0.000120	0.0000500	0.000500	0.000183	0.783	0.572
14_2_4_102	MW-04	Appendix IV	Arsenic	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal	Gamma	0.00107	0.00100	0.000470	0.00280	0.000517	0.481	2.40
14_2_4_103	MW-04	Appendix IV	Barium	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Nonparametric	Nonparametric	0.134	0.120	0.0250	0.460	0.0894	0.665	3.27
14_2_4_104	MW-04	Appendix IV	Beryllium	mg/L	17	15	88%	2022-11-28 to 2025-10-22		Nonparametric	0.0000529	0.0000520	0.0000520	0.0000660	0.00000340	0.0642	3.99
14_2_4_106	MW-04	Appendix IV	Cadmium	mg/L	17	17	100%	2022-11-28 to 2025-10-22		Nonparametric	0.000113	0.0000750	0.0000320	0.000380	0.000106	0.939	2.12
14_2_4_109	MW-04	Appendix IV	Chromium, Total	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.00364	0.00380	0.00100	0.00600	0.00131	0.360	-0.149
14_2_4_110	MW-04	Appendix IV	Cobalt	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Lognormal	Lognormal	0.000551	0.000350	0.000110	0.00250	0.000546	0.991	3.14
14_2_4_113	MW-04	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Lognormal	Lognormal	1.40	1.40	0.760	2.30	0.329	0.235	1.13
14_2_4_115	MW-04	Appendix IV	Lead	mg/L	17	15	88%	2022-11-28 to 2025-10-22		Nonparametric	0.000393	0.000260	0.000100	0.00110	0.000314	0.798	1.34
14_2_4_116	MW-04	Appendix IV	Lithium	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.0606	0.0610	0.0310	0.0740	0.0117	0.192	-0.938
14_2_4_117	MW-04	Appendix IV	Mercury	ng/L	17	14	82%	2022-11-28 to 2025-10-22		Nonparametric	132	160	0.210	160	62.4	0.473	-1.87
14_2_4_118	MW-04	Appendix IV	Molybdenum	mg/L	17	2	12%	2022-11-28 to 2025-10-22	Nonparametric	Nonparametric	0.00228	0.00120	0.000370	0.0110	0.00316	1.39	2.40
14_2_4_121	MW-04	Appendix IV	Radium 226 and 228	pCi/L	17	6	35%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	1.01	1.06	0.560	1.55	0.338	0.335	0.169
14_2_4_122	MW-04	Appendix IV	Selenium	mg/L	17	5	29%	2022-11-28 to 2025-10-22	Gamma; Lognormal	Gamma	0.000301	0.000220	0.000100	0.00120	0.000247	0.819	3.36
14_2_4_125	MW-04	Appendix IV	Thallium	mg/L	17	17	100%	2022-11-28 to 2025-10-22		Nonparametric	0.000219	0.0000750	0.0000750	0.000380	0.000157	0.718	0.130
14_2_5_111	MW-04	Part 115	Copper	mg/L	17	13	76%	2022-11-28 to 2025-10-22		Nonparametric	0.000311	0.000200	0.000200	0.00110	0.000279	0.898	2.57
14_2_5_114	MW-04	Part 115	Iron	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Nonparametric	Nonparametric	5.02	5.60	0.190	6.80	1.94	0.387	-1.73
14_2_5_119	MW-04	Part 115	Nickel	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Normal	Normal	0.0137	0.0130	0.00190	0.0220	0.00549	0.399	-0.814
14_2_5_123	MW-04	Part 115	Silver	mg/L	17	17	100%	2022-11-28 to 2025-10-22		Nonparametric	0.0000971	0.0000500	0.0000500	0.000250	0.0000874	0.901	1.37
14_2_5_128	MW-04	Part 115	Vanadium	mg/L	17	10	59%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Nonparametric	0.000757	0.000620	0.000620	0.00120	0.000205	0.271	1.25
14_2_5_129	MW-04	Part 115	Zinc	mg/L	17	10	59%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Nonparametric	0.00224	0.00120	0.00120	0.00590	0.00170	0.762	1.36
16_1_3_105	MW-06	Appendix III	Boron	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	9.44	9.70	6.40	12.0	1.72	0.182	-0.248
16_1_3_107	MW-06	Appendix III	Calcium	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	247	240	200	310	34.2	0.139	0.644
16_1_3_108	MW-06	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	68.9	71.0	13.0	160	37.4	0.542	0.721
16_1_3_112	MW-06	Appendix III	Fluoride	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	1.22	1.20	0.980	1.60	0.200	0.164	0.575
16_1_3_120	MW-06	Appendix III	pH (field)	su	17	0	0%	2022-11-29 to 2025-10-23	Nonparametric	Nonparametric	7.24	7.27	6.42	7.49	0.229	0.0317	-3.13
16_1_3_124	MW-06	Appendix III	Sulfate (as SO4)	mg/L	17	2	12%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	10.4	9.40	0.410	30.0	8.23	0.793	0.773
16_1_3_126	MW-06	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-11-29 to 2025-10-23		Nonparametric	1200	1200	1100	1300	61.2	0.0510	0
16_1_4_101	MW-06	Appendix IV	Antimony	mg/L	17	15	88%	2022-11-29 to 2025-10-23		Nonparametric	0.000164	0.000100	0.0000500	0.000500	0.000147	0.898	1.73
16_1_4_102	MW-06	Appendix IV	Arsenic	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	0.000691	0.000650	0.000470	0.00100	0.000177	0.257	0.682
16_1_4_103	MW-06	Appendix IV	Barium	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Normal	Normal	1.42	1.40	0.990	1.70	0.158	0.111	-0.946
16_1_4_104	MW-06	Appendix IV	Beryllium	mg/L	17	16	94%	2022-11-29 to 2025-10-23		Nonparametric	0.0000521	0.0000520	0.0000520	0.0000540	0.000000485	0.00931	4.12
16_1_4_106	MW-06	Appendix IV	Cadmium	mg/L	17	17	100%	2022-11-29 to 2025-10-23		Nonparametric	0.000113	0.0000750	0.0000320	0.000380	0.000106	0.939	2.12
16_1_4_109	MW-06	Appendix IV	Chromium, Total	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Gamma; Lognormal	Gamma	0.00160	0.00140	0.000950	0.00300	0.000535	0.335	1.26
16_1_4_110	MW-06	Appendix IV	Cobalt	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	0.000501	0.000460	0.000330	0.000800	0.000139	0.278	0.933

(Table continues on next page)

[a] Non-detects are excluded from goodness-of-fit tests.

Table 1: Summary Statistics, Non-Detects Included *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit[a]	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	Skewness
16_1_4_113	MW-06	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	1.22	1.20	0.980	1.60	0.200	0.164	0.575
16_1_4_115	MW-06	Appendix IV	Lead	mg/L	17	10	59%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Nonparametric	0.000324	0.000220	0.000100	0.00110	0.000319	0.986	1.91
16_1_4_116	MW-06	Appendix IV	Lithium	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	0.176	0.180	0.110	0.230	0.0381	0.217	-0.163
16_1_4_117	MW-06	Appendix IV	Mercury	ng/L	17	14	82%	2022-11-29 to 2025-10-23		Nonparametric	132	160	0.530	160	62.6	0.475	-1.87
16_1_4_118	MW-06	Appendix IV	Molybdenum	mg/L	17	10	59%	2022-11-29 to 2025-10-23	Nonparametric	Nonparametric	0.000541	0.000280	0.000250	0.00310	0.000679	1.25	3.74
16_1_4_121	MW-06	Appendix IV	Radium 226 and 228	pCi/L	17	3	18%	2022-11-29 to 2025-10-23	Gamma; Lognormal	Gamma	0.892	0.824	0.460	1.91	0.358	0.402	1.73
16_1_4_122	MW-06	Appendix IV	Selenium	mg/L	17	5	29%	2022-11-29 to 2025-10-23	Nonparametric	Nonparametric	0.000231	0.000220	0.000160	0.000470	0.0000667	0.289	3.17
16_1_4_125	MW-06	Appendix IV	Thallium	mg/L	17	17	100%	2022-11-29 to 2025-10-23		Nonparametric	0.000147	0.0000750	0.0000750	0.000380	0.000133	0.908	1.37
16_1_5_111	MW-06	Part 115	Copper	mg/L	17	13	76%	2022-11-29 to 2025-10-23		Nonparametric	0.000224	0.000200	0.000200	0.000380	0.0000500	0.224	2.35
16_1_5_114	MW-06	Part 115	Iron	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	16.5	17.0	4.60	31.0	6.95	0.421	0.253
16_1_5_119	MW-06	Part 115	Nickel	mg/L	17	6	35%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	0.000865	0.000900	0.000650	0.00120	0.000193	0.223	0.201
16_1_5_123	MW-06	Part 115	Silver	mg/L	17	17	100%	2022-11-29 to 2025-10-23		Nonparametric	0.0000971	0.0000500	0.0000500	0.000250	0.0000874	0.900	1.37
16_1_5_128	MW-06	Part 115	Vanadium	mg/L	17	14	82%	2022-11-29 to 2025-10-23		Nonparametric	0.000622	0.000620	0.000540	0.000700	0.0000291	0.0467	-0.230
16_1_5_129	MW-06	Part 115	Zinc	mg/L	17	2	12%	2022-11-29 to 2025-10-23	Nonparametric	Nonparametric	0.0184	0.00180	0.00120	0.0940	0.0322	1.75	1.58
17_1_3_105	MW-07	Appendix III	Boron	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	11.2	11.0	8.80	13.0	1.10	0.0986	-0.175
17_1_3_107	MW-07	Appendix III	Calcium	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Normal	Normal	146	150	120	160	12.2	0.0834	-0.620
17_1_3_108	MW-07	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Nonparametric	Nonparametric	14.6	14.0	13.0	17.0	1.28	0.0876	0.695
17_1_3_112	MW-07	Appendix III	Fluoride	mg/L	17	4	24%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.112	0.110	0.0550	0.220	0.0461	0.410	0.838
17_1_3_120	MW-07	Appendix III	pH (field)	su	17	0	0%	2022-11-30 to 2025-10-22	Nonparametric	Nonparametric	6.89	6.88	6.58	7.05	0.120	0.0174	-1.25
17_1_3_124	MW-07	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	26.0	28.0	15.0	37.0	7.73	0.297	-0.128
17_1_3_126	MW-07	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Normal	Normal	656	670	470	740	74.8	0.114	-1.46
17_1_4_101	MW-07	Appendix IV	Antimony	mg/L	17	16	94%	2022-11-30 to 2025-10-22		Nonparametric	0.0000865	0.000100	0.0000500	0.000100	0.0000220	0.254	-1.12
17_1_4_102	MW-07	Appendix IV	Arsenic	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.000208	0.000210	0.000130	0.000290	0.0000356	0.172	0.0212
17_1_4_103	MW-07	Appendix IV	Barium	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.355	0.350	0.250	0.430	0.0426	0.120	-0.510
17_1_4_104	MW-07	Appendix IV	Beryllium	mg/L	17	13	76%	2022-11-30 to 2025-10-22		Nonparametric	0.0000538	0.0000520	0.0000520	0.0000660	0.00000404	0.0751	2.50
17_1_4_106	MW-07	Appendix IV	Cadmium	mg/L	17	17	100%	2022-11-30 to 2025-10-22		Nonparametric	0.0000624	0.0000750	0.0000320	0.0000750	0.0000202	0.324	-0.994
17_1_4_109	MW-07	Appendix IV	Chromium, Total	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal	Gamma	0.000365	0.000340	0.000280	0.000740	0.000107	0.292	2.98
17_1_4_110	MW-07	Appendix IV	Cobalt	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.000925	0.000970	0.000710	0.00110	0.000112	0.121	-0.365
17_1_4_113	MW-07	Appendix IV	Fluoride (App IV)	mg/L	17	4	24%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.112	0.110	0.0550	0.220	0.0461	0.410	0.838
17_1_4_115	MW-07	Appendix IV	Lead	mg/L	17	17	100%	2022-11-30 to 2025-10-22		Nonparametric	0.000135	0.000100	0.000100	0.000220	0.0000564	0.417	0.994
17_1_4_116	MW-07	Appendix IV	Lithium	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.00605	0.00570	0.00310	0.0100	0.00154	0.255	0.799
17_1_4_117	MW-07	Appendix IV	Mercury	ng/L	17	16	94%	2022-11-30 to 2025-10-22		Nonparametric	132	160	0.160	160	62.8	0.476	-1.87
17_1_4_118	MW-07	Appendix IV	Molybdenum	mg/L	17	17	100%	2022-11-30 to 2025-10-22		Nonparametric	0.000359	0.000250	0.000250	0.000620	0.000174	0.484	0.994
17_1_4_121	MW-07	Appendix IV	Radium 226 and 228	pCi/L	17	2	12%	2022-11-30 to 2025-10-22	Gamma; Lognormal	Gamma	0.978	0.928	0.570	2.36	0.405	0.414	2.67
17_1_4_122	MW-07	Appendix IV	Selenium	mg/L	17	9	53%	2022-11-30 to 2025-10-22	Gamma; Lognormal	Nonparametric	0.000152	0.000120	0.000100	0.000230	0.0000554	0.364	0.447
17_1_4_125	MW-07	Appendix IV	Thallium	mg/L	17	17	100%	2022-11-30 to 2025-10-22		Nonparametric	0.0000750	0.0000750	0.0000750	0.0000750	0	0	NA
17_1_5_111	MW-07	Part 115	Copper	mg/L	17	13	76%	2022-11-30 to 2025-10-22		Nonparametric	0.000232	0.000200	0.000200	0.000620	0.000102	0.439	3.90
17_1_5_114	MW-07	Part 115	Iron	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	16.4	16.0	13.0	21.0	2.32	0.142	0.298
17_1_5_119	MW-07	Part 115	Nickel	mg/L	17	14	82%	2022-11-30 to 2025-10-22		Nonparametric	0.000601	0.000650	0.000160	0.000710	0.000152	0.253	-2.60
17_1_5_123	MW-07	Part 115	Silver	mg/L	17	17	100%	2022-11-30 to 2025-10-22		Nonparametric	0.0000500	0.0000500	0.0000500	0.0000500	0	0	NA
17_1_5_128	MW-07	Part 115	Vanadium	mg/L	17	12	71%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Nonparametric	0.000679	0.000620	0.000620	0.000950	0.000102	0.150	1.61
17_1_5_129	MW-07	Part 115	Zinc	mg/L	17	10	59%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Nonparametric	0.00568	0.00120	0.000750	0.0250	0.00830	1.46	1.57

(Table continues on next page)

[a] Non-detects are excluded from goodness-of-fit tests.

Table 1: Summary Statistics, Non-Detects Included *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit[a]	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	Skewness
18_1_3_105	MW-08	Appendix III	Boron	mg/L	17	0	0%	2022-12-01 to 2025-10-22	Normal	Normal	6.19	7.00	2.50	9.30	1.89	0.305	-0.430
18_1_3_107	MW-08	Appendix III	Calcium	mg/L	17	0	0%	2022-12-01 to 2025-10-22	Nonparametric	Nonparametric	137	130	120	160	14.0	0.102	0.288
18_1_3_108	MW-08	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-12-01 to 2025-10-22	Nonparametric	Nonparametric	39.6	30.0	17.0	110	27.8	0.702	1.86
18_1_3_112	MW-08	Appendix III	Fluoride	mg/L	17	0	0%	2022-12-01 to 2025-10-22	Normal	Normal	0.924	1.00	0.400	1.30	0.251	0.271	-0.803
18_1_3_120	MW-08	Appendix III	pH (field)	su	17	0	0%	2022-12-01 to 2025-10-22	Nonparametric	Nonparametric	7.18	7.24	6.21	7.51	0.277	0.0386	-2.85
18_1_3_124	MW-08	Appendix III	Sulfate (as SO4)	mg/L	17	4	24%	2022-12-01 to 2025-10-22	Gamma; Lognormal; Normal	Gamma	15.0	5.60	0.410	65.0	18.9	1.26	1.53
18_1_3_126	MW-08	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-12-01 to 2025-10-22	Gamma; Lognormal; Normal	Normal	566	550	440	780	81.9	0.145	1.00
18_1_4_101	MW-08	Appendix IV	Antimony	mg/L	17	9	53%	2022-12-01 to 2025-10-22	Gamma; Lognormal; Normal	Nonparametric	0.000122	0.000100	0.0000540	0.000280	0.0000524	0.431	2.04
18_1_4_102	MW-08	Appendix IV	Arsenic	mg/L	17	0	0%	2022-12-01 to 2025-10-22	Gamma; Normal	Normal	0.0369	0.0410	0.00690	0.0570	0.0141	0.383	-0.826
18_1_4_103	MW-08	Appendix IV	Barium	mg/L	17	0	0%	2022-12-01 to 2025-10-22	Gamma; Lognormal; Normal	Normal	1.21	1.20	0.750	1.50	0.210	0.174	-0.531
18_1_4_104	MW-08	Appendix IV	Beryllium	mg/L	17	16	94%	2022-12-01 to 2025-10-22		Nonparametric	0.0000560	0.0000520	0.0000520	0.000120	0.0000165	0.295	4.12
18_1_4_106	MW-08	Appendix IV	Cadmium	mg/L	17	16	94%	2022-12-01 to 2025-10-22		Nonparametric	0.0000644	0.0000750	0.0000320	0.000110	0.0000231	0.359	-0.357
18_1_4_109	MW-08	Appendix IV	Chromium, Total	mg/L	17	0	0%	2022-12-01 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.000794	0.000710	0.000430	0.00150	0.000265	0.334	1.17
18_1_4_110	MW-08	Appendix IV	Cobalt	mg/L	17	0	0%	2022-12-01 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.000515	0.000510	0.000260	0.000980	0.000190	0.370	0.830
18_1_4_113	MW-08	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-12-01 to 2025-10-22	Normal	Normal	0.924	1.00	0.400	1.30	0.251	0.271	-0.803
18_1_4_115	MW-08	Appendix IV	Lead	mg/L	17	11	65%	2022-12-01 to 2025-10-22	Gamma; Lognormal	Nonparametric	0.000345	0.000100	0.000100	0.00290	0.000683	1.98	3.70
18_1_4_116	MW-08	Appendix IV	Lithium	mg/L	17	0	0%	2022-12-01 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.0993	0.0980	0.0630	0.140	0.0248	0.249	0.202
18_1_4_117	MW-08	Appendix IV	Mercury	ng/L	17	16	94%	2022-12-01 to 2025-10-22		Nonparametric	132	160	0.160	160	62.7	0.476	-1.87
18_1_4_118	MW-08	Appendix IV	Molybdenum	mg/L	17	1	6%	2022-12-01 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.00137	0.00150	0.000250	0.00290	0.000877	0.642	0.306
18_1_4_121	MW-08	Appendix IV	Radium 226 and 228	pCi/L	17	4	24%	2022-12-01 to 2025-10-22	Gamma; Lognormal; Normal	Normal	1.01	0.952	0.550	2.10	0.403	0.398	1.40
18_1_4_122	MW-08	Appendix IV	Selenium	mg/L	17	6	35%	2022-12-01 to 2025-10-22	Lognormal	Lognormal	0.000182	0.000160	0.000100	0.000340	0.0000673	0.369	0.956
18_1_4_125	MW-08	Appendix IV	Thallium	mg/L	17	16	94%	2022-12-01 to 2025-10-22		Nonparametric	0.0000782	0.0000750	0.0000750	0.000130	0.0000133	0.171	4.12
18_1_5_111	MW-08	Part 115	Copper	mg/L	17	6	35%	2022-12-01 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.000336	0.000280	0.000200	0.000800	0.000175	0.520	1.53
18_1_5_114	MW-08	Part 115	Iron	mg/L	17	0	0%	2022-12-01 to 2025-10-22	Gamma; Lognormal; Normal	Normal	18.9	19.0	9.50	32.0	6.08	0.322	0.577
18_1_5_119	MW-08	Part 115	Nickel	mg/L	17	0	0%	2022-12-01 to 2025-10-22	Nonparametric	Nonparametric	0.00275	0.00130	0.000850	0.0130	0.00298	1.08	2.83
18_1_5_123	MW-08	Part 115	Silver	mg/L	17	17	100%	2022-12-01 to 2025-10-22		Nonparametric	0.0000500	0.0000500	0.0000500	0.0000500	0	0	NA
18_1_5_128	MW-08	Part 115	Vanadium	mg/L	17	14	82%	2022-12-01 to 2025-10-22		Nonparametric	0.000599	0.000620	0.000290	0.000910	0.000134	0.224	-0.760
18_1_5_129	MW-08	Part 115	Zinc	mg/L	17	3	18%	2022-12-01 to 2025-10-22	Nonparametric	Nonparametric	0.0260	0.00170	0.00120	0.160	0.0490	1.89	1.97
19_2_3_105	MW-09	Appendix III	Boron	mg/L	17	0	0%	2022-11-28 to 2025-10-20	Gamma; Lognormal; Normal	Normal	5.72	5.80	4.90	6.90	0.552	0.0964	0.178
19_2_3_107	MW-09	Appendix III	Calcium	mg/L	17	0	0%	2022-11-28 to 2025-10-20	Gamma; Lognormal; Normal	Normal	394	410	230	510	87.7	0.223	-0.314
19_2_3_108	MW-09	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-11-28 to 2025-10-20	Lognormal	Lognormal	24.9	18.0	11.0	67.0	16.8	0.677	1.51
19_2_3_112	MW-09	Appendix III	Fluoride	mg/L	17	0	0%	2022-11-28 to 2025-10-20	Gamma; Lognormal; Normal	Normal	2.53	2.50	2.10	2.90	0.266	0.105	-0.111
19_2_3_120	MW-09	Appendix III	pH (field)	su	17	0	0%	2022-11-28 to 2025-10-20	Gamma; Lognormal; Normal	Normal	7.19	7.20	6.88	7.52	0.140	0.0195	0.137
19_2_3_124	MW-09	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	2022-11-28 to 2025-10-20	Gamma; Normal	Normal	513	580	83.0	930	256	0.500	-0.315
19_2_3_126	MW-09	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-11-28 to 2025-10-20	Gamma; Lognormal; Normal	Normal	1488	1600	740	2000	355	0.239	-0.576
19_2_4_101	MW-09	Appendix IV	Antimony	mg/L	17	12	71%	2022-11-28 to 2025-10-20	Gamma; Lognormal; Normal	Nonparametric	0.000167	0.000100	0.0000500	0.000500	0.000145	0.871	1.78
19_2_4_102	MW-09	Appendix IV	Arsenic	mg/L	17	0	0%	2022-11-28 to 2025-10-20	Nonparametric	Nonparametric	0.00216	0.00230	0.00130	0.00300	0.000516	0.239	-0.554
19_2_4_103	MW-09	Appendix IV	Barium	mg/L	17	0	0%	2022-11-28 to 2025-10-20	Lognormal	Lognormal	0.362	0.200	0.0970	2.40	0.539	1.49	3.78
19_2_4_104	MW-09	Appendix IV	Beryllium	mg/L	17	13	76%	2022-11-28 to 2025-10-20		Nonparametric	0.0000604	0.0000520	0.0000520	0.000150	0.0000245	0.405	3.53
19_2_4_106	MW-09	Appendix IV	Cadmium	mg/L	17	17	100%	2022-11-28 to 2025-10-20		Nonparametric	0.000106	0.0000750	0.0000320	0.000380	0.000107	1.02	2.26
19_2_4_109	MW-09	Appendix IV	Chromium, Total	mg/L	17	0	0%	2022-11-28 to 2025-10-20	Gamma; Lognormal; Normal	Normal	0.00238	0.00240	0.00160	0.00320	0.000491	0.206	0.164
19_2_4_110	MW-09	Appendix IV	Cobalt	mg/L	17	0	0%	2022-11-28 to 2025-10-20	Gamma; Lognormal; Normal	Normal	0.000491	0.000460	0.000230	0.000990	0.000218	0.444	0.684

(Table continues on next page)

[a] Non-detects are excluded from goodness-of-fit tests.

Table 1: Summary Statistics, Non-Detects Included *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit[a]	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	Skewness
19_2_4_113	MW-09	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-11-28 to 2025-10-20	Gamma; Lognormal; Normal	Normal	2.53	2.50	2.10	2.90	0.266	0.105	-0.111
19_2_4_115	MW-09	Appendix IV	Lead	mg/L	17	17	100%	2022-11-28 to 2025-10-20		Nonparametric	0.000356	0.000220	0.000100	0.00110	0.000328	0.921	1.42
19_2_4_116	MW-09	Appendix IV	Lithium	mg/L	17	0	0%	2022-11-28 to 2025-10-20	Gamma; Lognormal; Normal	Normal	0.302	0.300	0.260	0.340	0.0259	0.0856	-0.0974
19_2_4_117	MW-09	Appendix IV	Mercury	ng/L	17	14	82%	2022-11-28 to 2025-10-20		Nonparametric	378	160	0.160	2400	709	1.88	2.60
19_2_4_118	MW-09	Appendix IV	Molybdenum	mg/L	17	0	0%	2022-11-28 to 2025-10-20	Gamma; Lognormal; Normal	Normal	0.0221	0.0210	0.00970	0.0330	0.00613	0.277	-0.299
19_2_4_121	MW-09	Appendix IV	Radium 226 and 228	pCi/L	17	15	88%	2022-11-28 to 2025-10-20		Nonparametric	0.749	0.771	0.450	0.980	0.120	0.160	-0.511
19_2_4_122	MW-09	Appendix IV	Selenium	mg/L	17	2	12%	2022-11-28 to 2025-10-20	Gamma; Lognormal; Normal	Normal	0.000294	0.000270	0.000120	0.000640	0.000111	0.378	1.92
19_2_4_125	MW-09	Appendix IV	Thallium	mg/L	17	17	100%	2022-11-28 to 2025-10-20		Nonparametric	0.000201	0.0000750	0.0000750	0.000380	0.000155	0.771	0.394
19_2_5_111	MW-09	Part 115	Copper	mg/L	17	11	65%	2022-11-28 to 2025-10-20	Gamma; Lognormal	Nonparametric	0.000299	0.000200	0.000200	0.00130	0.000266	0.888	3.74
19_2_5_114	MW-09	Part 115	Iron	mg/L	17	0	0%	2022-11-28 to 2025-10-20	Gamma; Lognormal; Normal	Normal	20.5	20.0	13.0	26.0	4.19	0.204	-0.221
19_2_5_119	MW-09	Part 115	Nickel	mg/L	17	0	0%	2022-11-28 to 2025-10-20	Lognormal	Nonparametric	0.0101	0.00200	0.000720	0.100	0.0238	2.35	3.78
19_2_5_123	MW-09	Part 115	Silver	mg/L	17	17	100%	2022-11-28 to 2025-10-20		Nonparametric	0.0000853	0.0000500	0.0000500	0.000250	0.0000786	0.921	1.87
19_2_5_128	MW-09	Part 115	Vanadium	mg/L	17	15	88%	2022-11-28 to 2025-10-20		Nonparametric	0.000616	0.000620	0.000470	0.000710	0.0000436	0.0707	-1.99
19_2_5_129	MW-09	Part 115	Zinc	mg/L	17	8	47%	2022-11-28 to 2025-10-20	Gamma; Lognormal; Normal	Gamma	0.00555	0.00150	0.00120	0.0250	0.00731	1.32	1.75
20_3_3_105	MW-10	Appendix III	Boron	mg/L	17	0	0%	2022-11-29 to 2025-10-20	Gamma; Normal	Normal	18.3	21.0	4.50	30.0	8.32	0.455	-0.262
20_3_3_107	MW-10	Appendix III	Calcium	mg/L	17	0	0%	2022-11-29 to 2025-10-20	Gamma; Lognormal	Gamma	295	270	160	590	111	0.375	1.43
20_3_3_108	MW-10	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-11-29 to 2025-10-20	Gamma; Lognormal; Normal	Normal	319	310	92.0	700	191	0.600	0.855
20_3_3_112	MW-10	Appendix III	Fluoride	mg/L	17	0	0%	2022-11-29 to 2025-10-20	Gamma; Lognormal; Normal	Normal	5.29	5.70	2.70	7.70	1.53	0.289	-0.309
20_3_3_120	MW-10	Appendix III	pH (field)	su	17	0	0%	2022-11-29 to 2025-10-20	Gamma; Lognormal; Normal	Normal	7.75	7.77	7.05	8.81	0.380	0.0491	1.07
20_3_3_124	MW-10	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	2022-11-29 to 2025-10-20	Gamma; Lognormal; Normal	Normal	588	450	140	1700	393	0.668	1.49
20_3_3_126	MW-10	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-11-29 to 2025-10-20	Lognormal	Lognormal	2059	1900	1500	3200	473	0.230	1.18
20_3_4_101	MW-10	Appendix IV	Antimony	mg/L	17	13	76%	2022-11-29 to 2025-10-20		Nonparametric	0.000167	0.000100	0.0000500	0.000500	0.000144	0.859	1.76
20_3_4_102	MW-10	Appendix IV	Arsenic	mg/L	17	0	0%	2022-11-29 to 2025-10-20	Gamma; Lognormal; Normal	Normal	0.000822	0.000730	0.000200	0.00200	0.000538	0.655	0.938
20_3_4_103	MW-10	Appendix IV	Barium	mg/L	17	0	0%	2022-11-29 to 2025-10-20	Gamma; Lognormal; Normal	Normal	0.316	0.280	0.140	0.640	0.136	0.429	1.13
20_3_4_104	MW-10	Appendix IV	Beryllium	mg/L	17	7	41%	2022-11-29 to 2025-10-20	Gamma; Lognormal; Normal	Normal	0.0000788	0.0000540	0.0000520	0.000220	0.0000458	0.581	2.27
20_3_4_106	MW-10	Appendix IV	Cadmium	mg/L	17	17	100%	2022-11-29 to 2025-10-20		Nonparametric	0.000113	0.0000750	0.0000320	0.000380	0.000106	0.939	2.12
20_3_4_109	MW-10	Appendix IV	Chromium, Total	mg/L	17	0	0%	2022-11-29 to 2025-10-20	Gamma; Lognormal; Normal	Normal	0.00390	0.00410	0.00130	0.00850	0.00191	0.490	0.807
20_3_4_110	MW-10	Appendix IV	Cobalt	mg/L	17	1	6%	2022-11-29 to 2025-10-20	Gamma; Lognormal	Gamma	0.000488	0.000400	0.000100	0.00180	0.000392	0.804	2.57
20_3_4_113	MW-10	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-11-29 to 2025-10-20	Gamma; Lognormal; Normal	Normal	5.29	5.70	2.70	7.70	1.53	0.289	-0.309
20_3_4_115	MW-10	Appendix IV	Lead	mg/L	17	15	88%	2022-11-29 to 2025-10-20		Nonparametric	0.000391	0.000220	0.000100	0.00110	0.000374	0.958	1.20
20_3_4_116	MW-10	Appendix IV	Lithium	mg/L	17	0	0%	2022-11-29 to 2025-10-20	Gamma; Lognormal; Normal	Normal	0.940	0.940	0.540	1.60	0.239	0.254	0.940
20_3_4_117	MW-10	Appendix IV	Mercury	ng/L	17	15	88%	2022-11-29 to 2025-10-20		Nonparametric	234	160	0.160	1900	434	1.85	3.97
20_3_4_118	MW-10	Appendix IV	Molybdenum	mg/L	17	0	0%	2022-11-29 to 2025-10-20	Gamma; Lognormal; Normal	Normal	0.00301	0.00280	0.000650	0.00720	0.00171	0.568	0.895
20_3_4_121	MW-10	Appendix IV	Radium 226 and 228	pCi/L	17	13	76%	2022-11-29 to 2025-10-20		Nonparametric	0.857	0.801	0.590	1.36	0.215	0.250	0.934
20_3_4_122	MW-10	Appendix IV	Selenium	mg/L	17	1	6%	2022-11-29 to 2025-10-20	Gamma; Lognormal	Gamma	0.000357	0.000340	0.000190	0.000830	0.000139	0.390	2.56
20_3_4_125	MW-10	Appendix IV	Thallium	mg/L	17	17	100%	2022-11-29 to 2025-10-20		Nonparametric	0.000201	0.0000750	0.0000750	0.000380	0.000155	0.771	0.394
20_3_5_111	MW-10	Part 115	Copper	mg/L	17	14	82%	2022-11-29 to 2025-10-20		Nonparametric	0.000292	0.000200	0.000200	0.00130	0.000272	0.930	3.60
20_3_5_114	MW-10	Part 115	Iron	mg/L	17	0	0%	2022-11-29 to 2025-10-20	Gamma; Lognormal; Normal	Normal	4.90	4.50	2.30	7.70	1.78	0.364	0.175
20_3_5_119	MW-10	Part 115	Nickel	mg/L	17	7	41%	2022-11-29 to 2025-10-20	Nonparametric	Nonparametric	0.000859	0.000790	0.000650	0.00180	0.000294	0.342	2.28
20_3_5_123	MW-10	Part 115	Silver	mg/L	17	17	100%	2022-11-29 to 2025-10-20		Nonparametric	0.0000971	0.0000500	0.0000500	0.000250	0.0000874	0.900	1.37
20_3_5_128	MW-10	Part 115	Vanadium	mg/L	17	12	71%	2022-11-29 to 2025-10-20	Gamma; Lognormal; Normal	Nonparametric	0.000779	0.000620	0.000620	0.00140	0.000273	0.350	1.46
20_3_5_129	MW-10	Part 115	Zinc	mg/L	17	7	41%	2022-11-29 to 2025-10-20	Lognormal	Nonparametric	0.00459	0.00120	0.00120	0.0190	0.00607	1.32	1.52

(Table continues on next page)

[a] Non-detects are excluded from goodness-of-fit tests.

Table 1: Summary Statistics, Non-Detects Included *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit[a]	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	Skewness
21_2_3_105	MW-11	Appendix III	Boron	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	6.24	5.20	1.50	13.0	3.56	0.570	0.648
21_2_3_107	MW-11	Appendix III	Calcium	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	258	270	130	380	68.0	0.263	-0.178
21_2_3_108	MW-11	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	68.6	72.0	38.0	95.0	17.1	0.249	-0.219
21_2_3_112	MW-11	Appendix III	Fluoride	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	0.641	0.640	0.210	1.40	0.339	0.529	0.686
21_2_3_120	MW-11	Appendix III	pH (field)	su	17	0	0%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	7.29	7.31	7.09	7.47	0.102	0.0140	-0.248
21_2_3_124	MW-11	Appendix III	Sulfate (as SO4)	mg/L	17	6	35%	2022-11-29 to 2025-10-23	Gamma; Lognormal	Gamma	35.6	10.0	0.410	210	63.9	1.79	2.20
21_2_3_126	MW-11	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	1043	1000	680	1800	242	0.232	1.88
21_2_4_101	MW-11	Appendix IV	Antimony	mg/L	17	12	71%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Nonparametric	0.000184	0.000100	0.0000500	0.000690	0.000176	0.957	1.97
21_2_4_102	MW-11	Appendix IV	Arsenic	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	0.00183	0.00160	0.000610	0.00440	0.00101	0.552	1.73
21_2_4_103	MW-11	Appendix IV	Barium	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	0.648	0.590	0.360	1.20	0.197	0.304	1.33
21_2_4_104	MW-11	Appendix IV	Beryllium	mg/L	17	13	76%	2022-11-29 to 2025-10-23		Nonparametric	0.0000794	0.0000520	0.0000520	0.000440	0.0000938	1.18	4.01
21_2_4_106	MW-11	Appendix IV	Cadmium	mg/L	17	14	82%	2022-11-29 to 2025-10-23		Nonparametric	0.000150	0.0000750	0.0000320	0.000730	0.000181	1.20	2.48
21_2_4_109	MW-11	Appendix IV	Chromium, Total	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Nonparametric	Nonparametric	0.00153	0.000910	0.000450	0.00860	0.00196	1.29	3.35
21_2_4_110	MW-11	Appendix IV	Cobalt	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Lognormal	Lognormal	0.000715	0.000400	0.000230	0.00260	0.000714	0.998	2.14
21_2_4_113	MW-11	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	0.641	0.640	0.210	1.40	0.339	0.529	0.686
21_2_4_115	MW-11	Appendix IV	Lead	mg/L	17	3	18%	2022-11-29 to 2025-10-23	Gamma; Lognormal	Gamma	0.00731	0.000500	0.000170	0.0680	0.0176	2.41	3.08
21_2_4_116	MW-11	Appendix IV	Lithium	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	0.0680	0.0550	0.00590	0.220	0.0542	0.796	1.53
21_2_4_117	MW-11	Appendix IV	Mercury	ng/L	17	13	76%	2022-11-29 to 2025-10-23		Nonparametric	187	160	0.880	1100	243	1.30	3.65
21_2_4_118	MW-11	Appendix IV	Molybdenum	mg/L	17	2	12%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	0.00144	0.00100	0.000430	0.00390	0.00101	0.696	1.26
21_2_4_121	MW-11	Appendix IV	Radium 226 and 228	pCi/L	16	5	31%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	1.00	0.881	0.460	1.76	0.381	0.381	0.721
21_2_4_122	MW-11	Appendix IV	Selenium	mg/L	17	3	18%	2022-11-29 to 2025-10-23	Lognormal	Lognormal	0.000249	0.000220	0.000140	0.000710	0.000138	0.556	2.62
21_2_4_125	MW-11	Appendix IV	Thallium	mg/L	17	16	94%	2022-11-29 to 2025-10-23		Nonparametric	0.000137	0.0000750	0.0000750	0.000380	0.000121	0.881	1.64
21_2_5_111	MW-11	Part 115	Copper	mg/L	17	4	24%	2022-11-29 to 2025-10-23	Lognormal	Nonparametric	0.00197	0.000310	0.000200	0.0190	0.00464	2.36	3.52
21_2_5_114	MW-11	Part 115	Iron	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	7.22	7.30	3.60	11.0	2.28	0.316	-0.113
21_2_5_119	MW-11	Part 115	Nickel	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Nonparametric	Nonparametric	0.00267	0.00150	0.000650	0.0150	0.00375	1.40	2.86
21_2_5_123	MW-11	Part 115	Silver	mg/L	17	14	82%	2022-11-29 to 2025-10-23		Nonparametric	0.0000918	0.0000500	0.0000500	0.000250	0.0000720	0.784	1.49
21_2_5_128	MW-11	Part 115	Vanadium	mg/L	17	13	76%	2022-11-29 to 2025-10-23		Nonparametric	0.000786	0.000620	0.000620	0.00300	0.000578	0.735	3.96
21_2_5_129	MW-11	Part 115	Zinc	mg/L	17	4	24%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Gamma	0.0210	0.00490	0.00120	0.100	0.0268	1.28	1.75
22_2_3_105	MW-12	Appendix III	Boron	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.329	0.330	0.190	0.620	0.113	0.342	0.955
22_2_3_107	MW-12	Appendix III	Calcium	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	67.7	69.0	40.0	99.0	19.2	0.284	0.0103
22_2_3_108	MW-12	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Lognormal	Lognormal	18.9	17.0	12.0	27.0	4.57	0.242	0.786
22_2_3_112	MW-12	Appendix III	Fluoride	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal	Gamma	0.322	0.290	0.200	0.540	0.102	0.317	0.898
22_2_3_120	MW-12	Appendix III	pH (field)	su	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	7.64	7.64	7.00	8.32	0.327	0.0428	0.299
22_2_3_124	MW-12	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	102	100	52.0	180	40.8	0.401	0.574
22_2_3_126	MW-12	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	286	300	100	420	88.6	0.310	-0.355
22_2_4_101	MW-12	Appendix IV	Antimony	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.000654	0.000640	0.000170	0.00150	0.000339	0.518	0.876
22_2_4_102	MW-12	Appendix IV	Arsenic	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.00269	0.00240	0.00140	0.00640	0.00136	0.506	1.62
22_2_4_103	MW-12	Appendix IV	Barium	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.0508	0.0380	0.0170	0.140	0.0356	0.701	1.40
22_2_4_104	MW-12	Appendix IV	Beryllium	mg/L	17	17	100%	2022-11-28 to 2025-10-22		Nonparametric	0.0000520	0.0000520	0.0000520	0.0000520	0	0	NA
22_2_4_106	MW-12	Appendix IV	Cadmium	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal	Gamma	0.00224	0.00140	0.000540	0.0110	0.00254	1.13	2.90
22_2_4_109	MW-12	Appendix IV	Chromium, Total	mg/L	17	6	35%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.000438	0.000340	0.000200	0.000990	0.000289	0.659	1.03
22_2_4_110	MW-12	Appendix IV	Cobalt	mg/L	17	5	29%	2022-11-28 to 2025-10-22	Gamma; Lognormal	Gamma	0.000491	0.000190	0.000100	0.00280	0.000684	1.39	2.75

(Table continues on next page)

[a] Non-detects are excluded from goodness-of-fit tests.

Table 1: Summary Statistics, Non-Detects Included *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit[a]	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	Skewness
22_2_4_113	MW-12	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal	Gamma	0.322	0.290	0.200	0.540	0.102	0.317	0.898
22_2_4_115	MW-12	Appendix IV	Lead	mg/L	17	6	35%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.000251	0.000220	0.000100	0.000510	0.000117	0.464	1.13
22_2_4_116	MW-12	Appendix IV	Lithium	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.00376	0.00370	0.00190	0.00640	0.00146	0.389	0.196
22_2_4_117	MW-12	Appendix IV	Mercury	ng/L	17	12	71%	2022-11-28 to 2025-10-22	Gamma	Nonparametric	136	160	0.830	230	66.6	0.490	-1.53
22_2_4_118	MW-12	Appendix IV	Molybdenum	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal	Gamma	0.00779	0.00720	0.00460	0.0180	0.00301	0.387	2.57
22_2_4_121	MW-12	Appendix IV	Radium 226 and 228	pCi/L	17	10	59%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Nonparametric	0.650	0.614	0.459	1.09	0.158	0.243	1.48
22_2_4_122	MW-12	Appendix IV	Selenium	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Gamma	0.00113	0.000890	0.000130	0.00430	0.00110	0.975	1.62
22_2_4_125	MW-12	Appendix IV	Thallium	mg/L	17	17	100%	2022-11-28 to 2025-10-22		Nonparametric	0.0000750	0.0000750	0.0000750	0.0000750	0	0	NA
22_2_5_111	MW-12	Part 115	Copper	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.00138	0.00120	0.000550	0.00340	0.000681	0.492	1.72
22_2_5_114	MW-12	Part 115	Iron	mg/L	17	6	35%	2022-11-28 to 2025-10-22	Lognormal	Nonparametric	0.130	0.0370	0.0210	0.920	0.228	1.75	3.02
22_2_5_119	MW-12	Part 115	Nickel	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal	Gamma	0.00301	0.00260	0.00140	0.00730	0.00157	0.524	1.78
22_2_5_123	MW-12	Part 115	Silver	mg/L	17	17	100%	2022-11-28 to 2025-10-22		Nonparametric	0.0000500	0.0000500	0.0000500	0.0000500	0	0	NA
22_2_5_128	MW-12	Part 115	Vanadium	mg/L	17	6	35%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.000926	0.000850	0.000460	0.00210	0.000424	0.458	1.59
22_2_5_129	MW-12	Part 115	Zinc	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal	Gamma	0.00982	0.00800	0.00270	0.0230	0.00570	0.581	1.41
28_1_3_105	MW-18	Appendix III	Boron	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	3.11	3.00	1.80	4.40	0.937	0.302	0.0268
28_1_3_107	MW-18	Appendix III	Calcium	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	328	330	240	450	65.6	0.200	0.107
28_1_3_108	MW-18	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	23.2	24.0	16.0	32.0	4.38	0.189	-0.00282
28_1_3_112	MW-18	Appendix III	Fluoride	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	3.96	3.80	2.70	5.10	0.718	0.181	0.0949
28_1_3_120	MW-18	Appendix III	pH (field)	su	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	7.19	7.18	7.02	7.31	0.0836	0.0116	-0.434
28_1_3_124	MW-18	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	783	760	370	1200	229	0.293	0.413
28_1_3_126	MW-18	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	1351	1400	860	1800	237	0.176	0.0266
28_1_4_101	MW-18	Appendix IV	Antimony	mg/L	17	3	18%	2022-11-30 to 2025-10-22	Lognormal	Lognormal	0.000251	0.000140	0.000100	0.00100	0.000232	0.925	2.43
28_1_4_102	MW-18	Appendix IV	Arsenic	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.0282	0.0290	0.0150	0.0440	0.00764	0.271	0.397
28_1_4_103	MW-18	Appendix IV	Barium	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.0199	0.0210	0.0120	0.0340	0.00603	0.302	0.625
28_1_4_104	MW-18	Appendix IV	Beryllium	mg/L	17	14	82%	2022-11-30 to 2025-10-22		Nonparametric	0.0000526	0.0000520	0.0000520	0.0000590	0.00000173	0.0330	3.58
28_1_4_106	MW-18	Appendix IV	Cadmium	mg/L	17	7	41%	2022-11-30 to 2025-10-22	Gamma; Lognormal	Gamma	0.000220	0.000160	0.0000750	0.000900	0.000210	0.956	2.38
28_1_4_109	MW-18	Appendix IV	Chromium, Total	mg/L	17	15	88%	2022-11-30 to 2025-10-22		Nonparametric	0.000222	0.000200	0.000180	0.000630	0.000106	0.478	3.96
28_1_4_110	MW-18	Appendix IV	Cobalt	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Lognormal	Lognormal	0.00264	0.00200	0.00110	0.00600	0.00144	0.547	1.42
28_1_4_113	MW-18	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	3.96	3.80	2.70	5.10	0.718	0.181	0.0949
28_1_4_115	MW-18	Appendix IV	Lead	mg/L	17	10	59%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Nonparametric	0.000276	0.000220	0.000100	0.00110	0.000244	0.883	2.70
28_1_4_116	MW-18	Appendix IV	Lithium	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.0351	0.0380	0.0200	0.0450	0.00777	0.222	-0.342
28_1_4_117	MW-18	Appendix IV	Mercury	ng/L	17	15	88%	2022-11-30 to 2025-10-22		Nonparametric	132	160	0.160	160	62.6	0.475	-1.87
28_1_4_118	MW-18	Appendix IV	Molybdenum	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.0159	0.0140	0.00900	0.0280	0.00489	0.307	0.857
28_1_4_121	MW-18	Appendix IV	Radium 226 and 228	pCi/L	17	9	53%	2022-11-30 to 2025-10-22	Gamma; Lognormal	Nonparametric	0.656	0.618	0.462	1.27	0.189	0.288	2.35
28_1_4_122	MW-18	Appendix IV	Selenium	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.000683	0.000410	0.000140	0.00230	0.000655	0.959	1.45
28_1_4_125	MW-18	Appendix IV	Thallium	mg/L	17	16	94%	2022-11-30 to 2025-10-22		Nonparametric	0.000134	0.0000750	0.0000750	0.000380	0.000119	0.891	1.76
28_1_5_111	MW-18	Part 115	Copper	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Nonparametric	Nonparametric	0.000747	0.000480	0.000330	0.00210	0.000521	0.697	1.73
28_1_5_114	MW-18	Part 115	Iron	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	6.38	6.20	3.30	10.0	1.66	0.260	0.336
28_1_5_119	MW-18	Part 115	Nickel	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal	Gamma	0.00648	0.00560	0.00320	0.0110	0.00247	0.382	0.828
28_1_5_123	MW-18	Part 115	Silver	mg/L	17	17	100%	2022-11-30 to 2025-10-22		Nonparametric	0.0000853	0.0000500	0.0000500	0.000250	0.0000786	0.921	1.87
28_1_5_128	MW-18	Part 115	Vanadium	mg/L	17	16	94%	2022-11-30 to 2025-10-22		Nonparametric	0.000585	0.000620	0.000280	0.000620	0.000101	0.172	-2.71
28_1_5_129	MW-18	Part 115	Zinc	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal	Gamma	0.0565	0.0450	0.0160	0.210	0.0440	0.778	2.88

(Table continues on next page)

[a] Non-detects are excluded from goodness-of-fit tests.

Table 1: Summary Statistics, Non-Detects Included *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit[a]	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	Skewness
29_1_3_105	MW-19	Appendix III	Boron	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	2.14	2.00	1.50	3.40	0.517	0.242	0.761
29_1_3_107	MW-19	Appendix III	Calcium	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	461	470	360	550	52.9	0.115	-0.380
29_1_3_108	MW-19	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	42.1	39.0	21.0	75.0	14.6	0.348	0.887
29_1_3_112	MW-19	Appendix III	Fluoride	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	1.86	1.90	1.40	2.30	0.265	0.142	-0.112
29_1_3_120	MW-19	Appendix III	pH (field)	su	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	6.82	6.85	6.39	7.07	0.156	0.0229	-1.11
29_1_3_124	MW-19	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	985	960	600	1300	184	0.187	0.0519
29_1_3_126	MW-19	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	1841	1800	1600	2200	232	0.126	0.485
29_1_4_101	MW-19	Appendix IV	Antimony	mg/L	17	12	71%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Nonparametric	0.000230	0.000100	0.0000500	0.000720	0.000208	0.905	1.14
29_1_4_102	MW-19	Appendix IV	Arsenic	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.00482	0.00440	0.00240	0.00730	0.00172	0.356	0.00621
29_1_4_103	MW-19	Appendix IV	Barium	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.0392	0.0390	0.0300	0.0500	0.00528	0.135	0.450
29_1_4_104	MW-19	Appendix IV	Beryllium	mg/L	17	3	18%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.0000892	0.0000770	0.0000520	0.000260	0.0000488	0.547	2.92
29_1_4_106	MW-19	Appendix IV	Cadmium	mg/L	17	16	94%	2022-11-30 to 2025-10-22		Nonparametric	0.000127	0.0000750	0.0000320	0.000380	0.000115	0.909	1.59
29_1_4_109	MW-19	Appendix IV	Chromium, Total	mg/L	17	5	29%	2022-11-30 to 2025-10-22	Gamma; Lognormal	Gamma	0.000303	0.000270	0.000180	0.000880	0.000170	0.563	2.82
29_1_4_110	MW-19	Appendix IV	Cobalt	mg/L	17	1	6%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.000569	0.000460	0.000100	0.00130	0.000367	0.646	0.599
29_1_4_113	MW-19	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	1.86	1.90	1.40	2.30	0.265	0.142	-0.112
29_1_4_115	MW-19	Appendix IV	Lead	mg/L	17	17	100%	2022-11-30 to 2025-10-22		Nonparametric	0.000408	0.000220	0.000100	0.00110	0.000372	0.911	1.07
29_1_4_116	MW-19	Appendix IV	Lithium	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.0896	0.0890	0.0730	0.110	0.0111	0.123	0.294
29_1_4_117	MW-19	Appendix IV	Mercury	ng/L	17	16	94%	2022-11-30 to 2025-10-22		Nonparametric	132	160	0.160	160	62.8	0.476	-1.87
29_1_4_118	MW-19	Appendix IV	Molybdenum	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.0116	0.0110	0.00390	0.0210	0.00460	0.397	0.605
29_1_4_121	MW-19	Appendix IV	Radium 226 and 228	pCi/L	17	8	47%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.772	0.700	0.514	1.17	0.233	0.301	0.509
29_1_4_122	MW-19	Appendix IV	Selenium	mg/L	17	11	65%	2022-11-30 to 2025-10-22	Lognormal	Nonparametric	0.000235	0.000130	0.000100	0.00110	0.000265	1.12	2.78
29_1_4_125	MW-19	Appendix IV	Thallium	mg/L	17	16	94%	2022-11-30 to 2025-10-22		Nonparametric	0.000221	0.000120	0.0000750	0.000380	0.000155	0.699	0.115
29_1_5_111	MW-19	Part 115	Copper	mg/L	17	13	76%	2022-11-30 to 2025-10-22		Nonparametric	0.000271	0.000200	0.000200	0.00100	0.000197	0.727	3.60
29_1_5_114	MW-19	Part 115	Iron	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	16.1	16.0	8.20	24.0	3.88	0.240	0.160
29_1_5_119	MW-19	Part 115	Nickel	mg/L	17	1	6%	2022-11-30 to 2025-10-22	Lognormal	Lognormal	0.00384	0.00250	0.00110	0.0170	0.00450	1.17	2.51
29_1_5_123	MW-19	Part 115	Silver	mg/L	17	17	100%	2022-11-30 to 2025-10-22		Nonparametric	0.0000971	0.0000500	0.0000500	0.000250	0.0000874	0.901	1.37
29_1_5_128	MW-19	Part 115	Vanadium	mg/L	17	14	82%	2022-11-30 to 2025-10-22		Nonparametric	0.000784	0.000620	0.000550	0.00310	0.000602	0.769	4.01
29_1_5_129	MW-19	Part 115	Zinc	mg/L	17	10	59%	2022-11-30 to 2025-10-22	Nonparametric	Nonparametric	0.00798	0.00120	0.00120	0.100	0.0238	2.98	4.09
30_1_3_105	MW-20	Appendix III	Boron	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	1.00	0.920	0.720	1.40	0.219	0.219	0.627
30_1_3_107	MW-20	Appendix III	Calcium	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Normal	Normal	126	130	58.0	170	23.8	0.189	-1.06
30_1_3_108	MW-20	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Normal	Normal	58.8	62.0	29.0	92.0	20.0	0.341	-0.156
30_1_3_112	MW-20	Appendix III	Fluoride	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Nonparametric	Nonparametric	0.259	0.250	0.120	0.550	0.0858	0.331	2.44
30_1_3_120	MW-20	Appendix III	pH (field)	su	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	7.34	7.34	7.14	7.50	0.107	0.0146	-0.343
30_1_3_124	MW-20	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	59.0	52.0	18.0	120	31.4	0.532	0.430
30_1_3_126	MW-20	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	653	650	510	840	83.9	0.128	0.441
30_1_4_101	MW-20	Appendix IV	Antimony	mg/L	17	6	35%	2022-11-30 to 2025-10-22	Lognormal	Lognormal	0.000134	0.000100	0.0000540	0.000650	0.000135	1.01	3.87
30_1_4_102	MW-20	Appendix IV	Arsenic	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.00144	0.00150	0.00100	0.00190	0.000292	0.202	0.187
30_1_4_103	MW-20	Appendix IV	Barium	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal	Gamma	0.522	0.470	0.310	0.940	0.160	0.307	1.50
30_1_4_104	MW-20	Appendix IV	Beryllium	mg/L	17	16	94%	2022-11-30 to 2025-10-22		Nonparametric	0.0000524	0.0000520	0.0000520	0.0000590	0.00000170	0.0324	4.12
30_1_4_106	MW-20	Appendix IV	Cadmium	mg/L	17	16	94%	2022-11-30 to 2025-10-22		Nonparametric	0.0000809	0.0000750	0.0000320	0.000390	0.0000821	1.02	3.70
30_1_4_109	MW-20	Appendix IV	Chromium, Total	mg/L	17	9	53%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Nonparametric	0.000214	0.000200	0.000180	0.000290	0.0000280	0.131	1.69
30_1_4_110	MW-20	Appendix IV	Cobalt	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.00119	0.00110	0.000690	0.00180	0.000308	0.259	0.310

(Table continues on next page)

[a] Non-detects are excluded from goodness-of-fit tests.

Table 1: Summary Statistics, Non-Detects Included *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit[a]	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	Skewness
30_1_4_113	MW-20	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Nonparametric	Nonparametric	0.259	0.250	0.120	0.550	0.0858	0.331	2.44
30_1_4_115	MW-20	Appendix IV	Lead	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Lognormal	Lognormal	0.00226	0.00180	0.00120	0.00780	0.00150	0.664	3.46
30_1_4_116	MW-20	Appendix IV	Lithium	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.0579	0.0600	0.0290	0.0830	0.0152	0.263	-0.380
30_1_4_117	MW-20	Appendix IV	Mercury	ng/L	17	14	82%	2022-11-30 to 2025-10-22		Nonparametric	132	160	1.90	160	61.3	0.462	-1.87
30_1_4_118	MW-20	Appendix IV	Molybdenum	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.00439	0.00450	0.00330	0.00580	0.000676	0.154	0.241
30_1_4_121	MW-20	Appendix IV	Radium 226 and 228	pCi/L	16	8	50%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Nonparametric	0.719	0.586	0.467	1.47	0.293	0.408	1.54
30_1_4_122	MW-20	Appendix IV	Selenium	mg/L	17	10	59%	2022-11-30 to 2025-10-22	Nonparametric	Nonparametric	0.000169	0.000130	0.000100	0.000430	0.0000894	0.530	1.66
30_1_4_125	MW-20	Appendix IV	Thallium	mg/L	17	16	94%	2022-11-30 to 2025-10-22		Nonparametric	0.0000771	0.0000750	0.0000750	0.000110	0.00000849	0.110	4.12
30_1_5_111	MW-20	Part 115	Copper	mg/L	17	2	12%	2022-11-30 to 2025-10-22	Lognormal	Lognormal	0.000512	0.000290	0.000200	0.00330	0.000736	1.44	3.81
30_1_5_114	MW-20	Part 115	Iron	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	18.1	18.0	12.0	22.0	2.88	0.160	-0.563
30_1_5_119	MW-20	Part 115	Nickel	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Nonparametric	Nonparametric	0.00954	0.00840	0.00450	0.0340	0.00649	0.680	3.73
30_1_5_123	MW-20	Part 115	Silver	mg/L	17	17	100%	2022-11-30 to 2025-10-22		Nonparametric	0.0000500	0.0000500	0.0000500	0.0000500	0	0	NA
30_1_5_128	MW-20	Part 115	Vanadium	mg/L	17	17	100%	2022-11-30 to 2025-10-22		Nonparametric	0.000580	0.000620	0.000280	0.000620	0.000113	0.195	-2.61
30_1_5_129	MW-20	Part 115	Zinc	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Lognormal	Lognormal	0.0371	0.0280	0.0130	0.110	0.0257	0.691	1.69
40_1_3_105	MW-30	Appendix III	Boron	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Lognormal	Lognormal	1.94	1.90	1.40	3.50	0.455	0.235	2.66
40_1_3_107	MW-30	Appendix III	Calcium	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Nonparametric	Nonparametric	495	460	62.0	960	184	0.373	0.415
40_1_3_108	MW-30	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Nonparametric	Nonparametric	379	190	82.0	1200	421	1.11	1.28
40_1_3_112	MW-30	Appendix III	Fluoride	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Nonparametric	Nonparametric	1.08	1.10	0.570	1.40	0.184	0.171	-1.23
40_1_3_120	MW-30	Appendix III	pH (field)	su	17	0	0%	2022-11-30 to 2025-10-21	Nonparametric	Nonparametric	7.04	7.06	6.48	7.25	0.182	0.0259	-1.97
40_1_3_124	MW-30	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Normal	Normal	846	860	440	1000	163	0.193	-1.33
40_1_3_126	MW-30	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Nonparametric	Nonparametric	2612	2300	1800	4300	777	0.297	1.35
40_1_4_101	MW-30	Appendix IV	Antimony	mg/L	17	14	82%	2022-11-30 to 2025-10-21		Nonparametric	0.000285	0.000100	0.0000500	0.00120	0.000309	1.08	1.83
40_1_4_102	MW-30	Appendix IV	Arsenic	mg/L	17	2	12%	2022-11-30 to 2025-10-21	Lognormal	Nonparametric	0.00118	0.000500	0.000100	0.00800	0.00191	1.62	3.21
40_1_4_103	MW-30	Appendix IV	Barium	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Gamma; Lognormal; Normal	Normal	0.0679	0.0660	0.0410	0.100	0.0197	0.290	0.460
40_1_4_104	MW-30	Appendix IV	Beryllium	mg/L	17	13	76%	2022-11-30 to 2025-10-21		Nonparametric	0.0000815	0.0000520	0.0000520	0.000260	0.0000687	0.842	2.42
40_1_4_106	MW-30	Appendix IV	Cadmium	mg/L	17	16	94%	2022-11-30 to 2025-10-21		Nonparametric	0.000146	0.0000750	0.0000320	0.000380	0.000131	0.899	1.16
40_1_4_109	MW-30	Appendix IV	Chromium, Total	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Gamma; Lognormal; Normal	Normal	0.00964	0.00870	0.00310	0.0230	0.00465	0.483	1.39
40_1_4_110	MW-30	Appendix IV	Cobalt	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Nonparametric	Nonparametric	0.00394	0.00110	0.000470	0.0460	0.0109	2.76	4.07
40_1_4_113	MW-30	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Nonparametric	Nonparametric	1.08	1.10	0.570	1.40	0.184	0.171	-1.23
40_1_4_115	MW-30	Appendix IV	Lead	mg/L	17	15	88%	2022-11-30 to 2025-10-21		Nonparametric	0.00398	0.000500	0.000100	0.0580	0.0139	3.50	4.12
40_1_4_116	MW-30	Appendix IV	Lithium	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Gamma; Lognormal	Gamma	0.138	0.120	0.0860	0.270	0.0436	0.316	1.91
40_1_4_117	MW-30	Appendix IV	Mercury	ng/L	17	16	94%	2022-11-30 to 2025-10-21		Nonparametric	145	160	0.160	390	88.7	0.610	0.560
40_1_4_118	MW-30	Appendix IV	Molybdenum	mg/L	17	3	18%	2022-11-30 to 2025-10-21	Lognormal	Nonparametric	0.00437	0.00120	0.000320	0.0320	0.00835	1.91	2.88
40_1_4_121	MW-30	Appendix IV	Radium 226 and 228	pCi/L	17	9	53%	2022-11-30 to 2025-10-21	Gamma; Lognormal; Normal	Nonparametric	0.700	0.659	0.445	1.12	0.178	0.255	0.732
40_1_4_122	MW-30	Appendix IV	Selenium	mg/L	17	7	41%	2022-11-30 to 2025-10-21	Nonparametric	Nonparametric	0.000330	0.000220	0.000100	0.00150	0.000387	1.17	2.44
40_1_4_125	MW-30	Appendix IV	Thallium	mg/L	17	17	100%	2022-11-30 to 2025-10-21		Nonparametric	0.000272	0.000380	0.0000750	0.000380	0.000150	0.552	-0.677
40_1_5_111	MW-30	Part 115	Copper	mg/L	17	11	65%	2022-11-30 to 2025-10-21	Nonparametric	Nonparametric	0.00108	0.000200	0.000200	0.0130	0.00308	2.84	4.07
40_1_5_114	MW-30	Part 115	Iron	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Gamma; Lognormal	Gamma	4.00	2.90	0.870	17.0	3.91	0.978	2.59
40_1_5_119	MW-30	Part 115	Nickel	mg/L	17	3	18%	2022-11-30 to 2025-10-21	Nonparametric	Nonparametric	0.00904	0.00180	0.000650	0.110	0.0262	2.90	4.05
40_1_5_123	MW-30	Part 115	Silver	mg/L	17	16	94%	2022-11-30 to 2025-10-21		Nonparametric	0.000113	0.0000500	0.0000500	0.000250	0.0000927	0.821	0.900
40_1_5_128	MW-30	Part 115	Vanadium	mg/L	17	15	88%	2022-11-30 to 2025-10-21		Nonparametric	0.00228	0.000620	0.000470	0.0240	0.00566	2.48	3.98
40_1_5_129	MW-30	Part 115	Zinc	mg/L	17	10	59%	2022-11-30 to 2025-10-21	Gamma; Lognormal	Nonparametric	0.00947	0.00120	0.00110	0.100	0.0241	2.55	3.73

(Table continues on next page)

[a] Non-detects are excluded from goodness-of-fit tests.

Table 1: Summary Statistics, Non-Detects Included *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit[a]	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	Skewness
41_1_3_105	MW-31	Appendix III	Boron	mg/L	17	0	0%	2022-12-01 to 2025-10-21	Gamma; Lognormal; Normal	Normal	4.86	4.50	3.60	7.00	0.908	0.187	0.967
41_1_3_107	MW-31	Appendix III	Calcium	mg/L	17	0	0%	2022-12-01 to 2025-10-21	Gamma; Lognormal; Normal	Normal	168	170	130	200	21.9	0.131	-0.0629
41_1_3_108	MW-31	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-12-01 to 2025-10-21	Nonparametric	Nonparametric	111	100	87.0	170	23.8	0.216	2.03
41_1_3_112	MW-31	Appendix III	Fluoride	mg/L	17	0	0%	2022-12-01 to 2025-10-21	Nonparametric	Nonparametric	4.58	4.60	3.30	5.20	0.455	0.0994	-1.36
41_1_3_120	MW-31	Appendix III	pH (field)	su	17	0	0%	2022-12-01 to 2025-10-21	Gamma; Lognormal; Normal	Normal	7.84	7.82	7.67	8.08	0.120	0.0153	0.668
41_1_3_124	MW-31	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	2022-12-01 to 2025-10-21	Gamma; Lognormal; Normal	Normal	145	150	19.0	250	76.8	0.531	0.0251
41_1_3_126	MW-31	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-12-01 to 2025-10-21	Gamma; Lognormal; Normal	Normal	815	810	730	960	71.4	0.0876	0.749
41_1_4_101	MW-31	Appendix IV	Antimony	mg/L	17	7	41%	2022-12-01 to 2025-10-21	Gamma; Lognormal; Normal	Nonparametric	0.000245	0.000100	0.0000500	0.00110	0.000282	1.15	2.17
41_1_4_102	MW-31	Appendix IV	Arsenic	mg/L	17	0	0%	2022-12-01 to 2025-10-21	Gamma; Lognormal; Normal	Normal	0.00129	0.00120	0.000730	0.00190	0.000312	0.242	0.396
41_1_4_103	MW-31	Appendix IV	Barium	mg/L	17	0	0%	2022-12-01 to 2025-10-21	Gamma; Lognormal; Normal	Normal	0.185	0.160	0.0990	0.380	0.0713	0.385	1.43
41_1_4_104	MW-31	Appendix IV	Beryllium	mg/L	17	15	88%	2022-12-01 to 2025-10-21		Nonparametric	0.0000547	0.0000520	0.0000520	0.0000960	0.0000107	0.195	4.11
41_1_4_106	MW-31	Appendix IV	Cadmium	mg/L	17	16	94%	2022-12-01 to 2025-10-21		Nonparametric	0.0000629	0.0000750	0.0000320	0.0000840	0.0000207	0.329	-0.950
41_1_4_109	MW-31	Appendix IV	Chromium, Total	mg/L	17	0	0%	2022-12-01 to 2025-10-21	Gamma; Lognormal; Normal	Normal	0.00246	0.00230	0.00170	0.00410	0.000725	0.294	1.27
41_1_4_110	MW-31	Appendix IV	Cobalt	mg/L	17	3	18%	2022-12-01 to 2025-10-21	Gamma; Lognormal; Normal	Normal	0.000174	0.000160	0.000100	0.000360	0.0000687	0.394	1.32
41_1_4_113	MW-31	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-12-01 to 2025-10-21	Nonparametric	Nonparametric	4.58	4.60	3.30	5.20	0.455	0.0994	-1.36
41_1_4_115	MW-31	Appendix IV	Lead	mg/L	17	13	76%	2022-12-01 to 2025-10-21		Nonparametric	0.000186	0.000220	0.000100	0.000450	0.0000994	0.535	1.15
41_1_4_116	MW-31	Appendix IV	Lithium	mg/L	17	0	0%	2022-12-01 to 2025-10-21	Gamma; Lognormal; Normal	Normal	0.0494	0.0520	0.0300	0.0630	0.00802	0.162	-0.822
41_1_4_117	MW-31	Appendix IV	Mercury	ng/L	17	14	82%	2022-12-01 to 2025-10-21		Nonparametric	132	160	0.710	160	62.4	0.473	-1.87
41_1_4_118	MW-31	Appendix IV	Molybdenum	mg/L	17	0	0%	2022-12-01 to 2025-10-21	Nonparametric	Nonparametric	0.00177	0.00120	0.000400	0.00910	0.00200	1.13	3.46
41_1_4_121	MW-31	Appendix IV	Radium 226 and 228	pCi/L	17	7	41%	2022-12-01 to 2025-10-21	Gamma; Lognormal	Gamma	0.705	0.644	0.497	1.23	0.204	0.290	1.67
41_1_4_122	MW-31	Appendix IV	Selenium	mg/L	17	6	35%	2022-12-01 to 2025-10-21	Nonparametric	Nonparametric	0.000202	0.000160	0.000100	0.000740	0.000148	0.732	3.32
41_1_4_125	MW-31	Appendix IV	Thallium	mg/L	17	16	94%	2022-12-01 to 2025-10-21		Nonparametric	0.0000758	0.0000750	0.0000750	0.0000880	0.00000315	0.0416	4.12
41_1_5_111	MW-31	Part 115	Copper	mg/L	17	10	59%	2022-12-01 to 2025-10-21	Nonparametric	Nonparametric	0.000328	0.000200	0.000200	0.00170	0.000360	1.10	3.89
41_1_5_114	MW-31	Part 115	Iron	mg/L	17	0	0%	2022-12-01 to 2025-10-21	Lognormal	Nonparametric	0.706	0.390	0.120	2.50	0.670	0.948	1.30
41_1_5_119	MW-31	Part 115	Nickel	mg/L	17	10	59%	2022-12-01 to 2025-10-21	Gamma; Lognormal	Nonparametric	0.0204	0.000650	0.000650	0.240	0.0590	2.90	3.65
41_1_5_123	MW-31	Part 115	Silver	mg/L	17	17	100%	2022-12-01 to 2025-10-21		Nonparametric	0.0000500	0.0000500	0.0000500	0.0000500	0	0	NA
41_1_5_128	MW-31	Part 115	Vanadium	mg/L	17	12	71%	2022-12-01 to 2025-10-21	Gamma; Lognormal; Normal	Nonparametric	0.000630	0.000620	0.000450	0.000830	0.0000759	0.120	0.695
41_1_5_129	MW-31	Part 115	Zinc	mg/L	17	9	53%	2022-12-01 to 2025-10-21	Gamma; Lognormal; Normal	Nonparametric	0.00347	0.00120	0.00120	0.0130	0.00401	1.15	1.54
42_1_3_105	MW-32	Appendix III	Boron	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Nonparametric	Nonparametric	3.72	3.10	2.60	5.70	1.02	0.275	0.946
42_1_3_107	MW-32	Appendix III	Calcium	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Gamma; Lognormal; Normal	Normal	171	170	130	220	23.9	0.140	0.184
42_1_3_108	MW-32	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Gamma; Lognormal; Normal	Normal	46.8	47.0	38.0	61.0	5.71	0.122	0.656
42_1_3_112	MW-32	Appendix III	Fluoride	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Gamma; Lognormal; Normal	Normal	1.50	1.50	1.20	1.90	0.177	0.118	0.462
42_1_3_120	MW-32	Appendix III	pH (field)	su	17	0	0%	2022-11-30 to 2025-10-21	Gamma; Lognormal; Normal	Normal	7.61	7.59	7.50	7.75	0.0721	0.00948	0.268
42_1_3_124	MW-32	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Gamma; Lognormal; Normal	Gamma	72	54.0	5.90	190	61.9	0.859	0.504
42_1_3_126	MW-32	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Gamma; Lognormal; Normal	Normal	682	680	550	800	84	0.123	-0.0582
42_1_4_101	MW-32	Appendix IV	Antimony	mg/L	17	13	76%	2022-11-30 to 2025-10-21		Nonparametric	0.000128	0.000100	0.0000500	0.000700	0.000149	1.16	3.97
42_1_4_102	MW-32	Appendix IV	Arsenic	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Nonparametric	Nonparametric	0.000630	0.000520	0.000390	0.00240	0.000462	0.734	3.94
42_1_4_103	MW-32	Appendix IV	Barium	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Gamma; Lognormal; Normal	Normal	0.666	0.600	0.0590	1.40	0.366	0.550	0.571
42_1_4_104	MW-32	Appendix IV	Beryllium	mg/L	17	16	94%	2022-11-30 to 2025-10-21		Nonparametric	0.0000531	0.0000520	0.0000520	0.0000700	0.00000437	0.0823	4.12
42_1_4_106	MW-32	Appendix IV	Cadmium	mg/L	17	16	94%	2022-11-30 to 2025-10-21		Nonparametric	0.0000691	0.0000750	0.0000320	0.000190	0.0000370	0.535	2.12
42_1_4_109	MW-32	Appendix IV	Chromium, Total	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Nonparametric	Nonparametric	0.000565	0.000380	0.000310	0.00300	0.000635	1.12	3.96
42_1_4_110	MW-32	Appendix IV	Cobalt	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Gamma; Lognormal	Gamma	0.000502	0.000390	0.000210	0.00190	0.000382	0.760	3.38

(Table continues on next page)

[a] Non-detects are excluded from goodness-of-fit tests.

Table 1: Summary Statistics, Non-Detects Included *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit[a]	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	Skewness
42_1_4_113	MW-32	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Gamma; Lognormal; Normal	Normal	1.50	1.50	1.20	1.90	0.177	0.118	0.462
42_1_4_115	MW-32	Appendix IV	Lead	mg/L	17	12	71%	2022-11-30 to 2025-10-21	Lognormal; Normal	Nonparametric	0.000191	0.000140	0.000100	0.000420	0.000111	0.581	1.08
42_1_4_116	MW-32	Appendix IV	Lithium	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Gamma; Lognormal; Normal	Normal	0.132	0.130	0.0940	0.200	0.0331	0.251	0.699
42_1_4_117	MW-32	Appendix IV	Mercury	ng/L	17	14	82%	2022-11-30 to 2025-10-21		Nonparametric	234	160	0.160	1900	434	1.85	3.97
42_1_4_118	MW-32	Appendix IV	Molybdenum	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Gamma; Lognormal; Normal	Normal	0.00388	0.00380	0.00110	0.00730	0.00136	0.351	0.423
42_1_4_121	MW-32	Appendix IV	Radium 226 and 228	pCi/L	17	9	53%	2022-11-30 to 2025-10-21	Gamma; Lognormal; Normal	Nonparametric	0.664	0.607	0.497	0.985	0.141	0.212	1.07
42_1_4_122	MW-32	Appendix IV	Selenium	mg/L	17	13	76%	2022-11-30 to 2025-10-21		Nonparametric	0.000192	0.000100	0.000100	0.00100	0.000215	1.12	3.70
42_1_4_125	MW-32	Appendix IV	Thallium	mg/L	17	17	100%	2022-11-30 to 2025-10-21		Nonparametric	0.0000750	0.0000750	0.0000750	0.0000750	0	0	NA
42_1_5_111	MW-32	Part 115	Copper	mg/L	17	10	59%	2022-11-30 to 2025-10-21	Nonparametric	Nonparametric	0.00116	0.000200	0.000200	0.0160	0.00382	3.28	4.12
42_1_5_114	MW-32	Part 115	Iron	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Gamma; Lognormal; Normal	Normal	15.9	16.0	11.0	21.0	3.02	0.190	-0.151
42_1_5_119	MW-32	Part 115	Nickel	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Nonparametric	Nonparametric	0.00235	0.000960	0.000680	0.0230	0.00533	2.26	4.10
42_1_5_123	MW-32	Part 115	Silver	mg/L	17	17	100%	2022-11-30 to 2025-10-21		Nonparametric	0.0000500	0.0000500	0.0000500	0.0000500	0	0	NA
42_1_5_128	MW-32	Part 115	Vanadium	mg/L	17	17	100%	2022-11-30 to 2025-10-21		Nonparametric	0.000580	0.000620	0.000280	0.000620	0.000113	0.195	-2.61
42_1_5_129	MW-32	Part 115	Zinc	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Nonparametric	Nonparametric	0.0135	0.00350	0.00220	0.0680	0.0208	1.54	1.94

[a] 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	Skewness
11_2_3_105	MW-01R	Appendix III	Boron	mg/L	17	0	0%	2022-11-29 to 2025-10-22	Gamma; Lognormal; Normal	Normal	111	110	38.0	160	37.0	0.333	-0.374
11_2_3_107	MW-01R	Appendix III	Calcium	mg/L	17	0	0%	2022-11-29 to 2025-10-22	Gamma; Lognormal; Normal	Normal	229	210	130	400	77.5	0.339	0.728
11_2_3_108	MW-01R	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-11-29 to 2025-10-22	Normal	Normal	132	150	49.0	210	45.1	0.341	-0.556
11_2_3_112	MW-01R	Appendix III	Fluoride	mg/L	17	0	0%	2022-11-29 to 2025-10-22	Normal	Normal	12.2	14.0	4.80	17.0	3.63	0.297	-0.648
11_2_3_120	MW-01R	Appendix III	pH (field)	su	17	0	0%	2022-11-29 to 2025-10-22	Nonparametric	Nonparametric	7.62	7.73	6.02	7.81	0.419	0.0550	-3.89
11_2_3_124	MW-01R	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	2022-11-29 to 2025-10-22	Gamma; Lognormal; Normal	Gamma	409	350	8.80	980	304	0.744	0.394
11_2_3_126	MW-01R	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-11-29 to 2025-10-22	Gamma; Lognormal; Normal	Normal	2359	2400	2100	2600	123	0.0520	-0.230
11_2_4_101	MW-01R	Appendix IV	Antimony	mg/L	17	3	18%	2022-11-29 to 2025-10-22	Nonparametric	Nonparametric	0.000341	0.000240	0.000170	0.00120	0.000283	0.828	2.62
11_2_4_102	MW-01R	Appendix IV	Arsenic	mg/L	17	0	0%	2022-11-29 to 2025-10-22	Nonparametric	Nonparametric	0.00154	0.00130	0.000730	0.00410	0.000735	0.479	2.84
11_2_4_103	MW-01R	Appendix IV	Barium	mg/L	17	0	0%	2022-11-29 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.378	0.330	0.200	0.810	0.160	0.423	1.33
11_2_4_104	MW-01R	Appendix IV	Beryllium	mg/L	17	2	12%	2022-11-29 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.000227	0.000200	0.000120	0.000360	0.0000846	0.372	0.276
11_2_4_106	MW-01R	Appendix IV	Cadmium	mg/L	17	13	76%	2022-11-29 to 2025-10-22		Nonparametric	0.000163	0.000125	0.0000620	0.000340	0.000122	0.750	1.59
11_2_4_109	MW-01R	Appendix IV	Chromium, Total	mg/L	17	0	0%	2022-11-29 to 2025-10-22	Lognormal	Lognormal	0.00341	0.00210	0.00130	0.0220	0.00487	1.43	3.91
11_2_4_110	MW-01R	Appendix IV	Cobalt	mg/L	17	0	0%	2022-11-29 to 2025-10-22	Nonparametric	Nonparametric	0.00160	0.00110	0.000640	0.00450	0.00109	0.677	1.97
11_2_4_113	MW-01R	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-11-29 to 2025-10-22	Normal	Normal	12.2	14.0	4.80	17.0	3.63	0.297	-0.648
11_2_4_115	MW-01R	Appendix IV	Lead	mg/L	17	2	12%	2022-11-29 to 2025-10-22	Gamma; Lognormal	Gamma	0.00116	0.000800	0.000350	0.00530	0.00122	1.05	3.16
11_2_4_116	MW-01R	Appendix IV	Lithium	mg/L	17	0	0%	2022-11-29 to 2025-10-22	Gamma; Lognormal; Normal	Normal	2.39	2.60	0.770	3.40	0.766	0.320	-0.542
11_2_4_117	MW-01R	Appendix IV	Mercury	ng/L	17	15	88%	2022-11-29 to 2025-10-22		Nonparametric	0.695	0.695	0.520	0.870	0.247	0.356	NA
11_2_4_118	MW-01R	Appendix IV	Molybdenum	mg/L	17	2	12%	2022-11-29 to 2025-10-22	Lognormal	Lognormal	0.00112	0.000740	0.000330	0.00560	0.00132	1.19	3.14
11_2_4_121	MW-01R	Appendix IV	Radium 226 and 228	pCi/L	17	11	65%	2022-11-29 to 2025-10-22	Gamma; Lognormal; Normal	Nonparametric	1.00	1.06	0.601	1.28	0.274	0.273	-0.629
11_2_4_122	MW-01R	Appendix IV	Selenium	mg/L	17	0	0%	2022-11-29 to 2025-10-22	Lognormal	Lognormal	0.000711	0.000660	0.000300	0.00180	0.000318	0.448	2.65
11_2_5_111	MW-01R	Part 115	Copper	mg/L	17	6	35%	2022-11-29 to 2025-10-22	Lognormal	Lognormal	0.000479	0.000310	0.000270	0.00130	0.000343	0.716	1.97
11_2_5_114	MW-01R	Part 115	Iron	mg/L	17	0	0%	2022-11-29 to 2025-10-22	Gamma; Lognormal	Gamma	0.448	0.480	0.0590	1.10	0.352	0.787	0.479
11_2_5_119	MW-01R	Part 115	Nickel	mg/L	17	0	0%	2022-11-29 to 2025-10-22	Nonparametric	Nonparametric	0.00338	0.00200	0.00120	0.0220	0.00489	1.45	3.89
11_2_5_128	MW-01R	Part 115	Vanadium	mg/L	17	2	12%	2022-11-29 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.00231	0.00190	0.000670	0.00460	0.00125	0.539	0.537
11_2_5_129	MW-01R	Part 115	Zinc	mg/L	17	3	18%	2022-11-29 to 2025-10-22	Nonparametric	Nonparametric	0.00944	0.00250	0.00120	0.0330	0.0111	1.18	1.18
12_2_3_105	MW-02	Appendix III	Boron	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Lognormal	Lognormal	106	100	59.0	170	28.3	0.266	1.12
12_2_3_107	MW-02	Appendix III	Calcium	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	199	200	170	240	17.6	0.0887	0.511
12_2_3_108	MW-02	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Nonparametric	Nonparametric	141	140	67.0	160	20.6	0.146	-3.13
12_2_3_112	MW-02	Appendix III	Fluoride	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Nonparametric	Nonparametric	10.3	10.0	4.50	16.0	2.39	0.233	0.152
12_2_3_120	MW-02	Appendix III	pH (field)	su	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	7.20	7.18	7.06	7.45	0.105	0.0145	0.881
12_2_3_124	MW-02	Appendix III	Sulfate (as SO4)	mg/L	17	10	59%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Nonparametric	1.44	1.30	0.860	2.20	0.524	0.364	0.333
12_2_3_126	MW-02	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	1935	1900	1600	2600	240	0.124	1.22
12_2_4_101	MW-02	Appendix IV	Antimony	mg/L	17	3	18%	2022-11-28 to 2025-10-22	Gamma; Lognormal	Gamma	0.000236	0.000205	0.000140	0.000630	0.000123	0.521	2.79
12_2_4_102	MW-02	Appendix IV	Arsenic	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Normal	Normal	0.00742	0.00760	0.000440	0.0120	0.00240	0.324	-1.20
12_2_4_103	MW-02	Appendix IV	Barium	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.468	0.470	0.320	0.730	0.0975	0.208	0.814
12_2_4_104	MW-02	Appendix IV	Beryllium	mg/L	17	1	6%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.000276	0.000270	0.000120	0.000520	0.000113	0.409	0.665
12_2_4_106	MW-02	Appendix IV	Cadmium	mg/L	17	12	71%	2022-11-28 to 2025-10-22	Lognormal	Nonparametric	0.000147	0.0000780	0.0000410	0.000490	0.000193	1.31	2.19
12_2_4_109	MW-02	Appendix IV	Chromium, Total	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Normal	Normal	0.0418	0.0450	0.000380	0.0680	0.0184	0.441	-0.471
12_2_4_110	MW-02	Appendix IV	Cobalt	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Normal	Normal	0.00621	0.00630	0.000240	0.00970	0.00248	0.399	-0.713
12_2_4_113	MW-02	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Nonparametric	Nonparametric	10.3	10.0	4.50	16.0	2.39	0.233	0.152
12_2_4_115	MW-02	Appendix IV	Lead	mg/L	17	1	6%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.00294	0.00235	0.00100	0.00600	0.00154	0.524	0.849
12_2_4_116	MW-02	Appendix IV	Lithium	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	1.47	1.50	0.870	2.30	0.325	0.221	0.940

(Table continues on next page)

Table 2: Summary Statistics, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	Skewness
12_2_4_117	MW-02	Appendix IV	Mercury	ng/L	17	14	82%	2022-11-28 to 2025-10-22		Nonparametric	3.10	2.30	1.60	5.40	2.02	0.652	1.50
12_2_4_118	MW-02	Appendix IV	Molybdenum	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Lognormal	Lognormal	0.00734	0.00620	0.00380	0.0160	0.00344	0.469	1.38
12_2_4_121	MW-02	Appendix IV	Radium 226 and 228	pCi/L	16	5	31%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	1.60	1.56	0.708	3.35	0.765	0.477	1.24
12_2_4_122	MW-02	Appendix IV	Selenium	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.00129	0.00120	0.000500	0.00230	0.000449	0.347	0.274
12_2_4_125	MW-02	Appendix IV	Thallium	mg/L	17	16	94%	2022-11-28 to 2025-10-22		Nonparametric	0.000620	0.000620	0.000620	0.000620	NA	NA	NA
12_2_5_111	MW-02	Part 115	Copper	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.00203	0.00200	0.000230	0.00440	0.00104	0.513	0.573
12_2_5_114	MW-02	Part 115	Iron	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	23.6	23.0	18.0	31.0	3.97	0.168	0.360
12_2_5_119	MW-02	Part 115	Nickel	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Normal	Normal	0.0250	0.0230	0.000930	0.0530	0.0127	0.507	0.545
12_2_5_128	MW-02	Part 115	Vanadium	mg/L	17	1	6%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.00416	0.00400	0.00130	0.00690	0.00173	0.416	-0.0286
12_2_5_129	MW-02	Part 115	Zinc	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Nonparametric	Nonparametric	0.00826	0.00330	0.00160	0.0360	0.0106	1.28	1.70
13_2_3_105	MW-03	Appendix III	Boron	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	4.11	4.10	3.30	4.50	0.312	0.0759	-1.05
13_2_3_107	MW-03	Appendix III	Calcium	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	362	360	290	430	35.6	0.0983	0.0540
13_2_3_108	MW-03	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	155	140	94.0	300	53.6	0.345	1.38
13_2_3_112	MW-03	Appendix III	Fluoride	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Nonparametric	Nonparametric	0.693	0.620	0.520	1.60	0.251	0.362	3.30
13_2_3_120	MW-03	Appendix III	pH (field)	su	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	7.36	7.33	7.20	7.59	0.0954	0.0130	0.658
13_2_3_124	MW-03	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	336	310	34.0	760	219	0.652	0.338
13_2_3_126	MW-03	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Nonparametric	Nonparametric	2024	2000	1700	2300	259	0.128	-0.0974
13_2_4_101	MW-03	Appendix IV	Antimony	mg/L	17	11	65%	2022-11-28 to 2025-10-22	Gamma; Lognormal	Nonparametric	0.000171	0.000120	0.0000870	0.000450	0.000139	0.811	2.25
13_2_4_102	MW-03	Appendix IV	Arsenic	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.000924	0.000910	0.000490	0.00140	0.000270	0.292	-0.0423
13_2_4_103	MW-03	Appendix IV	Barium	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.358	0.370	0.130	0.500	0.0837	0.234	-1.14
13_2_4_104	MW-03	Appendix IV	Beryllium	mg/L	17	11	65%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Nonparametric	0.0000947	0.0000655	0.0000530	0.000180	0.0000558	0.590	1.02
13_2_4_106	MW-03	Appendix IV	Cadmium	mg/L	17	16	94%	2022-11-28 to 2025-10-22		Nonparametric	0.000110	0.000110	0.000110	0.000110	NA	NA	NA
13_2_4_109	MW-03	Appendix IV	Chromium, Total	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.00452	0.00450	0.00300	0.00730	0.00119	0.264	0.787
13_2_4_110	MW-03	Appendix IV	Cobalt	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.000768	0.000700	0.000370	0.00130	0.000307	0.399	0.613
13_2_4_113	MW-03	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Nonparametric	Nonparametric	0.693	0.620	0.520	1.60	0.251	0.362	3.30
13_2_4_115	MW-03	Appendix IV	Lead	mg/L	17	16	94%	2022-11-28 to 2025-10-22		Nonparametric	0.000220	0.000220	0.000220	0.000220	NA	NA	NA
13_2_4_116	MW-03	Appendix IV	Lithium	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal	Gamma	0.0378	0.0350	0.0290	0.0650	0.00919	0.243	1.82
13_2_4_117	MW-03	Appendix IV	Mercury	ng/L	17	14	82%	2022-11-28 to 2025-10-22		Nonparametric	80.4	0.770	0.390	240	138	1.72	1.73
13_2_4_118	MW-03	Appendix IV	Molybdenum	mg/L	17	13	76%	2022-11-28 to 2025-10-22		Nonparametric	0.000765	0.000785	0.000390	0.00110	0.000296	0.386	-0.377
13_2_4_121	MW-03	Appendix IV	Radium 226 and 228	pCi/L	16	2	12%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	1.04	0.938	0.540	1.92	0.410	0.392	1.05
13_2_4_122	MW-03	Appendix IV	Selenium	mg/L	17	3	18%	2022-11-28 to 2025-10-22	Gamma; Normal	Normal	0.000414	0.000405	0.000170	0.000620	0.000106	0.256	-0.281
13_2_4_125	MW-03	Appendix IV	Thallium	mg/L	17	16	94%	2022-11-28 to 2025-10-22		Nonparametric	0.000180	0.000180	0.000180	0.000180	NA	NA	NA
13_2_5_111	MW-03	Part 115	Copper	mg/L	17	8	47%	2022-11-28 to 2025-10-22	Nonparametric	Nonparametric	0.000481	0.000300	0.000220	0.00100	0.000335	0.695	0.878
13_2_5_114	MW-03	Part 115	Iron	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal	Gamma	1.29	0.630	0.0980	5.90	1.55	1.20	2.01
13_2_5_119	MW-03	Part 115	Nickel	mg/L	17	1	6%	2022-11-28 to 2025-10-22	Nonparametric	Nonparametric	0.00222	0.00135	0.000850	0.0150	0.00343	1.55	3.92
13_2_5_128	MW-03	Part 115	Vanadium	mg/L	17	9	53%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Nonparametric	0.00153	0.00145	0.00120	0.00220	0.000333	0.218	1.32
13_2_5_129	MW-03	Part 115	Zinc	mg/L	17	9	53%	2022-11-28 to 2025-10-22	Gamma; Lognormal	Nonparametric	0.00922	0.00750	0.000590	0.0190	0.00851	0.923	0.133
14_2_3_105	MW-04	Appendix III	Boron	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	3.97	4.00	2.60	4.70	0.484	0.122	-1.13
14_2_3_107	MW-04	Appendix III	Calcium	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	370	360	250	560	63.8	0.173	1.39
14_2_3_108	MW-04	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	149	150	21.0	300	70.6	0.474	0.140
14_2_3_112	MW-04	Appendix III	Fluoride	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Lognormal	Lognormal	1.40	1.40	0.760	2.30	0.329	0.235	1.13
14_2_3_120	MW-04	Appendix III	pH (field)	su	17	0	0%	2022-11-28 to 2025-10-22	Nonparametric	Nonparametric	7.32	7.34	6.78	7.66	0.177	0.0242	-1.44
14_2_3_124	MW-04	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Normal	Normal	617	630	1.80	1100	229	0.371	-0.758

(Table continues on next page)

Table 2: Summary Statistics, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	Skewness
14_2_3_126	MW-04	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	1882	1900	1200	2200	243	0.129	-1.25
14_2_4_101	MW-04	Appendix IV	Antimony	mg/L	17	11	65%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Nonparametric	0.000270	0.000275	0.0000710	0.000460	0.000177	0.656	-0.0298
14_2_4_102	MW-04	Appendix IV	Arsenic	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal	Gamma	0.00107	0.00100	0.000470	0.00280	0.000517	0.481	2.40
14_2_4_103	MW-04	Appendix IV	Barium	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Nonparametric	Nonparametric	0.134	0.120	0.0250	0.460	0.0894	0.665	3.27
14_2_4_104	MW-04	Appendix IV	Beryllium	mg/L	17	15	88%	2022-11-28 to 2025-10-22		Nonparametric	0.0000600	0.0000600	0.0000540	0.0000660	0.00000849	0.141	NA
14_2_4_109	MW-04	Appendix IV	Chromium, Total	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.00364	0.00380	0.00100	0.00600	0.00131	0.360	-0.149
14_2_4_110	MW-04	Appendix IV	Cobalt	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Lognormal	Lognormal	0.000551	0.000350	0.000110	0.00250	0.000546	0.991	3.14
14_2_4_113	MW-04	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Lognormal	Lognormal	1.40	1.40	0.760	2.30	0.329	0.235	1.13
14_2_4_115	MW-04	Appendix IV	Lead	mg/L	17	15	88%	2022-11-28 to 2025-10-22		Nonparametric	0.000210	0.000210	0.000160	0.000260	0.0000707	0.337	NA
14_2_4_116	MW-04	Appendix IV	Lithium	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.0606	0.0610	0.0310	0.0740	0.0117	0.192	-0.938
14_2_4_117	MW-04	Appendix IV	Mercury	ng/L	17	14	82%	2022-11-28 to 2025-10-22		Nonparametric	1.29	0.760	0.210	2.90	1.42	1.10	1.44
14_2_4_118	MW-04	Appendix IV	Molybdenum	mg/L	17	2	12%	2022-11-28 to 2025-10-22	Nonparametric	Nonparametric	0.00233	0.00120	0.000370	0.0110	0.00334	1.43	2.31
14_2_4_121	MW-04	Appendix IV	Radium 226 and 228	pCi/L	17	6	35%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	1.12	1.20	0.634	1.55	0.325	0.289	-0.396
14_2_4_122	MW-04	Appendix IV	Selenium	mg/L	17	5	29%	2022-11-28 to 2025-10-22	Gamma; Lognormal	Gamma	0.000345	0.000235	0.000170	0.00120	0.000283	0.821	2.90
14_2_5_111	MW-04	Part 115	Copper	mg/L	17	13	76%	2022-11-28 to 2025-10-22		Nonparametric	0.000670	0.000655	0.000270	0.00110	0.000436	0.650	0.0435
14_2_5_114	MW-04	Part 115	Iron	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Nonparametric	Nonparametric	5.02	5.60	0.190	6.80	1.94	0.387	-1.73
14_2_5_119	MW-04	Part 115	Nickel	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Normal	Normal	0.0137	0.0130	0.00190	0.0220	0.00549	0.399	-0.814
14_2_5_128	MW-04	Part 115	Vanadium	mg/L	17	10	59%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Nonparametric	0.000953	0.000970	0.000710	0.00120	0.000190	0.200	-0.0891
14_2_5_129	MW-04	Part 115	Zinc	mg/L	17	10	59%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Nonparametric	0.00371	0.00440	0.00150	0.00590	0.00184	0.496	-0.277
16_1_3_105	MW-06	Appendix III	Boron	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	9.44	9.70	6.40	12.0	1.72	0.182	-0.248
16_1_3_107	MW-06	Appendix III	Calcium	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	247	240	200	310	34.2	0.139	0.644
16_1_3_108	MW-06	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	68.9	71.0	13.0	160	37.4	0.542	0.721
16_1_3_112	MW-06	Appendix III	Fluoride	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	1.22	1.20	0.980	1.60	0.200	0.164	0.575
16_1_3_120	MW-06	Appendix III	pH (field)	su	17	0	0%	2022-11-29 to 2025-10-23	Nonparametric	Nonparametric	7.24	7.27	6.42	7.49	0.229	0.0317	-3.13
16_1_3_124	MW-06	Appendix III	Sulfate (as SO4)	mg/L	17	2	12%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	11.6	9.60	0.980	30.0	8.00	0.690	0.701
16_1_3_126	MW-06	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-11-29 to 2025-10-23		Nonparametric	1200	1200	1100	1300	61.2	0.0510	0
16_1_4_101	MW-06	Appendix IV	Antimony	mg/L	17	15	88%	2022-11-29 to 2025-10-23		Nonparametric	0.000218	0.000218	0.0000750	0.000360	0.000202	0.927	NA
16_1_4_102	MW-06	Appendix IV	Arsenic	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	0.000691	0.000650	0.000470	0.00100	0.000177	0.257	0.682
16_1_4_103	MW-06	Appendix IV	Barium	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Normal	Normal	1.42	1.40	0.990	1.70	0.158	0.111	-0.946
16_1_4_104	MW-06	Appendix IV	Beryllium	mg/L	17	16	94%	2022-11-29 to 2025-10-23		Nonparametric	0.0000520	0.0000520	0.0000520	0.0000520	NA	NA	NA
16_1_4_109	MW-06	Appendix IV	Chromium, Total	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Gamma; Lognormal	Gamma	0.00160	0.00140	0.000950	0.00300	0.000535	0.335	1.26
16_1_4_110	MW-06	Appendix IV	Cobalt	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	0.000501	0.000460	0.000330	0.000800	0.000139	0.278	0.933
16_1_4_113	MW-06	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	1.22	1.20	0.980	1.60	0.200	0.164	0.575
16_1_4_115	MW-06	Appendix IV	Lead	mg/L	17	10	59%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Nonparametric	0.000226	0.000230	0.000120	0.000350	0.0000746	0.330	0.365
16_1_4_116	MW-06	Appendix IV	Lithium	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	0.176	0.180	0.110	0.230	0.0381	0.217	-0.163
16_1_4_117	MW-06	Appendix IV	Mercury	ng/L	17	14	82%	2022-11-29 to 2025-10-23		Nonparametric	0.700	0.700	0.530	0.870	0.170	0.243	0
16_1_4_118	MW-06	Appendix IV	Molybdenum	mg/L	17	10	59%	2022-11-29 to 2025-10-23	Nonparametric	Nonparametric	0.000336	0.000280	0.000250	0.000560	0.000116	0.346	1.57
16_1_4_121	MW-06	Appendix IV	Radium 226 and 228	pCi/L	17	3	18%	2022-11-29 to 2025-10-23	Gamma; Lognormal	Gamma	0.941	0.857	0.460	1.91	0.378	0.401	1.48
16_1_4_122	MW-06	Appendix IV	Selenium	mg/L	17	5	29%	2022-11-29 to 2025-10-23	Nonparametric	Nonparametric	0.000236	0.000220	0.000160	0.000470	0.0000799	0.339	2.63
16_1_5_111	MW-06	Part 115	Copper	mg/L	17	13	76%	2022-11-29 to 2025-10-23		Nonparametric	0.000300	0.000285	0.000250	0.000380	0.0000560	0.187	1.44
16_1_5_114	MW-06	Part 115	Iron	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	16.5	17.0	4.60	31.0	6.95	0.421	0.253
16_1_5_119	MW-06	Part 115	Nickel	mg/L	17	6	35%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	0.000982	0.000950	0.000790	0.00120	0.000129	0.131	0.205
16_1_5_128	MW-06	Part 115	Vanadium	mg/L	17	14	82%	2022-11-29 to 2025-10-23		Nonparametric	0.000627	0.000640	0.000540	0.000700	0.0000808	0.129	-0.722

(Table continues on next page)

Table 2: Summary Statistics, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	Skewness
16_1_5_129	MW-06	Part 115	Zinc	mg/L	17	2	12%	2022-11-29 to 2025-10-23	Nonparametric	Nonparametric	0.0207	0.00180	0.00120	0.0940	0.0338	1.63	1.39
17_1_3_105	MW-07	Appendix III	Boron	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	11.2	11.0	8.80	13.0	1.10	0.0986	-0.175
17_1_3_107	MW-07	Appendix III	Calcium	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Normal	Normal	146	150	120	160	12.2	0.0834	-0.620
17_1_3_108	MW-07	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Nonparametric	Nonparametric	14.6	14.0	13.0	17.0	1.28	0.0876	0.695
17_1_3_112	MW-07	Appendix III	Fluoride	mg/L	17	4	24%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.122	0.120	0.0680	0.220	0.0469	0.385	0.768
17_1_3_120	MW-07	Appendix III	pH (field)	su	17	0	0%	2022-11-30 to 2025-10-22	Nonparametric	Nonparametric	6.89	6.88	6.58	7.05	0.120	0.0174	-1.25
17_1_3_124	MW-07	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	26.0	28.0	15.0	37.0	7.73	0.297	-0.128
17_1_3_126	MW-07	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Normal	Normal	656	670	470	740	74.8	0.114	-1.46
17_1_4_101	MW-07	Appendix IV	Antimony	mg/L	17	16	94%	2022-11-30 to 2025-10-22		Nonparametric	0.0000710	0.0000710	0.0000710	0.0000710	NA	NA	NA
17_1_4_102	MW-07	Appendix IV	Arsenic	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.000208	0.000210	0.000130	0.000290	0.0000356	0.172	0.0212
17_1_4_103	MW-07	Appendix IV	Barium	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.355	0.350	0.250	0.430	0.0426	0.120	-0.510
17_1_4_104	MW-07	Appendix IV	Beryllium	mg/L	17	13	76%	2022-11-30 to 2025-10-22		Nonparametric	0.0000595	0.0000585	0.0000550	0.0000660	0.00000545	0.0915	0.446
17_1_4_109	MW-07	Appendix IV	Chromium, Total	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal	Gamma	0.000365	0.000340	0.000280	0.000740	0.000107	0.292	2.98
17_1_4_110	MW-07	Appendix IV	Cobalt	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.000925	0.000970	0.000710	0.00110	0.000112	0.121	-0.365
17_1_4_113	MW-07	Appendix IV	Fluoride (App IV)	mg/L	17	4	24%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.122	0.120	0.0680	0.220	0.0469	0.385	0.768
17_1_4_116	MW-07	Appendix IV	Lithium	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.00605	0.00570	0.00310	0.0100	0.00154	0.255	0.799
17_1_4_117	MW-07	Appendix IV	Mercury	ng/L	17	16	94%	2022-11-30 to 2025-10-22		Nonparametric	0.240	0.240	0.240	0.240	NA	NA	NA
17_1_4_121	MW-07	Appendix IV	Radium 226 and 228	pCi/L	17	2	12%	2022-11-30 to 2025-10-22	Gamma; Lognormal	Gamma	1.00	0.965	0.570	2.36	0.425	0.425	2.52
17_1_4_122	MW-07	Appendix IV	Selenium	mg/L	17	9	53%	2022-11-30 to 2025-10-22	Gamma; Lognormal	Nonparametric	0.000136	0.000120	0.000100	0.000230	0.0000434	0.319	1.79
17_1_5_111	MW-07	Part 115	Copper	mg/L	17	13	76%	2022-11-30 to 2025-10-22		Nonparametric	0.000335	0.000255	0.000210	0.000620	0.000192	0.572	1.90
17_1_5_114	MW-07	Part 115	Iron	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	16.4	16.0	13.0	21.0	2.32	0.142	0.298
17_1_5_119	MW-07	Part 115	Nickel	mg/L	17	14	82%	2022-11-30 to 2025-10-22		Nonparametric	0.000370	0.000240	0.000160	0.000710	0.000297	0.803	1.59
17_1_5_128	MW-07	Part 115	Vanadium	mg/L	17	12	71%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Nonparametric	0.000820	0.000790	0.000750	0.000950	0.0000800	0.0976	1.39
17_1_5_129	MW-07	Part 115	Zinc	mg/L	17	10	59%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Nonparametric	0.0121	0.0160	0.000750	0.0250	0.0101	0.838	-0.0186
18_1_3_105	MW-08	Appendix III	Boron	mg/L	17	0	0%	2022-12-01 to 2025-10-22	Normal	Normal	6.19	7.00	2.50	9.30	1.89	0.305	-0.430
18_1_3_107	MW-08	Appendix III	Calcium	mg/L	17	0	0%	2022-12-01 to 2025-10-22	Nonparametric	Nonparametric	137	130	120	160	14.0	0.102	0.288
18_1_3_108	MW-08	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-12-01 to 2025-10-22	Nonparametric	Nonparametric	39.6	30.0	17.0	110	27.8	0.702	1.86
18_1_3_112	MW-08	Appendix III	Fluoride	mg/L	17	0	0%	2022-12-01 to 2025-10-22	Normal	Normal	0.924	1.00	0.400	1.30	0.251	0.271	-0.803
18_1_3_120	MW-08	Appendix III	pH (field)	su	17	0	0%	2022-12-01 to 2025-10-22	Nonparametric	Nonparametric	7.18	7.24	6.21	7.51	0.277	0.0386	-2.85
18_1_3_124	MW-08	Appendix III	Sulfate (as SO4)	mg/L	17	4	24%	2022-12-01 to 2025-10-22	Gamma; Lognormal; Normal	Gamma	19.4	13.0	0.600	65.0	19.8	1.02	1.22
18_1_3_126	MW-08	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-12-01 to 2025-10-22	Gamma; Lognormal; Normal	Normal	566	550	440	780	81.9	0.145	1.00
18_1_4_101	MW-08	Appendix IV	Antimony	mg/L	17	9	53%	2022-12-01 to 2025-10-22	Gamma; Lognormal; Normal	Nonparametric	0.000146	0.000135	0.0000540	0.000280	0.0000706	0.483	0.839
18_1_4_102	MW-08	Appendix IV	Arsenic	mg/L	17	0	0%	2022-12-01 to 2025-10-22	Gamma; Normal	Normal	0.0369	0.0410	0.00690	0.0570	0.0141	0.383	-0.826
18_1_4_103	MW-08	Appendix IV	Barium	mg/L	17	0	0%	2022-12-01 to 2025-10-22	Gamma; Lognormal; Normal	Normal	1.21	1.20	0.750	1.50	0.210	0.174	-0.531
18_1_4_104	MW-08	Appendix IV	Beryllium	mg/L	17	16	94%	2022-12-01 to 2025-10-22		Nonparametric	0.000120	0.000120	0.000120	0.000120	NA	NA	NA
18_1_4_106	MW-08	Appendix IV	Cadmium	mg/L	17	16	94%	2022-12-01 to 2025-10-22		Nonparametric	0.000110	0.000110	0.000110	0.000110	NA	NA	NA
18_1_4_109	MW-08	Appendix IV	Chromium, Total	mg/L	17	0	0%	2022-12-01 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.000794	0.000710	0.000430	0.00150	0.000265	0.334	1.17
18_1_4_110	MW-08	Appendix IV	Cobalt	mg/L	17	0	0%	2022-12-01 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.000515	0.000510	0.000260	0.000980	0.000190	0.370	0.830
18_1_4_113	MW-08	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-12-01 to 2025-10-22	Normal	Normal	0.924	1.00	0.400	1.30	0.251	0.271	-0.803
18_1_4_115	MW-08	Appendix IV	Lead	mg/L	17	11	65%	2022-12-01 to 2025-10-22	Gamma; Lognormal	Nonparametric	0.000735	0.000220	0.000100	0.00290	0.00110	1.49	2.13
18_1_4_116	MW-08	Appendix IV	Lithium	mg/L	17	0	0%	2022-12-01 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.0993	0.0980	0.0630	0.140	0.0248	0.249	0.202
18_1_4_117	MW-08	Appendix IV	Mercury	ng/L	17	16	94%	2022-12-01 to 2025-10-22		Nonparametric	0.650	0.650	0.650	0.650	NA	NA	NA
18_1_4_118	MW-08	Appendix IV	Molybdenum	mg/L	17	1	6%	2022-12-01 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.00144	0.00155	0.000310	0.00290	0.000856	0.596	0.244

(Table continues on next page)

Table 2: Summary Statistics, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	Skewness
18_1_4_121	MW-08	Appendix IV	Radium 226 and 228	pCi/L	17	4	24%	2022-12-01 to 2025-10-22	Gamma; Lognormal; Normal	Normal	1.09	0.984	0.550	2.10	0.427	0.391	1.08
18_1_4_122	MW-08	Appendix IV	Selenium	mg/L	17	6	35%	2022-12-01 to 2025-10-22	Lognormal	Lognormal	0.000173	0.000140	0.000110	0.000340	0.0000759	0.439	1.70
18_1_4_125	MW-08	Appendix IV	Thallium	mg/L	17	16	94%	2022-12-01 to 2025-10-22		Nonparametric	0.000130	0.000130	0.000130	0.000130	NA	NA	NA
18_1_5_111	MW-08	Part 115	Copper	mg/L	17	6	35%	2022-12-01 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.000410	0.000350	0.000210	0.000800	0.000178	0.434	1.20
18_1_5_114	MW-08	Part 115	Iron	mg/L	17	0	0%	2022-12-01 to 2025-10-22	Gamma; Lognormal; Normal	Normal	18.9	19.0	9.50	32.0	6.08	0.322	0.577
18_1_5_119	MW-08	Part 115	Nickel	mg/L	17	0	0%	2022-12-01 to 2025-10-22	Nonparametric	Nonparametric	0.00275	0.00130	0.000850	0.0130	0.00298	1.08	2.83
18_1_5_128	MW-08	Part 115	Vanadium	mg/L	17	14	82%	2022-12-01 to 2025-10-22		Nonparametric	0.000500	0.000300	0.000290	0.000910	0.000355	0.710	1.73
18_1_5_129	MW-08	Part 115	Zinc	mg/L	17	3	18%	2022-12-01 to 2025-10-22	Nonparametric	Nonparametric	0.0313	0.00215	0.00130	0.160	0.0527	1.69	1.67
19_2_3_105	MW-09	Appendix III	Boron	mg/L	17	0	0%	2022-11-28 to 2025-10-20	Gamma; Lognormal; Normal	Normal	5.72	5.80	4.90	6.90	0.552	0.0964	0.178
19_2_3_107	MW-09	Appendix III	Calcium	mg/L	17	0	0%	2022-11-28 to 2025-10-20	Gamma; Lognormal; Normal	Normal	394	410	230	510	87.7	0.223	-0.314
19_2_3_108	MW-09	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-11-28 to 2025-10-20	Lognormal	Lognormal	24.9	18.0	11.0	67.0	16.8	0.677	1.51
19_2_3_112	MW-09	Appendix III	Fluoride	mg/L	17	0	0%	2022-11-28 to 2025-10-20	Gamma; Lognormal; Normal	Normal	2.53	2.50	2.10	2.90	0.266	0.105	-0.111
19_2_3_120	MW-09	Appendix III	pH (field)	su	17	0	0%	2022-11-28 to 2025-10-20	Gamma; Lognormal; Normal	Normal	7.19	7.20	6.88	7.52	0.140	0.0195	0.137
19_2_3_124	MW-09	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	2022-11-28 to 2025-10-20	Gamma; Normal	Normal	513	580	83.0	930	256	0.500	-0.315
19_2_3_126	MW-09	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-11-28 to 2025-10-20	Gamma; Lognormal; Normal	Normal	1488	1600	740	2000	355	0.239	-0.576
19_2_4_101	MW-09	Appendix IV	Antimony	mg/L	17	12	71%	2022-11-28 to 2025-10-20	Gamma; Lognormal; Normal	Nonparametric	0.000177	0.000120	0.0000730	0.000370	0.000124	0.700	1.19
19_2_4_102	MW-09	Appendix IV	Arsenic	mg/L	17	0	0%	2022-11-28 to 2025-10-20	Nonparametric	Nonparametric	0.00216	0.00230	0.00130	0.00300	0.000516	0.239	-0.554
19_2_4_103	MW-09	Appendix IV	Barium	mg/L	17	0	0%	2022-11-28 to 2025-10-20	Lognormal	Lognormal	0.362	0.200	0.0970	2.40	0.539	1.49	3.78
19_2_4_104	MW-09	Appendix IV	Beryllium	mg/L	17	13	76%	2022-11-28 to 2025-10-20		Nonparametric	0.0000875	0.0000715	0.0000570	0.000150	0.0000436	0.499	1.52
19_2_4_109	MW-09	Appendix IV	Chromium, Total	mg/L	17	0	0%	2022-11-28 to 2025-10-20	Gamma; Lognormal; Normal	Normal	0.00238	0.00240	0.00160	0.00320	0.000491	0.206	0.164
19_2_4_110	MW-09	Appendix IV	Cobalt	mg/L	17	0	0%	2022-11-28 to 2025-10-20	Gamma; Lognormal; Normal	Normal	0.000491	0.000460	0.000230	0.000990	0.000218	0.444	0.684
19_2_4_113	MW-09	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-11-28 to 2025-10-20	Gamma; Lognormal; Normal	Normal	2.53	2.50	2.10	2.90	0.266	0.105	-0.111
19_2_4_116	MW-09	Appendix IV	Lithium	mg/L	17	0	0%	2022-11-28 to 2025-10-20	Gamma; Lognormal; Normal	Normal	0.302	0.300	0.260	0.340	0.0259	0.0856	-0.0974
19_2_4_117	MW-09	Appendix IV	Mercury	ng/L	17	14	82%	2022-11-28 to 2025-10-20		Nonparametric	1500	2100	0.320	2400	1307	0.872	-1.63
19_2_4_118	MW-09	Appendix IV	Molybdenum	mg/L	17	0	0%	2022-11-28 to 2025-10-20	Gamma; Lognormal; Normal	Normal	0.0221	0.0210	0.00970	0.0330	0.00613	0.277	-0.299
19_2_4_121	MW-09	Appendix IV	Radium 226 and 228	pCi/L	17	15	88%	2022-11-28 to 2025-10-20		Nonparametric	0.708	0.708	0.626	0.789	0.115	0.163	NA
19_2_4_122	MW-09	Appendix IV	Selenium	mg/L	17	2	12%	2022-11-28 to 2025-10-20	Gamma; Lognormal; Normal	Normal	0.000303	0.000270	0.000120	0.000640	0.000115	0.378	1.76
19_2_5_111	MW-09	Part 115	Copper	mg/L	17	11	65%	2022-11-28 to 2025-10-20	Gamma; Lognormal	Nonparametric	0.000482	0.000315	0.000240	0.00130	0.000406	0.843	2.32
19_2_5_114	MW-09	Part 115	Iron	mg/L	17	0	0%	2022-11-28 to 2025-10-20	Gamma; Lognormal; Normal	Normal	20.5	20.0	13.0	26.0	4.19	0.204	-0.221
19_2_5_119	MW-09	Part 115	Nickel	mg/L	17	0	0%	2022-11-28 to 2025-10-20	Lognormal	Nonparametric	0.0101	0.00200	0.000720	0.100	0.0238	2.35	3.78
19_2_5_128	MW-09	Part 115	Vanadium	mg/L	17	15	88%	2022-11-28 to 2025-10-20		Nonparametric	0.000590	0.000590	0.000470	0.000710	0.000170	0.288	NA
19_2_5_129	MW-09	Part 115	Zinc	mg/L	17	8	47%	2022-11-28 to 2025-10-20	Gamma; Lognormal; Normal	Gamma	0.00942	0.00710	0.00150	0.0250	0.00843	0.894	0.854
20_3_3_105	MW-10	Appendix III	Boron	mg/L	17	0	0%	2022-11-29 to 2025-10-20	Gamma; Normal	Normal	18.3	21.0	4.50	30.0	8.32	0.455	-0.262
20_3_3_107	MW-10	Appendix III	Calcium	mg/L	17	0	0%	2022-11-29 to 2025-10-20	Gamma; Lognormal	Gamma	295	270	160	590	111	0.375	1.43
20_3_3_108	MW-10	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-11-29 to 2025-10-20	Gamma; Lognormal; Normal	Normal	319	310	92.0	700	191	0.600	0.855
20_3_3_112	MW-10	Appendix III	Fluoride	mg/L	17	0	0%	2022-11-29 to 2025-10-20	Gamma; Lognormal; Normal	Normal	5.29	5.70	2.70	7.70	1.53	0.289	-0.309
20_3_3_120	MW-10	Appendix III	pH (field)	su	17	0	0%	2022-11-29 to 2025-10-20	Gamma; Lognormal; Normal	Normal	7.75	7.77	7.05	8.81	0.380	0.0491	1.07
20_3_3_124	MW-10	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	2022-11-29 to 2025-10-20	Gamma; Lognormal; Normal	Normal	588	450	140	1700	393	0.668	1.49
20_3_3_126	MW-10	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-11-29 to 2025-10-20	Lognormal	Lognormal	2059	1900	1500	3200	473	0.230	1.18
20_3_4_101	MW-10	Appendix IV	Antimony	mg/L	17	13	76%	2022-11-29 to 2025-10-20		Nonparametric	0.000172	0.000120	0.000110	0.000340	0.000112	0.650	1.96
20_3_4_102	MW-10	Appendix IV	Arsenic	mg/L	17	0	0%	2022-11-29 to 2025-10-20	Gamma; Lognormal; Normal	Normal	0.000822	0.000730	0.000200	0.00200	0.000538	0.655	0.938
20_3_4_103	MW-10	Appendix IV	Barium	mg/L	17	0	0%	2022-11-29 to 2025-10-20	Gamma; Lognormal; Normal	Normal	0.316	0.280	0.140	0.640	0.136	0.429	1.13
20_3_4_104	MW-10	Appendix IV	Beryllium	mg/L	17	7	41%	2022-11-29 to 2025-10-20	Gamma; Lognormal; Normal	Normal	0.0000973	0.0000765	0.0000520	0.000220	0.0000529	0.544	1.64

(Table continues on next page)

Table 2: Summary Statistics, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	Skewness
20_3_4_109	MW-10	Appendix IV	Chromium, Total	mg/L	17	0	0%	2022-11-29 to 2025-10-20	Gamma; Lognormal; Normal	Normal	0.00390	0.00410	0.00130	0.00850	0.00191	0.490	0.807
20_3_4_110	MW-10	Appendix IV	Cobalt	mg/L	17	1	6%	2022-11-29 to 2025-10-20	Gamma; Lognormal	Gamma	0.000512	0.000405	0.000100	0.00180	0.000391	0.765	2.63
20_3_4_113	MW-10	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-11-29 to 2025-10-20	Gamma; Lognormal; Normal	Normal	5.29	5.70	2.70	7.70	1.53	0.289	-0.309
20_3_4_115	MW-10	Appendix IV	Lead	mg/L	17	15	88%	2022-11-29 to 2025-10-20		Nonparametric	0.000145	0.000145	0.000120	0.000170	0.0000354	0.244	NA
20_3_4_116	MW-10	Appendix IV	Lithium	mg/L	17	0	0%	2022-11-29 to 2025-10-20	Gamma; Lognormal; Normal	Normal	0.940	0.940	0.540	1.60	0.239	0.254	0.940
20_3_4_117	MW-10	Appendix IV	Mercury	ng/L	17	15	88%	2022-11-29 to 2025-10-20		Nonparametric	950	950	0.370	1900	1343	1.41	NA
20_3_4_118	MW-10	Appendix IV	Molybdenum	mg/L	17	0	0%	2022-11-29 to 2025-10-20	Gamma; Lognormal; Normal	Normal	0.00301	0.00280	0.000650	0.00720	0.00171	0.568	0.895
20_3_4_121	MW-10	Appendix IV	Radium 226 and 228	pCi/L	17	13	76%	2022-11-29 to 2025-10-20		Nonparametric	0.971	0.896	0.732	1.36	0.278	0.287	1.29
20_3_4_122	MW-10	Appendix IV	Selenium	mg/L	17	1	6%	2022-11-29 to 2025-10-20	Gamma; Lognormal	Gamma	0.000366	0.000340	0.000190	0.000830	0.000139	0.381	2.63
20_3_5_111	MW-10	Part 115	Copper	mg/L	17	14	82%	2022-11-29 to 2025-10-20		Nonparametric	0.000723	0.000490	0.000380	0.00130	0.000502	0.695	1.64
20_3_5_114	MW-10	Part 115	Iron	mg/L	17	0	0%	2022-11-29 to 2025-10-20	Gamma; Lognormal; Normal	Normal	4.90	4.50	2.30	7.70	1.78	0.364	0.175
20_3_5_119	MW-10	Part 115	Nickel	mg/L	17	7	41%	2022-11-29 to 2025-10-20	Nonparametric	Nonparametric	0.00101	0.000885	0.000760	0.00180	0.000310	0.308	2.21
20_3_5_128	MW-10	Part 115	Vanadium	mg/L	17	12	71%	2022-11-29 to 2025-10-20	Gamma; Lognormal; Normal	Nonparametric	0.00116	0.00120	0.000890	0.00140	0.000211	0.182	-0.272
20_3_5_129	MW-10	Part 115	Zinc	mg/L	17	7	41%	2022-11-29 to 2025-10-20	Lognormal	Nonparametric	0.00697	0.00215	0.00120	0.0190	0.00710	1.02	0.667
21_2_3_105	MW-11	Appendix III	Boron	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	6.24	5.20	1.50	13.0	3.56	0.570	0.648
21_2_3_107	MW-11	Appendix III	Calcium	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	258	270	130	380	68.0	0.263	-0.178
21_2_3_108	MW-11	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	68.6	72.0	38.0	95.0	17.1	0.249	-0.219
21_2_3_112	MW-11	Appendix III	Fluoride	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	0.641	0.640	0.210	1.40	0.339	0.529	0.686
21_2_3_120	MW-11	Appendix III	pH (field)	su	17	0	0%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	7.29	7.31	7.09	7.47	0.102	0.0140	-0.248
21_2_3_124	MW-11	Appendix III	Sulfate (as SO4)	mg/L	17	6	35%	2022-11-29 to 2025-10-23	Gamma; Lognormal	Gamma	54.3	17.0	1.80	210	73.8	1.36	1.58
21_2_3_126	MW-11	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	1043	1000	680	1800	242	0.232	1.88
21_2_4_101	MW-11	Appendix IV	Antimony	mg/L	17	12	71%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Nonparametric	0.000326	0.000280	0.0000820	0.000690	0.000222	0.680	1.27
21_2_4_102	MW-11	Appendix IV	Arsenic	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	0.00183	0.00160	0.000610	0.00440	0.00101	0.552	1.73
21_2_4_103	MW-11	Appendix IV	Barium	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	0.648	0.590	0.360	1.20	0.197	0.304	1.33
21_2_4_104	MW-11	Appendix IV	Beryllium	mg/L	17	13	76%	2022-11-29 to 2025-10-23		Nonparametric	0.000168	0.0000895	0.0000540	0.000440	0.000182	1.08	1.95
21_2_4_106	MW-11	Appendix IV	Cadmium	mg/L	17	14	82%	2022-11-29 to 2025-10-23		Nonparametric	0.000413	0.000350	0.000160	0.000730	0.000290	0.702	0.935
21_2_4_109	MW-11	Appendix IV	Chromium, Total	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Nonparametric	Nonparametric	0.00153	0.000910	0.000450	0.00860	0.00196	1.29	3.35
21_2_4_110	MW-11	Appendix IV	Cobalt	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Lognormal	Lognormal	0.000715	0.000400	0.000230	0.00260	0.000714	0.998	2.14
21_2_4_113	MW-11	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	0.641	0.640	0.210	1.40	0.339	0.529	0.686
21_2_4_115	MW-11	Appendix IV	Lead	mg/L	17	3	18%	2022-11-29 to 2025-10-23	Gamma; Lognormal	Gamma	0.00875	0.000815	0.000170	0.0680	0.0192	2.20	2.76
21_2_4_116	MW-11	Appendix IV	Lithium	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	0.0680	0.0550	0.00590	0.220	0.0542	0.796	1.53
21_2_4_117	MW-11	Appendix IV	Mercury	ng/L	17	13	76%	2022-11-29 to 2025-10-23		Nonparametric	276	1.90	0.880	1100	549	1.99	2.0
21_2_4_118	MW-11	Appendix IV	Molybdenum	mg/L	17	2	12%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	0.00155	0.00130	0.000430	0.00390	0.00102	0.658	1.11
21_2_4_121	MW-11	Appendix IV	Radium 226 and 228	pCi/L	16	5	31%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	1.03	0.852	0.460	1.76	0.418	0.406	0.645
21_2_4_122	MW-11	Appendix IV	Selenium	mg/L	17	3	18%	2022-11-29 to 2025-10-23	Lognormal	Lognormal	0.000255	0.000205	0.000140	0.000710	0.000153	0.599	2.32
21_2_4_125	MW-11	Appendix IV	Thallium	mg/L	17	16	94%	2022-11-29 to 2025-10-23		Nonparametric	0.000210	0.000210	0.000210	0.000210	NA	NA	NA
21_2_5_111	MW-11	Part 115	Copper	mg/L	17	4	24%	2022-11-29 to 2025-10-23	Lognormal	Nonparametric	0.00251	0.000470	0.000200	0.0190	0.00523	2.09	3.06
21_2_5_114	MW-11	Part 115	Iron	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Normal	7.22	7.30	3.60	11.0	2.28	0.316	-0.113
21_2_5_119	MW-11	Part 115	Nickel	mg/L	17	0	0%	2022-11-29 to 2025-10-23	Nonparametric	Nonparametric	0.00267	0.00150	0.000650	0.0150	0.00375	1.40	2.86
21_2_5_123	MW-11	Part 115	Silver	mg/L	17	14	82%	2022-11-29 to 2025-10-23		Nonparametric	0.000153	0.000150	0.000140	0.000170	0.0000153	0.0996	0.935
21_2_5_128	MW-11	Part 115	Vanadium	mg/L	17	13	76%	2022-11-29 to 2025-10-23		Nonparametric	0.00132	0.000840	0.000620	0.00300	0.00113	0.852	1.87
21_2_5_129	MW-11	Part 115	Zinc	mg/L	17	4	24%	2022-11-29 to 2025-10-23	Gamma; Lognormal; Normal	Gamma	0.0270	0.0320	0.00180	0.100	0.0280	1.04	1.47
22_2_3_105	MW-12	Appendix III	Boron	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.329	0.330	0.190	0.620	0.113	0.342	0.955

(Table continues on next page)

Table 2: Summary Statistics, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	Skewness
22_2_3_107	MW-12	Appendix III	Calcium	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	67.7	69.0	40.0	99.0	19.2	0.284	0.0103
22_2_3_108	MW-12	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Lognormal	Lognormal	18.9	17.0	12.0	27.0	4.57	0.242	0.786
22_2_3_112	MW-12	Appendix III	Fluoride	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal	Gamma	0.322	0.290	0.200	0.540	0.102	0.317	0.898
22_2_3_120	MW-12	Appendix III	pH (field)	su	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	7.64	7.64	7.00	8.32	0.327	0.0428	0.299
22_2_3_124	MW-12	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	102	100	52.0	180	40.8	0.401	0.574
22_2_3_126	MW-12	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	286	300	100	420	88.6	0.310	-0.355
22_2_4_101	MW-12	Appendix IV	Antimony	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.000654	0.000640	0.000170	0.00150	0.000339	0.518	0.876
22_2_4_102	MW-12	Appendix IV	Arsenic	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.00269	0.00240	0.00140	0.00640	0.00136	0.506	1.62
22_2_4_103	MW-12	Appendix IV	Barium	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.0508	0.0380	0.0170	0.140	0.0356	0.701	1.40
22_2_4_106	MW-12	Appendix IV	Cadmium	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal	Gamma	0.00224	0.00140	0.000540	0.0110	0.00254	1.13	2.90
22_2_4_109	MW-12	Appendix IV	Chromium, Total	mg/L	17	6	35%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.000568	0.000480	0.000210	0.000990	0.000284	0.500	0.488
22_2_4_110	MW-12	Appendix IV	Cobalt	mg/L	17	5	29%	2022-11-28 to 2025-10-22	Gamma; Lognormal	Gamma	0.000654	0.000440	0.000110	0.00280	0.000763	1.17	2.35
22_2_4_113	MW-12	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal	Gamma	0.322	0.290	0.200	0.540	0.102	0.317	0.898
22_2_4_115	MW-12	Appendix IV	Lead	mg/L	17	6	35%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.000279	0.000210	0.000140	0.000510	0.000135	0.482	0.677
22_2_4_116	MW-12	Appendix IV	Lithium	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.00376	0.00370	0.00190	0.00640	0.00146	0.389	0.196
22_2_4_117	MW-12	Appendix IV	Mercury	ng/L	17	12	71%	2022-11-28 to 2025-10-22	Gamma	Nonparametric	78.6	1.20	0.830	230	109	1.39	0.837
22_2_4_118	MW-12	Appendix IV	Molybdenum	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal	Gamma	0.00779	0.00720	0.00460	0.0180	0.00301	0.387	2.57
22_2_4_121	MW-12	Appendix IV	Radium 226 and 228	pCi/L	17	10	59%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Nonparametric	0.692	0.623	0.487	1.09	0.206	0.297	1.36
22_2_4_122	MW-12	Appendix IV	Selenium	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Gamma	0.00113	0.000890	0.000130	0.00430	0.00110	0.975	1.62
22_2_5_111	MW-12	Part 115	Copper	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.00138	0.00120	0.000550	0.00340	0.000681	0.492	1.72
22_2_5_114	MW-12	Part 115	Iron	mg/L	17	6	35%	2022-11-28 to 2025-10-22	Lognormal	Nonparametric	0.165	0.0510	0.0210	0.920	0.273	1.65	2.57
22_2_5_119	MW-12	Part 115	Nickel	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal	Gamma	0.00301	0.00260	0.00140	0.00730	0.00157	0.524	1.78
22_2_5_128	MW-12	Part 115	Vanadium	mg/L	17	6	35%	2022-11-28 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.00109	0.000960	0.000460	0.00210	0.000448	0.410	1.13
22_2_5_129	MW-12	Part 115	Zinc	mg/L	17	0	0%	2022-11-28 to 2025-10-22	Gamma; Lognormal	Gamma	0.00982	0.00800	0.00270	0.0230	0.00570	0.581	1.41
28_1_3_105	MW-18	Appendix III	Boron	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	3.11	3.00	1.80	4.40	0.937	0.302	0.0268
28_1_3_107	MW-18	Appendix III	Calcium	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	328	330	240	450	65.6	0.200	0.107
28_1_3_108	MW-18	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	23.2	24.0	16.0	32.0	4.38	0.189	-0.00282
28_1_3_112	MW-18	Appendix III	Fluoride	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	3.96	3.80	2.70	5.10	0.718	0.181	0.0949
28_1_3_120	MW-18	Appendix III	pH (field)	su	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	7.19	7.18	7.02	7.31	0.0836	0.0116	-0.434
28_1_3_124	MW-18	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	783	760	370	1200	229	0.293	0.413
28_1_3_126	MW-18	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	1351	1400	860	1800	237	0.176	0.0266
28_1_4_101	MW-18	Appendix IV	Antimony	mg/L	17	3	18%	2022-11-30 to 2025-10-22	Lognormal	Lognormal	0.000226	0.000135	0.000100	0.00100	0.000233	1.03	3.21
28_1_4_102	MW-18	Appendix IV	Arsenic	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.0282	0.0290	0.0150	0.0440	0.00764	0.271	0.397
28_1_4_103	MW-18	Appendix IV	Barium	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.0199	0.0210	0.0120	0.0340	0.00603	0.302	0.625
28_1_4_104	MW-18	Appendix IV	Beryllium	mg/L	17	14	82%	2022-11-30 to 2025-10-22		Nonparametric	0.0000553	0.0000540	0.0000530	0.0000590	0.00000321	0.0581	1.55
28_1_4_106	MW-18	Appendix IV	Cadmium	mg/L	17	7	41%	2022-11-30 to 2025-10-22	Gamma; Lognormal	Gamma	0.000282	0.000200	0.0000890	0.000900	0.000243	0.863	2.12
28_1_4_109	MW-18	Appendix IV	Chromium, Total	mg/L	17	15	88%	2022-11-30 to 2025-10-22		Nonparametric	0.000440	0.000440	0.000250	0.000630	0.000269	0.611	NA
28_1_4_110	MW-18	Appendix IV	Cobalt	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Lognormal	Lognormal	0.00264	0.00200	0.00110	0.00600	0.00144	0.547	1.42
28_1_4_113	MW-18	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	3.96	3.80	2.70	5.10	0.718	0.181	0.0949
28_1_4_115	MW-18	Appendix IV	Lead	mg/L	17	10	59%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Nonparametric	0.000203	0.000160	0.000140	0.000320	0.0000727	0.359	0.713
28_1_4_116	MW-18	Appendix IV	Lithium	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.0351	0.0380	0.0200	0.0450	0.00777	0.222	-0.342
28_1_4_117	MW-18	Appendix IV	Mercury	ng/L	17	15	88%	2022-11-30 to 2025-10-22		Nonparametric	0.925	0.925	0.860	0.990	0.0919	0.0994	NA
28_1_4_118	MW-18	Appendix IV	Molybdenum	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.0159	0.0140	0.00900	0.0280	0.00489	0.307	0.857

(Table continues on next page)

Table 2: Summary Statistics, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	Skewness
28_1_4_121	MW-18	Appendix IV	Radium 226 and 228	pCi/L	17	9	53%	2022-11-30 to 2025-10-22	Gamma; Lognormal	Nonparametric	0.703	0.659	0.462	1.27	0.247	0.351	2.07
28_1_4_122	MW-18	Appendix IV	Selenium	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.000683	0.000410	0.000140	0.00230	0.000655	0.959	1.45
28_1_4_125	MW-18	Appendix IV	Thallium	mg/L	17	16	94%	2022-11-30 to 2025-10-22		Nonparametric	0.000160	0.000160	0.000160	0.000160	NA	NA	NA
28_1_5_111	MW-18	Part 115	Copper	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Nonparametric	Nonparametric	0.000747	0.000480	0.000330	0.00210	0.000521	0.697	1.73
28_1_5_114	MW-18	Part 115	Iron	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	6.38	6.20	3.30	10.0	1.66	0.260	0.336
28_1_5_119	MW-18	Part 115	Nickel	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal	Gamma	0.00648	0.00560	0.00320	0.0110	0.00247	0.382	0.828
28_1_5_128	MW-18	Part 115	Vanadium	mg/L	17	16	94%	2022-11-30 to 2025-10-22		Nonparametric	0.000360	0.000360	0.000360	0.000360	NA	NA	NA
28_1_5_129	MW-18	Part 115	Zinc	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal	Gamma	0.0565	0.0450	0.0160	0.210	0.0440	0.778	2.88
29_1_3_105	MW-19	Appendix III	Boron	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	2.14	2.00	1.50	3.40	0.517	0.242	0.761
29_1_3_107	MW-19	Appendix III	Calcium	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	461	470	360	550	52.9	0.115	-0.380
29_1_3_108	MW-19	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	42.1	39.0	21.0	75.0	14.6	0.348	0.887
29_1_3_112	MW-19	Appendix III	Fluoride	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	1.86	1.90	1.40	2.30	0.265	0.142	-0.112
29_1_3_120	MW-19	Appendix III	pH (field)	su	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	6.82	6.85	6.39	7.07	0.156	0.0229	-1.11
29_1_3_124	MW-19	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	985	960	600	1300	184	0.187	0.0519
29_1_3_126	MW-19	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	1841	1800	1600	2200	232	0.126	0.485
29_1_4_101	MW-19	Appendix IV	Antimony	mg/L	17	12	71%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Nonparametric	0.000382	0.000430	0.000110	0.000720	0.000242	0.632	0.354
29_1_4_102	MW-19	Appendix IV	Arsenic	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.00482	0.00440	0.00240	0.00730	0.00172	0.356	0.00621
29_1_4_103	MW-19	Appendix IV	Barium	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.0392	0.0390	0.0300	0.0500	0.00528	0.135	0.450
29_1_4_104	MW-19	Appendix IV	Beryllium	mg/L	17	3	18%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.0000824	0.0000810	0.0000570	0.000120	0.0000207	0.251	0.499
29_1_4_106	MW-19	Appendix IV	Cadmium	mg/L	17	16	94%	2022-11-30 to 2025-10-22		Nonparametric	0.000300	0.000300	0.000300	0.000300	NA	NA	NA
29_1_4_109	MW-19	Appendix IV	Chromium, Total	mg/L	17	5	29%	2022-11-30 to 2025-10-22	Gamma; Lognormal	Gamma	0.000291	0.000270	0.000200	0.000530	0.0000869	0.299	2.13
29_1_4_110	MW-19	Appendix IV	Cobalt	mg/L	17	1	6%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.000598	0.000480	0.000130	0.00130	0.000358	0.599	0.584
29_1_4_113	MW-19	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	1.86	1.90	1.40	2.30	0.265	0.142	-0.112
29_1_4_116	MW-19	Appendix IV	Lithium	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.0896	0.0890	0.0730	0.110	0.0111	0.123	0.294
29_1_4_117	MW-19	Appendix IV	Mercury	ng/L	17	16	94%	2022-11-30 to 2025-10-22		Nonparametric	0.260	0.260	0.260	0.260	NA	NA	NA
29_1_4_118	MW-19	Appendix IV	Molybdenum	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.0116	0.0110	0.00390	0.0210	0.00460	0.397	0.605
29_1_4_121	MW-19	Appendix IV	Radium 226 and 228	pCi/L	17	8	47%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.822	0.904	0.514	1.17	0.253	0.308	0.0106
29_1_4_122	MW-19	Appendix IV	Selenium	mg/L	17	11	65%	2022-11-30 to 2025-10-22	Lognormal	Nonparametric	0.000237	0.000140	0.000120	0.000700	0.000229	0.967	2.36
29_1_4_125	MW-19	Appendix IV	Thallium	mg/L	17	16	94%	2022-11-30 to 2025-10-22		Nonparametric	0.000120	0.000120	0.000120	0.000120	NA	NA	NA
29_1_5_111	MW-19	Part 115	Copper	mg/L	17	13	76%	2022-11-30 to 2025-10-22		Nonparametric	0.000300	0.000290	0.000220	0.000400	0.0000891	0.297	0.255
29_1_5_114	MW-19	Part 115	Iron	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	16.1	16.0	8.20	24.0	3.88	0.240	0.160
29_1_5_119	MW-19	Part 115	Nickel	mg/L	17	1	6%	2022-11-30 to 2025-10-22	Lognormal	Lognormal	0.00387	0.00245	0.00110	0.0170	0.00464	1.20	2.43
29_1_5_128	MW-19	Part 115	Vanadium	mg/L	17	14	82%	2022-11-30 to 2025-10-22		Nonparametric	0.000720	0.000670	0.000550	0.000940	0.000200	0.277	1.06
29_1_5_129	MW-19	Part 115	Zinc	mg/L	17	10	59%	2022-11-30 to 2025-10-22	Nonparametric	Nonparametric	0.0170	0.00420	0.00170	0.100	0.0366	2.16	2.64
30_1_3_105	MW-20	Appendix III	Boron	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	1.00	0.920	0.720	1.40	0.219	0.219	0.627
30_1_3_107	MW-20	Appendix III	Calcium	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Normal	Normal	126	130	58.0	170	23.8	0.189	-1.06
30_1_3_108	MW-20	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Normal	Normal	58.8	62.0	29.0	92.0	20.0	0.341	-0.156
30_1_3_112	MW-20	Appendix III	Fluoride	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Nonparametric	Nonparametric	0.259	0.250	0.120	0.550	0.0858	0.331	2.44
30_1_3_120	MW-20	Appendix III	pH (field)	su	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	7.34	7.34	7.14	7.50	0.107	0.0146	-0.343
30_1_3_124	MW-20	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	59.0	52.0	18.0	120	31.4	0.532	0.430
30_1_3_126	MW-20	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	653	650	510	840	83.9	0.128	0.441
30_1_4_101	MW-20	Appendix IV	Antimony	mg/L	17	6	35%	2022-11-30 to 2025-10-22	Lognormal	Lognormal	0.000153	0.000110	0.0000540	0.000650	0.000168	1.10	3.09
30_1_4_102	MW-20	Appendix IV	Arsenic	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.00144	0.00150	0.00100	0.00190	0.000292	0.202	0.187

(Table continues on next page)

Table 2: Summary Statistics, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	Skewness
30_1_4_103	MW-20	Appendix IV	Barium	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal	Gamma	0.522	0.470	0.310	0.940	0.160	0.307	1.50
30_1_4_104	MW-20	Appendix IV	Beryllium	mg/L	17	16	94%	2022-11-30 to 2025-10-22		Nonparametric	0.0000590	0.0000590	0.0000590	0.0000590	NA	NA	NA
30_1_4_106	MW-20	Appendix IV	Cadmium	mg/L	17	16	94%	2022-11-30 to 2025-10-22		Nonparametric	0.000390	0.000390	0.000390	0.000390	NA	NA	NA
30_1_4_109	MW-20	Appendix IV	Chromium, Total	mg/L	17	9	53%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Nonparametric	0.000231	0.000220	0.000190	0.000290	0.0000327	0.141	0.767
30_1_4_110	MW-20	Appendix IV	Cobalt	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.00119	0.00110	0.000690	0.00180	0.000308	0.259	0.310
30_1_4_113	MW-20	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Nonparametric	Nonparametric	0.259	0.250	0.120	0.550	0.0858	0.331	2.44
30_1_4_115	MW-20	Appendix IV	Lead	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Lognormal	Lognormal	0.00226	0.00180	0.00120	0.00780	0.00150	0.664	3.46
30_1_4_116	MW-20	Appendix IV	Lithium	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.0579	0.0600	0.0290	0.0830	0.0152	0.263	-0.380
30_1_4_117	MW-20	Appendix IV	Mercury	ng/L	17	14	82%	2022-11-30 to 2025-10-22		Nonparametric	4.10	5.10	1.90	5.30	1.91	0.465	-1.71
30_1_4_118	MW-20	Appendix IV	Molybdenum	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	0.00439	0.00450	0.00330	0.00580	0.000676	0.154	0.241
30_1_4_121	MW-20	Appendix IV	Radium 226 and 228	pCi/L	16	8	50%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Nonparametric	0.771	0.610	0.479	1.47	0.343	0.444	1.49
30_1_4_122	MW-20	Appendix IV	Selenium	mg/L	17	10	59%	2022-11-30 to 2025-10-22	Nonparametric	Nonparametric	0.000181	0.000130	0.000100	0.000430	0.000123	0.675	1.81
30_1_4_125	MW-20	Appendix IV	Thallium	mg/L	17	16	94%	2022-11-30 to 2025-10-22		Nonparametric	0.000110	0.000110	0.000110	0.000110	NA	NA	NA
30_1_5_111	MW-20	Part 115	Copper	mg/L	17	2	12%	2022-11-30 to 2025-10-22	Lognormal	Lognormal	0.000554	0.000340	0.000200	0.00330	0.000777	1.40	3.60
30_1_5_114	MW-20	Part 115	Iron	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Gamma; Lognormal; Normal	Normal	18.1	18.0	12.0	22.0	2.88	0.160	-0.563
30_1_5_119	MW-20	Part 115	Nickel	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Nonparametric	Nonparametric	0.00954	0.00840	0.00450	0.0340	0.00649	0.680	3.73
30_1_5_129	MW-20	Part 115	Zinc	mg/L	17	0	0%	2022-11-30 to 2025-10-22	Lognormal	Lognormal	0.0371	0.0280	0.0130	0.110	0.0257	0.691	1.69
40_1_3_105	MW-30	Appendix III	Boron	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Lognormal	Lognormal	1.94	1.90	1.40	3.50	0.455	0.235	2.66
40_1_3_107	MW-30	Appendix III	Calcium	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Nonparametric	Nonparametric	495	460	62.0	960	184	0.373	0.415
40_1_3_108	MW-30	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Nonparametric	Nonparametric	379	190	82.0	1200	421	1.11	1.28
40_1_3_112	MW-30	Appendix III	Fluoride	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Nonparametric	Nonparametric	1.08	1.10	0.570	1.40	0.184	0.171	-1.23
40_1_3_120	MW-30	Appendix III	pH (field)	su	17	0	0%	2022-11-30 to 2025-10-21	Nonparametric	Nonparametric	7.04	7.06	6.48	7.25	0.182	0.0259	-1.97
40_1_3_124	MW-30	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Normal	Normal	846	860	440	1000	163	0.193	-1.33
40_1_3_126	MW-30	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Nonparametric	Nonparametric	2612	2300	1800	4300	777	0.297	1.35
40_1_4_101	MW-30	Appendix IV	Antimony	mg/L	17	14	82%	2022-11-30 to 2025-10-21		Nonparametric	0.000750	0.000650	0.000400	0.00120	0.000409	0.546	1.03
40_1_4_102	MW-30	Appendix IV	Arsenic	mg/L	17	2	12%	2022-11-30 to 2025-10-21	Lognormal	Nonparametric	0.00130	0.000580	0.000120	0.00800	0.00201	1.55	3.02
40_1_4_103	MW-30	Appendix IV	Barium	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Gamma; Lognormal; Normal	Normal	0.0679	0.0660	0.0410	0.100	0.0197	0.290	0.460
40_1_4_104	MW-30	Appendix IV	Beryllium	mg/L	17	13	76%	2022-11-30 to 2025-10-21		Nonparametric	0.0000735	0.0000655	0.0000530	0.000110	0.0000252	0.343	1.60
40_1_4_106	MW-30	Appendix IV	Cadmium	mg/L	17	16	94%	2022-11-30 to 2025-10-21		Nonparametric	0.000320	0.000320	0.000320	0.000320	NA	NA	NA
40_1_4_109	MW-30	Appendix IV	Chromium, Total	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Gamma; Lognormal; Normal	Normal	0.00964	0.00870	0.00310	0.0230	0.00465	0.483	1.39
40_1_4_110	MW-30	Appendix IV	Cobalt	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Nonparametric	Nonparametric	0.00394	0.00110	0.000470	0.0460	0.0109	2.76	4.07
40_1_4_113	MW-30	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Nonparametric	Nonparametric	1.08	1.10	0.570	1.40	0.184	0.171	-1.23
40_1_4_115	MW-30	Appendix IV	Lead	mg/L	17	15	88%	2022-11-30 to 2025-10-21		Nonparametric	0.0299	0.0299	0.00170	0.0580	0.0398	1.33	NA
40_1_4_116	MW-30	Appendix IV	Lithium	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Gamma; Lognormal	Gamma	0.138	0.120	0.0860	0.270	0.0436	0.316	1.91
40_1_4_117	MW-30	Appendix IV	Mercury	ng/L	17	16	94%	2022-11-30 to 2025-10-21		Nonparametric	390	390	390	390	NA	NA	NA
40_1_4_118	MW-30	Appendix IV	Molybdenum	mg/L	17	3	18%	2022-11-30 to 2025-10-21	Lognormal	Nonparametric	0.00482	0.00115	0.000320	0.0320	0.00918	1.91	2.59
40_1_4_121	MW-30	Appendix IV	Radium 226 and 228	pCi/L	17	9	53%	2022-11-30 to 2025-10-21	Gamma; Lognormal; Normal	Nonparametric	0.661	0.595	0.445	0.911	0.178	0.269	0.448
40_1_4_122	MW-30	Appendix IV	Selenium	mg/L	17	7	41%	2022-11-30 to 2025-10-21	Nonparametric	Nonparametric	0.000303	0.000135	0.000100	0.00150	0.000430	1.42	2.94
40_1_5_111	MW-30	Part 115	Copper	mg/L	17	11	65%	2022-11-30 to 2025-10-21	Nonparametric	Nonparametric	0.00244	0.000325	0.000200	0.0130	0.00518	2.12	2.45
40_1_5_114	MW-30	Part 115	Iron	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Gamma; Lognormal	Gamma	4.00	2.90	0.870	17.0	3.91	0.978	2.59
40_1_5_119	MW-30	Part 115	Nickel	mg/L	17	3	18%	2022-11-30 to 2025-10-21	Nonparametric	Nonparametric	0.0106	0.00185	0.000700	0.110	0.0287	2.70	3.68
40_1_5_123	MW-30	Part 115	Silver	mg/L	17	16	94%	2022-11-30 to 2025-10-21		Nonparametric	0.000120	0.000120	0.000120	0.000120	NA	NA	NA
40_1_5_128	MW-30	Part 115	Vanadium	mg/L	17	15	88%	2022-11-30 to 2025-10-21		Nonparametric	0.0122	0.0122	0.000470	0.0240	0.0166	1.36	NA

(Table continues on next page)

Table 2: Summary Statistics, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	Skewness
40_1_5_129	MW-30	Part 115	Zinc	mg/L	17	10	59%	2022-11-30 to 2025-10-21	Gamma; Lognormal	Nonparametric	0.0206	0.00490	0.00110	0.100	0.0361	1.75	2.35
41_1_3_105	MW-31	Appendix III	Boron	mg/L	17	0	0%	2022-12-01 to 2025-10-21	Gamma; Lognormal; Normal	Normal	4.86	4.50	3.60	7.00	0.908	0.187	0.967
41_1_3_107	MW-31	Appendix III	Calcium	mg/L	17	0	0%	2022-12-01 to 2025-10-21	Gamma; Lognormal; Normal	Normal	168	170	130	200	21.9	0.131	-0.0629
41_1_3_108	MW-31	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-12-01 to 2025-10-21	Nonparametric	Nonparametric	111	100	87.0	170	23.8	0.216	2.03
41_1_3_112	MW-31	Appendix III	Fluoride	mg/L	17	0	0%	2022-12-01 to 2025-10-21	Nonparametric	Nonparametric	4.58	4.60	3.30	5.20	0.455	0.0994	-1.36
41_1_3_120	MW-31	Appendix III	pH (field)	su	17	0	0%	2022-12-01 to 2025-10-21	Gamma; Lognormal; Normal	Normal	7.84	7.82	7.67	8.08	0.120	0.0153	0.668
41_1_3_124	MW-31	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	2022-12-01 to 2025-10-21	Gamma; Lognormal; Normal	Normal	145	150	19.0	250	76.8	0.531	0.0251
41_1_3_126	MW-31	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-12-01 to 2025-10-21	Gamma; Lognormal; Normal	Normal	815	810	730	960	71.4	0.0876	0.749
41_1_4_101	MW-31	Appendix IV	Antimony	mg/L	17	7	41%	2022-12-01 to 2025-10-21	Gamma; Lognormal; Normal	Nonparametric	0.000351	0.000255	0.0000690	0.00110	0.000332	0.947	1.45
41_1_4_102	MW-31	Appendix IV	Arsenic	mg/L	17	0	0%	2022-12-01 to 2025-10-21	Gamma; Lognormal; Normal	Normal	0.00129	0.00120	0.000730	0.00190	0.000312	0.242	0.396
41_1_4_103	MW-31	Appendix IV	Barium	mg/L	17	0	0%	2022-12-01 to 2025-10-21	Gamma; Lognormal; Normal	Normal	0.185	0.160	0.0990	0.380	0.0713	0.385	1.43
41_1_4_104	MW-31	Appendix IV	Beryllium	mg/L	17	15	88%	2022-12-01 to 2025-10-21		Nonparametric	0.0000750	0.0000750	0.0000540	0.0000960	0.0000297	0.396	NA
41_1_4_106	MW-31	Appendix IV	Cadmium	mg/L	17	16	94%	2022-12-01 to 2025-10-21		Nonparametric	0.0000840	0.0000840	0.0000840	0.0000840	NA	NA	NA
41_1_4_109	MW-31	Appendix IV	Chromium, Total	mg/L	17	0	0%	2022-12-01 to 2025-10-21	Gamma; Lognormal; Normal	Normal	0.00246	0.00230	0.00170	0.00410	0.000725	0.294	1.27
41_1_4_110	MW-31	Appendix IV	Cobalt	mg/L	17	3	18%	2022-12-01 to 2025-10-21	Gamma; Lognormal; Normal	Normal	0.000190	0.000180	0.000100	0.000360	0.0000653	0.344	1.47
41_1_4_113	MW-31	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-12-01 to 2025-10-21	Nonparametric	Nonparametric	4.58	4.60	3.30	5.20	0.455	0.0994	-1.36
41_1_4_115	MW-31	Appendix IV	Lead	mg/L	17	13	76%	2022-12-01 to 2025-10-21		Nonparametric	0.000315	0.000280	0.000250	0.000450	0.0000943	0.299	1.52
41_1_4_116	MW-31	Appendix IV	Lithium	mg/L	17	0	0%	2022-12-01 to 2025-10-21	Gamma; Lognormal; Normal	Normal	0.0494	0.0520	0.0300	0.0630	0.00802	0.162	-0.822
41_1_4_117	MW-31	Appendix IV	Mercury	ng/L	17	14	82%	2022-12-01 to 2025-10-21		Nonparametric	1.27	1.40	0.710	1.70	0.508	0.400	-1.08
41_1_4_118	MW-31	Appendix IV	Molybdenum	mg/L	17	0	0%	2022-12-01 to 2025-10-21	Nonparametric	Nonparametric	0.00177	0.00120	0.000400	0.00910	0.00200	1.13	3.46
41_1_4_121	MW-31	Appendix IV	Radium 226 and 228	pCi/L	17	7	41%	2022-12-01 to 2025-10-21	Gamma; Lognormal	Gamma	0.733	0.632	0.502	1.23	0.251	0.342	1.43
41_1_4_122	MW-31	Appendix IV	Selenium	mg/L	17	6	35%	2022-12-01 to 2025-10-21	Nonparametric	Nonparametric	0.000203	0.000140	0.000100	0.000740	0.000184	0.906	2.99
41_1_4_125	MW-31	Appendix IV	Thallium	mg/L	17	16	94%	2022-12-01 to 2025-10-21		Nonparametric	0.0000880	0.0000880	0.0000880	0.0000880	NA	NA	NA
41_1_5_111	MW-31	Part 115	Copper	mg/L	17	10	59%	2022-12-01 to 2025-10-21	Nonparametric	Nonparametric	0.000510	0.000310	0.000230	0.00170	0.000529	1.04	2.56
41_1_5_114	MW-31	Part 115	Iron	mg/L	17	0	0%	2022-12-01 to 2025-10-21	Lognormal	Nonparametric	0.706	0.390	0.120	2.50	0.670	0.948	1.30
41_1_5_119	MW-31	Part 115	Nickel	mg/L	17	10	59%	2022-12-01 to 2025-10-21	Gamma; Lognormal	Nonparametric	0.0485	0.00270	0.00140	0.240	0.0879	1.81	2.28
41_1_5_128	MW-31	Part 115	Vanadium	mg/L	17	12	71%	2022-12-01 to 2025-10-21	Gamma; Lognormal; Normal	Nonparametric	0.000654	0.000640	0.000450	0.000830	0.000148	0.227	-0.269
41_1_5_129	MW-31	Part 115	Zinc	mg/L	17	9	53%	2022-12-01 to 2025-10-21	Gamma; Lognormal; Normal	Nonparametric	0.00602	0.00520	0.00140	0.0130	0.00476	0.790	0.280
42_1_3_105	MW-32	Appendix III	Boron	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Nonparametric	Nonparametric	3.72	3.10	2.60	5.70	1.02	0.275	0.946
42_1_3_107	MW-32	Appendix III	Calcium	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Gamma; Lognormal; Normal	Normal	171	170	130	220	23.9	0.140	0.184
42_1_3_108	MW-32	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Gamma; Lognormal; Normal	Normal	46.8	47.0	38.0	61.0	5.71	0.122	0.656
42_1_3_112	MW-32	Appendix III	Fluoride	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Gamma; Lognormal; Normal	Normal	1.50	1.50	1.20	1.90	0.177	0.118	0.462
42_1_3_120	MW-32	Appendix III	pH (field)	su	17	0	0%	2022-11-30 to 2025-10-21	Gamma; Lognormal; Normal	Normal	7.61	7.59	7.50	7.75	0.0721	0.00948	0.268
42_1_3_124	MW-32	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Gamma; Lognormal; Normal	Gamma	72	54.0	5.90	190	61.9	0.859	0.504
42_1_3_126	MW-32	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Gamma; Lognormal; Normal	Normal	682	680	550	800	84	0.123	-0.0582
42_1_4_101	MW-32	Appendix IV	Antimony	mg/L	17	13	76%	2022-11-30 to 2025-10-21		Nonparametric	0.000245	0.000106	0.0000670	0.000700	0.000305	1.25	1.93
42_1_4_102	MW-32	Appendix IV	Arsenic	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Nonparametric	Nonparametric	0.000630	0.000520	0.000390	0.00240	0.000462	0.734	3.94
42_1_4_103	MW-32	Appendix IV	Barium	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Gamma; Lognormal; Normal	Normal	0.666	0.600	0.0590	1.40	0.366	0.550	0.571
42_1_4_104	MW-32	Appendix IV	Beryllium	mg/L	17	16	94%	2022-11-30 to 2025-10-21		Nonparametric	0.0000700	0.0000700	0.0000700	0.0000700	NA	NA	NA
42_1_4_106	MW-32	Appendix IV	Cadmium	mg/L	17	16	94%	2022-11-30 to 2025-10-21		Nonparametric	0.000190	0.000190	0.000190	0.000190	NA	NA	NA
42_1_4_109	MW-32	Appendix IV	Chromium, Total	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Nonparametric	Nonparametric	0.000565	0.000380	0.000310	0.00300	0.000635	1.12	3.96
42_1_4_110	MW-32	Appendix IV	Cobalt	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Gamma; Lognormal	Gamma	0.000502	0.000390	0.000210	0.00190	0.000382	0.760	3.38
42_1_4_113	MW-32	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Gamma; Lognormal; Normal	Normal	1.50	1.50	1.20	1.90	0.177	0.118	0.462

(Table continues on next page)

Table 2: Summary Statistics, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	Distributions Fit	Recommended Distribution	Mean	Median	Minimum	Maximum	SD	CV	Skewness
42_1_4_115	MW-32	Appendix IV	Lead	mg/L	17	12	71%	2022-11-30 to 2025-10-21	Lognormal; Normal	Nonparametric	0.000290	0.000380	0.000120	0.000420	0.000147	0.507	-0.573
42_1_4_116	MW-32	Appendix IV	Lithium	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Gamma; Lognormal; Normal	Normal	0.132	0.130	0.0940	0.200	0.0331	0.251	0.699
42_1_4_117	MW-32	Appendix IV	Mercury	ng/L	17	14	82%	2022-11-30 to 2025-10-21		Nonparametric	634	1.20	0.640	1900	1096	1.73	1.73
42_1_4_118	MW-32	Appendix IV	Molybdenum	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Gamma; Lognormal; Normal	Normal	0.00388	0.00380	0.00110	0.00730	0.00136	0.351	0.423
42_1_4_121	MW-32	Appendix IV	Radium 226 and 228	pCi/L	17	9	53%	2022-11-30 to 2025-10-21	Gamma; Lognormal; Normal	Nonparametric	0.747	0.749	0.550	0.985	0.159	0.213	0.189
42_1_4_122	MW-32	Appendix IV	Selenium	mg/L	17	13	76%	2022-11-30 to 2025-10-21		Nonparametric	0.000342	0.000135	0.000100	0.00100	0.000439	1.28	1.99
42_1_5_111	MW-32	Part 115	Copper	mg/L	17	10	59%	2022-11-30 to 2025-10-21	Nonparametric	Nonparametric	0.00254	0.000310	0.000200	0.0160	0.00593	2.33	2.64
42_1_5_114	MW-32	Part 115	Iron	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Gamma; Lognormal; Normal	Normal	15.9	16.0	11.0	21.0	3.02	0.190	-0.151
42_1_5_119	MW-32	Part 115	Nickel	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Nonparametric	Nonparametric	0.00235	0.000960	0.000680	0.0230	0.00533	2.26	4.10
42_1_5_129	MW-32	Part 115	Zinc	mg/L	17	0	0%	2022-11-30 to 2025-10-21	Nonparametric	Nonparametric	0.0135	0.00350	0.00220	0.0680	0.0208	1.54	1.94

Table 3: Goodness-of-Fit Tests, Non-Detects Excluded

								Normal				Lognormal				Gamma						
								S-W		Lilliefors		S-W		Lilliefors		K-S		A-D				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Log-SD (NDs excl.)	ProUCL Distributions Fit	Recommended Distribution
11_2_3_105	MW-01R	Appendix III	Boron	mg/L	17	0	0%	0.945	0.384	0.133	0.585	0.896	0.058	0.163	0.268	0.137	>= 0.10	0.479	>= 0.10	0.396	Gamma; Lognormal; Normal	Normal
11_2_3_107	MW-01R	Appendix III	Calcium	mg/L	17	0	0%	0.937	0.281	0.129	0.637	0.966	0.752	0.124	0.700	0.134	>= 0.10	0.283	>= 0.10	0.331	Gamma; Lognormal; Normal	Normal
11_2_3_108	MW-01R	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	0.936	0.277	0.181	0.149	0.846	0.009	0.240	0.010	0.213	0.01 <= p < 0.05	0.906	0.01 <= p < 0.05	0.426	Normal	Normal
11_2_3_112	MW-01R	Appendix III	Fluoride	mg/L	17	0	0%	0.909	0.097	0.275	0.001	0.861	0.016	0.290	0.001	0.293	< 0.01	0.889	0.01 <= p < 0.05	0.355	Normal	Normal
11_2_3_120	MW-01R	Appendix III	pH (field)	su	17	0	0%	0.419	0.000	0.350	0.000	0.401	0.000	0.369	0.000	0.354	< 0.01	4.092	< 0.01	0.061	Nonparametric	Nonparametric
11_2_3_124	MW-01R	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	0.932	0.235	0.147	0.430	0.872	0.024	0.184	0.132	0.144	>= 0.10	0.370	>= 0.10	1.234	Gamma; Lognormal; Normal	Gamma
11_2_3_126	MW-01R	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	0.940	0.321	0.220	0.029	0.936	0.275	0.227	0.020	0.229	0.01 <= p < 0.05	0.649	0.05 <= p < 0.10	0.052	Gamma; Lognormal; Normal	Normal
11_2_4_101	MW-01R	Appendix IV	Antimony	mg/L	17	3	18%	0.612	0.000	0.359	0.000	0.799	0.005	0.231	0.041	0.281	< 0.01	1.481	< 0.01	0.559	Nonparametric	Nonparametric
11_2_4_102	MW-01R	Appendix IV	Arsenic	mg/L	17	0	0%	0.668	0.000	0.284	0.001	0.856	0.013	0.228	0.019	0.238	0.01 <= p < 0.05	1.263	< 0.01	0.376	Nonparametric	Nonparametric
11_2_4_103	MW-01R	Appendix IV	Barium	mg/L	17	0	0%	0.879	0.031	0.162	0.280	0.959	0.617	0.128	0.642	0.147	>= 0.10	0.378	>= 0.10	0.388	Gamma; Lognormal; Normal	Normal
11_2_4_104	MW-01R	Appendix IV	Beryllium	mg/L	17	2	12%	0.908	0.126	0.181	0.205	0.918	0.177	0.169	0.297	0.178	>= 0.10	0.476	>= 0.10	0.387	Gamma; Lognormal; Normal	Normal
11_2_4_106	MW-01R	Appendix IV	Cadmium	mg/L	17	13	76%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.708		Nonparametric
11_2_4_109	MW-01R	Appendix IV	Chromium, Total	mg/L	17	0	0%	0.414	0.000	0.368	0.000	0.764	0.001	0.184	0.132	0.252	< 0.01	2.161	< 0.01	0.674	Lognormal	Lognormal
11_2_4_110	MW-01R	Appendix IV	Cobalt	mg/L	17	0	0%	0.718	0.000	0.292	0.000	0.885	0.039	0.250	0.006	0.275	< 0.01	1.223	< 0.01	0.529	Nonparametric	Nonparametric
11_2_4_113	MW-01R	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	0.909	0.097	0.275	0.001	0.861	0.016	0.290	0.001	0.293	< 0.01	0.889	0.01 <= p < 0.05	0.355	Normal	Normal
11_2_4_115	MW-01R	Appendix IV	Lead	mg/L	17	2	12%	0.586	0.000	0.284	0.002	0.912	0.146	0.170	0.289	0.219	0.05 <= p < 0.10	0.925	0.01 <= p < 0.05	0.688	Gamma; Lognormal	Gamma
11_2_4_116	MW-01R	Appendix IV	Lithium	mg/L	17	0	0%	0.940	0.317	0.136	0.549	0.868	0.021	0.174	0.187	0.169	>= 0.10	0.587	>= 0.10	0.393	Gamma; Lognormal; Normal	Normal
11_2_4_117	MW-01R	Appendix IV	Mercury	ng/L	17	15	88%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.364		Nonparametric
11_2_4_118	MW-01R	Appendix IV	Molybdenum	mg/L	17	2	12%	0.571	0.000	0.322	0.000	0.887	0.060	0.214	0.062	0.273	< 0.01	1.110	< 0.01	0.757	Lognormal	Lognormal
11_2_4_121	MW-01R	Appendix IV	Radium 226 and 228	pCi/L	17	11	65%	0.897	0.358	0.248	0.296	0.874	0.243	0.284	0.137	0.283	>= 0.10	0.437	>= 0.10	0.302	Gamma; Lognormal; Normal	Nonparametric
11_2_4_122	MW-01R	Appendix IV	Selenium	mg/L	17	0	0%	0.719	0.000	0.284	0.001	0.905	0.082	0.199	0.073	0.222	0.01 <= p < 0.05	0.875	0.01 <= p < 0.05	0.367	Lognormal	Lognormal
11_2_4_125	MW-01R	Appendix IV	Thallium	mg/L	17	17	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
11_2_5_111	MW-01R	Part 115	Copper	mg/L	17	6	35%	0.643	0.000	0.352	0.000	0.736	0.001	0.250	0.054	0.289	0.01 <= p < 0.05	1.535	< 0.01	0.536	Lognormal	Lognormal
11_2_5_114	MW-01R	Part 115	Iron	mg/L	17	0	0%	0.887	0.041	0.211	0.042	0.899	0.064	0.210	0.045	0.182	>= 0.10	0.695	0.05 <= p < 0.10	0.996	Gamma; Lognormal	Gamma
11_2_5_119	MW-01R	Part 115	Nickel	mg/L	17	0	0%	0.408	0.000	0.413	0.000	0.734	0.000	0.248	0.007	0.332	< 0.01	2.531	< 0.01	0.671	Nonparametric	Nonparametric
11_2_5_123	MW-01R	Part 115	Silver	mg/L	17	17	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
11_2_5_128	MW-01R	Part 115	Vanadium	mg/L	17	2	12%	0.907	0.121	0.234	0.027	0.927	0.250	0.163	0.348	0.176	>= 0.10	0.450	>= 0.10	0.594	Gamma; Lognormal; Normal	Normal
11_2_5_129	MW-01R	Part 115	Zinc	mg/L	17	3	18%	0.769	0.002	0.284	0.003	0.821	0.009	0.244	0.024	0.267	0.01 <= p < 0.05	1.099	< 0.01	1.340	Nonparametric	Nonparametric
12_2_3_105	MW-02	Appendix III	Boron	mg/L	17	0	0%	0.857	0.014	0.272	0.002	0.914	0.118	0.223	0.024	0.237	0.01 <= p < 0.05	0.799	0.01 <= p < 0.05	0.256	Lognormal	Lognormal
12_2_3_107	MW-02	Appendix III	Calcium	mg/L	17	0	0%	0.944	0.364	0.162	0.275	0.953	0.505	0.159	0.304	0.160	>= 0.10	0.444	>= 0.10	0.088	Gamma; Lognormal; Normal	Normal
12_2_3_108	MW-02	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	0.606	0.000	0.363	0.000	0.508	0.000	0.398	0.000	0.389	< 0.01	2.849	< 0.01	0.196	Nonparametric	Nonparametric
12_2_3_112	MW-02	Appendix III	Fluoride	mg/L	17	0	0%	0.879	0.031	0.254	0.005	0.810	0.003	0.257	0.004	0.235	0.01 <= p < 0.05	1.116	< 0.01	0.260	Nonparametric	Nonparametric
12_2_3_120	MW-02	Appendix III	pH (field)	su	17	0	0%	0.929	0.209	0.168	0.227	0.932	0.231	0.167	0.232	0.173	>= 0.10	0.483	>= 0.10	0.014	Gamma; Lognormal; Normal	Normal
12_2_3_124	MW-02	Appendix III	Sulfate (as SO4)	mg/L	17	10	59%	0.913	0.418	0.181	0.693	0.922	0.486	0.204	0.509	0.215	>= 0.10	0.347	>= 0.10	0.370	Gamma; Lognormal; Normal	Nonparametric
12_2_3_126	MW-02	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	0.906	0.085	0.158	0.310	0.940	0.322	0.133	0.584	0.141	>= 0.10	0.410	>= 0.10	0.118	Gamma; Lognormal; Normal	Normal
12_2_4_101	MW-02	Appendix IV	Antimony	mg/L	17	3	18%	0.668	0.000	0.260	0.011	0.863	0.033	0.158	0.454	0.184	>= 0.10	0.834	0.01 <= p < 0.05	0.387	Gamma; Lognormal	Gamma
12_2_4_102	MW-02	Appendix IV	Arsenic	mg/L	17	0	0%	0.891	0.048	0.153	0.358	0.525	0.000	0.349	0.000	0.287	< 0.01	2.090	< 0.01	0.722	Normal	Normal
12_2_4_103	MW-02	Appendix IV	Barium	mg/L	17	0	0%	0.918	0.139	0.146	0.440	0.944	0.371	0.167	0.234	0.153	>= 0.10	0.433	>= 0.10	0.205	Gamma; Lognormal; Normal	Normal
12_2_4_104	MW-02	Appendix IV	Beryllium	mg/L	17	1	6%	0.951	0.509	0.127	0.703	0.982	0.975	0.090	0.979	0.100	>= 0.10	0.172	>= 0.10	0.414	Gamma; Lognormal; Normal	Normal

(Table continues on next page)

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 3: Goodness-of-Fit Tests, Non-Detects Excluded *(continued)*

								Normal				Lognormal				Gamma						
								S-W		Lilliefors		S-W		Lilliefors		K-S		A-D				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Log-SD (NDs excl.)	ProUCL Distributions Fit	Recommended Distribution
12_2_4_106	MW-02	Appendix IV	Cadmium	mg/L	17	12	71%	0.631	0.002	0.439	0.002	0.793	0.070	0.353	0.041	0.411	0.01 <= p < 0.05	0.798	0.01 <= p < 0.05	0.998	Lognormal	Nonparametric
12_2_4_109	MW-02	Appendix IV	Chromium, Total	mg/L	17	0	0%	0.964	0.706	0.099	0.928	0.550	0.000	0.307	0.000	0.249	< 0.01	1.499	< 0.01	1.198	Normal	Normal
12_2_4_110	MW-02	Appendix IV	Cobalt	mg/L	17	0	0%	0.950	0.454	0.151	0.379	0.611	0.000	0.293	0.000	0.263	< 0.01	1.337	< 0.01	0.855	Normal	Normal
12_2_4_113	MW-02	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	0.879	0.031	0.254	0.005	0.810	0.003	0.257	0.004	0.235	0.01 <= p < 0.05	1.116	< 0.01	0.260	Nonparametric	Nonparametric
12_2_4_115	MW-02	Appendix IV	Lead	mg/L	17	1	6%	0.900	0.081	0.199	0.090	0.966	0.765	0.120	0.780	0.153	>= 0.10	0.342	>= 0.10	0.523	Gamma; Lognormal; Normal	Normal
12_2_4_116	MW-02	Appendix IV	Lithium	mg/L	17	0	0%	0.913	0.112	0.226	0.021	0.943	0.351	0.186	0.123	0.197	0.05 <= p < 0.10	0.533	>= 0.10	0.217	Gamma; Lognormal; Normal	Normal
12_2_4_117	MW-02	Appendix IV	Mercury	ng/L	17	14	82%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.624		Nonparametric
12_2_4_118	MW-02	Appendix IV	Molybdenum	mg/L	17	0	0%	0.821	0.004	0.255	0.005	0.903	0.075	0.206	0.054	0.222	0.01 <= p < 0.05	0.967	0.01 <= p < 0.05	0.411	Lognormal	Lognormal
12_2_4_121	MW-02	Appendix IV	Radium 226 and 228	pCi/L	16	5	31%	0.904	0.206	0.193	0.298	0.984	0.985	0.110	0.968	0.134	>= 0.10	0.214	>= 0.10	0.452	Gamma; Lognormal; Normal	Normal
12_2_4_122	MW-02	Appendix IV	Selenium	mg/L	17	0	0%	0.959	0.613	0.172	0.199	0.916	0.126	0.194	0.087	0.170	>= 0.10	0.466	>= 0.10	0.390	Gamma; Lognormal; Normal	Normal
12_2_4_125	MW-02	Appendix IV	Thallium	mg/L	17	16	94%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
12_2_5_111	MW-02	Part 115	Copper	mg/L	17	0	0%	0.971	0.829	0.114	0.808	0.880	0.032	0.176	0.176	0.141	>= 0.10	0.311	>= 0.10	0.683	Gamma; Lognormal; Normal	Normal
12_2_5_114	MW-02	Part 115	Iron	mg/L	17	0	0%	0.956	0.562	0.126	0.671	0.964	0.701	0.106	0.877	0.114	>= 0.10	0.222	>= 0.10	0.167	Gamma; Lognormal; Normal	Normal
12_2_5_119	MW-02	Part 115	Nickel	mg/L	17	0	0%	0.942	0.345	0.206	0.054	0.689	0.000	0.280	0.001	0.210	0.05 <= p < 0.10	0.862	0.01 <= p < 0.05	0.883	Gamma; Normal	Normal
12_2_5_123	MW-02	Part 115	Silver	mg/L	17	17	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
12_2_5_128	MW-02	Part 115	Vanadium	mg/L	17	1	6%	0.962	0.690	0.126	0.710	0.906	0.100	0.140	0.547	0.139	>= 0.10	0.357	>= 0.10	0.501	Gamma; Lognormal; Normal	Normal
12_2_5_129	MW-02	Part 115	Zinc	mg/L	17	0	0%	0.641	0.000	0.417	0.000	0.779	0.001	0.308	0.000	0.370	< 0.01	2.308	< 0.01	1.016	Nonparametric	Nonparametric
13_2_3_105	MW-03	Appendix III	Boron	mg/L	17	0	0%	0.920	0.145	0.139	0.521	0.896	0.058	0.147	0.424	0.150	>= 0.10	0.488	>= 0.10	0.079	Gamma; Lognormal; Normal	Normal
13_2_3_107	MW-03	Appendix III	Calcium	mg/L	17	0	0%	0.975	0.905	0.173	0.191	0.974	0.877	0.155	0.343	0.162	>= 0.10	0.273	>= 0.10	0.099	Gamma; Lognormal; Normal	Normal
13_2_3_108	MW-03	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	0.886	0.040	0.143	0.471	0.963	0.682	0.101	0.915	0.119	>= 0.10	0.325	>= 0.10	0.314	Gamma; Lognormal; Normal	Normal
13_2_3_112	MW-03	Appendix III	Fluoride	mg/L	17	0	0%	0.561	0.000	0.333	0.000	0.696	0.000	0.301	0.000	0.317	< 0.01	2.155	< 0.01	0.263	Nonparametric	Nonparametric
13_2_3_120	MW-03	Appendix III	pH (field)	su	17	0	0%	0.954	0.515	0.155	0.340	0.956	0.556	0.154	0.356	0.157	>= 0.10	0.360	>= 0.10	0.013	Gamma; Lognormal; Normal	Normal
13_2_3_124	MW-03	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	0.960	0.629	0.084	0.988	0.881	0.033	0.186	0.124	0.149	>= 0.10	0.432	>= 0.10	0.956	Gamma; Lognormal; Normal	Normal
13_2_3_126	MW-03	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	0.808	0.003	0.223	0.024	0.811	0.003	0.231	0.017	0.235	0.01 <= p < 0.05	1.308	< 0.01	0.129	Nonparametric	Nonparametric
13_2_4_101	MW-03	Appendix IV	Antimony	mg/L	17	11	65%	0.669	0.003	0.366	0.012	0.815	0.080	0.256	0.250	0.299	>= 0.10	0.738	0.01 <= p < 0.05	0.608	Gamma; Lognormal	Nonparametric
13_2_4_102	MW-03	Appendix IV	Arsenic	mg/L	17	0	0%	0.966	0.737	0.155	0.338	0.940	0.317	0.168	0.230	0.172	>= 0.10	0.325	>= 0.10	0.316	Gamma; Lognormal; Normal	Normal
13_2_4_103	MW-03	Appendix IV	Barium	mg/L	17	0	0%	0.921	0.155	0.155	0.337	0.779	0.001	0.203	0.061	0.190	>= 0.10	0.906	0.01 <= p < 0.05	0.301	Gamma; Lognormal; Normal	Normal
13_2_4_104	MW-03	Appendix IV	Beryllium	mg/L	17	11	65%	0.778	0.037	0.311	0.071	0.806	0.067	0.254	0.260	0.284	>= 0.10	0.693	0.05 <= p < 0.10	0.546	Gamma; Lognormal; Normal	Nonparametric
13_2_4_106	MW-03	Appendix IV	Cadmium	mg/L	17	16	94%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
13_2_4_109	MW-03	Appendix IV	Chromium, Total	mg/L	17	0	0%	0.928	0.200	0.166	0.240	0.955	0.534	0.160	0.298	0.170	>= 0.10	0.379	>= 0.10	0.254	Gamma; Lognormal; Normal	Normal
13_2_4_110	MW-03	Appendix IV	Cobalt	mg/L	17	0	0%	0.909	0.097	0.176	0.172	0.951	0.478	0.124	0.692	0.146	>= 0.10	0.375	>= 0.10	0.396	Gamma; Lognormal; Normal	Normal
13_2_4_113	MW-03	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	0.561	0.000	0.333	0.000	0.696	0.000	0.301	0.000	0.317	< 0.01	2.155	< 0.01	0.263	Nonparametric	Nonparametric
13_2_4_115	MW-03	Appendix IV	Lead	mg/L	17	16	94%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
13_2_4_116	MW-03	Appendix IV	Lithium	mg/L	17	0	0%	0.820	0.004	0.209	0.047	0.893	0.052	0.188	0.114	0.200	0.05 <= p < 0.10	0.710	0.05 <= p < 0.10	0.214	Gamma; Lognormal	Gamma
13_2_4_117	MW-03	Appendix IV	Mercury	ng/L	17	14	82%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		3.528		Nonparametric
13_2_4_118	MW-03	Appendix IV	Molybdenum	mg/L	17	13	76%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.441		Nonparametric
13_2_4_121	MW-03	Appendix IV	Radium 226 and 228	pCi/L	16	2	12%	0.903	0.124	0.190	0.186	0.970	0.872	0.123	0.814	0.147	>= 0.10	0.303	>= 0.10	0.370	Gamma; Lognormal; Normal	Normal
13_2_4_122	MW-03	Appendix IV	Selenium	mg/L	17	3	18%	0.944	0.475	0.190	0.185	0.848	0.021	0.227	0.049	0.199	>= 0.10	0.587	>= 0.10	0.301	Gamma; Normal	Normal
13_2_4_125	MW-03	Appendix IV	Thallium	mg/L	17	16	94%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric

(Table continues on next page)

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 3: Goodness-of-Fit Tests, Non-Detects Excluded *(continued)*

								Normal				Lognormal				Gamma						
								S-W		Lilliefors		S-W		Lilliefors		K-S		A-D				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Log-SD (NDs excl.)	ProUCL Distributions Fit	Recommended Distribution
13_2_5_111	MW-03	Part 115	Copper	mg/L	17	8	47%	0.718	0.002	0.373	0.001	0.756	0.006	0.331	0.005	0.360	< 0.01	1.224	< 0.01	0.645	Nonparametric	Nonparametric
13_2_5_114	MW-03	Part 115	Iron	mg/L	17	0	0%	0.756	0.001	0.221	0.026	0.974	0.887	0.094	0.957	0.139	>= 0.10	0.343	>= 0.10	1.210	Gamma; Lognormal	Gamma
13_2_5_119	MW-03	Part 115	Nickel	mg/L	17	1	6%	0.367	0.000	0.439	0.000	0.661	0.000	0.279	0.002	0.362	< 0.01	2.892	< 0.01	0.664	Nonparametric	Nonparametric
13_2_5_123	MW-03	Part 115	Silver	mg/L	17	17	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
13_2_5_128	MW-03	Part 115	Vanadium	mg/L	17	9	53%	0.863	0.130	0.280	0.065	0.903	0.311	0.245	0.167	0.258	>= 0.10	0.445	>= 0.10	0.203	Gamma; Lognormal; Normal	Nonparametric
13_2_5_129	MW-03	Part 115	Zinc	mg/L	17	9	53%	0.778	0.017	0.302	0.030	0.835	0.067	0.264	0.104	0.274	>= 0.10	0.783	0.01 <= p < 0.05	1.419	Gamma; Lognormal	Nonparametric
14_2_3_105	MW-04	Appendix III	Boron	mg/L	17	0	0%	0.903	0.077	0.171	0.209	0.842	0.008	0.202	0.063	0.186	>= 0.10	0.674	0.05 <= p < 0.10	0.134	Gamma; Lognormal; Normal	Normal
14_2_3_107	MW-04	Appendix III	Calcium	mg/L	17	0	0%	0.868	0.021	0.150	0.387	0.916	0.125	0.155	0.339	0.145	>= 0.10	0.666	0.05 <= p < 0.10	0.164	Gamma; Lognormal; Normal	Normal
14_2_3_108	MW-04	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	0.980	0.961	0.098	0.932	0.871	0.022	0.176	0.173	0.132	>= 0.10	0.438	>= 0.10	0.649	Gamma; Lognormal; Normal	Normal
14_2_3_112	MW-04	Appendix III	Fluoride	mg/L	17	0	0%	0.868	0.021	0.262	0.003	0.898	0.062	0.219	0.030	0.232	0.01 <= p < 0.05	0.881	0.01 <= p < 0.05	0.231	Lognormal	Lognormal
14_2_3_120	MW-04	Appendix III	pH (field)	su	17	0	0%	0.835	0.006	0.230	0.017	0.823	0.004	0.236	0.013	0.226	0.01 <= p < 0.05	0.995	0.01 <= p < 0.05	0.025	Nonparametric	Nonparametric
14_2_3_124	MW-04	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	0.910	0.098	0.200	0.068	0.421	0.000	0.380	0.000	0.349	< 0.01	2.958	< 0.01	1.445	Normal	Normal
14_2_3_126	MW-04	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	0.869	0.021	0.168	0.230	0.811	0.003	0.200	0.071	0.182	>= 0.10	0.854	0.01 <= p < 0.05	0.143	Gamma; Lognormal; Normal	Normal
14_2_4_101	MW-04	Appendix IV	Antimony	mg/L	17	11	65%	0.816	0.081	0.285	0.132	0.850	0.157	0.293	0.109	0.313	0.05 <= p < 0.10	0.598	>= 0.10	0.799	Gamma; Lognormal; Normal	Nonparametric
14_2_4_102	MW-04	Appendix IV	Arsenic	mg/L	17	0	0%	0.758	0.001	0.228	0.019	0.936	0.276	0.140	0.506	0.164	>= 0.10	0.585	>= 0.10	0.405	Gamma; Lognormal	Gamma
14_2_4_103	MW-04	Appendix IV	Barium	mg/L	17	0	0%	0.577	0.000	0.328	0.000	0.776	0.001	0.222	0.025	0.243	0.01 <= p < 0.05	1.766	< 0.01	0.544	Nonparametric	Nonparametric
14_2_4_104	MW-04	Appendix IV	Beryllium	mg/L	17	15	88%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.142		Nonparametric
14_2_4_106	MW-04	Appendix IV	Cadmium	mg/L	17	17	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
14_2_4_109	MW-04	Appendix IV	Chromium, Total	mg/L	17	0	0%	0.958	0.585	0.151	0.381	0.885	0.038	0.159	0.307	0.148	>= 0.10	0.529	>= 0.10	0.437	Gamma; Lognormal; Normal	Normal
14_2_4_110	MW-04	Appendix IV	Cobalt	mg/L	17	0	0%	0.619	0.000	0.252	0.005	0.946	0.398	0.177	0.171	0.213	0.01 <= p < 0.05	0.824	0.01 <= p < 0.05	0.702	Lognormal	Lognormal
14_2_4_113	MW-04	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	0.868	0.021	0.262	0.003	0.898	0.062	0.219	0.030	0.232	0.01 <= p < 0.05	0.881	0.01 <= p < 0.05	0.231	Lognormal	Lognormal
14_2_4_115	MW-04	Appendix IV	Lead	mg/L	17	15	88%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.343		Nonparametric
14_2_4_116	MW-04	Appendix IV	Lithium	mg/L	17	0	0%	0.914	0.117	0.126	0.673	0.847	0.010	0.165	0.250	0.153	>= 0.10	0.596	>= 0.10	0.221	Gamma; Lognormal; Normal	Normal
14_2_4_117	MW-04	Appendix IV	Mercury	ng/L	17	14	82%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		1.313		Nonparametric
14_2_4_118	MW-04	Appendix IV	Molybdenum	mg/L	17	2	12%	0.560	0.000	0.398	0.000	0.871	0.035	0.245	0.016	0.325	< 0.01	1.537	< 0.01	0.991	Nonparametric	Nonparametric
14_2_4_121	MW-04	Appendix IV	Radium 226 and 228	pCi/L	17	6	35%	0.920	0.318	0.151	0.688	0.881	0.109	0.208	0.205	0.186	>= 0.10	0.516	>= 0.10	0.321	Gamma; Lognormal; Normal	Normal
14_2_4_122	MW-04	Appendix IV	Selenium	mg/L	17	5	29%	0.599	0.000	0.299	0.004	0.822	0.017	0.217	0.122	0.236	0.05 <= p < 0.10	1.100	< 0.01	0.545	Gamma; Lognormal	Gamma
14_2_4_125	MW-04	Appendix IV	Thallium	mg/L	17	17	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
14_2_5_111	MW-04	Part 115	Copper	mg/L	17	13	76%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.736		Nonparametric
14_2_5_114	MW-04	Part 115	Iron	mg/L	17	0	0%	0.778	0.001	0.257	0.004	0.552	0.000	0.389	0.000	0.371	< 0.01	2.831	< 0.01	0.963	Nonparametric	Nonparametric
14_2_5_119	MW-04	Part 115	Nickel	mg/L	17	0	0%	0.915	0.123	0.140	0.507	0.716	0.000	0.277	0.001	0.233	0.01 <= p < 0.05	1.378	< 0.01	0.662	Normal	Normal
14_2_5_123	MW-04	Part 115	Silver	mg/L	17	17	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
14_2_5_128	MW-04	Part 115	Vanadium	mg/L	17	10	59%	0.923	0.492	0.209	0.471	0.917	0.450	0.213	0.439	0.233	>= 0.10	0.370	>= 0.10	0.205	Gamma; Lognormal; Normal	Nonparametric
14_2_5_129	MW-04	Part 115	Zinc	mg/L	17	10	59%	0.866	0.171	0.217	0.411	0.829	0.078	0.267	0.137	0.267	>= 0.10	0.601	>= 0.10	0.594	Gamma; Lognormal; Normal	Nonparametric
16_1_3_105	MW-06	Appendix III	Boron	mg/L	17	0	0%	0.950	0.449	0.162	0.276	0.935	0.261	0.196	0.082	0.186	>= 0.10	0.424	>= 0.10	0.191	Gamma; Lognormal; Normal	Normal
16_1_3_107	MW-06	Appendix III	Calcium	mg/L	17	0	0%	0.924	0.171	0.172	0.202	0.943	0.350	0.150	0.396	0.155	>= 0.10	0.403	>= 0.10	0.135	Gamma; Lognormal; Normal	Normal
16_1_3_108	MW-06	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	0.941	0.325	0.187	0.118	0.913	0.113	0.253	0.005	0.213	0.01 <= p < 0.05	0.477	>= 0.10	0.658	Gamma; Lognormal; Normal	Normal
16_1_3_112	MW-06	Appendix III	Fluoride	mg/L	17	0	0%	0.905	0.083	0.190	0.107	0.917	0.133	0.179	0.158	0.189	>= 0.10	0.590	>= 0.10	0.160	Gamma; Lognormal; Normal	Normal
16_1_3_120	MW-06	Appendix III	pH (field)	su	17	0	0%	0.632	0.000	0.314	0.000	0.611	0.000	0.325	0.000	0.314	< 0.01	2.124	< 0.01	0.033	Nonparametric	Nonparametric

(Table continues on next page)

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 3: Goodness-of-Fit Tests, Non-Detects Excluded *(continued)*

								Normal				Lognormal				Gamma						
								S-W		Lilliefors		S-W		Lilliefors		K-S		A-D				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Log-SD (NDs excl.)	ProUCL Distributions Fit	Recommended Distribution
16_1_3_124	MW-06	Appendix III	Sulfate (as SO4)	mg/L	17	2	12%	0.947	0.478	0.132	0.687	0.900	0.095	0.206	0.086	0.157	>= 0.10	0.336	>= 0.10	0.978	Gamma; Lognormal; Normal	Normal
16_1_3_126	MW-06	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.051		Nonparametric
16_1_4_101	MW-06	Appendix IV	Antimony	mg/L	17	15	88%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		1.109		Nonparametric
16_1_4_102	MW-06	Appendix IV	Arsenic	mg/L	17	0	0%	0.889	0.044	0.180	0.151	0.922	0.160	0.140	0.509	0.156	>= 0.10	0.588	>= 0.10	0.247	Gamma; Lognormal; Normal	Normal
16_1_4_103	MW-06	Appendix IV	Barium	mg/L	17	0	0%	0.903	0.076	0.207	0.051	0.855	0.013	0.232	0.016	0.222	0.01 <= p < 0.05	0.772	0.01 <= p < 0.05	0.119	Normal	Normal
16_1_4_104	MW-06	Appendix IV	Beryllium	mg/L	17	16	94%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16_1_4_106	MW-06	Appendix IV	Cadmium	mg/L	17	17	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16_1_4_109	MW-06	Appendix IV	Chromium, Total	mg/L	17	0	0%	0.882	0.034	0.219	0.030	0.950	0.449	0.168	0.229	0.188	>= 0.10	0.526	>= 0.10	0.307	Gamma; Lognormal	Gamma
16_1_4_110	MW-06	Appendix IV	Cobalt	mg/L	17	0	0%	0.894	0.055	0.208	0.050	0.940	0.318	0.160	0.293	0.177	>= 0.10	0.563	>= 0.10	0.262	Gamma; Lognormal; Normal	Normal
16_1_4_113	MW-06	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	0.905	0.083	0.190	0.107	0.917	0.133	0.179	0.158	0.189	>= 0.10	0.590	>= 0.10	0.160	Gamma; Lognormal; Normal	Normal
16_1_4_115	MW-06	Appendix IV	Lead	mg/L	17	10	59%	0.976	0.937	0.159	0.857	0.971	0.909	0.162	0.837	0.152	>= 0.10	0.201	>= 0.10	0.346	Gamma; Lognormal; Normal	Nonparametric
16_1_4_116	MW-06	Appendix IV	Lithium	mg/L	17	0	0%	0.951	0.477	0.115	0.795	0.941	0.326	0.141	0.489	0.138	>= 0.10	0.334	>= 0.10	0.228	Gamma; Lognormal; Normal	Normal
16_1_4_117	MW-06	Appendix IV	Mercury	ng/L	17	14	82%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.248		Nonparametric
16_1_4_118	MW-06	Appendix IV	Molybdenum	mg/L	17	10	59%	0.765	0.018	0.335	0.017	0.808	0.049	0.304	0.049	0.324	0.01 <= p < 0.05	0.771	0.01 <= p < 0.05	0.304	Nonparametric	Nonparametric
16_1_4_121	MW-06	Appendix IV	Radium 226 and 228	pCi/L	17	3	18%	0.869	0.040	0.243	0.025	0.964	0.791	0.170	0.332	0.192	>= 0.10	0.420	>= 0.10	0.365	Gamma; Lognormal	Gamma
16_1_4_122	MW-06	Appendix IV	Selenium	mg/L	17	5	29%	0.668	0.000	0.362	0.000	0.794	0.008	0.314	0.002	0.333	< 0.01	1.245	< 0.01	0.269	Nonparametric	Nonparametric
16_1_4_125	MW-06	Appendix IV	Thallium	mg/L	17	17	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16_1_5_111	MW-06	Part 115	Copper	mg/L	17	13	76%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.177		Nonparametric
16_1_5_114	MW-06	Part 115	Iron	mg/L	17	0	0%	0.954	0.522	0.182	0.139	0.902	0.072	0.217	0.033	0.183	>= 0.10	0.553	>= 0.10	0.504	Gamma; Lognormal; Normal	Normal
16_1_5_119	MW-06	Part 115	Nickel	mg/L	17	6	35%	0.948	0.618	0.184	0.375	0.953	0.683	0.186	0.357	0.197	>= 0.10	0.329	>= 0.10	0.131	Gamma; Lognormal; Normal	Normal
16_1_5_123	MW-06	Part 115	Silver	mg/L	17	17	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16_1_5_128	MW-06	Part 115	Vanadium	mg/L	17	14	82%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.132		Nonparametric
16_1_5_129	MW-06	Part 115	Zinc	mg/L	17	2	12%	0.621	0.000	0.443	0.000	0.660	0.000	0.402	0.000	0.441	< 0.01	2.739	< 0.01	1.765	Nonparametric	Nonparametric
17_1_3_105	MW-07	Appendix III	Boron	mg/L	17	0	0%	0.926	0.190	0.207	0.052	0.919	0.144	0.224	0.023	0.217	0.01 <= p < 0.05	0.681	0.05 <= p < 0.10	0.100	Gamma; Lognormal; Normal	Normal
17_1_3_107	MW-07	Appendix III	Calcium	mg/L	17	0	0%	0.892	0.051	0.202	0.064	0.885	0.038	0.213	0.040	0.215	0.01 <= p < 0.05	0.776	0.01 <= p < 0.05	0.086	Normal	Normal
17_1_3_108	MW-07	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	0.879	0.031	0.266	0.002	0.889	0.045	0.258	0.004	0.263	< 0.01	0.841	0.01 <= p < 0.05	0.086	Nonparametric	Nonparametric
17_1_3_112	MW-07	Appendix III	Fluoride	mg/L	17	4	24%	0.900	0.134	0.194	0.202	0.925	0.294	0.182	0.281	0.193	>= 0.10	0.478	>= 0.10	0.379	Gamma; Lognormal; Normal	Normal
17_1_3_120	MW-07	Appendix III	pH (field)	su	17	0	0%	0.855	0.013	0.240	0.010	0.849	0.010	0.244	0.008	0.240	0.01 <= p < 0.05	1.041	< 0.01	0.018	Nonparametric	Nonparametric
17_1_3_124	MW-07	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	0.904	0.080	0.193	0.093	0.891	0.049	0.176	0.174	0.181	>= 0.10	0.740	0.01 <= p < 0.05	0.318	Gamma; Lognormal; Normal	Normal
17_1_3_126	MW-07	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	0.840	0.007	0.198	0.075	0.797	0.002	0.229	0.018	0.214	0.01 <= p < 0.05	1.159	< 0.01	0.125	Normal	Normal
17_1_4_101	MW-07	Appendix IV	Antimony	mg/L	17	16	94%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
17_1_4_102	MW-07	Appendix IV	Arsenic	mg/L	17	0	0%	0.959	0.613	0.148	0.419	0.940	0.323	0.155	0.341	0.142	>= 0.10	0.408	>= 0.10	0.179	Gamma; Lognormal; Normal	Normal
17_1_4_103	MW-07	Appendix IV	Barium	mg/L	17	0	0%	0.946	0.392	0.183	0.135	0.913	0.114	0.209	0.047	0.192	>= 0.10	0.479	>= 0.10	0.126	Gamma; Lognormal; Normal	Normal
17_1_4_104	MW-07	Appendix IV	Beryllium	mg/L	17	13	76%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.091		Nonparametric
17_1_4_106	MW-07	Appendix IV	Cadmium	mg/L	17	17	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
17_1_4_109	MW-07	Appendix IV	Chromium, Total	mg/L	17	0	0%	0.659	0.000	0.243	0.009	0.799	0.002	0.171	0.207	0.189	>= 0.10	1.160	< 0.01	0.230	Gamma; Lognormal	Gamma
17_1_4_110	MW-07	Appendix IV	Cobalt	mg/L	17	0	0%	0.941	0.327	0.187	0.120	0.929	0.206	0.199	0.071	0.200	0.05 <= p < 0.10	0.542	>= 0.10	0.125	Gamma; Lognormal; Normal	Normal
17_1_4_113	MW-07	Appendix IV	Fluoride (App IV)	mg/L	17	4	24%	0.900	0.134	0.194	0.202	0.925	0.294	0.182	0.281	0.193	>= 0.10	0.478	>= 0.10	0.379	Gamma; Lognormal; Normal	Normal
17_1_4_115	MW-07	Appendix IV	Lead	mg/L	17	17	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric

(Table continues on next page)

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 3: Goodness-of-Fit Tests, Non-Detects Excluded *(continued)*

								Normal				Lognormal				Gamma						
								S-W		Lilliefors		S-W		Lilliefors		K-S		A-D				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Log-SD (NDs excl.)	ProUCL Distributions Fit	Recommended Distribution
17_1_4_116	MW-07	Appendix IV	Lithium	mg/L	17	0	0%	0.925	0.178	0.177	0.167	0.937	0.279	0.202	0.062	0.185	>= 0.10	0.525	>= 0.10	0.258	Gamma; Lognormal; Normal	Normal
17_1_4_117	MW-07	Appendix IV	Mercury	ng/L	17	16	94%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
17_1_4_118	MW-07	Appendix IV	Molybdenum	mg/L	17	17	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
17_1_4_121	MW-07	Appendix IV	Radium 226 and 228	pCi/L	17	2	12%	0.733	0.001	0.255	0.010	0.907	0.121	0.170	0.288	0.193	>= 0.10	0.654	0.05 <= p < 0.10	0.341	Gamma; Lognormal	Gamma
17_1_4_122	MW-07	Appendix IV	Selenium	mg/L	17	9	53%	0.776	0.016	0.307	0.025	0.843	0.080	0.265	0.101	0.283	0.05 <= p < 0.10	0.722	0.01 <= p < 0.05	0.276	Gamma; Lognormal	Nonparametric
17_1_4_125	MW-07	Appendix IV	Thallium	mg/L	17	17	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
17_1_5_111	MW-07	Part 115	Copper	mg/L	17	13	76%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.488		Nonparametric
17_1_5_114	MW-07	Part 115	Iron	mg/L	17	0	0%	0.956	0.559	0.132	0.598	0.960	0.635	0.119	0.755	0.129	>= 0.10	0.291	>= 0.10	0.141	Gamma; Lognormal; Normal	Normal
17_1_5_119	MW-07	Part 115	Nickel	mg/L	17	14	82%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.770		Nonparametric
17_1_5_123	MW-07	Part 115	Silver	mg/L	17	17	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
17_1_5_128	MW-07	Part 115	Vanadium	mg/L	17	12	71%	0.877	0.295	0.246	0.408	0.894	0.378	0.240	0.452	0.254	>= 0.10	0.374	>= 0.10	0.094	Gamma; Lognormal; Normal	Nonparametric
17_1_5_129	MW-07	Part 115	Zinc	mg/L	17	10	59%	0.872	0.194	0.230	0.316	0.844	0.109	0.305	0.048	0.306	0.05 <= p < 0.10	0.563	>= 0.10	1.447	Gamma; Lognormal; Normal	Nonparametric
18_1_3_105	MW-08	Appendix III	Boron	mg/L	17	0	0%	0.928	0.198	0.211	0.042	0.882	0.034	0.260	0.003	0.249	< 0.01	0.867	0.01 <= p < 0.05	0.354	Normal	Normal
18_1_3_107	MW-08	Appendix III	Calcium	mg/L	17	0	0%	0.887	0.042	0.222	0.026	0.890	0.046	0.211	0.043	0.220	0.01 <= p < 0.05	0.772	0.01 <= p < 0.05	0.102	Nonparametric	Nonparametric
18_1_3_108	MW-08	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	0.693	0.000	0.333	0.000	0.849	0.010	0.230	0.017	0.261	< 0.01	1.542	< 0.01	0.545	Nonparametric	Nonparametric
18_1_3_112	MW-08	Appendix III	Fluoride	mg/L	17	0	0%	0.902	0.072	0.226	0.021	0.836	0.006	0.286	0.001	0.268	< 0.01	1.140	< 0.01	0.325	Normal	Normal
18_1_3_120	MW-08	Appendix III	pH (field)	su	17	0	0%	0.689	0.000	0.270	0.002	0.662	0.000	0.283	0.001	0.271	< 0.01	1.804	< 0.01	0.041	Nonparametric	Nonparametric
18_1_3_124	MW-08	Appendix III	Sulfate (as SO4)	mg/L	17	4	24%	0.862	0.041	0.196	0.186	0.946	0.545	0.166	0.419	0.130	>= 0.10	0.219	>= 0.10	1.420	Gamma; Lognormal; Normal	Gamma
18_1_3_126	MW-08	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	0.940	0.319	0.179	0.159	0.972	0.853	0.153	0.358	0.161	>= 0.10	0.271	>= 0.10	0.139	Gamma; Lognormal; Normal	Normal
18_1_4_101	MW-08	Appendix IV	Antimony	mg/L	17	9	53%	0.944	0.648	0.195	0.491	0.973	0.920	0.152	0.850	0.171	>= 0.10	0.211	>= 0.10	0.505	Gamma; Lognormal; Normal	Nonparametric
18_1_4_102	MW-08	Appendix IV	Arsenic	mg/L	17	0	0%	0.922	0.163	0.164	0.261	0.781	0.001	0.235	0.013	0.193	>= 0.10	1.076	< 0.01	0.568	Gamma; Normal	Normal
18_1_4_103	MW-08	Appendix IV	Barium	mg/L	17	0	0%	0.953	0.509	0.136	0.548	0.924	0.172	0.163	0.271	0.152	>= 0.10	0.396	>= 0.10	0.187	Gamma; Lognormal; Normal	Normal
18_1_4_104	MW-08	Appendix IV	Beryllium	mg/L	17	16	94%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
18_1_4_106	MW-08	Appendix IV	Cadmium	mg/L	17	16	94%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
18_1_4_109	MW-08	Appendix IV	Chromium, Total	mg/L	17	0	0%	0.918	0.135	0.153	0.358	0.980	0.955	0.108	0.861	0.128	>= 0.10	0.255	>= 0.10	0.317	Gamma; Lognormal; Normal	Normal
18_1_4_110	MW-08	Appendix IV	Cobalt	mg/L	17	0	0%	0.914	0.119	0.188	0.113	0.944	0.375	0.182	0.141	0.193	0.05 <= p < 0.10	0.526	>= 0.10	0.362	Gamma; Lognormal; Normal	Normal
18_1_4_113	MW-08	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	0.902	0.072	0.226	0.021	0.836	0.006	0.286	0.001	0.268	< 0.01	1.140	< 0.01	0.325	Normal	Normal
18_1_4_115	MW-08	Appendix IV	Lead	mg/L	17	11	65%	0.671	0.003	0.347	0.023	0.874	0.244	0.289	0.119	0.344	0.05 <= p < 0.10	0.617	0.05 <= p < 0.10	1.312	Gamma; Lognormal	Nonparametric
18_1_4_116	MW-08	Appendix IV	Lithium	mg/L	17	0	0%	0.940	0.324	0.138	0.529	0.944	0.370	0.169	0.219	0.165	>= 0.10	0.373	>= 0.10	0.254	Gamma; Lognormal; Normal	Normal
18_1_4_117	MW-08	Appendix IV	Mercury	ng/L	17	16	94%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
18_1_4_118	MW-08	Appendix IV	Molybdenum	mg/L	17	1	6%	0.934	0.287	0.153	0.406	0.909	0.111	0.201	0.085	0.174	>= 0.10	0.448	>= 0.10	0.741	Gamma; Lognormal; Normal	Normal
18_1_4_121	MW-08	Appendix IV	Radium 226 and 228	pCi/L	17	4	24%	0.925	0.292	0.190	0.226	0.981	0.986	0.123	0.855	0.139	>= 0.10	0.198	>= 0.10	0.377	Gamma; Lognormal; Normal	Normal
18_1_4_122	MW-08	Appendix IV	Selenium	mg/L	17	6	35%	0.734	0.001	0.294	0.009	0.825	0.020	0.236	0.089	0.260	0.01 <= p < 0.05	1.056	< 0.01	0.366	Lognormal	Lognormal
18_1_4_125	MW-08	Appendix IV	Thallium	mg/L	17	16	94%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
18_1_5_111	MW-08	Part 115	Copper	mg/L	17	6	35%	0.895	0.161	0.186	0.357	0.971	0.896	0.125	0.900	0.151	>= 0.10	0.271	>= 0.10	0.403	Gamma; Lognormal; Normal	Normal
18_1_5_114	MW-08	Part 115	Iron	mg/L	17	0	0%	0.942	0.340	0.185	0.128	0.956	0.556	0.152	0.376	0.154	>= 0.10	0.325	>= 0.10	0.331	Gamma; Lognormal; Normal	Normal
18_1_5_119	MW-08	Part 115	Nickel	mg/L	17	0	0%	0.636	0.000	0.262	0.003	0.875	0.027	0.234	0.014	0.255	< 0.01	1.145	< 0.01	0.769	Nonparametric	Nonparametric
18_1_5_123	MW-08	Part 115	Silver	mg/L	17	17	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
18_1_5_128	MW-08	Part 115	Vanadium	mg/L	17	14	82%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.651		Nonparametric

(Table continues on next page)

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 3: Goodness-of-Fit Tests, Non-Detects Excluded *(continued)*

								Normal				Lognormal				Gamma						
								S-W		Lilliefors		S-W		Lilliefors		K-S		A-D				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Log-SD (NDs excl.)	ProUCL Distributions Fit	Recommended Distribution
18_1_5_129	MW-08	Part 115	Zinc	mg/L	17	3	18%	0.644	0.000	0.412	0.000	0.739	0.001	0.298	0.001	0.374	< 0.01	1.980	< 0.01	1.872	Nonparametric	Nonparametric
19_2_3_105	MW-09	Appendix III	Boron	mg/L	17	0	0%	0.961	0.648	0.106	0.879	0.960	0.636	0.111	0.834	0.116	>= 0.10	0.285	>= 0.10	0.096	Gamma; Lognormal; Normal	Normal
19_2_3_107	MW-09	Appendix III	Calcium	mg/L	17	0	0%	0.933	0.242	0.131	0.612	0.917	0.132	0.175	0.182	0.161	>= 0.10	0.524	>= 0.10	0.239	Gamma; Lognormal; Normal	Normal
19_2_3_108	MW-09	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	0.787	0.001	0.262	0.003	0.895	0.056	0.190	0.106	0.220	0.01 <= p < 0.05	0.896	0.01 <= p < 0.05	0.580	Lognormal	Lognormal
19_2_3_112	MW-09	Appendix III	Fluoride	mg/L	17	0	0%	0.941	0.327	0.098	0.934	0.938	0.295	0.099	0.931	0.105	>= 0.10	0.328	>= 0.10	0.107	Gamma; Lognormal; Normal	Normal
19_2_3_120	MW-09	Appendix III	pH (field)	su	17	0	0%	0.927	0.191	0.190	0.106	0.927	0.195	0.186	0.121	0.185	>= 0.10	0.665	0.05 <= p < 0.10	0.019	Gamma; Lognormal; Normal	Normal
19_2_3_124	MW-09	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	0.948	0.420	0.133	0.585	0.851	0.011	0.237	0.012	0.200	0.05 <= p < 0.10	0.801	0.01 <= p < 0.05	0.716	Gamma; Normal	Normal
19_2_3_126	MW-09	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	0.955	0.548	0.153	0.362	0.907	0.089	0.179	0.156	0.176	>= 0.10	0.486	>= 0.10	0.270	Gamma; Lognormal; Normal	Normal
19_2_4_101	MW-09	Appendix IV	Antimony	mg/L	17	12	71%	0.868	0.257	0.277	0.233	0.937	0.645	0.219	0.600	0.260	>= 0.10	0.332	>= 0.10	0.671	Gamma; Lognormal; Normal	Nonparametric
19_2_4_102	MW-09	Appendix IV	Arsenic	mg/L	17	0	0%	0.877	0.028	0.255	0.005	0.838	0.007	0.286	0.001	0.281	< 0.01	1.284	< 0.01	0.265	Nonparametric	Nonparametric
19_2_4_103	MW-09	Appendix IV	Barium	mg/L	17	0	0%	0.451	0.000	0.369	0.000	0.849	0.011	0.185	0.128	0.248	0.01 <= p < 0.05	1.716	< 0.01	0.761	Lognormal	Lognormal
19_2_4_104	MW-09	Appendix IV	Beryllium	mg/L	17	13	76%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.453		Nonparametric
19_2_4_106	MW-09	Appendix IV	Cadmium	mg/L	17	17	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
19_2_4_109	MW-09	Appendix IV	Chromium, Total	mg/L	17	0	0%	0.958	0.593	0.125	0.681	0.962	0.662	0.113	0.815	0.116	>= 0.10	0.278	>= 0.10	0.209	Gamma; Lognormal; Normal	Normal
19_2_4_110	MW-09	Appendix IV	Cobalt	mg/L	17	0	0%	0.931	0.230	0.122	0.719	0.941	0.328	0.149	0.399	0.146	>= 0.10	0.330	>= 0.10	0.454	Gamma; Lognormal; Normal	Normal
19_2_4_113	MW-09	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	0.941	0.327	0.098	0.934	0.938	0.295	0.099	0.931	0.105	>= 0.10	0.328	>= 0.10	0.107	Gamma; Lognormal; Normal	Normal
19_2_4_115	MW-09	Appendix IV	Lead	mg/L	17	17	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
19_2_4_116	MW-09	Appendix IV	Lithium	mg/L	17	0	0%	0.927	0.191	0.154	0.350	0.924	0.174	0.153	0.366	0.158	>= 0.10	0.510	>= 0.10	0.086	Gamma; Lognormal; Normal	Normal
19_2_4_117	MW-09	Appendix IV	Mercury	ng/L	17	14	82%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		5.113		Nonparametric
19_2_4_118	MW-09	Appendix IV	Molybdenum	mg/L	17	0	0%	0.968	0.778	0.130	0.623	0.910	0.101	0.190	0.106	0.165	>= 0.10	0.446	>= 0.10	0.317	Gamma; Lognormal; Normal	Normal
19_2_4_121	MW-09	Appendix IV	Radium 226 and 228	pCi/L	17	15	88%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.164		Nonparametric
19_2_4_122	MW-09	Appendix IV	Selenium	mg/L	17	2	12%	0.826	0.008	0.213	0.066	0.903	0.107	0.205	0.092	0.189	>= 0.10	0.705	0.05 <= p < 0.10	0.357	Gamma; Lognormal; Normal	Normal
19_2_4_125	MW-09	Appendix IV	Thallium	mg/L	17	17	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
19_2_5_111	MW-09	Part 115	Copper	mg/L	17	11	65%	0.638	0.001	0.384	0.006	0.777	0.036	0.279	0.150	0.324	0.05 <= p < 0.10	0.883	0.01 <= p < 0.05	0.614	Gamma; Lognormal	Nonparametric
19_2_5_114	MW-09	Part 115	Iron	mg/L	17	0	0%	0.931	0.226	0.149	0.398	0.925	0.179	0.149	0.406	0.157	>= 0.10	0.485	>= 0.10	0.214	Gamma; Lognormal; Normal	Normal
19_2_5_119	MW-09	Part 115	Nickel	mg/L	17	0	0%	0.418	0.000	0.386	0.000	0.902	0.072	0.186	0.122	0.239	0.01 <= p < 0.05	1.698	< 0.01	1.289	Lognormal	Nonparametric
19_2_5_123	MW-09	Part 115	Silver	mg/L	17	17	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
19_2_5_128	MW-09	Part 115	Vanadium	mg/L	17	15	88%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.292		Nonparametric
19_2_5_129	MW-09	Part 115	Zinc	mg/L	17	8	47%	0.879	0.154	0.182	0.529	0.908	0.305	0.190	0.458	0.196	>= 0.10	0.351	>= 0.10	1.080	Gamma; Lognormal; Normal	Gamma
20_3_3_105	MW-10	Appendix III	Boron	mg/L	17	0	0%	0.929	0.213	0.158	0.310	0.888	0.042	0.211	0.043	0.203	0.05 <= p < 0.10	0.652	0.05 <= p < 0.10	0.575	Gamma; Normal	Normal
20_3_3_107	MW-10	Appendix III	Calcium	mg/L	17	0	0%	0.871	0.023	0.210	0.045	0.959	0.618	0.140	0.502	0.163	>= 0.10	0.476	>= 0.10	0.338	Gamma; Lognormal	Gamma
20_3_3_108	MW-10	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	0.894	0.054	0.141	0.488	0.957	0.583	0.125	0.689	0.140	>= 0.10	0.337	>= 0.10	0.614	Gamma; Lognormal; Normal	Normal
20_3_3_112	MW-10	Appendix III	Fluoride	mg/L	17	0	0%	0.957	0.584	0.134	0.574	0.912	0.106	0.181	0.146	0.166	>= 0.10	0.448	>= 0.10	0.324	Gamma; Lognormal; Normal	Normal
20_3_3_120	MW-10	Appendix III	pH (field)	su	17	0	0%	0.900	0.067	0.216	0.035	0.915	0.122	0.206	0.054	0.207	0.05 <= p < 0.10	0.657	0.05 <= p < 0.10	0.048	Gamma; Lognormal; Normal	Normal
20_3_3_124	MW-10	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	0.869	0.021	0.186	0.120	0.987	0.995	0.097	0.942	0.122	>= 0.10	0.235	>= 0.10	0.648	Gamma; Lognormal; Normal	Normal
20_3_3_126	MW-10	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	0.867	0.019	0.279	0.001	0.910	0.099	0.254	0.005	0.267	< 0.01	0.828	0.01 <= p < 0.05	0.213	Lognormal	Lognormal
20_3_4_101	MW-10	Appendix IV	Antimony	mg/L	17	13	76%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.542		Nonparametric
20_3_4_102	MW-10	Appendix IV	Arsenic	mg/L	17	0	0%	0.902	0.073	0.164	0.261	0.975	0.897	0.092	0.966	0.122	>= 0.10	0.223	>= 0.10	0.678	Gamma; Lognormal; Normal	Normal
20_3_4_103	MW-10	Appendix IV	Barium	mg/L	17	0	0%	0.904	0.079	0.196	0.083	0.978	0.932	0.118	0.766	0.142	>= 0.10	0.283	>= 0.10	0.409	Gamma; Lognormal; Normal	Normal

(Table continues on next page)

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 3: Goodness-of-Fit Tests, Non-Detects Excluded *(continued)*

								Normal				Lognormal				Gamma						
								S-W		Lilliefors		S-W		Lilliefors		K-S		A-D				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Log-SD (NDs excl.)	ProUCL Distributions Fit	Recommended Distribution
20_3_4_104	MW-10	Appendix IV	Beryllium	mg/L	17	7	41%	0.816	0.023	0.240	0.106	0.921	0.362	0.172	0.552	0.191	>= 0.10	0.484	>= 0.10	0.467	Gamma; Lognormal; Normal	Normal
20_3_4_106	MW-10	Appendix IV	Cadmium	mg/L	17	17	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
20_3_4_109	MW-10	Appendix IV	Chromium, Total	mg/L	17	0	0%	0.929	0.210	0.165	0.254	0.953	0.502	0.198	0.076	0.173	>= 0.10	0.357	>= 0.10	0.521	Gamma; Lognormal; Normal	Normal
20_3_4_110	MW-10	Appendix IV	Cobalt	mg/L	17	1	6%	0.711	0.000	0.274	0.002	0.944	0.404	0.148	0.454	0.186	>= 0.10	0.637	0.05 <= p < 0.10	0.628	Gamma; Lognormal	Gamma
20_3_4_113	MW-10	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	0.957	0.584	0.134	0.574	0.912	0.106	0.181	0.146	0.166	>= 0.10	0.448	>= 0.10	0.324	Gamma; Lognormal; Normal	Normal
20_3_4_115	MW-10	Appendix IV	Lead	mg/L	17	15	88%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.246		Nonparametric
20_3_4_116	MW-10	Appendix IV	Lithium	mg/L	17	0	0%	0.894	0.055	0.224	0.023	0.916	0.128	0.182	0.139	0.191	>= 0.10	0.673	0.05 <= p < 0.10	0.254	Gamma; Lognormal; Normal	Normal
20_3_4_117	MW-10	Appendix IV	Mercury	ng/L	17	15	88%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		6.041		Nonparametric
20_3_4_118	MW-10	Appendix IV	Molybdenum	mg/L	17	0	0%	0.939	0.311	0.168	0.229	0.956	0.554	0.129	0.640	0.111	>= 0.10	0.209	>= 0.10	0.639	Gamma; Lognormal; Normal	Normal
20_3_4_121	MW-10	Appendix IV	Radium 226 and 228	pCi/L	17	13	76%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.271		Nonparametric
20_3_4_122	MW-10	Appendix IV	Selenium	mg/L	17	1	6%	0.723	0.000	0.250	0.009	0.893	0.062	0.172	0.230	0.192	>= 0.10	0.868	0.01 <= p < 0.05	0.310	Gamma; Lognormal	Gamma
20_3_4_125	MW-10	Appendix IV	Thallium	mg/L	17	17	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
20_3_5_111	MW-10	Part 115	Copper	mg/L	17	14	82%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.649		Nonparametric
20_3_5_114	MW-10	Part 115	Iron	mg/L	17	0	0%	0.924	0.174	0.183	0.136	0.930	0.217	0.155	0.337	0.156	>= 0.10	0.474	>= 0.10	0.386	Gamma; Lognormal; Normal	Normal
20_3_5_119	MW-10	Part 115	Nickel	mg/L	17	7	41%	0.726	0.002	0.309	0.007	0.813	0.021	0.286	0.020	0.301	0.01 <= p < 0.05	0.922	0.01 <= p < 0.05	0.257	Nonparametric	Nonparametric
20_3_5_123	MW-10	Part 115	Silver	mg/L	17	17	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
20_3_5_128	MW-10	Part 115	Vanadium	mg/L	17	12	71%	0.955	0.770	0.179	0.862	0.945	0.701	0.204	0.707	0.208	>= 0.10	0.280	>= 0.10	0.187	Gamma; Lognormal; Normal	Nonparametric
20_3_5_129	MW-10	Part 115	Zinc	mg/L	17	7	41%	0.760	0.005	0.336	0.002	0.788	0.010	0.248	0.082	0.293	0.01 <= p < 0.05	1.130	< 0.01	1.185	Lognormal	Nonparametric
21_2_3_105	MW-11	Appendix III	Boron	mg/L	17	0	0%	0.924	0.176	0.145	0.453	0.962	0.667	0.107	0.868	0.106	>= 0.10	0.216	>= 0.10	0.629	Gamma; Lognormal; Normal	Normal
21_2_3_107	MW-11	Appendix III	Calcium	mg/L	17	0	0%	0.985	0.990	0.098	0.935	0.948	0.429	0.140	0.504	0.131	>= 0.10	0.253	>= 0.10	0.289	Gamma; Lognormal; Normal	Normal
21_2_3_108	MW-11	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	0.958	0.587	0.144	0.454	0.924	0.174	0.186	0.123	0.176	>= 0.10	0.381	>= 0.10	0.272	Gamma; Lognormal; Normal	Normal
21_2_3_112	MW-11	Appendix III	Fluoride	mg/L	17	0	0%	0.943	0.358	0.105	0.887	0.954	0.515	0.153	0.359	0.121	>= 0.10	0.236	>= 0.10	0.574	Gamma; Lognormal; Normal	Normal
21_2_3_120	MW-11	Appendix III	pH (field)	su	17	0	0%	0.982	0.972	0.094	0.954	0.981	0.964	0.097	0.941	0.097	>= 0.10	0.170	>= 0.10	0.014	Gamma; Lognormal; Normal	Normal
21_2_3_124	MW-11	Appendix III	Sulfate (as SO4)	mg/L	17	6	35%	0.707	0.001	0.330	0.001	0.951	0.651	0.211	0.186	0.283	0.01 <= p < 0.05	0.609	>= 0.10	1.459	Gamma; Lognormal	Gamma
21_2_3_126	MW-11	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	0.830	0.005	0.199	0.072	0.921	0.153	0.160	0.293	0.165	>= 0.10	0.587	>= 0.10	0.209	Gamma; Lognormal; Normal	Normal
21_2_4_101	MW-11	Appendix IV	Antimony	mg/L	17	12	71%	0.849	0.192	0.347	0.048	0.887	0.342	0.327	0.086	0.288	>= 0.10	0.453	>= 0.10	0.760	Gamma; Lognormal; Normal	Nonparametric
21_2_4_102	MW-11	Appendix IV	Arsenic	mg/L	17	0	0%	0.799	0.002	0.203	0.060	0.952	0.497	0.120	0.743	0.145	>= 0.10	0.603	>= 0.10	0.484	Gamma; Lognormal; Normal	Normal
21_2_4_103	MW-11	Appendix IV	Barium	mg/L	17	0	0%	0.902	0.074	0.185	0.127	0.969	0.805	0.141	0.492	0.160	>= 0.10	0.367	>= 0.10	0.286	Gamma; Lognormal; Normal	Normal
21_2_4_104	MW-11	Appendix IV	Beryllium	mg/L	17	13	76%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.912		Nonparametric
21_2_4_106	MW-11	Appendix IV	Cadmium	mg/L	17	14	82%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.759		Nonparametric
21_2_4_109	MW-11	Appendix IV	Chromium, Total	mg/L	17	0	0%	0.508	0.000	0.369	0.000	0.827	0.005	0.245	0.008	0.293	< 0.01	1.908	< 0.01	0.720	Nonparametric	Nonparametric
21_2_4_110	MW-11	Appendix IV	Cobalt	mg/L	17	0	0%	0.652	0.000	0.321	0.000	0.872	0.023	0.178	0.165	0.221	0.01 <= p < 0.05	1.319	< 0.01	0.727	Lognormal	Lognormal
21_2_4_113	MW-11	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	0.943	0.358	0.105	0.887	0.954	0.515	0.153	0.359	0.121	>= 0.10	0.236	>= 0.10	0.574	Gamma; Lognormal; Normal	Normal
21_2_4_115	MW-11	Appendix IV	Lead	mg/L	17	3	18%	0.518	0.000	0.387	0.000	0.892	0.087	0.232	0.040	0.241	0.05 <= p < 0.10	1.339	< 0.01	1.906	Gamma; Lognormal	Gamma
21_2_4_116	MW-11	Appendix IV	Lithium	mg/L	17	0	0%	0.871	0.022	0.169	0.219	0.942	0.341	0.168	0.231	0.114	>= 0.10	0.207	>= 0.10	0.941	Gamma; Lognormal; Normal	Normal
21_2_4_117	MW-11	Appendix IV	Mercury	ng/L	17	13	76%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		3.376		Nonparametric
21_2_4_118	MW-11	Appendix IV	Molybdenum	mg/L	17	2	12%	0.880	0.048	0.188	0.166	0.969	0.847	0.115	0.855	0.147	>= 0.10	0.316	>= 0.10	0.647	Gamma; Lognormal; Normal	Normal
21_2_4_121	MW-11	Appendix IV	Radium 226 and 228	pCi/L	16	5	31%	0.930	0.407	0.209	0.195	0.967	0.857	0.154	0.659	0.181	>= 0.10	0.255	>= 0.10	0.411	Gamma; Lognormal; Normal	Normal
21_2_4_122	MW-11	Appendix IV	Selenium	mg/L	17	3	18%	0.719	0.001	0.279	0.004	0.877	0.053	0.204	0.119	0.236	0.01 <= p < 0.05	0.855	0.01 <= p < 0.05	0.460	Lognormal	Lognormal

(Table continues on next page)

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 3: Goodness-of-Fit Tests, Non-Detects Excluded *(continued)*

								Normal				Lognormal				Gamma						
								S-W		Lilliefors		S-W		Lilliefors		K-S		A-D				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Log-SD (NDs excl.)	ProUCL Distributions Fit	Recommended Distribution
21_2_4_125	MW-11	Appendix IV	Thallium	mg/L	17	16	94%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
21_2_5_111	MW-11	Part 115	Copper	mg/L	17	4	24%	0.502	0.000	0.377	0.000	0.853	0.032	0.208	0.129	0.288	0.01 <= p < 0.05	1.464	< 0.01	1.393	Lognormal	Nonparametric
21_2_5_114	MW-11	Part 115	Iron	mg/L	17	0	0%	0.963	0.681	0.084	0.988	0.933	0.246	0.129	0.632	0.110	>= 0.10	0.331	>= 0.10	0.348	Gamma; Lognormal; Normal	Normal
21_2_5_119	MW-11	Part 115	Nickel	mg/L	17	0	0%	0.512	0.000	0.405	0.000	0.788	0.001	0.270	0.002	0.344	< 0.01	2.401	< 0.01	0.813	Nonparametric	Nonparametric
21_2_5_123	MW-11	Part 115	Silver	mg/L	17	14	82%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.098		Nonparametric
21_2_5_128	MW-11	Part 115	Vanadium	mg/L	17	13	76%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.724		Nonparametric
21_2_5_129	MW-11	Part 115	Zinc	mg/L	17	4	24%	0.813	0.010	0.207	0.131	0.883	0.078	0.272	0.009	0.237	0.05 <= p < 0.10	0.704	0.05 <= p < 0.10	1.362	Gamma; Lognormal; Normal	Gamma
22_2_3_105	MW-12	Appendix III	Boron	mg/L	17	0	0%	0.909	0.097	0.170	0.213	0.951	0.468	0.141	0.497	0.158	>= 0.10	0.421	>= 0.10	0.330	Gamma; Lognormal; Normal	Normal
22_2_3_107	MW-12	Appendix III	Calcium	mg/L	17	0	0%	0.938	0.295	0.106	0.880	0.919	0.141	0.137	0.538	0.130	>= 0.10	0.435	>= 0.10	0.302	Gamma; Lognormal; Normal	Normal
22_2_3_108	MW-12	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	0.866	0.019	0.282	0.001	0.906	0.085	0.243	0.009	0.259	< 0.01	0.898	0.01 <= p < 0.05	0.232	Lognormal	Lognormal
22_2_3_112	MW-12	Appendix III	Fluoride	mg/L	17	0	0%	0.883	0.036	0.254	0.005	0.929	0.211	0.200	0.069	0.220	0.01 <= p < 0.05	0.666	0.05 <= p < 0.10	0.298	Gamma; Lognormal	Gamma
22_2_3_120	MW-12	Appendix III	pH (field)	su	17	0	0%	0.977	0.929	0.113	0.817	0.980	0.958	0.107	0.871	0.113	>= 0.10	0.216	>= 0.10	0.043	Gamma; Lognormal; Normal	Normal
22_2_3_124	MW-12	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	0.911	0.103	0.148	0.414	0.927	0.194	0.141	0.497	0.152	>= 0.10	0.464	>= 0.10	0.408	Gamma; Lognormal; Normal	Normal
22_2_3_126	MW-12	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	0.947	0.414	0.161	0.283	0.882	0.034	0.177	0.167	0.181	>= 0.10	0.555	>= 0.10	0.366	Gamma; Lognormal; Normal	Normal
22_2_4_101	MW-12	Appendix IV	Antimony	mg/L	17	0	0%	0.950	0.449	0.117	0.770	0.977	0.920	0.110	0.848	0.103	>= 0.10	0.141	>= 0.10	0.559	Gamma; Lognormal; Normal	Normal
22_2_4_102	MW-12	Appendix IV	Arsenic	mg/L	17	0	0%	0.816	0.003	0.191	0.103	0.919	0.145	0.187	0.119	0.198	0.05 <= p < 0.10	0.661	0.05 <= p < 0.10	0.439	Gamma; Lognormal; Normal	Normal
22_2_4_103	MW-12	Appendix IV	Barium	mg/L	17	0	0%	0.827	0.005	0.181	0.147	0.941	0.332	0.145	0.451	0.159	>= 0.10	0.588	>= 0.10	0.629	Gamma; Lognormal; Normal	Normal
22_2_4_104	MW-12	Appendix IV	Beryllium	mg/L	17	17	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
22_2_4_106	MW-12	Appendix IV	Cadmium	mg/L	17	0	0%	0.636	0.000	0.251	0.005	0.943	0.358	0.136	0.551	0.194	>= 0.10	0.764	0.01 <= p < 0.05	0.800	Gamma; Lognormal	Gamma
22_2_4_109	MW-12	Appendix IV	Chromium, Total	mg/L	17	6	35%	0.895	0.159	0.183	0.380	0.939	0.508	0.157	0.625	0.179	>= 0.10	0.325	>= 0.10	0.530	Gamma; Lognormal; Normal	Normal
22_2_4_110	MW-12	Appendix IV	Cobalt	mg/L	17	5	29%	0.707	0.001	0.299	0.004	0.958	0.761	0.124	0.876	0.192	>= 0.10	0.437	>= 0.10	0.982	Gamma; Lognormal	Gamma
22_2_4_113	MW-12	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	0.883	0.036	0.254	0.005	0.929	0.211	0.200	0.069	0.220	0.01 <= p < 0.05	0.666	0.05 <= p < 0.10	0.298	Gamma; Lognormal	Gamma
22_2_4_115	MW-12	Appendix IV	Lead	mg/L	17	6	35%	0.870	0.076	0.242	0.072	0.903	0.202	0.194	0.293	0.221	>= 0.10	0.536	>= 0.10	0.474	Gamma; Lognormal; Normal	Normal
22_2_4_116	MW-12	Appendix IV	Lithium	mg/L	17	0	0%	0.931	0.225	0.159	0.303	0.913	0.113	0.146	0.438	0.156	>= 0.10	0.519	>= 0.10	0.416	Gamma; Lognormal; Normal	Normal
22_2_4_117	MW-12	Appendix IV	Mercury	ng/L	17	12	71%	0.764	0.040	0.361	0.032	0.740	0.024	0.347	0.049	0.383	0.05 <= p < 0.10	0.765	0.01 <= p < 0.05	2.886	Gamma	Nonparametric
22_2_4_118	MW-12	Appendix IV	Molybdenum	mg/L	17	0	0%	0.735	0.000	0.251	0.006	0.905	0.084	0.171	0.204	0.192	0.05 <= p < 0.10	0.667	0.05 <= p < 0.10	0.313	Gamma; Lognormal	Gamma
22_2_4_121	MW-12	Appendix IV	Radium 226 and 228	pCi/L	17	10	59%	0.886	0.254	0.206	0.495	0.944	0.679	0.173	0.760	0.193	>= 0.10	0.305	>= 0.10	0.274	Gamma; Lognormal; Normal	Nonparametric
22_2_4_122	MW-12	Appendix IV	Selenium	mg/L	17	0	0%	0.832	0.006	0.182	0.140	0.938	0.296	0.136	0.553	0.155	>= 0.10	0.366	>= 0.10	1.099	Gamma; Lognormal; Normal	Gamma
22_2_4_125	MW-12	Appendix IV	Thallium	mg/L	17	17	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
22_2_5_111	MW-12	Part 115	Copper	mg/L	17	0	0%	0.861	0.016	0.139	0.512	0.986	0.992	0.108	0.861	0.125	>= 0.10	0.266	>= 0.10	0.442	Gamma; Lognormal; Normal	Normal
22_2_5_114	MW-12	Part 115	Iron	mg/L	17	6	35%	0.583	0.000	0.366	0.000	0.868	0.073	0.259	0.038	0.332	< 0.01	1.166	< 0.01	1.175	Lognormal	Nonparametric
22_2_5_119	MW-12	Part 115	Nickel	mg/L	17	0	0%	0.800	0.002	0.259	0.004	0.940	0.320	0.168	0.229	0.192	>= 0.10	0.570	>= 0.10	0.451	Gamma; Lognormal	Gamma
22_2_5_123	MW-12	Part 115	Silver	mg/L	17	17	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
22_2_5_128	MW-12	Part 115	Vanadium	mg/L	17	6	35%	0.917	0.291	0.219	0.147	0.971	0.893	0.153	0.669	0.179	>= 0.10	0.282	>= 0.10	0.402	Gamma; Lognormal; Normal	Normal
22_2_5_129	MW-12	Part 115	Zinc	mg/L	17	0	0%	0.823	0.004	0.252	0.005	0.940	0.314	0.166	0.247	0.181	>= 0.10	0.681	0.05 <= p < 0.10	0.552	Gamma; Lognormal	Gamma
28_1_3_105	MW-18	Appendix III	Boron	mg/L	17	0	0%	0.900	0.068	0.158	0.312	0.903	0.075	0.170	0.214	0.170	>= 0.10	0.663	0.05 <= p < 0.10	0.316	Gamma; Lognormal; Normal	Normal
28_1_3_107	MW-18	Appendix III	Calcium	mg/L	17	0	0%	0.933	0.245	0.166	0.247	0.922	0.160	0.195	0.085	0.184	>= 0.10	0.544	>= 0.10	0.203	Gamma; Lognormal; Normal	Normal
28_1_3_108	MW-18	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	0.964	0.712	0.124	0.694	0.949	0.442	0.136	0.557	0.128	>= 0.10	0.357	>= 0.10	0.195	Gamma; Lognormal; Normal	Normal
28_1_3_112	MW-18	Appendix III	Fluoride	mg/L	17	0	0%	0.944	0.363	0.153	0.360	0.947	0.407	0.155	0.345	0.156	>= 0.10	0.433	>= 0.10	0.184	Gamma; Lognormal; Normal	Normal

(Table continues on next page)

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 3: Goodness-of-Fit Tests, Non-Detects Excluded *(continued)*

								Normal				Lognormal				Gamma						
								S-W		Lilliefors		S-W		Lilliefors		K-S		A-D				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Log-SD (NDs excl.)	ProUCL Distributions Fit	Recommended Distribution
28_1_3_120	MW-18	Appendix III	pH (field)	su	17	0	0%	0.936	0.276	0.168	0.231	0.935	0.264	0.170	0.216	0.164	>= 0.10	0.449	>= 0.10	0.012	Gamma; Lognormal; Normal	Normal
28_1_3_124	MW-18	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	0.929	0.209	0.235	0.013	0.937	0.279	0.187	0.116	0.197	0.05 <= p < 0.10	0.506	>= 0.10	0.306	Gamma; Lognormal; Normal	Normal
28_1_3_126	MW-18	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	0.968	0.778	0.182	0.140	0.955	0.543	0.154	0.350	0.160	>= 0.10	0.335	>= 0.10	0.182	Gamma; Lognormal; Normal	Normal
28_1_4_101	MW-18	Appendix IV	Antimony	mg/L	17	3	18%	0.538	0.000	0.294	0.002	0.790	0.004	0.221	0.063	0.253	0.01 <= p < 0.05	1.528	< 0.01	0.617	Lognormal	Lognormal
28_1_4_102	MW-18	Appendix IV	Arsenic	mg/L	17	0	0%	0.971	0.834	0.121	0.735	0.977	0.920	0.137	0.540	0.119	>= 0.10	0.216	>= 0.10	0.279	Gamma; Lognormal; Normal	Normal
28_1_4_103	MW-18	Appendix IV	Barium	mg/L	17	0	0%	0.941	0.328	0.147	0.426	0.956	0.554	0.152	0.367	0.153	>= 0.10	0.344	>= 0.10	0.300	Gamma; Lognormal; Normal	Normal
28_1_4_104	MW-18	Appendix IV	Beryllium	mg/L	17	14	82%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.057		Nonparametric
28_1_4_106	MW-18	Appendix IV	Cadmium	mg/L	17	7	41%	0.756	0.004	0.270	0.037	0.947	0.636	0.130	0.902	0.174	>= 0.10	0.401	>= 0.10	0.719	Gamma; Lognormal	Gamma
28_1_4_109	MW-18	Appendix IV	Chromium, Total	mg/L	17	15	88%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.654		Nonparametric
28_1_4_110	MW-18	Appendix IV	Cobalt	mg/L	17	0	0%	0.804	0.002	0.298	0.000	0.921	0.156	0.223	0.024	0.254	< 0.01	0.895	0.01 <= p < 0.05	0.475	Lognormal	Lognormal
28_1_4_113	MW-18	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	0.944	0.363	0.153	0.360	0.947	0.407	0.155	0.345	0.156	>= 0.10	0.433	>= 0.10	0.184	Gamma; Lognormal; Normal	Normal
28_1_4_115	MW-18	Appendix IV	Lead	mg/L	17	10	59%	0.833	0.086	0.294	0.069	0.838	0.095	0.275	0.112	0.297	0.05 <= p < 0.10	0.642	0.05 <= p < 0.10	0.345	Gamma; Lognormal; Normal	Nonparametric
28_1_4_116	MW-18	Appendix IV	Lithium	mg/L	17	0	0%	0.903	0.076	0.190	0.107	0.892	0.051	0.201	0.065	0.199	0.05 <= p < 0.10	0.791	0.01 <= p < 0.05	0.238	Gamma; Lognormal; Normal	Normal
28_1_4_117	MW-18	Appendix IV	Mercury	ng/L	17	15	88%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.100		Nonparametric
28_1_4_118	MW-18	Appendix IV	Molybdenum	mg/L	17	0	0%	0.925	0.178	0.184	0.133	0.965	0.725	0.146	0.441	0.164	>= 0.10	0.400	>= 0.10	0.297	Gamma; Lognormal; Normal	Normal
28_1_4_121	MW-18	Appendix IV	Radium 226 and 228	pCi/L	17	9	53%	0.768	0.013	0.331	0.010	0.879	0.186	0.268	0.095	0.284	0.05 <= p < 0.10	0.605	>= 0.10	0.299	Gamma; Lognormal	Nonparametric
28_1_4_122	MW-18	Appendix IV	Selenium	mg/L	17	0	0%	0.805	0.002	0.203	0.060	0.907	0.091	0.183	0.135	0.181	>= 0.10	0.635	>= 0.10	0.956	Gamma; Lognormal; Normal	Normal
28_1_4_125	MW-18	Appendix IV	Thallium	mg/L	17	16	94%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
28_1_5_111	MW-18	Part 115	Copper	mg/L	17	0	0%	0.723	0.000	0.302	0.000	0.845	0.009	0.219	0.029	0.257	< 0.01	1.468	< 0.01	0.553	Nonparametric	Nonparametric
28_1_5_114	MW-18	Part 115	Iron	mg/L	17	0	0%	0.984	0.987	0.118	0.764	0.979	0.949	0.111	0.832	0.103	>= 0.10	0.161	>= 0.10	0.270	Gamma; Lognormal; Normal	Normal
28_1_5_119	MW-18	Part 115	Nickel	mg/L	17	0	0%	0.871	0.023	0.255	0.005	0.928	0.203	0.197	0.079	0.220	0.01 <= p < 0.05	0.714	0.05 <= p < 0.10	0.366	Gamma; Lognormal	Gamma
28_1_5_123	MW-18	Part 115	Silver	mg/L	17	17	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
28_1_5_128	MW-18	Part 115	Vanadium	mg/L	17	16	94%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
28_1_5_129	MW-18	Part 115	Zinc	mg/L	17	0	0%	0.685	0.000	0.228	0.019	0.952	0.497	0.131	0.615	0.136	>= 0.10	0.545	>= 0.10	0.606	Gamma; Lognormal	Gamma
29_1_3_105	MW-19	Appendix III	Boron	mg/L	17	0	0%	0.933	0.246	0.137	0.540	0.956	0.566	0.106	0.880	0.116	>= 0.10	0.295	>= 0.10	0.235	Gamma; Lognormal; Normal	Normal
29_1_3_107	MW-19	Appendix III	Calcium	mg/L	17	0	0%	0.968	0.791	0.126	0.666	0.952	0.481	0.150	0.398	0.138	>= 0.10	0.332	>= 0.10	0.118	Gamma; Lognormal; Normal	Normal
29_1_3_108	MW-19	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	0.905	0.081	0.209	0.047	0.947	0.409	0.178	0.163	0.166	>= 0.10	0.535	>= 0.10	0.341	Gamma; Lognormal; Normal	Normal
29_1_3_112	MW-19	Appendix III	Fluoride	mg/L	17	0	0%	0.964	0.703	0.150	0.392	0.956	0.554	0.174	0.184	0.170	>= 0.10	0.322	>= 0.10	0.146	Gamma; Lognormal; Normal	Normal
29_1_3_120	MW-19	Appendix III	pH (field)	su	17	0	0%	0.929	0.208	0.119	0.759	0.920	0.148	0.123	0.706	0.121	>= 0.10	0.384	>= 0.10	0.023	Gamma; Lognormal; Normal	Normal
29_1_3_124	MW-19	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	0.965	0.733	0.114	0.807	0.953	0.510	0.104	0.893	0.105	>= 0.10	0.253	>= 0.10	0.194	Gamma; Lognormal; Normal	Normal
29_1_3_126	MW-19	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	0.856	0.013	0.199	0.072	0.862	0.017	0.192	0.098	0.197	0.05 <= p < 0.10	0.844	0.01 <= p < 0.05	0.124	Gamma; Lognormal; Normal	Normal
29_1_4_101	MW-19	Appendix IV	Antimony	mg/L	17	12	71%	0.949	0.727	0.187	0.820	0.935	0.633	0.264	0.302	0.256	>= 0.10	0.287	>= 0.10	0.756	Gamma; Lognormal; Normal	Nonparametric
29_1_4_102	MW-19	Appendix IV	Arsenic	mg/L	17	0	0%	0.912	0.109	0.131	0.616	0.908	0.092	0.168	0.230	0.161	>= 0.10	0.559	>= 0.10	0.384	Gamma; Lognormal; Normal	Normal
29_1_4_103	MW-19	Appendix IV	Barium	mg/L	17	0	0%	0.969	0.804	0.144	0.459	0.981	0.964	0.119	0.751	0.125	>= 0.10	0.233	>= 0.10	0.134	Gamma; Lognormal; Normal	Normal
29_1_4_104	MW-19	Appendix IV	Beryllium	mg/L	17	3	18%	0.926	0.269	0.144	0.597	0.941	0.437	0.119	0.855	0.126	>= 0.10	0.339	>= 0.10	0.248	Gamma; Lognormal; Normal	Normal
29_1_4_106	MW-19	Appendix IV	Cadmium	mg/L	17	16	94%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
29_1_4_109	MW-19	Appendix IV	Chromium, Total	mg/L	17	5	29%	0.772	0.005	0.261	0.023	0.880	0.087	0.232	0.074	0.247	0.05 <= p < 0.10	0.773	0.01 <= p < 0.05	0.254	Gamma; Lognormal	Gamma
29_1_4_110	MW-19	Appendix IV	Cobalt	mg/L	17	1	6%	0.936	0.299	0.170	0.245	0.946	0.427	0.161	0.327	0.121	>= 0.10	0.276	>= 0.10	0.690	Gamma; Lognormal; Normal	Normal
29_1_4_113	MW-19	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	0.964	0.703	0.150	0.392	0.956	0.554	0.174	0.184	0.170	>= 0.10	0.322	>= 0.10	0.146	Gamma; Lognormal; Normal	Normal

(Table continues on next page)

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 3: Goodness-of-Fit Tests, Non-Detects Excluded *(continued)*

								Normal				Lognormal				Gamma						
								S-W		Lilliefors		S-W		Lilliefors		K-S		A-D				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Log-SD (NDs excl.)	ProUCL Distributions Fit	Recommended Distribution
29_1_4_115	MW-19	Appendix IV	Lead	mg/L	17	17	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
29_1_4_116	MW-19	Appendix IV	Lithium	mg/L	17	0	0%	0.929	0.209	0.193	0.092	0.932	0.233	0.170	0.213	0.177	>= 0.10	0.472	>= 0.10	0.123	Gamma; Lognormal; Normal	Normal
29_1_4_117	MW-19	Appendix IV	Mercury	ng/L	17	16	94%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
29_1_4_118	MW-19	Appendix IV	Molybdenum	mg/L	17	0	0%	0.925	0.176	0.204	0.058	0.927	0.193	0.166	0.240	0.159	>= 0.10	0.472	>= 0.10	0.430	Gamma; Lognormal; Normal	Normal
29_1_4_121	MW-19	Appendix IV	Radium 226 and 228	pCi/L	17	8	47%	0.889	0.195	0.225	0.212	0.879	0.155	0.224	0.213	0.225	>= 0.10	0.560	>= 0.10	0.321	Gamma; Lognormal; Normal	Normal
29_1_4_122	MW-19	Appendix IV	Selenium	mg/L	17	11	65%	0.602	0.000	0.397	0.004	0.717	0.009	0.286	0.129	0.337	0.01 <= p < 0.05	1.025	< 0.01	0.681	Lognormal	Nonparametric
29_1_4_125	MW-19	Appendix IV	Thallium	mg/L	17	16	94%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
29_1_5_111	MW-19	Part 115	Copper	mg/L	17	13	76%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.299		Nonparametric
29_1_5_114	MW-19	Part 115	Iron	mg/L	17	0	0%	0.978	0.940	0.117	0.775	0.956	0.566	0.114	0.807	0.098	>= 0.10	0.223	>= 0.10	0.254	Gamma; Lognormal; Normal	Normal
29_1_5_119	MW-19	Part 115	Nickel	mg/L	17	1	6%	0.573	0.000	0.373	0.000	0.837	0.009	0.203	0.077	0.275	< 0.01	1.684	< 0.01	0.789	Lognormal	Lognormal
29_1_5_123	MW-19	Part 115	Silver	mg/L	17	17	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
29_1_5_128	MW-19	Part 115	Vanadium	mg/L	17	14	82%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.271		Nonparametric
29_1_5_129	MW-19	Part 115	Zinc	mg/L	17	10	59%	0.483	0.000	0.490	0.000	0.713	0.005	0.370	0.004	0.462	< 0.01	1.438	< 0.01	1.399	Nonparametric	Nonparametric
30_1_3_105	MW-20	Appendix III	Boron	mg/L	17	0	0%	0.889	0.045	0.195	0.086	0.912	0.109	0.181	0.146	0.192	0.05 <= p < 0.10	0.713	0.05 <= p < 0.10	0.213	Gamma; Lognormal; Normal	Normal
30_1_3_107	MW-20	Appendix III	Calcium	mg/L	17	0	0%	0.894	0.054	0.195	0.084	0.774	0.001	0.252	0.005	0.227	0.01 <= p < 0.05	0.971	0.01 <= p < 0.05	0.228	Normal	Normal
30_1_3_108	MW-20	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	0.925	0.179	0.172	0.202	0.889	0.045	0.234	0.014	0.217	0.01 <= p < 0.05	0.747	0.01 <= p < 0.05	0.381	Normal	Normal
30_1_3_112	MW-20	Appendix III	Fluoride	mg/L	17	0	0%	0.718	0.000	0.257	0.004	0.837	0.007	0.224	0.023	0.214	0.01 <= p < 0.05	1.212	< 0.01	0.291	Nonparametric	Nonparametric
30_1_3_120	MW-20	Appendix III	pH (field)	su	17	0	0%	0.929	0.209	0.201	0.068	0.928	0.205	0.201	0.067	0.208	0.01 <= p < 0.05	0.567	>= 0.10	0.015	Gamma; Lognormal; Normal	Normal
30_1_3_124	MW-20	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	0.943	0.356	0.118	0.766	0.947	0.412	0.164	0.260	0.159	>= 0.10	0.287	>= 0.10	0.595	Gamma; Lognormal; Normal	Normal
30_1_3_126	MW-20	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	0.950	0.457	0.172	0.197	0.959	0.615	0.167	0.233	0.159	>= 0.10	0.433	>= 0.10	0.128	Gamma; Lognormal; Normal	Normal
30_1_4_101	MW-20	Appendix IV	Antimony	mg/L	17	6	35%	0.532	0.000	0.391	0.000	0.827	0.021	0.222	0.135	0.288	0.01 <= p < 0.05	1.215	< 0.01	0.668	Lognormal	Lognormal
30_1_4_102	MW-20	Appendix IV	Arsenic	mg/L	17	0	0%	0.935	0.267	0.156	0.328	0.941	0.331	0.144	0.458	0.152	>= 0.10	0.426	>= 0.10	0.204	Gamma; Lognormal; Normal	Normal
30_1_4_103	MW-20	Appendix IV	Barium	mg/L	17	0	0%	0.851	0.011	0.226	0.021	0.934	0.251	0.183	0.136	0.201	0.05 <= p < 0.10	0.721	0.05 <= p < 0.10	0.275	Gamma; Lognormal	Gamma
30_1_4_104	MW-20	Appendix IV	Beryllium	mg/L	17	16	94%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
30_1_4_106	MW-20	Appendix IV	Cadmium	mg/L	17	16	94%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
30_1_4_109	MW-20	Appendix IV	Chromium, Total	mg/L	17	9	53%	0.927	0.492	0.260	0.116	0.944	0.655	0.243	0.176	0.254	>= 0.10	0.342	>= 0.10	0.138	Gamma; Lognormal; Normal	Nonparametric
30_1_4_110	MW-20	Appendix IV	Cobalt	mg/L	17	0	0%	0.970	0.810	0.145	0.448	0.977	0.919	0.146	0.436	0.139	>= 0.10	0.221	>= 0.10	0.264	Gamma; Lognormal; Normal	Normal
30_1_4_113	MW-20	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	0.718	0.000	0.257	0.004	0.837	0.007	0.224	0.023	0.214	0.01 <= p < 0.05	1.212	< 0.01	0.291	Nonparametric	Nonparametric
30_1_4_115	MW-20	Appendix IV	Lead	mg/L	17	0	0%	0.558	0.000	0.314	0.000	0.821	0.004	0.206	0.053	0.249	< 0.01	1.367	< 0.01	0.427	Lognormal	Lognormal
30_1_4_116	MW-20	Appendix IV	Lithium	mg/L	17	0	0%	0.960	0.637	0.113	0.817	0.907	0.088	0.171	0.208	0.148	>= 0.10	0.517	>= 0.10	0.296	Gamma; Lognormal; Normal	Normal
30_1_4_117	MW-20	Appendix IV	Mercury	ng/L	17	14	82%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.581		Nonparametric
30_1_4_118	MW-20	Appendix IV	Molybdenum	mg/L	17	0	0%	0.971	0.833	0.136	0.556	0.974	0.880	0.122	0.715	0.126	>= 0.10	0.260	>= 0.10	0.155	Gamma; Lognormal; Normal	Normal
30_1_4_121	MW-20	Appendix IV	Radium 226 and 228	pCi/L	16	8	50%	0.816	0.042	0.287	0.051	0.886	0.215	0.259	0.117	0.281	0.05 <= p < 0.10	0.570	>= 0.10	0.389	Gamma; Lognormal; Normal	Nonparametric
30_1_4_122	MW-20	Appendix IV	Selenium	mg/L	17	10	59%	0.716	0.005	0.377	0.003	0.792	0.034	0.346	0.011	0.373	< 0.01	0.872	0.01 <= p < 0.05	0.547	Nonparametric	Nonparametric
30_1_4_125	MW-20	Appendix IV	Thallium	mg/L	17	16	94%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
30_1_5_111	MW-20	Part 115	Copper	mg/L	17	2	12%	0.451	0.000	0.379	0.000	0.764	0.001	0.210	0.073	0.279	< 0.01	1.963	< 0.01	0.710	Lognormal	Lognormal
30_1_5_114	MW-20	Part 115	Iron	mg/L	17	0	0%	0.941	0.332	0.198	0.076	0.914	0.118	0.229	0.018	0.219	0.01 <= p < 0.05	0.518	>= 0.10	0.170	Gamma; Lognormal; Normal	Normal
30_1_5_119	MW-20	Part 115	Nickel	mg/L	17	0	0%	0.485	0.000	0.419	0.000	0.749	0.000	0.303	0.000	0.348	< 0.01	2.009	< 0.01	0.414	Nonparametric	Nonparametric
30_1_5_123	MW-20	Part 115	Silver	mg/L	17	17	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric

(Table continues on next page)

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 3: Goodness-of-Fit Tests, Non-Detects Excluded *(continued)*

								Normal				Lognormal				Gamma						
								S-W		Lilliefors		S-W		Lilliefors		K-S		A-D				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Log-SD (NDs excl.)	ProUCL Distributions Fit	Recommended Distribution
30_1_5_128	MW-20	Part 115	Vanadium	mg/L	17	17	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
30_1_5_129	MW-20	Part 115	Zinc	mg/L	17	0	0%	0.791	0.002	0.315	0.000	0.927	0.194	0.228	0.019	0.266	< 0.01	0.865	0.01 <= p < 0.05	0.594	Lognormal	Lognormal
40_1_3_105	MW-30	Appendix III	Boron	mg/L	17	0	0%	0.717	0.000	0.241	0.010	0.842	0.008	0.202	0.064	0.215	0.01 <= p < 0.05	1.052	< 0.01	0.198	Lognormal	Lognormal
40_1_3_107	MW-30	Appendix III	Calcium	mg/L	17	0	0%	0.851	0.011	0.254	0.005	0.646	0.000	0.346	0.000	0.299	< 0.01	1.684	< 0.01	0.562	Nonparametric	Nonparametric
40_1_3_108	MW-30	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	0.672	0.000	0.379	0.000	0.805	0.002	0.281	0.001	0.334	< 0.01	1.865	< 0.01	0.979	Nonparametric	Nonparametric
40_1_3_112	MW-30	Appendix III	Fluoride	mg/L	17	0	0%	0.876	0.027	0.256	0.004	0.793	0.002	0.281	0.001	0.276	< 0.01	1.171	< 0.01	0.200	Nonparametric	Nonparametric
40_1_3_120	MW-30	Appendix III	pH (field)	su	17	0	0%	0.818	0.004	0.215	0.036	0.805	0.002	0.221	0.027	0.216	0.01 <= p < 0.05	0.972	0.01 <= p < 0.05	0.026	Nonparametric	Nonparametric
40_1_3_124	MW-30	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	0.837	0.007	0.202	0.064	0.779	0.001	0.249	0.006	0.233	0.01 <= p < 0.05	1.301	< 0.01	0.228	Normal	Normal
40_1_3_126	MW-30	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	0.767	0.001	0.313	0.000	0.823	0.004	0.283	0.001	0.295	< 0.01	1.598	< 0.01	0.264	Nonparametric	Nonparametric
40_1_4_101	MW-30	Appendix IV	Antimony	mg/L	17	14	82%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.551		Nonparametric
40_1_4_102	MW-30	Appendix IV	Arsenic	mg/L	17	2	12%	0.572	0.000	0.340	0.000	0.954	0.584	0.158	0.401	0.233	0.01 <= p < 0.05	0.961	0.01 <= p < 0.05	1.074	Lognormal	Nonparametric
40_1_4_103	MW-30	Appendix IV	Barium	mg/L	17	0	0%	0.924	0.169	0.114	0.809	0.948	0.433	0.098	0.936	0.109	>= 0.10	0.320	>= 0.10	0.289	Gamma; Lognormal; Normal	Normal
40_1_4_104	MW-30	Appendix IV	Beryllium	mg/L	17	13	76%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.314		Nonparametric
40_1_4_106	MW-30	Appendix IV	Cadmium	mg/L	17	16	94%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
40_1_4_109	MW-30	Appendix IV	Chromium, Total	mg/L	17	0	0%	0.899	0.064	0.129	0.636	0.981	0.966	0.104	0.892	0.097	>= 0.10	0.205	>= 0.10	0.476	Gamma; Lognormal; Normal	Normal
40_1_4_110	MW-30	Appendix IV	Cobalt	mg/L	17	0	0%	0.329	0.000	0.424	0.000	0.769	0.001	0.220	0.028	0.330	< 0.01	2.963	< 0.01	1.100	Nonparametric	Nonparametric
40_1_4_113	MW-30	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	0.876	0.027	0.256	0.004	0.793	0.002	0.281	0.001	0.276	< 0.01	1.171	< 0.01	0.200	Nonparametric	Nonparametric
40_1_4_115	MW-30	Appendix IV	Lead	mg/L	17	15	88%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		2.496		Nonparametric
40_1_4_116	MW-30	Appendix IV	Lithium	mg/L	17	0	0%	0.820	0.004	0.220	0.028	0.925	0.179	0.178	0.161	0.196	0.05 <= p < 0.10	0.696	0.05 <= p < 0.10	0.273	Gamma; Lognormal	Gamma
40_1_4_117	MW-30	Appendix IV	Mercury	ng/L	17	16	94%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
40_1_4_118	MW-30	Appendix IV	Molybdenum	mg/L	17	3	18%	0.534	0.000	0.406	0.000	0.871	0.043	0.217	0.074	0.300	< 0.01	1.624	< 0.01	1.328	Lognormal	Nonparametric
40_1_4_121	MW-30	Appendix IV	Radium 226 and 228	pCi/L	17	9	53%	0.886	0.213	0.251	0.144	0.910	0.356	0.213	0.351	0.234	>= 0.10	0.462	>= 0.10	0.266	Gamma; Lognormal; Normal	Nonparametric
40_1_4_122	MW-30	Appendix IV	Selenium	mg/L	17	7	41%	0.517	0.000	0.358	0.001	0.754	0.004	0.263	0.049	0.310	0.01 <= p < 0.05	1.478	< 0.01	0.827	Nonparametric	Nonparametric
40_1_4_125	MW-30	Appendix IV	Thallium	mg/L	17	17	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
40_1_5_111	MW-30	Part 115	Copper	mg/L	17	11	65%	0.517	0.000	0.476	0.000	0.700	0.006	0.348	0.022	0.443	< 0.01	1.264	< 0.01	1.570	Nonparametric	Nonparametric
40_1_5_114	MW-30	Part 115	Iron	mg/L	17	0	0%	0.707	0.000	0.233	0.015	0.976	0.906	0.094	0.955	0.146	>= 0.10	0.431	>= 0.10	0.779	Gamma; Lognormal	Gamma
40_1_5_119	MW-30	Part 115	Nickel	mg/L	17	3	18%	0.370	0.000	0.431	0.000	0.828	0.011	0.235	0.035	0.332	< 0.01	2.180	< 0.01	1.307	Nonparametric	Nonparametric
40_1_5_123	MW-30	Part 115	Silver	mg/L	17	16	94%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
40_1_5_128	MW-30	Part 115	Vanadium	mg/L	17	15	88%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		2.781		Nonparametric
40_1_5_129	MW-30	Part 115	Zinc	mg/L	17	10	59%	0.613	0.000	0.379	0.003	0.913	0.419	0.280	0.099	0.355	0.01 <= p < 0.05	0.707	0.05 <= p < 0.10	1.527	Gamma; Lognormal	Nonparametric
41_1_3_105	MW-31	Appendix III	Boron	mg/L	17	0	0%	0.928	0.205	0.183	0.135	0.964	0.704	0.164	0.259	0.175	>= 0.10	0.362	>= 0.10	0.178	Gamma; Lognormal; Normal	Normal
41_1_3_107	MW-31	Appendix III	Calcium	mg/L	17	0	0%	0.932	0.234	0.163	0.267	0.928	0.198	0.154	0.348	0.148	>= 0.10	0.445	>= 0.10	0.133	Gamma; Lognormal; Normal	Normal
41_1_3_108	MW-31	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	0.701	0.000	0.332	0.000	0.775	0.001	0.295	0.000	0.308	< 0.01	1.715	< 0.01	0.187	Nonparametric	Nonparametric
41_1_3_112	MW-31	Appendix III	Fluoride	mg/L	17	0	0%	0.874	0.025	0.257	0.004	0.829	0.005	0.280	0.001	0.267	< 0.01	0.945	0.01 <= p < 0.05	0.108	Nonparametric	Nonparametric
41_1_3_120	MW-31	Appendix III	pH (field)	su	17	0	0%	0.924	0.174	0.180	0.149	0.927	0.192	0.177	0.165	0.178	>= 0.10	0.575	>= 0.10	0.015	Gamma; Lognormal; Normal	Normal
41_1_3_124	MW-31	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	0.935	0.265	0.128	0.644	0.892	0.051	0.154	0.352	0.133	>= 0.10	0.403	>= 0.10	0.715	Gamma; Lognormal; Normal	Normal
41_1_3_126	MW-31	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	0.916	0.125	0.177	0.171	0.928	0.199	0.161	0.285	0.166	>= 0.10	0.464	>= 0.10	0.086	Gamma; Lognormal; Normal	Normal
41_1_4_101	MW-31	Appendix IV	Antimony	mg/L	17	7	41%	0.819	0.025	0.247	0.085	0.916	0.322	0.230	0.140	0.258	0.05 <= p < 0.10	0.498	>= 0.10	0.961	Gamma; Lognormal; Normal	Nonparametric
41_1_4_102	MW-31	Appendix IV	Arsenic	mg/L	17	0	0%	0.960	0.627	0.198	0.075	0.968	0.783	0.156	0.330	0.174	>= 0.10	0.309	>= 0.10	0.246	Gamma; Lognormal; Normal	Normal

(Table continues on next page)

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 3: Goodness-of-Fit Tests, Non-Detects Excluded *(continued)*

								Normal				Lognormal				Gamma						
								S-W		Lilliefors		S-W		Lilliefors		K-S		A-D				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Log-SD (NDs excl.)	ProUCL Distributions Fit	Recommended Distribution
41_1_4_103	MW-31	Appendix IV	Barium	mg/L	17	0	0%	0.883	0.035	0.168	0.231	0.969	0.803	0.127	0.658	0.147	>= 0.10	0.351	>= 0.10	0.348	Gamma; Lognormal; Normal	Normal
41_1_4_104	MW-31	Appendix IV	Beryllium	mg/L	17	15	88%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.407		Nonparametric
41_1_4_106	MW-31	Appendix IV	Cadmium	mg/L	17	16	94%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
41_1_4_109	MW-31	Appendix IV	Chromium, Total	mg/L	17	0	0%	0.852	0.011	0.186	0.120	0.914	0.118	0.138	0.526	0.155	>= 0.10	0.634	0.05 <= p < 0.10	0.267	Gamma; Lognormal; Normal	Normal
41_1_4_110	MW-31	Appendix IV	Cobalt	mg/L	17	3	18%	0.880	0.057	0.204	0.119	0.965	0.803	0.150	0.531	0.171	>= 0.10	0.397	>= 0.10	0.316	Gamma; Lognormal; Normal	Normal
41_1_4_113	MW-31	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	0.874	0.025	0.257	0.004	0.829	0.005	0.280	0.001	0.267	< 0.01	0.945	0.01 <= p < 0.05	0.108	Nonparametric	Nonparametric
41_1_4_115	MW-31	Appendix IV	Lead	mg/L	17	13	76%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.277		Nonparametric
41_1_4_116	MW-31	Appendix IV	Lithium	mg/L	17	0	0%	0.943	0.362	0.170	0.216	0.892	0.050	0.192	0.098	0.188	>= 0.10	0.647	0.05 <= p < 0.10	0.179	Gamma; Lognormal; Normal	Normal
41_1_4_117	MW-31	Appendix IV	Mercury	ng/L	17	14	82%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.458		Nonparametric
41_1_4_118	MW-31	Appendix IV	Molybdenum	mg/L	17	0	0%	0.527	0.000	0.319	0.000	0.875	0.026	0.218	0.030	0.267	< 0.01	1.547	< 0.01	0.688	Nonparametric	Nonparametric
41_1_4_121	MW-31	Appendix IV	Radium 226 and 228	pCi/L	17	7	41%	0.779	0.008	0.268	0.040	0.845	0.051	0.212	0.228	0.224	>= 0.10	0.850	0.01 <= p < 0.05	0.302	Gamma; Lognormal	Gamma
41_1_4_122	MW-31	Appendix IV	Selenium	mg/L	17	6	35%	0.552	0.000	0.329	0.002	0.771	0.004	0.255	0.044	0.293	0.01 <= p < 0.05	1.353	< 0.01	0.564	Nonparametric	Nonparametric
41_1_4_125	MW-31	Appendix IV	Thallium	mg/L	17	16	94%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
41_1_5_111	MW-31	Part 115	Copper	mg/L	17	10	59%	0.564	0.000	0.410	0.001	0.722	0.006	0.312	0.038	0.345	0.01 <= p < 0.05	1.206	< 0.01	0.679	Nonparametric	Nonparametric
41_1_5_114	MW-31	Part 115	Iron	mg/L	17	0	0%	0.830	0.005	0.232	0.015	0.896	0.058	0.211	0.043	0.236	0.01 <= p < 0.05	0.782	0.01 <= p < 0.05	1.024	Lognormal	Nonparametric
41_1_5_119	MW-31	Part 115	Nickel	mg/L	17	10	59%	0.636	0.001	0.328	0.022	0.853	0.132	0.304	0.050	0.329	0.05 <= p < 0.10	0.675	0.05 <= p < 0.10	2.026	Gamma; Lognormal	Nonparametric
41_1_5_123	MW-31	Part 115	Silver	mg/L	17	17	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
41_1_5_128	MW-31	Part 115	Vanadium	mg/L	17	12	71%	0.978	0.925	0.162	0.935	0.961	0.818	0.167	0.917	0.190	>= 0.10	0.217	>= 0.10	0.239	Gamma; Lognormal; Normal	Nonparametric
41_1_5_129	MW-31	Part 115	Zinc	mg/L	17	9	53%	0.828	0.056	0.289	0.047	0.815	0.042	0.257	0.123	0.281	0.05 <= p < 0.10	0.789	0.01 <= p < 0.05	0.964	Gamma; Lognormal; Normal	Nonparametric
42_1_3_105	MW-32	Appendix III	Boron	mg/L	17	0	0%	0.838	0.007	0.258	0.004	0.874	0.026	0.252	0.005	0.261	< 0.01	1.036	< 0.01	0.256	Nonparametric	Nonparametric
42_1_3_107	MW-32	Appendix III	Calcium	mg/L	17	0	0%	0.964	0.709	0.150	0.390	0.966	0.751	0.143	0.466	0.149	>= 0.10	0.356	>= 0.10	0.141	Gamma; Lognormal; Normal	Normal
42_1_3_108	MW-32	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	0.943	0.358	0.168	0.230	0.960	0.636	0.152	0.376	0.151	>= 0.10	0.336	>= 0.10	0.120	Gamma; Lognormal; Normal	Normal
42_1_3_112	MW-32	Appendix III	Fluoride	mg/L	17	0	0%	0.915	0.122	0.206	0.054	0.921	0.151	0.184	0.132	0.191	>= 0.10	0.680	0.05 <= p < 0.10	0.117	Gamma; Lognormal; Normal	Normal
42_1_3_120	MW-32	Appendix III	pH (field)	su	17	0	0%	0.944	0.370	0.146	0.437	0.944	0.375	0.146	0.432	0.153	>= 0.10	0.444	>= 0.10	0.009	Gamma; Lognormal; Normal	Normal
42_1_3_124	MW-32	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	0.895	0.056	0.178	0.161	0.883	0.036	0.183	0.134	0.163	>= 0.10	0.601	>= 0.10	1.258	Gamma; Lognormal; Normal	Gamma
42_1_3_126	MW-32	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	0.936	0.270	0.147	0.420	0.935	0.267	0.143	0.465	0.152	>= 0.10	0.372	>= 0.10	0.125	Gamma; Lognormal; Normal	Normal
42_1_4_101	MW-32	Appendix IV	Antimony	mg/L	17	13	76%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		1.090		Nonparametric
42_1_4_102	MW-32	Appendix IV	Arsenic	mg/L	17	0	0%	0.413	0.000	0.433	0.000	0.620	0.000	0.315	0.000	0.366	< 0.01	2.788	< 0.01	0.402	Nonparametric	Nonparametric
42_1_4_103	MW-32	Appendix IV	Barium	mg/L	17	0	0%	0.953	0.498	0.187	0.119	0.864	0.018	0.167	0.239	0.128	>= 0.10	0.312	>= 0.10	0.741	Gamma; Lognormal; Normal	Normal
42_1_4_104	MW-32	Appendix IV	Beryllium	mg/L	17	16	94%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
42_1_4_106	MW-32	Appendix IV	Cadmium	mg/L	17	16	94%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
42_1_4_109	MW-32	Appendix IV	Chromium, Total	mg/L	17	0	0%	0.393	0.000	0.388	0.000	0.637	0.000	0.240	0.010	0.292	< 0.01	2.850	< 0.01	0.536	Nonparametric	Nonparametric
42_1_4_110	MW-32	Appendix IV	Cobalt	mg/L	17	0	0%	0.578	0.000	0.302	0.000	0.877	0.028	0.161	0.284	0.208	0.05 <= p < 0.10	1.120	< 0.01	0.497	Gamma; Lognormal	Gamma
42_1_4_113	MW-32	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	0.915	0.122	0.206	0.054	0.921	0.151	0.184	0.132	0.191	>= 0.10	0.680	0.05 <= p < 0.10	0.117	Gamma; Lognormal; Normal	Normal
42_1_4_115	MW-32	Appendix IV	Lead	mg/L	17	12	71%	0.781	0.056	0.330	0.080	0.769	0.044	0.345	0.052	0.365	0.01 <= p < 0.05	0.721	0.01 <= p < 0.05	0.616	Lognormal; Normal	Nonparametric
42_1_4_116	MW-32	Appendix IV	Lithium	mg/L	17	0	0%	0.920	0.149	0.128	0.647	0.940	0.324	0.143	0.470	0.146	>= 0.10	0.363	>= 0.10	0.243	Gamma; Lognormal; Normal	Normal
42_1_4_117	MW-32	Appendix IV	Mercury	ng/L	17	14	82%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		4.446		Nonparametric
42_1_4_118	MW-32	Appendix IV	Molybdenum	mg/L	17	0	0%	0.943	0.360	0.155	0.345	0.881	0.033	0.147	0.423	0.136	>= 0.10	0.541	>= 0.10	0.412	Gamma; Lognormal; Normal	Normal
42_1_4_121	MW-32	Appendix IV	Radium 226 and 228	pCi/L	17	9	53%	0.910	0.353	0.215	0.336	0.911	0.363	0.235	0.218	0.242	>= 0.10	0.459	>= 0.10	0.214	Gamma; Lognormal; Normal	Nonparametric

(Table continues on next page)

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 3: Goodness-of-Fit Tests, Non-Detects Excluded *(continued)*

								Normal				Lognormal				Gamma						
								S-W		Lilliefors		S-W		Lilliefors		K-S		A-D				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Log-SD (NDs excl.)	ProUCL Distributions Fit	Recommended Distribution
42_1_4_122	MW-32	Appendix IV	Selenium	mg/L	17	13	76%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		1.061		Nonparametric
42_1_4_125	MW-32	Appendix IV	Thallium	mg/L	17	17	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
42_1_5_111	MW-32	Part 115	Copper	mg/L	17	10	59%	0.464	0.000	0.497	0.000	0.608	0.000	0.417	0.001	0.495	< 0.01	1.755	< 0.01	1.533	Nonparametric	Nonparametric
42_1_5_114	MW-32	Part 115	Iron	mg/L	17	0	0%	0.962	0.677	0.115	0.796	0.945	0.376	0.138	0.524	0.136	>= 0.10	0.321	>= 0.10	0.198	Gamma; Lognormal; Normal	Normal
42_1_5_119	MW-32	Part 115	Nickel	mg/L	17	0	0%	0.310	0.000	0.475	0.000	0.571	0.000	0.295	0.000	0.381	< 0.01	4.002	< 0.01	0.801	Nonparametric	Nonparametric
42_1_5_123	MW-32	Part 115	Silver	mg/L	17	17	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
42_1_5_128	MW-32	Part 115	Vanadium	mg/L	17	17	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
42_1_5_129	MW-32	Part 115	Zinc	mg/L	17	0	0%	0.600	0.000	0.425	0.000	0.737	0.000	0.324	0.000	0.390	< 0.01	2.551	< 0.01	1.190	Nonparametric	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.
11_2_3_105	MW-01R	Appendix III	Boron	mg/L	17	0	0%	0.248	0.265	
11_2_3_107	MW-01R	Appendix III	Calcium	mg/L	17	0	0%	0.214	0.337	
11_2_3_108	MW-01R	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	0.089	0.690	
11_2_3_112	MW-01R	Appendix III	Fluoride	mg/L	17	0	0%	0.352	0.114	
11_2_3_120	MW-01R	Appendix III	pH (field)	su	17	0	0%	-0.082	0.712	
11_2_3_124	MW-01R	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	0.221	0.321	
11_2_3_126	MW-01R	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	0.022	0.920	
11_2_4_101	MW-01R	Appendix IV	Antimony	mg/L	17	3	18%	0.409	0.090	
11_2_4_102	MW-01R	Appendix IV	Arsenic	mg/L	17	0	0%	-0.060	0.789	
11_2_4_103	MW-01R	Appendix IV	Barium	mg/L	17	0	0%	0.418	0.060	
11_2_4_104	MW-01R	Appendix IV	Beryllium	mg/L	17	2	12%	0.427	0.068	
11_2_4_106	MW-01R	Appendix IV	Cadmium	mg/L	17	13	76%	-0.370	0.296	
11_2_4_109	MW-01R	Appendix IV	Chromium, Total	mg/L	17	0	0%	-0.110	0.620	
11_2_4_110	MW-01R	Appendix IV	Cobalt	mg/L	17	0	0%	-0.237	0.287	
11_2_4_113	MW-01R	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	0.352	0.114	
11_2_4_115	MW-01R	Appendix IV	Lead	mg/L	17	2	12%	-0.053	0.822	
11_2_4_116	MW-01R	Appendix IV	Lithium	mg/L	17	0	0%	0.222	0.319	
11_2_4_117	MW-01R	Appendix IV	Mercury	ng/L	17	15	88%	-0.500	0.157	
11_2_4_118	MW-01R	Appendix IV	Molybdenum	mg/L	17	2	12%	0.051	0.827	
11_2_4_121	MW-01R	Appendix IV	Radium 226 and 228	pCi/L	17	11	65%	-0.747	0.021	*
11_2_4_122	MW-01R	Appendix IV	Selenium	mg/L	17	0	0%	-0.127	0.569	
11_2_5_111	MW-01R	Part 115	Copper	mg/L	17	6	35%	-0.233	0.377	
11_2_5_114	MW-01R	Part 115	Iron	mg/L	17	0	0%	0.468	0.036	*
11_2_5_119	MW-01R	Part 115	Nickel	mg/L	17	0	0%	-0.125	0.575	
11_2_5_128	MW-01R	Part 115	Vanadium	mg/L	17	2	12%	0.262	0.264	
11_2_5_129	MW-01R	Part 115	Zinc	mg/L	17	3	18%	-0.030	0.901	
12_2_3_105	MW-02	Appendix III	Boron	mg/L	17	0	0%	0.438	0.049	*
12_2_3_107	MW-02	Appendix III	Calcium	mg/L	17	0	0%	0.015	0.946	
12_2_3_108	MW-02	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	0.118	0.597	
12_2_3_112	MW-02	Appendix III	Fluoride	mg/L	17	0	0%	0.442	0.047	*
12_2_3_120	MW-02	Appendix III	pH (field)	su	17	0	0%	0.089	0.690	
12_2_3_124	MW-02	Appendix III	Sulfate (as SO4)	mg/L	17	10	59%	-0.499	0.106	
12_2_3_126	MW-02	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	0.306	0.169	
12_2_4_101	MW-02	Appendix IV	Antimony	mg/L	17	3	18%	-0.038	0.875	
12_2_4_102	MW-02	Appendix IV	Arsenic	mg/L	17	0	0%	0.196	0.379	
12_2_4_103	MW-02	Appendix IV	Barium	mg/L	17	0	0%	0.173	0.438	
12_2_4_104	MW-02	Appendix IV	Beryllium	mg/L	17	1	6%	0.225	0.325	
12_2_4_106	MW-02	Appendix IV	Cadmium	mg/L	17	12	71%	-0.299	0.376	
12_2_4_109	MW-02	Appendix IV	Chromium, Total	mg/L	17	0	0%	0.119	0.594	
12_2_4_110	MW-02	Appendix IV	Cobalt	mg/L	17	0	0%	0.103	0.644	
12_2_4_113	MW-02	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	0.442	0.047	*
12_2_4_115	MW-02	Appendix IV	Lead	mg/L	17	1	6%	-0.045	0.844	

(Table continues on next page)

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

Table 4: Autocorrelation Tests, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Autocorrelation	Box-Ljung p-value	Sig.
12_2_4_116	MW-02	Appendix IV	Lithium	mg/L	17	0	0%	0.224	0.315	
12_2_4_117	MW-02	Appendix IV	Mercury	ng/L	17	14	82%	-0.078	0.830	
12_2_4_118	MW-02	Appendix IV	Molybdenum	mg/L	17	0	0%	0.358	0.108	
12_2_4_121	MW-02	Appendix IV	Radium 226 and 228	pCi/L	16	5	31%	0.139	0.599	
12_2_4_122	MW-02	Appendix IV	Selenium	mg/L	17	0	0%	0.152	0.496	
12_2_4_125	MW-02	Appendix IV	Thallium	mg/L	17	16	94%	NA	NA	
12_2_5_111	MW-02	Part 115	Copper	mg/L	17	0	0%	-0.079	0.724	
12_2_5_114	MW-02	Part 115	Iron	mg/L	17	0	0%	0.130	0.558	
12_2_5_119	MW-02	Part 115	Nickel	mg/L	17	0	0%	0.245	0.271	
12_2_5_128	MW-02	Part 115	Vanadium	mg/L	17	1	6%	0.151	0.507	
12_2_5_129	MW-02	Part 115	Zinc	mg/L	17	0	0%	0.074	0.739	
13_2_3_105	MW-03	Appendix III	Boron	mg/L	17	0	0%	-0.411	0.065	
13_2_3_107	MW-03	Appendix III	Calcium	mg/L	17	0	0%	0.086	0.699	
13_2_3_108	MW-03	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	0.504	0.024	*
13_2_3_112	MW-03	Appendix III	Fluoride	mg/L	17	0	0%	0.037	0.869	
13_2_3_120	MW-03	Appendix III	pH (field)	su	17	0	0%	-0.191	0.390	
13_2_3_124	MW-03	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	0.547	0.014	*
13_2_3_126	MW-03	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	0.605	0.007	**
13_2_4_101	MW-03	Appendix IV	Antimony	mg/L	17	11	65%	-0.085	0.792	
13_2_4_102	MW-03	Appendix IV	Arsenic	mg/L	17	0	0%	0.160	0.472	
13_2_4_103	MW-03	Appendix IV	Barium	mg/L	17	0	0%	-0.360	0.106	
13_2_4_104	MW-03	Appendix IV	Beryllium	mg/L	17	11	65%	-0.657	0.042	*
13_2_4_106	MW-03	Appendix IV	Cadmium	mg/L	17	16	94%	NA	NA	
13_2_4_109	MW-03	Appendix IV	Chromium, Total	mg/L	17	0	0%	-0.007	0.975	
13_2_4_110	MW-03	Appendix IV	Cobalt	mg/L	17	0	0%	-0.148	0.507	
13_2_4_113	MW-03	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	0.037	0.869	
13_2_4_115	MW-03	Appendix IV	Lead	mg/L	17	16	94%	NA	NA	
13_2_4_116	MW-03	Appendix IV	Lithium	mg/L	17	0	0%	0.358	0.108	
13_2_4_117	MW-03	Appendix IV	Mercury	ng/L	17	14	82%	-0.166	0.650	
13_2_4_118	MW-03	Appendix IV	Molybdenum	mg/L	17	13	76%	-0.385	0.276	
13_2_4_121	MW-03	Appendix IV	Radium 226 and 228	pCi/L	16	2	12%	-0.142	0.557	
13_2_4_122	MW-03	Appendix IV	Selenium	mg/L	17	3	18%	0.202	0.401	
13_2_4_125	MW-03	Appendix IV	Thallium	mg/L	17	16	94%	NA	NA	
13_2_5_111	MW-03	Part 115	Copper	mg/L	17	8	47%	-0.557	0.050	
13_2_5_114	MW-03	Part 115	Iron	mg/L	17	0	0%	0.610	0.006	**
13_2_5_119	MW-03	Part 115	Nickel	mg/L	17	1	6%	-0.021	0.925	
13_2_5_128	MW-03	Part 115	Vanadium	mg/L	17	9	53%	0.019	0.950	
13_2_5_129	MW-03	Part 115	Zinc	mg/L	17	9	53%	0.117	0.693	
14_2_3_105	MW-04	Appendix III	Boron	mg/L	17	0	0%	0.105	0.636	
14_2_3_107	MW-04	Appendix III	Calcium	mg/L	17	0	0%	-0.005	0.984	
14_2_3_108	MW-04	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	0.680	0.002	**
14_2_3_112	MW-04	Appendix III	Fluoride	mg/L	17	0	0%	0.059	0.790	

(Table continues on next page)

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

Table 4: Autocorrelation Tests, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Autocorrelation	Box-Ljung p-value	Sig.
14_2_3_120	MW-04	Appendix III	pH (field)	su	17	0	0%	0.146	0.511	
14_2_3_124	MW-04	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	0.290	0.193	
14_2_3_126	MW-04	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	-0.050	0.822	
14_2_4_101	MW-04	Appendix IV	Antimony	mg/L	17	11	65%	-0.163	0.614	
14_2_4_102	MW-04	Appendix IV	Arsenic	mg/L	17	0	0%	0.113	0.613	
14_2_4_103	MW-04	Appendix IV	Barium	mg/L	17	0	0%	-0.083	0.708	
14_2_4_104	MW-04	Appendix IV	Beryllium	mg/L	17	15	88%	-0.500	0.157	
14_2_4_109	MW-04	Appendix IV	Chromium, Total	mg/L	17	0	0%	0.117	0.599	
14_2_4_110	MW-04	Appendix IV	Cobalt	mg/L	17	0	0%	-0.009	0.969	
14_2_4_113	MW-04	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	0.059	0.790	
14_2_4_115	MW-04	Appendix IV	Lead	mg/L	17	15	88%	-0.500	0.157	
14_2_4_116	MW-04	Appendix IV	Lithium	mg/L	17	0	0%	-0.056	0.802	
14_2_4_117	MW-04	Appendix IV	Mercury	ng/L	17	14	82%	-0.289	0.429	
14_2_4_118	MW-04	Appendix IV	Molybdenum	mg/L	17	2	12%	-0.002	0.992	
14_2_4_121	MW-04	Appendix IV	Radium 226 and 228	pCi/L	17	6	35%	0.386	0.145	
14_2_4_122	MW-04	Appendix IV	Selenium	mg/L	17	5	29%	-0.266	0.299	
14_2_5_111	MW-04	Part 115	Copper	mg/L	17	13	76%	0.291	0.411	
14_2_5_114	MW-04	Part 115	Iron	mg/L	17	0	0%	0.519	0.020	*
14_2_5_119	MW-04	Part 115	Nickel	mg/L	17	0	0%	0.120	0.590	
14_2_5_128	MW-04	Part 115	Vanadium	mg/L	17	10	59%	-0.139	0.652	
14_2_5_129	MW-04	Part 115	Zinc	mg/L	17	10	59%	-0.416	0.178	
16_1_3_105	MW-06	Appendix III	Boron	mg/L	17	0	0%	0.145	0.513	
16_1_3_107	MW-06	Appendix III	Calcium	mg/L	17	0	0%	0.397	0.074	
16_1_3_108	MW-06	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	0.580	0.009	**
16_1_3_112	MW-06	Appendix III	Fluoride	mg/L	17	0	0%	0.174	0.435	
16_1_3_120	MW-06	Appendix III	pH (field)	su	17	0	0%	0.103	0.642	
16_1_3_124	MW-06	Appendix III	Sulfate (as SO4)	mg/L	17	2	12%	-0.049	0.835	
16_1_3_126	MW-06	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	0.167	0.454	
16_1_4_101	MW-06	Appendix IV	Antimony	mg/L	17	15	88%	-0.500	0.157	
16_1_4_102	MW-06	Appendix IV	Arsenic	mg/L	17	0	0%	0.169	0.448	
16_1_4_103	MW-06	Appendix IV	Barium	mg/L	17	0	0%	0.185	0.406	
16_1_4_104	MW-06	Appendix IV	Beryllium	mg/L	17	16	94%	NA	NA	
16_1_4_109	MW-06	Appendix IV	Chromium, Total	mg/L	17	0	0%	0.383	0.085	
16_1_4_110	MW-06	Appendix IV	Cobalt	mg/L	17	0	0%	0.518	0.020	*
16_1_4_113	MW-06	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	0.174	0.435	
16_1_4_115	MW-06	Appendix IV	Lead	mg/L	17	10	59%	0.115	0.708	
16_1_4_116	MW-06	Appendix IV	Lithium	mg/L	17	0	0%	0.409	0.066	
16_1_4_117	MW-06	Appendix IV	Mercury	ng/L	17	14	82%	-0.500	0.171	
16_1_4_118	MW-06	Appendix IV	Molybdenum	mg/L	17	10	59%	0.287	0.352	
16_1_4_121	MW-06	Appendix IV	Radium 226 and 228	pCi/L	17	3	18%	-0.278	0.248	
16_1_4_122	MW-06	Appendix IV	Selenium	mg/L	17	5	29%	-0.098	0.701	
16_1_5_111	MW-06	Part 115	Copper	mg/L	17	13	76%	-0.543	0.125	

(Table continues on next page)

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Table 4: Autocorrelation Tests, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Autocorrelation	Box-Ljung p-value	Sig.
16_1_5_114	MW-06	Part 115	Iron	mg/L	17	0	0%	0.508	0.022	*
16_1_5_119	MW-06	Part 115	Nickel	mg/L	17	6	35%	0.245	0.355	
16_1_5_128	MW-06	Part 115	Vanadium	mg/L	17	14	82%	-0.412	0.260	
16_1_5_129	MW-06	Part 115	Zinc	mg/L	17	2	12%	-0.294	0.209	
17_1_3_105	MW-07	Appendix III	Boron	mg/L	17	0	0%	-0.093	0.677	
17_1_3_107	MW-07	Appendix III	Calcium	mg/L	17	0	0%	-0.220	0.324	
17_1_3_108	MW-07	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	0.825	0.000	***
17_1_3_112	MW-07	Appendix III	Fluoride	mg/L	17	4	24%	0.066	0.790	
17_1_3_120	MW-07	Appendix III	pH (field)	su	17	0	0%	0.148	0.507	
17_1_3_124	MW-07	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	0.189	0.395	
17_1_3_126	MW-07	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	0.254	0.253	
17_1_4_101	MW-07	Appendix IV	Antimony	mg/L	17	16	94%	NA	NA	
17_1_4_102	MW-07	Appendix IV	Arsenic	mg/L	17	0	0%	0.074	0.740	
17_1_4_103	MW-07	Appendix IV	Barium	mg/L	17	0	0%	0.483	0.030	*
17_1_4_104	MW-07	Appendix IV	Beryllium	mg/L	17	13	76%	0.081	0.818	
17_1_4_109	MW-07	Appendix IV	Chromium, Total	mg/L	17	0	0%	0.029	0.898	
17_1_4_110	MW-07	Appendix IV	Cobalt	mg/L	17	0	0%	0.133	0.550	
17_1_4_113	MW-07	Appendix IV	Fluoride (App IV)	mg/L	17	4	24%	0.066	0.790	
17_1_4_116	MW-07	Appendix IV	Lithium	mg/L	17	0	0%	-0.285	0.200	
17_1_4_117	MW-07	Appendix IV	Mercury	ng/L	17	16	94%	NA	NA	
17_1_4_121	MW-07	Appendix IV	Radium 226 and 228	pCi/L	17	2	12%	-0.237	0.311	
17_1_4_122	MW-07	Appendix IV	Selenium	mg/L	17	9	53%	-0.463	0.118	
17_1_5_111	MW-07	Part 115	Copper	mg/L	17	13	76%	-0.160	0.652	
17_1_5_114	MW-07	Part 115	Iron	mg/L	17	0	0%	0.405	0.069	
17_1_5_119	MW-07	Part 115	Nickel	mg/L	17	14	82%	-0.250	0.494	
17_1_5_128	MW-07	Part 115	Vanadium	mg/L	17	12	71%	-0.324	0.338	
17_1_5_129	MW-07	Part 115	Zinc	mg/L	17	10	59%	-0.579	0.061	
18_1_3_105	MW-08	Appendix III	Boron	mg/L	17	0	0%	0.170	0.444	
18_1_3_107	MW-08	Appendix III	Calcium	mg/L	17	0	0%	0.141	0.527	
18_1_3_108	MW-08	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	0.301	0.176	
18_1_3_112	MW-08	Appendix III	Fluoride	mg/L	17	0	0%	0.284	0.202	
18_1_3_120	MW-08	Appendix III	pH (field)	su	17	0	0%	0.077	0.729	
18_1_3_124	MW-08	Appendix III	Sulfate (as SO4)	mg/L	17	4	24%	0.441	0.075	
18_1_3_126	MW-08	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	0.071	0.750	
18_1_4_101	MW-08	Appendix IV	Antimony	mg/L	17	9	53%	-0.048	0.871	
18_1_4_102	MW-08	Appendix IV	Arsenic	mg/L	17	0	0%	0.383	0.085	
18_1_4_103	MW-08	Appendix IV	Barium	mg/L	17	0	0%	0.278	0.212	
18_1_4_104	MW-08	Appendix IV	Beryllium	mg/L	17	16	94%	NA	NA	
18_1_4_106	MW-08	Appendix IV	Cadmium	mg/L	17	16	94%	NA	NA	
18_1_4_109	MW-08	Appendix IV	Chromium, Total	mg/L	17	0	0%	0.576	0.010	**
18_1_4_110	MW-08	Appendix IV	Cobalt	mg/L	17	0	0%	-0.210	0.346	
18_1_4_113	MW-08	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	0.284	0.202	

(Table continues on next page)

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

Table 4: Autocorrelation Tests, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Autocorrelation	Box-Ljung p-value	Sig.
18_1_4_115	MW-08	Appendix IV	Lead	mg/L	17	11	65%	-0.313	0.333	
18_1_4_116	MW-08	Appendix IV	Lithium	mg/L	17	0	0%	0.505	0.023	*
18_1_4_117	MW-08	Appendix IV	Mercury	ng/L	17	16	94%	NA	NA	
18_1_4_118	MW-08	Appendix IV	Molybdenum	mg/L	17	1	6%	0.128	0.573	
18_1_4_121	MW-08	Appendix IV	Radium 226 and 228	pCi/L	17	4	24%	0.165	0.506	
18_1_4_122	MW-08	Appendix IV	Selenium	mg/L	17	6	35%	-0.159	0.547	
18_1_4_125	MW-08	Appendix IV	Thallium	mg/L	17	16	94%	NA	NA	
18_1_5_111	MW-08	Part 115	Copper	mg/L	17	6	35%	0.292	0.269	
18_1_5_114	MW-08	Part 115	Iron	mg/L	17	0	0%	0.482	0.030	*
18_1_5_119	MW-08	Part 115	Nickel	mg/L	17	0	0%	0.232	0.298	
18_1_5_128	MW-08	Part 115	Vanadium	mg/L	17	14	82%	-0.175	0.632	
18_1_5_129	MW-08	Part 115	Zinc	mg/L	17	3	18%	-0.312	0.195	
19_2_3_105	MW-09	Appendix III	Boron	mg/L	17	0	0%	0.037	0.869	
19_2_3_107	MW-09	Appendix III	Calcium	mg/L	17	0	0%	0.439	0.049	*
19_2_3_108	MW-09	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	0.715	0.001	**
19_2_3_112	MW-09	Appendix III	Fluoride	mg/L	17	0	0%	0.186	0.404	
19_2_3_120	MW-09	Appendix III	pH (field)	su	17	0	0%	0.297	0.182	
19_2_3_124	MW-09	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	0.519	0.020	*
19_2_3_126	MW-09	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	0.602	0.007	**
19_2_4_101	MW-09	Appendix IV	Antimony	mg/L	17	12	71%	-0.610	0.071	
19_2_4_102	MW-09	Appendix IV	Arsenic	mg/L	17	0	0%	0.069	0.756	
19_2_4_103	MW-09	Appendix IV	Barium	mg/L	17	0	0%	0.181	0.415	
19_2_4_104	MW-09	Appendix IV	Beryllium	mg/L	17	13	76%	-0.204	0.565	
19_2_4_109	MW-09	Appendix IV	Chromium, Total	mg/L	17	0	0%	0.100	0.653	
19_2_4_110	MW-09	Appendix IV	Cobalt	mg/L	17	0	0%	0.075	0.735	
19_2_4_113	MW-09	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	0.186	0.404	
19_2_4_116	MW-09	Appendix IV	Lithium	mg/L	17	0	0%	0.154	0.488	
19_2_4_117	MW-09	Appendix IV	Mercury	ng/L	17	14	82%	-0.105	0.773	
19_2_4_118	MW-09	Appendix IV	Molybdenum	mg/L	17	0	0%	0.379	0.088	
19_2_4_121	MW-09	Appendix IV	Radium 226 and 228	pCi/L	17	15	88%	-0.500	0.157	
19_2_4_122	MW-09	Appendix IV	Selenium	mg/L	17	2	12%	0.438	0.062	
19_2_5_111	MW-09	Part 115	Copper	mg/L	17	11	65%	-0.294	0.362	
19_2_5_114	MW-09	Part 115	Iron	mg/L	17	0	0%	0.296	0.184	
19_2_5_119	MW-09	Part 115	Nickel	mg/L	17	0	0%	-0.073	0.743	
19_2_5_128	MW-09	Part 115	Vanadium	mg/L	17	15	88%	-0.500	0.157	
19_2_5_129	MW-09	Part 115	Zinc	mg/L	17	8	47%	-0.459	0.107	
20_3_3_105	MW-10	Appendix III	Boron	mg/L	17	0	0%	0.590	0.008	**
20_3_3_107	MW-10	Appendix III	Calcium	mg/L	17	0	0%	0.459	0.039	*
20_3_3_108	MW-10	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	0.545	0.014	*
20_3_3_112	MW-10	Appendix III	Fluoride	mg/L	17	0	0%	0.553	0.013	*
20_3_3_120	MW-10	Appendix III	pH (field)	su	17	0	0%	0.093	0.675	
20_3_3_124	MW-10	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	0.413	0.064	

(Table continues on next page)

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

Table 4: Autocorrelation Tests, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Autocorrelation	Box-Ljung p-value	Sig.
20_3_3_126	MW-10	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	0.380	0.088	
20_3_4_101	MW-10	Appendix IV	Antimony	mg/L	17	13	76%	-0.363	0.304	
20_3_4_102	MW-10	Appendix IV	Arsenic	mg/L	17	0	0%	0.373	0.094	
20_3_4_103	MW-10	Appendix IV	Barium	mg/L	17	0	0%	0.256	0.251	
20_3_4_104	MW-10	Appendix IV	Beryllium	mg/L	17	7	41%	-0.236	0.388	
20_3_4_109	MW-10	Appendix IV	Chromium, Total	mg/L	17	0	0%	0.525	0.018	*
20_3_4_110	MW-10	Appendix IV	Cobalt	mg/L	17	1	6%	0.102	0.654	
20_3_4_113	MW-10	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	0.553	0.013	*
20_3_4_115	MW-10	Appendix IV	Lead	mg/L	17	15	88%	-0.500	0.157	
20_3_4_116	MW-10	Appendix IV	Lithium	mg/L	17	0	0%	-0.113	0.613	
20_3_4_117	MW-10	Appendix IV	Mercury	ng/L	17	15	88%	-0.500	0.157	
20_3_4_118	MW-10	Appendix IV	Molybdenum	mg/L	17	0	0%	0.199	0.371	
20_3_4_121	MW-10	Appendix IV	Radium 226 and 228	pCi/L	17	13	76%	0.163	0.646	
20_3_4_122	MW-10	Appendix IV	Selenium	mg/L	17	1	6%	0.015	0.948	
20_3_5_111	MW-10	Part 115	Copper	mg/L	17	14	82%	-0.659	0.071	
20_3_5_114	MW-10	Part 115	Iron	mg/L	17	0	0%	0.445	0.045	*
20_3_5_119	MW-10	Part 115	Nickel	mg/L	17	7	41%	-0.211	0.442	
20_3_5_128	MW-10	Part 115	Vanadium	mg/L	17	12	71%	0.044	0.896	
20_3_5_129	MW-10	Part 115	Zinc	mg/L	17	7	41%	-0.069	0.802	
21_2_3_105	MW-11	Appendix III	Boron	mg/L	17	0	0%	0.359	0.106	
21_2_3_107	MW-11	Appendix III	Calcium	mg/L	17	0	0%	0.227	0.308	
21_2_3_108	MW-11	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	0.102	0.646	
21_2_3_112	MW-11	Appendix III	Fluoride	mg/L	17	0	0%	0.251	0.259	
21_2_3_120	MW-11	Appendix III	pH (field)	su	17	0	0%	0.253	0.256	
21_2_3_124	MW-11	Appendix III	Sulfate (as SO4)	mg/L	17	6	35%	0.590	0.026	*
21_2_3_126	MW-11	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	-0.190	0.393	
21_2_4_101	MW-11	Appendix IV	Antimony	mg/L	17	12	71%	-0.520	0.124	
21_2_4_102	MW-11	Appendix IV	Arsenic	mg/L	17	0	0%	0.189	0.395	
21_2_4_103	MW-11	Appendix IV	Barium	mg/L	17	0	0%	0.233	0.295	
21_2_4_104	MW-11	Appendix IV	Beryllium	mg/L	17	13	76%	-0.339	0.338	
21_2_4_106	MW-11	Appendix IV	Cadmium	mg/L	17	14	82%	-0.381	0.297	
21_2_4_109	MW-11	Appendix IV	Chromium, Total	mg/L	17	0	0%	-0.067	0.764	
21_2_4_110	MW-11	Appendix IV	Cobalt	mg/L	17	0	0%	-0.144	0.517	
21_2_4_113	MW-11	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	0.251	0.259	
21_2_4_115	MW-11	Appendix IV	Lead	mg/L	17	3	18%	-0.045	0.853	
21_2_4_116	MW-11	Appendix IV	Lithium	mg/L	17	0	0%	0.310	0.164	
21_2_4_117	MW-11	Appendix IV	Mercury	ng/L	17	13	76%	-0.084	0.812	
21_2_4_118	MW-11	Appendix IV	Molybdenum	mg/L	17	2	12%	0.134	0.568	
21_2_4_121	MW-11	Appendix IV	Radium 226 and 228	pCi/L	16	5	31%	-0.070	0.792	
21_2_4_122	MW-11	Appendix IV	Selenium	mg/L	17	3	18%	0.221	0.359	
21_2_4_125	MW-11	Appendix IV	Thallium	mg/L	17	16	94%	NA	NA	
21_2_5_111	MW-11	Part 115	Copper	mg/L	17	4	24%	-0.140	0.572	

(Table continues on next page)

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

Table 4: Autocorrelation Tests, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Autocorrelation	Box-Ljung p-value	Sig.
21_2_5_114	MW-11	Part 115	Iron	mg/L	17	0	0%	0.398	0.073	
21_2_5_119	MW-11	Part 115	Nickel	mg/L	17	0	0%	-0.024	0.912	
21_2_5_123	MW-11	Part 115	Silver	mg/L	17	14	82%	-0.595	0.103	
21_2_5_128	MW-11	Part 115	Vanadium	mg/L	17	13	76%	-0.536	0.129	
21_2_5_129	MW-11	Part 115	Zinc	mg/L	17	4	24%	0.004	0.986	
22_2_3_105	MW-12	Appendix III	Boron	mg/L	17	0	0%	0.282	0.206	
22_2_3_107	MW-12	Appendix III	Calcium	mg/L	17	0	0%	0.054	0.807	
22_2_3_108	MW-12	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	-0.071	0.751	
22_2_3_112	MW-12	Appendix III	Fluoride	mg/L	17	0	0%	0.092	0.679	
22_2_3_120	MW-12	Appendix III	pH (field)	su	17	0	0%	0.175	0.432	
22_2_3_124	MW-12	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	0.552	0.013	*
22_2_3_126	MW-12	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	0.082	0.714	
22_2_4_101	MW-12	Appendix IV	Antimony	mg/L	17	0	0%	0.342	0.125	
22_2_4_102	MW-12	Appendix IV	Arsenic	mg/L	17	0	0%	0.377	0.090	
22_2_4_103	MW-12	Appendix IV	Barium	mg/L	17	0	0%	0.455	0.041	*
22_2_4_106	MW-12	Appendix IV	Cadmium	mg/L	17	0	0%	0.285	0.201	
22_2_4_109	MW-12	Appendix IV	Chromium, Total	mg/L	17	6	35%	-0.128	0.628	
22_2_4_110	MW-12	Appendix IV	Cobalt	mg/L	17	5	29%	0.272	0.289	
22_2_4_113	MW-12	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	0.092	0.679	
22_2_4_115	MW-12	Appendix IV	Lead	mg/L	17	6	35%	-0.012	0.963	
22_2_4_116	MW-12	Appendix IV	Lithium	mg/L	17	0	0%	0.151	0.498	
22_2_4_117	MW-12	Appendix IV	Mercury	ng/L	17	12	71%	0.264	0.434	
22_2_4_118	MW-12	Appendix IV	Molybdenum	mg/L	17	0	0%	0.079	0.722	
22_2_4_121	MW-12	Appendix IV	Radium 226 and 228	pCi/L	17	10	59%	0.080	0.795	
22_2_4_122	MW-12	Appendix IV	Selenium	mg/L	17	0	0%	0.204	0.360	
22_2_5_111	MW-12	Part 115	Copper	mg/L	17	0	0%	0.539	0.015	*
22_2_5_114	MW-12	Part 115	Iron	mg/L	17	6	35%	0.324	0.221	
22_2_5_119	MW-12	Part 115	Nickel	mg/L	17	0	0%	0.365	0.101	
22_2_5_128	MW-12	Part 115	Vanadium	mg/L	17	6	35%	0.079	0.764	
22_2_5_129	MW-12	Part 115	Zinc	mg/L	17	0	0%	0.367	0.099	
28_1_3_105	MW-18	Appendix III	Boron	mg/L	17	0	0%	0.799	0.000	***
28_1_3_107	MW-18	Appendix III	Calcium	mg/L	17	0	0%	0.378	0.090	
28_1_3_108	MW-18	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	-0.009	0.969	
28_1_3_112	MW-18	Appendix III	Fluoride	mg/L	17	0	0%	0.259	0.245	
28_1_3_120	MW-18	Appendix III	pH (field)	su	17	0	0%	0.291	0.191	
28_1_3_124	MW-18	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	0.174	0.436	
28_1_3_126	MW-18	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	0.350	0.116	
28_1_4_101	MW-18	Appendix IV	Antimony	mg/L	17	3	18%	-0.113	0.640	
28_1_4_102	MW-18	Appendix IV	Arsenic	mg/L	17	0	0%	0.293	0.189	
28_1_4_103	MW-18	Appendix IV	Barium	mg/L	17	0	0%	0.232	0.296	
28_1_4_104	MW-18	Appendix IV	Beryllium	mg/L	17	14	82%	-0.263	0.471	
28_1_4_106	MW-18	Appendix IV	Cadmium	mg/L	17	7	41%	-0.108	0.694	

(Table continues on next page)

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Table 4: Autocorrelation Tests, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Autocorrelation	Box-Ljung p-value	Sig.
28_1_4_109	MW-18	Appendix IV	Chromium, Total	mg/L	17	15	88%	-0.500	0.157	
28_1_4_110	MW-18	Appendix IV	Cobalt	mg/L	17	0	0%	0.665	0.003	**
28_1_4_113	MW-18	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	0.259	0.245	
28_1_4_115	MW-18	Appendix IV	Lead	mg/L	17	10	59%	-0.189	0.540	
28_1_4_116	MW-18	Appendix IV	Lithium	mg/L	17	0	0%	0.264	0.236	
28_1_4_117	MW-18	Appendix IV	Mercury	ng/L	17	15	88%	-0.500	0.157	
28_1_4_118	MW-18	Appendix IV	Molybdenum	mg/L	17	0	0%	0.278	0.212	
28_1_4_121	MW-18	Appendix IV	Radium 226 and 228	pCi/L	17	9	53%	-0.016	0.956	
28_1_4_122	MW-18	Appendix IV	Selenium	mg/L	17	0	0%	-0.024	0.914	
28_1_4_125	MW-18	Appendix IV	Thallium	mg/L	17	16	94%	NA	NA	
28_1_5_111	MW-18	Part 115	Copper	mg/L	17	0	0%	0.061	0.785	
28_1_5_114	MW-18	Part 115	Iron	mg/L	17	0	0%	0.425	0.056	
28_1_5_119	MW-18	Part 115	Nickel	mg/L	17	0	0%	0.409	0.066	
28_1_5_128	MW-18	Part 115	Vanadium	mg/L	17	16	94%	NA	NA	
28_1_5_129	MW-18	Part 115	Zinc	mg/L	17	0	0%	-0.090	0.687	
29_1_3_105	MW-19	Appendix III	Boron	mg/L	17	0	0%	0.157	0.480	
29_1_3_107	MW-19	Appendix III	Calcium	mg/L	17	0	0%	0.278	0.212	
29_1_3_108	MW-19	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	0.591	0.008	**
29_1_3_112	MW-19	Appendix III	Fluoride	mg/L	17	0	0%	0.315	0.157	
29_1_3_120	MW-19	Appendix III	pH (field)	su	17	0	0%	-0.178	0.424	
29_1_3_124	MW-19	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	0.004	0.985	
29_1_3_126	MW-19	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	0.659	0.003	**
29_1_4_101	MW-19	Appendix IV	Antimony	mg/L	17	12	71%	0.217	0.522	
29_1_4_102	MW-19	Appendix IV	Arsenic	mg/L	17	0	0%	0.380	0.088	
29_1_4_103	MW-19	Appendix IV	Barium	mg/L	17	0	0%	0.408	0.067	
29_1_4_104	MW-19	Appendix IV	Beryllium	mg/L	17	3	18%	0.152	0.529	
29_1_4_106	MW-19	Appendix IV	Cadmium	mg/L	17	16	94%	NA	NA	
29_1_4_109	MW-19	Appendix IV	Chromium, Total	mg/L	17	5	29%	0.308	0.228	
29_1_4_110	MW-19	Appendix IV	Cobalt	mg/L	17	1	6%	0.001	0.995	
29_1_4_113	MW-19	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	0.315	0.157	
29_1_4_116	MW-19	Appendix IV	Lithium	mg/L	17	0	0%	0.358	0.108	
29_1_4_117	MW-19	Appendix IV	Mercury	ng/L	17	16	94%	NA	NA	
29_1_4_118	MW-19	Appendix IV	Molybdenum	mg/L	17	0	0%	0.223	0.316	
29_1_4_121	MW-19	Appendix IV	Radium 226 and 228	pCi/L	17	8	47%	0.275	0.334	
29_1_4_122	MW-19	Appendix IV	Selenium	mg/L	17	11	65%	-0.035	0.914	
29_1_4_125	MW-19	Appendix IV	Thallium	mg/L	17	16	94%	NA	NA	
29_1_5_111	MW-19	Part 115	Copper	mg/L	17	13	76%	-0.252	0.476	
29_1_5_114	MW-19	Part 115	Iron	mg/L	17	0	0%	0.421	0.059	
29_1_5_119	MW-19	Part 115	Nickel	mg/L	17	1	6%	0.062	0.786	
29_1_5_128	MW-19	Part 115	Vanadium	mg/L	17	14	82%	-0.362	0.321	
29_1_5_129	MW-19	Part 115	Zinc	mg/L	17	10	59%	-0.043	0.889	
30_1_3_105	MW-20	Appendix III	Boron	mg/L	17	0	0%	0.280	0.209	

(Table continues on next page)

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

Table 4: Autocorrelation Tests, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Autocorrelation	Box-Ljung p-value	Sig.
30_1_3_107	MW-20	Appendix III	Calcium	mg/L	17	0	0%	0.202	0.364	
30_1_3_108	MW-20	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	0.610	0.006	**
30_1_3_112	MW-20	Appendix III	Fluoride	mg/L	17	0	0%	0.066	0.768	
30_1_3_120	MW-20	Appendix III	pH (field)	su	17	0	0%	0.021	0.924	
30_1_3_124	MW-20	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	0.571	0.010	*
30_1_3_126	MW-20	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	0.411	0.065	
30_1_4_101	MW-20	Appendix IV	Antimony	mg/L	17	6	35%	0.031	0.907	
30_1_4_102	MW-20	Appendix IV	Arsenic	mg/L	17	0	0%	0.101	0.649	
30_1_4_103	MW-20	Appendix IV	Barium	mg/L	17	0	0%	0.200	0.368	
30_1_4_104	MW-20	Appendix IV	Beryllium	mg/L	17	16	94%	NA	NA	
30_1_4_106	MW-20	Appendix IV	Cadmium	mg/L	17	16	94%	NA	NA	
30_1_4_109	MW-20	Appendix IV	Chromium, Total	mg/L	17	9	53%	-0.184	0.534	
30_1_4_110	MW-20	Appendix IV	Cobalt	mg/L	17	0	0%	0.462	0.038	*
30_1_4_113	MW-20	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	0.066	0.768	
30_1_4_115	MW-20	Appendix IV	Lead	mg/L	17	0	0%	0.074	0.740	
30_1_4_116	MW-20	Appendix IV	Lithium	mg/L	17	0	0%	0.309	0.165	
30_1_4_117	MW-20	Appendix IV	Mercury	ng/L	17	14	82%	-0.198	0.588	
30_1_4_118	MW-20	Appendix IV	Molybdenum	mg/L	17	0	0%	0.274	0.217	
30_1_4_121	MW-20	Appendix IV	Radium 226 and 228	pCi/L	16	8	50%	0.083	0.779	
30_1_4_122	MW-20	Appendix IV	Selenium	mg/L	17	10	59%	-0.079	0.798	
30_1_4_125	MW-20	Appendix IV	Thallium	mg/L	17	16	94%	NA	NA	
30_1_5_111	MW-20	Part 115	Copper	mg/L	17	2	12%	-0.038	0.871	
30_1_5_114	MW-20	Part 115	Iron	mg/L	17	0	0%	0.088	0.691	
30_1_5_119	MW-20	Part 115	Nickel	mg/L	17	0	0%	0.052	0.817	
30_1_5_129	MW-20	Part 115	Zinc	mg/L	17	0	0%	0.119	0.593	
40_1_3_105	MW-30	Appendix III	Boron	mg/L	17	0	0%	-0.044	0.843	
40_1_3_107	MW-30	Appendix III	Calcium	mg/L	17	0	0%	-0.003	0.991	
40_1_3_108	MW-30	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	0.805	0.000	***
40_1_3_112	MW-30	Appendix III	Fluoride	mg/L	17	0	0%	-0.279	0.210	
40_1_3_120	MW-30	Appendix III	pH (field)	su	17	0	0%	0.031	0.891	
40_1_3_124	MW-30	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	-0.153	0.493	
40_1_3_126	MW-30	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	0.665	0.003	**
40_1_4_101	MW-30	Appendix IV	Antimony	mg/L	17	14	82%	-0.030	0.935	
40_1_4_102	MW-30	Appendix IV	Arsenic	mg/L	17	2	12%	0.122	0.604	
40_1_4_103	MW-30	Appendix IV	Barium	mg/L	17	0	0%	0.341	0.125	
40_1_4_104	MW-30	Appendix IV	Beryllium	mg/L	17	13	76%	-0.586	0.097	
40_1_4_106	MW-30	Appendix IV	Cadmium	mg/L	17	16	94%	NA	NA	
40_1_4_109	MW-30	Appendix IV	Chromium, Total	mg/L	17	0	0%	0.062	0.780	
40_1_4_110	MW-30	Appendix IV	Cobalt	mg/L	17	0	0%	-0.069	0.755	
40_1_4_113	MW-30	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	-0.279	0.210	
40_1_4_115	MW-30	Appendix IV	Lead	mg/L	17	15	88%	-0.500	0.157	
40_1_4_116	MW-30	Appendix IV	Lithium	mg/L	17	0	0%	-0.076	0.734	

(Table continues on next page)

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

Table 4: Autocorrelation Tests, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Autocorrelation	Box-Ljung p-value	Sig.
40_1_4_117	MW-30	Appendix IV	Mercury	ng/L	17	16	94%	NA	NA	
40_1_4_118	MW-30	Appendix IV	Molybdenum	mg/L	17	3	18%	-0.039	0.872	
40_1_4_121	MW-30	Appendix IV	Radium 226 and 228	pCi/L	17	9	53%	-0.415	0.161	
40_1_4_122	MW-30	Appendix IV	Selenium	mg/L	17	7	41%	-0.060	0.828	
40_1_5_111	MW-30	Part 115	Copper	mg/L	17	11	65%	-0.045	0.890	
40_1_5_114	MW-30	Part 115	Iron	mg/L	17	0	0%	-0.065	0.771	
40_1_5_119	MW-30	Part 115	Nickel	mg/L	17	3	18%	-0.068	0.778	
40_1_5_123	MW-30	Part 115	Silver	mg/L	17	16	94%	NA	NA	
40_1_5_128	MW-30	Part 115	Vanadium	mg/L	17	15	88%	-0.500	0.157	
40_1_5_129	MW-30	Part 115	Zinc	mg/L	17	10	59%	-0.263	0.394	
41_1_3_105	MW-31	Appendix III	Boron	mg/L	17	0	0%	0.410	0.065	
41_1_3_107	MW-31	Appendix III	Calcium	mg/L	17	0	0%	0.165	0.459	
41_1_3_108	MW-31	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	0.442	0.047	*
41_1_3_112	MW-31	Appendix III	Fluoride	mg/L	17	0	0%	0.420	0.059	
41_1_3_120	MW-31	Appendix III	pH (field)	su	17	0	0%	-0.197	0.376	
41_1_3_124	MW-31	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	0.387	0.082	
41_1_3_126	MW-31	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	0.047	0.835	
41_1_4_101	MW-31	Appendix IV	Antimony	mg/L	17	7	41%	0.566	0.039	*
41_1_4_102	MW-31	Appendix IV	Arsenic	mg/L	17	0	0%	0.079	0.722	
41_1_4_103	MW-31	Appendix IV	Barium	mg/L	17	0	0%	0.159	0.476	
41_1_4_104	MW-31	Appendix IV	Beryllium	mg/L	17	15	88%	-0.500	0.157	
41_1_4_106	MW-31	Appendix IV	Cadmium	mg/L	17	16	94%	NA	NA	
41_1_4_109	MW-31	Appendix IV	Chromium, Total	mg/L	17	0	0%	-0.188	0.398	
41_1_4_110	MW-31	Appendix IV	Cobalt	mg/L	17	3	18%	-0.605	0.012	*
41_1_4_113	MW-31	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	0.420	0.059	
41_1_4_115	MW-31	Appendix IV	Lead	mg/L	17	13	76%	-0.158	0.654	
41_1_4_116	MW-31	Appendix IV	Lithium	mg/L	17	0	0%	0.164	0.460	
41_1_4_117	MW-31	Appendix IV	Mercury	ng/L	17	14	82%	-0.359	0.326	
41_1_4_118	MW-31	Appendix IV	Molybdenum	mg/L	17	0	0%	0.097	0.664	
41_1_4_121	MW-31	Appendix IV	Radium 226 and 228	pCi/L	17	7	41%	-0.378	0.168	
41_1_4_122	MW-31	Appendix IV	Selenium	mg/L	17	6	35%	-0.130	0.622	
41_1_4_125	MW-31	Appendix IV	Thallium	mg/L	17	16	94%	NA	NA	
41_1_5_111	MW-31	Part 115	Copper	mg/L	17	10	59%	-0.019	0.951	
41_1_5_114	MW-31	Part 115	Iron	mg/L	17	0	0%	0.562	0.011	*
41_1_5_119	MW-31	Part 115	Nickel	mg/L	17	10	59%	0.029	0.925	
41_1_5_128	MW-31	Part 115	Vanadium	mg/L	17	12	71%	0.087	0.798	
41_1_5_129	MW-31	Part 115	Zinc	mg/L	17	9	53%	0.012	0.969	
42_1_3_105	MW-32	Appendix III	Boron	mg/L	17	0	0%	0.190	0.393	
42_1_3_107	MW-32	Appendix III	Calcium	mg/L	17	0	0%	0.459	0.039	*
42_1_3_108	MW-32	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	0.483	0.030	*
42_1_3_112	MW-32	Appendix III	Fluoride	mg/L	17	0	0%	-0.180	0.419	
42_1_3_120	MW-32	Appendix III	pH (field)	su	17	0	0%	0.151	0.496	

(Table continues on next page)

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

Table 4: Autocorrelation Tests, Non-Detects Excluded *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Autocorrelation	Box-Ljung p-value	Sig.
42_1_3_124	MW-32	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	0.401	0.071	
42_1_3_126	MW-32	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	0.371	0.096	
42_1_4_101	MW-32	Appendix IV	Antimony	mg/L	17	13	76%	0.004	0.991	
42_1_4_102	MW-32	Appendix IV	Arsenic	mg/L	17	0	0%	-0.059	0.793	
42_1_4_103	MW-32	Appendix IV	Barium	mg/L	17	0	0%	0.440	0.048	*
42_1_4_104	MW-32	Appendix IV	Beryllium	mg/L	17	16	94%	NA	NA	
42_1_4_106	MW-32	Appendix IV	Cadmium	mg/L	17	16	94%	NA	NA	
42_1_4_109	MW-32	Appendix IV	Chromium, Total	mg/L	17	0	0%	-0.104	0.639	
42_1_4_110	MW-32	Appendix IV	Cobalt	mg/L	17	0	0%	-0.202	0.365	
42_1_4_113	MW-32	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	-0.180	0.419	
42_1_4_115	MW-32	Appendix IV	Lead	mg/L	17	12	71%	0.425	0.209	
42_1_4_116	MW-32	Appendix IV	Lithium	mg/L	17	0	0%	0.096	0.666	
42_1_4_117	MW-32	Appendix IV	Mercury	ng/L	17	14	82%	-0.167	0.648	
42_1_4_118	MW-32	Appendix IV	Molybdenum	mg/L	17	0	0%	0.294	0.187	
42_1_4_121	MW-32	Appendix IV	Radium 226 and 228	pCi/L	17	9	53%	-0.067	0.820	
42_1_4_122	MW-32	Appendix IV	Selenium	mg/L	17	13	76%	-0.082	0.816	
42_1_5_111	MW-32	Part 115	Copper	mg/L	17	10	59%	-0.183	0.554	
42_1_5_114	MW-32	Part 115	Iron	mg/L	17	0	0%	0.444	0.046	*
42_1_5_119	MW-32	Part 115	Nickel	mg/L	17	0	0%	-0.086	0.700	
42_1_5_129	MW-32	Part 115	Zinc	mg/L	17	0	0%	0.283	0.204	

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

Table 5: Outlier Counts by Date

Date	Count
2022-11-28	1
2022-11-30	2
2023-01-03	7
2023-01-04	7
2023-01-05	1
2023-02-06	1
2023-02-08	1
2023-03-13	2
2023-03-14	1
2023-04-18	5
2023-05-23	3
2023-06-27	1
2023-06-28	3
2023-08-07	1
2023-10-24	3
2024-02-12	7
2024-02-13	10
2024-04-07	3
2024-07-17	2
2024-07-18	1
2024-10-15	1
2024-10-16	5
2025-02-25	6
2025-02-26	2
2025-04-20	1
2025-04-21	4
2025-08-12	3
2025-08-13	1
2025-10-21	5
2025-10-22	16
2025-10-23	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	Dilution	Value
11_2_3_120	MW-01R	Appendix III	pH (field)	su	17	0	0%	17	2023-01-03	NA	6.02
11_2_4_101	MW-01R	Appendix IV	Antimony	mg/L	17	3	18%	14	2023-04-18	5	0.00120
11_2_4_102	MW-01R	Appendix IV	Arsenic	mg/L	17	0	0%	17	2024-02-13	1	0.00410
11_2_4_109	MW-01R	Appendix IV	Chromium, Total	mg/L	17	0	0%	17	2024-02-13	1	0.0220
11_2_4_110	MW-01R	Appendix IV	Cobalt	mg/L	17	0	0%	17	2023-06-28	1	0.00450
11_2_4_115	MW-01R	Appendix IV	Lead	mg/L	17	2	12%	15	2023-06-28	5	0.00530

(Table continues on next page)

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

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	No. Detects	Date	Dilution	Value
11_2_4_118	MW-01R	Appendix IV	Molybdenum	mg/L	17	2	12%	15	2024-02-13	1	0.00560
11_2_4_122	MW-01R	Appendix IV	Selenium	mg/L	17	0	0%	17	2024-02-13	1	0.00180
11_2_5_111	MW-01R	Part 115	Copper	mg/L	17	6	35%	11	2023-06-28	1	0.00130
11_2_5_119	MW-01R	Part 115	Nickel	mg/L	17	0	0%	17	2024-02-13	1	0.0220
12_2_3_105	MW-02	Appendix III	Boron	mg/L	17	0	0%	17	2025-02-25	20	170
12_2_3_108	MW-02	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	17	2023-02-08	50	67.0
12_2_4_101	MW-02	Appendix IV	Antimony	mg/L	17	3	18%	14	2023-04-18	5	0.000630
12_2_4_102	MW-02	Appendix IV	Arsenic	mg/L	17	0	0%	17	2024-02-13	1	0.000440
12_2_4_106	MW-02	Appendix IV	Cadmium	mg/L	17	12	71%	5	2023-10-24	1	0.000490
13_2_3_108	MW-03	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	17	2022-11-28	100	300
13_2_3_112	MW-03	Appendix III	Fluoride	mg/L	17	0	0%	17	2023-01-04	5	1.60
13_2_4_101	MW-03	Appendix IV	Antimony	mg/L	17	11	65%	6	2023-04-18	5	0.000450
13_2_4_113	MW-03	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	17	2023-01-04	5	1.60
13_2_4_117	MW-03	Appendix IV	Mercury	ng/L	17	14	82%	3	2023-10-24	1	240
13_2_5_114	MW-03	Part 115	Iron	mg/L	17	0	0%	17	2023-01-04	1	5.90
13_2_5_119	MW-03	Part 115	Nickel	mg/L	17	1	6%	16	2023-01-04	1	0.0150
14_2_3_105	MW-04	Appendix III	Boron	mg/L	17	0	0%	17	2025-10-22	1	2.60
14_2_3_107	MW-04	Appendix III	Calcium	mg/L	17	0	0%	17	2025-10-22	50	560
14_2_3_112	MW-04	Appendix III	Fluoride	mg/L	17	0	0%	17	2025-04-21	10	2.30
14_2_3_120	MW-04	Appendix III	pH (field)	su	17	0	0%	17	2025-10-22	NA	6.78
14_2_4_102	MW-04	Appendix IV	Arsenic	mg/L	17	0	0%	17	2025-02-26	1	0.00280
14_2_4_103	MW-04	Appendix IV	Barium	mg/L	17	0	0%	17	2023-01-04	1	0.460
14_2_4_110	MW-04	Appendix IV	Cobalt	mg/L	17	0	0%	17	2025-10-22	1	0.00250
14_2_4_113	MW-04	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	17	2025-04-21	10	2.30
14_2_4_118	MW-04	Appendix IV	Molybdenum	mg/L	17	2	12%	15	2025-04-21	1	0.0110
14_2_4_122	MW-04	Appendix IV	Selenium	mg/L	17	5	29%	12	2025-04-21	1	0.00120
16_1_3_120	MW-06	Appendix III	pH (field)	su	17	0	0%	17	2023-02-06	NA	6.42
16_1_4_122	MW-06	Appendix IV	Selenium	mg/L	17	5	29%	12	2024-02-13	1	0.000470
17_1_3_120	MW-07	Appendix III	pH (field)	su	17	0	0%	17	2023-03-13	NA	6.58
17_1_3_126	MW-07	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	17	2023-01-04	4	470
17_1_4_109	MW-07	Appendix IV	Chromium, Total	mg/L	17	0	0%	17	2024-07-17	1	0.000740
17_1_4_116	MW-07	Appendix IV	Lithium	mg/L	17	0	0%	17	2023-06-27	1	0.0100
17_1_4_121	MW-07	Appendix IV	Radium 226 and 228	pCi/L	17	2	12%	15	2023-08-07	1	2.36
18_1_3_120	MW-08	Appendix III	pH (field)	su	17	0	0%	17	2023-01-05	NA	6.21
18_1_4_115	MW-08	Appendix IV	Lead	mg/L	17	11	65%	6	2024-10-16	1	0.00290
18_1_4_122	MW-08	Appendix IV	Selenium	mg/L	17	6	35%	11	2024-02-13	1	0.000340
18_1_5_119	MW-08	Part 115	Nickel	mg/L	17	0	0%	17	2024-10-16	1	0.0130
19_2_3_120	MW-09	Appendix III	pH (field)	su	17	0	0%	17	2023-05-23	NA	7.52
19_2_4_103	MW-09	Appendix IV	Barium	mg/L	17	0	0%	17	2023-01-04	5	2.40
19_2_4_122	MW-09	Appendix IV	Selenium	mg/L	17	2	12%	15	2025-02-25	1	0.000640
19_2_5_111	MW-09	Part 115	Copper	mg/L	17	11	65%	6	2024-07-17	1	0.00130
19_2_5_119	MW-09	Part 115	Nickel	mg/L	17	0	0%	17	2025-02-25	1	0.100
20_3_3_120	MW-10	Appendix III	pH (field)	su	17	0	0%	17	2023-05-23	NA	8.81

(Table continues on next page)

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

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	No. Detects	Date	Dilution	Value
20_3_4_101	MW-10	Appendix IV	Antimony	mg/L	17	13	76%	4	2023-04-18	5	0.000340
20_3_4_110	MW-10	Appendix IV	Cobalt	mg/L	17	1	6%	16	2023-05-23	1	0.00180
20_3_4_116	MW-10	Appendix IV	Lithium	mg/L	17	0	0%	17	2023-03-14	50	1.60
20_3_4_122	MW-10	Appendix IV	Selenium	mg/L	17	1	6%	16	2024-02-13	1	0.000830
21_2_3_126	MW-11	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	17	2023-10-24	4	1800
21_2_4_102	MW-11	Appendix IV	Arsenic	mg/L	17	0	0%	17	2025-10-23	1	0.00440
21_2_4_104	MW-11	Appendix IV	Beryllium	mg/L	17	13	76%	4	2024-04-07	1	0.000440
21_2_4_109	MW-11	Appendix IV	Chromium, Total	mg/L	17	0	0%	17	2023-01-03	1	0.00860
21_2_4_110	MW-11	Appendix IV	Cobalt	mg/L	17	0	0%	17	2025-10-23	1	0.00260
21_2_4_115	MW-11	Appendix IV	Lead	mg/L	17	3	18%	14	2023-01-03	1	0.0680
21_2_4_116	MW-11	Appendix IV	Lithium	mg/L	17	0	0%	17	2023-01-03	1	0.220
21_2_4_117	MW-11	Appendix IV	Mercury	ng/L	17	13	76%	4	2024-04-07	1	1100
21_2_4_122	MW-11	Appendix IV	Selenium	mg/L	17	3	18%	14	2024-02-13	1	0.000710
21_2_5_111	MW-11	Part 115	Copper	mg/L	17	4	24%	13	2023-01-03	1	0.0190
21_2_5_119	MW-11	Part 115	Nickel	mg/L	17	0	0%	17	2025-10-23	1	0.0150
22_2_4_102	MW-12	Appendix IV	Arsenic	mg/L	17	0	0%	17	2025-10-22	1	0.00640
22_2_4_106	MW-12	Appendix IV	Cadmium	mg/L	17	0	0%	17	2025-08-13	1	0.0110
22_2_4_110	MW-12	Appendix IV	Cobalt	mg/L	17	5	29%	12	2025-10-22	1	0.00280
22_2_4_118	MW-12	Appendix IV	Molybdenum	mg/L	17	0	0%	17	2024-10-16	1	0.0180
22_2_5_111	MW-12	Part 115	Copper	mg/L	17	0	0%	17	2025-02-26	1	0.00340
22_2_5_114	MW-12	Part 115	Iron	mg/L	17	6	35%	11	2025-10-22	1	0.920
22_2_5_119	MW-12	Part 115	Nickel	mg/L	17	0	0%	17	2025-10-22	1	0.00730
28_1_4_101	MW-18	Appendix IV	Antimony	mg/L	17	3	18%	14	2025-10-22	1	0.00100
28_1_4_121	MW-18	Appendix IV	Radium 226 and 228	pCi/L	17	9	53%	8	2023-04-18	NA	1.27
28_1_5_129	MW-18	Part 115	Zinc	mg/L	17	0	0%	17	2025-10-22	1	0.210
29_1_4_109	MW-19	Appendix IV	Chromium, Total	mg/L	17	5	29%	12	2023-01-03	1	0.000530
29_1_4_122	MW-19	Appendix IV	Selenium	mg/L	17	11	65%	6	2025-10-22	1	0.000700
29_1_5_119	MW-19	Part 115	Nickel	mg/L	17	1	6%	16	2024-07-18	1	0.0170
29_1_5_129	MW-19	Part 115	Zinc	mg/L	17	10	59%	7	2025-10-22	1	0.100
30_1_3_112	MW-20	Appendix III	Fluoride	mg/L	17	0	0%	17	2022-11-30	25	0.550
30_1_4_101	MW-20	Appendix IV	Antimony	mg/L	17	6	35%	11	2025-10-22	1	0.000650
30_1_4_113	MW-20	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	17	2022-11-30	25	0.550
30_1_4_115	MW-20	Appendix IV	Lead	mg/L	17	0	0%	17	2025-10-22	1	0.00780
30_1_5_111	MW-20	Part 115	Copper	mg/L	17	2	12%	15	2025-10-22	1	0.00330
30_1_5_119	MW-20	Part 115	Nickel	mg/L	17	0	0%	17	2025-10-22	1	0.0340
40_1_3_105	MW-30	Appendix III	Boron	mg/L	17	0	0%	17	2023-03-13	50	3.50
40_1_3_120	MW-30	Appendix III	pH (field)	su	17	0	0%	17	2023-01-03	NA	6.48
40_1_4_102	MW-30	Appendix IV	Arsenic	mg/L	17	2	12%	15	2025-10-21	1	0.00800
40_1_4_110	MW-30	Appendix IV	Cobalt	mg/L	17	0	0%	17	2025-02-25	5	0.0460
40_1_4_118	MW-30	Appendix IV	Molybdenum	mg/L	17	3	18%	14	2025-10-21	1	0.0320
40_1_4_122	MW-30	Appendix IV	Selenium	mg/L	17	7	41%	10	2025-10-21	1	0.00150
40_1_5_111	MW-30	Part 115	Copper	mg/L	17	11	65%	6	2025-10-21	1	0.0130
40_1_5_114	MW-30	Part 115	Iron	mg/L	17	0	0%	17	2025-04-20	10	17.0

(Table continues on next page)

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

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	No. Detects	Date	Dilution	Value
40_1_5_119	MW-30	Part 115	Nickel	mg/L	17	3	18%	14	2025-02-25	5	0.110
40_1_5_129	MW-30	Part 115	Zinc	mg/L	17	10	59%	7	2025-02-25	5	0.100
41_1_3_108	MW-31	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	17	2025-08-12	10	170
41_1_4_110	MW-31	Appendix IV	Cobalt	mg/L	17	3	18%	14	2024-10-15	1	0.000360
41_1_4_118	MW-31	Appendix IV	Molybdenum	mg/L	17	0	0%	17	2025-08-12	1	0.00910
41_1_4_122	MW-31	Appendix IV	Selenium	mg/L	17	6	35%	11	2024-02-12	1	0.000740
41_1_5_111	MW-31	Part 115	Copper	mg/L	17	10	59%	7	2025-10-21	1	0.00170
41_1_5_119	MW-31	Part 115	Nickel	mg/L	17	10	59%	7	2025-08-12	1	0.240
42_1_3_112	MW-32	Appendix III	Fluoride	mg/L	17	0	0%	17	2024-10-16	5	1.90
42_1_4_102	MW-32	Appendix IV	Arsenic	mg/L	17	0	0%	17	2024-02-12	1	0.00240
42_1_4_109	MW-32	Appendix IV	Chromium, Total	mg/L	17	0	0%	17	2024-02-12	1	0.00300
42_1_4_110	MW-32	Appendix IV	Cobalt	mg/L	17	0	0%	17	2024-02-12	1	0.00190
42_1_4_113	MW-32	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	17	2024-10-16	5	1.90
42_1_4_117	MW-32	Appendix IV	Mercury	ng/L	17	14	82%	3	2024-04-07	1	1900
42_1_4_122	MW-32	Appendix IV	Selenium	mg/L	17	13	76%	4	2024-02-12	1	0.00100
42_1_5_111	MW-32	Part 115	Copper	mg/L	17	10	59%	7	2024-02-12	1	0.0160
42_1_5_119	MW-32	Part 115	Nickel	mg/L	17	0	0%	17	2024-02-12	1	0.0230

Table 7: Seasonality Tests

						Full											Without Non-Detects										
						Sample Size					p-Value						Sample Size					p-Value					
ID	Well	Constituent Type	Constituent	Unit	% NDs	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis		ANOVA		Log ANOVA		Winter	Spring	Summer	Fall	Total	Kruskal-Wallis		ANOVA		Log ANOVA	
11_2_3_105	MW-01R	Appendix III	Boron	mg/L	0%	4	5	4	4	17	0.019	*	0.005	**	0.019	*	4	5	4	4	17	0.019	*	0.005	**	0.019	*
11_2_3_107	MW-01R	Appendix III	Calcium	mg/L	0%	4	5	4	4	17	0.022	*	0.017	*	0.008	**	4	5	4	4	17	0.022	*	0.017	*	0.008	**
11_2_3_108	MW-01R	Appendix III	Chloride (as Cl)	mg/L	0%	4	5	4	4	17	0.045	*	0.035	*	0.048	*	4	5	4	4	17	0.045	*	0.035	*	0.048	*
11_2_3_112	MW-01R	Appendix III	Fluoride	mg/L	0%	4	5	4	4	17	0.013	*	0.004	**	0.018	*	4	5	4	4	17	0.013	*	0.004	**	0.018	*
11_2_3_120	MW-01R	Appendix III	pH (field)	su	0%	4	5	4	4	17	0.327		0.299		0.306		4	5	4	4	17	0.327		0.299		0.306	
11_2_3_124	MW-01R	Appendix III	Sulfate (as SO4)	mg/L	0%	4	5	4	4	17	0.023	*	0.007	**	0.014	*	4	5	4	4	17	0.023	*	0.007	**	0.014	*
11_2_3_126	MW-01R	Appendix III	Total Dissolved Solids	mg/L	0%	4	5	4	4	17	0.080		0.077		0.081		4	5	4	4	17	0.080		0.077		0.081	
11_2_4_101	MW-01R	Appendix IV	Antimony	mg/L	18%	4	5	4	4	17	0.983		0.663		0.832		2	4	4	4	14	0.947		0.728		0.858	
11_2_4_102	MW-01R	Appendix IV	Arsenic	mg/L	0%	4	5	4	4	17	0.076		0.282		0.134		4	5	4	4	17	0.076		0.282		0.134	
11_2_4_103	MW-01R	Appendix IV	Barium	mg/L	0%	4	5	4	4	17	0.078		0.106		0.073		4	5	4	4	17	0.078		0.106		0.073	
11_2_4_104	MW-01R	Appendix IV	Beryllium	mg/L	12%	4	5	4	4	17	0.235		0.217		0.410		4	4	4	3	15	0.205		0.202		0.271	
11_2_4_106	MW-01R	Appendix IV	Cadmium	mg/L	76%	4	5	4	4	17	0.992		0.883		0.949		1	0	1	2	4	0.259		0.100		0.139	
11_2_4_109	MW-01R	Appendix IV	Chromium, Total	mg/L	0%	4	5	4	4	17	0.033	*	0.398		0.186		4	5	4	4	17	0.033	*	0.398		0.186	
11_2_4_110	MW-01R	Appendix IV	Cobalt	mg/L	0%	4	5	4	4	17	0.437		0.644		0.634		4	5	4	4	17	0.437		0.644		0.634	
11_2_4_113	MW-01R	Appendix IV	Fluoride (App IV)	mg/L	0%	4	5	4	4	17	0.013	*	0.004	**	0.018	*	4	5	4	4	17	0.013	*	0.004	**	0.018	*
11_2_4_115	MW-01R	Appendix IV	Lead	mg/L	12%	4	5	4	4	17	0.226		0.461		0.262		3	4	4	4	15	0.113		0.495		0.196	
11_2_4_116	MW-01R	Appendix IV	Lithium	mg/L	0%	4	5	4	4	17	0.021	*	0.013	*	0.045	*	4	5	4	4	17	0.021	*	0.013	*	0.045	*
11_2_4_117	MW-01R	Appendix IV	Mercury	ng/L	88%	4	5	4	4	17	0.787		0.810		0.823		0	0	1	1	2	0.317		NA		NA	
11_2_4_118	MW-01R	Appendix IV	Molybdenum	mg/L	12%	4	5	4	4	17	0.871		0.486		0.607		4	3	4	4	15	0.809		0.515		0.520	
11_2_4_121	MW-01R	Appendix IV	Radium 226 and 228	pCi/L	65%	4	5	4	4	17	0.790		0.746		0.826		2	1	2	1	6	0.463		0.840		0.859	
11_2_4_122	MW-01R	Appendix IV	Selenium	mg/L	0%	4	5	4	4	17	0.193		0.487		0.336		4	5	4	4	17	0.193		0.487		0.336	
11_2_4_125	MW-01R	Appendix IV	Thallium	mg/L	100%	4	5	4	4	17	0.397		0.430		0.430		NA	NA	NA	NA	NA	NA		NA		NA	
11_2_5_111	MW-01R	Part 115	Copper	mg/L	35%	4	5	4	4	17	0.068		0.304		0.172		2	1	4	4	11	0.207		0.510		0.353	
11_2_5_114	MW-01R	Part 115	Iron	mg/L	0%	4	5	4	4	17	0.145		0.172		0.196		4	5	4	4	17	0.145		0.172		0.196	
11_2_5_119	MW-01R	Part 115	Nickel	mg/L	0%	4	5	4	4	17	0.231		0.423		0.380		4	5	4	4	17	0.231		0.423		0.380	
11_2_5_123	MW-01R	Part 115	Silver	mg/L	100%	4	5	4	4	17	0.213		0.218		0.218		NA	NA	NA	NA	NA	NA		NA		NA	
11_2_5_128	MW-01R	Part 115	Vanadium	mg/L	12%	4	5	4	4	17	0.032	*	0.001	**	0.017	*	3	4	4	4	15	0.057		0.004	**	0.035	*
11_2_5_129	MW-01R	Part 115	Zinc	mg/L	18%	4	5	4	4	17	0.494		0.788		0.694		4	3	3	4	14	0.766		0.906		0.823	
12_2_3_105	MW-02	Appendix III	Boron	mg/L	0%	4	5	4	4	17	0.659		0.730		0.654		4	5	4	4	17	0.659		0.730		0.654	
12_2_3_107	MW-02	Appendix III	Calcium	mg/L	0%	4	5	4	4	17	0.446		0.387		0.387		4	5	4	4	17	0.446		0.387		0.387	
12_2_3_108	MW-02	Appendix III	Chloride (as Cl)	mg/L	0%	4	5	4	4	17	0.542		0.339		0.342		4	5	4	4	17	0.542		0.339		0.342	
12_2_3_112	MW-02	Appendix III	Fluoride	mg/L	0%	4	5	4	4	17	0.767		0.976		0.867		4	5	4	4	17	0.767		0.976		0.867	
12_2_3_120	MW-02	Appendix III	pH (field)	su	0%	4	5	4	4	17	0.326		0.366		0.368		4	5	4	4	17	0.326		0.366		0.368	
12_2_3_124	MW-02	Appendix III	Sulfate (as SO4)	mg/L	59%	4	5	4	4	17	0.990		0.837		0.988		1	1	2	3	7	0.463		0.424		0.557	
12_2_3_126	MW-02	Appendix III	Total Dissolved Solids	mg/L	0%	4	5	4	4	17	0.435		0.581		0.557		4	5	4	4	17	0.435		0.581		0.557	
12_2_4_101	MW-02	Appendix IV	Antimony	mg/L	18%	4	5	4	4	17	0.176		0.108		0.111		2	4	4	4	14	0.279		0.360		0.294	
12_2_4_102	MW-02	Appendix IV	Arsenic	mg/L	0%	4	5	4	4	17	0.863		0.777		0.552		4	5	4	4	17	0.863		0.777		0.552	
12_2_4_103	MW-02	Appendix IV	Barium	mg/L	0%	4	5	4	4	17	0.290		0.385		0.496		4	5	4	4	17	0.290		0.385		0.496	
12_2_4_104	MW-02	Appendix IV	Beryllium	mg/L	6%	4	5	4	4	17	0.788		0.762		0.780		3	5	4	4	16	0.486		0.557		0.500	

(Table continues on next page)

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

Table 7: Seasonality Tests *(continued)*

						Full											Without Non-Detects										
						Sample Size					p-Value						Sample Size					p-Value					
ID	Well	Constituent Type	Constituent	Unit	% NDs	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis		ANOVA		Log ANOVA		Winter	Spring	Summer	Fall	Total	Kruskal-Wallis		ANOVA		Log ANOVA	
12_2_4_106	MW-02	Appendix IV	Cadmium	mg/L	71%	4	5	4	4	17	0.799		0.703		0.892		2	2	0	1	5	0.331		0.008	**	0.087	
12_2_4_109	MW-02	Appendix IV	Chromium, Total	mg/L	0%	4	5	4	4	17	0.362		0.642		0.658		4	5	4	4	17	0.362		0.642		0.658	
12_2_4_110	MW-02	Appendix IV	Cobalt	mg/L	0%	4	5	4	4	17	0.855		0.899		0.667		4	5	4	4	17	0.855		0.899		0.667	
12_2_4_113	MW-02	Appendix IV	Fluoride (App IV)	mg/L	0%	4	5	4	4	17	0.767		0.976		0.867		4	5	4	4	17	0.767		0.976		0.867	
12_2_4_115	MW-02	Appendix IV	Lead	mg/L	6%	4	5	4	4	17	0.235		0.297		0.543		3	5	4	4	16	0.087		0.128		0.105	
12_2_4_116	MW-02	Appendix IV	Lithium	mg/L	0%	4	5	4	4	17	0.384		0.468		0.488		4	5	4	4	17	0.384		0.468		0.488	
12_2_4_117	MW-02	Appendix IV	Mercury	ng/L	82%	4	5	4	4	17	0.751		0.808		0.776		0	1	1	1	3	0.368		NA		NA	
12_2_4_118	MW-02	Appendix IV	Molybdenum	mg/L	0%	4	5	4	4	17	0.186		0.195		0.203		4	5	4	4	17	0.186		0.195		0.203	
12_2_4_121	MW-02	Appendix IV	Radium 226 and 228	pCi/L	31%	3	5	4	4	16	0.466		0.323		0.589		2	3	3	3	11	0.811		0.779		0.890	
12_2_4_122	MW-02	Appendix IV	Selenium	mg/L	0%	4	5	4	4	17	0.517		0.681		0.618		4	5	4	4	17	0.517		0.681		0.618	
12_2_4_125	MW-02	Appendix IV	Thallium	mg/L	94%	4	5	4	4	17	0.948		0.922		0.977		0	0	0	1	1	NA		NA		NA	
12_2_5_111	MW-02	Part 115	Copper	mg/L	0%	4	5	4	4	17	0.932		0.907		0.934		4	5	4	4	17	0.932		0.907		0.934	
12_2_5_114	MW-02	Part 115	Iron	mg/L	0%	4	5	4	4	17	0.019	*	0.006	**	0.004	**	4	5	4	4	17	0.019	*	0.006	**	0.004	**
12_2_5_119	MW-02	Part 115	Nickel	mg/L	0%	4	5	4	4	17	0.763		0.786		0.882		4	5	4	4	17	0.763		0.786		0.882	
12_2_5_123	MW-02	Part 115	Silver	mg/L	100%	4	5	4	4	17	0.338		0.363		0.363		NA	NA	NA	NA	NA	NA		NA		NA	
12_2_5_128	MW-02	Part 115	Vanadium	mg/L	6%	4	5	4	4	17	0.652		0.588		0.619		3	5	4	4	16	0.769		0.736		0.735	
12_2_5_129	MW-02	Part 115	Zinc	mg/L	0%	4	5	4	4	17	0.507		0.611		0.472		4	5	4	4	17	0.507		0.611		0.472	
13_2_3_105	MW-03	Appendix III	Boron	mg/L	0%	4	5	4	4	17	0.617		0.500		0.466		4	5	4	4	17	0.617		0.500		0.466	
13_2_3_107	MW-03	Appendix III	Calcium	mg/L	0%	4	5	4	4	17	0.758		0.659		0.613		4	5	4	4	17	0.758		0.659		0.613	
13_2_3_108	MW-03	Appendix III	Chloride (as Cl)	mg/L	0%	4	5	4	4	17	0.653		0.534		0.566		4	5	4	4	17	0.653		0.534		0.566	
13_2_3_112	MW-03	Appendix III	Fluoride	mg/L	0%	4	5	4	4	17	0.240		0.438		0.435		4	5	4	4	17	0.240		0.438		0.435	
13_2_3_120	MW-03	Appendix III	pH (field)	su	0%	4	5	4	4	17	0.273		0.221		0.224		4	5	4	4	17	0.273		0.221		0.224	
13_2_3_124	MW-03	Appendix III	Sulfate (as SO4)	mg/L	0%	4	5	4	4	17	0.103		0.067		0.104		4	5	4	4	17	0.103		0.067		0.104	
13_2_3_126	MW-03	Appendix III	Total Dissolved Solids	mg/L	0%	4	5	4	4	17	0.557		0.763		0.764		4	5	4	4	17	0.557		0.763		0.764	
13_2_4_101	MW-03	Appendix IV	Antimony	mg/L	65%	4	5	4	4	17	0.178		0.509		0.375		2	3	0	1	6	0.213		0.592		0.475	
13_2_4_102	MW-03	Appendix IV	Arsenic	mg/L	0%	4	5	4	4	17	0.287		0.426		0.510		4	5	4	4	17	0.287		0.426		0.510	
13_2_4_103	MW-03	Appendix IV	Barium	mg/L	0%	4	5	4	4	17	0.855		0.960		0.859		4	5	4	4	17	0.855		0.960		0.859	
13_2_4_104	MW-03	Appendix IV	Beryllium	mg/L	65%	4	5	4	4	17	0.899		0.772		0.873		1	2	2	1	6	0.836		0.678		0.683	
13_2_4_106	MW-03	Appendix IV	Cadmium	mg/L	94%	4	5	4	4	17	0.822		0.541		0.752		0	0	0	1	1	NA		NA		NA	
13_2_4_109	MW-03	Appendix IV	Chromium, Total	mg/L	0%	4	5	4	4	17	0.272		0.379		0.318		4	5	4	4	17	0.272		0.379		0.318	
13_2_4_110	MW-03	Appendix IV	Cobalt	mg/L	0%	4	5	4	4	17	0.248		0.396		0.293		4	5	4	4	17	0.248		0.396		0.293	
13_2_4_113	MW-03	Appendix IV	Fluoride (App IV)	mg/L	0%	4	5	4	4	17	0.240		0.438		0.435		4	5	4	4	17	0.240		0.438		0.435	
13_2_4_115	MW-03	Appendix IV	Lead	mg/L	94%	4	5	4	4	17	0.845		0.641		0.887		0	0	0	1	1	NA		NA		NA	
13_2_4_116	MW-03	Appendix IV	Lithium	mg/L	0%	4	5	4	4	17	0.880		0.738		0.792		4	5	4	4	17	0.880		0.738		0.792	
13_2_4_117	MW-03	Appendix IV	Mercury	ng/L	82%	4	5	4	4	17	0.875		0.875		0.807		0	1	1	1	3	0.368		NA		NA	
13_2_4_118	MW-03	Appendix IV	Molybdenum	mg/L	76%	4	5	4	4	17	0.271		0.514		0.380		1	1	0	2	4	0.407		0.635		0.722	
13_2_4_121	MW-03	Appendix IV	Radium 226 and 228	pCi/L	12%	4	4	4	4	16	0.418		0.412		0.404		3	4	4	3	14	0.295		0.341		0.292	
13_2_4_122	MW-03	Appendix IV	Selenium	mg/L	18%	4	5	4	4	17	0.440		0.338		0.430		2	4	4	4	14	0.405		0.363		0.465	
13_2_4_125	MW-03	Appendix IV	Thallium	mg/L	94%	4	5	4	4	17	0.726		0.730		0.794		0	0	0	1	1	NA		NA		NA	

(Table continues on next page)

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

Table 7: Seasonality Tests *(continued)*

						Full											Without Non-Detects										
						Sample Size					p-Value						Sample Size					p-Value					
ID	Well	Constituent Type	Constituent	Unit	% NDs	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis		ANOVA		Log ANOVA		Winter	Spring	Summer	Fall	Total	Kruskal-Wallis		ANOVA		Log ANOVA	
13_2_5_111	MW-03	Part 115	Copper	mg/L	47%	4	5	4	4	17	0.872		0.702		0.782		1	2	4	2	9	0.303		0.104		0.098	
13_2_5_114	MW-03	Part 115	Iron	mg/L	0%	4	5	4	4	17	0.040	*	0.185		0.030	*	4	5	4	4	17	0.040	*	0.185		0.030	*
13_2_5_119	MW-03	Part 115	Nickel	mg/L	6%	4	5	4	4	17	0.909		0.311		0.377		3	5	4	4	16	0.992		0.297		0.568	
13_2_5_123	MW-03	Part 115	Silver	mg/L	100%	4	5	4	4	17	0.213		0.218		0.218		NA	NA	NA	NA	NA	NA		NA		NA	
13_2_5_128	MW-03	Part 115	Vanadium	mg/L	53%	4	5	4	4	17	0.966		0.947		0.970		1	2	2	3	8	0.299		0.423		0.383	
13_2_5_129	MW-03	Part 115	Zinc	mg/L	53%	4	5	4	4	17	0.737		0.676		0.796		0	2	2	4	8	0.979		0.987		0.971	
14_2_3_105	MW-04	Appendix III	Boron	mg/L	0%	4	5	4	4	17	0.512		0.899		0.915		4	5	4	4	17	0.512		0.899		0.915	
14_2_3_107	MW-04	Appendix III	Calcium	mg/L	0%	4	5	4	4	17	0.870		0.875		0.919		4	5	4	4	17	0.870		0.875		0.919	
14_2_3_108	MW-04	Appendix III	Chloride (as Cl)	mg/L	0%	4	5	4	4	17	0.659		0.686		0.824		4	5	4	4	17	0.659		0.686		0.824	
14_2_3_112	MW-04	Appendix III	Fluoride	mg/L	0%	4	5	4	4	17	0.328		0.339		0.237		4	5	4	4	17	0.328		0.339		0.237	
14_2_3_120	MW-04	Appendix III	pH (field)	su	0%	4	5	4	4	17	0.075		0.085		0.089		4	5	4	4	17	0.075		0.085		0.089	
14_2_3_124	MW-04	Appendix III	Sulfate (as SO4)	mg/L	0%	4	5	4	4	17	0.625		0.466		0.365		4	5	4	4	17	0.625		0.466		0.365	
14_2_3_126	MW-04	Appendix III	Total Dissolved Solids	mg/L	0%	4	5	4	4	17	0.493		0.647		0.651		4	5	4	4	17	0.493		0.647		0.651	
14_2_4_101	MW-04	Appendix IV	Antimony	mg/L	65%	4	5	4	4	17	0.829		0.771		0.874		1	2	1	2	6	0.543		0.530		0.643	
14_2_4_102	MW-04	Appendix IV	Arsenic	mg/L	0%	4	5	4	4	17	0.789		0.694		0.834		4	5	4	4	17	0.789		0.694		0.834	
14_2_4_103	MW-04	Appendix IV	Barium	mg/L	0%	4	5	4	4	17	0.212		0.217		0.226		4	5	4	4	17	0.212		0.217		0.226	
14_2_4_104	MW-04	Appendix IV	Beryllium	mg/L	88%	4	5	4	4	17	0.492		0.420		0.424		0	0	1	1	2	0.317		NA		NA	
14_2_4_106	MW-04	Appendix IV	Cadmium	mg/L	100%	4	5	4	4	17	0.666		0.491		0.652		NA	NA	NA	NA	NA	NA		NA		NA	
14_2_4_109	MW-04	Appendix IV	Chromium, Total	mg/L	0%	4	5	4	4	17	0.560		0.444		0.421		4	5	4	4	17	0.560		0.444		0.421	
14_2_4_110	MW-04	Appendix IV	Cobalt	mg/L	0%	4	5	4	4	17	0.794		0.530		0.612		4	5	4	4	17	0.794		0.530		0.612	
14_2_4_113	MW-04	Appendix IV	Fluoride (App IV)	mg/L	0%	4	5	4	4	17	0.328		0.339		0.237		4	5	4	4	17	0.328		0.339		0.237	
14_2_4_115	MW-04	Appendix IV	Lead	mg/L	88%	4	5	4	4	17	0.770		0.768		0.827		0	1	0	1	2	0.317		NA		NA	
14_2_4_116	MW-04	Appendix IV	Lithium	mg/L	0%	4	5	4	4	17	0.058		0.018	*	0.019	*	4	5	4	4	17	0.058		0.018	*	0.019	*
14_2_4_117	MW-04	Appendix IV	Mercury	ng/L	82%	4	5	4	4	17	0.751		0.808		0.750		0	1	1	1	3	0.368		NA		NA	
14_2_4_118	MW-04	Appendix IV	Molybdenum	mg/L	12%	4	5	4	4	17	0.273		0.533		0.395		3	4	4	4	15	0.326		0.651		0.557	
14_2_4_121	MW-04	Appendix IV	Radium 226 and 228	pCi/L	35%	4	5	4	4	17	0.992		0.986		0.969		2	3	3	3	11	0.585		0.617		0.514	
14_2_4_122	MW-04	Appendix IV	Selenium	mg/L	29%	4	5	4	4	17	0.271		0.754		0.773		3	2	4	3	12	0.241		0.235		0.273	
14_2_4_125	MW-04	Appendix IV	Thallium	mg/L	100%	4	5	4	4	17	0.568		0.610		0.610		NA	NA	NA	NA	NA	NA		NA		NA	
14_2_5_111	MW-04	Part 115	Copper	mg/L	76%	4	5	4	4	17	0.222		0.519		0.432		0	2	0	2	4	1.000		0.960		0.975	
14_2_5_114	MW-04	Part 115	Iron	mg/L	0%	4	5	4	4	17	0.288		0.852		0.834		4	5	4	4	17	0.288		0.852		0.834	
14_2_5_119	MW-04	Part 115	Nickel	mg/L	0%	4	5	4	4	17	0.179		0.248		0.363		4	5	4	4	17	0.179		0.248		0.363	
14_2_5_123	MW-04	Part 115	Silver	mg/L	100%	4	5	4	4	17	0.213		0.218		0.218		NA	NA	NA	NA	NA	NA		NA		NA	
14_2_5_128	MW-04	Part 115	Vanadium	mg/L	59%	4	5	4	4	17	0.810		0.753		0.761		1	2	2	2	7	0.766		0.800		0.772	
14_2_5_129	MW-04	Part 115	Zinc	mg/L	59%	4	5	4	4	17	0.038	*	0.045	*	0.024	*	0	2	1	4	7	0.397		0.514		0.448	
16_1_3_105	MW-06	Appendix III	Boron	mg/L	0%	4	5	4	4	17	0.011	*	0.002	**	0.004	**	4	5	4	4	17	0.011	*	0.002	**	0.004	**
16_1_3_107	MW-06	Appendix III	Calcium	mg/L	0%	4	5	4	4	17	0.230		0.217		0.231		4	5	4	4	17	0.230		0.217		0.231	
16_1_3_108	MW-06	Appendix III	Chloride (as Cl)	mg/L	0%	4	5	4	4	17	0.396		0.351		0.459		4	5	4	4	17	0.396		0.351		0.459	
16_1_3_112	MW-06	Appendix III	Fluoride	mg/L	0%	4	5	4	4	17	0.139		0.095		0.101		4	5	4	4	17	0.139		0.095		0.101	
16_1_3_120	MW-06	Appendix III	pH (field)	su	0%	4	5	4	4	17	0.838		0.550		0.535		4	5	4	4	17	0.838		0.550		0.535	

(Table continues on next page)

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

Table 7: Seasonality Tests *(continued)*

						Full								Without Non-Detects							
						Sample Size					p-Value			Sample Size					p-Value		
ID	Well	Constituent Type	Constituent	Unit	% NDs	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA
16_1_3_124	MW-06	Appendix III	Sulfate (as SO4)	mg/L	12%	4	5	4	4	17	0.457	0.389	0.386	4	5	3	3	15	0.683	0.656	0.630
16_1_3_126	MW-06	Appendix III	Total Dissolved Solids	mg/L	0%	4	5	4	4	17	0.721	0.759	0.734	4	5	4	4	17	0.721	0.759	0.734
16_1_4_101	MW-06	Appendix IV	Antimony	mg/L	88%	4	5	4	4	17	0.744	0.402	0.608	0	1	0	1	2	0.317	NA	NA
16_1_4_102	MW-06	Appendix IV	Arsenic	mg/L	0%	4	5	4	4	17	0.033 *	0.004 **	0.004 **	4	5	4	4	17	0.033 *	0.004 **	0.004 **
16_1_4_103	MW-06	Appendix IV	Barium	mg/L	0%	4	5	4	4	17	0.081	0.084	0.089	4	5	4	4	17	0.081	0.084	0.089
16_1_4_104	MW-06	Appendix IV	Beryllium	mg/L	94%	4	5	4	4	17	0.355	0.383	0.383	1	0	0	0	1	NA	NA	NA
16_1_4_106	MW-06	Appendix IV	Cadmium	mg/L	100%	4	5	4	4	17	0.666	0.491	0.652	NA	NA	NA	NA	NA	NA	NA	NA
16_1_4_109	MW-06	Appendix IV	Chromium, Total	mg/L	0%	4	5	4	4	17	0.566	0.888	0.791	4	5	4	4	17	0.566	0.888	0.791
16_1_4_110	MW-06	Appendix IV	Cobalt	mg/L	0%	4	5	4	4	17	0.906	0.690	0.778	4	5	4	4	17	0.906	0.690	0.778
16_1_4_113	MW-06	Appendix IV	Fluoride (App IV)	mg/L	0%	4	5	4	4	17	0.139	0.095	0.101	4	5	4	4	17	0.139	0.095	0.101
16_1_4_115	MW-06	Appendix IV	Lead	mg/L	59%	4	5	4	4	17	0.404	0.384	0.343	2	0	2	3	7	0.731	0.903	0.818
16_1_4_116	MW-06	Appendix IV	Lithium	mg/L	0%	4	5	4	4	17	0.468	0.423	0.331	4	5	4	4	17	0.468	0.423	0.331
16_1_4_117	MW-06	Appendix IV	Mercury	ng/L	82%	4	5	4	4	17	0.768	0.810	0.808	0	1	1	1	3	0.368	NA	NA
16_1_4_118	MW-06	Appendix IV	Molybdenum	mg/L	59%	4	5	4	4	17	0.518	0.572	0.505	1	1	2	3	7	0.408	0.157	0.224
16_1_4_121	MW-06	Appendix IV	Radium 226 and 228	pCi/L	18%	4	5	4	4	17	0.322	0.351	0.304	3	4	3	4	14	0.267	0.332	0.261
16_1_4_122	MW-06	Appendix IV	Selenium	mg/L	29%	4	5	4	4	17	0.334	0.330	0.299	2	3	4	3	12	0.325	0.167	0.174
16_1_4_125	MW-06	Appendix IV	Thallium	mg/L	100%	4	5	4	4	17	0.379	0.218	0.219	NA	NA	NA	NA	NA	NA	NA	NA
16_1_5_111	MW-06	Part 115	Copper	mg/L	76%	4	5	4	4	17	0.311	0.226	0.241	1	0	2	1	4	0.259	0.656	0.622
16_1_5_114	MW-06	Part 115	Iron	mg/L	0%	4	5	4	4	17	0.331	0.392	0.498	4	5	4	4	17	0.331	0.392	0.498
16_1_5_119	MW-06	Part 115	Nickel	mg/L	35%	4	5	4	4	17	0.110	0.088	0.084	3	1	3	4	11	0.505	0.530	0.565
16_1_5_123	MW-06	Part 115	Silver	mg/L	100%	4	5	4	4	17	0.379	0.219	0.220	NA	NA	NA	NA	NA	NA	NA	NA
16_1_5_128	MW-06	Part 115	Vanadium	mg/L	82%	4	5	4	4	17	0.305	0.286	0.296	0	0	2	1	3	0.221	0.242	0.221
16_1_5_129	MW-06	Part 115	Zinc	mg/L	12%	4	5	4	4	17	0.260	0.681	0.490	3	4	4	4	15	0.430	0.765	0.641
17_1_3_105	MW-07	Appendix III	Boron	mg/L	0%	4	5	4	4	17	0.188	0.280	0.291	4	5	4	4	17	0.188	0.280	0.291
17_1_3_107	MW-07	Appendix III	Calcium	mg/L	0%	4	5	4	4	17	0.892	0.979	0.984	4	5	4	4	17	0.892	0.979	0.984
17_1_3_108	MW-07	Appendix III	Chloride (as Cl)	mg/L	0%	4	5	4	4	17	0.530	0.861	0.814	4	5	4	4	17	0.530	0.861	0.814
17_1_3_112	MW-07	Appendix III	Fluoride	mg/L	24%	4	5	4	4	17	0.622	0.566	0.732	3	4	3	3	13	0.139	0.210	0.182
17_1_3_120	MW-07	Appendix III	pH (field)	su	0%	4	5	4	4	17	0.690	0.593	0.597	4	5	4	4	17	0.690	0.593	0.597
17_1_3_124	MW-07	Appendix III	Sulfate (as SO4)	mg/L	0%	4	5	4	4	17	0.050 *	0.015 *	0.013 *	4	5	4	4	17	0.050 *	0.015 *	0.013 *
17_1_3_126	MW-07	Appendix III	Total Dissolved Solids	mg/L	0%	4	5	4	4	17	0.396	0.585	0.601	4	5	4	4	17	0.396	0.585	0.601
17_1_4_101	MW-07	Appendix IV	Antimony	mg/L	94%	4	5	4	4	17	0.449	0.485	0.484	0	1	0	0	1	NA	NA	NA
17_1_4_102	MW-07	Appendix IV	Arsenic	mg/L	0%	4	5	4	4	17	0.647	0.458	0.497	4	5	4	4	17	0.647	0.458	0.497
17_1_4_103	MW-07	Appendix IV	Barium	mg/L	0%	4	5	4	4	17	0.365	0.303	0.275	4	5	4	4	17	0.365	0.303	0.275
17_1_4_104	MW-07	Appendix IV	Beryllium	mg/L	76%	4	5	4	4	17	0.498	0.648	0.656	1	0	1	2	4	0.223	0.000 ***	0.000 ***
17_1_4_106	MW-07	Appendix IV	Cadmium	mg/L	100%	4	5	4	4	17	0.453	0.491	0.491	NA	NA	NA	NA	NA	NA	NA	NA
17_1_4_109	MW-07	Appendix IV	Chromium, Total	mg/L	0%	4	5	4	4	17	0.417	0.572	0.585	4	5	4	4	17	0.417	0.572	0.585
17_1_4_110	MW-07	Appendix IV	Cobalt	mg/L	0%	4	5	4	4	17	0.803	0.669	0.682	4	5	4	4	17	0.803	0.669	0.682
17_1_4_113	MW-07	Appendix IV	Fluoride (App IV)	mg/L	24%	4	5	4	4	17	0.622	0.566	0.732	3	4	3	3	13	0.139	0.210	0.182
17_1_4_115	MW-07	Appendix IV	Lead	mg/L	100%	4	5	4	4	17	0.453	0.491	0.491	NA	NA	NA	NA	NA	NA	NA	NA

(Table continues on next page)

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

Table 7: Seasonality Tests *(continued)*

						Full								Without Non-Detects							
						Sample Size					p-Value			Sample Size					p-Value		
ID	Well	Constituent Type	Constituent	Unit	% NDs	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA
17_1_4_116	MW-07	Appendix IV	Lithium	mg/L	0%	4	5	4	4	17	0.295	0.453	0.424	4	5	4	4	17	0.295	0.453	0.424
17_1_4_117	MW-07	Appendix IV	Mercury	ng/L	94%	4	5	4	4	17	0.779	0.810	0.812	0	0	1	0	1	NA	NA	NA
17_1_4_118	MW-07	Appendix IV	Molybdenum	mg/L	100%	4	5	4	4	17	0.453	0.491	0.491	NA	NA	NA	NA	NA	NA	NA	NA
17_1_4_121	MW-07	Appendix IV	Radium 226 and 228	pCi/L	12%	4	5	4	4	17	0.784	0.465	0.571	4	4	3	4	15	0.491	0.221	0.255
17_1_4_122	MW-07	Appendix IV	Selenium	mg/L	53%	4	5	4	4	17	0.101	0.122	0.116	2	2	2	2	8	0.133	0.357	0.297
17_1_4_125	MW-07	Appendix IV	Thallium	mg/L	100%	4	5	4	4	17	NA	0.383	0.383	NA	NA	NA	NA	NA	NA	NA	NA
17_1_5_111	MW-07	Part 115	Copper	mg/L	76%	4	5	4	4	17	0.983	0.468	0.532	1	1	1	1	4	0.392	NA	NA
17_1_5_114	MW-07	Part 115	Iron	mg/L	0%	4	5	4	4	17	0.585	0.661	0.593	4	5	4	4	17	0.585	0.661	0.593
17_1_5_119	MW-07	Part 115	Nickel	mg/L	82%	4	5	4	4	17	0.747	0.589	0.551	0	0	1	2	3	0.221	0.581	0.497
17_1_5_123	MW-07	Part 115	Silver	mg/L	100%	4	5	4	4	17	NA	0.383	0.383	NA	NA	NA	NA	NA	NA	NA	NA
17_1_5_128	MW-07	Part 115	Vanadium	mg/L	71%	4	5	4	4	17	0.296	0.250	0.265	0	1	2	2	5	0.223	0.268	0.251
17_1_5_129	MW-07	Part 115	Zinc	mg/L	59%	4	5	4	4	17	0.827	0.646	0.475	1	1	1	4	7	0.241	0.275	0.515
18_1_3_105	MW-08	Appendix III	Boron	mg/L	0%	5	5	4	3	17	0.254	0.440	0.375	5	5	4	3	17	0.254	0.440	0.375
18_1_3_107	MW-08	Appendix III	Calcium	mg/L	0%	5	5	4	3	17	0.622	0.569	0.603	5	5	4	3	17	0.622	0.569	0.603
18_1_3_108	MW-08	Appendix III	Chloride (as Cl)	mg/L	0%	5	5	4	3	17	0.557	0.209	0.320	5	5	4	3	17	0.557	0.209	0.320
18_1_3_112	MW-08	Appendix III	Fluoride	mg/L	0%	5	5	4	3	17	0.352	0.123	0.117	5	5	4	3	17	0.352	0.123	0.117
18_1_3_120	MW-08	Appendix III	pH (field)	su	0%	5	5	4	3	17	0.071	0.319	0.340	5	5	4	3	17	0.071	0.319	0.340
18_1_3_124	MW-08	Appendix III	Sulfate (as SO4)	mg/L	24%	5	5	4	3	17	0.437	0.723	0.374	5	4	1	3	13	0.312	0.680	0.363
18_1_3_126	MW-08	Appendix III	Total Dissolved Solids	mg/L	0%	5	5	4	3	17	0.426	0.411	0.455	5	5	4	3	17	0.426	0.411	0.455
18_1_4_101	MW-08	Appendix IV	Antimony	mg/L	53%	5	5	4	3	17	0.854	0.581	0.679	4	2	1	1	8	0.505	0.480	0.606
18_1_4_102	MW-08	Appendix IV	Arsenic	mg/L	0%	5	5	4	3	17	0.303	0.222	0.241	5	5	4	3	17	0.303	0.222	0.241
18_1_4_103	MW-08	Appendix IV	Barium	mg/L	0%	5	5	4	3	17	0.487	0.504	0.494	5	5	4	3	17	0.487	0.504	0.494
18_1_4_104	MW-08	Appendix IV	Beryllium	mg/L	94%	5	5	4	3	17	0.494	0.534	0.534	1	0	0	0	1	NA	NA	NA
18_1_4_106	MW-08	Appendix IV	Cadmium	mg/L	94%	5	5	4	3	17	0.446	0.514	0.337	1	0	0	0	1	NA	NA	NA
18_1_4_109	MW-08	Appendix IV	Chromium, Total	mg/L	0%	5	5	4	3	17	0.220	0.352	0.273	5	5	4	3	17	0.220	0.352	0.273
18_1_4_110	MW-08	Appendix IV	Cobalt	mg/L	0%	5	5	4	3	17	0.557	0.661	0.672	5	5	4	3	17	0.557	0.661	0.672
18_1_4_113	MW-08	Appendix IV	Fluoride (App IV)	mg/L	0%	5	5	4	3	17	0.352	0.123	0.117	5	5	4	3	17	0.352	0.123	0.117
18_1_4_115	MW-08	Appendix IV	Lead	mg/L	65%	5	5	4	3	17	0.073	0.278	0.317	3	2	0	1	6	0.252	0.013 *	0.157
18_1_4_116	MW-08	Appendix IV	Lithium	mg/L	0%	5	5	4	3	17	0.582	0.565	0.604	5	5	4	3	17	0.582	0.565	0.604
18_1_4_117	MW-08	Appendix IV	Mercury	ng/L	94%	5	5	4	3	17	0.639	0.691	0.678	0	0	1	0	1	NA	NA	NA
18_1_4_118	MW-08	Appendix IV	Molybdenum	mg/L	6%	5	5	4	3	17	0.014 *	0.008 **	0.000 ***	5	5	3	3	16	0.029 *	0.024 *	0.001 **
18_1_4_121	MW-08	Appendix IV	Radium 226 and 228	pCi/L	24%	5	5	4	3	17	0.307	0.733	0.659	3	5	3	2	13	0.567	0.736	0.804
18_1_4_122	MW-08	Appendix IV	Selenium	mg/L	35%	5	5	4	3	17	0.015 *	0.002 **	0.002 **	2	3	3	3	11	0.177	0.000 ***	0.002 **
18_1_4_125	MW-08	Appendix IV	Thallium	mg/L	94%	5	5	4	3	17	0.494	0.534	0.534	1	0	0	0	1	NA	NA	NA
18_1_5_111	MW-08	Part 115	Copper	mg/L	35%	5	5	4	3	17	0.960	0.820	0.902	3	4	2	2	11	0.572	0.609	0.650
18_1_5_114	MW-08	Part 115	Iron	mg/L	0%	5	5	4	3	17	0.017 *	0.004 **	0.004 **	5	5	4	3	17	0.017 *	0.004 **	0.004 **
18_1_5_119	MW-08	Part 115	Nickel	mg/L	0%	5	5	4	3	17	0.887	0.288	0.620	5	5	4	3	17	0.887	0.288	0.620
18_1_5_123	MW-08	Part 115	Silver	mg/L	100%	5	5	4	3	17	NA	0.534	0.534	NA	NA	NA	NA	NA	NA	NA	NA
18_1_5_128	MW-08	Part 115	Vanadium	mg/L	82%	5	5	4	3	17	0.274	0.285	0.306	1	0	1	1	3	0.368	NA	NA

(Table continues on next page)

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

Table 7: Seasonality Tests *(continued)*

						Full											Without Non-Detects										
						Sample Size					p-Value						Sample Size					p-Value					
ID	Well	Constituent Type	Constituent	Unit	% NDs	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis		ANOVA		Log ANOVA		Winter	Spring	Summer	Fall	Total	Kruskal-Wallis		ANOVA		Log ANOVA	
18_1_5_129	MW-08	Part 115	Zinc	mg/L	18%	5	5	4	3	17	0.761		0.740		0.935		3	5	3	3	14	0.428		0.884		0.910	
19_2_3_105	MW-09	Appendix III	Boron	mg/L	0%	4	5	4	4	17	0.030	*	0.013	*	0.014	*	4	5	4	4	17	0.030	*	0.013	*	0.014	*
19_2_3_107	MW-09	Appendix III	Calcium	mg/L	0%	4	5	4	4	17	0.521		0.455		0.367		4	5	4	4	17	0.521		0.455		0.367	
19_2_3_108	MW-09	Appendix III	Chloride (as Cl)	mg/L	0%	4	5	4	4	17	0.811		0.932		0.942		4	5	4	4	17	0.811		0.932		0.942	
19_2_3_112	MW-09	Appendix III	Fluoride	mg/L	0%	4	5	4	4	17	0.170		0.198		0.214		4	5	4	4	17	0.170		0.198		0.214	
19_2_3_120	MW-09	Appendix III	pH (field)	su	0%	4	5	4	4	17	0.150		0.115		0.116		4	5	4	4	17	0.150		0.115		0.116	
19_2_3_124	MW-09	Appendix III	Sulfate (as SO4)	mg/L	0%	4	5	4	4	17	0.292		0.153		0.127		4	5	4	4	17	0.292		0.153		0.127	
19_2_3_126	MW-09	Appendix III	Total Dissolved Solids	mg/L	0%	4	5	4	4	17	0.385		0.307		0.266		4	5	4	4	17	0.385		0.307		0.266	
19_2_4_101	MW-09	Appendix IV	Antimony	mg/L	71%	4	5	4	4	17	0.663		0.374		0.456		1	2	1	1	5	0.532		0.891		0.841	
19_2_4_102	MW-09	Appendix IV	Arsenic	mg/L	0%	4	5	4	4	17	0.149		0.186		0.148		4	5	4	4	17	0.149		0.186		0.148	
19_2_4_103	MW-09	Appendix IV	Barium	mg/L	0%	4	5	4	4	17	0.442		0.350		0.396		4	5	4	4	17	0.442		0.350		0.396	
19_2_4_104	MW-09	Appendix IV	Beryllium	mg/L	76%	4	5	4	4	17	0.983		0.513		0.575		1	1	1	1	4	0.392		NA		NA	
19_2_4_106	MW-09	Appendix IV	Cadmium	mg/L	100%	4	5	4	4	17	0.726		0.663		0.799		NA	NA	NA	NA	NA	NA		NA		NA	
19_2_4_109	MW-09	Appendix IV	Chromium, Total	mg/L	0%	4	5	4	4	17	0.919		0.941		0.948		4	5	4	4	17	0.919		0.941		0.948	
19_2_4_110	MW-09	Appendix IV	Cobalt	mg/L	0%	4	5	4	4	17	0.093		0.134		0.090		4	5	4	4	17	0.093		0.134		0.090	
19_2_4_113	MW-09	Appendix IV	Fluoride (App IV)	mg/L	0%	4	5	4	4	17	0.170		0.198		0.214		4	5	4	4	17	0.170		0.198		0.214	
19_2_4_115	MW-09	Appendix IV	Lead	mg/L	100%	4	5	4	4	17	0.227		0.350		0.251		NA	NA	NA	NA	NA	NA		NA		NA	
19_2_4_116	MW-09	Appendix IV	Lithium	mg/L	0%	4	5	4	4	17	0.103		0.135		0.159		4	5	4	4	17	0.103		0.135		0.159	
19_2_4_117	MW-09	Appendix IV	Mercury	ng/L	82%	4	5	4	4	17	0.938		0.653		0.917		0	1	1	1	3	0.368		NA		NA	
19_2_4_118	MW-09	Appendix IV	Molybdenum	mg/L	0%	4	5	4	4	17	0.328		0.587		0.707		4	5	4	4	17	0.328		0.587		0.707	
19_2_4_121	MW-09	Appendix IV	Radium 226 and 228	pCi/L	88%	4	5	4	4	17	0.594		0.670		0.523		0	0	0	2	2	NA		NA		NA	
19_2_4_122	MW-09	Appendix IV	Selenium	mg/L	12%	4	5	4	4	17	0.834		0.704		0.707		3	4	4	4	15	0.937		0.567		0.649	
19_2_4_125	MW-09	Appendix IV	Thallium	mg/L	100%	4	5	4	4	17	0.458		0.497		0.497		NA	NA	NA	NA	NA	NA		NA		NA	
19_2_5_111	MW-09	Part 115	Copper	mg/L	65%	4	5	4	4	17	0.605		0.272		0.273		1	1	2	2	6	0.210		0.604		0.456	
19_2_5_114	MW-09	Part 115	Iron	mg/L	0%	4	5	4	4	17	0.016	*	0.008	**	0.018	*	4	5	4	4	17	0.016	*	0.008	**	0.018	*
19_2_5_119	MW-09	Part 115	Nickel	mg/L	0%	4	5	4	4	17	0.616		0.454		0.668		4	5	4	4	17	0.616		0.454		0.668	
19_2_5_123	MW-09	Part 115	Silver	mg/L	100%	4	5	4	4	17	0.338		0.363		0.363		NA	NA	NA	NA	NA	NA		NA		NA	
19_2_5_128	MW-09	Part 115	Vanadium	mg/L	88%	4	5	4	4	17	0.261		0.286		0.295		0	0	1	1	2	0.317		NA		NA	
19_2_5_129	MW-09	Part 115	Zinc	mg/L	47%	4	5	4	4	17	0.663		0.689		0.771		2	2	2	3	9	0.675		0.848		0.866	
20_3_3_105	MW-10	Appendix III	Boron	mg/L	0%	4	5	4	4	17	0.032	*	0.015	*	0.026	*	4	5	4	4	17	0.032	*	0.015	*	0.026	*
20_3_3_107	MW-10	Appendix III	Calcium	mg/L	0%	4	5	4	4	17	0.501		0.480		0.519		4	5	4	4	17	0.501		0.480		0.519	
20_3_3_108	MW-10	Appendix III	Chloride (as Cl)	mg/L	0%	4	5	4	4	17	0.045	*	0.024	*	0.014	*	4	5	4	4	17	0.045	*	0.024	*	0.014	*
20_3_3_112	MW-10	Appendix III	Fluoride	mg/L	0%	4	5	4	4	17	0.211		0.206		0.219		4	5	4	4	17	0.211		0.206		0.219	
20_3_3_120	MW-10	Appendix III	pH (field)	su	0%	4	5	4	4	17	0.097		0.074		0.075		4	5	4	4	17	0.097		0.074		0.075	
20_3_3_124	MW-10	Appendix III	Sulfate (as SO4)	mg/L	0%	4	5	4	4	17	0.300		0.463		0.238		4	5	4	4	17	0.300		0.463		0.238	
20_3_3_126	MW-10	Appendix III	Total Dissolved Solids	mg/L	0%	4	5	4	4	17	0.829		0.754		0.785		4	5	4	4	17	0.829		0.754		0.785	
20_3_4_101	MW-10	Appendix IV	Antimony	mg/L	76%	4	5	4	4	17	0.976		0.474		0.754		0	1	2	1	4	0.223		0.000	***	0.000	***
20_3_4_102	MW-10	Appendix IV	Arsenic	mg/L	0%	4	5	4	4	17	0.031	*	0.016	*	0.011	*	4	5	4	4	17	0.031	*	0.016	*	0.011	*
20_3_4_103	MW-10	Appendix IV	Barium	mg/L	0%	4	5	4	4	17	0.089		0.097		0.071		4	5	4	4	17	0.089		0.097		0.071	

(Table continues on next page)

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

Table 7: Seasonality Tests *(continued)*

						Full								Without Non-Detects							
						Sample Size					p-Value			Sample Size					p-Value		
ID	Well	Constituent Type	Constituent	Unit	% NDs	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA
20_3_4_104	MW-10	Appendix IV	Beryllium	mg/L	41%	4	5	4	4	17	0.347	0.450	0.335	1	3	3	3	10	0.306	0.610	0.493
20_3_4_106	MW-10	Appendix IV	Cadmium	mg/L	100%	4	5	4	4	17	0.666	0.491	0.652	NA	NA	NA	NA	NA	NA	NA	NA
20_3_4_109	MW-10	Appendix IV	Chromium, Total	mg/L	0%	4	5	4	4	17	0.415	0.168	0.208	4	5	4	4	17	0.415	0.168	0.208
20_3_4_110	MW-10	Appendix IV	Cobalt	mg/L	6%	4	5	4	4	17	0.484	0.683	0.584	3	5	4	4	16	0.691	0.837	0.858
20_3_4_113	MW-10	Appendix IV	Fluoride (App IV)	mg/L	0%	4	5	4	4	17	0.211	0.206	0.219	4	5	4	4	17	0.211	0.206	0.219
20_3_4_115	MW-10	Appendix IV	Lead	mg/L	88%	4	5	4	4	17	0.660	0.414	0.570	0	0	1	1	2	0.317	NA	NA
20_3_4_116	MW-10	Appendix IV	Lithium	mg/L	0%	4	5	4	4	17	0.113	0.209	0.103	4	5	4	4	17	0.113	0.209	0.103
20_3_4_117	MW-10	Appendix IV	Mercury	ng/L	88%	4	5	4	4	17	0.807	0.569	0.841	0	1	1	0	2	0.317	NA	NA
20_3_4_118	MW-10	Appendix IV	Molybdenum	mg/L	0%	4	5	4	4	17	0.793	0.689	0.514	4	5	4	4	17	0.793	0.689	0.514
20_3_4_121	MW-10	Appendix IV	Radium 226 and 228	pCi/L	76%	4	5	4	4	17	0.301	0.519	0.533	2	0	1	1	4	0.259	0.565	0.502
20_3_4_122	MW-10	Appendix IV	Selenium	mg/L	6%	4	5	4	4	17	0.614	0.894	0.945	4	4	4	4	16	0.693	0.952	0.995
20_3_4_125	MW-10	Appendix IV	Thallium	mg/L	100%	4	5	4	4	17	0.752	0.696	0.697	NA	NA	NA	NA	NA	NA	NA	NA
20_3_5_111	MW-10	Part 115	Copper	mg/L	82%	4	5	4	4	17	0.274	0.602	0.532	0	1	0	2	3	0.221	0.070	0.125
20_3_5_114	MW-10	Part 115	Iron	mg/L	0%	4	5	4	4	17	0.020 *	0.006 **	0.010 **	4	5	4	4	17	0.020 *	0.006 **	0.010 **
20_3_5_119	MW-10	Part 115	Nickel	mg/L	41%	4	5	4	4	17	0.231	0.735	0.615	1	2	3	4	10	0.689	0.571	0.671
20_3_5_123	MW-10	Part 115	Silver	mg/L	100%	4	5	4	4	17	0.379	0.219	0.220	NA	NA	NA	NA	NA	NA	NA	NA
20_3_5_128	MW-10	Part 115	Vanadium	mg/L	71%	4	5	4	4	17	0.196	0.507	0.468	0	1	2	2	5	0.497	0.722	0.721
20_3_5_129	MW-10	Part 115	Zinc	mg/L	41%	4	5	4	4	17	0.064	0.464	0.279	1	2	3	4	10	0.447	0.903	0.777
21_2_3_105	MW-11	Appendix III	Boron	mg/L	0%	4	5	4	4	17	0.010 *	0.005 **	0.002 **	4	5	4	4	17	0.010 *	0.005 **	0.002 **
21_2_3_107	MW-11	Appendix III	Calcium	mg/L	0%	4	5	4	4	17	0.063	0.044 *	0.057	4	5	4	4	17	0.063	0.044 *	0.057
21_2_3_108	MW-11	Appendix III	Chloride (as Cl)	mg/L	0%	4	5	4	4	17	0.020 *	0.004 **	0.002 **	4	5	4	4	17	0.020 *	0.004 **	0.002 **
21_2_3_112	MW-11	Appendix III	Fluoride	mg/L	0%	4	5	4	4	17	0.040 *	0.061	0.059	4	5	4	4	17	0.040 *	0.061	0.059
21_2_3_120	MW-11	Appendix III	pH (field)	su	0%	4	5	4	4	17	0.123	0.215	0.215	4	5	4	4	17	0.123	0.215	0.215
21_2_3_124	MW-11	Appendix III	Sulfate (as SO4)	mg/L	35%	4	5	4	4	17	0.207	0.055	0.154	2	4	3	2	11	0.164	0.116	0.070
21_2_3_126	MW-11	Appendix III	Total Dissolved Solids	mg/L	0%	4	5	4	4	17	0.780	0.774	0.756	4	5	4	4	17	0.780	0.774	0.756
21_2_4_101	MW-11	Appendix IV	Antimony	mg/L	71%	4	5	4	4	17	0.855	0.621	0.737	1	2	0	2	5	0.349	0.121	0.364
21_2_4_102	MW-11	Appendix IV	Arsenic	mg/L	0%	4	5	4	4	17	0.117	0.277	0.148	4	5	4	4	17	0.117	0.277	0.148
21_2_4_103	MW-11	Appendix IV	Barium	mg/L	0%	4	5	4	4	17	0.031 *	0.044 *	0.024 *	4	5	4	4	17	0.031 *	0.044 *	0.024 *
21_2_4_104	MW-11	Appendix IV	Beryllium	mg/L	76%	4	5	4	4	17	0.569	0.602	0.707	1	1	0	2	4	0.259	0.076	0.219
21_2_4_106	MW-11	Appendix IV	Cadmium	mg/L	82%	4	5	4	4	17	0.827	0.725	0.898	1	1	0	1	3	0.368	NA	NA
21_2_4_109	MW-11	Appendix IV	Chromium, Total	mg/L	0%	4	5	4	4	17	0.142	0.516	0.443	4	5	4	4	17	0.142	0.516	0.443
21_2_4_110	MW-11	Appendix IV	Cobalt	mg/L	0%	4	5	4	4	17	0.889	0.879	0.981	4	5	4	4	17	0.889	0.879	0.981
21_2_4_113	MW-11	Appendix IV	Fluoride (App IV)	mg/L	0%	4	5	4	4	17	0.040 *	0.061	0.059	4	5	4	4	17	0.040 *	0.061	0.059
21_2_4_115	MW-11	Appendix IV	Lead	mg/L	18%	4	5	4	4	17	0.897	0.546	0.732	4	2	4	4	14	0.952	0.728	0.920
21_2_4_116	MW-11	Appendix IV	Lithium	mg/L	0%	4	5	4	4	17	0.026 *	0.069	0.013 *	4	5	4	4	17	0.026 *	0.069	0.013 *
21_2_4_117	MW-11	Appendix IV	Mercury	ng/L	76%	4	5	4	4	17	0.837	0.603	0.854	0	2	1	1	4	0.861	0.817	0.862
21_2_4_118	MW-11	Appendix IV	Molybdenum	mg/L	12%	4	5	4	4	17	0.491	0.718	0.621	4	3	4	4	15	0.903	0.872	0.902
21_2_4_121	MW-11	Appendix IV	Radium 226 and 228	pCi/L	31%	4	4	4	4	16	0.846	0.889	0.851	3	3	2	3	11	0.621	0.640	0.636
21_2_4_122	MW-11	Appendix IV	Selenium	mg/L	18%	4	5	4	4	17	0.606	0.383	0.426	3	3	4	4	14	0.532	0.337	0.410

(Table continues on next page)

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

Table 7: Seasonality Tests *(continued)*

						Full											Without Non-Detects										
						Sample Size					p-Value						Sample Size					p-Value					
ID	Well	Constituent Type	Constituent	Unit	% NDs	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis		ANOVA		Log ANOVA		Winter	Spring	Summer	Fall	Total	Kruskal-Wallis		ANOVA		Log ANOVA	
21_2_4_125	MW-11	Appendix IV	Thallium	mg/L	94%	4	5	4	4	17	0.138		0.189		0.148		0	1	0	0	1	NA		NA		NA	
21_2_5_111	MW-11	Part 115	Copper	mg/L	24%	4	5	4	4	17	0.347		0.538		0.792		4	2	4	3	13	0.900		0.749		0.995	
21_2_5_114	MW-11	Part 115	Iron	mg/L	0%	4	5	4	4	17	0.079		0.068		0.077		4	5	4	4	17	0.079		0.068		0.077	
21_2_5_119	MW-11	Part 115	Nickel	mg/L	0%	4	5	4	4	17	0.413		0.516		0.459		4	5	4	4	17	0.413		0.516		0.459	
21_2_5_123	MW-11	Part 115	Silver	mg/L	82%	4	5	4	4	17	0.180		0.122		0.174		1	1	0	1	3	0.368		NA		NA	
21_2_5_128	MW-11	Part 115	Vanadium	mg/L	76%	4	5	4	4	17	0.787		0.594		0.644		1	1	1	1	4	0.392		NA		NA	
21_2_5_129	MW-11	Part 115	Zinc	mg/L	24%	4	5	4	4	17	0.457		0.368		0.393		3	3	3	4	13	0.514		0.410		0.534	
22_2_3_105	MW-12	Appendix III	Boron	mg/L	0%	4	5	4	4	17	0.008	**	0.001	***	0.000	***	4	5	4	4	17	0.008	**	0.001	***	0.000	***
22_2_3_107	MW-12	Appendix III	Calcium	mg/L	0%	4	5	4	4	17	0.033	*	0.016	*	0.022	*	4	5	4	4	17	0.033	*	0.016	*	0.022	*
22_2_3_108	MW-12	Appendix III	Chloride (as Cl)	mg/L	0%	4	5	4	4	17	0.083		0.098		0.080		4	5	4	4	17	0.083		0.098		0.080	
22_2_3_112	MW-12	Appendix III	Fluoride	mg/L	0%	4	5	4	4	17	0.843		0.853		0.901		4	5	4	4	17	0.843		0.853		0.901	
22_2_3_120	MW-12	Appendix III	pH (field)	su	0%	4	5	4	4	17	0.058		0.128		0.133		4	5	4	4	17	0.058		0.128		0.133	
22_2_3_124	MW-12	Appendix III	Sulfate (as SO4)	mg/L	0%	4	5	4	4	17	0.689		0.640		0.659		4	5	4	4	17	0.689		0.640		0.659	
22_2_3_126	MW-12	Appendix III	Total Dissolved Solids	mg/L	0%	4	5	4	4	17	0.052		0.034	*	0.084		4	5	4	4	17	0.052		0.034	*	0.084	
22_2_4_101	MW-12	Appendix IV	Antimony	mg/L	0%	4	5	4	4	17	0.186		0.149		0.199		4	5	4	4	17	0.186		0.149		0.199	
22_2_4_102	MW-12	Appendix IV	Arsenic	mg/L	0%	4	5	4	4	17	0.007	**	0.010	*	0.001	***	4	5	4	4	17	0.007	**	0.010	*	0.001	***
22_2_4_103	MW-12	Appendix IV	Barium	mg/L	0%	4	5	4	4	17	0.021	*	0.029	*	0.010	**	4	5	4	4	17	0.021	*	0.029	*	0.010	**
22_2_4_104	MW-12	Appendix IV	Beryllium	mg/L	100%	4	5	4	4	17	NA		0.383		0.383		NA	NA	NA	NA	NA	NA		NA		NA	
22_2_4_106	MW-12	Appendix IV	Cadmium	mg/L	0%	4	5	4	4	17	0.066		0.117		0.034	*	4	5	4	4	17	0.066		0.117		0.034	*
22_2_4_109	MW-12	Appendix IV	Chromium, Total	mg/L	35%	4	5	4	4	17	0.019	*	0.017	*	0.004	**	4	4	0	3	11	0.034	*	0.039	*	0.008	**
22_2_4_110	MW-12	Appendix IV	Cobalt	mg/L	29%	4	5	4	4	17	0.008	**	0.103		0.001	**	2	2	4	4	12	0.070		0.459		0.086	
22_2_4_113	MW-12	Appendix IV	Fluoride (App IV)	mg/L	0%	4	5	4	4	17	0.843		0.853		0.901		4	5	4	4	17	0.843		0.853		0.901	
22_2_4_115	MW-12	Appendix IV	Lead	mg/L	35%	4	5	4	4	17	0.523		0.459		0.369		1	3	4	3	11	0.582		0.643		0.654	
22_2_4_116	MW-12	Appendix IV	Lithium	mg/L	0%	4	5	4	4	17	0.014	*	0.002	**	0.002	**	4	5	4	4	17	0.014	*	0.002	**	0.002	**
22_2_4_117	MW-12	Appendix IV	Mercury	ng/L	71%	4	5	4	4	17	0.837		0.831		0.822		0	2	1	2	5	0.741		0.816		0.834	
22_2_4_118	MW-12	Appendix IV	Molybdenum	mg/L	0%	4	5	4	4	17	0.024	*	0.039	*	0.012	*	4	5	4	4	17	0.024	*	0.039	*	0.012	*
22_2_4_121	MW-12	Appendix IV	Radium 226 and 228	pCi/L	59%	4	5	4	4	17	0.787		0.656		0.754		0	4	1	2	7	0.852		0.899		0.952	
22_2_4_122	MW-12	Appendix IV	Selenium	mg/L	0%	4	5	4	4	17	0.009	**	0.007	**	0.000	***	4	5	4	4	17	0.009	**	0.007	**	0.000	***
22_2_4_125	MW-12	Appendix IV	Thallium	mg/L	100%	4	5	4	4	17	NA		0.383		0.383		NA	NA	NA	NA	NA	NA		NA		NA	
22_2_5_111	MW-12	Part 115	Copper	mg/L	0%	4	5	4	4	17	0.321		0.626		0.398		4	5	4	4	17	0.321		0.626		0.398	
22_2_5_114	MW-12	Part 115	Iron	mg/L	35%	4	5	4	4	17	0.008	**	0.147		0.009	**	2	2	4	3	11	0.100		0.514		0.271	
22_2_5_119	MW-12	Part 115	Nickel	mg/L	0%	4	5	4	4	17	0.035	*	0.119		0.043	*	4	5	4	4	17	0.035	*	0.119		0.043	*
22_2_5_123	MW-12	Part 115	Silver	mg/L	100%	4	5	4	4	17	NA		0.383		0.383		NA	NA	NA	NA	NA	NA		NA		NA	
22_2_5_128	MW-12	Part 115	Vanadium	mg/L	35%	4	5	4	4	17	0.098		0.405		0.227		1	4	4	2	11	0.563		0.799		0.846	
22_2_5_129	MW-12	Part 115	Zinc	mg/L	0%	4	5	4	4	17	0.092		0.121		0.101		4	5	4	4	17	0.092		0.121		0.101	
28_1_3_105	MW-18	Appendix III	Boron	mg/L	0%	4	5	4	4	17	0.706		0.831		0.791		4	5	4	4	17	0.706		0.831		0.791	
28_1_3_107	MW-18	Appendix III	Calcium	mg/L	0%	4	5	4	4	17	0.032	*	0.029	*	0.031	*	4	5	4	4	17	0.032	*	0.029	*	0.031	*
28_1_3_108	MW-18	Appendix III	Chloride (as Cl)	mg/L	0%	4	5	4	4	17	0.013	*	0.001	**	0.000	***	4	5	4	4	17	0.013	*	0.001	**	0.000	***
28_1_3_112	MW-18	Appendix III	Fluoride	mg/L	0%	4	5	4	4	17	0.016	*	0.002	**	0.003	**	4	5	4	4	17	0.016	*	0.002	**	0.003	**

(Table continues on next page)

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

Table 7: Seasonality Tests *(continued)*

						Full											Without Non-Detects										
						Sample Size					p-Value						Sample Size					p-Value					
ID	Well	Constituent Type	Constituent	Unit	% NDs	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis		ANOVA		Log ANOVA		Winter	Spring	Summer	Fall	Total	Kruskal-Wallis		ANOVA		Log ANOVA	
28_1_3_120	MW-18	Appendix III	pH (field)	su	0%	4	5	4	4	17	0.447		0.393		0.396		4	5	4	4	17	0.447		0.393		0.396	
28_1_3_124	MW-18	Appendix III	Sulfate (as SO4)	mg/L	0%	4	5	4	4	17	0.436		0.445		0.646		4	5	4	4	17	0.436		0.445		0.646	
28_1_3_126	MW-18	Appendix III	Total Dissolved Solids	mg/L	0%	4	5	4	4	17	0.104		0.155		0.203		4	5	4	4	17	0.104		0.155		0.203	
28_1_4_101	MW-18	Appendix IV	Antimony	mg/L	18%	4	5	4	4	17	0.025	*	0.554		0.244		3	4	3	4	14	0.070		0.668		0.547	
28_1_4_102	MW-18	Appendix IV	Arsenic	mg/L	0%	4	5	4	4	17	0.009	**	0.003	**	0.005	**	4	5	4	4	17	0.009	**	0.003	**	0.005	**
28_1_4_103	MW-18	Appendix IV	Barium	mg/L	0%	4	5	4	4	17	0.013	*	0.002	**	0.001	**	4	5	4	4	17	0.013	*	0.002	**	0.001	**
28_1_4_104	MW-18	Appendix IV	Beryllium	mg/L	82%	4	5	4	4	17	0.787		0.675		0.681		1	1	0	1	3	0.368		NA		NA	
28_1_4_106	MW-18	Appendix IV	Cadmium	mg/L	41%	4	5	4	4	17	0.560		0.696		0.701		2	4	2	2	10	0.604		0.401		0.548	
28_1_4_109	MW-18	Appendix IV	Chromium, Total	mg/L	88%	4	5	4	4	17	0.633		0.474		0.460		0	2	0	0	2	NA		NA		NA	
28_1_4_110	MW-18	Appendix IV	Cobalt	mg/L	0%	4	5	4	4	17	0.253		0.353		0.307		4	5	4	4	17	0.253		0.353		0.307	
28_1_4_113	MW-18	Appendix IV	Fluoride (App IV)	mg/L	0%	4	5	4	4	17	0.016	*	0.002	**	0.003	**	4	5	4	4	17	0.016	*	0.002	**	0.003	**
28_1_4_115	MW-18	Appendix IV	Lead	mg/L	59%	4	5	4	4	17	0.736		0.316		0.564		0	0	4	3	7	0.285		0.522		0.509	
28_1_4_116	MW-18	Appendix IV	Lithium	mg/L	0%	4	5	4	4	17	0.018	*	0.001	**	0.003	**	4	5	4	4	17	0.018	*	0.001	**	0.003	**
28_1_4_117	MW-18	Appendix IV	Mercury	ng/L	88%	4	5	4	4	17	0.787		0.810		0.825		0	0	1	1	2	0.317		NA		NA	
28_1_4_118	MW-18	Appendix IV	Molybdenum	mg/L	0%	4	5	4	4	17	0.021	*	0.005	**	0.004	**	4	5	4	4	17	0.021	*	0.005	**	0.004	**
28_1_4_121	MW-18	Appendix IV	Radium 226 and 228	pCi/L	53%	4	5	4	4	17	0.461		0.678		0.652		1	2	2	3	8	0.997		0.836		0.941	
28_1_4_122	MW-18	Appendix IV	Selenium	mg/L	0%	4	5	4	4	17	0.131		0.273		0.081		4	5	4	4	17	0.131		0.273		0.081	
28_1_4_125	MW-18	Appendix IV	Thallium	mg/L	94%	4	5	4	4	17	0.398		0.296		0.346		0	0	0	1	1	NA		NA		NA	
28_1_5_111	MW-18	Part 115	Copper	mg/L	0%	4	5	4	4	17	0.022	*	0.082		0.038	*	4	5	4	4	17	0.022	*	0.082		0.038	*
28_1_5_114	MW-18	Part 115	Iron	mg/L	0%	4	5	4	4	17	0.090		0.134		0.213		4	5	4	4	17	0.090		0.134		0.213	
28_1_5_119	MW-18	Part 115	Nickel	mg/L	0%	4	5	4	4	17	0.194		0.204		0.178		4	5	4	4	17	0.194		0.204		0.178	
28_1_5_123	MW-18	Part 115	Silver	mg/L	100%	4	5	4	4	17	0.227		0.234		0.234		NA	NA	NA	NA	NA	NA		NA		NA	
28_1_5_128	MW-18	Part 115	Vanadium	mg/L	94%	4	5	4	4	17	0.492		0.528		0.522		0	0	0	1	1	NA		NA		NA	
28_1_5_129	MW-18	Part 115	Zinc	mg/L	0%	4	5	4	4	17	0.196		0.241		0.095		4	5	4	4	17	0.196		0.241		0.095	
29_1_3_105	MW-19	Appendix III	Boron	mg/L	0%	4	5	4	4	17	0.006	**	0.001	***	0.000	***	4	5	4	4	17	0.006	**	0.001	***	0.000	***
29_1_3_107	MW-19	Appendix III	Calcium	mg/L	0%	4	5	4	4	17	0.128		0.217		0.242		4	5	4	4	17	0.128		0.217		0.242	
29_1_3_108	MW-19	Appendix III	Chloride (as Cl)	mg/L	0%	4	5	4	4	17	0.315		0.254		0.277		4	5	4	4	17	0.315		0.254		0.277	
29_1_3_112	MW-19	Appendix III	Fluoride	mg/L	0%	4	5	4	4	17	0.095		0.136		0.133		4	5	4	4	17	0.095		0.136		0.133	
29_1_3_120	MW-19	Appendix III	pH (field)	su	0%	4	5	4	4	17	0.390		0.322		0.315		4	5	4	4	17	0.390		0.322		0.315	
29_1_3_124	MW-19	Appendix III	Sulfate (as SO4)	mg/L	0%	4	5	4	4	17	0.280		0.494		0.503		4	5	4	4	17	0.280		0.494		0.503	
29_1_3_126	MW-19	Appendix III	Total Dissolved Solids	mg/L	0%	4	5	4	4	17	0.300		0.338		0.336		4	5	4	4	17	0.300		0.338		0.336	
29_1_4_101	MW-19	Appendix IV	Antimony	mg/L	71%	4	5	4	4	17	0.556		0.379		0.528		1	2	1	1	5	0.532		0.877		0.738	
29_1_4_102	MW-19	Appendix IV	Arsenic	mg/L	0%	4	5	4	4	17	0.342		0.253		0.485		4	5	4	4	17	0.342		0.253		0.485	
29_1_4_103	MW-19	Appendix IV	Barium	mg/L	0%	4	5	4	4	17	0.062		0.040	*	0.035	*	4	5	4	4	17	0.062		0.040	*	0.035	*
29_1_4_104	MW-19	Appendix IV	Beryllium	mg/L	18%	4	5	4	4	17	0.910		0.684		0.855		3	5	4	2	14	0.243		0.167		0.176	
29_1_4_106	MW-19	Appendix IV	Cadmium	mg/L	94%	4	5	4	4	17	0.906		0.765		0.916		0	0	0	1	1	NA		NA		NA	
29_1_4_109	MW-19	Appendix IV	Chromium, Total	mg/L	29%	4	5	4	4	17	0.724		0.265		0.429		2	3	4	3	12	0.924		0.632		0.821	
29_1_4_110	MW-19	Appendix IV	Cobalt	mg/L	6%	4	5	4	4	17	0.253		0.361		0.217		4	5	3	4	16	0.448		0.581		0.428	
29_1_4_113	MW-19	Appendix IV	Fluoride (App IV)	mg/L	0%	4	5	4	4	17	0.095		0.136		0.133		4	5	4	4	17	0.095		0.136		0.133	

(Table continues on next page)

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

Table 7: Seasonality Tests *(continued)*

						Full								Without Non-Detects							
						Sample Size					p-Value			Sample Size					p-Value		
ID	Well	Constituent Type	Constituent	Unit	% NDs	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA
29_1_4_115	MW-19	Appendix IV	Lead	mg/L	100%	4	5	4	4	17	0.698	0.520	0.733	NA	NA	NA	NA	NA	NA	NA	NA
29_1_4_116	MW-19	Appendix IV	Lithium	mg/L	0%	4	5	4	4	17	0.817	0.904	0.868	4	5	4	4	17	0.817	0.904	0.868
29_1_4_117	MW-19	Appendix IV	Mercury	ng/L	94%	4	5	4	4	17	0.779	0.810	0.812	0	0	1	0	1	NA	NA	NA
29_1_4_118	MW-19	Appendix IV	Molybdenum	mg/L	0%	4	5	4	4	17	0.400	0.671	0.638	4	5	4	4	17	0.400	0.671	0.638
29_1_4_121	MW-19	Appendix IV	Radium 226 and 228	pCi/L	47%	4	5	4	4	17	0.775	0.872	0.828	3	4	2	0	9	0.801	0.814	0.833
29_1_4_122	MW-19	Appendix IV	Selenium	mg/L	65%	4	5	4	4	17	0.151	0.409	0.257	2	1	1	2	6	0.210	0.622	0.463
29_1_4_125	MW-19	Appendix IV	Thallium	mg/L	94%	4	5	4	4	17	0.930	0.860	0.898	0	0	0	1	1	NA	NA	NA
29_1_5_111	MW-19	Part 115	Copper	mg/L	76%	4	5	4	4	17	0.683	0.469	0.475	0	1	2	1	4	0.259	0.229	0.182
29_1_5_114	MW-19	Part 115	Iron	mg/L	0%	4	5	4	4	17	0.207	0.465	0.534	4	5	4	4	17	0.207	0.465	0.534
29_1_5_119	MW-19	Part 115	Nickel	mg/L	6%	4	5	4	4	17	0.773	0.542	0.669	3	5	4	4	16	0.814	0.571	0.656
29_1_5_123	MW-19	Part 115	Silver	mg/L	100%	4	5	4	4	17	0.213	0.218	0.218	NA	NA	NA	NA	NA	NA	NA	NA
29_1_5_128	MW-19	Part 115	Vanadium	mg/L	82%	4	5	4	4	17	0.404	0.414	0.439	0	1	1	1	3	0.368	NA	NA
29_1_5_129	MW-19	Part 115	Zinc	mg/L	59%	4	5	4	4	17	0.441	0.400	0.458	1	2	1	3	7	0.400	0.851	0.907
30_1_3_105	MW-20	Appendix III	Boron	mg/L	0%	4	5	4	4	17	0.006 **	0.000 ***	0.000 ***	4	5	4	4	17	0.006 **	0.000 ***	0.000 ***
30_1_3_107	MW-20	Appendix III	Calcium	mg/L	0%	4	5	4	4	17	0.446	0.393	0.350	4	5	4	4	17	0.446	0.393	0.350
30_1_3_108	MW-20	Appendix III	Chloride (as Cl)	mg/L	0%	4	5	4	4	17	0.495	0.530	0.690	4	5	4	4	17	0.495	0.530	0.690
30_1_3_112	MW-20	Appendix III	Fluoride	mg/L	0%	4	5	4	4	17	0.939	0.901	0.994	4	5	4	4	17	0.939	0.901	0.994
30_1_3_120	MW-20	Appendix III	pH (field)	su	0%	4	5	4	4	17	0.137	0.074	0.076	4	5	4	4	17	0.137	0.074	0.076
30_1_3_124	MW-20	Appendix III	Sulfate (as SO4)	mg/L	0%	4	5	4	4	17	0.049 *	0.039 *	0.015 *	4	5	4	4	17	0.049 *	0.039 *	0.015 *
30_1_3_126	MW-20	Appendix III	Total Dissolved Solids	mg/L	0%	4	5	4	4	17	0.244	0.238	0.315	4	5	4	4	17	0.244	0.238	0.315
30_1_4_101	MW-20	Appendix IV	Antimony	mg/L	35%	4	5	4	4	17	0.532	0.362	0.296	3	2	3	3	11	0.567	0.488	0.413
30_1_4_102	MW-20	Appendix IV	Arsenic	mg/L	0%	4	5	4	4	17	0.006 **	0.000 ***	0.000 ***	4	5	4	4	17	0.006 **	0.000 ***	0.000 ***
30_1_4_103	MW-20	Appendix IV	Barium	mg/L	0%	4	5	4	4	17	0.021 *	0.020 *	0.014 *	4	5	4	4	17	0.021 *	0.020 *	0.014 *
30_1_4_104	MW-20	Appendix IV	Beryllium	mg/L	94%	4	5	4	4	17	0.355	0.383	0.383	1	0	0	0	1	NA	NA	NA
30_1_4_106	MW-20	Appendix IV	Cadmium	mg/L	94%	4	5	4	4	17	0.444	0.399	0.448	0	0	0	1	1	NA	NA	NA
30_1_4_109	MW-20	Appendix IV	Chromium, Total	mg/L	53%	4	5	4	4	17	0.520	0.357	0.380	2	3	1	2	8	0.418	0.458	0.448
30_1_4_110	MW-20	Appendix IV	Cobalt	mg/L	0%	4	5	4	4	17	0.838	0.849	0.871	4	5	4	4	17	0.838	0.849	0.871
30_1_4_113	MW-20	Appendix IV	Fluoride (App IV)	mg/L	0%	4	5	4	4	17	0.939	0.901	0.994	4	5	4	4	17	0.939	0.901	0.994
30_1_4_115	MW-20	Appendix IV	Lead	mg/L	0%	4	5	4	4	17	0.137	0.345	0.244	4	5	4	4	17	0.137	0.345	0.244
30_1_4_116	MW-20	Appendix IV	Lithium	mg/L	0%	4	5	4	4	17	0.067	0.032 *	0.044 *	4	5	4	4	17	0.067	0.032 *	0.044 *
30_1_4_117	MW-20	Appendix IV	Mercury	ng/L	82%	4	5	4	4	17	0.768	0.809	0.787	0	1	1	1	3	0.368	NA	NA
30_1_4_118	MW-20	Appendix IV	Molybdenum	mg/L	0%	4	5	4	4	17	0.115	0.097	0.072	4	5	4	4	17	0.115	0.097	0.072
30_1_4_121	MW-20	Appendix IV	Radium 226 and 228	pCi/L	50%	3	5	4	4	16	0.550	0.329	0.397	1	3	2	2	8	0.881	0.741	0.803
30_1_4_122	MW-20	Appendix IV	Selenium	mg/L	59%	4	5	4	4	17	0.192	0.301	0.231	1	2	2	2	7	0.321	0.587	0.525
30_1_4_125	MW-20	Appendix IV	Thallium	mg/L	94%	4	5	4	4	17	0.355	0.383	0.383	1	0	0	0	1	NA	NA	NA
30_1_5_111	MW-20	Part 115	Copper	mg/L	12%	4	5	4	4	17	0.069	0.228	0.099	3	4	4	4	15	0.160	0.333	0.211
30_1_5_114	MW-20	Part 115	Iron	mg/L	0%	4	5	4	4	17	0.342	0.593	0.694	4	5	4	4	17	0.342	0.593	0.694
30_1_5_119	MW-20	Part 115	Nickel	mg/L	0%	4	5	4	4	17	0.802	0.480	0.562	4	5	4	4	17	0.802	0.480	0.562
30_1_5_123	MW-20	Part 115	Silver	mg/L	100%	4	5	4	4	17	NA	0.383	0.383	NA	NA	NA	NA	NA	NA	NA	NA

(Table continues on next page)

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

Table 7: Seasonality Tests *(continued)*

						Full											Without Non-Detects										
						Sample Size					p-Value						Sample Size					p-Value					
ID	Well	Constituent Type	Constituent	Unit	% NDs	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis		ANOVA		Log ANOVA		Winter	Spring	Summer	Fall	Total	Kruskal-Wallis		ANOVA		Log ANOVA	
30_1_5_128	MW-20	Part 115	Vanadium	mg/L	100%	4	5	4	4	17	0.494		0.534		0.534		NA	NA	NA	NA	NA	NA		NA		NA	
30_1_5_129	MW-20	Part 115	Zinc	mg/L	0%	4	5	4	4	17	0.173		0.058		0.068		4	5	4	4	17	0.173		0.058		0.068	
40_1_3_105	MW-30	Appendix III	Boron	mg/L	0%	4	5	4	4	17	0.791		0.794		0.828		4	5	4	4	17	0.791		0.794		0.828	
40_1_3_107	MW-30	Appendix III	Calcium	mg/L	0%	4	5	4	4	17	0.336		0.216		0.202		4	5	4	4	17	0.336		0.216		0.202	
40_1_3_108	MW-30	Appendix III	Chloride (as Cl)	mg/L	0%	4	5	4	4	17	0.685		0.977		0.872		4	5	4	4	17	0.685		0.977		0.872	
40_1_3_112	MW-30	Appendix III	Fluoride	mg/L	0%	4	5	4	4	17	0.816		0.822		0.721		4	5	4	4	17	0.816		0.822		0.721	
40_1_3_120	MW-30	Appendix III	pH (field)	su	0%	4	5	4	4	17	0.472		0.294		0.292		4	5	4	4	17	0.472		0.294		0.292	
40_1_3_124	MW-30	Appendix III	Sulfate (as SO4)	mg/L	0%	4	5	4	4	17	0.024	*	0.000	***	0.001	***	4	5	4	4	17	0.024	*	0.000	***	0.001	***
40_1_3_126	MW-30	Appendix III	Total Dissolved Solids	mg/L	0%	4	5	4	4	17	0.430		0.805		0.776		4	5	4	4	17	0.430		0.805		0.776	
40_1_4_101	MW-30	Appendix IV	Antimony	mg/L	82%	4	5	4	4	17	0.872		0.840		0.893		1	1	0	1	3	0.368		NA		NA	
40_1_4_102	MW-30	Appendix IV	Arsenic	mg/L	12%	4	5	4	4	17	0.345		0.497		0.463		3	4	4	4	15	0.556		0.602		0.669	
40_1_4_103	MW-30	Appendix IV	Barium	mg/L	0%	4	5	4	4	17	0.023	*	0.006	**	0.007	**	4	5	4	4	17	0.023	*	0.006	**	0.007	**
40_1_4_104	MW-30	Appendix IV	Beryllium	mg/L	76%	4	5	4	4	17	0.013	*	0.013	*	0.006	**	2	0	1	1	4	0.861		0.923		0.949	
40_1_4_106	MW-30	Appendix IV	Cadmium	mg/L	94%	4	5	4	4	17	0.594		0.382		0.632		0	0	0	1	1	NA		NA		NA	
40_1_4_109	MW-30	Appendix IV	Chromium, Total	mg/L	0%	4	5	4	4	17	0.059		0.054		0.052		4	5	4	4	17	0.059		0.054		0.052	
40_1_4_110	MW-30	Appendix IV	Cobalt	mg/L	0%	4	5	4	4	17	0.069		0.310		0.105		4	5	4	4	17	0.069		0.310		0.105	
40_1_4_113	MW-30	Appendix IV	Fluoride (App IV)	mg/L	0%	4	5	4	4	17	0.816		0.822		0.721		4	5	4	4	17	0.816		0.822		0.721	
40_1_4_115	MW-30	Appendix IV	Lead	mg/L	88%	4	5	4	4	17	0.988		0.378		0.783		0	0	0	2	2	NA		NA		NA	
40_1_4_116	MW-30	Appendix IV	Lithium	mg/L	0%	4	5	4	4	17	0.634		0.540		0.547		4	5	4	4	17	0.634		0.540		0.547	
40_1_4_117	MW-30	Appendix IV	Mercury	ng/L	94%	4	5	4	4	17	0.781		0.771		0.821		0	1	0	0	1	NA		NA		NA	
40_1_4_118	MW-30	Appendix IV	Molybdenum	mg/L	18%	4	5	4	4	17	0.425		0.558		0.575		3	4	4	3	14	0.778		0.464		0.635	
40_1_4_121	MW-30	Appendix IV	Radium 226 and 228	pCi/L	53%	4	5	4	4	17	0.227		0.186		0.173		3	1	4	0	8	0.213		0.168		0.162	
40_1_4_122	MW-30	Appendix IV	Selenium	mg/L	41%	4	5	4	4	17	0.033	*	0.231		0.040	*	1	2	4	3	10	0.224		0.512		0.282	
40_1_4_125	MW-30	Appendix IV	Thallium	mg/L	100%	4	5	4	4	17	0.181		0.180		0.180		NA	NA	NA	NA	NA	NA		NA		NA	
40_1_5_111	MW-30	Part 115	Copper	mg/L	65%	4	5	4	4	17	0.037	*	0.385		0.207		2	2	0	2	6	0.156		0.441		0.275	
40_1_5_114	MW-30	Part 115	Iron	mg/L	0%	4	5	4	4	17	0.016	*	0.075		0.007	**	4	5	4	4	17	0.016	*	0.075		0.007	**
40_1_5_119	MW-30	Part 115	Nickel	mg/L	18%	4	5	4	4	17	0.198		0.370		0.242		3	5	4	2	14	0.439		0.321		0.311	
40_1_5_123	MW-30	Part 115	Silver	mg/L	94%	4	5	4	4	17	0.126		0.071		0.095		0	0	0	1	1	NA		NA		NA	
40_1_5_128	MW-30	Part 115	Vanadium	mg/L	88%	4	5	4	4	17	0.165		0.424		0.363		0	0	1	1	2	0.317		NA		NA	
40_1_5_129	MW-30	Part 115	Zinc	mg/L	59%	4	5	4	4	17	0.122		0.416		0.265		1	2	1	3	7	0.206		0.016	*	0.129	
41_1_3_105	MW-31	Appendix III	Boron	mg/L	0%	5	5	4	3	17	0.009	**	0.002	**	0.001	**	5	5	4	3	17	0.009	**	0.002	**	0.001	**
41_1_3_107	MW-31	Appendix III	Calcium	mg/L	0%	5	5	4	3	17	0.066		0.036	*	0.039	*	5	5	4	3	17	0.066		0.036	*	0.039	*
41_1_3_108	MW-31	Appendix III	Chloride (as Cl)	mg/L	0%	5	5	4	3	17	0.028	*	0.182		0.128		5	5	4	3	17	0.028	*	0.182		0.128	
41_1_3_112	MW-31	Appendix III	Fluoride	mg/L	0%	5	5	4	3	17	0.293		0.235		0.229		5	5	4	3	17	0.293		0.235		0.229	
41_1_3_120	MW-31	Appendix III	pH (field)	su	0%	5	5	4	3	17	0.964		0.995		0.995		5	5	4	3	17	0.964		0.995		0.995	
41_1_3_124	MW-31	Appendix III	Sulfate (as SO4)	mg/L	0%	5	5	4	3	17	0.014	*	0.001	**	0.001	***	5	5	4	3	17	0.014	*	0.001	**	0.001	***
41_1_3_126	MW-31	Appendix III	Total Dissolved Solids	mg/L	0%	5	5	4	3	17	0.147		0.297		0.263		5	5	4	3	17	0.147		0.297		0.263	
41_1_4_101	MW-31	Appendix IV	Antimony	mg/L	41%	5	5	4	3	17	0.209		0.413		0.293		3	2	3	2	10	0.514		0.648		0.505	
41_1_4_102	MW-31	Appendix IV	Arsenic	mg/L	0%	5	5	4	3	17	0.143		0.118		0.130		5	5	4	3	17	0.143		0.118		0.130	

(Table continues on next page)

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

Table 7: Seasonality Tests *(continued)*

						Full											Without Non-Detects										
						Sample Size					p-Value						Sample Size					p-Value					
ID	Well	Constituent Type	Constituent	Unit	% NDs	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis		ANOVA		Log ANOVA		Winter	Spring	Summer	Fall	Total	Kruskal-Wallis		ANOVA		Log ANOVA	
41_1_4_103	MW-31	Appendix IV	Barium	mg/L	0%	5	5	4	3	17	0.020	*	0.013	*	0.008	**	5	5	4	3	17	0.020	*	0.013	*	0.008	**
41_1_4_104	MW-31	Appendix IV	Beryllium	mg/L	88%	5	5	4	3	17	0.415		0.207		0.210		1	0	0	1	2	0.317		NA		NA	
41_1_4_106	MW-31	Appendix IV	Cadmium	mg/L	94%	5	5	4	3	17	0.446		0.232		0.203		1	0	0	0	1	NA		NA		NA	
41_1_4_109	MW-31	Appendix IV	Chromium, Total	mg/L	0%	5	5	4	3	17	0.141		0.022	*	0.041	*	5	5	4	3	17	0.141		0.022	*	0.041	*
41_1_4_110	MW-31	Appendix IV	Cobalt	mg/L	18%	5	5	4	3	17	0.623		0.356		0.487		4	3	4	3	14	0.688		0.480		0.542	
41_1_4_113	MW-31	Appendix IV	Fluoride (App IV)	mg/L	0%	5	5	4	3	17	0.293		0.235		0.229		5	5	4	3	17	0.293		0.235		0.229	
41_1_4_115	MW-31	Appendix IV	Lead	mg/L	76%	5	5	4	3	17	0.981		0.945		0.996		0	1	2	1	4	0.223		0.000	***	0.000	***
41_1_4_116	MW-31	Appendix IV	Lithium	mg/L	0%	5	5	4	3	17	0.138		0.105		0.137		5	5	4	3	17	0.138		0.105		0.137	
41_1_4_117	MW-31	Appendix IV	Mercury	ng/L	82%	5	5	4	3	17	0.661		0.692		0.711		0	1	1	1	3	0.368		NA		NA	
41_1_4_118	MW-31	Appendix IV	Molybdenum	mg/L	0%	5	5	4	3	17	0.159		0.385		0.208		5	5	4	3	17	0.159		0.385		0.208	
41_1_4_121	MW-31	Appendix IV	Radium 226 and 228	pCi/L	41%	5	5	4	3	17	0.961		0.884		0.934		3	3	4	0	10	0.943		0.923		0.963	
41_1_4_122	MW-31	Appendix IV	Selenium	mg/L	35%	5	5	4	3	17	0.603		0.399		0.424		1	3	4	3	11	0.205		0.000	***	0.005	**
41_1_4_125	MW-31	Appendix IV	Thallium	mg/L	94%	5	5	4	3	17	0.494		0.534		0.534		1	0	0	0	1	NA		NA		NA	
41_1_5_111	MW-31	Part 115	Copper	mg/L	59%	5	5	4	3	17	0.390		0.189		0.194		1	2	2	2	7	0.408		0.608		0.589	
41_1_5_114	MW-31	Part 115	Iron	mg/L	0%	5	5	4	3	17	0.419		0.274		0.497		5	5	4	3	17	0.419		0.274		0.497	
41_1_5_119	MW-31	Part 115	Nickel	mg/L	59%	5	5	4	3	17	0.424		0.466		0.488		2	1	2	2	7	0.482		0.702		0.832	
41_1_5_123	MW-31	Part 115	Silver	mg/L	100%	5	5	4	3	17	NA		0.534		0.534		NA	NA	NA	NA	NA	NA		NA		NA	
41_1_5_128	MW-31	Part 115	Vanadium	mg/L	71%	5	5	4	3	17	0.915		0.385		0.380		0	1	2	2	5	0.497		0.532		0.528	
41_1_5_129	MW-31	Part 115	Zinc	mg/L	53%	5	5	4	3	17	0.746		0.637		0.689		2	3	1	2	8	0.510		0.504		0.539	
42_1_3_105	MW-32	Appendix III	Boron	mg/L	0%	4	5	4	4	17	0.006	**	0.000	***	0.000	***	4	5	4	4	17	0.006	**	0.000	***	0.000	***
42_1_3_107	MW-32	Appendix III	Calcium	mg/L	0%	4	5	4	4	17	0.022	*	0.010	*	0.006	**	4	5	4	4	17	0.022	*	0.010	*	0.006	**
42_1_3_108	MW-32	Appendix III	Chloride (as Cl)	mg/L	0%	4	5	4	4	17	0.328		0.289		0.301		4	5	4	4	17	0.328		0.289		0.301	
42_1_3_112	MW-32	Appendix III	Fluoride	mg/L	0%	4	5	4	4	17	0.578		0.503		0.573		4	5	4	4	17	0.578		0.503		0.573	
42_1_3_120	MW-32	Appendix III	pH (field)	su	0%	4	5	4	4	17	0.508		0.457		0.459		4	5	4	4	17	0.508		0.457		0.459	
42_1_3_124	MW-32	Appendix III	Sulfate (as SO4)	mg/L	0%	4	5	4	4	17	0.008	**	0.000	***	0.003	**	4	5	4	4	17	0.008	**	0.000	***	0.003	**
42_1_3_126	MW-32	Appendix III	Total Dissolved Solids	mg/L	0%	4	5	4	4	17	0.014	*	0.002	**	0.001	**	4	5	4	4	17	0.014	*	0.002	**	0.001	**
42_1_4_101	MW-32	Appendix IV	Antimony	mg/L	76%	4	5	4	4	17	0.780		0.569		0.958		1	2	0	1	4	0.259		0.091		0.249	
42_1_4_102	MW-32	Appendix IV	Arsenic	mg/L	0%	4	5	4	4	17	0.116		0.511		0.602		4	5	4	4	17	0.116		0.511		0.602	
42_1_4_103	MW-32	Appendix IV	Barium	mg/L	0%	4	5	4	4	17	0.116		0.107		0.283		4	5	4	4	17	0.116		0.107		0.283	
42_1_4_104	MW-32	Appendix IV	Beryllium	mg/L	94%	4	5	4	4	17	0.355		0.383		0.383		1	0	0	0	1	NA		NA		NA	
42_1_4_106	MW-32	Appendix IV	Cadmium	mg/L	94%	4	5	4	4	17	0.719		0.801		0.815		1	0	0	0	1	NA		NA		NA	
42_1_4_109	MW-32	Appendix IV	Chromium, Total	mg/L	0%	4	5	4	4	17	0.106		0.241		0.114		4	5	4	4	17	0.106		0.241		0.114	
42_1_4_110	MW-32	Appendix IV	Cobalt	mg/L	0%	4	5	4	4	17	0.084		0.511		0.382		4	5	4	4	17	0.084		0.511		0.382	
42_1_4_113	MW-32	Appendix IV	Fluoride (App IV)	mg/L	0%	4	5	4	4	17	0.578		0.503		0.573		4	5	4	4	17	0.578		0.503		0.573	
42_1_4_115	MW-32	Appendix IV	Lead	mg/L	71%	4	5	4	4	17	0.836		0.778		0.784		1	1	2	1	5	0.362		0.717		0.703	
42_1_4_116	MW-32	Appendix IV	Lithium	mg/L	0%	4	5	4	4	17	0.004	**	0.000	***	0.000	***	4	5	4	4	17	0.004	**	0.000	***	0.000	***
42_1_4_117	MW-32	Appendix IV	Mercury	ng/L	82%	4	5	4	4	17	0.837		0.569		0.882		0	1	1	1	3	0.368		NA		NA	
42_1_4_118	MW-32	Appendix IV	Molybdenum	mg/L	0%	4	5	4	4	17	0.668		0.754		0.848		4	5	4	4	17	0.668		0.754		0.848	
42_1_4_121	MW-32	Appendix IV	Radium 226 and 228	pCi/L	53%	4	5	4	4	17	0.076		0.106		0.087		1	2	2	3	8	0.120		0.010	*	0.006	**

(Table continues on next page)

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

Table 7: Seasonality Tests *(continued)*

						Full								Without Non-Detects							
						Sample Size					p-Value			Sample Size					p-Value		
ID	Well	Constituent Type	Constituent	Unit	% NDs	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA
42_1_4_122	MW-32	Appendix IV	Selenium	mg/L	76%	4	5	4	4	17	0.142	0.234	0.130	1	1	0	2	4	0.407	0.037 *	0.129
42_1_4_125	MW-32	Appendix IV	Thallium	mg/L	100%	4	5	4	4	17	NA	0.383	0.383	NA	NA	NA	NA	NA	NA	NA	NA
42_1_5_111	MW-32	Part 115	Copper	mg/L	59%	4	5	4	4	17	0.317	0.390	0.461	2	1	2	2	7	0.375	0.612	0.675
42_1_5_114	MW-32	Part 115	Iron	mg/L	0%	4	5	4	4	17	0.249	0.261	0.234	4	5	4	4	17	0.249	0.261	0.234
42_1_5_119	MW-32	Part 115	Nickel	mg/L	0%	4	5	4	4	17	0.533	0.366	0.337	4	5	4	4	17	0.533	0.366	0.337
42_1_5_123	MW-32	Part 115	Silver	mg/L	100%	4	5	4	4	17	NA	0.383	0.383	NA	NA	NA	NA	NA	NA	NA	NA
42_1_5_128	MW-32	Part 115	Vanadium	mg/L	100%	4	5	4	4	17	0.494	0.534	0.534	NA	NA	NA	NA	NA	NA	NA	NA
42_1_5_129	MW-32	Part 115	Zinc	mg/L	0%	4	5	4	4	17	0.484	0.494	0.455	4	5	4	4	17	0.484	0.494	0.455

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

Table 8: Trend Tests: Lognormal MLE and MK

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Type	Method	Slope	p-value	Trend
11_2_3_105	MW-01R	Appendix III	Boron	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000352	0.176	↔
11_2_3_107	MW-01R	Appendix III	Calcium	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000351	0.098	↔
11_2_3_108	MW-01R	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.0000259	0.930	↔
11_2_3_112	MW-01R	Appendix III	Fluoride	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000300	0.200	↔
11_2_3_120	MW-01R	Appendix III	pH (field)	su	17	0	0%	Nonparametric	MK	-0.00000700	0.868	↔
11_2_3_124	MW-01R	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.00112	0.168	↔
11_2_3_126	MW-01R	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	Parametric	Lognormal MLE	0.0000415	0.234	↔
11_2_4_102	MW-01R	Appendix IV	Arsenic	mg/L	17	0	0%	Nonparametric	MK	0	0.525	↔
11_2_4_103	MW-01R	Appendix IV	Barium	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000736	0.000	↑
11_2_4_104	MW-01R	Appendix IV	Beryllium	mg/L	17	2	12%	Parametric	Lognormal MLE	-0.000337	0.456	↔
11_2_4_109	MW-01R	Appendix IV	Chromium, Total	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000234	0.613	↔
11_2_4_110	MW-01R	Appendix IV	Cobalt	mg/L	17	0	0%	Nonparametric	MK	-0.0000000822	0.740	↔
11_2_4_113	MW-01R	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000300	0.200	↔
11_2_4_115	MW-01R	Appendix IV	Lead	mg/L	17	2	12%	Parametric	Lognormal MLE	-0.000226	0.634	↔
11_2_4_116	MW-01R	Appendix IV	Lithium	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000255	0.335	↔
11_2_4_118	MW-01R	Appendix IV	Molybdenum	mg/L	17	2	12%	Parametric	Lognormal MLE	-0.000880	0.106	↔
11_2_4_122	MW-01R	Appendix IV	Selenium	mg/L	17	0	0%	Parametric	Lognormal MLE	0.0000861	0.734	↔
11_2_5_111	MW-01R	Part 115	Copper	mg/L	17	6	35%	Parametric	Lognormal MLE	0.000563	0.332	↔
11_2_5_114	MW-01R	Part 115	Iron	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.00217	0.000	↓
11_2_5_119	MW-01R	Part 115	Nickel	mg/L	17	0	0%	Nonparametric	MK	0.000000369	0.563	↔
11_2_5_128	MW-01R	Part 115	Vanadium	mg/L	17	2	12%	Parametric	Lognormal MLE	0.00132	0.001	↑
11_2_5_129	MW-01R	Part 115	Zinc	mg/L	17	3	18%	Nonparametric	MK	0	0.441	↔
12_2_3_105	MW-02	Appendix III	Boron	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000232	0.167	↔
12_2_3_107	MW-02	Appendix III	Calcium	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000109	0.047	↔
12_2_3_108	MW-02	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	Nonparametric	MK	0.0119	0.035	↔
12_2_3_112	MW-02	Appendix III	Fluoride	mg/L	17	0	0%	Nonparametric	MK	0.00359	0.000	↑
12_2_3_120	MW-02	Appendix III	pH (field)	su	17	0	0%	Parametric	Lognormal MLE	-0.0000101	0.298	↔
12_2_3_126	MW-02	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000227	0.000	↑
12_2_4_101	MW-02	Appendix IV	Antimony	mg/L	17	3	18%	Parametric	Lognormal MLE	-0.0000261	0.934	↔
12_2_4_102	MW-02	Appendix IV	Arsenic	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000362	0.461	↔
12_2_4_103	MW-02	Appendix IV	Barium	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000149	0.278	↔
12_2_4_104	MW-02	Appendix IV	Beryllium	mg/L	17	1	6%	Parametric	Lognormal MLE	-0.000409	0.299	↔
12_2_4_109	MW-02	Appendix IV	Chromium, Total	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000205	0.805	↔
12_2_4_110	MW-02	Appendix IV	Cobalt	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000380	0.516	↔
12_2_4_113	MW-02	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	Nonparametric	MK	0.00359	0.000	↑
12_2_4_115	MW-02	Appendix IV	Lead	mg/L	17	1	6%	Parametric	Lognormal MLE	0.000207	0.762	↔
12_2_4_116	MW-02	Appendix IV	Lithium	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000269	0.046	↔
12_2_4_118	MW-02	Appendix IV	Molybdenum	mg/L	17	0	0%	Parametric	Lognormal MLE	0.0000935	0.742	↔
12_2_4_121	MW-02	Appendix IV	Radium 226 and 228	pCi/L	16	5	31%	Parametric	Lognormal MLE	-0.000267	0.509	↔
12_2_4_122	MW-02	Appendix IV	Selenium	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000564	0.015	↔
12_2_5_111	MW-02	Part 115	Copper	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000383	0.408	↔
12_2_5_114	MW-02	Part 115	Iron	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000155	0.156	↔
12_2_5_119	MW-02	Part 115	Nickel	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000386	0.522	↔

(Table continues on next page)

Table 8: Trend Tests: Lognormal MLE and MK *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Type	Method	Slope	p-value	Trend
12_2_5_128	MW-02	Part 115	Vanadium	mg/L	17	1	6%	Parametric	Lognormal MLE	0.000589	0.194	↔
12_2_5_129	MW-02	Part 115	Zinc	mg/L	17	0	0%	Nonparametric	MK	-0.000000602	0.741	↔
13_2_3_105	MW-03	Appendix III	Boron	mg/L	17	0	0%	Parametric	Lognormal MLE	0.0000120	0.827	↔
13_2_3_107	MW-03	Appendix III	Calcium	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000111	0.078	↔
13_2_3_108	MW-03	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000706	0.000	↓
13_2_3_112	MW-03	Appendix III	Fluoride	mg/L	17	0	0%	Nonparametric	MK	0.000135	0.046	↔
13_2_3_120	MW-03	Appendix III	pH (field)	su	17	0	0%	Parametric	Lognormal MLE	0.000000469	0.958	↔
13_2_3_124	MW-03	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.00139	0.014	↔
13_2_3_126	MW-03	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	Nonparametric	MK	-0.607	0.002	↓
13_2_4_102	MW-03	Appendix IV	Arsenic	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.0000292	0.894	↔
13_2_4_103	MW-03	Appendix IV	Barium	mg/L	17	0	0%	Parametric	Lognormal MLE	0.0000715	0.730	↔
13_2_4_109	MW-03	Appendix IV	Chromium, Total	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000295	0.067	↔
13_2_4_110	MW-03	Appendix IV	Cobalt	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000158	0.560	↔
13_2_4_113	MW-03	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	Nonparametric	MK	0.000135	0.046	↔
13_2_4_116	MW-03	Appendix IV	Lithium	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000438	0.000	↓
13_2_4_121	MW-03	Appendix IV	Radium 226 and 228	pCi/L	16	2	12%	Parametric	Lognormal MLE	-0.000733	0.003	↓
13_2_4_122	MW-03	Appendix IV	Selenium	mg/L	17	3	18%	Parametric	Lognormal MLE	0.000371	0.168	↔
13_2_5_114	MW-03	Part 115	Iron	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.00238	0.000	↓
13_2_5_119	MW-03	Part 115	Nickel	mg/L	17	1	6%	Nonparametric	MK	-0.000000539	0.200	↔
14_2_3_105	MW-04	Appendix III	Boron	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000118	0.181	↔
14_2_3_107	MW-04	Appendix III	Calcium	mg/L	17	0	0%	Parametric	Lognormal MLE	0.0000825	0.461	↔
14_2_3_108	MW-04	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.00158	0.000	↓
14_2_3_112	MW-04	Appendix III	Fluoride	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000300	0.035	↔
14_2_3_120	MW-04	Appendix III	pH (field)	su	17	0	0%	Nonparametric	MK	-0.000154	0.063	↔
14_2_3_124	MW-04	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	Parametric	Lognormal MLE	0.00142	0.130	↔
14_2_3_126	MW-04	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.0000250	0.801	↔
14_2_4_102	MW-04	Appendix IV	Arsenic	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000477	0.061	↔
14_2_4_103	MW-04	Appendix IV	Barium	mg/L	17	0	0%	Nonparametric	MK	-0.0000255	0.398	↔
14_2_4_109	MW-04	Appendix IV	Chromium, Total	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000530	0.053	↔
14_2_4_110	MW-04	Appendix IV	Cobalt	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000260	0.590	↔
14_2_4_113	MW-04	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000300	0.035	↔
14_2_4_116	MW-04	Appendix IV	Lithium	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000188	0.199	↔
14_2_4_121	MW-04	Appendix IV	Radium 226 and 228	pCi/L	17	6	35%	Parametric	Lognormal MLE	-0.000911	0.002	↓
14_2_4_122	MW-04	Appendix IV	Selenium	mg/L	17	5	29%	Parametric	Lognormal MLE	0.00101	0.030	↔
14_2_5_114	MW-04	Part 115	Iron	mg/L	17	0	0%	Nonparametric	MK	-0.00216	0.057	↔
14_2_5_119	MW-04	Part 115	Nickel	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.0000461	0.920	↔
16_1_3_105	MW-06	Appendix III	Boron	mg/L	17	0	0%	Parametric	Lognormal MLE	0.0000169	0.898	↔
16_1_3_107	MW-06	Appendix III	Calcium	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000180	0.030	↔
16_1_3_108	MW-06	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000797	0.053	↔
16_1_3_112	MW-06	Appendix III	Fluoride	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000182	0.074	↔
16_1_3_120	MW-06	Appendix III	pH (field)	su	17	0	0%	Nonparametric	MK	0.000124	0.160	↔
16_1_3_124	MW-06	Appendix III	Sulfate (as SO4)	mg/L	17	2	12%	Parametric	Lognormal MLE	-0.000132	0.887	↔
16_1_3_126	MW-06	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	Nonparametric	MK	0	0.117	↔

(Table continues on next page)

Table 8: Trend Tests: Lognormal MLE and MK *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Type	Method	Slope	p-value	Trend
16_1_4_102	MW-06	Appendix IV	Arsenic	mg/L	17	0	0%	Parametric	Lognormal MLE	0.0000719	0.672	↔
16_1_4_103	MW-06	Appendix IV	Barium	mg/L	17	0	0%	Parametric	Lognormal MLE	0.0000402	0.623	↔
16_1_4_109	MW-06	Appendix IV	Chromium, Total	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000474	0.008	↓
16_1_4_110	MW-06	Appendix IV	Cobalt	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000475	0.001	↓
16_1_4_113	MW-06	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000182	0.074	↔
16_1_4_116	MW-06	Appendix IV	Lithium	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000265	0.066	↔
16_1_4_121	MW-06	Appendix IV	Radium 226 and 228	pCi/L	17	3	18%	Parametric	Lognormal MLE	0.000167	0.554	↔
16_1_4_122	MW-06	Appendix IV	Selenium	mg/L	17	5	29%	Nonparametric	MK	0	0.895	↔
16_1_5_114	MW-06	Part 115	Iron	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000930	0.000	↓
16_1_5_119	MW-06	Part 115	Nickel	mg/L	17	6	35%	Parametric	Lognormal MLE	-0.000141	0.537	↔
16_1_5_129	MW-06	Part 115	Zinc	mg/L	17	2	12%	Nonparametric	MK	0	0.967	↔
17_1_3_105	MW-07	Appendix III	Boron	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000106	0.101	↔
17_1_3_107	MW-07	Appendix III	Calcium	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000110	0.038	↔
17_1_3_108	MW-07	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	Nonparametric	MK	0.00203	0.057	↔
17_1_3_112	MW-07	Appendix III	Fluoride	mg/L	17	4	24%	Parametric	Lognormal MLE	0.000195	0.578	↔
17_1_3_120	MW-07	Appendix III	pH (field)	su	17	0	0%	Nonparametric	MK	0	1.000	↔
17_1_3_124	MW-07	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000259	0.220	↔
17_1_3_126	MW-07	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000210	0.003	↑
17_1_4_102	MW-07	Appendix IV	Arsenic	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.0000916	0.453	↔
17_1_4_103	MW-07	Appendix IV	Barium	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000255	0.000	↑
17_1_4_109	MW-07	Appendix IV	Chromium, Total	mg/L	17	0	0%	Parametric	Lognormal MLE	0.0000734	0.642	↔
17_1_4_110	MW-07	Appendix IV	Cobalt	mg/L	17	0	0%	Parametric	Lognormal MLE	0.0000681	0.422	↔
17_1_4_113	MW-07	Appendix IV	Fluoride (App IV)	mg/L	17	4	24%	Parametric	Lognormal MLE	0.000195	0.578	↔
17_1_4_116	MW-07	Appendix IV	Lithium	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.0000839	0.635	↔
17_1_4_121	MW-07	Appendix IV	Radium 226 and 228	pCi/L	17	2	12%	Parametric	Lognormal MLE	-0.000179	0.457	↔
17_1_5_114	MW-07	Part 115	Iron	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000242	0.002	↑
18_1_3_105	MW-08	Appendix III	Boron	mg/L	17	0	0%	Parametric	Lognormal MLE	0.0000532	0.828	↔
18_1_3_107	MW-08	Appendix III	Calcium	mg/L	17	0	0%	Nonparametric	MK	-0.0199	0.081	↔
18_1_3_108	MW-08	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	Nonparametric	MK	0.0246	0.010	↔
18_1_3_112	MW-08	Appendix III	Fluoride	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000176	0.425	↔
18_1_3_120	MW-08	Appendix III	pH (field)	su	17	0	0%	Nonparametric	MK	-0.0000310	0.773	↔
18_1_3_124	MW-08	Appendix III	Sulfate (as SO4)	mg/L	17	4	24%	Parametric	Lognormal MLE	0.00146	0.326	↔
18_1_3_126	MW-08	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000197	0.018	↔
18_1_4_102	MW-08	Appendix IV	Arsenic	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000655	0.068	↔
18_1_4_103	MW-08	Appendix IV	Barium	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000102	0.420	↔
18_1_4_109	MW-08	Appendix IV	Chromium, Total	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000721	0.000	↓
18_1_4_110	MW-08	Appendix IV	Cobalt	mg/L	17	0	0%	Parametric	Lognormal MLE	0.0000460	0.854	↔
18_1_4_113	MW-08	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000176	0.425	↔
18_1_4_116	MW-08	Appendix IV	Lithium	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000397	0.007	↓
18_1_4_118	MW-08	Appendix IV	Molybdenum	mg/L	17	1	6%	Parametric	Lognormal MLE	-0.000662	0.253	↔
18_1_4_121	MW-08	Appendix IV	Radium 226 and 228	pCi/L	17	4	24%	Parametric	Lognormal MLE	-0.000574	0.038	↔
18_1_4_122	MW-08	Appendix IV	Selenium	mg/L	17	6	35%	Parametric	Lognormal MLE	-0.0000520	0.867	↔
18_1_5_111	MW-08	Part 115	Copper	mg/L	17	6	35%	Parametric	Lognormal MLE	0.000624	0.172	↔

(Table continues on next page)

Table 8: Trend Tests: Lognormal MLE and MK *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Type	Method	Slope	p-value	Trend
18_1_5_114	MW-08	Part 115	Iron	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000620	0.000	↓
18_1_5_119	MW-08	Part 115	Nickel	mg/L	17	0	0%	Nonparametric	MK	0.00000291	0.018	↔
18_1_5_129	MW-08	Part 115	Zinc	mg/L	17	3	18%	Nonparametric	MK	0.000000301	0.649	↔
19_2_3_105	MW-09	Appendix III	Boron	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.0000390	0.555	↔
19_2_3_107	MW-09	Appendix III	Calcium	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000462	0.000	↑
19_2_3_108	MW-09	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	Parametric	Lognormal MLE	0.00141	0.000	↑
19_2_3_112	MW-09	Appendix III	Fluoride	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.0000382	0.603	↔
19_2_3_120	MW-09	Appendix III	pH (field)	su	17	0	0%	Parametric	Lognormal MLE	-0.0000386	0.000	↓
19_2_3_124	MW-09	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	Parametric	Lognormal MLE	0.00127	0.001	↑
19_2_3_126	MW-09	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000545	0.000	↑
19_2_4_102	MW-09	Appendix IV	Arsenic	mg/L	17	0	0%	Nonparametric	MK	0	0.900	↔
19_2_4_103	MW-09	Appendix IV	Barium	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.00147	0.000	↓
19_2_4_109	MW-09	Appendix IV	Chromium, Total	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000123	0.384	↔
19_2_4_110	MW-09	Appendix IV	Cobalt	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000523	0.069	↔
19_2_4_113	MW-09	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.0000382	0.603	↔
19_2_4_116	MW-09	Appendix IV	Lithium	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.0000269	0.651	↔
19_2_4_118	MW-09	Appendix IV	Molybdenum	mg/L	17	0	0%	Parametric	Lognormal MLE	0.0000656	0.764	↔
19_2_4_122	MW-09	Appendix IV	Selenium	mg/L	17	2	12%	Parametric	Lognormal MLE	0.000678	0.001	↑
19_2_5_114	MW-09	Part 115	Iron	mg/L	17	0	0%	Parametric	Lognormal MLE	0.0000541	0.714	↔
19_2_5_119	MW-09	Part 115	Nickel	mg/L	17	0	0%	Nonparametric	MK	0.00000580	0.015	↔
19_2_5_129	MW-09	Part 115	Zinc	mg/L	17	8	47%	Parametric	Lognormal MLE	0.00171	0.209	↔
20_3_3_105	MW-10	Appendix III	Boron	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000680	0.061	↔
20_3_3_107	MW-10	Appendix III	Calcium	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000215	0.345	↔
20_3_3_108	MW-10	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	Parametric	Lognormal MLE	0.00132	0.000	↑
20_3_3_112	MW-10	Appendix III	Fluoride	mg/L	17	0	0%	Parametric	Lognormal MLE	0.0000312	0.889	↔
20_3_3_120	MW-10	Appendix III	pH (field)	su	17	0	0%	Parametric	Lognormal MLE	-0.0000466	0.138	↔
20_3_3_124	MW-10	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000219	0.623	↔
20_3_3_126	MW-10	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000246	0.068	↔
20_3_4_102	MW-10	Appendix IV	Arsenic	mg/L	17	0	0%	Parametric	Lognormal MLE	0.00125	0.000	↑
20_3_4_103	MW-10	Appendix IV	Barium	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000399	0.133	↔
20_3_4_104	MW-10	Appendix IV	Beryllium	mg/L	17	7	41%	Parametric	Lognormal MLE	0.000177	0.711	↔
20_3_4_109	MW-10	Appendix IV	Chromium, Total	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000170	0.635	↔
20_3_4_110	MW-10	Appendix IV	Cobalt	mg/L	17	1	6%	Parametric	Lognormal MLE	-0.000383	0.446	↔
20_3_4_113	MW-10	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	Parametric	Lognormal MLE	0.0000312	0.889	↔
20_3_4_116	MW-10	Appendix IV	Lithium	mg/L	17	0	0%	Parametric	Lognormal MLE	0.0000161	0.927	↔
20_3_4_118	MW-10	Appendix IV	Molybdenum	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.00104	0.004	↓
20_3_4_122	MW-10	Appendix IV	Selenium	mg/L	17	1	6%	Parametric	Lognormal MLE	-0.0000712	0.760	↔
20_3_5_114	MW-10	Part 115	Iron	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.0000530	0.843	↔
20_3_5_119	MW-10	Part 115	Nickel	mg/L	17	7	41%	Nonparametric	MK	0	0.864	↔
20_3_5_129	MW-10	Part 115	Zinc	mg/L	17	7	41%	Nonparametric	MK	0	0.858	↔
21_2_3_105	MW-11	Appendix III	Boron	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000436	0.302	↔
21_2_3_107	MW-11	Appendix III	Calcium	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000106	0.594	↔
21_2_3_108	MW-11	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000106	0.570	↔

(Table continues on next page)

Table 8: Trend Tests: Lognormal MLE and MK *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Type	Method	Slope	p-value	Trend
21_2_3_112	MW-11	Appendix III	Fluoride	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000453	0.236	↔
21_2_3_120	MW-11	Appendix III	pH (field)	su	17	0	0%	Parametric	Lognormal MLE	-0.0000238	0.002	↓
21_2_3_124	MW-11	Appendix III	Sulfate (as SO4)	mg/L	17	6	35%	Parametric	Lognormal MLE	-0.00363	0.045	↔
21_2_3_126	MW-11	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000123	0.385	↔
21_2_4_102	MW-11	Appendix IV	Arsenic	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000484	0.122	↔
21_2_4_103	MW-11	Appendix IV	Barium	mg/L	17	0	0%	Parametric	Lognormal MLE	0.0000197	0.921	↔
21_2_4_109	MW-11	Appendix IV	Chromium, Total	mg/L	17	0	0%	Nonparametric	MK	0.000000477	0.283	↔
21_2_4_110	MW-11	Appendix IV	Cobalt	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000106	0.833	↔
21_2_4_113	MW-11	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000453	0.236	↔
21_2_4_115	MW-11	Appendix IV	Lead	mg/L	17	3	18%	Parametric	Lognormal MLE	0.00121	0.397	↔
21_2_4_116	MW-11	Appendix IV	Lithium	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000449	0.484	↔
21_2_4_118	MW-11	Appendix IV	Molybdenum	mg/L	17	2	12%	Parametric	Lognormal MLE	0.000605	0.212	↔
21_2_4_121	MW-11	Appendix IV	Radium 226 and 228	pCi/L	16	5	31%	Parametric	Lognormal MLE	-0.000765	0.013	↔
21_2_4_122	MW-11	Appendix IV	Selenium	mg/L	17	3	18%	Parametric	Lognormal MLE	0.000202	0.542	↔
21_2_5_111	MW-11	Part 115	Copper	mg/L	17	4	24%	Nonparametric	MK	0	0.834	↔
21_2_5_114	MW-11	Part 115	Iron	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000382	0.085	↔
21_2_5_119	MW-11	Part 115	Nickel	mg/L	17	0	0%	Nonparametric	MK	0.000000561	0.244	↔
21_2_5_129	MW-11	Part 115	Zinc	mg/L	17	4	24%	Parametric	Lognormal MLE	0.00108	0.430	↔
22_2_3_105	MW-12	Appendix III	Boron	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000490	0.012	↔
22_2_3_107	MW-12	Appendix III	Calcium	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.00000754	0.971	↔
22_2_3_108	MW-12	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000129	0.411	↔
22_2_3_112	MW-12	Appendix III	Fluoride	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000201	0.316	↔
22_2_3_120	MW-12	Appendix III	pH (field)	su	17	0	0%	Parametric	Lognormal MLE	-0.0000270	0.349	↔
22_2_3_124	MW-12	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000985	0.000	↓
22_2_3_126	MW-12	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000147	0.559	↔
22_2_4_101	MW-12	Appendix IV	Antimony	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000703	0.042	↔
22_2_4_102	MW-12	Appendix IV	Arsenic	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000510	0.066	↔
22_2_4_103	MW-12	Appendix IV	Barium	mg/L	17	0	0%	Parametric	Lognormal MLE	0.00134	0.000	↑
22_2_4_106	MW-12	Appendix IV	Cadmium	mg/L	17	0	0%	Parametric	Lognormal MLE	0.00145	0.001	↑
22_2_4_109	MW-12	Appendix IV	Chromium, Total	mg/L	17	6	35%	Parametric	Lognormal MLE	-0.000187	0.767	↔
22_2_4_110	MW-12	Appendix IV	Cobalt	mg/L	17	5	29%	Parametric	Lognormal MLE	0.00204	0.014	↔
22_2_4_113	MW-12	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000201	0.316	↔
22_2_4_115	MW-12	Appendix IV	Lead	mg/L	17	6	35%	Parametric	Lognormal MLE	0.000986	0.018	↔
22_2_4_116	MW-12	Appendix IV	Lithium	mg/L	17	0	0%	Parametric	Lognormal MLE	0.0000486	0.865	↔
22_2_4_118	MW-12	Appendix IV	Molybdenum	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000165	0.438	↔
22_2_4_122	MW-12	Appendix IV	Selenium	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000800	0.276	↔
22_2_5_111	MW-12	Part 115	Copper	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000702	0.006	↑
22_2_5_119	MW-12	Part 115	Nickel	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000596	0.031	↔
22_2_5_128	MW-12	Part 115	Vanadium	mg/L	17	6	35%	Parametric	Lognormal MLE	0.000526	0.213	↔
22_2_5_129	MW-12	Part 115	Zinc	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000806	0.014	↔
28_1_3_105	MW-18	Appendix III	Boron	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000811	0.000	↑
28_1_3_107	MW-18	Appendix III	Calcium	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000235	0.068	↔
28_1_3_108	MW-18	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	Parametric	Lognormal MLE	0.0000975	0.463	↔

(Table continues on next page)

Table 8: Trend Tests: Lognormal MLE and MK *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Type	Method	Slope	p-value	Trend
28_1_3_112	MW-18	Appendix III	Fluoride	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000121	0.329	↔
28_1_3_120	MW-18	Appendix III	pH (field)	su	17	0	0%	Parametric	Lognormal MLE	0.0000233	0.000	↑
28_1_3_124	MW-18	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000307	0.122	↔
28_1_3_126	MW-18	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000297	0.004	↓
28_1_4_101	MW-18	Appendix IV	Antimony	mg/L	17	3	18%	Parametric	Lognormal MLE	0.000514	0.232	↔
28_1_4_102	MW-18	Appendix IV	Arsenic	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000437	0.007	↑
28_1_4_103	MW-18	Appendix IV	Barium	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000251	0.206	↔
28_1_4_106	MW-18	Appendix IV	Cadmium	mg/L	17	7	41%	Parametric	Lognormal MLE	-0.000590	0.442	↔
28_1_4_110	MW-18	Appendix IV	Cobalt	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000988	0.000	↓
28_1_4_113	MW-18	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000121	0.329	↔
28_1_4_116	MW-18	Appendix IV	Lithium	mg/L	17	0	0%	Parametric	Lognormal MLE	0.0000581	0.723	↔
28_1_4_118	MW-18	Appendix IV	Molybdenum	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000465	0.007	↑
28_1_4_122	MW-18	Appendix IV	Selenium	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000522	0.421	↔
28_1_5_111	MW-18	Part 115	Copper	mg/L	17	0	0%	Nonparametric	MK	0.000000332	0.074	↔
28_1_5_114	MW-18	Part 115	Iron	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000255	0.148	↔
28_1_5_119	MW-18	Part 115	Nickel	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000426	0.066	↔
28_1_5_129	MW-18	Part 115	Zinc	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000258	0.533	↔
29_1_3_105	MW-19	Appendix III	Boron	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000255	0.089	↔
29_1_3_107	MW-19	Appendix III	Calcium	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000191	0.005	↓
29_1_3_108	MW-19	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000654	0.000	↓
29_1_3_112	MW-19	Appendix III	Fluoride	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000163	0.078	↔
29_1_3_120	MW-19	Appendix III	pH (field)	su	17	0	0%	Parametric	Lognormal MLE	-0.0000219	0.146	↔
29_1_3_124	MW-19	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000171	0.180	↔
29_1_3_126	MW-19	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000252	0.000	↓
29_1_4_102	MW-19	Appendix IV	Arsenic	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000477	0.046	↔
29_1_4_103	MW-19	Appendix IV	Barium	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000117	0.182	↔
29_1_4_104	MW-19	Appendix IV	Beryllium	mg/L	17	3	18%	Parametric	Lognormal MLE	0.000611	0.000	↑
29_1_4_109	MW-19	Appendix IV	Chromium, Total	mg/L	17	5	29%	Parametric	Lognormal MLE	-0.000197	0.411	↔
29_1_4_110	MW-19	Appendix IV	Cobalt	mg/L	17	1	6%	Parametric	Lognormal MLE	-0.000138	0.806	↔
29_1_4_113	MW-19	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000163	0.078	↔
29_1_4_116	MW-19	Appendix IV	Lithium	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000206	0.003	↓
29_1_4_118	MW-19	Appendix IV	Molybdenum	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000488	0.073	↔
29_1_4_121	MW-19	Appendix IV	Radium 226 and 228	pCi/L	17	8	47%	Parametric	Lognormal MLE	-0.000677	0.031	↔
29_1_5_114	MW-19	Part 115	Iron	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000128	0.458	↔
29_1_5_119	MW-19	Part 115	Nickel	mg/L	17	1	6%	Parametric	Lognormal MLE	0.00129	0.005	↑
30_1_3_105	MW-20	Appendix III	Boron	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000257	0.054	↔
30_1_3_107	MW-20	Appendix III	Calcium	mg/L	17	0	0%	Parametric	Lognormal MLE	0.0000624	0.691	↔
30_1_3_108	MW-20	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000896	0.000	↓
30_1_3_112	MW-20	Appendix III	Fluoride	mg/L	17	0	0%	Nonparametric	MK	0.0000186	0.649	↔
30_1_3_120	MW-20	Appendix III	pH (field)	su	17	0	0%	Parametric	Lognormal MLE	0.00000184	0.855	↔
30_1_3_124	MW-20	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000345	0.391	↔
30_1_3_126	MW-20	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000169	0.031	↔
30_1_4_101	MW-20	Appendix IV	Antimony	mg/L	17	6	35%	Parametric	Lognormal MLE	0.000730	0.089	↔

(Table continues on next page)

Table 8: Trend Tests: Lognormal MLE and MK *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Type	Method	Slope	p-value	Trend
30_1_4_102	MW-20	Appendix IV	Arsenic	mg/L	17	0	0%	Parametric	Lognormal MLE	0.0000740	0.597	↔
30_1_4_103	MW-20	Appendix IV	Barium	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000126	0.501	↔
30_1_4_110	MW-20	Appendix IV	Cobalt	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000367	0.021	↔
30_1_4_113	MW-20	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	Nonparametric	MK	0.0000186	0.649	↔
30_1_4_115	MW-20	Appendix IV	Lead	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000269	0.349	↔
30_1_4_116	MW-20	Appendix IV	Lithium	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000364	0.049	↔
30_1_4_118	MW-20	Appendix IV	Molybdenum	mg/L	17	0	0%	Parametric	Lognormal MLE	0.0000709	0.502	↔
30_1_5_111	MW-20	Part 115	Copper	mg/L	17	2	12%	Parametric	Lognormal MLE	0.000858	0.079	↔
30_1_5_114	MW-20	Part 115	Iron	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000321	0.000	↓
30_1_5_119	MW-20	Part 115	Nickel	mg/L	17	0	0%	Nonparametric	MK	-0.00000284	0.138	↔
30_1_5_129	MW-20	Part 115	Zinc	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000122	0.765	↔
40_1_3_105	MW-30	Appendix III	Boron	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000253	0.039	↔
40_1_3_107	MW-30	Appendix III	Calcium	mg/L	17	0	0%	Nonparametric	MK	0.0189	0.836	↔
40_1_3_108	MW-30	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	Nonparametric	MK	0.300	0.318	↔
40_1_3_112	MW-30	Appendix III	Fluoride	mg/L	17	0	0%	Nonparametric	MK	0	0.830	↔
40_1_3_120	MW-30	Appendix III	pH (field)	su	17	0	0%	Nonparametric	MK	-0.000163	0.108	↔
40_1_3_124	MW-30	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000173	0.255	↔
40_1_3_126	MW-30	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	Nonparametric	MK	0.976	0.055	↔
40_1_4_103	MW-30	Appendix IV	Barium	mg/L	17	0	0%	Parametric	Lognormal MLE	0.0000268	0.893	↔
40_1_4_109	MW-30	Appendix IV	Chromium, Total	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.0000709	0.829	↔
40_1_4_110	MW-30	Appendix IV	Cobalt	mg/L	17	0	0%	Nonparametric	MK	-0.000000187	0.482	↔
40_1_4_113	MW-30	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	Nonparametric	MK	0	0.830	↔
40_1_4_116	MW-30	Appendix IV	Lithium	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.0000125	0.947	↔
40_1_5_114	MW-30	Part 115	Iron	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000490	0.351	↔
41_1_3_105	MW-31	Appendix III	Boron	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000338	0.000	↑
41_1_3_107	MW-31	Appendix III	Calcium	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000115	0.193	↔
41_1_3_108	MW-31	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	Nonparametric	MK	0.00603	0.354	↔
41_1_3_112	MW-31	Appendix III	Fluoride	mg/L	17	0	0%	Nonparametric	MK	-0.000833	0.004	↓
41_1_3_120	MW-31	Appendix III	pH (field)	su	17	0	0%	Parametric	Lognormal MLE	0.0000127	0.208	↔
41_1_3_124	MW-31	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.00140	0.000	↓
41_1_3_126	MW-31	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.00000739	0.901	↔
41_1_4_102	MW-31	Appendix IV	Arsenic	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.0000810	0.632	↔
41_1_4_103	MW-31	Appendix IV	Barium	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000396	0.073	↔
41_1_4_109	MW-31	Appendix IV	Chromium, Total	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000319	0.058	↔
41_1_4_110	MW-31	Appendix IV	Cobalt	mg/L	17	3	18%	Parametric	Lognormal MLE	-0.000233	0.446	↔
41_1_4_113	MW-31	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	Nonparametric	MK	-0.000833	0.004	↓
41_1_4_116	MW-31	Appendix IV	Lithium	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000103	0.396	↔
41_1_4_118	MW-31	Appendix IV	Molybdenum	mg/L	17	0	0%	Nonparametric	MK	-0.0000000977	0.615	↔
41_1_4_121	MW-31	Appendix IV	Radium 226 and 228	pCi/L	17	7	41%	Parametric	Lognormal MLE	-0.000432	0.111	↔
41_1_5_114	MW-31	Part 115	Iron	mg/L	17	0	0%	Nonparametric	MK	-0.00142	0.012	↔
42_1_3_105	MW-32	Appendix III	Boron	mg/L	17	0	0%	Nonparametric	MK	0.00133	0.097	↔
42_1_3_107	MW-32	Appendix III	Calcium	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000178	0.042	↔
42_1_3_108	MW-32	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000124	0.110	↔

(Table continues on next page)

Table 8: Trend Tests: Lognormal MLE and MK *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Type	Method	Slope	p-value	Trend
42_1_3_112	MW-32	Appendix III	Fluoride	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.0000936	0.229	↔
42_1_3_120	MW-32	Appendix III	pH (field)	su	17	0	0%	Parametric	Lognormal MLE	-0.00000127	0.846	↔
42_1_3_124	MW-32	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.00229	0.001	↓
42_1_3_126	MW-32	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000149	0.058	↔
42_1_4_102	MW-32	Appendix IV	Arsenic	mg/L	17	0	0%	Nonparametric	MK	-0.0000000183	0.934	↔
42_1_4_103	MW-32	Appendix IV	Barium	mg/L	17	0	0%	Parametric	Lognormal MLE	0.00102	0.023	↔
42_1_4_109	MW-32	Appendix IV	Chromium, Total	mg/L	17	0	0%	Nonparametric	MK	-0.000000120	0.117	↔
42_1_4_110	MW-32	Appendix IV	Cobalt	mg/L	17	0	0%	Parametric	Lognormal MLE	0.0000463	0.893	↔
42_1_4_113	MW-32	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.0000936	0.229	↔
42_1_4_116	MW-32	Appendix IV	Lithium	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000153	0.351	↔
42_1_4_118	MW-32	Appendix IV	Molybdenum	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000768	0.000	↓
42_1_5_114	MW-32	Part 115	Iron	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000111	0.408	↔
42_1_5_119	MW-32	Part 115	Nickel	mg/L	17	0	0%	Nonparametric	MK	-0.000000414	0.047	↔
42_1_5_129	MW-32	Part 115	Zinc	mg/L	17	0	0%	Nonparametric	MK	0.00000155	0.386	↔

Table 9: Trend Tests: Piecewise Linear-Linear

								Line 1			Line 2				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Slope	p-Value	Trend	Slope	p-Value	Trend	Break 1	R-Squared
11_2_3_105	MW-01R	Appendix III	Boron	mg/L	17	0	0%	0.020181	0.568	↔	0.28571	0.709	↔	2025-05-26	0.185
11_2_3_107	MW-01R	Appendix III	Calcium	mg/L	17	0	0%	0.07359	0.703	↔	-0.19553	0.229	↔	2024-03-09	0.184
11_2_3_108	MW-01R	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	0.11863	0.662	↔	-0.031968	0.598	↔	2023-07-01	0.037
11_2_3_112	MW-01R	Appendix III	Fluoride	mg/L	17	0	0%	-0.0066919	0.560	↔	0.011648	0.059	↔	2024-02-12	0.299
11_2_3_120	MW-01R	Appendix III	pH (field)	su	17	0	0%	0.0051548	0.340	↔	< 0.0001	0.933	↔	2023-04-09	0.226
11_2_3_124	MW-01R	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	0.016505	0.983	↔	-0.64409	0.314	↔	2024-04-09	0.162
11_2_3_126	MW-01R	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	0.052838	0.664	↔	1.4286	0.591	↔	2025-07-29	0.112
11_2_4_101	MW-01R	Appendix IV	Antimony	mg/L	17	3	18%	< 0.0001	0.739	↔	< 0.0001	0.113	↔	2023-02-06	0.190
11_2_4_102	MW-01R	Appendix IV	Arsenic	mg/L	17	0	0%	< 0.0001	0.262	↔	< 0.0001	0.275	↔	2024-02-13	0.171
11_2_4_103	MW-01R	Appendix IV	Barium	mg/L	17	0	0%	0.0001615	0.116	↔	0.0037143	0.098	↔	2025-07-13	0.661
11_2_4_104	MW-01R	Appendix IV	Beryllium	mg/L	17	2	12%	< 0.0001	0.026	↔	< 0.0001	0.065	↔	2024-12-23	0.453
11_2_4_106	MW-01R	Appendix IV	Cadmium	mg/L	17	13	76%	< 0.0001	0.361	↔	< 0.0001	0.108	↔	2023-05-22	0.237
11_2_4_109	MW-01R	Appendix IV	Chromium, Total	mg/L	17	0	0%	< 0.0001	0.259	↔	< 0.0001	0.125	↔	2024-02-12	0.258
11_2_4_110	MW-01R	Appendix IV	Cobalt	mg/L	17	0	0%	< 0.0001	0.458	↔	< 0.0001	0.257	↔	2023-06-27	0.137
11_2_4_113	MW-01R	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	-0.0066919	0.560	↔	0.011648	0.059	↔	2024-02-12	0.299
11_2_4_115	MW-01R	Appendix IV	Lead	mg/L	17	2	12%	< 0.0001	0.466	↔	< 0.0001	0.322	↔	2023-06-28	0.115
11_2_4_116	MW-01R	Appendix IV	Lithium	mg/L	17	0	0%	-0.004887	0.884	↔	0.00068542	0.309	↔	2023-02-07	0.081
11_2_4_117	MW-01R	Appendix IV	Mercury	ng/L	17	15	88%	< 0.0001	1.000	↔	-0.52089	0.003	↓	2024-11-02	0.849
11_2_4_118	MW-01R	Appendix IV	Molybdenum	mg/L	17	2	12%	< 0.0001	0.469	↔	< 0.0001	0.099	↔	2024-02-12	0.228
11_2_4_121	MW-01R	Appendix IV	Radium 226 and 228	pCi/L	17	11	65%	0.0049143	0.609	↔	< 0.0001	0.878	↔	2023-01-28	0.111
11_2_4_122	MW-01R	Appendix IV	Selenium	mg/L	17	0	0%	< 0.0001	0.342	↔	< 0.0001	0.208	↔	2024-02-12	0.192
11_2_4_125	MW-01R	Appendix IV	Thallium	mg/L	17	17	100%	< 0.0001	0.207	↔	< 0.0001	0.104	↔	2023-05-09	0.291

(Table continues on next page)

Table 9: Trend Tests: Piecewise Linear-Linear *(continued)*

								Line 1			Line 2				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Slope	p-Value	Trend	Slope	p-Value	Trend	Break 1	R-Squared
11_2_5_111	MW-01R	Part 115	Copper	mg/L	17	6	35%	< 0.0001	0.243	↔	< 0.0001	0.216	↔	2023-06-27	0.237
11_2_5_114	MW-01R	Part 115	Iron	mg/L	17	0	0%	-0.0028846	0.624	↔	-0.00055669	0.040	↔	2023-03-13	0.456
11_2_5_119	MW-01R	Part 115	Nickel	mg/L	17	0	0%	< 0.0001	0.321	↔	< 0.0001	0.157	↔	2024-02-12	0.215
11_2_5_123	MW-01R	Part 115	Silver	mg/L	17	17	100%	< 0.0001	0.597	↔	< 0.0001	0.062	↔	2023-02-07	0.274
11_2_5_128	MW-01R	Part 115	Vanadium	mg/L	17	2	12%	< 0.0001	0.130	↔	< 0.0001	0.765	↔	2023-06-27	0.466
11_2_5_129	MW-01R	Part 115	Zinc	mg/L	17	3	18%	< 0.0001	0.652	↔	< 0.0001	0.206	↔	2023-10-24	0.224
12_2_3_105	MW-02	Appendix III	Boron	mg/L	17	0	0%	0.078429	0.000	↑	-0.87143	0.016	↔	2025-07-03	0.753
12_2_3_107	MW-02	Appendix III	Calcium	mg/L	17	0	0%	0.00073177	0.986	↔	-0.044233	0.218	↔	2024-04-09	0.231
12_2_3_108	MW-02	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	0.03812	0.253	↔	0.0079064	0.911	↔	2024-07-17	0.218
12_2_3_112	MW-02	Appendix III	Fluoride	mg/L	17	0	0%	-0.024205	0.708	↔	0.0058133	0.001	↑	2023-02-07	0.612
12_2_3_120	MW-02	Appendix III	pH (field)	su	17	0	0%	0.0030136	0.128	↔	-0.00014754	0.087	↔	2023-02-08	0.338
12_2_3_124	MW-02	Appendix III	Sulfate (as SO4)	mg/L	17	10	59%	0.0039005	0.128	↔	-0.0011061	0.730	↔	2024-04-10	0.247
12_2_3_126	MW-02	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	0.60138	0.011	↔	-0.5117	0.727	↔	2025-02-27	0.488
12_2_4_101	MW-02	Appendix IV	Antimony	mg/L	17	3	18%	< 0.0001	0.345	↔	< 0.0001	0.090	↔	2023-04-17	0.272
12_2_4_102	MW-02	Appendix IV	Arsenic	mg/L	17	0	0%	< 0.0001	0.293	↔	< 0.0001	0.662	↔	2024-02-12	0.254
12_2_4_103	MW-02	Appendix IV	Barium	mg/L	17	0	0%	-0.00017859	0.184	↔	0.00048288	0.370	↔	2025-01-18	0.184
12_2_4_104	MW-02	Appendix IV	Beryllium	mg/L	17	1	6%	< 0.0001	0.208	↔	< 0.0001	0.735	↔	2024-04-26	0.183
12_2_4_106	MW-02	Appendix IV	Cadmium	mg/L	17	12	71%	< 0.0001	0.330	↔	< 0.0001	0.117	↔	2023-05-22	0.242
12_2_4_109	MW-02	Appendix IV	Chromium, Total	mg/L	17	0	0%	< 0.0001	0.644	↔	< 0.0001	0.294	↔	2024-02-12	0.101
12_2_4_110	MW-02	Appendix IV	Cobalt	mg/L	17	0	0%	< 0.0001	0.615	↔	< 0.0001	0.211	↔	2024-02-13	0.206
12_2_4_113	MW-02	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	-0.024205	0.708	↔	0.0058133	0.001	↑	2023-02-07	0.612
12_2_4_115	MW-02	Appendix IV	Lead	mg/L	17	1	6%	< 0.0001	0.182	↔	< 0.0001	0.261	↔	2025-04-18	0.206
12_2_4_116	MW-02	Appendix IV	Lithium	mg/L	17	0	0%	-0.00090394	0.826	↔	0.00050593	0.103	↔	2023-04-15	0.218
12_2_4_117	MW-02	Appendix IV	Mercury	ng/L	17	14	82%	< 0.0001	1.000	↔	-0.52189	0.002	↓	2024-11-06	0.855
12_2_4_118	MW-02	Appendix IV	Molybdenum	mg/L	17	0	0%	< 0.0001	0.501	↔	< 0.0001	0.179	↔	2024-02-08	0.162
12_2_4_121	MW-02	Appendix IV	Radium 226 and 228	pCi/L	16	5	31%	-0.0041271	0.073	↔	0.0011652	0.296	↔	2024-01-15	0.460
12_2_4_122	MW-02	Appendix IV	Selenium	mg/L	17	0	0%	< 0.0001	0.040	↔	< 0.0001	0.789	↔	2025-02-25	0.364
12_2_5_111	MW-02	Part 115	Copper	mg/L	17	0	0%	< 0.0001	0.111	↔	< 0.0001	0.332	↔	2025-04-18	0.241
12_2_5_114	MW-02	Part 115	Iron	mg/L	17	0	0%	0.036034	0.655	↔	-0.0052442	0.146	↔	2023-03-13	0.168
12_2_5_119	MW-02	Part 115	Nickel	mg/L	17	0	0%	< 0.0001	0.479	↔	< 0.0001	0.061	↔	2024-02-12	0.285
12_2_5_123	MW-02	Part 115	Silver	mg/L	17	17	100%	< 0.0001	0.592	↔	< 0.0001	0.045	↔	2023-02-07	0.298
12_2_5_128	MW-02	Part 115	Vanadium	mg/L	17	1	6%	< 0.0001	0.293	↔	< 0.0001	0.816	↔	2023-06-27	0.215
13_2_3_105	MW-03	Appendix III	Boron	mg/L	17	0	0%	0.00076924	0.607	↔	-0.00024971	0.605	↔	2023-10-23	0.053
13_2_3_107	MW-03	Appendix III	Calcium	mg/L	17	0	0%	0.16231	0.609	↔	-0.063656	0.080	↔	2023-05-12	0.246
13_2_3_108	MW-03	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	-0.24396	0.008	↓	0.014493	0.825	↔	2024-04-06	0.705
13_2_3_112	MW-03	Appendix III	Fluoride	mg/L	17	0	0%	-0.0032746	0.143	↔	0.00029596	0.216	↔	2023-05-01	0.299
13_2_3_120	MW-03	Appendix III	pH (field)	su	17	0	0%	0.00082219	0.359	↔	< 0.0001	0.354	↔	2023-05-22	0.176
13_2_3_124	MW-03	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	3.7216	0.026	↔	-0.64179	0.000	↓	2023-04-07	0.770
13_2_3_126	MW-03	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2.4609	0.220	↔	-0.74833	0.000	↓	2023-04-03	0.726
13_2_4_101	MW-03	Appendix IV	Antimony	mg/L	17	11	65%	< 0.0001	0.124	↔	< 0.0001	0.029	↔	2023-04-22	0.402
13_2_4_102	MW-03	Appendix IV	Arsenic	mg/L	17	0	0%	< 0.0001	0.276	↔	< 0.0001	0.577	↔	2025-04-21	0.236
13_2_4_103	MW-03	Appendix IV	Barium	mg/L	17	0	0%	< 0.0001	0.553	↔	0.00023764	0.632	↔	2024-12-09	0.049

(Table continues on next page)

Table 9: Trend Tests: Piecewise Linear-Linear *(continued)*

								Line 1			Line 2				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Slope	p-Value	Trend	Slope	p-Value	Trend	Break 1	R-Squared
13_2_4_104	MW-03	Appendix IV	Beryllium	mg/L	17	11	65%	< 0.0001	0.851	↔	< 0.0001	0.478	↔	2024-04-06	0.064
13_2_4_106	MW-03	Appendix IV	Cadmium	mg/L	17	16	94%	< 0.0001	0.198	↔	< 0.0001	0.185	↔	2023-05-23	0.230
13_2_4_109	MW-03	Appendix IV	Chromium, Total	mg/L	17	0	0%	< 0.0001	0.440	↔	< 0.0001	0.660	↔	2023-08-29	0.210
13_2_4_110	MW-03	Appendix IV	Cobalt	mg/L	17	0	0%	< 0.0001	0.347	↔	< 0.0001	0.221	↔	2023-08-26	0.172
13_2_4_113	MW-03	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	-0.0032746	0.143	↔	0.00029596	0.216	↔	2023-05-01	0.299
13_2_4_115	MW-03	Appendix IV	Lead	mg/L	17	16	94%	< 0.0001	0.324	↔	< 0.0001	0.502	↔	2024-10-14	0.337
13_2_4_116	MW-03	Appendix IV	Lithium	mg/L	17	0	0%	< 0.0001	0.035	↔	< 0.0001	0.949	↔	2024-03-13	0.563
13_2_4_117	MW-03	Appendix IV	Mercury	ng/L	17	14	82%	0.018158	0.741	↔	-0.50003	0.001	↓	2024-09-23	0.794
13_2_4_118	MW-03	Appendix IV	Molybdenum	mg/L	17	13	76%	< 0.0001	0.732	↔	< 0.0001	0.060	↔	2023-02-06	0.252
13_2_4_121	MW-03	Appendix IV	Radium 226 and 228	pCi/L	16	2	12%	-0.001075	0.008	↓	0.0070714	0.288	↔	2025-06-15	0.486
13_2_4_122	MW-03	Appendix IV	Selenium	mg/L	17	3	18%	< 0.0001	0.806	↔	< 0.0001	0.568	↔	2023-02-06	0.043
13_2_4_125	MW-03	Appendix IV	Thallium	mg/L	17	16	94%	< 0.0001	0.069	↔	< 0.0001	0.003	↓	2023-02-24	0.597
13_2_5_111	MW-03	Part 115	Copper	mg/L	17	8	47%	< 0.0001	0.218	↔	< 0.0001	0.268	↔	2024-04-07	0.203
13_2_5_114	MW-03	Part 115	Iron	mg/L	17	0	0%	-0.022027	0.001	↓	-0.0001056	0.902	↔	2023-06-04	0.789
13_2_5_119	MW-03	Part 115	Nickel	mg/L	17	1	6%	< 0.0001	0.164	↔	< 0.0001	0.954	↔	2023-04-23	0.311
13_2_5_123	MW-03	Part 115	Silver	mg/L	17	17	100%	< 0.0001	0.578	↔	< 0.0001	0.064	↔	2023-02-06	0.271
13_2_5_128	MW-03	Part 115	Vanadium	mg/L	17	9	53%	< 0.0001	0.781	↔	< 0.0001	0.489	↔	2023-02-06	0.117
14_2_3_105	MW-04	Appendix III	Boron	mg/L	17	0	0%	0.0010413	0.034	↔	-0.0040963	0.042	↔	2024-10-15	0.605
14_2_3_107	MW-04	Appendix III	Calcium	mg/L	17	0	0%	-0.03787	0.369	↔	2.6389	0.009	↑	2025-07-28	0.616
14_2_3_112	MW-04	Appendix III	Fluoride	mg/L	17	0	0%	0.0013513	0.333	↔	< 0.0001	0.889	↔	2023-10-23	0.278
14_2_3_120	MW-04	Appendix III	pH (field)	su	17	0	0%	-0.00012136	0.264	↔	-0.0063889	0.012	↔	2025-08-04	0.674
14_2_3_124	MW-04	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	2.866	0.257	↔	0.14308	0.421	↔	2023-04-18	0.439
14_2_3_126	MW-04	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	-0.30666	0.168	↔	3.0284	0.508	↔	2025-04-21	0.295
14_2_4_101	MW-04	Appendix IV	Antimony	mg/L	17	11	65%	< 0.0001	0.805	↔	< 0.0001	0.729	↔	2024-10-29	0.035
14_2_4_102	MW-04	Appendix IV	Arsenic	mg/L	17	0	0%	< 0.0001	0.583	↔	< 0.0001	0.072	↔	2023-05-22	0.251
14_2_4_103	MW-04	Appendix IV	Barium	mg/L	17	0	0%	-0.00093577	0.411	↔	< 0.0001	0.846	↔	2023-04-18	0.235
14_2_4_104	MW-04	Appendix IV	Beryllium	mg/L	17	15	88%	< 0.0001	0.057	↔	< 0.0001	0.246	↔	2024-07-18	0.309
14_2_4_106	MW-04	Appendix IV	Cadmium	mg/L	17	17	100%	< 0.0001	0.349	↔	< 0.0001	0.173	↔	2023-05-22	0.209
14_2_4_110	MW-04	Appendix IV	Cobalt	mg/L	17	0	0%	< 0.0001	0.010	↔	< 0.0001	0.000	↑	2025-08-05	0.911
14_2_4_113	MW-04	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	0.0013513	0.333	↔	< 0.0001	0.889	↔	2023-10-23	0.278
14_2_4_115	MW-04	Appendix IV	Lead	mg/L	17	15	88%	< 0.0001	0.635	↔	< 0.0001	0.160	↔	2023-02-06	0.181
14_2_4_116	MW-04	Appendix IV	Lithium	mg/L	17	0	0%	< 0.0001	0.520	↔	< 0.0001	0.198	↔	2023-07-11	0.166
14_2_4_117	MW-04	Appendix IV	Mercury	ng/L	17	14	82%	< 0.0001	1.000	↔	-0.53038	0.003	↓	2024-11-08	0.853
14_2_4_118	MW-04	Appendix IV	Molybdenum	mg/L	17	2	12%	< 0.0001	0.906	↔	< 0.0001	0.046	↔	2024-06-25	0.487
14_2_4_121	MW-04	Appendix IV	Radium 226 and 228	pCi/L	17	6	35%	-0.0011373	0.001	↓	0.0032484	0.015	↔	2025-02-06	0.664
14_2_4_122	MW-04	Appendix IV	Selenium	mg/L	17	5	29%	< 0.0001	0.086	↔	< 0.0001	0.761	↔	2025-04-21	0.215
14_2_4_125	MW-04	Appendix IV	Thallium	mg/L	17	17	100%	< 0.0001	0.501	↔	< 0.0001	0.399	↔	2023-04-18	0.127
14_2_5_114	MW-04	Part 115	Iron	mg/L	17	0	0%	0.0080159	0.579	↔	-0.0047088	0.009	↓	2023-05-19	0.467
14_2_5_119	MW-04	Part 115	Nickel	mg/L	17	0	0%	< 0.0001	0.449	↔	< 0.0001	0.253	↔	2023-03-13	0.196
14_2_5_123	MW-04	Part 115	Silver	mg/L	17	17	100%	< 0.0001	0.578	↔	< 0.0001	0.064	↔	2023-02-06	0.271
14_2_5_128	MW-04	Part 115	Vanadium	mg/L	17	10	59%	< 0.0001	0.001	↑	< 0.0001	0.292	↔	2024-10-15	0.651
16_1_3_105	MW-06	Appendix III	Boron	mg/L	17	0	0%	-0.005611	0.092	↔	0.0061201	0.152	↔	2024-04-07	0.315

(Table continues on next page)

Table 9: Trend Tests: Piecewise Linear-Linear *(continued)*

								Line 1			Line 2				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Slope	p-Value	Trend	Slope	p-Value	Trend	Break 1	R-Squared
16_1_3_107	MW-06	Appendix III	Calcium	mg/L	17	0	0%	0.62537	0.285	↔	-0.073478	0.007	↓	2023-03-13	0.480
16_1_3_108	MW-06	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	-0.2329	0.000	↓	0.085684	0.052	↔	2024-03-02	0.761
16_1_3_112	MW-06	Appendix III	Fluoride	mg/L	17	0	0%	-0.0030595	0.411	↔	0.00038318	0.023	↔	2023-03-13	0.372
16_1_3_120	MW-06	Appendix III	pH (field)	su	17	0	0%	0.00034818	0.123	↔	-0.002	0.671	↔	2025-07-21	0.199
16_1_3_124	MW-06	Appendix III	Sulfate (as SO4)	mg/L	17	2	12%	-0.038656	0.173	↔	0.015566	0.269	↔	2023-11-09	0.214
16_1_3_126	MW-06	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	-0.37491	0.046	↔	0.10053	0.260	↔	2023-12-06	0.431
16_1_4_101	MW-06	Appendix IV	Antimony	mg/L	17	15	88%	< 0.0001	0.423	↔	< 0.0001	0.127	↔	2023-04-17	0.221
16_1_4_103	MW-06	Appendix IV	Barium	mg/L	17	0	0%	-0.0016808	0.422	↔	0.00017687	0.238	↔	2023-04-17	0.183
16_1_4_104	MW-06	Appendix IV	Beryllium	mg/L	17	16	94%	< 0.0001	0.000	↓	< 0.0001	0.454	↔	2023-01-19	0.909
16_1_4_106	MW-06	Appendix IV	Cadmium	mg/L	17	17	100%	< 0.0001	0.225	↔	< 0.0001	0.210	↔	2023-05-23	0.209
16_1_4_109	MW-06	Appendix IV	Chromium, Total	mg/L	17	0	0%	< 0.0001	0.025	↔	< 0.0001	0.325	↔	2025-04-19	0.403
16_1_4_110	MW-06	Appendix IV	Cobalt	mg/L	17	0	0%	< 0.0001	0.033	↔	< 0.0001	0.815	↔	2024-08-06	0.454
16_1_4_113	MW-06	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	-0.0030595	0.411	↔	0.00038318	0.023	↔	2023-03-13	0.372
16_1_4_115	MW-06	Appendix IV	Lead	mg/L	17	10	59%	< 0.0001	0.120	↔	< 0.0001	0.840	↔	2024-07-23	0.271
16_1_4_116	MW-06	Appendix IV	Lithium	mg/L	17	0	0%	-0.00018527	0.020	↔	< 0.0001	0.152	↔	2024-04-06	0.534
16_1_4_117	MW-06	Appendix IV	Mercury	ng/L	17	14	82%	< 0.0001	1.000	↔	-0.51886	0.003	↓	2024-11-02	0.848
16_1_4_118	MW-06	Appendix IV	Molybdenum	mg/L	17	10	59%	< 0.0001	0.467	↔	< 0.0001	0.955	↔	2024-01-01	0.137
16_1_4_121	MW-06	Appendix IV	Radium 226 and 228	pCi/L	17	3	18%	-0.00029816	0.538	↔	0.0026292	0.195	↔	2025-02-25	0.173
16_1_4_122	MW-06	Appendix IV	Selenium	mg/L	17	5	29%	< 0.0001	0.191	↔	< 0.0001	0.258	↔	2024-02-13	0.203
16_1_4_125	MW-06	Appendix IV	Thallium	mg/L	17	17	100%	< 0.0001	0.598	↔	< 0.0001	0.090	↔	2023-04-17	0.219
16_1_5_111	MW-06	Part 115	Copper	mg/L	17	13	76%	< 0.0001	0.082	↔	< 0.0001	0.228	↔	2024-07-17	0.347
16_1_5_114	MW-06	Part 115	Iron	mg/L	17	0	0%	0.018114	0.266	↔	-0.032127	0.001	↓	2024-02-12	0.628
16_1_5_119	MW-06	Part 115	Nickel	mg/L	17	6	35%	< 0.0001	0.071	↔	< 0.0001	0.073	↔	2024-01-28	0.440
16_1_5_123	MW-06	Part 115	Silver	mg/L	17	17	100%	< 0.0001	0.589	↔	< 0.0001	0.063	↔	2023-02-05	0.272
16_1_5_129	MW-06	Part 115	Zinc	mg/L	17	2	12%	-0.00010732	0.477	↔	< 0.0001	0.369	↔	2023-10-10	0.101
17_1_3_108	MW-07	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	-0.010682	0.009	↓	0.0046356	0.000	↑	2023-06-21	0.873
17_1_3_112	MW-07	Appendix III	Fluoride	mg/L	17	4	24%	< 0.0001	0.954	↔	0.0003354	0.173	↔	2025-02-08	0.279
17_1_3_120	MW-07	Appendix III	pH (field)	su	17	0	0%	-0.0013528	0.607	↔	0.00010638	0.333	↔	2023-03-12	0.114
17_1_3_124	MW-07	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	-0.088848	0.196	↔	0.01379	0.069	↔	2023-04-18	0.308
17_1_3_126	MW-07	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	0.24817	0.060	↔	-0.011804	0.941	↔	2024-05-17	0.448
17_1_4_101	MW-07	Appendix IV	Antimony	mg/L	17	16	94%	< 0.0001	0.000	↑	< 0.0001	1.000	↔	2023-07-09	0.909
17_1_4_102	MW-07	Appendix IV	Arsenic	mg/L	17	0	0%	< 0.0001	0.304	↔	< 0.0001	0.206	↔	2024-04-18	0.228
17_1_4_103	MW-07	Appendix IV	Barium	mg/L	17	0	0%	-0.00027973	0.651	↔	0.00010676	0.001	↑	2023-03-12	0.610
17_1_4_104	MW-07	Appendix IV	Beryllium	mg/L	17	13	76%	< 0.0001	0.500	↔	< 0.0001	0.325	↔	2023-02-07	0.107
17_1_4_106	MW-07	Appendix IV	Cadmium	mg/L	17	17	100%	< 0.0001	0.000	↑	< 0.0001	1.000	↔	2023-07-30	0.850
17_1_4_109	MW-07	Appendix IV	Chromium, Total	mg/L	17	0	0%	< 0.0001	0.111	↔	< 0.0001	0.328	↔	2024-07-17	0.234
17_1_4_110	MW-07	Appendix IV	Cobalt	mg/L	17	0	0%	< 0.0001	0.280	↔	< 0.0001	0.962	↔	2023-01-17	0.262
17_1_4_113	MW-07	Appendix IV	Fluoride (App IV)	mg/L	17	4	24%	< 0.0001	0.954	↔	0.0003354	0.173	↔	2025-02-08	0.279
17_1_4_115	MW-07	Appendix IV	Lead	mg/L	17	17	100%	< 0.0001	0.000	↓	< 0.0001	1.000	↔	2023-07-30	0.850
17_1_4_116	MW-07	Appendix IV	Lithium	mg/L	17	0	0%	< 0.0001	0.355	↔	< 0.0001	0.622	↔	2024-02-13	0.102
17_1_4_117	MW-07	Appendix IV	Mercury	ng/L	17	16	94%	< 0.0001	1.000	↔	-0.52681	0.003	↓	2024-11-05	0.850
17_1_4_118	MW-07	Appendix IV	Molybdenum	mg/L	17	17	100%	< 0.0001	0.000	↓	< 0.0001	1.000	↔	2023-07-30	0.850

(Table continues on next page)

Table 9: Trend Tests: Piecewise Linear-Linear *(continued)*

								Line 1			Line 2				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Slope	p-Value	Trend	Slope	p-Value	Trend	Break 1	R-Squared
17_1_4_121	MW-07	Appendix IV	Radium 226 and 228	pCi/L	17	2	12%	-0.0005572	0.329	↔	0.0015471	0.504	↔	2025-02-25	0.121
17_1_4_122	MW-07	Appendix IV	Selenium	mg/L	17	9	53%	< 0.0001	0.067	↔	< 0.0001	0.963	↔	2023-06-26	0.531
17_1_5_111	MW-07	Part 115	Copper	mg/L	17	13	76%	< 0.0001	0.112	↔	< 0.0001	0.173	↔	2025-02-25	0.290
17_1_5_114	MW-07	Part 115	Iron	mg/L	17	0	0%	0.0054358	0.007	↑	-0.042857	0.270	↔	2025-07-30	0.487
17_1_5_119	MW-07	Part 115	Nickel	mg/L	17	14	82%	< 0.0001	0.667	↔	< 0.0001	0.000	↓	2025-03-20	0.894
17_1_5_128	MW-07	Part 115	Vanadium	mg/L	17	12	71%	< 0.0001	0.028	↔	< 0.0001	0.930	↔	2024-10-15	0.491
17_1_5_129	MW-07	Part 115	Zinc	mg/L	17	10	59%	< 0.0001	0.497	↔	< 0.0001	0.459	↔	2023-09-15	0.078
18_1_3_105	MW-08	Appendix III	Boron	mg/L	17	0	0%	-0.0016585	0.437	↔	0.016968	0.264	↔	2025-04-19	0.156
18_1_3_107	MW-08	Appendix III	Calcium	mg/L	17	0	0%	-0.089713	0.029	↔	0.031443	0.109	↔	2023-12-26	0.504
18_1_3_108	MW-08	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	0.036446	0.078	↔	0.23607	0.584	↔	2025-04-20	0.559
18_1_3_112	MW-08	Appendix III	Fluoride	mg/L	17	0	0%	0.010236	0.030	↔	-0.00013342	0.449	↔	2023-02-07	0.470
18_1_3_120	MW-08	Appendix III	pH (field)	su	17	0	0%	0.0056589	0.117	↔	-0.00016735	0.485	↔	2023-03-14	0.299
18_1_3_124	MW-08	Appendix III	Sulfate (as SO4)	mg/L	17	4	24%	-0.092959	0.339	↔	0.044277	0.051	↔	2023-07-10	0.334
18_1_3_126	MW-08	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	-0.17174	0.474	↔	0.26767	0.039	↔	2023-12-06	0.411
18_1_4_101	MW-08	Appendix IV	Antimony	mg/L	17	9	53%	< 0.0001	0.570	↔	< 0.0001	0.174	↔	2023-02-06	0.203
18_1_4_102	MW-08	Appendix IV	Arsenic	mg/L	17	0	0%	0.00044823	0.091	↔	< 0.0001	0.474	↔	2023-02-07	0.431
18_1_4_103	MW-08	Appendix IV	Barium	mg/L	17	0	0%	-0.00076954	0.291	↔	0.00036364	0.317	↔	2024-01-22	0.193
18_1_4_104	MW-08	Appendix IV	Beryllium	mg/L	17	16	94%	< 0.0001	0.075	↔	< 0.0001	0.382	↔	2025-02-26	0.260
18_1_4_106	MW-08	Appendix IV	Cadmium	mg/L	17	16	94%	< 0.0001	0.006	↑	< 0.0001	0.586	↔	2023-07-30	0.763
18_1_4_109	MW-08	Appendix IV	Chromium, Total	mg/L	17	0	0%	< 0.0001	0.284	↔	< 0.0001	0.000	↓	2023-01-25	0.688
18_1_4_110	MW-08	Appendix IV	Cobalt	mg/L	17	0	0%	< 0.0001	0.369	↔	< 0.0001	0.203	↔	2024-06-10	0.188
18_1_4_113	MW-08	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	0.010236	0.030	↔	-0.00013342	0.449	↔	2023-02-07	0.470
18_1_4_115	MW-08	Appendix IV	Lead	mg/L	17	11	65%	< 0.0001	0.248	↔	< 0.0001	0.247	↔	2024-10-15	0.184
18_1_4_116	MW-08	Appendix IV	Lithium	mg/L	17	0	0%	0.0013429	0.046	↔	< 0.0001	0.000	↓	2023-01-17	0.699
18_1_4_117	MW-08	Appendix IV	Mercury	ng/L	17	16	94%	< 0.0001	1.000	↔	-0.52273	0.003	↓	2024-11-03	0.849
18_1_4_118	MW-08	Appendix IV	Molybdenum	mg/L	17	1	6%	< 0.0001	0.870	↔	< 0.0001	0.627	↔	2025-06-11	0.118
18_1_4_121	MW-08	Appendix IV	Radium 226 and 228	pCi/L	17	4	24%	-0.0063617	0.682	↔	-0.00043112	0.172	↔	2023-02-06	0.293
18_1_4_122	MW-08	Appendix IV	Selenium	mg/L	17	6	35%	< 0.0001	0.989	↔	< 0.0001	0.399	↔	2025-02-26	0.203
18_1_4_125	MW-08	Appendix IV	Thallium	mg/L	17	16	94%	< 0.0001	0.075	↔	< 0.0001	0.382	↔	2025-02-26	0.260
18_1_5_111	MW-08	Part 115	Copper	mg/L	17	6	35%	< 0.0001	0.034	↔	< 0.0001	0.044	↔	2025-02-25	0.456
18_1_5_114	MW-08	Part 115	Iron	mg/L	17	0	0%	-0.16071	0.069	↔	-0.0060466	0.089	↔	2023-02-23	0.667
18_1_5_119	MW-08	Part 115	Nickel	mg/L	17	0	0%	< 0.0001	0.037	↔	< 0.0001	0.422	↔	2024-10-15	0.439
18_1_5_128	MW-08	Part 115	Vanadium	mg/L	17	14	82%	< 0.0001	0.057	↔	< 0.0001	0.002	↓	2025-02-26	0.775
18_1_5_129	MW-08	Part 115	Zinc	mg/L	17	3	18%	< 0.0001	0.712	↔	< 0.0001	0.578	↔	2023-08-25	0.038
19_2_3_105	MW-09	Appendix III	Boron	mg/L	17	0	0%	-0.00053747	0.330	↔	0.010294	0.403	↔	2025-07-31	0.127
19_2_3_107	MW-09	Appendix III	Calcium	mg/L	17	0	0%	1.2852	0.119	↔	0.12569	0.039	↔	2023-03-14	0.614
19_2_3_108	MW-09	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	-0.030535	0.570	↔	0.053097	0.001	↑	2023-07-24	0.730
19_2_3_112	MW-09	Appendix III	Fluoride	mg/L	17	0	0%	0.0026069	0.131	↔	-0.00050183	0.071	↔	2023-06-20	0.354
19_2_3_120	MW-09	Appendix III	pH (field)	su	17	0	0%	0.0014782	0.263	↔	-0.00035585	0.002	↓	2023-03-14	0.593
19_2_3_124	MW-09	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	3.51	0.143	↔	0.31938	0.067	↔	2023-03-31	0.614
19_2_3_126	MW-09	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	4.7268	0.101	↔	0.49613	0.022	↔	2023-04-08	0.715
19_2_4_101	MW-09	Appendix IV	Antimony	mg/L	17	12	71%	< 0.0001	0.388	↔	< 0.0001	0.105	↔	2023-04-17	0.246

(Table continues on next page)

Table 9: Trend Tests: Piecewise Linear-Linear *(continued)*

								Line 1			Line 2				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Slope	p-Value	Trend	Slope	p-Value	Trend	Break 1	R-Squared
19_2_4_102	MW-09	Appendix IV	Arsenic	mg/L	17	0	0%	< 0.0001	0.640	↔	< 0.0001	0.682	↔	2023-04-17	0.061
19_2_4_103	MW-09	Appendix IV	Barium	mg/L	17	0	0%	-0.007781	0.197	↔	-0.00012298	0.767	↔	2023-04-17	0.437
19_2_4_104	MW-09	Appendix IV	Beryllium	mg/L	17	13	76%	< 0.0001	0.113	↔	< 0.0001	0.753	↔	2025-02-25	0.224
19_2_4_106	MW-09	Appendix IV	Cadmium	mg/L	17	17	100%	< 0.0001	0.267	↔	< 0.0001	0.185	↔	2023-05-22	0.252
19_2_4_109	MW-09	Appendix IV	Chromium, Total	mg/L	17	0	0%	< 0.0001	0.357	↔	< 0.0001	0.702	↔	2023-12-18	0.146
19_2_4_110	MW-09	Appendix IV	Cobalt	mg/L	17	0	0%	< 0.0001	0.436	↔	< 0.0001	0.046	↔	2023-03-01	0.299
19_2_4_113	MW-09	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	0.0026069	0.131	↔	-0.00050183	0.071	↔	2023-06-20	0.354
19_2_4_115	MW-09	Appendix IV	Lead	mg/L	17	17	100%	< 0.0001	0.717	↔	< 0.0001	0.263	↔	2023-02-05	0.117
19_2_4_116	MW-09	Appendix IV	Lithium	mg/L	17	0	0%	< 0.0001	0.417	↔	< 0.0001	0.394	↔	2024-02-12	0.137
19_2_4_117	MW-09	Appendix IV	Mercury	ng/L	17	14	82%	4.129	0.072	↔	-1.8724	0.101	↔	2023-10-24	0.349
19_2_4_118	MW-09	Appendix IV	Molybdenum	mg/L	17	0	0%	< 0.0001	0.034	↔	< 0.0001	0.020	↔	2023-05-22	0.578
19_2_4_121	MW-09	Appendix IV	Radium 226 and 228	pCi/L	17	15	88%	0.00026814	0.513	↔	-0.00031031	0.147	↔	2024-02-12	0.182
19_2_4_122	MW-09	Appendix IV	Selenium	mg/L	17	2	12%	< 0.0001	0.003	↑	< 0.0001	0.314	↔	2025-02-25	0.539
19_2_5_111	MW-09	Part 115	Copper	mg/L	17	11	65%	< 0.0001	0.046	↔	< 0.0001	0.235	↔	2024-07-17	0.331
19_2_5_114	MW-09	Part 115	Iron	mg/L	17	0	0%	-0.0022103	0.645	↔	0.025267	0.459	↔	2025-02-27	0.118
19_2_5_119	MW-09	Part 115	Nickel	mg/L	17	0	0%	< 0.0001	0.074	↔	< 0.0001	0.572	↔	2025-03-12	0.265
19_2_5_123	MW-09	Part 115	Silver	mg/L	17	17	100%	< 0.0001	0.225	↔	< 0.0001	0.119	↔	2023-04-18	0.255
19_2_5_128	MW-09	Part 115	Vanadium	mg/L	17	15	88%	< 0.0001	1.000	↔	< 0.0001	0.772	↔	2024-01-31	0.014
20_3_3_105	MW-10	Appendix III	Boron	mg/L	17	0	0%	-0.30556	0.318	↔	0.014071	0.034	↔	2023-01-10	0.341
20_3_3_107	MW-10	Appendix III	Calcium	mg/L	17	0	0%	0.33087	0.132	↔	-0.36263	0.200	↔	2024-06-27	0.266
20_3_3_108	MW-10	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	0.34456	0.014	↔	1.1545	0.685	↔	2025-04-20	0.615
20_3_3_112	MW-10	Appendix III	Fluoride	mg/L	17	0	0%	-0.0035307	0.274	↔	0.0032577	0.434	↔	2024-04-07	0.132
20_3_3_120	MW-10	Appendix III	pH (field)	su	17	0	0%	0.0034025	0.670	↔	-0.00053786	0.118	↔	2023-03-11	0.187
20_3_3_124	MW-10	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	1.1745	0.120	↔	-1.5287	0.122	↔	2024-04-30	0.313
20_3_3_126	MW-10	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	1.5143	0.043	↔	-1.1475	0.453	↔	2024-07-17	0.332
20_3_4_101	MW-10	Appendix IV	Antimony	mg/L	17	13	76%	< 0.0001	0.375	↔	< 0.0001	0.153	↔	2023-04-27	0.195
20_3_4_102	MW-10	Appendix IV	Arsenic	mg/L	17	0	0%	< 0.0001	0.061	↔	< 0.0001	0.715	↔	2025-04-20	0.494
20_3_4_103	MW-10	Appendix IV	Barium	mg/L	17	0	0%	-0.0016814	0.296	↔	0.00026237	0.031	↔	2023-04-17	0.362
20_3_4_104	MW-10	Appendix IV	Beryllium	mg/L	17	7	41%	< 0.0001	0.580	↔	< 0.0001	0.504	↔	2025-02-17	0.058
20_3_4_106	MW-10	Appendix IV	Cadmium	mg/L	17	17	100%	< 0.0001	0.354	↔	< 0.0001	0.172	↔	2023-05-22	0.209
20_3_4_109	MW-10	Appendix IV	Chromium, Total	mg/L	17	0	0%	< 0.0001	0.505	↔	< 0.0001	0.423	↔	2024-06-13	0.084
20_3_4_110	MW-10	Appendix IV	Cobalt	mg/L	17	1	6%	< 0.0001	0.508	↔	< 0.0001	0.178	↔	2023-05-22	0.162
20_3_4_113	MW-10	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	-0.0035307	0.274	↔	0.0032577	0.434	↔	2024-04-07	0.132
20_3_4_115	MW-10	Appendix IV	Lead	mg/L	17	15	88%	< 0.0001	0.487	↔	< 0.0001	0.511	↔	2023-09-05	0.247
20_3_4_116	MW-10	Appendix IV	Lithium	mg/L	17	0	0%	0.0023628	0.658	↔	-0.00014407	0.515	↔	2023-03-13	0.077
20_3_4_117	MW-10	Appendix IV	Mercury	ng/L	17	15	88%	1.3917	0.100	↔	-1.5117	0.165	↔	2024-04-07	0.301
20_3_4_118	MW-10	Appendix IV	Molybdenum	mg/L	17	0	0%	< 0.0001	0.054	↔	< 0.0001	0.791	↔	2023-09-01	0.534
20_3_4_121	MW-10	Appendix IV	Radium 226 and 228	pCi/L	17	13	76%	-0.00027531	0.537	↔	0.000649	0.273	↔	2024-07-12	0.129
20_3_4_122	MW-10	Appendix IV	Selenium	mg/L	17	1	6%	< 0.0001	0.379	↔	< 0.0001	0.145	↔	2024-02-12	0.201
20_3_4_125	MW-10	Appendix IV	Thallium	mg/L	17	17	100%	< 0.0001	0.214	↔	< 0.0001	0.113	↔	2023-02-06	0.269
20_3_5_111	MW-10	Part 115	Copper	mg/L	17	14	82%	< 0.0001	0.625	↔	< 0.0001	0.272	↔	2023-05-23	0.121
20_3_5_114	MW-10	Part 115	Iron	mg/L	17	0	0%	0.0024587	0.123	↔	-0.023753	0.496	↔	2025-04-20	0.340

(Table continues on next page)

Table 9: Trend Tests: Piecewise Linear-Linear *(continued)*

								Line 1			Line 2				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Slope	p-Value	Trend	Slope	p-Value	Trend	Break 1	R-Squared
20_3_5_119	MW-10	Part 115	Nickel	mg/L	17	7	41%	< 0.0001	0.365	↔	< 0.0001	0.497	↔	2025-02-26	0.109
20_3_5_123	MW-10	Part 115	Silver	mg/L	17	17	100%	< 0.0001	0.579	↔	< 0.0001	0.064	↔	2023-02-05	0.270
20_3_5_128	MW-10	Part 115	Vanadium	mg/L	17	12	71%	< 0.0001	0.739	↔	< 0.0001	0.415	↔	2025-04-20	0.534
20_3_5_129	MW-10	Part 115	Zinc	mg/L	17	7	41%	< 0.0001	0.377	↔	< 0.0001	0.316	↔	2023-08-21	0.130
21_2_3_105	MW-11	Appendix III	Boron	mg/L	17	0	0%	-0.067192	0.136	↔	0.0044761	0.159	↔	2023-03-14	0.295
21_2_3_107	MW-11	Appendix III	Calcium	mg/L	17	0	0%	-0.056908	0.563	↔	0.0012616	0.997	↔	2024-10-16	0.048
21_2_3_108	MW-11	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	-0.29854	0.168	↔	0.010266	0.491	↔	2023-03-25	0.285
21_2_3_112	MW-11	Appendix III	Fluoride	mg/L	17	0	0%	-0.0063039	0.341	↔	0.00040638	0.156	↔	2023-03-12	0.276
21_2_3_120	MW-11	Appendix III	pH (field)	su	17	0	0%	0.0014461	0.411	↔	-0.00021044	0.012	↔	2023-02-08	0.430
21_2_3_124	MW-11	Appendix III	Sulfate (as SO4)	mg/L	17	6	35%	0.84604	0.476	↔	-0.11871	0.030	↔	2023-03-13	0.335
21_2_3_126	MW-11	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2.6194	0.403	↔	-0.33963	0.138	↔	2023-04-11	0.214
21_2_4_101	MW-11	Appendix IV	Antimony	mg/L	17	12	71%	< 0.0001	0.255	↔	< 0.0001	0.451	↔	2025-07-29	0.136
21_2_4_102	MW-11	Appendix IV	Arsenic	mg/L	17	0	0%	< 0.0001	0.690	↔	< 0.0001	0.083	↔	2025-07-20	0.455
21_2_4_103	MW-11	Appendix IV	Barium	mg/L	17	0	0%	-0.002957	0.229	↔	0.00016558	0.337	↔	2023-04-13	0.293
21_2_4_104	MW-11	Appendix IV	Beryllium	mg/L	17	13	76%	< 0.0001	0.213	↔	< 0.0001	0.170	↔	2024-04-06	0.233
21_2_4_106	MW-11	Appendix IV	Cadmium	mg/L	17	14	82%	< 0.0001	0.270	↔	< 0.0001	0.305	↔	2025-07-30	0.174
21_2_4_109	MW-11	Appendix IV	Chromium, Total	mg/L	17	0	0%	< 0.0001	0.186	↔	< 0.0001	0.503	↔	2023-04-19	0.222
21_2_4_110	MW-11	Appendix IV	Cobalt	mg/L	17	0	0%	< 0.0001	0.642	↔	< 0.0001	0.022	↔	2025-08-12	0.474
21_2_4_113	MW-11	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	-0.0063039	0.341	↔	0.00040638	0.156	↔	2023-03-12	0.276
21_2_4_115	MW-11	Appendix IV	Lead	mg/L	17	3	18%	< 0.0001	0.242	↔	0.00035857	0.316	↔	2025-07-02	0.242
21_2_4_116	MW-11	Appendix IV	Lithium	mg/L	17	0	0%	-0.0015579	0.481	↔	< 0.0001	0.700	↔	2023-02-02	0.217
21_2_4_117	MW-11	Appendix IV	Mercury	ng/L	17	13	76%	0.77525	0.164	↔	-0.95634	0.044	↔	2024-04-06	0.358
21_2_4_118	MW-11	Appendix IV	Molybdenum	mg/L	17	2	12%	< 0.0001	0.508	↔	< 0.0001	0.163	↔	2025-06-22	0.470
21_2_4_121	MW-11	Appendix IV	Radium 226 and 228	pCi/L	16	5	31%	-0.001093	0.070	↔	0.0014203	0.259	↔	2024-09-26	0.332
21_2_4_122	MW-11	Appendix IV	Selenium	mg/L	17	3	18%	< 0.0001	0.261	↔	< 0.0001	0.336	↔	2024-02-13	0.156
21_2_4_125	MW-11	Appendix IV	Thallium	mg/L	17	16	94%	< 0.0001	0.587	↔	< 0.0001	0.046	↔	2023-02-07	0.300
21_2_5_111	MW-11	Part 115	Copper	mg/L	17	4	24%	< 0.0001	0.203	↔	< 0.0001	0.604	↔	2023-04-20	0.216
21_2_5_114	MW-11	Part 115	Iron	mg/L	17	0	0%	-0.053941	0.204	↔	0.0038762	0.041	↔	2023-02-17	0.359
21_2_5_119	MW-11	Part 115	Nickel	mg/L	17	0	0%	< 0.0001	0.381	↔	0.00018714	0.001	↑	2025-08-07	0.734
21_2_5_123	MW-11	Part 115	Silver	mg/L	17	14	82%	< 0.0001	0.294	↔	< 0.0001	0.357	↔	2025-08-09	0.141
21_2_5_128	MW-11	Part 115	Vanadium	mg/L	17	13	76%	< 0.0001	0.152	↔	< 0.0001	0.412	↔	2024-04-07	0.193
21_2_5_129	MW-11	Part 115	Zinc	mg/L	17	4	24%	-0.00022262	0.042	↔	< 0.0001	0.069	↔	2023-08-19	0.413
22_2_3_105	MW-12	Appendix III	Boron	mg/L	17	0	0%	< 0.0001	0.408	↔	0.0025714	0.149	↔	2025-07-05	0.558
22_2_3_107	MW-12	Appendix III	Calcium	mg/L	17	0	0%	-0.017383	0.332	↔	0.42857	0.275	↔	2025-07-11	0.238
22_2_3_108	MW-12	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	-0.030431	0.630	↔	-0.00037568	0.933	↔	2023-04-18	0.092
22_2_3_112	MW-12	Appendix III	Fluoride	mg/L	17	0	0%	-0.0033633	0.349	↔	< 0.0001	0.893	↔	2023-02-06	0.395
22_2_3_120	MW-12	Appendix III	pH (field)	su	17	0	0%	0.0045125	0.497	↔	-0.00042215	0.146	↔	2023-03-12	0.204
22_2_3_124	MW-12	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	-0.16337	0.003	↓	-0.0092821	0.875	↔	2024-05-22	0.748
22_2_3_126	MW-12	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	-0.20633	0.496	↔	0.23085	0.143	↔	2024-02-12	0.186
22_2_4_101	MW-12	Appendix IV	Antimony	mg/L	17	0	0%	< 0.0001	0.621	↔	< 0.0001	0.262	↔	2025-02-26	0.260
22_2_4_102	MW-12	Appendix IV	Arsenic	mg/L	17	0	0%	< 0.0001	0.823	↔	< 0.0001	0.001	↑	2025-04-20	0.758
22_2_4_103	MW-12	Appendix IV	Barium	mg/L	17	0	0%	< 0.0001	0.533	↔	0.00012253	0.070	↔	2024-04-08	0.619

(Table continues on next page)

Table 9: Trend Tests: Piecewise Linear-Linear *(continued)*

								Line 1			Line 2				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Slope	p-Value	Trend	Slope	p-Value	Trend	Break 1	R-Squared
22_2_4_106	MW-12	Appendix IV	Cadmium	mg/L	17	0	0%	< 0.0001	0.515	↔	< 0.0001	0.085	↔	2025-03-06	0.587
22_2_4_109	MW-12	Appendix IV	Chromium, Total	mg/L	17	6	35%	< 0.0001	0.404	↔	< 0.0001	0.690	↔	2025-04-21	0.137
22_2_4_110	MW-12	Appendix IV	Cobalt	mg/L	17	5	29%	< 0.0001	0.364	↔	< 0.0001	0.001	↑	2025-07-02	0.893
22_2_4_113	MW-12	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	-0.0033633	0.349	↔	< 0.0001	0.893	↔	2023-02-06	0.395
22_2_4_115	MW-12	Appendix IV	Lead	mg/L	17	6	35%	< 0.0001	0.029	↔	< 0.0001	0.648	↔	2025-04-21	0.327
22_2_4_116	MW-12	Appendix IV	Lithium	mg/L	17	0	0%	< 0.0001	0.692	↔	< 0.0001	0.733	↔	2025-04-21	0.107
22_2_4_117	MW-12	Appendix IV	Mercury	ng/L	17	12	71%	0.044973	0.385	↔	-0.49838	0.001	↓	2024-09-04	0.815
22_2_4_118	MW-12	Appendix IV	Molybdenum	mg/L	17	0	0%	< 0.0001	0.237	↔	< 0.0001	0.677	↔	2024-10-16	0.119
22_2_4_121	MW-12	Appendix IV	Radium 226 and 228	pCi/L	17	10	59%	0.0015543	0.466	↔	-0.00012067	0.425	↔	2023-04-18	0.144
22_2_4_122	MW-12	Appendix IV	Selenium	mg/L	17	0	0%	< 0.0001	0.234	↔	< 0.0001	0.441	↔	2023-07-09	0.176
22_2_5_111	MW-12	Part 115	Copper	mg/L	17	0	0%	< 0.0001	0.001	↑	< 0.0001	0.190	↔	2025-06-21	0.612
22_2_5_114	MW-12	Part 115	Iron	mg/L	17	6	35%	< 0.0001	0.679	↔	0.0074286	0.000	↑	2025-06-26	0.931
22_2_5_119	MW-12	Part 115	Nickel	mg/L	17	0	0%	< 0.0001	0.980	↔	< 0.0001	0.098	↔	2025-04-21	0.807
22_2_5_128	MW-12	Part 115	Vanadium	mg/L	17	6	35%	< 0.0001	0.037	↔	< 0.0001	0.052	↔	2024-10-15	0.438
22_2_5_129	MW-12	Part 115	Zinc	mg/L	17	0	0%	< 0.0001	0.599	↔	< 0.0001	0.011	↔	2024-03-17	0.576
28_1_3_105	MW-18	Appendix III	Boron	mg/L	17	0	0%	0.003827	0.000	↑	0.00090897	0.266	↔	2024-05-08	0.913
28_1_3_107	MW-18	Appendix III	Calcium	mg/L	17	0	0%	-1.1356	0.138	↔	-0.013947	0.784	↔	2023-03-31	0.427
28_1_3_108	MW-18	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	-0.085419	0.332	↔	0.0054963	0.145	↔	2023-03-02	0.252
28_1_3_112	MW-18	Appendix III	Fluoride	mg/L	17	0	0%	0.0038781	0.351	↔	< 0.0001	0.988	↔	2023-06-27	0.146
28_1_3_120	MW-18	Appendix III	pH (field)	su	17	0	0%	0.001139	0.145	↔	0.00010947	0.051	↔	2023-04-01	0.631
28_1_3_124	MW-18	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	-7.7111	0.331	↔	-0.049435	0.754	↔	2023-02-07	0.416
28_1_3_126	MW-18	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	-0.14968	0.493	↔	-1.8382	0.244	↔	2025-02-26	0.437
28_1_4_102	MW-18	Appendix IV	Arsenic	mg/L	17	0	0%	< 0.0001	0.043	↔	< 0.0001	0.777	↔	2024-10-16	0.356
28_1_4_103	MW-18	Appendix IV	Barium	mg/L	17	0	0%	< 0.0001	0.885	↔	0.0001831	0.107	↔	2025-08-03	0.369
28_1_4_104	MW-18	Appendix IV	Beryllium	mg/L	17	14	82%	< 0.0001	0.165	↔	< 0.0001	0.539	↔	2024-04-10	0.182
28_1_4_109	MW-18	Appendix IV	Chromium, Total	mg/L	17	15	88%	< 0.0001	0.046	↔	< 0.0001	0.681	↔	2025-04-21	0.281
28_1_4_110	MW-18	Appendix IV	Cobalt	mg/L	17	0	0%	< 0.0001	0.000	↓	< 0.0001	0.073	↔	2023-04-18	0.917
28_1_4_113	MW-18	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	0.0038781	0.351	↔	< 0.0001	0.988	↔	2023-06-27	0.146
28_1_4_115	MW-18	Appendix IV	Lead	mg/L	17	10	59%	< 0.0001	0.151	↔	< 0.0001	0.633	↔	2025-03-16	0.182
28_1_4_116	MW-18	Appendix IV	Lithium	mg/L	17	0	0%	< 0.0001	0.662	↔	< 0.0001	0.404	↔	2024-02-12	0.068
28_1_4_117	MW-18	Appendix IV	Mercury	ng/L	17	15	88%	< 0.0001	1.000	↔	-0.52339	0.003	↓	2024-11-04	0.848
28_1_4_118	MW-18	Appendix IV	Molybdenum	mg/L	17	0	0%	< 0.0001	0.265	↔	0.00012676	0.122	↔	2025-07-31	0.496
28_1_4_121	MW-18	Appendix IV	Radium 226 and 228	pCi/L	17	9	53%	-0.0001845	0.578	↔	0.0001707	0.813	↔	2024-10-15	0.043
28_1_4_125	MW-18	Appendix IV	Thallium	mg/L	17	16	94%	< 0.0001	0.704	↔	< 0.0001	0.287	↔	2023-02-07	0.116
28_1_5_111	MW-18	Part 115	Copper	mg/L	17	0	0%	< 0.0001	0.592	↔	< 0.0001	0.059	↔	2025-08-07	0.471
28_1_5_114	MW-18	Part 115	Iron	mg/L	17	0	0%	-0.045647	0.113	↔	< 0.0001	0.958	↔	2023-03-01	0.478
28_1_5_119	MW-18	Part 115	Nickel	mg/L	17	0	0%	< 0.0001	0.011	↔	< 0.0001	0.532	↔	2023-05-01	0.637
28_1_5_123	MW-18	Part 115	Silver	mg/L	17	17	100%	< 0.0001	0.428	↔	< 0.0001	0.195	↔	2023-02-08	0.164
28_1_5_128	MW-18	Part 115	Vanadium	mg/L	17	16	94%	< 0.0001	1.000	↔	< 0.0001	0.000	↓	2025-03-22	0.868
29_1_3_105	MW-19	Appendix III	Boron	mg/L	17	0	0%	-0.00071682	0.435	↔	0.002073	0.098	↔	2024-04-24	0.370
29_1_3_107	MW-19	Appendix III	Calcium	mg/L	17	0	0%	-0.38088	0.113	↔	-0.022015	0.666	↔	2023-08-06	0.501
29_1_3_108	MW-19	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	-0.24111	0.003	↓	-0.010308	0.172	↔	2023-04-26	0.798

(Table continues on next page)

Table 9: Trend Tests: Piecewise Linear-Linear *(continued)*

								Line 1			Line 2				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Slope	p-Value	Trend	Slope	p-Value	Trend	Break 1	R-Squared
29_1_3_112	MW-19	Appendix III	Fluoride	mg/L	17	0	0%	-0.00059633	0.030	↔	0.0027202	0.141	↔	2025-04-20	0.399
29_1_3_120	MW-19	Appendix III	pH (field)	su	17	0	0%	0.0010373	0.470	↔	-0.00025883	0.107	↔	2023-05-01	0.218
29_1_3_124	MW-19	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	-5.4673	0.423	↔	-0.087686	0.500	↔	2023-02-07	0.394
29_1_3_126	MW-19	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	-2.4679	0.001	↓	-0.11317	0.412	↔	2023-07-11	0.813
29_1_4_101	MW-19	Appendix IV	Antimony	mg/L	17	12	71%	< 0.0001	0.492	↔	< 0.0001	0.688	↔	2023-04-17	0.131
29_1_4_102	MW-19	Appendix IV	Arsenic	mg/L	17	0	0%	< 0.0001	0.641	↔	< 0.0001	0.268	↔	2024-10-16	0.336
29_1_4_103	MW-19	Appendix IV	Barium	mg/L	17	0	0%	< 0.0001	0.104	↔	< 0.0001	0.759	↔	2023-04-12	0.488
29_1_4_104	MW-19	Appendix IV	Beryllium	mg/L	17	3	18%	< 0.0001	0.613	↔	< 0.0001	0.482	↔	2023-09-25	0.057
29_1_4_109	MW-19	Appendix IV	Chromium, Total	mg/L	17	5	29%	< 0.0001	0.170	↔	< 0.0001	0.811	↔	2023-05-25	0.321
29_1_4_110	MW-19	Appendix IV	Cobalt	mg/L	17	1	6%	< 0.0001	0.171	↔	< 0.0001	0.053	↔	2024-06-24	0.357
29_1_4_113	MW-19	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	-0.00059633	0.030	↔	0.0027202	0.141	↔	2025-04-20	0.399
29_1_4_115	MW-19	Appendix IV	Lead	mg/L	17	17	100%	< 0.0001	0.475	↔	< 0.0001	0.888	↔	2023-10-23	0.179
29_1_4_116	MW-19	Appendix IV	Lithium	mg/L	17	0	0%	< 0.0001	0.012	↔	< 0.0001	0.570	↔	2024-02-13	0.580
29_1_4_117	MW-19	Appendix IV	Mercury	ng/L	17	16	94%	< 0.0001	1.000	↔	-0.52723	0.003	↓	2024-11-05	0.850
29_1_4_118	MW-19	Appendix IV	Molybdenum	mg/L	17	0	0%	< 0.0001	0.477	↔	< 0.0001	0.009	↑	2024-02-12	0.494
29_1_4_121	MW-19	Appendix IV	Radium 226 and 228	pCi/L	17	8	47%	0.0054672	0.246	↔	-0.00031579	0.117	↔	2023-02-08	0.254
29_1_4_122	MW-19	Appendix IV	Selenium	mg/L	17	11	65%	< 0.0001	0.235	↔	< 0.0001	0.108	↔	2025-08-04	0.299
29_1_4_125	MW-19	Appendix IV	Thallium	mg/L	17	16	94%	< 0.0001	0.603	↔	< 0.0001	0.435	↔	2023-02-07	0.156
29_1_5_111	MW-19	Part 115	Copper	mg/L	17	13	76%	< 0.0001	0.492	↔	< 0.0001	0.706	↔	2023-08-03	0.083
29_1_5_114	MW-19	Part 115	Iron	mg/L	17	0	0%	0.010927	0.027	↔	-0.03082	0.007	↓	2024-09-30	0.580
29_1_5_123	MW-19	Part 115	Silver	mg/L	17	17	100%	< 0.0001	0.603	↔	< 0.0001	0.062	↔	2023-02-07	0.275
29_1_5_128	MW-19	Part 115	Vanadium	mg/L	17	14	82%	< 0.0001	0.385	↔	< 0.0001	0.822	↔	2023-08-26	0.115
30_1_3_105	MW-20	Appendix III	Boron	mg/L	17	0	0%	< 0.0001	0.782	↔	0.002677	0.074	↔	2025-04-20	0.447
30_1_3_107	MW-20	Appendix III	Calcium	mg/L	17	0	0%	-0.16692	0.326	↔	0.032715	0.221	↔	2023-06-27	0.191
30_1_3_108	MW-20	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	0.089464	0.416	↔	-0.060169	0.000	↓	2023-05-22	0.726
30_1_3_112	MW-20	Appendix III	Fluoride	mg/L	17	0	0%	-0.0082857	0.000	↓	< 0.0001	0.376	↔	2023-01-08	0.782
30_1_3_120	MW-20	Appendix III	pH (field)	su	17	0	0%	0.0001225	0.233	↔	-0.0014286	0.515	↔	2025-05-25	0.210
30_1_3_124	MW-20	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	-0.082685	0.046	↔	0.17005	0.288	↔	2024-11-26	0.321
30_1_3_126	MW-20	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	-0.16401	0.042	↔	0.57143	0.724	↔	2025-05-09	0.288
30_1_4_102	MW-20	Appendix IV	Arsenic	mg/L	17	0	0%	< 0.0001	0.498	↔	< 0.0001	0.824	↔	2023-08-06	0.093
30_1_4_103	MW-20	Appendix IV	Barium	mg/L	17	0	0%	-0.0094286	0.046	↔	0.00020048	0.033	↔	2023-01-25	0.644
30_1_4_104	MW-20	Appendix IV	Beryllium	mg/L	17	16	94%	< 0.0001	0.158	↔	< 0.0001	0.204	↔	2024-02-13	0.237
30_1_4_109	MW-20	Appendix IV	Chromium, Total	mg/L	17	9	53%	< 0.0001	0.516	↔	< 0.0001	0.186	↔	2023-02-06	0.232
30_1_4_110	MW-20	Appendix IV	Cobalt	mg/L	17	0	0%	< 0.0001	0.000	↓	< 0.0001	0.001	↑	2025-07-23	0.828
30_1_4_113	MW-20	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	-0.0082857	0.000	↓	< 0.0001	0.376	↔	2023-01-08	0.782
30_1_4_115	MW-20	Appendix IV	Lead	mg/L	17	0	0%	< 0.0001	0.100	↔	< 0.0001	0.000	↑	2025-08-03	0.921
30_1_4_116	MW-20	Appendix IV	Lithium	mg/L	17	0	0%	< 0.0001	0.839	↔	< 0.0001	0.125	↔	2023-06-27	0.227
30_1_4_117	MW-20	Appendix IV	Mercury	ng/L	17	14	82%	< 0.0001	1.000	↔	-0.52163	0.002	↓	2024-11-08	0.854
30_1_4_118	MW-20	Appendix IV	Molybdenum	mg/L	17	0	0%	< 0.0001	0.147	↔	< 0.0001	0.528	↔	2024-10-16	0.177
30_1_4_121	MW-20	Appendix IV	Radium 226 and 228	pCi/L	16	8	50%	-0.018514	0.066	↔	0.00017188	0.377	↔	2023-01-16	0.521
30_1_4_122	MW-20	Appendix IV	Selenium	mg/L	17	10	59%	< 0.0001	0.024	↔	< 0.0001	0.262	↔	2025-04-28	0.544
30_1_4_125	MW-20	Appendix IV	Thallium	mg/L	17	16	94%	< 0.0001	0.293	↔	< 0.0001	0.136	↔	2024-02-12	0.237

(Table continues on next page)

Table 9: Trend Tests: Piecewise Linear-Linear *(continued)*

								Line 1			Line 2				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Slope	p-Value	Trend	Slope	p-Value	Trend	Break 1	R-Squared
30_1_5_114	MW-20	Part 115	Iron	mg/L	17	0	0%	-0.0015083	0.749	↔	-0.0089594	0.161	↔	2024-04-08	0.454
30_1_5_119	MW-20	Part 115	Nickel	mg/L	17	0	0%	< 0.0001	0.000	↓	0.00036571	0.000	↑	2025-08-03	0.983
30_1_5_128	MW-20	Part 115	Vanadium	mg/L	17	17	100%	< 0.0001	1.000	↔	< 0.0001	0.000	↓	2025-04-04	0.946
30_1_5_129	MW-20	Part 115	Zinc	mg/L	17	0	0%	< 0.0001	0.128	↔	0.00074286	0.043	↔	2025-06-18	0.669
40_1_3_105	MW-30	Appendix III	Boron	mg/L	17	0	0%	0.0019679	0.839	↔	-0.00064024	0.120	↔	2023-03-12	0.187
40_1_3_108	MW-30	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	-0.23223	0.556	↔	2.0422	0.000	↑	2024-03-06	0.886
40_1_3_112	MW-30	Appendix III	Fluoride	mg/L	17	0	0%	< 0.0001	0.943	↔	-0.00036543	0.351	↔	2024-04-06	0.133
40_1_3_120	MW-30	Appendix III	pH (field)	su	17	0	0%	0.003348	0.369	↔	-0.00021823	0.159	↔	2023-03-12	0.268
40_1_3_124	MW-30	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	-0.024007	0.877	↔	-3.662	0.283	↔	2025-08-08	0.179
40_1_3_126	MW-30	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	-0.43326	0.711	↔	3.4741	0.003	↑	2024-03-19	0.704
40_1_4_103	MW-30	Appendix IV	Barium	mg/L	17	0	0%	-0.00045157	0.037	↔	< 0.0001	0.078	↔	2023-03-30	0.532
40_1_4_104	MW-30	Appendix IV	Beryllium	mg/L	17	13	76%	< 0.0001	0.607	↔	< 0.0001	0.601	↔	2023-06-27	0.042
40_1_4_109	MW-30	Appendix IV	Chromium, Total	mg/L	17	0	0%	< 0.0001	0.114	↔	0.00021127	0.005	↑	2025-07-31	0.632
40_1_4_110	MW-30	Appendix IV	Cobalt	mg/L	17	0	0%	< 0.0001	0.918	↔	< 0.0001	0.451	↔	2023-07-16	0.075
40_1_4_113	MW-30	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	< 0.0001	0.943	↔	-0.00036543	0.351	↔	2024-04-06	0.133
40_1_4_117	MW-30	Appendix IV	Mercury	ng/L	17	16	94%	0.2316	0.120	↔	-0.47579	0.001	↓	2024-04-06	0.665
40_1_5_114	MW-30	Part 115	Iron	mg/L	17	0	0%	0.0063162	0.098	↔	-0.046479	0.552	↔	2025-06-02	0.224
40_1_5_119	MW-30	Part 115	Nickel	mg/L	17	3	18%	< 0.0001	0.956	↔	< 0.0001	0.382	↔	2023-09-19	0.119
40_1_5_123	MW-30	Part 115	Silver	mg/L	17	16	94%	< 0.0001	0.677	↔	< 0.0001	0.404	↔	2023-02-05	0.110
40_1_5_129	MW-30	Part 115	Zinc	mg/L	17	10	59%	< 0.0001	0.122	↔	< 0.0001	0.681	↔	2025-02-25	0.204
41_1_3_105	MW-31	Appendix III	Boron	mg/L	17	0	0%	0.00083007	0.156	↔	0.010935	0.378	↔	2025-04-20	0.654
41_1_3_107	MW-31	Appendix III	Calcium	mg/L	17	0	0%	-0.0032822	0.873	↔	-0.42857	0.345	↔	2025-07-22	0.211
41_1_3_108	MW-31	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	-0.021392	0.333	↔	0.19772	0.001	↑	2024-10-11	0.741
41_1_3_112	MW-31	Appendix III	Fluoride	mg/L	17	0	0%	-0.00029394	0.489	↔	-0.0027621	0.009	↓	2024-10-05	0.732
41_1_3_120	MW-31	Appendix III	pH (field)	su	17	0	0%	< 0.0001	0.903	↔	0.00038442	0.575	↔	2024-12-04	0.120
41_1_3_124	MW-31	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	-0.43444	0.137	↔	-0.066513	0.462	↔	2023-08-08	0.456
41_1_3_126	MW-31	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	-0.62878	0.224	↔	0.07328	0.354	↔	2023-05-30	0.195
41_1_4_101	MW-31	Appendix IV	Antimony	mg/L	17	7	41%	< 0.0001	0.810	↔	< 0.0001	0.041	↔	2024-02-12	0.574
41_1_4_102	MW-31	Appendix IV	Arsenic	mg/L	17	0	0%	< 0.0001	0.081	↔	< 0.0001	0.462	↔	2025-04-20	0.363
41_1_4_103	MW-31	Appendix IV	Barium	mg/L	17	0	0%	< 0.0001	0.786	↔	0.0018571	0.098	↔	2025-07-03	0.575
41_1_4_104	MW-31	Appendix IV	Beryllium	mg/L	17	15	88%	< 0.0001	0.116	↔	< 0.0001	0.175	↔	2024-10-14	0.280
41_1_4_106	MW-31	Appendix IV	Cadmium	mg/L	17	16	94%	< 0.0001	0.000	↑	< 0.0001	0.724	↔	2023-08-16	0.846
41_1_4_110	MW-31	Appendix IV	Cobalt	mg/L	17	3	18%	< 0.0001	0.741	↔	< 0.0001	0.579	↔	2025-08-08	0.040
41_1_4_113	MW-31	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	-0.00029394	0.489	↔	-0.0027621	0.009	↓	2024-10-05	0.732
41_1_4_115	MW-31	Appendix IV	Lead	mg/L	17	13	76%	< 0.0001	0.031	↔	< 0.0001	0.046	↔	2025-06-13	0.663
41_1_4_116	MW-31	Appendix IV	Lithium	mg/L	17	0	0%	< 0.0001	0.115	↔	1e-04	0.532	↔	2025-05-14	0.247
41_1_4_117	MW-31	Appendix IV	Mercury	ng/L	17	14	82%	< 0.0001	1.000	↔	-0.52118	0.003	↓	2024-11-03	0.849
41_1_4_118	MW-31	Appendix IV	Molybdenum	mg/L	17	0	0%	< 0.0001	0.619	↔	< 0.0001	0.036	↔	2025-01-24	0.491
41_1_4_121	MW-31	Appendix IV	Radium 226 and 228	pCi/L	17	7	41%	-0.00036472	0.409	↔	0.00015083	0.791	↔	2024-04-08	0.074
41_1_4_122	MW-31	Appendix IV	Selenium	mg/L	17	6	35%	< 0.0001	0.534	↔	< 0.0001	0.482	↔	2024-02-12	0.069
41_1_4_125	MW-31	Appendix IV	Thallium	mg/L	17	16	94%	< 0.0001	0.157	↔	< 0.0001	0.204	↔	2024-02-12	0.238
41_1_5_111	MW-31	Part 115	Copper	mg/L	17	10	59%	< 0.0001	0.256	↔	< 0.0001	0.000	↑	2025-08-09	0.972

(Table continues on next page)

Table 9: Trend Tests: Piecewise Linear-Linear *(continued)*

								Line 1			Line 2				
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Slope	p-Value	Trend	Slope	p-Value	Trend	Break 1	R-Squared
41_1_5_114	MW-31	Part 115	Iron	mg/L	17	0	0%	-0.0066396	0.000	↓	0.00058	0.161	↔	2023-09-23	0.859
41_1_5_119	MW-31	Part 115	Nickel	mg/L	17	10	59%	< 0.0001	0.963	↔	0.00052613	0.045	↔	2025-01-17	0.543
41_1_5_128	MW-31	Part 115	Vanadium	mg/L	17	12	71%	< 0.0001	0.116	↔	< 0.0001	0.470	↔	2025-04-20	0.348
41_1_5_129	MW-31	Part 115	Zinc	mg/L	17	9	53%	< 0.0001	0.617	↔	< 0.0001	0.431	↔	2023-08-04	0.066
42_1_3_105	MW-32	Appendix III	Boron	mg/L	17	0	0%	0.00054911	0.509	↔	0.010709	0.548	↔	2025-04-20	0.410
42_1_3_107	MW-32	Appendix III	Calcium	mg/L	17	0	0%	-0.19146	0.098	↔	0.0041939	0.862	↔	2023-08-07	0.449
42_1_3_108	MW-32	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	-0.020407	0.026	↔	0.032695	0.000	↑	2024-04-06	0.727
42_1_3_112	MW-32	Appendix III	Fluoride	mg/L	17	0	0%	0.00026157	0.227	↔	-0.0011364	0.203	↔	2024-10-16	0.351
42_1_3_120	MW-32	Appendix III	pH (field)	su	17	0	0%	< 0.0001	0.500	↔	-0.00059062	0.698	↔	2025-04-20	0.126
42_1_3_124	MW-32	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	-0.21715	0.397	↔	-0.055769	0.495	↔	2023-09-20	0.314
42_1_3_126	MW-32	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	-0.59325	0.166	↔	0.0063547	0.944	↔	2023-08-07	0.366
42_1_4_101	MW-32	Appendix IV	Antimony	mg/L	17	13	76%	< 0.0001	0.217	↔	< 0.0001	0.113	↔	2024-02-11	0.289
42_1_4_102	MW-32	Appendix IV	Arsenic	mg/L	17	0	0%	< 0.0001	0.263	↔	< 0.0001	0.091	↔	2024-02-11	0.274
42_1_4_103	MW-32	Appendix IV	Barium	mg/L	17	0	0%	-0.0024461	0.279	↔	0.0010443	0.001	↑	2023-05-01	0.659
42_1_4_104	MW-32	Appendix IV	Beryllium	mg/L	17	16	94%	< 0.0001	0.292	↔	< 0.0001	0.135	↔	2024-02-11	0.237
42_1_4_106	MW-32	Appendix IV	Cadmium	mg/L	17	16	94%	< 0.0001	0.033	↔	< 0.0001	0.070	↔	2024-02-11	0.568
42_1_4_109	MW-32	Appendix IV	Chromium, Total	mg/L	17	0	0%	< 0.0001	0.407	↔	< 0.0001	0.174	↔	2024-02-11	0.180
42_1_4_110	MW-32	Appendix IV	Cobalt	mg/L	17	0	0%	< 0.0001	0.325	↔	< 0.0001	0.185	↔	2024-02-11	0.206
42_1_4_113	MW-32	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	0.00026157	0.227	↔	-0.0011364	0.203	↔	2024-10-16	0.351
42_1_4_115	MW-32	Appendix IV	Lead	mg/L	17	12	71%	< 0.0001	0.649	↔	< 0.0001	0.505	↔	2025-08-08	0.058
42_1_4_116	MW-32	Appendix IV	Lithium	mg/L	17	0	0%	-0.00042857	0.543	↔	< 0.0001	0.211	↔	2023-02-23	0.144
42_1_4_117	MW-32	Appendix IV	Mercury	ng/L	17	14	82%	1.3969	0.179	↔	-1.5158	0.081	↔	2024-04-06	0.301
42_1_4_118	MW-32	Appendix IV	Molybdenum	mg/L	17	0	0%	< 0.0001	0.203	↔	< 0.0001	0.007	↓	2024-02-12	0.600
42_1_4_121	MW-32	Appendix IV	Radium 226 and 228	pCi/L	17	9	53%	0.0014085	0.461	↔	-0.00013769	0.309	↔	2023-04-17	0.153
42_1_4_122	MW-32	Appendix IV	Selenium	mg/L	17	13	76%	< 0.0001	0.372	↔	< 0.0001	0.241	↔	2024-02-12	0.168
42_1_5_111	MW-32	Part 115	Copper	mg/L	17	10	59%	< 0.0001	0.282	↔	< 0.0001	0.131	↔	2024-02-11	0.244
42_1_5_114	MW-32	Part 115	Iron	mg/L	17	0	0%	-0.027997	0.014	↔	0.006094	0.076	↔	2023-09-13	0.543
42_1_5_119	MW-32	Part 115	Nickel	mg/L	17	0	0%	< 0.0001	0.322	↔	< 0.0001	0.150	↔	2024-02-11	0.218
42_1_5_128	MW-32	Part 115	Vanadium	mg/L	17	17	100%	< 0.0001	1.000	↔	< 0.0001	0.000	↓	2025-04-03	0.945
42_1_5_129	MW-32	Part 115	Zinc	mg/L	17	0	0%	< 0.0001	0.107	↔	-0.00015377	0.333	↔	2025-02-25	0.241

Table 10: Trend Tests: Piecewise Linear-Linear-Linear

								Line 1			Line 2			Line 3					
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Slope	p-Value	Trend	Slope	p-Value	Trend	Slope	p-Value	Trend	Break 1	Break 2	R-Squared
11_2_3_105	MW-01R	Appendix III	Boron	mg/L	17	0	0%	0.15826	0.467	↔	-0.017015	0.801	↔	0.28571	0.723	↔	2023-07-16	2025-04-21	0.241
11_2_3_107	MW-01R	Appendix III	Calcium	mg/L	17	0	0%	0.07359	0.727	↔	-0.16586	0.556	↔	-0.42857	0.806	↔	2024-02-15	2025-07-23	0.187
11_2_3_112	MW-01R	Appendix III	Fluoride	mg/L	17	0	0%	-0.062436	0.407	↔	0.0037706	0.449	↔	0.022014	0.441	↔	2023-02-10	2025-04-19	0.309
11_2_4_101	MW-01R	Appendix IV	Antimony	mg/L	17	3	18%	< 0.0001	0.139	↔	< 0.0001	0.060	↔	< 0.0001	0.607	↔	2023-04-18	2024-11-01	0.439
11_2_4_102	MW-01R	Appendix IV	Arsenic	mg/L	17	0	0%	< 0.0001	0.513	↔	< 0.0001	0.315	↔	< 0.0001	0.123	↔	2023-01-25	2024-02-12	0.315

(Table continues on next page)

Table 10: Trend Tests: Piecewise Linear-Linear-Linear *(continued)*

								Line 1			Line 2			Line 3					
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Slope	p-Value	Trend	Slope	p-Value	Trend	Slope	p-Value	Trend	Break 1	Break 2	R-Squared
11_2_4_103	MW-01R	Appendix IV	Barium	mg/L	17	0	0%	0.00068894	0.160	↔	-0.00031305	0.430	↔	0.0016114	0.015	↔	2023-10-23	2025-01-18	0.700
11_2_4_104	MW-01R	Appendix IV	Beryllium	mg/L	17	2	12%	< 0.0001	0.288	↔	< 0.0001	0.108	↔	< 0.0001	0.013	↔	2023-08-08	2024-09-14	0.619
11_2_4_106	MW-01R	Appendix IV	Cadmium	mg/L	17	13	76%	< 0.0001	0.214	↔	< 0.0001	0.166	↔	< 0.0001	0.589	↔	2023-05-23	2025-07-27	0.292
11_2_4_110	MW-01R	Appendix IV	Cobalt	mg/L	17	0	0%	< 0.0001	0.279	↔	< 0.0001	0.510	↔	< 0.0001	0.444	↔	2024-02-13	2024-09-01	0.240
11_2_4_113	MW-01R	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	-0.062436	0.407	↔	0.0037706	0.449	↔	0.022014	0.441	↔	2023-02-10	2025-04-19	0.309
11_2_4_115	MW-01R	Appendix IV	Lead	mg/L	17	2	12%	< 0.0001	0.422	↔	< 0.0001	0.236	↔	< 0.0001	0.526	↔	2023-06-27	2025-01-06	0.222
11_2_4_116	MW-01R	Appendix IV	Lithium	mg/L	17	0	0%	-0.0077466	0.472	↔	0.022857	0.503	↔	< 0.0001	0.971	↔	2023-04-14	2023-06-05	0.217
11_2_4_121	MW-01R	Appendix IV	Radium 226 and 228	pCi/L	17	11	65%	0.0059292	0.228	↔	-0.0027545	0.571	↔	0.0001787	0.490	↔	2023-02-26	2023-06-27	0.239
11_2_4_122	MW-01R	Appendix IV	Selenium	mg/L	17	0	0%	< 0.0001	0.135	↔	< 0.0001	0.335	↔	< 0.0001	0.585	↔	2024-02-13	2025-04-04	0.276
11_2_4_125	MW-01R	Appendix IV	Thallium	mg/L	17	17	100%	< 0.0001	0.231	↔	< 0.0001	0.896	↔	< 0.0001	0.241	↔	2023-04-18	2025-01-31	0.372
11_2_5_111	MW-01R	Part 115	Copper	mg/L	17	6	35%	< 0.0001	0.623	↔	< 0.0001	0.376	↔	< 0.0001	0.179	↔	2023-01-11	2023-06-27	0.296
11_2_5_114	MW-01R	Part 115	Iron	mg/L	17	0	0%	-0.0001418	0.811	↔	-0.0026365	0.582	↔	0.00060658	0.708	↔	2024-04-12	2024-12-02	0.515
11_2_5_119	MW-01R	Part 115	Nickel	mg/L	17	0	0%	< 0.0001	0.063	↔	< 0.0001	0.270	↔	< 0.0001	0.715	↔	2024-02-13	2024-10-20	0.360
11_2_5_123	MW-01R	Part 115	Silver	mg/L	17	17	100%	< 0.0001	0.594	↔	< 0.0001	0.207	↔	< 0.0001	0.913	↔	2023-02-07	2025-01-16	0.293
11_2_5_128	MW-01R	Part 115	Vanadium	mg/L	17	2	12%	< 0.0001	0.032	↔	< 0.0001	0.522	↔	< 0.0001	0.306	↔	2023-06-28	2025-03-10	0.569
11_2_5_129	MW-01R	Part 115	Zinc	mg/L	17	3	18%	< 0.0001	0.495	↔	0.00024222	0.120	↔	< 0.0001	0.270	↔	2024-07-10	2024-11-09	0.484
12_2_3_105	MW-02	Appendix III	Boron	mg/L	17	0	0%	-0.048633	0.821	↔	0.088973	0.001	↑	-0.74894	0.046	↔	2023-03-20	2025-06-14	0.765
12_2_3_107	MW-02	Appendix III	Calcium	mg/L	17	0	0%	0.005053	0.913	↔	-0.059984	0.337	↔	0.060247	0.875	↔	2024-04-09	2025-07-02	0.246
12_2_3_108	MW-02	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	-0.3744	0.640	↔	0.043118	0.069	↔	-0.069305	0.869	↔	2023-02-07	2025-06-08	0.329
12_2_3_120	MW-02	Appendix III	pH (field)	su	17	0	0%	0.0015417	0.035	↔	-0.0020239	0.536	↔	< 0.0001	0.936	↔	2023-05-23	2023-08-28	0.442
12_2_3_124	MW-02	Appendix III	Sulfate (as SO4)	mg/L	17	10	59%	-0.0056656	0.371	↔	0.011303	0.204	↔	-0.0027097	0.252	↔	2023-07-25	2024-04-09	0.469
12_2_3_126	MW-02	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	-0.0080919	0.990	↔	1.153	0.282	↔	-1.0336	0.331	↔	2023-12-13	2025-02-24	0.563
12_2_4_101	MW-02	Appendix IV	Antimony	mg/L	17	3	18%	< 0.0001	0.120	↔	< 0.0001	0.060	↔	< 0.0001	0.527	↔	2024-01-05	2023-05-17	0.450
12_2_4_102	MW-02	Appendix IV	Arsenic	mg/L	17	0	0%	< 0.0001	0.265	↔	< 0.0001	0.402	↔	< 0.0001	0.248	↔	2023-05-27	2024-02-12	0.490
12_2_4_103	MW-02	Appendix IV	Barium	mg/L	17	0	0%	0.00014888	0.510	↔	-0.00095361	0.186	↔	0.00066326	0.193	↔	2024-02-13	2024-10-28	0.416
12_2_4_104	MW-02	Appendix IV	Beryllium	mg/L	17	1	6%	< 0.0001	0.800	↔	< 0.0001	0.217	↔	< 0.0001	0.716	↔	2023-01-24	2024-04-10	0.212
12_2_4_106	MW-02	Appendix IV	Cadmium	mg/L	17	12	71%	< 0.0001	0.158	↔	< 0.0001	0.164	↔	< 0.0001	0.684	↔	2023-10-23	2024-08-17	0.373
12_2_4_109	MW-02	Appendix IV	Chromium, Total	mg/L	17	0	0%	< 0.0001	0.335	↔	< 0.0001	0.216	↔	-0.00017527	0.662	↔	2024-02-13	2025-05-16	0.244
12_2_4_110	MW-02	Appendix IV	Cobalt	mg/L	17	0	0%	< 0.0001	0.431	↔	< 0.0001	0.283	↔	< 0.0001	0.619	↔	2024-02-13	2025-03-29	0.292
12_2_4_115	MW-02	Appendix IV	Lead	mg/L	17	1	6%	< 0.0001	0.807	↔	< 0.0001	0.359	↔	< 0.0001	0.702	↔	2023-05-14	2025-04-19	0.208
12_2_4_122	MW-02	Appendix IV	Selenium	mg/L	17	0	0%	< 0.0001	0.682	↔	< 0.0001	0.661	↔	< 0.0001	0.352	↔	2024-06-10	2025-02-24	0.439
12_2_4_125	MW-02	Appendix IV	Thallium	mg/L	17	16	94%	< 0.0001	0.916	↔	< 0.0001	0.712	↔	< 0.0001	0.534	↔	2024-03-04	2024-11-24	0.086
12_2_5_111	MW-02	Part 115	Copper	mg/L	17	0	0%	< 0.0001	0.914	↔	< 0.0001	0.672	↔	< 0.0001	0.130	↔	2024-05-03	2025-02-23	0.349
12_2_5_119	MW-02	Part 115	Nickel	mg/L	17	0	0%	< 0.0001	0.252	↔	< 0.0001	0.036	↔	< 0.0001	0.453	↔	2024-02-12	2025-02-28	0.475
12_2_5_123	MW-02	Part 115	Silver	mg/L	17	17	100%	< 0.0001	0.454	↔	< 0.0001	0.145	↔	< 0.0001	0.740	↔	2023-02-07	2024-04-08	0.434
12_2_5_128	MW-02	Part 115	Vanadium	mg/L	17	1	6%	< 0.0001	0.382	↔	< 0.0001	0.650	↔	< 0.0001	0.870	↔	2023-06-27	2025-04-27	0.239
12_2_5_129	MW-02	Part 115	Zinc	mg/L	17	0	0%	< 0.0001	0.300	↔	< 0.0001	0.262	↔	-0.00011179	0.056	↔	2024-03-27	2025-02-02	0.409
13_2_3_107	MW-03	Appendix III	Calcium	mg/L	17	0	0%	0.21502	0.364	↔	-0.14486	0.086	↔	0.13158	0.476	↔	2023-06-08	2024-12-12	0.398
13_2_3_112	MW-03	Appendix III	Fluoride	mg/L	17	0	0%	-0.0037155	0.265	↔	0.00010388	0.822	↔	0.00096176	0.486	↔	2023-04-05	2025-02-12	0.322
13_2_3_120	MW-03	Appendix III	pH (field)	su	17	0	0%	0.00082985	0.397	↔	< 0.0001	0.743	↔	< 0.0001	0.814	↔	2023-05-21	2024-09-26	0.174
13_2_3_124	MW-03	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	3.514	0.046	↔	-0.73001	0.000	↓	0.14652	0.954	↔	2023-04-17	2025-05-21	0.784
13_2_3_126	MW-03	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2.2318	0.116	↔	-1.0952	0.003	↓	0.15193	0.849	↔	2023-05-04	2024-12-22	0.783

(Table continues on next page)

Table 10: Trend Tests: Piecewise Linear-Linear-Linear *(continued)*

								Line 1			Line 2			Line 3					
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Slope	p-Value	Trend	Slope	p-Value	Trend	Slope	p-Value	Trend	Break 1	Break 2	R-Squared
13_2_4_101	MW-03	Appendix IV	Antimony	mg/L	17	11	65%	< 0.0001	0.146	↔	< 0.0001	0.153	↔	< 0.0001	0.965	↔	2023-05-11	2024-08-31	0.443
13_2_4_102	MW-03	Appendix IV	Arsenic	mg/L	17	0	0%	< 0.0001	0.839	↔	< 0.0001	0.840	↔	< 0.0001	0.507	↔	2024-10-17	2025-04-21	0.278
13_2_4_103	MW-03	Appendix IV	Barium	mg/L	17	0	0%	0.00023702	0.434	↔	-0.00095628	0.251	↔	0.00032801	0.302	↔	2024-01-27	2024-07-29	0.240
13_2_4_104	MW-03	Appendix IV	Beryllium	mg/L	17	11	65%	< 0.0001	0.257	↔	< 0.0001	0.648	↔	< 0.0001	0.874	↔	2023-01-19	2023-04-17	0.247
13_2_4_106	MW-03	Appendix IV	Cadmium	mg/L	17	16	94%	< 0.0001	0.172	↔	< 0.0001	0.567	↔	< 0.0001	0.762	↔	2024-02-14	2024-09-21	0.268
13_2_4_109	MW-03	Appendix IV	Chromium, Total	mg/L	17	0	0%	< 0.0001	0.845	↔	< 0.0001	0.471	↔	< 0.0001	0.797	↔	2023-03-13	2023-08-20	0.240
13_2_4_110	MW-03	Appendix IV	Cobalt	mg/L	17	0	0%	< 0.0001	0.180	↔	< 0.0001	0.561	↔	< 0.0001	0.781	↔	2023-10-24	2024-09-09	0.257
13_2_4_113	MW-03	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	-0.0037155	0.265	↔	0.00010388	0.822	↔	0.00096176	0.486	↔	2023-04-05	2025-02-12	0.322
13_2_4_115	MW-03	Appendix IV	Lead	mg/L	17	16	94%	< 0.0001	0.307	↔	< 0.0001	0.088	↔	< 0.0001	0.627	↔	2023-02-06	2024-07-08	0.618
13_2_4_117	MW-03	Appendix IV	Mercury	ng/L	17	14	82%	0.12621	0.299	↔	-0.11467	0.550	↔	-0.53169	0.016	↔	2023-10-24	2024-12-11	0.818
13_2_4_121	MW-03	Appendix IV	Radium 226 and 228	pCi/L	16	2	12%	-0.016216	0.182	↔	-0.00082843	0.045	↔	0.0070714	0.264	↔	2023-01-08	2025-06-29	0.622
13_2_4_122	MW-03	Appendix IV	Selenium	mg/L	17	3	18%	< 0.0001	0.644	↔	< 0.0001	0.536	↔	< 0.0001	0.600	↔	2023-05-22	2024-07-30	0.089
13_2_4_125	MW-03	Appendix IV	Thallium	mg/L	17	16	94%	< 0.0001	0.096	↔	< 0.0001	0.027	↔	< 0.0001	0.865	↔	2023-02-24	2025-06-29	0.597
13_2_5_111	MW-03	Part 115	Copper	mg/L	17	8	47%	< 0.0001	0.229	↔	< 0.0001	0.491	↔	< 0.0001	0.958	↔	2024-04-07	2025-07-05	0.210
13_2_5_114	MW-03	Part 115	Iron	mg/L	17	0	0%	-0.022058	0.003	↓	0.0024152	0.622	↔	-0.00083318	0.626	↔	2023-06-19	2024-02-14	0.798
13_2_5_119	MW-03	Part 115	Nickel	mg/L	17	1	6%	< 0.0001	0.191	↔	< 0.0001	0.926	↔	< 0.0001	0.917	↔	2023-05-04	2023-06-29	0.313
13_2_5_123	MW-03	Part 115	Silver	mg/L	17	17	100%	< 0.0001	0.292	↔	< 0.0001	0.250	↔	< 0.0001	0.916	↔	2023-02-07	2025-01-16	0.289
13_2_5_128	MW-03	Part 115	Vanadium	mg/L	17	9	53%	< 0.0001	0.461	↔	< 0.0001	0.509	↔	< 0.0001	0.759	↔	2023-08-07	2024-04-11	0.217
14_2_3_107	MW-04	Appendix III	Calcium	mg/L	17	0	0%	0.097652	0.209	↔	-0.33689	0.075	↔	2.6389	0.004	↑	2024-05-27	2025-07-02	0.763
14_2_3_120	MW-04	Appendix III	pH (field)	su	17	0	0%	0.0013514	0.774	↔	-0.00015206	0.252	↔	-0.0063889	0.020	↔	2023-01-20	2025-08-06	0.685
14_2_3_124	MW-04	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	3.2404	0.047	↔	-0.15874	0.474	↔	4.7222	0.164	↔	2023-04-25	2025-07-01	0.659
14_2_4_102	MW-04	Appendix IV	Arsenic	mg/L	17	0	0%	< 0.0001	0.452	↔	< 0.0001	0.527	↔	< 0.0001	0.086	↔	2024-04-28	2025-02-25	0.513
14_2_4_103	MW-04	Appendix IV	Barium	mg/L	17	0	0%	-0.0008536	0.330	↔	< 0.0001	0.783	↔	< 0.0001	0.788	↔	2023-04-19	2024-10-14	0.247
14_2_4_104	MW-04	Appendix IV	Beryllium	mg/L	17	15	88%	< 0.0001	0.589	↔	< 0.0001	0.262	↔	< 0.0001	0.084	↔	2023-11-01	2024-07-18	0.487
14_2_4_106	MW-04	Appendix IV	Cadmium	mg/L	17	17	100%	< 0.0001	0.353	↔	< 0.0001	0.436	↔	< 0.0001	0.780	↔	2024-02-13	2024-09-27	0.234
14_2_4_115	MW-04	Appendix IV	Lead	mg/L	17	15	88%	< 0.0001	0.115	↔	< 0.0001	0.573	↔	< 0.0001	0.719	↔	2023-04-19	2023-07-24	0.378
14_2_4_117	MW-04	Appendix IV	Mercury	ng/L	17	14	82%	< 0.0001	1.000	↔	< 0.0001	1.000	↔	-0.53038	0.006	↓	2023-01-23	2024-11-08	0.853
14_2_4_121	MW-04	Appendix IV	Radium 226 and 228	pCi/L	17	6	35%	-0.0013924	0.100	↔	-0.00074136	0.357	↔	0.0037007	0.062	↔	2023-12-03	2025-03-24	0.672
14_2_4_122	MW-04	Appendix IV	Selenium	mg/L	17	5	29%	< 0.0001	0.896	↔	< 0.0001	0.201	↔	< 0.0001	0.189	↔	2025-01-21	2025-05-15	0.521
14_2_4_125	MW-04	Appendix IV	Thallium	mg/L	17	17	100%	< 0.0001	0.587	↔	< 0.0001	0.820	↔	< 0.0001	0.860	↔	2023-02-06	2023-10-20	0.148
14_2_5_114	MW-04	Part 115	Iron	mg/L	17	0	0%	0.0028745	0.495	↔	-0.012775	0.002	↓	0.019365	0.438	↔	2024-02-01	2025-04-22	0.726
14_2_5_119	MW-04	Part 115	Nickel	mg/L	17	0	0%	< 0.0001	0.240	↔	< 0.0001	0.265	↔	< 0.0001	0.861	↔	2023-03-14	2025-05-05	0.230
14_2_5_123	MW-04	Part 115	Silver	mg/L	17	17	100%	< 0.0001	0.582	↔	< 0.0001	0.153	↔	< 0.0001	0.921	↔	2023-02-06	2025-03-04	0.287
14_2_5_128	MW-04	Part 115	Vanadium	mg/L	17	10	59%	< 0.0001	1.000	↔	< 0.0001	0.010	↑	< 0.0001	0.010	↔	2024-01-17	2024-08-10	0.831
16_1_3_105	MW-06	Appendix III	Boron	mg/L	17	0	0%	-0.072338	0.279	↔	-0.0010021	0.613	↔	0.019896	0.121	↔	2023-01-05	2025-04-19	0.424
16_1_3_107	MW-06	Appendix III	Calcium	mg/L	17	0	0%	0.095428	0.102	↔	-0.35826	0.422	↔	0.071292	0.634	↔	2024-04-07	2024-12-15	0.561
16_1_3_108	MW-06	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	-0.74342	0.058	↔	-0.15091	0.028	↔	0.076895	0.044	↔	2023-03-03	2024-04-06	0.856
16_1_3_112	MW-06	Appendix III	Fluoride	mg/L	17	0	0%	-0.0028703	0.463	↔	< 0.0001	0.931	↔	0.00066336	0.185	↔	2023-02-28	2024-05-01	0.416
16_1_3_120	MW-06	Appendix III	pH (field)	su	17	0	0%	-0.0044049	0.644	↔	0.00054272	0.147	↔	-0.00067335	0.592	↔	2023-02-05	2025-02-20	0.312
16_1_3_124	MW-06	Appendix III	Sulfate (as SO4)	mg/L	17	2	12%	-0.04949	0.082	↔	0.040465	0.347	↔	-0.046468	0.286	↔	2023-11-28	2025-02-25	0.384
16_1_4_101	MW-06	Appendix IV	Antimony	mg/L	17	15	88%	< 0.0001	0.282	↔	< 0.0001	0.501	↔	< 0.0001	0.883	↔	2024-02-13	2024-07-22	0.231
16_1_4_102	MW-06	Appendix IV	Arsenic	mg/L	17	0	0%	< 0.0001	0.139	↔	< 0.0001	0.117	↔	< 0.0001	0.126	↔	2024-09-18	2025-06-20	0.476

(Table continues on next page)

Table 10: Trend Tests: Piecewise Linear-Linear-Linear *(continued)*

								Line 1			Line 2			Line 3					
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Slope	p-Value	Trend	Slope	p-Value	Trend	Slope	p-Value	Trend	Break 1	Break 2	R-Squared
16_1_4_103	MW-06	Appendix IV	Barium	mg/L	17	0	0%	-0.002368	0.245	↔	0.00064992	0.085	↔	-0.00038683	0.470	↔	2023-04-17	2024-07-18	0.377
16_1_4_106	MW-06	Appendix IV	Cadmium	mg/L	17	17	100%	< 0.0001	0.213	↔	< 0.0001	0.616	↔	< 0.0001	0.780	↔	2024-02-13	2024-09-29	0.233
16_1_4_109	MW-06	Appendix IV	Chromium, Total	mg/L	17	0	0%	< 0.0001	0.378	↔	< 0.0001	0.032	↔	< 0.0001	0.411	↔	2023-01-06	2024-12-27	0.480
16_1_4_110	MW-06	Appendix IV	Cobalt	mg/L	17	0	0%	< 0.0001	0.270	↔	< 0.0001	0.259	↔	< 0.0001	0.636	↔	2023-07-24	2023-12-19	0.656
16_1_4_113	MW-06	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	-0.0028703	0.463	↔	< 0.0001	0.931	↔	0.00066336	0.185	↔	2023-02-28	2024-05-01	0.416
16_1_4_115	MW-06	Appendix IV	Lead	mg/L	17	10	59%	< 0.0001	0.608	↔	< 0.0001	0.144	↔	< 0.0001	0.816	↔	2023-02-05	2024-03-08	0.389
16_1_4_117	MW-06	Appendix IV	Mercury	ng/L	17	14	82%	< 0.0001	1.000	↔	< 0.0001	1.000	↔	-0.51886	0.007	↓	2023-01-26	2024-11-02	0.848
16_1_4_118	MW-06	Appendix IV	Molybdenum	mg/L	17	10	59%	< 0.0001	0.370	↔	< 0.0001	0.893	↔	< 0.0001	0.837	↔	2024-02-21	2025-01-19	0.143
16_1_4_121	MW-06	Appendix IV	Radium 226 and 228	pCi/L	17	3	18%	0.0036251	0.650	↔	-0.00087696	0.286	↔	0.0015768	0.252	↔	2023-03-13	2024-09-06	0.228
16_1_4_122	MW-06	Appendix IV	Selenium	mg/L	17	5	29%	< 0.0001	0.734	↔	< 0.0001	0.443	↔	< 0.0001	0.159	↔	2023-02-20	2024-02-12	0.246
16_1_4_125	MW-06	Appendix IV	Thallium	mg/L	17	17	100%	< 0.0001	0.367	↔	< 0.0001	0.478	↔	< 0.0001	0.735	↔	2023-04-17	2023-09-21	0.310
16_1_5_111	MW-06	Part 115	Copper	mg/L	17	13	76%	< 0.0001	0.018	↔	< 0.0001	0.442	↔	< 0.0001	0.655	↔	2024-07-18	2025-03-04	0.439
16_1_5_114	MW-06	Part 115	Iron	mg/L	17	0	0%	0.02113	0.081	↔	-0.073255	0.050	↔	-0.003967	0.872	↔	2024-04-01	2024-11-19	0.709
16_1_5_119	MW-06	Part 115	Nickel	mg/L	17	6	35%	< 0.0001	0.104	↔	< 0.0001	0.566	↔	< 0.0001	0.153	↔	2023-04-18	2024-03-30	0.528
16_1_5_123	MW-06	Part 115	Silver	mg/L	17	17	100%	< 0.0001	0.554	↔	< 0.0001	0.214	↔	< 0.0001	0.961	↔	2023-04-17	2024-10-29	0.247
17_1_3_124	MW-07	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	-0.10035	0.057	↔	0.070191	0.400	↔	-0.0011565	0.921	↔	2023-05-25	2023-12-22	0.460
17_1_4_101	MW-07	Appendix IV	Antimony	mg/L	17	16	94%	< 0.0001	0.000	↑	< 0.0001	0.890	↔	< 0.0001	0.959	↔	2023-07-20	2024-06-19	0.908
17_1_4_102	MW-07	Appendix IV	Arsenic	mg/L	17	0	0%	< 0.0001	0.187	↔	< 0.0001	0.025	↔	< 0.0001	0.021	↔	2023-04-17	2023-10-24	0.593
17_1_4_103	MW-07	Appendix IV	Barium	mg/L	17	0	0%	-0.00018754	0.661	↔	0.00011672	0.012	↔	< 0.0001	0.936	↔	2023-04-17	2025-05-14	0.615
17_1_4_104	MW-07	Appendix IV	Beryllium	mg/L	17	13	76%	< 0.0001	0.394	↔	< 0.0001	0.421	↔	< 0.0001	0.523	↔	2023-08-07	2025-01-06	0.192
17_1_4_106	MW-07	Appendix IV	Cadmium	mg/L	17	17	100%	< 0.0001	0.566	↔	< 0.0001	0.001	↑	< 0.0001	0.621	↔	2023-01-10	2023-08-16	0.878
17_1_4_109	MW-07	Appendix IV	Chromium, Total	mg/L	17	0	0%	< 0.0001	0.467	↔	< 0.0001	0.289	↔	< 0.0001	0.119	↔	2023-10-31	2024-07-17	0.432
17_1_4_110	MW-07	Appendix IV	Cobalt	mg/L	17	0	0%	< 0.0001	0.143	↔	< 0.0001	0.300	↔	< 0.0001	0.090	↔	2023-03-03	2024-02-12	0.483
17_1_4_115	MW-07	Appendix IV	Lead	mg/L	17	17	100%	< 0.0001	0.001	↓	< 0.0001	1.000	↔	< 0.0001	1.000	↔	2023-07-30	2025-08-10	0.850
17_1_4_118	MW-07	Appendix IV	Molybdenum	mg/L	17	17	100%	< 0.0001	0.001	↓	< 0.0001	1.000	↔	< 0.0001	1.000	↔	2023-07-30	2025-07-06	0.850
17_1_4_121	MW-07	Appendix IV	Radium 226 and 228	pCi/L	17	2	12%	0.00061597	0.804	↔	-0.00098967	0.439	↔	0.0019618	0.430	↔	2023-08-04	2025-02-17	0.159
17_1_4_122	MW-07	Appendix IV	Selenium	mg/L	17	9	53%	< 0.0001	0.012	↔	< 0.0001	0.766	↔	< 0.0001	0.435	↔	2023-06-27	2023-12-31	0.581
17_1_5_111	MW-07	Part 115	Copper	mg/L	17	13	76%	< 0.0001	0.877	↔	< 0.0001	0.159	↔	< 0.0001	0.252	↔	2023-10-14	2025-02-26	0.349
17_1_5_114	MW-07	Part 115	Iron	mg/L	17	0	0%	0.0032224	0.205	↔	0.037037	0.457	↔	-0.042857	0.272	↔	2025-01-09	2025-05-27	0.569
17_1_5_119	MW-07	Part 115	Nickel	mg/L	17	14	82%	< 0.0001	0.922	↔	< 0.0001	0.724	↔	< 0.0001	0.000	↓	2024-05-09	2025-01-30	0.895
17_1_5_128	MW-07	Part 115	Vanadium	mg/L	17	12	71%	< 0.0001	0.960	↔	< 0.0001	0.208	↔	< 0.0001	0.377	↔	2024-03-27	2024-09-09	0.660
18_1_3_105	MW-08	Appendix III	Boron	mg/L	17	0	0%	0.0022496	0.547	↔	-0.015813	0.201	↔	0.02438	0.108	↔	2024-07-17	2025-03-23	0.343
18_1_3_108	MW-08	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	-0.0059527	0.936	↔	0.061545	0.296	↔	0.20264	0.659	↔	2023-10-31	2025-04-21	0.580
18_1_3_112	MW-08	Appendix III	Fluoride	mg/L	17	0	0%	0.00057804	0.292	↔	-0.0018889	0.660	↔	0.0017119	0.253	↔	2024-06-28	2025-02-22	0.225
18_1_3_120	MW-08	Appendix III	pH (field)	su	17	0	0%	0.0054235	0.371	↔	< 0.0001	0.996	↔	-0.00025682	0.652	↔	2023-03-13	2024-02-19	0.301
18_1_3_124	MW-08	Appendix III	Sulfate (as SO4)	mg/L	17	4	24%	-0.03837	0.124	↔	0.16367	0.000	↑	-0.45507	0.038	↔	2024-04-05	2025-06-02	0.830
18_1_3_126	MW-08	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	-0.10268	0.686	↔	0.19371	0.333	↔	0.59863	0.701	↔	2024-01-05	2025-04-20	0.436
18_1_4_101	MW-08	Appendix IV	Antimony	mg/L	17	9	53%	< 0.0001	0.118	↔	< 0.0001	0.156	↔	< 0.0001	0.684	↔	2023-02-25	2023-08-24	0.432
18_1_4_102	MW-08	Appendix IV	Arsenic	mg/L	17	0	0%	0.00061694	0.005	↑	-0.00012218	0.130	↔	< 0.0001	0.007	↑	2023-02-16	2023-10-12	0.745
18_1_4_104	MW-08	Appendix IV	Beryllium	mg/L	17	16	94%	< 0.0001	0.660	↔	< 0.0001	0.459	↔	< 0.0001	0.021	↔	2024-06-11	2025-02-25	0.527
18_1_4_106	MW-08	Appendix IV	Cadmium	mg/L	17	16	94%	< 0.0001	0.008	↑	< 0.0001	0.358	↔	< 0.0001	0.299	↔	2023-07-05	2025-02-25	0.800
18_1_4_109	MW-08	Appendix IV	Chromium, Total	mg/L	17	0	0%	< 0.0001	0.291	↔	< 0.0001	0.715	↔	< 0.0001	0.619	↔	2024-01-17	2025-02-26	0.546

(Table continues on next page)

Table 10: Trend Tests: Piecewise Linear-Linear-Linear *(continued)*

								Line 1			Line 2			Line 3					
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Slope	p-Value	Trend	Slope	p-Value	Trend	Slope	p-Value	Trend	Break 1	Break 2	R-Squared
18_1_4_110	MW-08	Appendix IV	Cobalt	mg/L	17	0	0%	< 0.0001	0.225	↔	< 0.0001	0.334	↔	< 0.0001	0.085	↔	2023-02-11	2024-01-25	0.371
18_1_4_113	MW-08	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	0.00057804	0.292	↔	-0.0018889	0.660	↔	0.0017119	0.253	↔	2024-06-28	2025-02-22	0.225
18_1_4_115	MW-08	Appendix IV	Lead	mg/L	17	11	65%	< 0.0001	0.313	↔	< 0.0001	0.343	↔	< 0.0001	0.045	↔	2023-11-27	2024-10-15	0.436
18_1_4_116	MW-08	Appendix IV	Lithium	mg/L	17	0	0%	0.0013429	0.043	↔	< 0.0001	0.001	↓	0.00027536	0.376	↔	2023-01-19	2025-07-25	0.762
18_1_4_118	MW-08	Appendix IV	Molybdenum	mg/L	17	1	6%	< 0.0001	0.312	↔	< 0.0001	0.346	↔	< 0.0001	0.067	↔	2024-09-29	2025-04-19	0.365
18_1_4_121	MW-08	Appendix IV	Radium 226 and 228	pCi/L	17	4	24%	-0.0053393	0.748	↔	-0.0007396	0.346	↔	0.00021023	0.882	↔	2023-02-06	2024-09-27	0.317
18_1_4_125	MW-08	Appendix IV	Thallium	mg/L	17	16	94%	< 0.0001	0.653	↔	< 0.0001	0.234	↔	< 0.0001	0.104	↔	2023-10-15	2025-02-25	0.380
18_1_5_111	MW-08	Part 115	Copper	mg/L	17	6	35%	< 0.0001	0.742	↔	< 0.0001	0.077	↔	< 0.0001	0.018	↔	2024-01-14	2025-01-05	0.598
18_1_5_114	MW-08	Part 115	Iron	mg/L	17	0	0%	-0.1043	0.006	↓	0.0025551	0.635	↔	-0.054079	0.055	↔	2023-04-22	2025-04-11	0.794
18_1_5_128	MW-08	Part 115	Vanadium	mg/L	17	14	82%	< 0.0001	0.535	↔	< 0.0001	0.138	↔	< 0.0001	0.001	↓	2023-10-30	2025-02-26	0.821
18_1_5_129	MW-08	Part 115	Zinc	mg/L	17	3	18%	-0.00016152	0.382	↔	0.00026923	0.582	↔	-0.00016682	0.381	↔	2023-11-17	2024-10-15	0.191
19_2_3_105	MW-09	Appendix III	Boron	mg/L	17	0	0%	0.00030412	0.734	↔	-0.0057919	0.188	↔	0.011462	0.341	↔	2024-10-16	2025-06-01	0.309
19_2_3_107	MW-09	Appendix III	Calcium	mg/L	17	0	0%	1.171	0.057	↔	-0.98246	0.698	↔	0.18629	0.028	↔	2023-05-16	2023-08-07	0.666
19_2_3_112	MW-09	Appendix III	Fluoride	mg/L	17	0	0%	0.0026069	0.166	↔	-0.00045646	0.458	↔	-0.00058505	0.680	↔	2023-06-17	2024-11-19	0.355
19_2_3_124	MW-09	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	4.2007	0.021	↔	-1.6719	0.610	↔	0.56175	0.041	↔	2023-04-23	2023-09-06	0.684
19_2_3_126	MW-09	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	4.8111	0.119	↔	0.16669	0.809	↔	0.7757	0.202	↔	2023-04-17	2024-05-27	0.728
19_2_4_101	MW-09	Appendix IV	Antimony	mg/L	17	12	71%	< 0.0001	0.234	↔	< 0.0001	0.543	↔	< 0.0001	0.567	↔	2023-04-06	2023-08-08	0.278
19_2_4_102	MW-09	Appendix IV	Arsenic	mg/L	17	0	0%	< 0.0001	0.797	↔	< 0.0001	0.429	↔	< 0.0001	0.727	↔	2024-02-11	2025-05-06	0.102
19_2_4_104	MW-09	Appendix IV	Beryllium	mg/L	17	13	76%	< 0.0001	0.744	↔	< 0.0001	0.147	↔	< 0.0001	0.418	↔	2024-03-21	2025-02-25	0.381
19_2_4_106	MW-09	Appendix IV	Cadmium	mg/L	17	17	100%	< 0.0001	0.256	↔	< 0.0001	0.399	↔	< 0.0001	0.765	↔	2024-02-12	2024-09-22	0.270
19_2_4_109	MW-09	Appendix IV	Chromium, Total	mg/L	17	0	0%	< 0.0001	0.214	↔	< 0.0001	0.773	↔	< 0.0001	0.714	↔	2024-02-20	2024-09-27	0.181
19_2_4_110	MW-09	Appendix IV	Cobalt	mg/L	17	0	0%	< 0.0001	0.667	↔	< 0.0001	0.276	↔	< 0.0001	0.930	↔	2023-05-31	2025-07-20	0.203
19_2_4_113	MW-09	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	0.0026069	0.166	↔	-0.00045646	0.458	↔	-0.00058505	0.680	↔	2023-06-17	2024-11-19	0.355
19_2_4_115	MW-09	Appendix IV	Lead	mg/L	17	17	100%	< 0.0001	0.291	↔	< 0.0001	0.391	↔	< 0.0001	0.789	↔	2023-03-01	2023-06-18	0.298
19_2_4_117	MW-09	Appendix IV	Mercury	ng/L	17	14	82%	4.501	0.071	↔	-3.2364	0.385	↔	-0.52577	0.888	↔	2023-11-11	2024-11-02	0.370
19_2_4_118	MW-09	Appendix IV	Molybdenum	mg/L	17	0	0%	< 0.0001	0.042	↔	< 0.0001	0.054	↔	< 0.0001	0.723	↔	2023-05-22	2025-07-29	0.595
19_2_4_121	MW-09	Appendix IV	Radium 226 and 228	pCi/L	17	15	88%	0.00035679	0.264	↔	-0.00060238	0.273	↔	0.00031729	0.744	↔	2024-02-16	2025-02-25	0.258
19_2_4_122	MW-09	Appendix IV	Selenium	mg/L	17	2	12%	< 0.0001	0.614	↔	< 0.0001	0.105	↔	< 0.0001	0.024	↔	2023-11-25	2025-02-24	0.705
19_2_4_125	MW-09	Appendix IV	Thallium	mg/L	17	17	100%	< 0.0001	0.384	↔	< 0.0001	0.614	↔	< 0.0001	0.645	↔	2023-02-20	2023-07-04	0.126
19_2_5_111	MW-09	Part 115	Copper	mg/L	17	11	65%	< 0.0001	0.788	↔	< 0.0001	0.212	↔	< 0.0001	0.081	↔	2023-12-06	2024-07-17	0.484
19_2_5_123	MW-09	Part 115	Silver	mg/L	17	17	100%	< 0.0001	0.216	↔	< 0.0001	0.504	↔	< 0.0001	0.769	↔	2023-04-18	2024-05-17	0.267
19_2_5_129	MW-09	Part 115	Zinc	mg/L	17	8	47%	< 0.0001	0.118	↔	< 0.0001	0.423	↔	< 0.0001	0.314	↔	2023-11-19	2025-02-24	0.321
20_3_3_105	MW-10	Appendix III	Boron	mg/L	17	0	0%	0.037008	0.235	↔	-0.12655	0.164	↔	0.037089	0.019	↔	2023-10-15	2024-02-17	0.542
20_3_3_107	MW-10	Appendix III	Calcium	mg/L	17	0	0%	0.34015	0.152	↔	-0.53947	0.320	↔	0.28845	0.906	↔	2024-07-16	2025-06-21	0.283
20_3_3_108	MW-10	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	-1.6868	0.568	↔	1.6201	0.384	↔	0.36328	0.054	↔	2023-03-01	2023-06-27	0.632
20_3_3_112	MW-10	Appendix III	Fluoride	mg/L	17	0	0%	-0.044836	0.162	↔	0.054286	0.377	↔	-0.0010787	0.465	↔	2023-03-11	2023-05-12	0.374
20_3_3_120	MW-10	Appendix III	pH (field)	su	17	0	0%	0.0045884	0.204	↔	-0.0035377	0.617	↔	-0.00012163	0.821	↔	2023-04-30	2023-10-11	0.331
20_3_3_124	MW-10	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	-2.1054	0.091	↔	5.3443	0.032	↔	-2.143	0.008	↓	2023-09-08	2024-04-07	0.695
20_3_4_101	MW-10	Appendix IV	Antimony	mg/L	17	13	76%	< 0.0001	0.525	↔	< 0.0001	0.484	↔	< 0.0001	0.795	↔	2024-02-12	2024-10-02	0.211
20_3_4_102	MW-10	Appendix IV	Arsenic	mg/L	17	0	0%	< 0.0001	0.272	↔	< 0.0001	0.735	↔	< 0.0001	0.672	↔	2023-08-17	2025-04-20	0.530
20_3_4_103	MW-10	Appendix IV	Barium	mg/L	17	0	0%	-0.0015701	0.328	↔	< 0.0001	0.753	↔	0.00098744	0.152	↔	2023-04-02	2025-01-27	0.468
20_3_4_104	MW-10	Appendix IV	Beryllium	mg/L	17	7	41%	< 0.0001	0.104	↔	< 0.0001	0.166	↔	< 0.0001	0.253	↔	2023-06-01	2024-06-04	0.397

(Table continues on next page)

Table 10: Trend Tests: Piecewise Linear-Linear-Linear *(continued)*

								Line 1			Line 2			Line 3					
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Slope	p-Value	Trend	Slope	p-Value	Trend	Slope	p-Value	Trend	Break 1	Break 2	R-Squared
20_3_4_106	MW-10	Appendix IV	Cadmium	mg/L	17	17	100%	< 0.0001	0.353	↔	< 0.0001	0.437	↔	< 0.0001	0.778	↔	2024-02-12	2024-09-27	0.234
20_3_4_110	MW-10	Appendix IV	Cobalt	mg/L	17	1	6%	< 0.0001	0.042	↔	< 0.0001	0.352	↔	< 0.0001	0.204	↔	2023-05-23	2024-02-09	0.545
20_3_4_113	MW-10	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	-0.044836	0.162	↔	0.054286	0.377	↔	-0.0010787	0.465	↔	2023-03-11	2023-05-12	0.374
20_3_4_115	MW-10	Appendix IV	Lead	mg/L	17	15	88%	< 0.0001	0.004	↑	< 0.0001	0.071	↔	< 0.0001	0.717	↔	2023-04-02	2023-06-06	0.779
20_3_4_117	MW-10	Appendix IV	Mercury	ng/L	17	15	88%	1.738	0.056	↔	-3.4053	0.609	↔	0.15556	0.946	↔	2024-04-07	2024-12-05	0.366
20_3_4_121	MW-10	Appendix IV	Radium 226 and 228	pCi/L	17	13	76%	0.0041377	0.651	↔	-0.00063778	0.263	↔	0.0006392	0.293	↔	2023-02-05	2024-04-25	0.233
20_3_4_122	MW-10	Appendix IV	Selenium	mg/L	17	1	6%	< 0.0001	0.137	↔	< 0.0001	0.083	↔	< 0.0001	0.303	↔	2024-02-12	2024-12-18	0.450
20_3_4_125	MW-10	Appendix IV	Thallium	mg/L	17	17	100%	< 0.0001	0.112	↔	< 0.0001	0.444	↔	< 0.0001	0.701	↔	2023-02-06	2023-08-08	0.340
20_3_5_111	MW-10	Part 115	Copper	mg/L	17	14	82%	< 0.0001	0.589	↔	< 0.0001	0.389	↔	< 0.0001	0.821	↔	2023-05-23	2025-04-11	0.142
20_3_5_114	MW-10	Part 115	Iron	mg/L	17	0	0%	-0.0038401	0.481	↔	0.006408	0.145	↔	-0.029133	0.402	↔	2023-11-08	2025-04-20	0.458
20_3_5_119	MW-10	Part 115	Nickel	mg/L	17	7	41%	< 0.0001	0.645	↔	< 0.0001	0.284	↔	< 0.0001	0.398	↔	2023-04-11	2024-12-22	0.172
20_3_5_123	MW-10	Part 115	Silver	mg/L	17	17	100%	< 0.0001	0.546	↔	< 0.0001	0.280	↔	< 0.0001	0.958	↔	2023-04-17	2024-07-31	0.246
20_3_5_128	MW-10	Part 115	Vanadium	mg/L	17	12	71%	< 0.0001	0.330	↔	< 0.0001	0.833	↔	< 0.0001	0.302	↔	2024-10-16	2025-04-28	0.581
21_2_3_105	MW-11	Appendix III	Boron	mg/L	17	0	0%	-0.069246	0.034	↔	0.068336	0.264	↔	-0.00031193	0.945	↔	2023-05-03	2023-08-14	0.457
21_2_3_107	MW-11	Appendix III	Calcium	mg/L	17	0	0%	1.6768	0.047	↔	-0.65583	0.375	↔	0.043473	0.608	↔	2023-03-20	2023-10-23	0.483
21_2_3_108	MW-11	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	-0.28725	0.193	↔	-0.0056812	0.779	↔	0.13189	0.696	↔	2023-03-16	2025-04-21	0.379
21_2_3_112	MW-11	Appendix III	Fluoride	mg/L	17	0	0%	-0.0065344	0.027	↔	0.0062104	0.259	↔	-0.0002497	0.542	↔	2023-05-06	2023-09-10	0.516
21_2_3_124	MW-11	Appendix III	Sulfate (as SO4)	mg/L	17	6	35%	1.5562	0.000	↑	-2.6621	0.000	↓	0.0093626	0.748	↔	2023-04-17	2023-07-01	0.906
21_2_3_126	MW-11	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2.3748	0.324	↔	-0.59324	0.273	↔	0.069172	0.960	↔	2023-05-09	2024-10-16	0.236
21_2_4_102	MW-11	Appendix IV	Arsenic	mg/L	17	0	0%	< 0.0001	0.232	↔	< 0.0001	0.439	↔	< 0.0001	0.066	↔	2023-04-05	2025-08-02	0.608
21_2_4_103	MW-11	Appendix IV	Barium	mg/L	17	0	0%	-0.0032154	0.218	↔	0.00042428	0.358	↔	-0.00024006	0.725	↔	2023-04-17	2024-09-08	0.338
21_2_4_104	MW-11	Appendix IV	Beryllium	mg/L	17	13	76%	< 0.0001	0.831	↔	< 0.0001	0.207	↔	< 0.0001	0.148	↔	2024-05-03	2023-10-01	0.301
21_2_4_109	MW-11	Appendix IV	Chromium, Total	mg/L	17	0	0%	< 0.0001	0.400	↔	< 0.0001	0.985	↔	< 0.0001	0.440	↔	2023-04-17	2025-07-31	0.297
21_2_4_110	MW-11	Appendix IV	Cobalt	mg/L	17	0	0%	< 0.0001	0.533	↔	< 0.0001	0.585	↔	< 0.0001	0.016	↔	2024-04-07	2025-08-10	0.527
21_2_4_113	MW-11	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	-0.0065344	0.027	↔	0.0062104	0.259	↔	-0.0002497	0.542	↔	2023-05-06	2023-09-10	0.516
21_2_4_115	MW-11	Appendix IV	Lead	mg/L	17	3	18%	-0.00021013	0.344	↔	< 0.0001	0.959	↔	0.00035857	0.310	↔	2023-04-11	2025-07-20	0.386
21_2_4_116	MW-11	Appendix IV	Lithium	mg/L	17	0	0%	-0.0010955	0.027	↔	0.0011093	0.566	↔	< 0.0001	0.548	↔	2023-05-07	2023-08-07	0.467
21_2_4_122	MW-11	Appendix IV	Selenium	mg/L	17	3	18%	< 0.0001	0.057	↔	< 0.0001	0.185	↔	< 0.0001	0.333	↔	2024-02-18	2024-11-19	0.416
21_2_4_125	MW-11	Appendix IV	Thallium	mg/L	17	16	94%	< 0.0001	0.128	↔	< 0.0001	0.223	↔	< 0.0001	0.840	↔	2023-04-13	2023-07-19	0.497
21_2_5_111	MW-11	Part 115	Copper	mg/L	17	4	24%	< 0.0001	0.378	↔	< 0.0001	0.948	↔	< 0.0001	0.418	↔	2023-04-09	2025-08-08	0.288
21_2_5_114	MW-11	Part 115	Iron	mg/L	17	0	0%	-0.034809	0.011	↔	0.060976	0.312	↔	-0.00076376	0.749	↔	2023-06-03	2023-09-08	0.633
21_2_5_119	MW-11	Part 115	Nickel	mg/L	17	0	0%	< 0.0001	0.382	↔	< 0.0001	0.838	↔	0.00018698	0.001	↑	2023-04-17	2025-08-12	0.784
21_2_5_123	MW-11	Part 115	Silver	mg/L	17	14	82%	< 0.0001	0.273	↔	< 0.0001	0.420	↔	< 0.0001	0.623	↔	2023-04-28	2023-12-05	0.245
21_2_5_128	MW-11	Part 115	Vanadium	mg/L	17	13	76%	< 0.0001	0.109	↔	< 0.0001	0.255	↔	< 0.0001	0.517	↔	2024-04-06	2024-12-04	0.337
21_2_5_129	MW-11	Part 115	Zinc	mg/L	17	4	24%	-0.00045795	0.161	↔	< 0.0001	0.764	↔	< 0.0001	0.098	↔	2023-03-14	2024-01-23	0.452
22_2_3_105	MW-12	Appendix III	Boron	mg/L	17	0	0%	0.00014966	0.186	↔	-0.0024074	0.283	↔	0.0025714	0.146	↔	2025-02-16	2025-05-07	0.640
22_2_3_108	MW-12	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	-0.010229	0.315	↔	0.021484	0.506	↔	-0.02949	0.453	↔	2024-05-11	2025-02-26	0.184
22_2_3_112	MW-12	Appendix III	Fluoride	mg/L	17	0	0%	-0.0017827	0.040	↔	0.00055149	0.478	↔	-0.00020816	0.172	↔	2023-05-05	2024-02-12	0.519
22_2_4_101	MW-12	Appendix IV	Antimony	mg/L	17	0	0%	< 0.0001	0.030	↔	< 0.0001	0.264	↔	< 0.0001	0.001	↓	2024-06-02	2025-02-10	0.705
22_2_4_106	MW-12	Appendix IV	Cadmium	mg/L	17	0	0%	< 0.0001	0.817	↔	< 0.0001	0.719	↔	< 0.0001	0.111	↔	2023-02-13	2025-03-03	0.591
22_2_4_109	MW-12	Appendix IV	Chromium, Total	mg/L	17	6	35%	< 0.0001	0.909	↔	< 0.0001	0.460	↔	< 0.0001	0.702	↔	2023-04-03	2025-04-21	0.143
22_2_4_110	MW-12	Appendix IV	Cobalt	mg/L	17	5	29%	< 0.0001	0.032	↔	< 0.0001	0.650	↔	< 0.0001	0.000	↑	2024-10-16	2025-06-16	0.931

(Table continues on next page)

Table 10: Trend Tests: Piecewise Linear-Linear-Linear *(continued)*

								Line 1			Line 2			Line 3					
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Slope	p-Value	Trend	Slope	p-Value	Trend	Slope	p-Value	Trend	Break 1	Break 2	R-Squared
22_2_4_113	MW-12	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	-0.0017827	0.040	↔	0.00055149	0.478	↔	-0.00020816	0.172	↔	2023-05-05	2024-02-12	0.519
22_2_4_115	MW-12	Appendix IV	Lead	mg/L	17	6	35%	< 0.0001	0.593	↔	< 0.0001	0.137	↔	< 0.0001	0.149	↔	2024-01-09	2024-08-09	0.492
22_2_4_117	MW-12	Appendix IV	Mercury	ng/L	17	12	71%	0.026619	0.313	↔	-2.9476	0.000	↓	0.0028571	0.994	↔	2025-02-19	2025-04-21	0.942
22_2_4_122	MW-12	Appendix IV	Selenium	mg/L	17	0	0%	< 0.0001	0.085	↔	< 0.0001	0.305	↔	< 0.0001	0.007	↓	2024-07-02	2025-02-25	0.611
22_2_5_111	MW-12	Part 115	Copper	mg/L	17	0	0%	< 0.0001	0.851	↔	< 0.0001	0.043	↔	< 0.0001	0.003	↓	2024-01-18	2025-02-25	0.774
22_2_5_119	MW-12	Part 115	Nickel	mg/L	17	0	0%	< 0.0001	0.600	↔	< 0.0001	0.579	↔	< 0.0001	0.142	↔	2024-03-11	2025-04-21	0.817
22_2_5_128	MW-12	Part 115	Vanadium	mg/L	17	6	35%	< 0.0001	0.995	↔	< 0.0001	0.166	↔	< 0.0001	0.017	↔	2024-03-05	2024-08-10	0.592
28_1_3_105	MW-18	Appendix III	Boron	mg/L	17	0	0%	-0.0018932	0.602	↔	0.0048936	0.001	↑	0.00074654	0.194	↔	2023-03-25	2024-04-09	0.943
28_1_3_107	MW-18	Appendix III	Calcium	mg/L	17	0	0%	-1.1952	0.058	↔	0.12052	0.152	↔	-0.61464	0.023	↔	2023-04-17	2025-02-18	0.701
28_1_3_120	MW-18	Appendix III	pH (field)	su	17	0	0%	0.00064054	0.031	↔	< 0.0001	0.945	↔	0.00040566	0.389	↔	2023-08-08	2025-02-26	0.653
28_1_3_124	MW-18	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	-8.8539	0.158	↔	0.27595	0.104	↔	-3.0146	0.330	↔	2023-02-07	2025-04-25	0.712
28_1_3_126	MW-18	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	-4.9	0.013	↔	0.25886	0.180	↔	-2.3895	0.030	↔	2023-03-28	2025-02-26	0.805
28_1_4_102	MW-18	Appendix IV	Arsenic	mg/L	17	0	0%	< 0.0001	0.235	↔	< 0.0001	0.853	↔	< 0.0001	0.929	↔	2023-10-24	2024-11-30	0.359
28_1_4_103	MW-18	Appendix IV	Barium	mg/L	17	0	0%	< 0.0001	0.234	↔	< 0.0001	0.502	↔	0.0001831	0.099	↔	2024-12-28	2025-06-06	0.508
28_1_4_104	MW-18	Appendix IV	Beryllium	mg/L	17	14	82%	< 0.0001	0.129	↔	< 0.0001	0.320	↔	< 0.0001	0.478	↔	2024-04-09	2024-12-10	0.313
28_1_4_109	MW-18	Appendix IV	Chromium, Total	mg/L	17	15	88%	< 0.0001	0.791	↔	< 0.0001	0.113	↔	< 0.0001	0.616	↔	2023-10-03	2025-04-21	0.349
28_1_4_110	MW-18	Appendix IV	Cobalt	mg/L	17	0	0%	< 0.0001	0.001	↓	< 0.0001	0.137	↔	< 0.0001	0.877	↔	2023-04-17	2025-08-03	0.917
28_1_4_115	MW-18	Appendix IV	Lead	mg/L	17	10	59%	< 0.0001	0.690	↔	< 0.0001	0.077	↔	< 0.0001	0.777	↔	2023-02-07	2025-04-28	0.273
28_1_4_116	MW-18	Appendix IV	Lithium	mg/L	17	0	0%	-0.00018075	0.302	↔	< 0.0001	0.694	↔	< 0.0001	0.834	↔	2023-02-11	2025-05-18	0.222
28_1_4_117	MW-18	Appendix IV	Mercury	ng/L	17	15	88%	< 0.0001	1.000	↔	< 0.0001	1.000	↔	-0.52339	0.007	↓	2023-01-14	2024-11-04	0.848
28_1_4_118	MW-18	Appendix IV	Molybdenum	mg/L	17	0	0%	< 0.0001	0.131	↔	< 0.0001	0.699	↔	0.00012919	0.110	↔	2023-08-08	2025-07-14	0.600
28_1_4_121	MW-18	Appendix IV	Radium 226 and 228	pCi/L	17	9	53%	0.0033348	0.153	↔	-0.0011748	0.107	↔	0.00025818	0.453	↔	2023-04-17	2024-03-09	0.465
28_1_4_122	MW-18	Appendix IV	Selenium	mg/L	17	0	0%	< 0.0001	0.070	↔	< 0.0001	0.448	↔	< 0.0001	0.132	↔	2024-04-10	2024-11-01	0.465
28_1_4_125	MW-18	Appendix IV	Thallium	mg/L	17	16	94%	< 0.0001	0.699	↔	< 0.0001	0.296	↔	< 0.0001	0.593	↔	2023-02-07	2025-08-10	0.158
28_1_5_111	MW-18	Part 115	Copper	mg/L	17	0	0%	< 0.0001	0.160	↔	< 0.0001	0.691	↔	< 0.0001	0.067	↔	2024-11-11	2025-06-22	0.570
28_1_5_114	MW-18	Part 115	Iron	mg/L	17	0	0%	-0.045456	0.001	↓	0.0040214	0.016	↔	-0.017199	0.002	↓	2023-03-19	2025-02-10	0.847
28_1_5_123	MW-18	Part 115	Silver	mg/L	17	17	100%	< 0.0001	0.734	↔	< 0.0001	0.426	↔	< 0.0001	0.861	↔	2024-02-12	2024-11-08	0.149
28_1_5_128	MW-18	Part 115	Vanadium	mg/L	17	16	94%	< 0.0001	1.000	↔	< 0.0001	1.000	↔	< 0.0001	0.001	↓	2023-07-06	2025-03-22	0.868
29_1_3_105	MW-19	Appendix III	Boron	mg/L	17	0	0%	-0.0047236	0.397	↔	0.008078	0.430	↔	0.013278	0.136	↔	2025-07-22	2023-04-02	0.560
29_1_3_107	MW-19	Appendix III	Calcium	mg/L	17	0	0%	-0.44733	0.090	↔	0.027718	0.868	↔	-0.088205	0.577	↔	2023-07-21	2024-09-04	0.514
29_1_3_108	MW-19	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	-0.24455	0.031	↔	-0.028553	0.241	↔	-0.00013261	0.995	↔	2023-04-11	2024-04-08	0.812
29_1_3_112	MW-19	Appendix III	Fluoride	mg/L	17	0	0%	-0.0040237	0.406	↔	-0.00043543	0.120	↔	0.0024298	0.607	↔	2023-02-26	2025-04-21	0.479
29_1_4_101	MW-19	Appendix IV	Antimony	mg/L	17	12	71%	< 0.0001	0.215	↔	< 0.0001	0.370	↔	< 0.0001	0.529	↔	2023-04-18	2024-07-30	0.236
29_1_4_103	MW-19	Appendix IV	Barium	mg/L	17	0	0%	< 0.0001	0.112	↔	< 0.0001	0.561	↔	< 0.0001	0.627	↔	2023-04-02	2025-05-21	0.558
29_1_4_104	MW-19	Appendix IV	Beryllium	mg/L	17	3	18%	< 0.0001	0.734	↔	< 0.0001	0.598	↔	< 0.0001	0.689	↔	2023-02-07	2024-12-03	0.100
29_1_4_106	MW-19	Appendix IV	Cadmium	mg/L	17	16	94%	< 0.0001	0.419	↔	< 0.0001	0.366	↔	< 0.0001	0.191	↔	2023-12-06	2025-07-29	0.271
29_1_4_109	MW-19	Appendix IV	Chromium, Total	mg/L	17	5	29%	< 0.0001	0.379	↔	< 0.0001	0.820	↔	< 0.0001	0.959	↔	2023-05-21	2023-11-05	0.328
29_1_4_113	MW-19	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	-0.0040237	0.406	↔	-0.00043543	0.120	↔	0.0024298	0.607	↔	2023-02-26	2025-04-21	0.479
29_1_4_115	MW-19	Appendix IV	Lead	mg/L	17	17	100%	< 0.0001	0.347	↔	< 0.0001	0.065	↔	< 0.0001	0.653	↔	2023-02-07	2023-11-14	0.516
29_1_4_118	MW-19	Appendix IV	Molybdenum	mg/L	17	0	0%	< 0.0001	0.328	↔	< 0.0001	0.364	↔	< 0.0001	0.732	↔	2024-06-28	2025-01-19	0.565
29_1_4_125	MW-19	Appendix IV	Thallium	mg/L	17	16	94%	< 0.0001	0.363	↔	< 0.0001	0.288	↔	< 0.0001	0.745	↔	2023-08-11	2023-01-29	0.268
29_1_5_114	MW-19	Part 115	Iron	mg/L	17	0	0%	-0.031704	0.187	↔	0.06756	0.009	↑	-0.015631	0.003	↓	2023-05-12	2023-10-25	0.720

(Table continues on next page)

Table 10: Trend Tests: Piecewise Linear-Linear-Linear *(continued)*

								Line 1			Line 2			Line 3					
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Slope	p-Value	Trend	Slope	p-Value	Trend	Slope	p-Value	Trend	Break 1	Break 2	R-Squared
29_1_5_119	MW-19	Part 115	Nickel	mg/L	17	1	6%	< 0.0001	0.154	↔	< 0.0001	0.241	↔	0.00011446	0.164	↔	2024-07-17	2025-06-26	0.496
29_1_5_123	MW-19	Part 115	Silver	mg/L	17	17	100%	< 0.0001	0.600	↔	< 0.0001	0.208	↔	< 0.0001	0.912	↔	2023-02-07	2025-01-18	0.294
29_1_5_128	MW-19	Part 115	Vanadium	mg/L	17	14	82%	< 0.0001	0.509	↔	< 0.0001	0.275	↔	< 0.0001	0.671	↔	2023-02-08	2024-11-19	0.162
30_1_3_107	MW-20	Appendix III	Calcium	mg/L	17	0	0%	-0.13845	0.435	↔	0.0065602	0.884	↔	0.14304	0.466	↔	2023-06-25	2025-03-01	0.251
30_1_3_108	MW-20	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	0.10517	0.230	↔	-0.071137	0.006	↓	0.015523	0.868	↔	2023-05-23	2025-04-16	0.753
30_1_3_112	MW-20	Appendix III	Fluoride	mg/L	17	0	0%	-0.0080056	0.001	↓	< 0.0001	0.788	↔	0.00016715	0.312	↔	2023-01-08	2024-10-15	0.804
30_1_3_120	MW-20	Appendix III	pH (field)	su	17	0	0%	< 0.0001	0.555	↔	0.00035882	0.907	↔	-0.0013378	0.574	↔	2024-11-05	2025-04-30	0.216
30_1_3_124	MW-20	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	1.0286	0.415	↔	-0.067753	0.055	↔	0.54286	0.391	↔	2023-01-07	2025-06-20	0.368
30_1_3_126	MW-20	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	0.10082	0.474	↔	-0.87912	0.433	↔	0.64356	0.112	↔	2024-04-18	2025-01-14	0.528
30_1_4_102	MW-20	Appendix IV	Arsenic	mg/L	17	0	0%	< 0.0001	0.318	↔	< 0.0001	0.494	↔	< 0.0001	0.442	↔	2023-08-31	2025-03-25	0.194
30_1_4_103	MW-20	Appendix IV	Barium	mg/L	17	0	0%	-0.0068446	0.012	↔	0.00095381	0.341	↔	0.00014003	0.384	↔	2023-02-24	2023-08-07	0.672
30_1_4_104	MW-20	Appendix IV	Beryllium	mg/L	17	16	94%	< 0.0001	0.168	↔	< 0.0001	0.174	↔	< 0.0001	0.777	↔	2024-02-12	2024-11-02	0.344
30_1_4_109	MW-20	Appendix IV	Chromium, Total	mg/L	17	9	53%	< 0.0001	0.412	↔	< 0.0001	0.419	↔	< 0.0001	0.906	↔	2023-02-06	2023-09-03	0.297
30_1_4_110	MW-20	Appendix IV	Cobalt	mg/L	17	0	0%	< 0.0001	0.630	↔	< 0.0001	0.000	↓	< 0.0001	0.001	↑	2023-02-06	2025-07-18	0.864
30_1_4_113	MW-20	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	-0.0080056	0.001	↓	< 0.0001	0.788	↔	0.00016715	0.312	↔	2023-01-08	2024-10-15	0.804
30_1_4_116	MW-20	Appendix IV	Lithium	mg/L	17	0	0%	< 0.0001	0.665	↔	< 0.0001	0.112	↔	0.00011052	0.338	↔	2023-08-06	2025-04-13	0.377
30_1_4_117	MW-20	Appendix IV	Mercury	ng/L	17	14	82%	0.017035	0.627	↔	0.43851	0.623	↔	-0.28609	0.599	↔	2025-04-24	2024-11-03	0.875
30_1_4_118	MW-20	Appendix IV	Molybdenum	mg/L	17	0	0%	< 0.0001	0.631	↔	< 0.0001	0.394	↔	< 0.0001	0.520	↔	2023-04-07	2023-05-25	0.269
30_1_4_125	MW-20	Appendix IV	Thallium	mg/L	17	16	94%	< 0.0001	0.066	↔	< 0.0001	0.301	↔	< 0.0001	0.823	↔	2024-02-13	2024-10-16	0.348
30_1_5_111	MW-20	Part 115	Copper	mg/L	17	2	12%	< 0.0001	0.004	↑	< 0.0001	0.487	↔	< 0.0001	0.000	↑	2024-10-16	2025-08-06	0.981
30_1_5_119	MW-20	Part 115	Nickel	mg/L	17	0	0%	< 0.0001	0.782	↔	< 0.0001	0.001	↓	0.00036571	0.000	↑	2023-02-12	2025-08-03	0.984
30_1_5_128	MW-20	Part 115	Vanadium	mg/L	17	17	100%	< 0.0001	1.000	↔	< 0.0001	1.000	↔	< 0.0001	0.000	↓	2023-03-24	2025-04-04	0.946
30_1_5_129	MW-20	Part 115	Zinc	mg/L	17	0	0%	< 0.0001	0.261	↔	< 0.0001	0.914	↔	0.00074286	0.053	↔	2023-08-11	2025-06-26	0.699
40_1_3_105	MW-30	Appendix III	Boron	mg/L	17	0	0%	0.0059712	0.335	↔	-0.0042077	0.457	↔	< 0.0001	0.922	↔	2023-03-13	2023-09-01	0.316
40_1_3_107	MW-30	Appendix III	Calcium	mg/L	17	0	0%	-0.484	0.353	↔	0.63214	0.130	↔	-7.7183	0.025	↔	2023-12-25	2025-07-24	0.545
40_1_3_108	MW-30	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	-0.2078	0.185	↔	3.8083	0.000	↑	-1.4085	0.366	↔	2024-06-17	2025-04-27	0.978
40_1_3_120	MW-30	Appendix III	pH (field)	su	17	0	0%	0.0033167	0.414	↔	-0.00018016	0.866	↔	-0.00023736	0.466	↔	2023-03-12	2024-02-07	0.268
40_1_3_124	MW-30	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	-0.28372	0.271	↔	1.5813	0.196	↔	-3.9292	0.230	↔	2024-10-15	2025-06-08	0.377
40_1_4_103	MW-30	Appendix IV	Barium	mg/L	17	0	0%	-0.0004447	0.058	↔	< 0.0001	0.775	↔	< 0.0001	0.438	↔	2023-03-27	2024-04-07	0.536
40_1_4_104	MW-30	Appendix IV	Beryllium	mg/L	17	13	76%	< 0.0001	0.497	↔	< 0.0001	0.448	↔	< 0.0001	0.331	↔	2024-07-28	2025-02-25	0.230
40_1_4_106	MW-30	Appendix IV	Cadmium	mg/L	17	16	94%	< 0.0001	0.351	↔	< 0.0001	0.549	↔	< 0.0001	0.300	↔	2025-02-13	2025-06-21	0.209
40_1_4_109	MW-30	Appendix IV	Chromium, Total	mg/L	17	0	0%	< 0.0001	0.281	↔	< 0.0001	0.433	↔	0.00021063	0.006	↑	2023-02-06	2025-08-04	0.691
40_1_4_110	MW-30	Appendix IV	Cobalt	mg/L	17	0	0%	< 0.0001	0.556	↔	0.00011192	0.075	↔	-0.00013317	0.078	↔	2024-06-09	2025-02-25	0.532
40_1_4_116	MW-30	Appendix IV	Lithium	mg/L	17	0	0%	-0.00010682	0.226	↔	0.00022409	0.277	↔	-0.0013239	0.147	↔	2024-05-05	2025-07-26	0.346
40_1_4_125	MW-30	Appendix IV	Thallium	mg/L	17	17	100%	< 0.0001	0.144	↔	< 0.0001	0.643	↔	< 0.0001	0.364	↔	2023-02-06	2025-08-10	0.381
40_1_5_119	MW-30	Part 115	Nickel	mg/L	17	3	18%	< 0.0001	0.573	↔	0.00010142	0.143	↔	-0.000196	0.335	↔	2023-09-03	2025-02-25	0.347
40_1_5_123	MW-30	Part 115	Silver	mg/L	17	16	94%	< 0.0001	0.342	↔	< 0.0001	0.687	↔	< 0.0001	0.931	↔	2023-02-06	2024-01-03	0.141
40_1_5_129	MW-30	Part 115	Zinc	mg/L	17	10	59%	< 0.0001	0.534	↔	0.00011454	0.167	↔	-0.00014812	0.425	↔	2023-11-21	2025-02-25	0.351
41_1_3_107	MW-31	Appendix III	Calcium	mg/L	17	0	0%	-0.21738	0.076	↔	0.12759	0.420	↔	-0.065564	0.134	↔	2023-06-29	2024-04-07	0.407
41_1_3_108	MW-31	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	-0.17216	0.234	↔	0.011461	0.461	↔	0.40308	0.000	↑	2023-03-15	2025-04-19	0.867
41_1_3_112	MW-31	Appendix III	Fluoride	mg/L	17	0	0%	0.0020381	0.323	↔	-0.00095213	0.007	↓	-0.01	0.042	↔	2023-05-11	2025-07-22	0.847
41_1_4_102	MW-31	Appendix IV	Arsenic	mg/L	17	0	0%	< 0.0001	0.525	↔	< 0.0001	0.299	↔	< 0.0001	0.498	↔	2023-01-27	2025-04-20	0.457

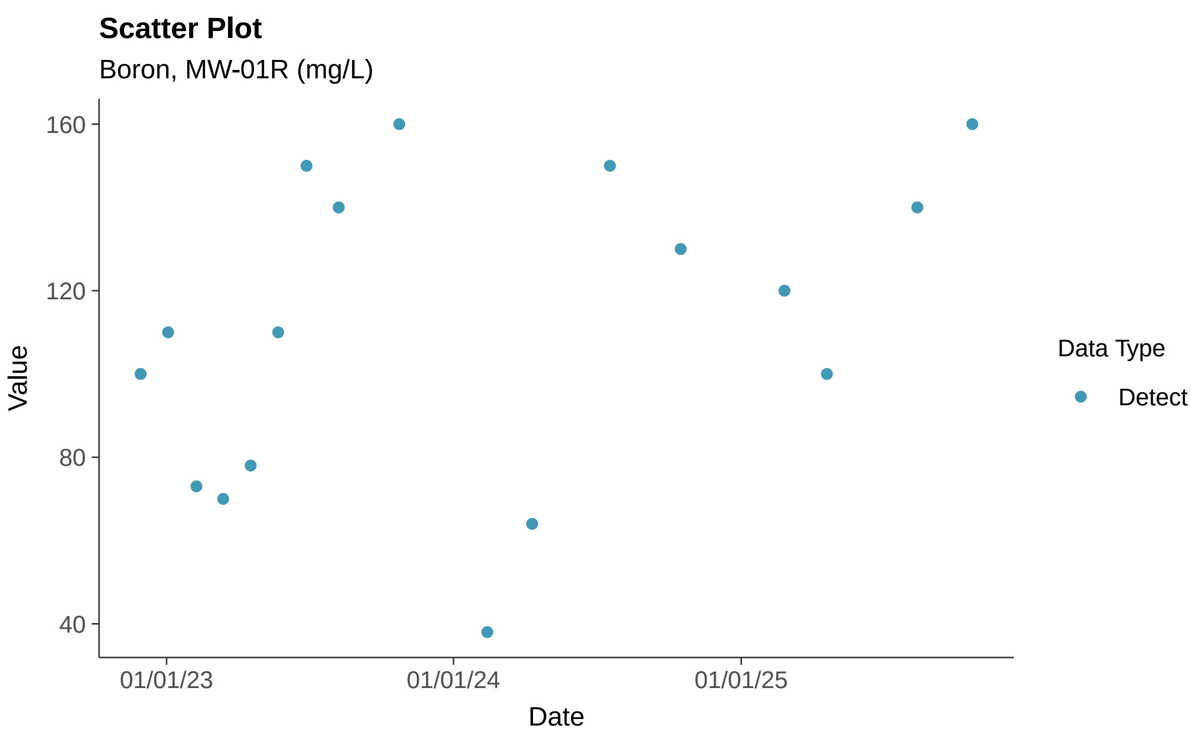
(Table continues on next page)

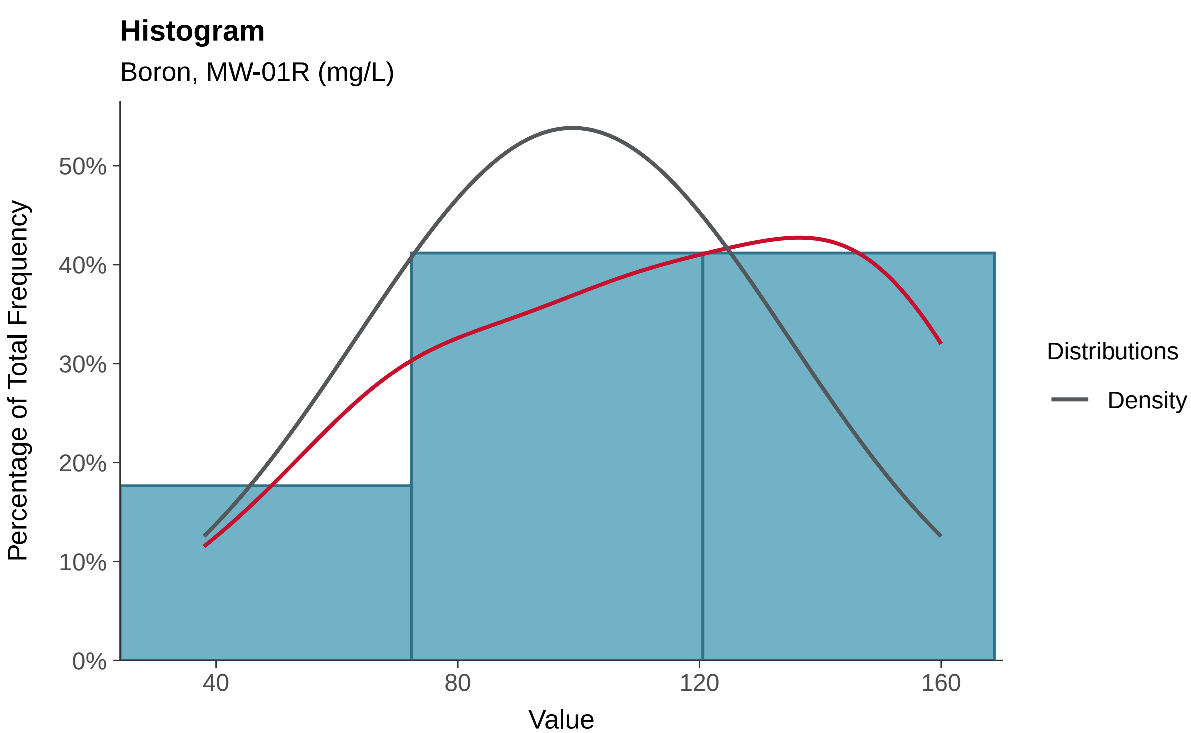
Table 10: Trend Tests: Piecewise Linear-Linear-Linear *(continued)*

								Line 1			Line 2			Line 3					
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Slope	p-Value	Trend	Slope	p-Value	Trend	Slope	p-Value	Trend	Break 1	Break 2	R-Squared
41_1_4_103	MW-31	Appendix IV	Barium	mg/L	17	0	0%	< 0.0001	0.317	↔	-0.0018704	0.172	↔	0.0018571	0.087	↔	2025-02-21	2025-05-06	0.677
41_1_4_104	MW-31	Appendix IV	Beryllium	mg/L	17	15	88%	< 0.0001	0.601	↔	< 0.0001	0.151	↔	< 0.0001	0.176	↔	2023-11-24	2024-10-15	0.443
41_1_4_106	MW-31	Appendix IV	Cadmium	mg/L	17	16	94%	< 0.0001	0.421	↔	< 0.0001	0.005	↑	< 0.0001	0.481	↔	2023-03-29	2023-06-07	0.961
41_1_4_110	MW-31	Appendix IV	Cobalt	mg/L	17	3	18%	< 0.0001	0.757	↔	< 0.0001	0.483	↔	< 0.0001	0.600	↔	2024-02-11	2025-07-01	0.086
41_1_4_113	MW-31	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	0.0020381	0.323	↔	-0.00095213	0.007	↓	-0.01	0.042	↔	2023-05-11	2025-07-22	0.847
41_1_4_115	MW-31	Appendix IV	Lead	mg/L	17	13	76%	< 0.0001	0.172	↔	< 0.0001	0.930	↔	< 0.0001	0.058	↔	2023-10-07	2025-06-21	0.717
41_1_4_122	MW-31	Appendix IV	Selenium	mg/L	17	6	35%	< 0.0001	0.357	↔	< 0.0001	0.186	↔	< 0.0001	0.421	↔	2024-02-11	2024-11-24	0.263
41_1_4_125	MW-31	Appendix IV	Thallium	mg/L	17	16	94%	< 0.0001	0.166	↔	< 0.0001	0.172	↔	< 0.0001	0.775	↔	2024-02-11	2024-11-02	0.346
41_1_5_119	MW-31	Part 115	Nickel	mg/L	17	10	59%	< 0.0001	1.000	↔	< 0.0001	0.978	↔	0.00052613	0.066	↔	2023-09-23	2025-01-18	0.543
41_1_5_128	MW-31	Part 115	Vanadium	mg/L	17	12	71%	< 0.0001	0.744	↔	< 0.0001	0.366	↔	< 0.0001	0.008	↓	2024-03-15	2024-10-14	0.533
41_1_5_129	MW-31	Part 115	Zinc	mg/L	17	9	53%	< 0.0001	0.290	↔	< 0.0001	0.104	↔	< 0.0001	0.082	↔	2024-07-02	2024-11-10	0.471
42_1_3_108	MW-32	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	-0.020407	0.028	↔	0.02534	0.036	↔	0.11268	0.114	↔	2024-03-12	2025-08-06	0.771
42_1_3_126	MW-32	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	0.35946	0.912	↔	-0.79431	0.159	↔	0.022136	0.845	↔	2023-02-05	2023-08-08	0.393
42_1_4_101	MW-32	Appendix IV	Antimony	mg/L	17	13	76%	< 0.0001	0.034	↔	< 0.0001	0.521	↔	< 0.0001	0.706	↔	2024-02-12	2024-10-05	0.413
42_1_4_102	MW-32	Appendix IV	Arsenic	mg/L	17	0	0%	< 0.0001	0.100	↔	< 0.0001	0.572	↔	< 0.0001	0.963	↔	2024-02-11	2024-07-02	0.416
42_1_4_103	MW-32	Appendix IV	Barium	mg/L	17	0	0%	-0.0005897	0.468	↔	0.0028433	0.203	↔	0.000445	0.596	↔	2024-02-05	2024-10-15	0.717
42_1_4_104	MW-32	Appendix IV	Beryllium	mg/L	17	16	94%	< 0.0001	0.045	↔	< 0.0001	0.432	↔	< 0.0001	0.753	↔	2024-02-12	2024-08-19	0.380
42_1_4_106	MW-32	Appendix IV	Cadmium	mg/L	17	16	94%	< 0.0001	0.010	↑	< 0.0001	0.207	↔	< 0.0001	0.645	↔	2024-02-11	2024-09-25	0.675
42_1_4_109	MW-32	Appendix IV	Chromium, Total	mg/L	17	0	0%	< 0.0001	0.564	↔	< 0.0001	0.677	↔	< 0.0001	0.078	↔	2023-07-07	2024-02-11	0.307
42_1_4_110	MW-32	Appendix IV	Cobalt	mg/L	17	0	0%	< 0.0001	0.080	↔	< 0.0001	0.357	↔	< 0.0001	0.589	↔	2024-02-12	2024-12-09	0.329
42_1_4_115	MW-32	Appendix IV	Lead	mg/L	17	12	71%	< 0.0001	0.590	↔	< 0.0001	0.439	↔	< 0.0001	0.400	↔	2023-05-12	2025-08-10	0.141
42_1_4_118	MW-32	Appendix IV	Molybdenum	mg/L	17	0	0%	< 0.0001	0.372	↔	< 0.0001	0.265	↔	< 0.0001	0.001	↓	2023-02-28	2024-02-11	0.697
42_1_4_121	MW-32	Appendix IV	Radium 226 and 228	pCi/L	17	9	53%	0.0021887	0.069	↔	-0.0011072	0.075	↔	0.00034231	0.176	↔	2023-05-03	2024-02-29	0.510
42_1_4_122	MW-32	Appendix IV	Selenium	mg/L	17	13	76%	< 0.0001	0.443	↔	< 0.0001	0.687	↔	< 0.0001	0.068	↔	2023-07-05	2024-02-11	0.314
42_1_5_111	MW-32	Part 115	Copper	mg/L	17	10	59%	< 0.0001	0.040	↔	< 0.0001	0.405	↔	< 0.0001	0.790	↔	2024-02-12	2024-08-08	0.389
42_1_5_114	MW-32	Part 115	Iron	mg/L	17	0	0%	-0.027698	0.008	↓	0.0014687	0.721	↔	0.084064	0.055	↔	2023-08-08	2025-08-05	0.709
42_1_5_128	MW-32	Part 115	Vanadium	mg/L	17	17	100%	< 0.0001	1.000	↔	< 0.0001	1.000	↔	< 0.0001	0.000	↓	2023-04-25	2025-04-03	0.945
42_1_5_129	MW-32	Part 115	Zinc	mg/L	17	0	0%	< 0.0001	0.390	↔	0.00061099	0.025	↔	-0.00021361	0.023	↔	2024-07-09	2024-11-03	0.635

Appendix III: Boron, MW-01R

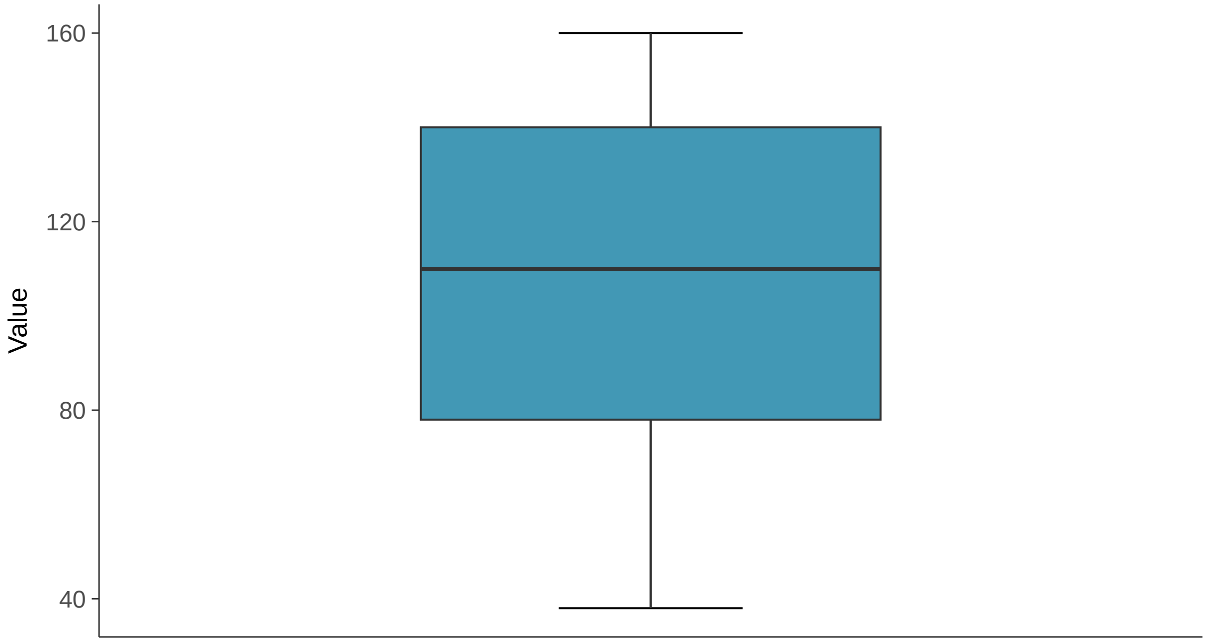
ID: 11_2_3_105





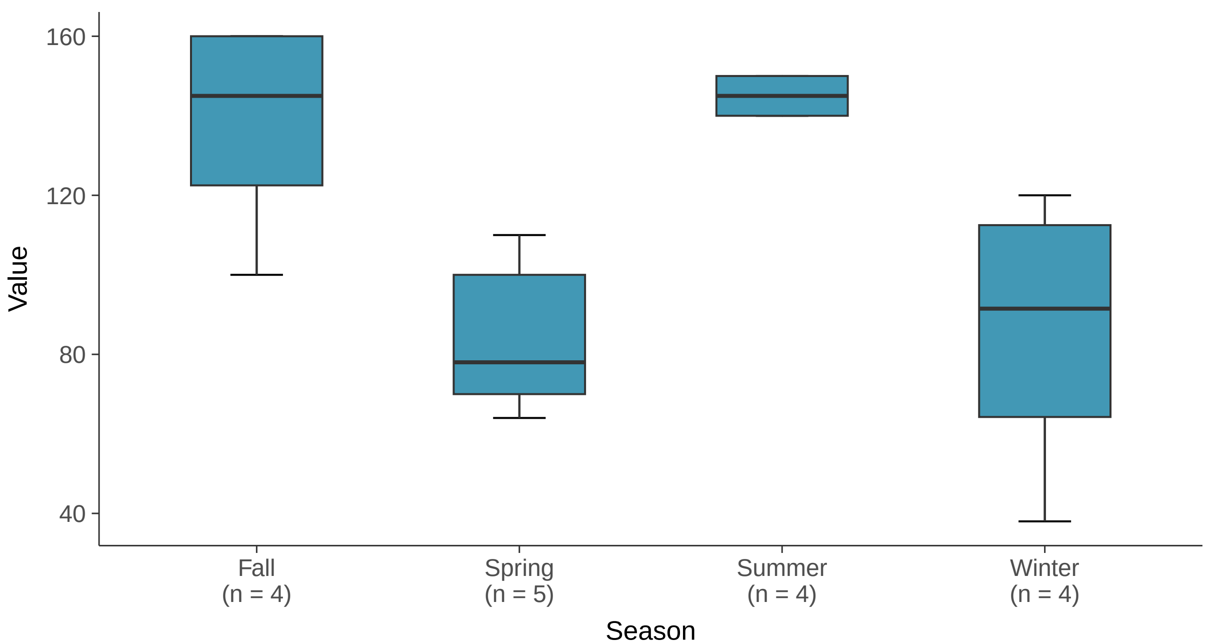
Boxplot

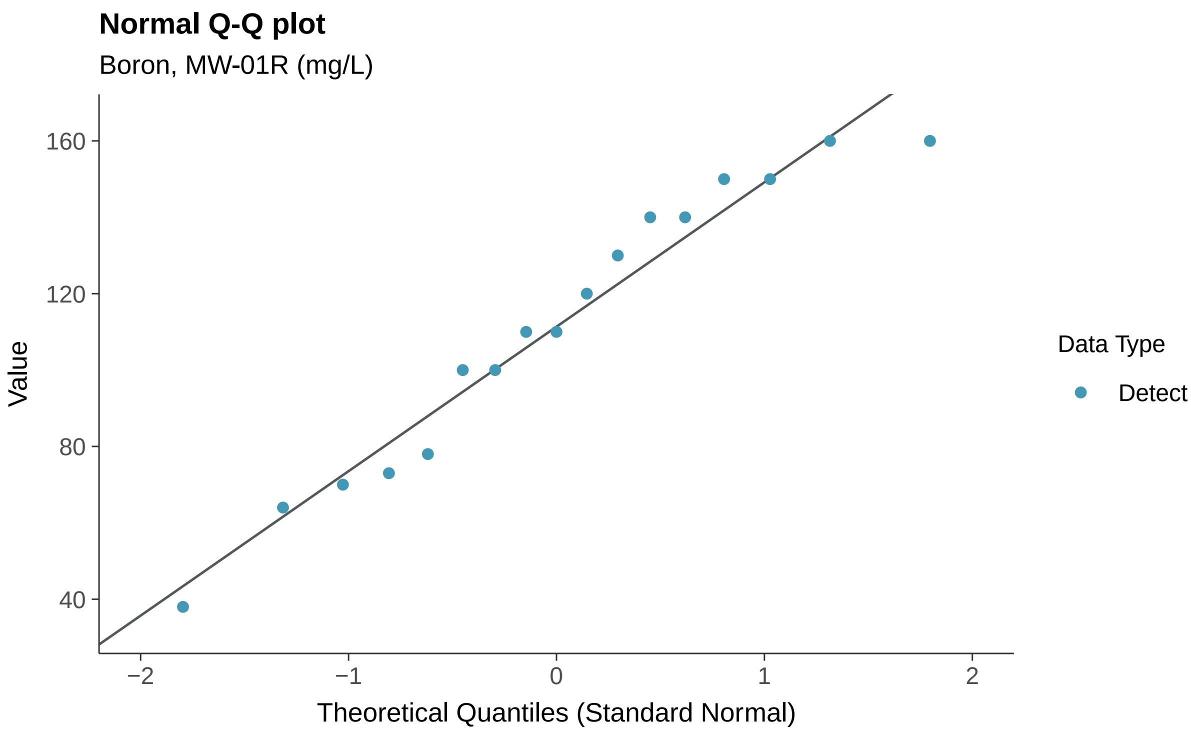
Boron, MW-01R (mg/L)

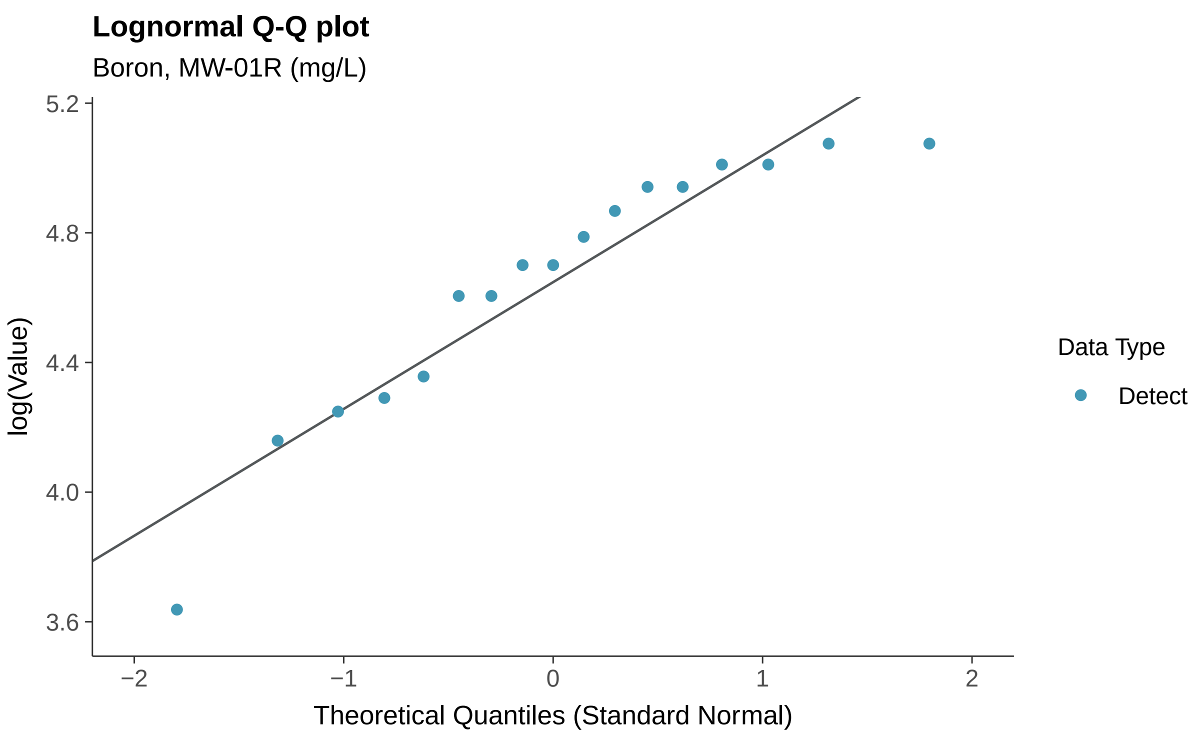


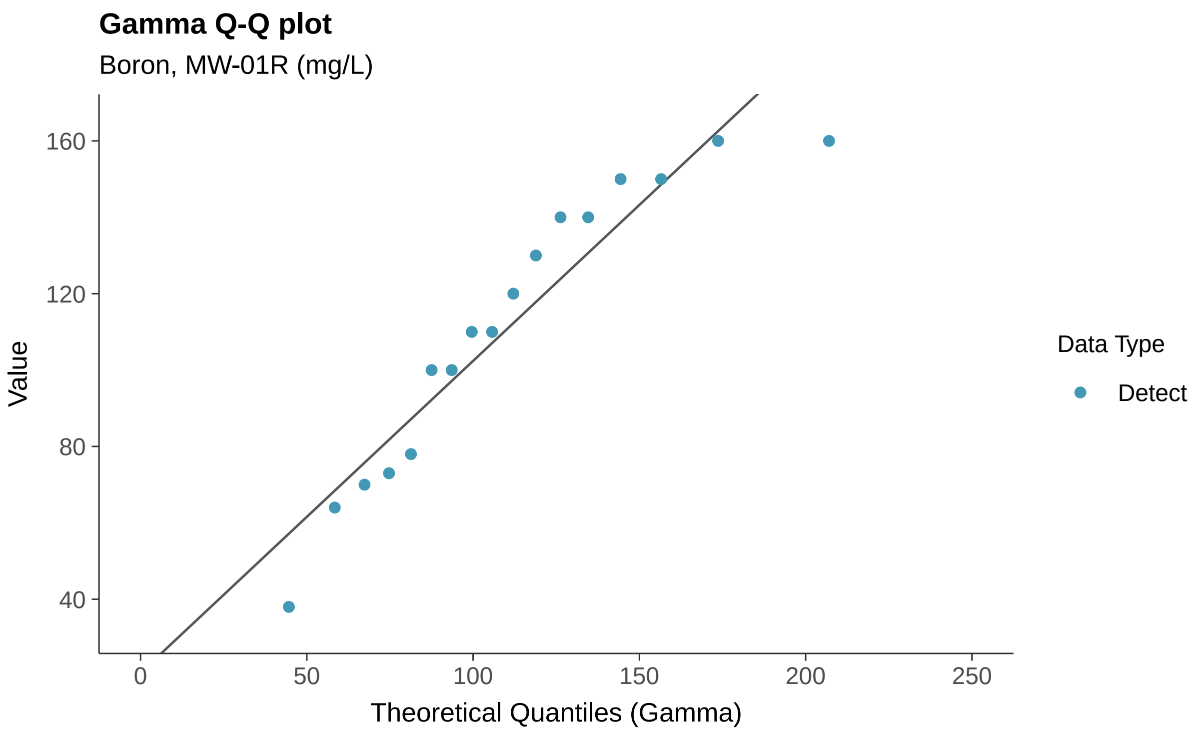
Boxplot by Season

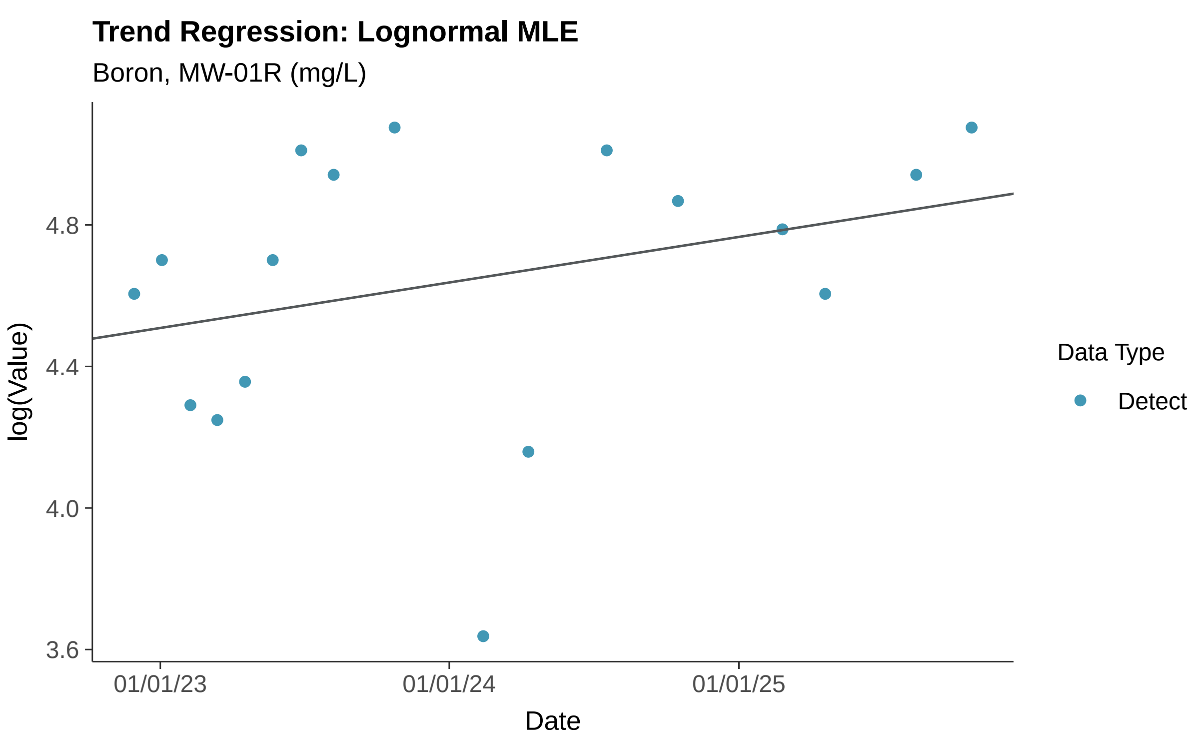
Boron, MW-01R (mg/L)




Normal Q-Q plot
Boron, MW-01R (mg/L)
Value
160
120
80
40
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

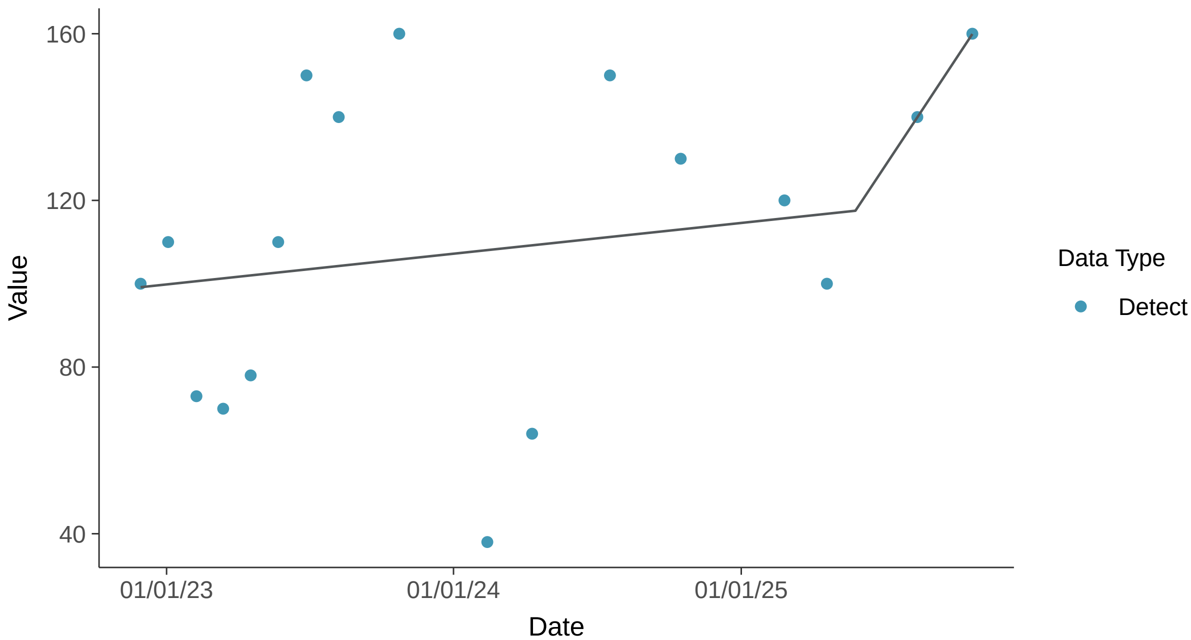

Lognormal Q-Q plot
Boron, MW-01R (mg/L)
log(Value)
5.2
4.8
4.4
4.0
3.6
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Boron, MW-01R (mg/L)
Value
160
120
80
40
0
50
100
150
200
250
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Boron, MW-01R (mg/L)
log(Value)
4.8
4.4
4.0
3.6
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

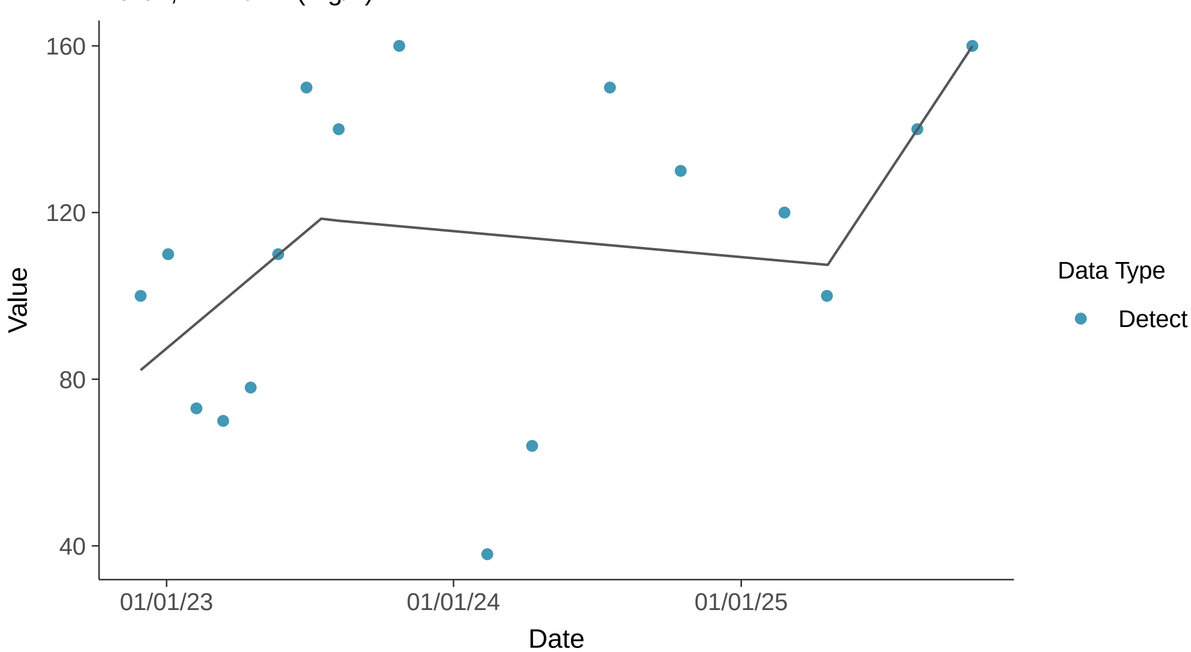
Trend Regression: Piecewise Linear-Linear

Boron, MW-01R (mg/L)



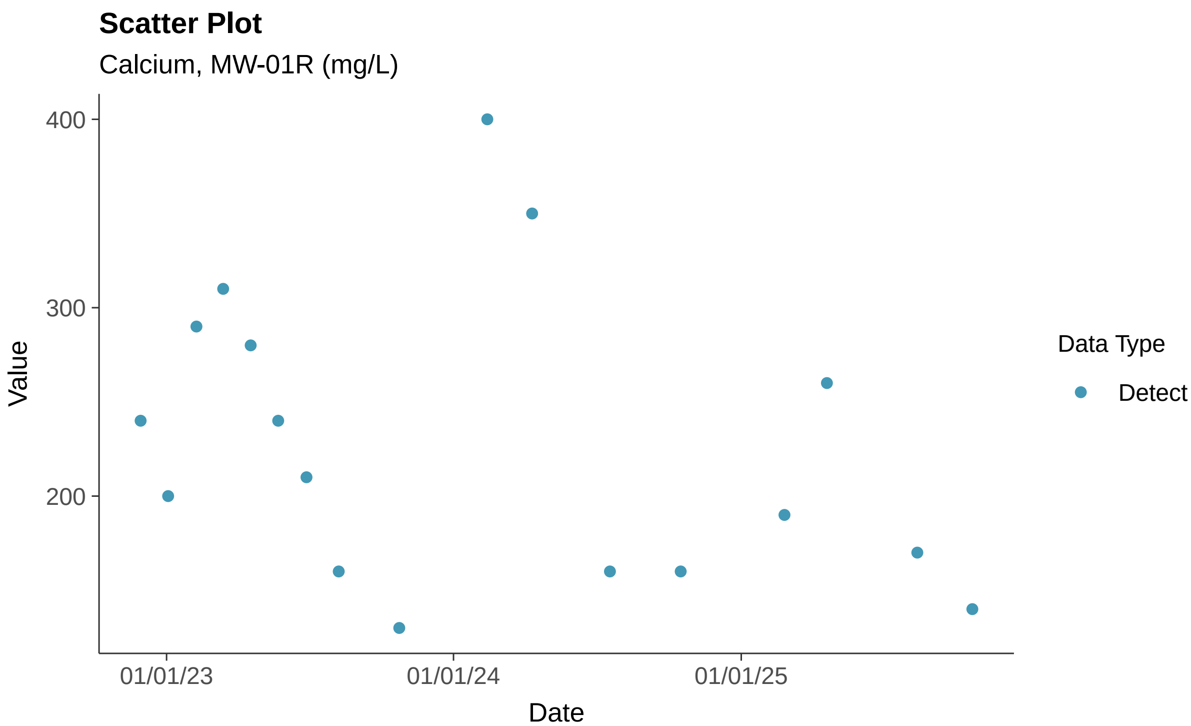
Trend Regression: Piecewise Linear-Linear-Linear

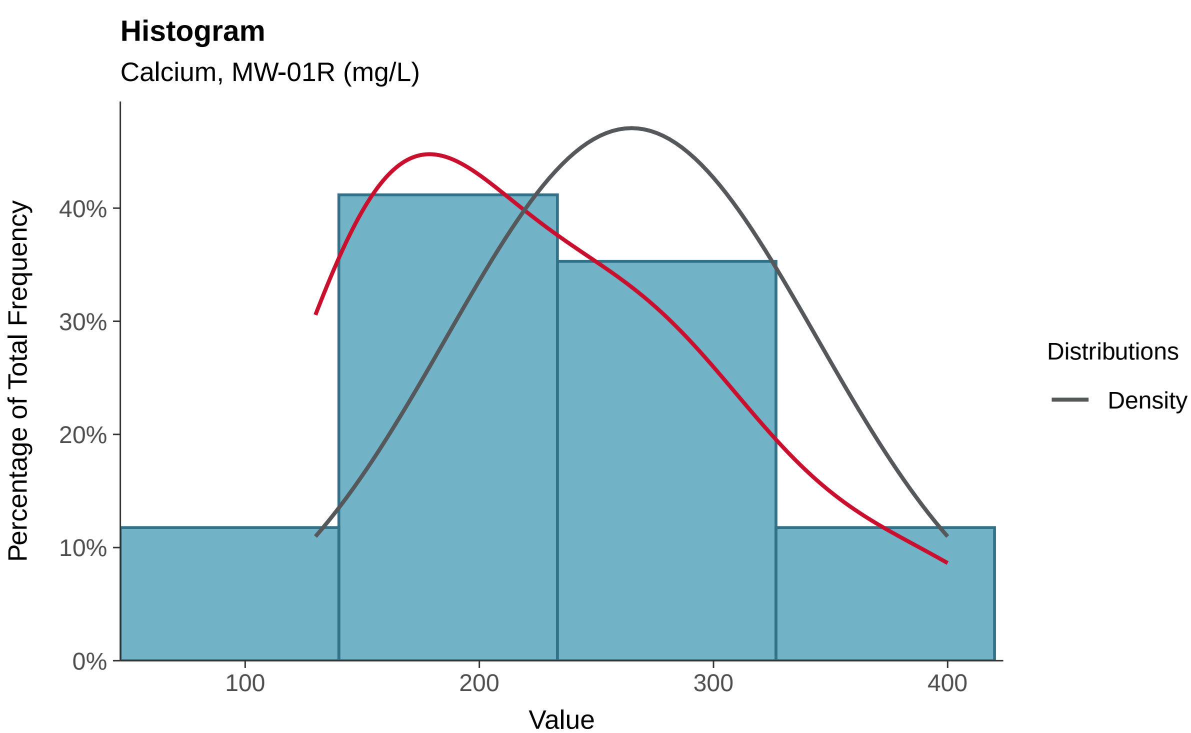
Boron, MW-01R (mg/L)



Appendix III: Calcium, MW-01R

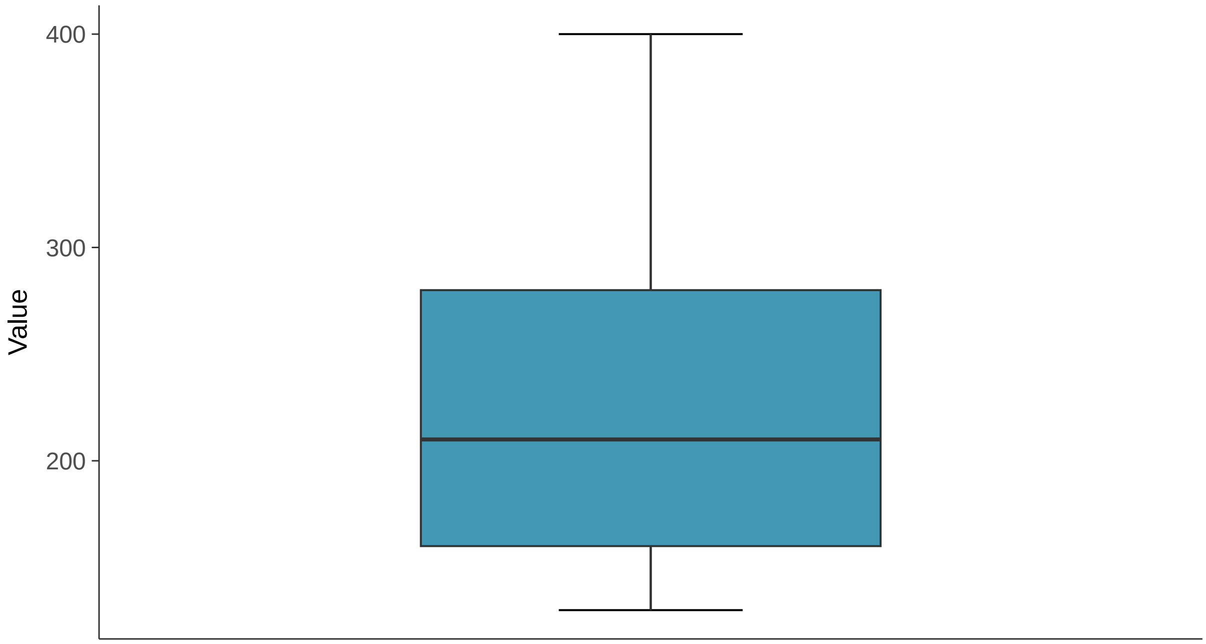
ID: 11_2_3_107





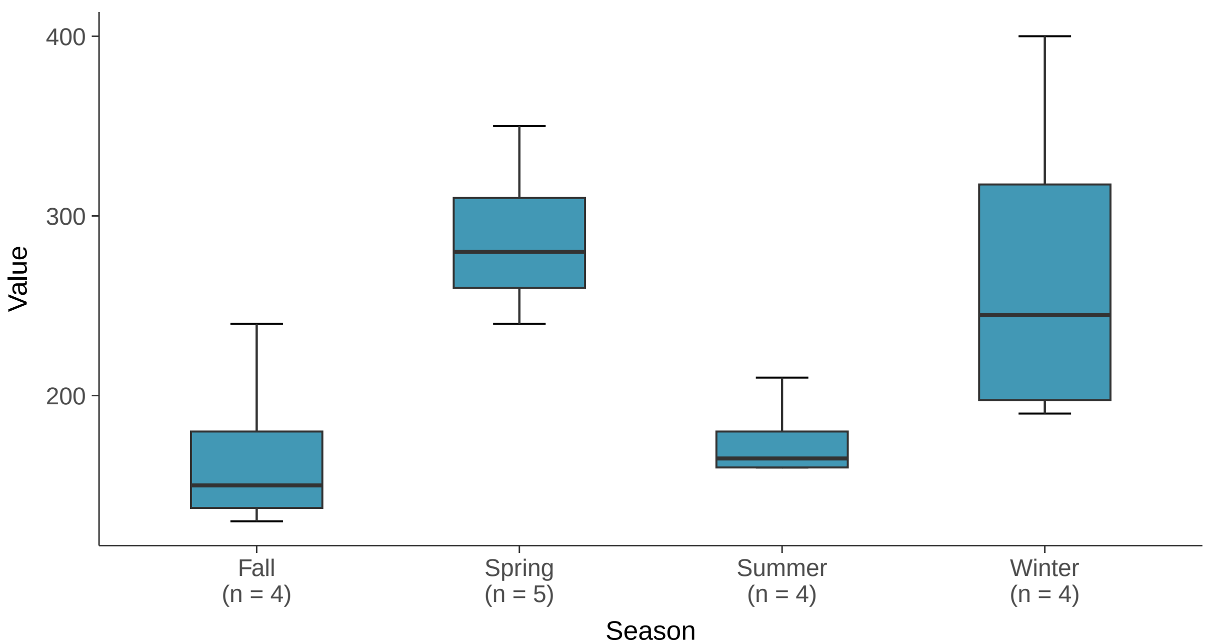
Boxplot

Calcium, MW-01R (mg/L)



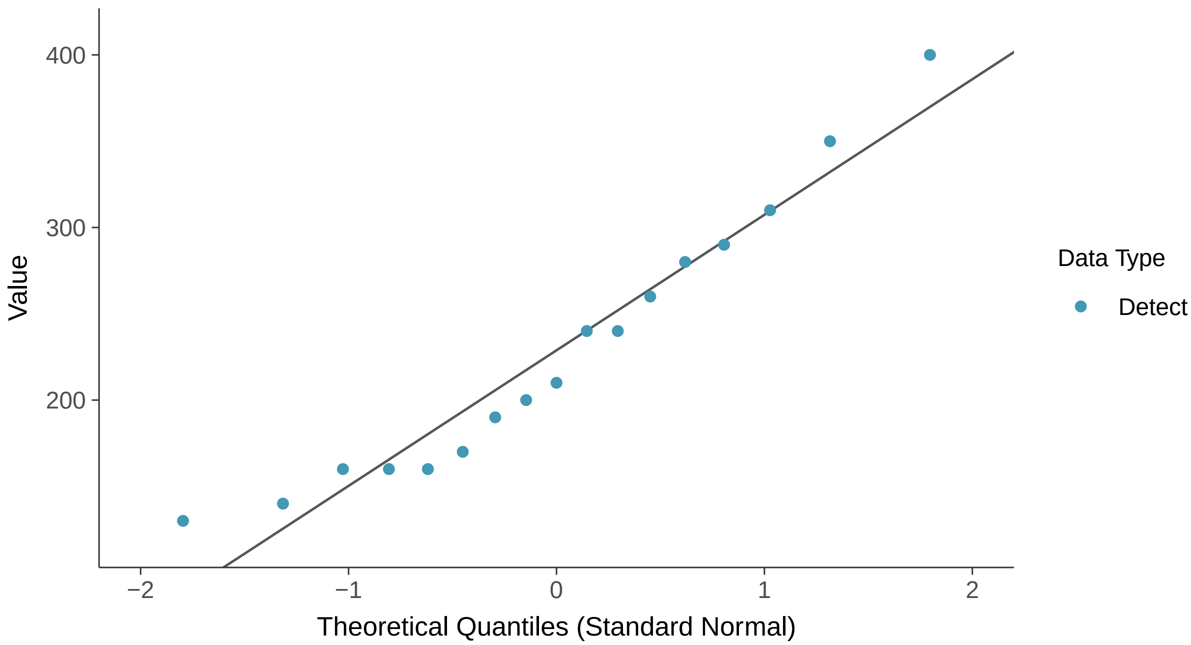
Boxplot by Season

Calcium, MW-01R (mg/L)



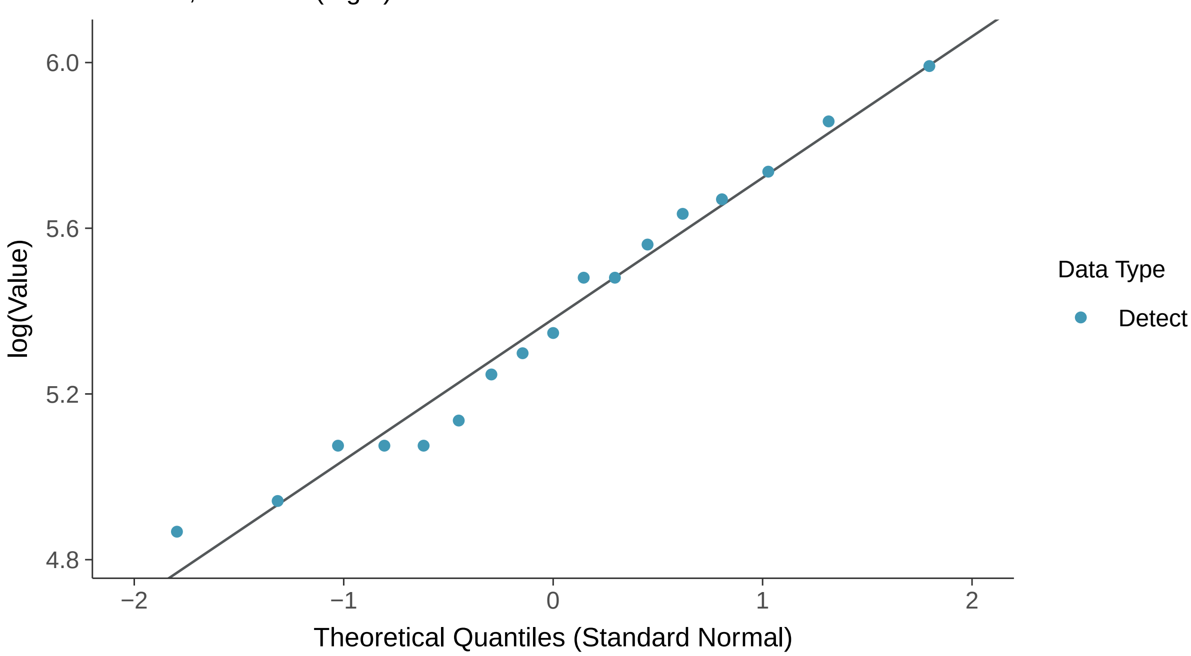
Normal Q-Q plot

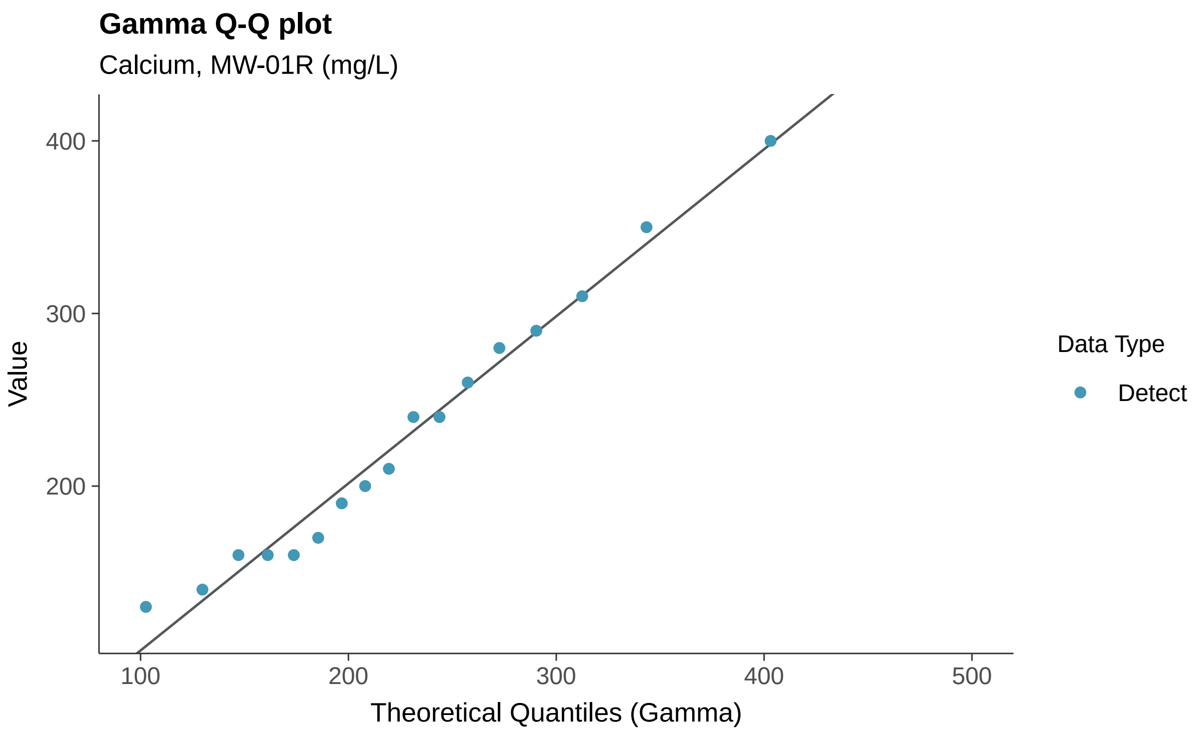
Calcium, MW-01R (mg/L)

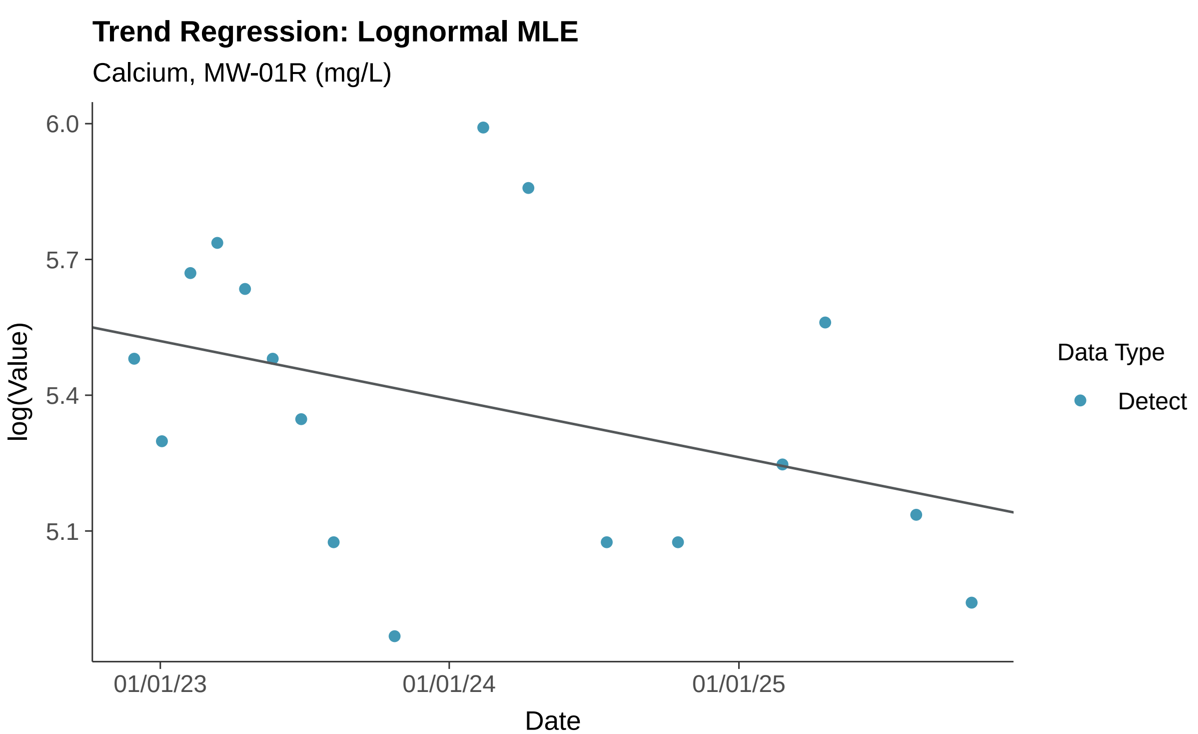


Lognormal Q-Q plot

Calcium, MW-01R (mg/L)

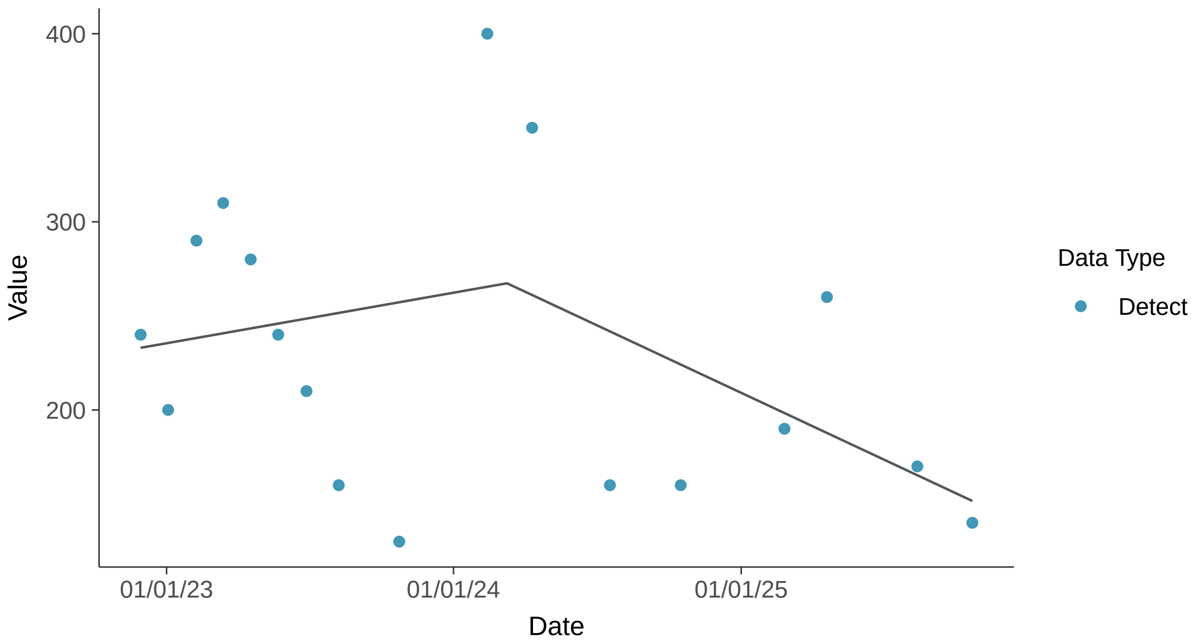



Gamma Q-Q plot
Calcium, MW-01R (mg/L)
Value
400
300
200
100
200
300
400
500
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Calcium, MW-01R (mg/L)
log(Value)
6.0
5.7
5.4
5.1
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

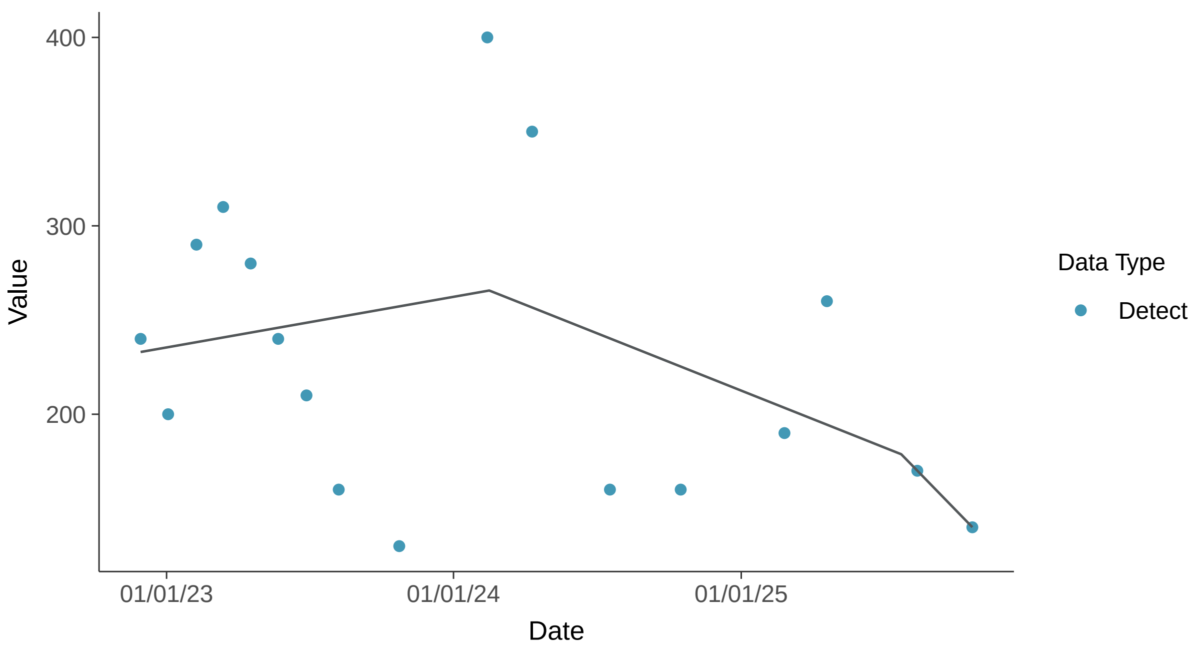
Trend Regression: Piecewise Linear-Linear

Calcium, MW-01R (mg/L)



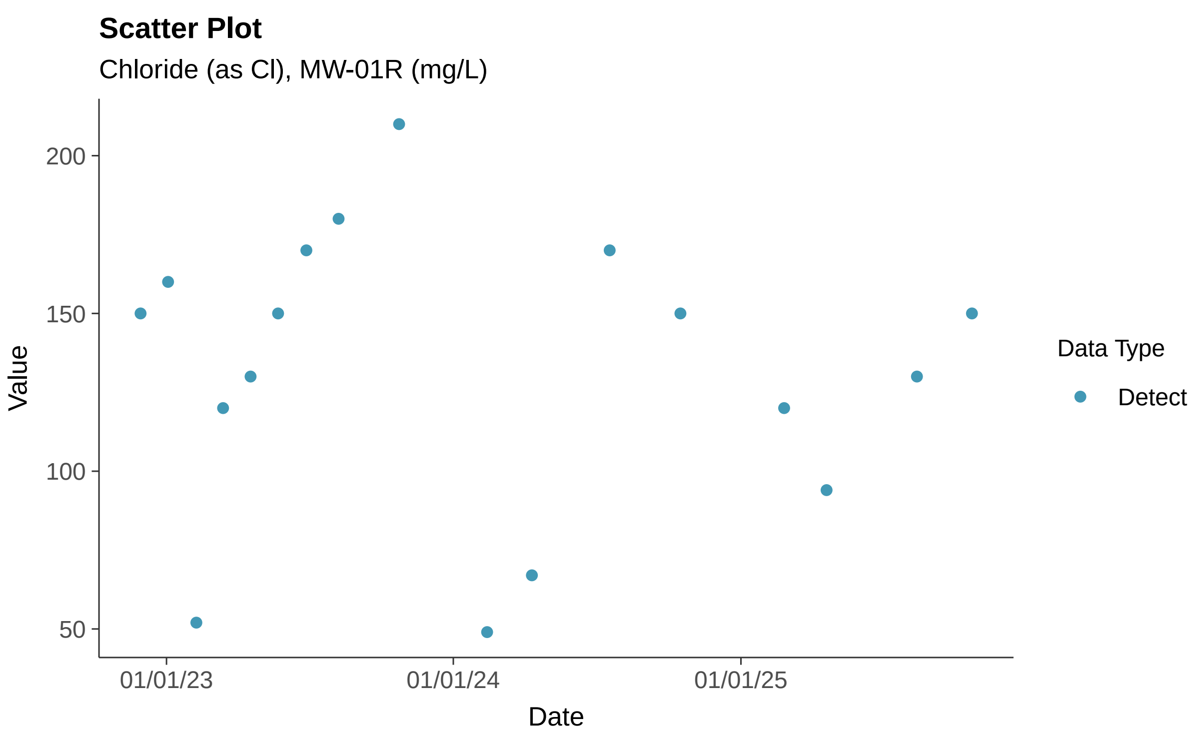
Trend Regression: Piecewise Linear-Linear-Linear

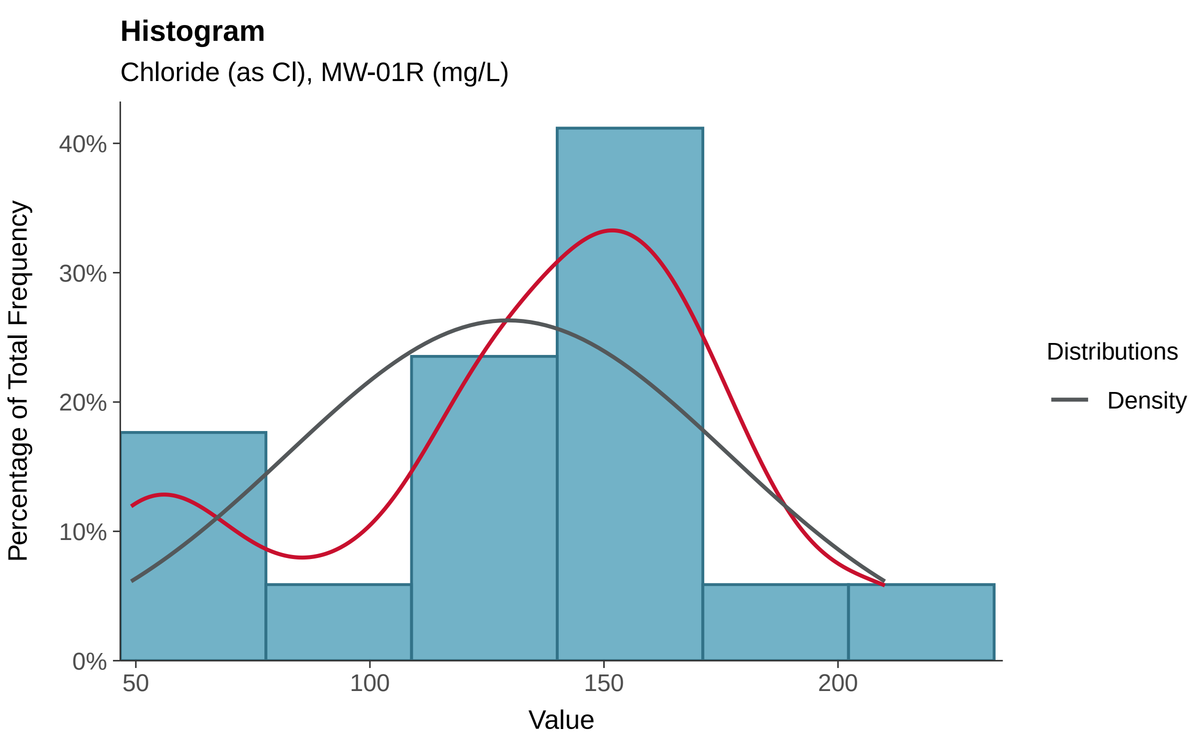
Calcium, MW-01R (mg/L)



Appendix III: Chloride (as Cl), MW-01R

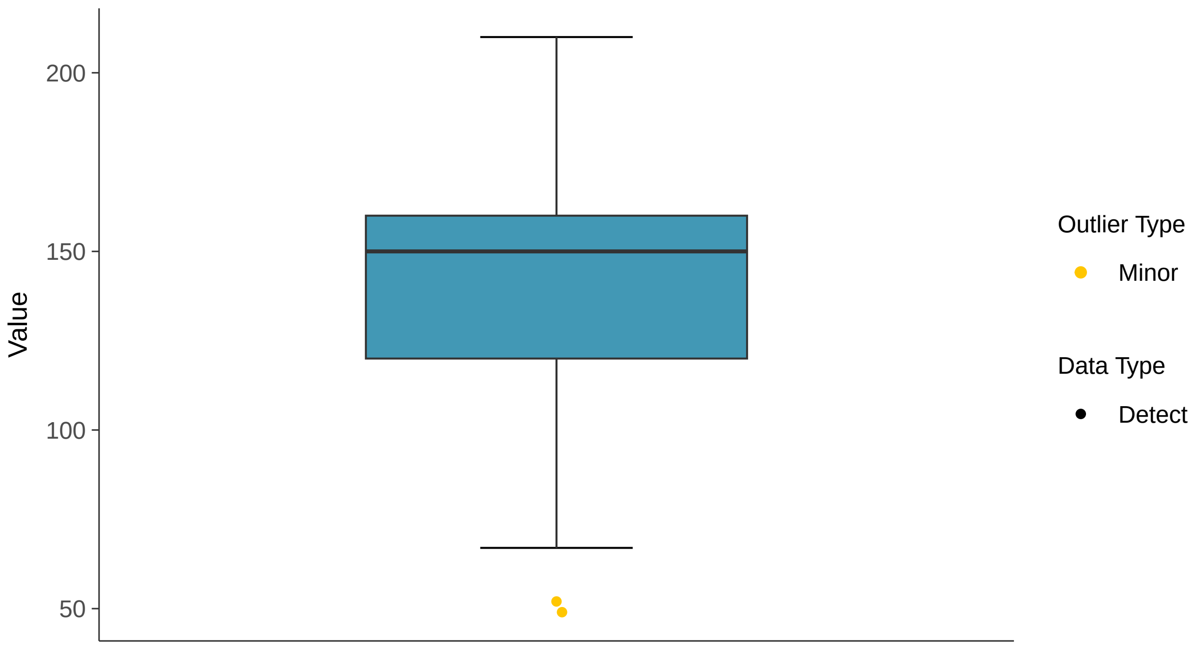
ID: 11_2_3_108





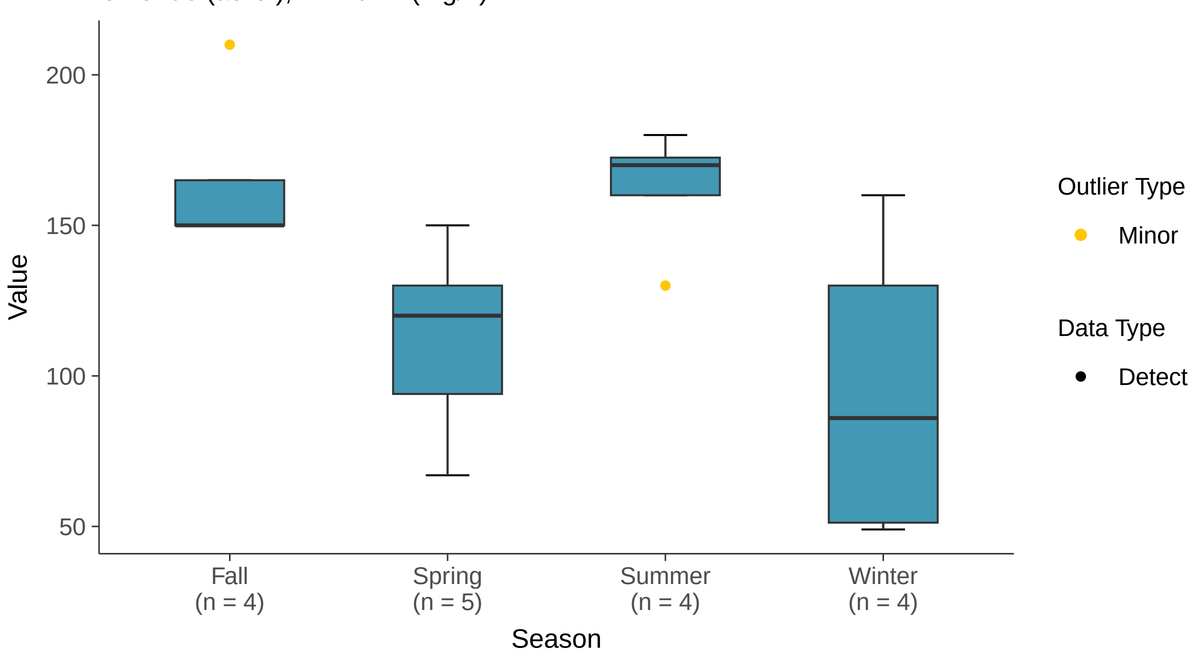
Boxplot

Chloride (as Cl), MW-01R (mg/L)



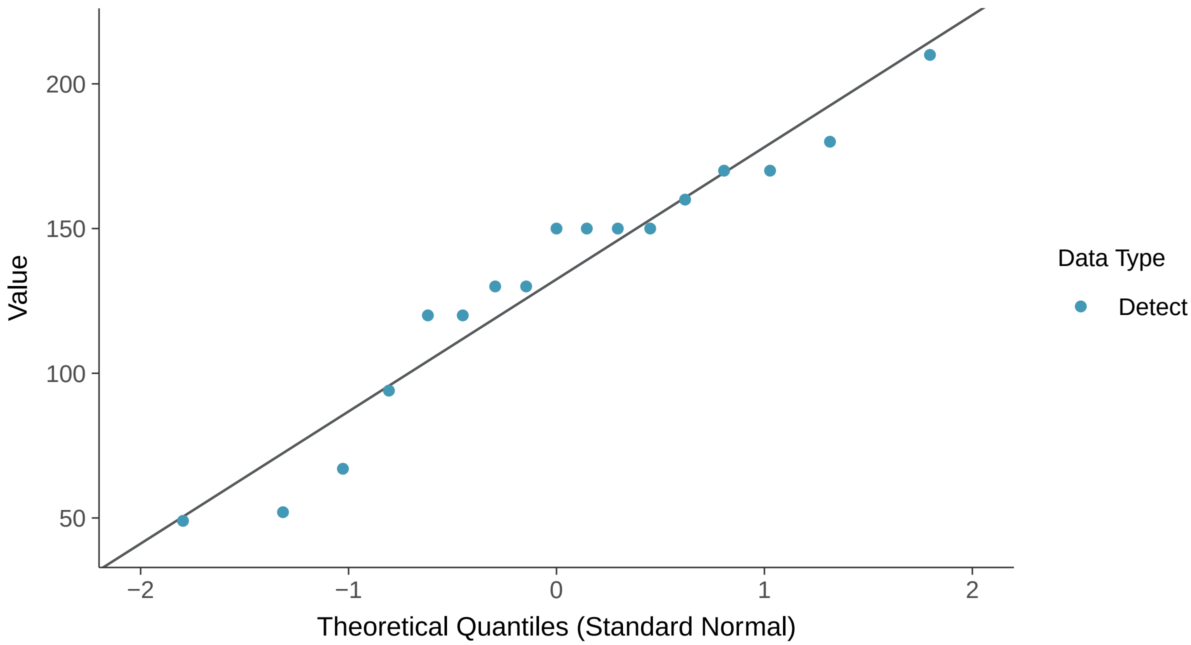
Boxplot by Season

Chloride (as Cl), MW-01R (mg/L)



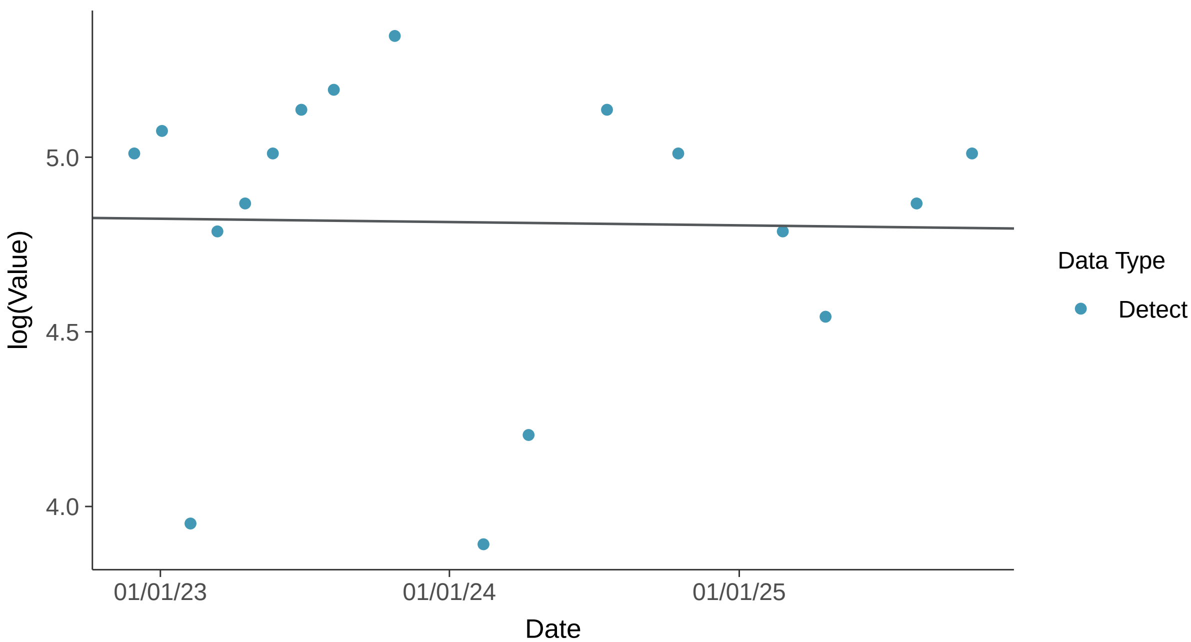
Normal Q-Q plot

Chloride (as Cl), MW-01R (mg/L)



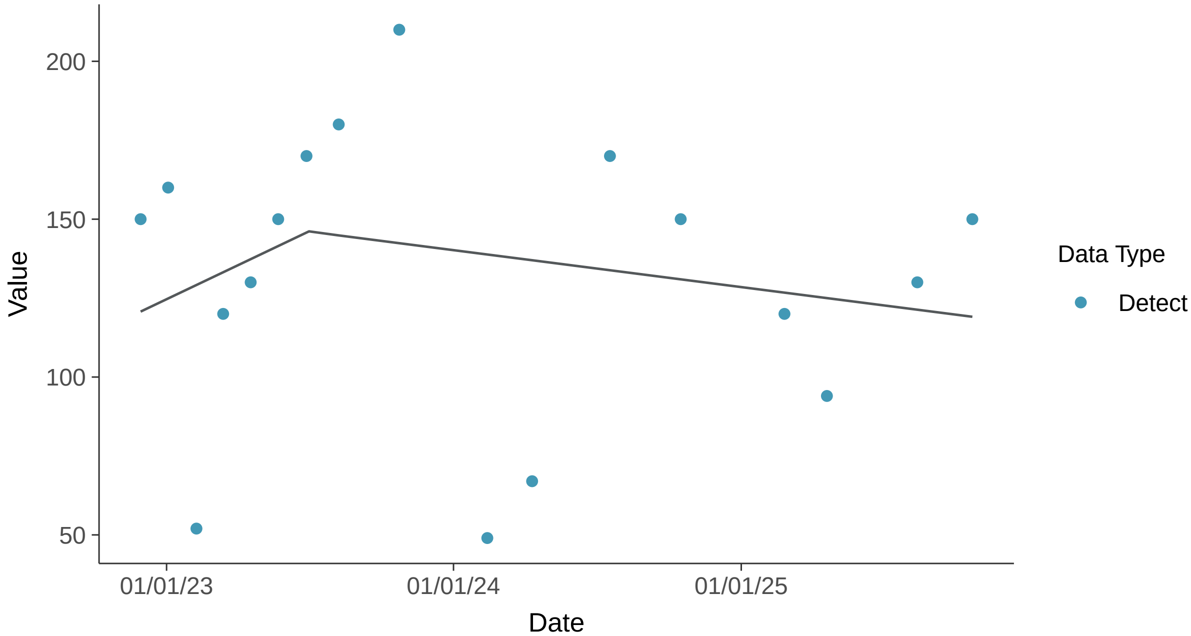
Trend Regression: Lognormal MLE

Chloride (as Cl), MW-01R (mg/L)



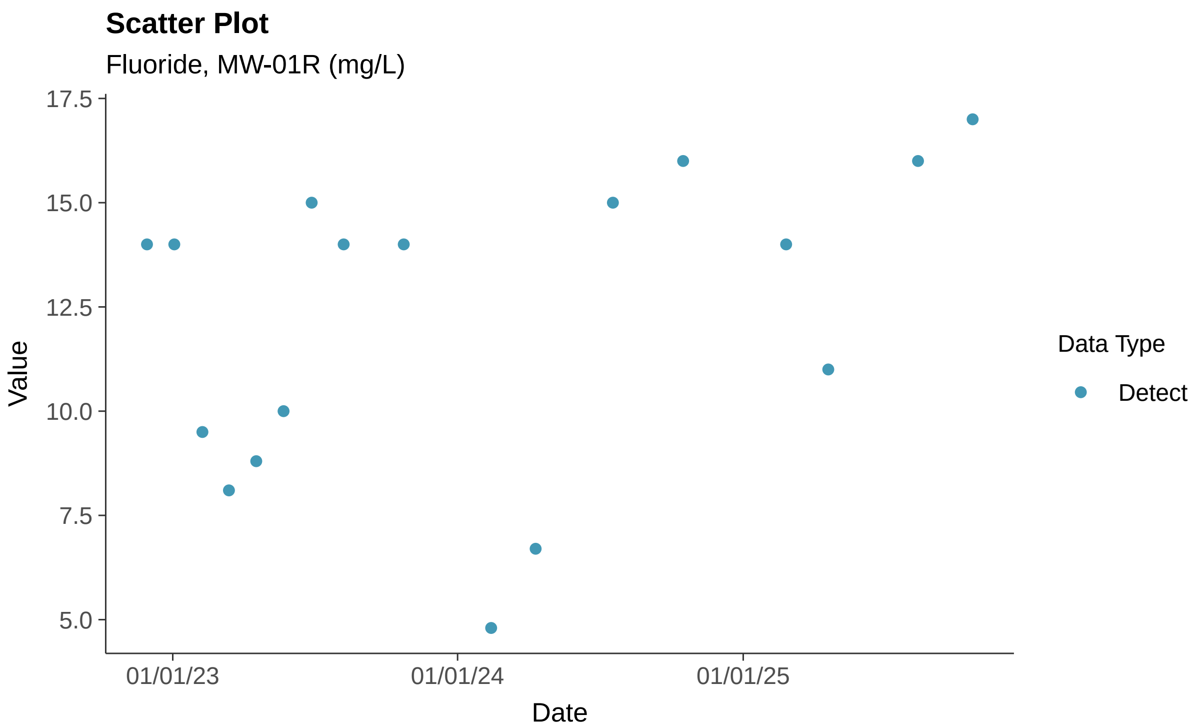
Trend Regression: Piecewise Linear-Linear

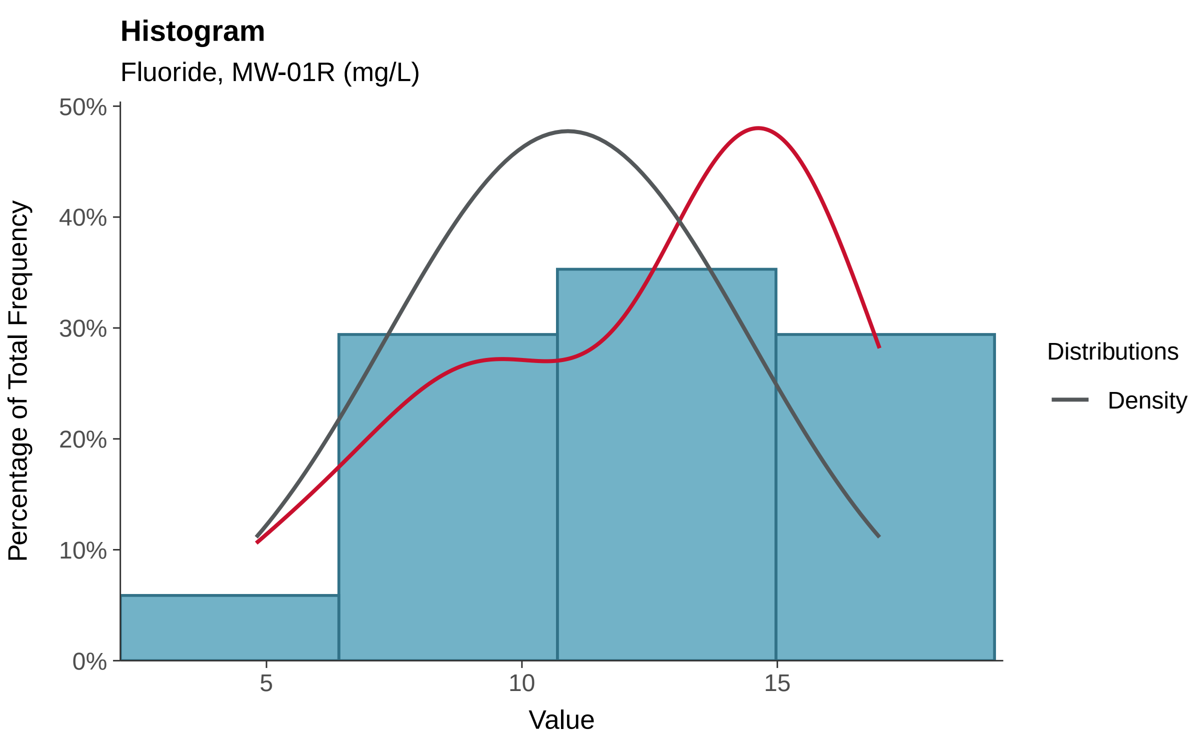
Chloride (as Cl), MW-01R (mg/L)



Appendix III: Fluoride, MW-01R

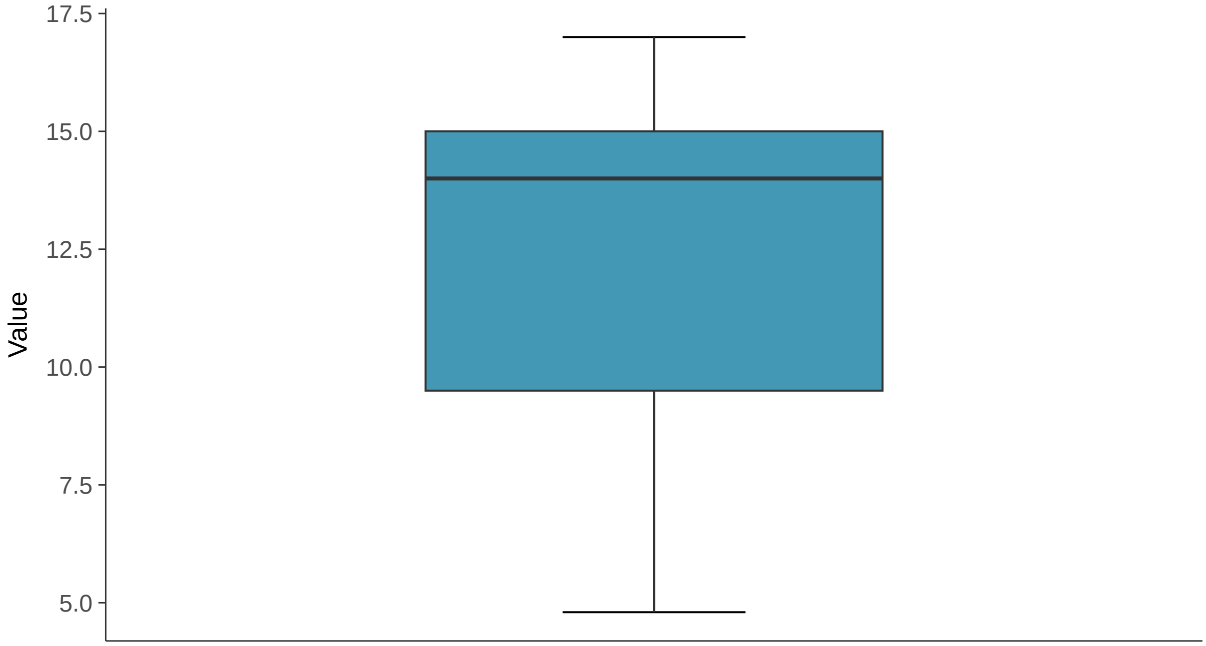
ID: 11_2_3_112





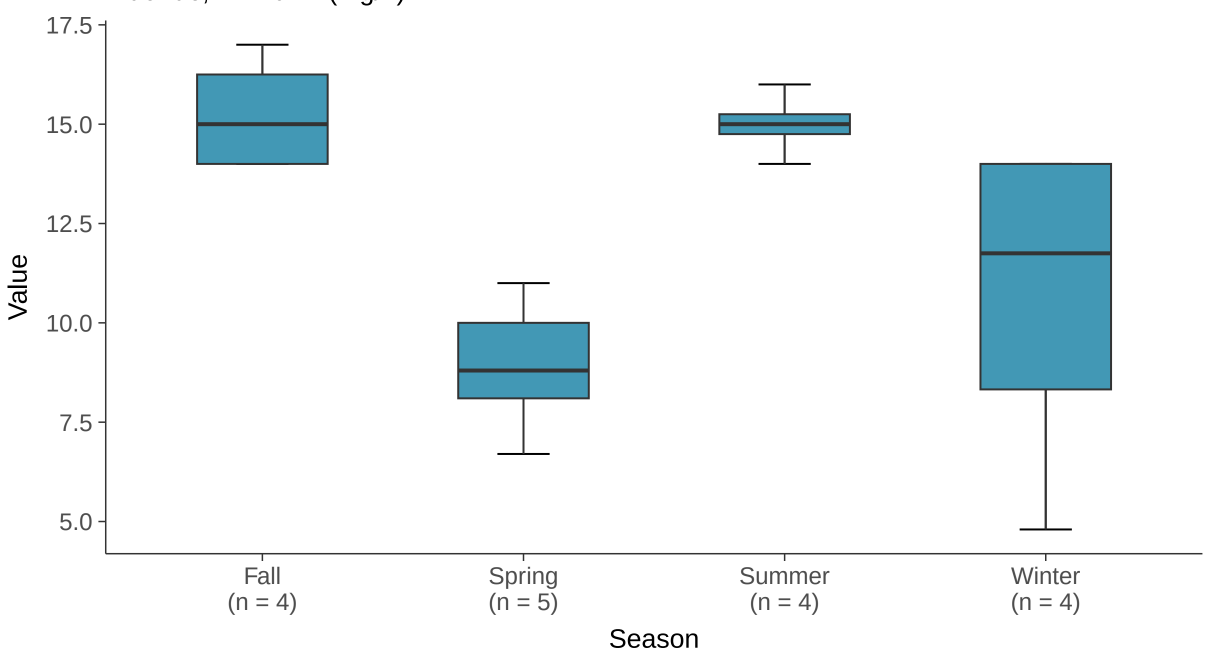
Boxplot

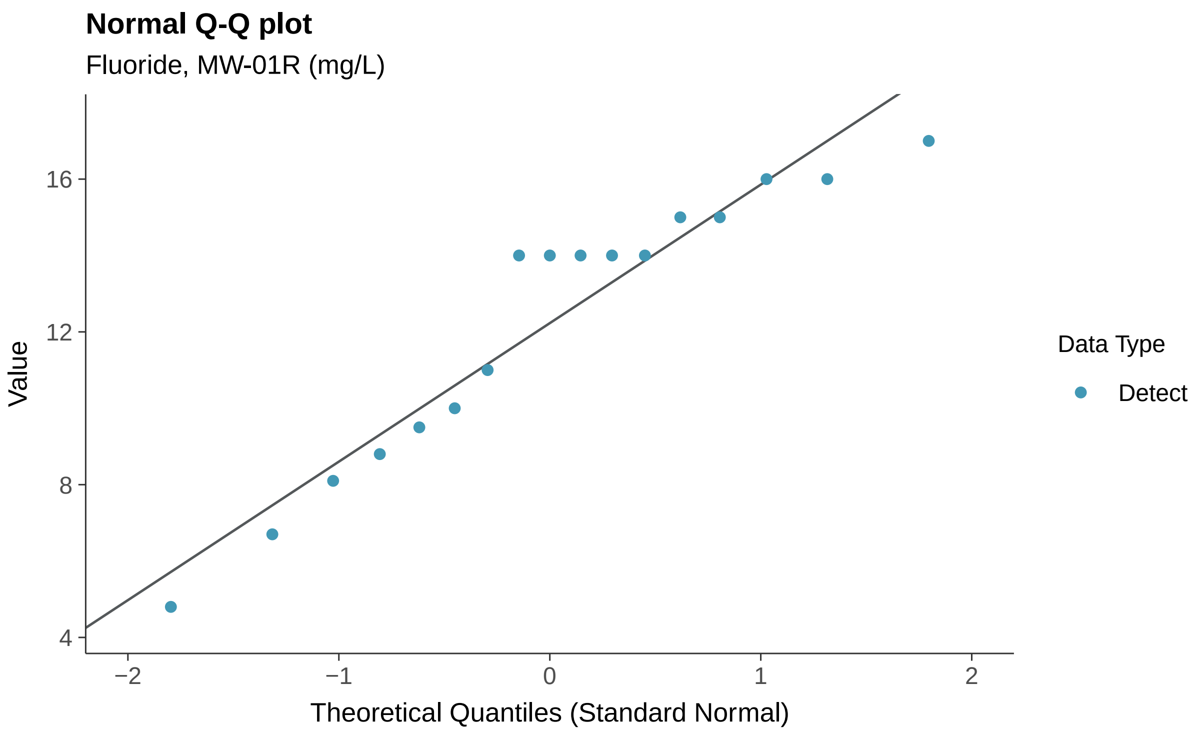
Fluoride, MW-01R (mg/L)

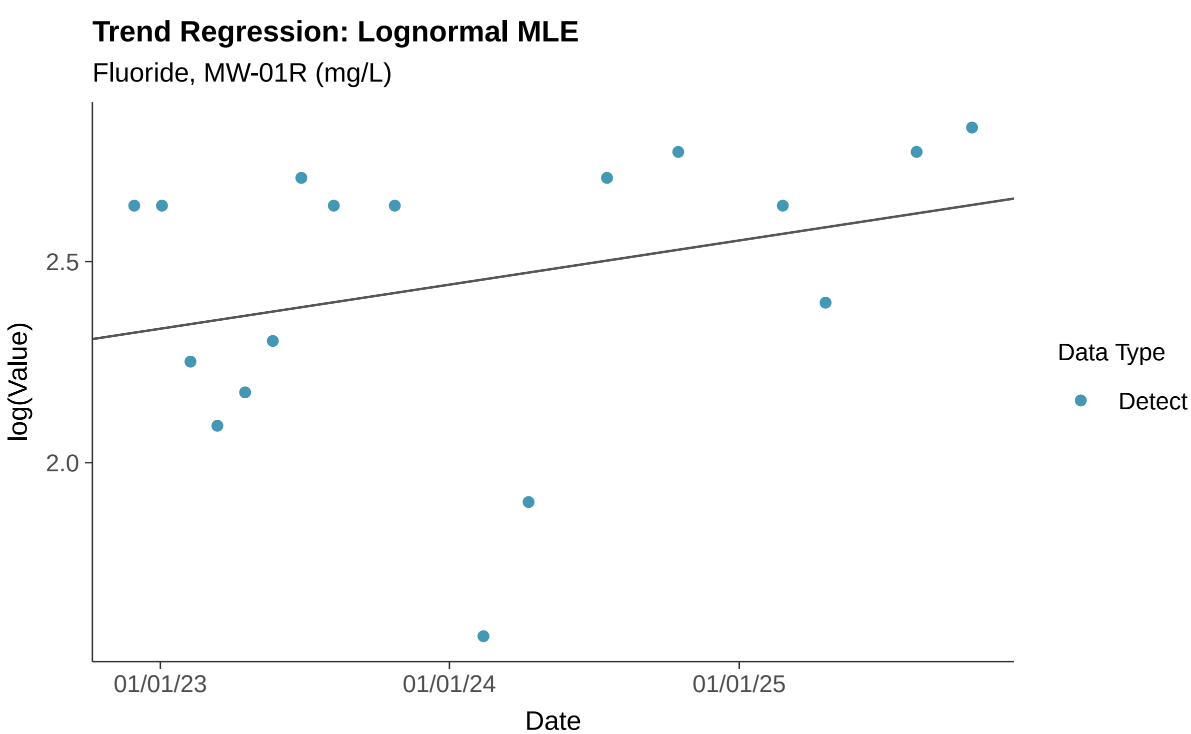


Boxplot by Season

Fluoride, MW-01R (mg/L)

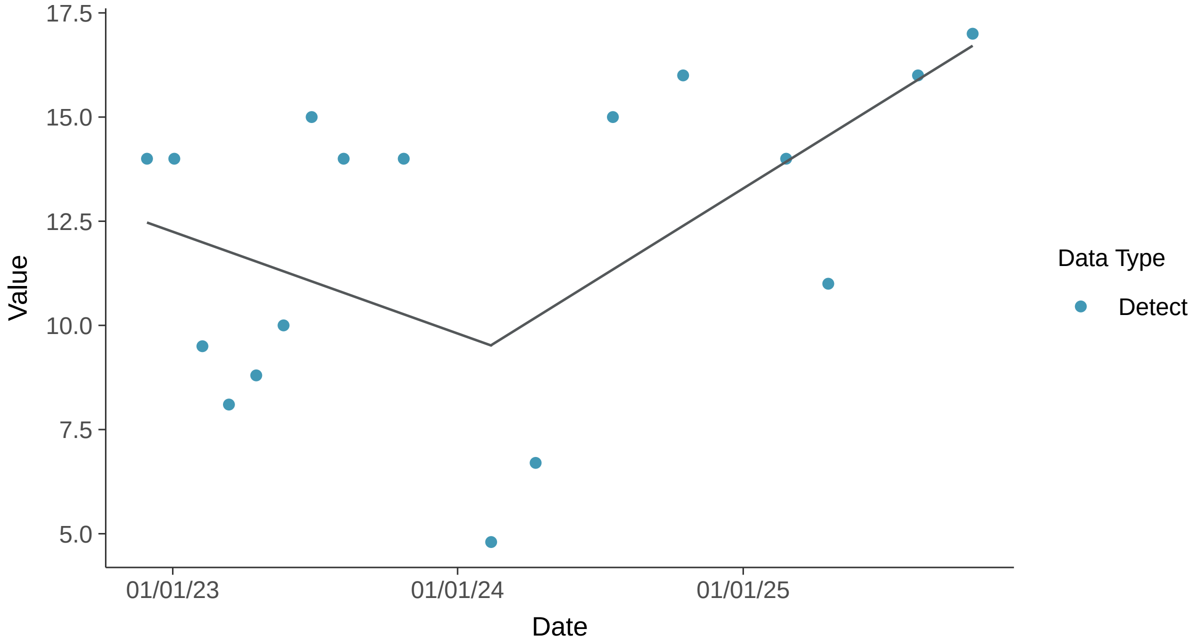



Normal Q-Q plot
Fluoride, MW-01R (mg/L)
Value
16
12
8
4
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Lognormal MLE
Fluoride, MW-01R (mg/L)
log(Value)
2.5
2.0
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

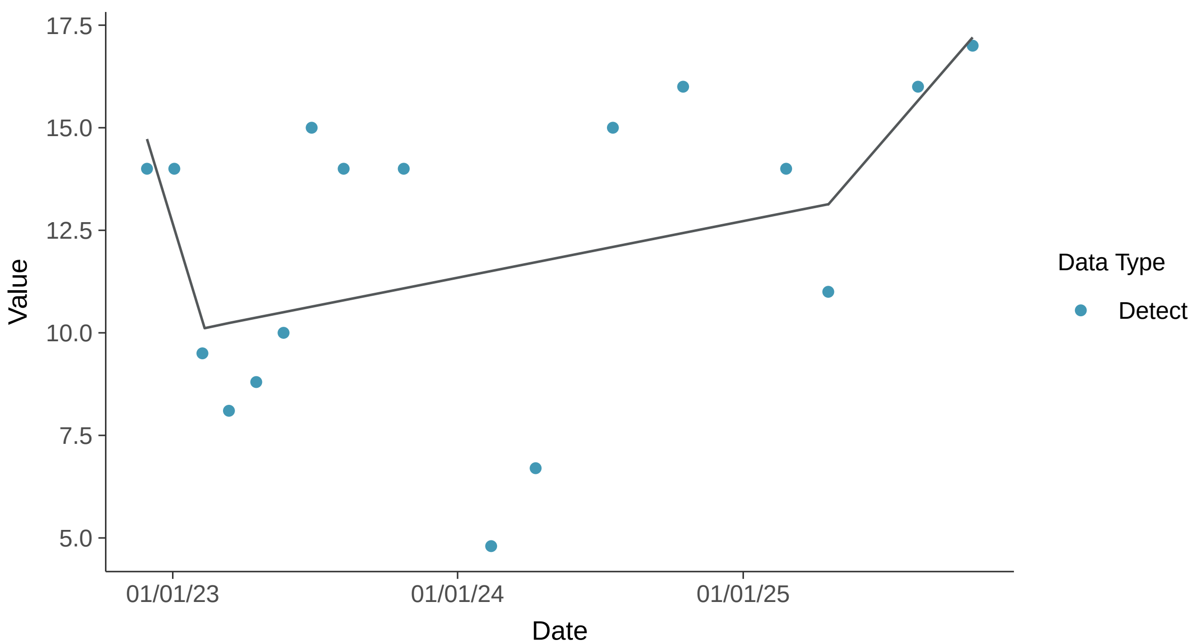
Trend Regression: Piecewise Linear-Linear

Fluoride, MW-01R (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Fluoride, MW-01R (mg/L)

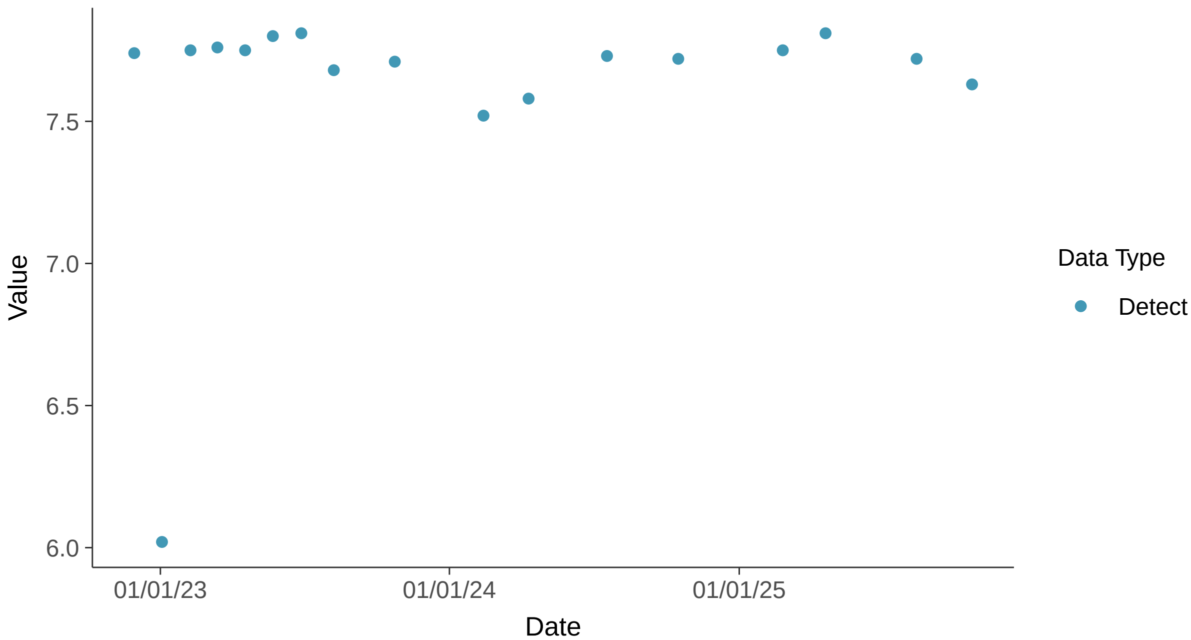


Appendix III: pH (field), MW-01R

ID: 11_2_3_120

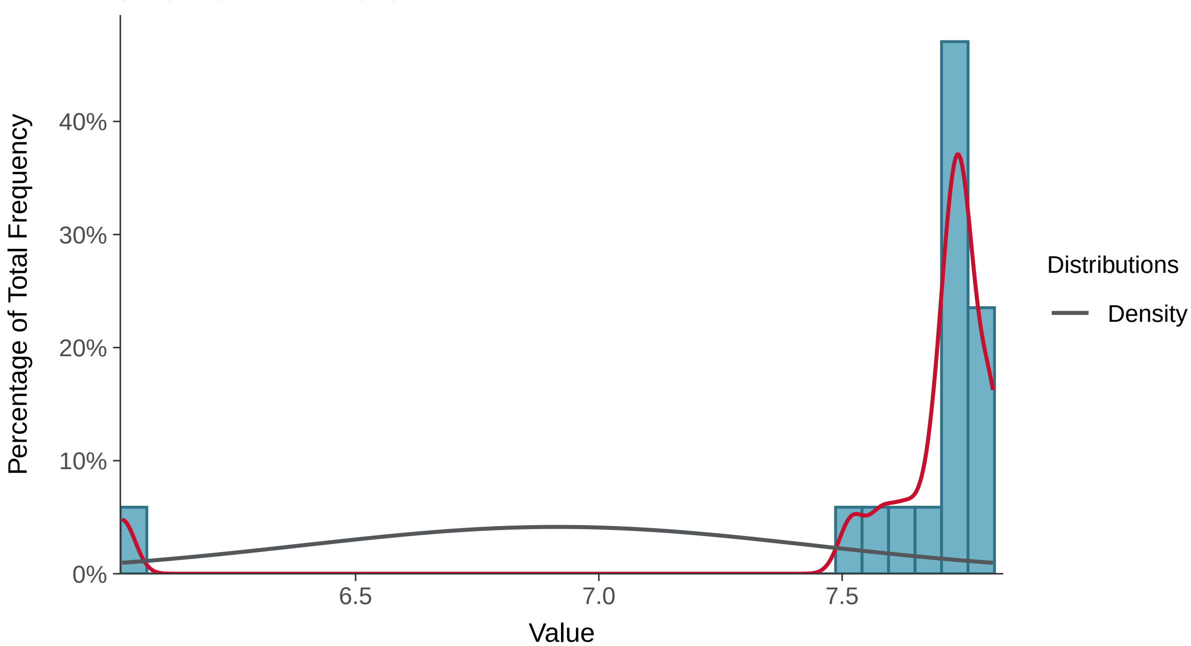
Scatter Plot

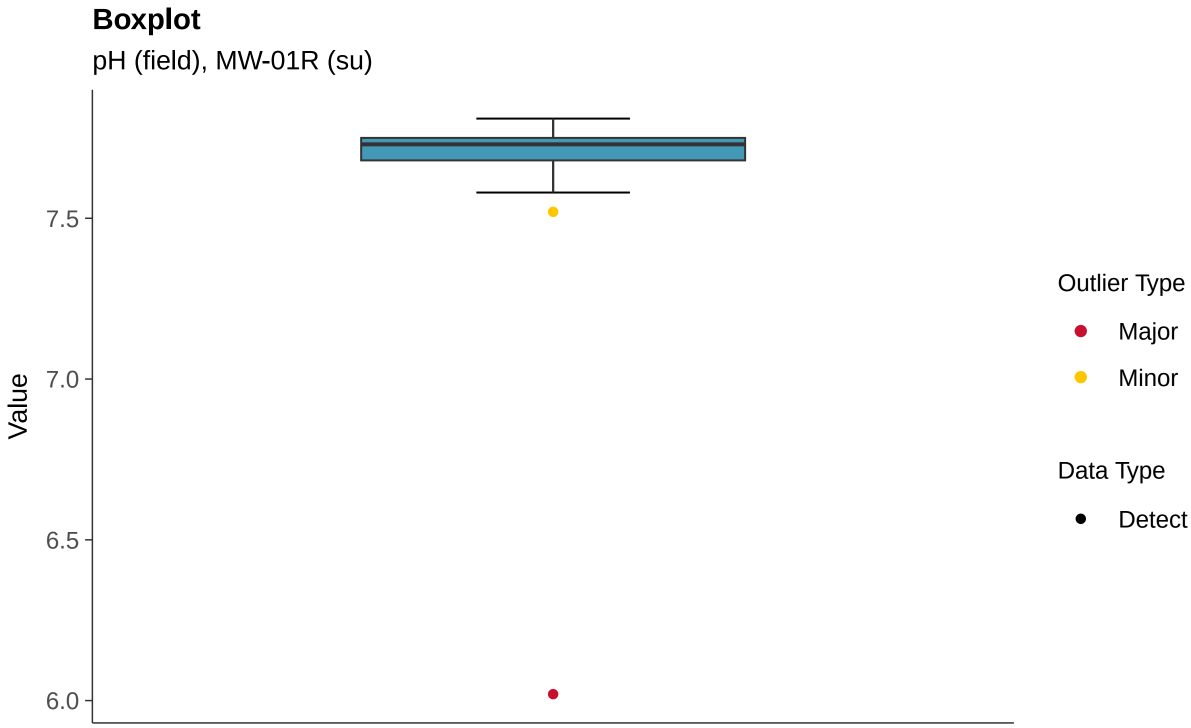
pH (field), MW-01R (su)

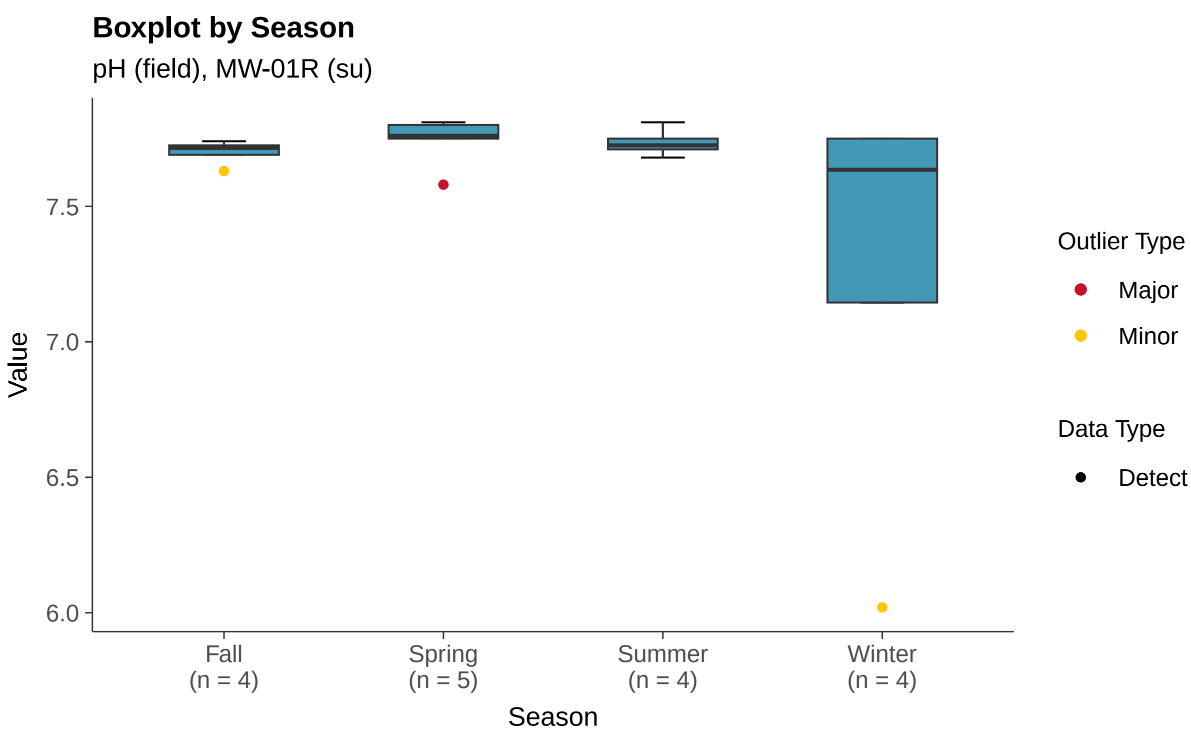


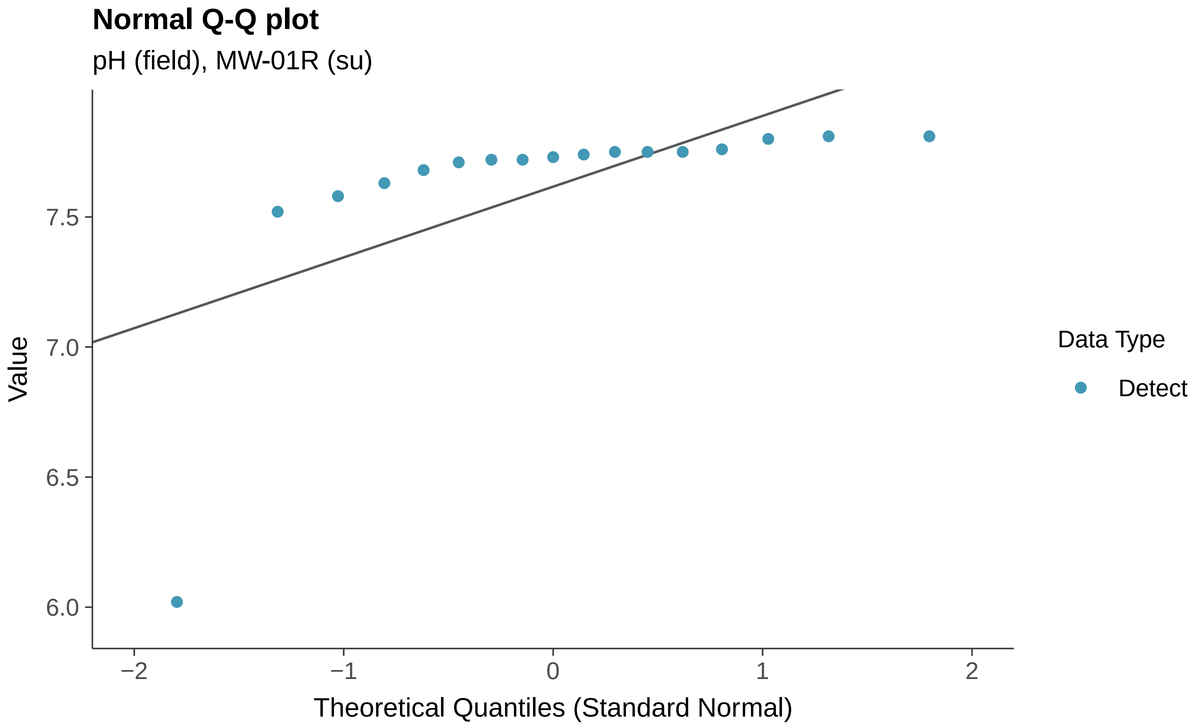
Histogram

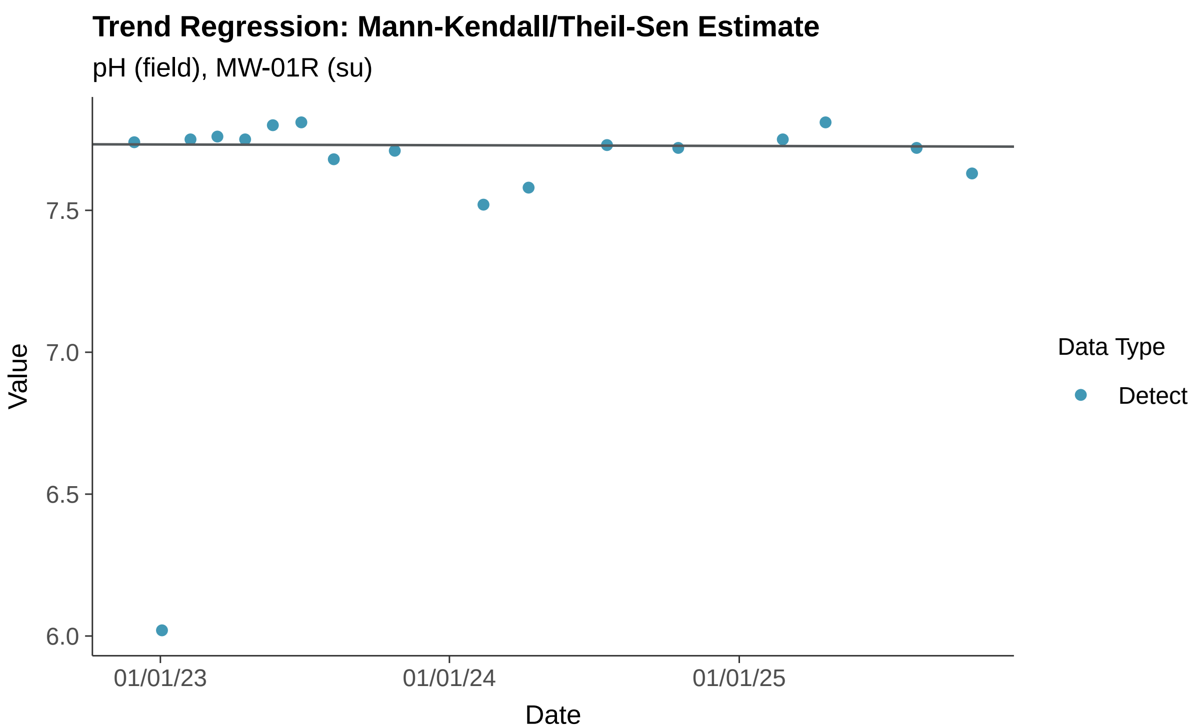
pH (field), MW-01R (su)




Boxplot
pH (field), MW-01R (su)
Value
7.5
7.0
6.5
6.0
Outlier Type
Major
Minor
Data Type
Detect

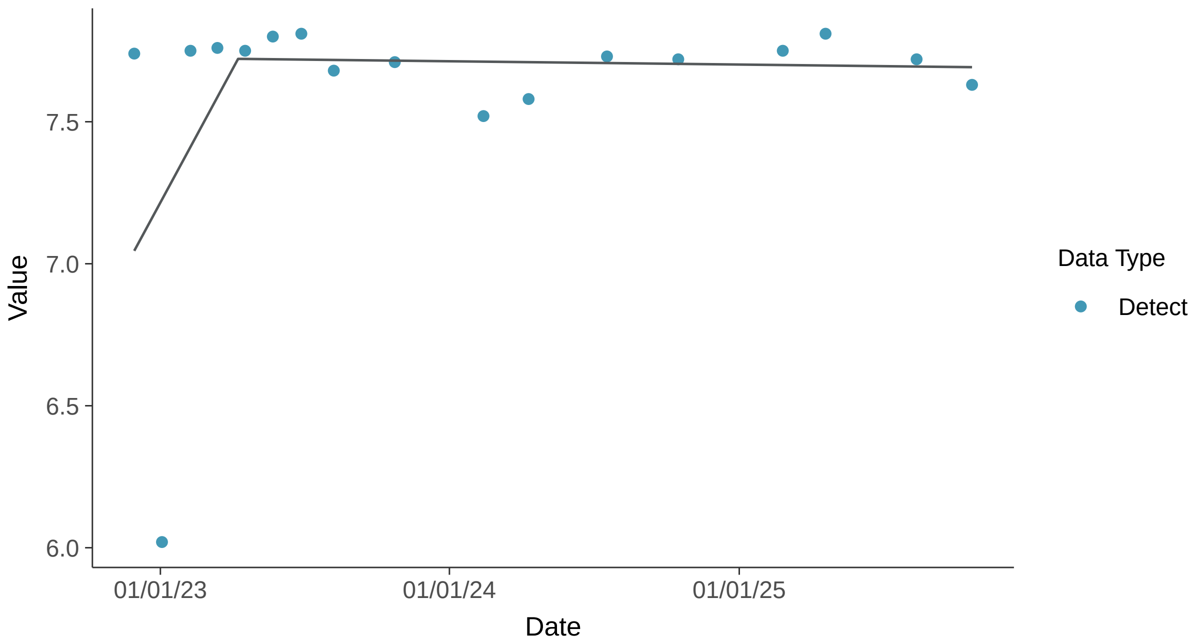

Boxplot by Season
pH (field), MW-01R (su)
Value
7.5
7.0
6.5
6.0
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Major
Minor
Data Type
Detect


Normal Q-Q plot
pH (field), MW-01R (su)
Value
7.5
7.0
6.5
6.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Mann-Kendall/Theil-Sen Estimate
pH (field), MW-01R (su)
Value
7.5
7.0
6.5
6.0
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

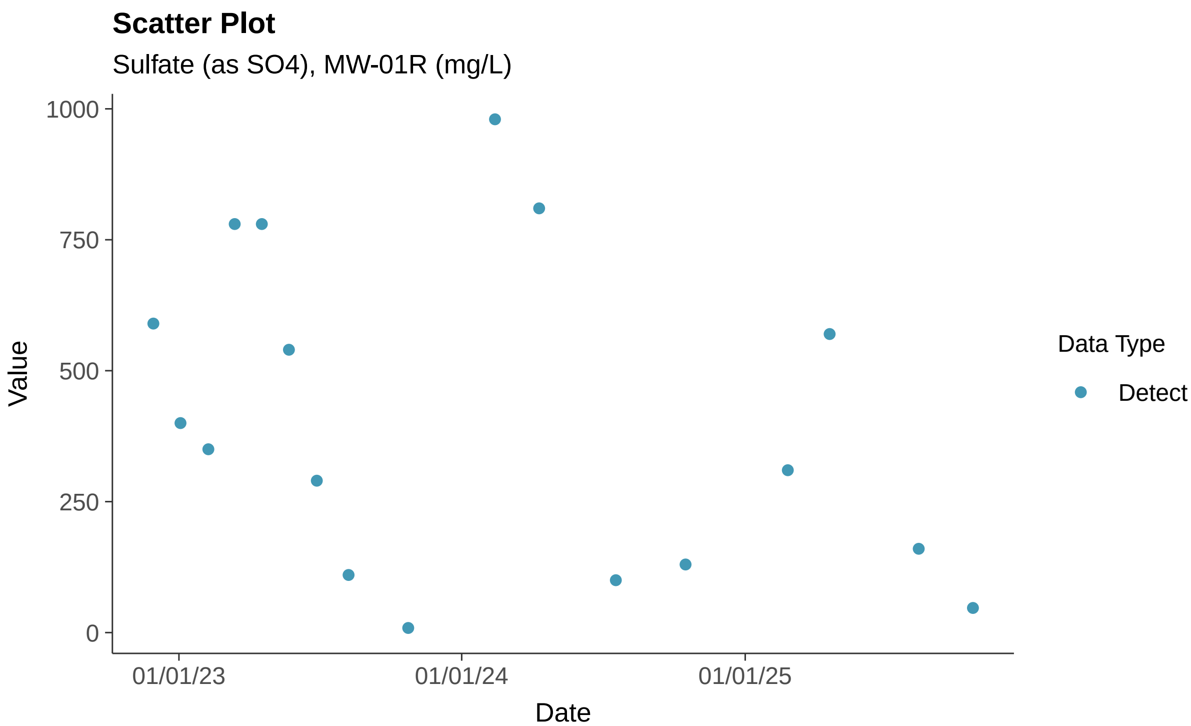
Trend Regression: Piecewise Linear-Linear

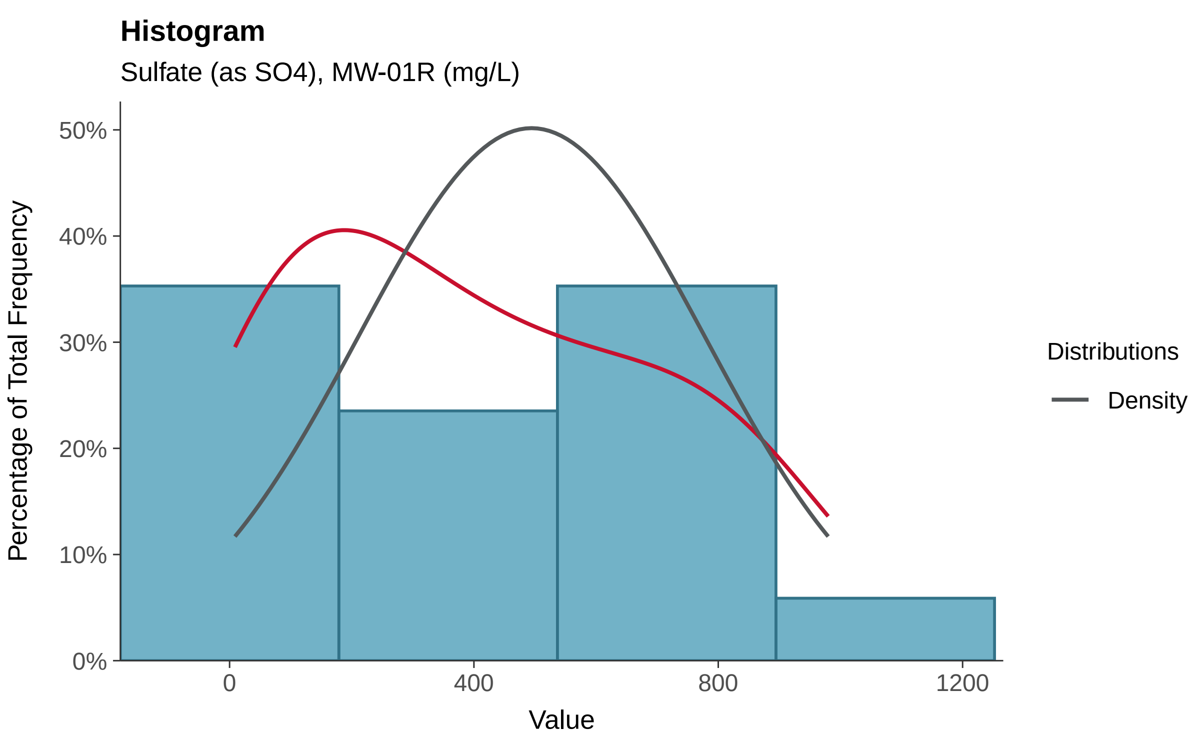
pH (field), MW-01R (su)



Appendix III: Sulfate (as SO4), MW-01R

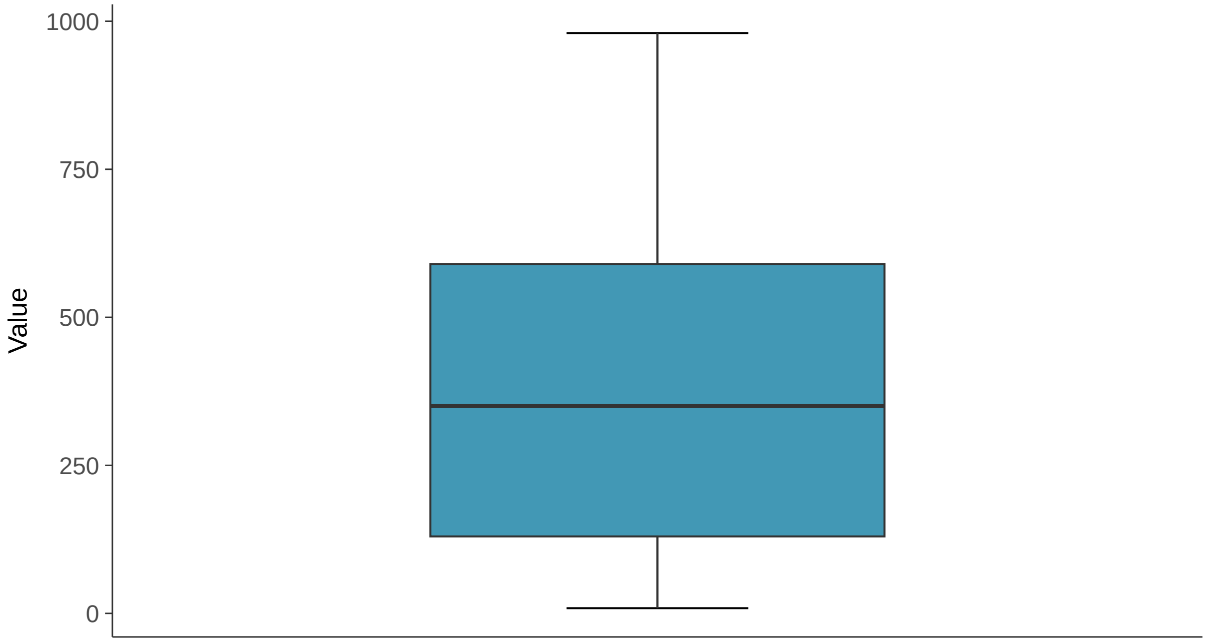
ID: 11_2_3_124





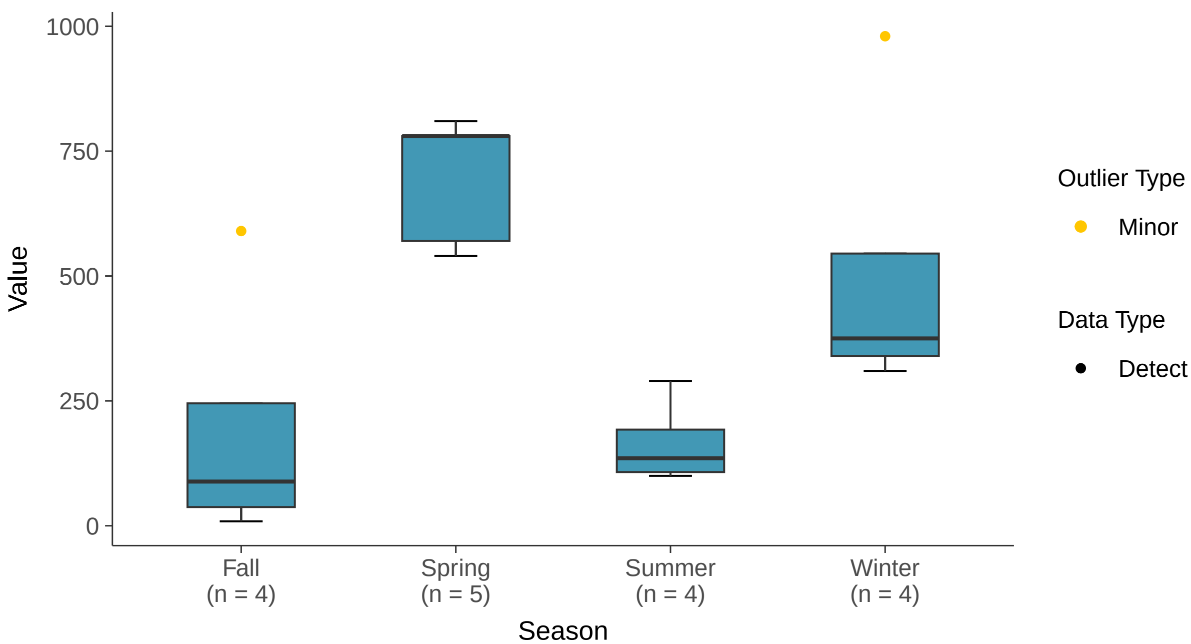
Boxplot

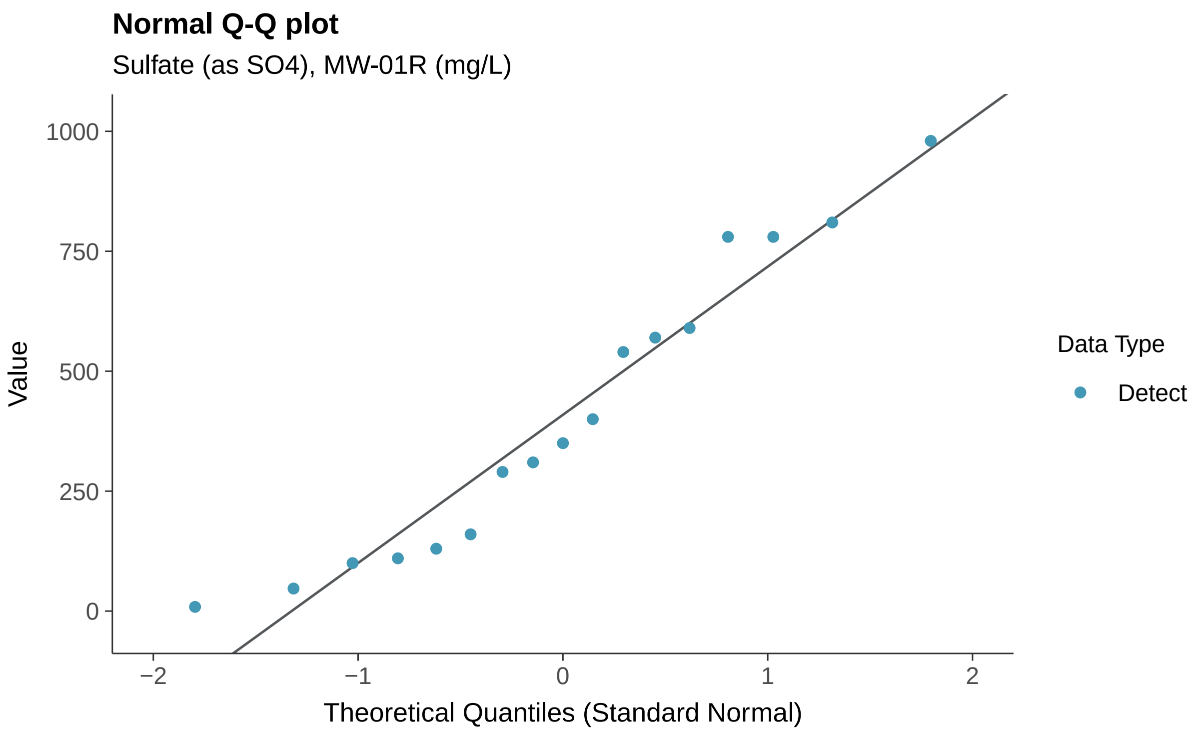
Sulfate (as SO4), MW-01R (mg/L)

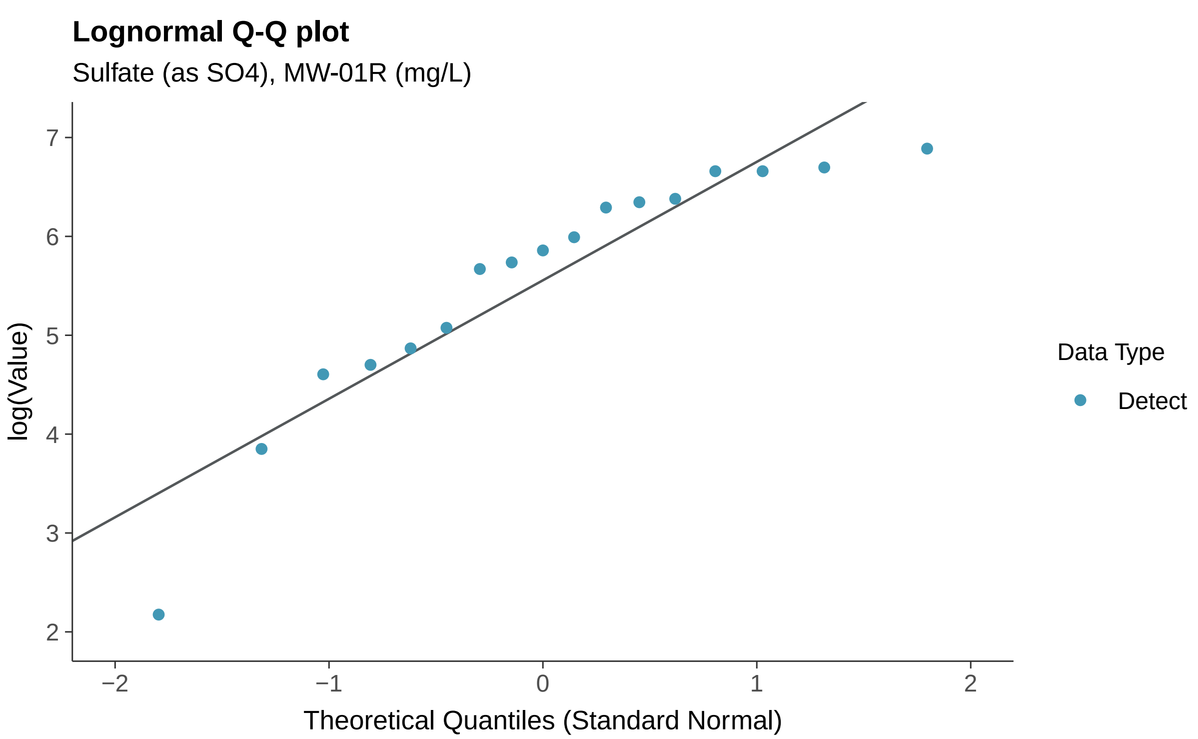


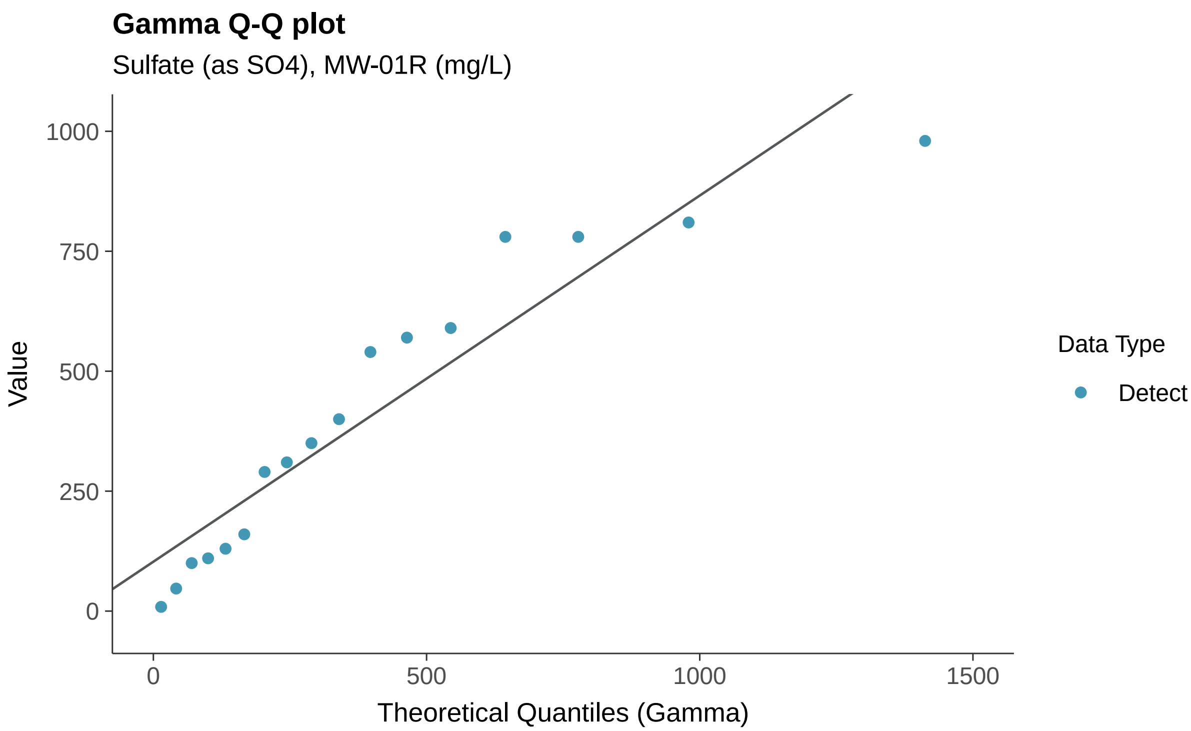
Boxplot by Season

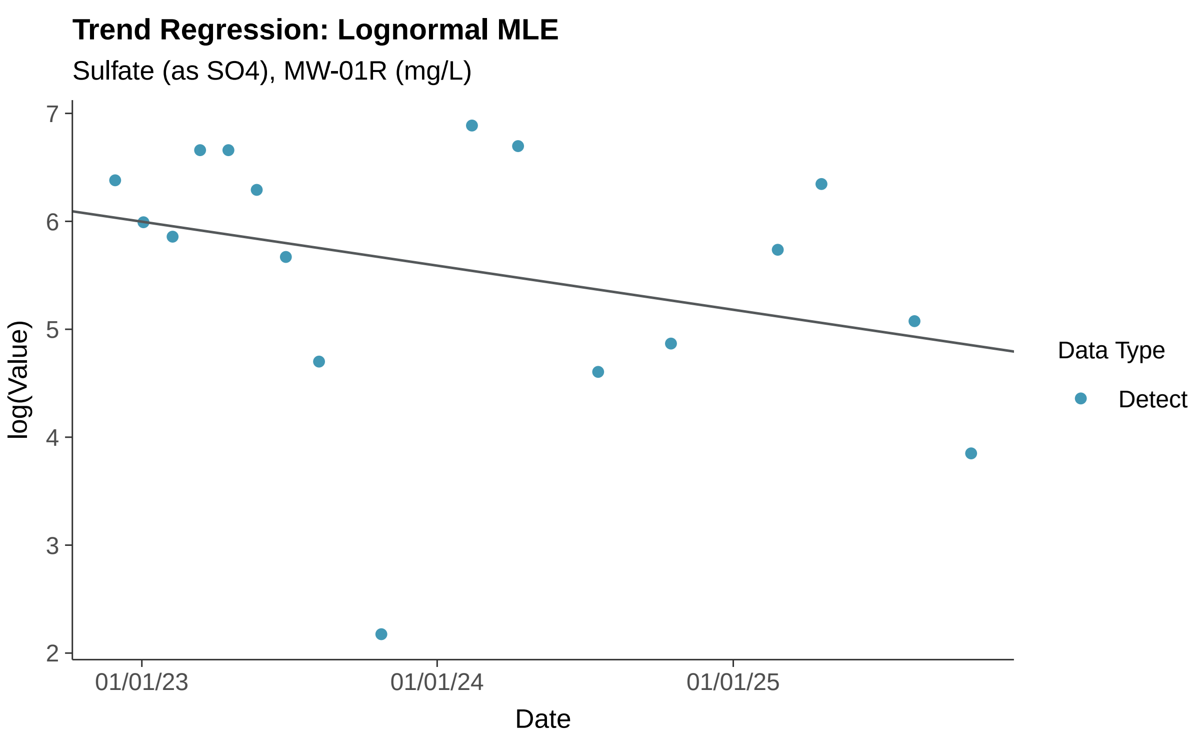
Sulfate (as SO4), MW-01R (mg/L)




Normal Q-Q plot
Sulfate (as SO4), MW-01R (mg/L)
Value
1000
750
500
250
0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

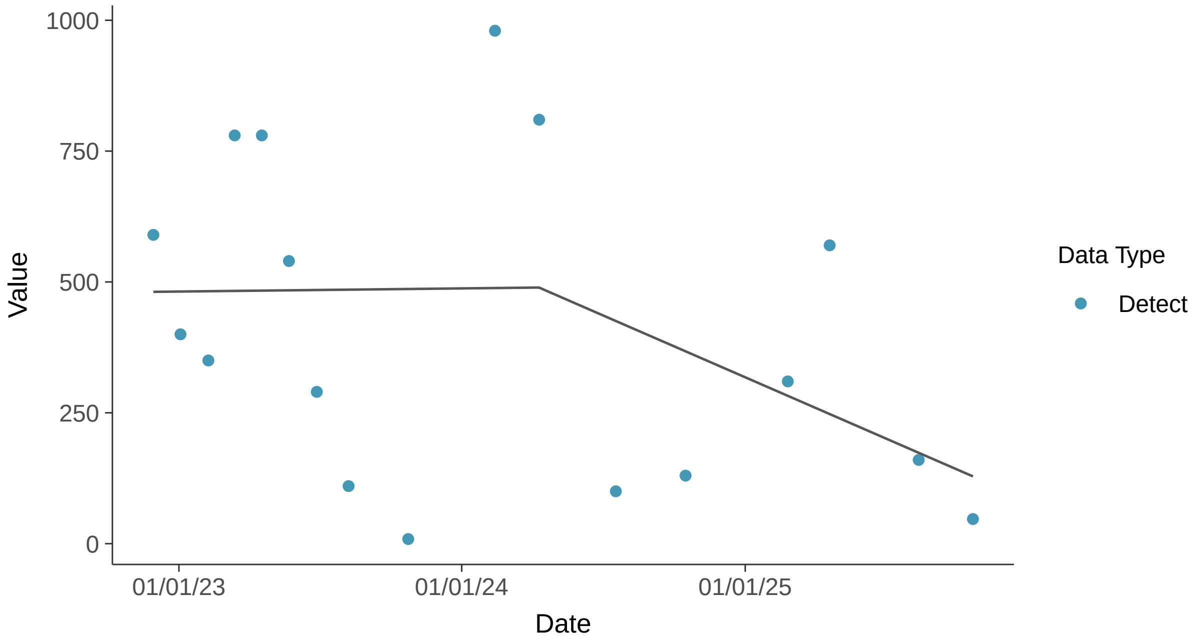

Lognormal Q-Q plot
Sulfate (as SO4), MW-01R (mg/L)
log(Value)
7
6
5
4
3
2
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Sulfate (as SO4), MW-01R (mg/L)
Value
1000
750
500
250
0
0
500
1000
1500
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Sulfate (as SO4), MW-01R (mg/L)
log(Value)
7
6
5
4
3
2
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear

Sulfate (as SO4), MW-01R (mg/L)

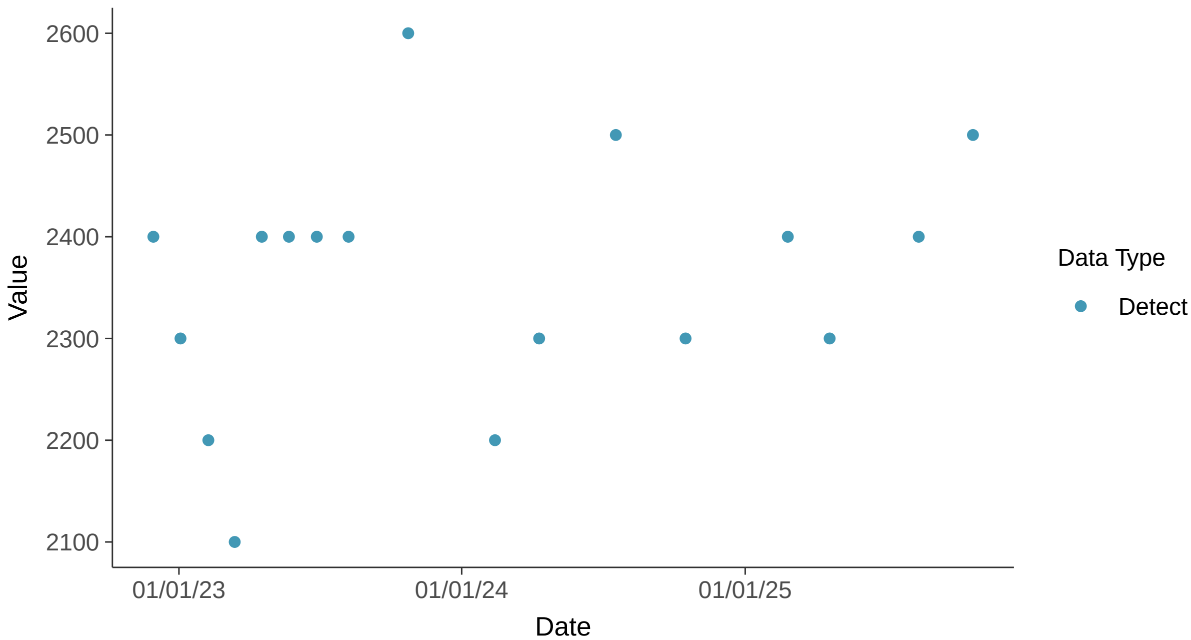


Appendix III: Total Dissolved Solids, MW-01R

ID: 11_2_3_126

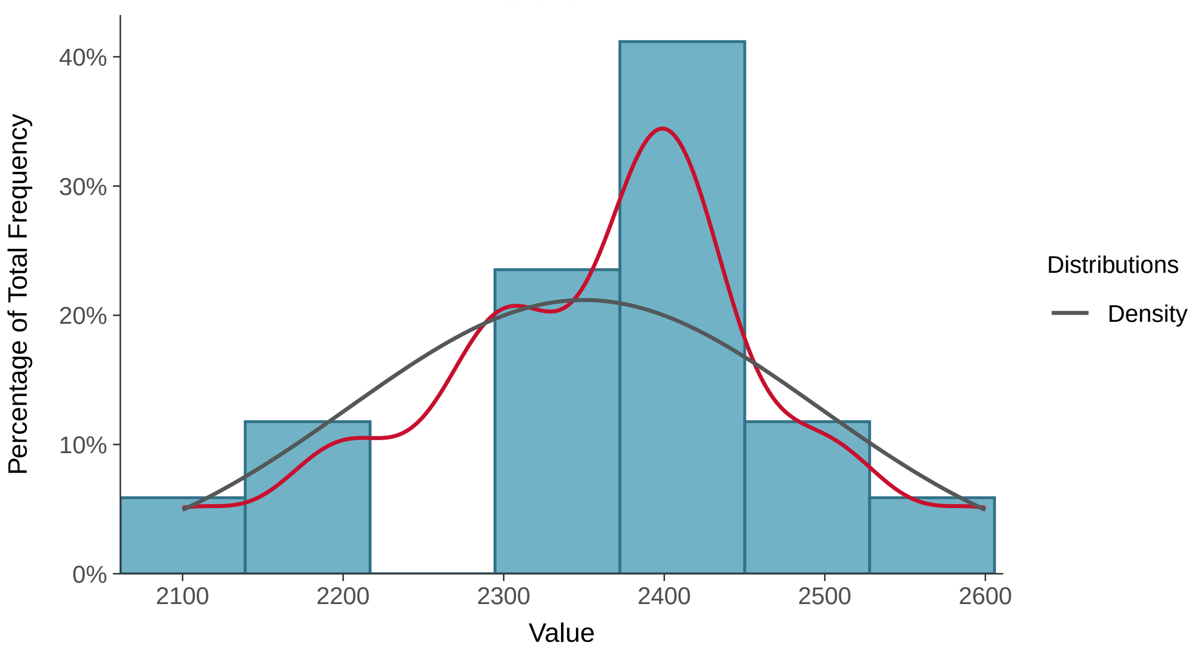
Scatter Plot

Total Dissolved Solids, MW-01R (mg/L)



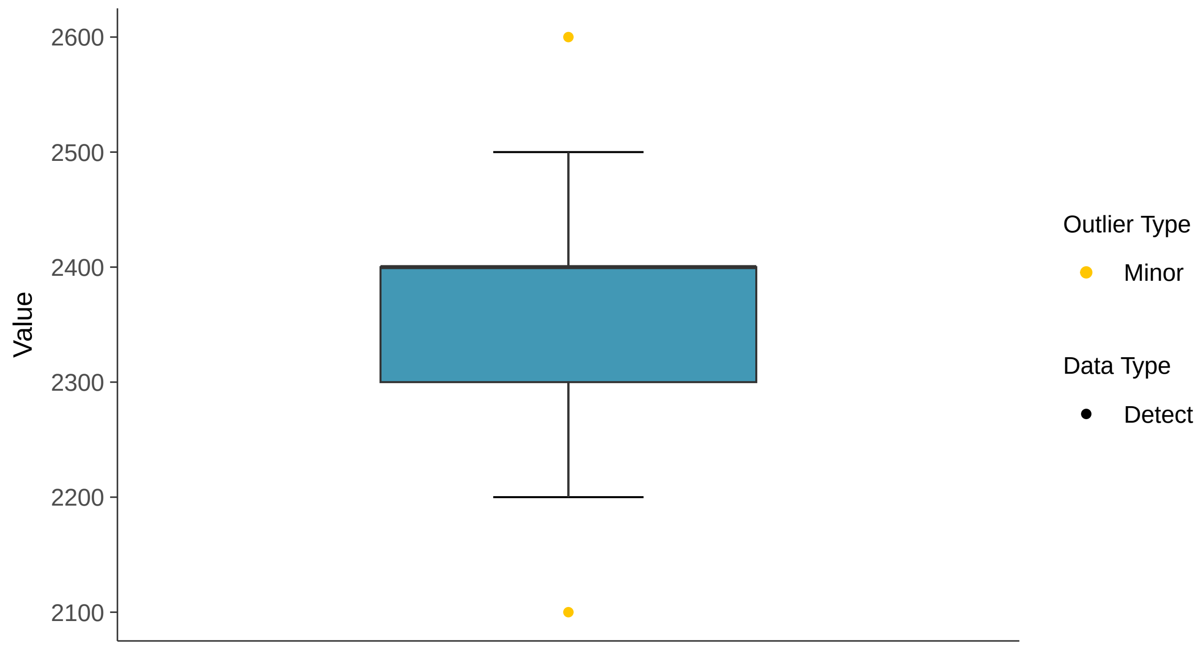
Histogram

Total Dissolved Solids, MW-01R (mg/L)



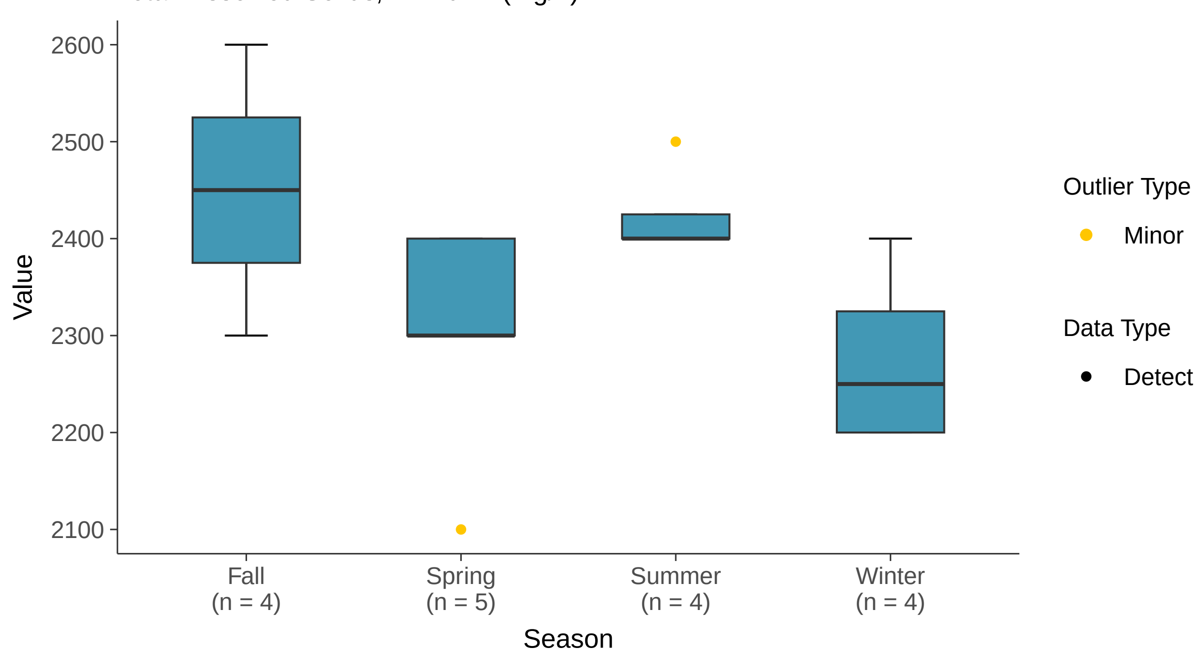
Boxplot

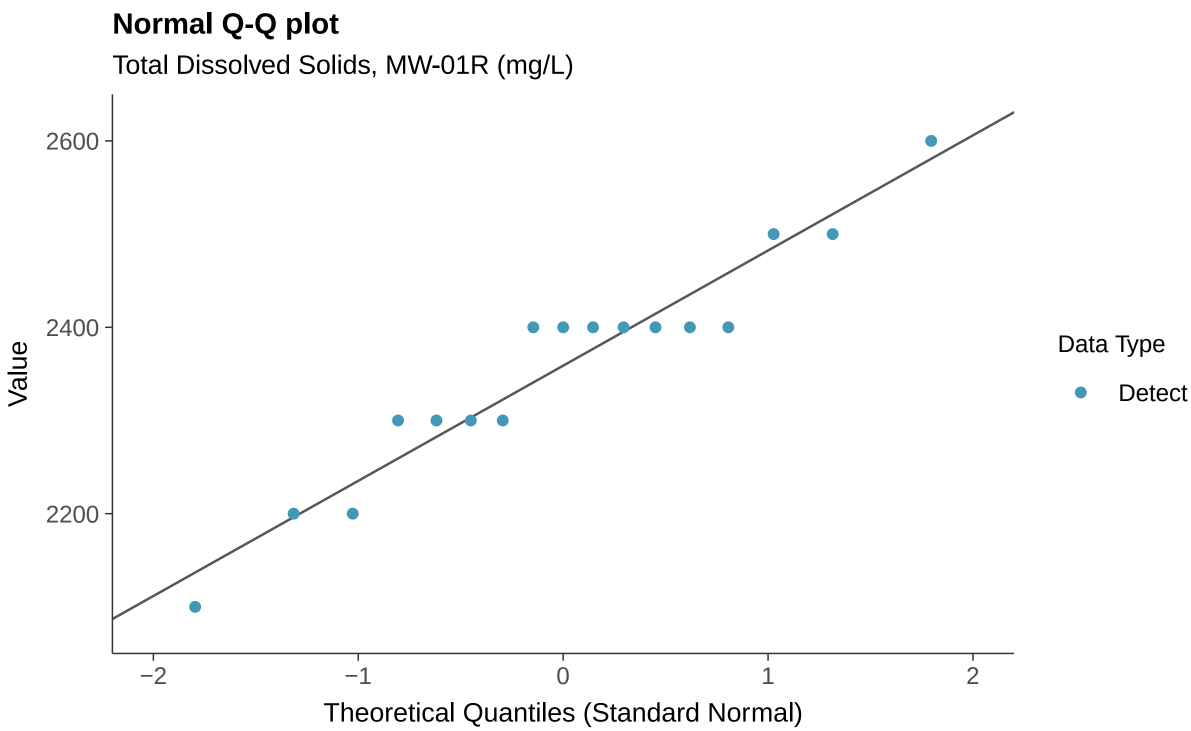
Total Dissolved Solids, MW-01R (mg/L)

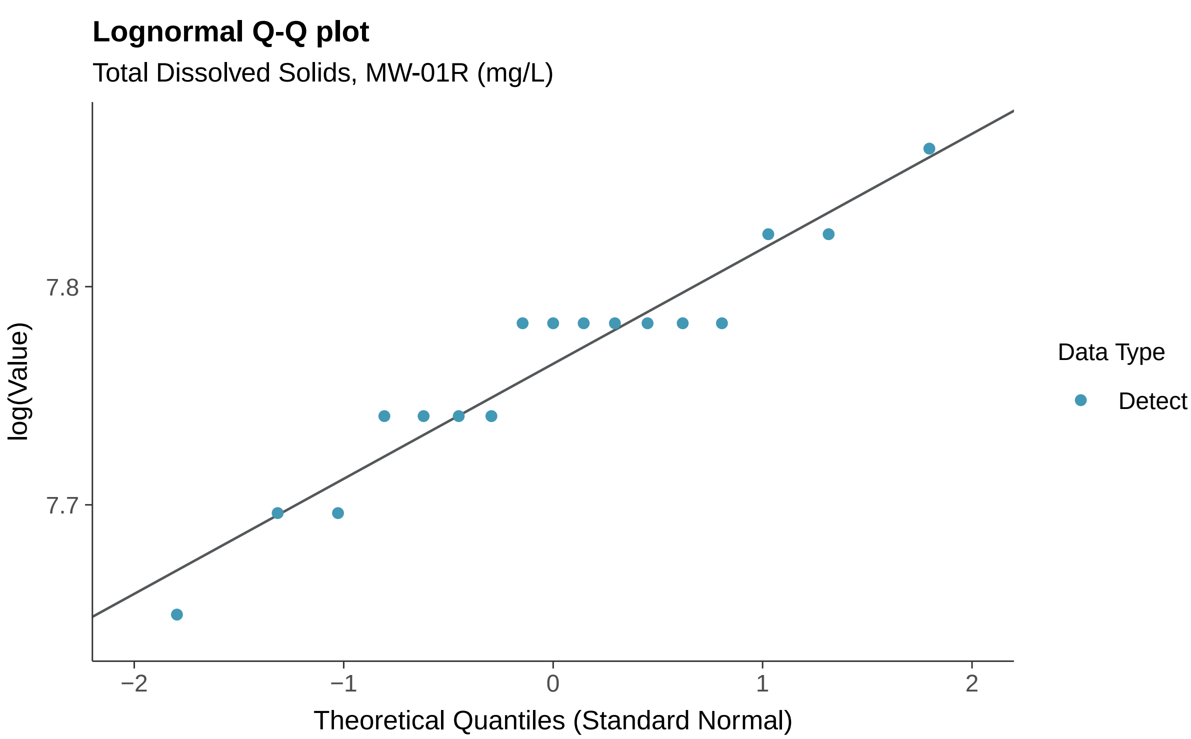


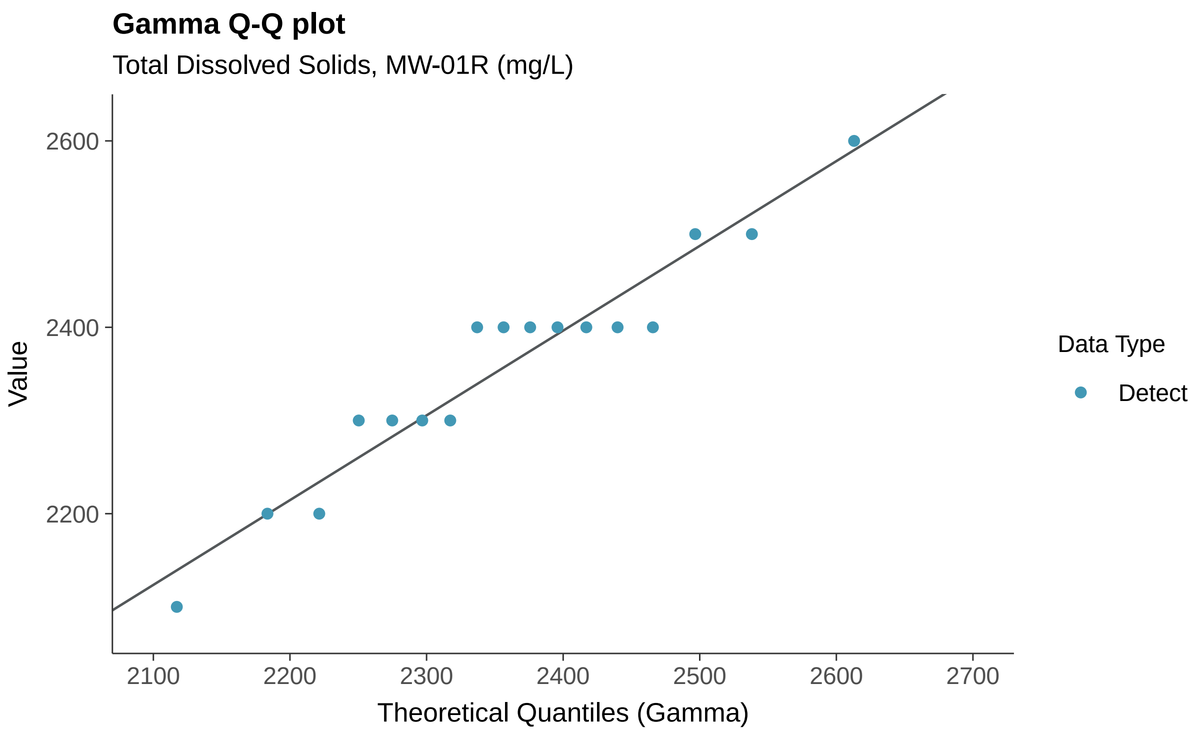
Boxplot by Season

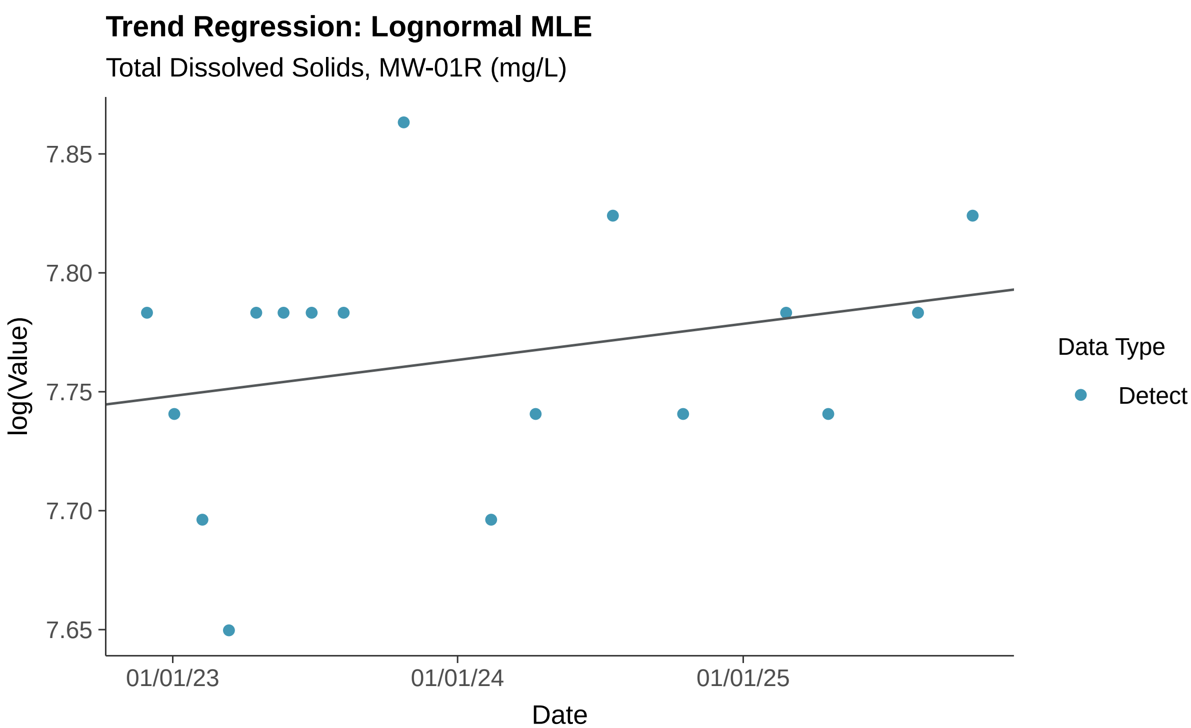
Total Dissolved Solids, MW-01R (mg/L)




Normal Q-Q plot
Total Dissolved Solids, MW-01R (mg/L)
Value
2600
2400
2200
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

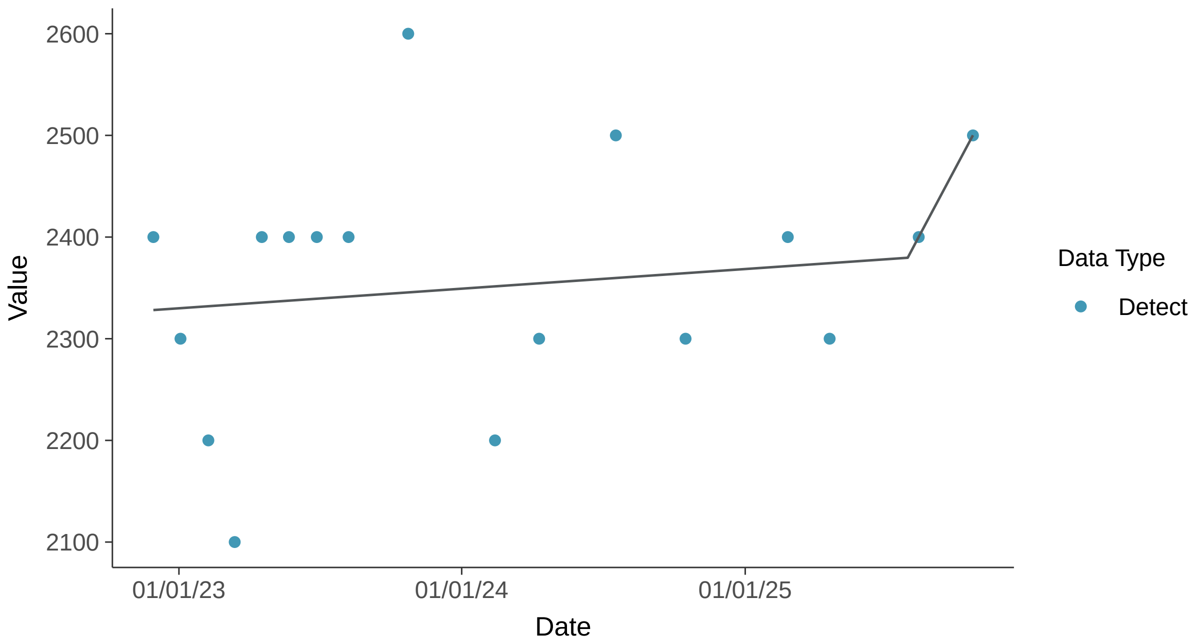

Lognormal Q-Q plot
Total Dissolved Solids, MW-01R (mg/L)
log(Value)
7.8
7.7
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Total Dissolved Solids, MW-01R (mg/L)
Value
2600
2400
2200
2100
2200
2300
2400
2500
2600
2700
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Total Dissolved Solids, MW-01R (mg/L)
log(Value)
7.85
7.80
7.75
7.70
7.65
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear

Total Dissolved Solids, MW-01R (mg/L)

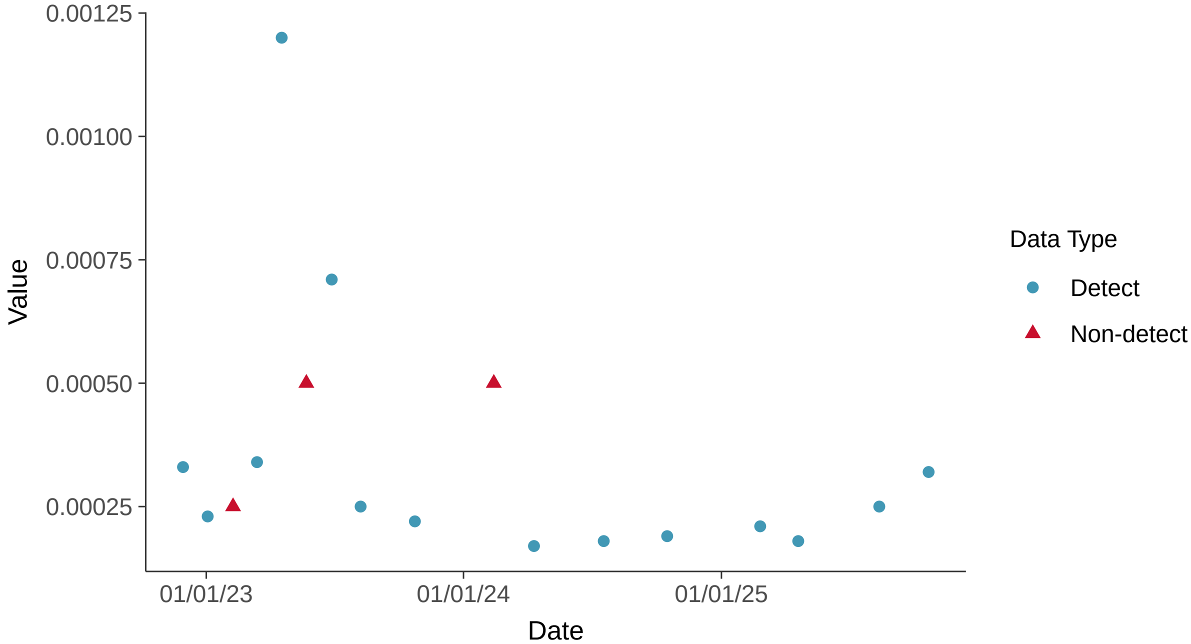


Appendix IV: Antimony, MW-01R

ID: 11_2_4_101

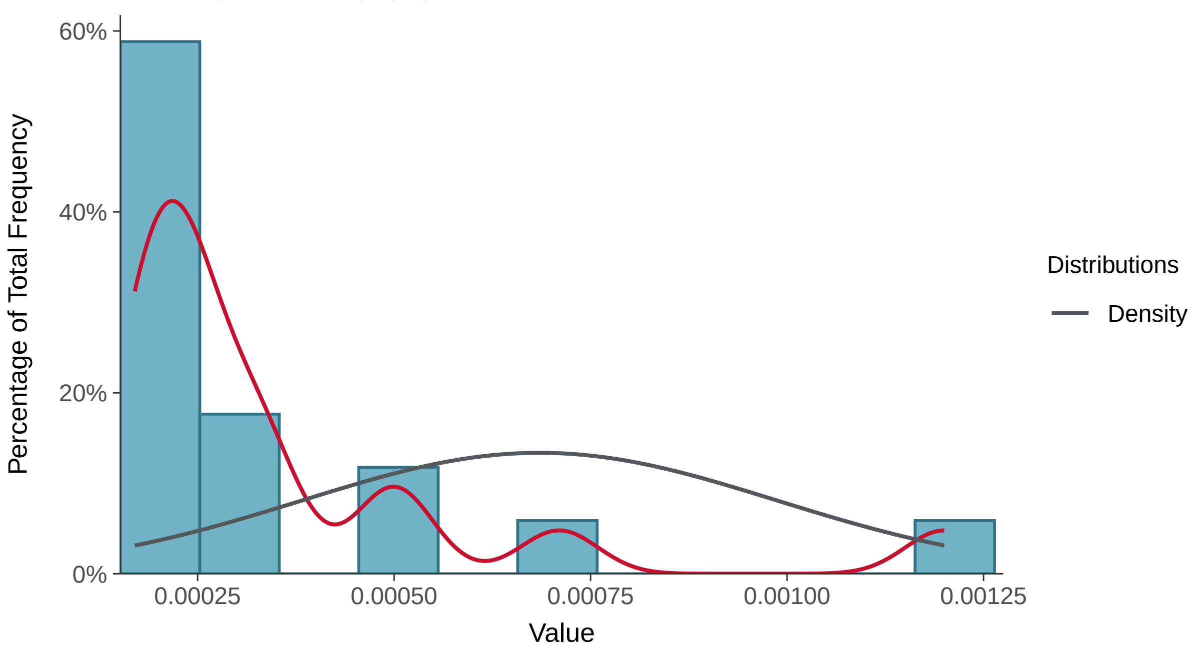
Scatter Plot

Antimony, MW-01R (mg/L)



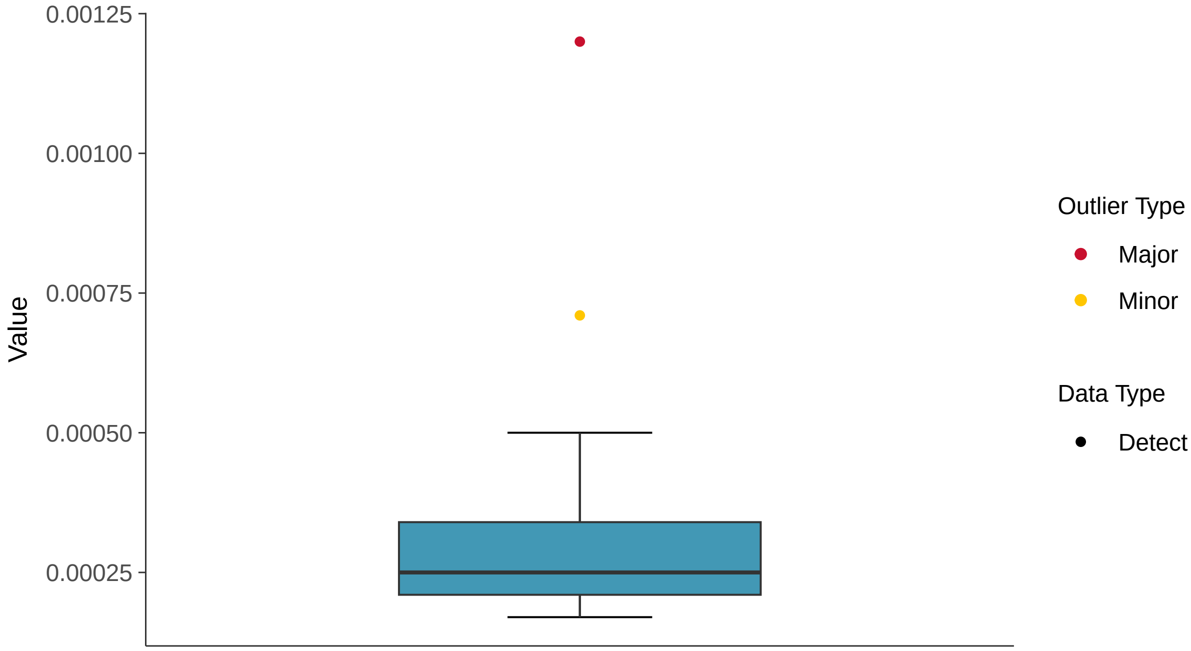
Histogram

Antimony, MW-01R (mg/L)



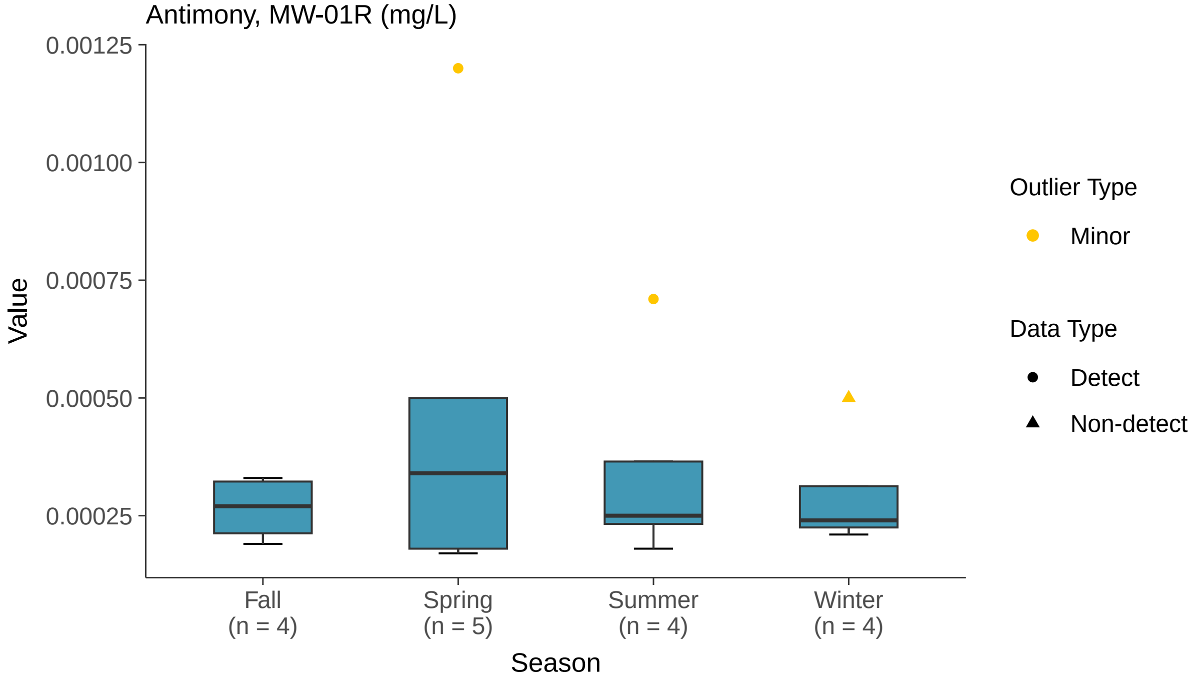
Boxplot

Antimony, MW-01R (mg/L)



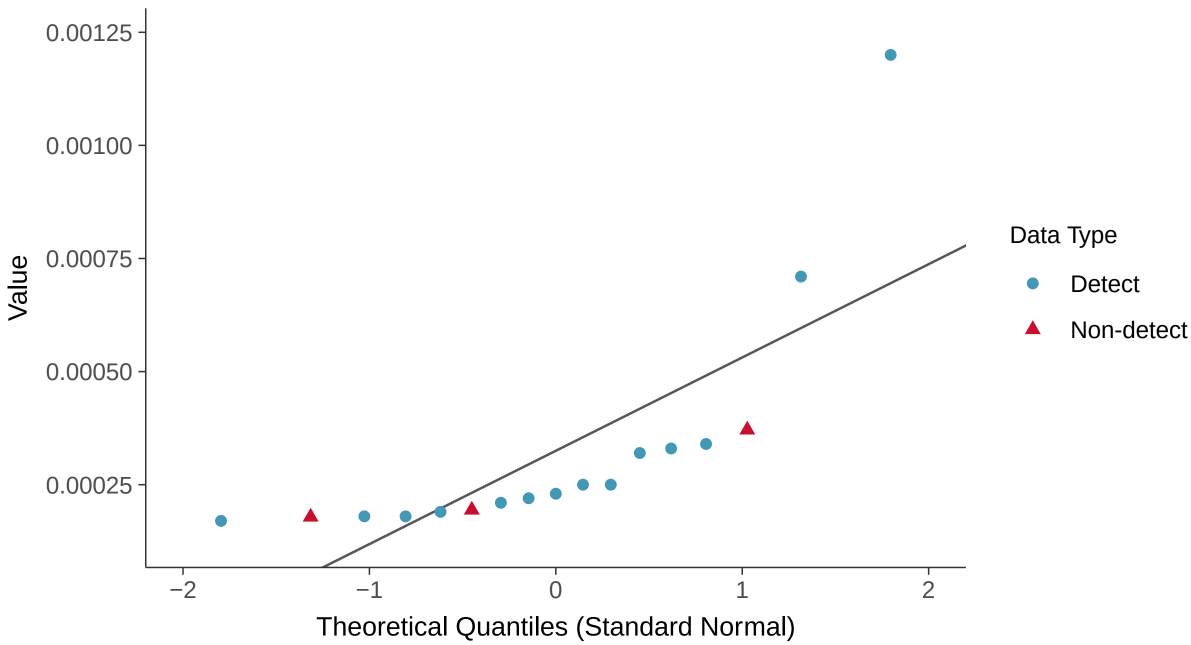
Boxplot by Season

Antimony, MW-01R (mg/L)



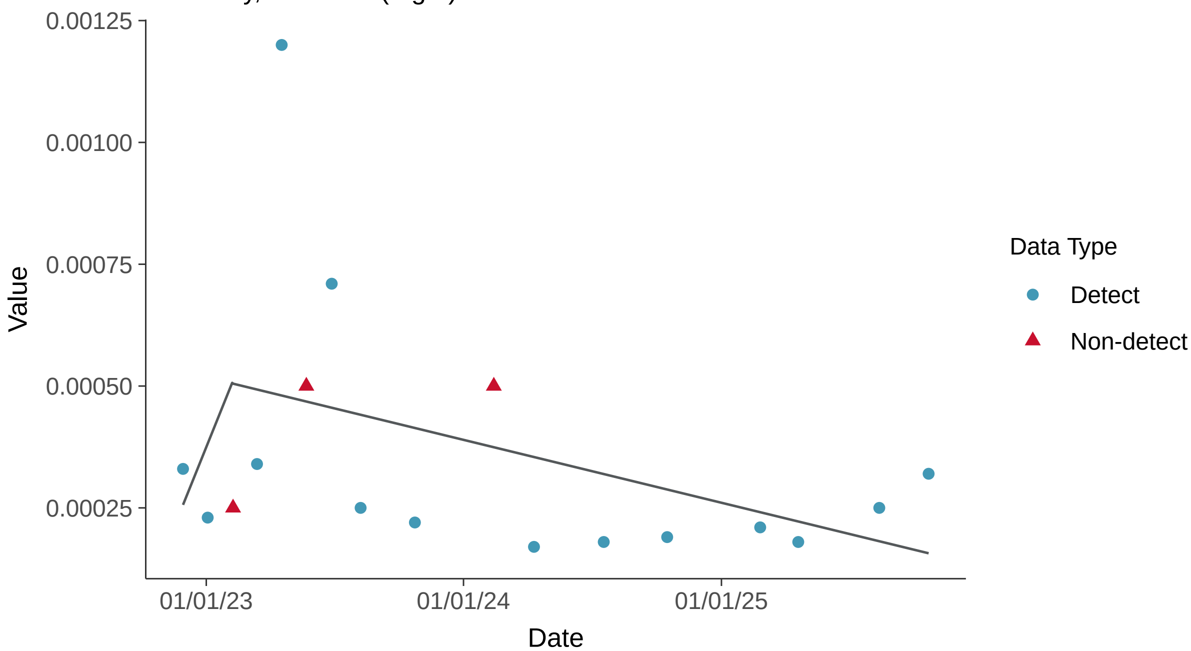
Normal Q-Q plot using ROS Imputed Estimates

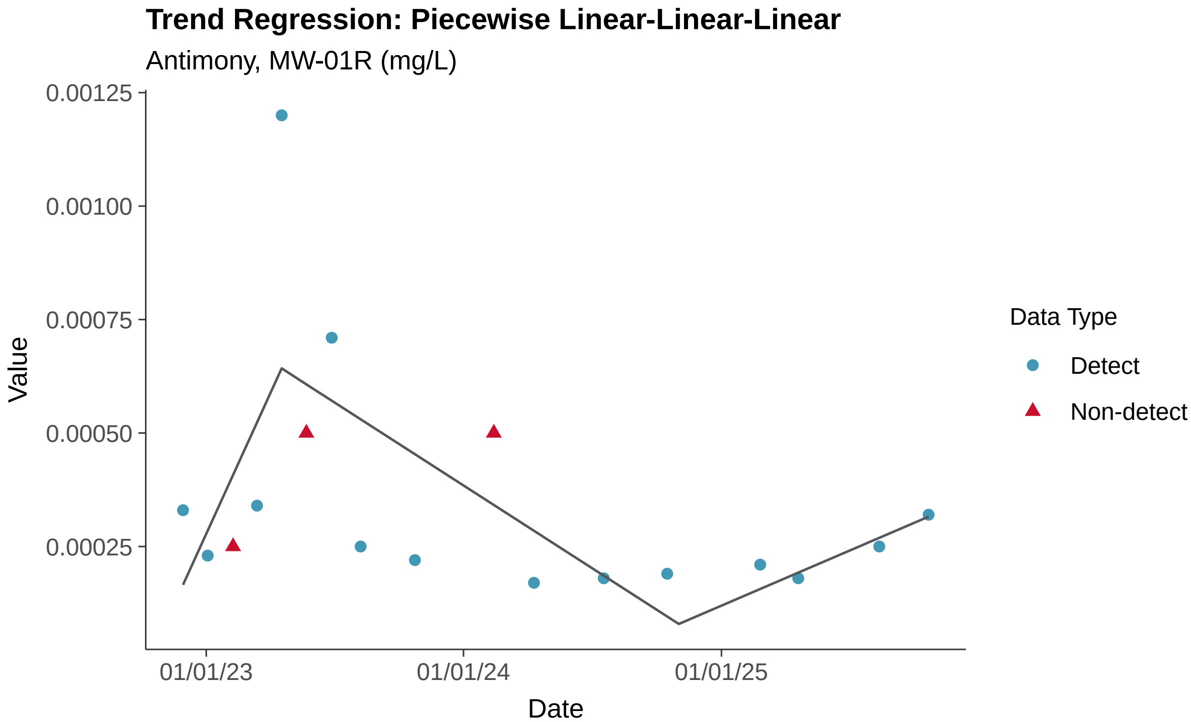
Antimony, MW-01R (mg/L)



Trend Regression: Piecewise Linear-Linear

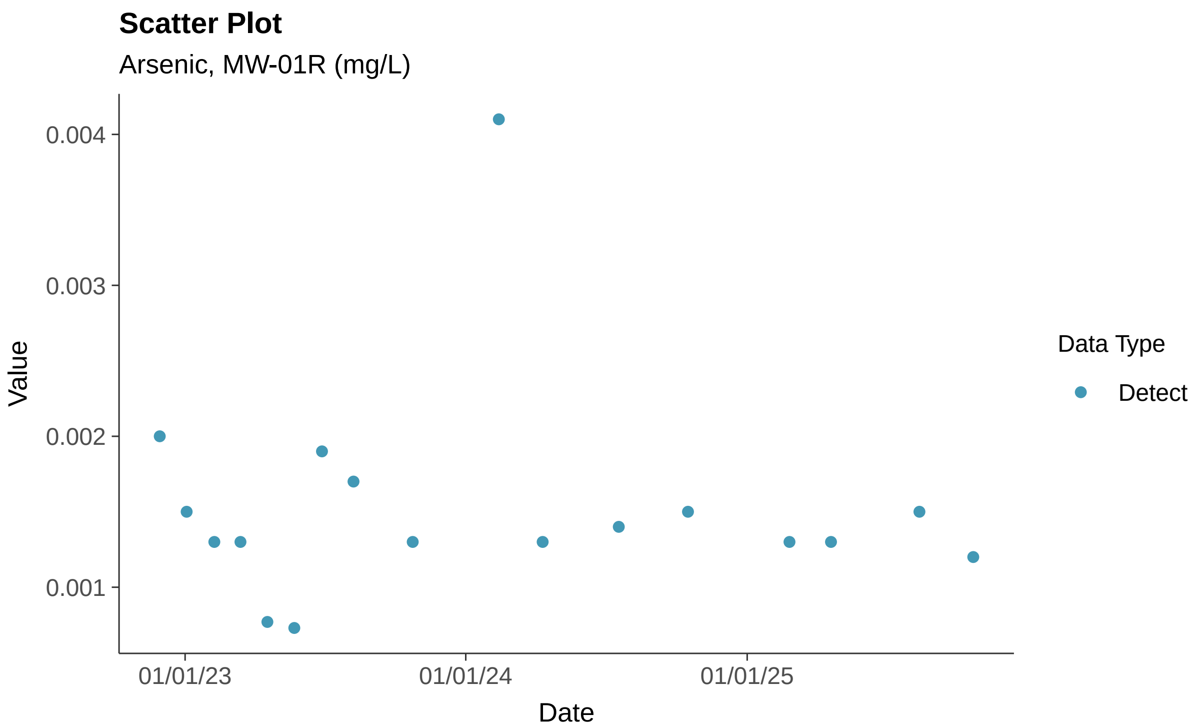
Antimony, MW-01R (mg/L)

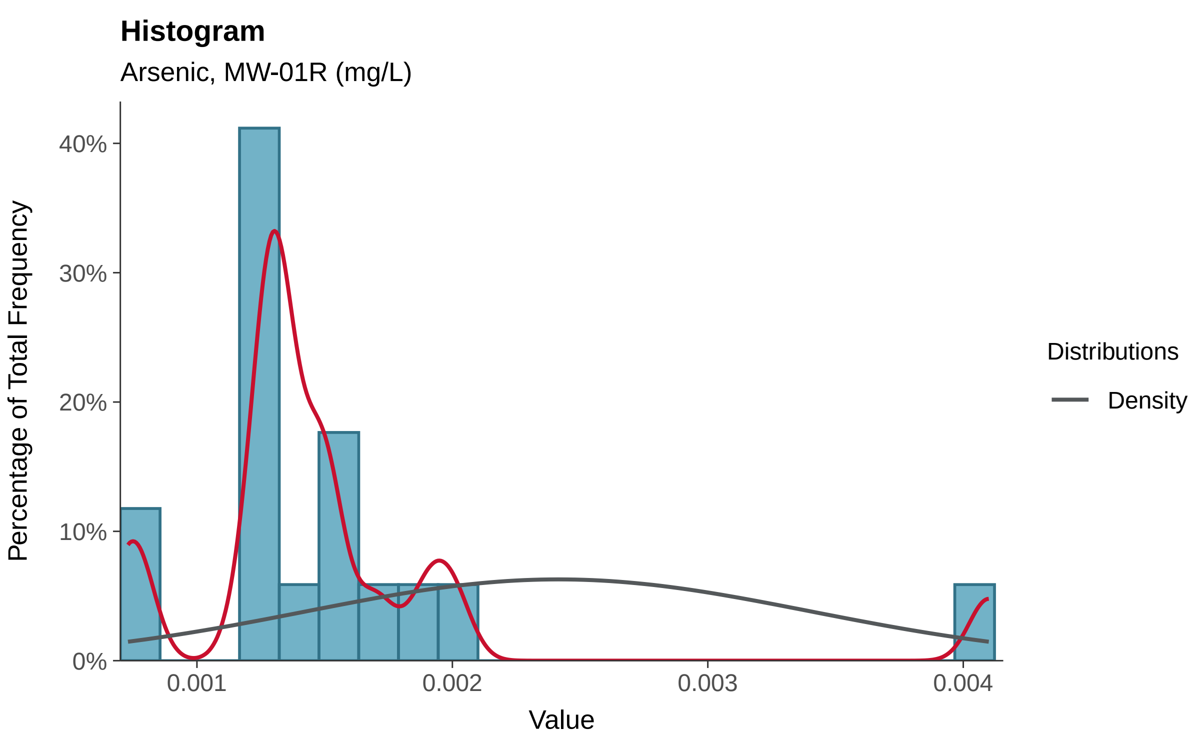



Trend Regression: Piecewise Linear-Linear-Linear
Antimony, MW-01R (mg/L)
0.00125
0.00100
0.00075
0.00050
0.00025
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Appendix IV: Arsenic, MW-01R

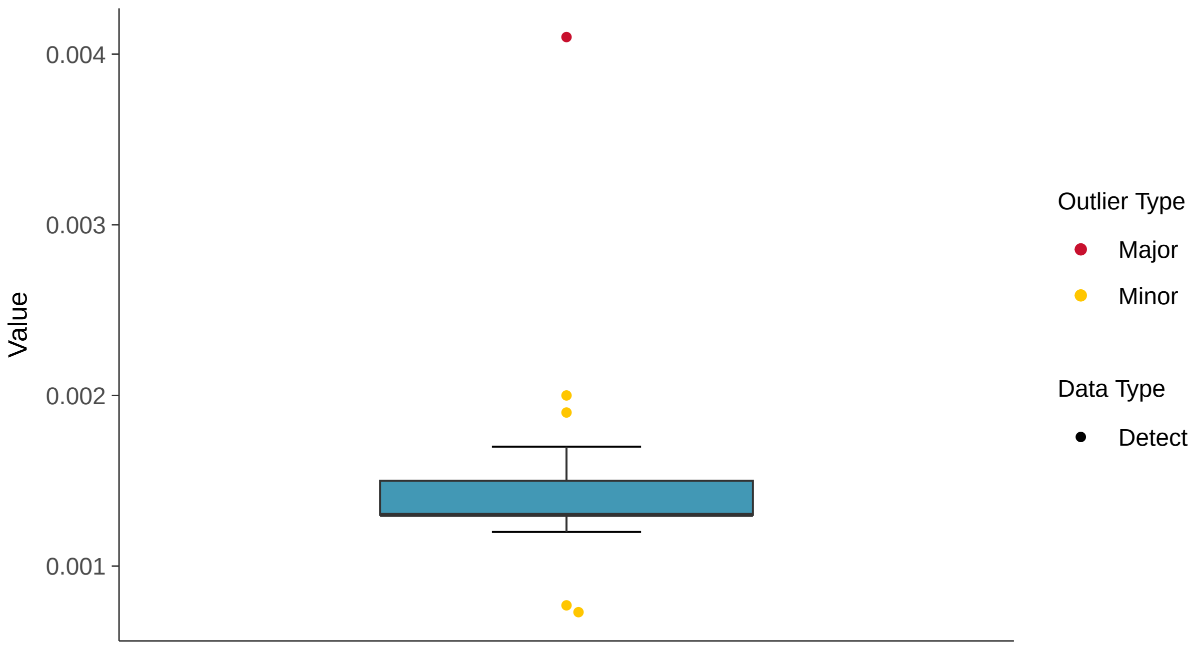
ID: 11_2_4_102





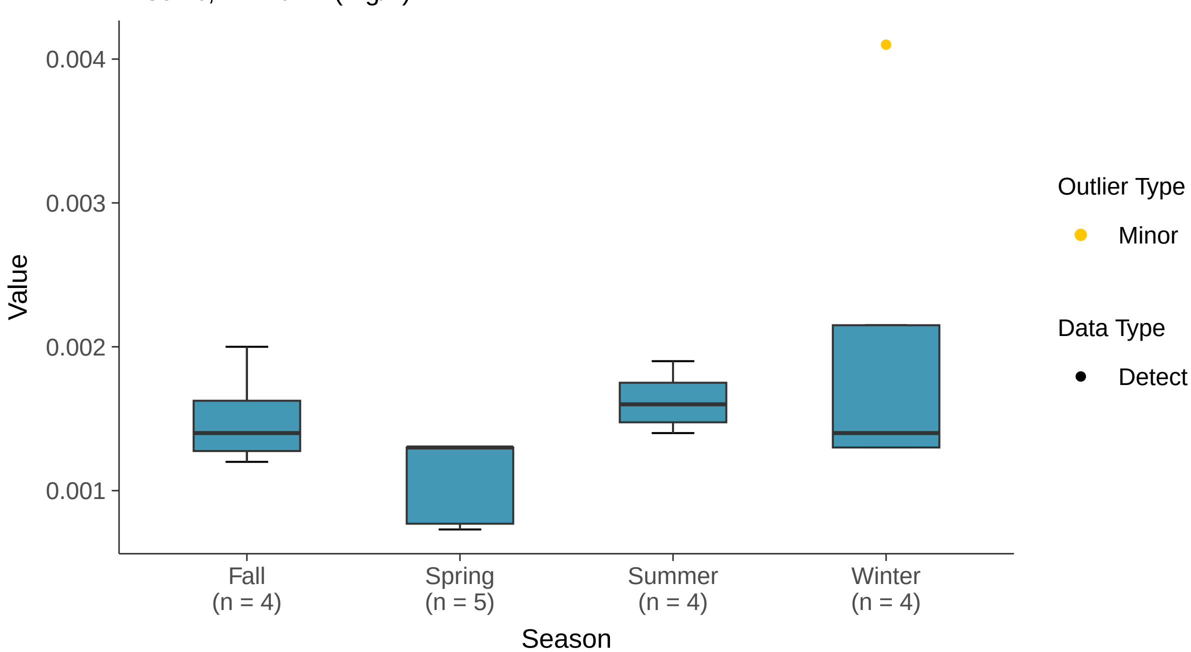
Boxplot

Arsenic, MW-01R (mg/L)



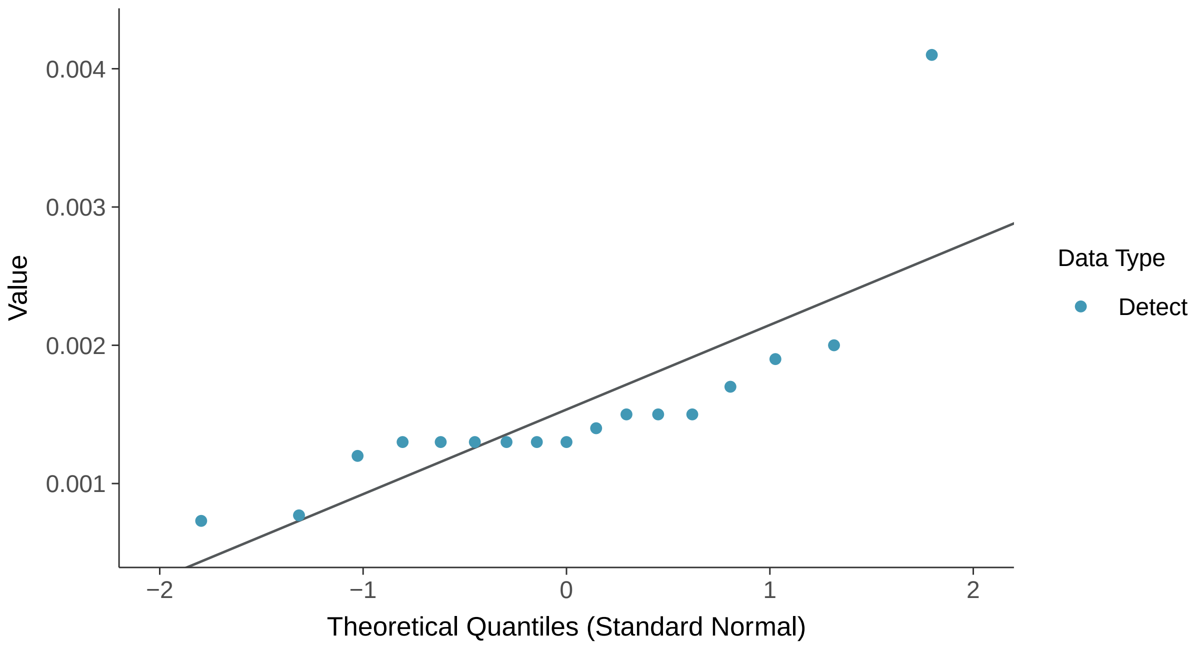
Boxplot by Season

Arsenic, MW-01R (mg/L)



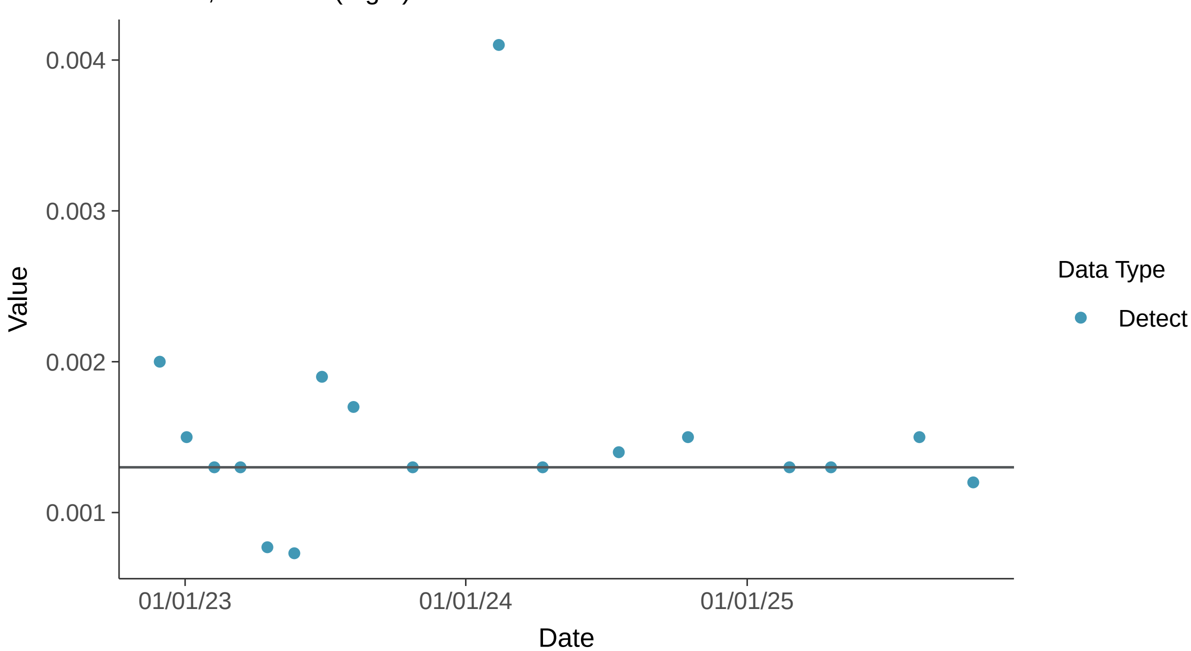
Normal Q-Q plot

Arsenic, MW-01R (mg/L)



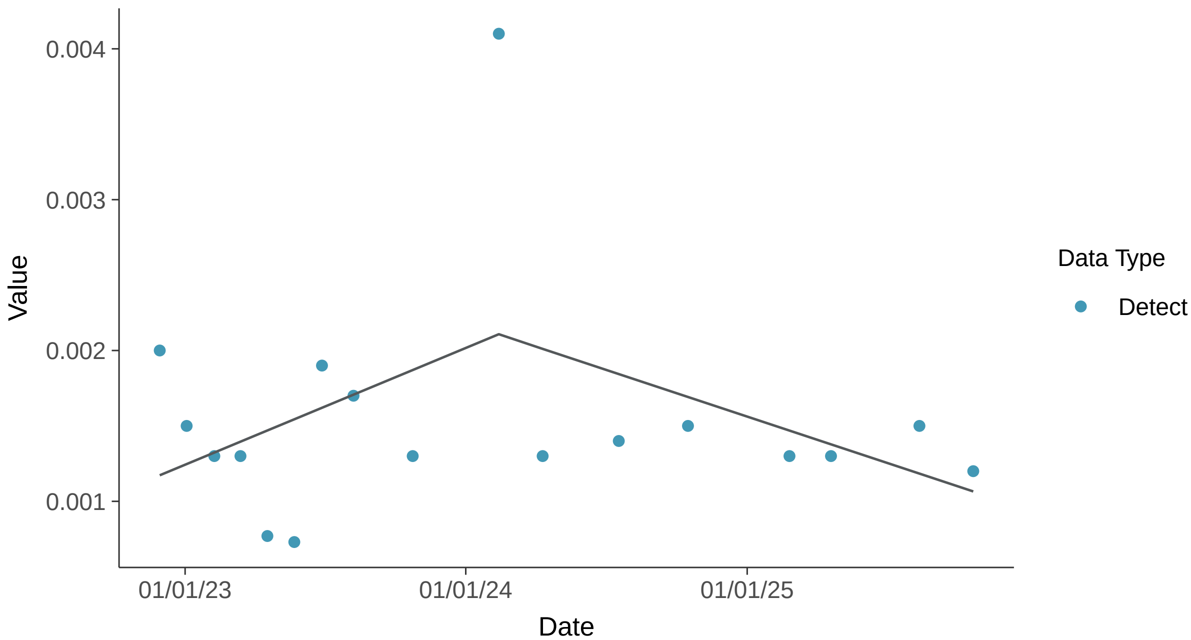
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Arsenic, MW-01R (mg/L)



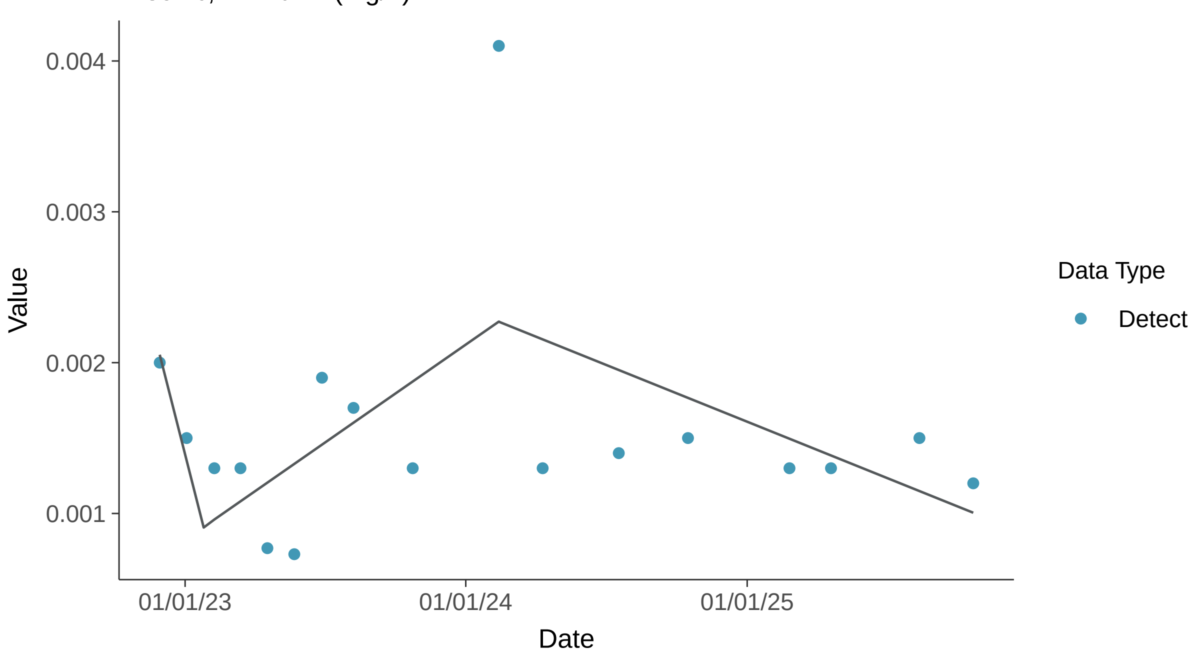
Trend Regression: Piecewise Linear-Linear

Arsenic, MW-01R (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Arsenic, MW-01R (mg/L)

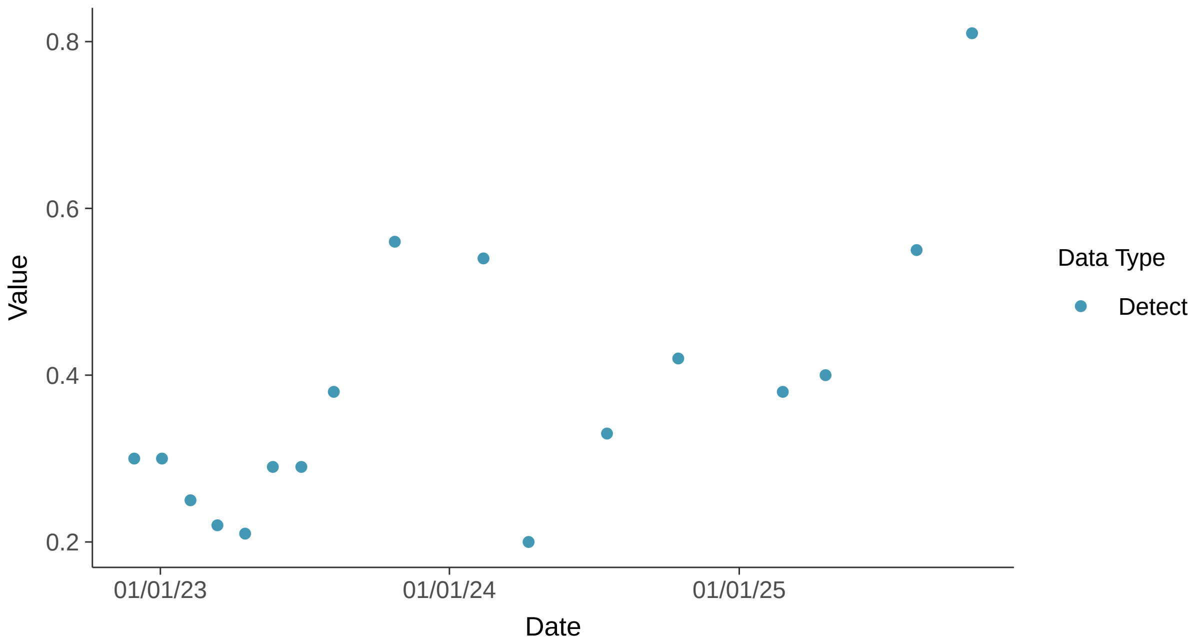


Appendix IV: Barium, MW-01R

ID: 11_2_4_103

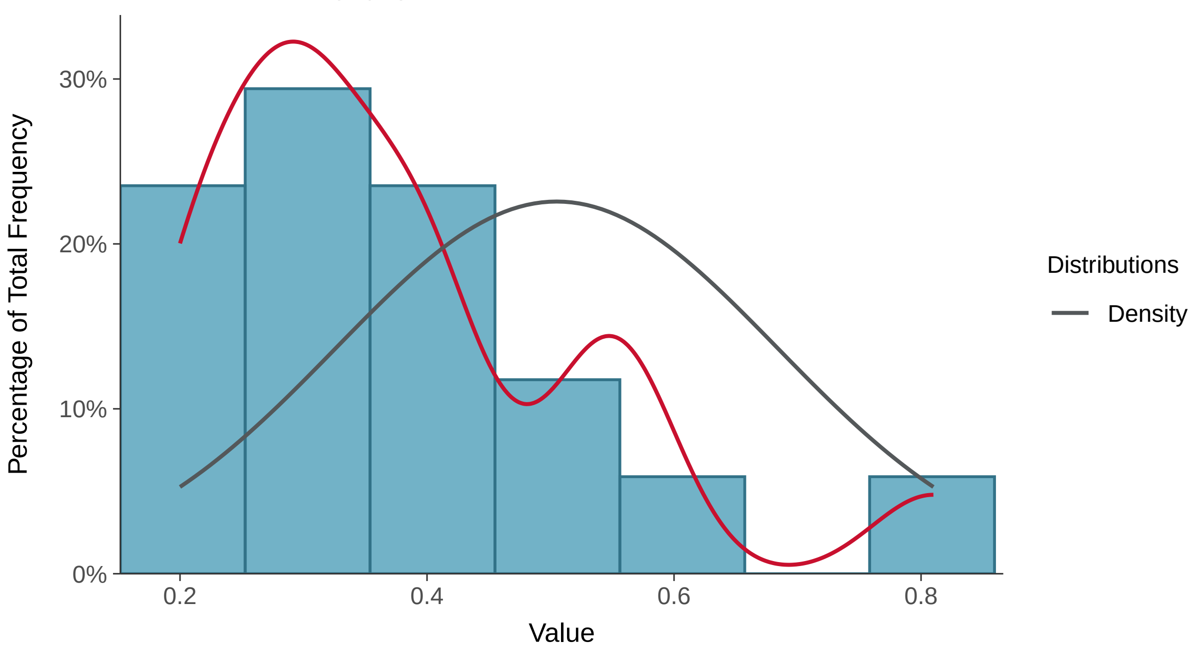
Scatter Plot

Barium, MW-01R (mg/L)



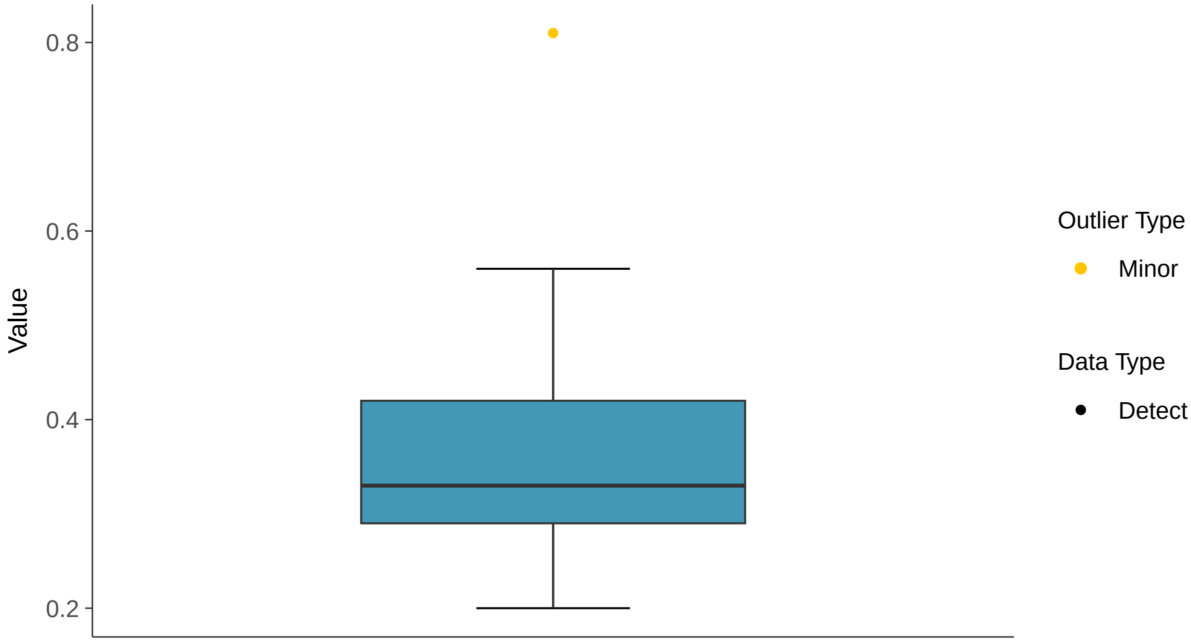
Histogram

Barium, MW-01R (mg/L)



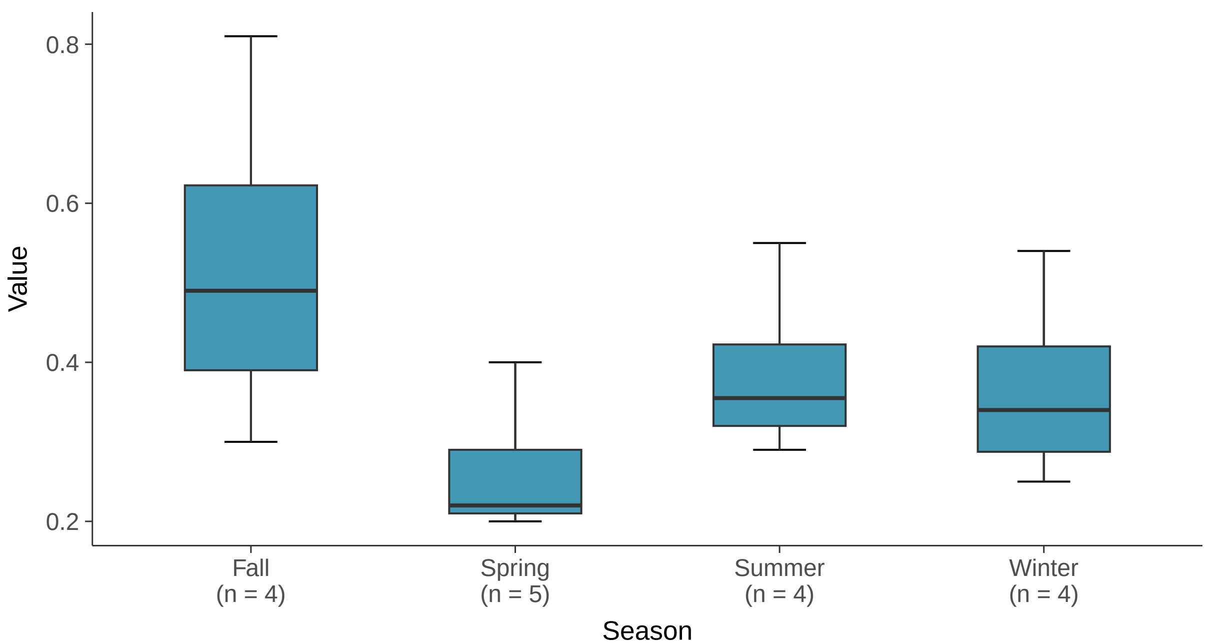
Boxplot

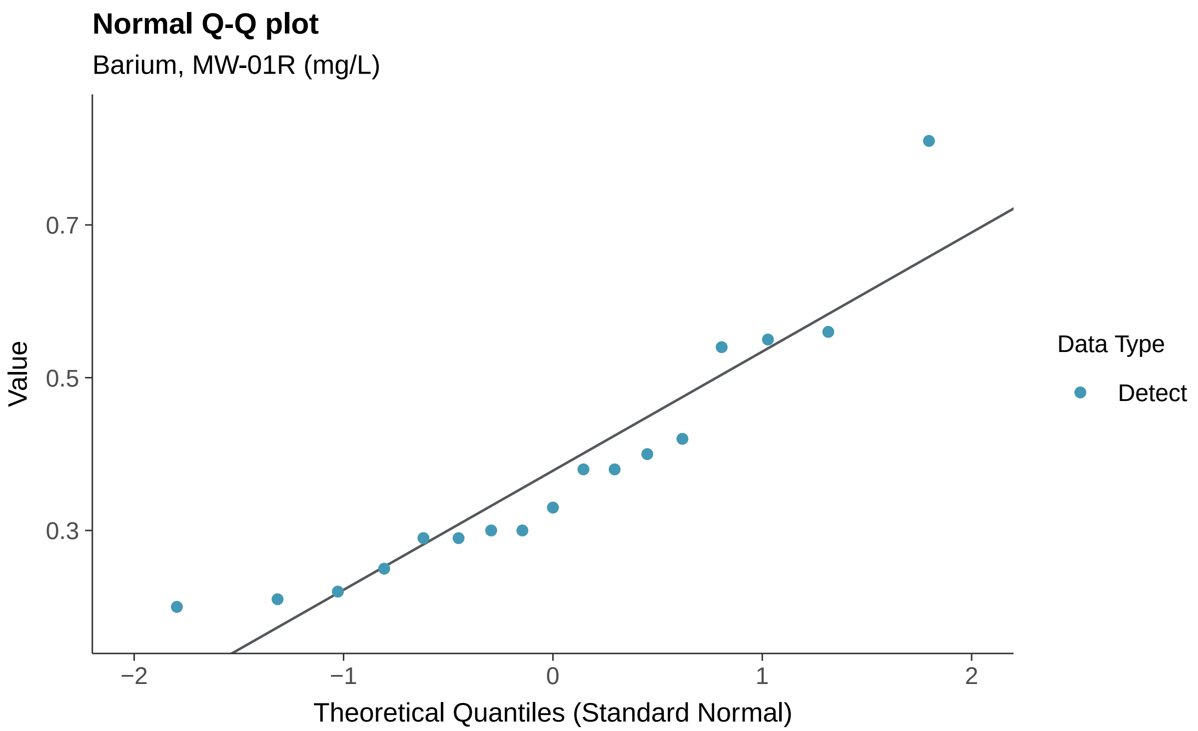
Barium, MW-01R (mg/L)

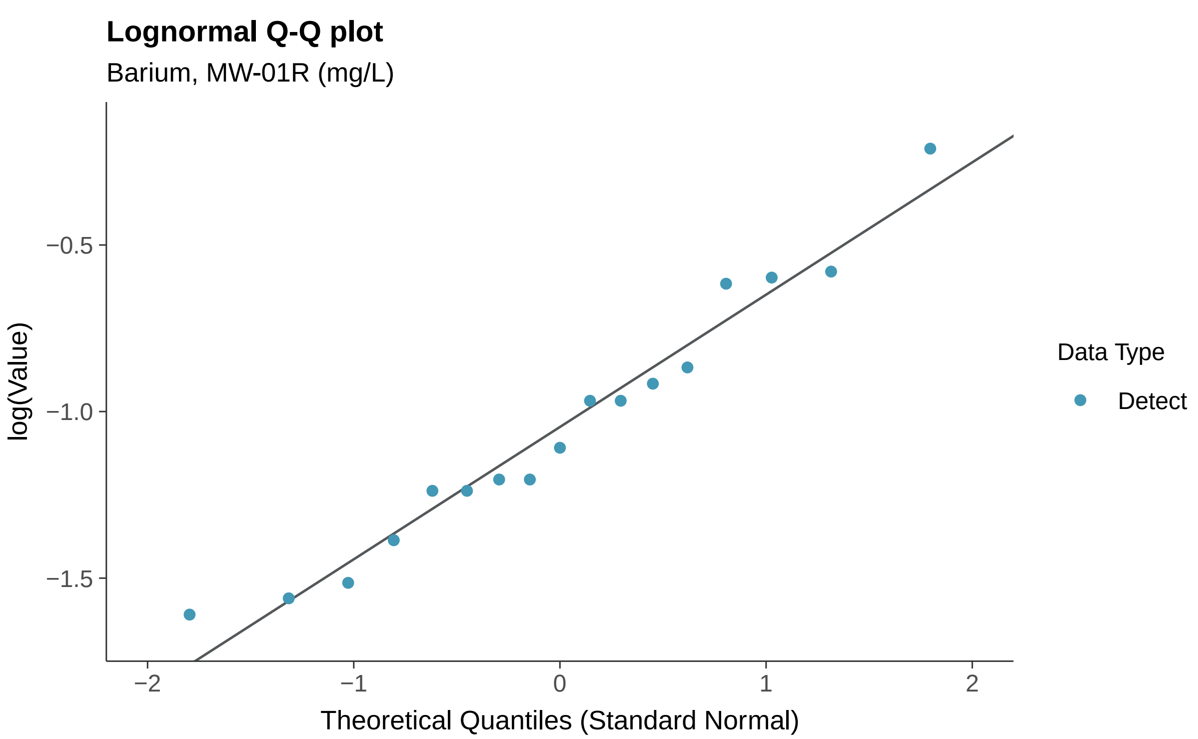


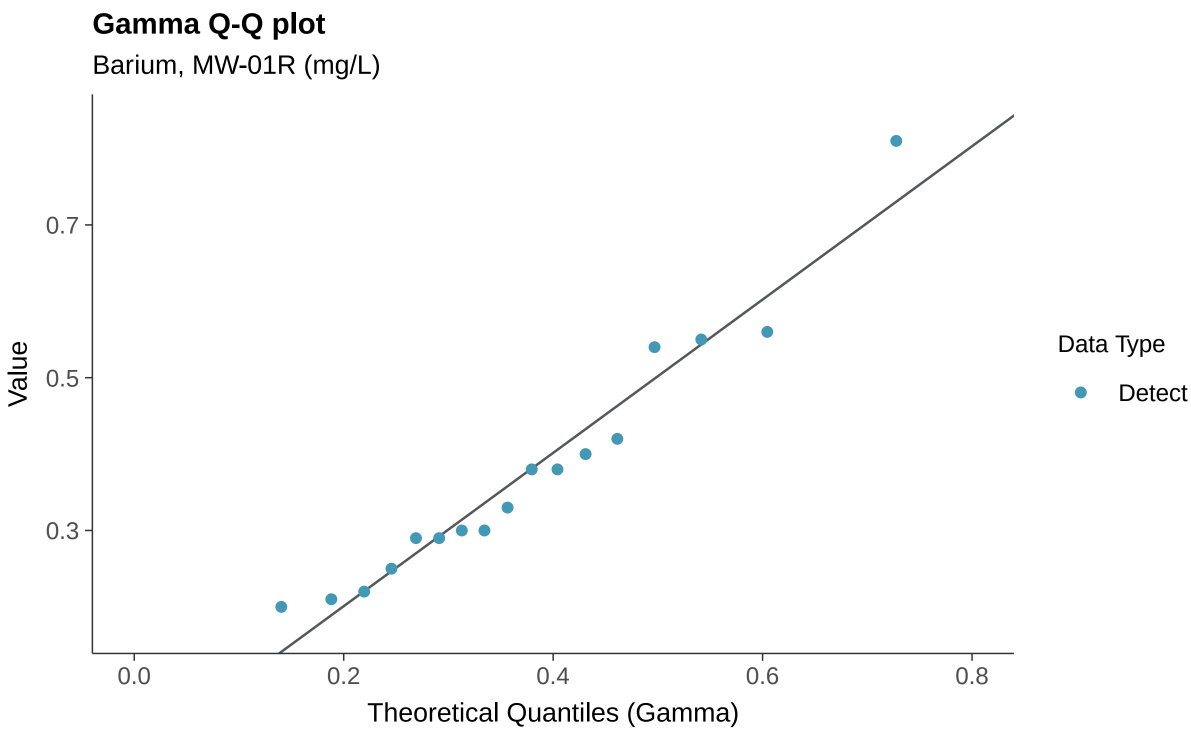
Boxplot by Season

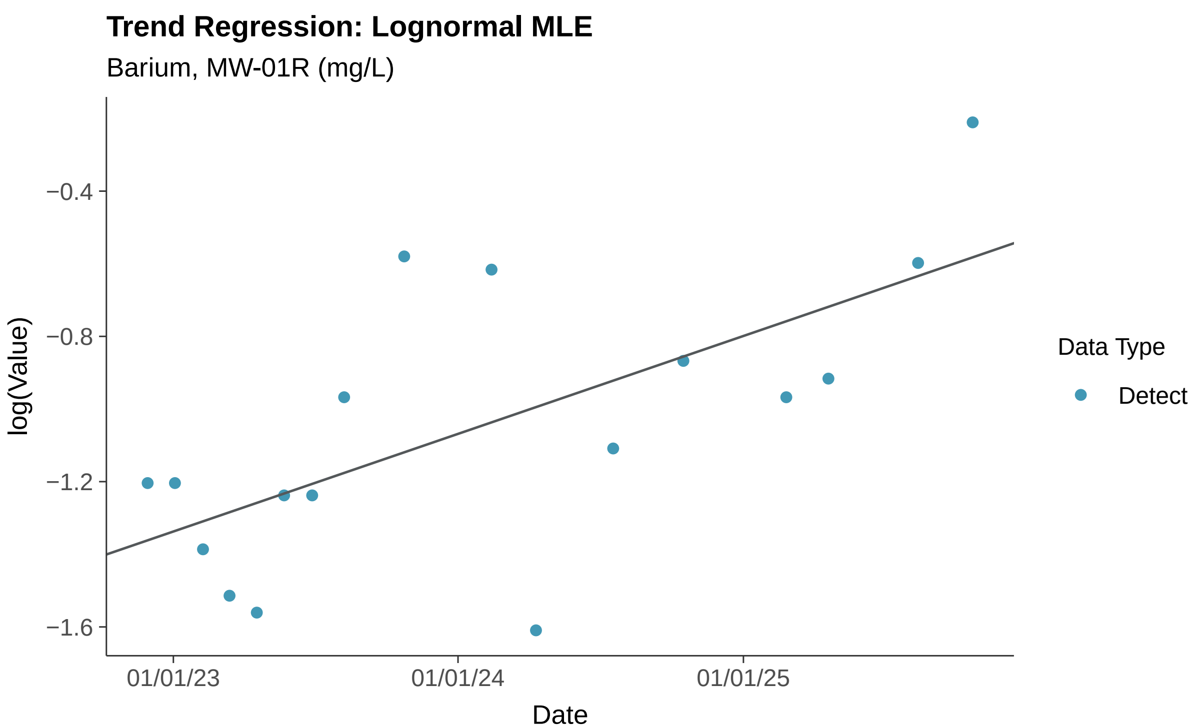
Barium, MW-01R (mg/L)




Normal Q-Q plot
Barium, MW-01R (mg/L)
Value
0.7
0.5
0.3
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

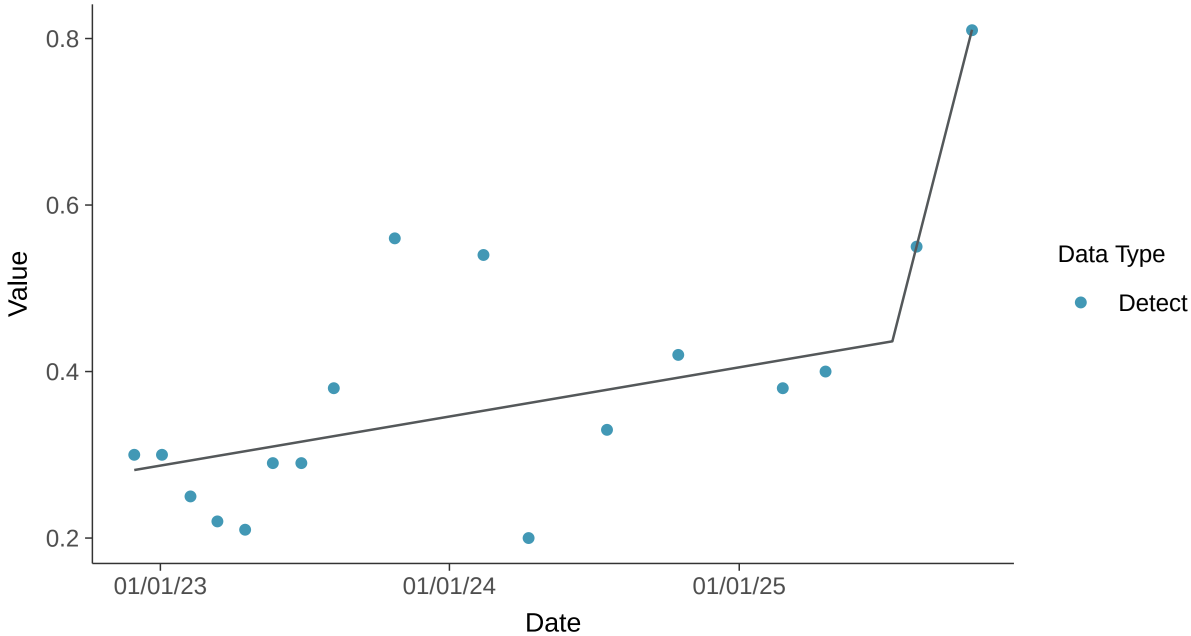

Lognormal Q-Q plot
Barium, MW-01R (mg/L)
log(Value)
−0.5
−1.0
−1.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Barium, MW-01R (mg/L)
Value
0.7
0.5
0.3
0.0
0.2
0.4
0.6
0.8
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Barium, MW-01R (mg/L)
log(Value)
−0.4
−0.8
−1.2
−1.6
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

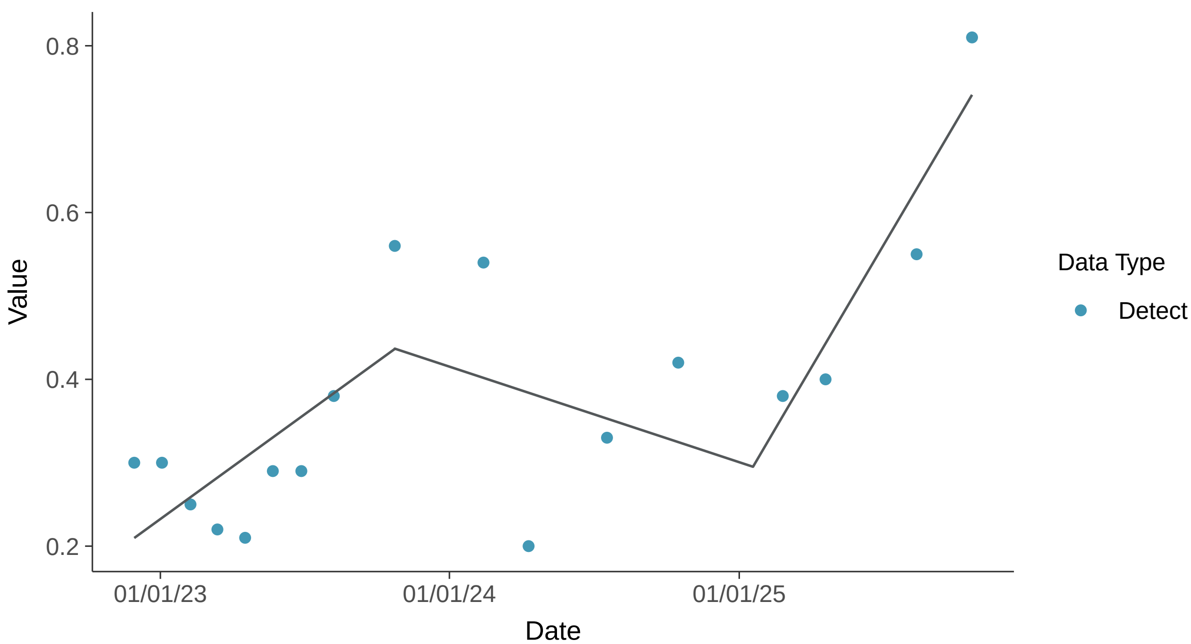
Trend Regression: Piecewise Linear-Linear

Barium, MW-01R (mg/L)



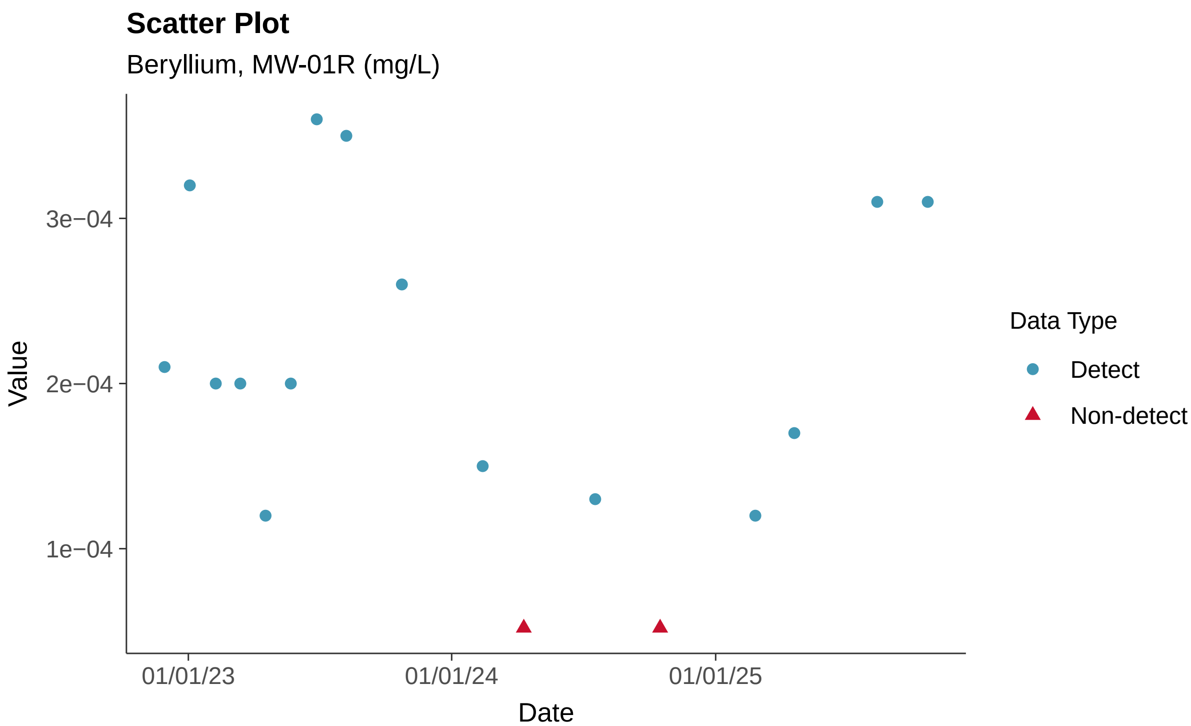
Trend Regression: Piecewise Linear-Linear-Linear

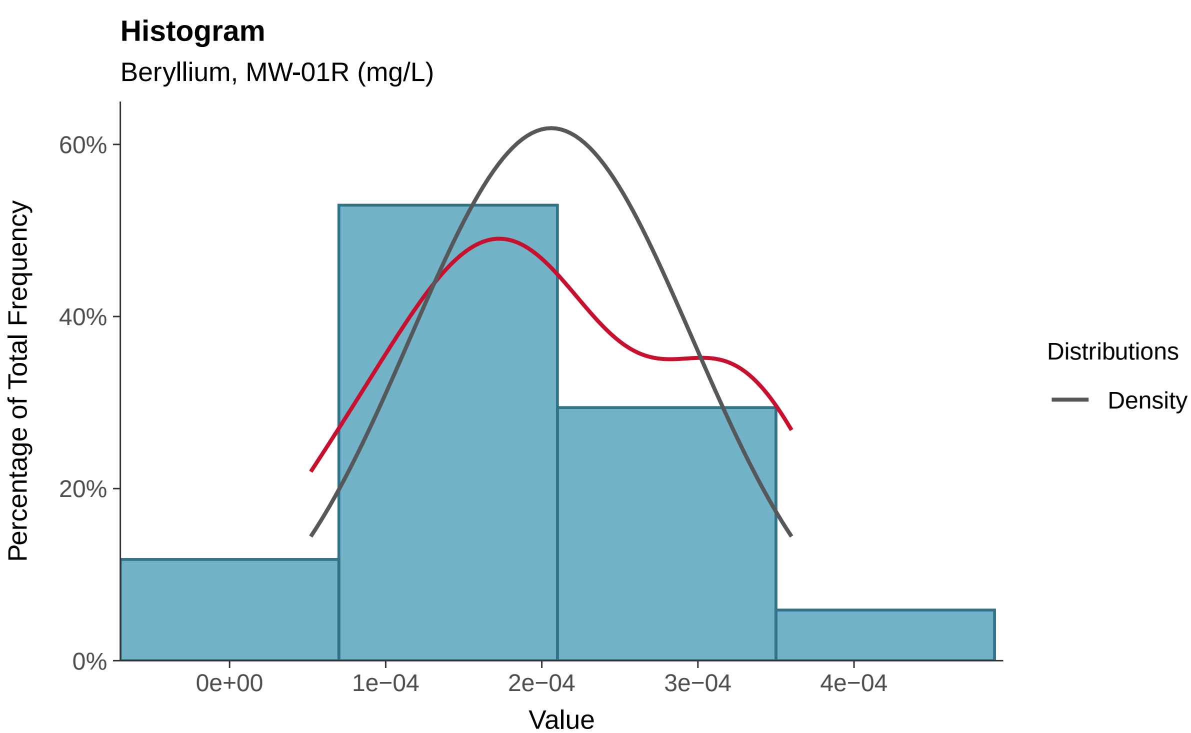
Barium, MW-01R (mg/L)



Appendix IV: Beryllium, MW-01R

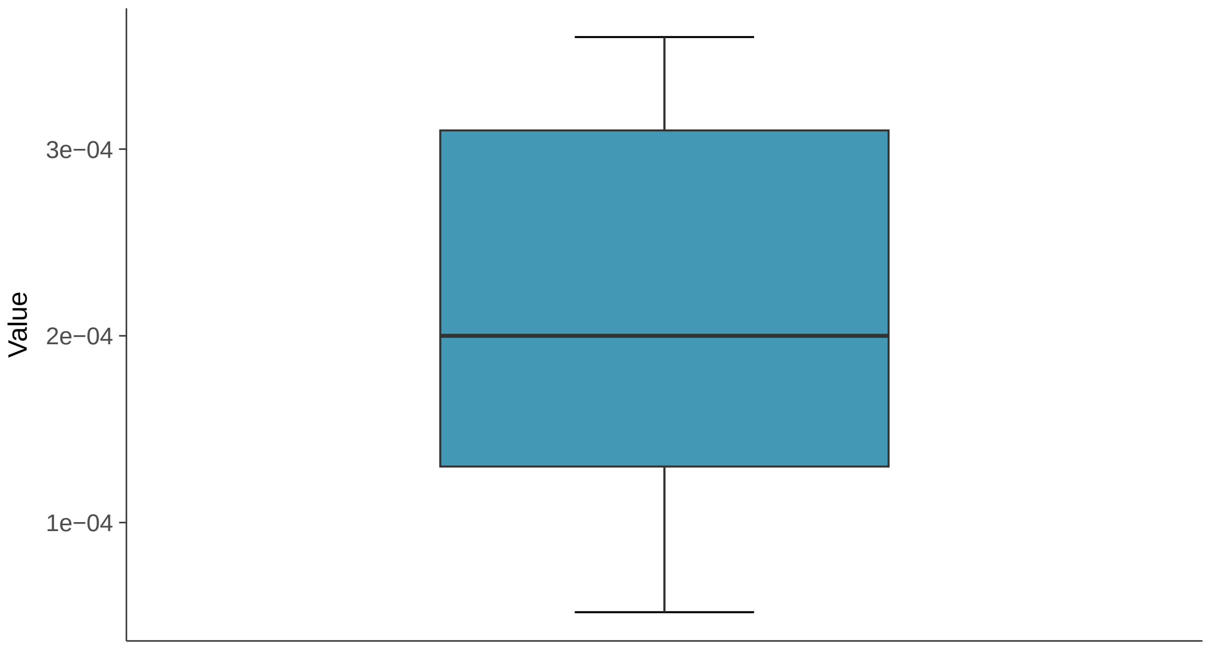
ID: 11_2_4_104





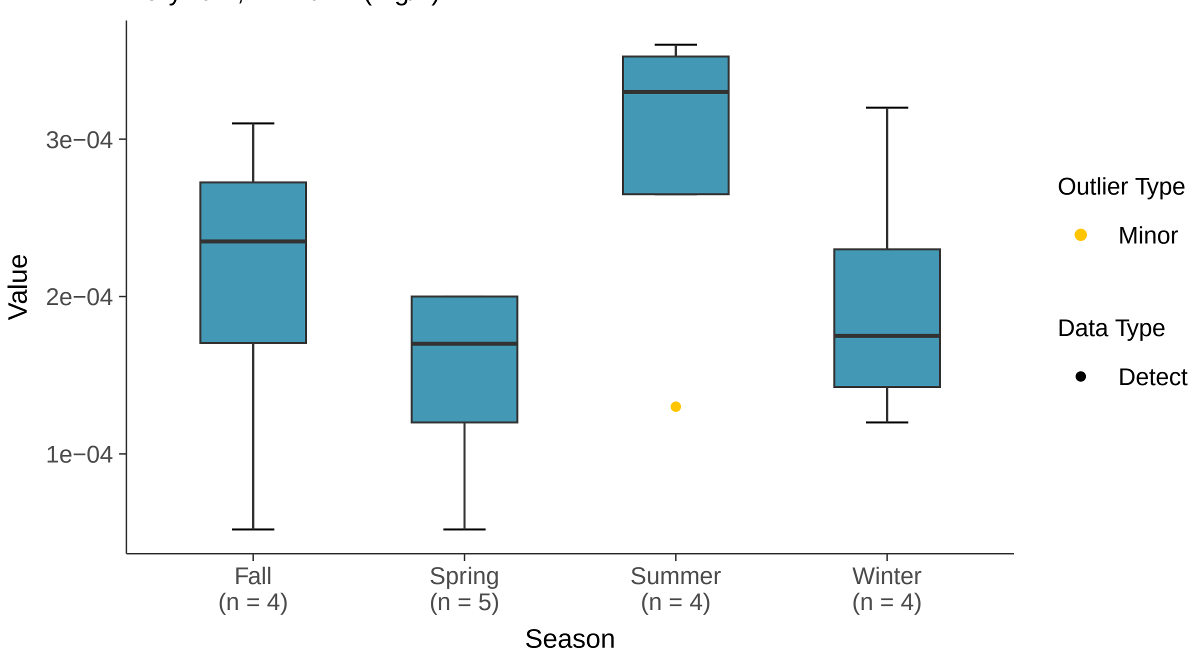
Boxplot

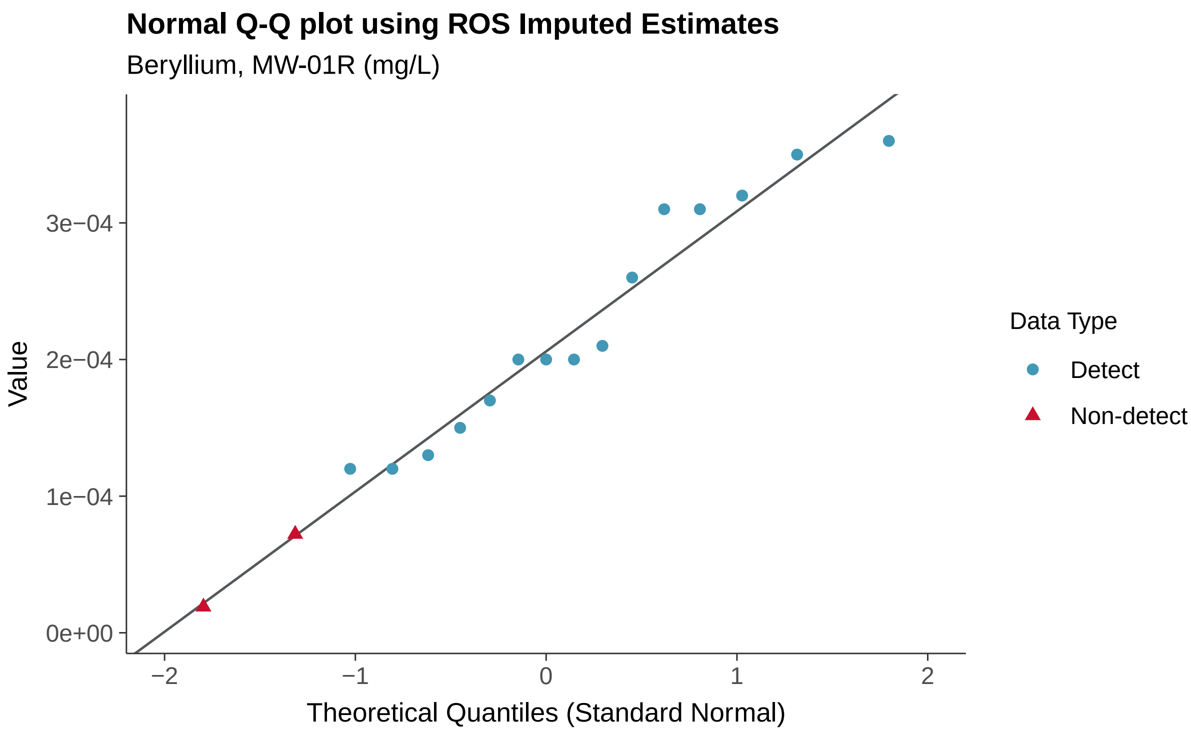
Beryllium, MW-01R (mg/L)

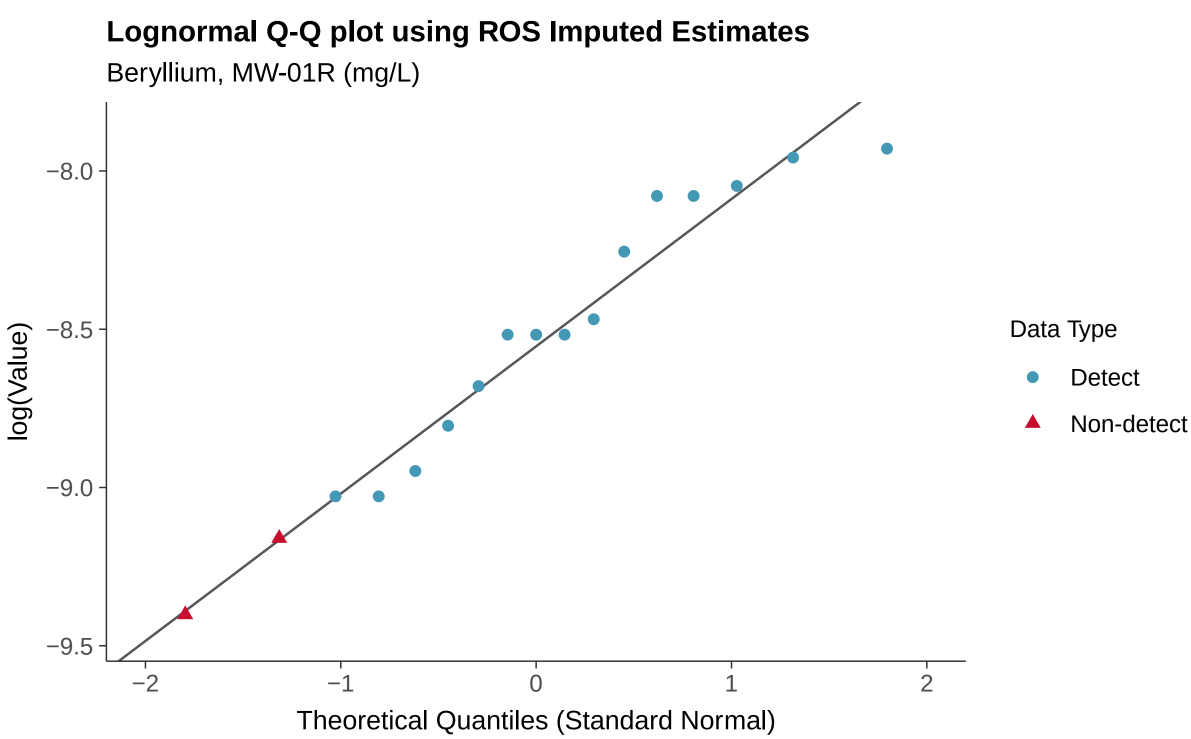


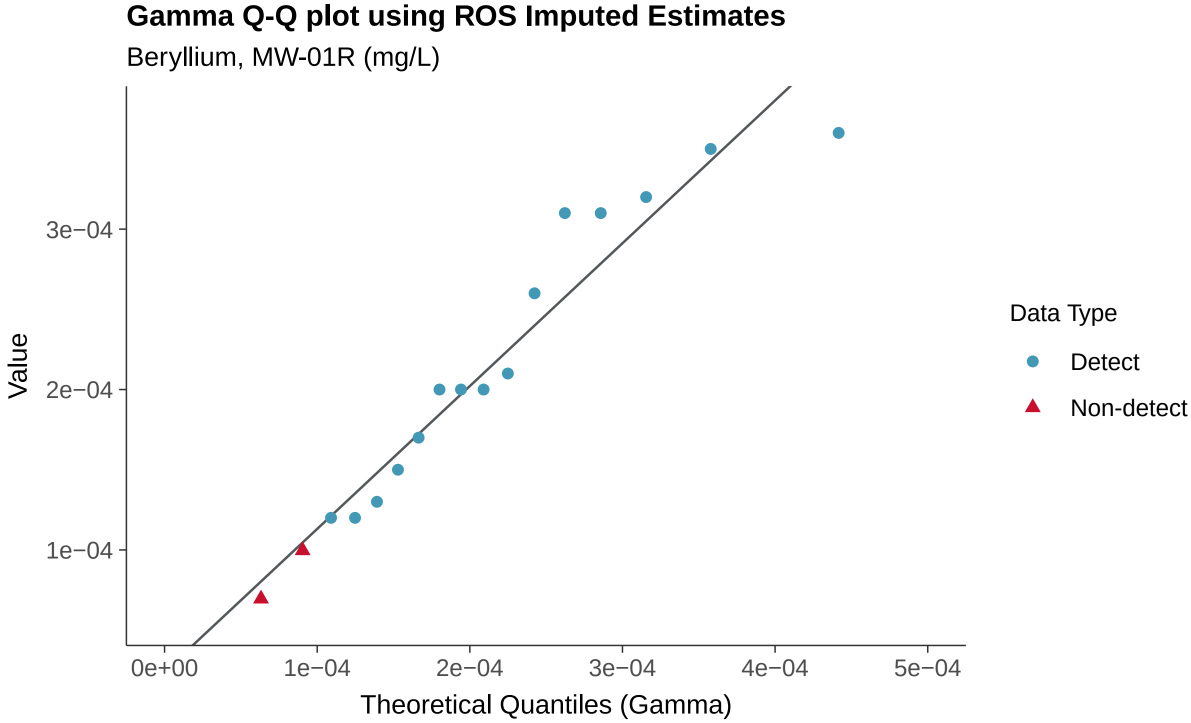
Boxplot by Season

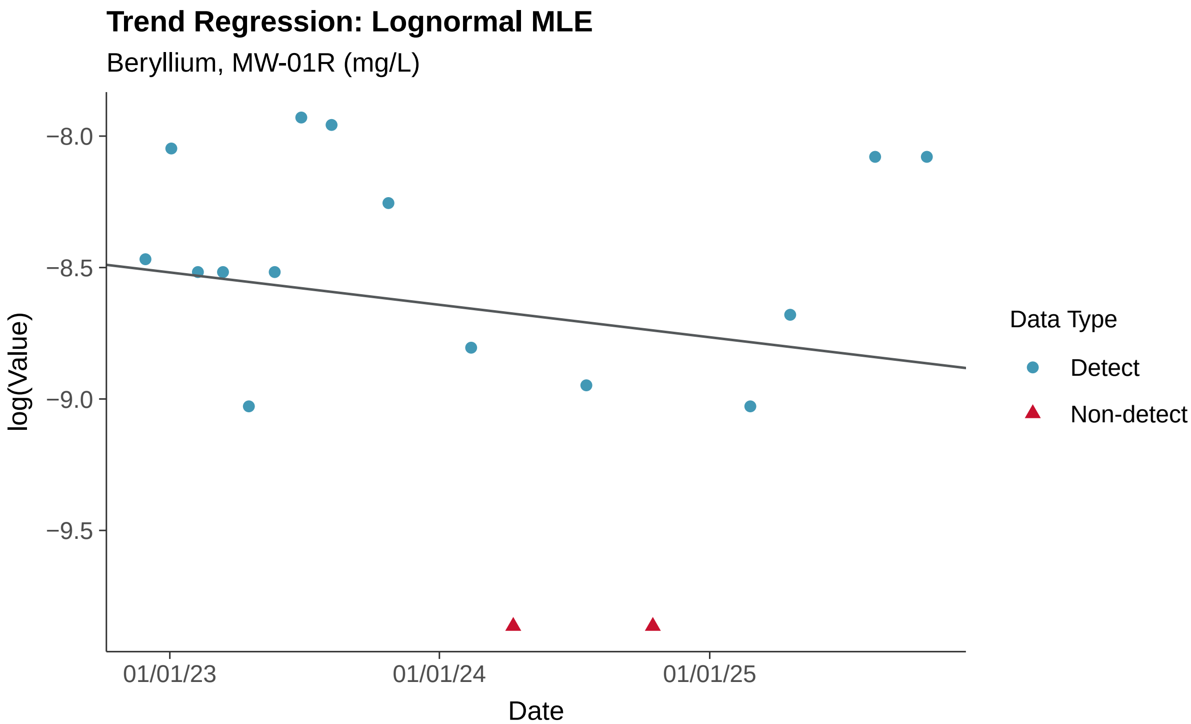
Beryllium, MW-01R (mg/L)

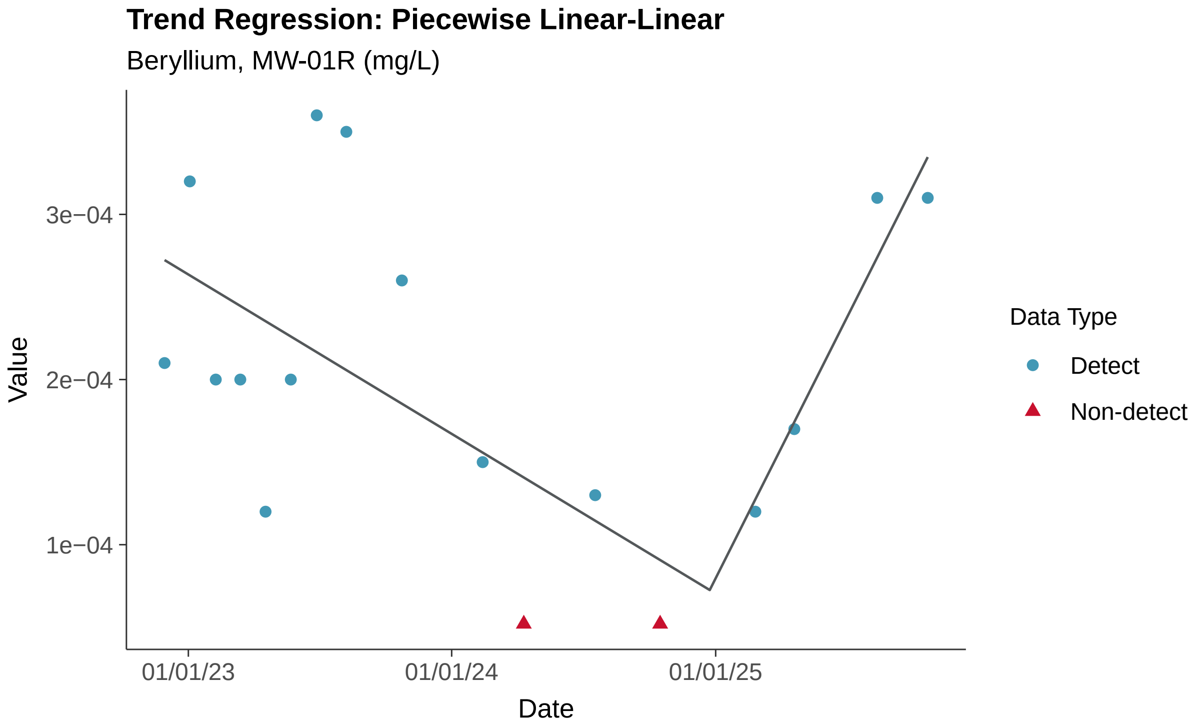


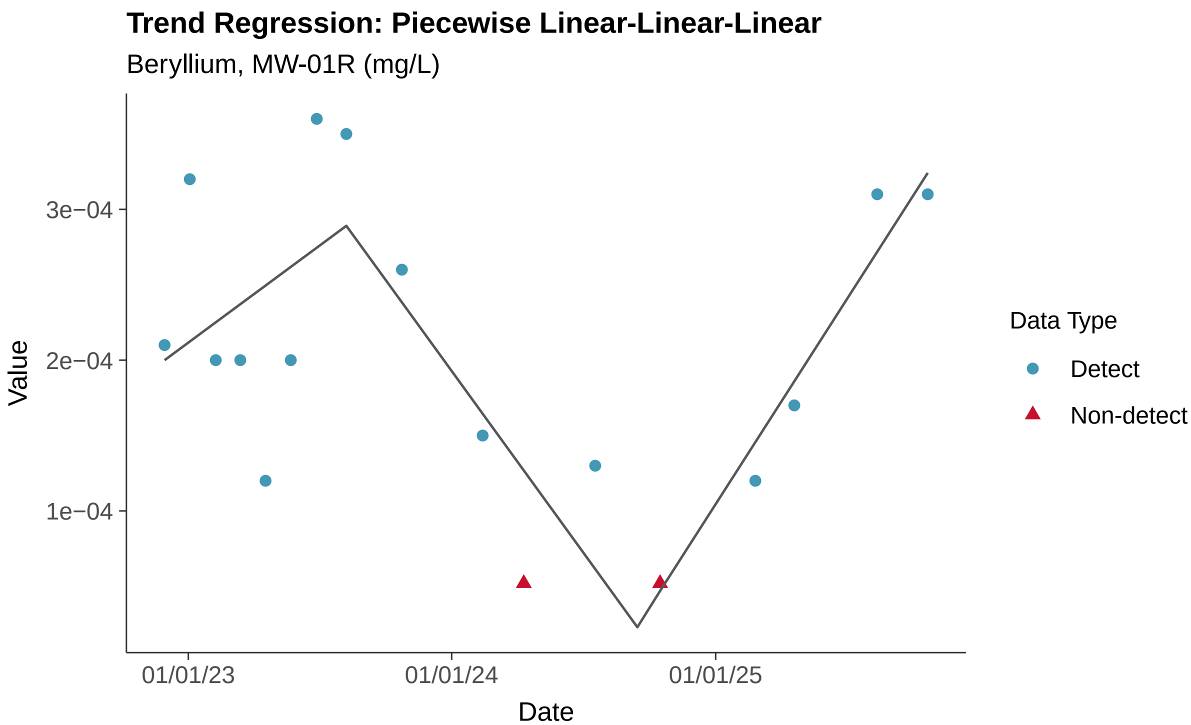

Normal Q-Q plot using ROS Imputed Estimates
Beryllium, MW-01R (mg/L)
Value
3e−04
2e−04
1e−04
0e+00
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Lognormal Q-Q plot using ROS Imputed Estimates
Beryllium, MW-01R (mg/L)
log(Value)
−8.0
−8.5
−9.0
−9.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Gamma Q-Q plot using ROS Imputed Estimates
Beryllium, MW-01R (mg/L)
Value
3e−04
2e−04
1e−04
0e+00
1e−04
2e−04
3e−04
4e−04
5e−04
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect

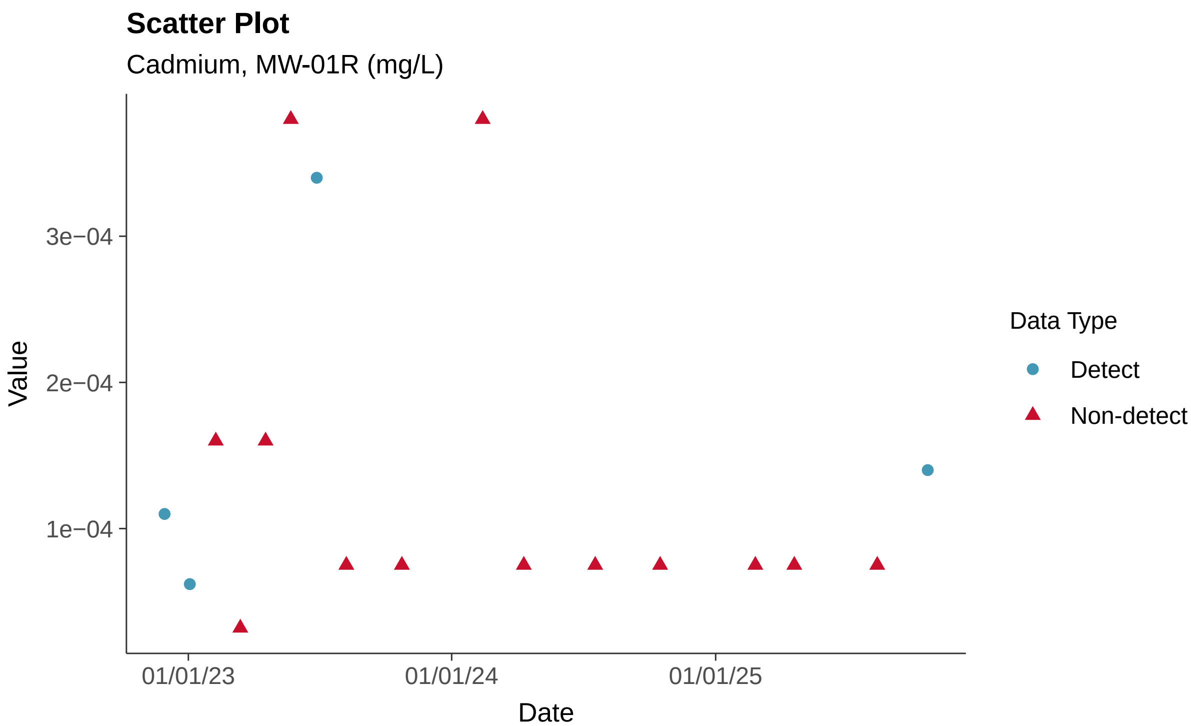

Trend Regression: Lognormal MLE
Beryllium, MW-01R (mg/L)
log(Value)
−8.0
−8.5
−9.0
−9.5
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

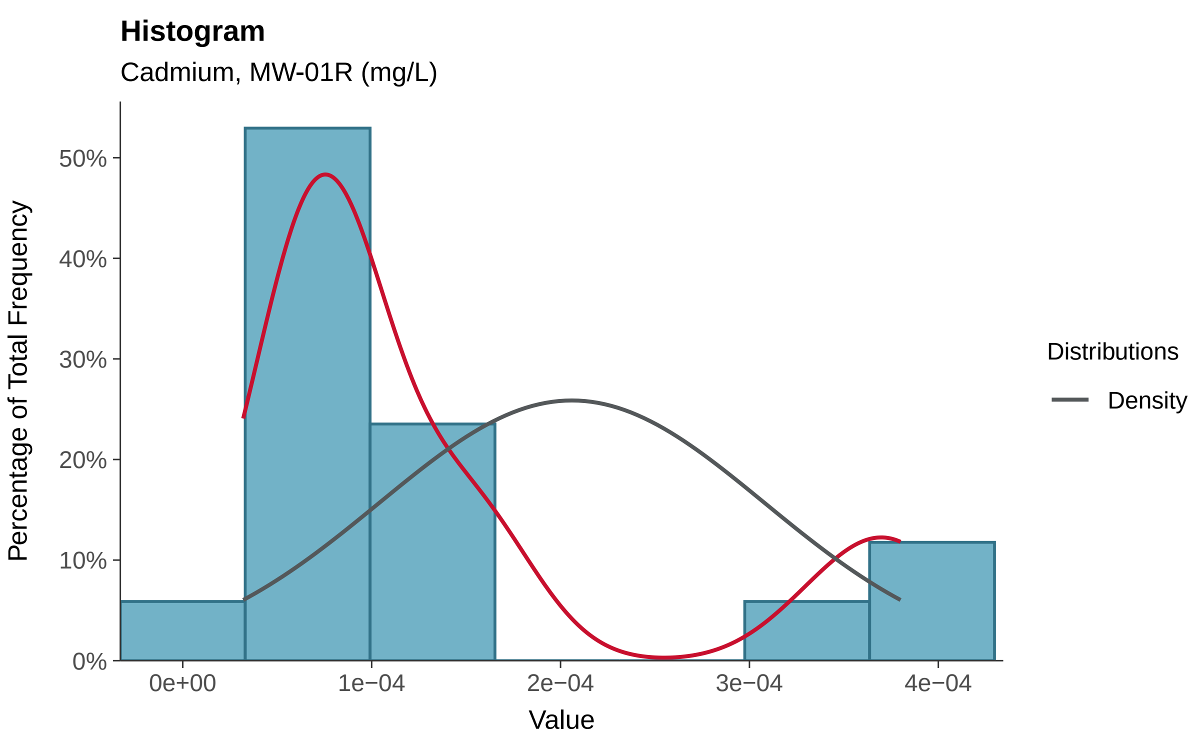

Trend Regression: Piecewise Linear-Linear
Beryllium, MW-01R (mg/L)
Value
3e−04
2e−04
1e−04
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear-Linear
Beryllium, MW-01R (mg/L)
Value
3e−04
2e−04
1e−04
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Appendix IV: Cadmium, MW-01R

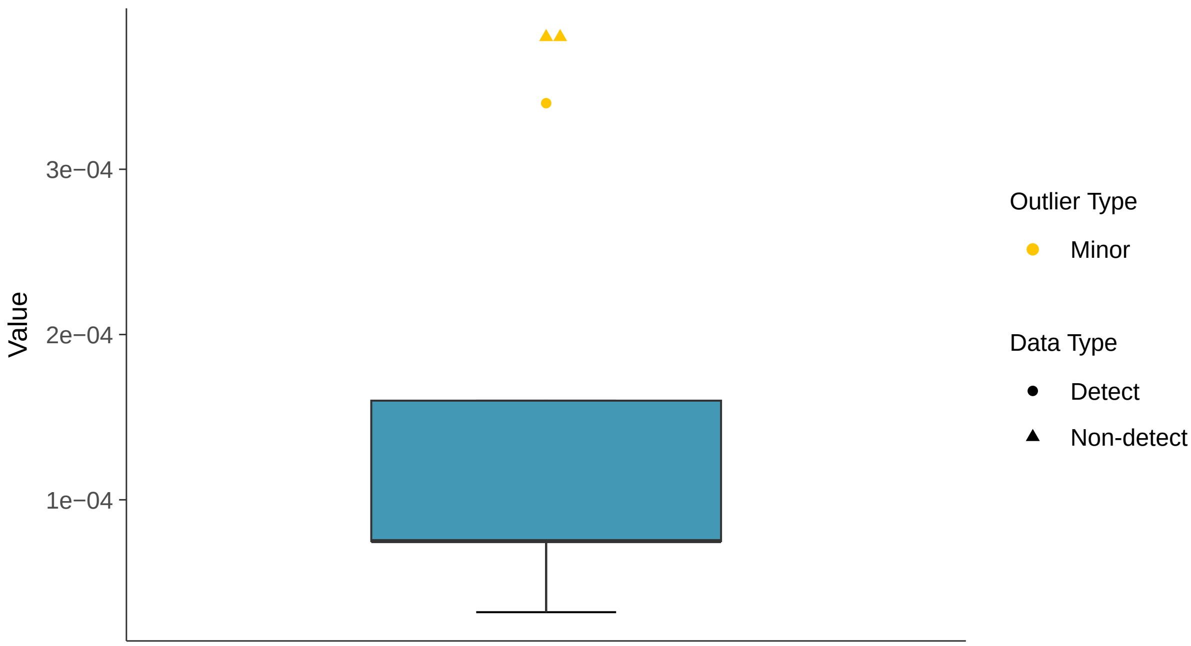
ID: 11_2_4_106





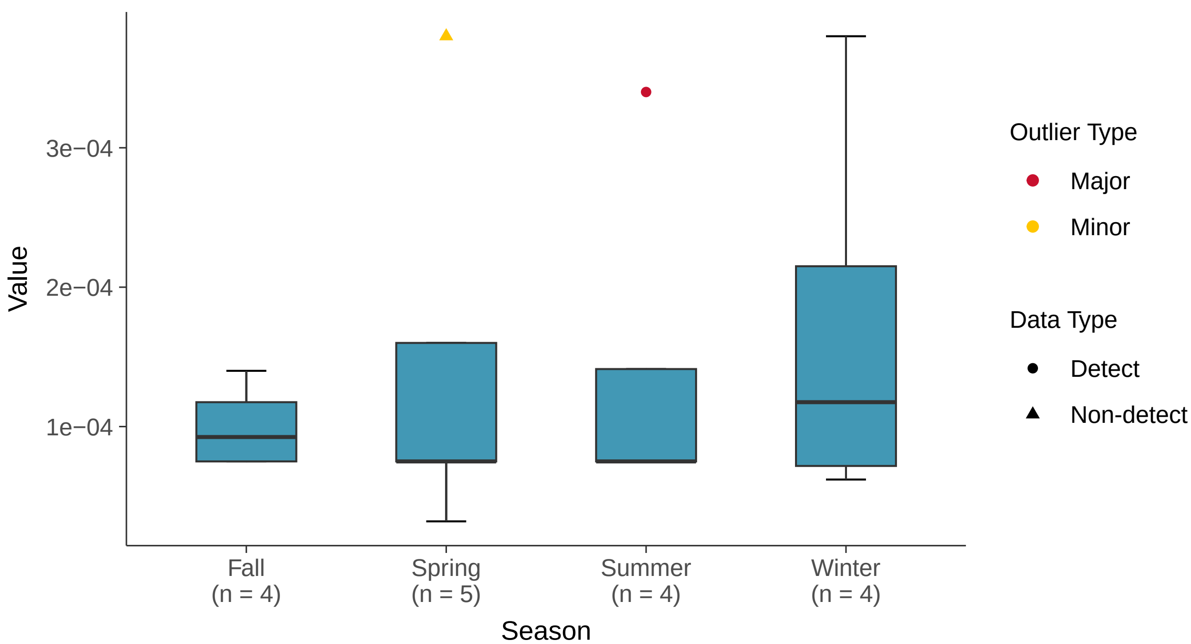
Boxplot

Cadmium, MW-01R (mg/L)



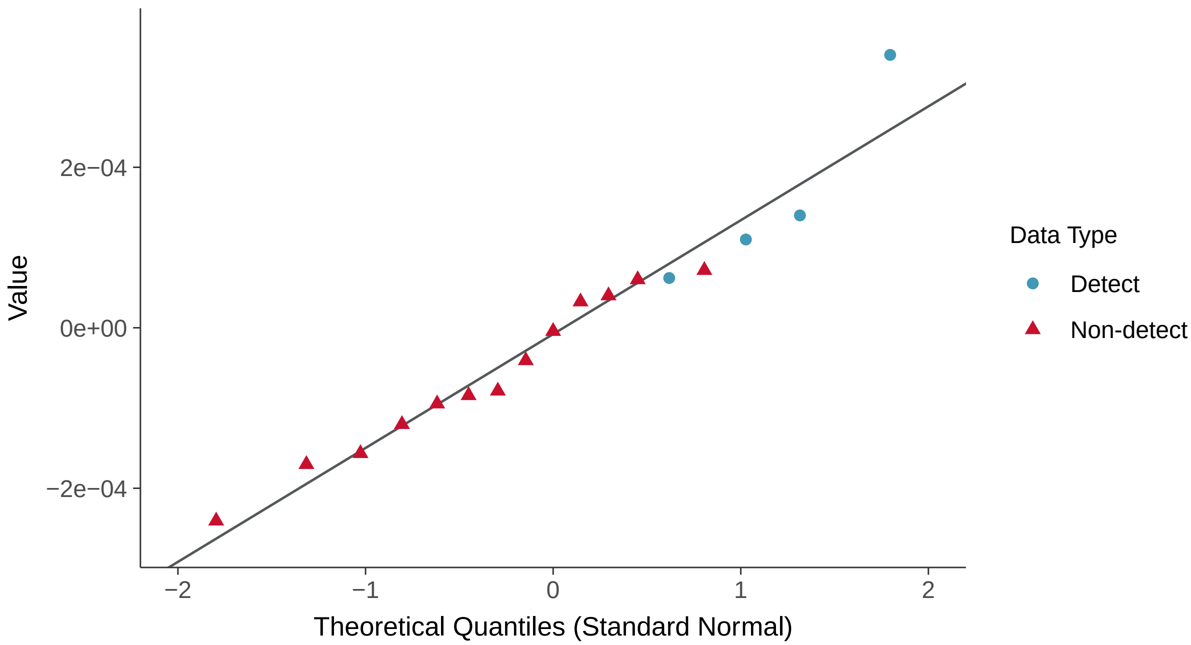
Boxplot by Season

Cadmium, MW-01R (mg/L)



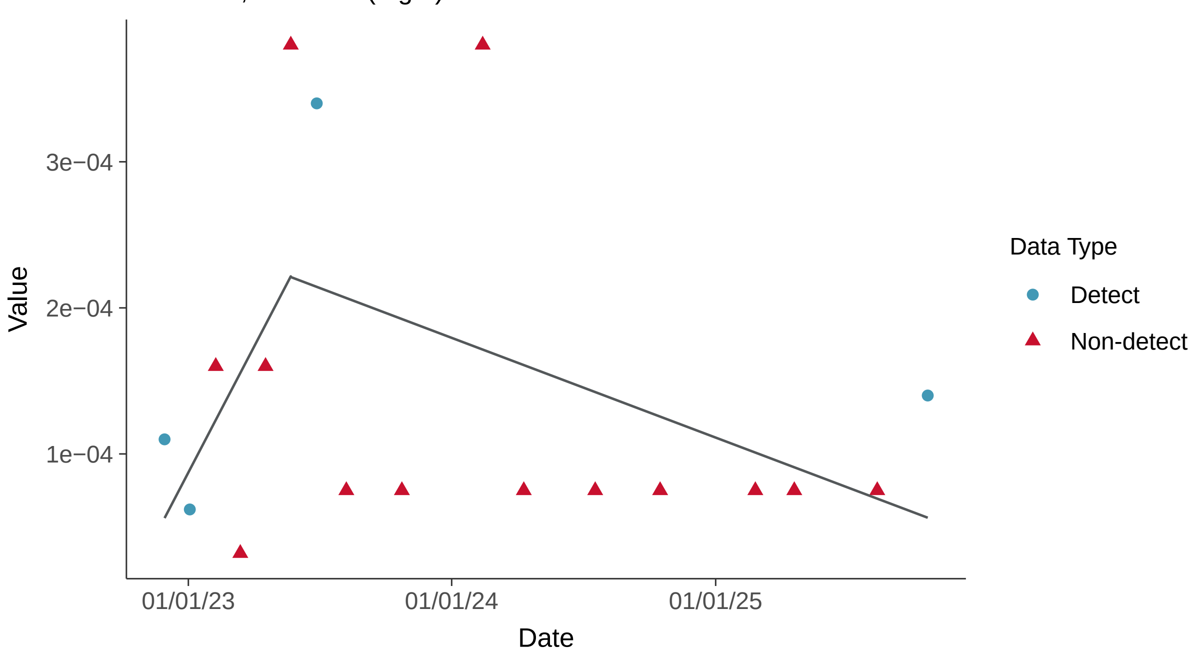
Normal Q-Q plot using ROS Imputed Estimates

Cadmium, MW-01R (mg/L)



Trend Regression: Piecewise Linear-Linear

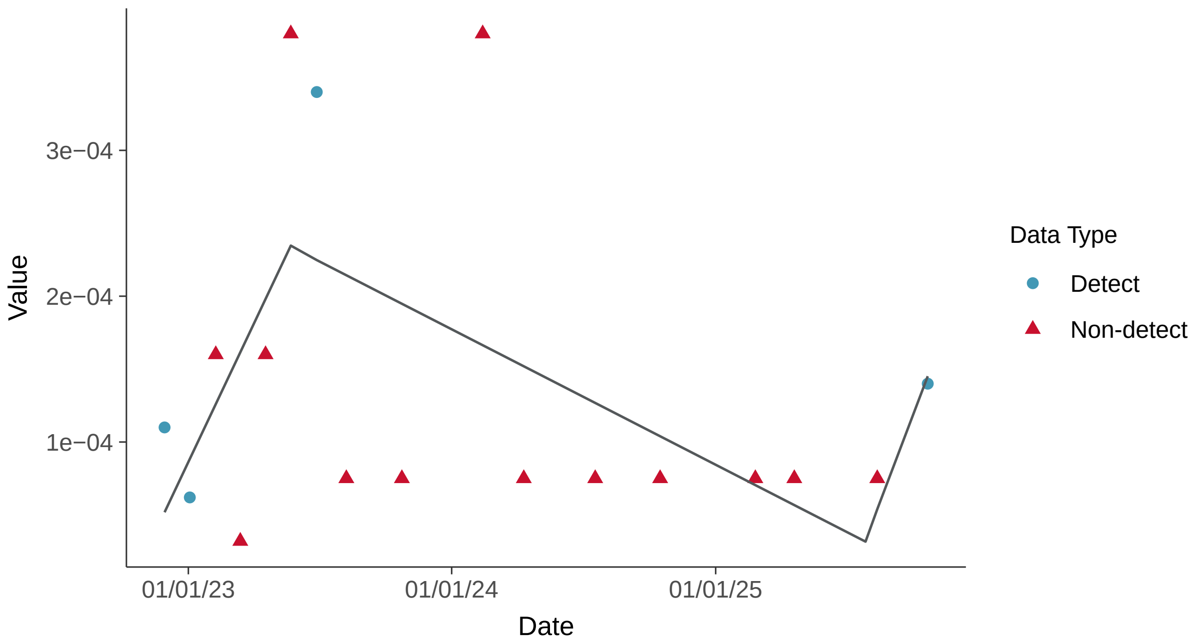
Cadmium, MW-01R (mg/L)



Grand Haven
Downgradient Wells as of October 2025

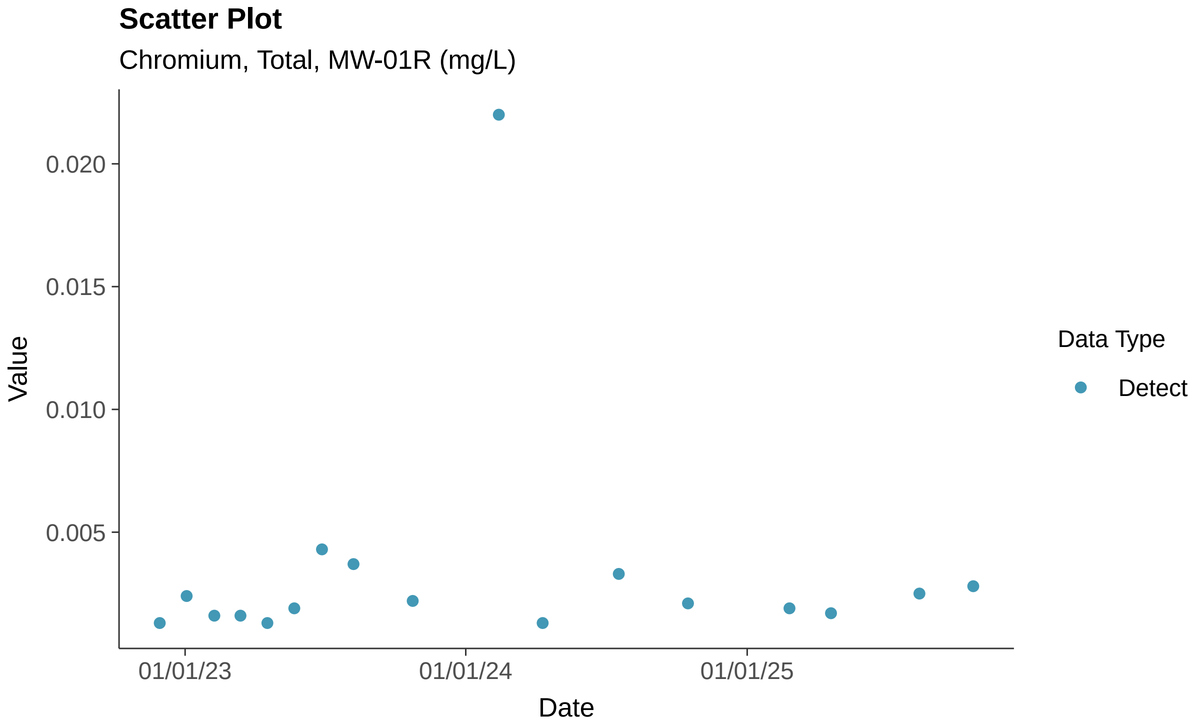
Trend Regression: Piecewise Linear-Linear-Linear

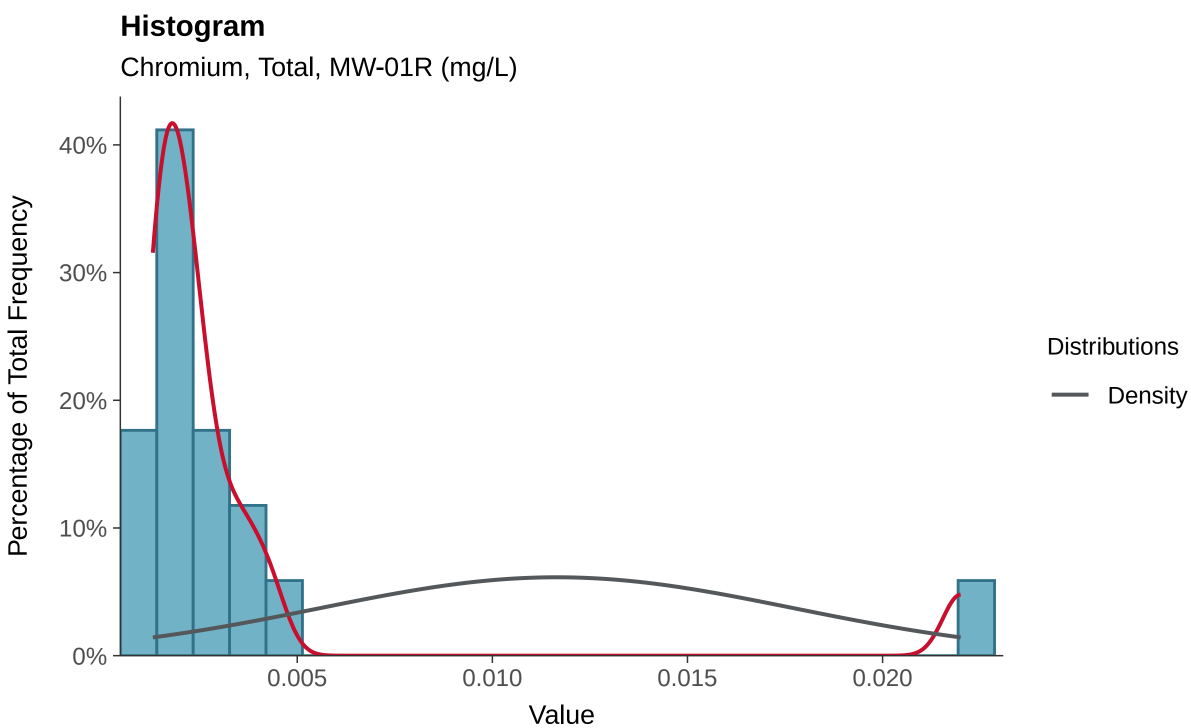
Cadmium, MW-01R (mg/L)



Appendix IV: Chromium, Total, MW-01R

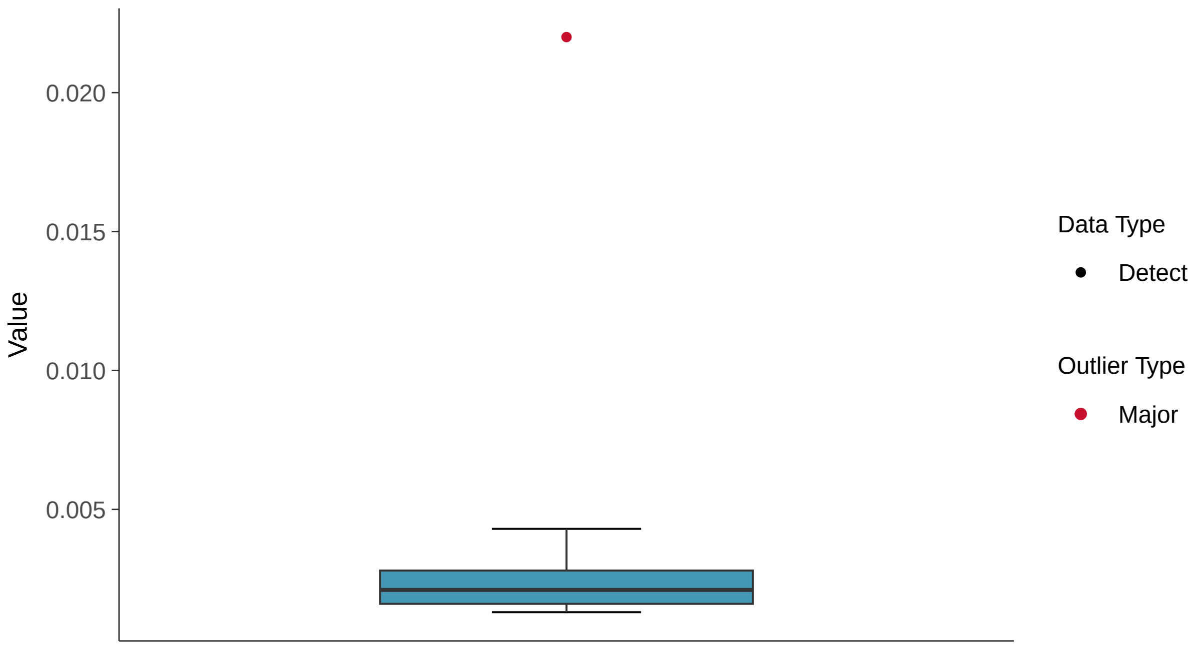
ID: 11_2_4_109





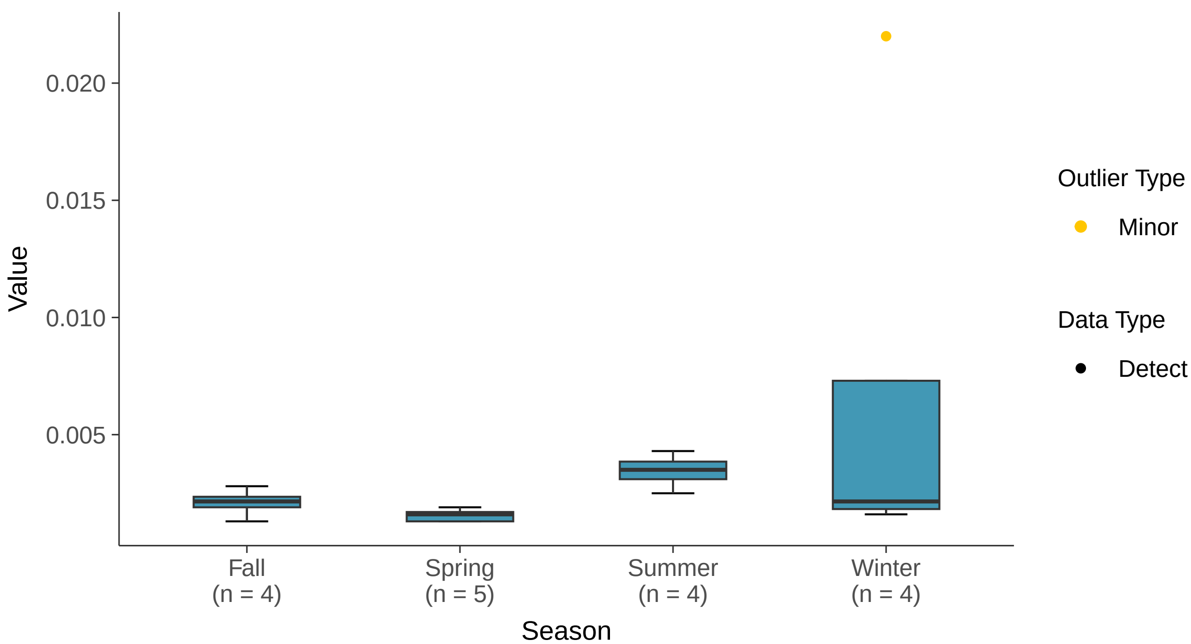
Boxplot

Chromium, Total, MW-01R (mg/L)



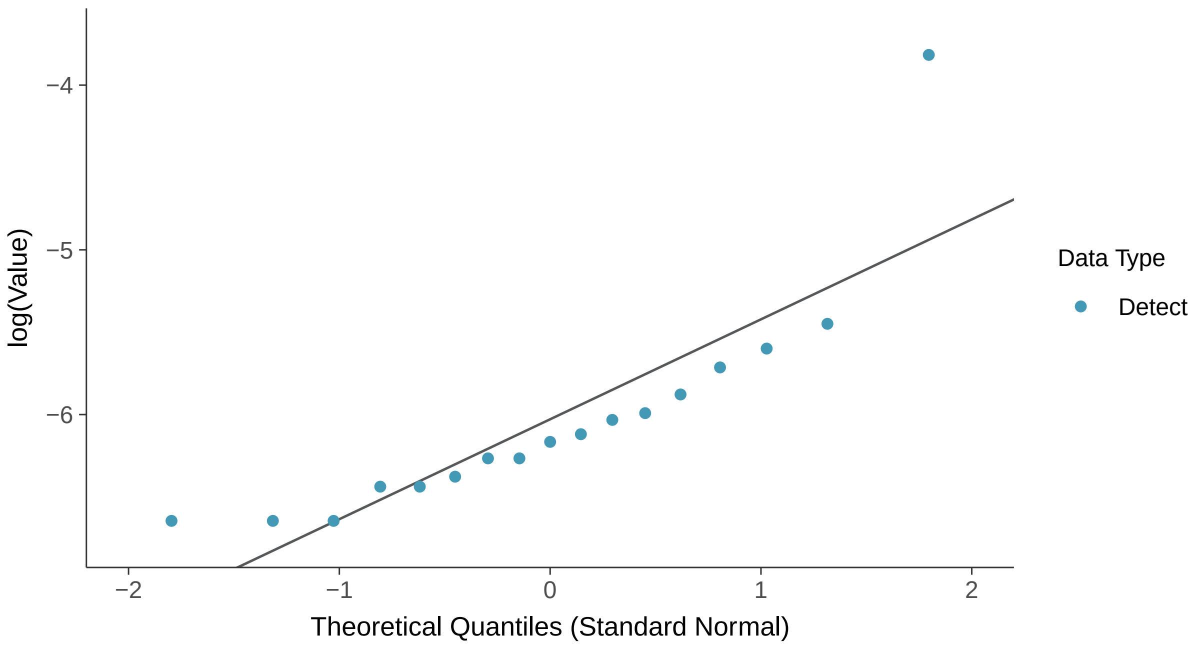
Boxplot by Season

Chromium, Total, MW-01R (mg/L)



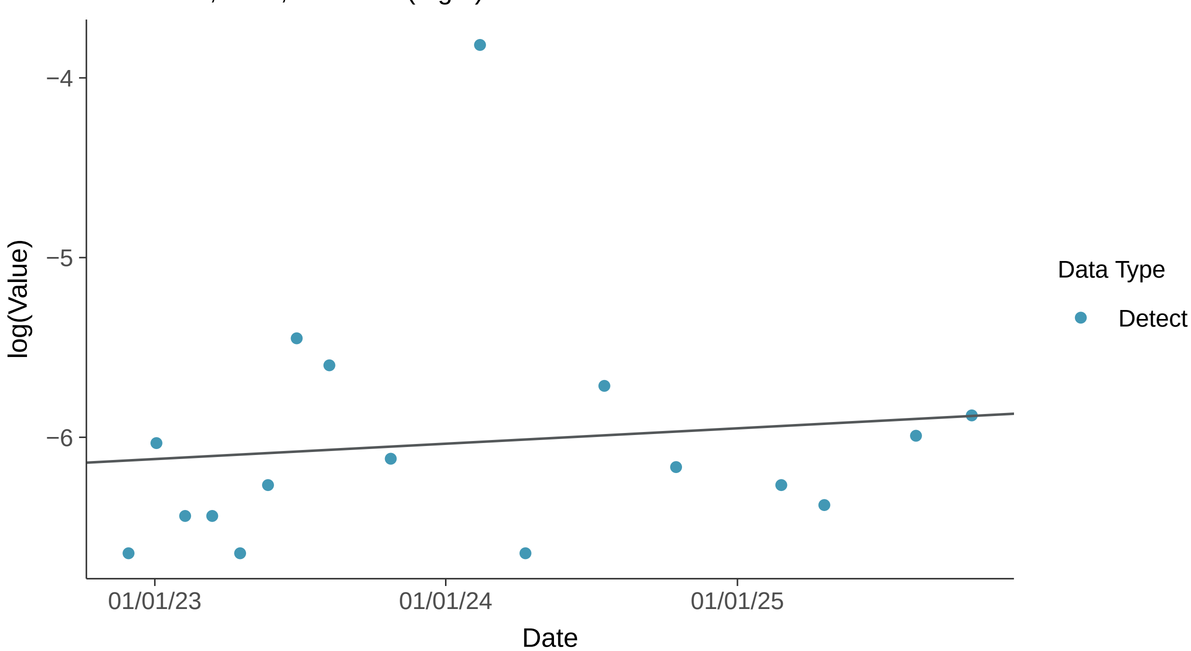
Lognormal Q-Q plot

Chromium, Total, MW-01R (mg/L)



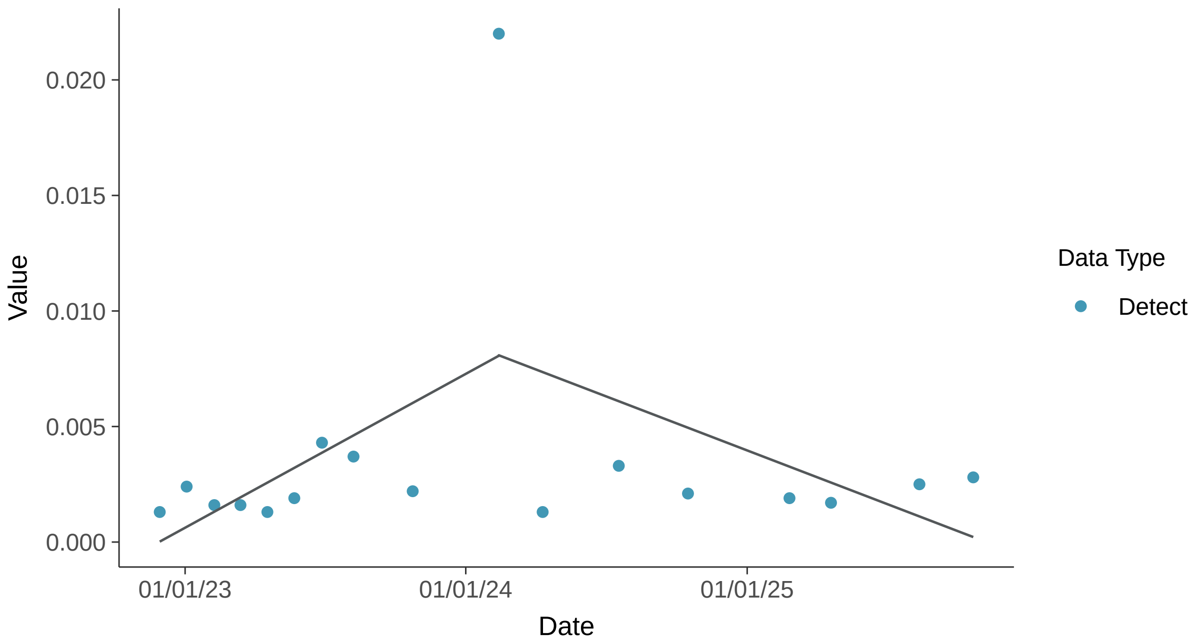
Trend Regression: Lognormal MLE

Chromium, Total, MW-01R (mg/L)



Trend Regression: Piecewise Linear-Linear

Chromium, Total, MW-01R (mg/L)

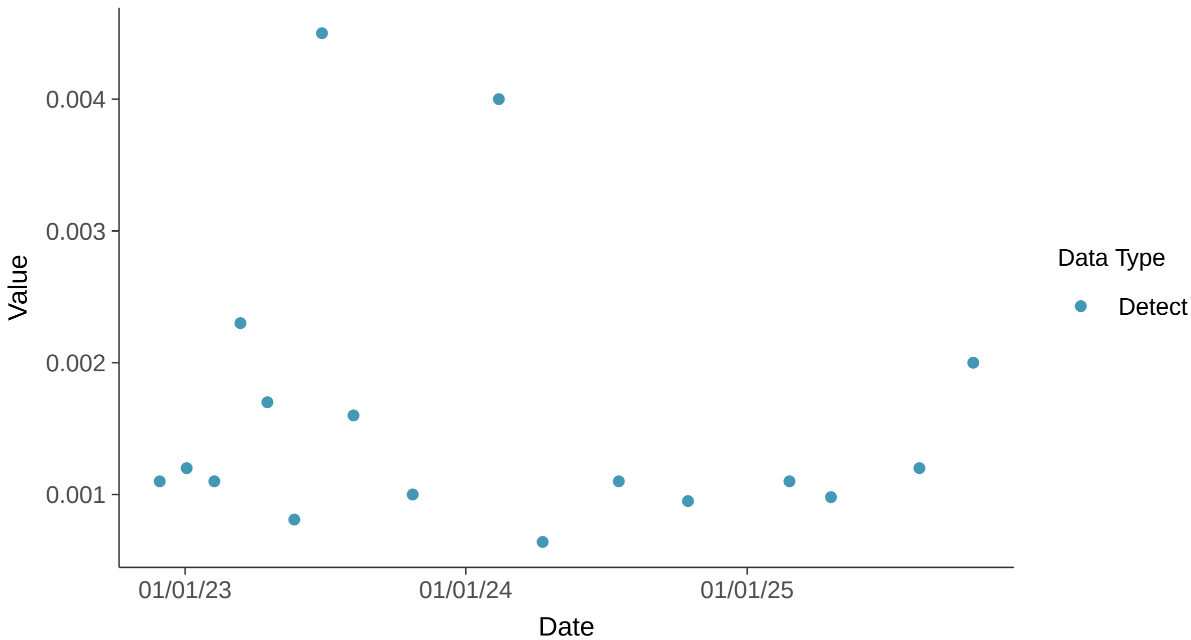


Appendix IV: Cobalt, MW-01R

ID: 11_2_4_110

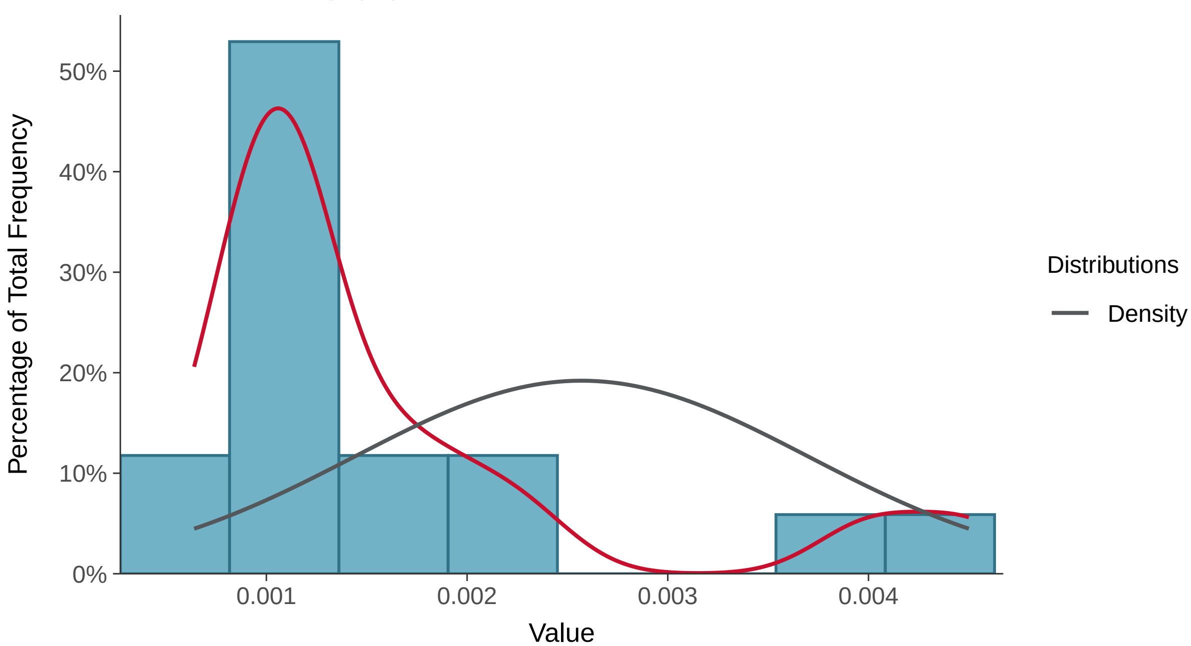
Scatter Plot

Cobalt, MW-01R (mg/L)



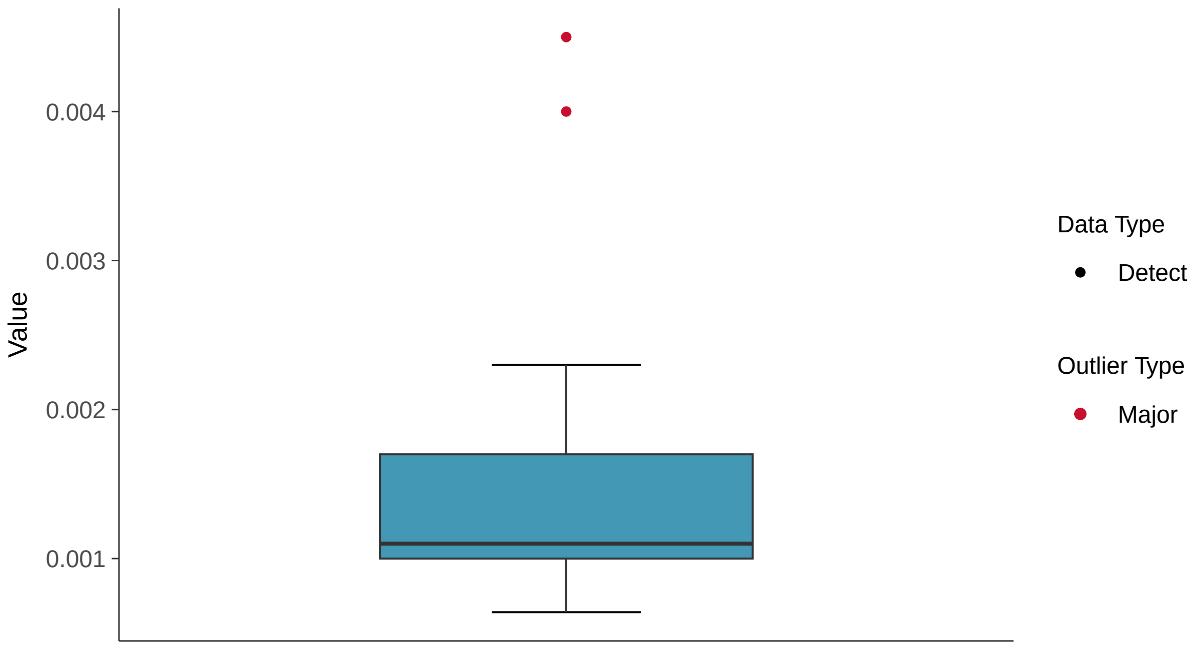
Histogram

Cobalt, MW-01R (mg/L)



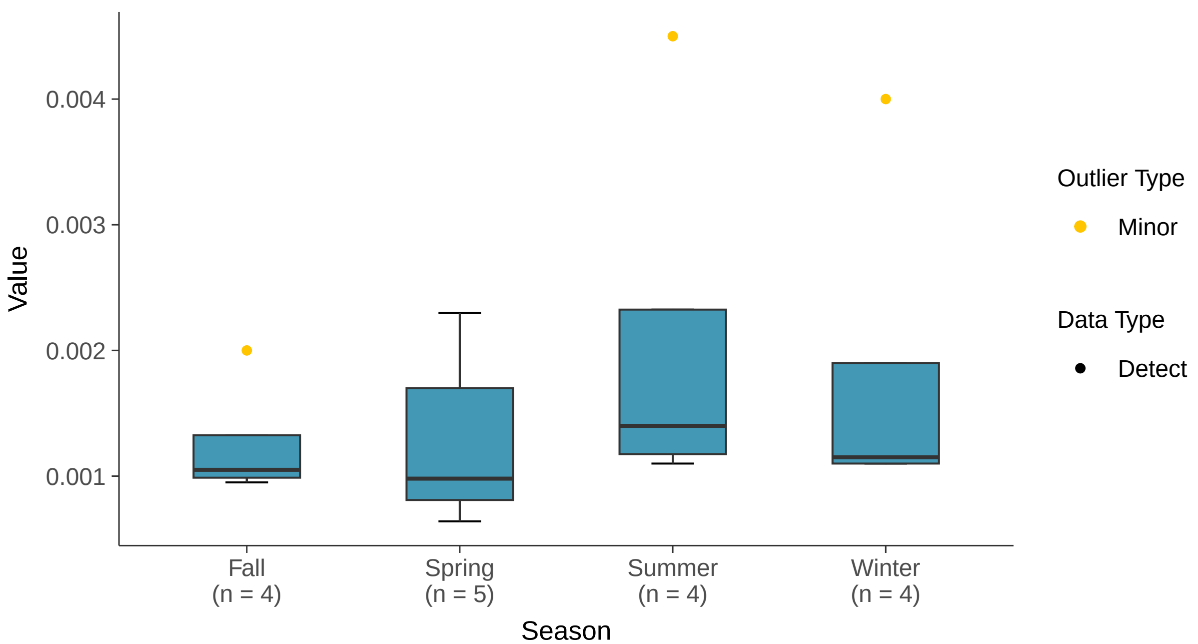
Boxplot

Cobalt, MW-01R (mg/L)



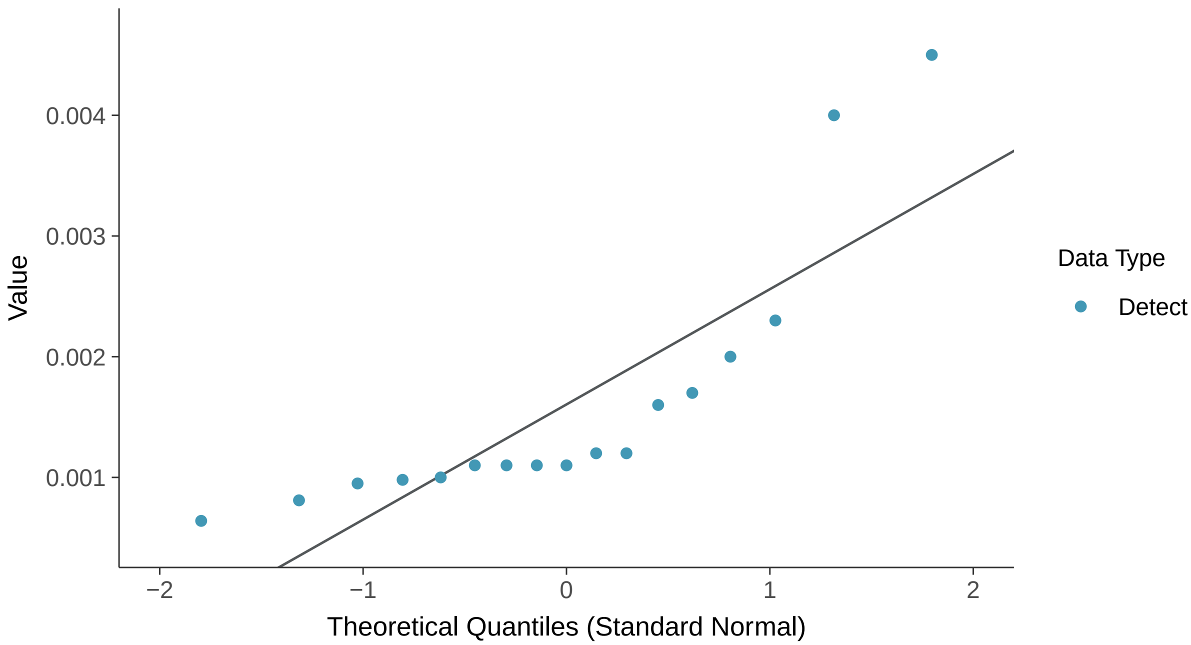
Boxplot by Season

Cobalt, MW-01R (mg/L)



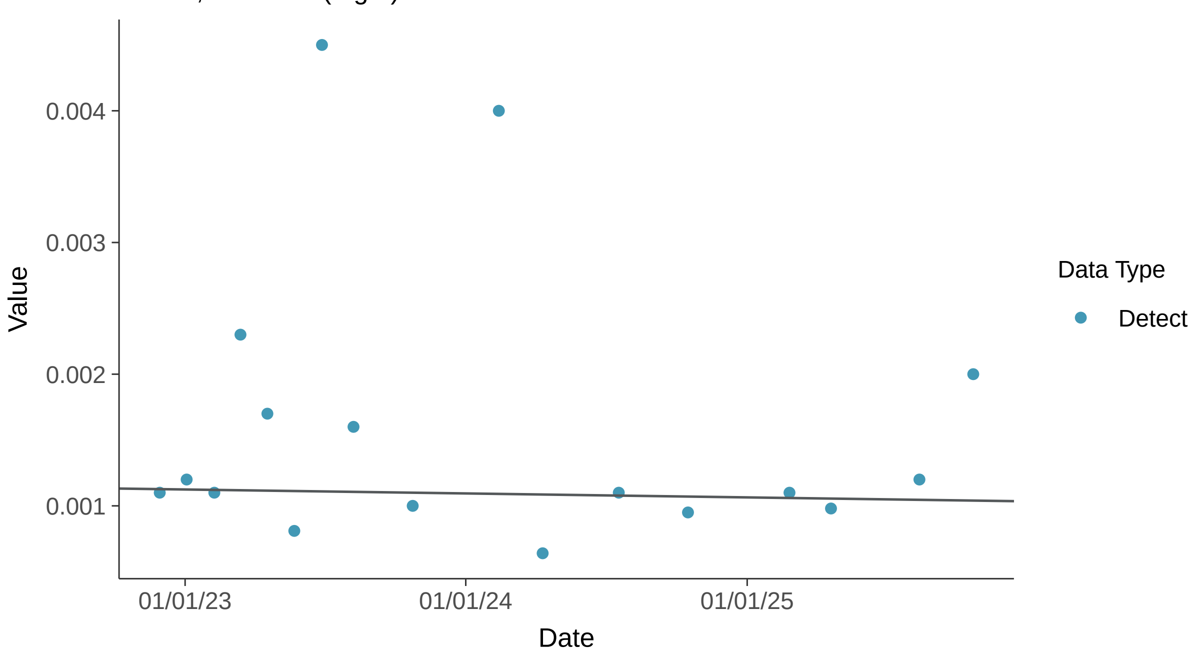
Normal Q-Q plot

Cobalt, MW-01R (mg/L)



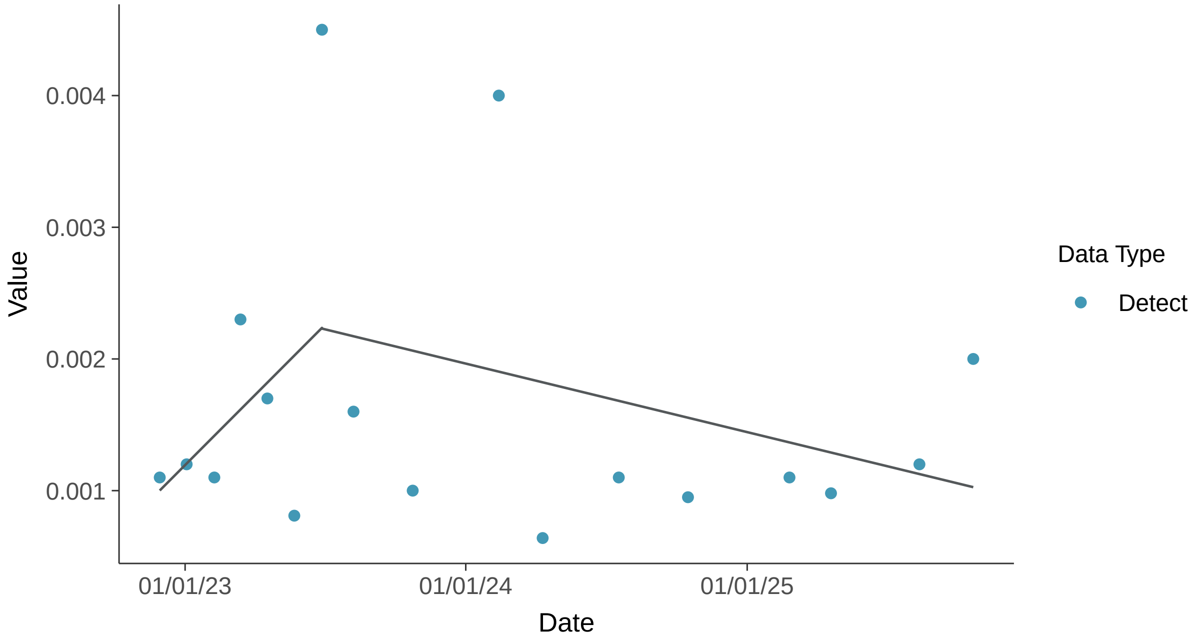
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Cobalt, MW-01R (mg/L)



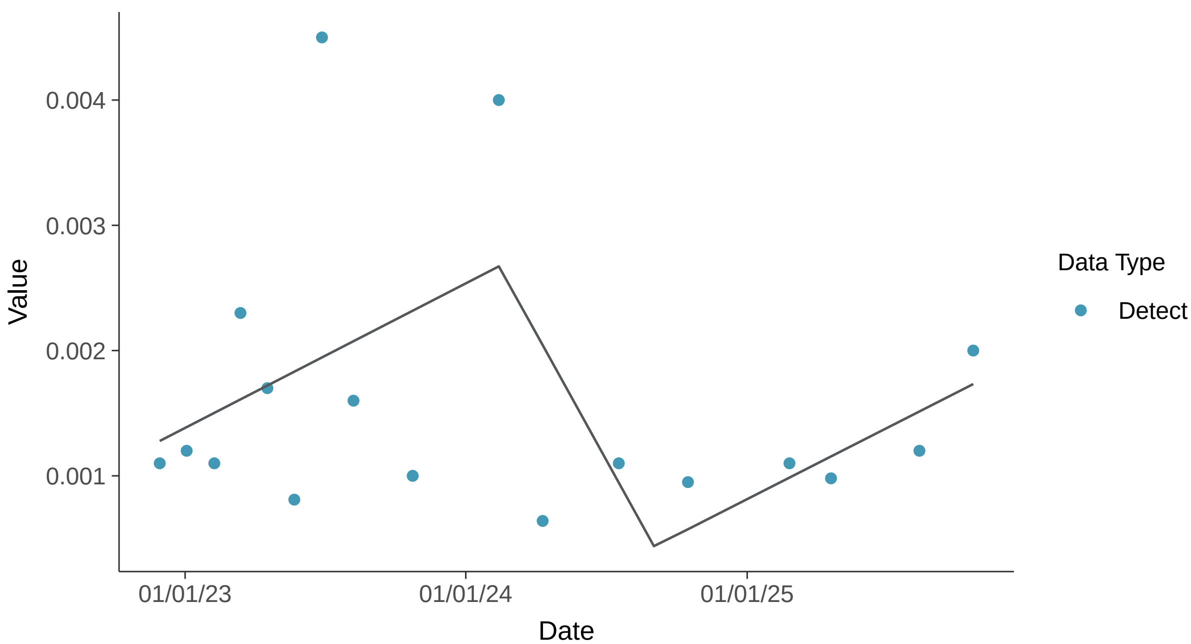
Trend Regression: Piecewise Linear-Linear

Cobalt, MW-01R (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Cobalt, MW-01R (mg/L)

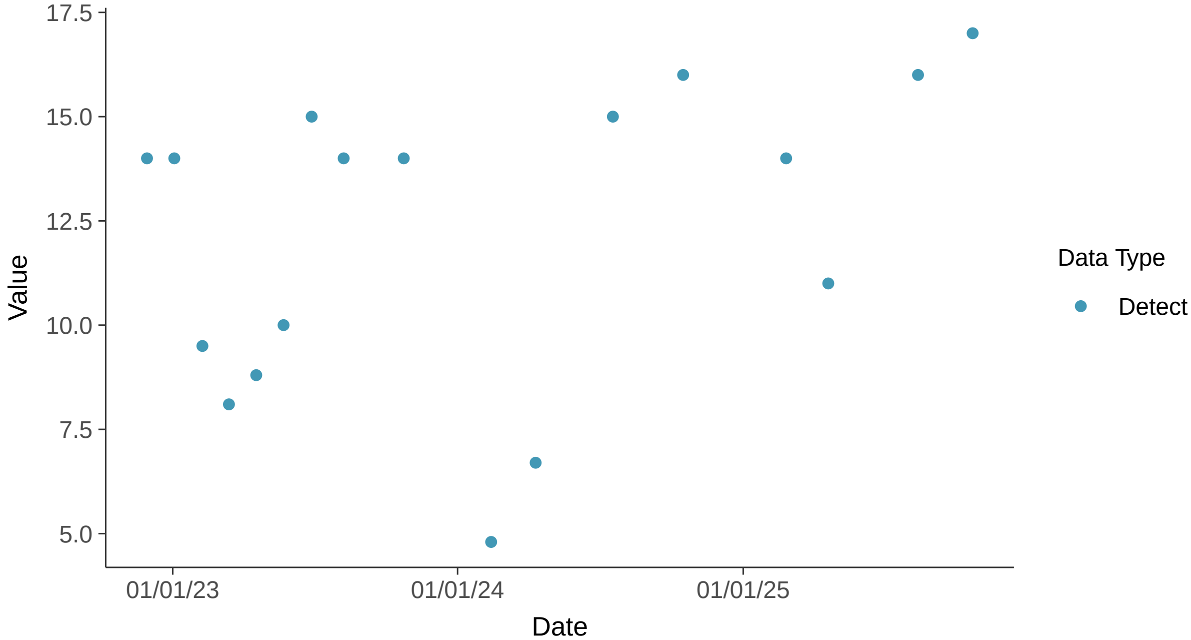


Appendix IV: Fluoride (App IV), MW-01R

ID: 11_2_4_113

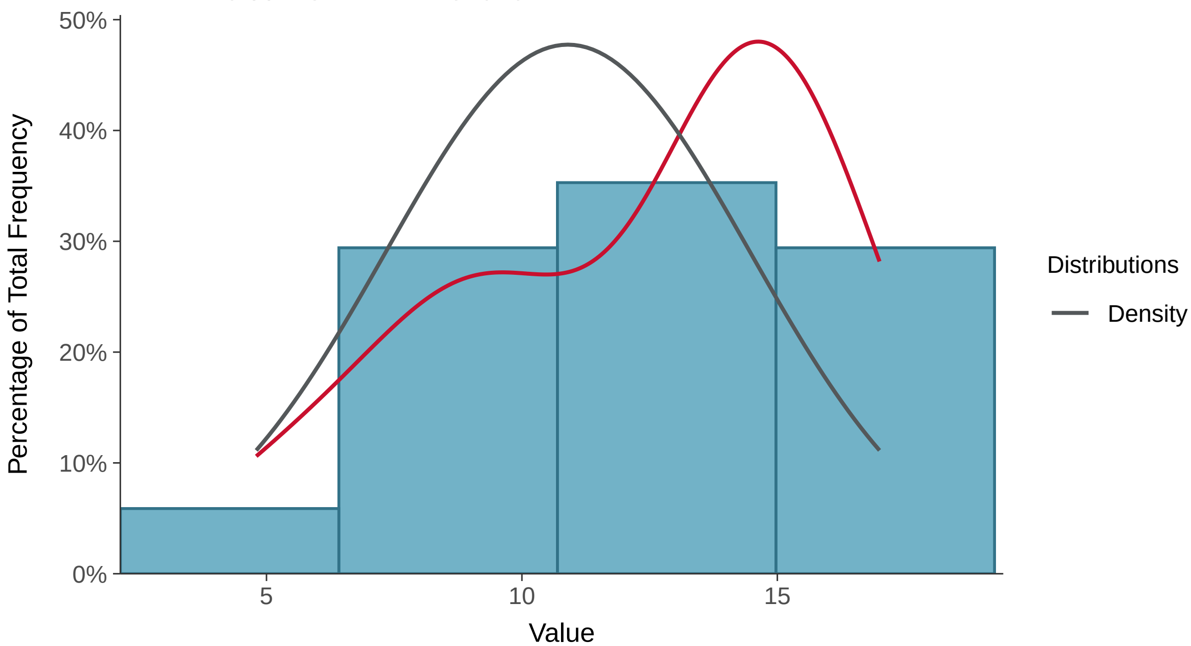
Scatter Plot

Fluoride (App IV), MW-01R (mg/L)



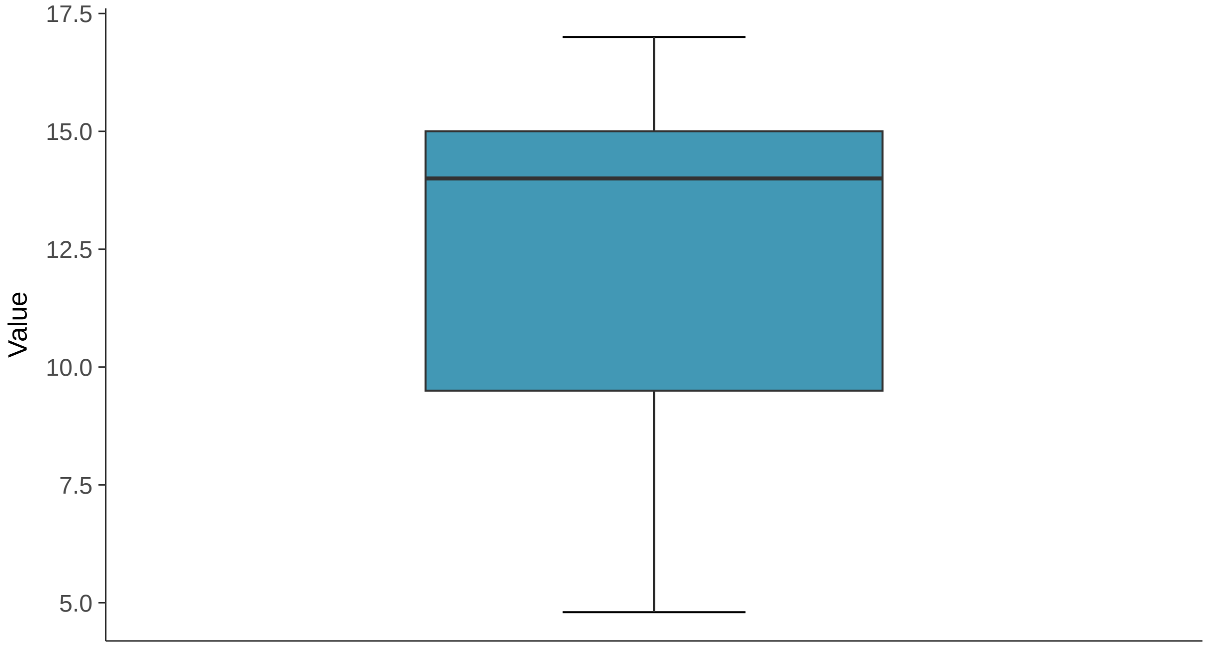
Histogram

Fluoride (App IV), MW-01R (mg/L)



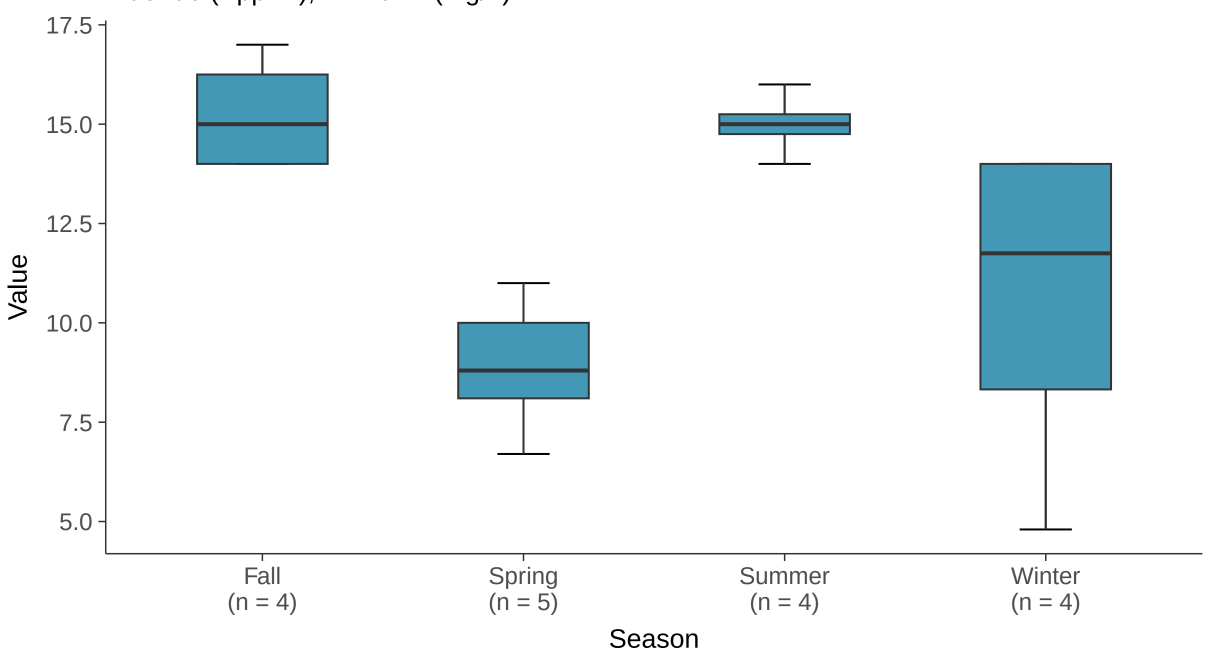
Boxplot

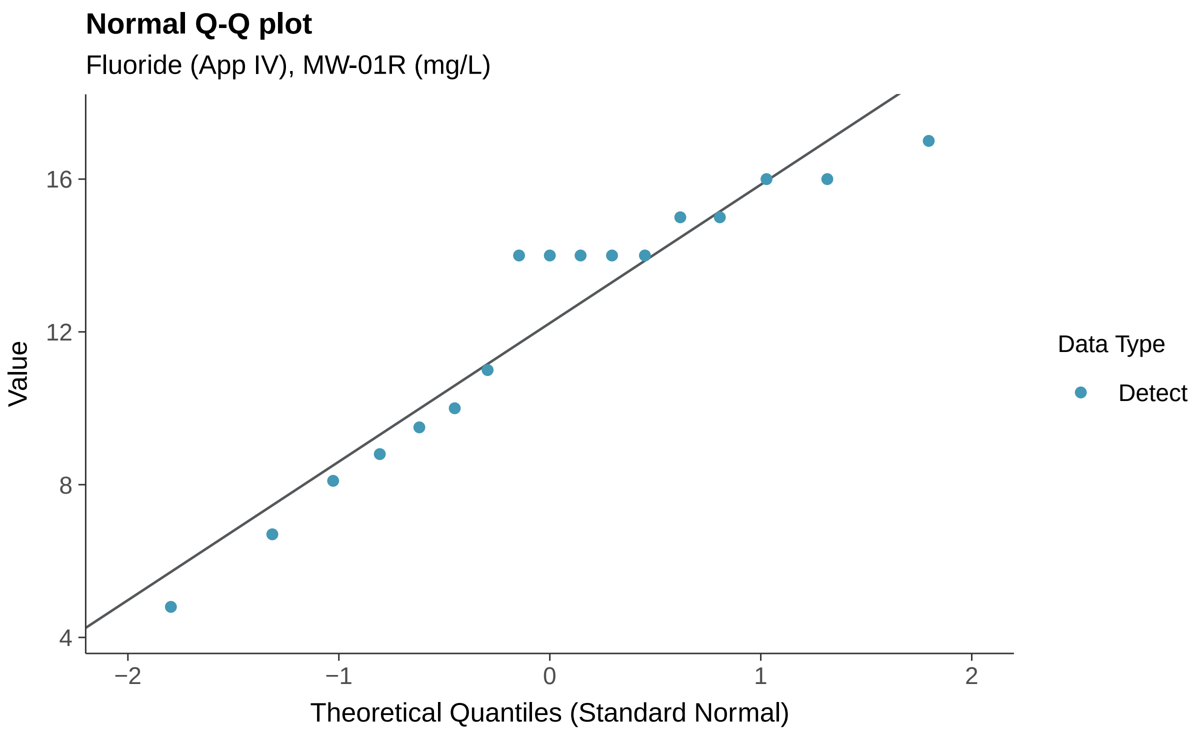
Fluoride (App IV), MW-01R (mg/L)

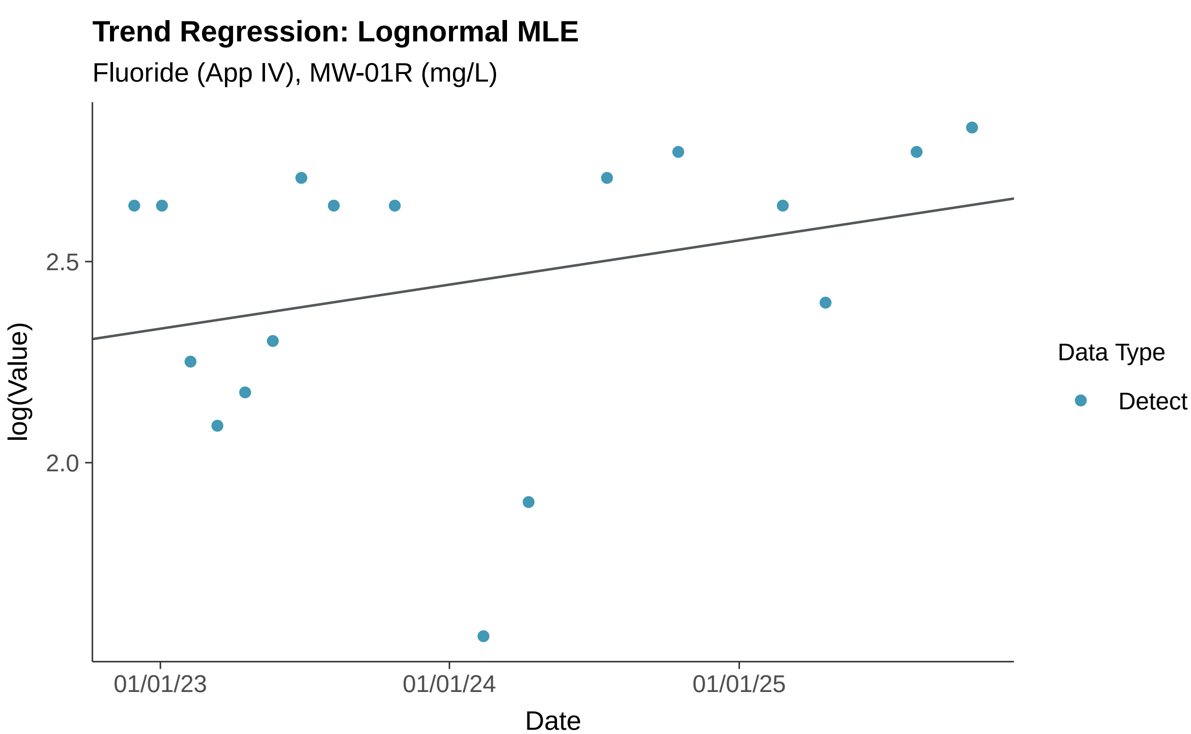


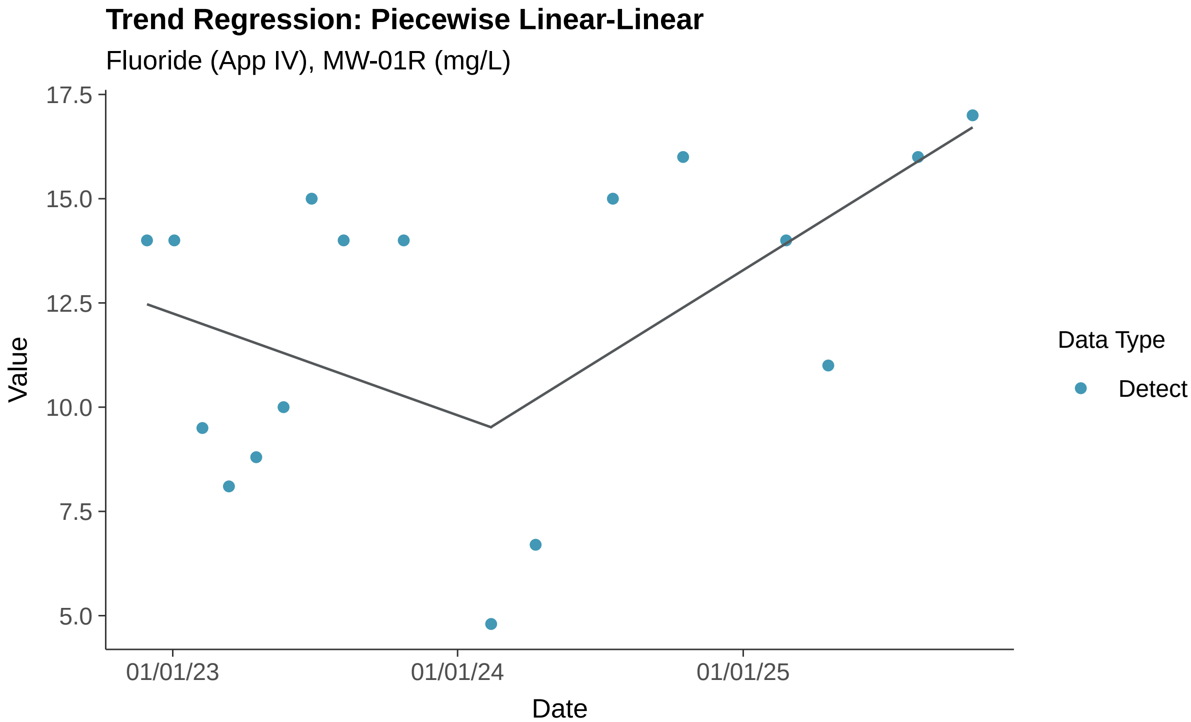
Boxplot by Season

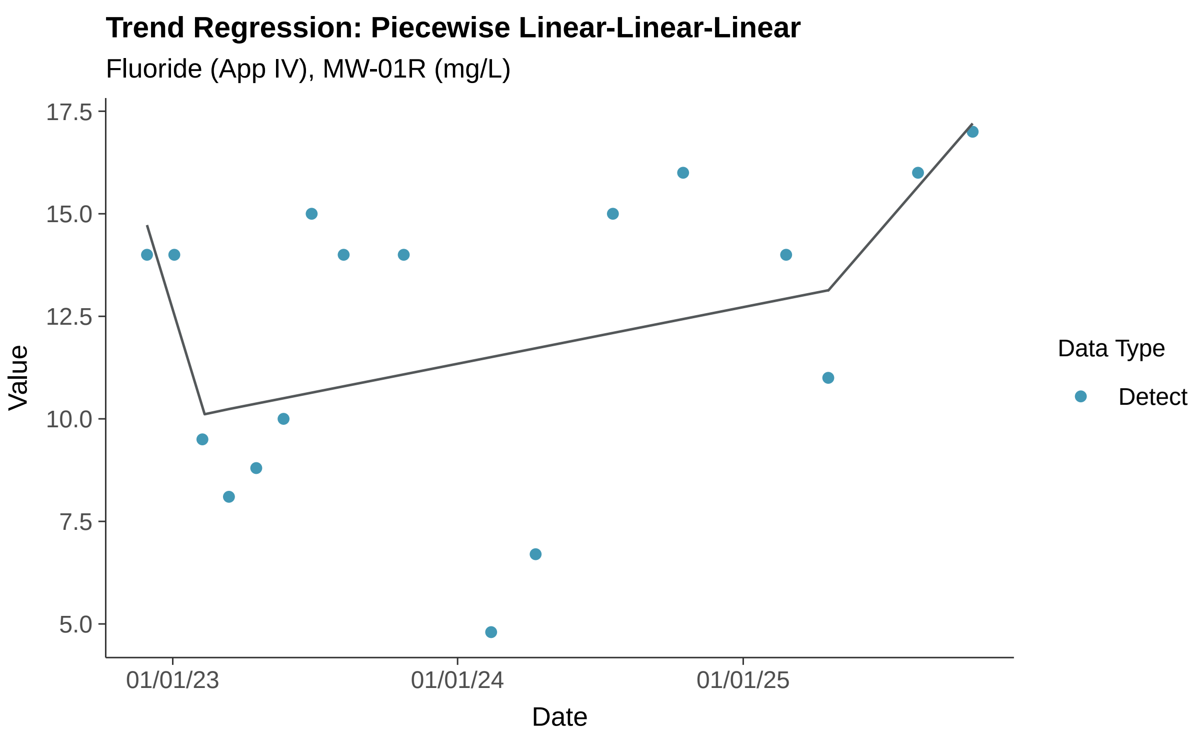
Fluoride (App IV), MW-01R (mg/L)




Normal Q-Q plot
Fluoride (App IV), MW-01R (mg/L)
Value
16
12
8
4
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Lognormal MLE
Fluoride (App IV), MW-01R (mg/L)
log(Value)
2.5
2.0
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear
Fluoride (App IV), MW-01R (mg/L)
17.5
15.0
12.5
10.0
7.5
5.0
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

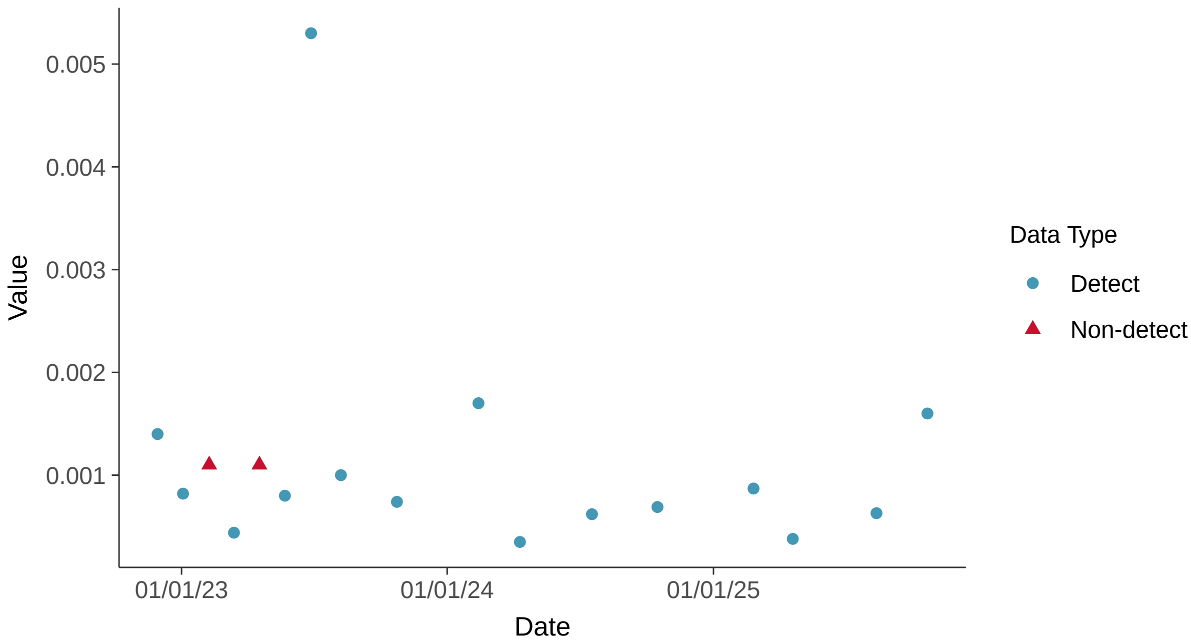

Trend Regression: Piecewise Linear-Linear-Linear
Fluoride (App IV), MW-01R (mg/L)
17.5
15.0
12.5
10.0
7.5
5.0
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Appendix IV: Lead, MW-01R

ID: 11_2_4_115

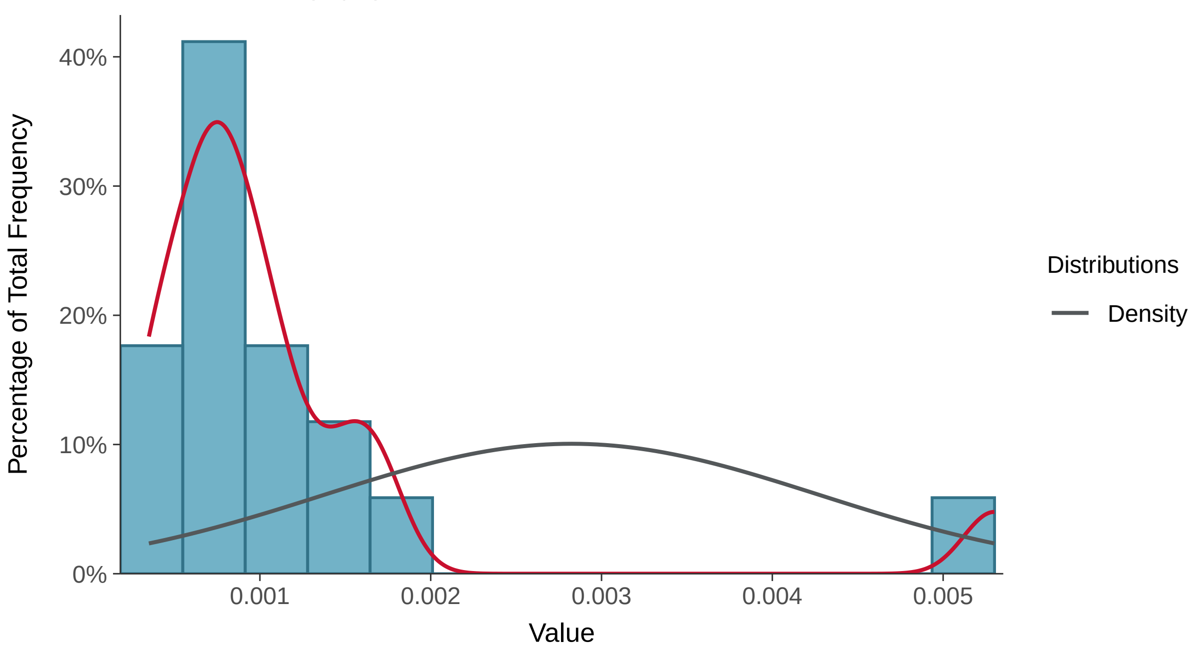
Scatter Plot

Lead, MW-01R (mg/L)



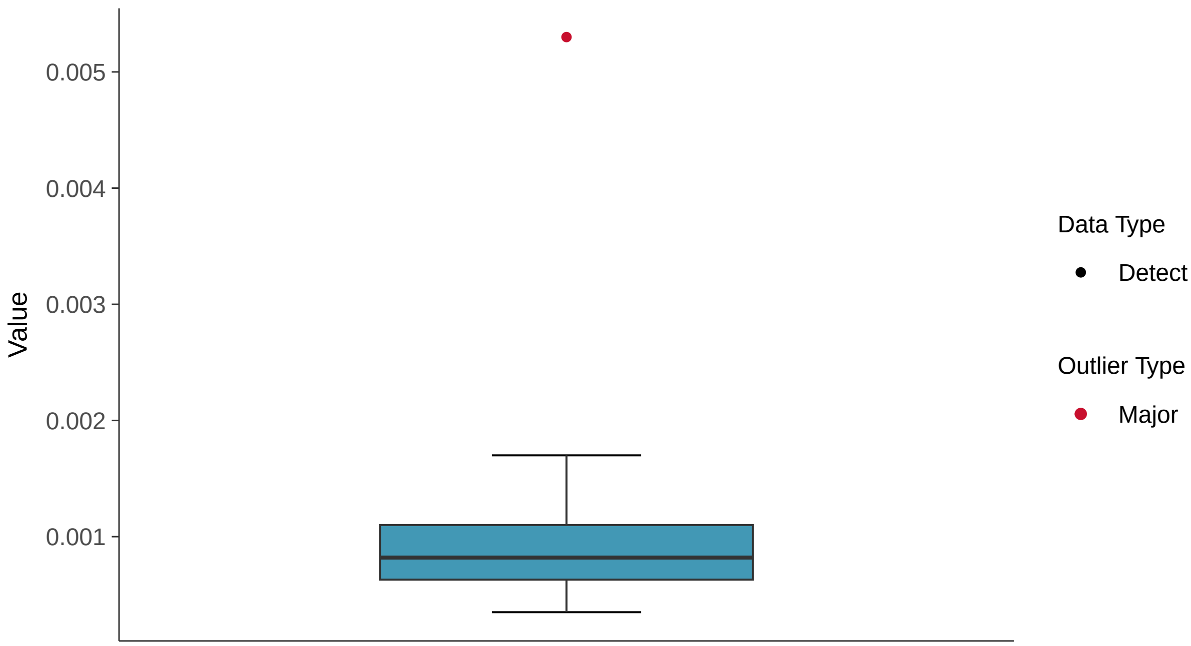
Histogram

Lead, MW-01R (mg/L)



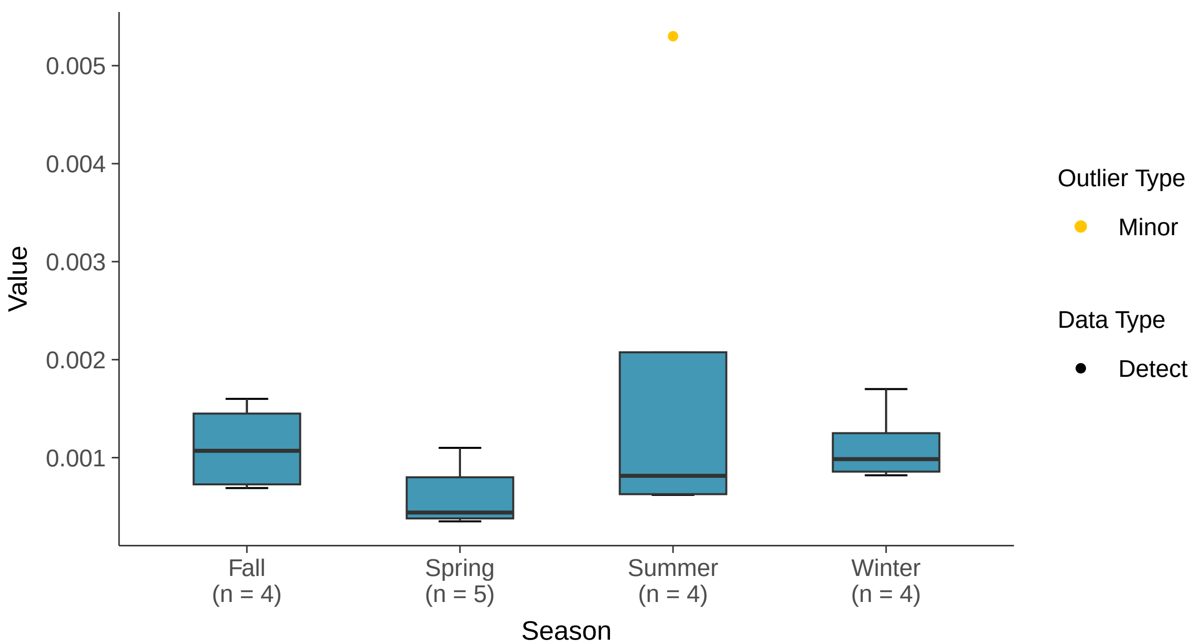
Boxplot

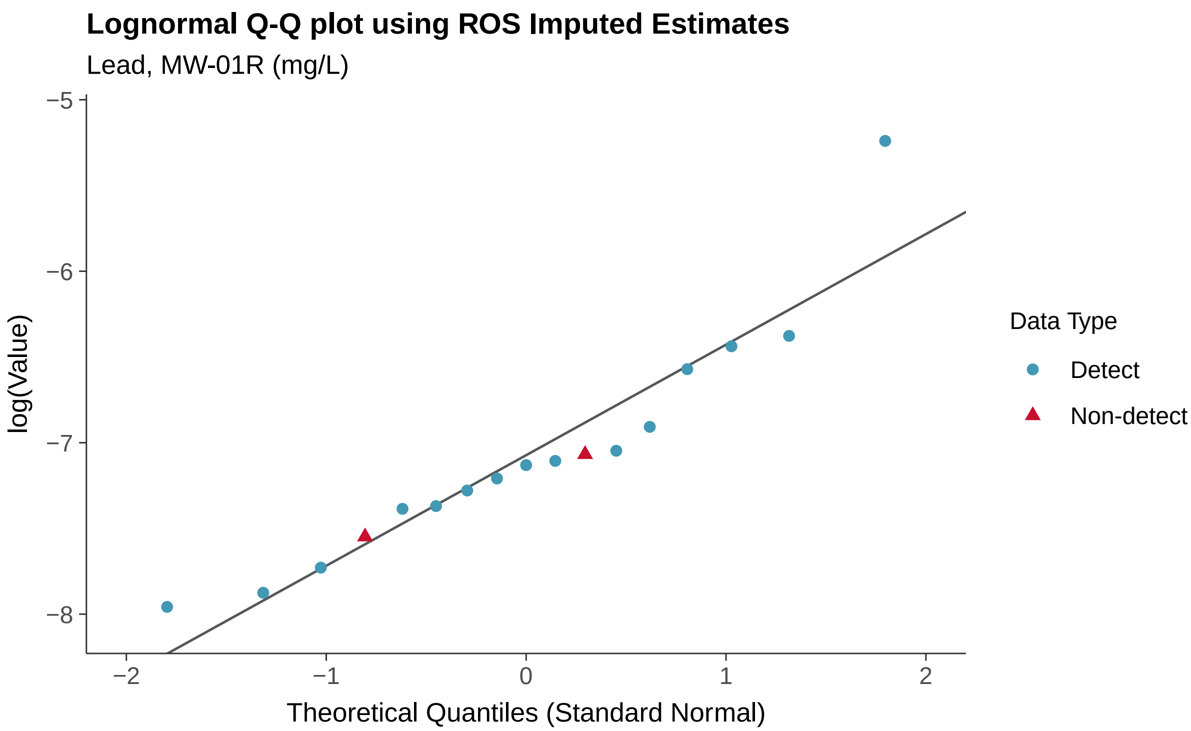
Lead, MW-01R (mg/L)

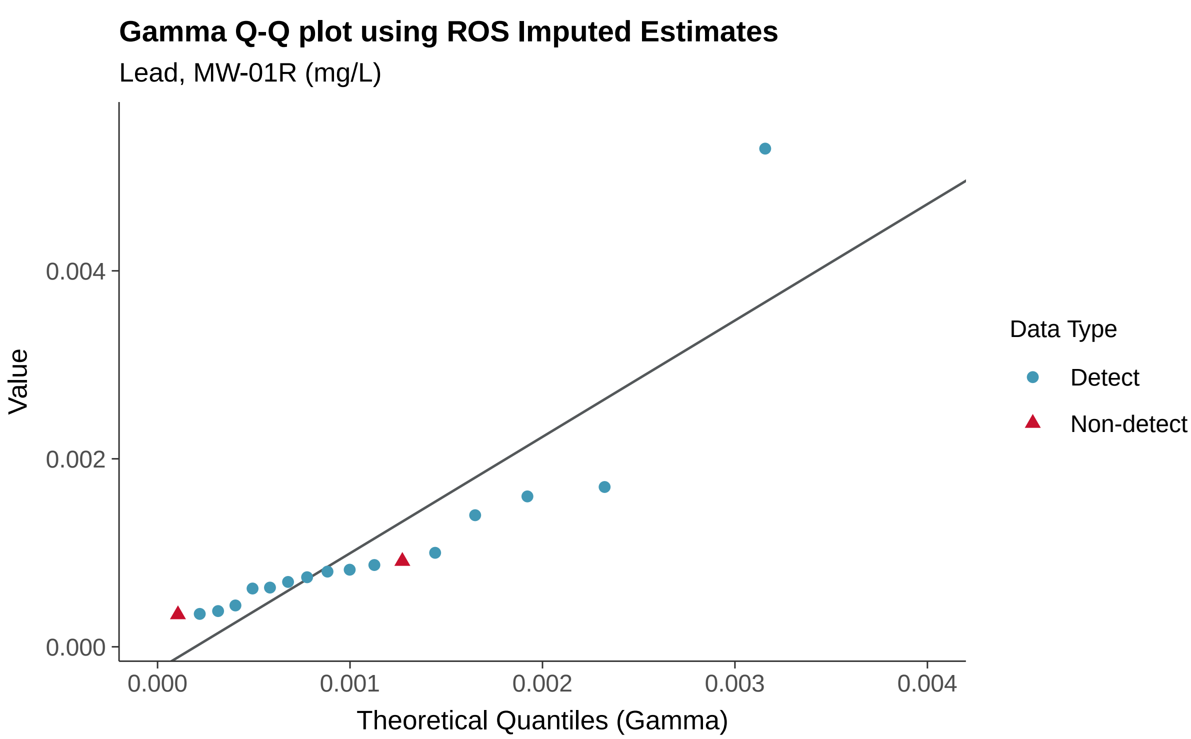


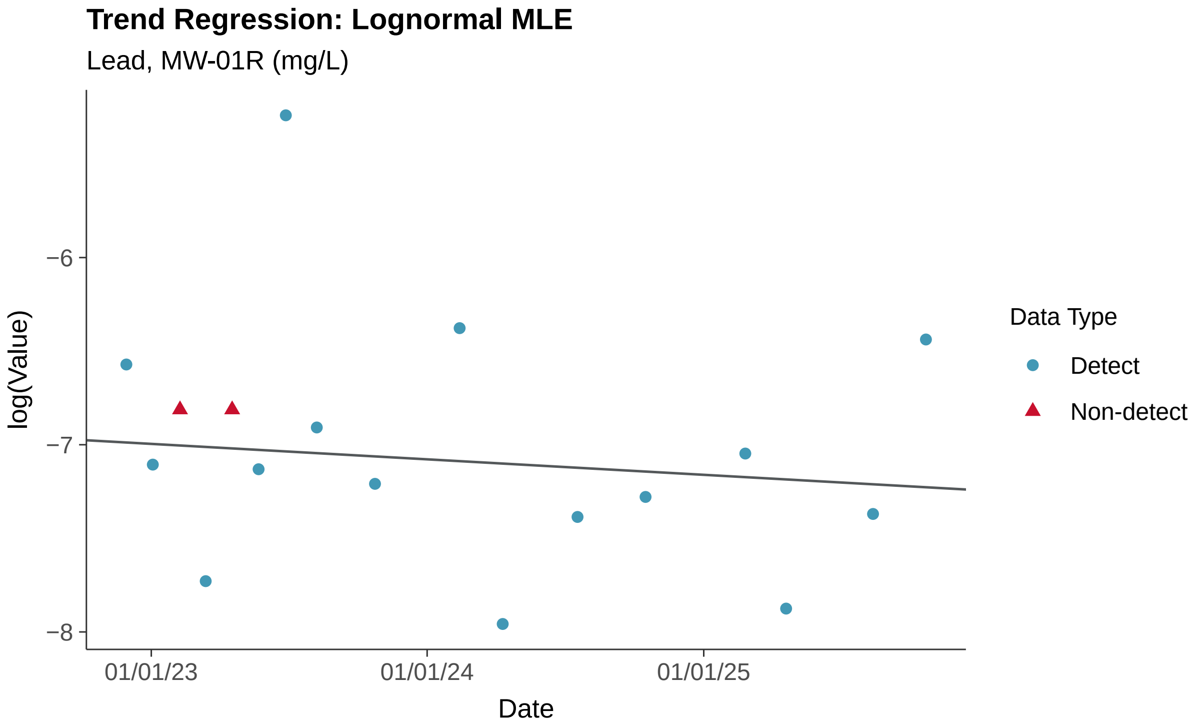
Boxplot by Season

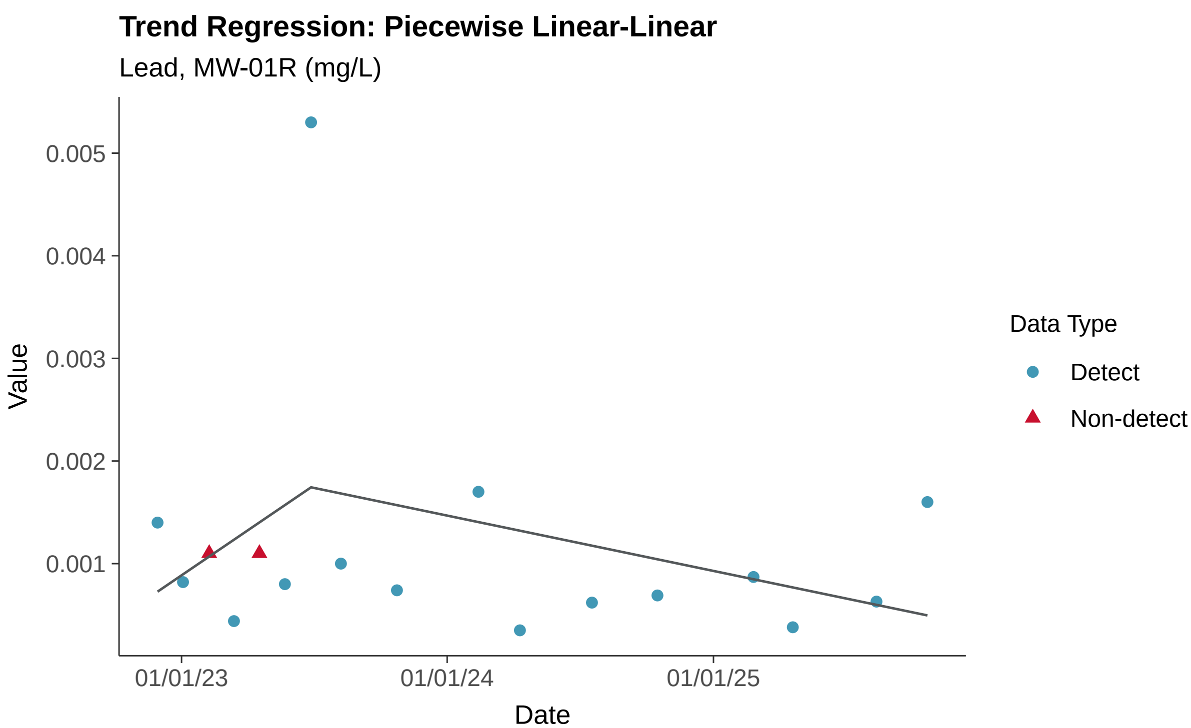
Lead, MW-01R (mg/L)




Lognormal Q-Q plot using ROS Imputed Estimates
Lead, MW-01R (mg/L)
log(Value)
−5
−6
−7
−8
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

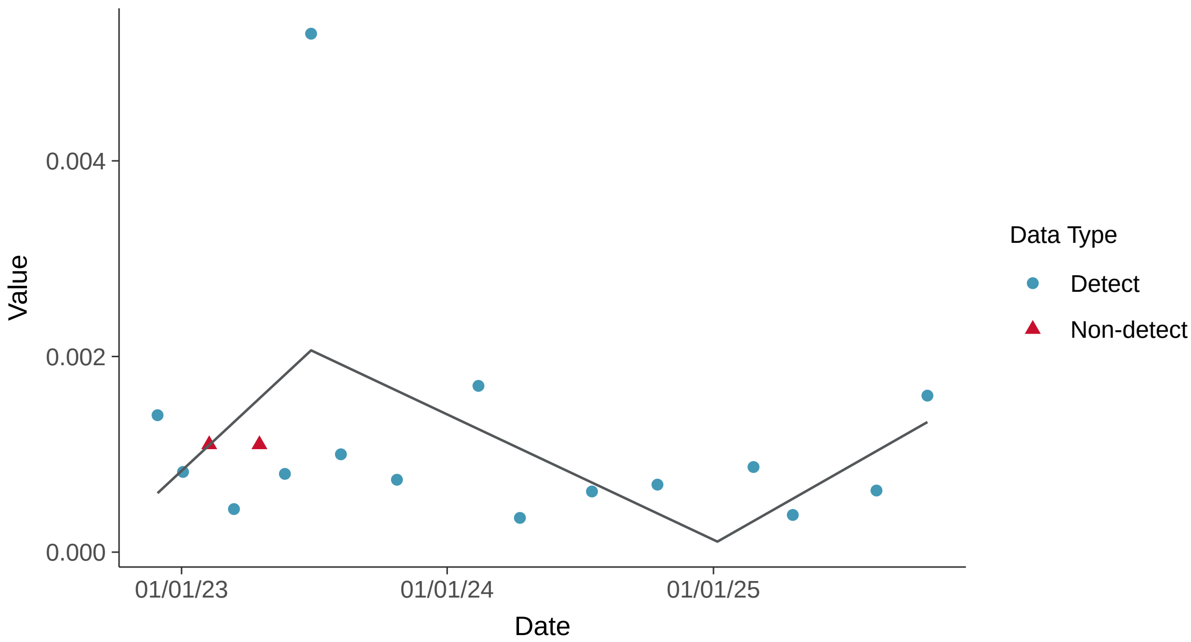

Gamma Q-Q plot using ROS Imputed Estimates
Lead, MW-01R (mg/L)
Value
0.004
0.002
0.000
0.000
0.001
0.002
0.003
0.004
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect


Trend Regression: Lognormal MLE
Lead, MW-01R (mg/L)
log(Value)
−6
−7
−8
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Lead, MW-01R (mg/L)
Value
0.005
0.004
0.003
0.002
0.001
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

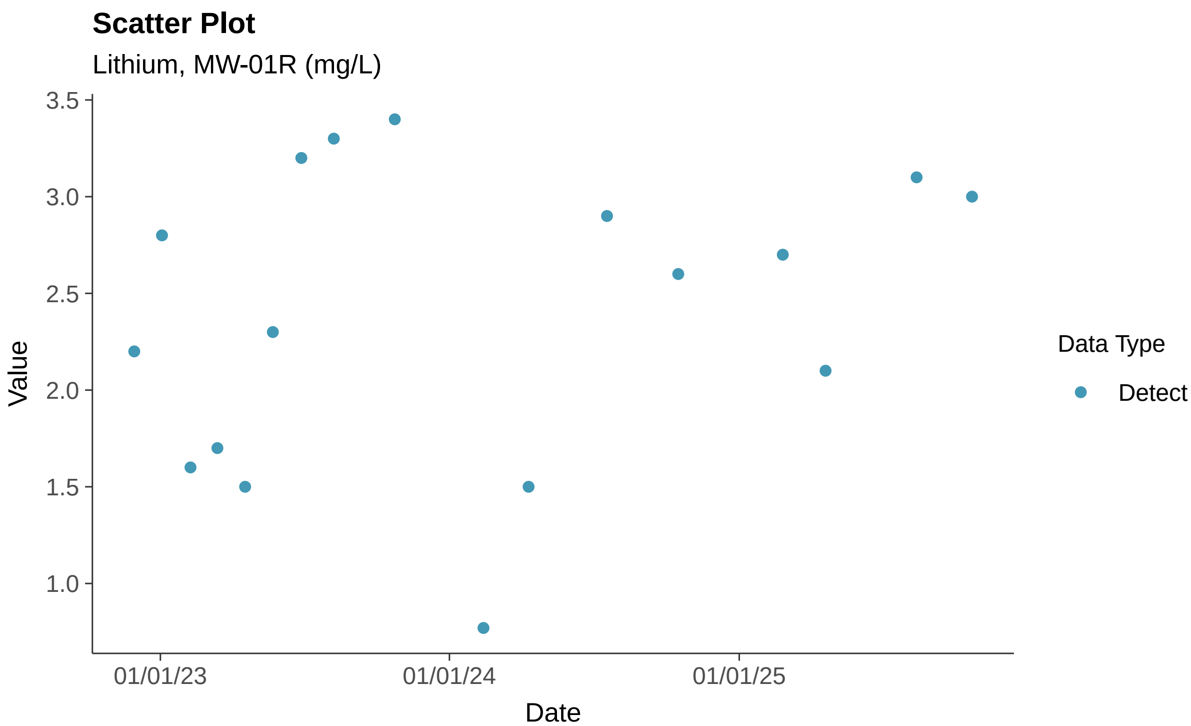
Trend Regression: Piecewise Linear-Linear-Linear

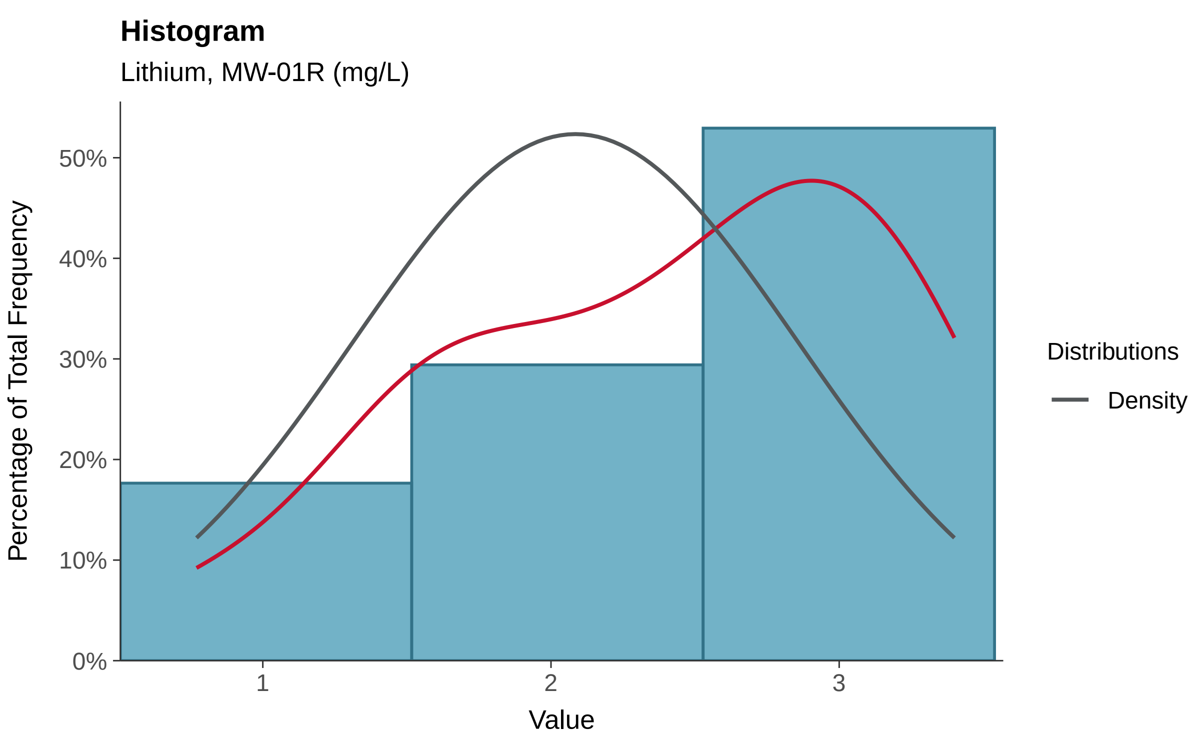
Lead, MW-01R (mg/L)



Appendix IV: Lithium, MW-01R

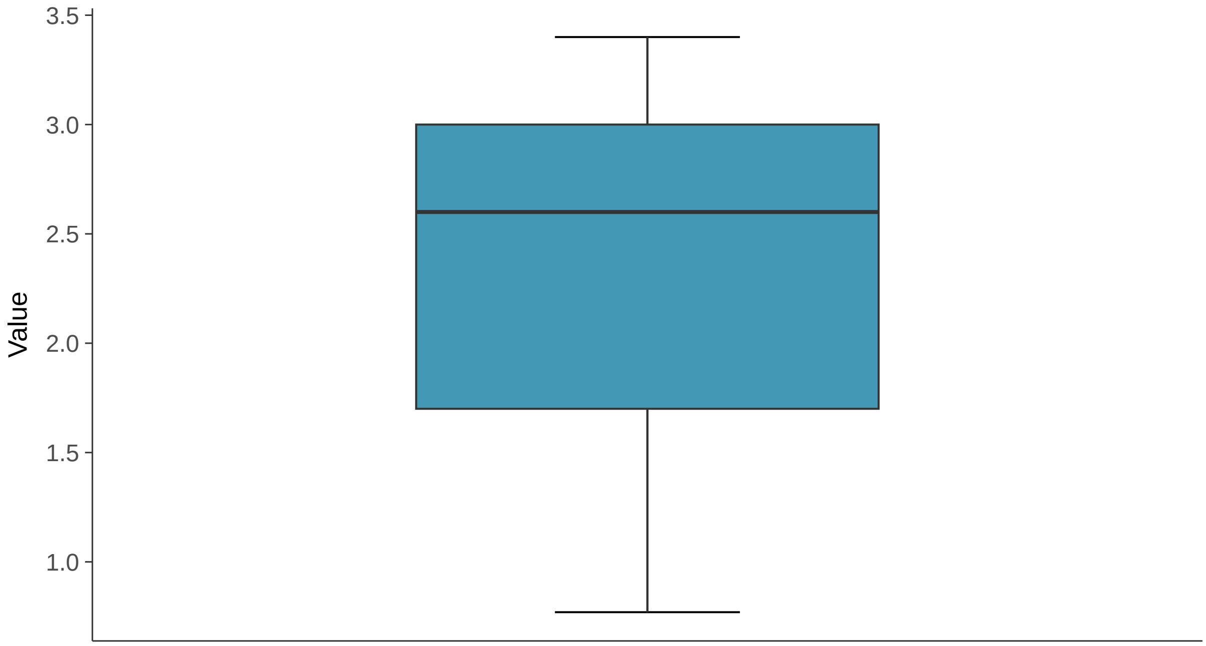
ID: 11_2_4_116





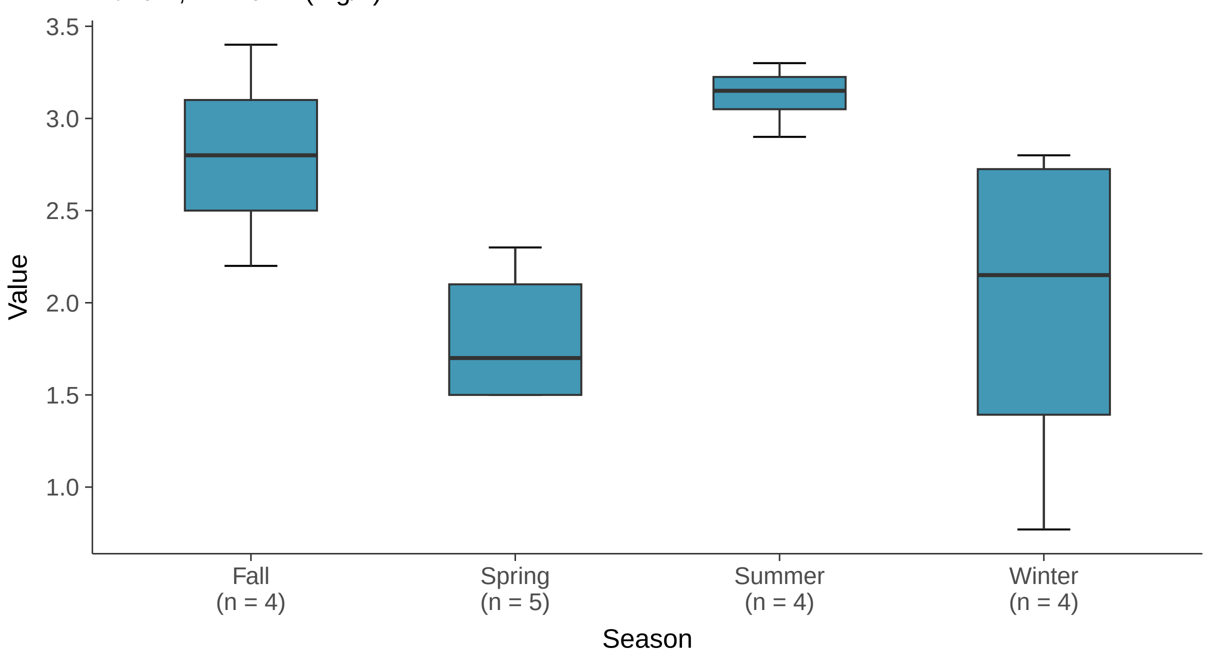
Boxplot

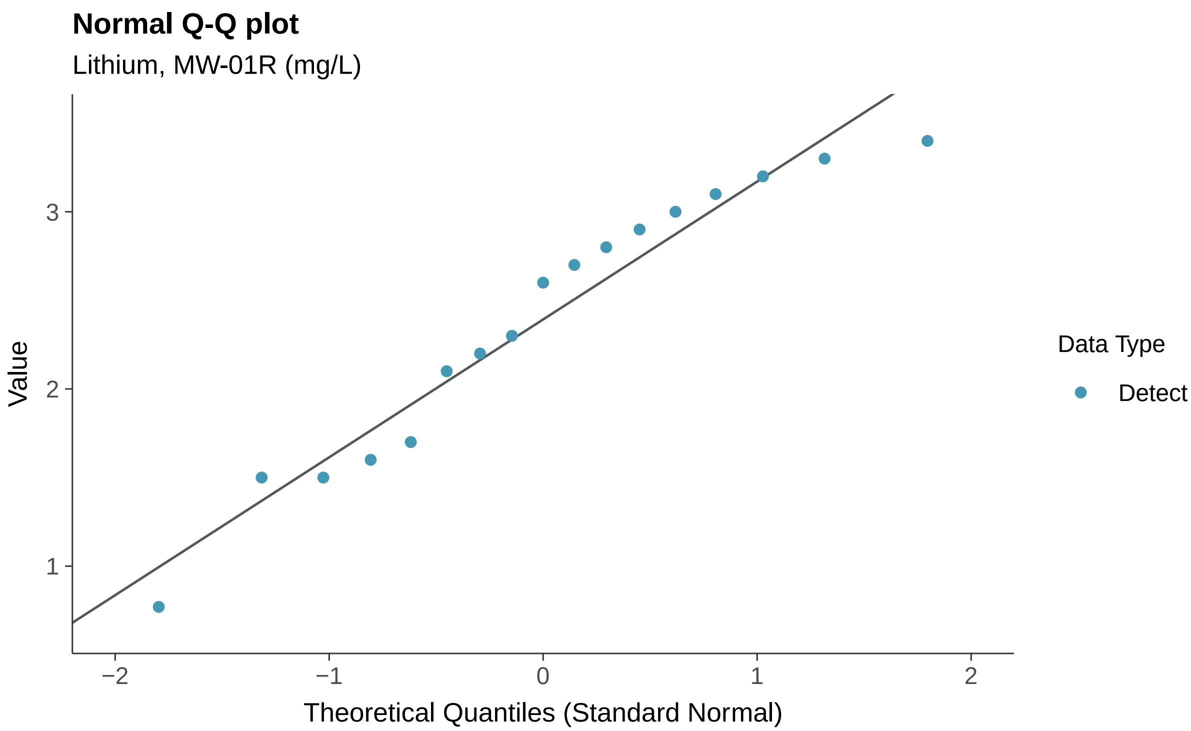
Lithium, MW-01R (mg/L)

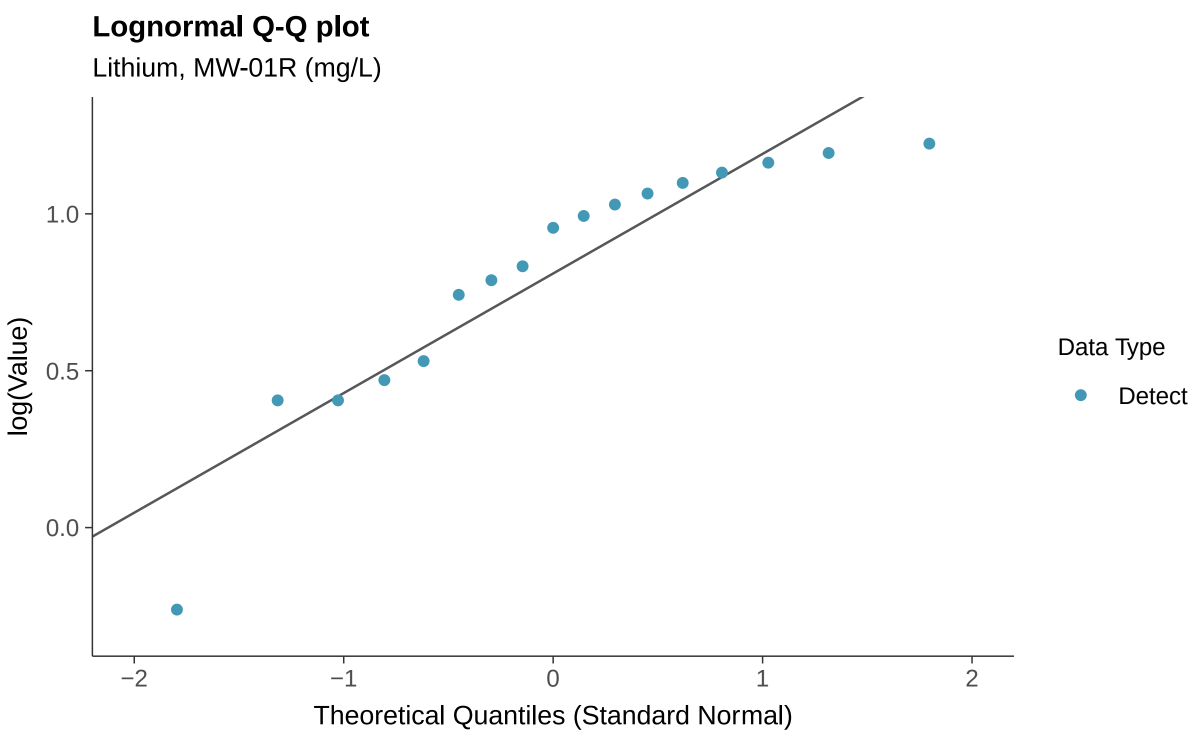


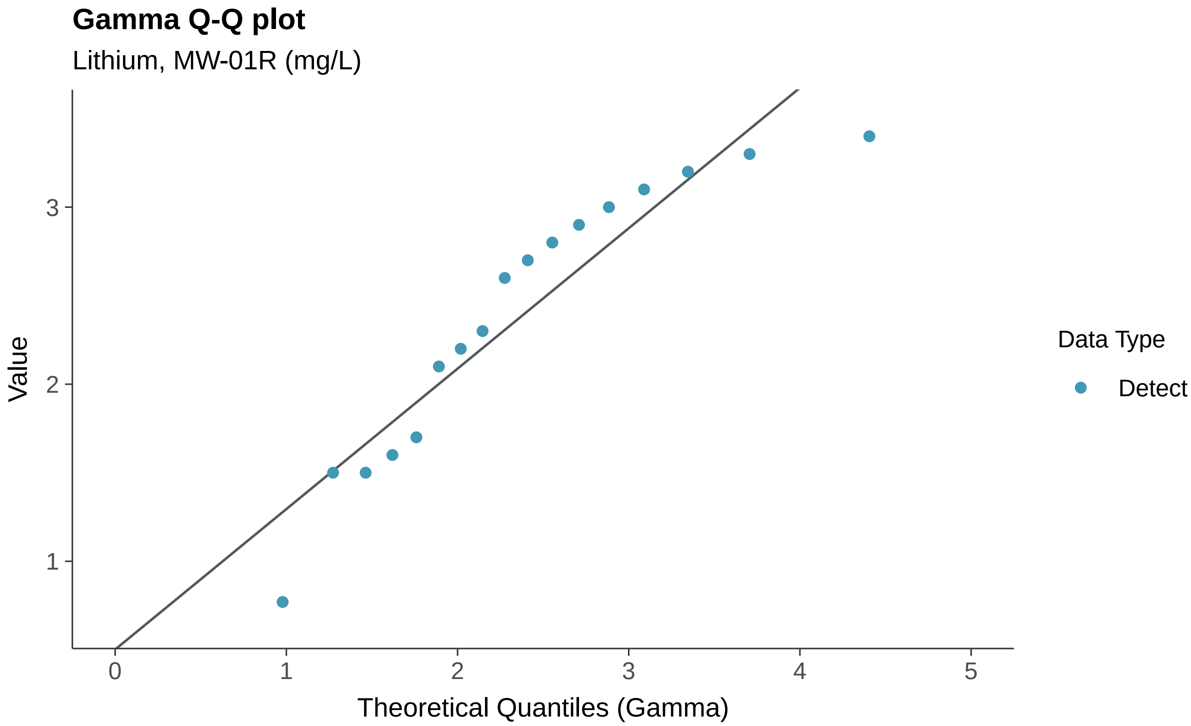
Boxplot by Season

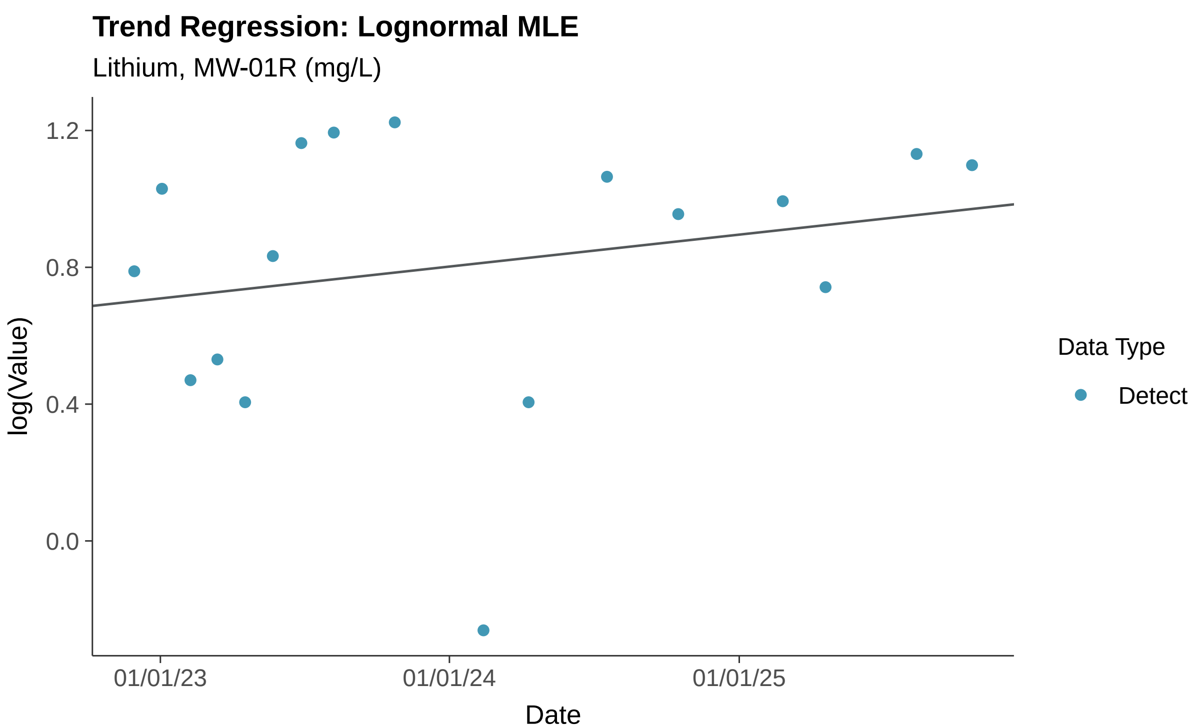
Lithium, MW-01R (mg/L)




Normal Q-Q plot
Lithium, MW-01R (mg/L)
Value
3
2
1
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

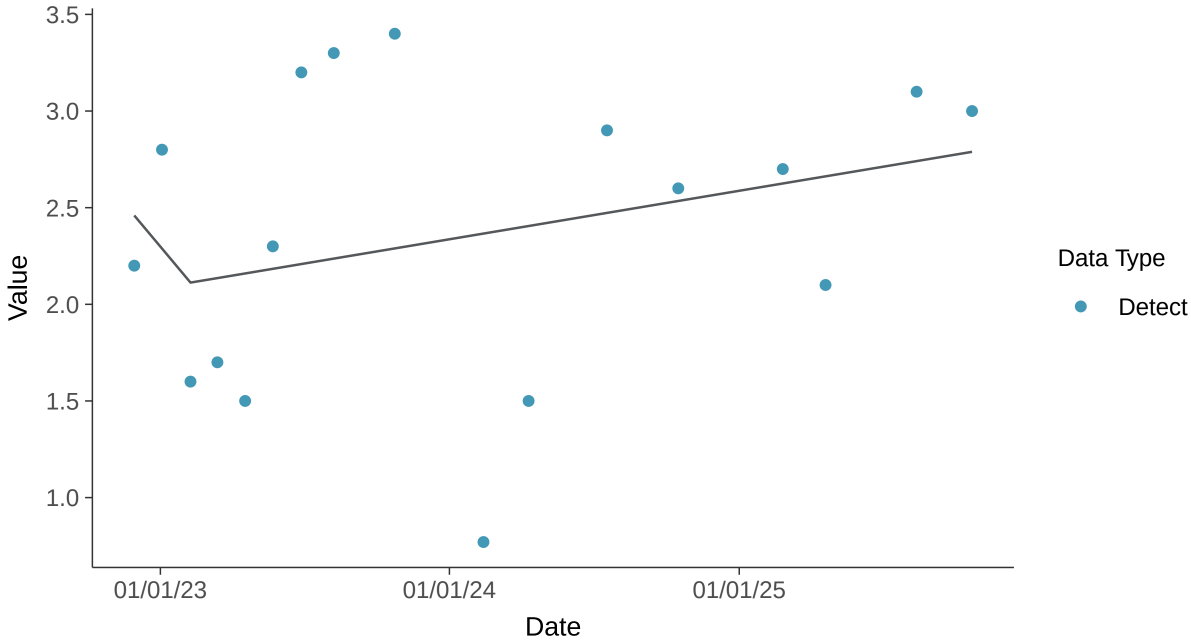

Lognormal Q-Q plot
Lithium, MW-01R (mg/L)
log(Value)
1.0
0.5
0.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Lithium, MW-01R (mg/L)
Value
3
2
1
0
1
2
3
4
5
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Lithium, MW-01R (mg/L)
log(Value)
1.2
0.8
0.4
0.0
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

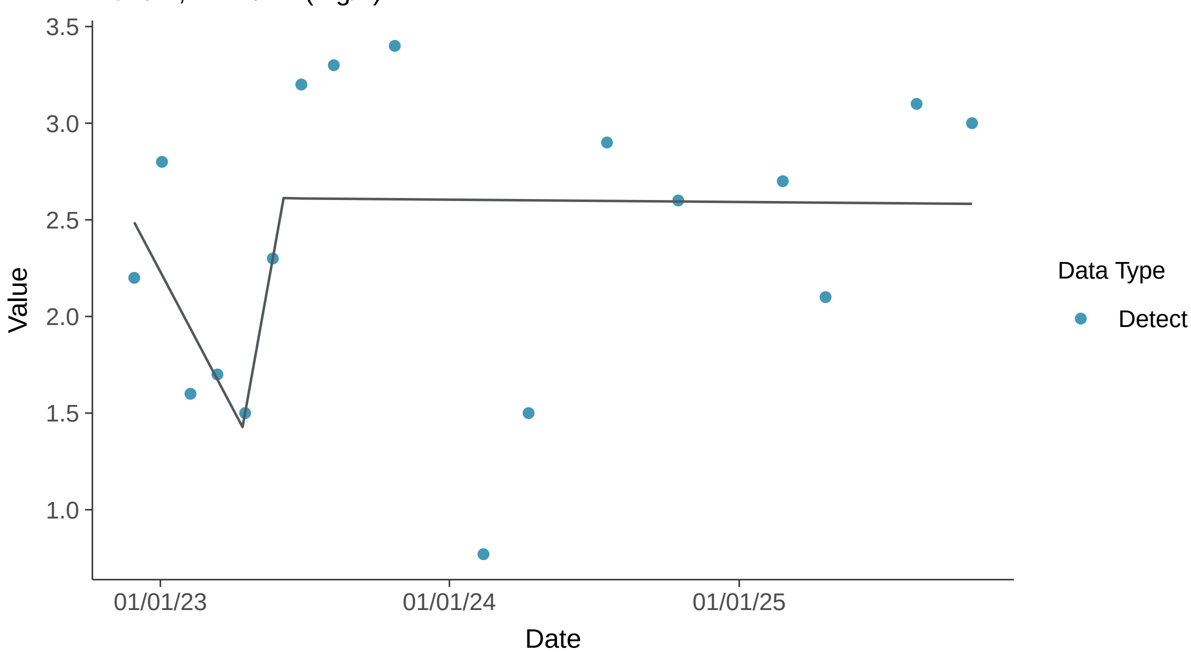
Trend Regression: Piecewise Linear-Linear

Lithium, MW-01R (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Lithium, MW-01R (mg/L)

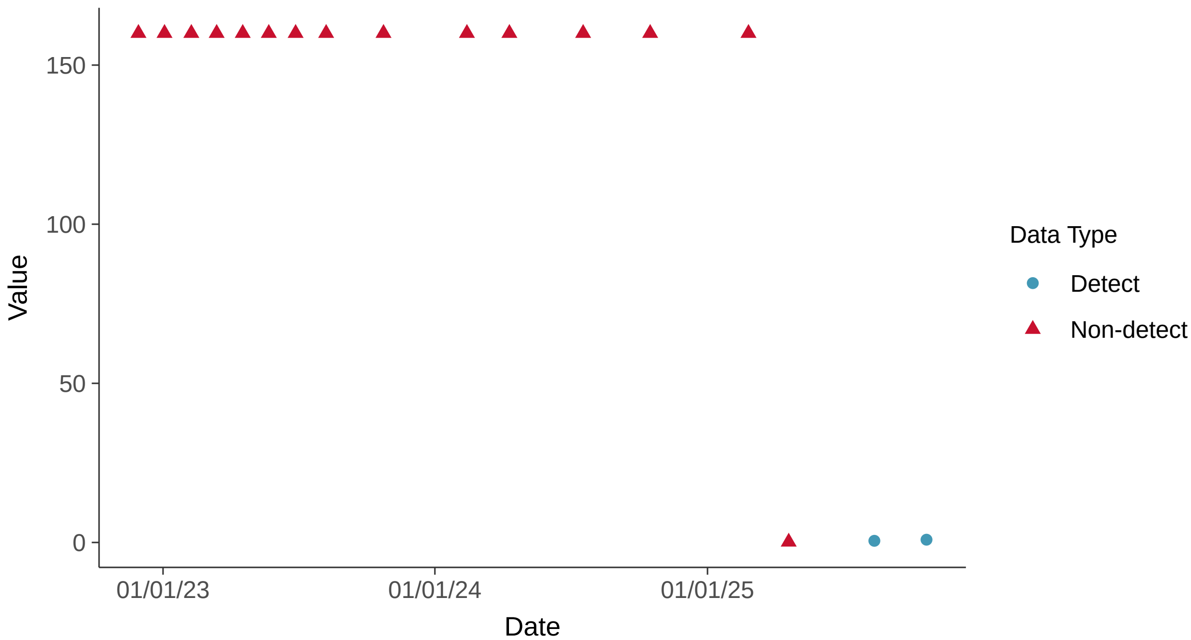


Appendix IV: Mercury, MW-01R

ID: 11_2_4_117

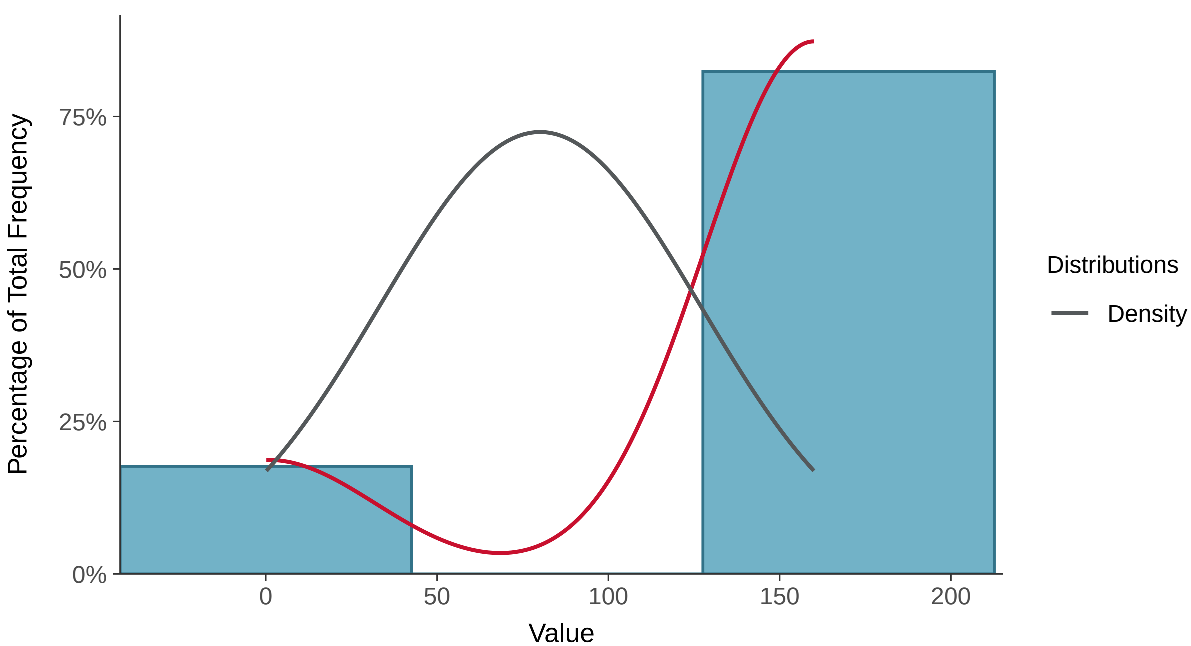
Scatter Plot

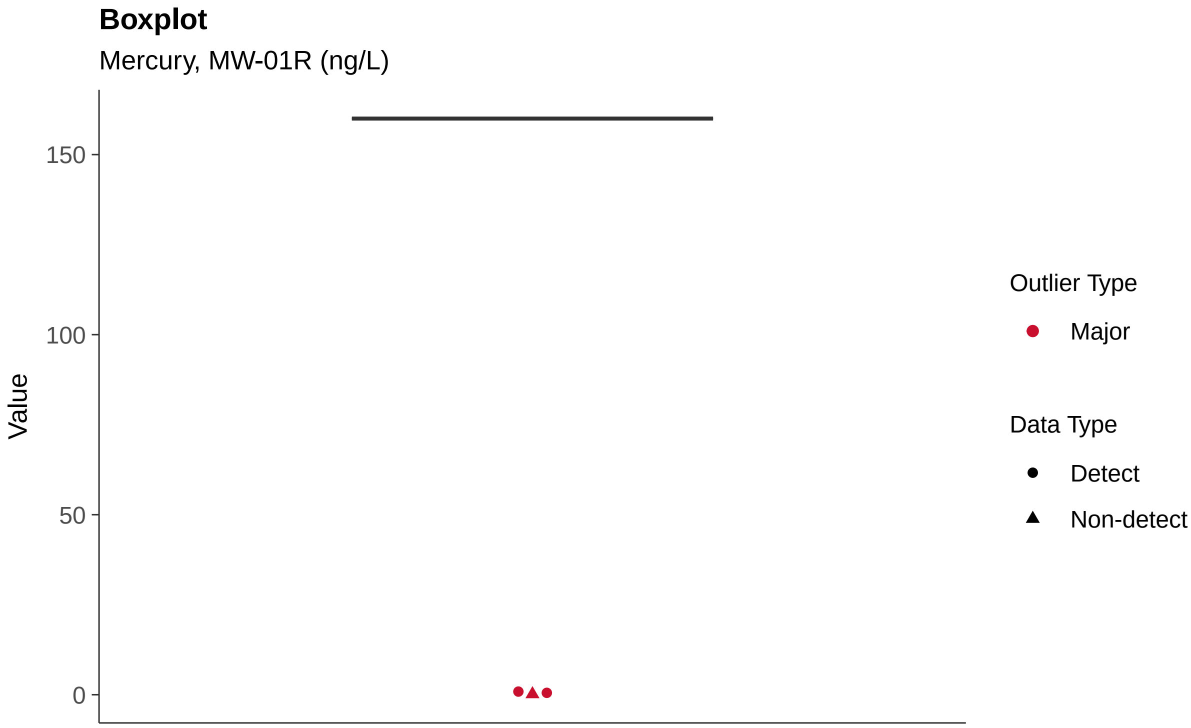
Mercury, MW-01R (ng/L)

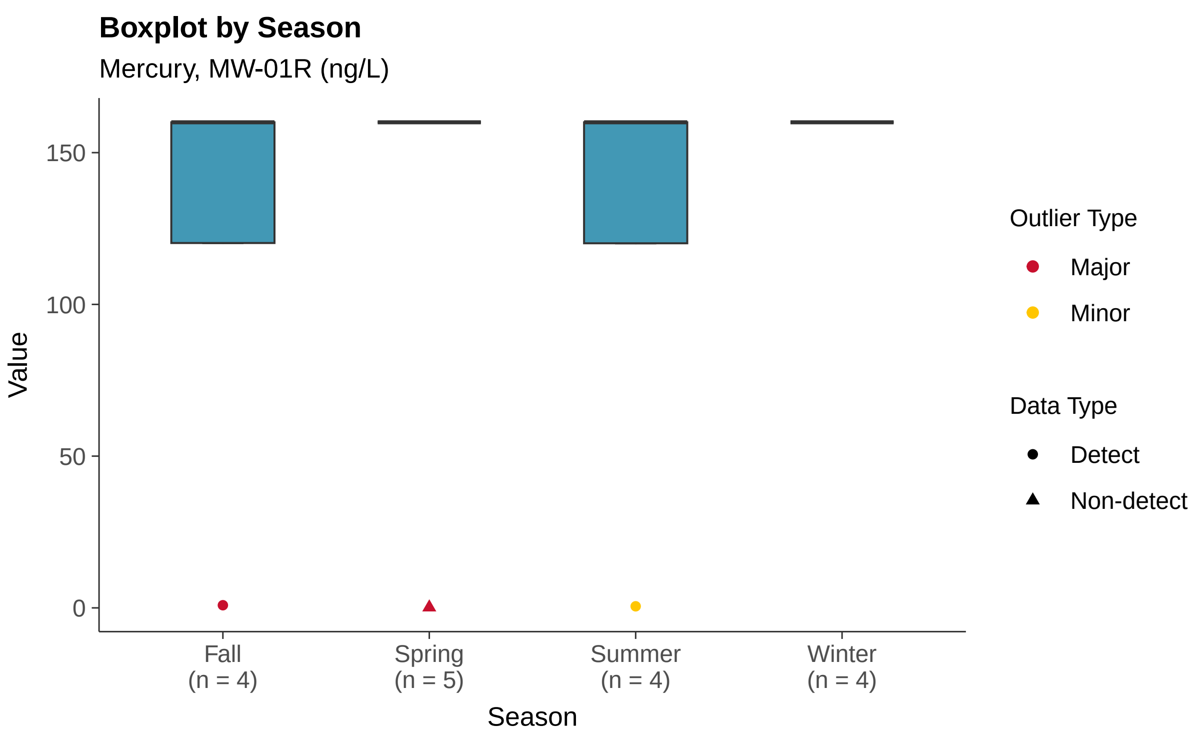


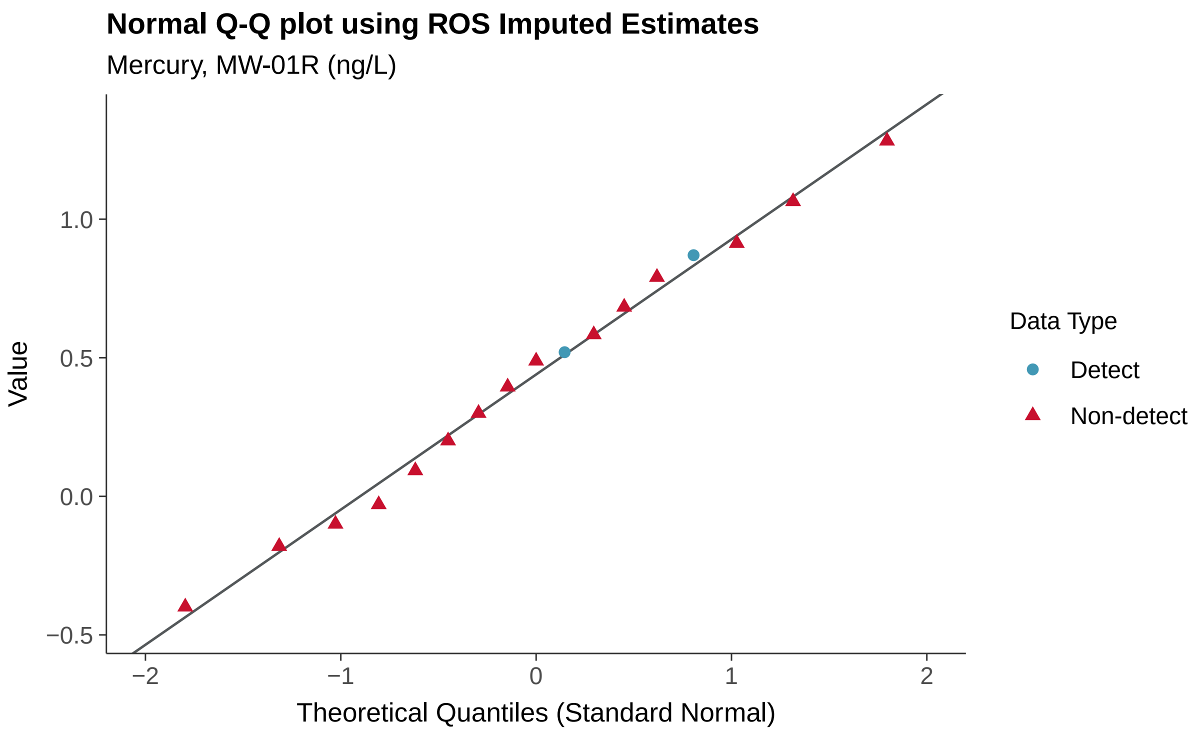
Histogram

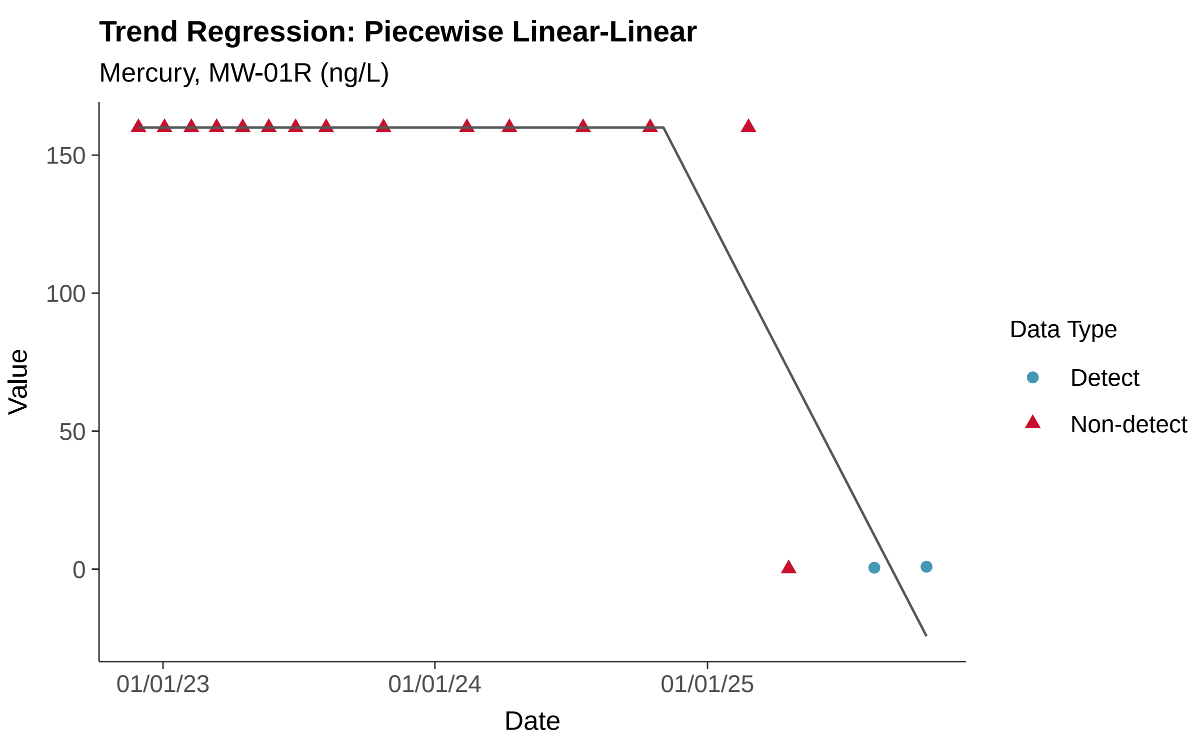
Mercury, MW-01R (ng/L)




Boxplot
Mercury, MW-01R (ng/L)
Value
150
100
50
0
Outlier Type
Major
Data Type
Detect
Non-detect


Boxplot by Season
Mercury, MW-01R (ng/L)
Value
150
100
50
0
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Major
Minor
Data Type
Detect
Non-detect


Normal Q-Q plot using ROS Imputed Estimates
Mercury, MW-01R (ng/L)
Value
1.0
0.5
0.0
−0.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

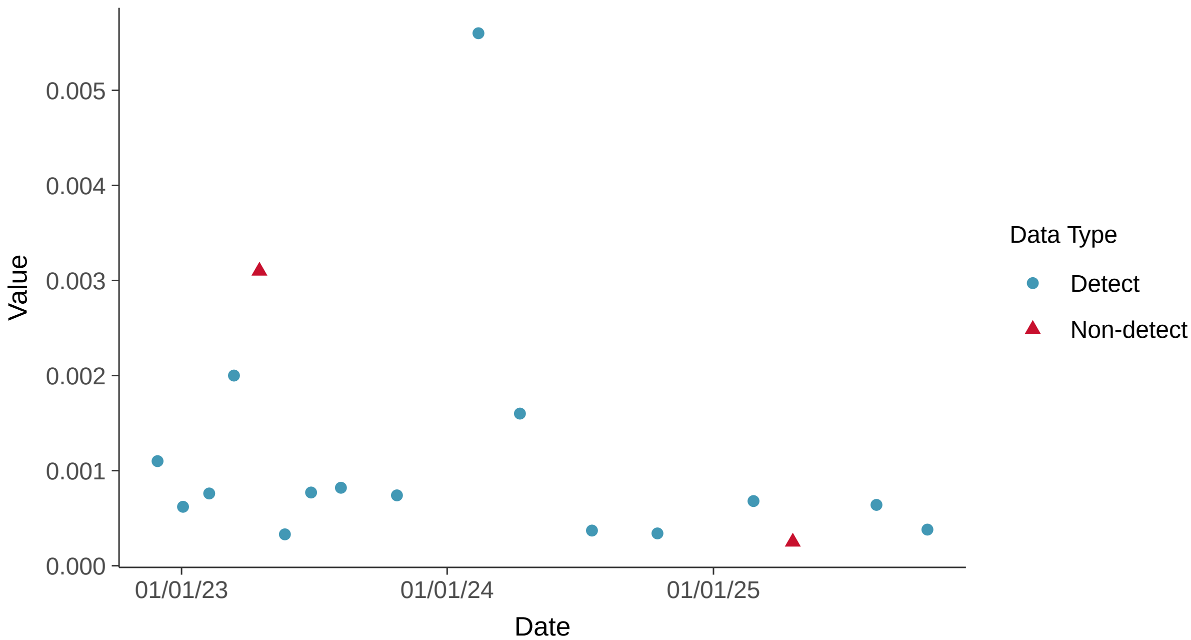

Trend Regression: Piecewise Linear-Linear
Mercury, MW-01R (ng/L)
Value
150
100
50
0
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Appendix IV: Molybdenum, MW-01R

ID: 11_2_4_118

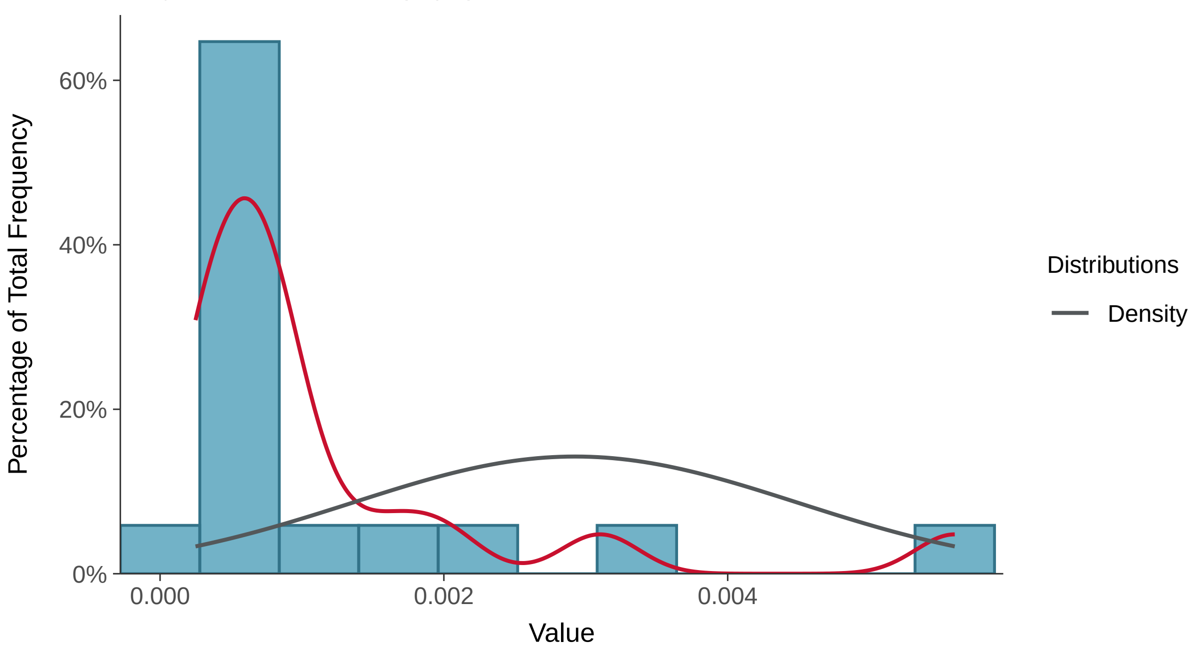
Scatter Plot

Molybdenum, MW-01R (mg/L)



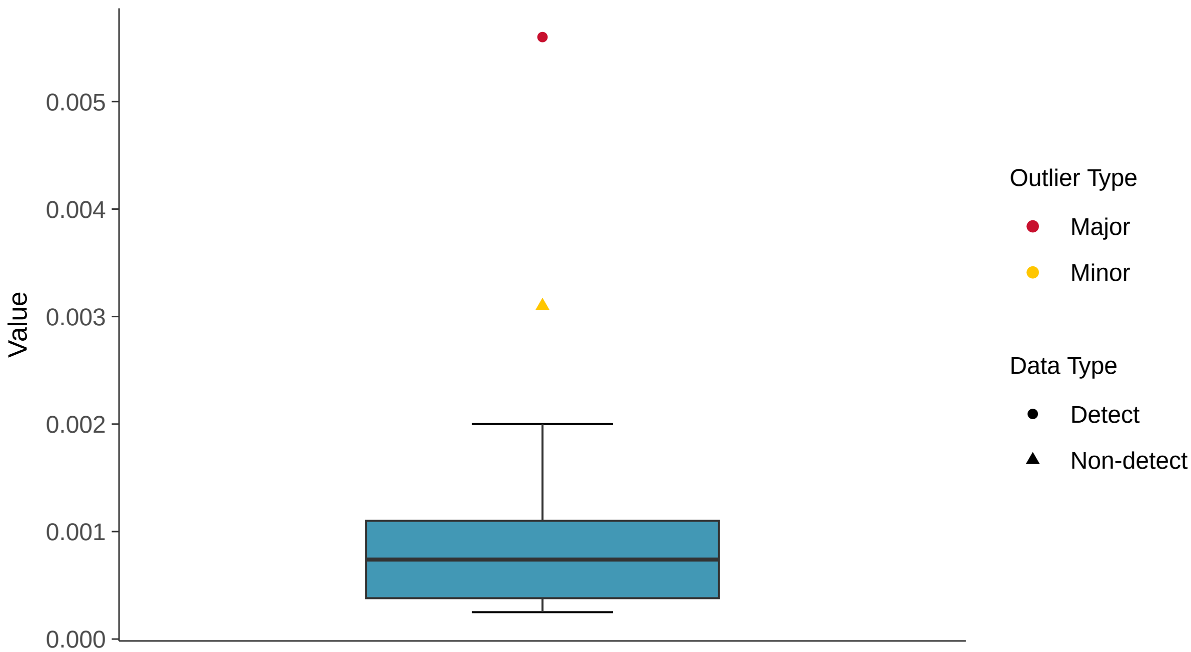
Histogram

Molybdenum, MW-01R (mg/L)



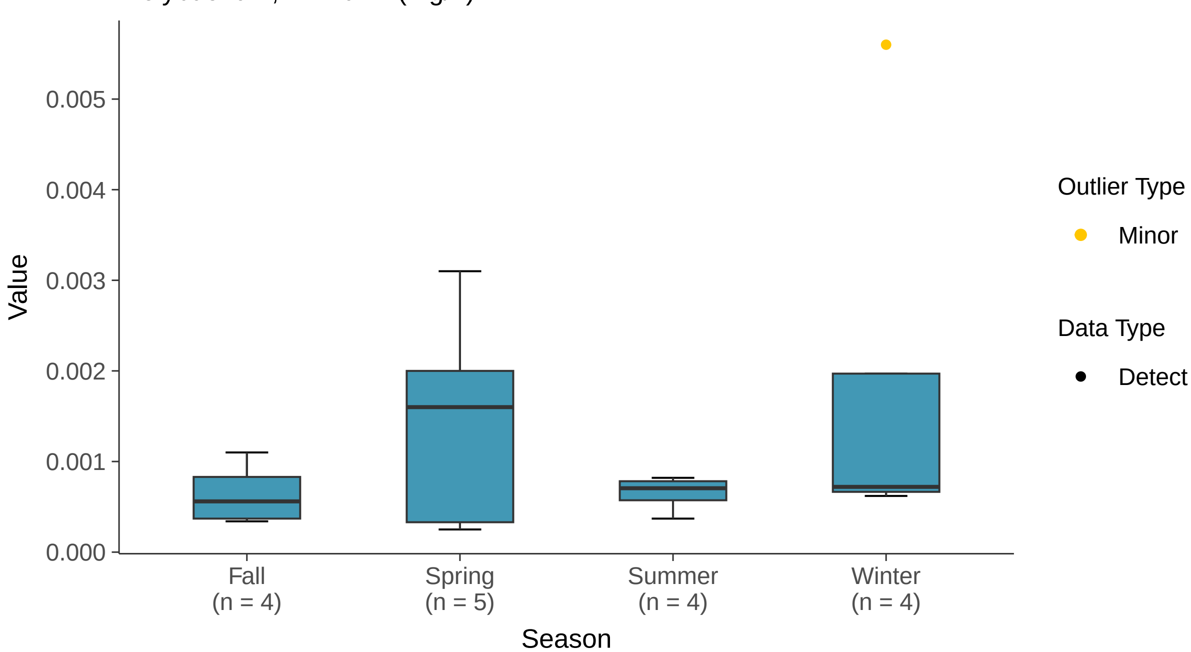
Boxplot

Molybdenum, MW-01R (mg/L)



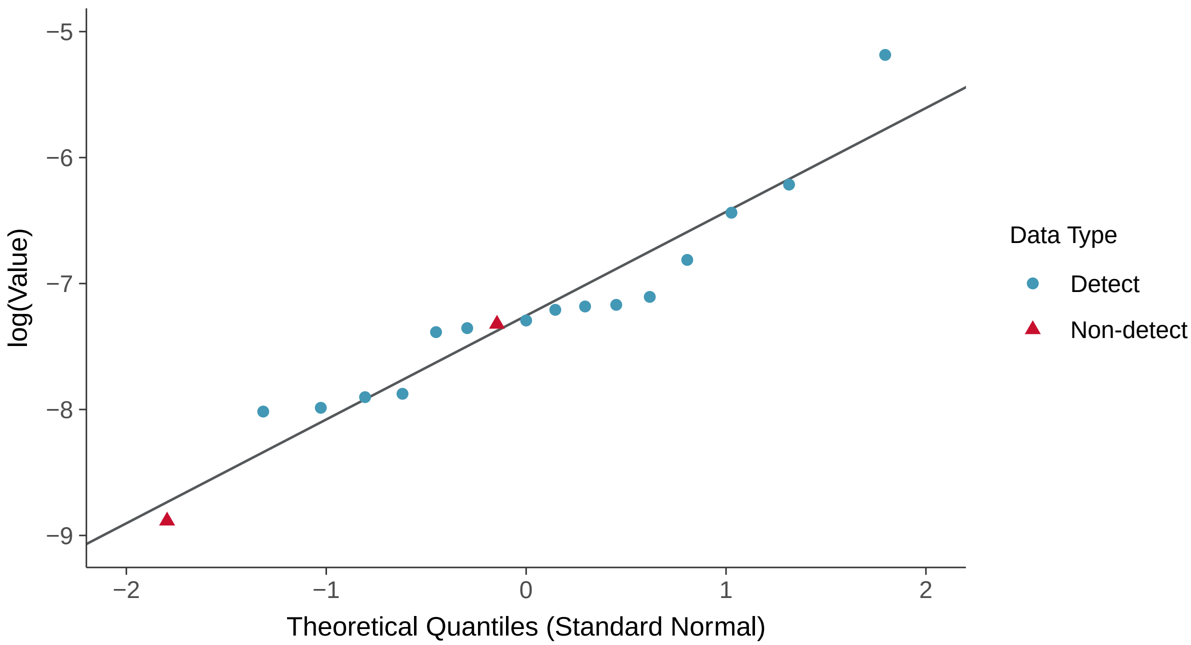
Boxplot by Season

Molybdenum, MW-01R (mg/L)



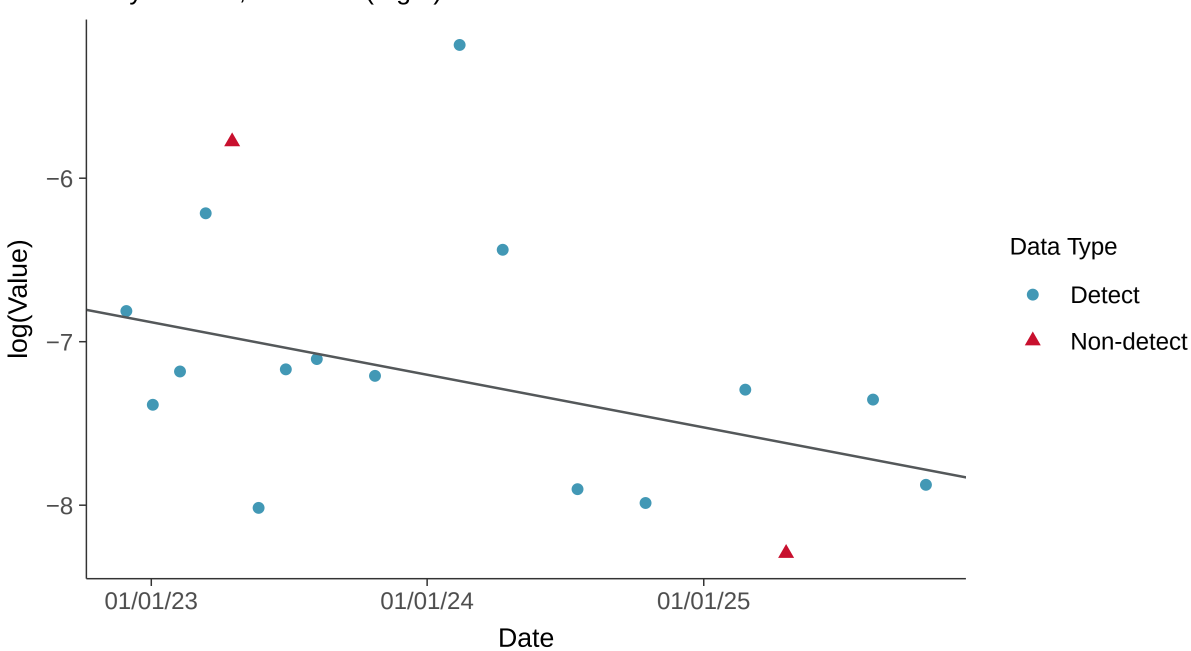
Lognormal Q-Q plot using ROS Imputed Estimates

Molybdenum, MW-01R (mg/L)



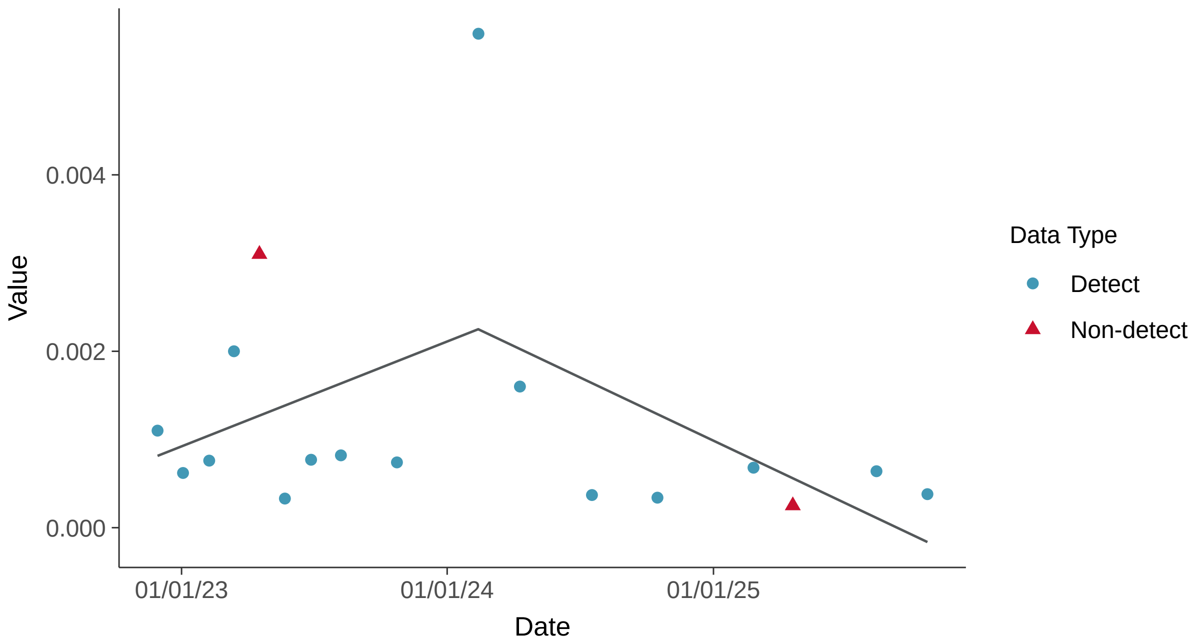
Trend Regression: Lognormal MLE

Molybdenum, MW-01R (mg/L)



Trend Regression: Piecewise Linear-Linear

Molybdenum, MW-01R (mg/L)

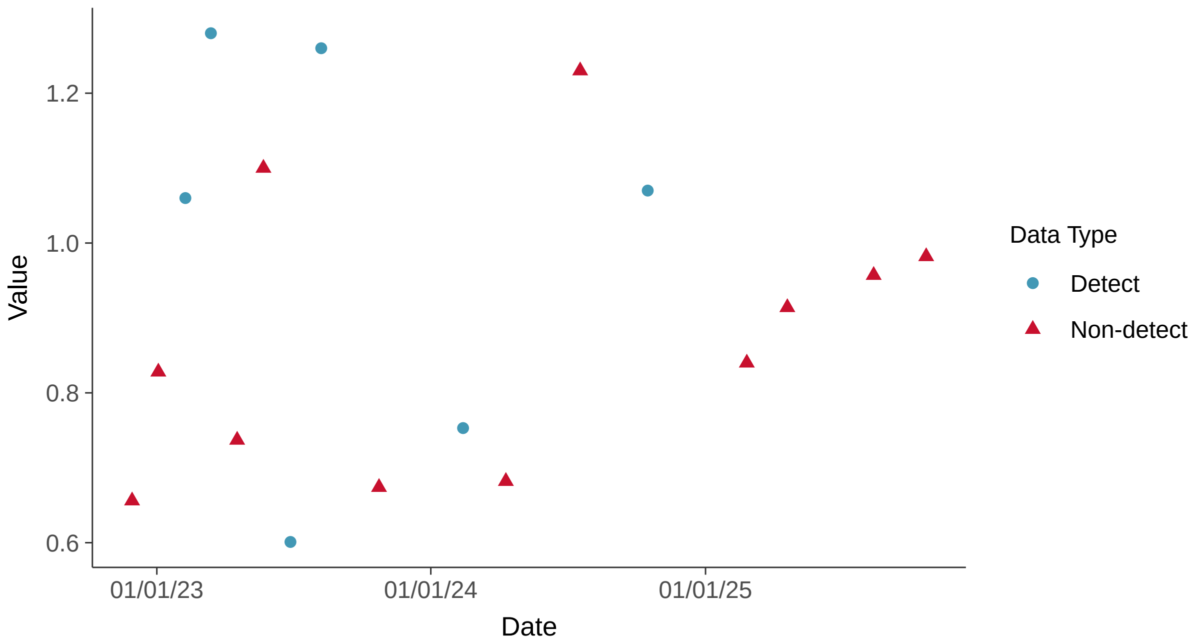


Appendix IV: Radium 226 and 228, MW-01R

ID: 11_2_4_121

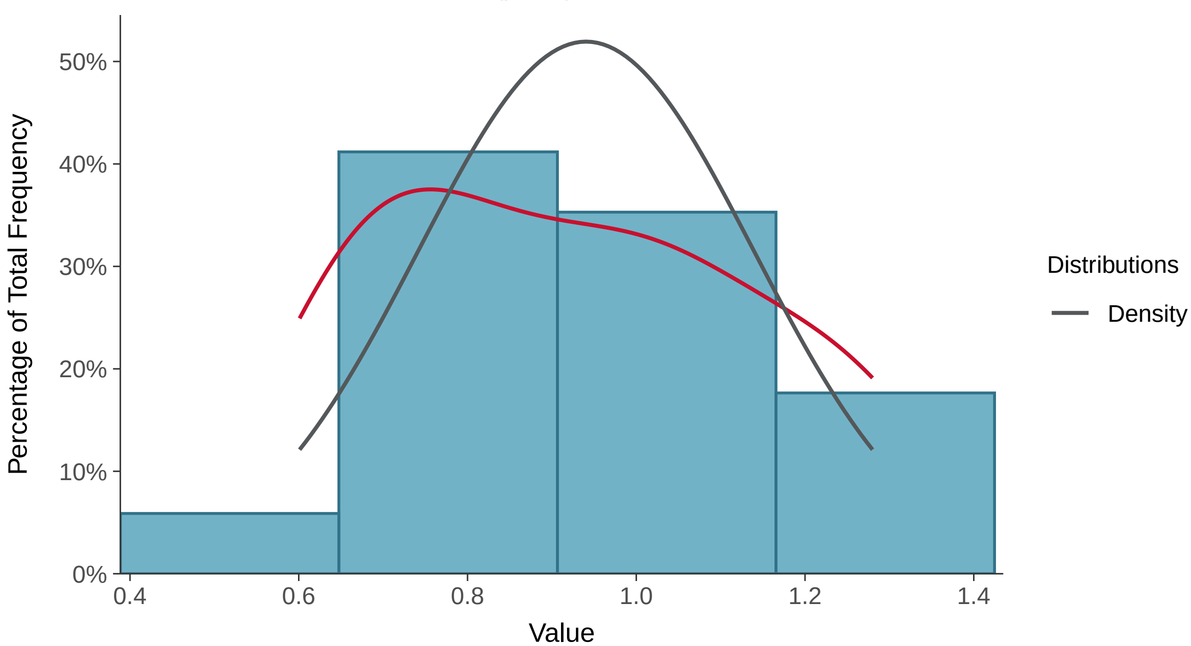
Scatter Plot

Radium 226 and 228, MW-01R (pCi/L)



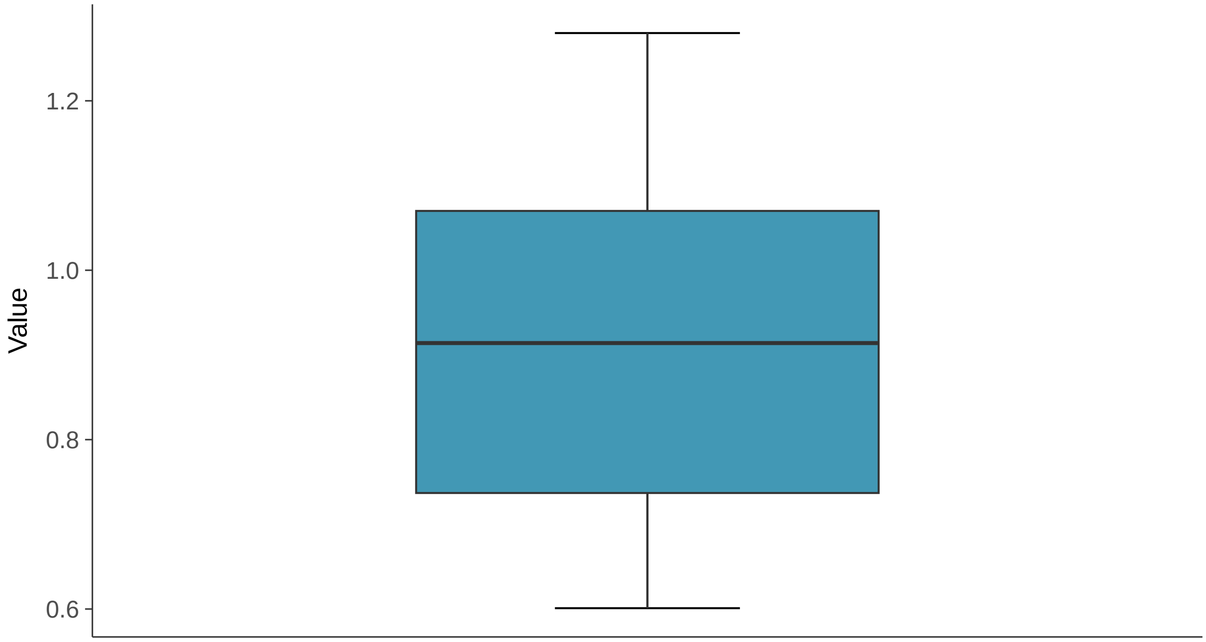
Histogram

Radium 226 and 228, MW-01R (pCi/L)



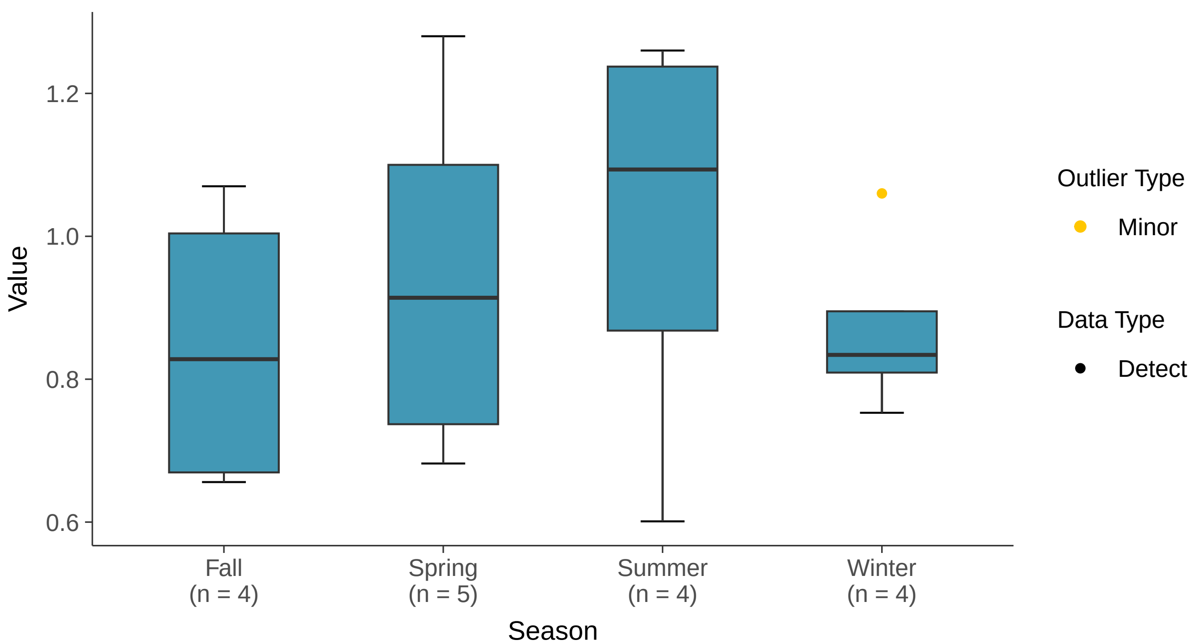
Boxplot

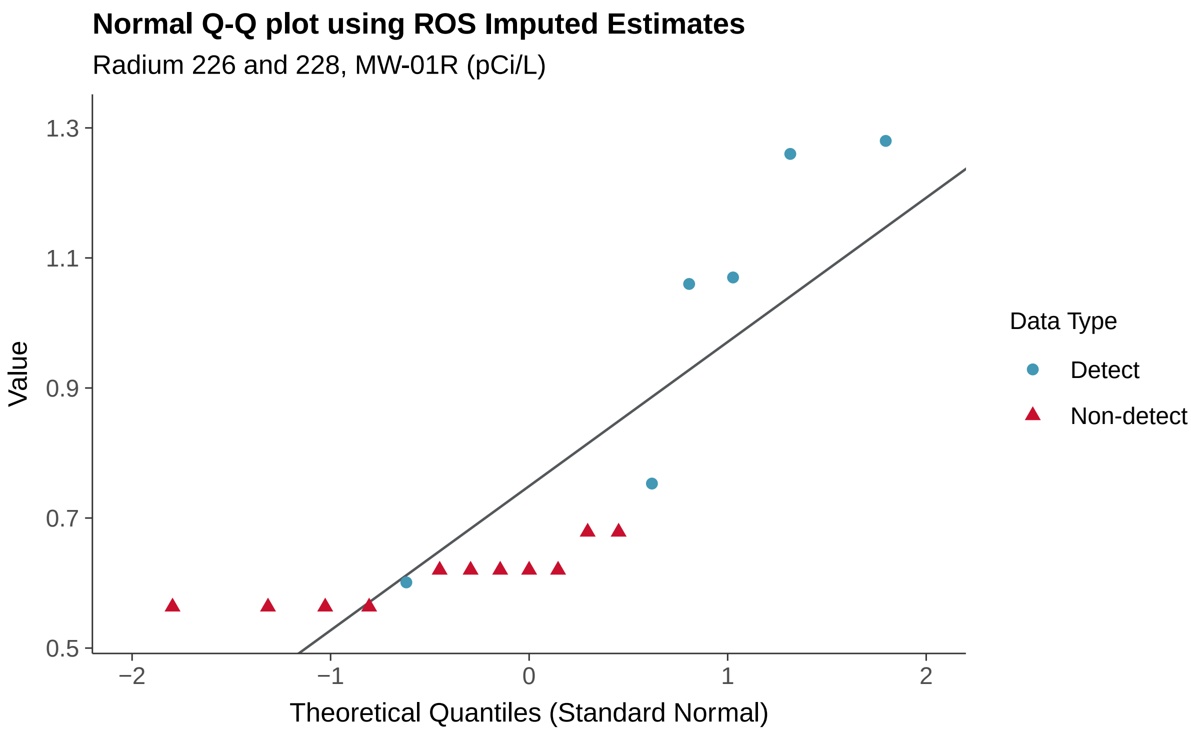
Radium 226 and 228, MW-01R (pCi/L)

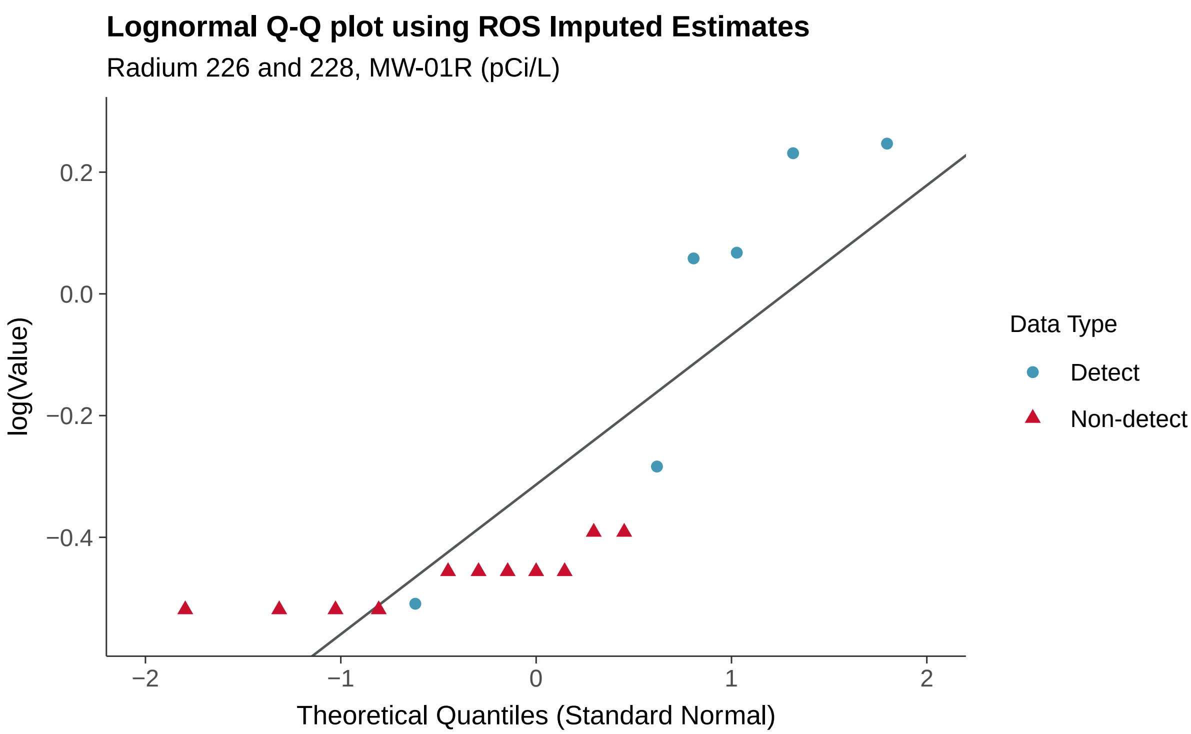


Boxplot by Season

Radium 226 and 228, MW-01R (pCi/L)

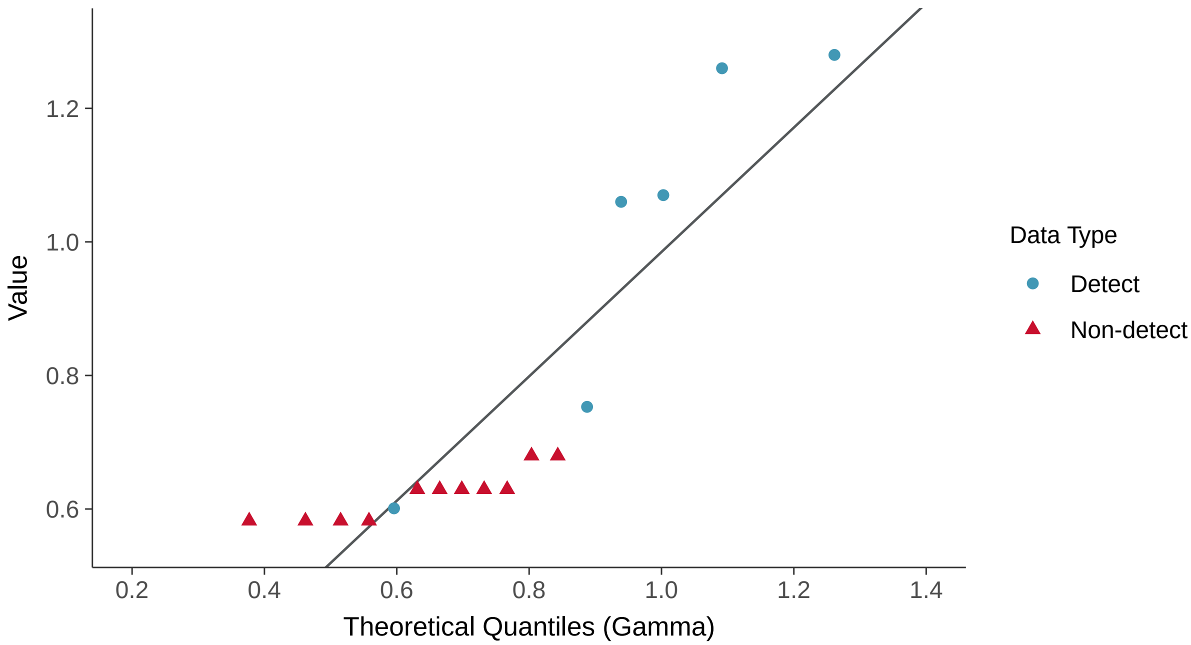



Normal Q-Q plot using ROS Imputed Estimates
Radium 226 and 228, MW-01R (pCi/L)
Value
1.3
1.1
0.9
0.7
0.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Lognormal Q-Q plot using ROS Imputed Estimates
Radium 226 and 228, MW-01R (pCi/L)
log(Value)
0.2
0.0
−0.2
−0.4
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

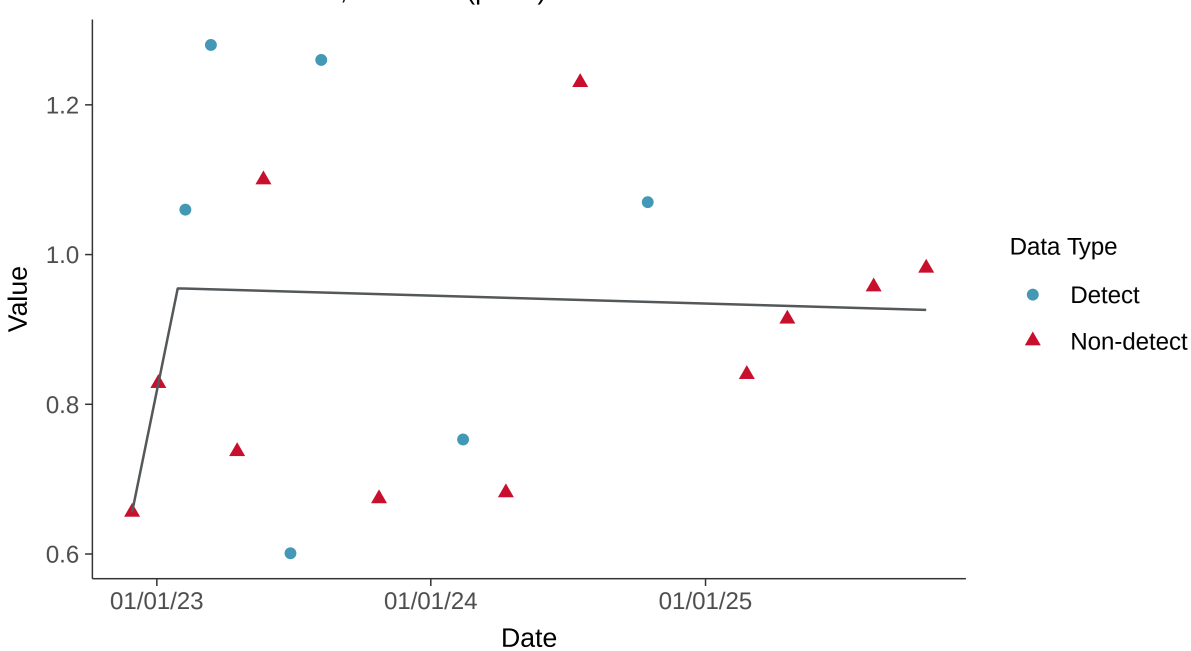
Gamma Q-Q plot using ROS Imputed Estimates

Radium 226 and 228, MW-01R (pCi/L)



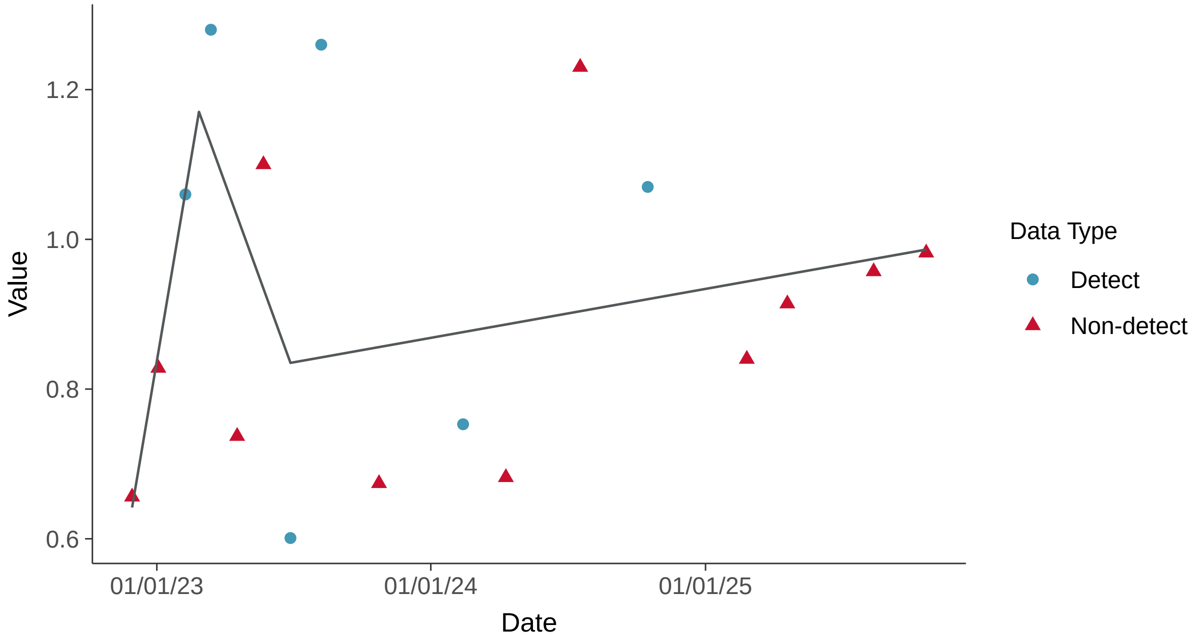
Trend Regression: Piecewise Linear-Linear

Radium 226 and 228, MW-01R (pCi/L)



Trend Regression: Piecewise Linear-Linear-Linear

Radium 226 and 228, MW-01R (pCi/L)

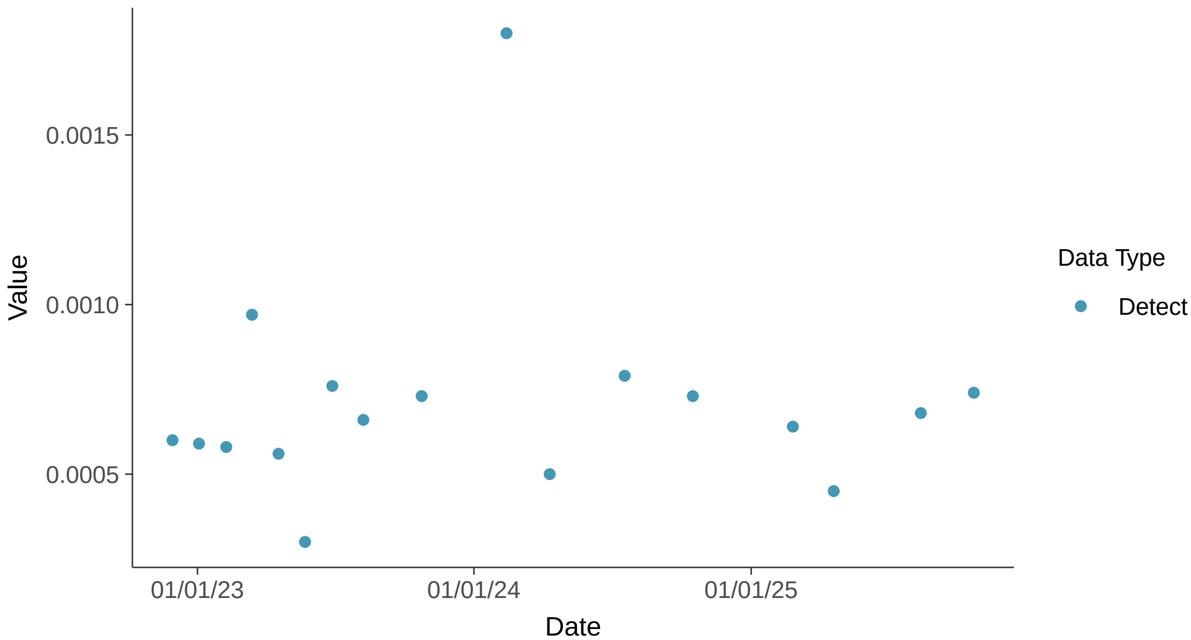


Appendix IV: Selenium, MW-01R

ID: 11_2_4_122

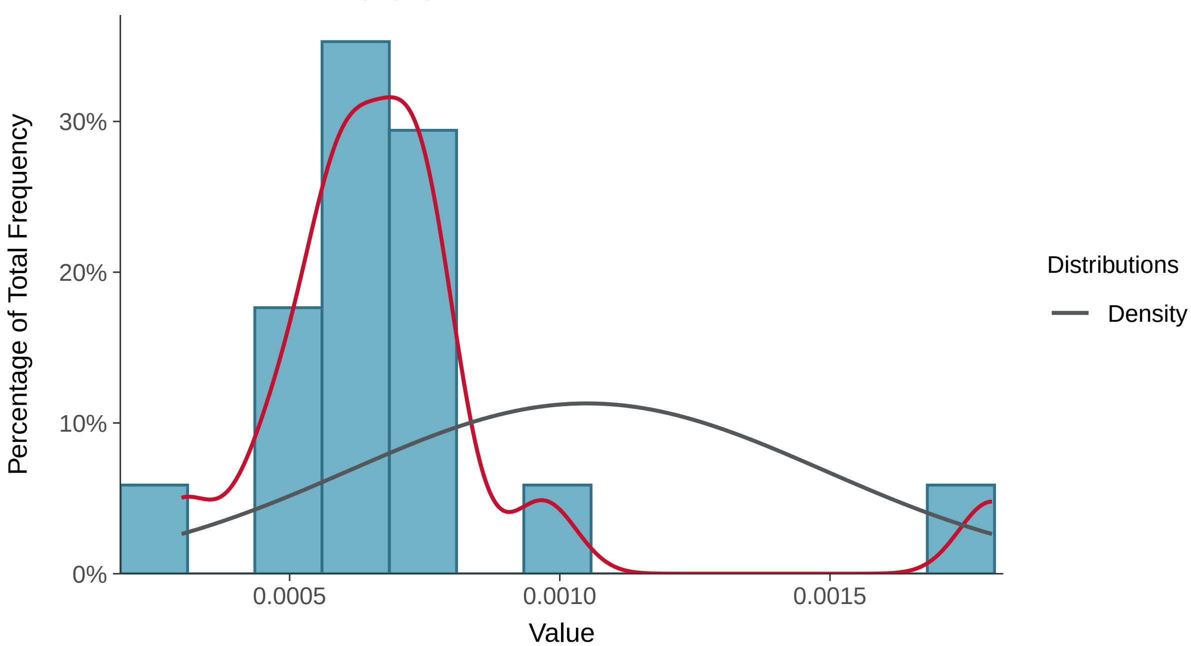
Scatter Plot

Selenium, MW-01R (mg/L)



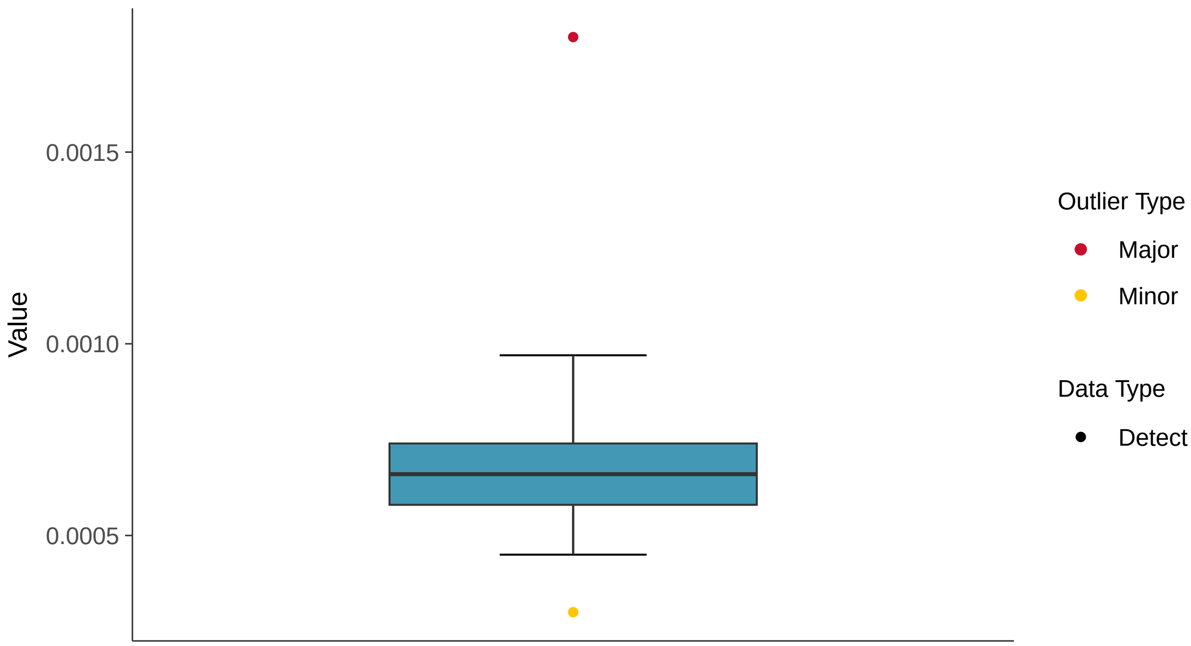
Histogram

Selenium, MW-01R (mg/L)



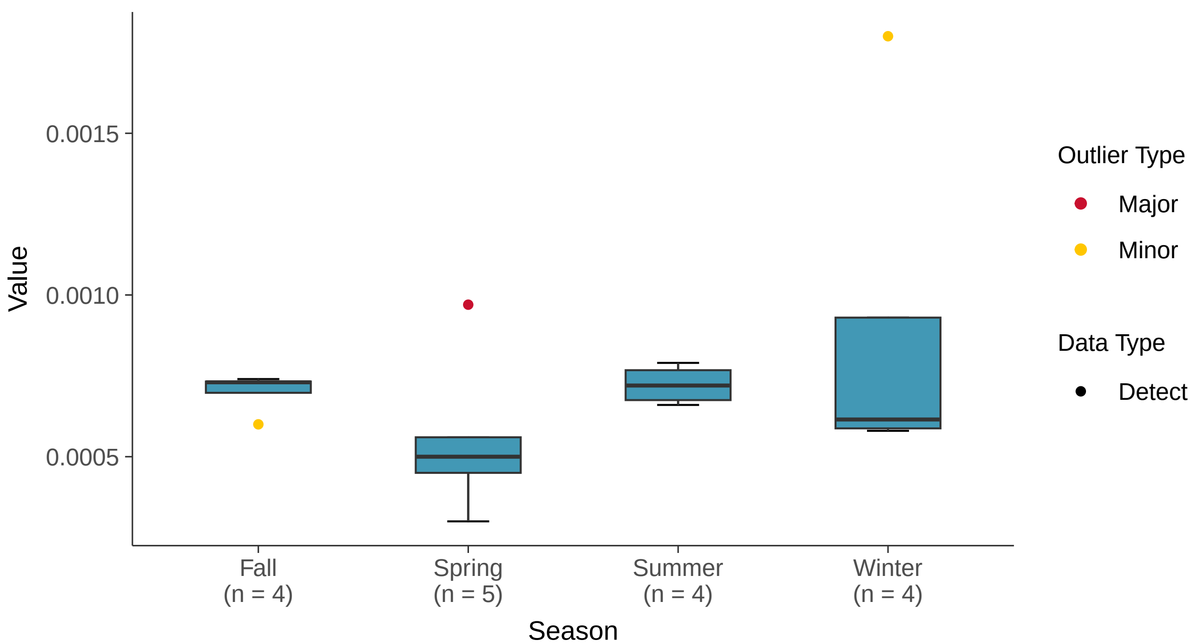
Boxplot

Selenium, MW-01R (mg/L)



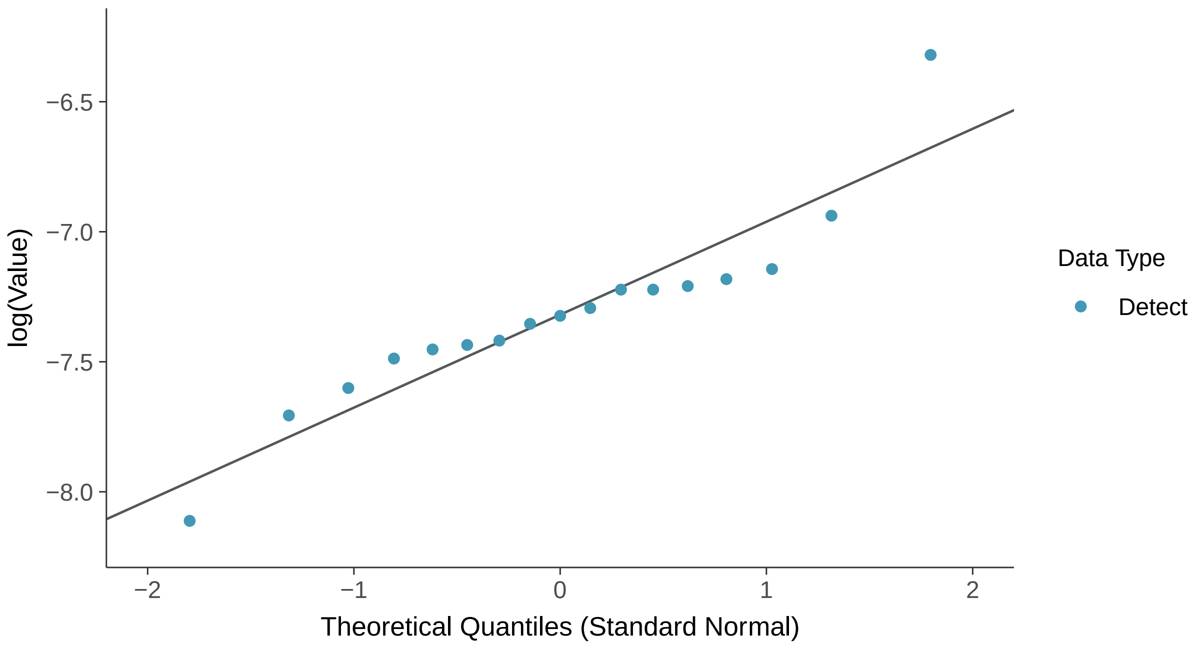
Boxplot by Season

Selenium, MW-01R (mg/L)



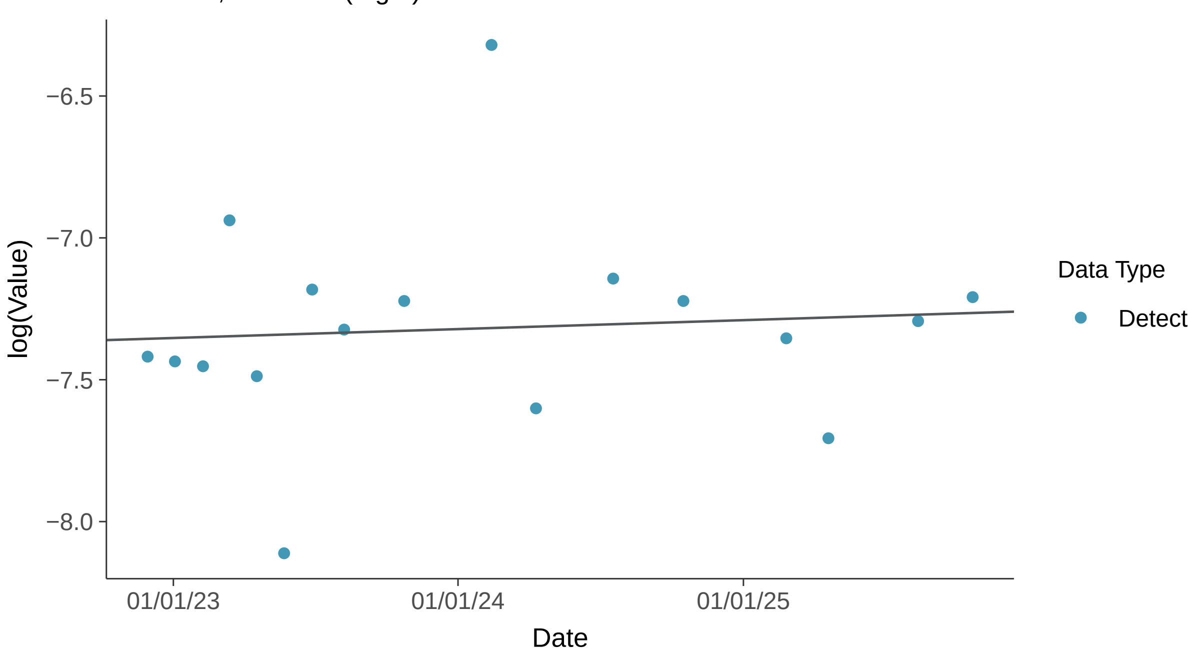
Lognormal Q-Q plot

Selenium, MW-01R (mg/L)



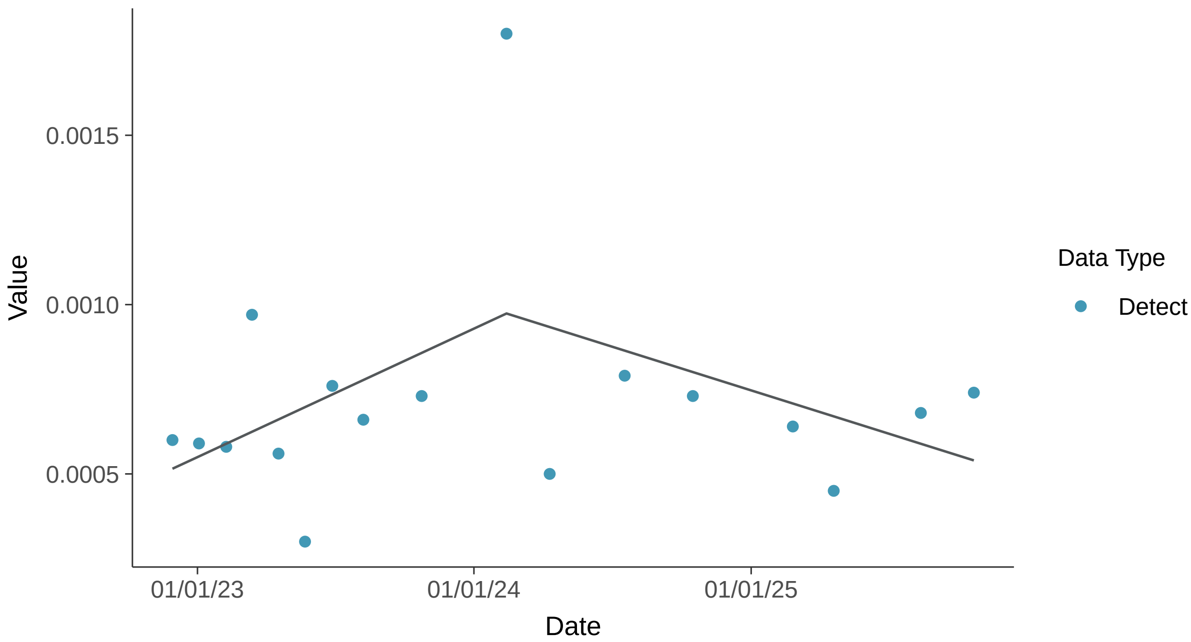
Trend Regression: Lognormal MLE

Selenium, MW-01R (mg/L)



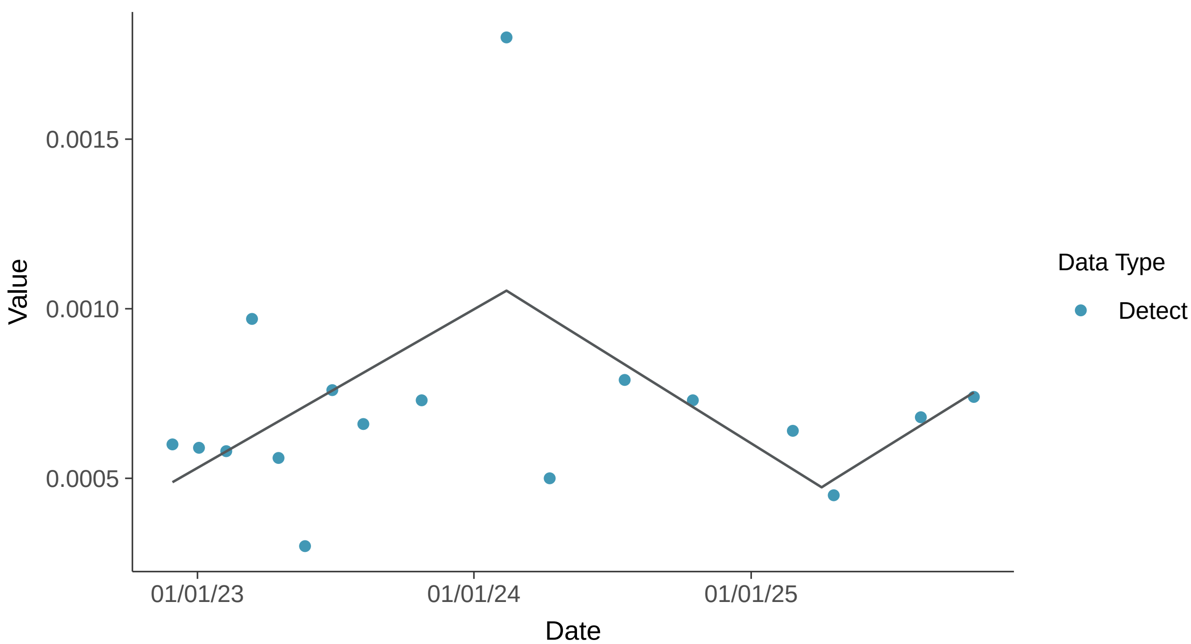
Trend Regression: Piecewise Linear-Linear

Selenium, MW-01R (mg/L)



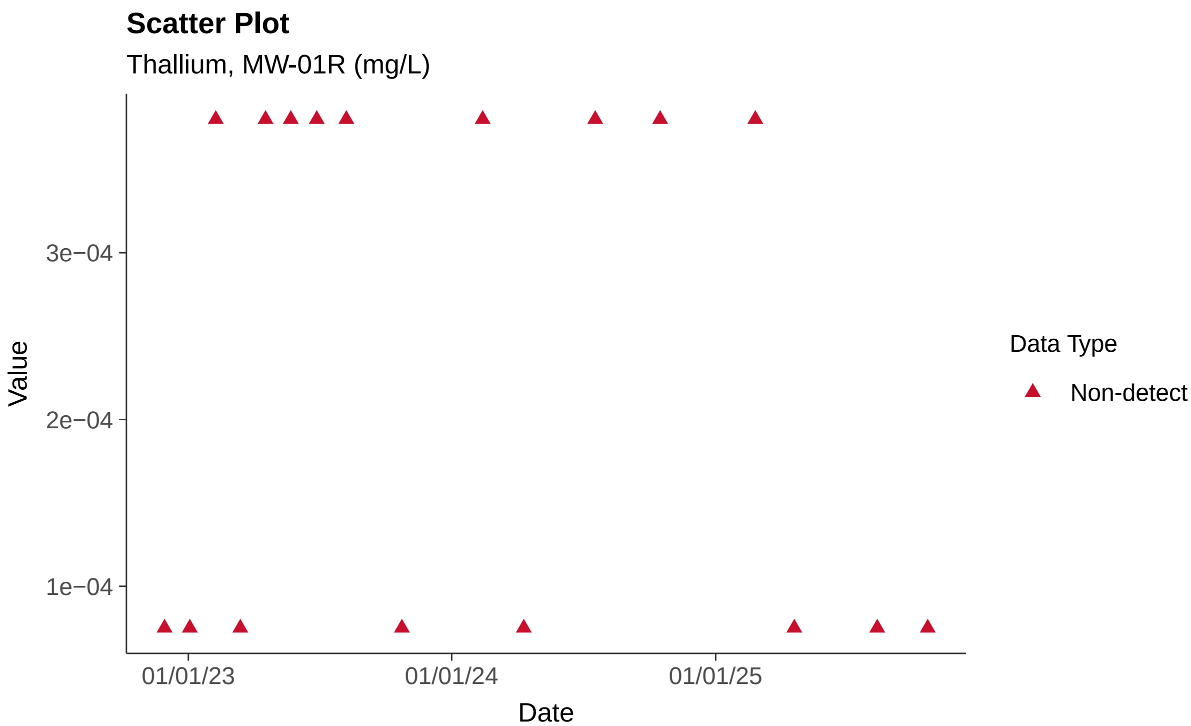
Trend Regression: Piecewise Linear-Linear-Linear

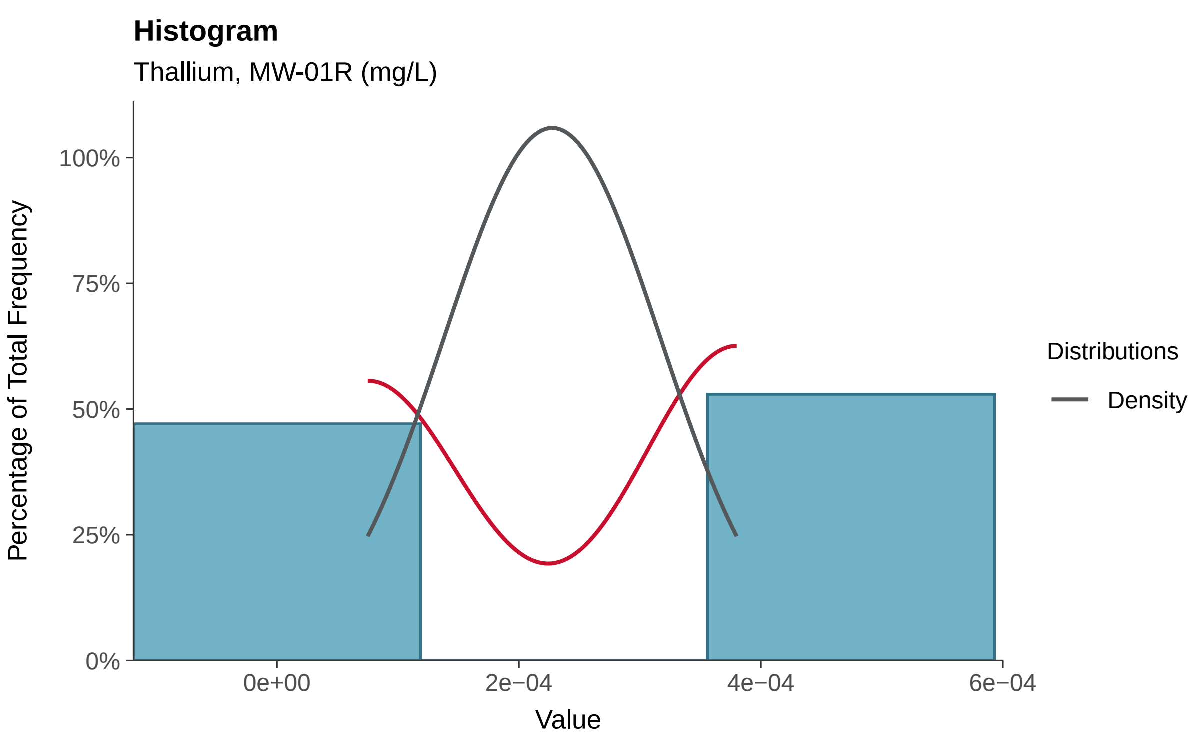
Selenium, MW-01R (mg/L)



Appendix IV: Thallium, MW-01R

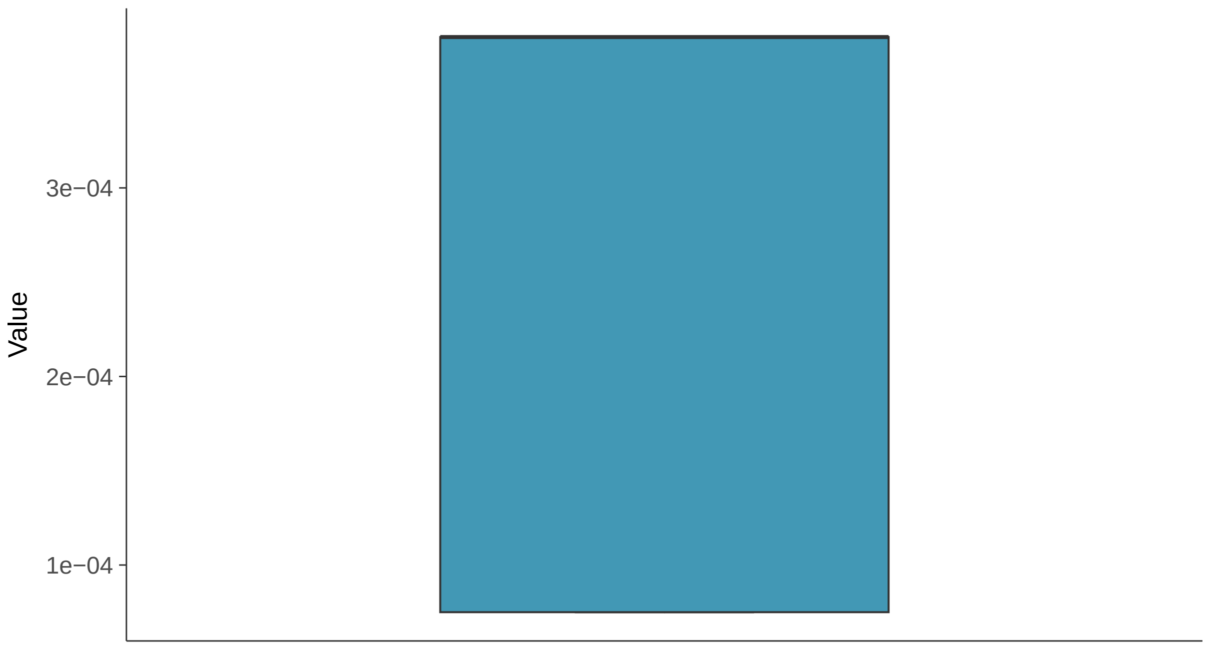
ID: 11_2_4_125





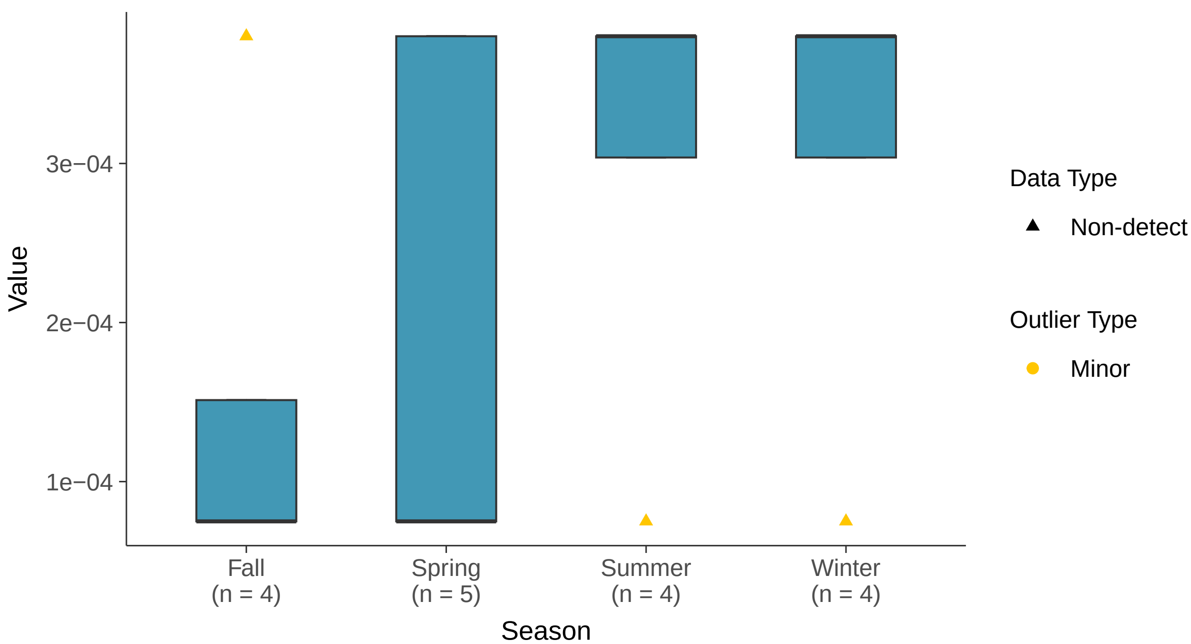
Boxplot

Thallium, MW-01R (mg/L)



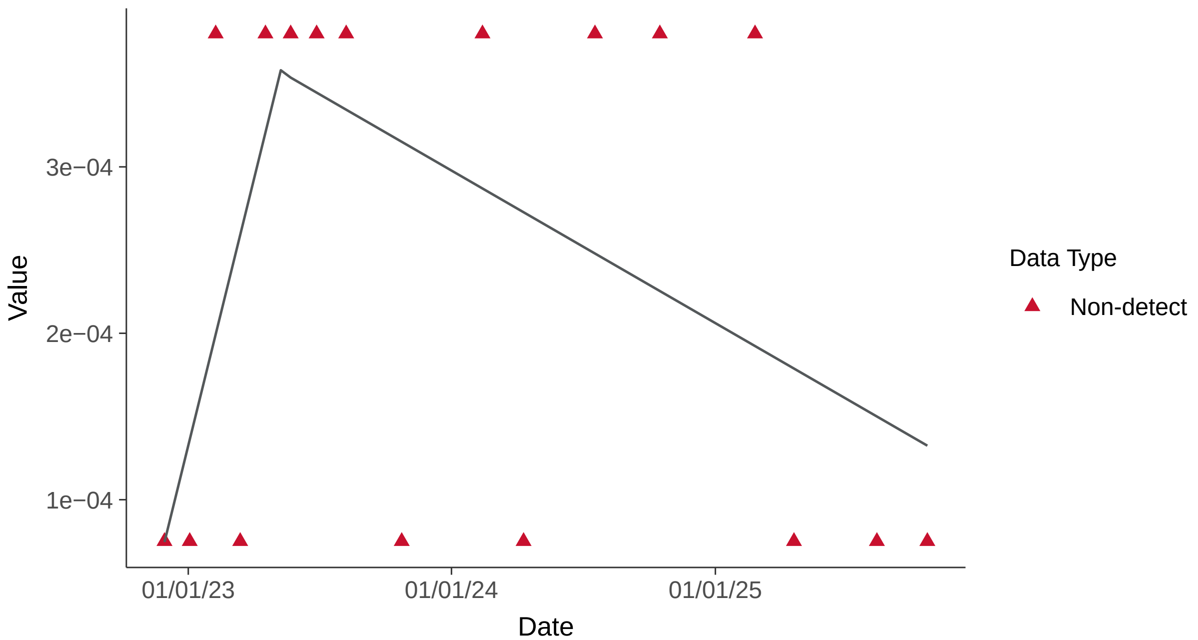
Boxplot by Season

Thallium, MW-01R (mg/L)



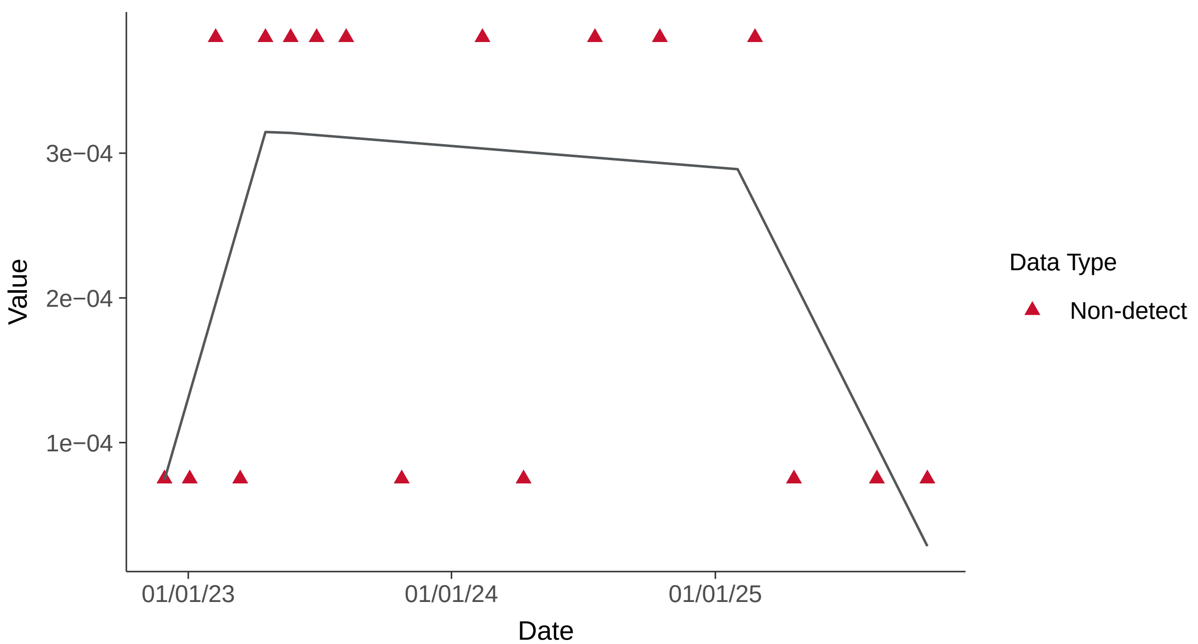
Trend Regression: Piecewise Linear-Linear

Thallium, MW-01R (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Thallium, MW-01R (mg/L)

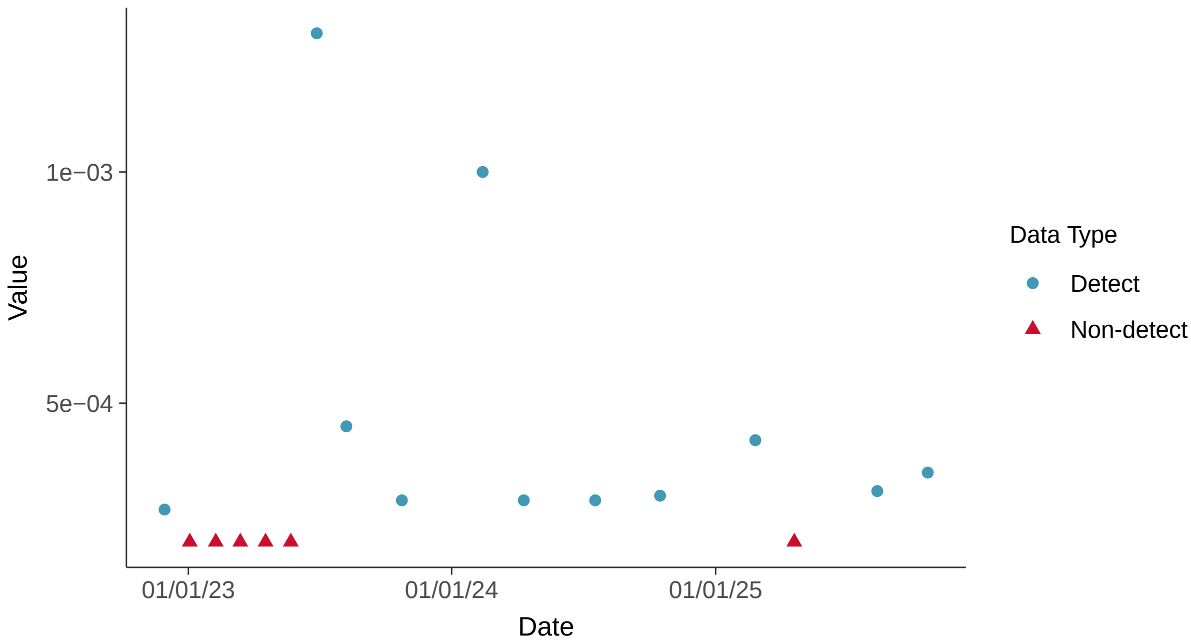


Part 115: Copper, MW-01R

ID: 11_2_5_111

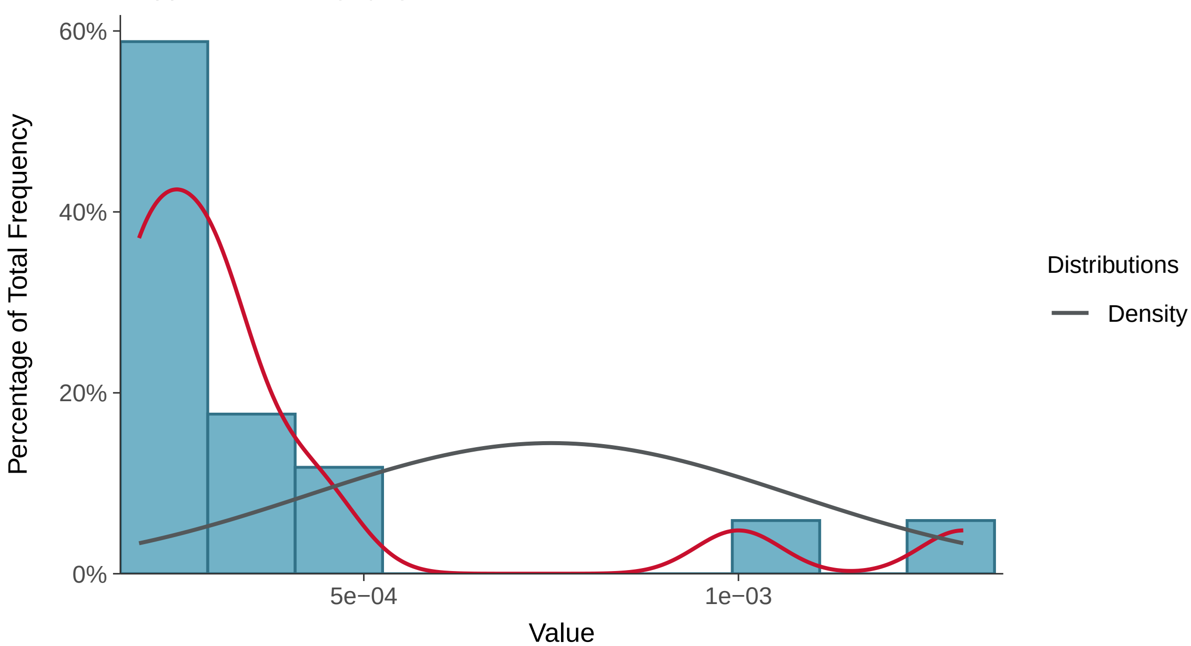
Scatter Plot

Copper, MW-01R (mg/L)



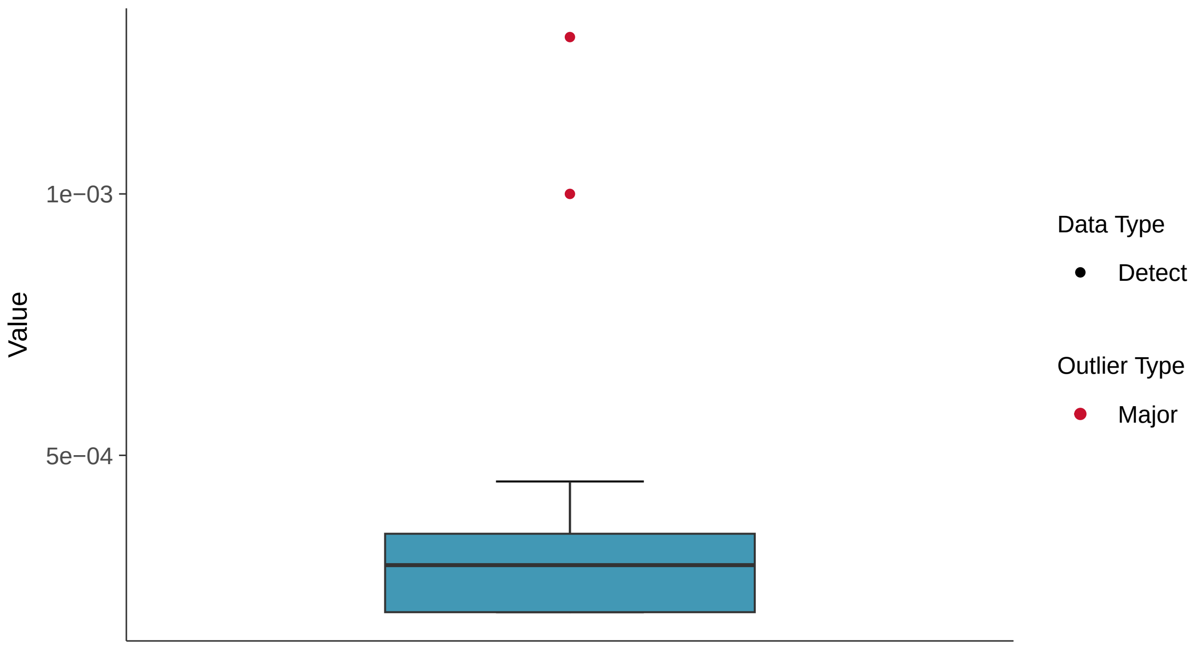
Histogram

Copper, MW-01R (mg/L)



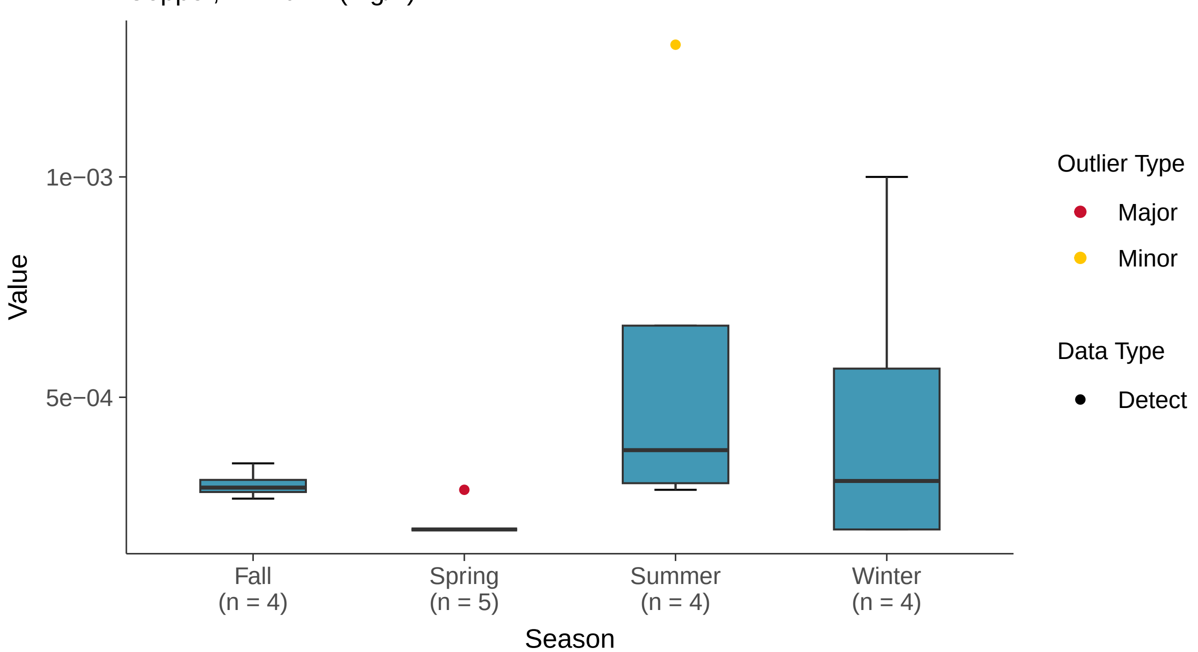
Boxplot

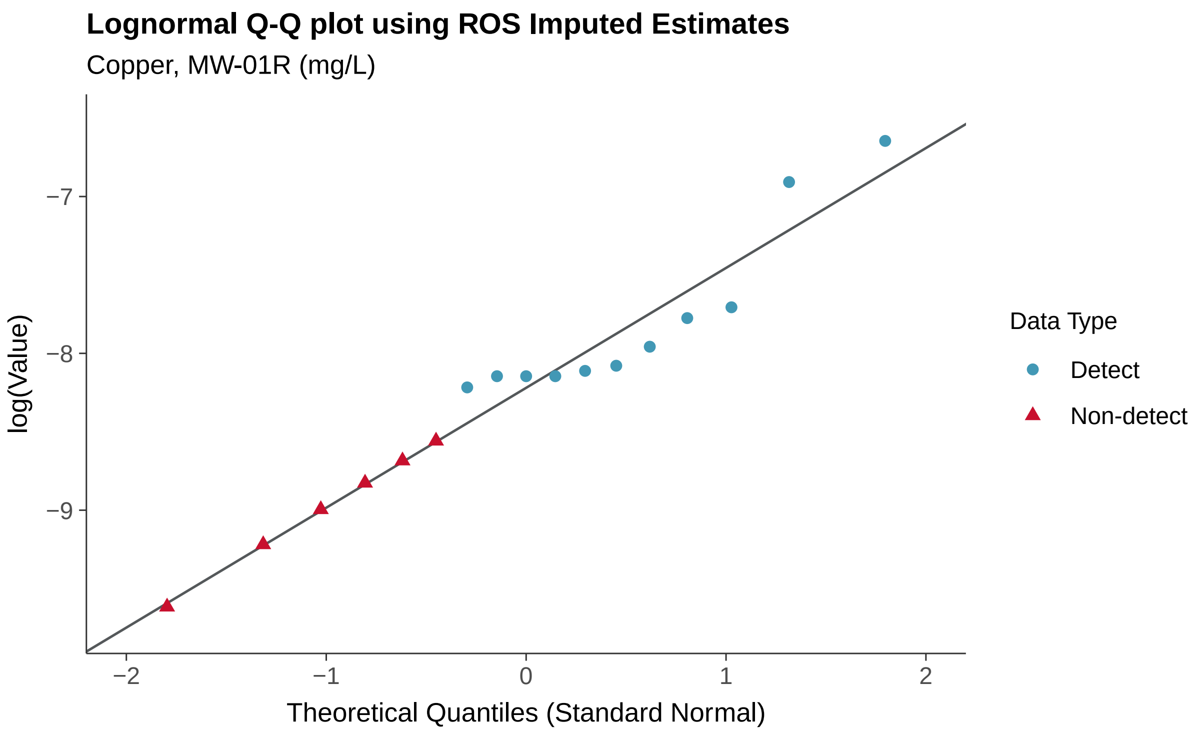
Copper, MW-01R (mg/L)

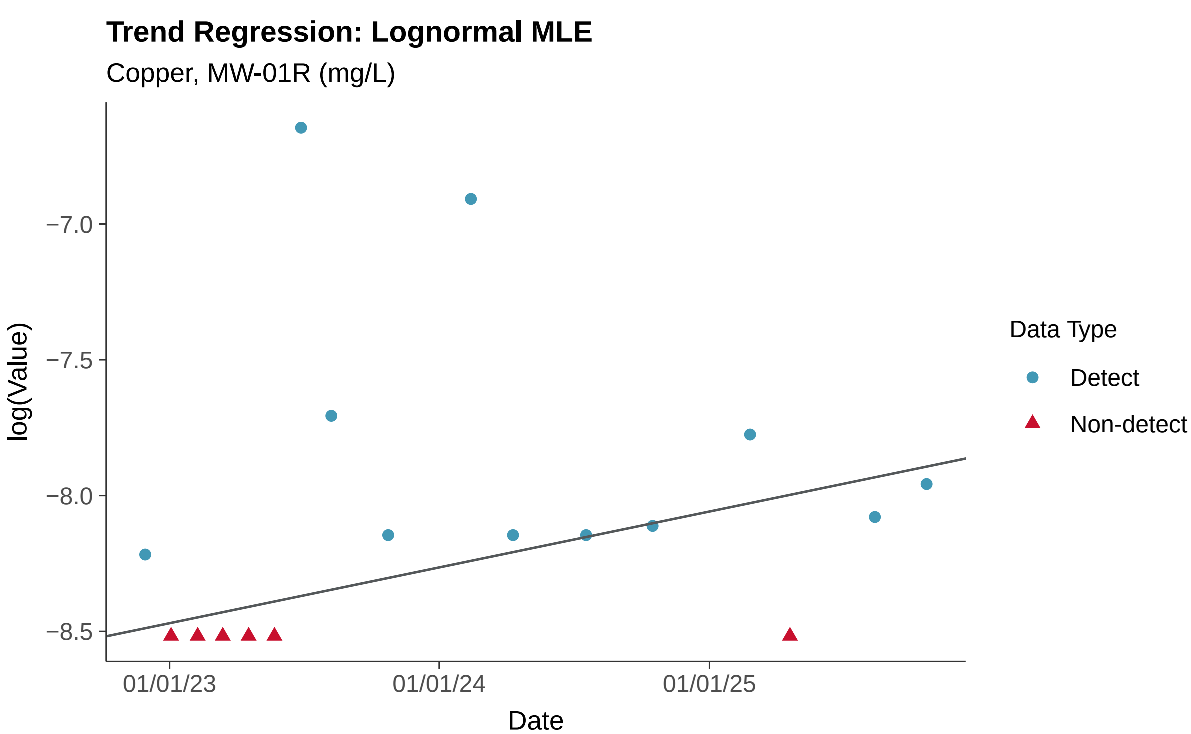


Boxplot by Season

Copper, MW-01R (mg/L)

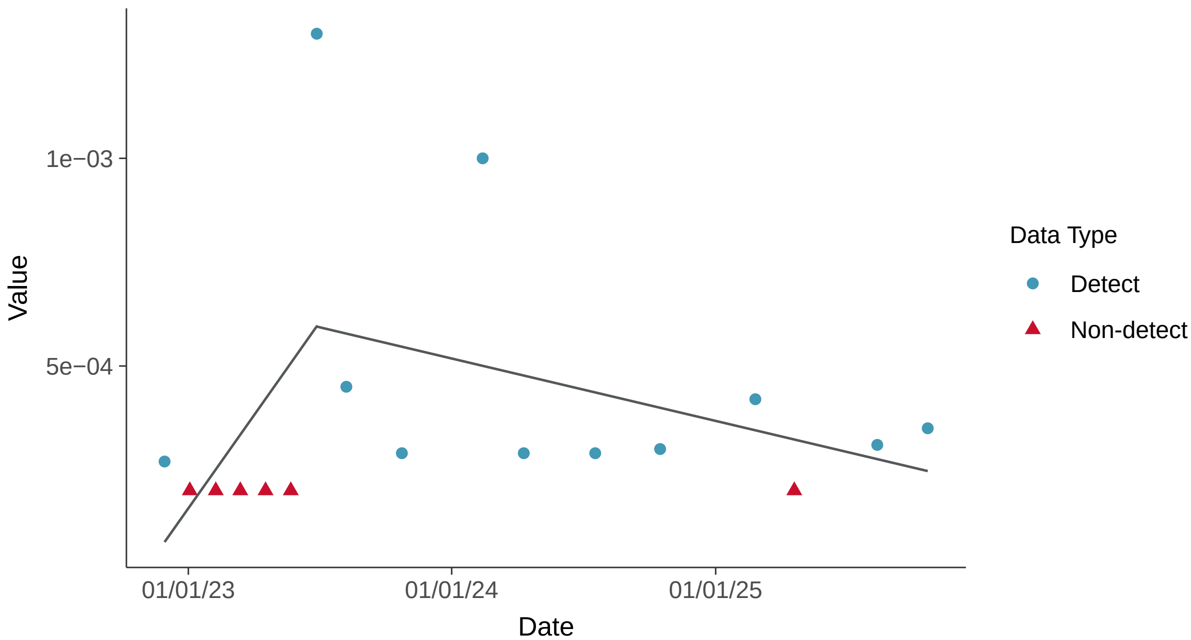



Lognormal Q-Q plot using ROS Imputed Estimates
Copper, MW-01R (mg/L)
log(Value)
−7
−8
−9
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Trend Regression: Lognormal MLE
Copper, MW-01R (mg/L)
log(Value)
−7.0
−7.5
−8.0
−8.5
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

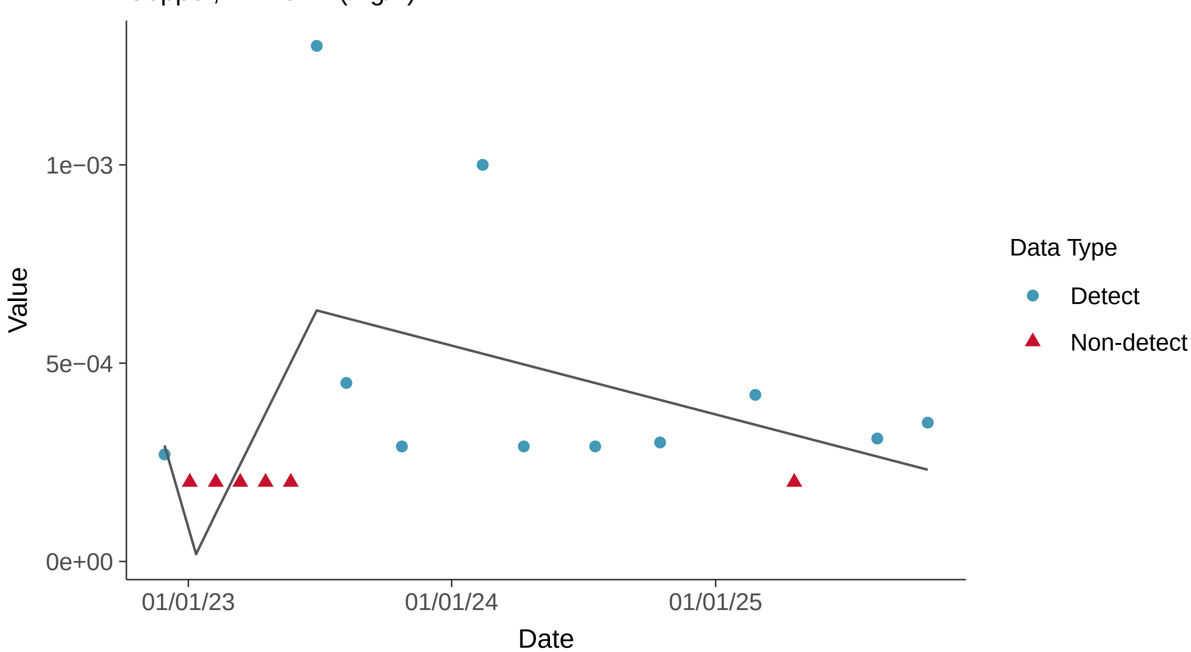
Trend Regression: Piecewise Linear-Linear

Copper, MW-01R (mg/L)



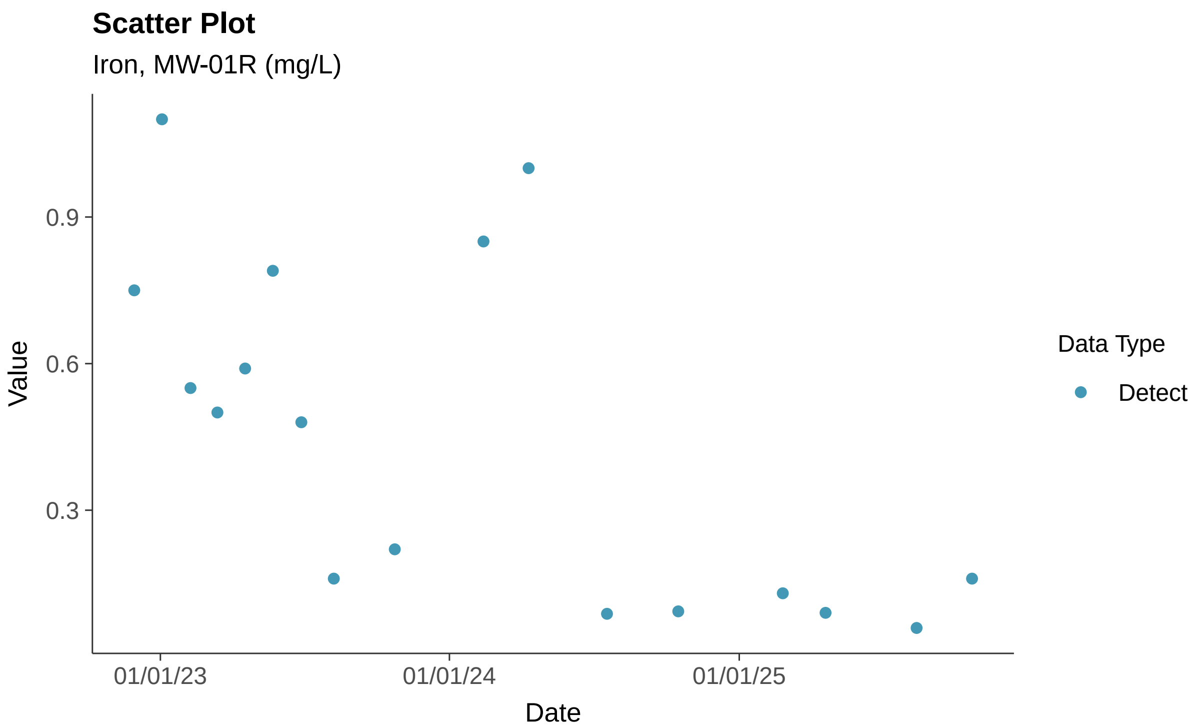
Trend Regression: Piecewise Linear-Linear-Linear

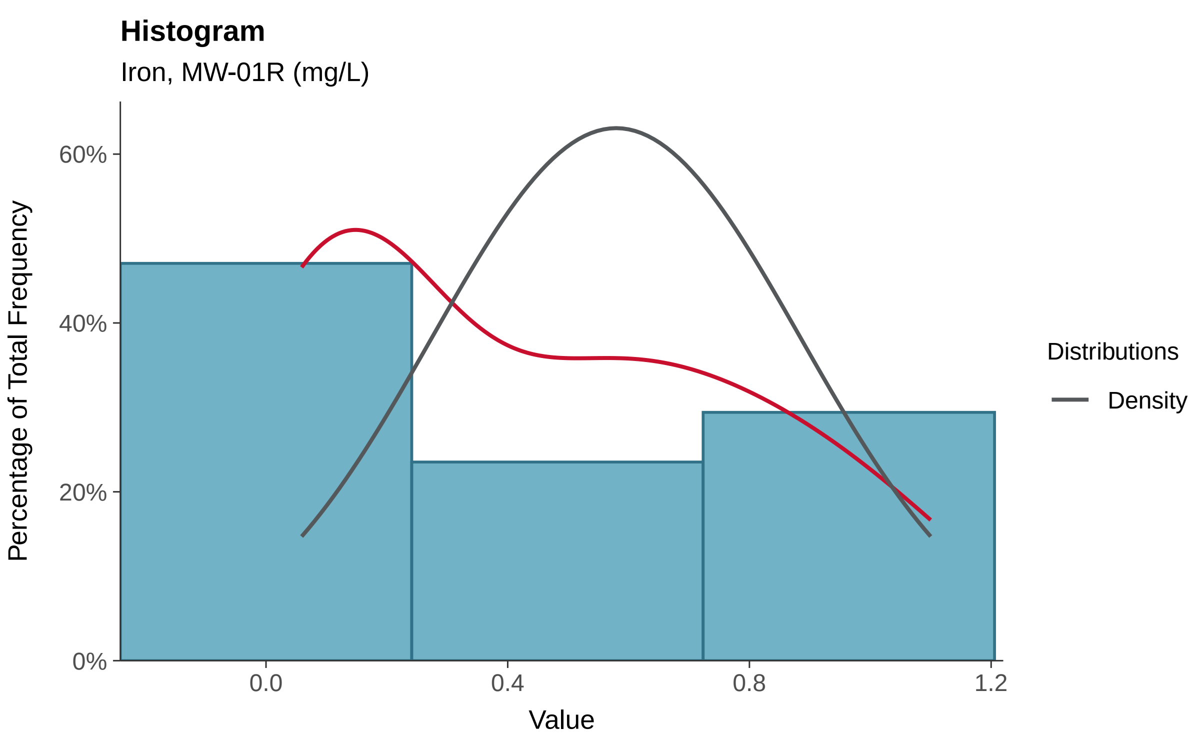
Copper, MW-01R (mg/L)



Part 115: Iron, MW-01R

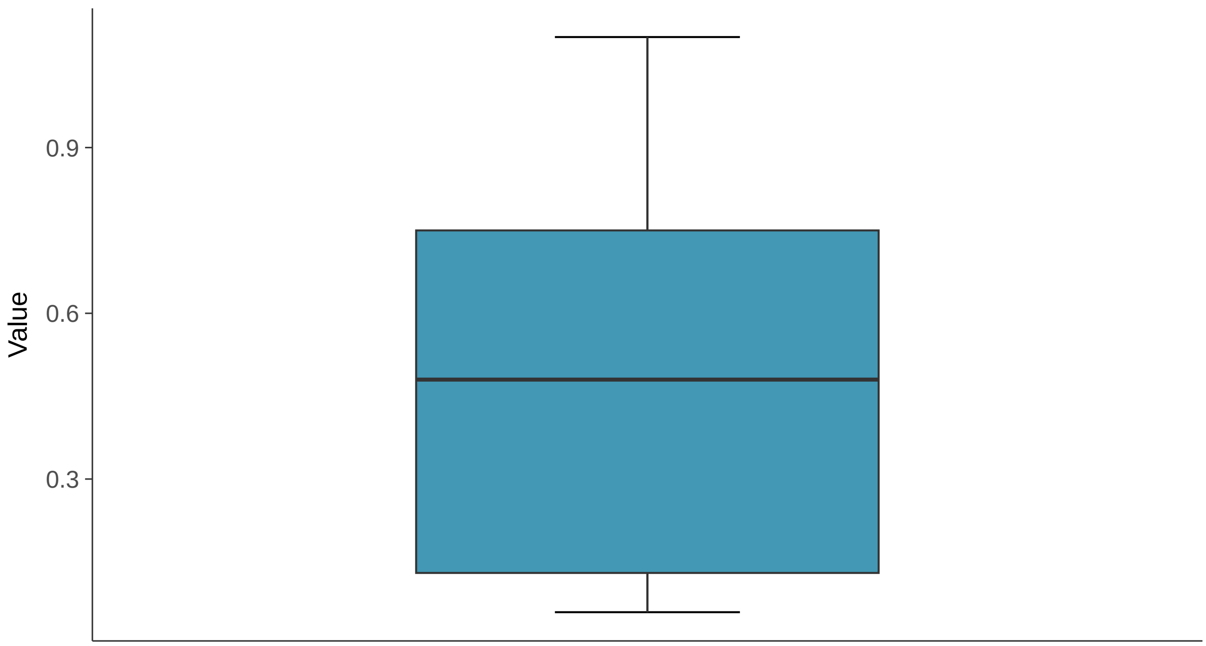
ID: 11_2_5_114





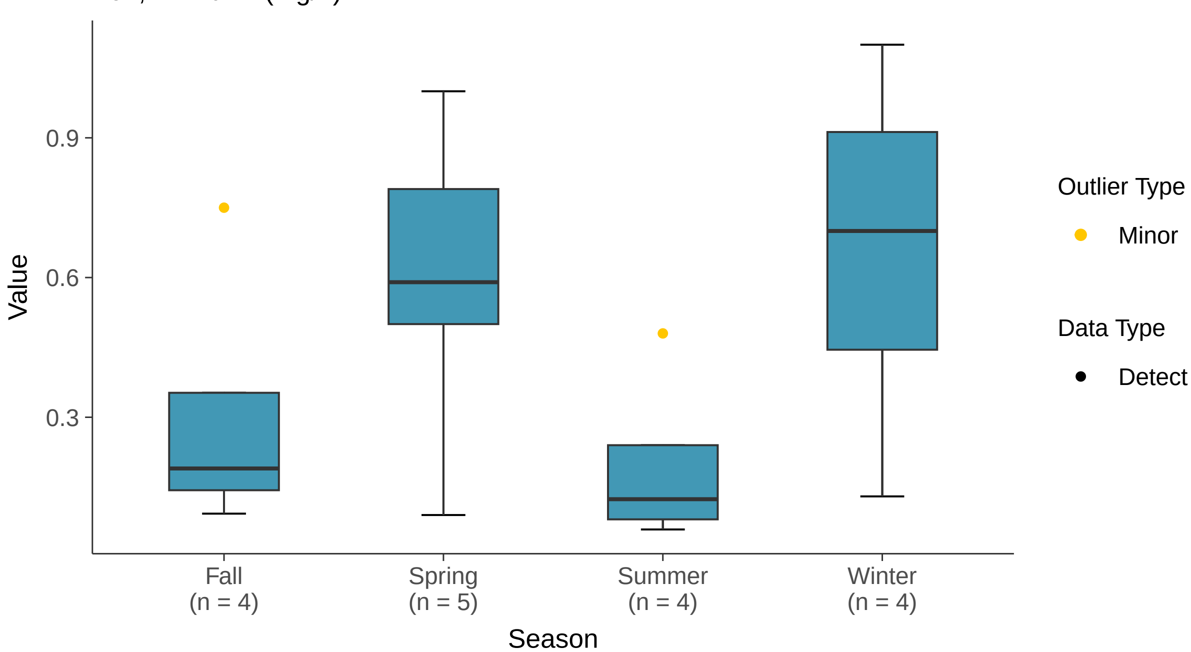
Boxplot

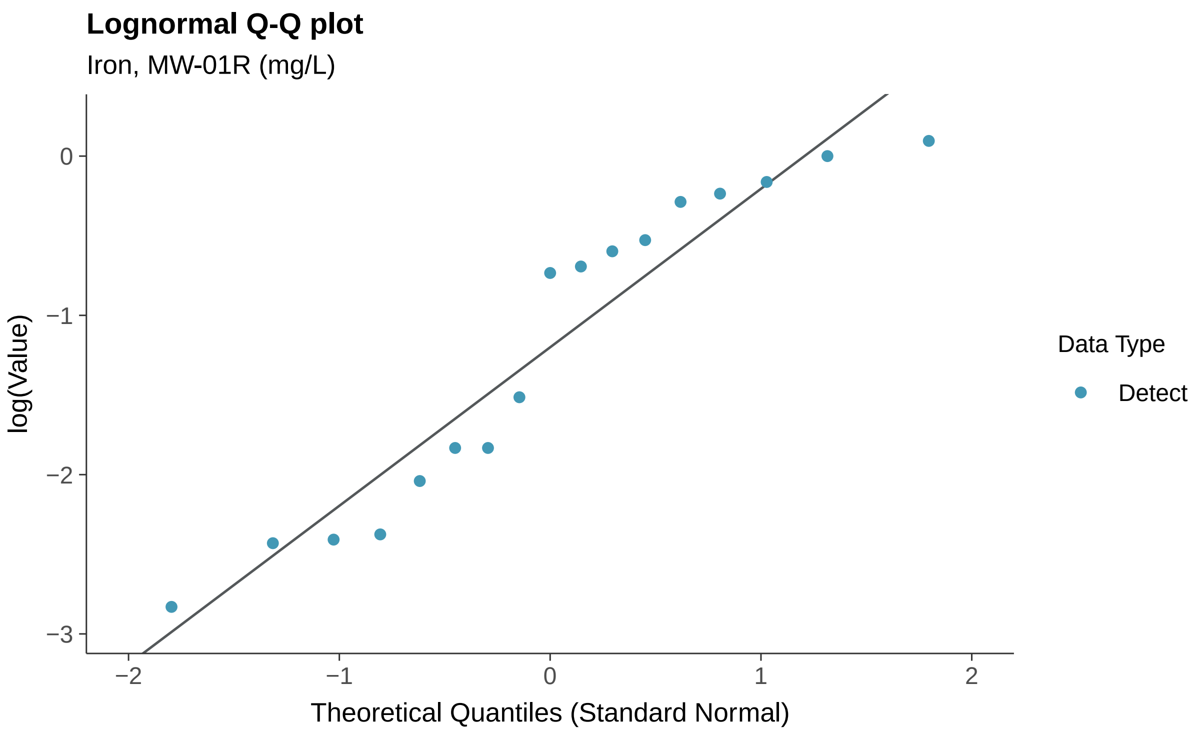
Iron, MW-01R (mg/L)

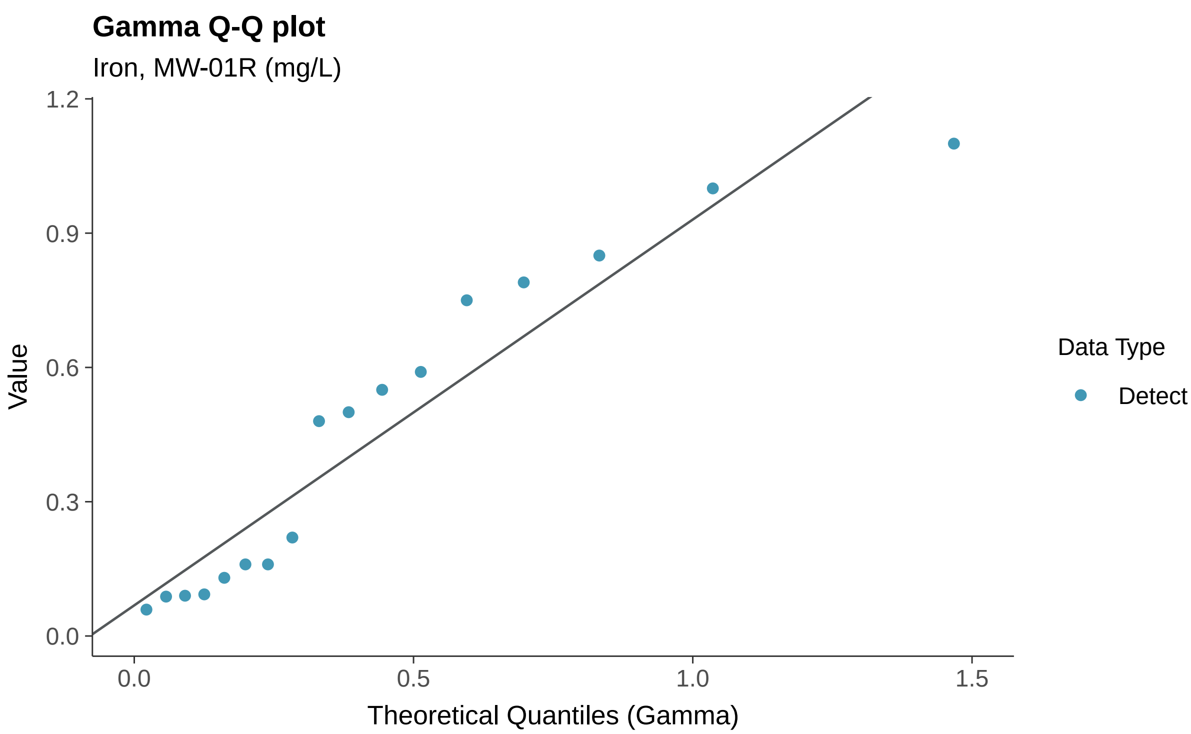


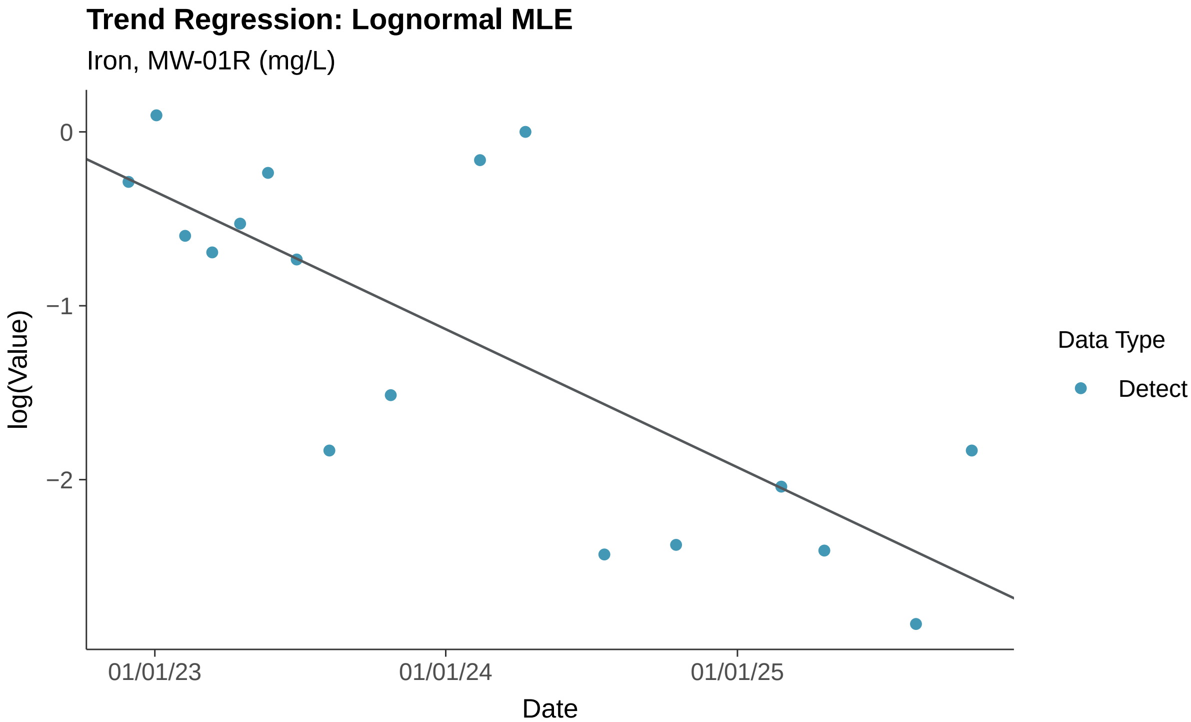
Boxplot by Season

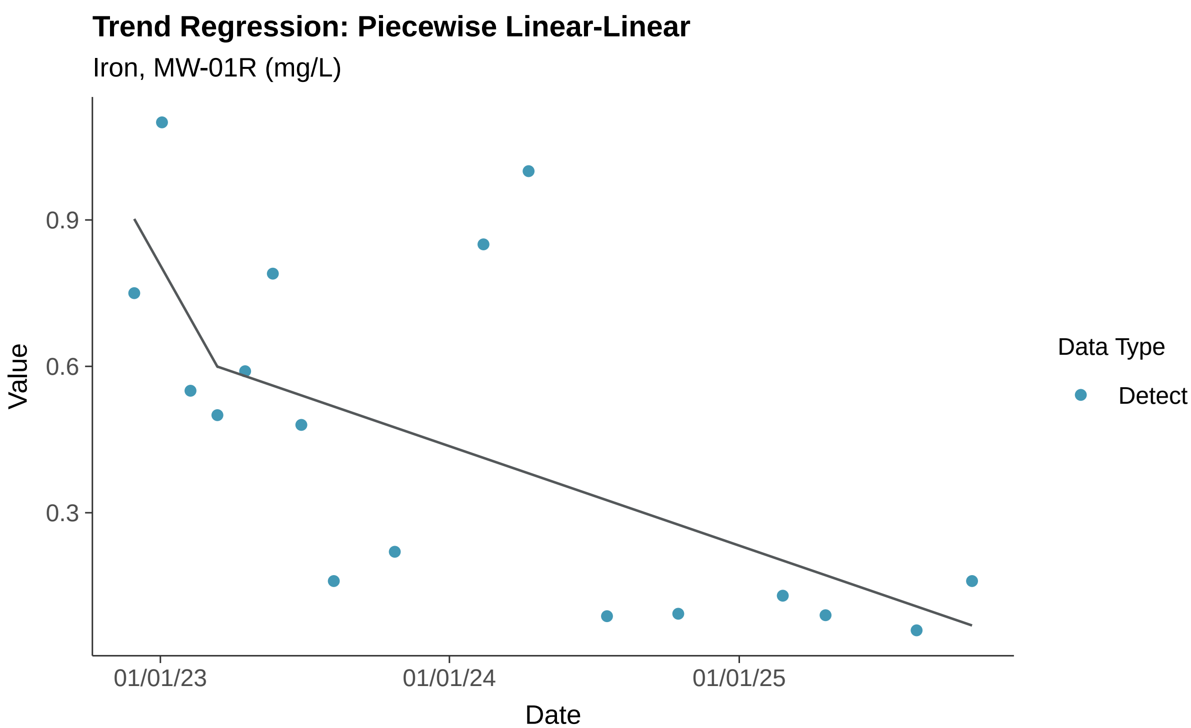
Iron, MW-01R (mg/L)




Lognormal Q-Q plot
Iron, MW-01R (mg/L)
log(Value)
0
−1
−2
−3
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

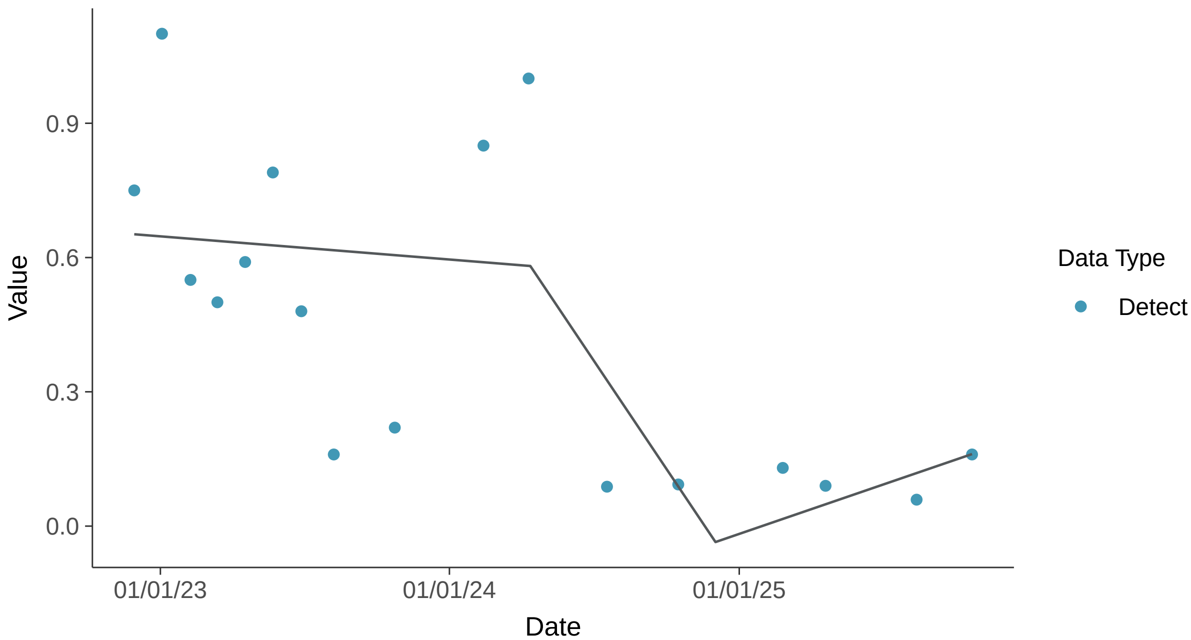

Gamma Q-Q plot
Iron, MW-01R (mg/L)
Value
1.2
0.9
0.6
0.3
0.0
0.0
0.5
1.0
1.5
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Iron, MW-01R (mg/L)
0
−1
−2
log(Value)
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear
Iron, MW-01R (mg/L)
0.9
0.6
0.3
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear-Linear

Iron, MW-01R (mg/L)

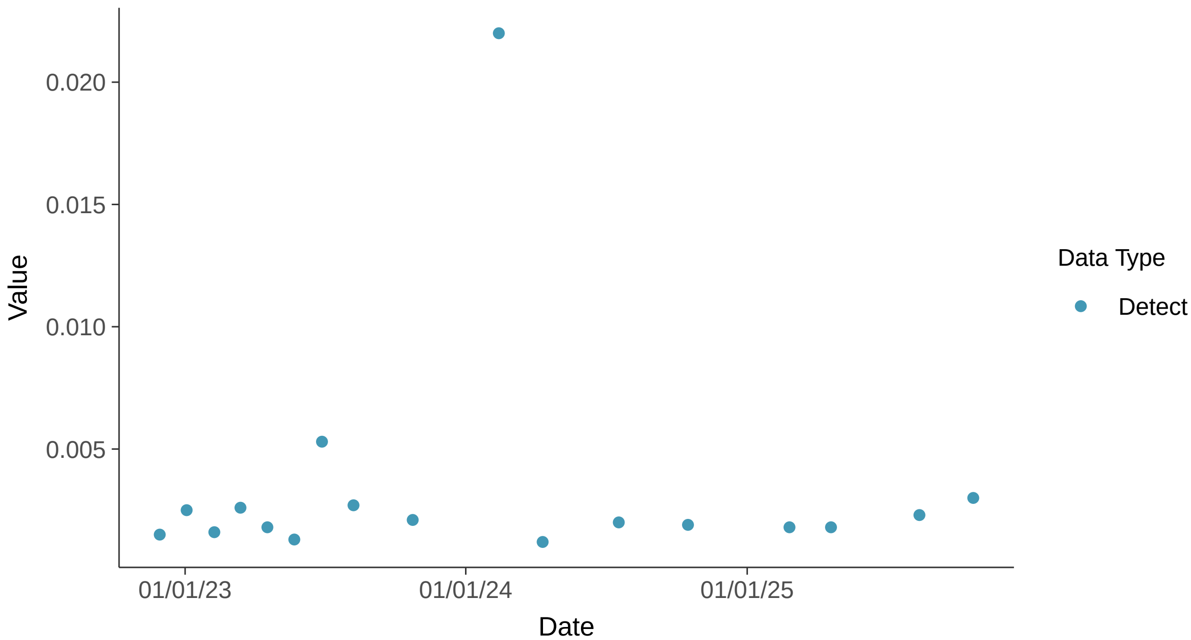


Part 115: Nickel, MW-01R

ID: 11_2_5_119

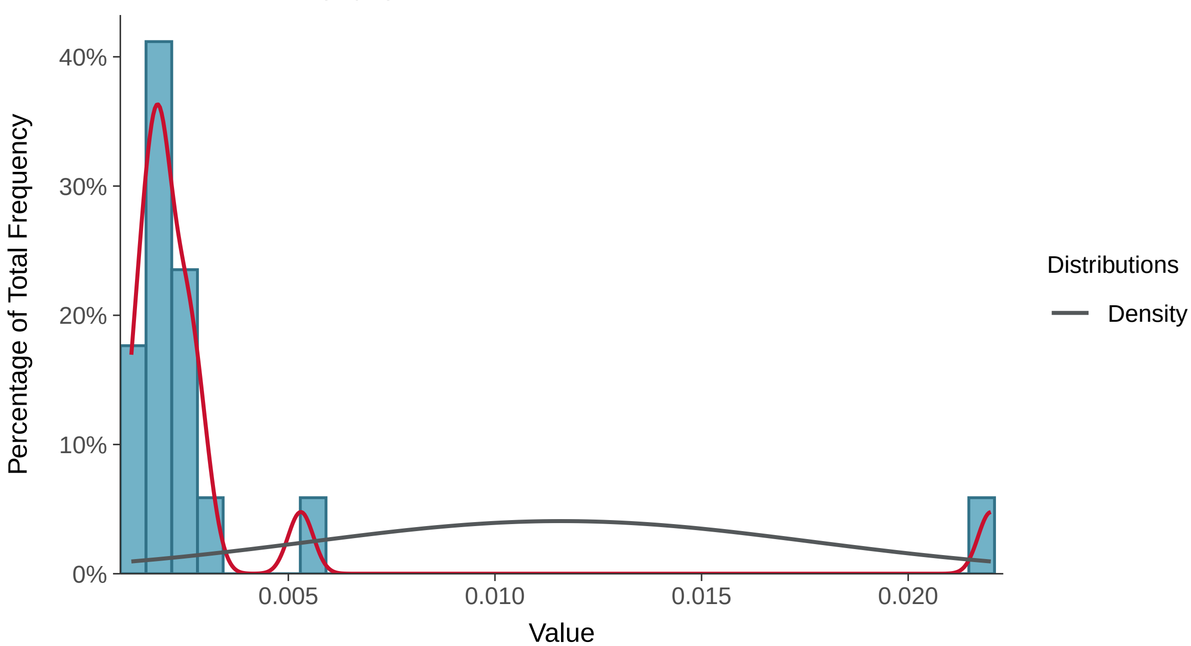
Scatter Plot

Nickel, MW-01R (mg/L)



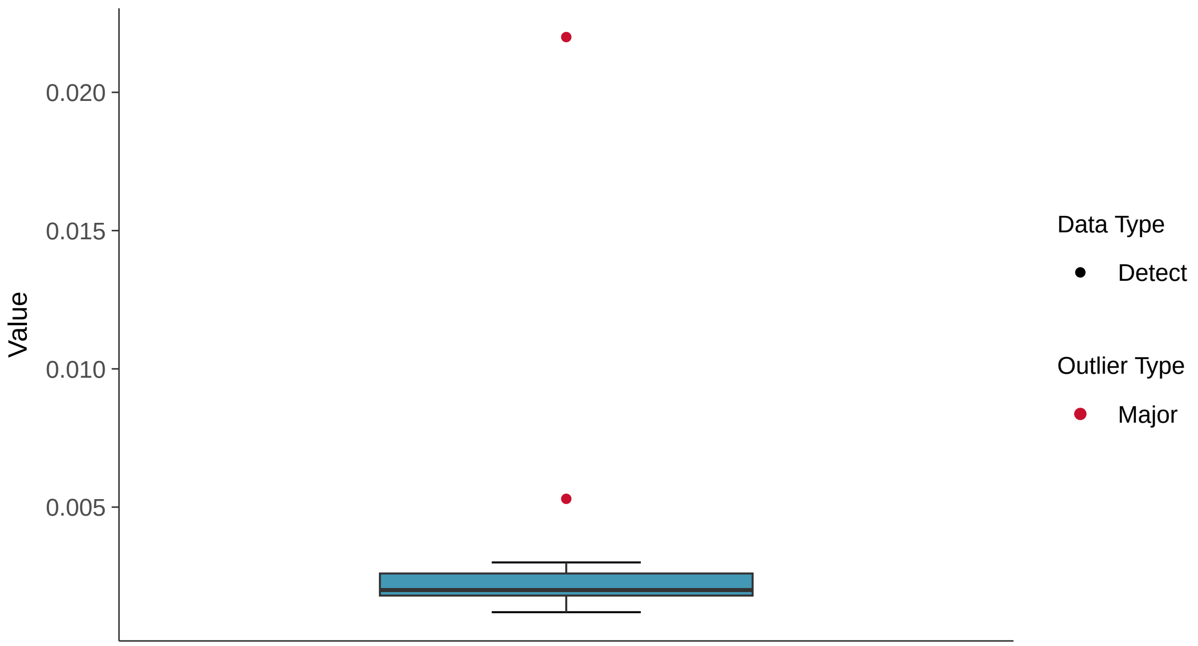
Histogram

Nickel, MW-01R (mg/L)



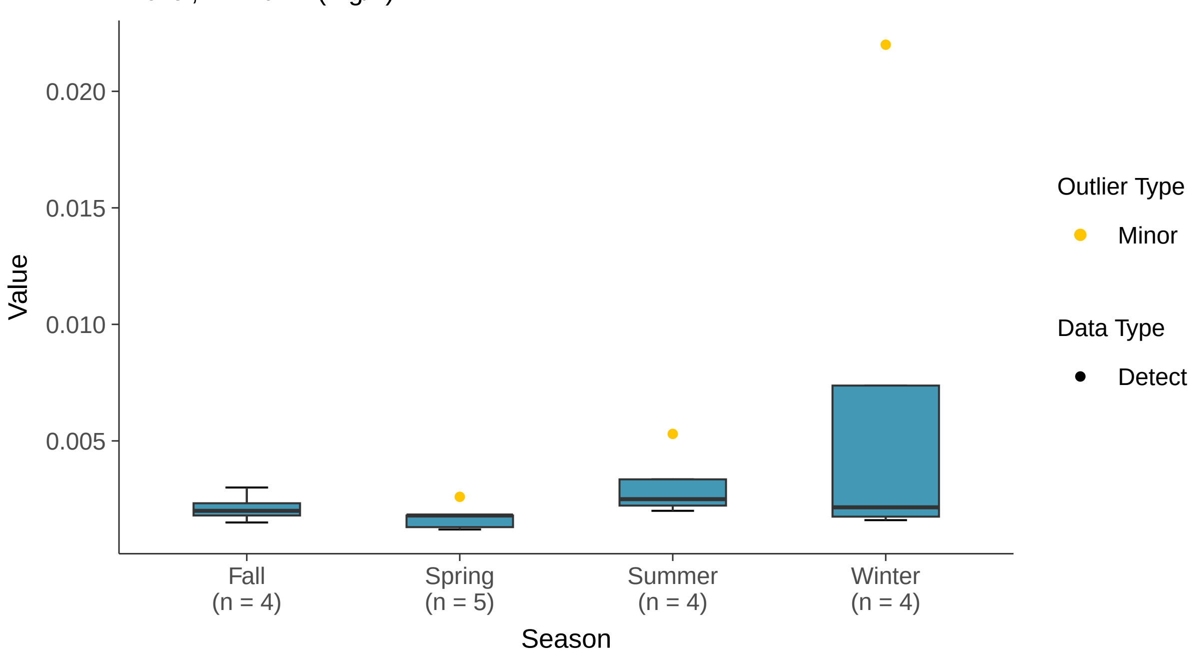
Boxplot

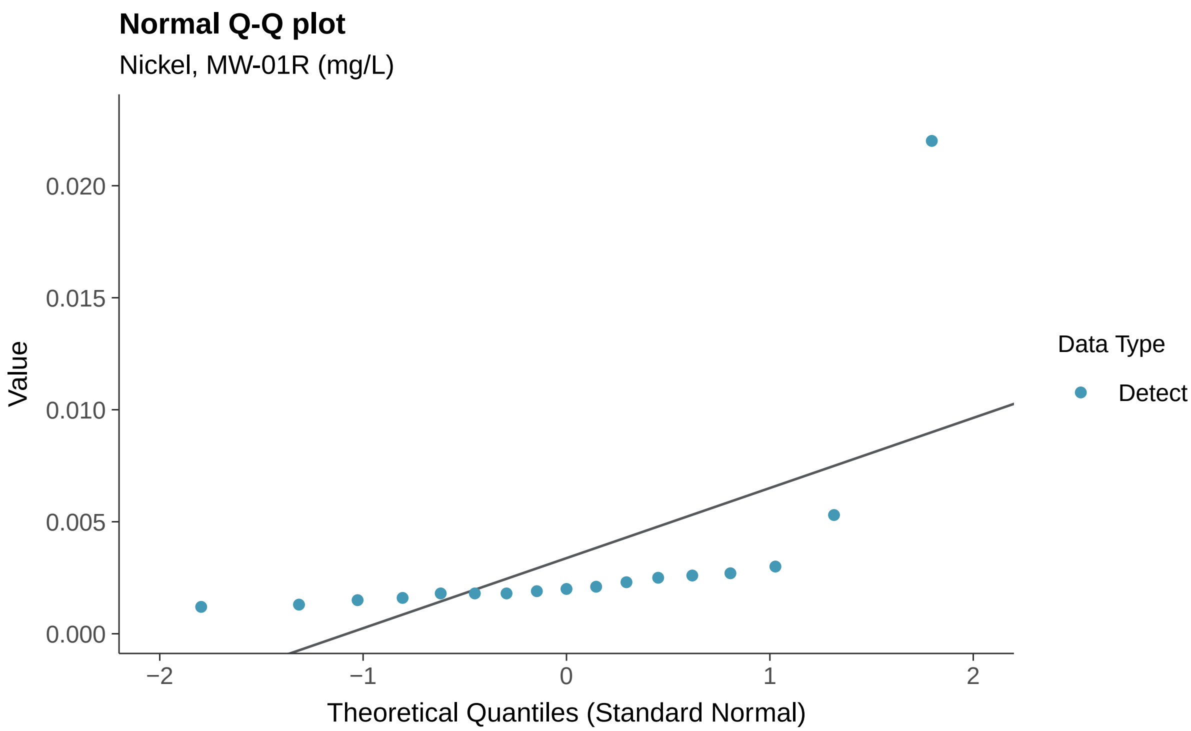
Nickel, MW-01R (mg/L)

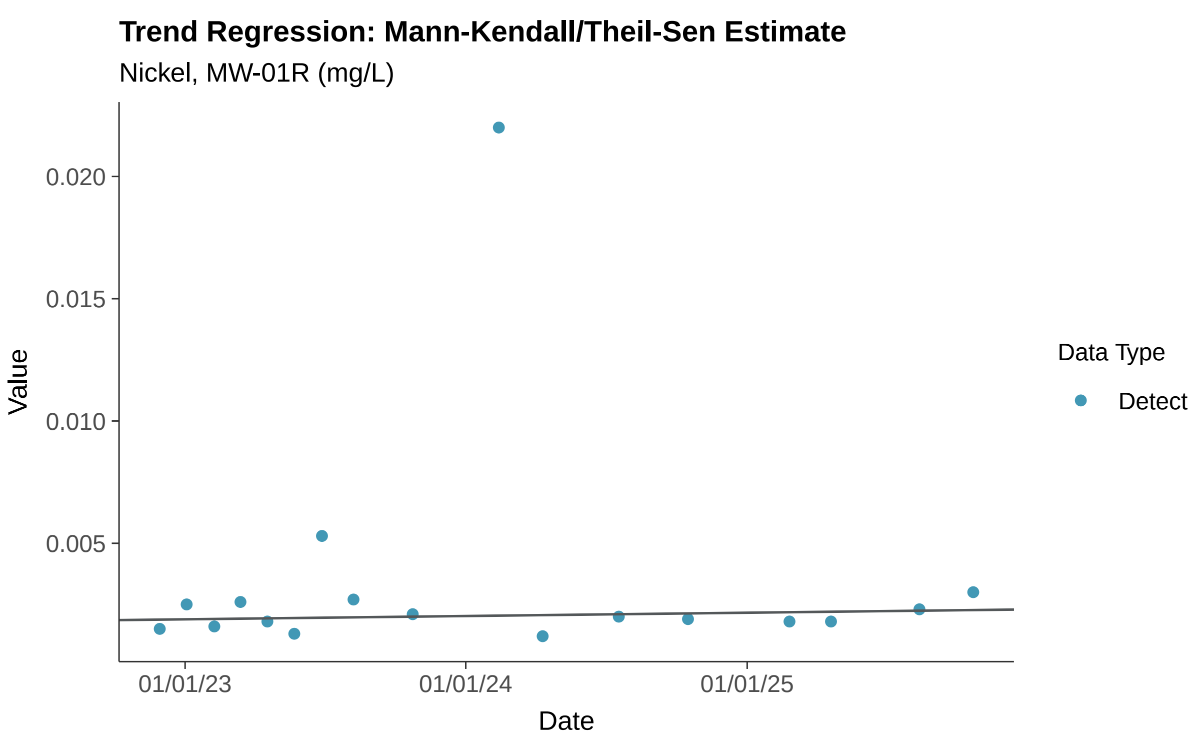


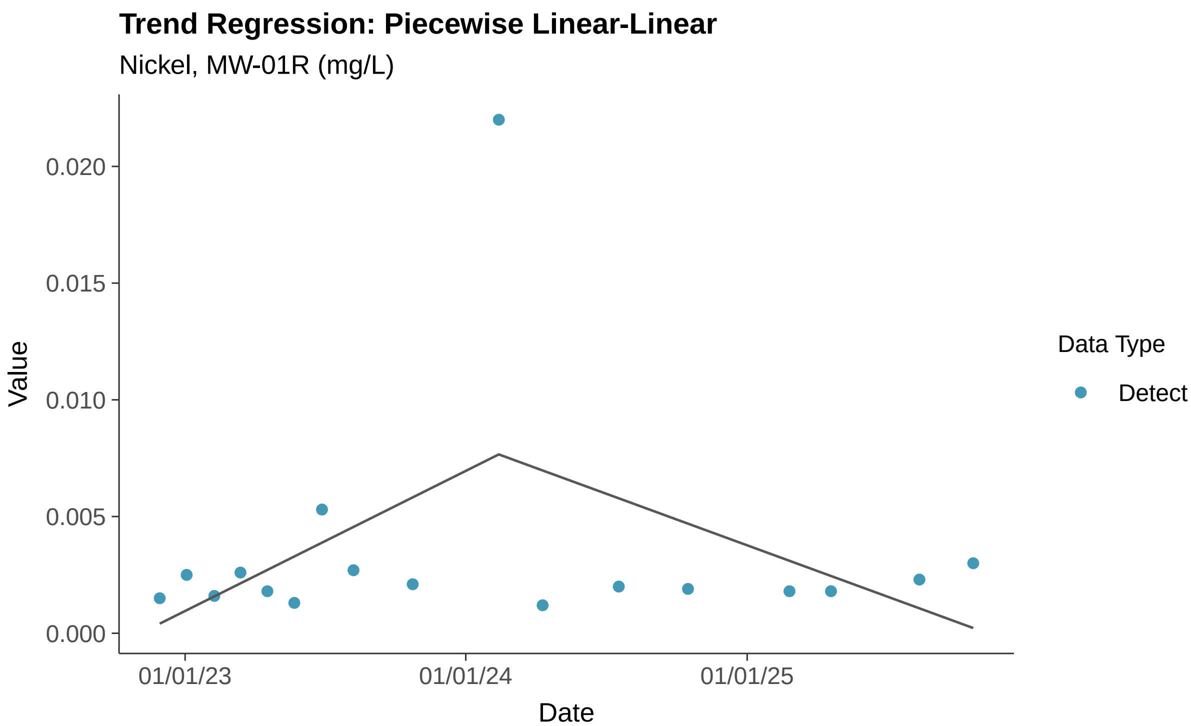
Boxplot by Season

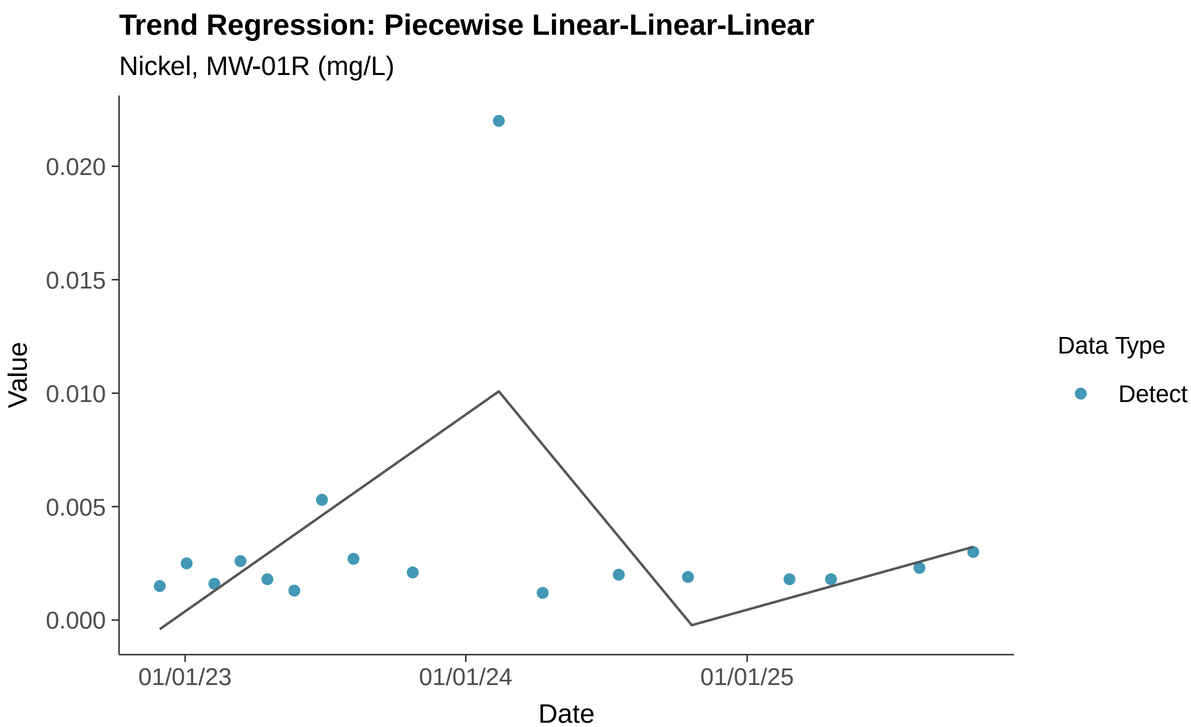
Nickel, MW-01R (mg/L)




Normal Q-Q plot
Nickel, MW-01R (mg/L)
Value
0.020
0.015
0.010
0.005
0.000
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

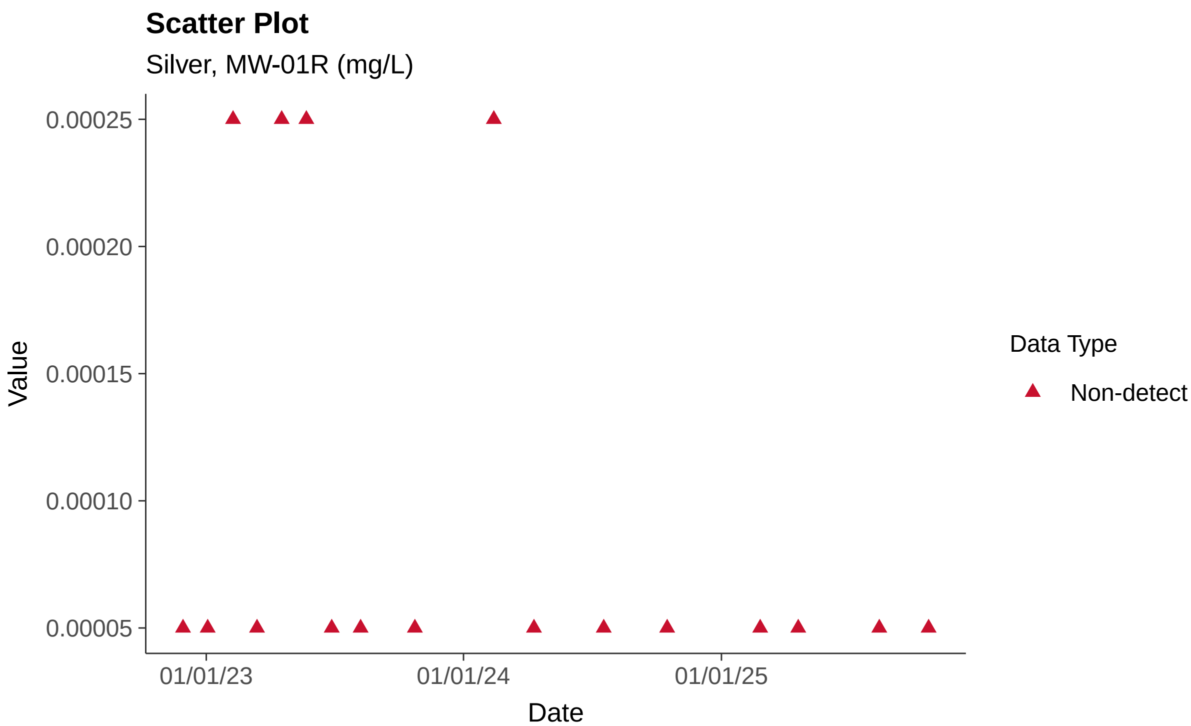

Trend Regression: Mann-Kendall/Theil-Sen Estimate
Nickel, MW-01R (mg/L)
Value
0.020
0.015
0.010
0.005
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

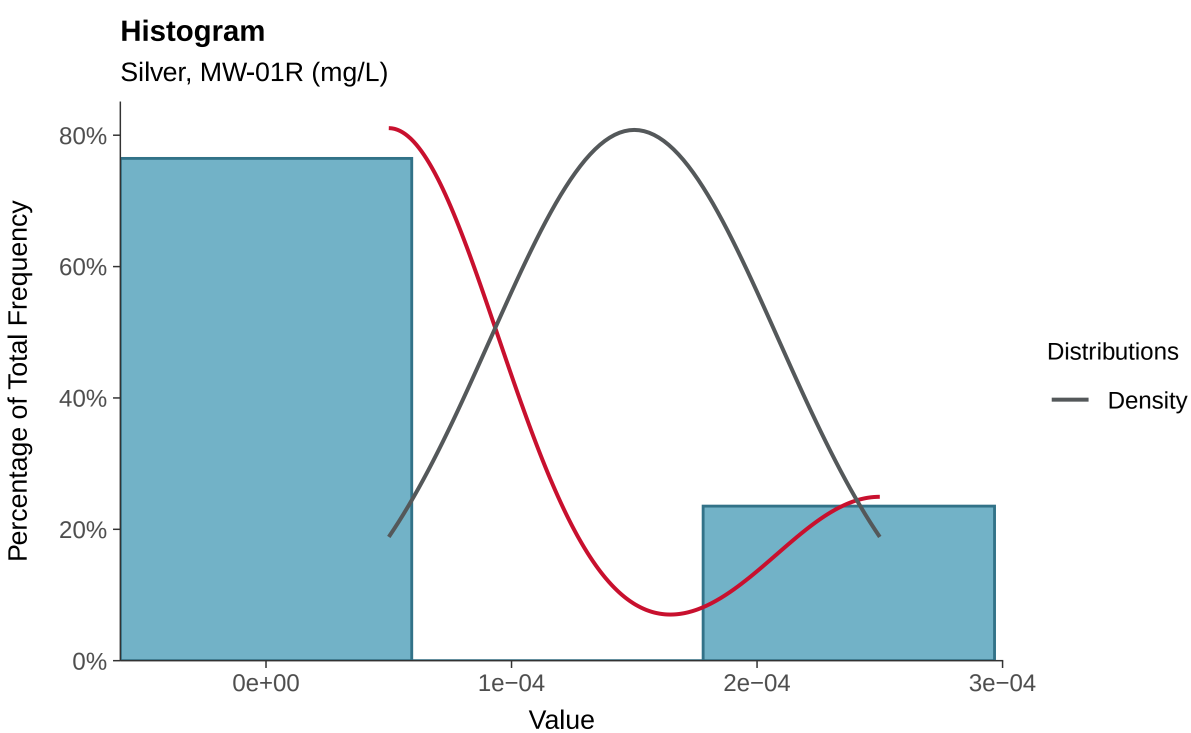

Trend Regression: Piecewise Linear-Linear
Nickel, MW-01R (mg/L)
Value
0.020
0.015
0.010
0.005
0.000
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
Nickel, MW-01R (mg/L)
Value
0.020
0.015
0.010
0.005
0.000
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Part 115: Silver, MW-01R

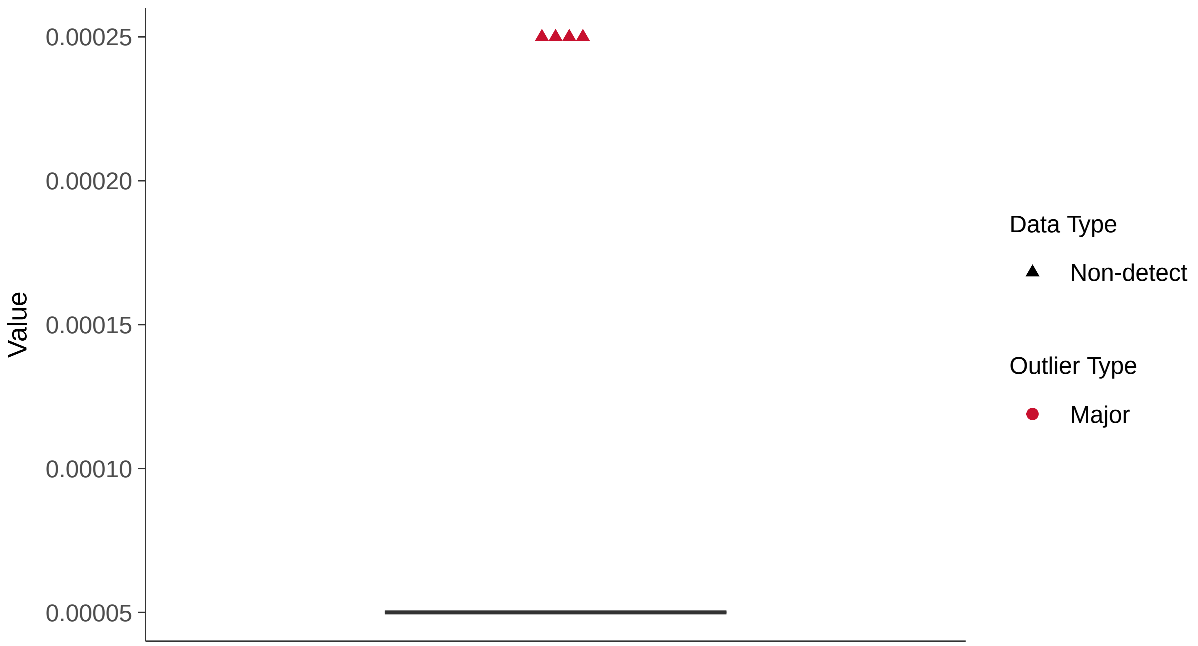
ID: 11_2_5_123





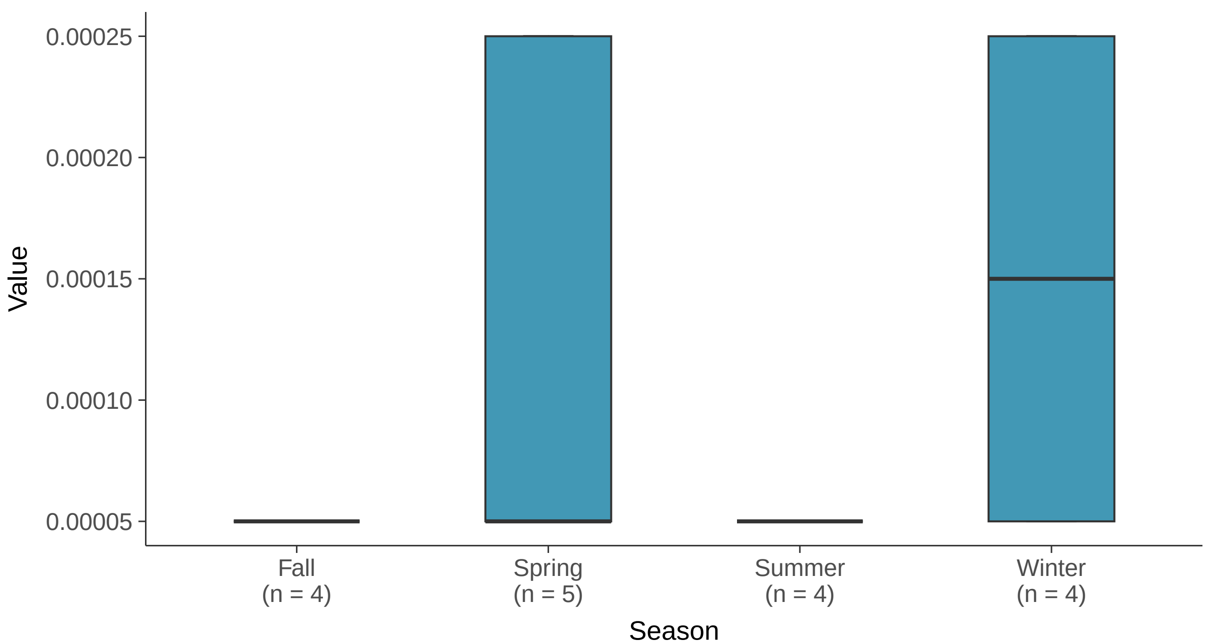
Boxplot

Silver, MW-01R (mg/L)



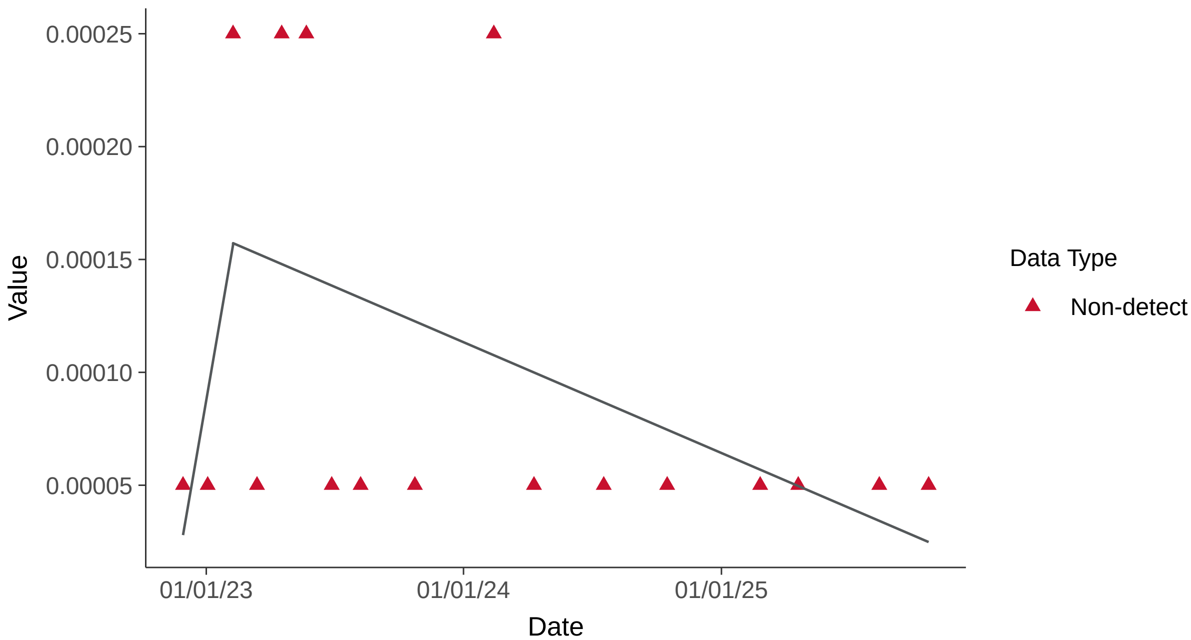
Boxplot by Season

Silver, MW-01R (mg/L)



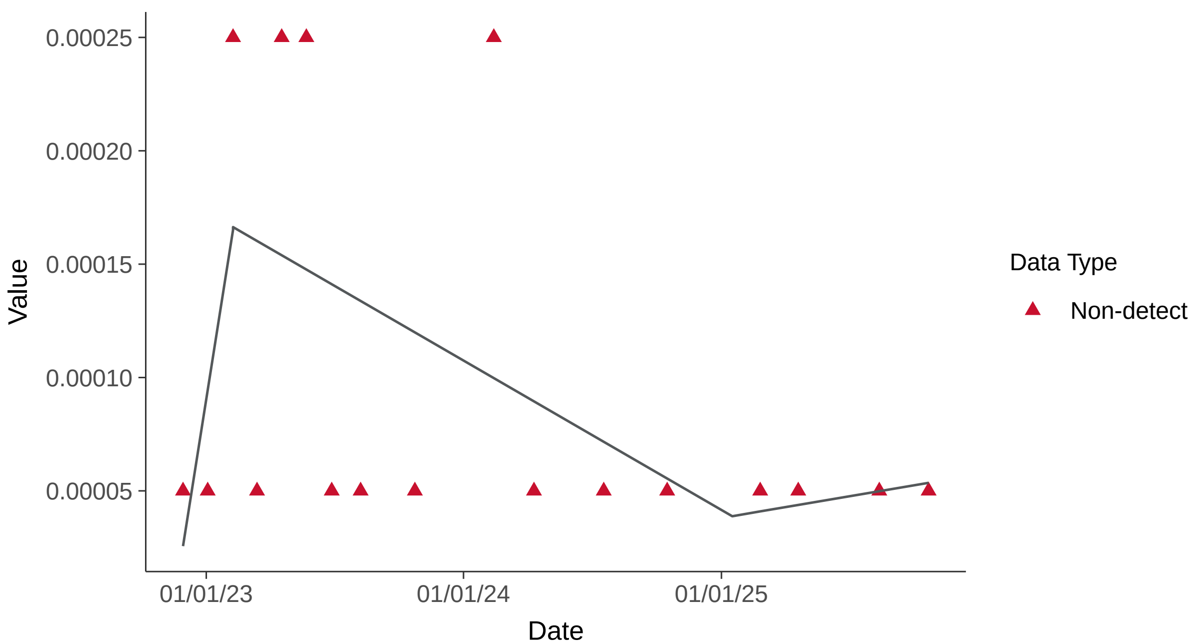
Trend Regression: Piecewise Linear-Linear

Silver, MW-01R (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Silver, MW-01R (mg/L)

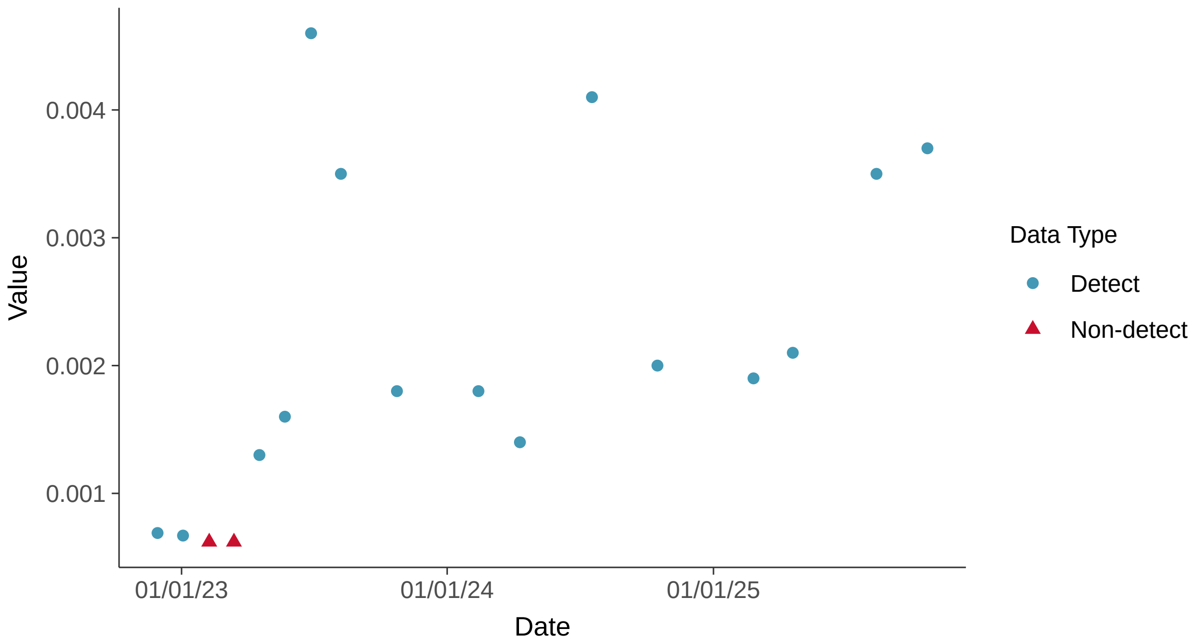


Part 115: Vanadium, MW-01R

ID: 11_2_5_128

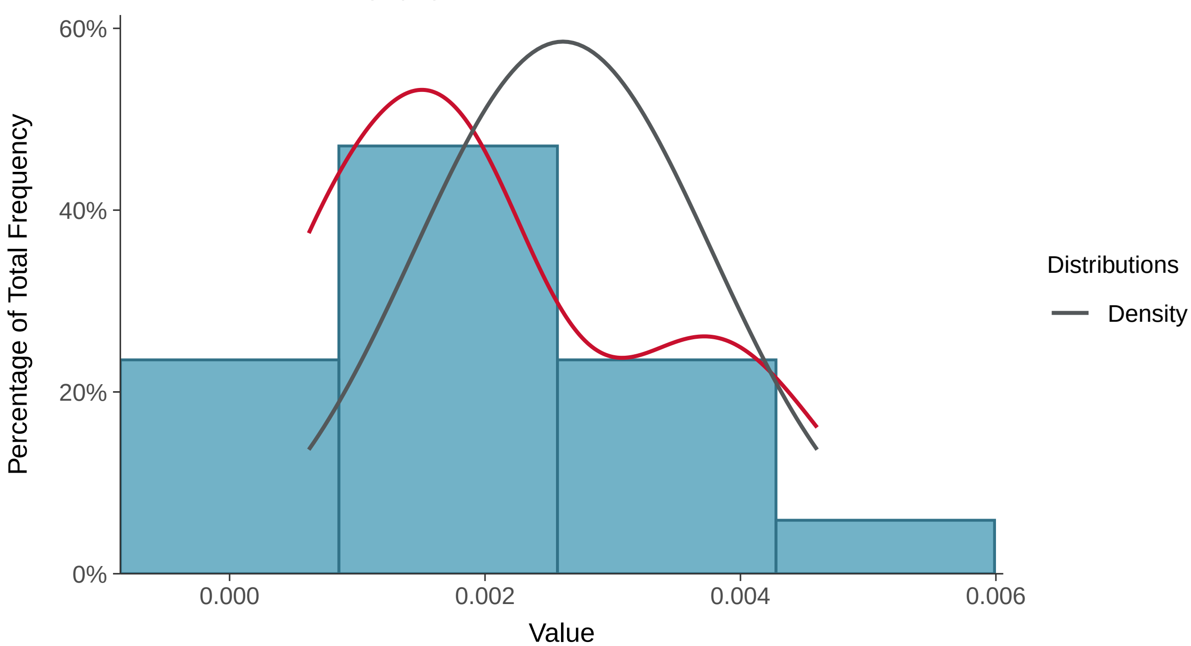
Scatter Plot

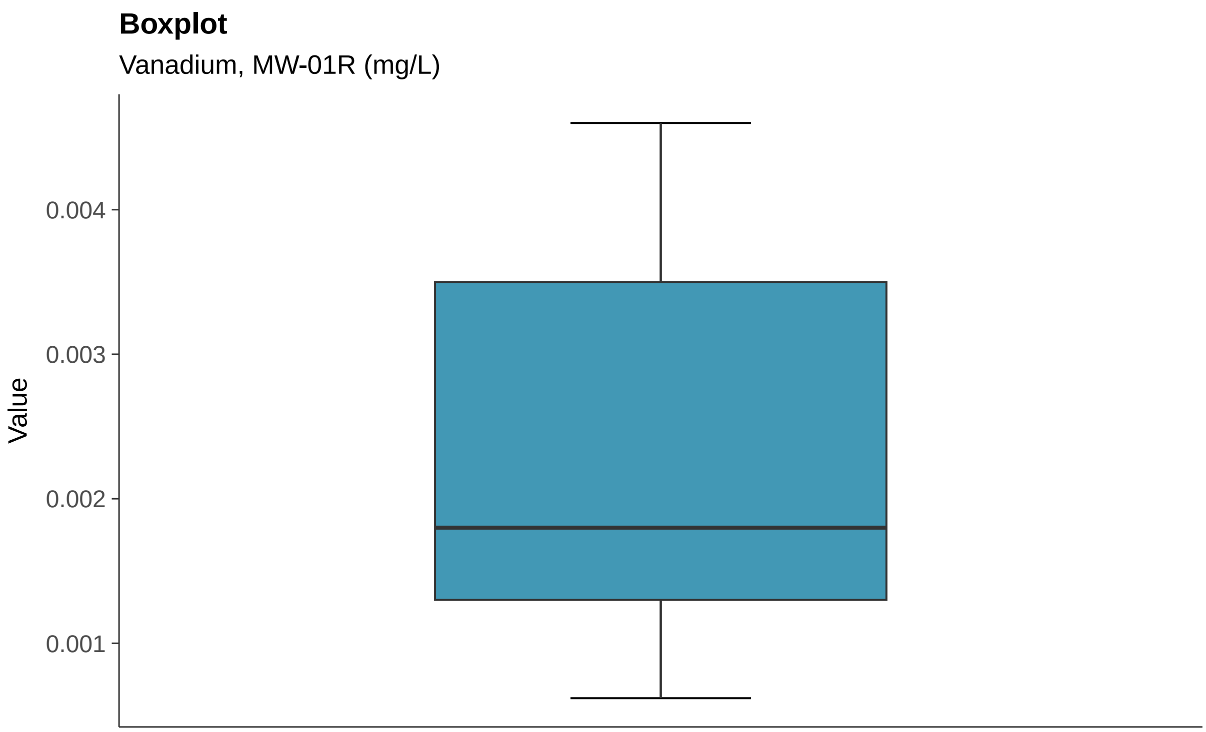
Vanadium, MW-01R (mg/L)

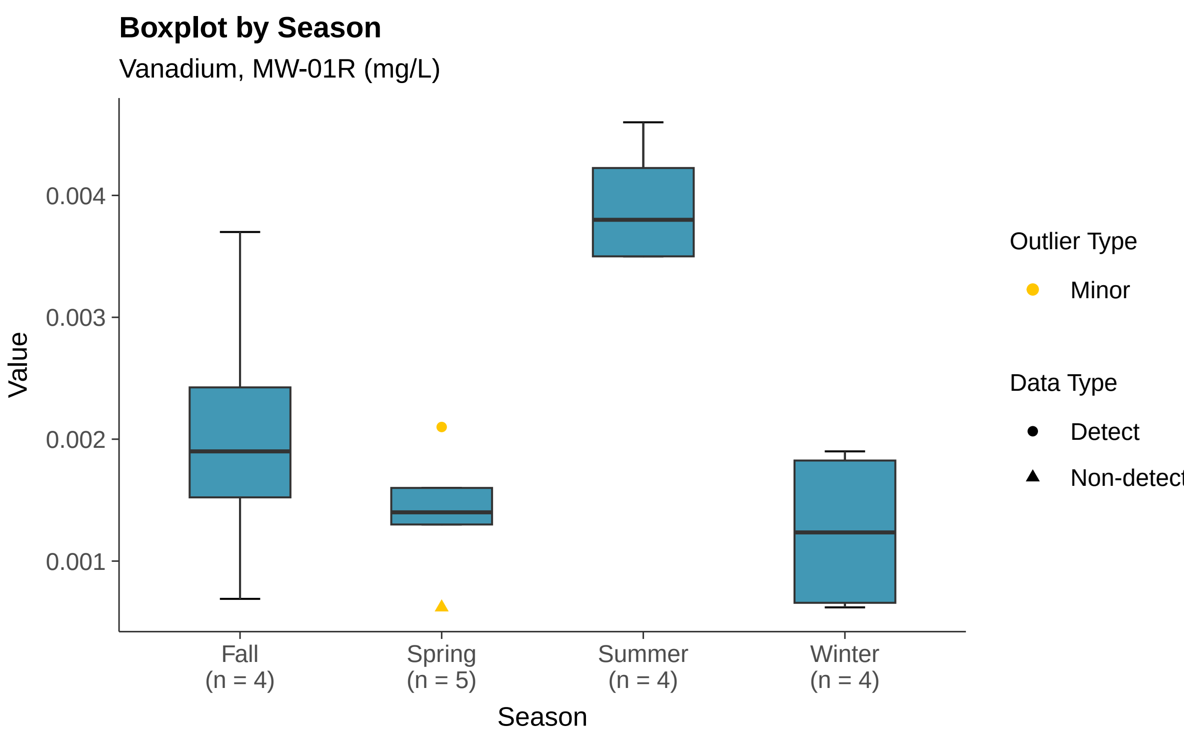


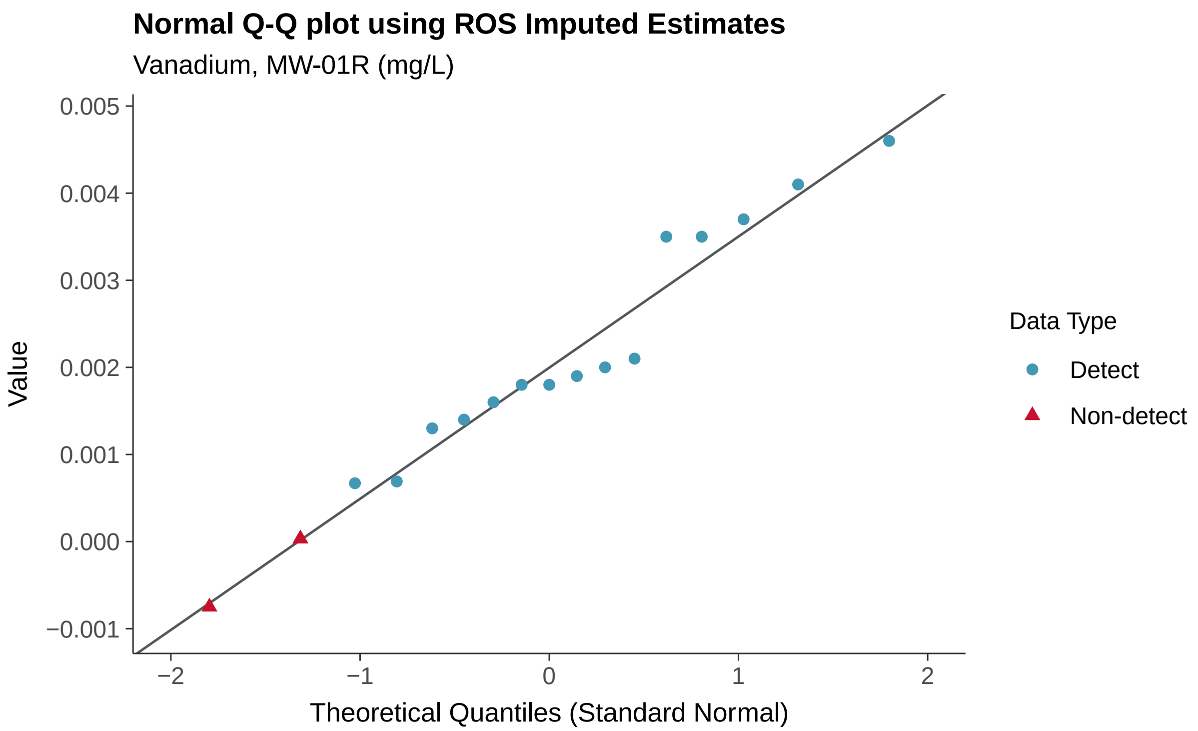
Histogram

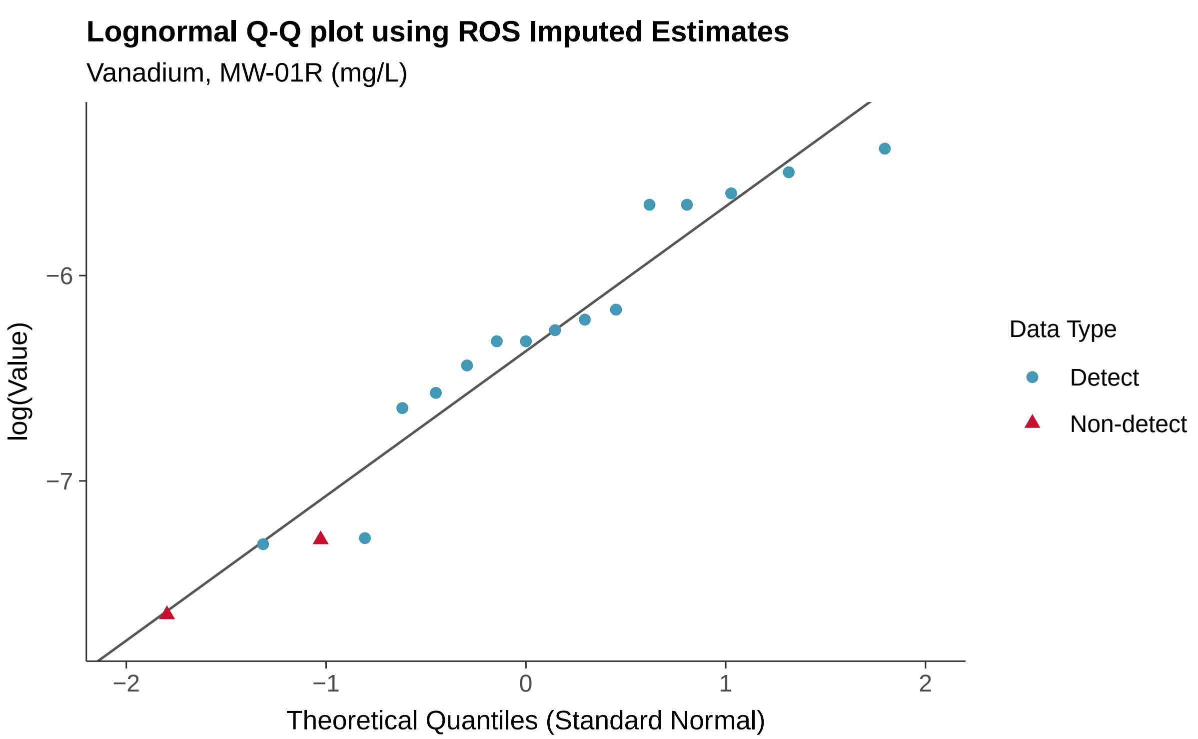
Vanadium, MW-01R (mg/L)




Boxplot
Vanadium, MW-01R (mg/L)
Value
0.004
0.003
0.002
0.001

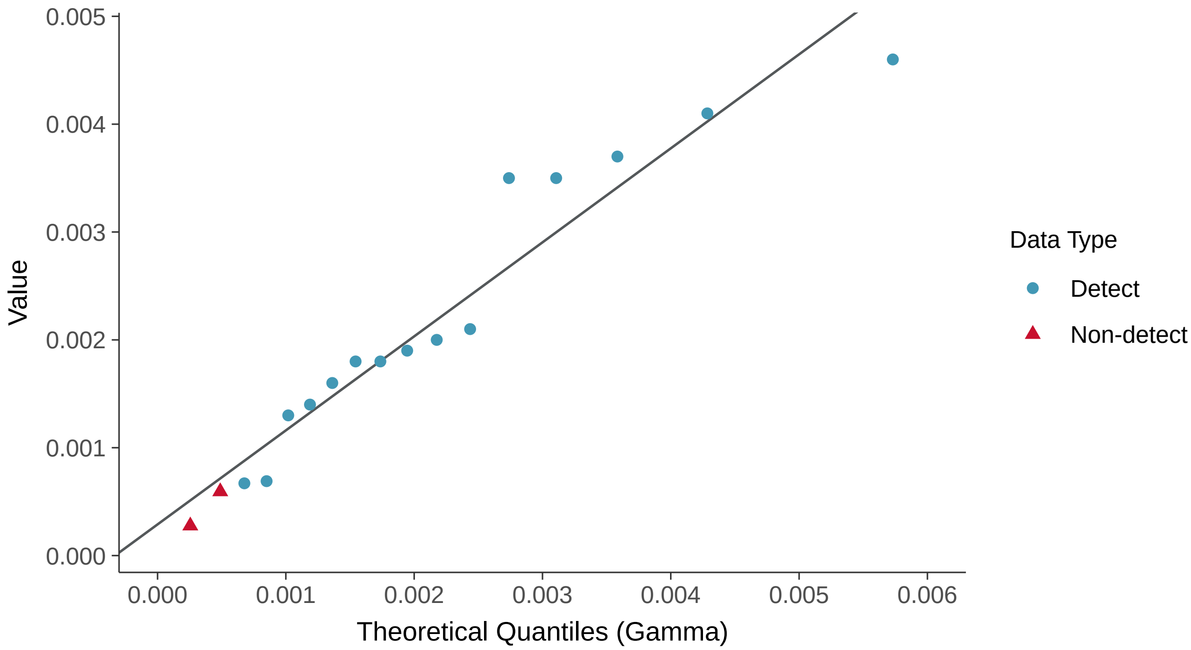

Boxplot by Season
Vanadium, MW-01R (mg/L)
Value
0.004
0.003
0.002
0.001
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Minor
Data Type
Detect
Non-detect


Normal Q-Q plot using ROS Imputed Estimates
Vanadium, MW-01R (mg/L)
Value
0.005
0.004
0.003
0.002
0.001
0.000
−0.001
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Lognormal Q-Q plot using ROS Imputed Estimates
Vanadium, MW-01R (mg/L)
log(Value)
−6
−7
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

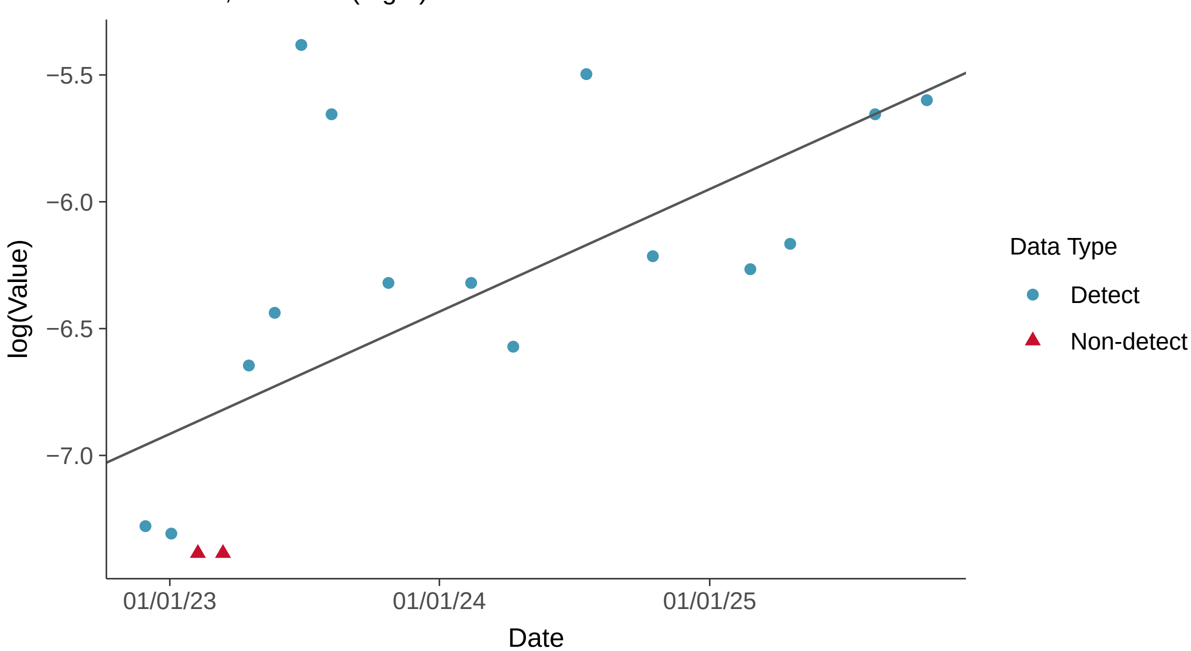
Gamma Q-Q plot using ROS Imputed Estimates

Vanadium, MW-01R (mg/L)



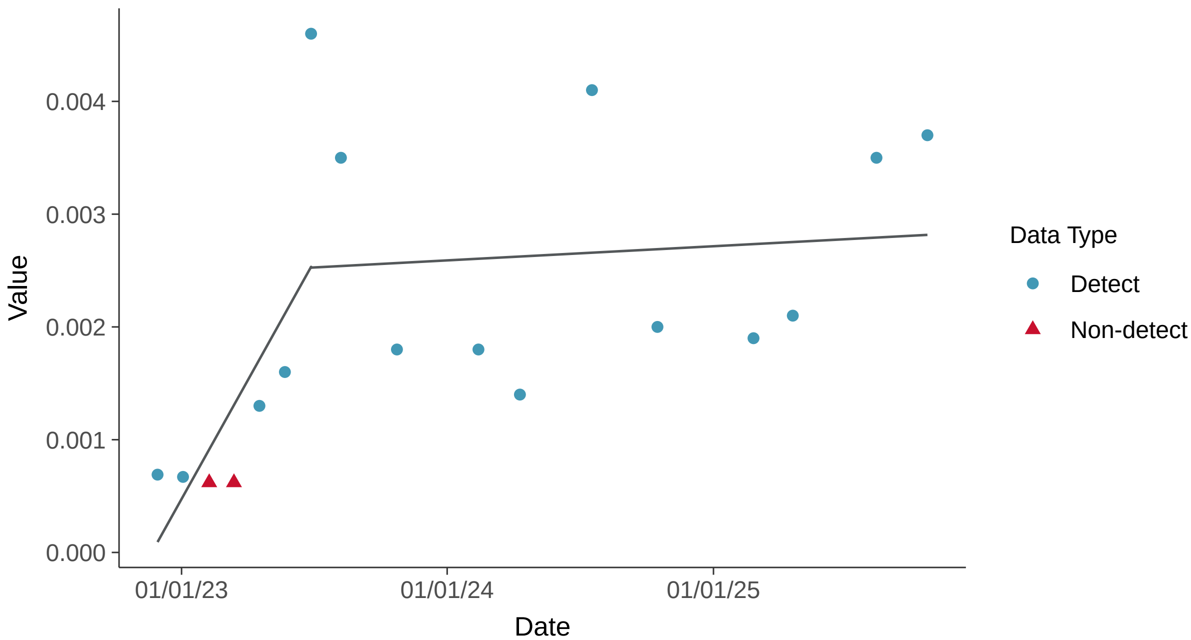
Trend Regression: Lognormal MLE

Vanadium, MW-01R (mg/L)



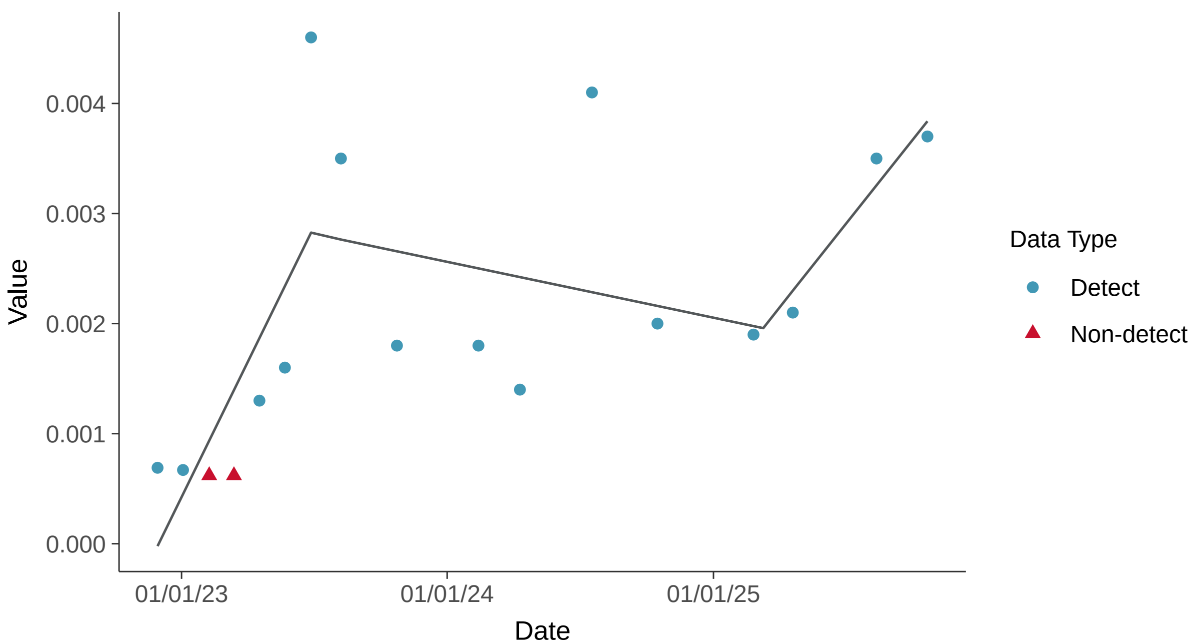
Trend Regression: Piecewise Linear-Linear

Vanadium, MW-01R (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Vanadium, MW-01R (mg/L)

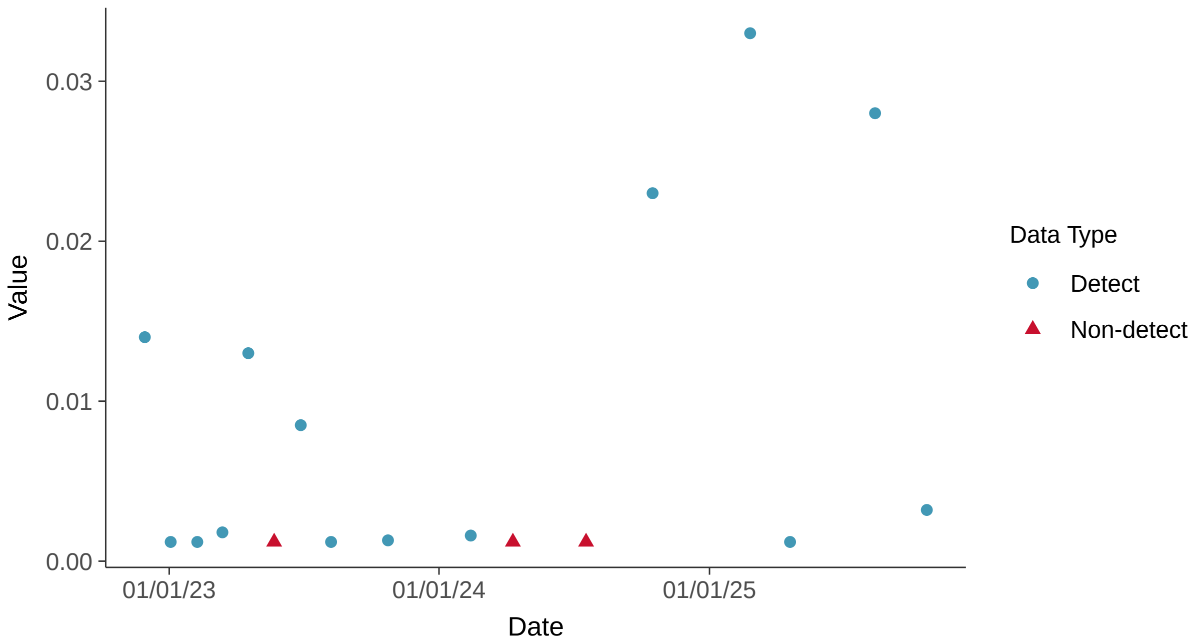


Part 115: Zinc, MW-01R

ID: 11_2_5_129

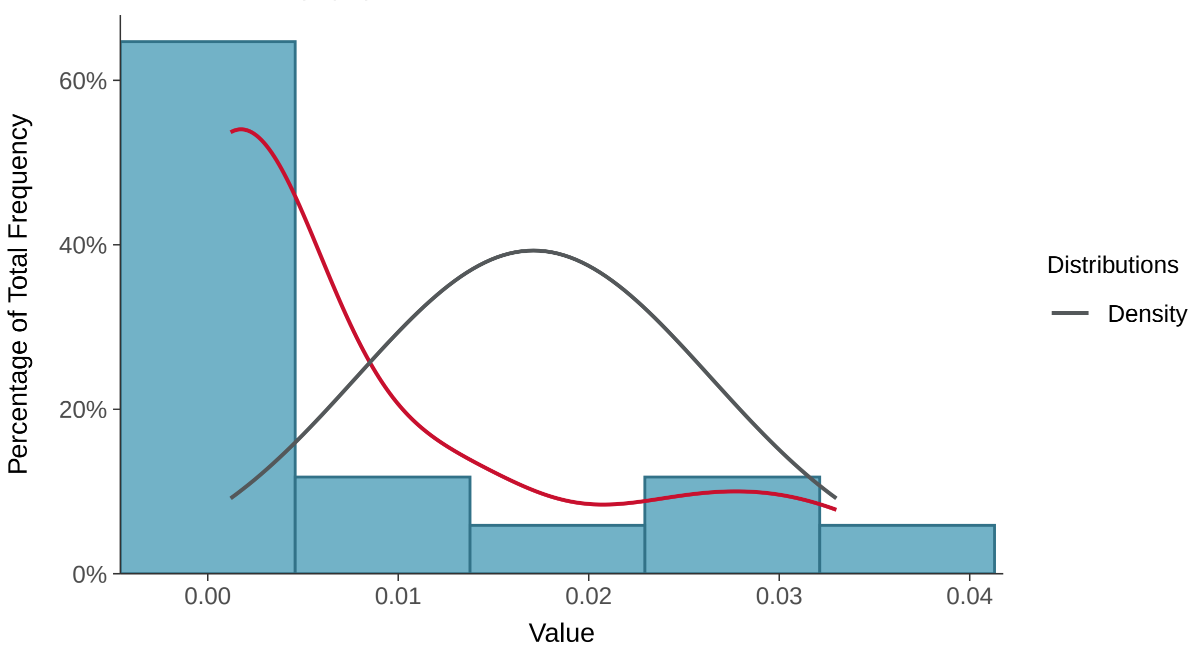
Scatter Plot

Zinc, MW-01R (mg/L)



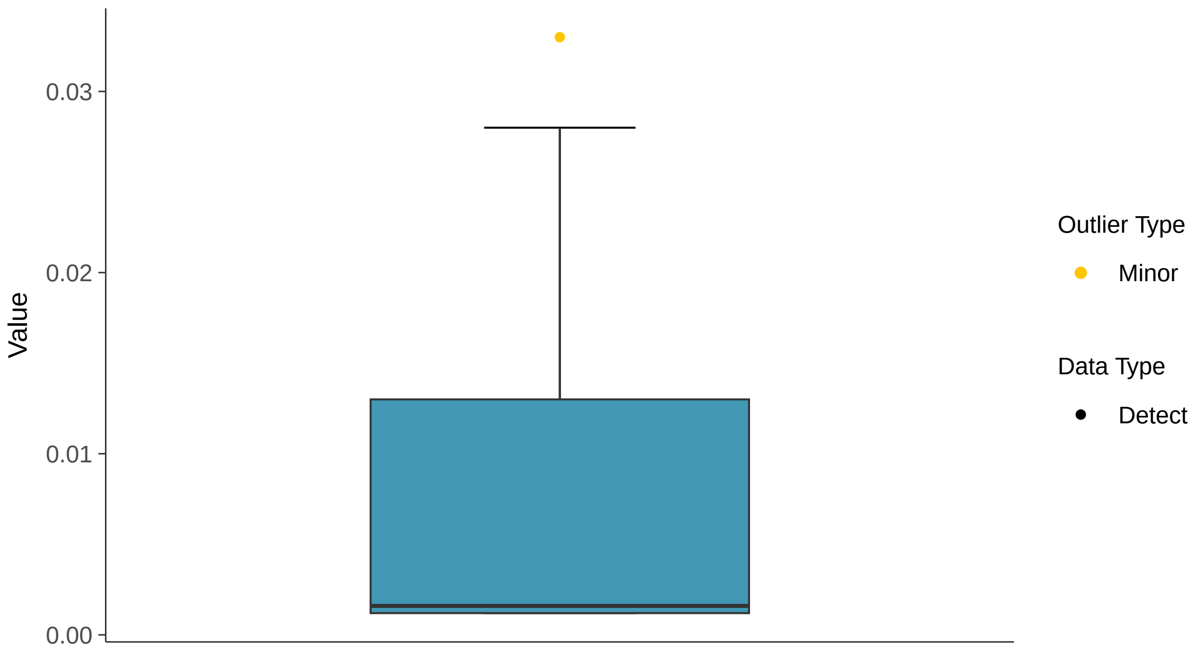
Histogram

Zinc, MW-01R (mg/L)



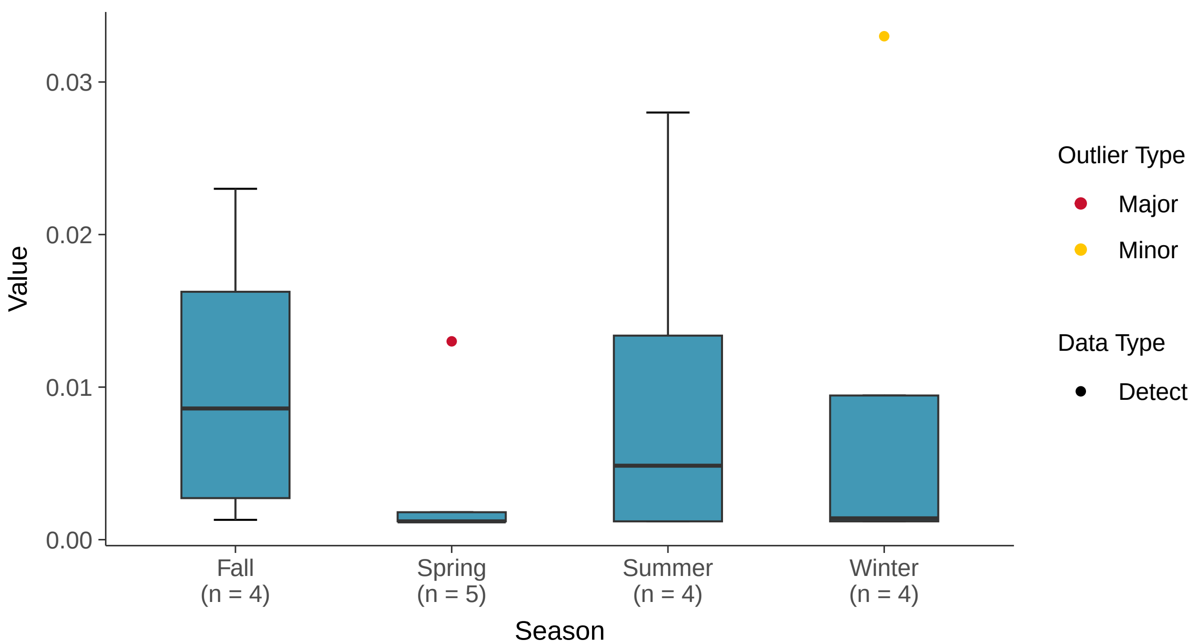
Boxplot

Zinc, MW-01R (mg/L)



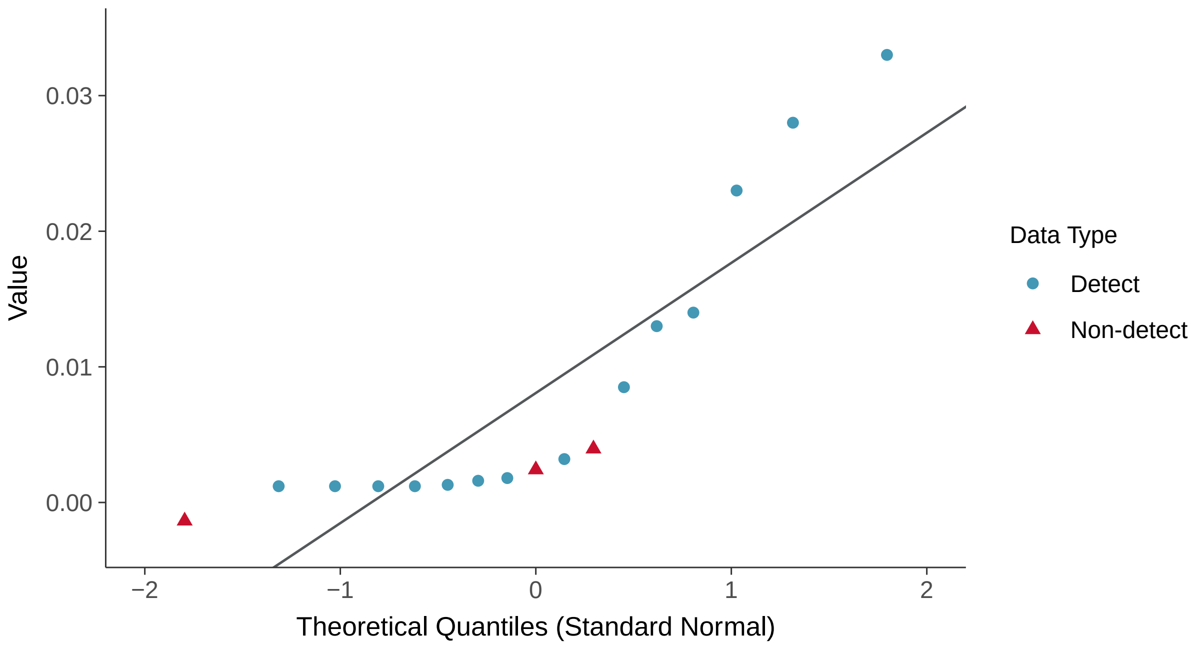
Boxplot by Season

Zinc, MW-01R (mg/L)



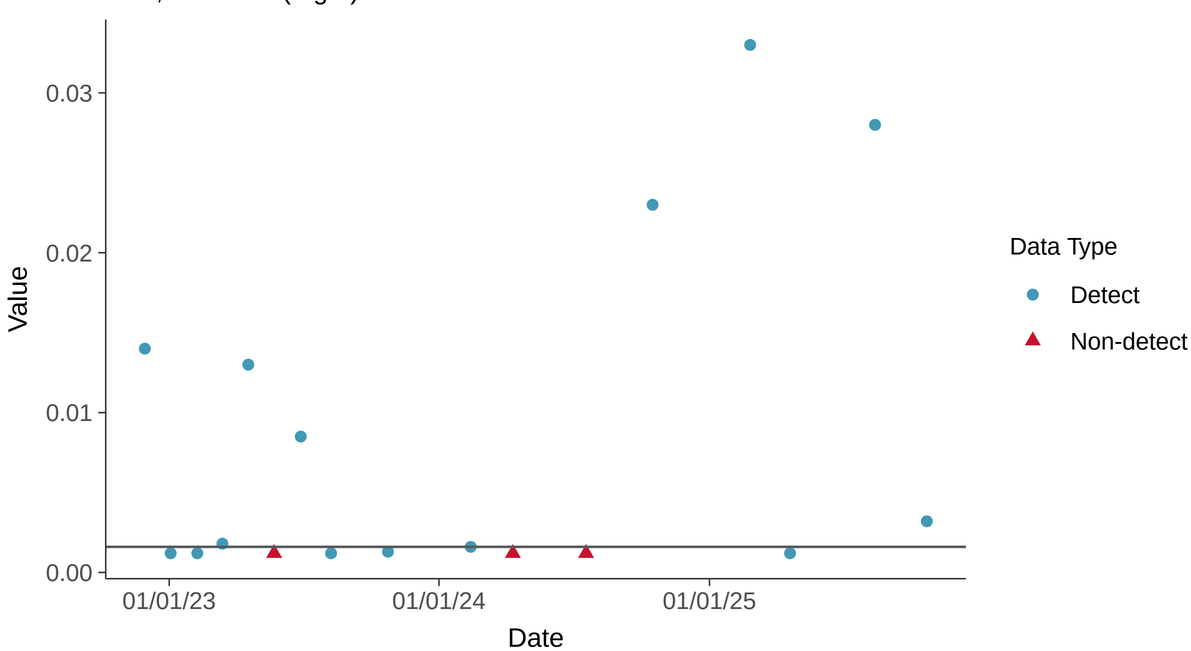
Normal Q-Q plot using ROS Imputed Estimates

Zinc, MW-01R (mg/L)



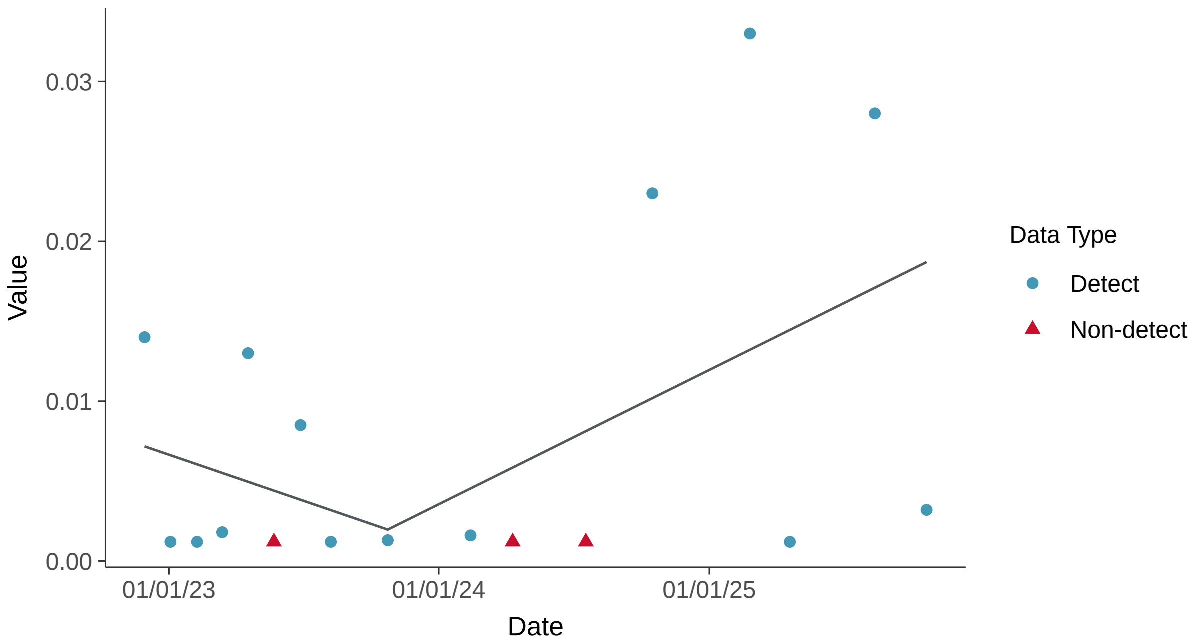
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Zinc, MW-01R (mg/L)



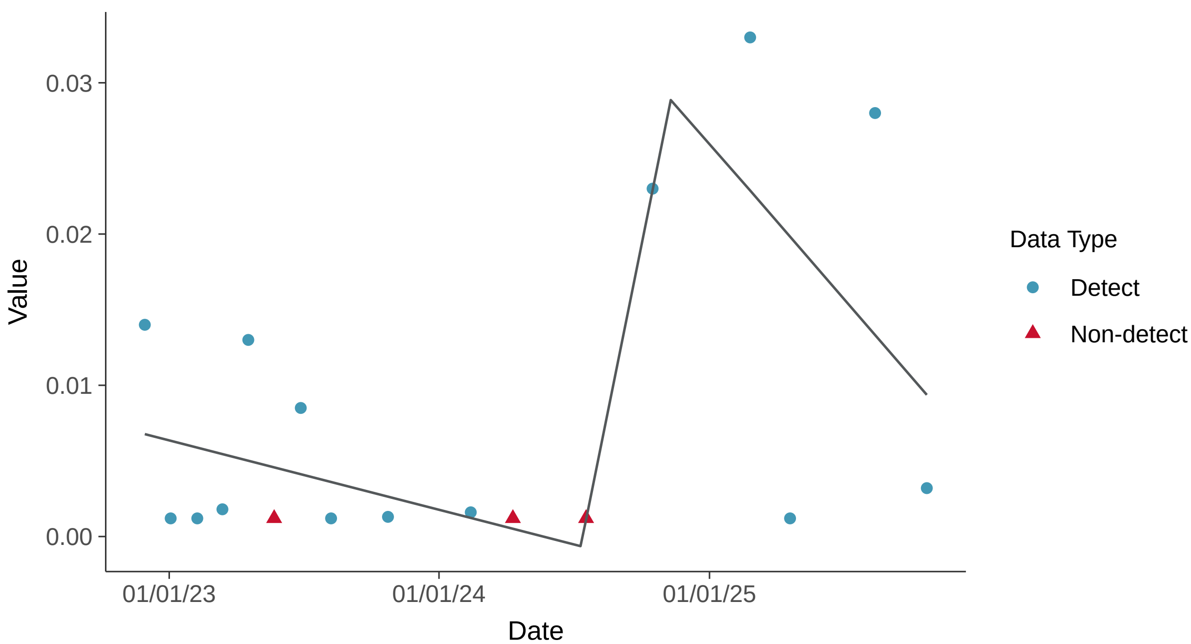
Trend Regression: Piecewise Linear-Linear

Zinc, MW-01R (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Zinc, MW-01R (mg/L)

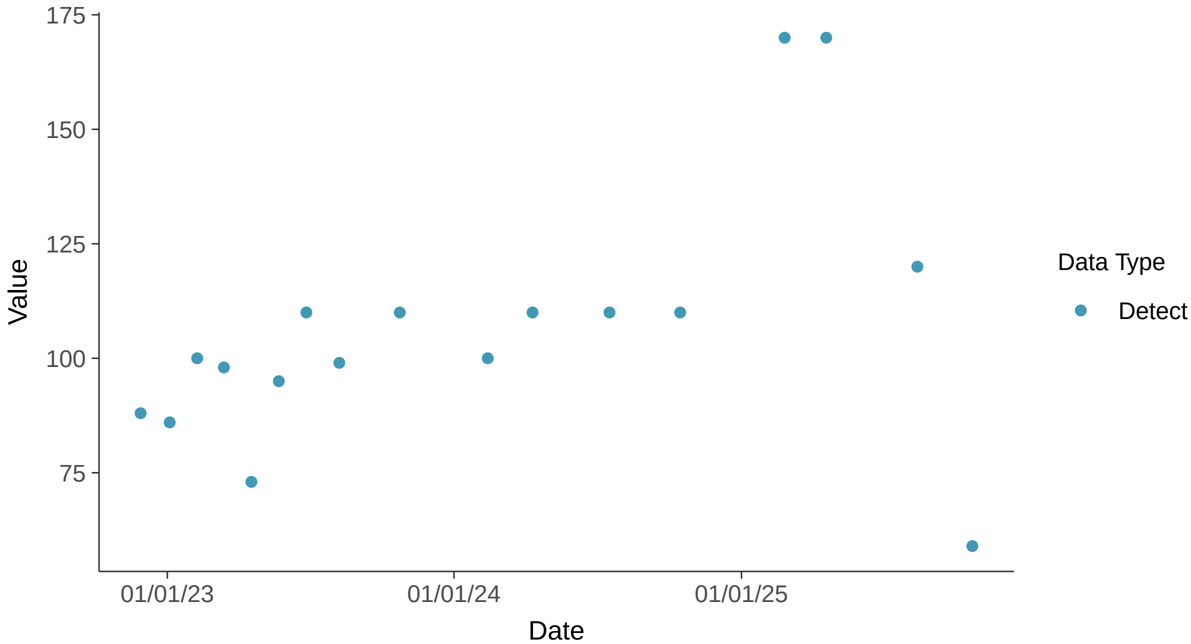


Appendix III: Boron, MW-02

ID: 12_2_3_105

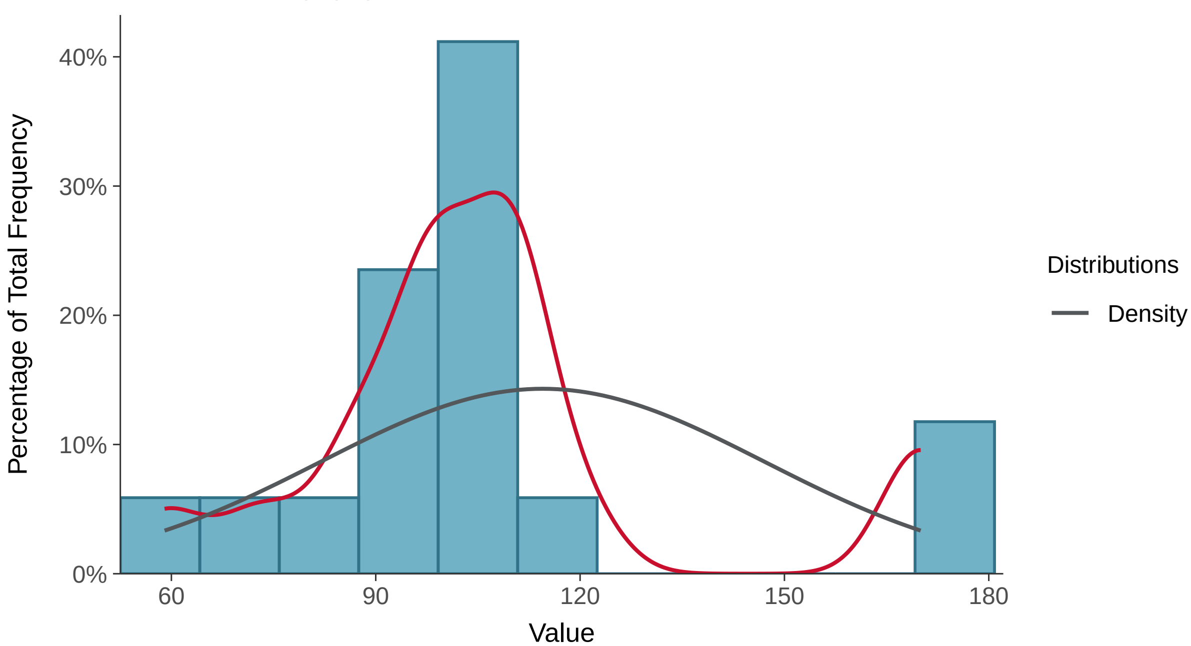
Scatter Plot

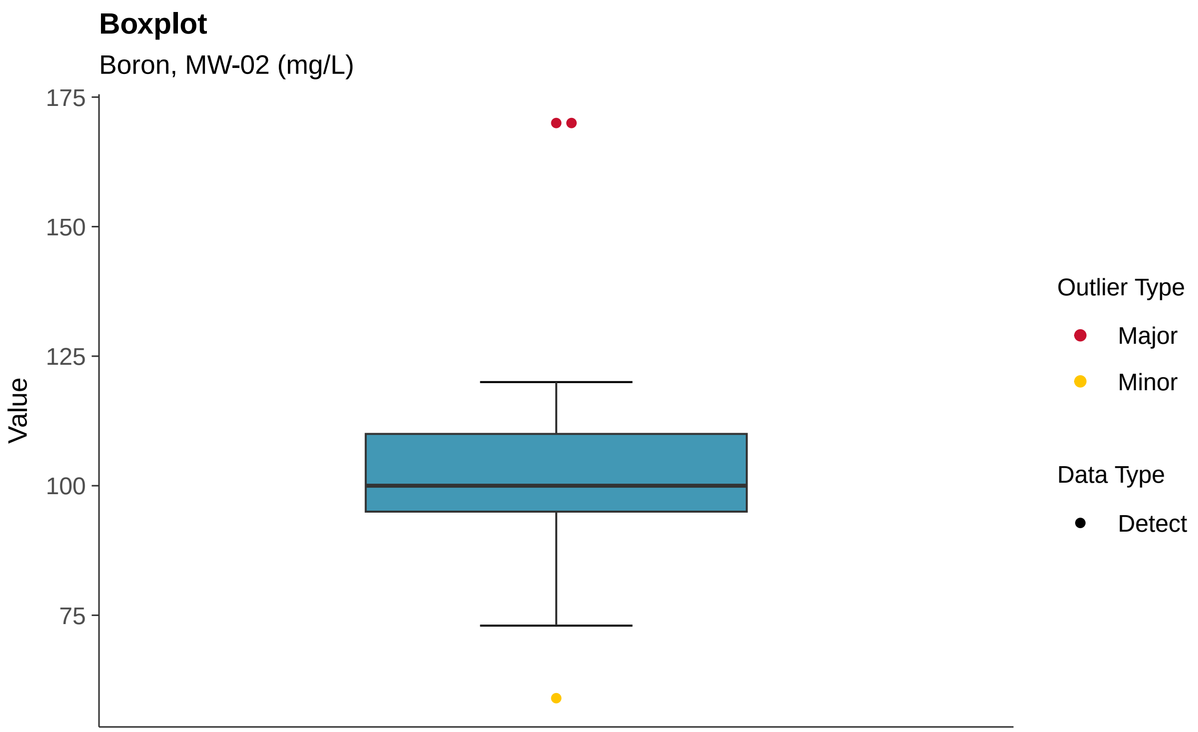
Boron, MW-02 (mg/L)

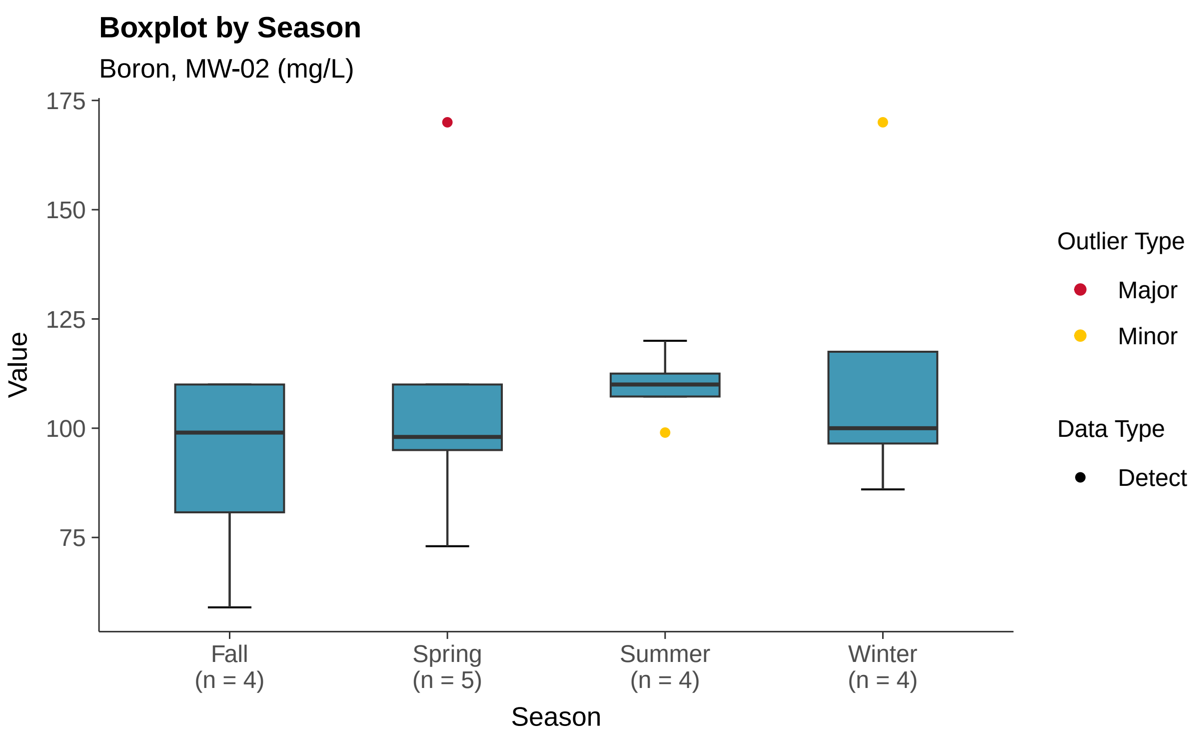


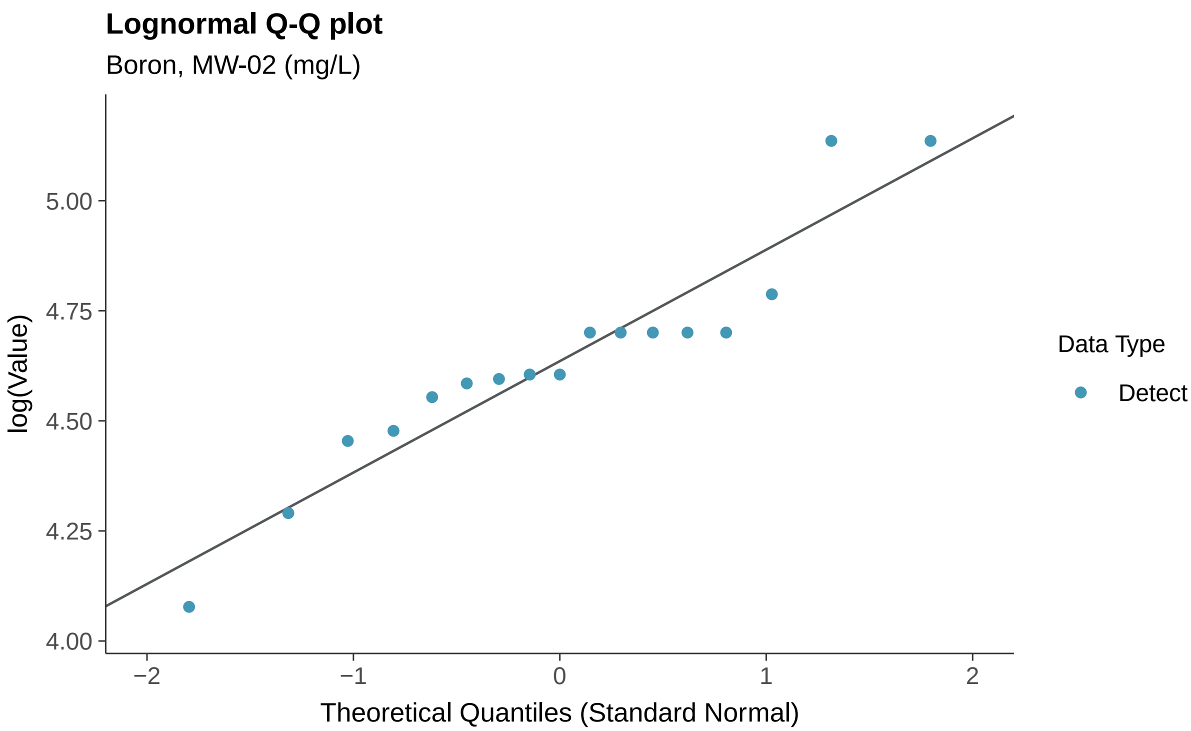
Histogram

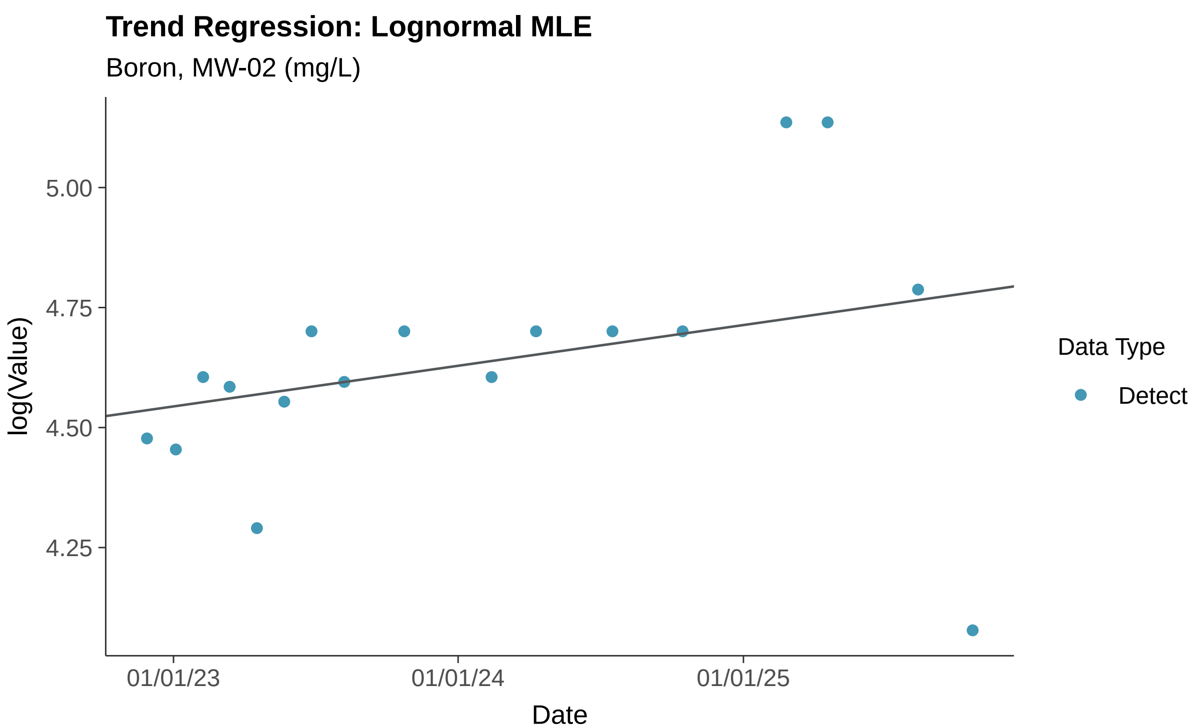
Boron, MW-02 (mg/L)




Boxplot
Boron, MW-02 (mg/L)
175
150
125
100
75
Value
Outlier Type
Major
Minor
Data Type
Detect

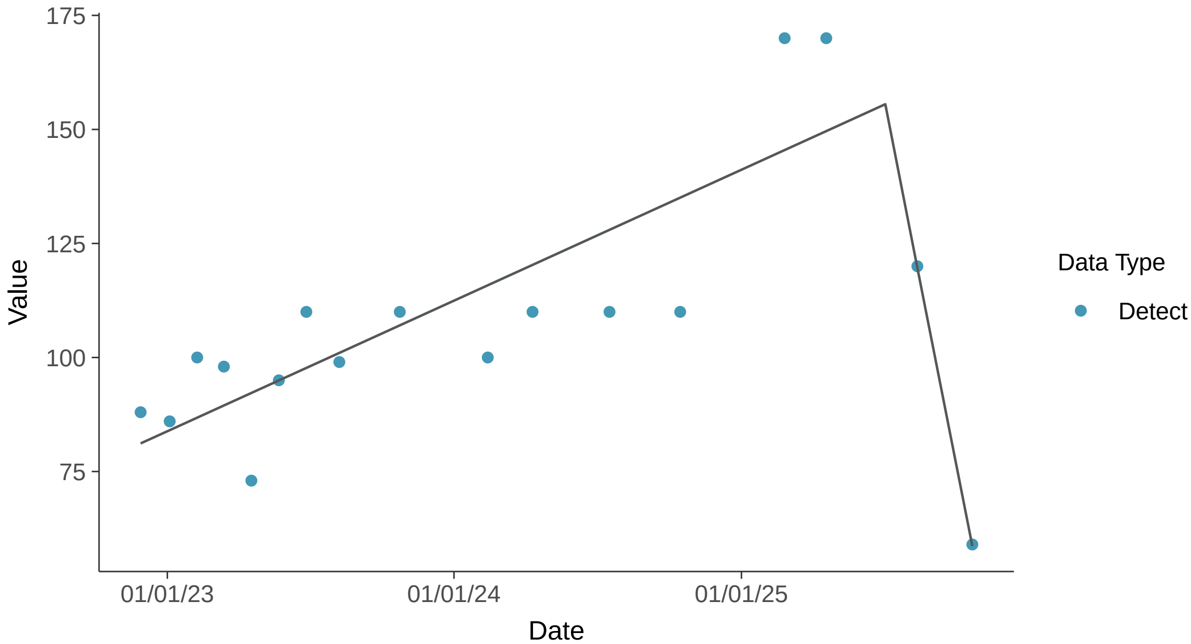

Boxplot by Season
Boron, MW-02 (mg/L)
175
150
125
100
75
Value
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Major
Minor
Data Type
Detect


Lognormal Q-Q plot
Boron, MW-02 (mg/L)
log(Value)
5.00
4.75
4.50
4.25
4.00
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Lognormal MLE
Boron, MW-02 (mg/L)
log(Value)
5.00
4.75
4.50
4.25
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

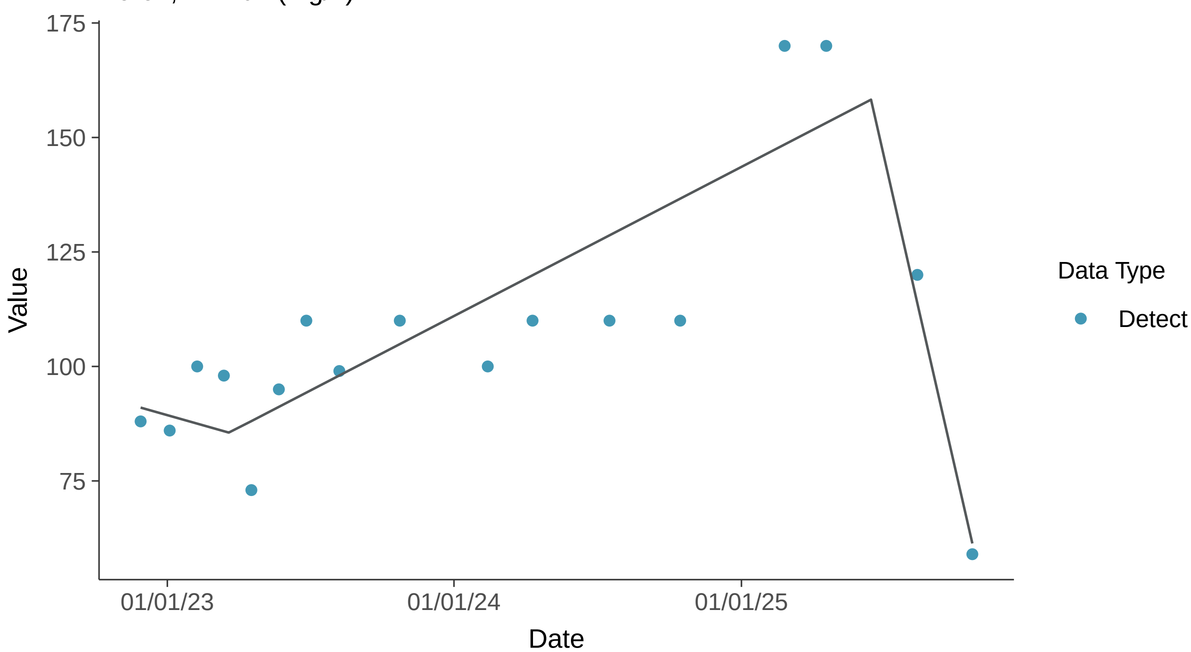
Trend Regression: Piecewise Linear-Linear

Boron, MW-02 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Boron, MW-02 (mg/L)

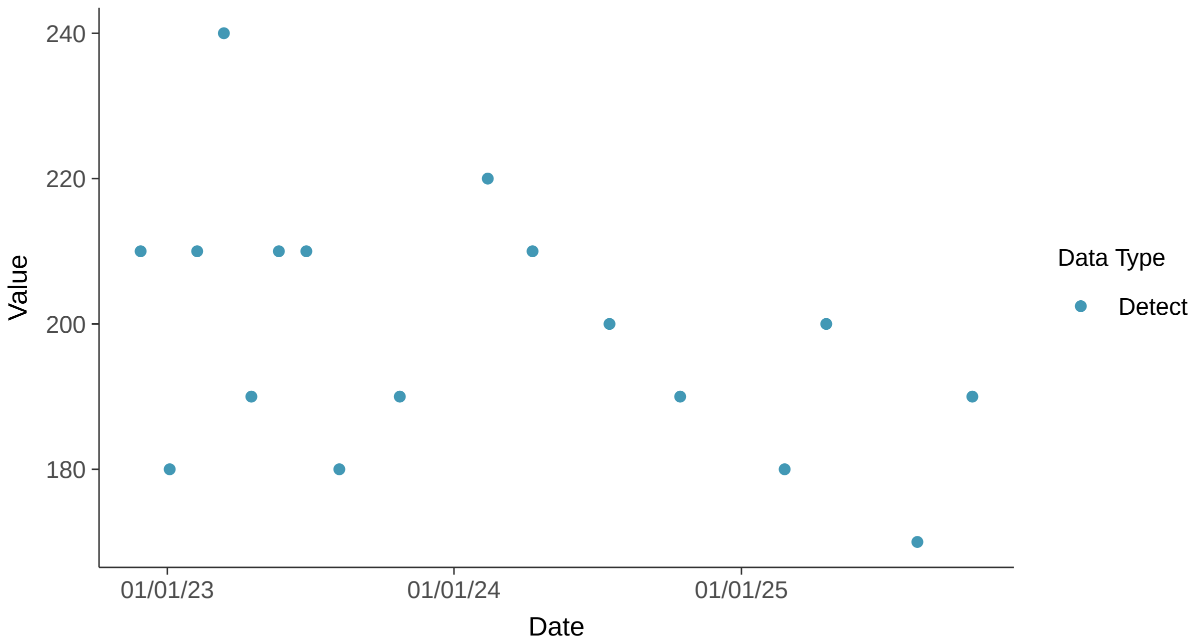


Appendix III: Calcium, MW-02

ID: 12_2_3_107

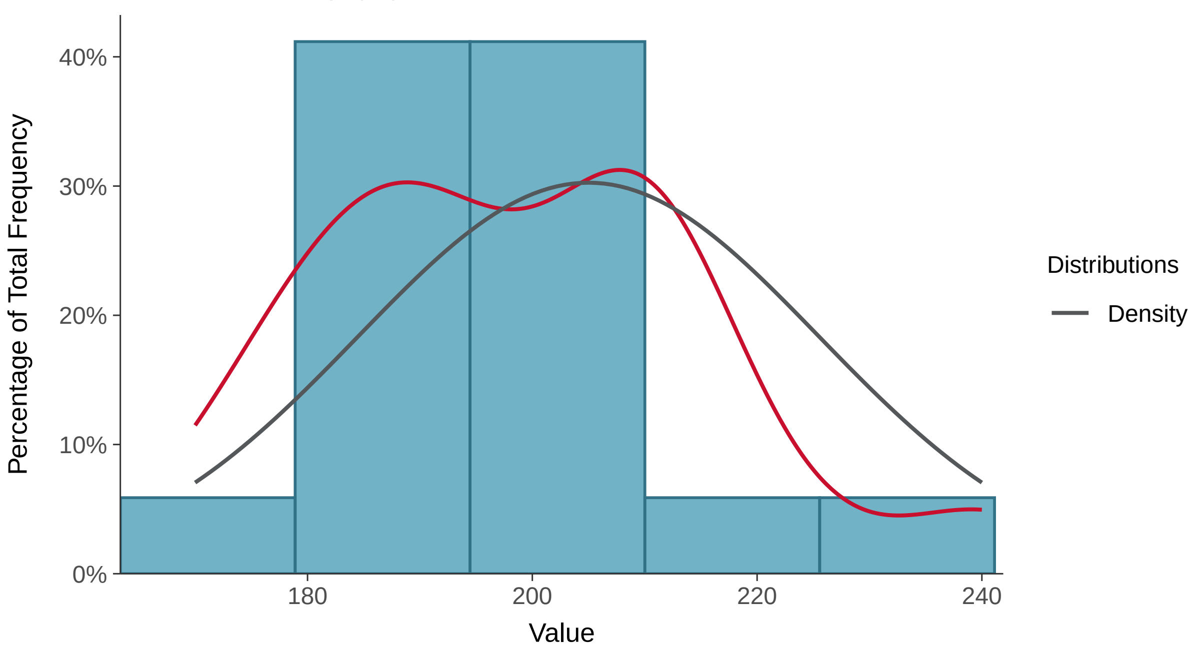
Scatter Plot

Calcium, MW-02 (mg/L)



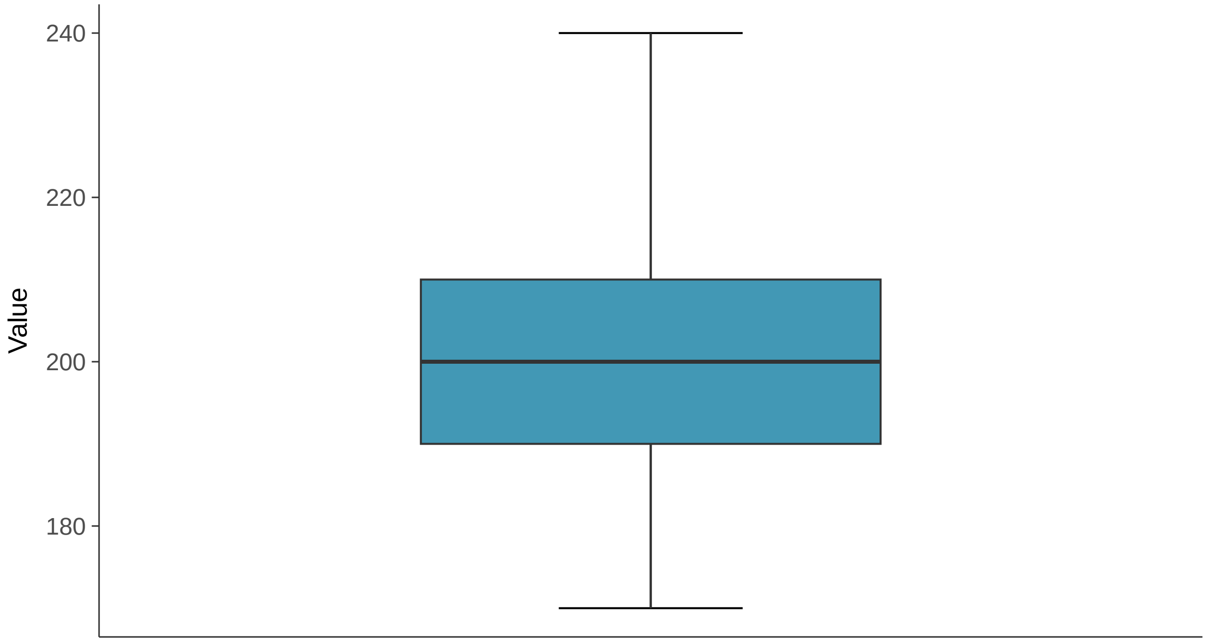
Histogram

Calcium, MW-02 (mg/L)



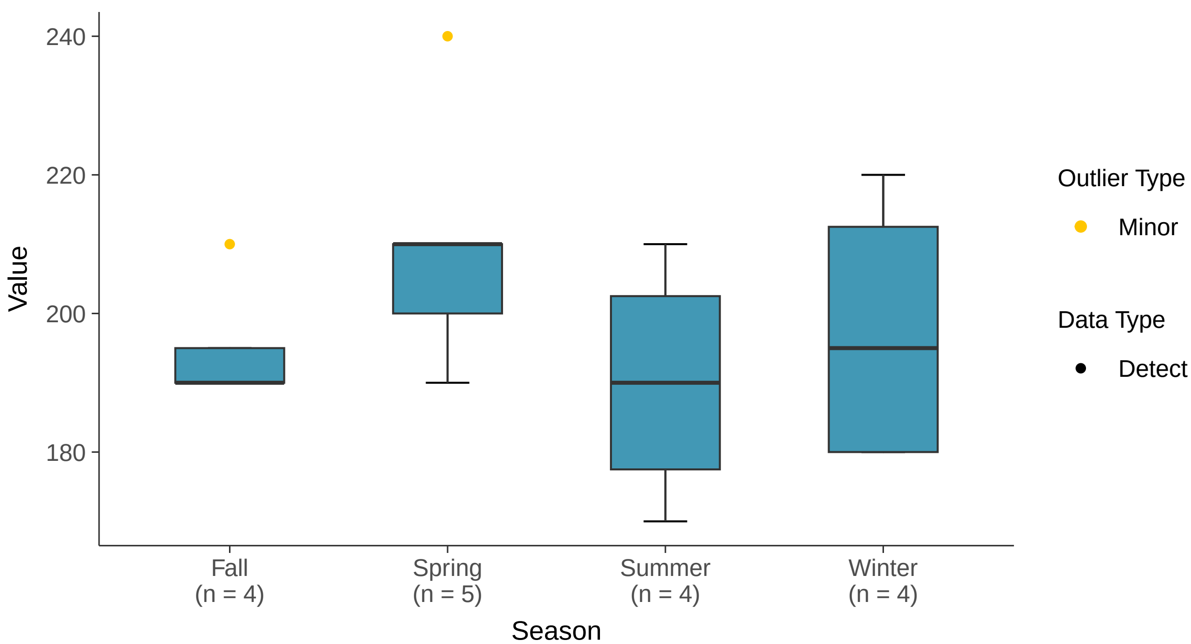
Boxplot

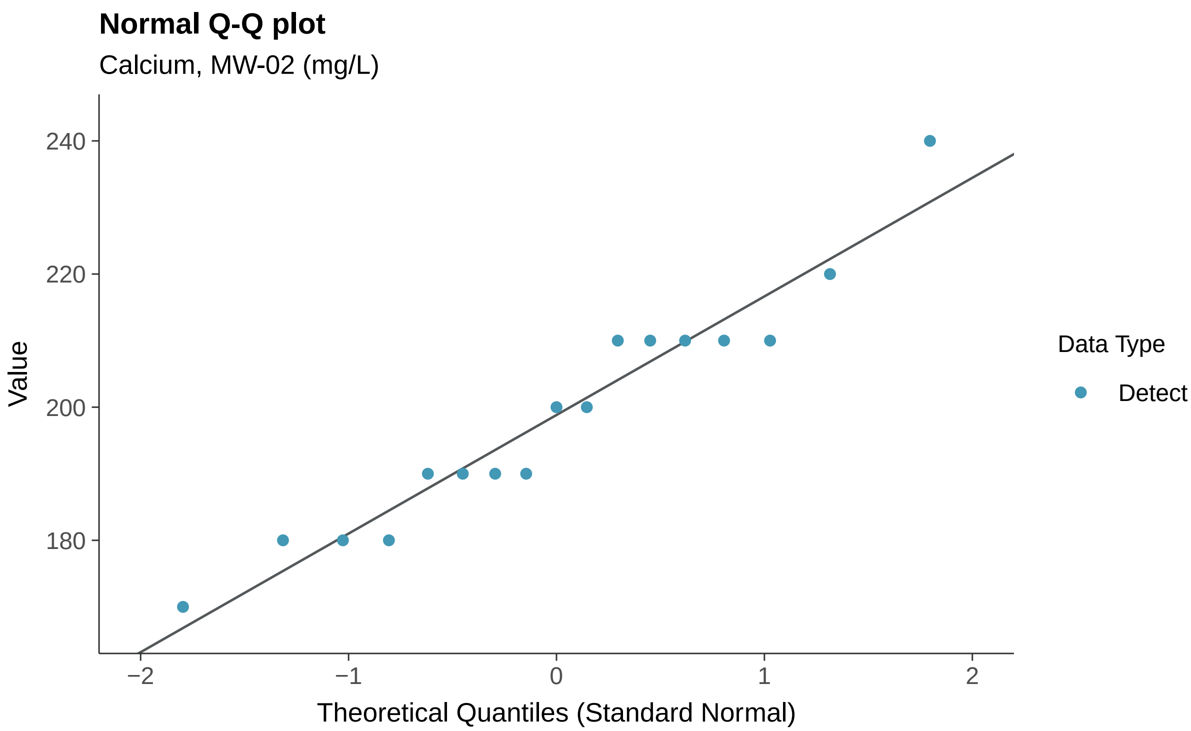
Calcium, MW-02 (mg/L)

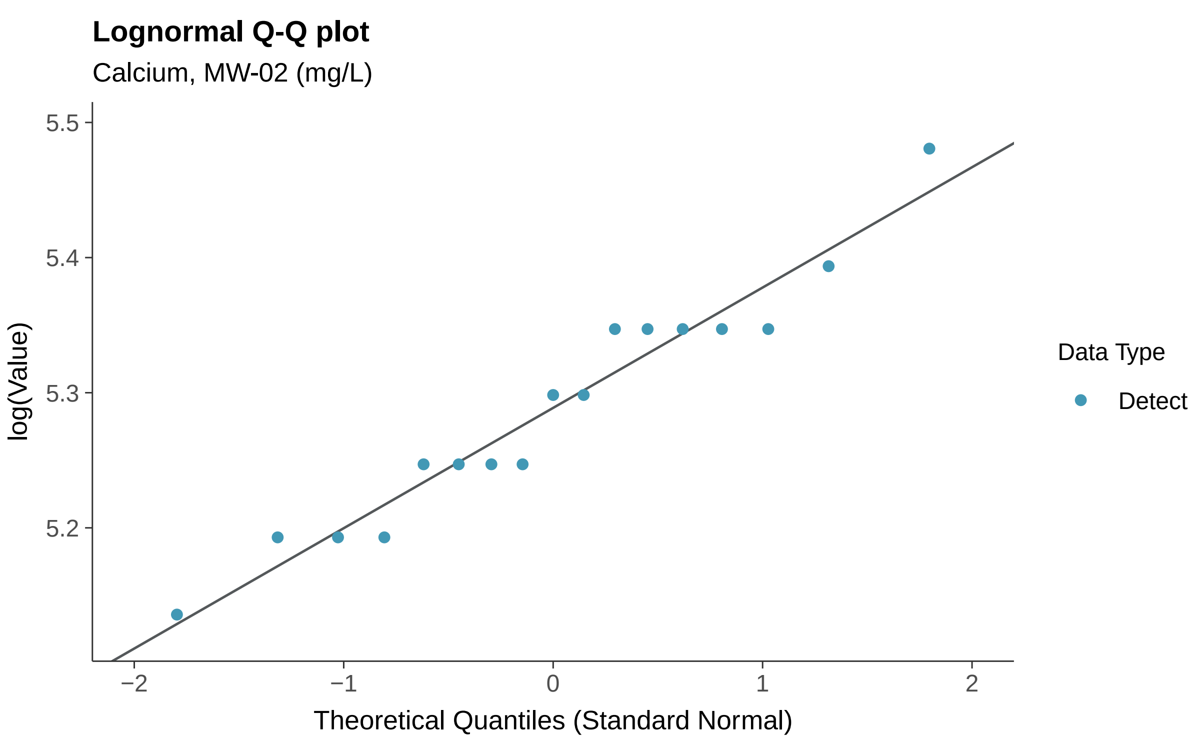


Boxplot by Season

Calcium, MW-02 (mg/L)

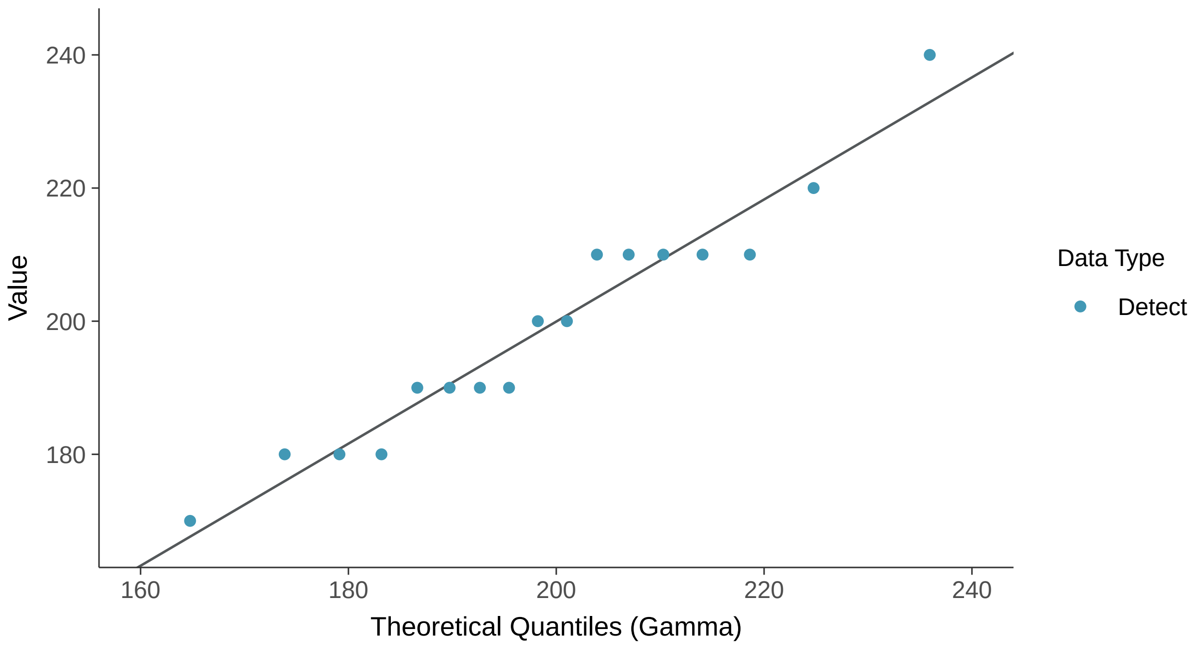



Normal Q-Q plot
Calcium, MW-02 (mg/L)
Value
240
220
200
180
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Calcium, MW-02 (mg/L)
log(Value)
5.5
5.4
5.3
5.2
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

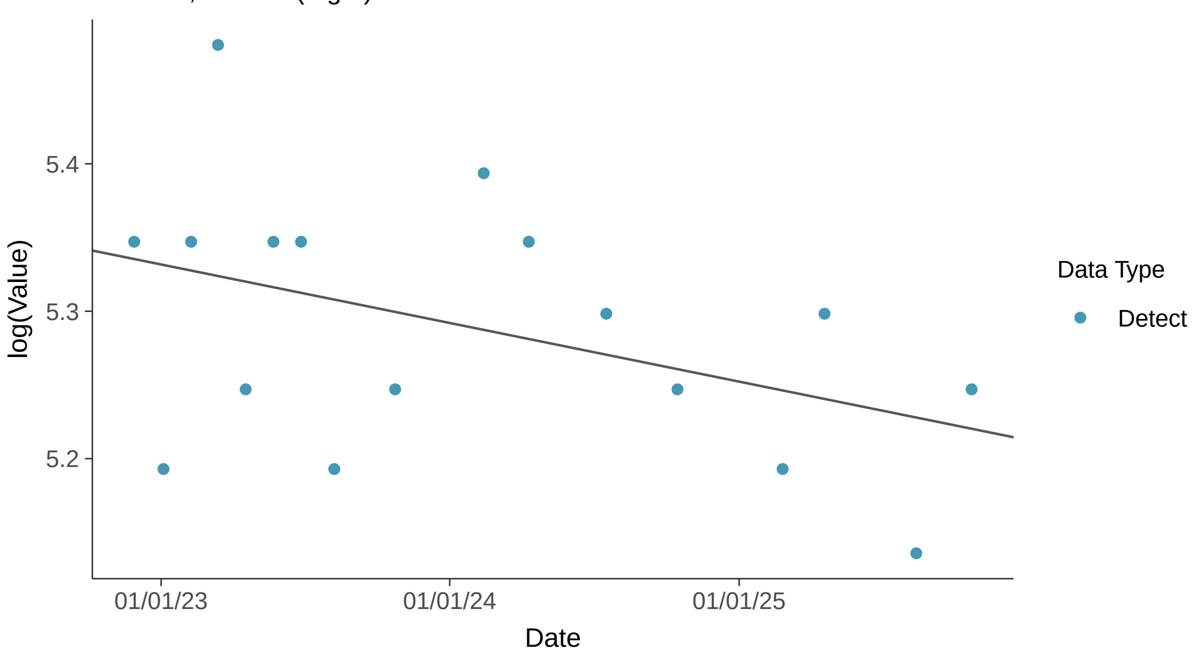
Gamma Q-Q plot

Calcium, MW-02 (mg/L)



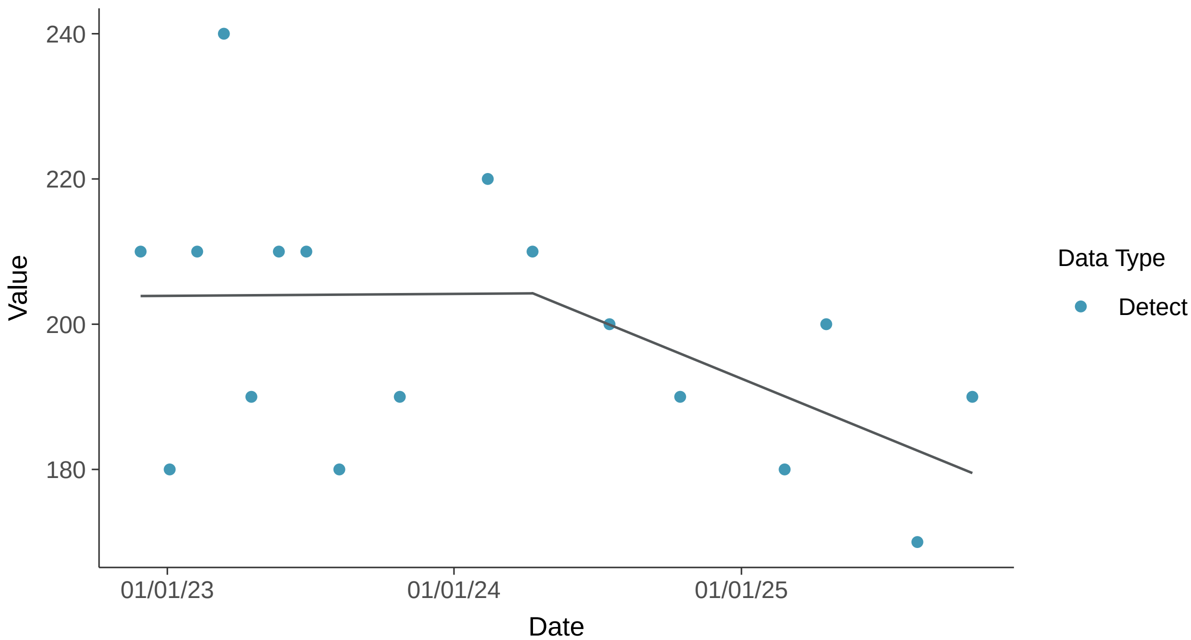
Trend Regression: Lognormal MLE

Calcium, MW-02 (mg/L)



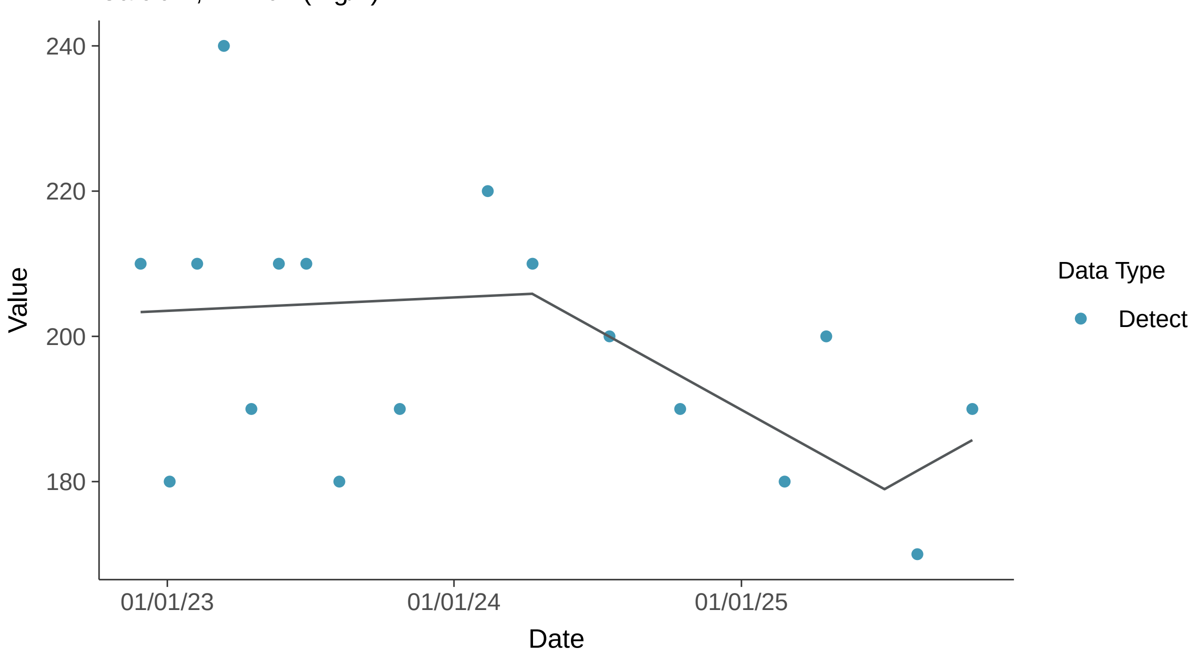
Trend Regression: Piecewise Linear-Linear

Calcium, MW-02 (mg/L)



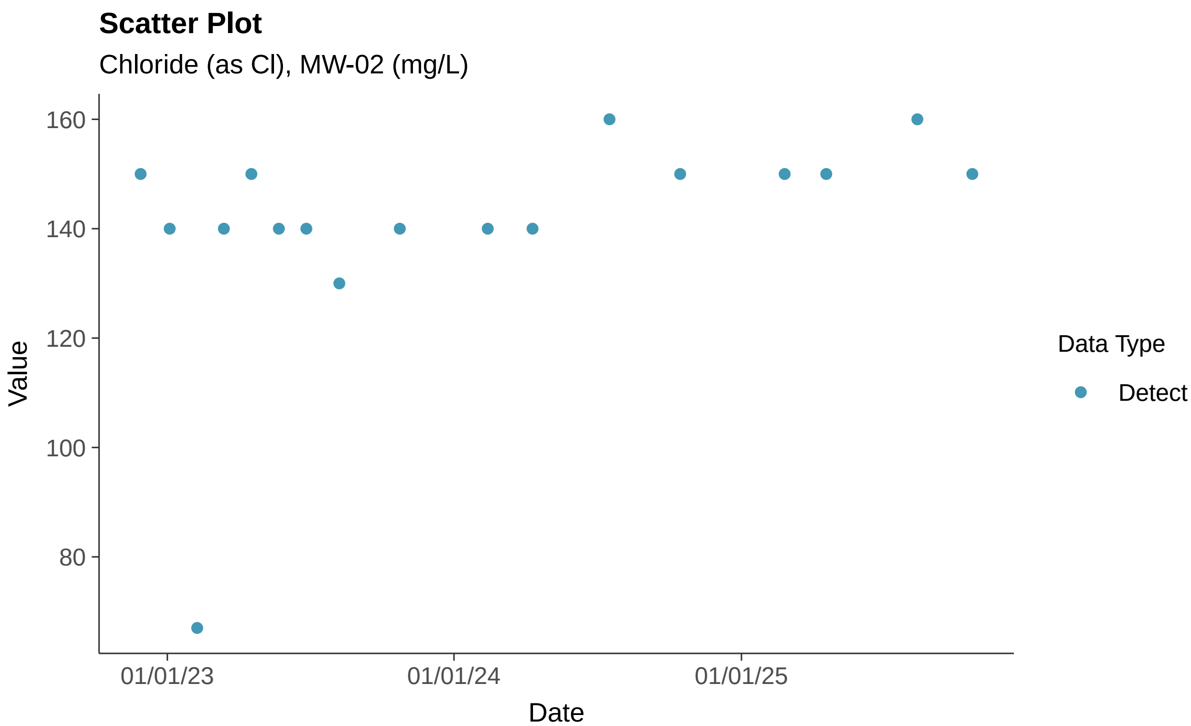
Trend Regression: Piecewise Linear-Linear-Linear

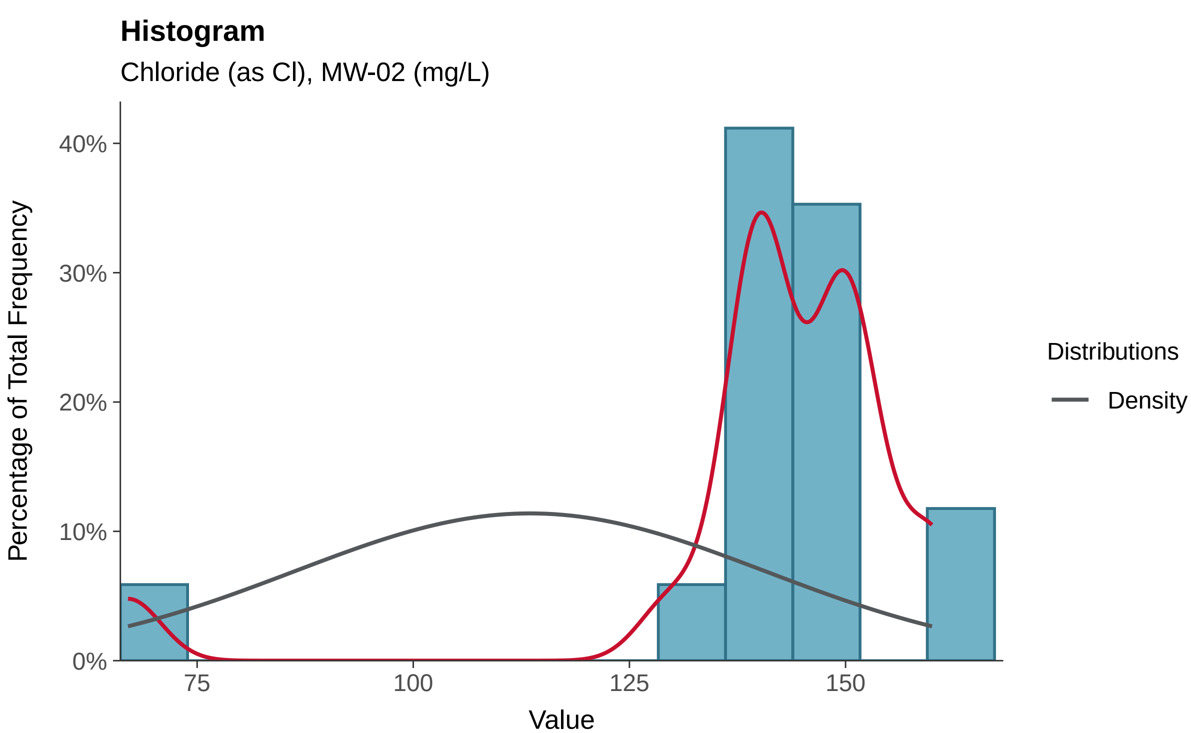
Calcium, MW-02 (mg/L)



Appendix III: Chloride (as Cl), MW-02

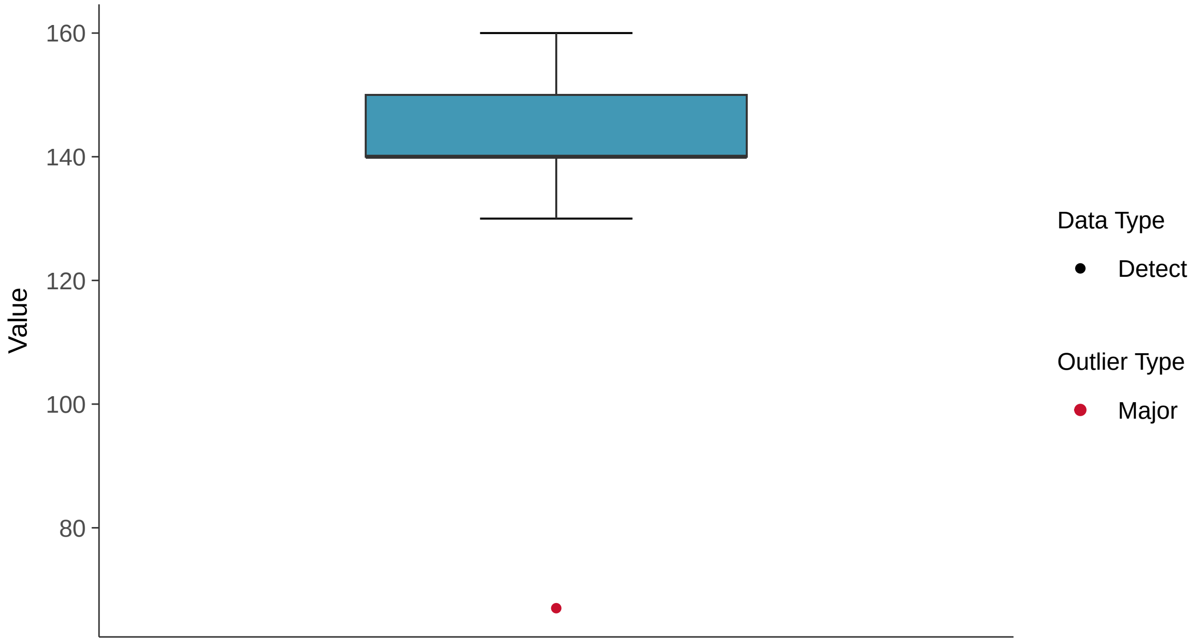
ID: 12_2_3_108





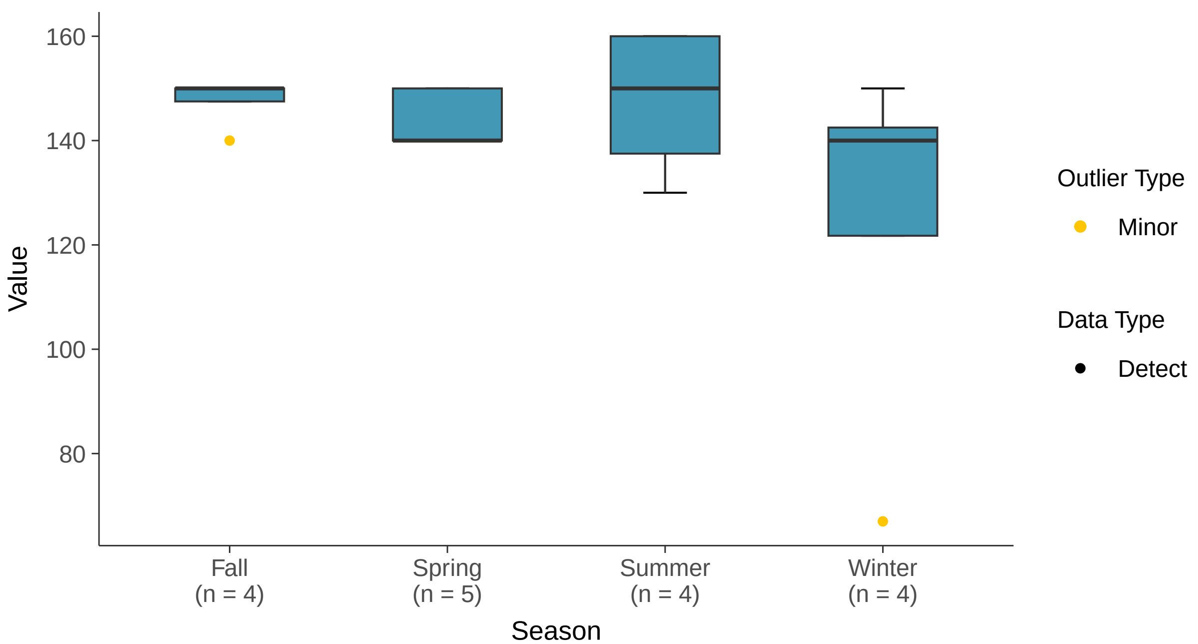
Boxplot

Chloride (as Cl), MW-02 (mg/L)



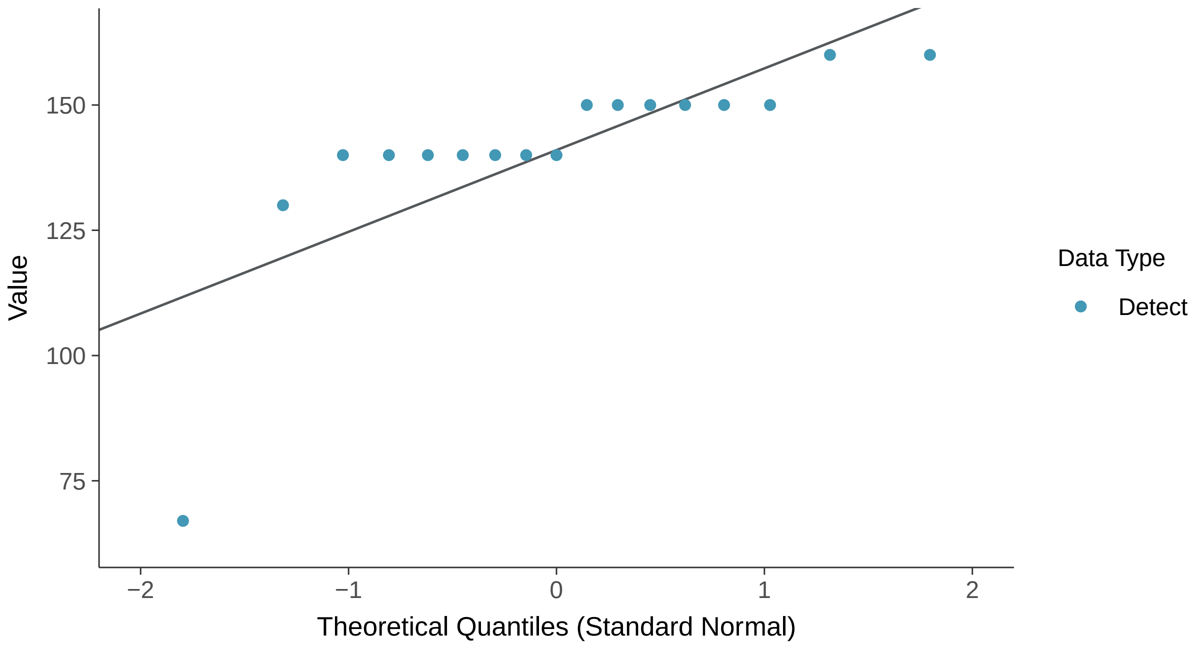
Boxplot by Season

Chloride (as Cl), MW-02 (mg/L)



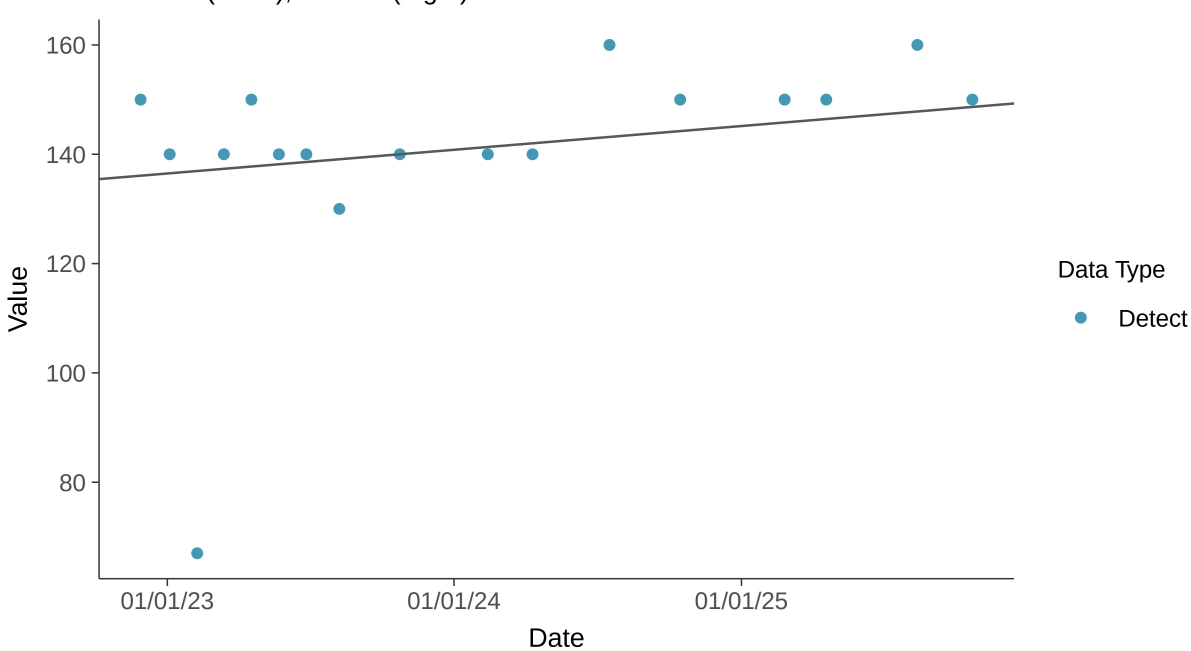
Normal Q-Q plot

Chloride (as Cl), MW-02 (mg/L)



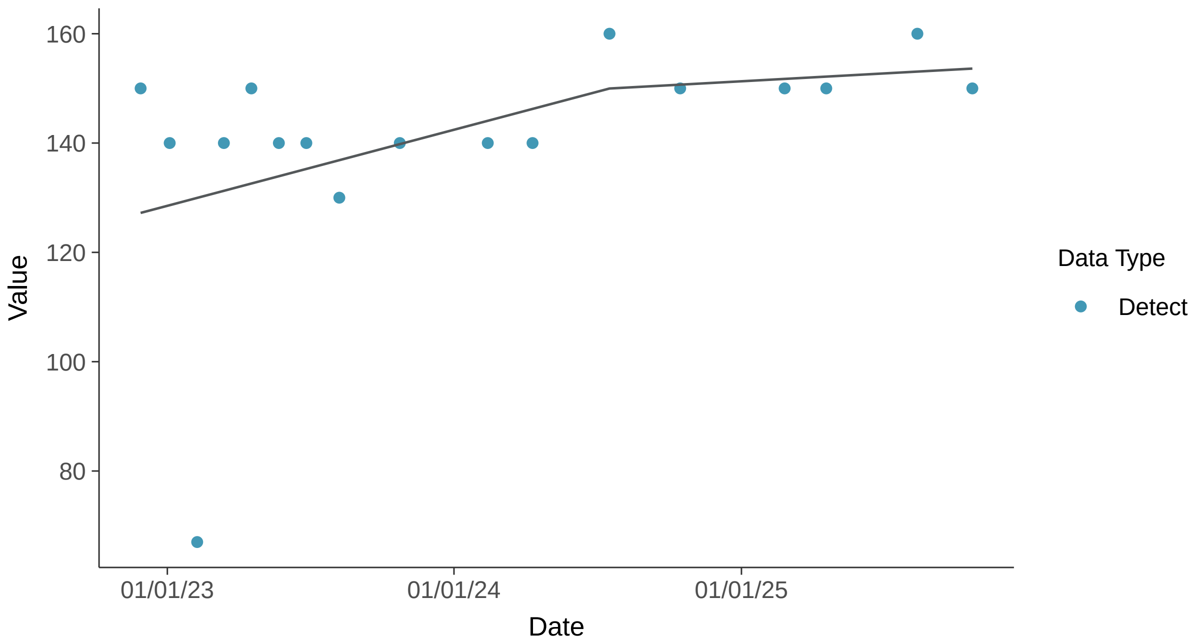
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Chloride (as Cl), MW-02 (mg/L)



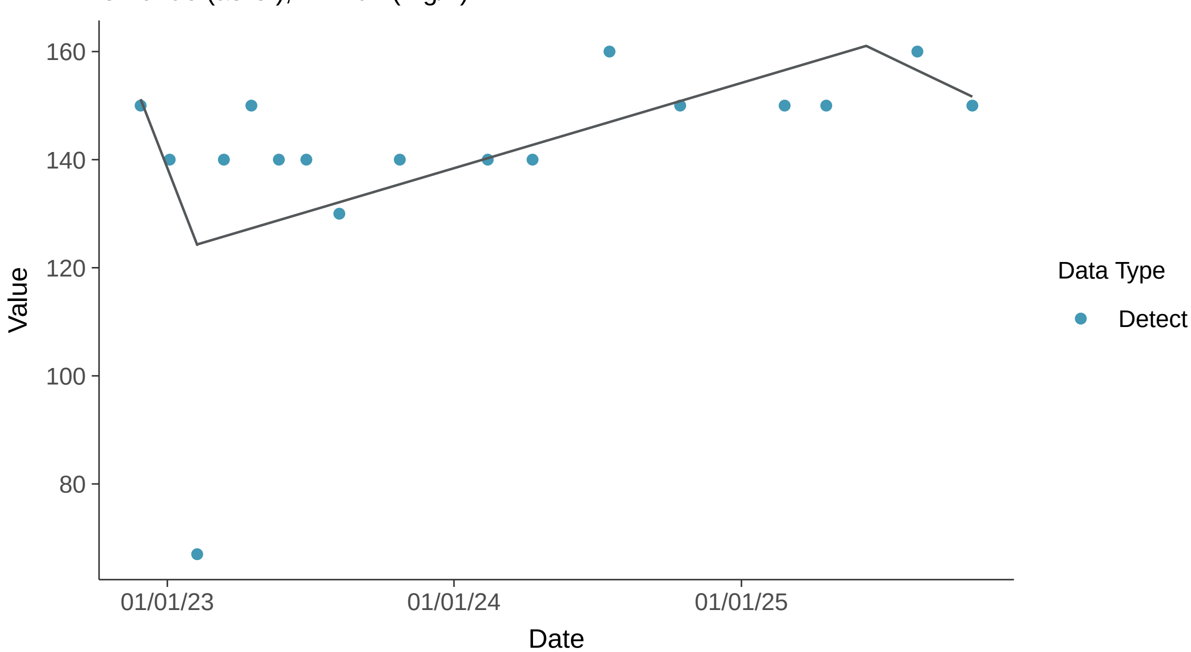
Trend Regression: Piecewise Linear-Linear

Chloride (as Cl), MW-02 (mg/L)



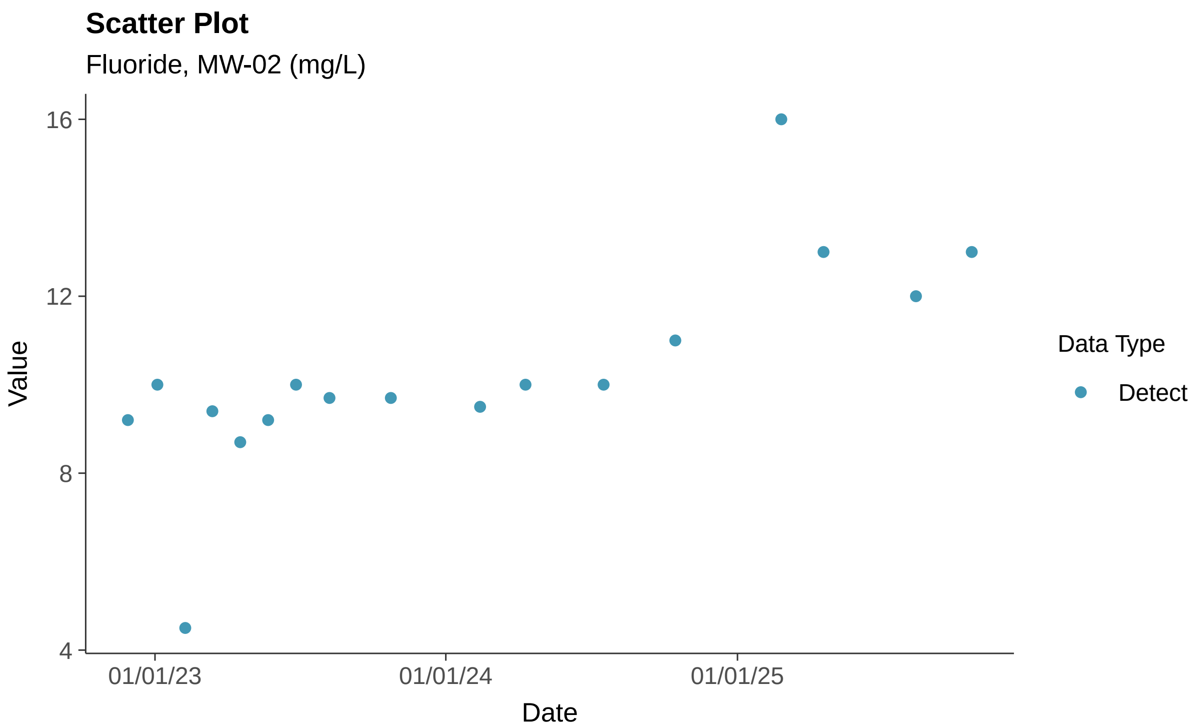
Trend Regression: Piecewise Linear-Linear-Linear

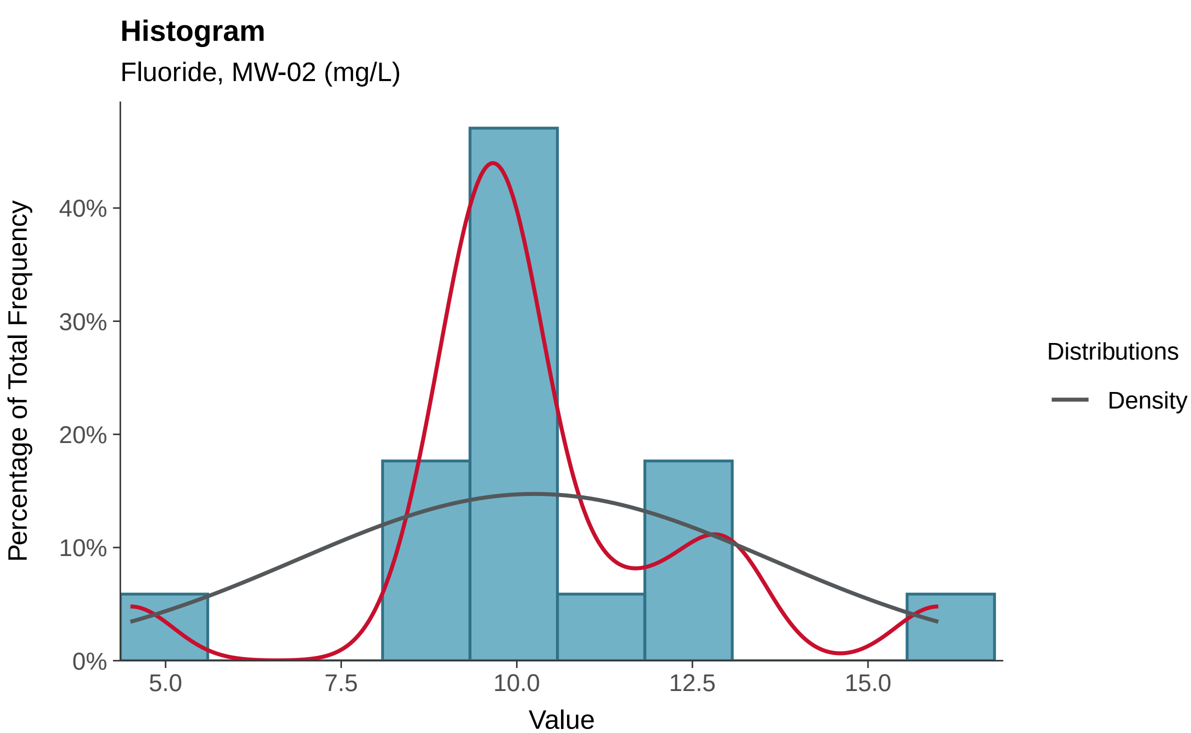
Chloride (as Cl), MW-02 (mg/L)



Appendix III: Fluoride, MW-02

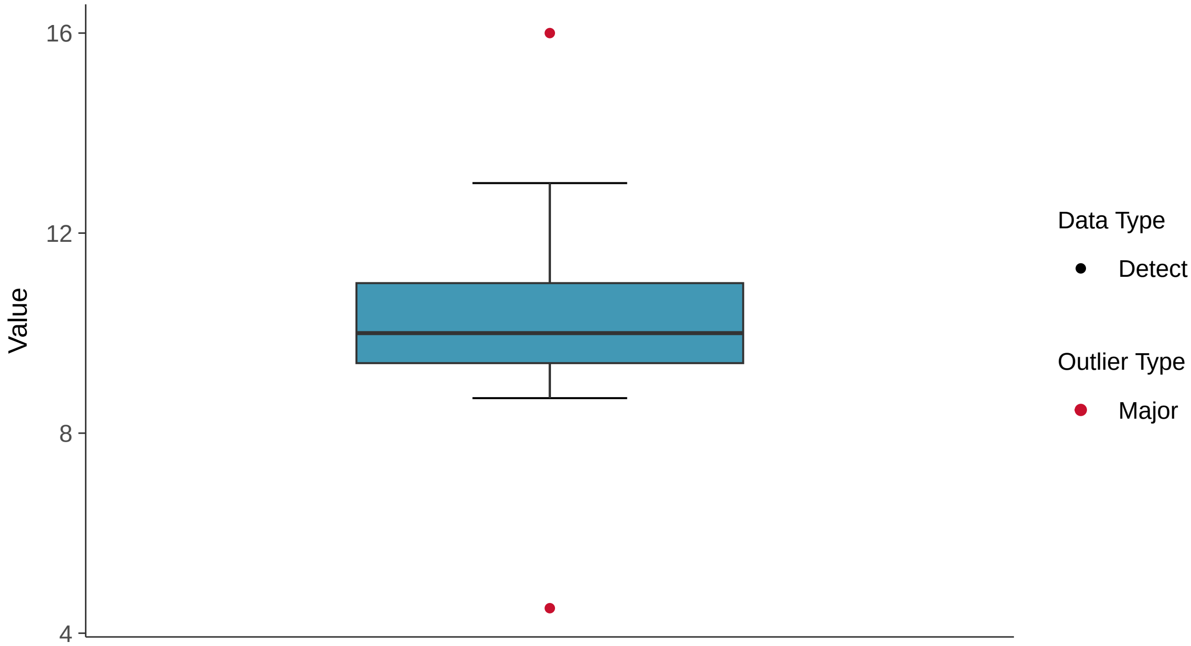
ID: 12_2_3_112





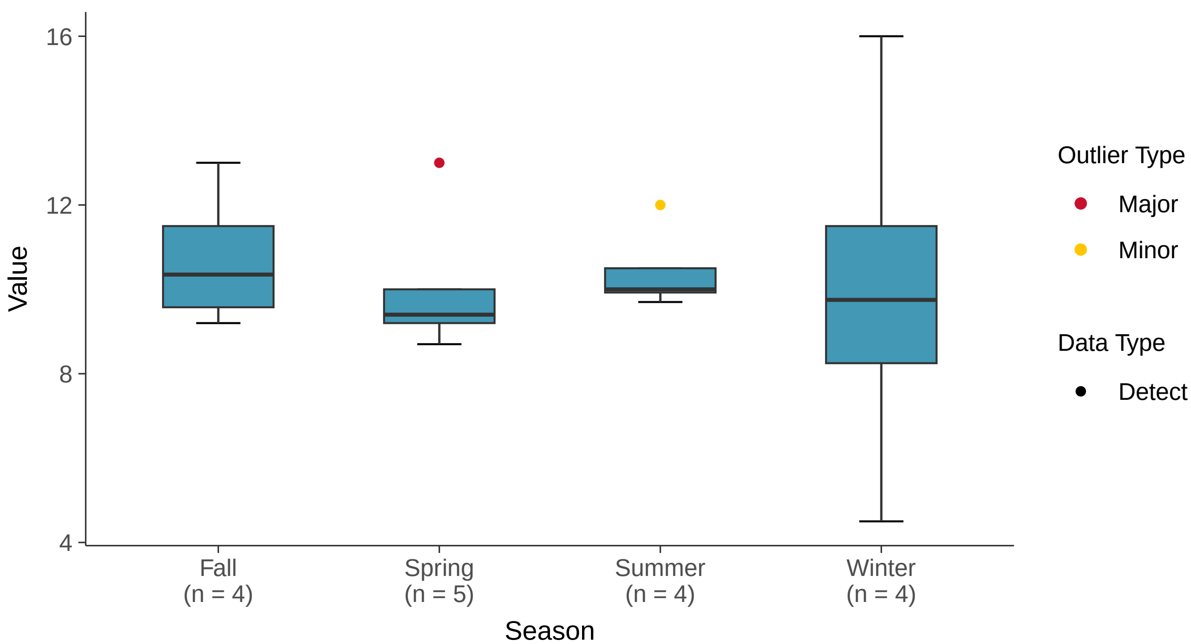
Boxplot

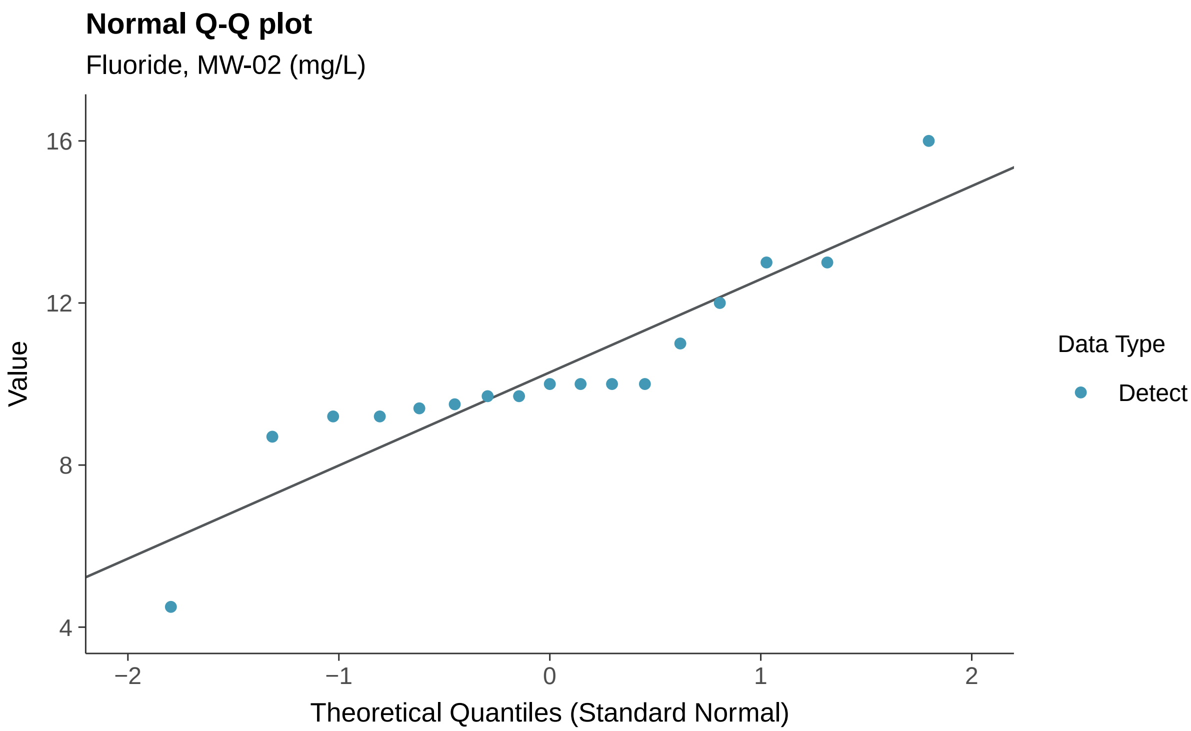
Fluoride, MW-02 (mg/L)

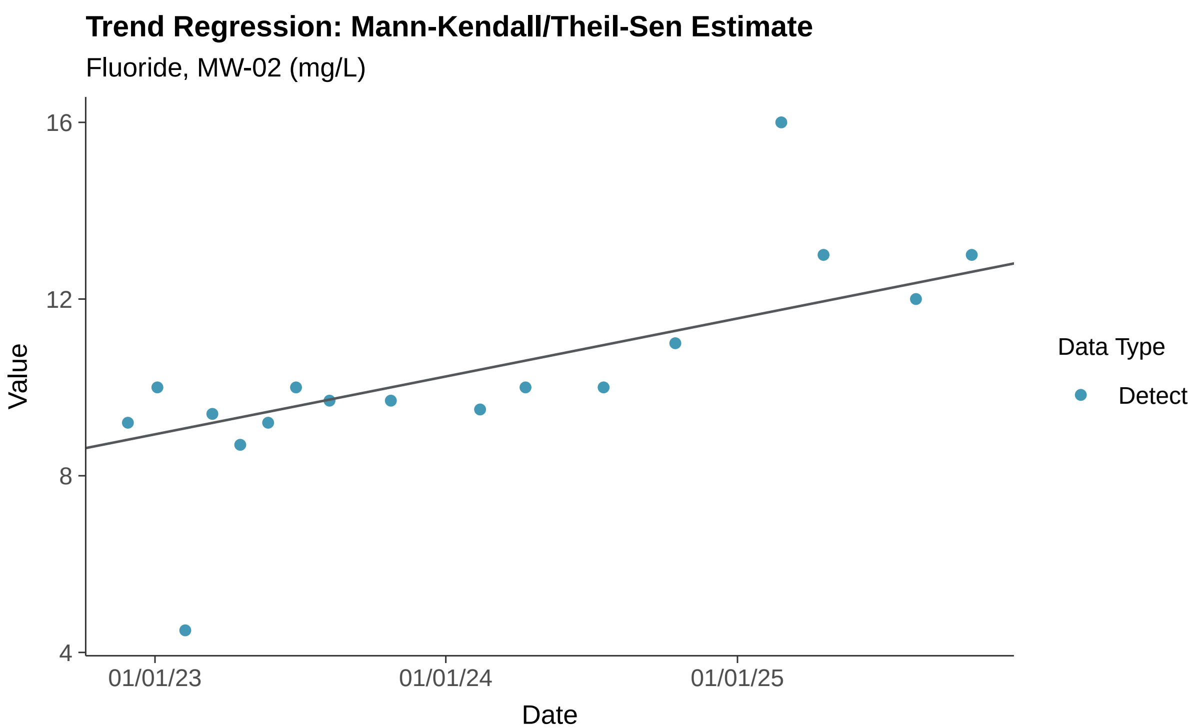


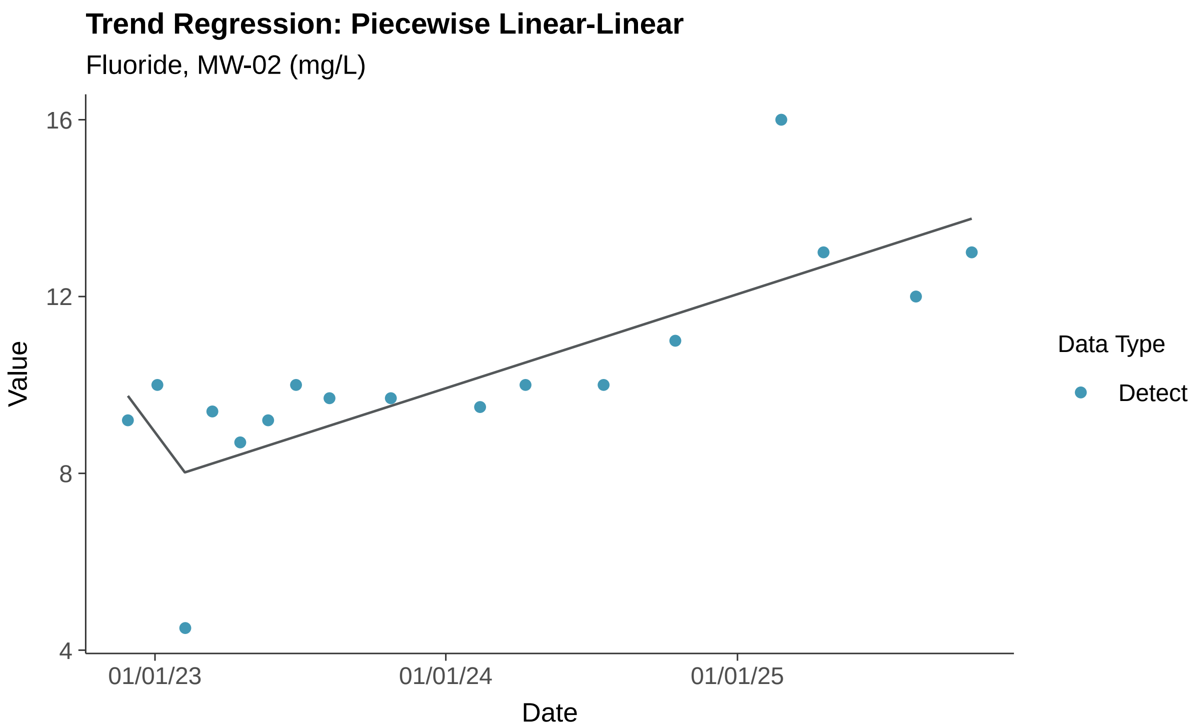
Boxplot by Season

Fluoride, MW-02 (mg/L)



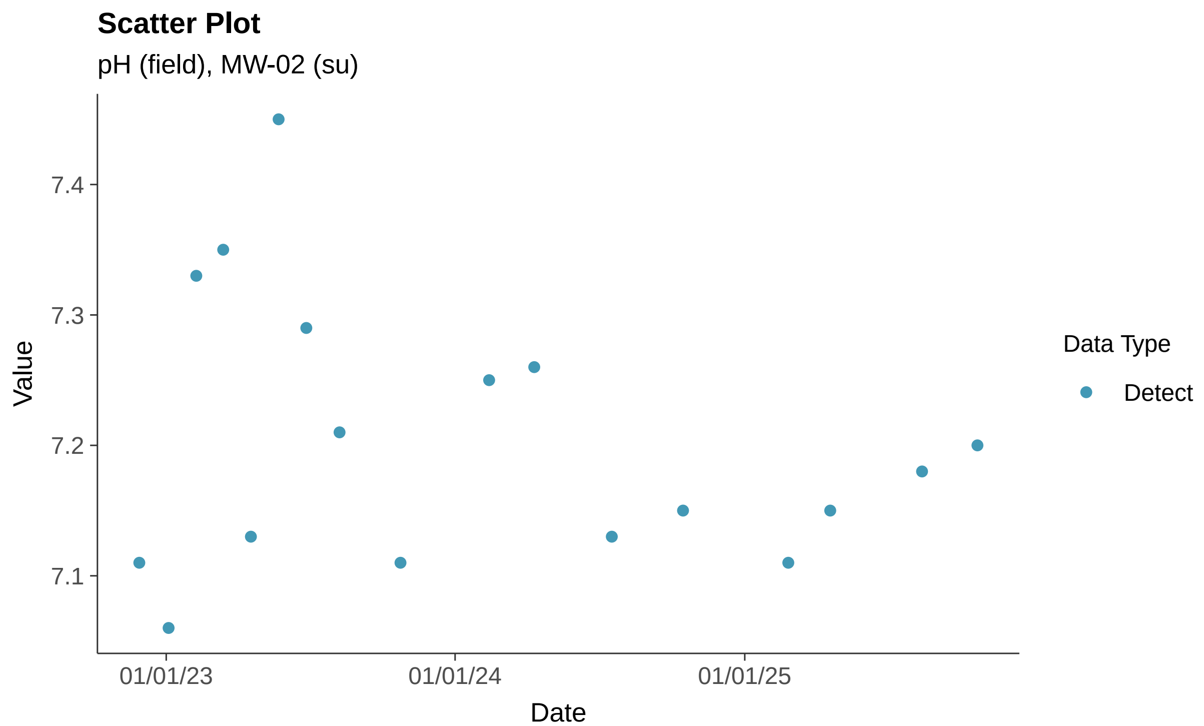

Normal Q-Q plot
Fluoride, MW-02 (mg/L)
Value
16
12
8
4
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

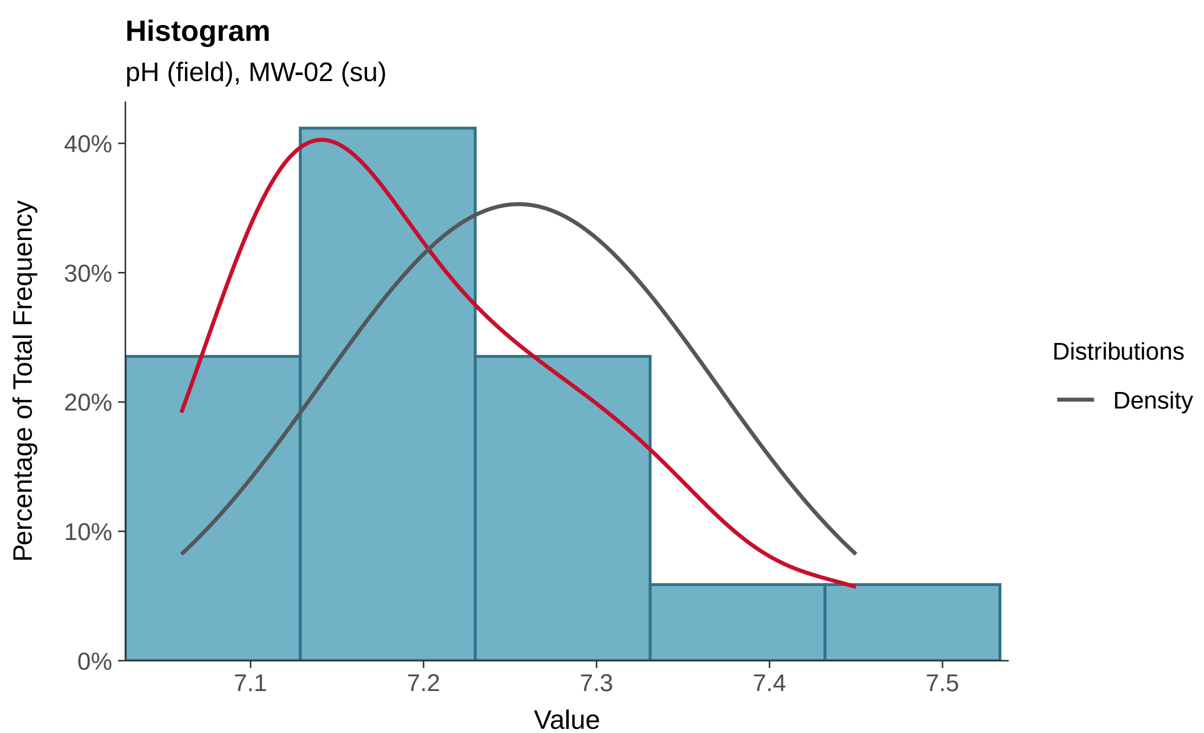

Trend Regression: Mann-Kendall/Theil-Sen Estimate
Fluoride, MW-02 (mg/L)
Value
16
12
8
4
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear
Fluoride, MW-02 (mg/L)
Value
16
12
8
4
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Appendix III: pH (field), MW-02

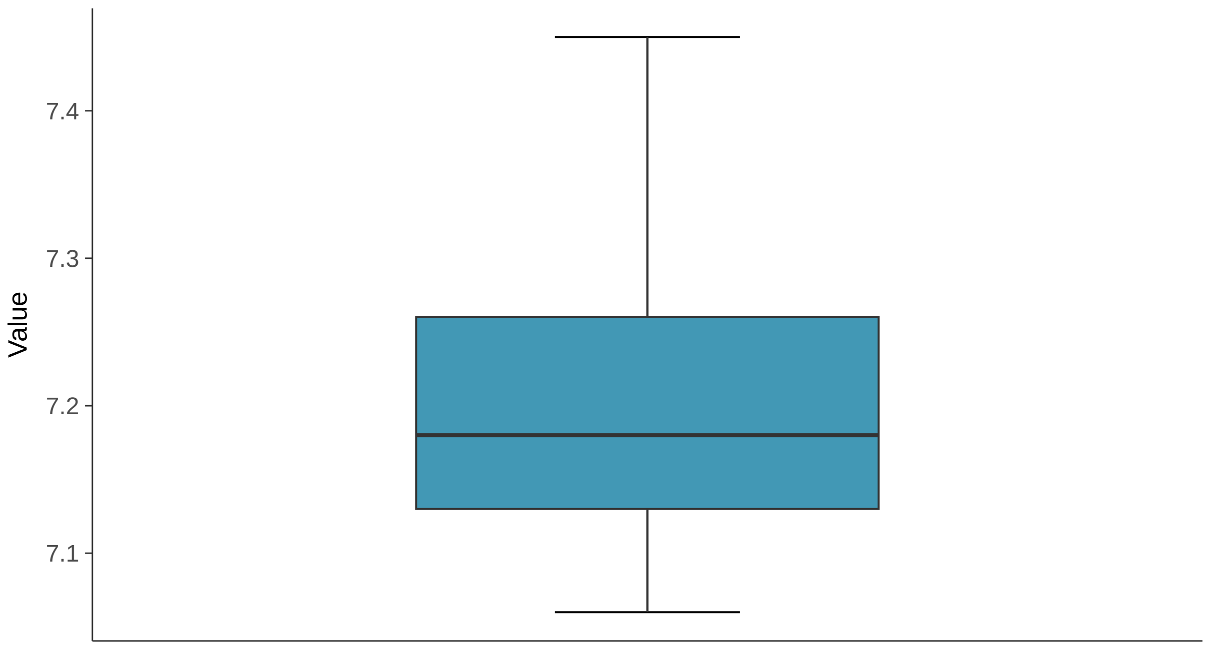
ID: 12_2_3_120





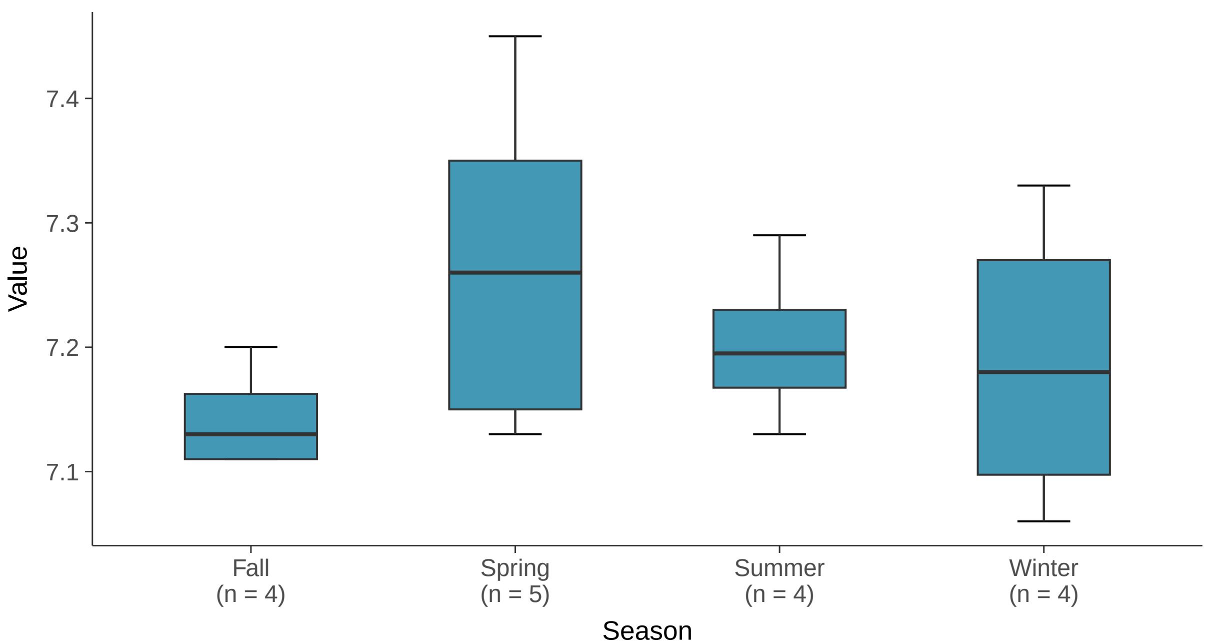
Boxplot

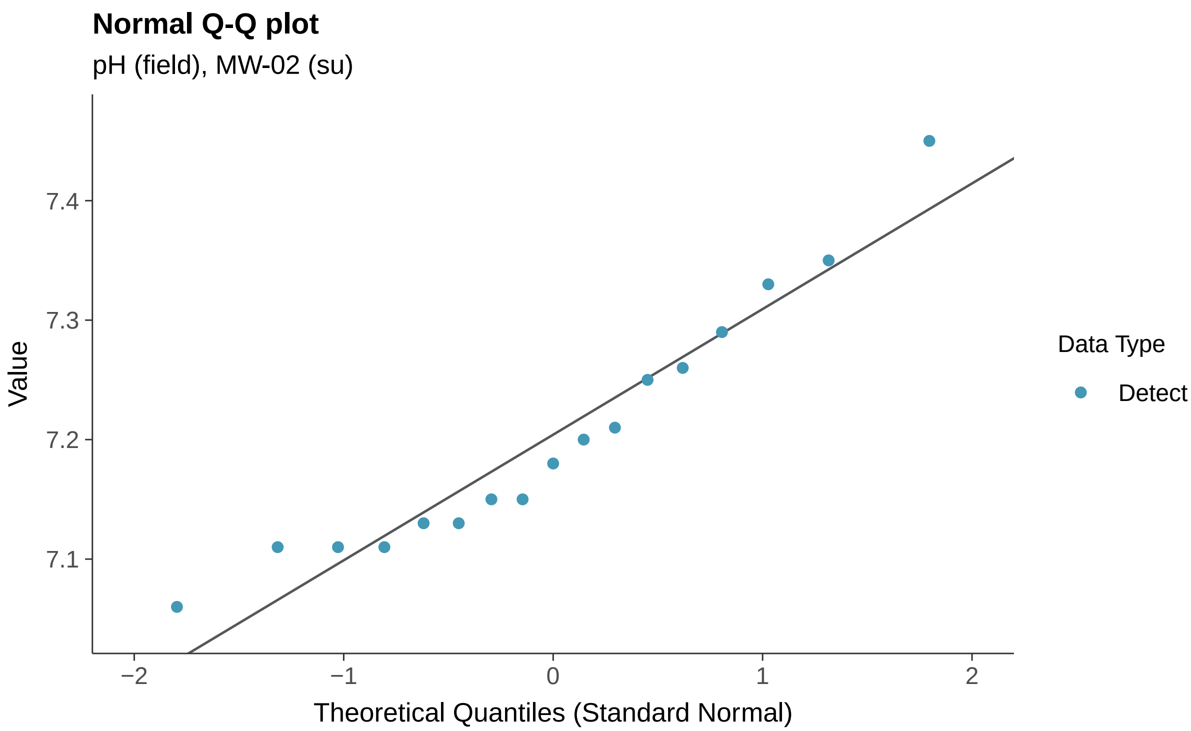
pH (field), MW-02 (su)

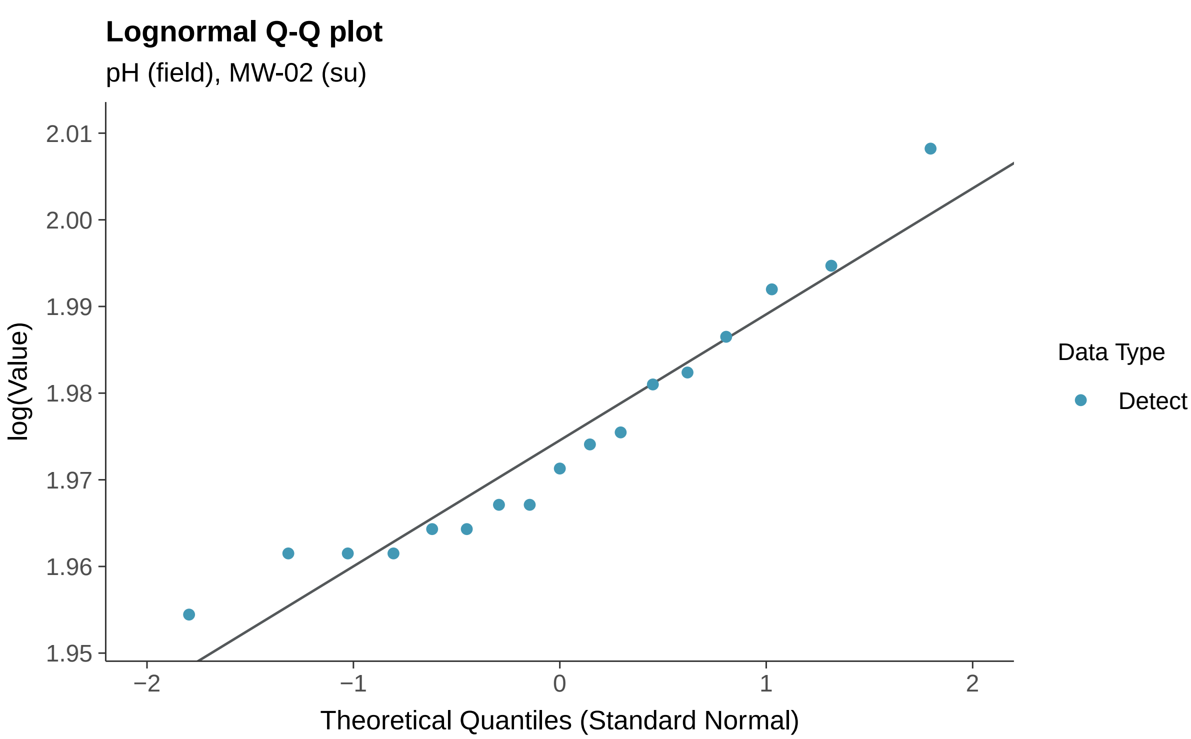


Boxplot by Season

pH (field), MW-02 (su)

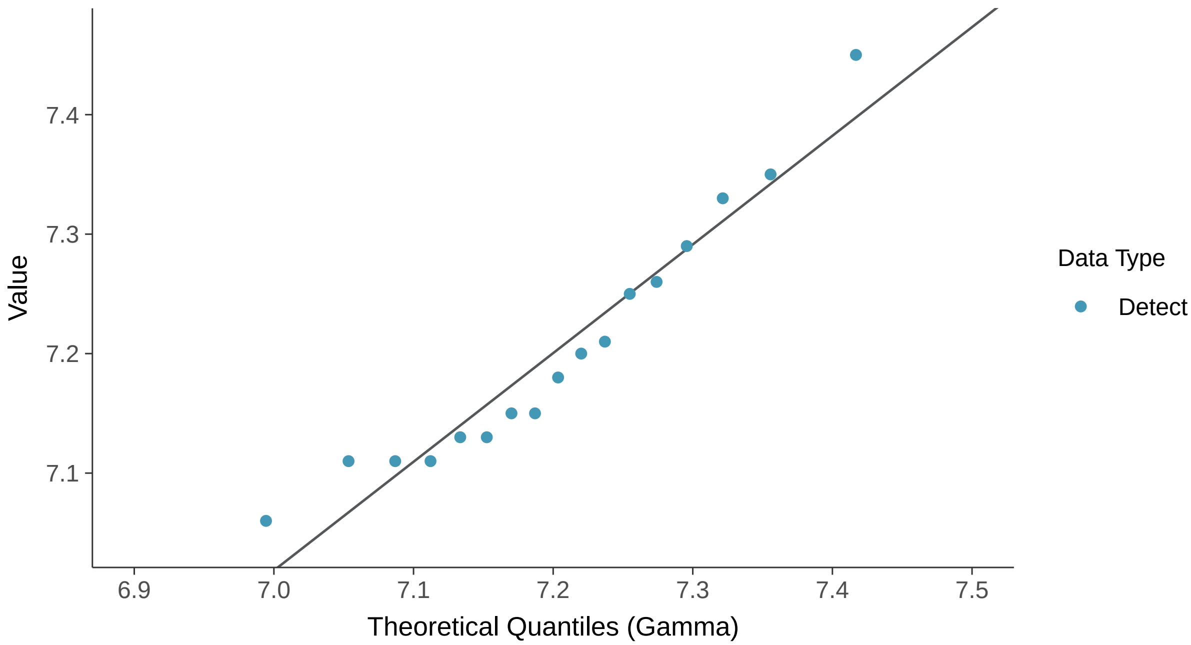



Normal Q-Q plot
pH (field), MW-02 (su)
Value
7.4
7.3
7.2
7.1
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
pH (field), MW-02 (su)
log(Value)
2.01
2.00
1.99
1.98
1.97
1.96
1.95
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

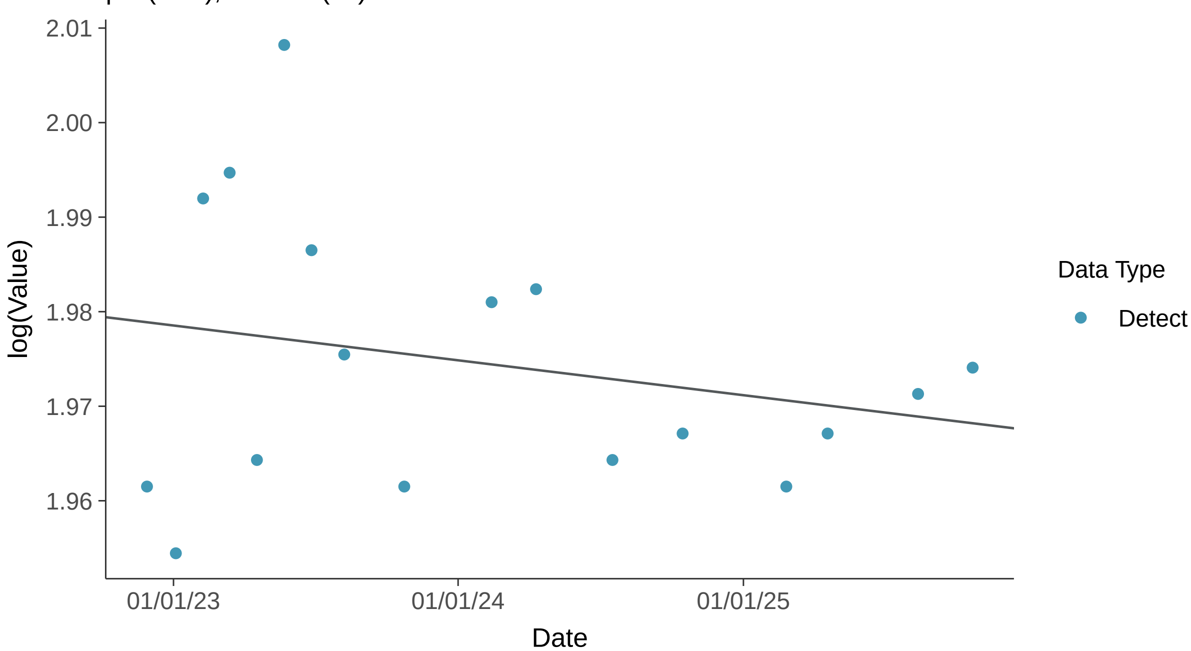
Gamma Q-Q plot

pH (field), MW-02 (su)



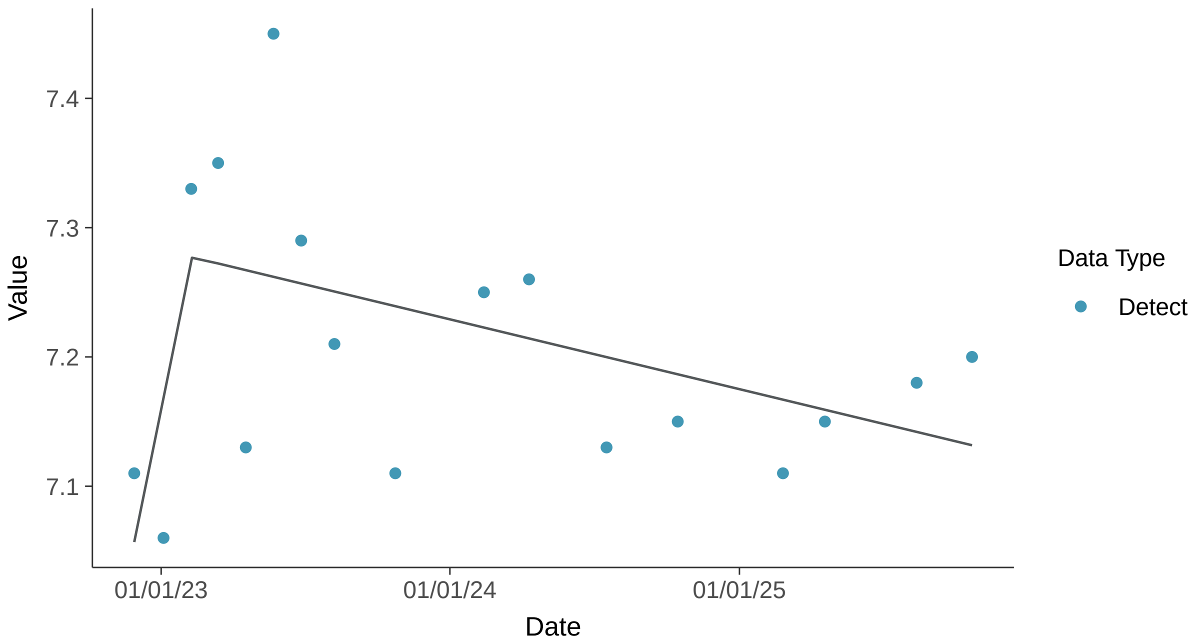
Trend Regression: Lognormal MLE

pH (field), MW-02 (su)



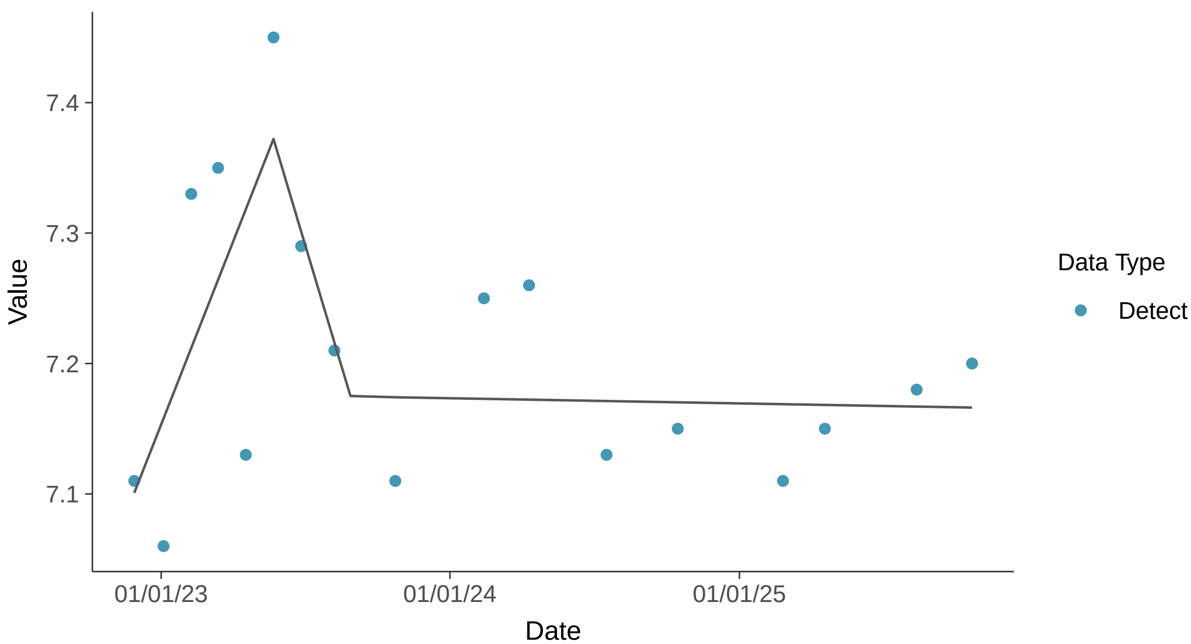
Trend Regression: Piecewise Linear-Linear

pH (field), MW-02 (su)



Trend Regression: Piecewise Linear-Linear-Linear

pH (field), MW-02 (su)

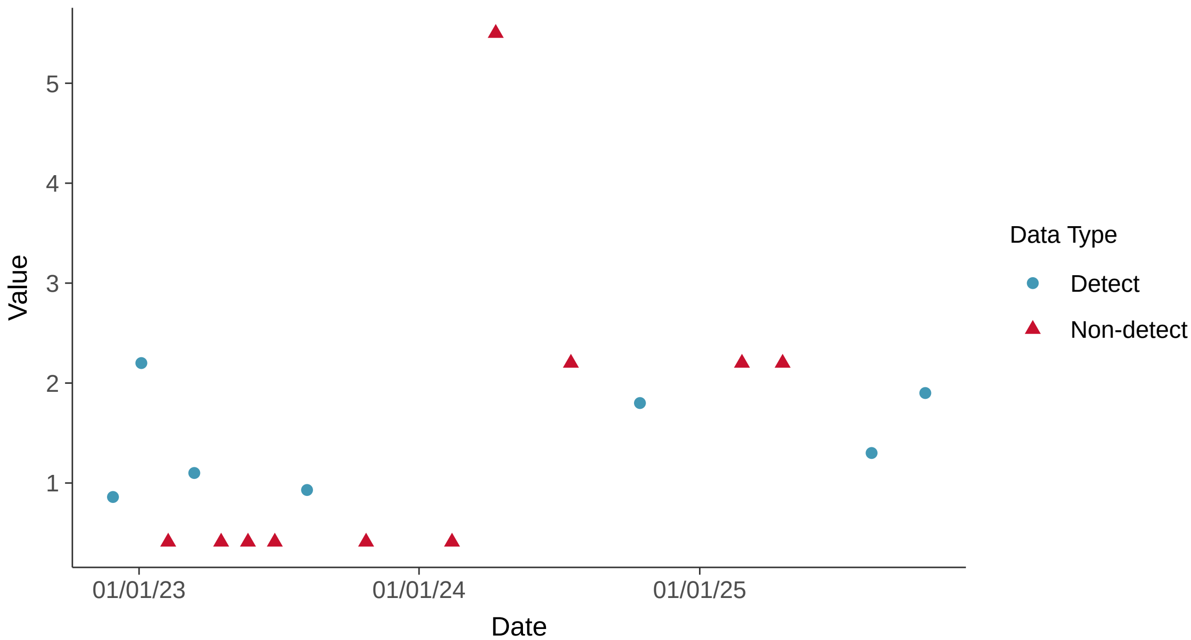


Appendix III: Sulfate (as SO4), MW-02

ID: 12_2_3_124

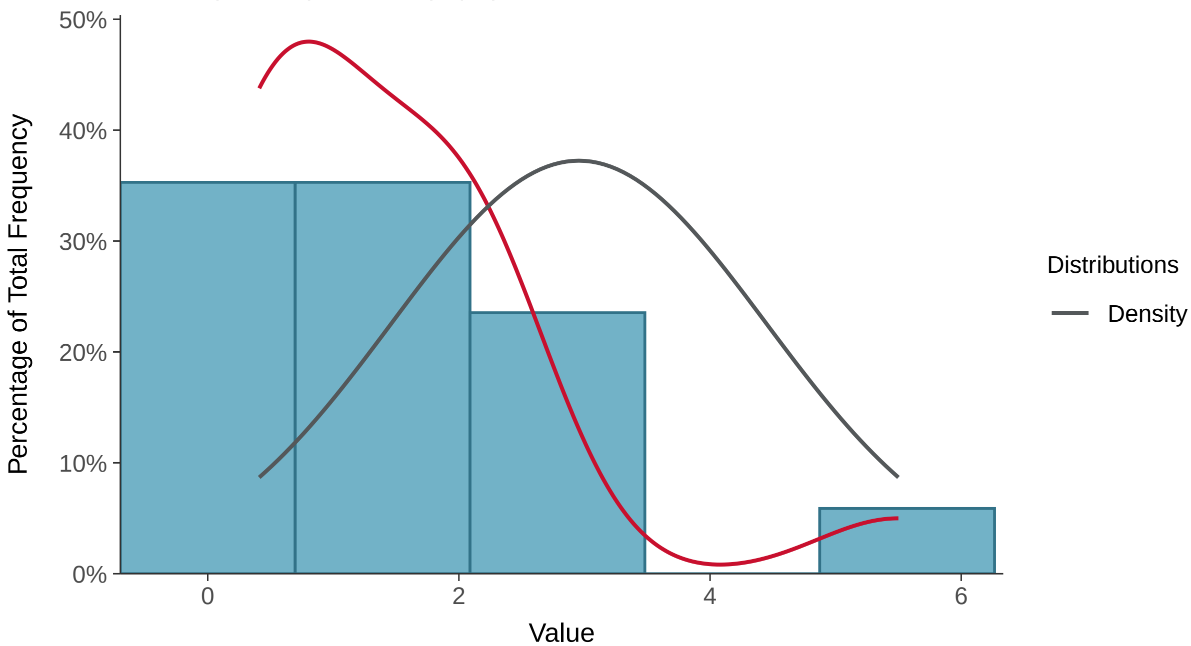
Scatter Plot

Sulfate (as SO4), MW-02 (mg/L)



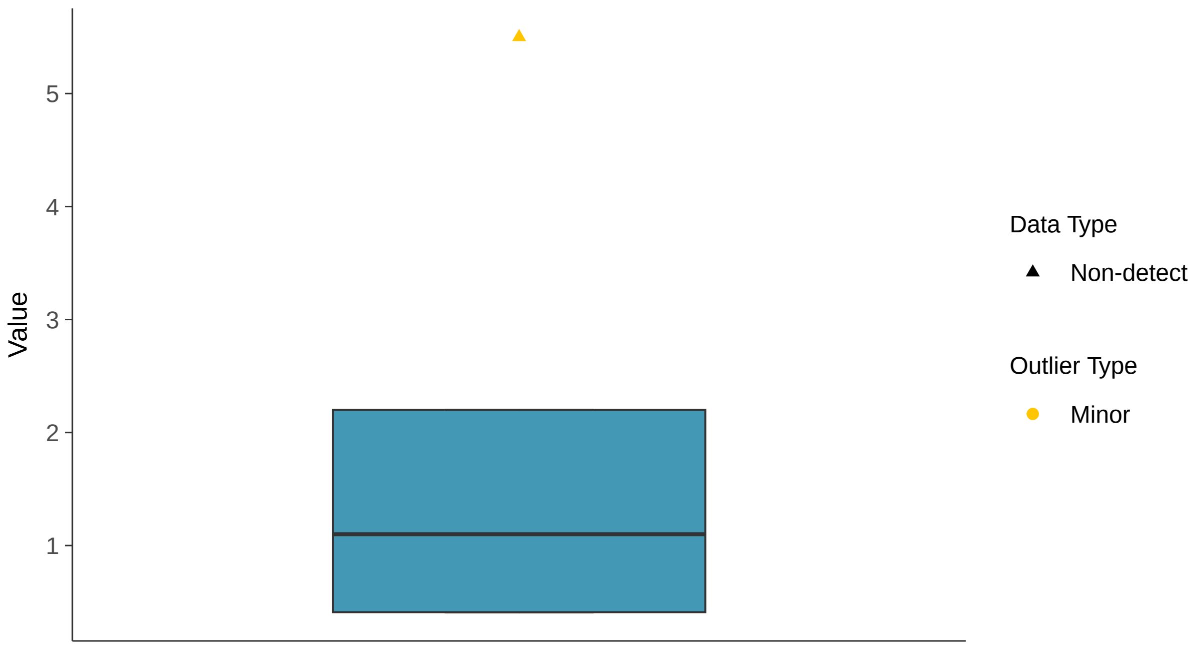
Histogram

Sulfate (as SO4), MW-02 (mg/L)



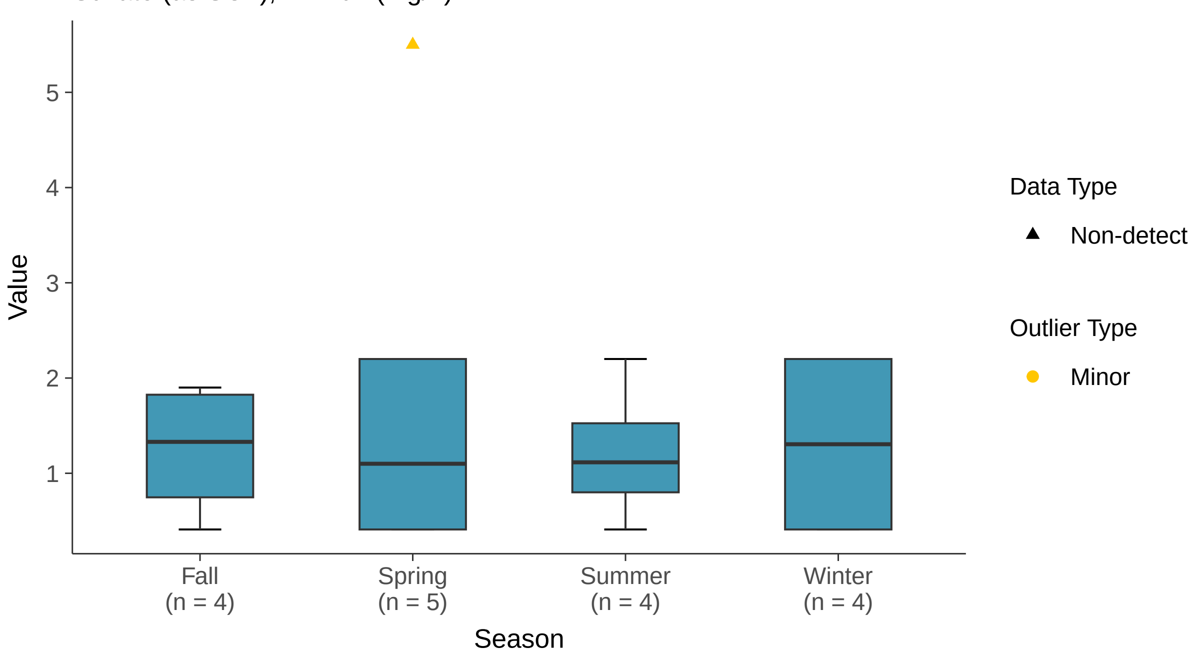
Boxplot

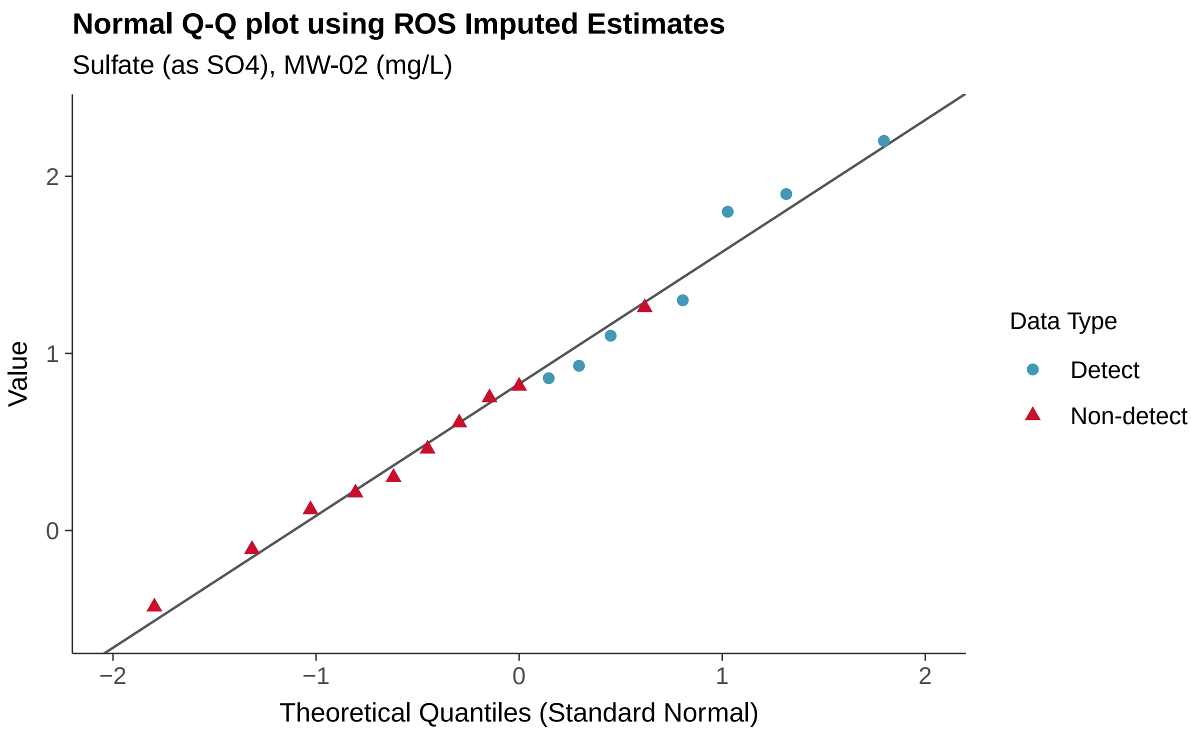
Sulfate (as SO4), MW-02 (mg/L)

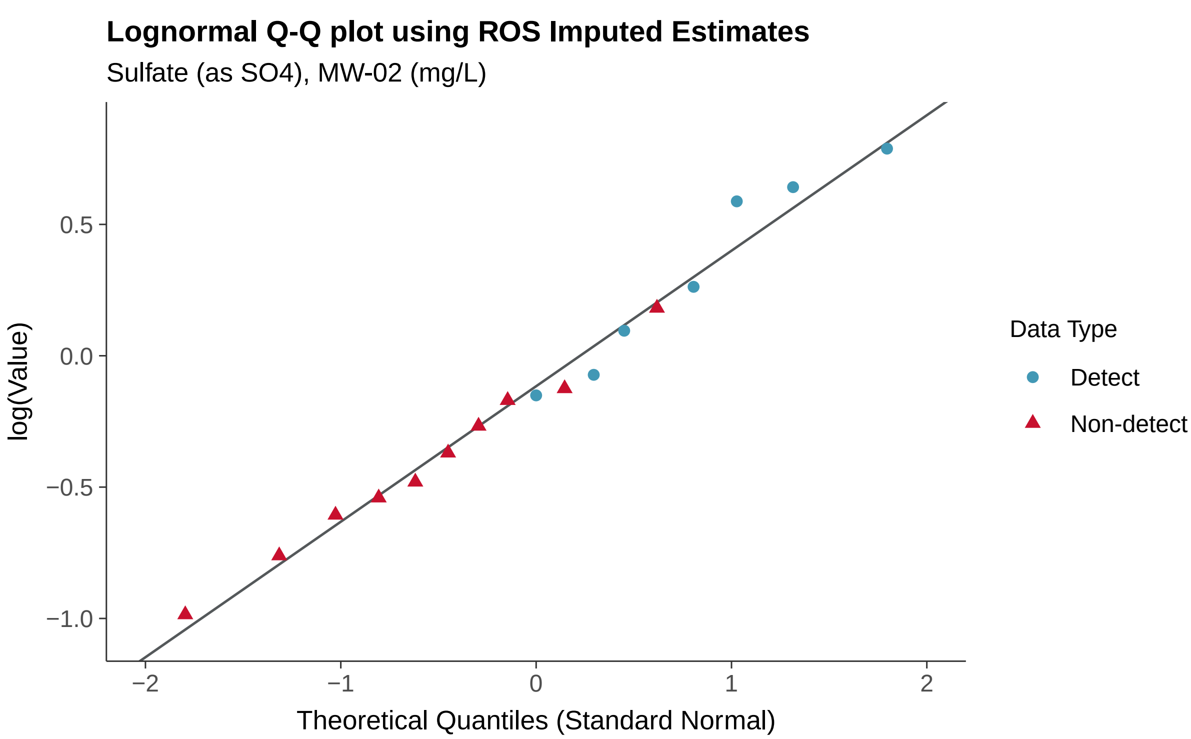


Boxplot by Season

Sulfate (as SO4), MW-02 (mg/L)

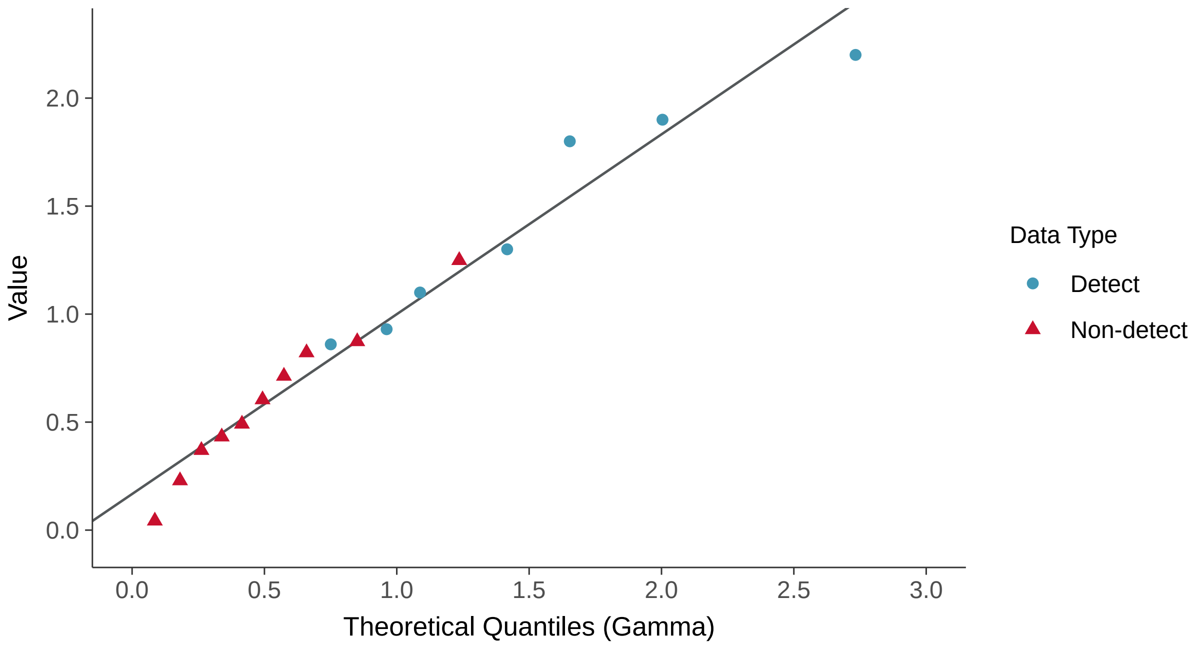



Normal Q-Q plot using ROS Imputed Estimates
Sulfate (as SO4), MW-02 (mg/L)
Value
2
1
0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Lognormal Q-Q plot using ROS Imputed Estimates
Sulfate (as SO4), MW-02 (mg/L)
log(Value)
0.5
0.0
−0.5
−1.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

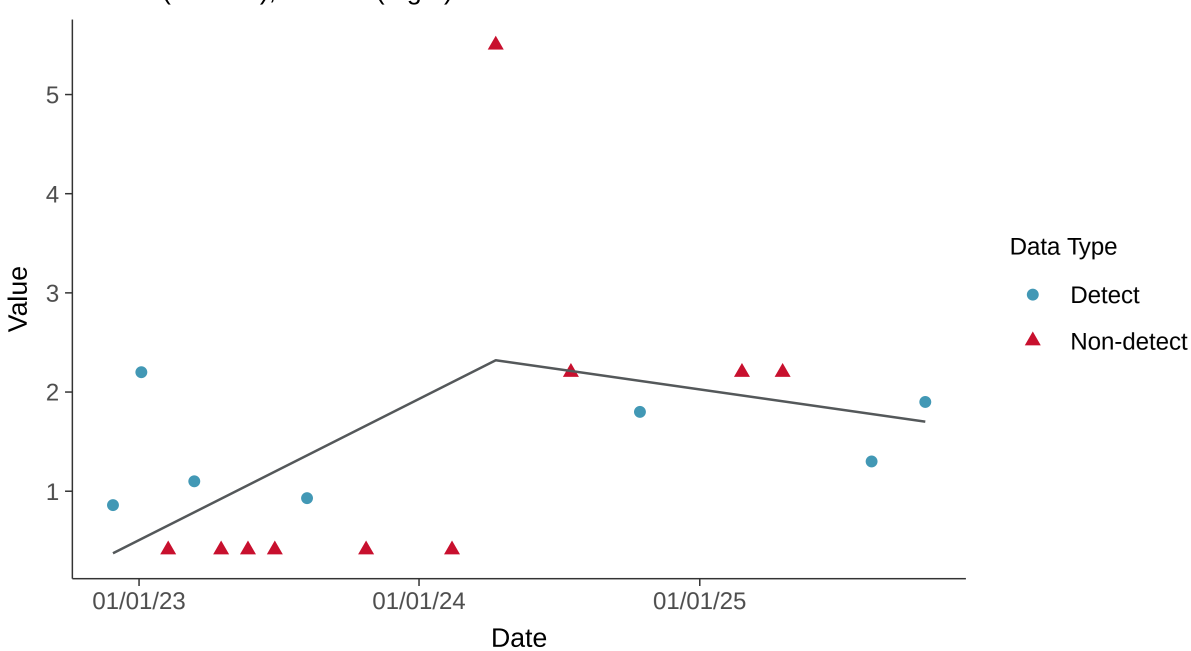
Gamma Q-Q plot using ROS Imputed Estimates

Sulfate (as SO4), MW-02 (mg/L)



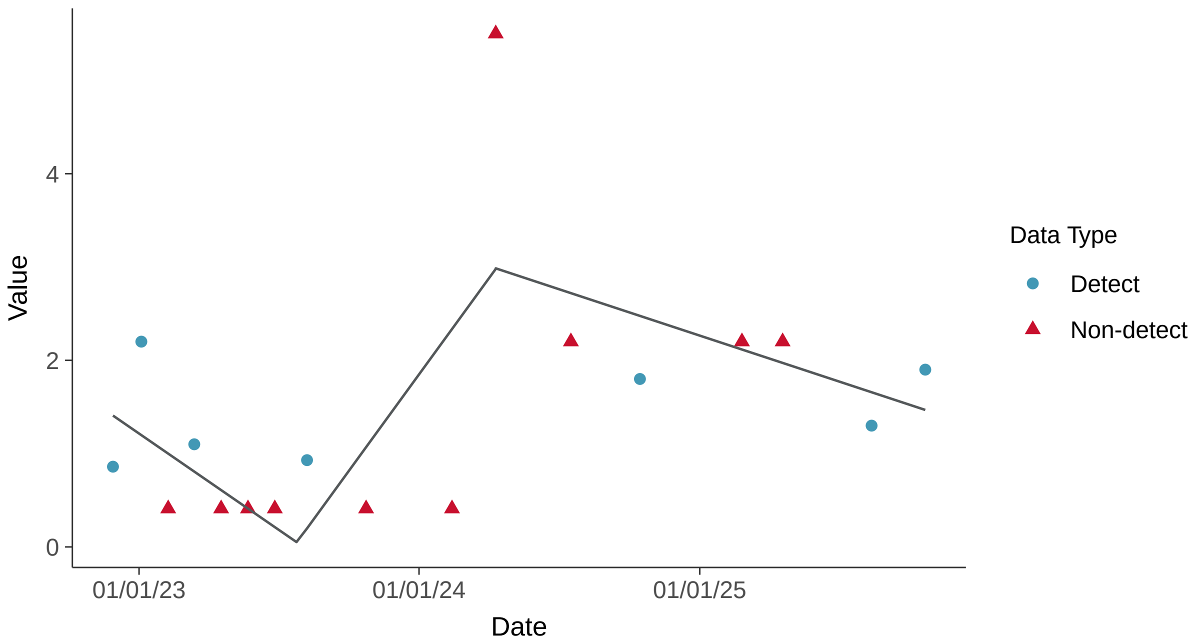
Trend Regression: Piecewise Linear-Linear

Sulfate (as SO4), MW-02 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Sulfate (as SO4), MW-02 (mg/L)

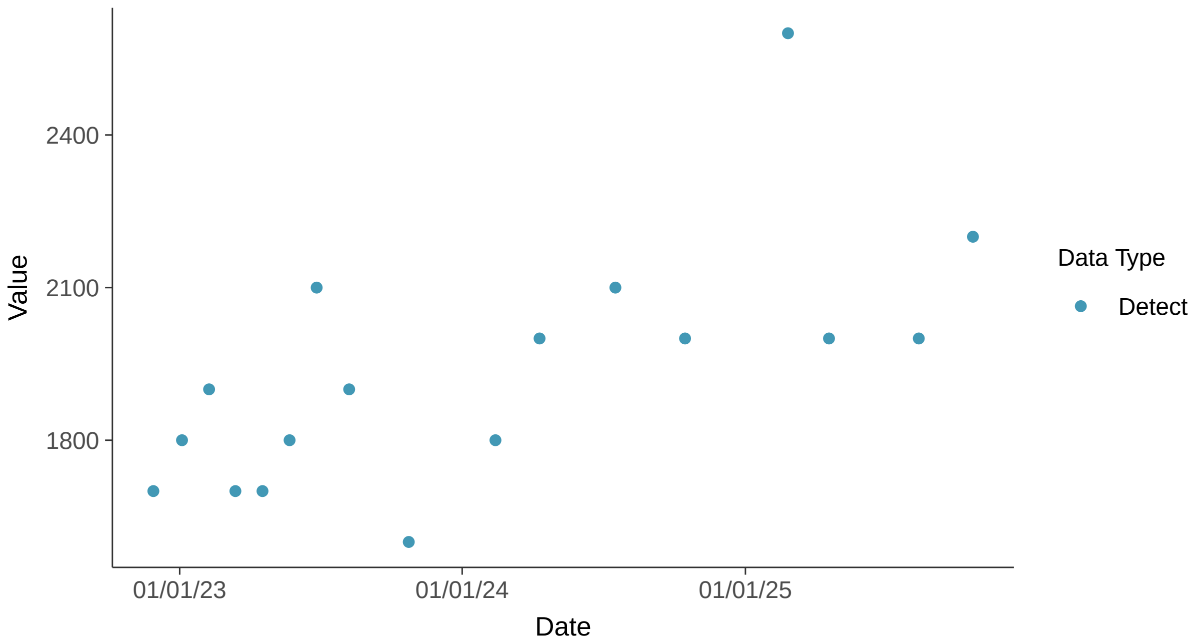


Appendix III: Total Dissolved Solids, MW-02

ID: 12_2_3_126

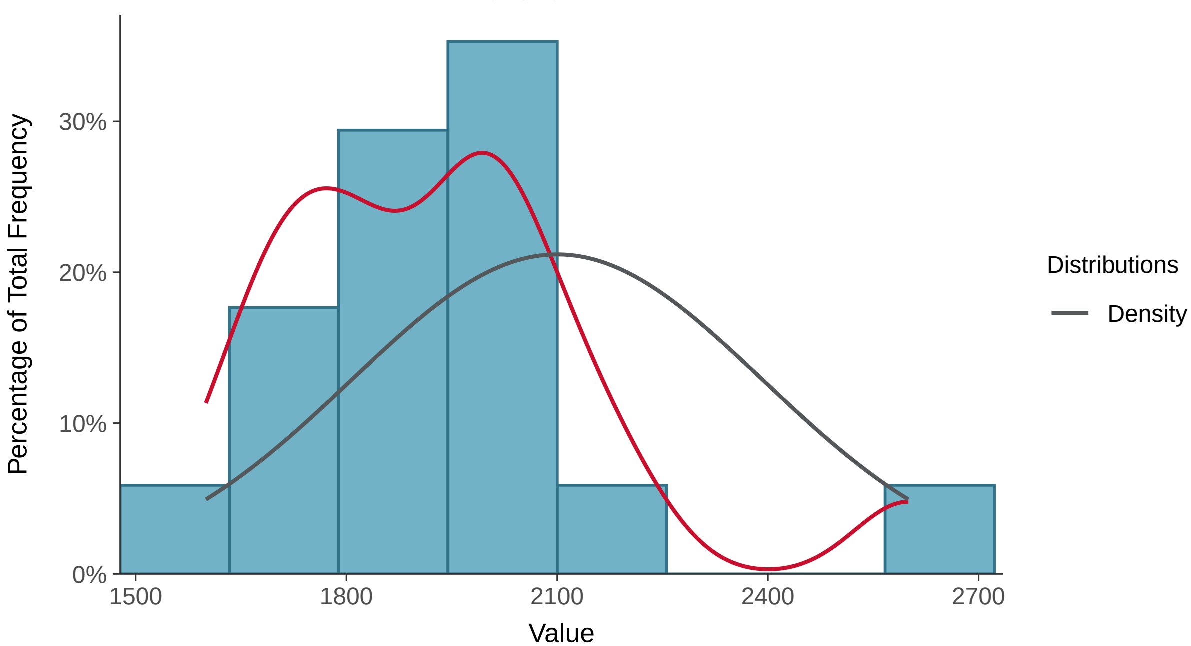
Scatter Plot

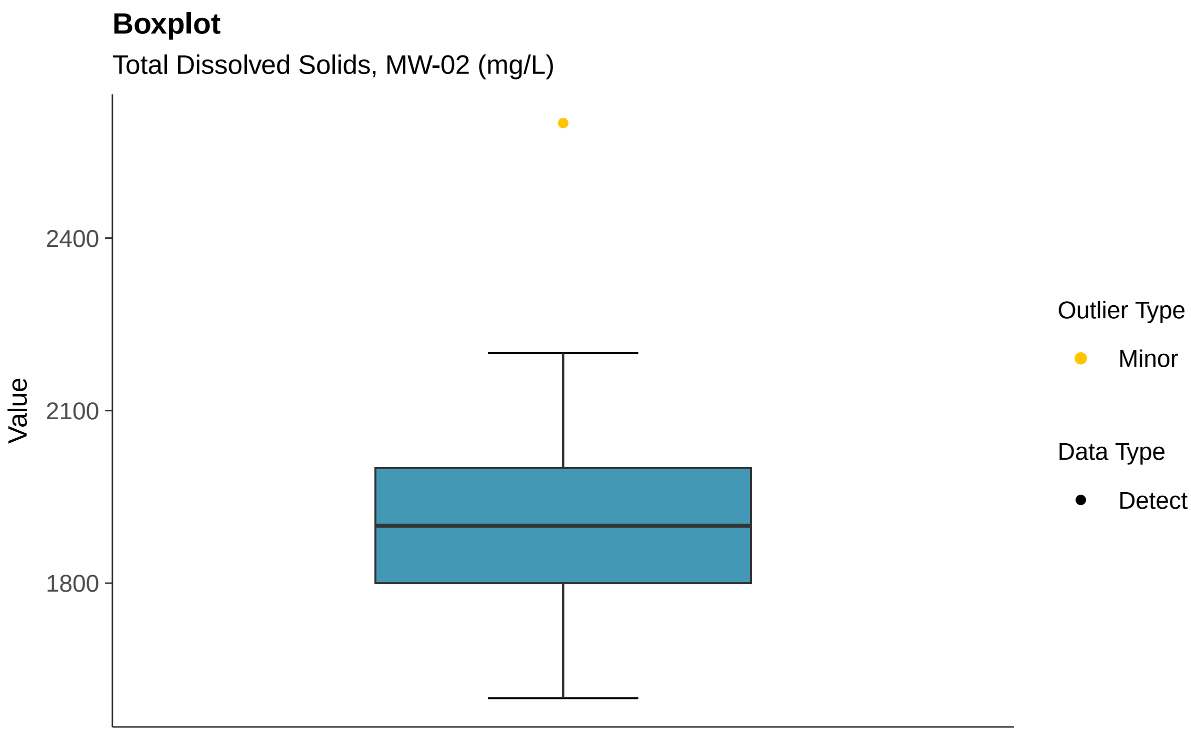
Total Dissolved Solids, MW-02 (mg/L)

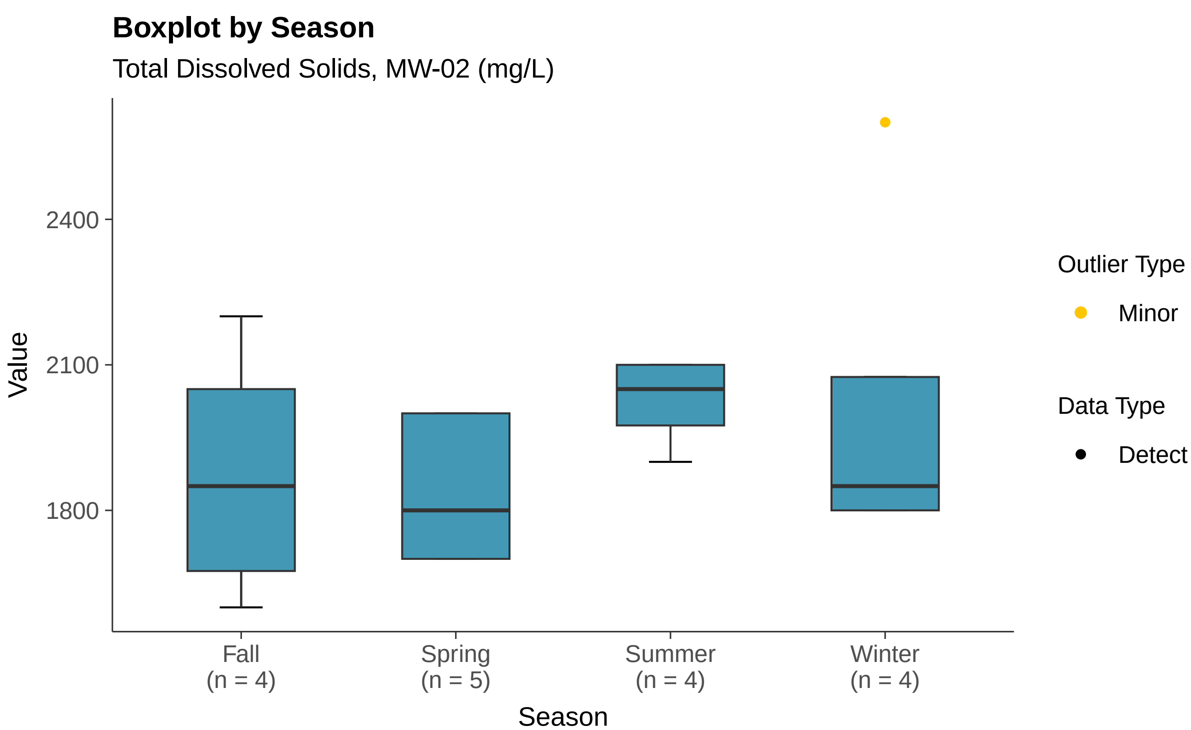


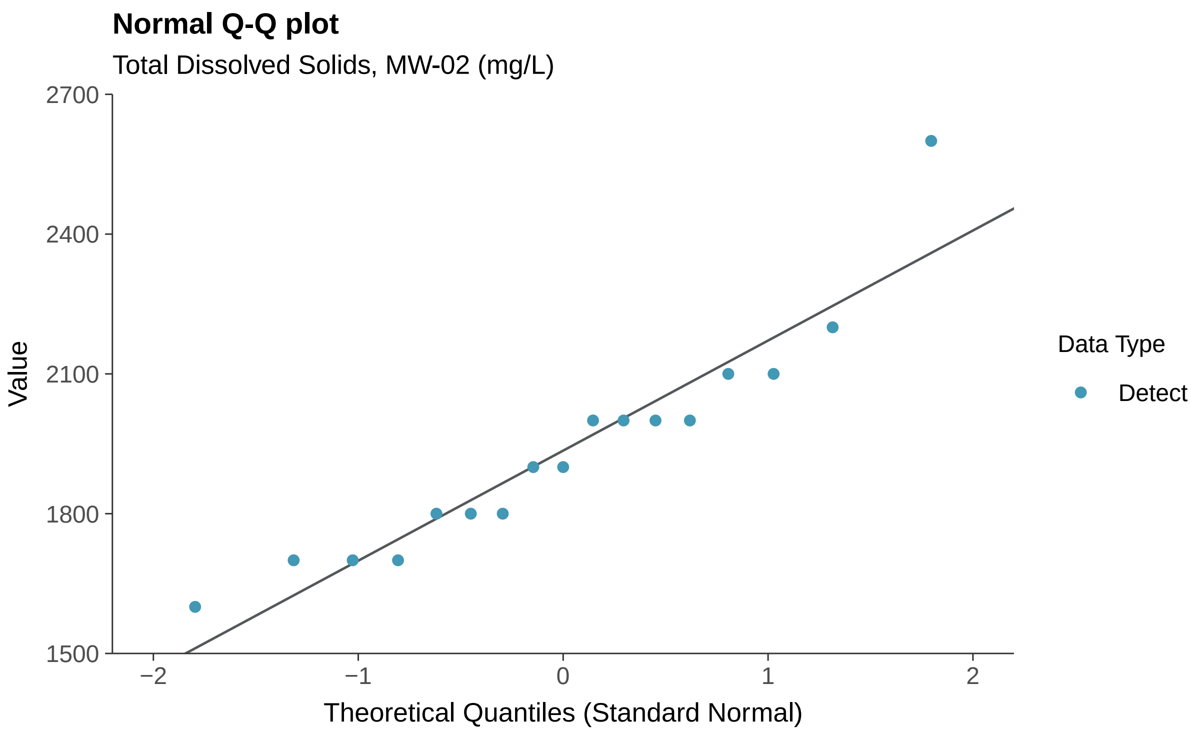
Histogram

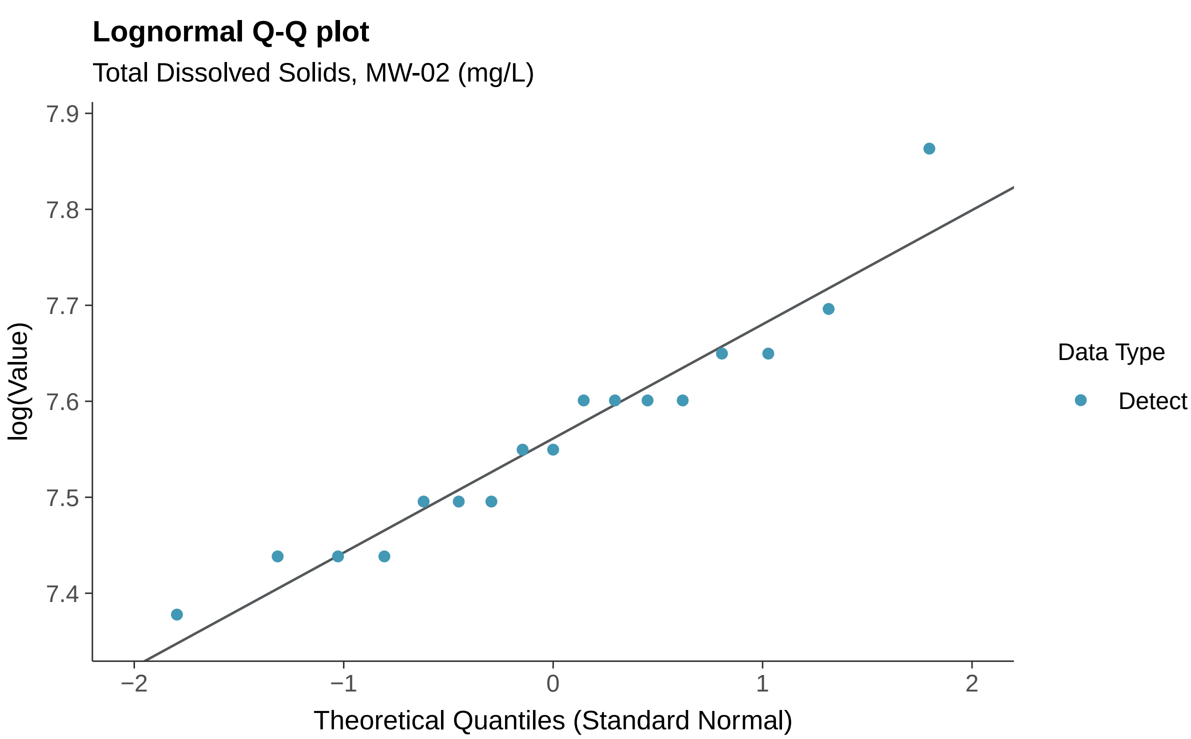
Total Dissolved Solids, MW-02 (mg/L)

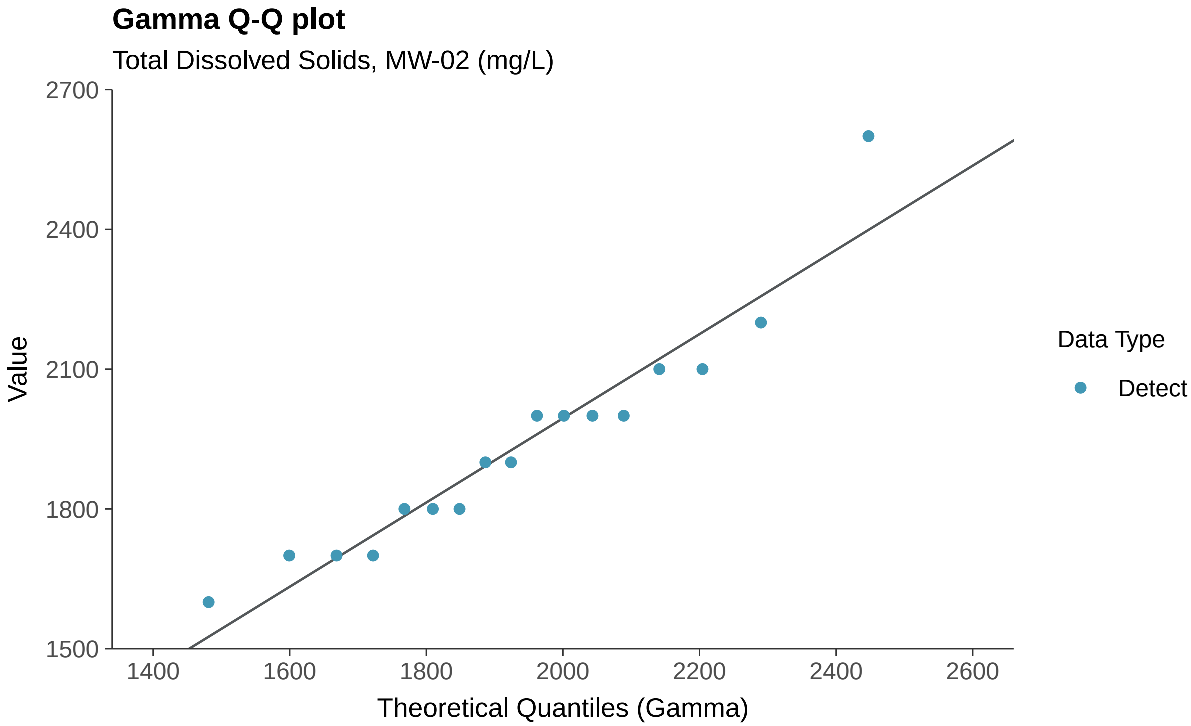


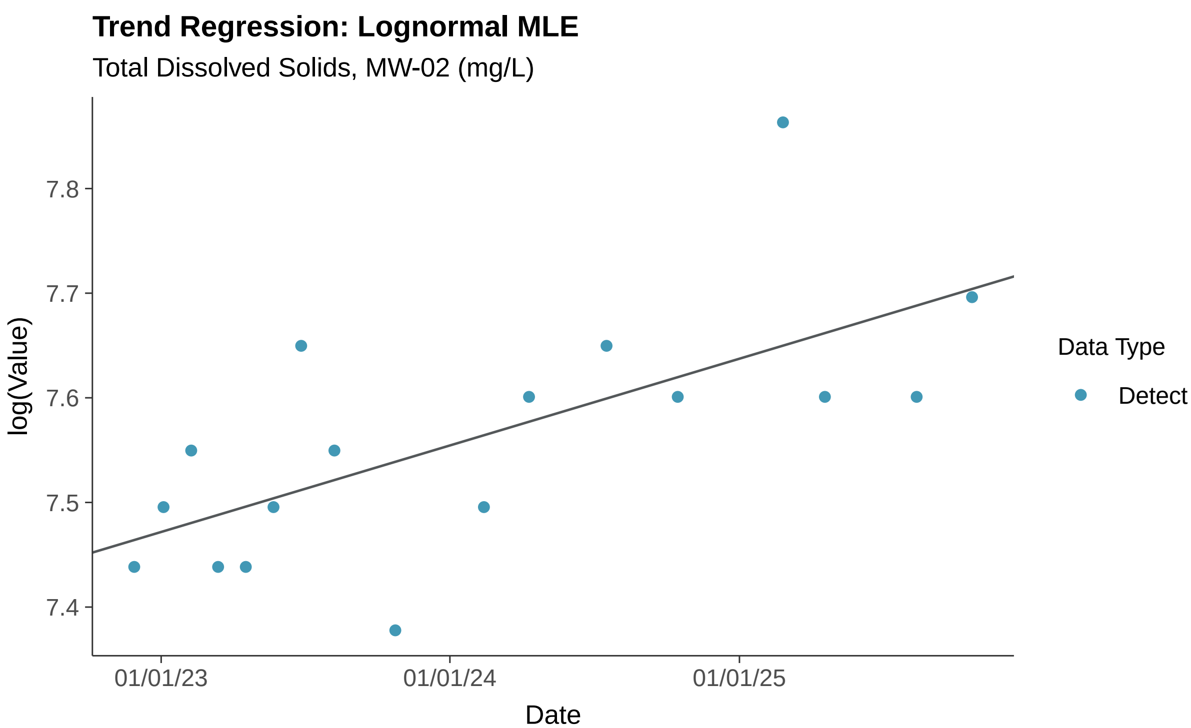

Boxplot
Total Dissolved Solids, MW-02 (mg/L)
2400
2100
1800
Value
Outlier Type
Minor
Data Type
Detect


Boxplot by Season
Total Dissolved Solids, MW-02 (mg/L)
2400
2100
1800
Value
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Minor
Data Type
Detect


Normal Q-Q plot
Total Dissolved Solids, MW-02 (mg/L)
Value
2700
2400
2100
1800
1500
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

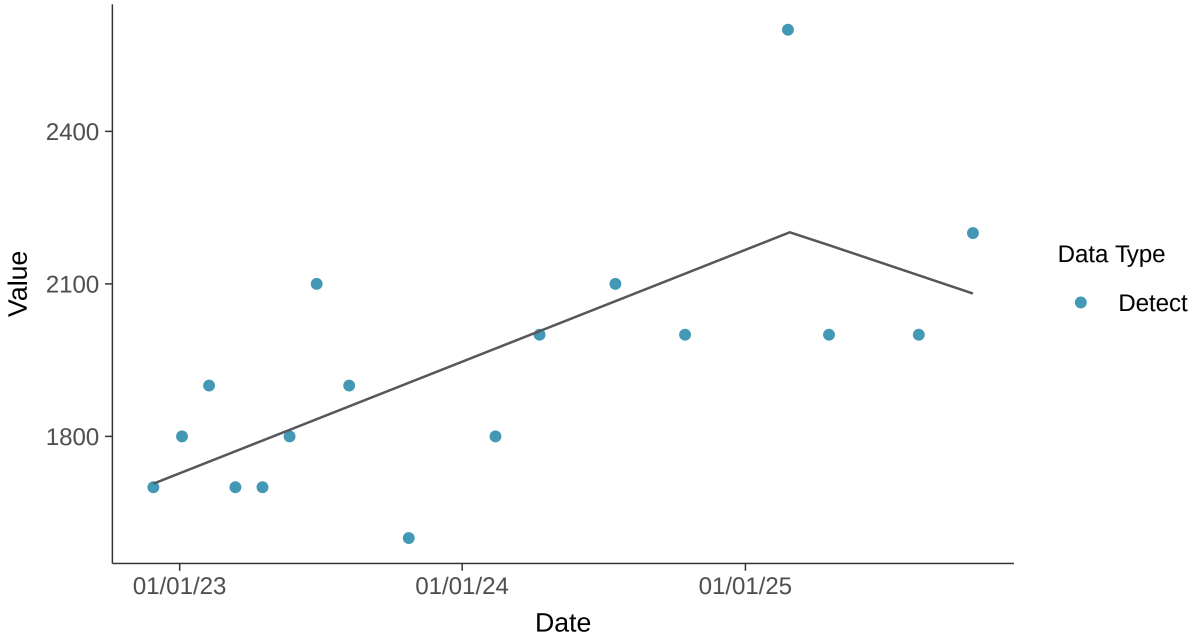

Lognormal Q-Q plot
Total Dissolved Solids, MW-02 (mg/L)
log(Value)
7.9
7.8
7.7
7.6
7.5
7.4
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Total Dissolved Solids, MW-02 (mg/L)
Value
2700
2400
2100
1800
1500
1400
1600
1800
2000
2200
2400
2600
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Total Dissolved Solids, MW-02 (mg/L)
log(Value)
7.8
7.7
7.6
7.5
7.4
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

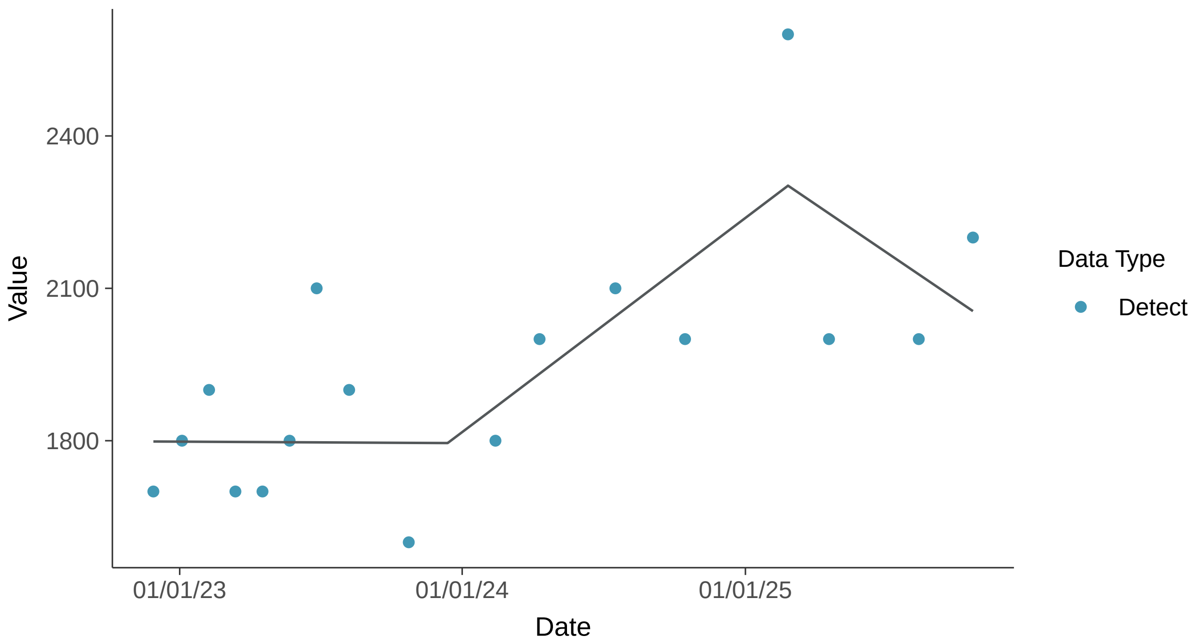
Trend Regression: Piecewise Linear-Linear

Total Dissolved Solids, MW-02 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Total Dissolved Solids, MW-02 (mg/L)

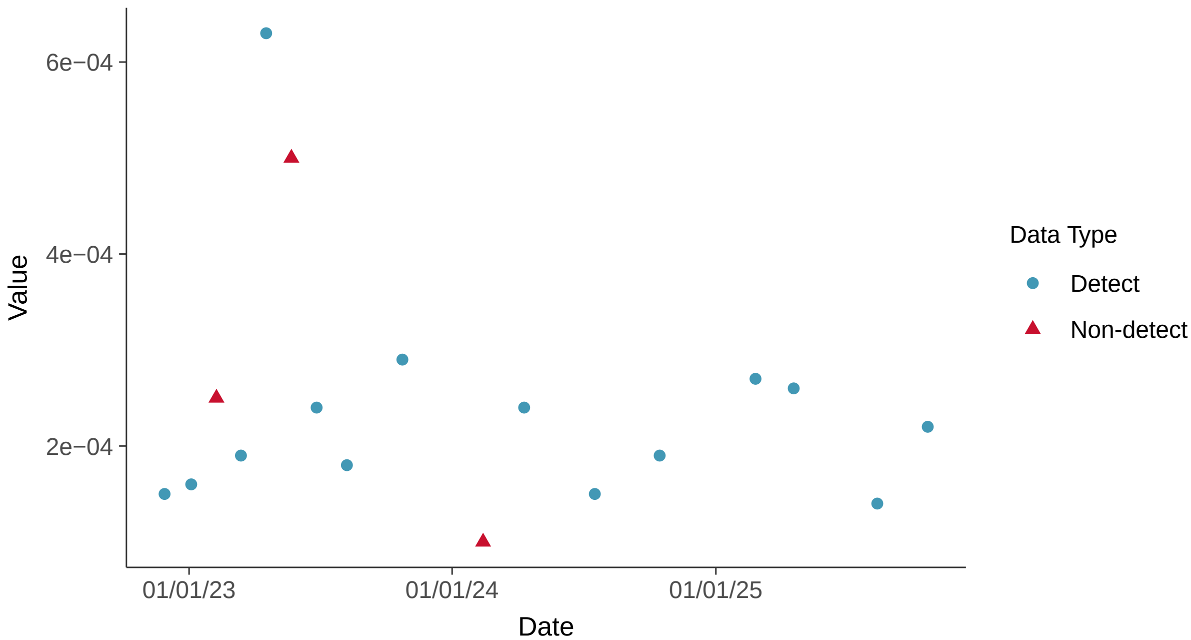


Appendix IV: Antimony, MW-02

ID: 12_2_4_101

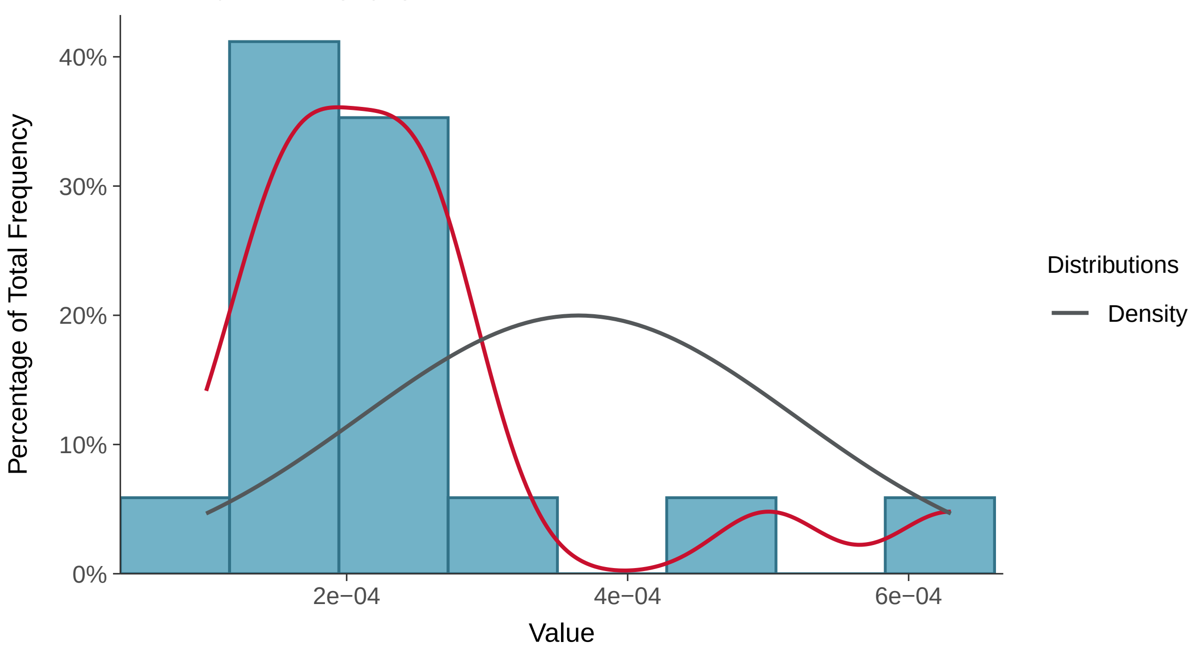
Scatter Plot

Antimony, MW-02 (mg/L)



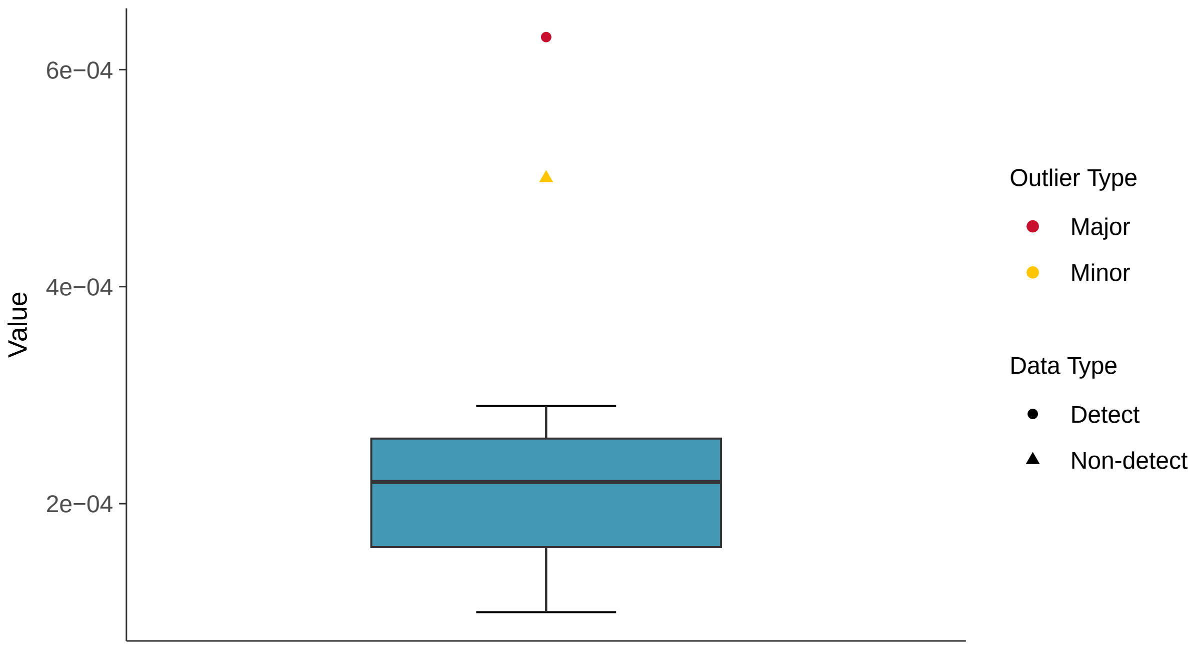
Histogram

Antimony, MW-02 (mg/L)



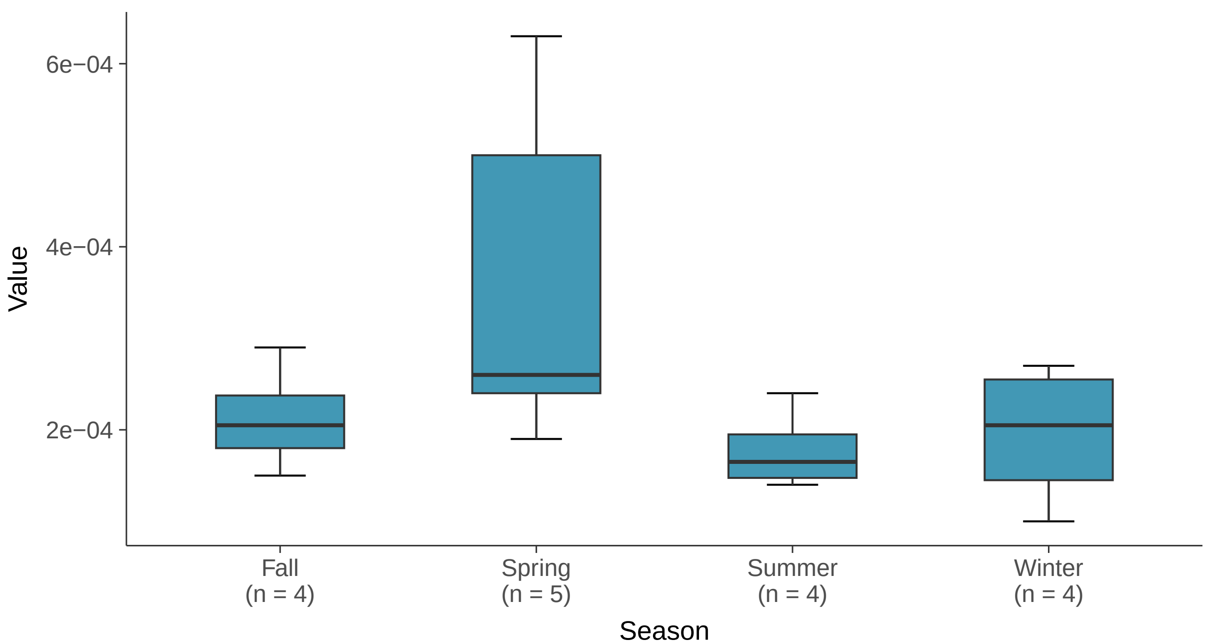
Boxplot

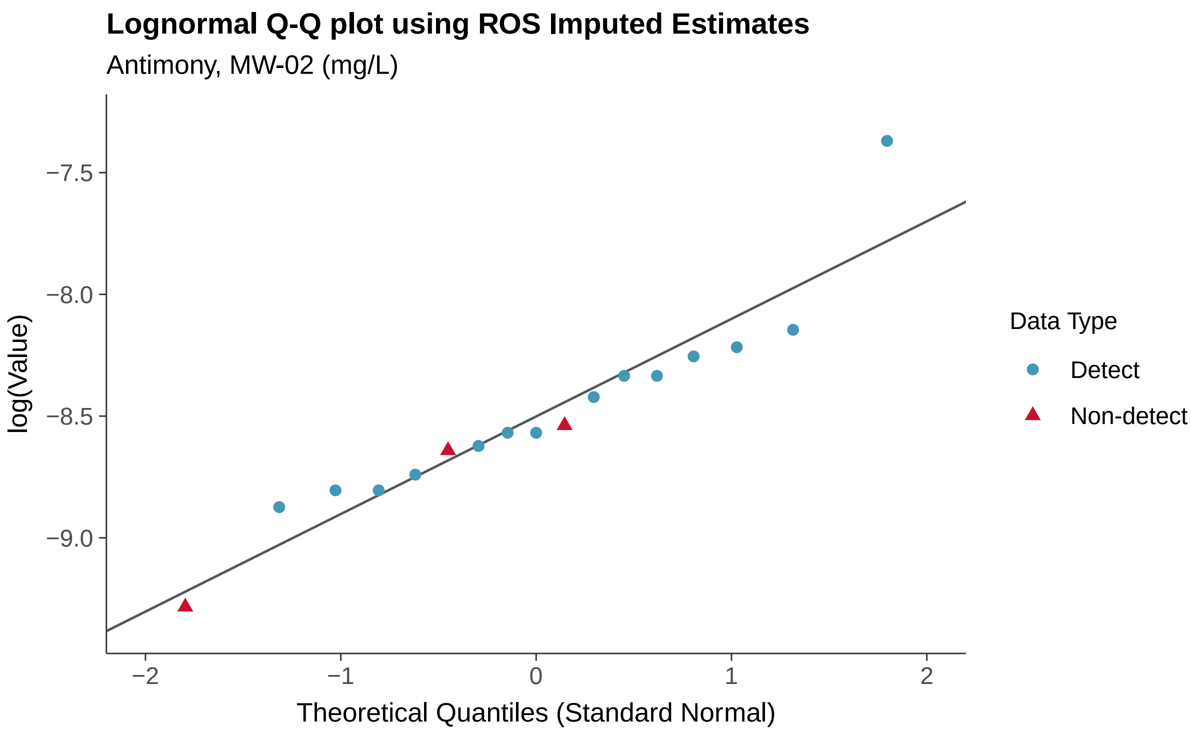
Antimony, MW-02 (mg/L)

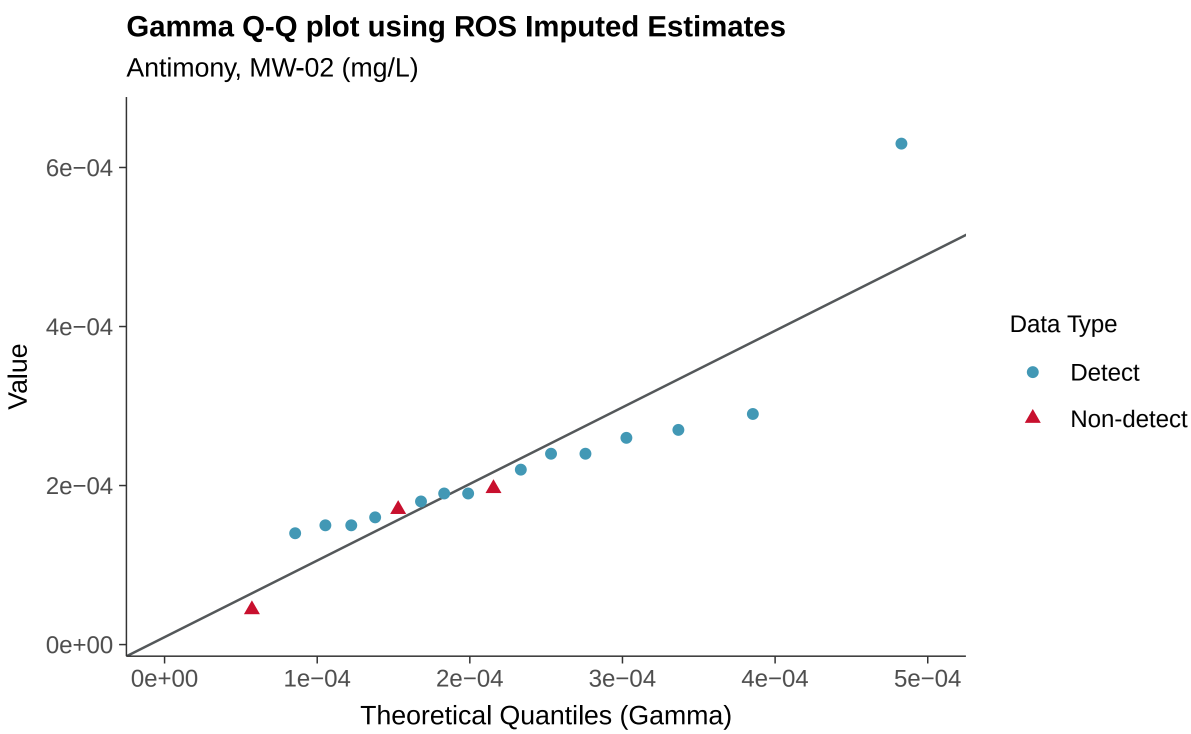


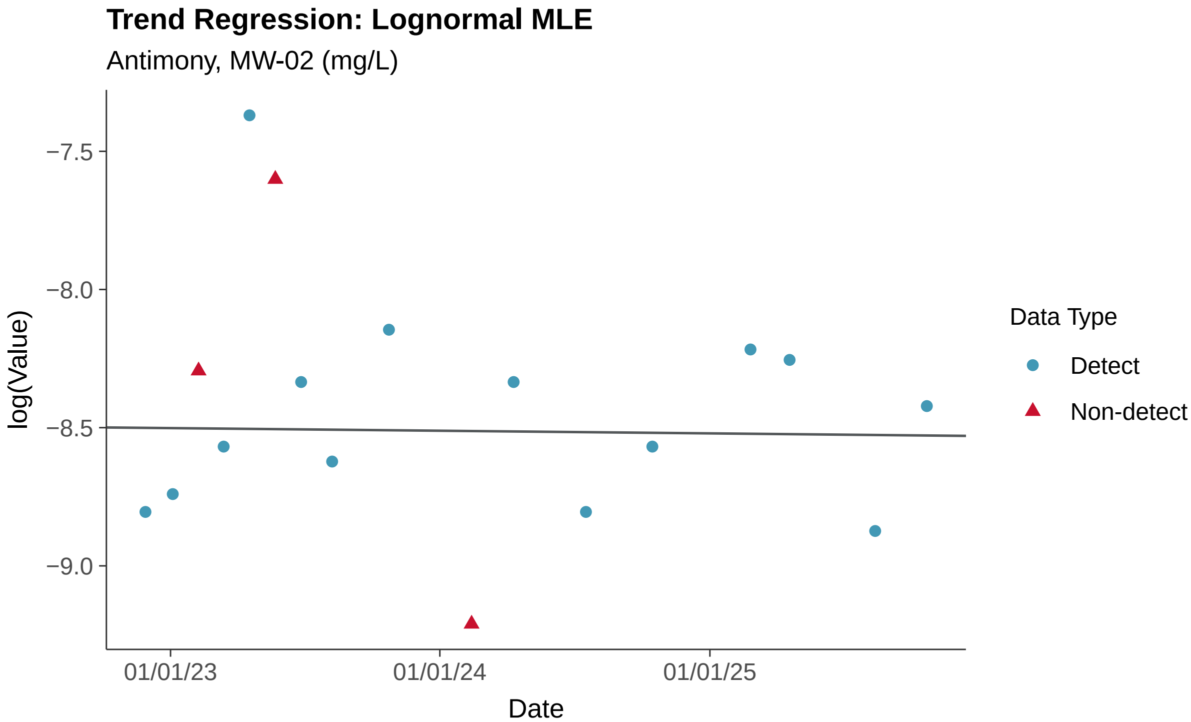
Boxplot by Season

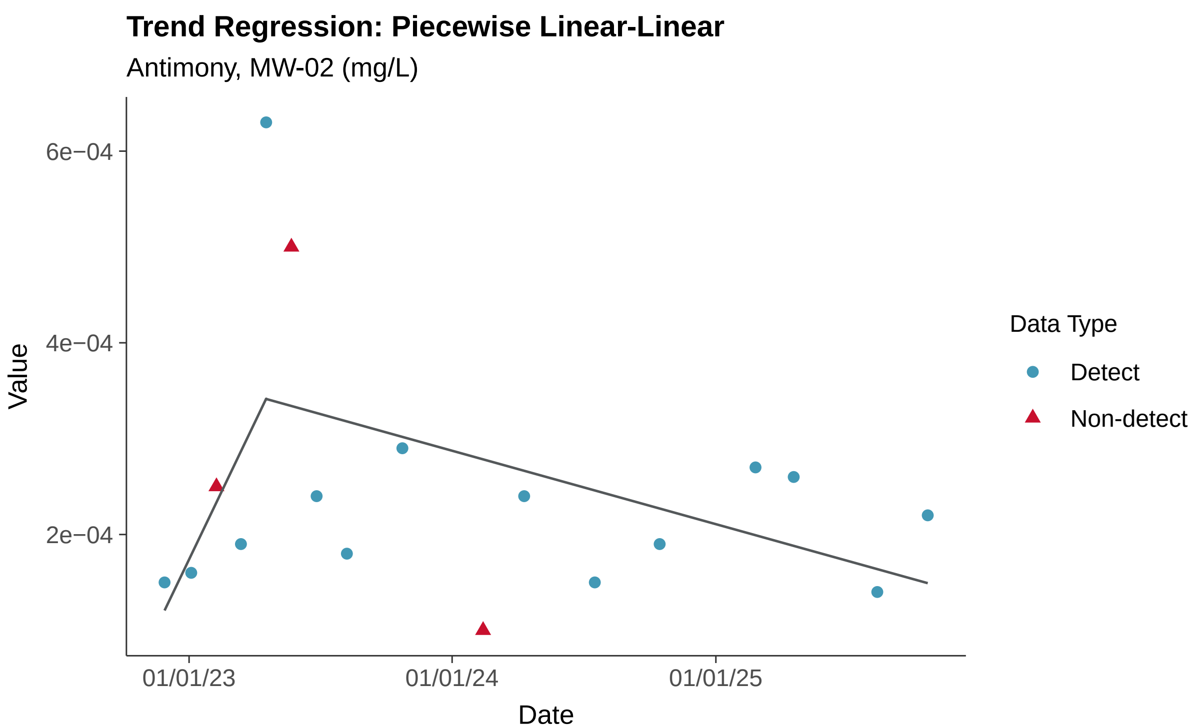
Antimony, MW-02 (mg/L)

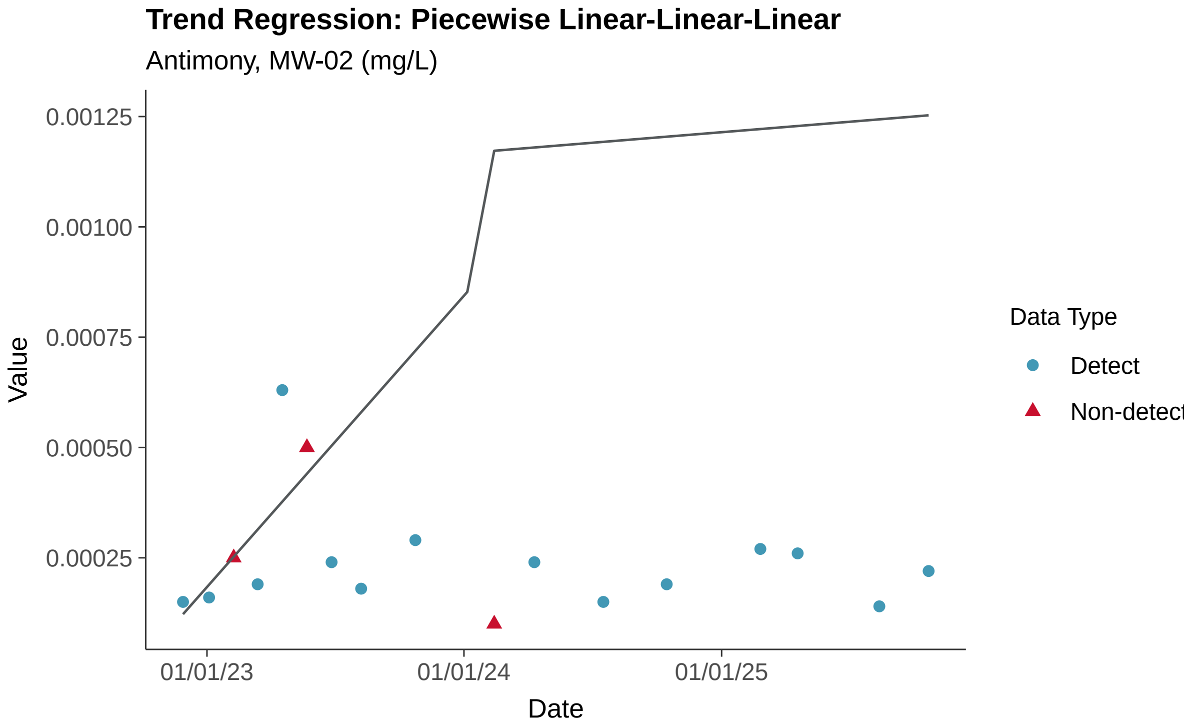



Lognormal Q-Q plot using ROS Imputed Estimates
Antimony, MW-02 (mg/L)
log(Value)
−7.5
−8.0
−8.5
−9.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Gamma Q-Q plot using ROS Imputed Estimates
Antimony, MW-02 (mg/L)
Value
6e−04
4e−04
2e−04
0e+00
0e+00
1e−04
2e−04
3e−04
4e−04
5e−04
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect

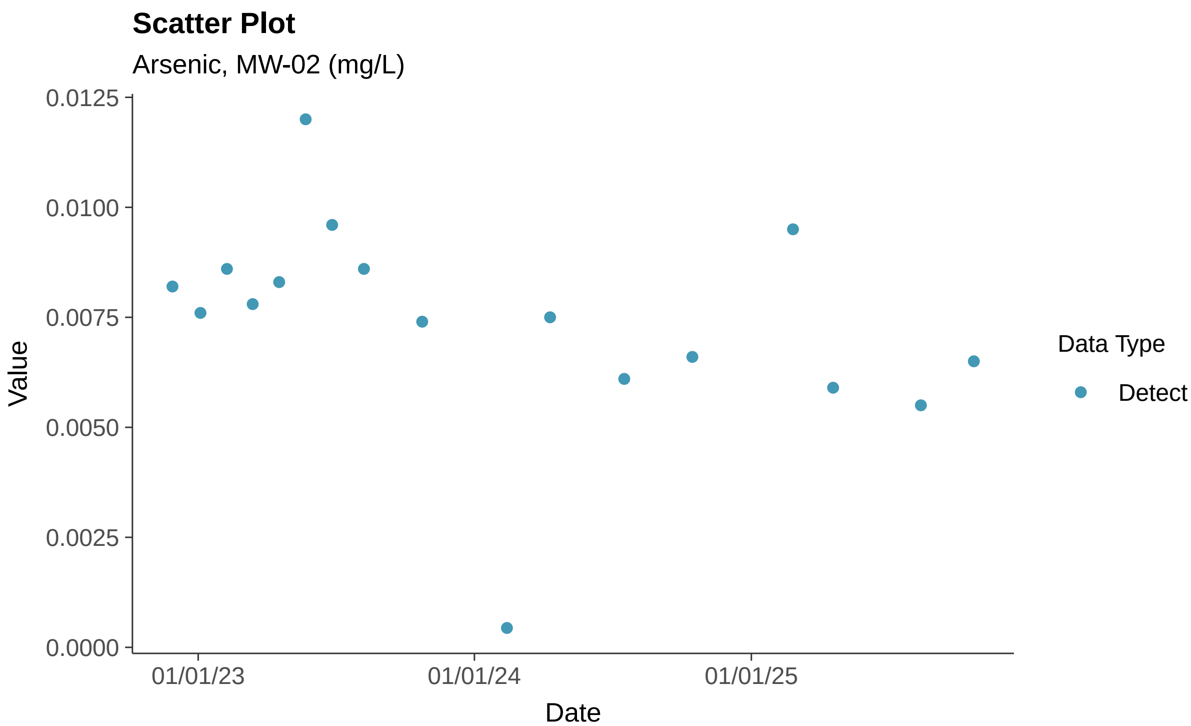

Trend Regression: Lognormal MLE
Antimony, MW-02 (mg/L)
log(Value)
−7.5
−8.0
−8.5
−9.0
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

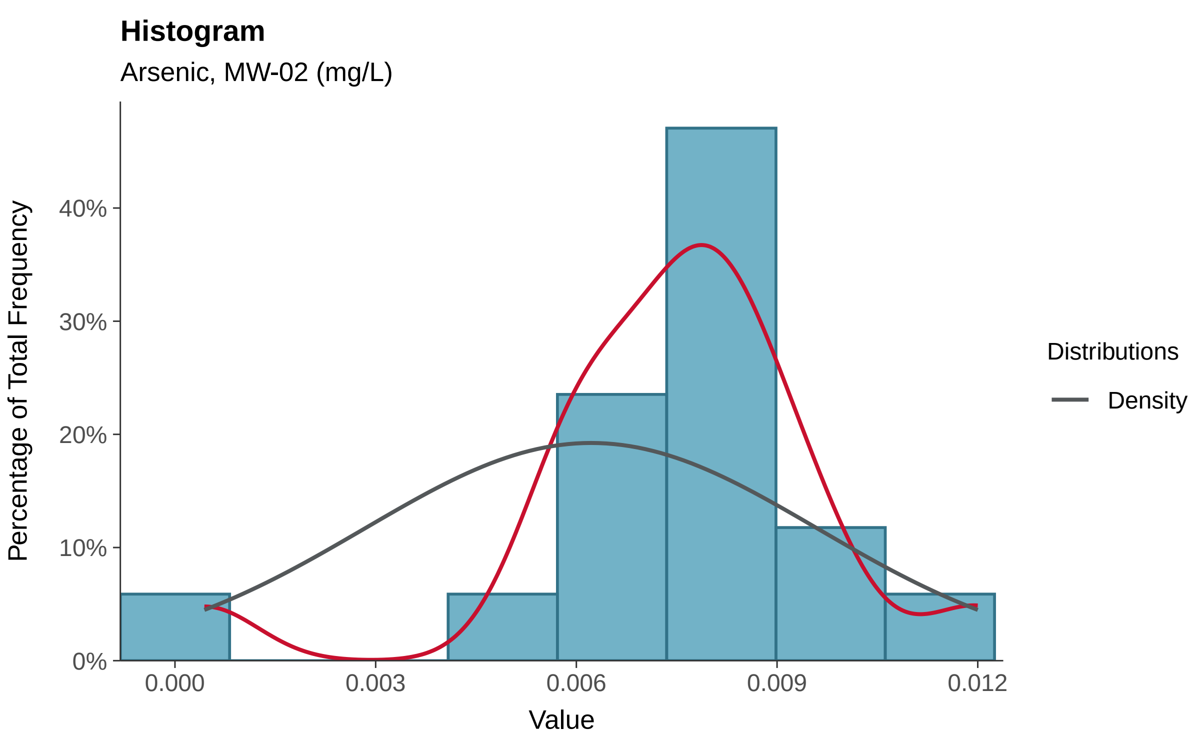

Trend Regression: Piecewise Linear-Linear
Antimony, MW-02 (mg/L)
Value
6e−04
4e−04
2e−04
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear-Linear
Antimony, MW-02 (mg/L)
Value
0.00125
0.00100
0.00075
0.00050
0.00025
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Appendix IV: Arsenic, MW-02

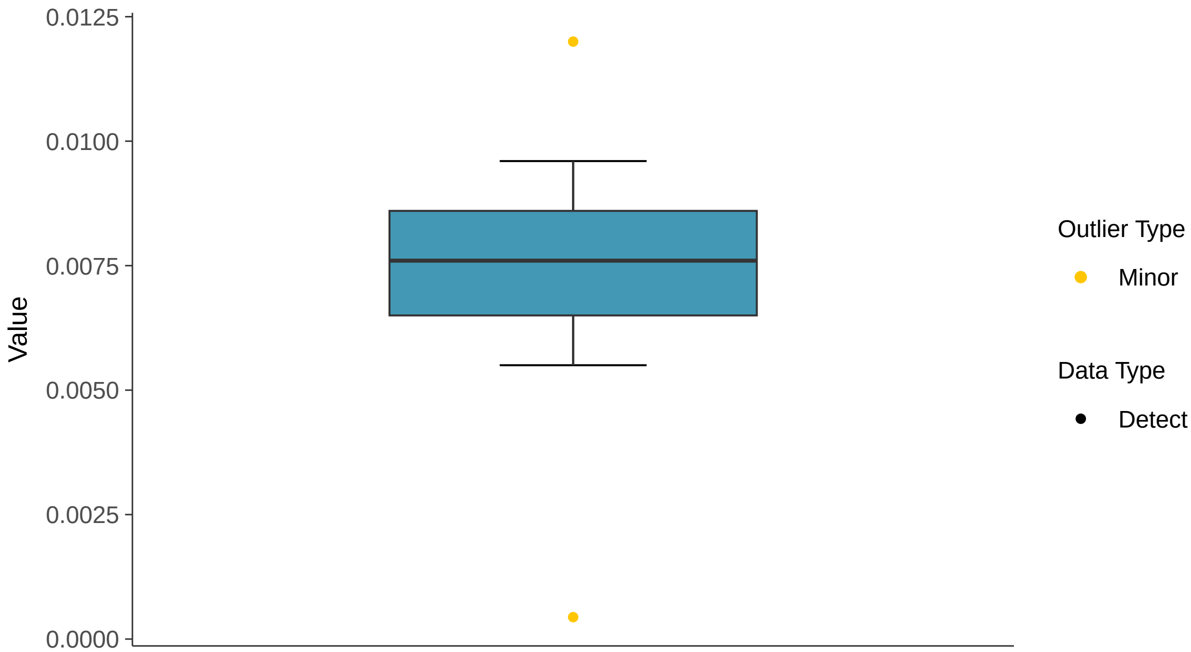
ID: 12_2_4_102





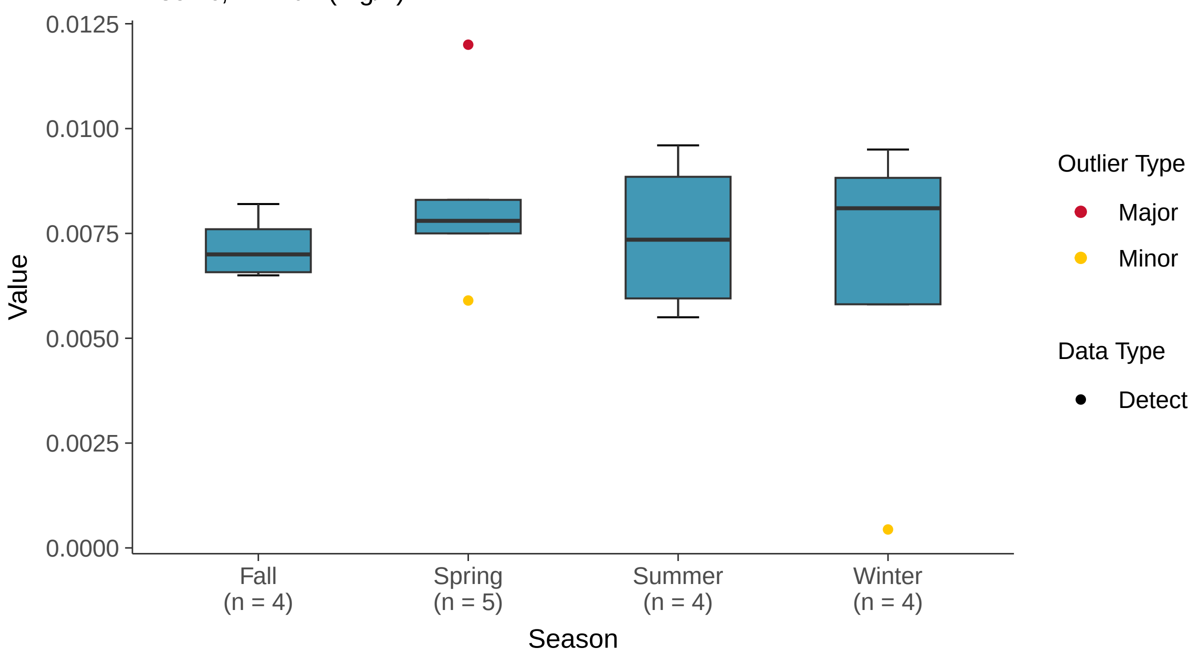
Boxplot

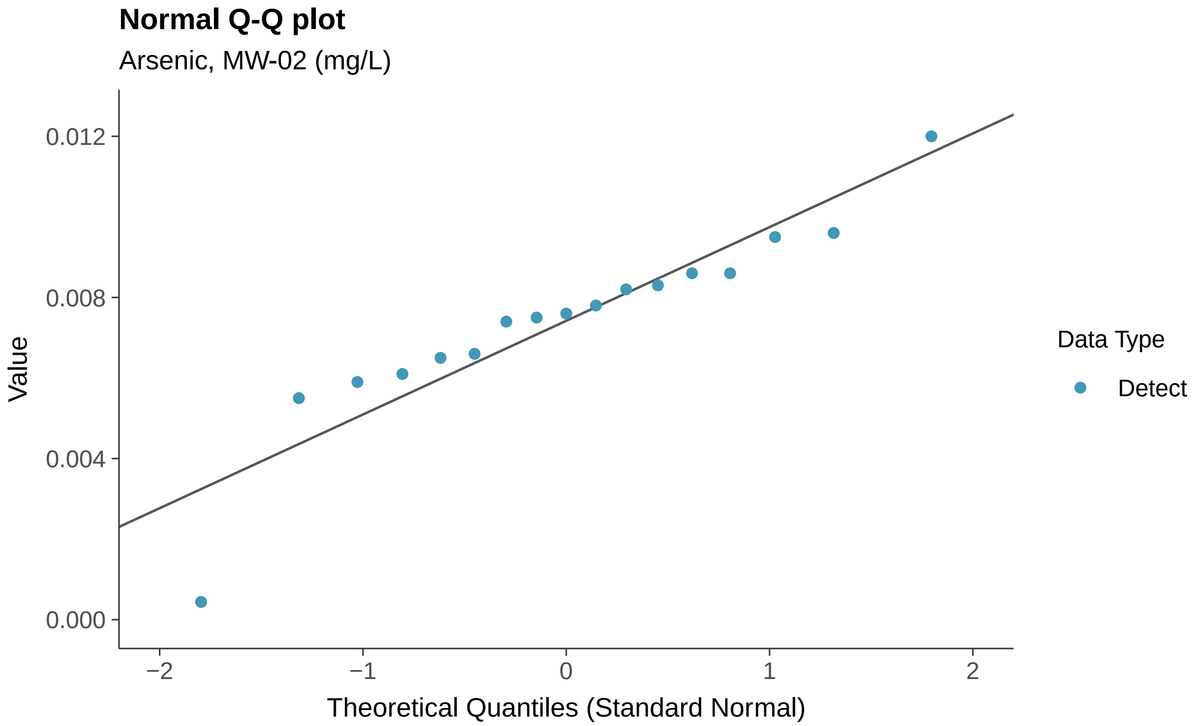
Arsenic, MW-02 (mg/L)

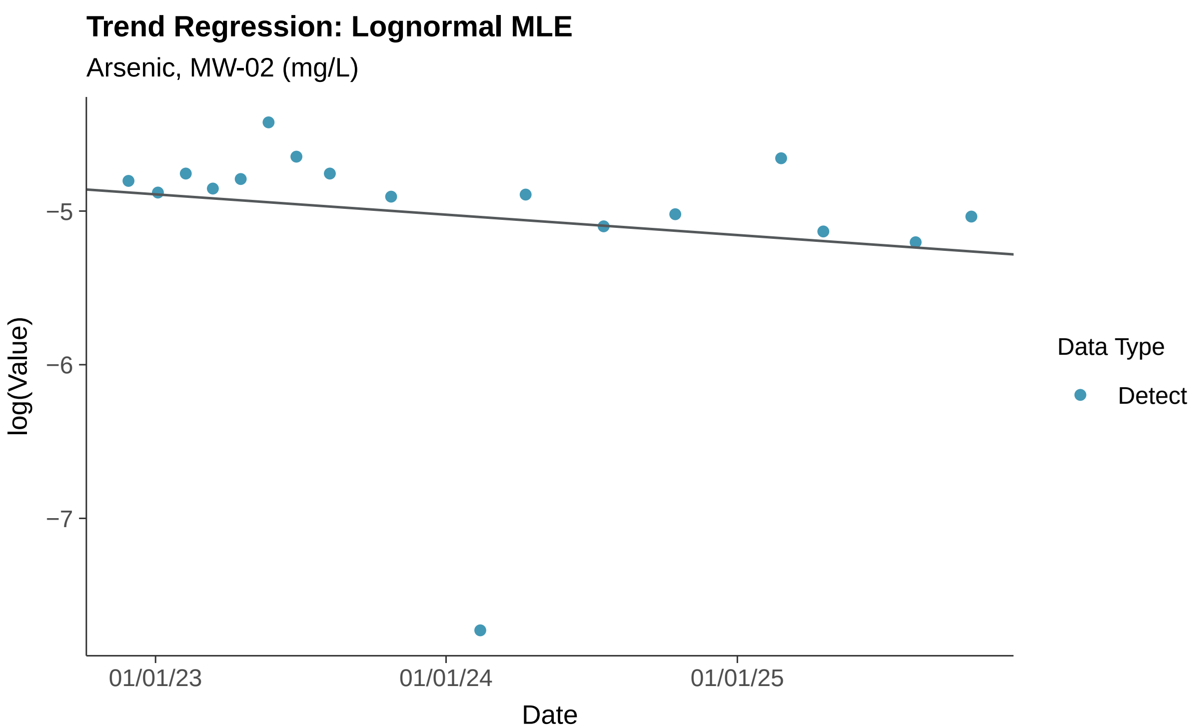


Boxplot by Season

Arsenic, MW-02 (mg/L)

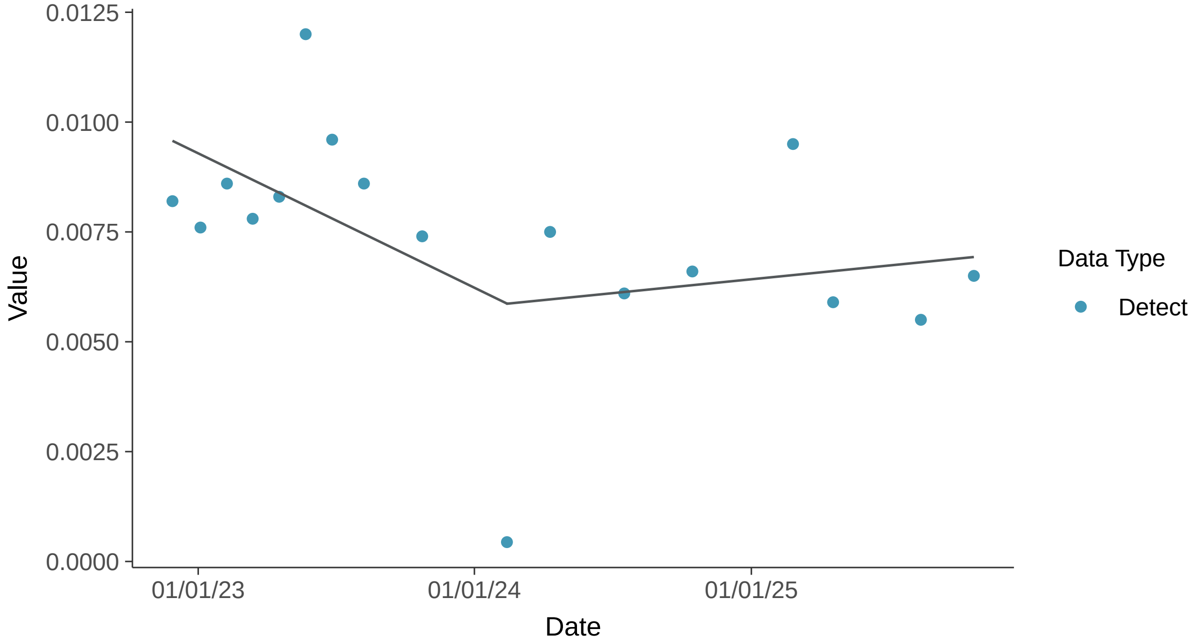



Normal Q-Q plot
Arsenic, MW-02 (mg/L)
Value
0.012
0.008
0.004
0.000
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Lognormal MLE
Arsenic, MW-02 (mg/L)
log(Value)
−5
−6
−7
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

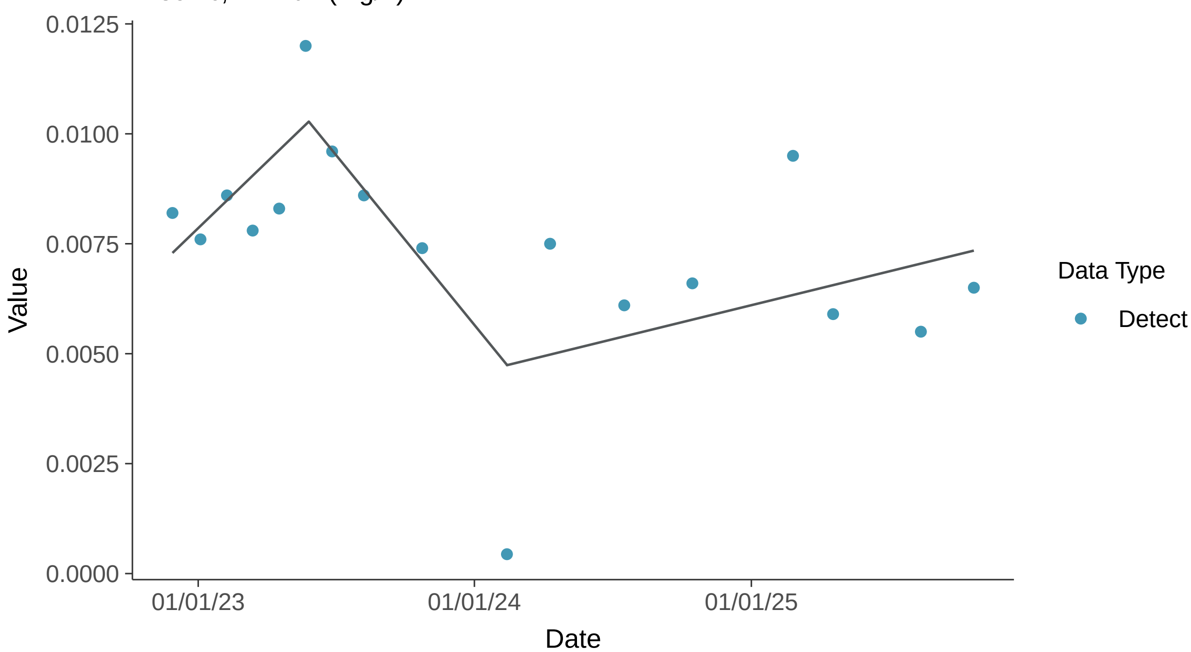
Trend Regression: Piecewise Linear-Linear

Arsenic, MW-02 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Arsenic, MW-02 (mg/L)

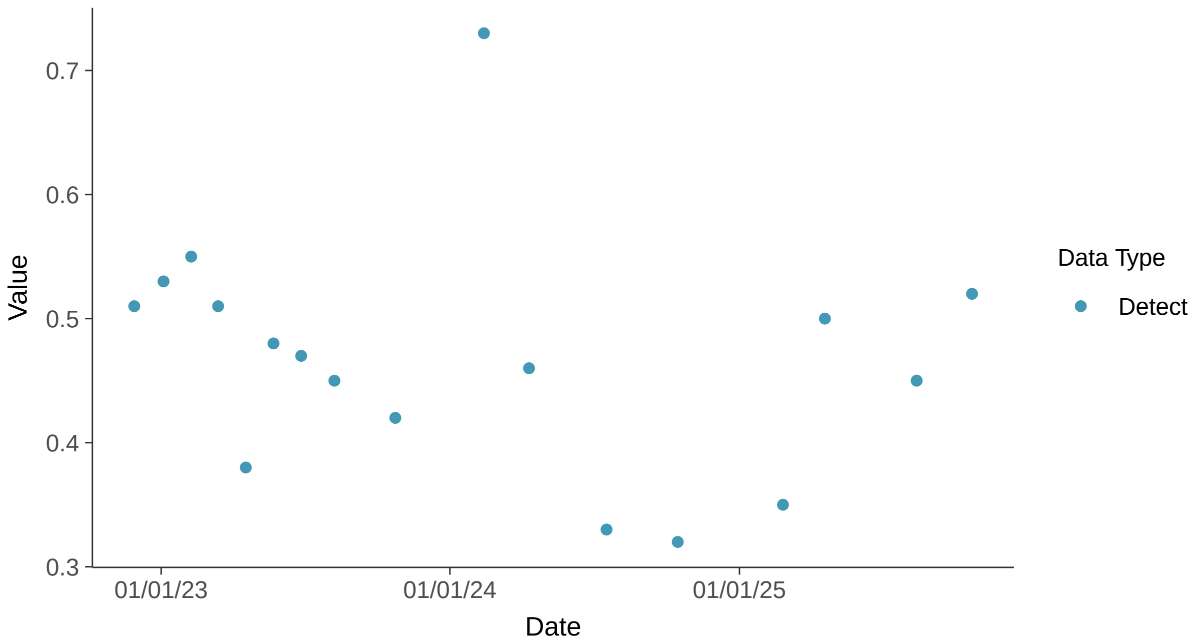


Appendix IV: Barium, MW-02

ID: 12_2_4_103

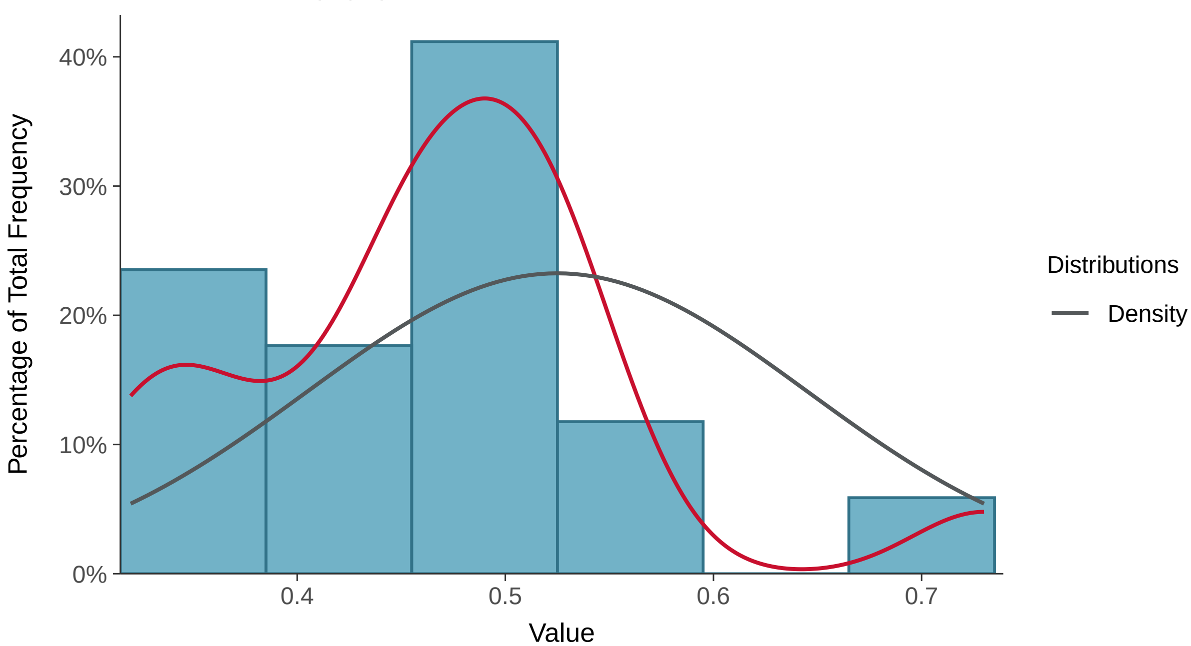
Scatter Plot

Barium, MW-02 (mg/L)



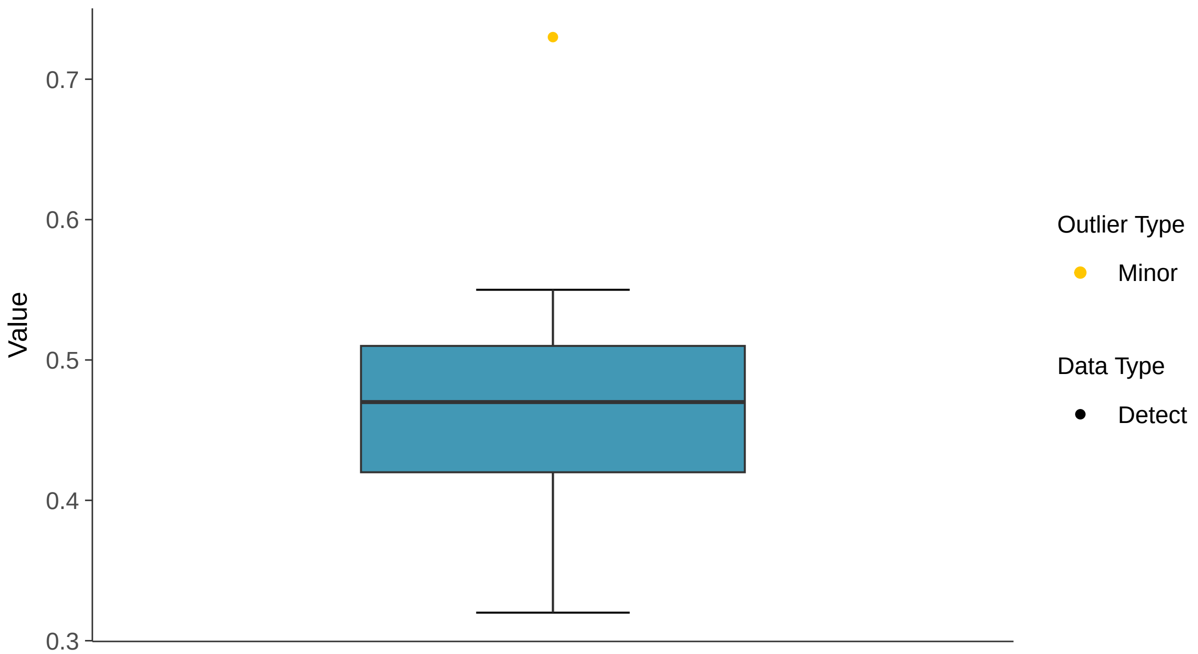
Histogram

Barium, MW-02 (mg/L)



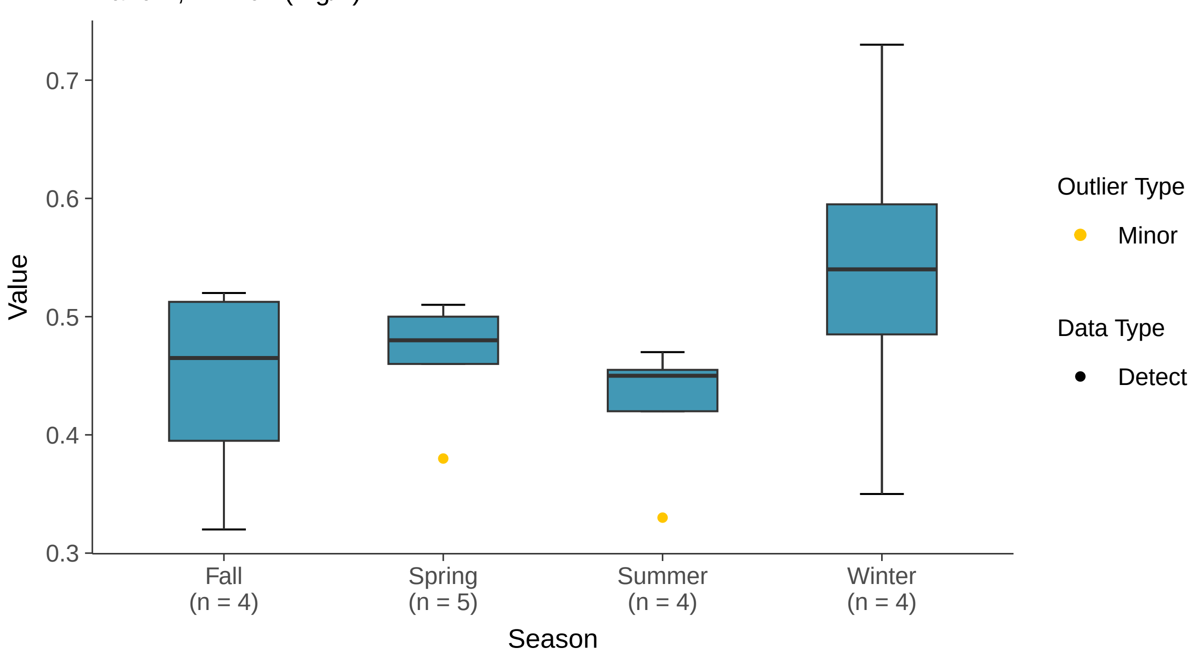
Boxplot

Barium, MW-02 (mg/L)



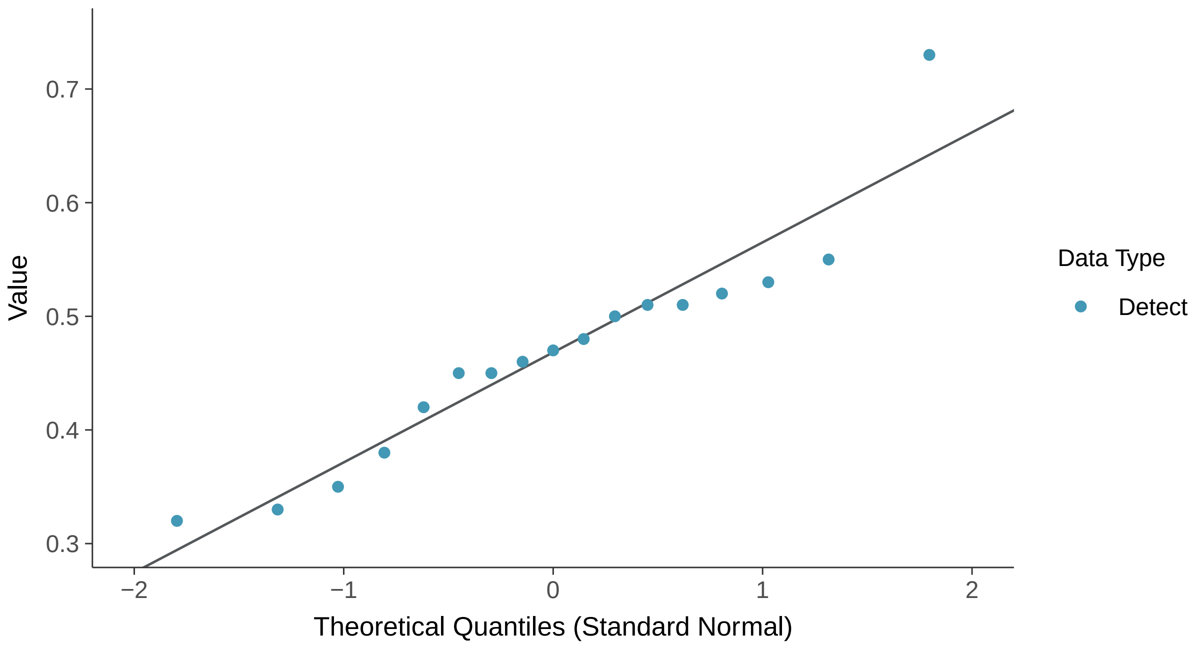
Boxplot by Season

Barium, MW-02 (mg/L)



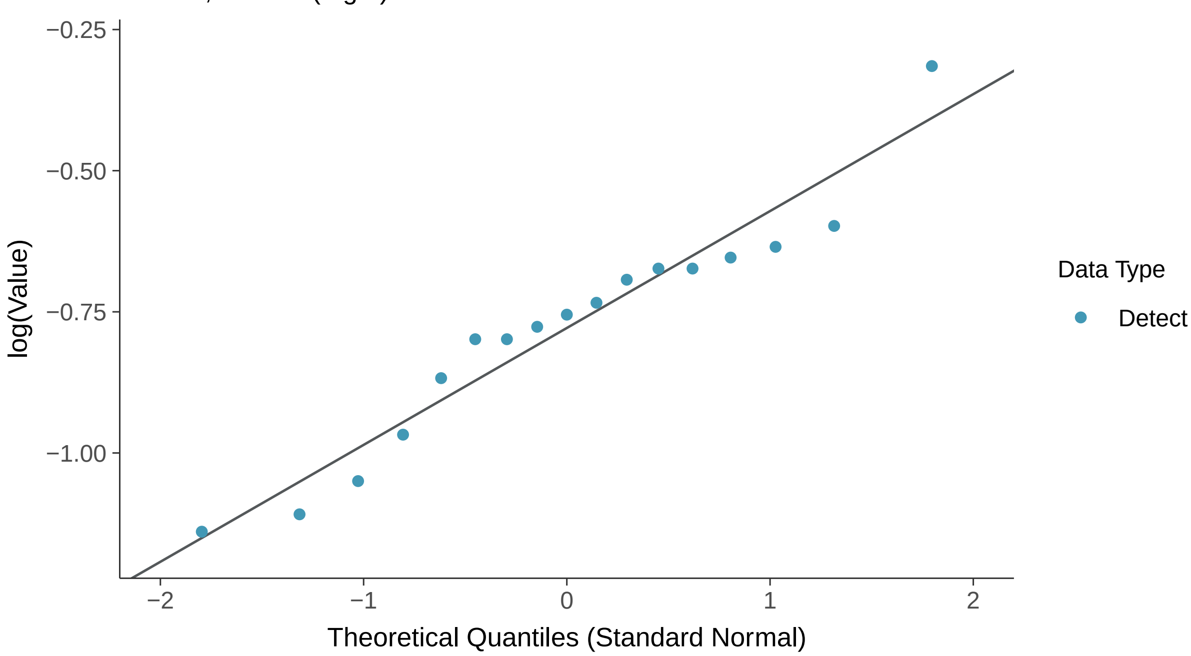
Normal Q-Q plot

Barium, MW-02 (mg/L)



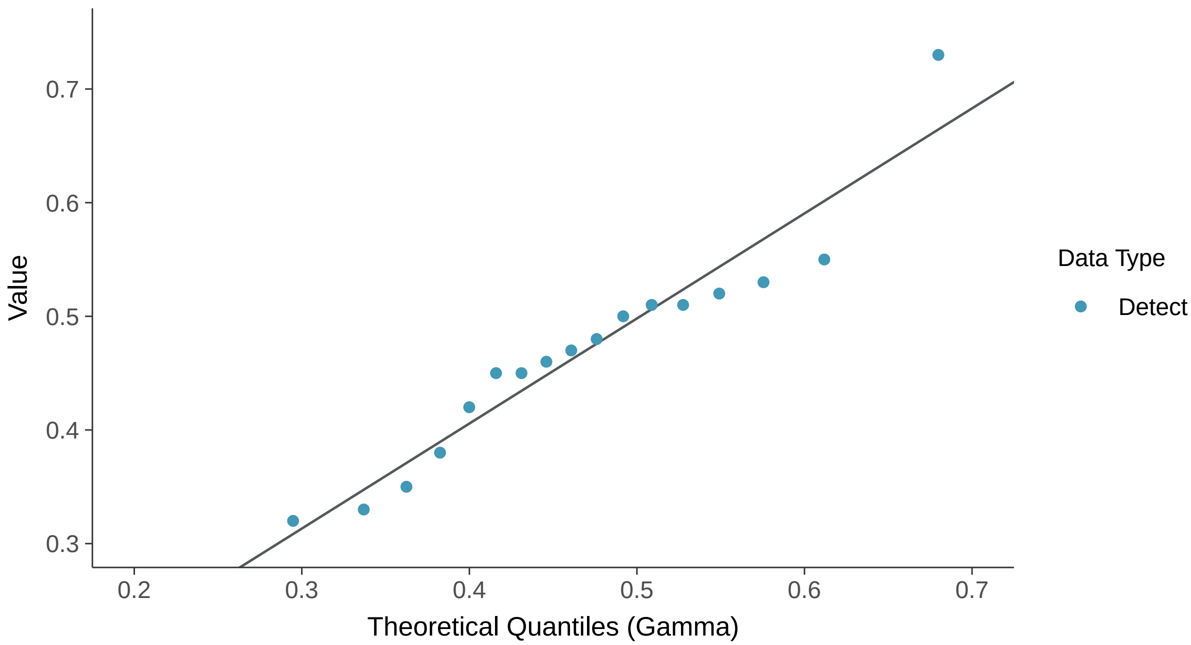
Lognormal Q-Q plot

Barium, MW-02 (mg/L)



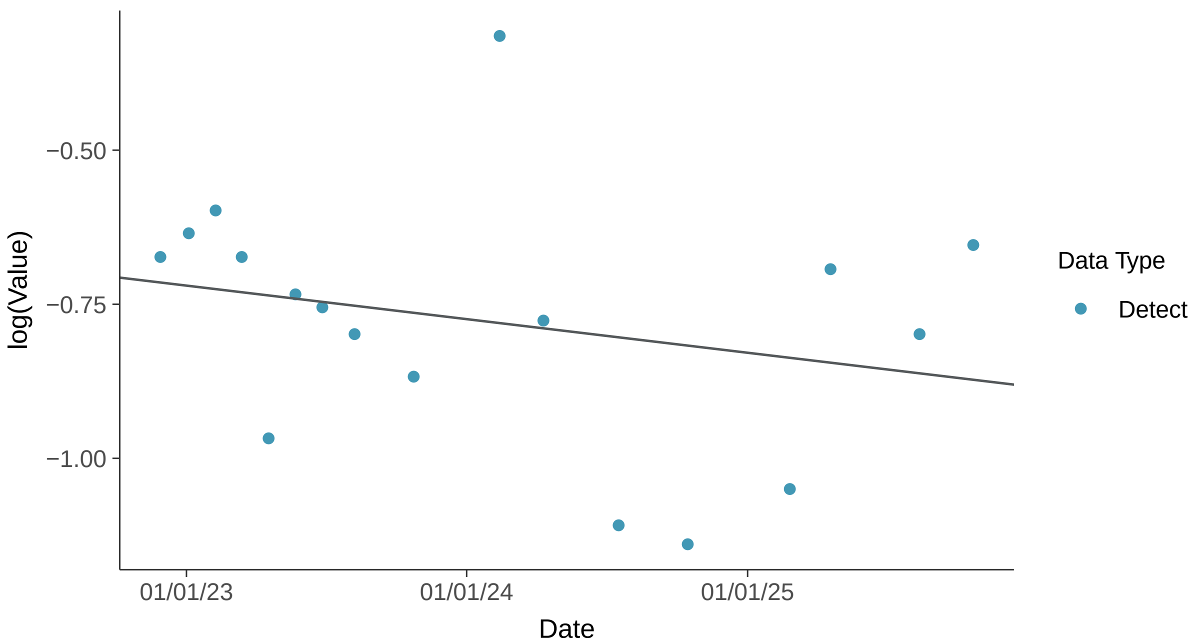
Gamma Q-Q plot

Barium, MW-02 (mg/L)



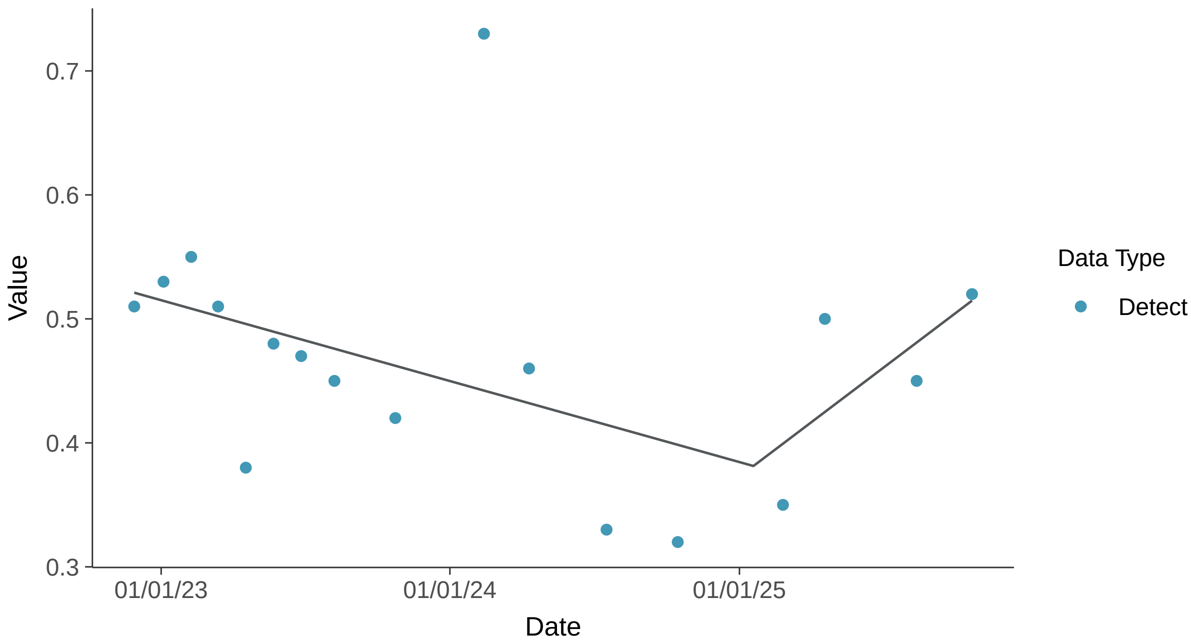
Trend Regression: Lognormal MLE

Barium, MW-02 (mg/L)



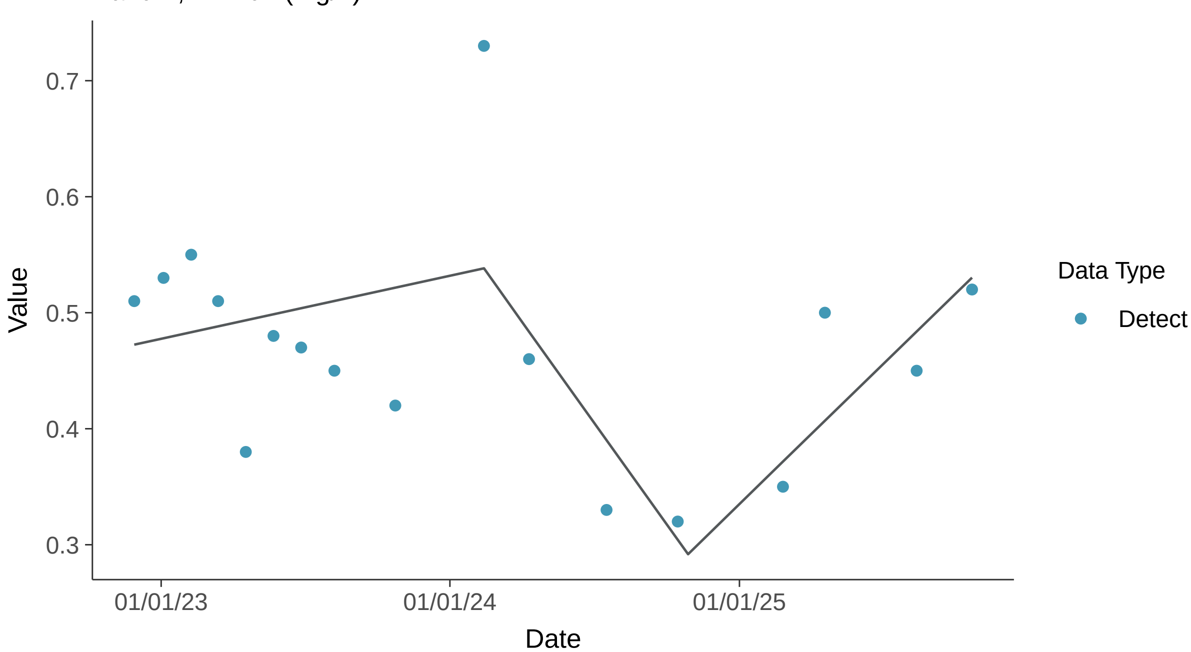
Trend Regression: Piecewise Linear-Linear

Barium, MW-02 (mg/L)



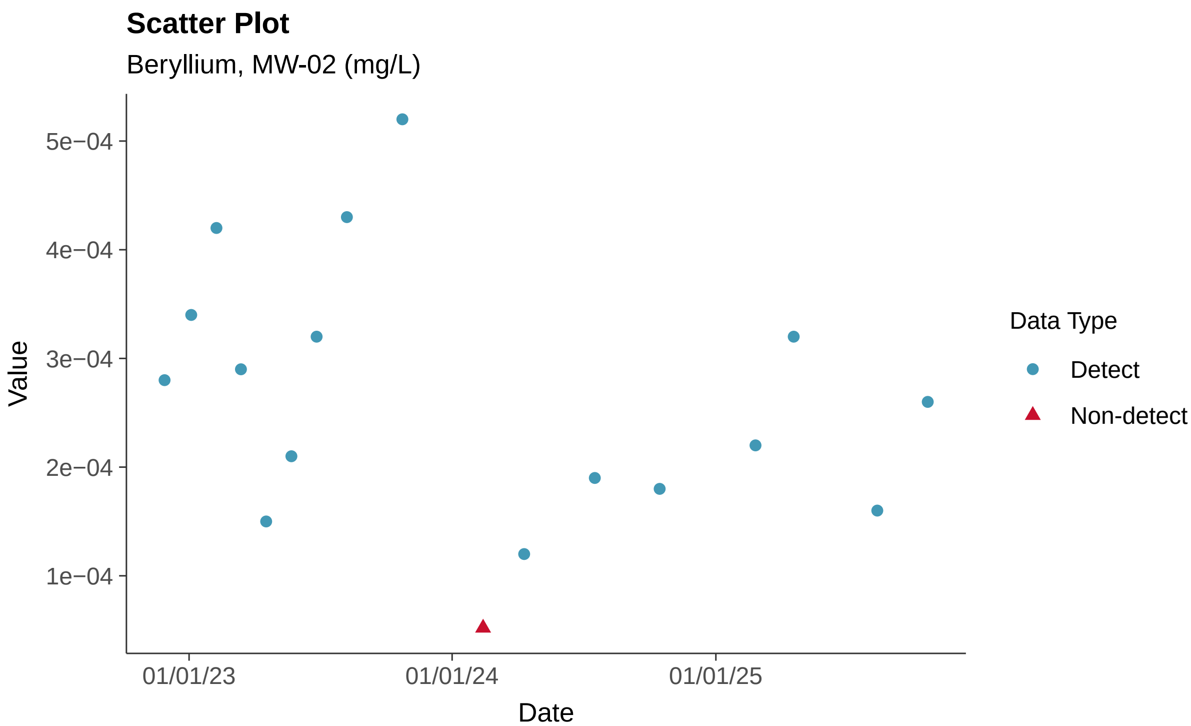
Trend Regression: Piecewise Linear-Linear-Linear

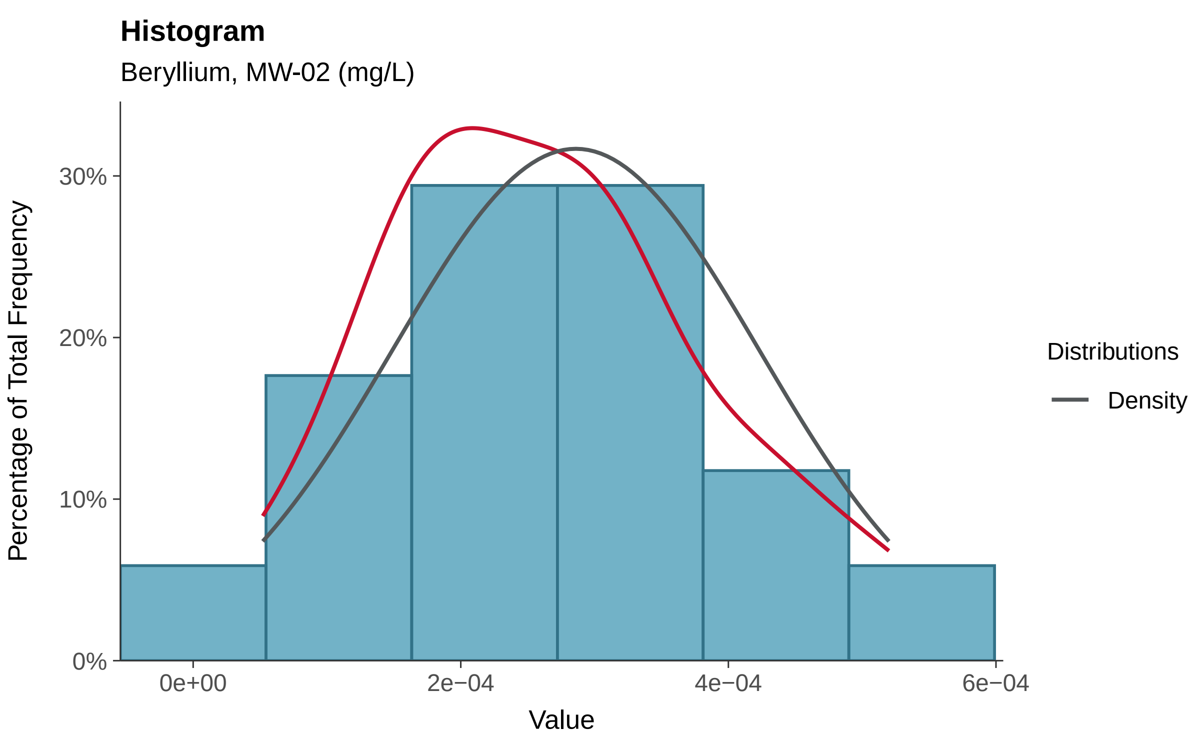
Barium, MW-02 (mg/L)



Appendix IV: Beryllium, MW-02

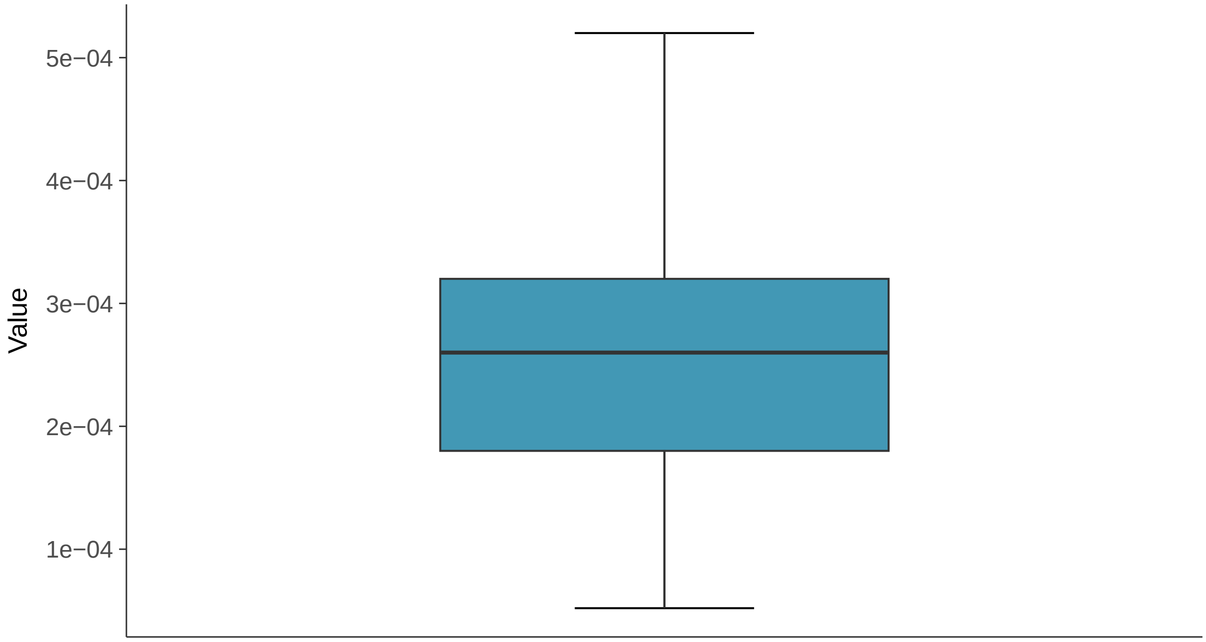
ID: 12_2_4_104





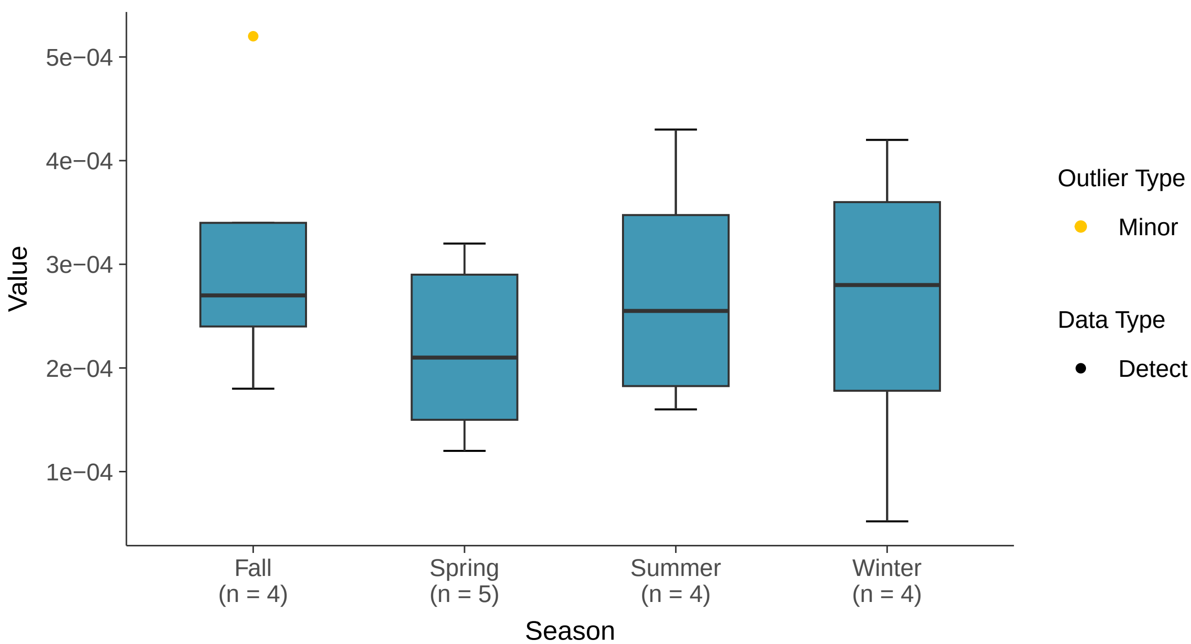
Boxplot

Beryllium, MW-02 (mg/L)



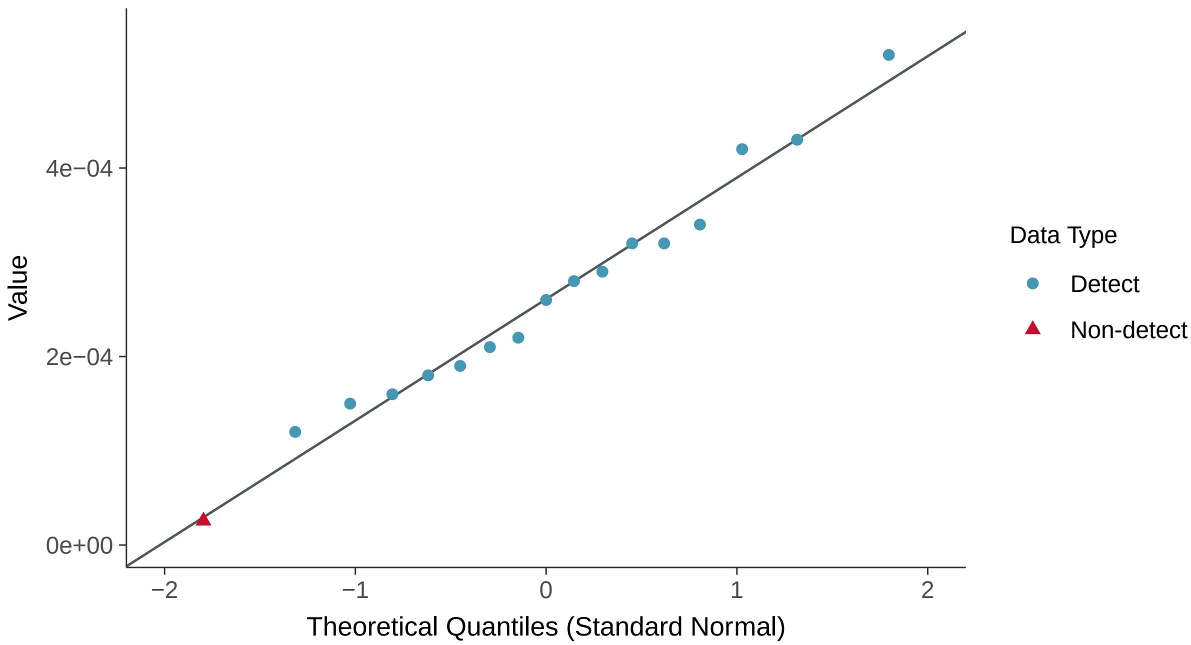
Boxplot by Season

Beryllium, MW-02 (mg/L)



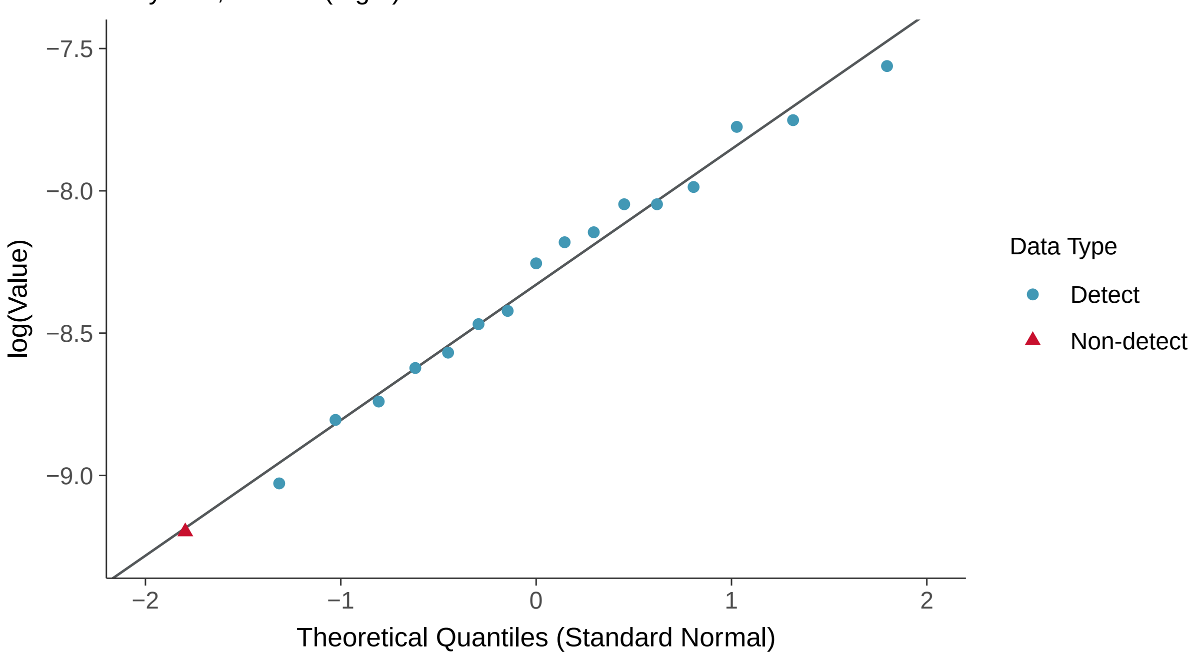
Normal Q-Q plot using ROS Imputed Estimates

Beryllium, MW-02 (mg/L)



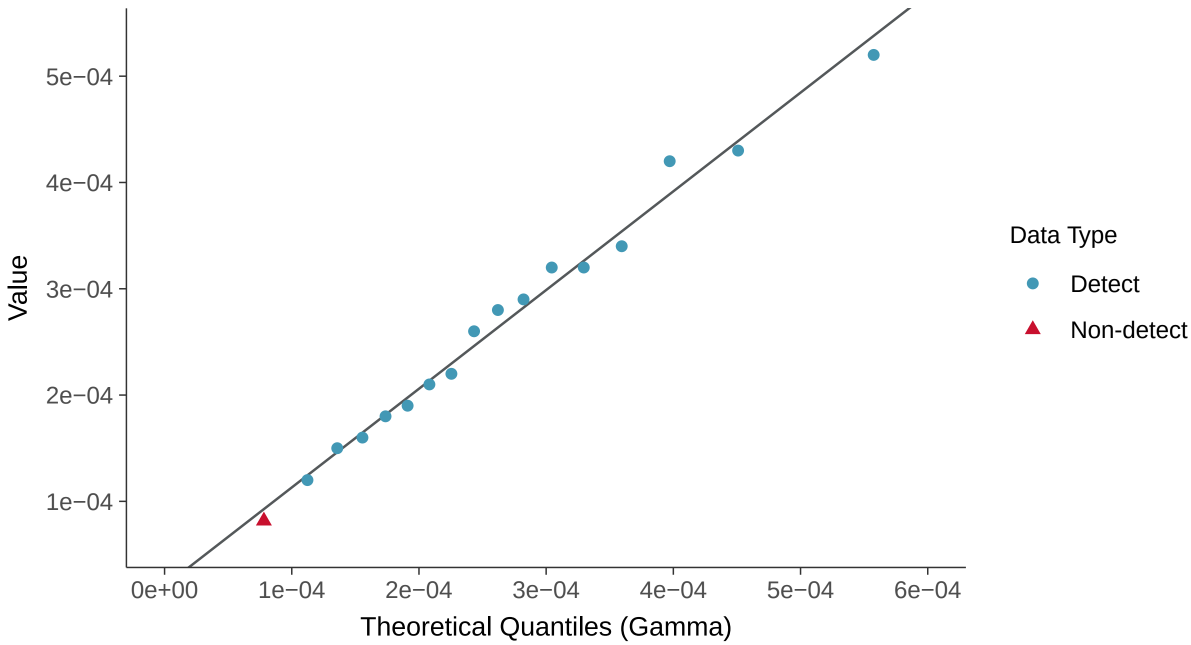
Lognormal Q-Q plot using ROS Imputed Estimates

Beryllium, MW-02 (mg/L)



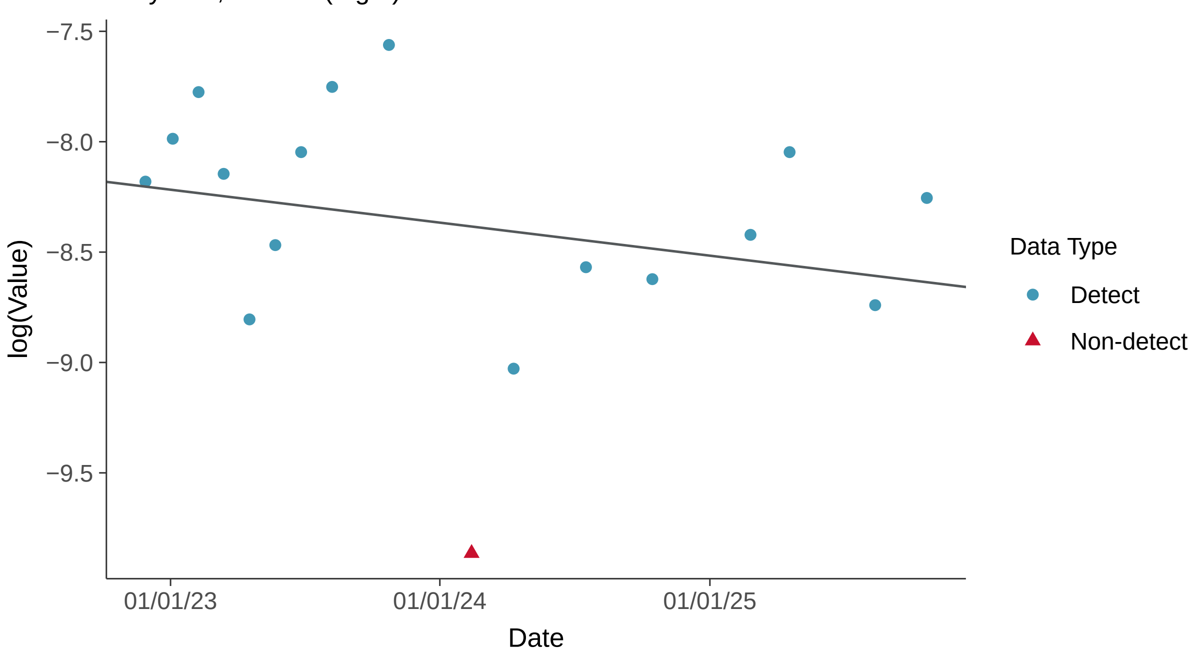
Gamma Q-Q plot using ROS Imputed Estimates

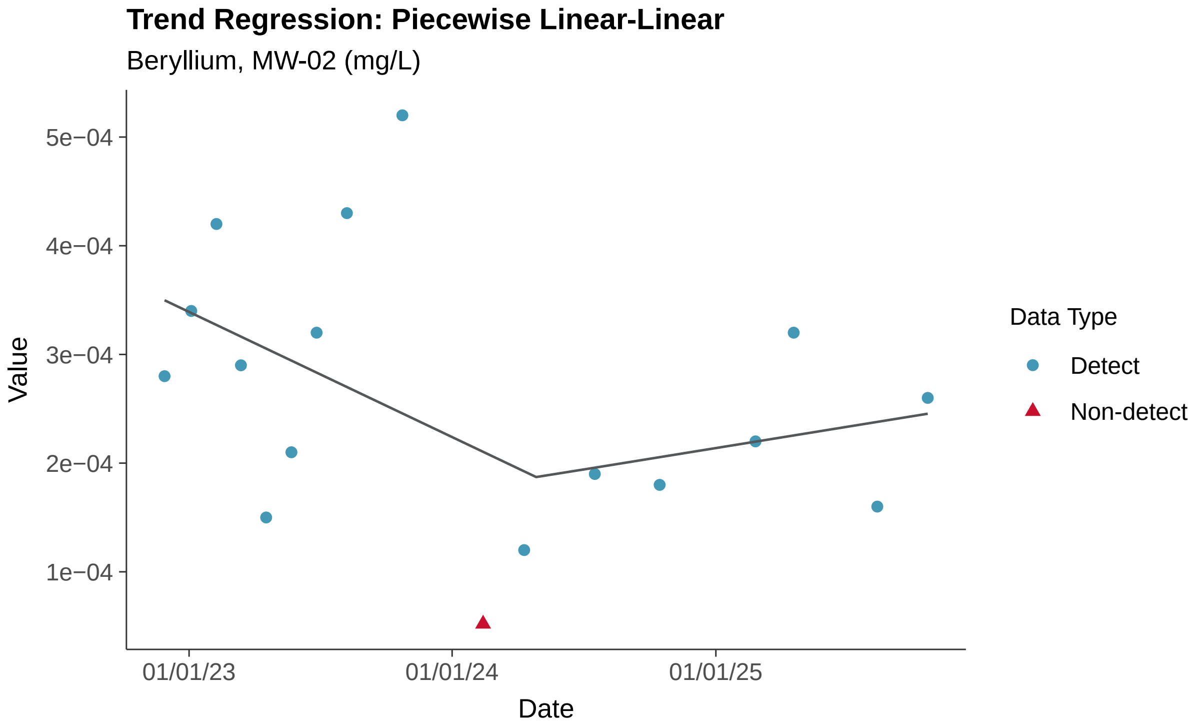
Beryllium, MW-02 (mg/L)

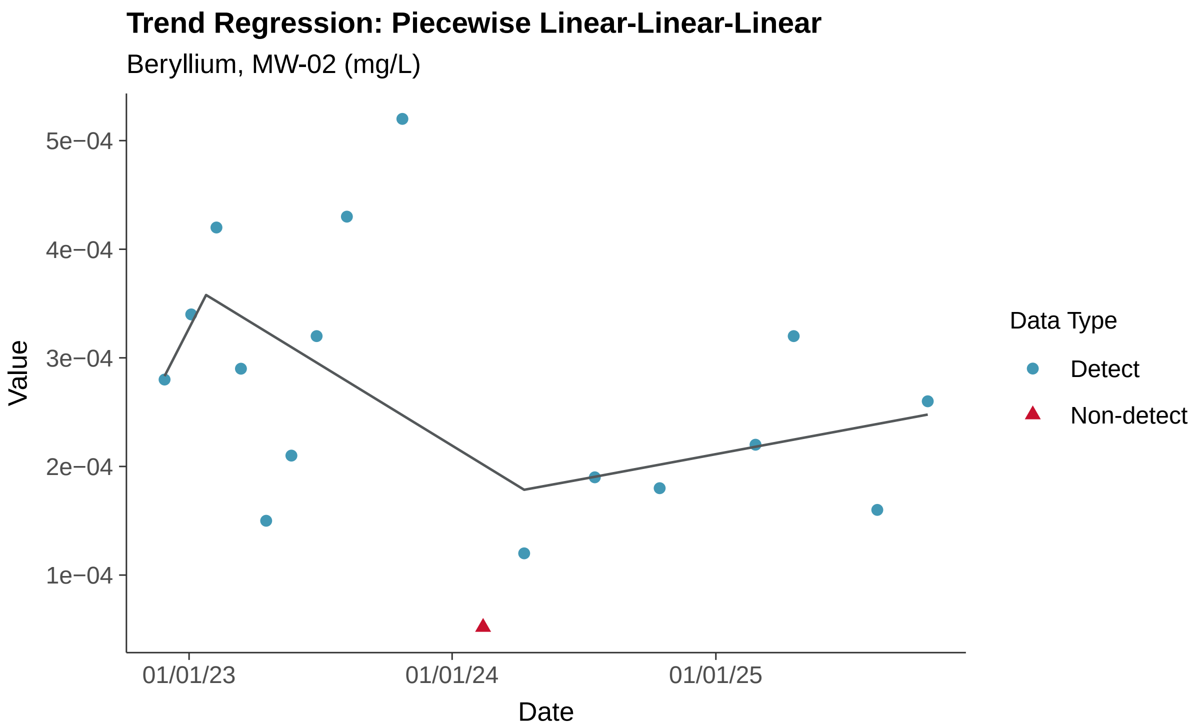


Trend Regression: Lognormal MLE

Beryllium, MW-02 (mg/L)




Trend Regression: Piecewise Linear-Linear
Beryllium, MW-02 (mg/L)
Value
5e−04
4e−04
3e−04
2e−04
1e−04
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

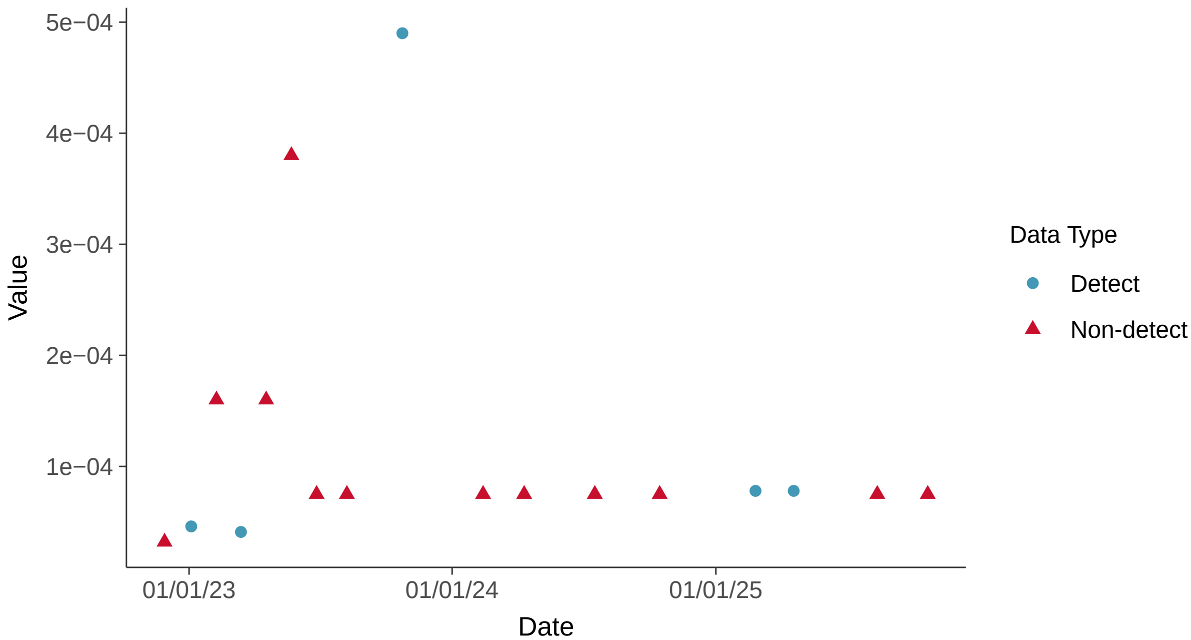

Trend Regression: Piecewise Linear-Linear-Linear
Beryllium, MW-02 (mg/L)
Value
5e−04
4e−04
3e−04
2e−04
1e−04
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Appendix IV: Cadmium, MW-02

ID: 12_2_4_106

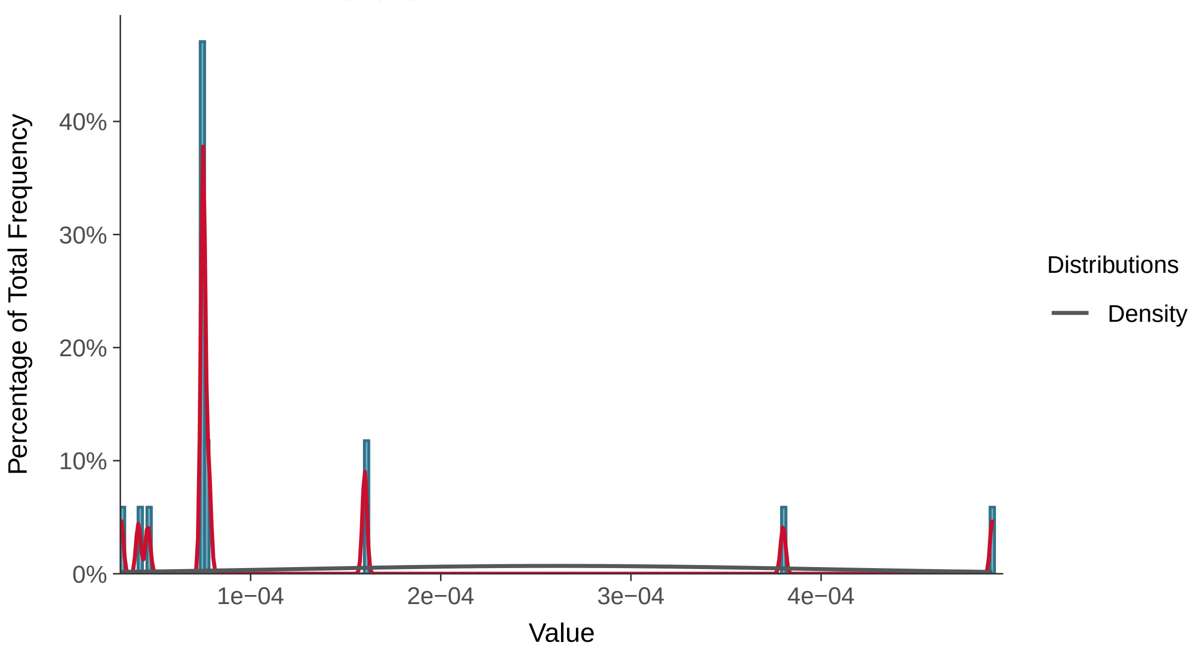
Scatter Plot

Cadmium, MW-02 (mg/L)



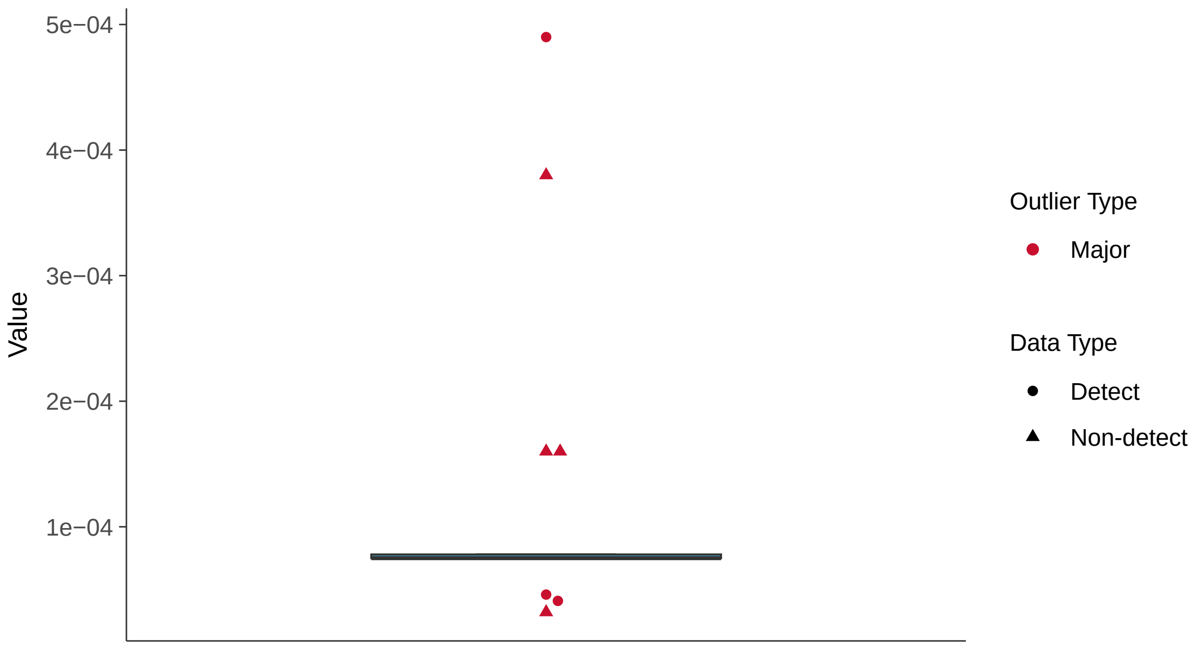
Histogram

Cadmium, MW-02 (mg/L)



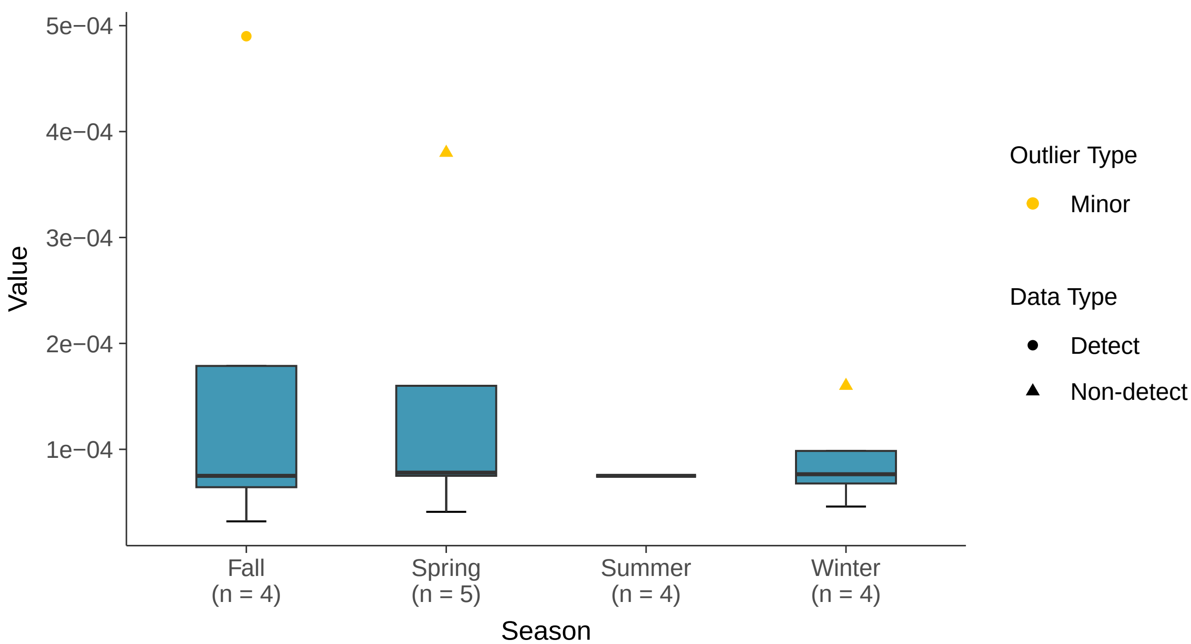
Boxplot

Cadmium, MW-02 (mg/L)



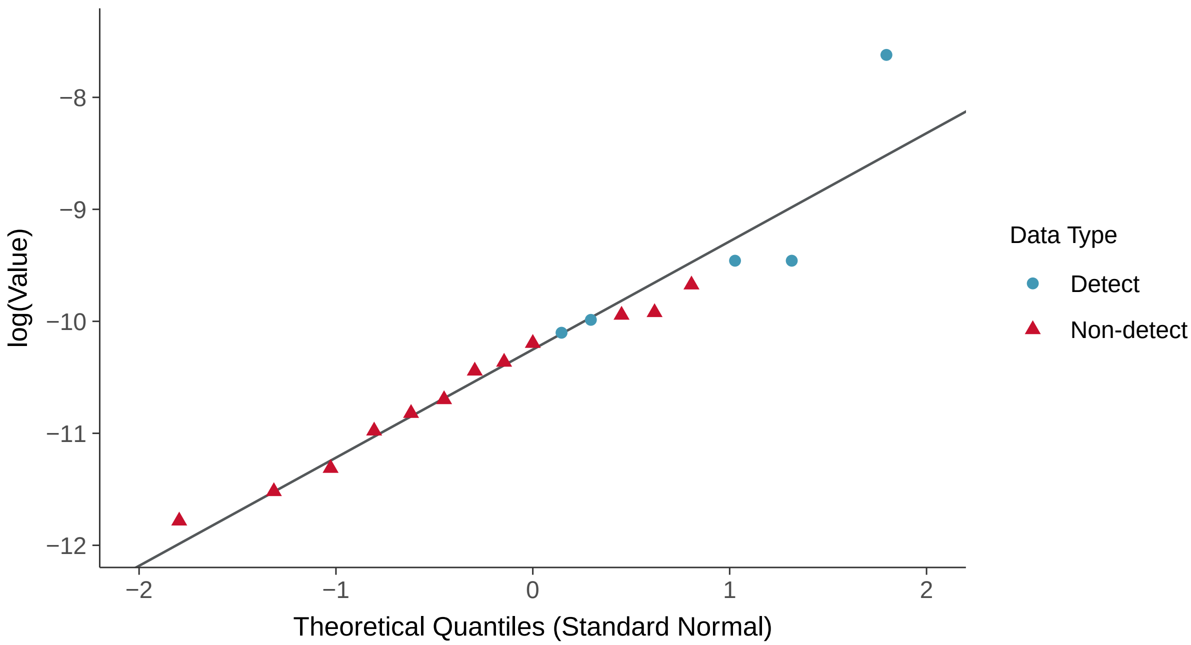
Boxplot by Season

Cadmium, MW-02 (mg/L)



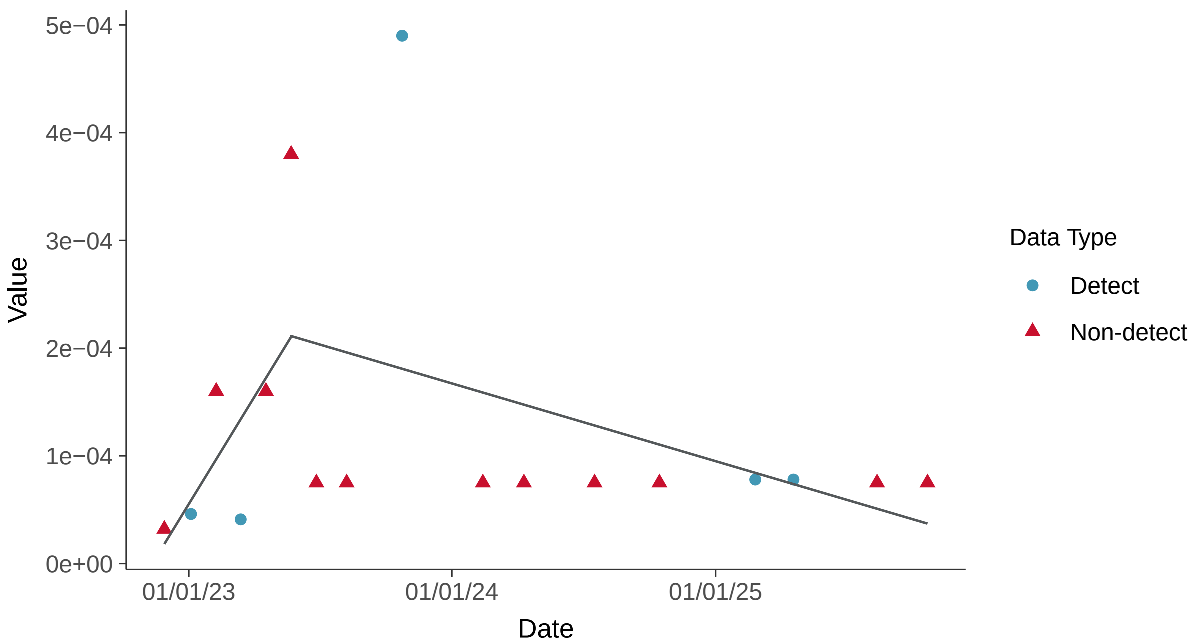
Lognormal Q-Q plot using ROS Imputed Estimates

Cadmium, MW-02 (mg/L)



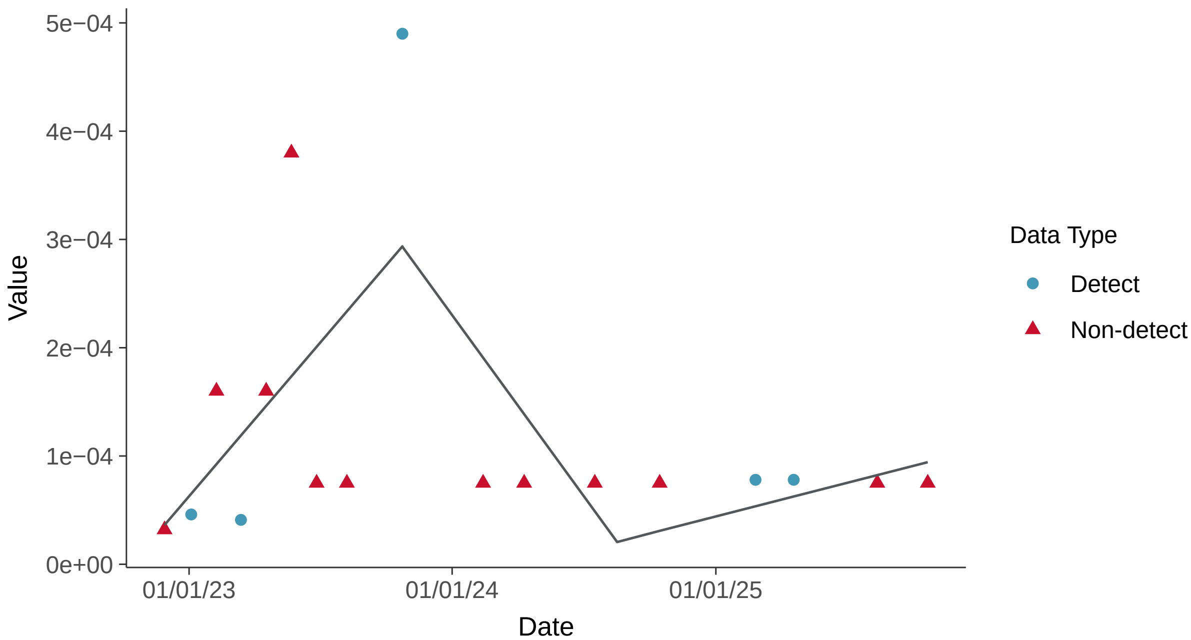
Trend Regression: Piecewise Linear-Linear

Cadmium, MW-02 (mg/L)



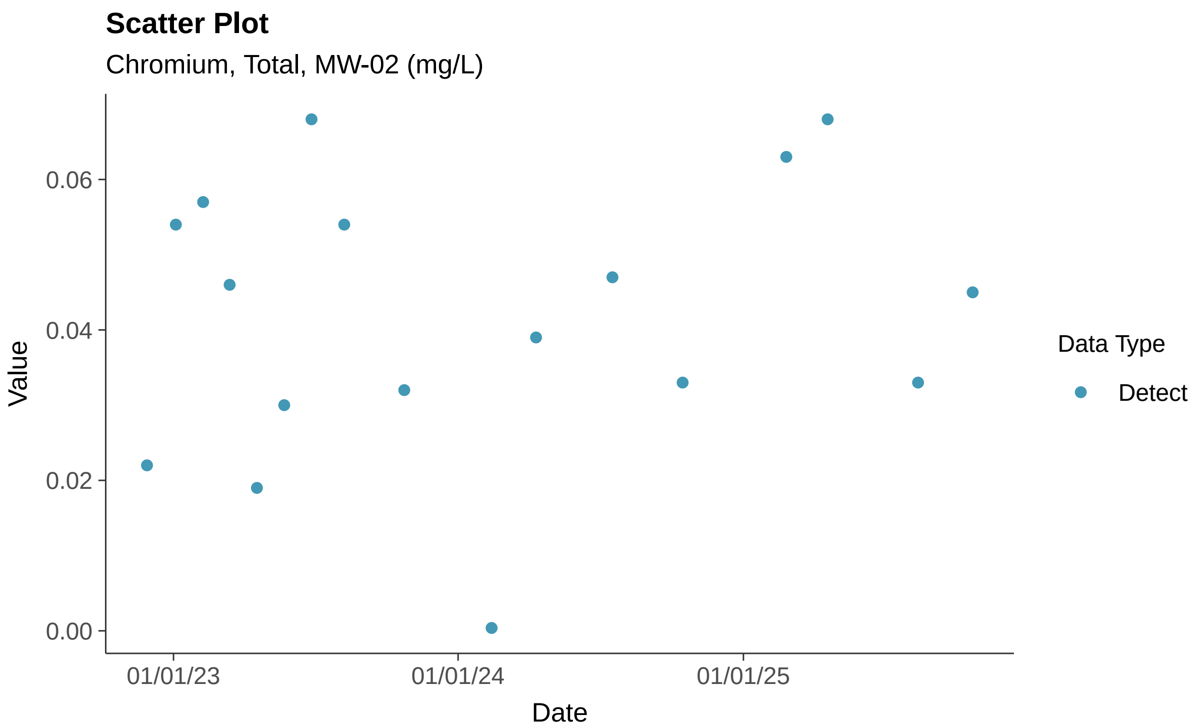
Trend Regression: Piecewise Linear-Linear-Linear

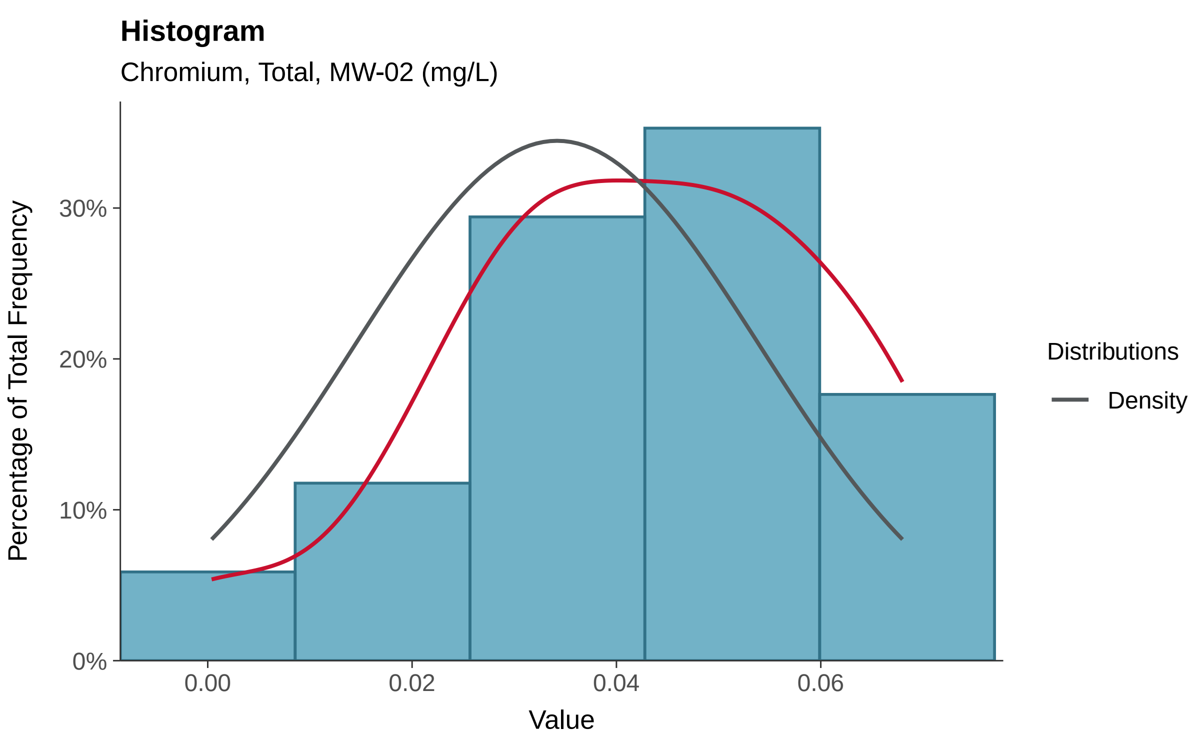
Cadmium, MW-02 (mg/L)



Appendix IV: Chromium, Total, MW-02

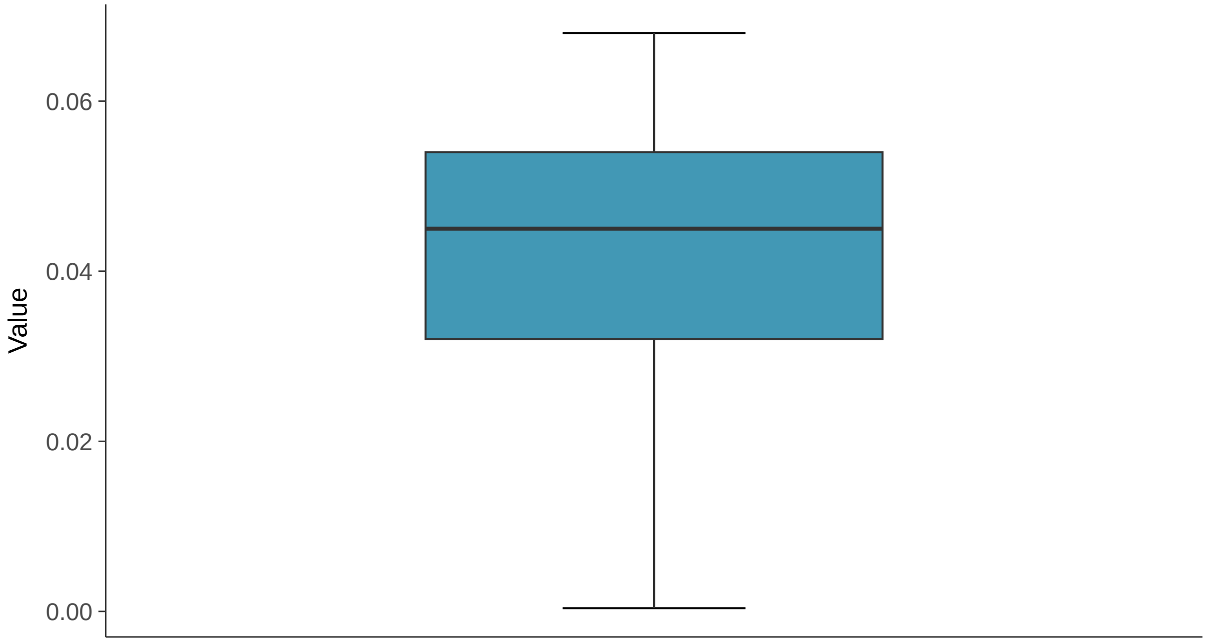
ID: 12_2_4_109





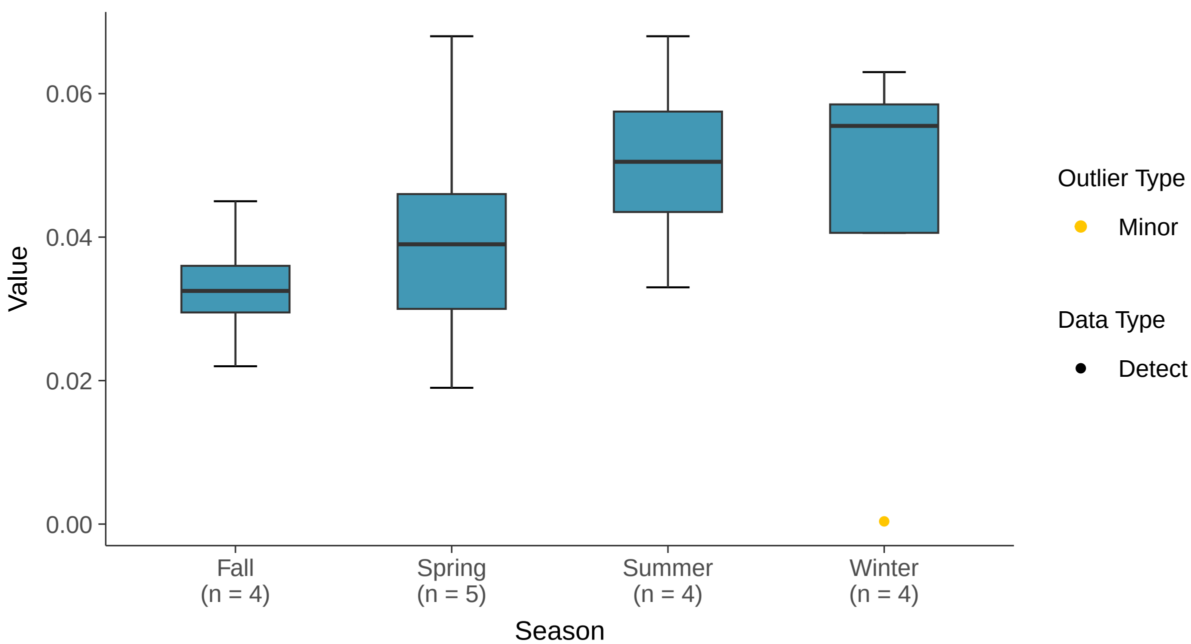
Boxplot

Chromium, Total, MW-02 (mg/L)



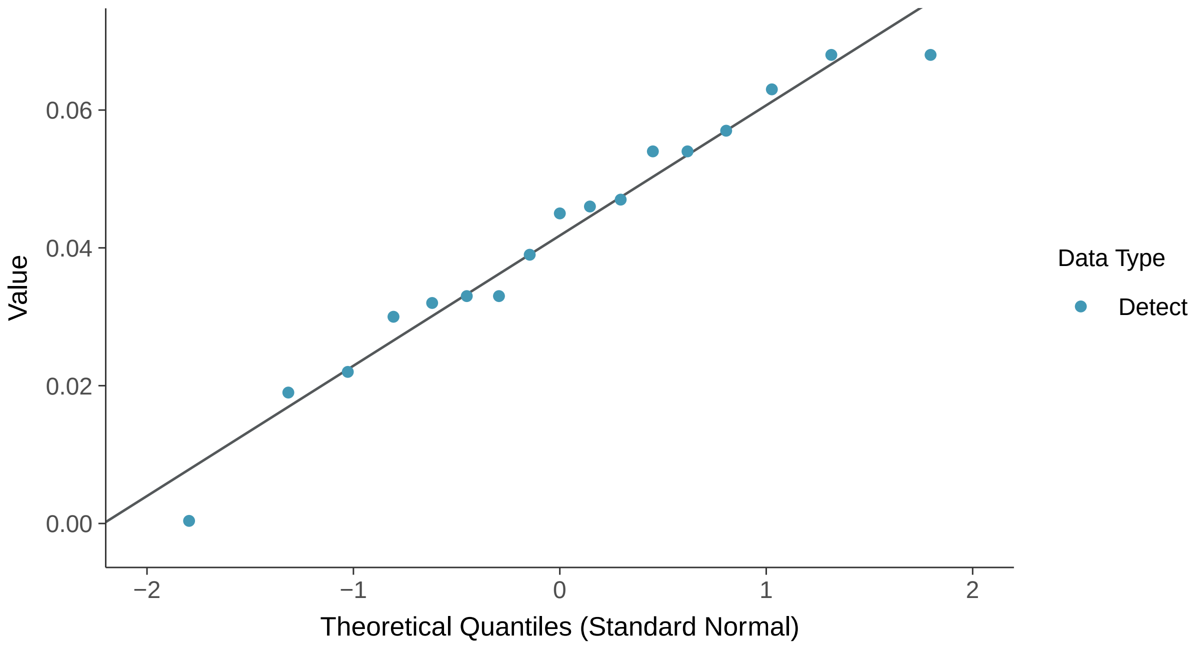
Boxplot by Season

Chromium, Total, MW-02 (mg/L)



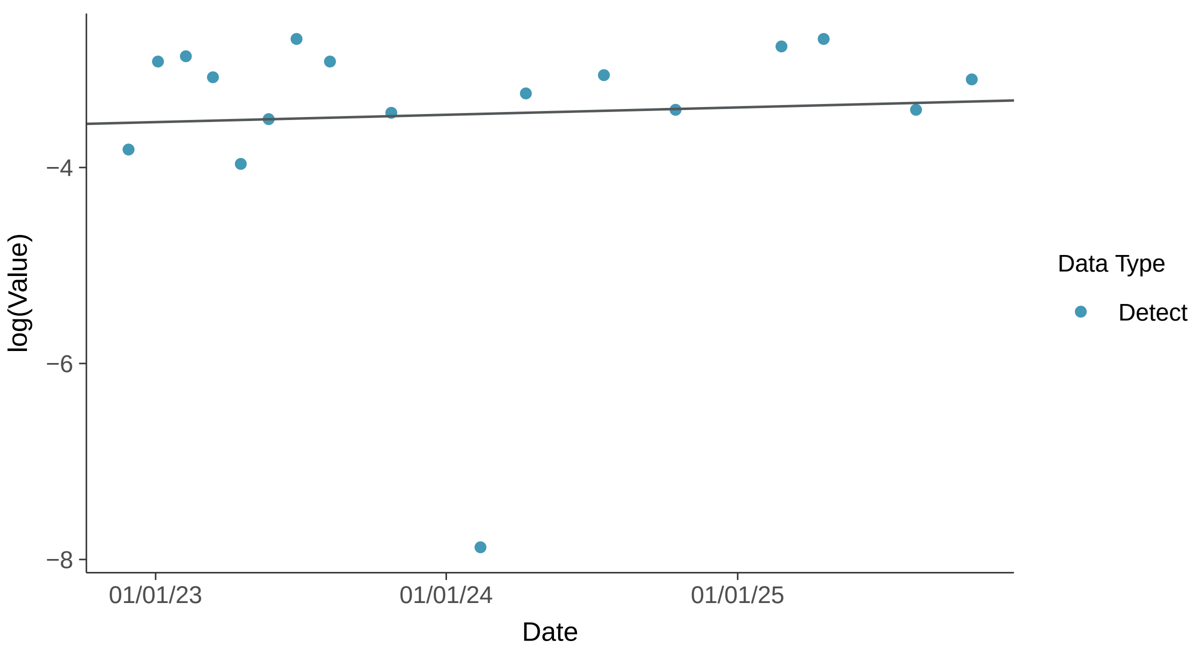
Normal Q-Q plot

Chromium, Total, MW-02 (mg/L)



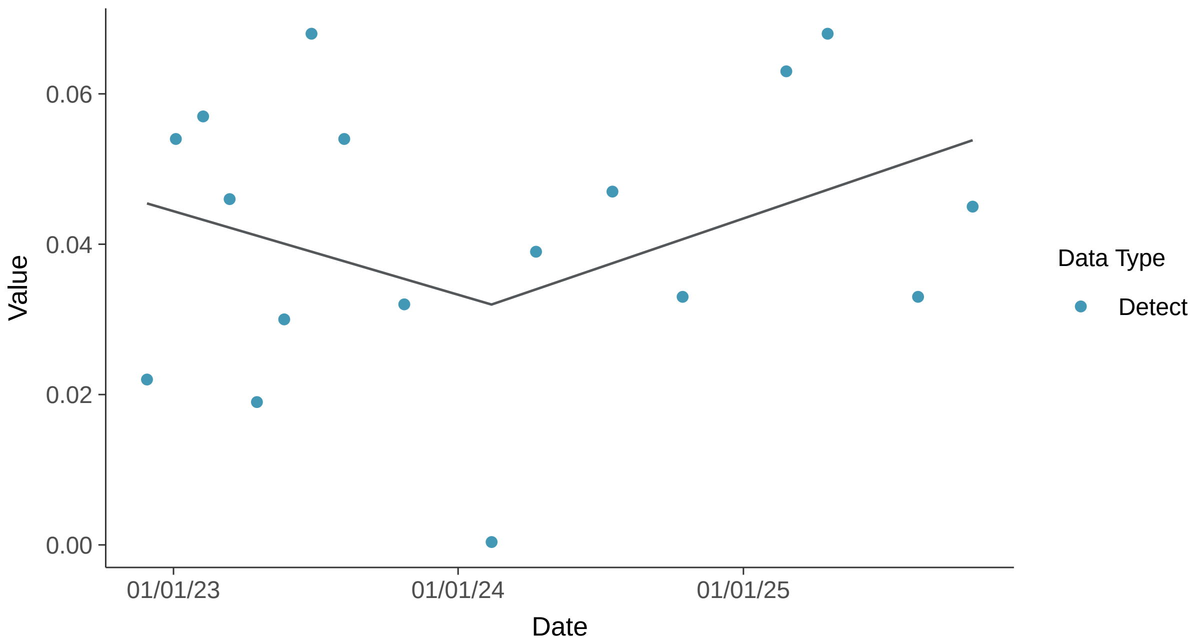
Trend Regression: Lognormal MLE

Chromium, Total, MW-02 (mg/L)



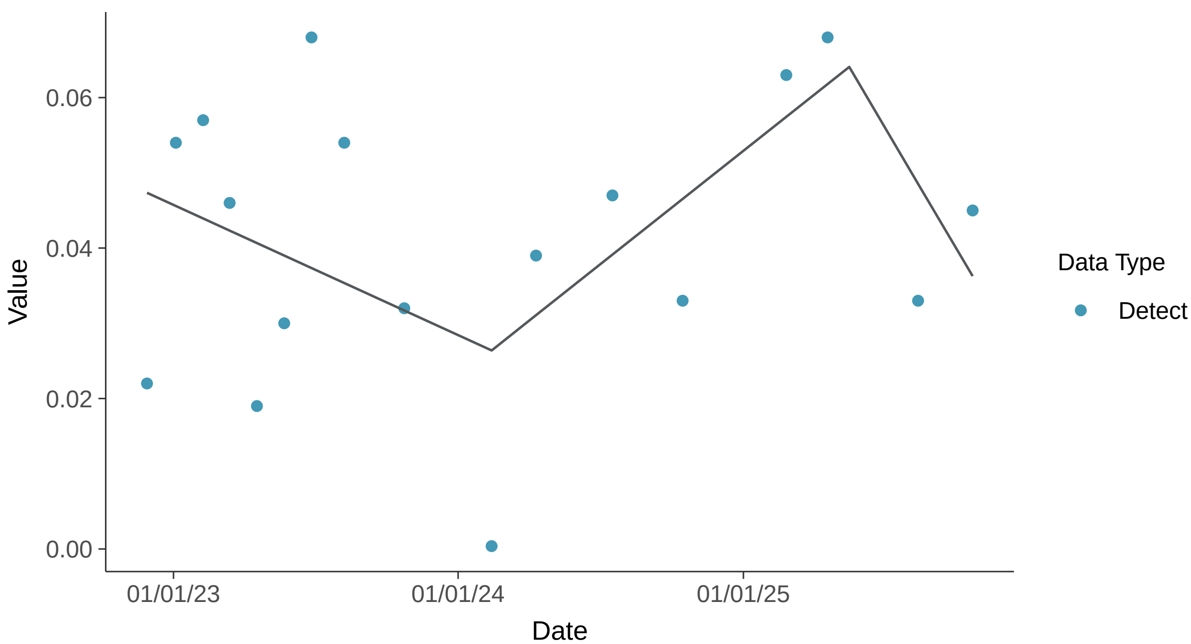
Trend Regression: Piecewise Linear-Linear

Chromium, Total, MW-02 (mg/L)



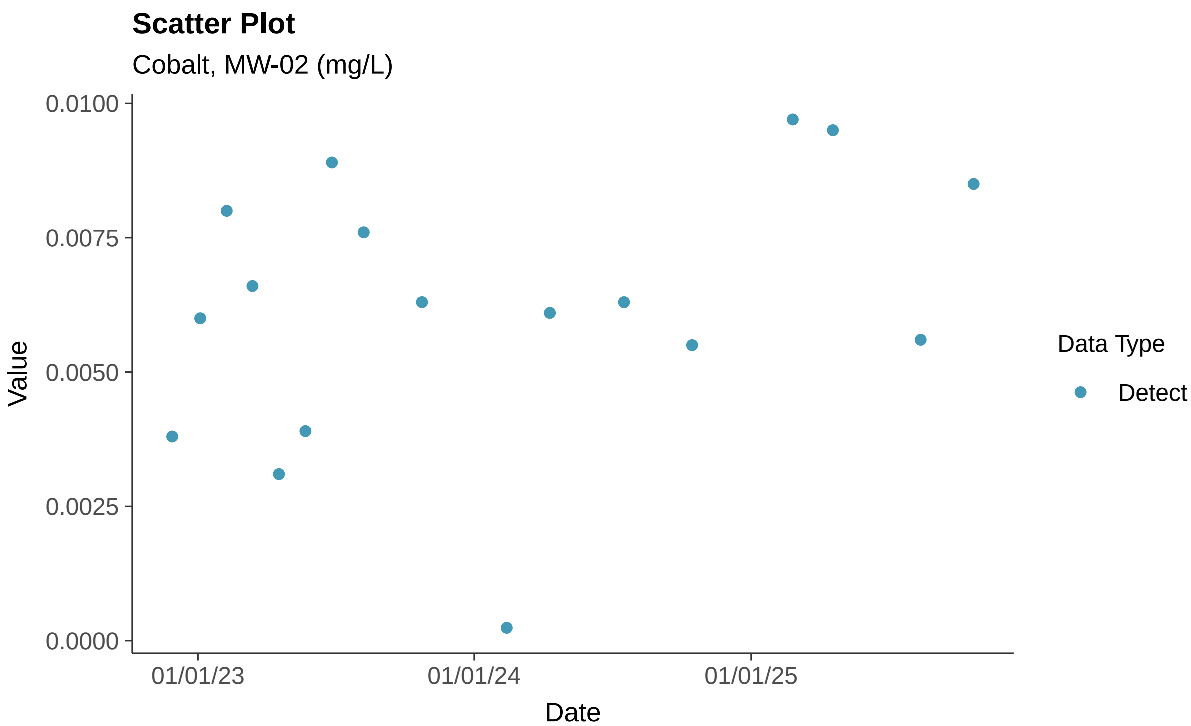
Trend Regression: Piecewise Linear-Linear-Linear

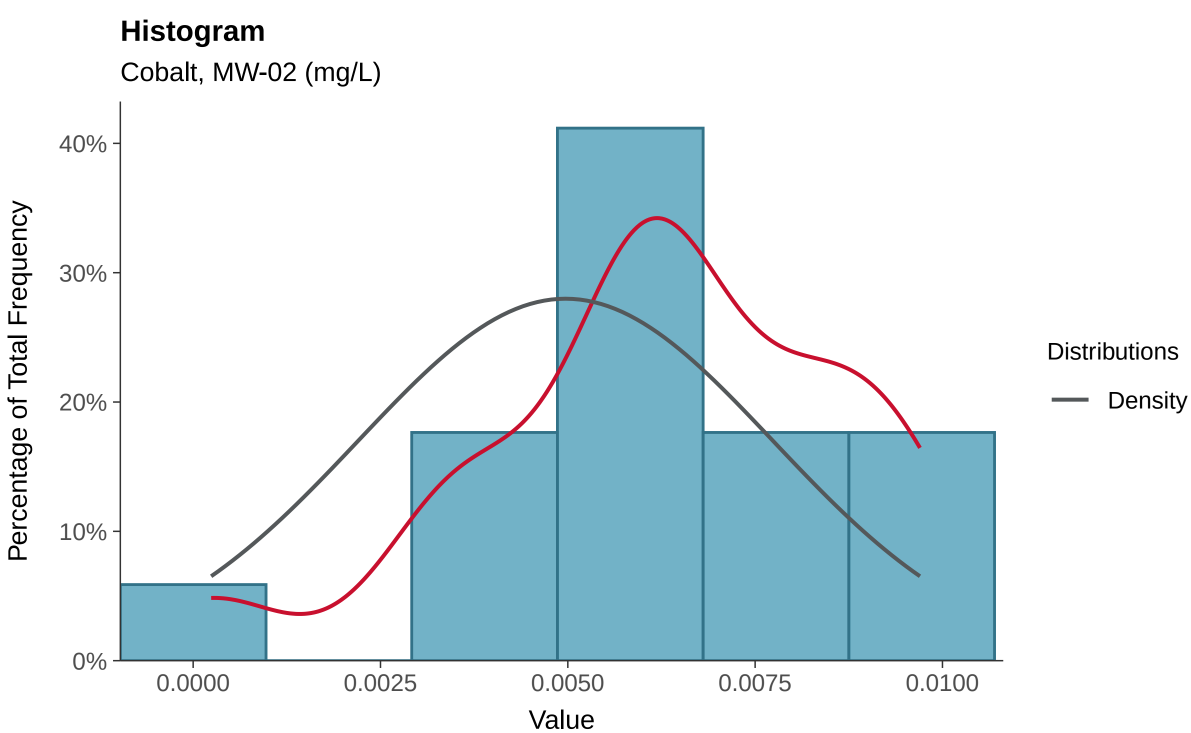
Chromium, Total, MW-02 (mg/L)



Appendix IV: Cobalt, MW-02

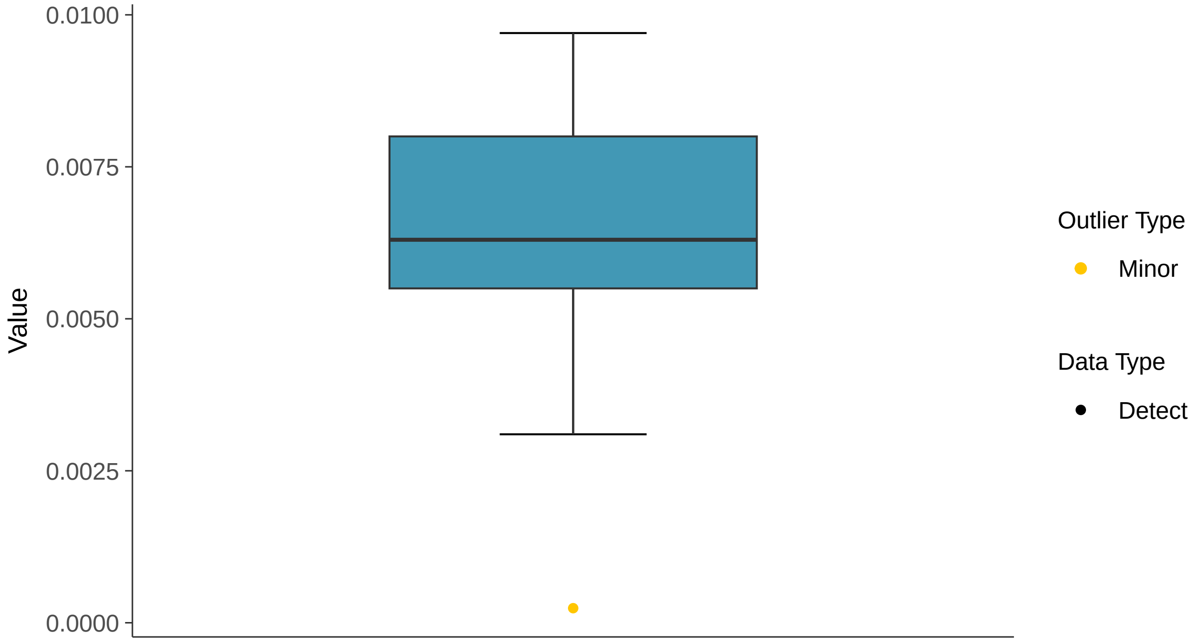
ID: 12_2_4_110





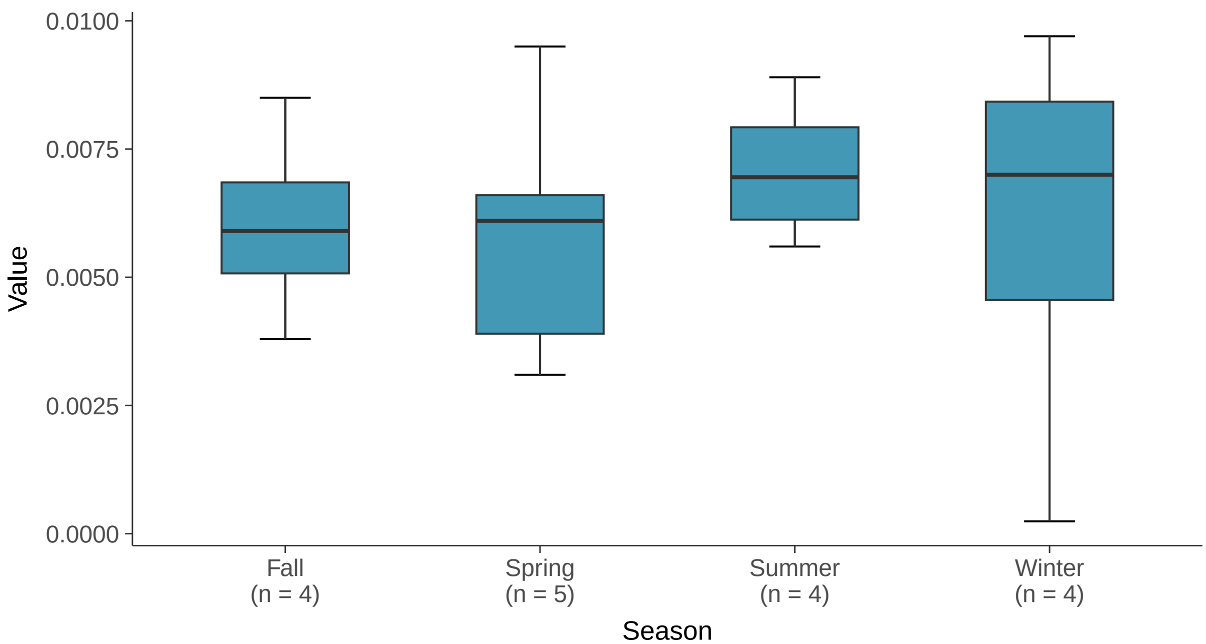
Boxplot

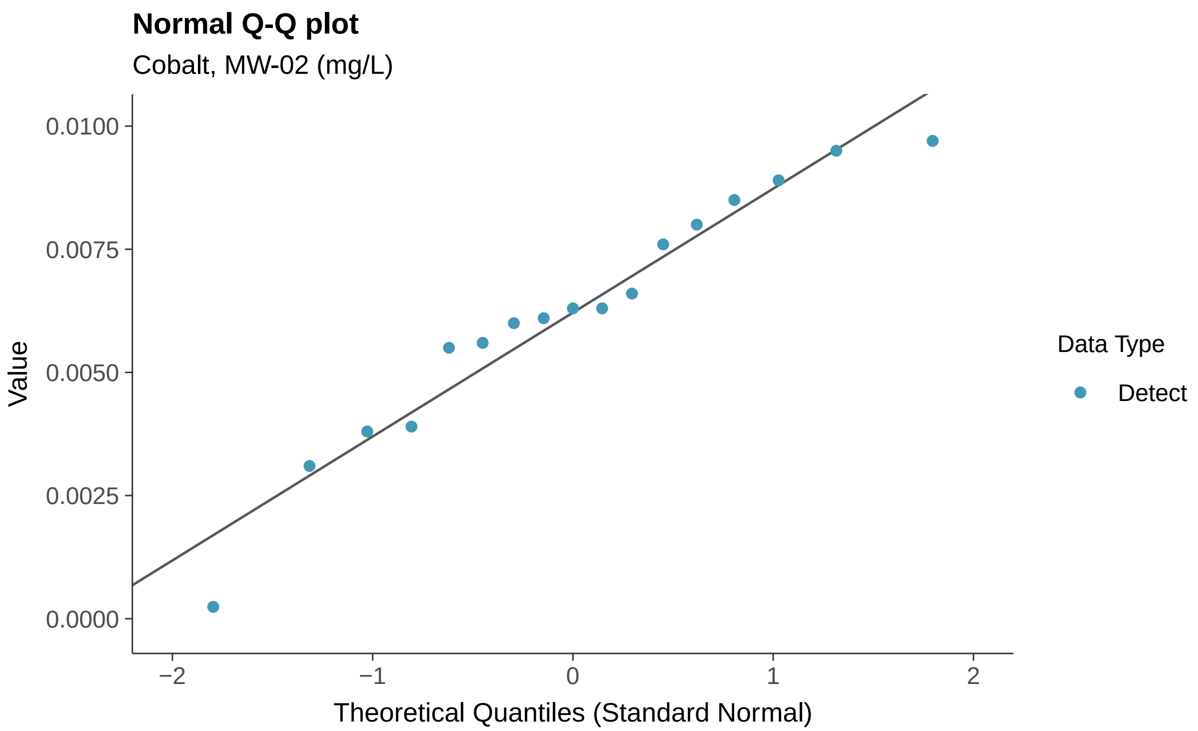
Cobalt, MW-02 (mg/L)

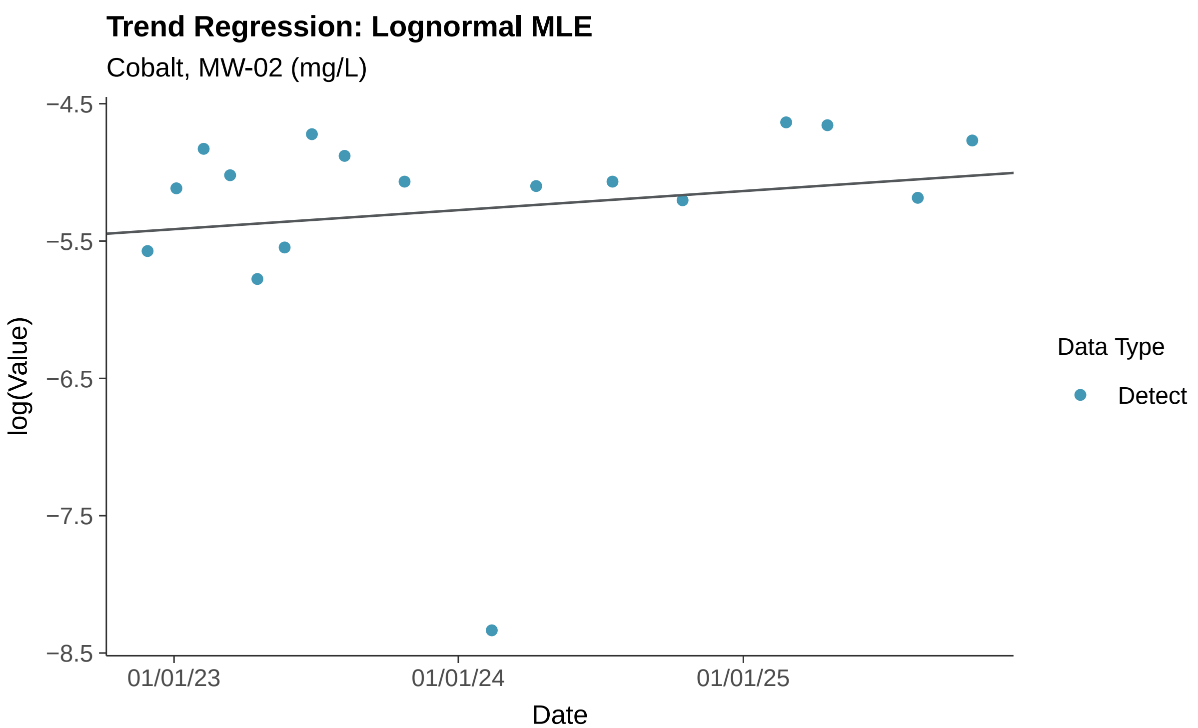


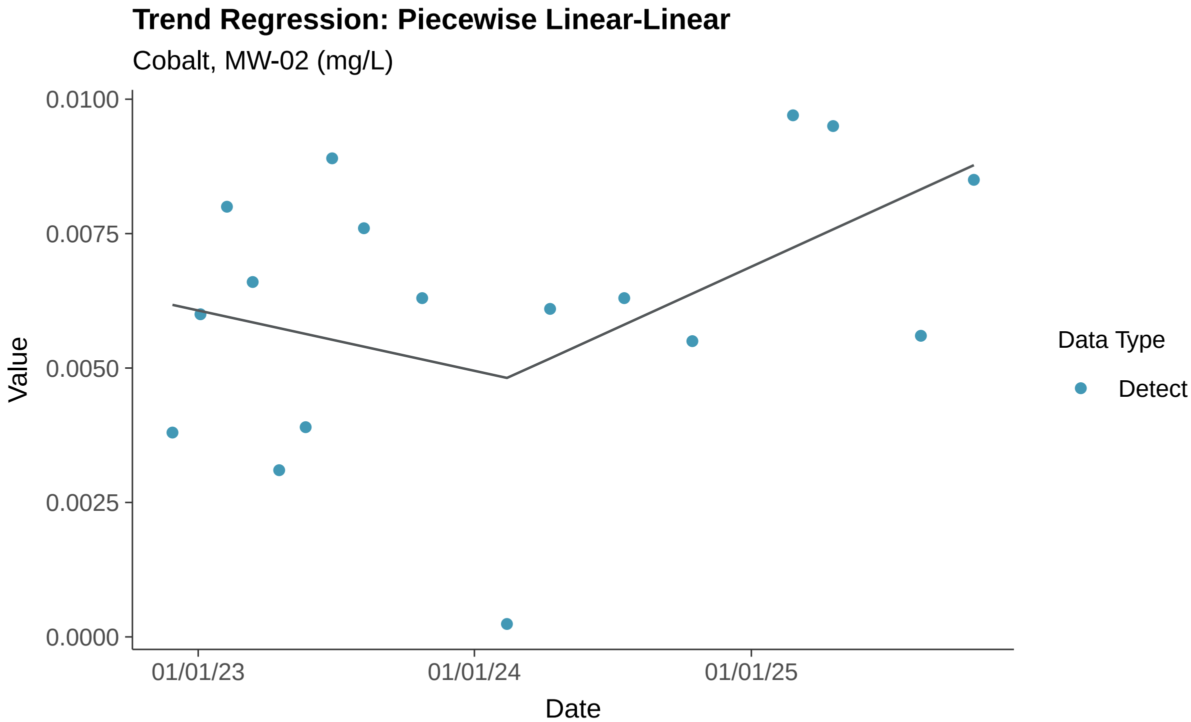
Boxplot by Season

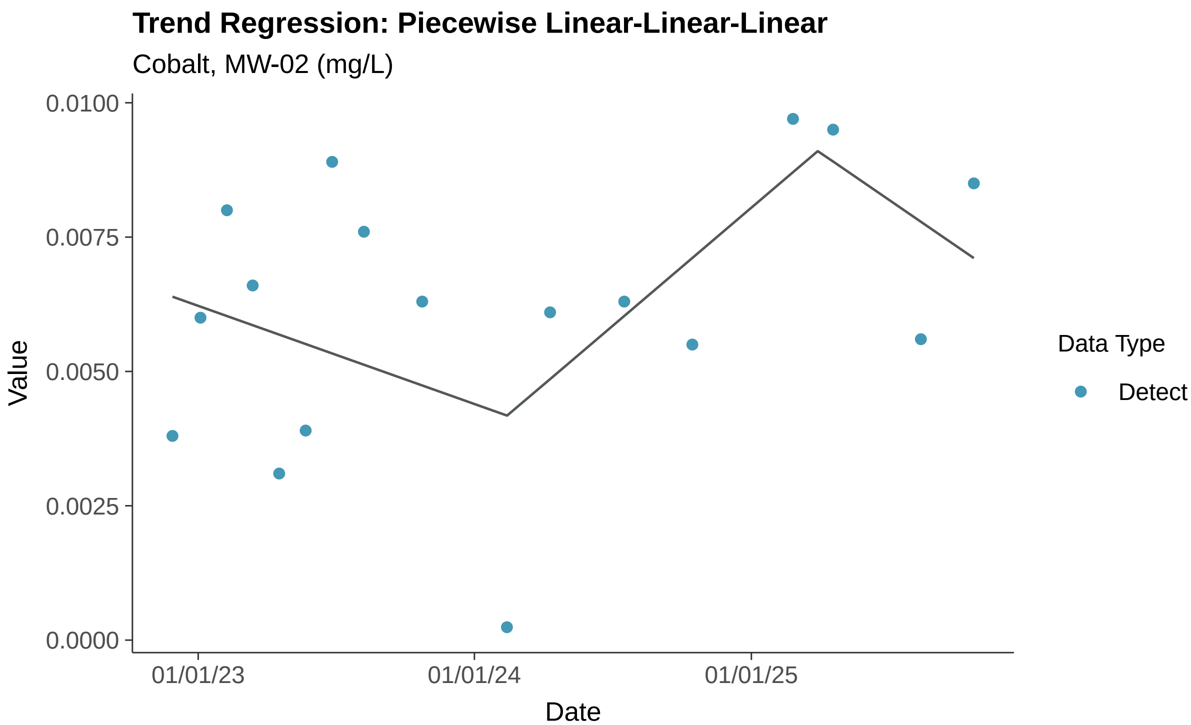
Cobalt, MW-02 (mg/L)




Normal Q-Q plot
Cobalt, MW-02 (mg/L)
Value
0.0100
0.0075
0.0050
0.0025
0.0000
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Lognormal MLE
Cobalt, MW-02 (mg/L)
log(Value)
−4.5
−5.5
−6.5
−7.5
−8.5
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear
Cobalt, MW-02 (mg/L)
Value
0.0100
0.0075
0.0050
0.0025
0.0000
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

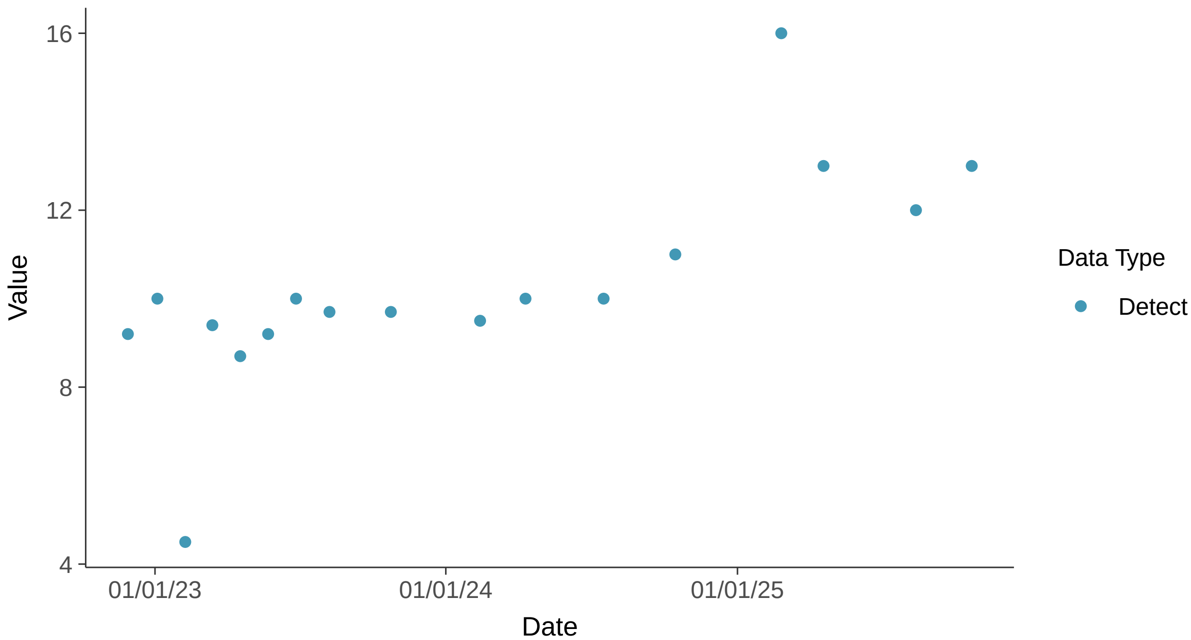

Trend Regression: Piecewise Linear-Linear-Linear
Cobalt, MW-02 (mg/L)
Value
0.0100
0.0075
0.0050
0.0025
0.0000
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Appendix IV: Fluoride (App IV), MW-02

ID: 12_2_4_113

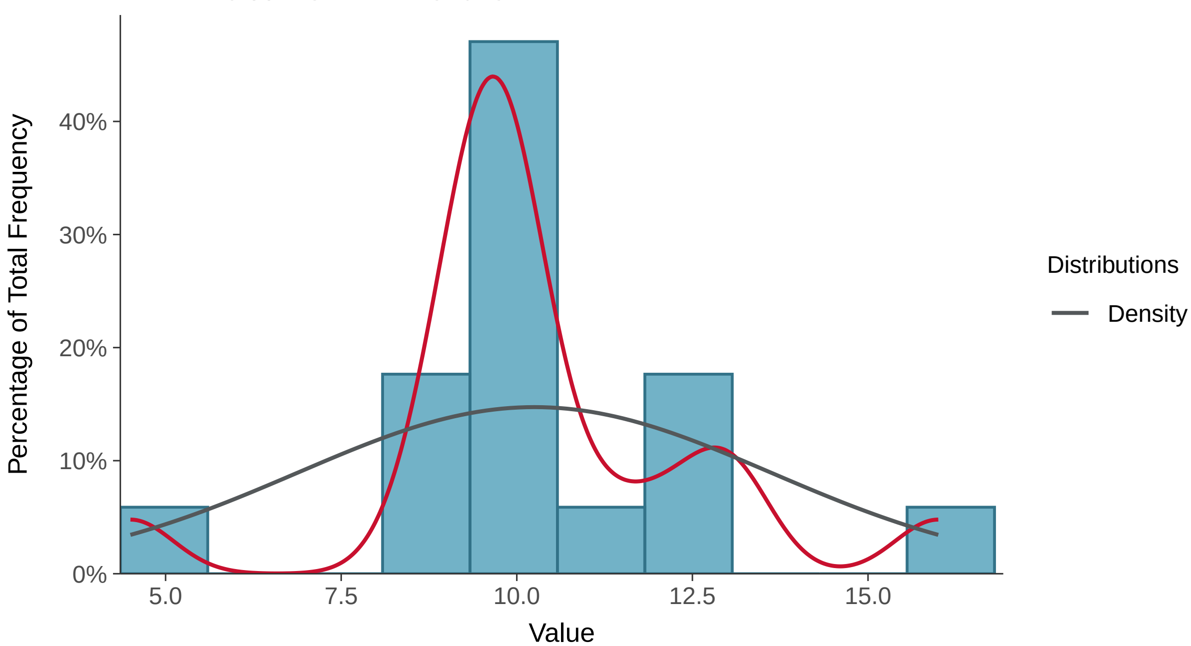
Scatter Plot

Fluoride (App IV), MW-02 (mg/L)



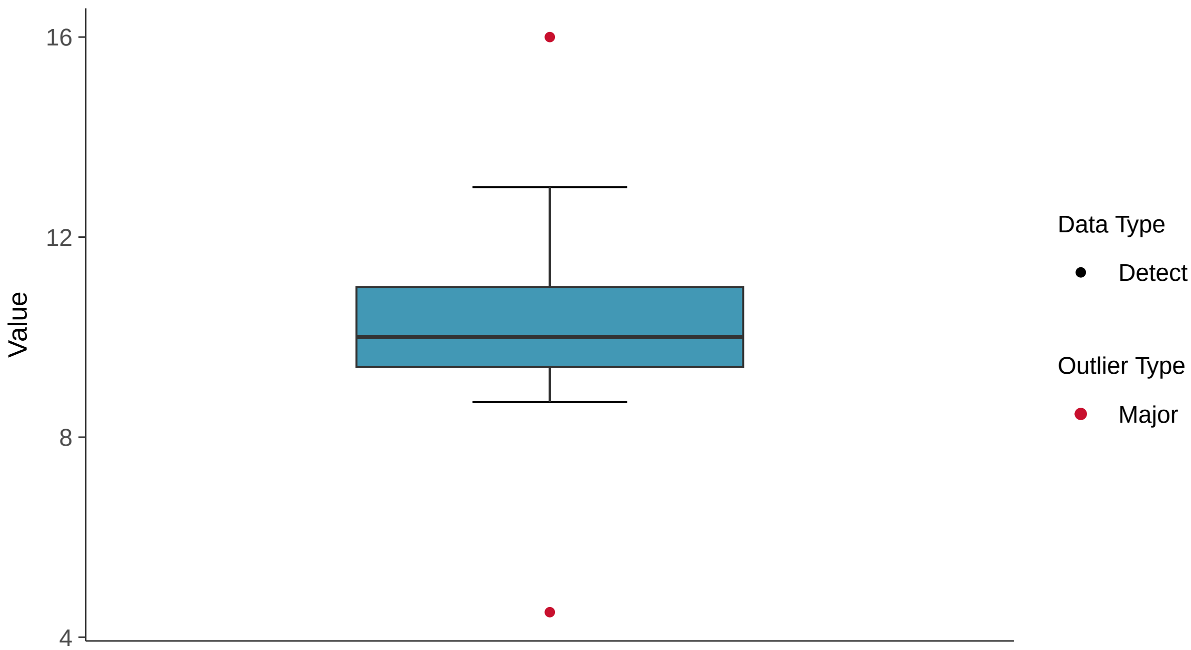
Histogram

Fluoride (App IV), MW-02 (mg/L)



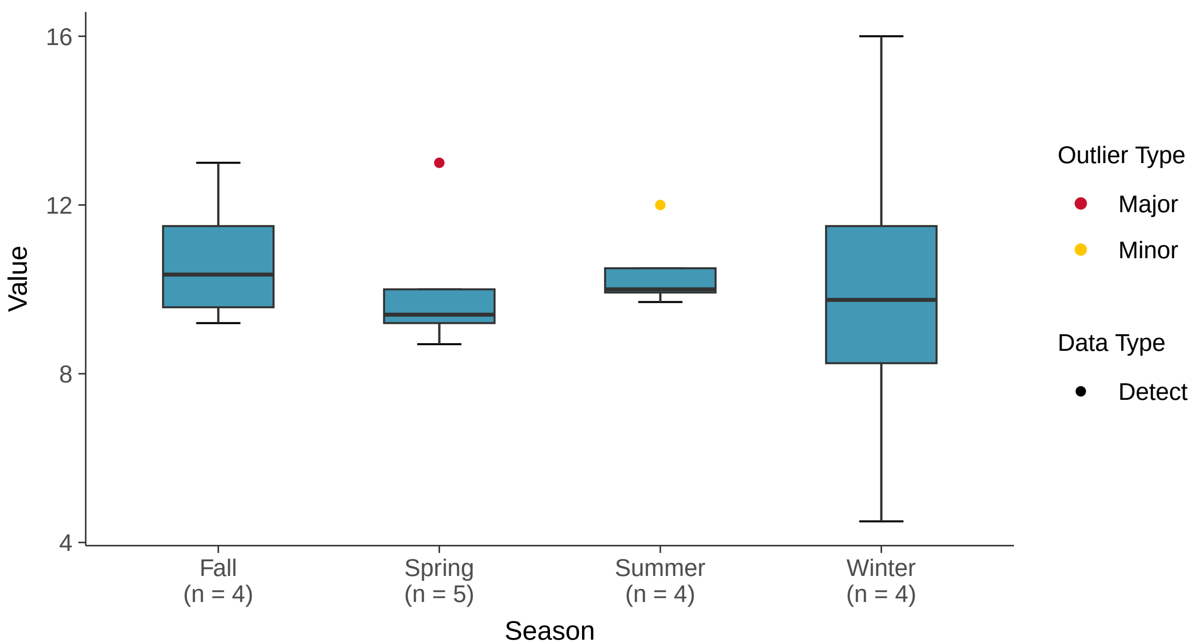
Boxplot

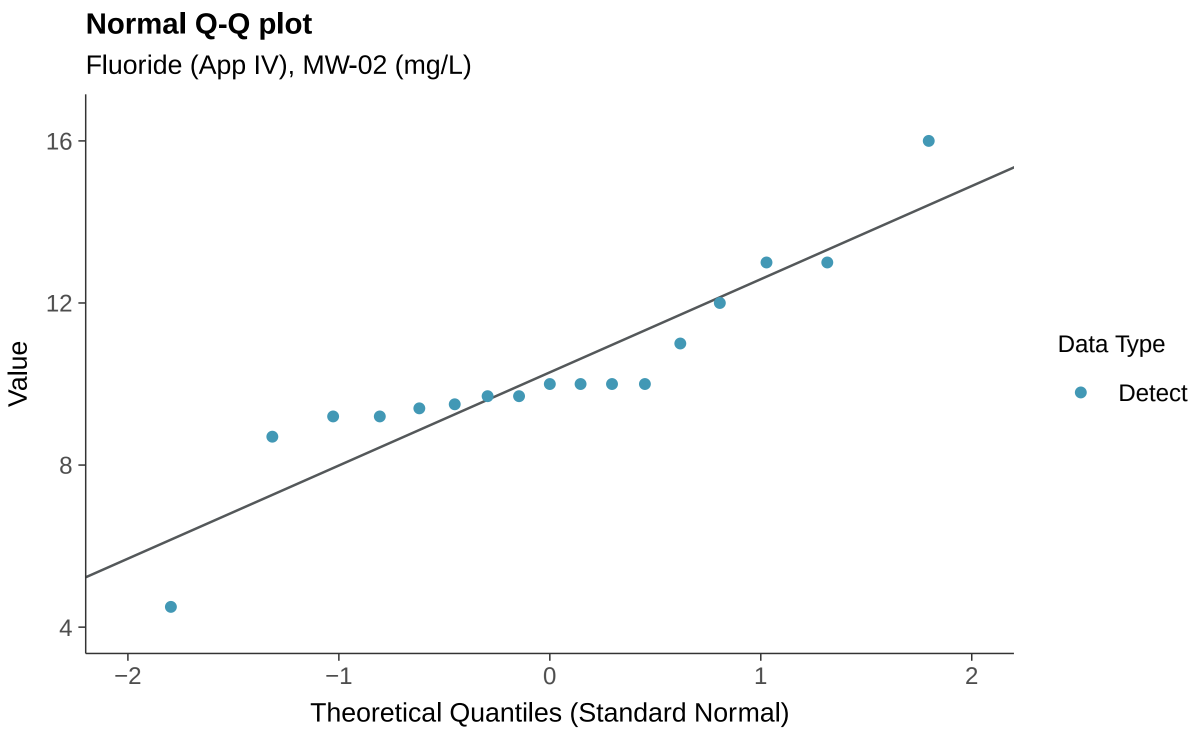
Fluoride (App IV), MW-02 (mg/L)

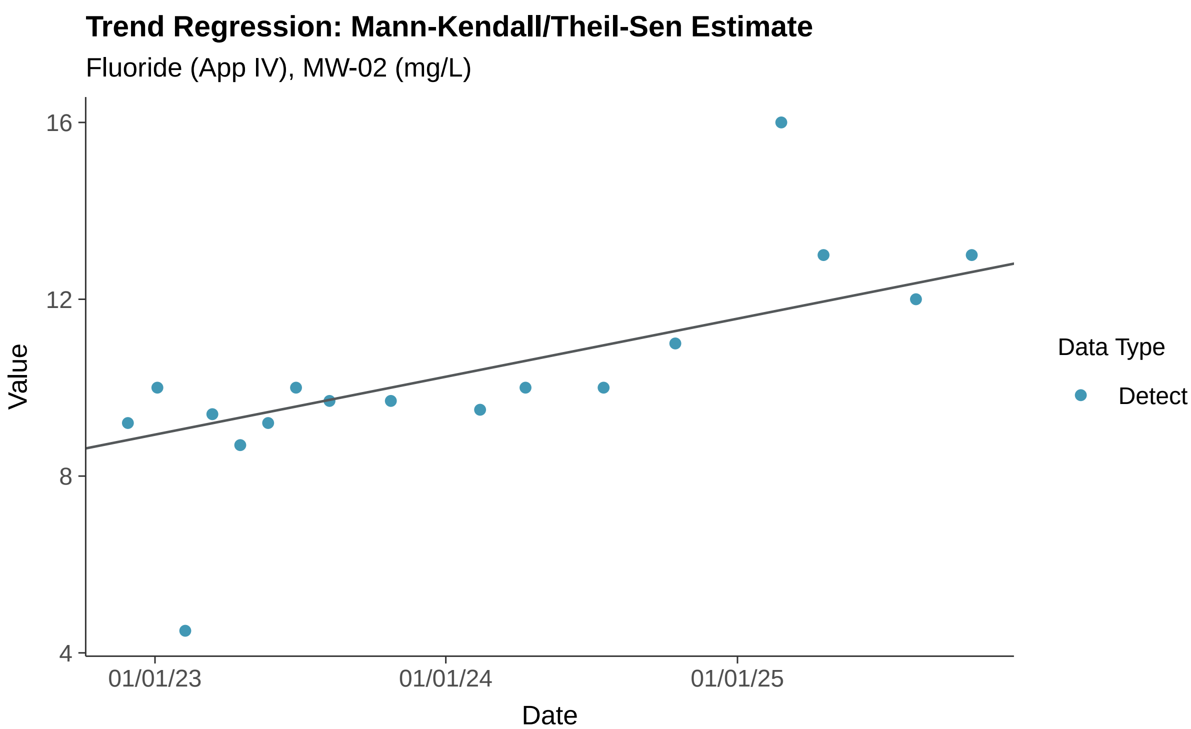


Boxplot by Season

Fluoride (App IV), MW-02 (mg/L)

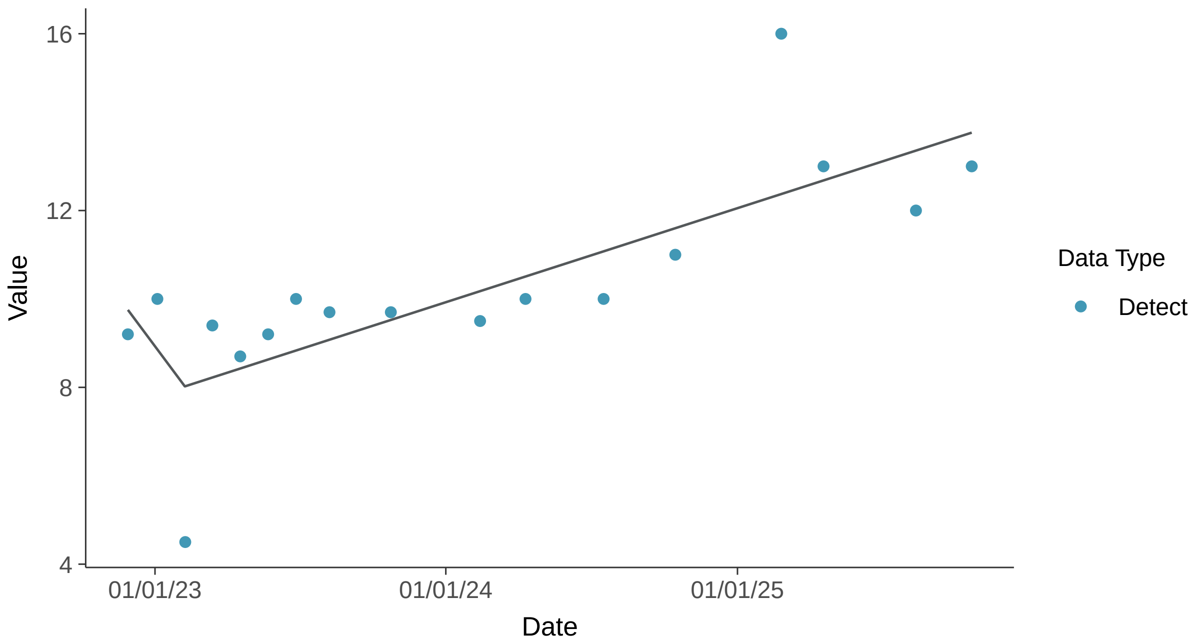



Normal Q-Q plot
Fluoride (App IV), MW-02 (mg/L)
Value
16
12
8
4
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Mann-Kendall/Theil-Sen Estimate
Fluoride (App IV), MW-02 (mg/L)
Value
16
12
8
4
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

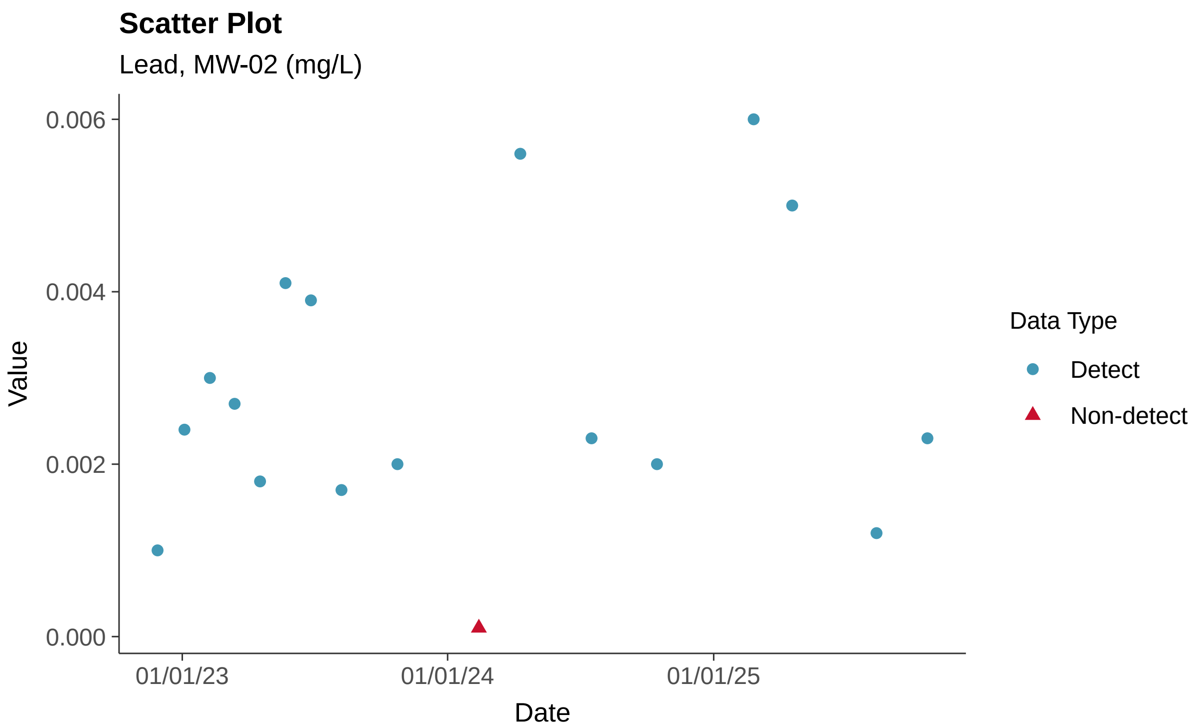
Trend Regression: Piecewise Linear-Linear

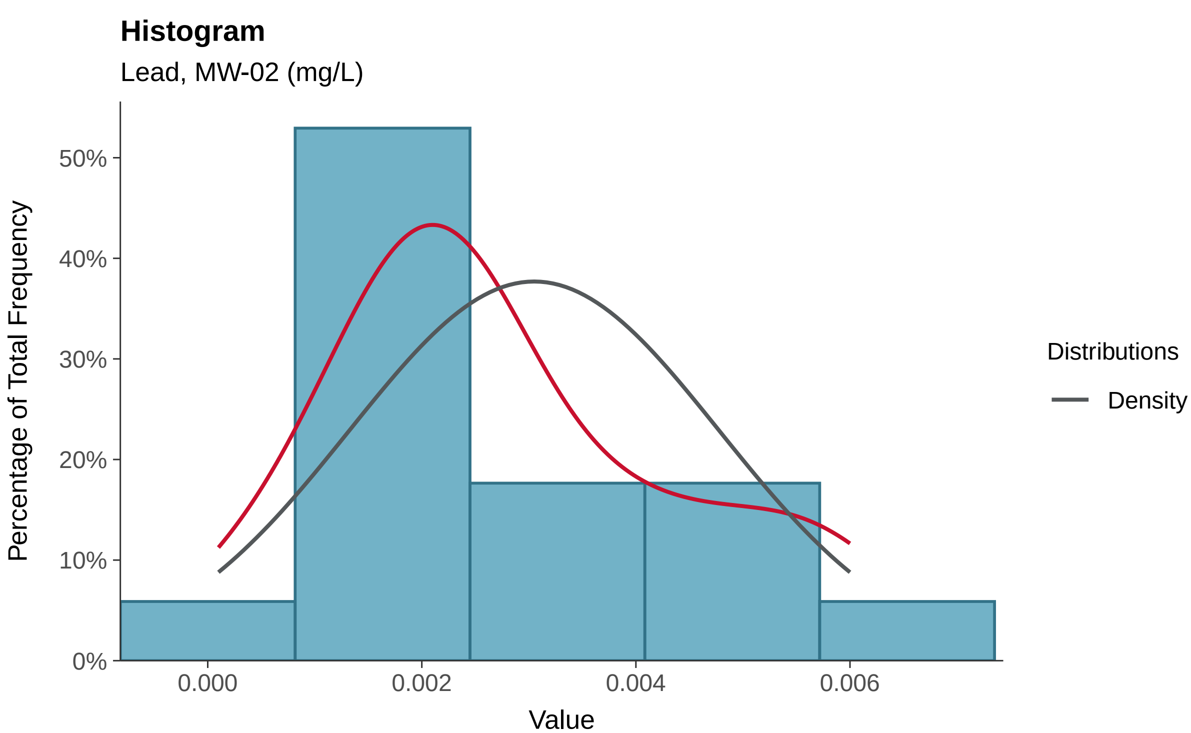
Fluoride (App IV), MW-02 (mg/L)



Appendix IV: Lead, MW-02

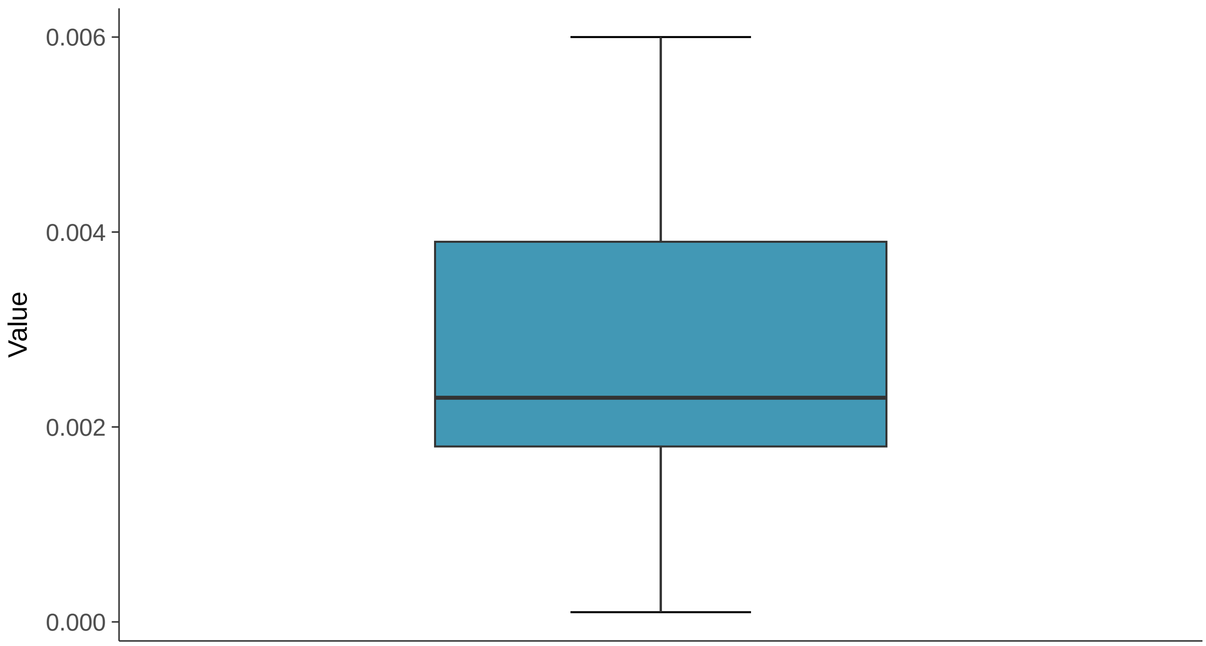
ID: 12_2_4_115



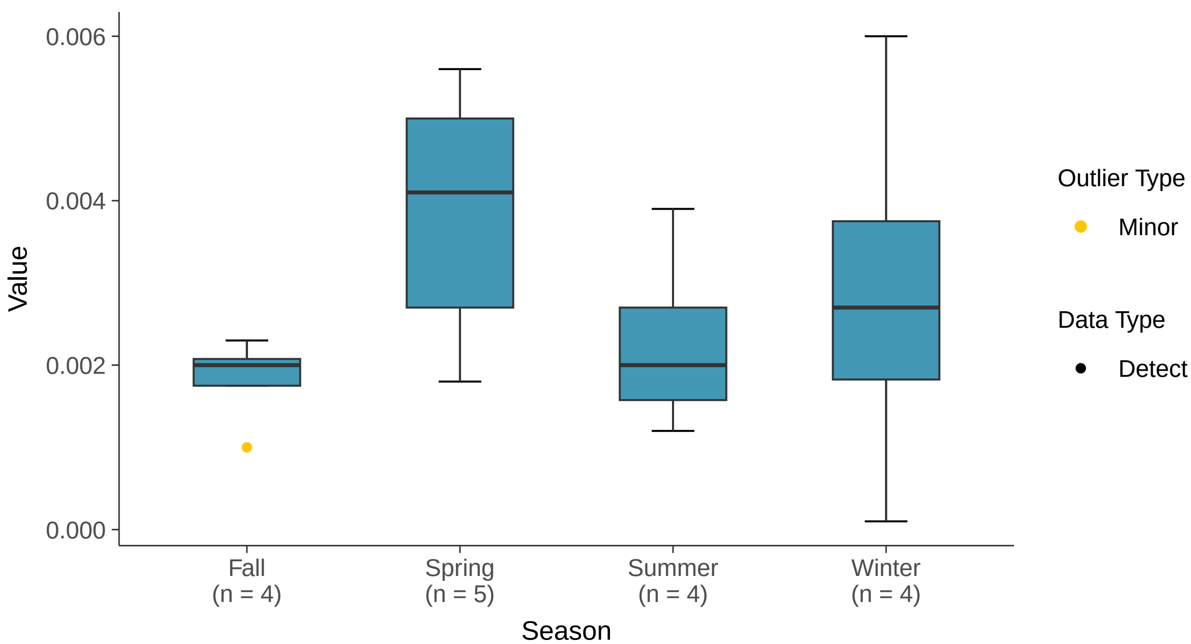


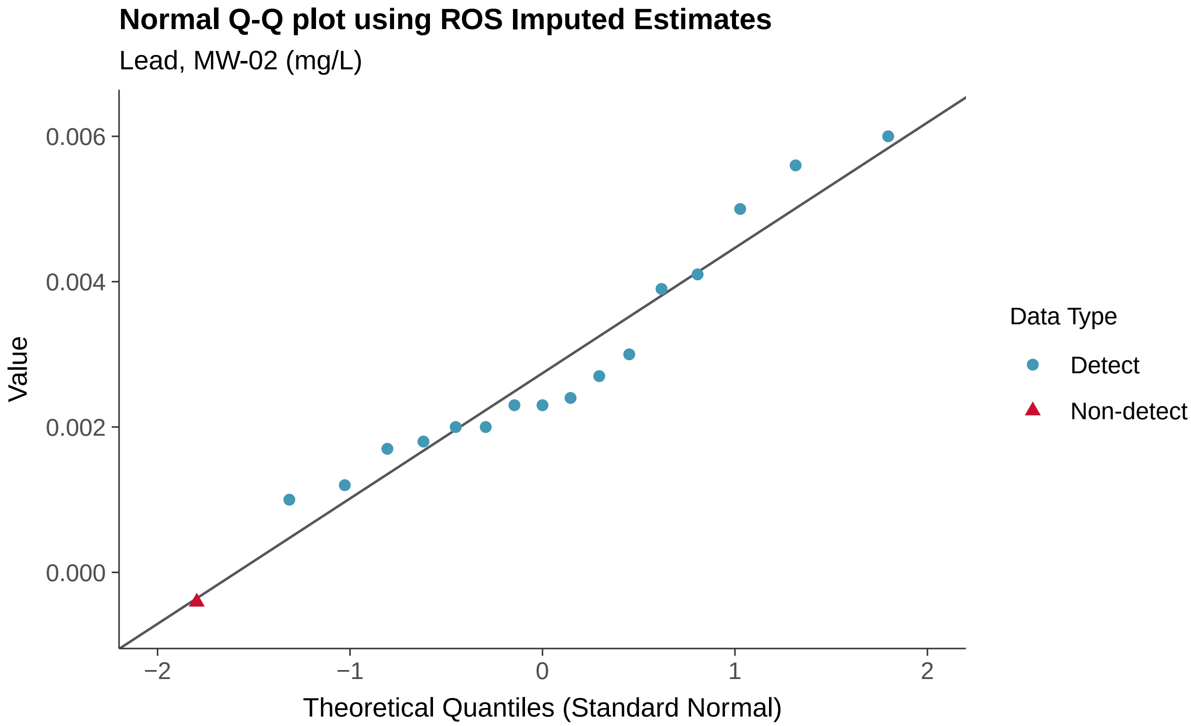
Grand Haven
Downgradient Wells as of October 2025

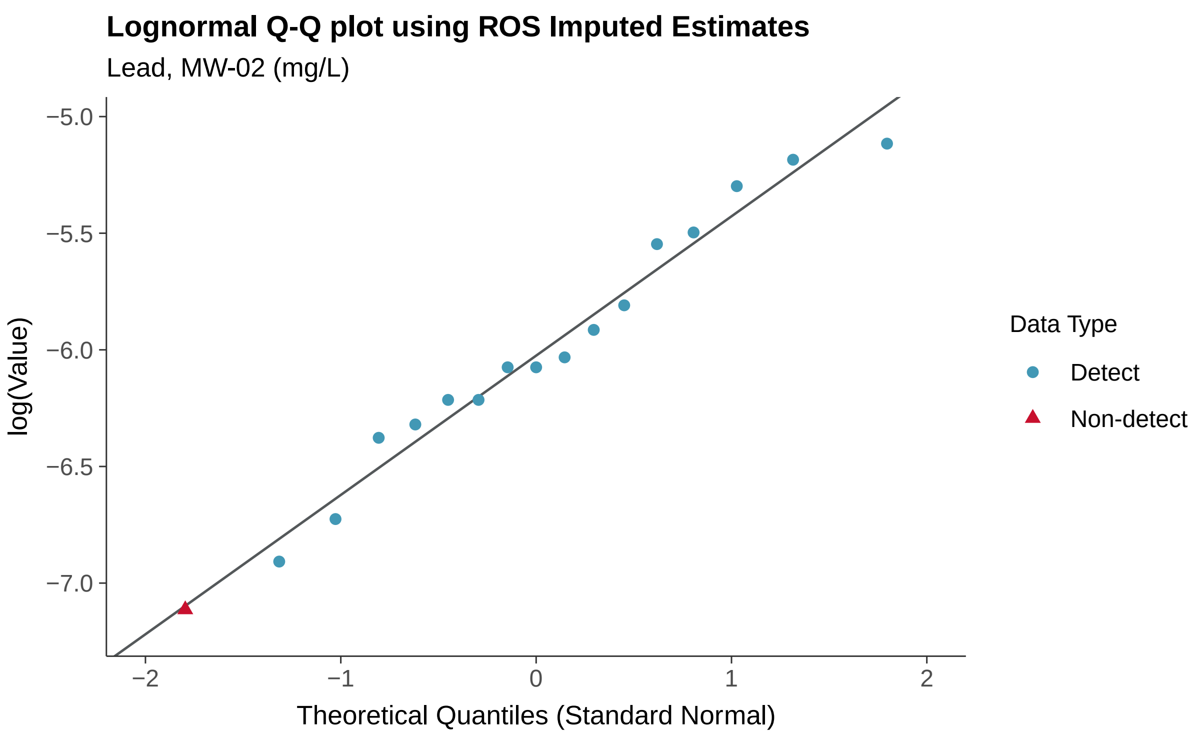
Boxplot
Lead, MW-02 (mg/L)

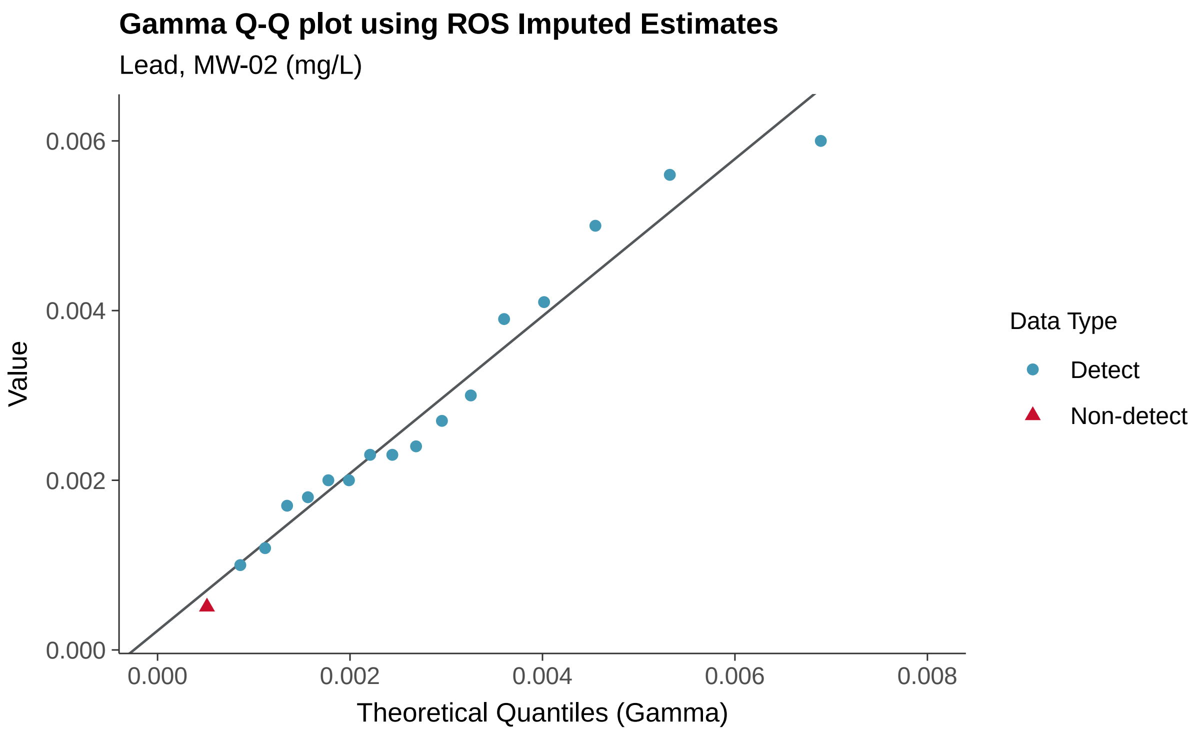


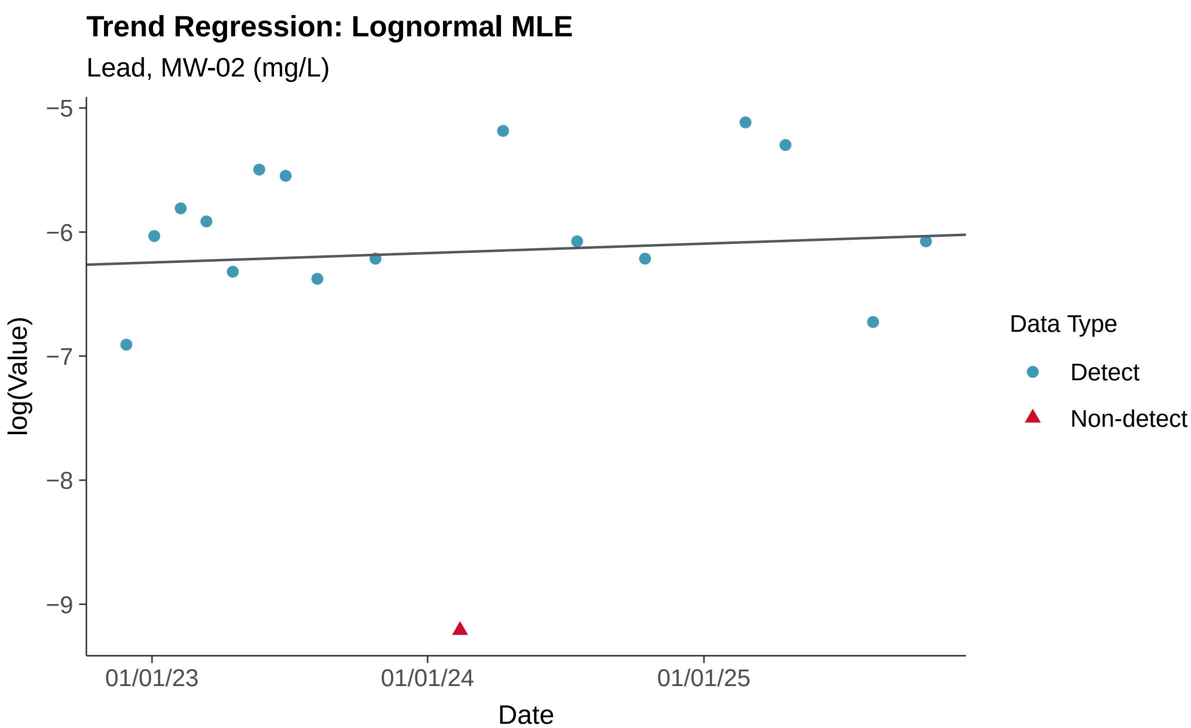
Boxplot by Season
Lead, MW-02 (mg/L)



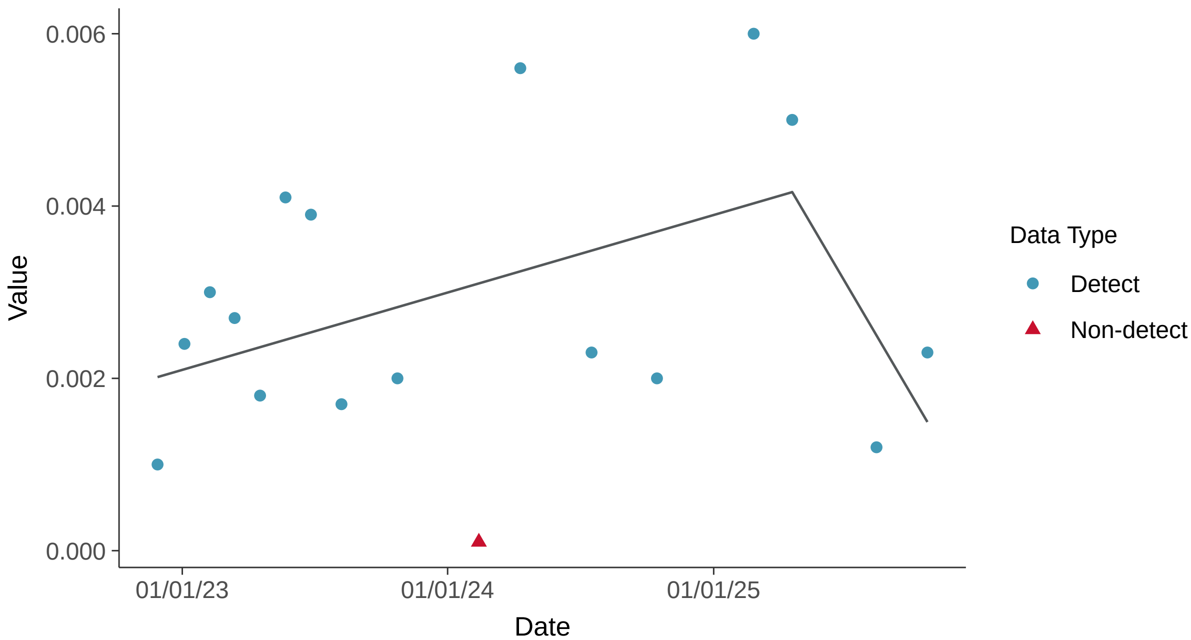

Normal Q-Q plot using ROS Imputed Estimates
Lead, MW-02 (mg/L)
Value
0.006
0.004
0.002
0.000
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Lognormal Q-Q plot using ROS Imputed Estimates
Lead, MW-02 (mg/L)
log(Value)
−5.0
−5.5
−6.0
−6.5
−7.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

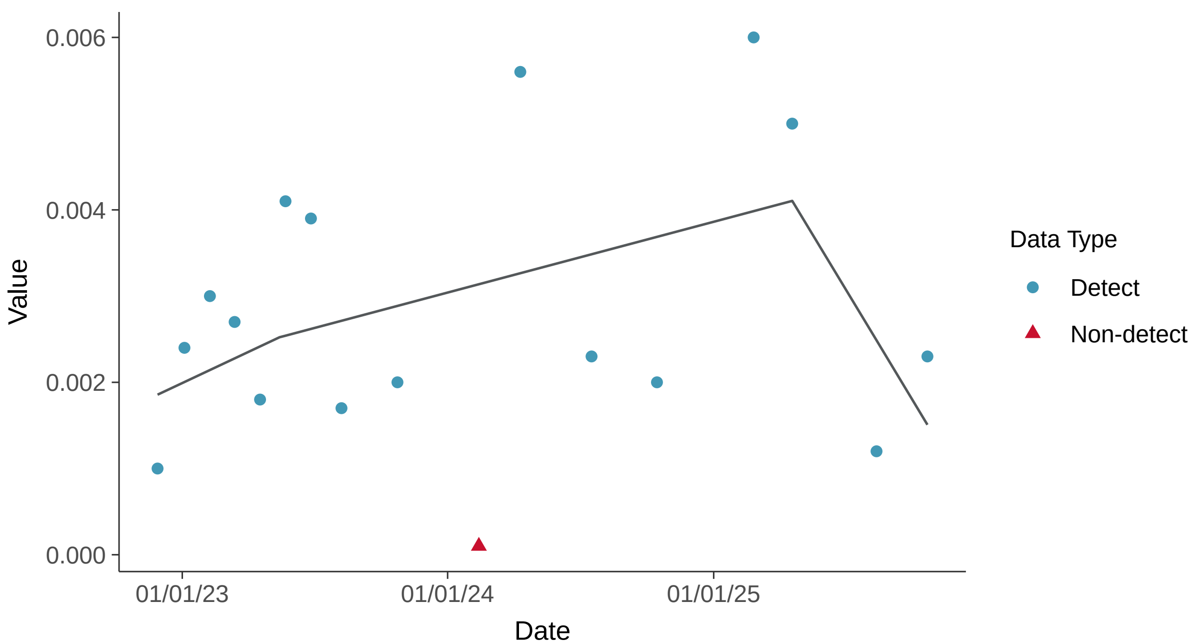

Gamma Q-Q plot using ROS Imputed Estimates
Lead, MW-02 (mg/L)
Value
0.006
0.004
0.002
0.000
0.000
0.002
0.004
0.006
0.008
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect


Trend Regression: Lognormal MLE
Lead, MW-02 (mg/L)
log(Value)
−5
−6
−7
−8
−9
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Trend Regression: Piecewise Linear-Linear
Lead, MW-02 (mg/L)

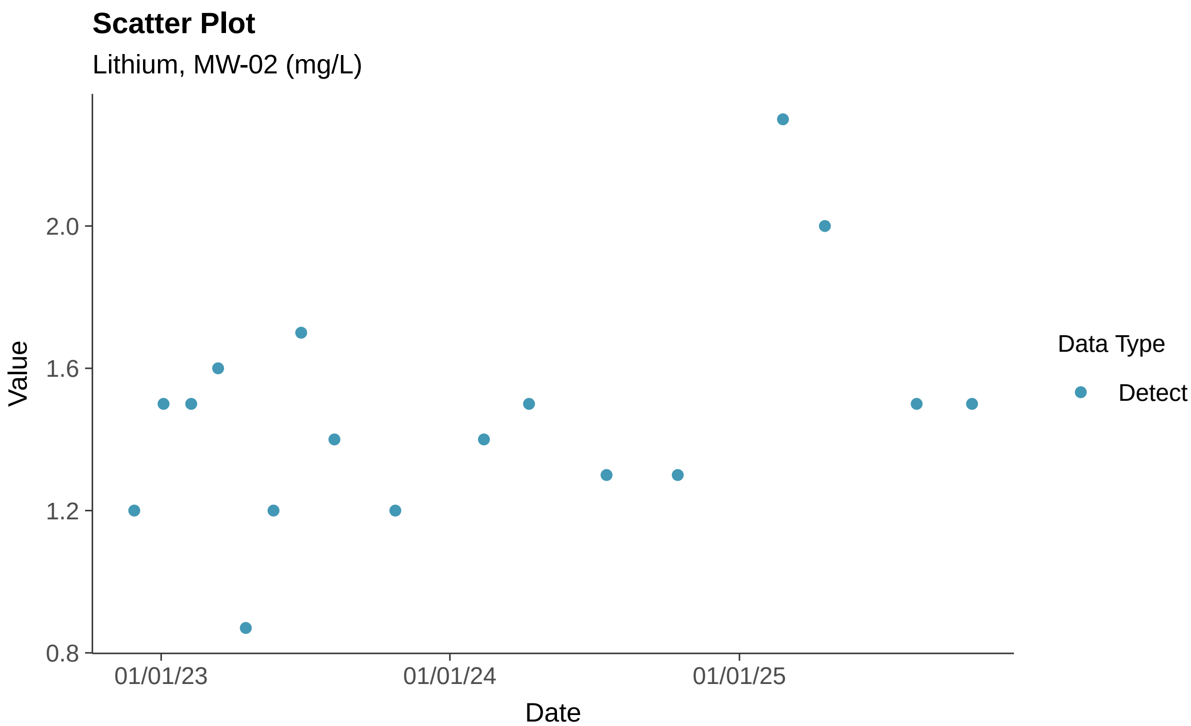


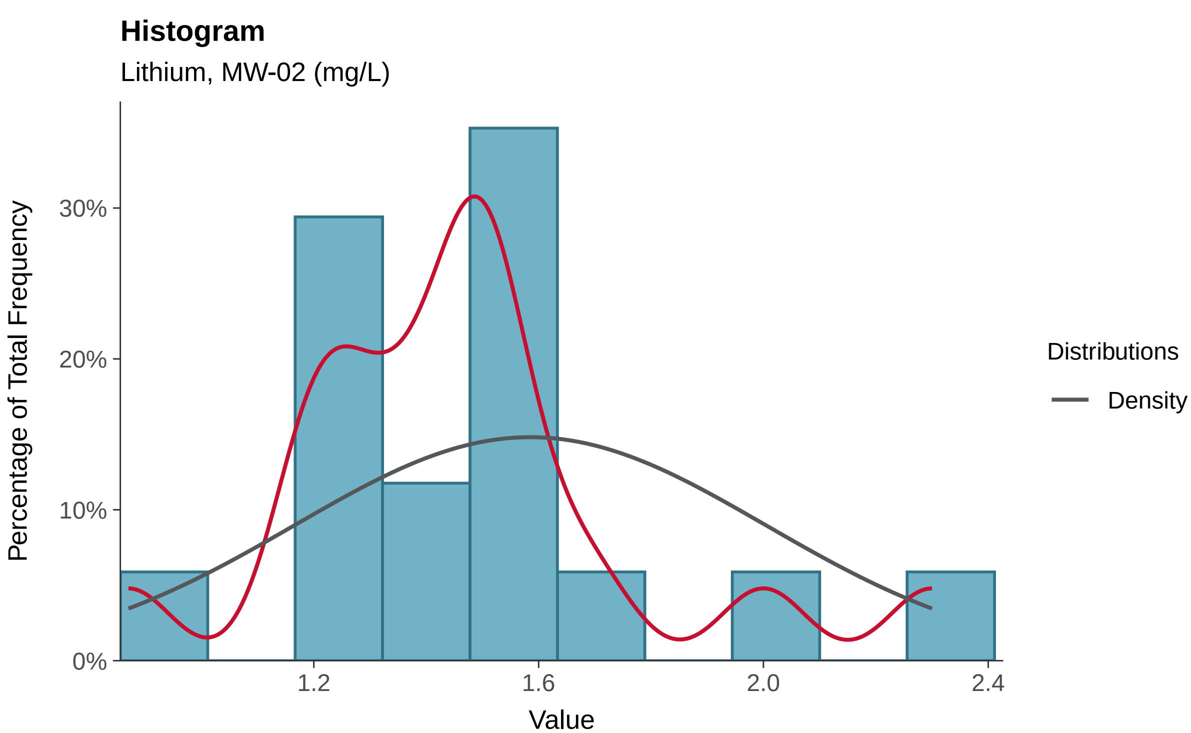
Trend Regression: Piecewise Linear-Linear-Linear
Lead, MW-02 (mg/L)



Appendix IV: Lithium, MW-02

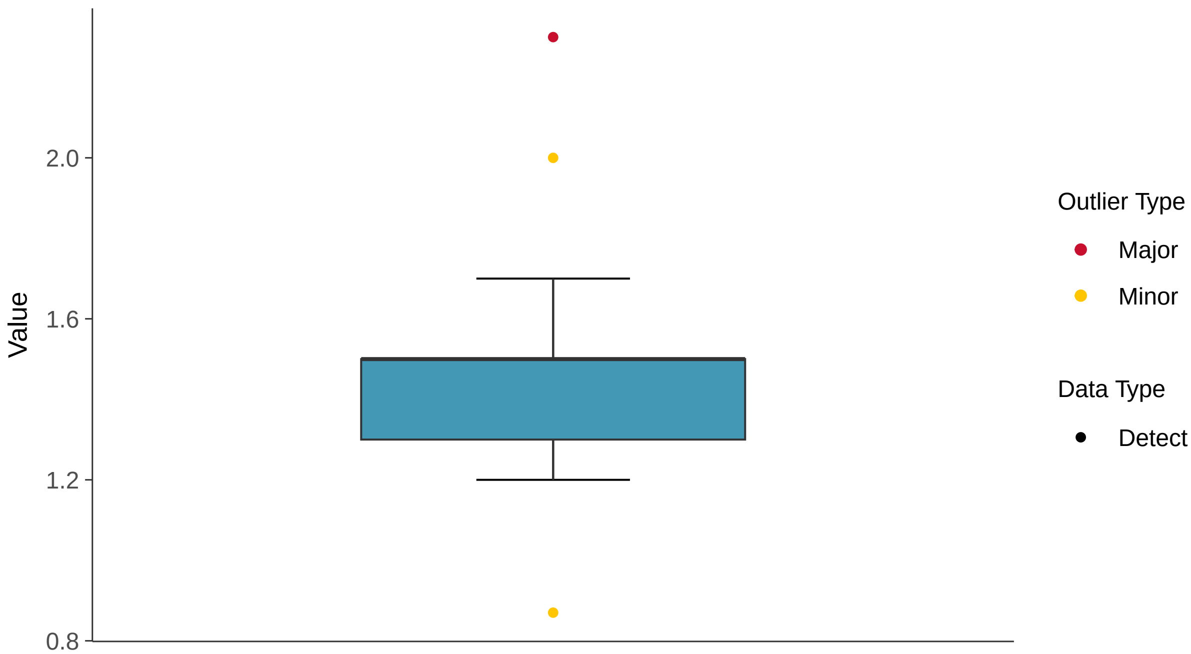
ID: 12_2_4_116





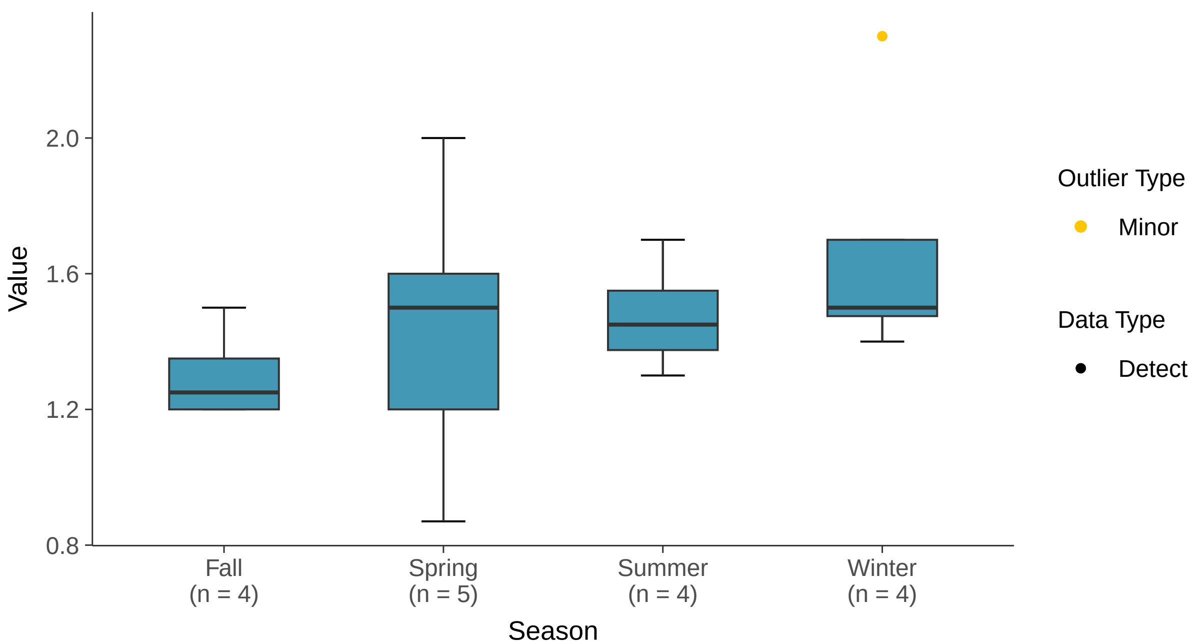
Boxplot

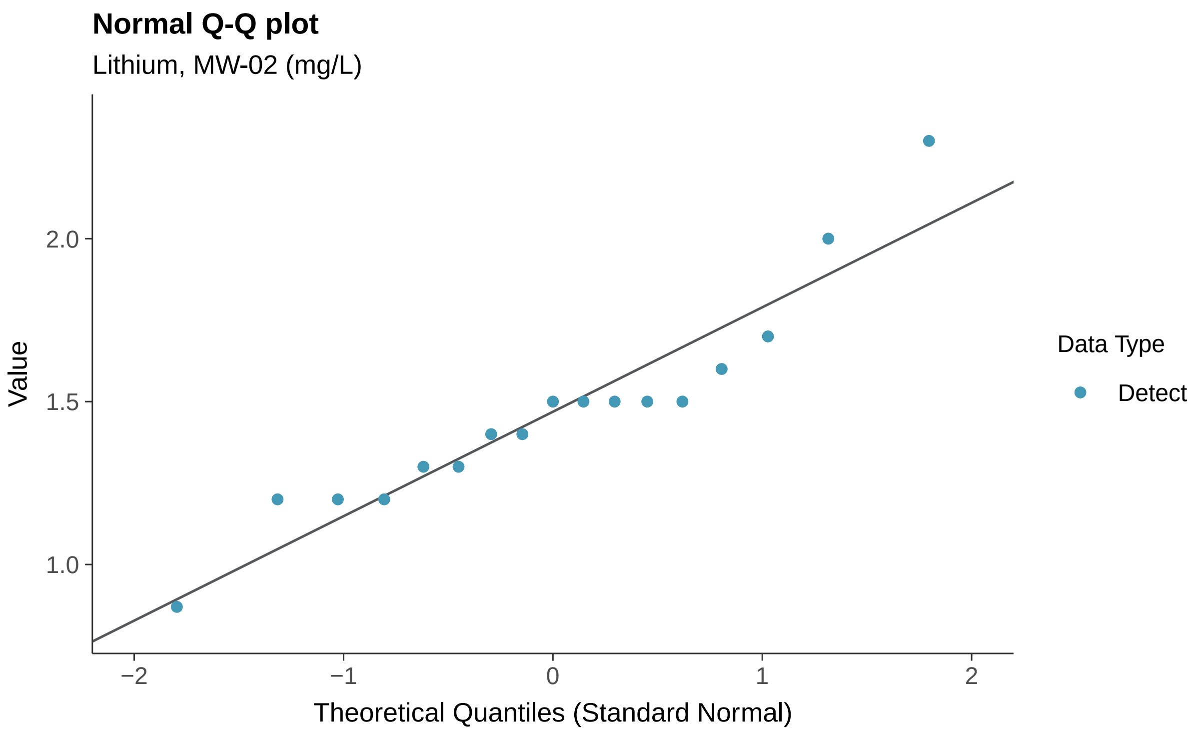
Lithium, MW-02 (mg/L)

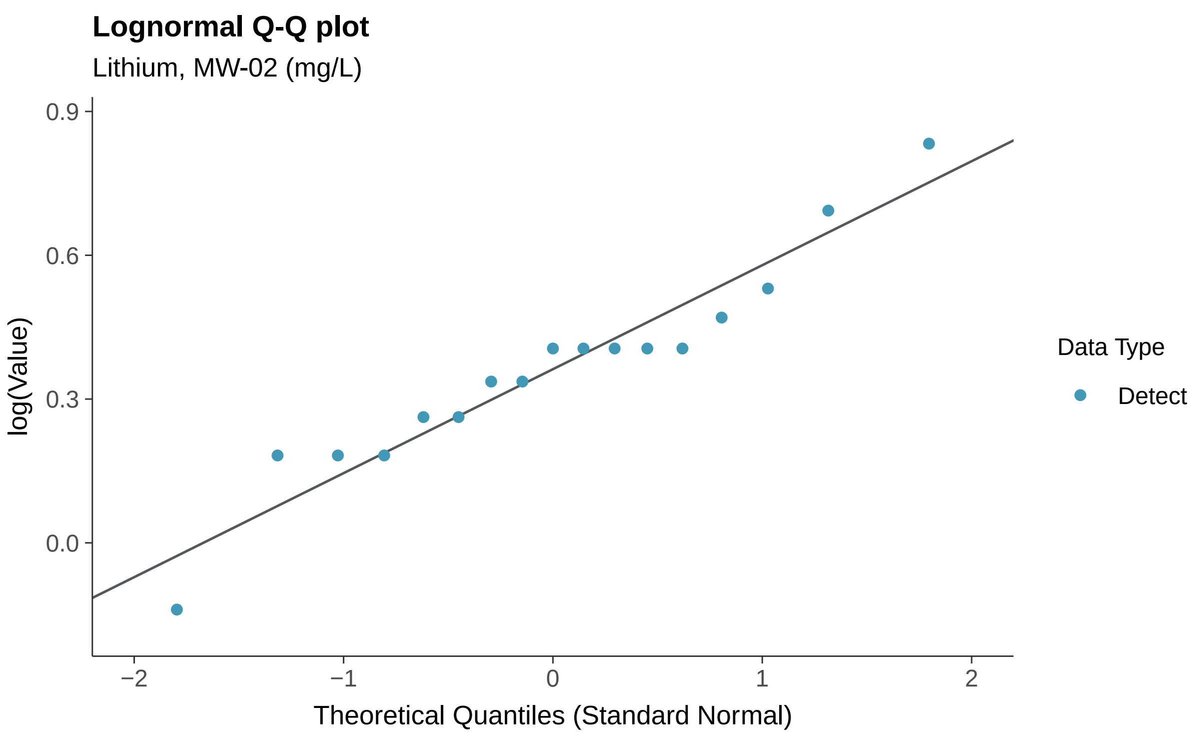


Boxplot by Season

Lithium, MW-02 (mg/L)

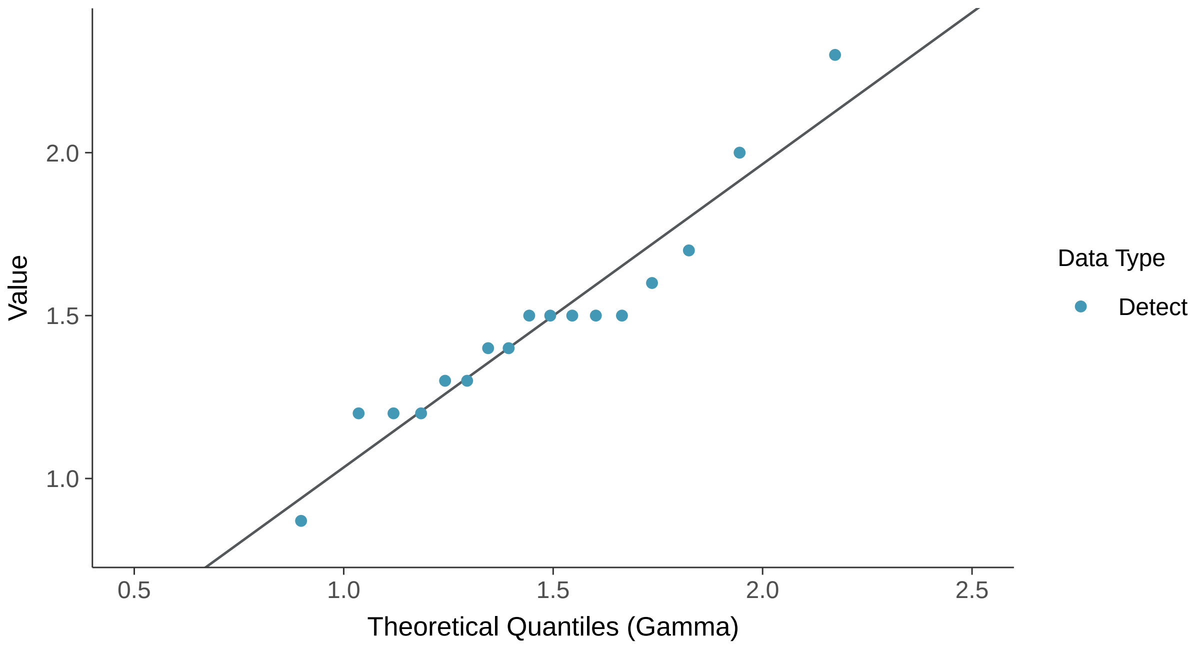



Normal Q-Q plot
Lithium, MW-02 (mg/L)
Value
2.0
1.5
1.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Lithium, MW-02 (mg/L)
log(Value)
0.9
0.6
0.3
0.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

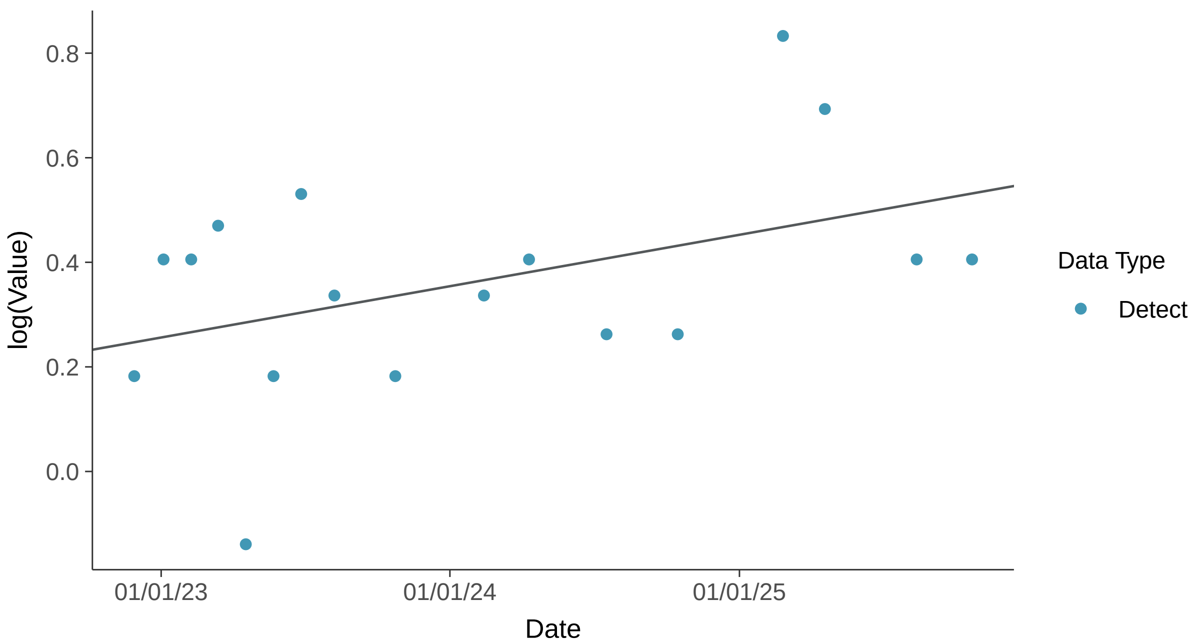
Gamma Q-Q plot

Lithium, MW-02 (mg/L)



Trend Regression: Lognormal MLE

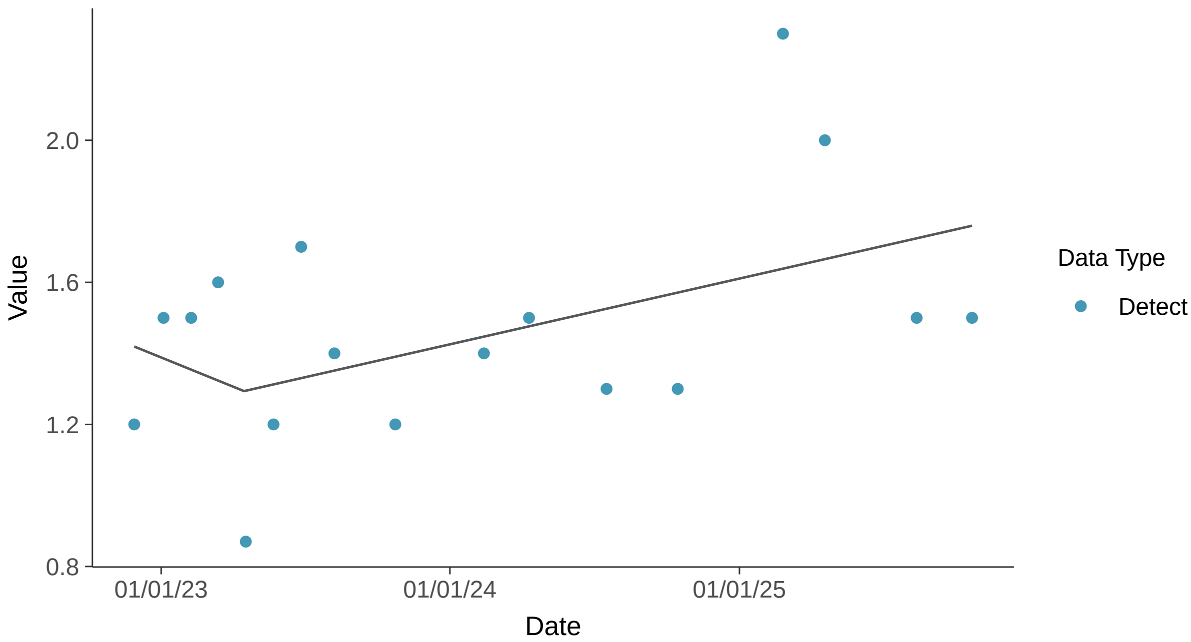
Lithium, MW-02 (mg/L)



Grand Haven
Downgradient Wells as of October 2025

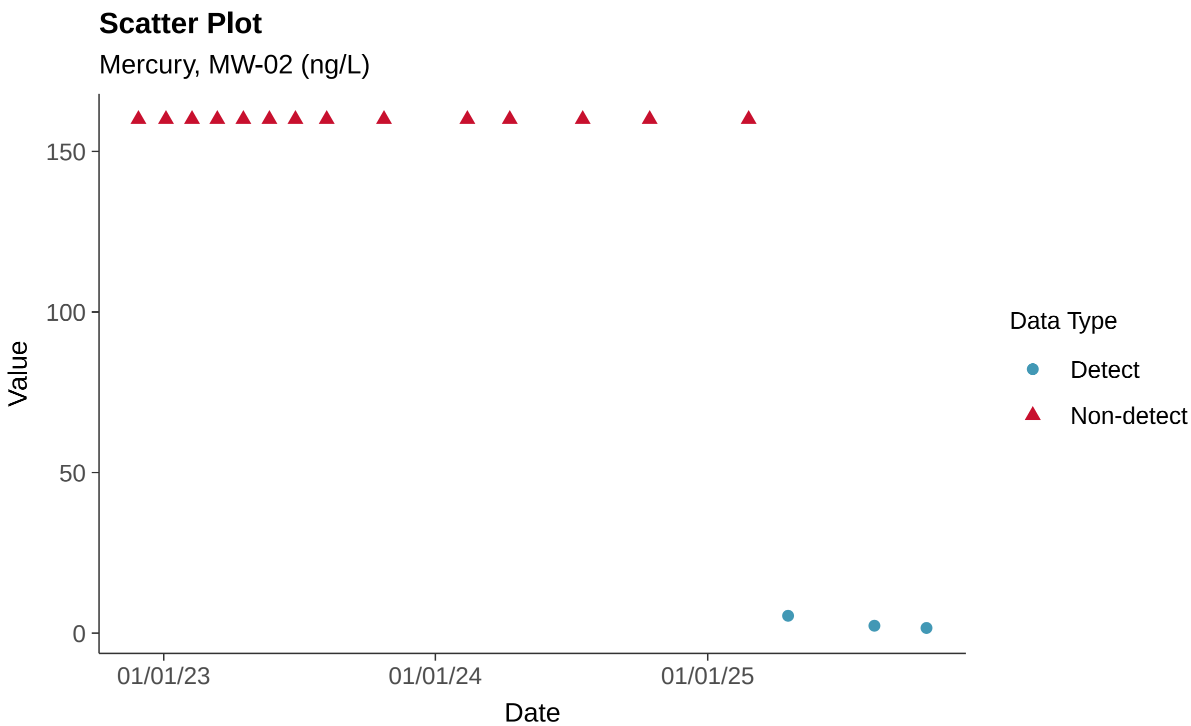
Trend Regression: Piecewise Linear-Linear

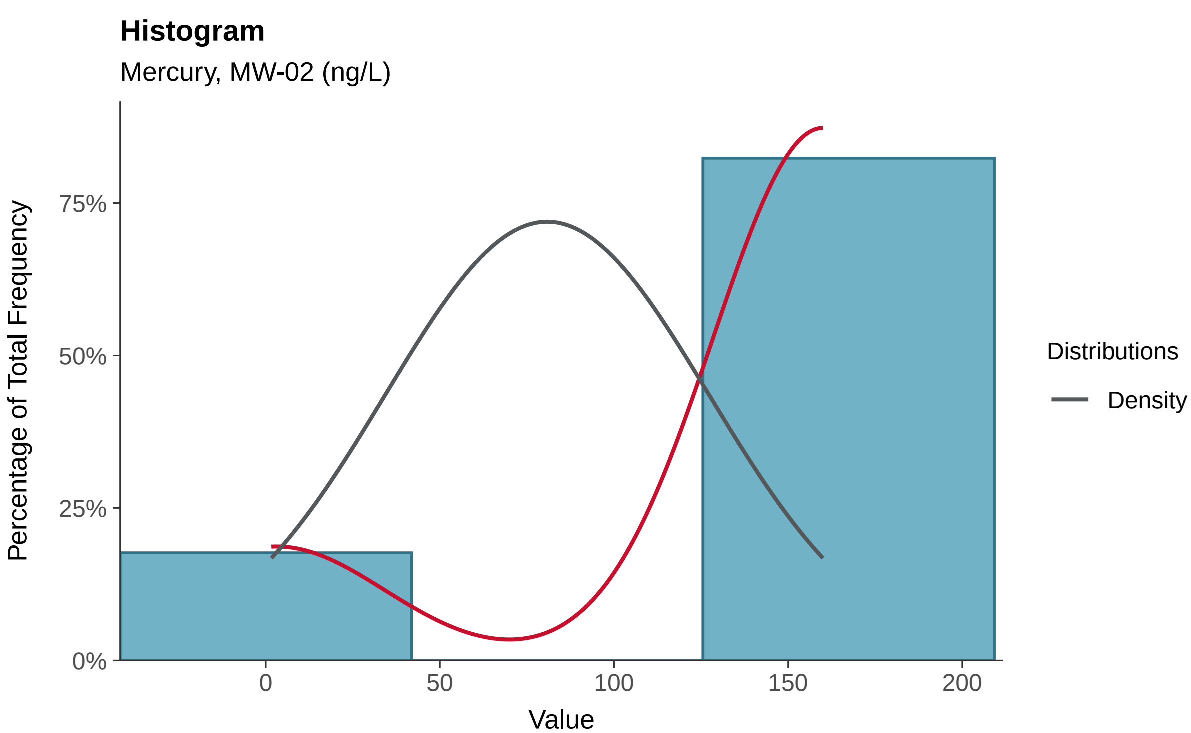
Lithium, MW-02 (mg/L)

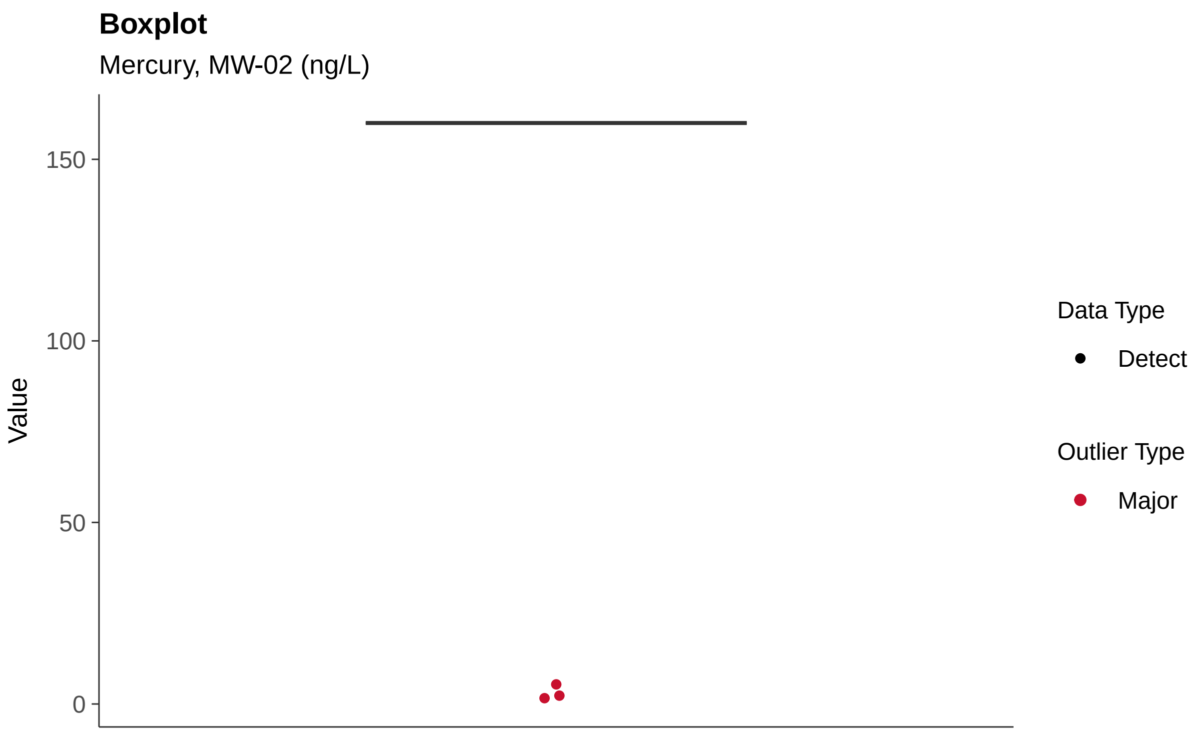


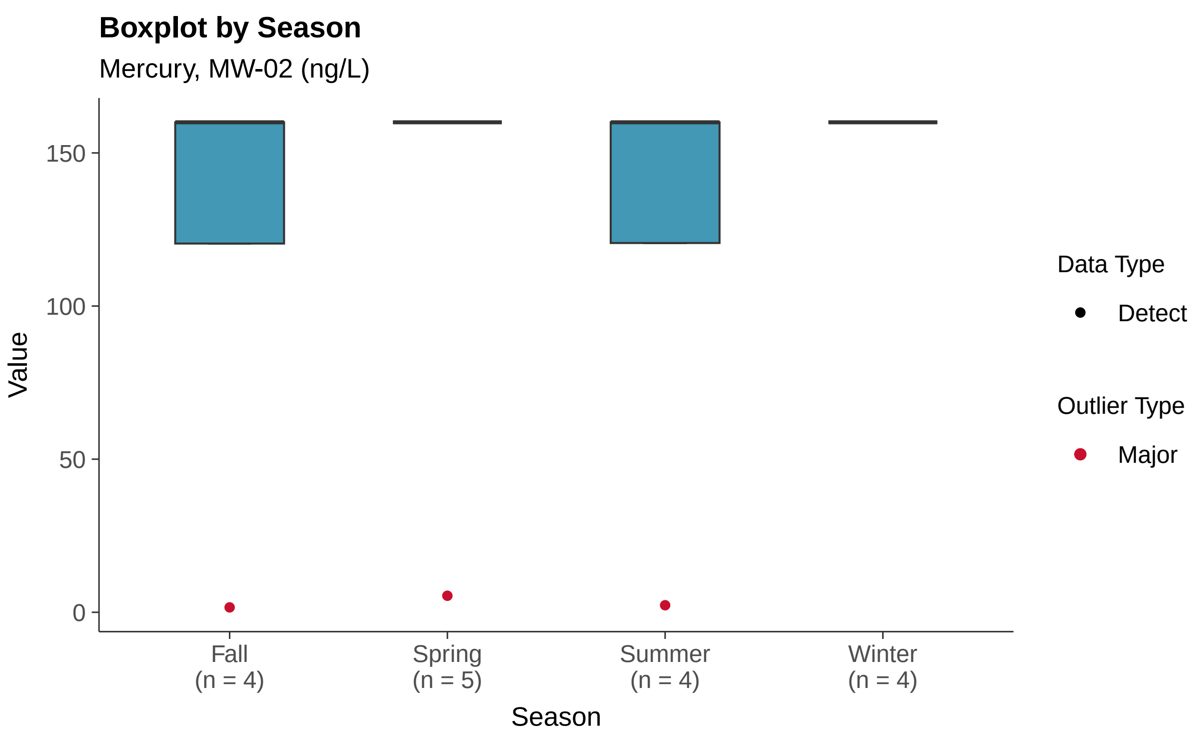
Appendix IV: Mercury, MW-02

ID: 12_2_4_117



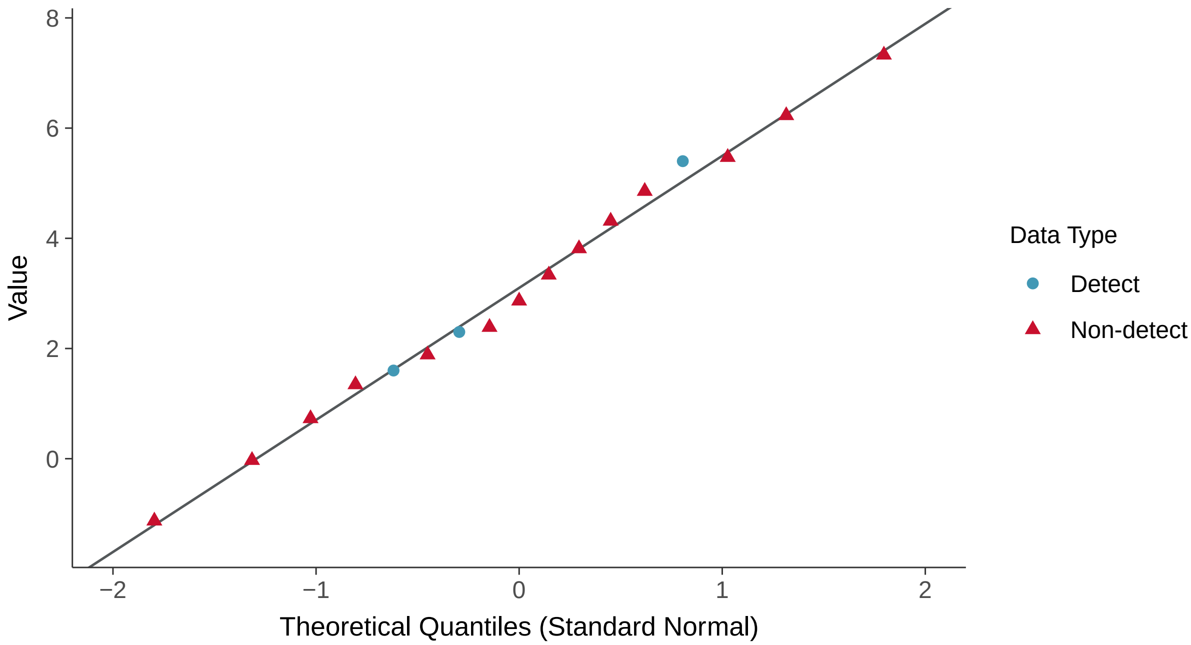



Boxplot
Mercury, MW-02 (ng/L)
Value
150
100
50
0
Data Type
Detect
Outlier Type
Major


Boxplot by Season
Mercury, MW-02 (ng/L)
Value
150
100
50
0
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Data Type
Detect
Outlier Type
Major

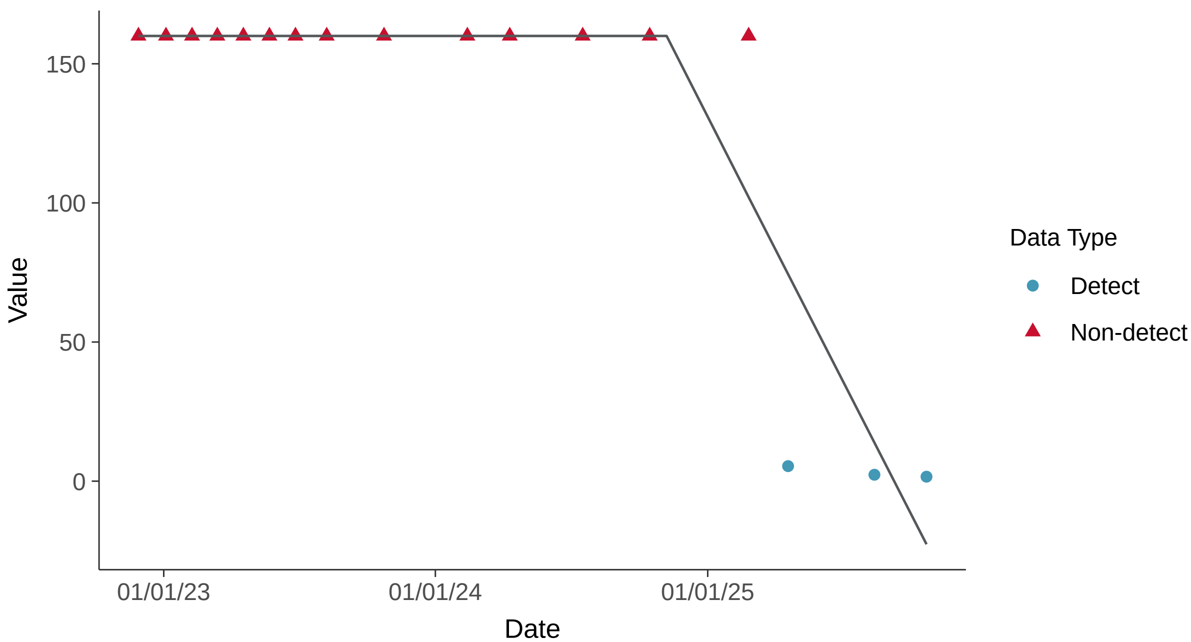
Normal Q-Q plot using ROS Imputed Estimates

Mercury, MW-02 (ng/L)



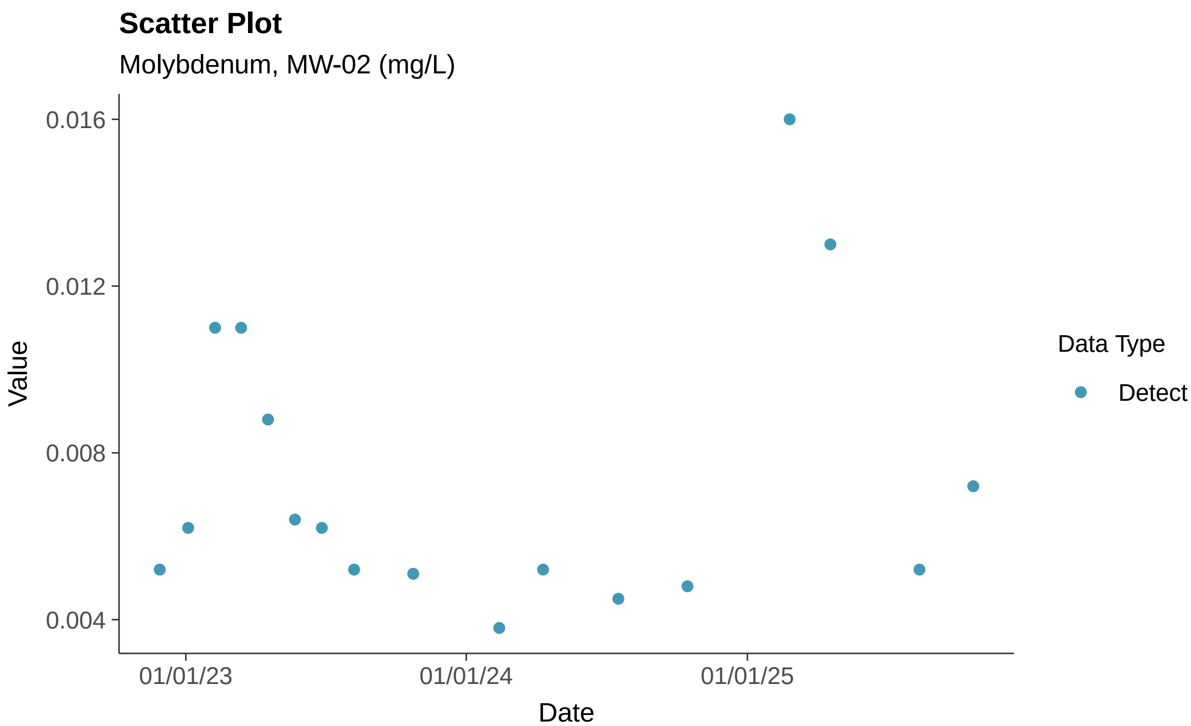
Trend Regression: Piecewise Linear-Linear

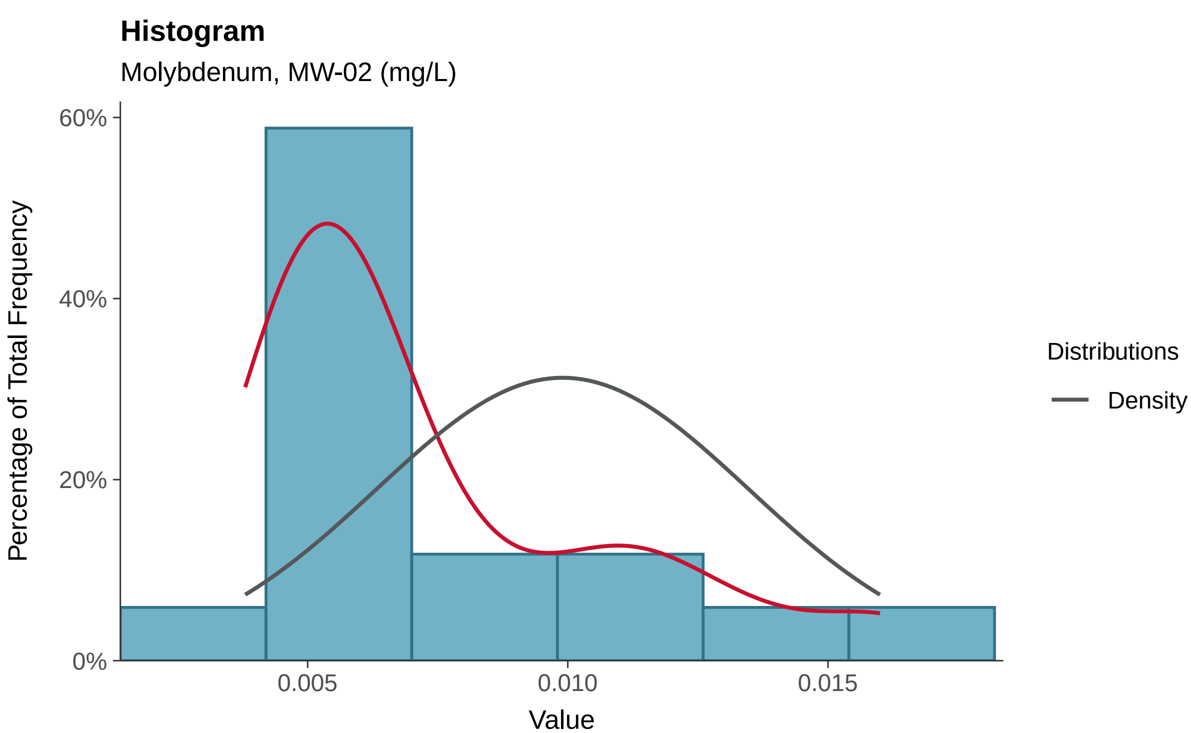
Mercury, MW-02 (ng/L)



Appendix IV: Molybdenum, MW-02

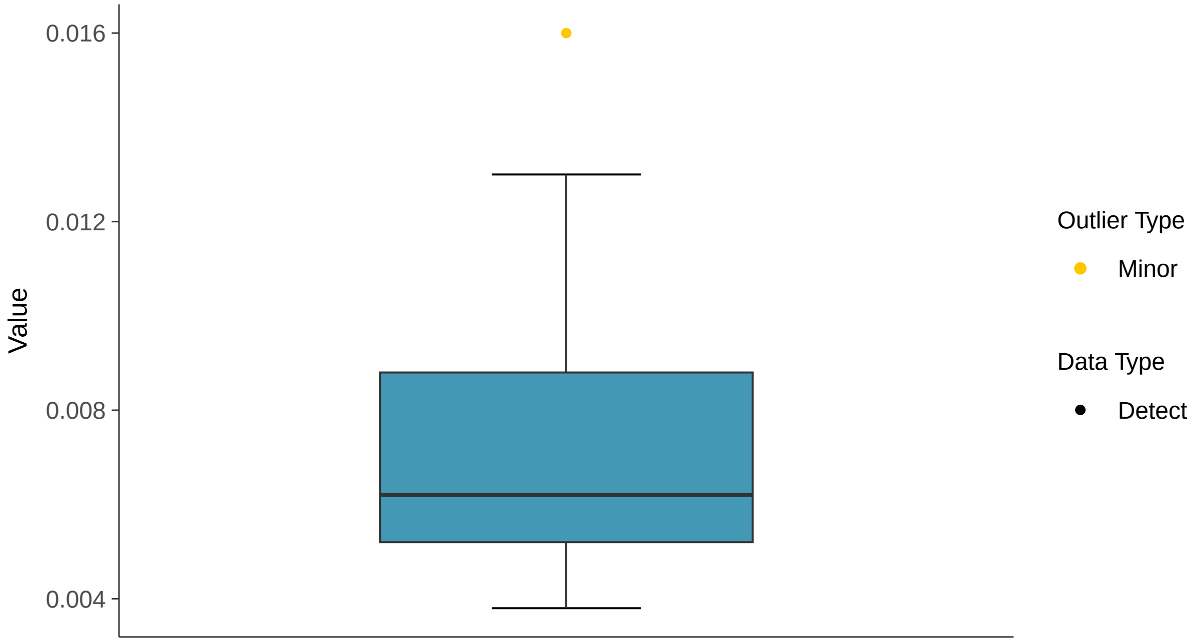
ID: 12_2_4_118





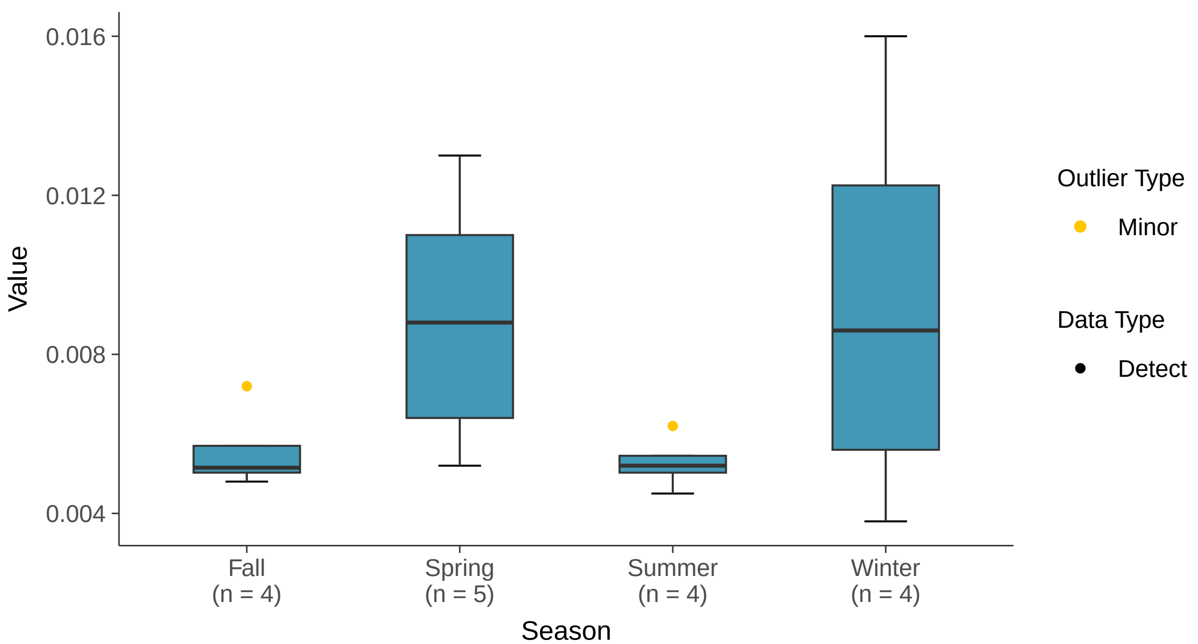
Boxplot

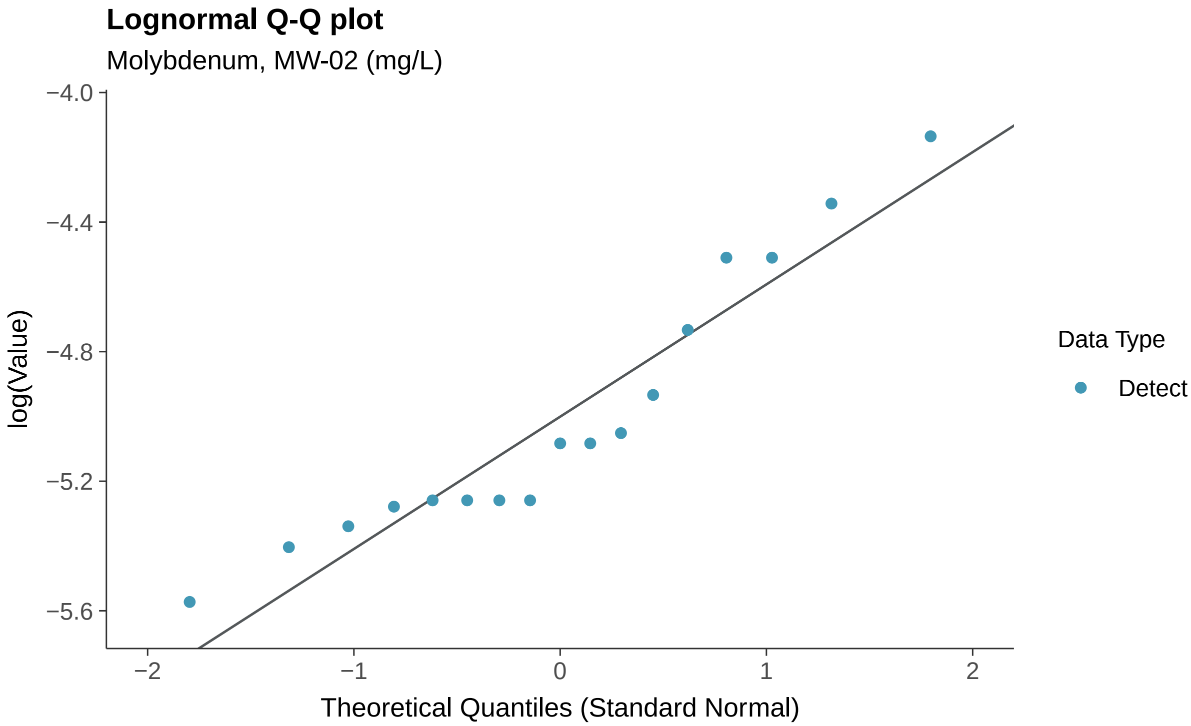
Molybdenum, MW-02 (mg/L)

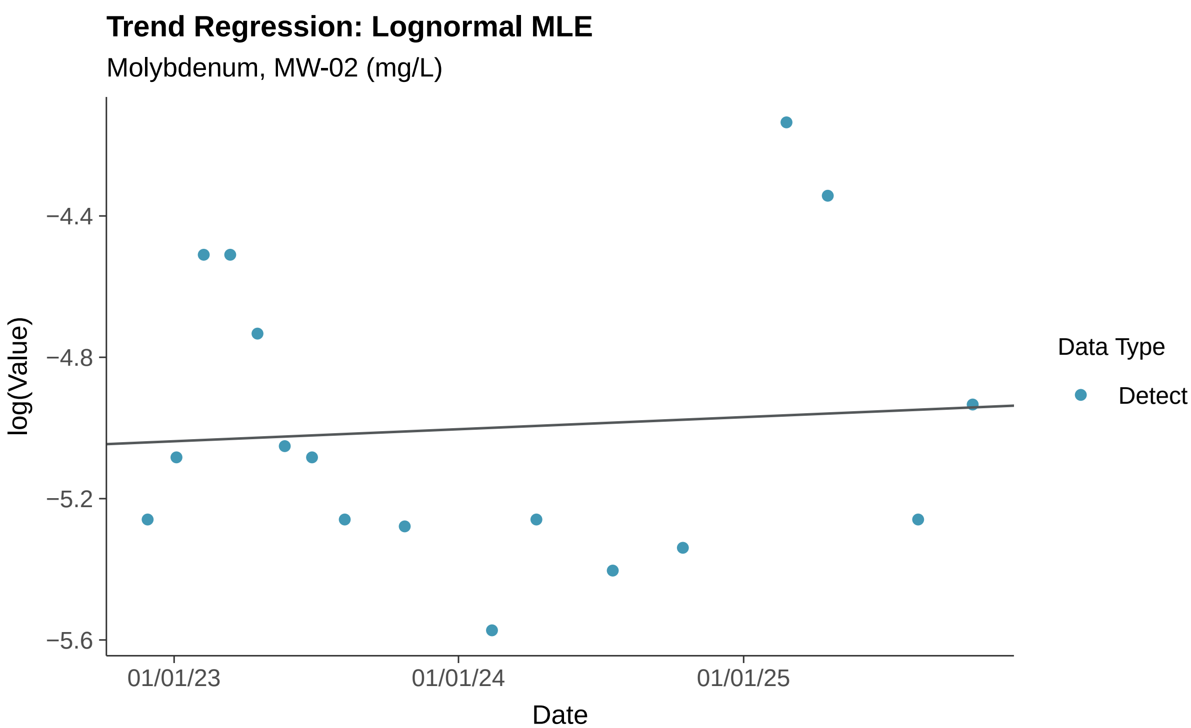


Boxplot by Season

Molybdenum, MW-02 (mg/L)

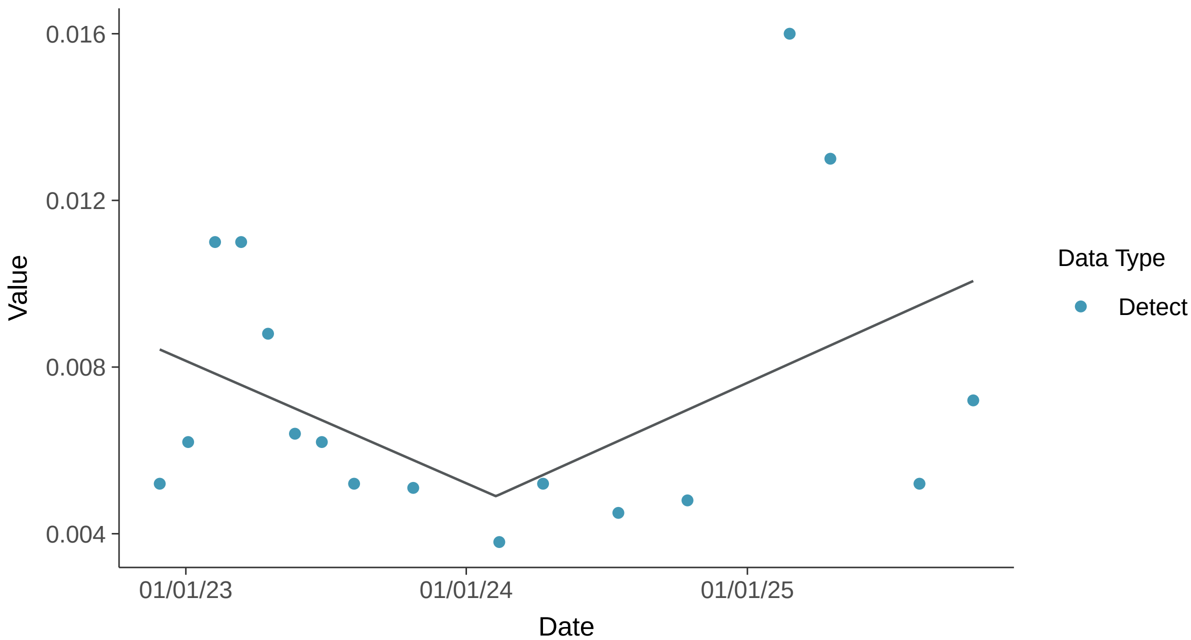



Lognormal Q-Q plot
Molybdenum, MW-02 (mg/L)
log(Value)
−4.0
−4.4
−4.8
−5.2
−5.6
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Lognormal MLE
Molybdenum, MW-02 (mg/L)
log(Value)
−4.4
−4.8
−5.2
−5.6
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

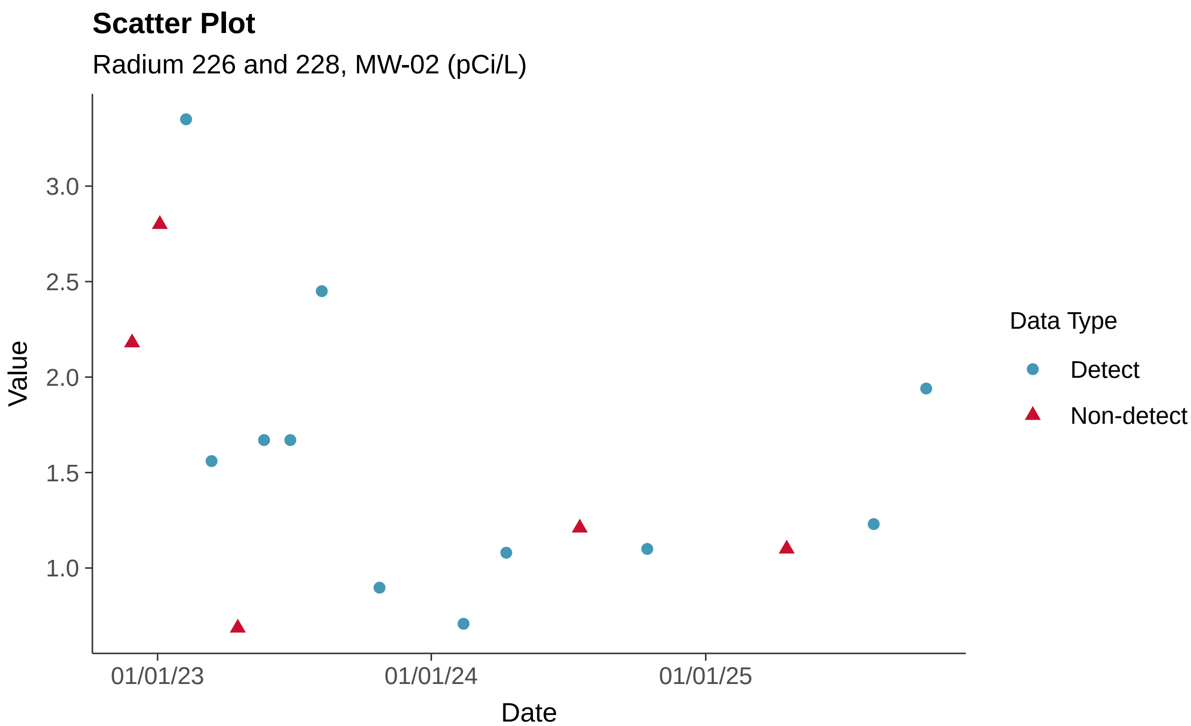
Trend Regression: Piecewise Linear-Linear

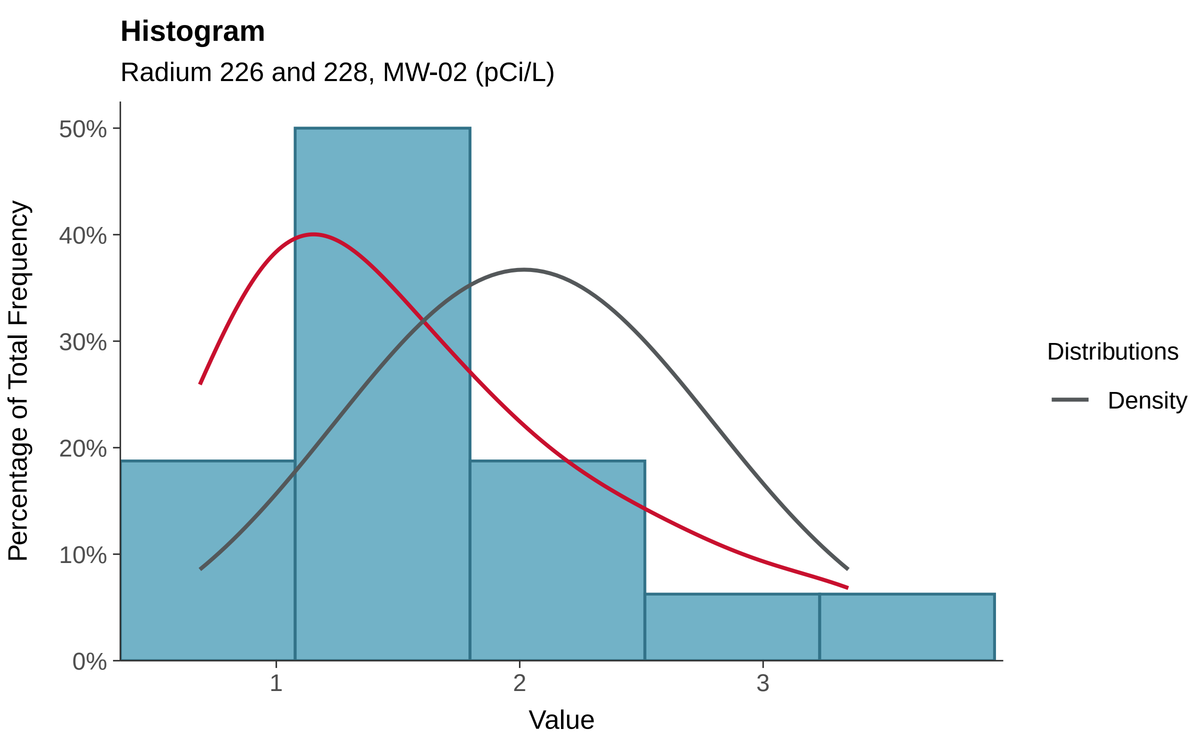
Molybdenum, MW-02 (mg/L)



Appendix IV: Radium 226 and 228, MW-02

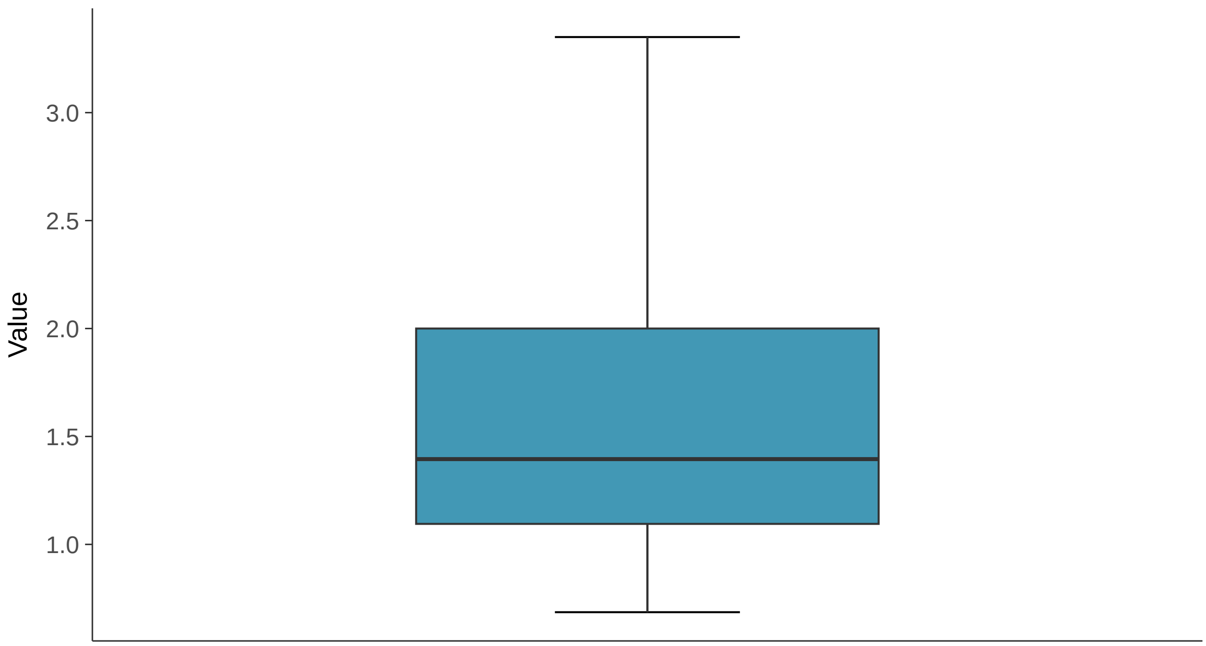
ID: 12_2_4_121





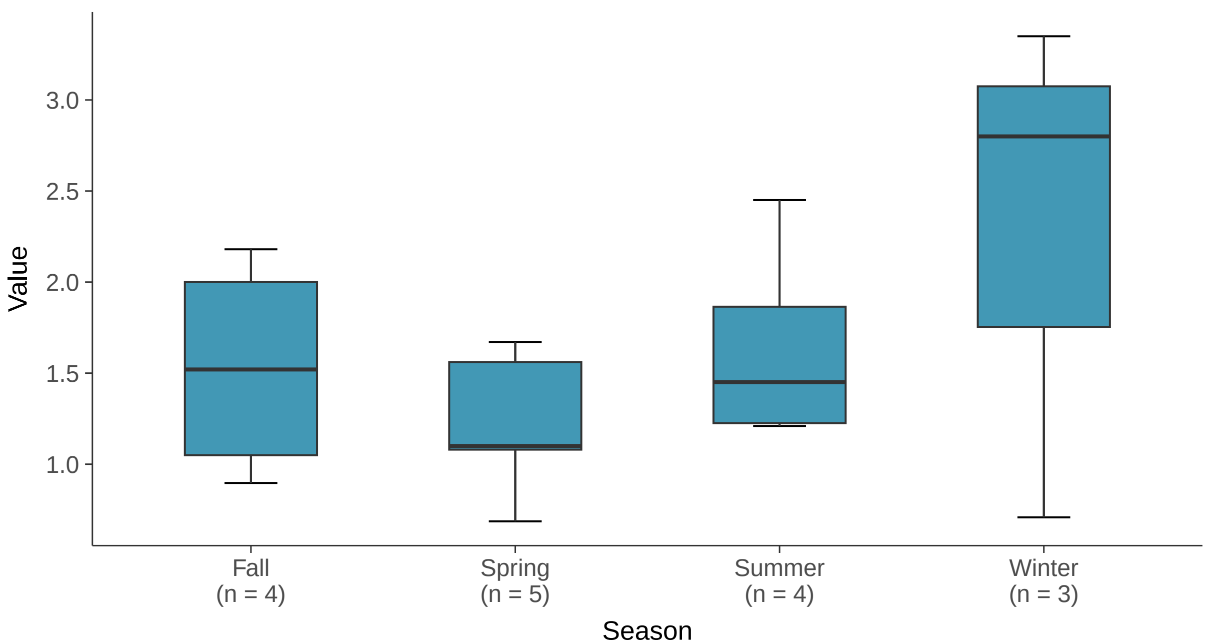
Boxplot

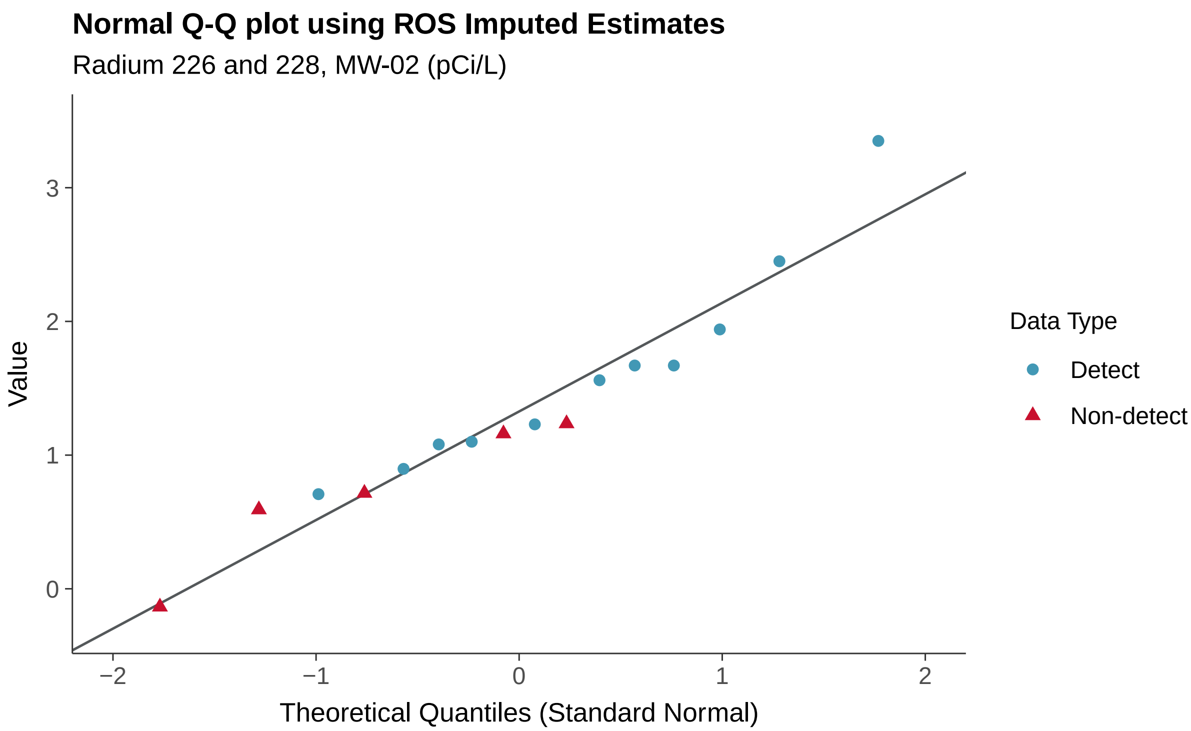
Radium 226 and 228, MW-02 (pCi/L)

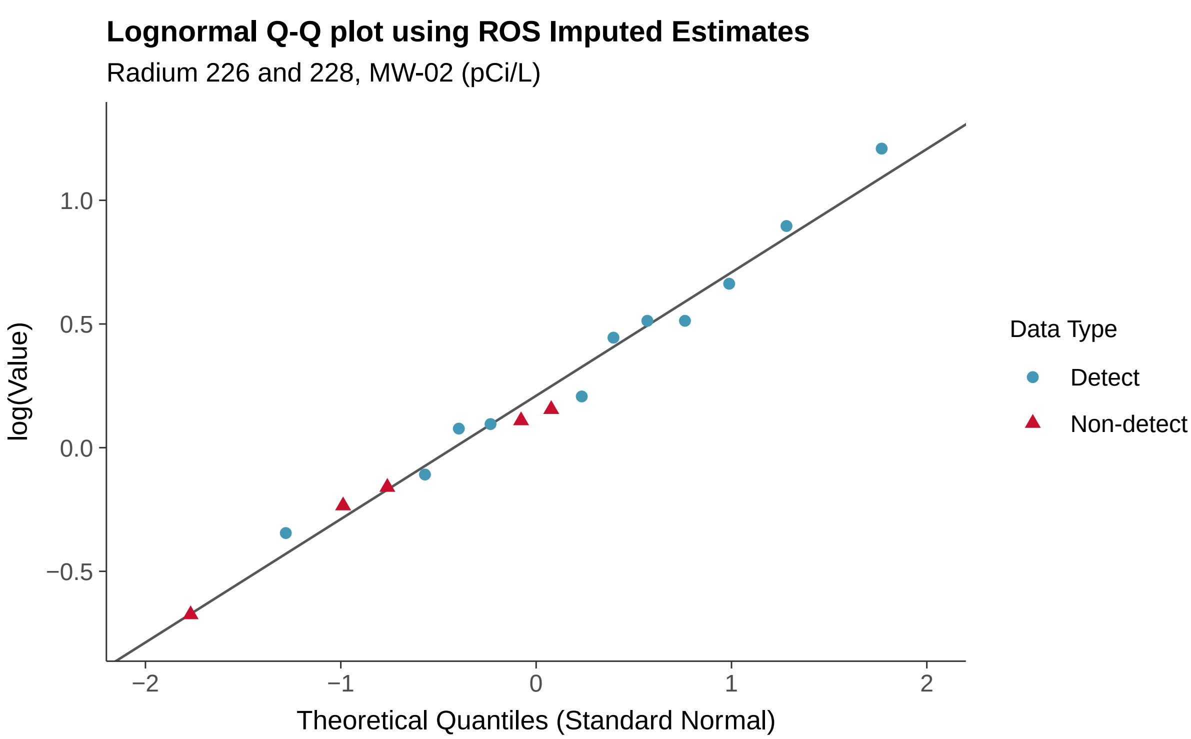


Boxplot by Season

Radium 226 and 228, MW-02 (pCi/L)

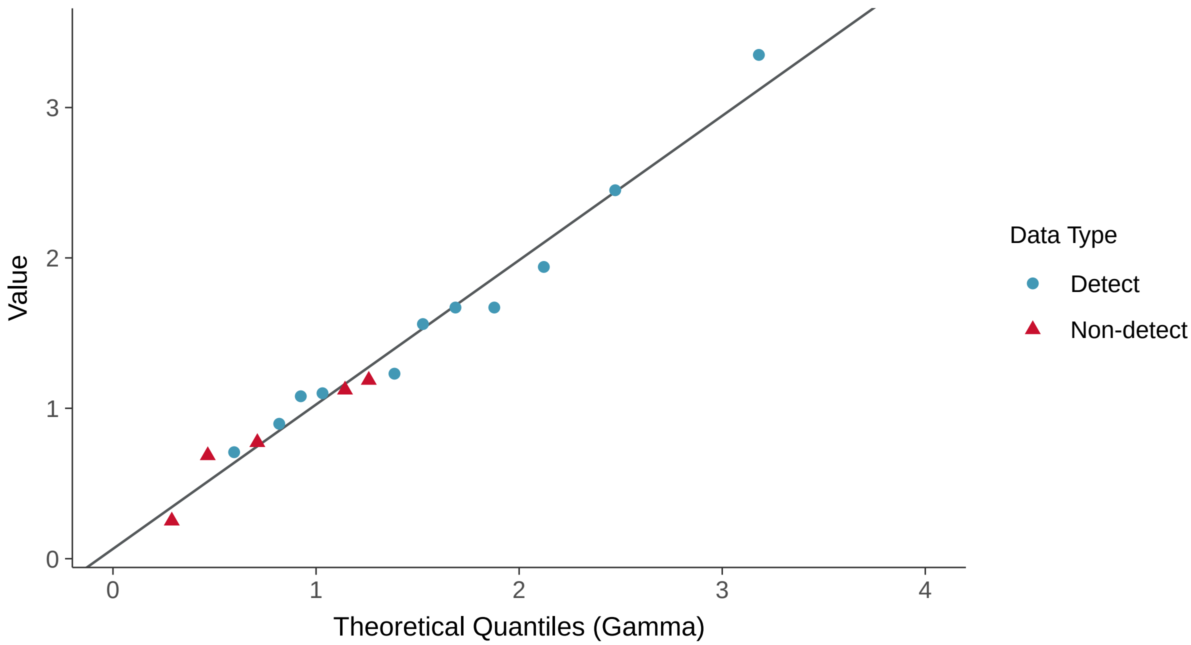



Normal Q-Q plot using ROS Imputed Estimates
Radium 226 and 228, MW-02 (pCi/L)
Value
3
2
1
0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Lognormal Q-Q plot using ROS Imputed Estimates
Radium 226 and 228, MW-02 (pCi/L)
log(Value)
1.0
0.5
0.0
−0.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

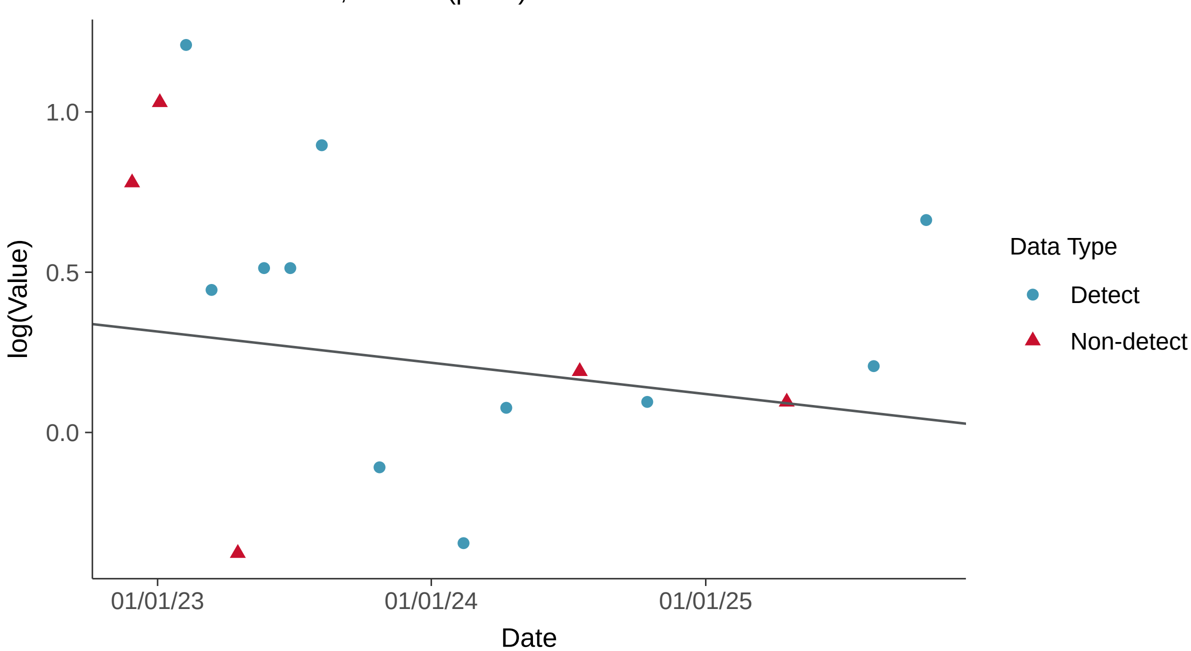
Gamma Q-Q plot using ROS Imputed Estimates

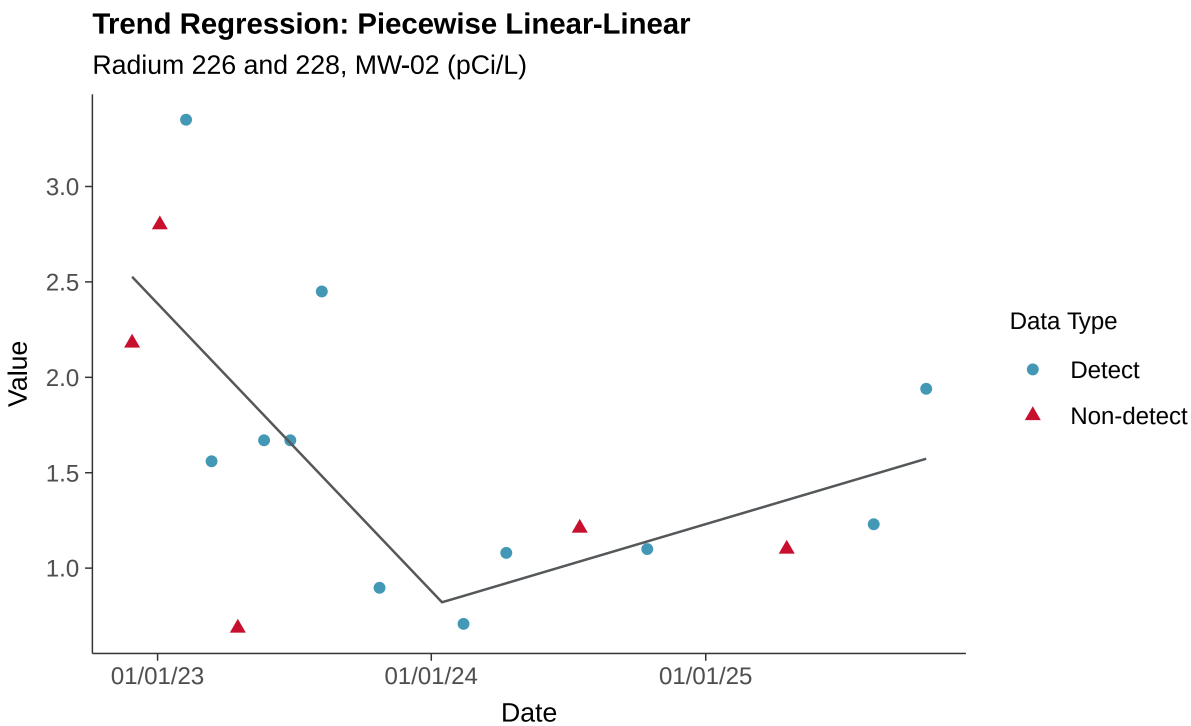
Radium 226 and 228, MW-02 (pCi/L)



Trend Regression: Lognormal MLE

Radium 226 and 228, MW-02 (pCi/L)



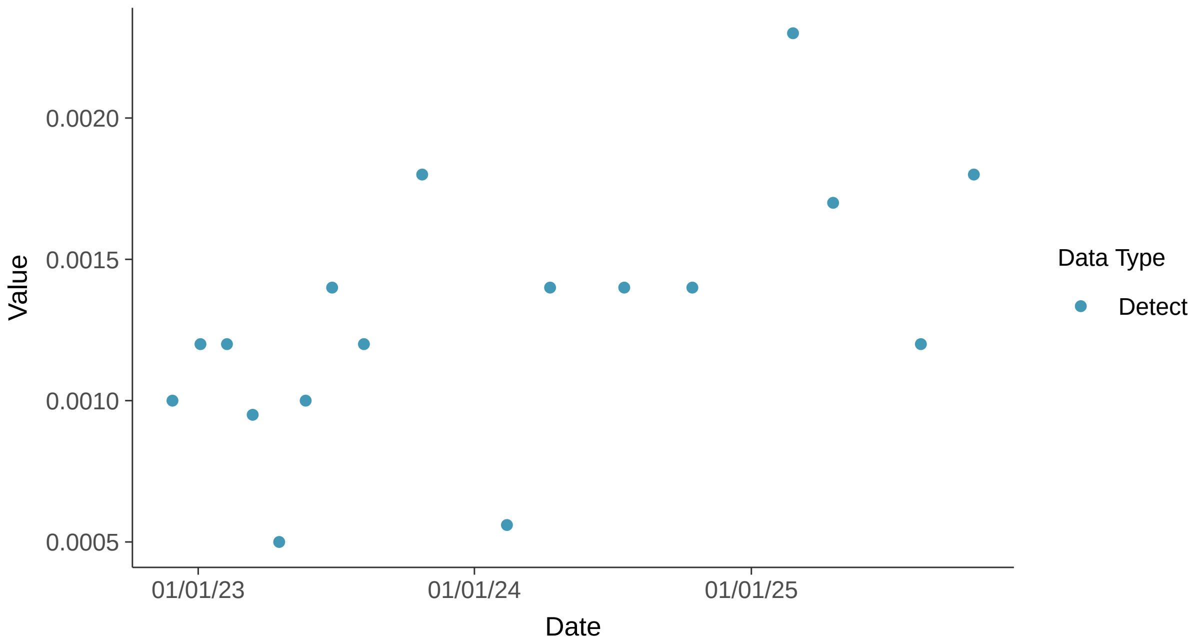

Trend Regression: Piecewise Linear-Linear
Radium 226 and 228, MW-02 (pCi/L)
Value
3.0
2.5
2.0
1.5
1.0
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Appendix IV: Selenium, MW-02

ID: 12_2_4_122

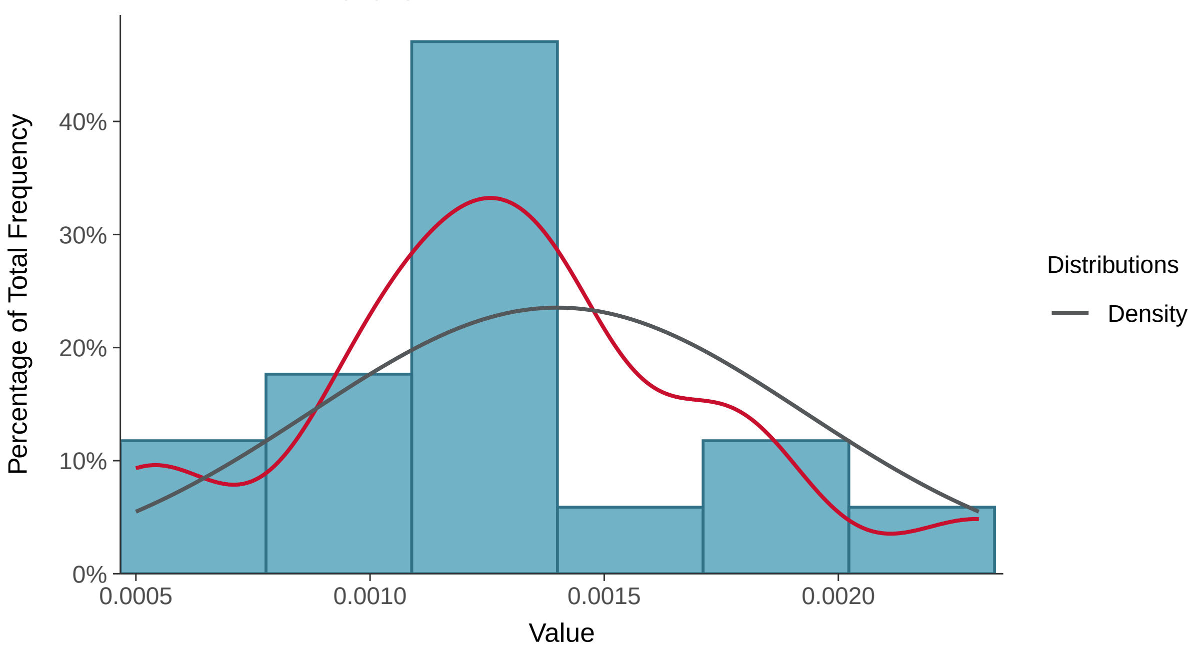
Scatter Plot

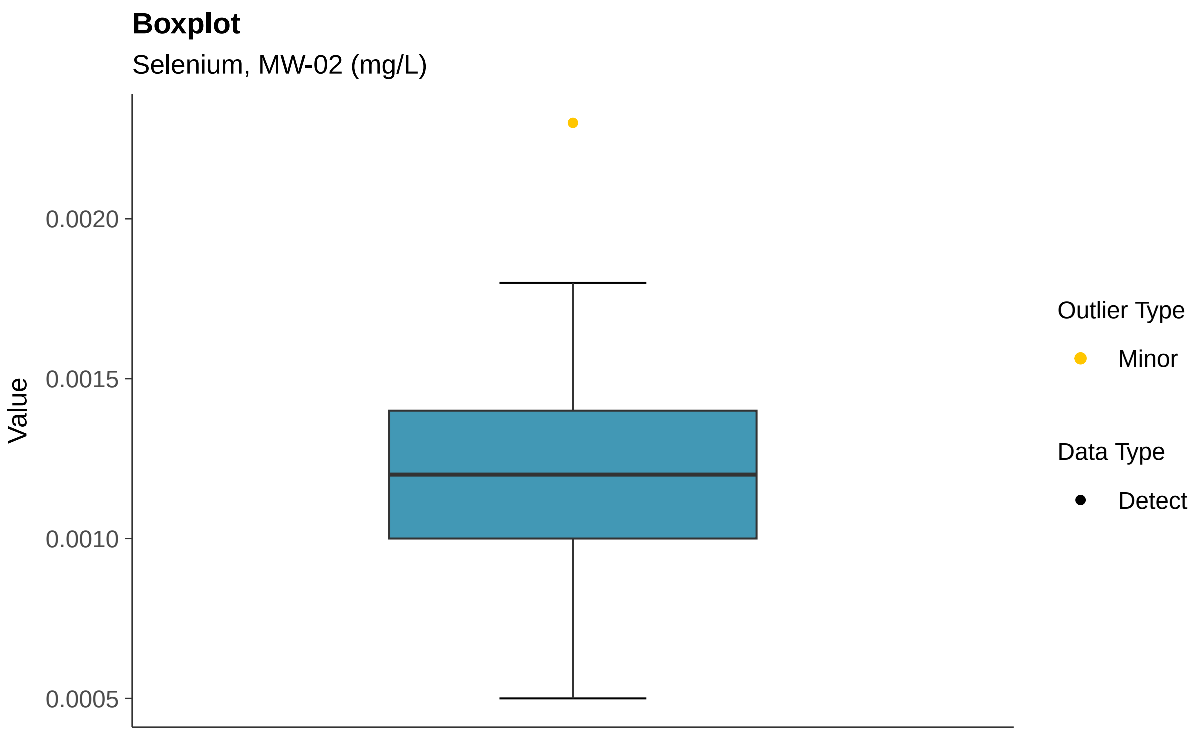
Selenium, MW-02 (mg/L)

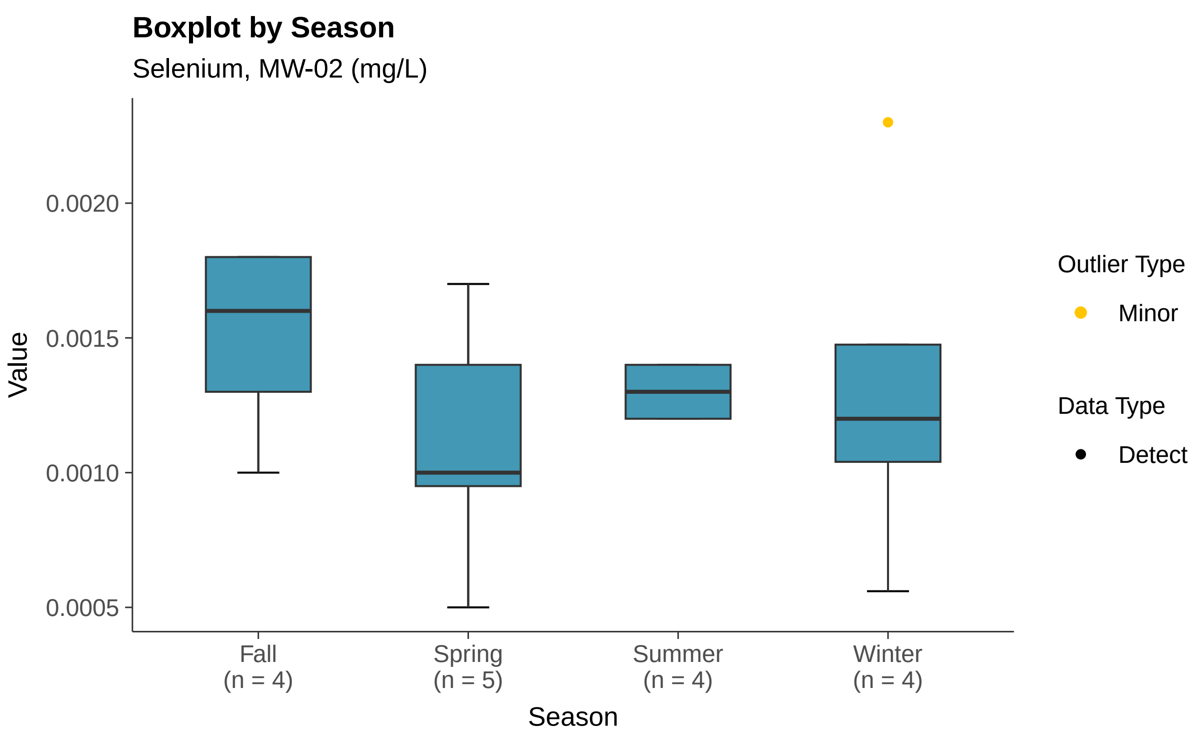


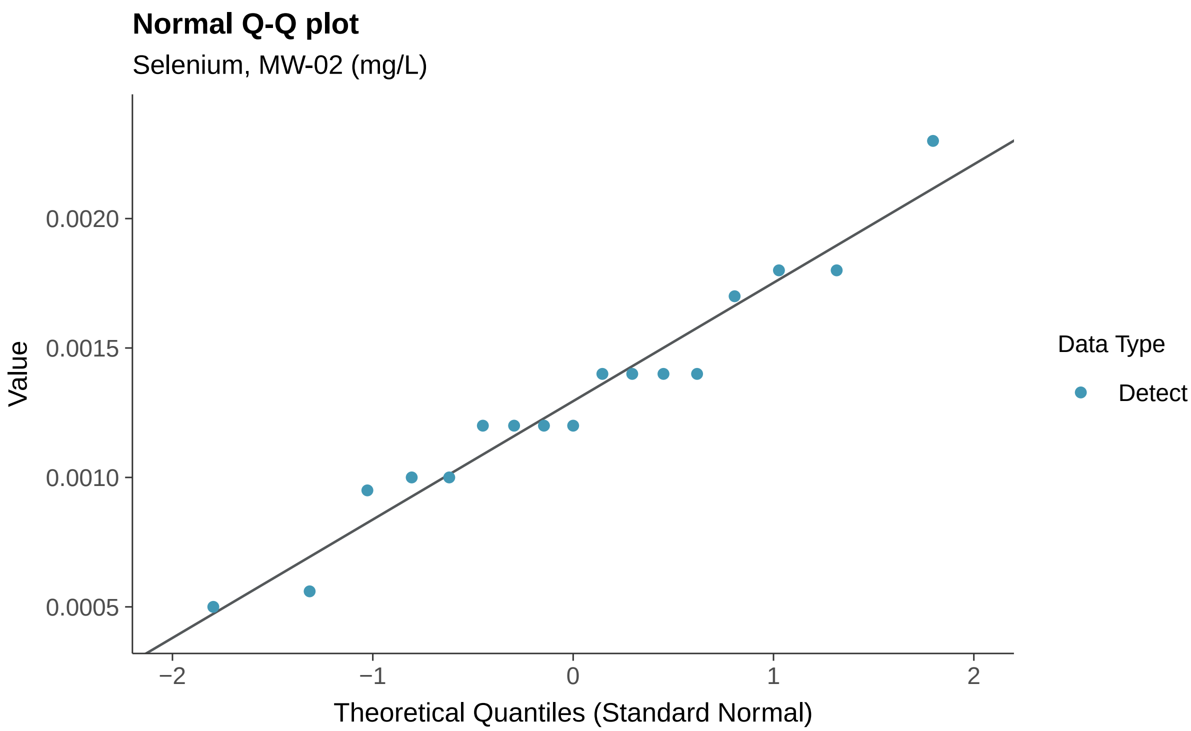
Histogram

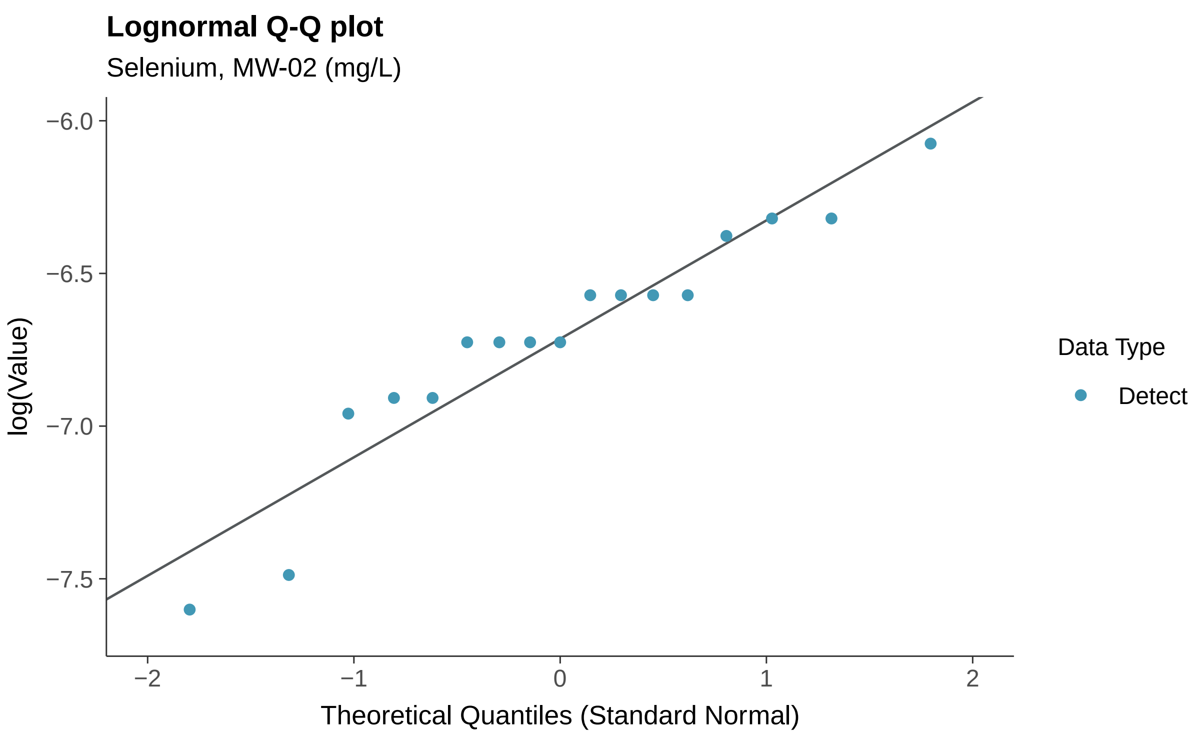
Selenium, MW-02 (mg/L)

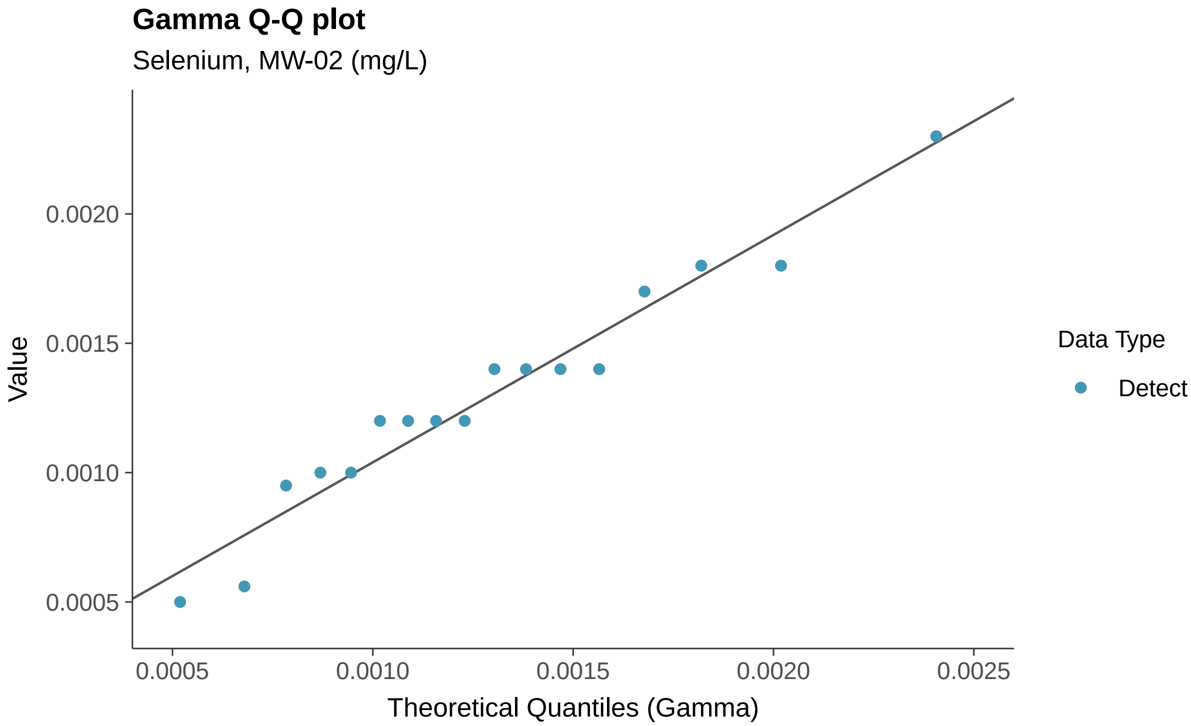


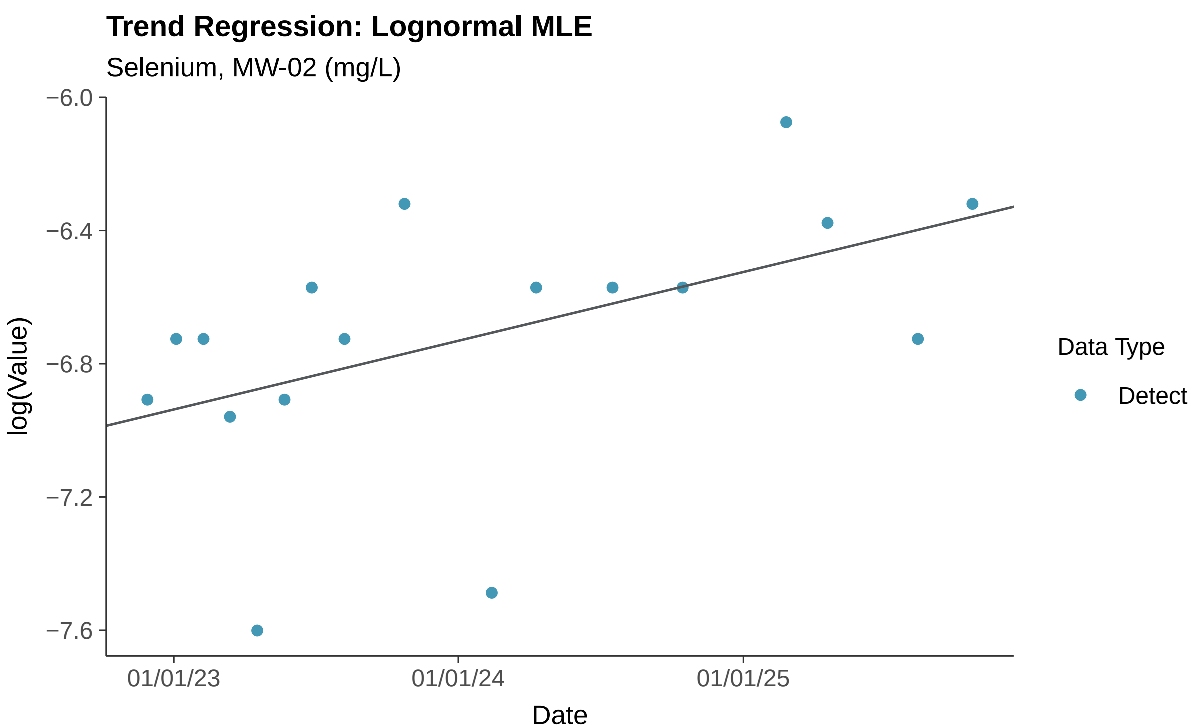

Boxplot
Selenium, MW-02 (mg/L)
Value
0.0020
0.0015
0.0010
0.0005
Outlier Type
Minor
Data Type
Detect


Boxplot by Season
Selenium, MW-02 (mg/L)
Value
0.0020
0.0015
0.0010
0.0005
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Minor
Data Type
Detect


Normal Q-Q plot
Selenium, MW-02 (mg/L)
Value
0.0020
0.0015
0.0010
0.0005
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

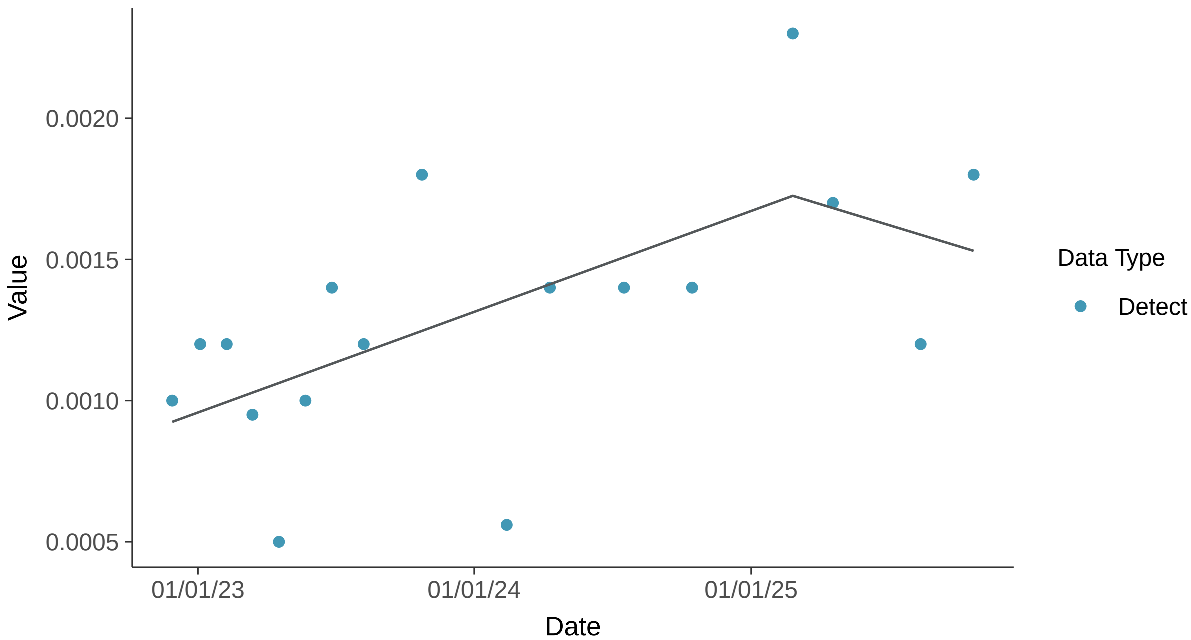

Lognormal Q-Q plot
Selenium, MW-02 (mg/L)
log(Value)
−6.0
−6.5
−7.0
−7.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Selenium, MW-02 (mg/L)
Value
0.0020
0.0015
0.0010
0.0005
0.0005
0.0010
0.0015
0.0020
0.0025
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Selenium, MW-02 (mg/L)
log(Value)
−6.0
−6.4
−6.8
−7.2
−7.6
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

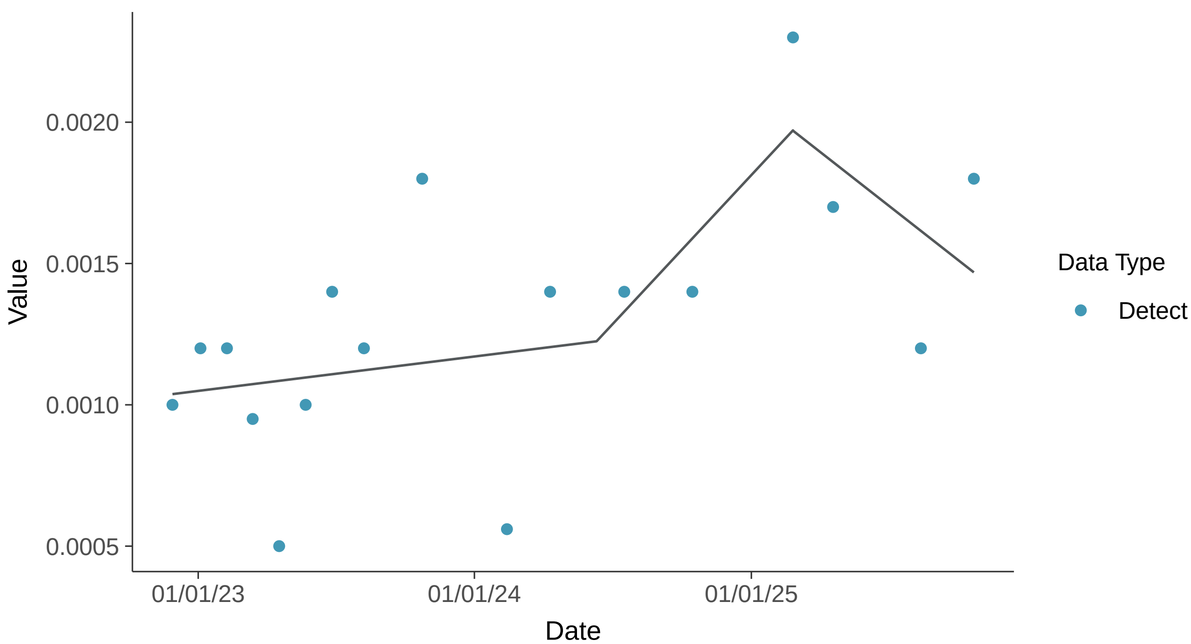
Trend Regression: Piecewise Linear-Linear

Selenium, MW-02 (mg/L)



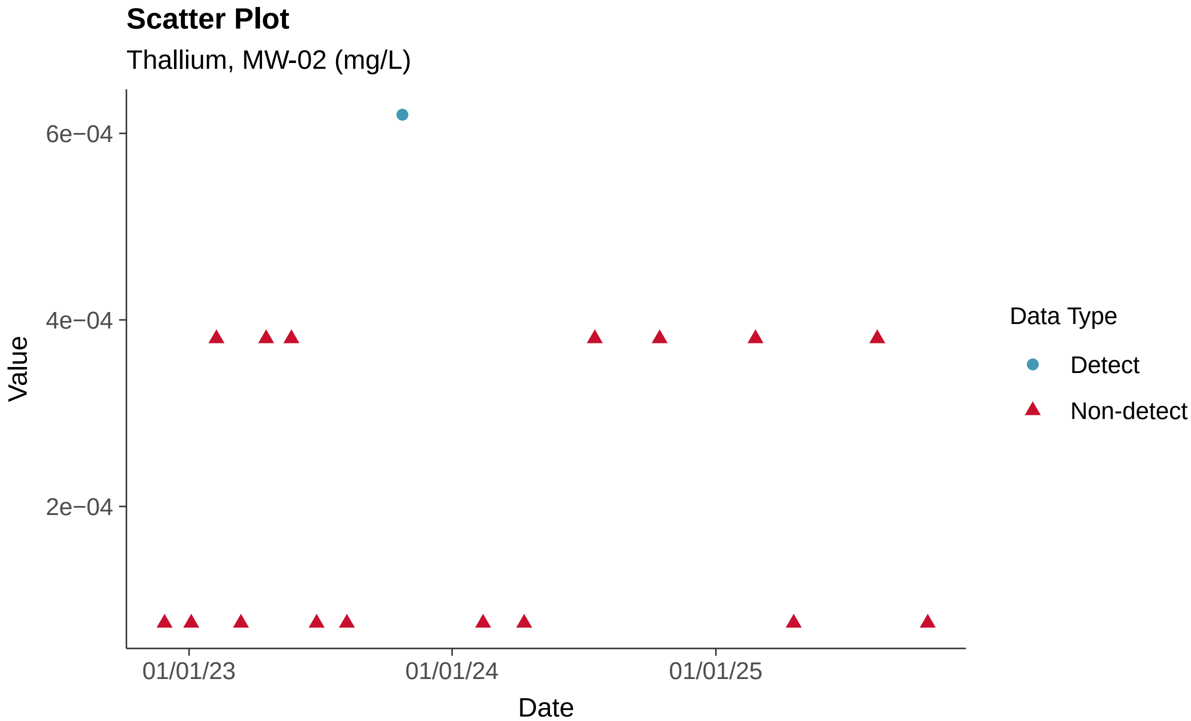
Trend Regression: Piecewise Linear-Linear-Linear

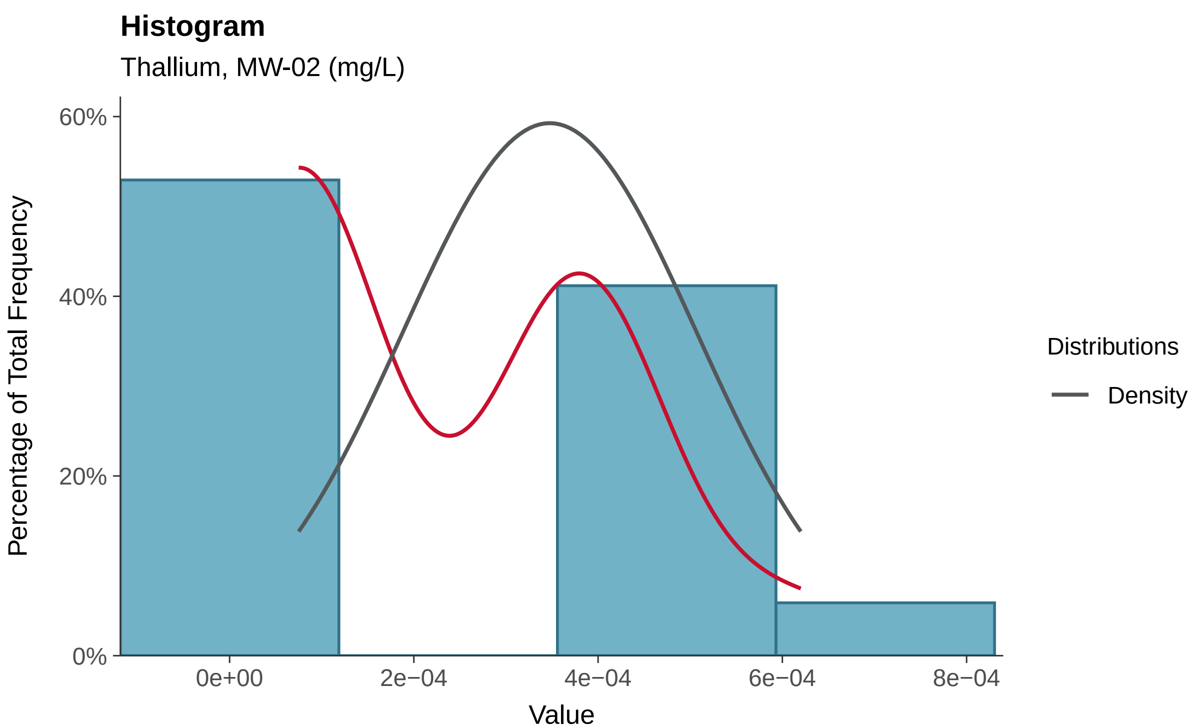
Selenium, MW-02 (mg/L)



Appendix IV: Thallium, MW-02

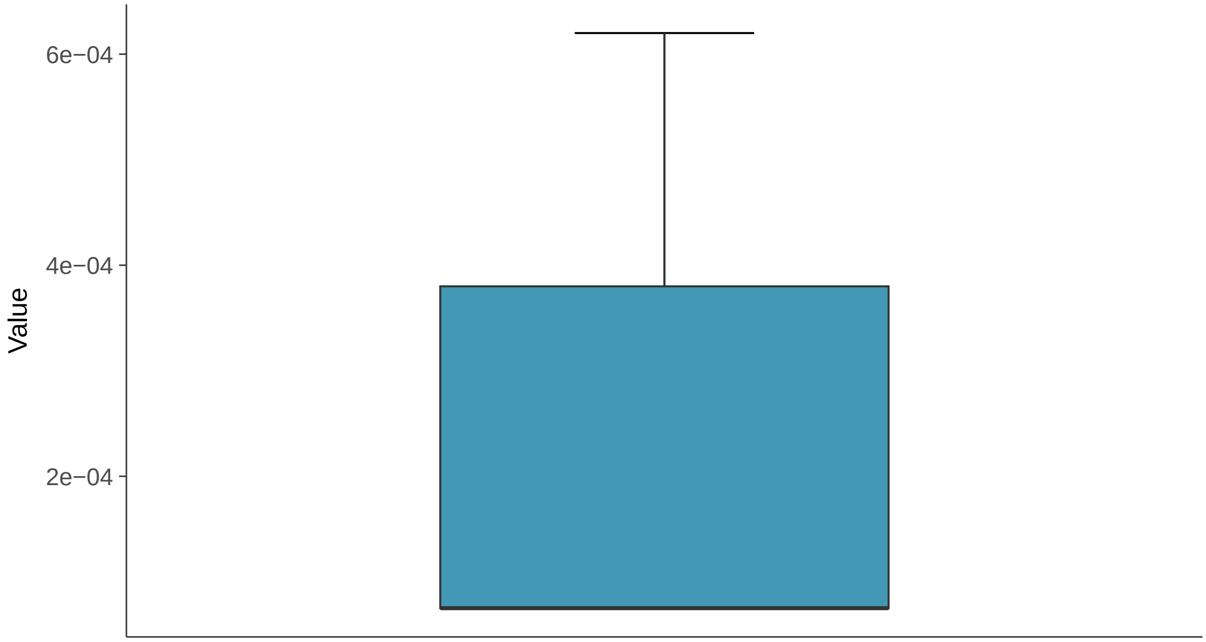
ID: 12_2_4_125





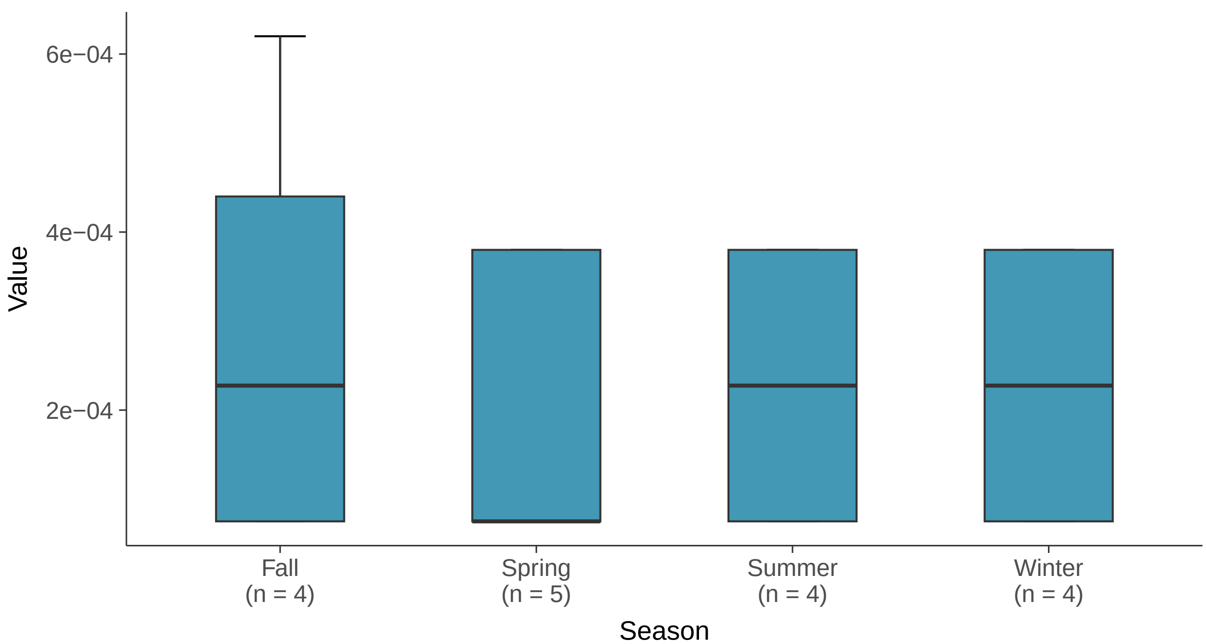
Boxplot

Thallium, MW-02 (mg/L)



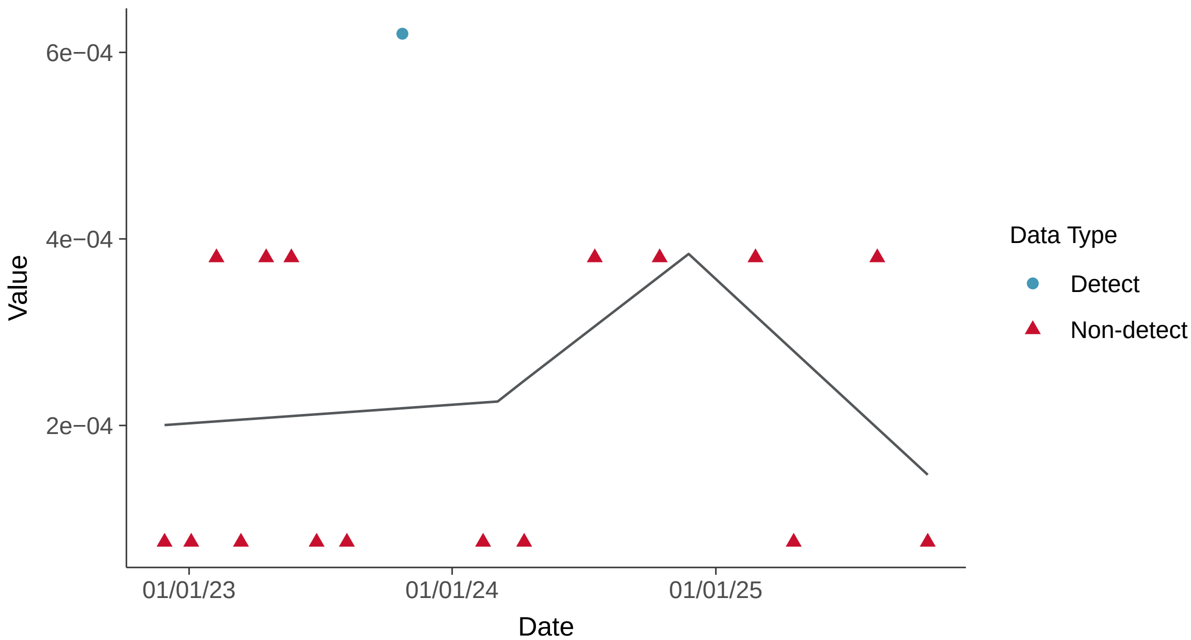
Boxplot by Season

Thallium, MW-02 (mg/L)



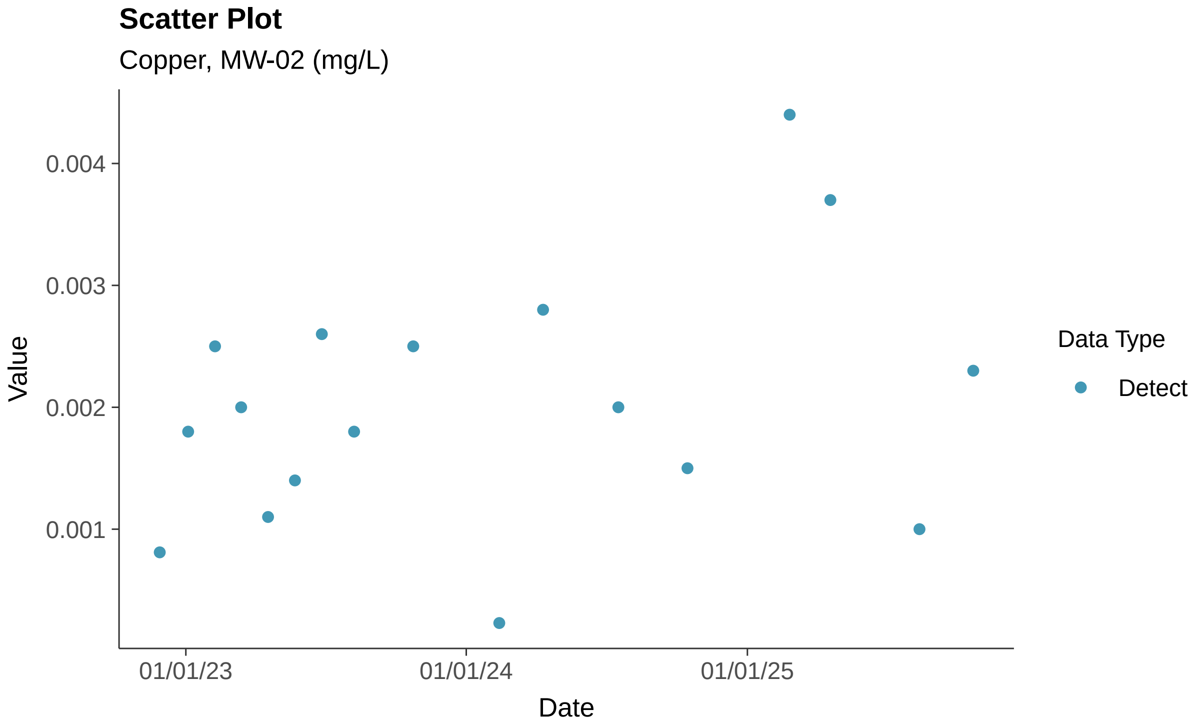
Trend Regression: Piecewise Linear-Linear-Linear

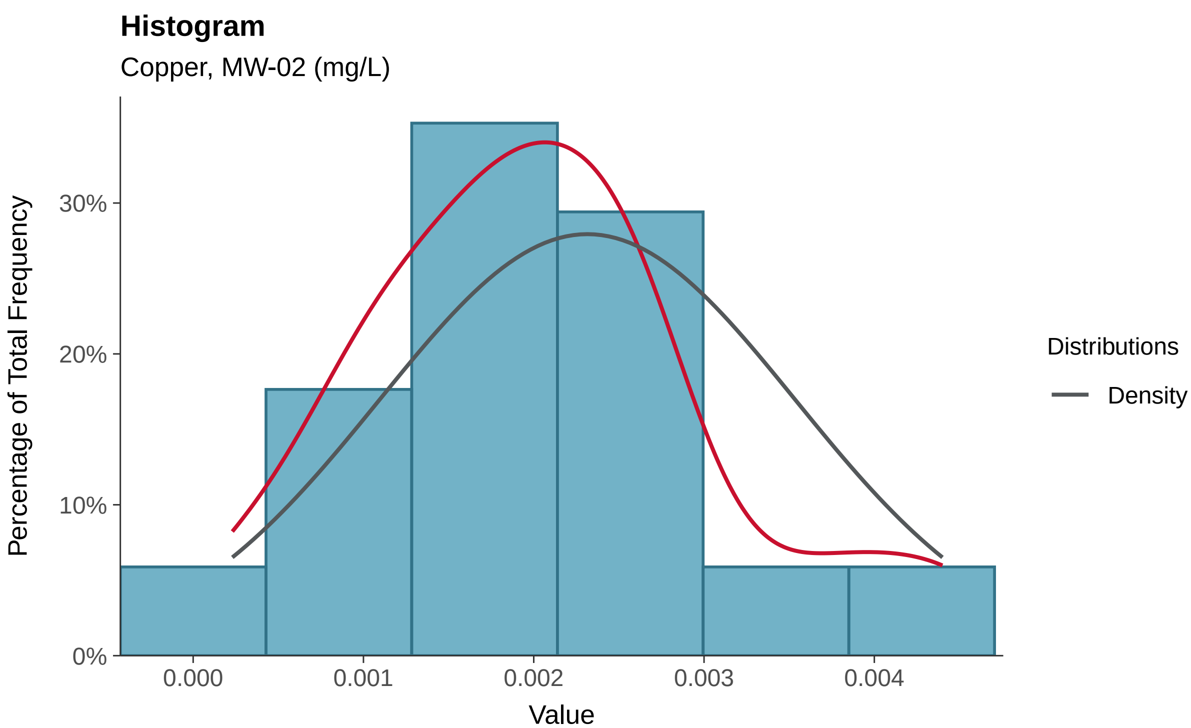
Thallium, MW-02 (mg/L)



Part 115: Copper, MW-02

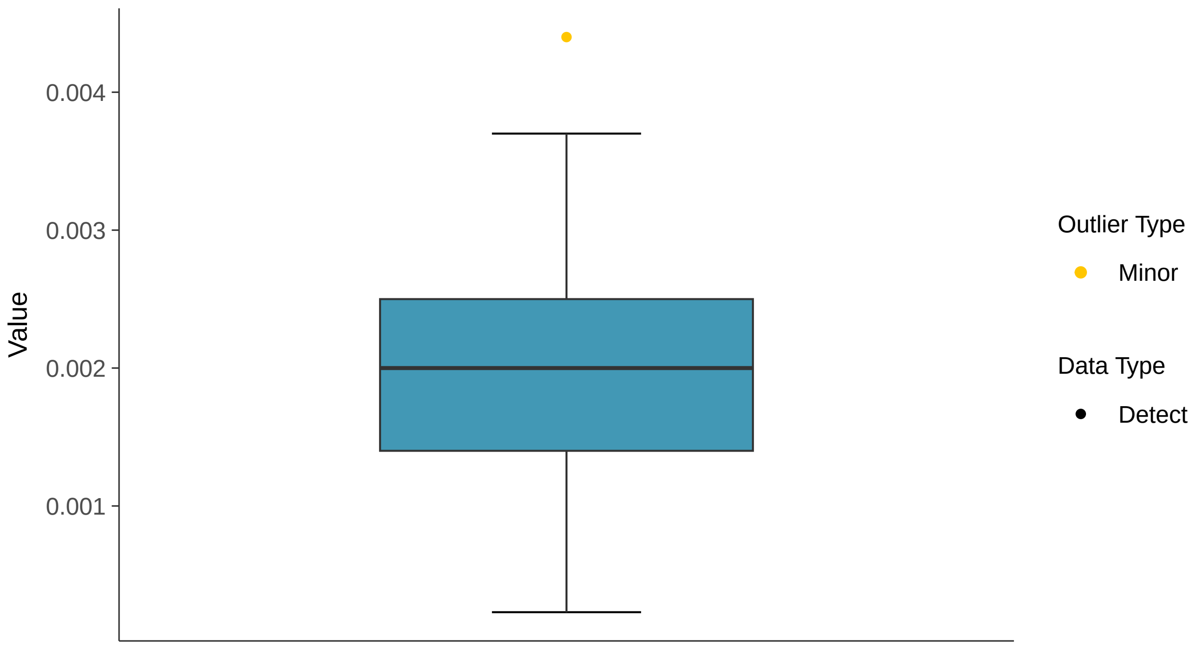
ID: 12_2_5_111





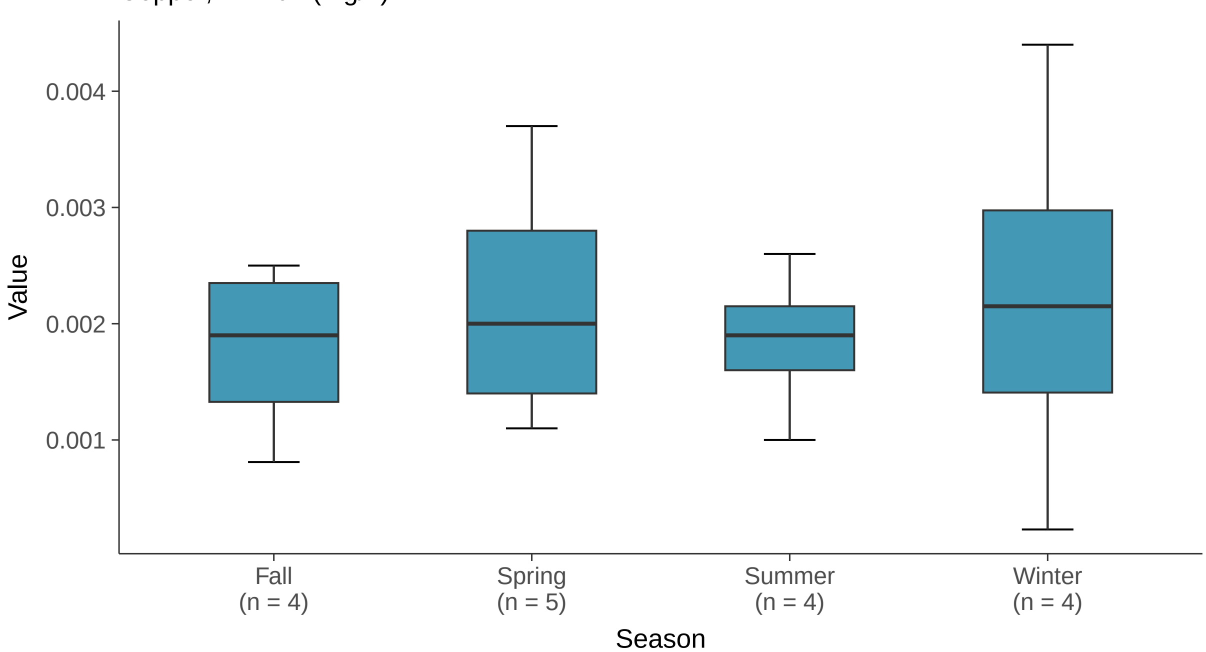
Boxplot

Copper, MW-02 (mg/L)



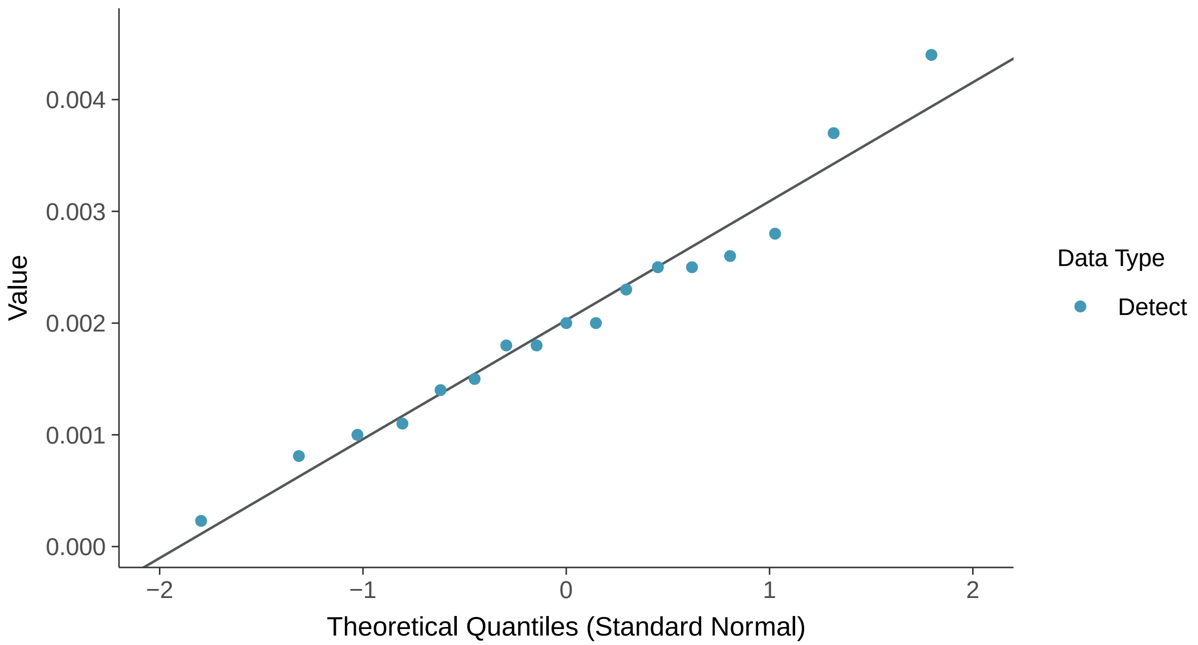
Boxplot by Season

Copper, MW-02 (mg/L)



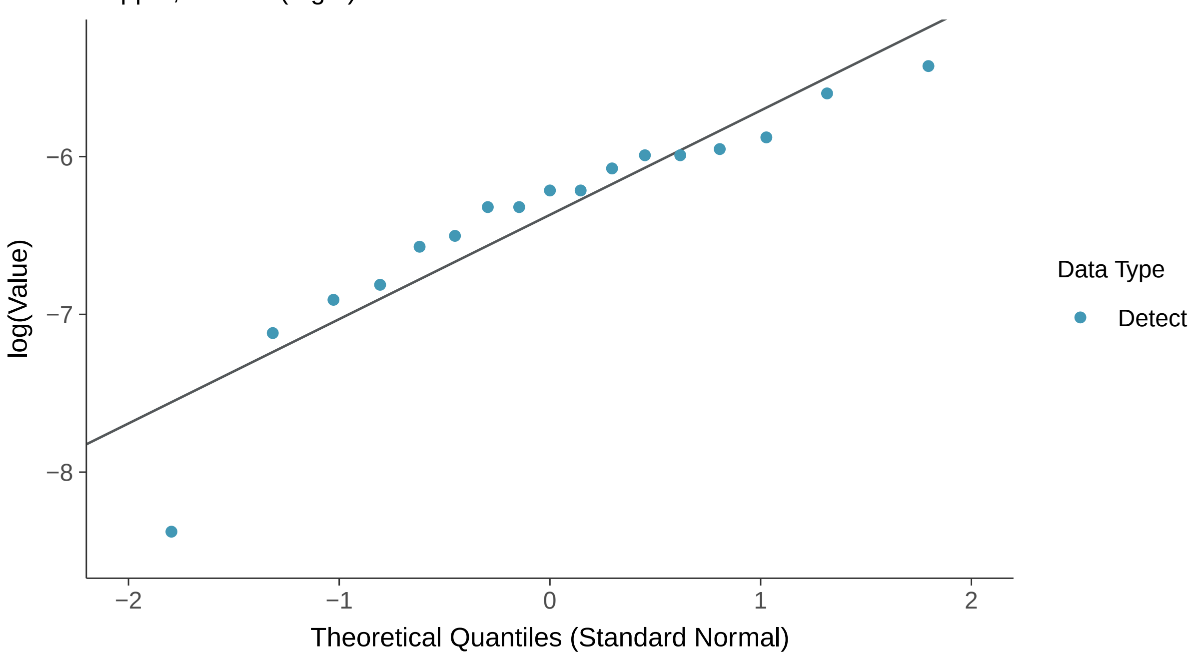
Normal Q-Q plot

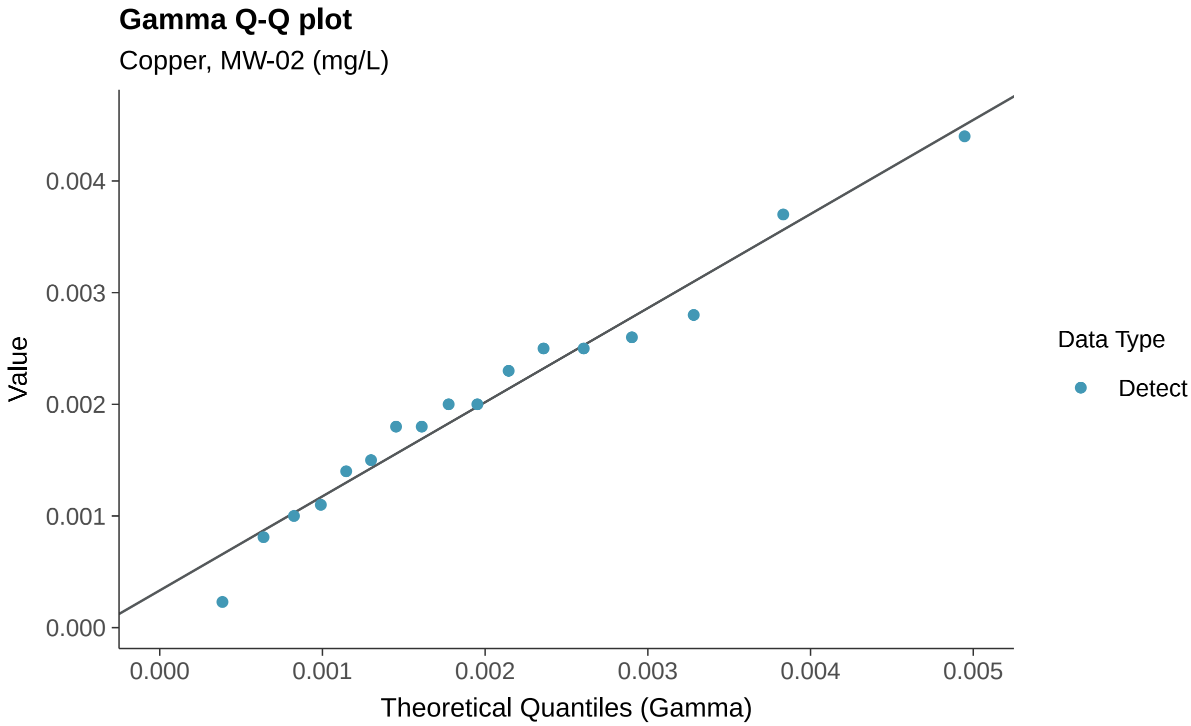
Copper, MW-02 (mg/L)

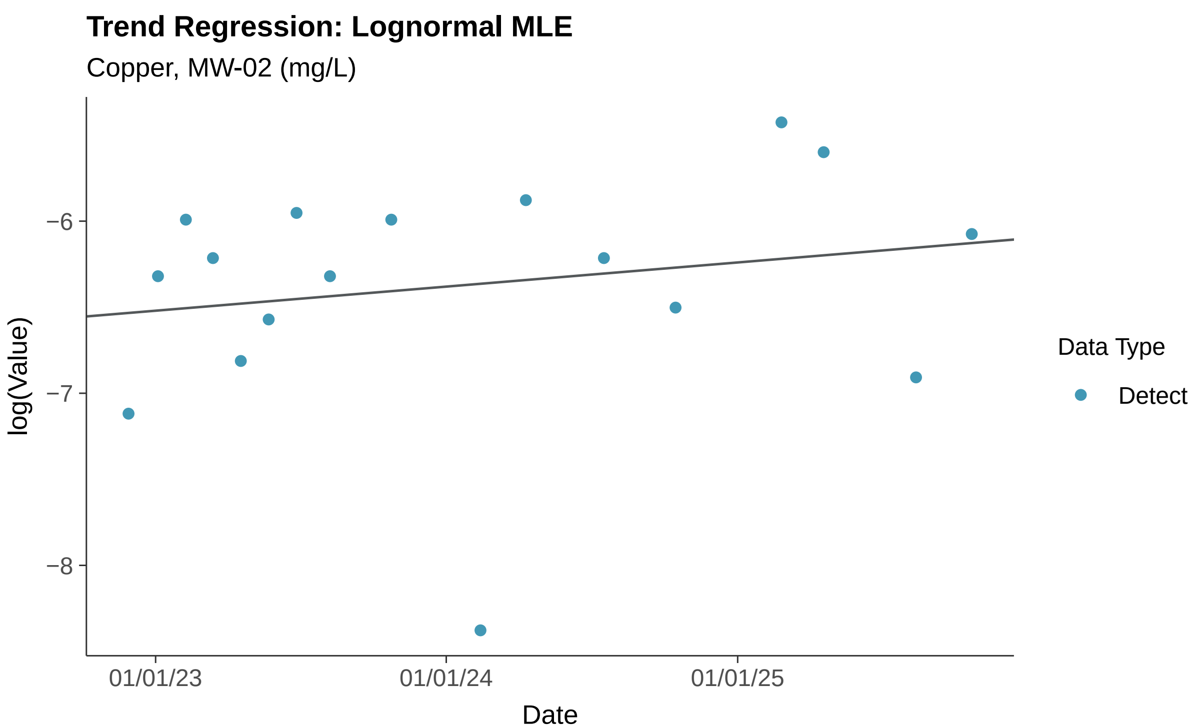


Lognormal Q-Q plot

Copper, MW-02 (mg/L)

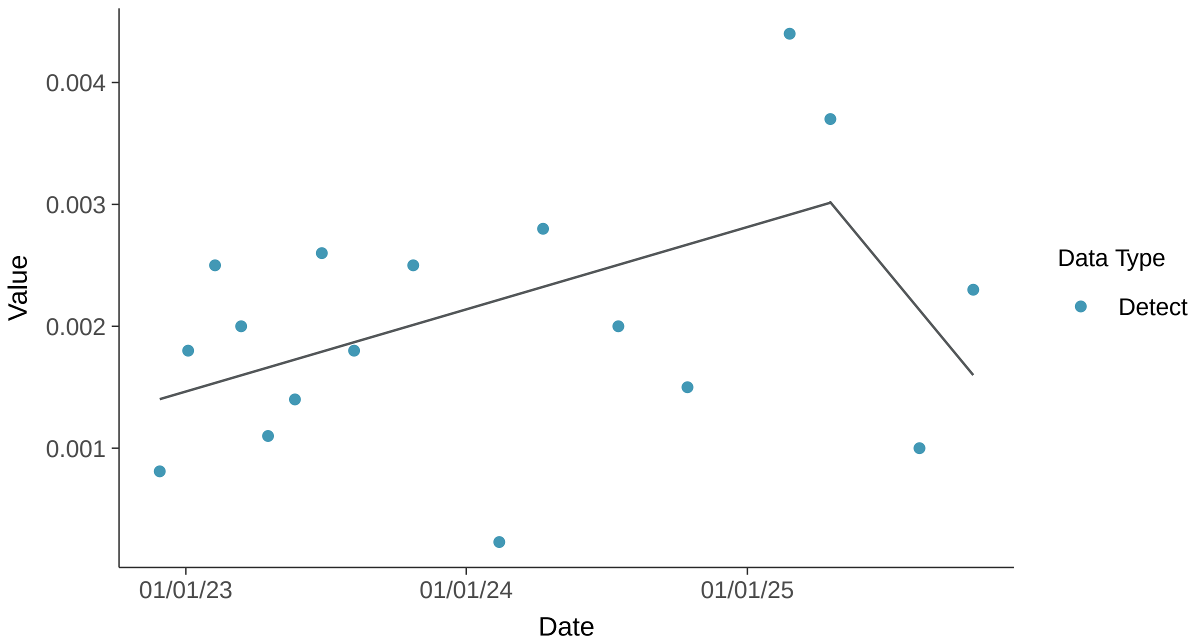



Gamma Q-Q plot
Copper, MW-02 (mg/L)
Value
0.004
0.003
0.002
0.001
0.000
0.000
0.001
0.002
0.003
0.004
0.005
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Copper, MW-02 (mg/L)
log(Value)
−6
−7
−8
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

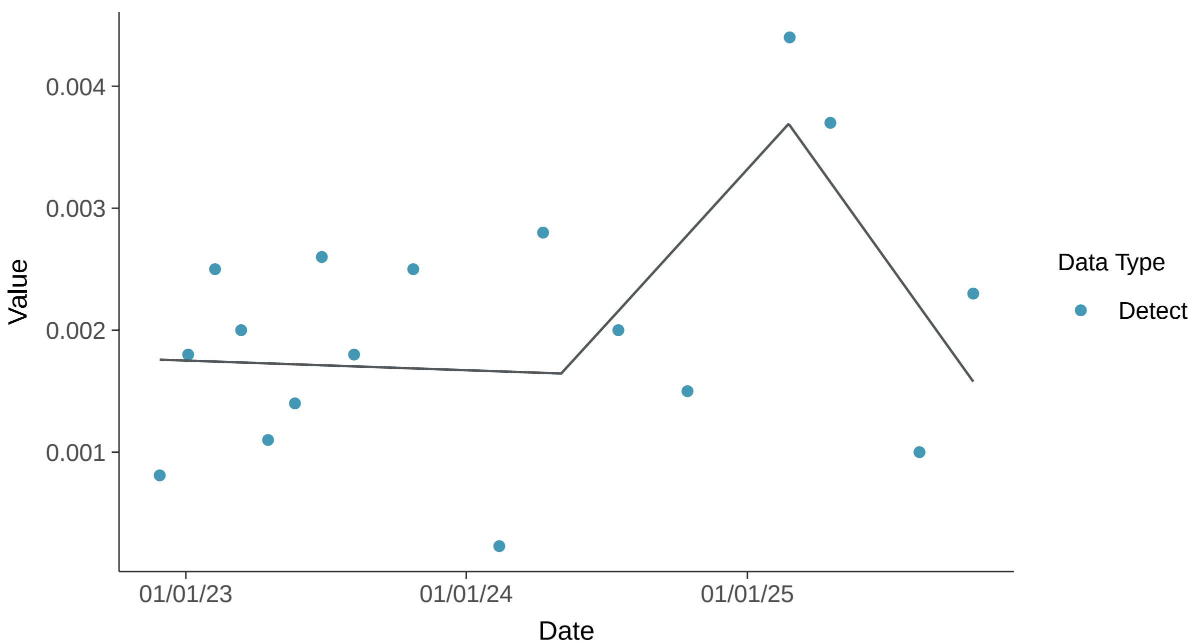
Trend Regression: Piecewise Linear-Linear

Copper, MW-02 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Copper, MW-02 (mg/L)

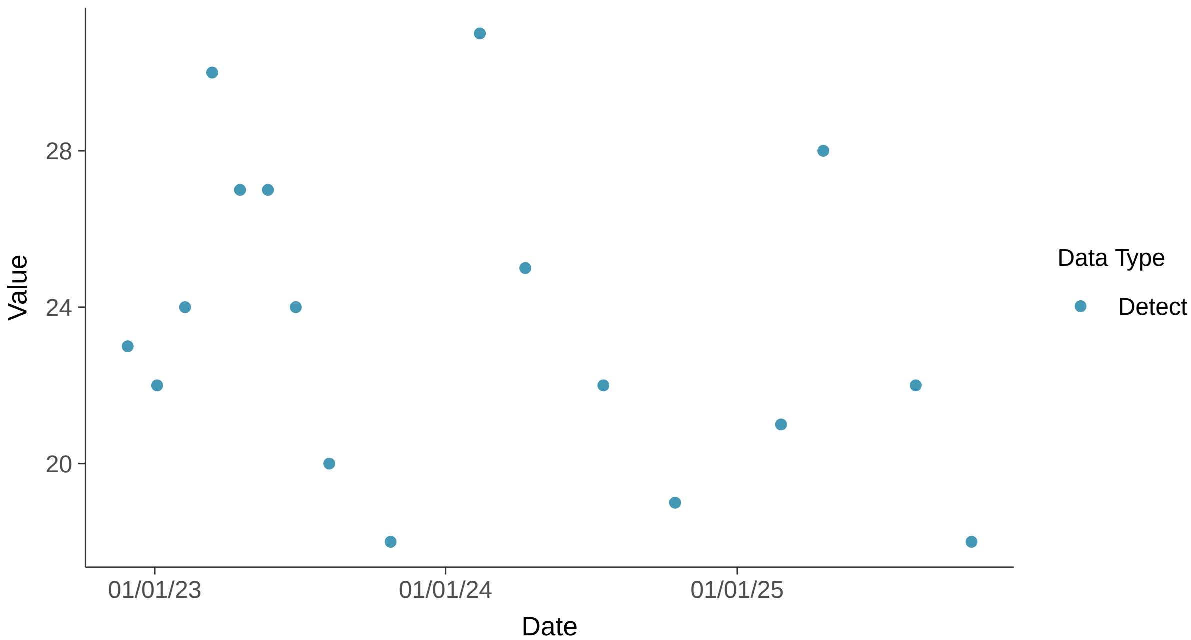


Part 115: Iron, MW-02

ID: 12_2_5_114

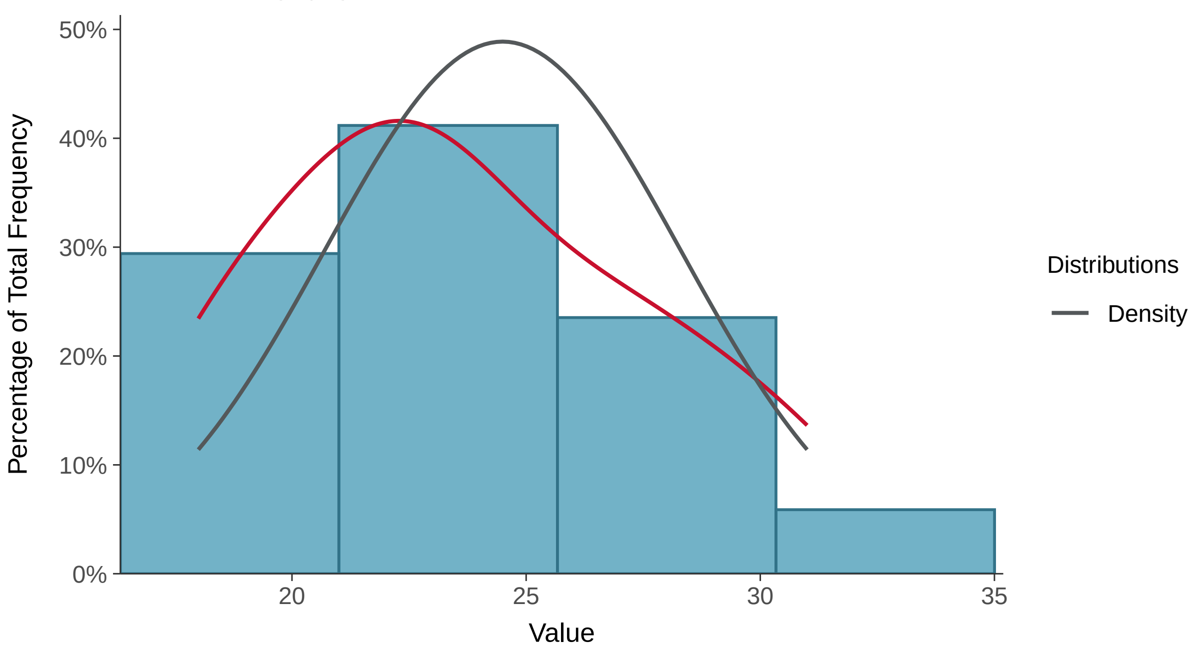
Scatter Plot

Iron, MW-02 (mg/L)



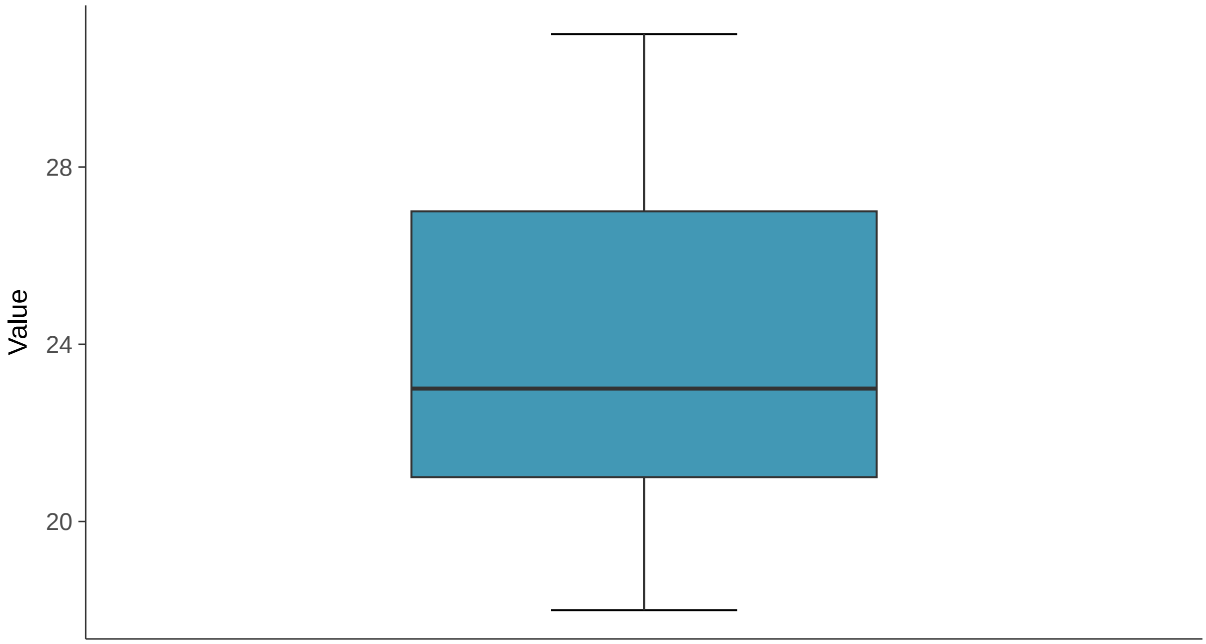
Histogram

Iron, MW-02 (mg/L)



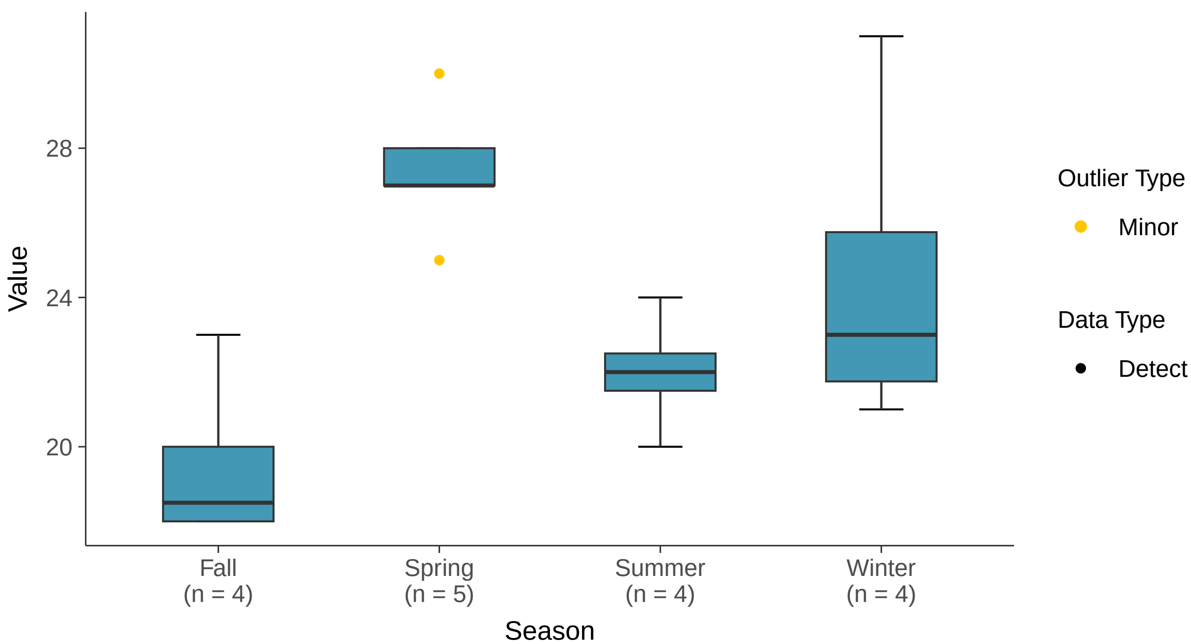
Boxplot

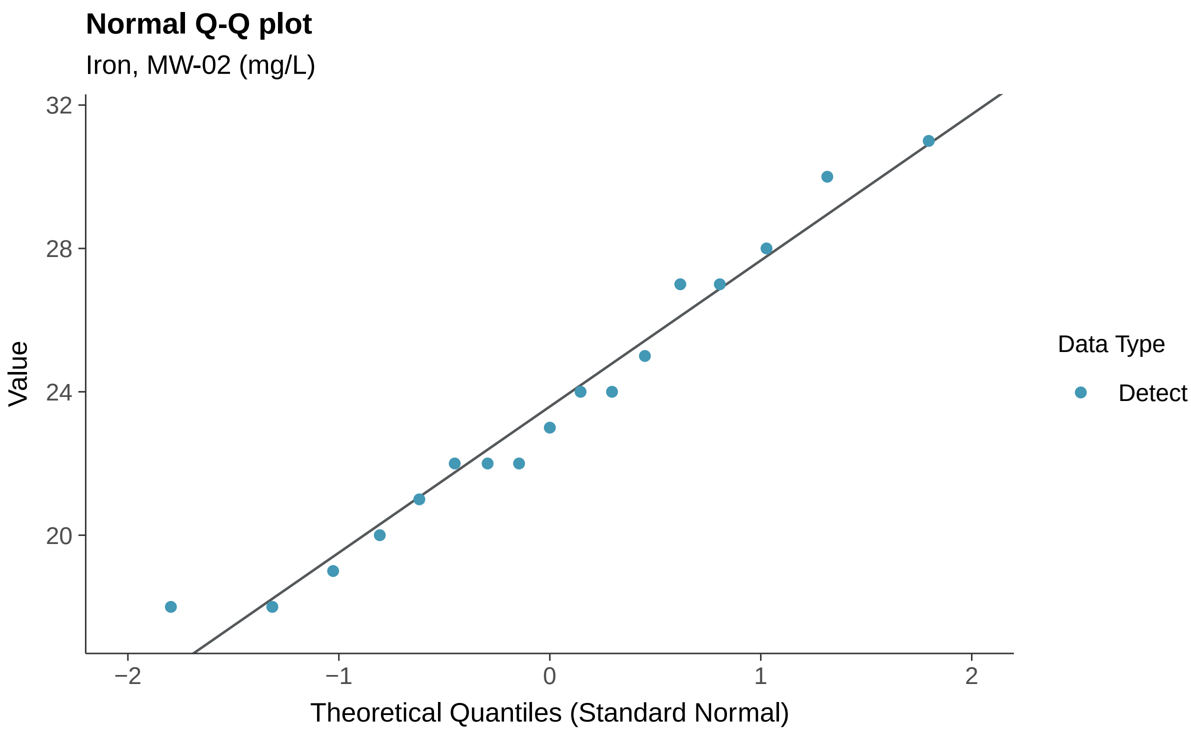
Iron, MW-02 (mg/L)

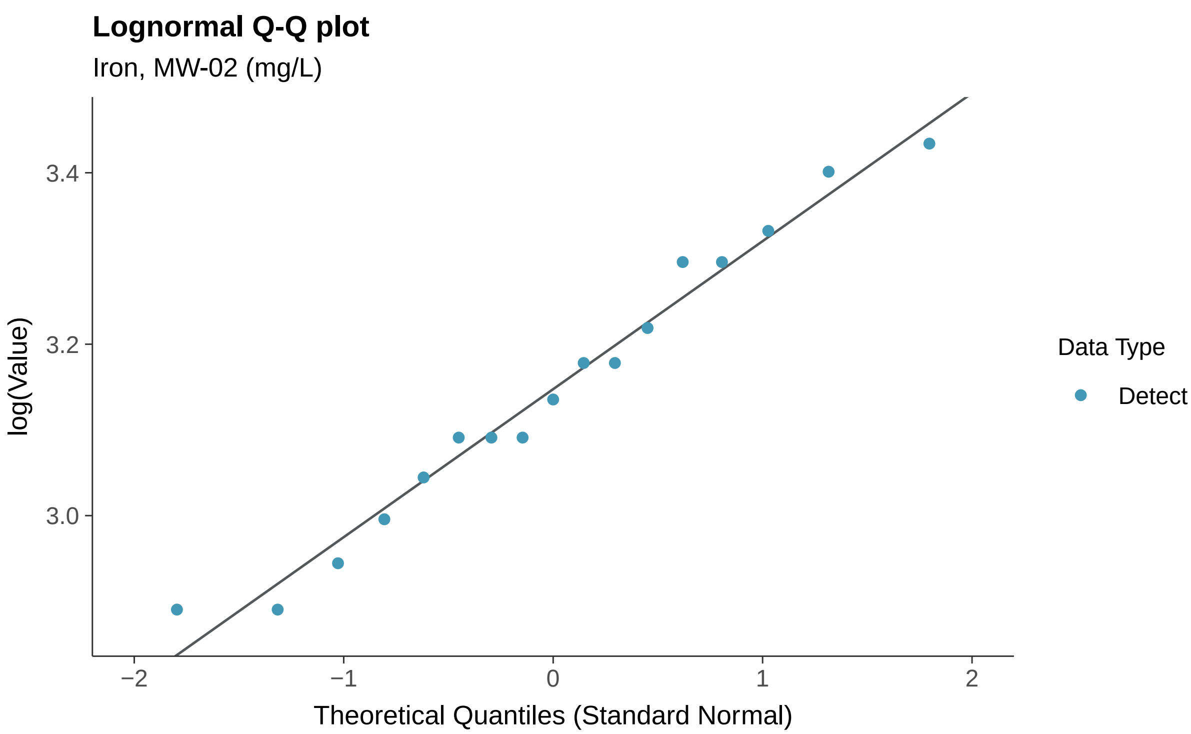


Boxplot by Season

Iron, MW-02 (mg/L)

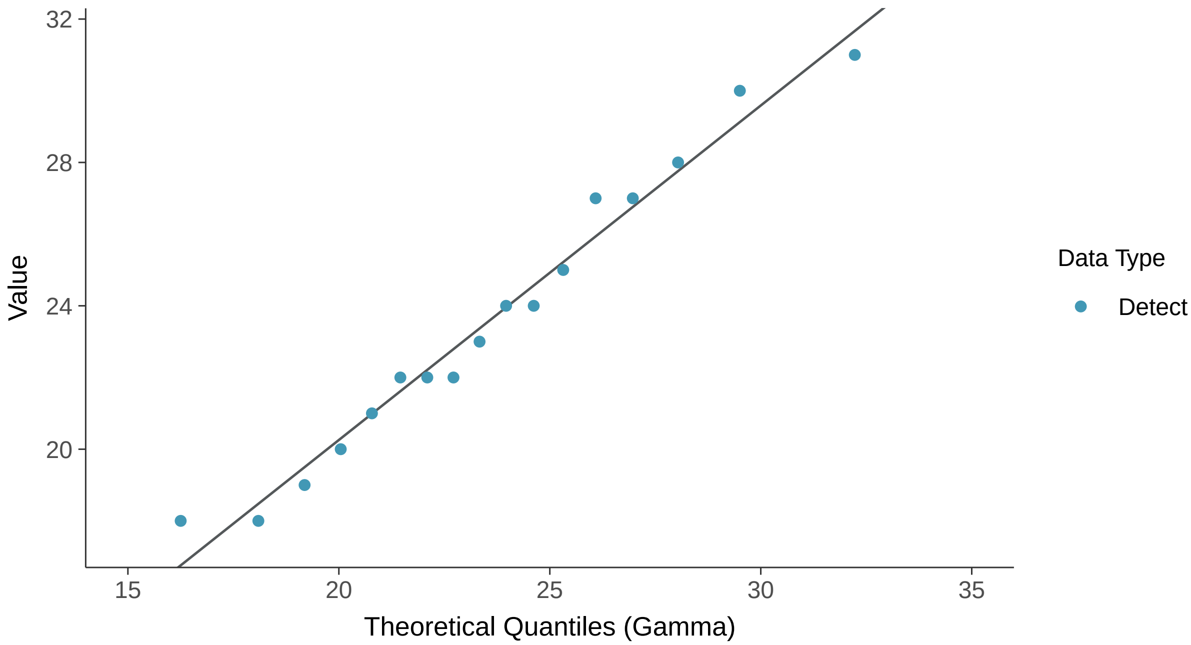



Normal Q-Q plot
Iron, MW-02 (mg/L)
Value
32
28
24
20
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Iron, MW-02 (mg/L)
log(Value)
3.4
3.2
3.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

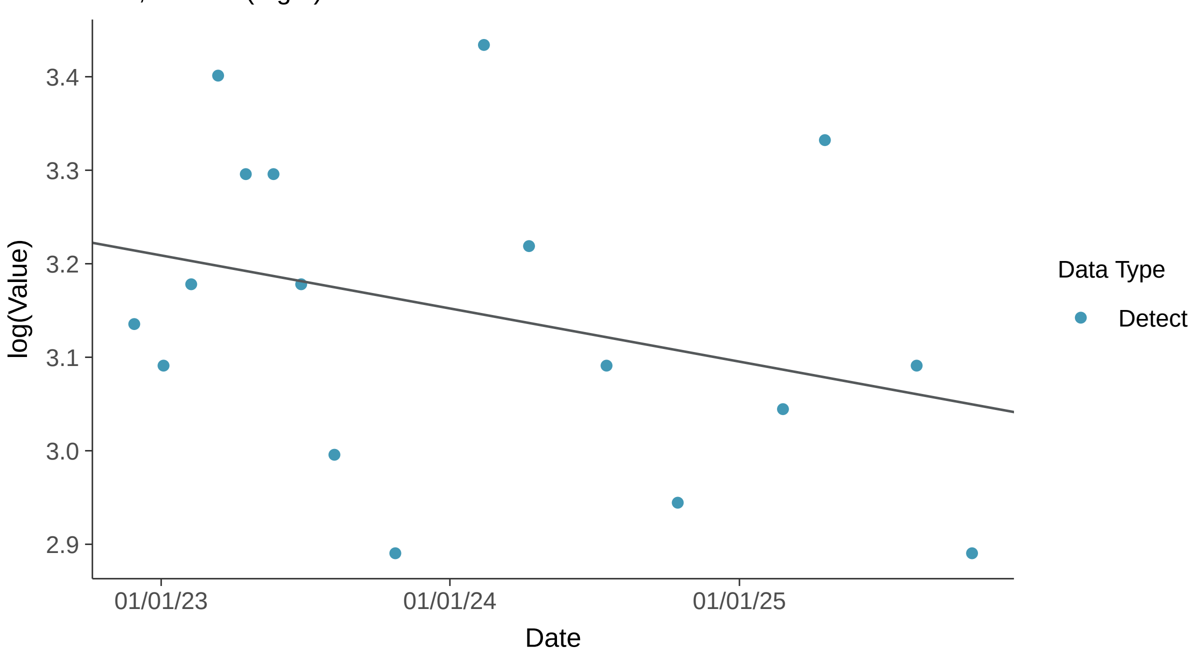
Gamma Q-Q plot

Iron, MW-02 (mg/L)



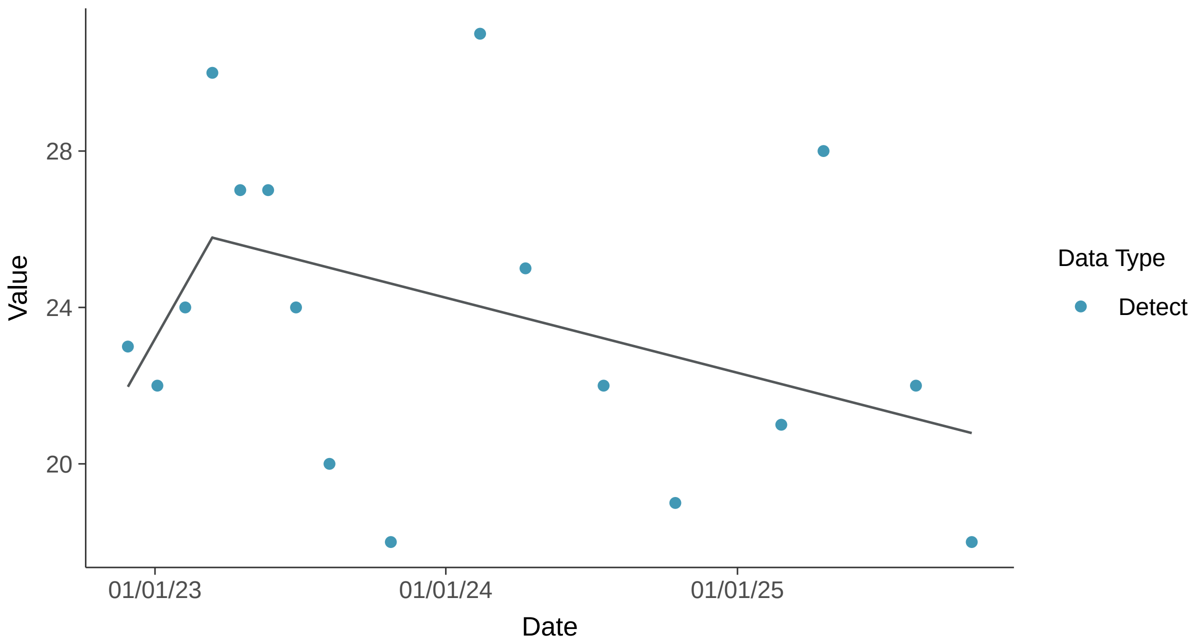
Trend Regression: Lognormal MLE

Iron, MW-02 (mg/L)



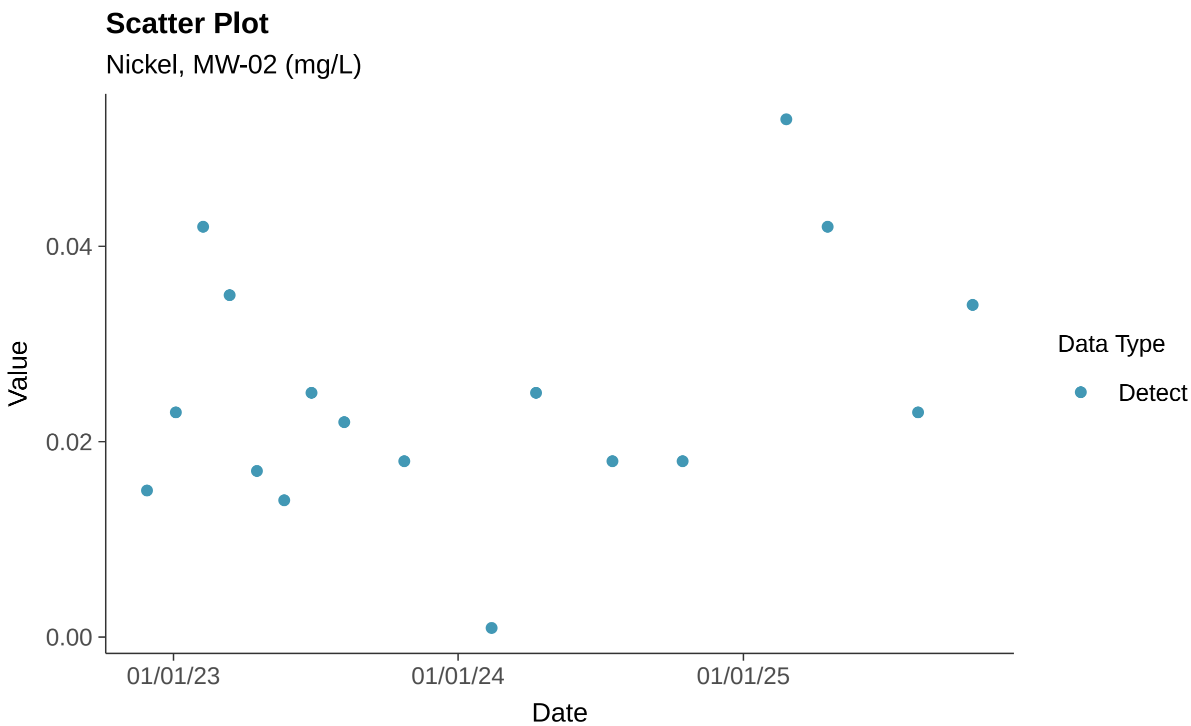
Trend Regression: Piecewise Linear-Linear

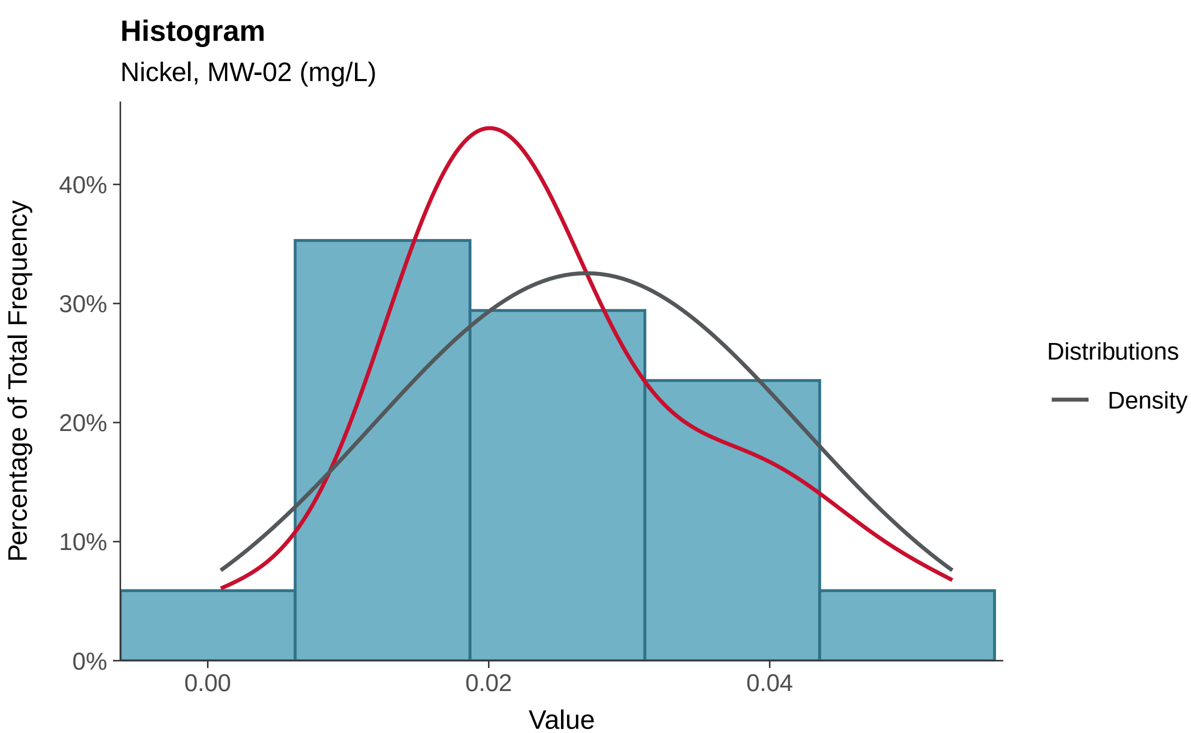
Iron, MW-02 (mg/L)

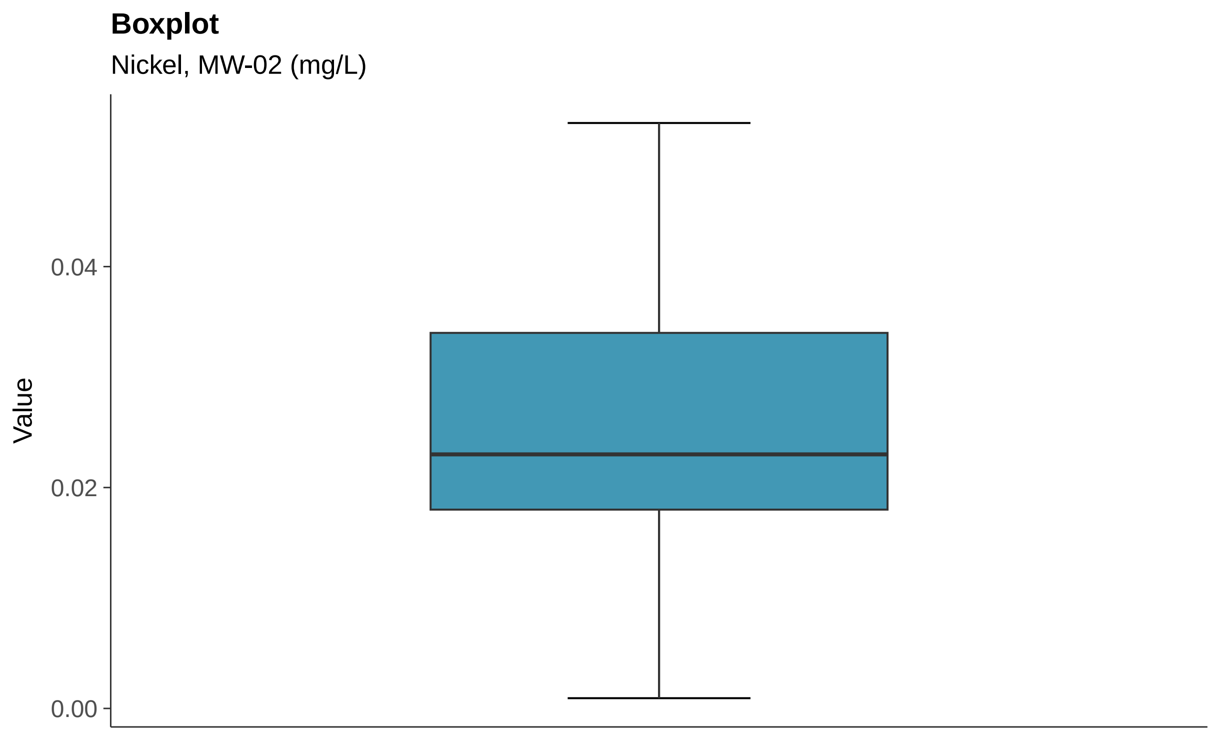


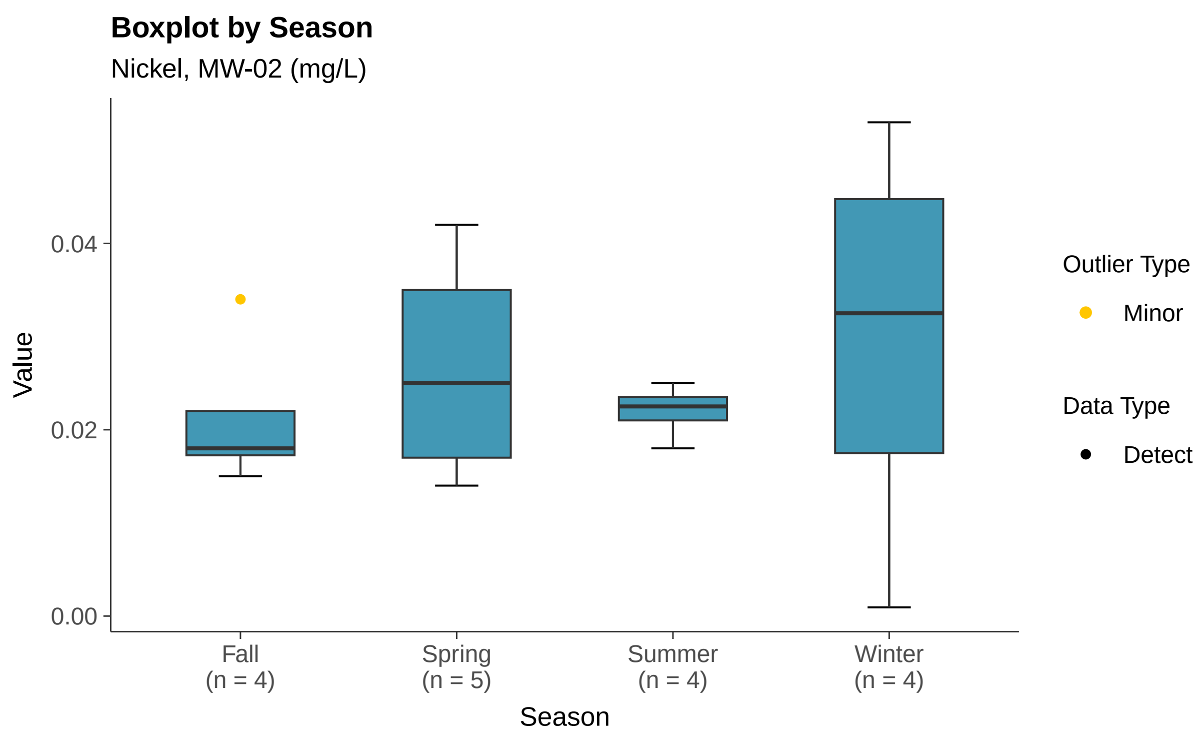
Part 115: Nickel, MW-02

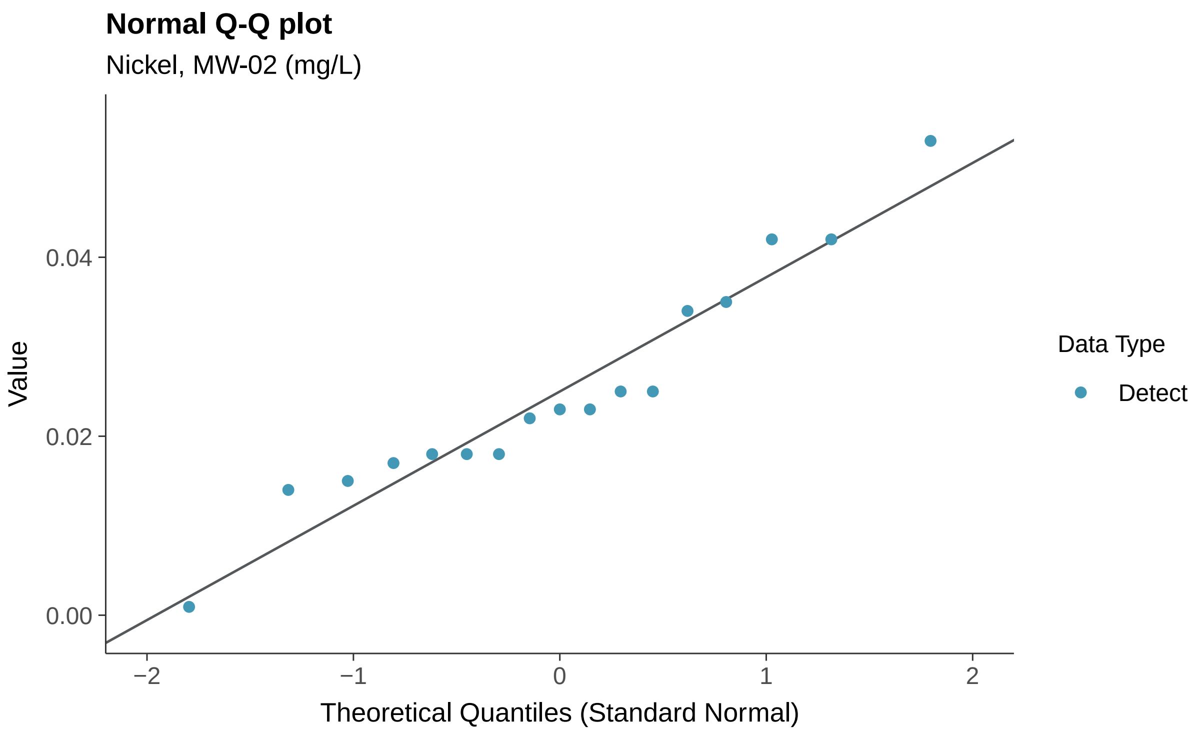
ID: 12_2_5_119

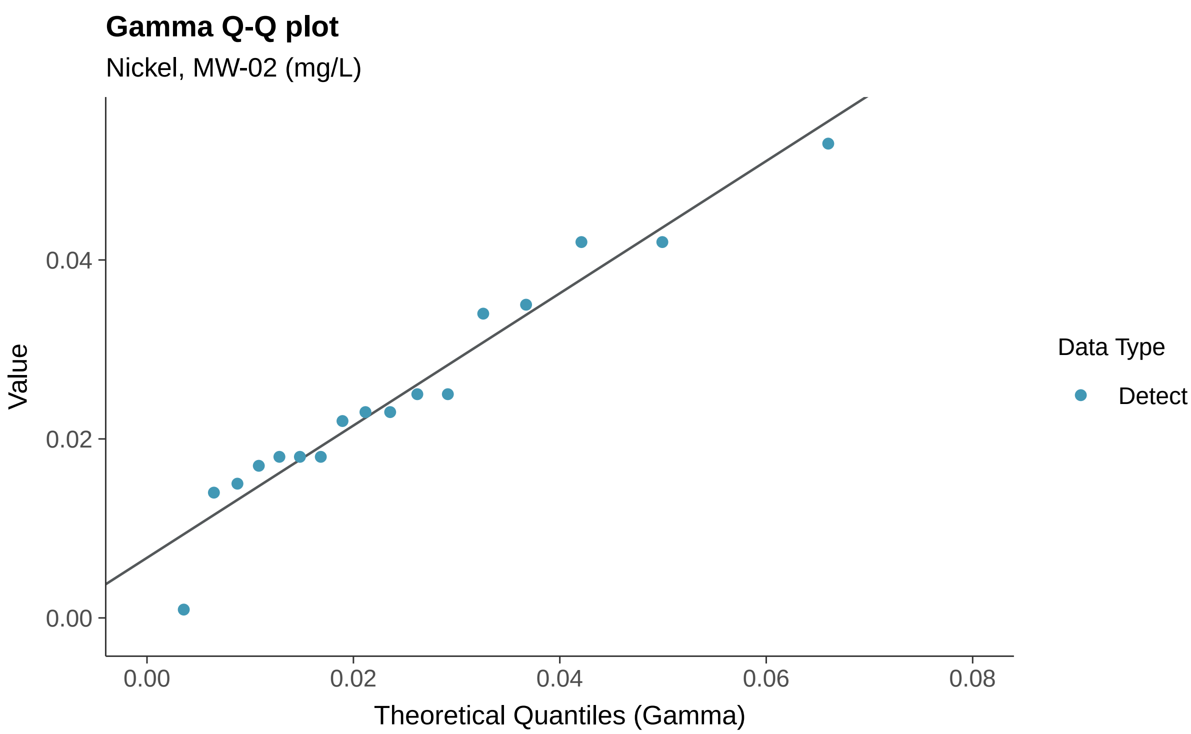





Boxplot
Nickel, MW-02 (mg/L)
Value
0.04
0.02
0.00

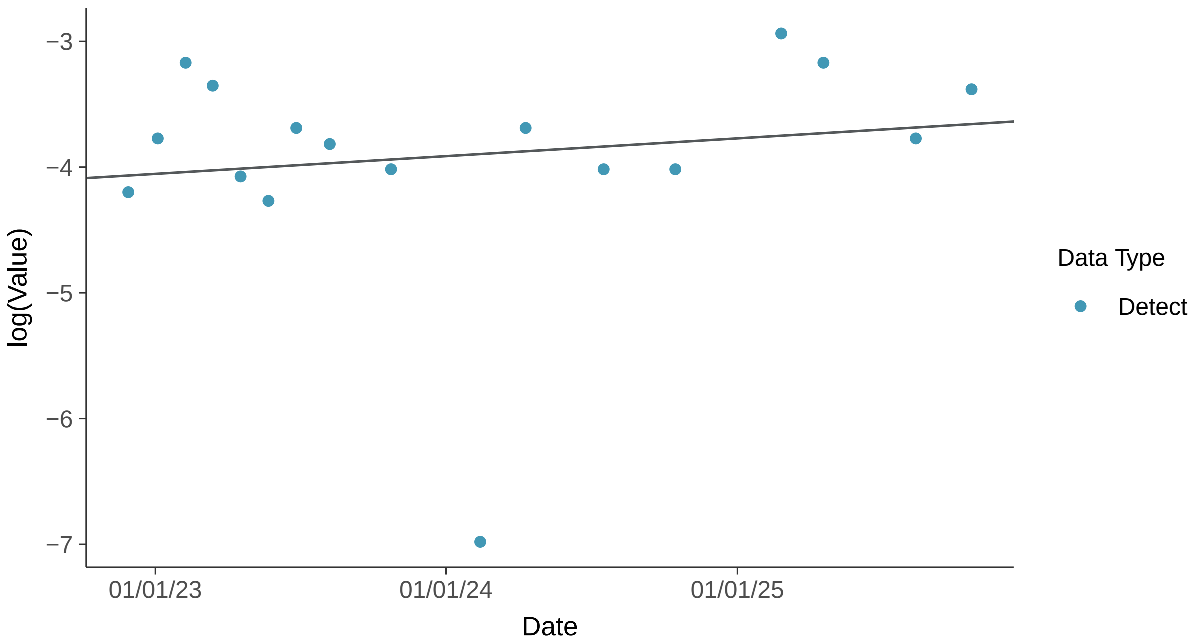

Boxplot by Season
Nickel, MW-02 (mg/L)
Value
0.04
0.02
0.00
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Minor
Data Type
Detect


Normal Q-Q plot
Nickel, MW-02 (mg/L)
Value
0.04
0.02
0.00
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Nickel, MW-02 (mg/L)
Value
0.04
0.02
0.00
0.00
0.02
0.04
0.06
0.08
Theoretical Quantiles (Gamma)
Data Type
Detect

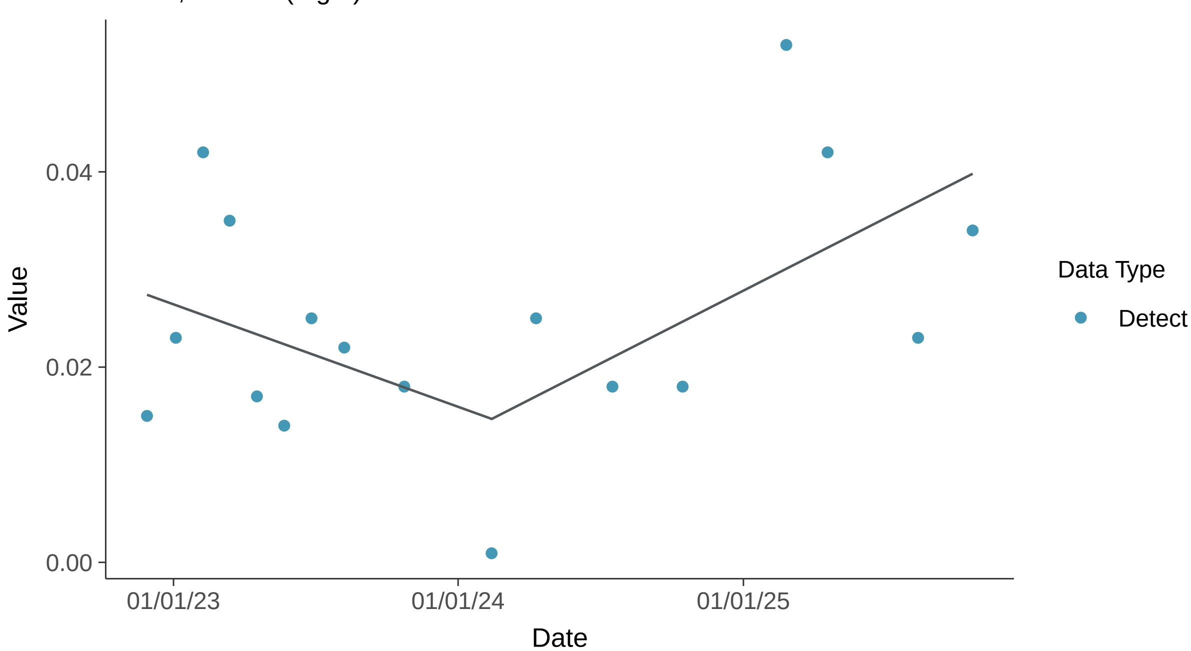
Trend Regression: Lognormal MLE

Nickel, MW-02 (mg/L)

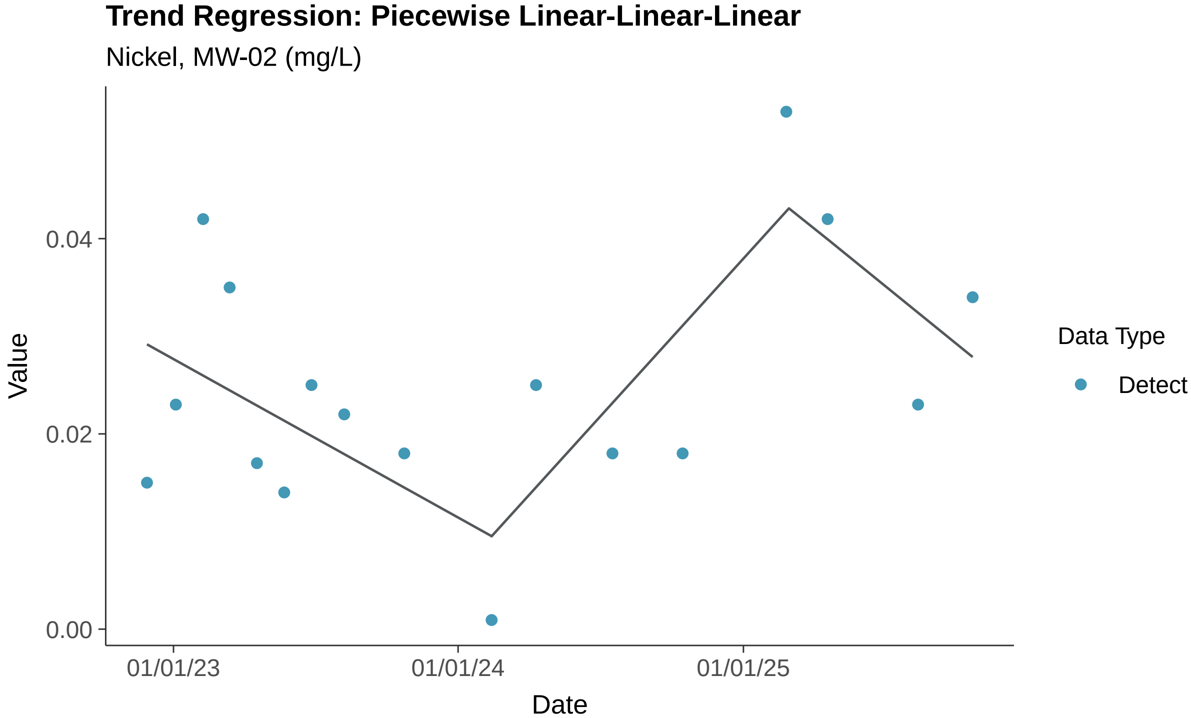


Trend Regression: Piecewise Linear-Linear

Nickel, MW-02 (mg/L)

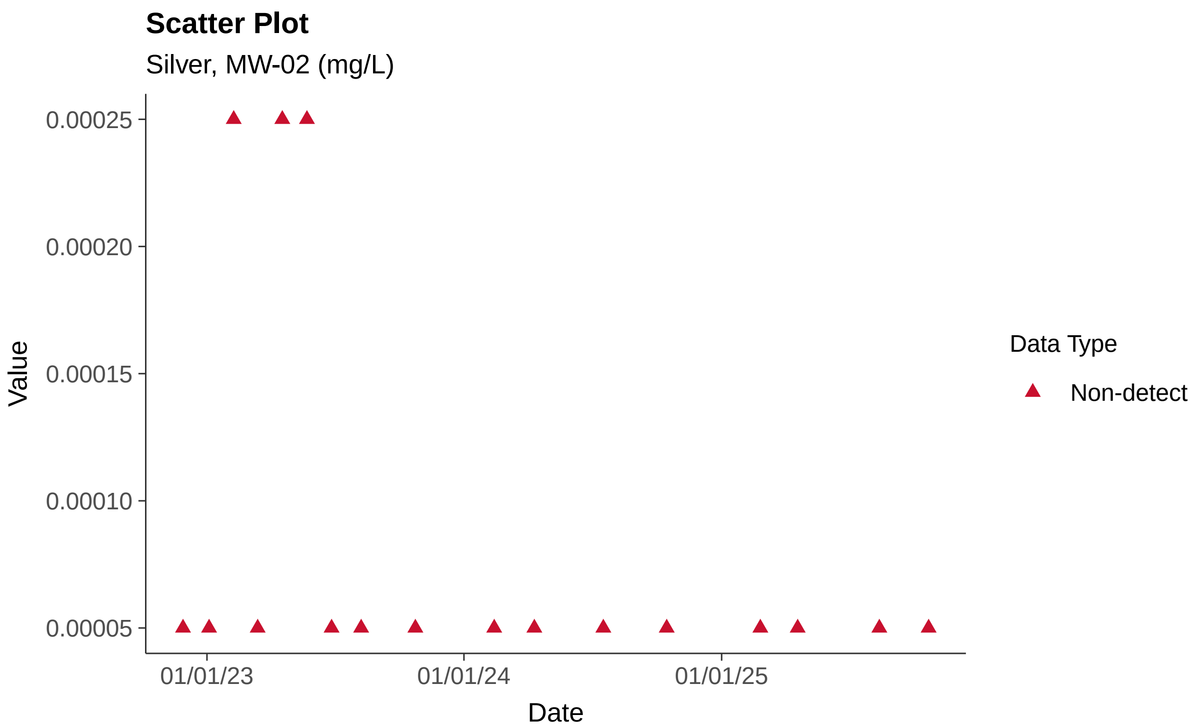


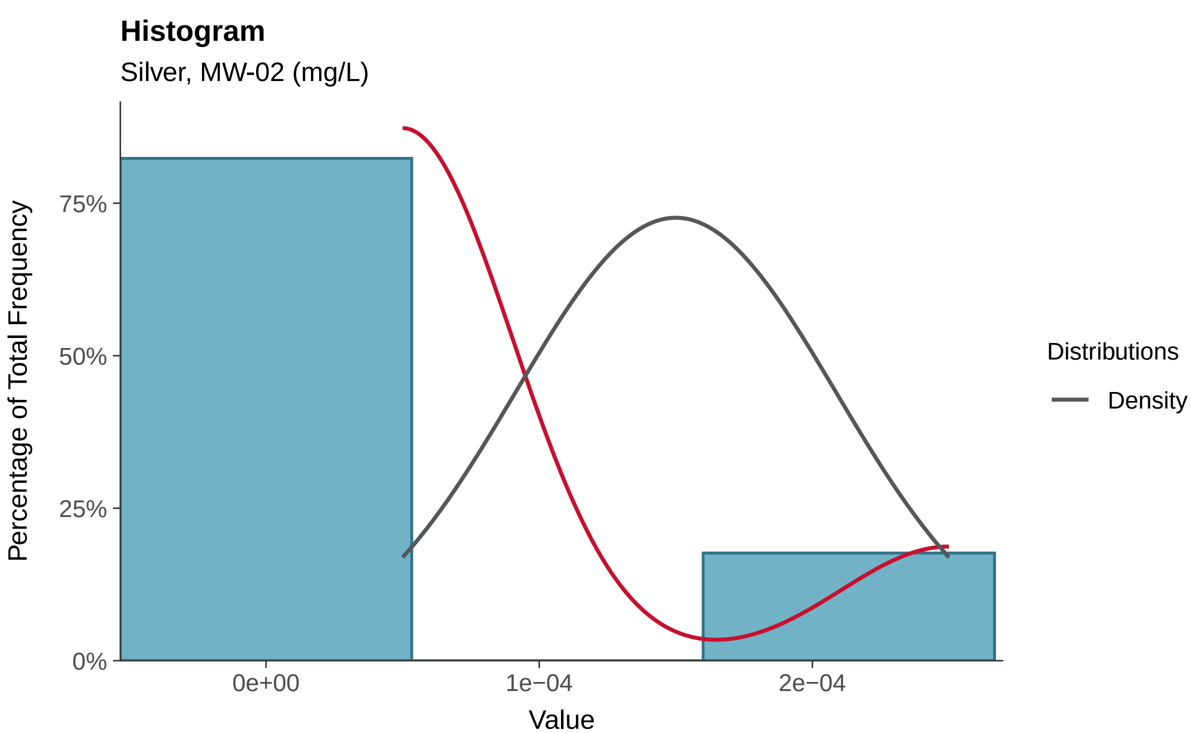
Grand Haven
Downgradient Wells as of October 2025



Part 115: Silver, MW-02

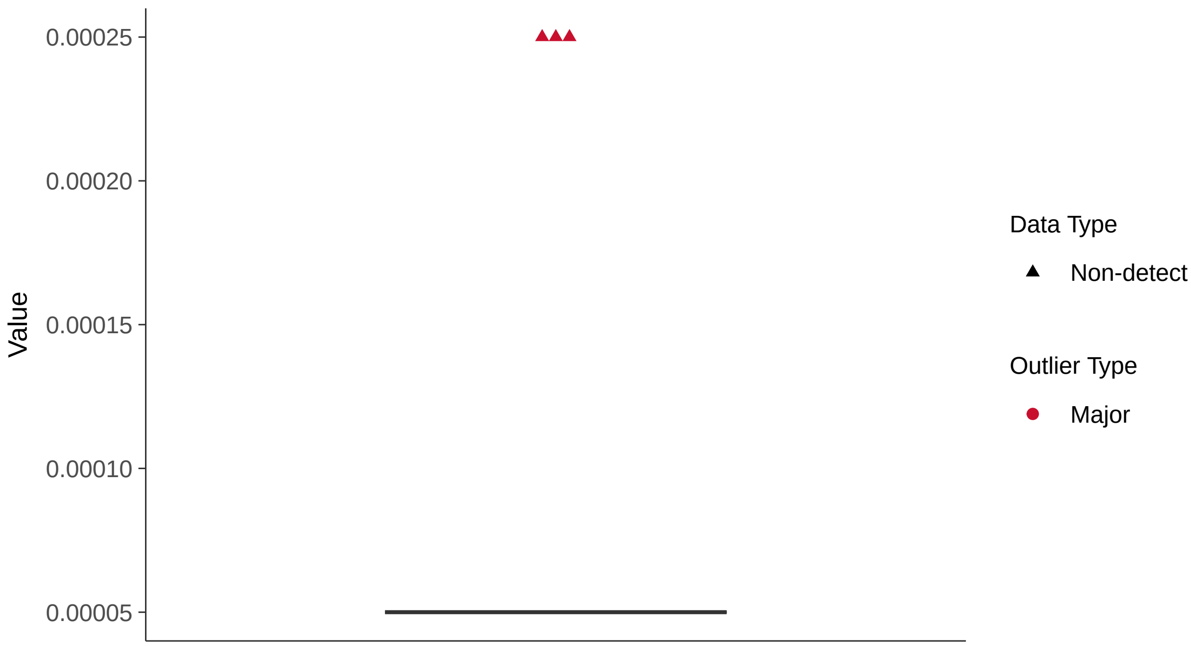
ID: 12_2_5_123





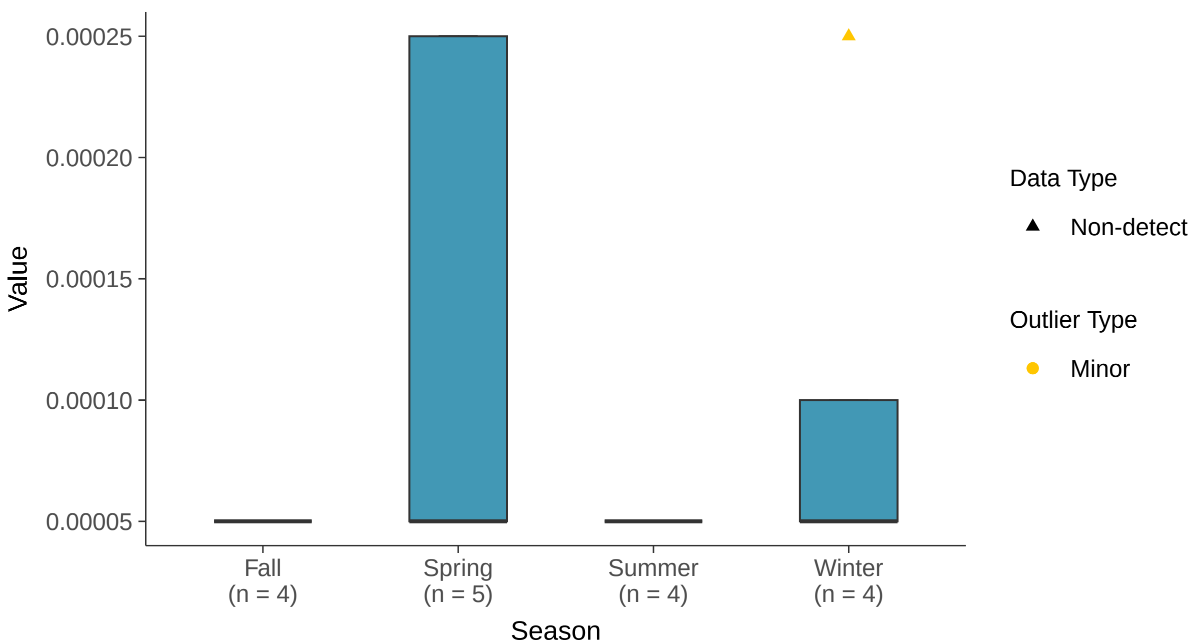
Boxplot

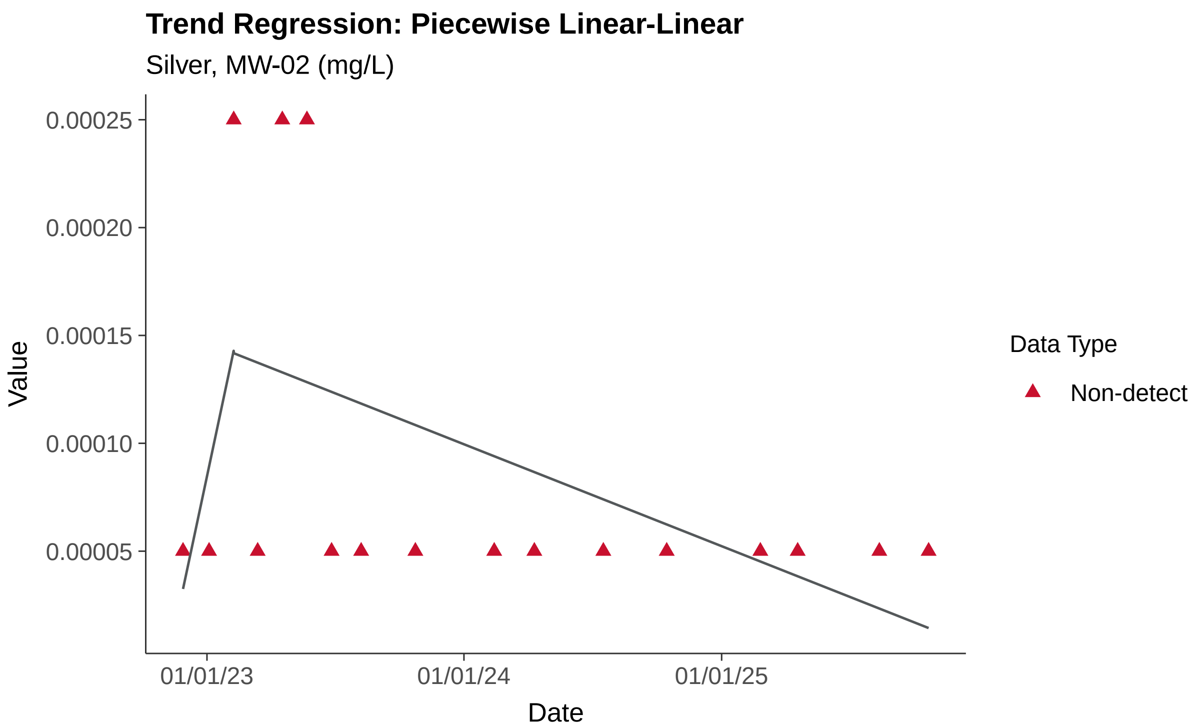
Silver, MW-02 (mg/L)

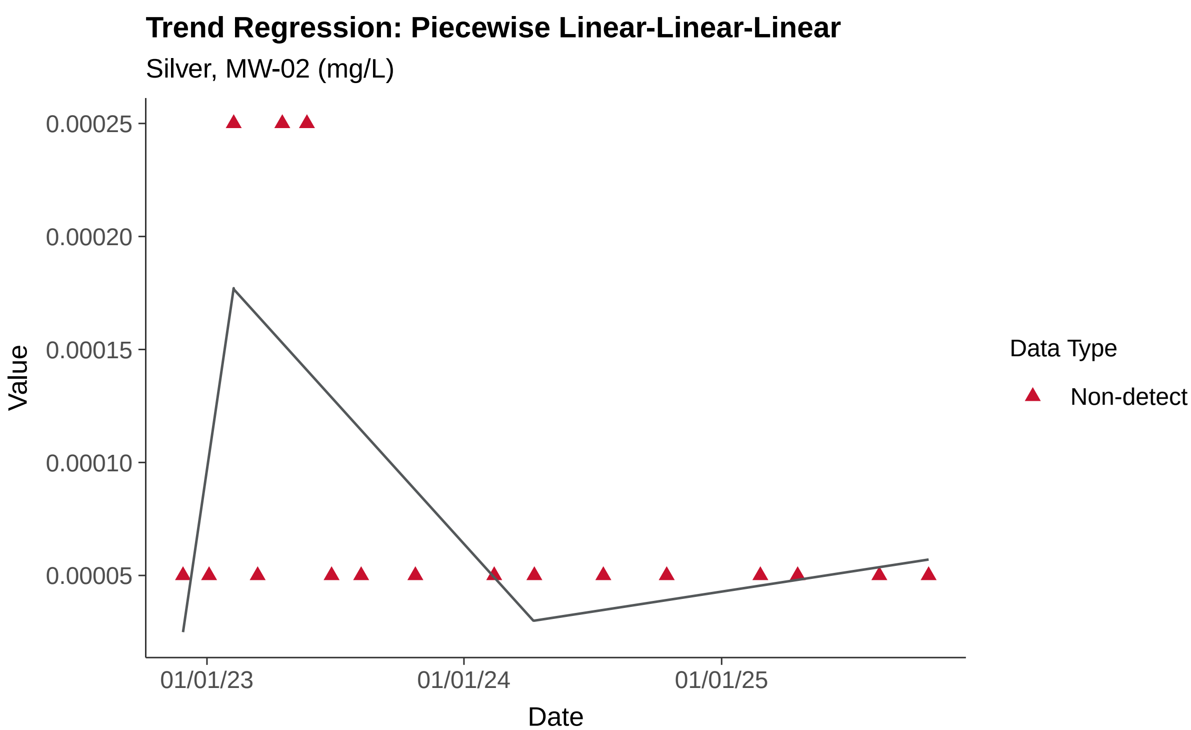


Boxplot by Season

Silver, MW-02 (mg/L)

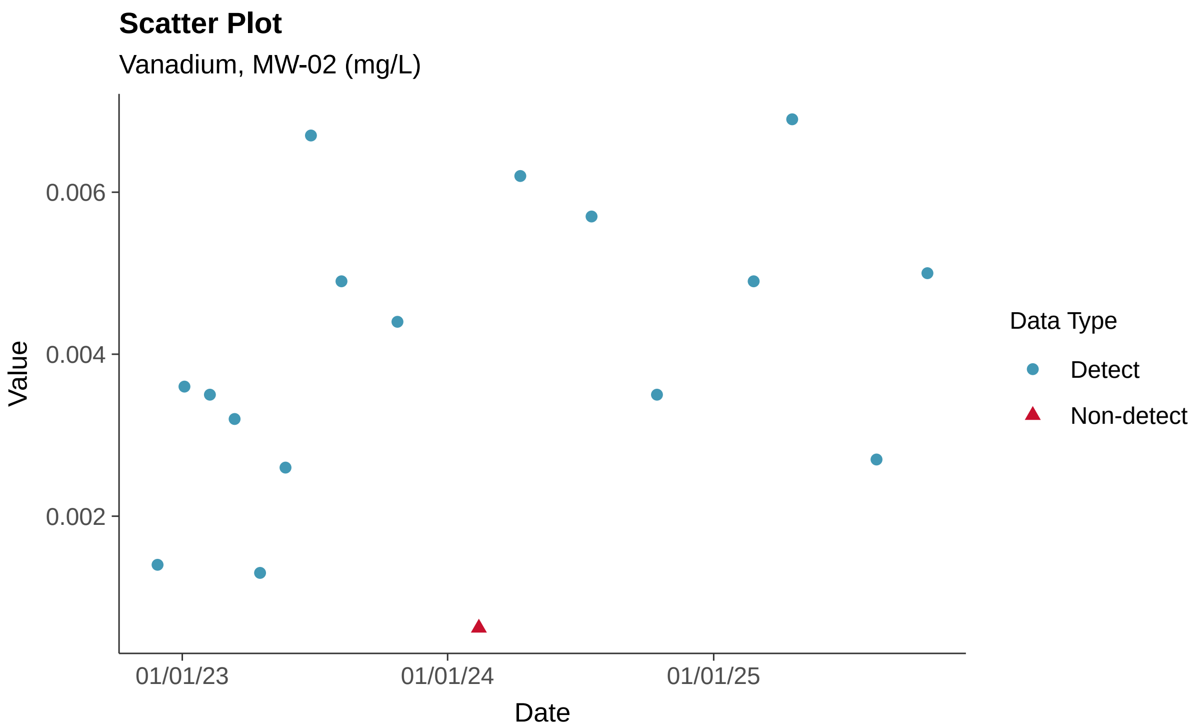


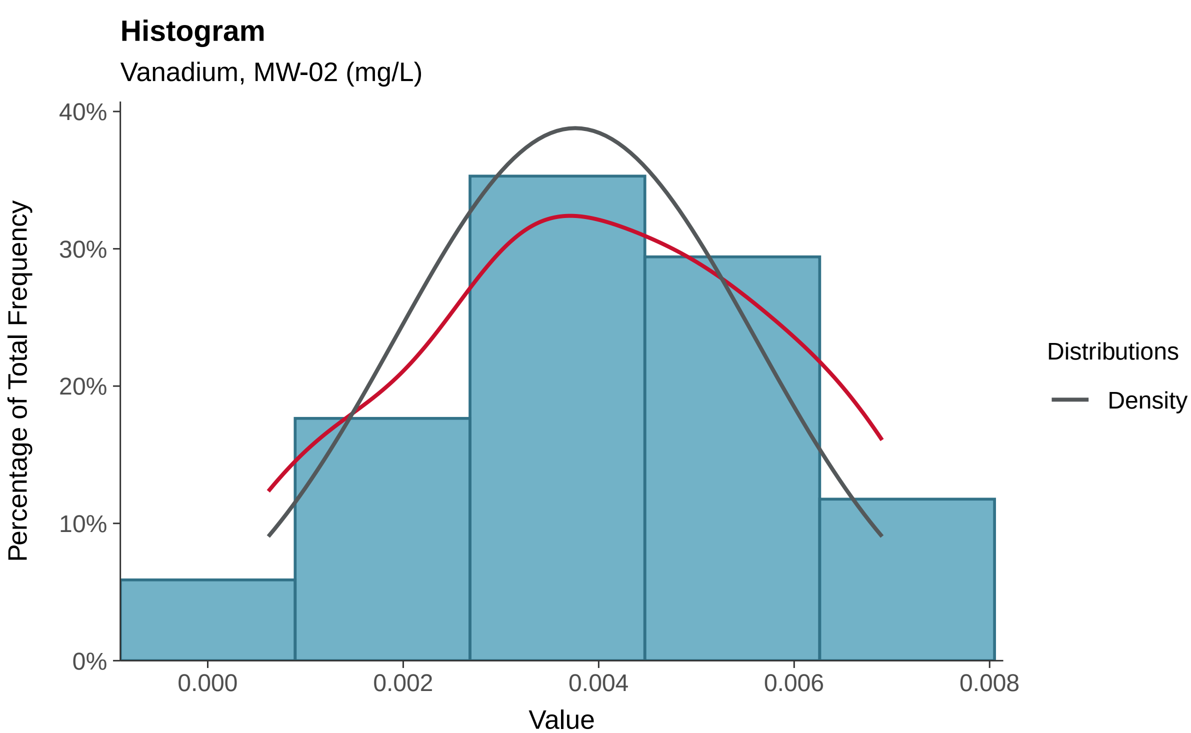

Trend Regression: Piecewise Linear-Linear
Silver, MW-02 (mg/L)
Value
0.00025
0.00020
0.00015
0.00010
0.00005
01/01/23
01/01/24
01/01/25
Date
Data Type
Non-detect


Trend Regression: Piecewise Linear-Linear-Linear
Silver, MW-02 (mg/L)
Value
0.00025
0.00020
0.00015
0.00010
0.00005
01/01/23
01/01/24
01/01/25
Date
Data Type
Non-detect

Part 115: Vanadium, MW-02

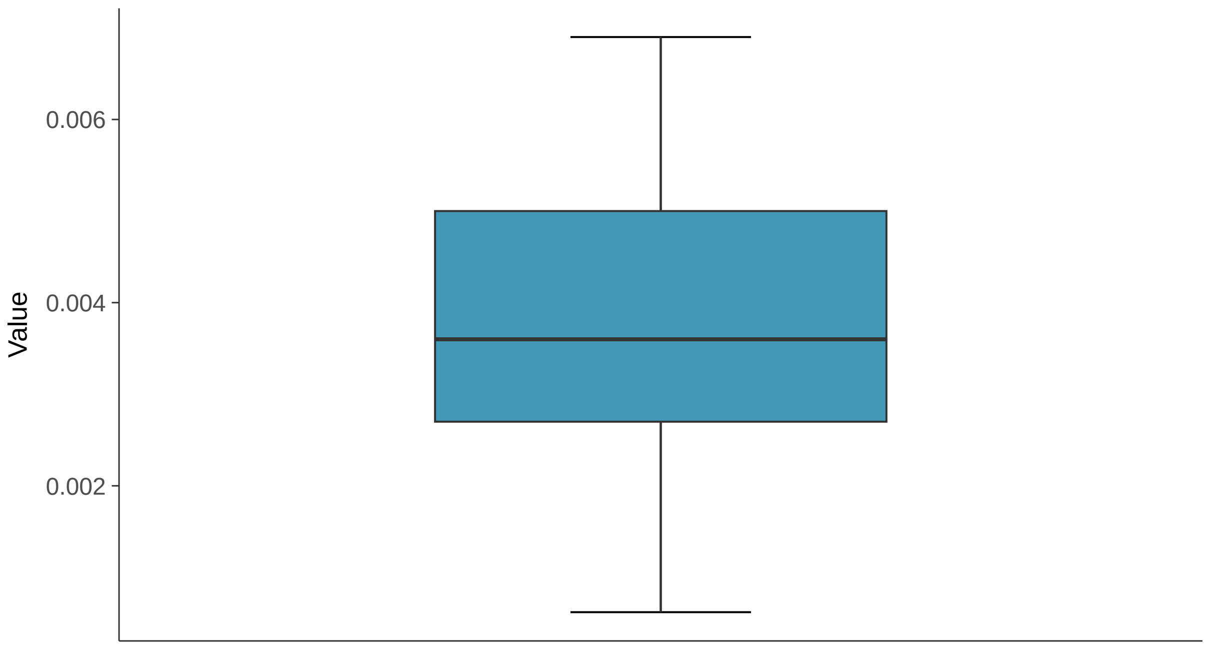
ID: 12_2_5_128





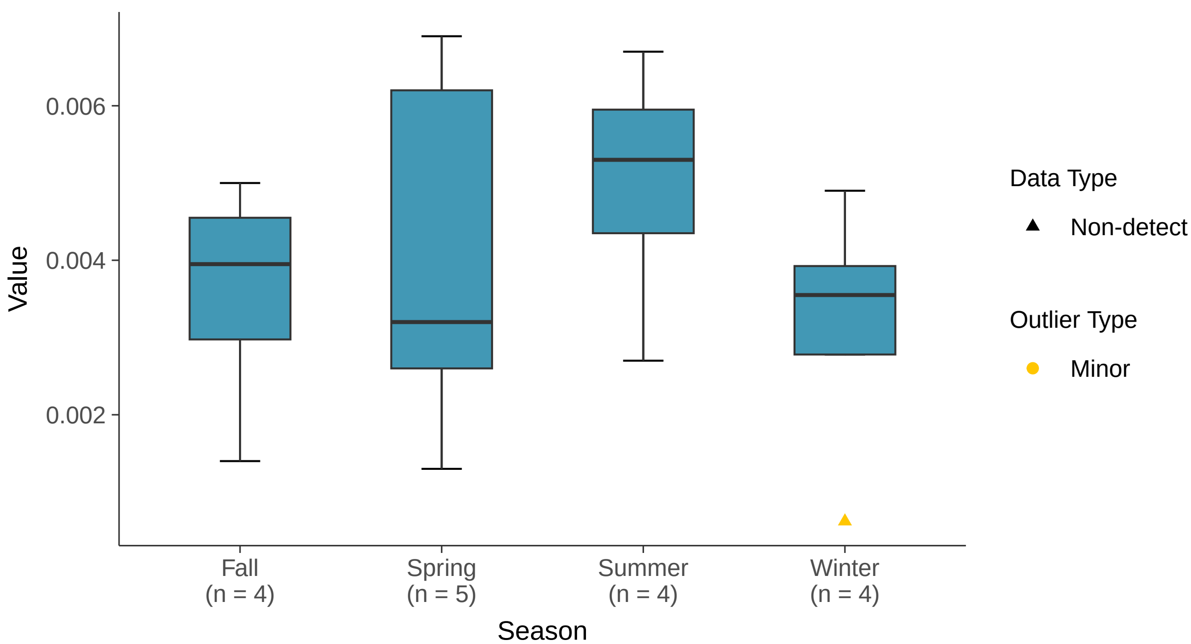
Boxplot

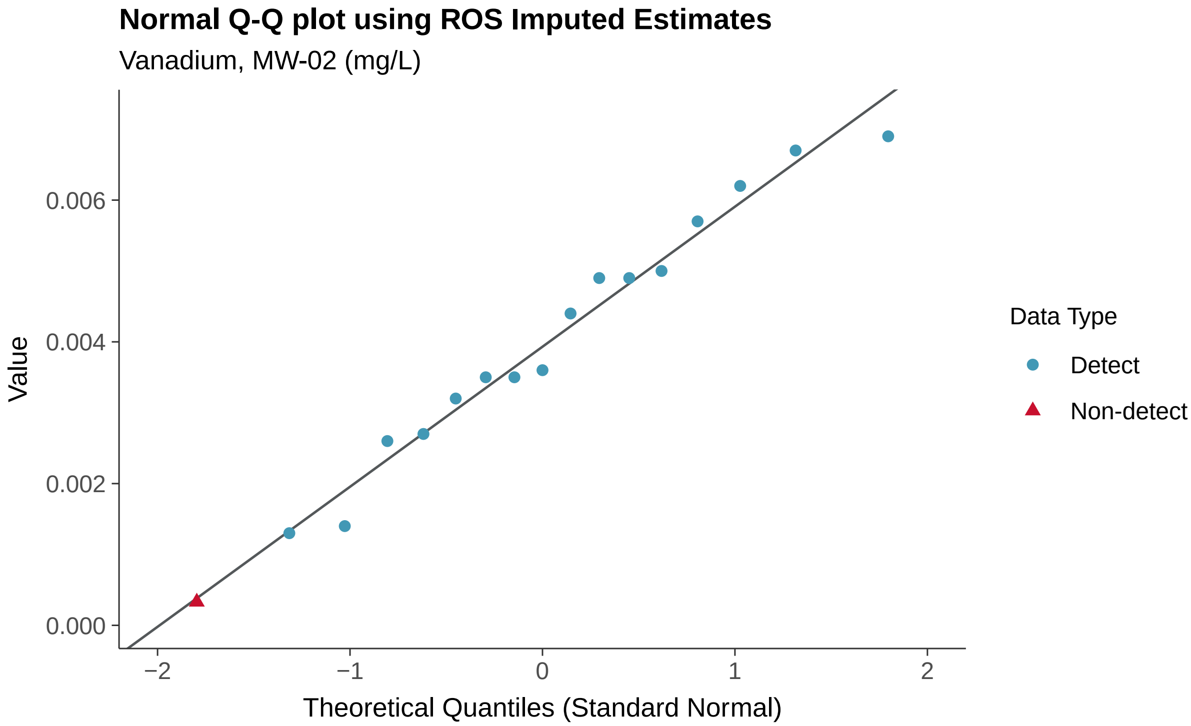
Vanadium, MW-02 (mg/L)

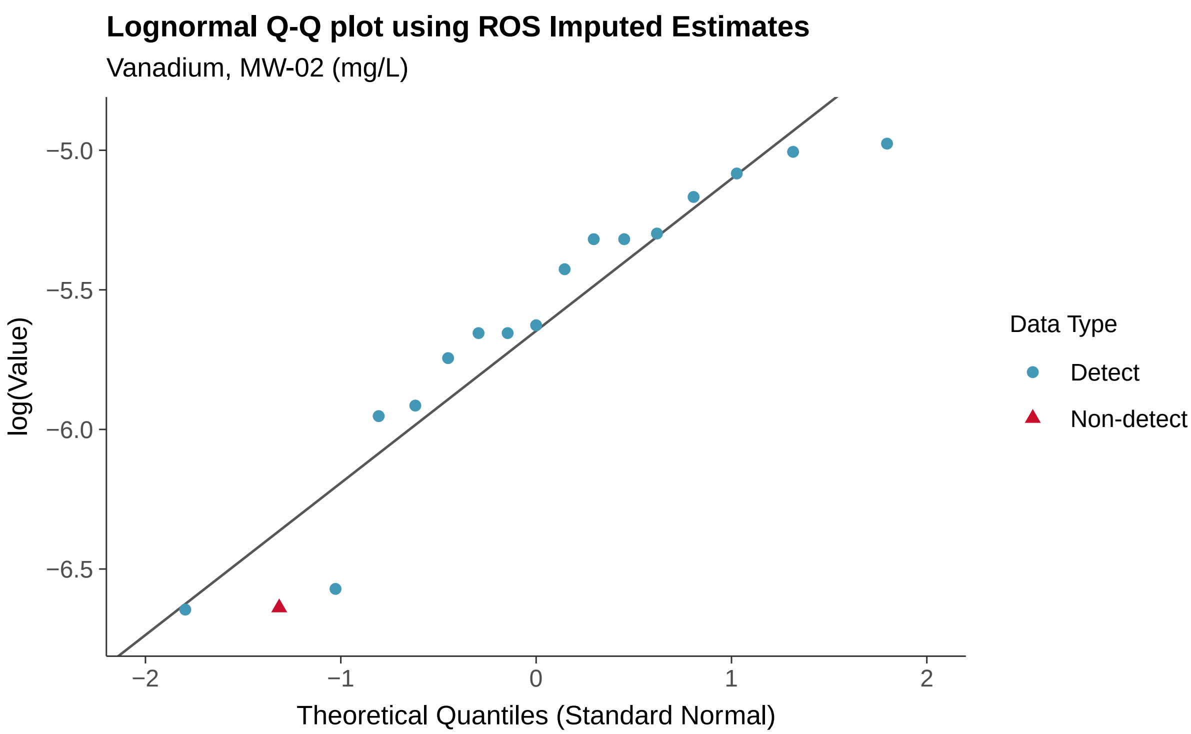


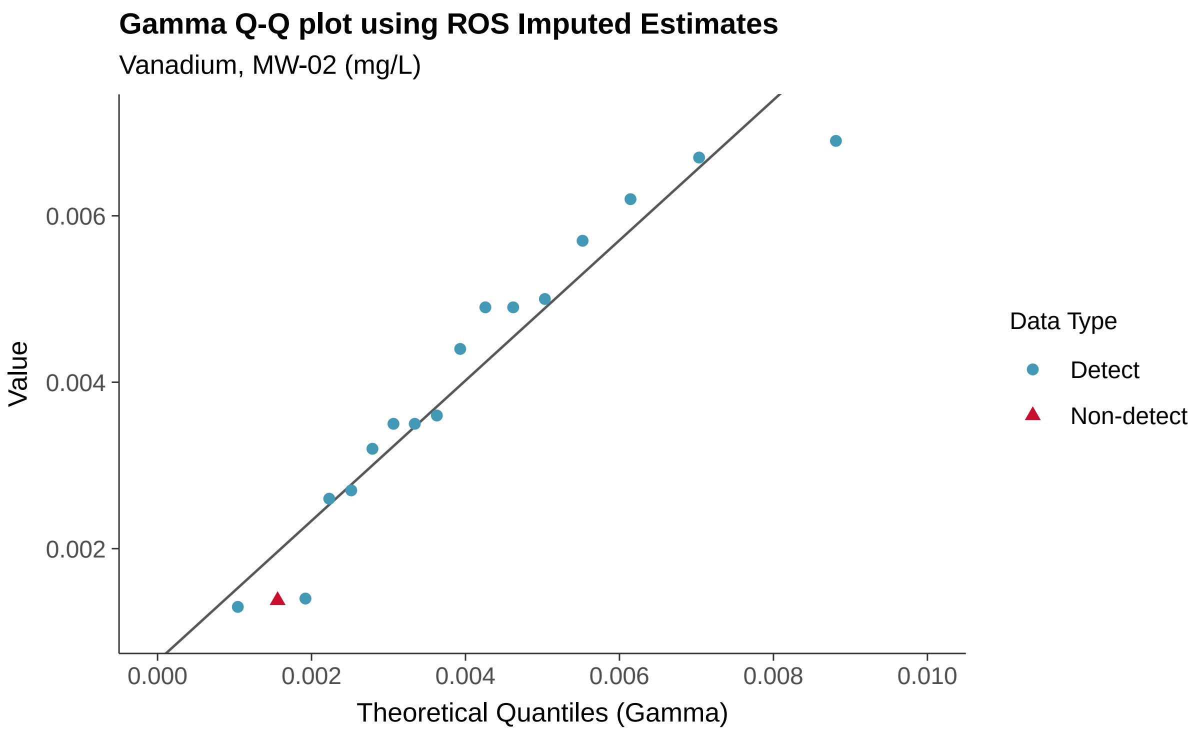
Boxplot by Season

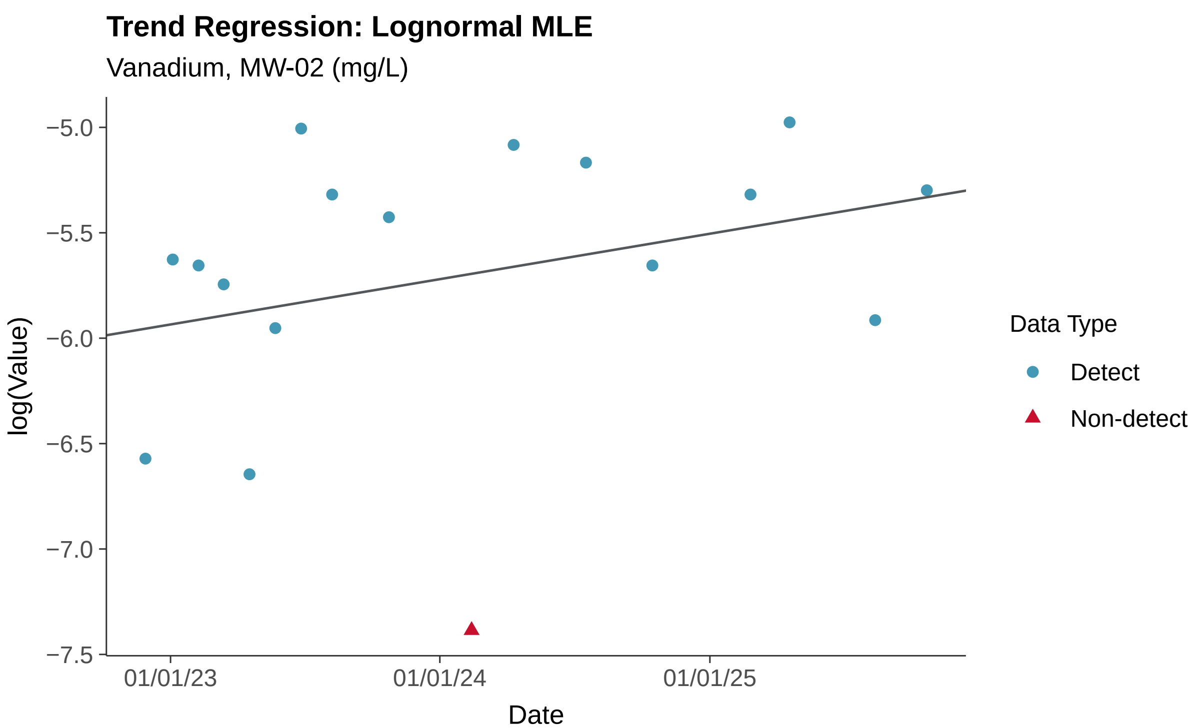
Vanadium, MW-02 (mg/L)




Normal Q-Q plot using ROS Imputed Estimates
Vanadium, MW-02 (mg/L)
Value
0.006
0.004
0.002
0.000
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

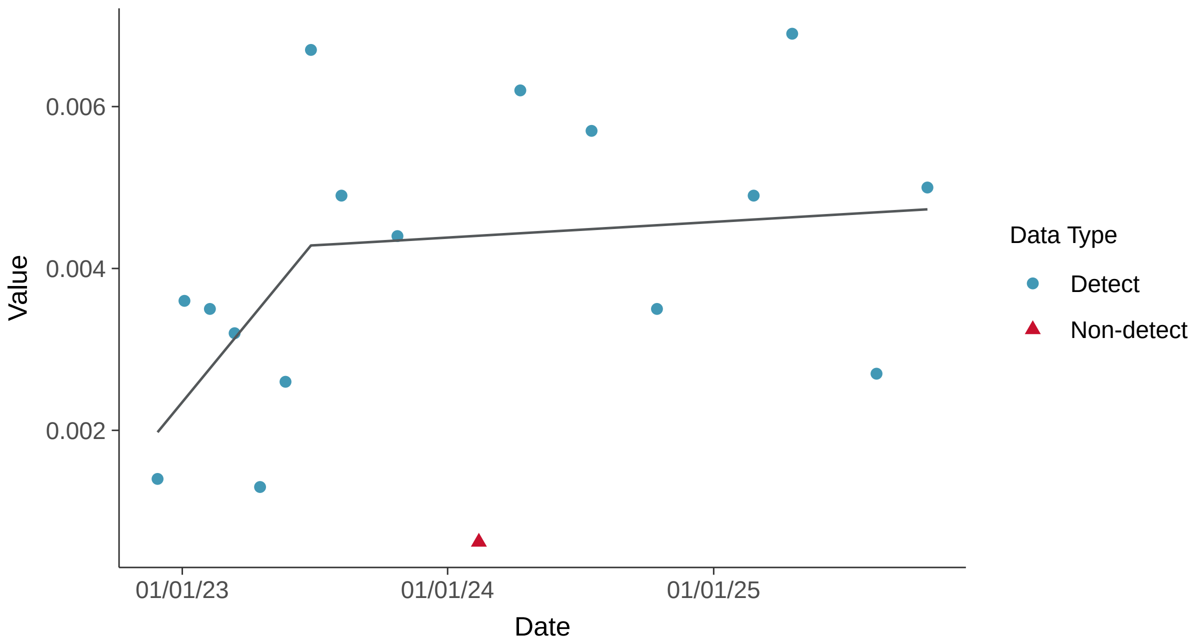

Lognormal Q-Q plot using ROS Imputed Estimates
Vanadium, MW-02 (mg/L)
log(Value)
−5.0
−5.5
−6.0
−6.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Gamma Q-Q plot using ROS Imputed Estimates
Vanadium, MW-02 (mg/L)
Value
0.006
0.004
0.002
0.000
0.002
0.004
0.006
0.008
0.010
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect


Trend Regression: Lognormal MLE
Vanadium, MW-02 (mg/L)
log(Value)
−5.0
−5.5
−6.0
−6.5
−7.0
−7.5
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

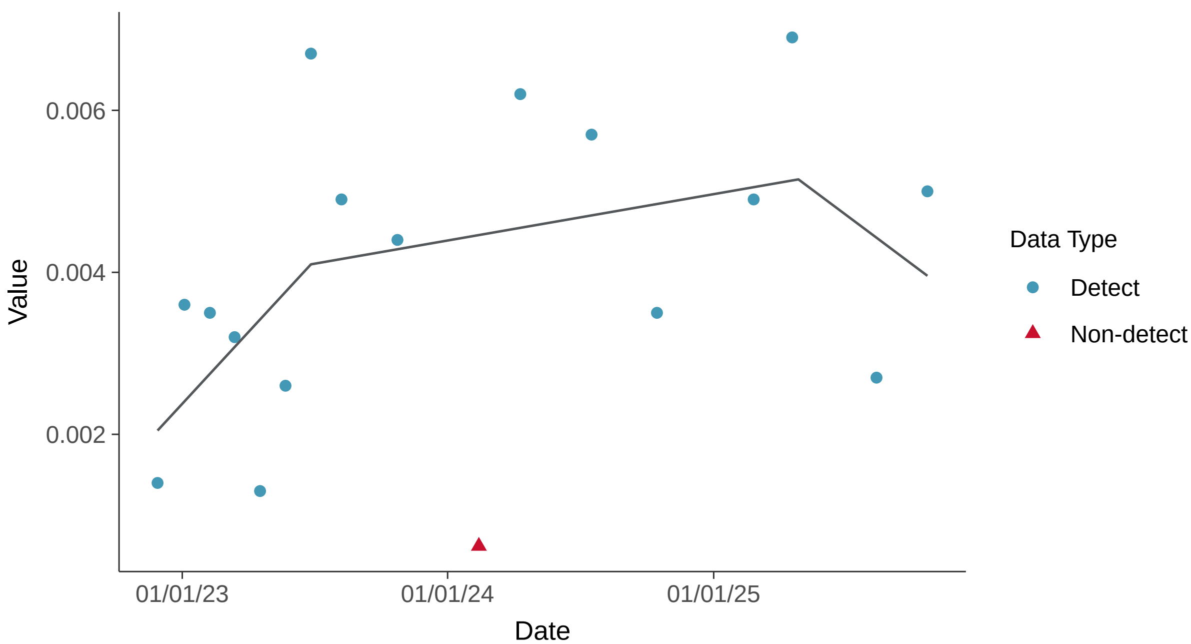
Trend Regression: Piecewise Linear-Linear

Vanadium, MW-02 (mg/L)



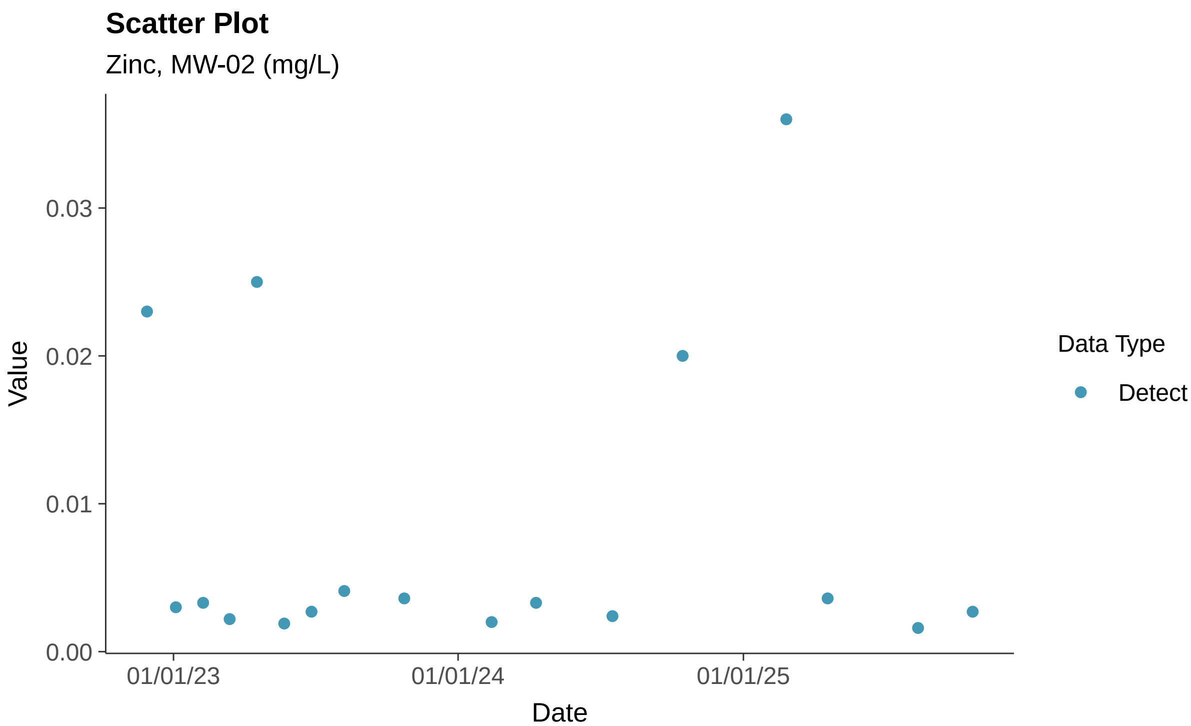
Trend Regression: Piecewise Linear-Linear-Linear

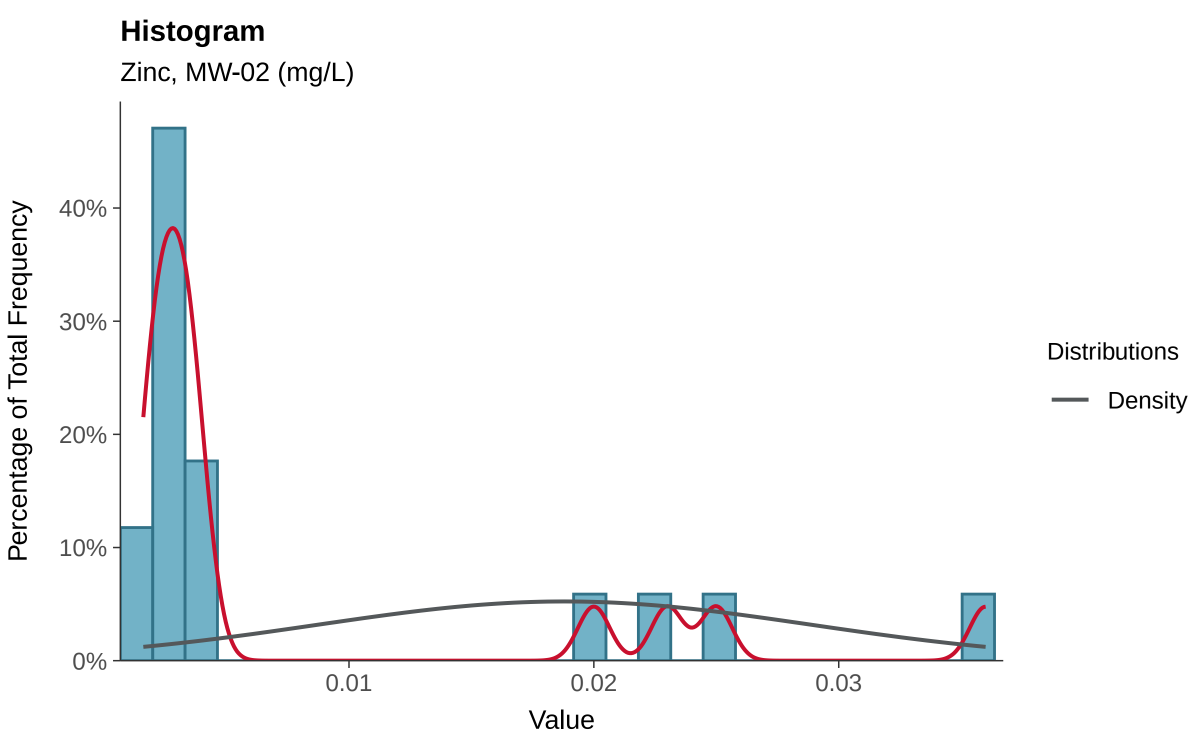
Vanadium, MW-02 (mg/L)



Part 115: Zinc, MW-02

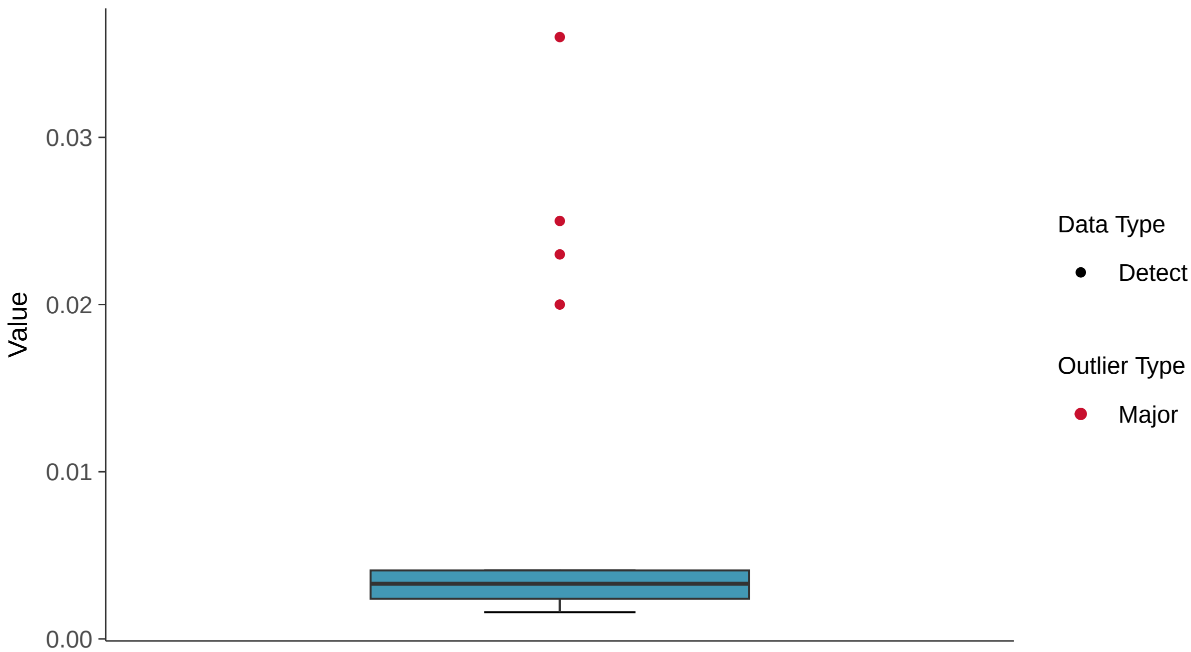
ID: 12_2_5_129





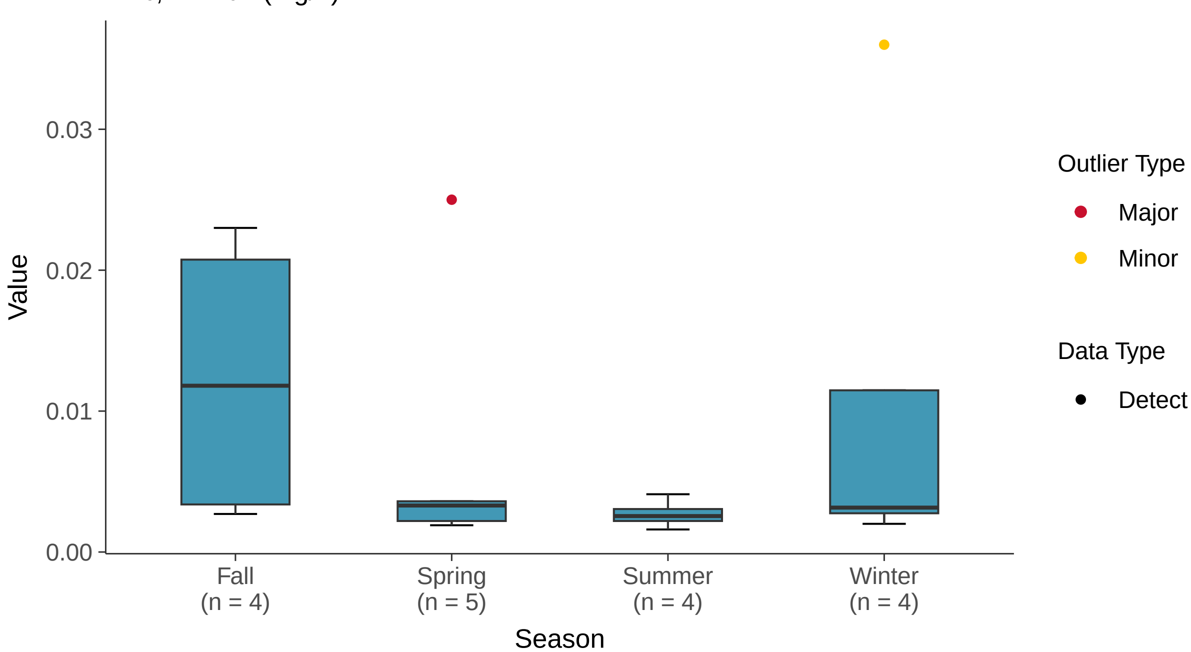
Boxplot

Zinc, MW-02 (mg/L)



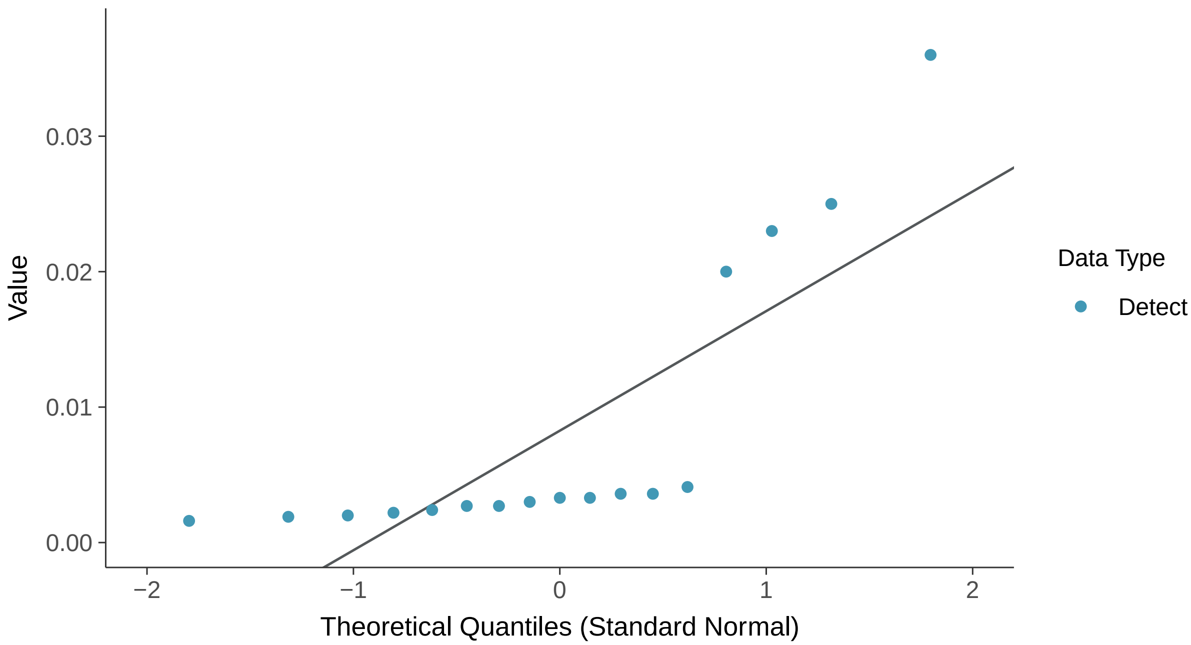
Boxplot by Season

Zinc, MW-02 (mg/L)



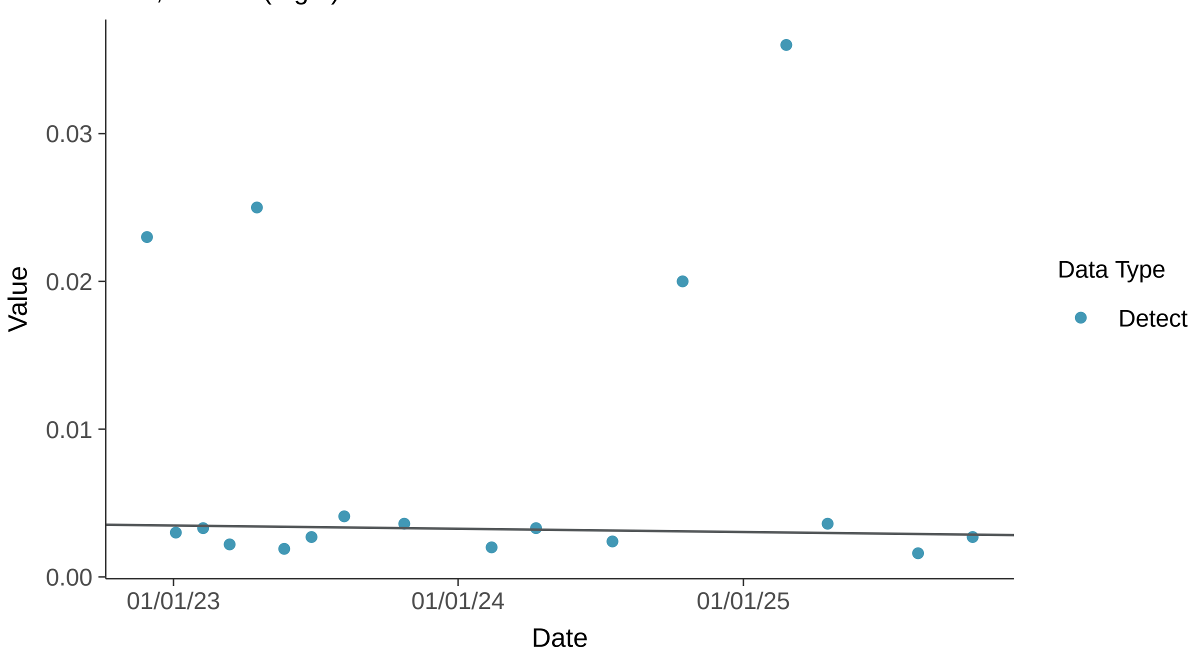
Normal Q-Q plot

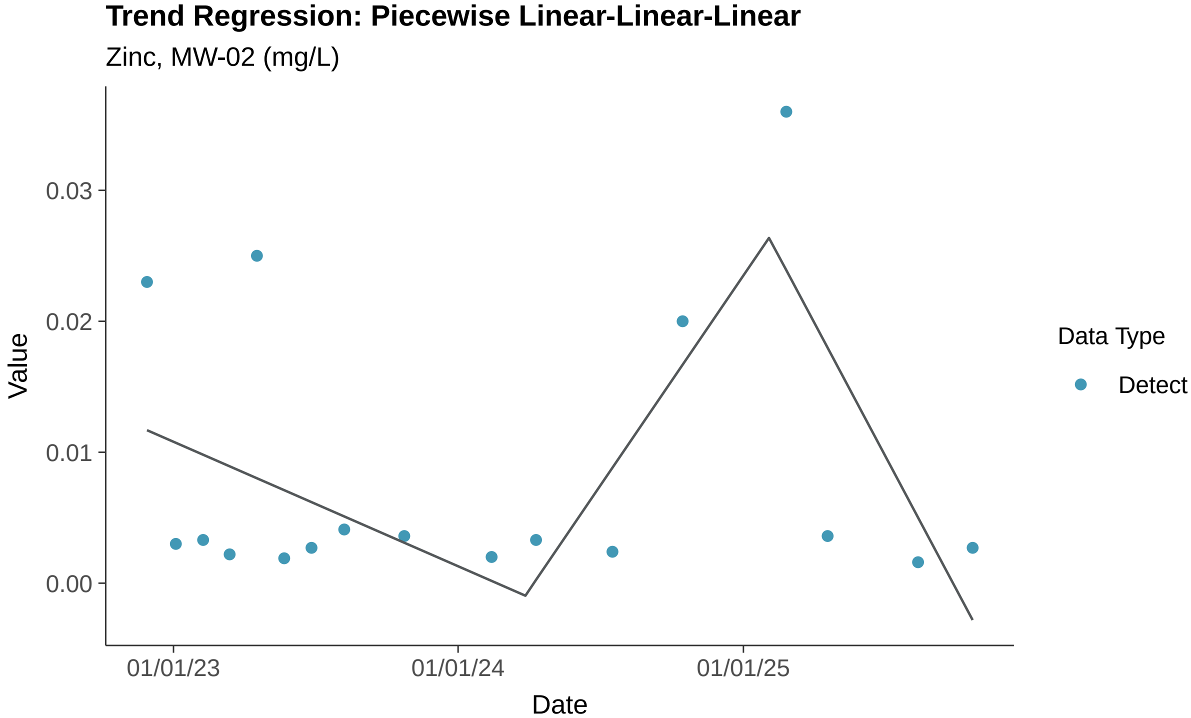
Zinc, MW-02 (mg/L)



Trend Regression: Mann-Kendall/Theil-Sen Estimate

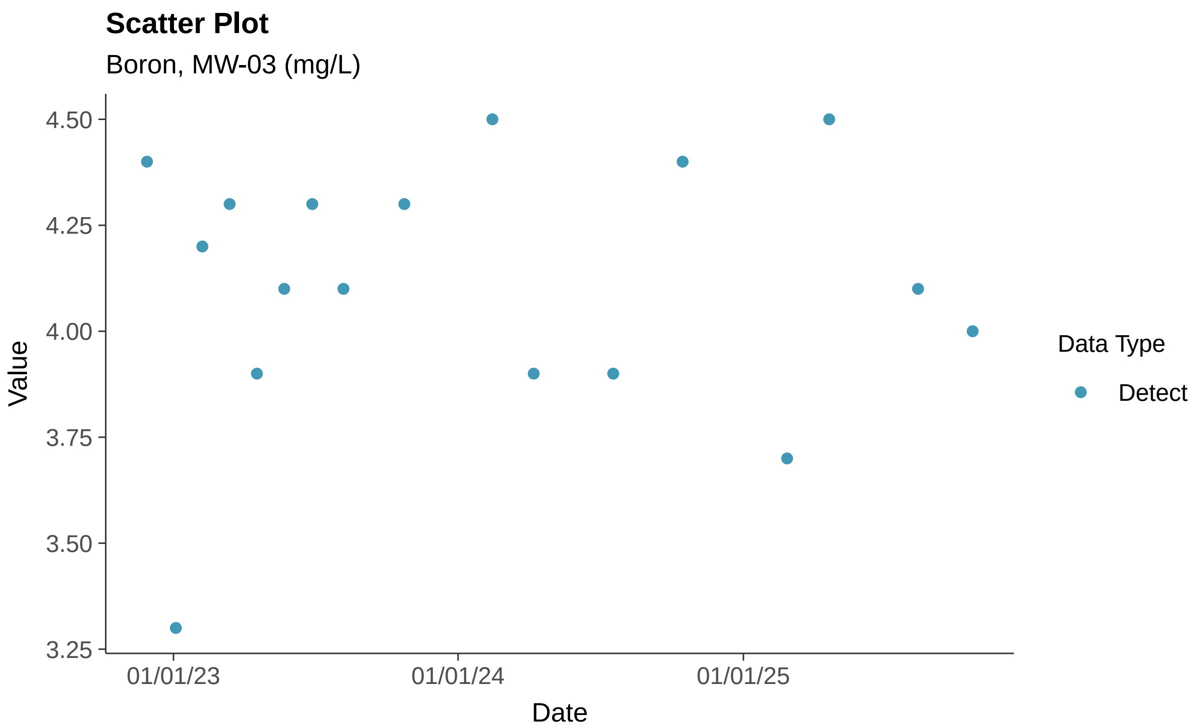
Zinc, MW-02 (mg/L)

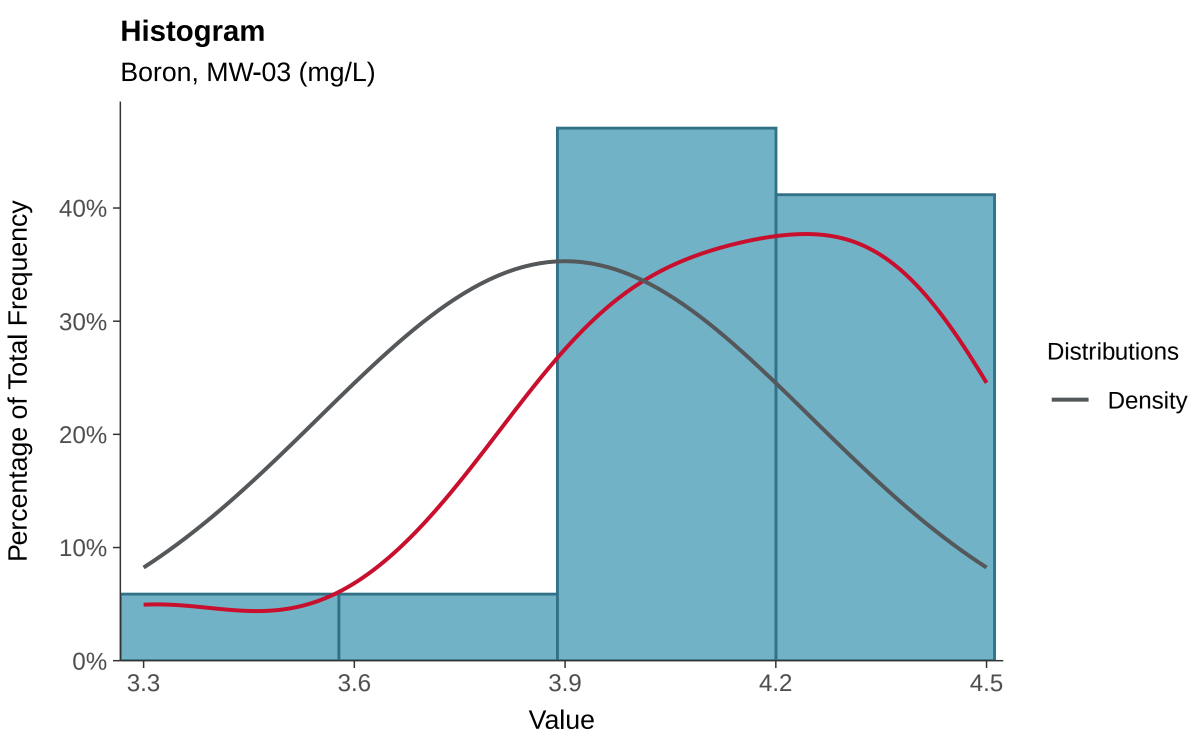



Trend Regression: Piecewise Linear-Linear-Linear
Zinc, MW-02 (mg/L)
Value
0.03
0.02
0.01
0.00
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Appendix III: Boron, MW-03

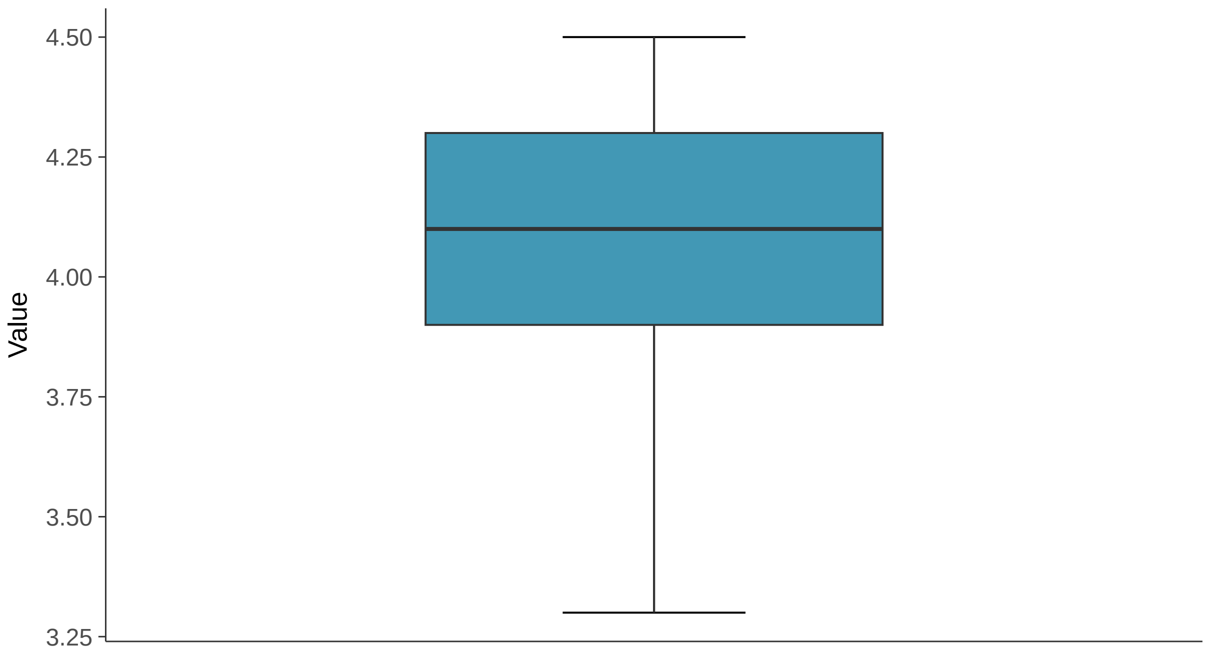
ID: 13_2_3_105





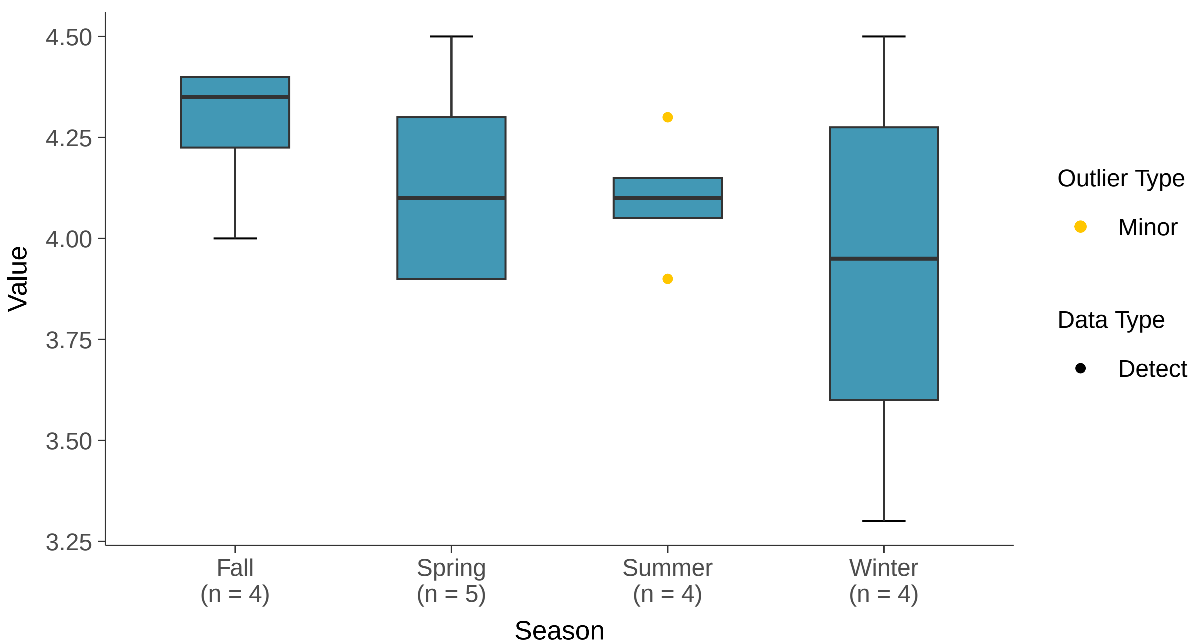
Boxplot

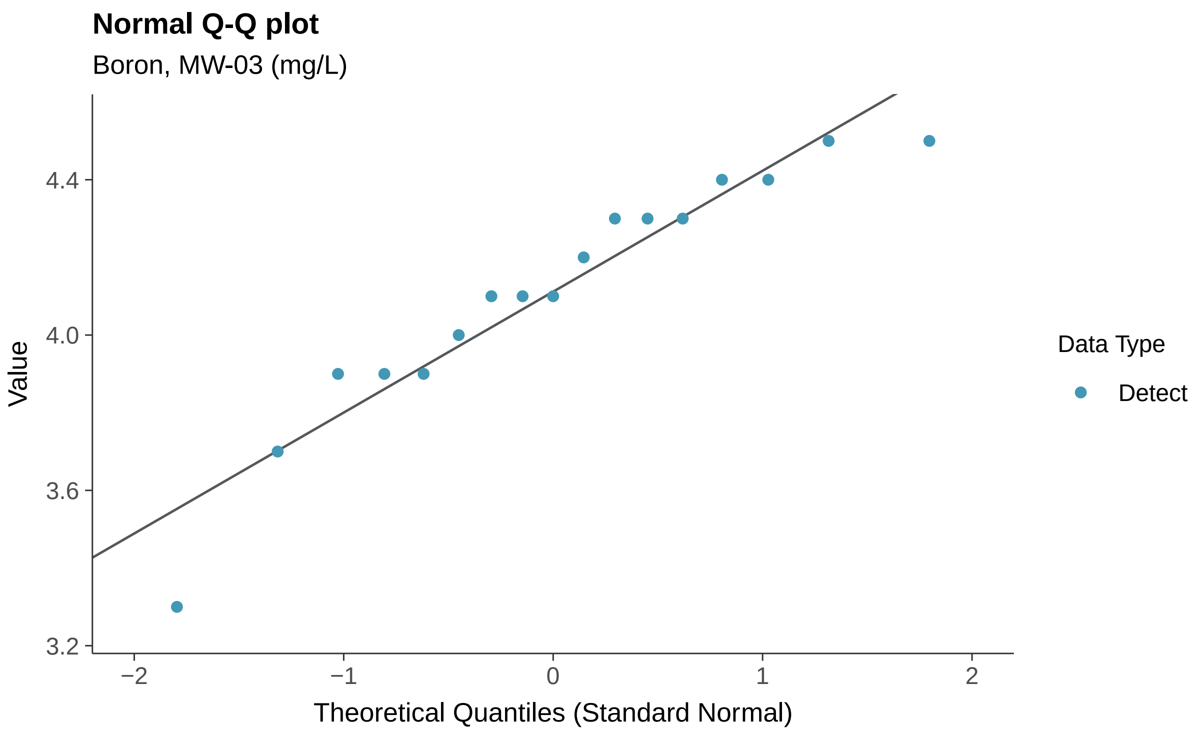
Boron, MW-03 (mg/L)

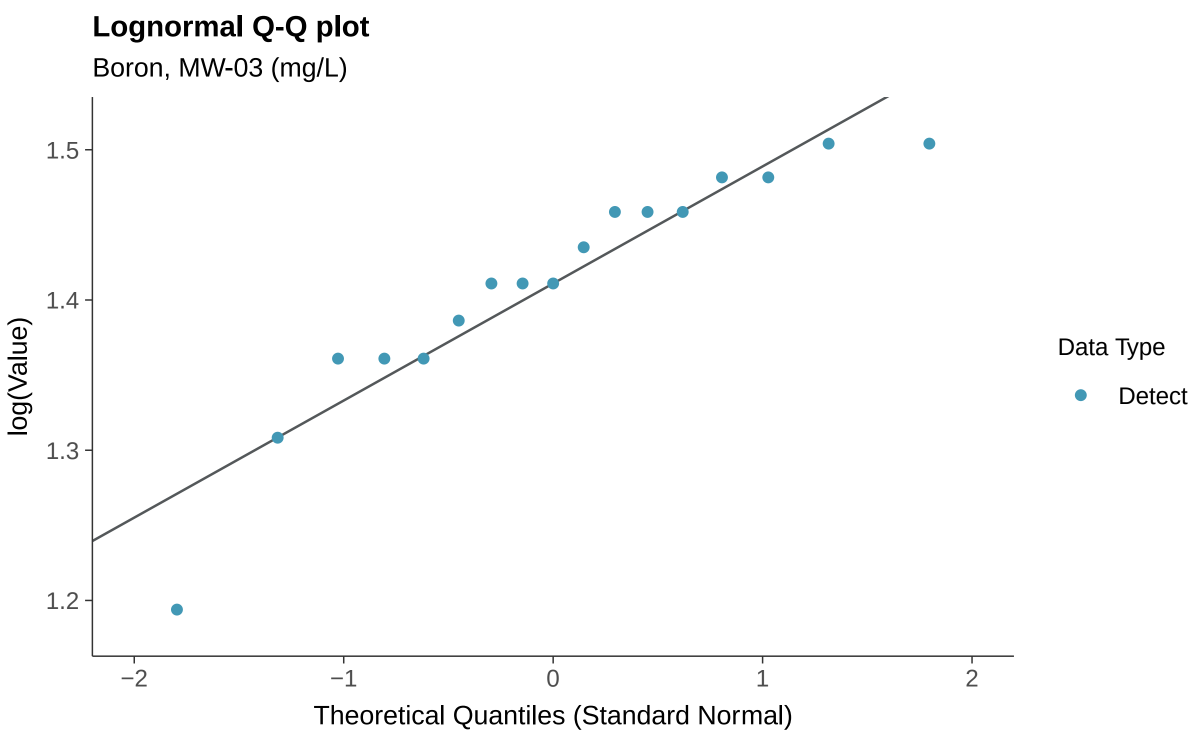


Boxplot by Season

Boron, MW-03 (mg/L)

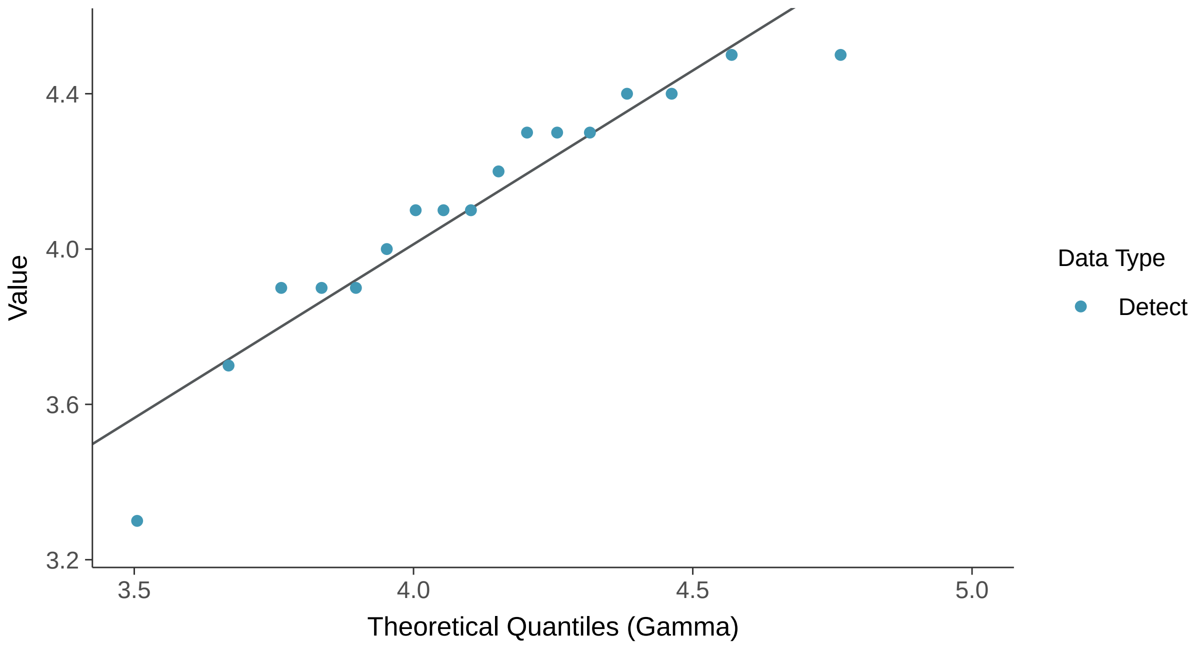



Normal Q-Q plot
Boron, MW-03 (mg/L)
Value
4.4
4.0
3.6
3.2
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Boron, MW-03 (mg/L)
log(Value)
1.5
1.4
1.3
1.2
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

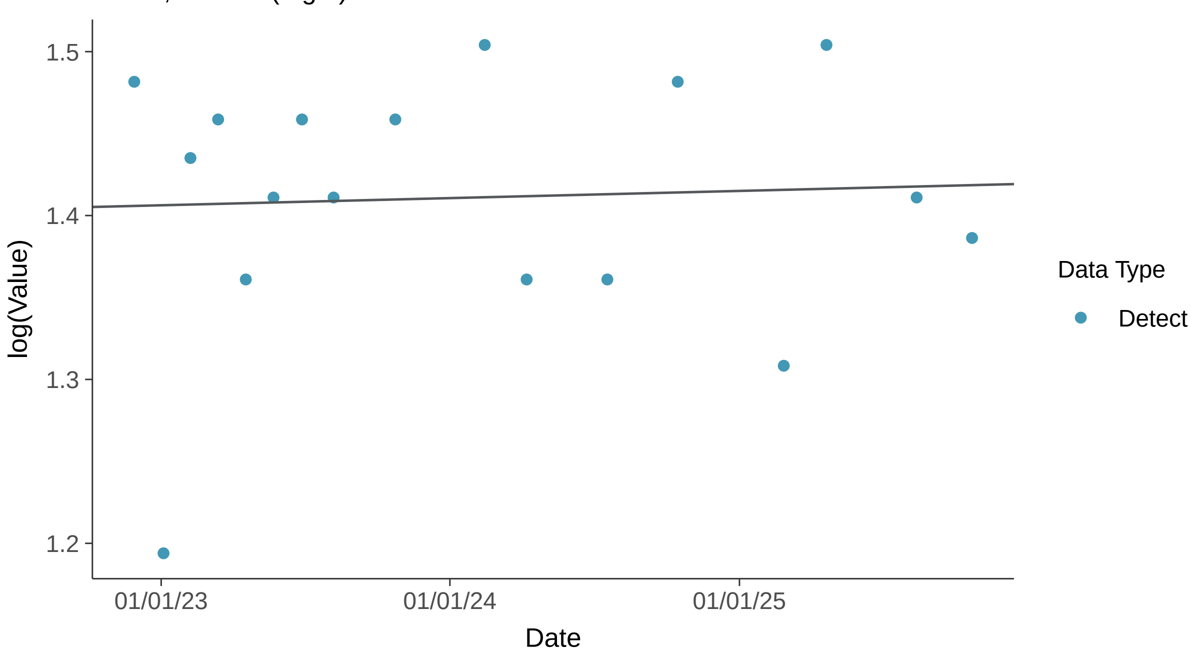
Gamma Q-Q plot

Boron, MW-03 (mg/L)



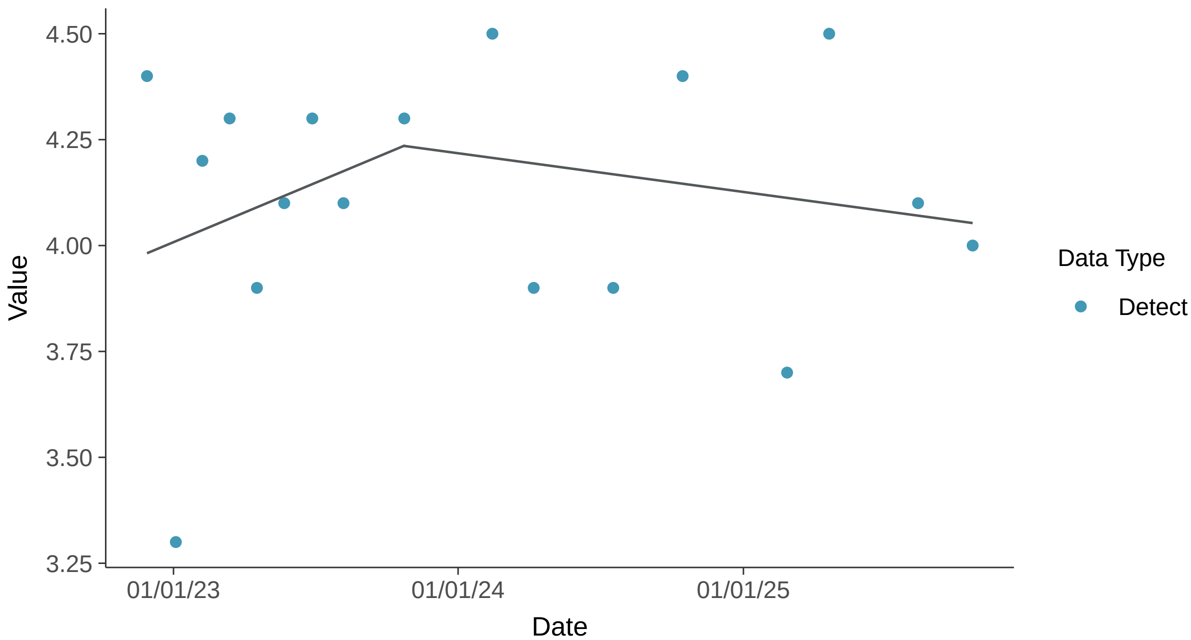
Trend Regression: Lognormal MLE

Boron, MW-03 (mg/L)



Trend Regression: Piecewise Linear-Linear

Boron, MW-03 (mg/L)

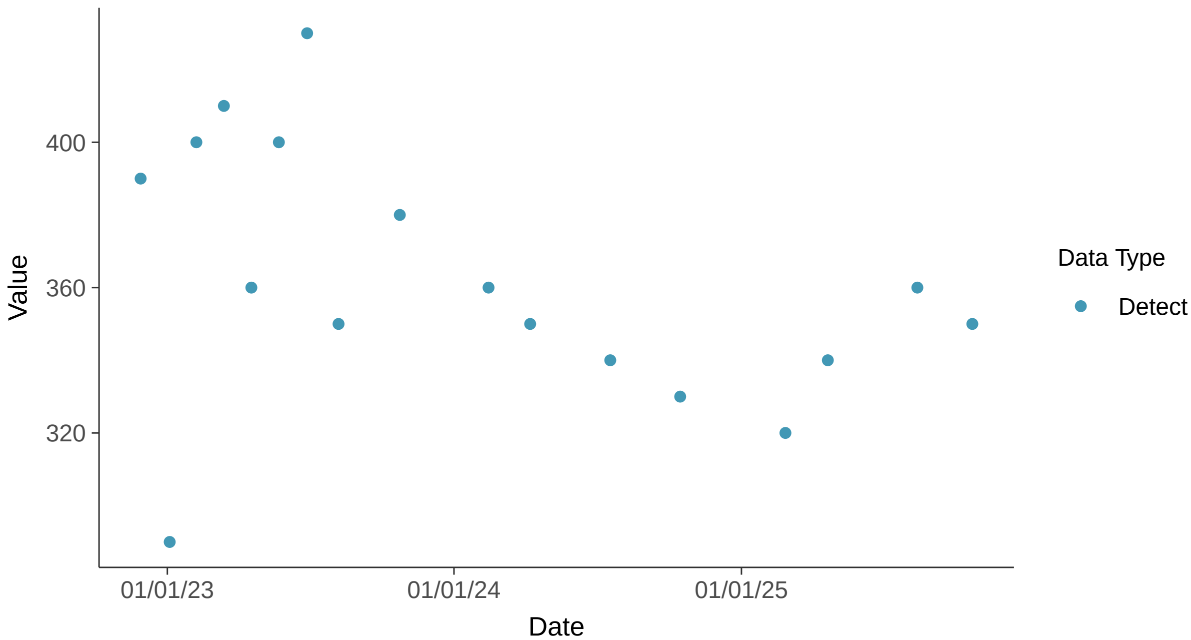


Appendix III: Calcium, MW-03

ID: 13_2_3_107

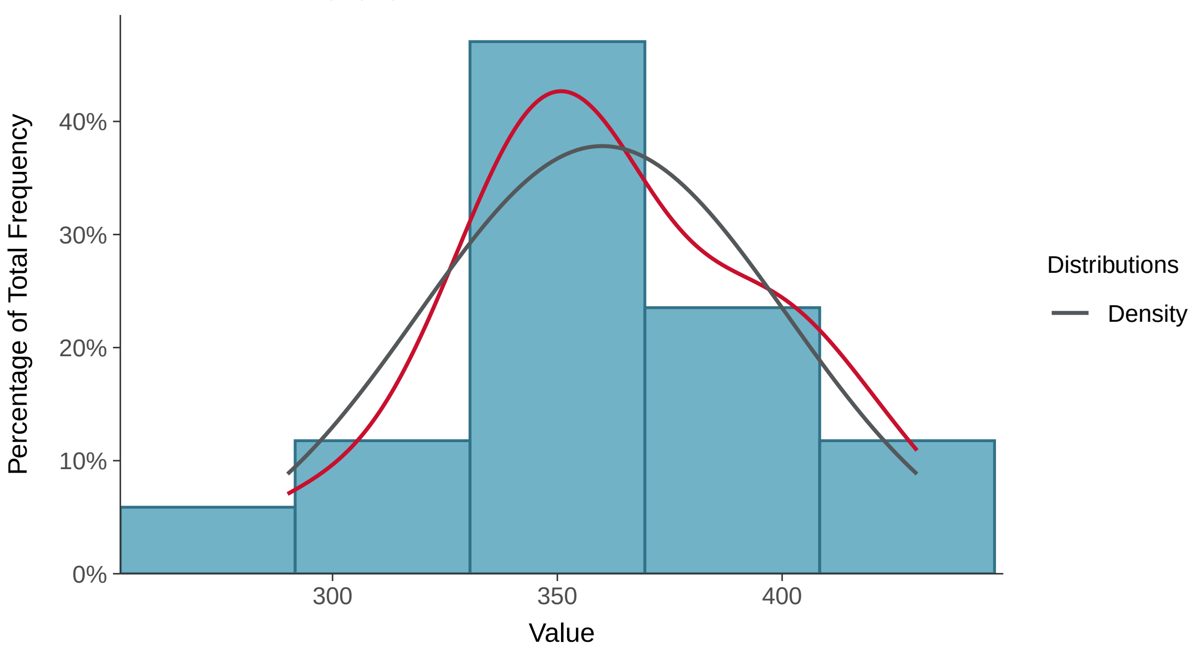
Scatter Plot

Calcium, MW-03 (mg/L)



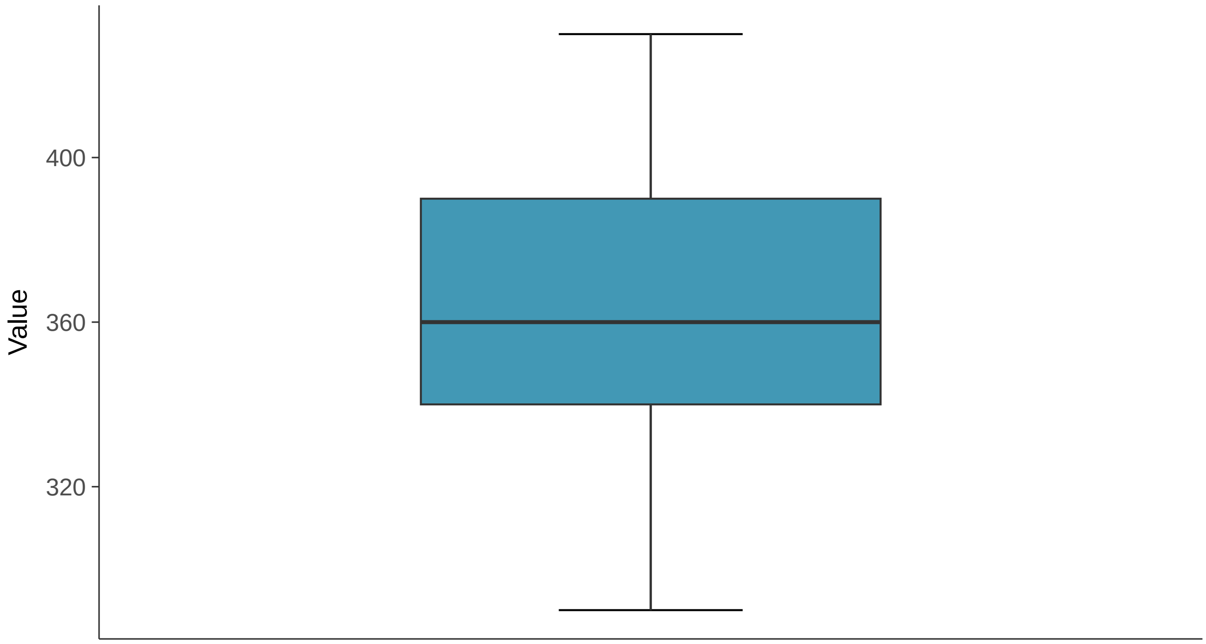
Histogram

Calcium, MW-03 (mg/L)



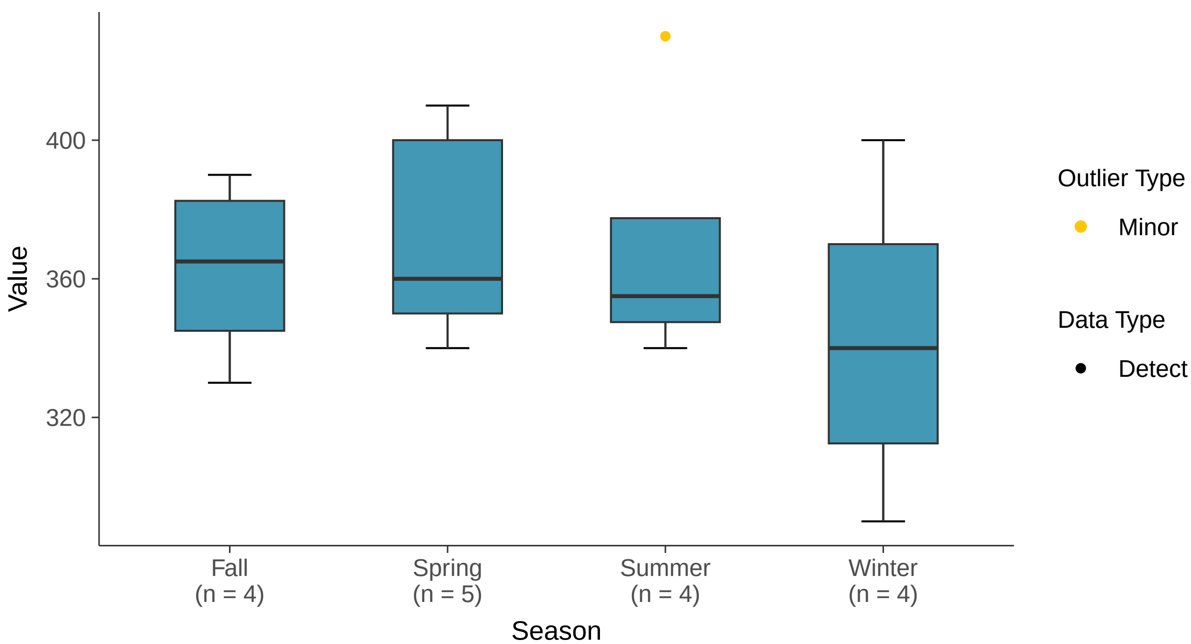
Boxplot

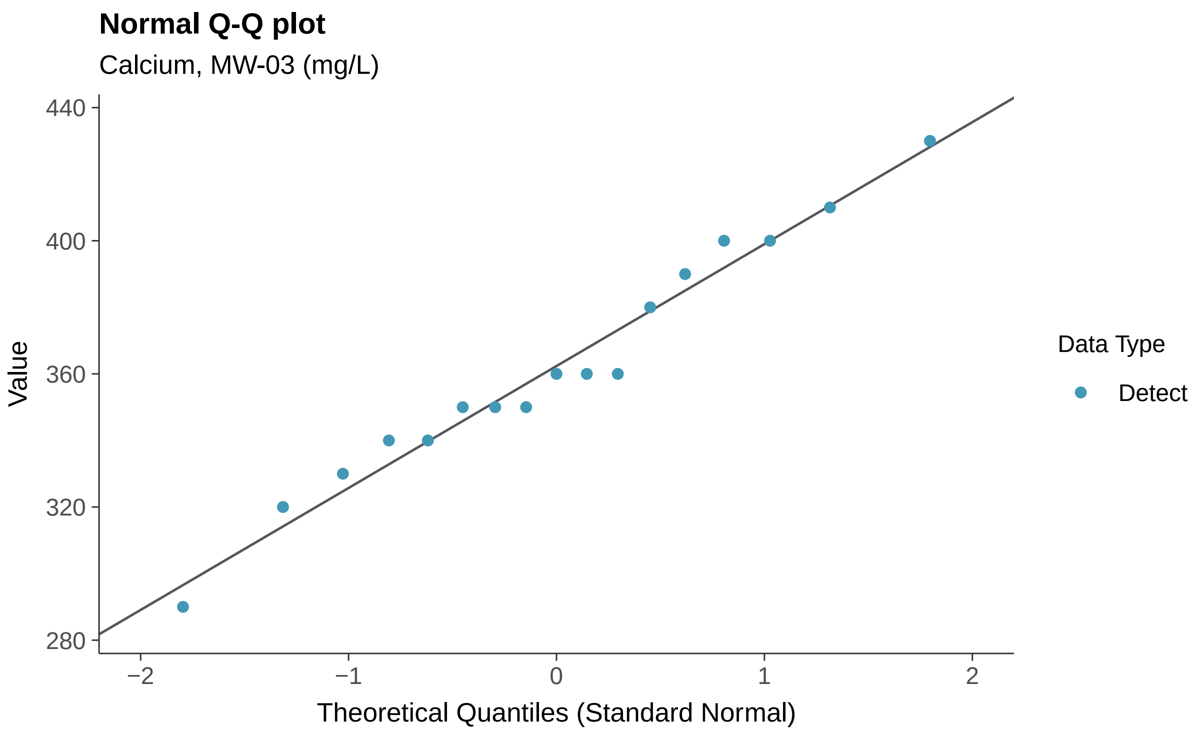
Calcium, MW-03 (mg/L)

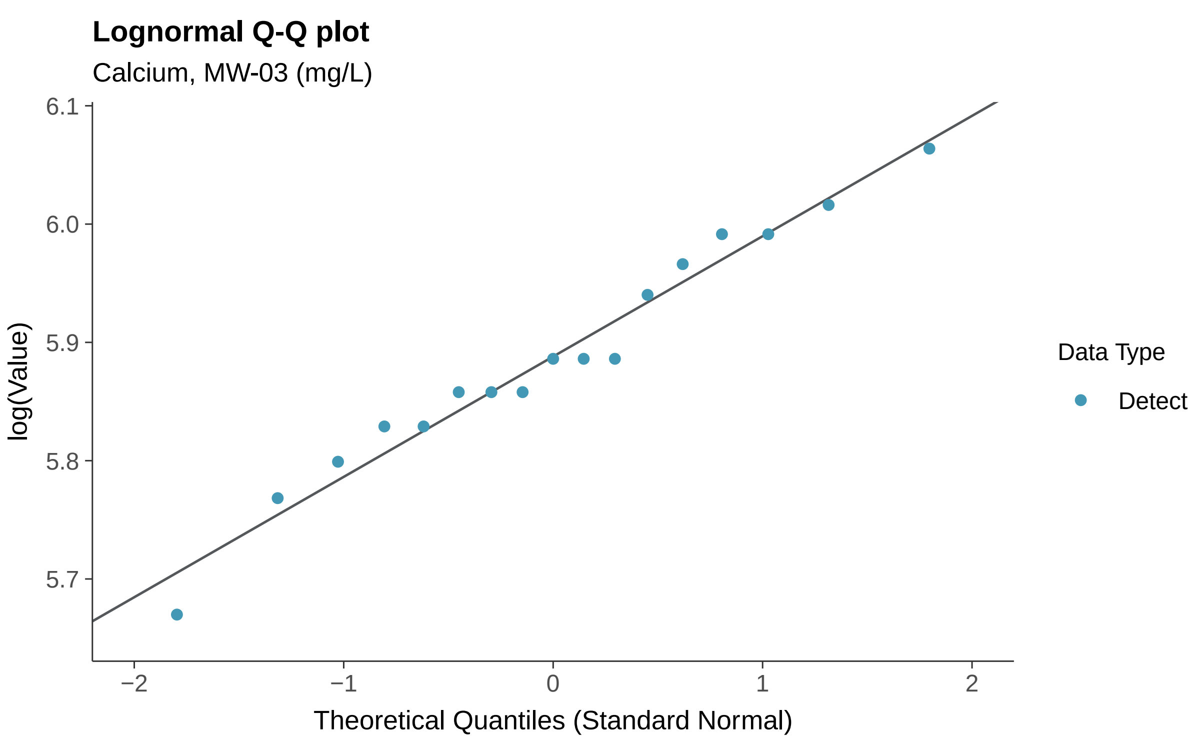


Boxplot by Season

Calcium, MW-03 (mg/L)

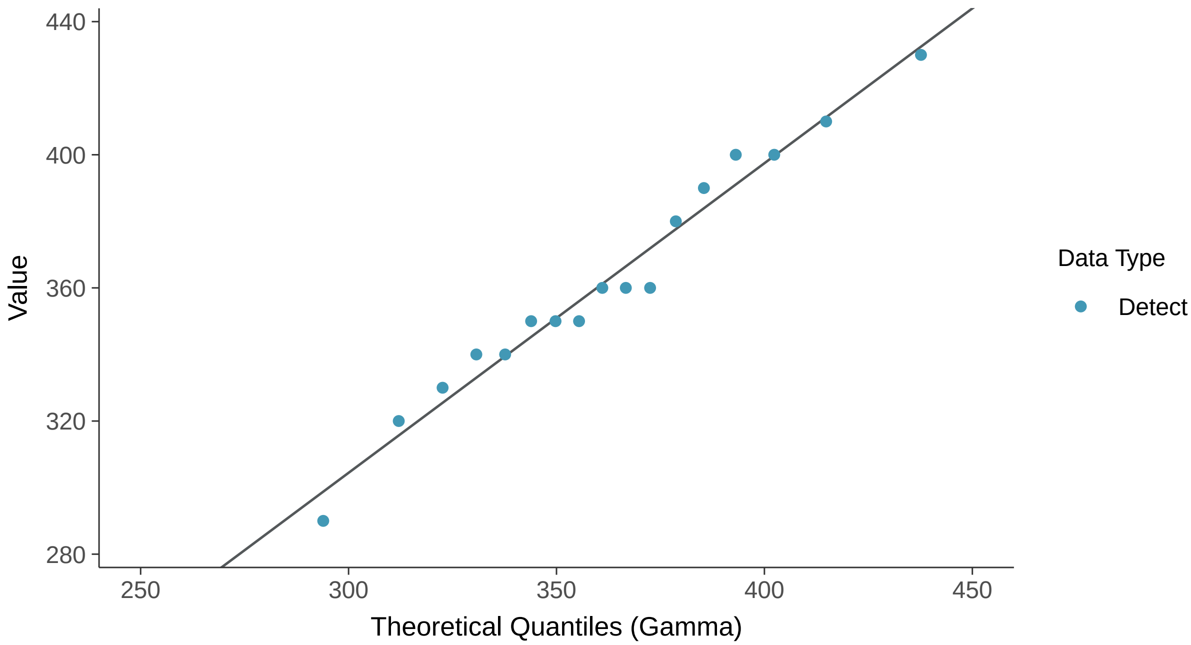



Normal Q-Q plot
Calcium, MW-03 (mg/L)
Value
440
400
360
320
280
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Calcium, MW-03 (mg/L)
log(Value)
6.1
6.0
5.9
5.8
5.7
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

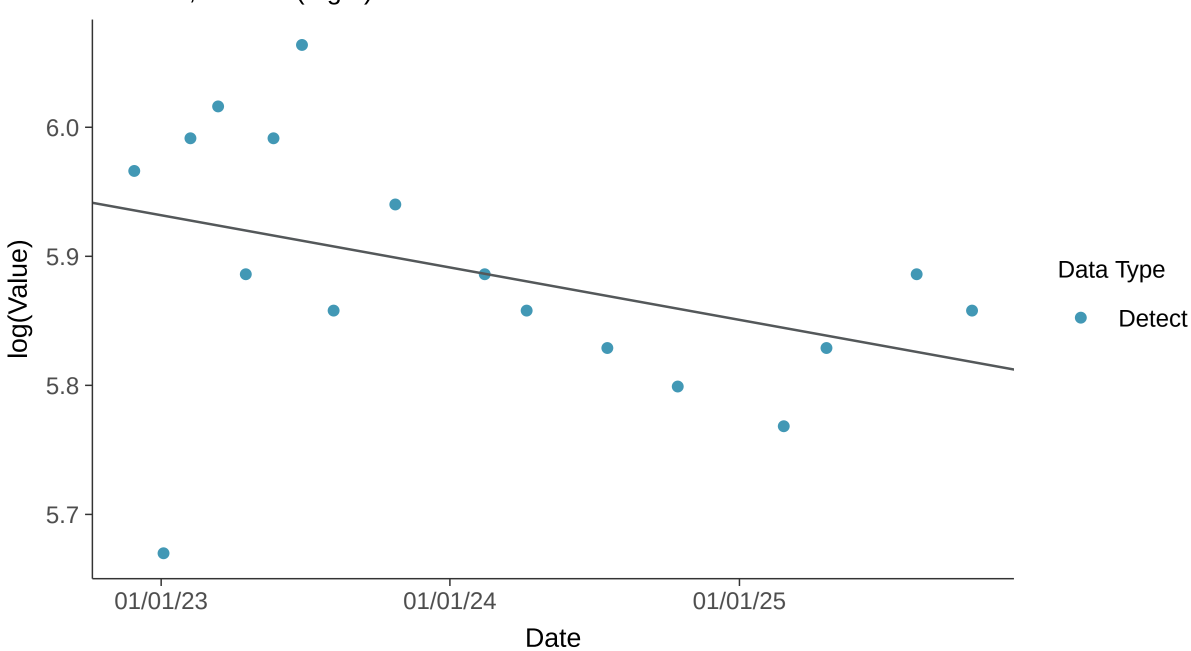
Gamma Q-Q plot

Calcium, MW-03 (mg/L)



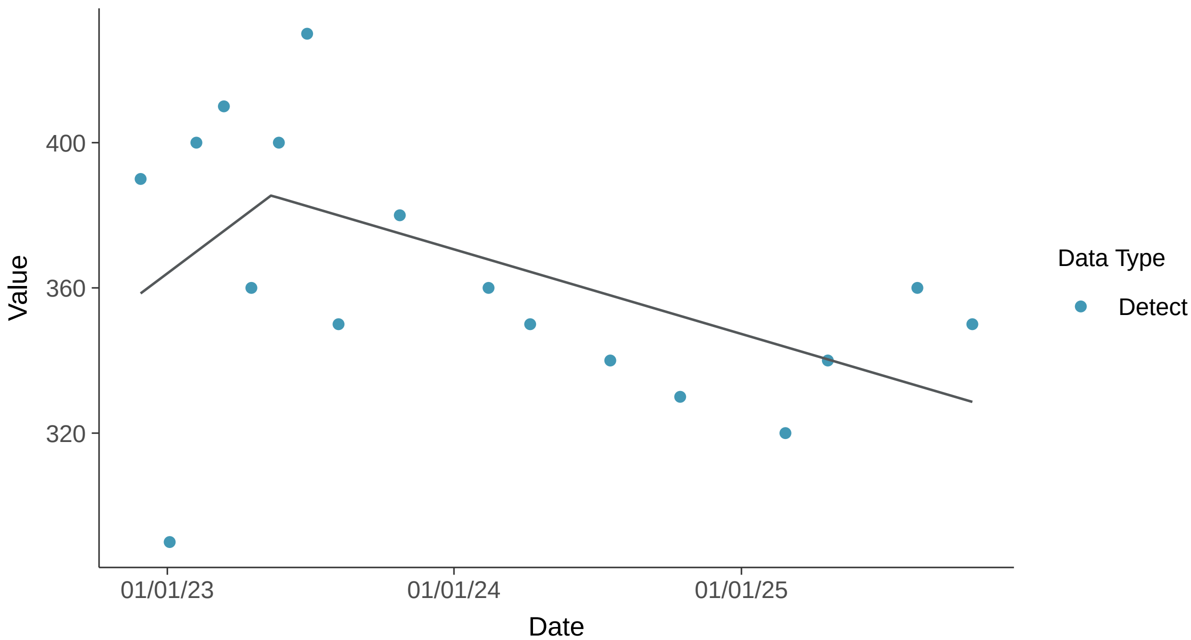
Trend Regression: Lognormal MLE

Calcium, MW-03 (mg/L)



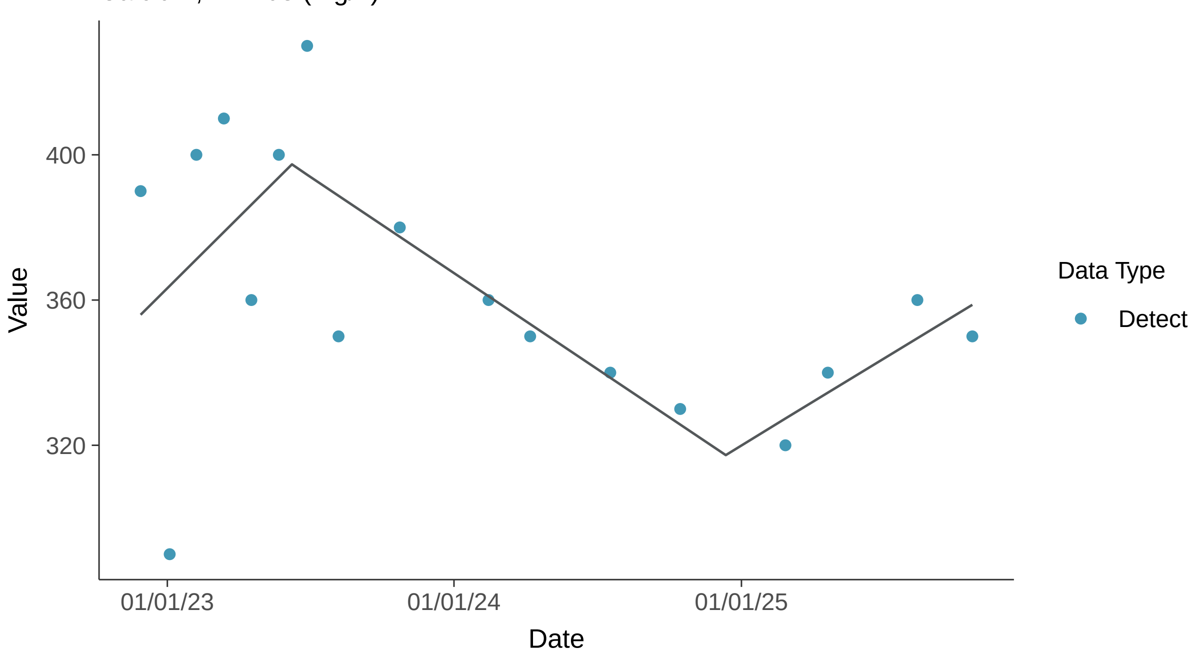
Trend Regression: Piecewise Linear-Linear

Calcium, MW-03 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Calcium, MW-03 (mg/L)

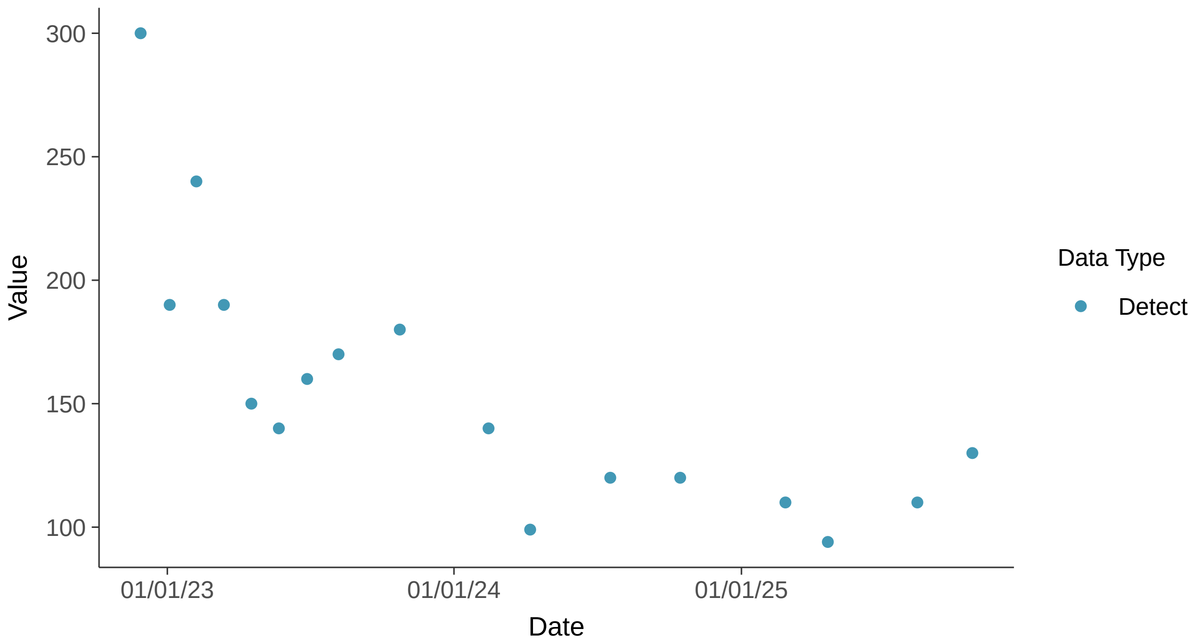


Appendix III: Chloride (as Cl), MW-03

ID: 13_2_3_108

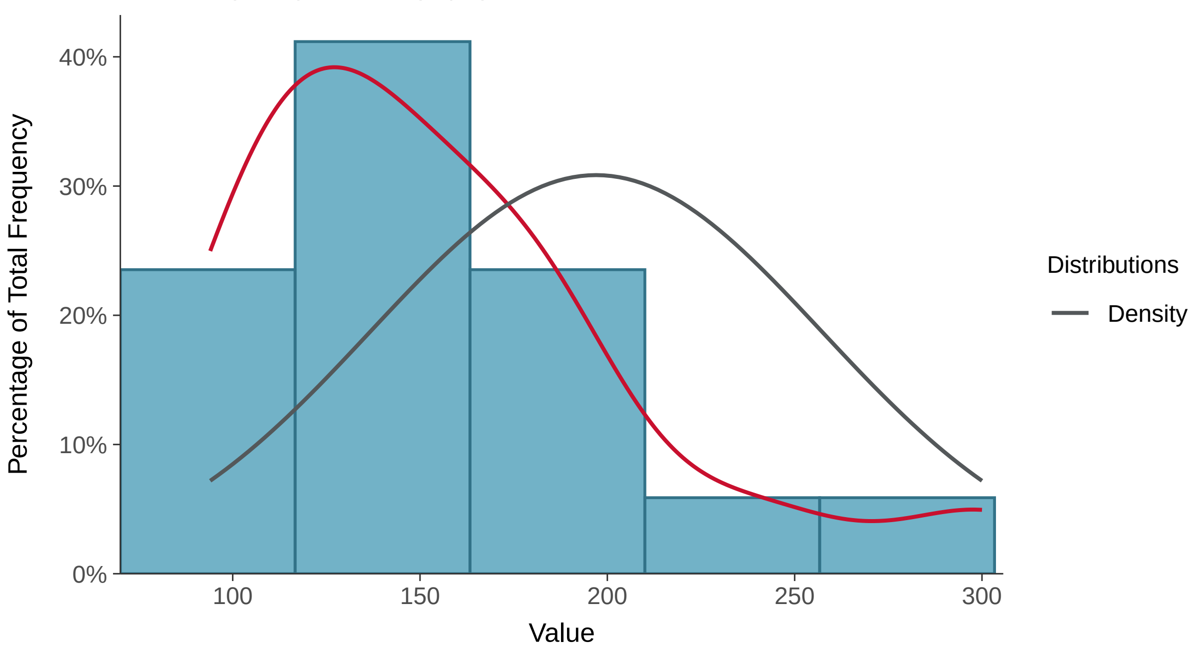
Scatter Plot

Chloride (as Cl), MW-03 (mg/L)



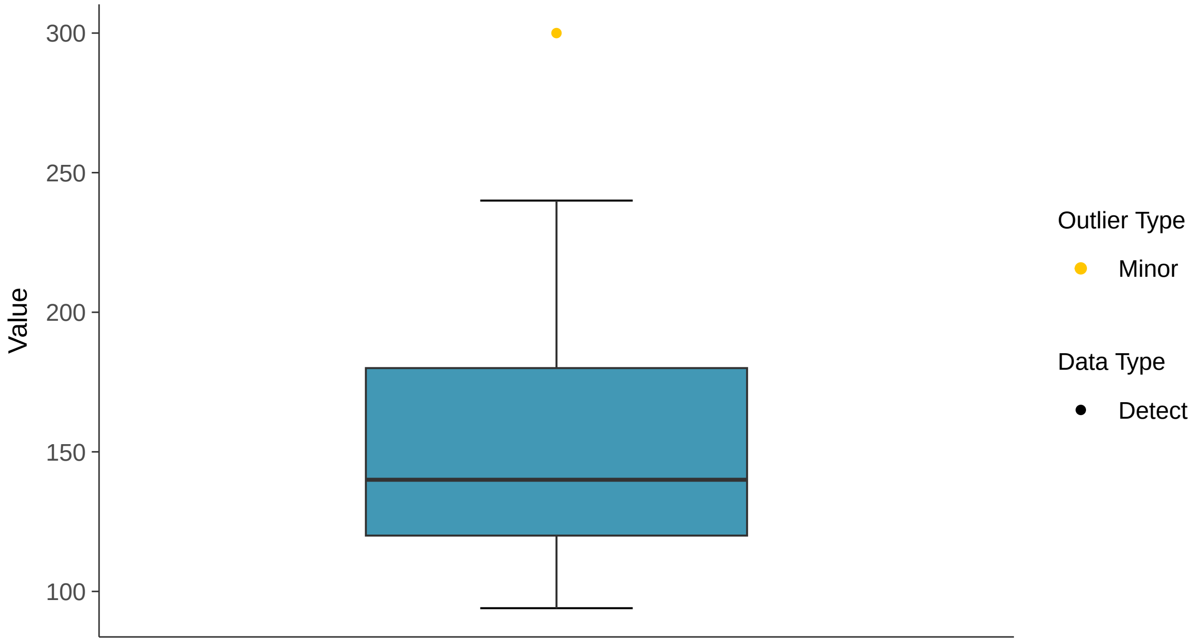
Histogram

Chloride (as Cl), MW-03 (mg/L)



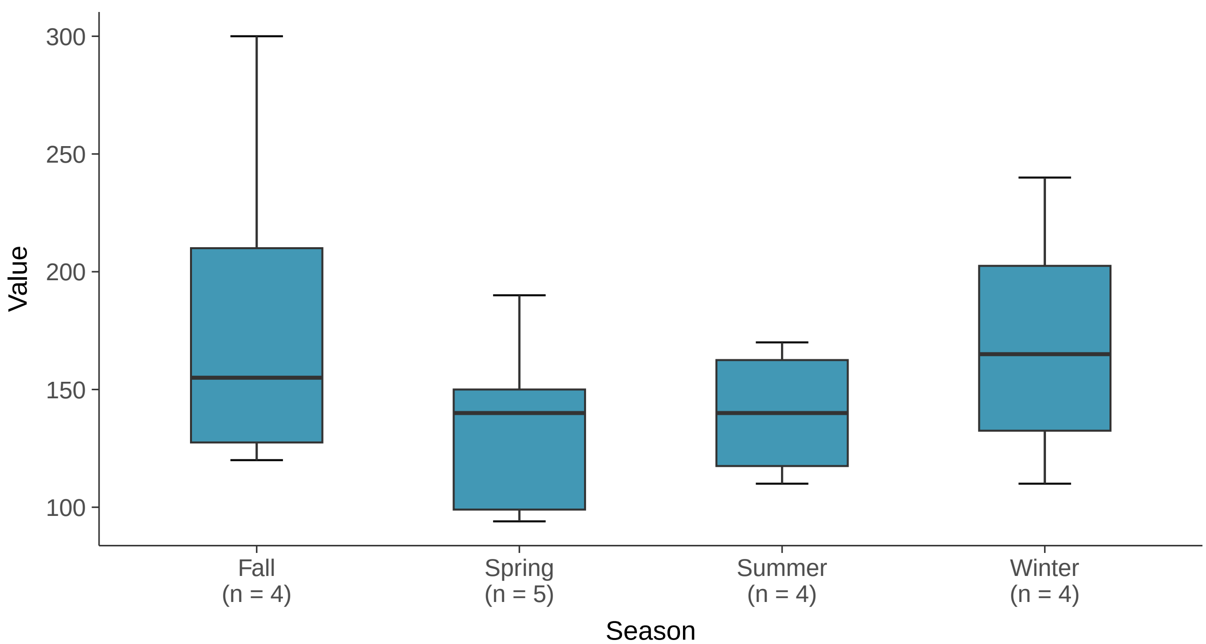
Boxplot

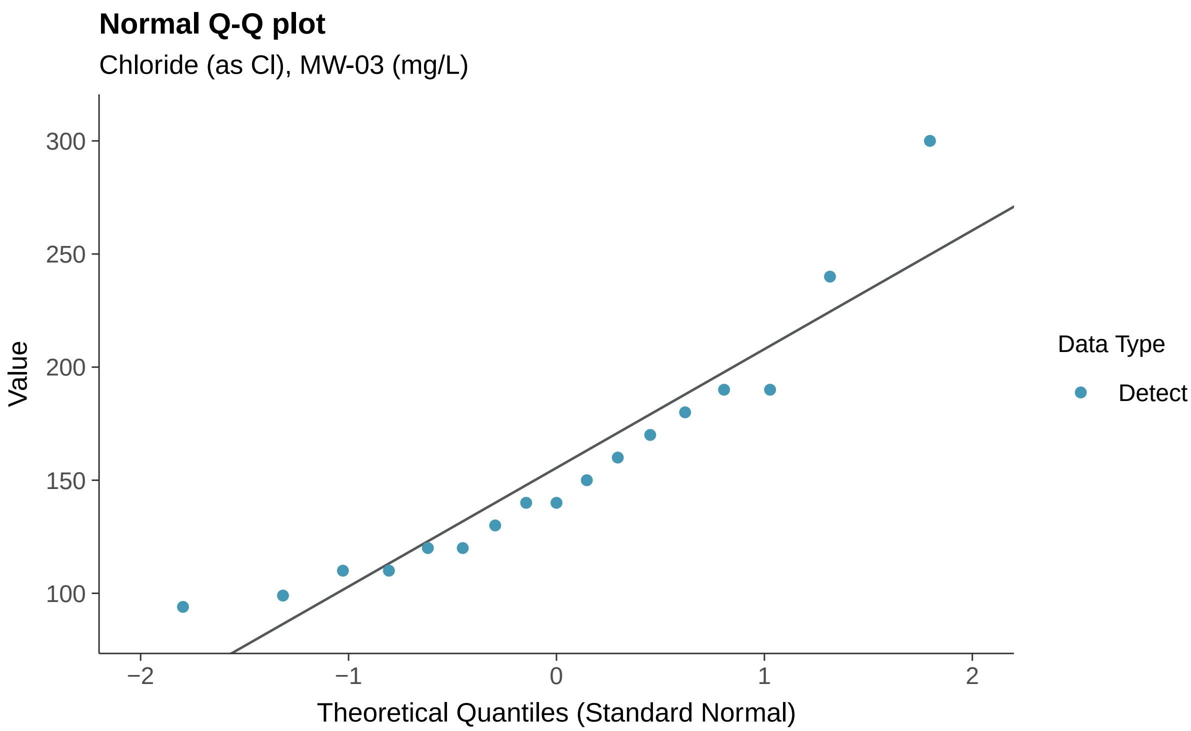
Chloride (as Cl), MW-03 (mg/L)

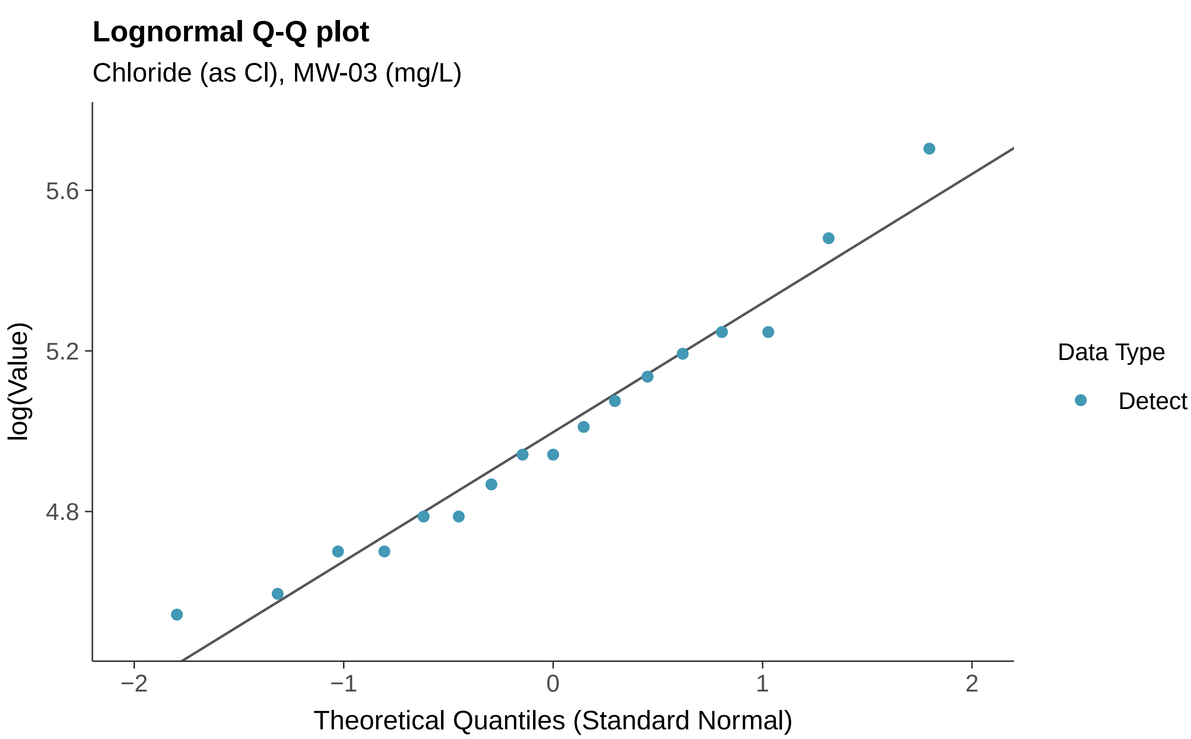


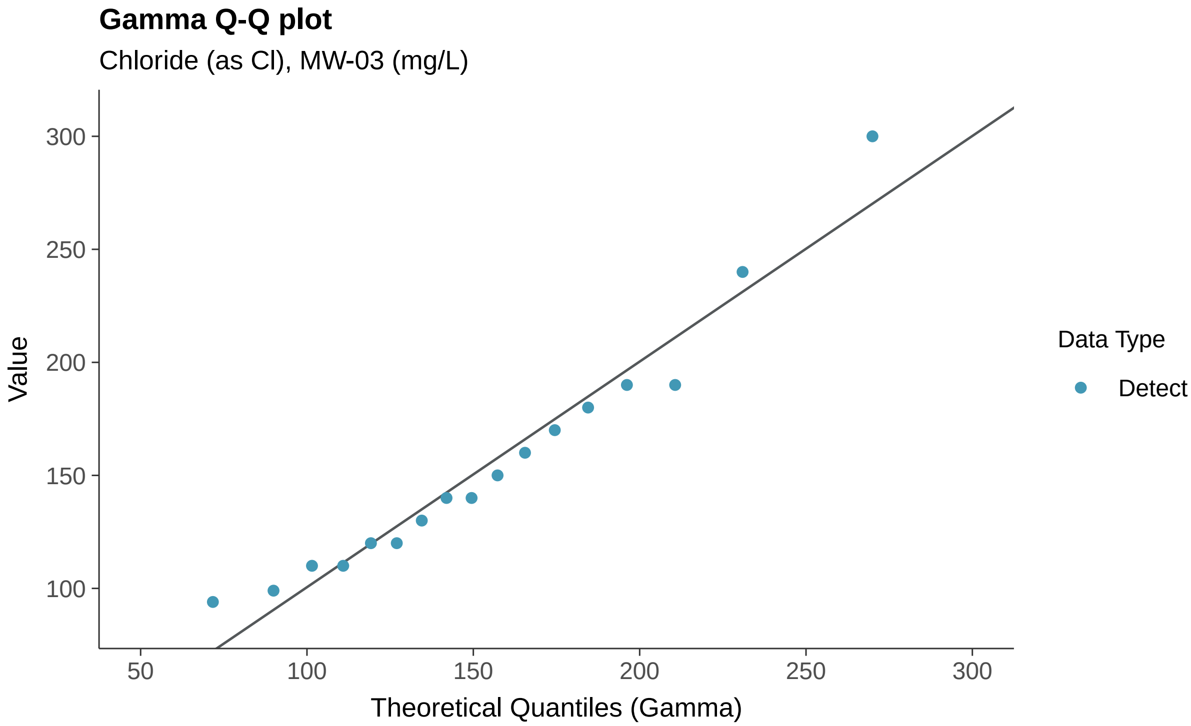
Boxplot by Season

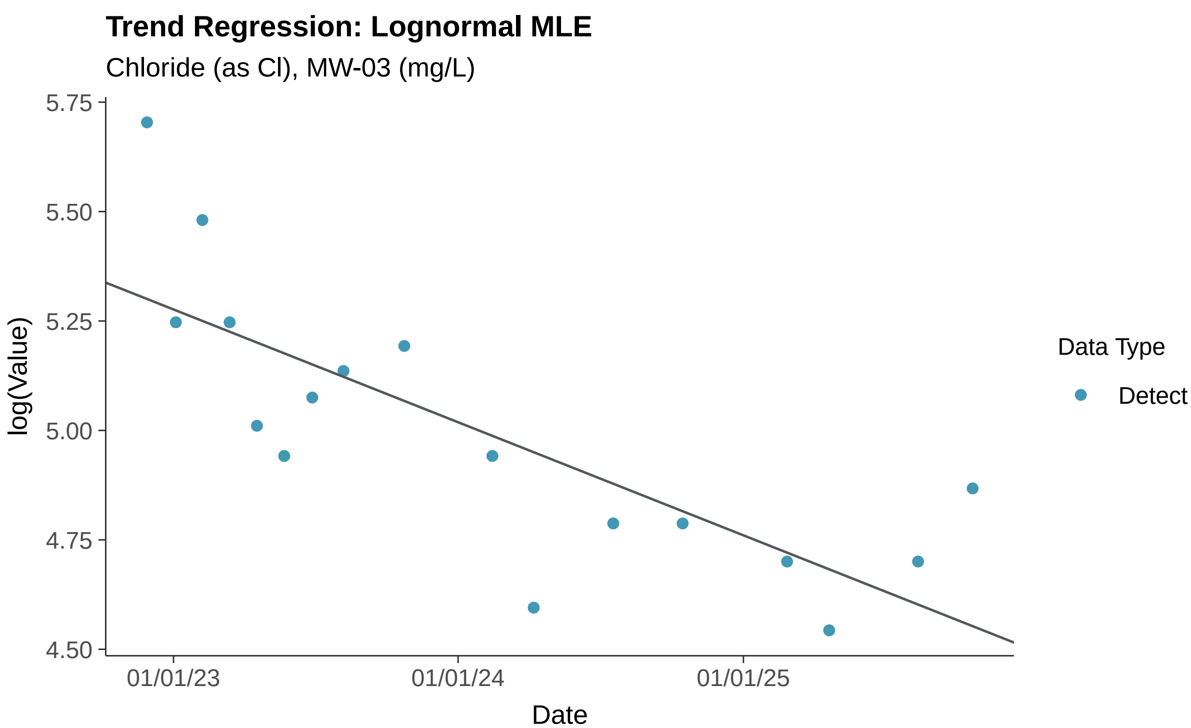
Chloride (as Cl), MW-03 (mg/L)




Normal Q-Q plot
Chloride (as Cl), MW-03 (mg/L)
Value
300
250
200
150
100
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

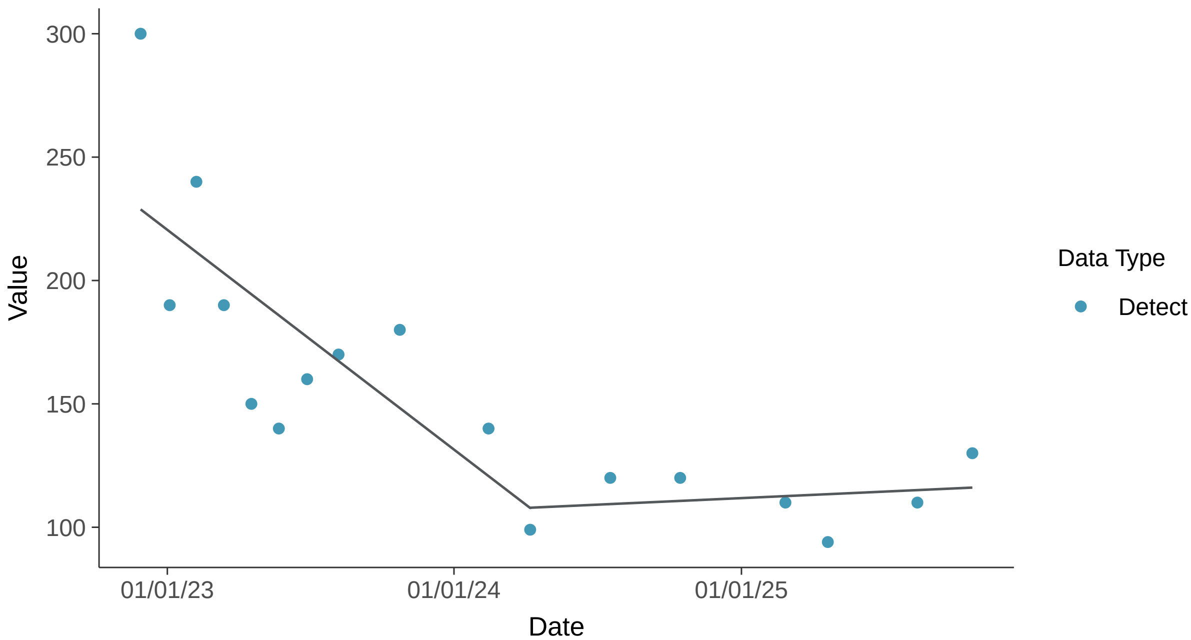

Lognormal Q-Q plot
Chloride (as Cl), MW-03 (mg/L)
log(Value)
5.6
5.2
4.8
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Chloride (as Cl), MW-03 (mg/L)
Value
300
250
200
150
100
50
100
150
200
250
300
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Chloride (as Cl), MW-03 (mg/L)
log(Value)
5.75
5.50
5.25
5.00
4.75
4.50
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

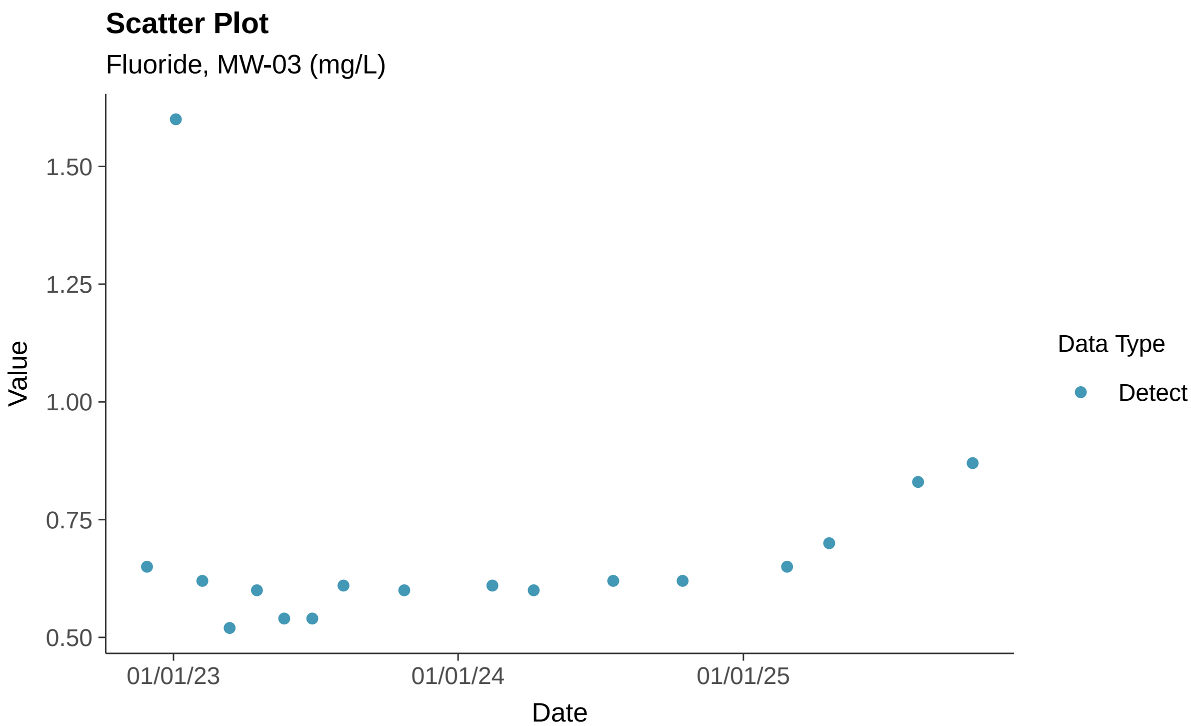
Trend Regression: Piecewise Linear-Linear

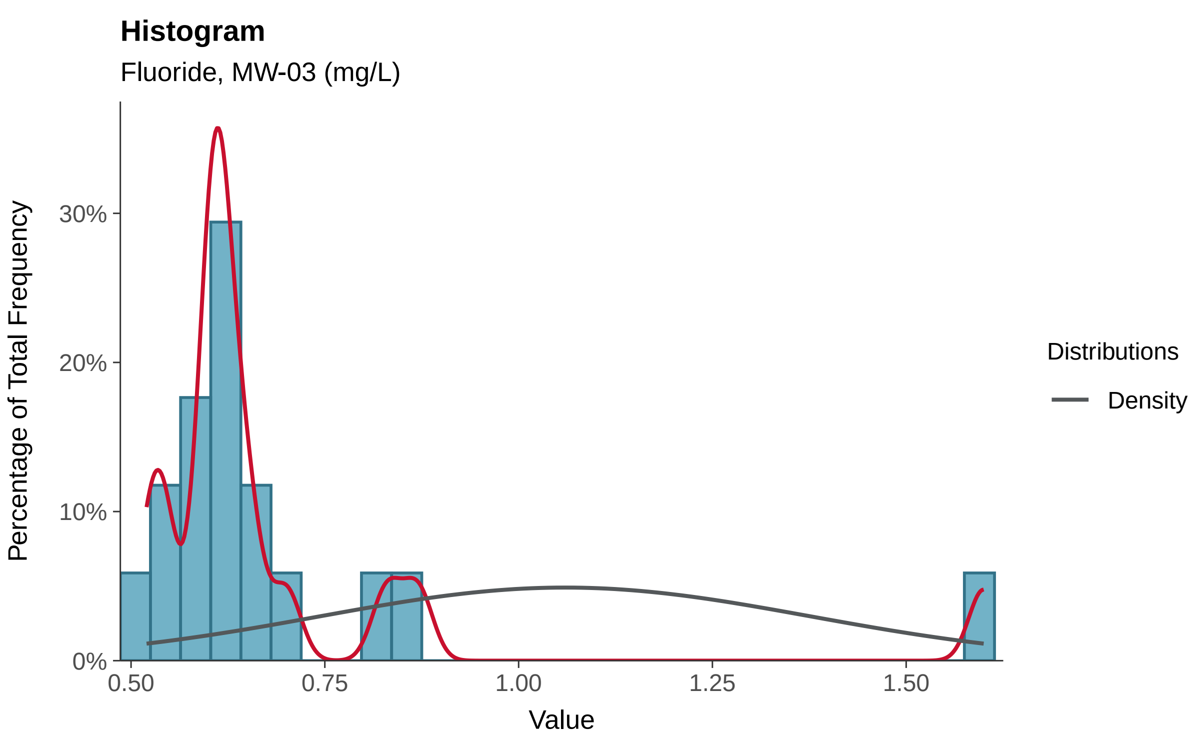
Chloride (as Cl), MW-03 (mg/L)



Appendix III: Fluoride, MW-03

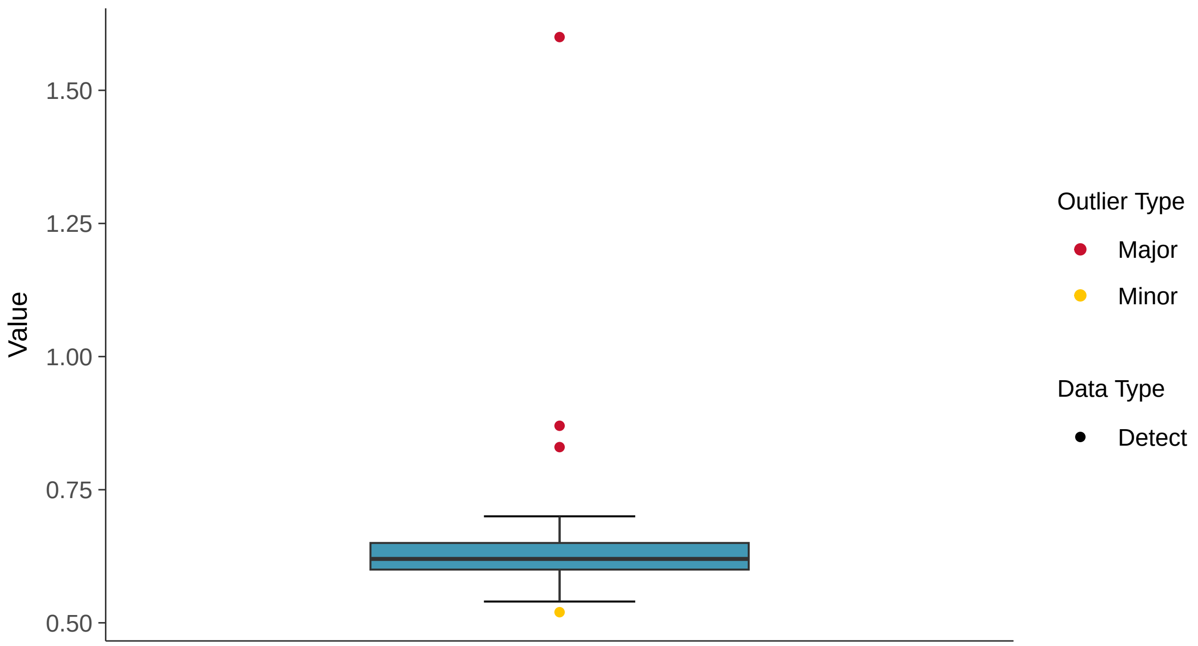
ID: 13_2_3_112





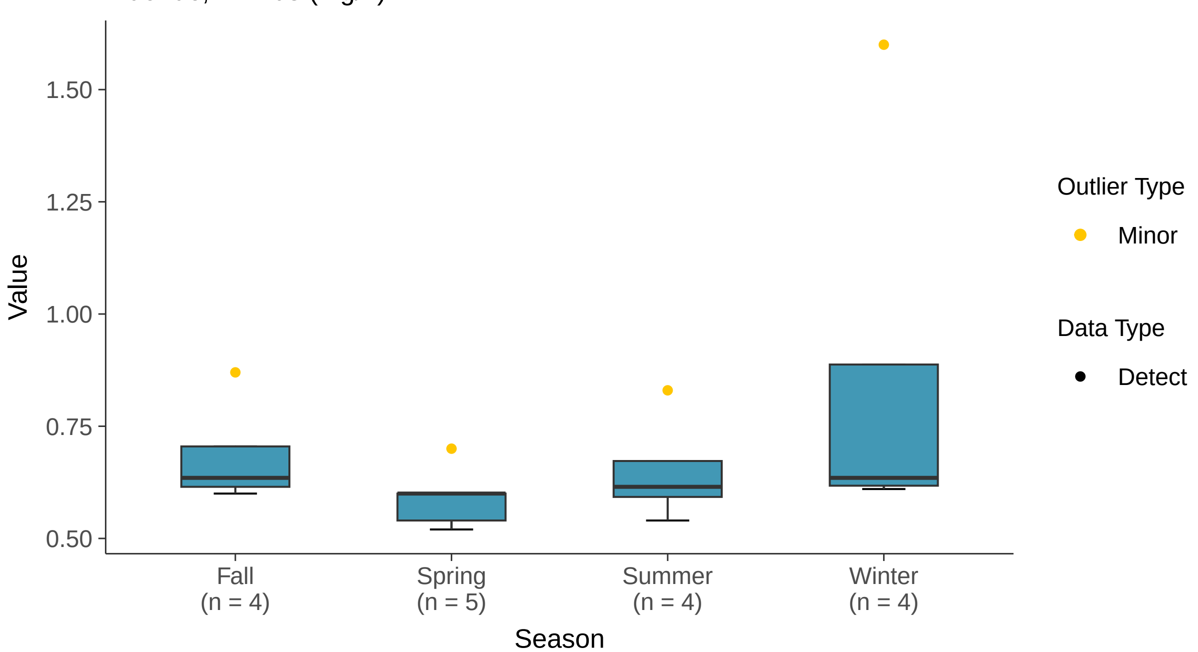
Boxplot

Fluoride, MW-03 (mg/L)



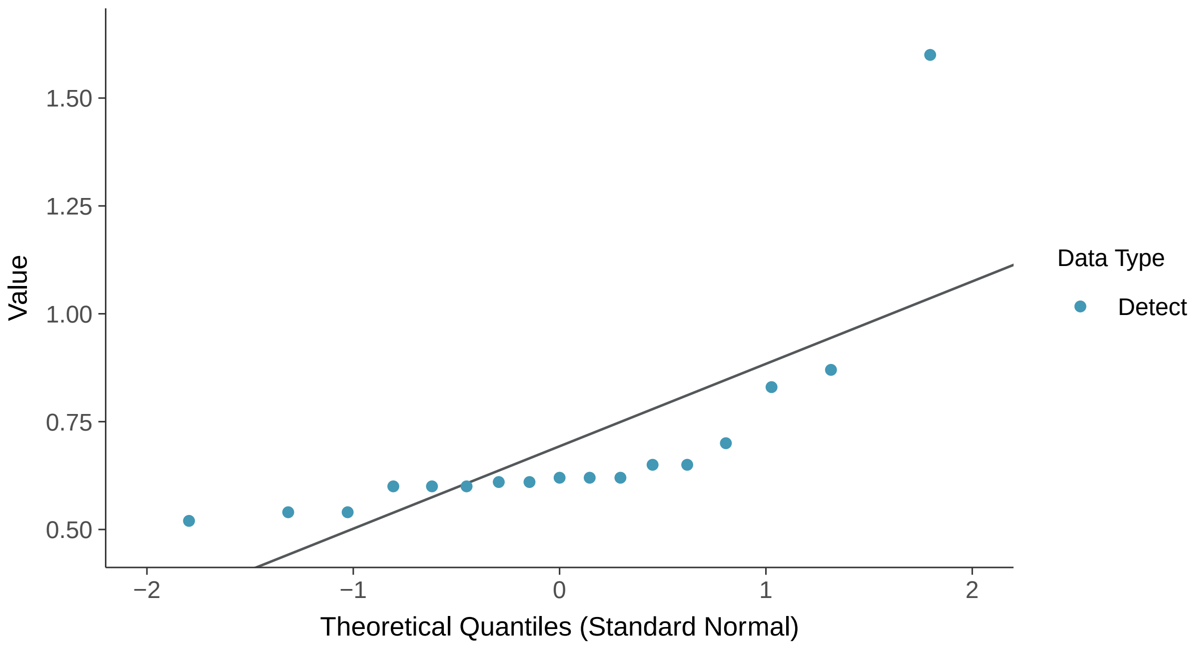
Boxplot by Season

Fluoride, MW-03 (mg/L)



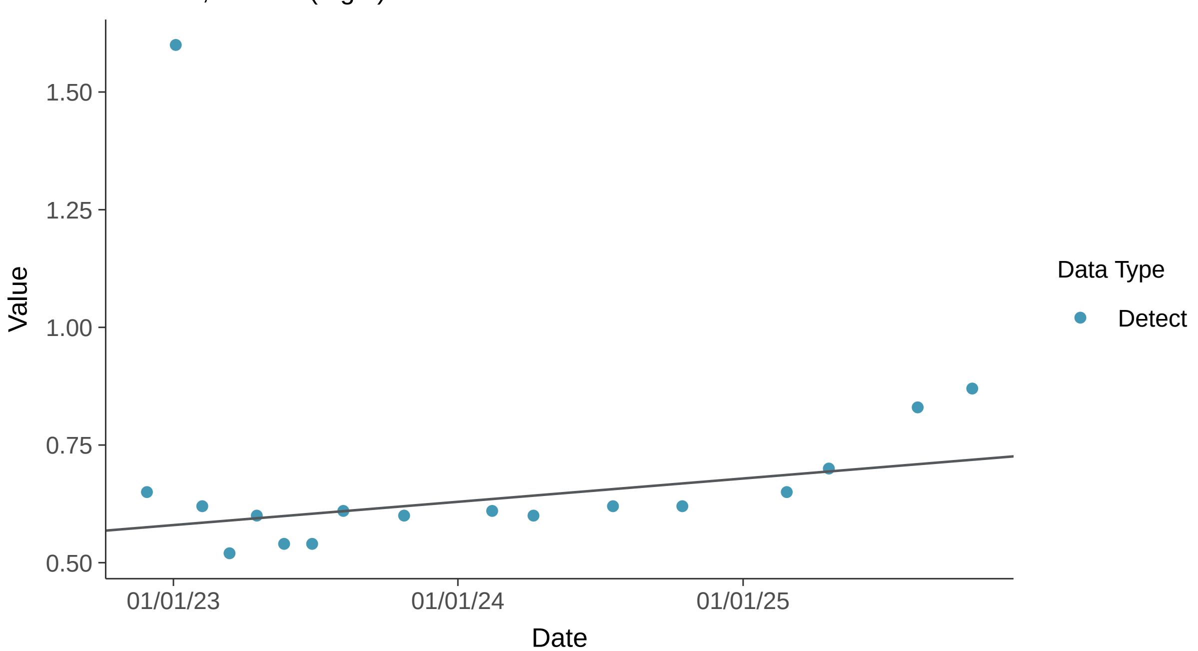
Normal Q-Q plot

Fluoride, MW-03 (mg/L)



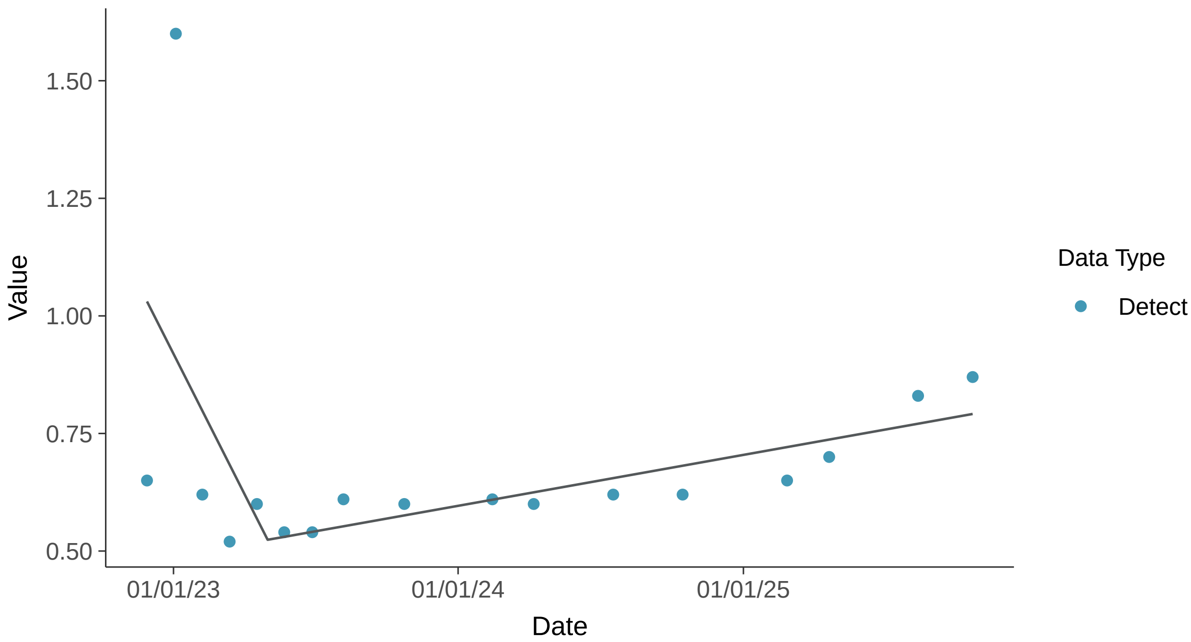
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Fluoride, MW-03 (mg/L)



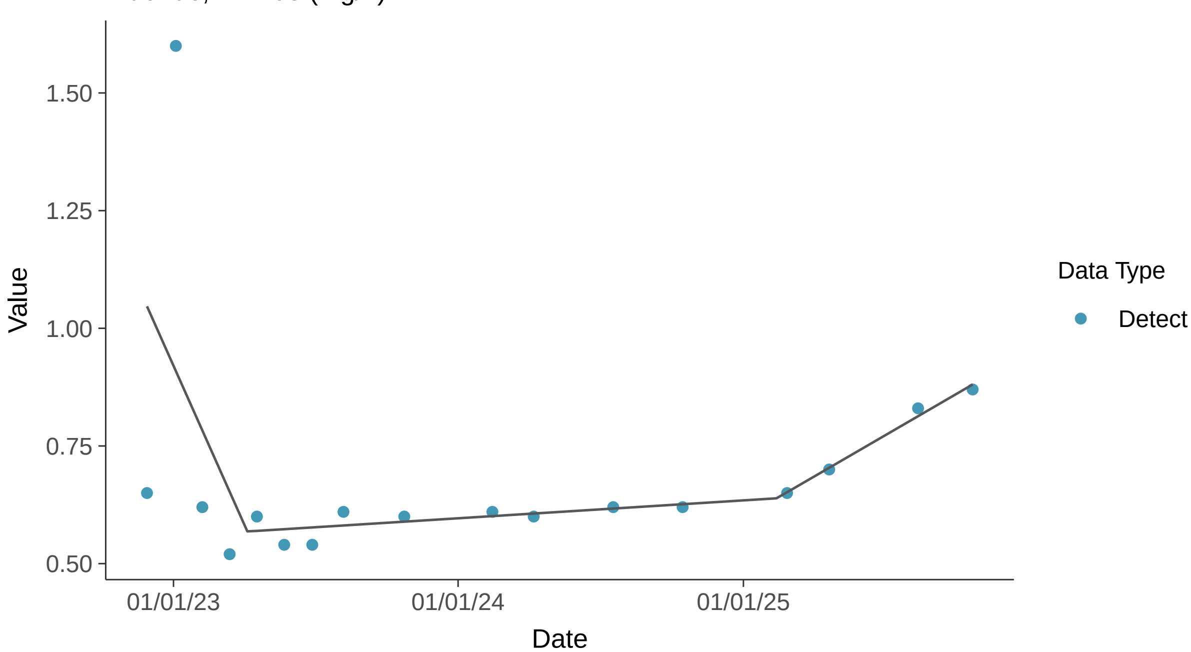
Trend Regression: Piecewise Linear-Linear

Fluoride, MW-03 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Fluoride, MW-03 (mg/L)

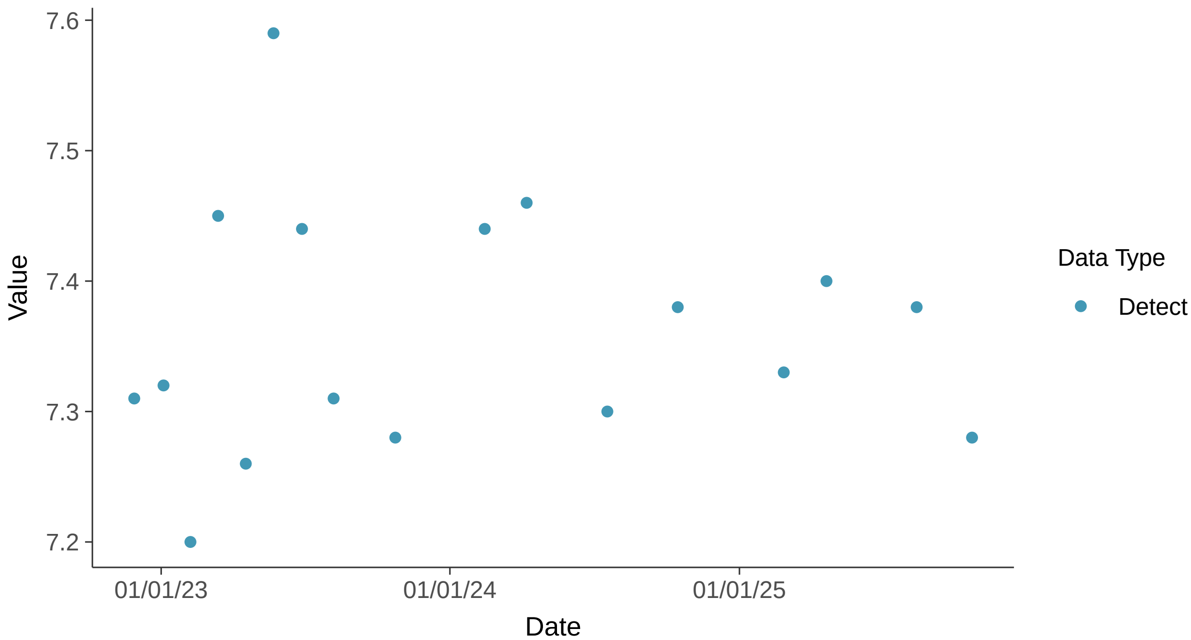


Appendix III: pH (field), MW-03

ID: 13_2_3_120

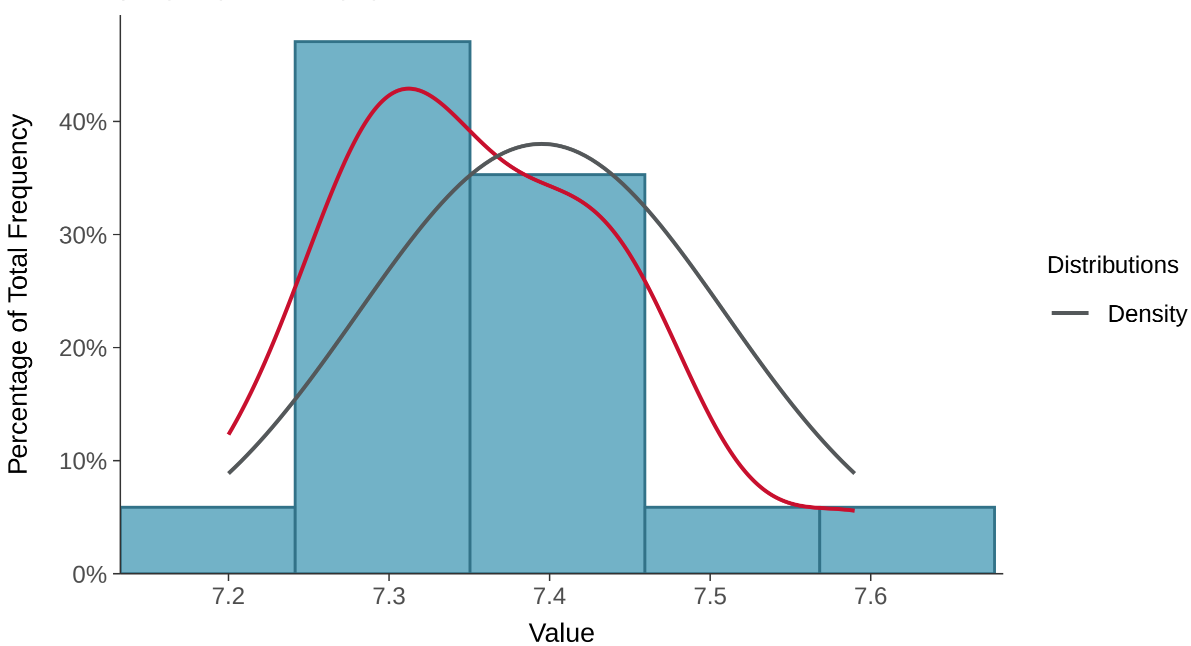
Scatter Plot

pH (field), MW-03 (su)



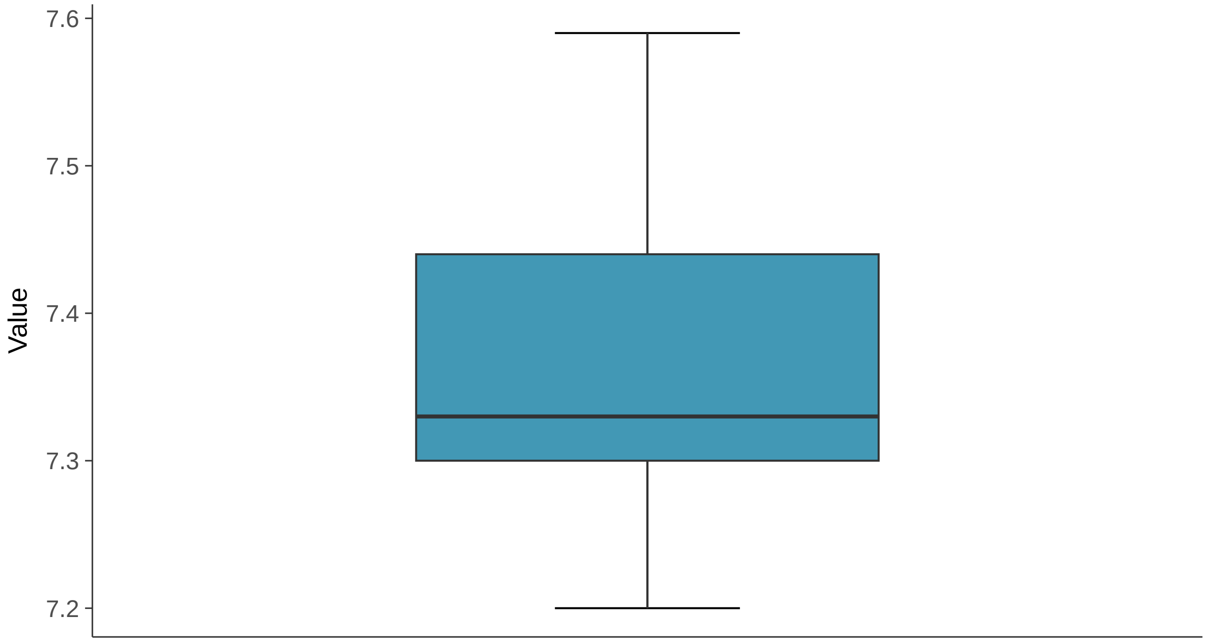
Histogram

pH (field), MW-03 (su)



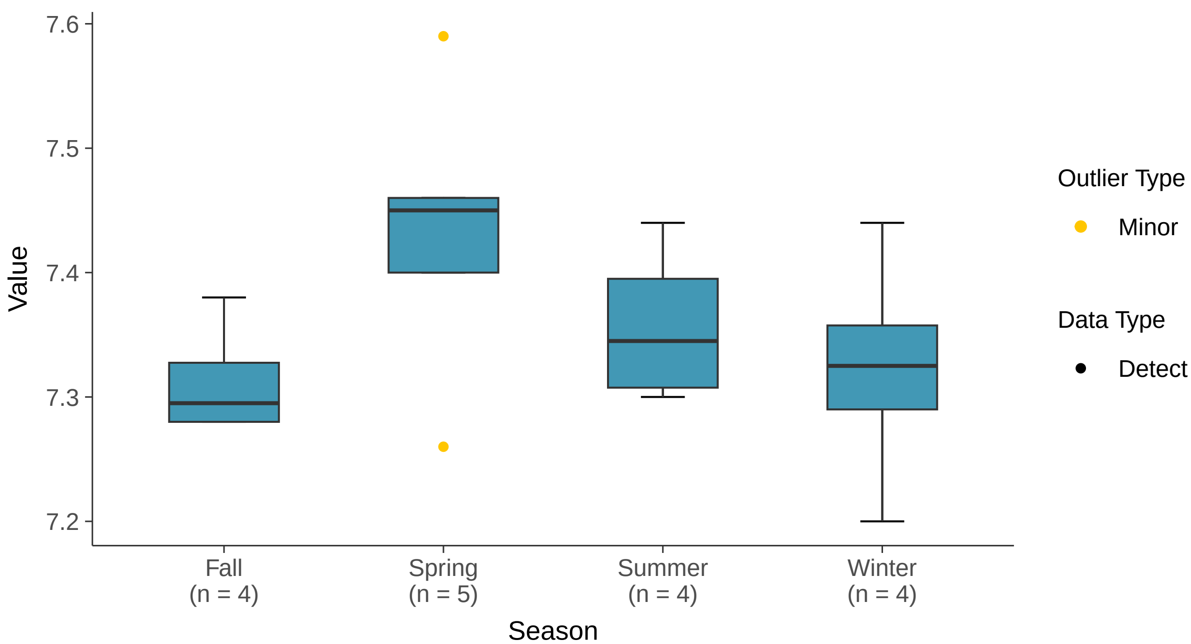
Boxplot

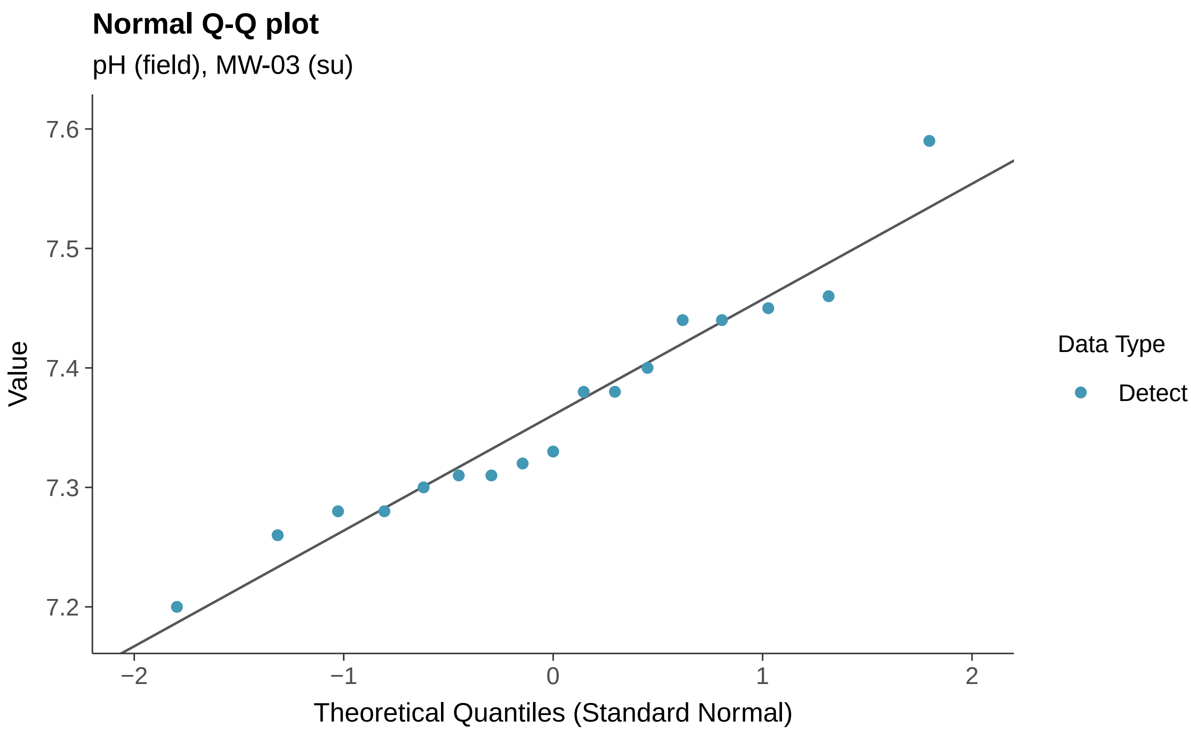
pH (field), MW-03 (su)

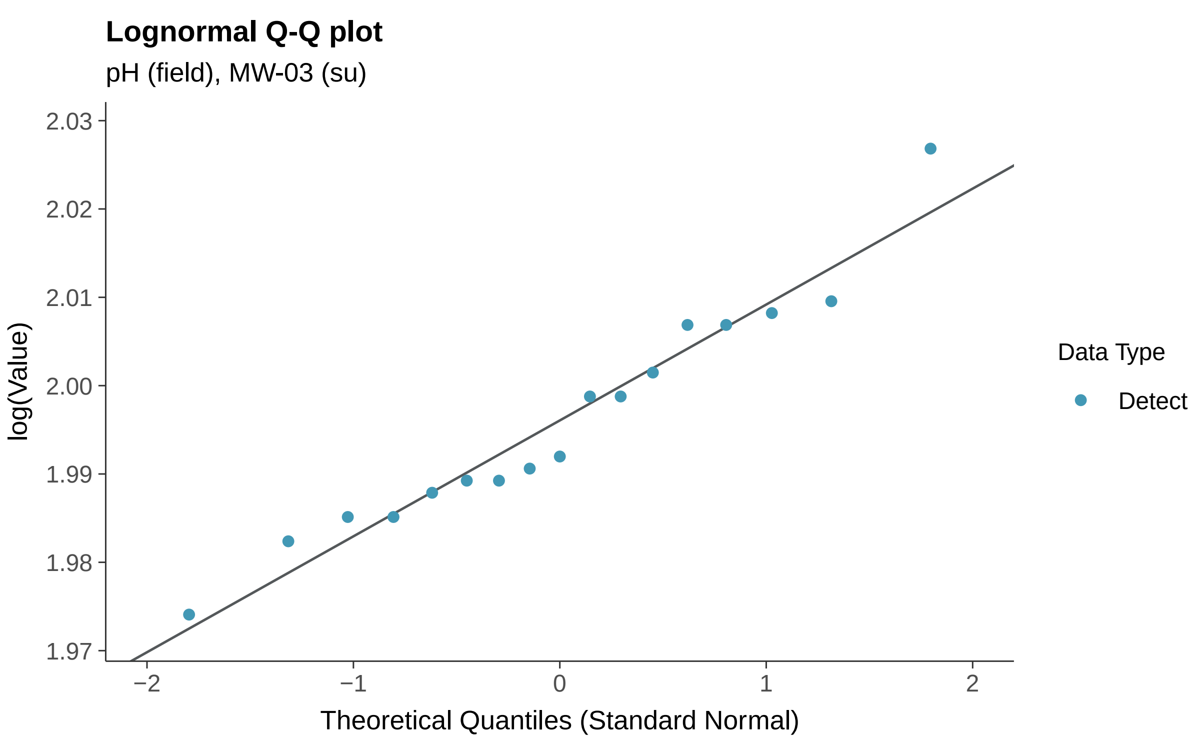


Boxplot by Season

pH (field), MW-03 (su)

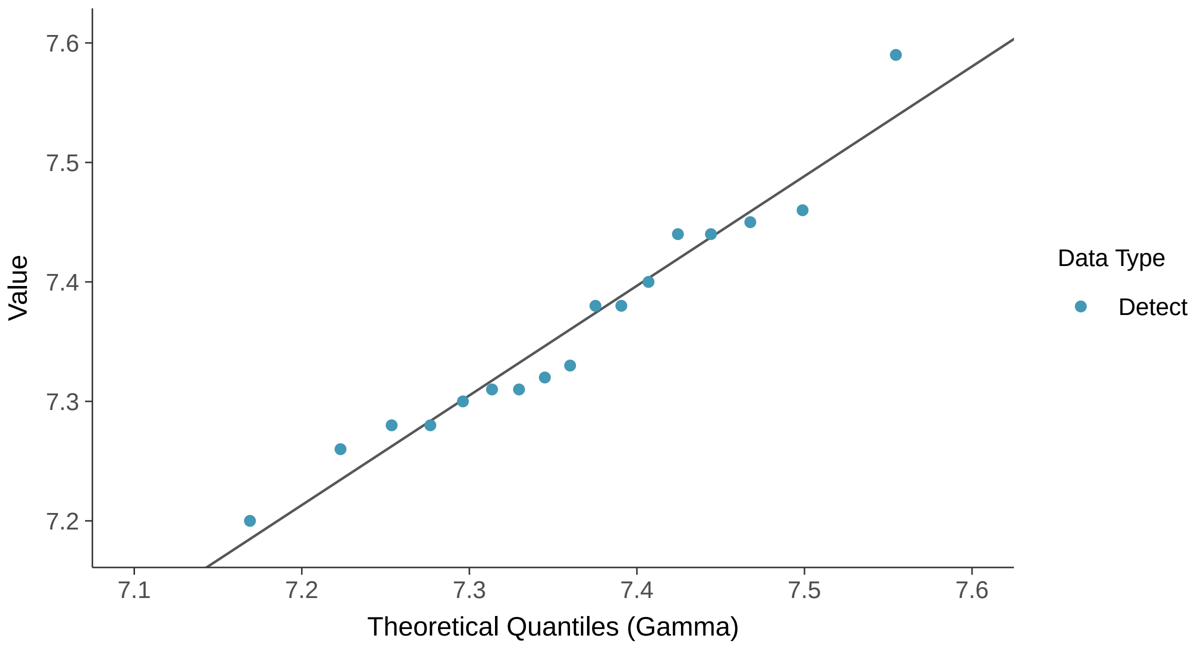



Normal Q-Q plot
pH (field), MW-03 (su)
Value
7.6
7.5
7.4
7.3
7.2
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
pH (field), MW-03 (su)
log(Value)
2.03
2.02
2.01
2.00
1.99
1.98
1.97
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

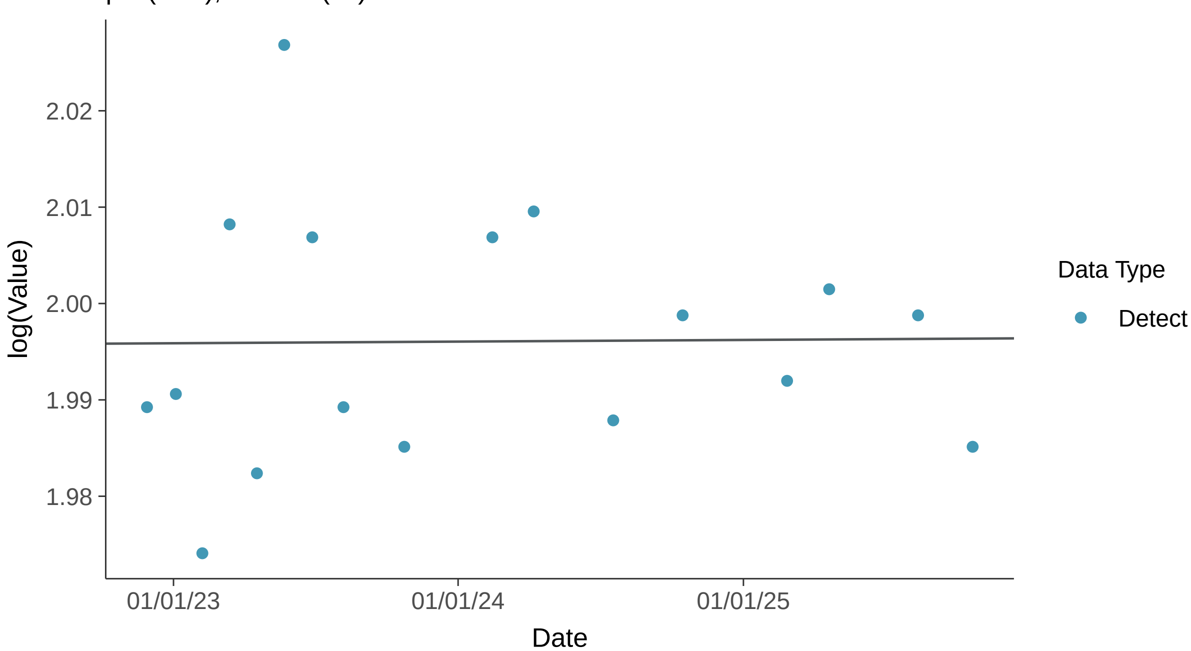
Gamma Q-Q plot

pH (field), MW-03 (su)



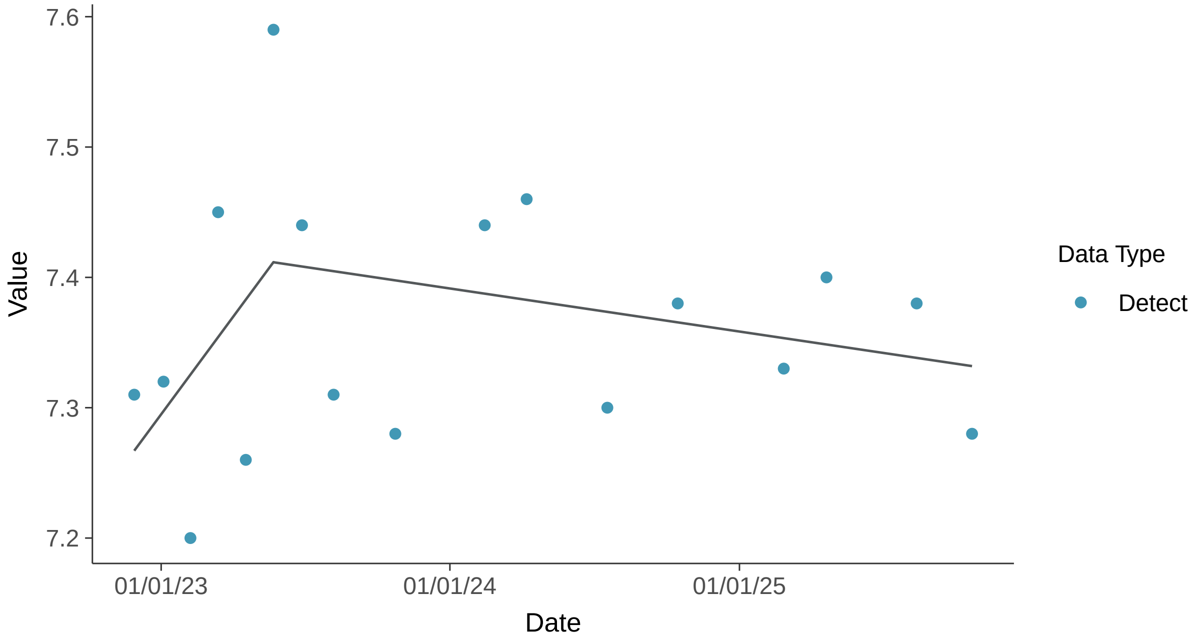
Trend Regression: Lognormal MLE

pH (field), MW-03 (su)



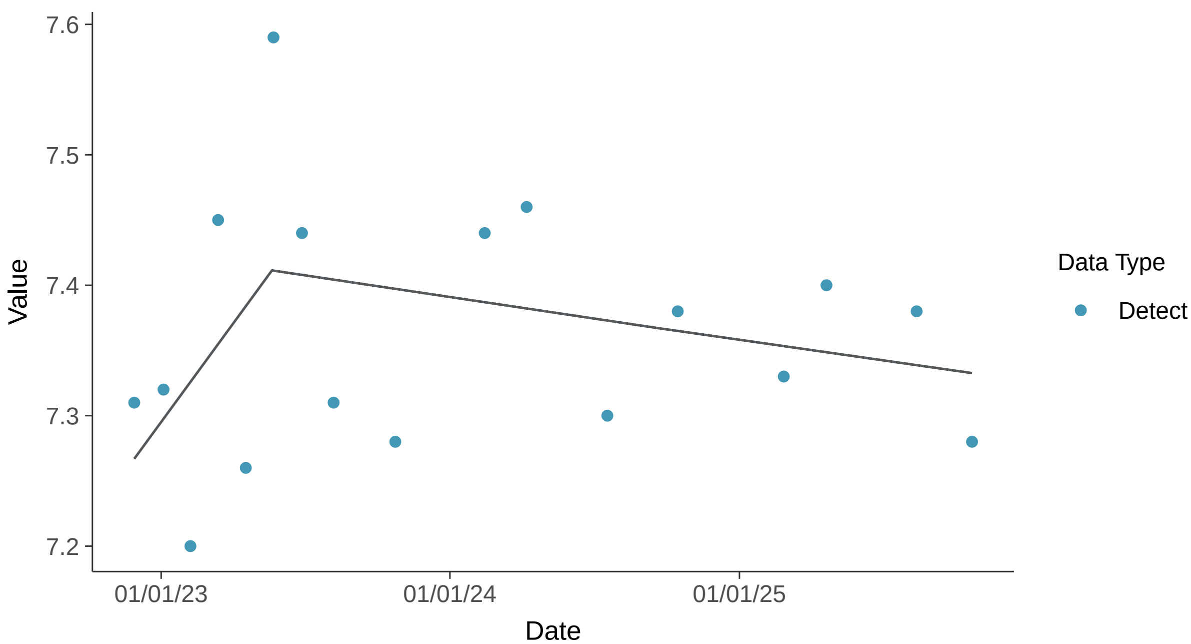
Trend Regression: Piecewise Linear-Linear

pH (field), MW-03 (su)



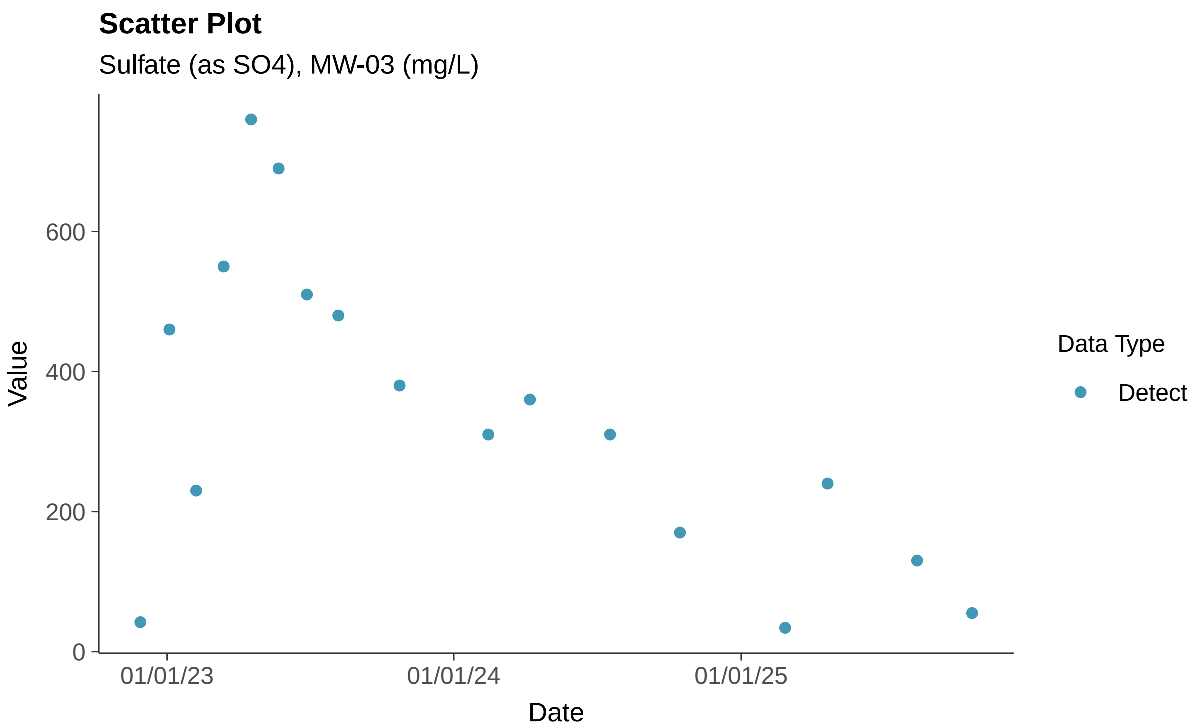
Trend Regression: Piecewise Linear-Linear-Linear

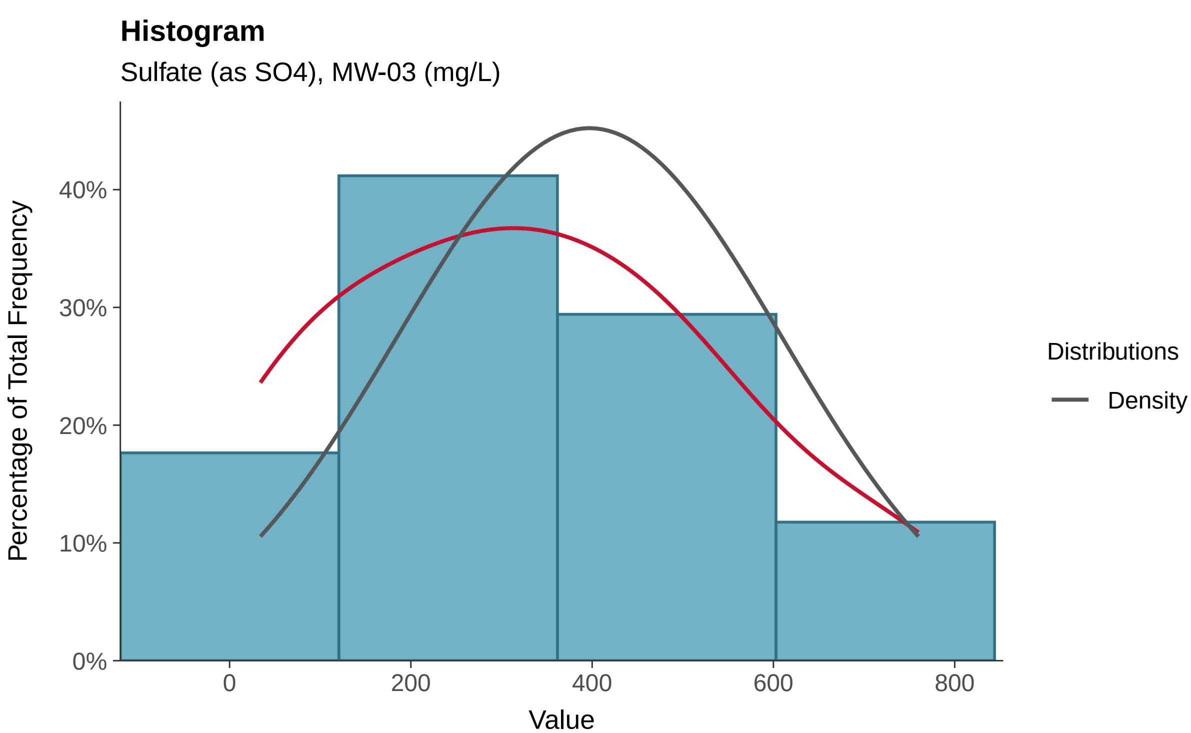
pH (field), MW-03 (su)



Appendix III: Sulfate (as SO4), MW-03

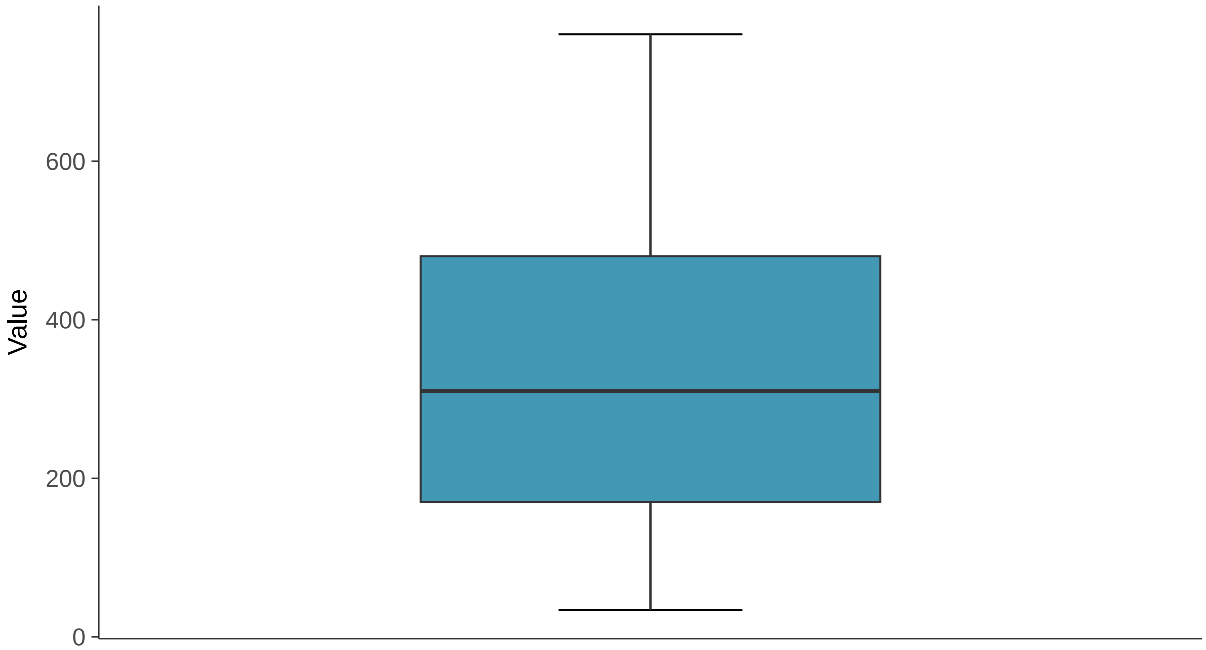
ID: 13_2_3_124





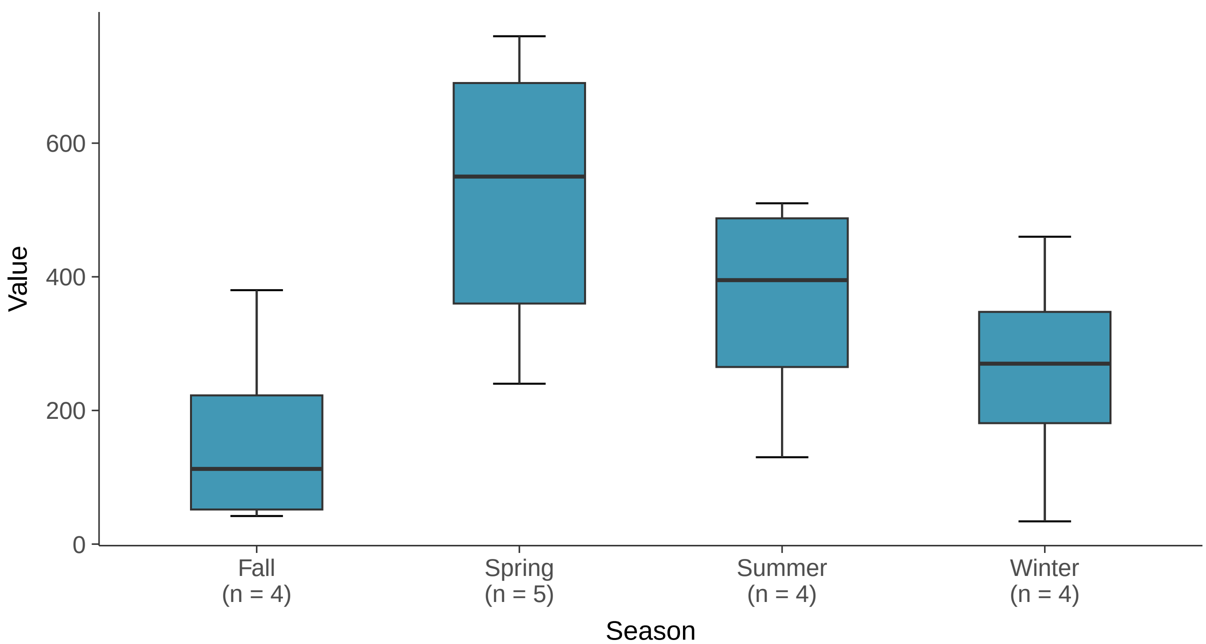
Boxplot

Sulfate (as SO4), MW-03 (mg/L)



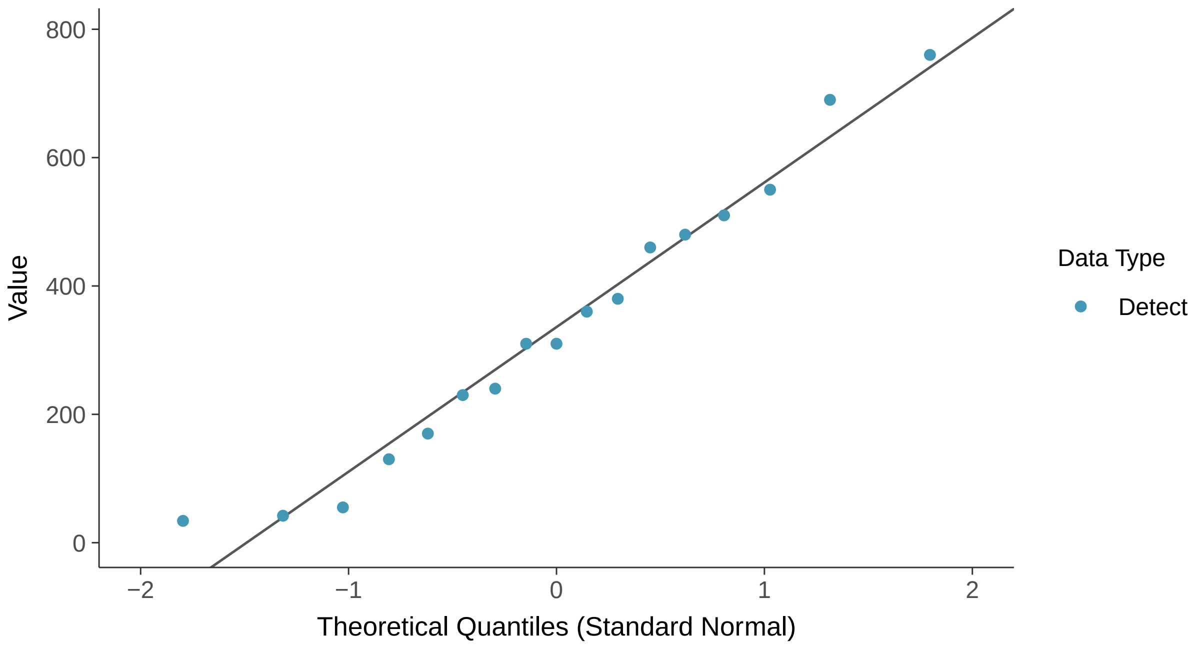
Boxplot by Season

Sulfate (as SO4), MW-03 (mg/L)



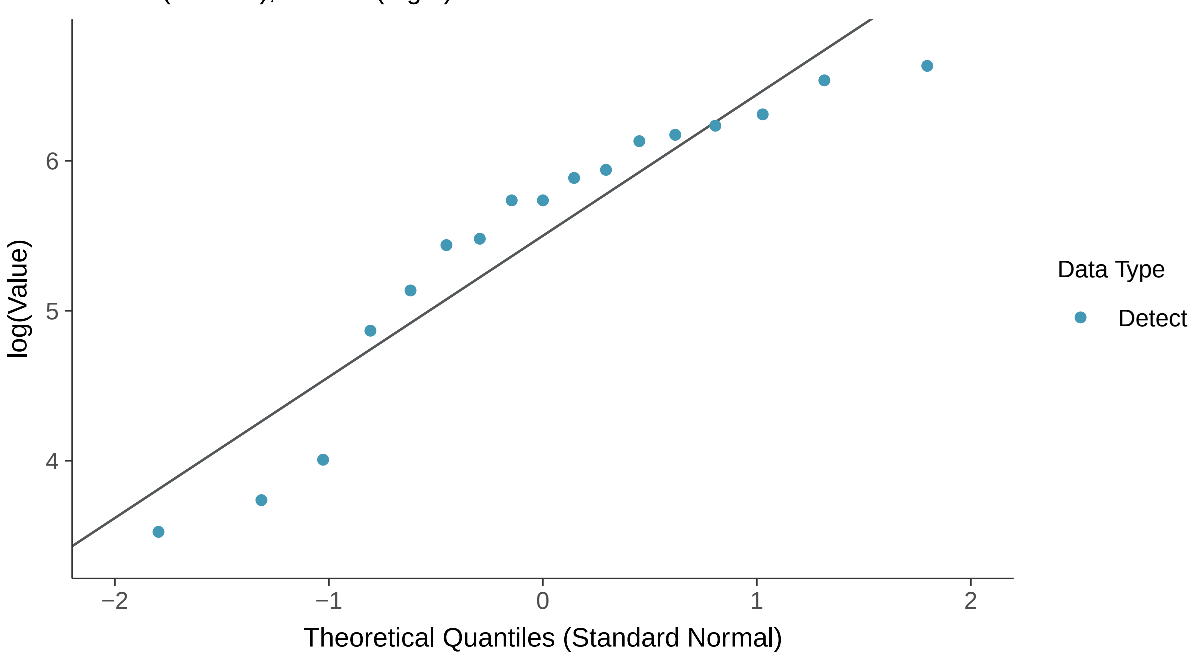
Normal Q-Q plot

Sulfate (as SO4), MW-03 (mg/L)



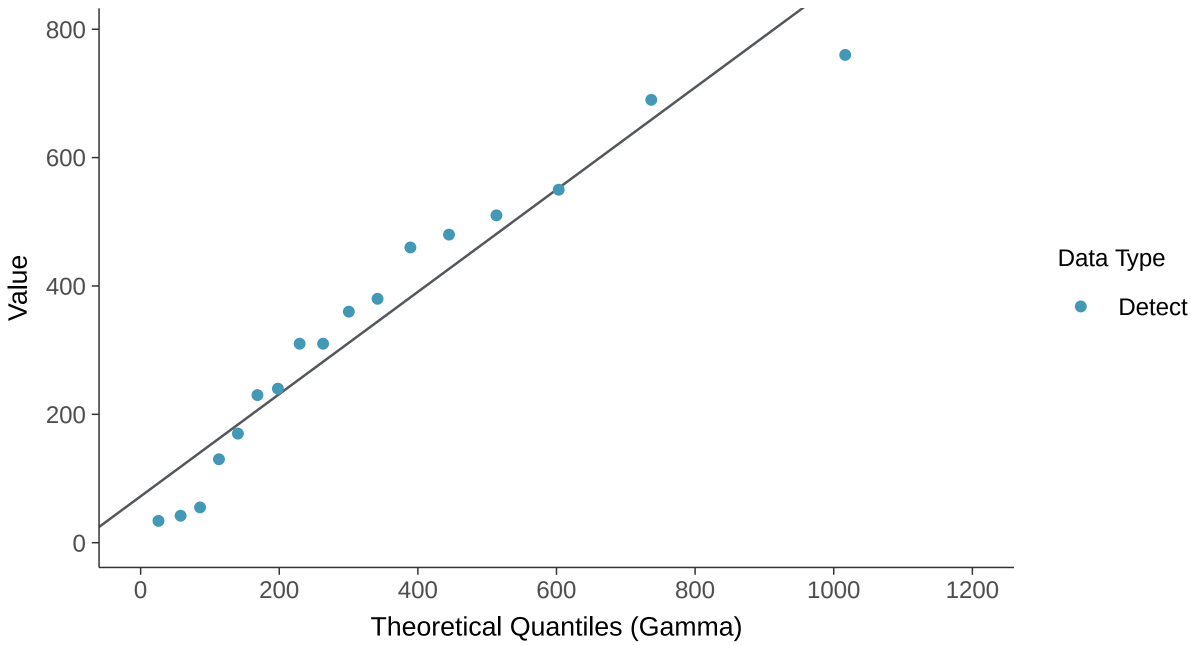
Lognormal Q-Q plot

Sulfate (as SO4), MW-03 (mg/L)



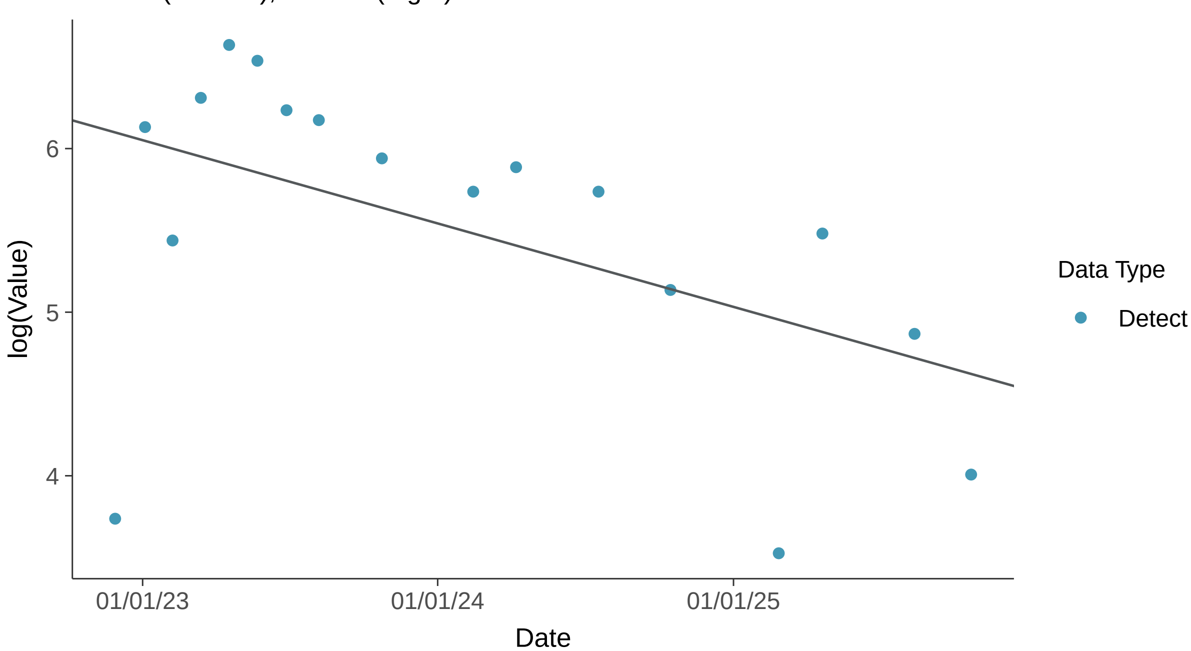
Gamma Q-Q plot

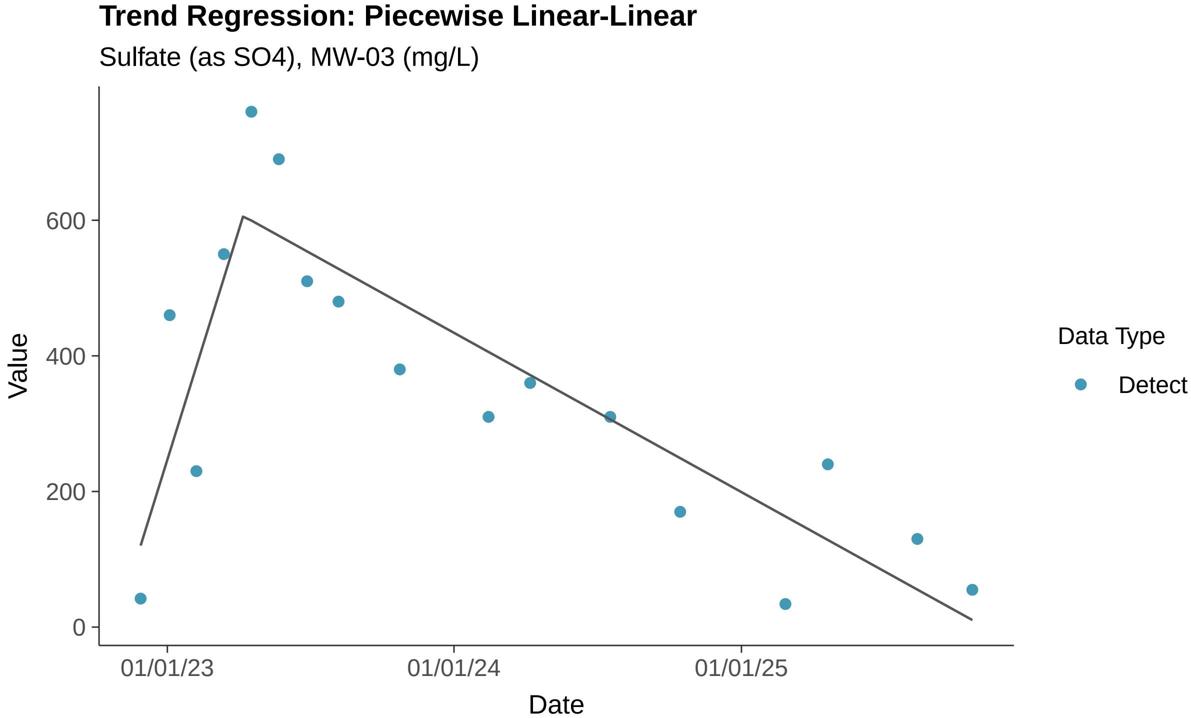
Sulfate (as SO4), MW-03 (mg/L)

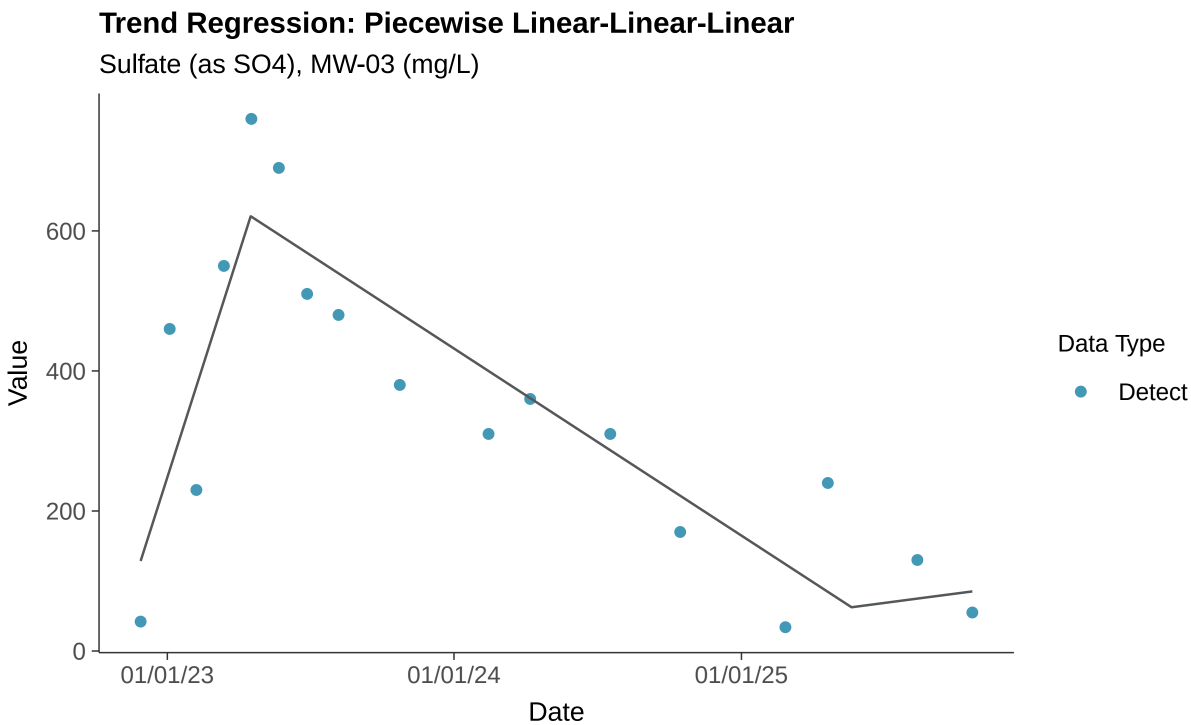


Trend Regression: Lognormal MLE

Sulfate (as SO4), MW-03 (mg/L)




Trend Regression: Piecewise Linear-Linear
Sulfate (as SO4), MW-03 (mg/L)
Value
600
400
200
0
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

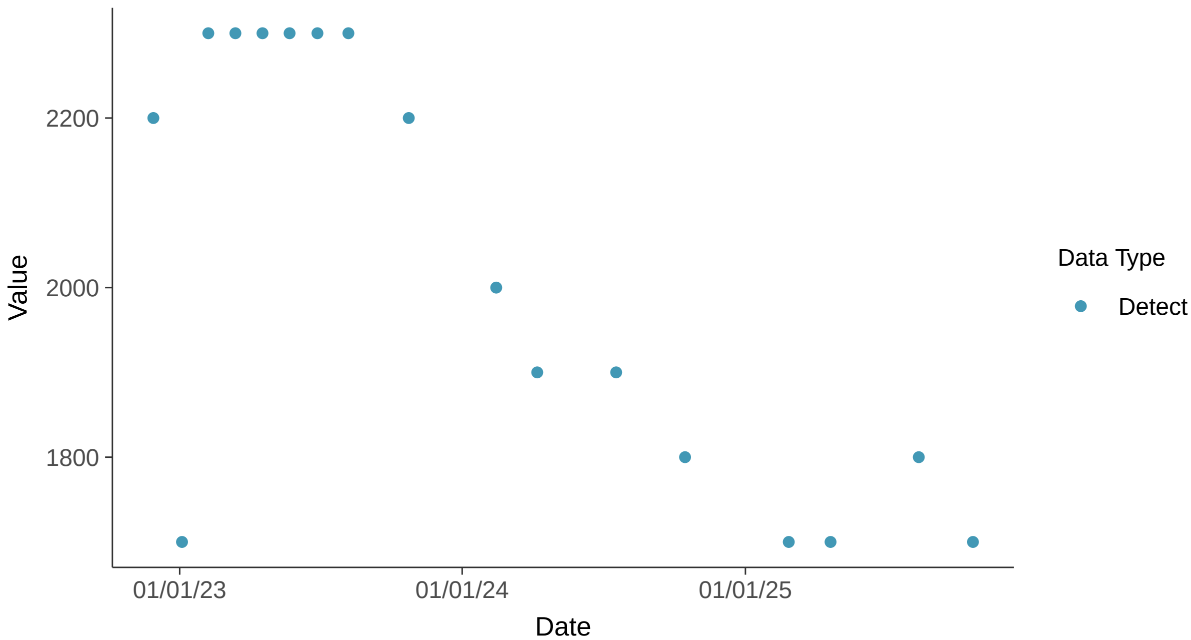

Trend Regression: Piecewise Linear-Linear-Linear
Sulfate (as SO4), MW-03 (mg/L)
Value
600
400
200
0
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Appendix III: Total Dissolved Solids, MW-03

ID: 13_2_3_126

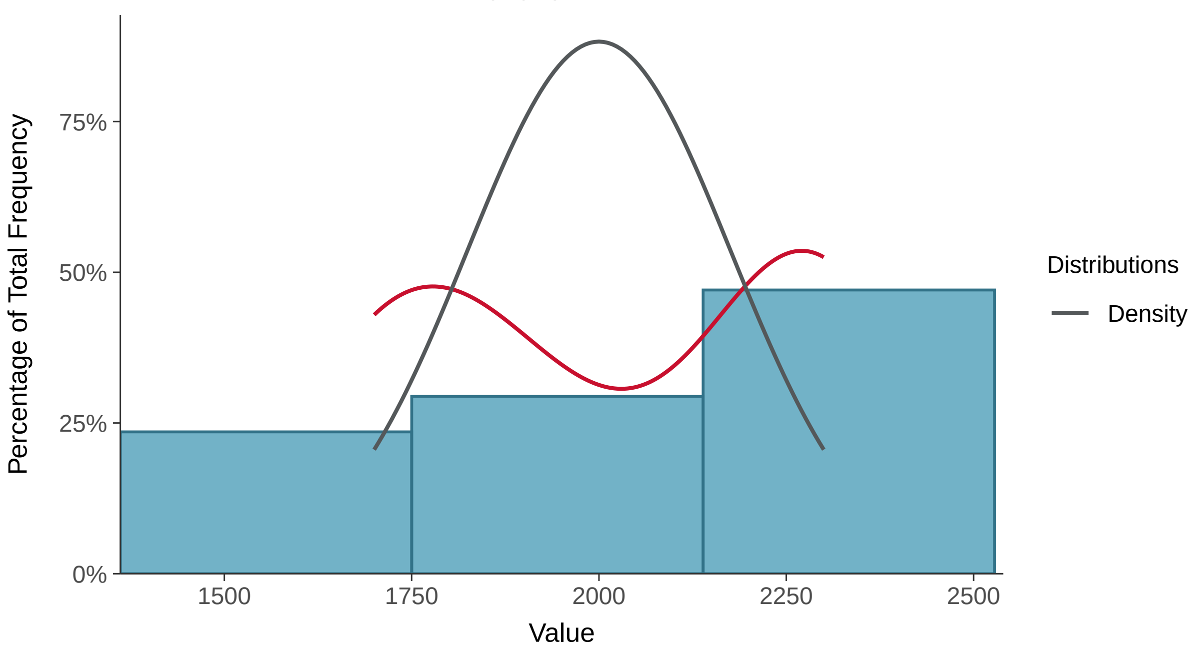
Scatter Plot

Total Dissolved Solids, MW-03 (mg/L)



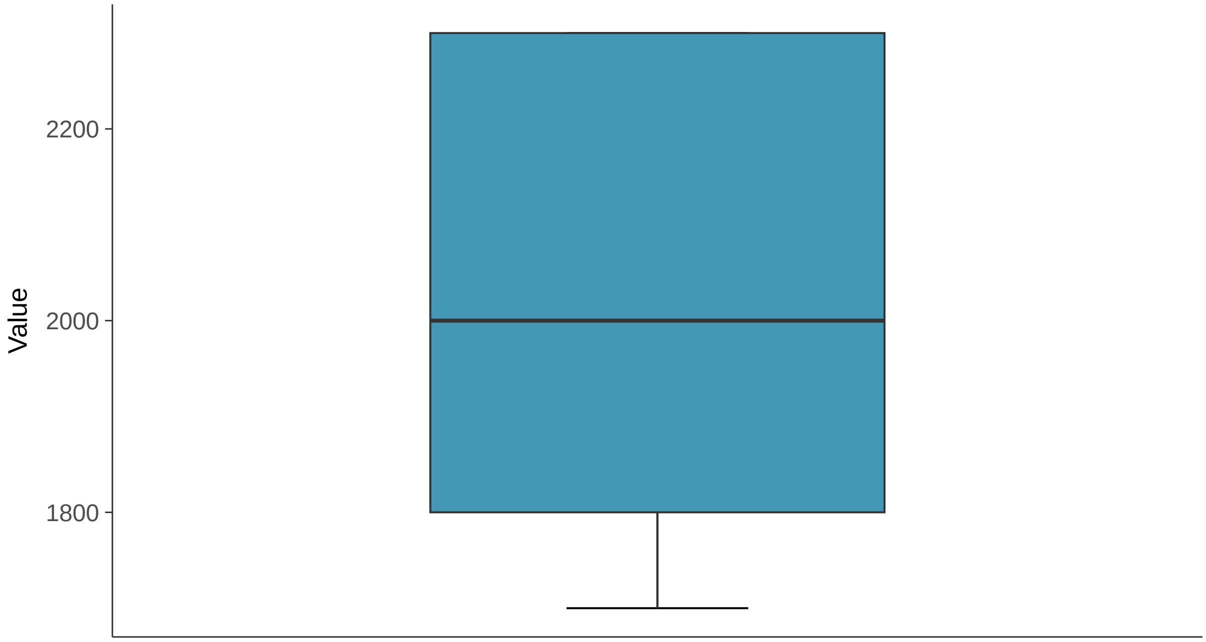
Histogram

Total Dissolved Solids, MW-03 (mg/L)



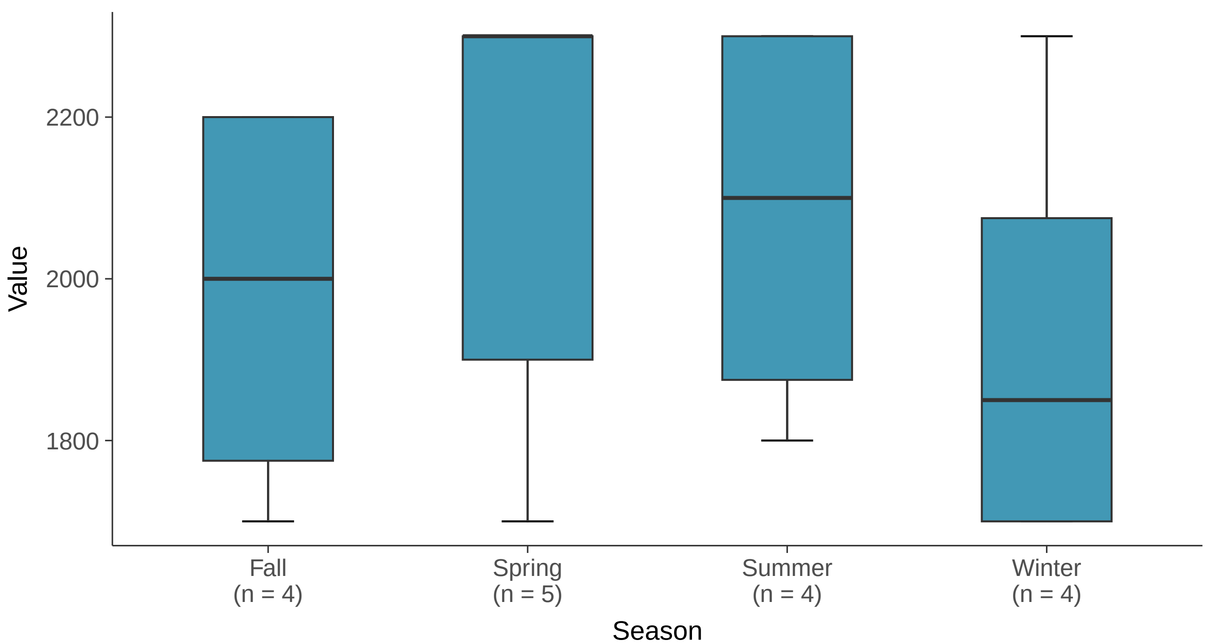
Boxplot

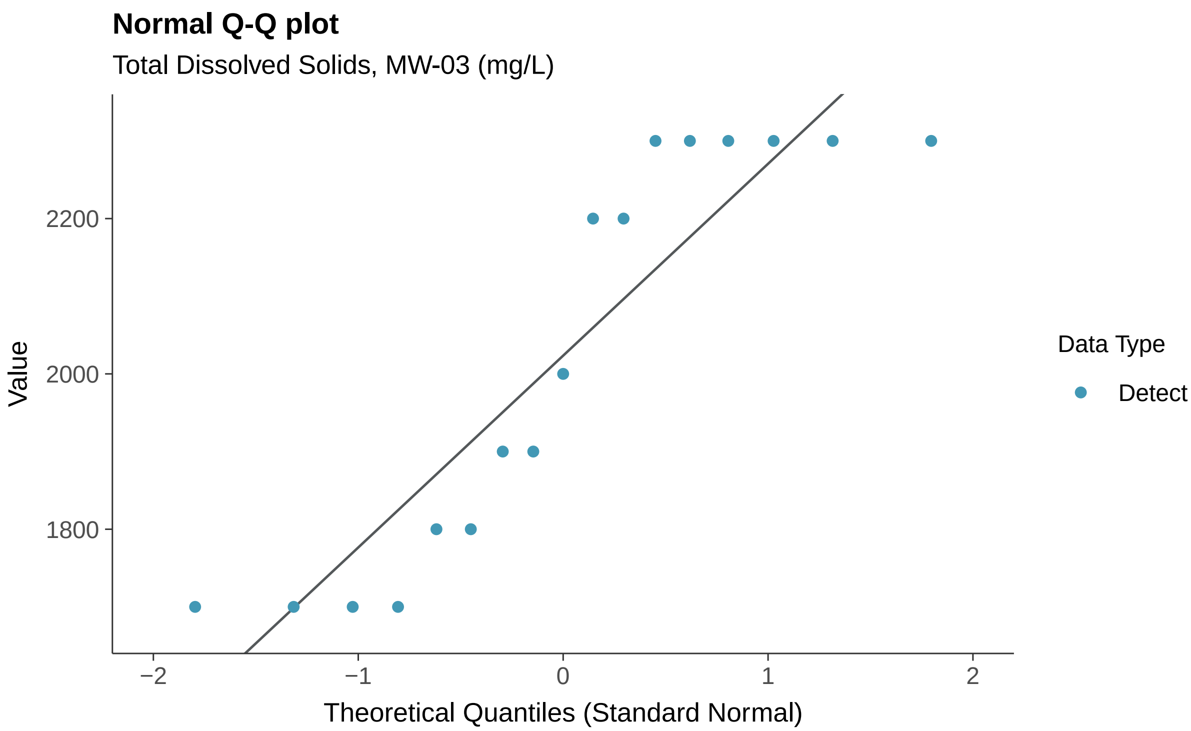
Total Dissolved Solids, MW-03 (mg/L)

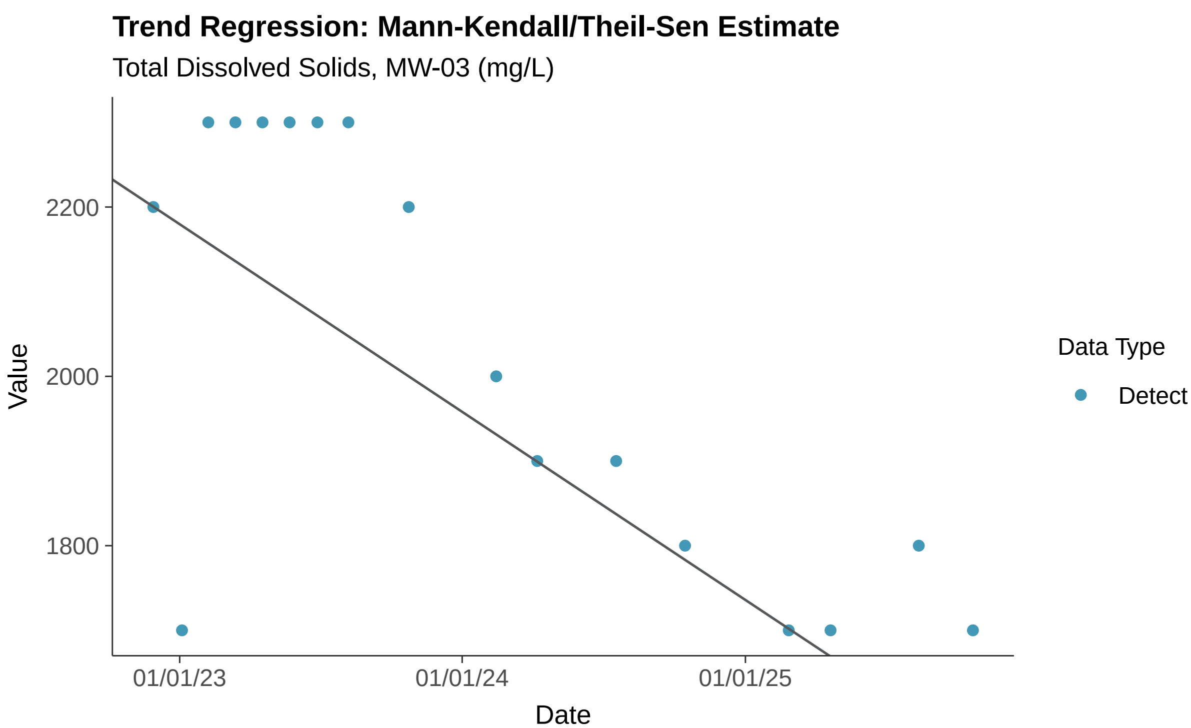


Boxplot by Season

Total Dissolved Solids, MW-03 (mg/L)

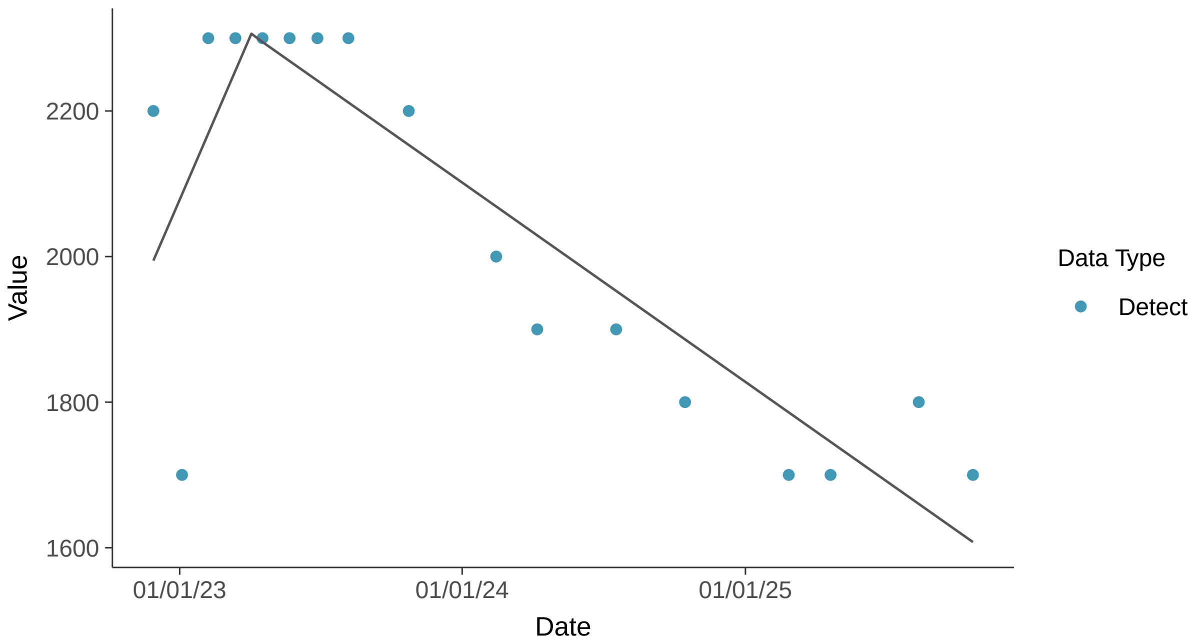



Normal Q-Q plot
Total Dissolved Solids, MW-03 (mg/L)
Value
2200
2000
1800
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Mann-Kendall/Theil-Sen Estimate
Total Dissolved Solids, MW-03 (mg/L)
Value
2200
2000
1800
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

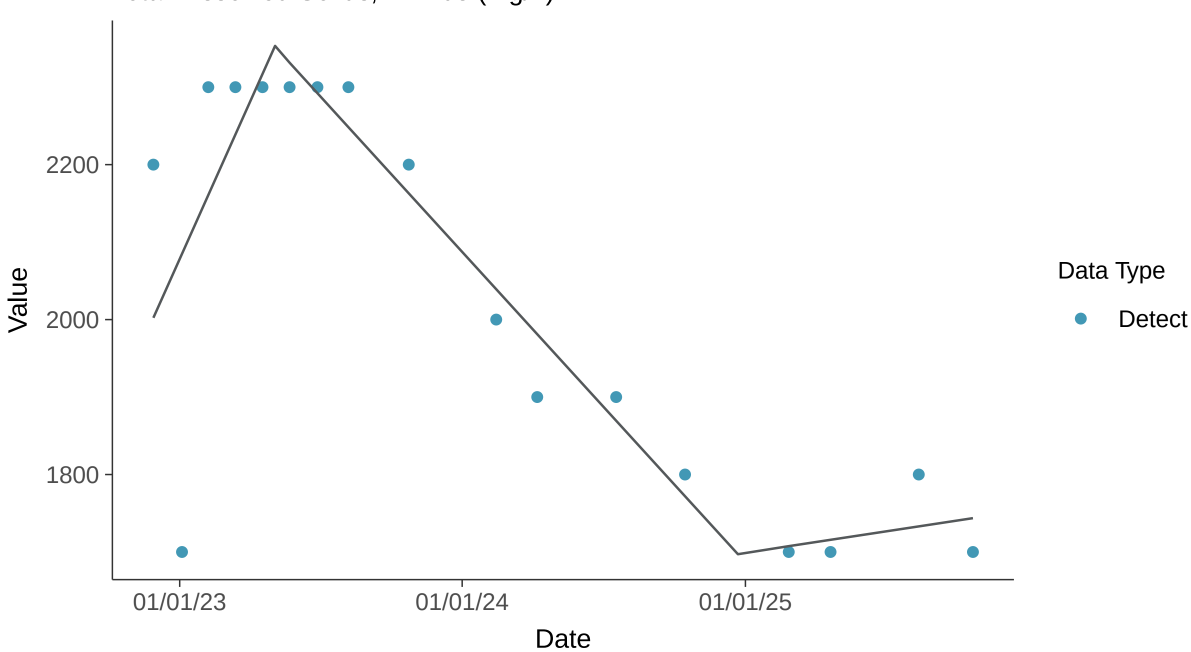
Trend Regression: Piecewise Linear-Linear

Total Dissolved Solids, MW-03 (mg/L)



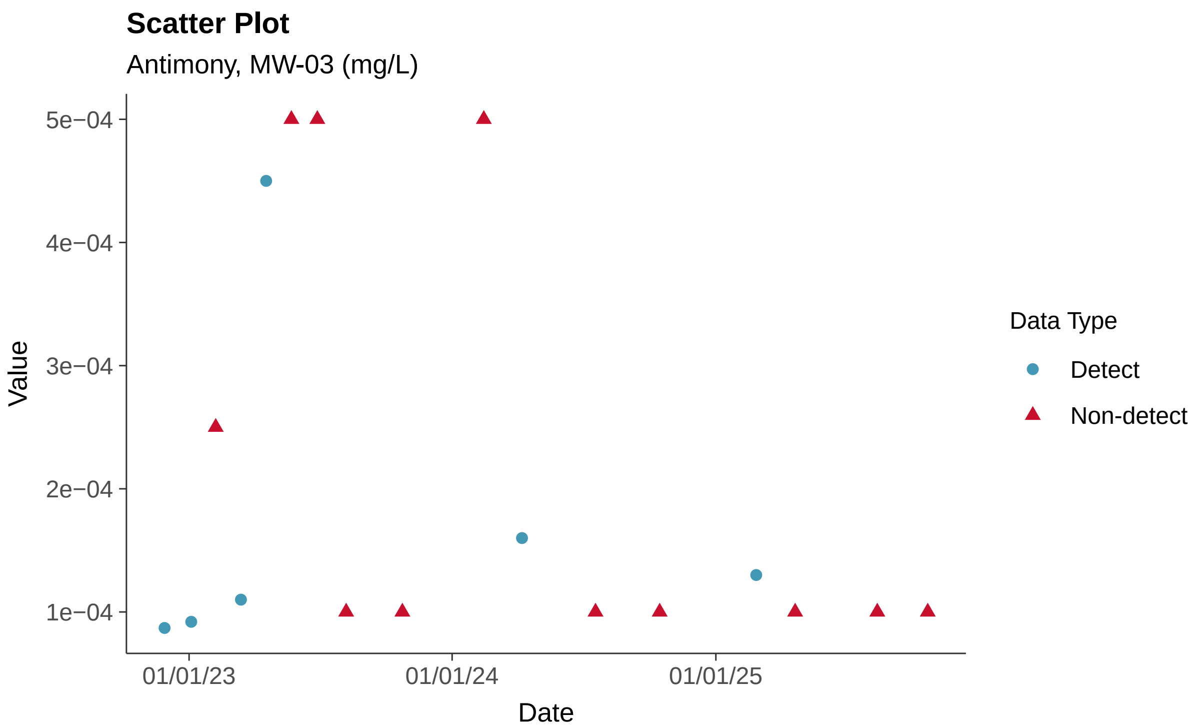
Trend Regression: Piecewise Linear-Linear-Linear

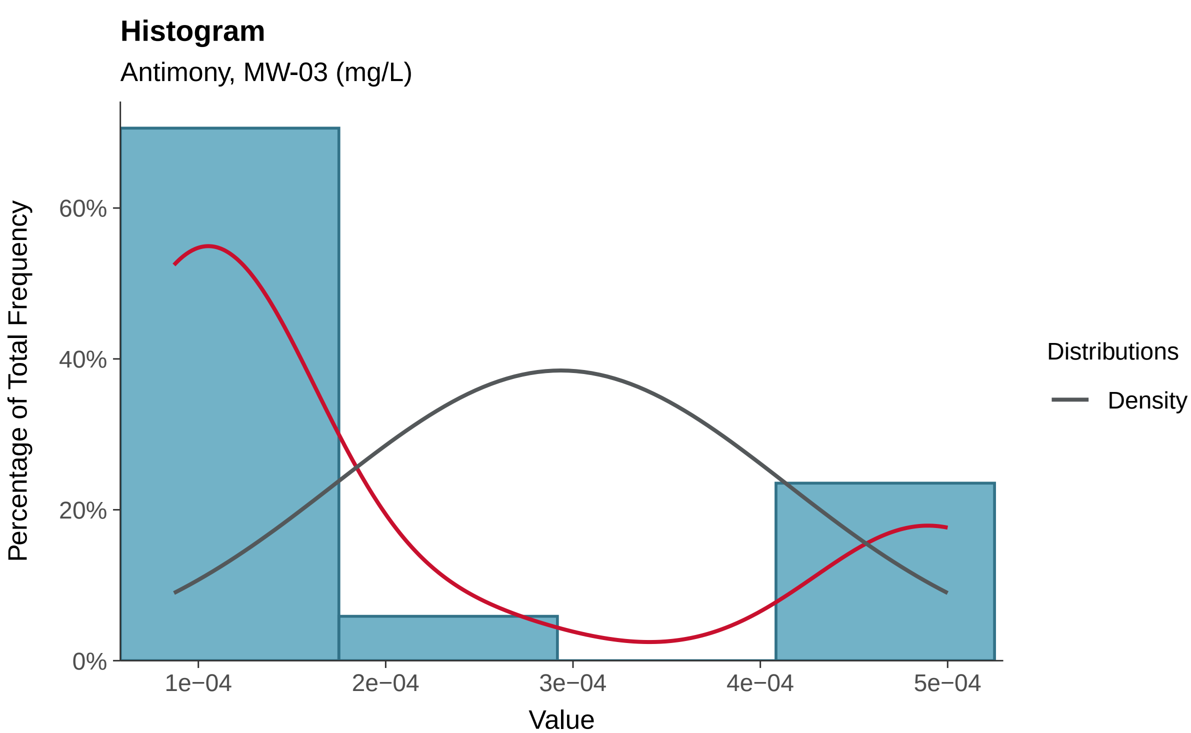
Total Dissolved Solids, MW-03 (mg/L)



Appendix IV: Antimony, MW-03

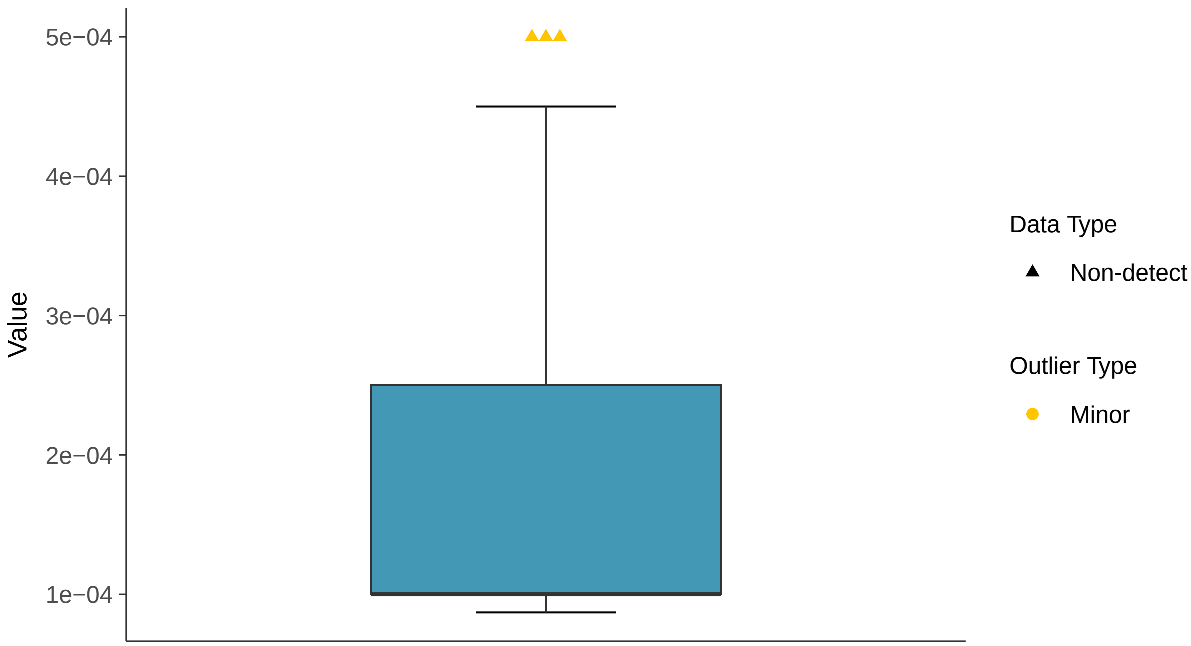
ID: 13_2_4_101





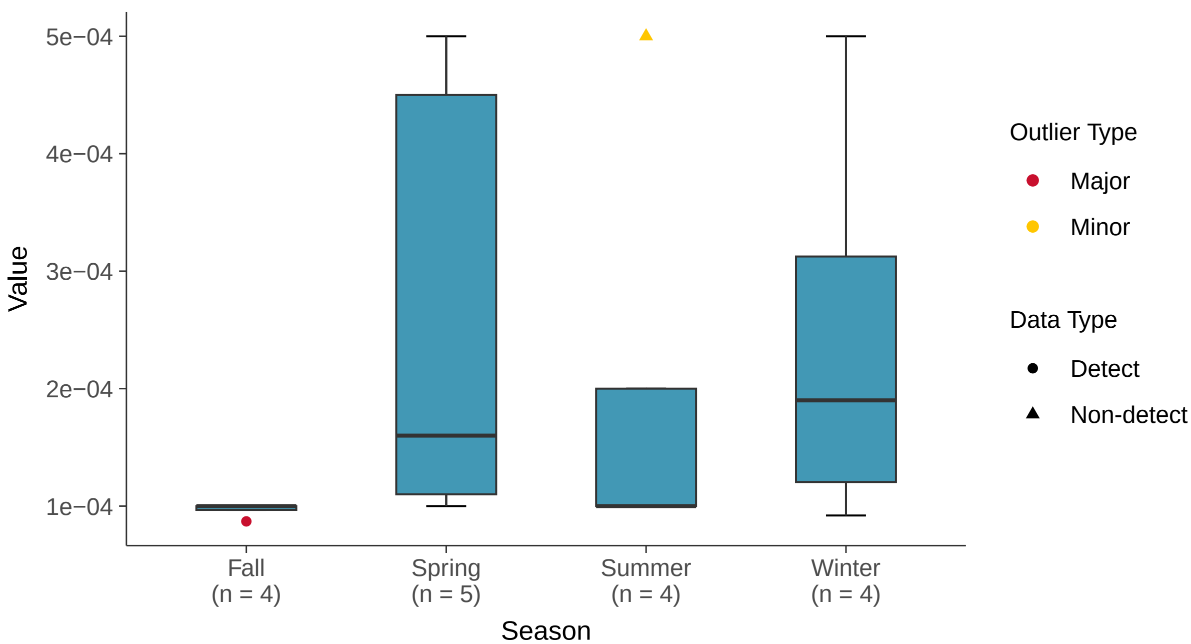
Boxplot

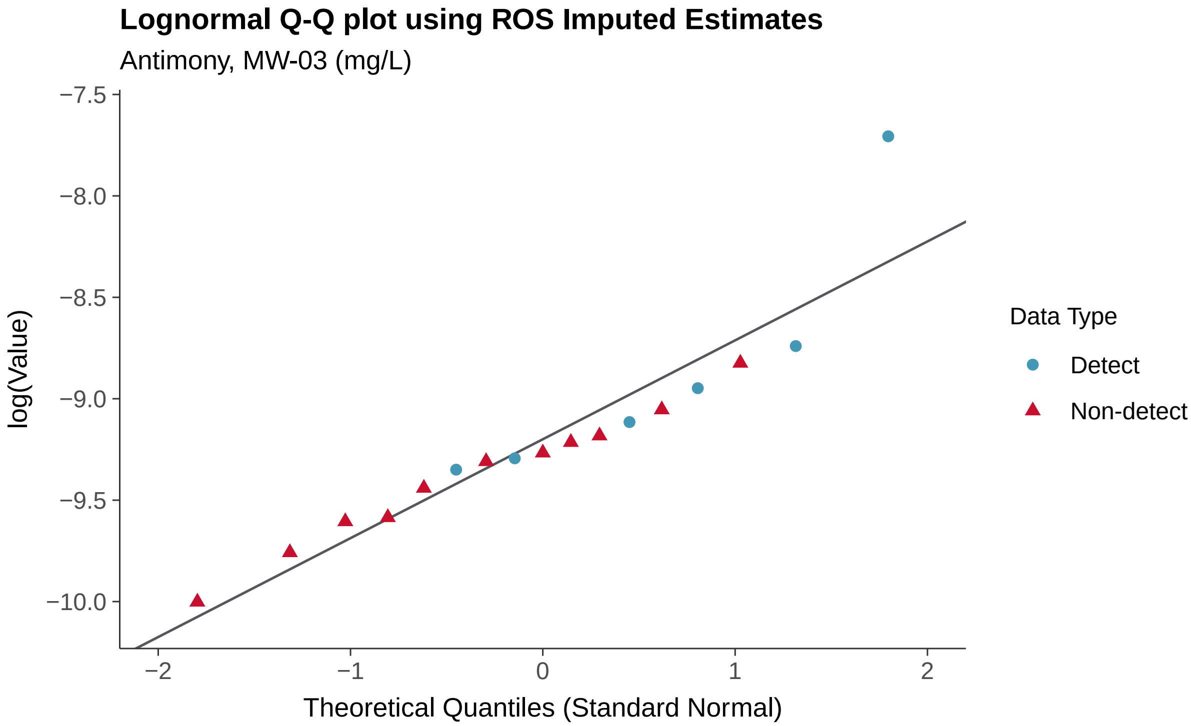
Antimony, MW-03 (mg/L)

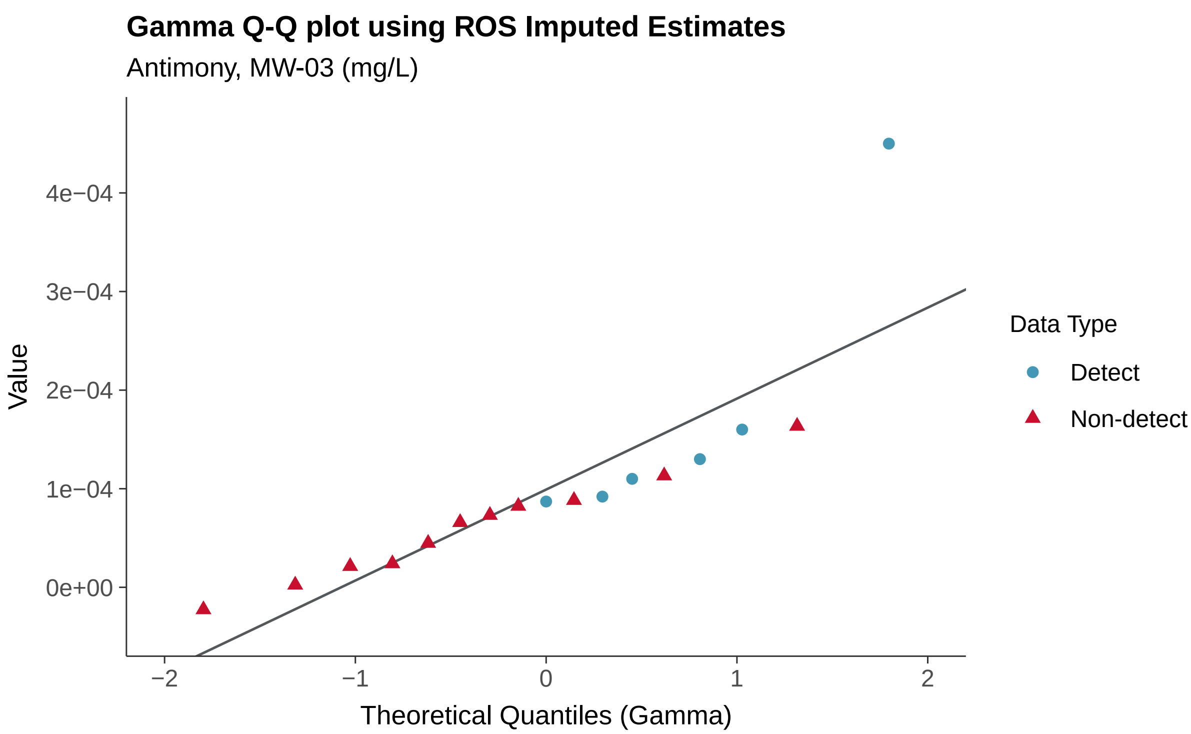


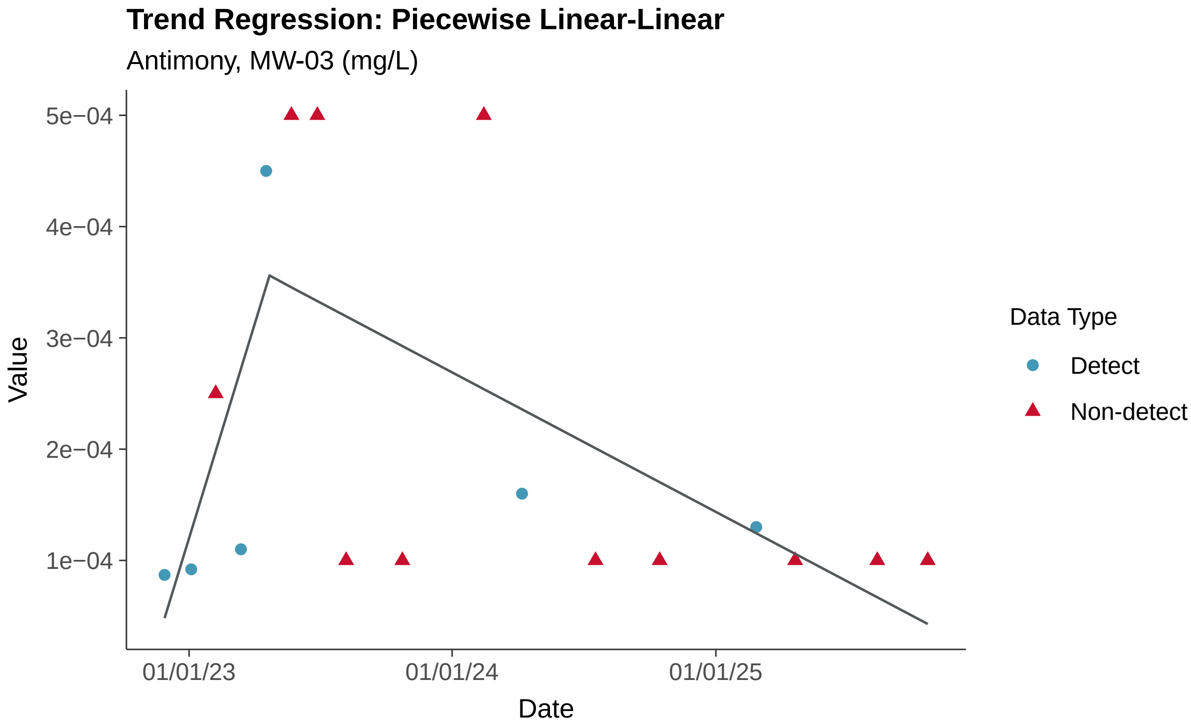
Boxplot by Season

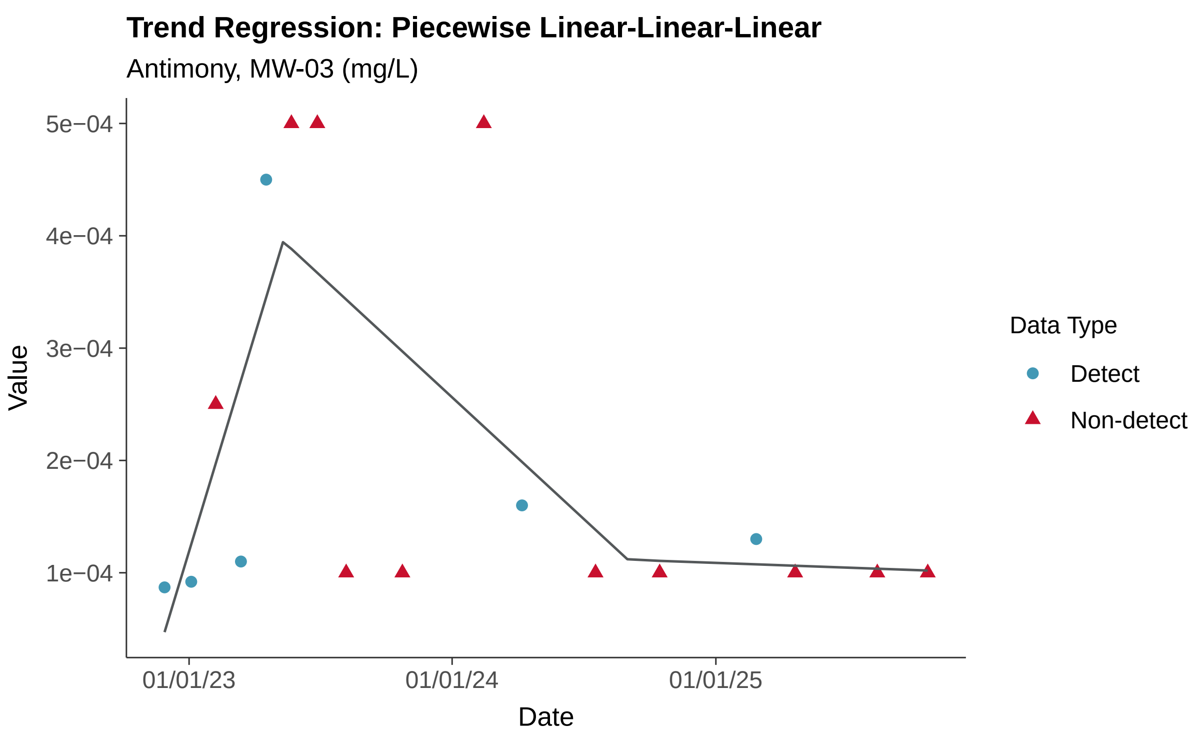
Antimony, MW-03 (mg/L)




Lognormal Q-Q plot using ROS Imputed Estimates
Antimony, MW-03 (mg/L)
log(Value)
−7.5
−8.0
−8.5
−9.0
−9.5
−10.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Gamma Q-Q plot using ROS Imputed Estimates
Antimony, MW-03 (mg/L)
Value
4e−04
3e−04
2e−04
1e−04
0e+00
−2
−1
0
1
2
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Antimony, MW-03 (mg/L)
Value
5e−04
4e−04
3e−04
2e−04
1e−04
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

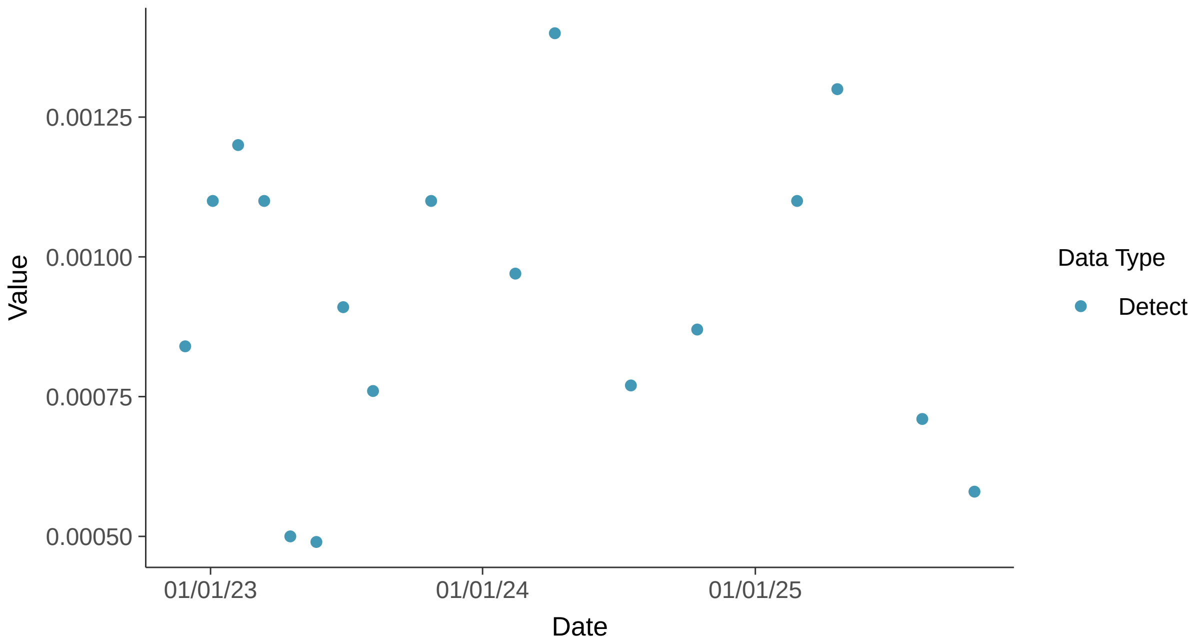

Trend Regression: Piecewise Linear-Linear-Linear
Antimony, MW-03 (mg/L)
Value
5e−04
4e−04
3e−04
2e−04
1e−04
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Appendix IV: Arsenic, MW-03

ID: 13_2_4_102

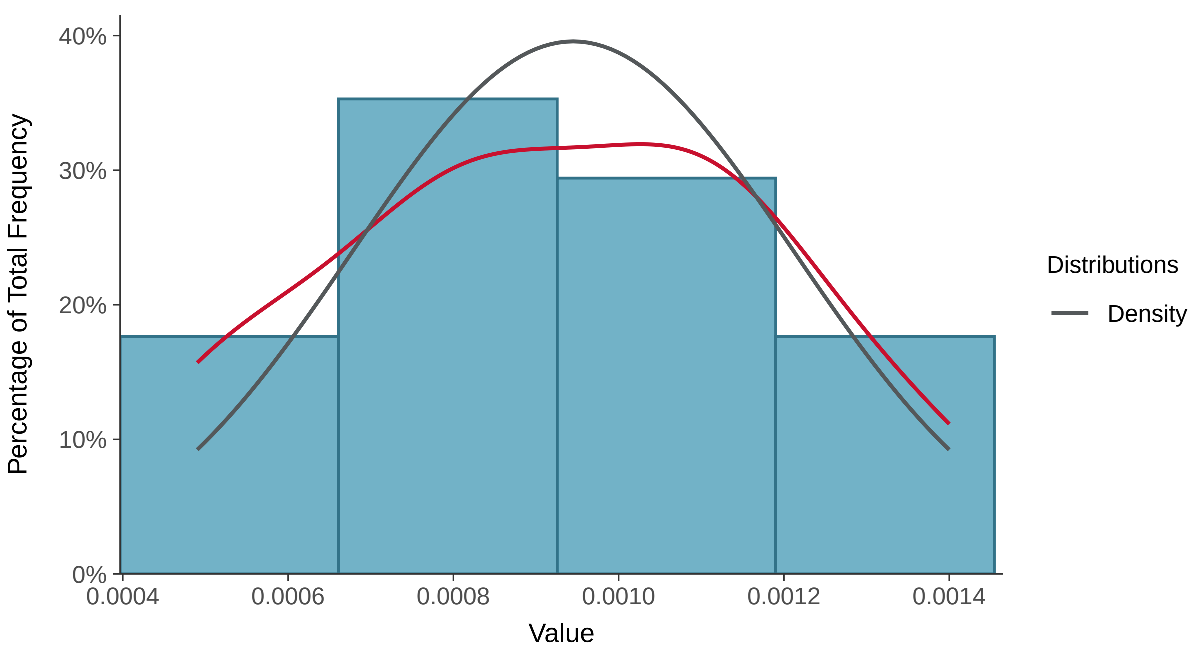
Scatter Plot

Arsenic, MW-03 (mg/L)



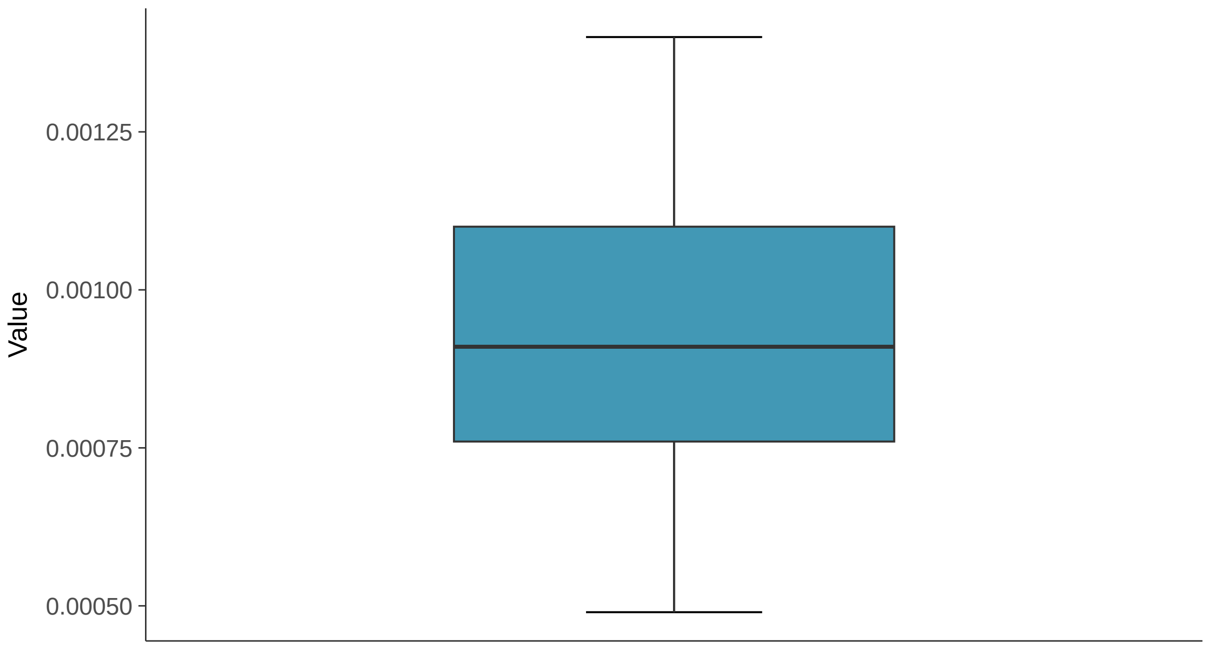
Histogram

Arsenic, MW-03 (mg/L)



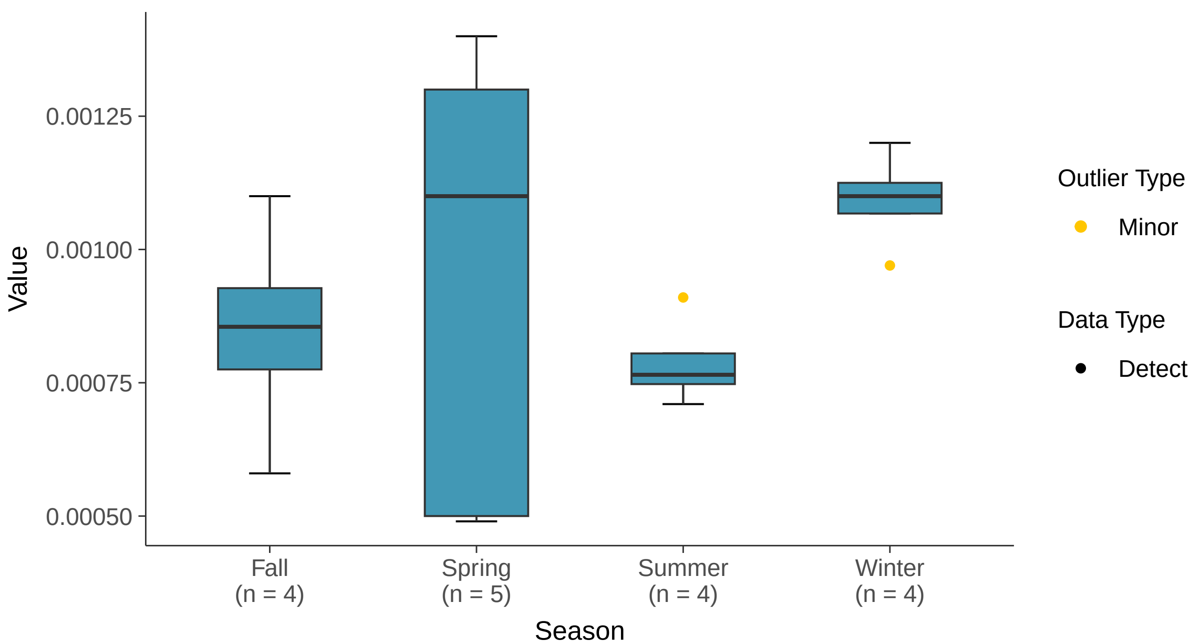
Boxplot

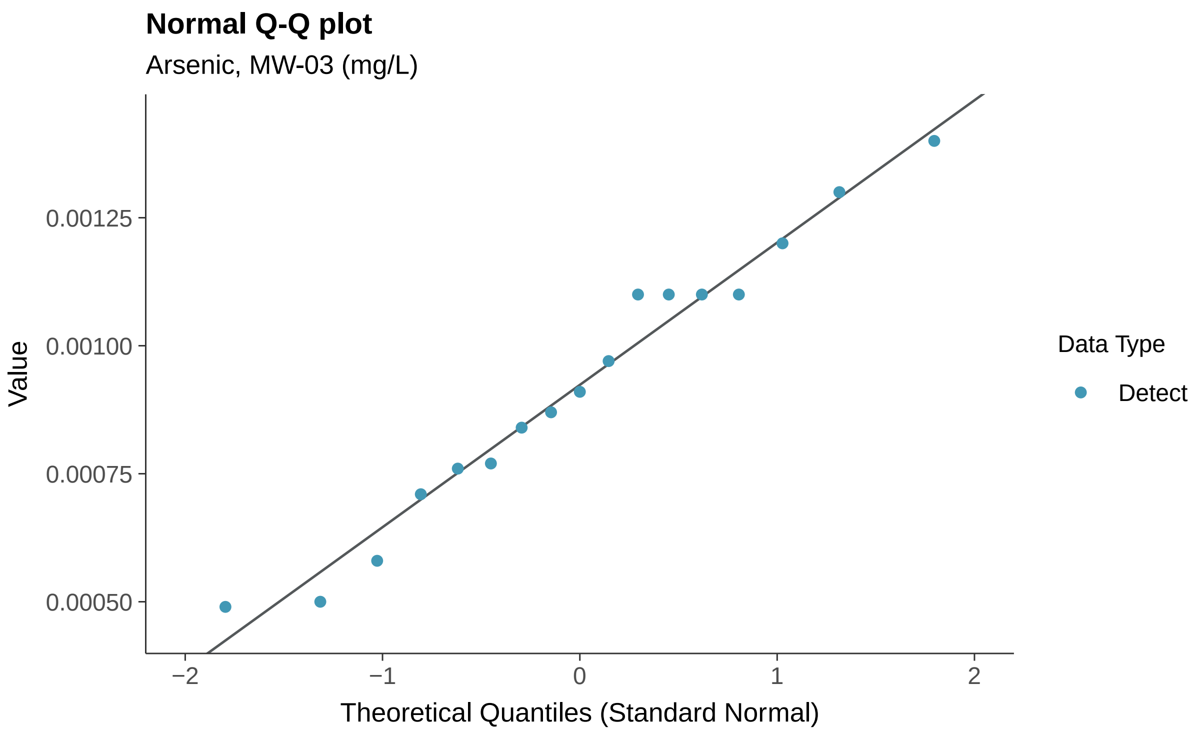
Arsenic, MW-03 (mg/L)

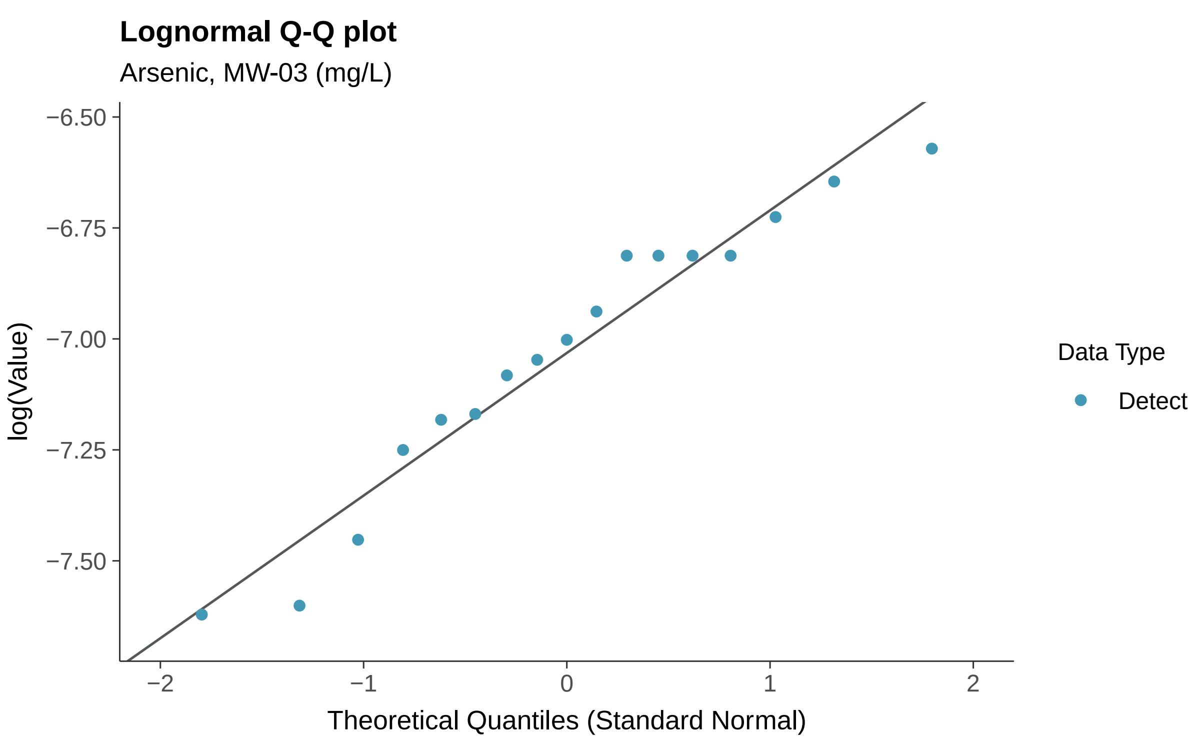


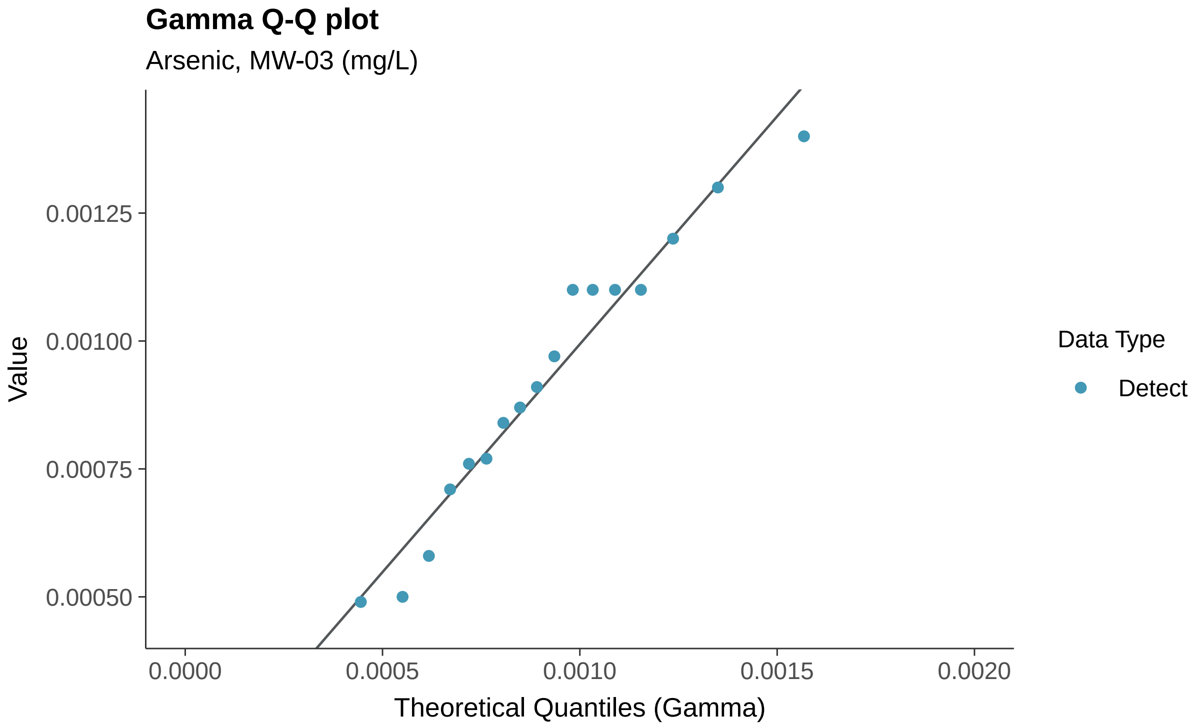
Boxplot by Season

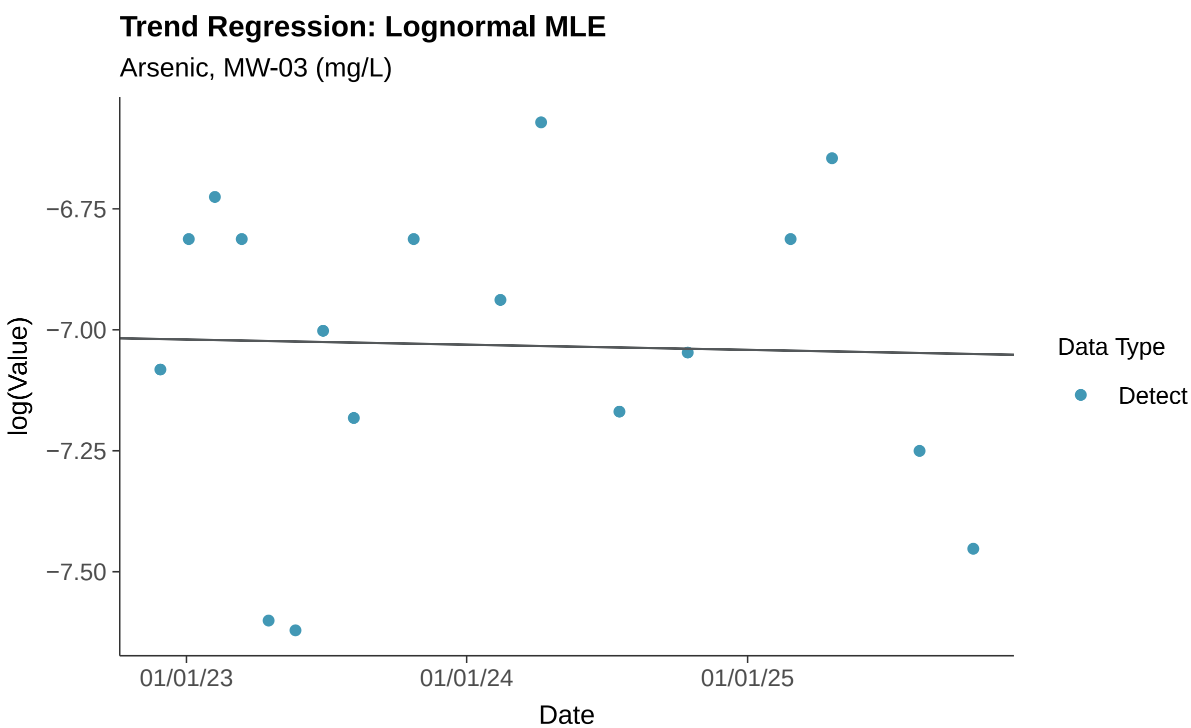
Arsenic, MW-03 (mg/L)




Normal Q-Q plot
Arsenic, MW-03 (mg/L)
Value
0.00125
0.00100
0.00075
0.00050
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

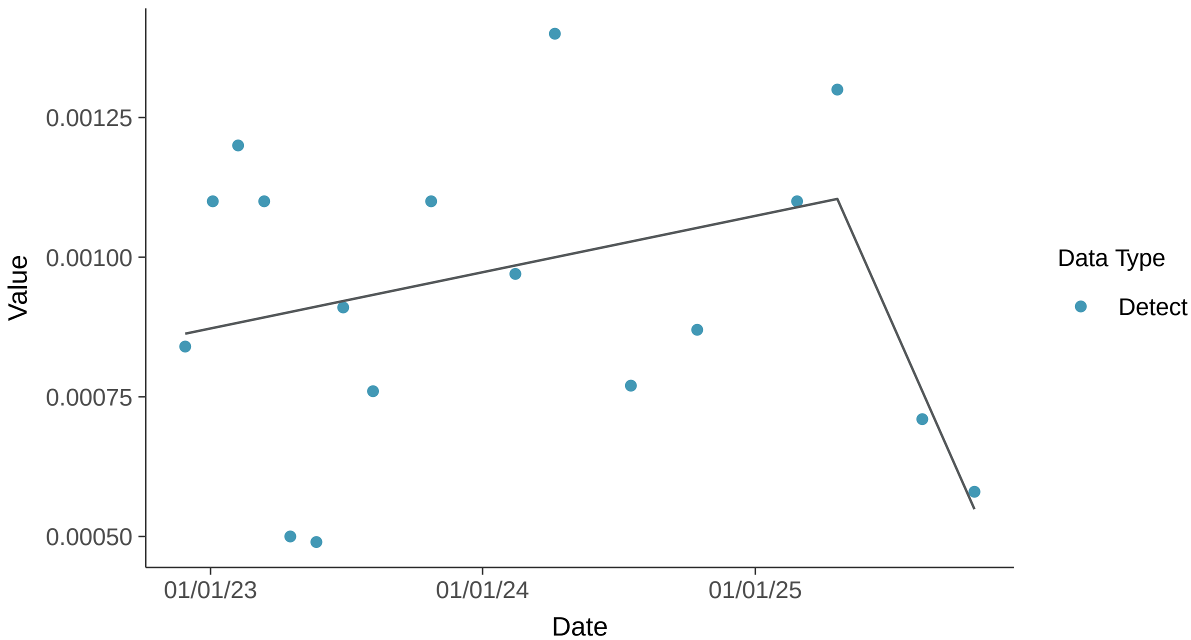

Lognormal Q-Q plot
Arsenic, MW-03 (mg/L)
log(Value)
−6.50
−6.75
−7.00
−7.25
−7.50
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Arsenic, MW-03 (mg/L)
Value
0.00125
0.00100
0.00075
0.00050
0.0000
0.0005
0.0010
0.0015
0.0020
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Arsenic, MW-03 (mg/L)
log(Value)
−6.75
−7.00
−7.25
−7.50
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

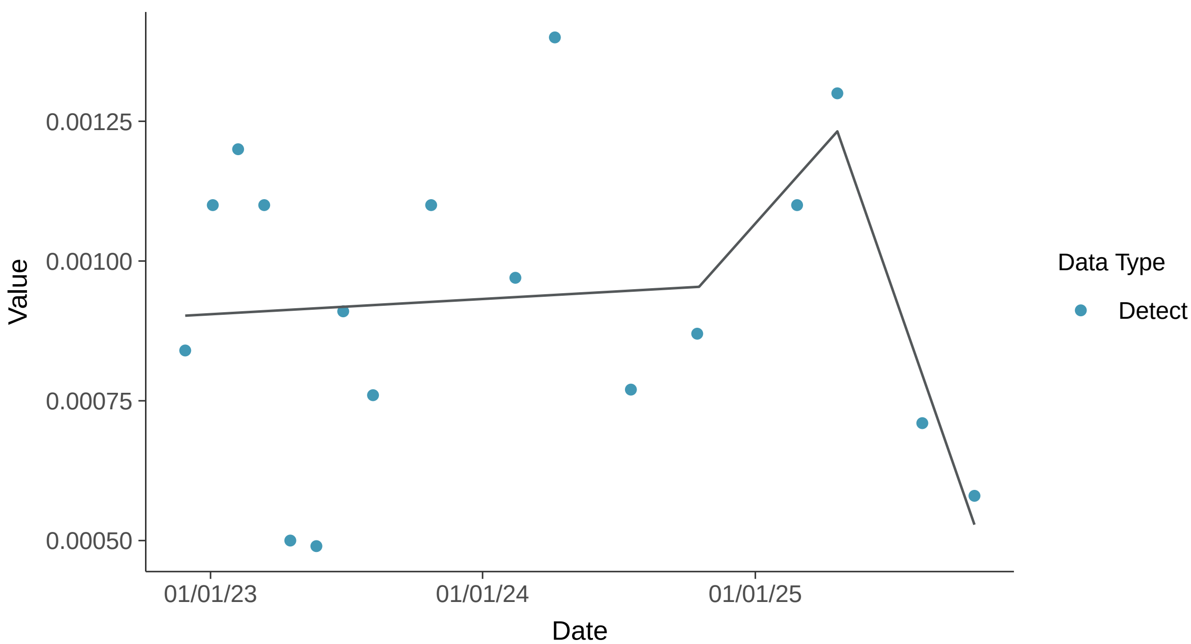
Trend Regression: Piecewise Linear-Linear

Arsenic, MW-03 (mg/L)



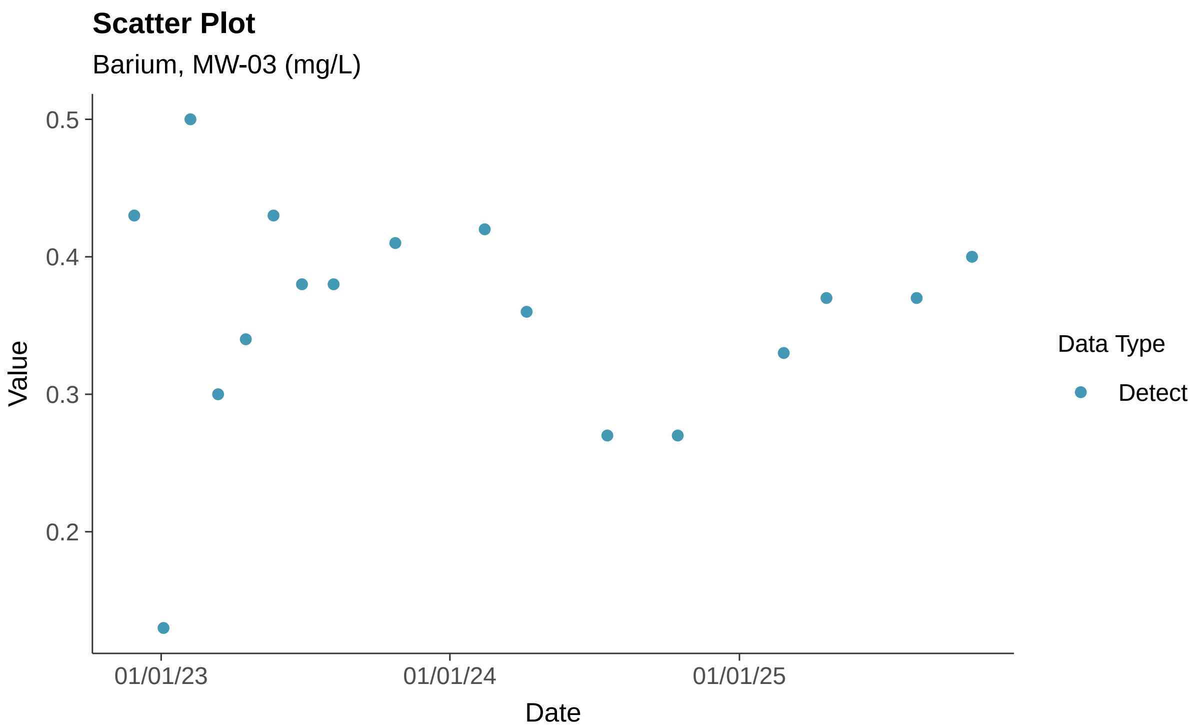
Trend Regression: Piecewise Linear-Linear-Linear

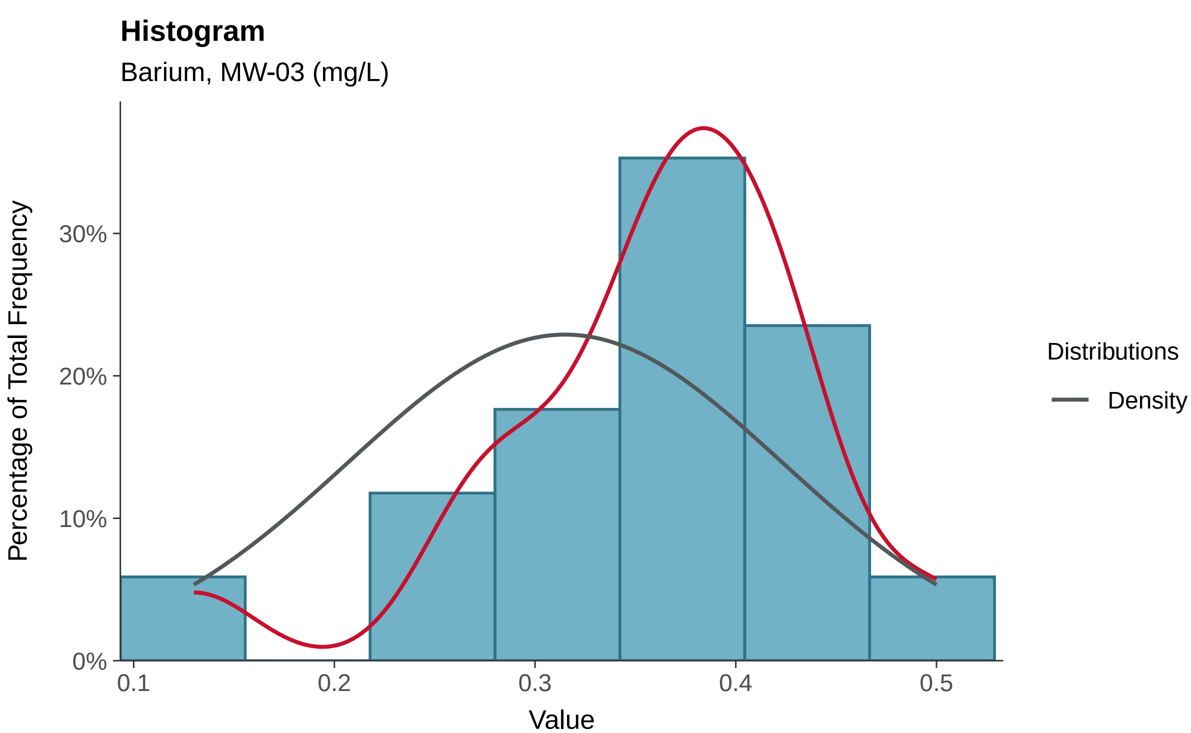
Arsenic, MW-03 (mg/L)



Appendix IV: Barium, MW-03

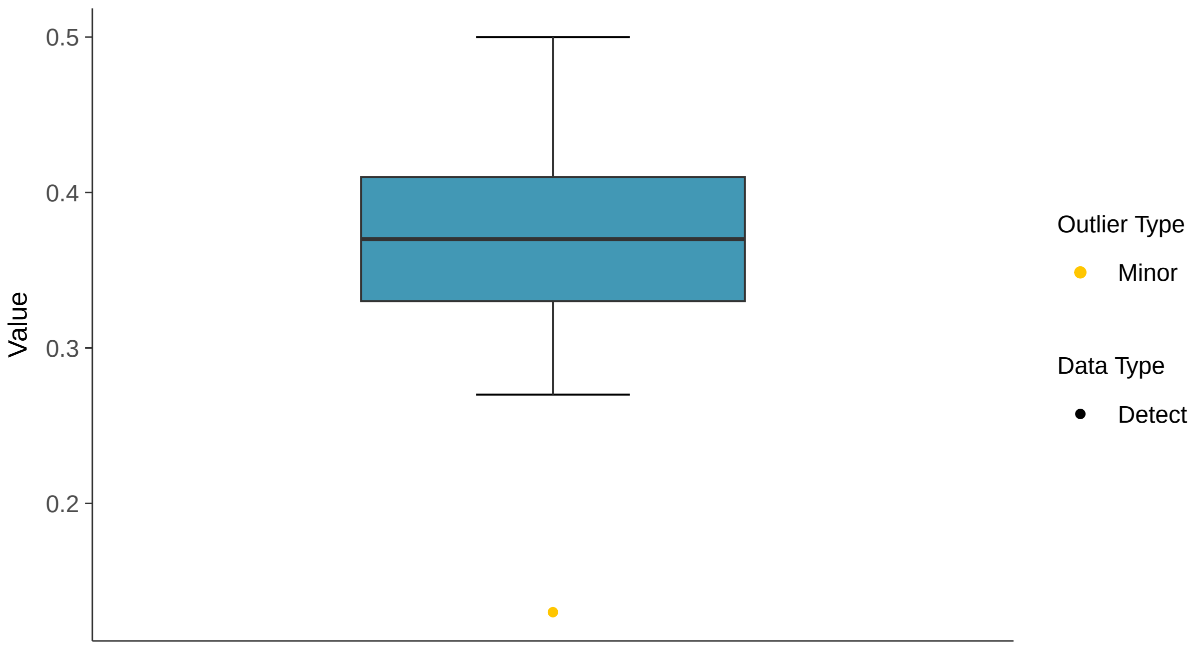
ID: 13_2_4_103





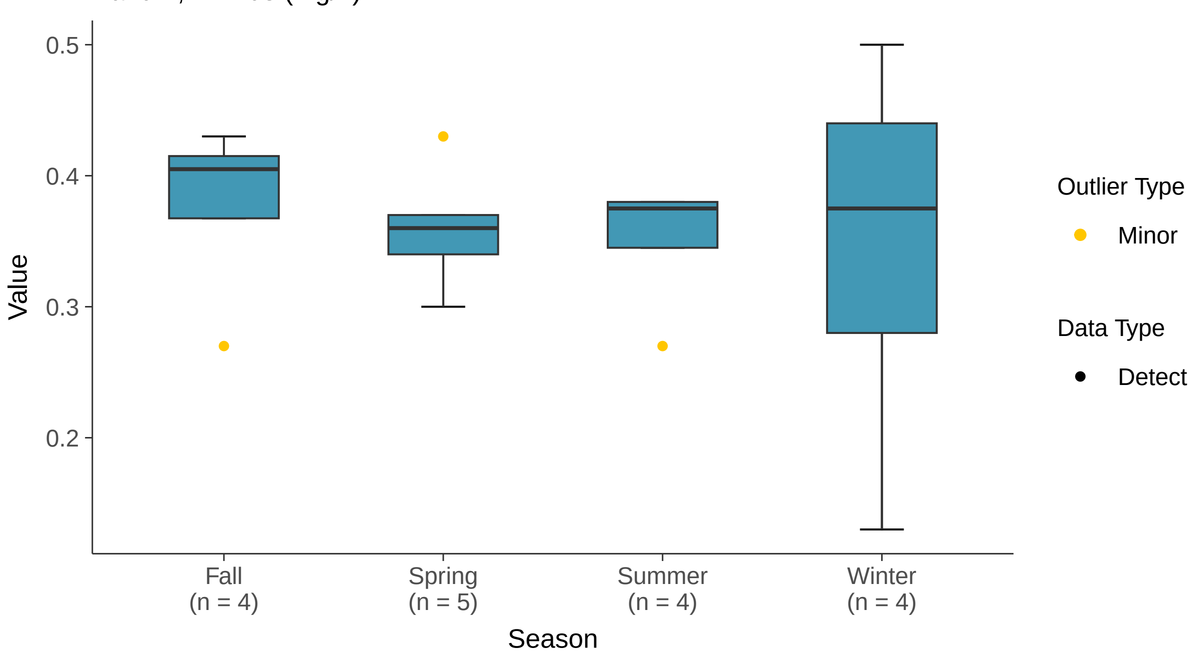
Boxplot

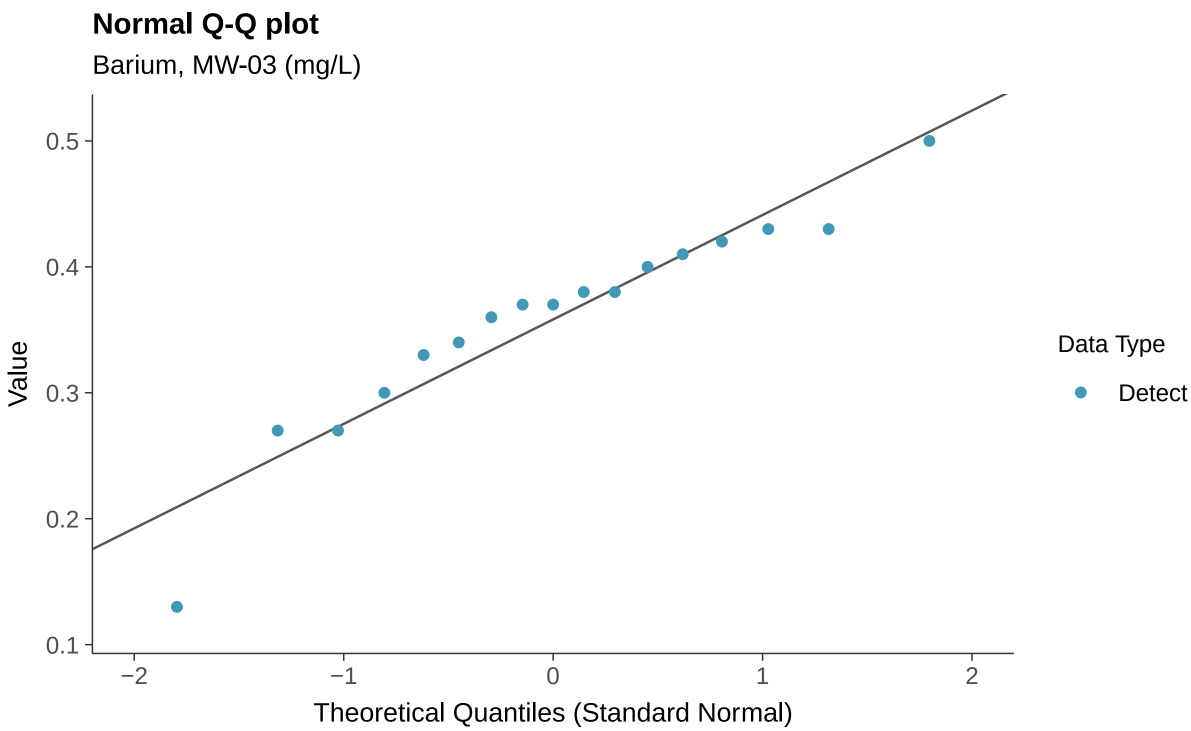
Barium, MW-03 (mg/L)

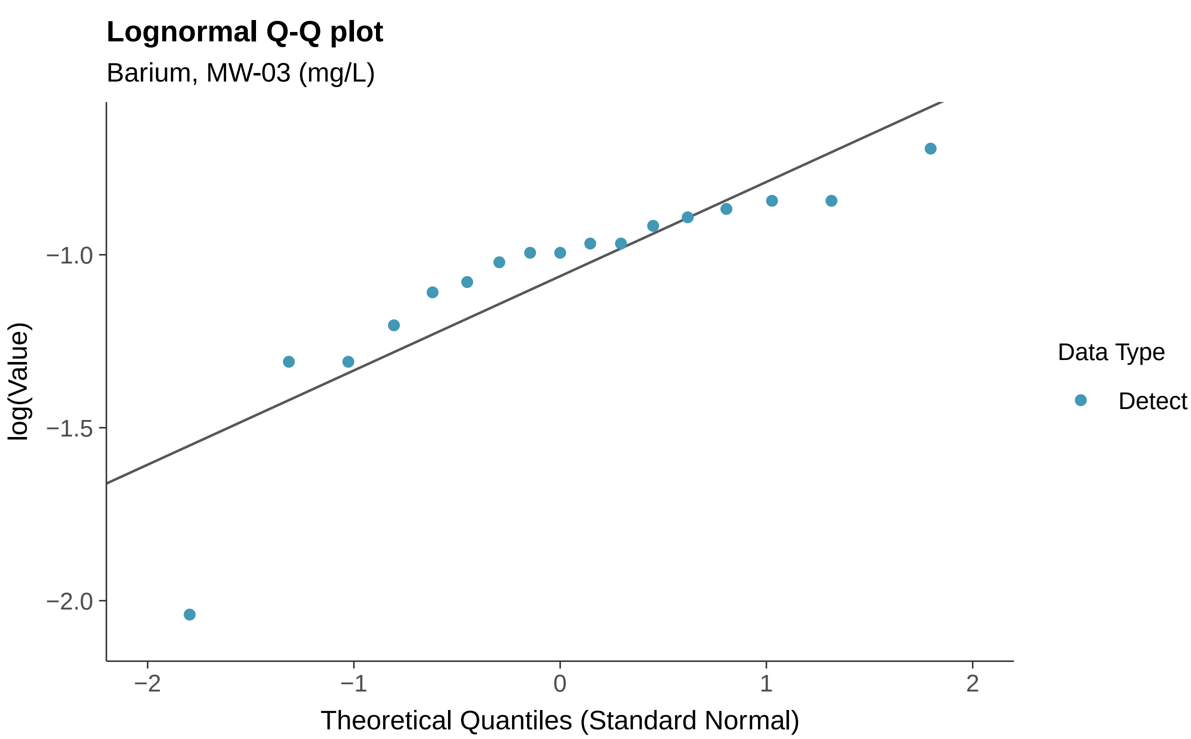


Boxplot by Season

Barium, MW-03 (mg/L)

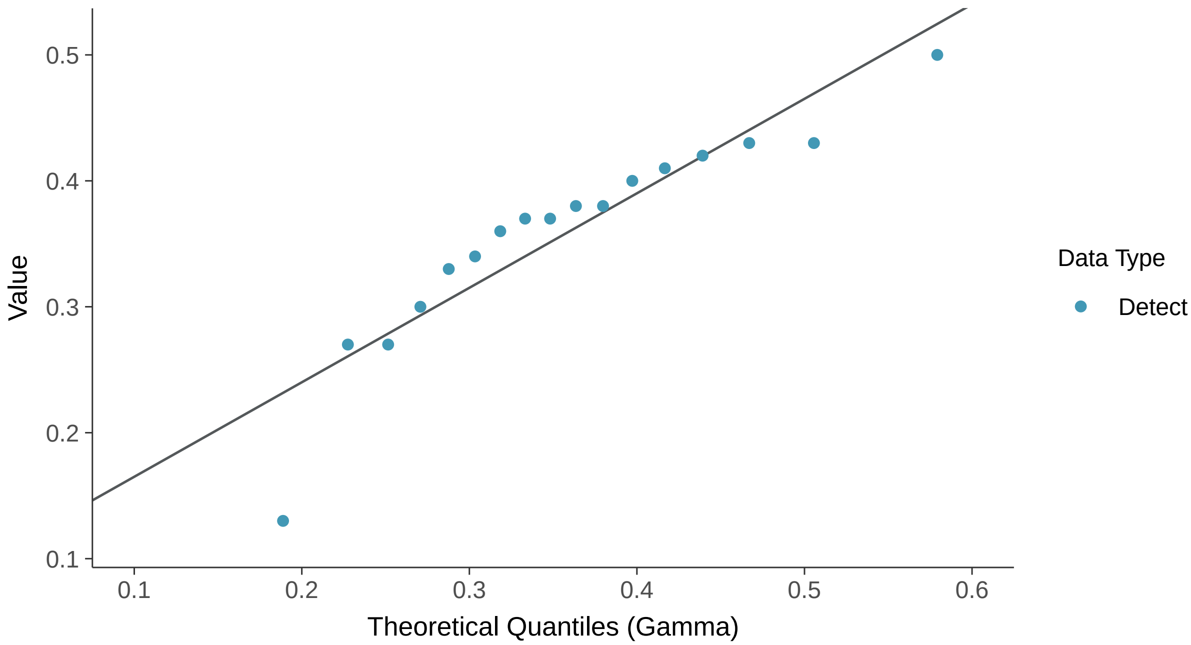



Normal Q-Q plot
Barium, MW-03 (mg/L)
Value
0.5
0.4
0.3
0.2
0.1
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Barium, MW-03 (mg/L)
log(Value)
−1.0
−1.5
−2.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

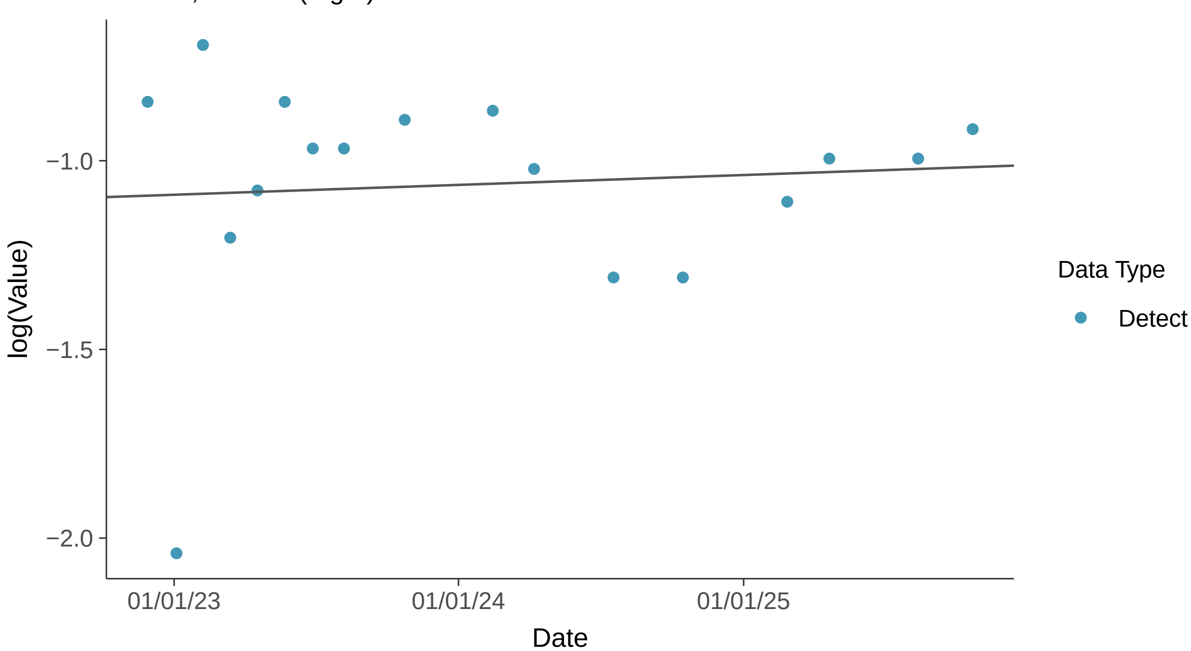
Gamma Q-Q plot

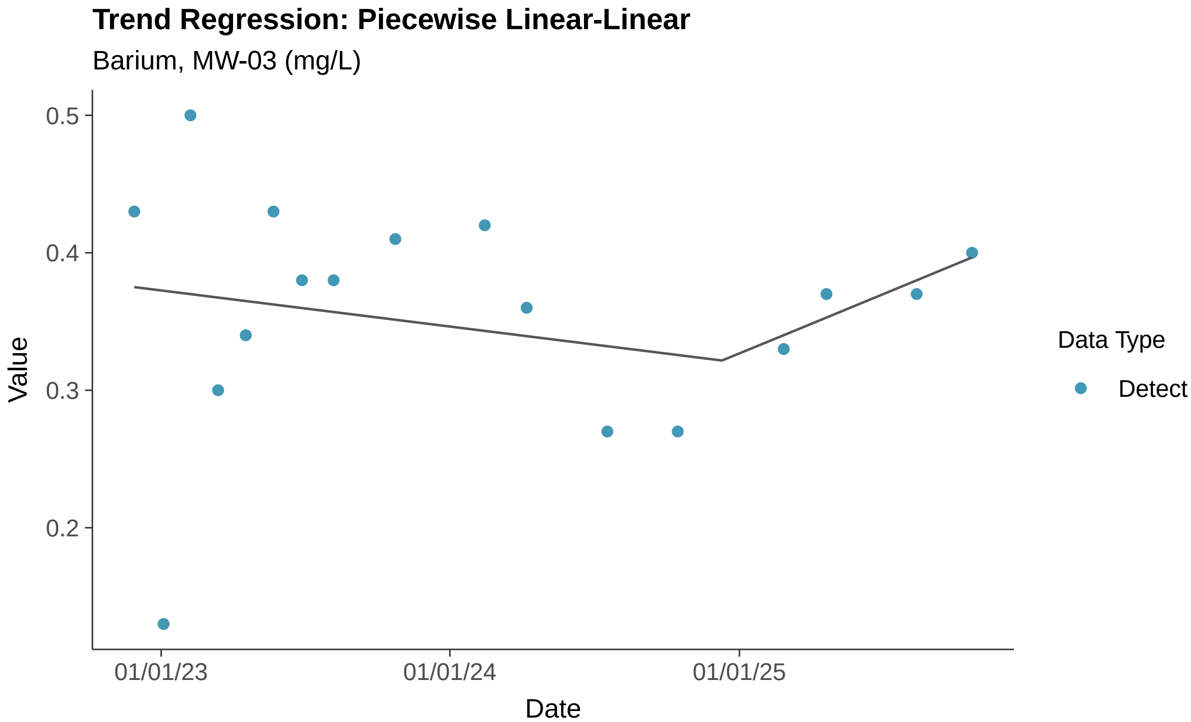
Barium, MW-03 (mg/L)

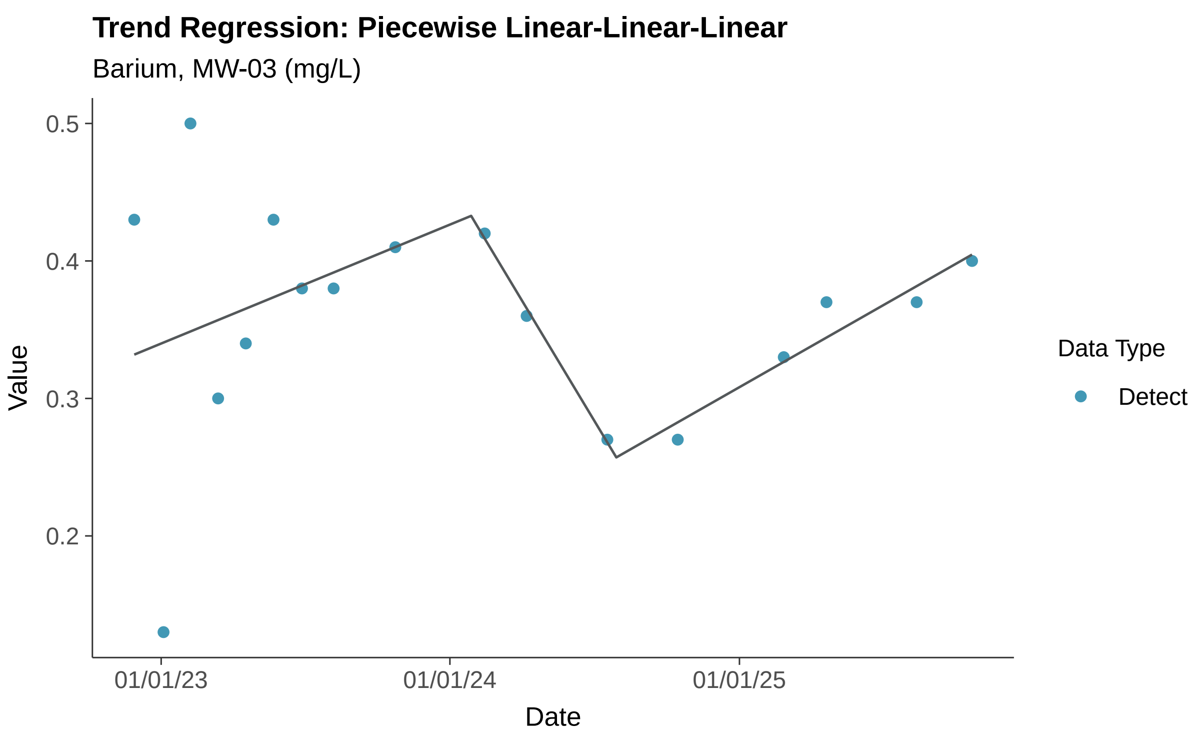


Trend Regression: Lognormal MLE

Barium, MW-03 (mg/L)

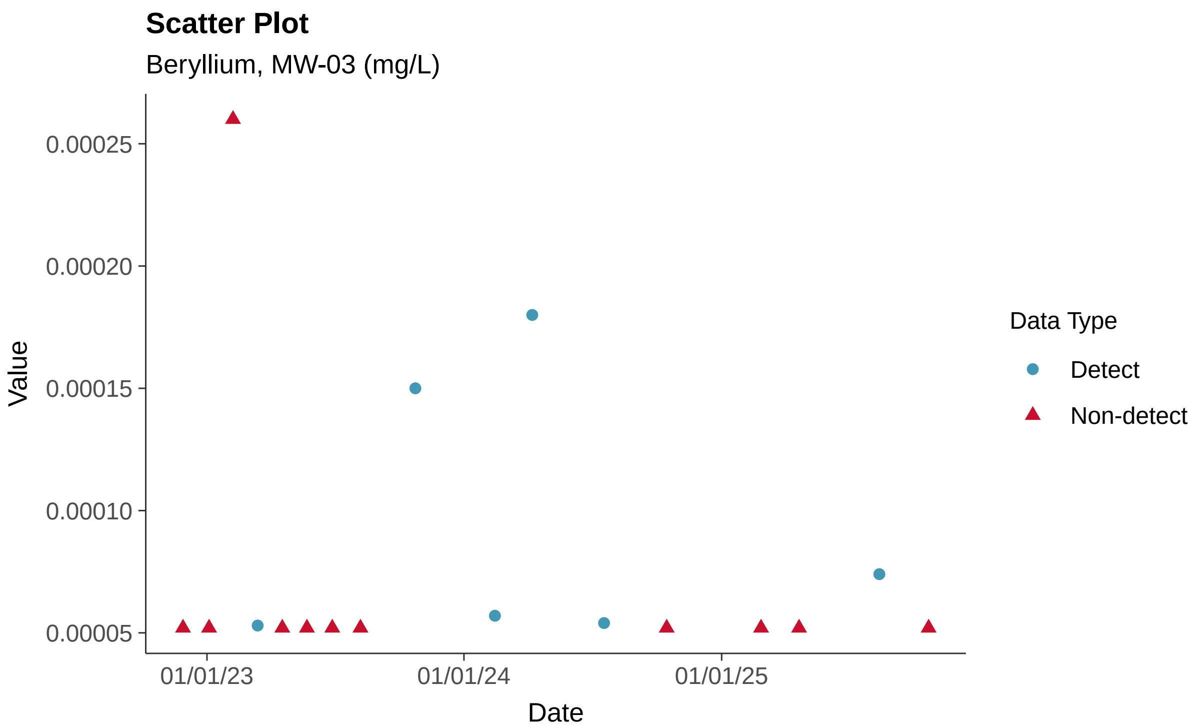


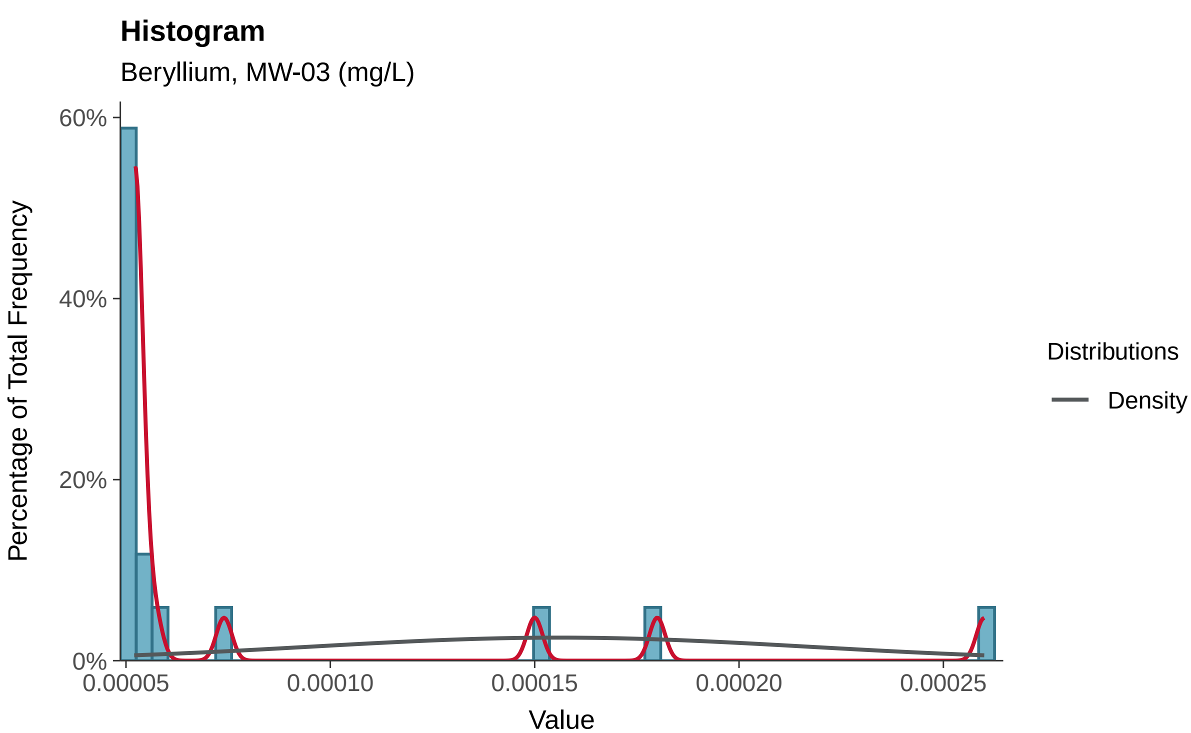

Trend Regression: Piecewise Linear-Linear
Barium, MW-03 (mg/L)
Value
0.5
0.4
0.3
0.2
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
Barium, MW-03 (mg/L)
Value
0.5
0.4
0.3
0.2
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Appendix IV: Beryllium, MW-03

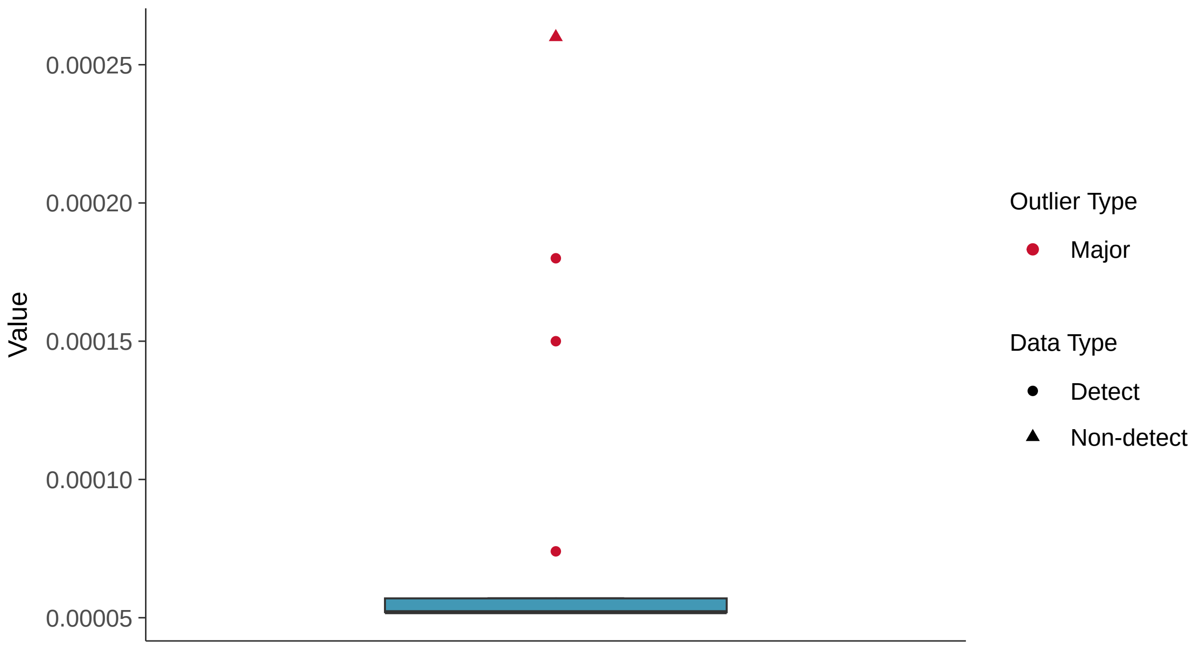
ID: 13_2_4_104





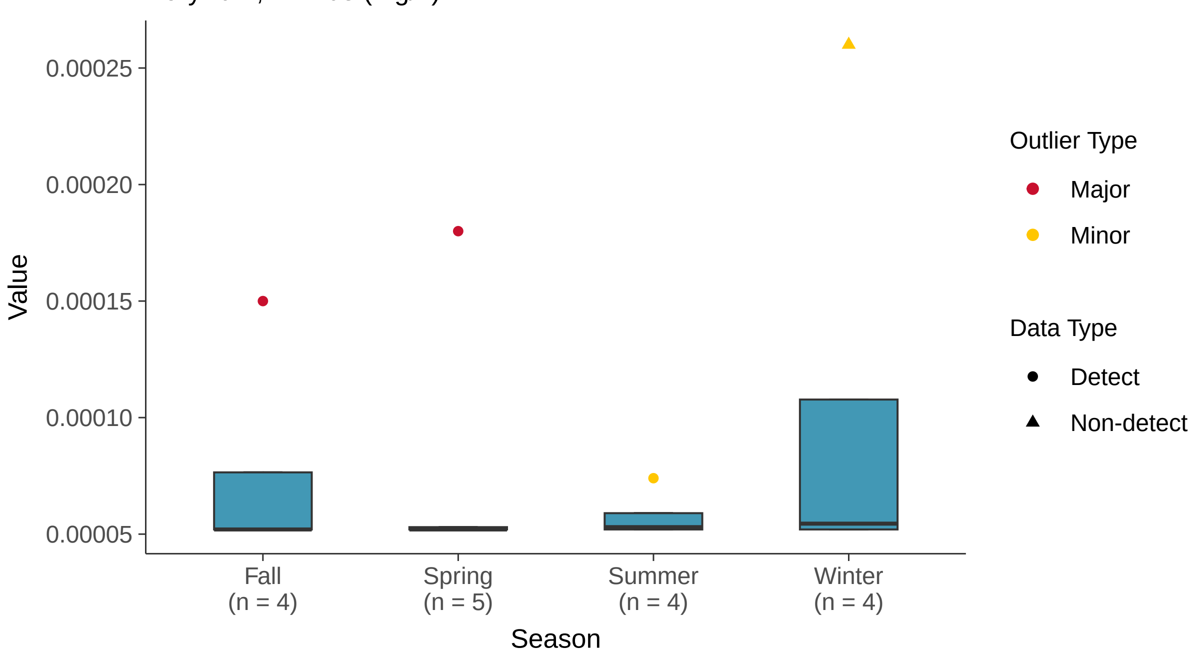
Boxplot

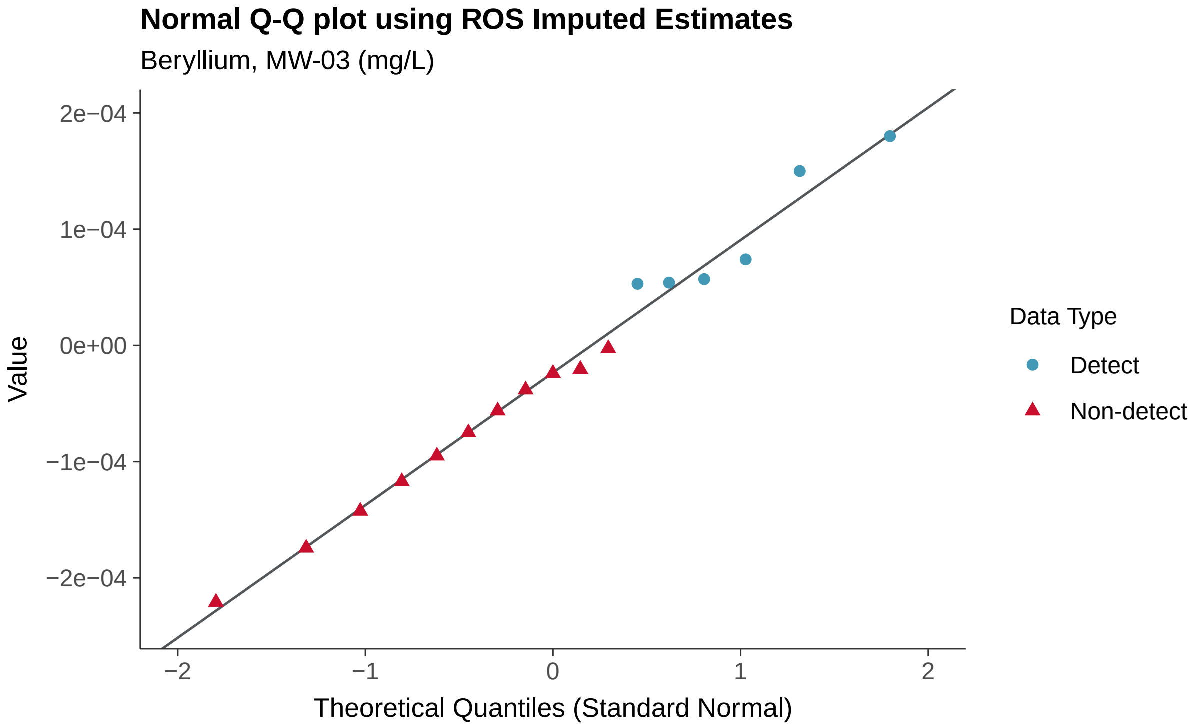
Beryllium, MW-03 (mg/L)

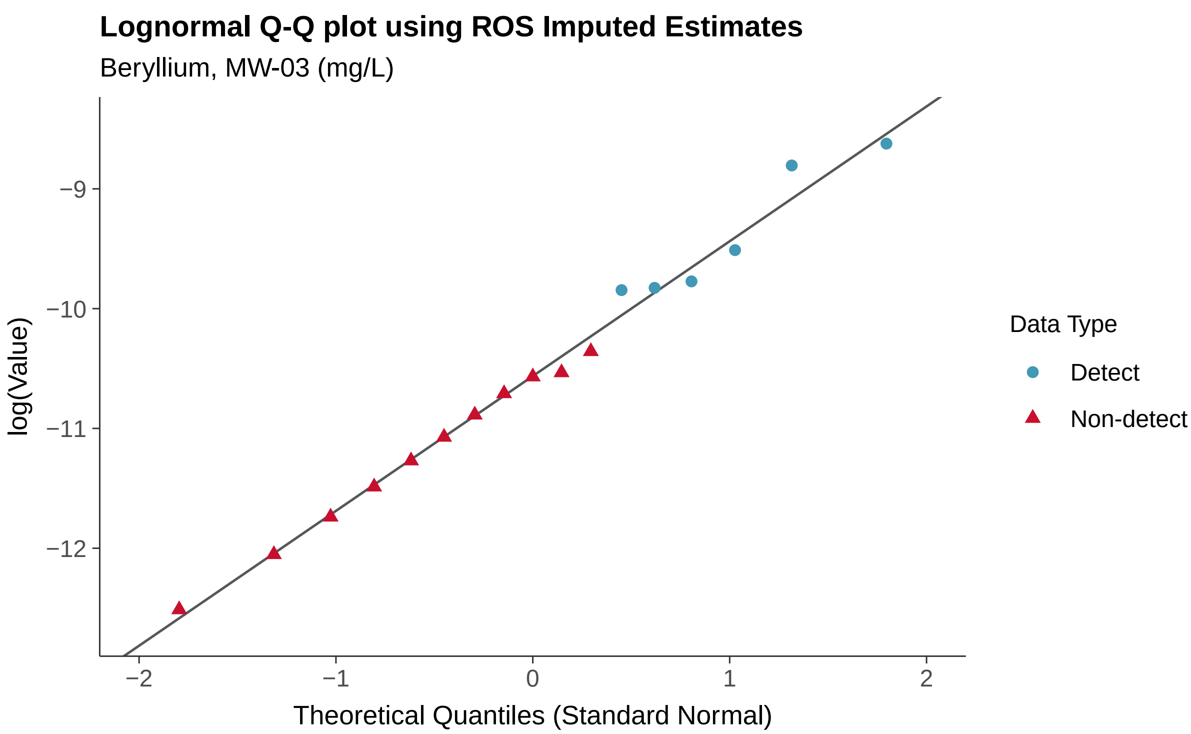


Boxplot by Season

Beryllium, MW-03 (mg/L)

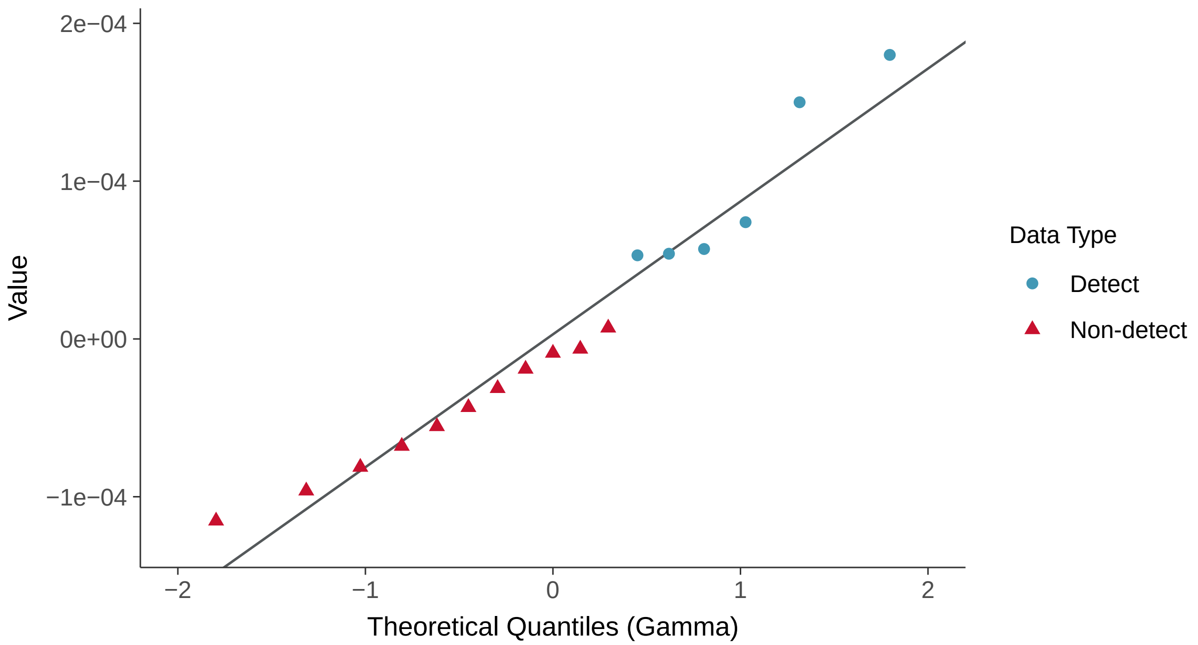



Normal Q-Q plot using ROS Imputed Estimates
Beryllium, MW-03 (mg/L)
Value
2e−04
1e−04
0e+00
−1e−04
−2e−04
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Lognormal Q-Q plot using ROS Imputed Estimates
Beryllium, MW-03 (mg/L)
log(Value)
−9
−10
−11
−12
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

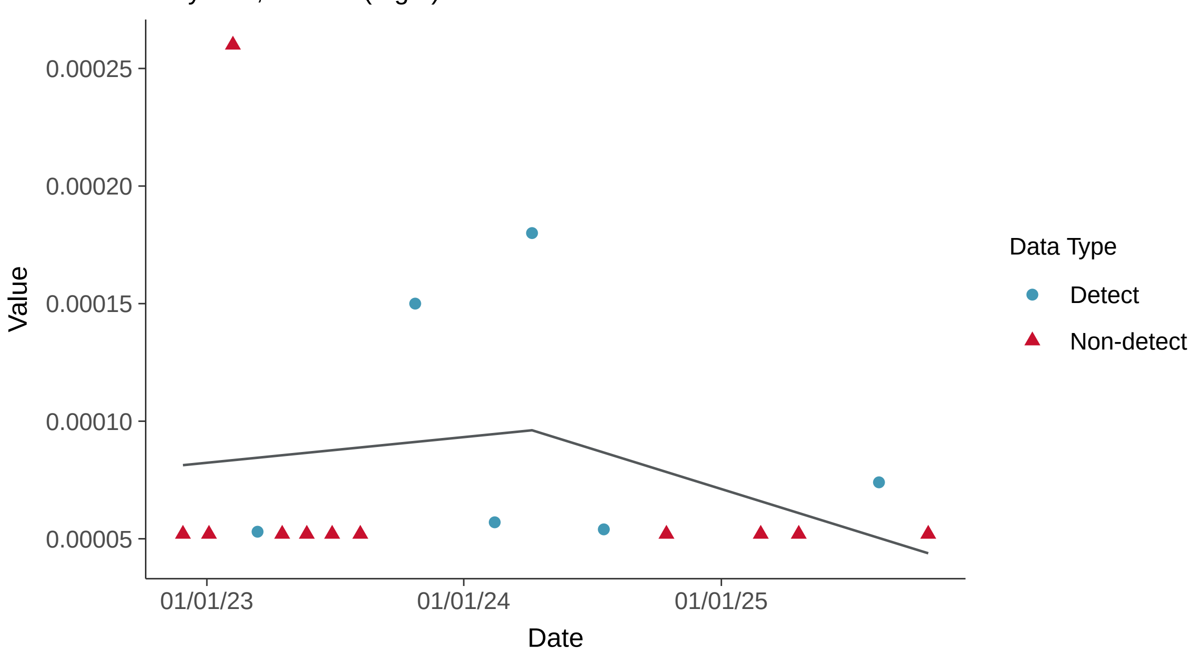
Gamma Q-Q plot using ROS Imputed Estimates

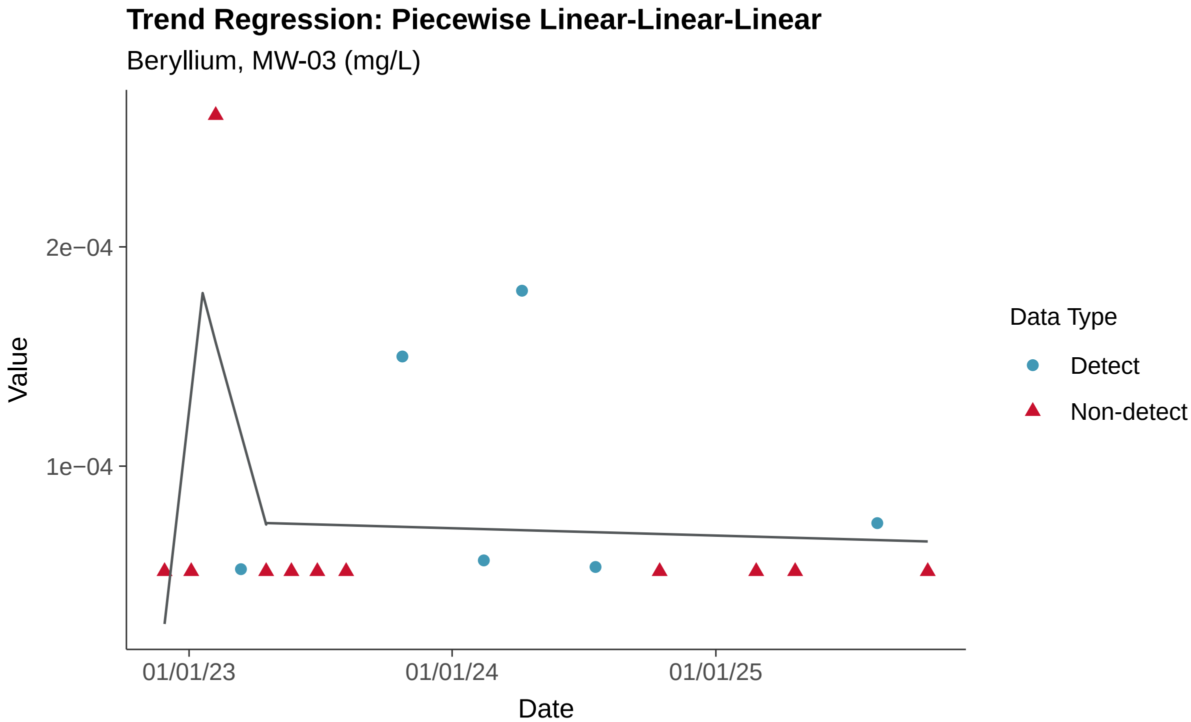
Beryllium, MW-03 (mg/L)



Trend Regression: Piecewise Linear-Linear

Beryllium, MW-03 (mg/L)



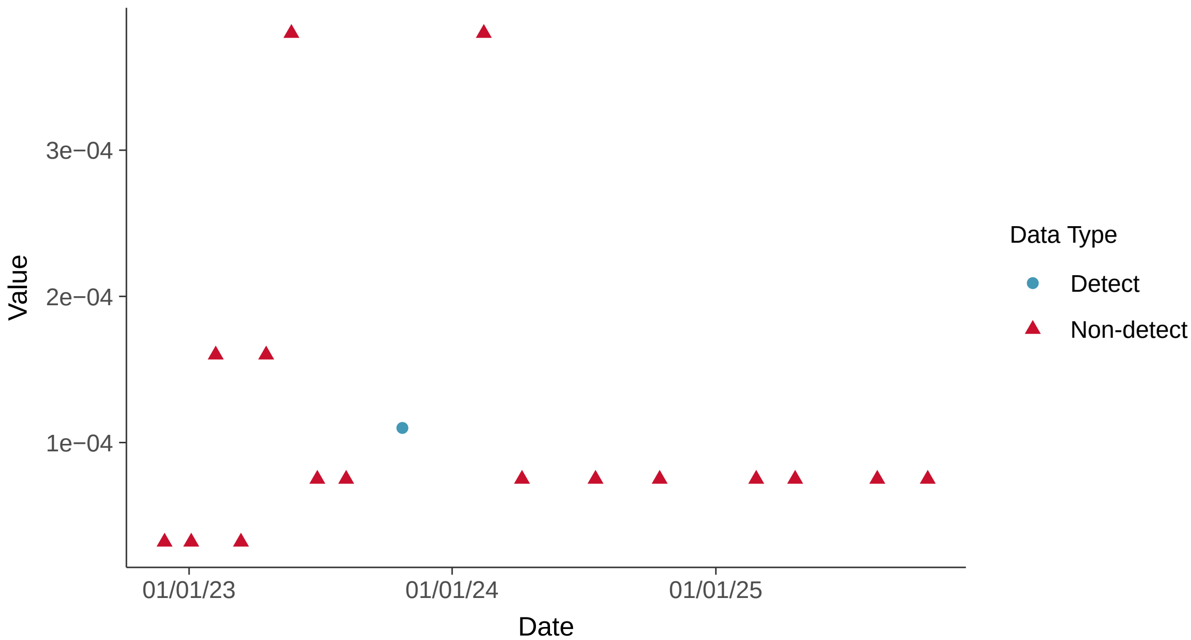

Trend Regression: Piecewise Linear-Linear-Linear
Beryllium, MW-03 (mg/L)
Value
2e−04
1e−04
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Appendix IV: Cadmium, MW-03

ID: 13_2_4_106

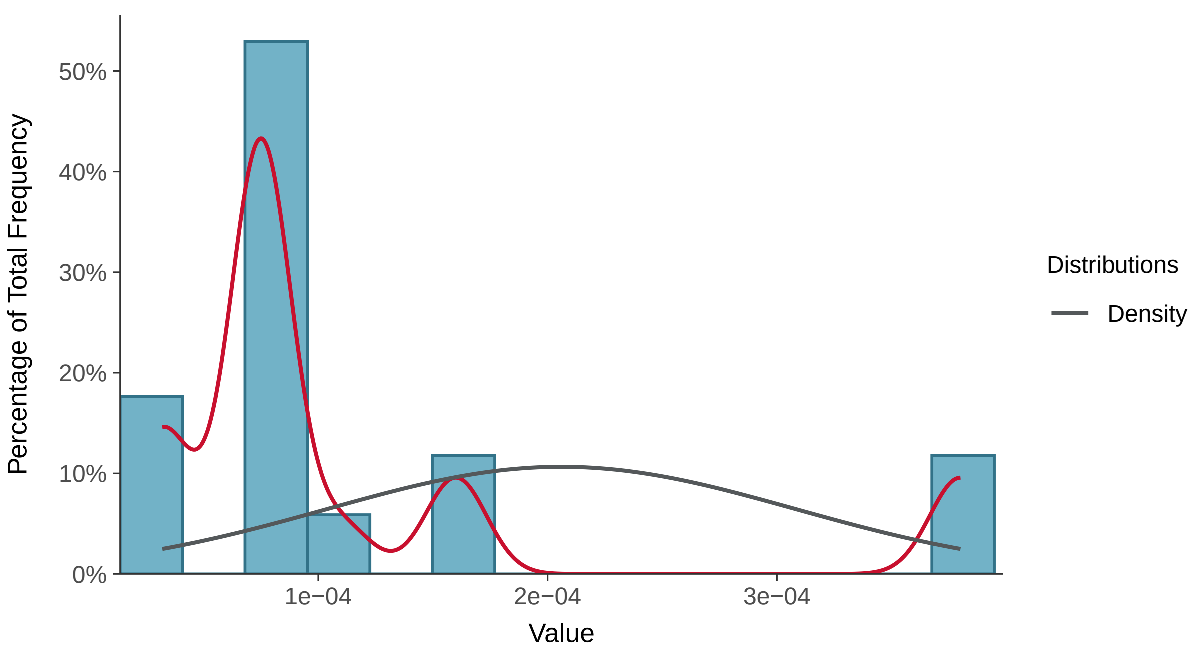
Scatter Plot

Cadmium, MW-03 (mg/L)



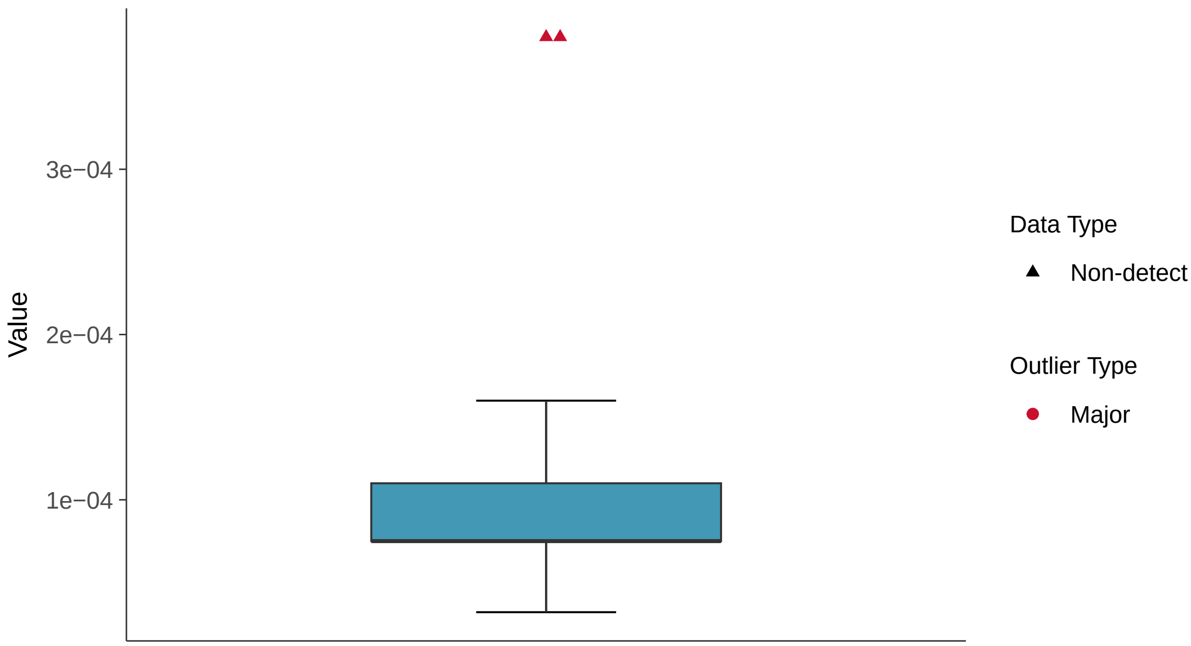
Histogram

Cadmium, MW-03 (mg/L)



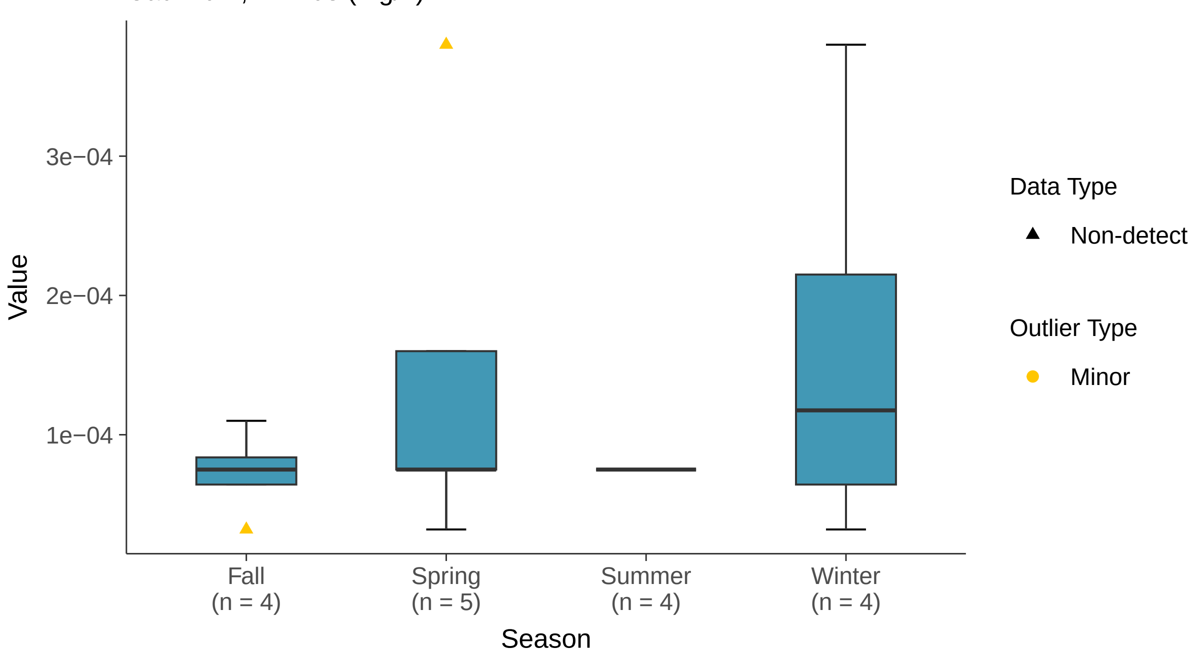
Boxplot

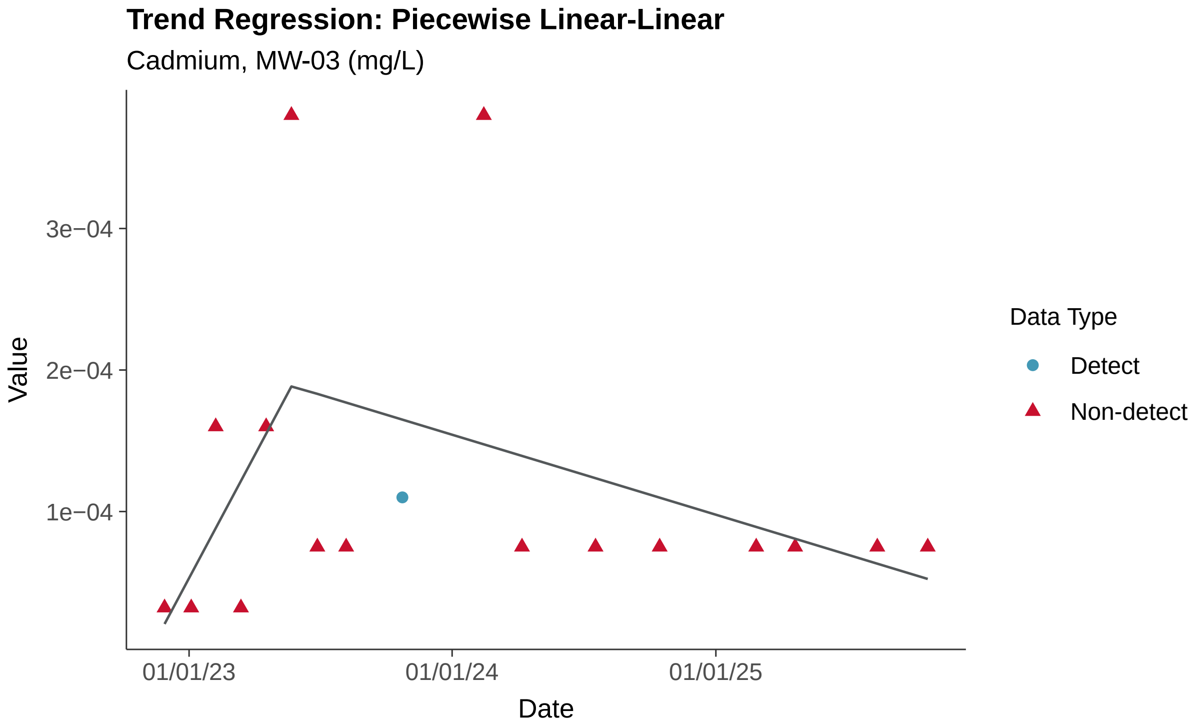
Cadmium, MW-03 (mg/L)

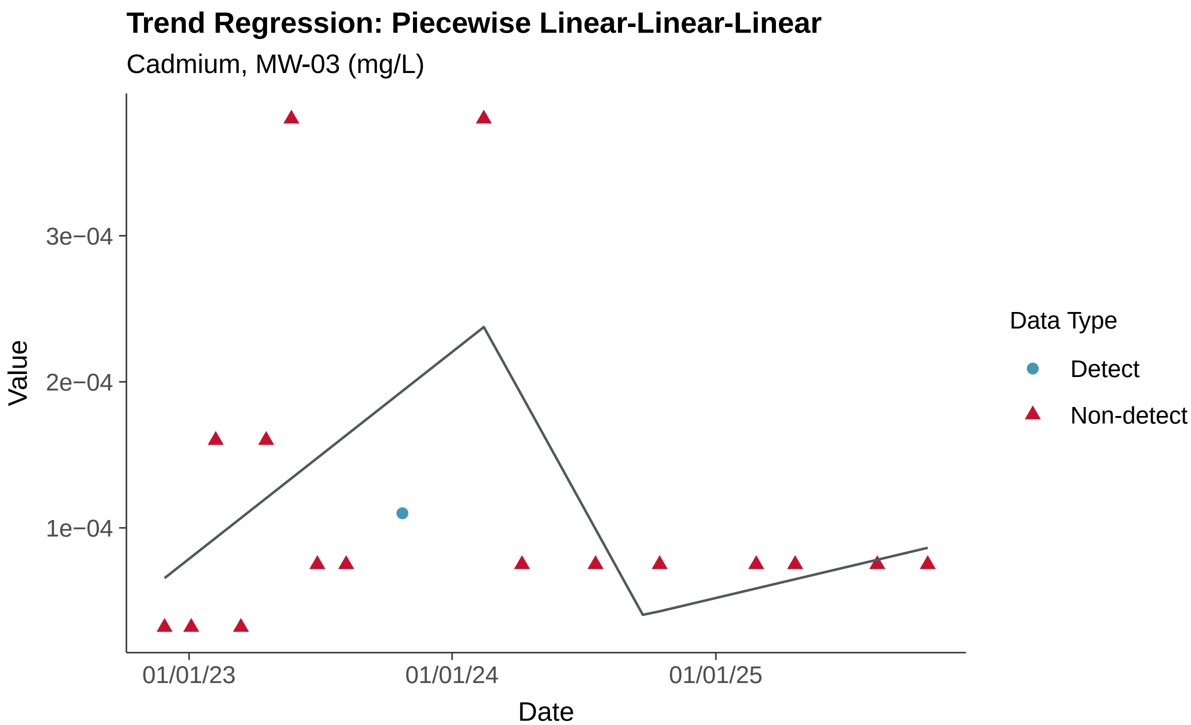


Boxplot by Season

Cadmium, MW-03 (mg/L)




Trend Regression: Piecewise Linear-Linear
Cadmium, MW-03 (mg/L)
Value
3e−04
2e−04
1e−04
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

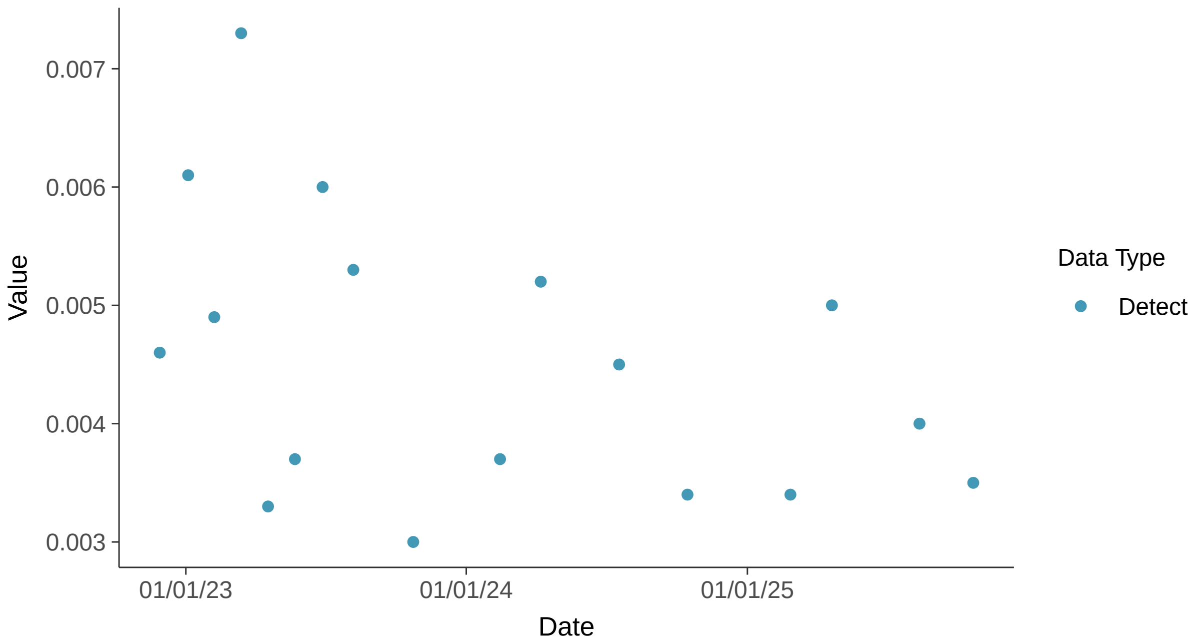

Trend Regression: Piecewise Linear-Linear-Linear
Cadmium, MW-03 (mg/L)
Value
3e−04
2e−04
1e−04
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Appendix IV: Chromium, Total, MW-03

ID: 13_2_4_109

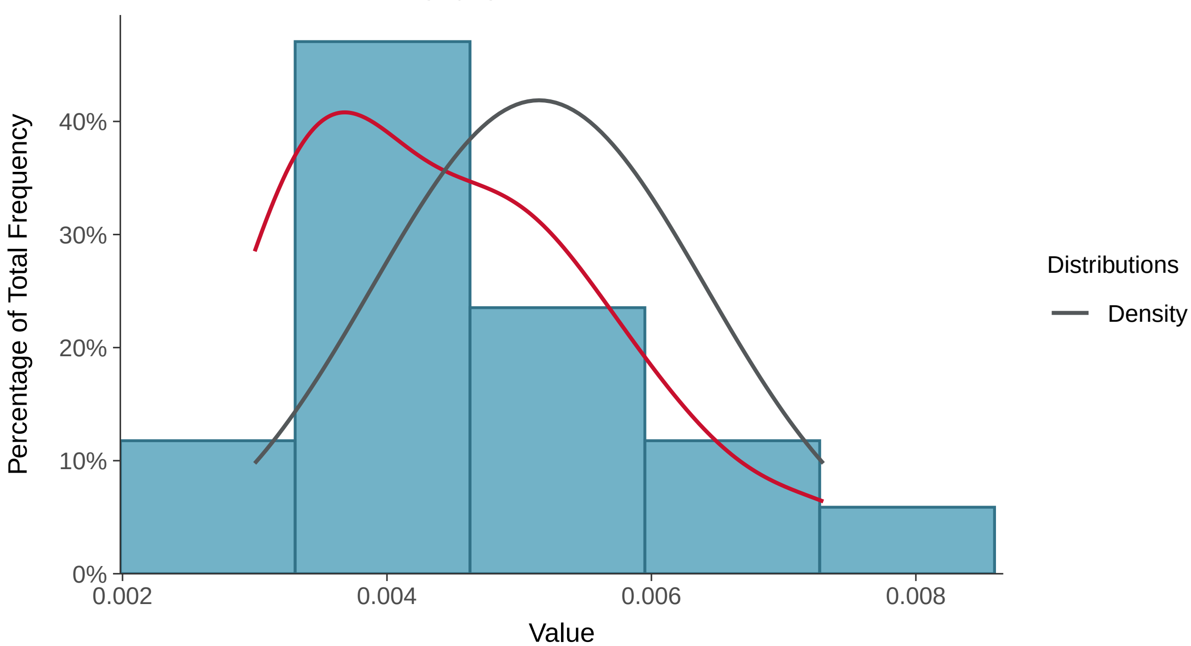
Scatter Plot

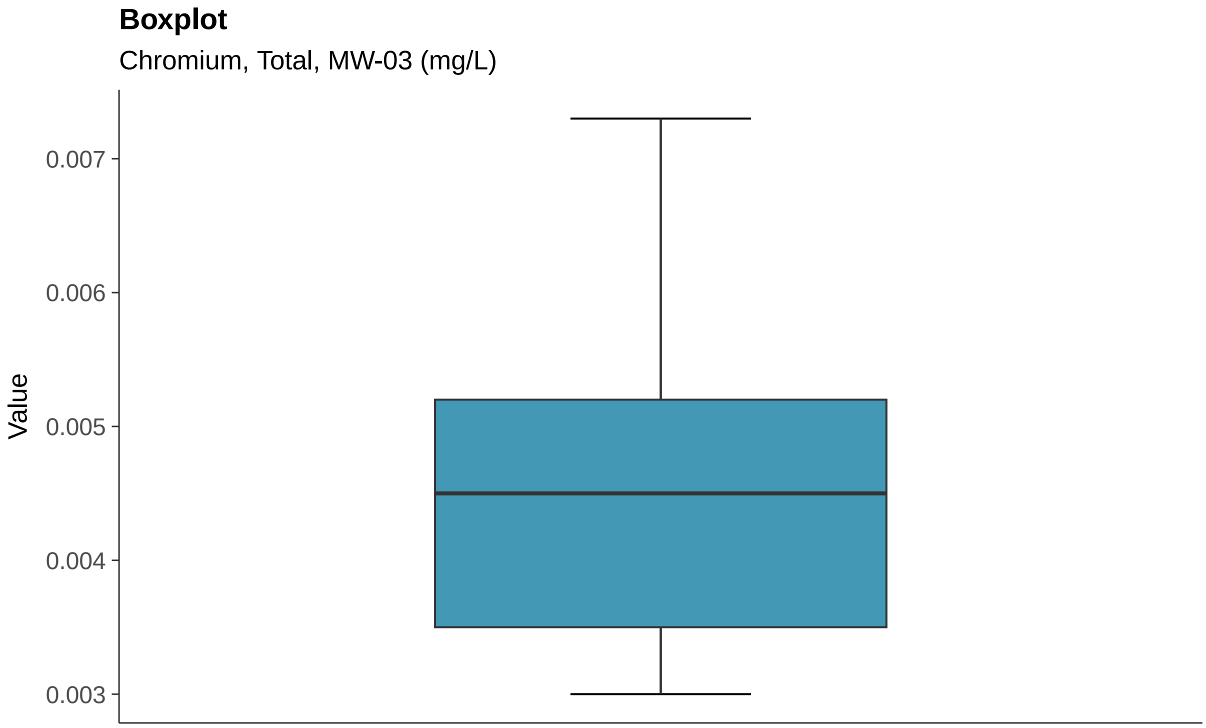
Chromium, Total, MW-03 (mg/L)

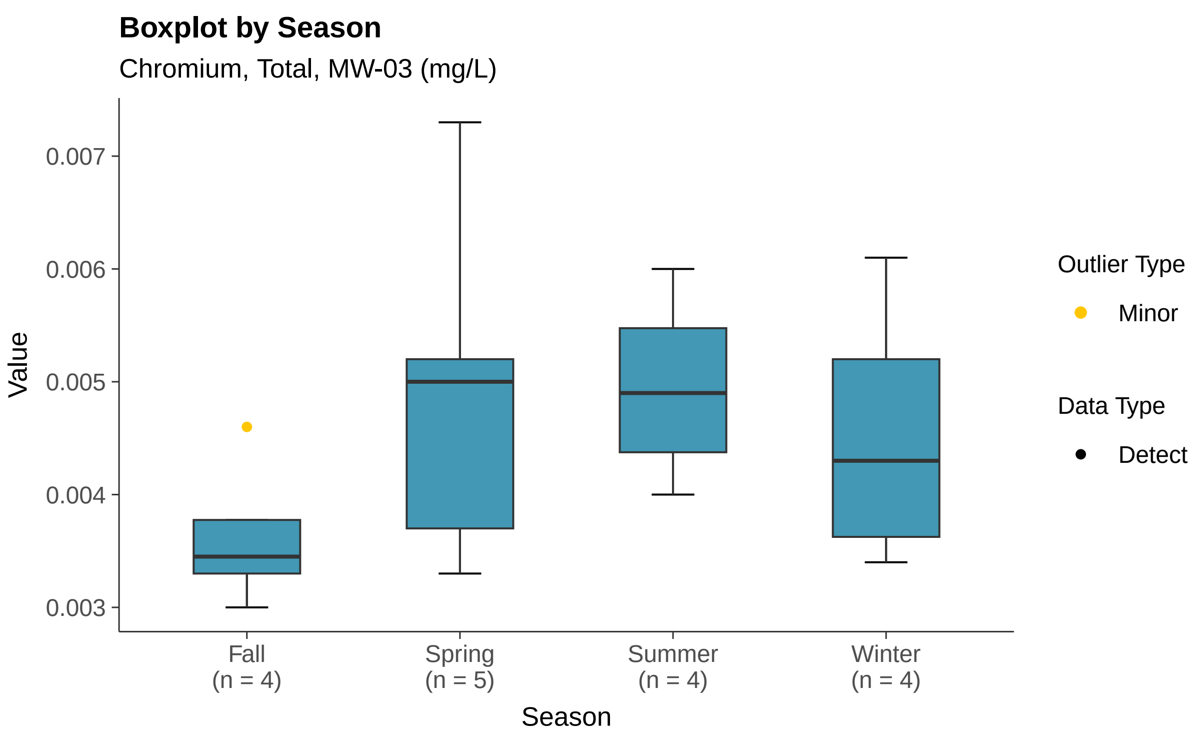


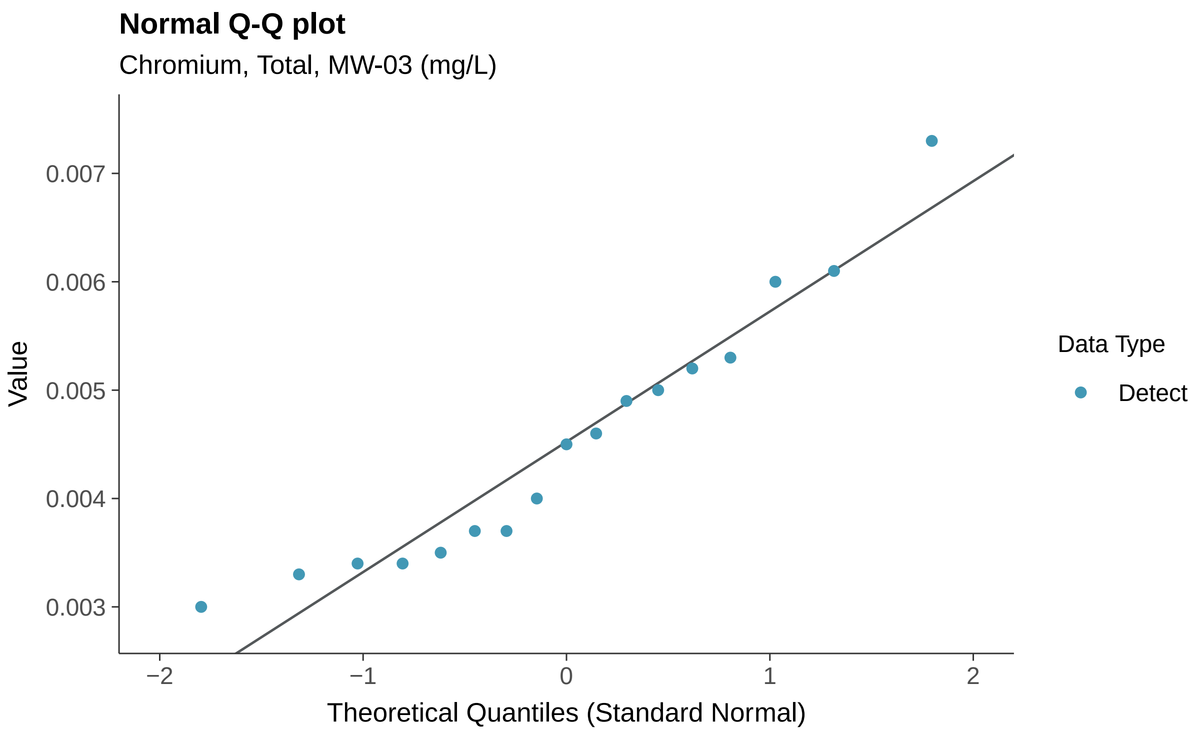
Histogram

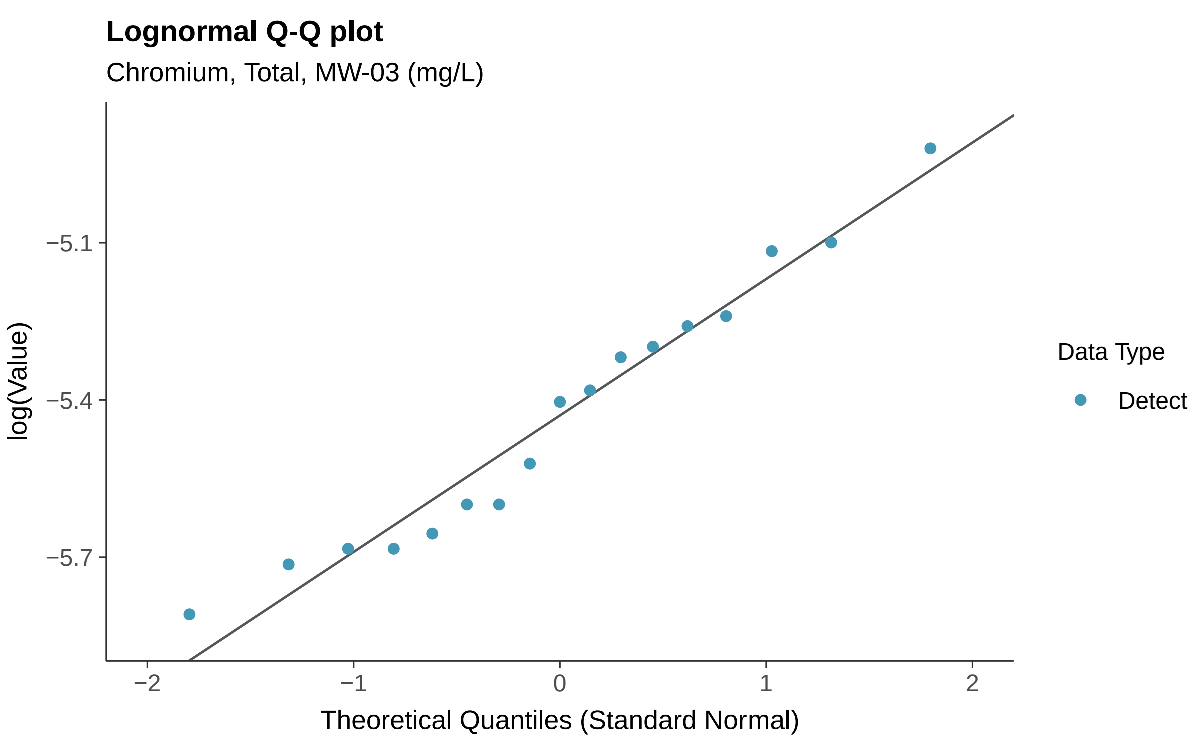
Chromium, Total, MW-03 (mg/L)




Boxplot
Chromium, Total, MW-03 (mg/L)
Value
0.007
0.006
0.005
0.004
0.003

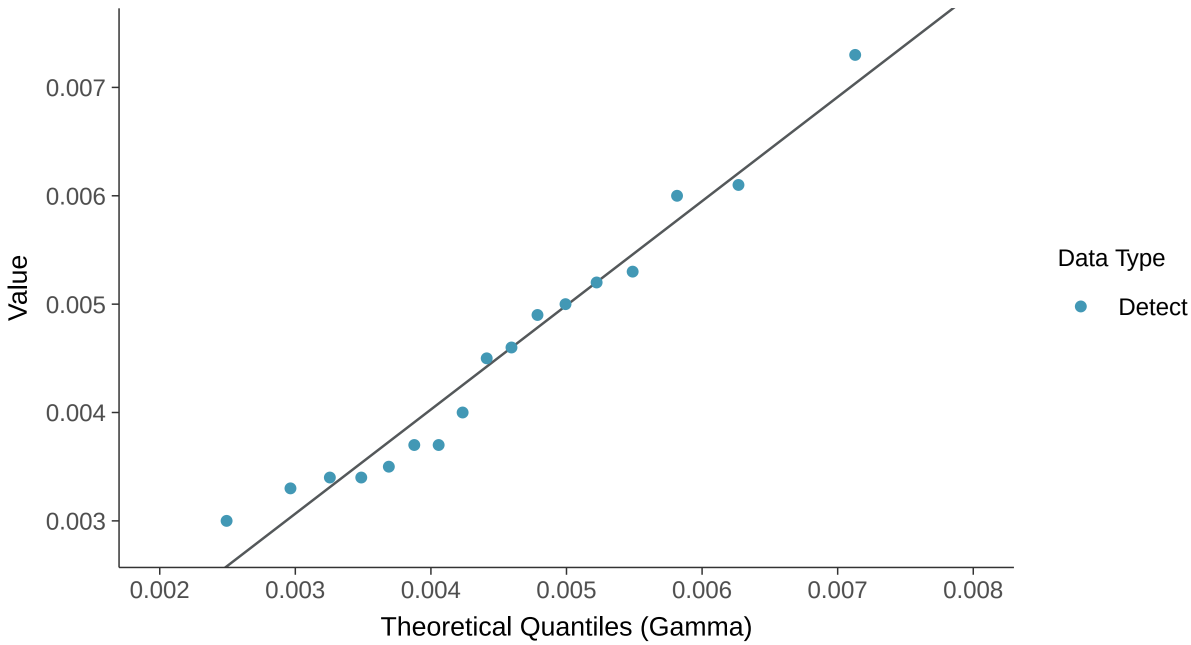

Boxplot by Season
Chromium, Total, MW-03 (mg/L)
Value
0.007
0.006
0.005
0.004
0.003
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Minor
Data Type
Detect


Normal Q-Q plot
Chromium, Total, MW-03 (mg/L)
Value
0.007
0.006
0.005
0.004
0.003
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Chromium, Total, MW-03 (mg/L)
log(Value)
−5.1
−5.4
−5.7
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

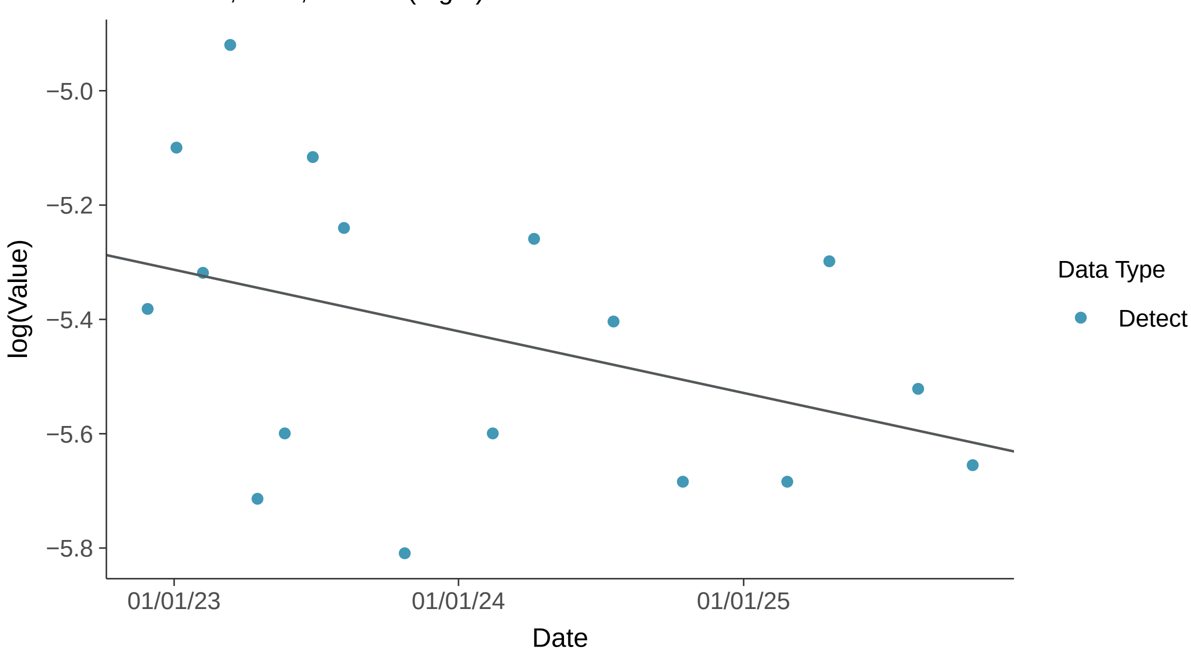
Gamma Q-Q plot

Chromium, Total, MW-03 (mg/L)



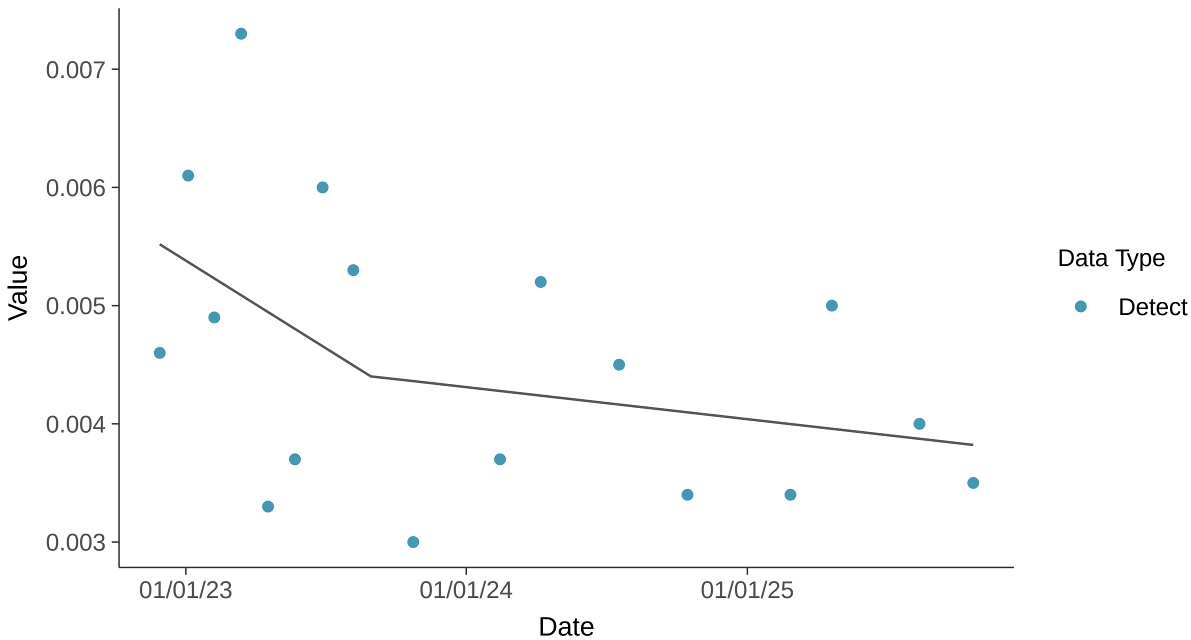
Trend Regression: Lognormal MLE

Chromium, Total, MW-03 (mg/L)



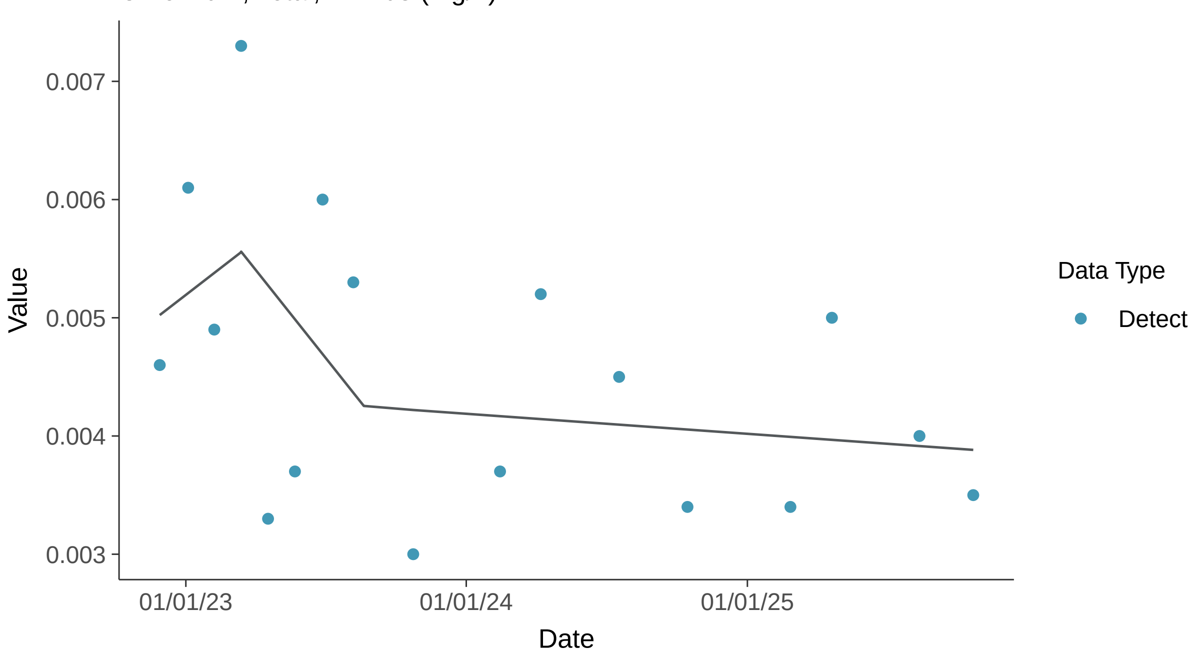
Trend Regression: Piecewise Linear-Linear

Chromium, Total, MW-03 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Chromium, Total, MW-03 (mg/L)

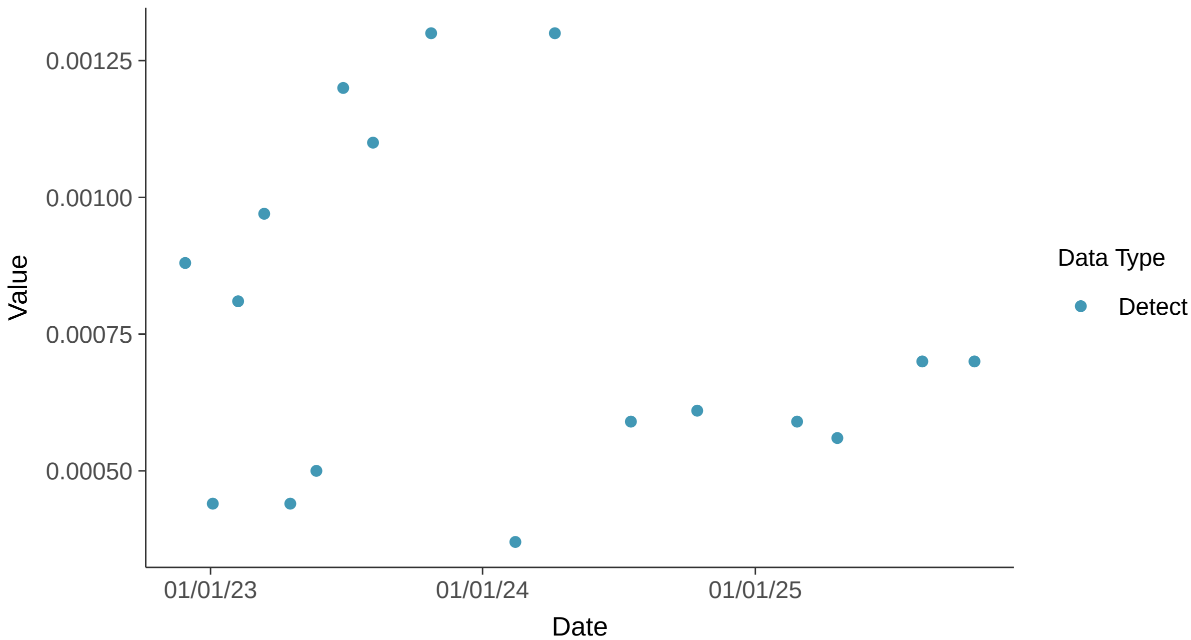


Appendix IV: Cobalt, MW-03

ID: 13_2_4_110

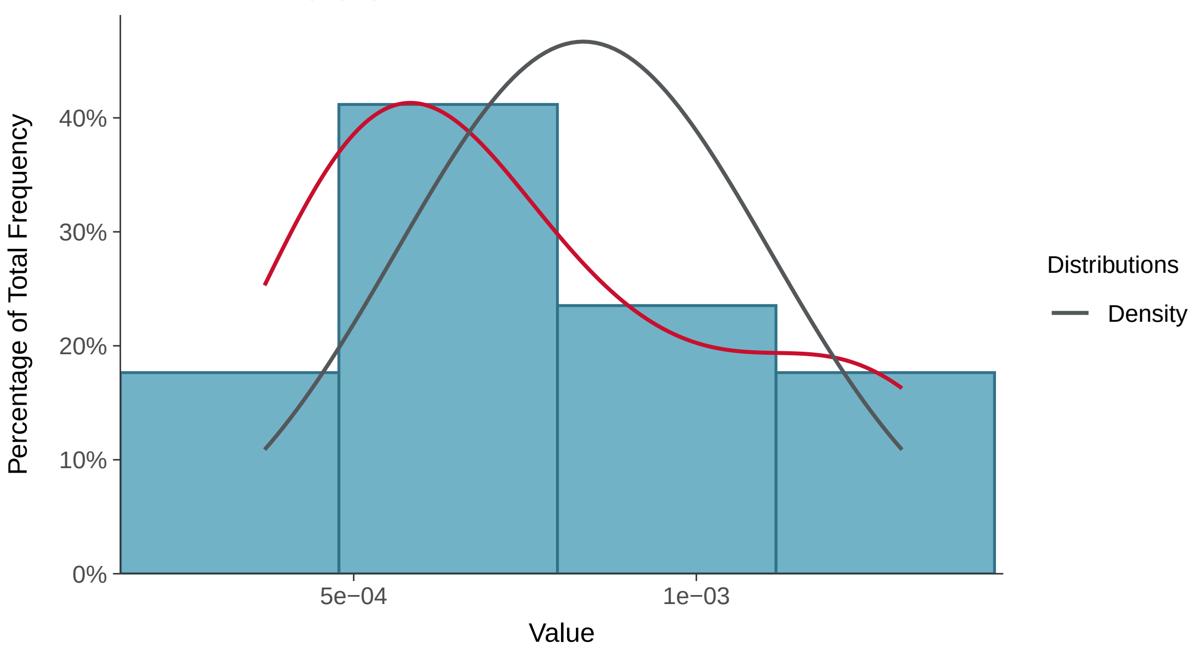
Scatter Plot

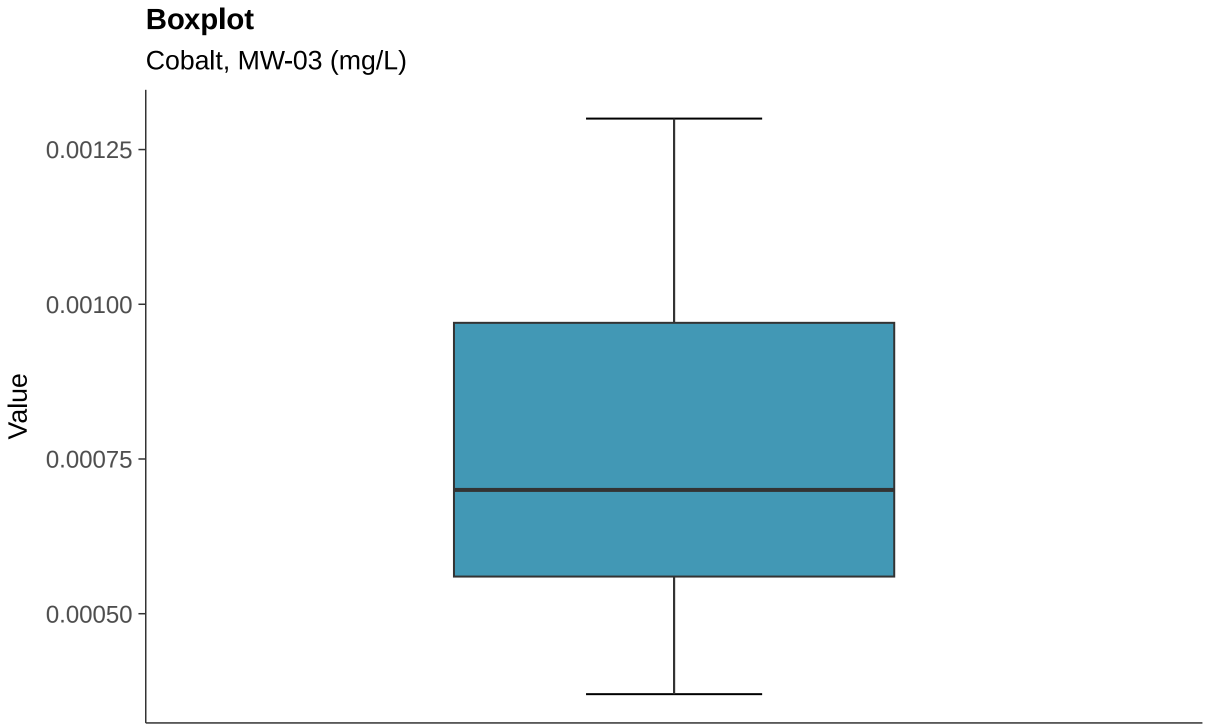
Cobalt, MW-03 (mg/L)

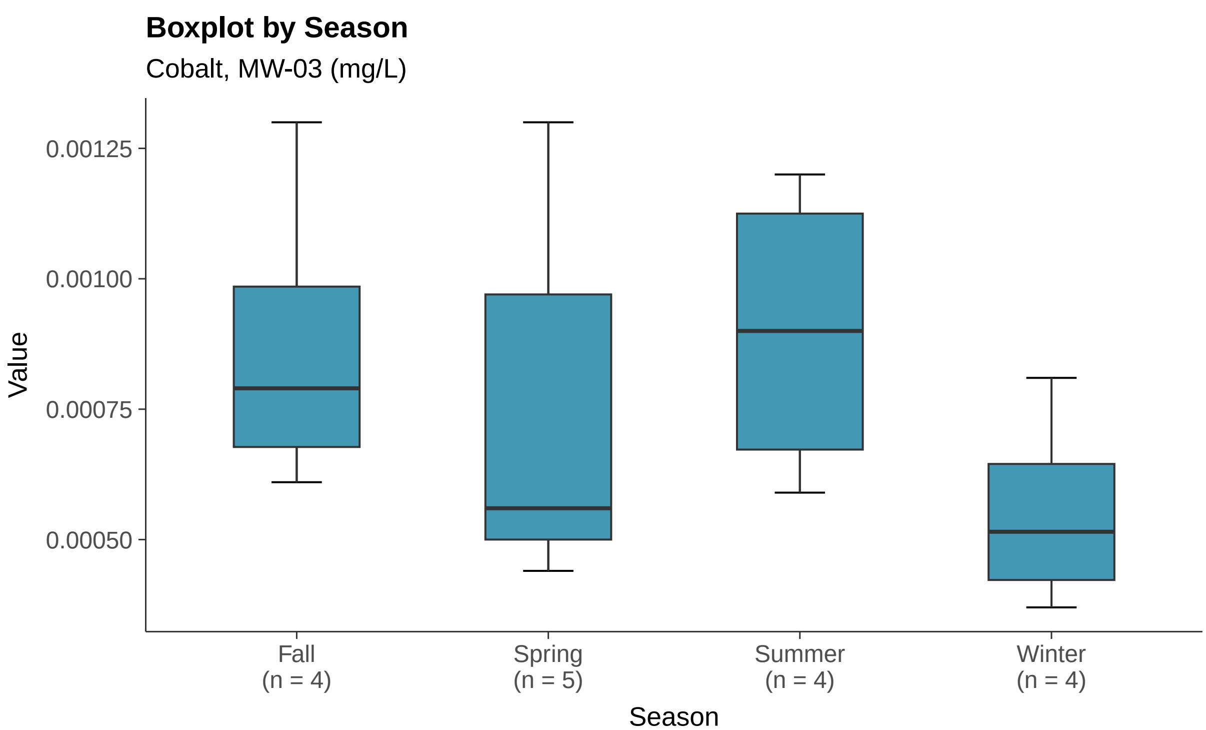


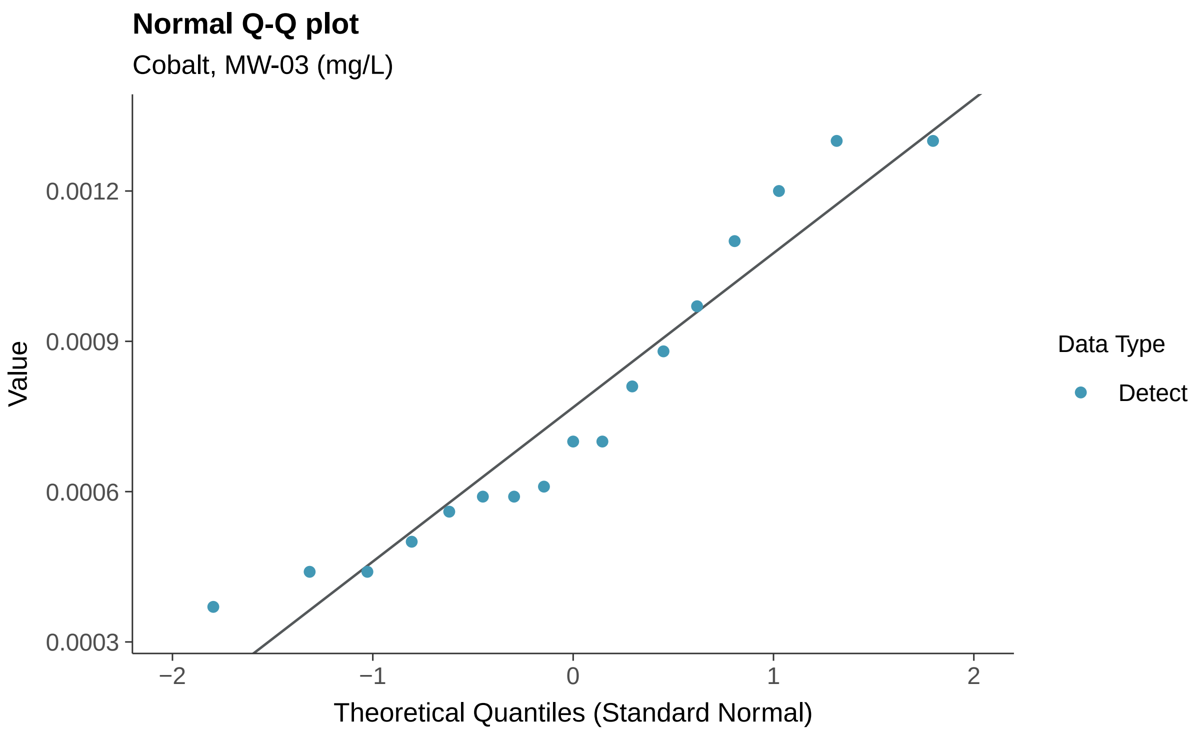
Histogram

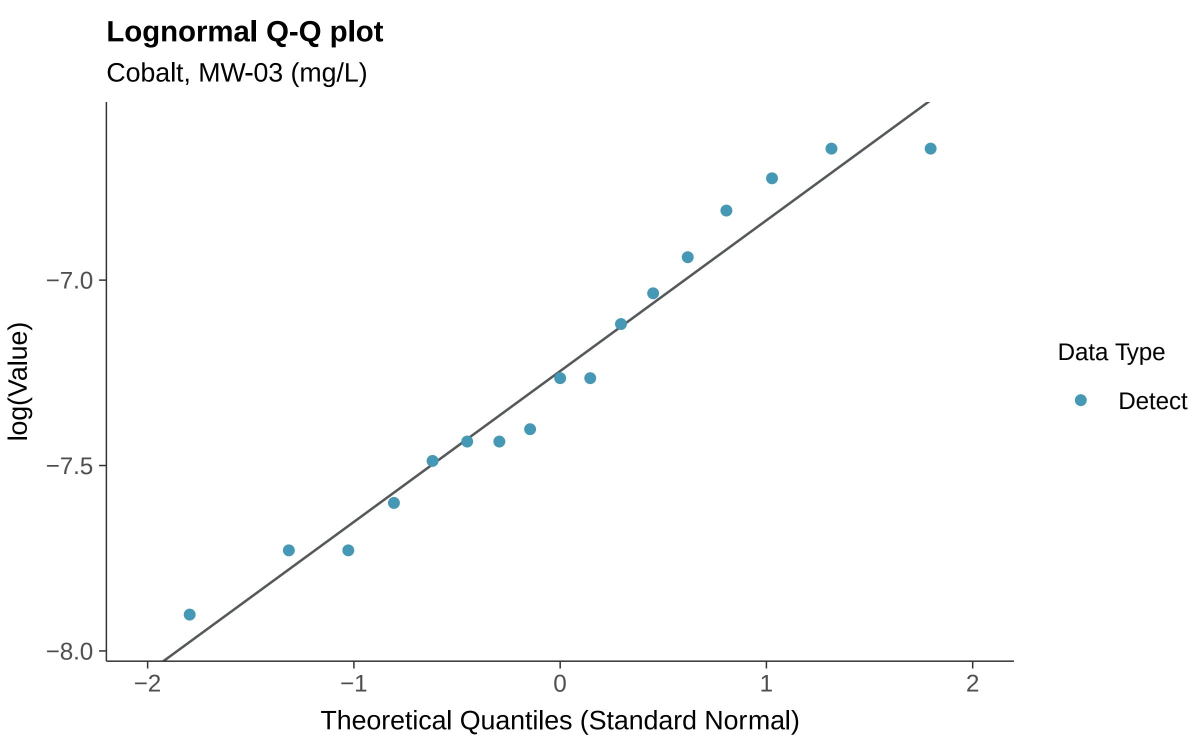
Cobalt, MW-03 (mg/L)

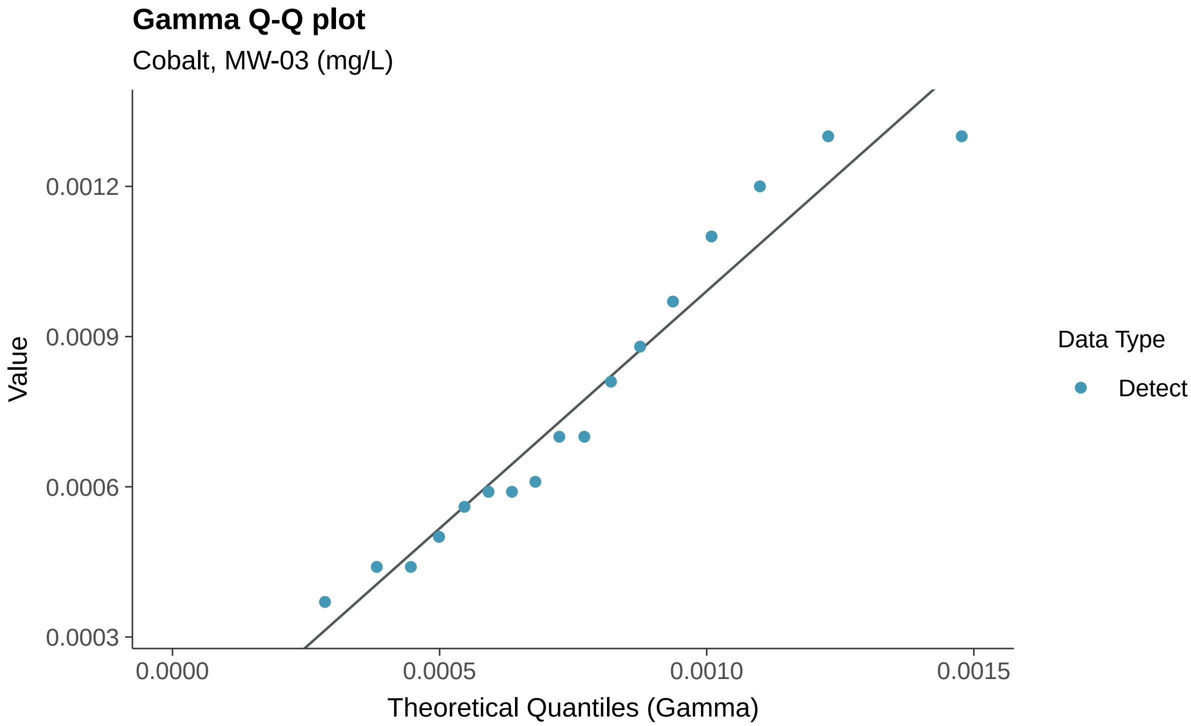


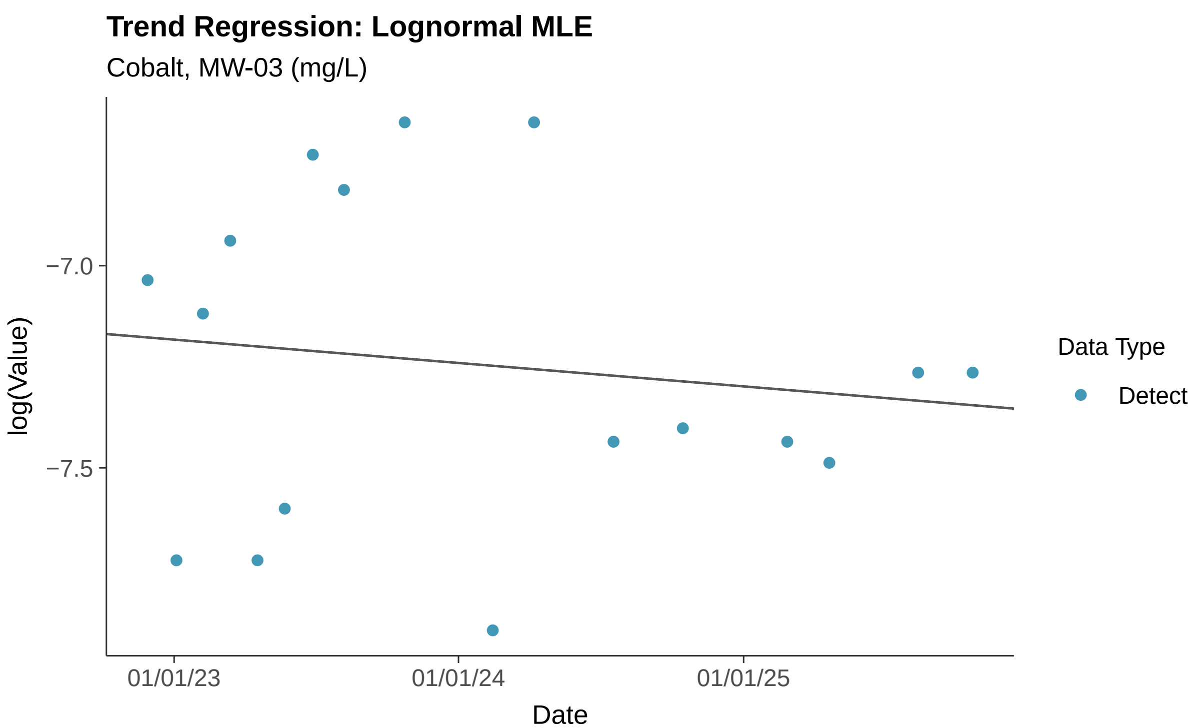

Boxplot
Cobalt, MW-03 (mg/L)
Value
0.00125
0.00100
0.00075
0.00050


Boxplot by Season
Cobalt, MW-03 (mg/L)
Value
0.00125
0.00100
0.00075
0.00050
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season


Normal Q-Q plot
Cobalt, MW-03 (mg/L)
Value
0.0012
0.0009
0.0006
0.0003
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

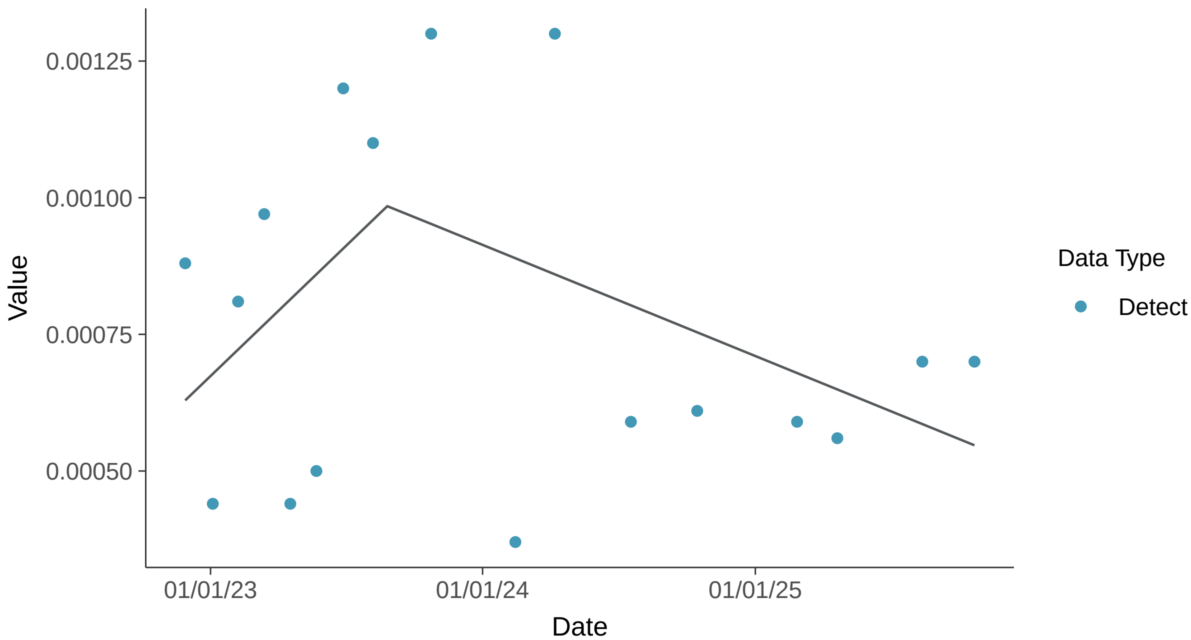

Lognormal Q-Q plot
Cobalt, MW-03 (mg/L)
log(Value)
−7.0
−7.5
−8.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Cobalt, MW-03 (mg/L)
Value
0.0012
0.0009
0.0006
0.0003
0.0000
0.0005
0.0010
0.0015
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Cobalt, MW-03 (mg/L)
log(Value)
−7.0
−7.5
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

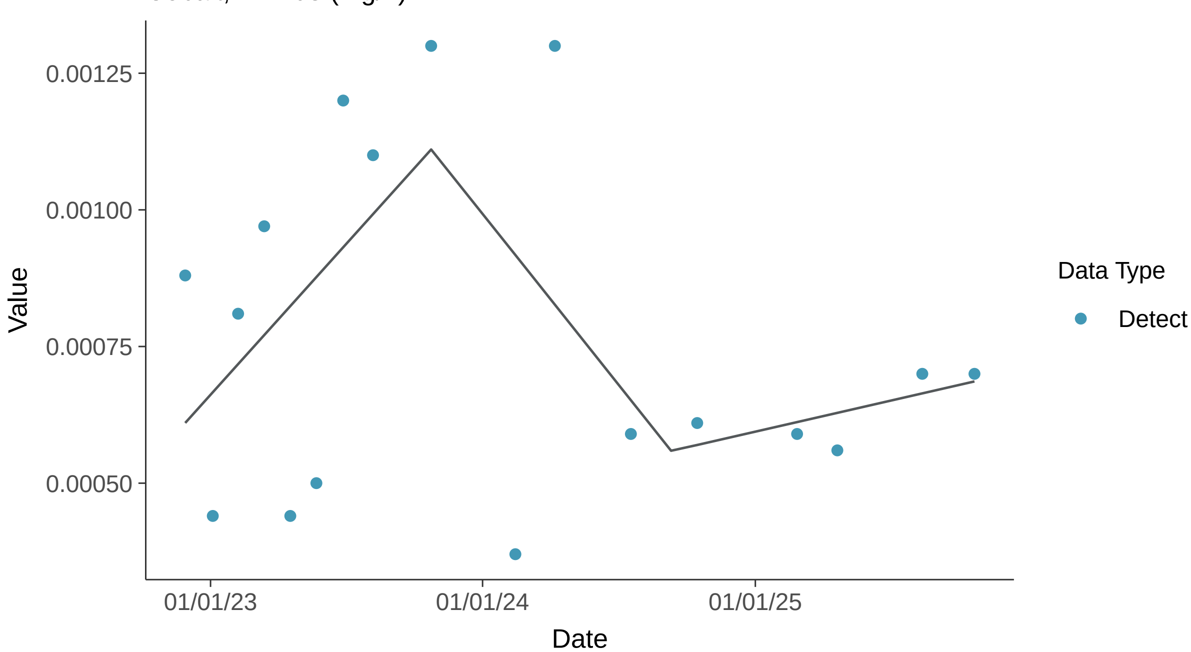
Trend Regression: Piecewise Linear-Linear

Cobalt, MW-03 (mg/L)



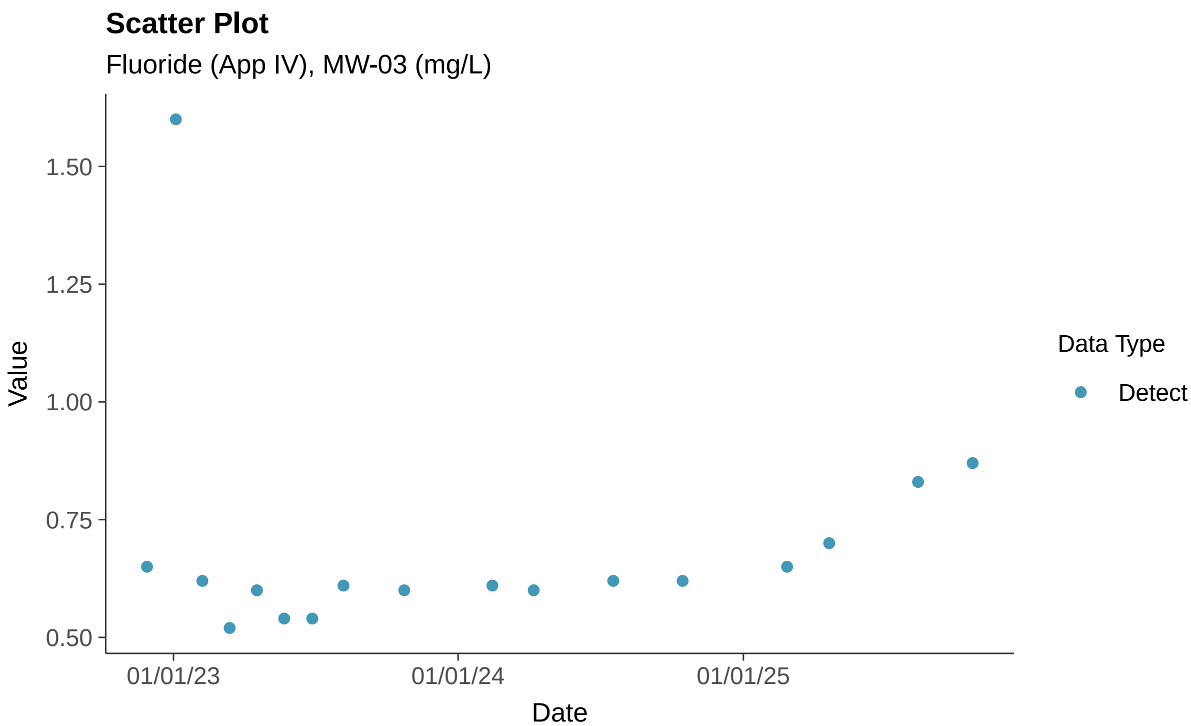
Trend Regression: Piecewise Linear-Linear-Linear

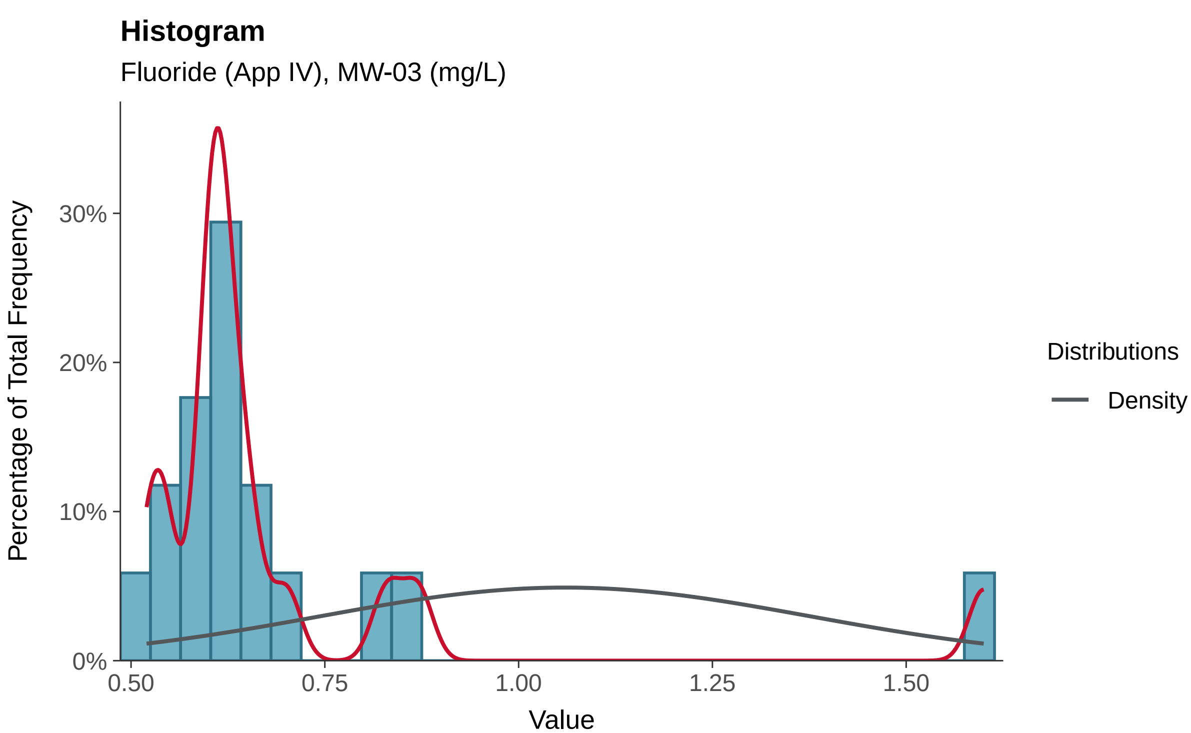
Cobalt, MW-03 (mg/L)



Appendix IV: Fluoride (App IV), MW-03

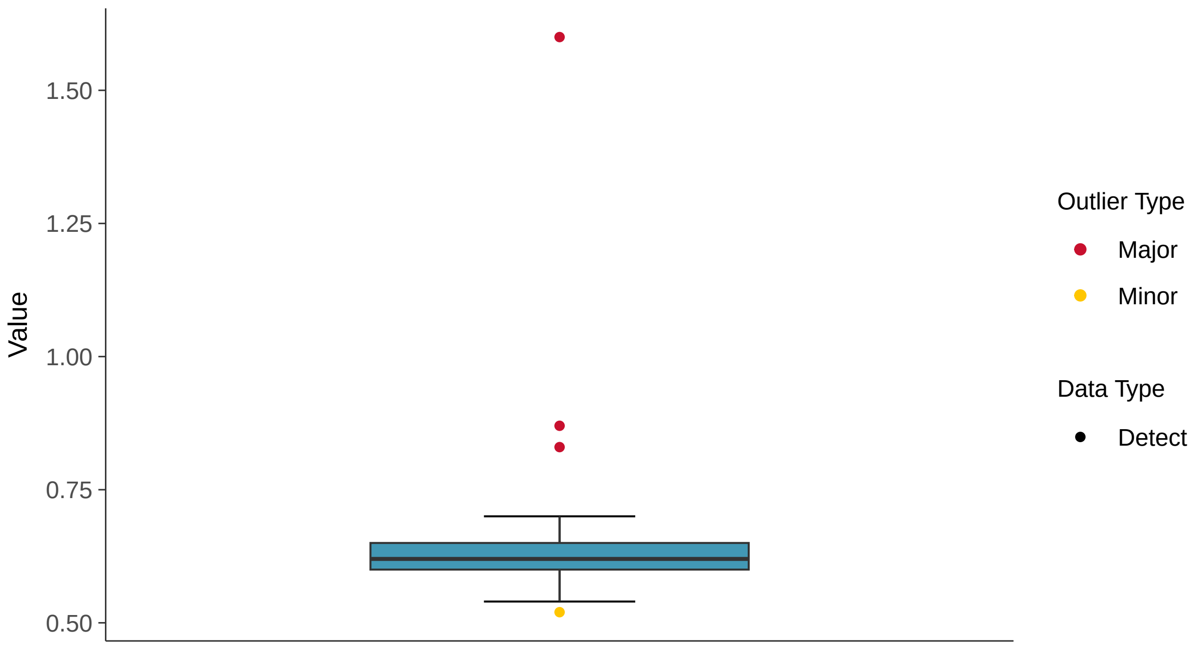
ID: 13_2_4_113





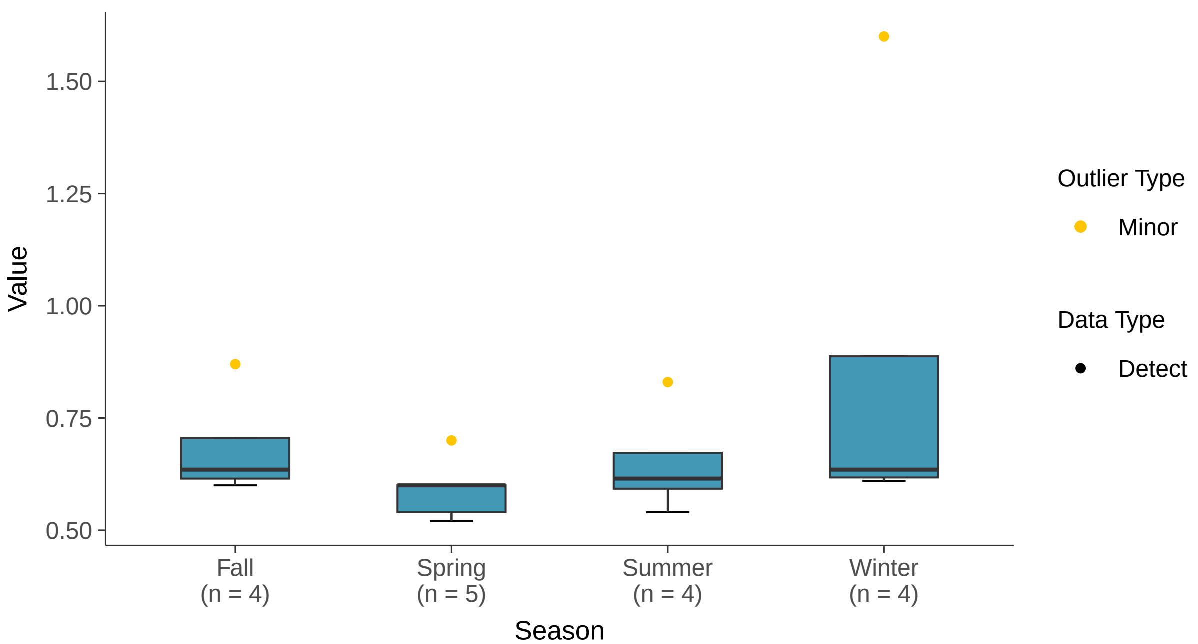
Boxplot

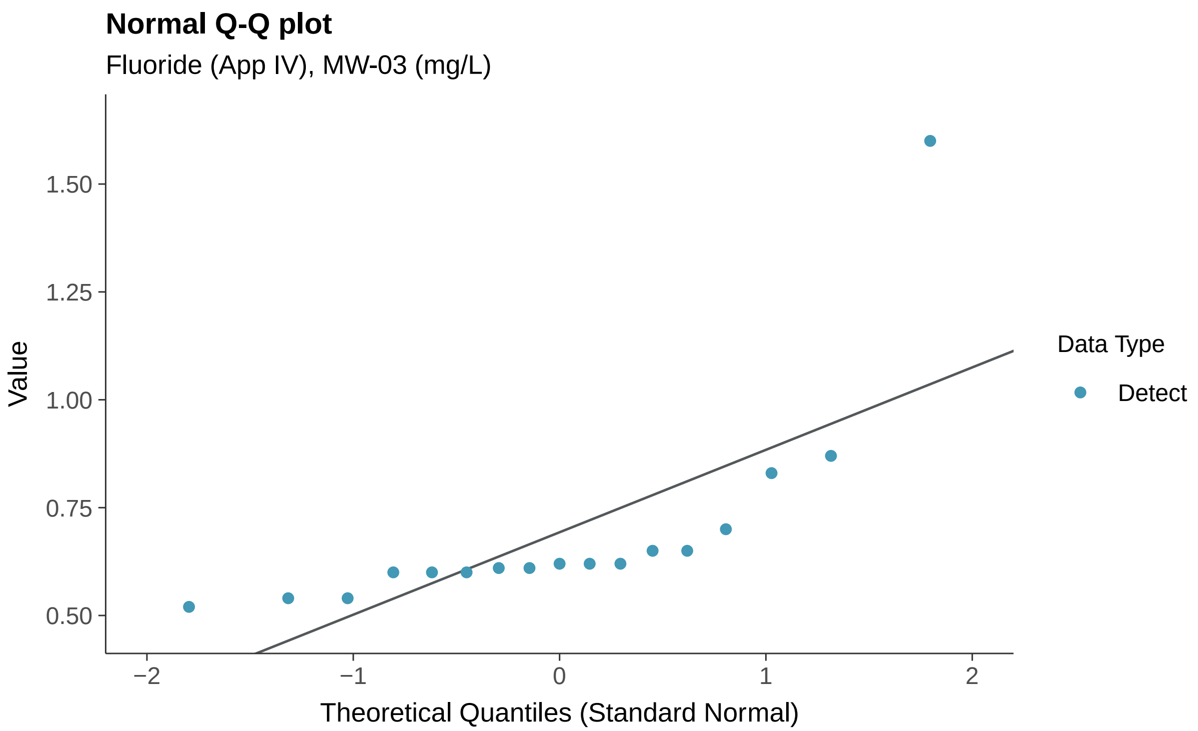
Fluoride (App IV), MW-03 (mg/L)

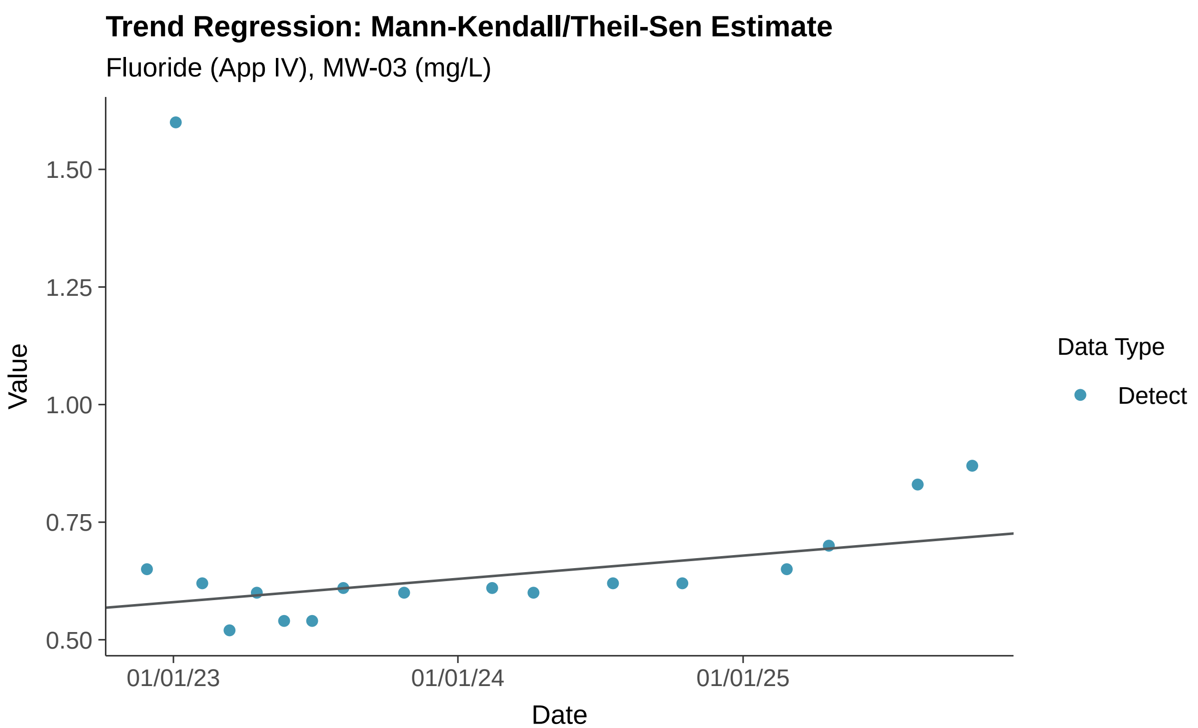


Boxplot by Season

Fluoride (App IV), MW-03 (mg/L)

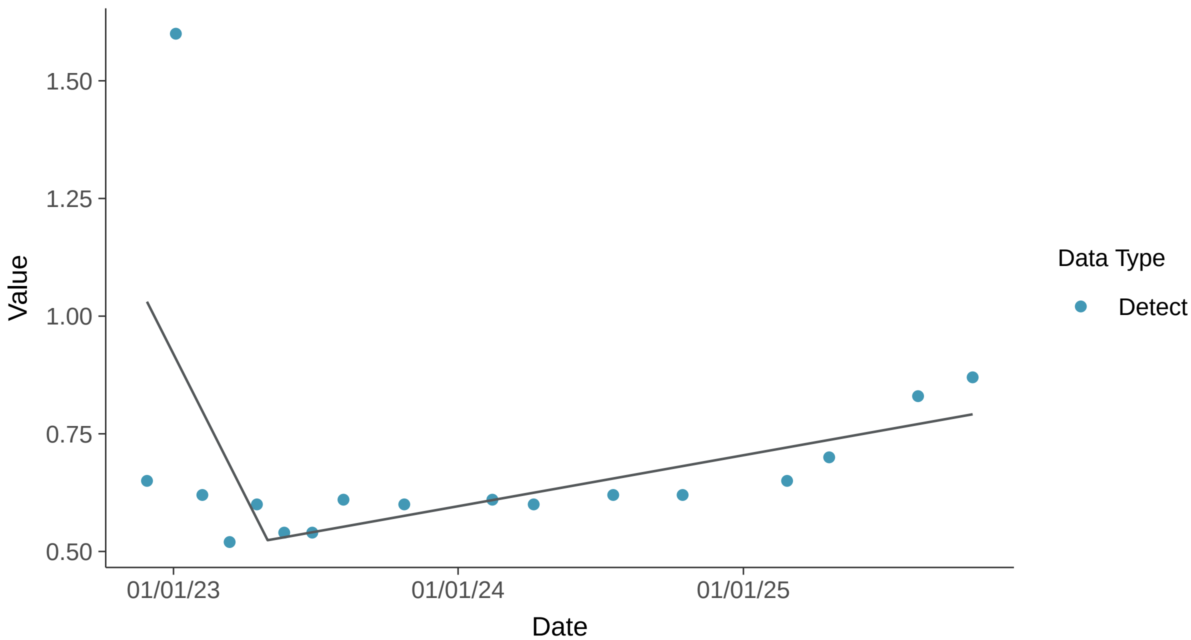



Normal Q-Q plot
Fluoride (App IV), MW-03 (mg/L)
Value
1.50
1.25
1.00
0.75
0.50
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Mann-Kendall/Theil-Sen Estimate
Fluoride (App IV), MW-03 (mg/L)
Value
1.50
1.25
1.00
0.75
0.50
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

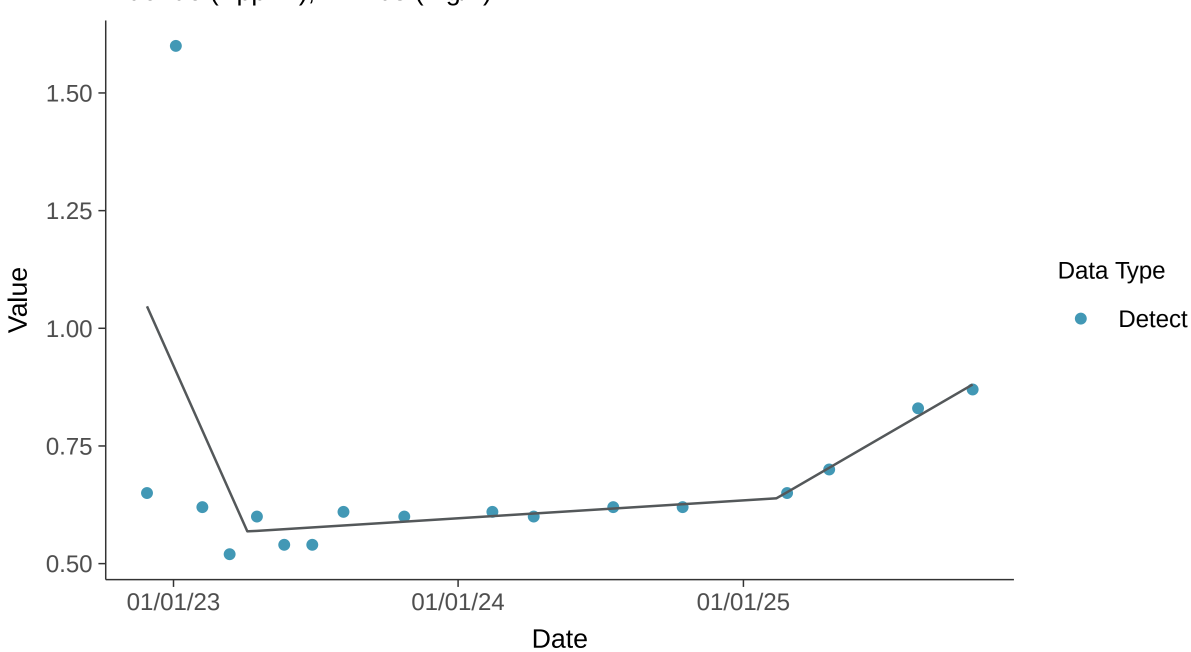
Trend Regression: Piecewise Linear-Linear

Fluoride (App IV), MW-03 (mg/L)



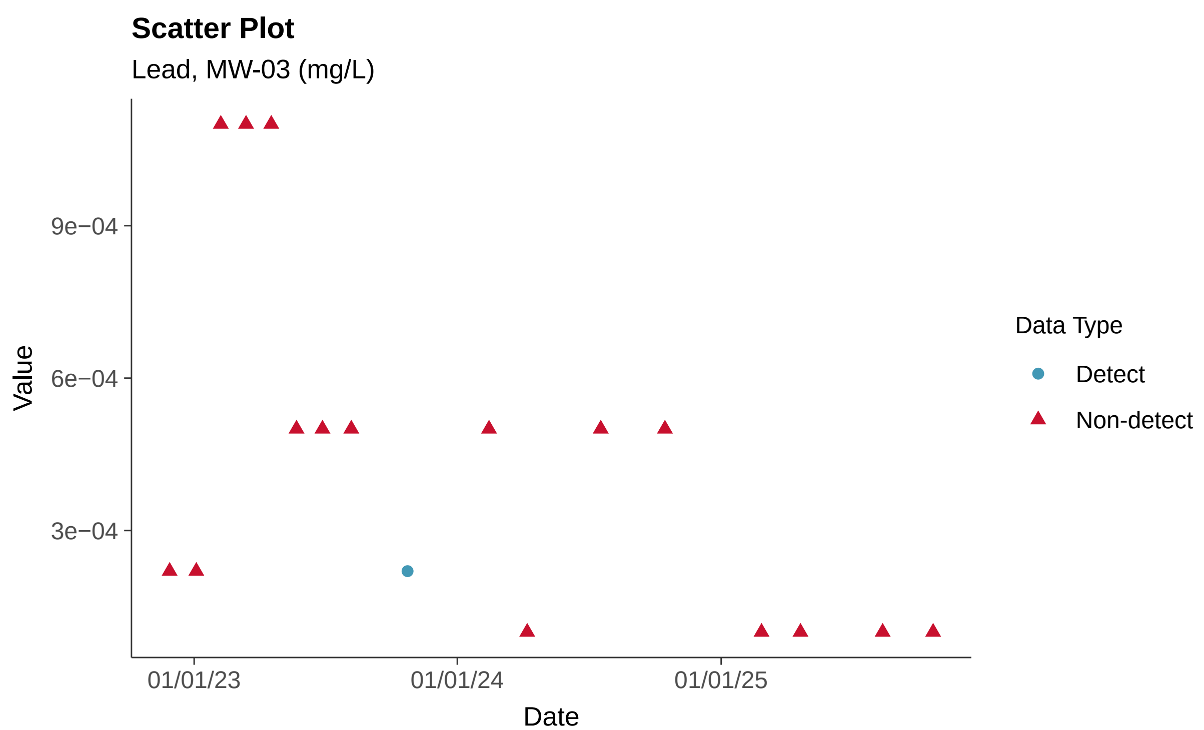
Trend Regression: Piecewise Linear-Linear-Linear

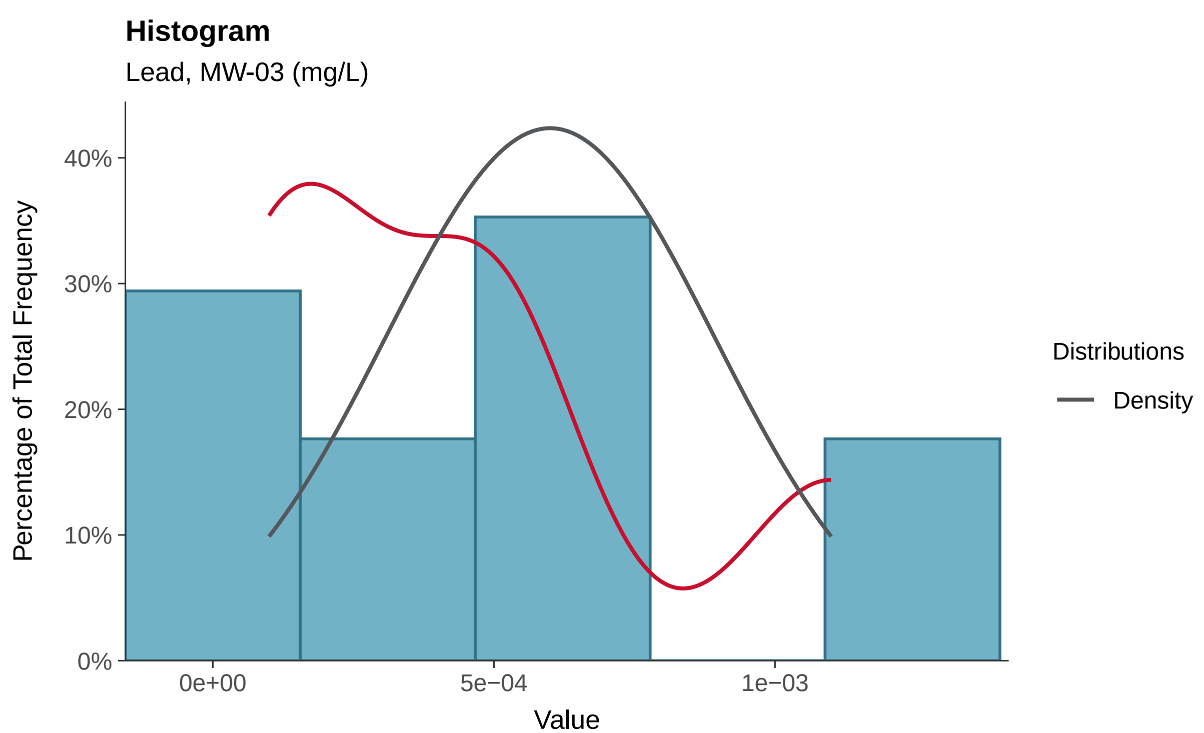
Fluoride (App IV), MW-03 (mg/L)



Appendix IV: Lead, MW-03

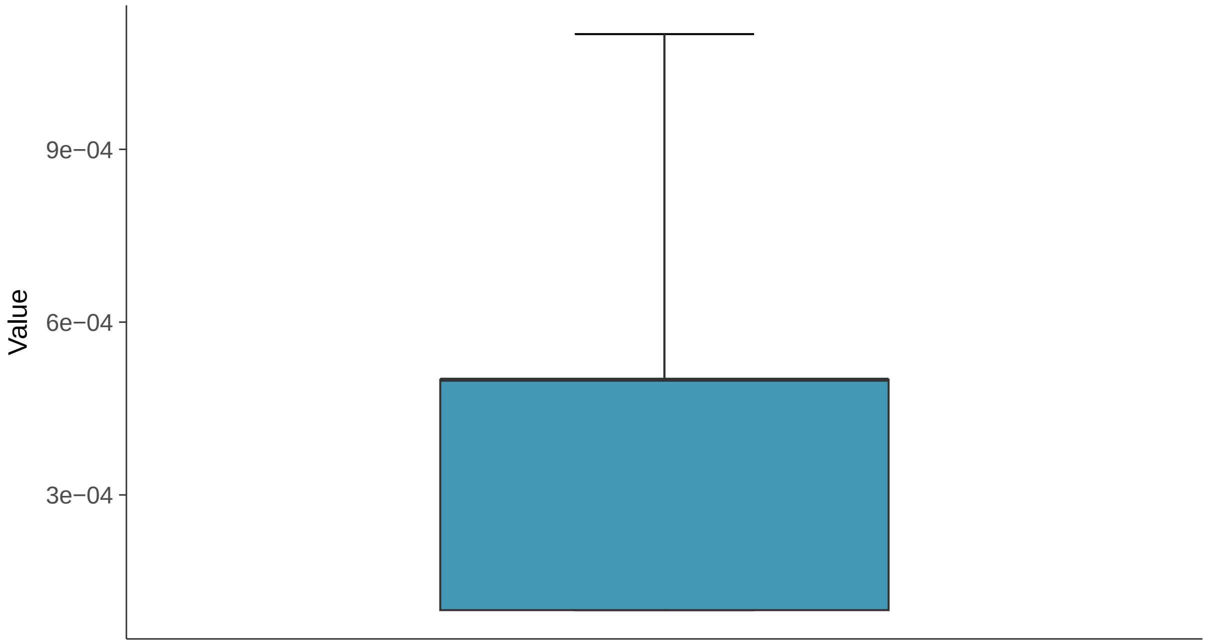
ID: 13_2_4_115





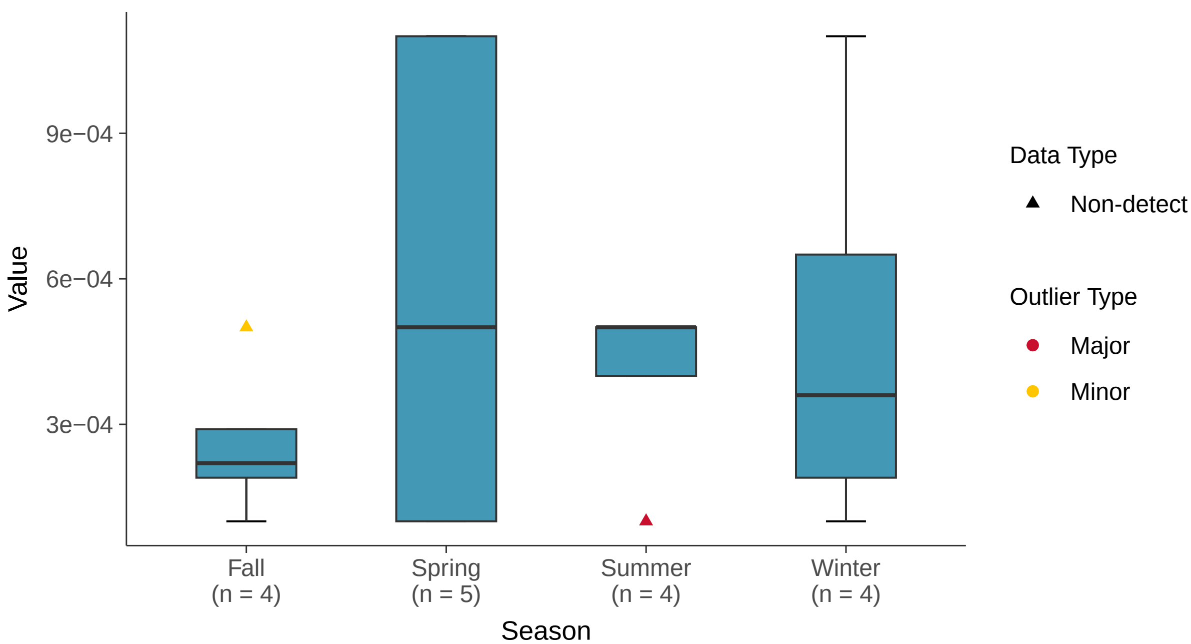
Boxplot

Lead, MW-03 (mg/L)



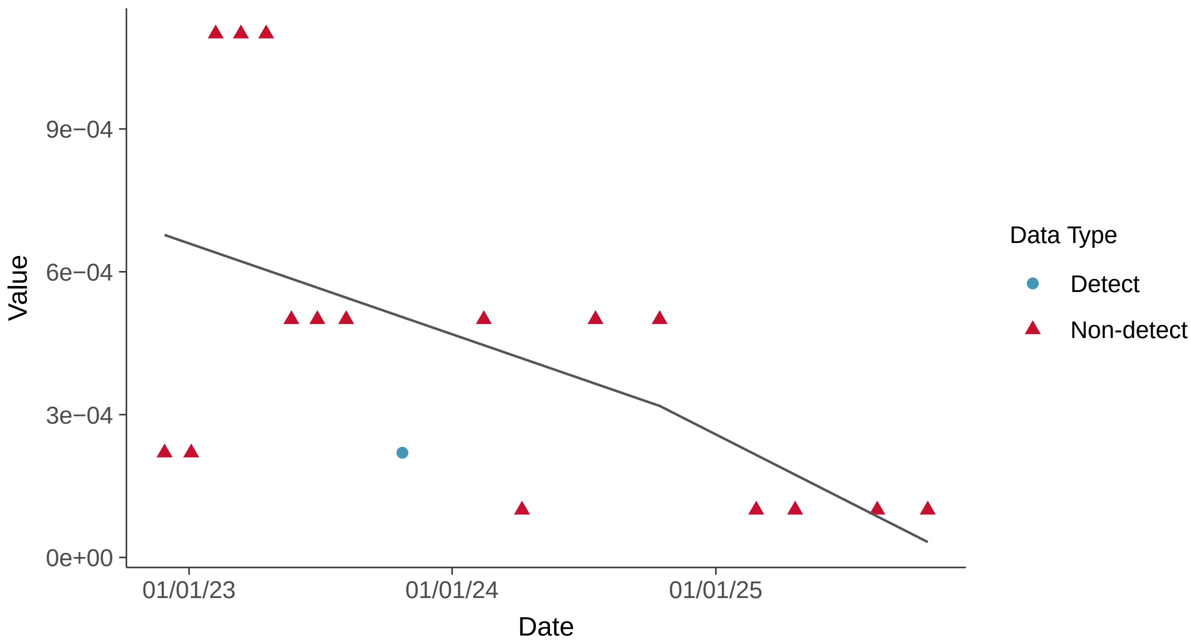
Boxplot by Season

Lead, MW-03 (mg/L)



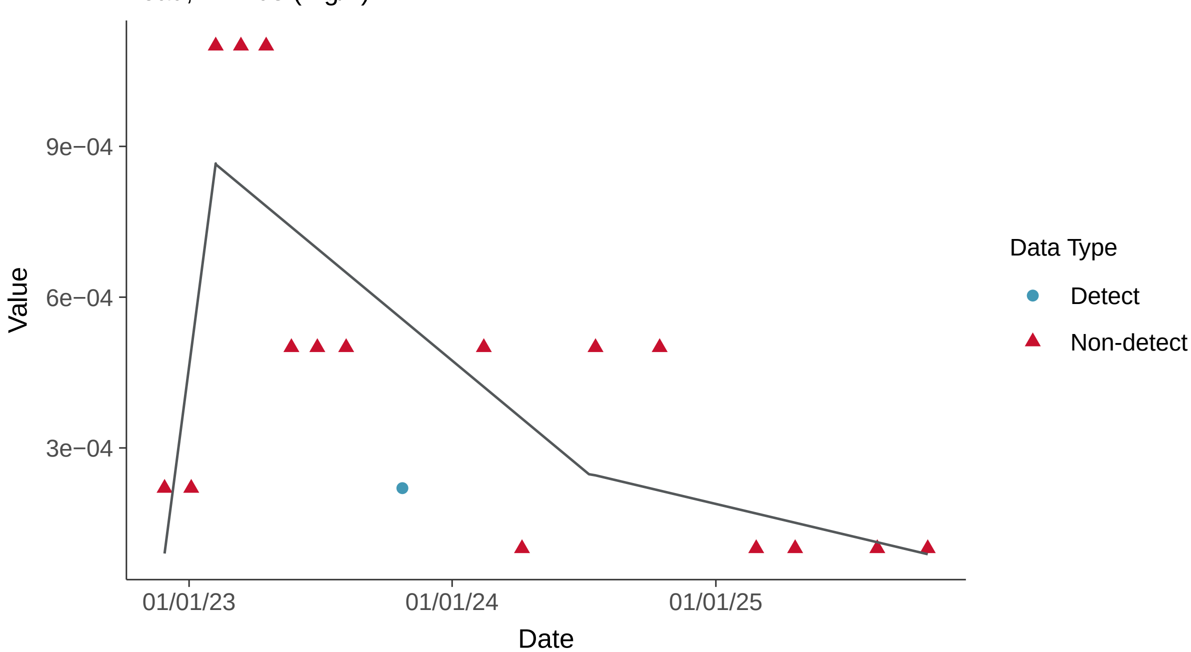
Trend Regression: Piecewise Linear-Linear

Lead, MW-03 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Lead, MW-03 (mg/L)

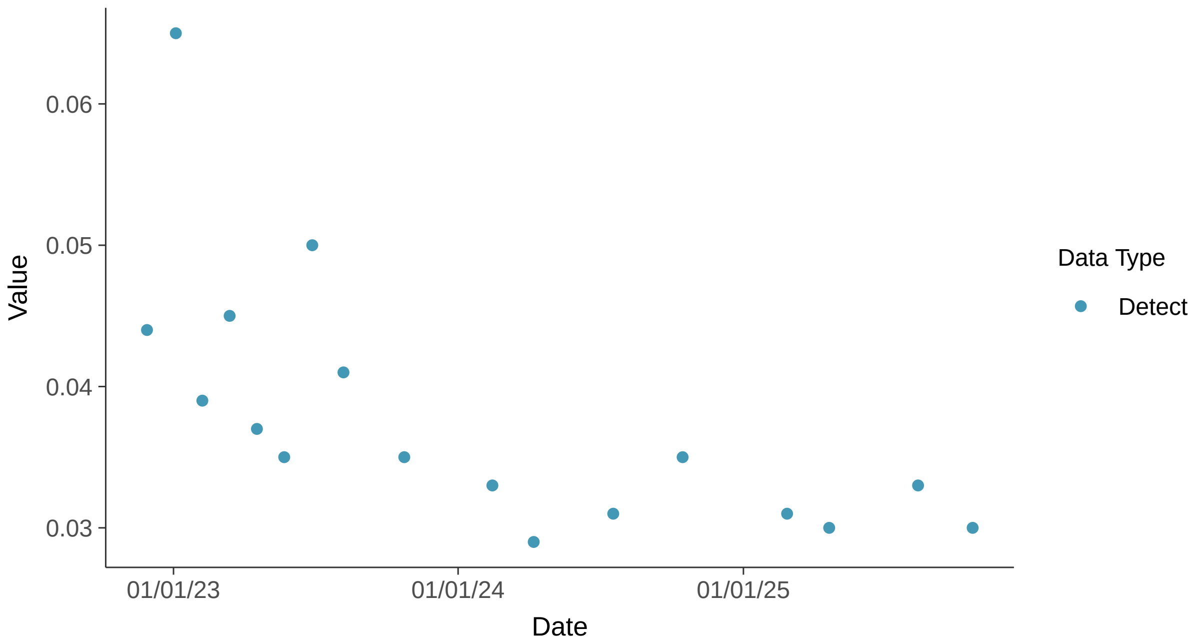


Appendix IV: Lithium, MW-03

ID: 13_2_4_116

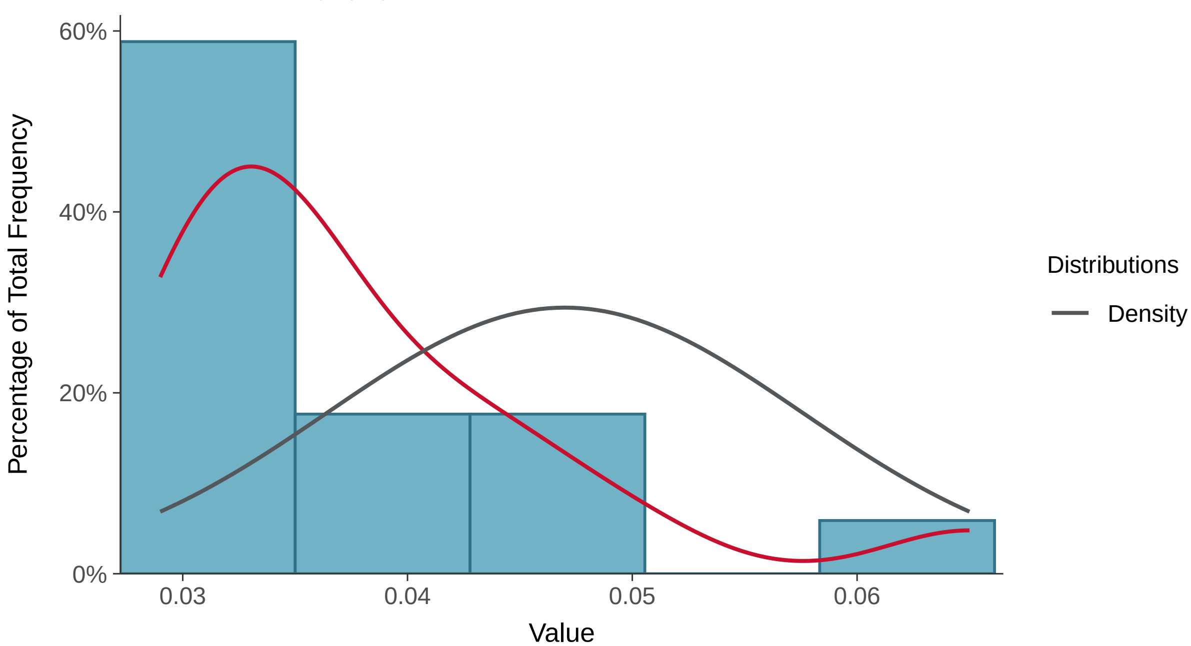
Scatter Plot

Lithium, MW-03 (mg/L)



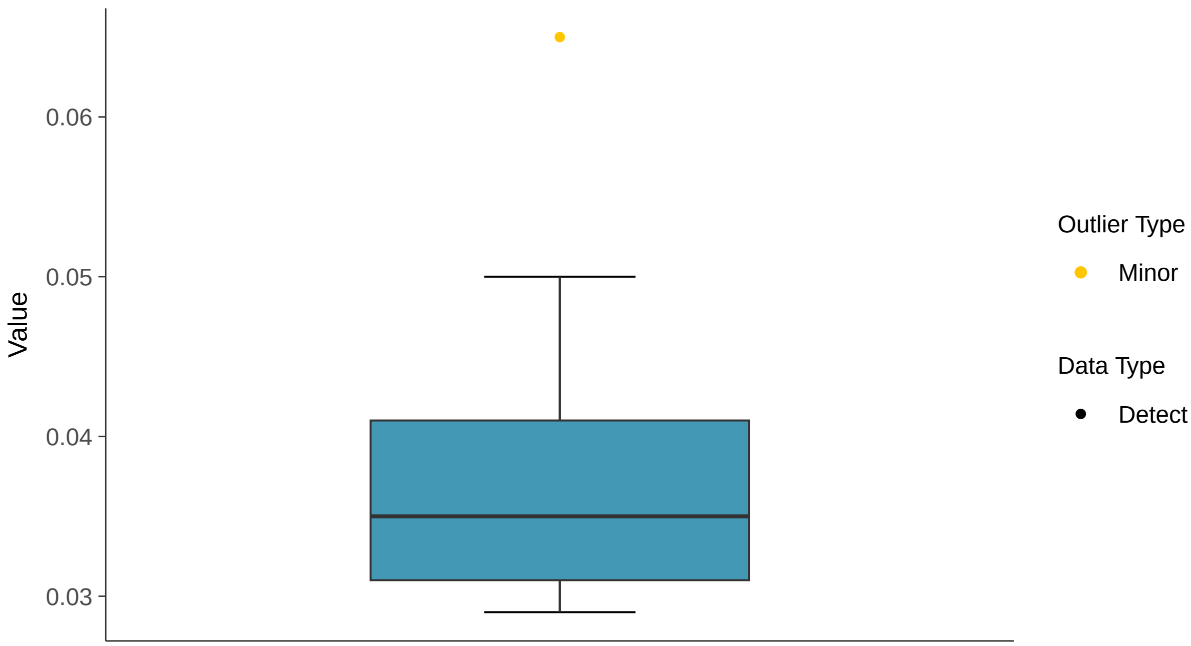
Histogram

Lithium, MW-03 (mg/L)



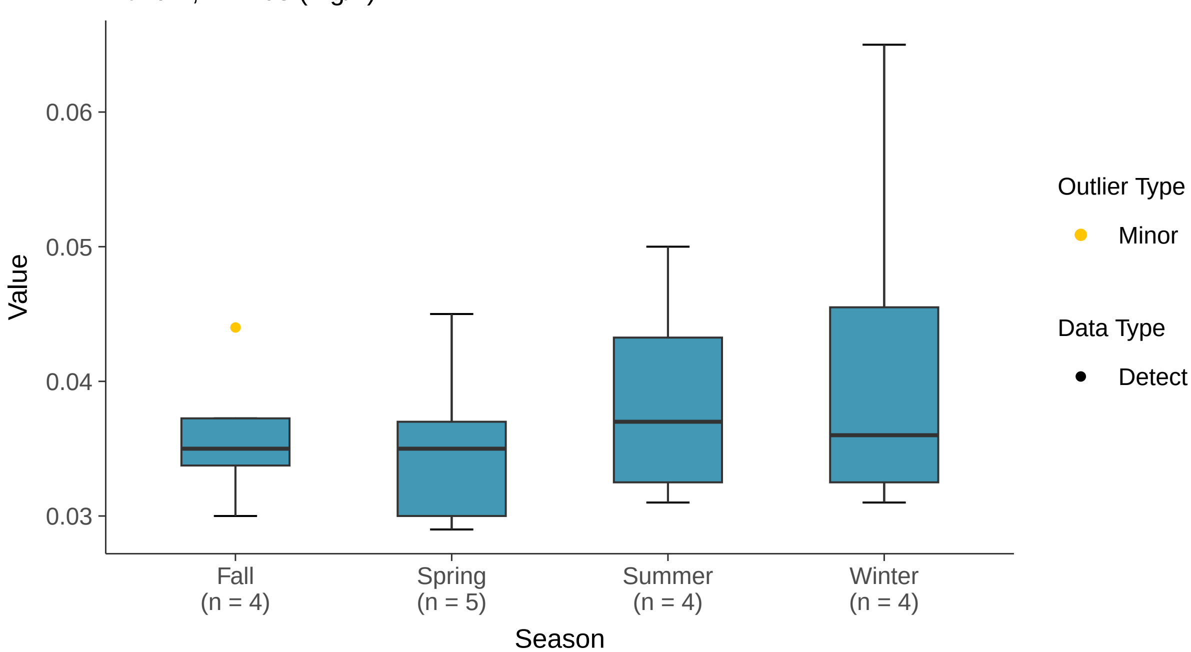
Boxplot

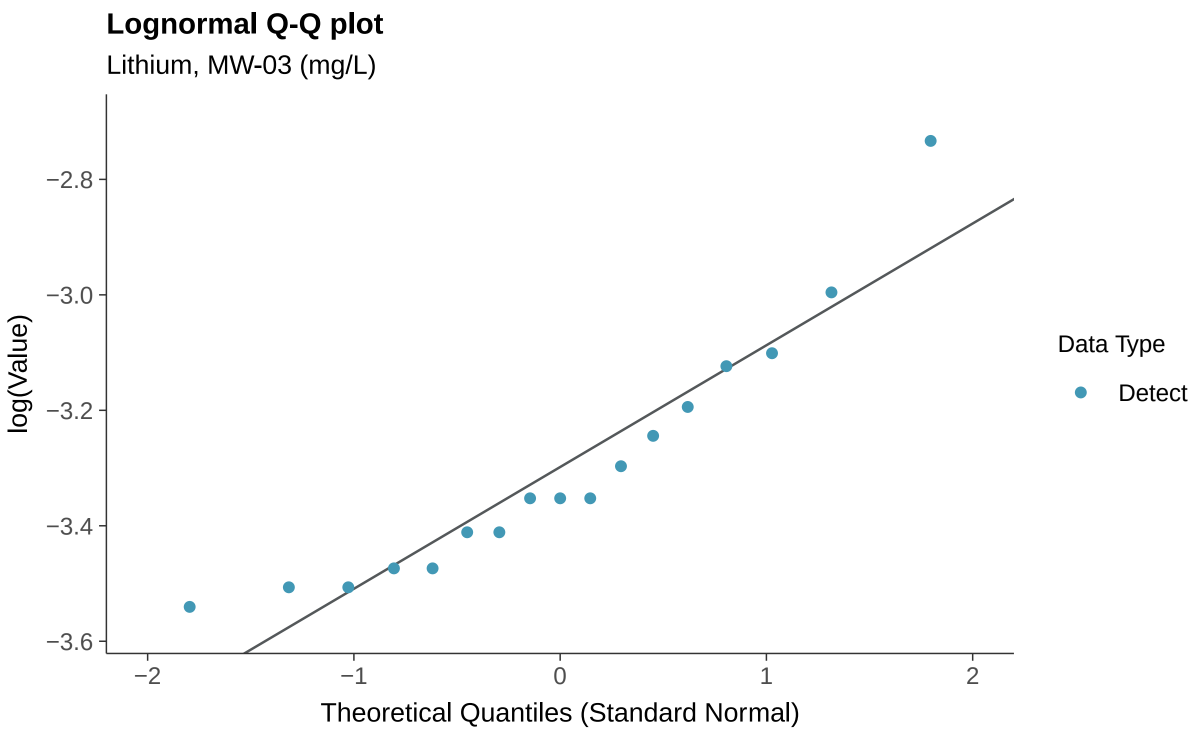
Lithium, MW-03 (mg/L)

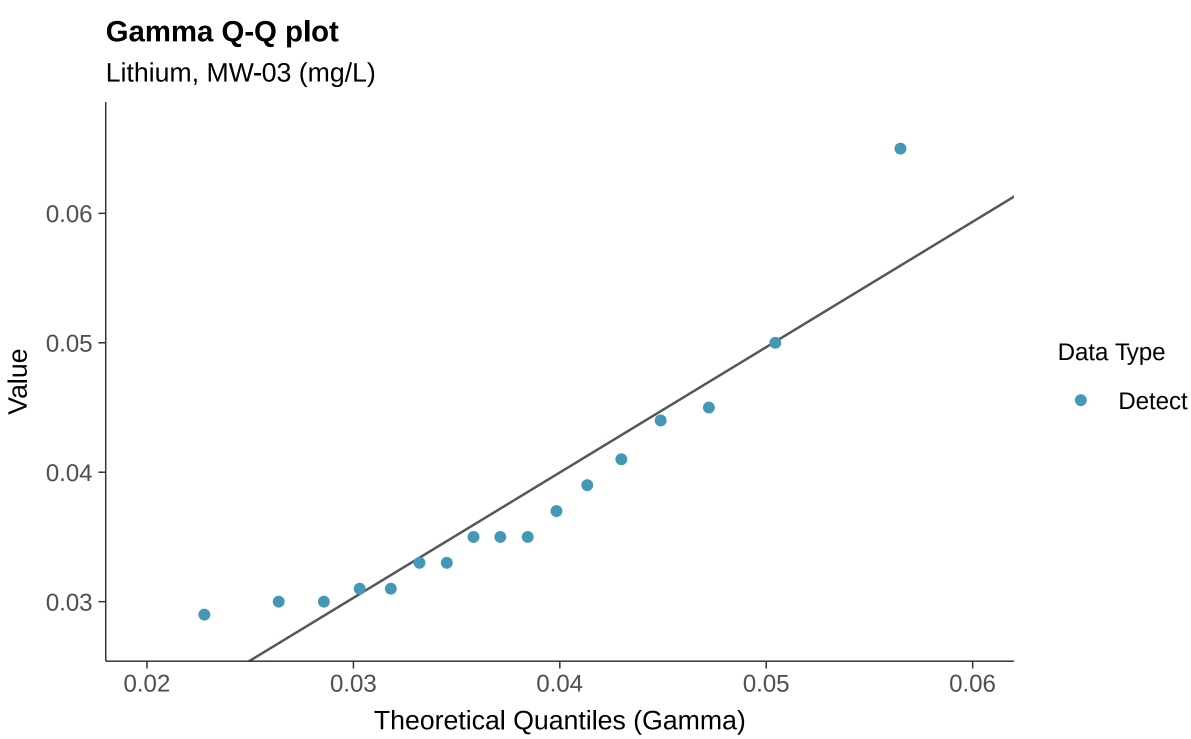


Boxplot by Season

Lithium, MW-03 (mg/L)

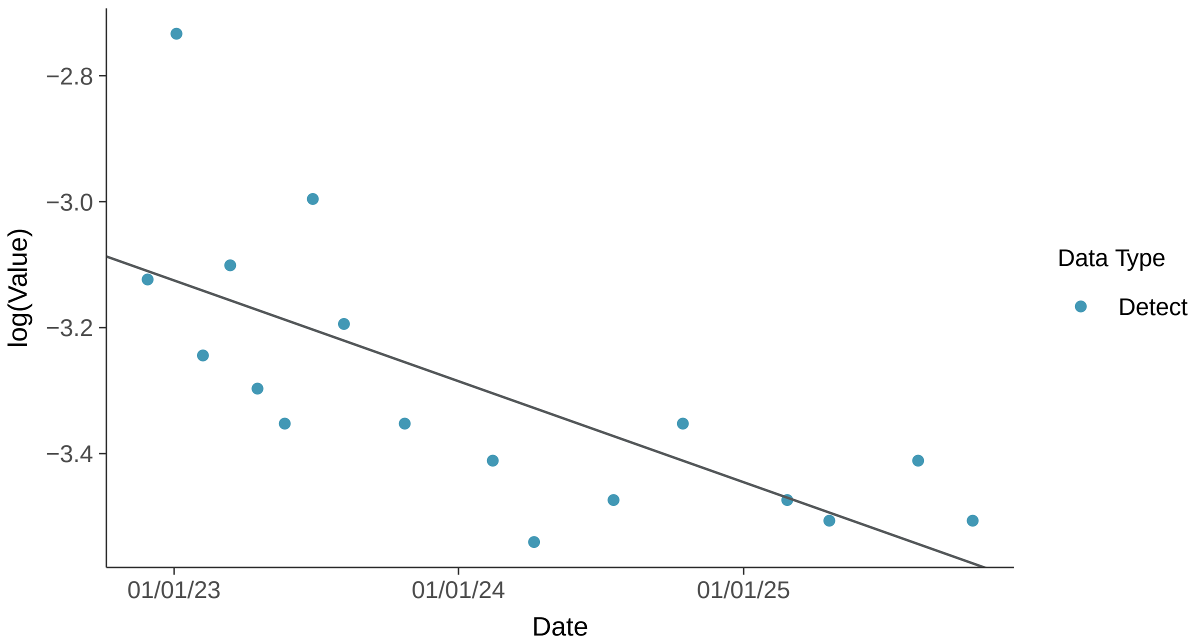



Lognormal Q-Q plot
Lithium, MW-03 (mg/L)
log(Value)
−2.8
−3.0
−3.2
−3.4
−3.6
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Lithium, MW-03 (mg/L)
Value
0.06
0.05
0.04
0.03
0.02
0.03
0.04
0.05
0.06
Theoretical Quantiles (Gamma)
Data Type
Detect

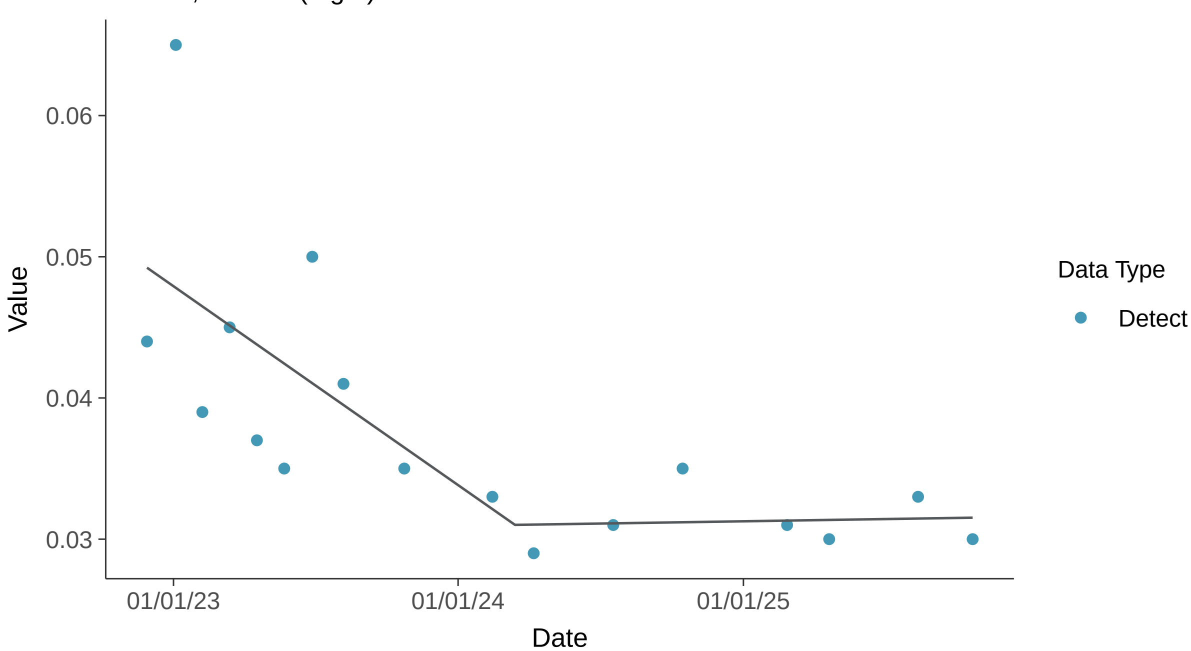
Trend Regression: Lognormal MLE

Lithium, MW-03 (mg/L)



Trend Regression: Piecewise Linear-Linear

Lithium, MW-03 (mg/L)

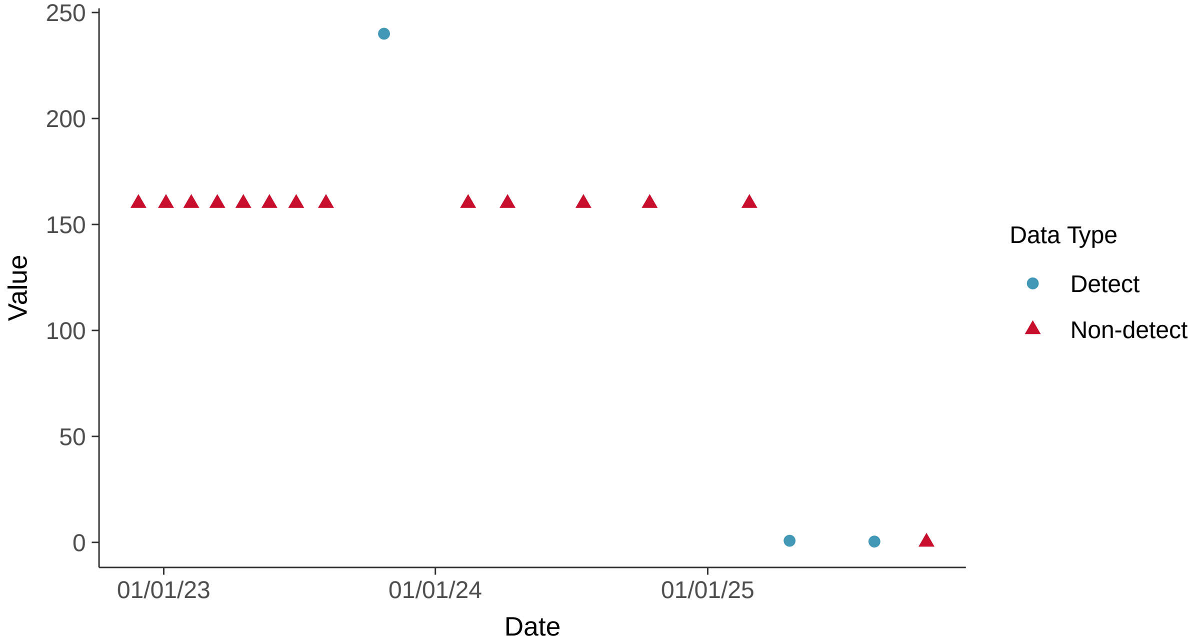


Appendix IV: Mercury, MW-03

ID: 13_2_4_117

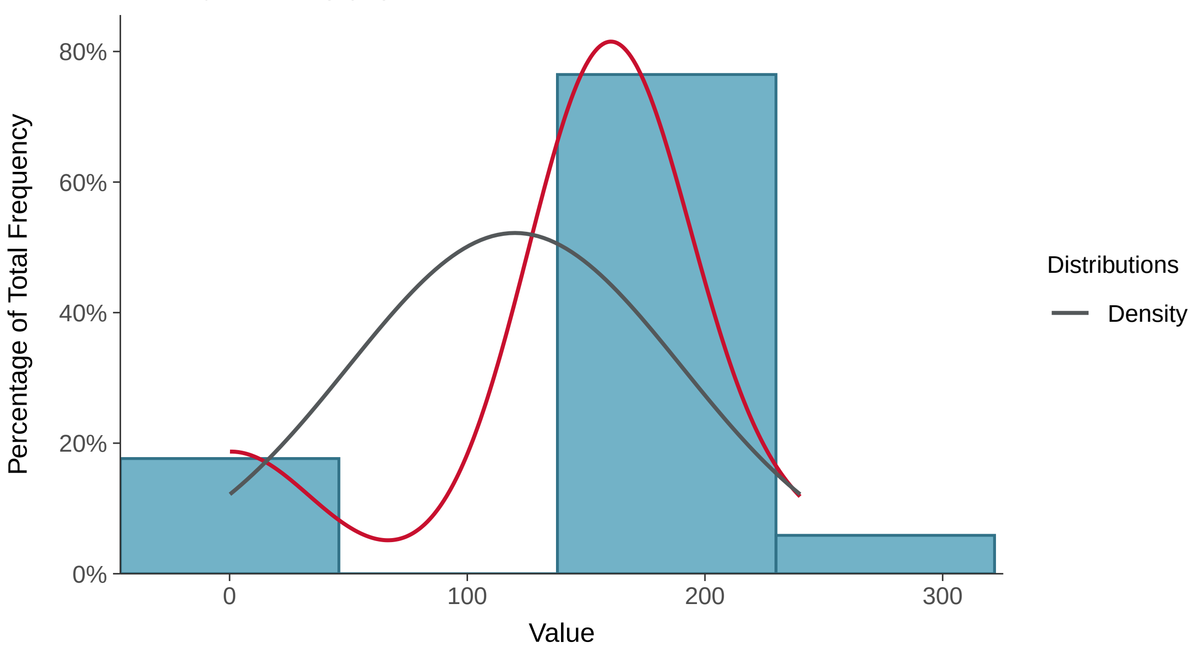
Scatter Plot

Mercury, MW-03 (ng/L)



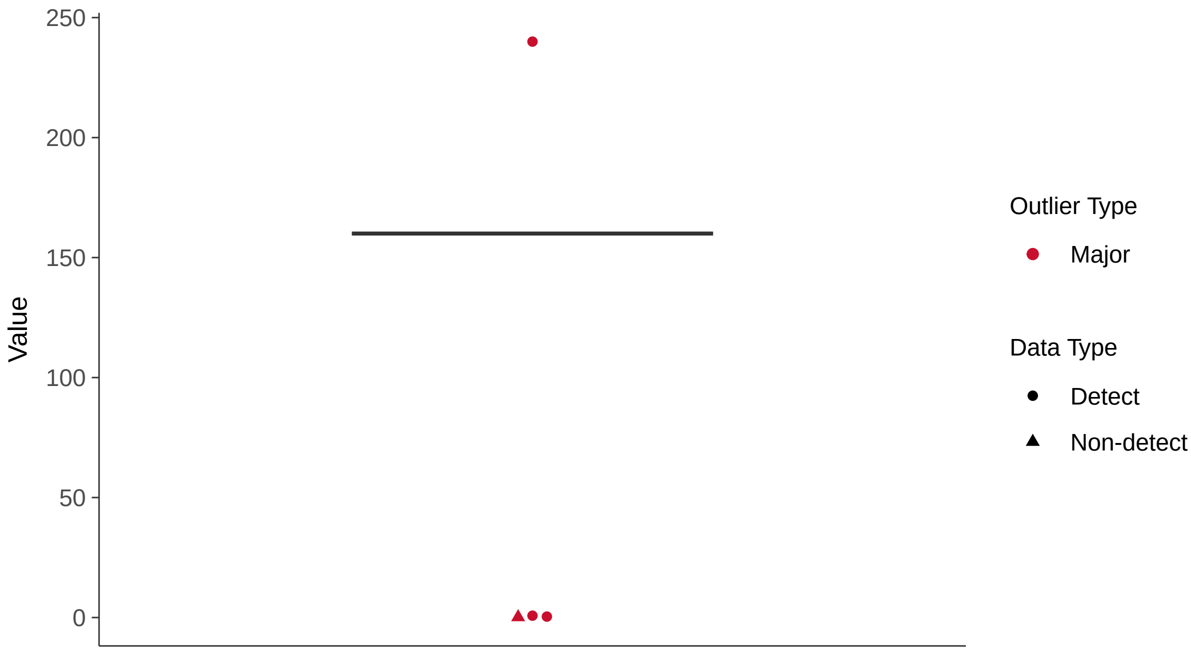
Histogram

Mercury, MW-03 (ng/L)



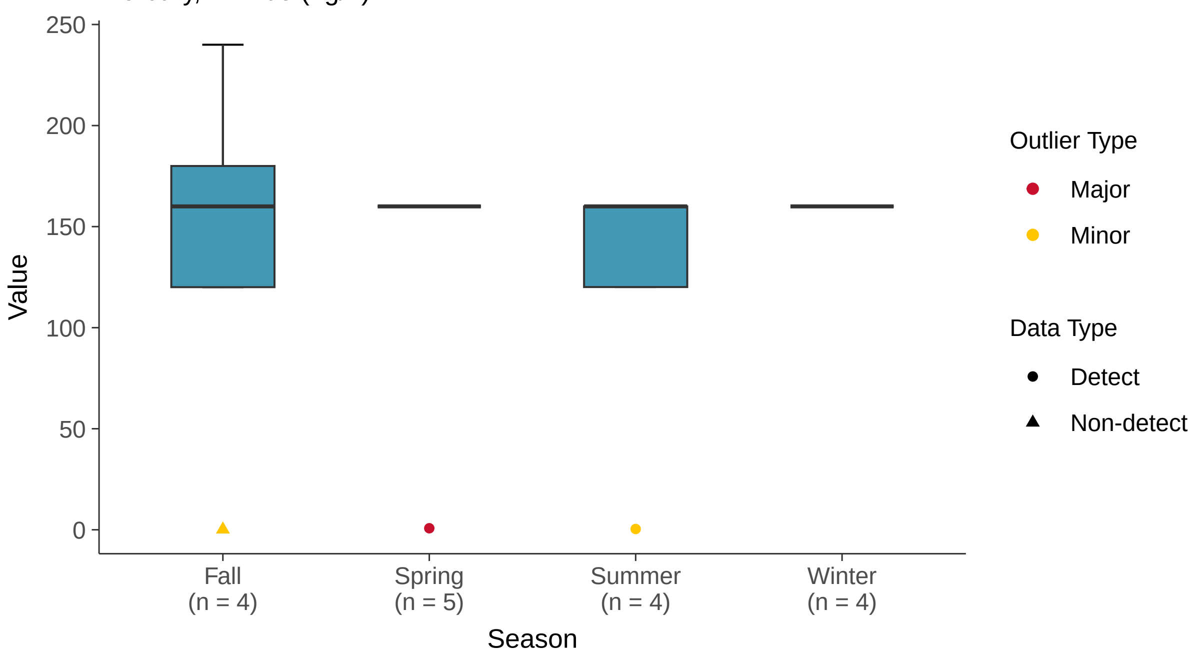
Boxplot

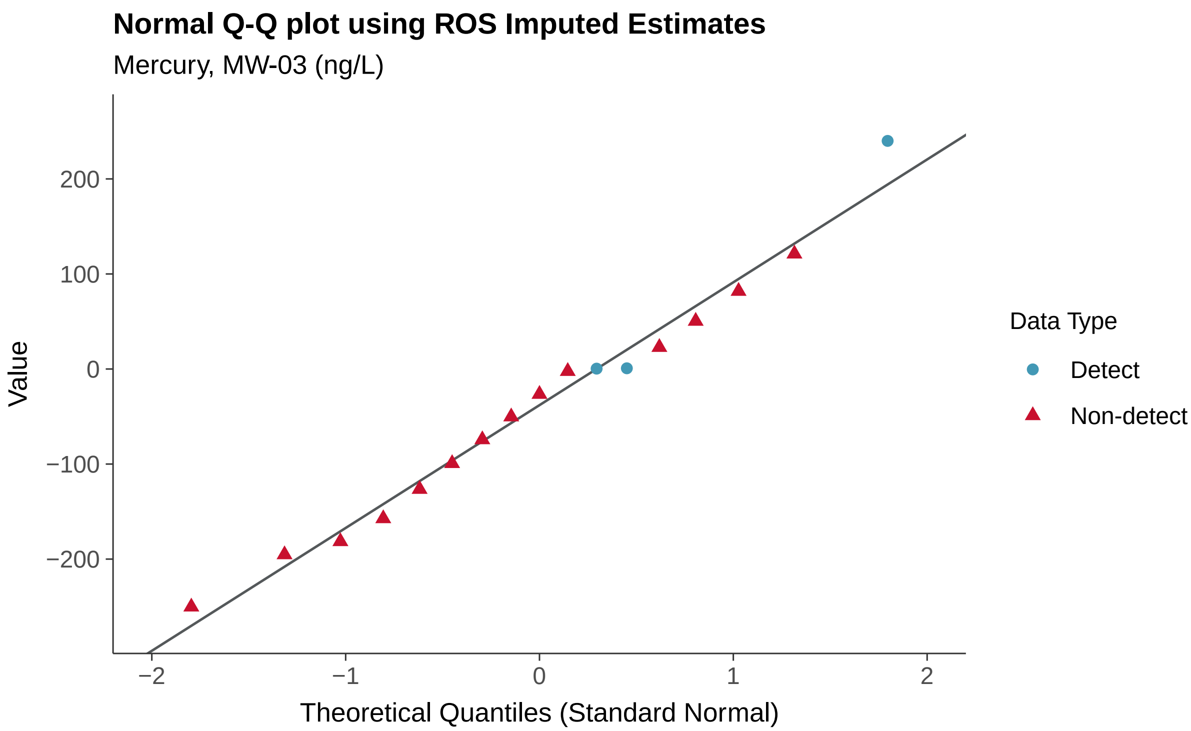
Mercury, MW-03 (ng/L)

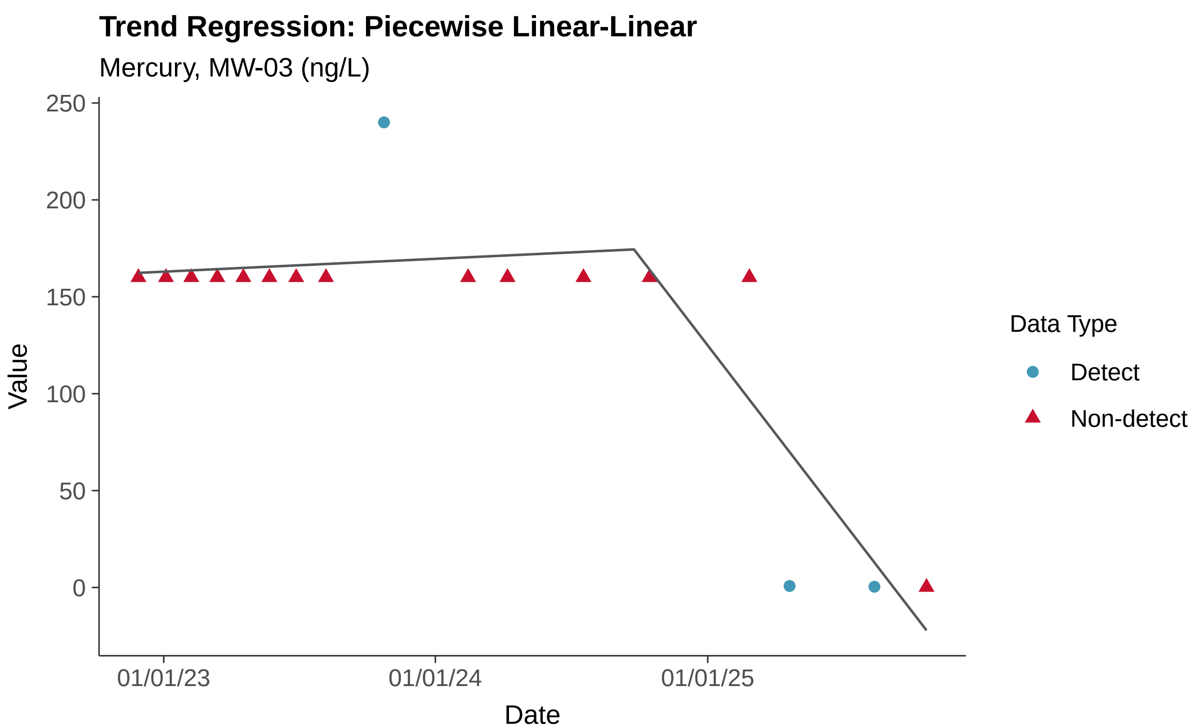


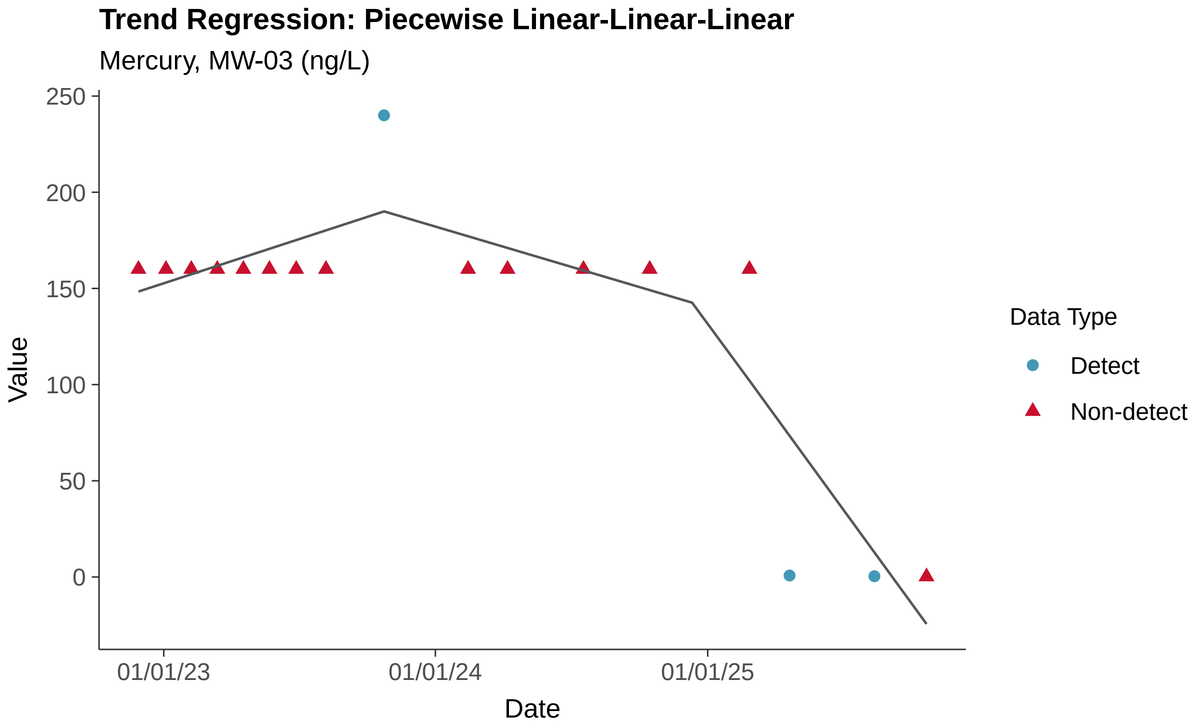
Boxplot by Season

Mercury, MW-03 (ng/L)



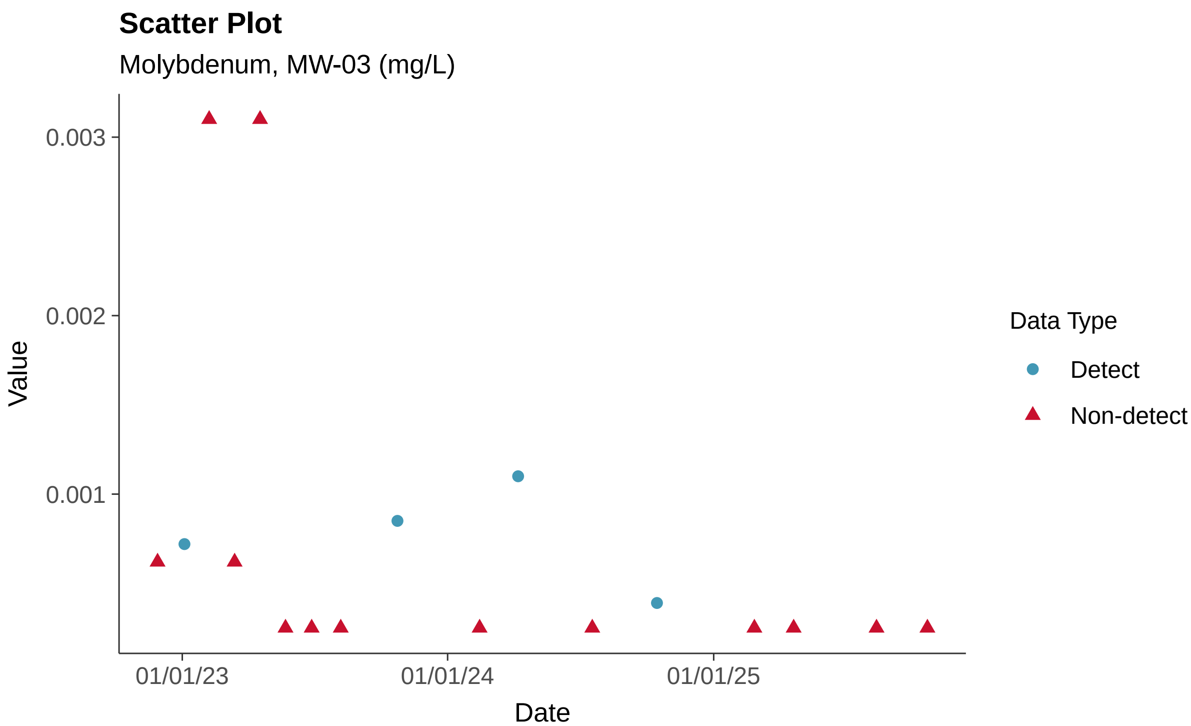

Normal Q-Q plot using ROS Imputed Estimates
Mercury, MW-03 (ng/L)
Value
200
100
0
−100
−200
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

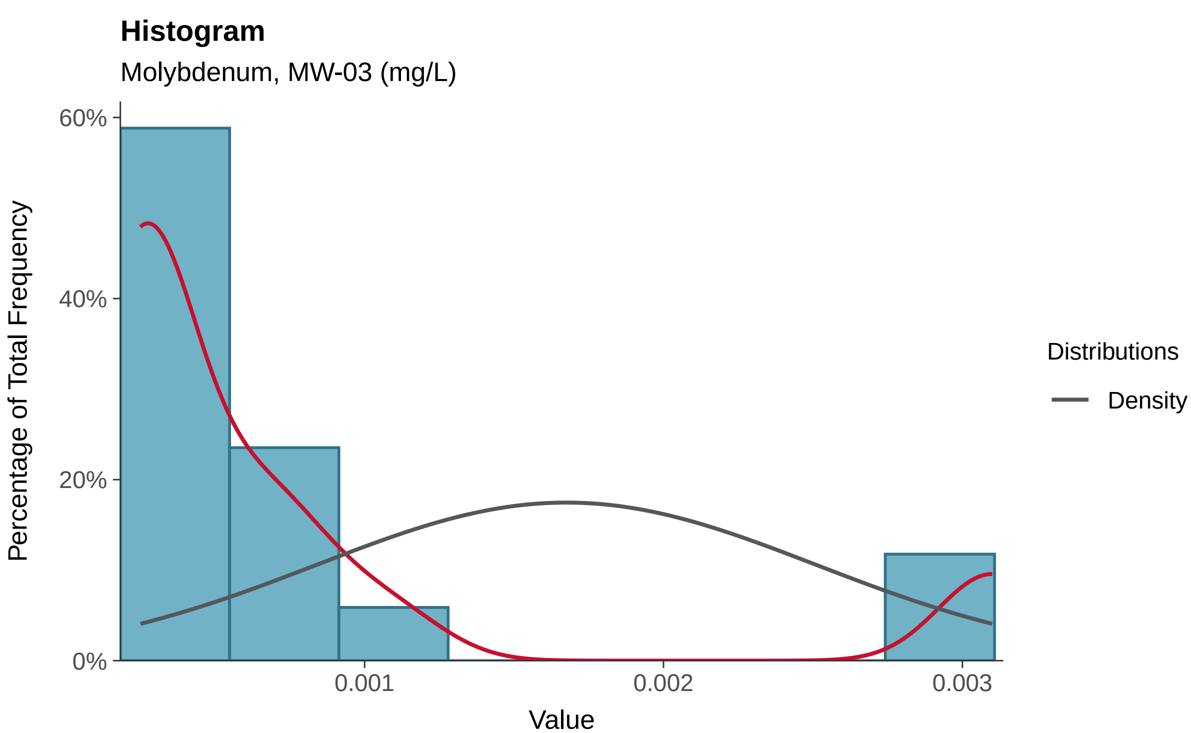

Trend Regression: Piecewise Linear-Linear
Mercury, MW-03 (ng/L)
Value
250
200
150
100
50
0
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear-Linear
Mercury, MW-03 (ng/L)
250
200
150
100
50
0
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Appendix IV: Molybdenum, MW-03

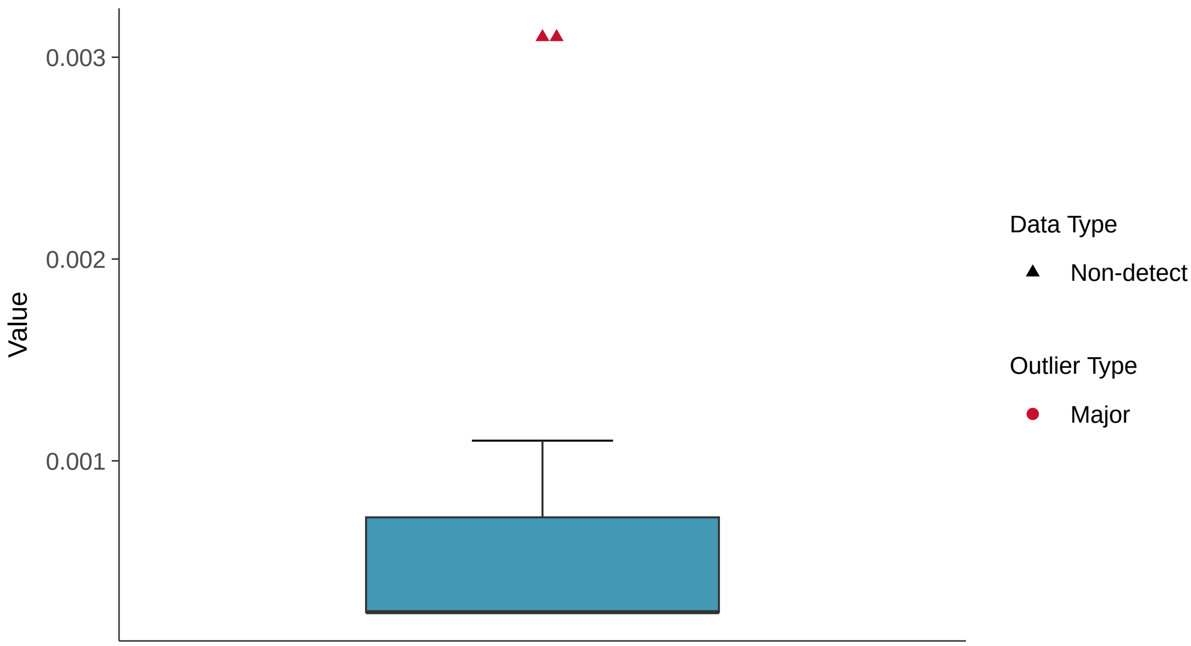
ID: 13_2_4_118





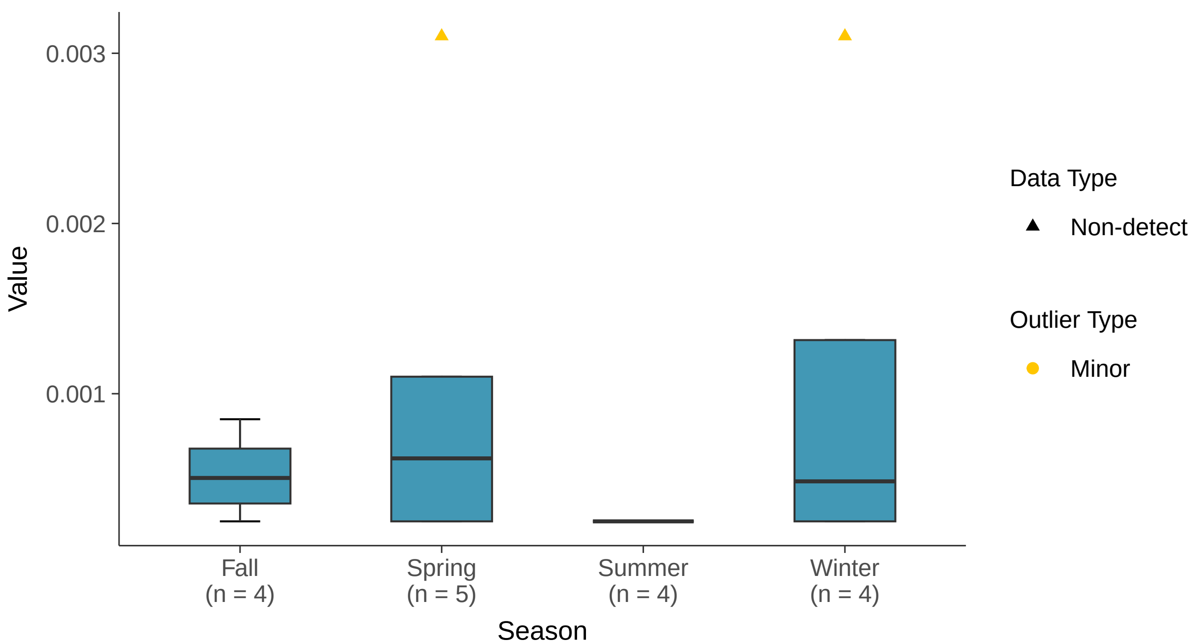
Boxplot

Molybdenum, MW-03 (mg/L)



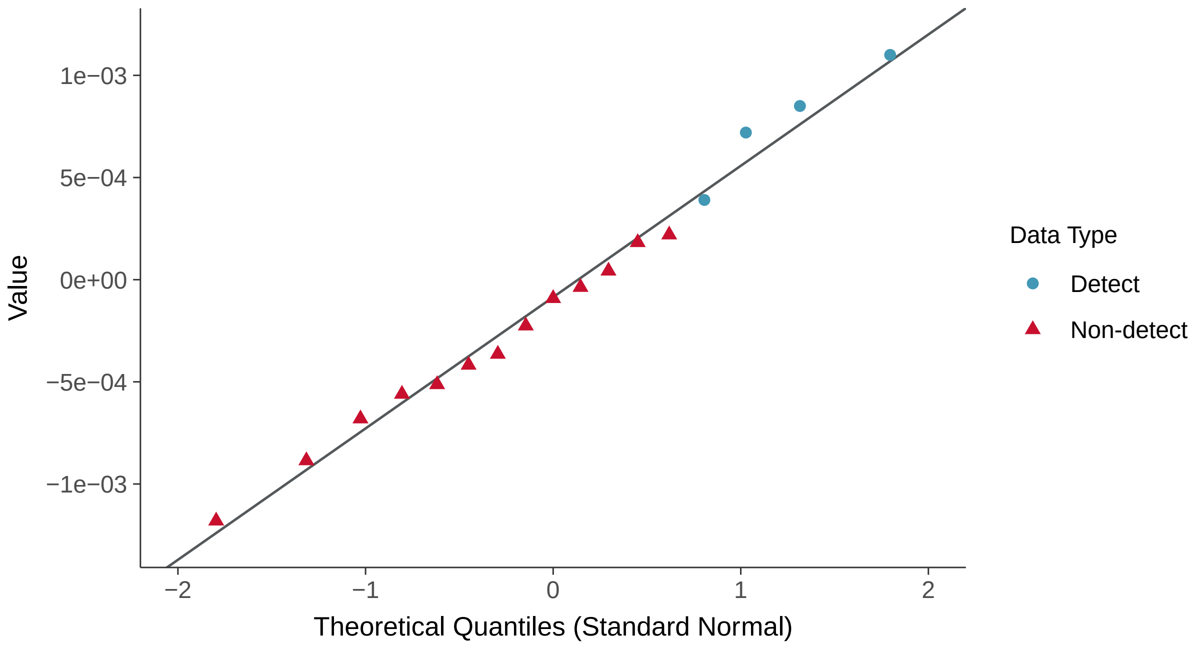
Boxplot by Season

Molybdenum, MW-03 (mg/L)



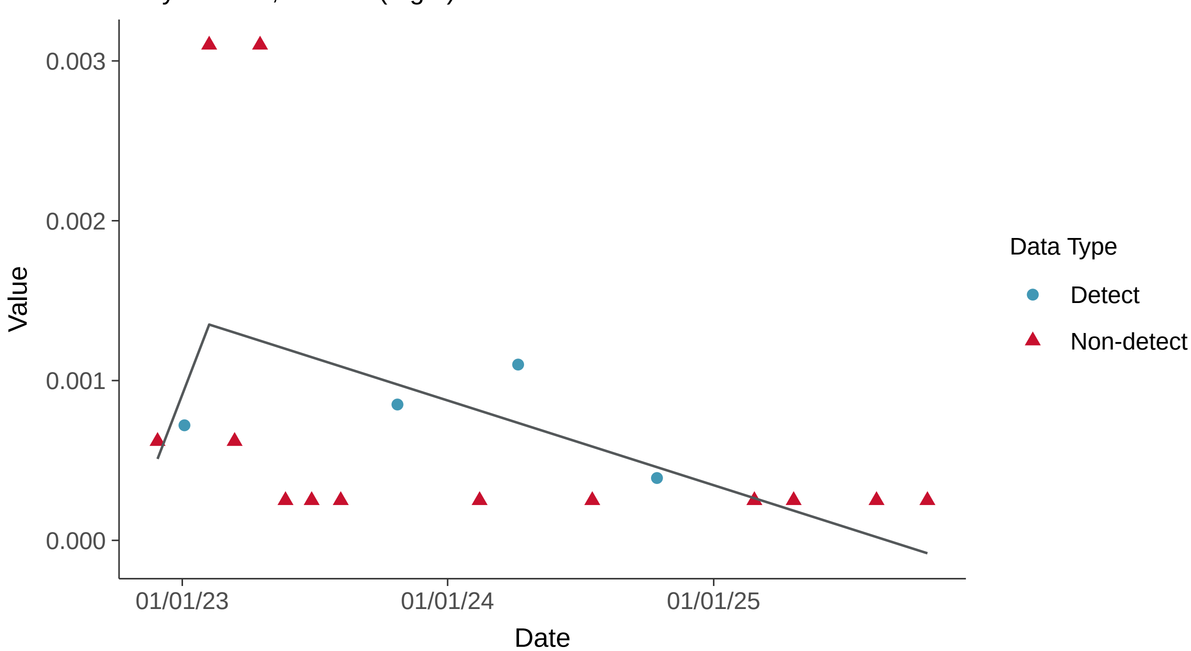
Normal Q-Q plot using ROS Imputed Estimates

Molybdenum, MW-03 (mg/L)



Trend Regression: Piecewise Linear-Linear

Molybdenum, MW-03 (mg/L)

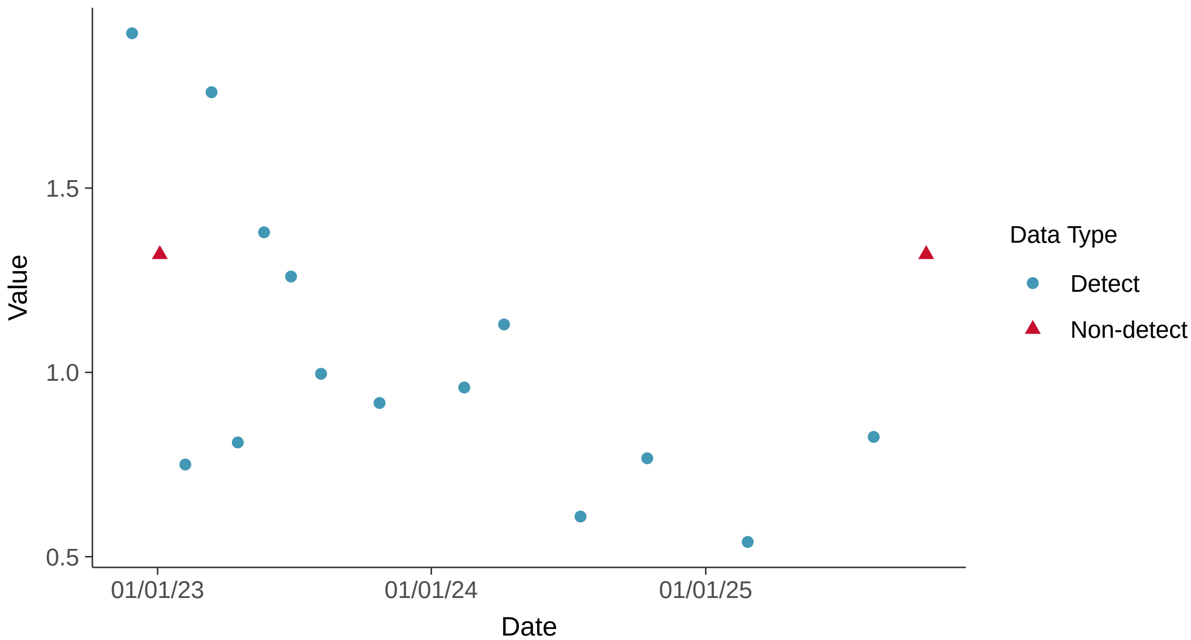


Appendix IV: Radium 226 and 228, MW-03

ID: 13_2_4_121

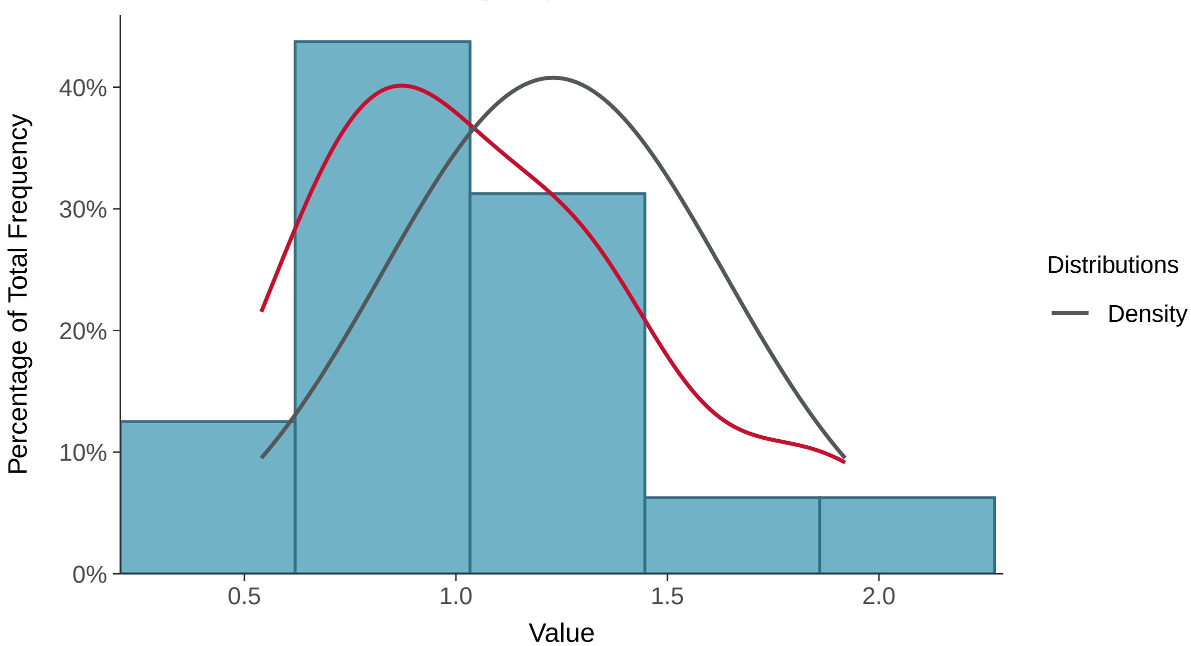
Scatter Plot

Radium 226 and 228, MW-03 (pCi/L)



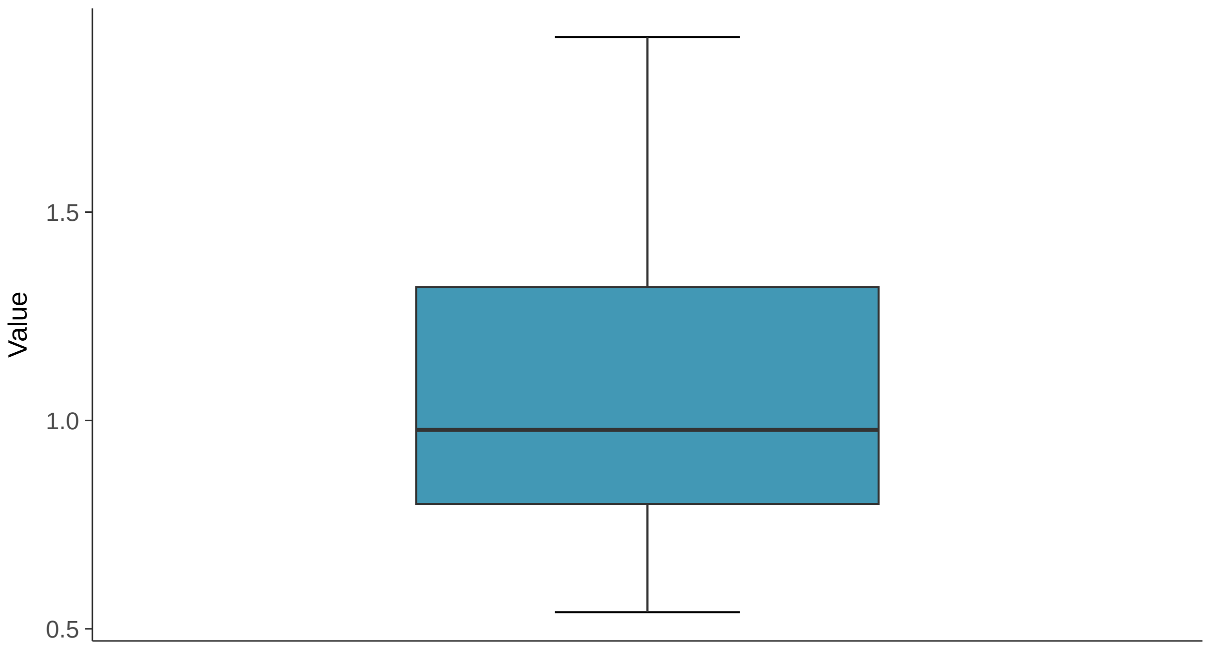
Histogram

Radium 226 and 228, MW-03 (pCi/L)



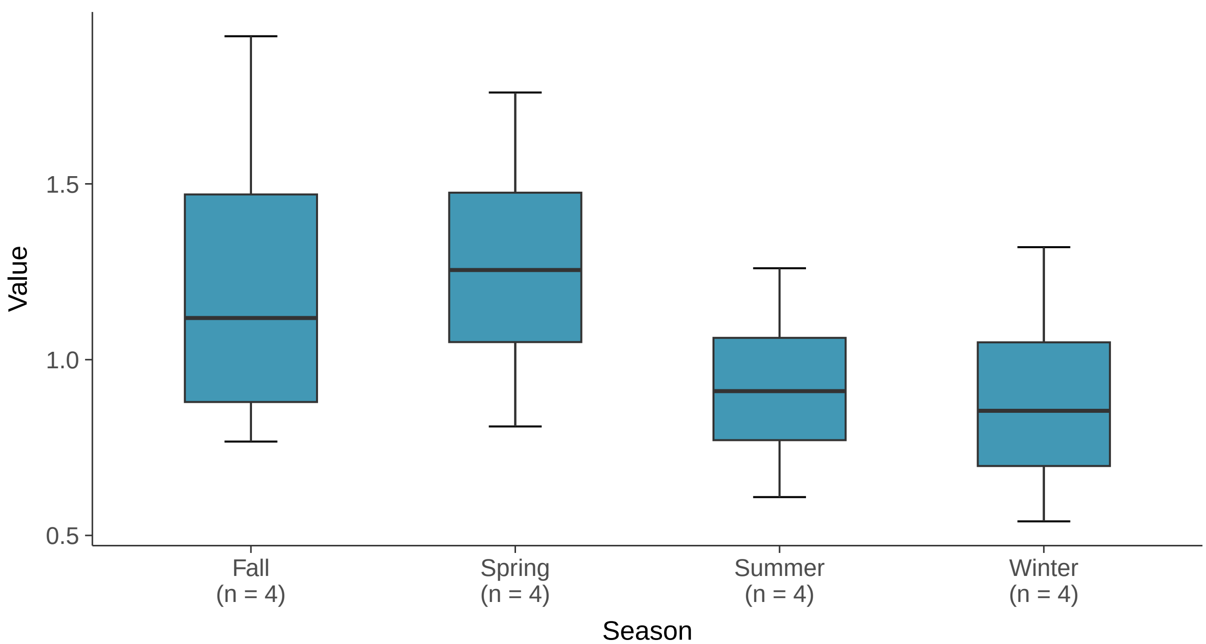
Boxplot

Radium 226 and 228, MW-03 (pCi/L)



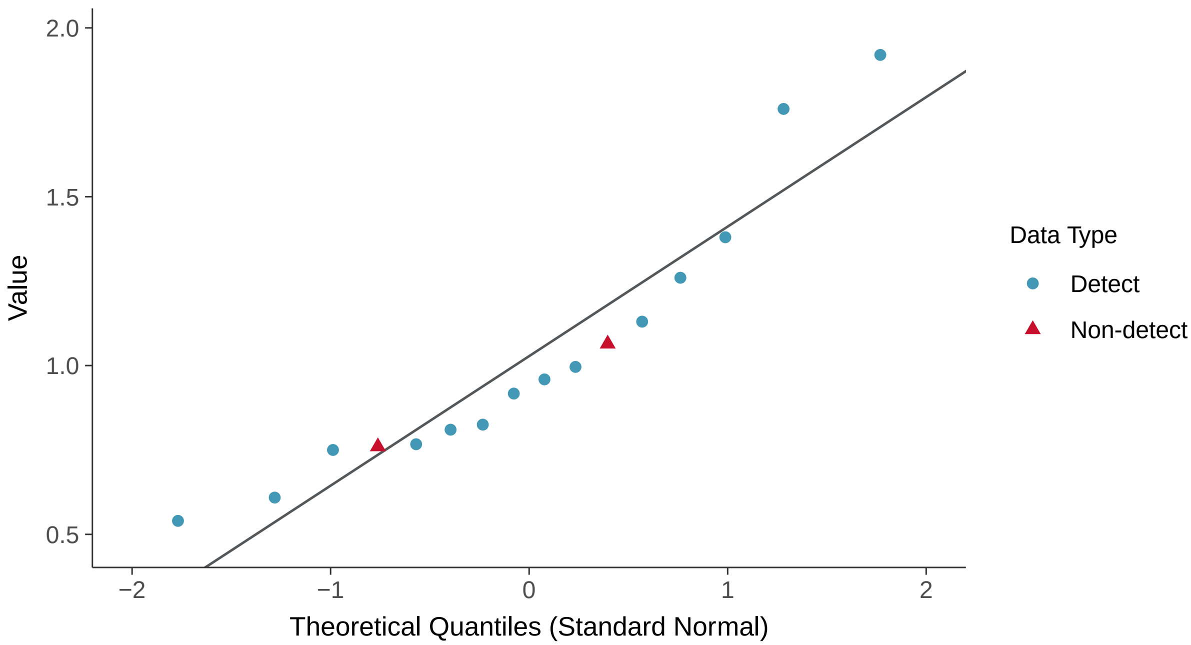
Boxplot by Season

Radium 226 and 228, MW-03 (pCi/L)



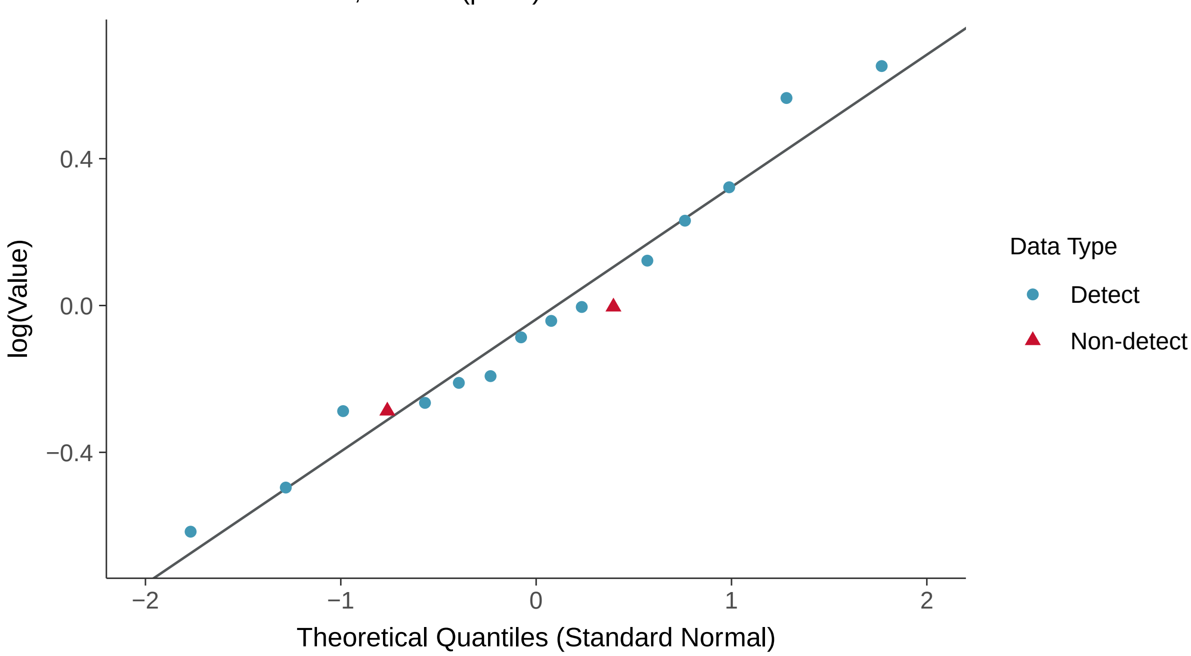
Normal Q-Q plot using ROS Imputed Estimates

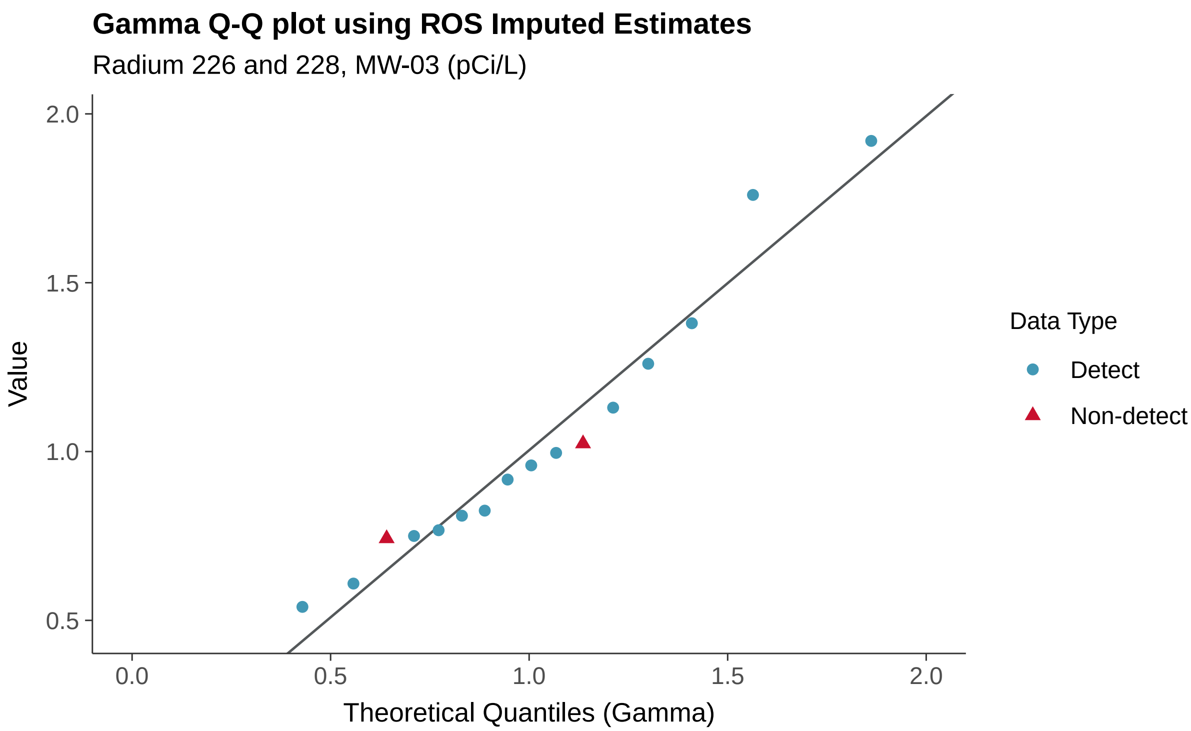
Radium 226 and 228, MW-03 (pCi/L)

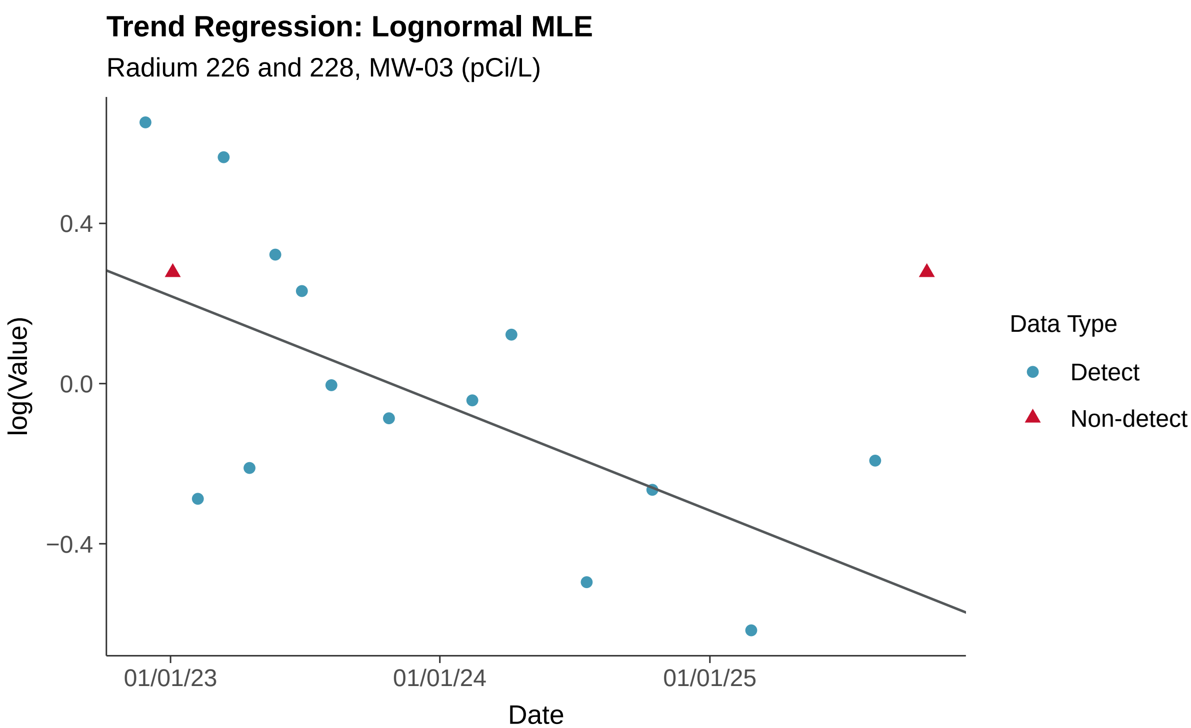


Lognormal Q-Q plot using ROS Imputed Estimates

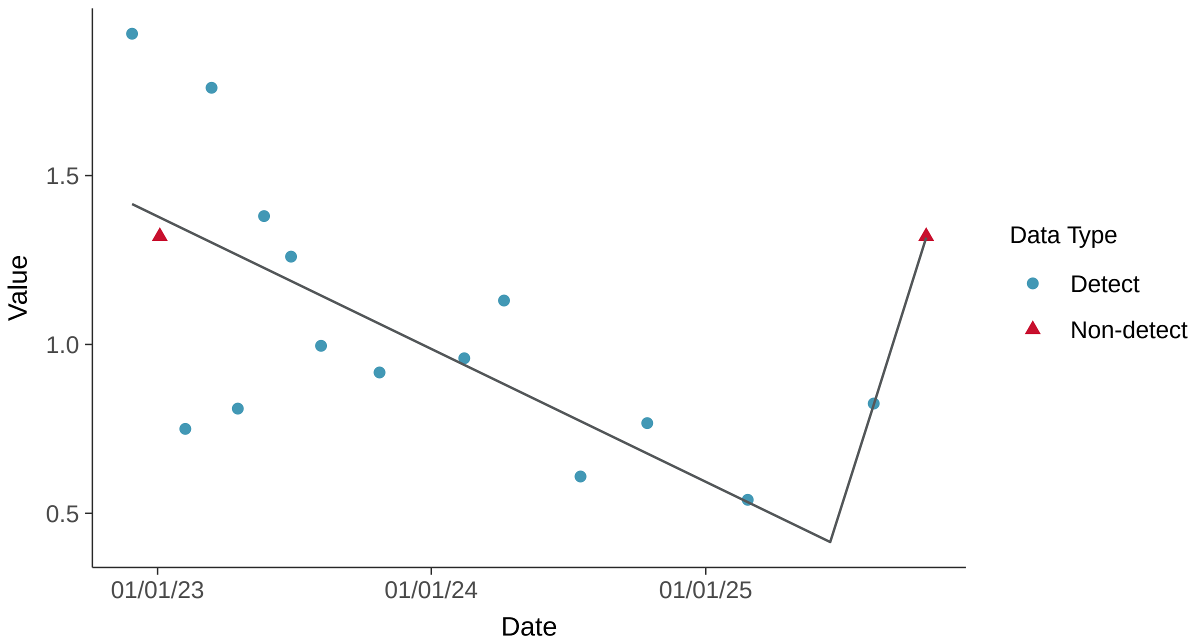
Radium 226 and 228, MW-03 (pCi/L)



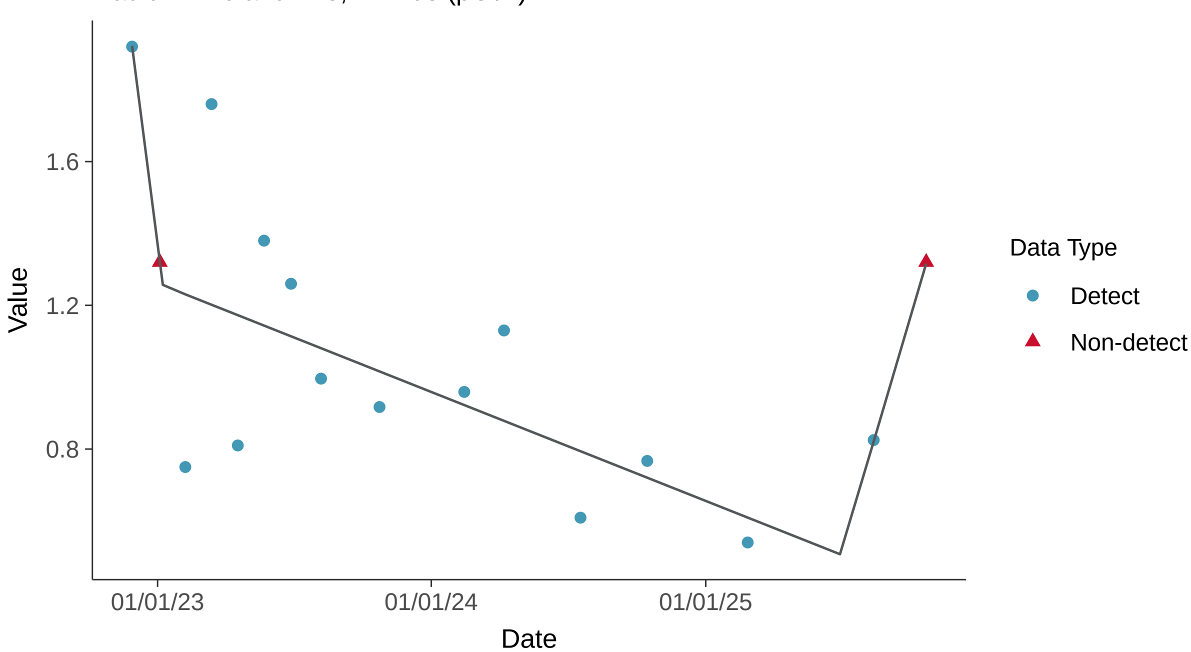

Gamma Q-Q plot using ROS Imputed Estimates
Radium 226 and 228, MW-03 (pCi/L)
Value
2.0
1.5
1.0
0.5
0.0
0.5
1.0
1.5
2.0
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect


Trend Regression: Lognormal MLE
Radium 226 and 228, MW-03 (pCi/L)
log(Value)
0.4
0.0
−0.4
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Trend Regression: Piecewise Linear-Linear
Radium 226 and 228, MW-03 (pCi/L)

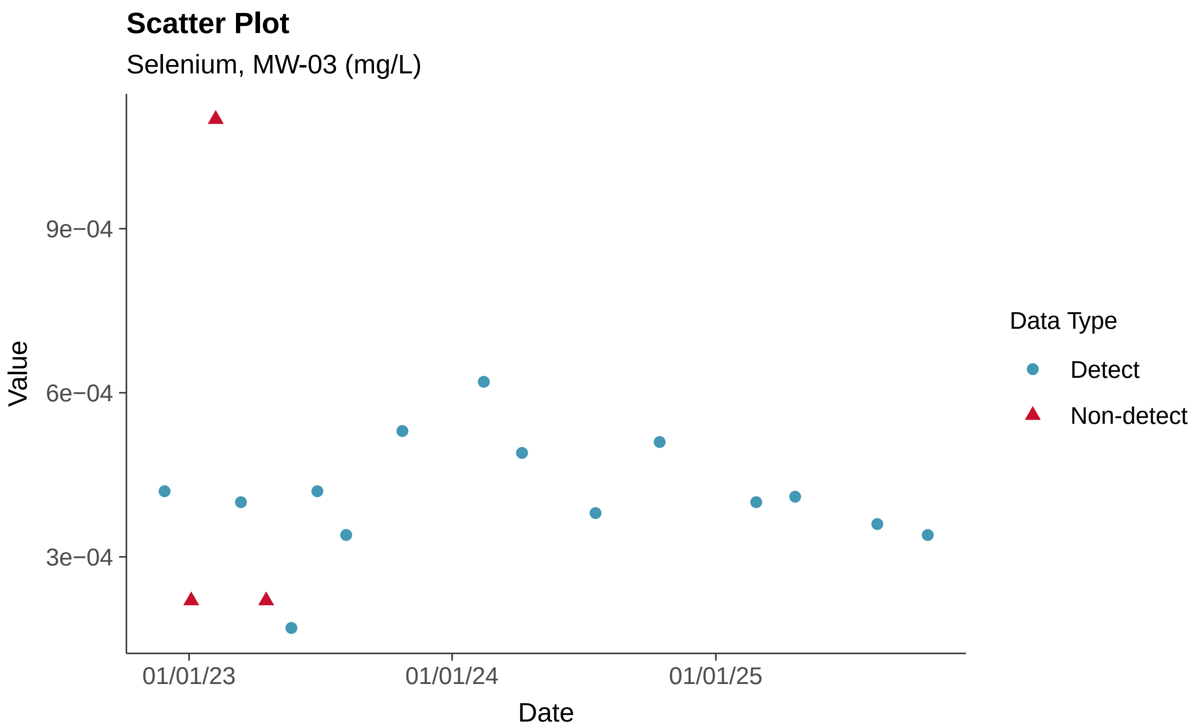


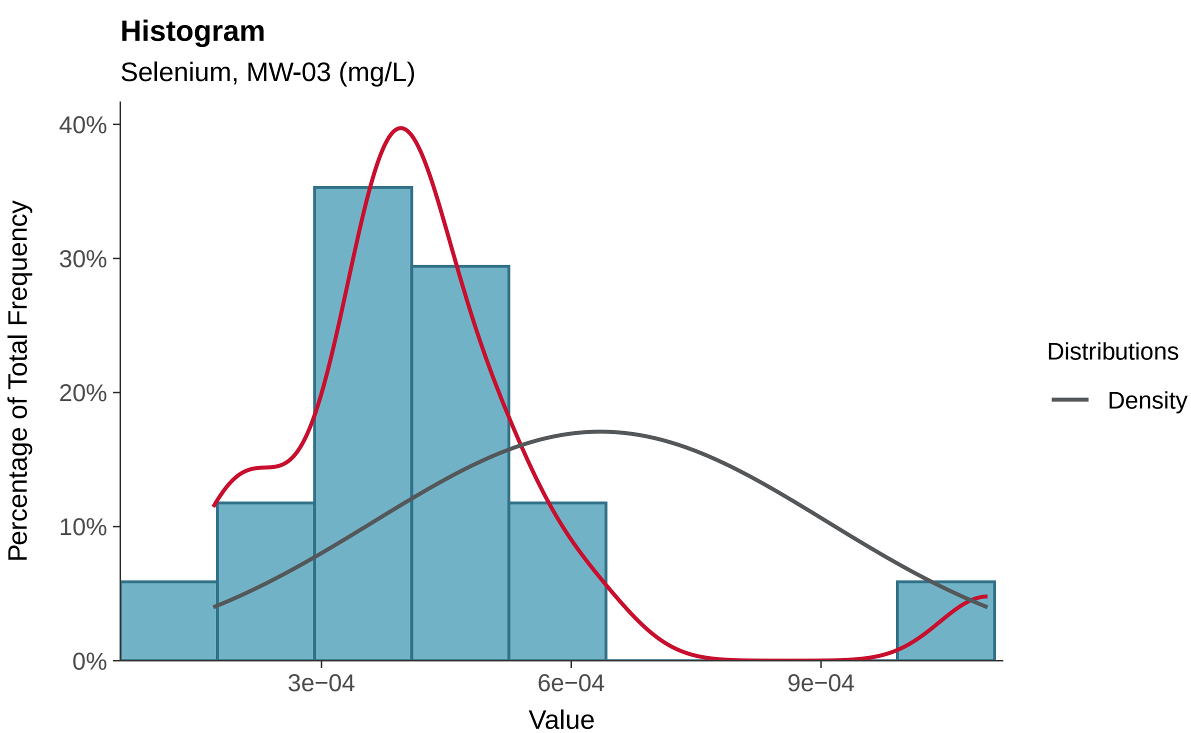
Trend Regression: Piecewise Linear-Linear-Linear
Radium 226 and 228, MW-03 (pCi/L)



Appendix IV: Selenium, MW-03

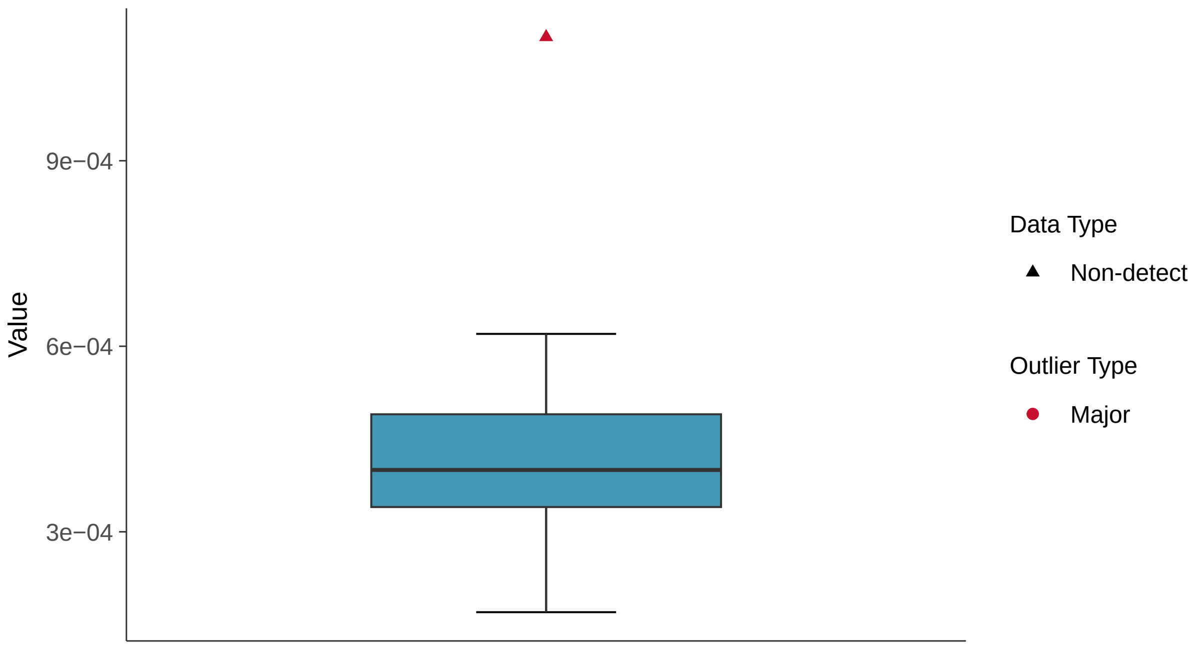
ID: 13_2_4_122





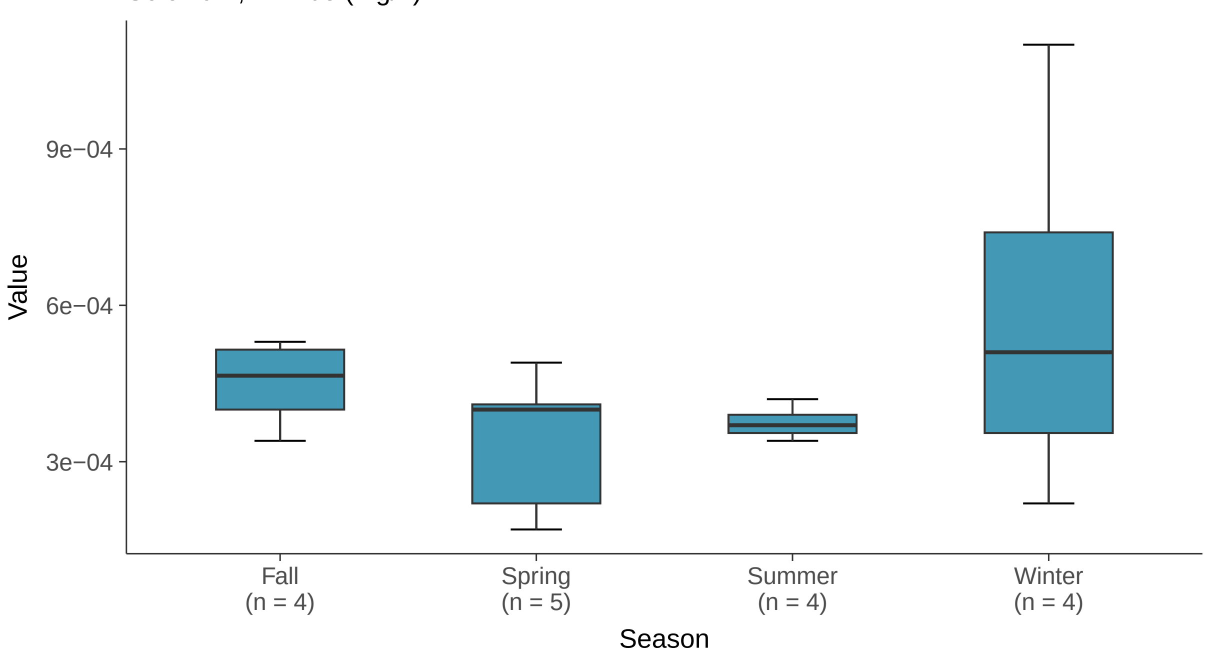
Boxplot

Selenium, MW-03 (mg/L)



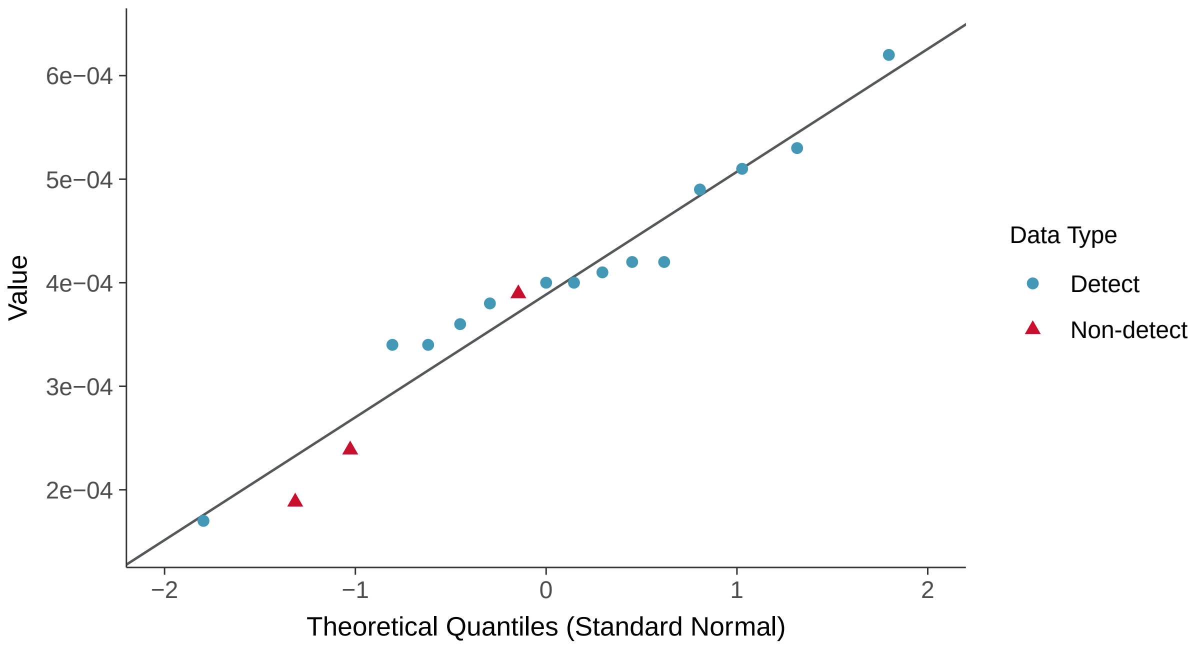
Boxplot by Season

Selenium, MW-03 (mg/L)



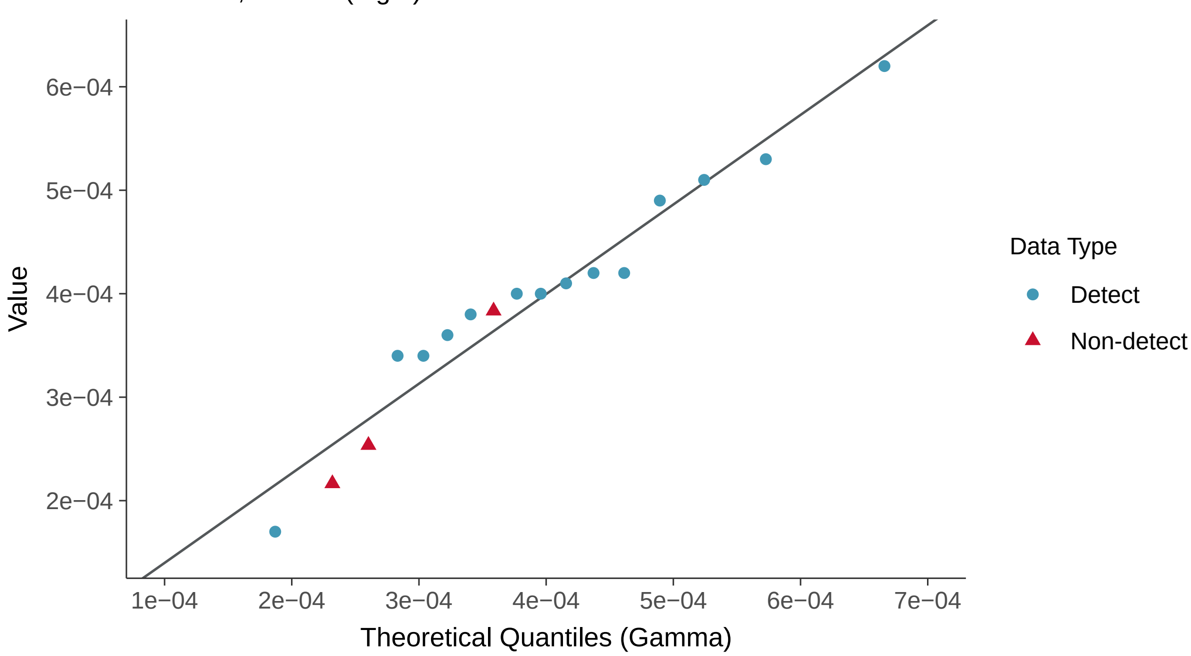
Normal Q-Q plot using ROS Imputed Estimates

Selenium, MW-03 (mg/L)



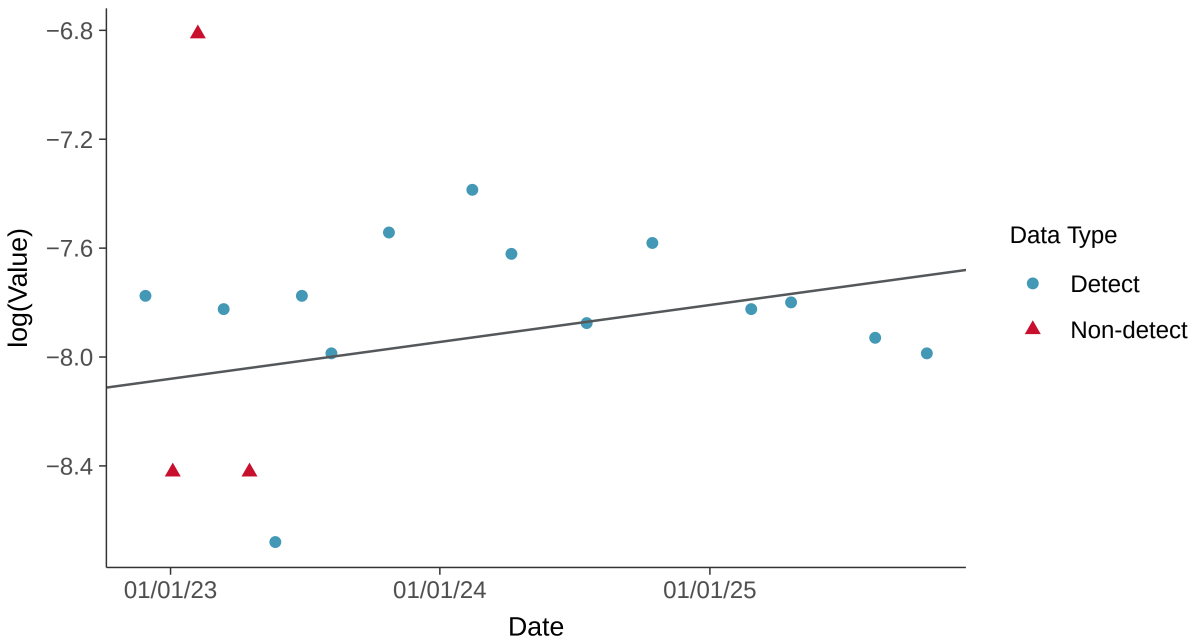
Gamma Q-Q plot using ROS Imputed Estimates

Selenium, MW-03 (mg/L)



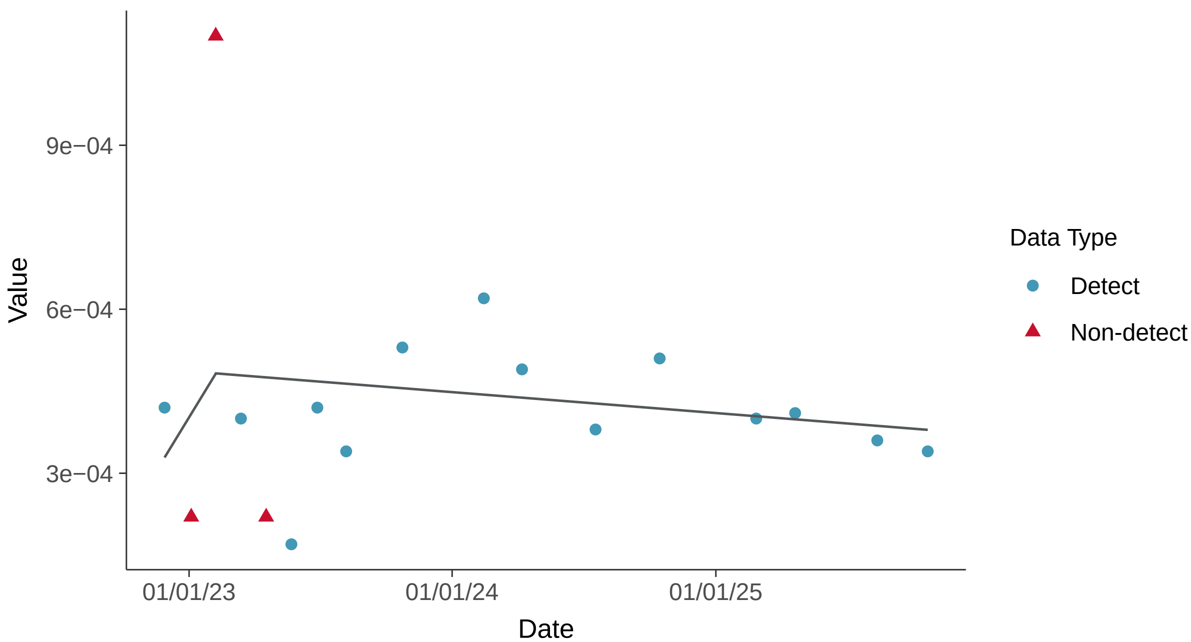
Trend Regression: Lognormal MLE

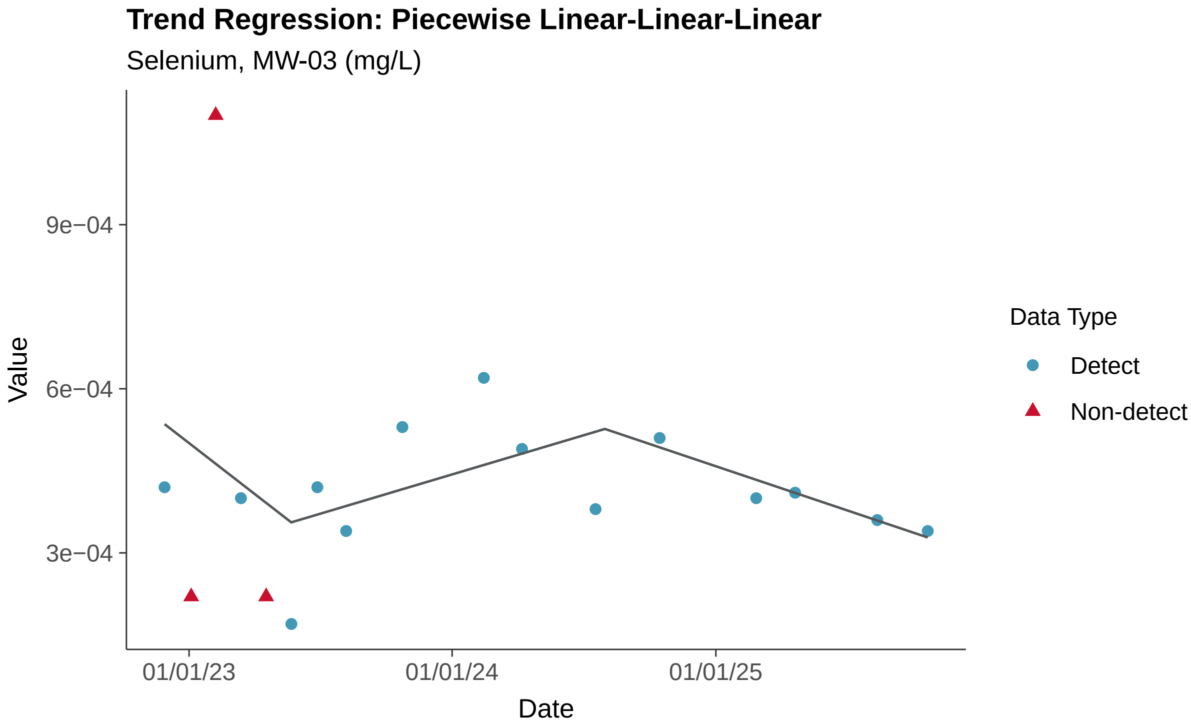
Selenium, MW-03 (mg/L)



Trend Regression: Piecewise Linear-Linear

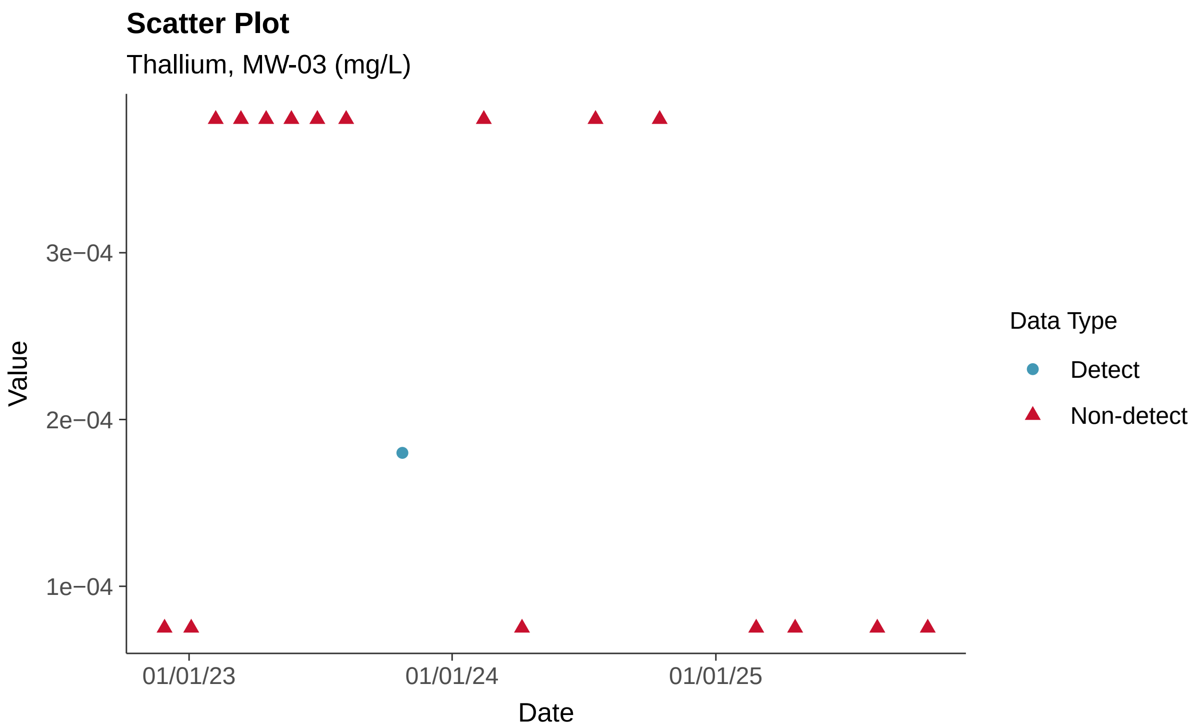
Selenium, MW-03 (mg/L)

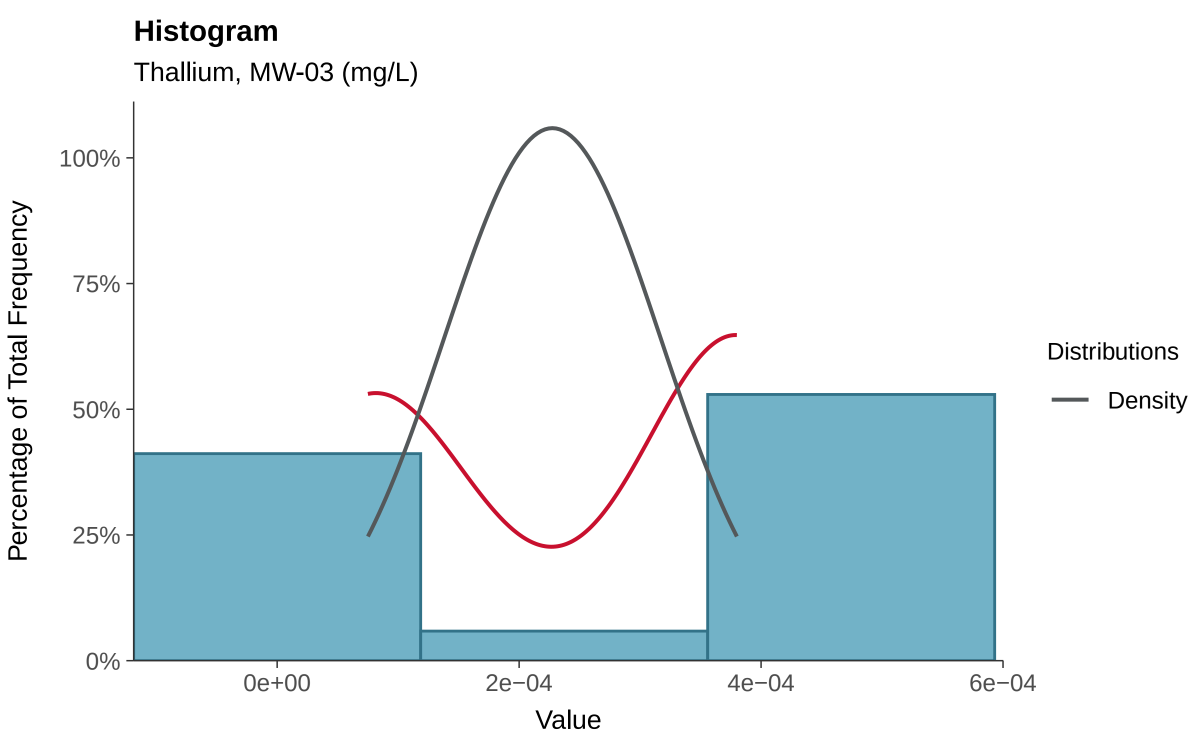



Trend Regression: Piecewise Linear-Linear-Linear
Selenium, MW-03 (mg/L)
Value
9e−04
6e−04
3e−04
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Appendix IV: Thallium, MW-03

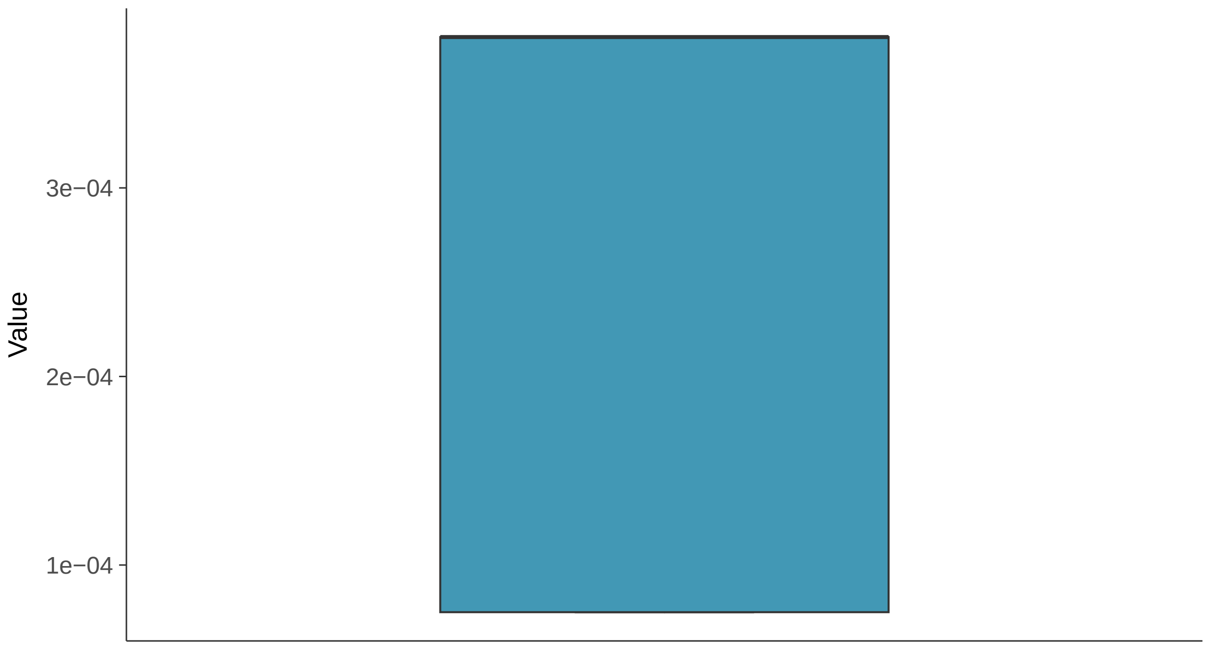
ID: 13_2_4_125





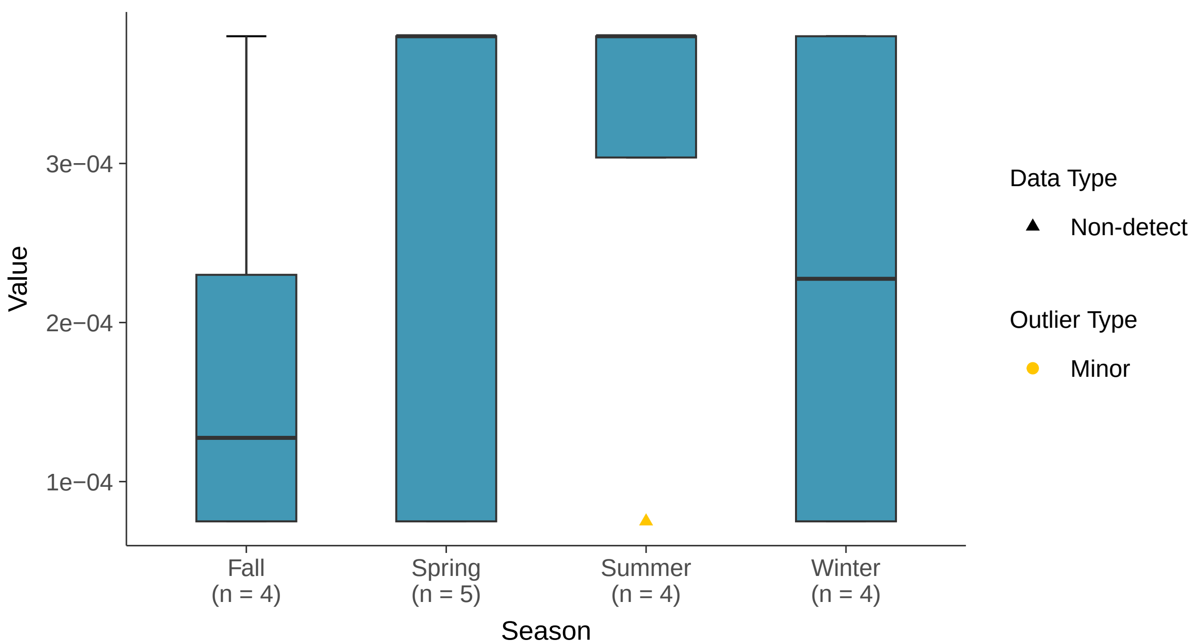
Boxplot

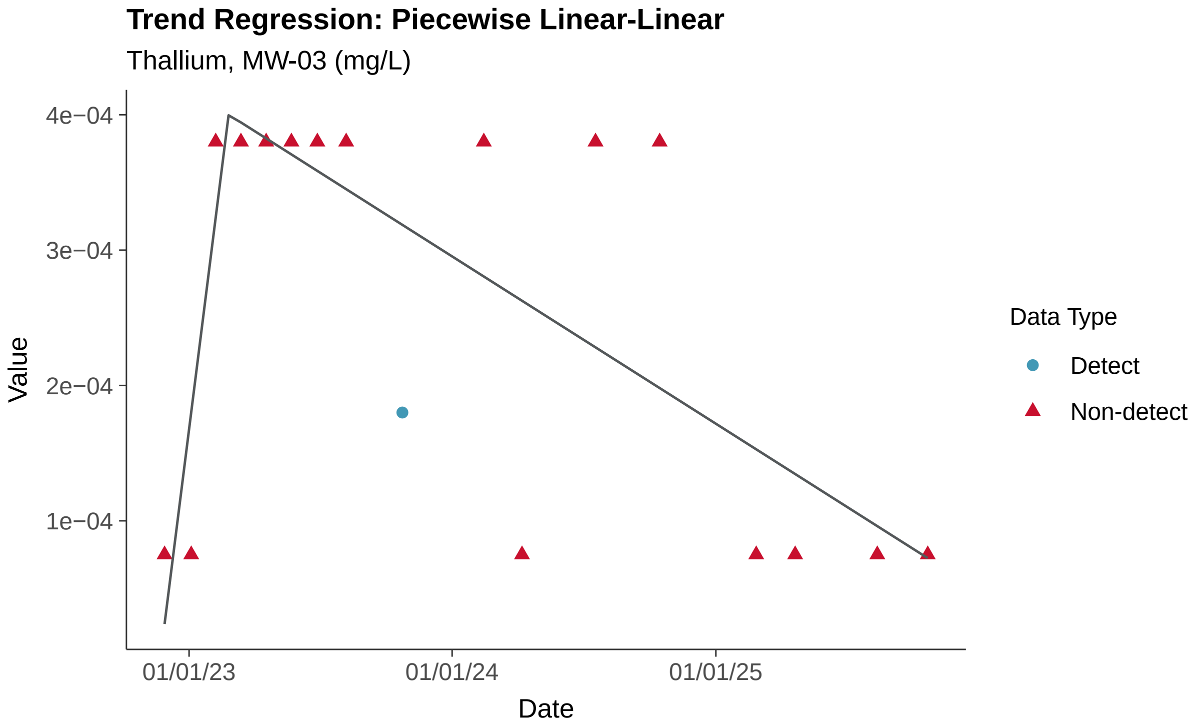
Thallium, MW-03 (mg/L)

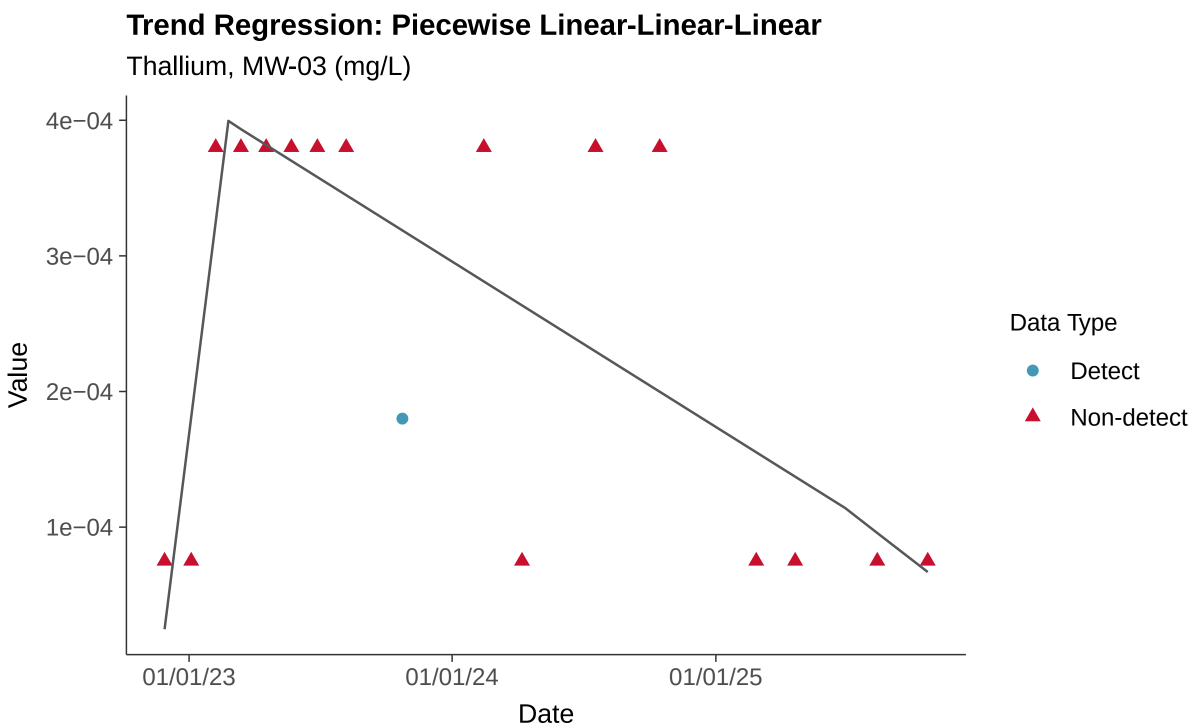


Boxplot by Season

Thallium, MW-03 (mg/L)

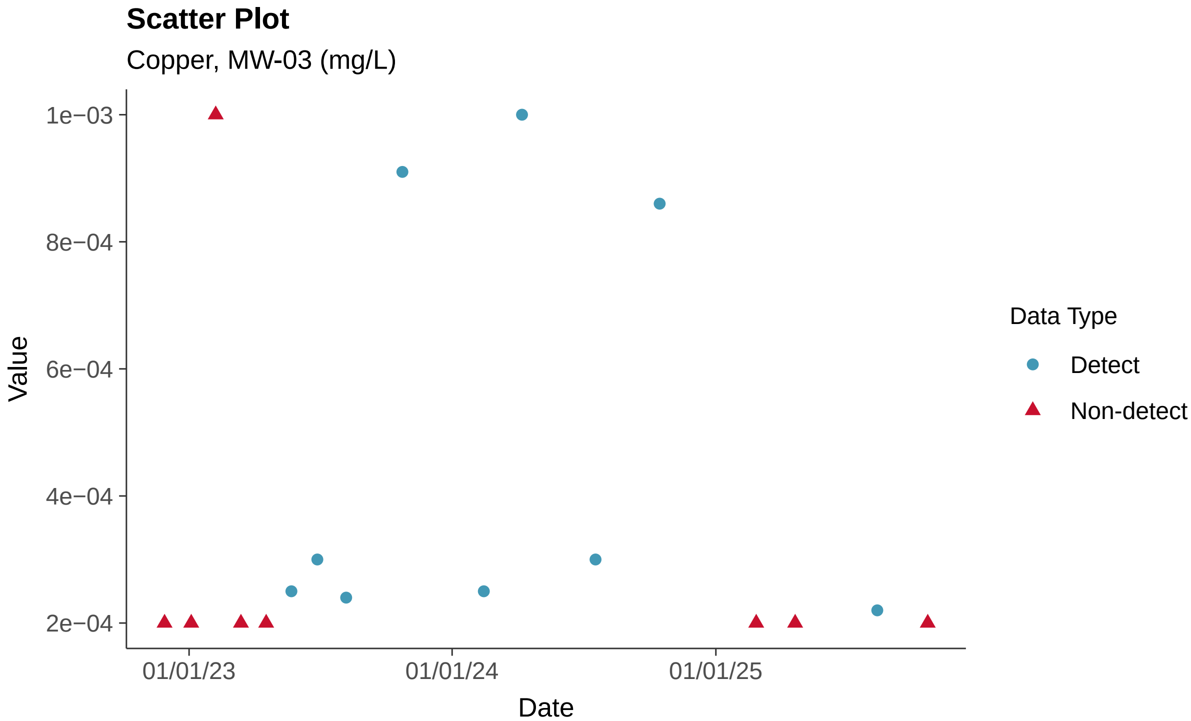


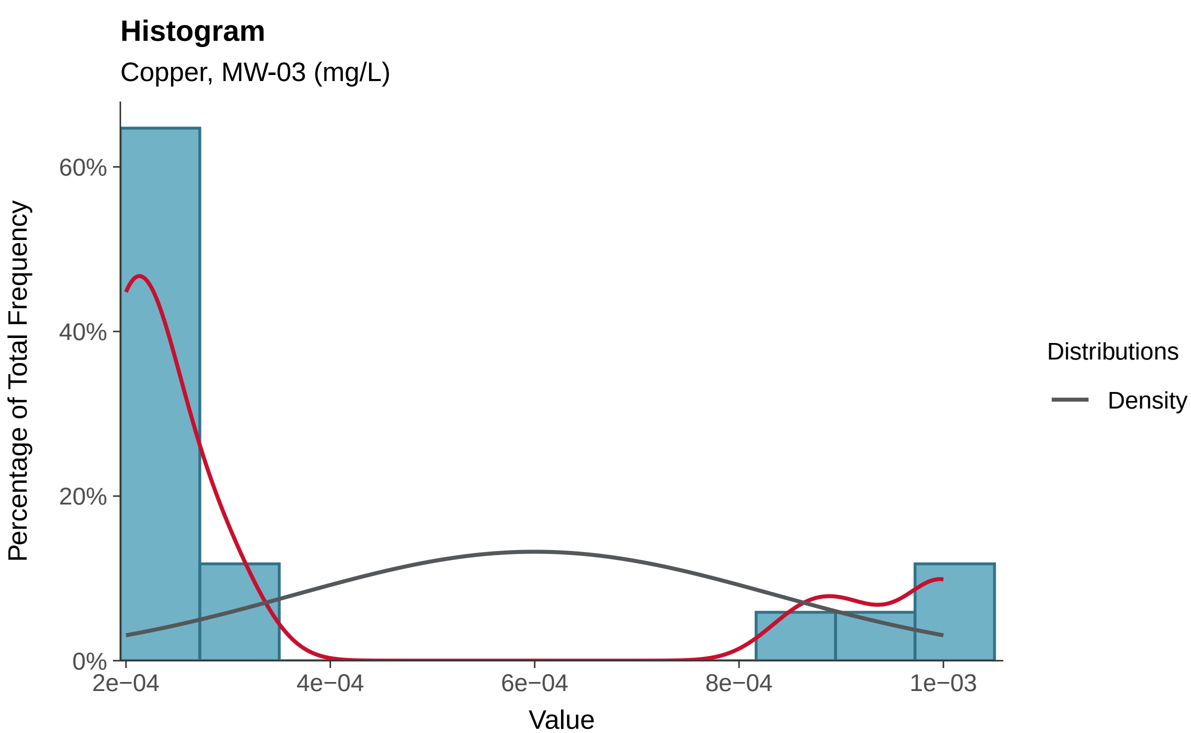

Trend Regression: Piecewise Linear-Linear
Thallium, MW-03 (mg/L)
4e−04
3e−04
2e−04
1e−04
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear-Linear
Thallium, MW-03 (mg/L)
4e−04
3e−04
2e−04
1e−04
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Part 115: Copper, MW-03

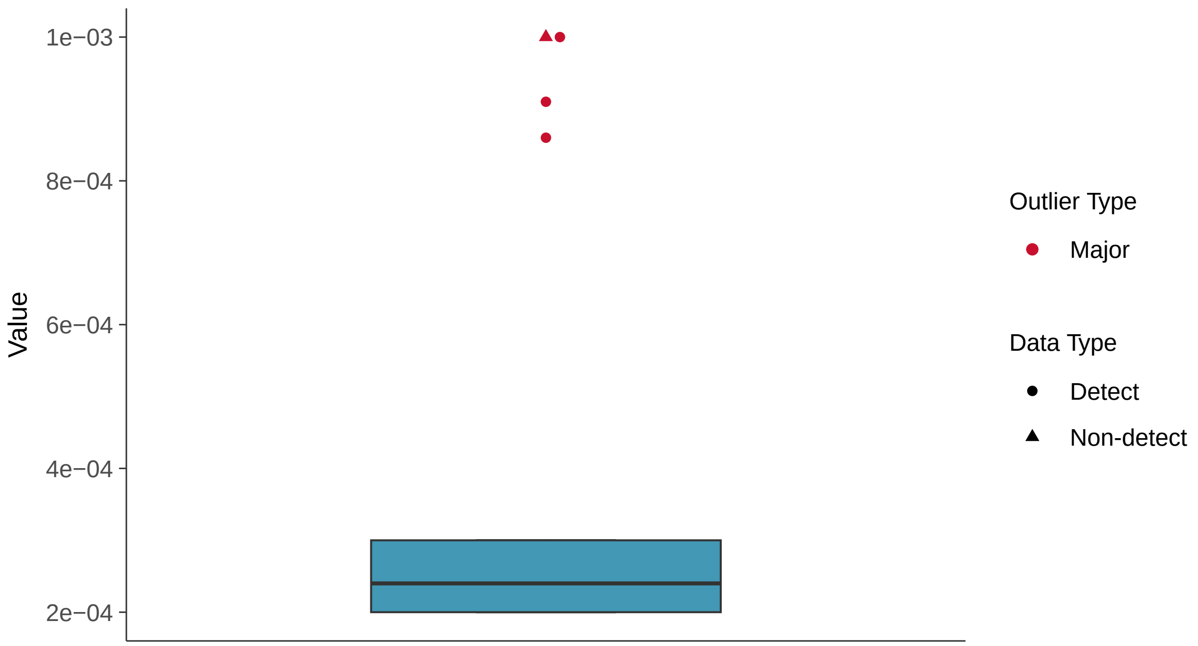
ID: 13_2_5_111





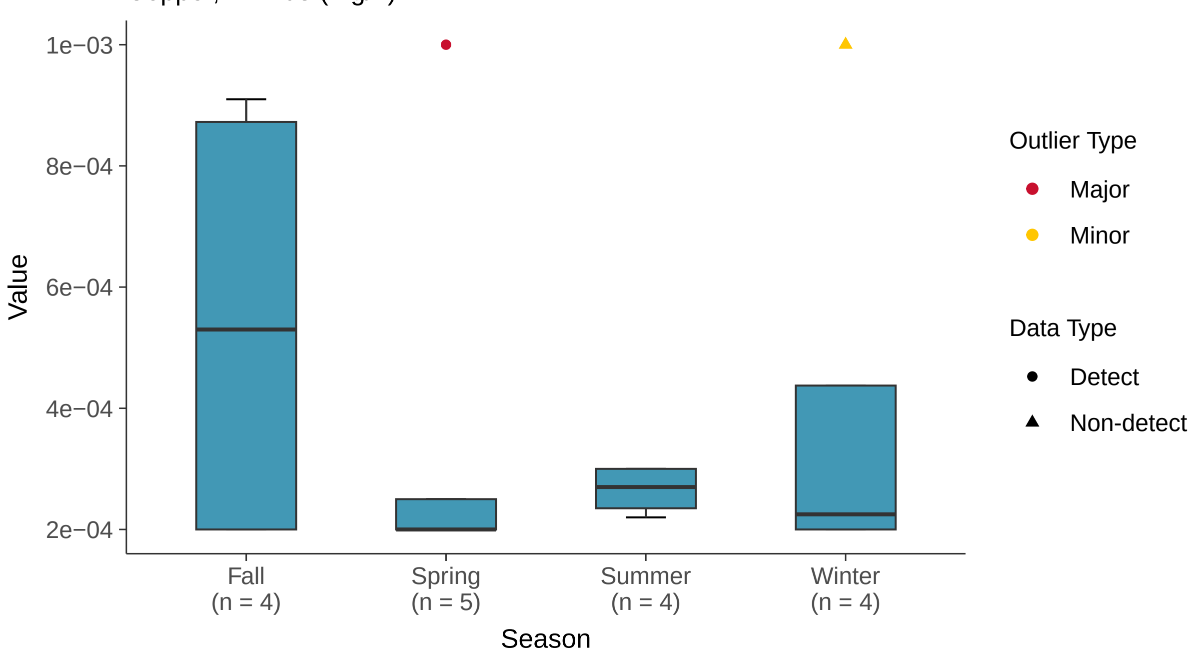
Boxplot

Copper, MW-03 (mg/L)



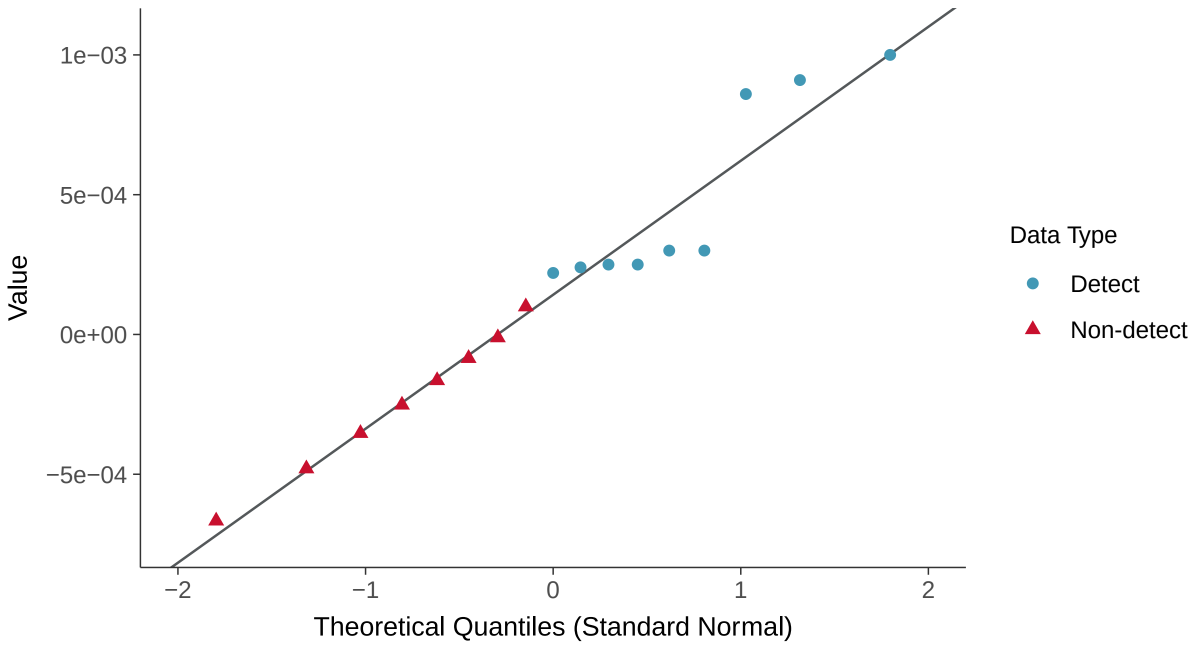
Boxplot by Season

Copper, MW-03 (mg/L)



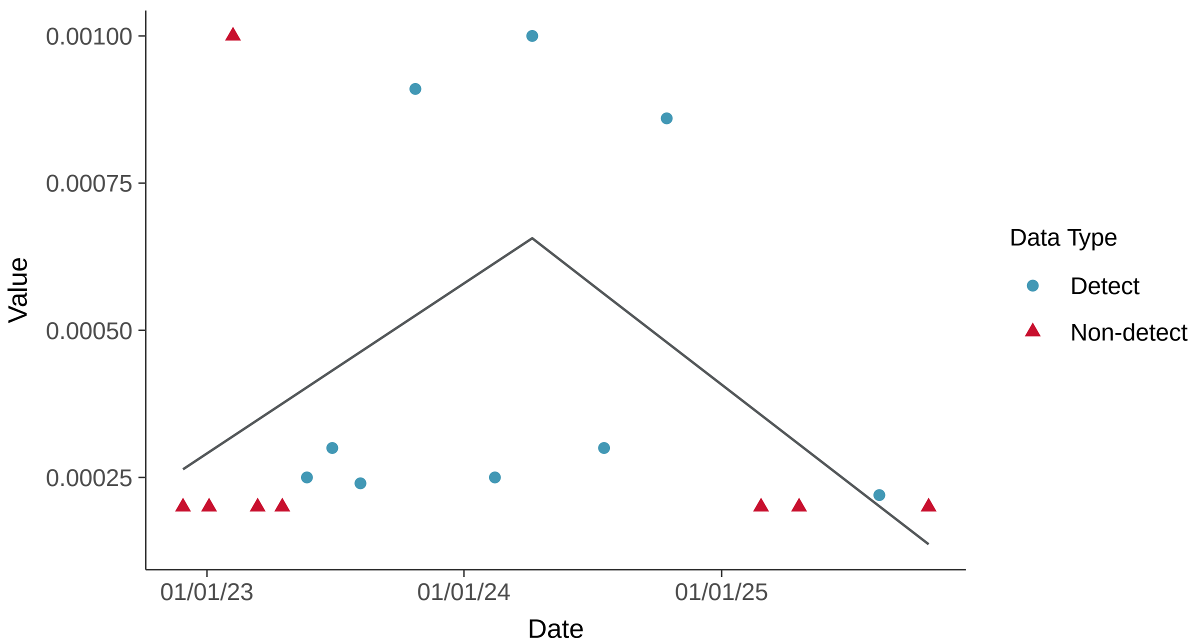
Normal Q-Q plot using ROS Imputed Estimates

Copper, MW-03 (mg/L)



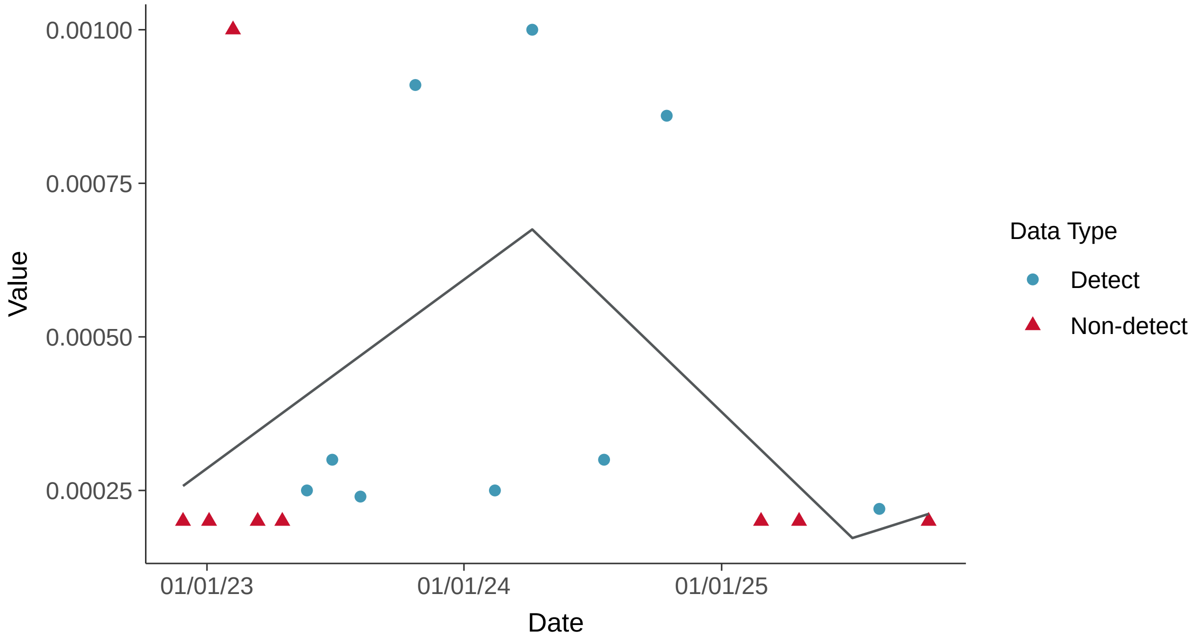
Trend Regression: Piecewise Linear-Linear

Copper, MW-03 (mg/L)



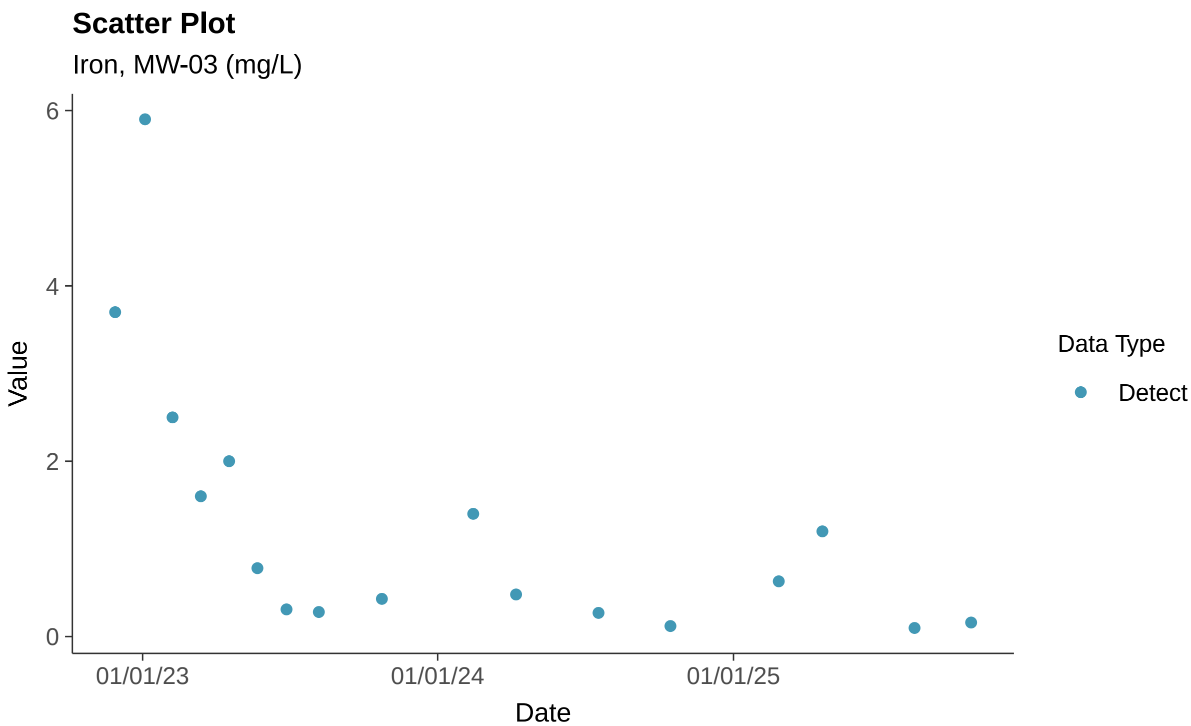
Trend Regression: Piecewise Linear-Linear-Linear

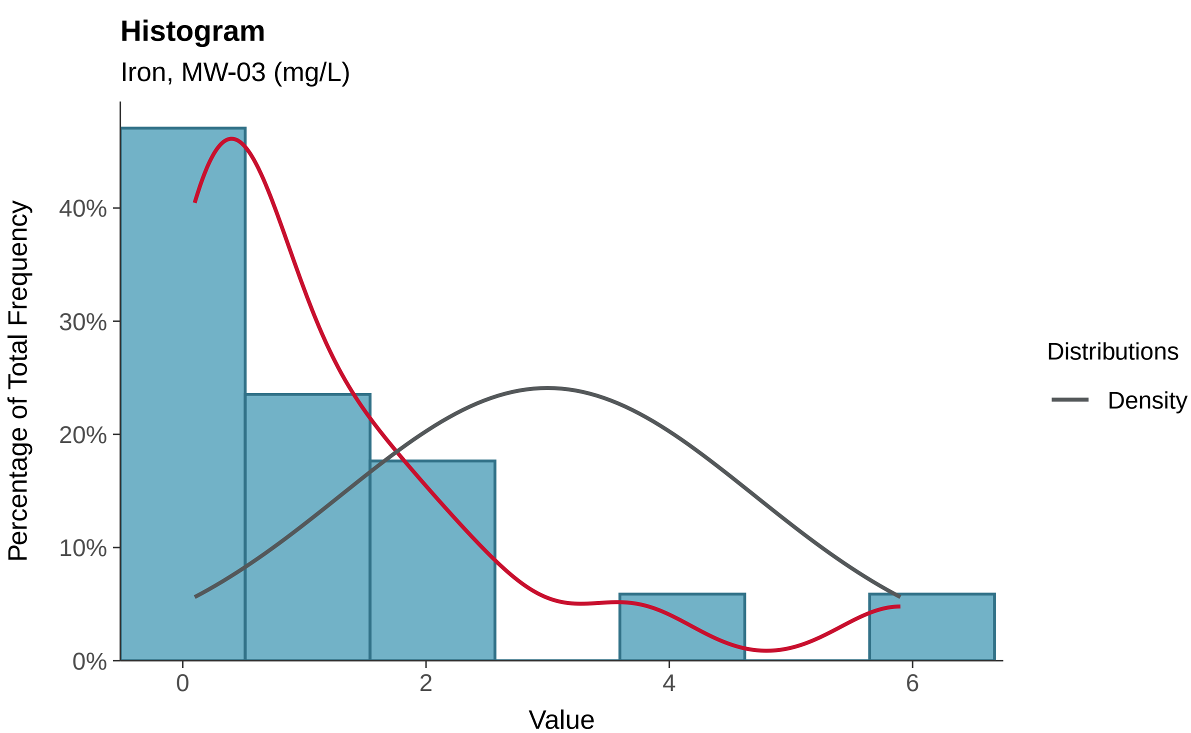
Copper, MW-03 (mg/L)



Part 115: Iron, MW-03

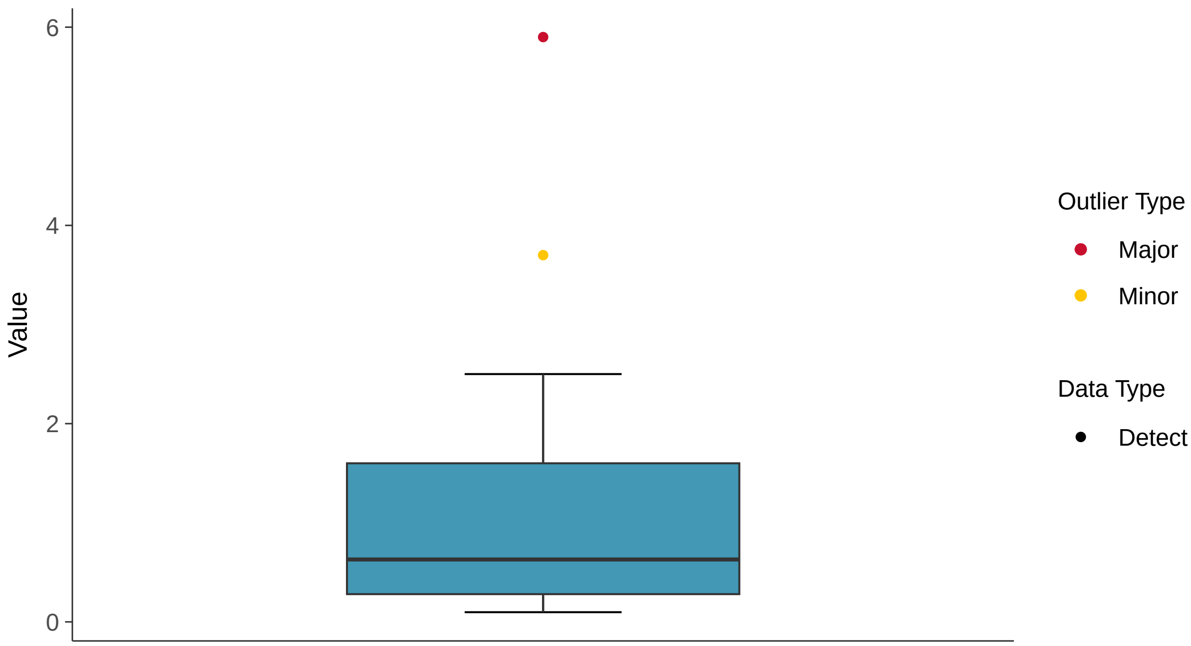
ID: 13_2_5_114





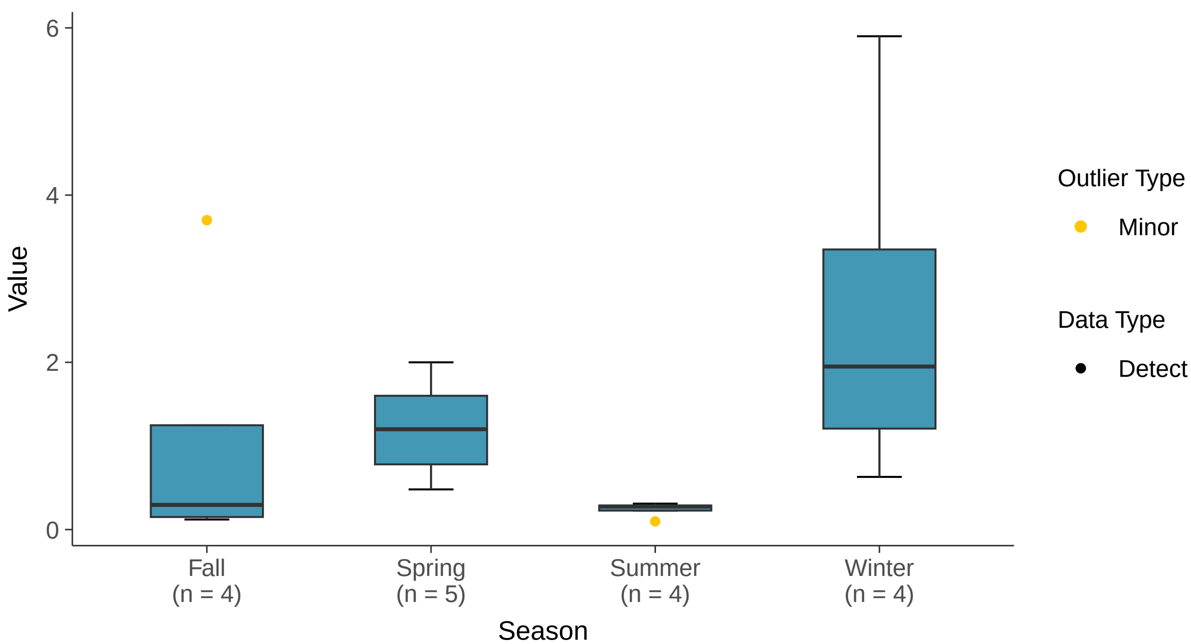
Boxplot

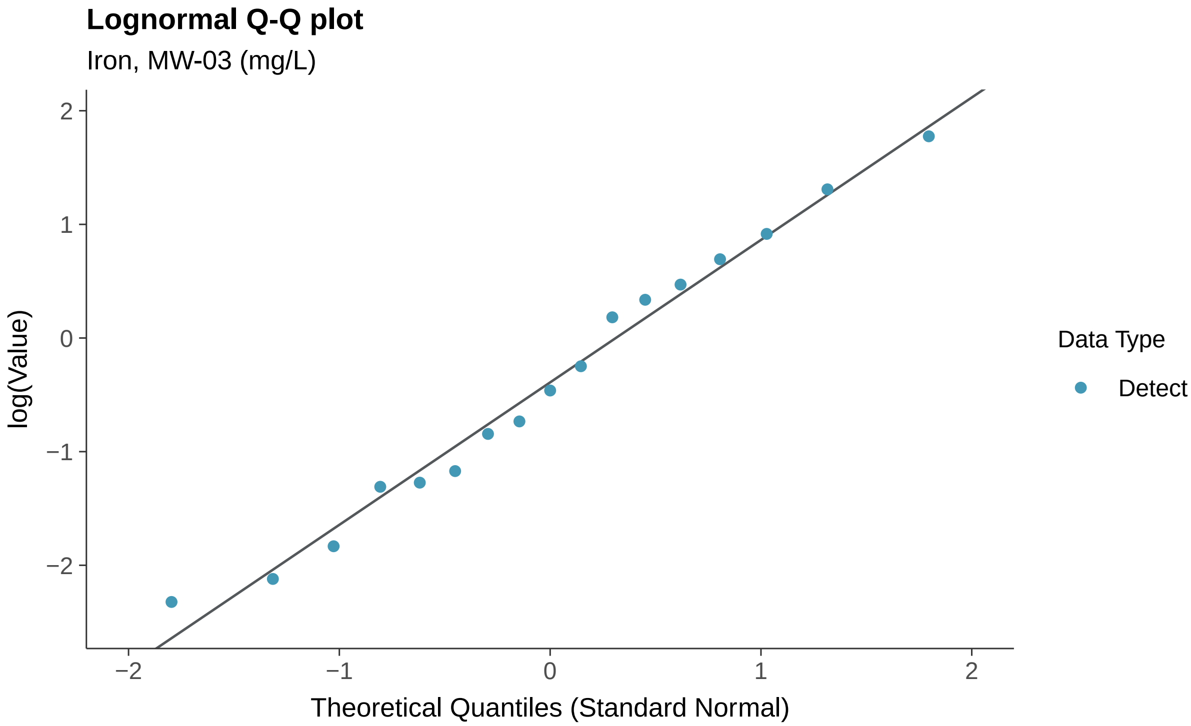
Iron, MW-03 (mg/L)

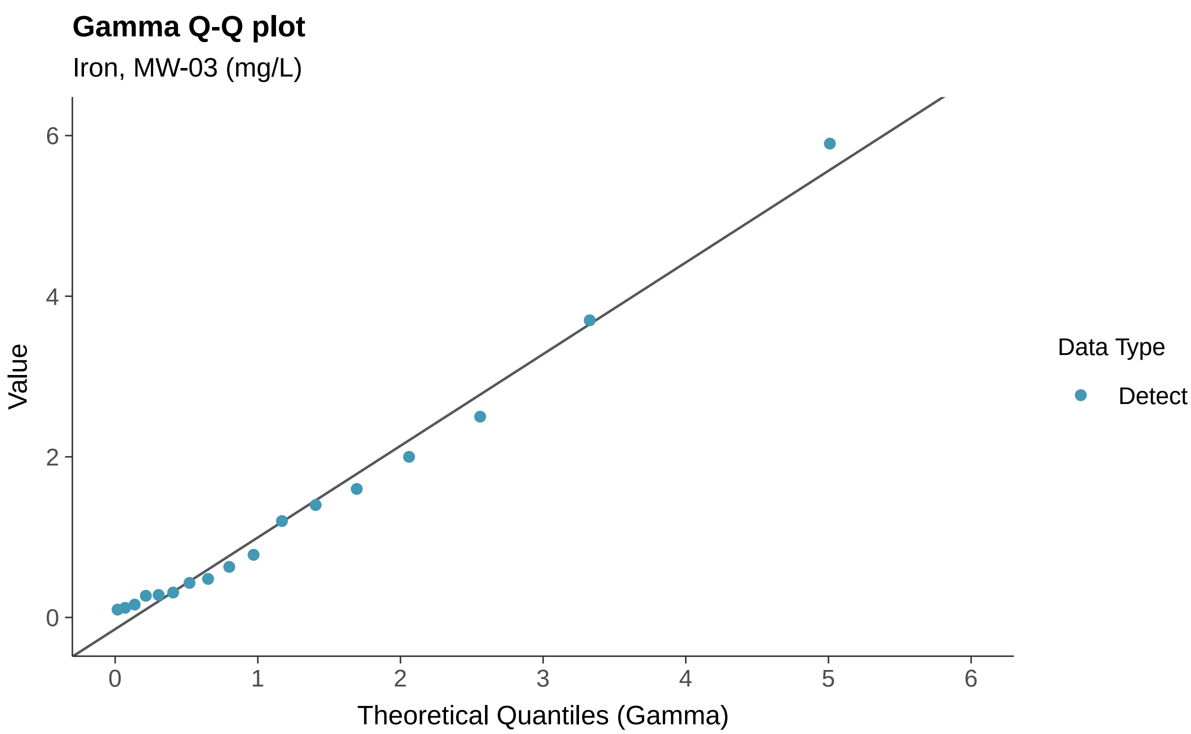


Boxplot by Season

Iron, MW-03 (mg/L)

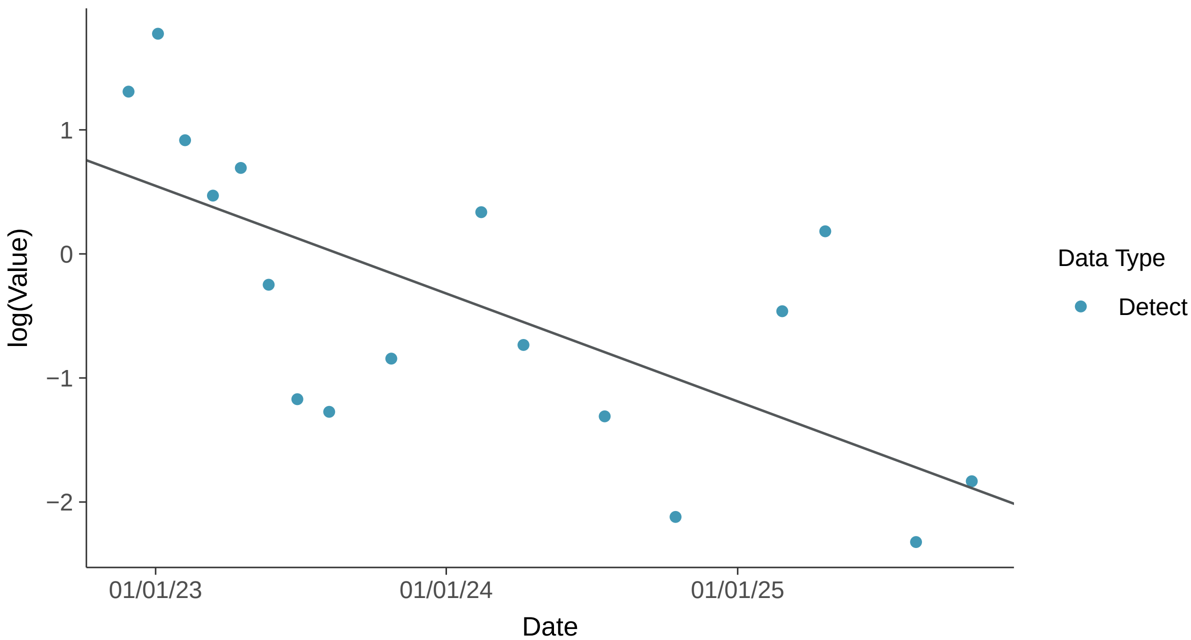



Lognormal Q-Q plot
Iron, MW-03 (mg/L)
log(Value)
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Iron, MW-03 (mg/L)
Value
Theoretical Quantiles (Gamma)
Data Type
Detect

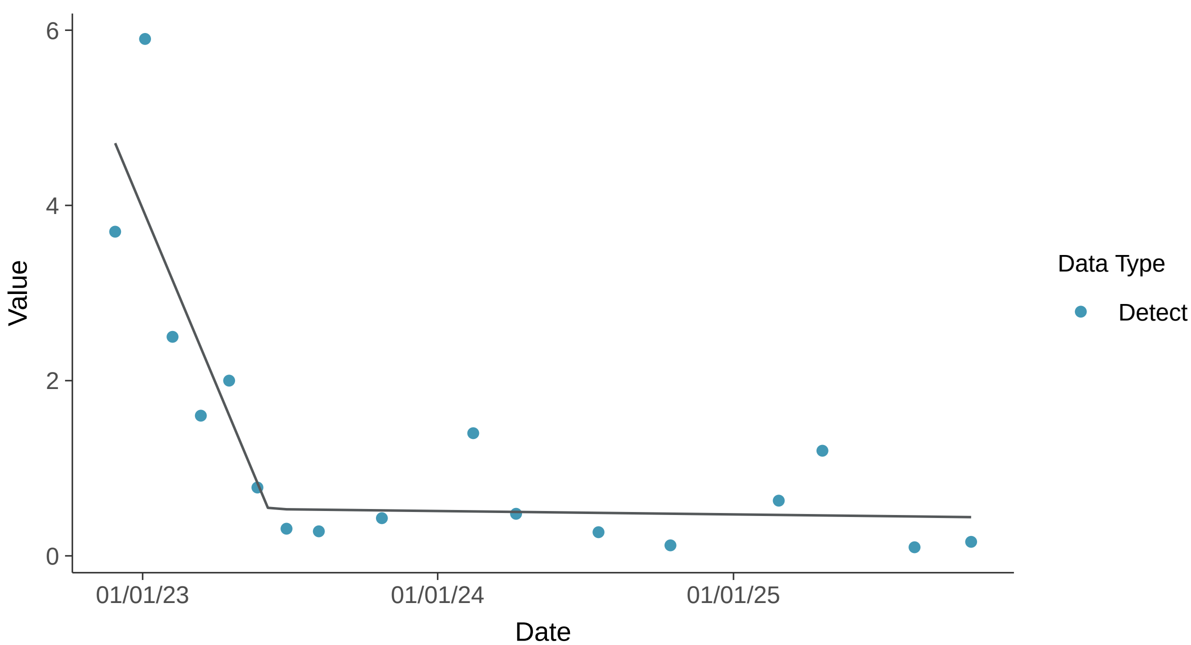
Trend Regression: Lognormal MLE

Iron, MW-03 (mg/L)



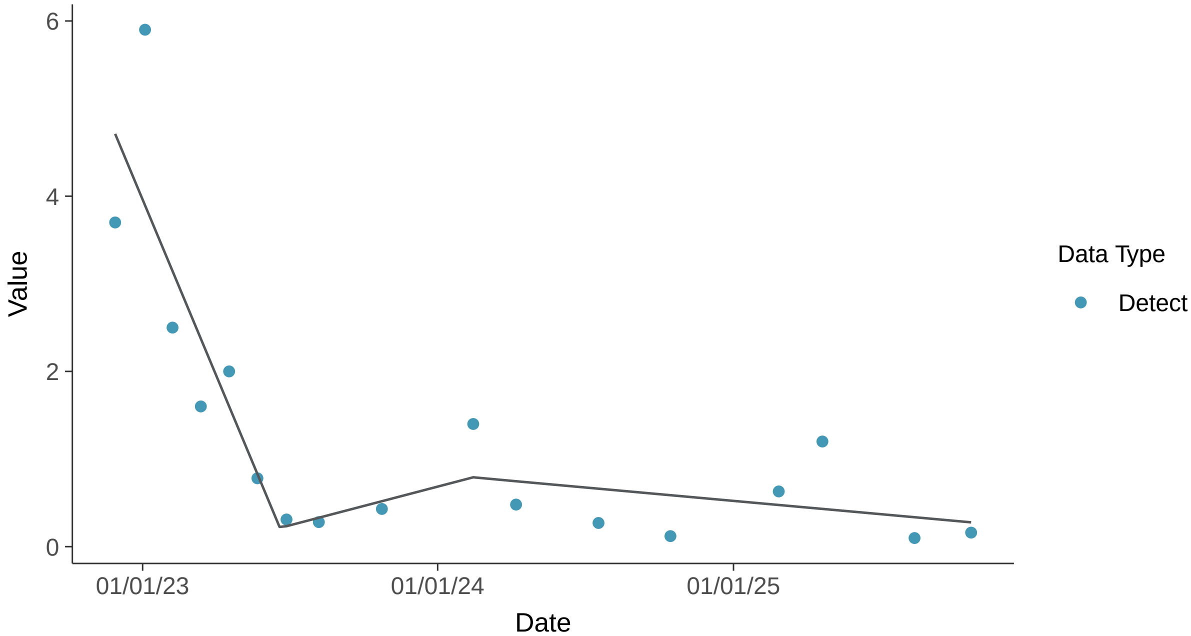
Trend Regression: Piecewise Linear-Linear

Iron, MW-03 (mg/L)



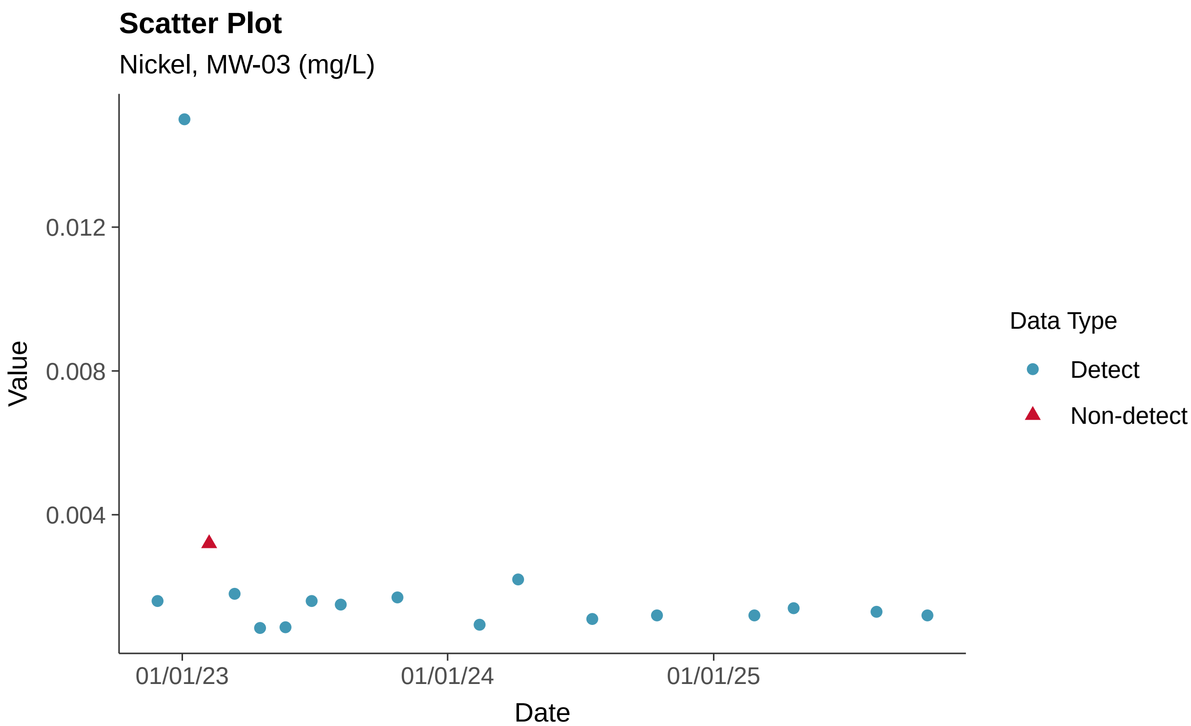
Trend Regression: Piecewise Linear-Linear-Linear

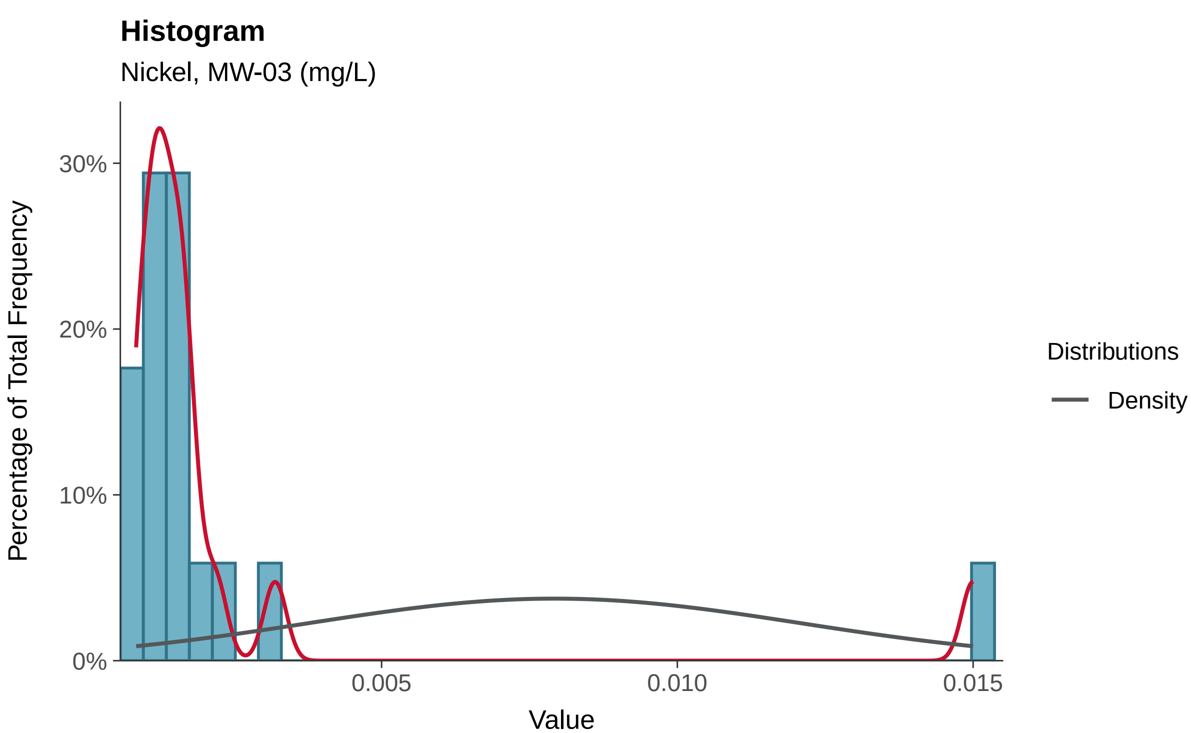
Iron, MW-03 (mg/L)

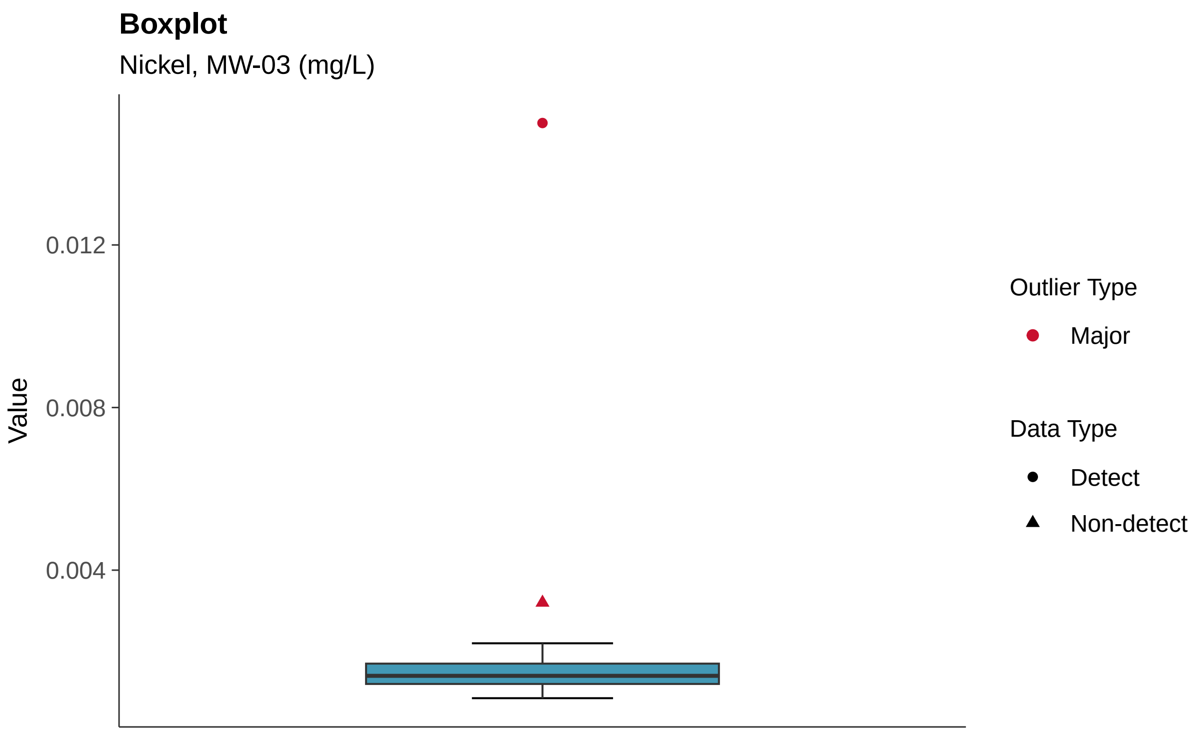


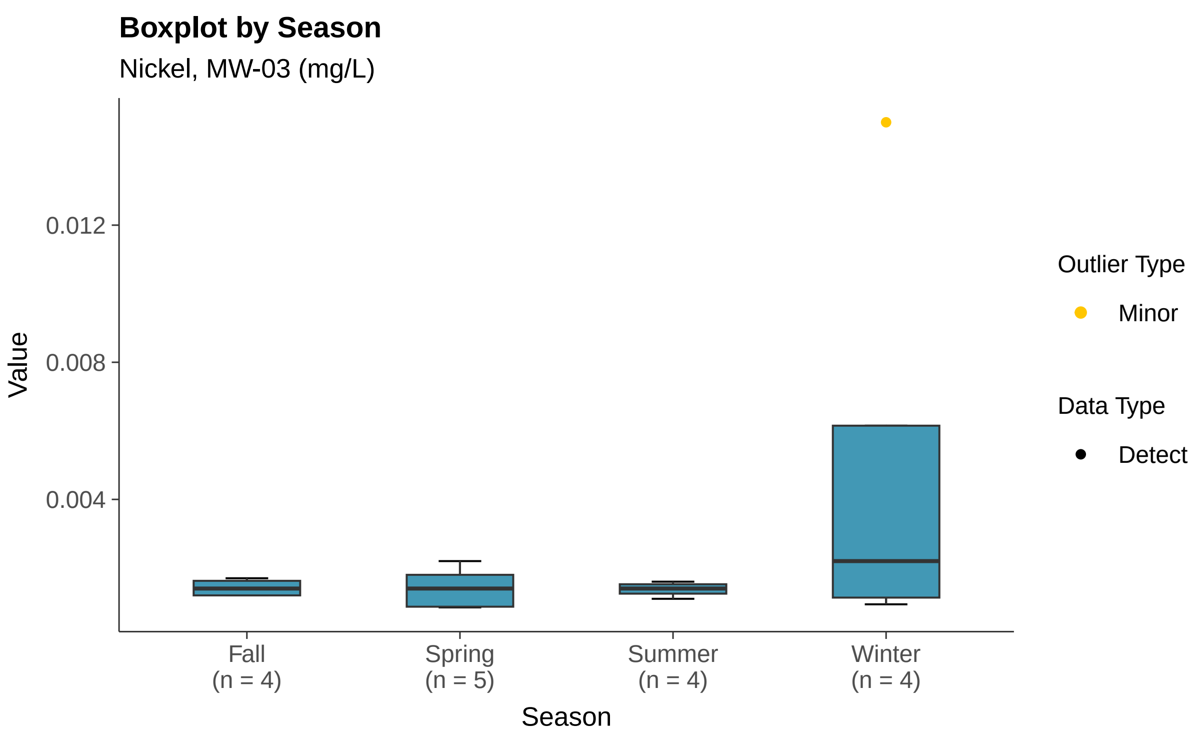
Part 115: Nickel, MW-03

ID: 13_2_5_119



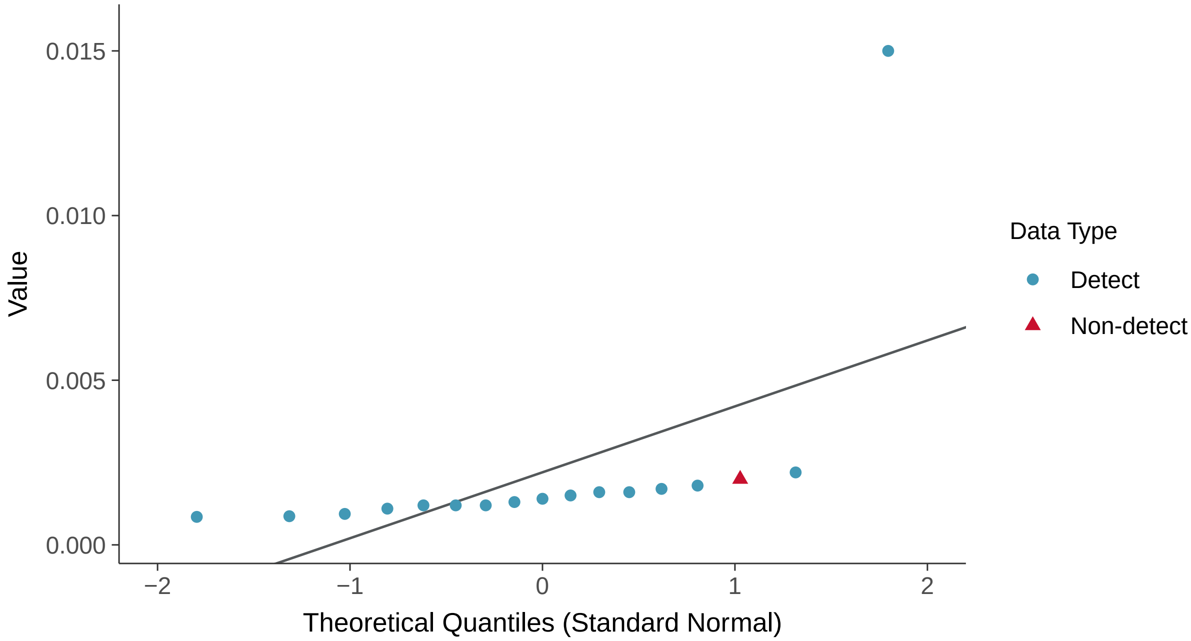



Boxplot
Nickel, MW-03 (mg/L)
Value
0.012
0.008
0.004
Outlier Type
Major
Data Type
Detect
Non-detect


Boxplot by Season
Nickel, MW-03 (mg/L)
Value
0.012
0.008
0.004
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Minor
Data Type
Detect

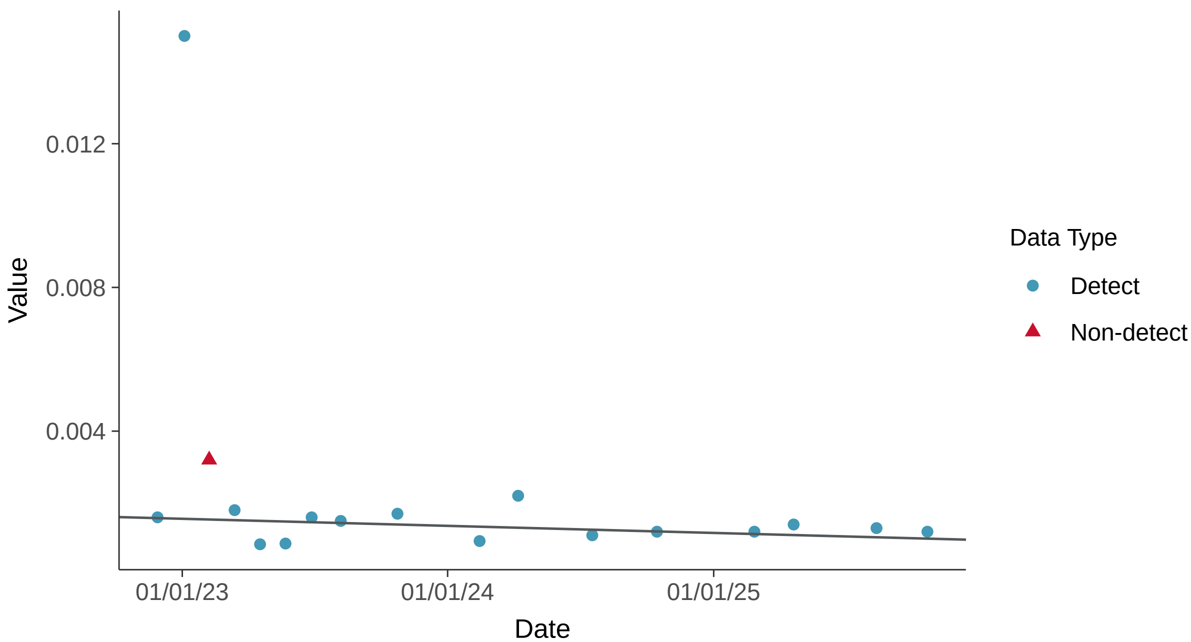
Normal Q-Q plot using ROS Imputed Estimates

Nickel, MW-03 (mg/L)



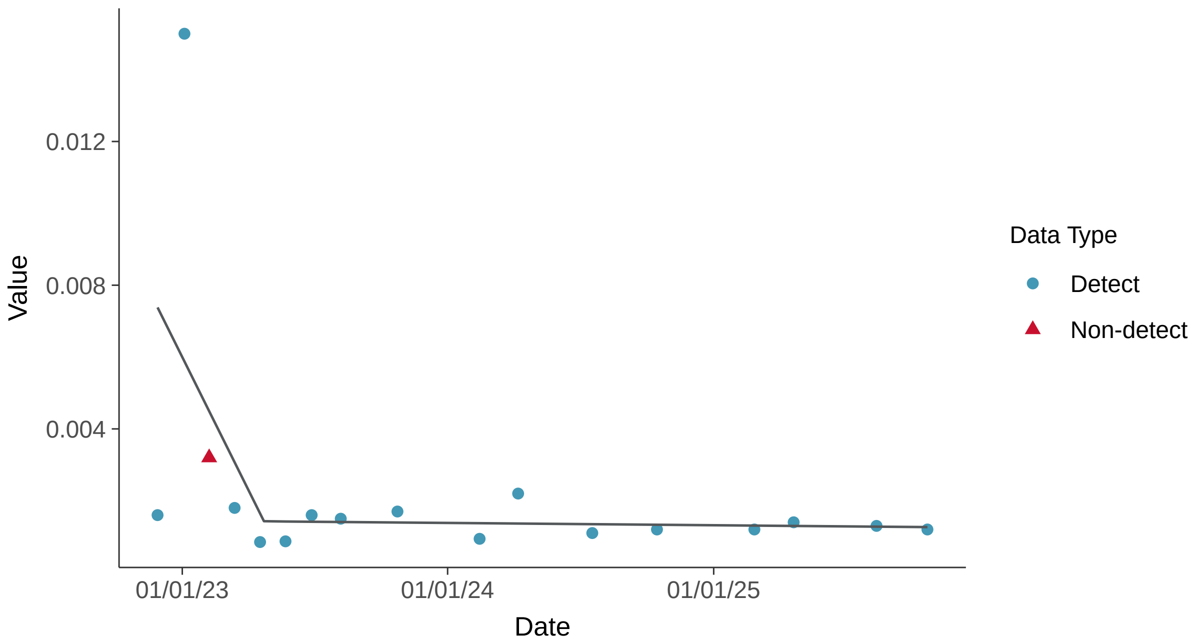
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Nickel, MW-03 (mg/L)



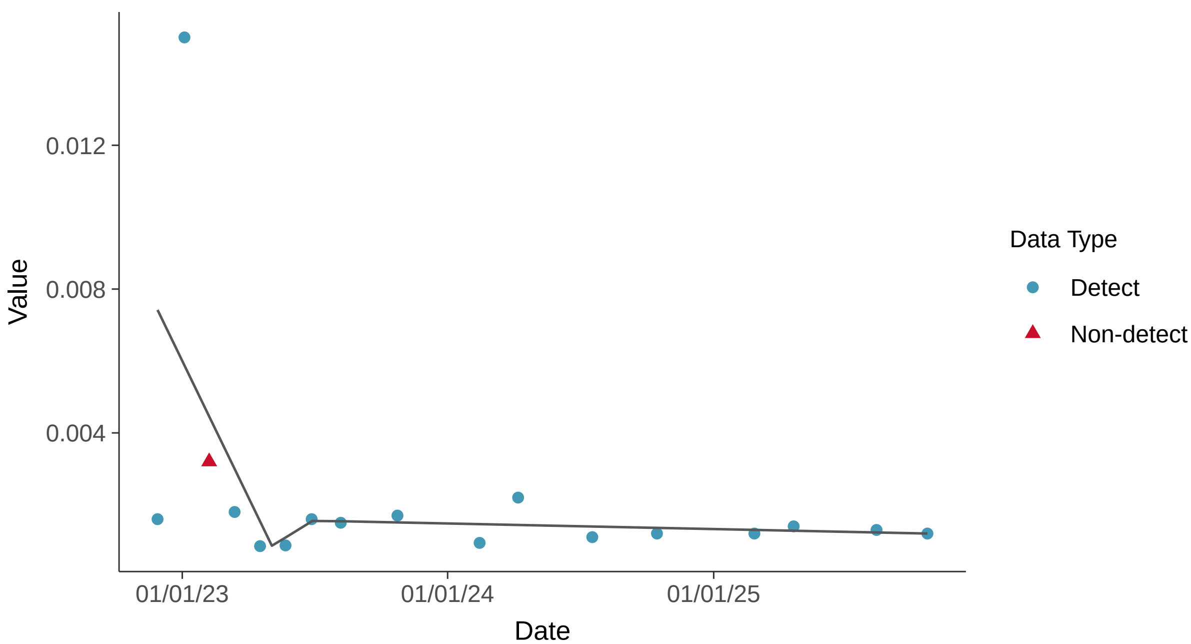
Trend Regression: Piecewise Linear-Linear

Nickel, MW-03 (mg/L)



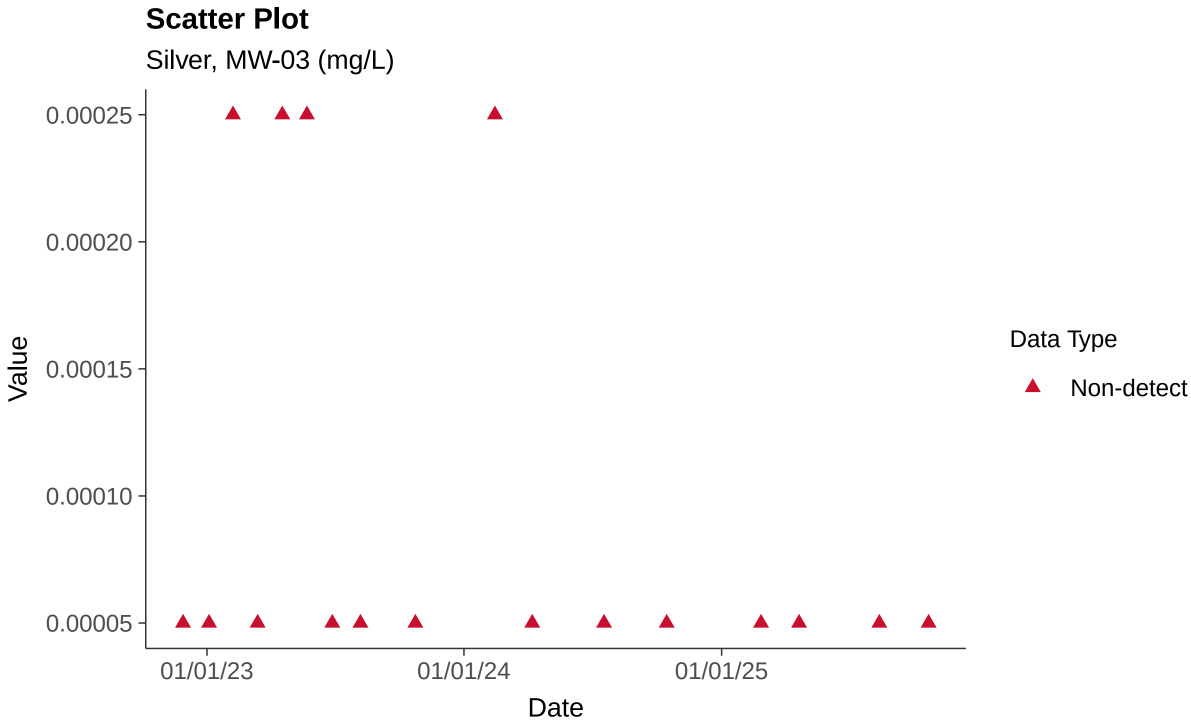
Trend Regression: Piecewise Linear-Linear-Linear

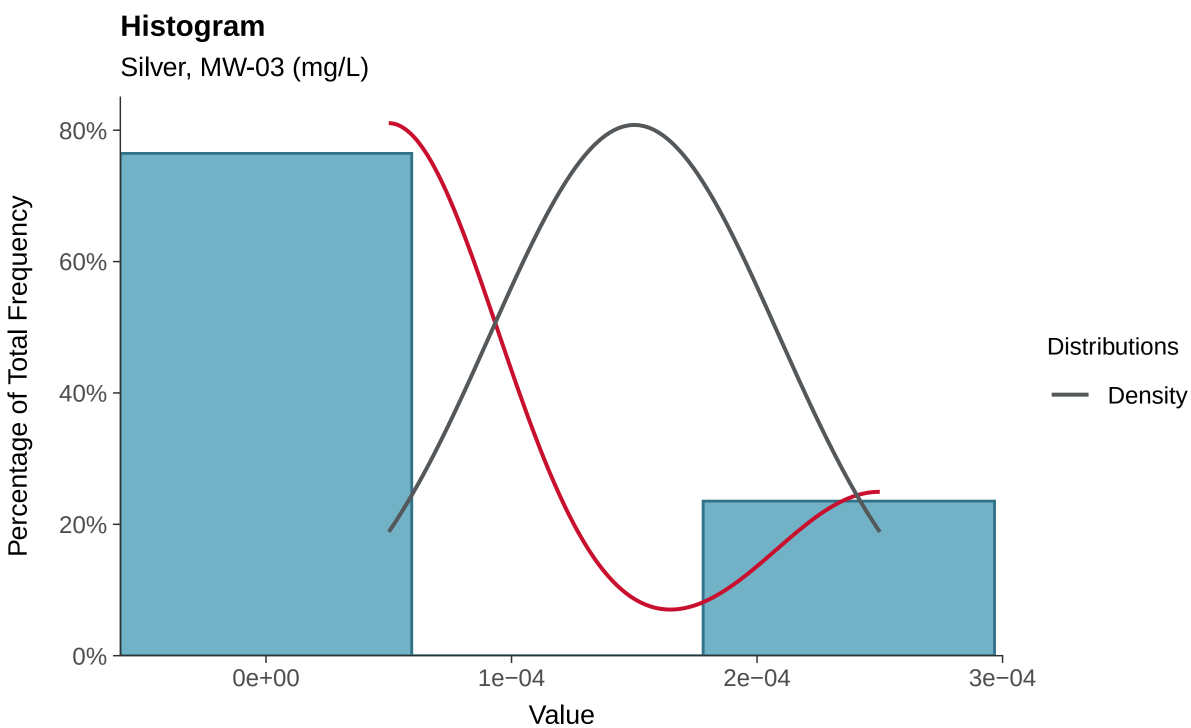
Nickel, MW-03 (mg/L)



Part 115: Silver, MW-03

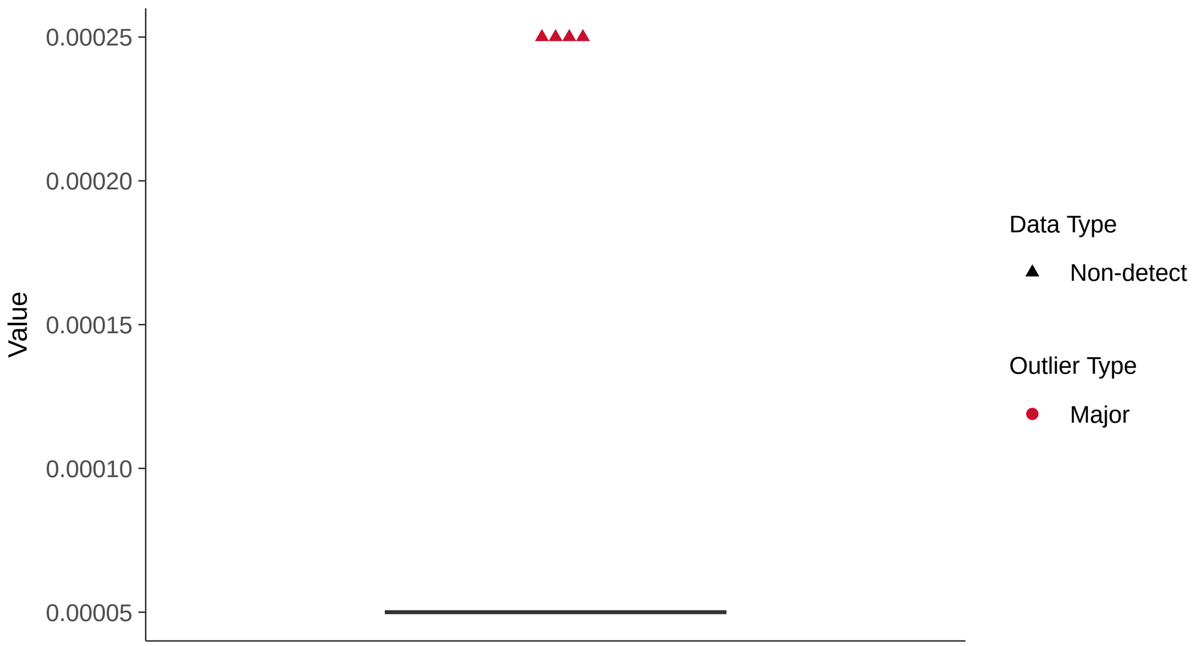
ID: 13_2_5_123





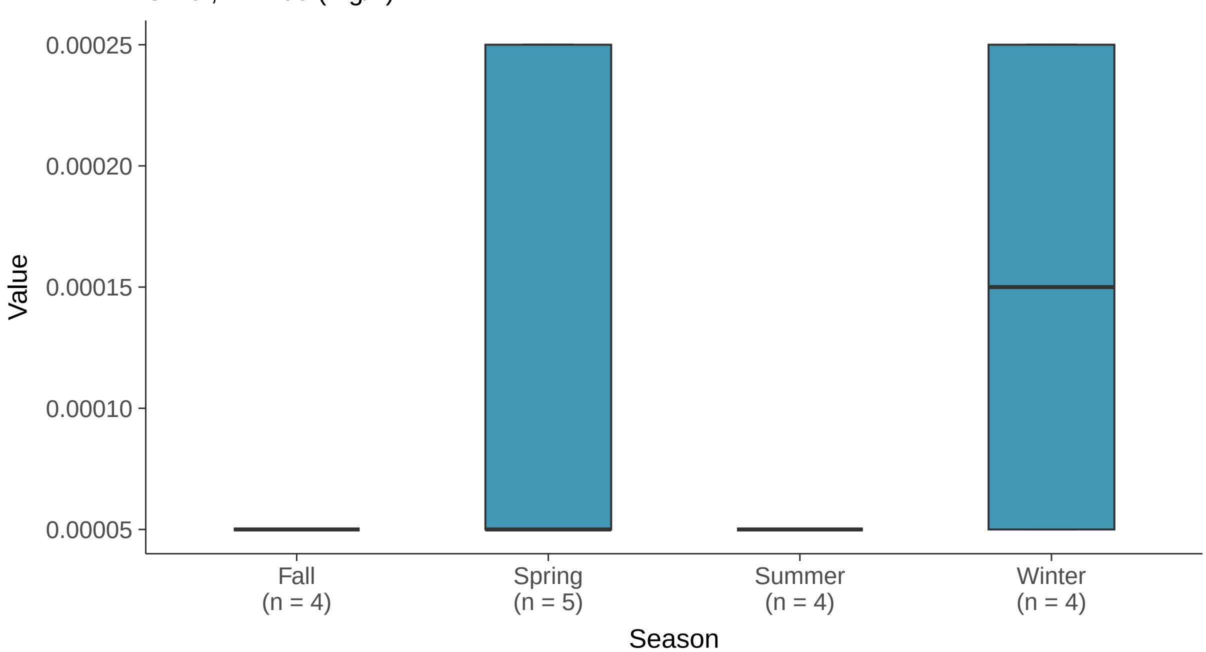
Boxplot

Silver, MW-03 (mg/L)



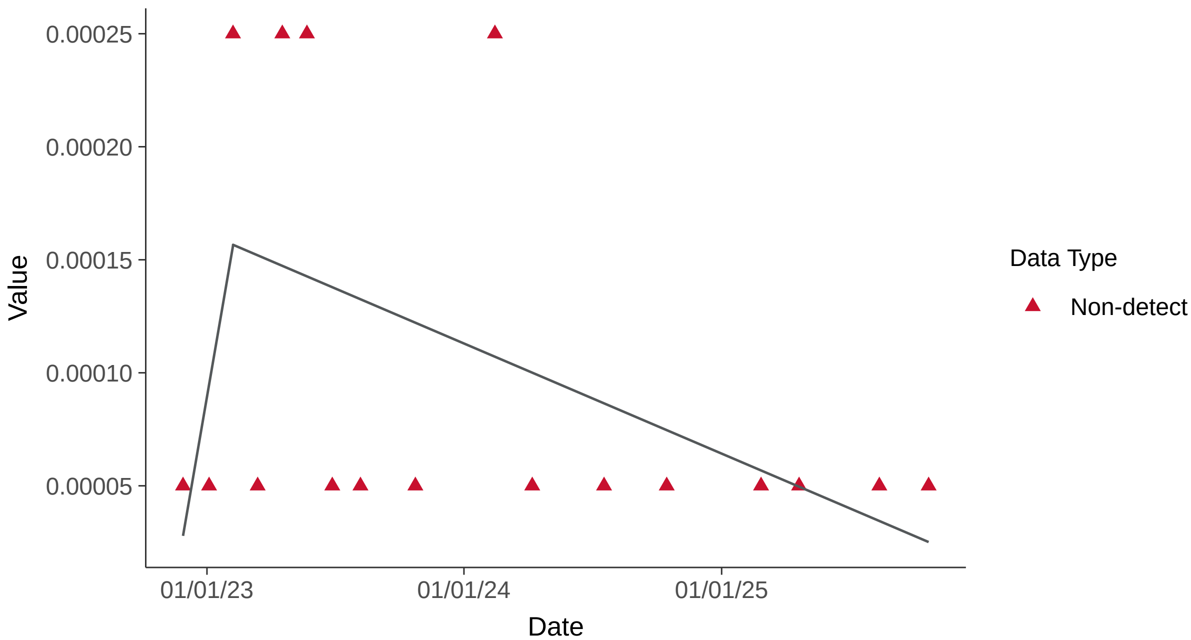
Boxplot by Season

Silver, MW-03 (mg/L)



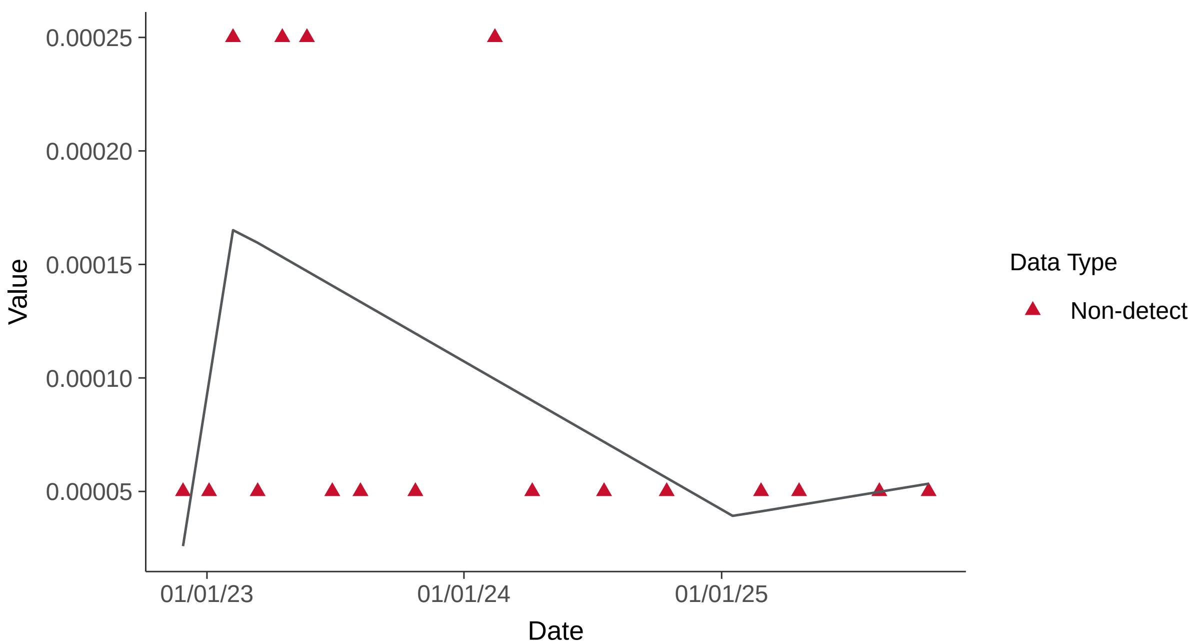
Trend Regression: Piecewise Linear-Linear

Silver, MW-03 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Silver, MW-03 (mg/L)

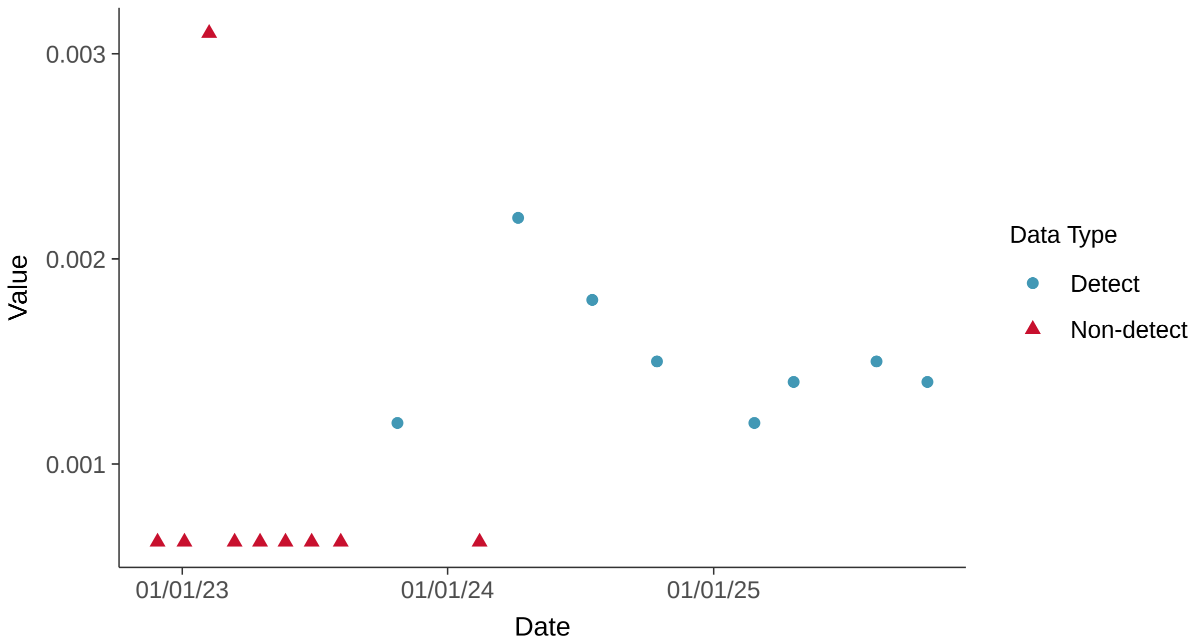


Part 115: Vanadium, MW-03

ID: 13_2_5_128

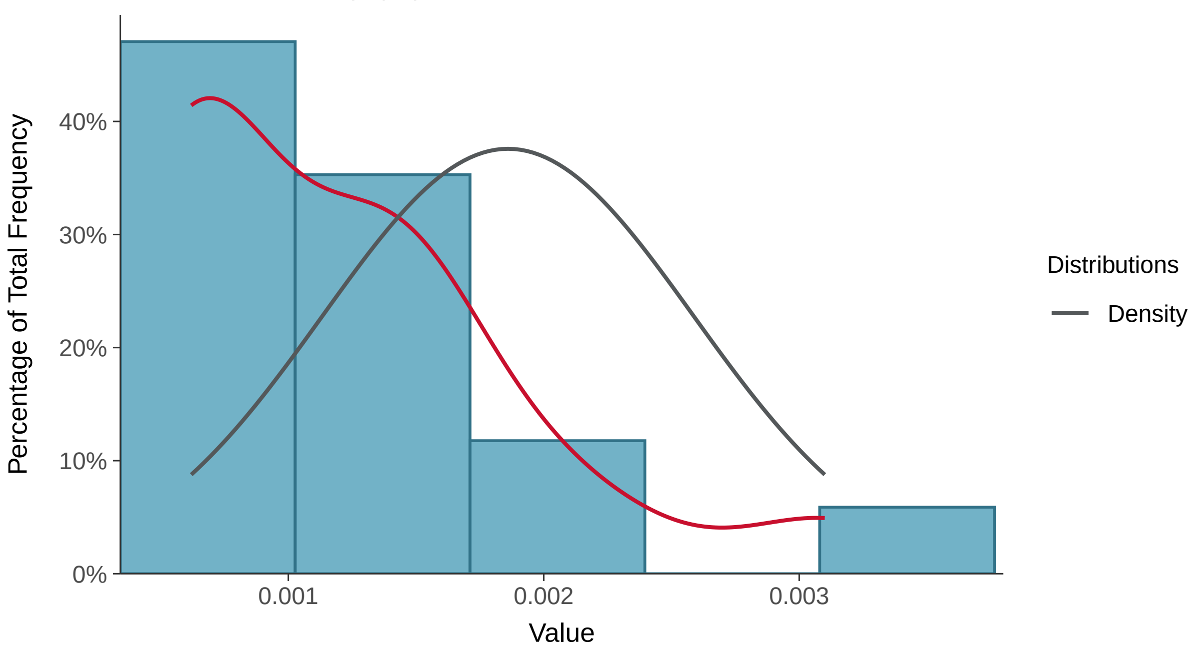
Scatter Plot

Vanadium, MW-03 (mg/L)



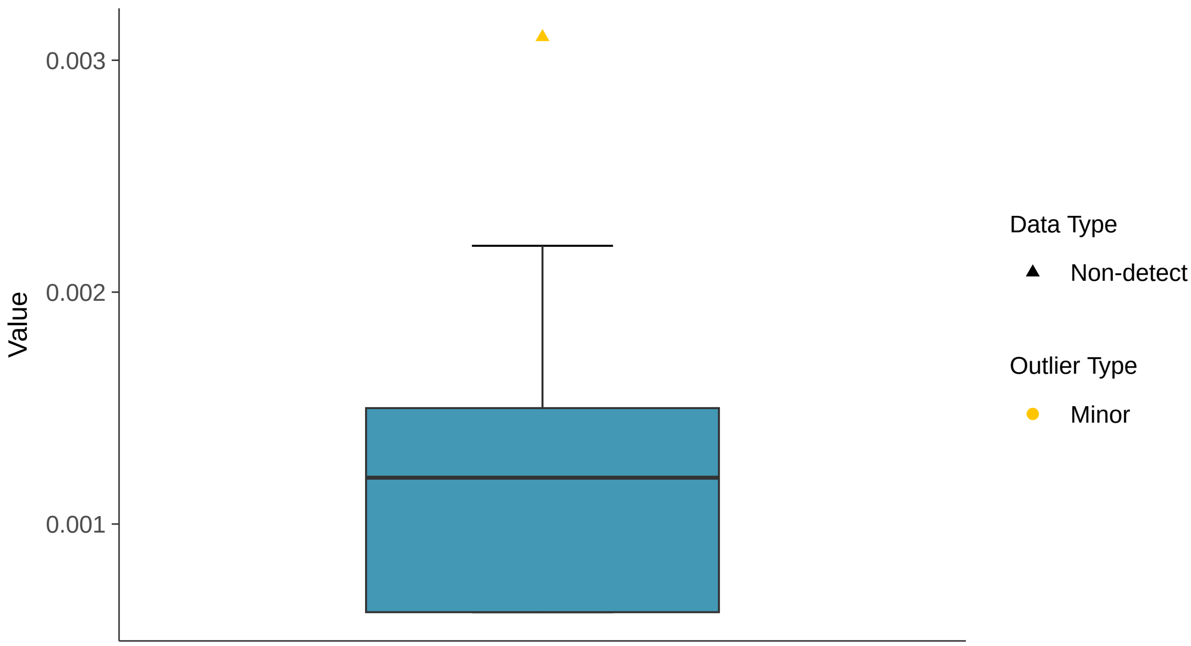
Histogram

Vanadium, MW-03 (mg/L)



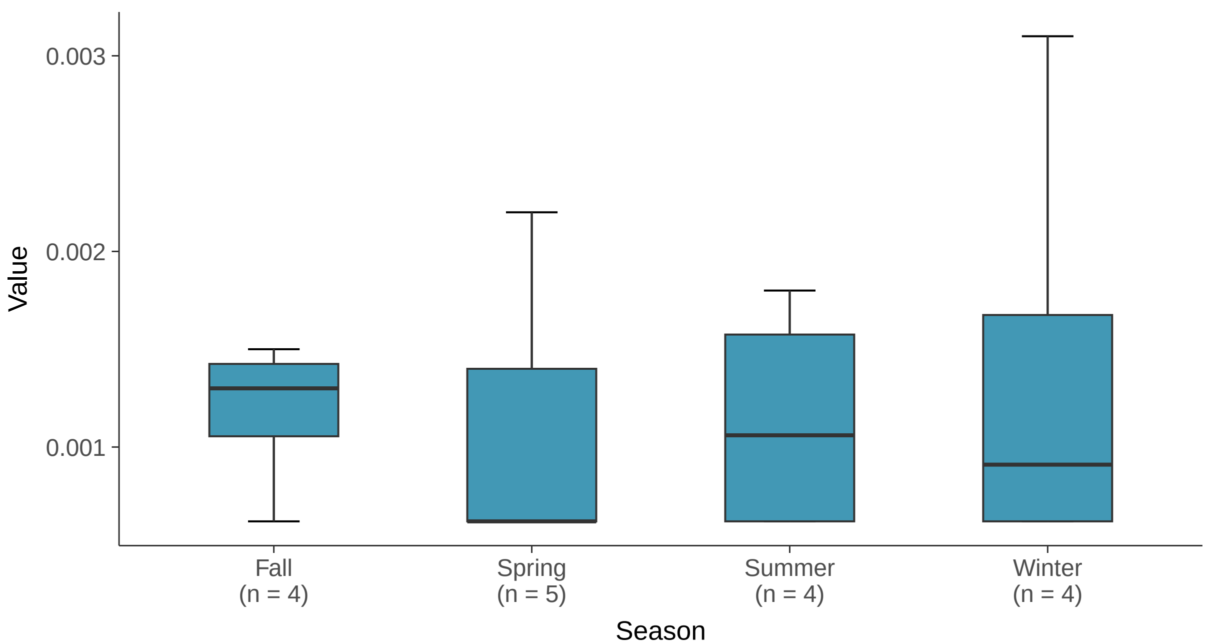
Boxplot

Vanadium, MW-03 (mg/L)



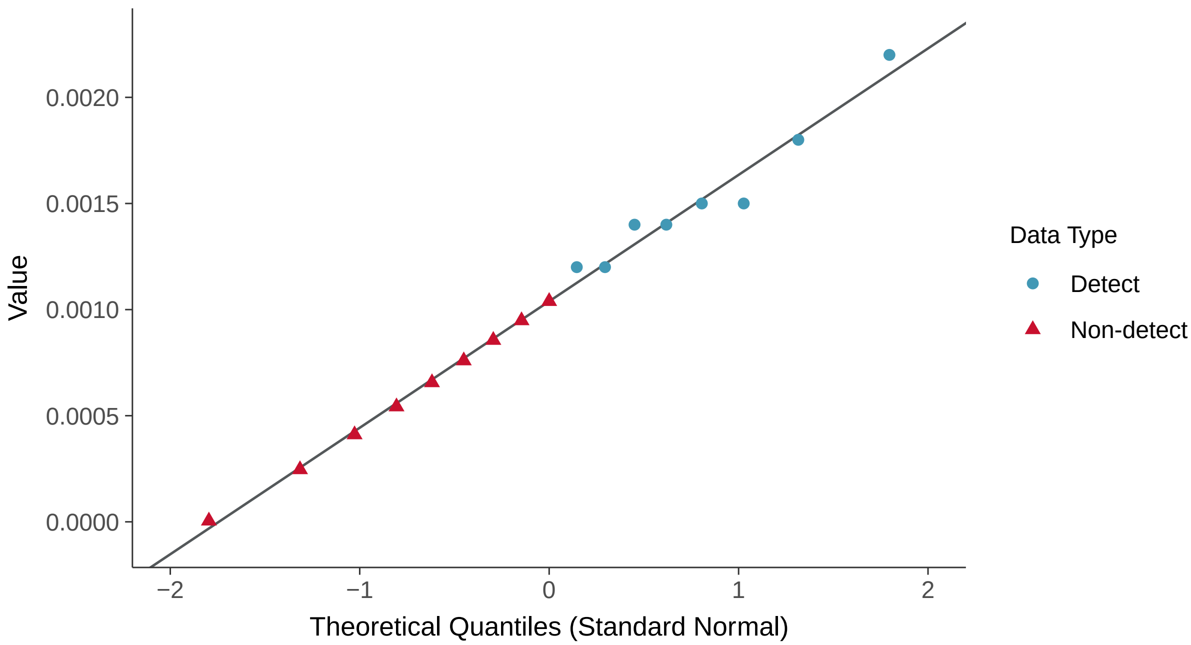
Boxplot by Season

Vanadium, MW-03 (mg/L)



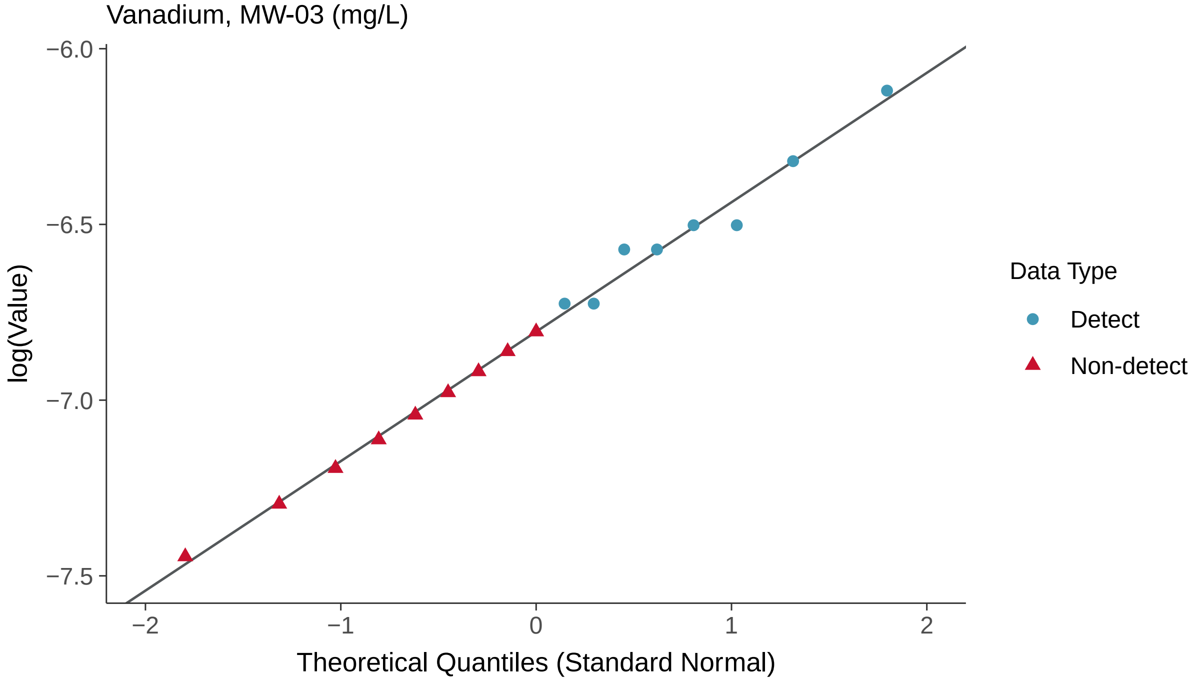
Normal Q-Q plot using ROS Imputed Estimates

Vanadium, MW-03 (mg/L)



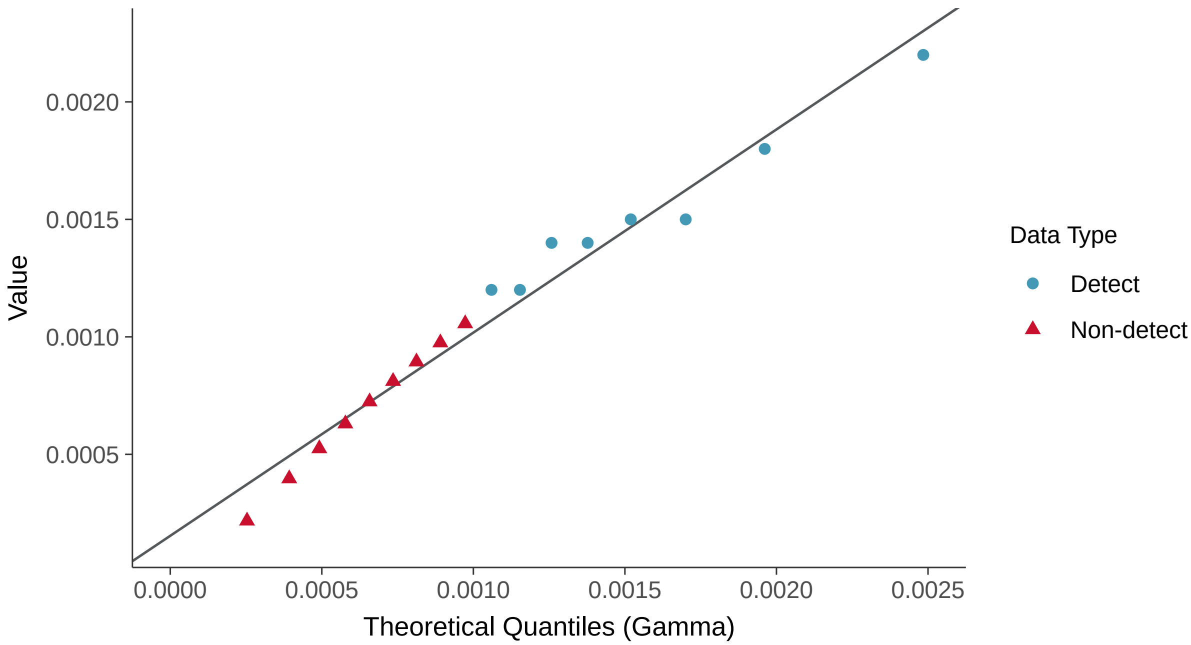
Lognormal Q-Q plot using ROS Imputed Estimates

Vanadium, MW-03 (mg/L)



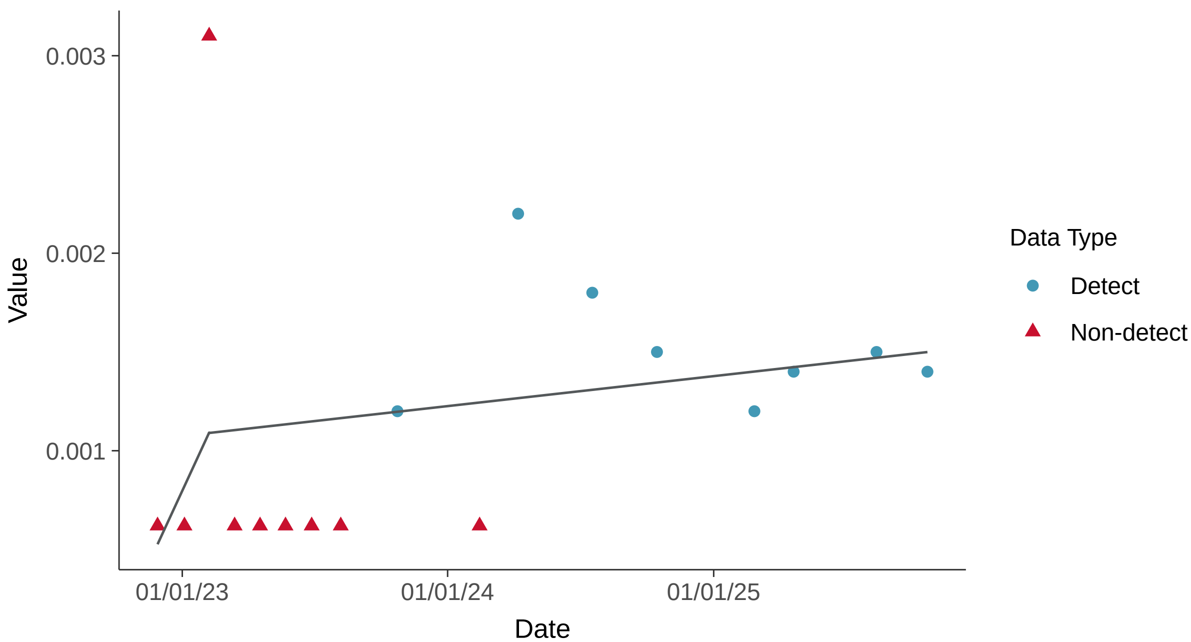
Gamma Q-Q plot using ROS Imputed Estimates

Vanadium, MW-03 (mg/L)



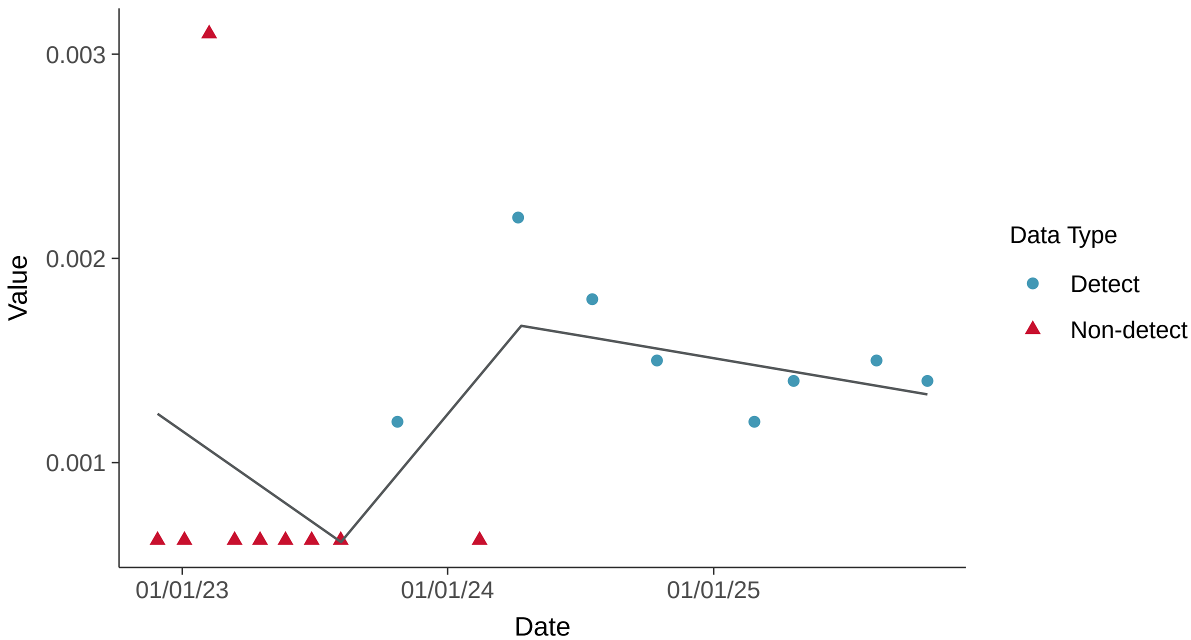
Trend Regression: Piecewise Linear-Linear

Vanadium, MW-03 (mg/L)



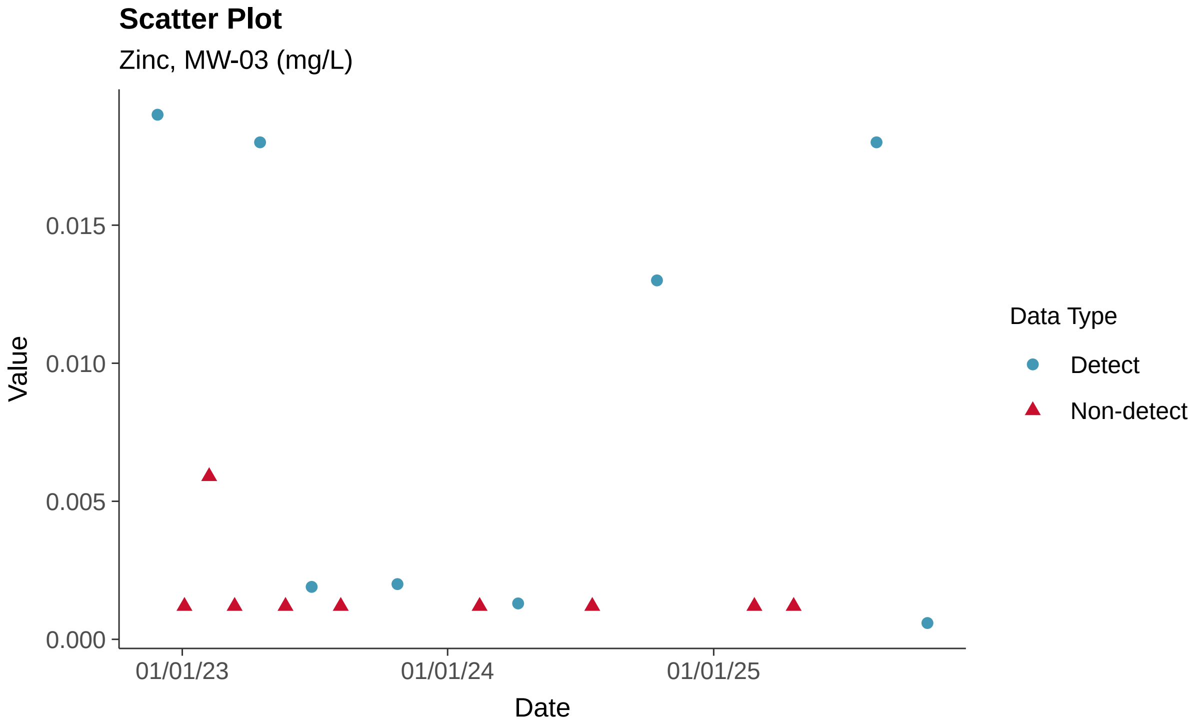
Trend Regression: Piecewise Linear-Linear-Linear

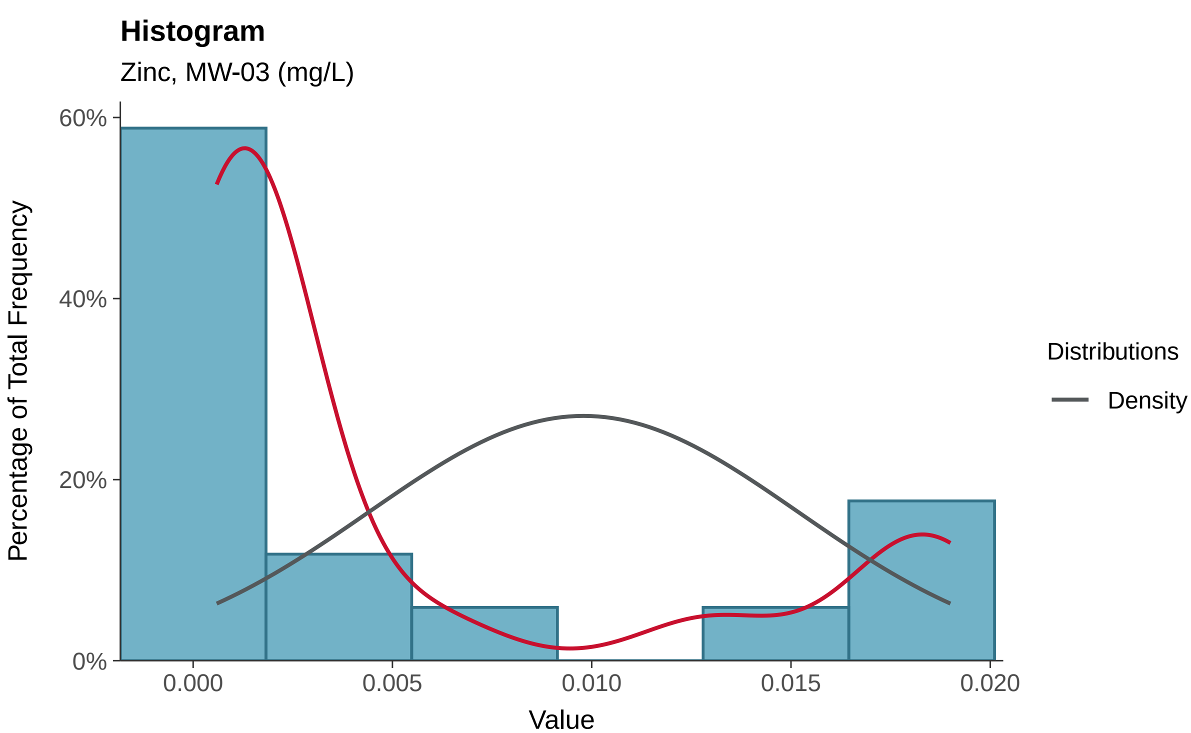
Vanadium, MW-03 (mg/L)

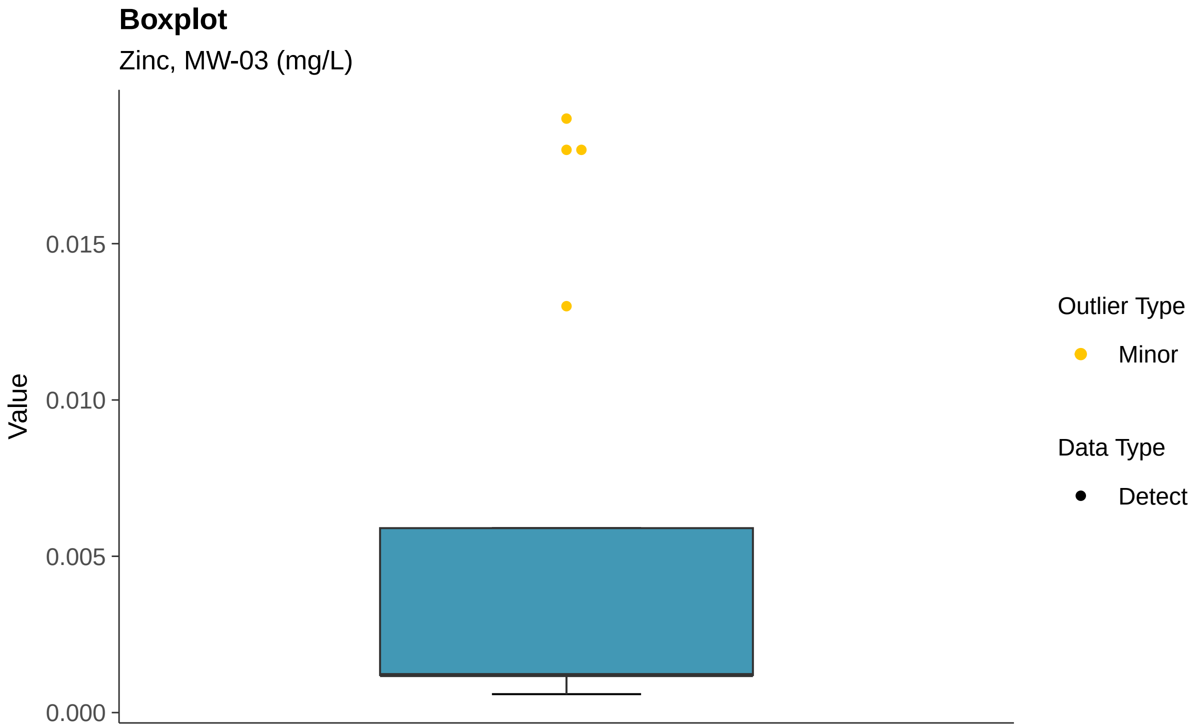


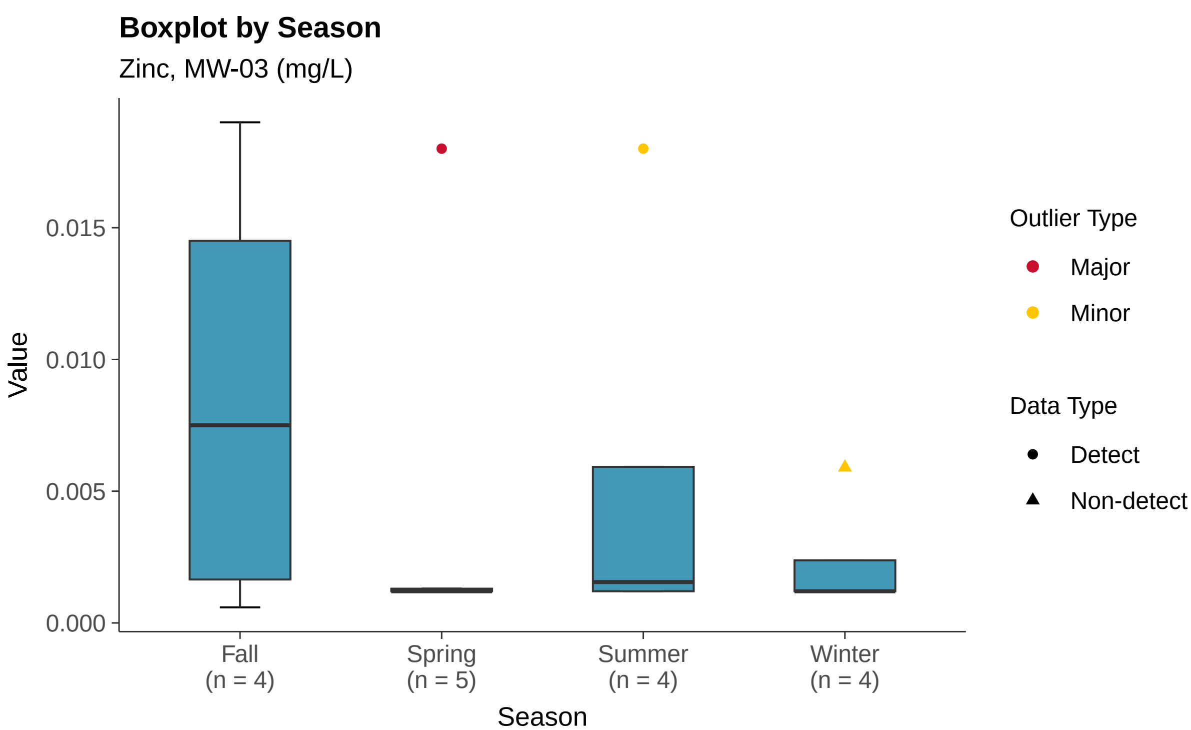
Part 115: Zinc, MW-03

ID: 13_2_5_129



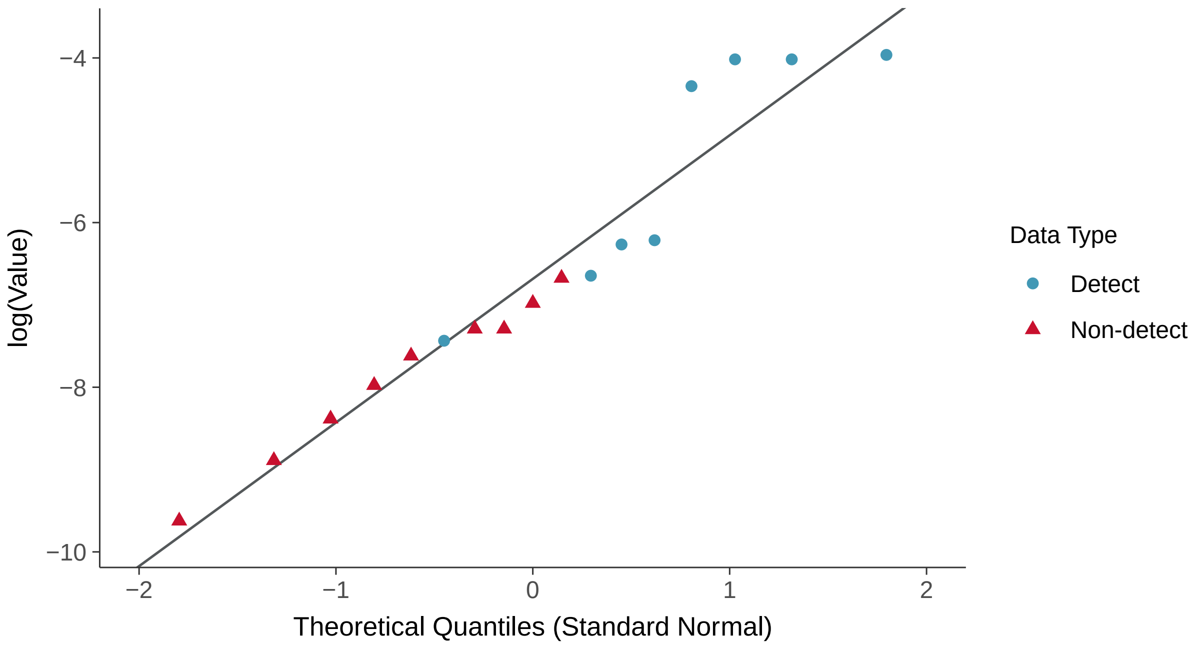



Boxplot
Zinc, MW-03 (mg/L)
Value
0.015
0.010
0.005
0.000
Outlier Type
Minor
Data Type
Detect


Boxplot by Season
Zinc, MW-03 (mg/L)
Value
0.015
0.010
0.005
0.000
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Major
Minor
Data Type
Detect
Non-detect

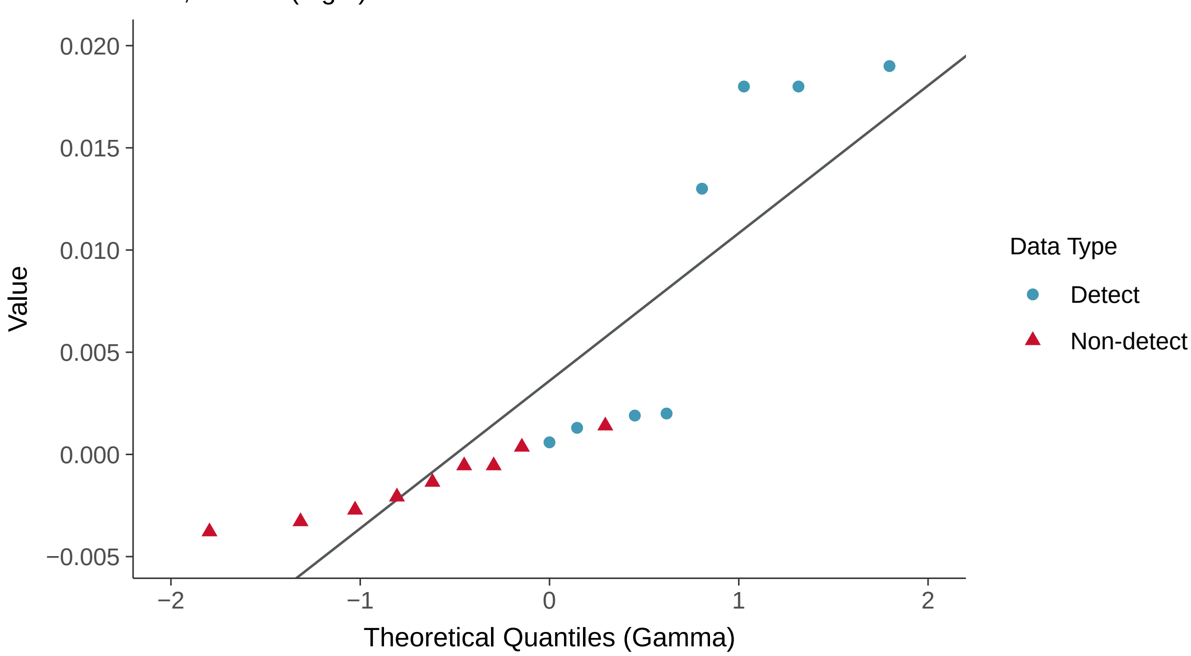
Lognormal Q-Q plot using ROS Imputed Estimates

Zinc, MW-03 (mg/L)



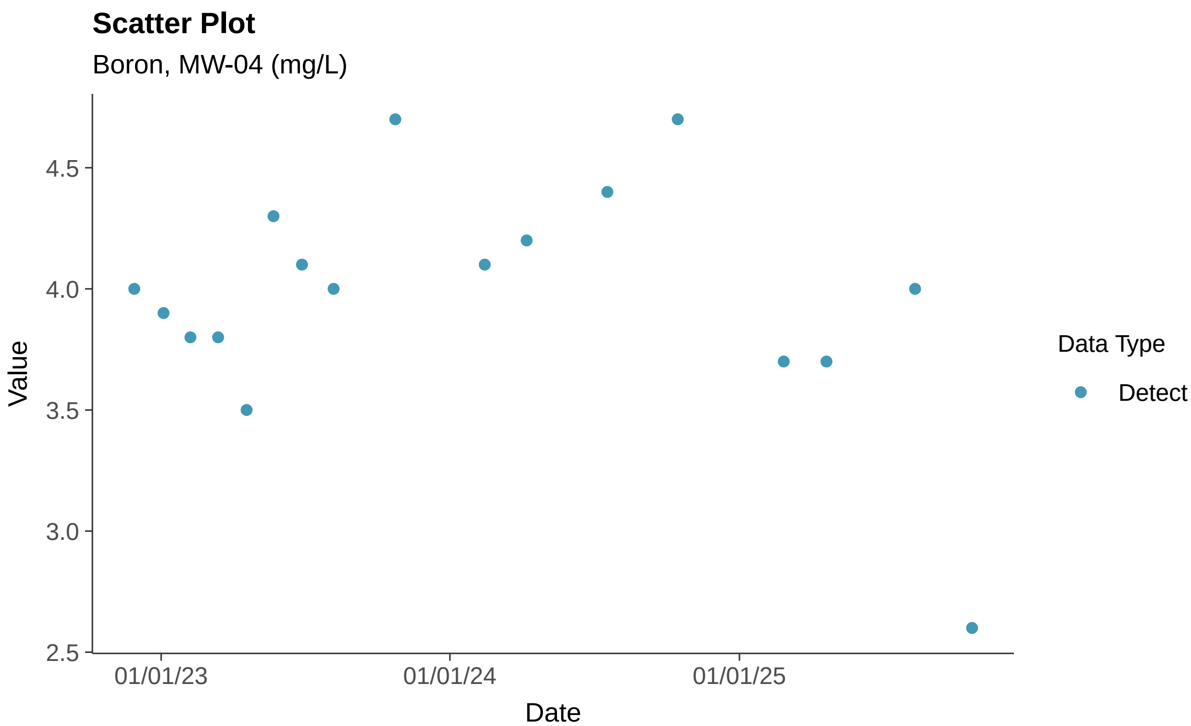
Gamma Q-Q plot using ROS Imputed Estimates

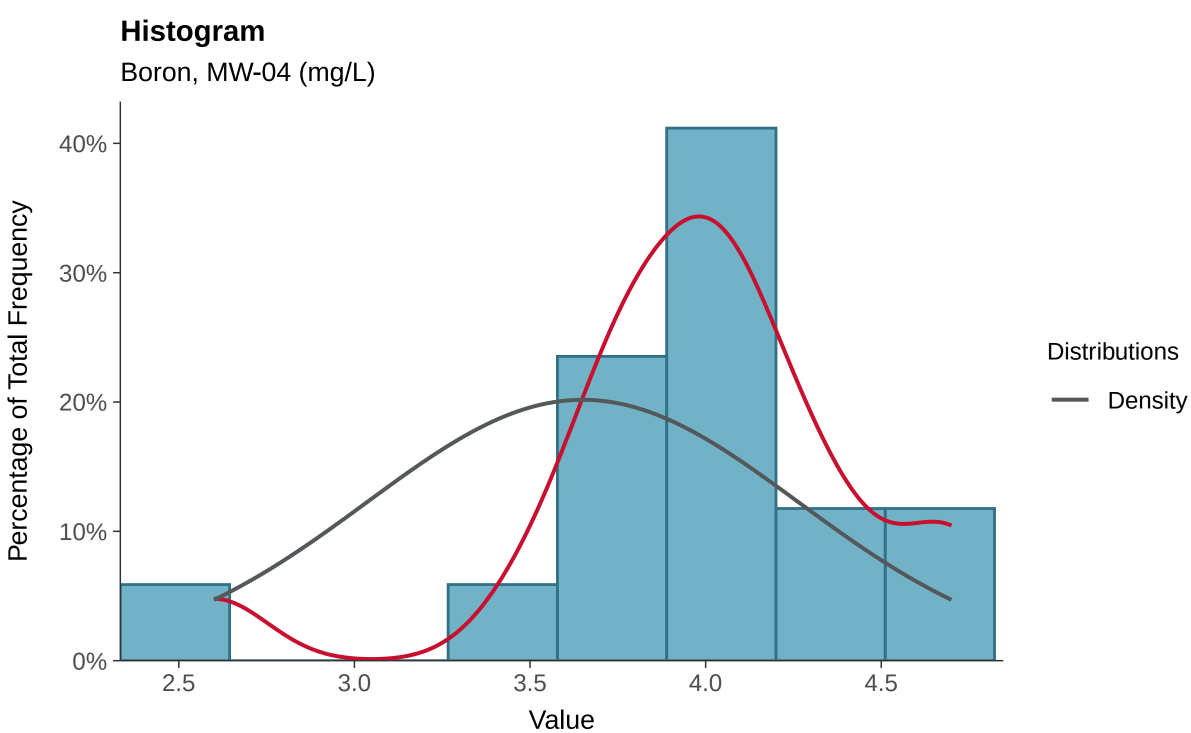
Zinc, MW-03 (mg/L)



Appendix III: Boron, MW-04

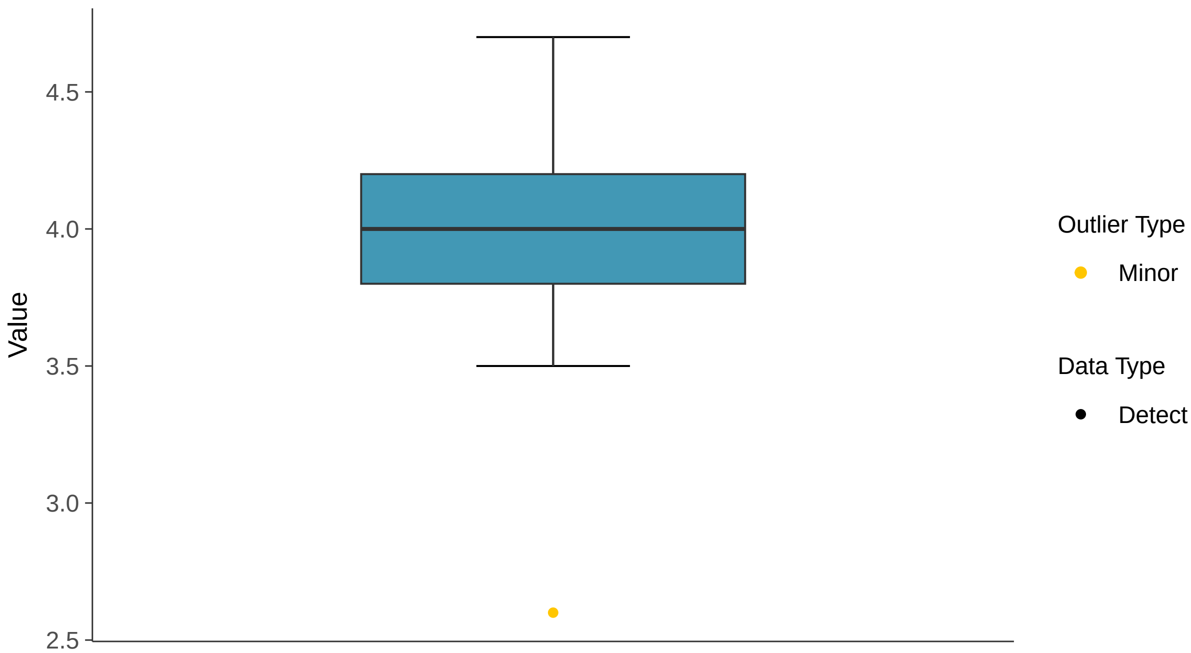
ID: 14_2_3_105





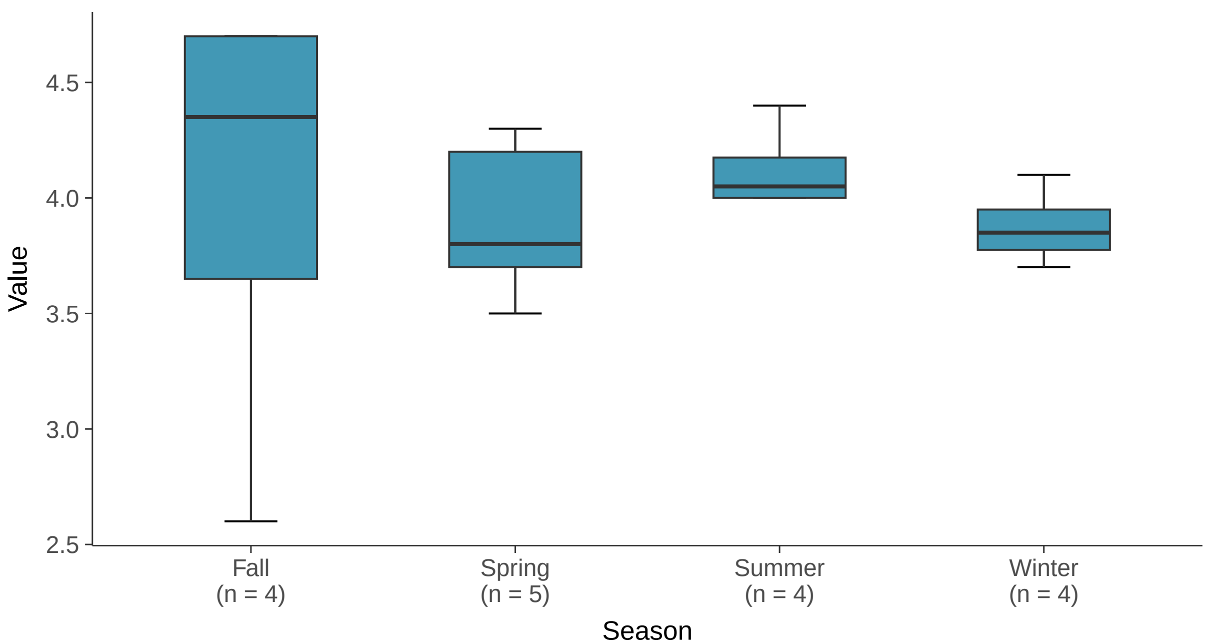
Boxplot

Boron, MW-04 (mg/L)



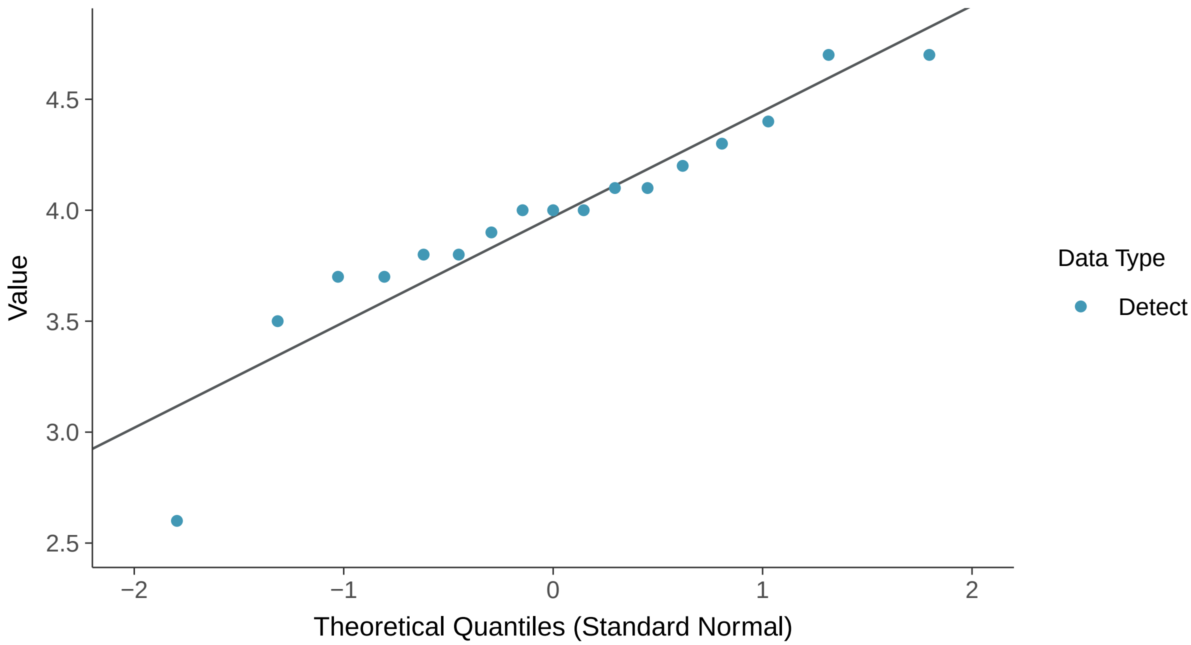
Boxplot by Season

Boron, MW-04 (mg/L)



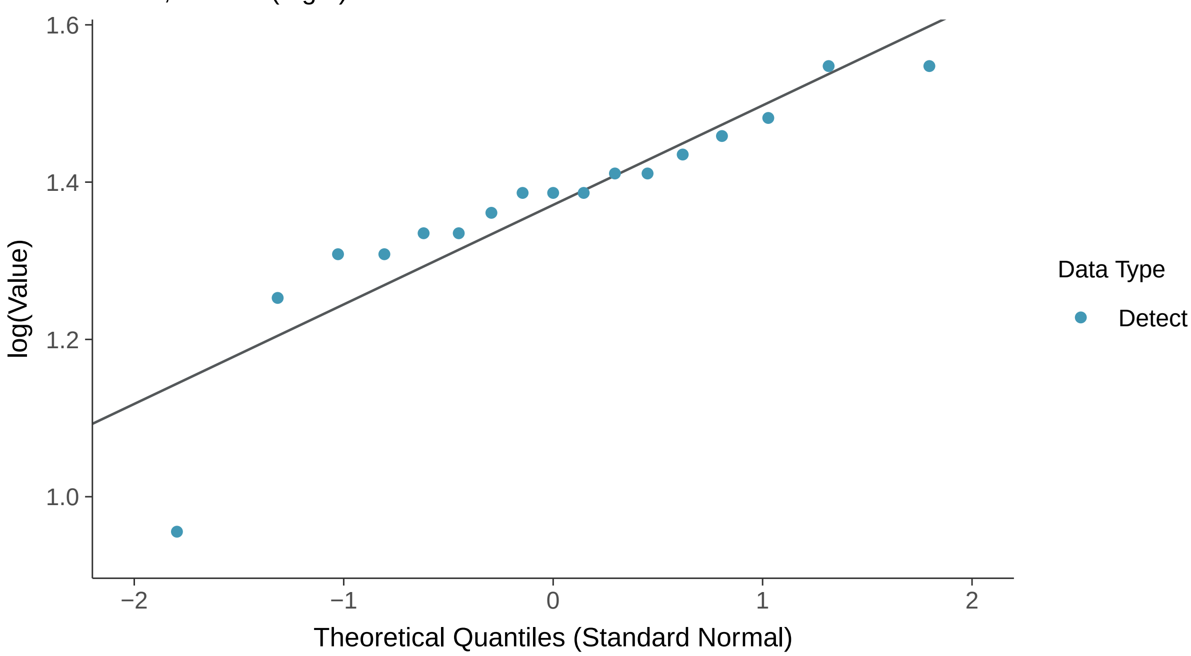
Normal Q-Q plot

Boron, MW-04 (mg/L)



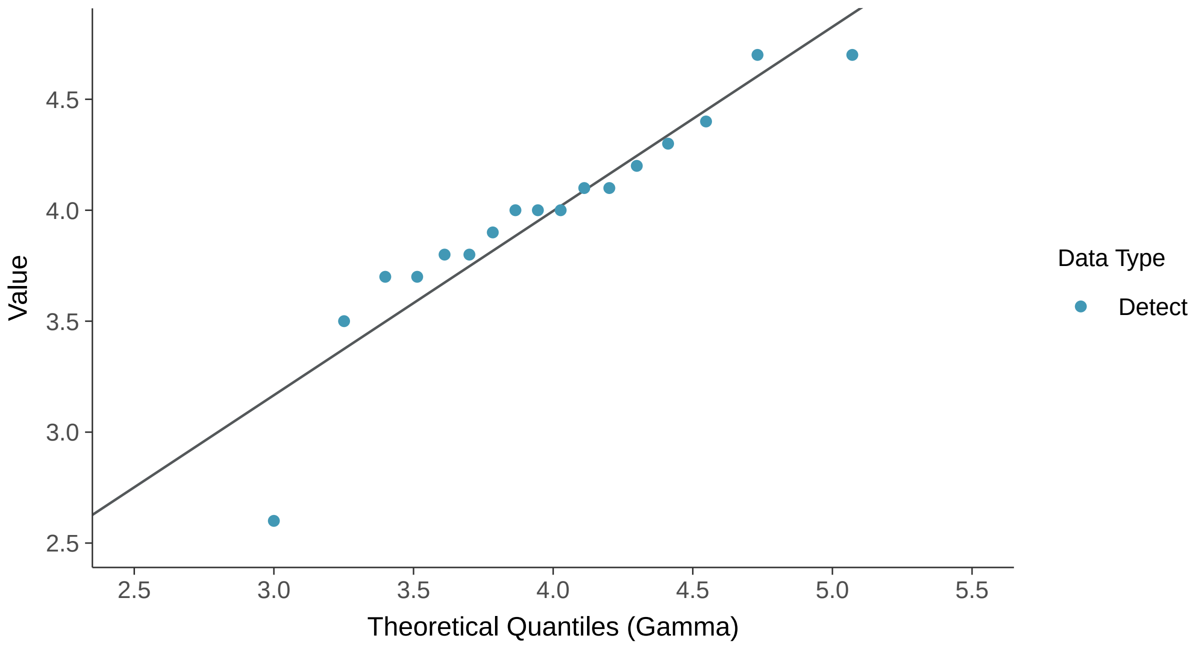
Lognormal Q-Q plot

Boron, MW-04 (mg/L)



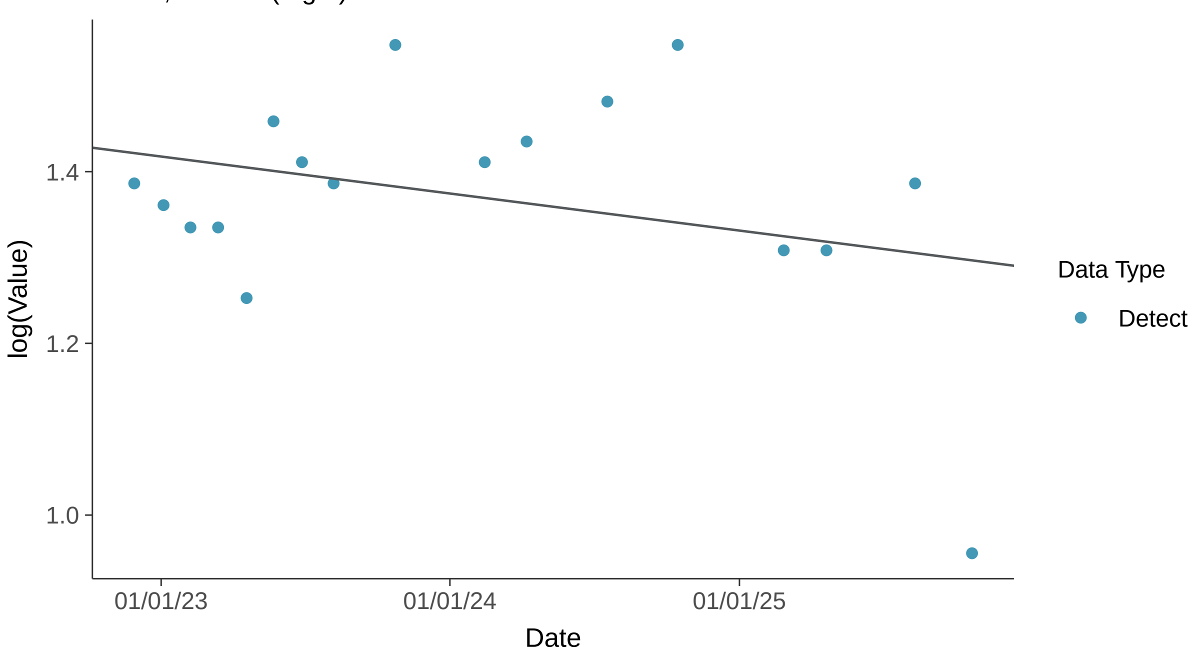
Gamma Q-Q plot

Boron, MW-04 (mg/L)



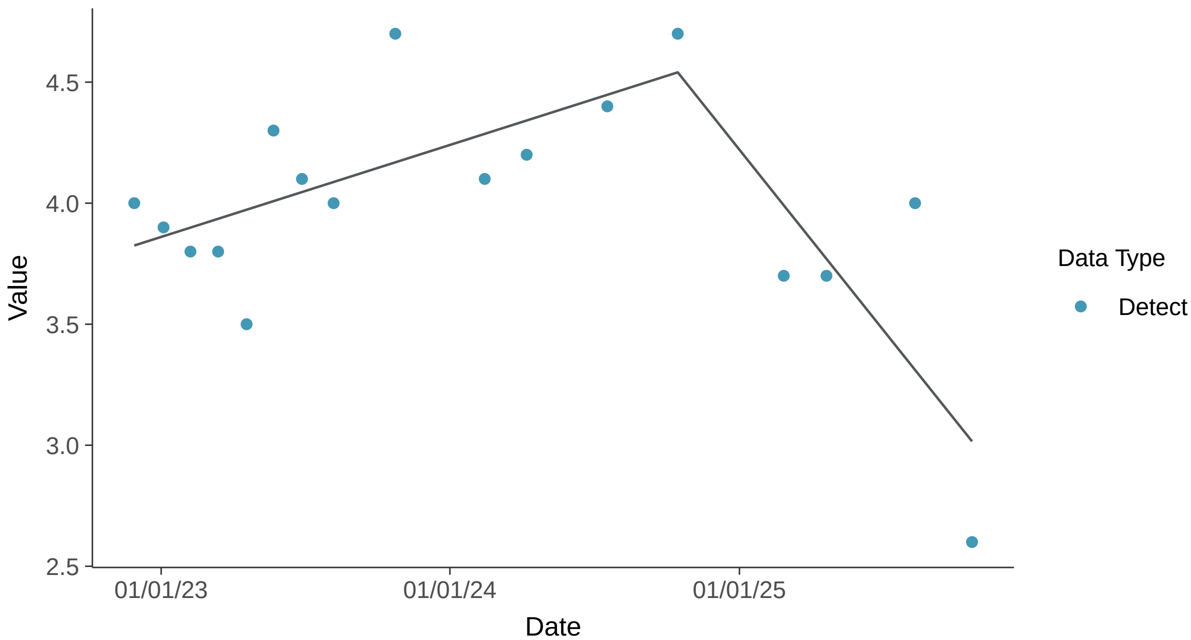
Trend Regression: Lognormal MLE

Boron, MW-04 (mg/L)



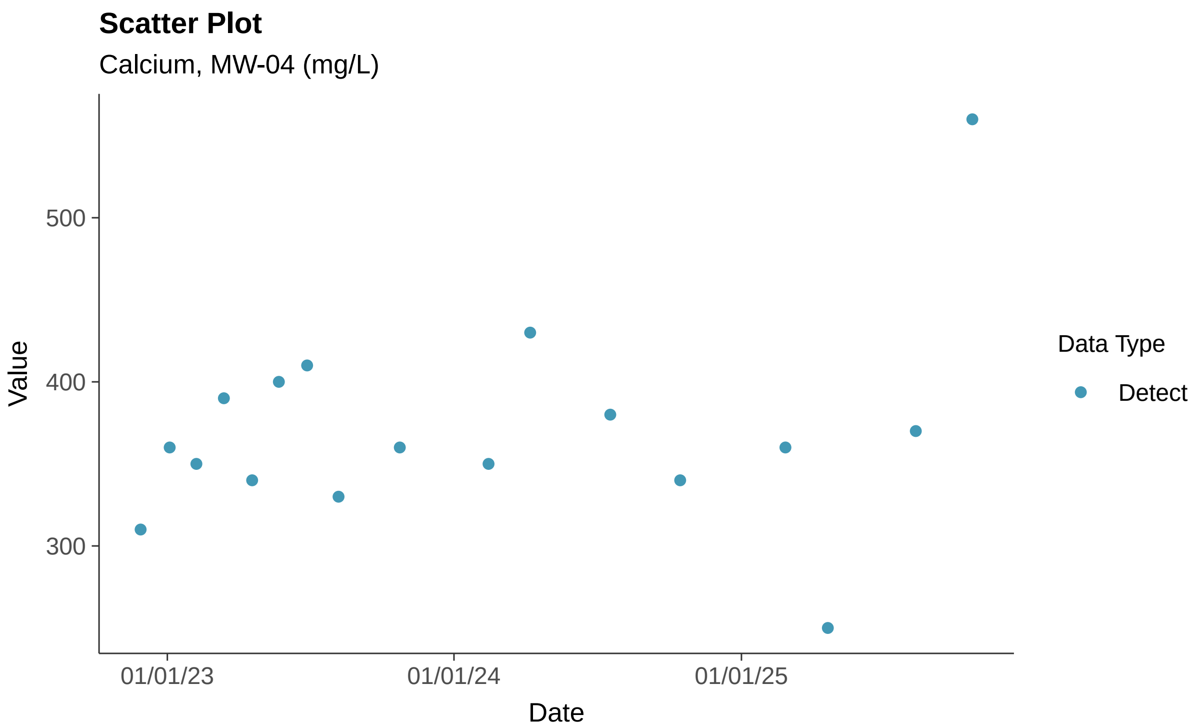
Trend Regression: Piecewise Linear-Linear

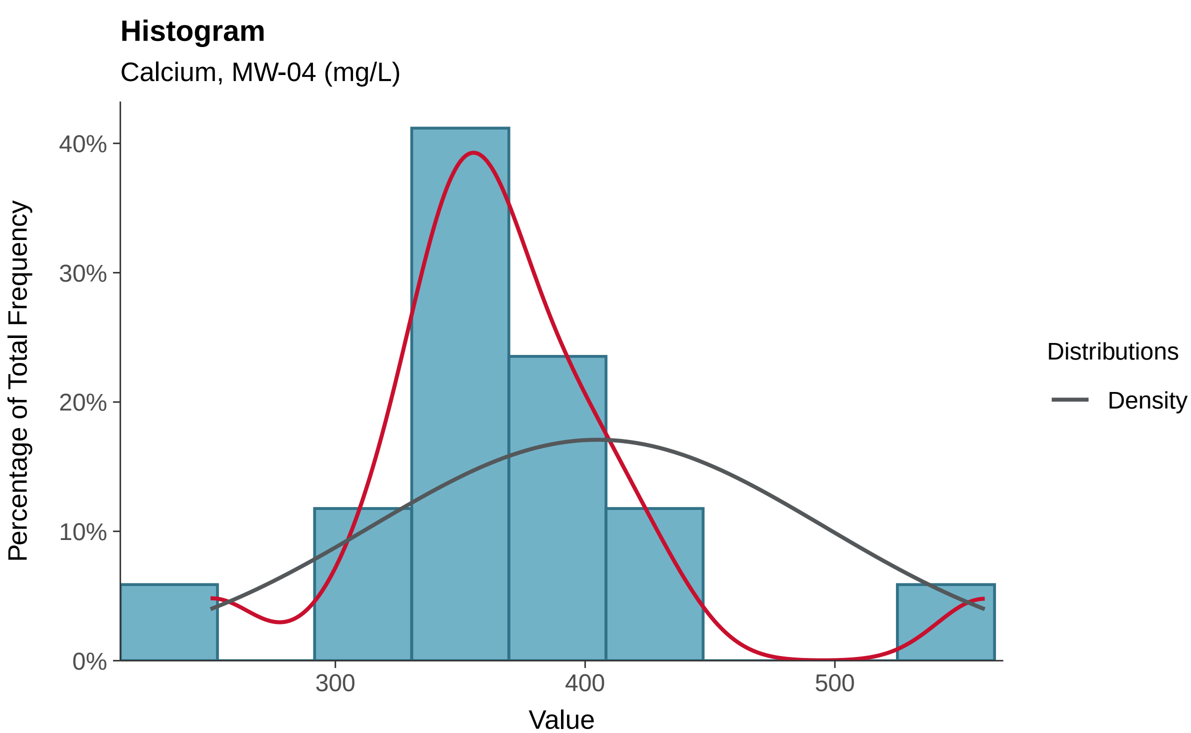
Boron, MW-04 (mg/L)



Appendix III: Calcium, MW-04

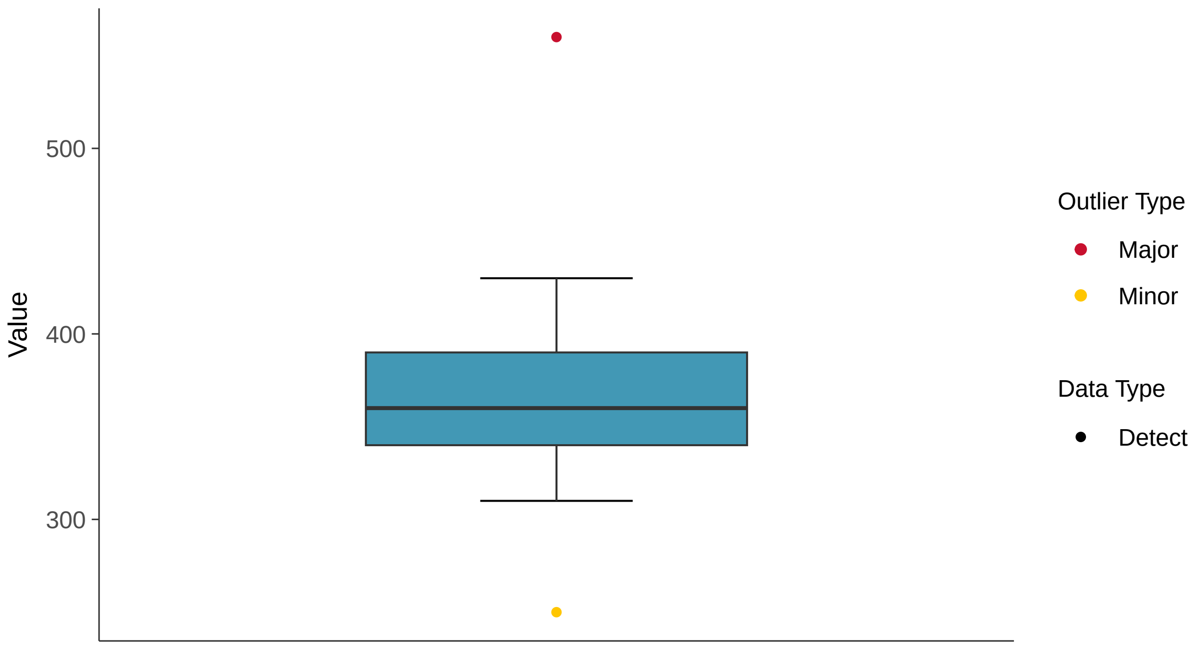
ID: 14_2_3_107





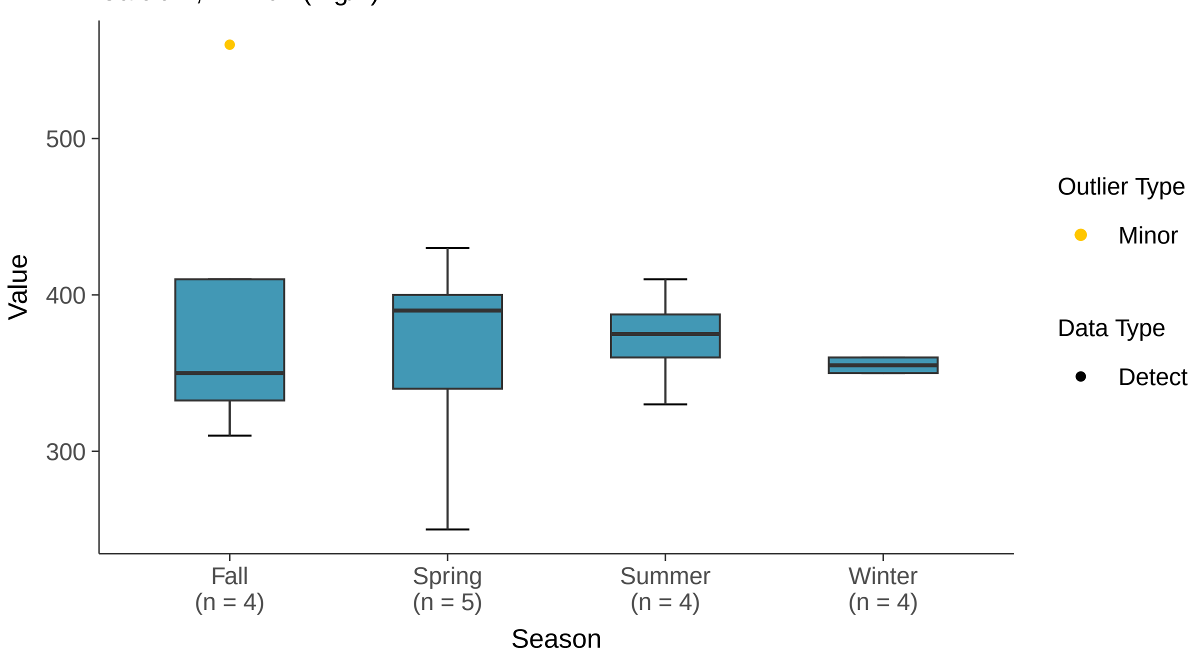
Boxplot

Calcium, MW-04 (mg/L)



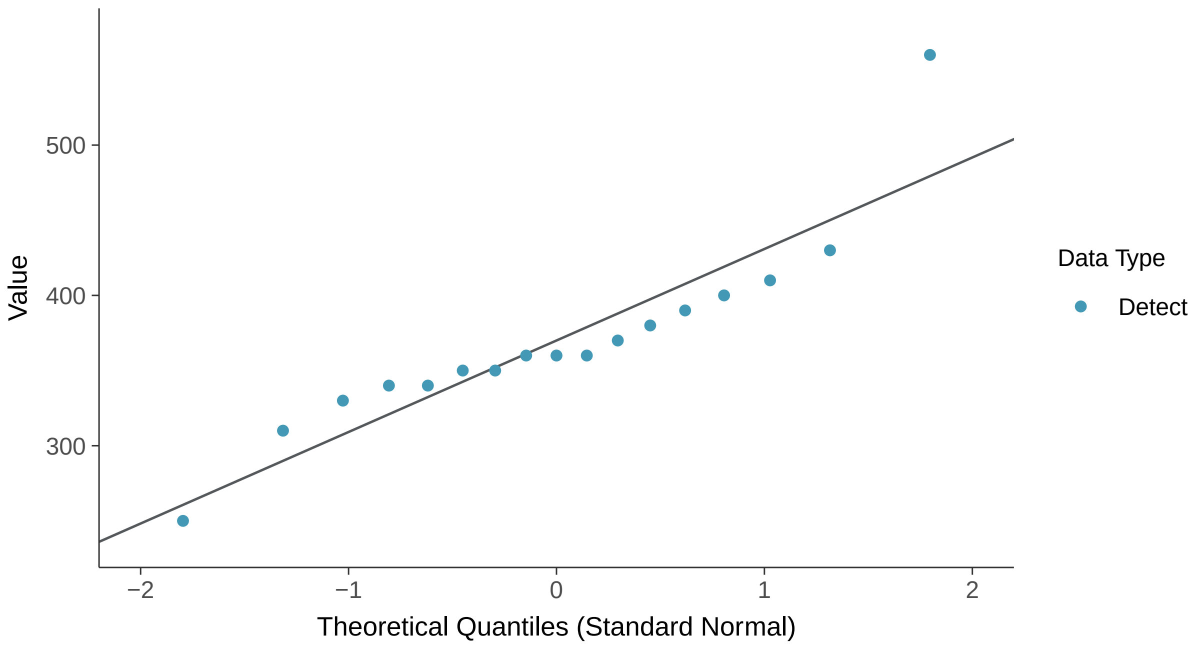
Boxplot by Season

Calcium, MW-04 (mg/L)



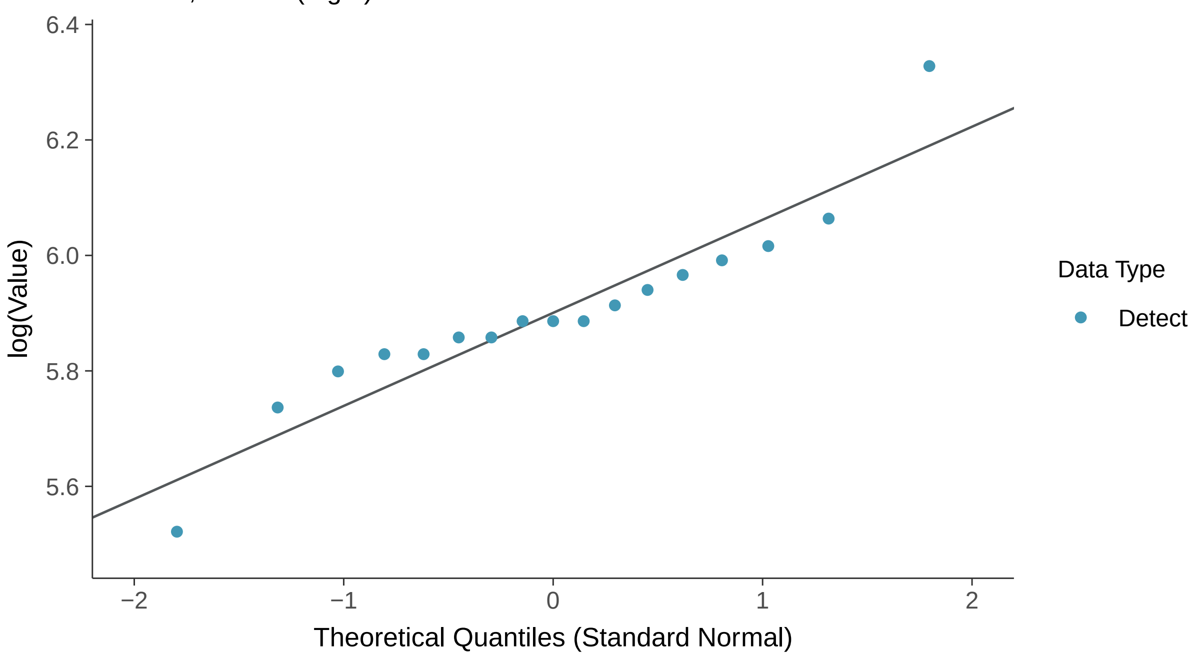
Normal Q-Q plot

Calcium, MW-04 (mg/L)



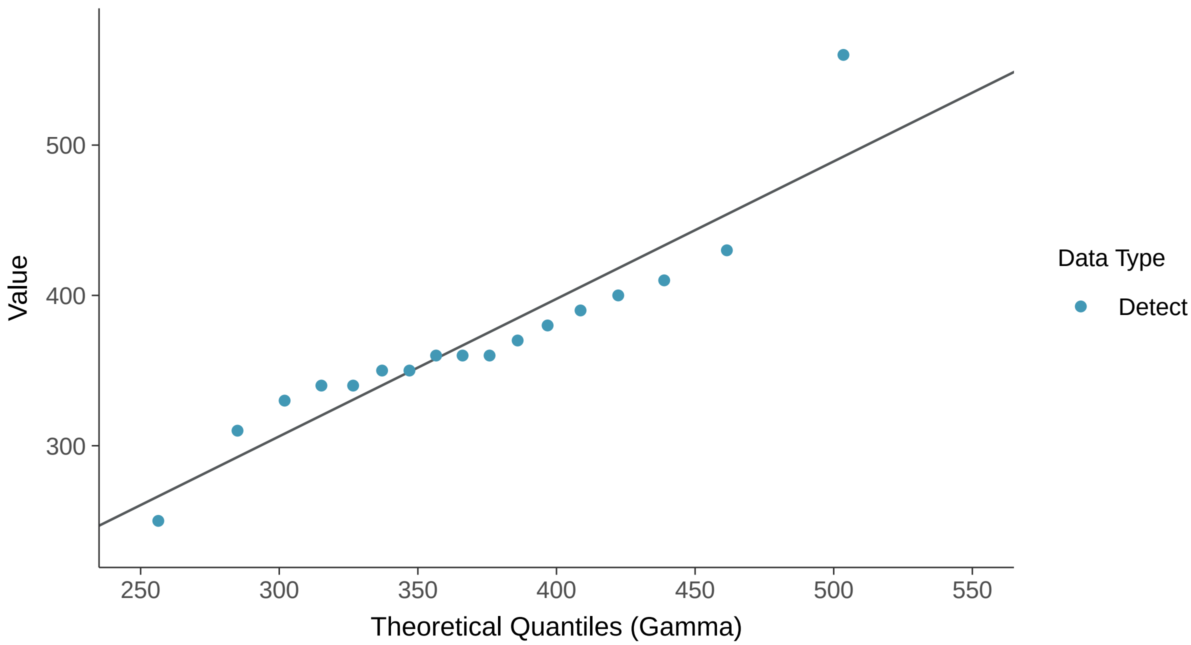
Lognormal Q-Q plot

Calcium, MW-04 (mg/L)



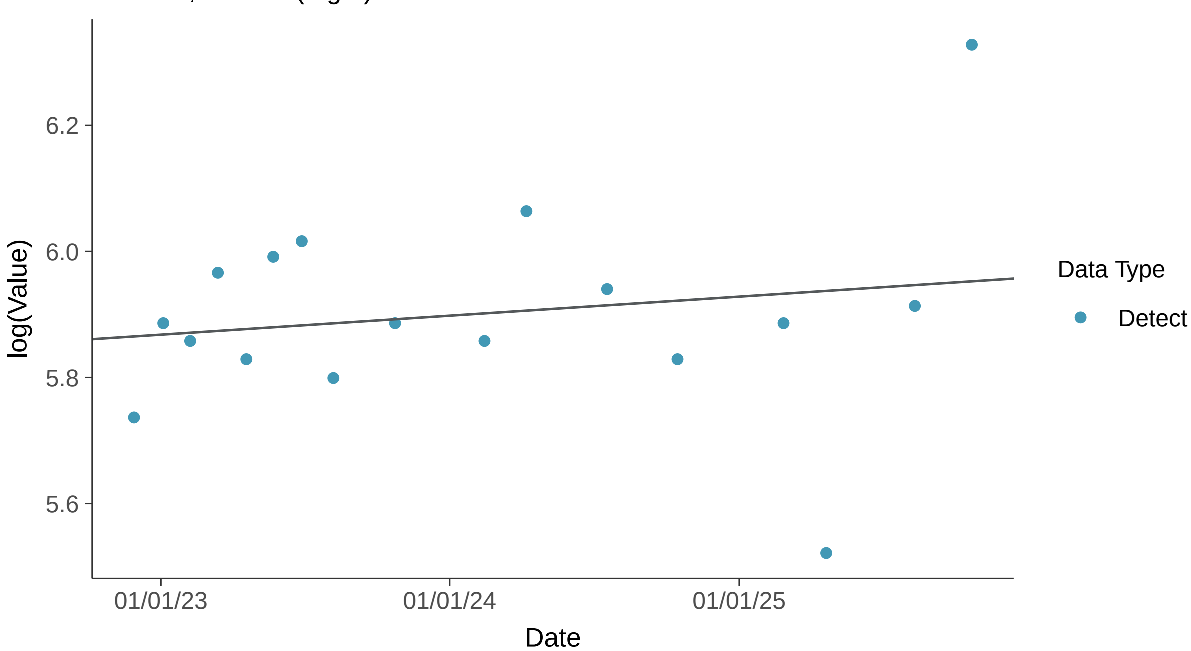
Gamma Q-Q plot

Calcium, MW-04 (mg/L)



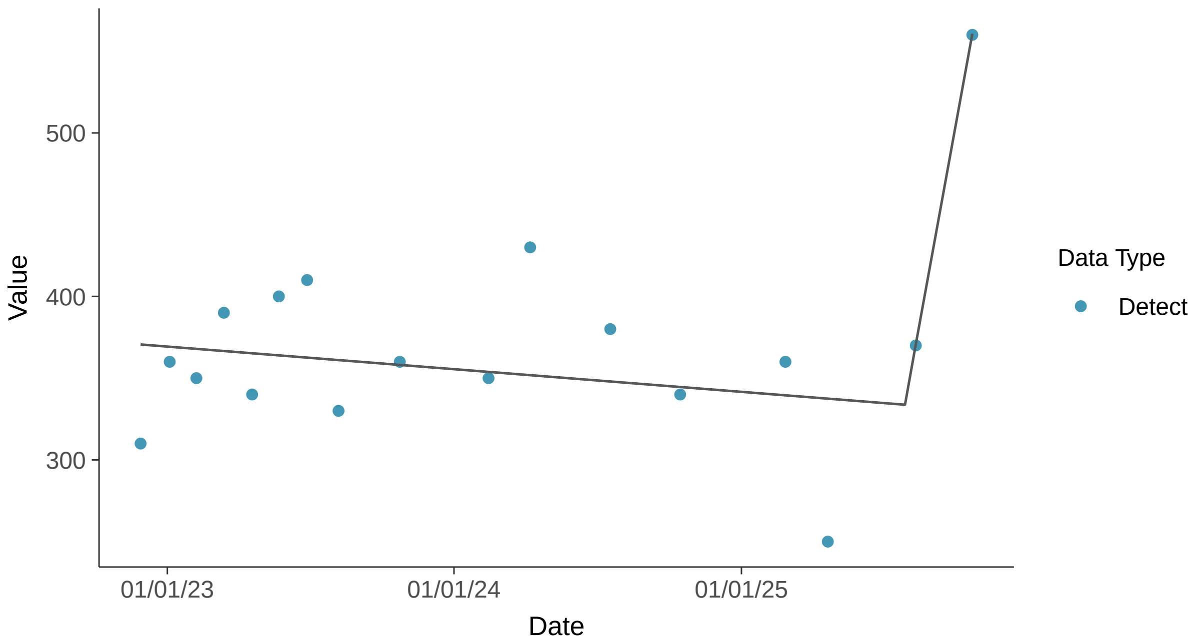
Trend Regression: Lognormal MLE

Calcium, MW-04 (mg/L)



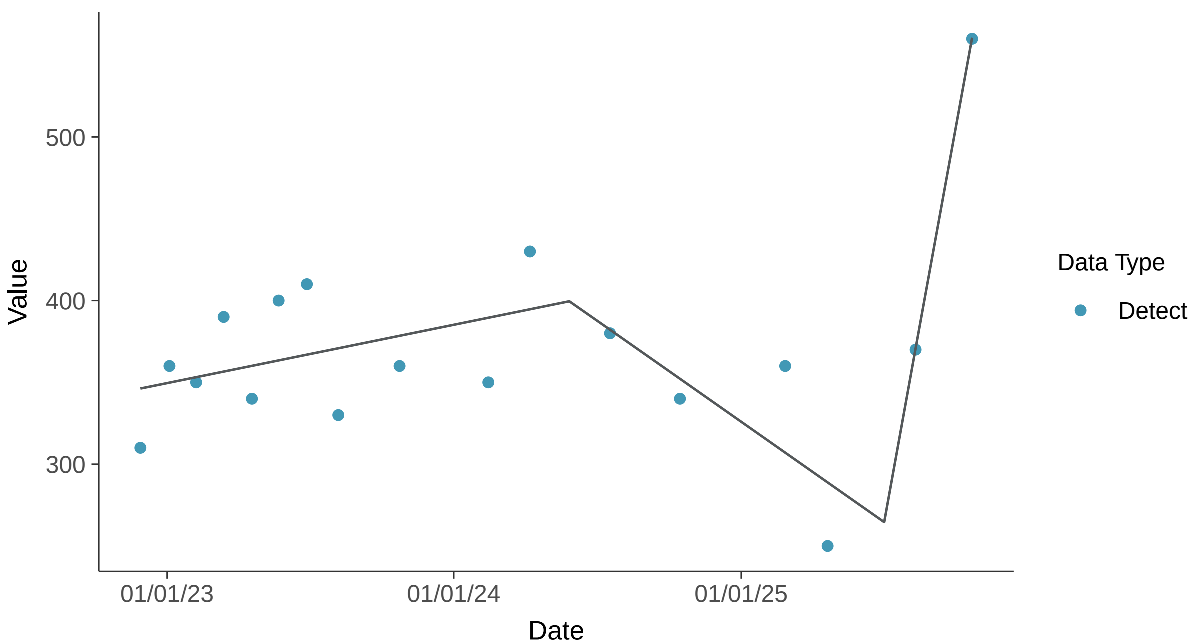
Trend Regression: Piecewise Linear-Linear

Calcium, MW-04 (mg/L)



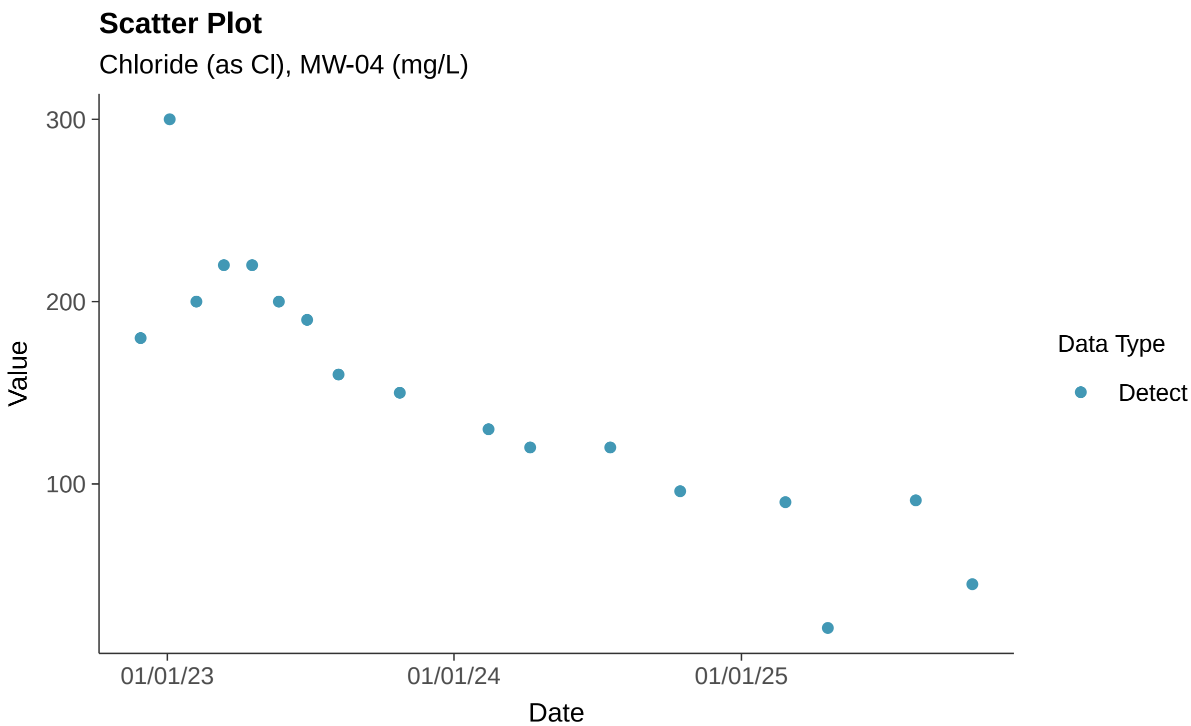
Trend Regression: Piecewise Linear-Linear-Linear

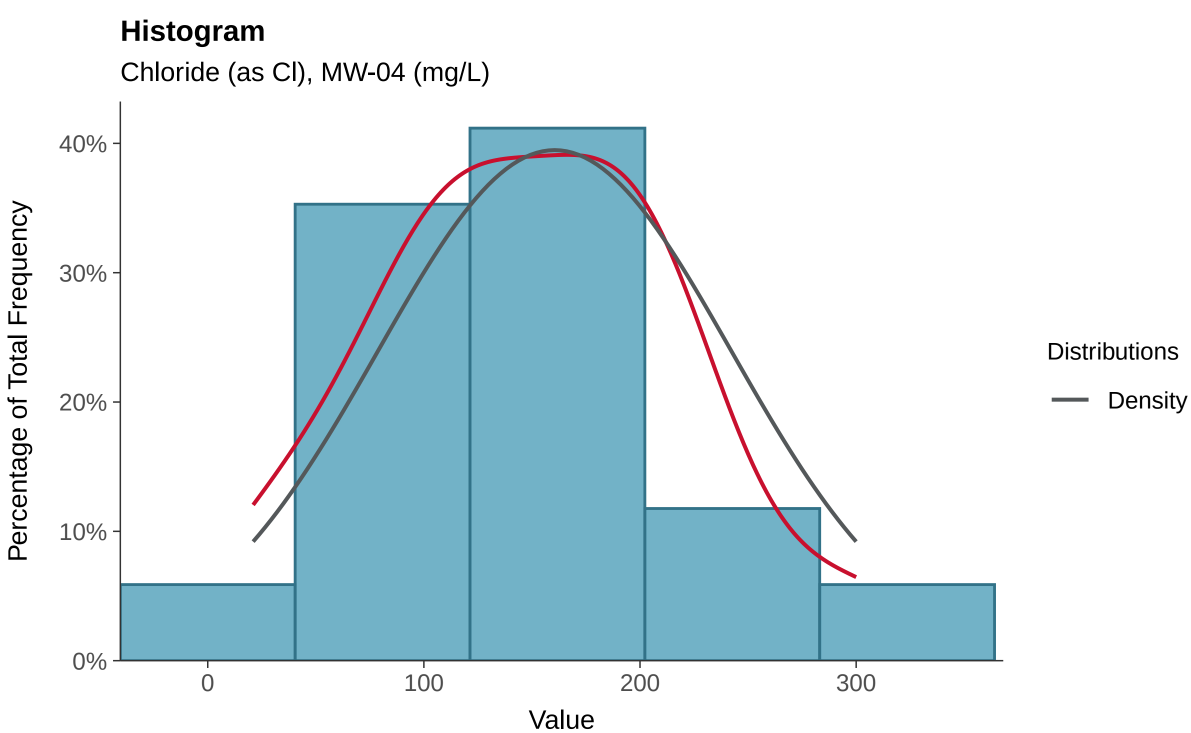
Calcium, MW-04 (mg/L)



Appendix III: Chloride (as Cl), MW-04

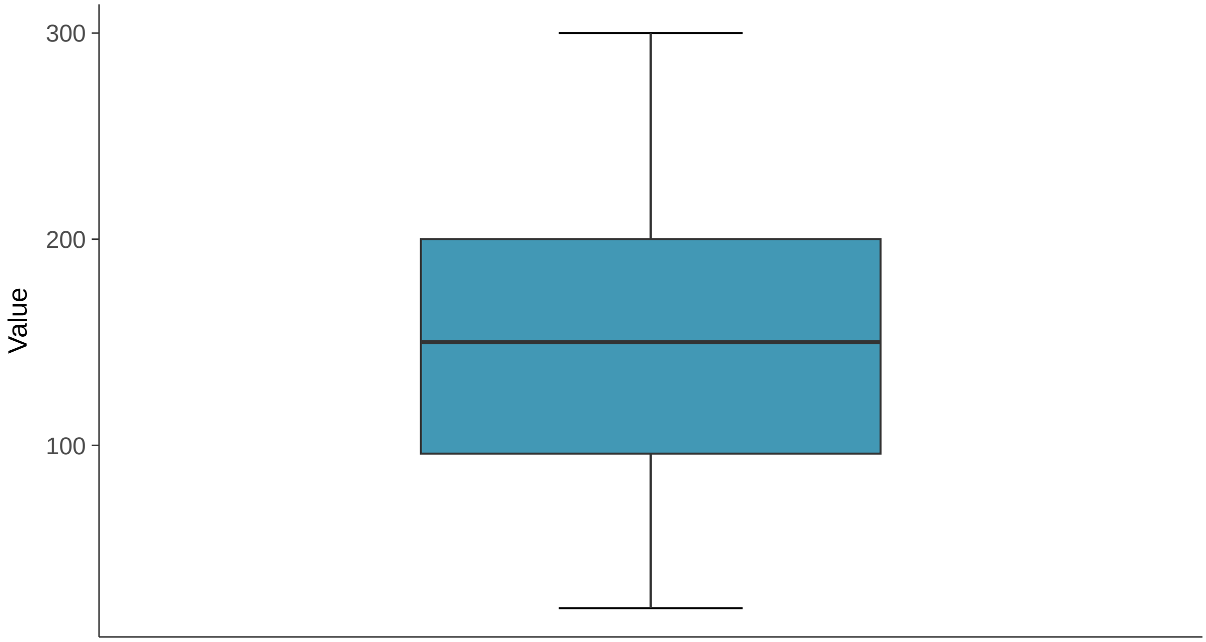
ID: 14_2_3_108





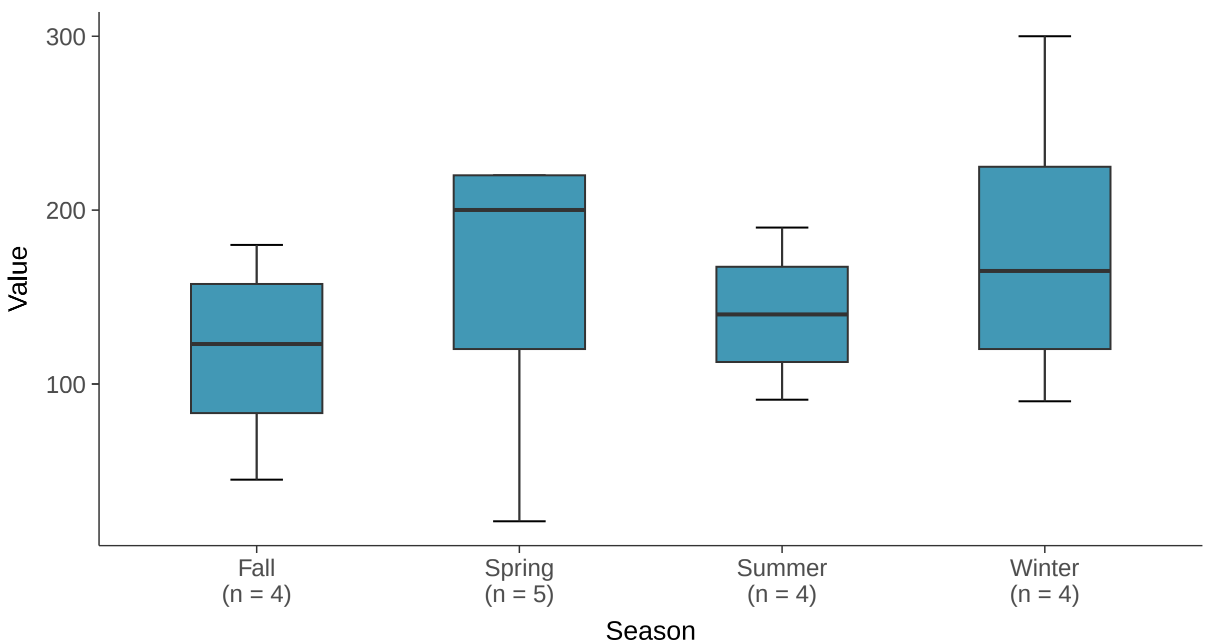
Boxplot

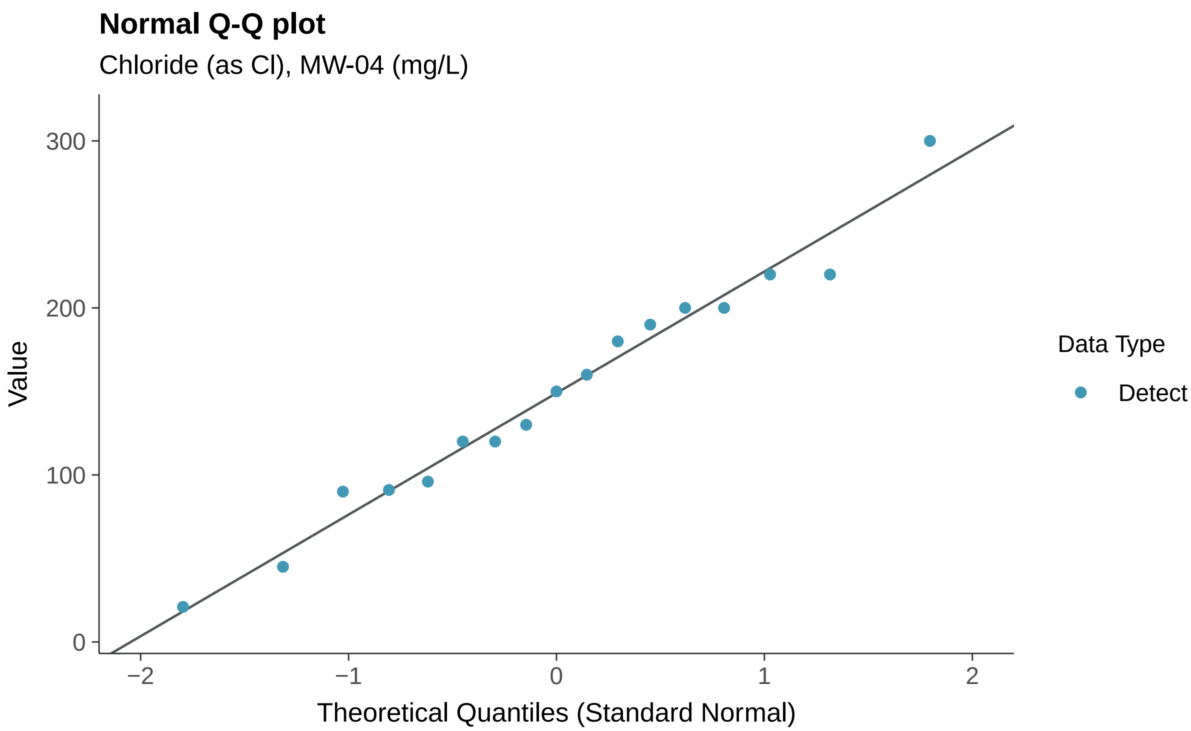
Chloride (as Cl), MW-04 (mg/L)

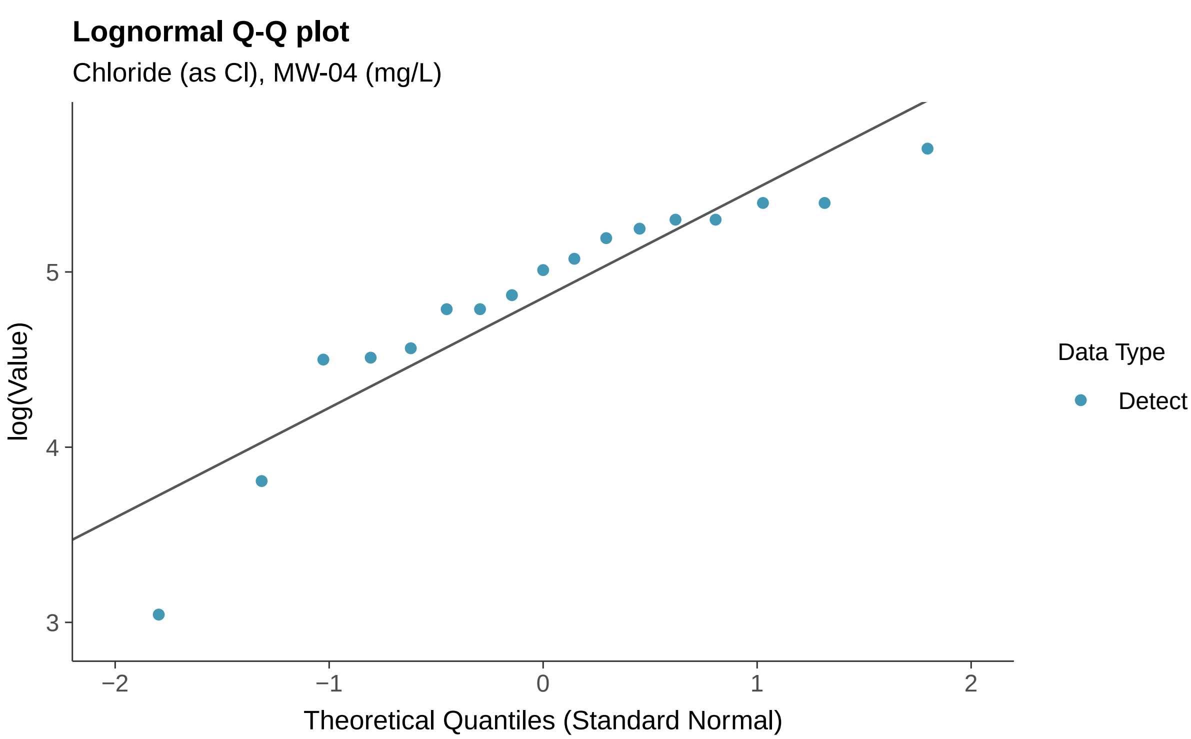


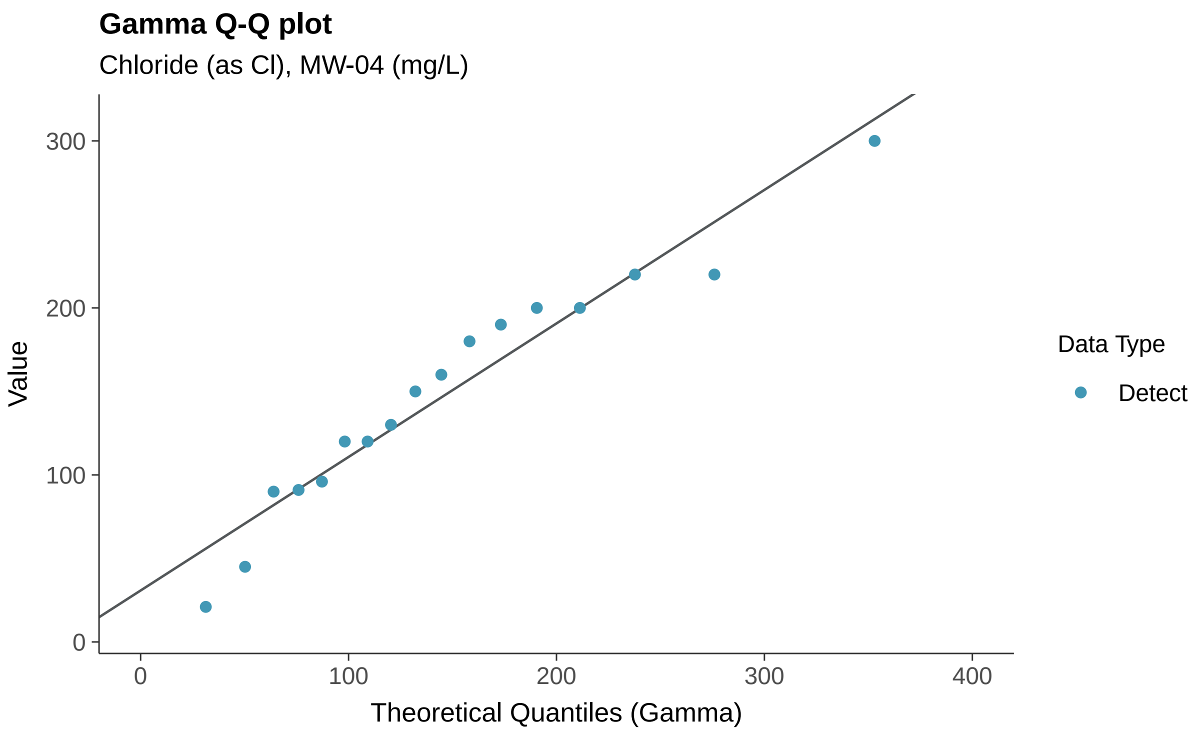
Boxplot by Season

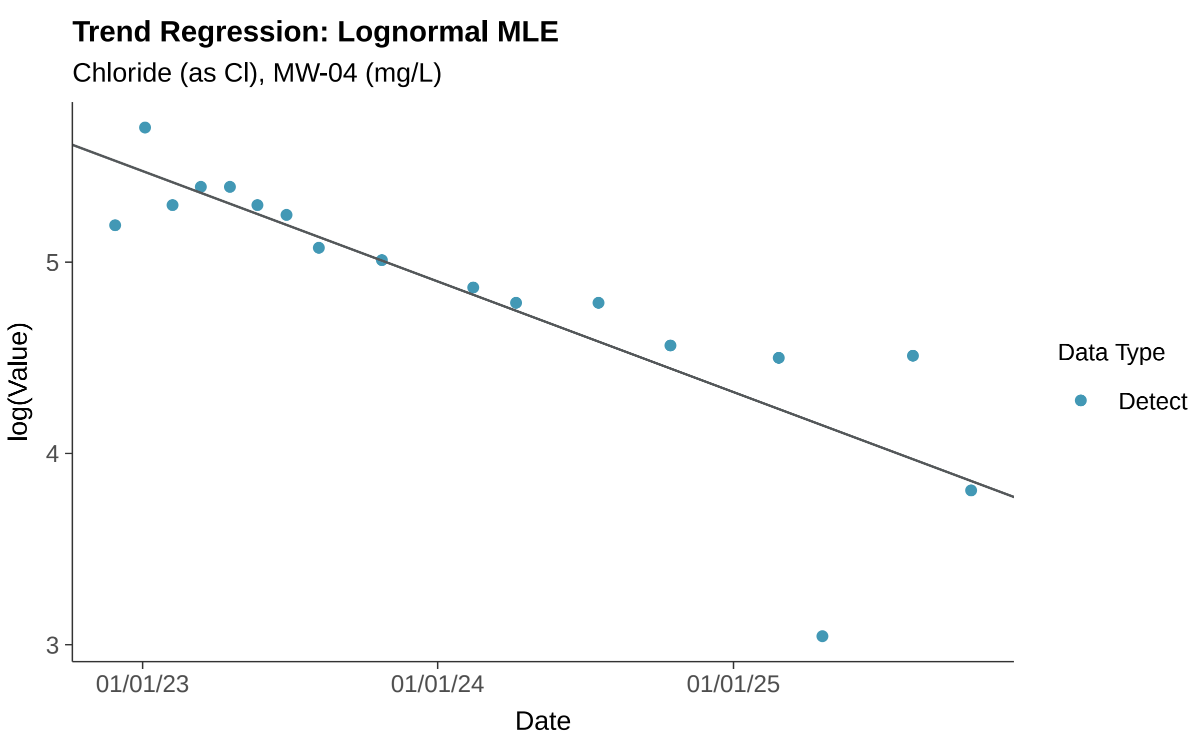
Chloride (as Cl), MW-04 (mg/L)




Normal Q-Q plot
Chloride (as Cl), MW-04 (mg/L)
Value
300
200
100
0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Chloride (as Cl), MW-04 (mg/L)
log(Value)
5
4
3
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Chloride (as Cl), MW-04 (mg/L)
Value
300
200
100
0
0
100
200
300
400
Theoretical Quantiles (Gamma)
Data Type
Detect

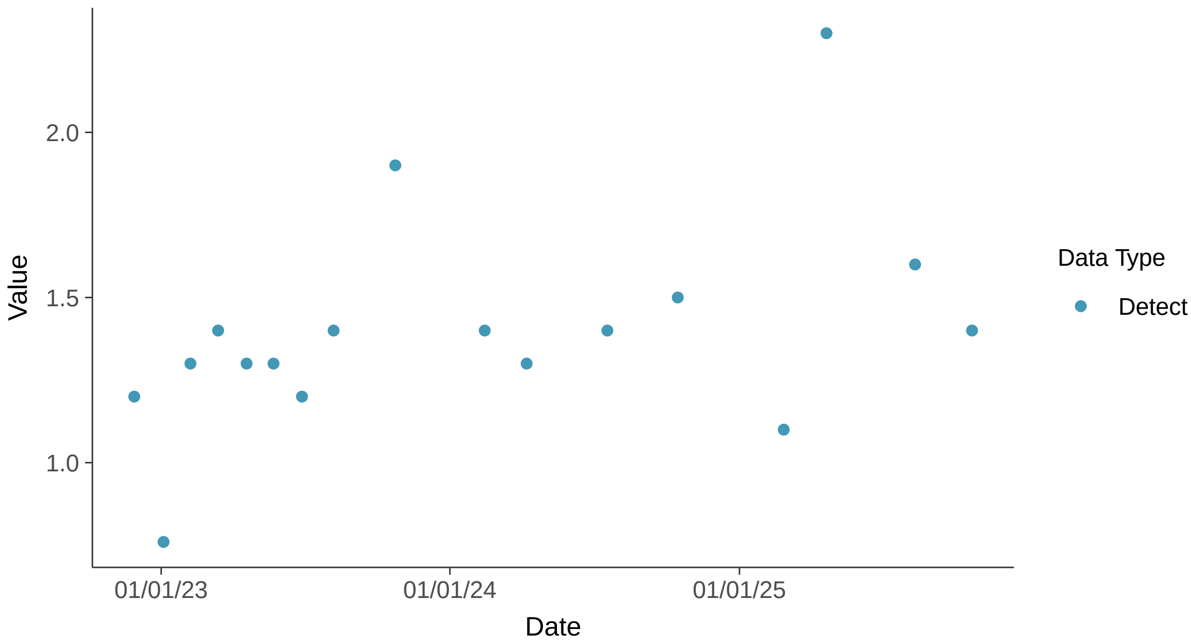

Trend Regression: Lognormal MLE
Chloride (as Cl), MW-04 (mg/L)
log(Value)
5
4
3
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Appendix III: Fluoride, MW-04

ID: 14_2_3_112

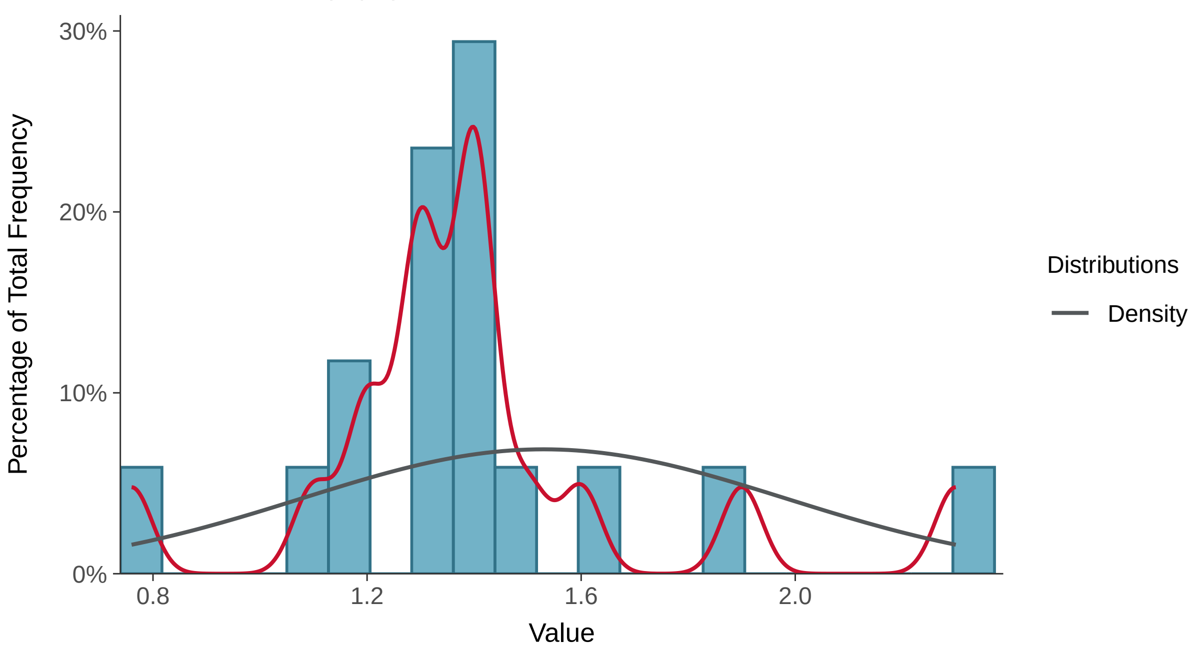
Scatter Plot

Fluoride, MW-04 (mg/L)



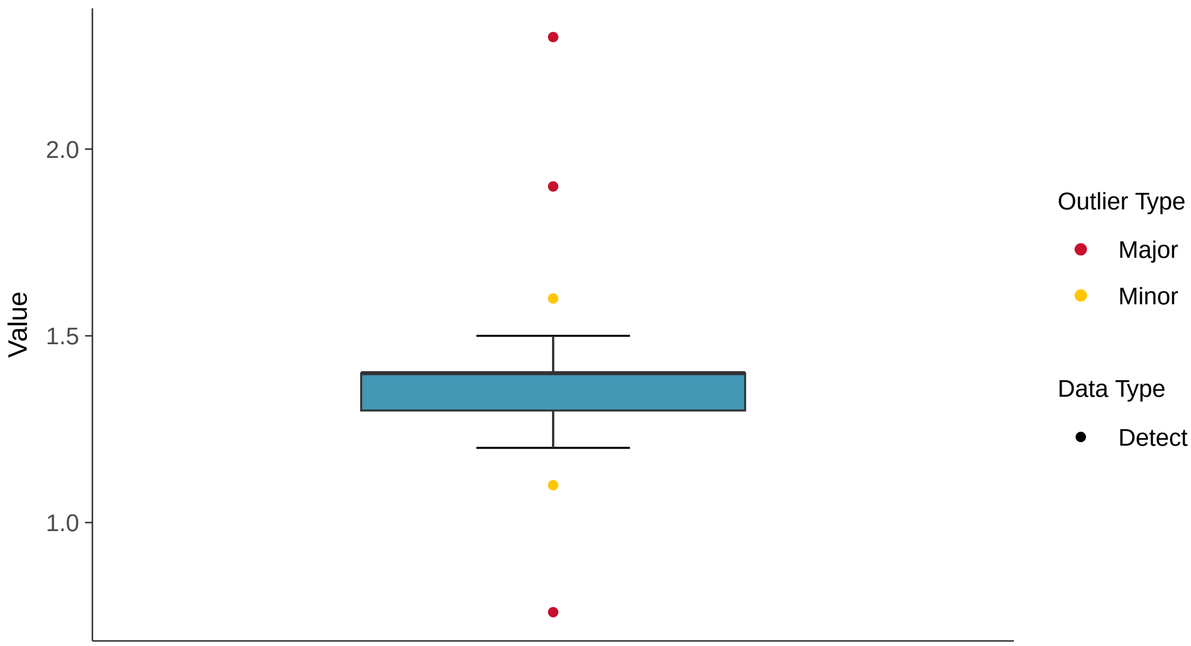
Histogram

Fluoride, MW-04 (mg/L)



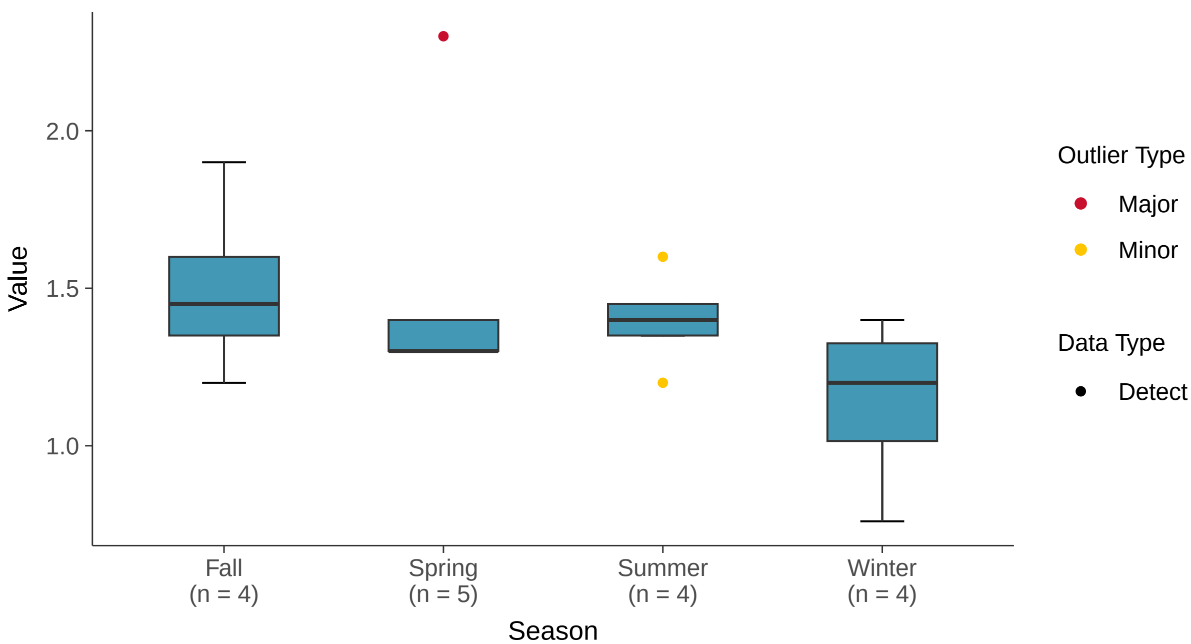
Boxplot

Fluoride, MW-04 (mg/L)



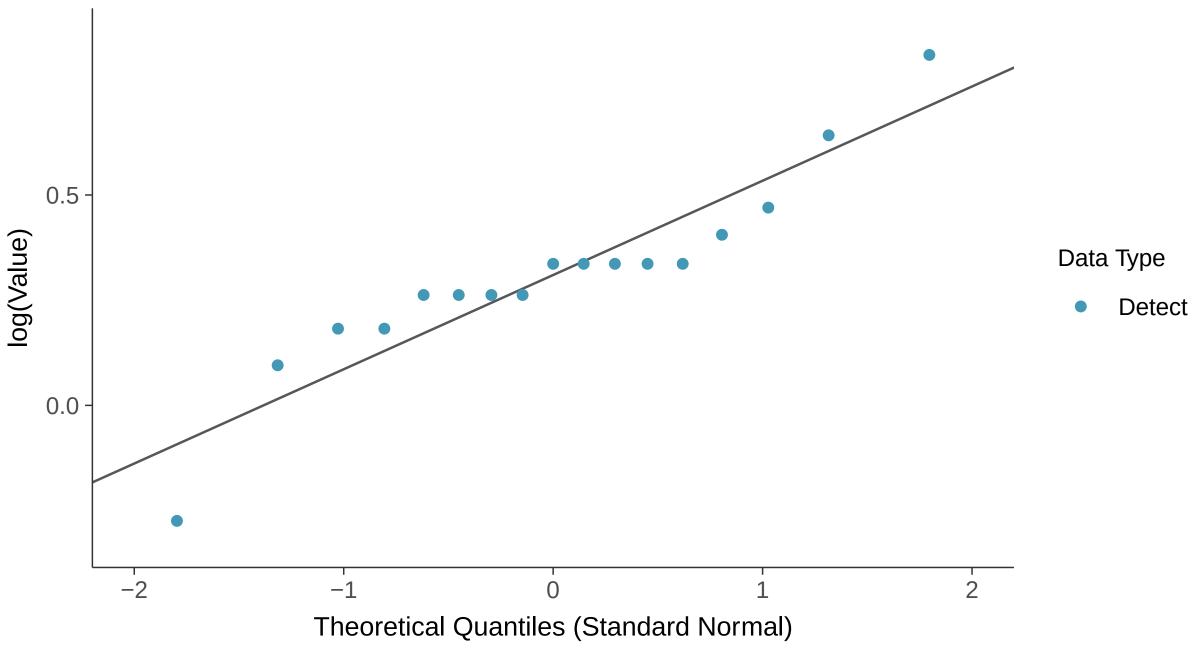
Boxplot by Season

Fluoride, MW-04 (mg/L)



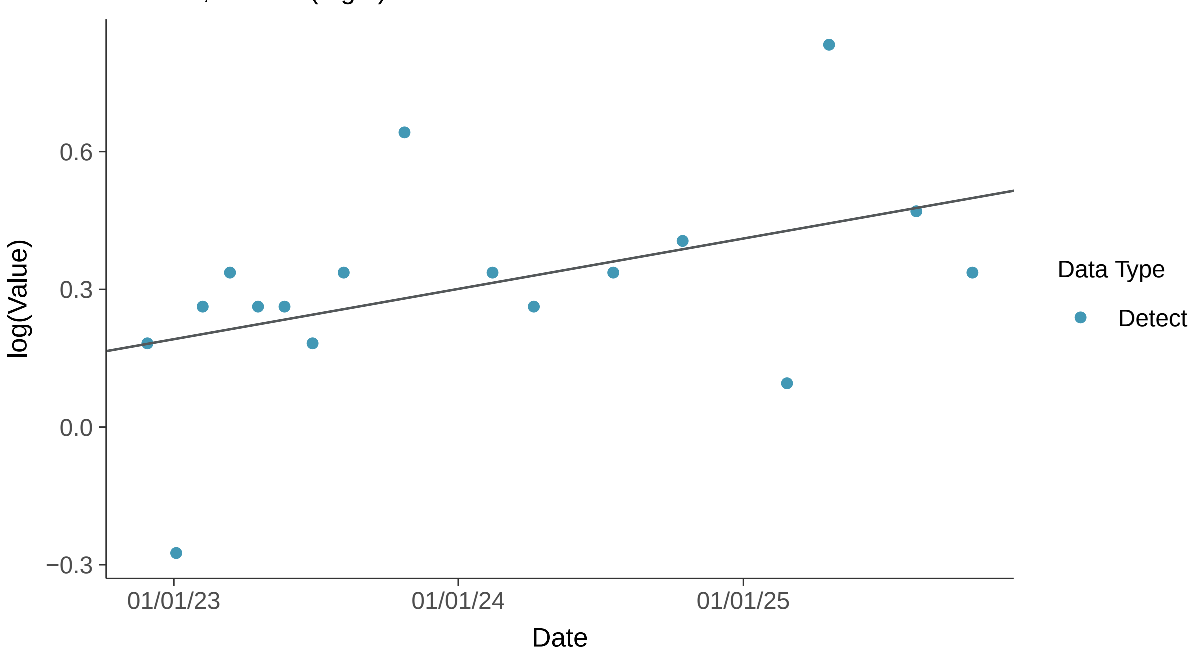
Lognormal Q-Q plot

Fluoride, MW-04 (mg/L)



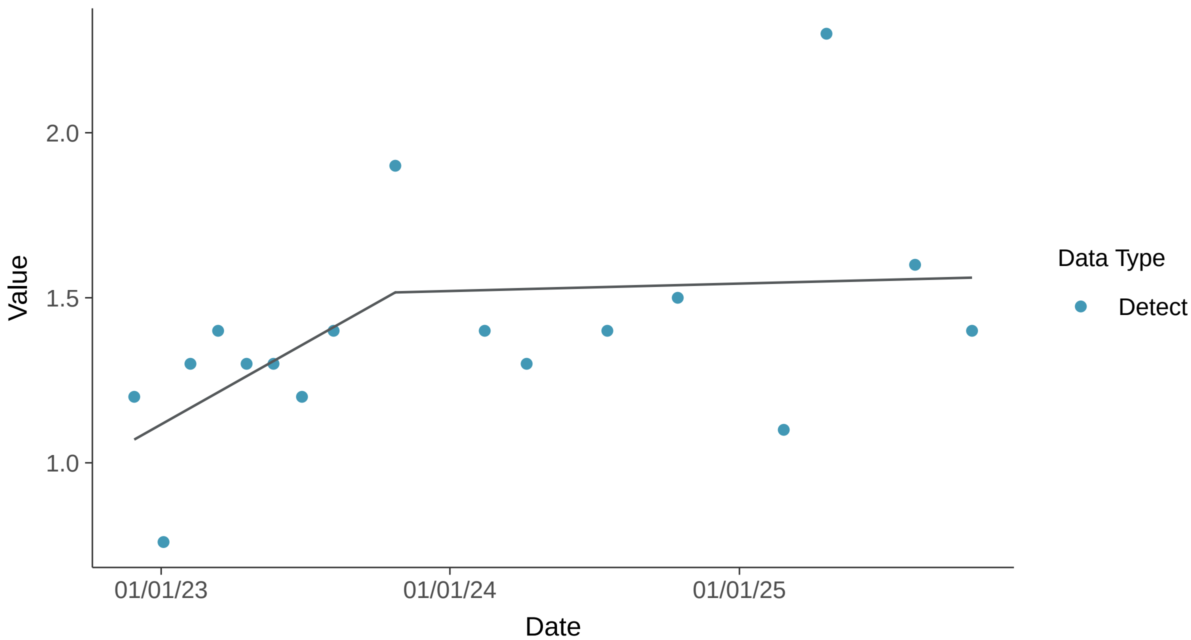
Trend Regression: Lognormal MLE

Fluoride, MW-04 (mg/L)



Trend Regression: Piecewise Linear-Linear

Fluoride, MW-04 (mg/L)

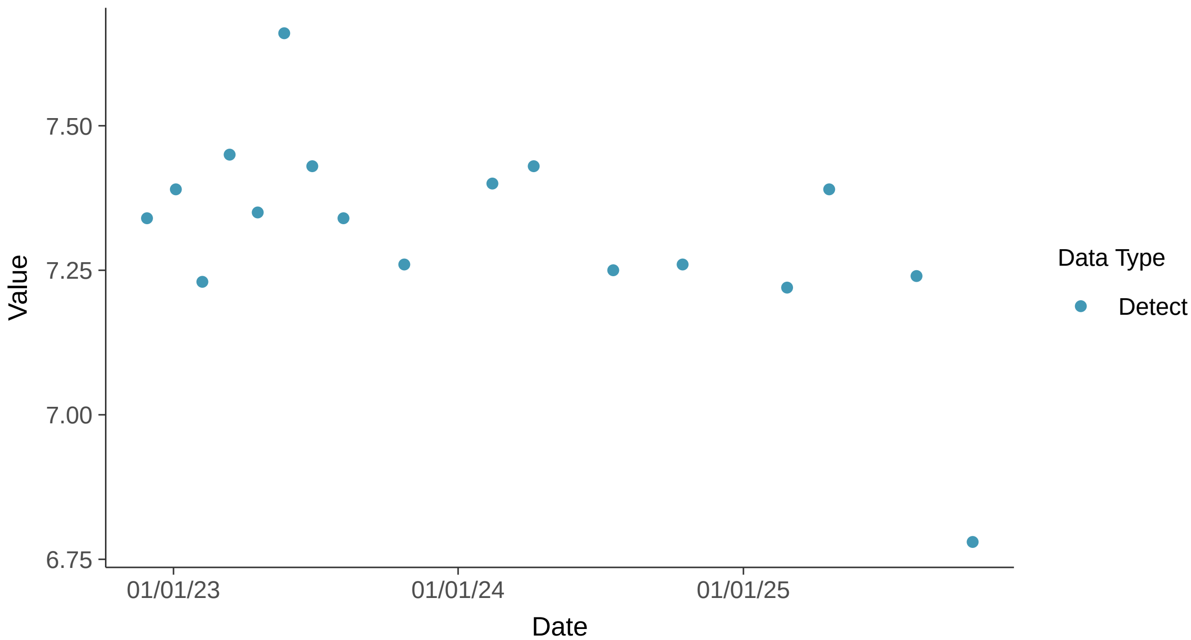


Appendix III: pH (field), MW-04

ID: 14_2_3_120

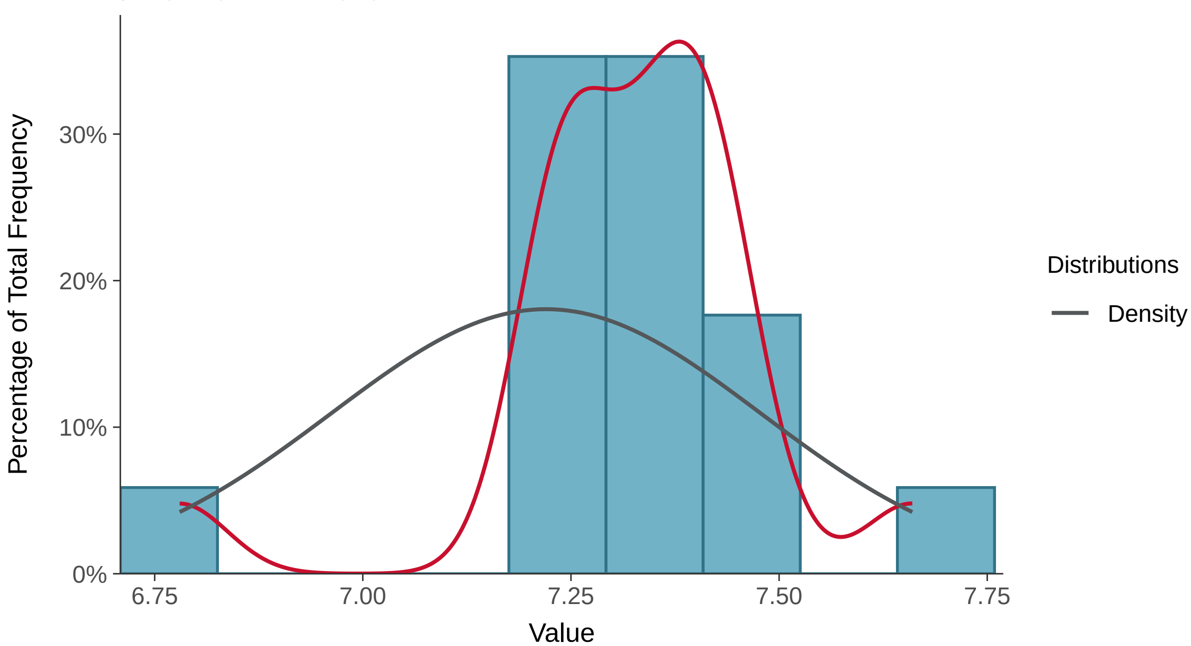
Scatter Plot

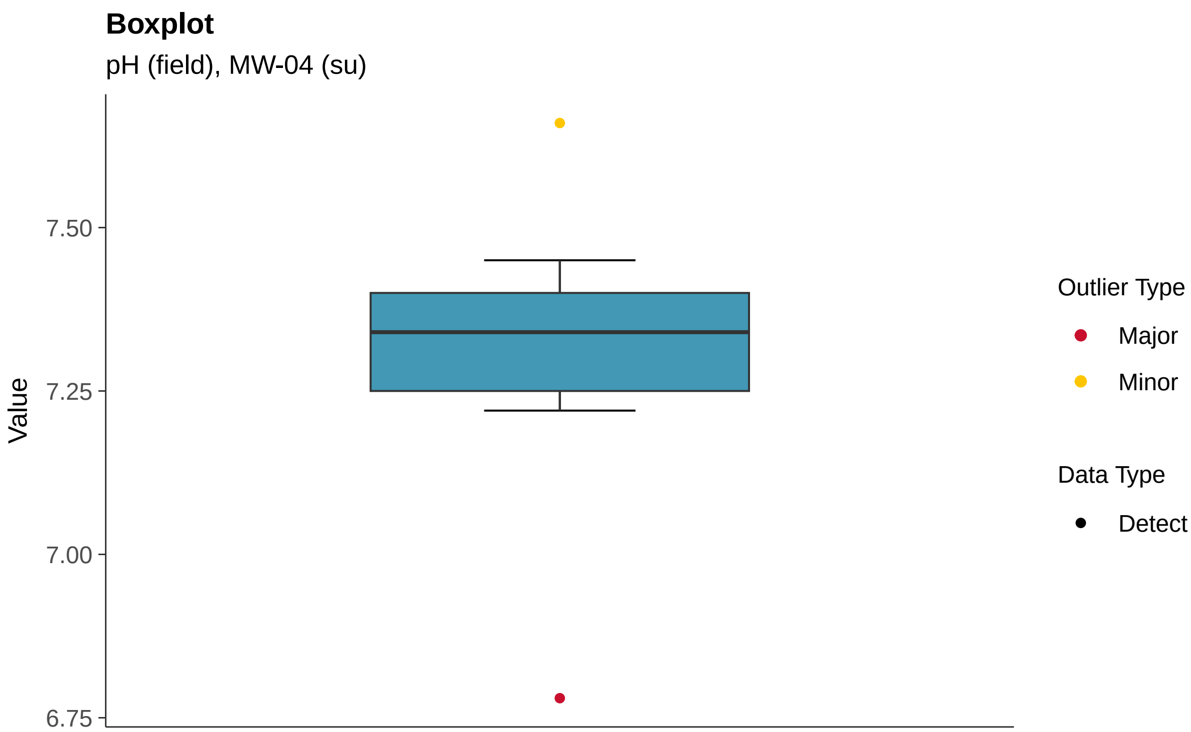
pH (field), MW-04 (su)

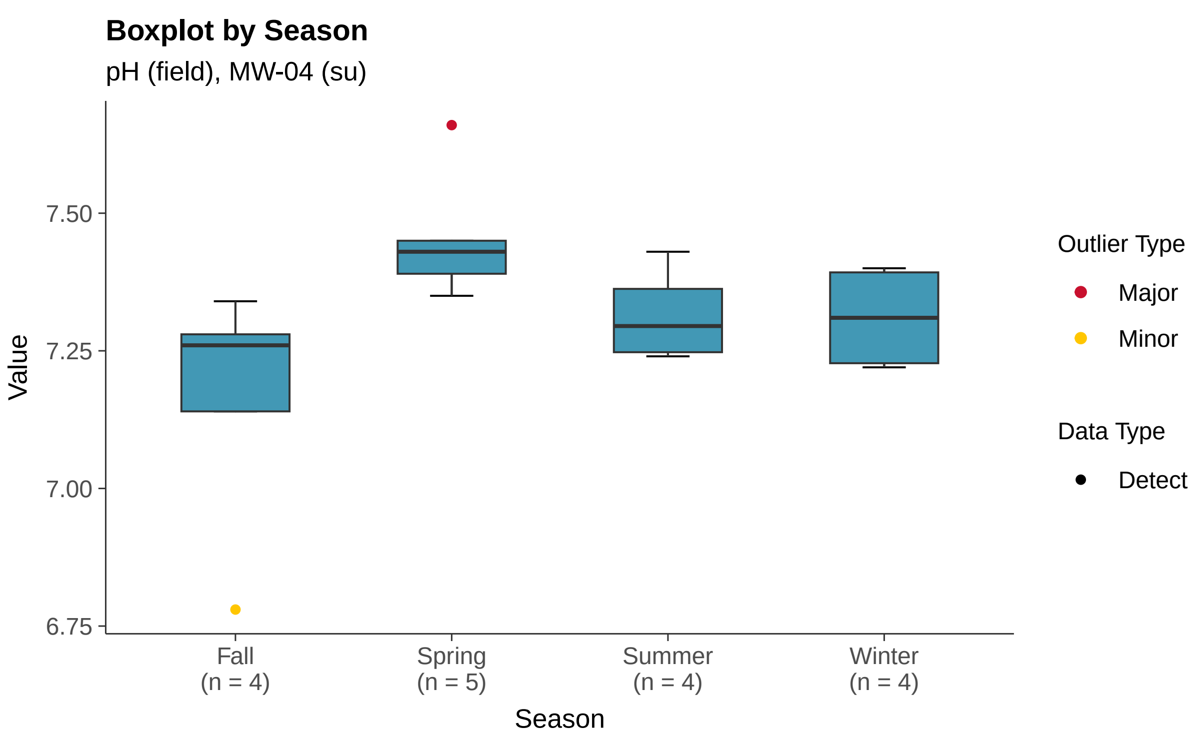


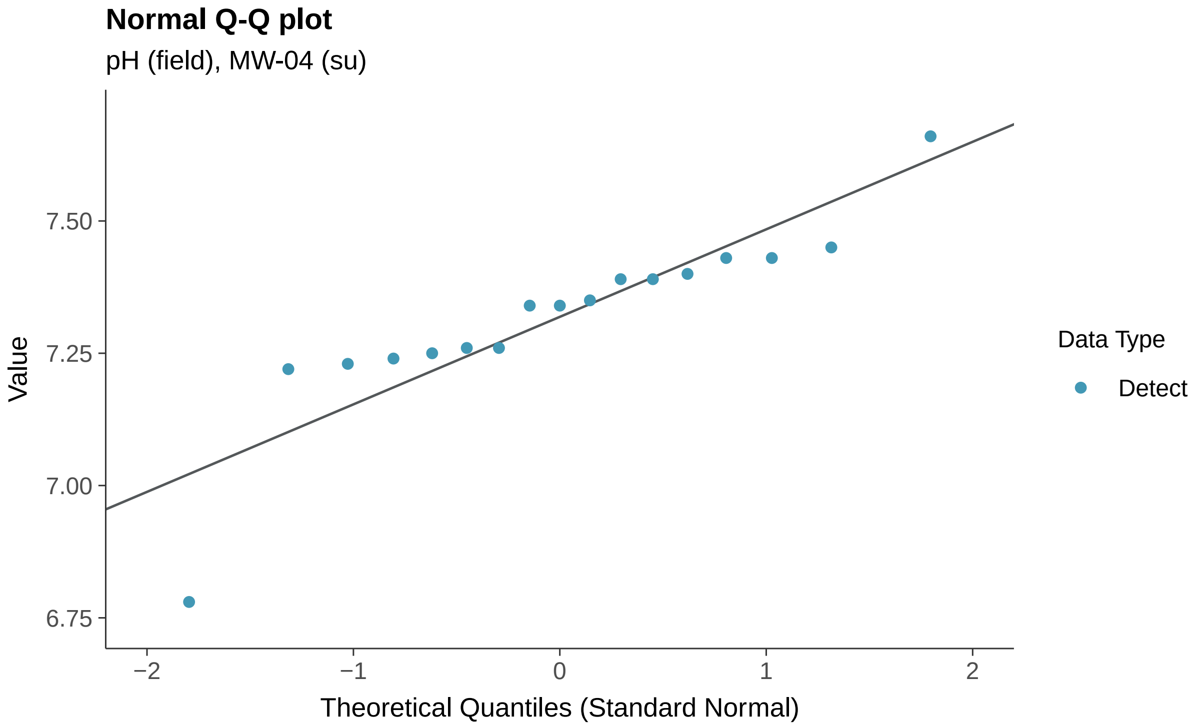
Histogram

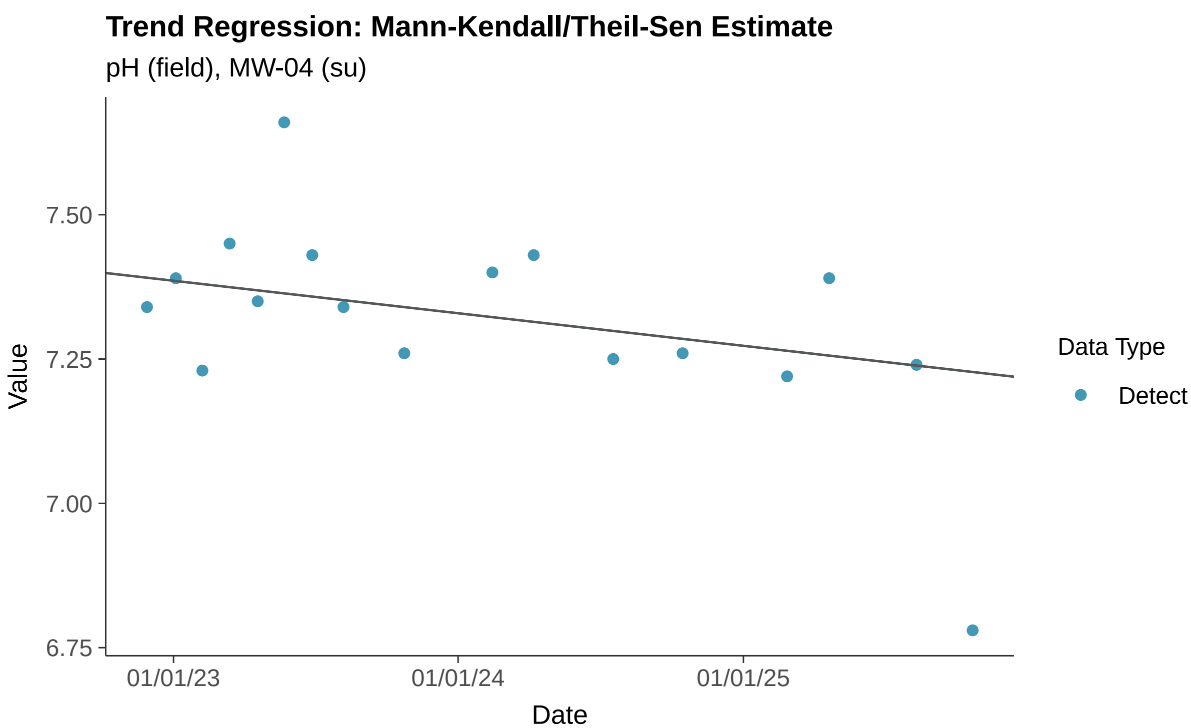
pH (field), MW-04 (su)




Boxplot
pH (field), MW-04 (su)
7.50
7.25
7.00
6.75
Value
Outlier Type
Major
Minor
Data Type
Detect

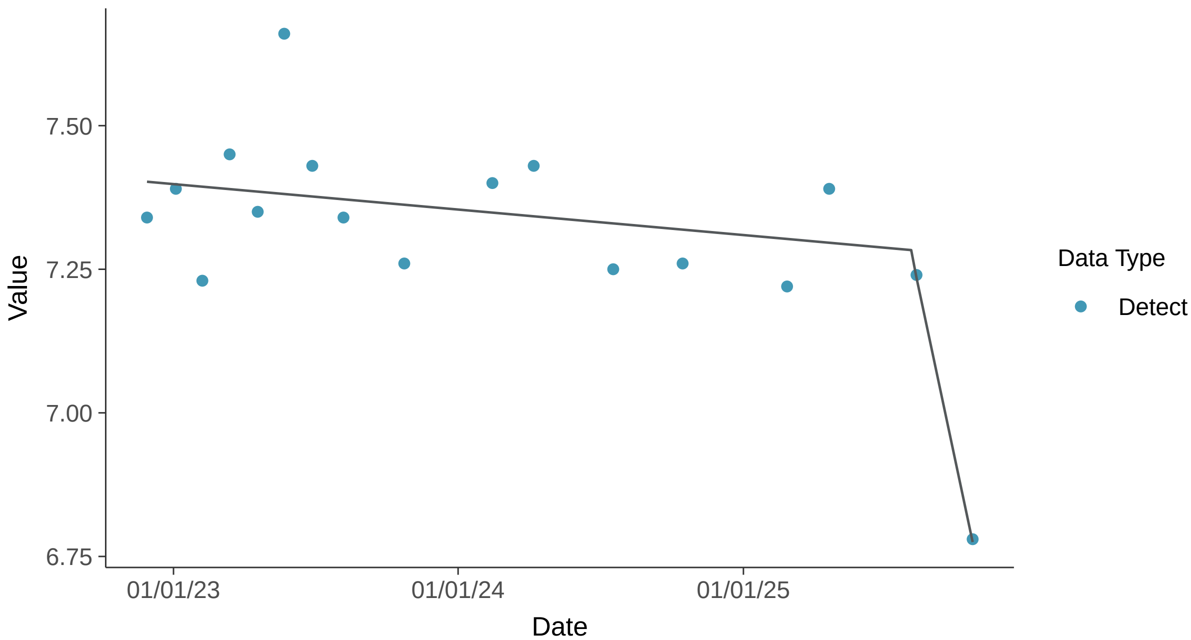

Boxplot by Season
pH (field), MW-04 (su)
7.50
7.25
7.00
6.75
Value
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Major
Minor
Data Type
Detect


Normal Q-Q plot
pH (field), MW-04 (su)
Value
7.50
7.25
7.00
6.75
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Mann-Kendall/Theil-Sen Estimate
pH (field), MW-04 (su)
Value
7.50
7.25
7.00
6.75
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

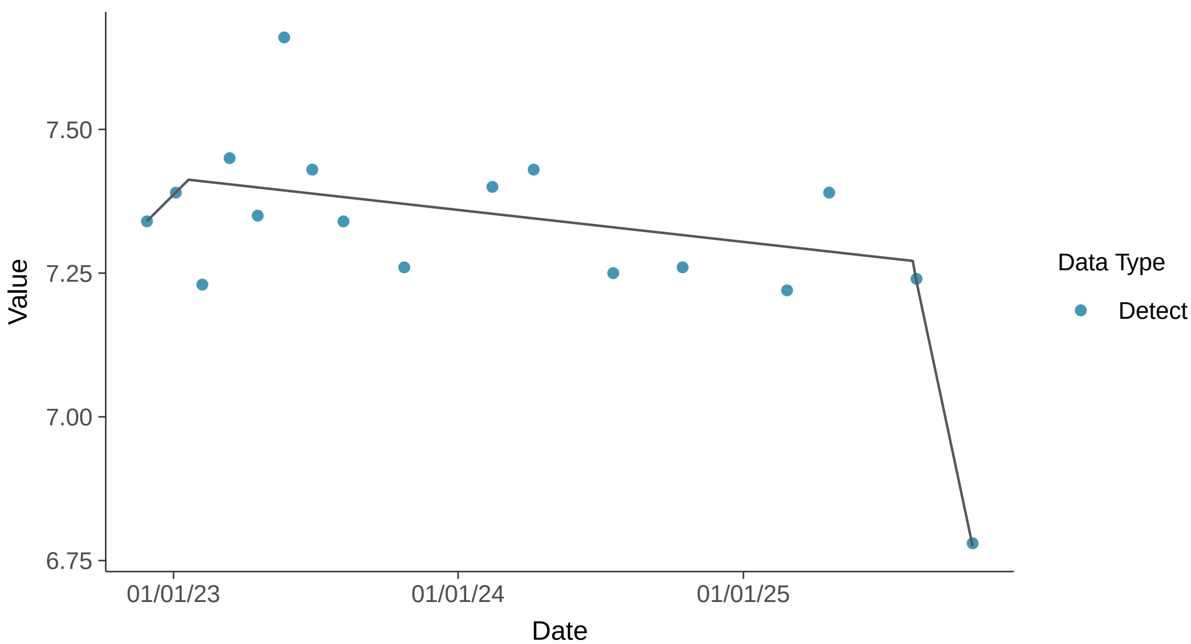
Trend Regression: Piecewise Linear-Linear

pH (field), MW-04 (su)



Trend Regression: Piecewise Linear-Linear-Linear

pH (field), MW-04 (su)

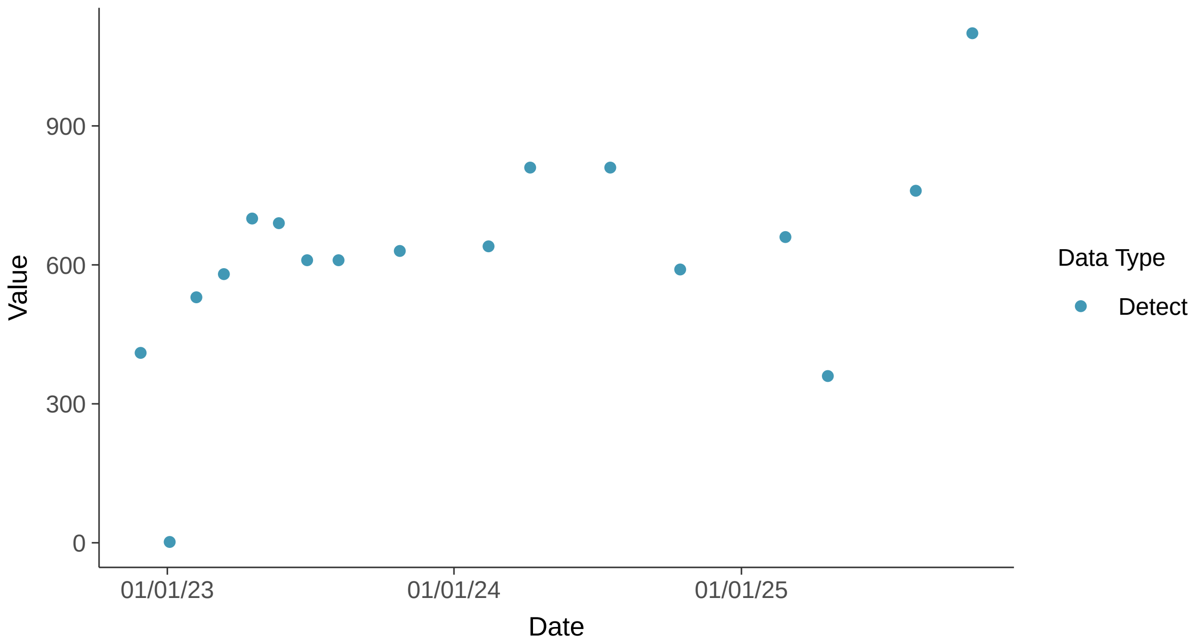


Appendix III: Sulfate (as SO4), MW-04

ID: 14_2_3_124

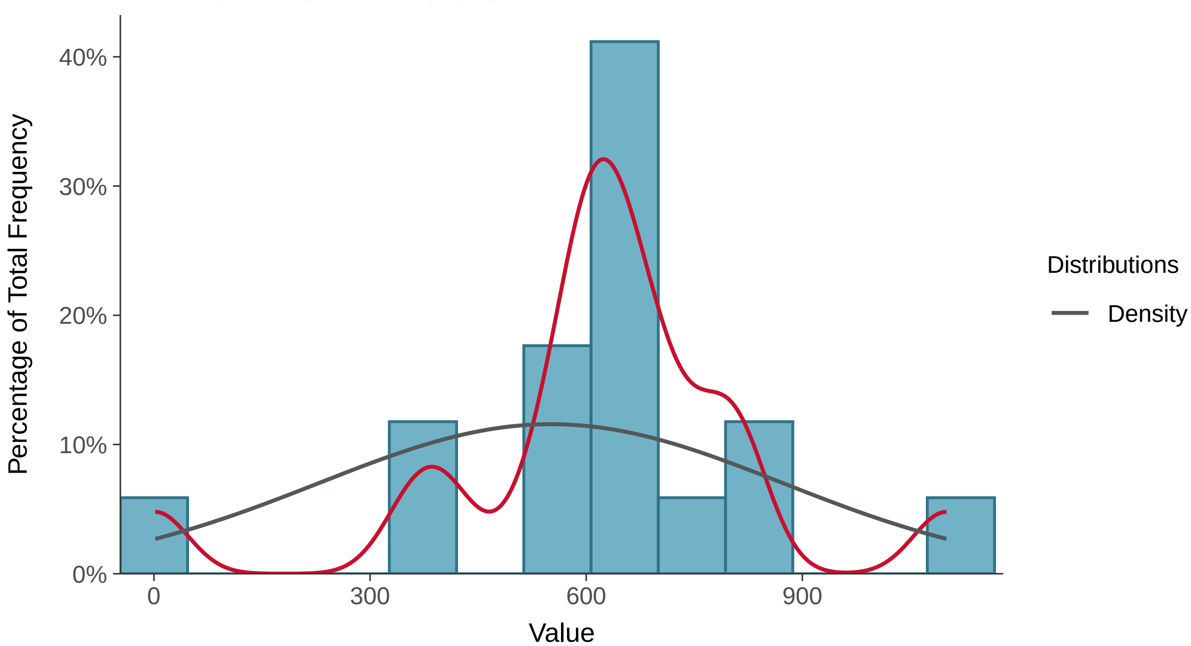
Scatter Plot

Sulfate (as SO4), MW-04 (mg/L)



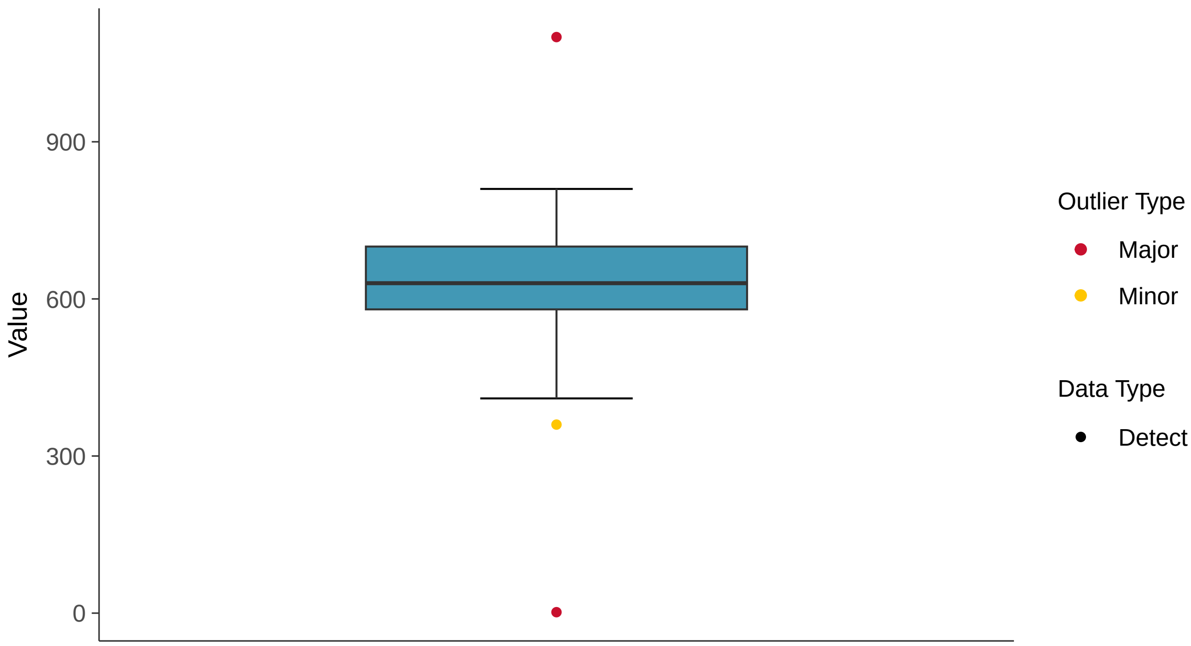
Histogram

Sulfate (as SO4), MW-04 (mg/L)



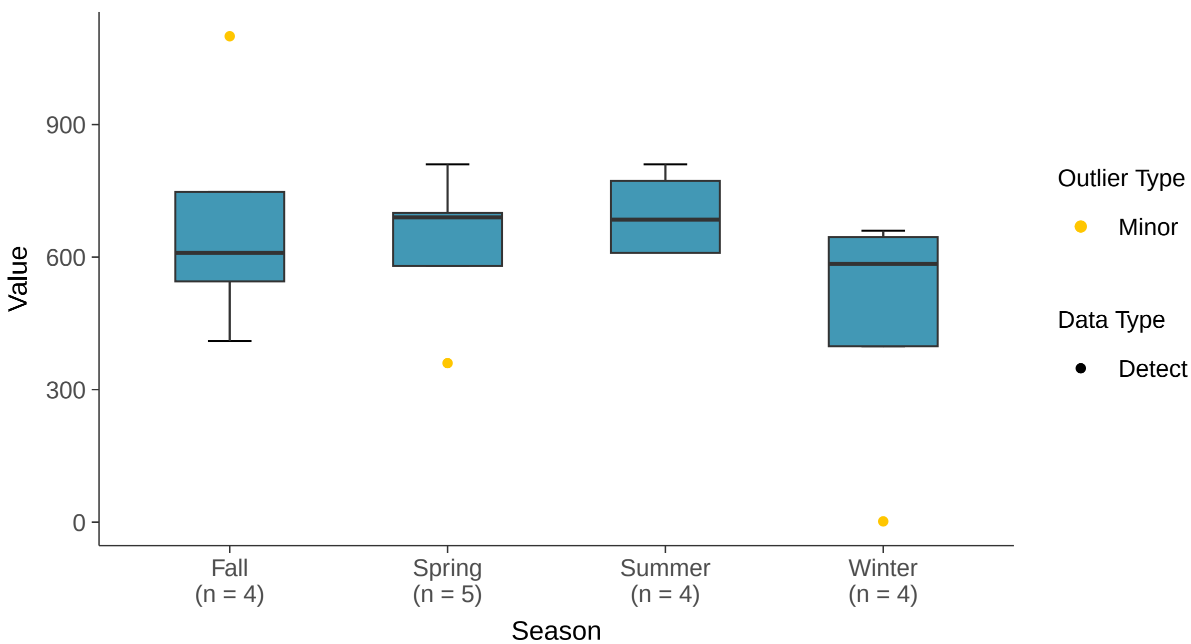
Boxplot

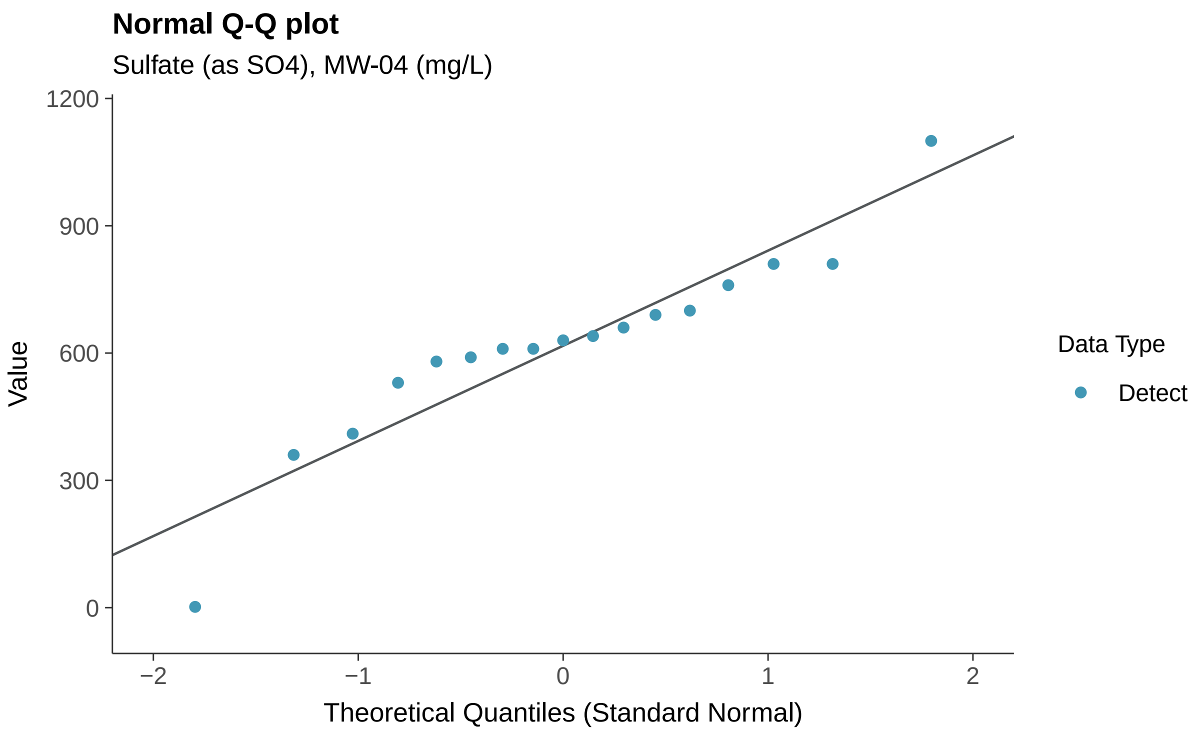
Sulfate (as SO4), MW-04 (mg/L)

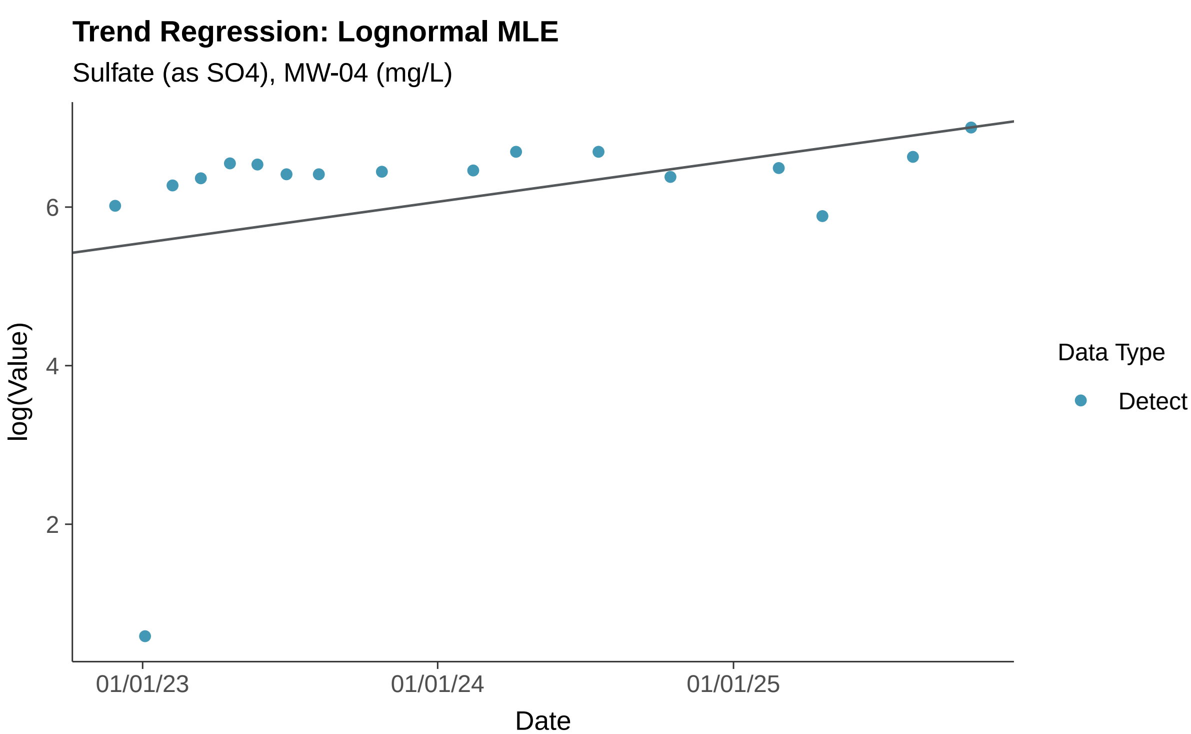


Boxplot by Season

Sulfate (as SO4), MW-04 (mg/L)

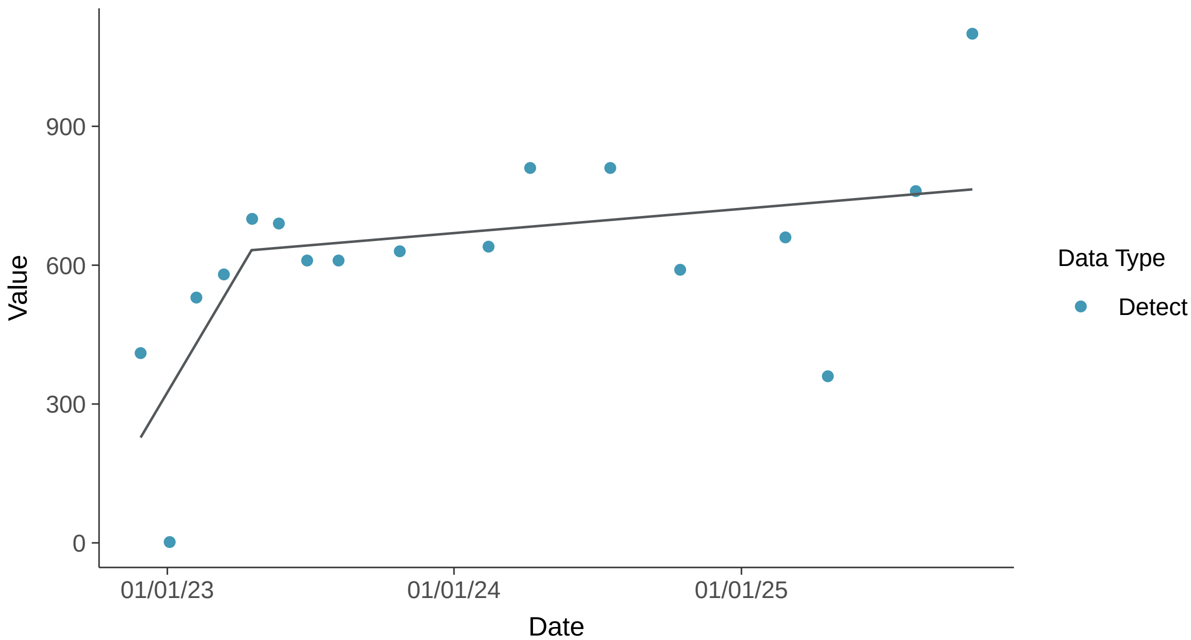



Normal Q-Q plot
Sulfate (as SO4), MW-04 (mg/L)
Value
1200
900
600
300
0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Lognormal MLE
Sulfate (as SO4), MW-04 (mg/L)
log(Value)
6
4
2
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

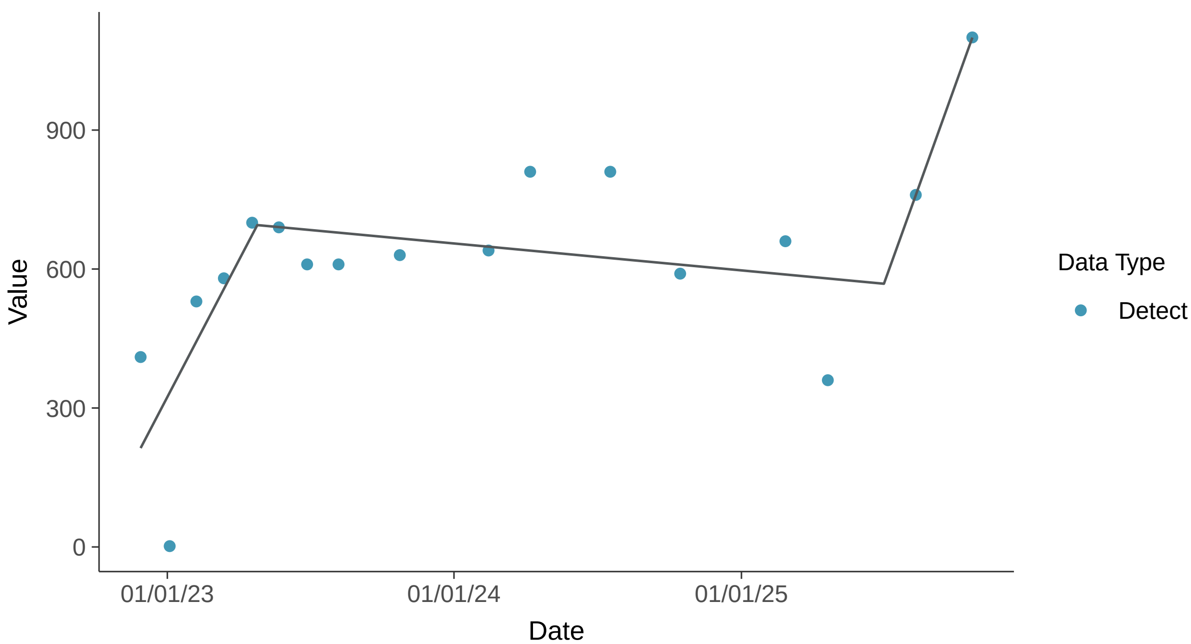
Trend Regression: Piecewise Linear-Linear

Sulfate (as SO4), MW-04 (mg/L)



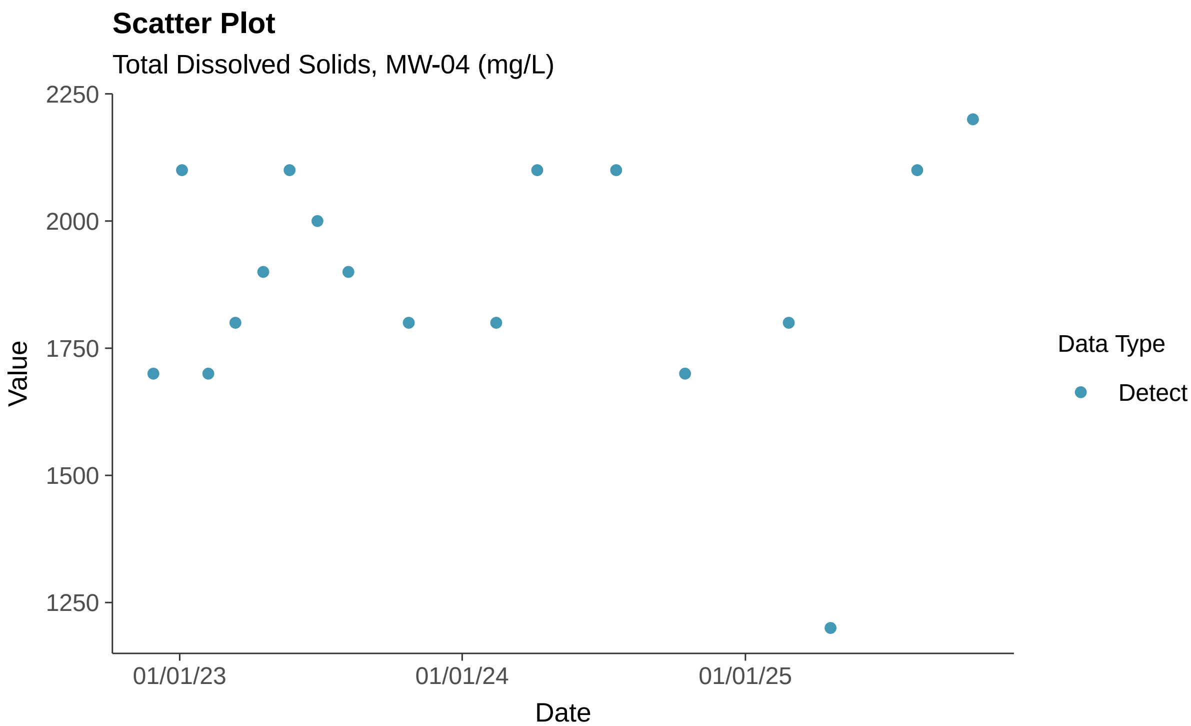
Trend Regression: Piecewise Linear-Linear-Linear

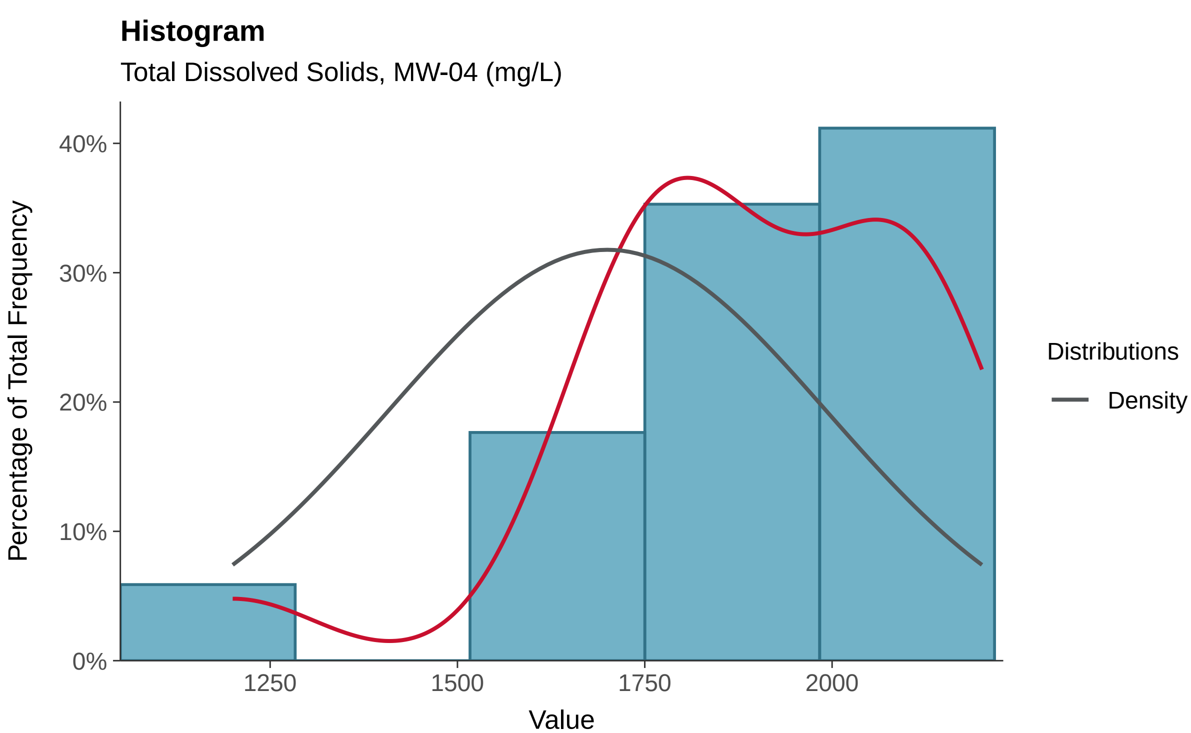
Sulfate (as SO4), MW-04 (mg/L)



Appendix III: Total Dissolved Solids, MW-04

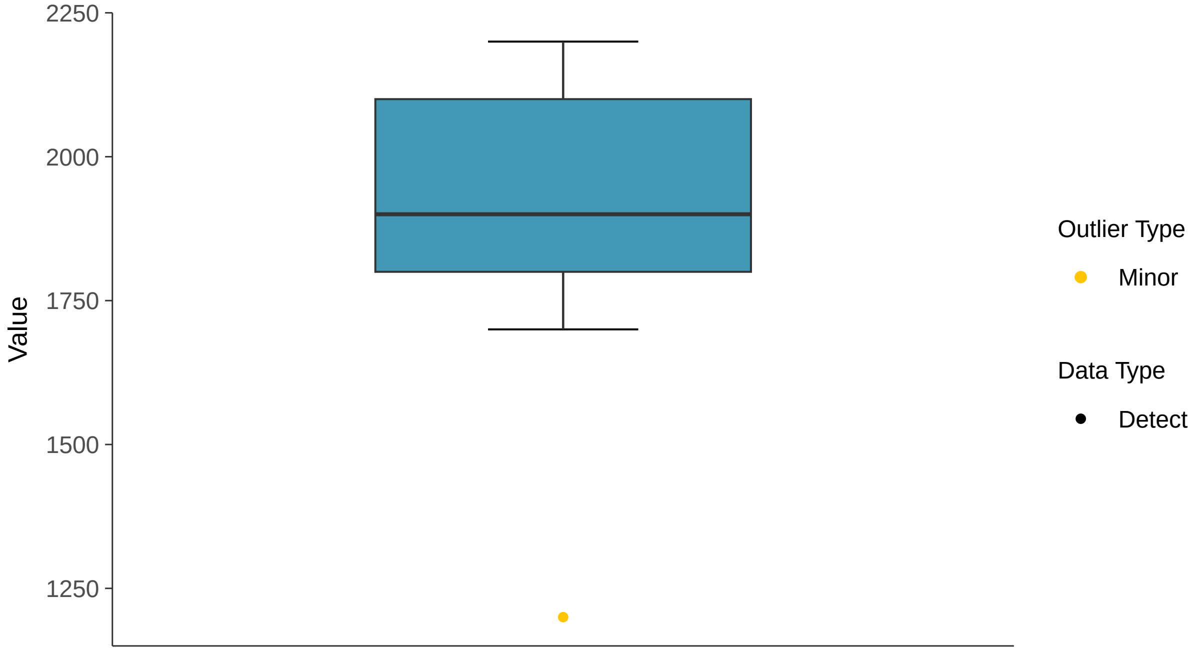
ID: 14_2_3_126





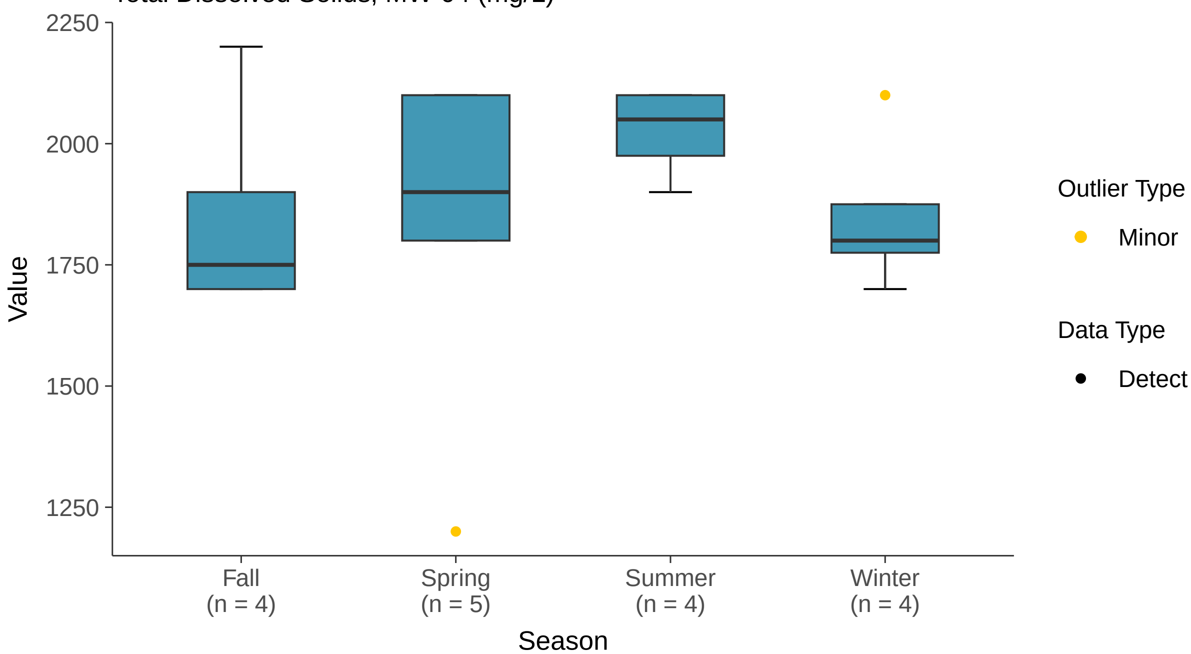
Boxplot

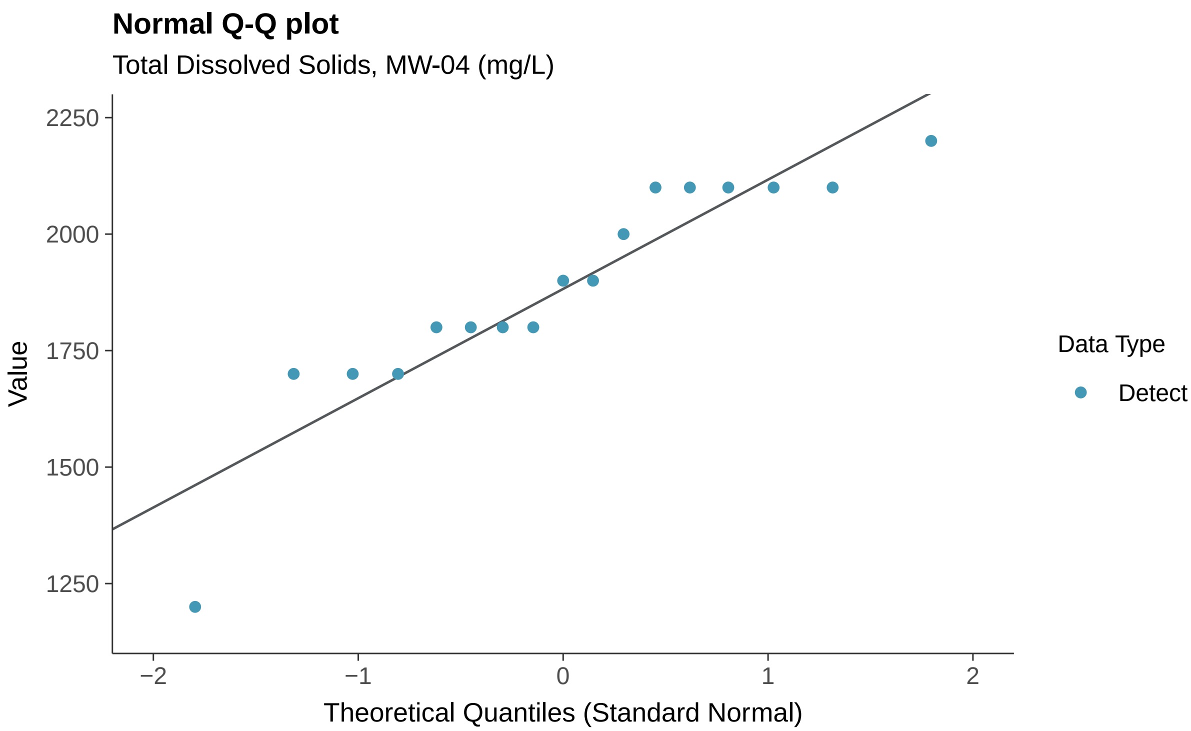
Total Dissolved Solids, MW-04 (mg/L)

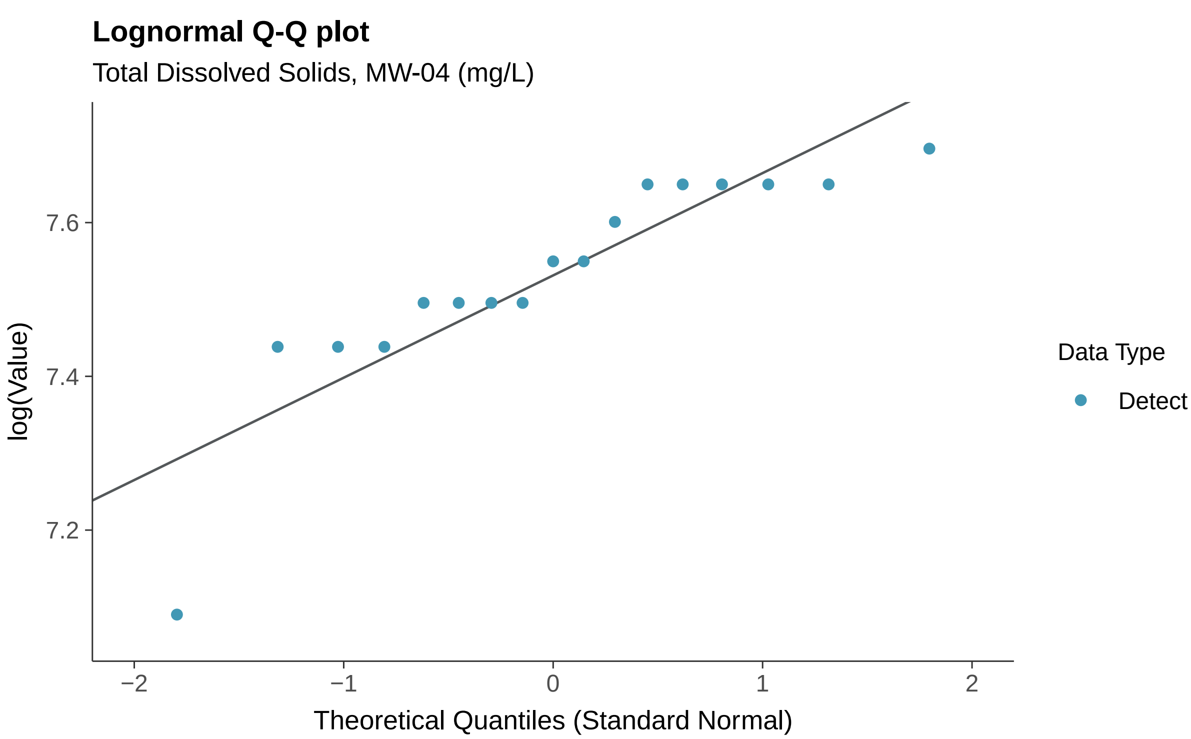


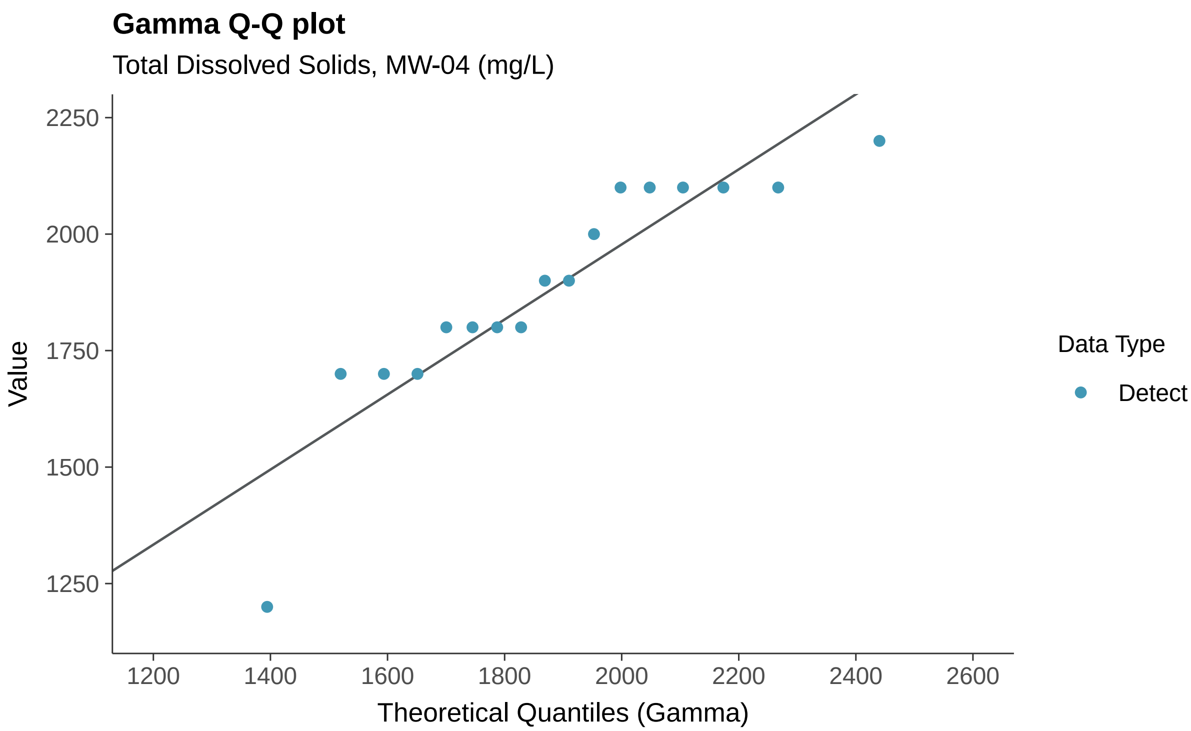
Boxplot by Season

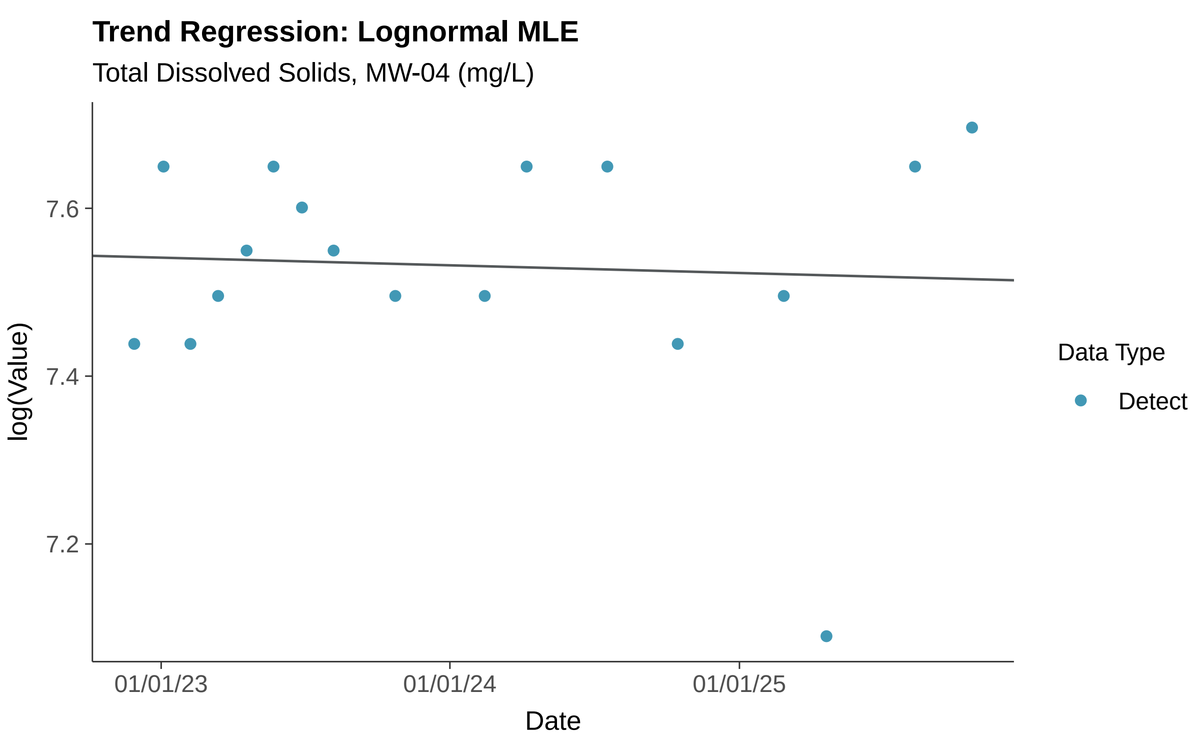
Total Dissolved Solids, MW-04 (mg/L)




Normal Q-Q plot
Total Dissolved Solids, MW-04 (mg/L)
Value
2250
2000
1750
1500
1250
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

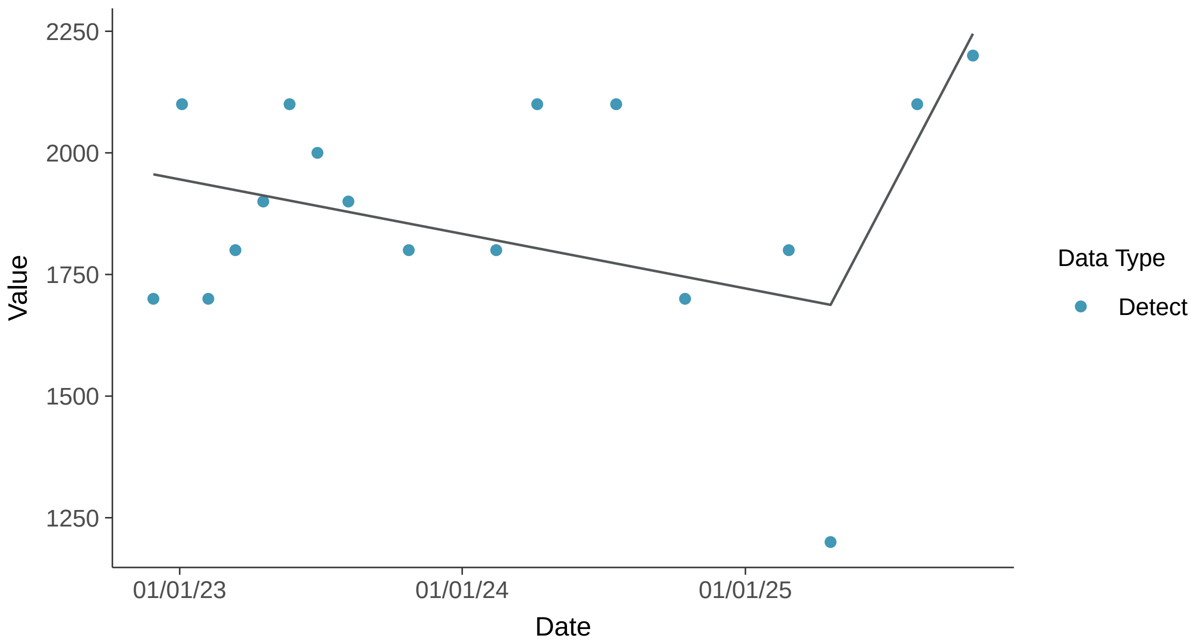

Lognormal Q-Q plot
Total Dissolved Solids, MW-04 (mg/L)
log(Value)
7.6
7.4
7.2
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Total Dissolved Solids, MW-04 (mg/L)
Value
2250
2000
1750
1500
1250
1200
1400
1600
1800
2000
2200
2400
2600
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Total Dissolved Solids, MW-04 (mg/L)
log(Value)
7.6
7.4
7.2
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear

Total Dissolved Solids, MW-04 (mg/L)

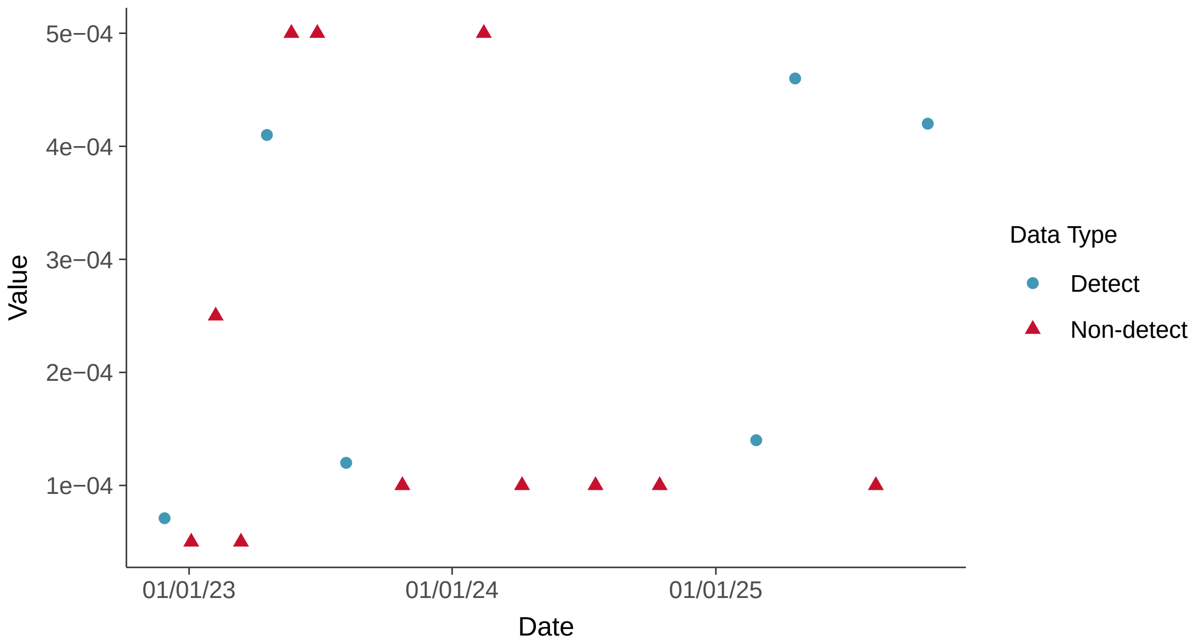


Appendix IV: Antimony, MW-04

ID: 14_2_4_101

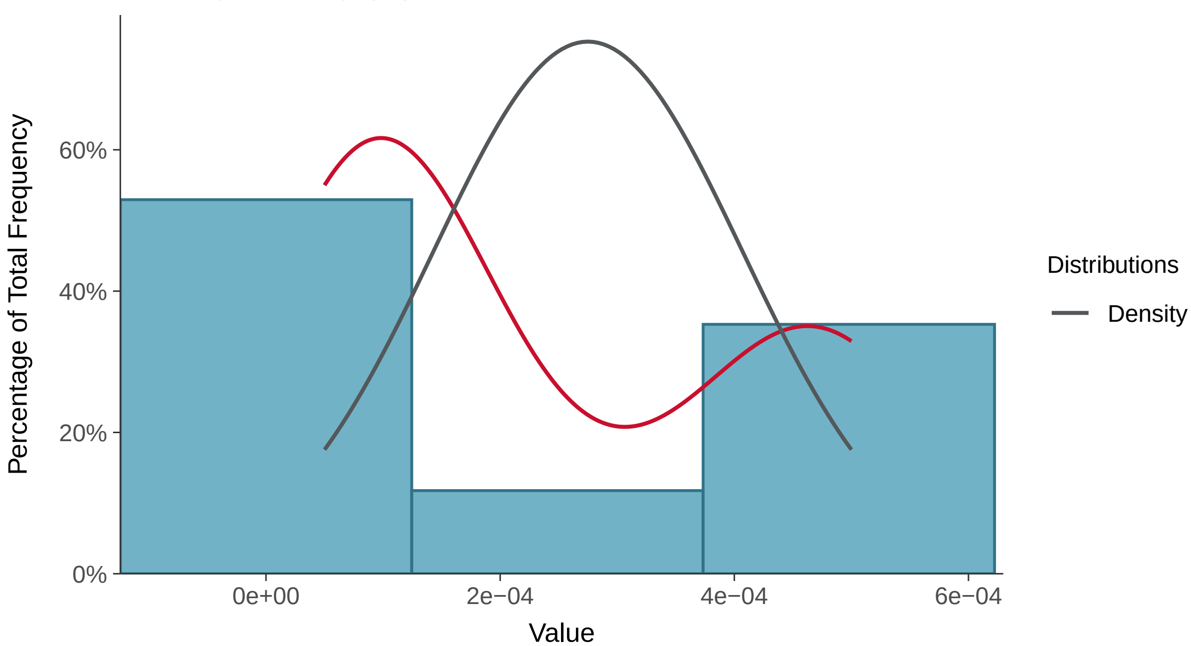
Scatter Plot

Antimony, MW-04 (mg/L)



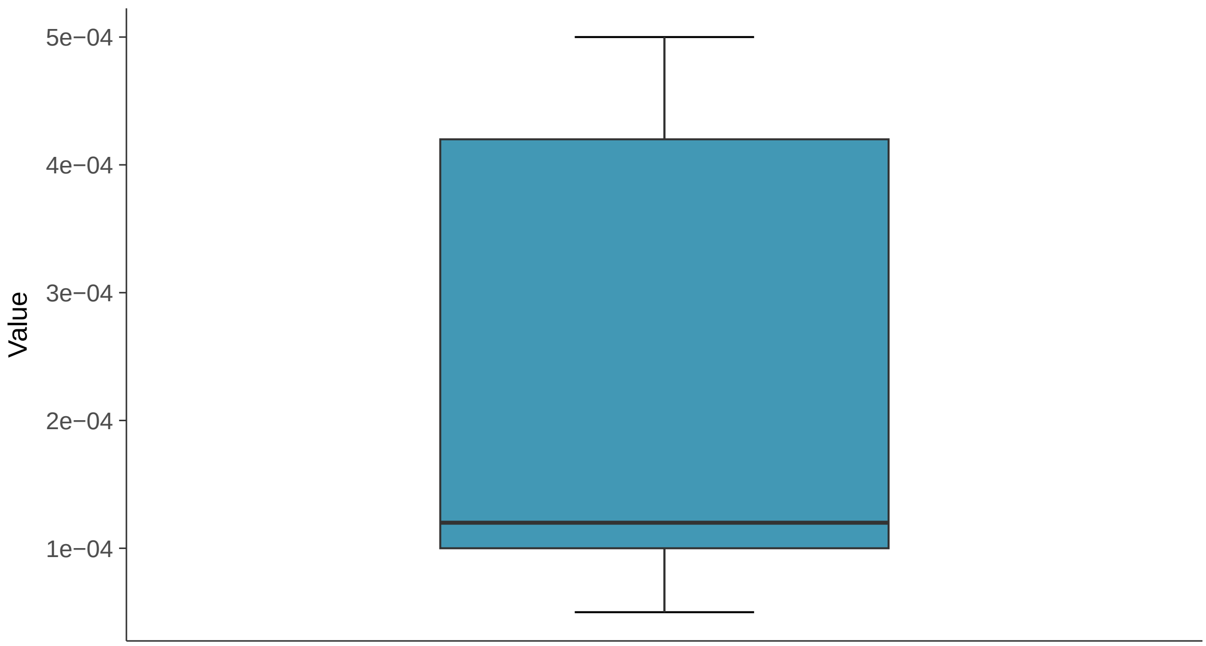
Histogram

Antimony, MW-04 (mg/L)



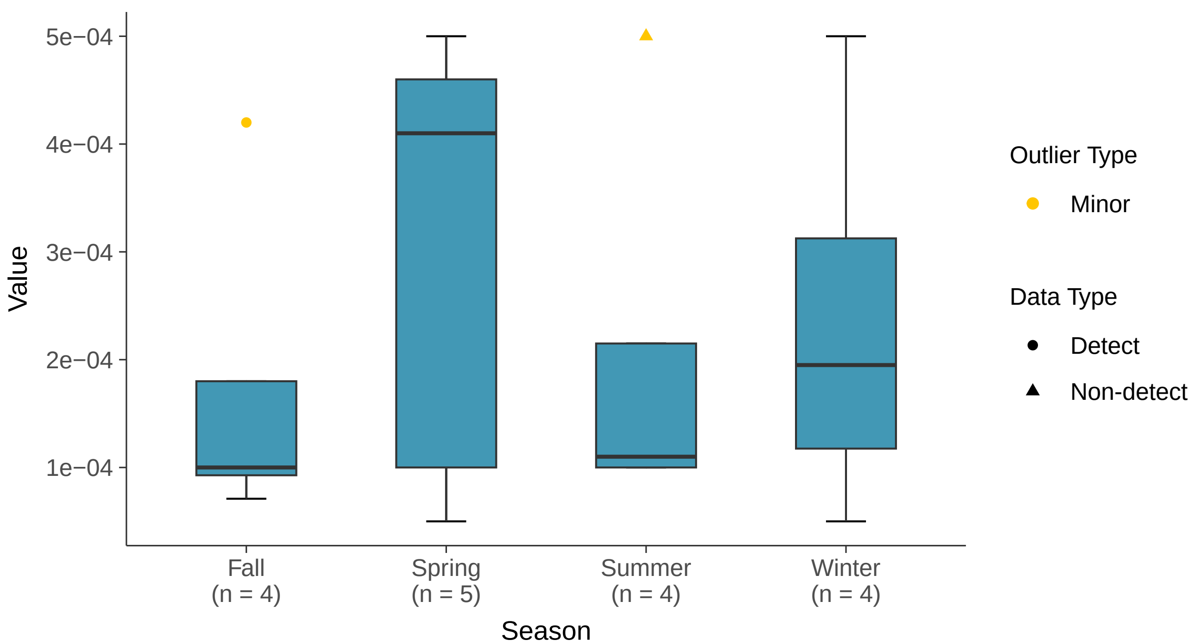
Boxplot

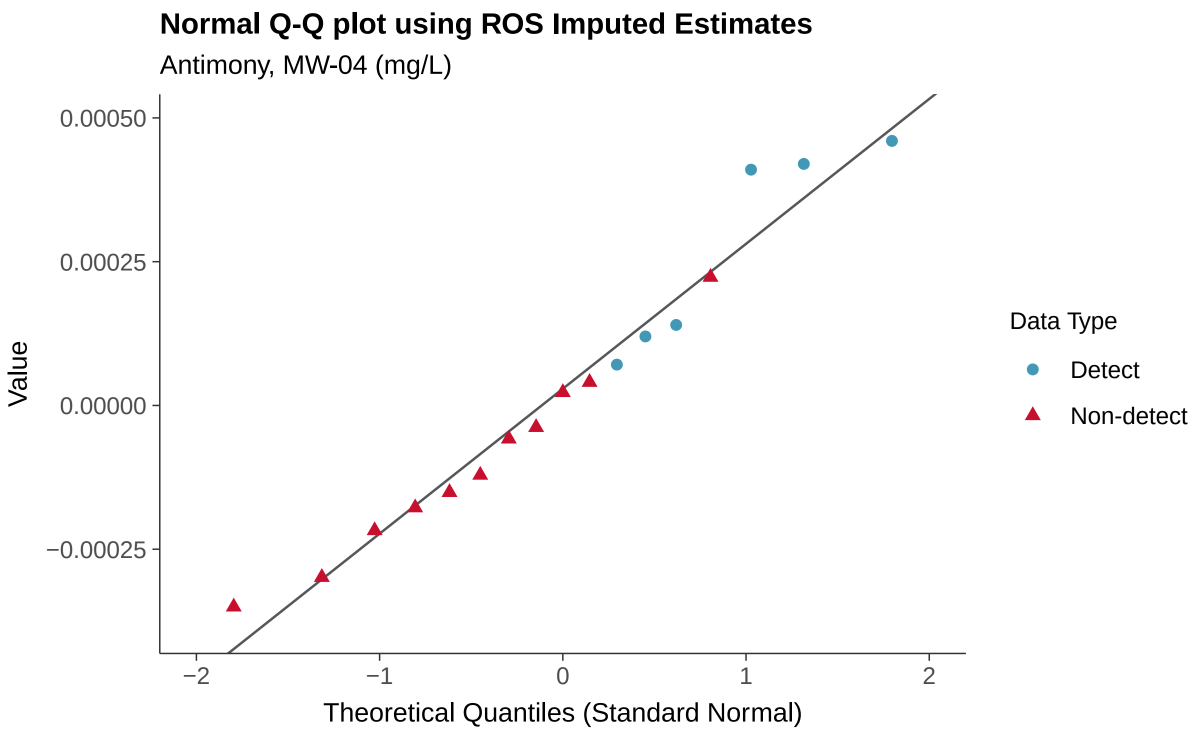
Antimony, MW-04 (mg/L)

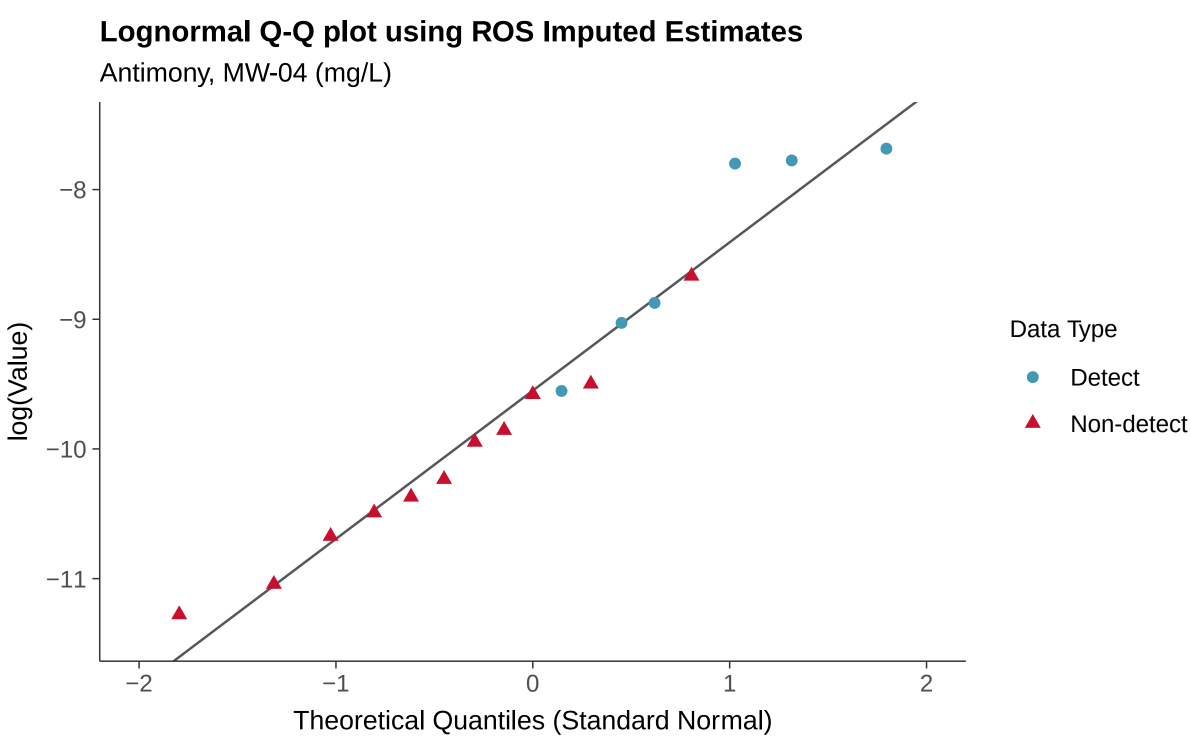


Boxplot by Season

Antimony, MW-04 (mg/L)

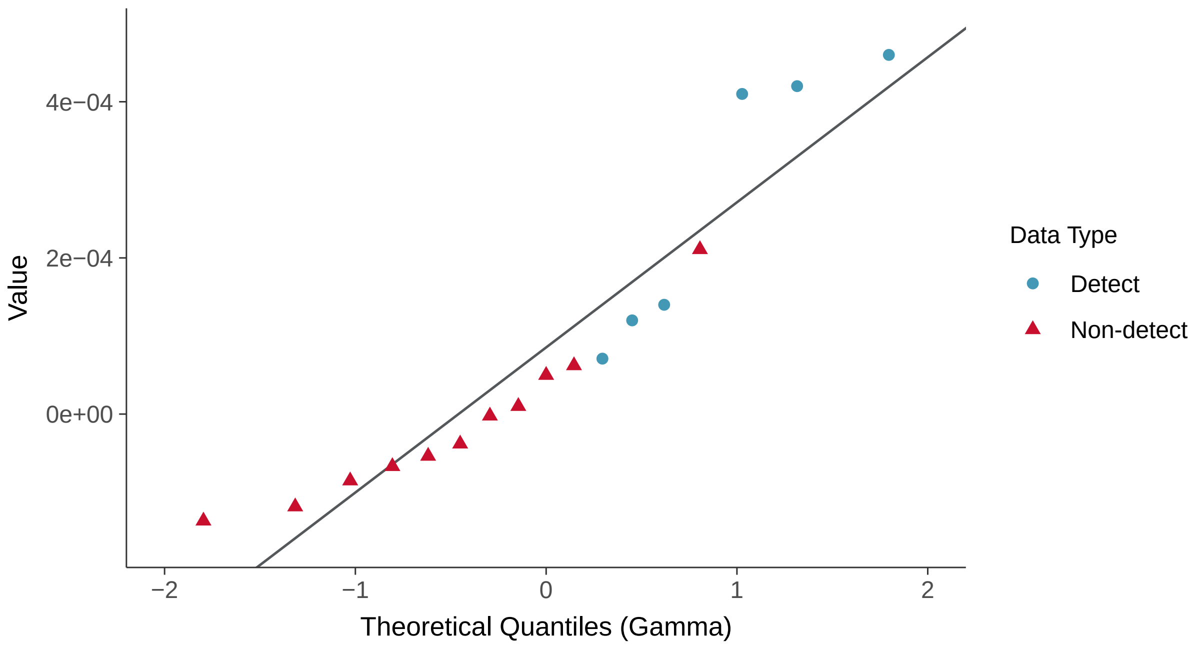



Normal Q-Q plot using ROS Imputed Estimates
Antimony, MW-04 (mg/L)
Value
0.00050
0.00025
0.00000
−0.00025
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Lognormal Q-Q plot using ROS Imputed Estimates
Antimony, MW-04 (mg/L)
log(Value)
−8
−9
−10
−11
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

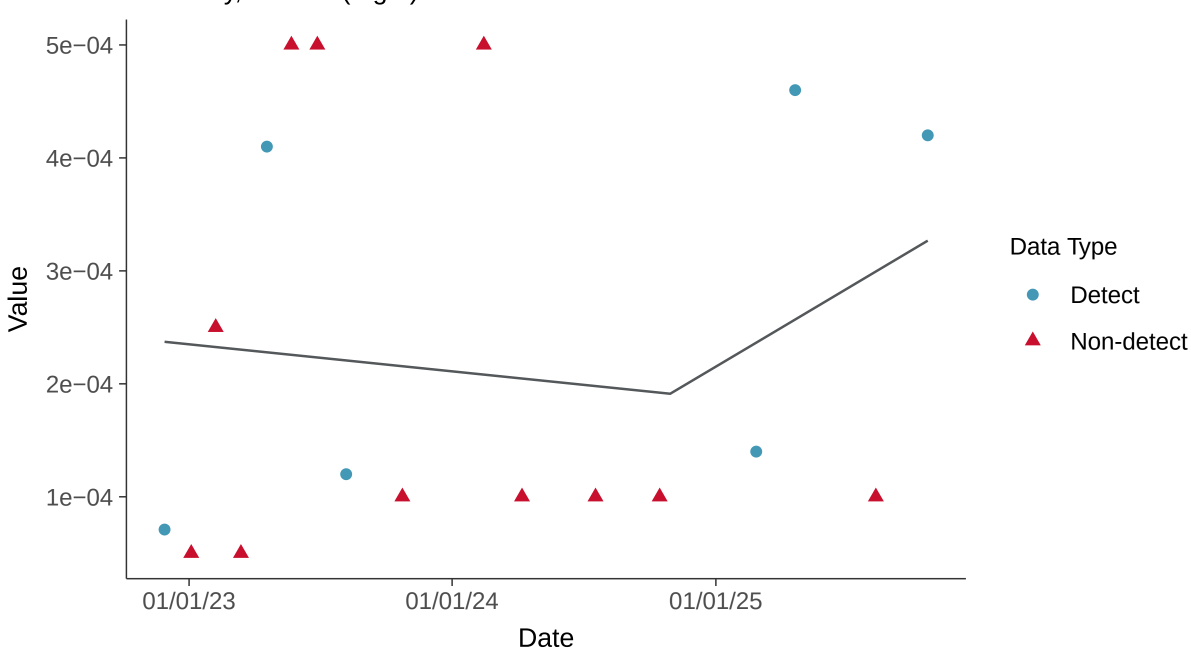
Gamma Q-Q plot using ROS Imputed Estimates

Antimony, MW-04 (mg/L)



Trend Regression: Piecewise Linear-Linear

Antimony, MW-04 (mg/L)

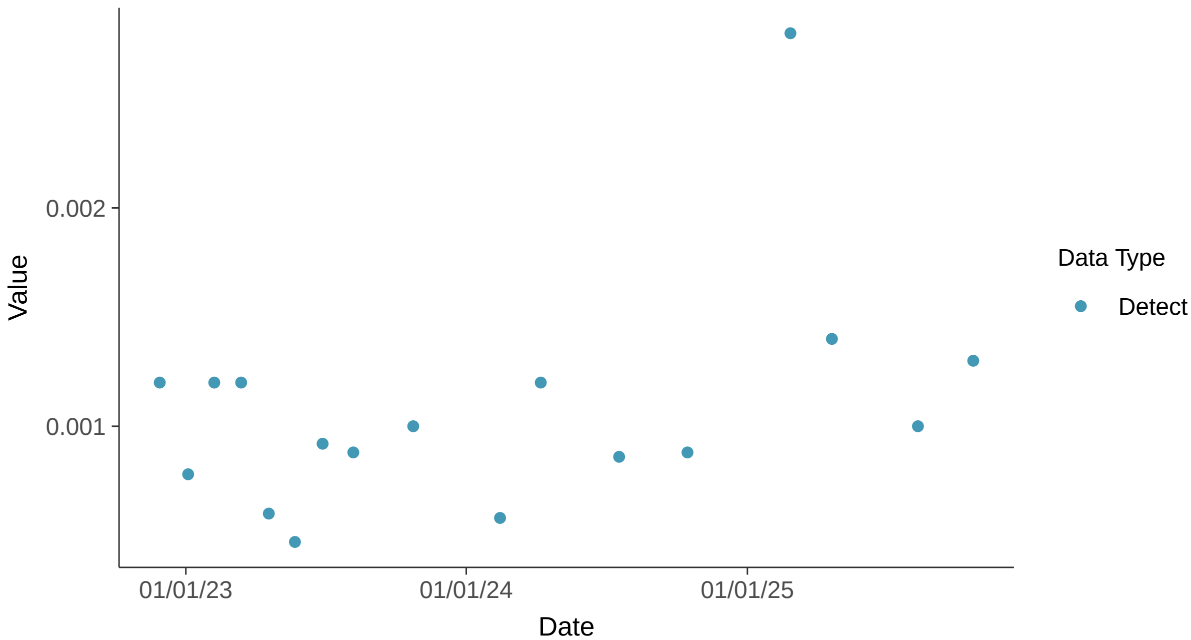


Appendix IV: Arsenic, MW-04

ID: 14_2_4_102

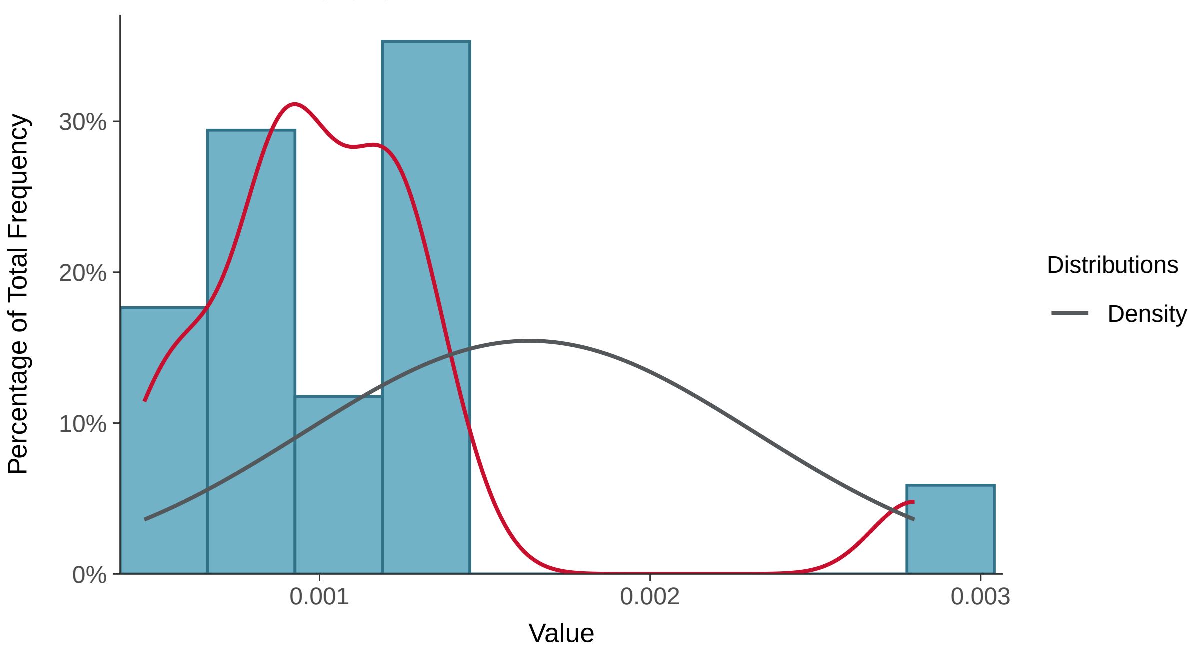
Scatter Plot

Arsenic, MW-04 (mg/L)



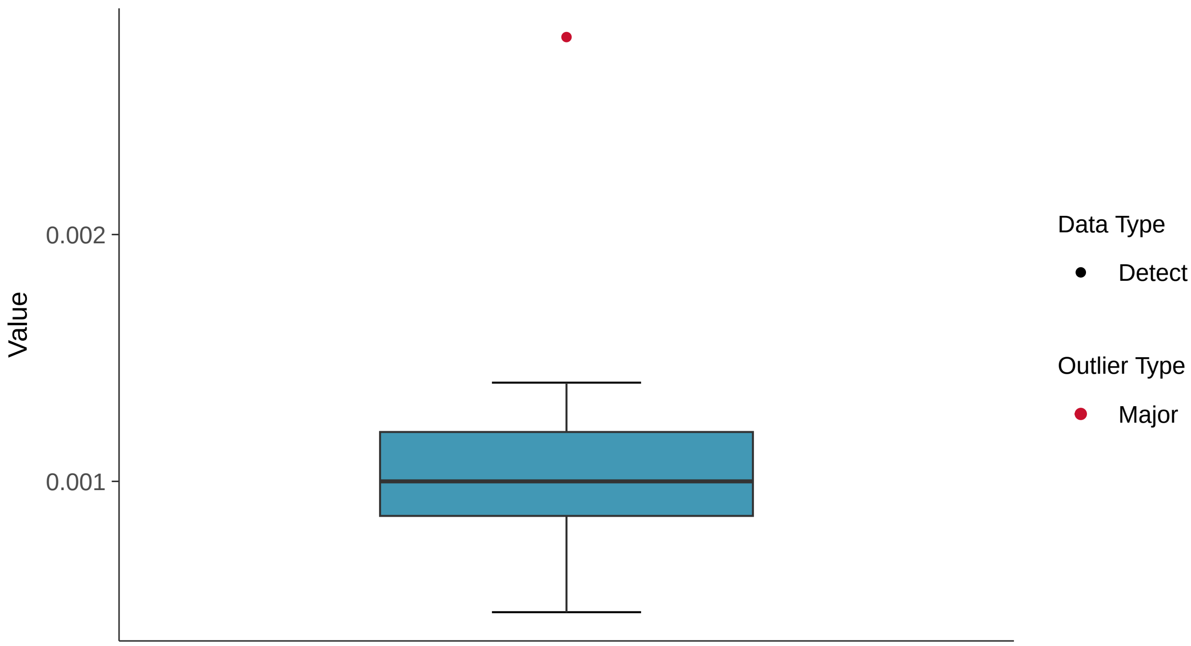
Histogram

Arsenic, MW-04 (mg/L)



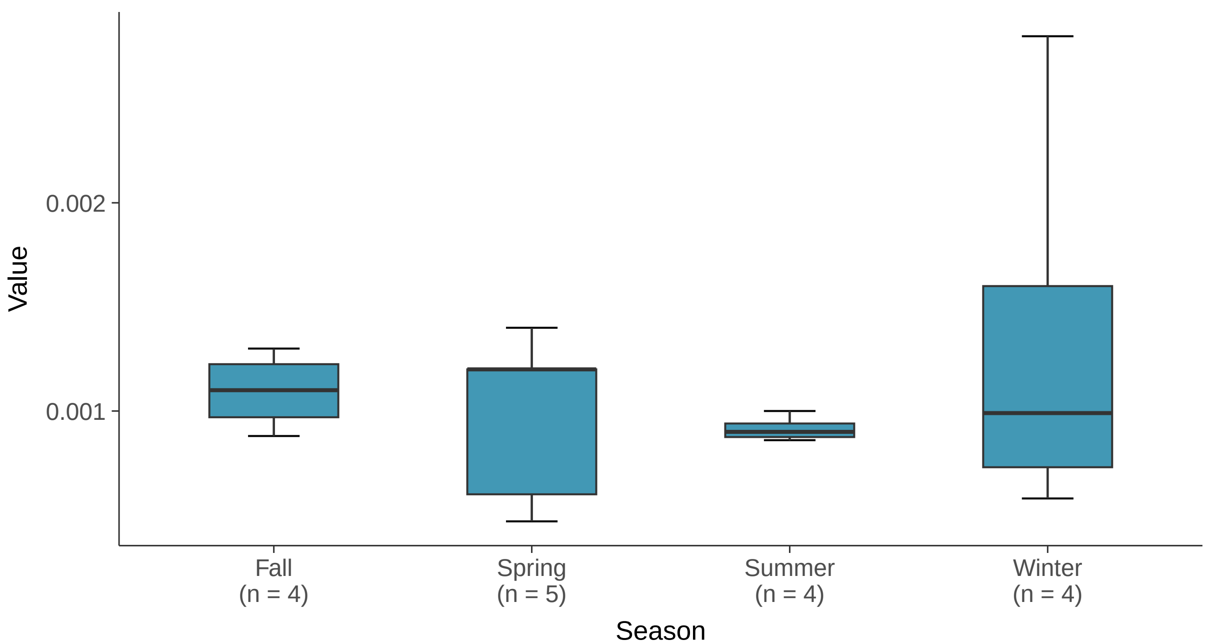
Boxplot

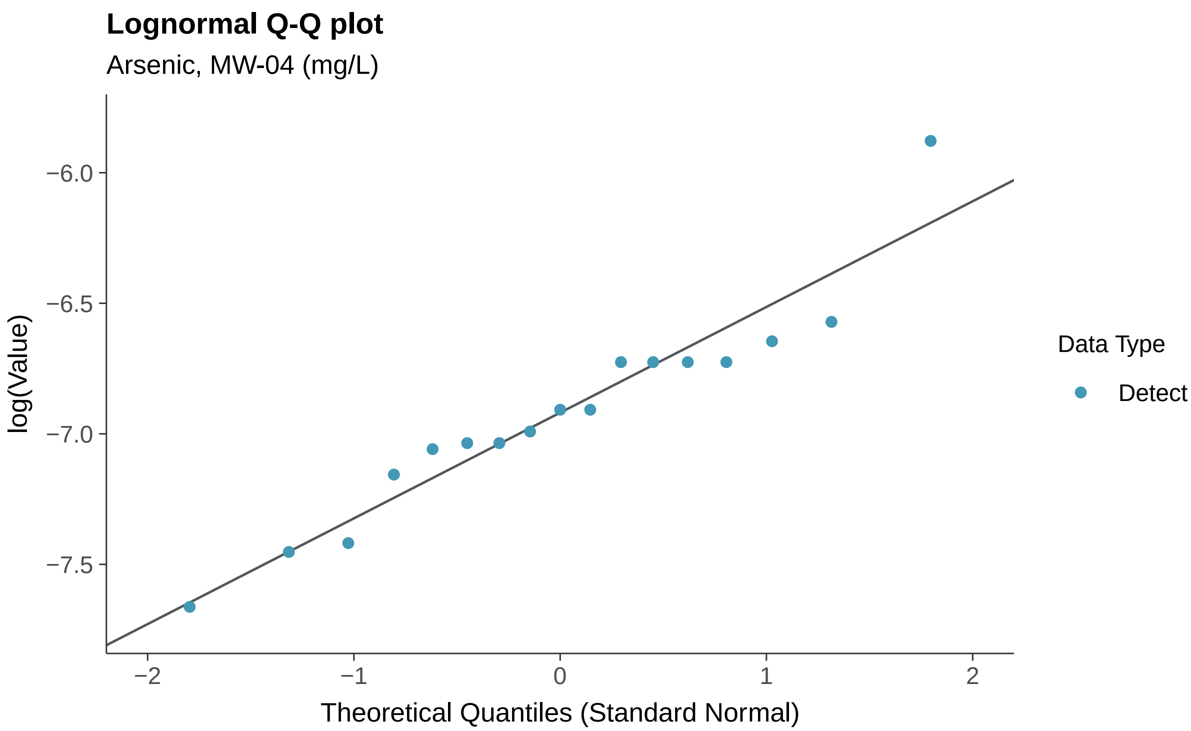
Arsenic, MW-04 (mg/L)

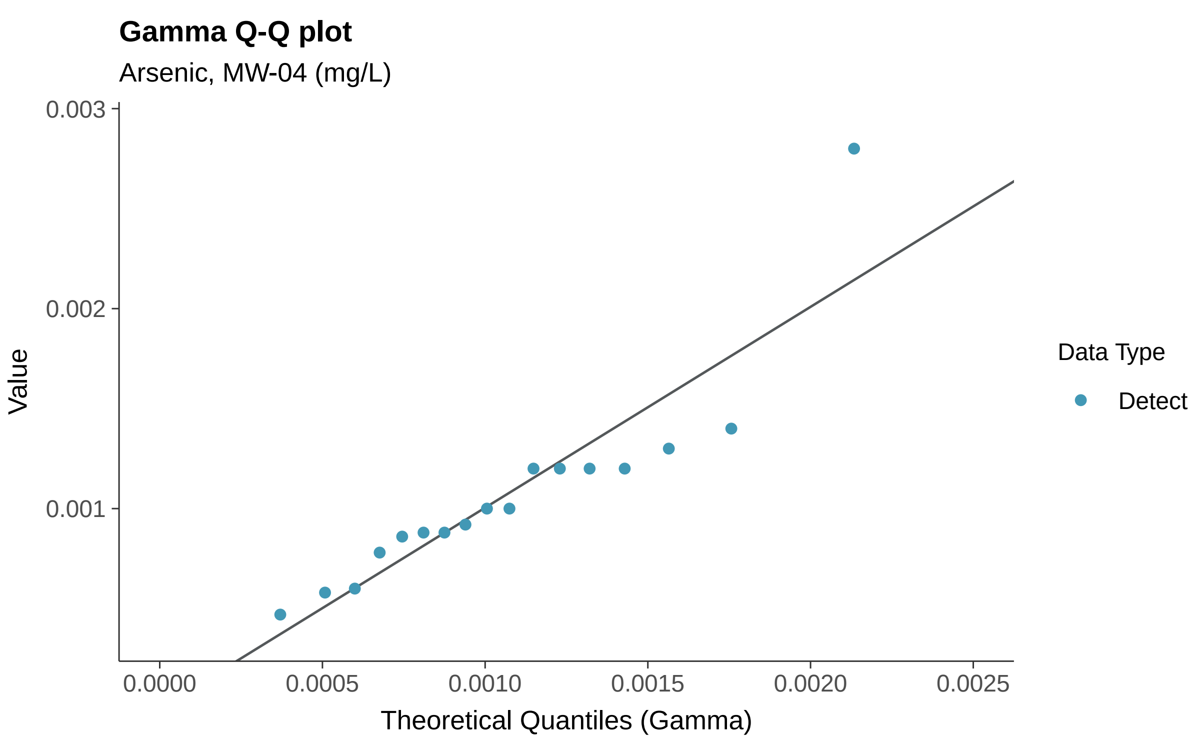


Boxplot by Season

Arsenic, MW-04 (mg/L)

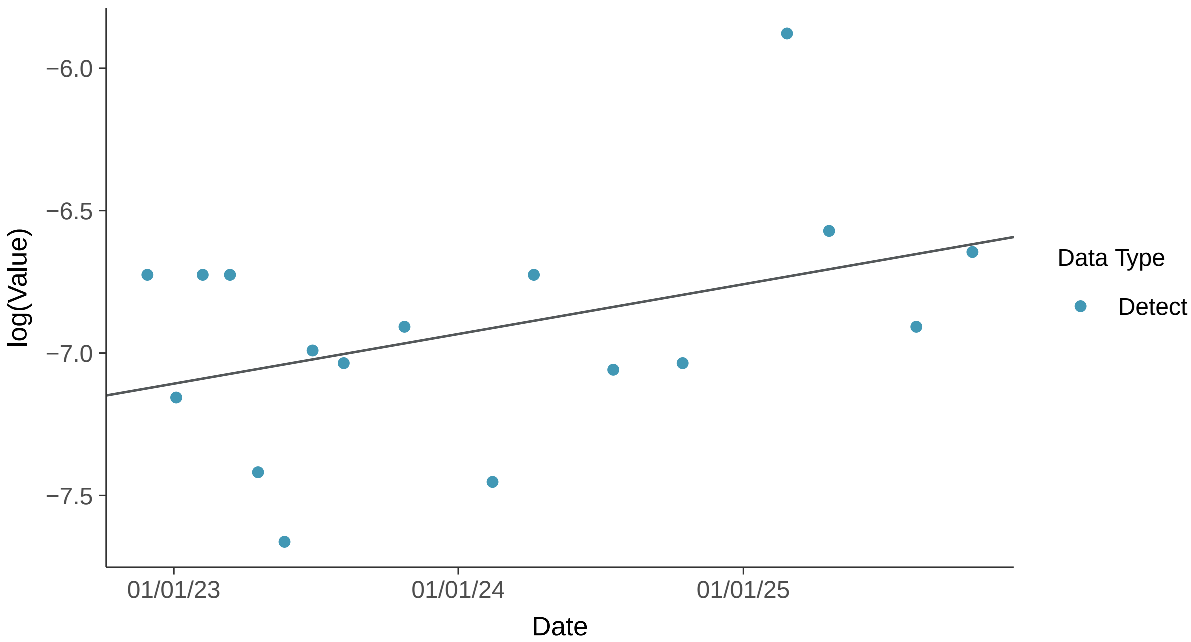



Lognormal Q-Q plot
Arsenic, MW-04 (mg/L)
log(Value)
−6.0
−6.5
−7.0
−7.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Arsenic, MW-04 (mg/L)
Value
0.003
0.002
0.001
0.0000
0.0005
0.0010
0.0015
0.0020
0.0025
Theoretical Quantiles (Gamma)
Data Type
Detect

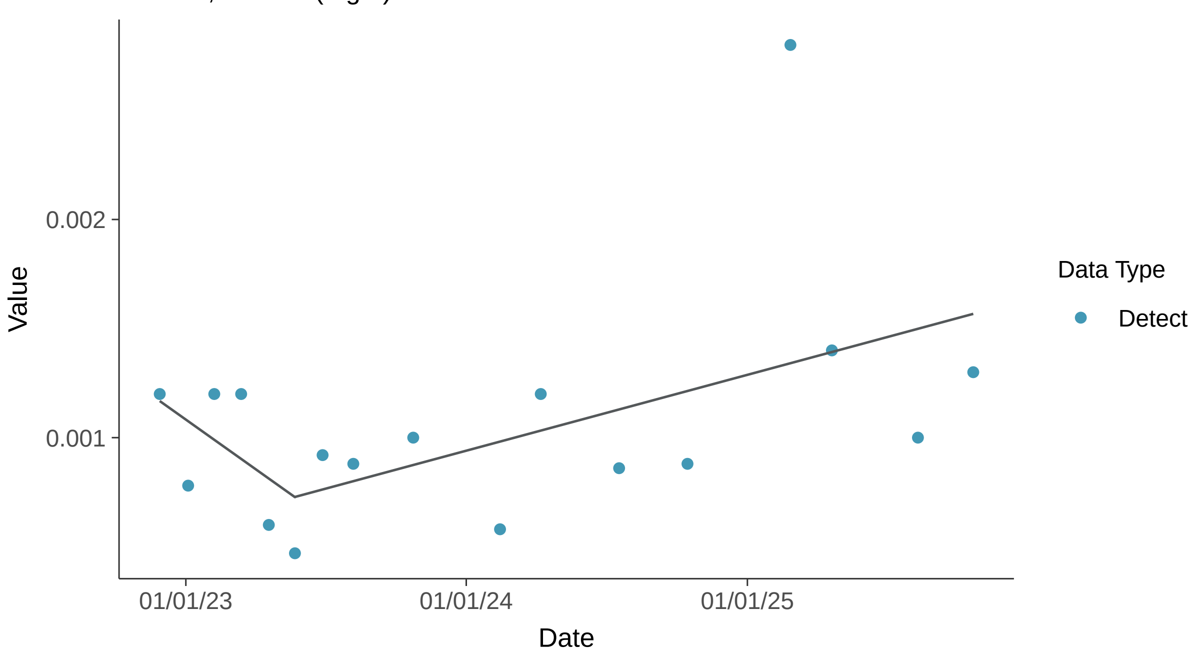
Trend Regression: Lognormal MLE

Arsenic, MW-04 (mg/L)



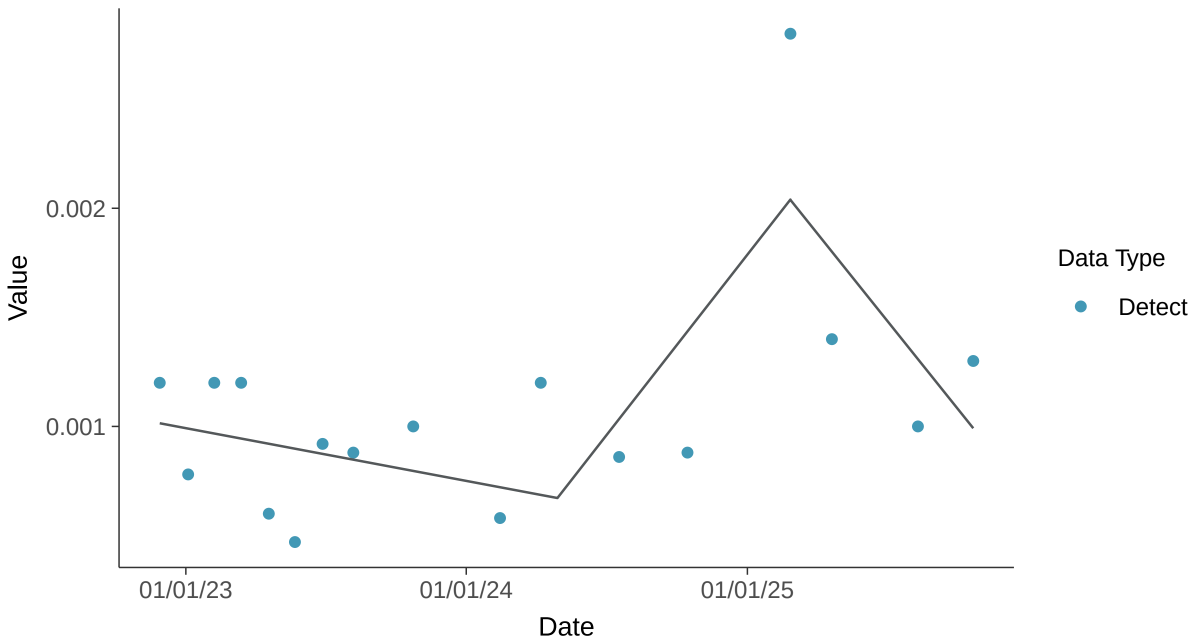
Trend Regression: Piecewise Linear-Linear

Arsenic, MW-04 (mg/L)



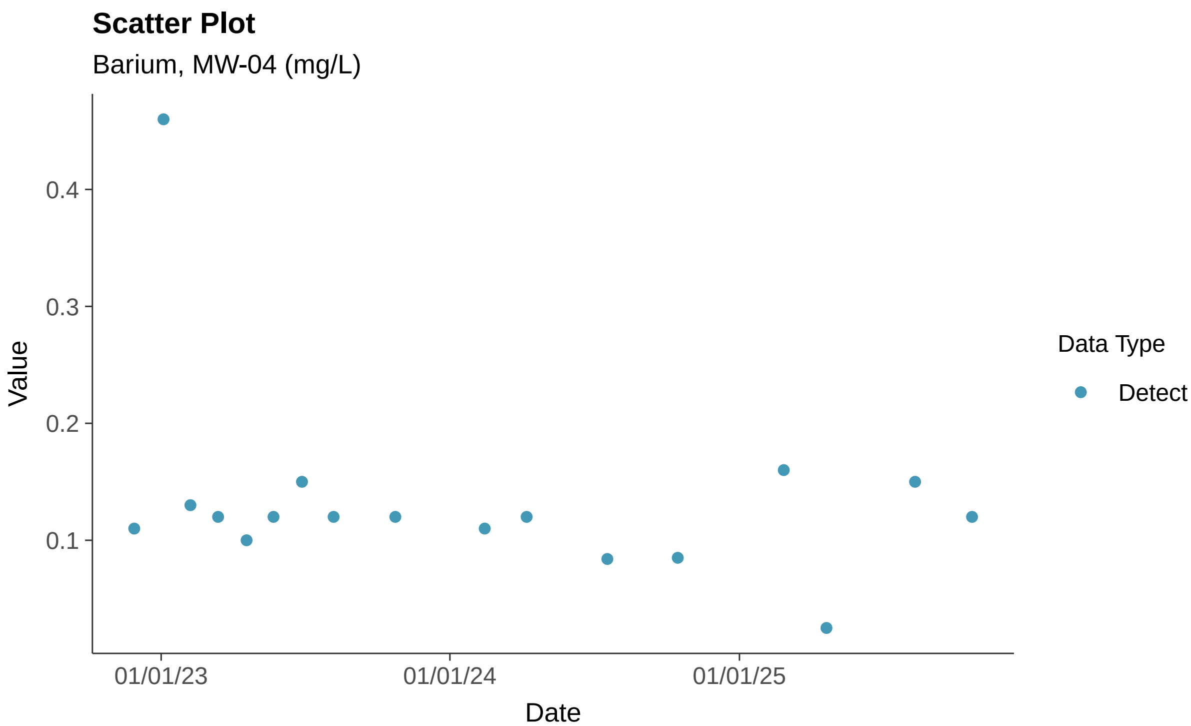
Trend Regression: Piecewise Linear-Linear-Linear

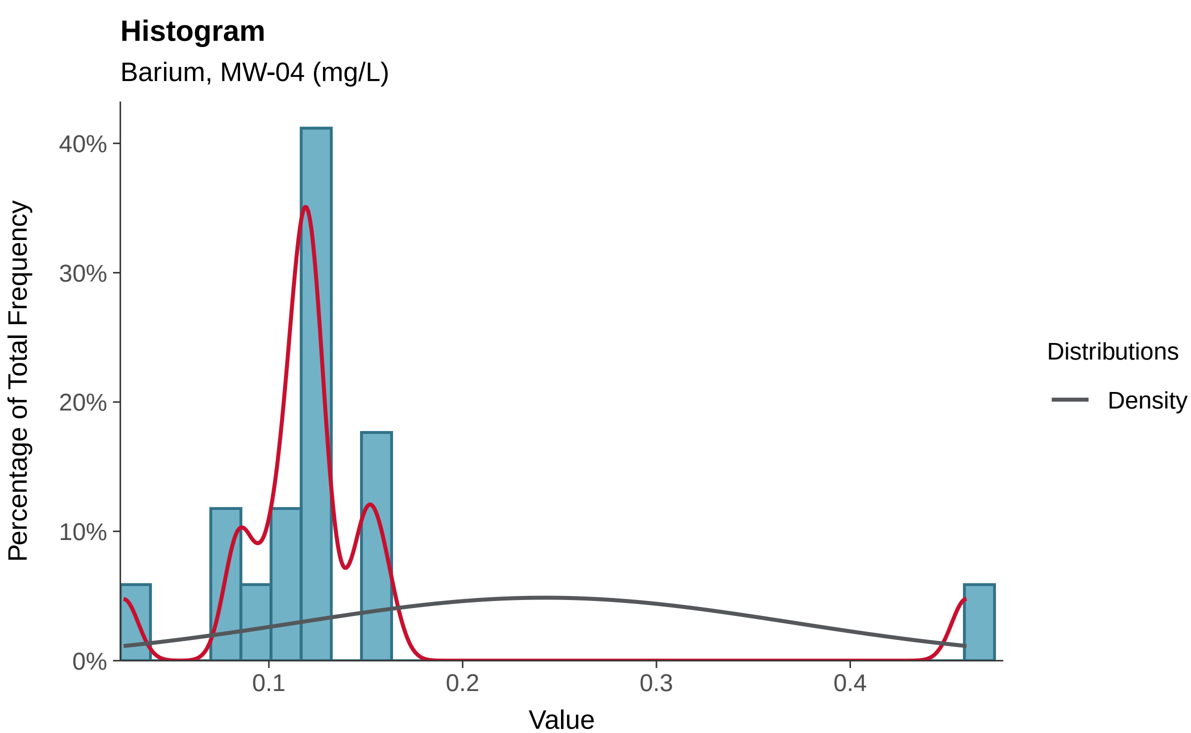
Arsenic, MW-04 (mg/L)



Appendix IV: Barium, MW-04

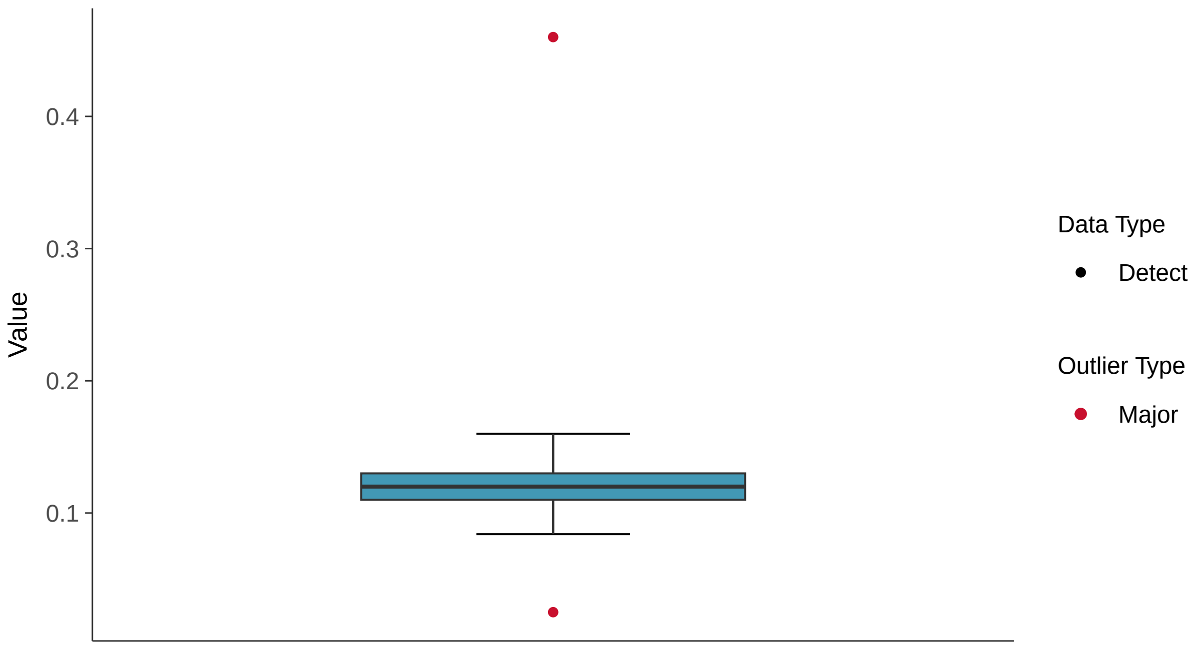
ID: 14_2_4_103





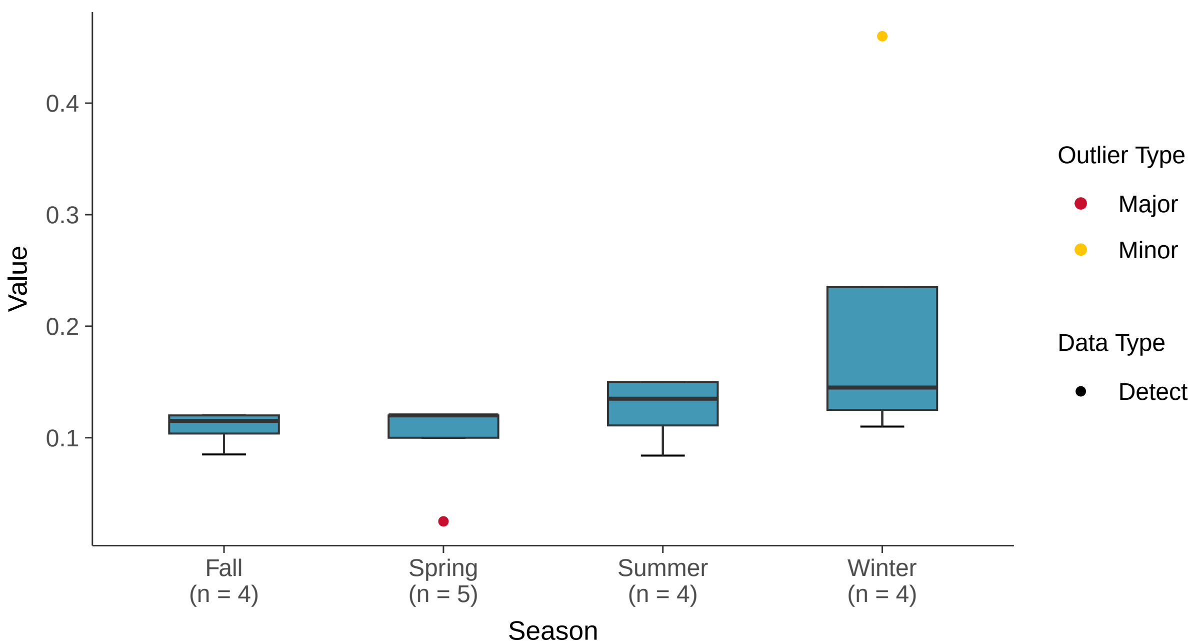
Boxplot

Barium, MW-04 (mg/L)



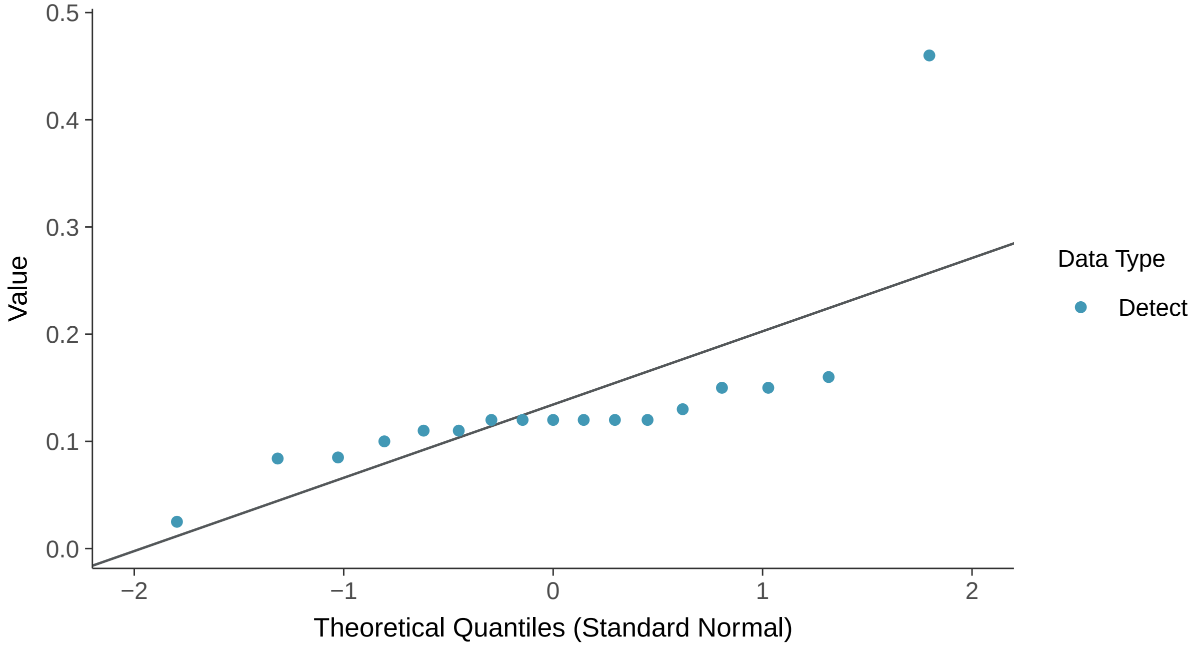
Boxplot by Season

Barium, MW-04 (mg/L)



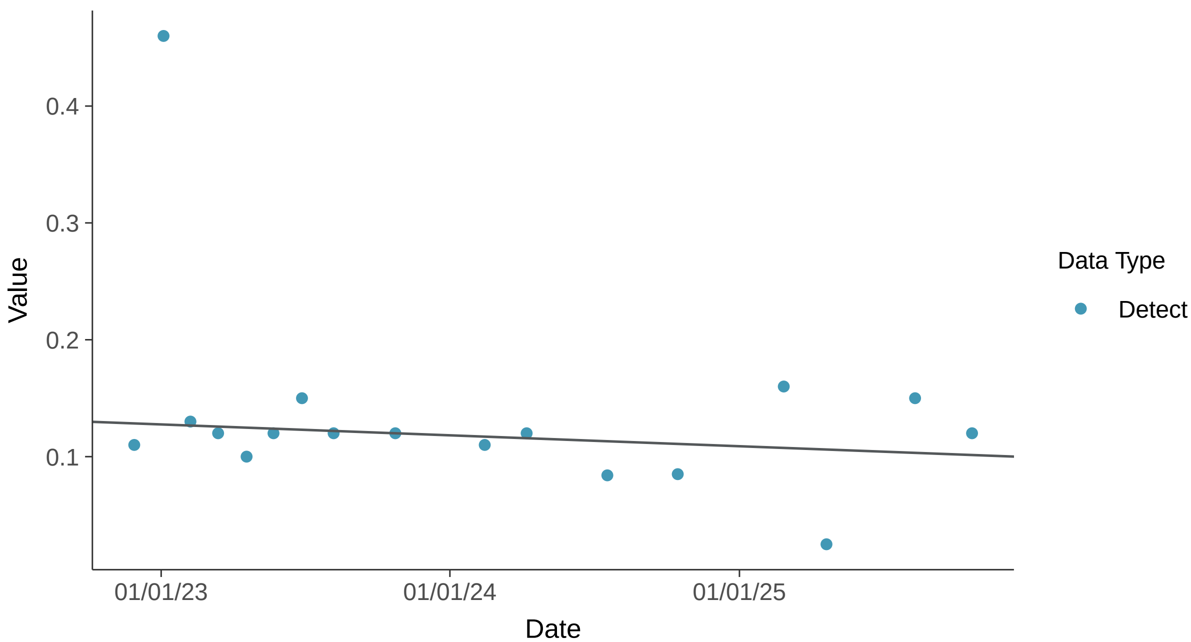
Normal Q-Q plot

Barium, MW-04 (mg/L)



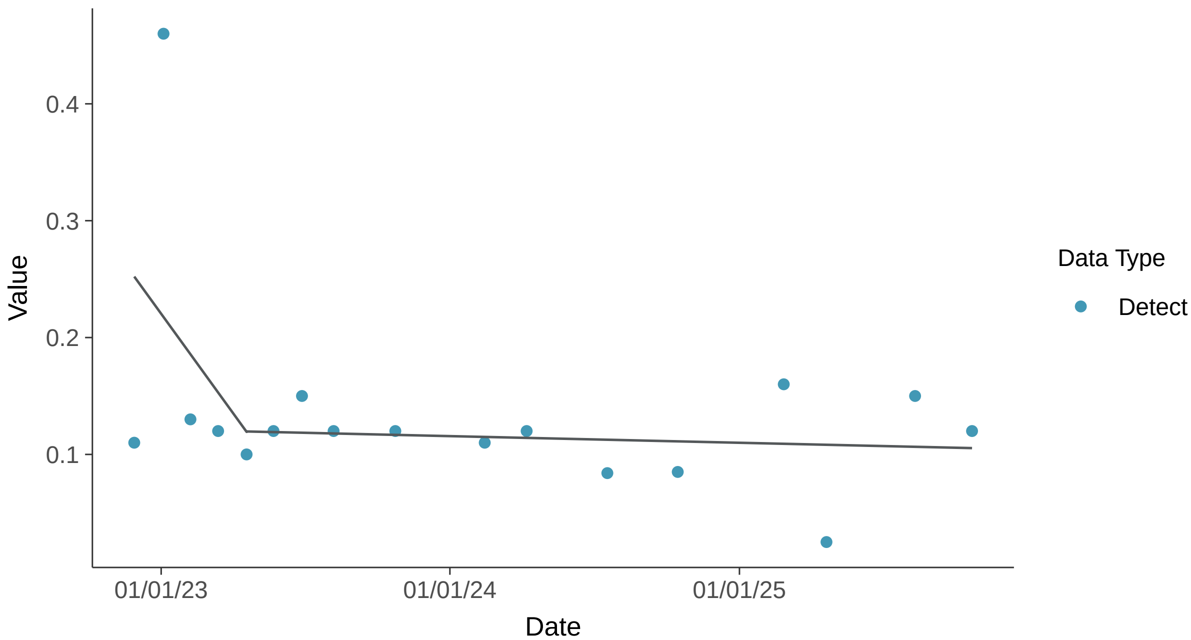
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Barium, MW-04 (mg/L)



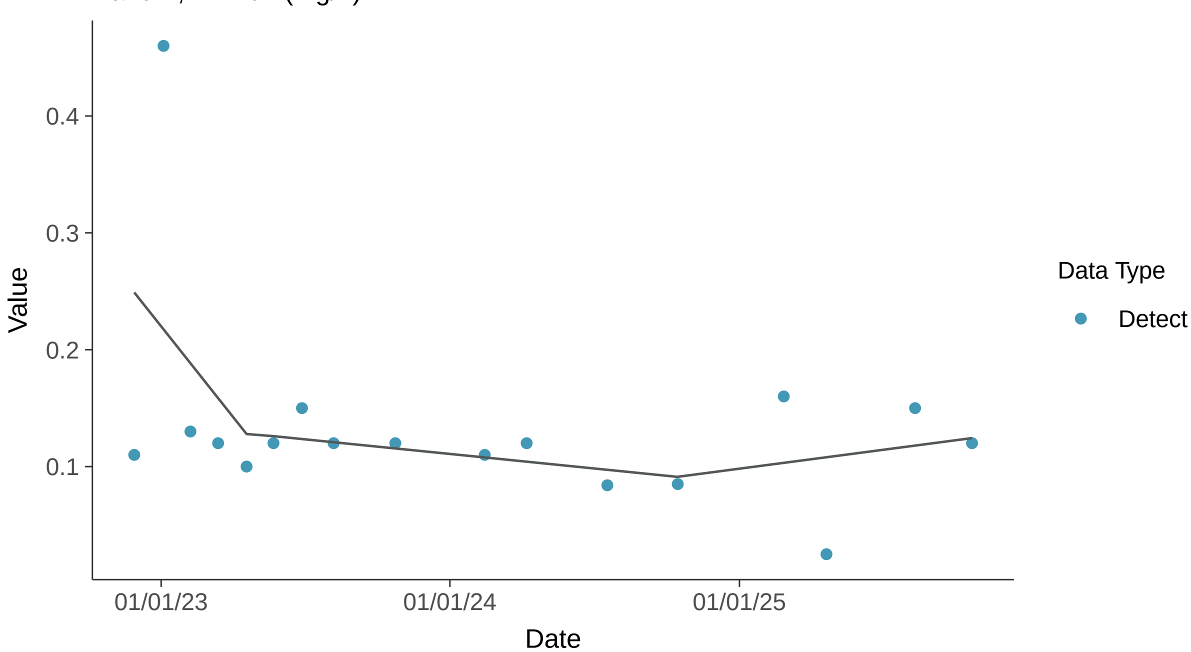
Trend Regression: Piecewise Linear-Linear

Barium, MW-04 (mg/L)



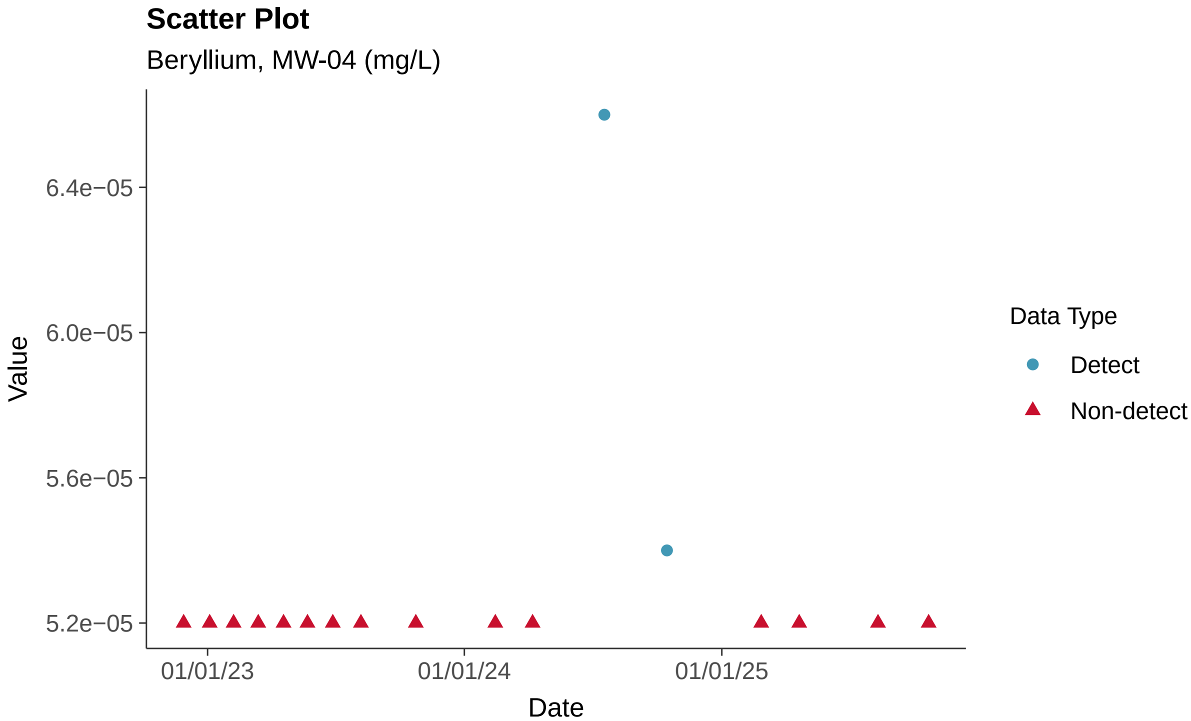
Trend Regression: Piecewise Linear-Linear-Linear

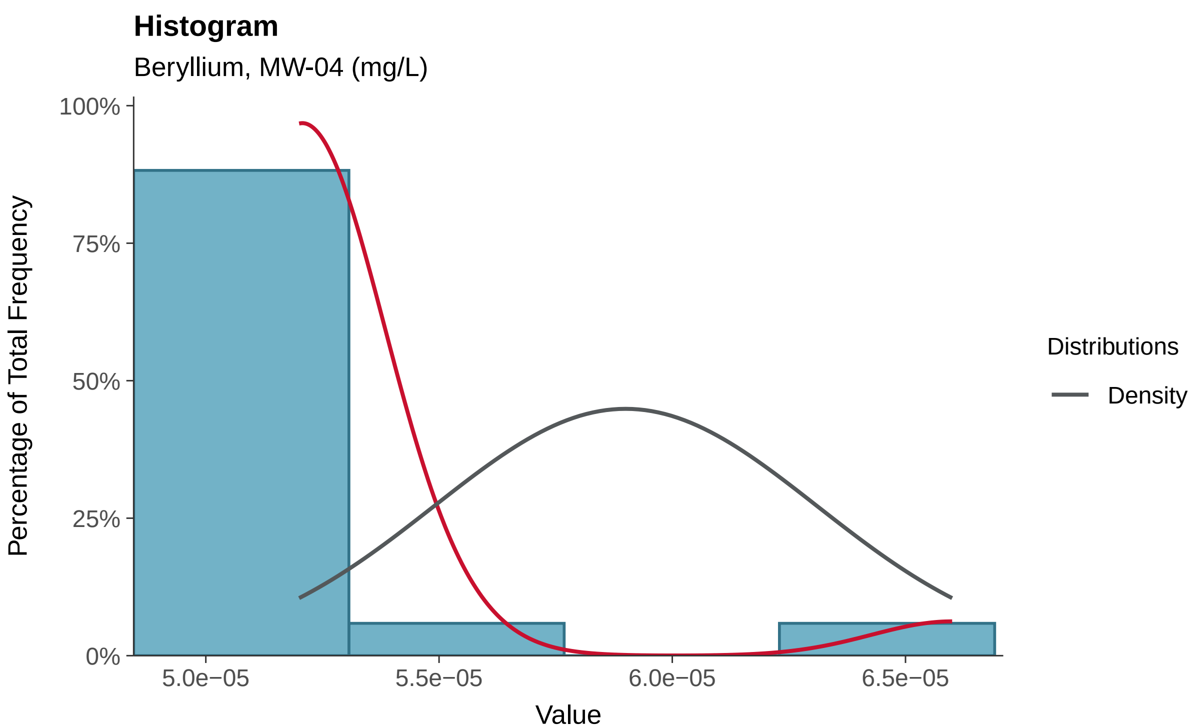
Barium, MW-04 (mg/L)



Appendix IV: Beryllium, MW-04

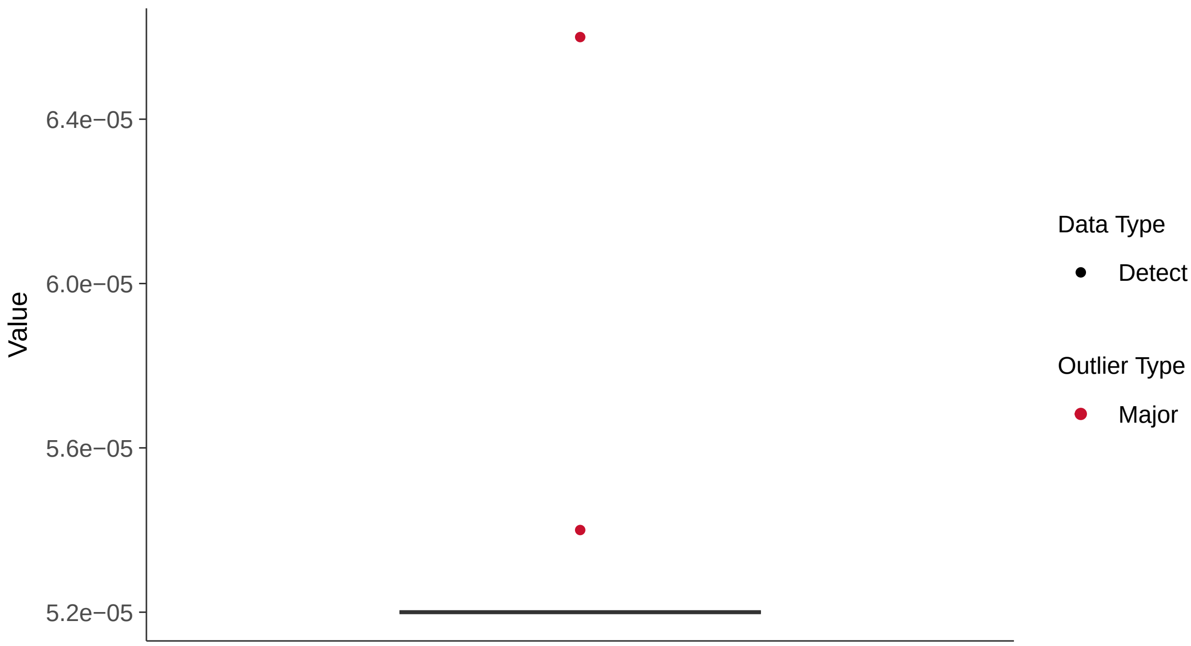
ID: 14_2_4_104





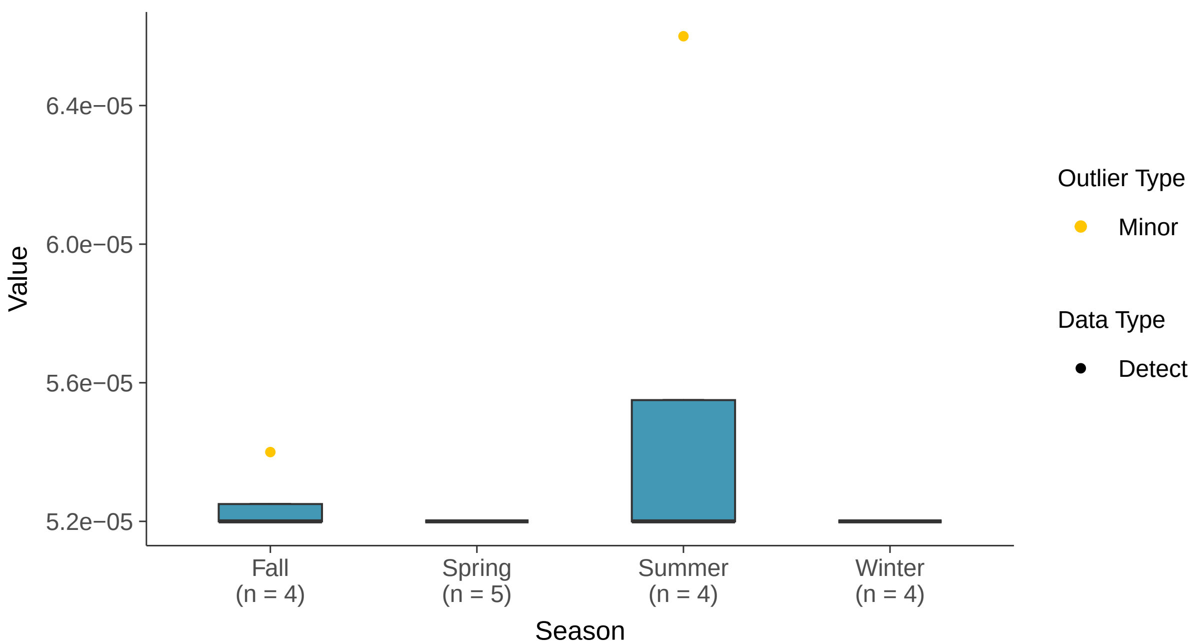
Boxplot

Beryllium, MW-04 (mg/L)



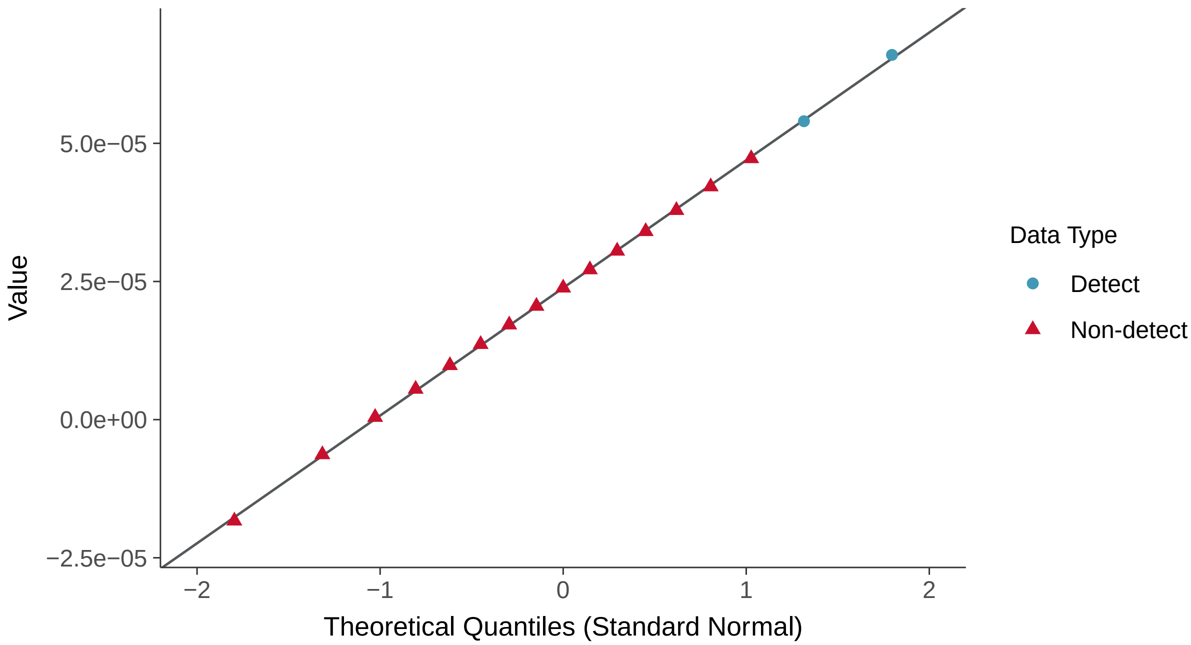
Boxplot by Season

Beryllium, MW-04 (mg/L)



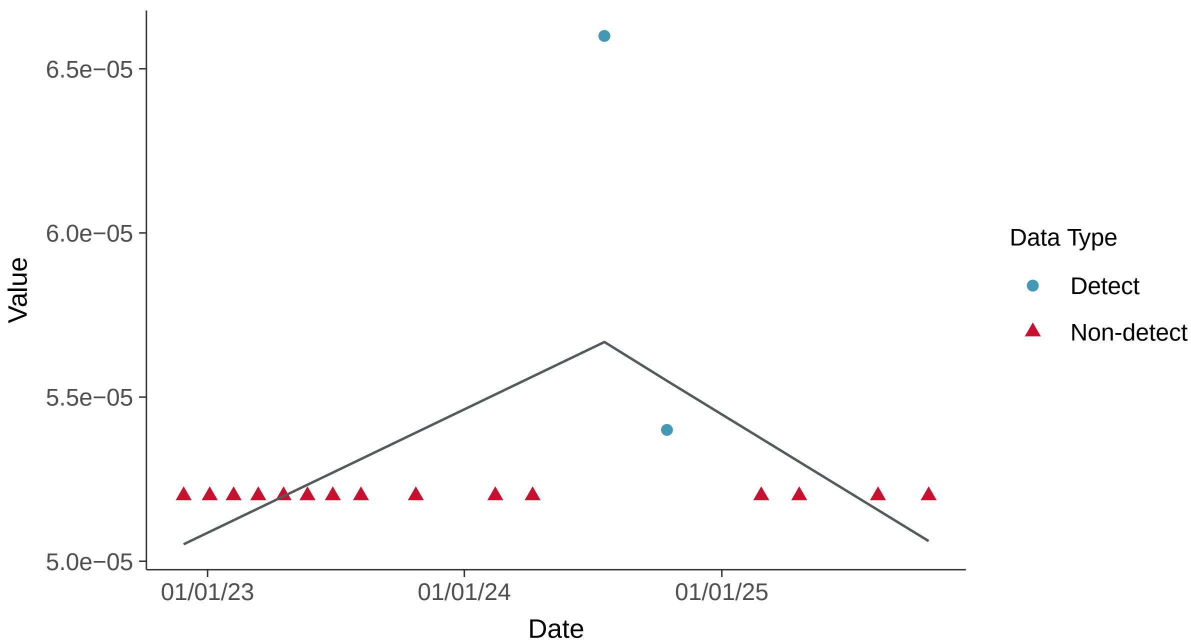
Normal Q-Q plot using ROS Imputed Estimates

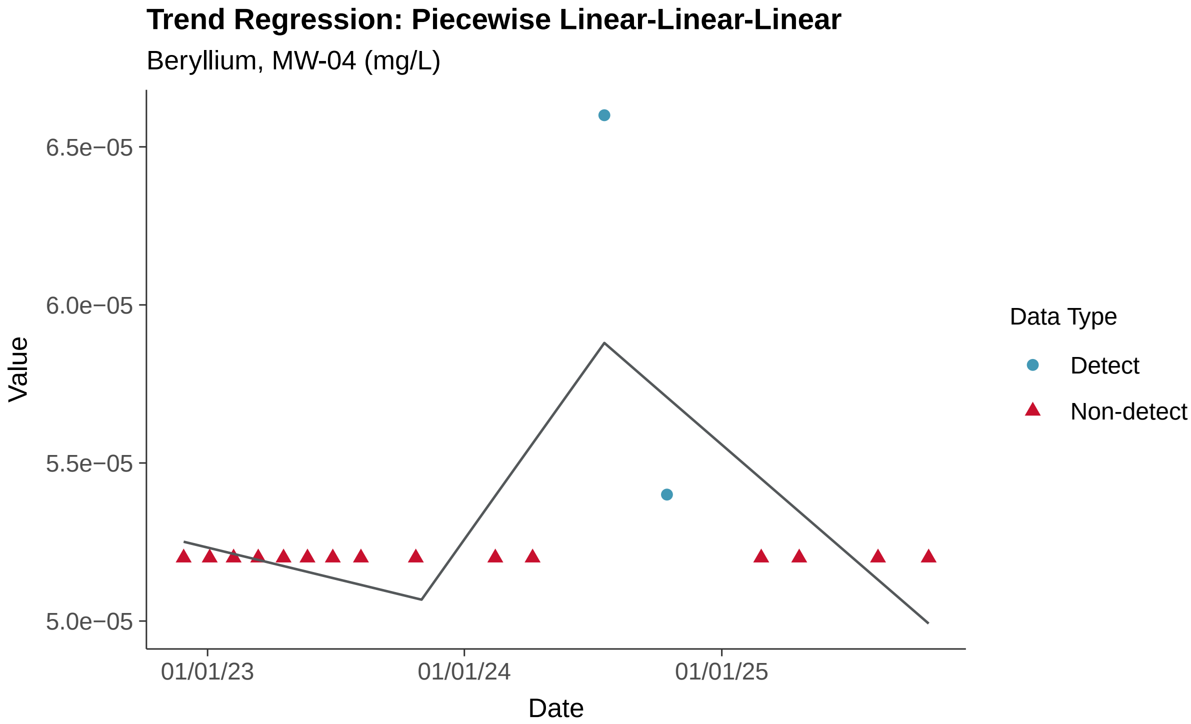
Beryllium, MW-04 (mg/L)



Trend Regression: Piecewise Linear-Linear

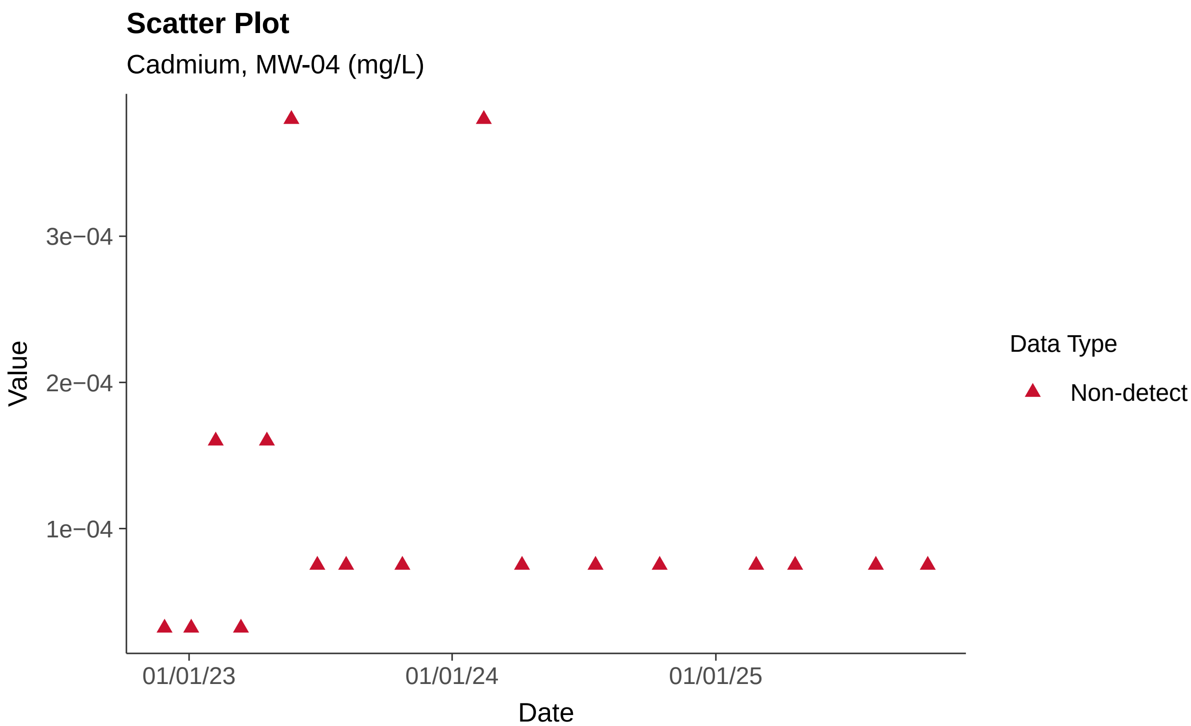
Beryllium, MW-04 (mg/L)

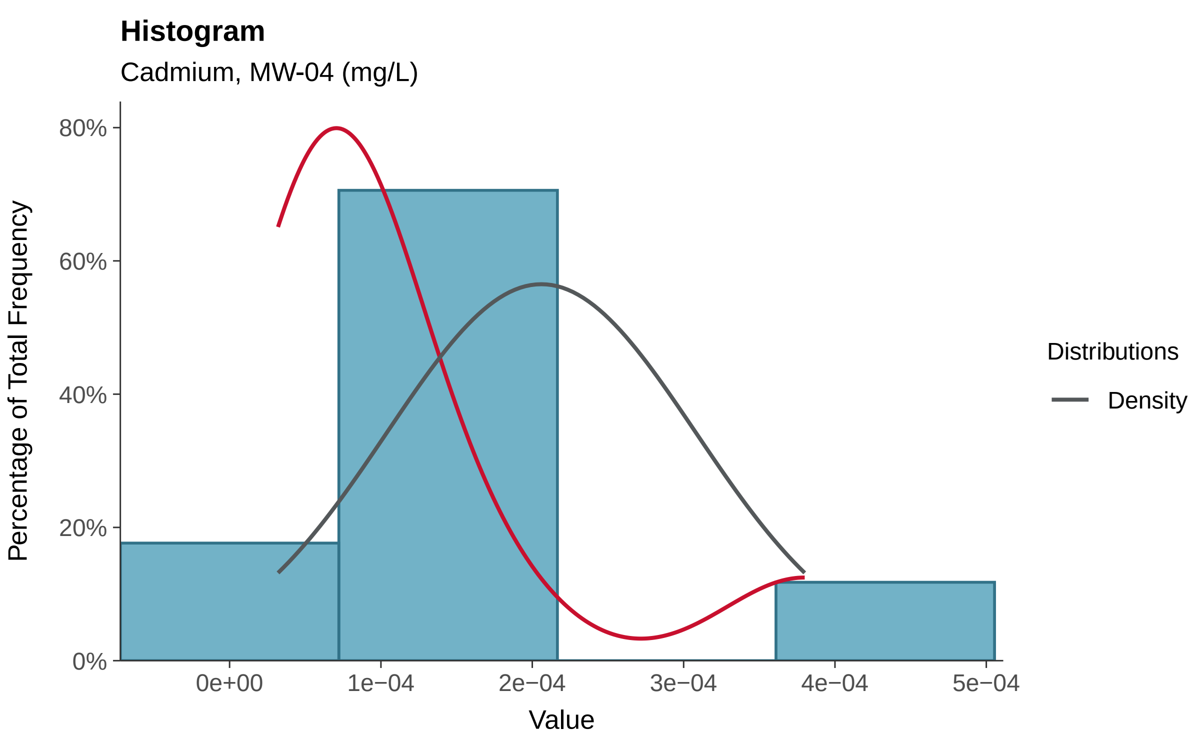



Trend Regression: Piecewise Linear-Linear-Linear
Beryllium, MW-04 (mg/L)
Value
6.5e−05
6.0e−05
5.5e−05
5.0e−05
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Appendix IV: Cadmium, MW-04

ID: 14_2_4_106

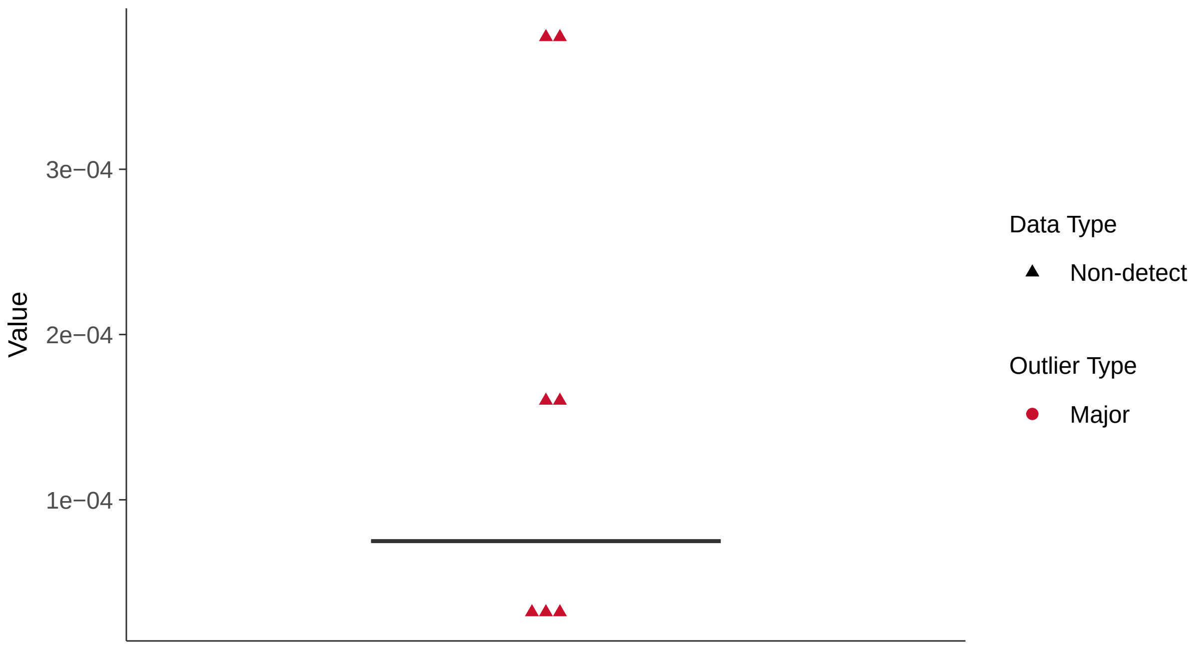




Grand Haven
Downgradient Wells as of October 2025

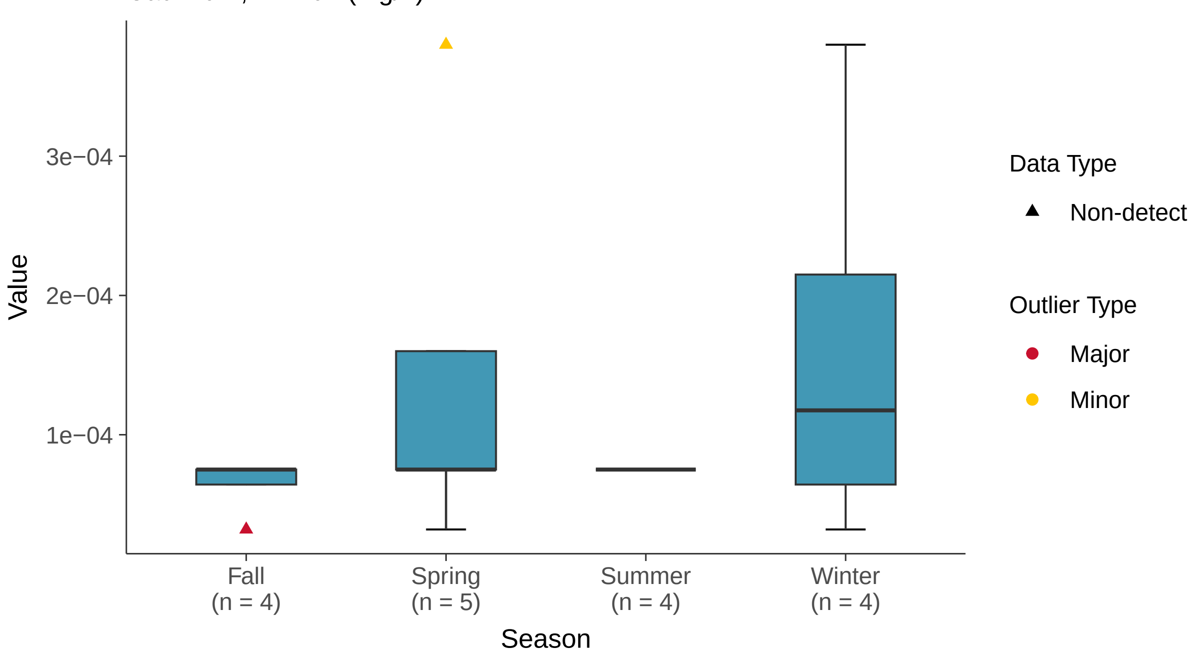
Boxplot

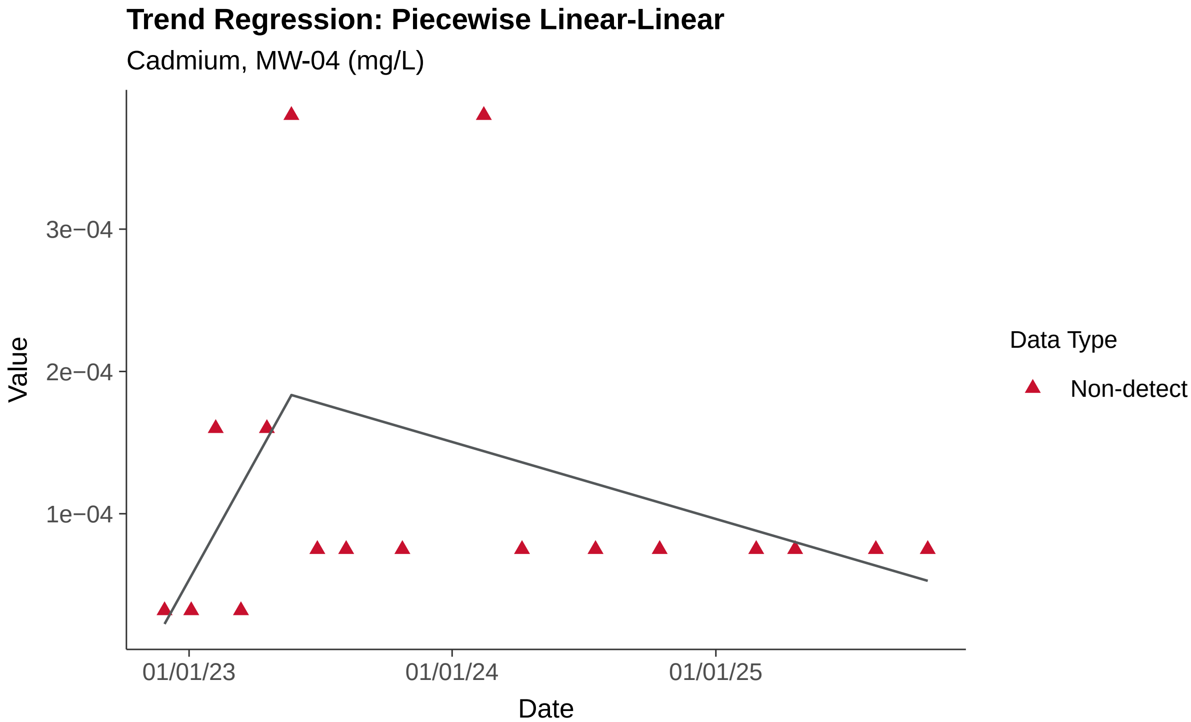
Cadmium, MW-04 (mg/L)

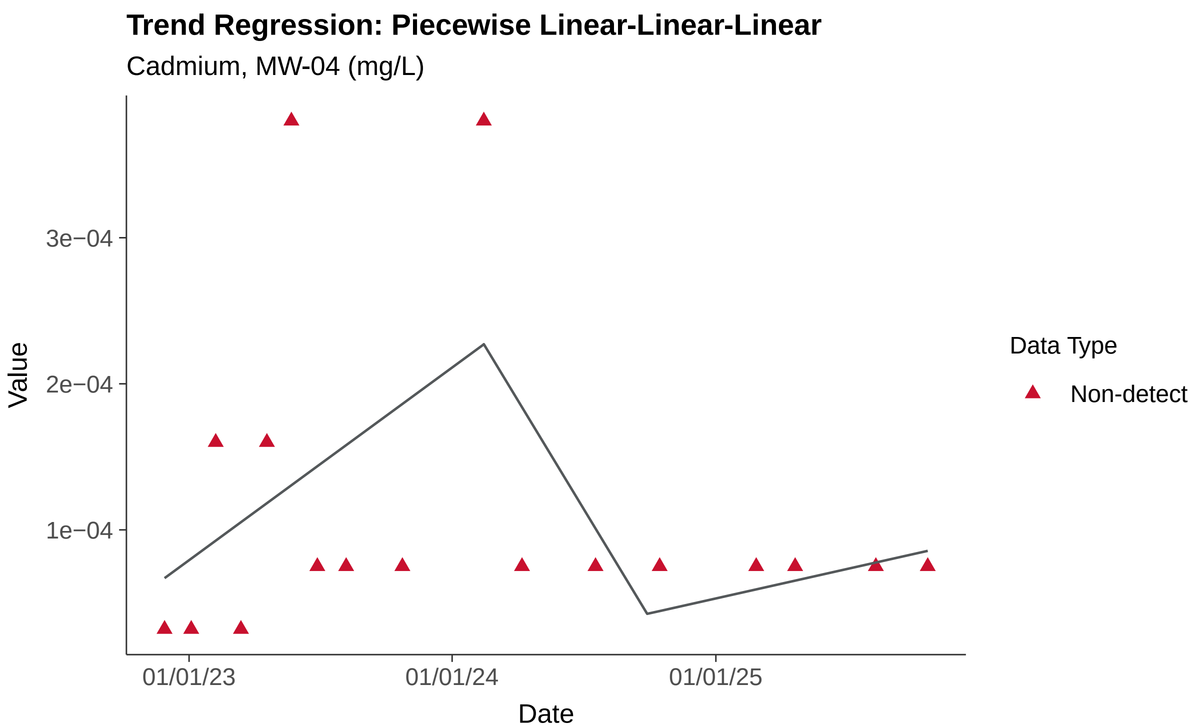


Boxplot by Season

Cadmium, MW-04 (mg/L)

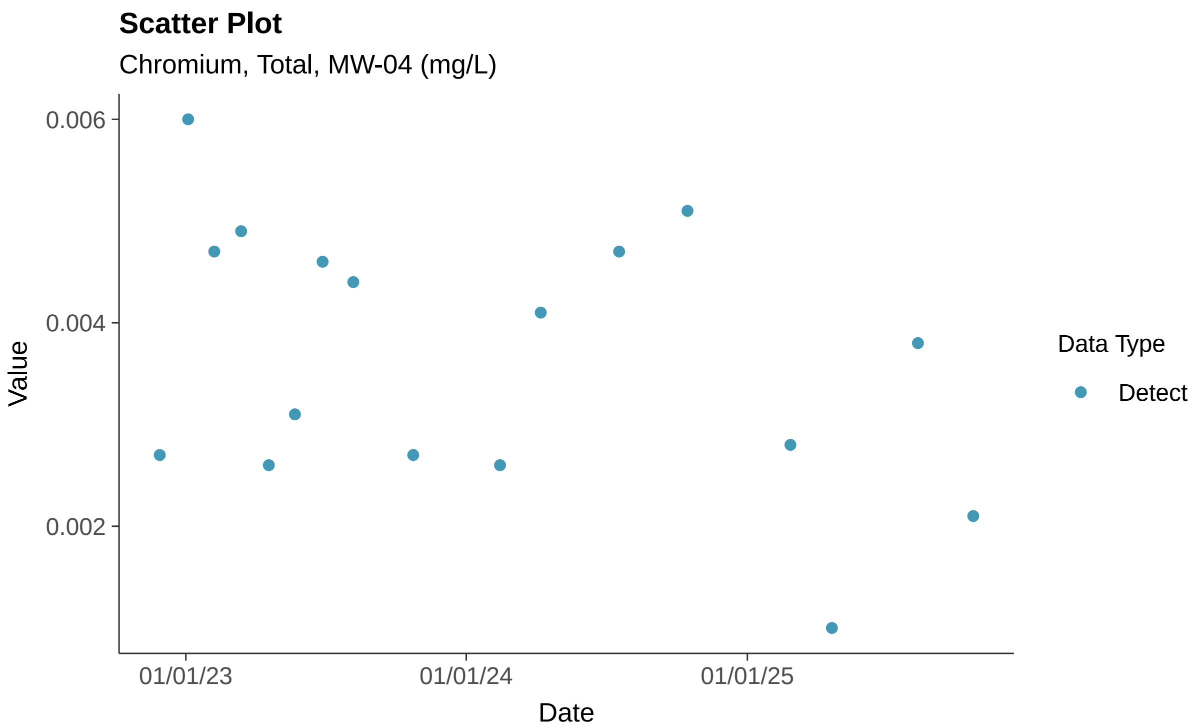


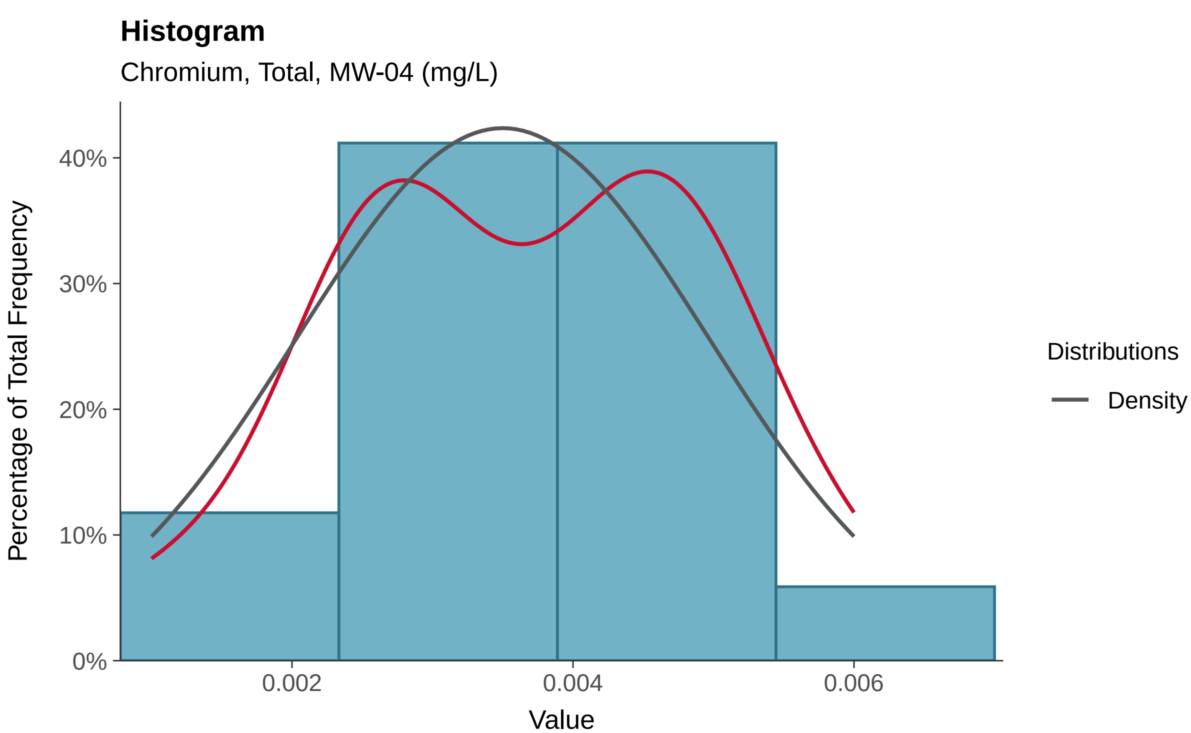

Trend Regression: Piecewise Linear-Linear
Cadmium, MW-04 (mg/L)
Value
3e−04
2e−04
1e−04
01/01/23
01/01/24
01/01/25
Date
Data Type
Non-detect


Trend Regression: Piecewise Linear-Linear-Linear
Cadmium, MW-04 (mg/L)
Value
3e−04
2e−04
1e−04
01/01/23
01/01/24
01/01/25
Date
Data Type
Non-detect

Appendix IV: Chromium, Total, MW-04

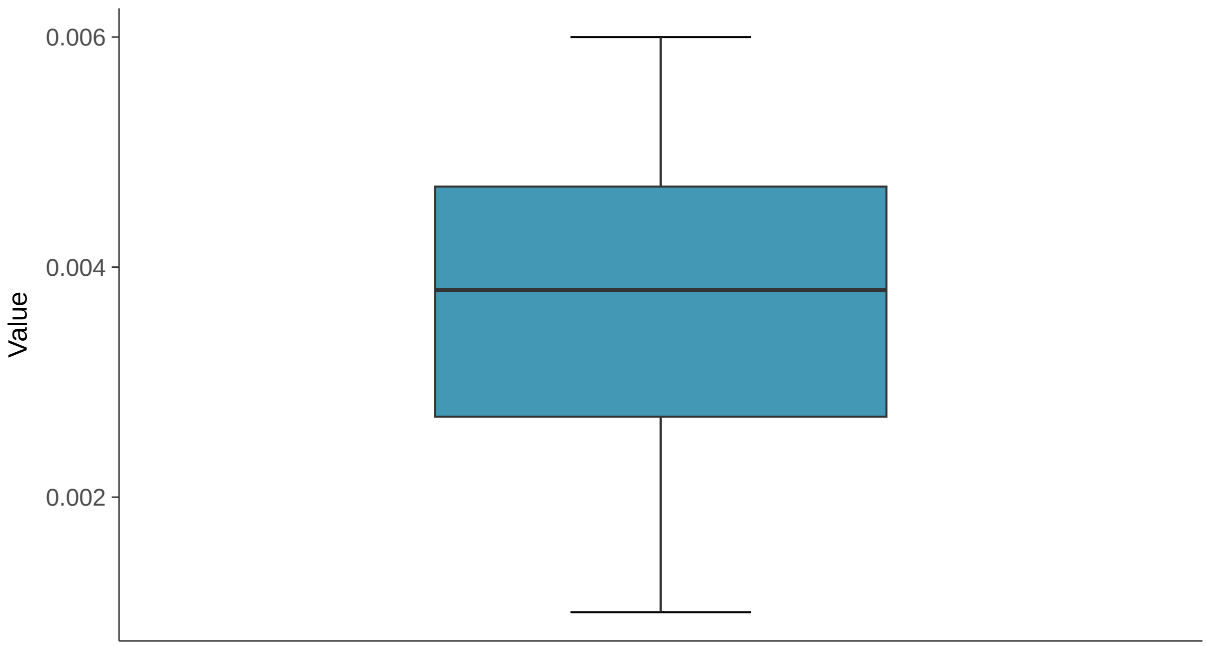
ID: 14_2_4_109





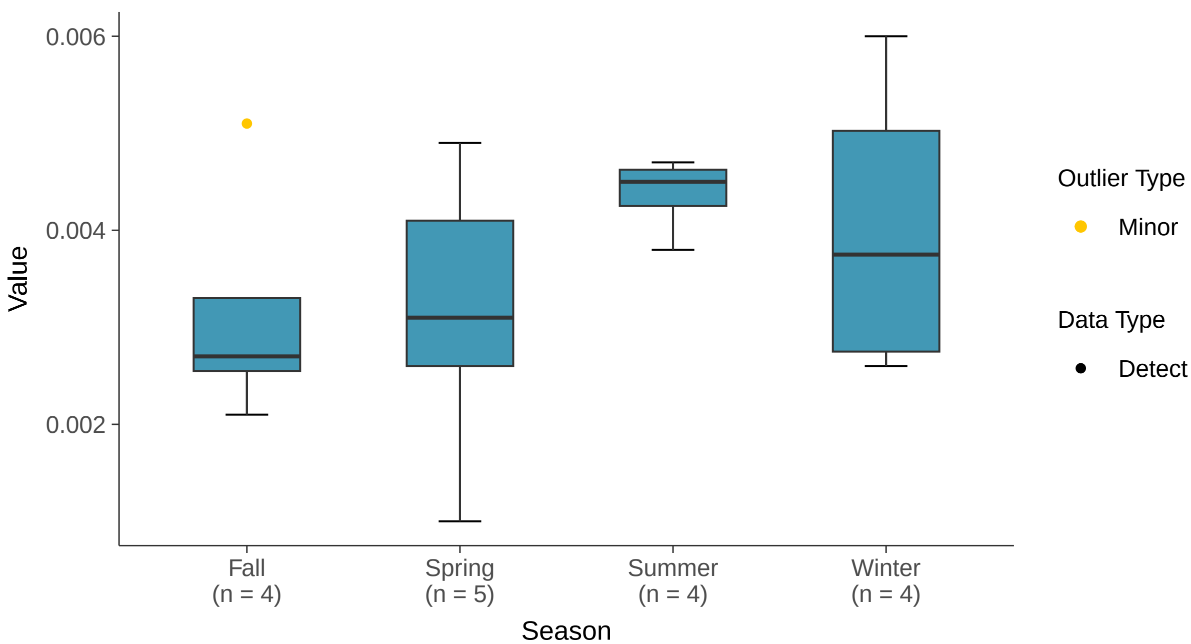
Boxplot

Chromium, Total, MW-04 (mg/L)



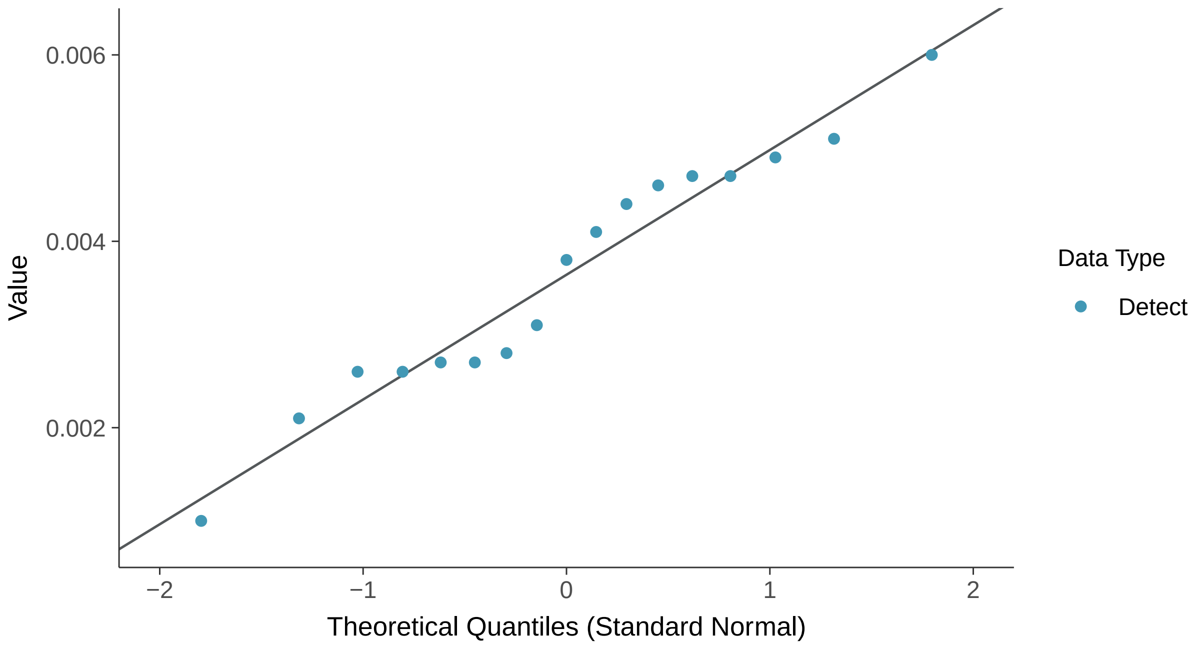
Boxplot by Season

Chromium, Total, MW-04 (mg/L)



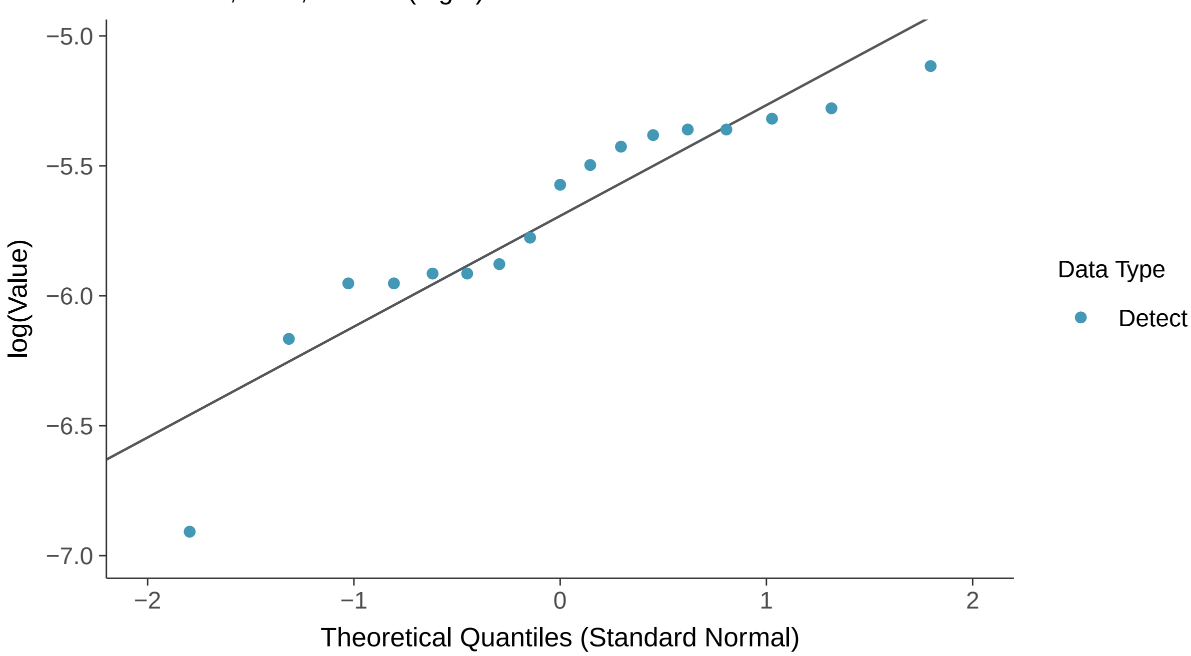
Normal Q-Q plot

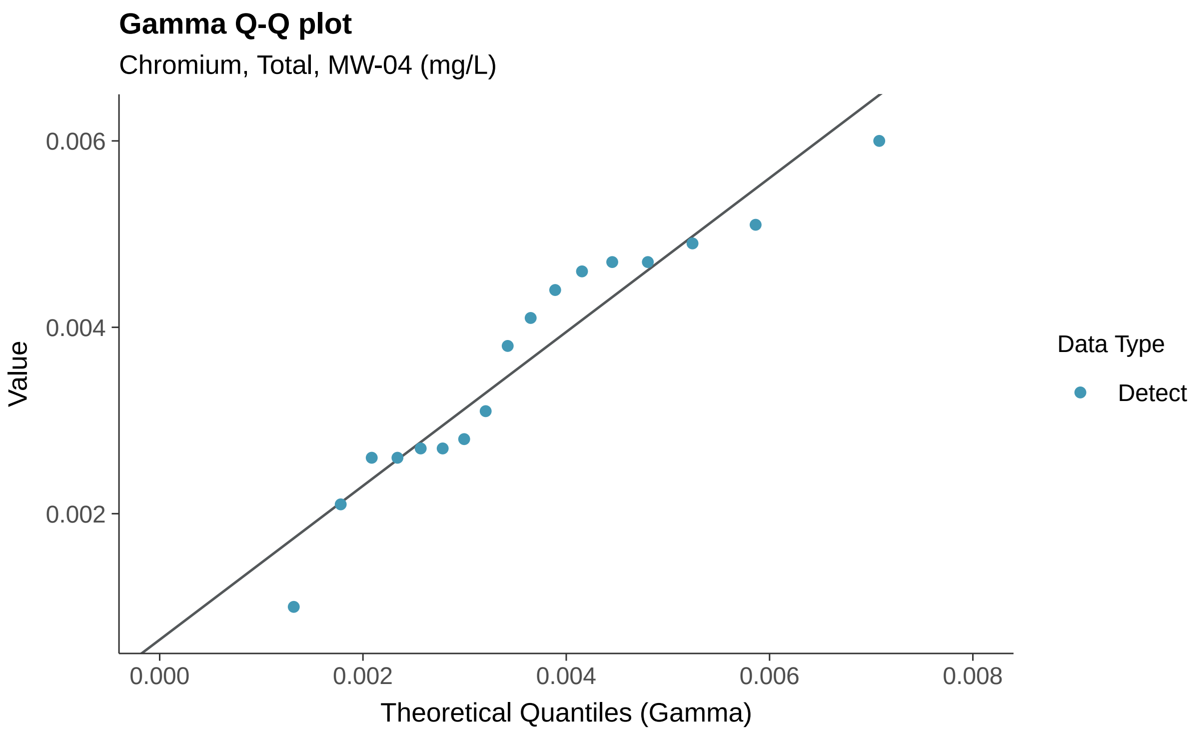
Chromium, Total, MW-04 (mg/L)

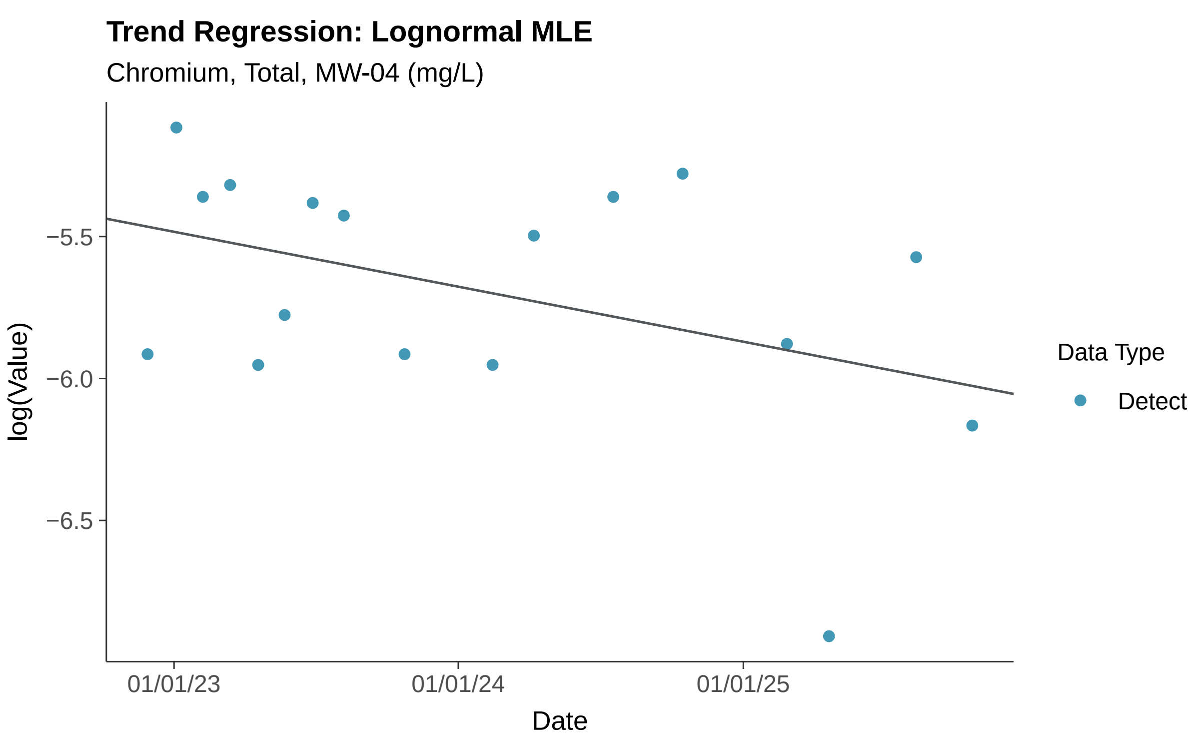


Lognormal Q-Q plot

Chromium, Total, MW-04 (mg/L)




Gamma Q-Q plot
Chromium, Total, MW-04 (mg/L)
Value
0.006
0.004
0.002
0.000
0.002
0.004
0.006
0.008
Theoretical Quantiles (Gamma)
Data Type
Detect

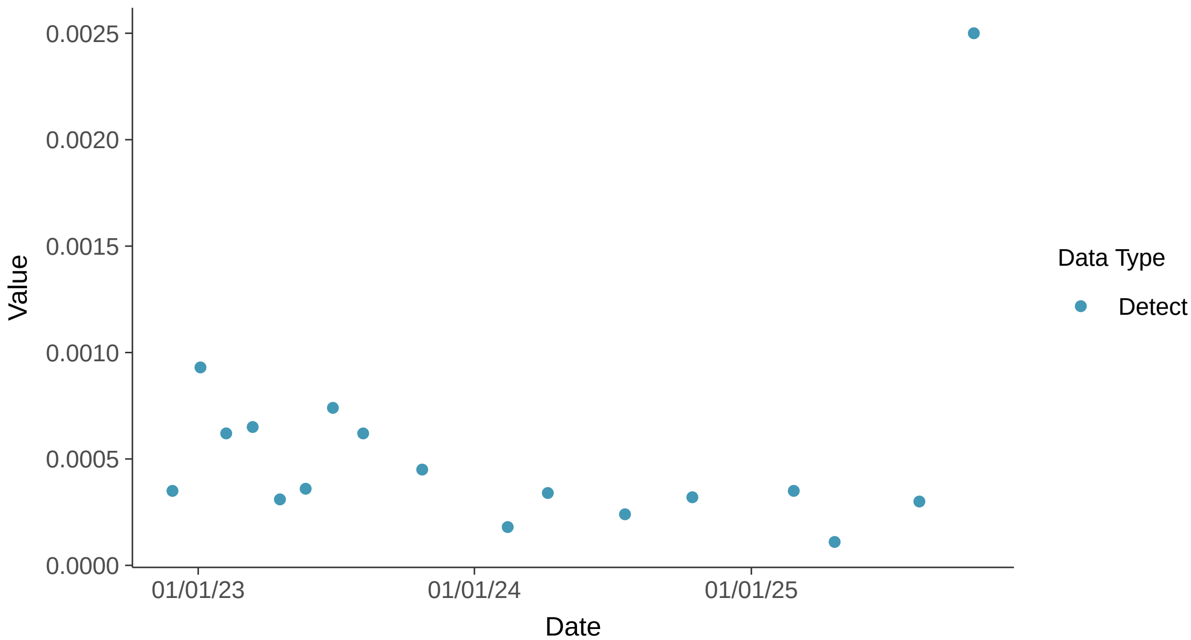

Trend Regression: Lognormal MLE
Chromium, Total, MW-04 (mg/L)
log(Value)
−5.5
−6.0
−6.5
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Appendix IV: Cobalt, MW-04

ID: 14_2_4_110

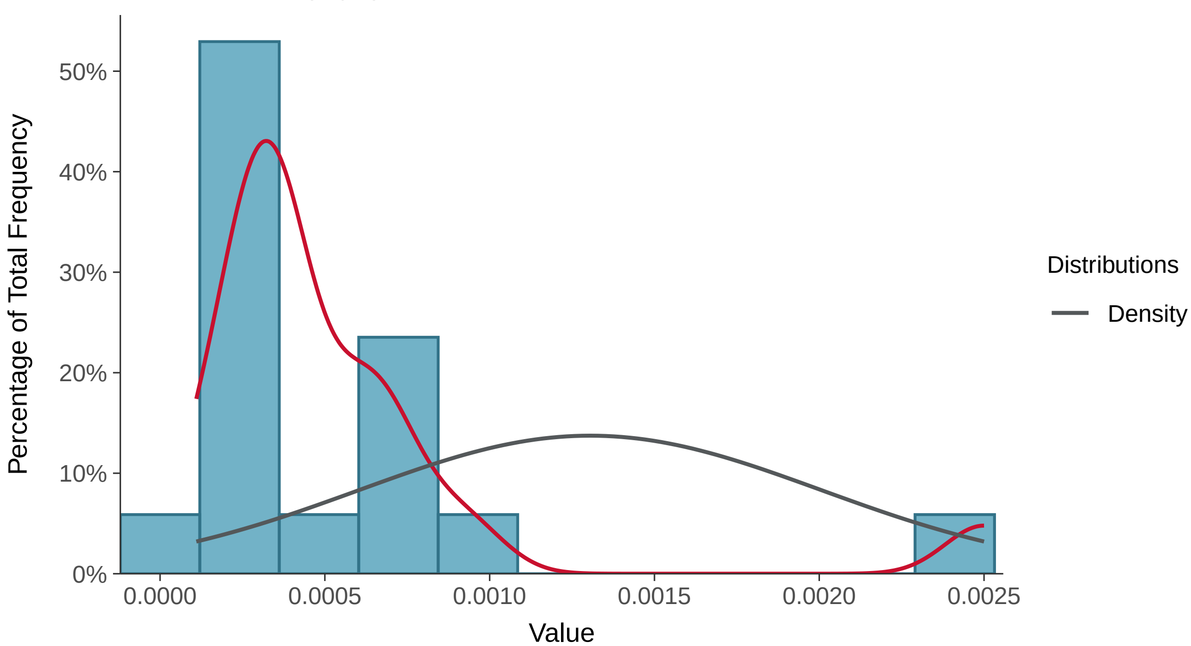
Scatter Plot

Cobalt, MW-04 (mg/L)



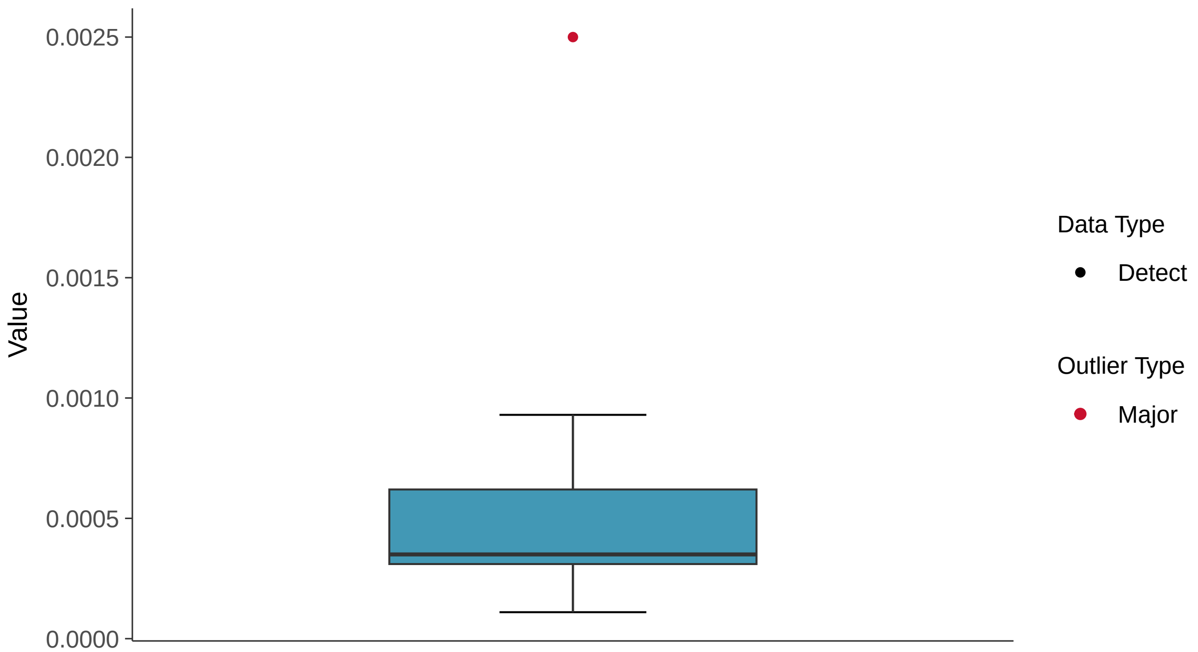
Histogram

Cobalt, MW-04 (mg/L)



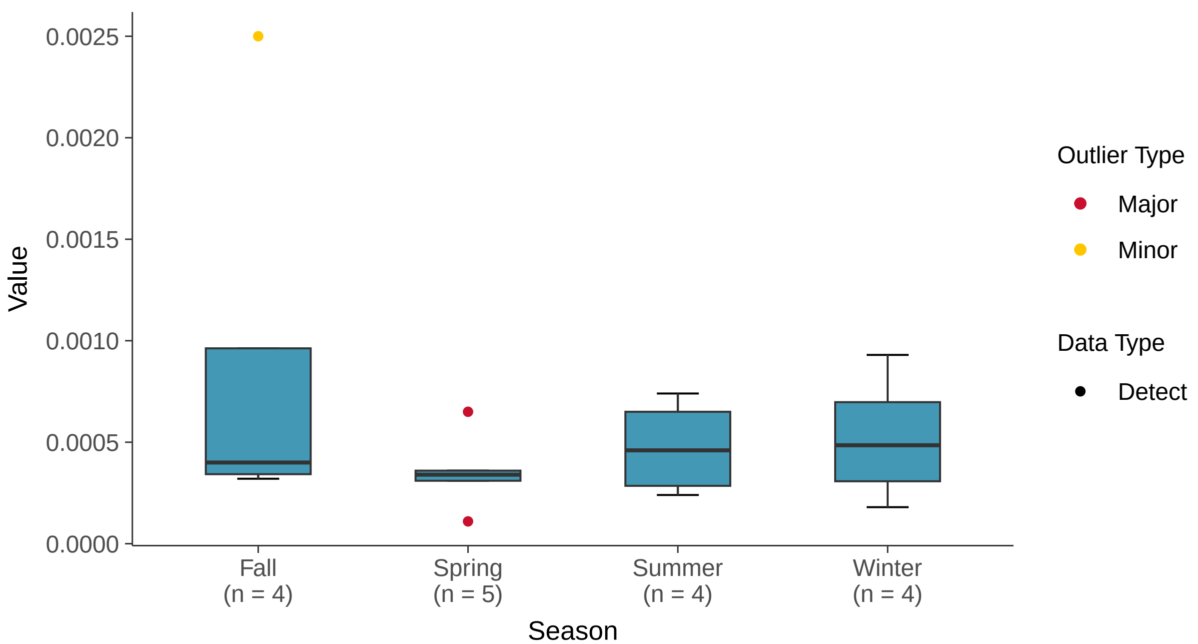
Boxplot

Cobalt, MW-04 (mg/L)



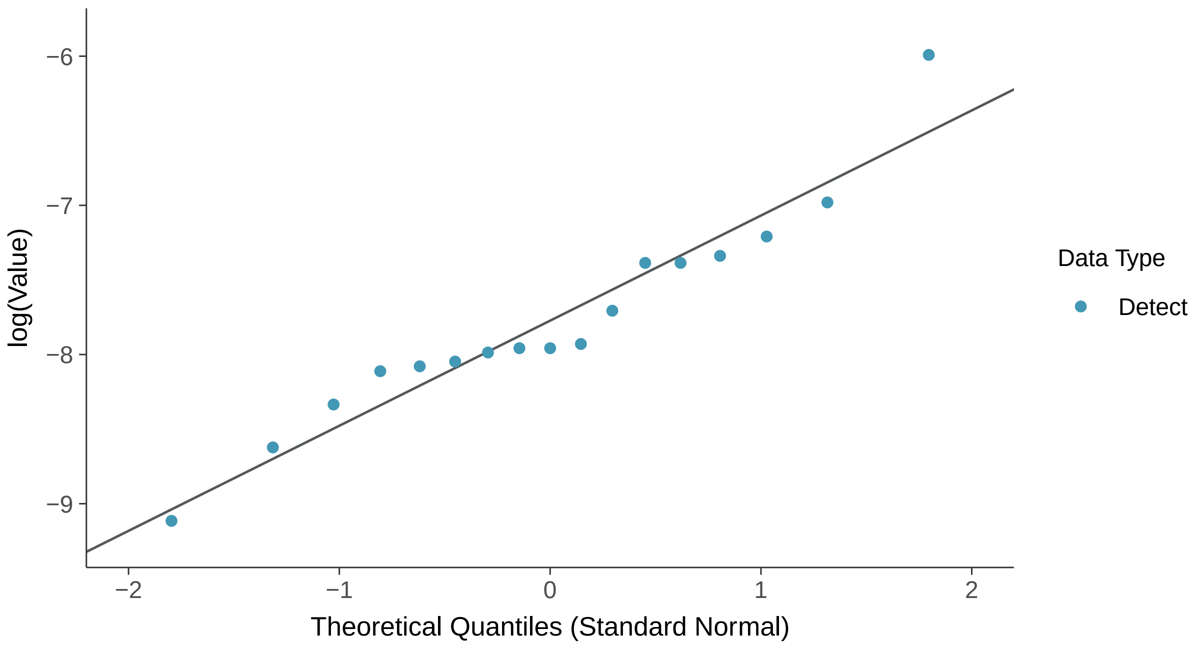
Boxplot by Season

Cobalt, MW-04 (mg/L)



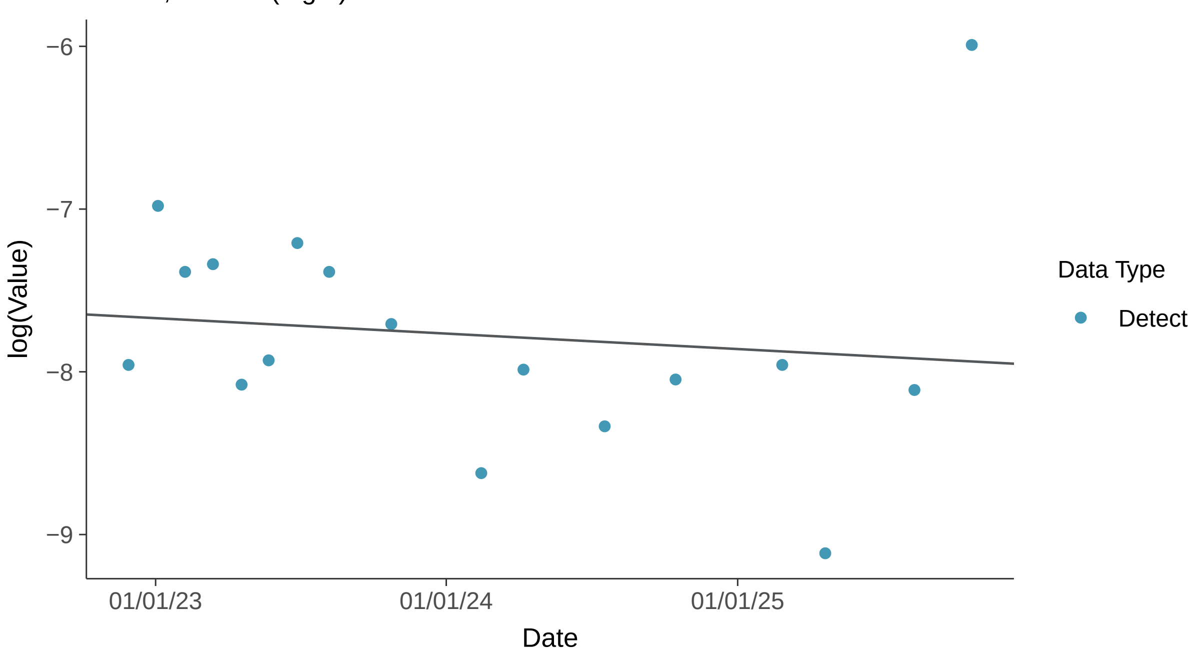
Lognormal Q-Q plot

Cobalt, MW-04 (mg/L)



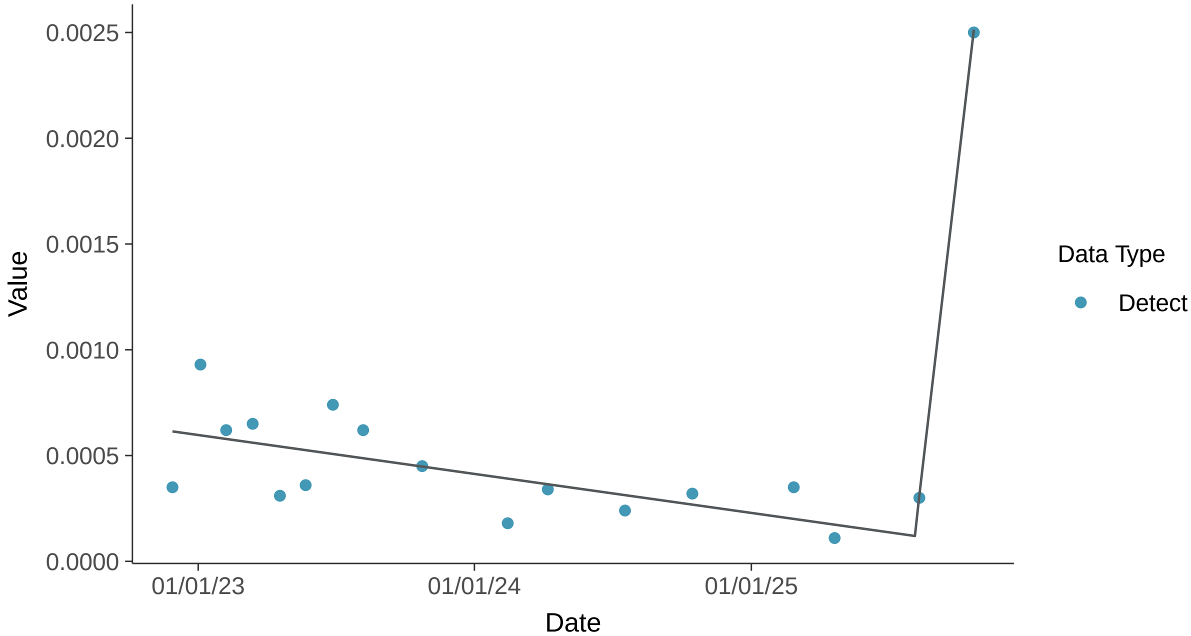
Trend Regression: Lognormal MLE

Cobalt, MW-04 (mg/L)



Trend Regression: Piecewise Linear-Linear

Cobalt, MW-04 (mg/L)

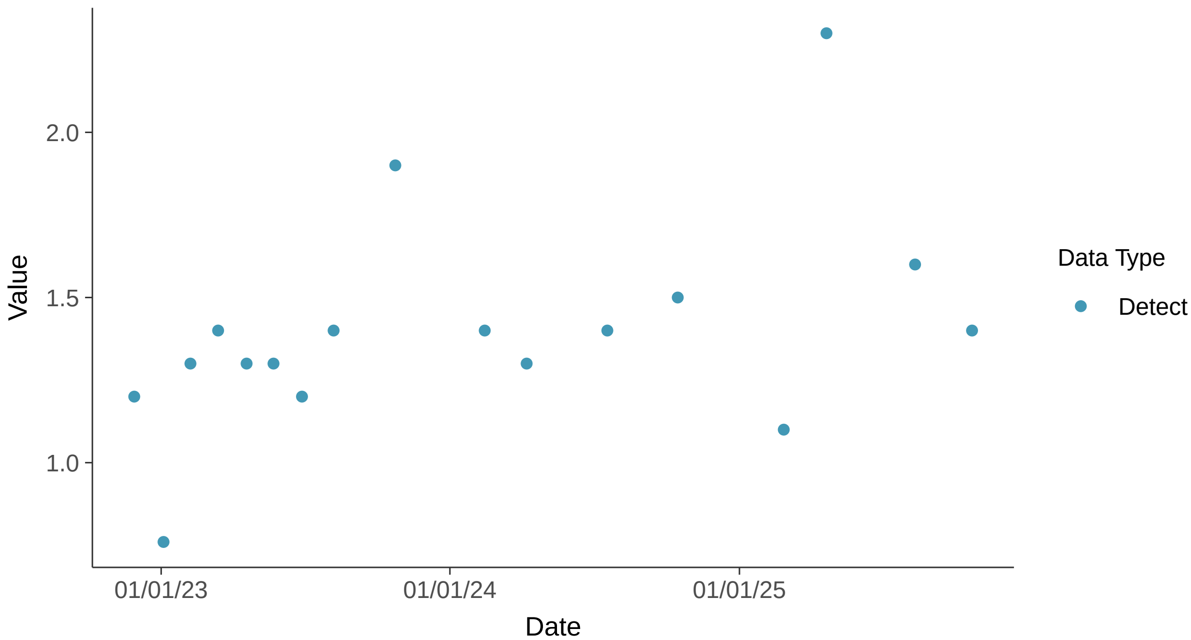


Appendix IV: Fluoride (App IV), MW-04

ID: 14_2_4_113

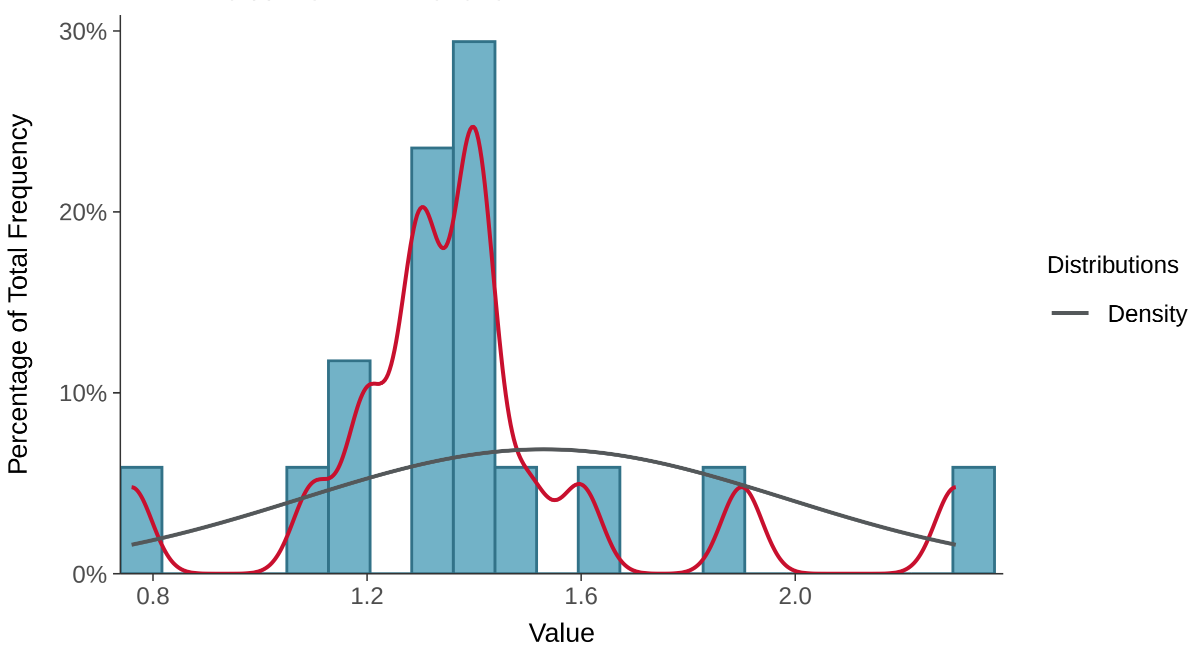
Scatter Plot

Fluoride (App IV), MW-04 (mg/L)



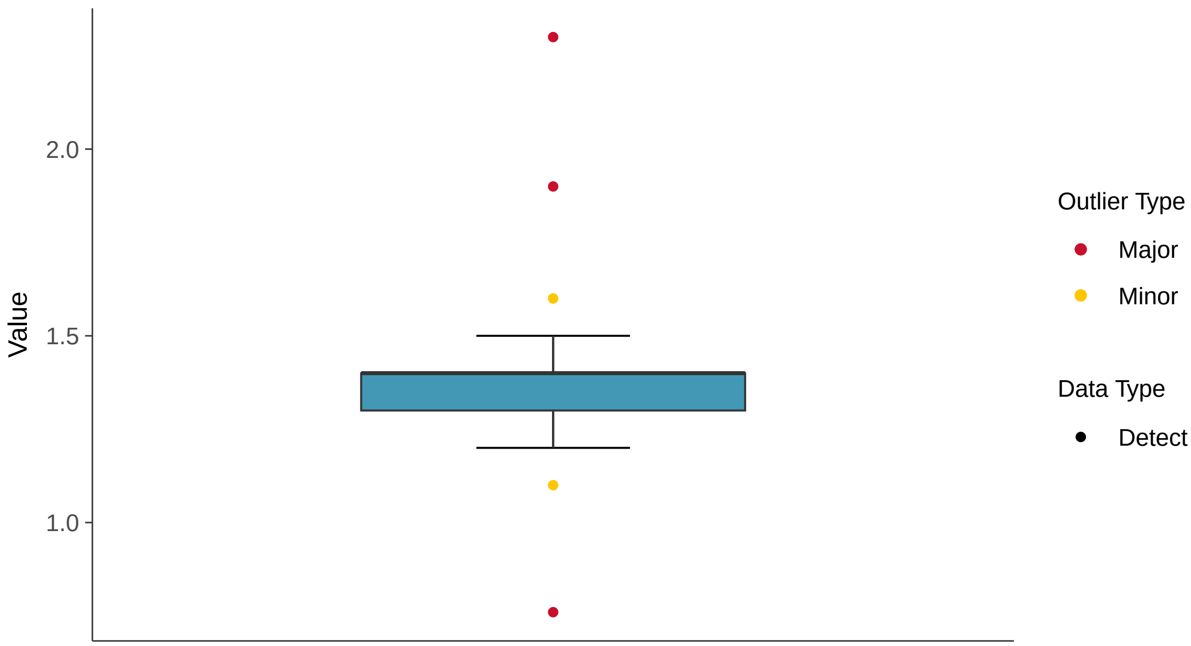
Histogram

Fluoride (App IV), MW-04 (mg/L)



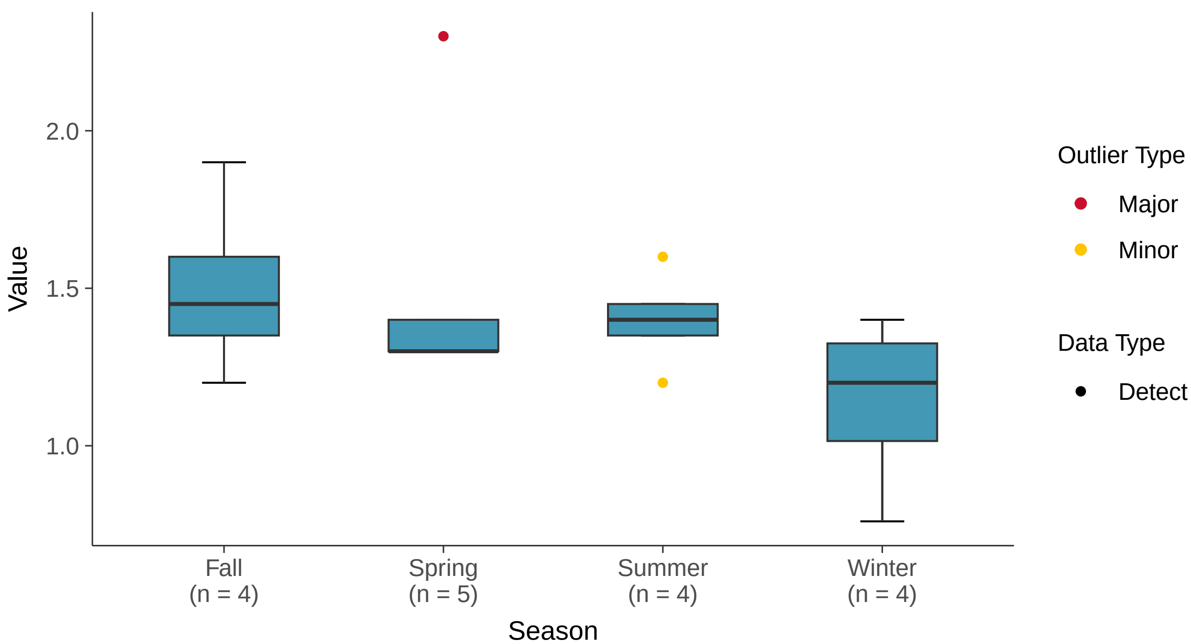
Boxplot

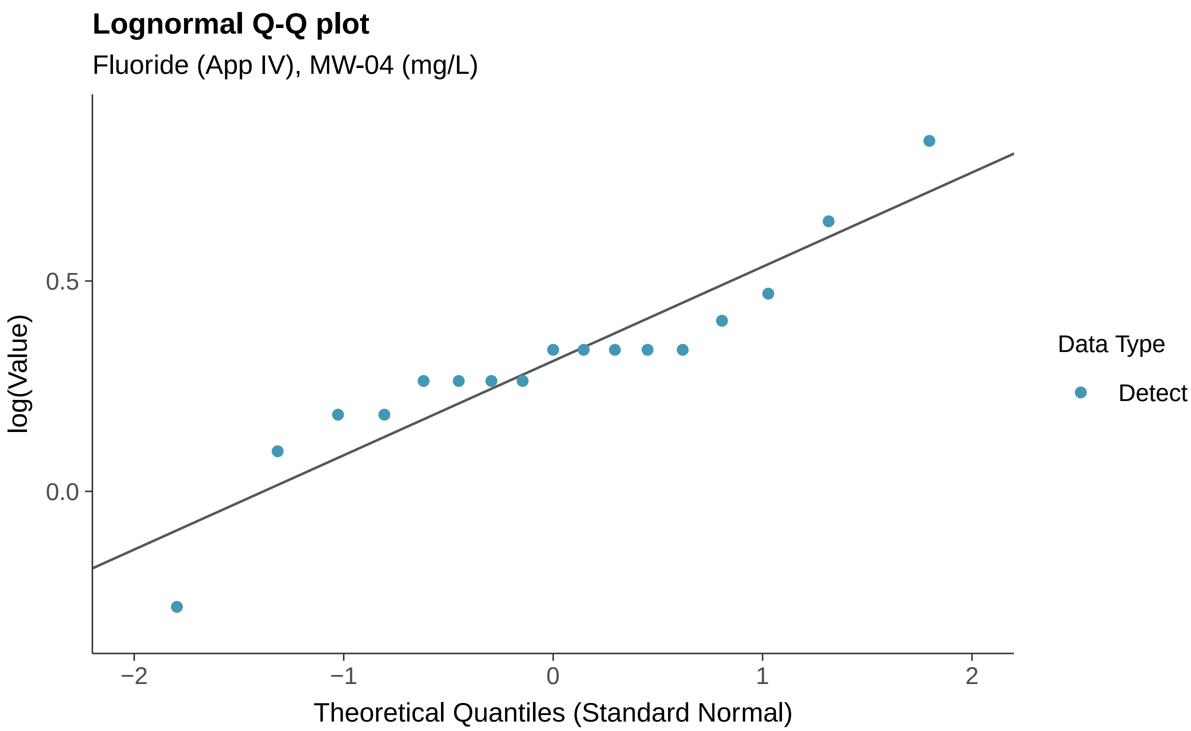
Fluoride (App IV), MW-04 (mg/L)

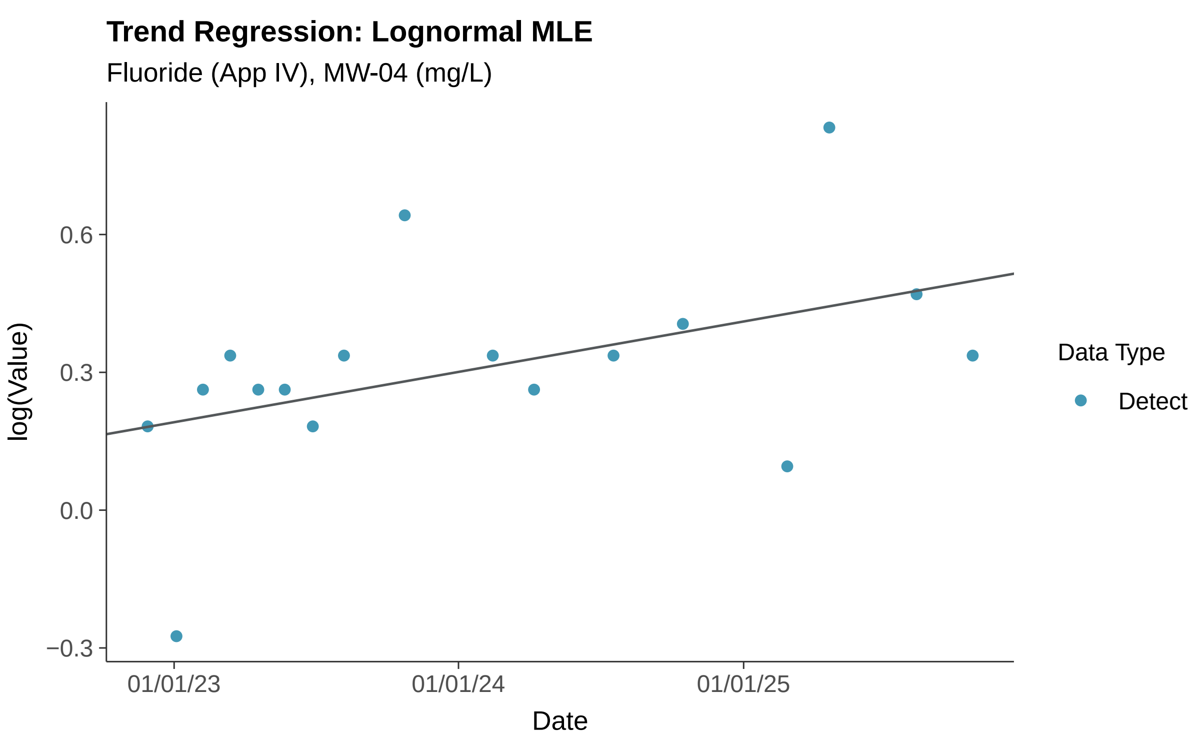


Boxplot by Season

Fluoride (App IV), MW-04 (mg/L)

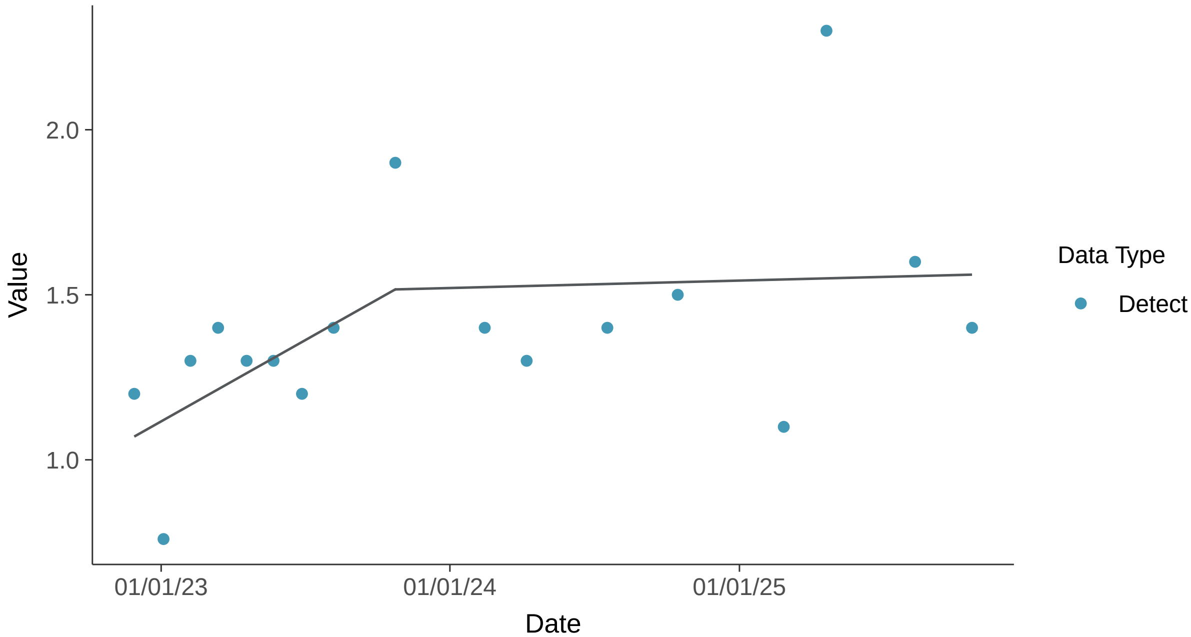



Lognormal Q-Q plot
Fluoride (App IV), MW-04 (mg/L)
log(Value)
0.5
0.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Lognormal MLE
Fluoride (App IV), MW-04 (mg/L)
log(Value)
0.6
0.3
0.0
−0.3
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

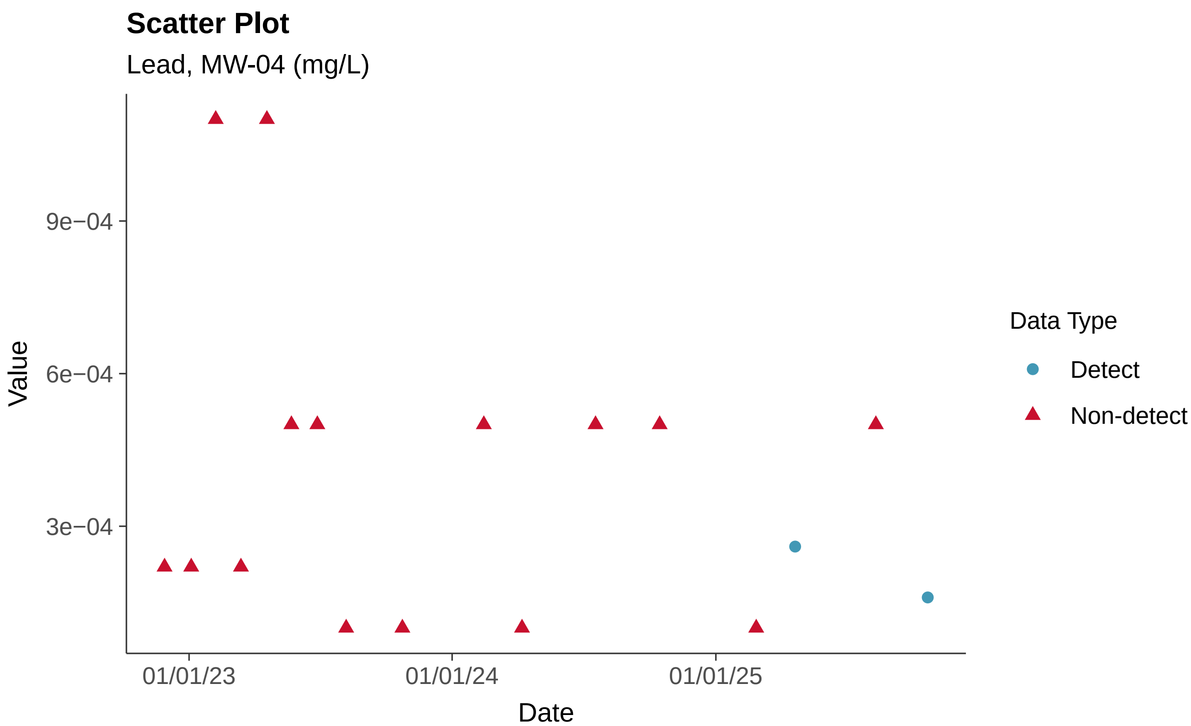
Trend Regression: Piecewise Linear-Linear

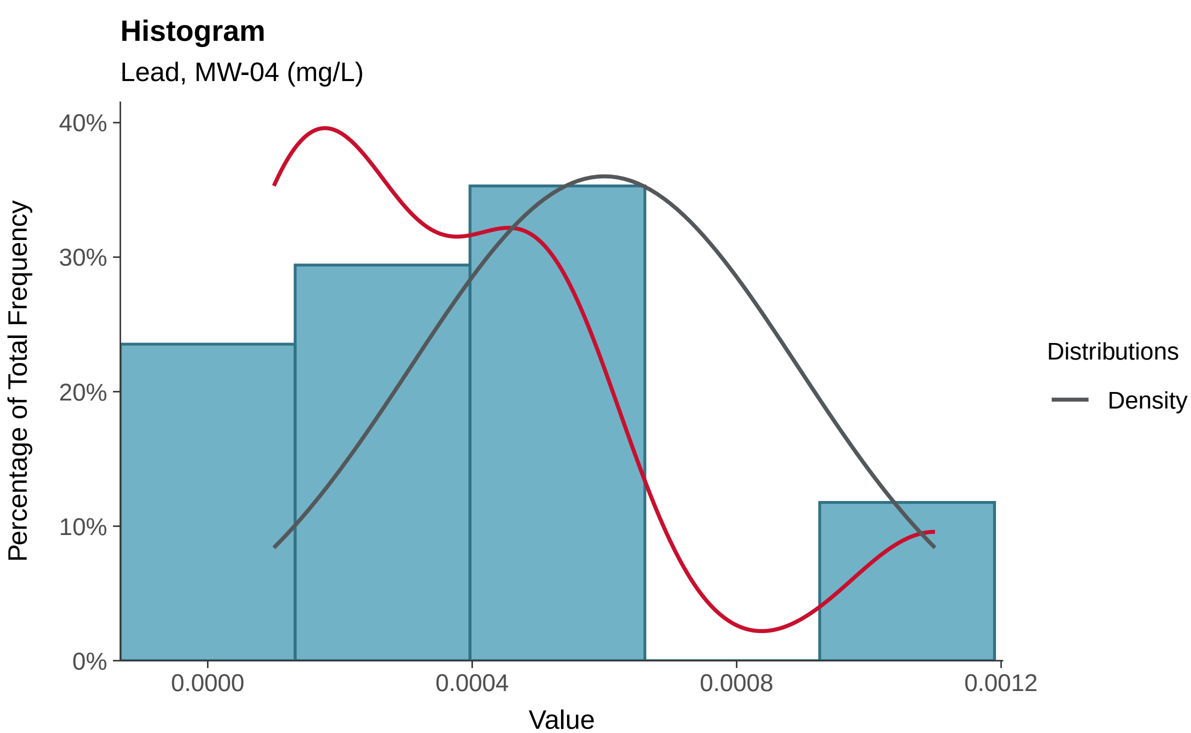
Fluoride (App IV), MW-04 (mg/L)

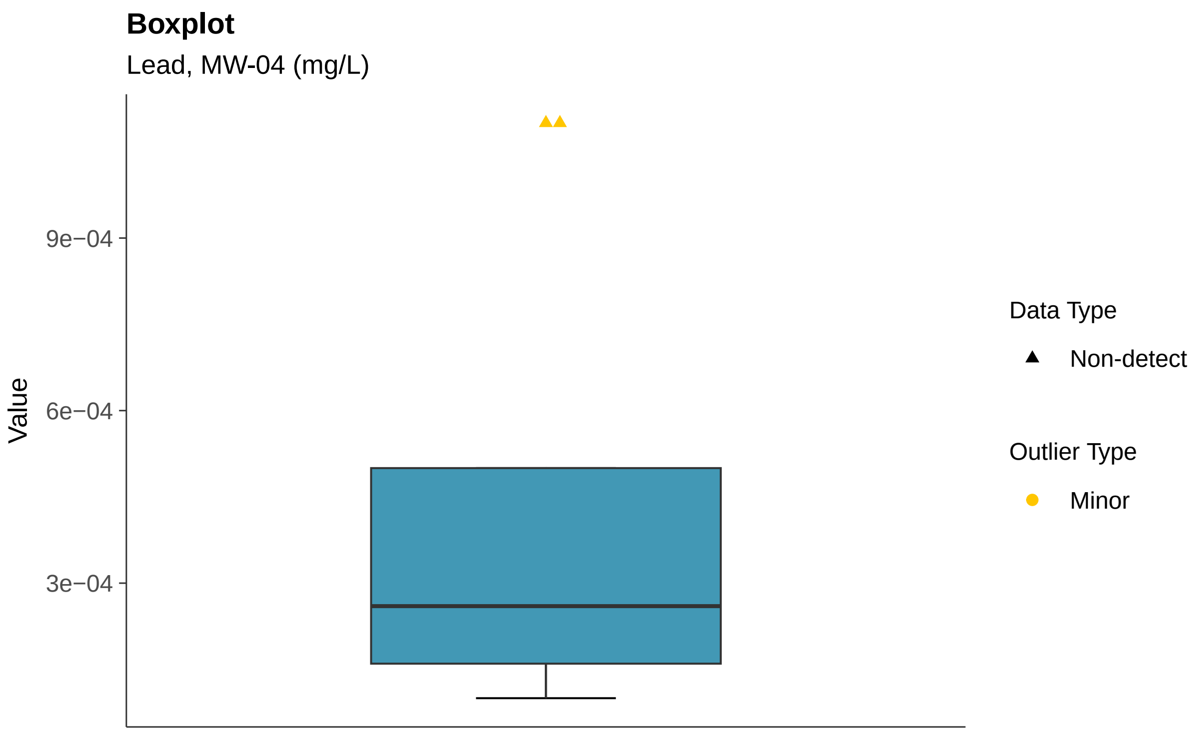


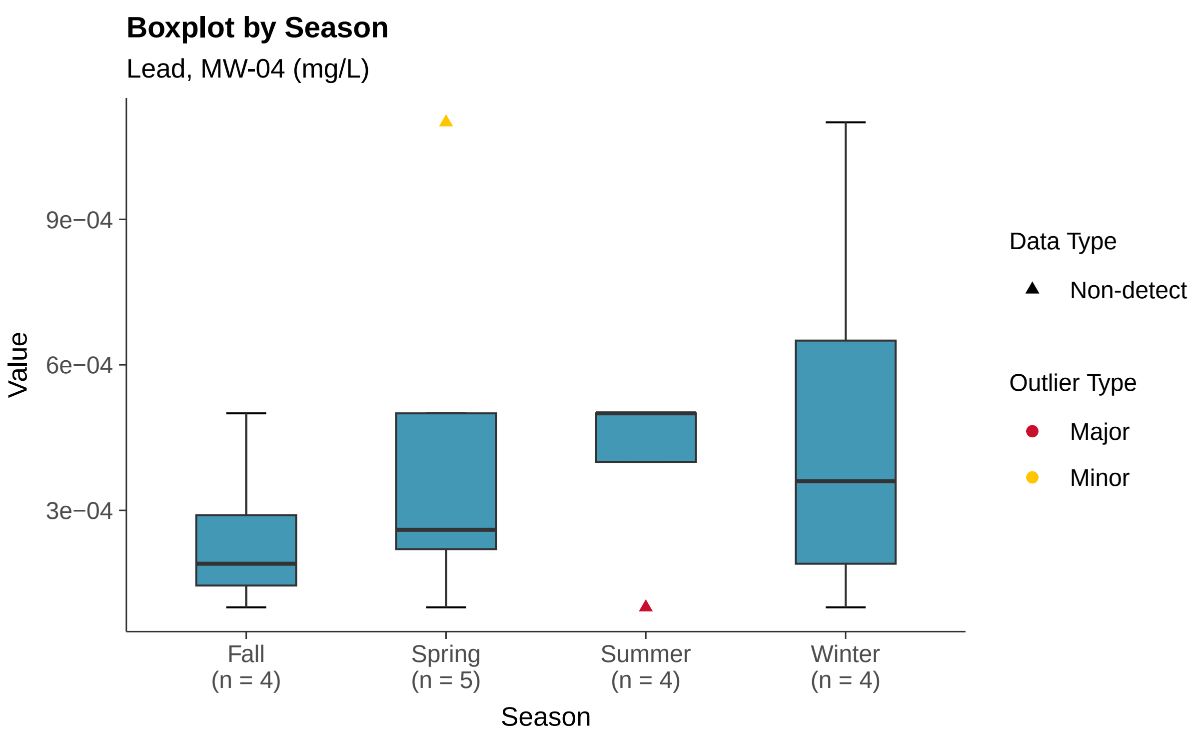
Appendix IV: Lead, MW-04

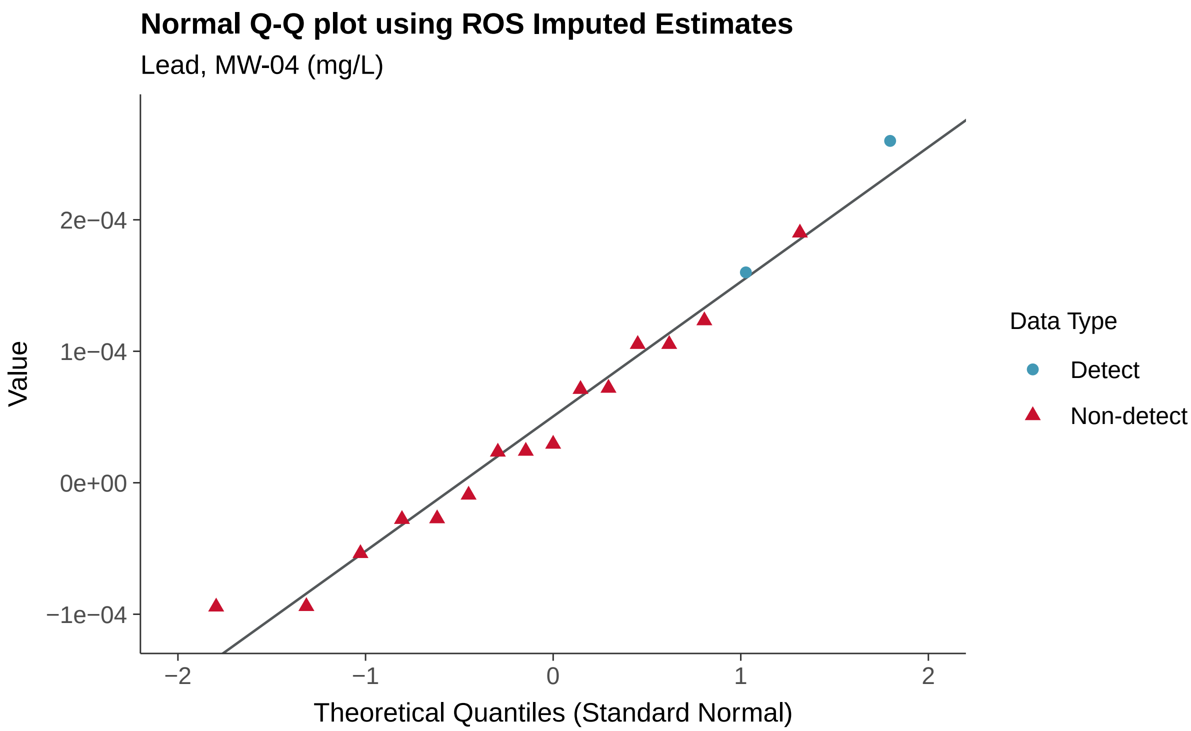
ID: 14_2_4_115

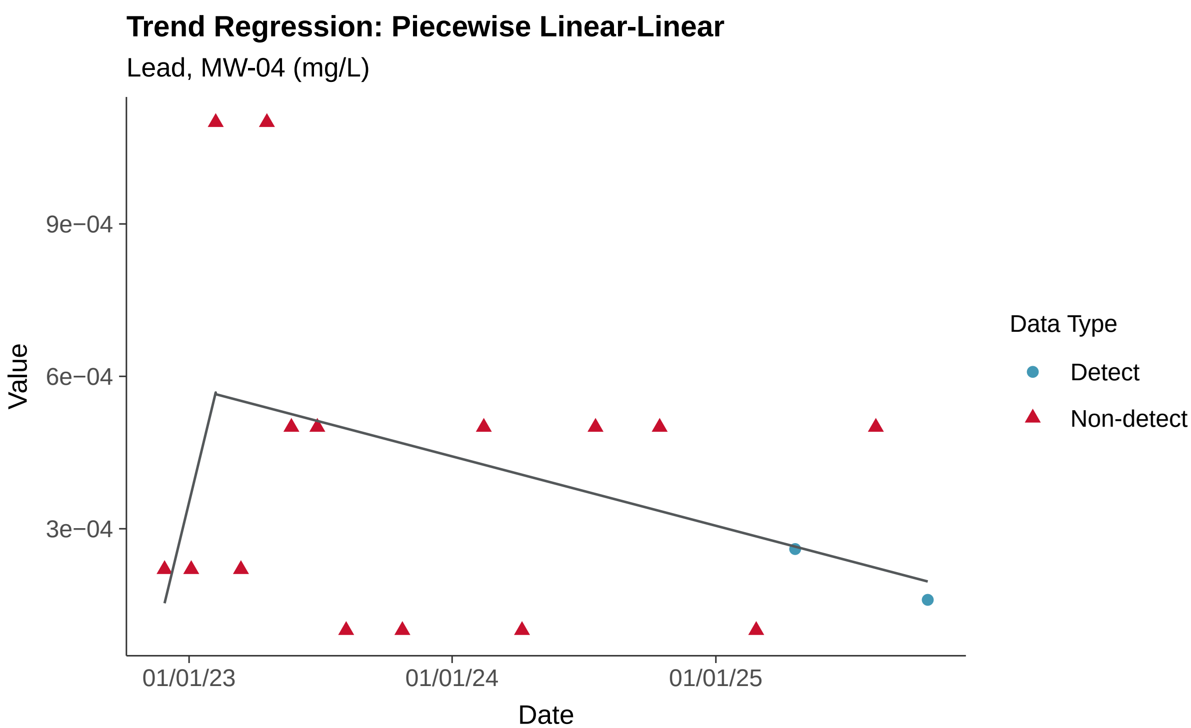


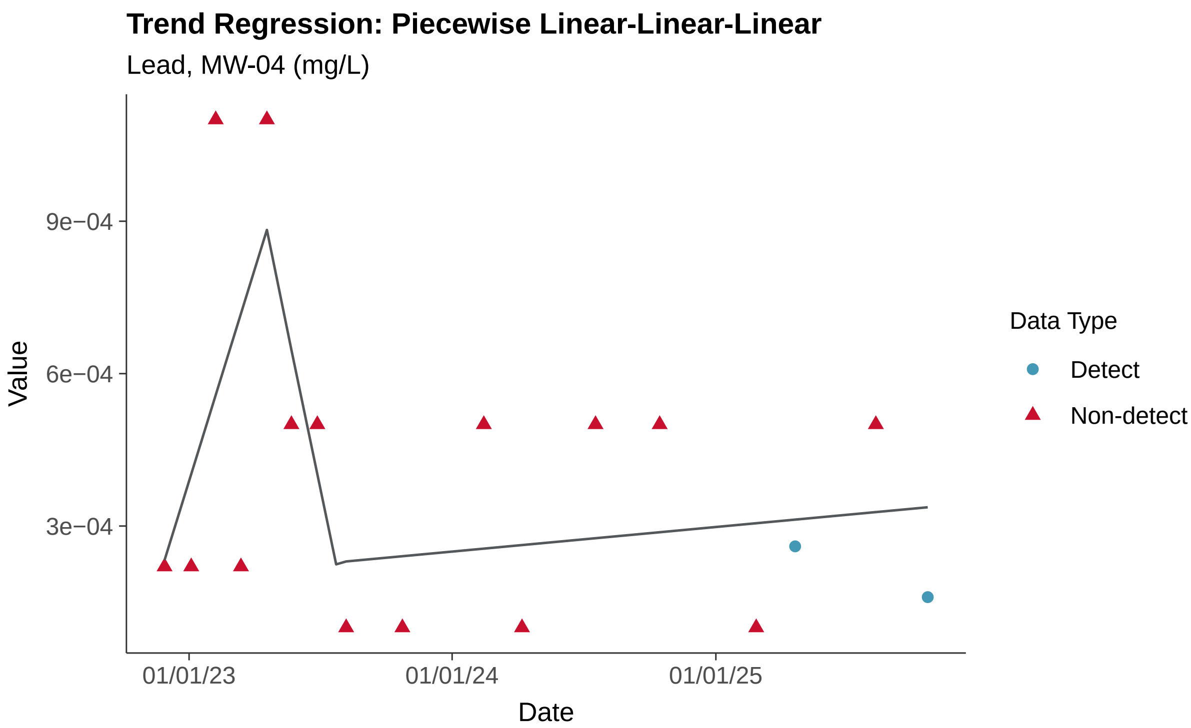



Boxplot
Lead, MW-04 (mg/L)
Value
9e−04
6e−04
3e−04
Data Type
Non-detect
Outlier Type
Minor


Boxplot by Season
Lead, MW-04 (mg/L)
Value
9e−04
6e−04
3e−04
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Data Type
Non-detect
Outlier Type
Major
Minor


Normal Q-Q plot using ROS Imputed Estimates
Lead, MW-04 (mg/L)
Value
2e−04
1e−04
0e+00
−1e−04
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Lead, MW-04 (mg/L)
Value
9e−04
6e−04
3e−04
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

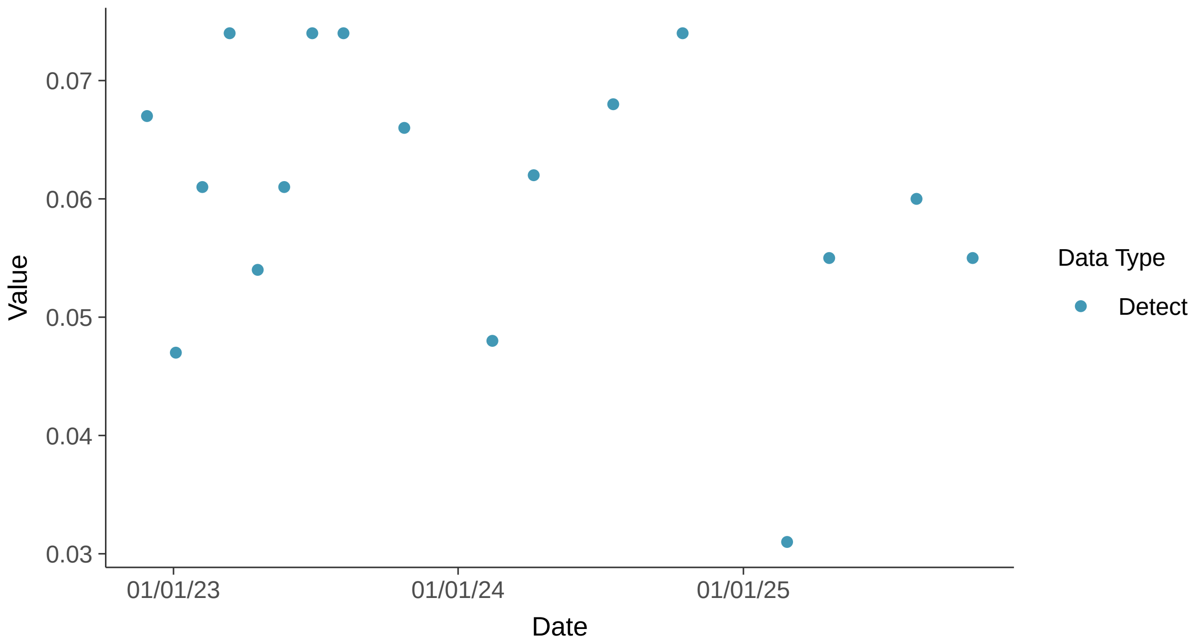

Trend Regression: Piecewise Linear-Linear-Linear
Lead, MW-04 (mg/L)
Value
9e−04
6e−04
3e−04
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Appendix IV: Lithium, MW-04

ID: 14_2_4_116

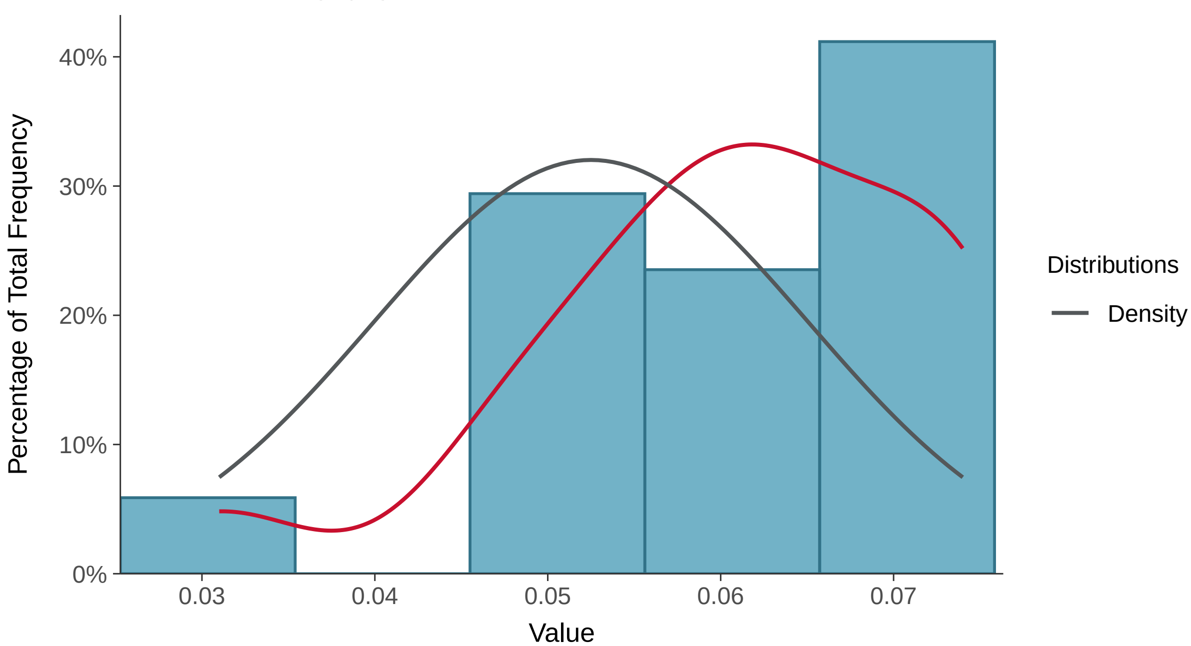
Scatter Plot

Lithium, MW-04 (mg/L)



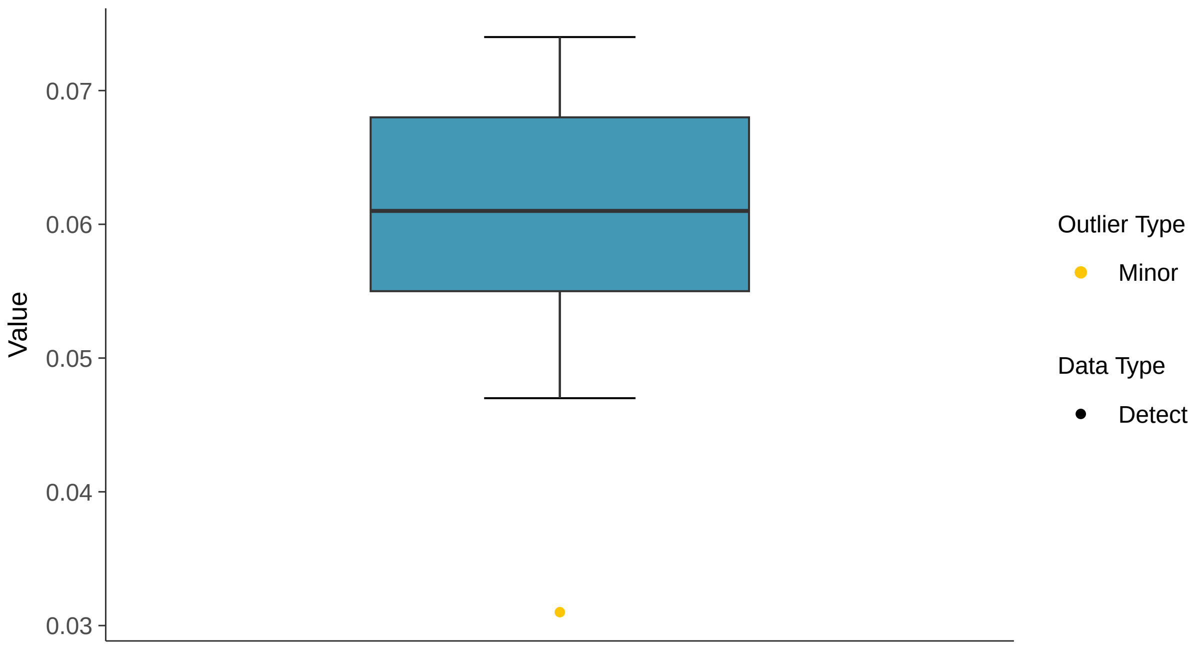
Histogram

Lithium, MW-04 (mg/L)



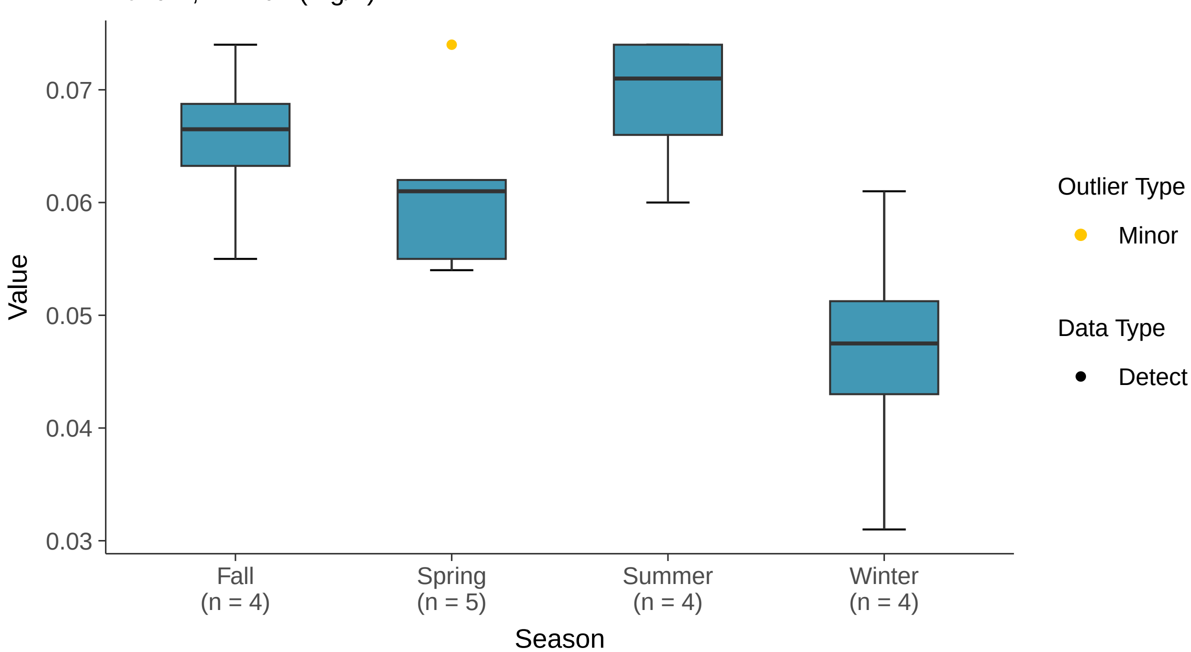
Boxplot

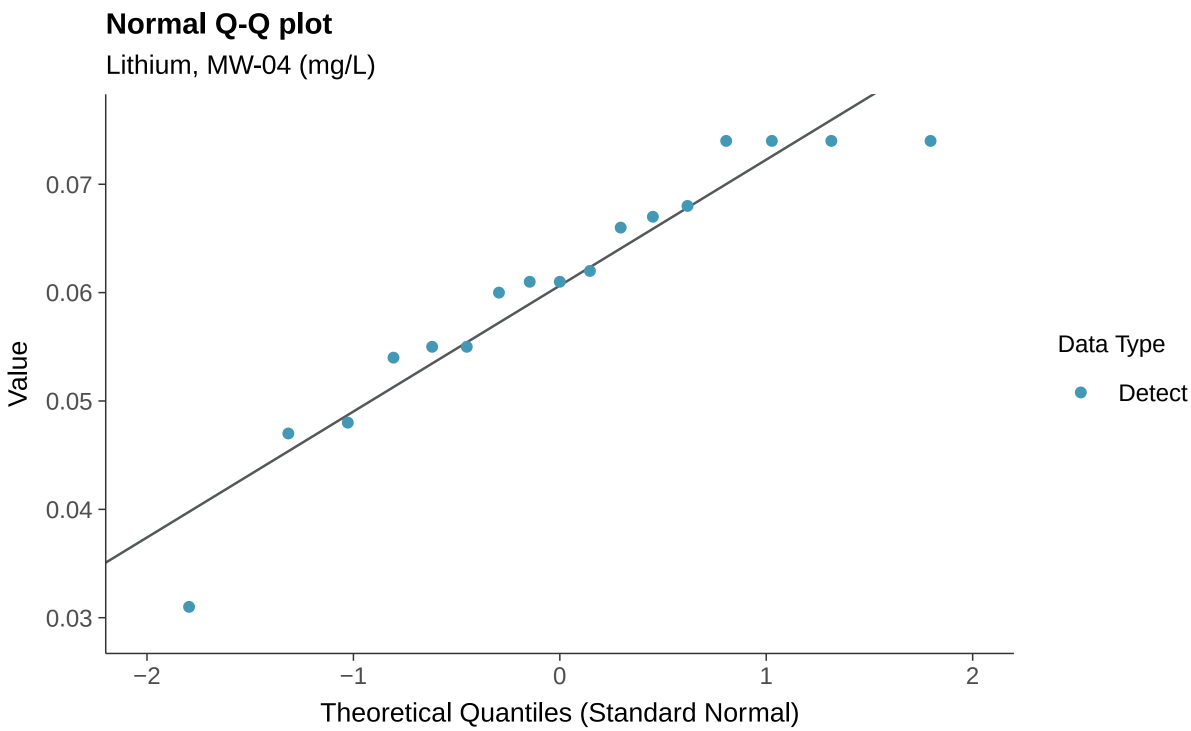
Lithium, MW-04 (mg/L)

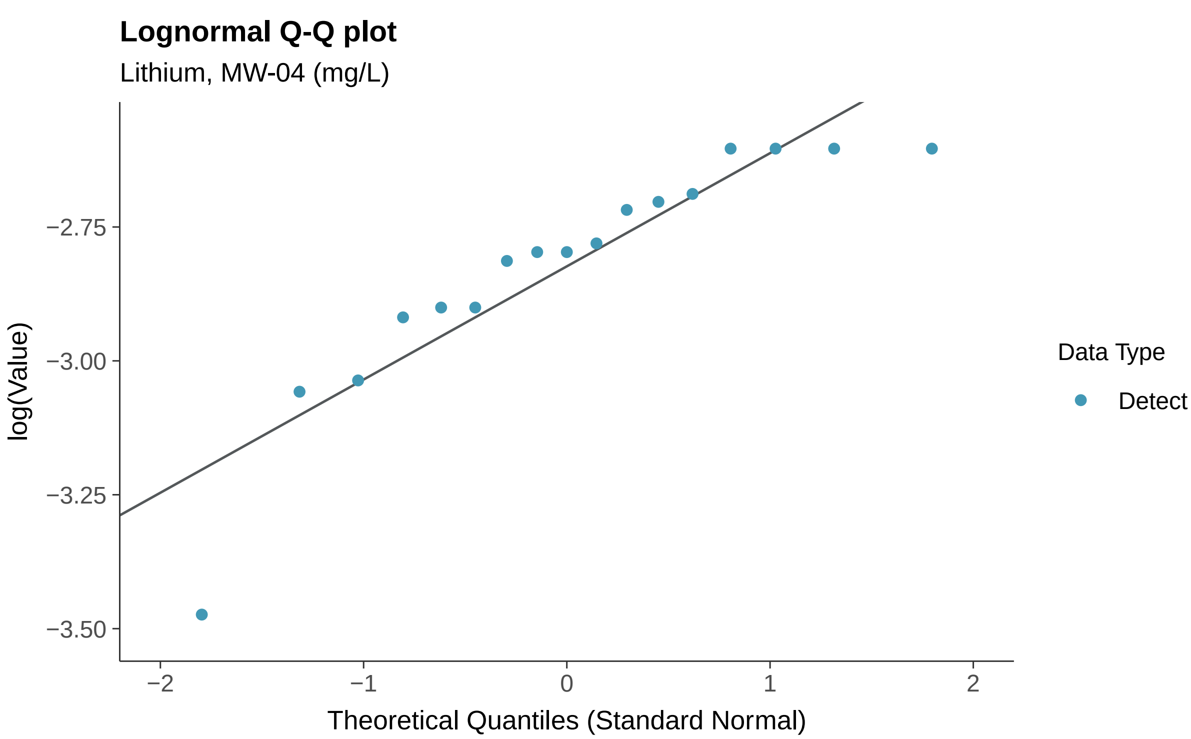


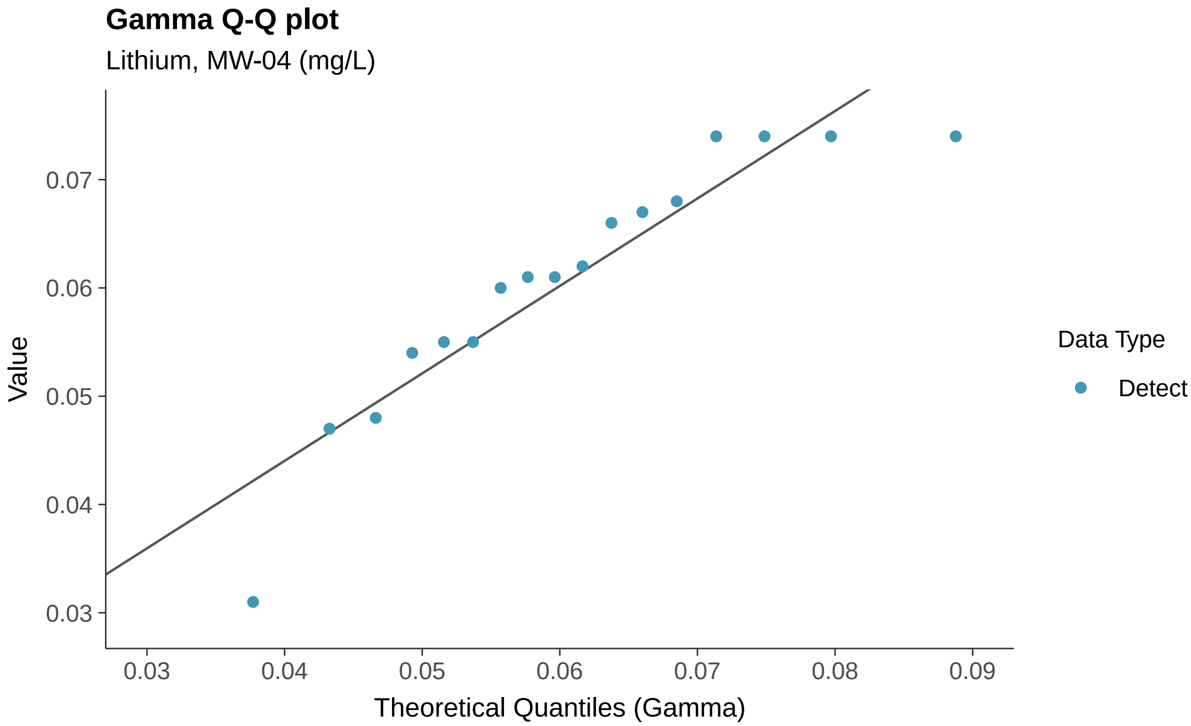
Boxplot by Season

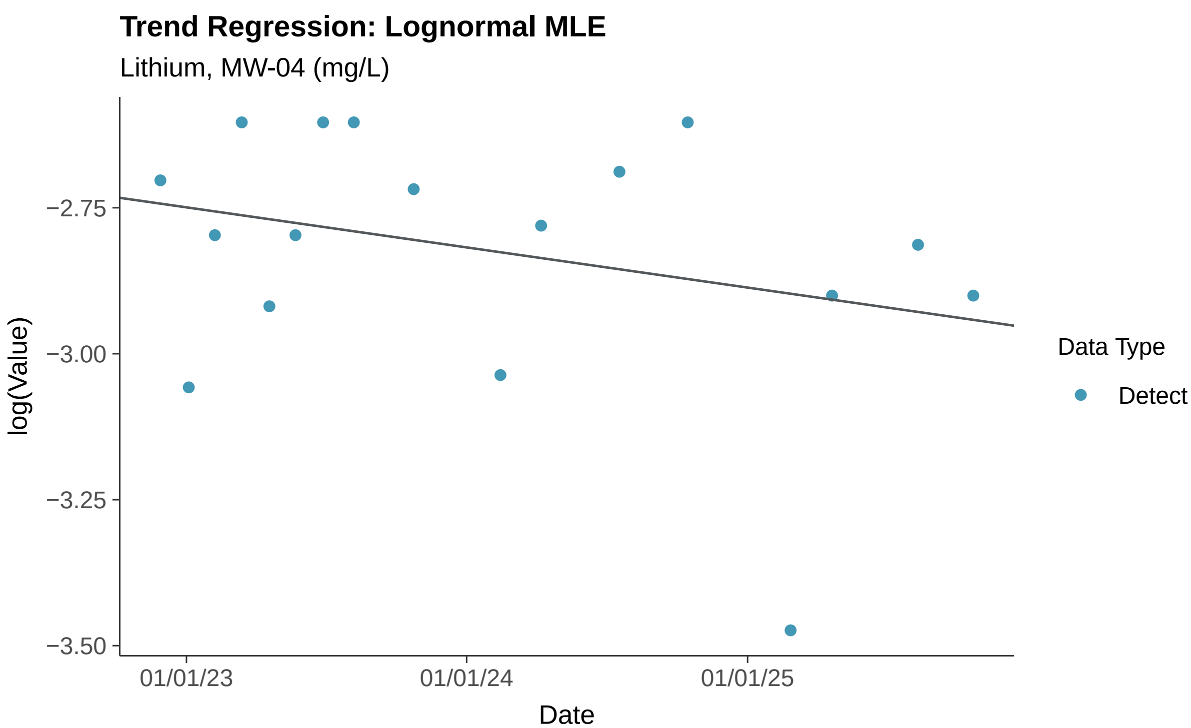
Lithium, MW-04 (mg/L)




Normal Q-Q plot
Lithium, MW-04 (mg/L)
Value
0.07
0.06
0.05
0.04
0.03
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Lithium, MW-04 (mg/L)
log(Value)
−2.75
−3.00
−3.25
−3.50
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

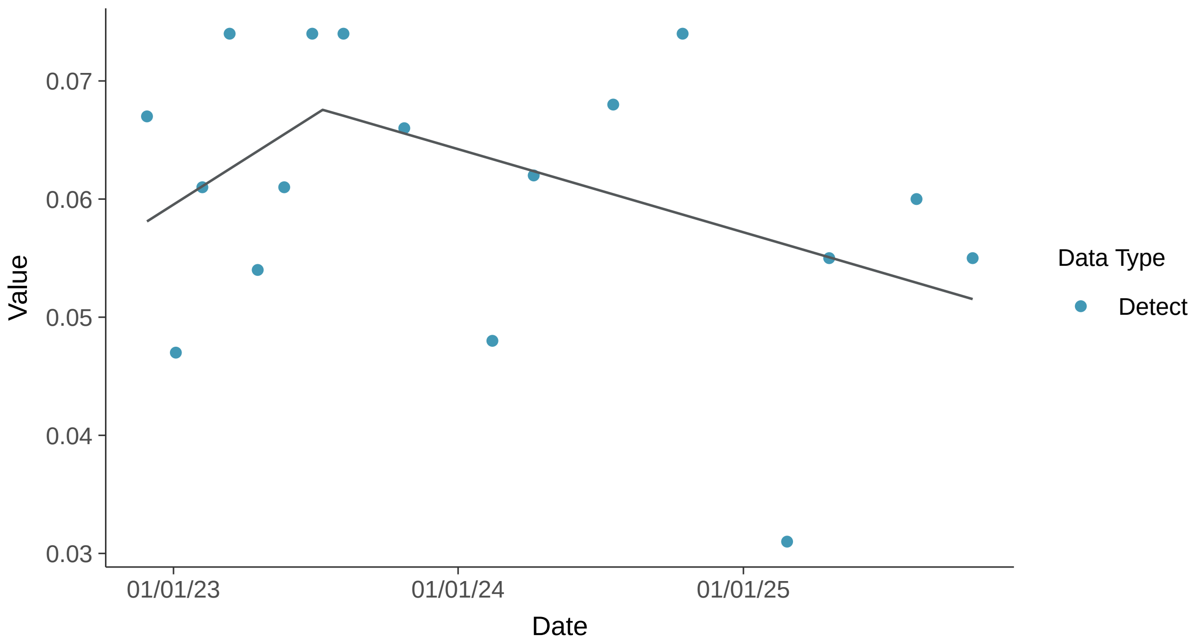

Gamma Q-Q plot
Lithium, MW-04 (mg/L)
Value
0.07
0.06
0.05
0.04
0.03
0.03
0.04
0.05
0.06
0.07
0.08
0.09
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Lithium, MW-04 (mg/L)
log(Value)
−2.75
−3.00
−3.25
−3.50
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Grand Haven
Downgradient Wells as of October 2025

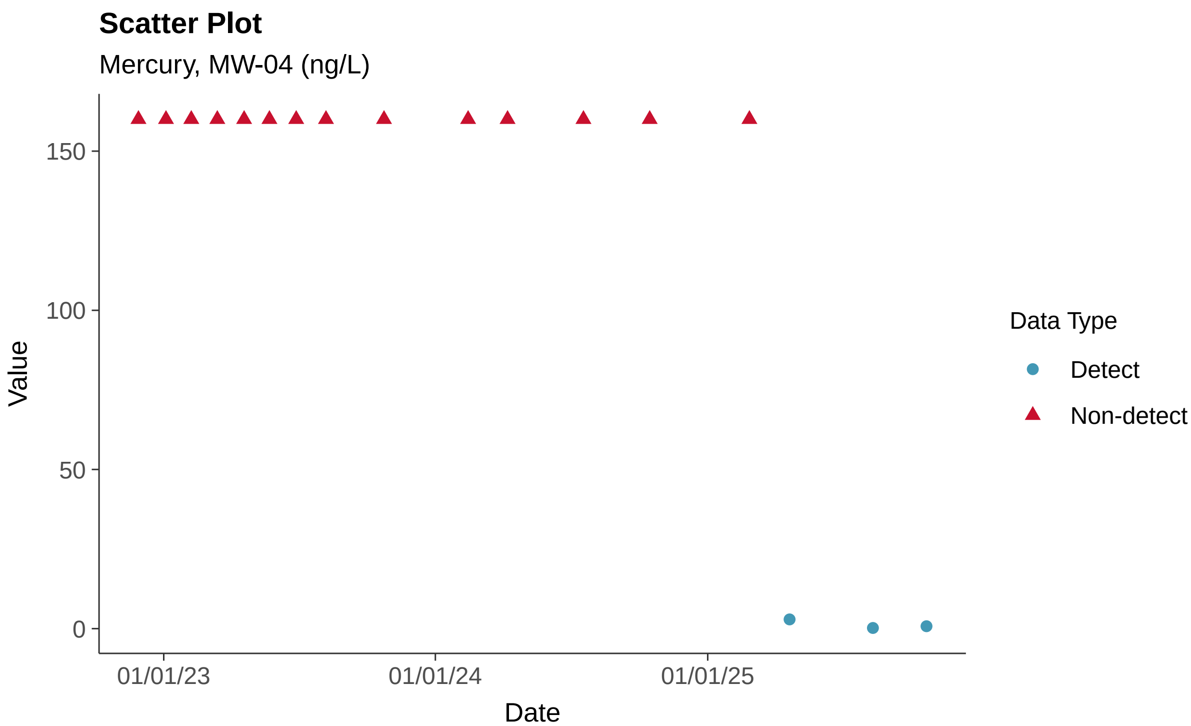
Trend Regression: Piecewise Linear-Linear

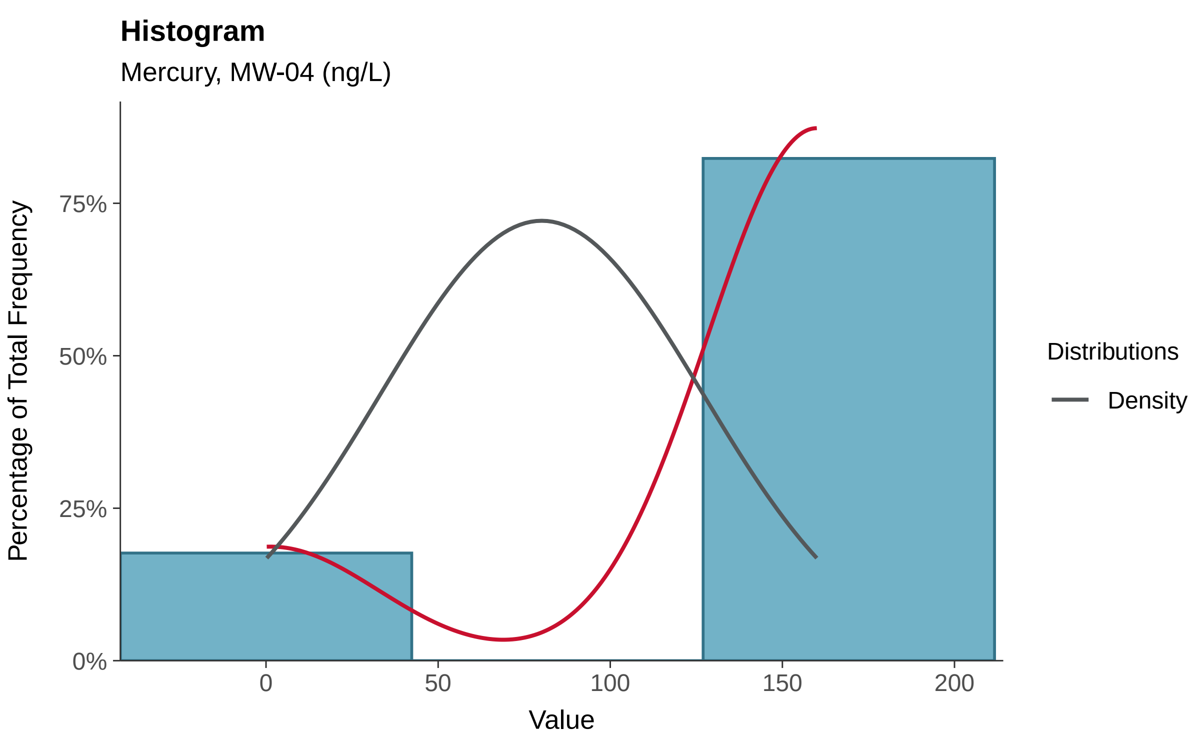
Lithium, MW-04 (mg/L)



Appendix IV: Mercury, MW-04

ID: 14_2_4_117



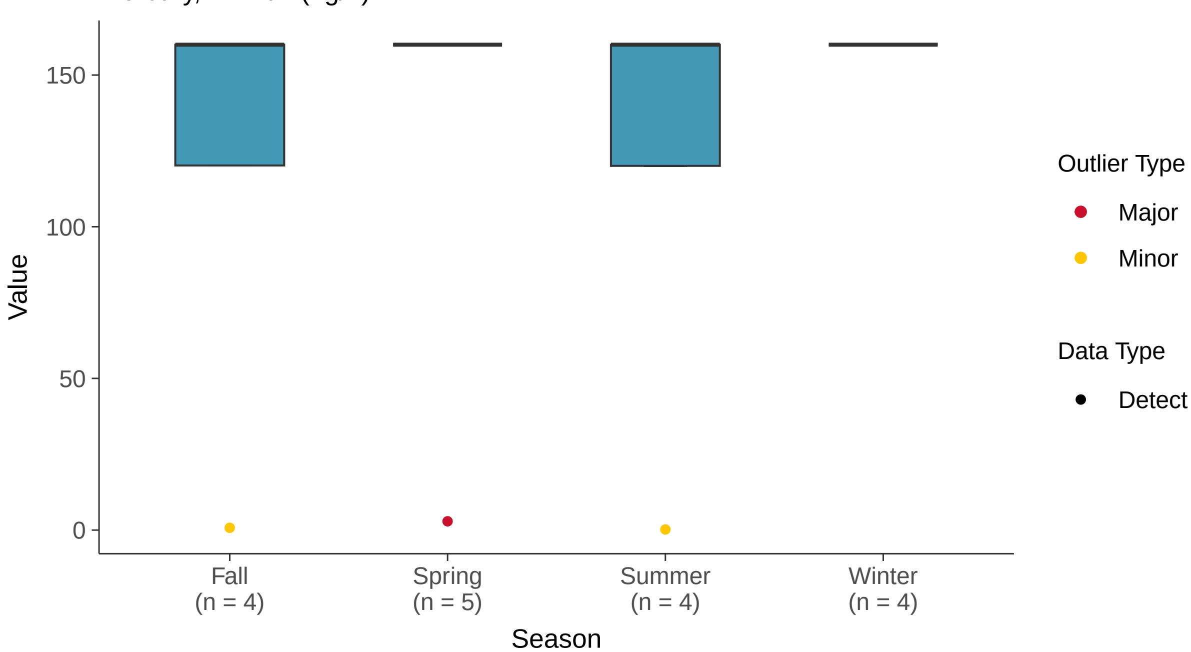


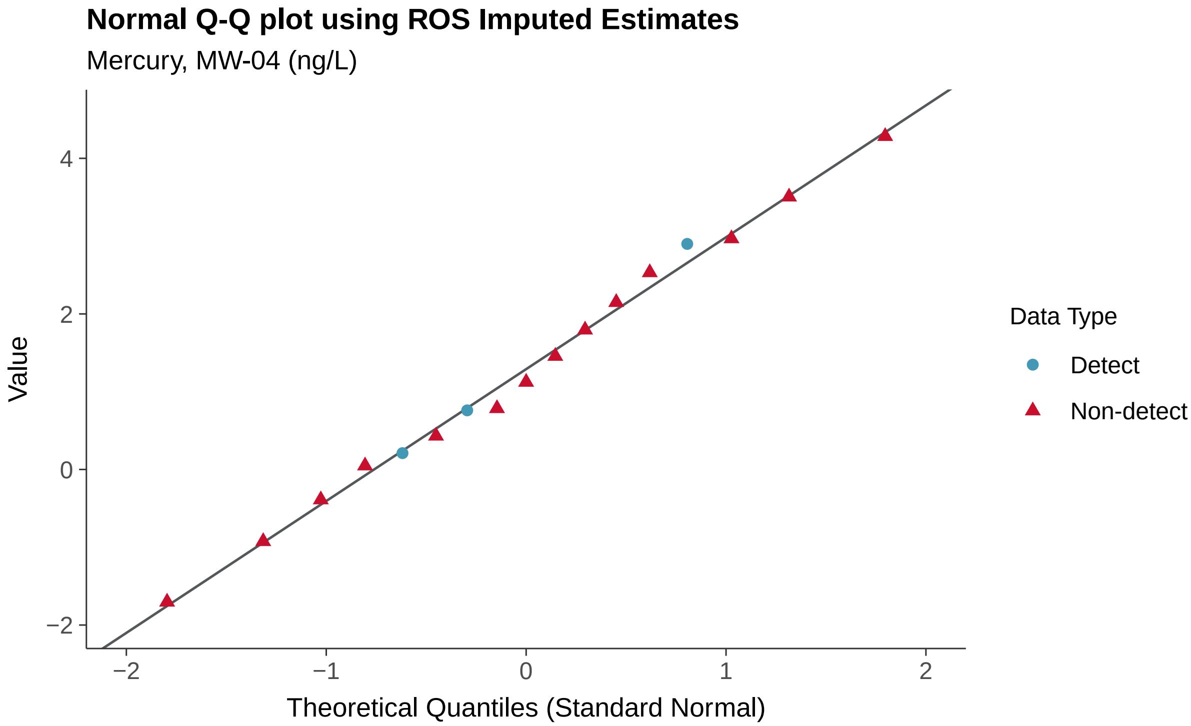
Boxplot

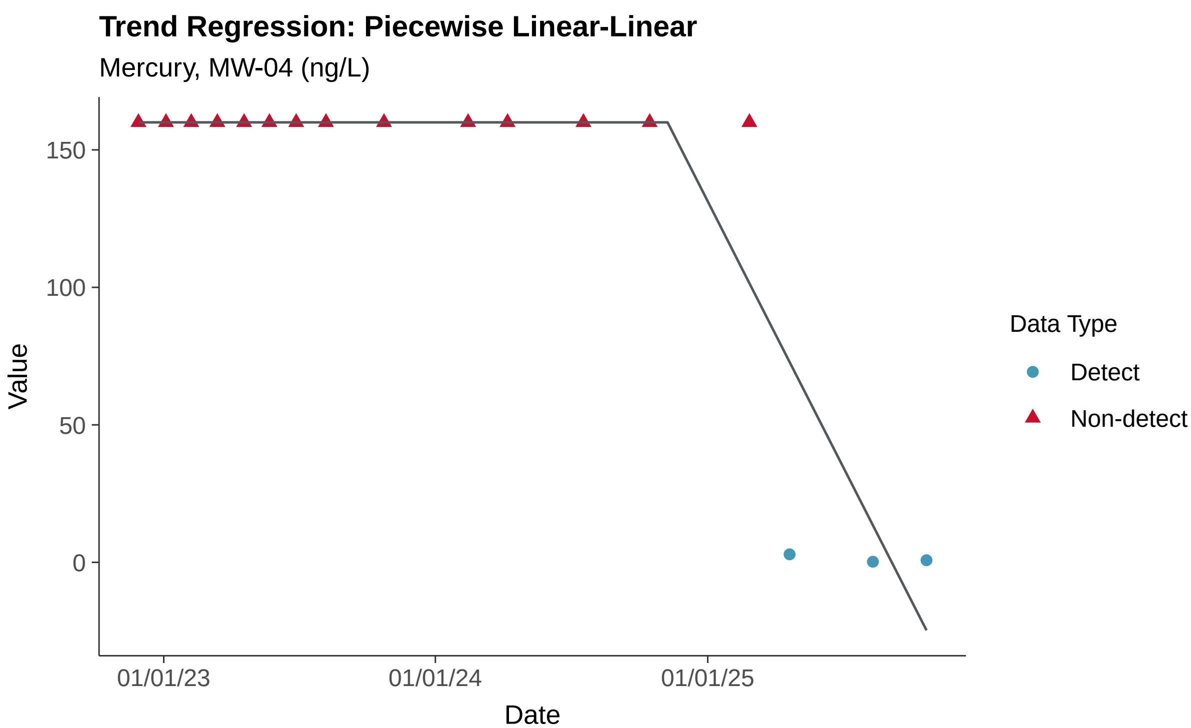
Mercury, MW-04 (ng/L)

Boxplot by Season

Mercury, MW-04 (ng/L)

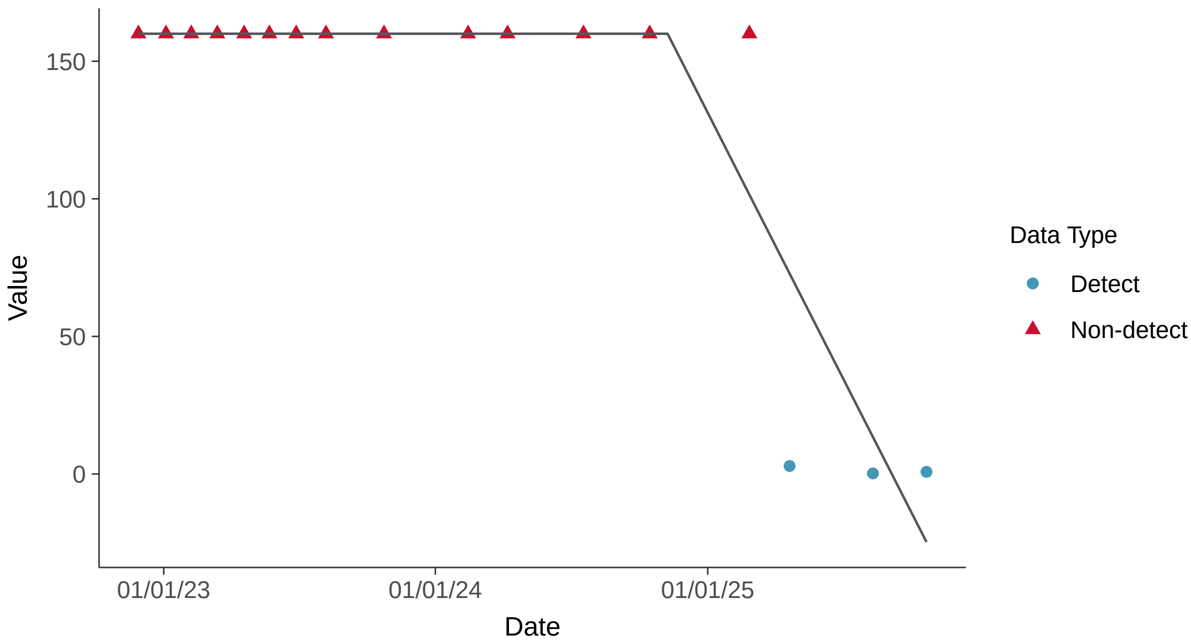



Normal Q-Q plot using ROS Imputed Estimates
Mercury, MW-04 (ng/L)
Value
4
2
0
−2
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Mercury, MW-04 (ng/L)
Value
150
100
50
0
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

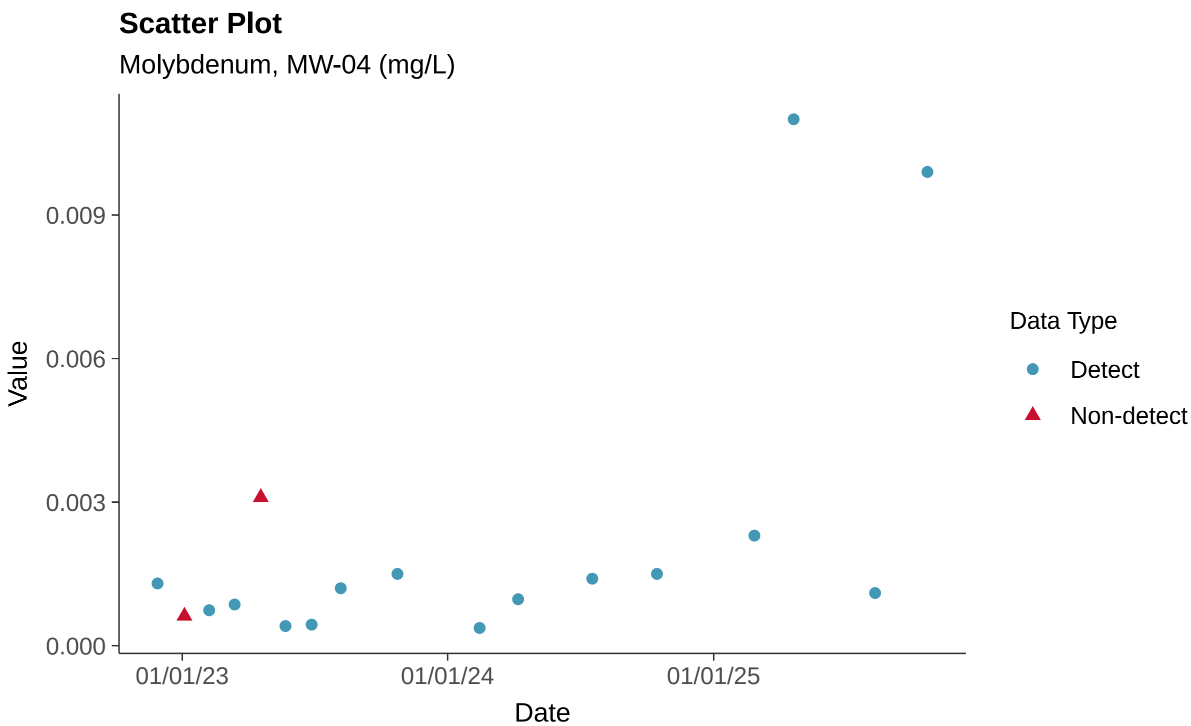
Trend Regression: Piecewise Linear-Linear-Linear

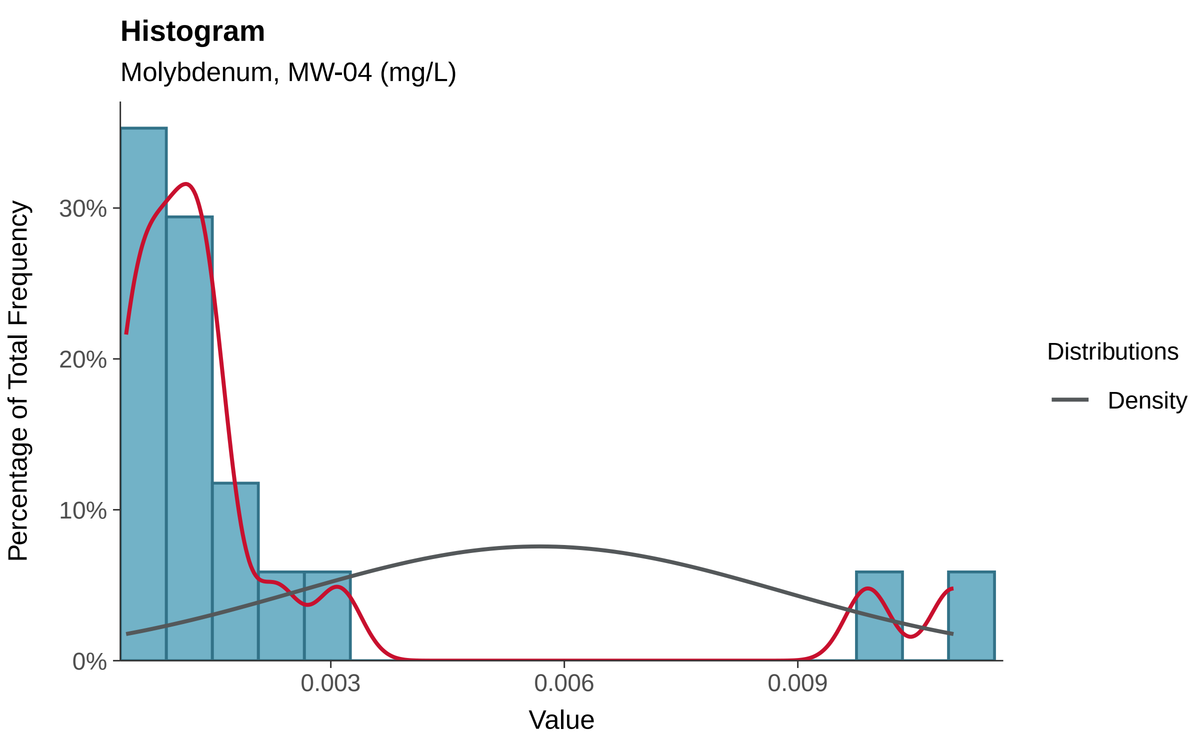
Mercury, MW-04 (ng/L)

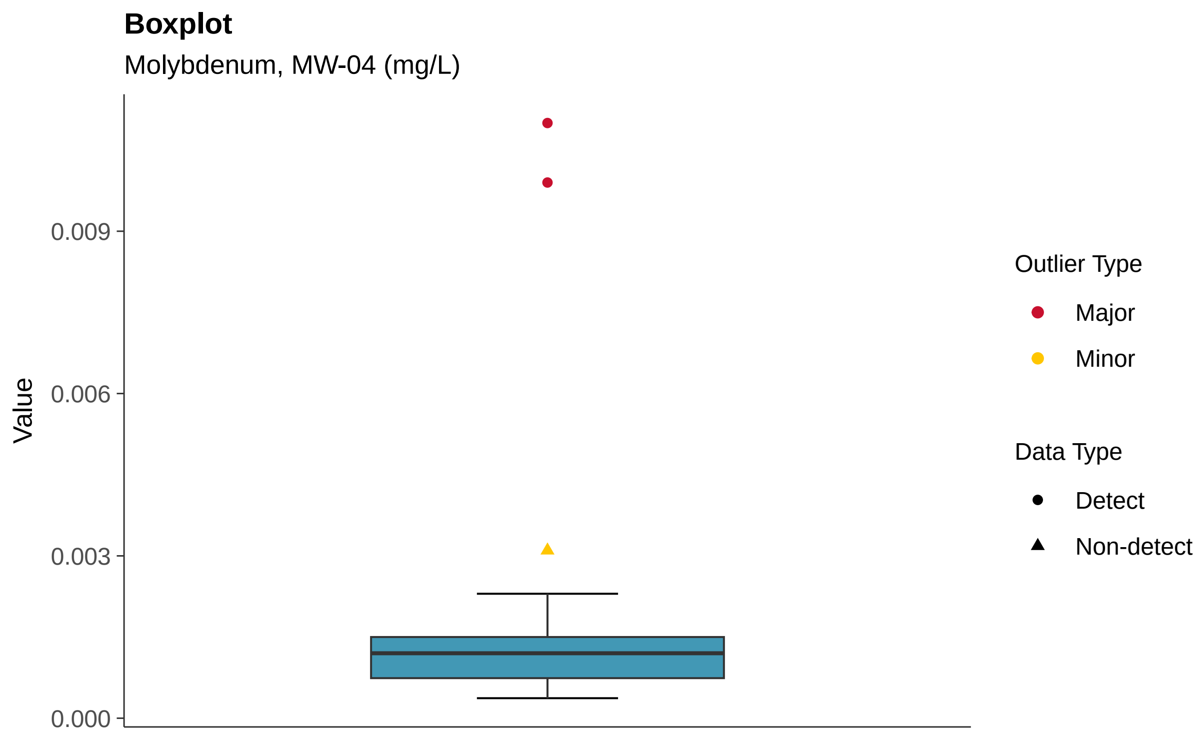


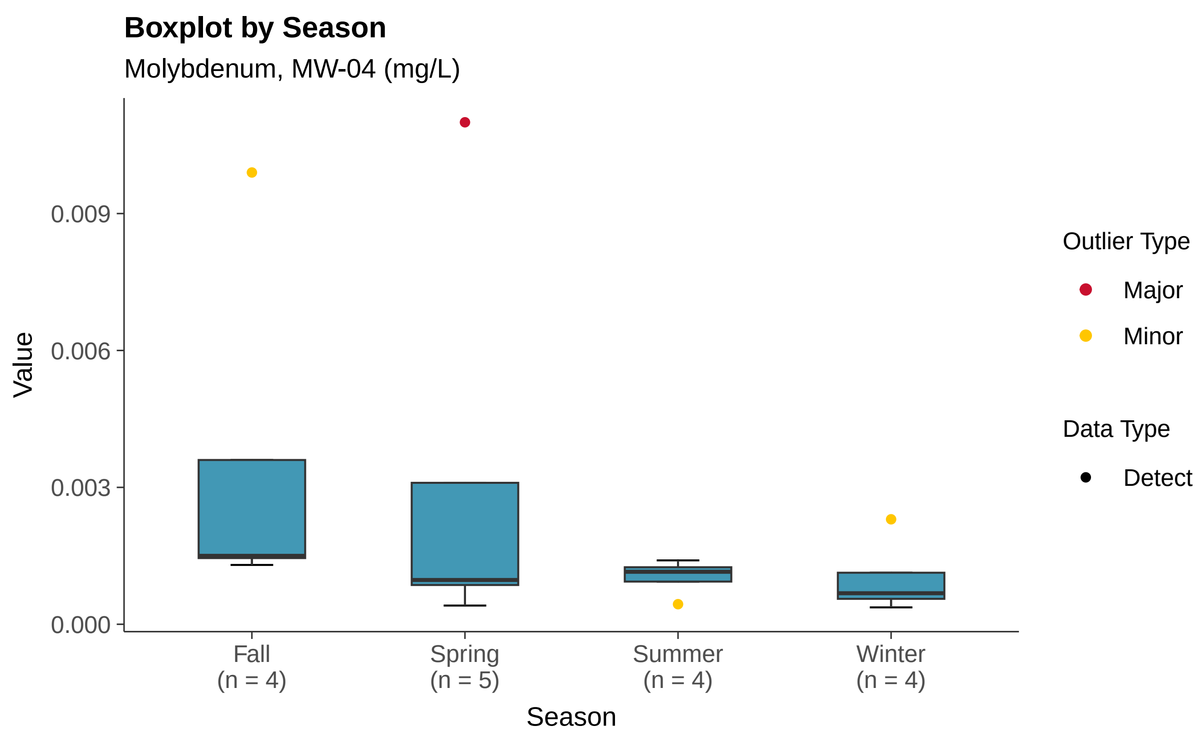
Appendix IV: Molybdenum, MW-04

ID: 14_2_4_118



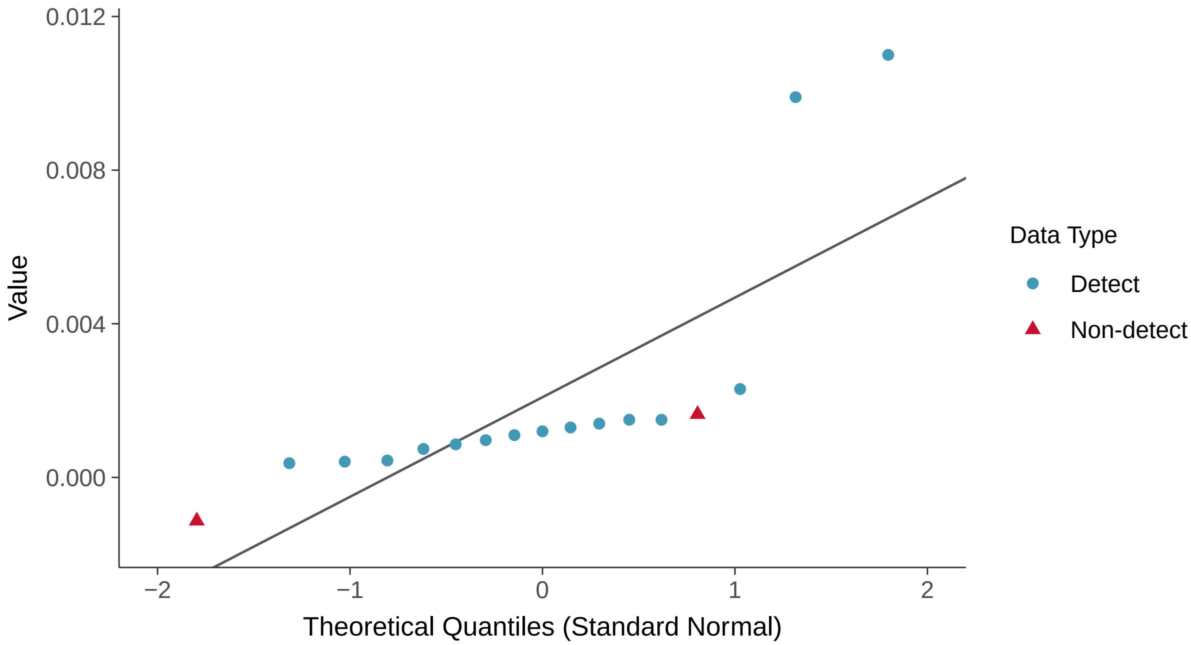



Boxplot
Molybdenum, MW-04 (mg/L)
Value
0.009
0.006
0.003
0.000
Outlier Type
Major
Minor
Data Type
Detect
Non-detect


Boxplot by Season
Molybdenum, MW-04 (mg/L)
Value
0.009
0.006
0.003
0.000
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Major
Minor
Data Type
Detect

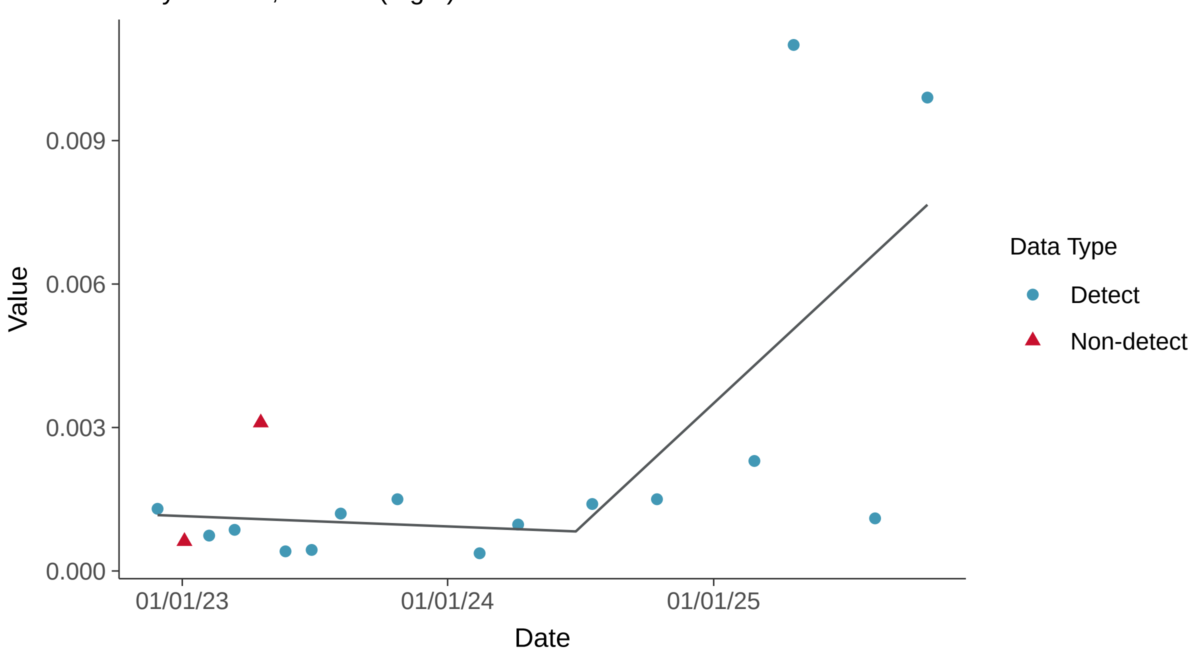
Normal Q-Q plot using ROS Imputed Estimates

Molybdenum, MW-04 (mg/L)



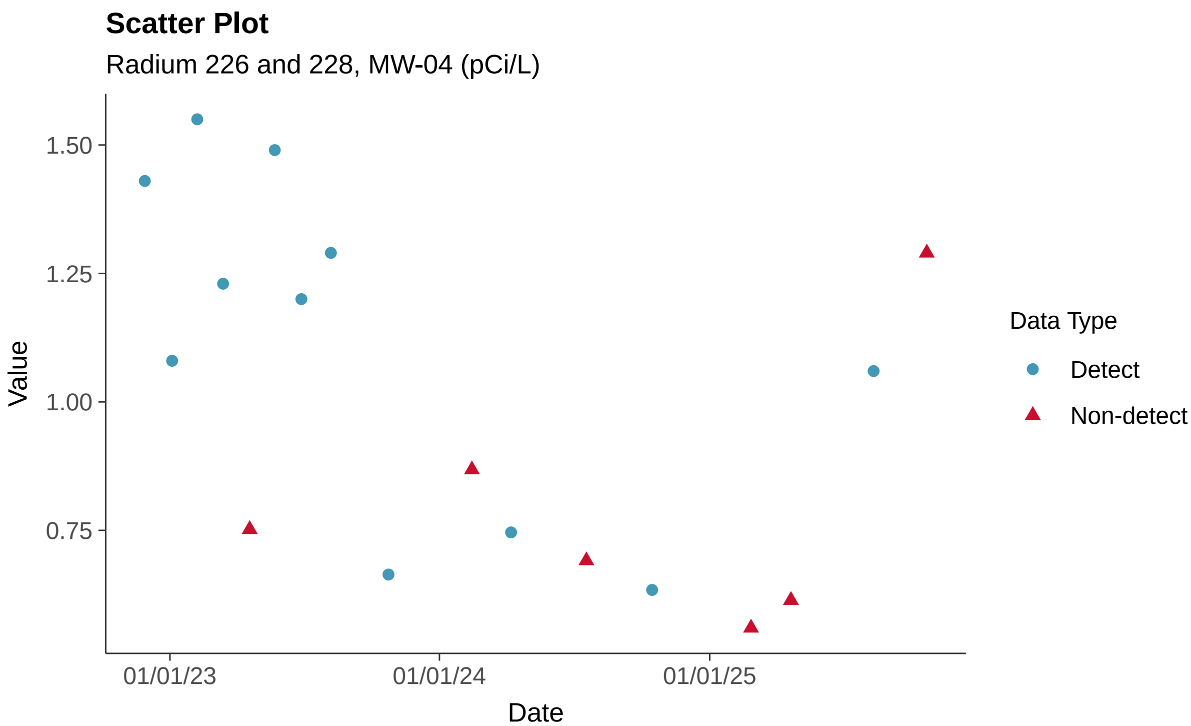
Trend Regression: Piecewise Linear-Linear

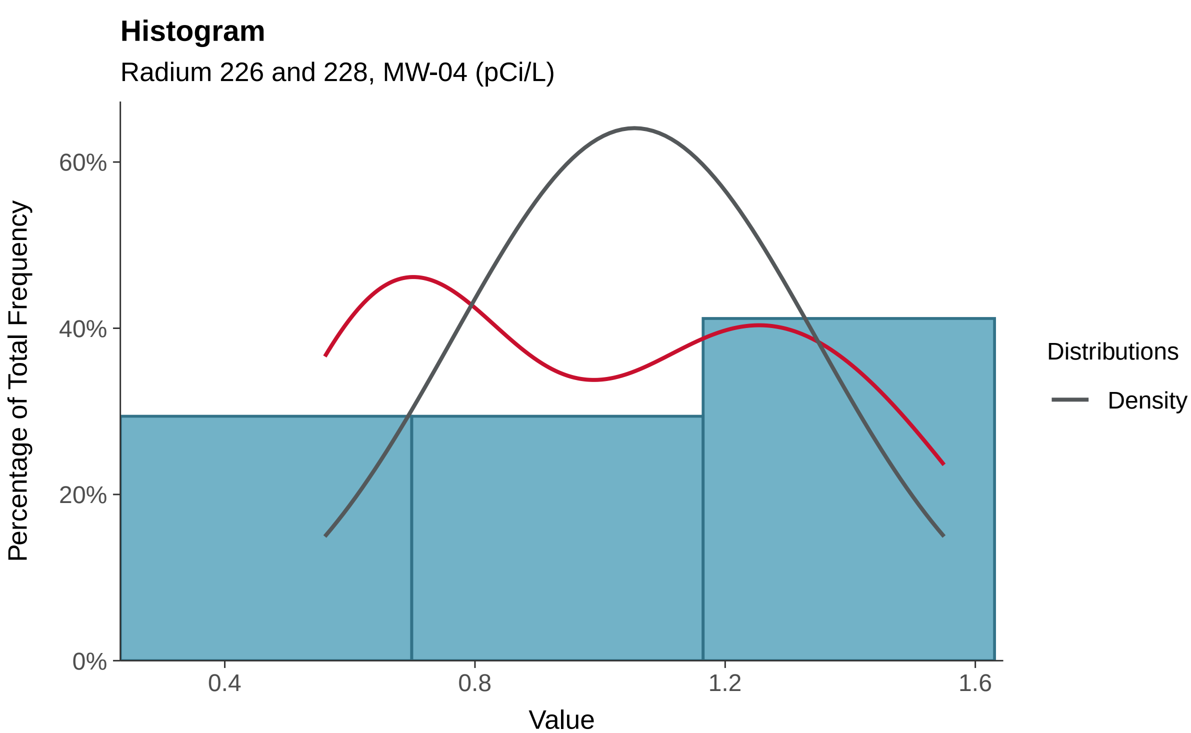
Molybdenum, MW-04 (mg/L)



Appendix IV: Radium 226 and 228, MW-04

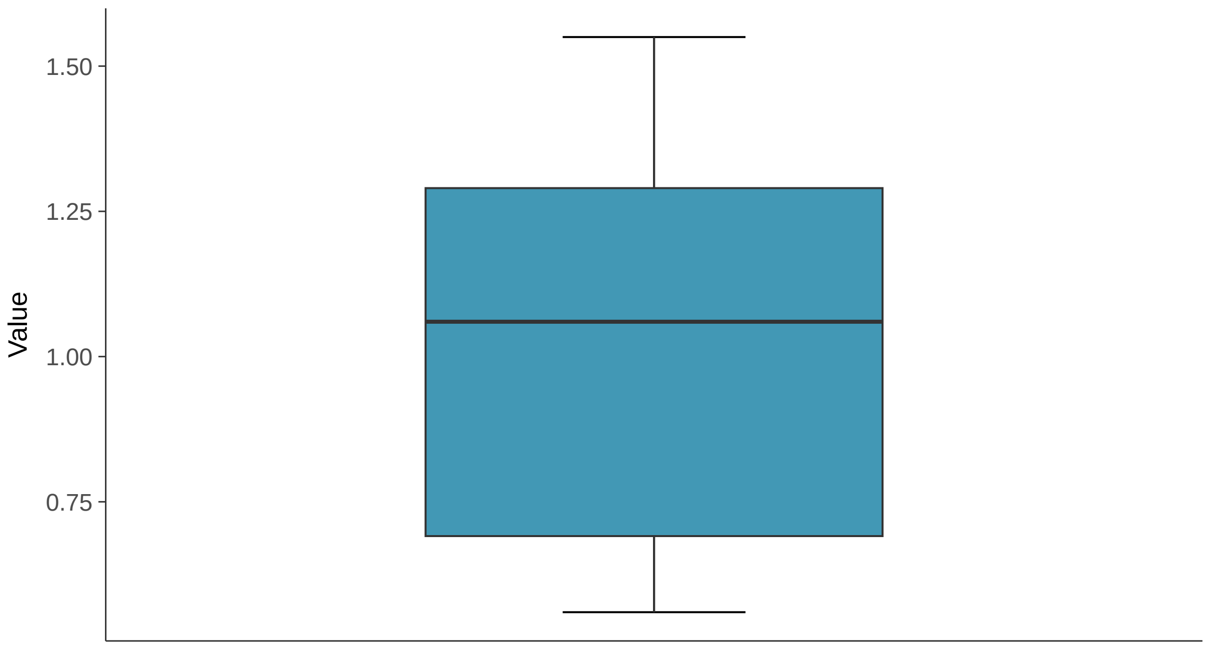
ID: 14_2_4_121





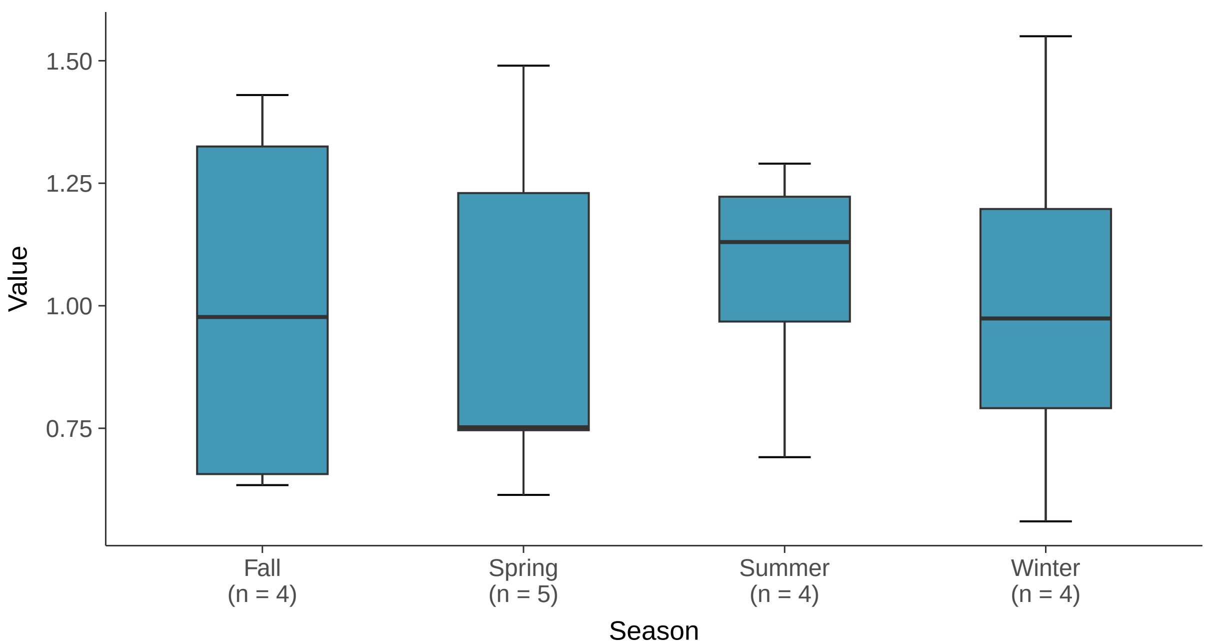
Boxplot

Radium 226 and 228, MW-04 (pCi/L)



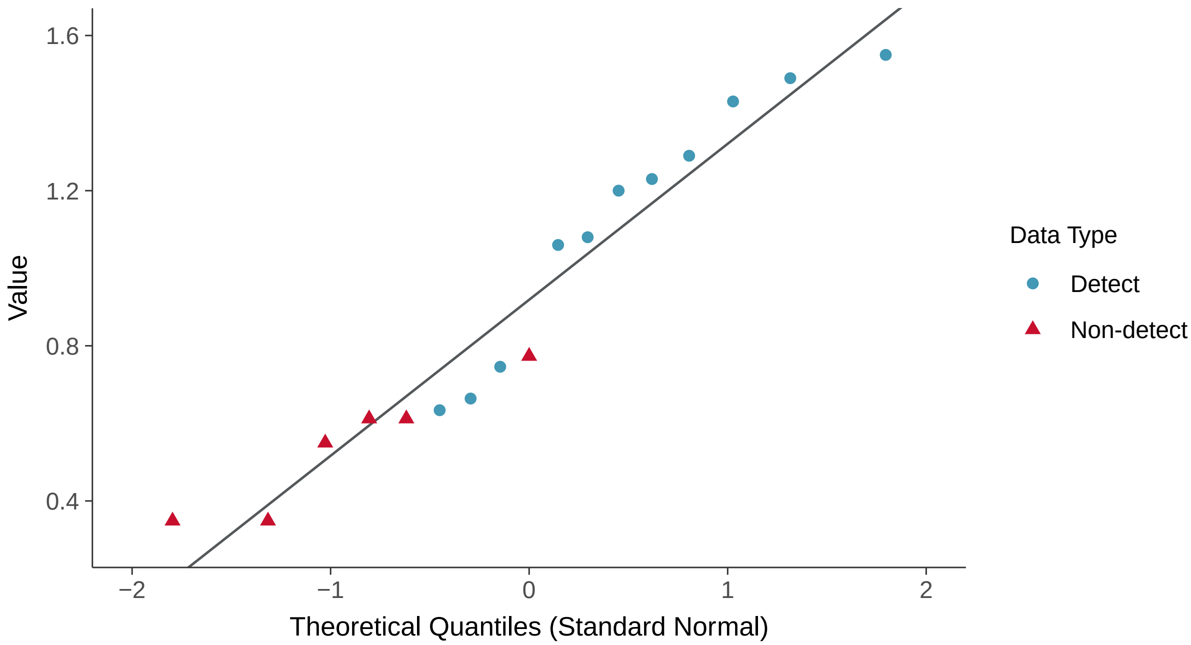
Boxplot by Season

Radium 226 and 228, MW-04 (pCi/L)



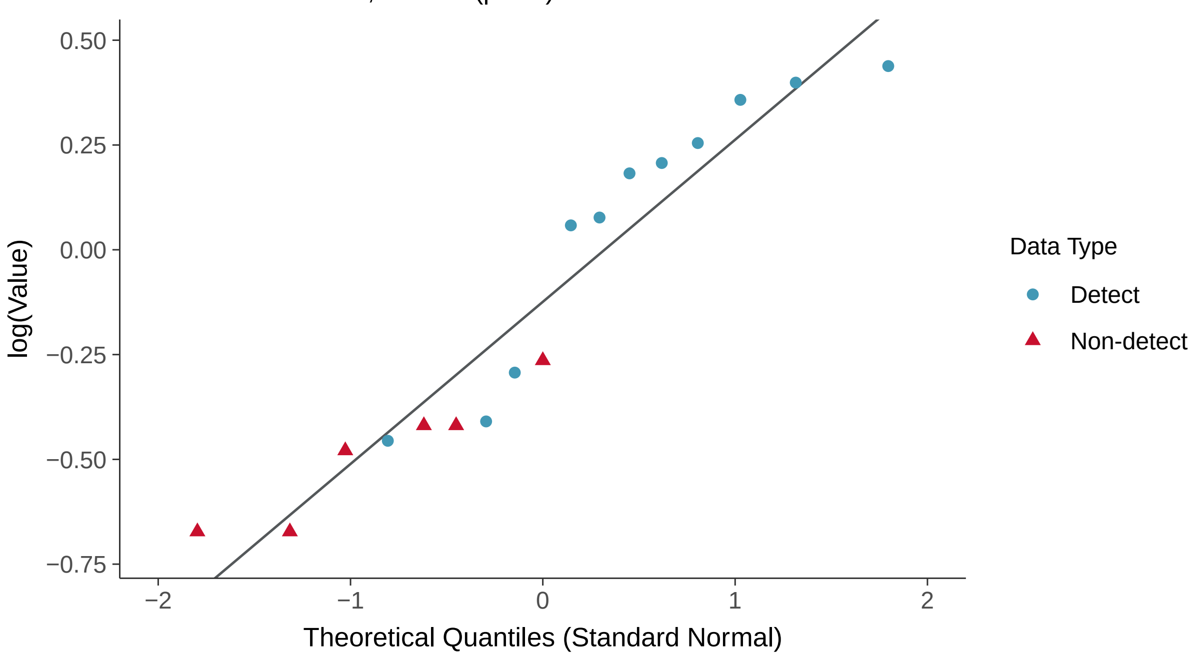
Normal Q-Q plot using ROS Imputed Estimates

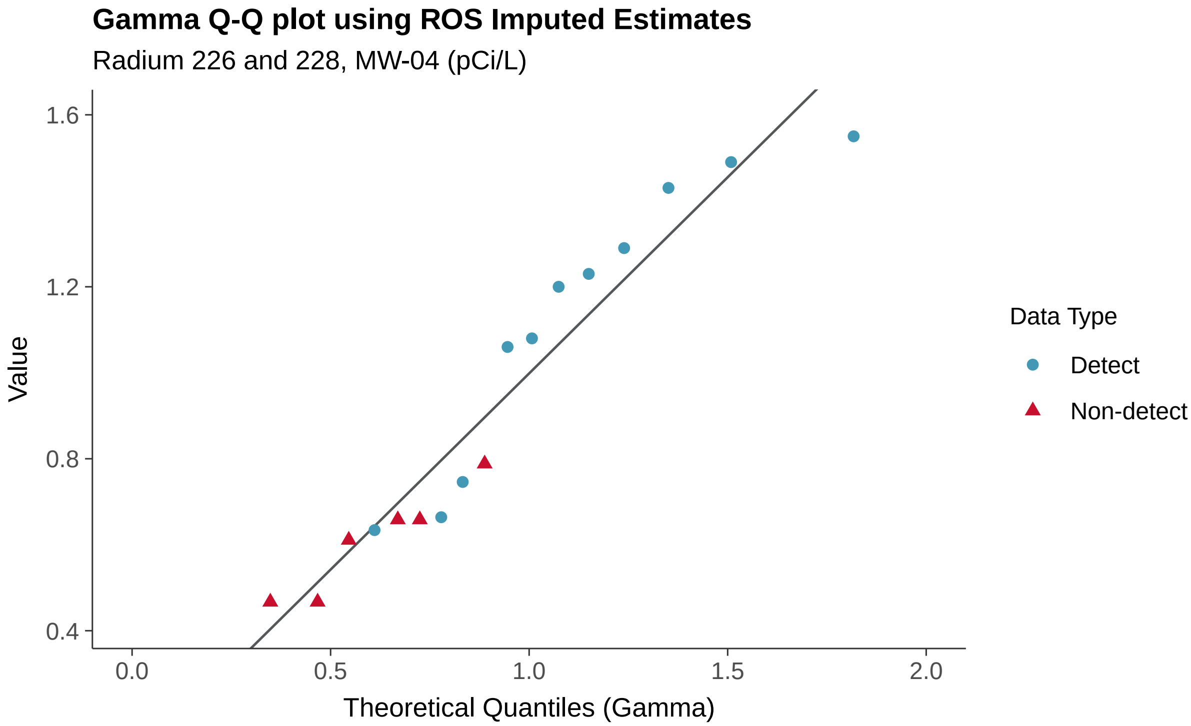
Radium 226 and 228, MW-04 (pCi/L)

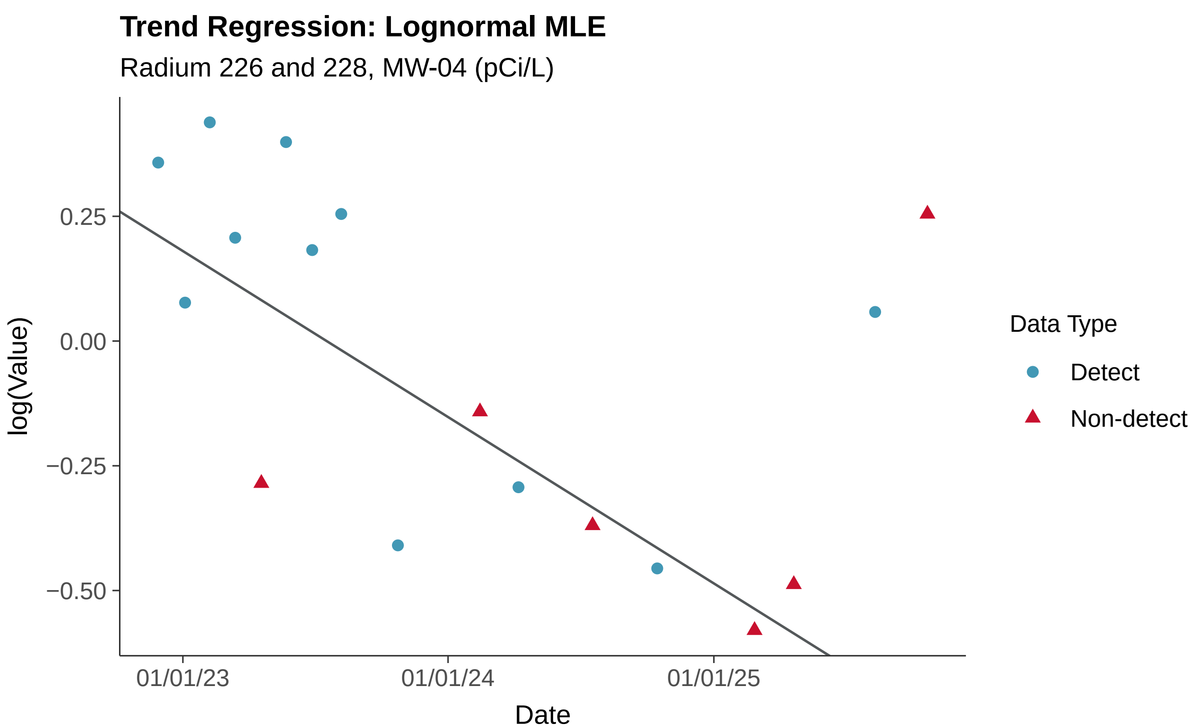


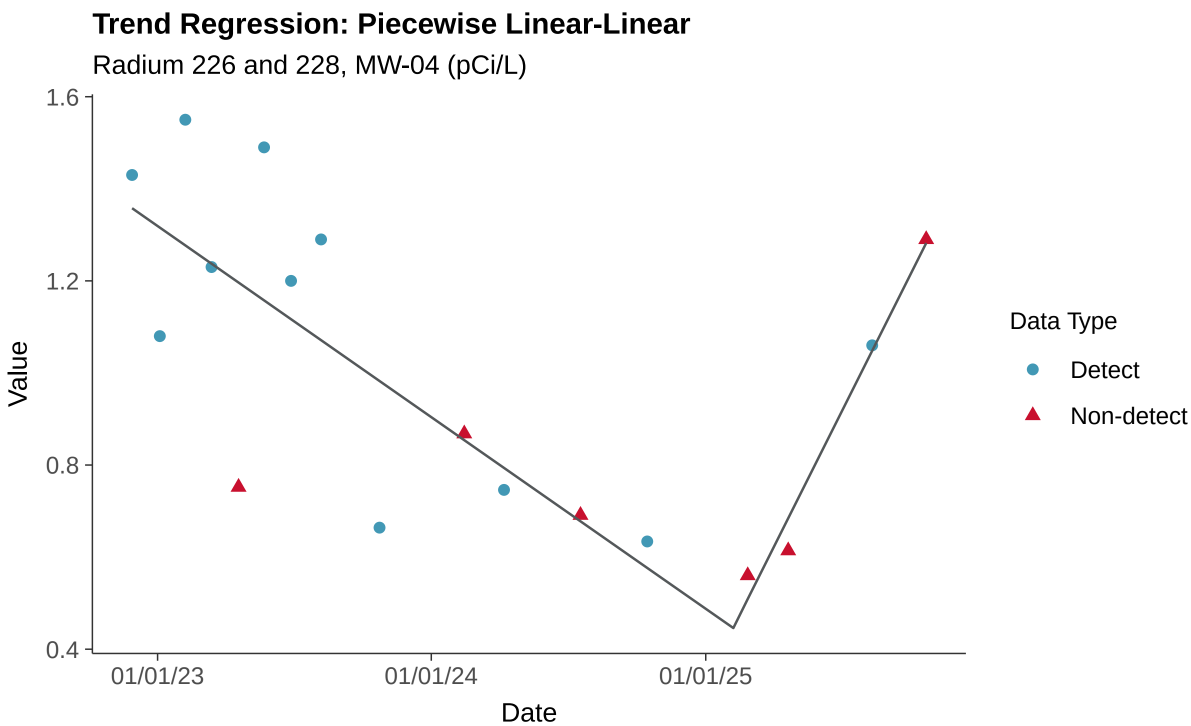
Lognormal Q-Q plot using ROS Imputed Estimates

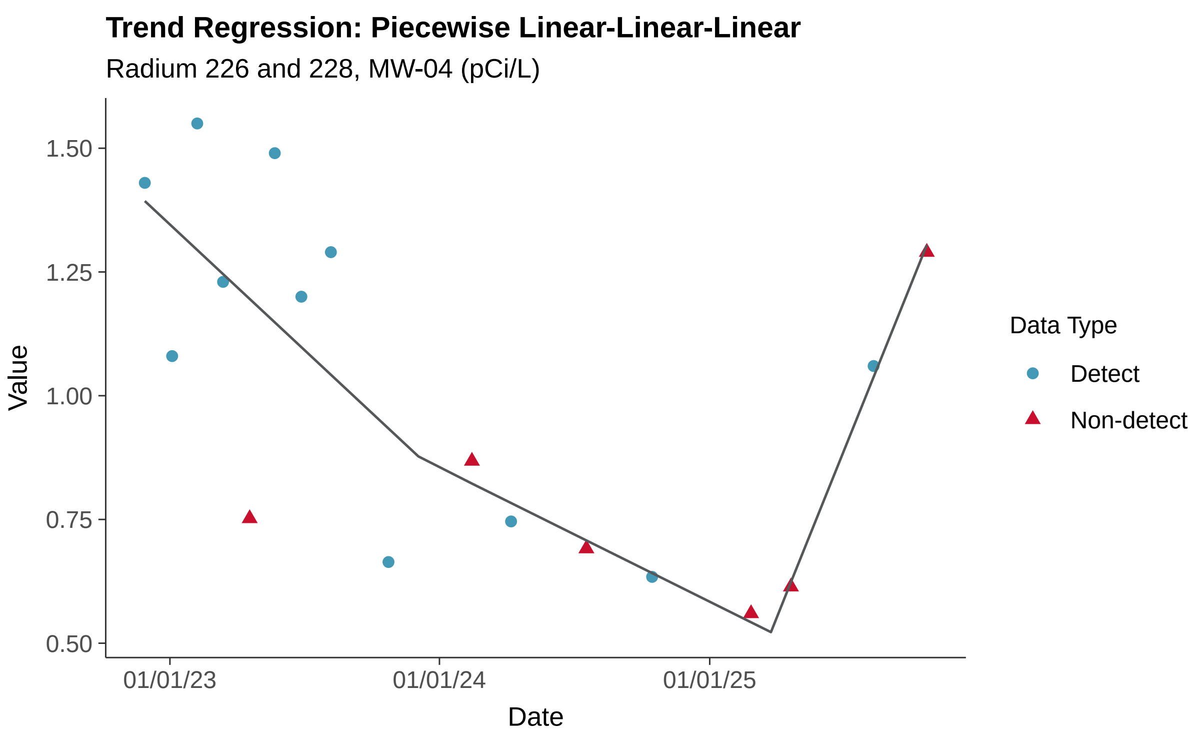
Radium 226 and 228, MW-04 (pCi/L)




Gamma Q-Q plot using ROS Imputed Estimates
Radium 226 and 228, MW-04 (pCi/L)
Value
1.6
1.2
0.8
0.4
0.0
0.5
1.0
1.5
2.0
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect

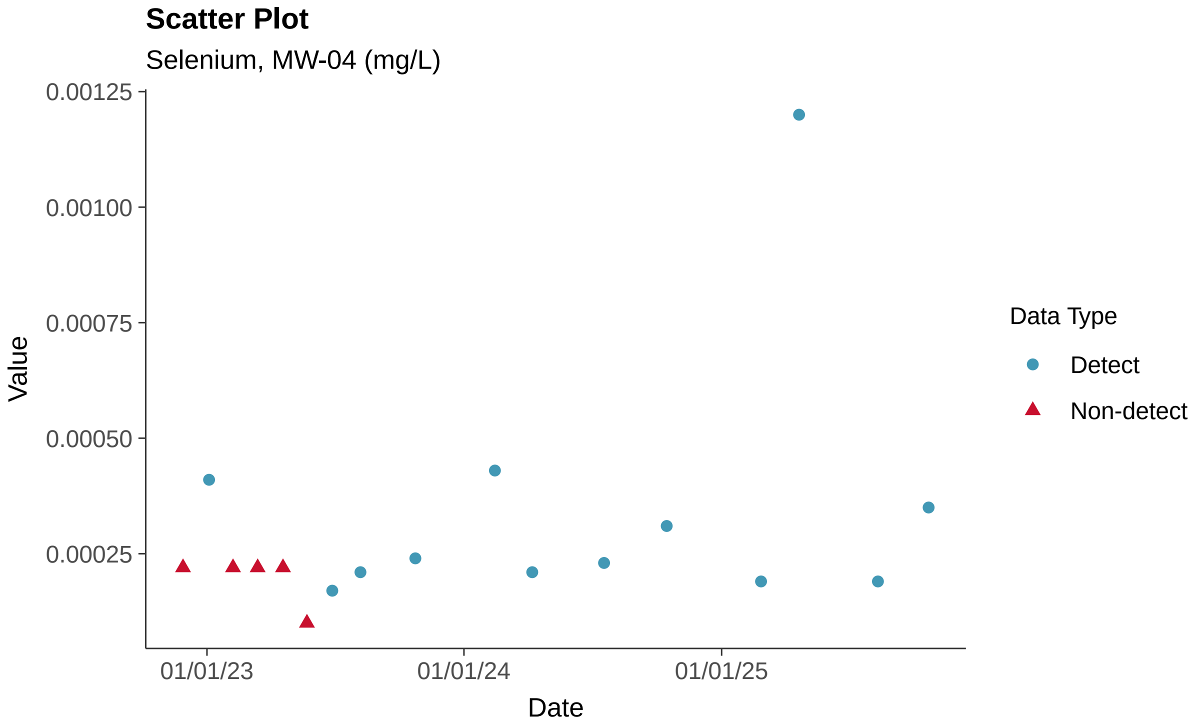

Trend Regression: Lognormal MLE
Radium 226 and 228, MW-04 (pCi/L)
log(Value)
0.25
0.00
−0.25
−0.50
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

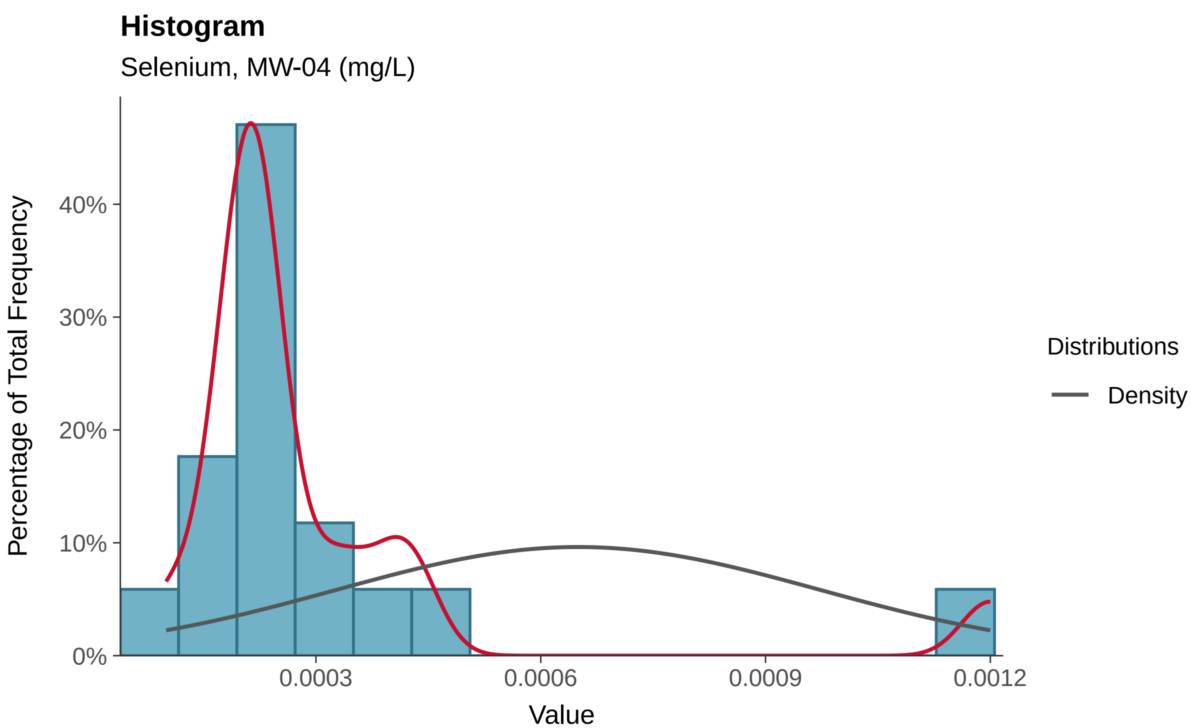

Trend Regression: Piecewise Linear-Linear
Radium 226 and 228, MW-04 (pCi/L)
1.6
1.2
0.8
0.4
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

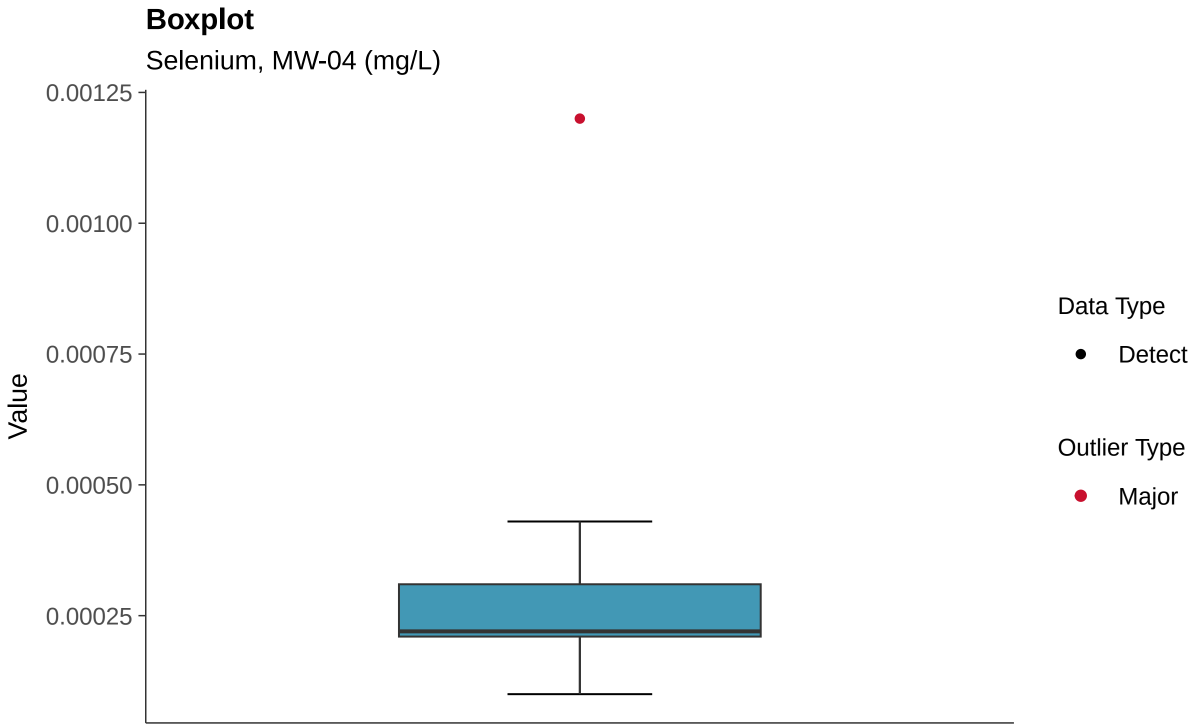

Trend Regression: Piecewise Linear-Linear-Linear
Radium 226 and 228, MW-04 (pCi/L)
1.50
1.25
1.00
0.75
0.50
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

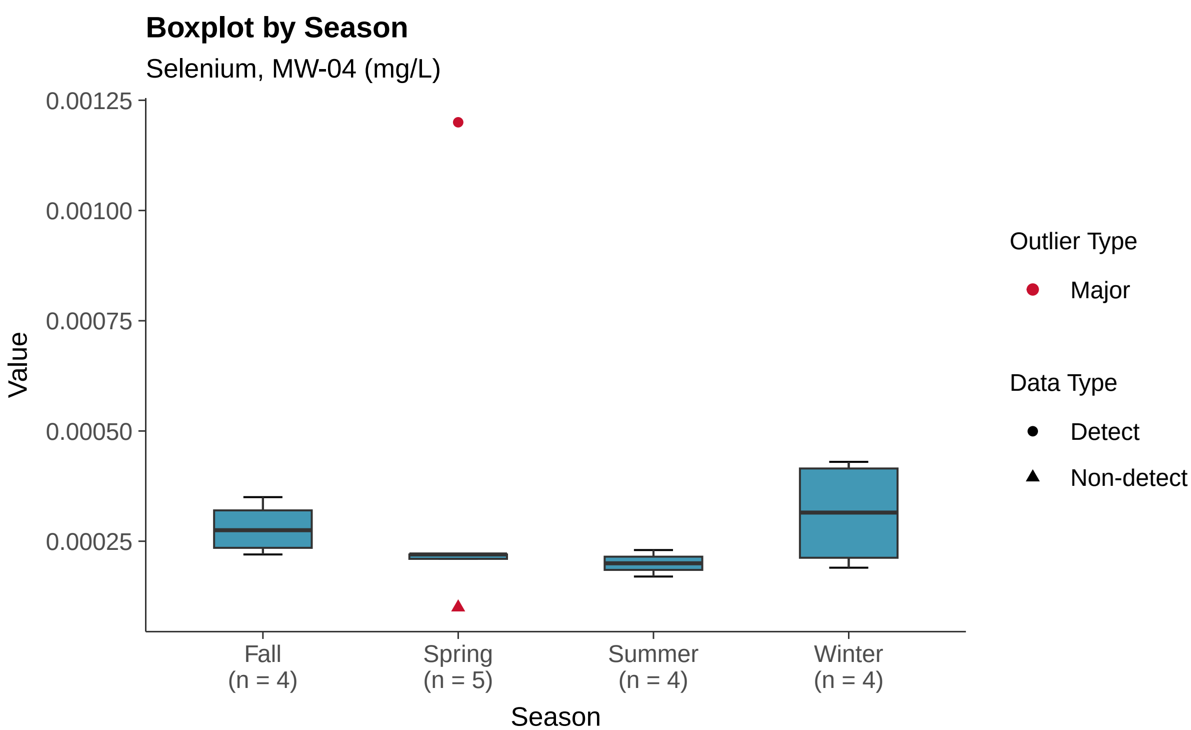
Appendix IV: Selenium, MW-04

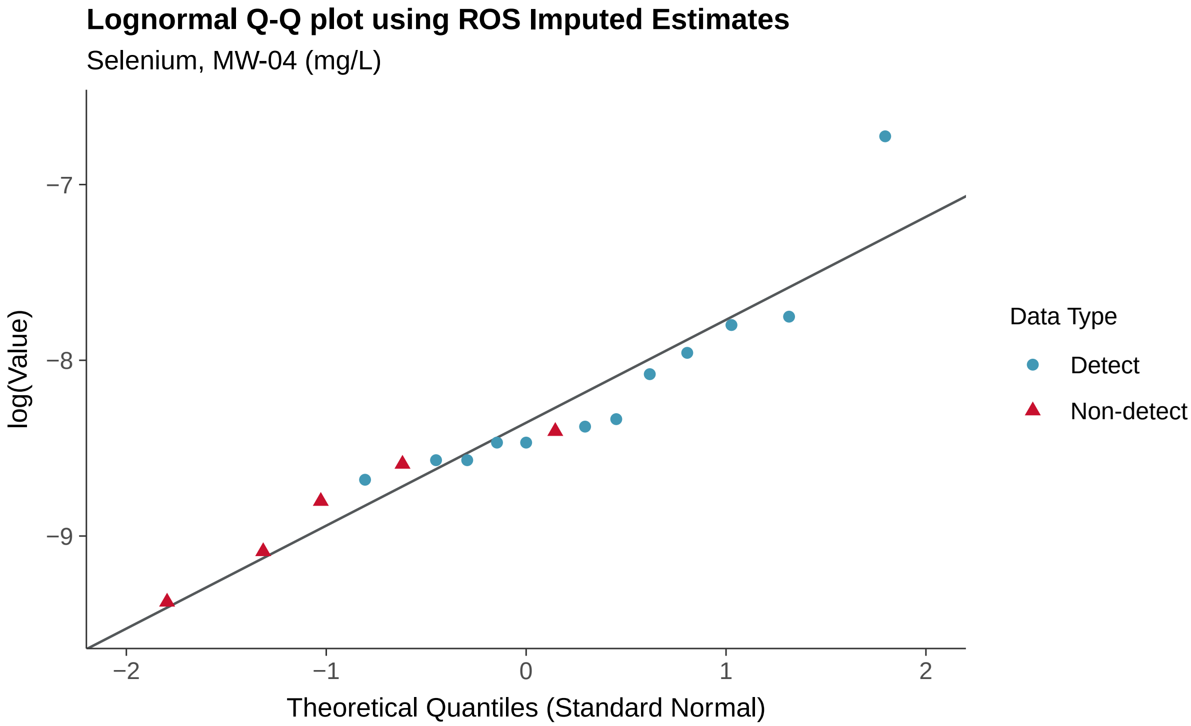
ID: 14_2_4_122

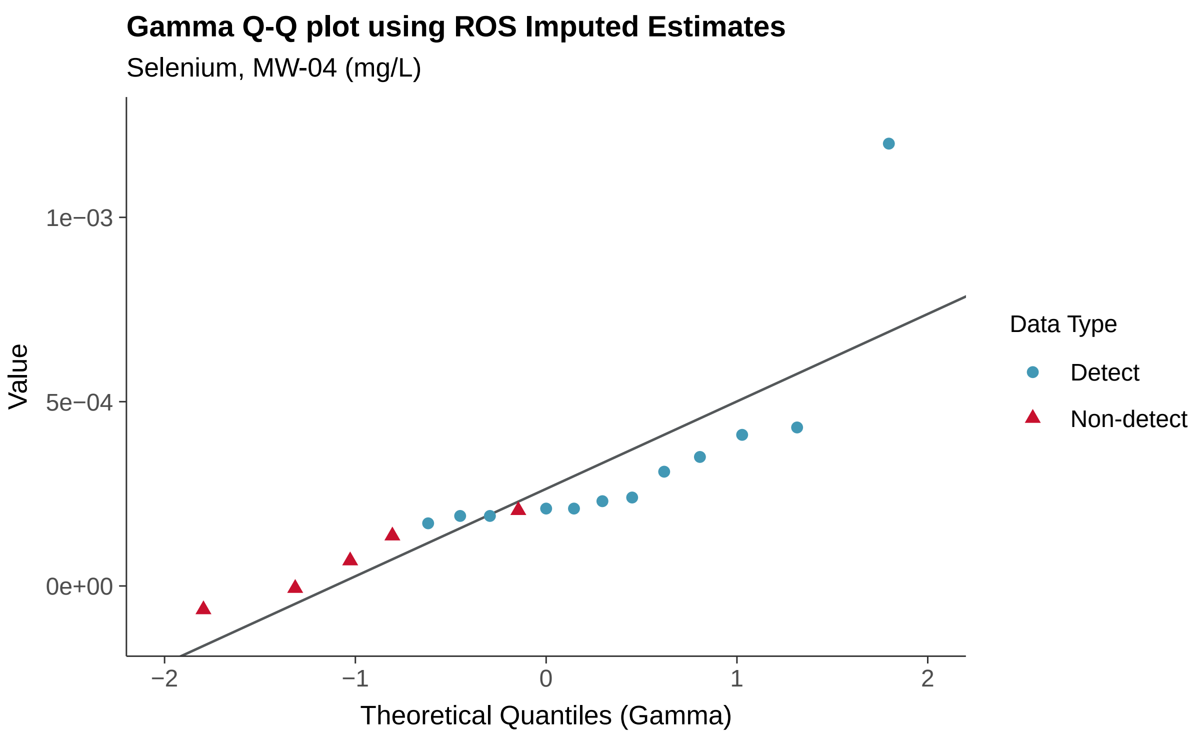





Boxplot
Selenium, MW-04 (mg/L)
0.00125
0.00100
0.00075
0.00050
0.00025
Value
Data Type
Detect
Outlier Type
Major

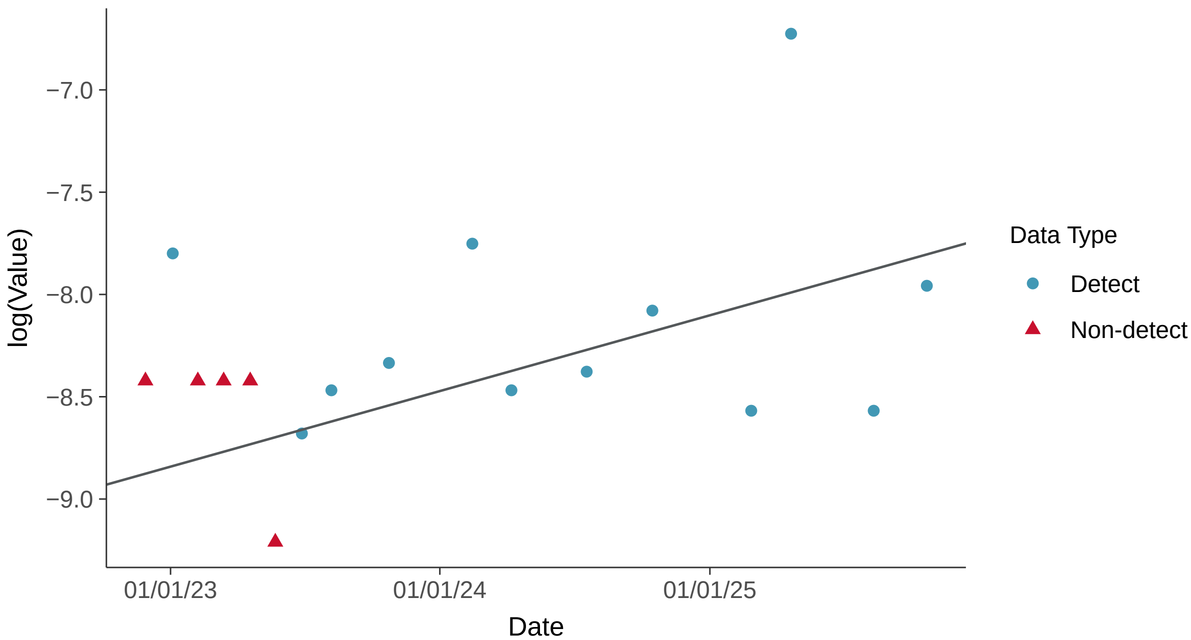

Boxplot by Season
Selenium, MW-04 (mg/L)
0.00125
0.00100
0.00075
0.00050
0.00025
Value
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Major
Data Type
Detect
Non-detect


Lognormal Q-Q plot using ROS Imputed Estimates
Selenium, MW-04 (mg/L)
log(Value)
−7
−8
−9
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Gamma Q-Q plot using ROS Imputed Estimates
Selenium, MW-04 (mg/L)
Value
1e−03
5e−04
0e+00
−2
−1
0
1
2
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect

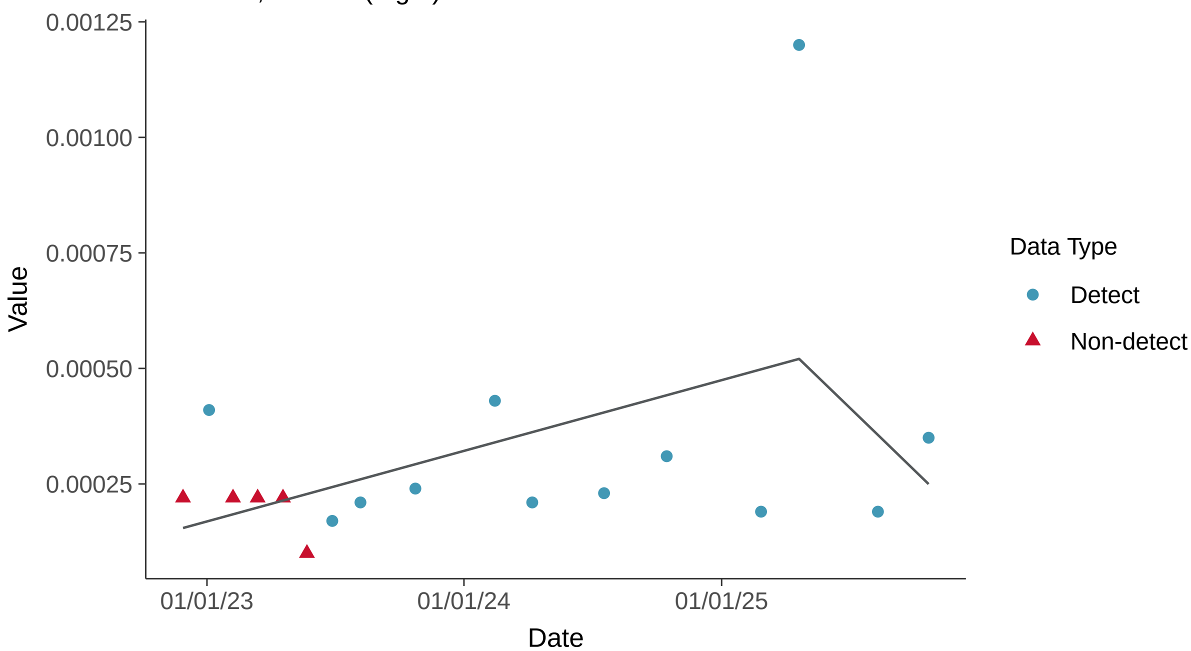
Trend Regression: Lognormal MLE

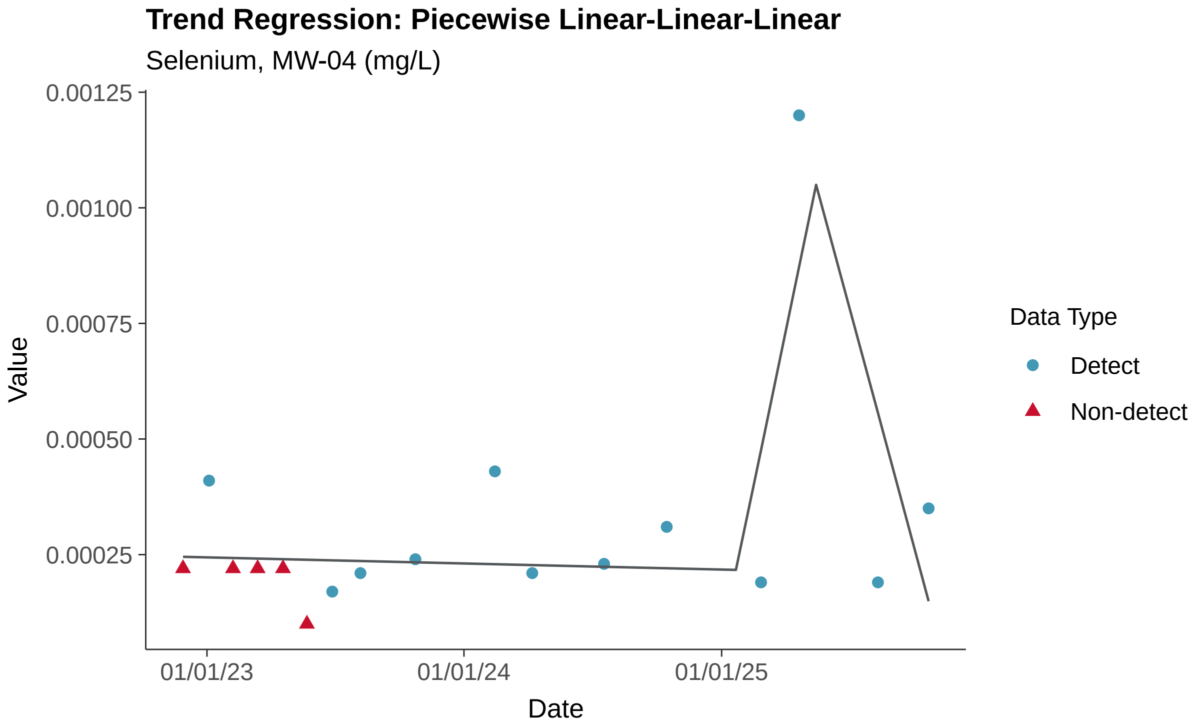
Selenium, MW-04 (mg/L)



Trend Regression: Piecewise Linear-Linear

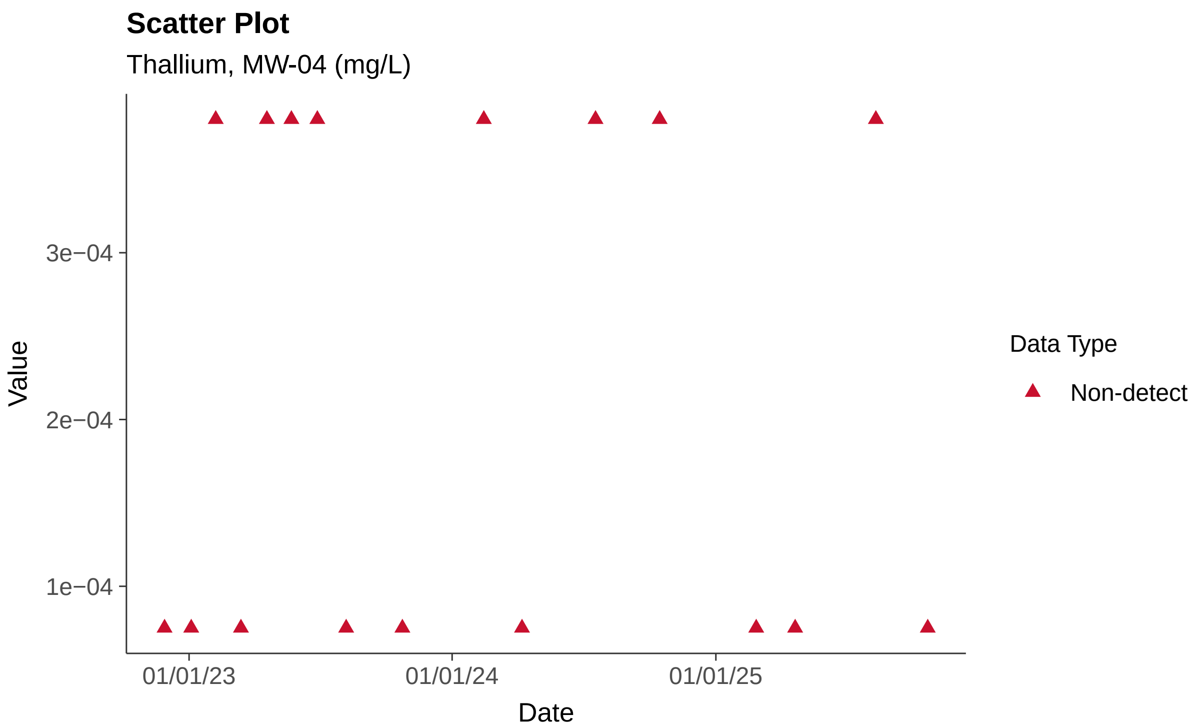
Selenium, MW-04 (mg/L)

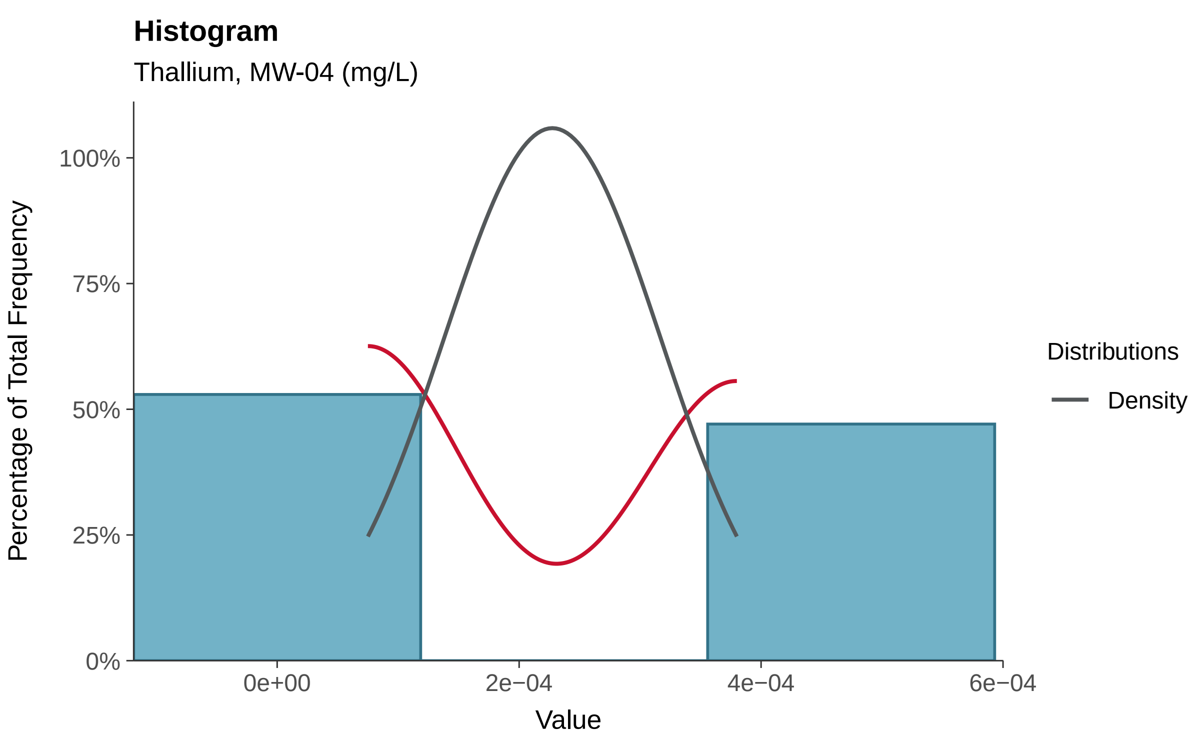



Trend Regression: Piecewise Linear-Linear-Linear
Selenium, MW-04 (mg/L)
Value
0.00125
0.00100
0.00075
0.00050
0.00025
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Appendix IV: Thallium, MW-04

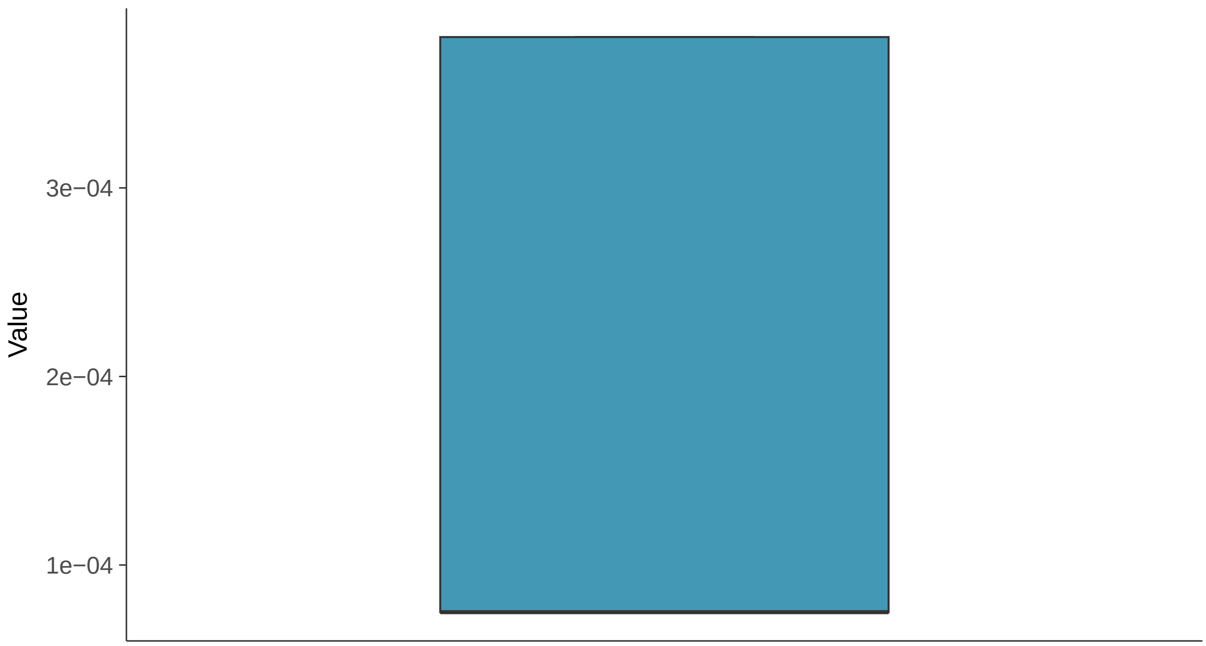
ID: 14_2_4_125





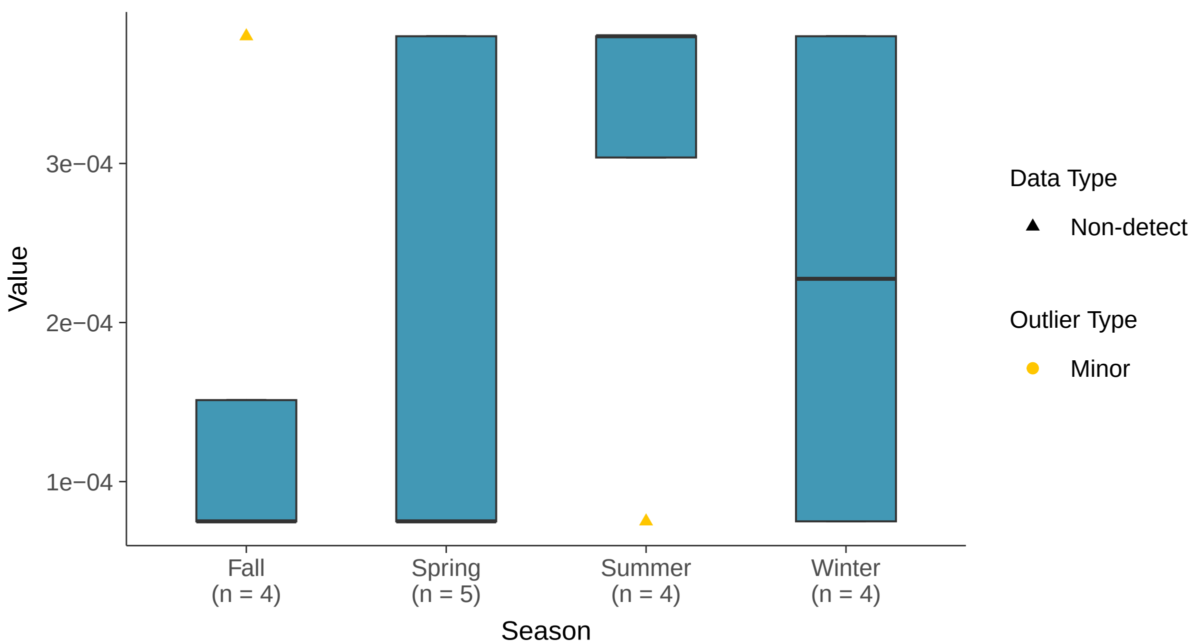
Boxplot

Thallium, MW-04 (mg/L)



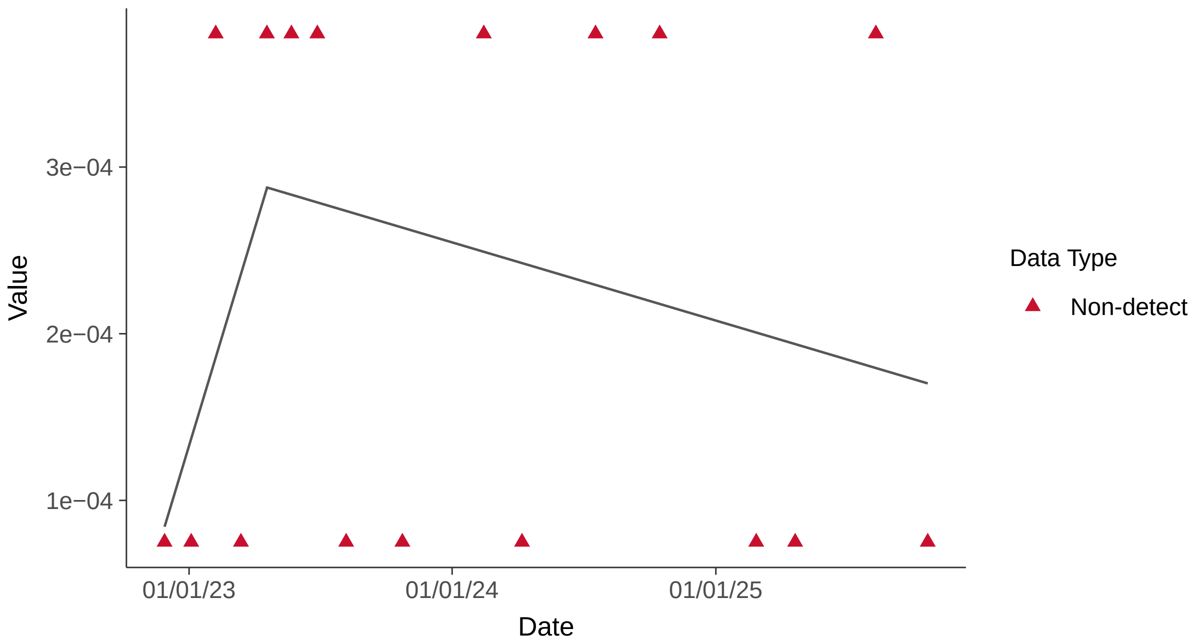
Boxplot by Season

Thallium, MW-04 (mg/L)



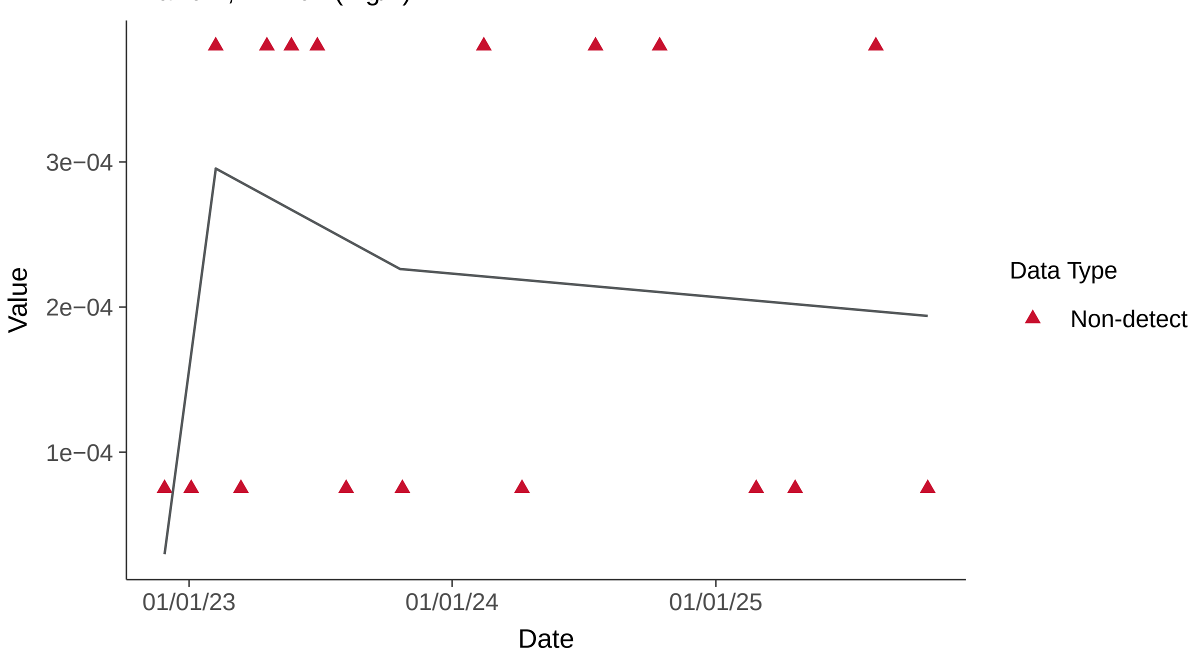
Trend Regression: Piecewise Linear-Linear

Thallium, MW-04 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Thallium, MW-04 (mg/L)

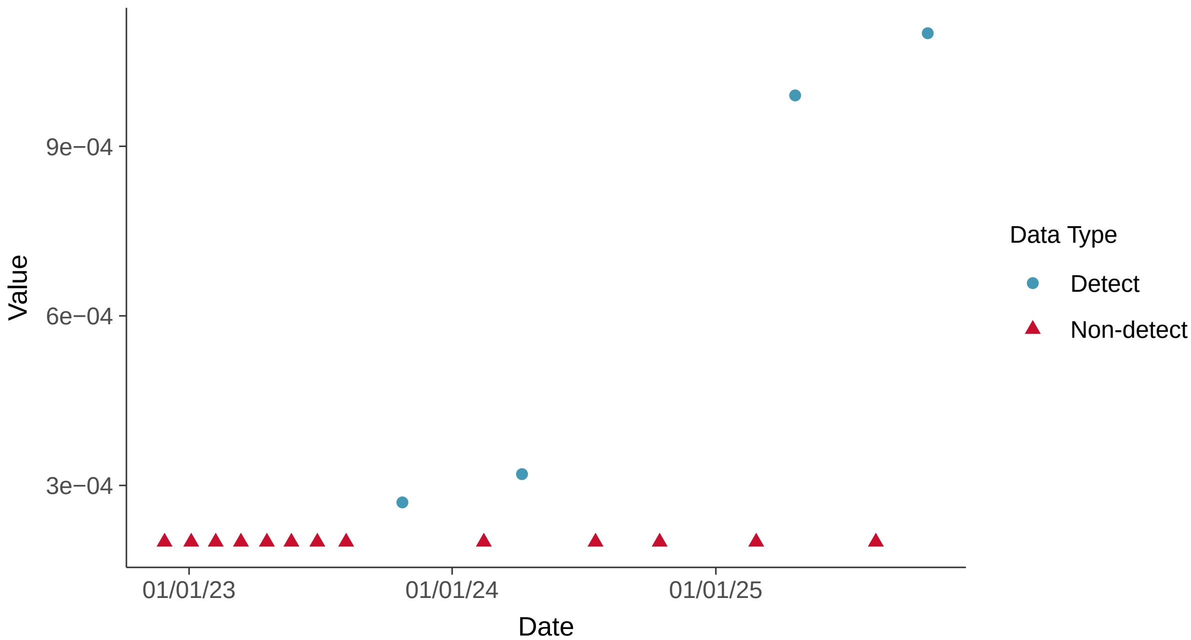


Part 115: Copper, MW-04

ID: 14_2_5_111

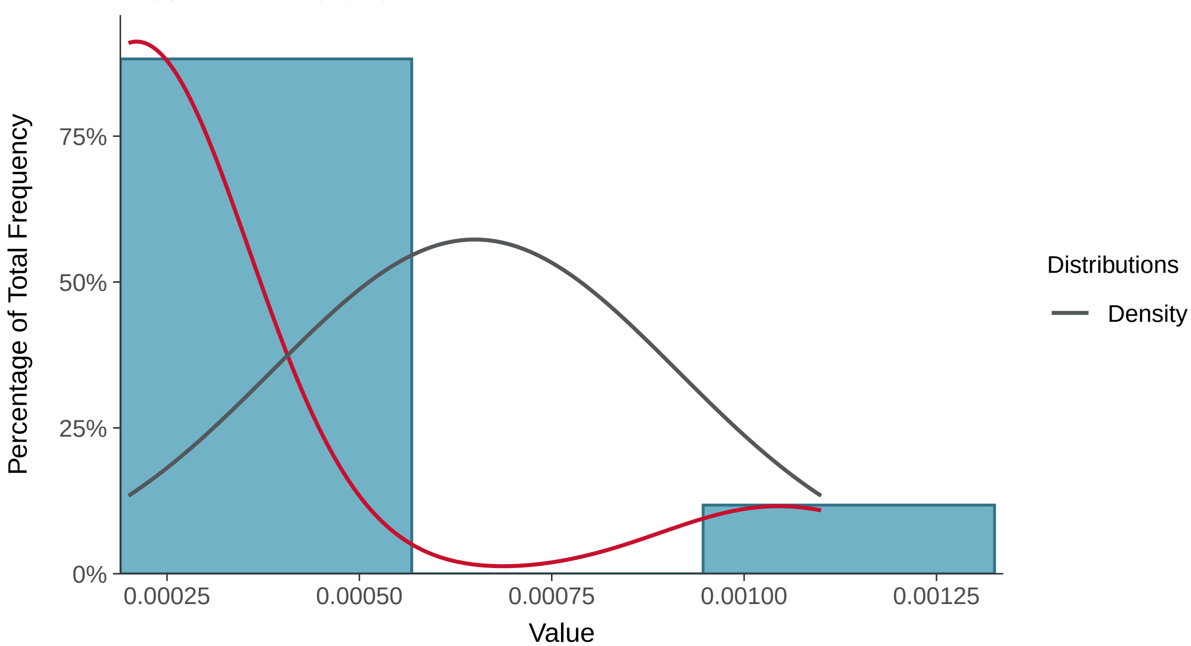
Scatter Plot

Copper, MW-04 (mg/L)



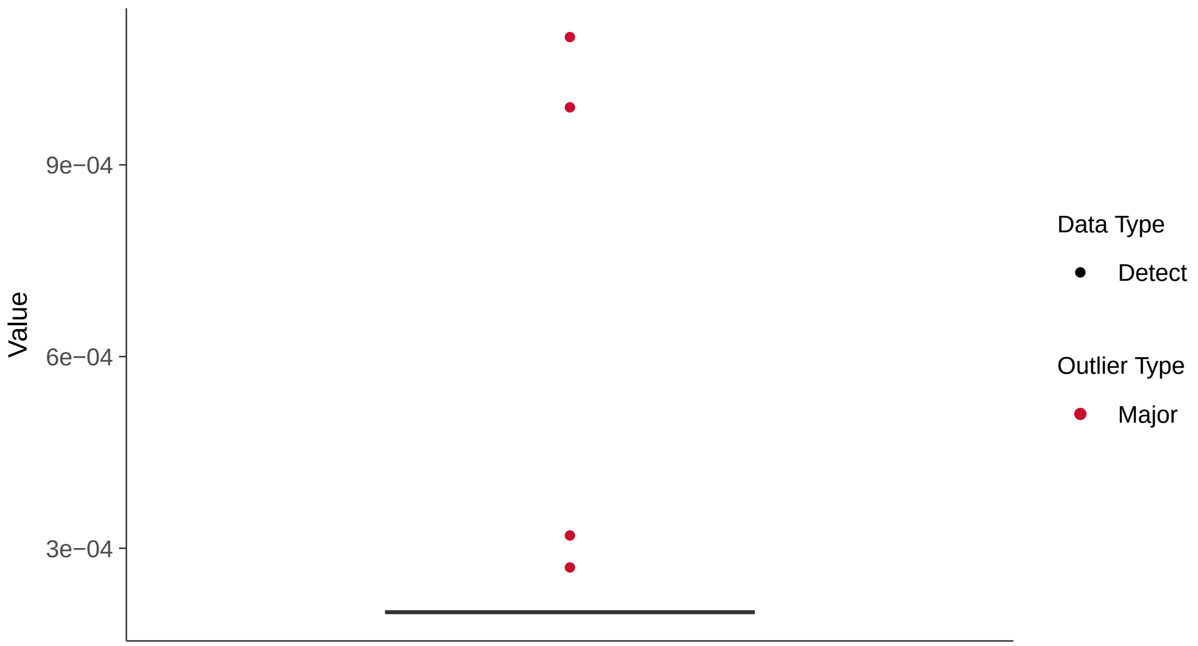
Histogram

Copper, MW-04 (mg/L)



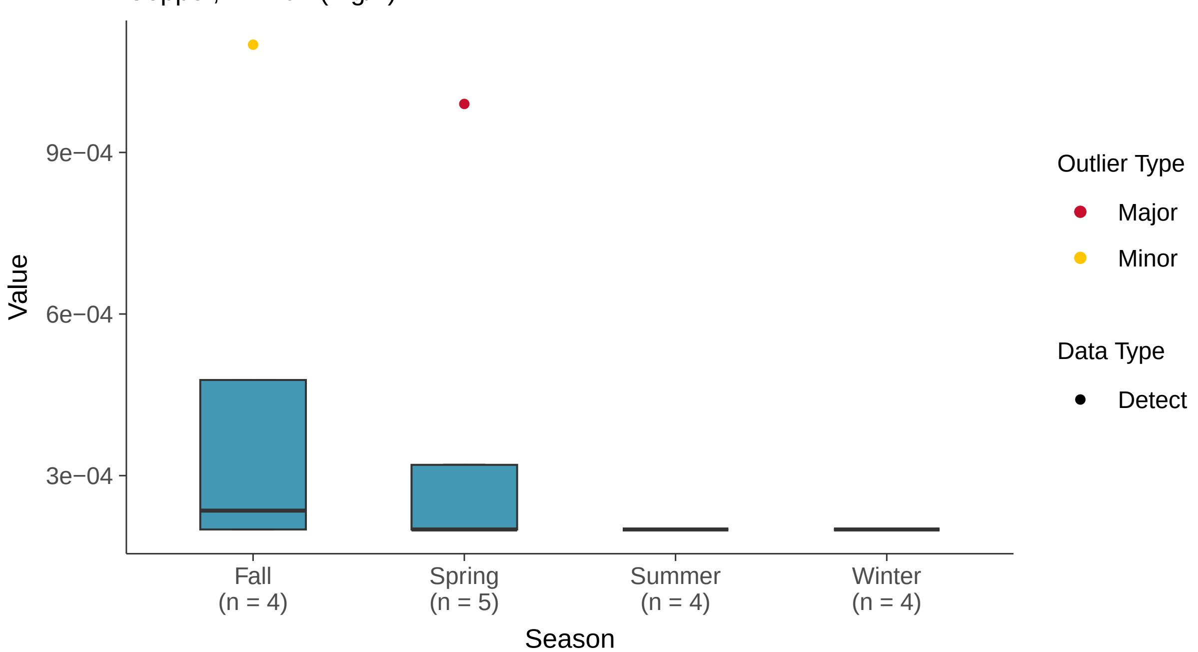
Boxplot

Copper, MW-04 (mg/L)



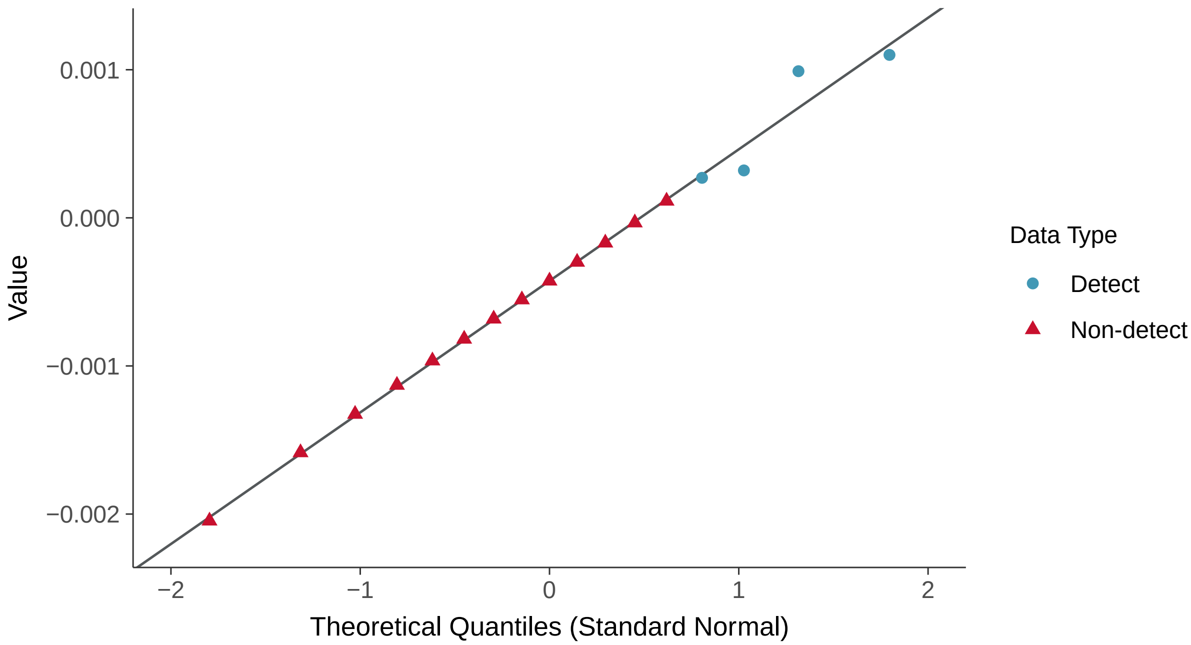
Boxplot by Season

Copper, MW-04 (mg/L)



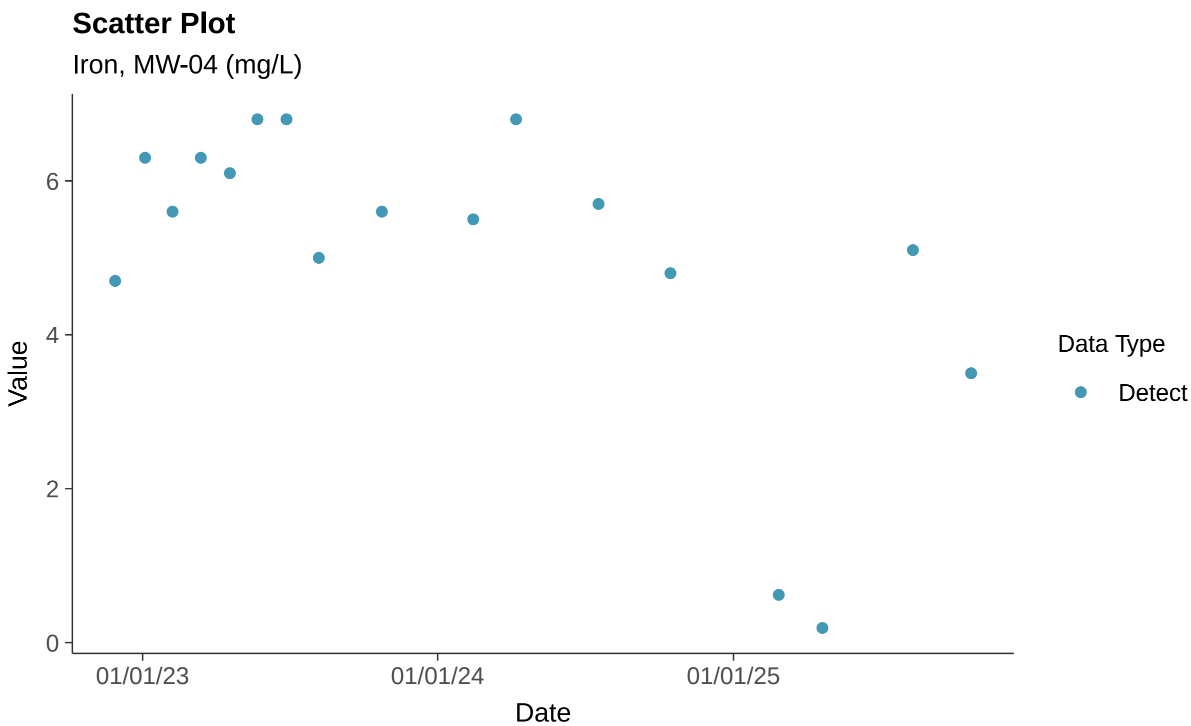
Normal Q-Q plot using ROS Imputed Estimates

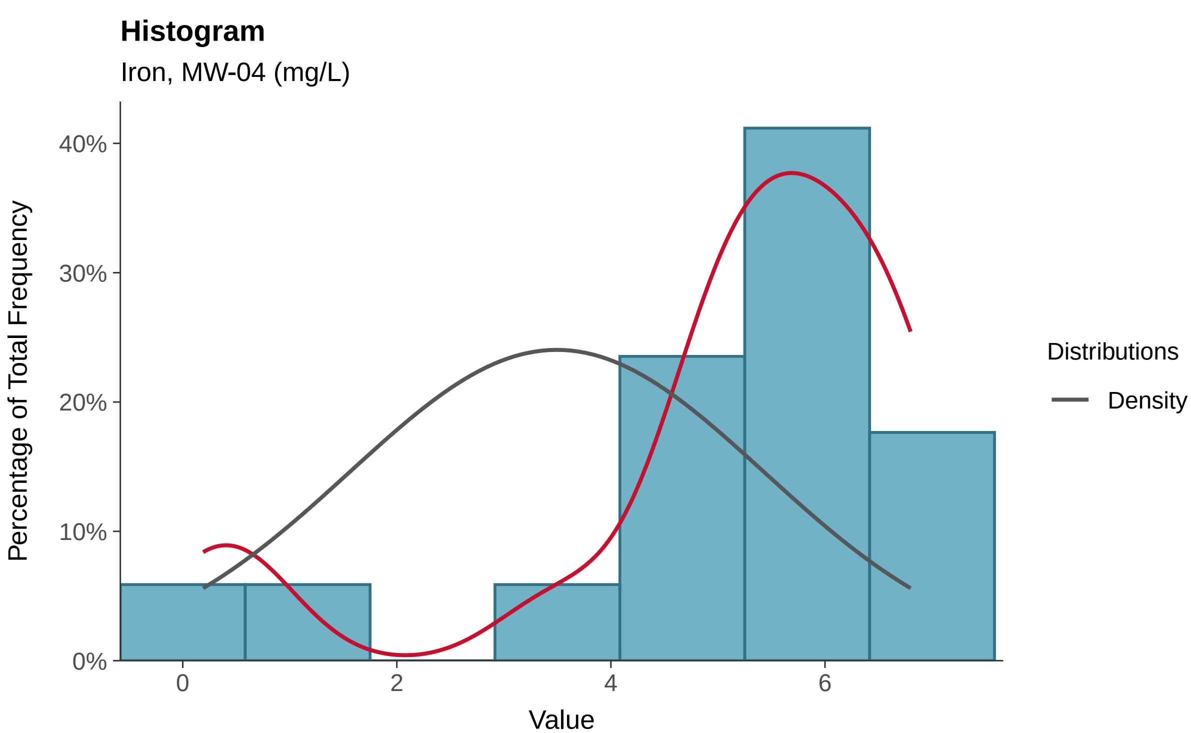
Copper, MW-04 (mg/L)



Part 115: Iron, MW-04

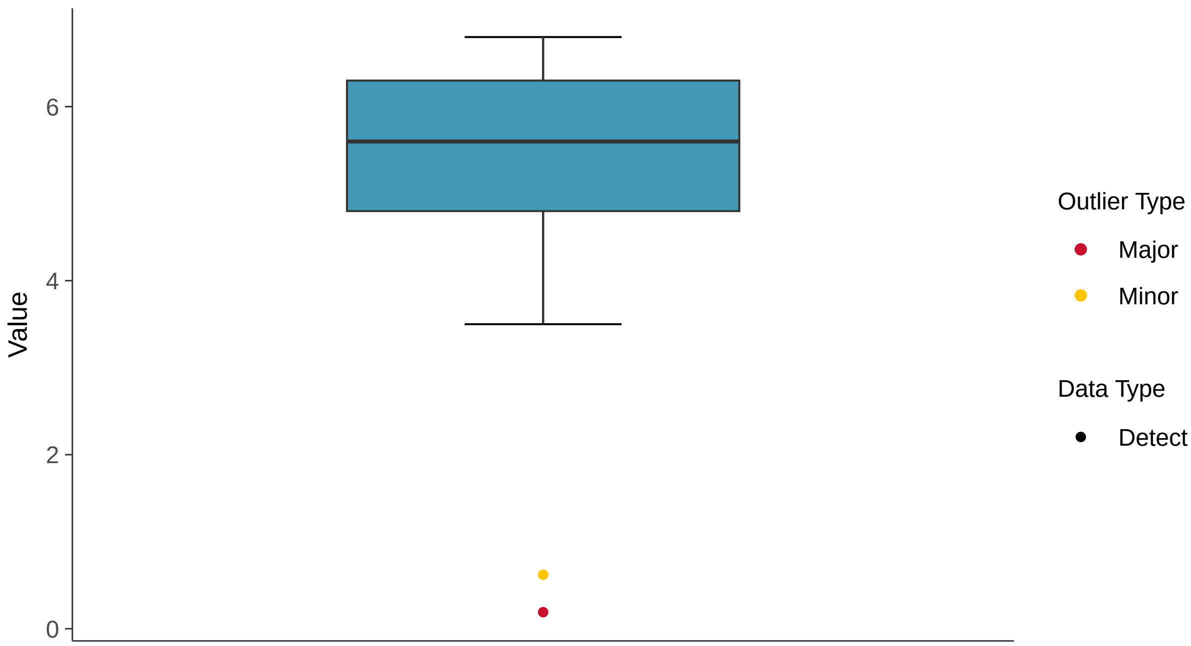
ID: 14_2_5_114





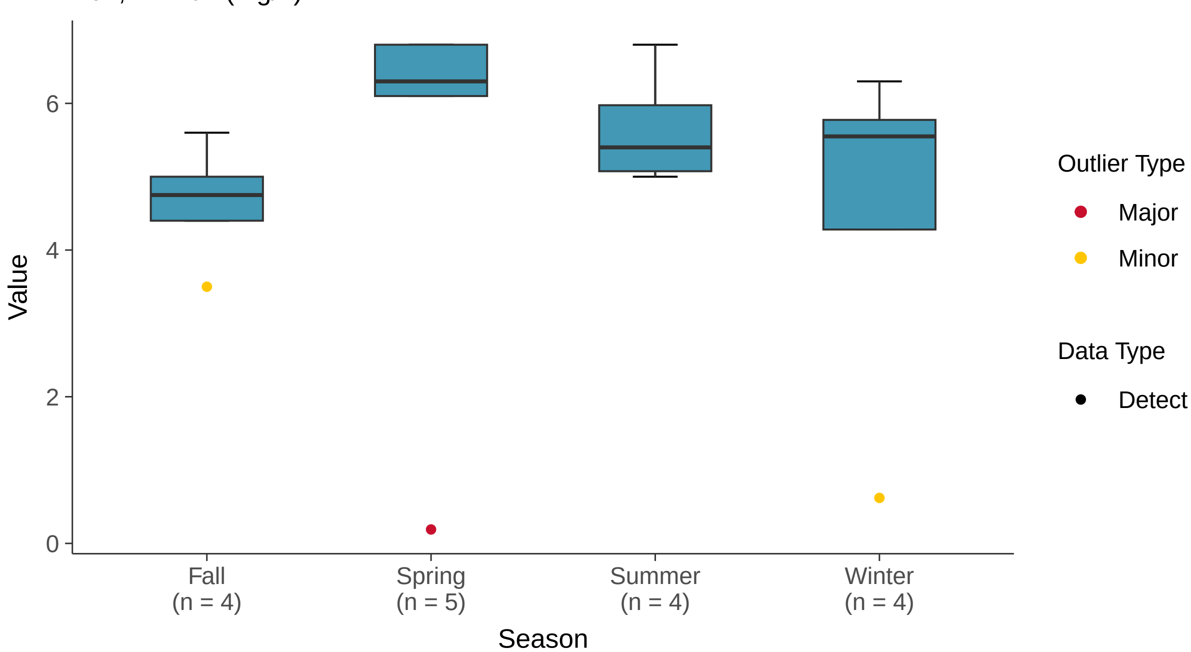
Boxplot

Iron, MW-04 (mg/L)



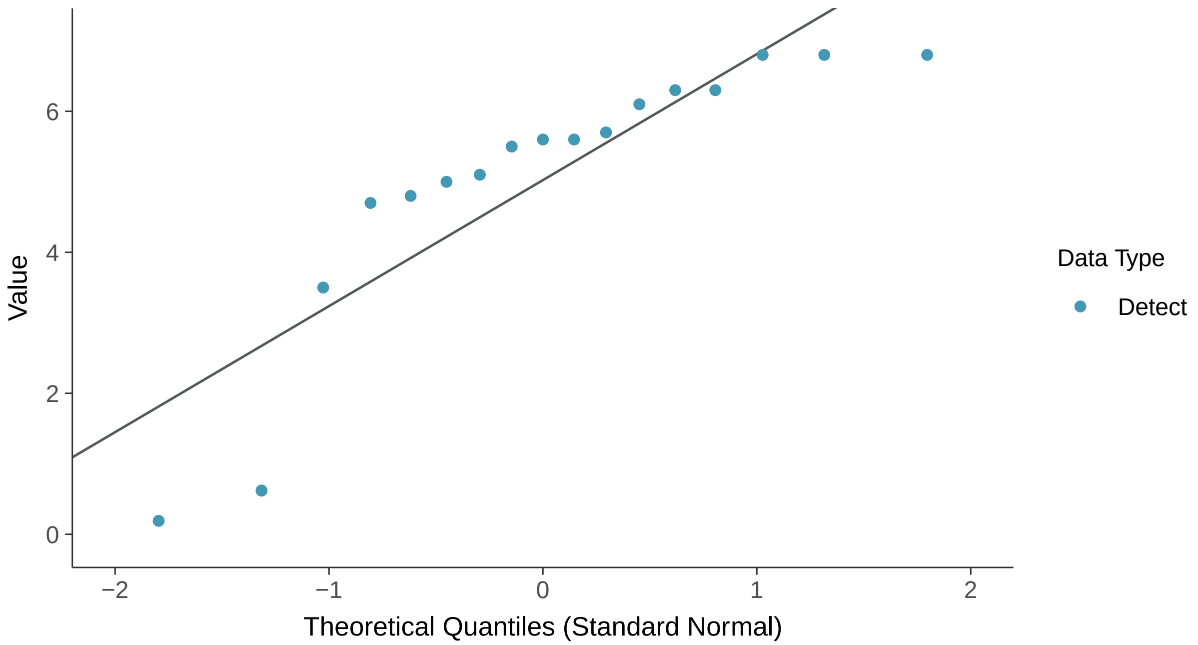
Boxplot by Season

Iron, MW-04 (mg/L)



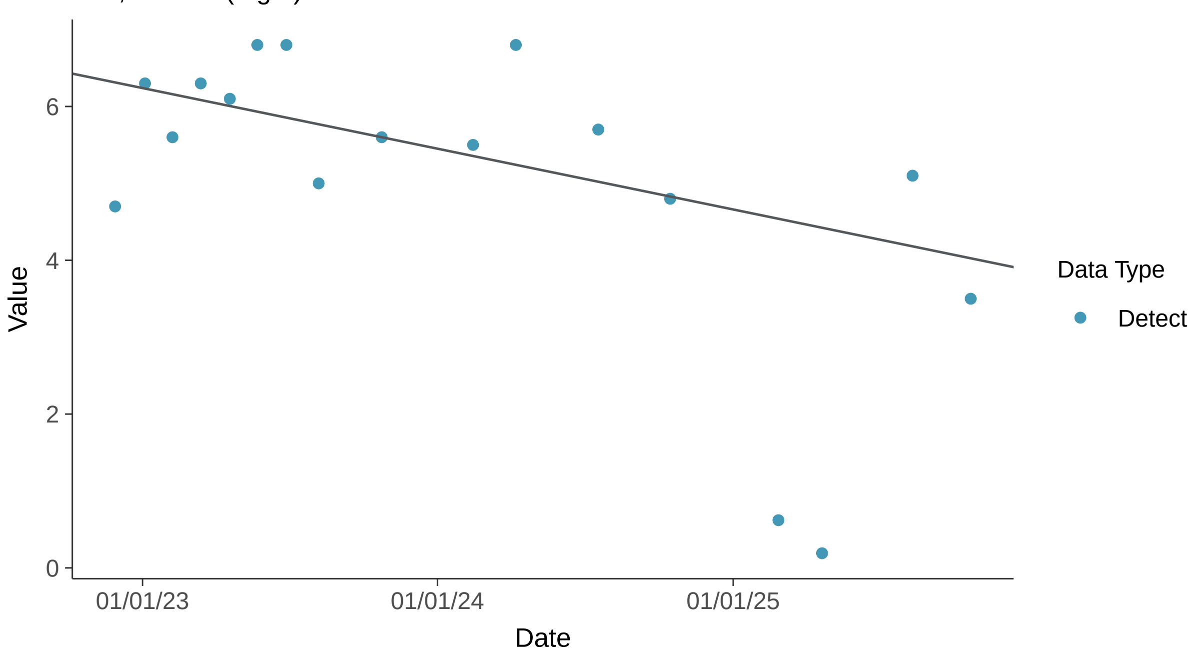
Normal Q-Q plot

Iron, MW-04 (mg/L)



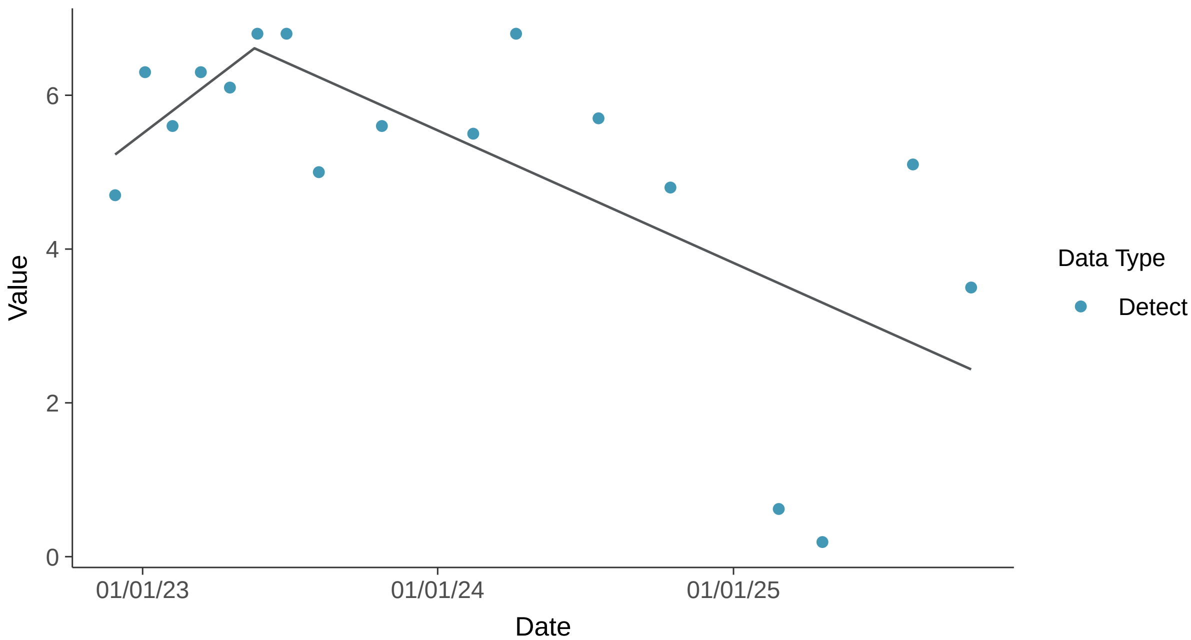
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Iron, MW-04 (mg/L)



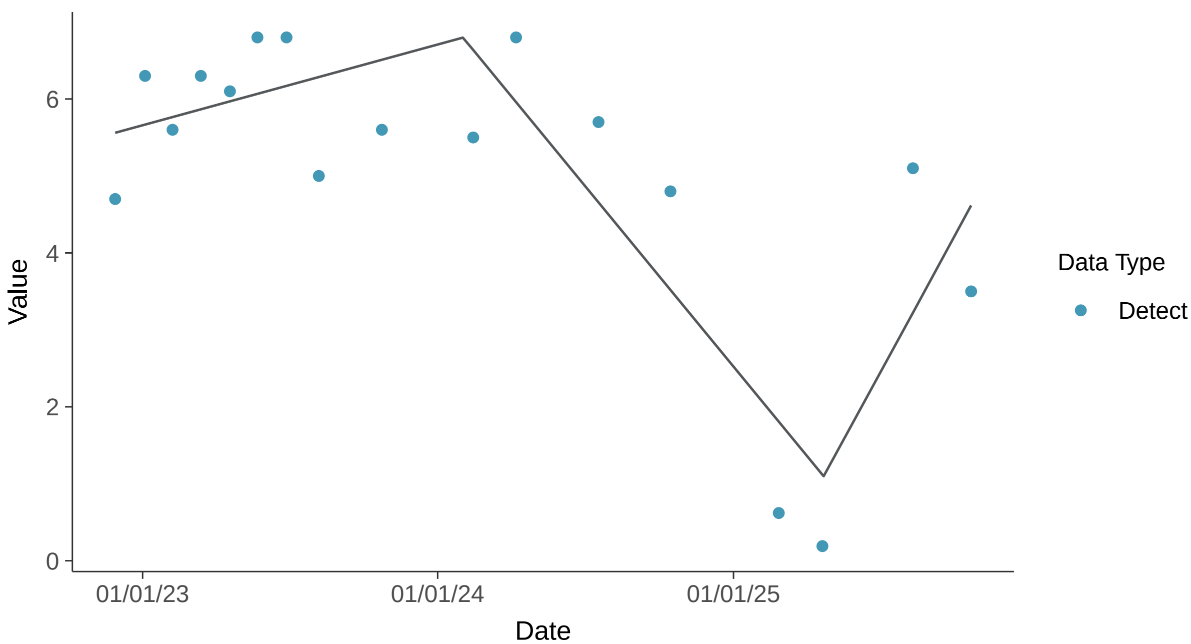
Trend Regression: Piecewise Linear-Linear

Iron, MW-04 (mg/L)



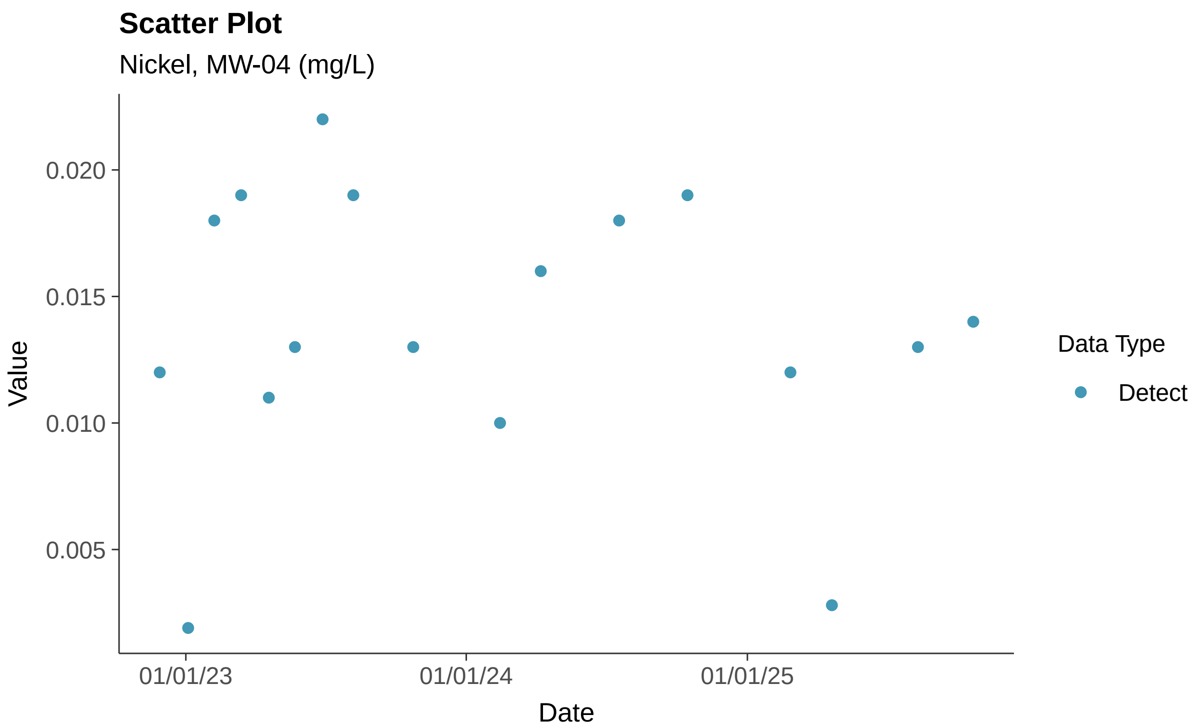
Trend Regression: Piecewise Linear-Linear-Linear

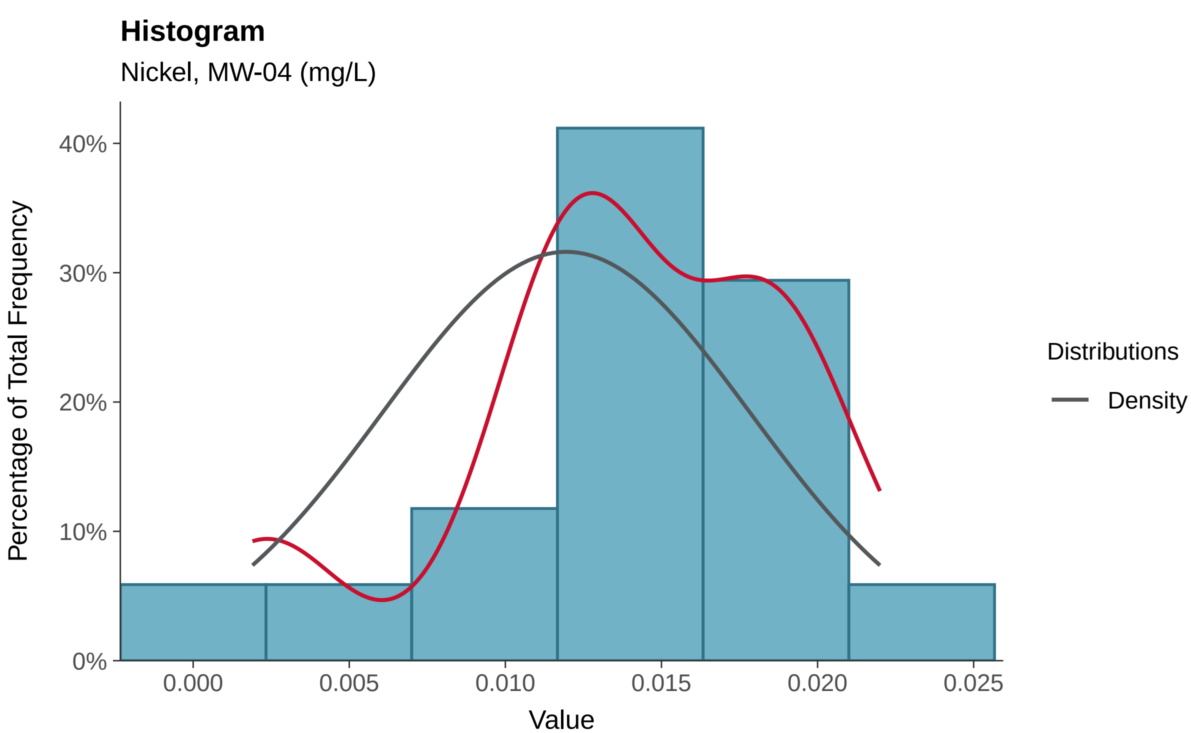
Iron, MW-04 (mg/L)



Part 115: Nickel, MW-04

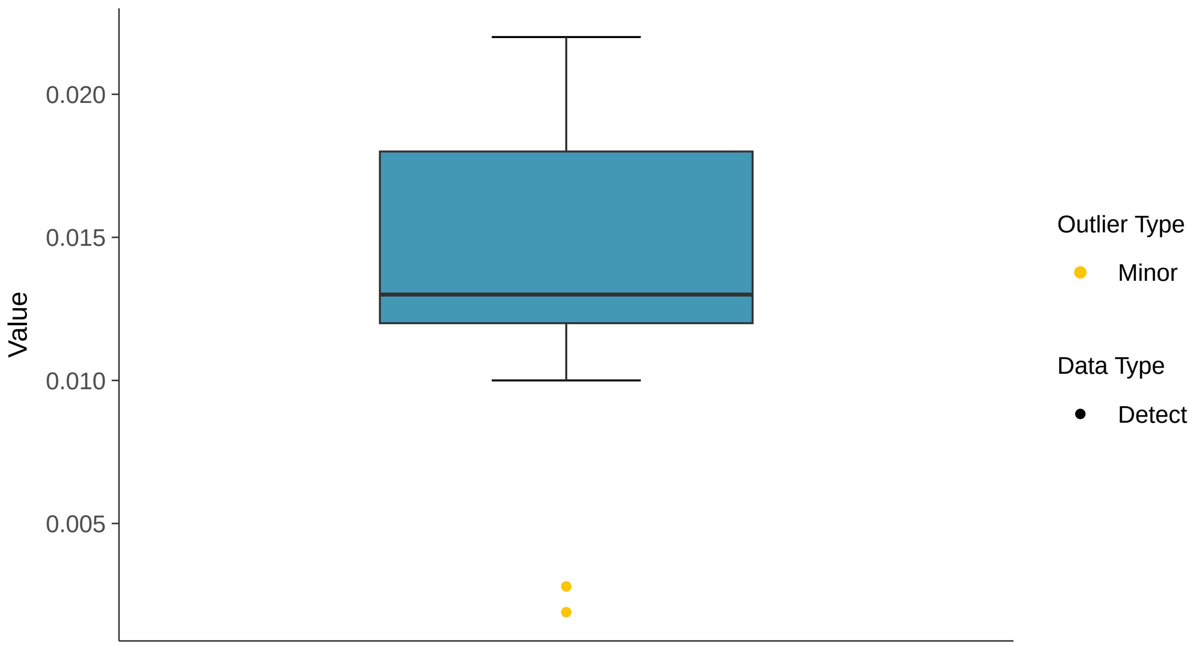
ID: 14_2_5_119





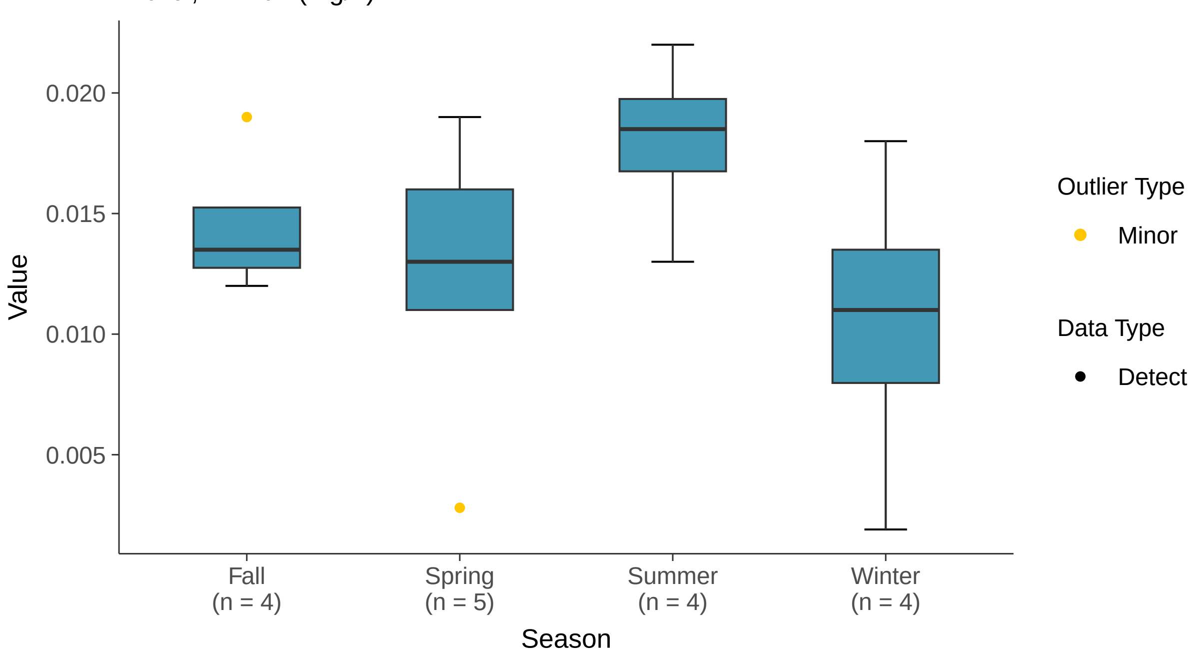
Boxplot

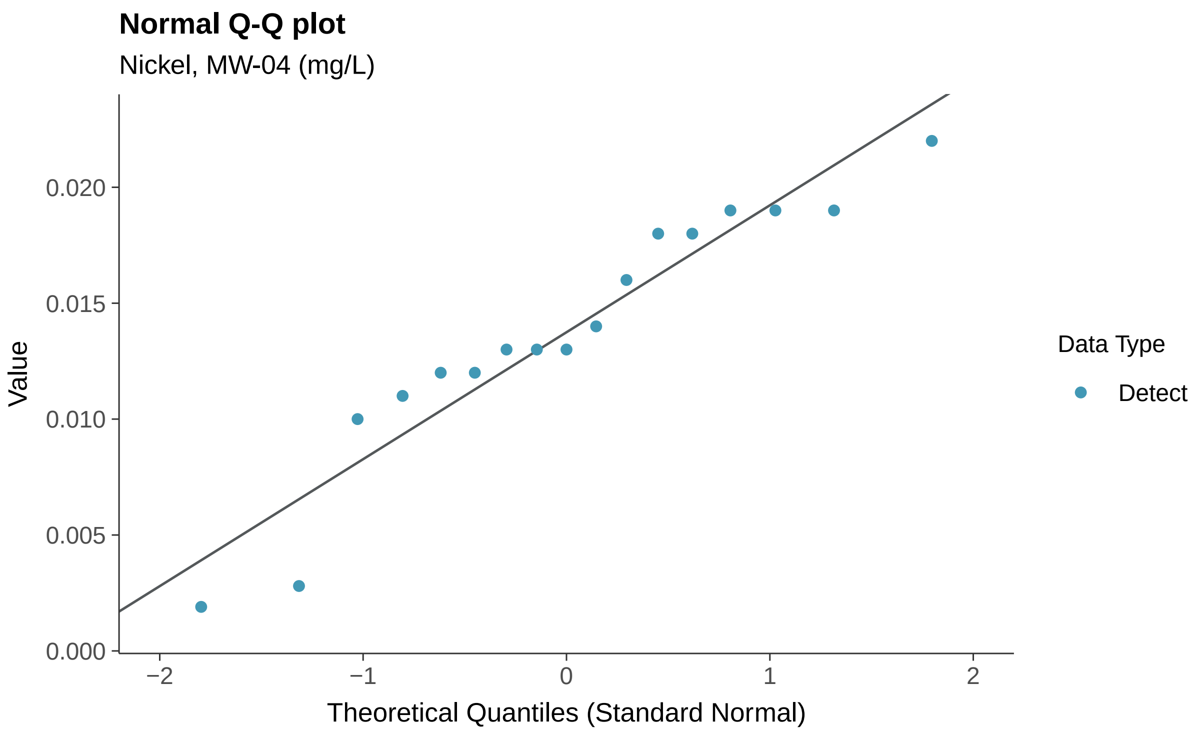
Nickel, MW-04 (mg/L)

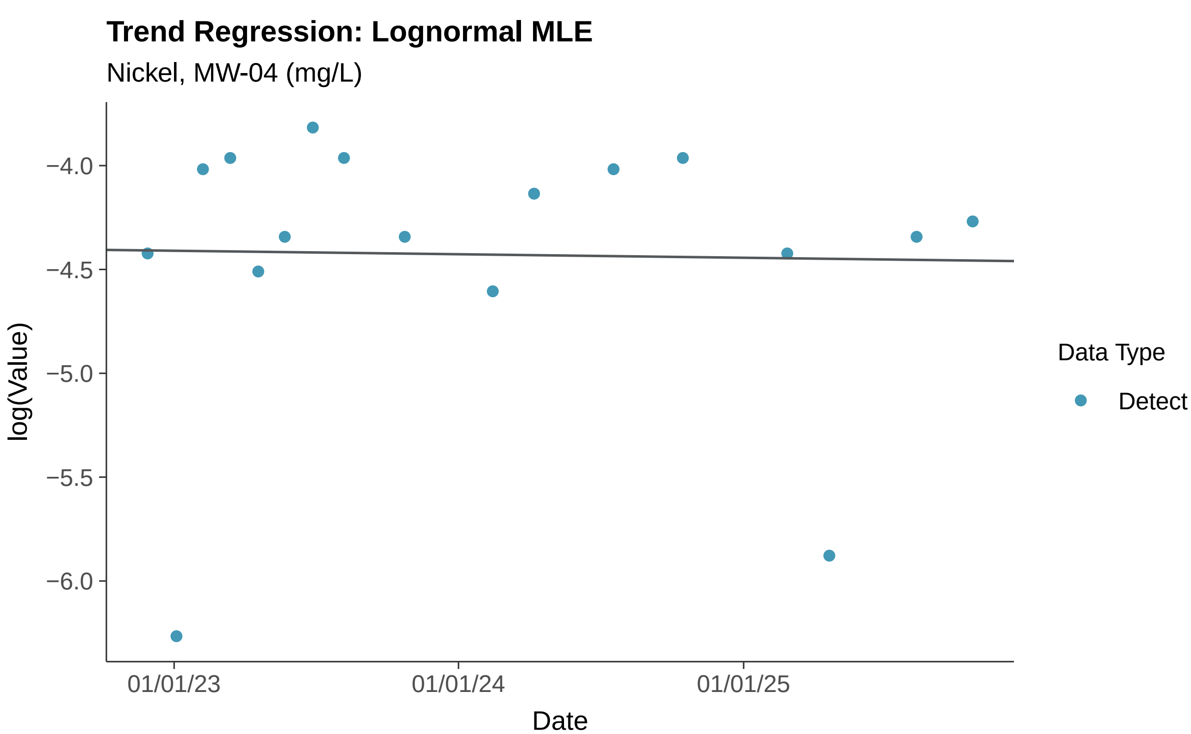


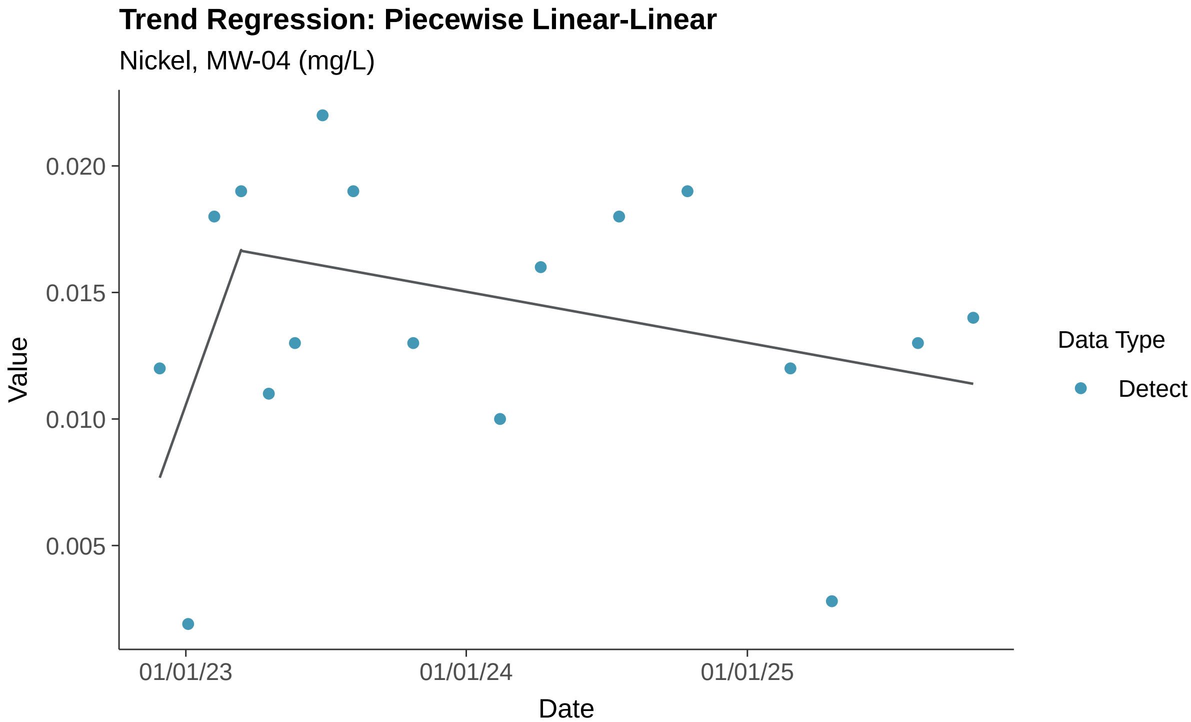
Boxplot by Season

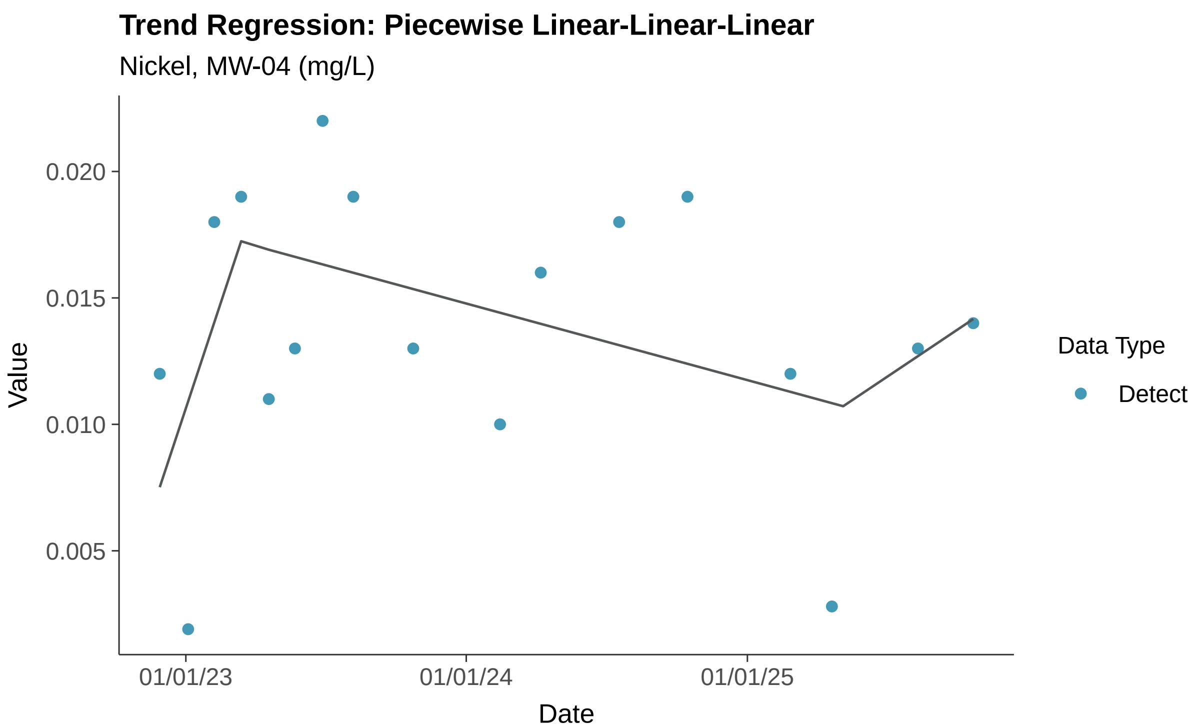
Nickel, MW-04 (mg/L)




Normal Q-Q plot
Nickel, MW-04 (mg/L)
Value
0.000
0.005
0.010
0.015
0.020
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

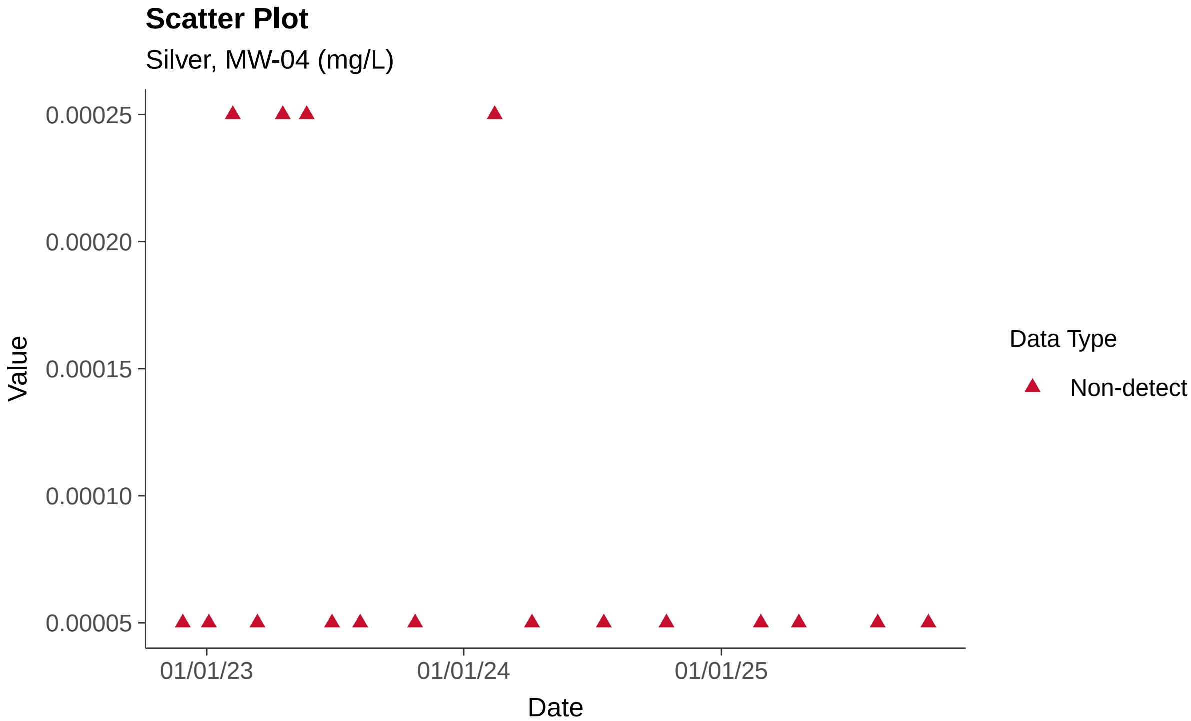

Trend Regression: Lognormal MLE
Nickel, MW-04 (mg/L)
log(Value)
−4.0
−4.5
−5.0
−5.5
−6.0
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

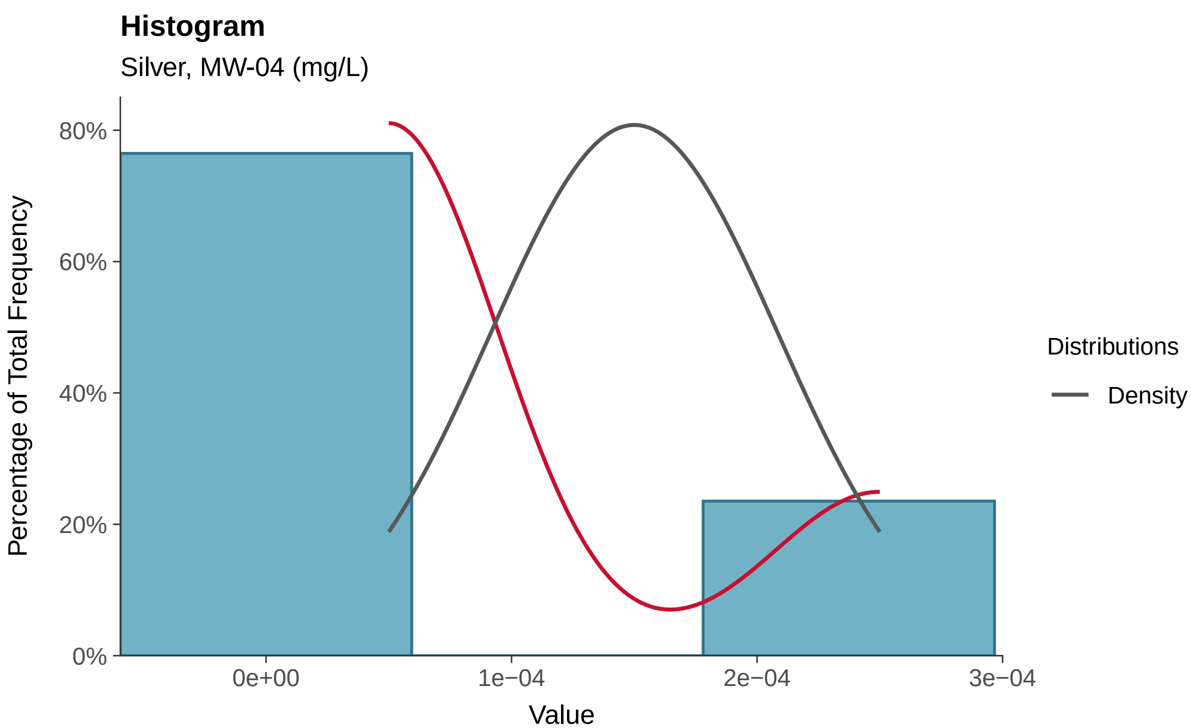

Trend Regression: Piecewise Linear-Linear
Nickel, MW-04 (mg/L)
Value
0.020
0.015
0.010
0.005
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

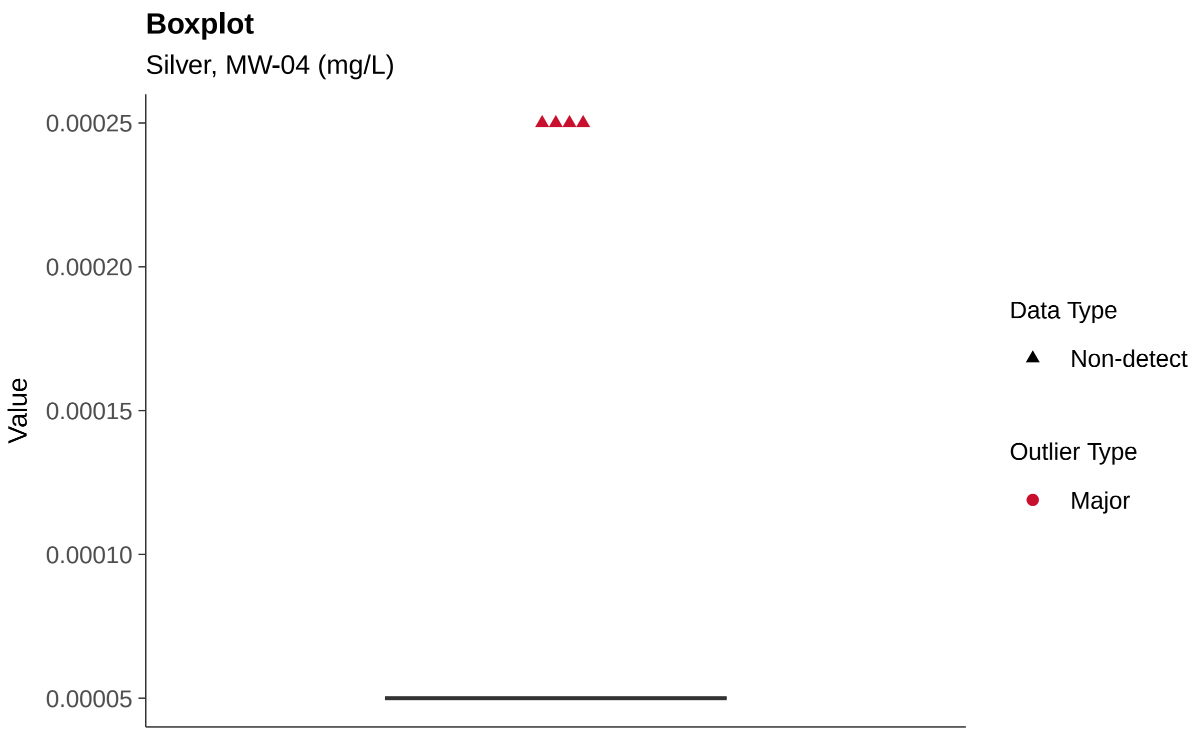

Trend Regression: Piecewise Linear-Linear-Linear
Nickel, MW-04 (mg/L)
Value
0.020
0.015
0.010
0.005
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

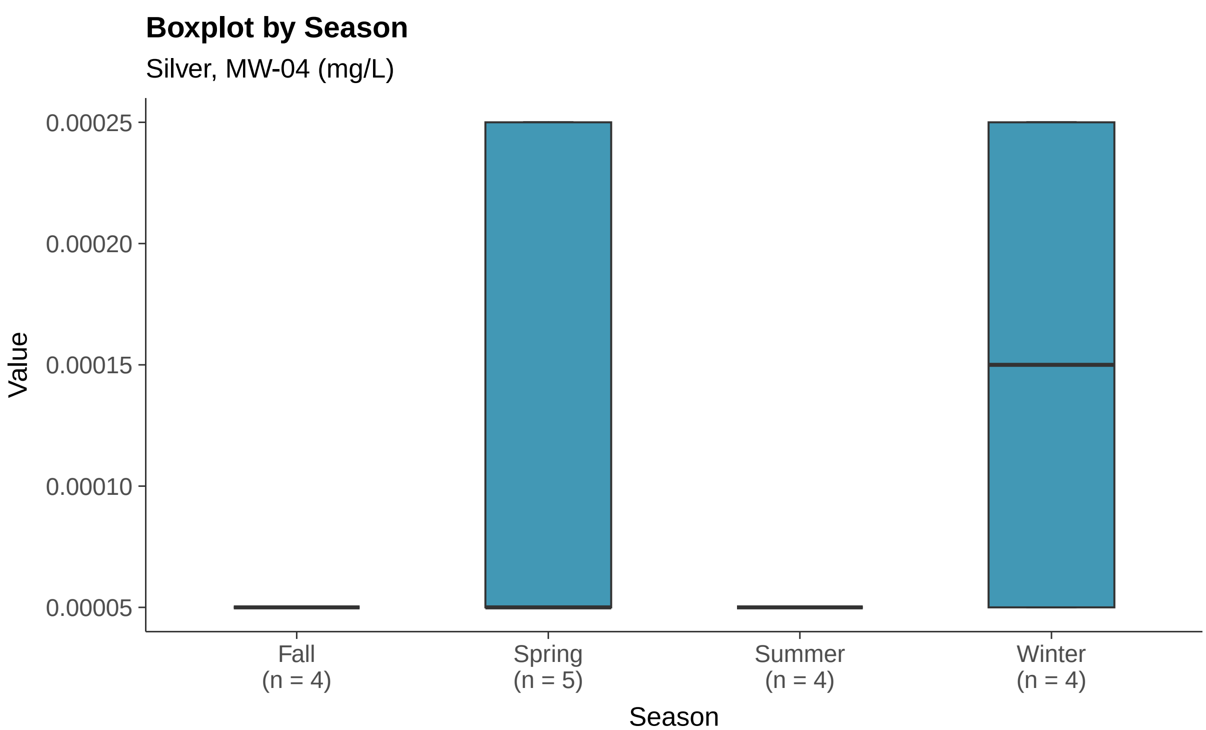
Part 115: Silver, MW-04

ID: 14_2_5_123



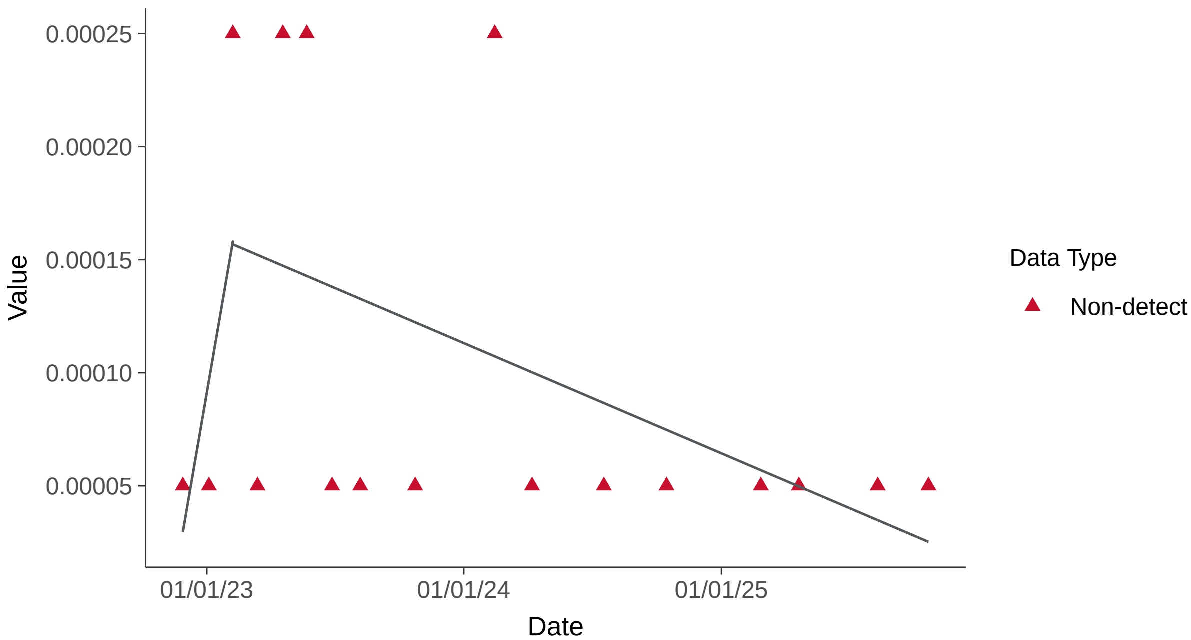



Boxplot
Silver, MW-04 (mg/L)
0.00025
0.00020
0.00015
0.00010
0.00005
Value
Data Type
Non-detect
Outlier Type
Major


Boxplot by Season
Silver, MW-04 (mg/L)
0.00025
0.00020
0.00015
0.00010
0.00005
Value
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season

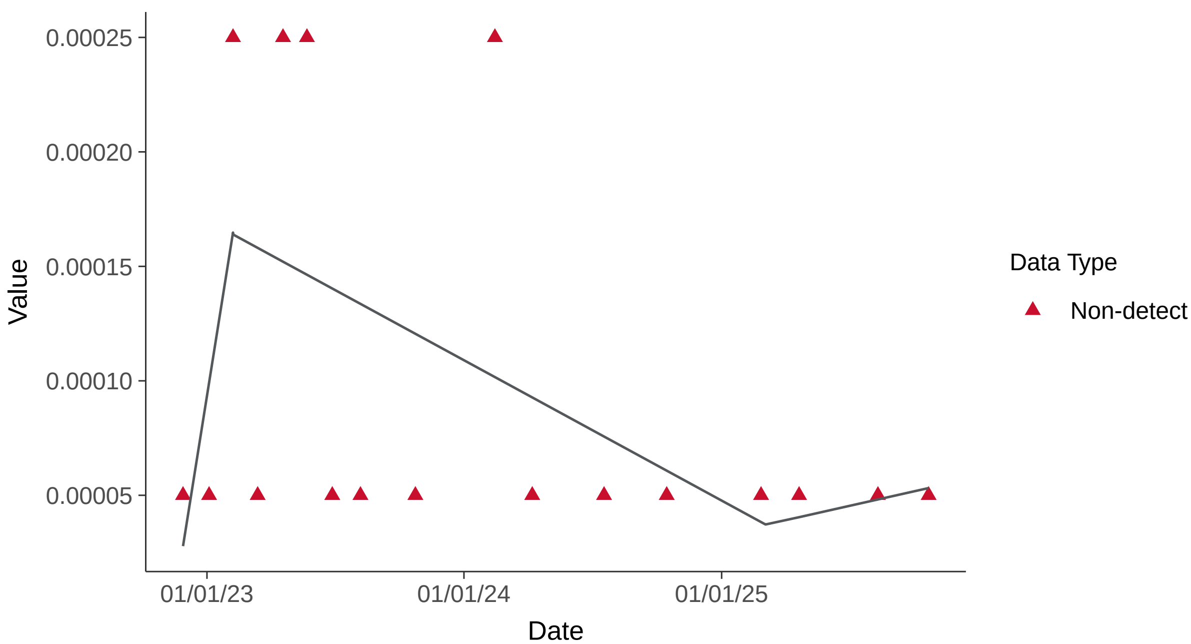
Trend Regression: Piecewise Linear-Linear

Silver, MW-04 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Silver, MW-04 (mg/L)

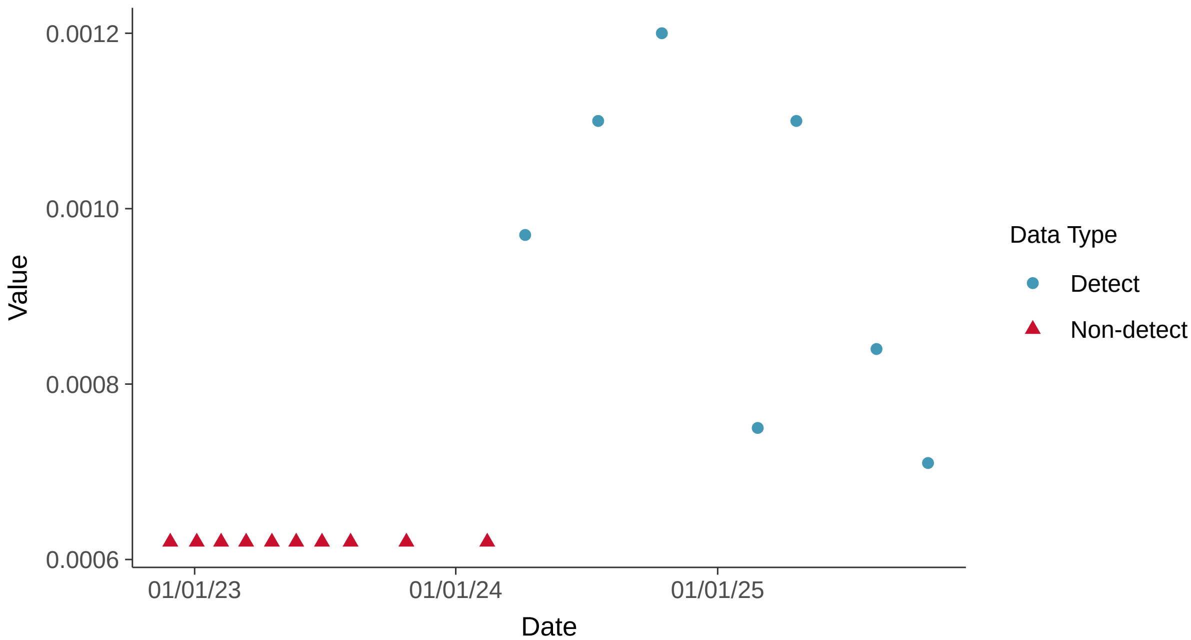


Part 115: Vanadium, MW-04

ID: 14_2_5_128

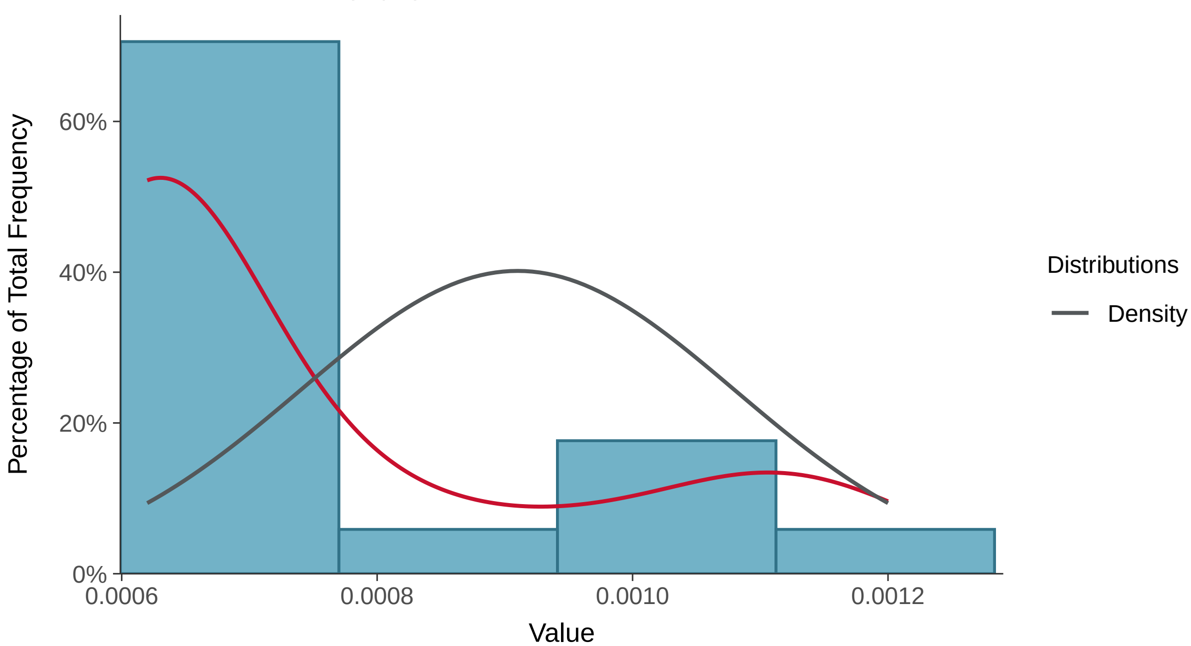
Scatter Plot

Vanadium, MW-04 (mg/L)



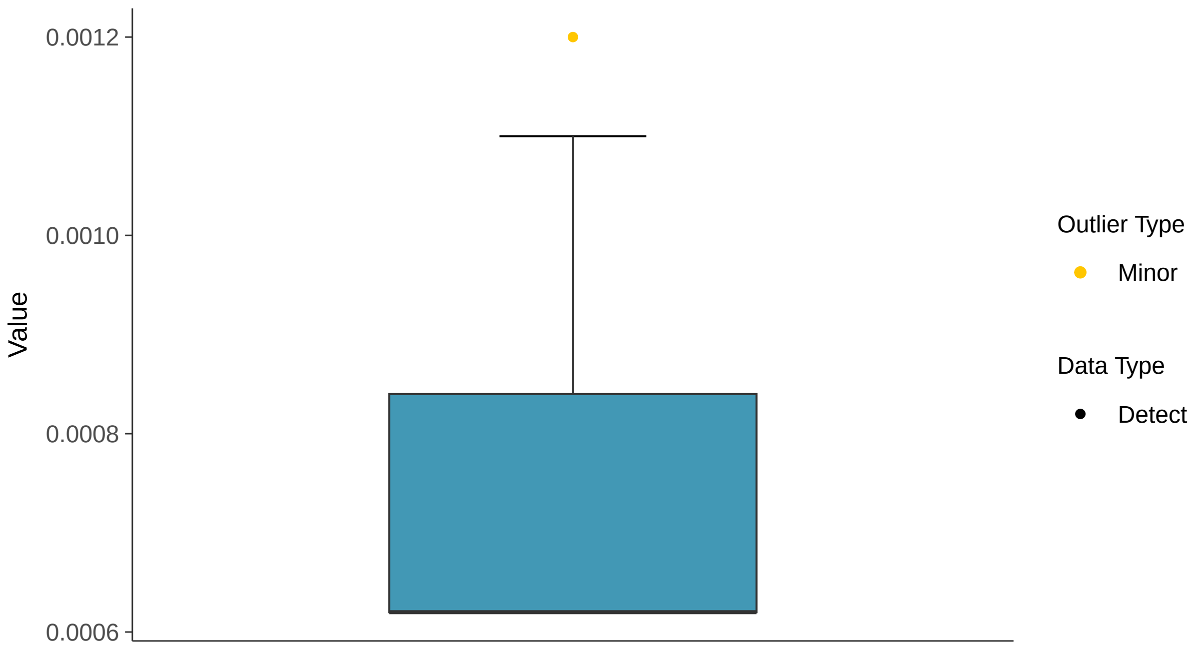
Histogram

Vanadium, MW-04 (mg/L)



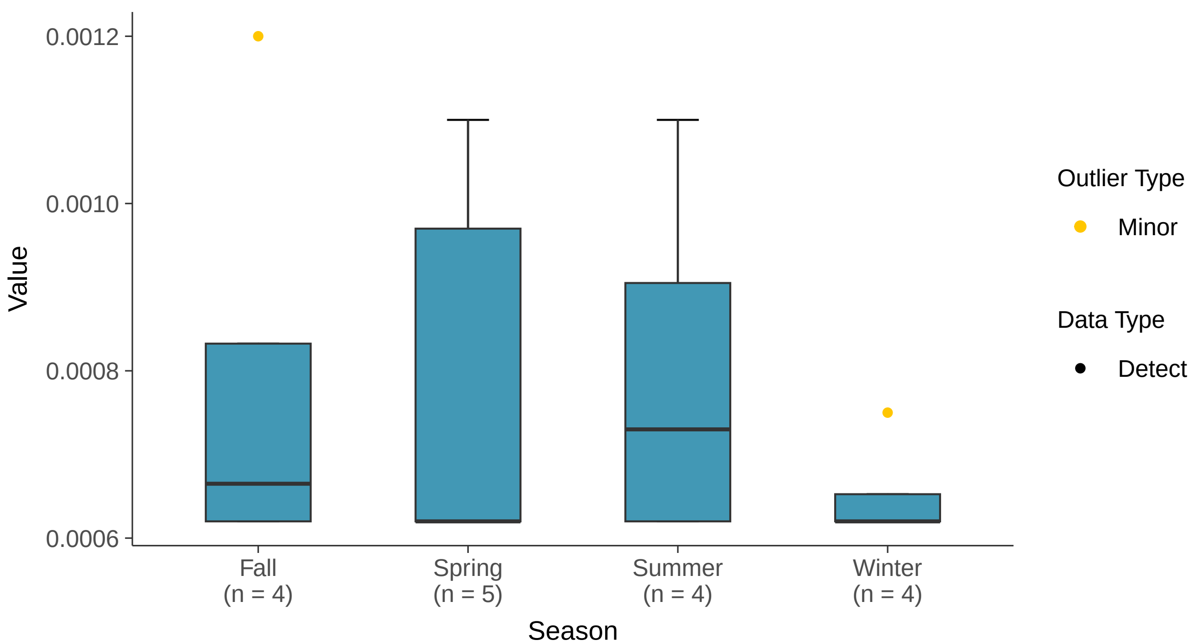
Boxplot

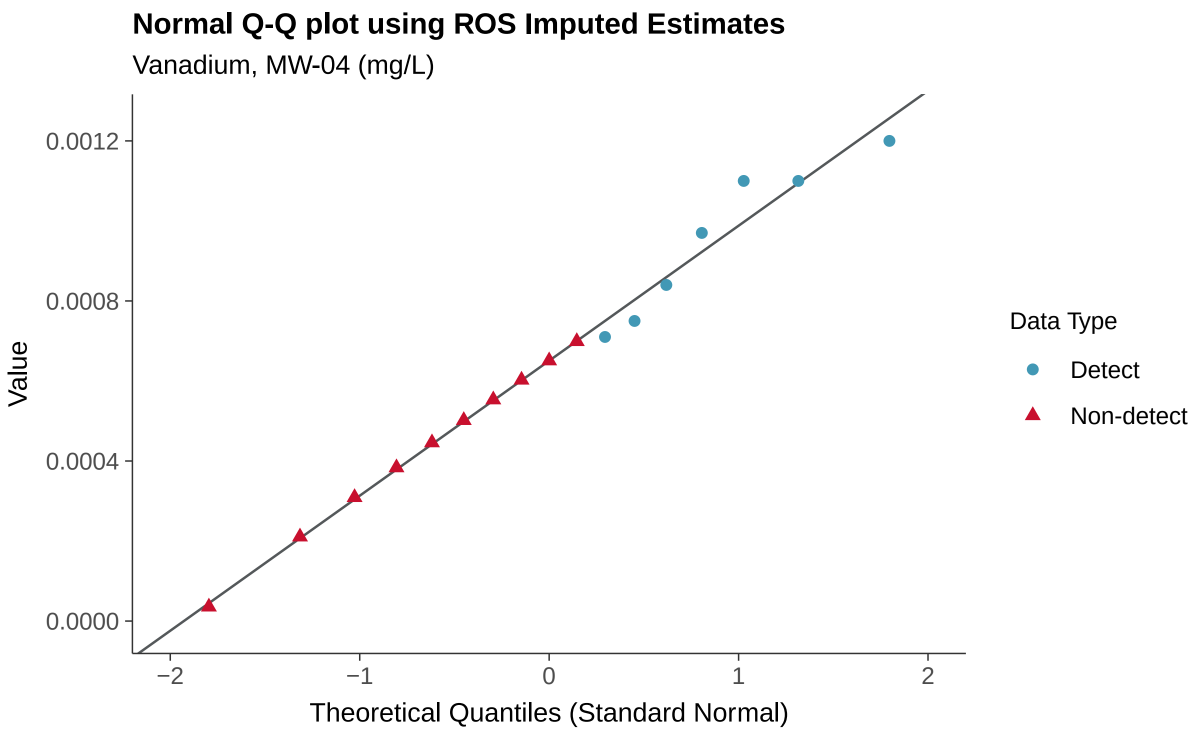
Vanadium, MW-04 (mg/L)

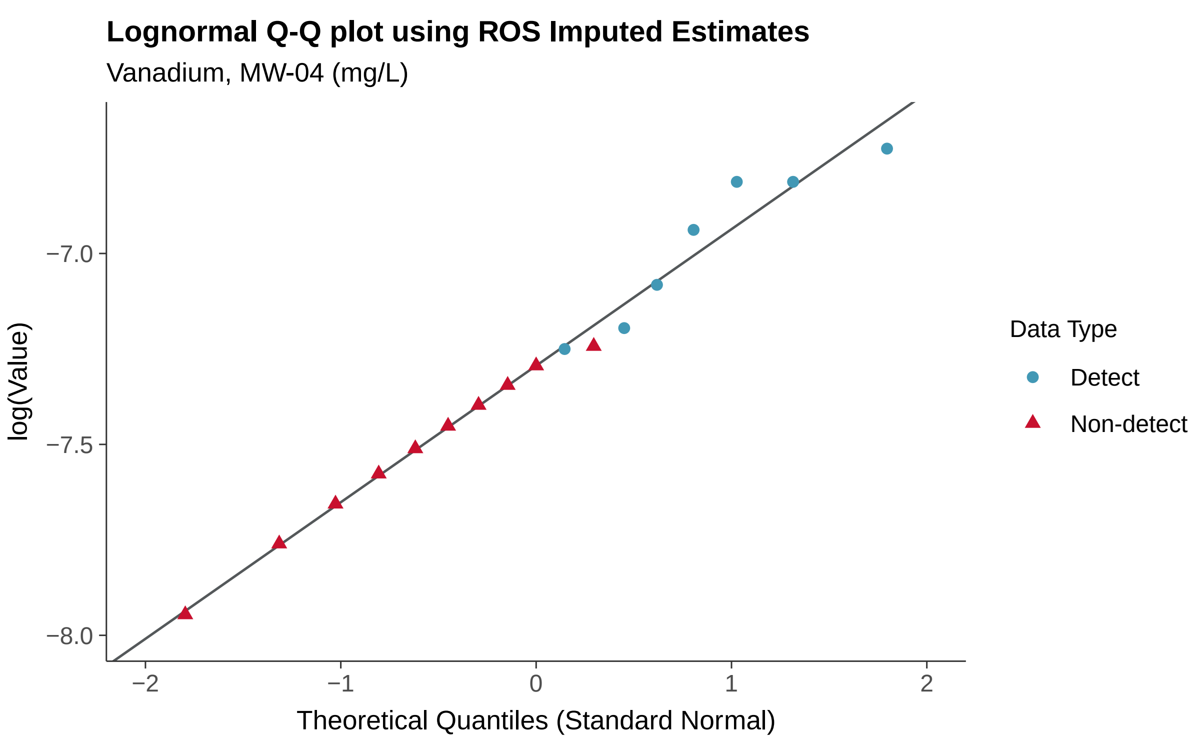


Boxplot by Season

Vanadium, MW-04 (mg/L)

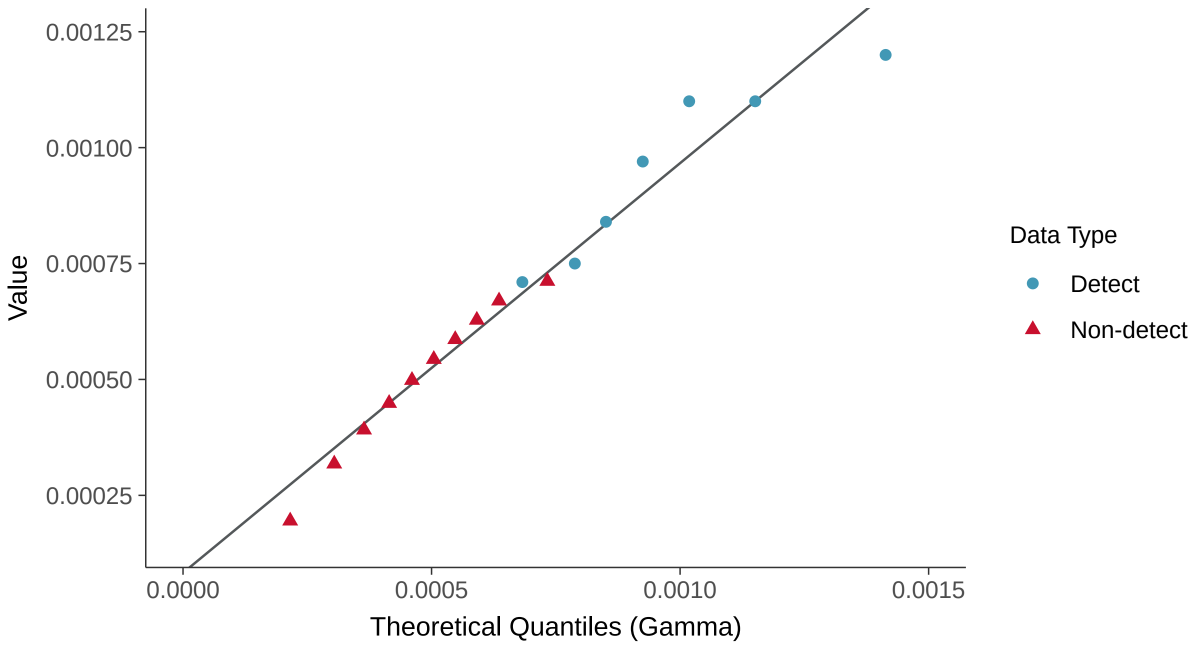



Normal Q-Q plot using ROS Imputed Estimates
Vanadium, MW-04 (mg/L)
Value
0.0012
0.0008
0.0004
0.0000
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Lognormal Q-Q plot using ROS Imputed Estimates
Vanadium, MW-04 (mg/L)
log(Value)
−7.0
−7.5
−8.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

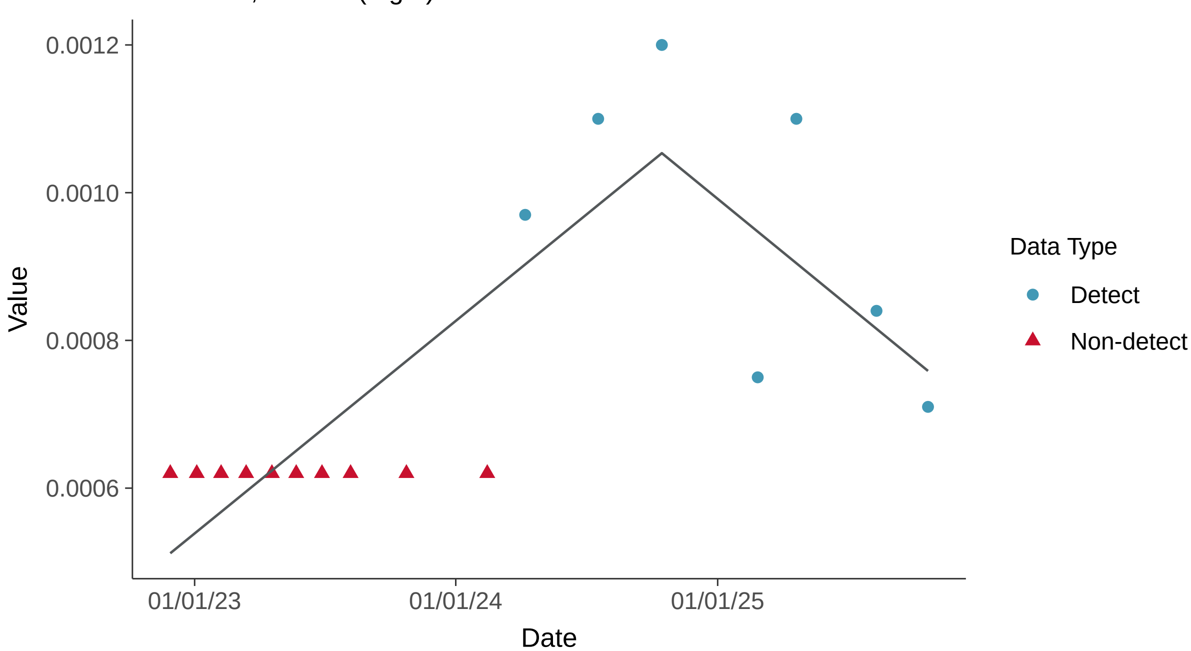
Gamma Q-Q plot using ROS Imputed Estimates

Vanadium, MW-04 (mg/L)



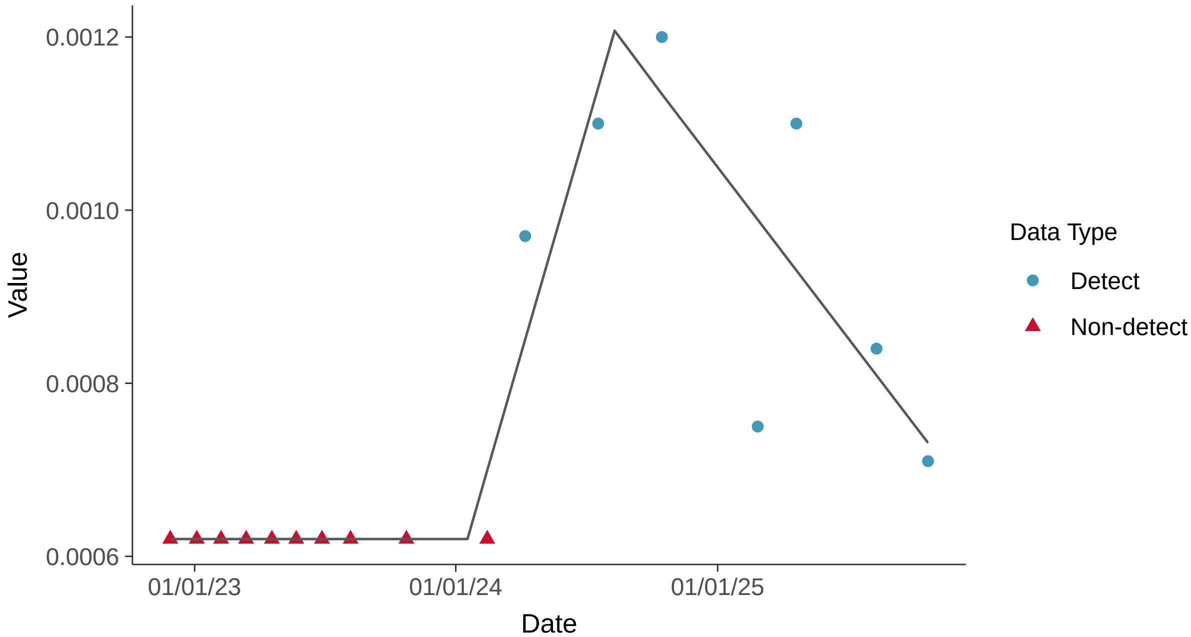
Trend Regression: Piecewise Linear-Linear

Vanadium, MW-04 (mg/L)



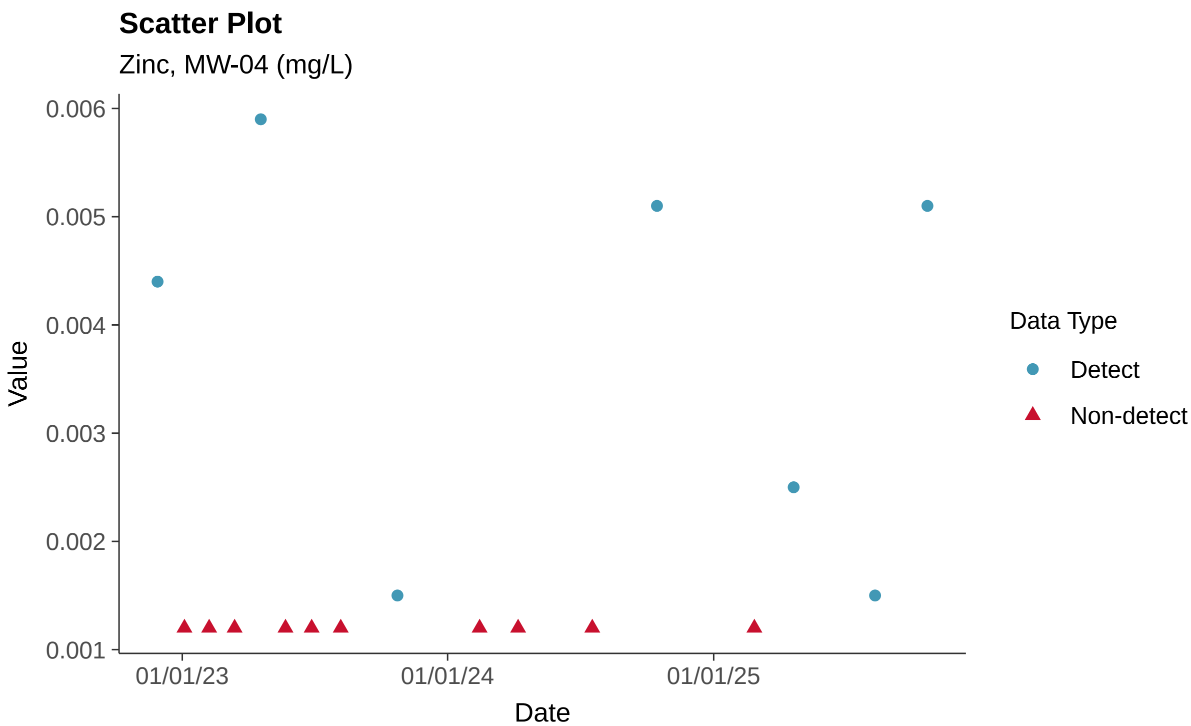
Trend Regression: Piecewise Linear-Linear-Linear

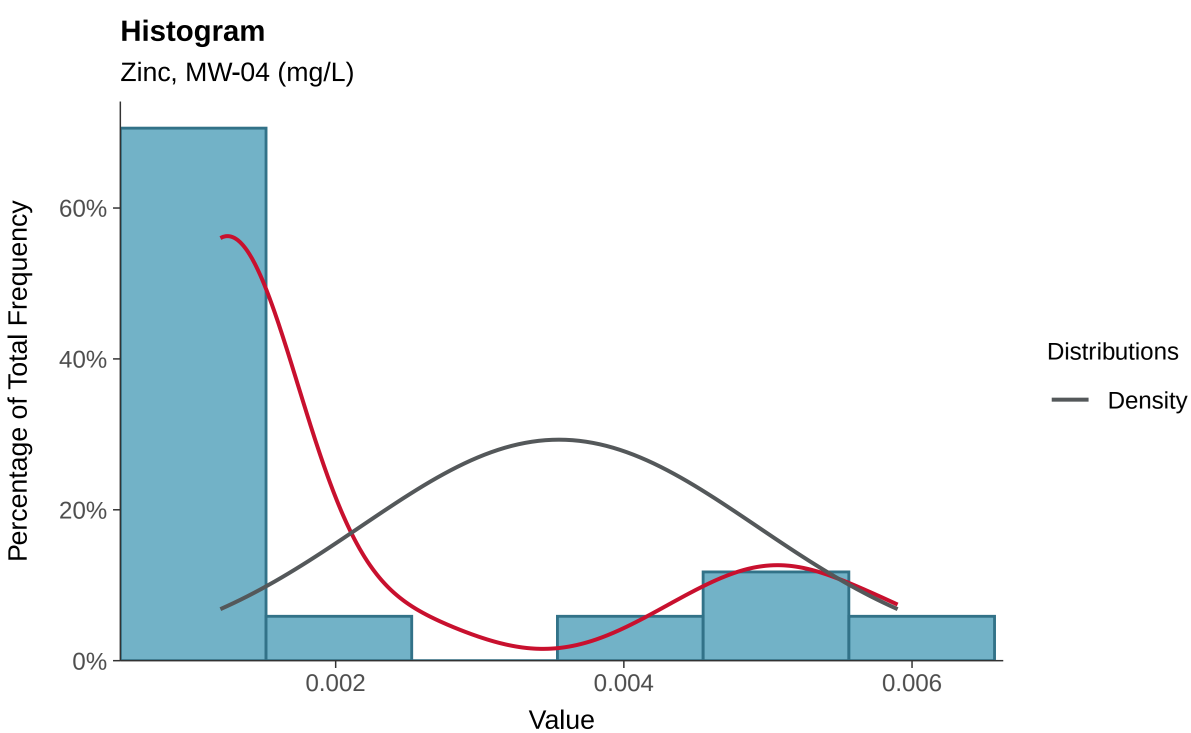
Vanadium, MW-04 (mg/L)



Part 115: Zinc, MW-04

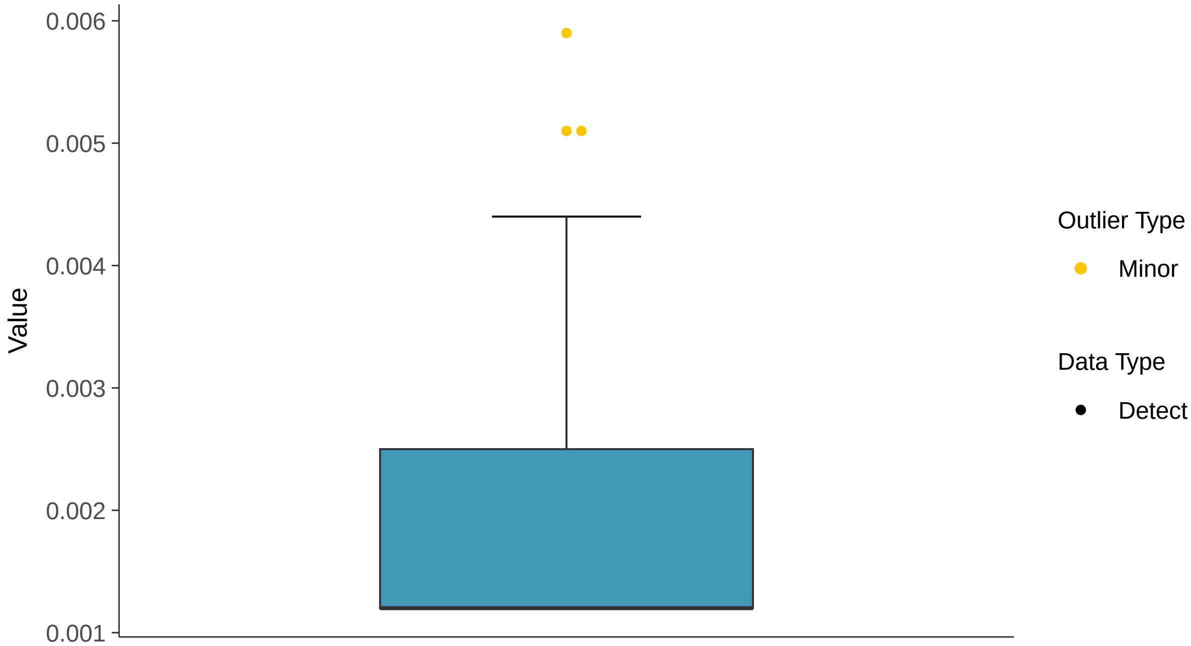
ID: 14_2_5_129





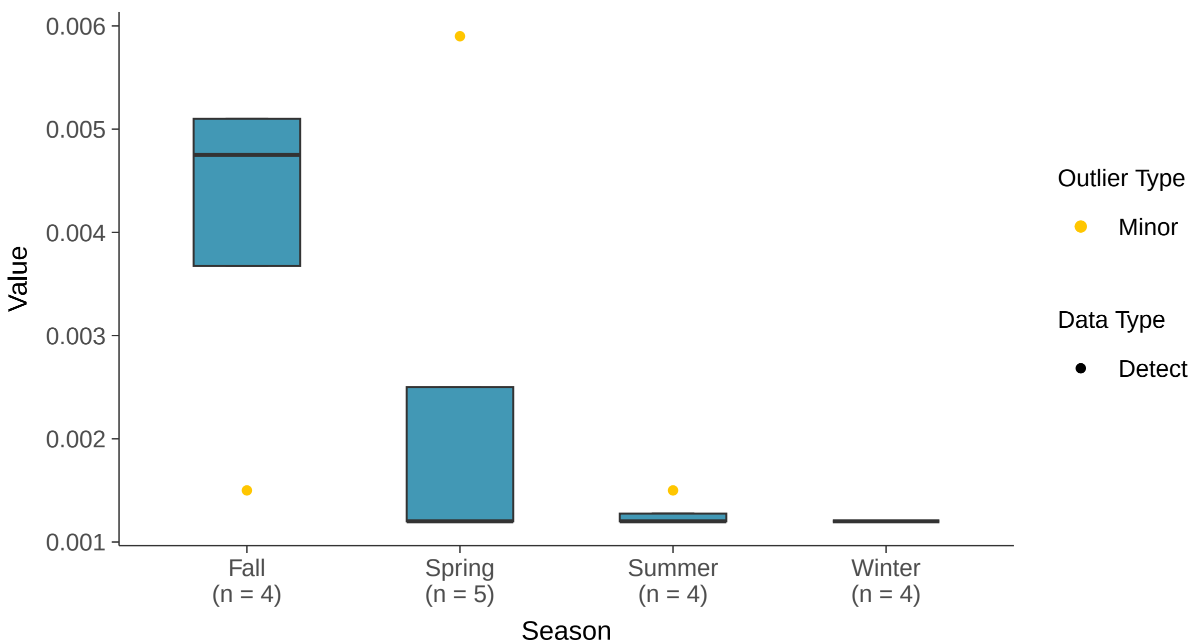
Boxplot

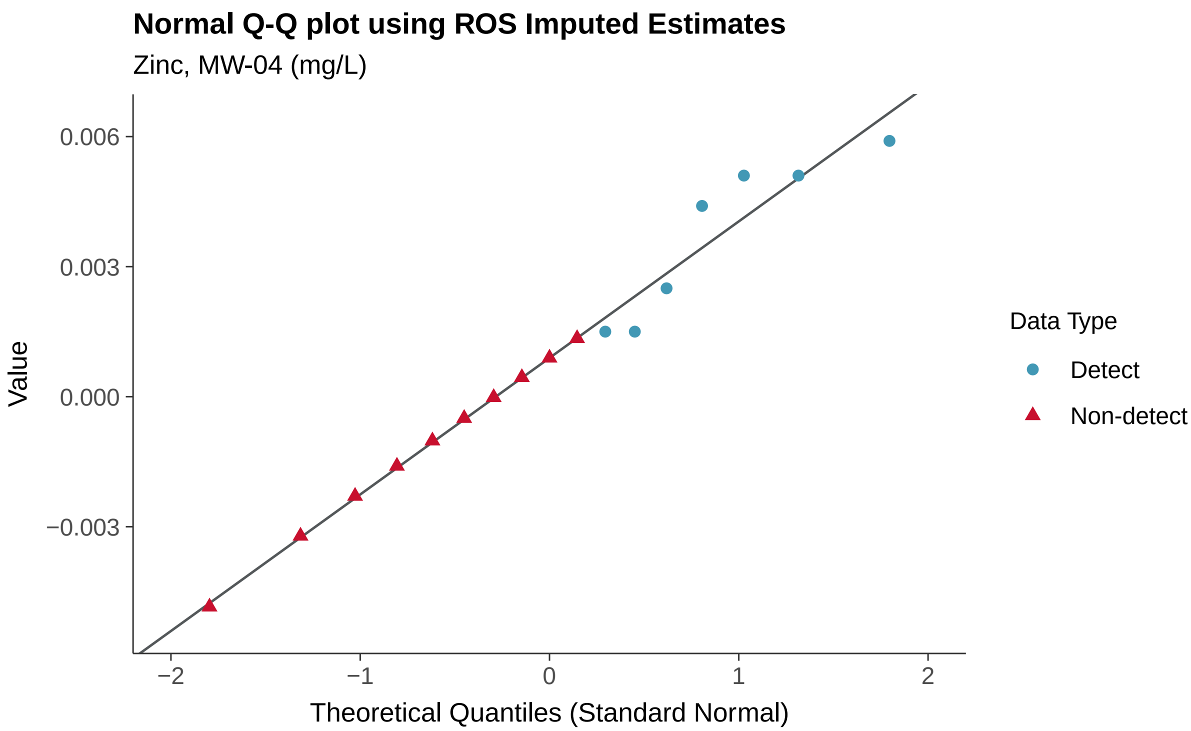
Zinc, MW-04 (mg/L)

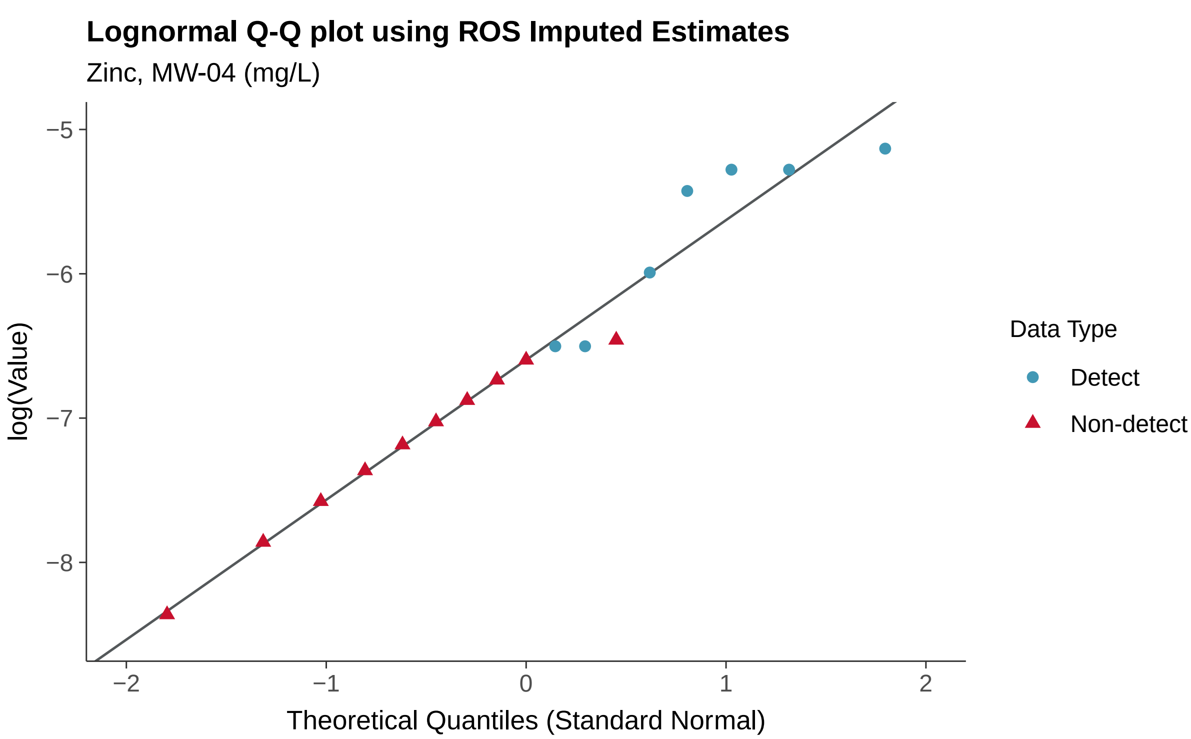


Boxplot by Season

Zinc, MW-04 (mg/L)

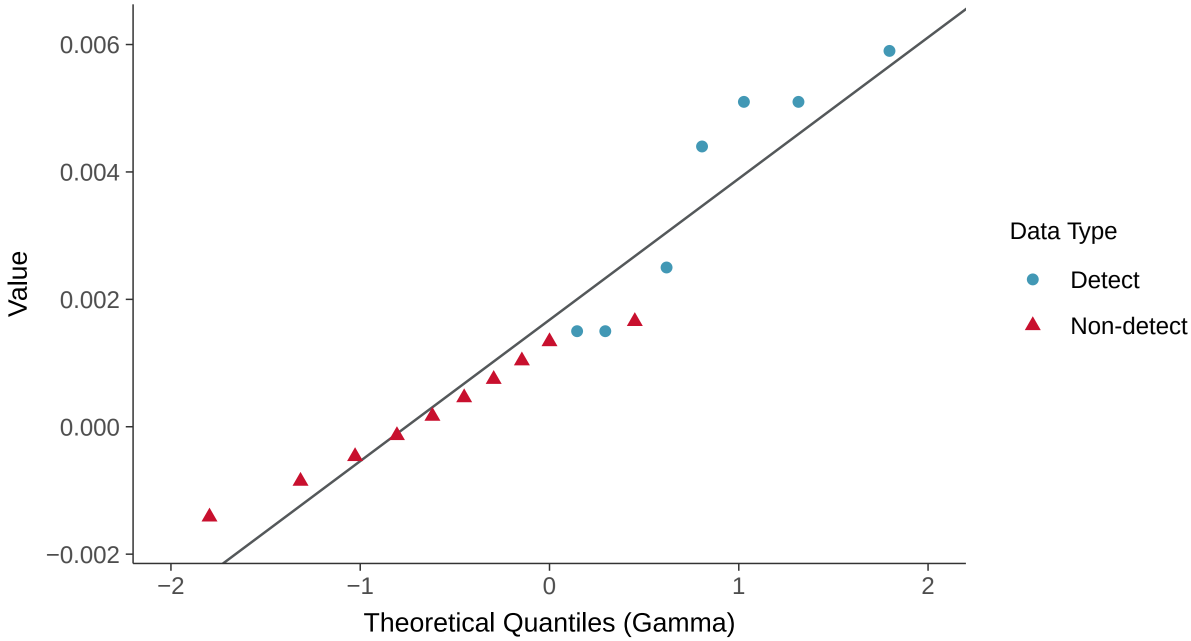



Normal Q-Q plot using ROS Imputed Estimates
Zinc, MW-04 (mg/L)
Value
0.006
0.003
0.000
−0.003
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Lognormal Q-Q plot using ROS Imputed Estimates
Zinc, MW-04 (mg/L)
log(Value)
−5
−6
−7
−8
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

Gamma Q-Q plot using ROS Imputed Estimates

Zinc, MW-04 (mg/L)

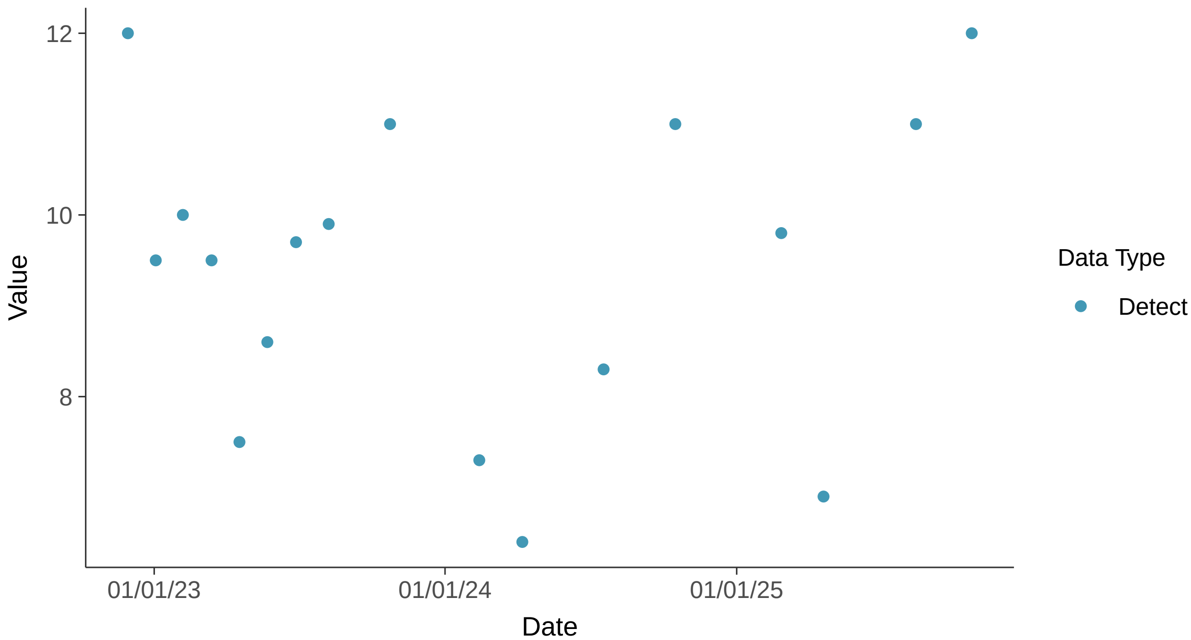


Appendix III: Boron, MW-06

ID: 16_1_3_105

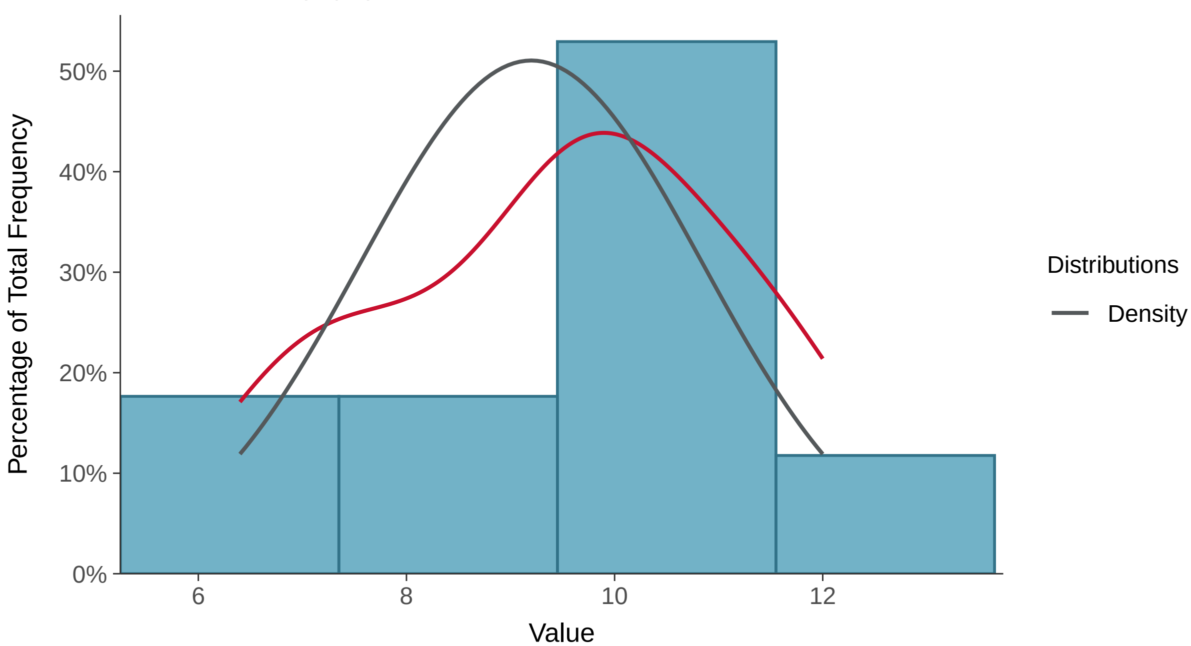
Scatter Plot

Boron, MW-06 (mg/L)



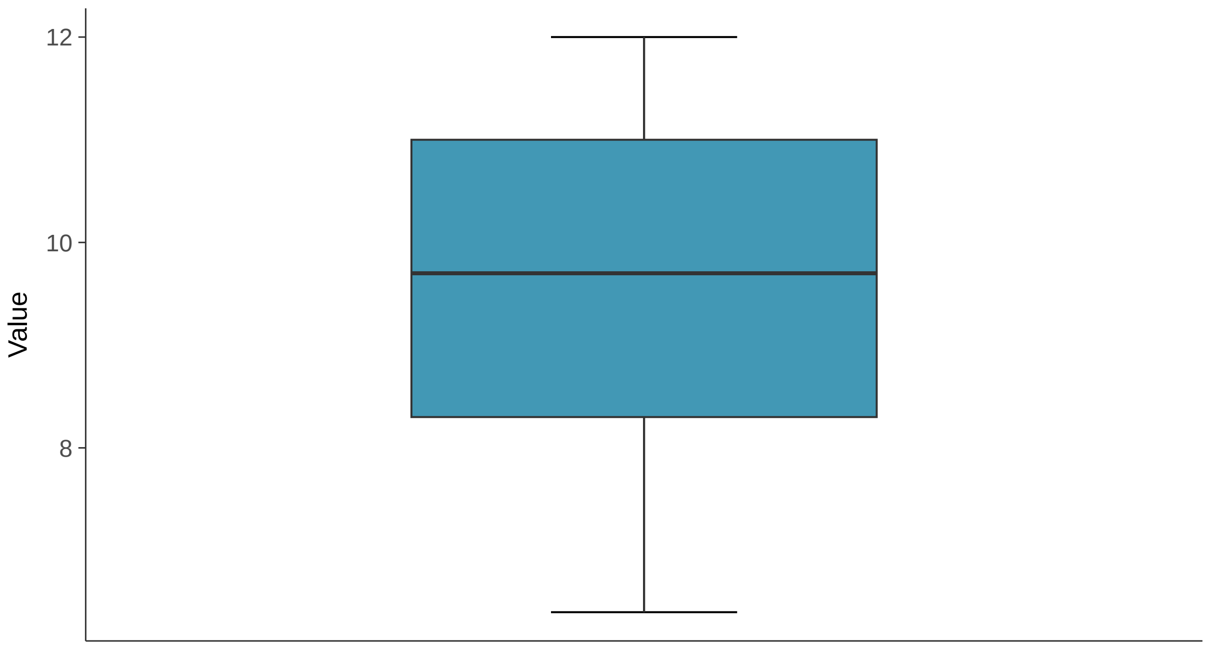
Histogram

Boron, MW-06 (mg/L)



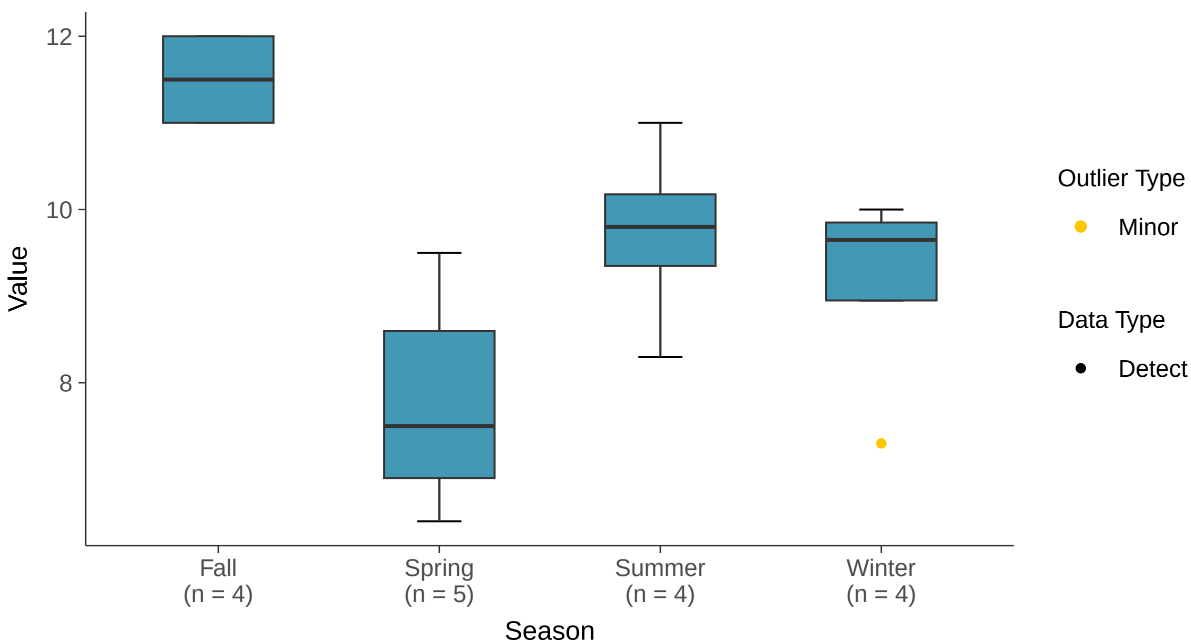
Boxplot

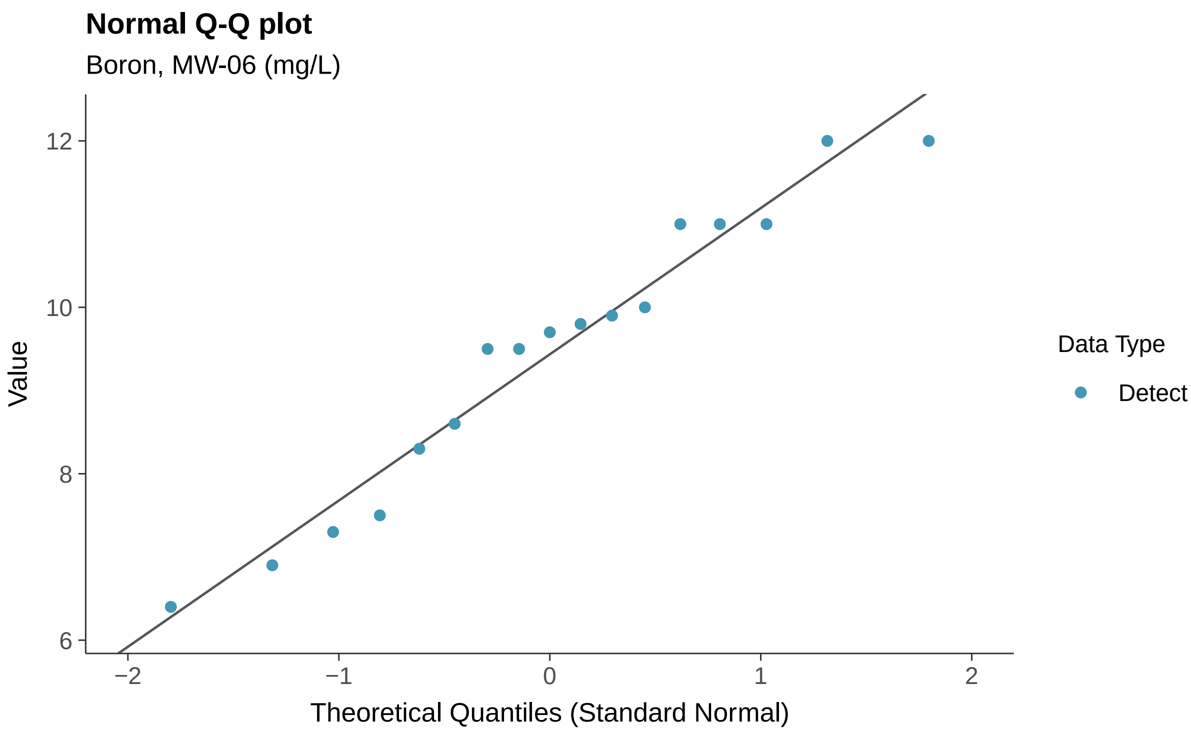
Boron, MW-06 (mg/L)

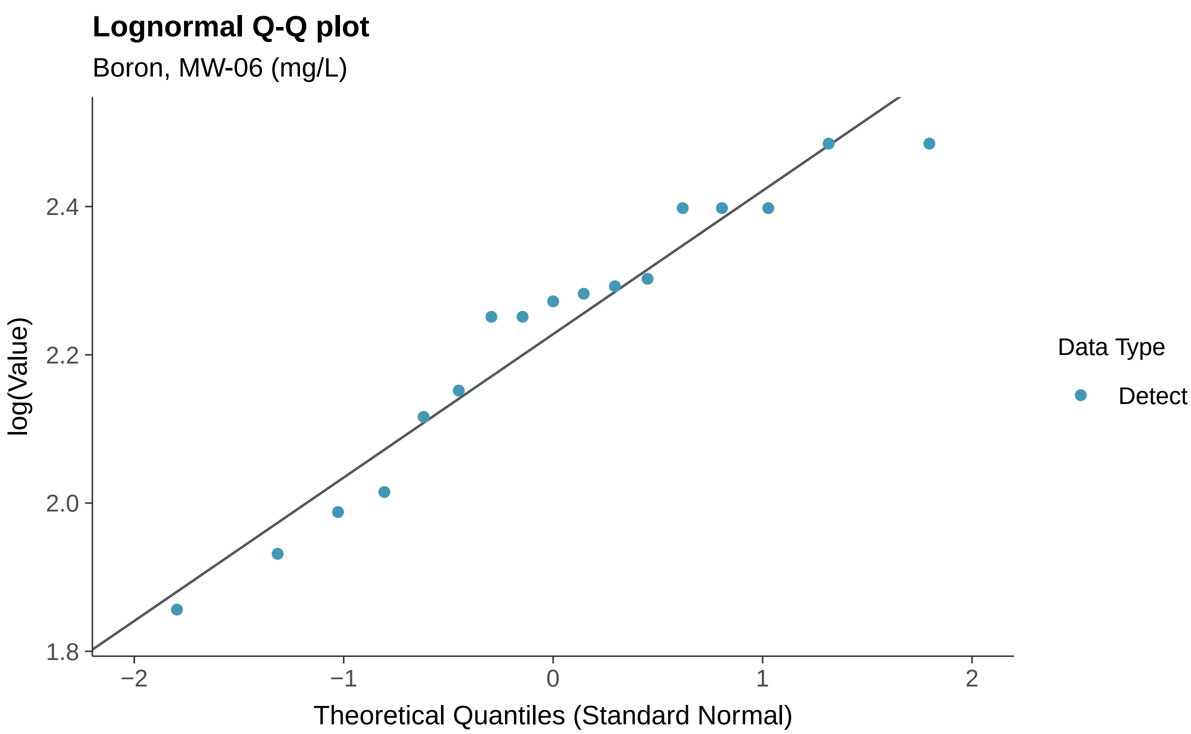


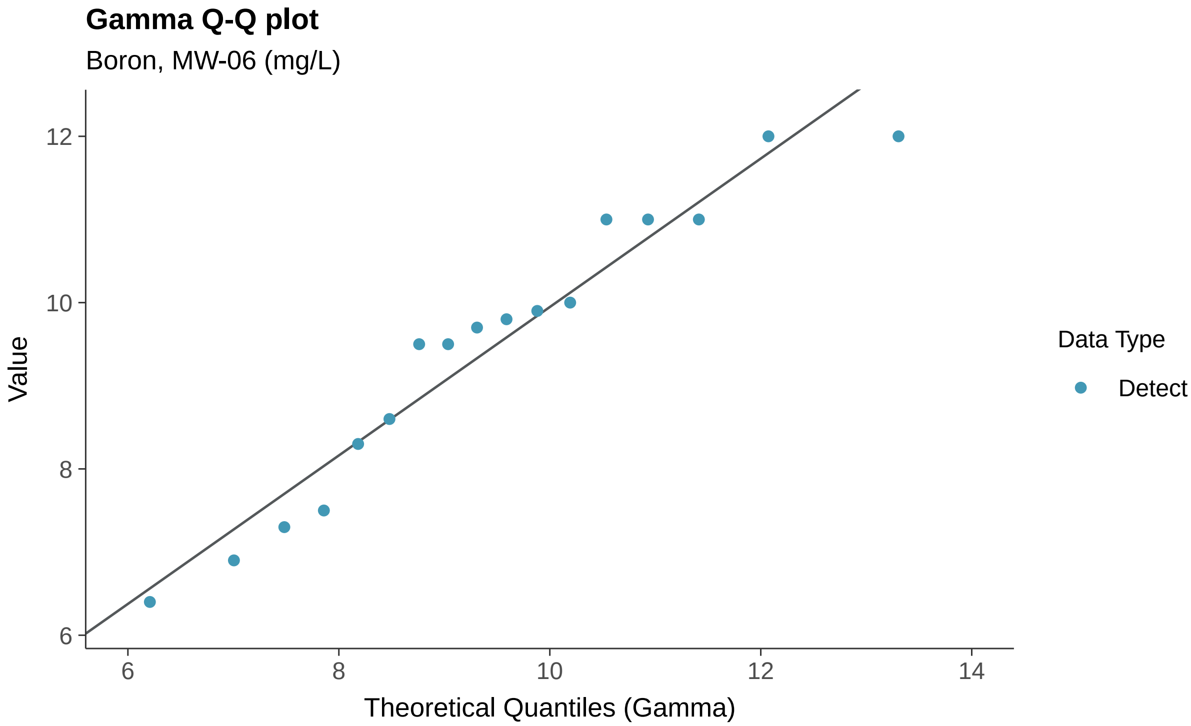
Boxplot by Season

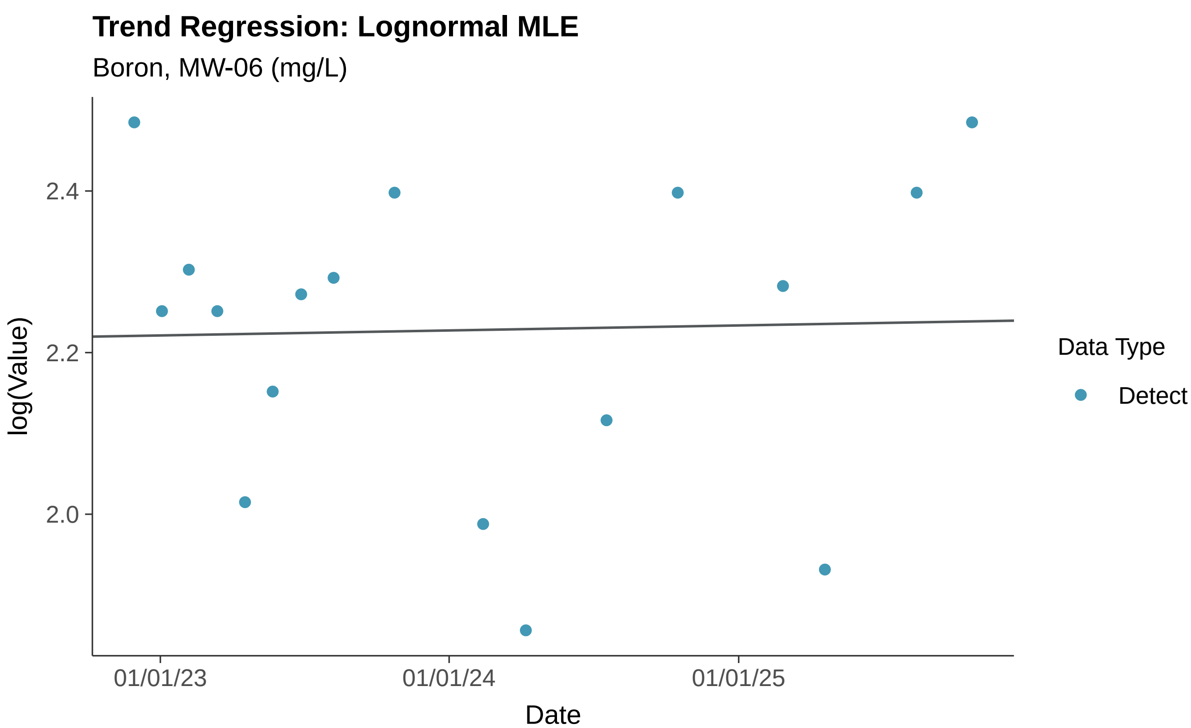
Boron, MW-06 (mg/L)

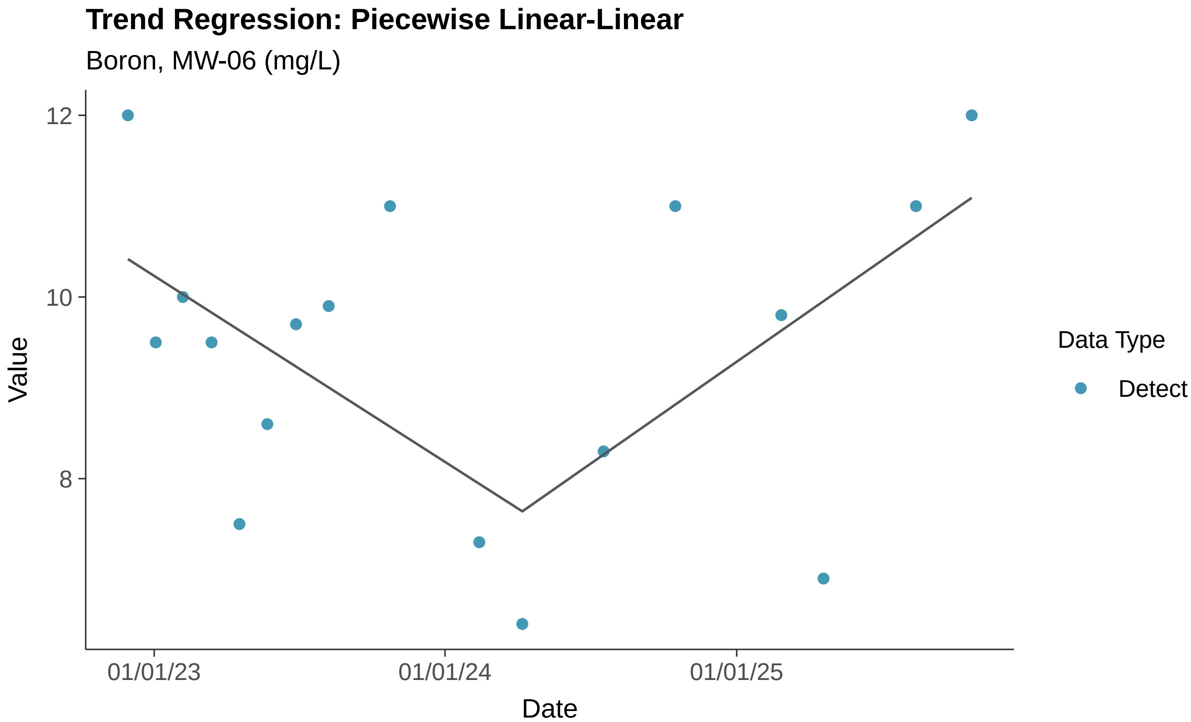


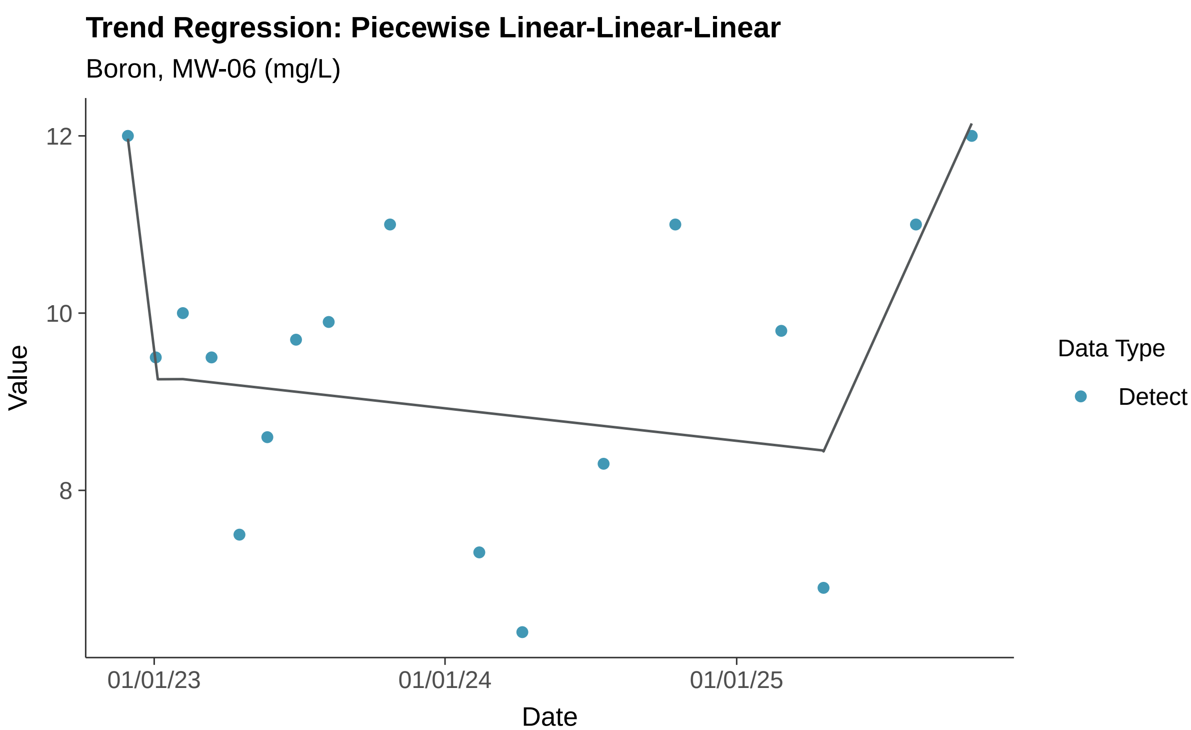

Normal Q-Q plot
Boron, MW-06 (mg/L)
Value
12
10
8
6
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Boron, MW-06 (mg/L)
log(Value)
2.4
2.2
2.0
1.8
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Boron, MW-06 (mg/L)
Value
12
10
8
6
6
8
10
12
14
Theoretical Quantiles (Gamma)
Data Type
Detect

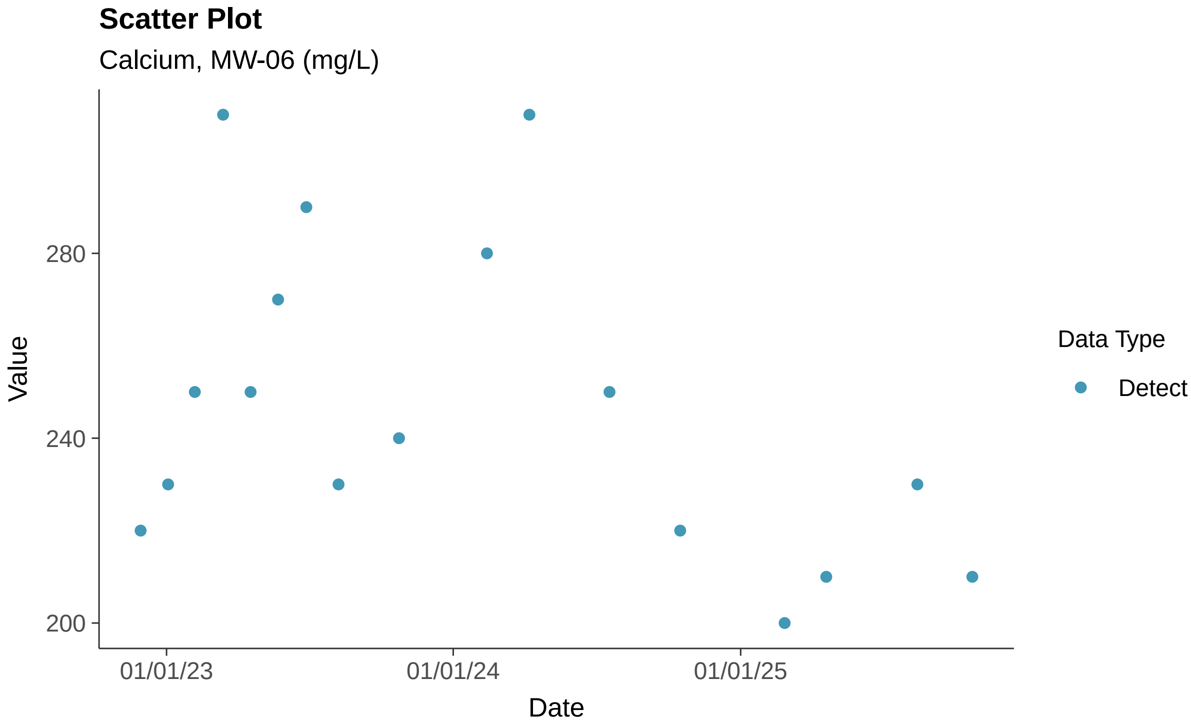

Trend Regression: Lognormal MLE
Boron, MW-06 (mg/L)
log(Value)
2.4
2.2
2.0
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

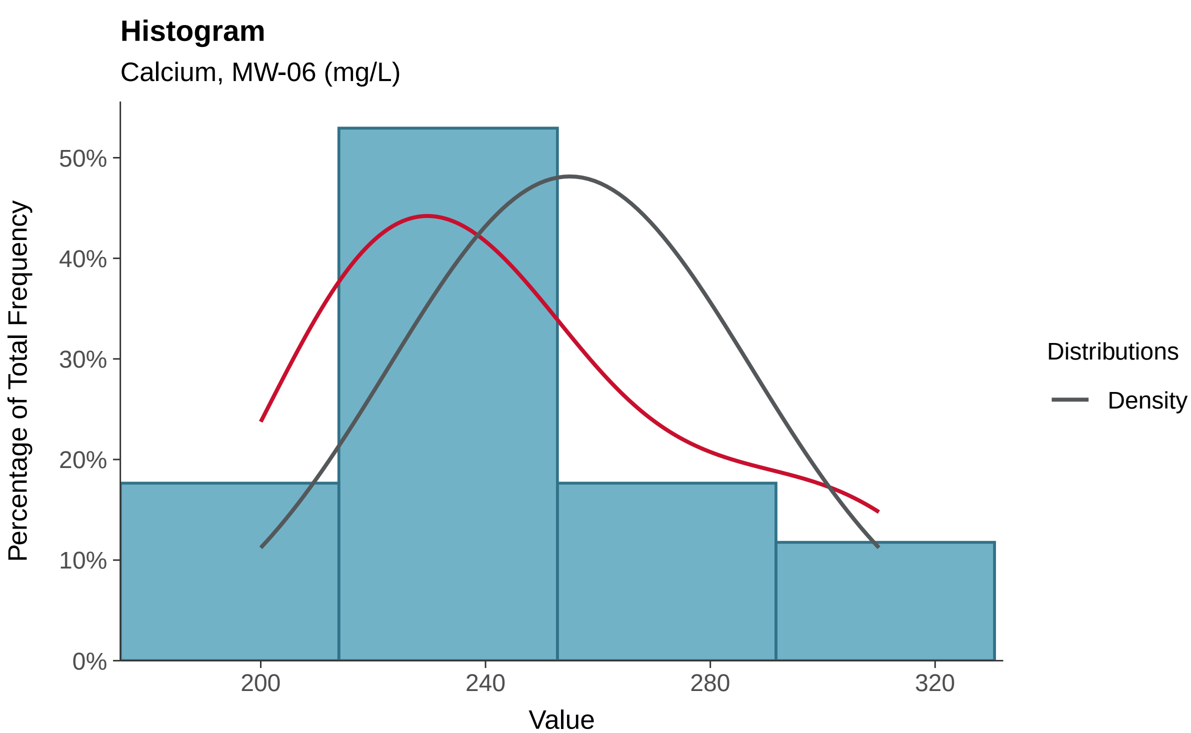

Trend Regression: Piecewise Linear-Linear
Boron, MW-06 (mg/L)
12
10
8
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
Boron, MW-06 (mg/L)
12
10
8
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Appendix III: Calcium, MW-06

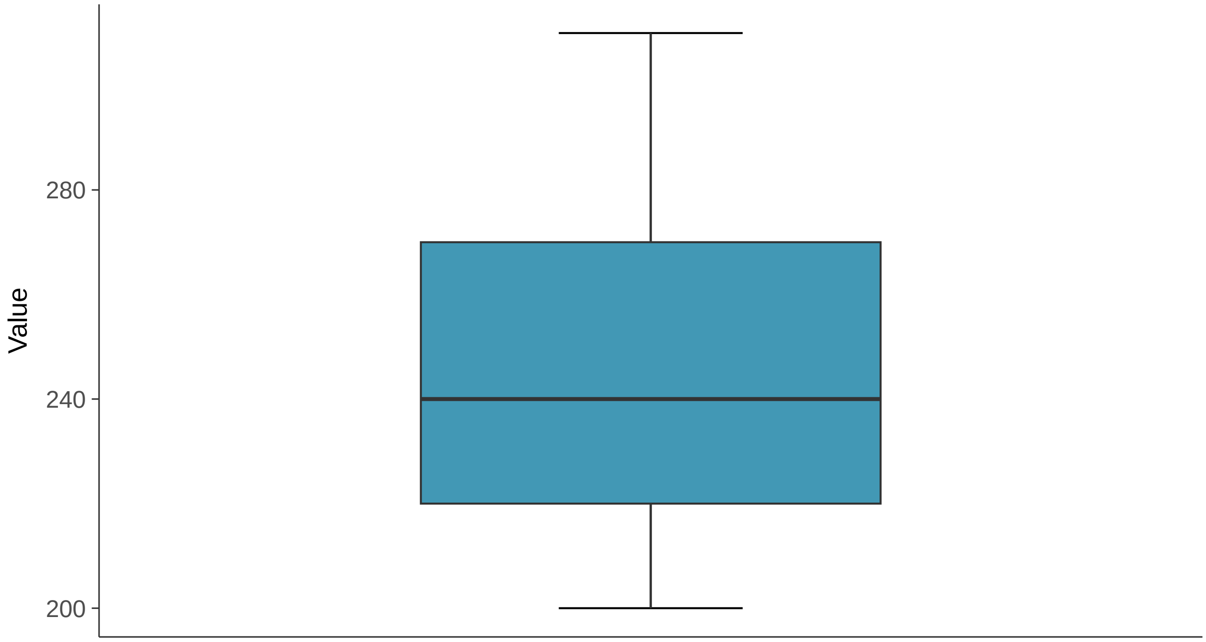
ID: 16_1_3_107





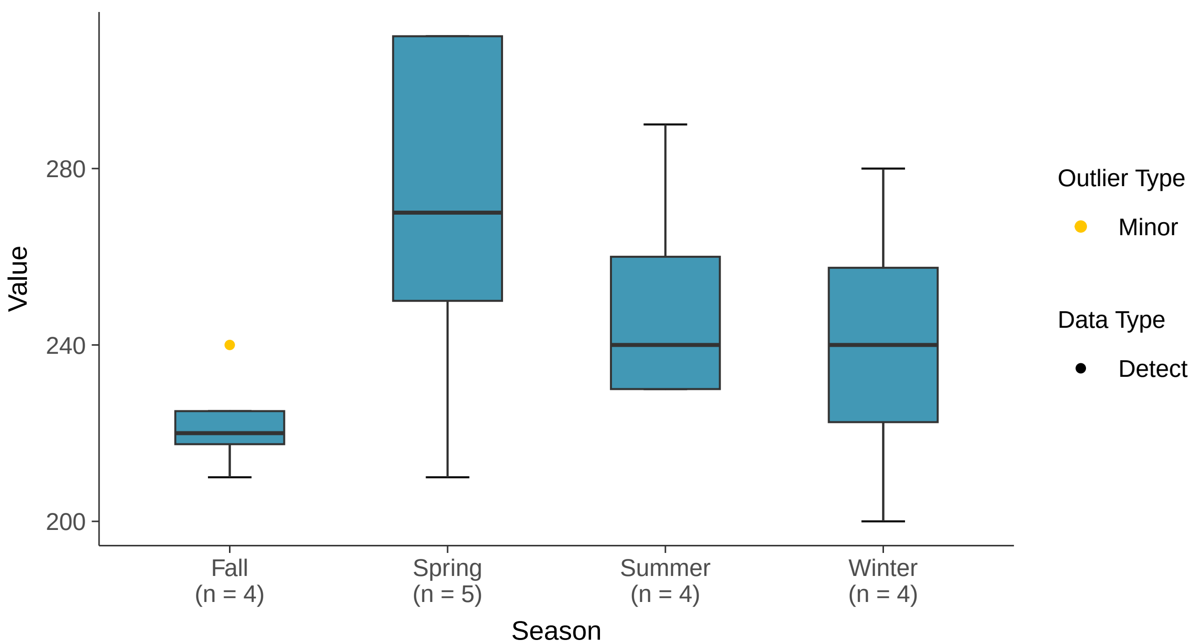
Boxplot

Calcium, MW-06 (mg/L)



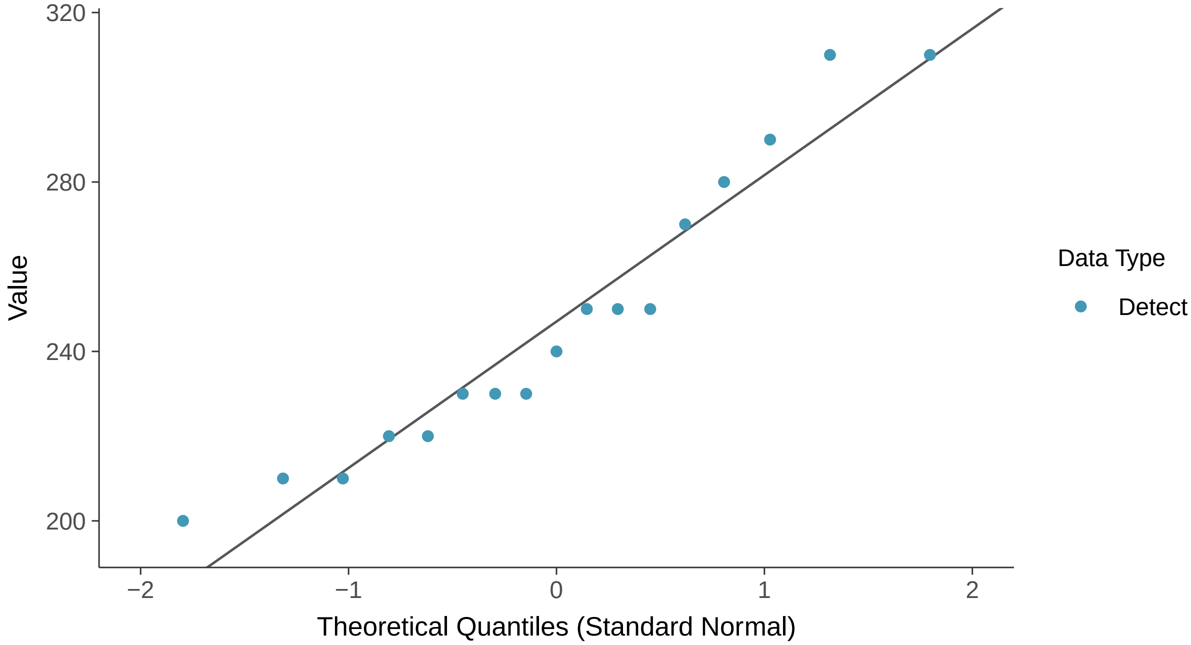
Boxplot by Season

Calcium, MW-06 (mg/L)



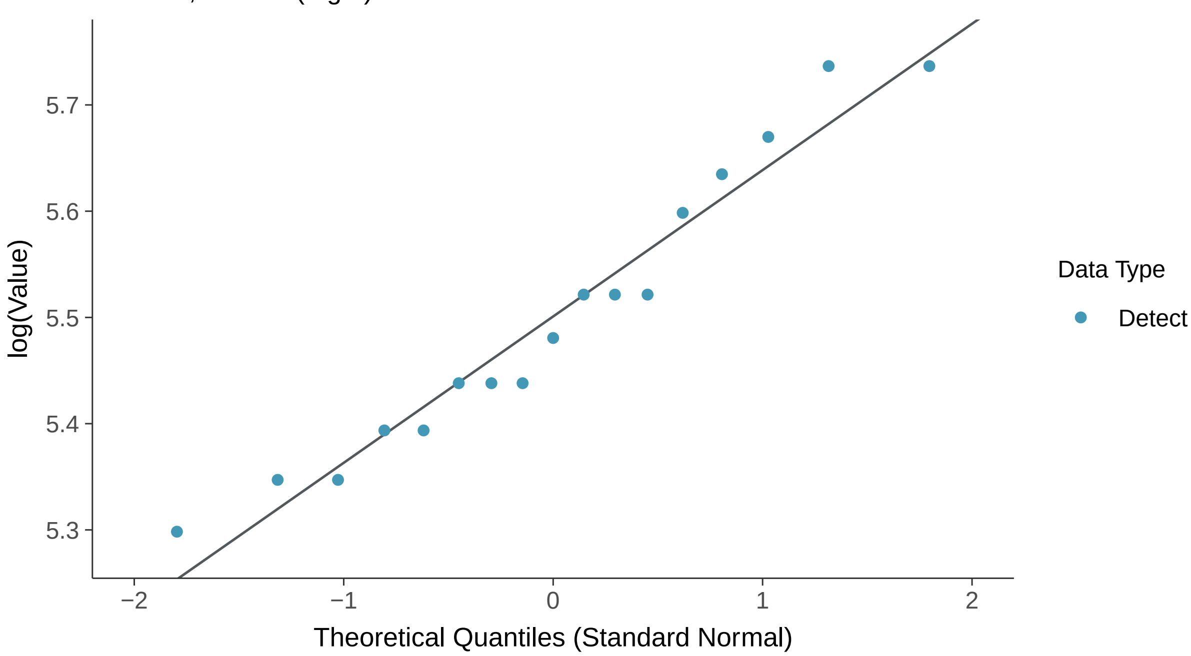
Normal Q-Q plot

Calcium, MW-06 (mg/L)



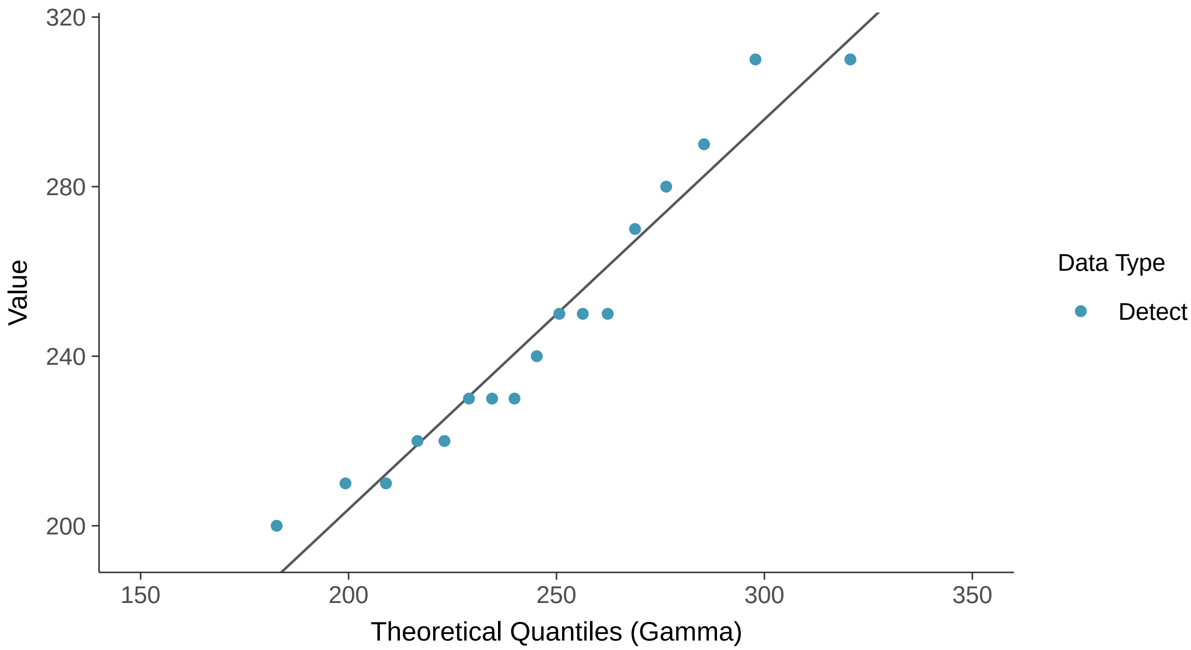
Lognormal Q-Q plot

Calcium, MW-06 (mg/L)



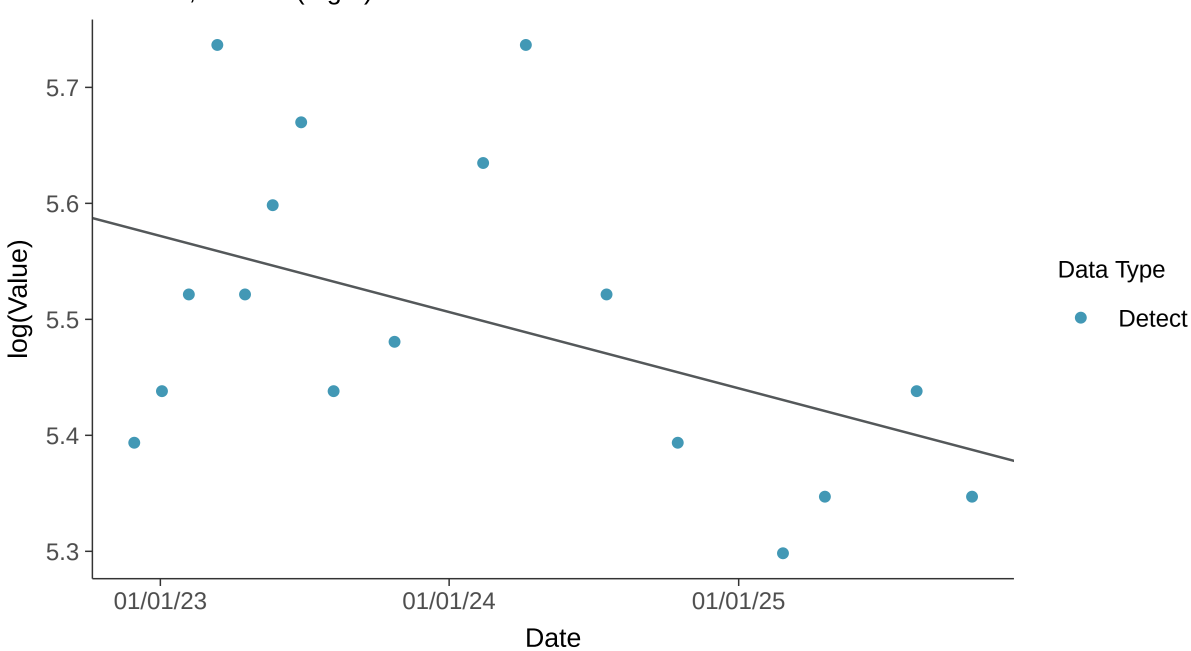
Gamma Q-Q plot

Calcium, MW-06 (mg/L)



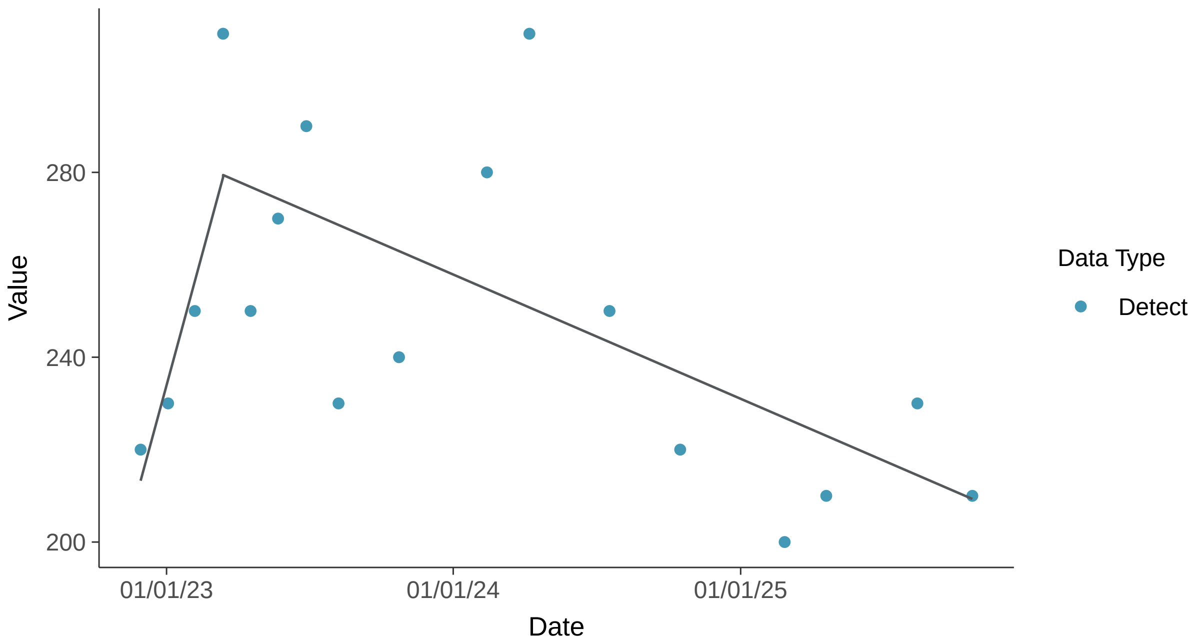
Trend Regression: Lognormal MLE

Calcium, MW-06 (mg/L)



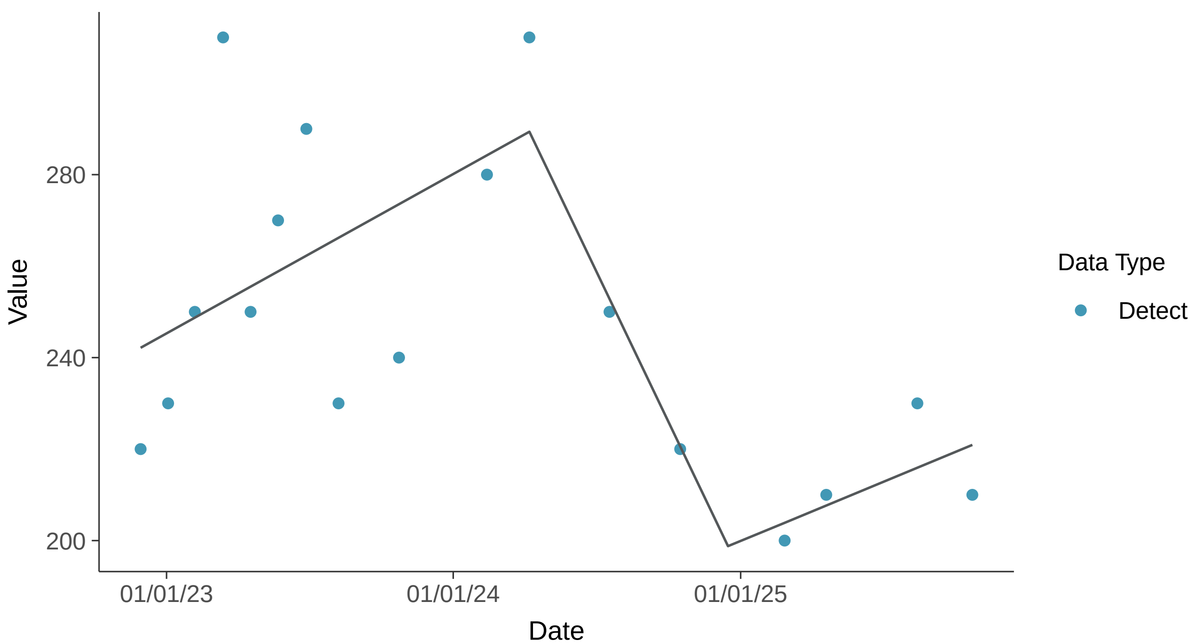
Trend Regression: Piecewise Linear-Linear

Calcium, MW-06 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Calcium, MW-06 (mg/L)

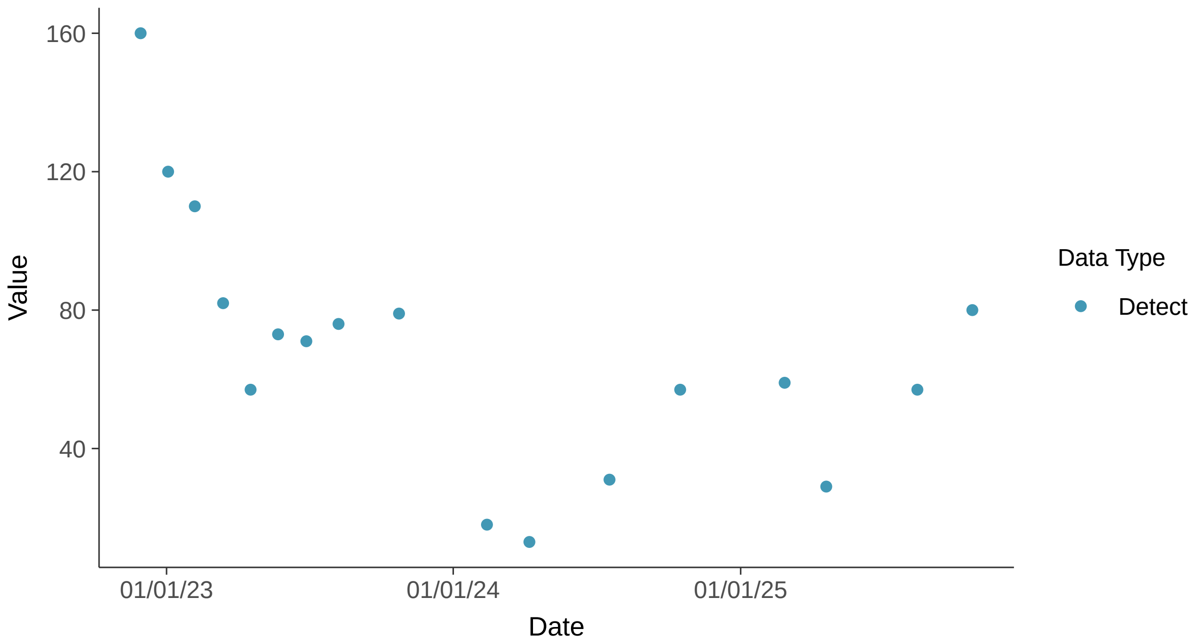


Appendix III: Chloride (as Cl), MW-06

ID: 16_1_3_108

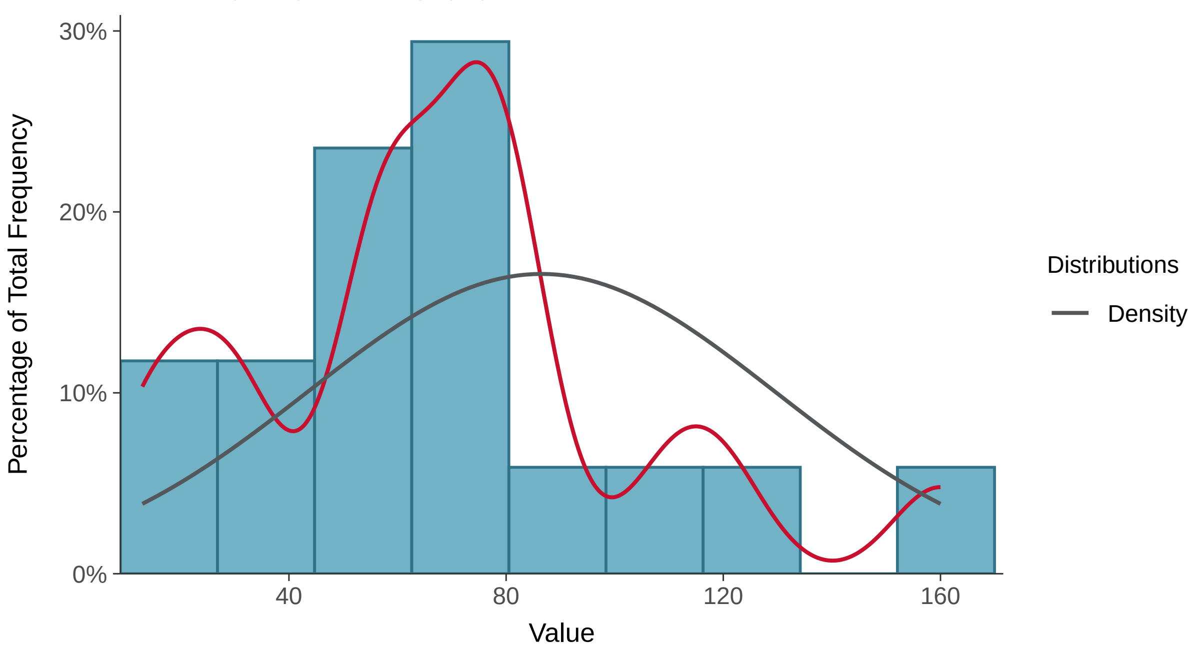
Scatter Plot

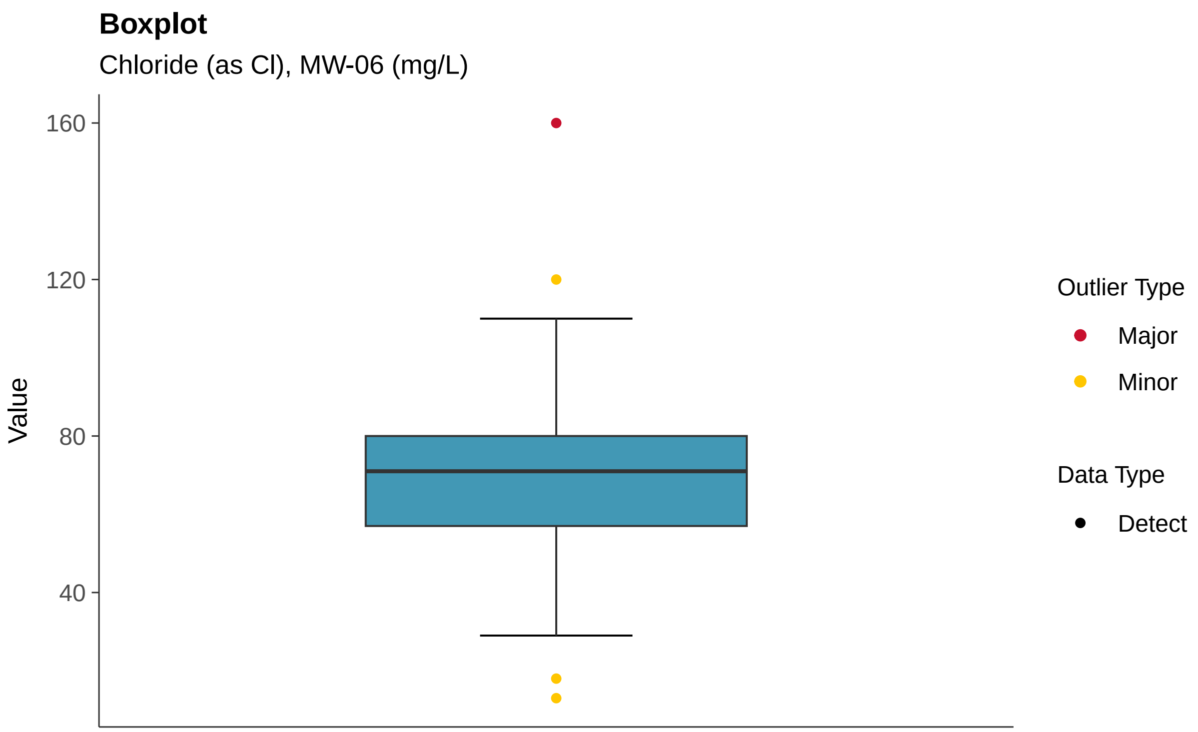
Chloride (as Cl), MW-06 (mg/L)

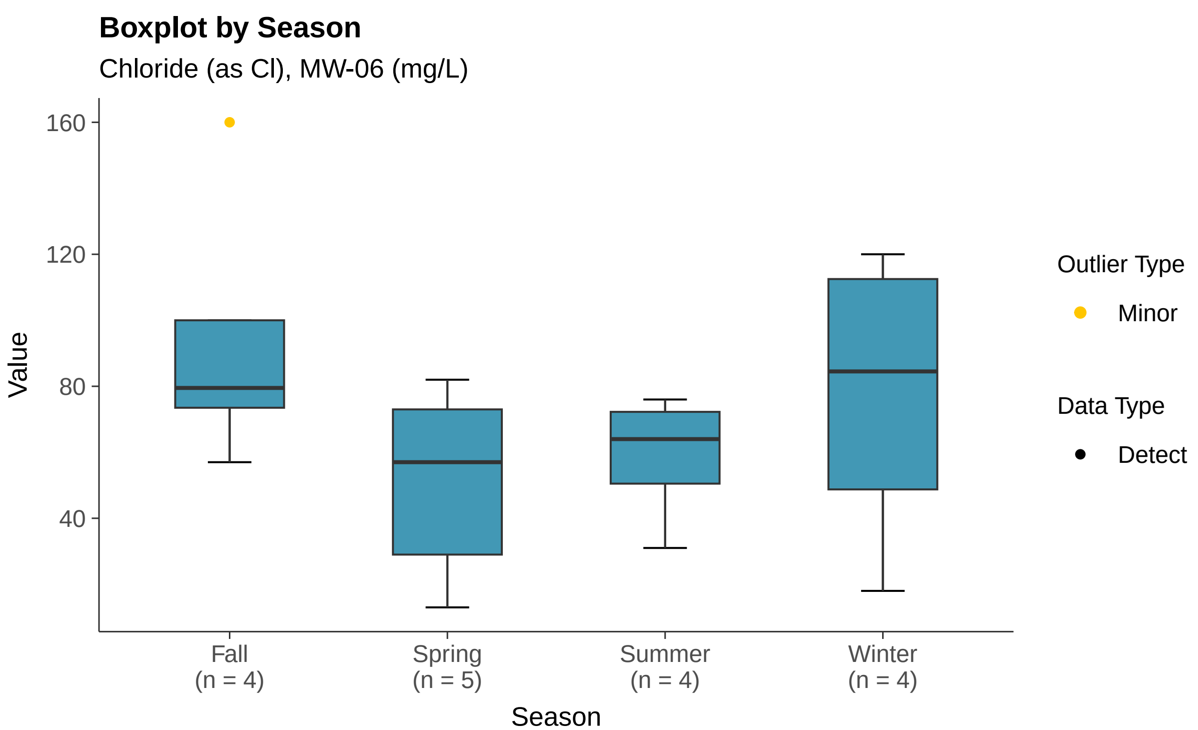


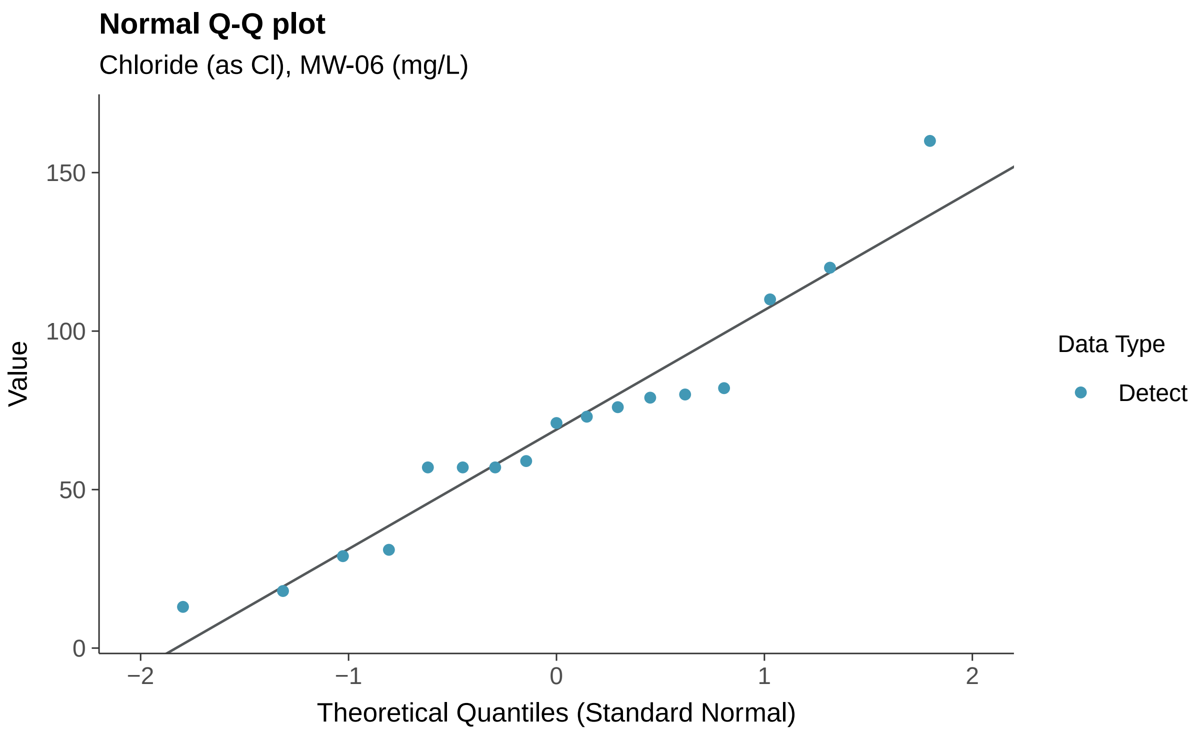
Histogram

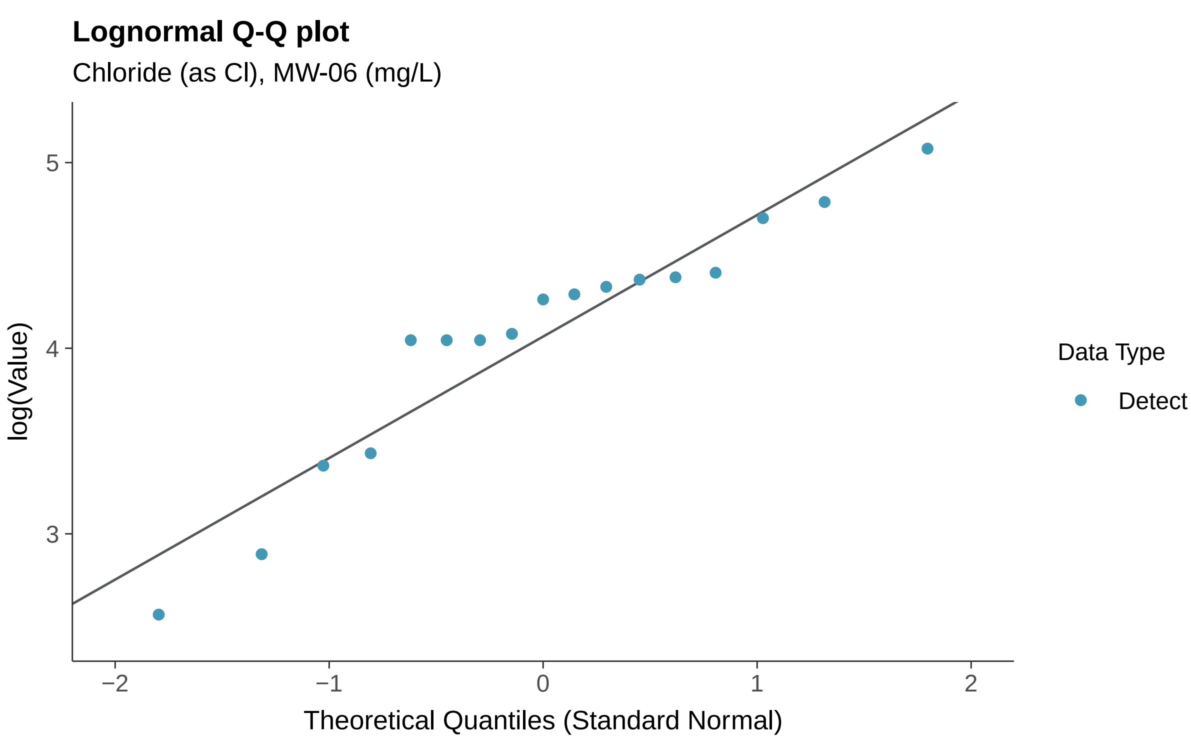
Chloride (as Cl), MW-06 (mg/L)




Boxplot
Chloride (as Cl), MW-06 (mg/L)
Value
160
120
80
40
Outlier Type
Major
Minor
Data Type
Detect

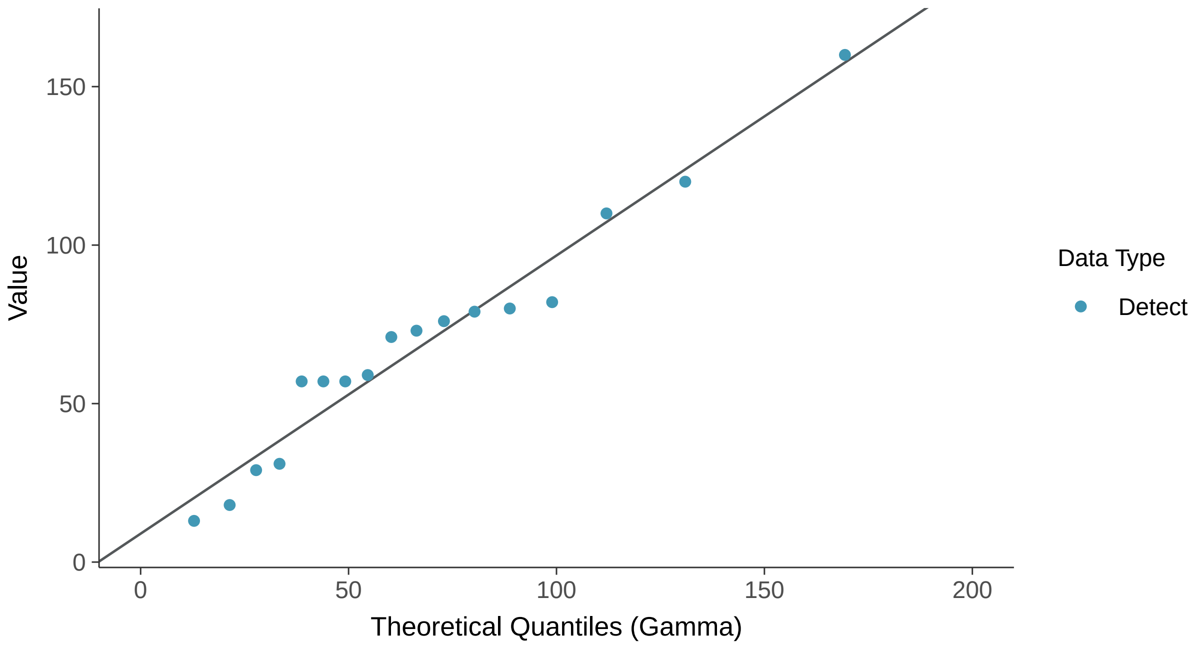

Boxplot by Season
Chloride (as Cl), MW-06 (mg/L)
Value
160
120
80
40
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Minor
Data Type
Detect


Normal Q-Q plot
Chloride (as Cl), MW-06 (mg/L)
Value
150
100
50
0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Chloride (as Cl), MW-06 (mg/L)
log(Value)
5
4
3
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

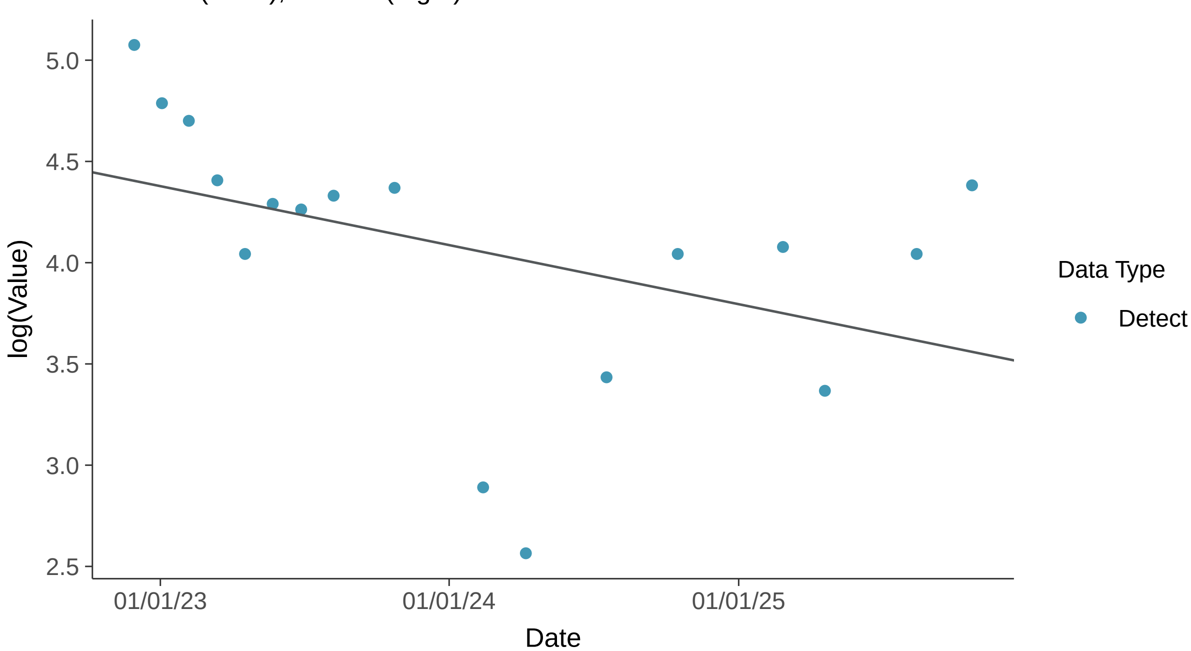
Gamma Q-Q plot

Chloride (as Cl), MW-06 (mg/L)



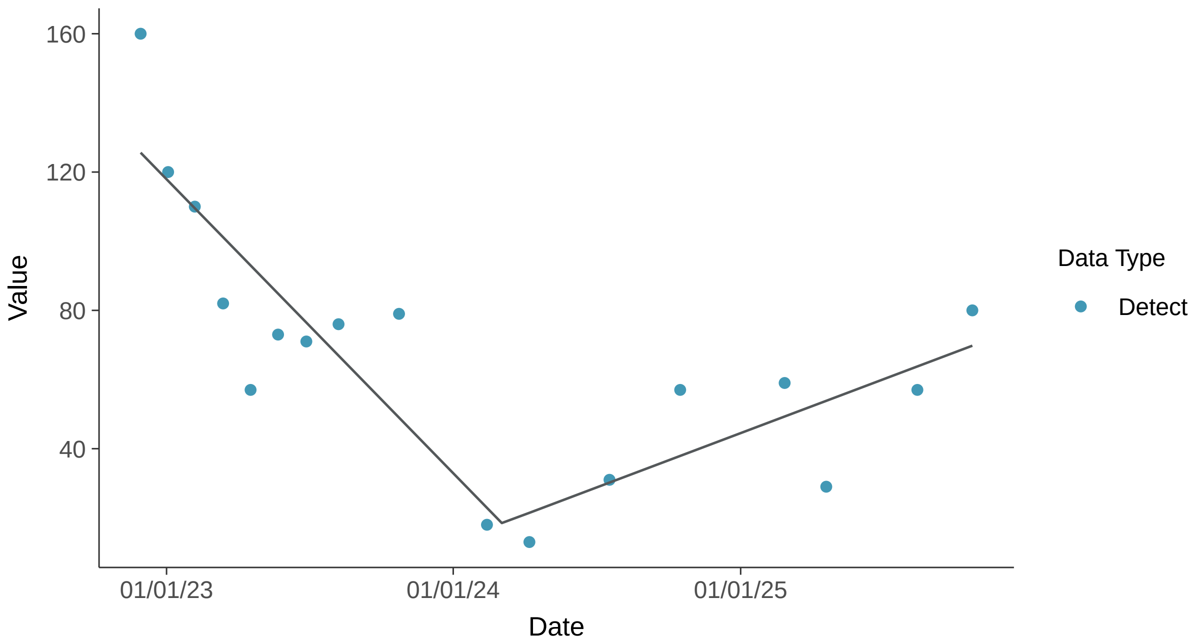
Trend Regression: Lognormal MLE

Chloride (as Cl), MW-06 (mg/L)



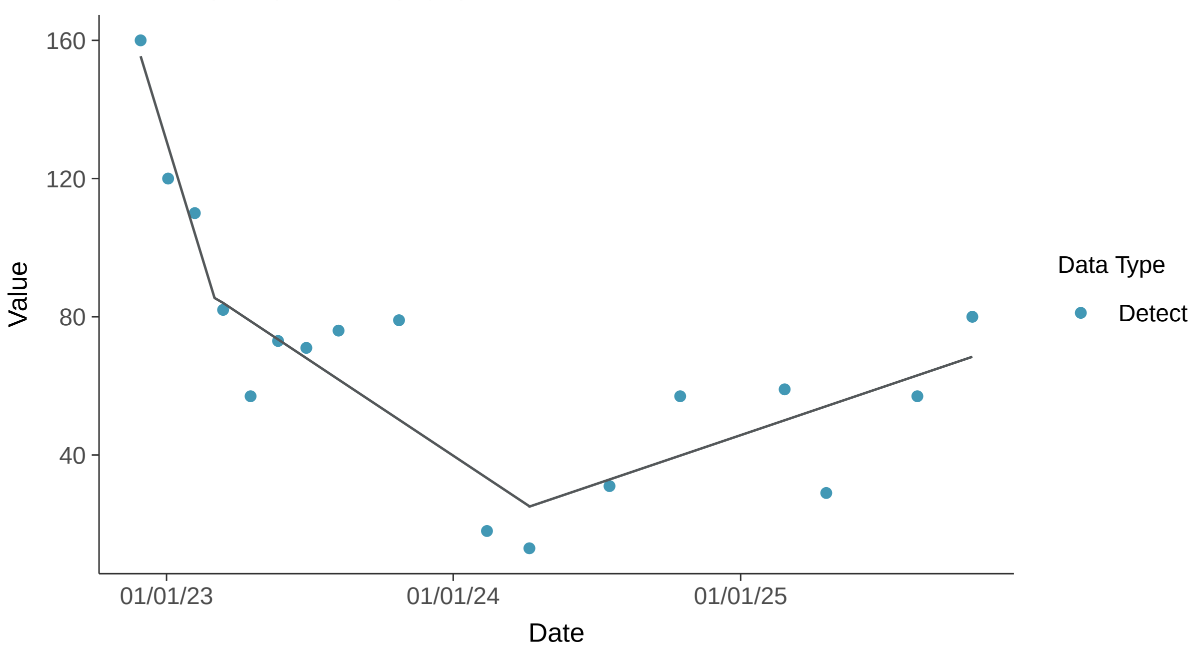
Trend Regression: Piecewise Linear-Linear

Chloride (as Cl), MW-06 (mg/L)



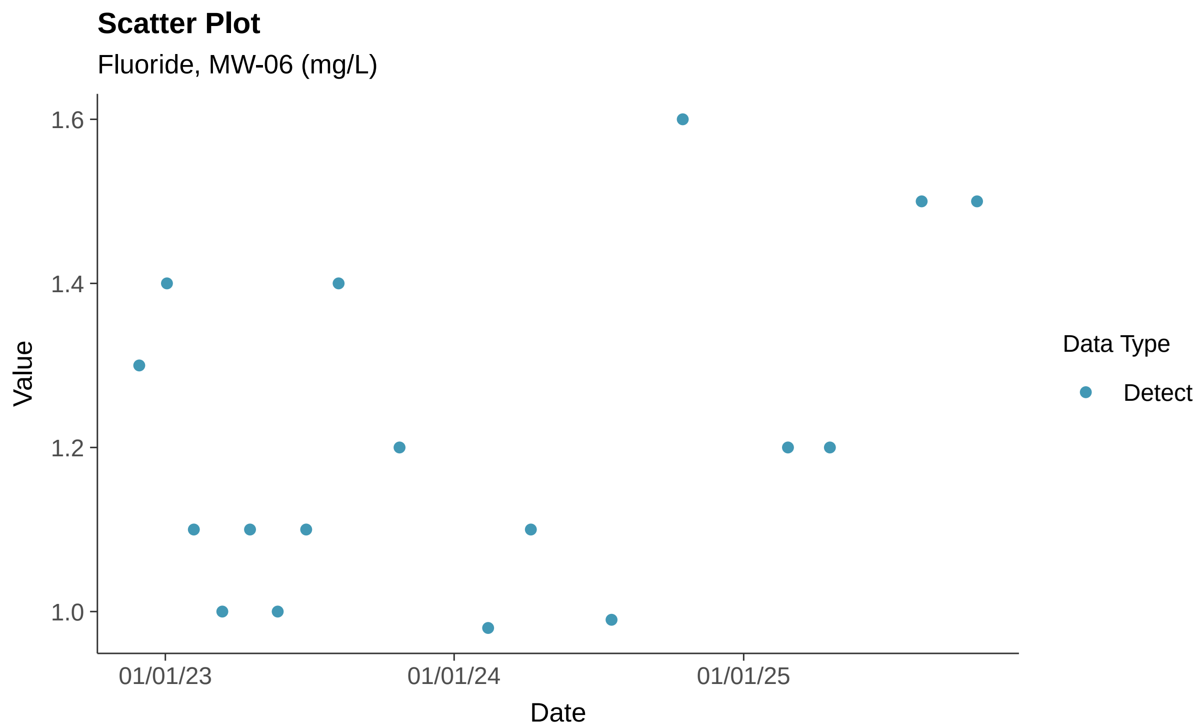
Trend Regression: Piecewise Linear-Linear-Linear

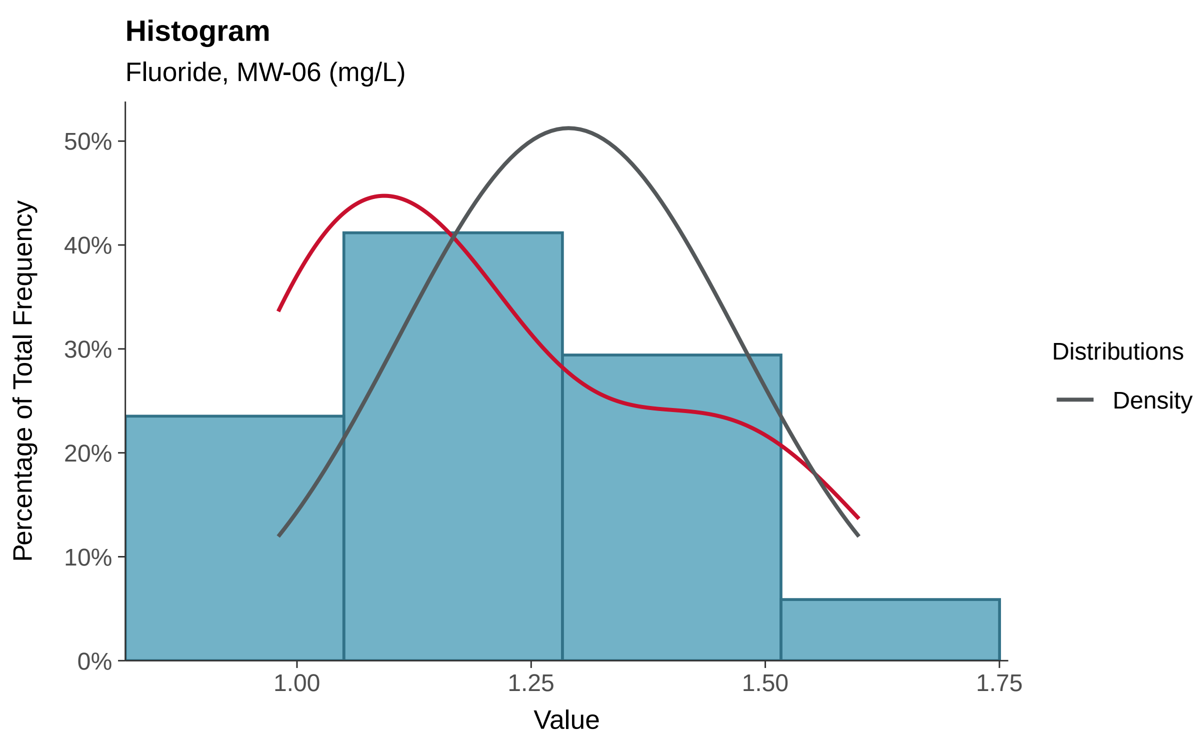
Chloride (as Cl), MW-06 (mg/L)



Appendix III: Fluoride, MW-06

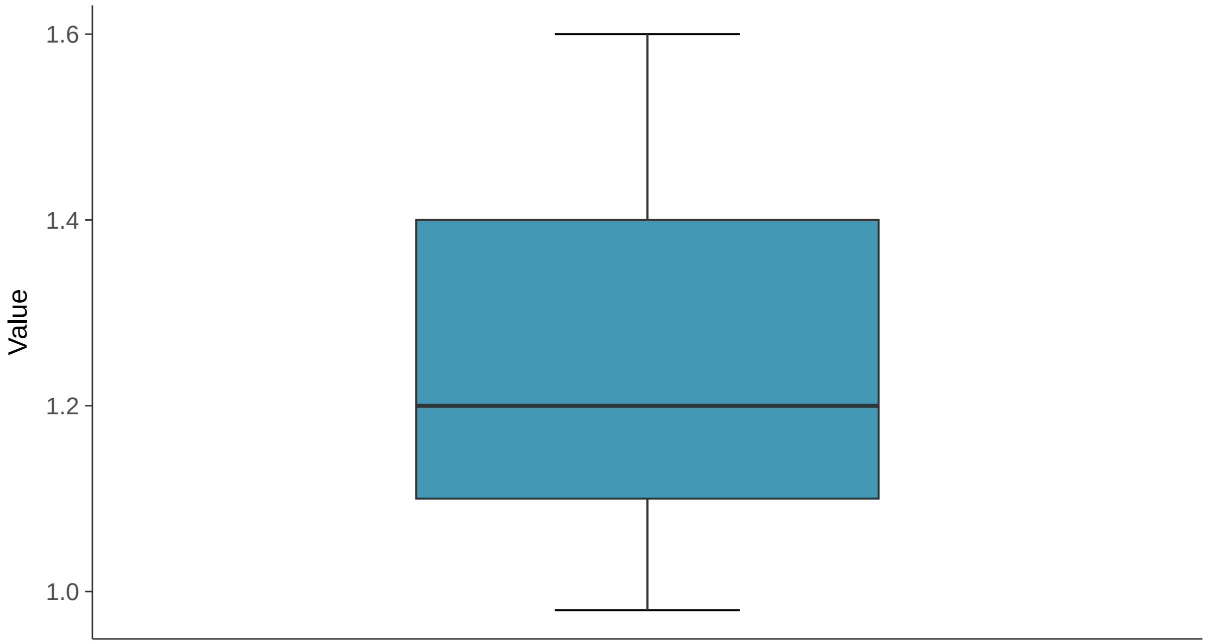
ID: 16_1_3_112





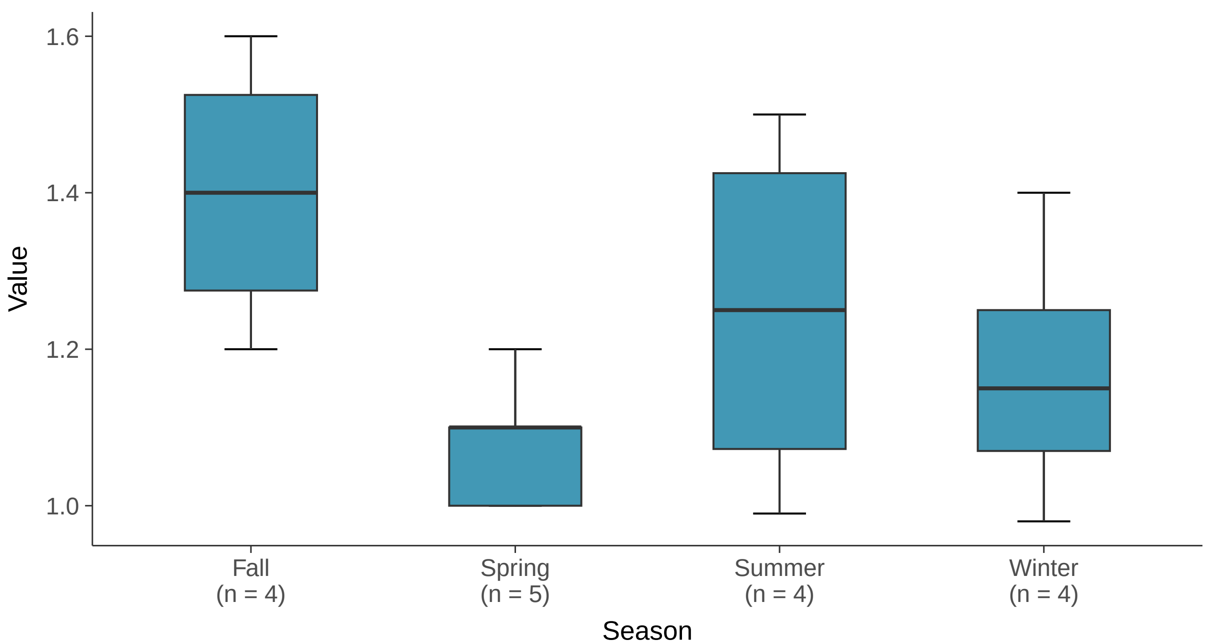
Boxplot

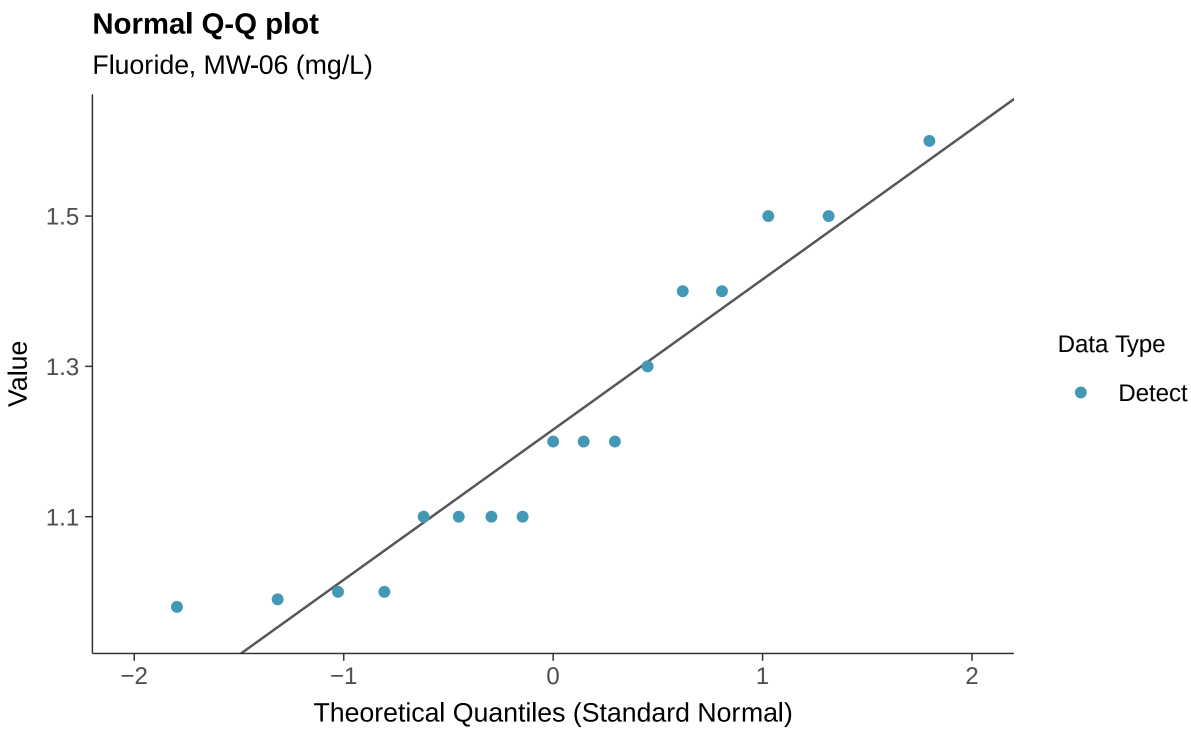
Fluoride, MW-06 (mg/L)

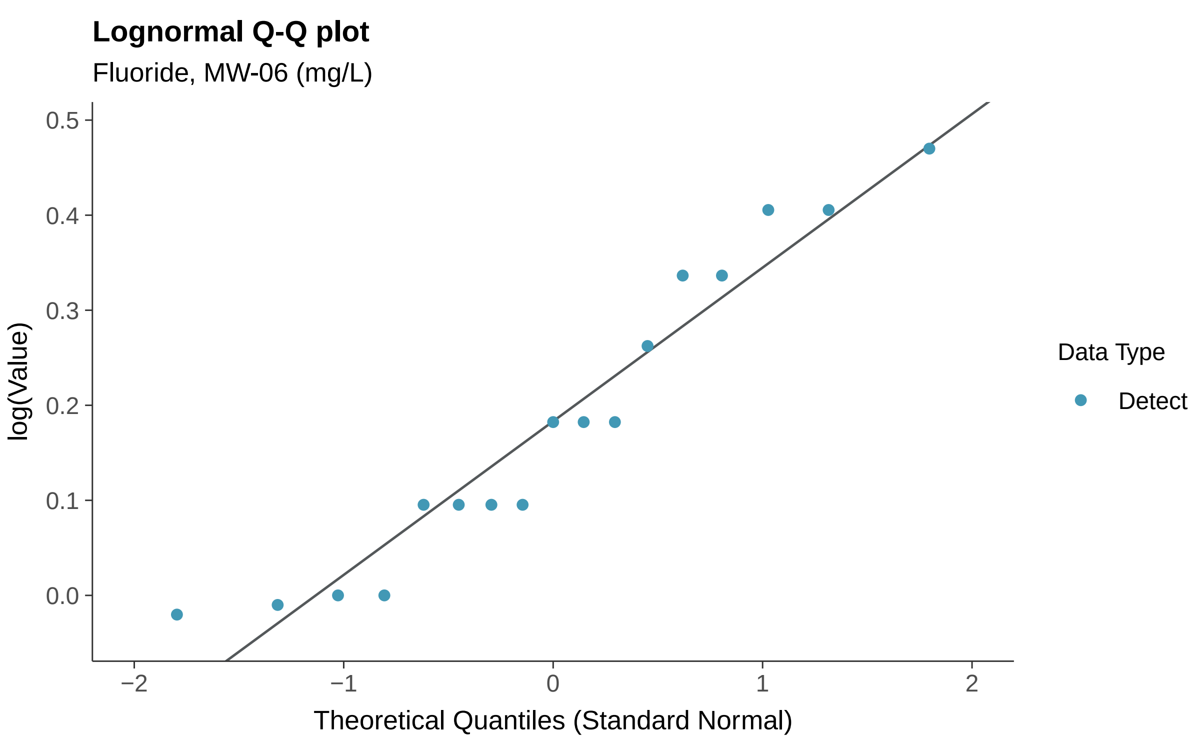


Boxplot by Season

Fluoride, MW-06 (mg/L)

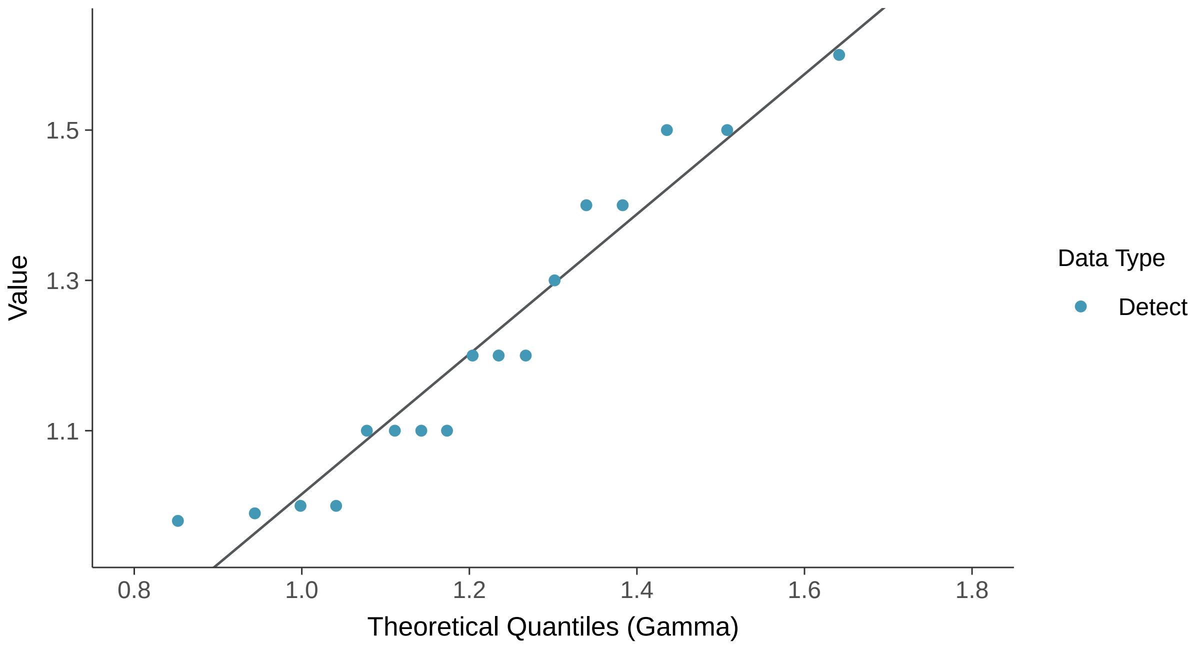



Normal Q-Q plot
Fluoride, MW-06 (mg/L)
Value
1.5
1.3
1.1
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Fluoride, MW-06 (mg/L)
log(Value)
0.5
0.4
0.3
0.2
0.1
0.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

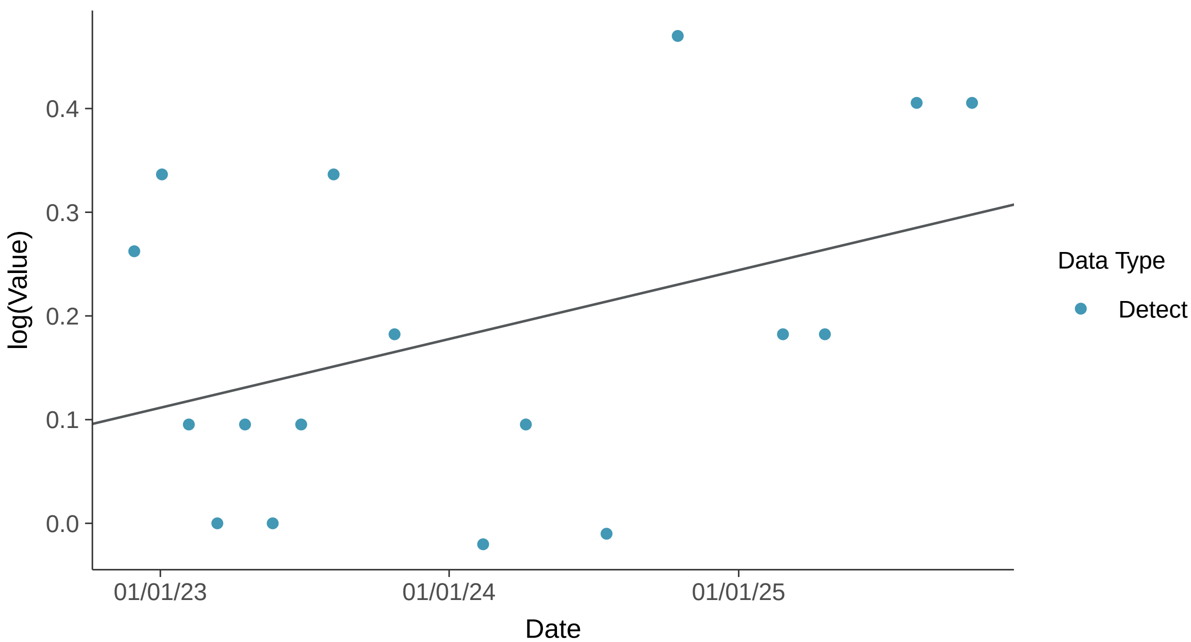
Gamma Q-Q plot

Fluoride, MW-06 (mg/L)



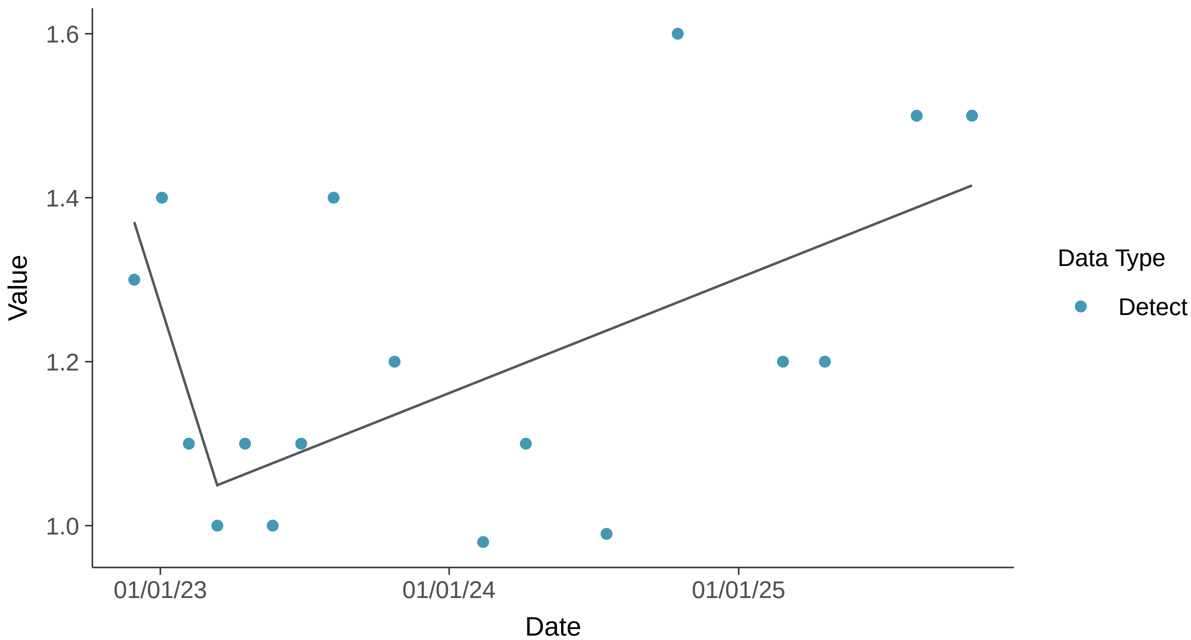
Trend Regression: Lognormal MLE

Fluoride, MW-06 (mg/L)



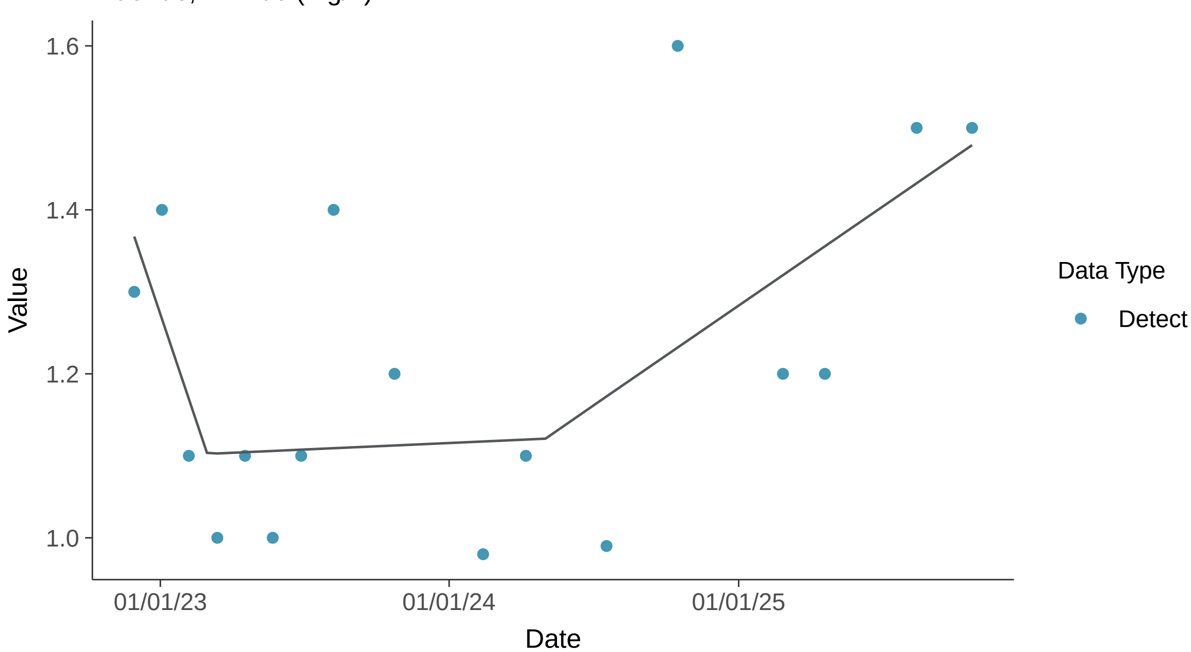
Trend Regression: Piecewise Linear-Linear

Fluoride, MW-06 (mg/L)



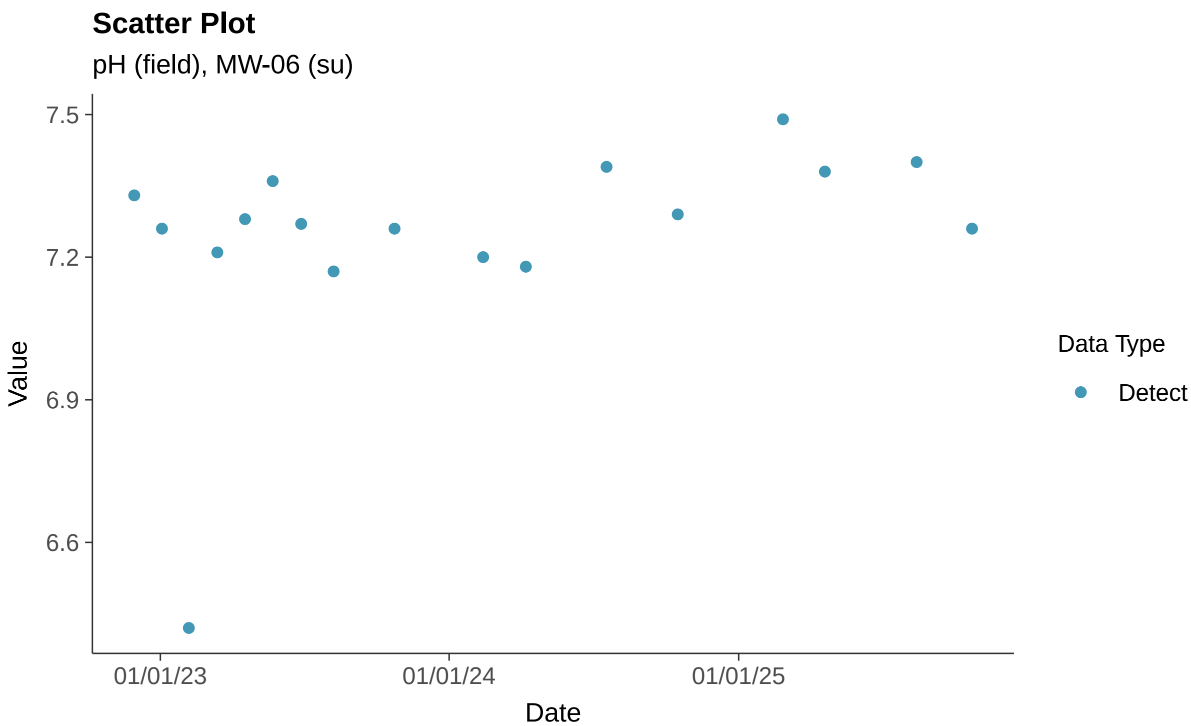
Trend Regression: Piecewise Linear-Linear-Linear

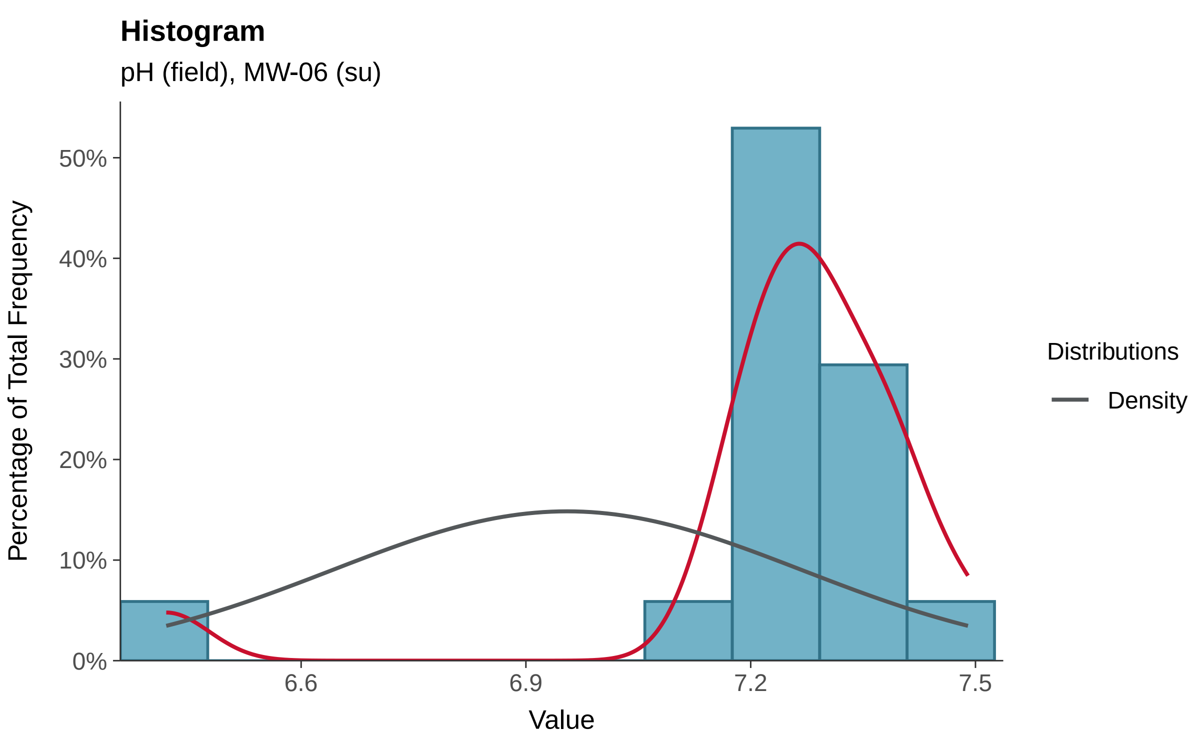
Fluoride, MW-06 (mg/L)

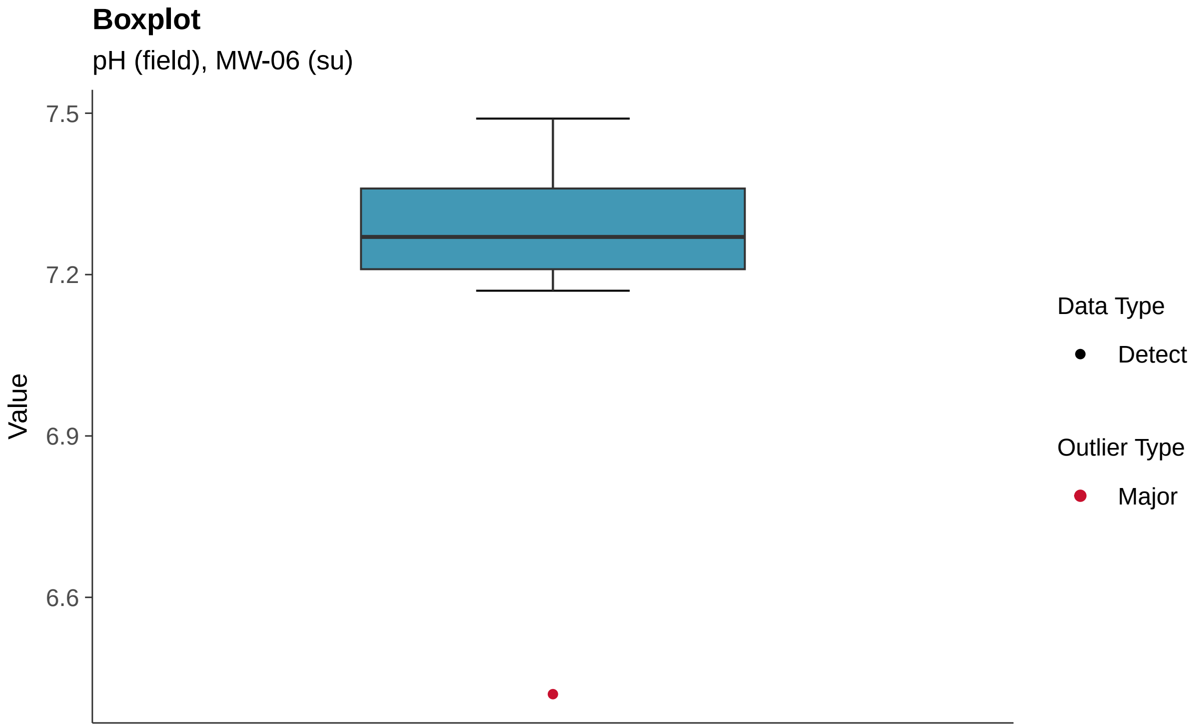


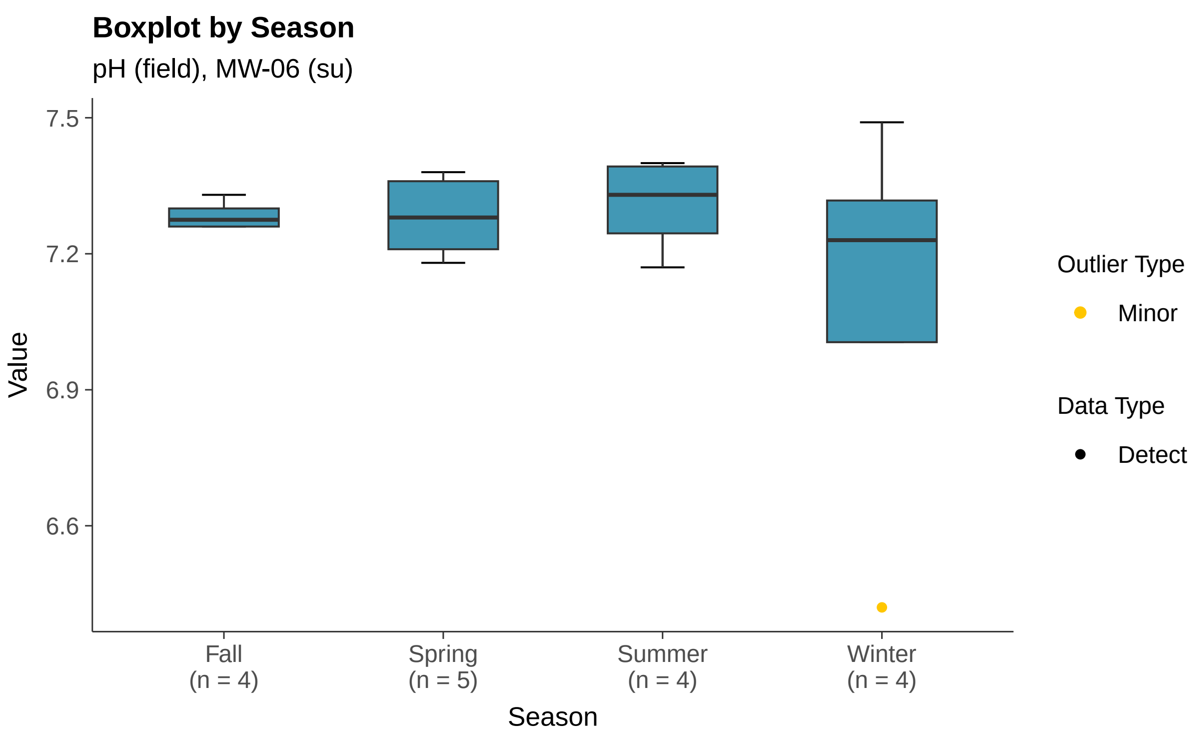
Appendix III: pH (field), MW-06

ID: 16_1_3_120



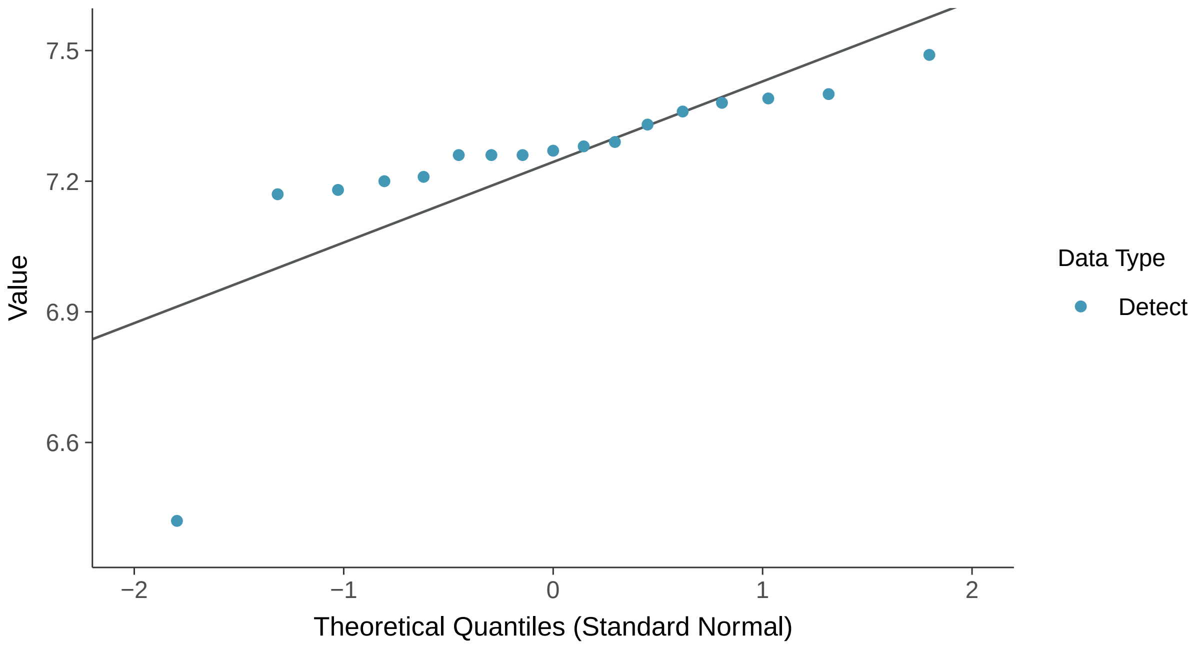



Boxplot
pH (field), MW-06 (su)
Value
7.5
7.2
6.9
6.6
Data Type
Detect
Outlier Type
Major


Boxplot by Season
pH (field), MW-06 (su)
Value
7.5
7.2
6.9
6.6
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Minor
Data Type
Detect

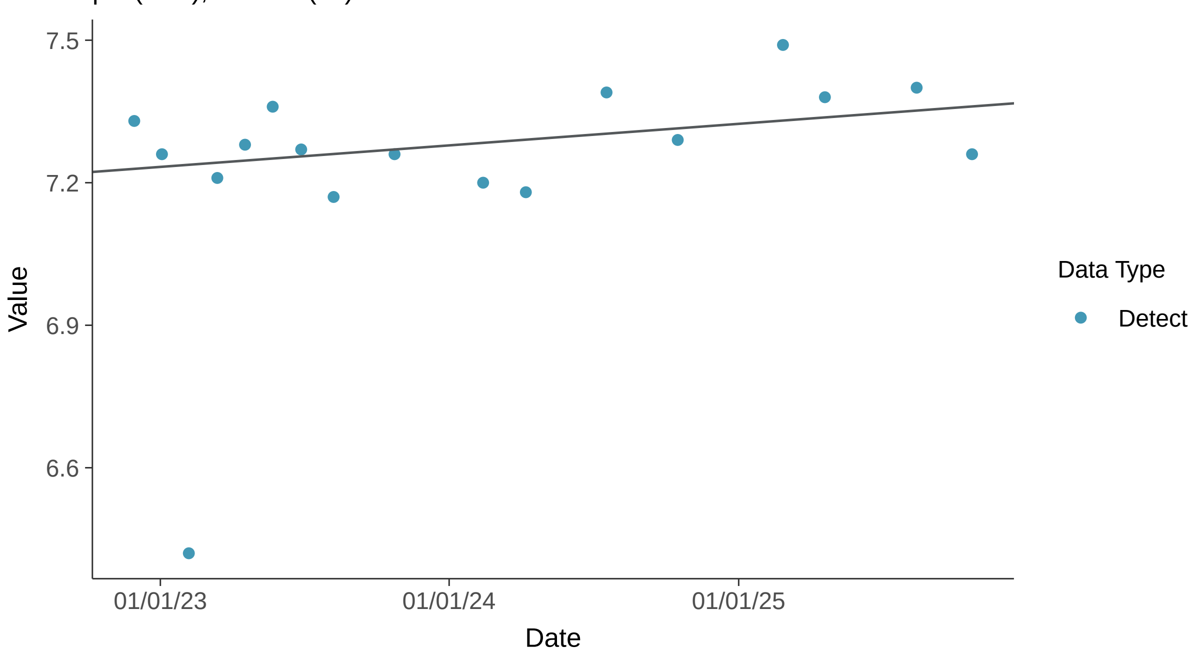
Normal Q-Q plot

pH (field), MW-06 (su)



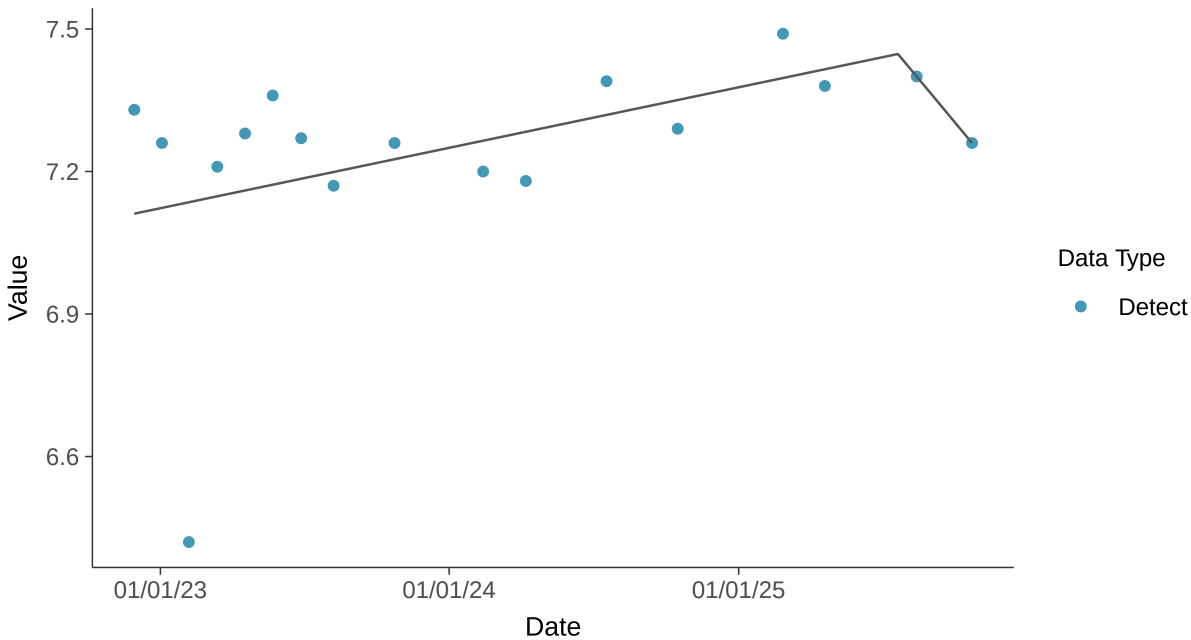
Trend Regression: Mann-Kendall/Theil-Sen Estimate

pH (field), MW-06 (su)



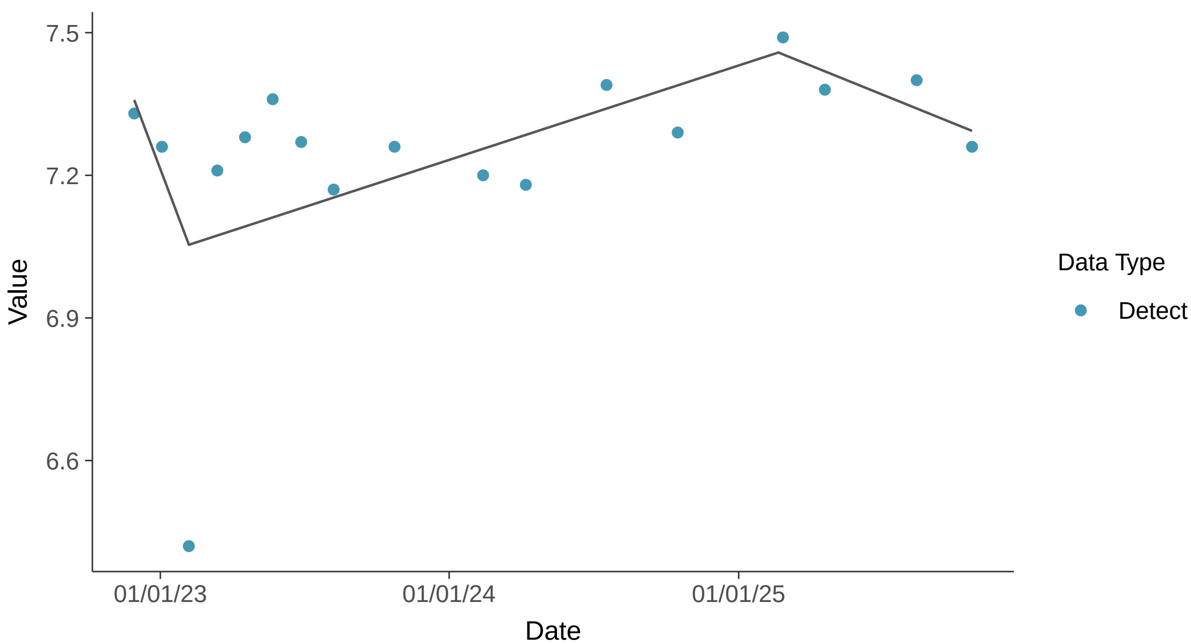
Trend Regression: Piecewise Linear-Linear

pH (field), MW-06 (su)



Trend Regression: Piecewise Linear-Linear-Linear

pH (field), MW-06 (su)

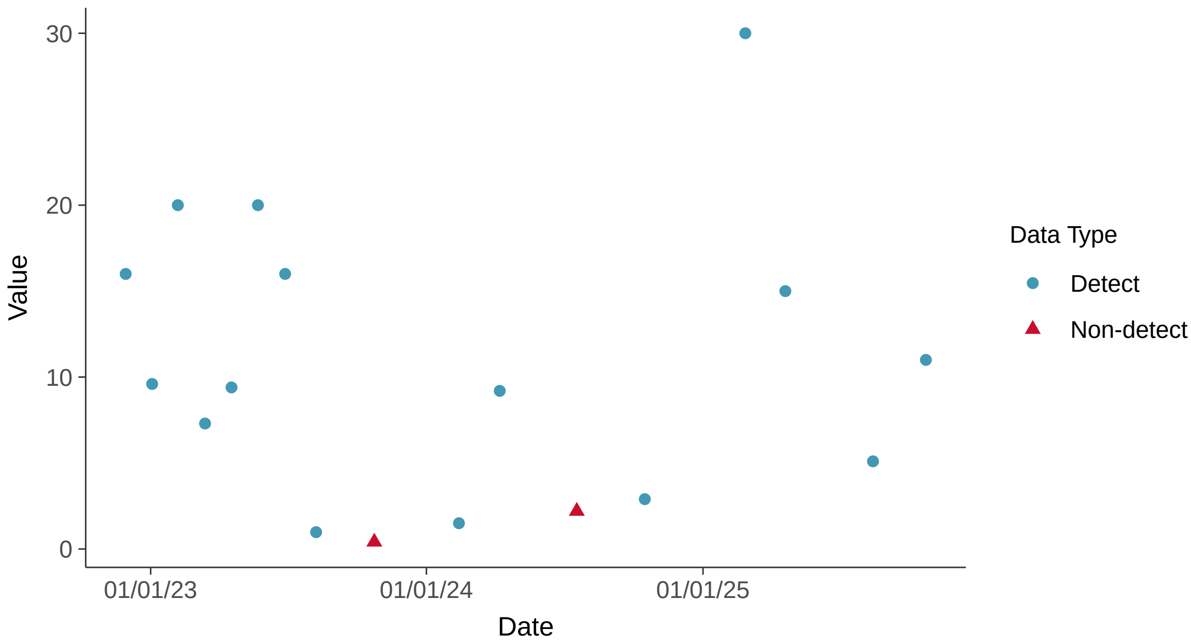


Appendix III: Sulfate (as SO4), MW-06

ID: 16_1_3_124

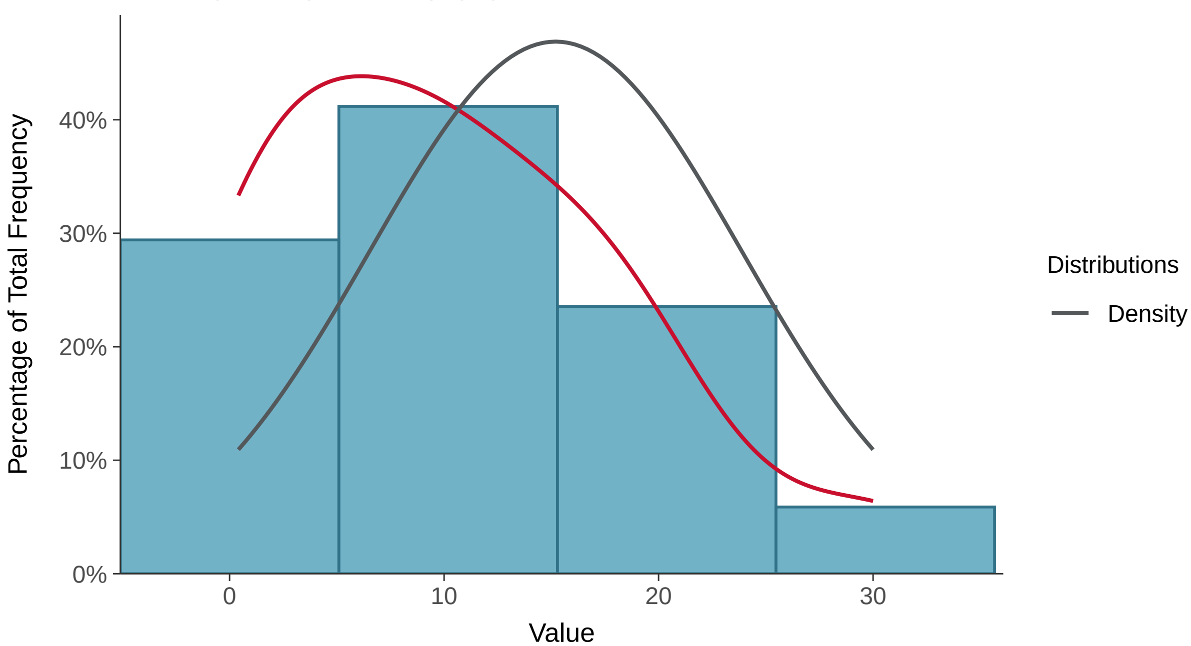
Scatter Plot

Sulfate (as SO4), MW-06 (mg/L)



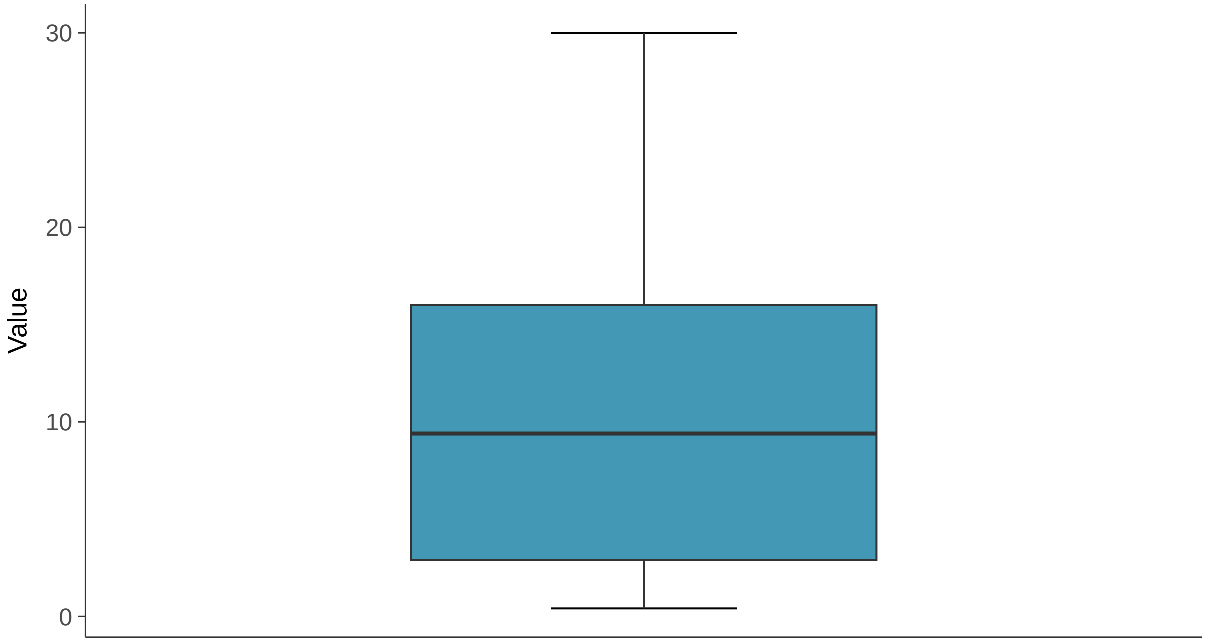
Histogram

Sulfate (as SO4), MW-06 (mg/L)



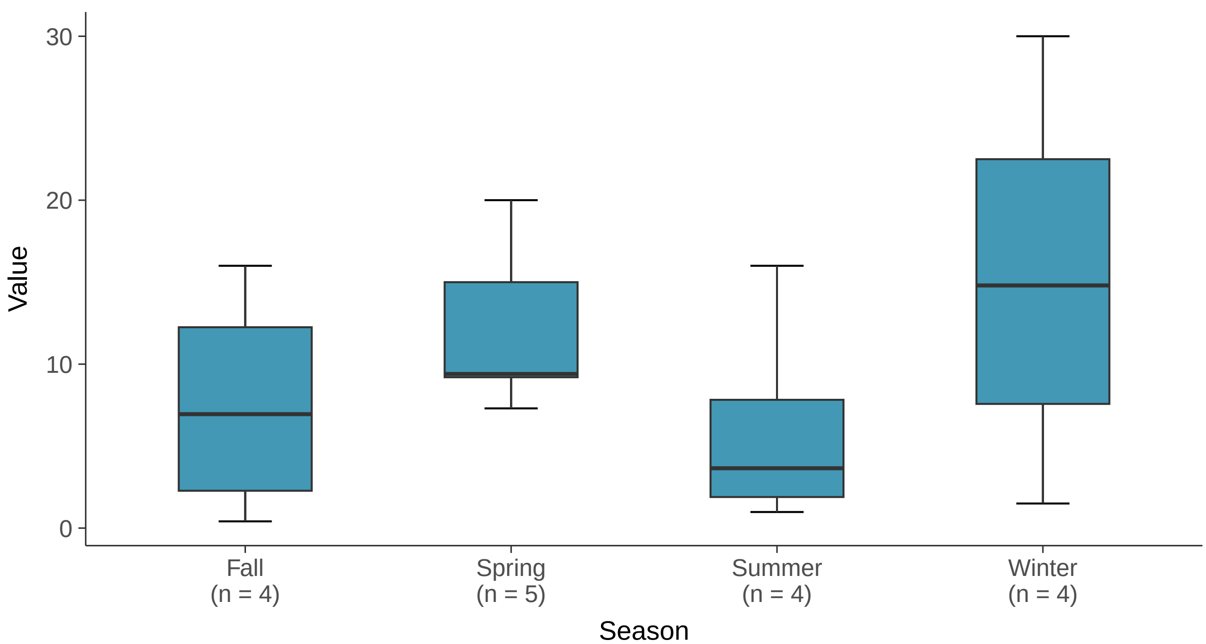
Boxplot

Sulfate (as SO4), MW-06 (mg/L)



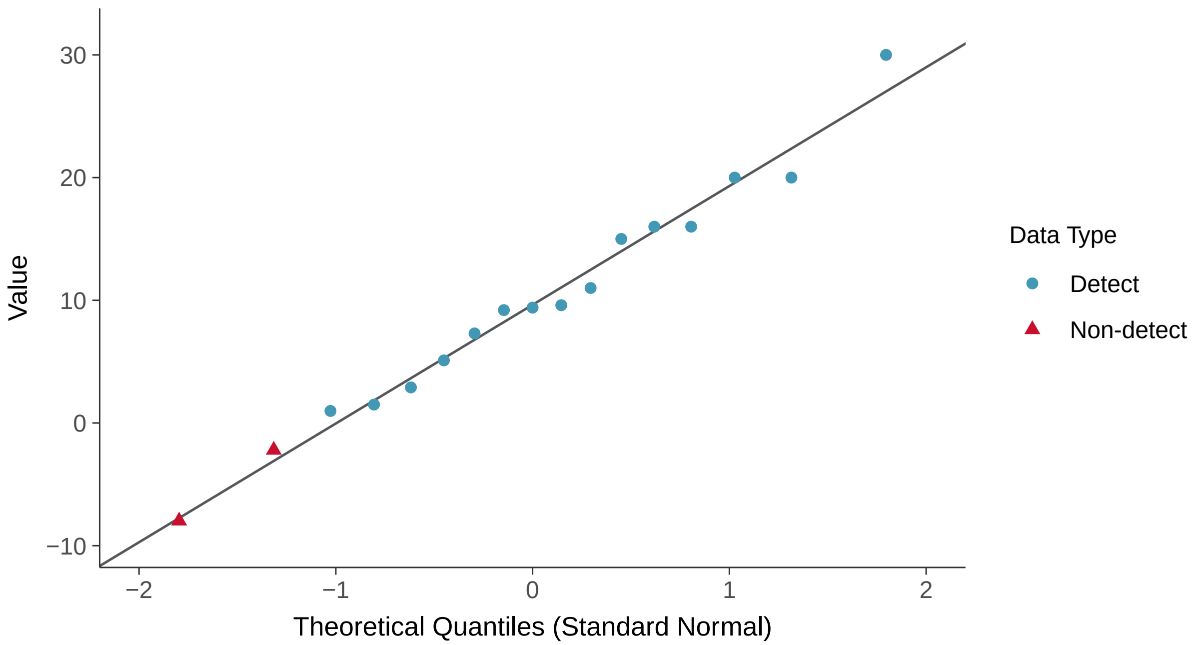
Boxplot by Season

Sulfate (as SO4), MW-06 (mg/L)



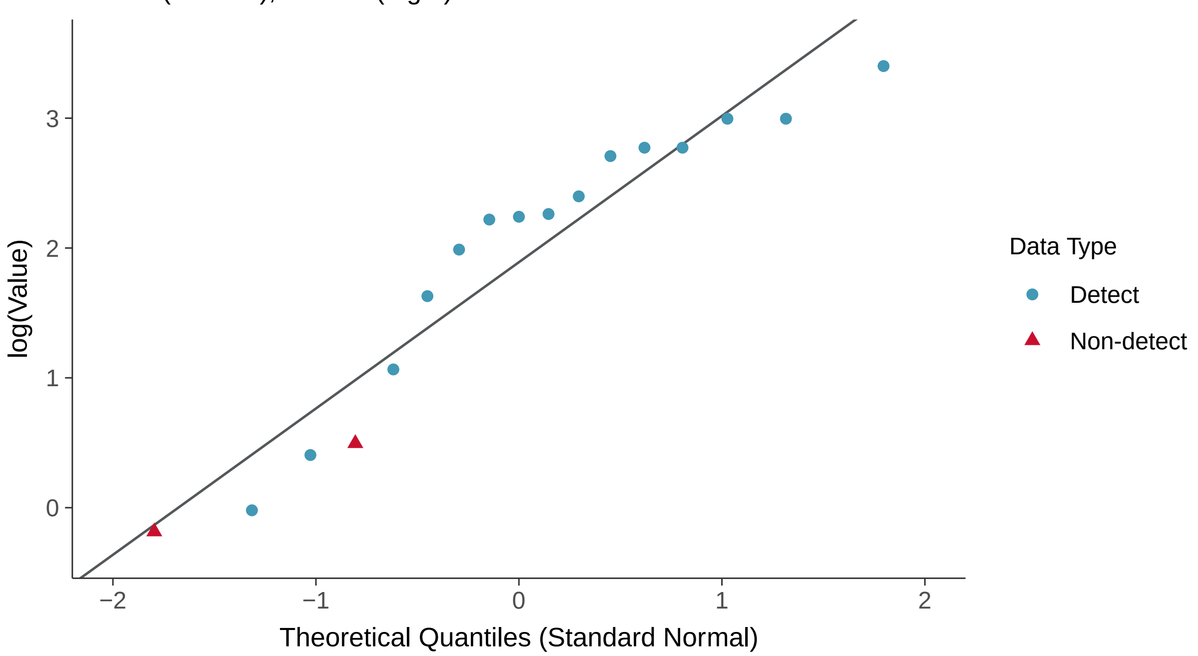
Normal Q-Q plot using ROS Imputed Estimates

Sulfate (as SO4), MW-06 (mg/L)



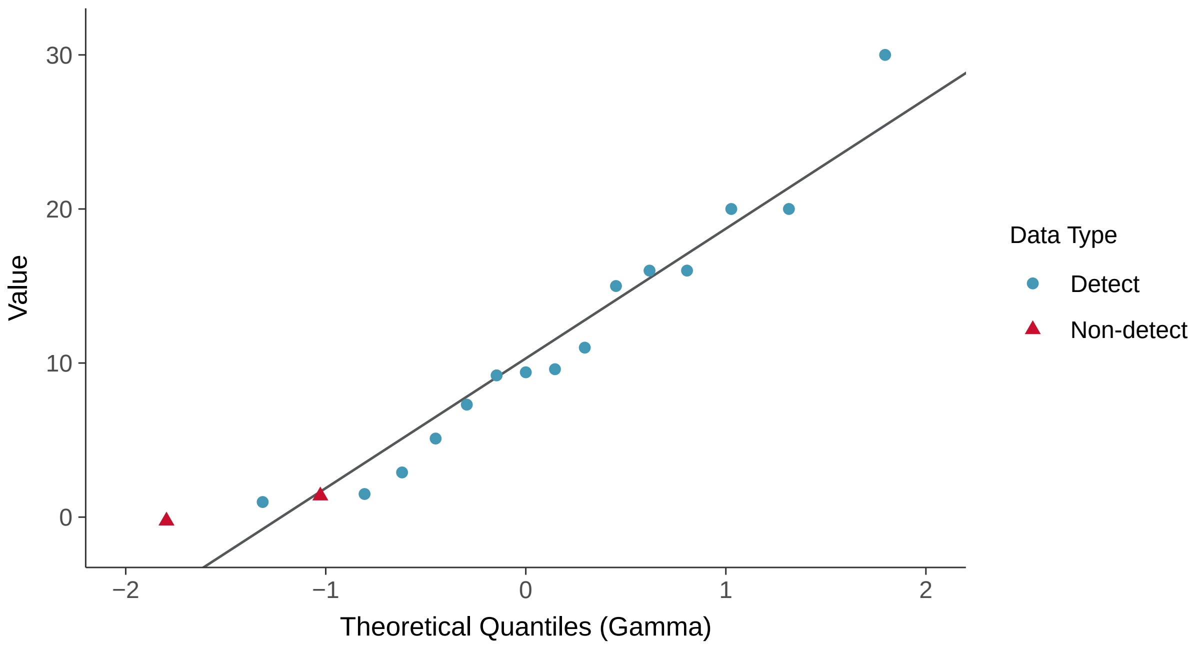
Lognormal Q-Q plot using ROS Imputed Estimates

Sulfate (as SO4), MW-06 (mg/L)



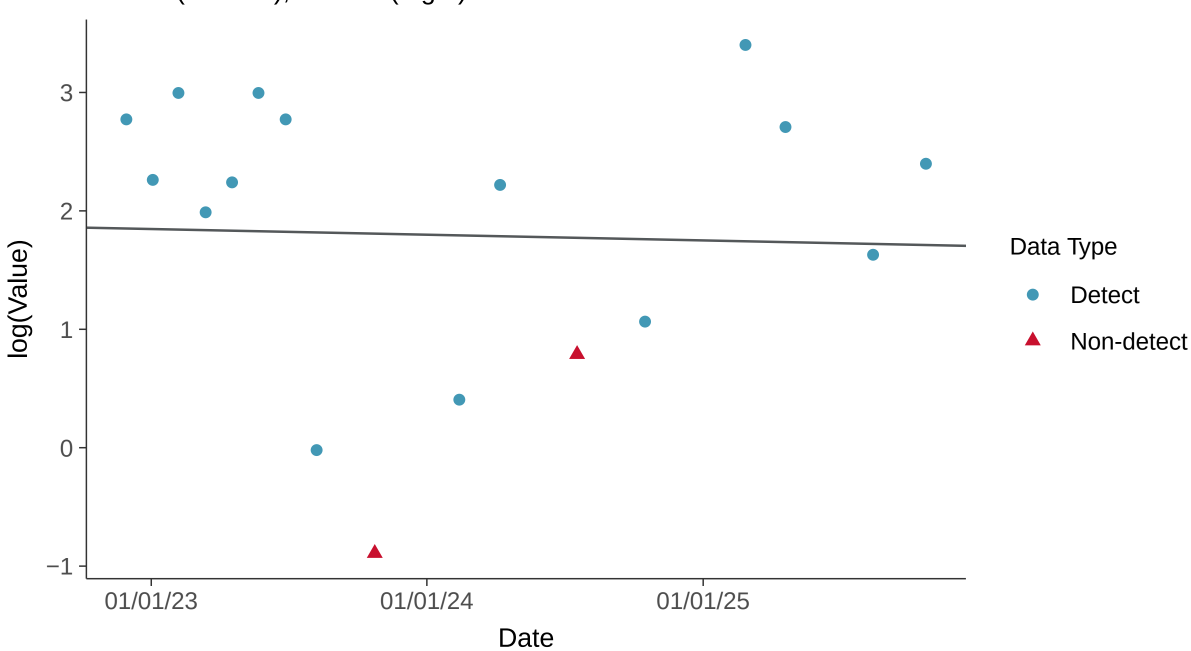
Gamma Q-Q plot using ROS Imputed Estimates

Sulfate (as SO4), MW-06 (mg/L)



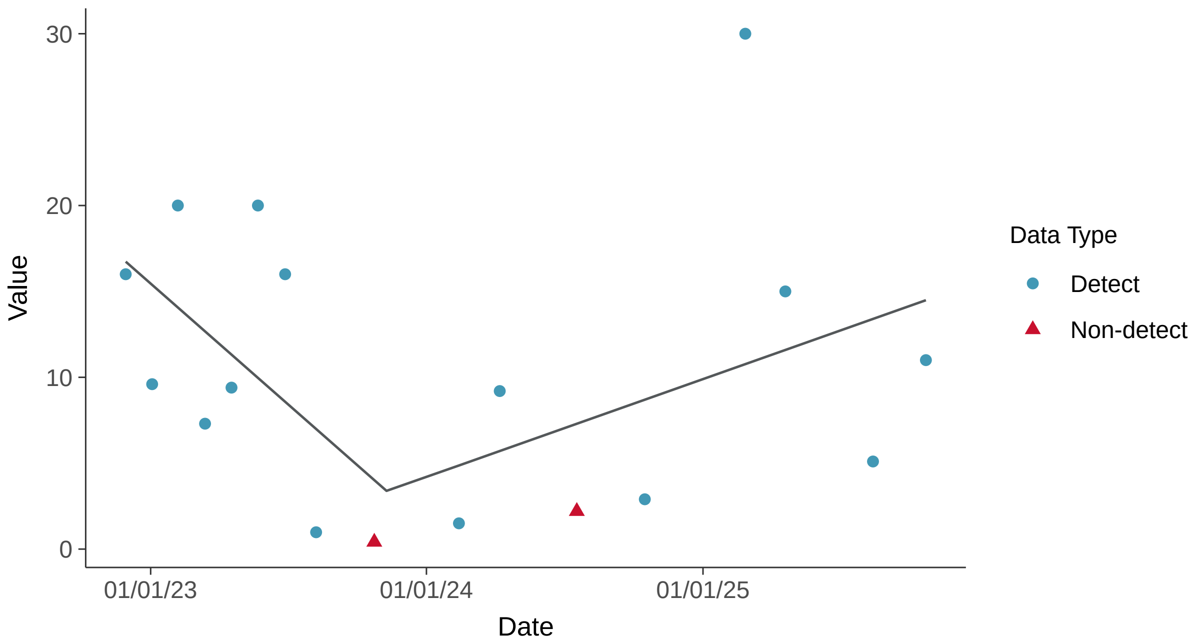
Trend Regression: Lognormal MLE

Sulfate (as SO4), MW-06 (mg/L)



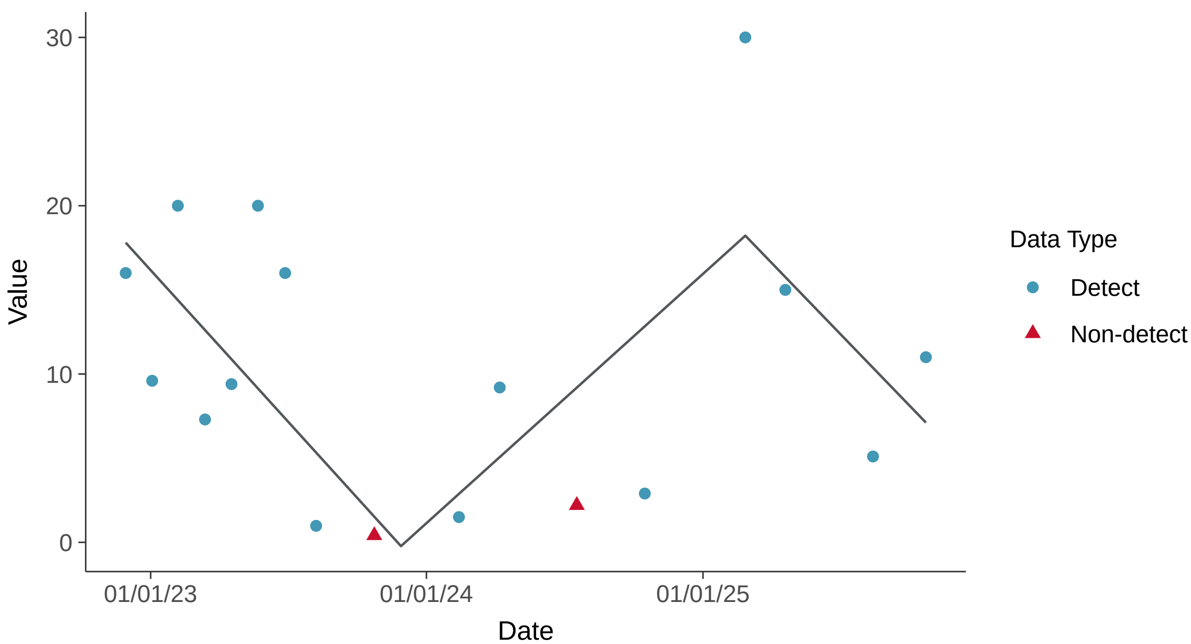
Trend Regression: Piecewise Linear-Linear

Sulfate (as SO4), MW-06 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Sulfate (as SO4), MW-06 (mg/L)

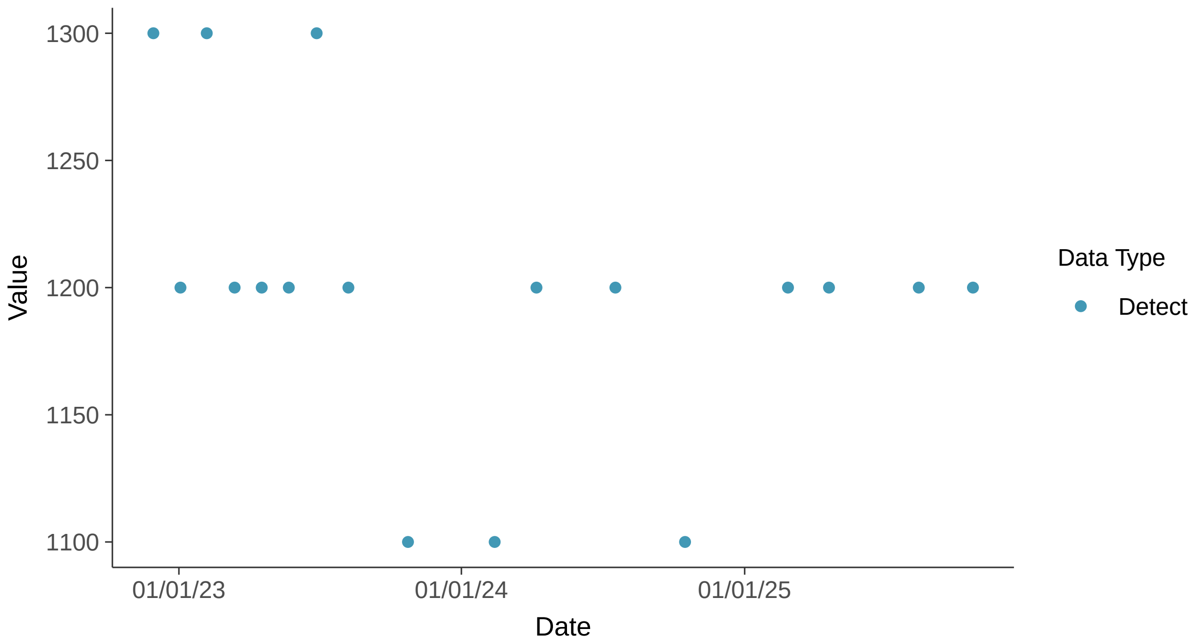


Appendix III: Total Dissolved Solids, MW-06

ID: 16_1_3_126

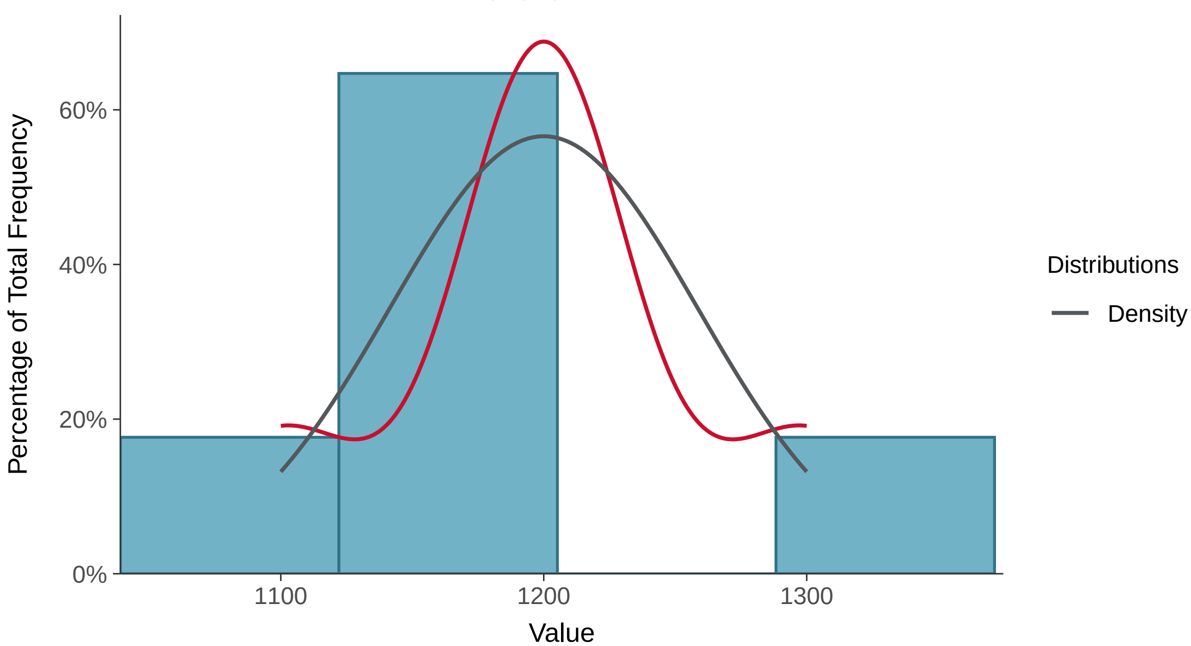
Scatter Plot

Total Dissolved Solids, MW-06 (mg/L)



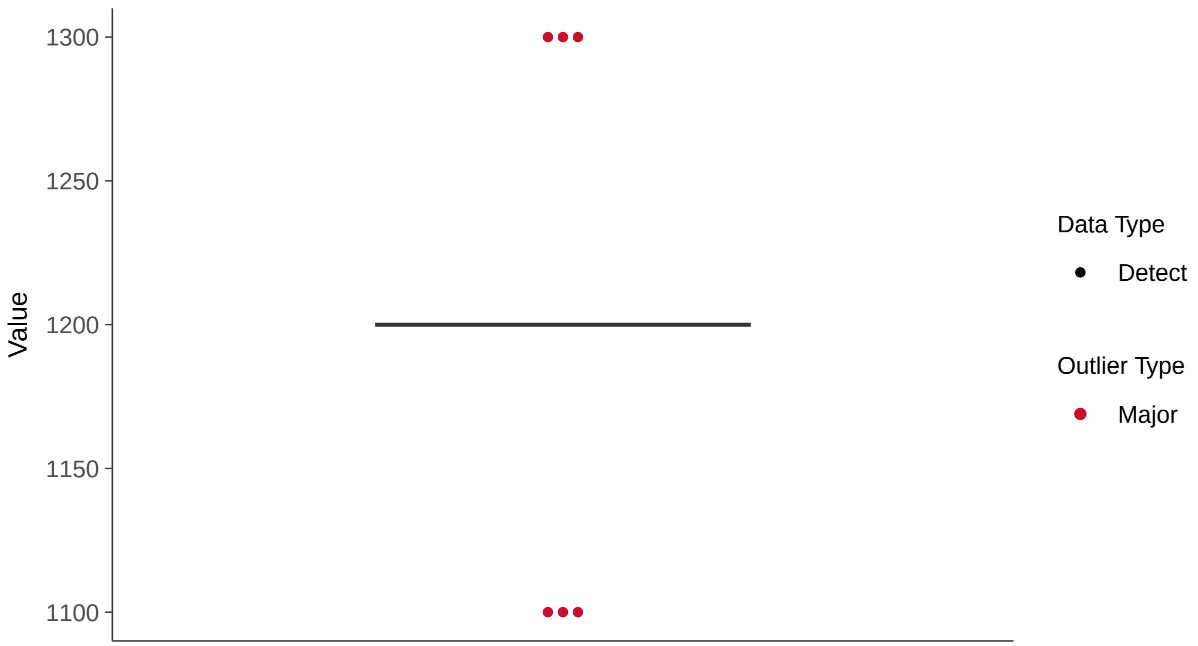
Histogram

Total Dissolved Solids, MW-06 (mg/L)



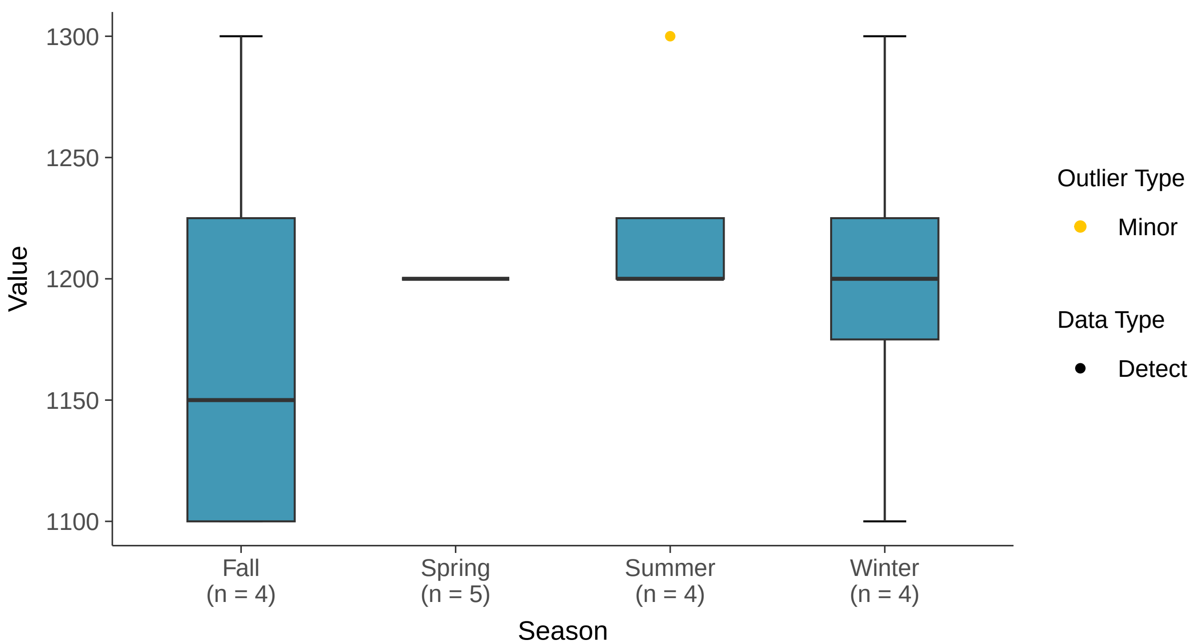
Boxplot

Total Dissolved Solids, MW-06 (mg/L)



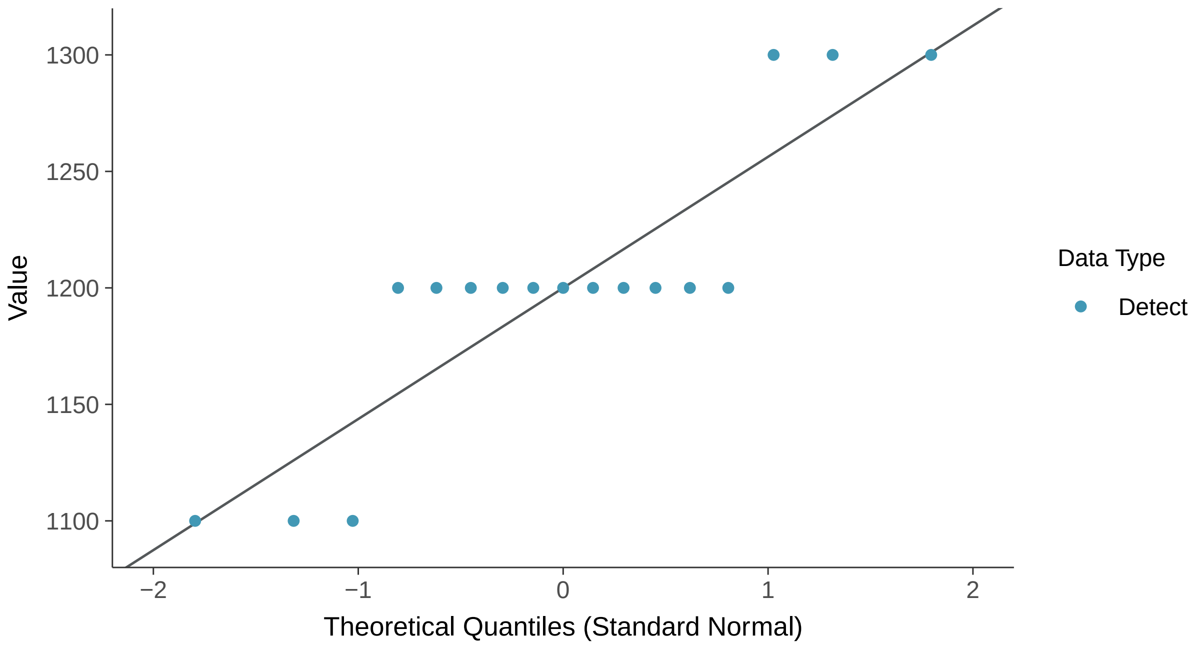
Boxplot by Season

Total Dissolved Solids, MW-06 (mg/L)



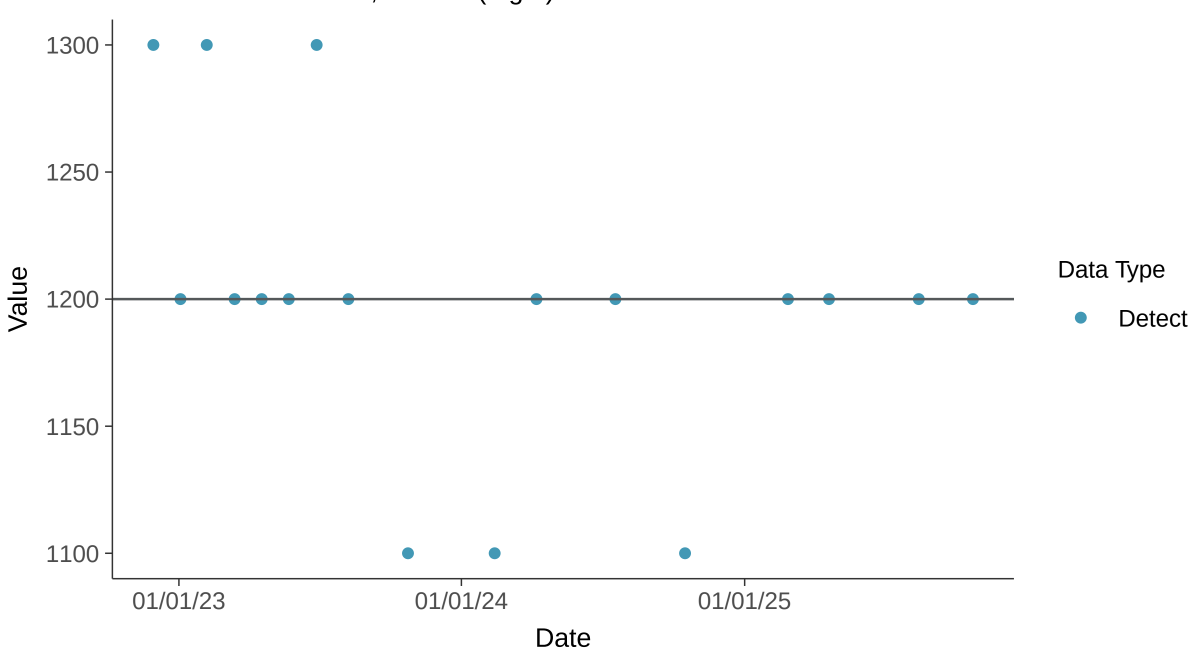
Normal Q-Q plot

Total Dissolved Solids, MW-06 (mg/L)



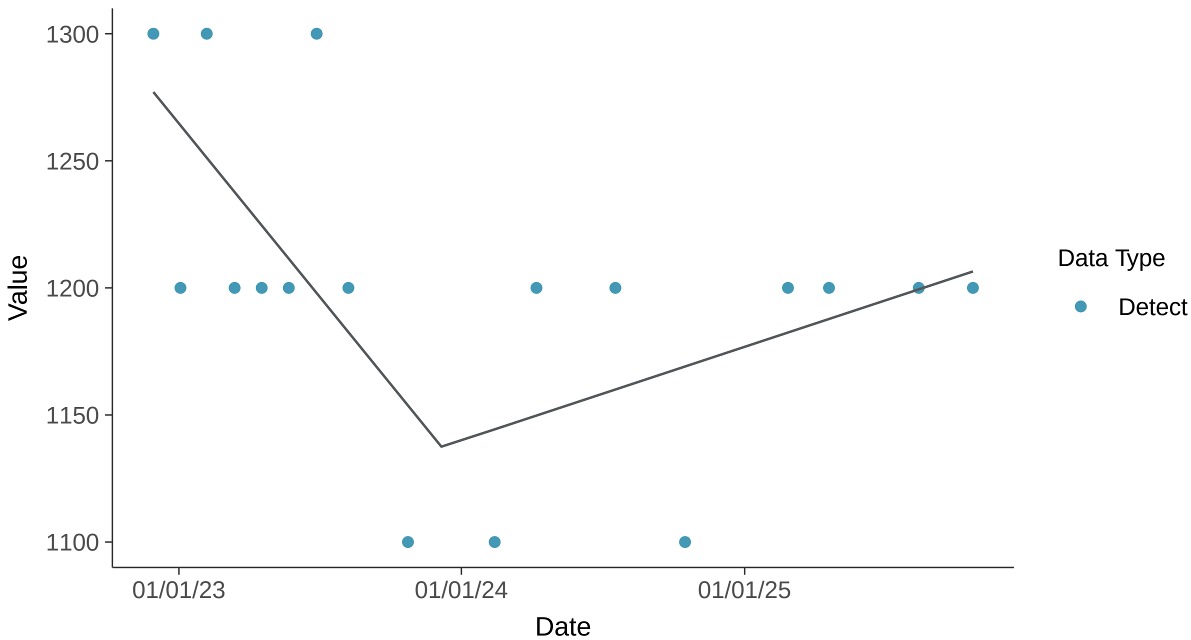
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Total Dissolved Solids, MW-06 (mg/L)



Trend Regression: Piecewise Linear-Linear

Total Dissolved Solids, MW-06 (mg/L)

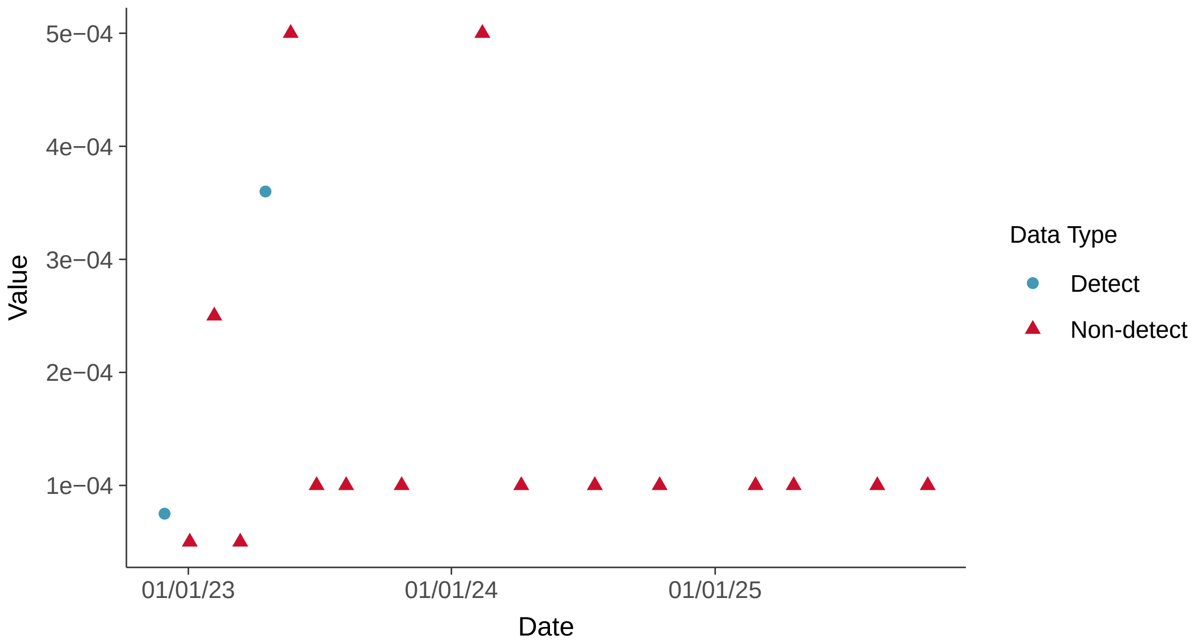


Appendix IV: Antimony, MW-06

ID: 16_1_4_101

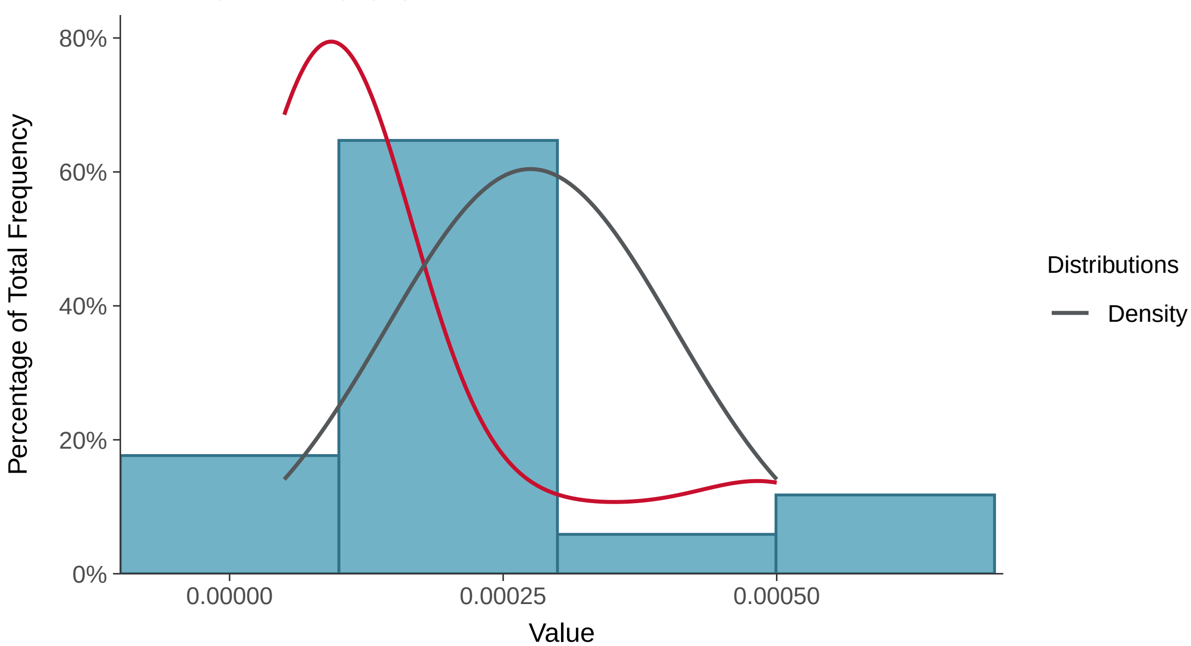
Scatter Plot

Antimony, MW-06 (mg/L)



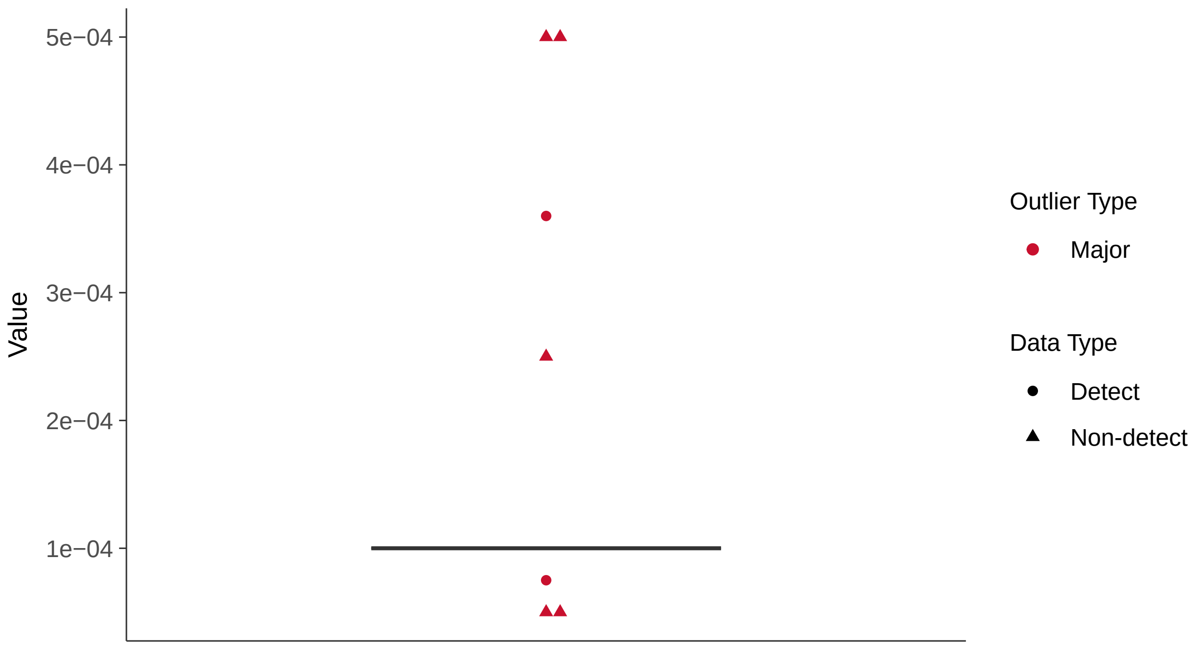
Histogram

Antimony, MW-06 (mg/L)



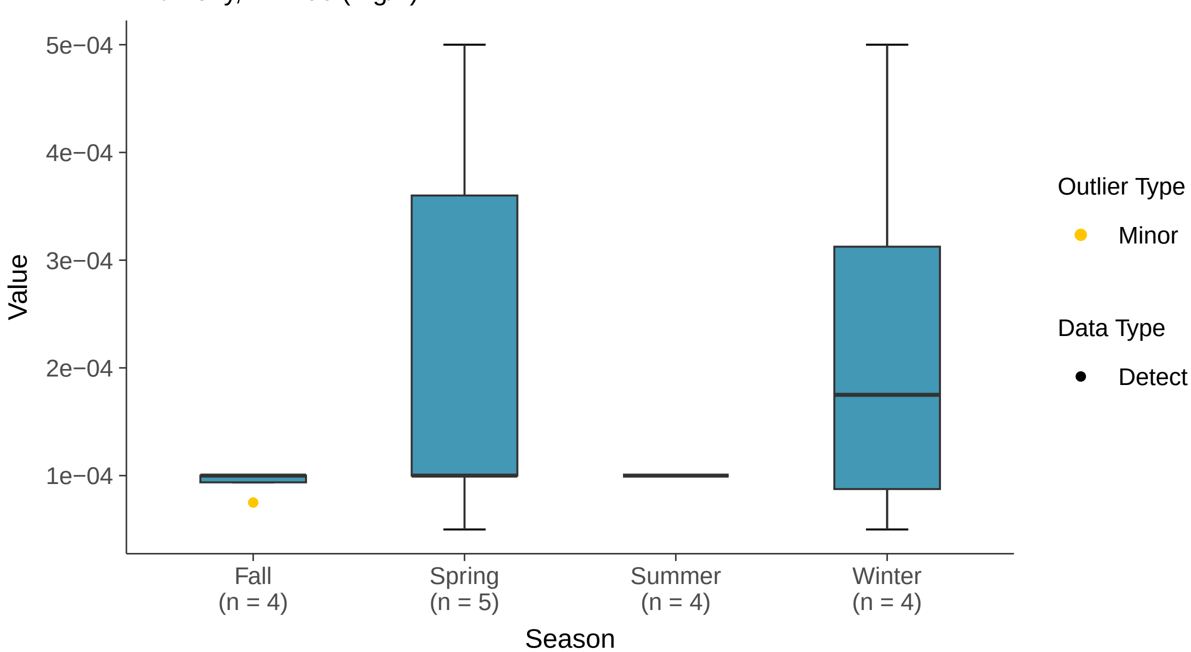
Boxplot

Antimony, MW-06 (mg/L)



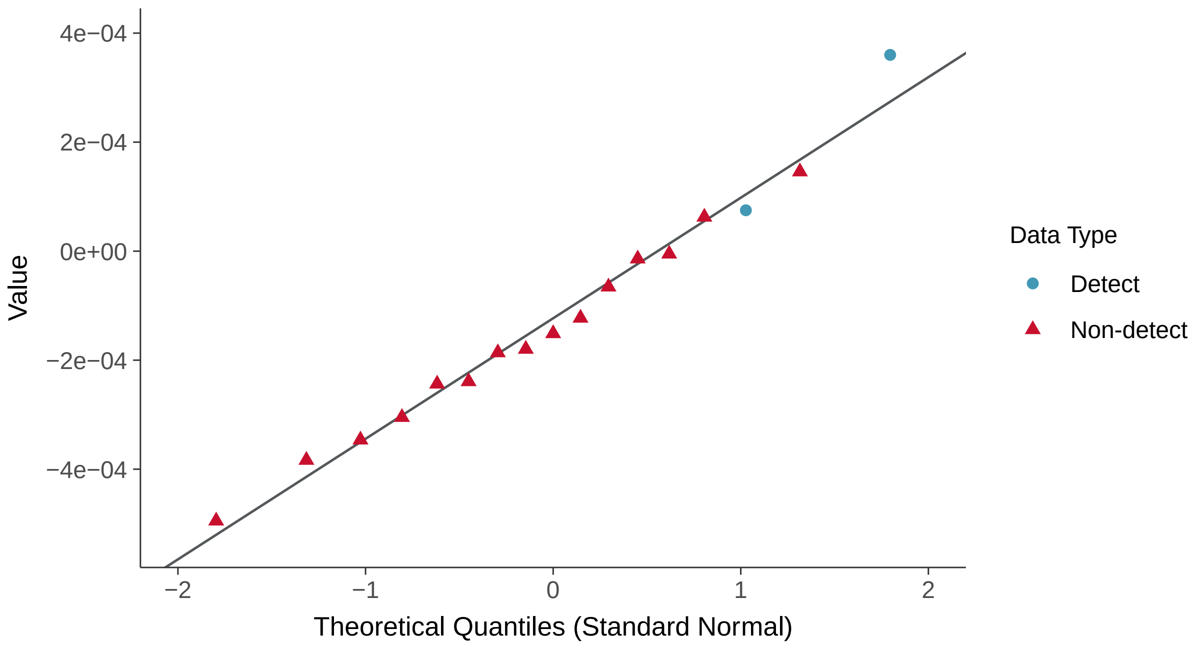
Boxplot by Season

Antimony, MW-06 (mg/L)



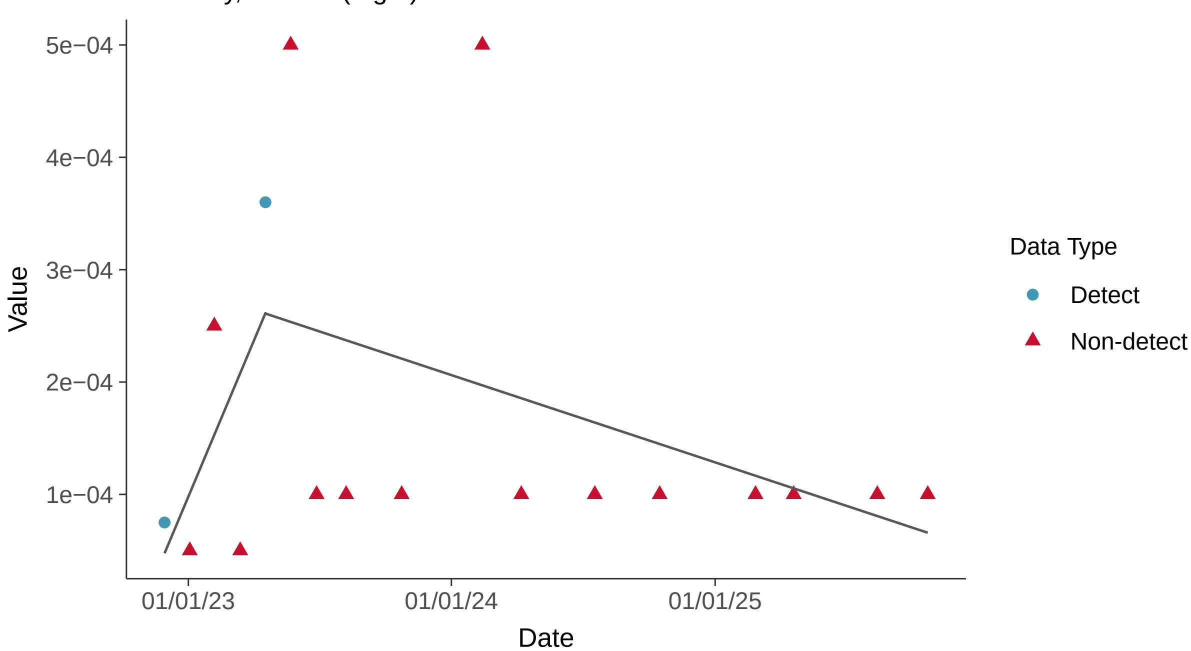
Normal Q-Q plot using ROS Imputed Estimates

Antimony, MW-06 (mg/L)



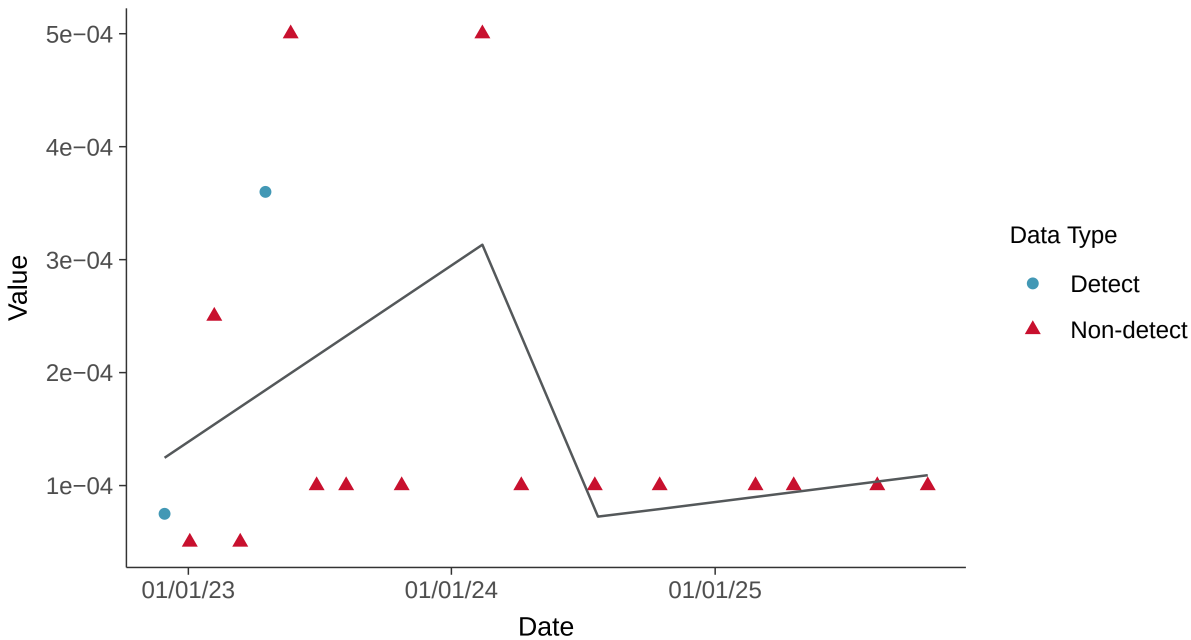
Trend Regression: Piecewise Linear-Linear

Antimony, MW-06 (mg/L)



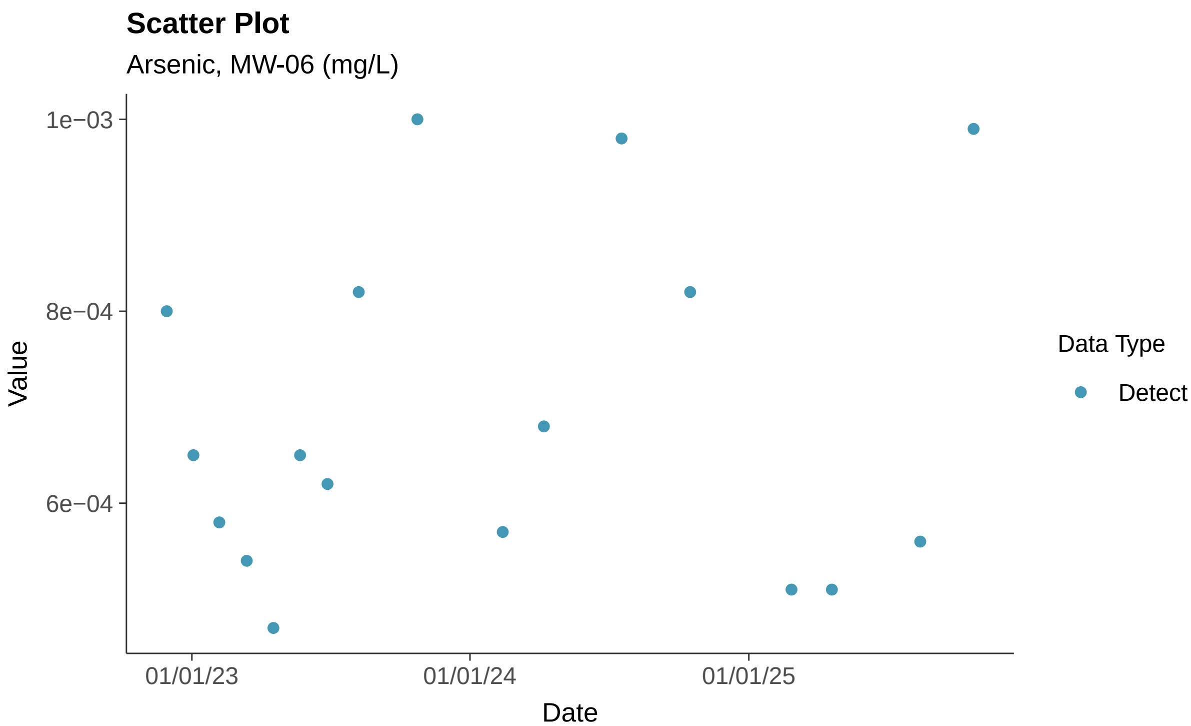
Trend Regression: Piecewise Linear-Linear-Linear

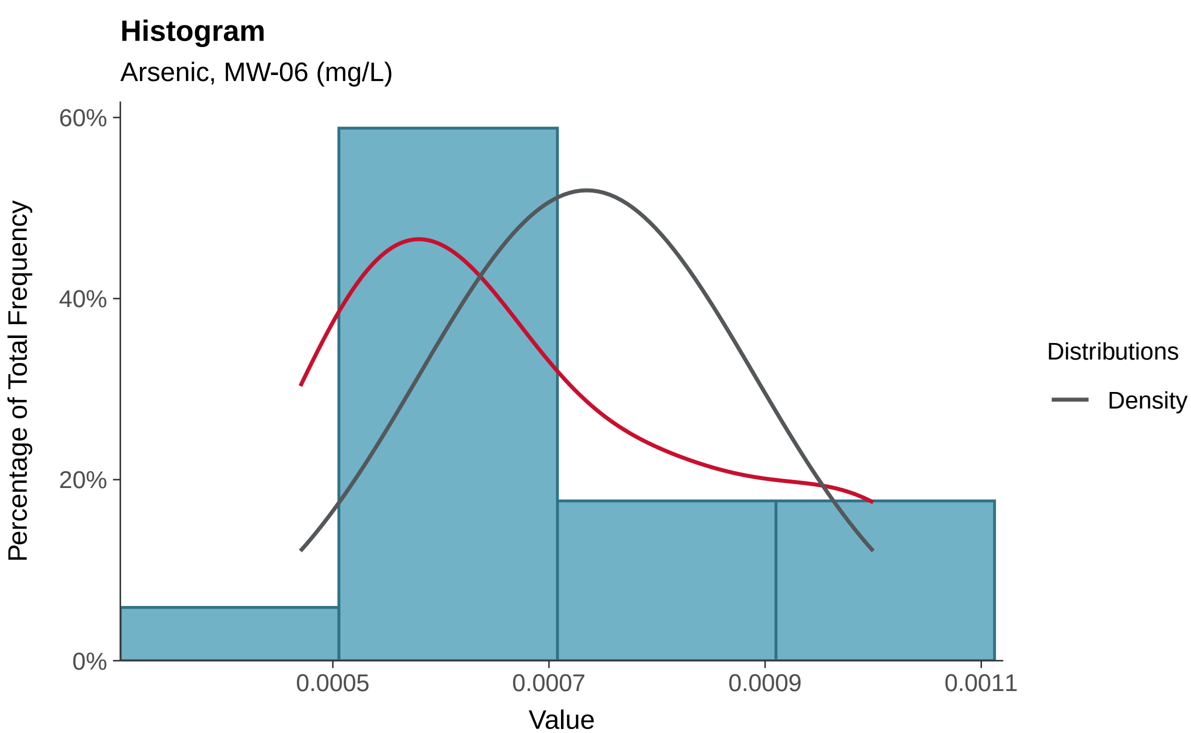
Antimony, MW-06 (mg/L)



Appendix IV: Arsenic, MW-06

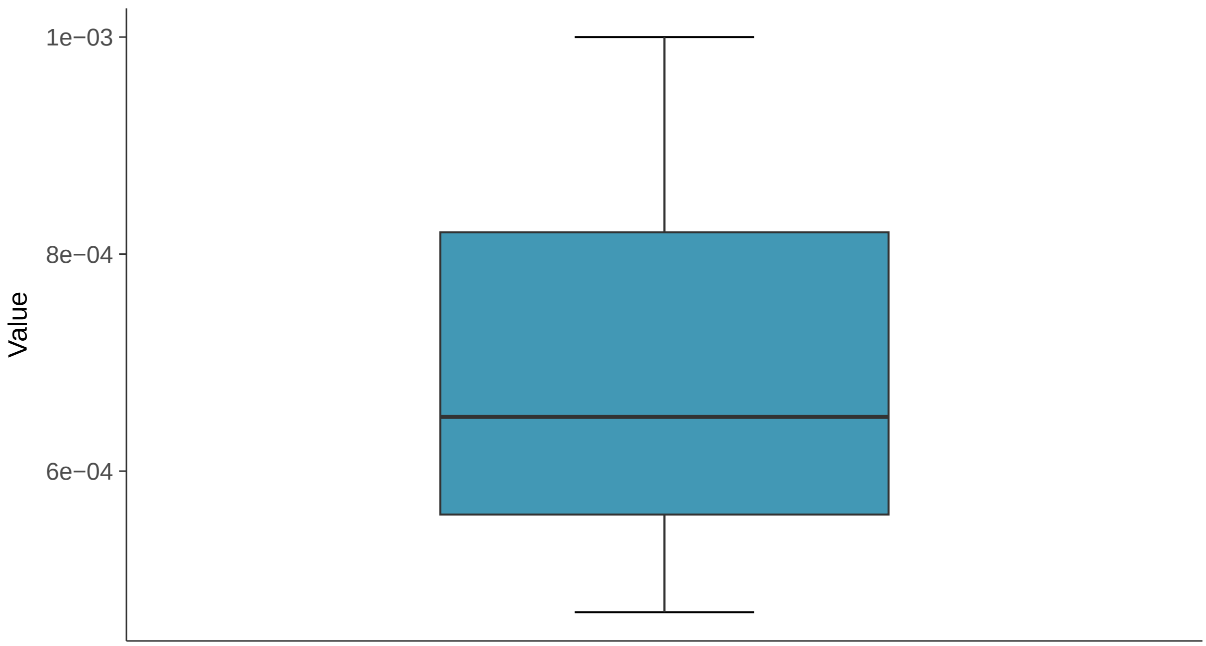
ID: 16_1_4_102





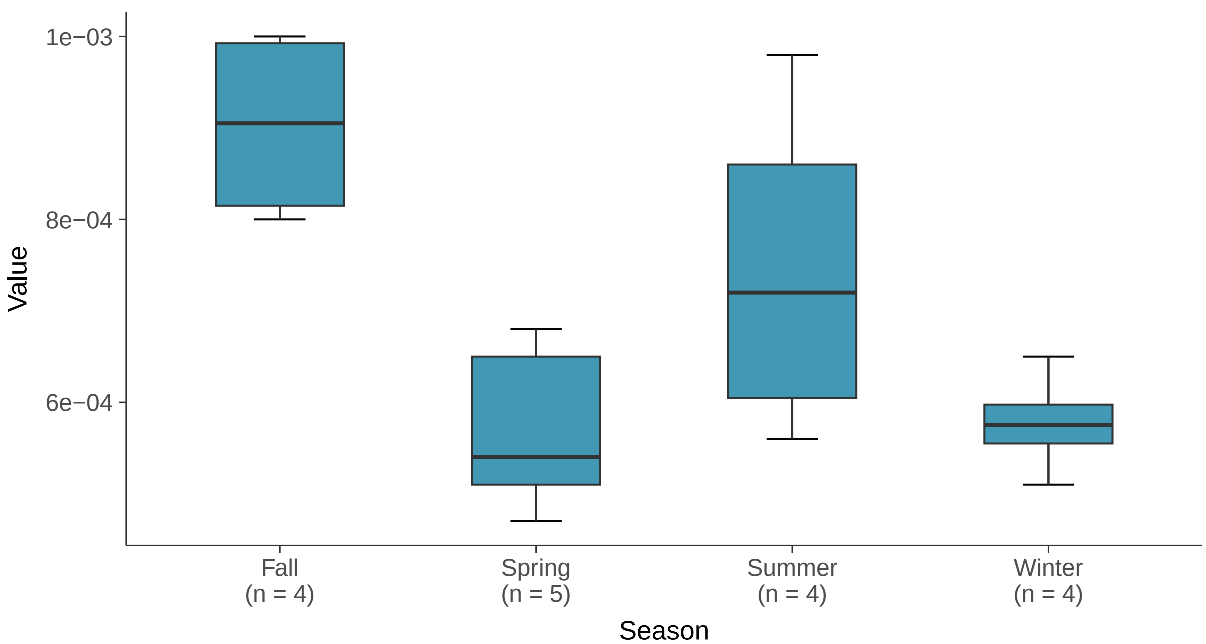
Boxplot

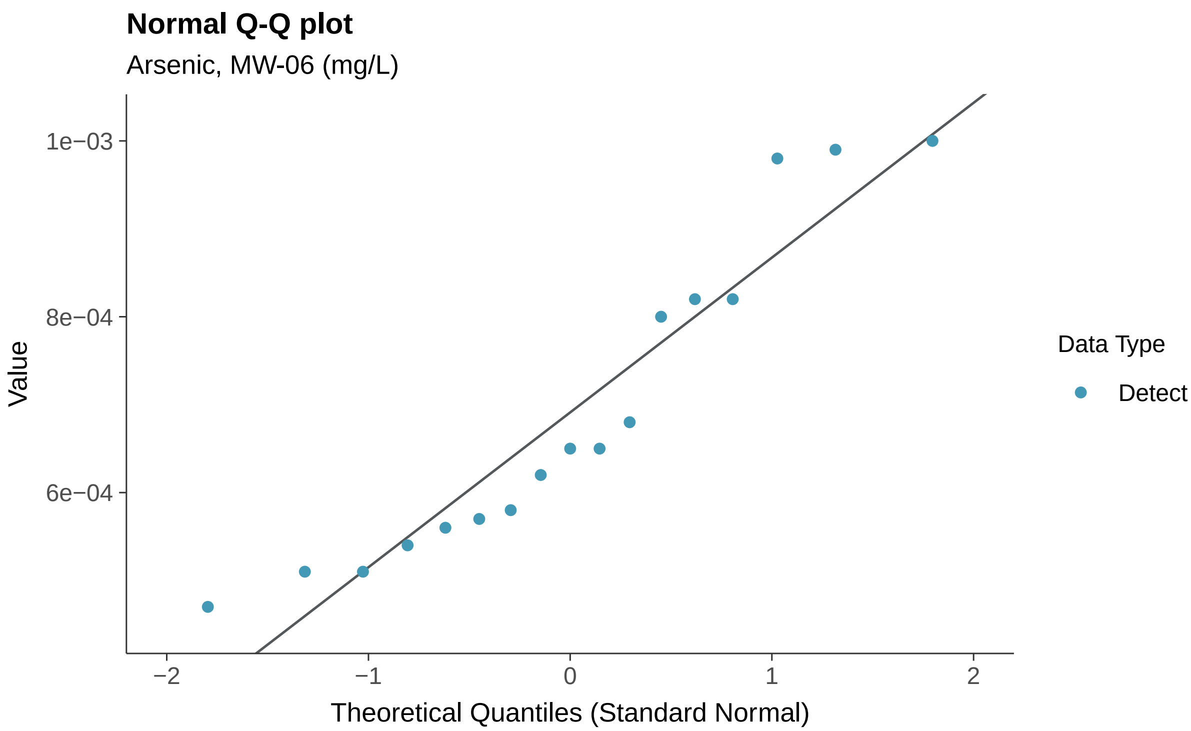
Arsenic, MW-06 (mg/L)

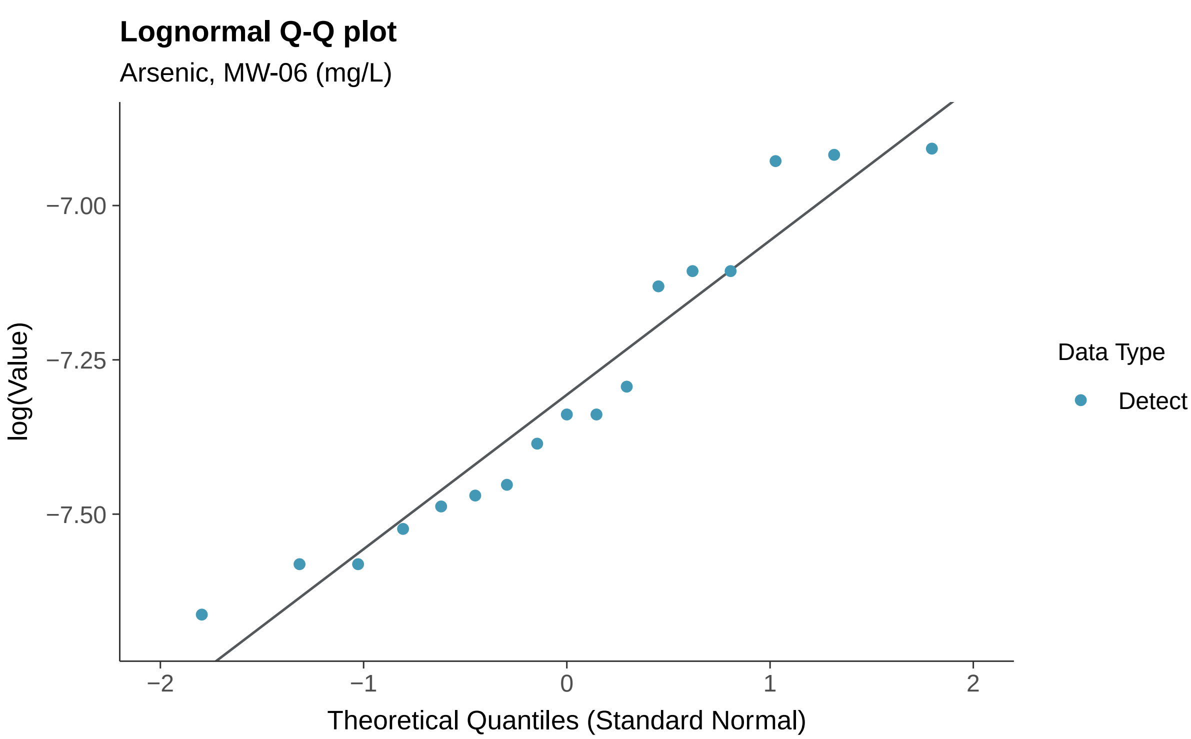


Boxplot by Season

Arsenic, MW-06 (mg/L)

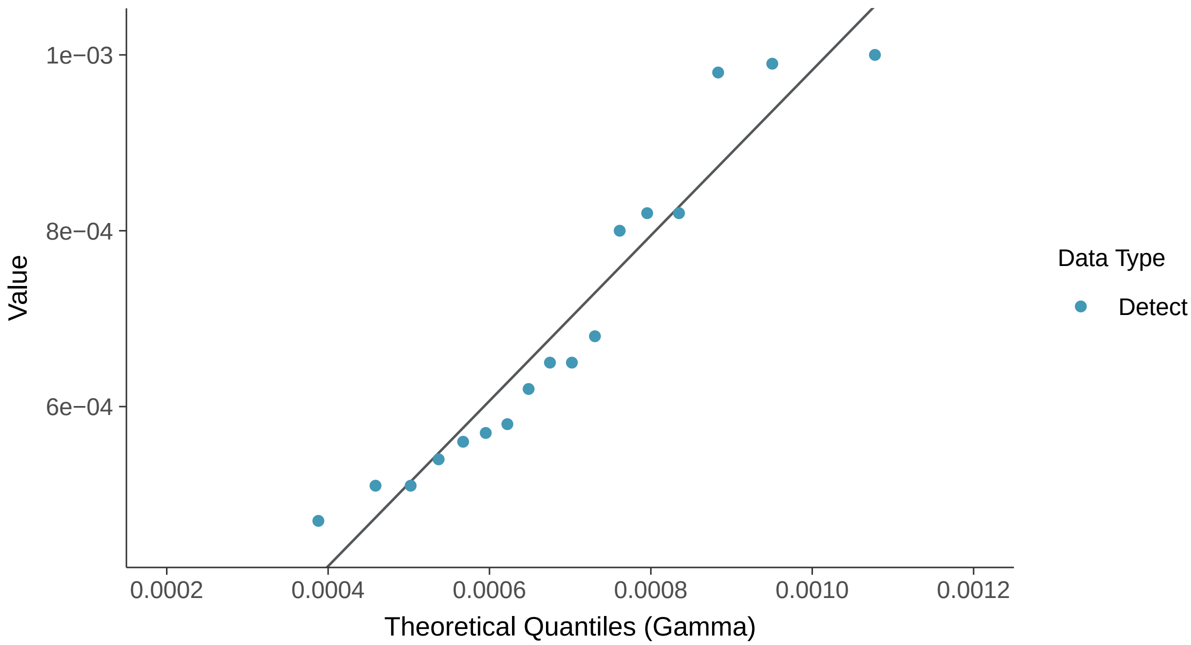



Normal Q-Q plot
Arsenic, MW-06 (mg/L)
Value
1e−03
8e−04
6e−04
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Arsenic, MW-06 (mg/L)
log(Value)
−7.00
−7.25
−7.50
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

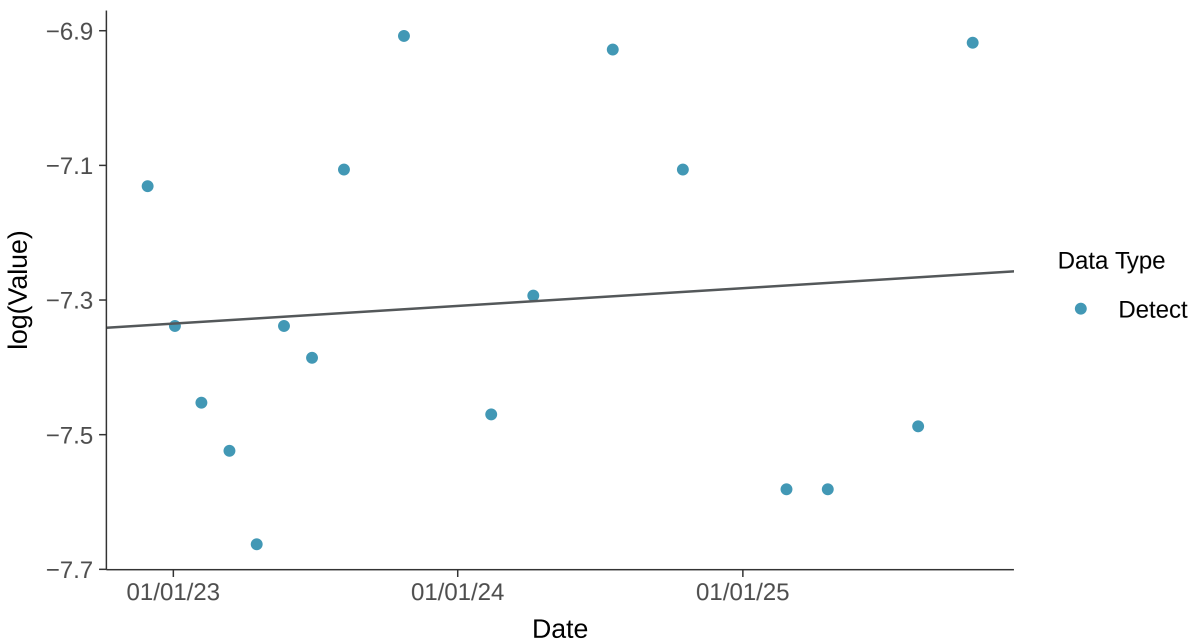
Gamma Q-Q plot

Arsenic, MW-06 (mg/L)



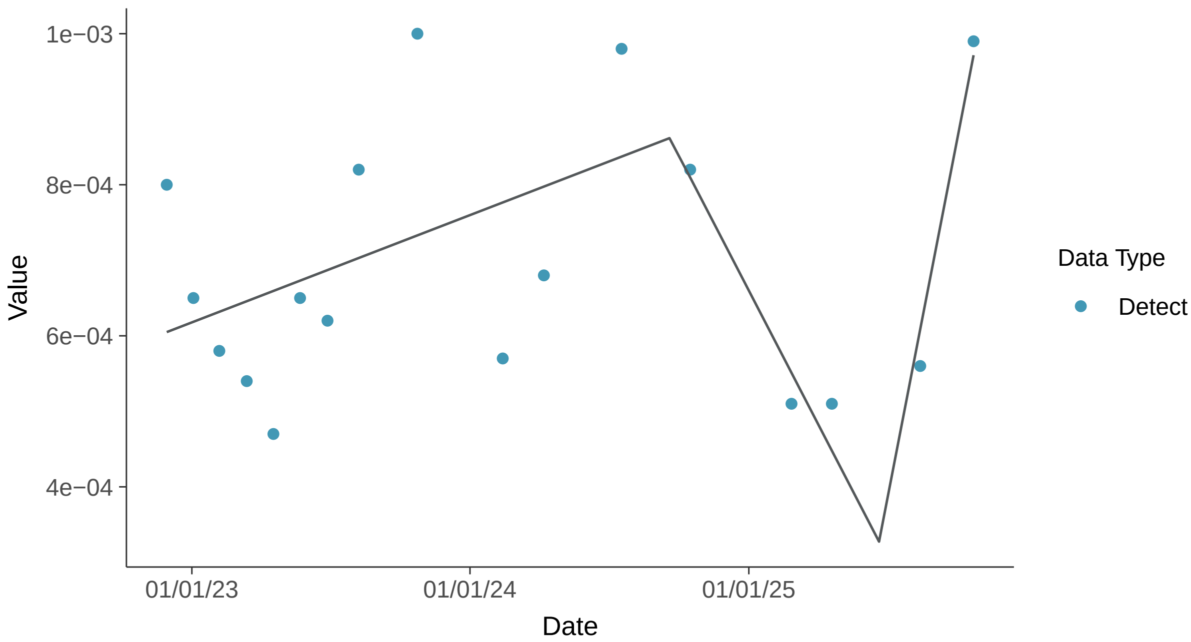
Trend Regression: Lognormal MLE

Arsenic, MW-06 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Arsenic, MW-06 (mg/L)

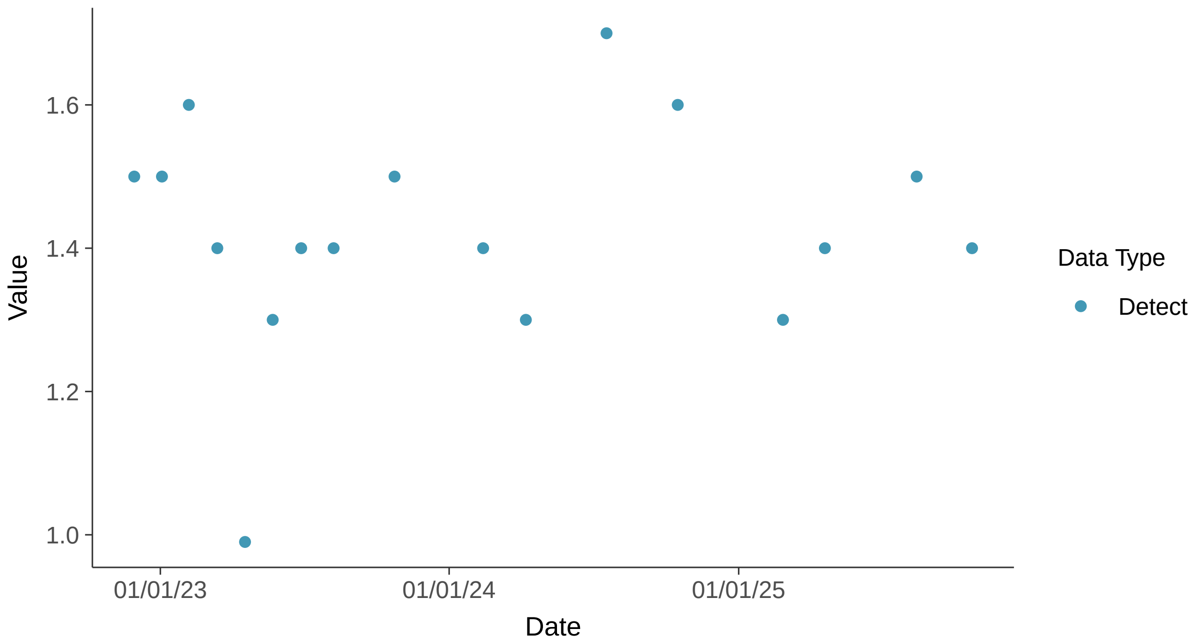


Appendix IV: Barium, MW-06

ID: 16_1_4_103

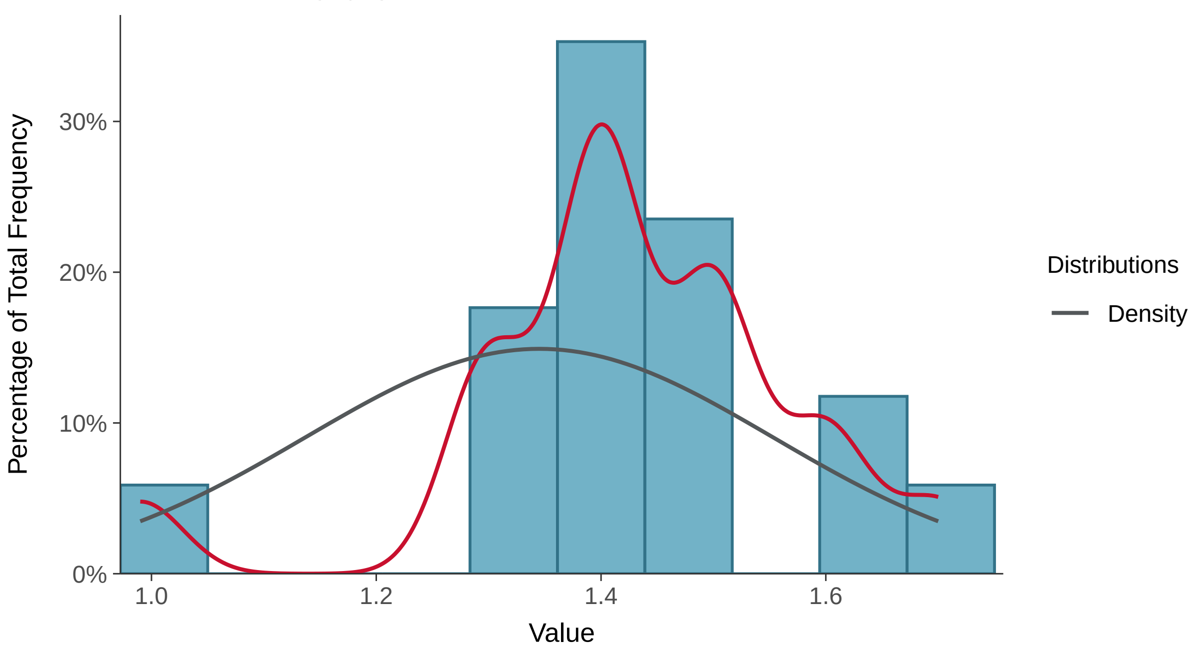
Scatter Plot

Barium, MW-06 (mg/L)



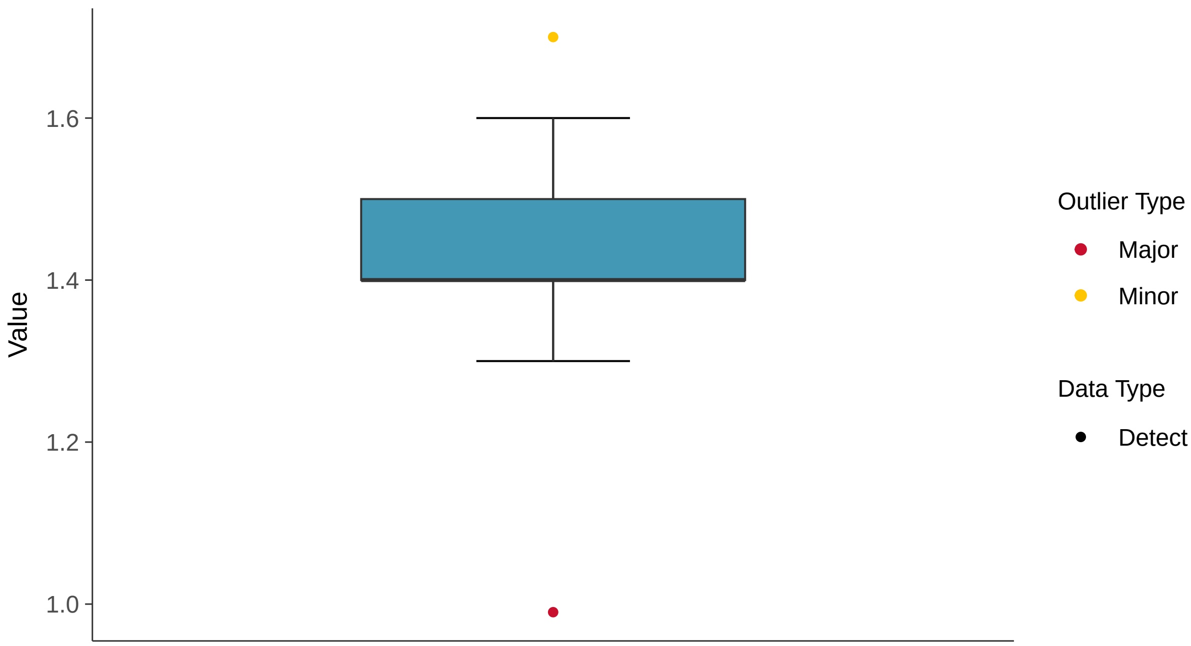
Histogram

Barium, MW-06 (mg/L)



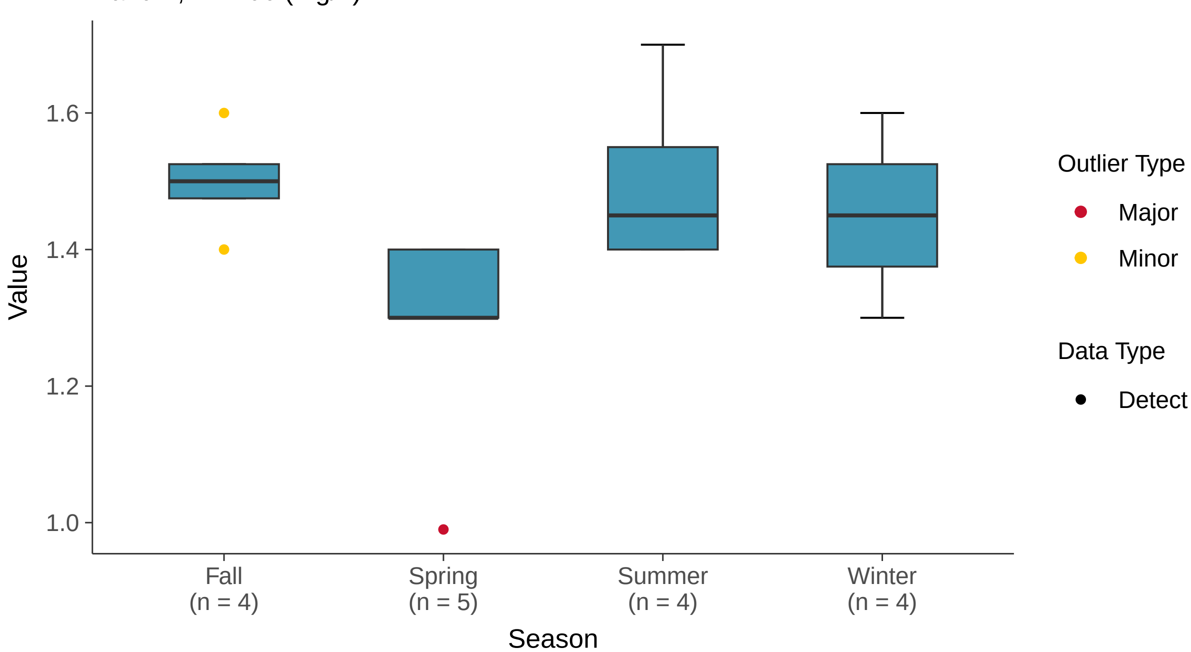
Boxplot

Barium, MW-06 (mg/L)

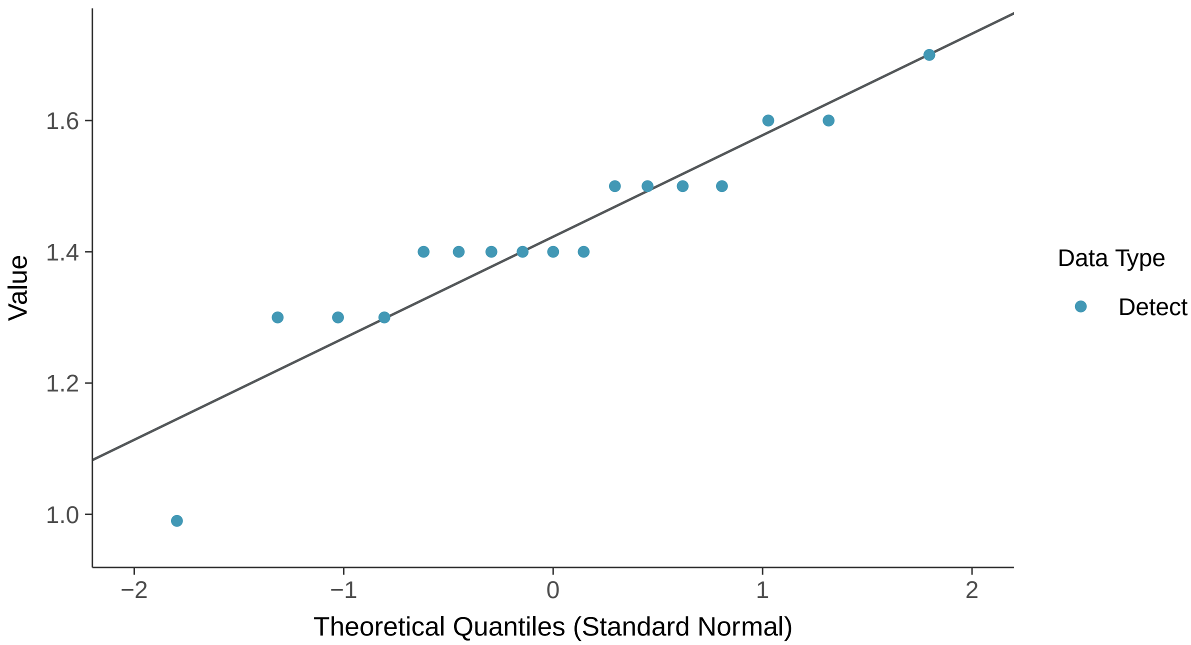


Boxplot by Season

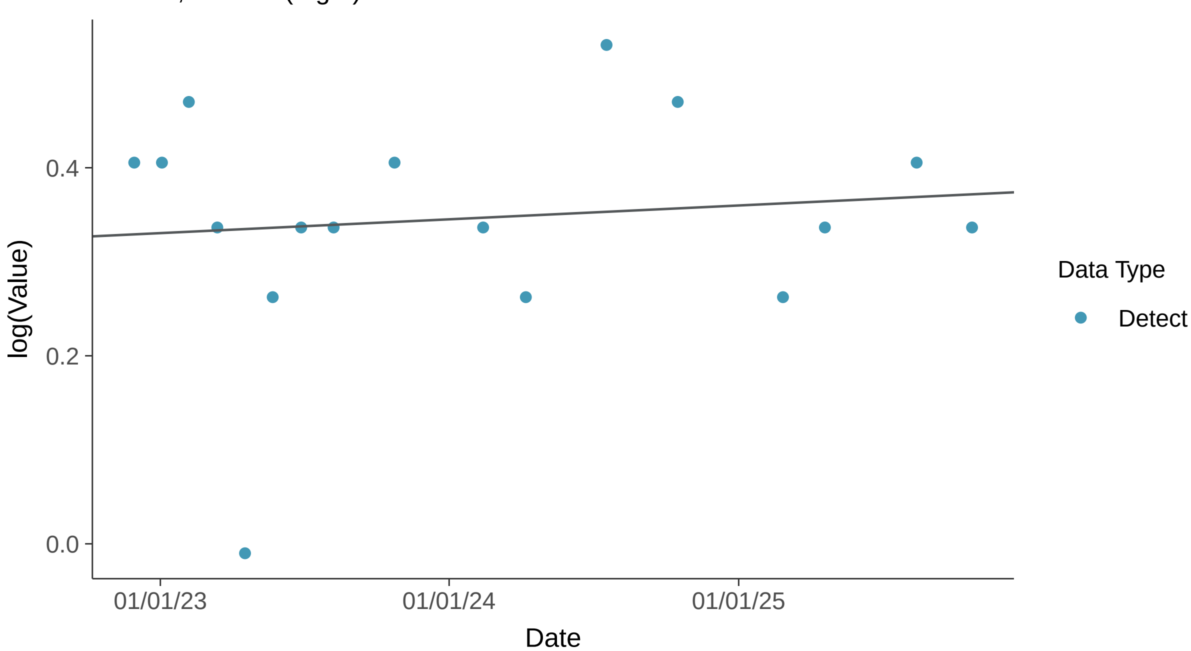
Barium, MW-06 (mg/L)



Normal Q-Q plot
Barium, MW-06 (mg/L)

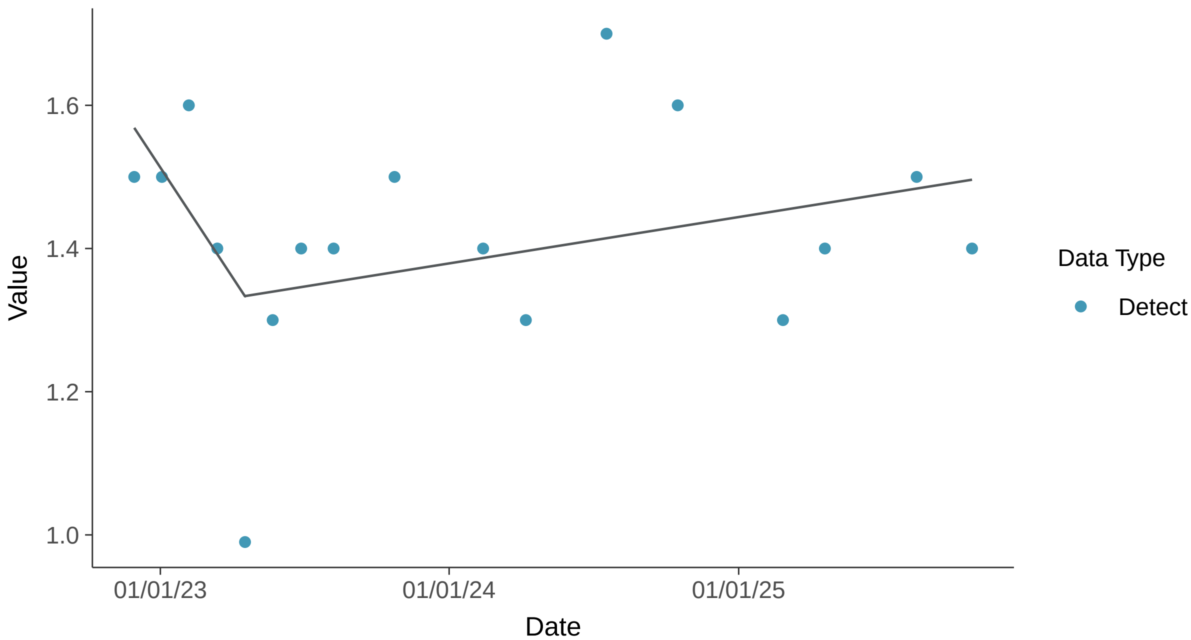


Trend Regression: Lognormal MLE
Barium, MW-06 (mg/L)



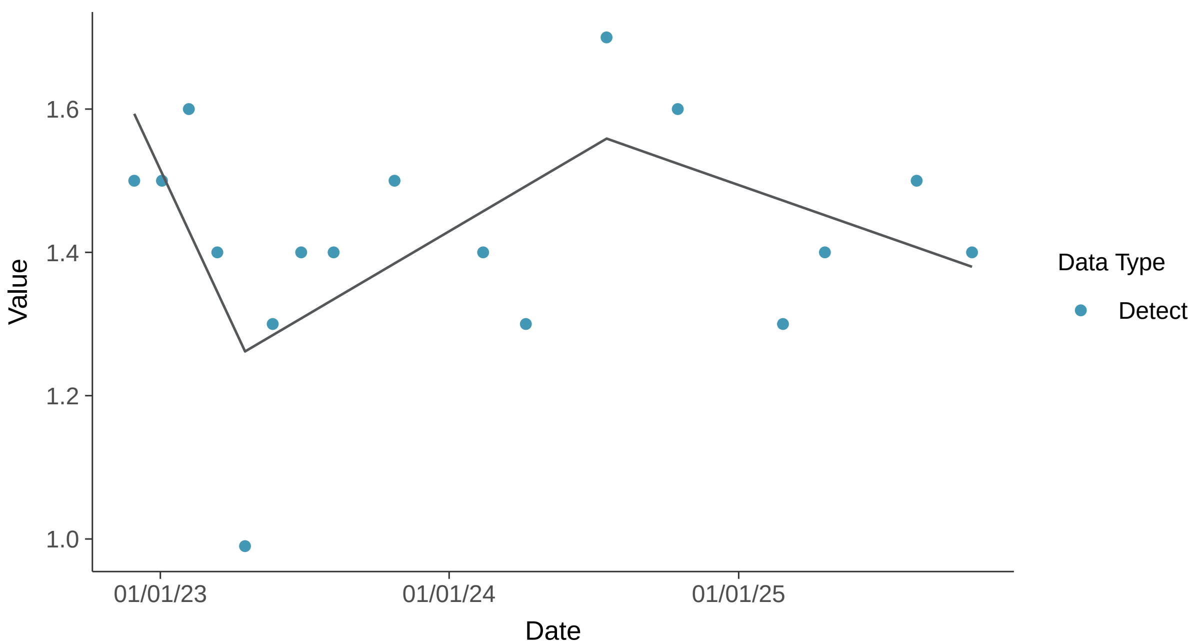
Trend Regression: Piecewise Linear-Linear

Barium, MW-06 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Barium, MW-06 (mg/L)

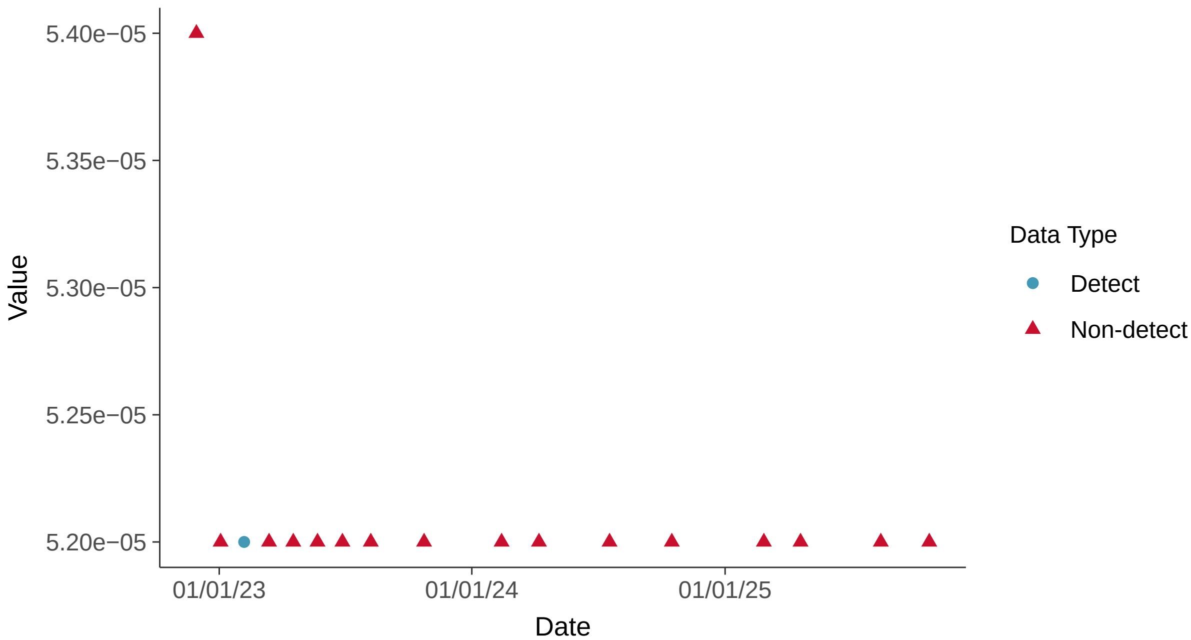


Appendix IV: Beryllium, MW-06

ID: 16_1_4_104

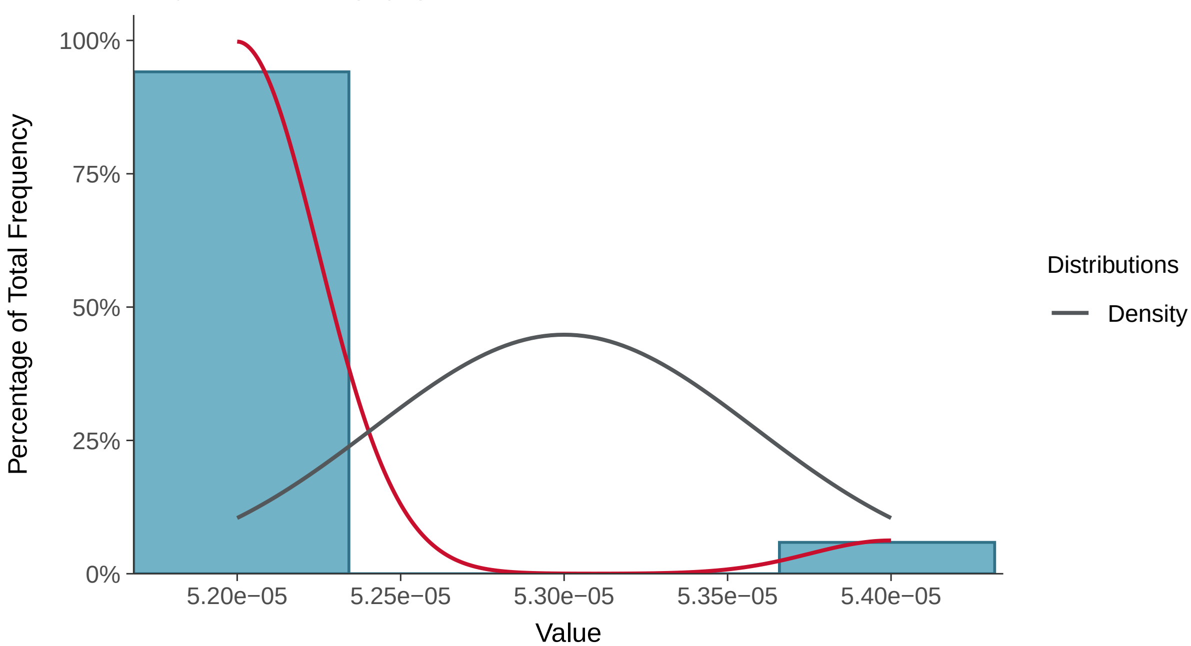
Scatter Plot

Beryllium, MW-06 (mg/L)



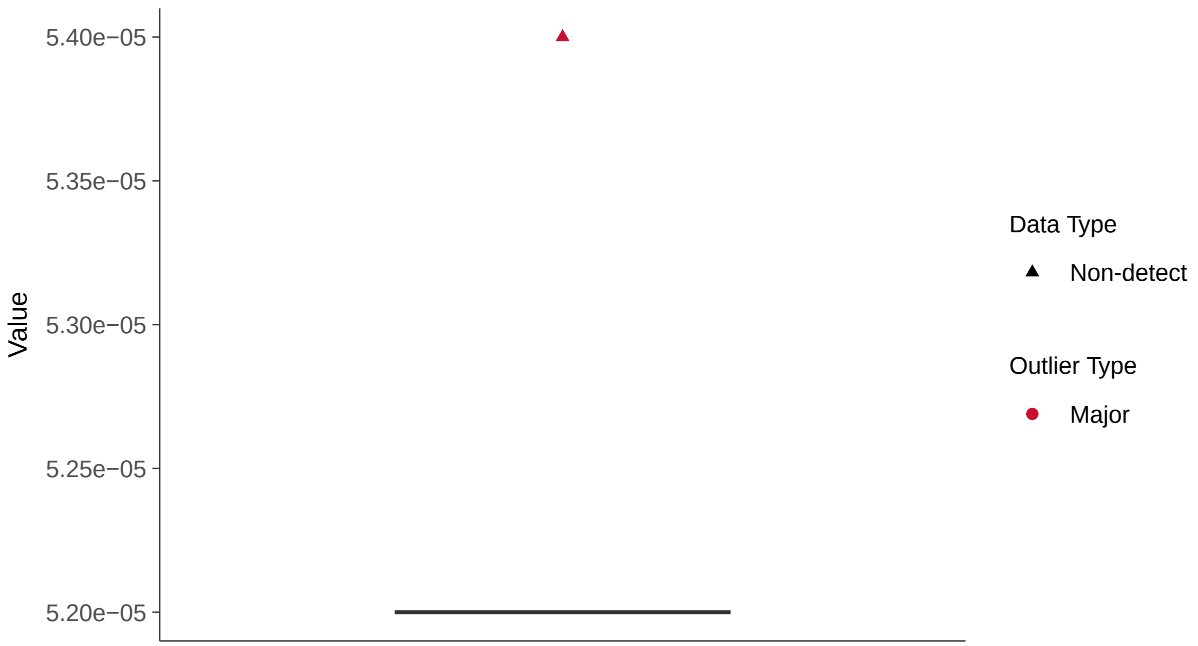
Histogram

Beryllium, MW-06 (mg/L)



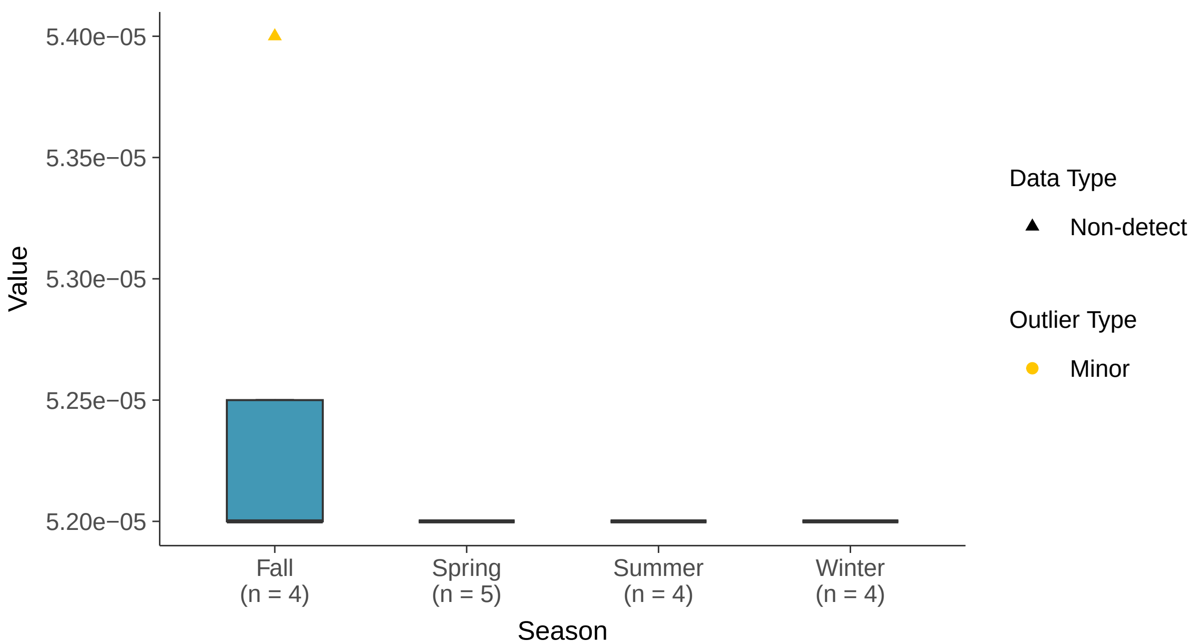
Boxplot

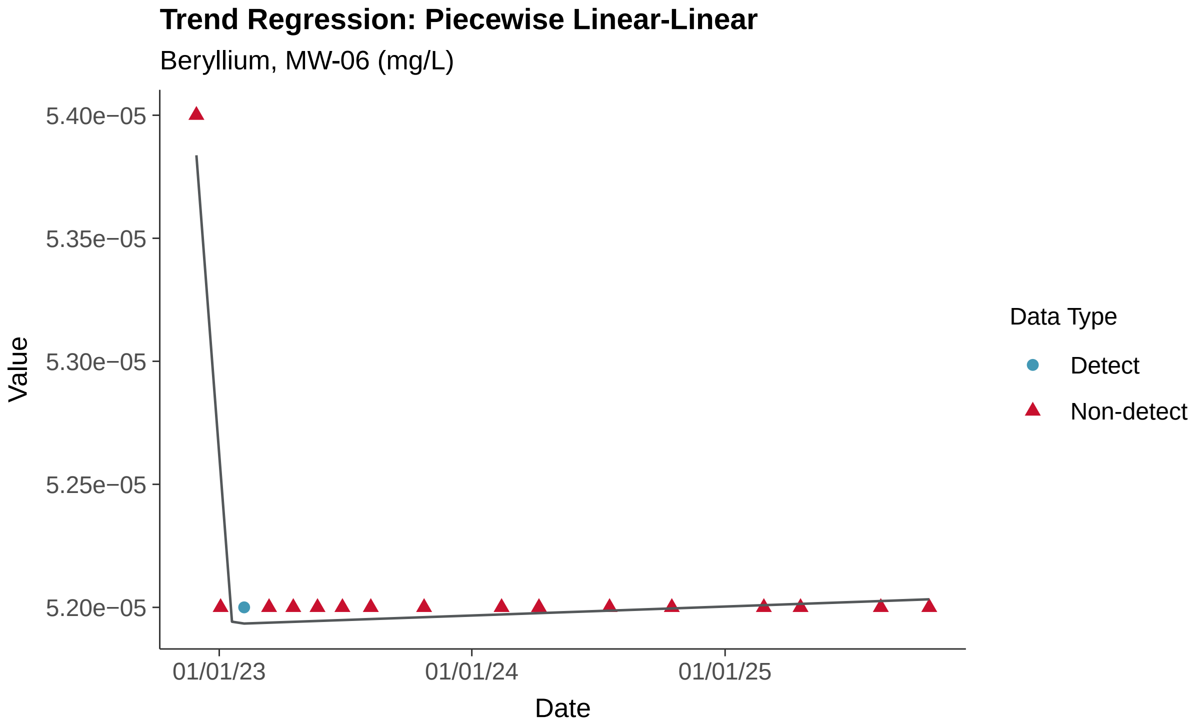
Beryllium, MW-06 (mg/L)



Boxplot by Season

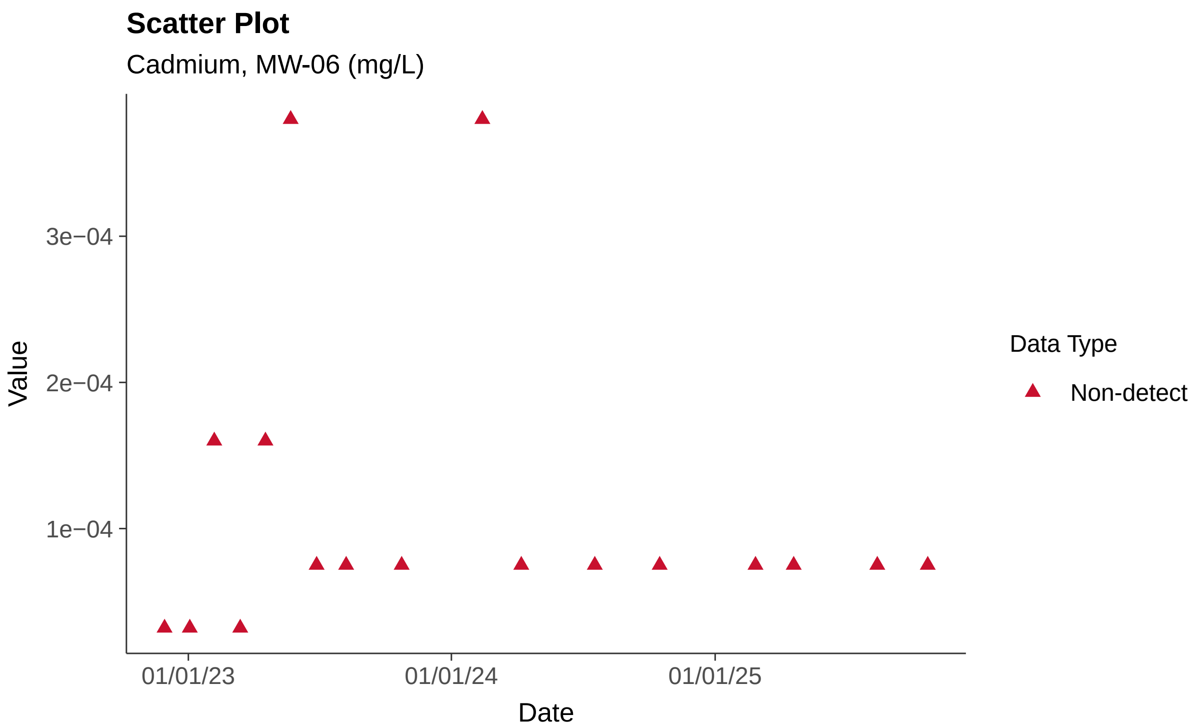
Beryllium, MW-06 (mg/L)

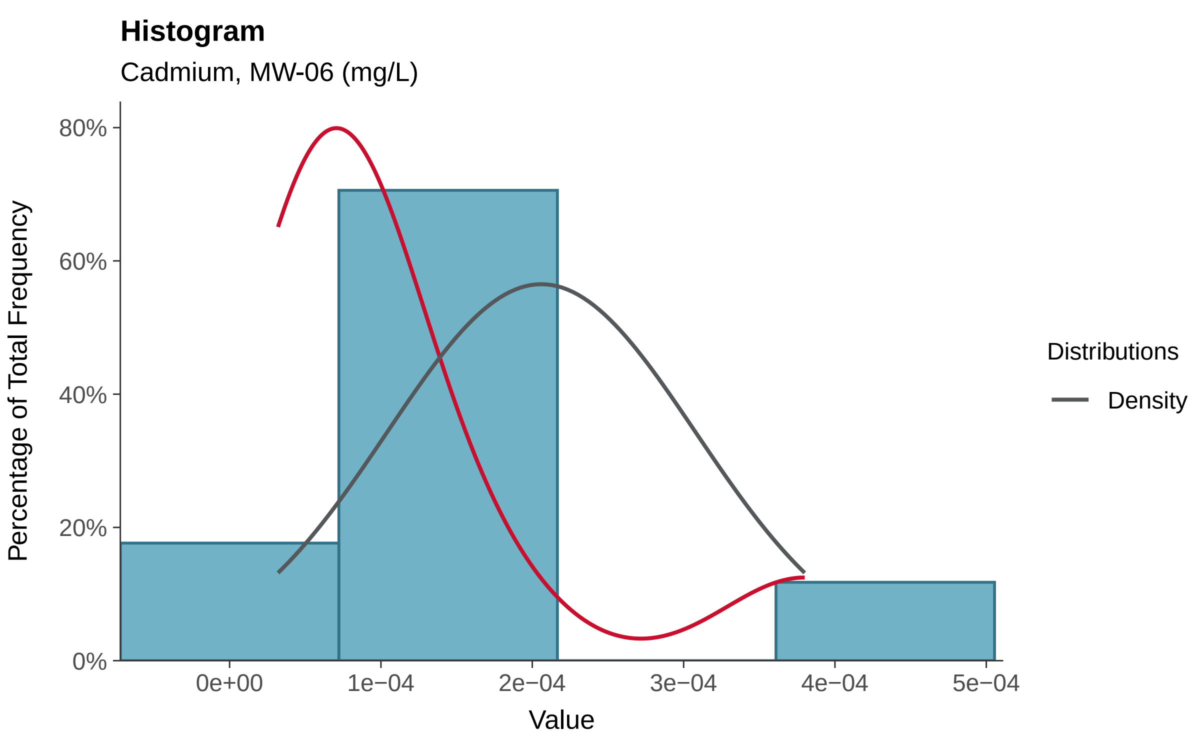



Trend Regression: Piecewise Linear-Linear
Beryllium, MW-06 (mg/L)
5.40e−05
5.35e−05
5.30e−05
5.25e−05
5.20e−05
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

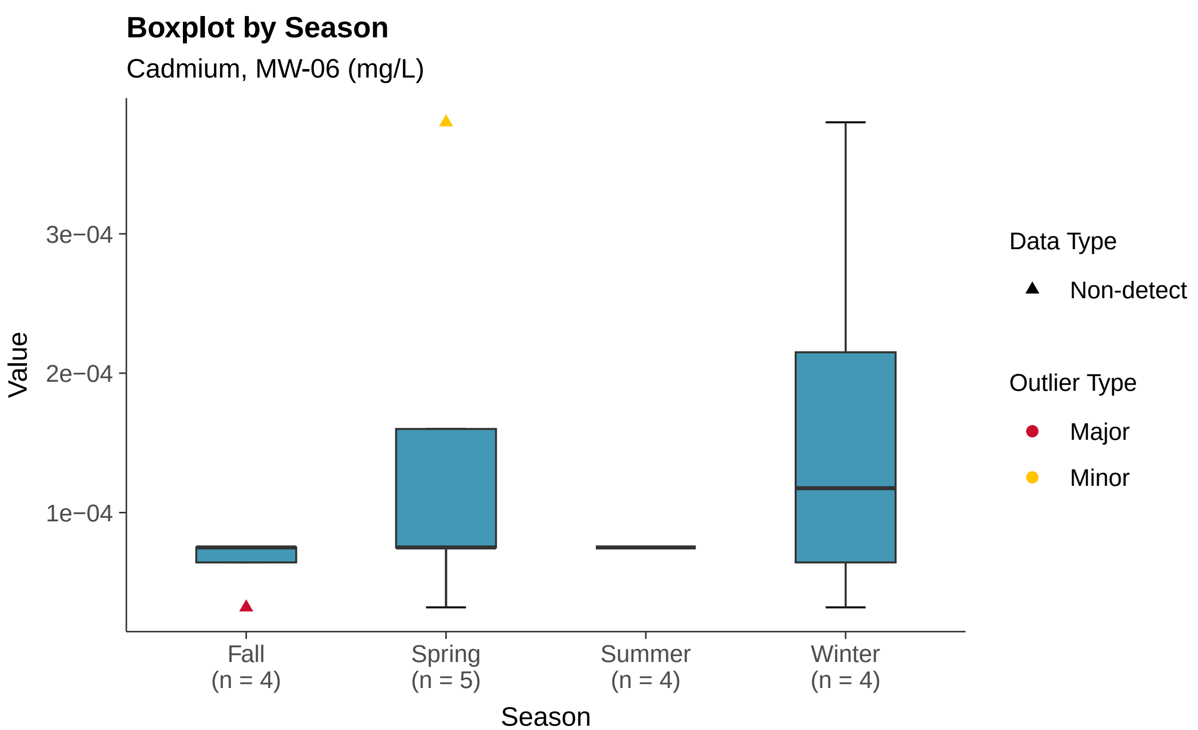
Appendix IV: Cadmium, MW-06

ID: 16_1_4_106



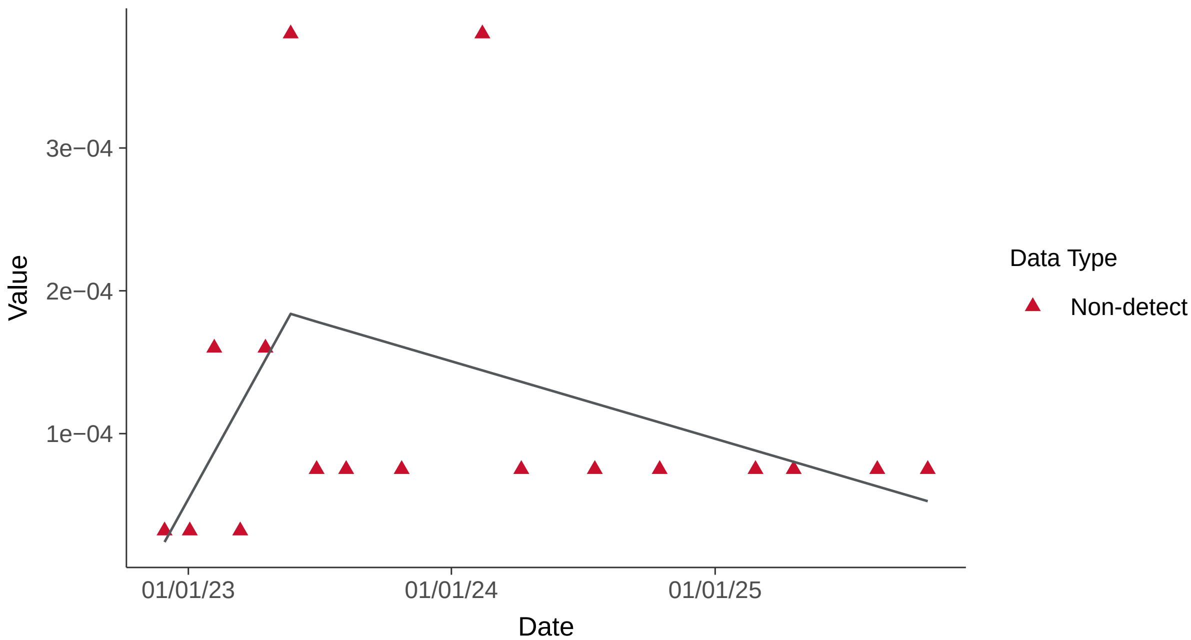



Boxplot
Cadmium, MW-06 (mg/L)
Value
3e−04
2e−04
1e−04
Data Type
Non-detect
Outlier Type
Major


Boxplot by Season
Cadmium, MW-06 (mg/L)
Value
3e−04
2e−04
1e−04
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Data Type
Non-detect
Outlier Type
Major
Minor

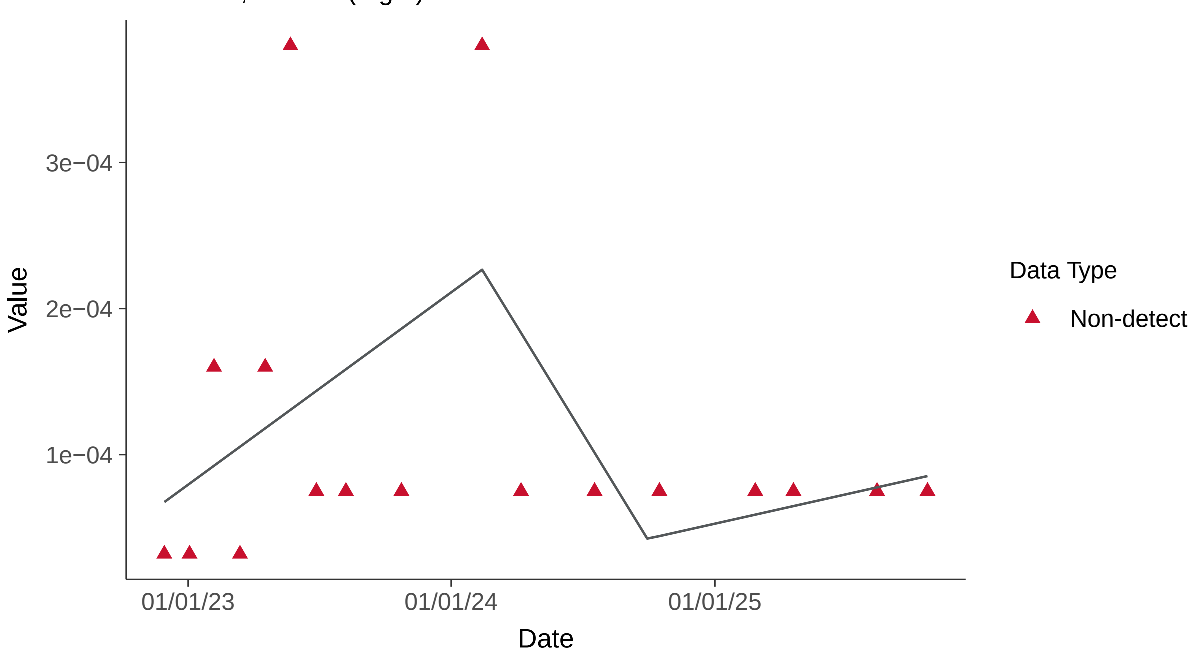
Trend Regression: Piecewise Linear-Linear

Cadmium, MW-06 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Cadmium, MW-06 (mg/L)

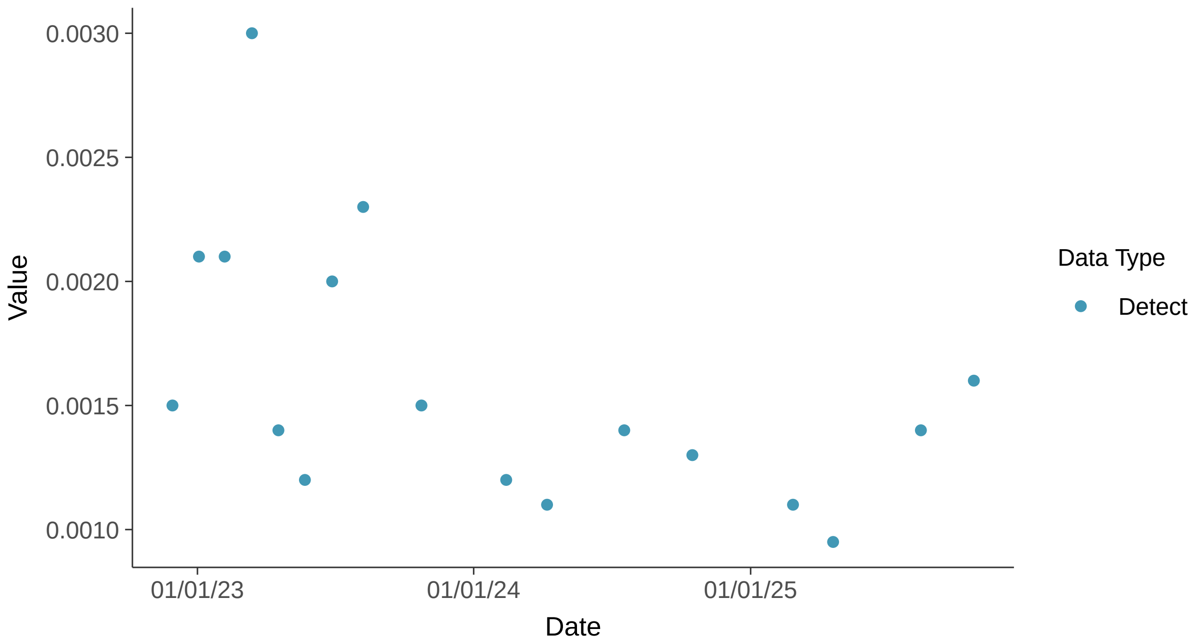


Appendix IV: Chromium, Total, MW-06

ID: 16_1_4_109

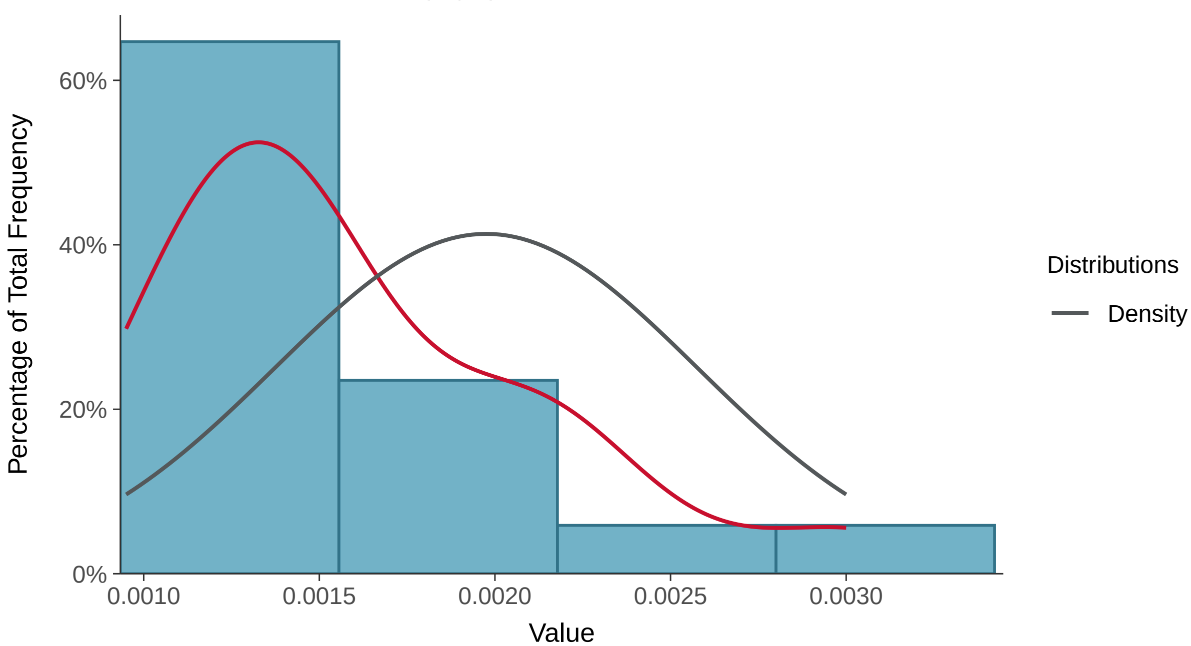
Scatter Plot

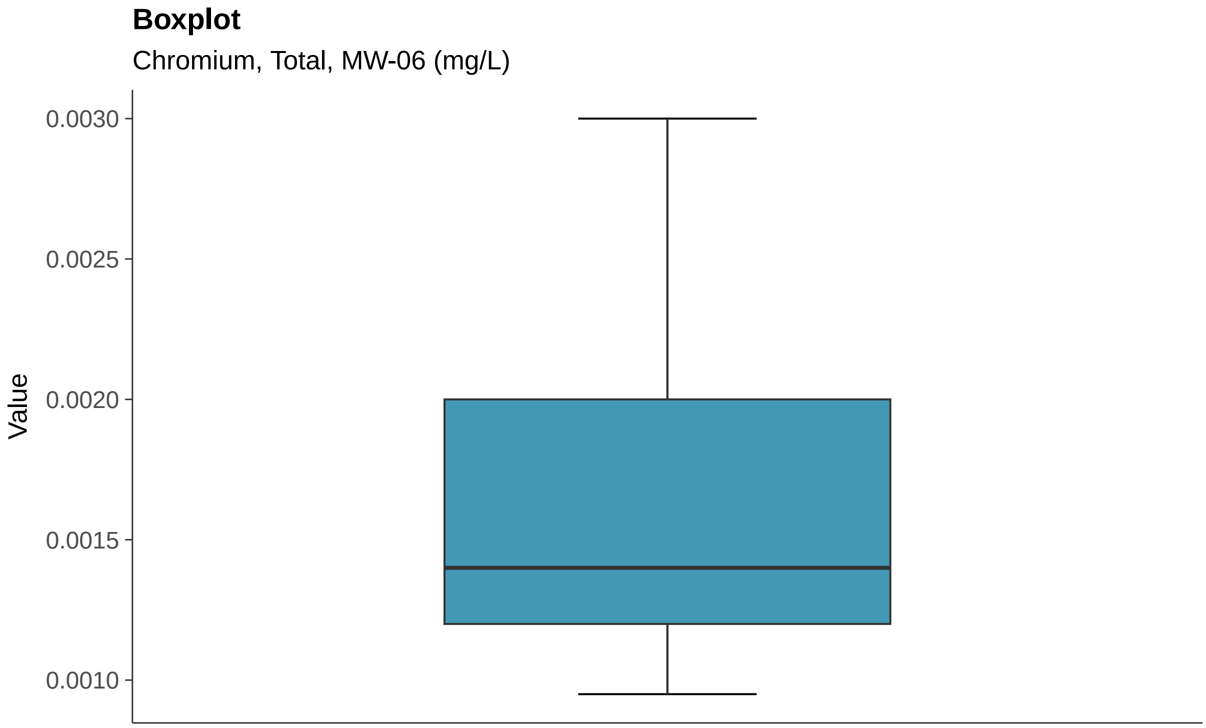
Chromium, Total, MW-06 (mg/L)

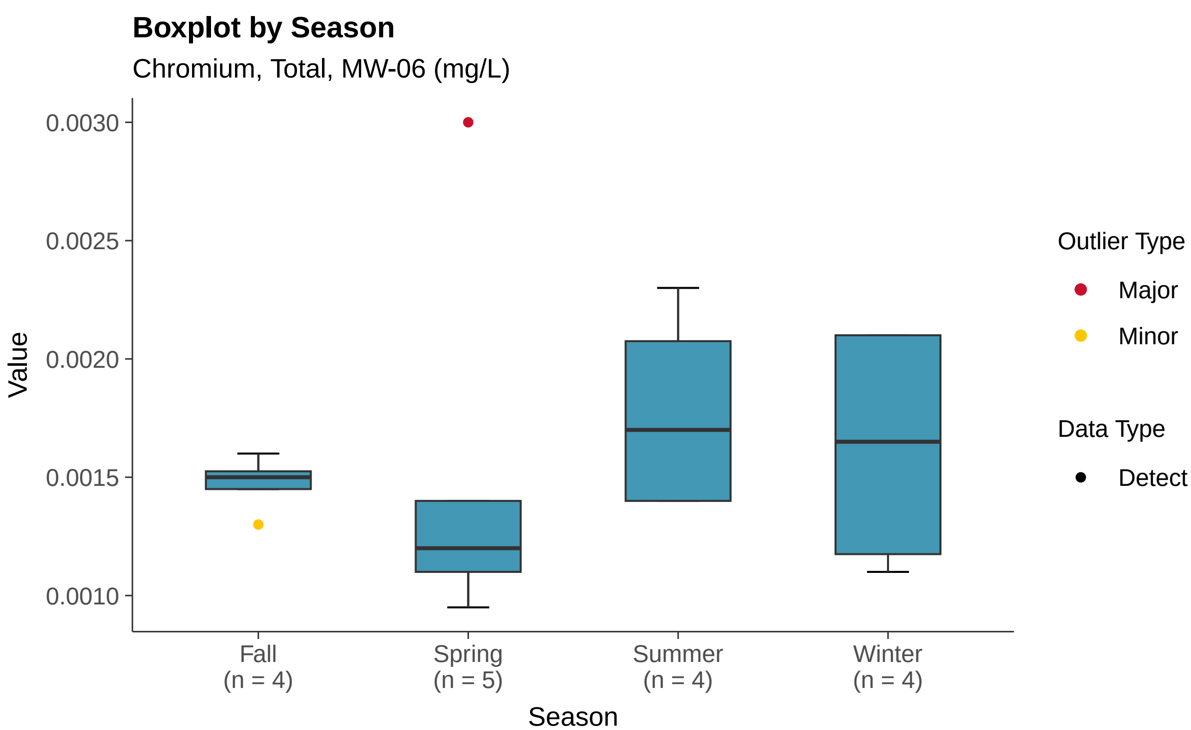


Histogram

Chromium, Total, MW-06 (mg/L)

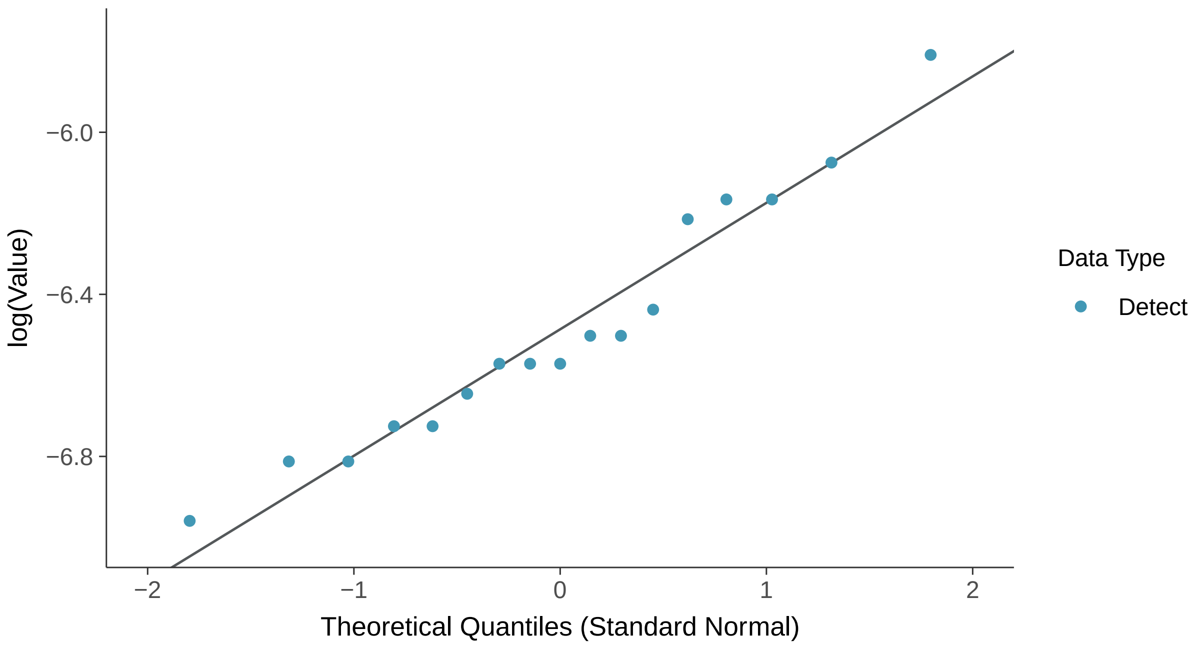



Boxplot
Chromium, Total, MW-06 (mg/L)
Value
0.0030
0.0025
0.0020
0.0015
0.0010


Boxplot by Season
Chromium, Total, MW-06 (mg/L)
Value
0.0030
0.0025
0.0020
0.0015
0.0010
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Major
Minor
Data Type
Detect

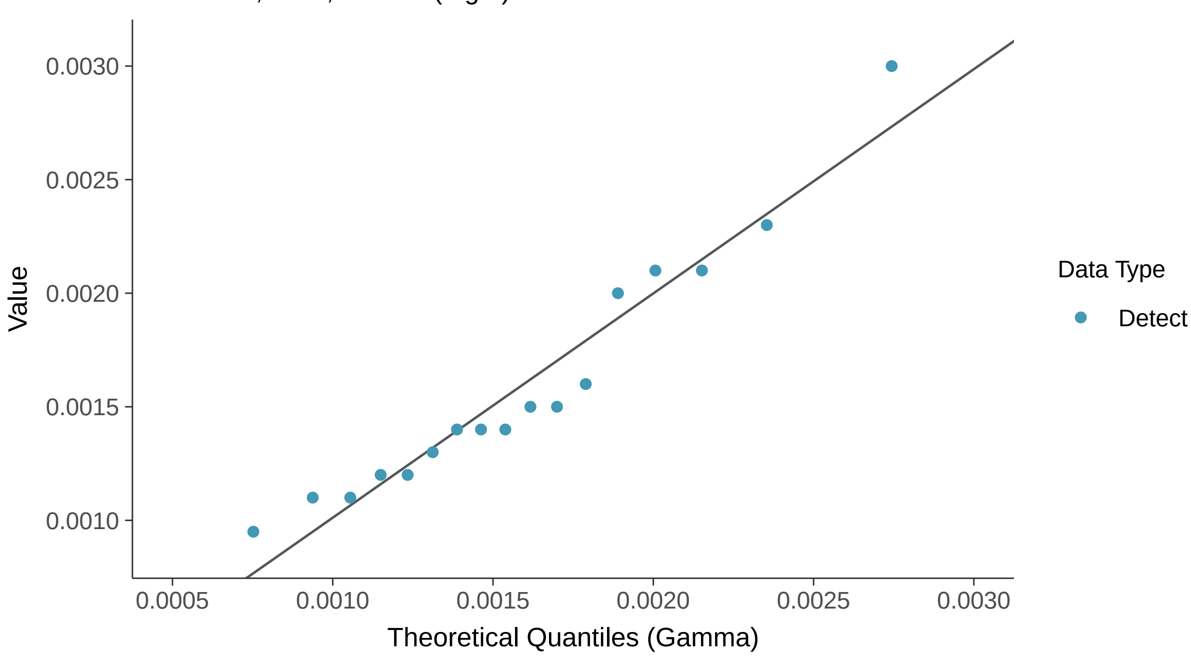
Lognormal Q-Q plot

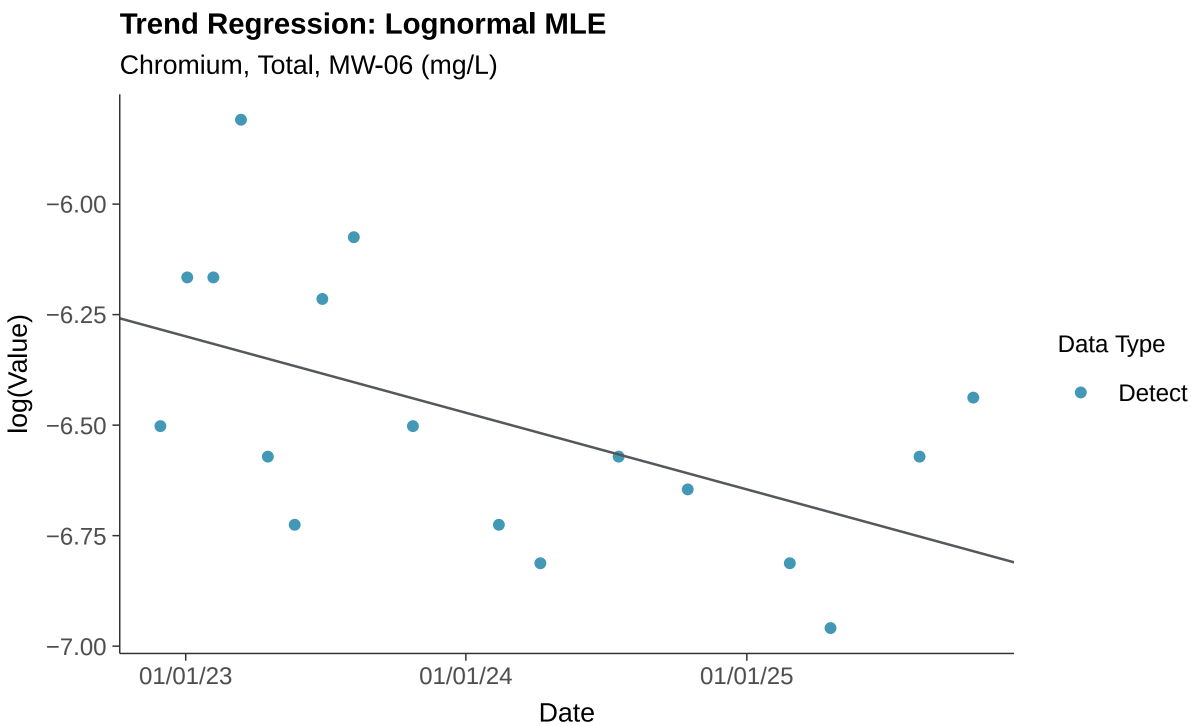
Chromium, Total, MW-06 (mg/L)

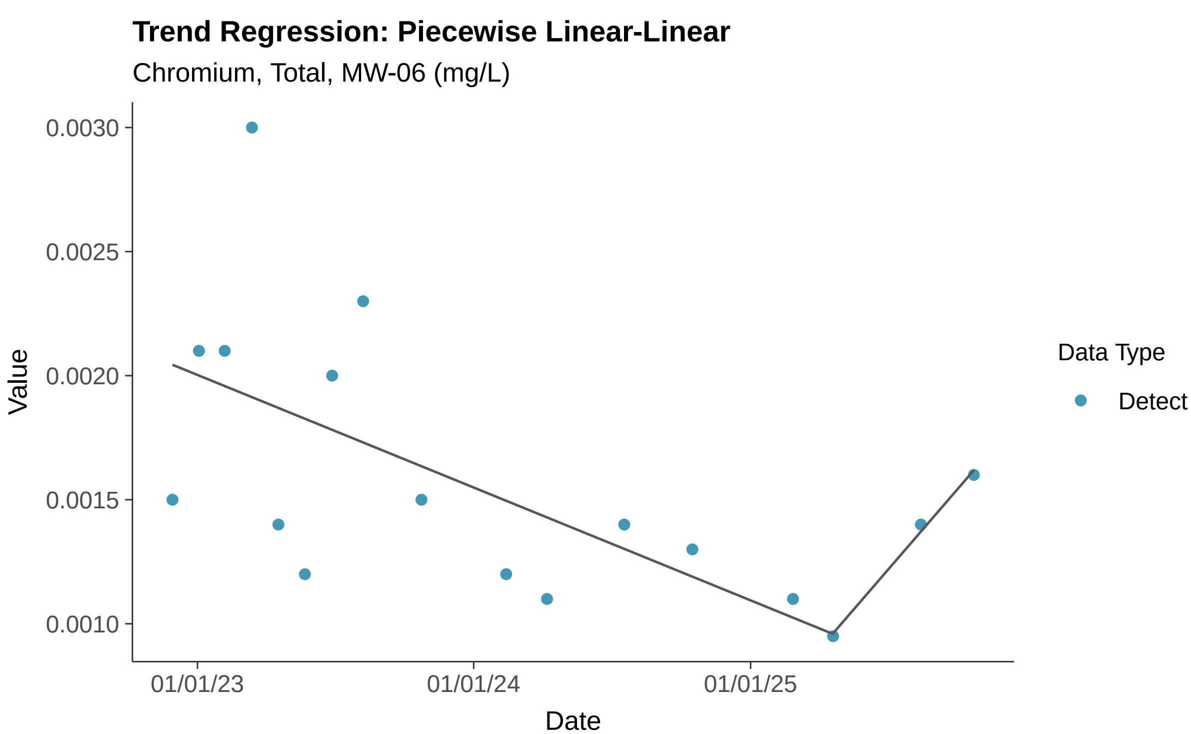


Gamma Q-Q plot

Chromium, Total, MW-06 (mg/L)

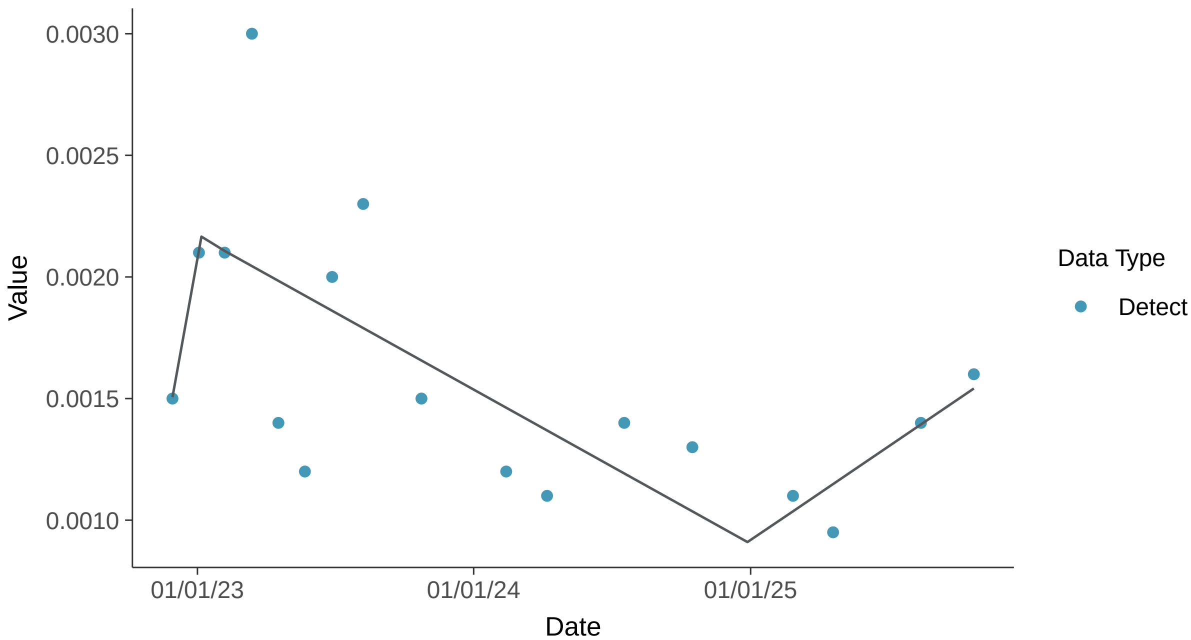



Trend Regression: Lognormal MLE
Chromium, Total, MW-06 (mg/L)
log(Value)
−6.00
−6.25
−6.50
−6.75
−7.00
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear
Chromium, Total, MW-06 (mg/L)
Value
0.0030
0.0025
0.0020
0.0015
0.0010
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

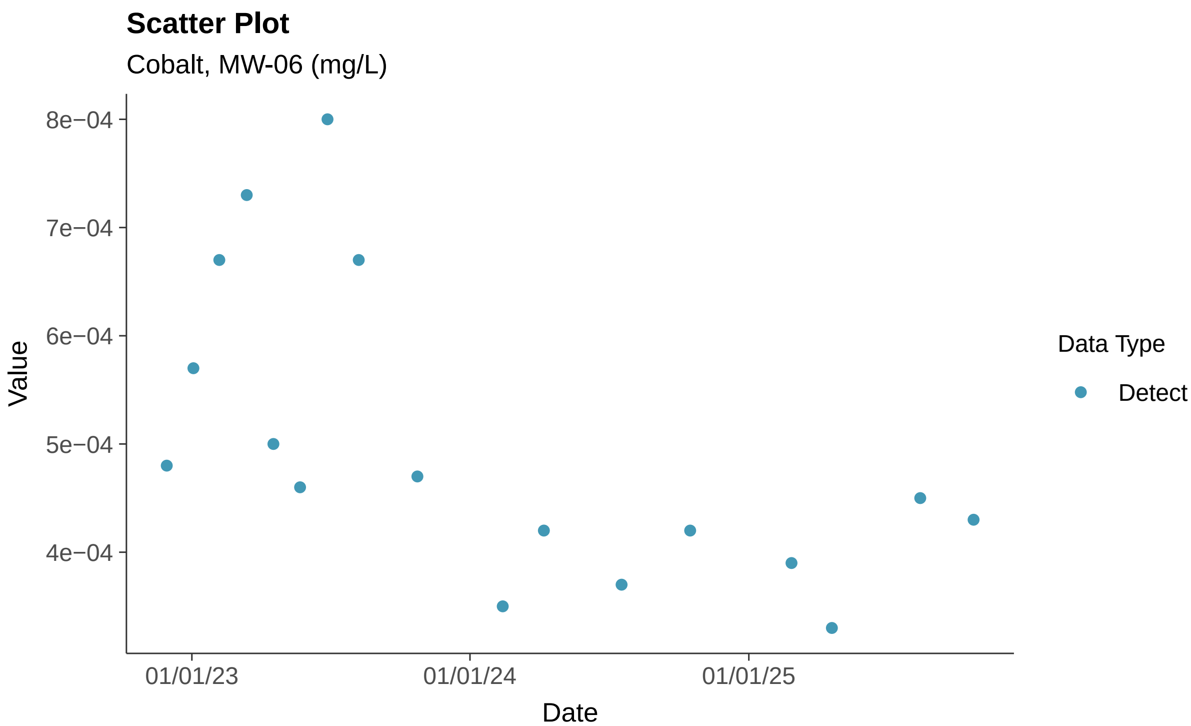
Trend Regression: Piecewise Linear-Linear-Linear

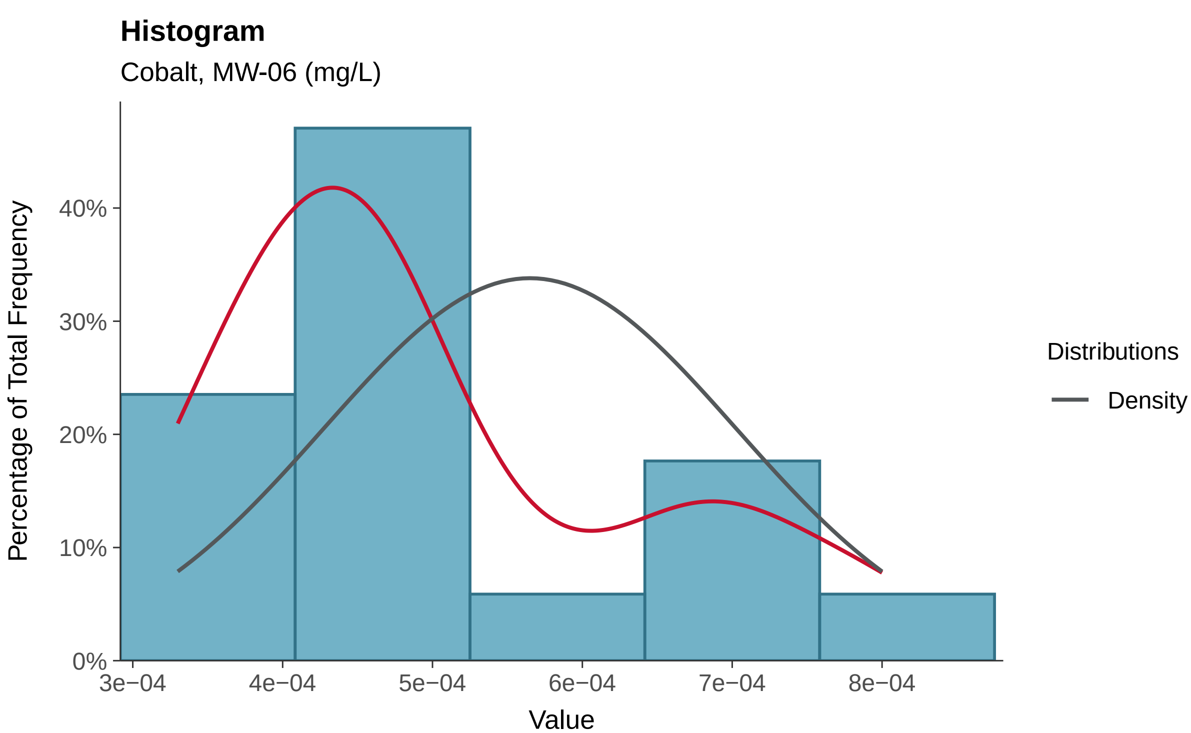
Chromium, Total, MW-06 (mg/L)



Appendix IV: Cobalt, MW-06

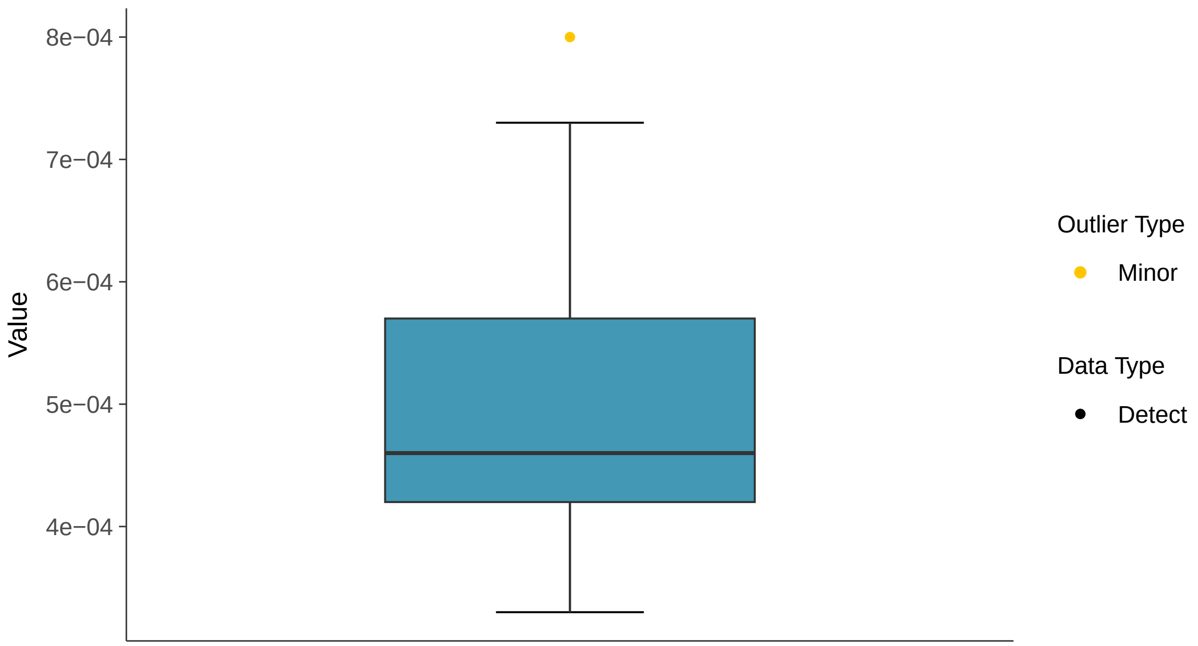
ID: 16_1_4_110





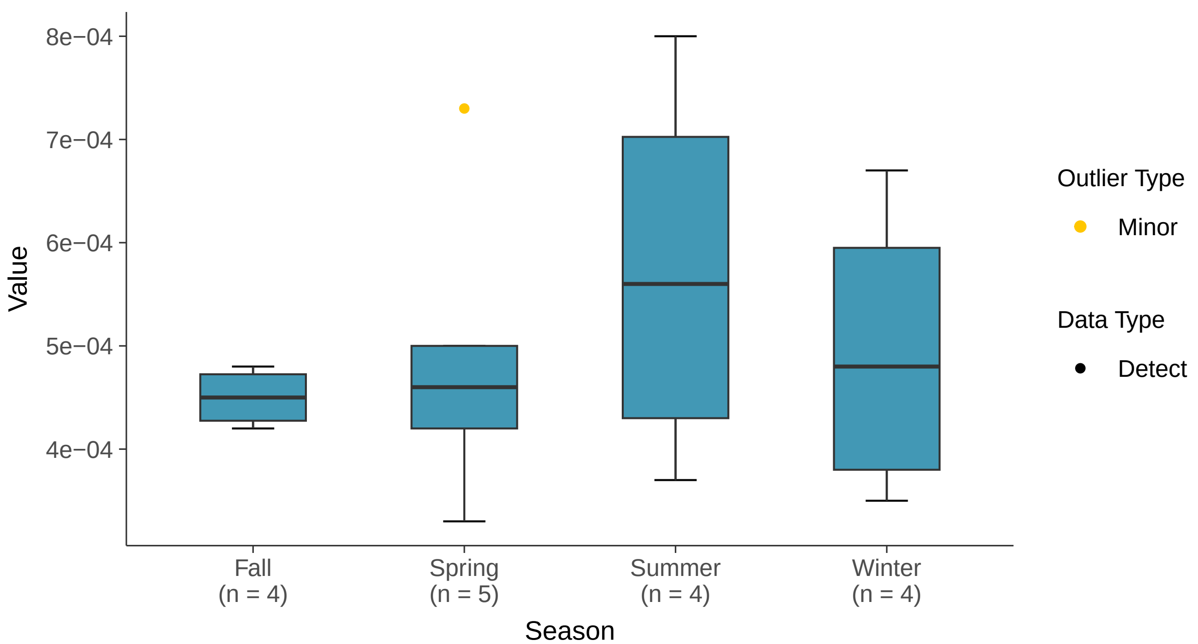
Boxplot

Cobalt, MW-06 (mg/L)



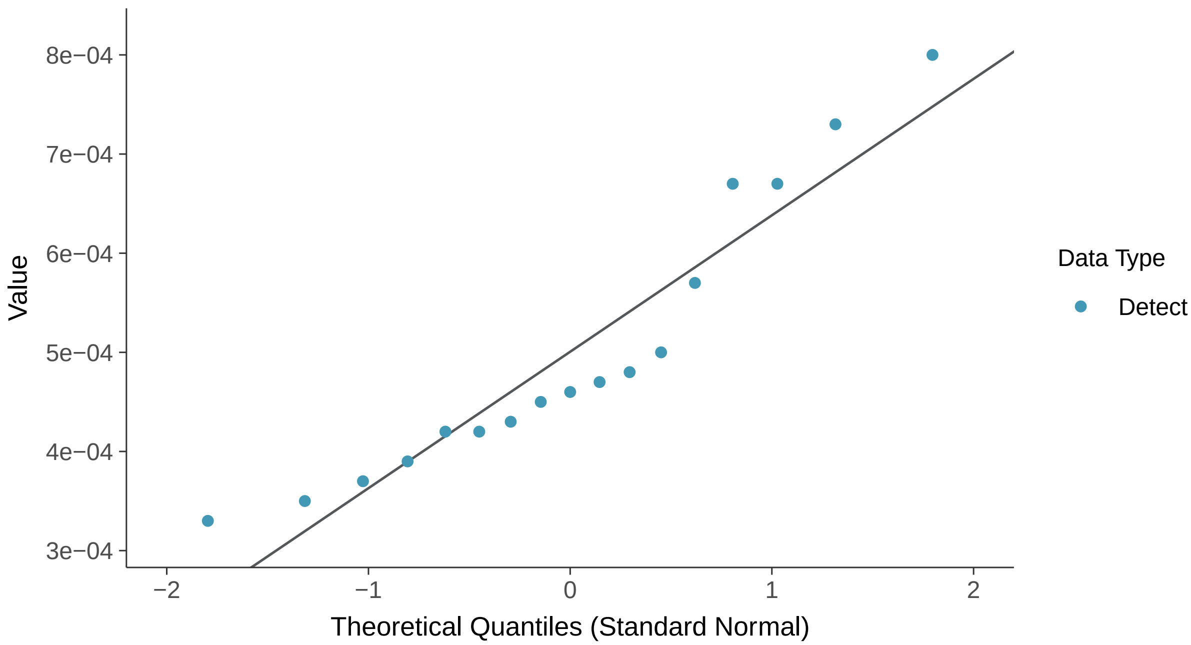
Boxplot by Season

Cobalt, MW-06 (mg/L)



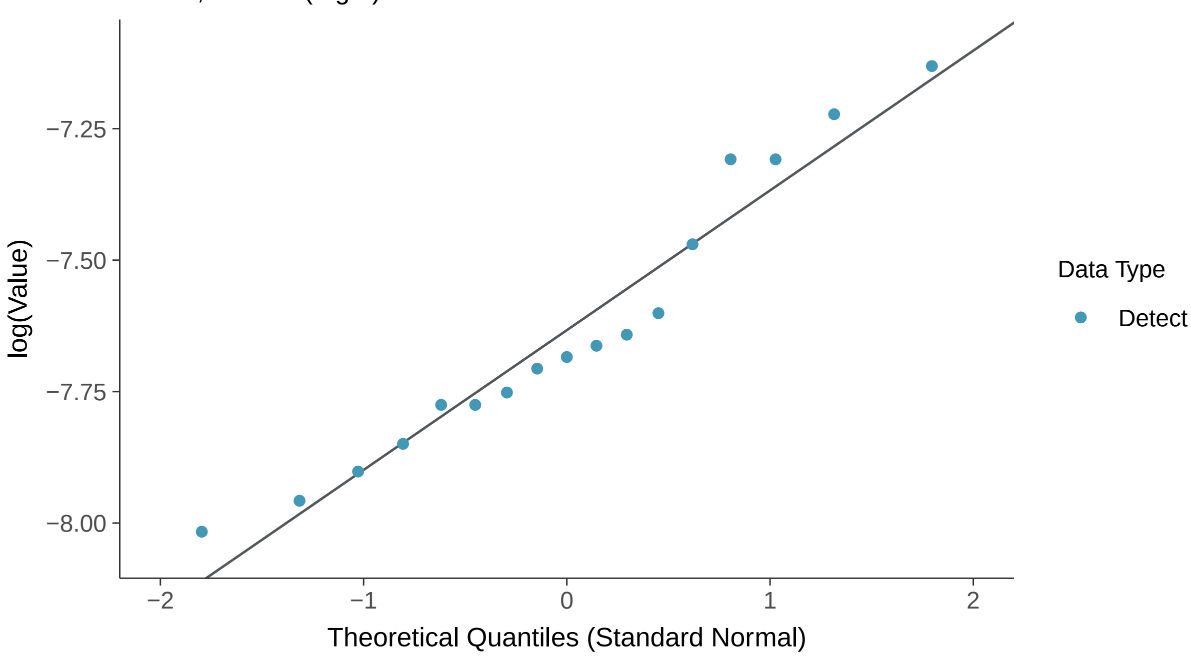
Normal Q-Q plot

Cobalt, MW-06 (mg/L)



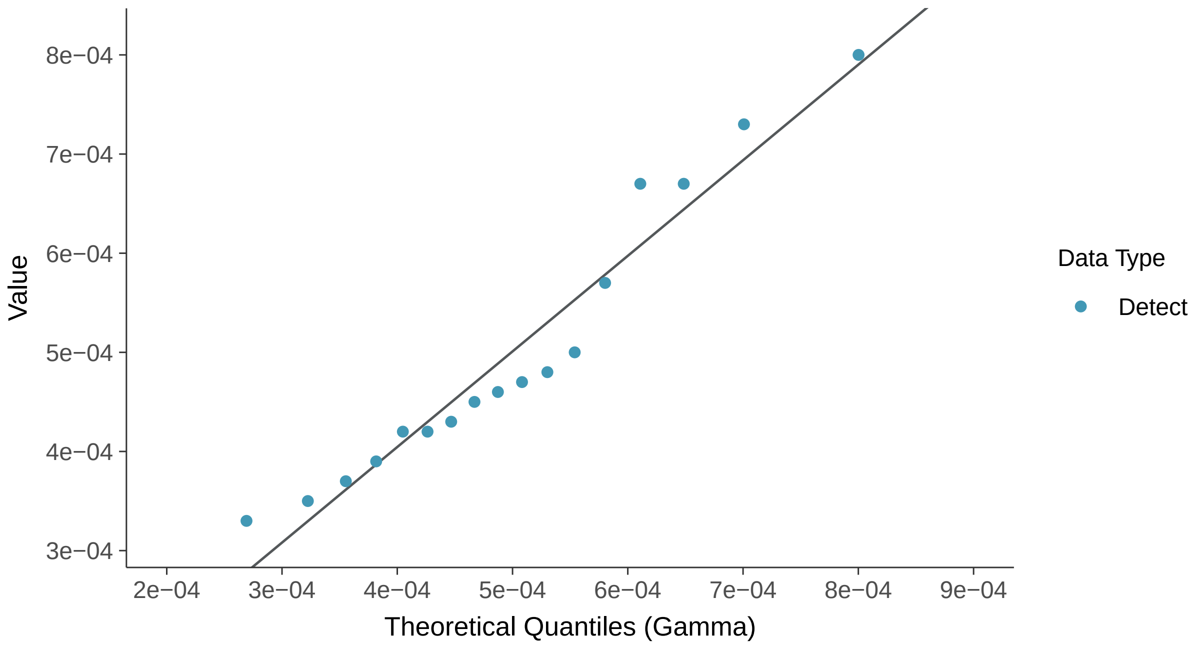
Lognormal Q-Q plot

Cobalt, MW-06 (mg/L)



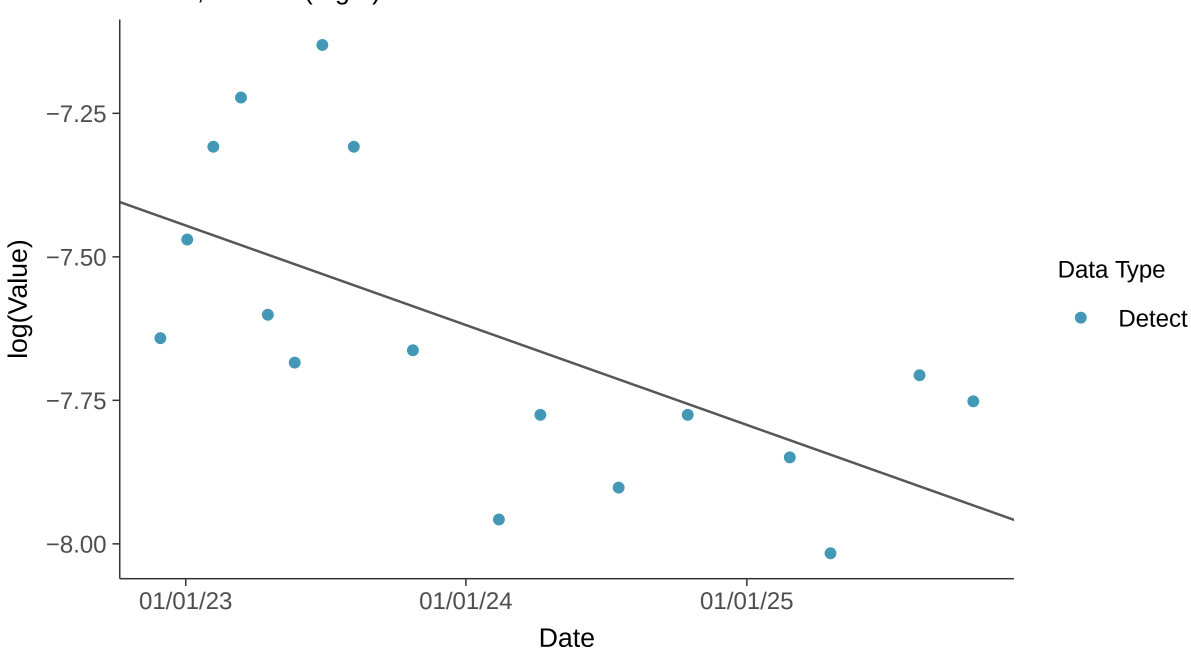
Gamma Q-Q plot

Cobalt, MW-06 (mg/L)

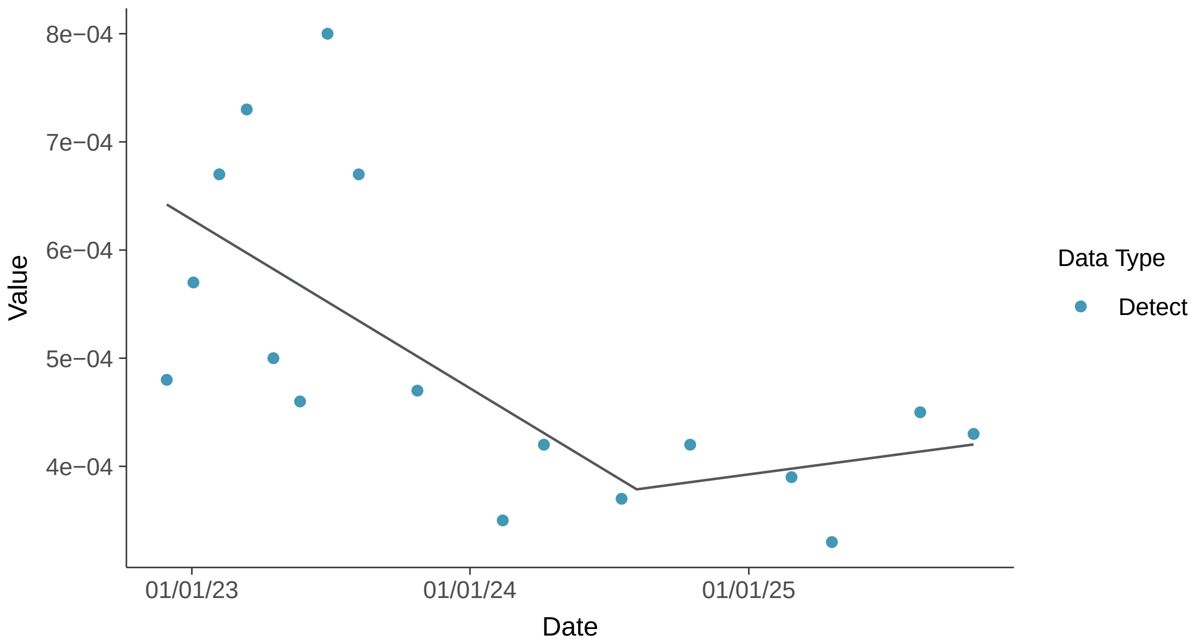


Trend Regression: Lognormal MLE

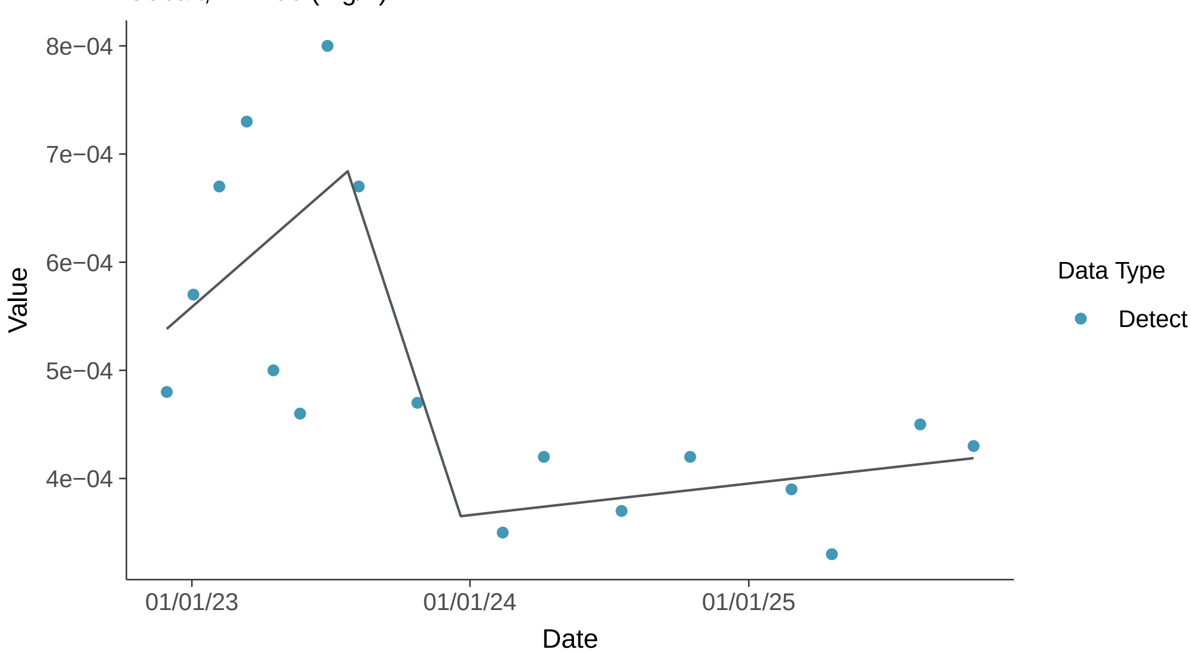
Cobalt, MW-06 (mg/L)



Trend Regression: Piecewise Linear-Linear
Cobalt, MW-06 (mg/L)

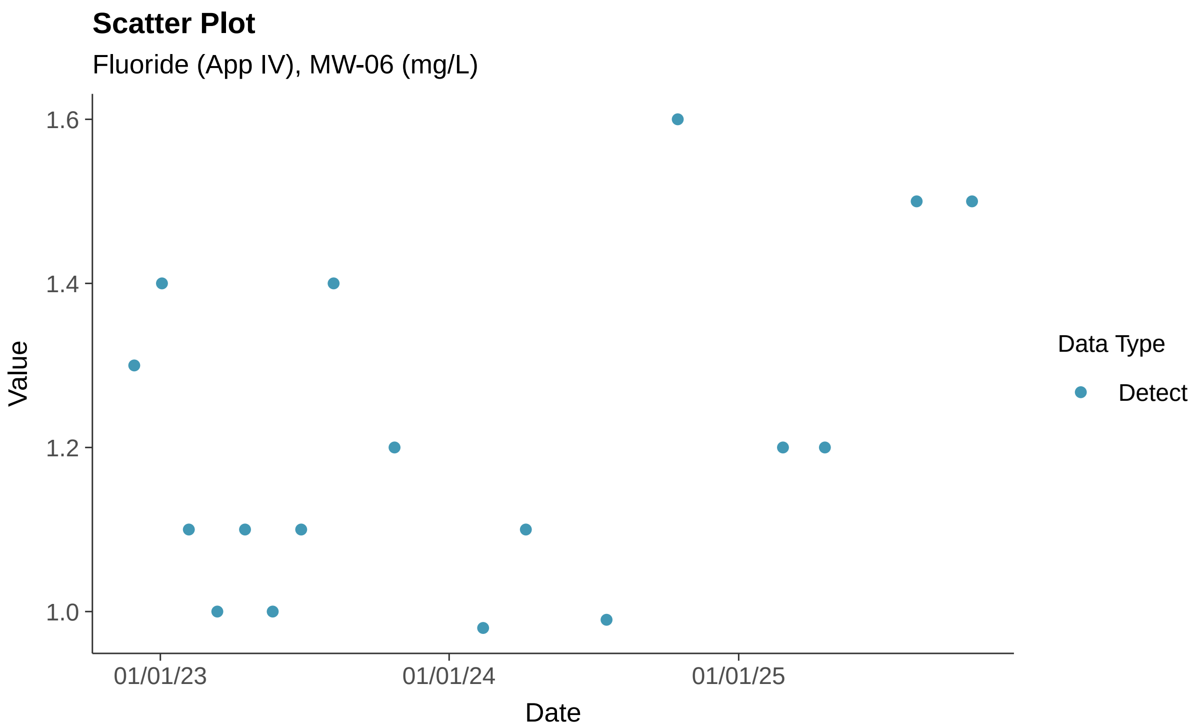


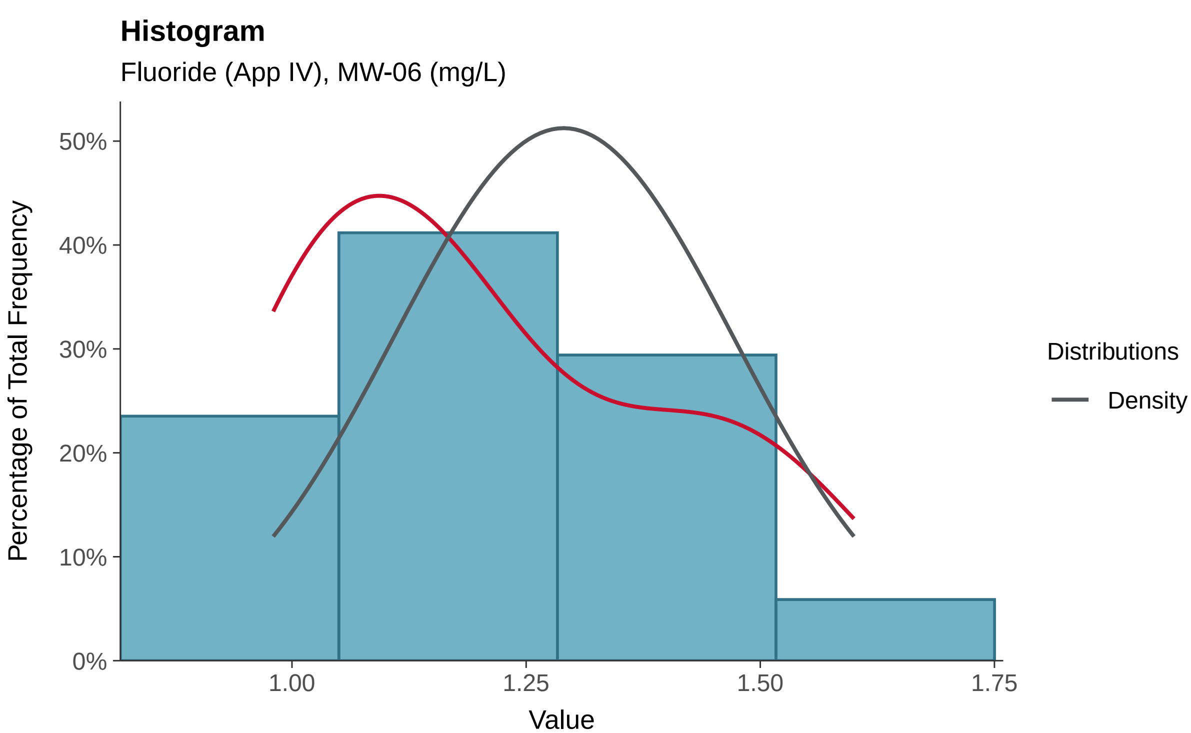
Trend Regression: Piecewise Linear-Linear-Linear
Cobalt, MW-06 (mg/L)



Appendix IV: Fluoride (App IV), MW-06

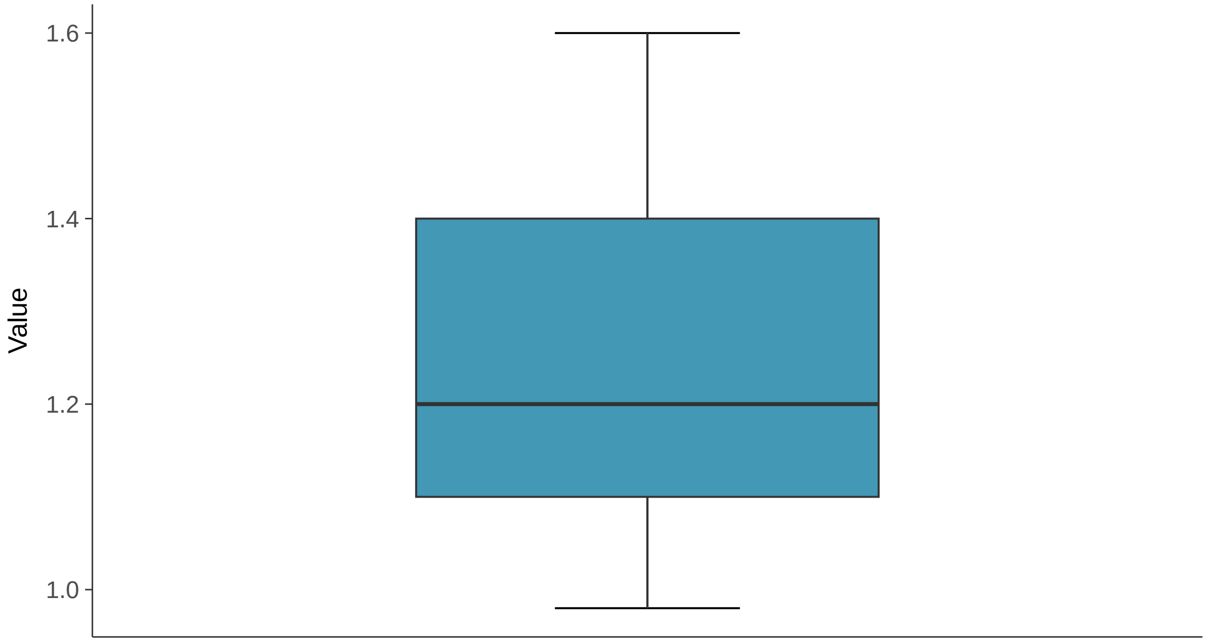
ID: 16_1_4_113





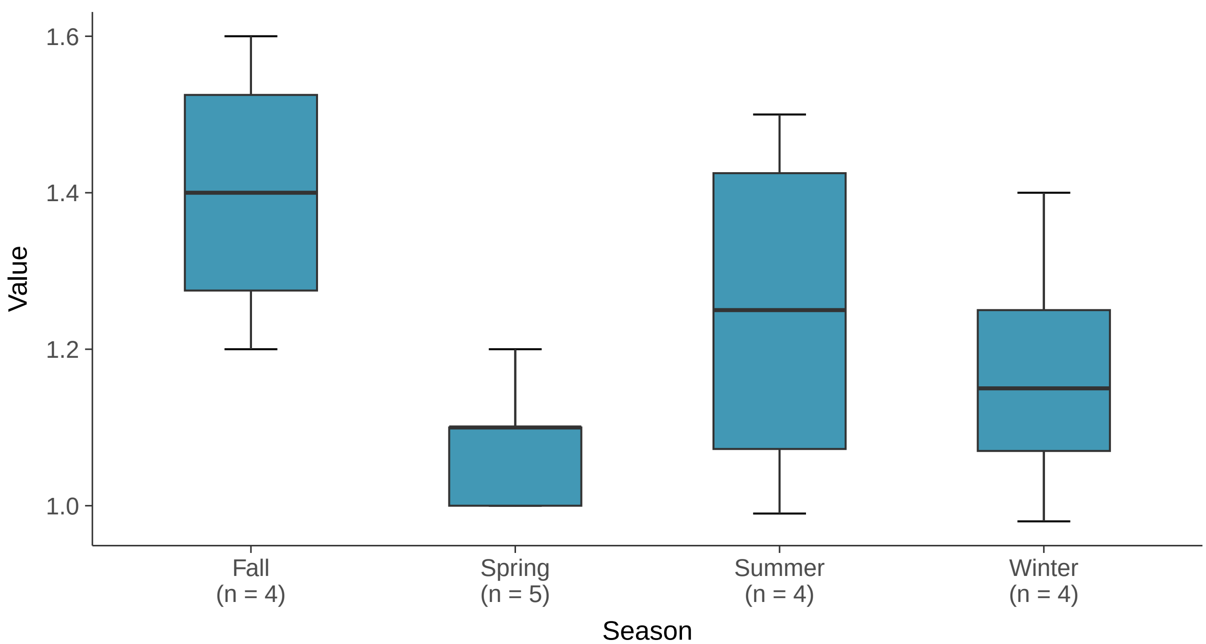
Boxplot

Fluoride (App IV), MW-06 (mg/L)



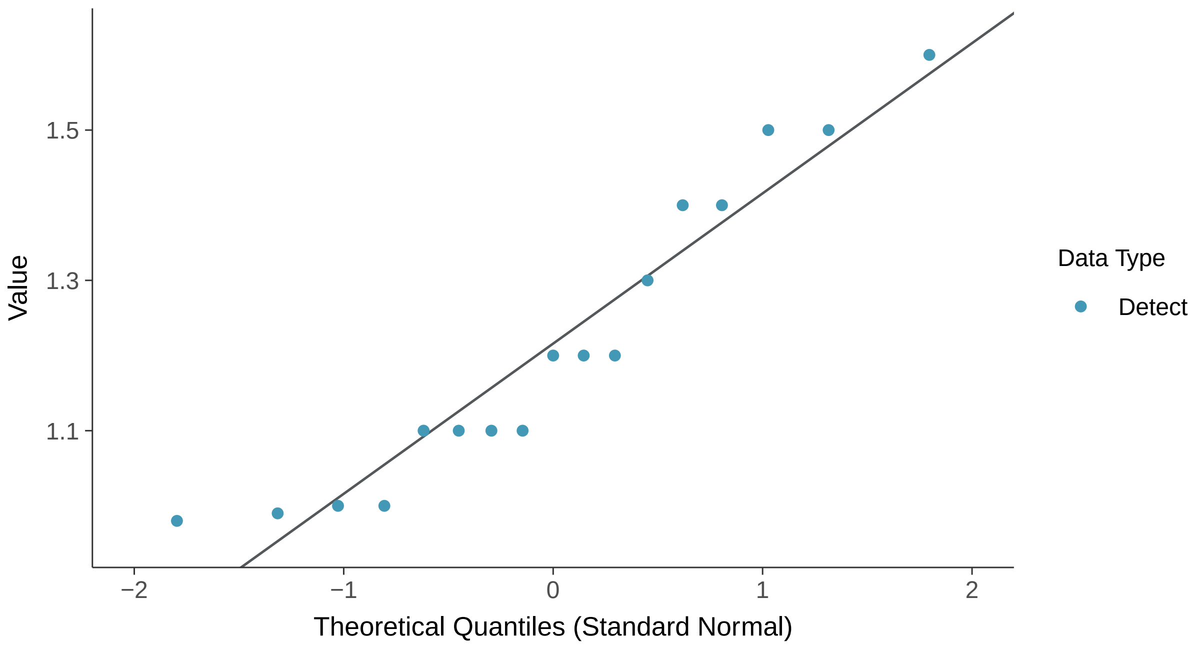
Boxplot by Season

Fluoride (App IV), MW-06 (mg/L)



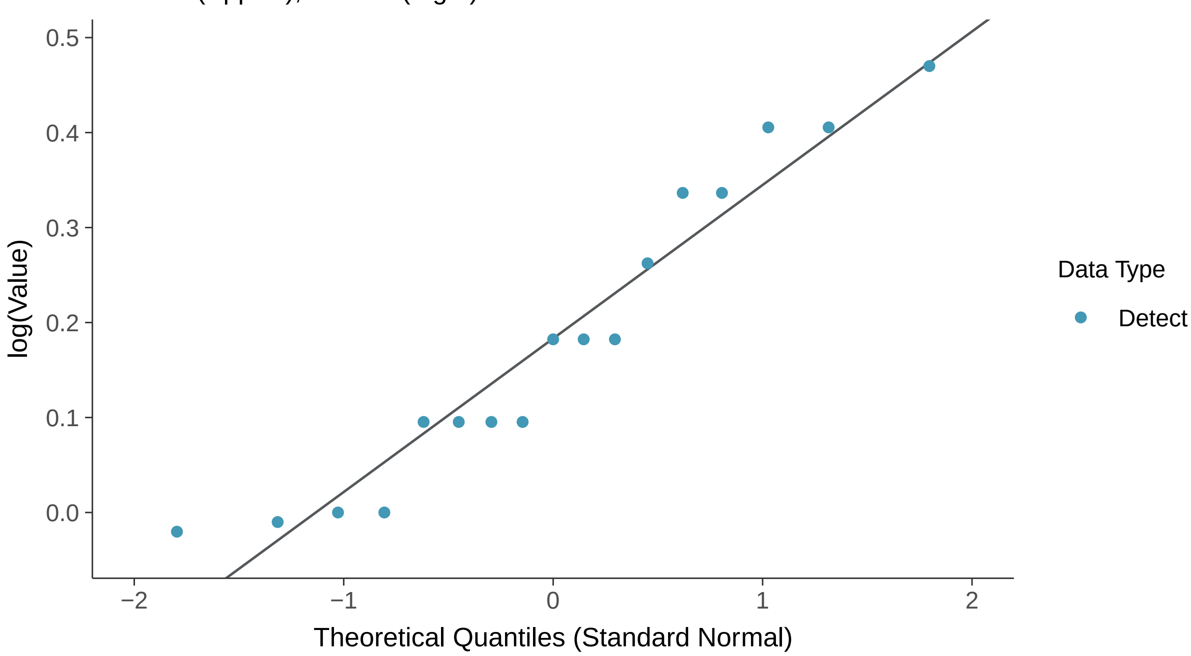
Normal Q-Q plot

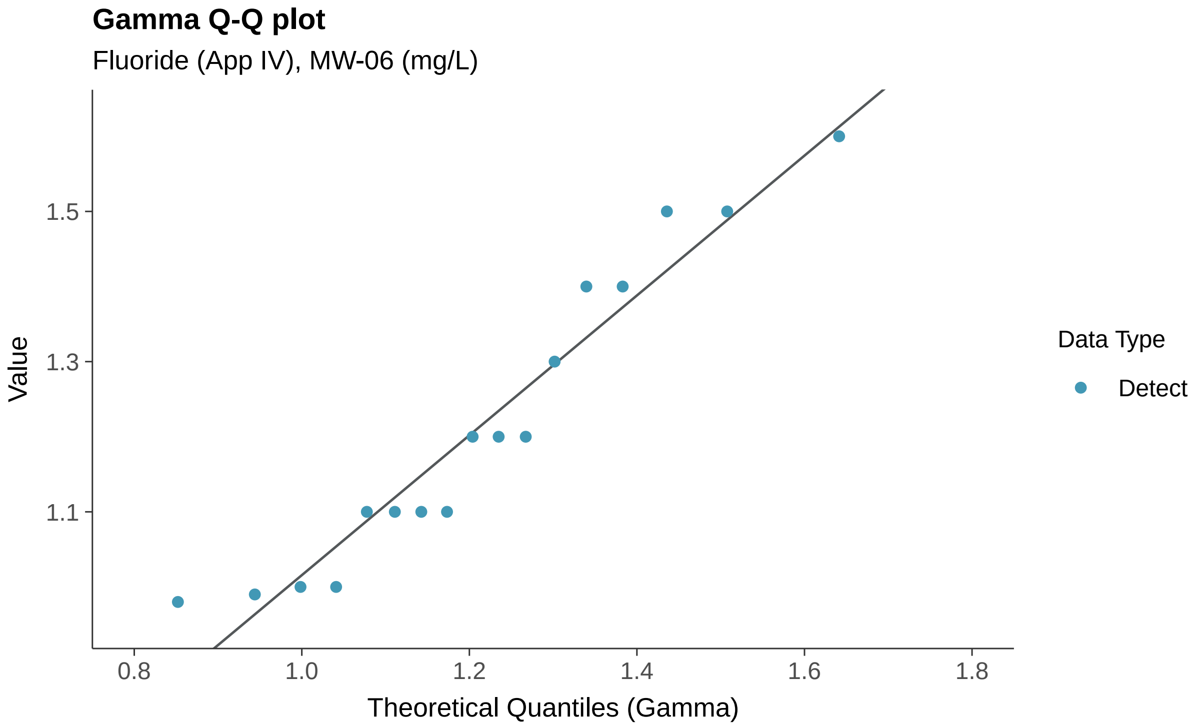
Fluoride (App IV), MW-06 (mg/L)

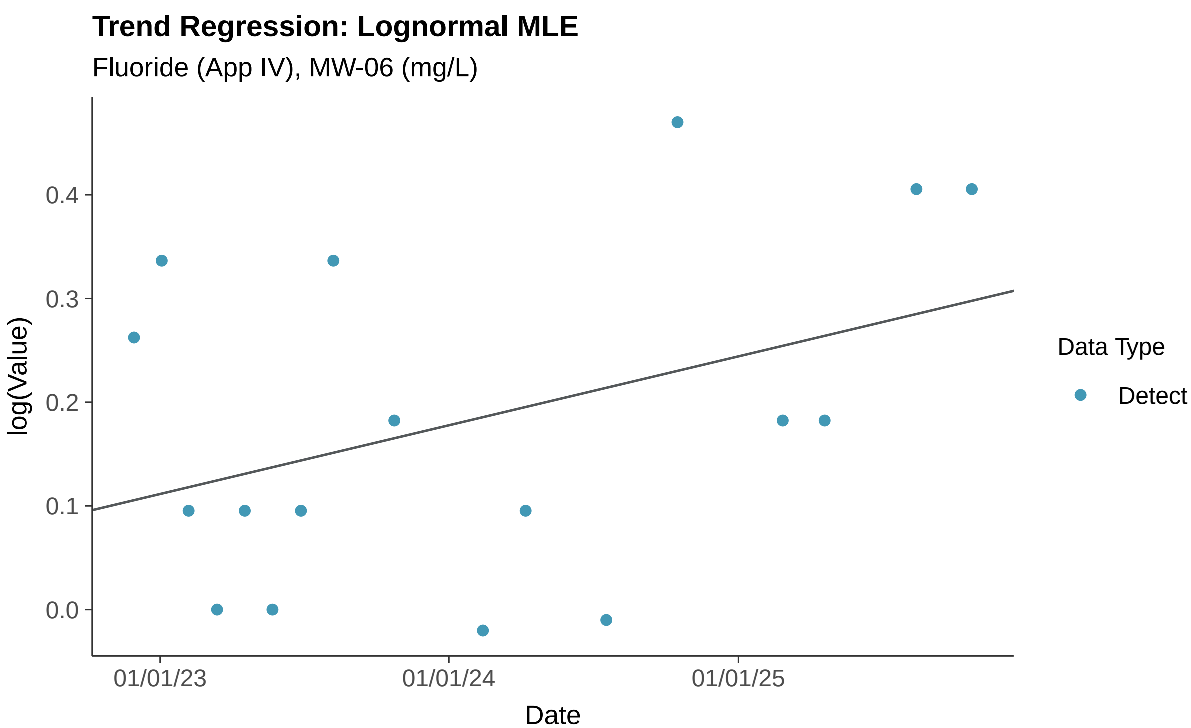


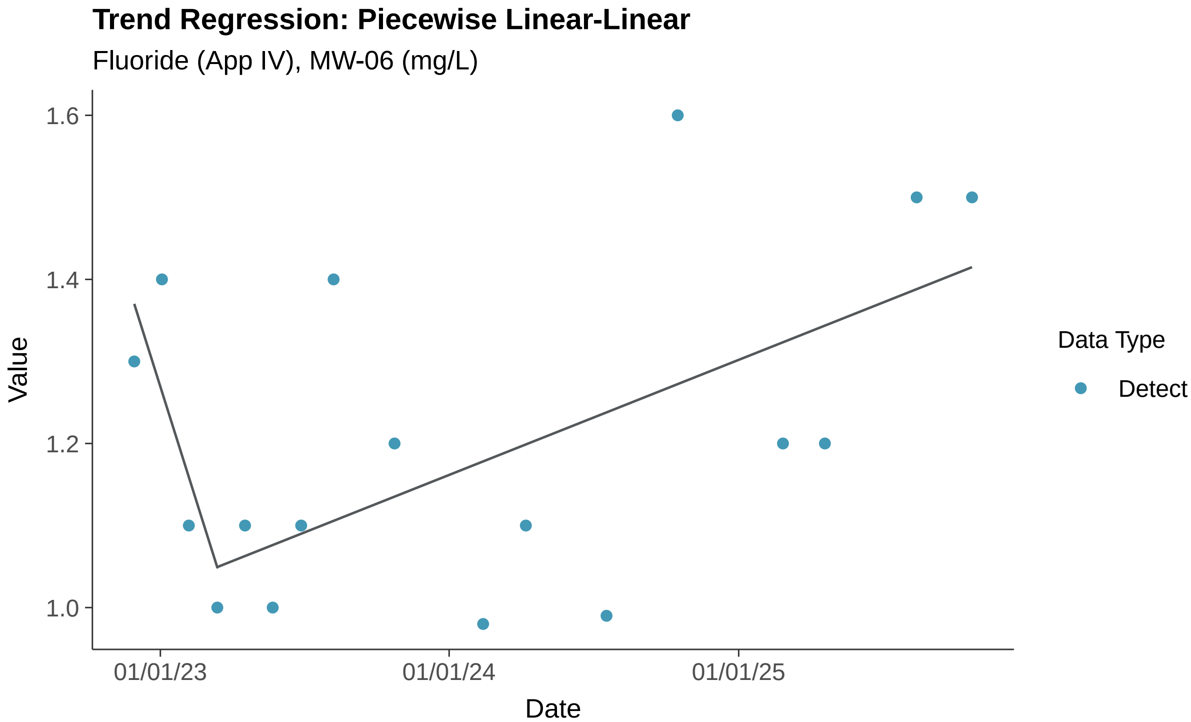
Lognormal Q-Q plot

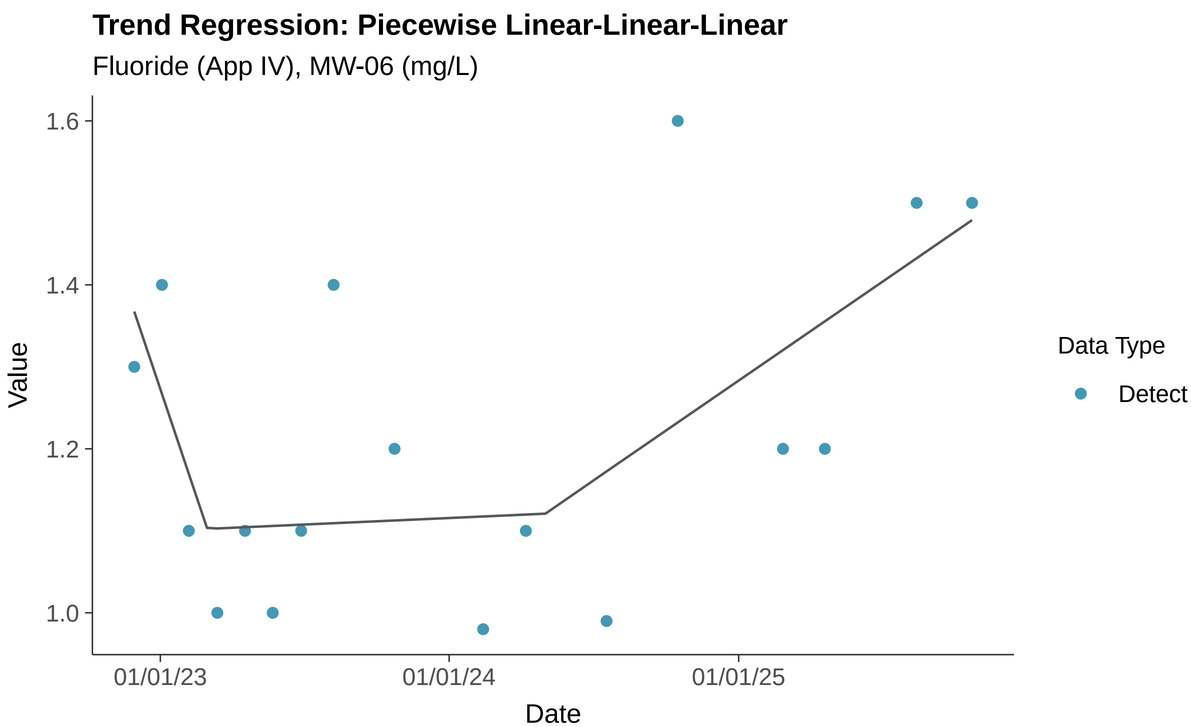
Fluoride (App IV), MW-06 (mg/L)




Gamma Q-Q plot
Fluoride (App IV), MW-06 (mg/L)
Value
1.5
1.3
1.1
0.8
1.0
1.2
1.4
1.6
1.8
Theoretical Quantiles (Gamma)
Data Type
Detect

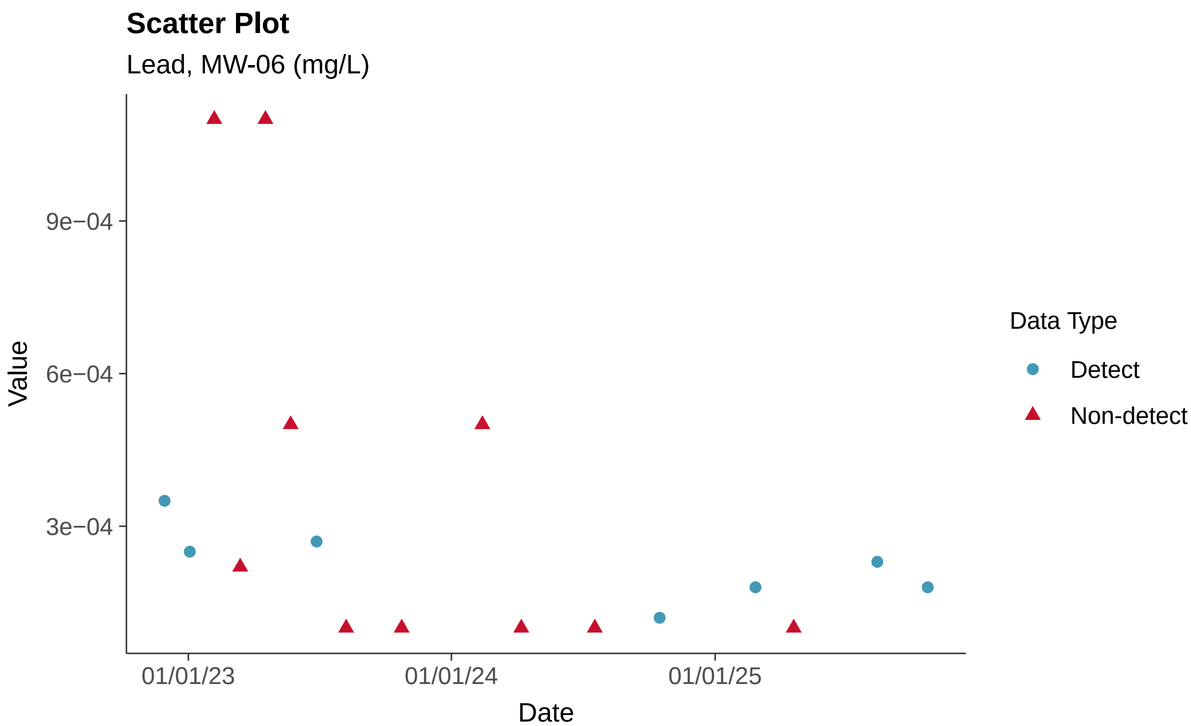

Trend Regression: Lognormal MLE
Fluoride (App IV), MW-06 (mg/L)
log(Value)
0.4
0.3
0.2
0.1
0.0
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

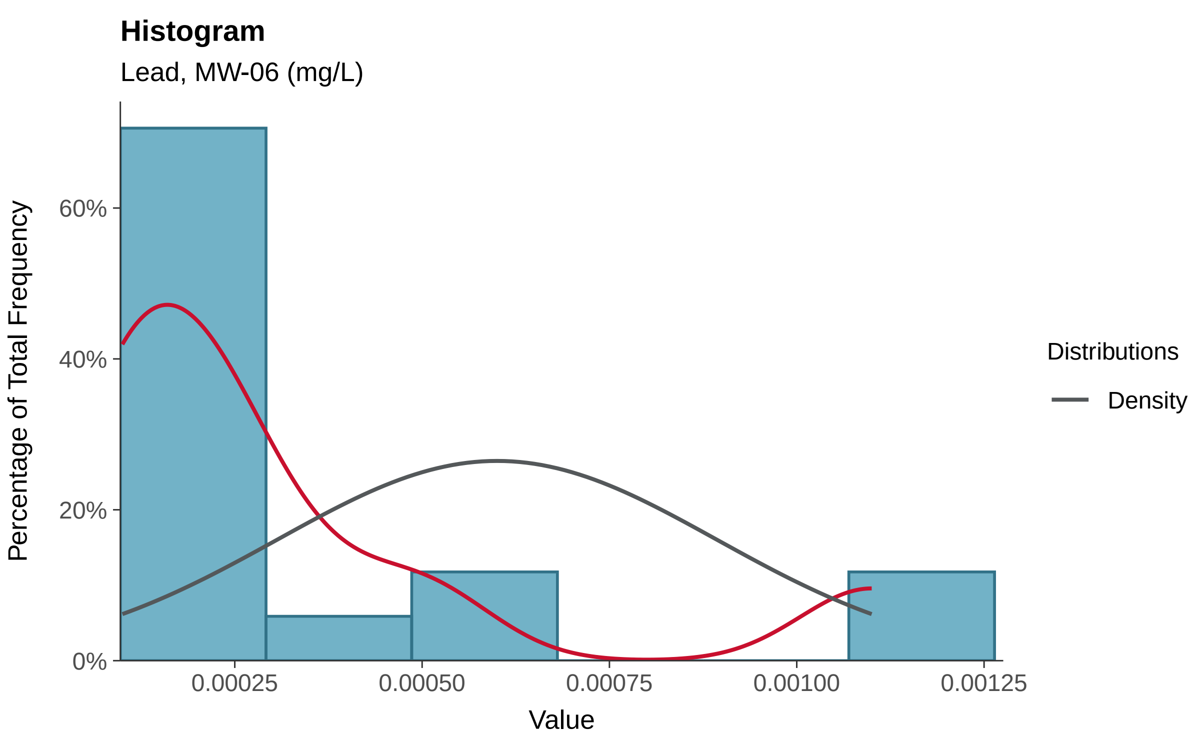

Trend Regression: Piecewise Linear-Linear
Fluoride (App IV), MW-06 (mg/L)
1.6
1.4
1.2
1.0
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
Fluoride (App IV), MW-06 (mg/L)
1.6
1.4
1.2
1.0
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Appendix IV: Lead, MW-06

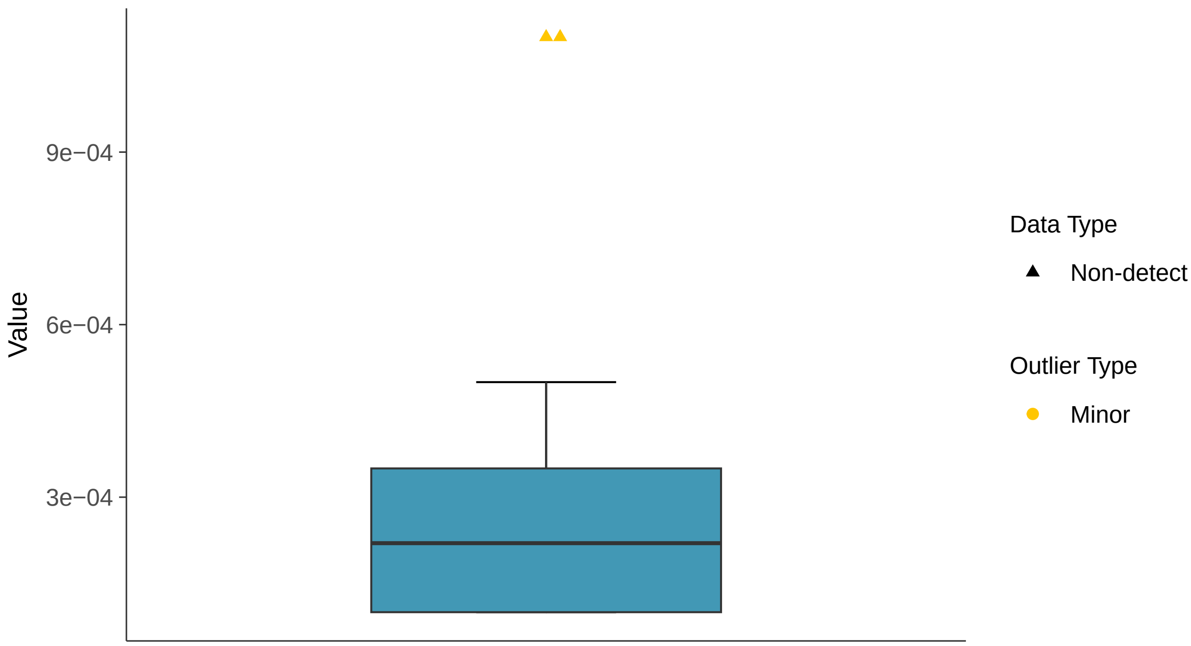
ID: 16_1_4_115





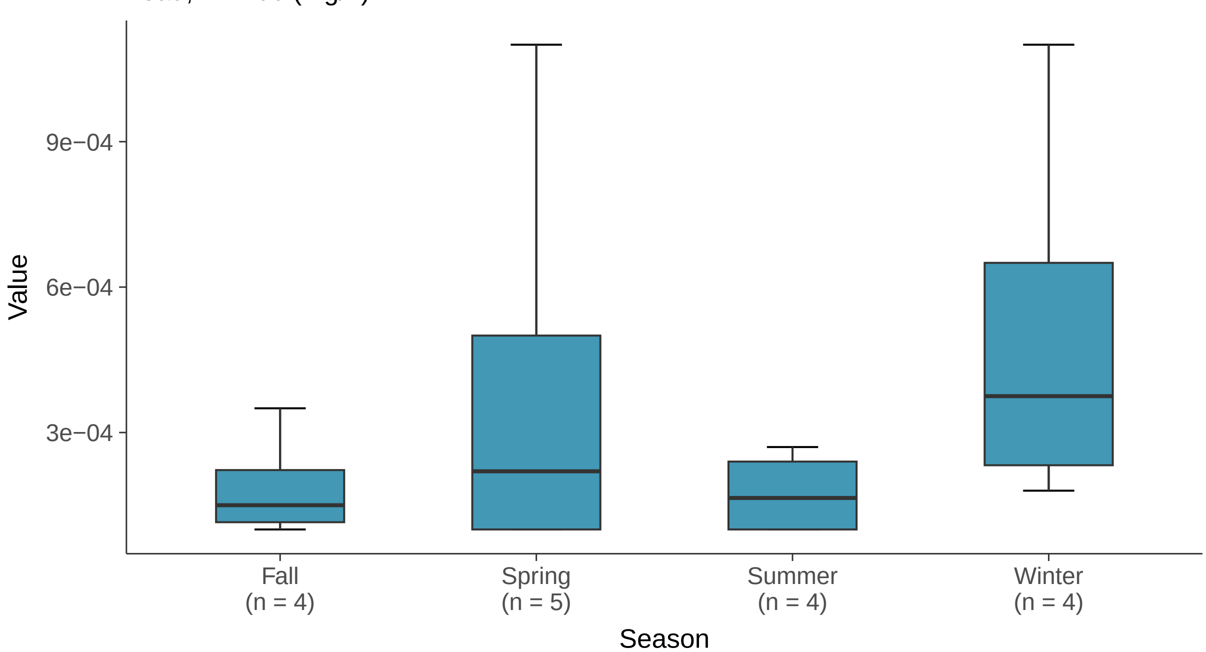
Boxplot

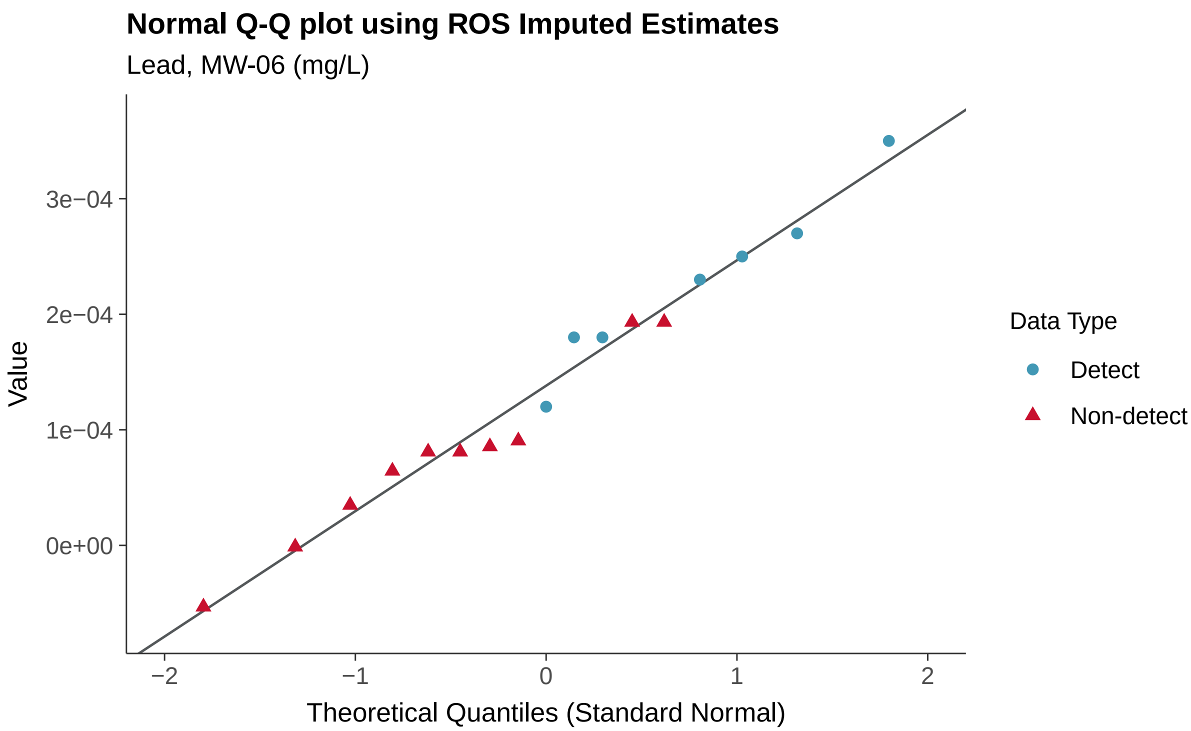
Lead, MW-06 (mg/L)

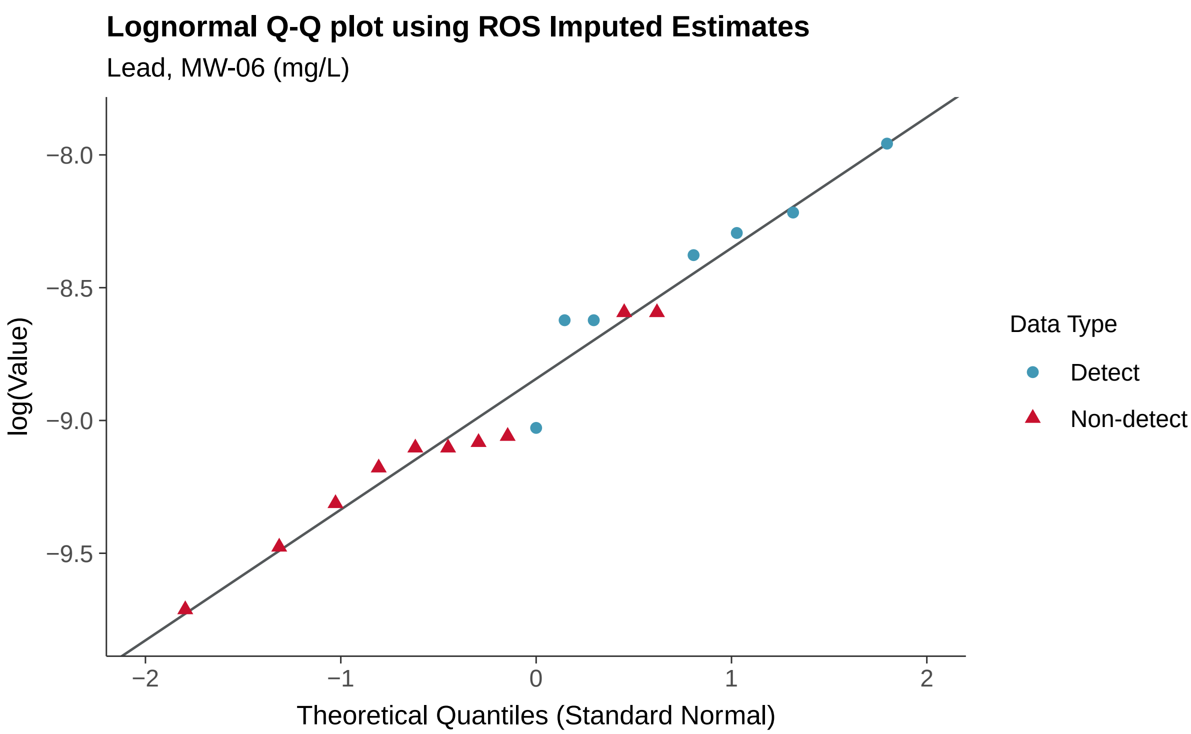


Boxplot by Season

Lead, MW-06 (mg/L)

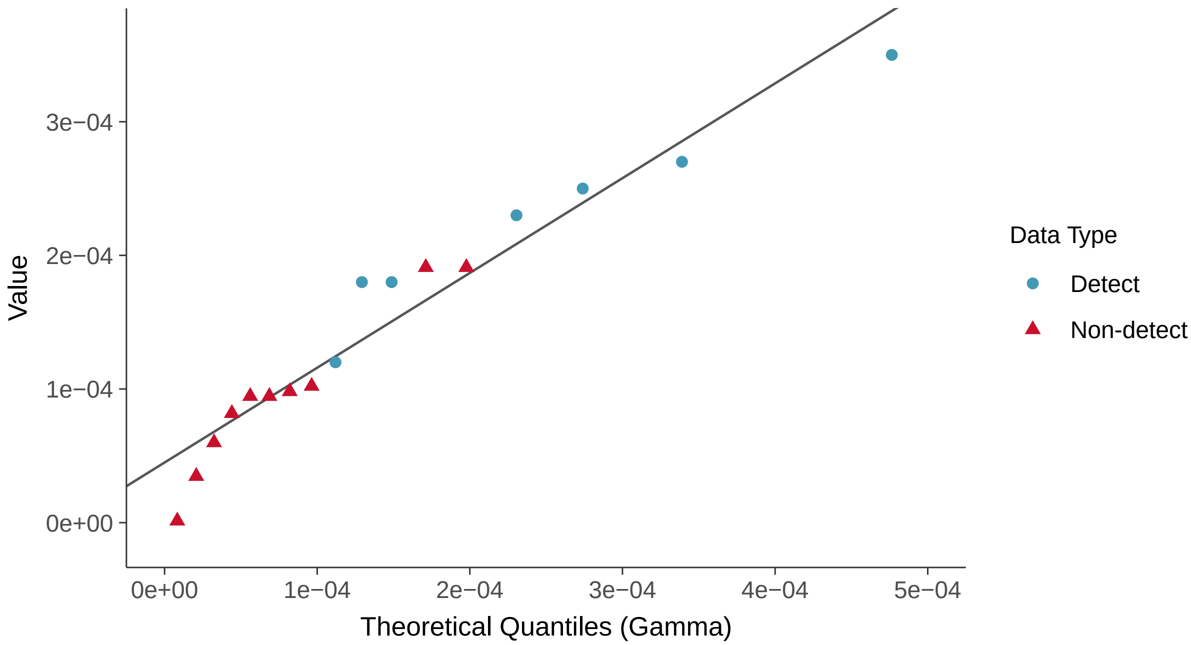



Normal Q-Q plot using ROS Imputed Estimates
Lead, MW-06 (mg/L)
Value
3e−04
2e−04
1e−04
0e+00
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Lognormal Q-Q plot using ROS Imputed Estimates
Lead, MW-06 (mg/L)
log(Value)
−8.0
−8.5
−9.0
−9.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

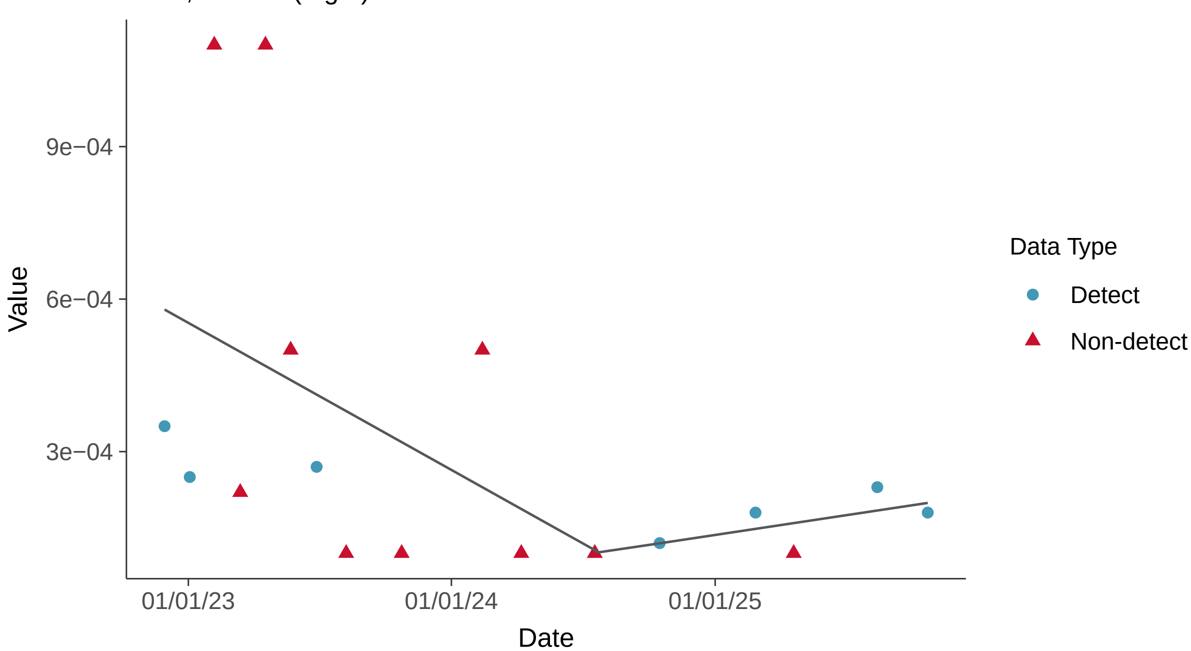
Gamma Q-Q plot using ROS Imputed Estimates

Lead, MW-06 (mg/L)



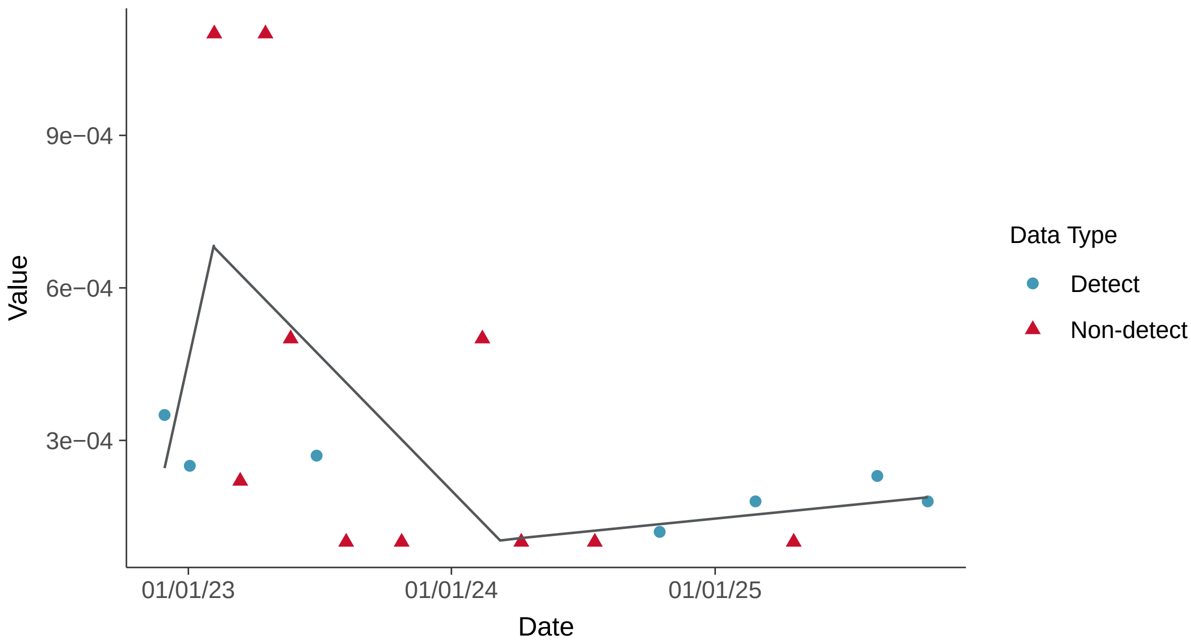
Trend Regression: Piecewise Linear-Linear

Lead, MW-06 (mg/L)



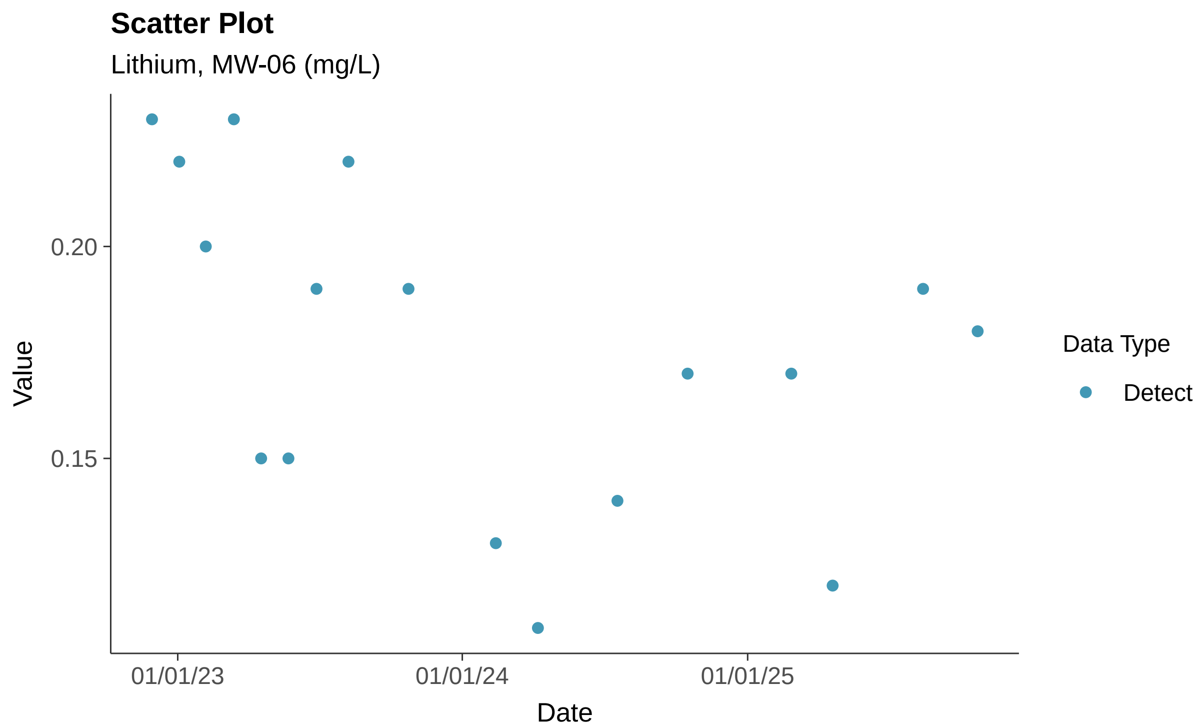
Trend Regression: Piecewise Linear-Linear-Linear

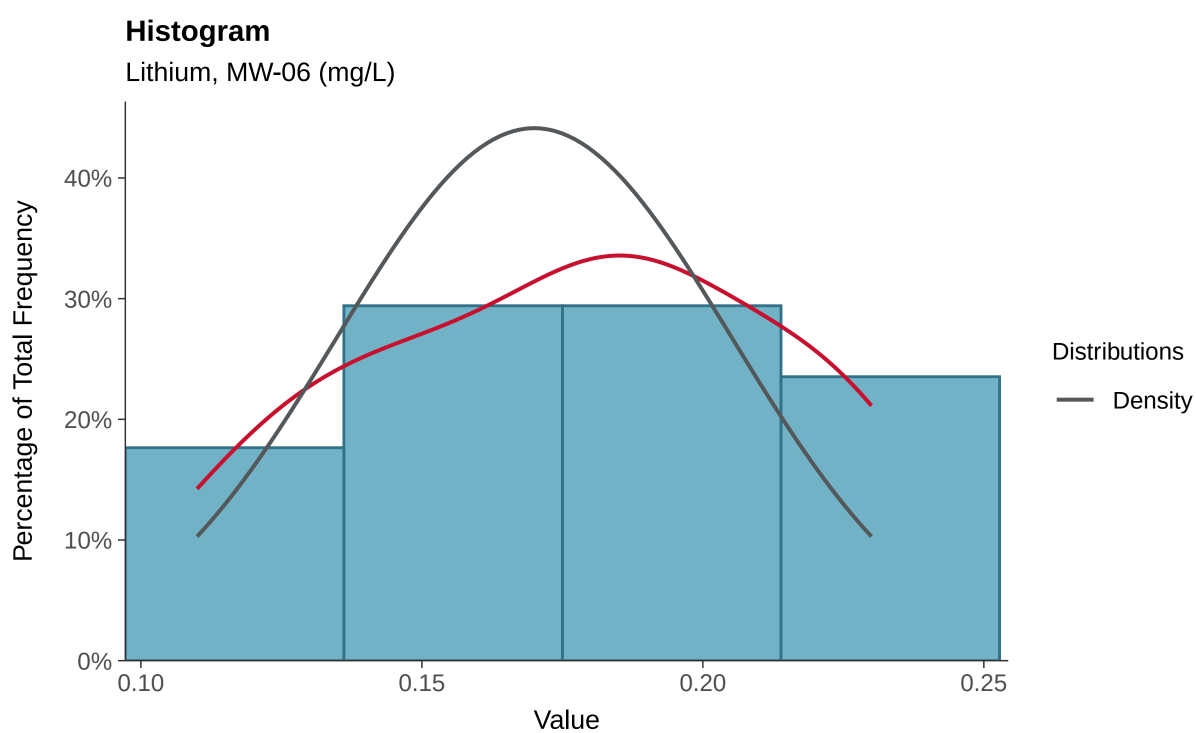
Lead, MW-06 (mg/L)



Appendix IV: Lithium, MW-06

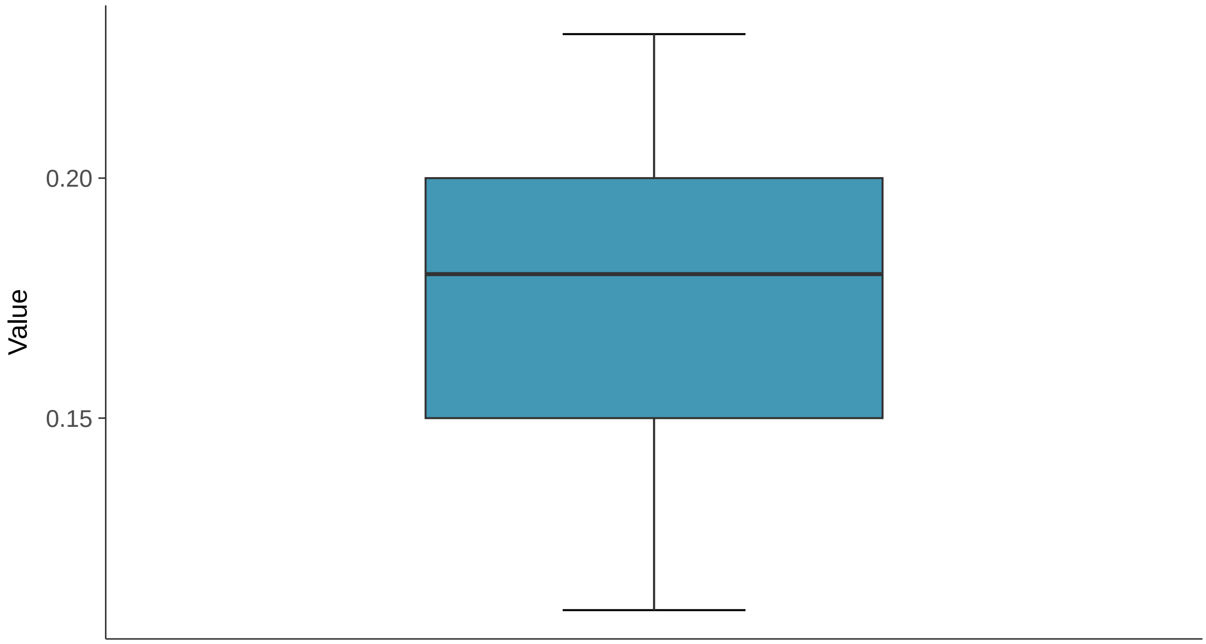
ID: 16_1_4_116





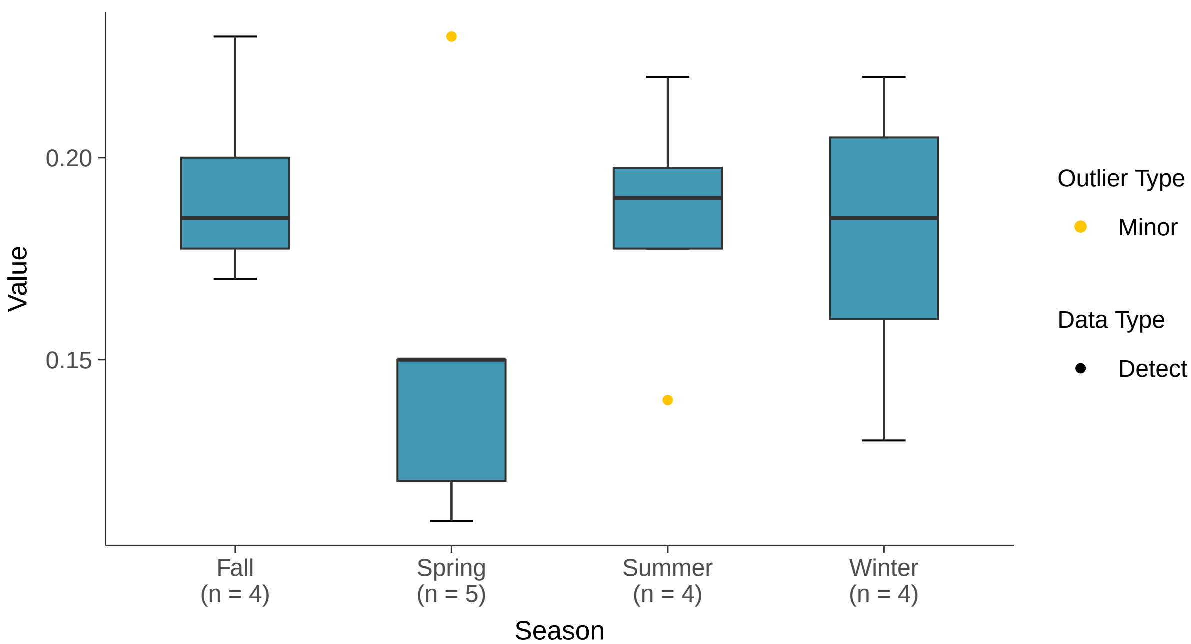
Boxplot

Lithium, MW-06 (mg/L)



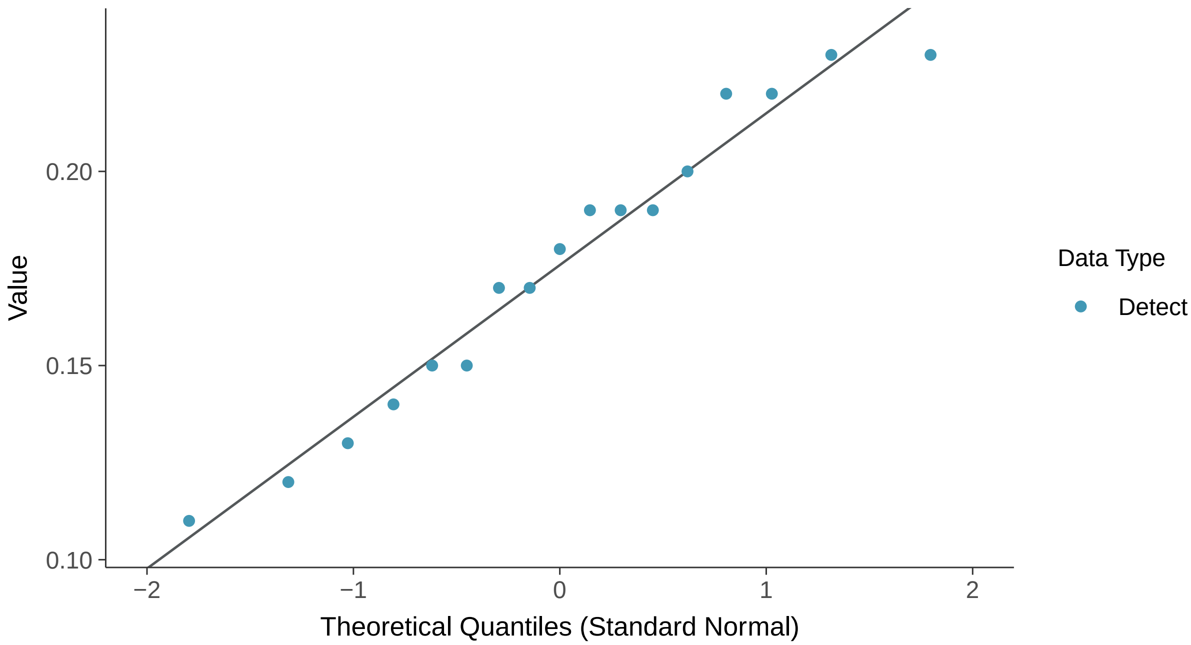
Boxplot by Season

Lithium, MW-06 (mg/L)



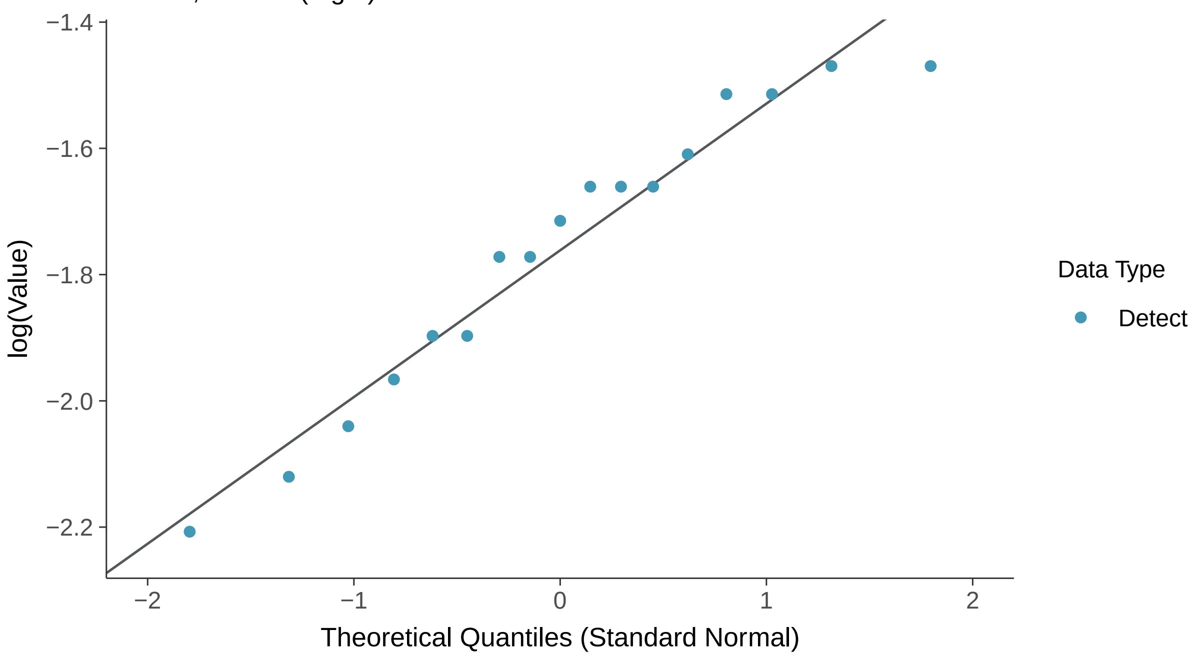
Normal Q-Q plot

Lithium, MW-06 (mg/L)



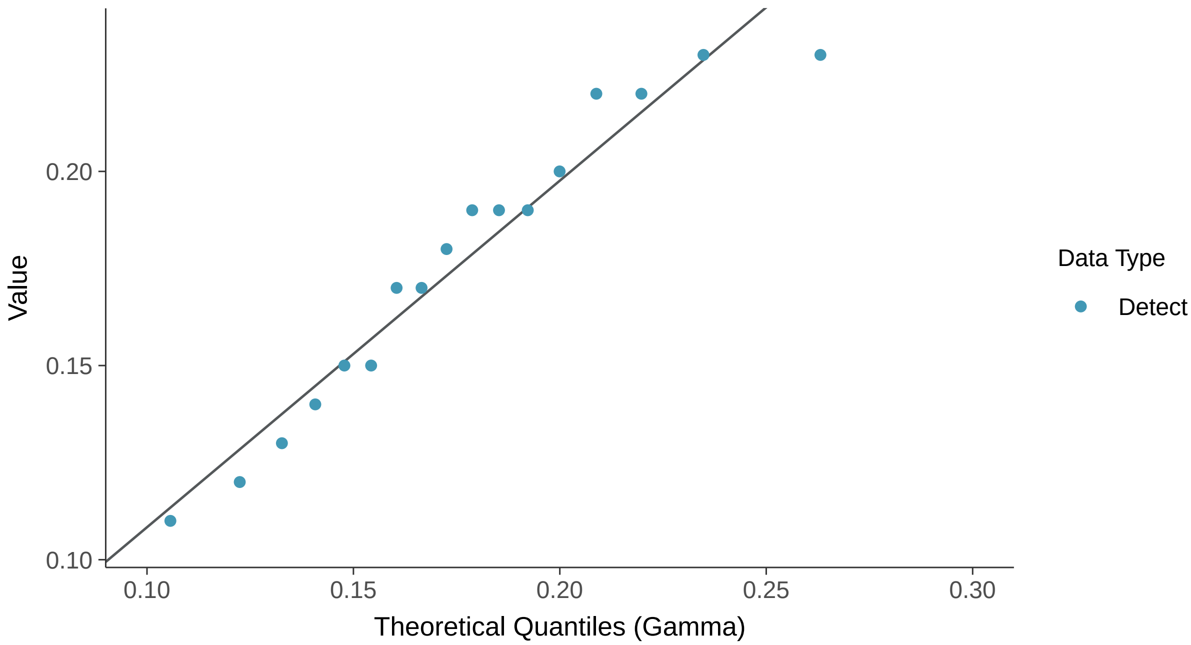
Lognormal Q-Q plot

Lithium, MW-06 (mg/L)



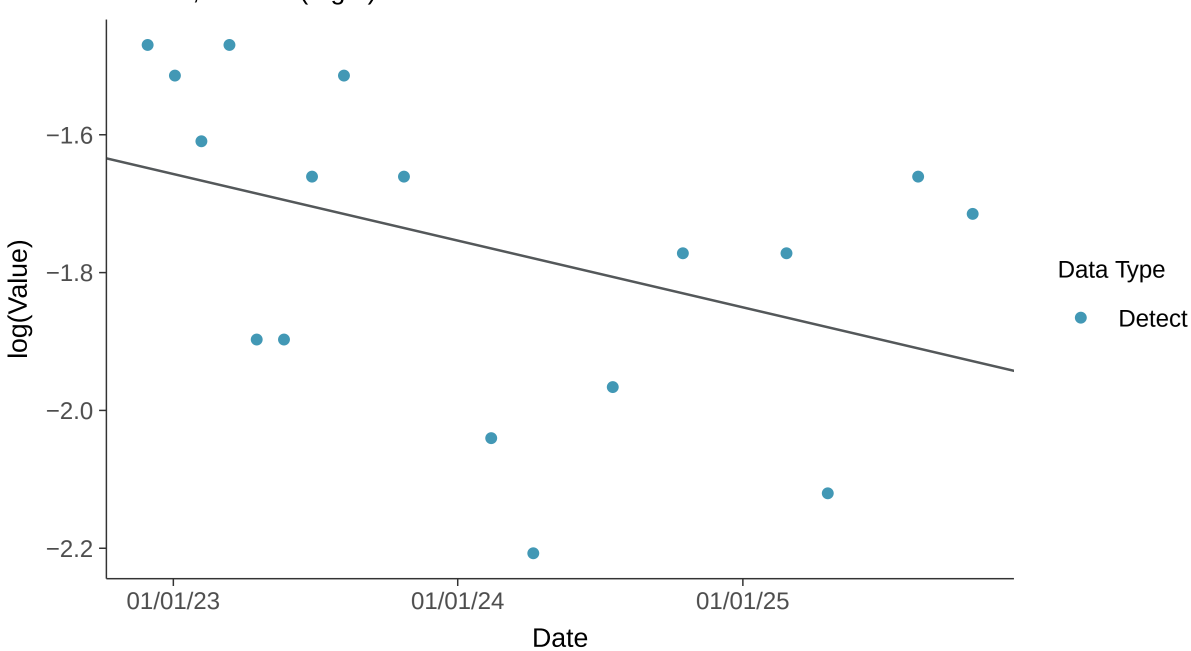
Gamma Q-Q plot

Lithium, MW-06 (mg/L)



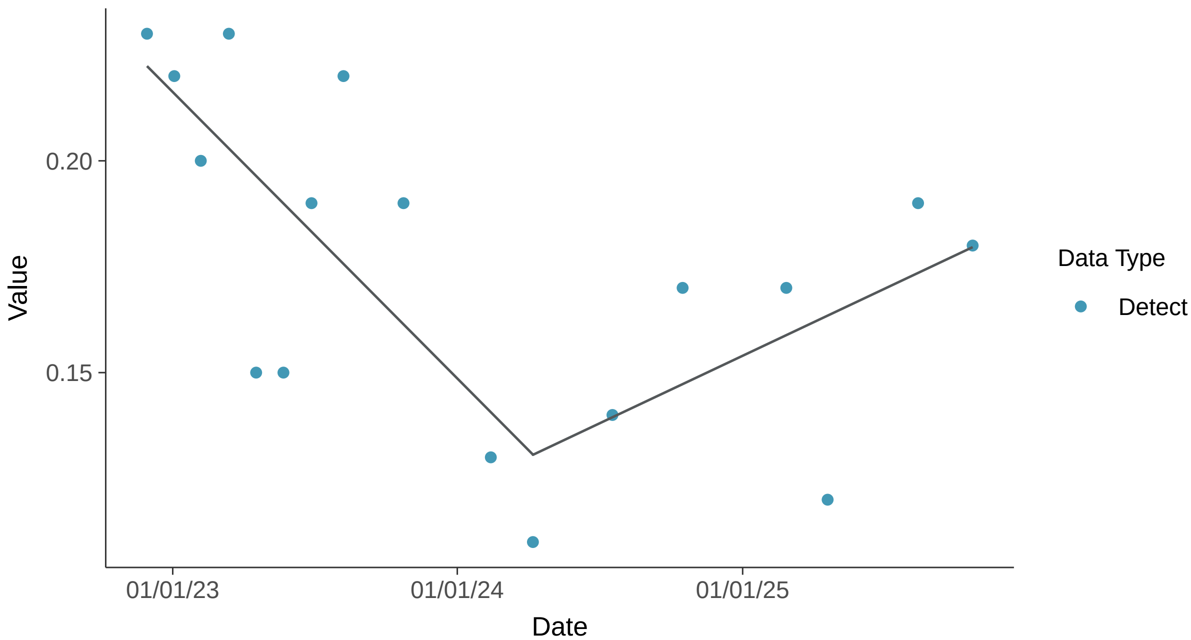
Trend Regression: Lognormal MLE

Lithium, MW-06 (mg/L)



Trend Regression: Piecewise Linear-Linear

Lithium, MW-06 (mg/L)

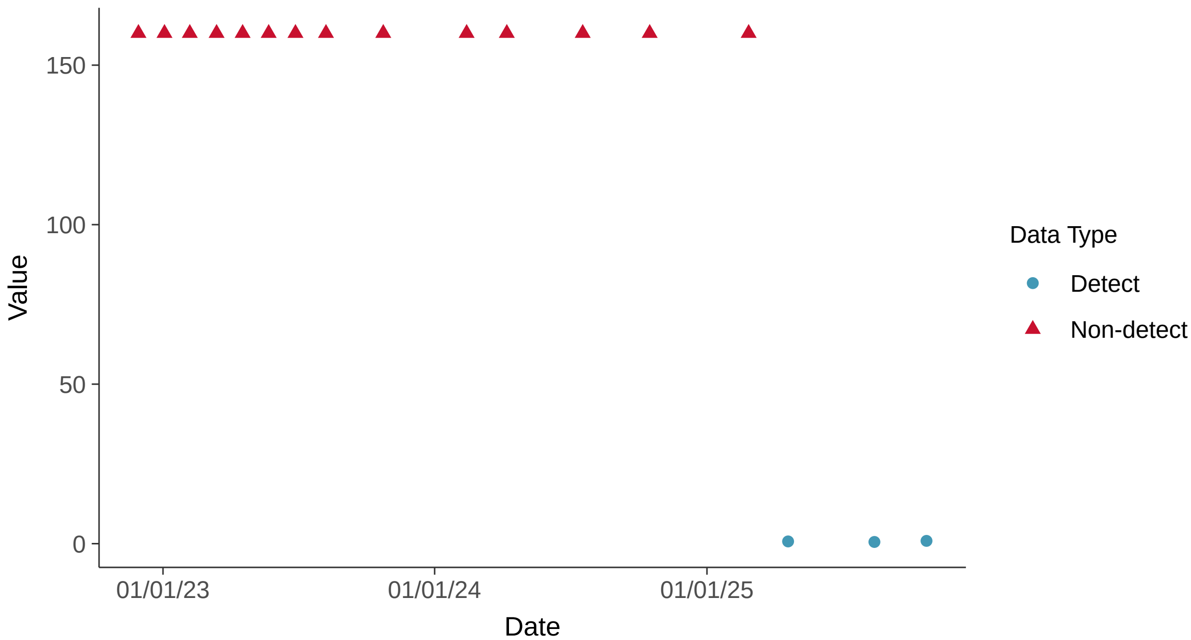


Appendix IV: Mercury, MW-06

ID: 16_1_4_117

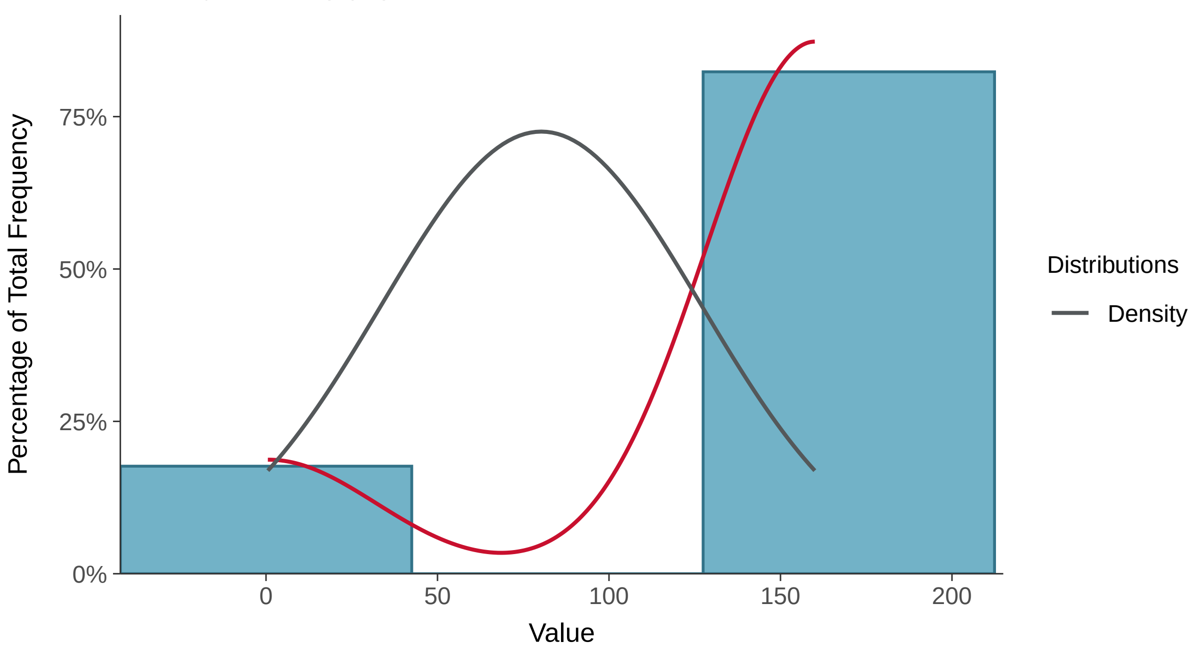
Scatter Plot

Mercury, MW-06 (ng/L)



Histogram

Mercury, MW-06 (ng/L)

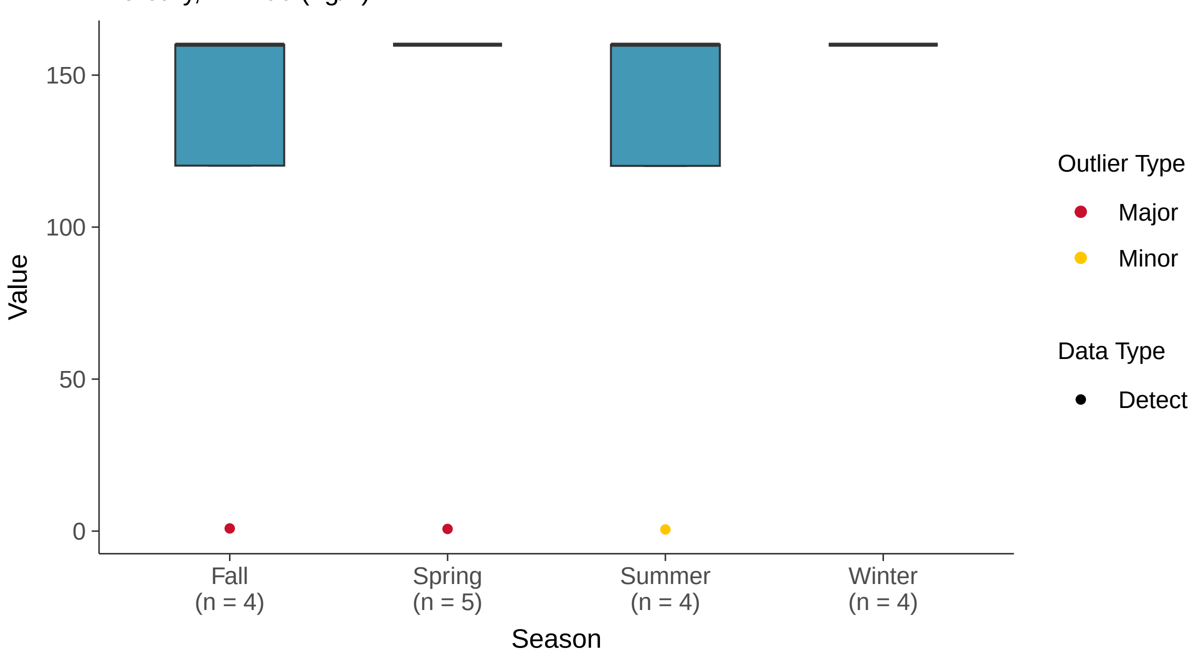


Boxplot

Mercury, MW-06 (ng/L)

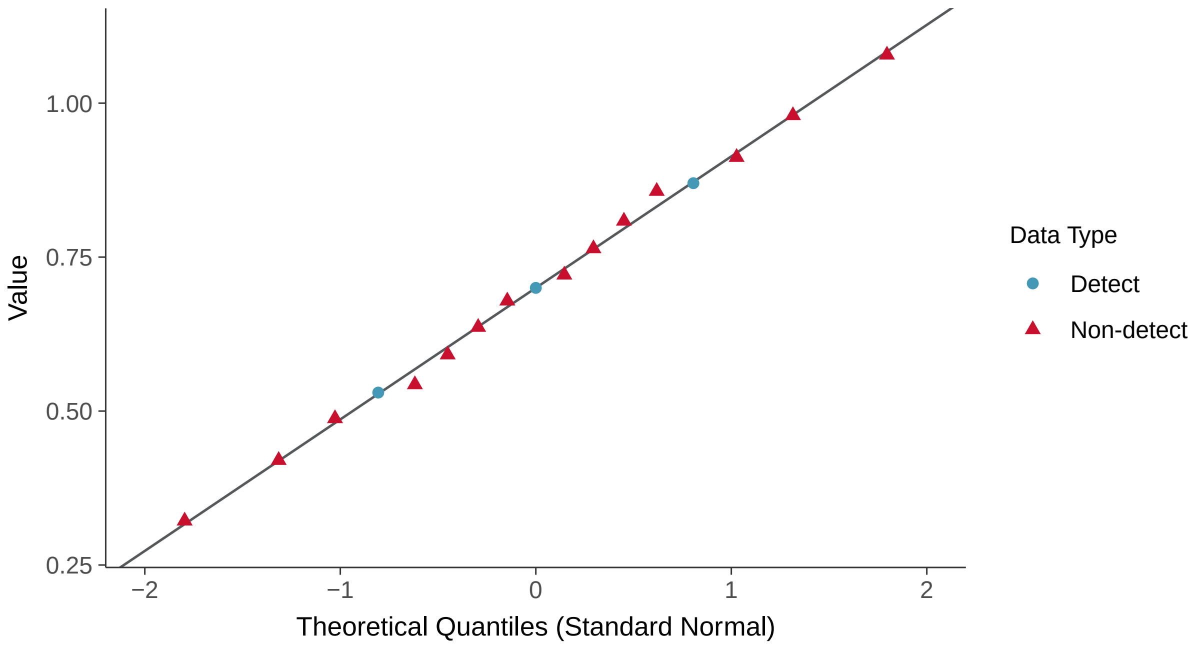
Boxplot by Season

Mercury, MW-06 (ng/L)



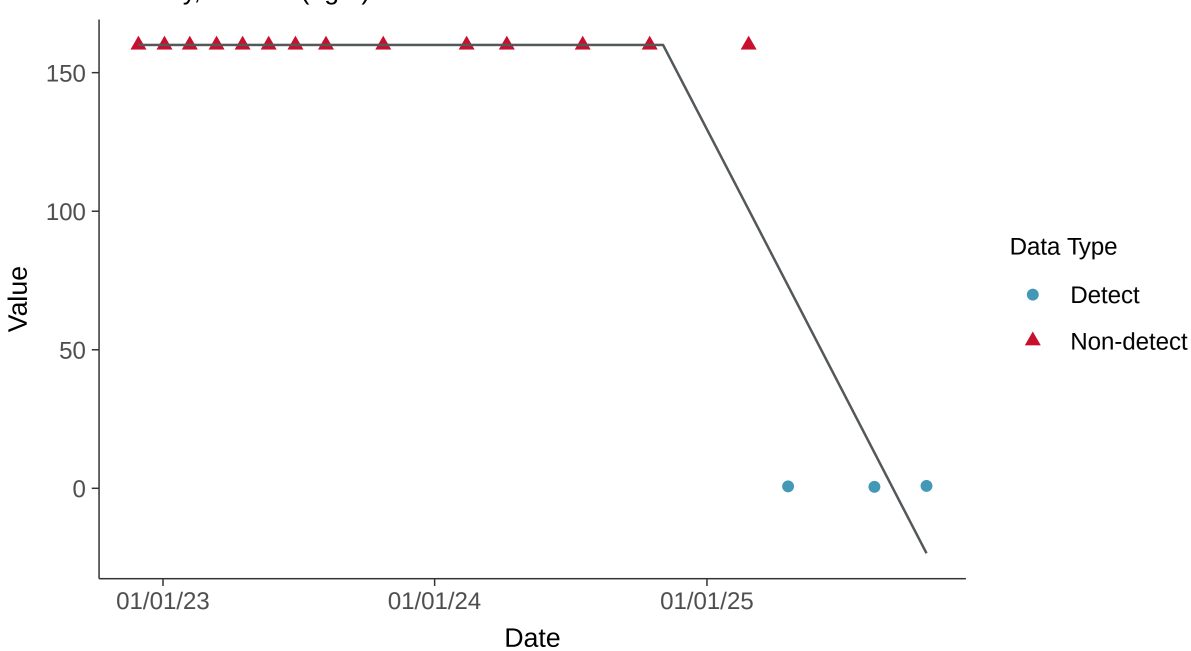
Normal Q-Q plot using ROS Imputed Estimates

Mercury, MW-06 (ng/L)



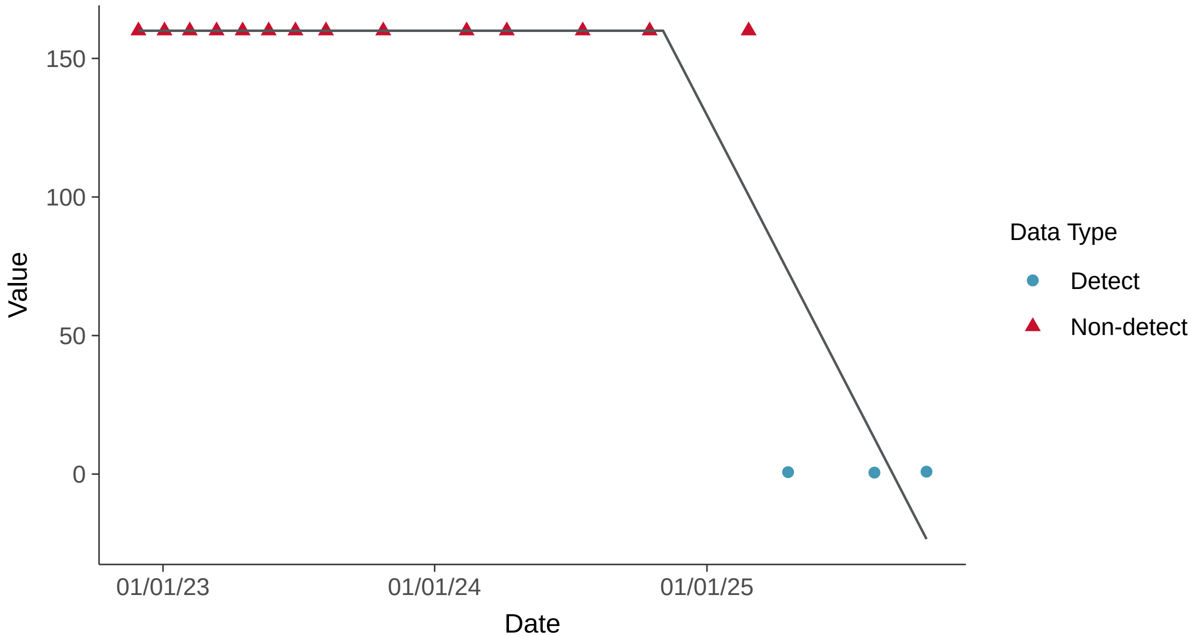
Trend Regression: Piecewise Linear-Linear

Mercury, MW-06 (ng/L)



Trend Regression: Piecewise Linear-Linear-Linear

Mercury, MW-06 (ng/L)

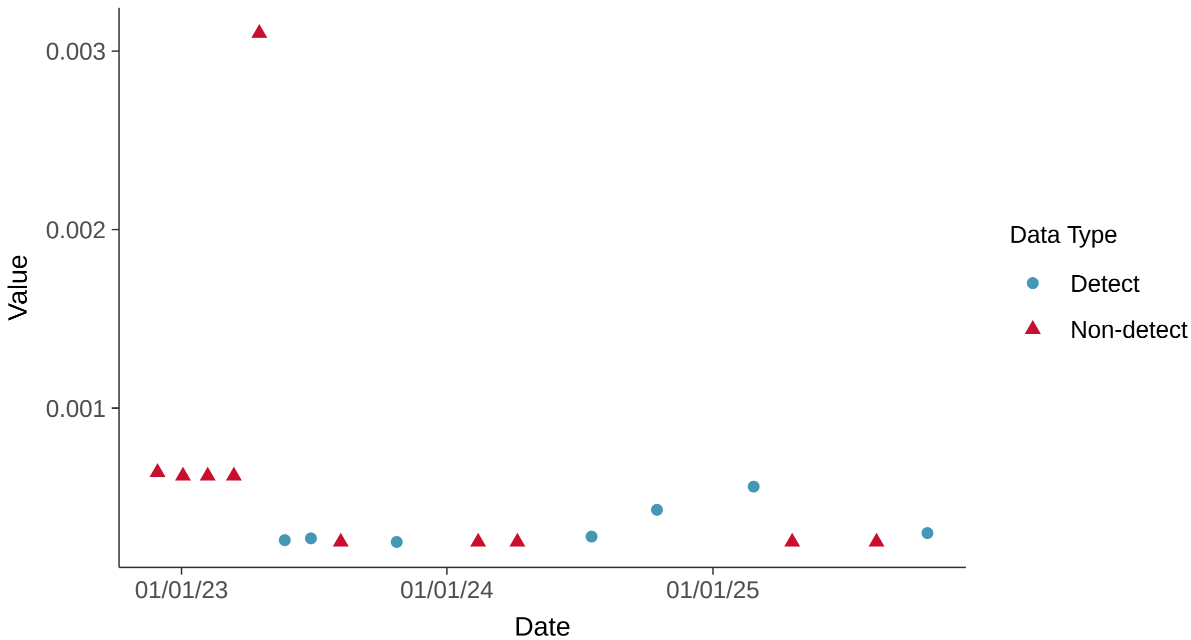


Appendix IV: Molybdenum, MW-06

ID: 16_1_4_118

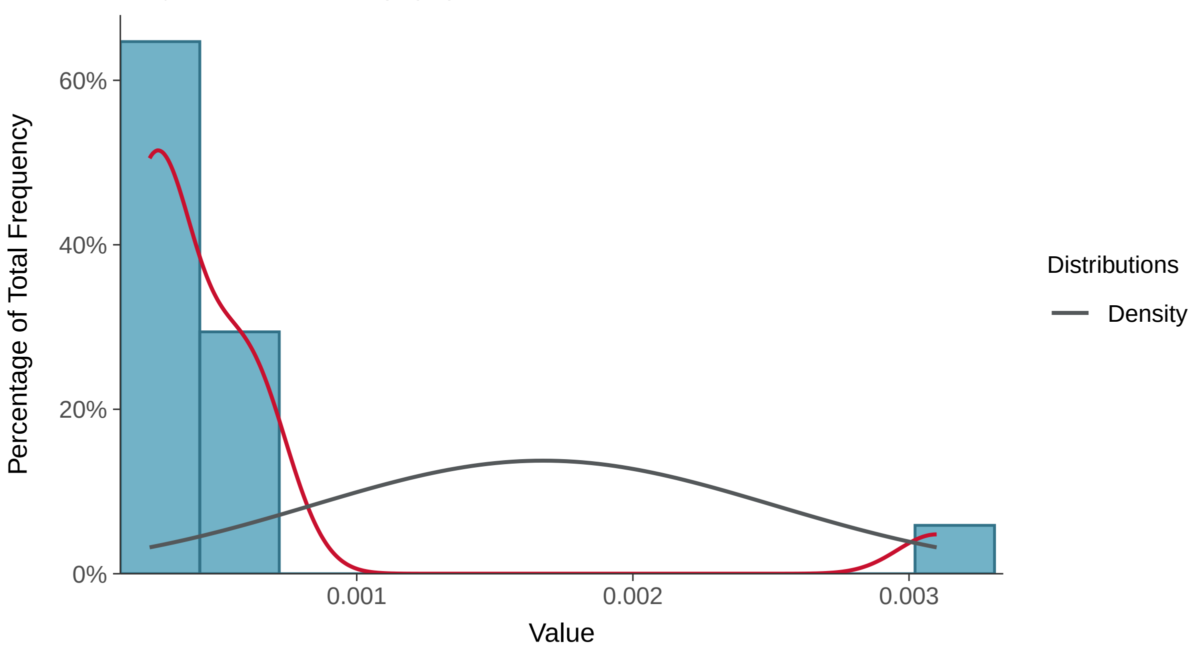
Scatter Plot

Molybdenum, MW-06 (mg/L)



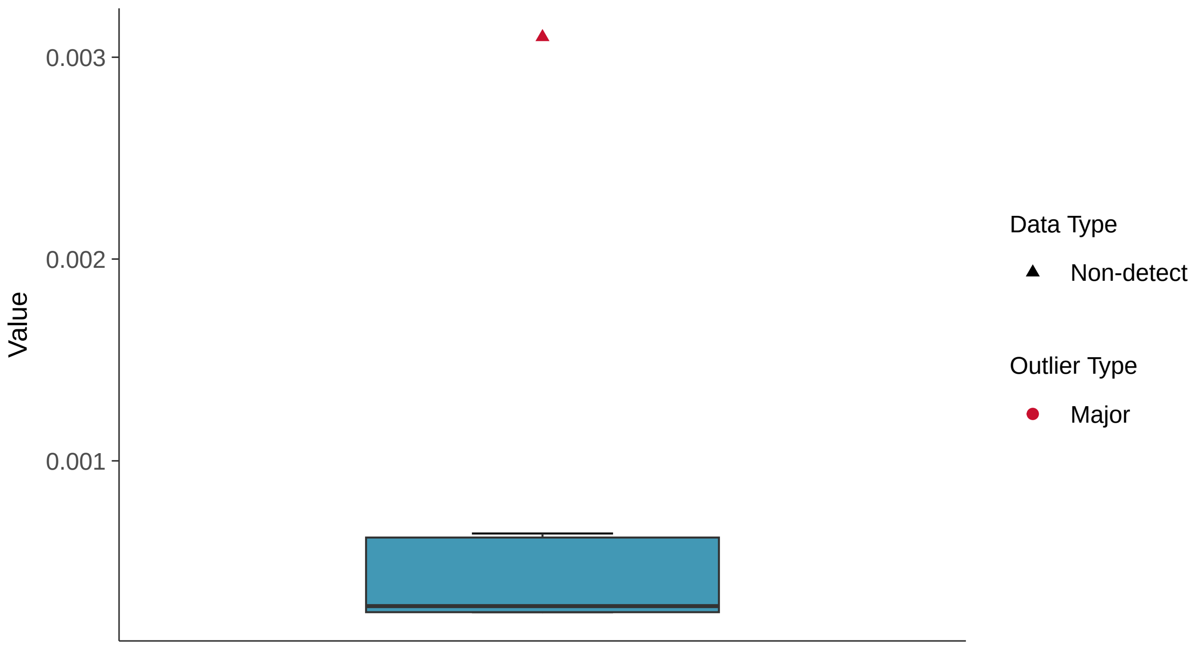
Histogram

Molybdenum, MW-06 (mg/L)



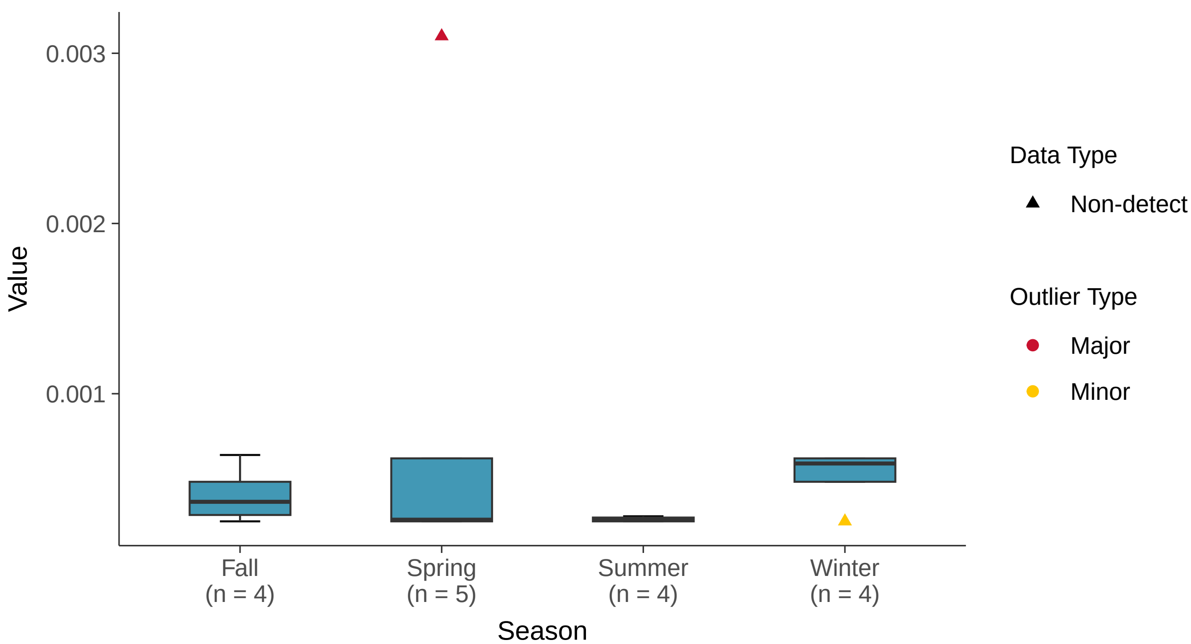
Boxplot

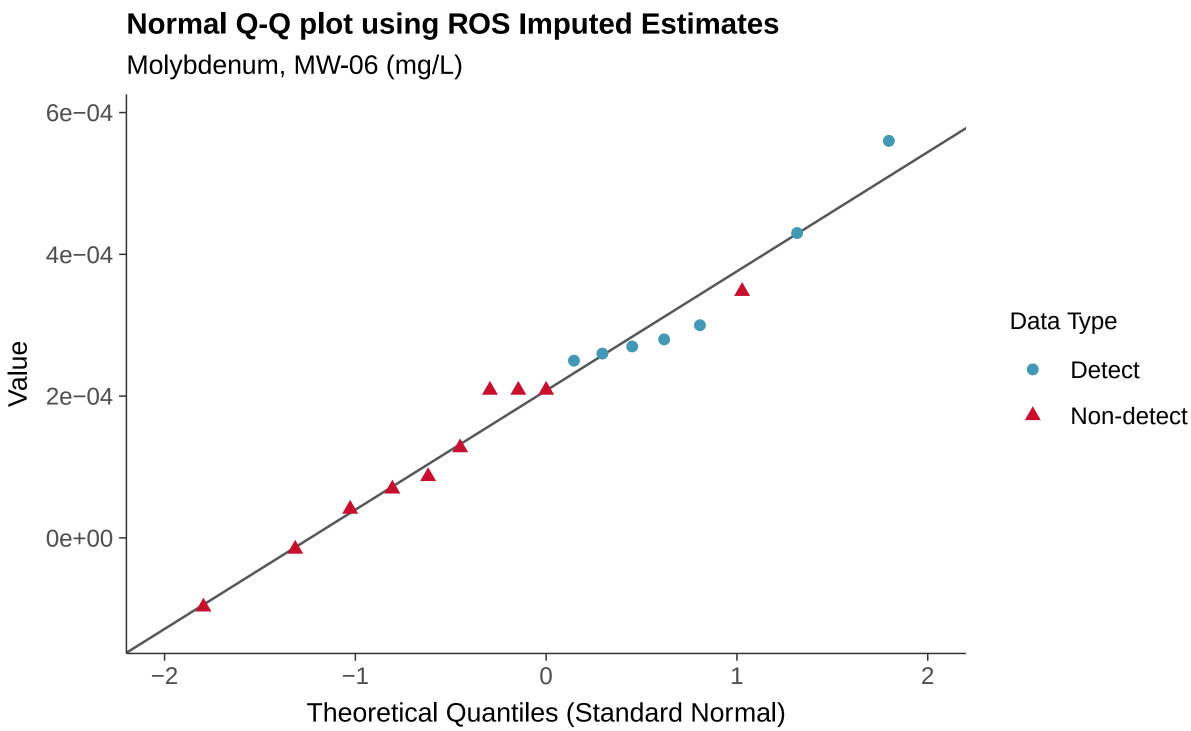
Molybdenum, MW-06 (mg/L)

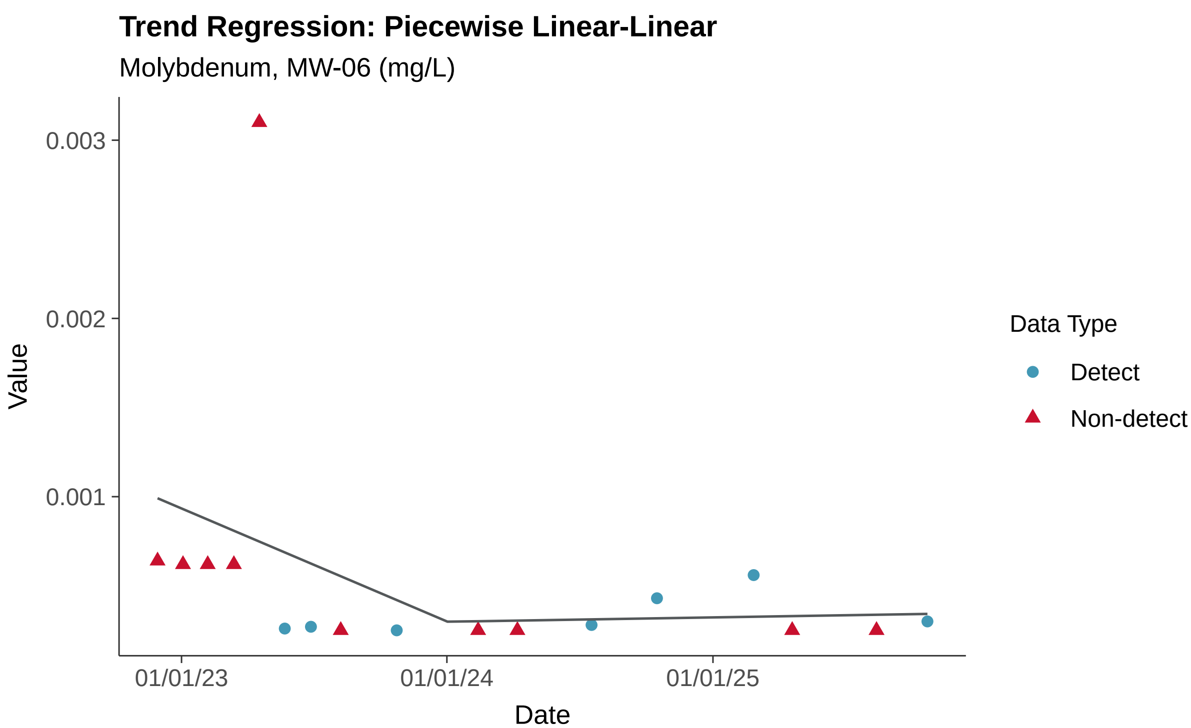


Boxplot by Season

Molybdenum, MW-06 (mg/L)

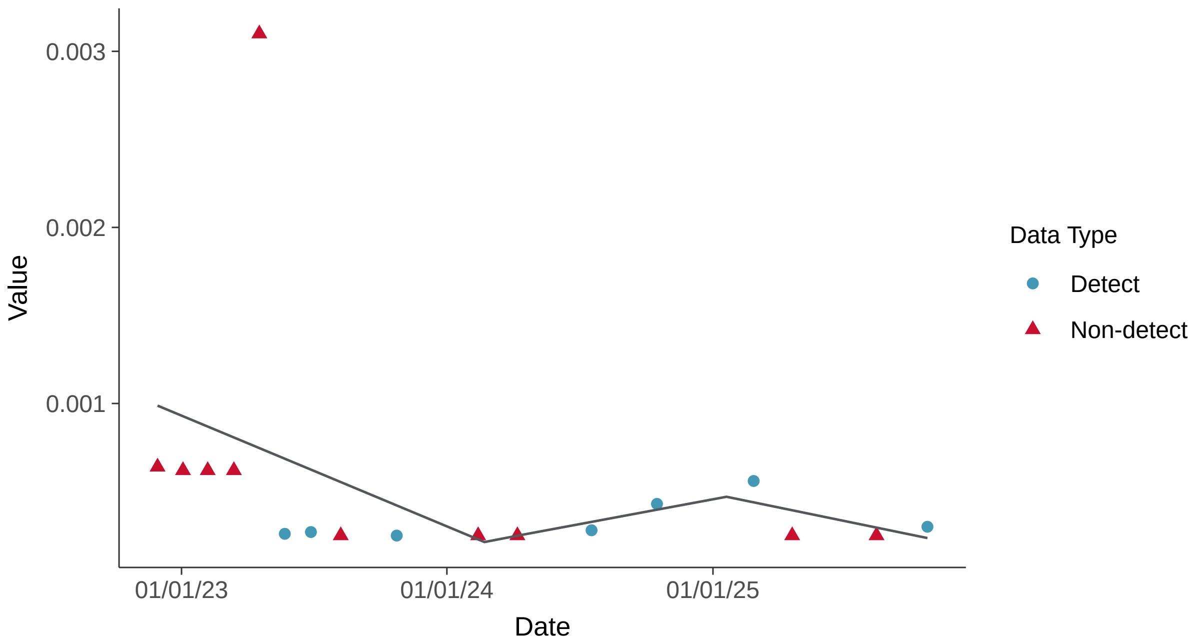



Normal Q-Q plot using ROS Imputed Estimates
Molybdenum, MW-06 (mg/L)
Value
6e−04
4e−04
2e−04
0e+00
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Molybdenum, MW-06 (mg/L)
Value
0.003
0.002
0.001
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Trend Regression: Piecewise Linear-Linear-Linear

Molybdenum, MW-06 (mg/L)

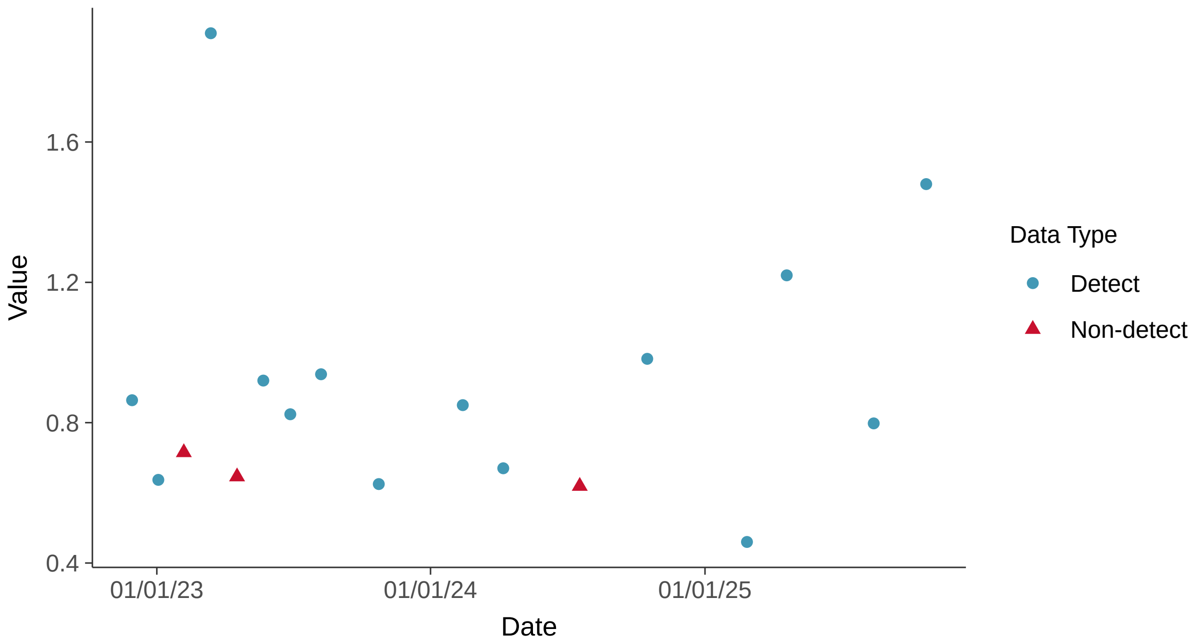


Appendix IV: Radium 226 and 228, MW-06

ID: 16_1_4_121

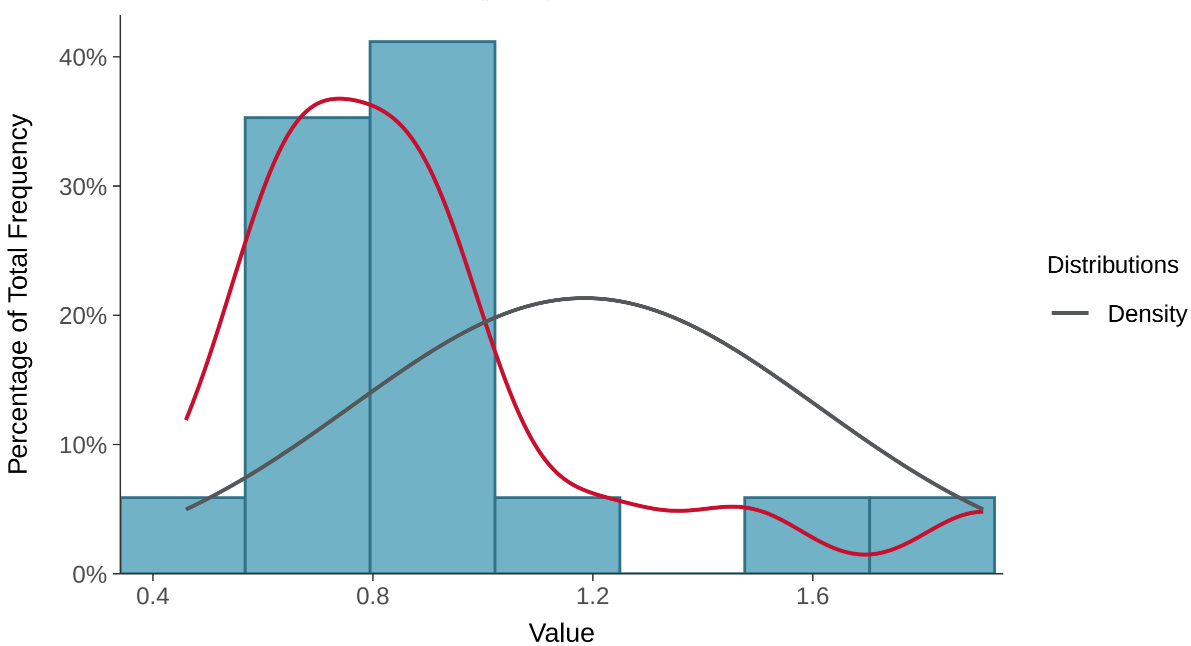
Scatter Plot

Radium 226 and 228, MW-06 (pCi/L)



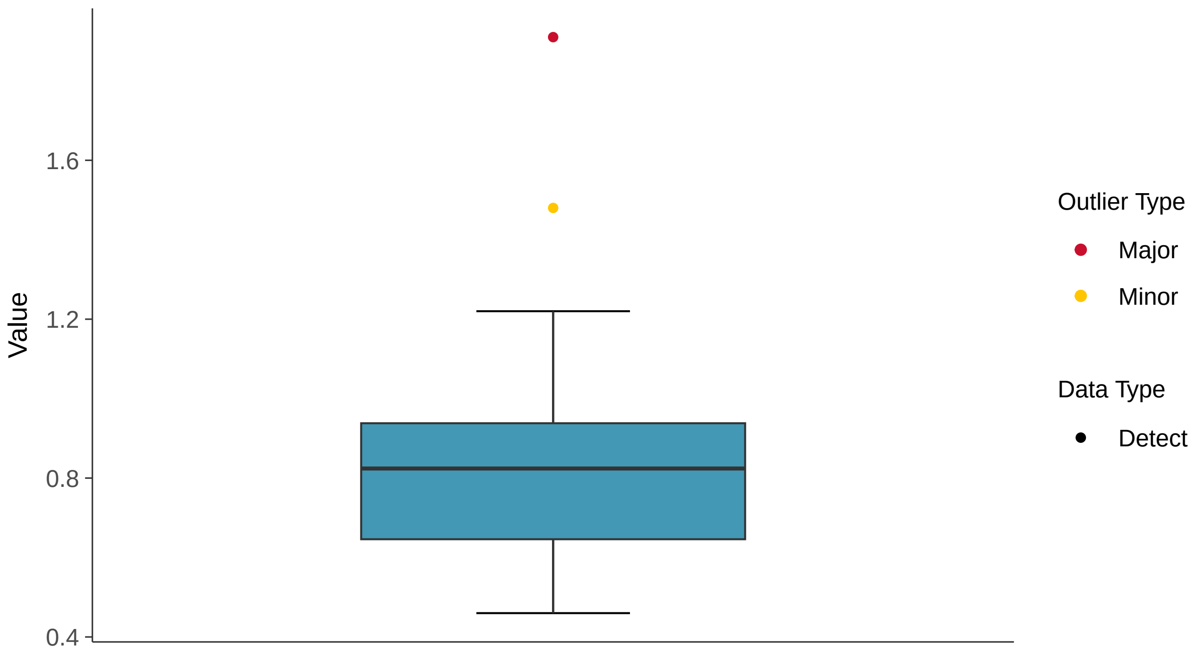
Histogram

Radium 226 and 228, MW-06 (pCi/L)



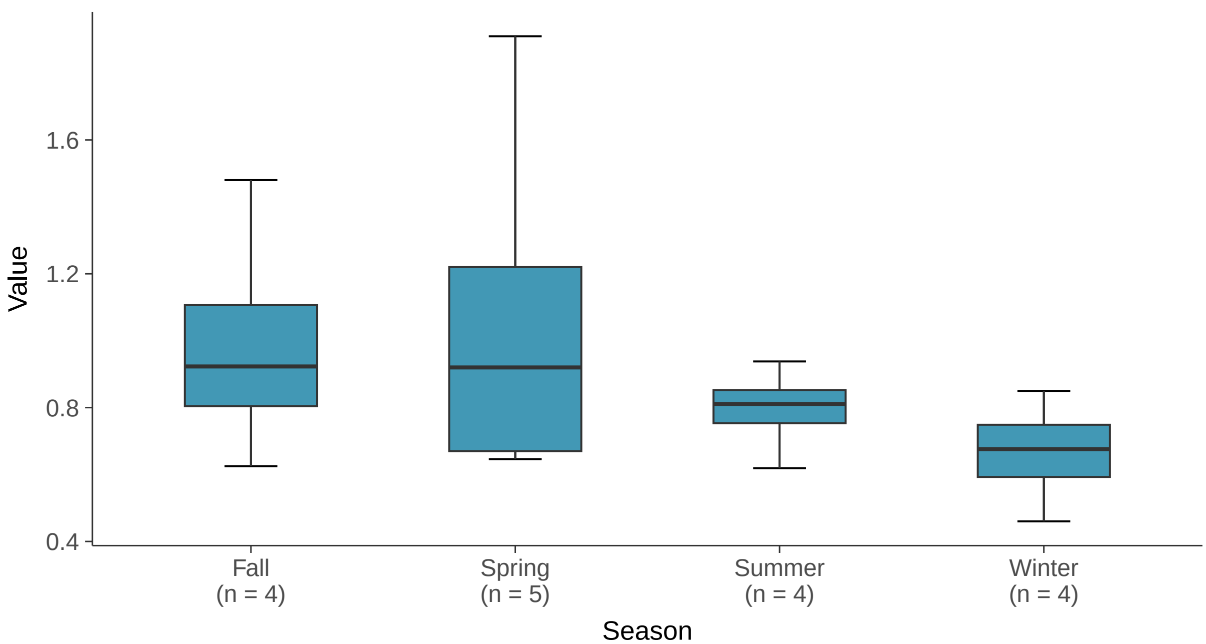
Boxplot

Radium 226 and 228, MW-06 (pCi/L)



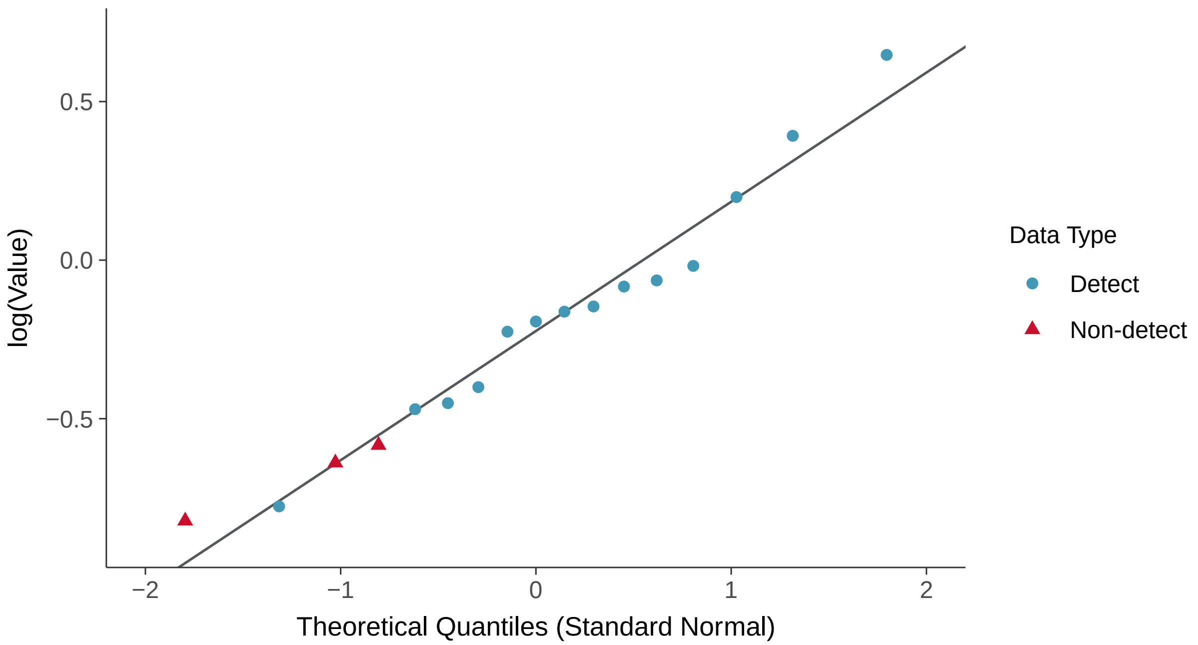
Boxplot by Season

Radium 226 and 228, MW-06 (pCi/L)



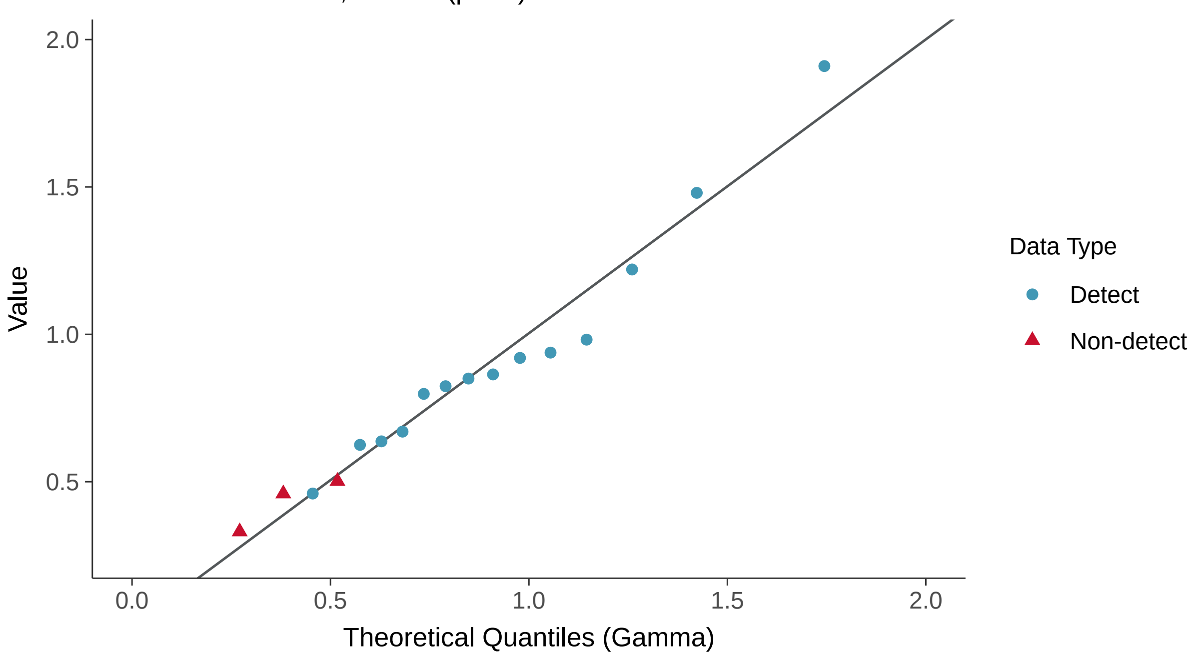
Lognormal Q-Q plot using ROS Imputed Estimates

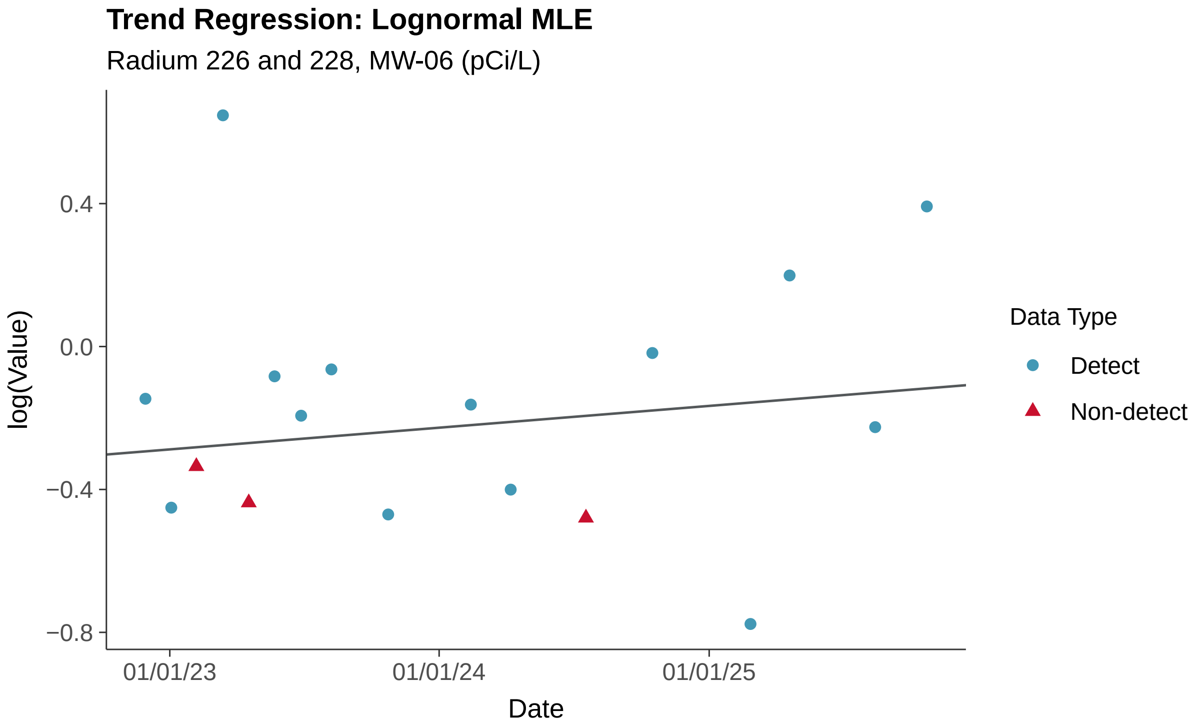
Radium 226 and 228, MW-06 (pCi/L)

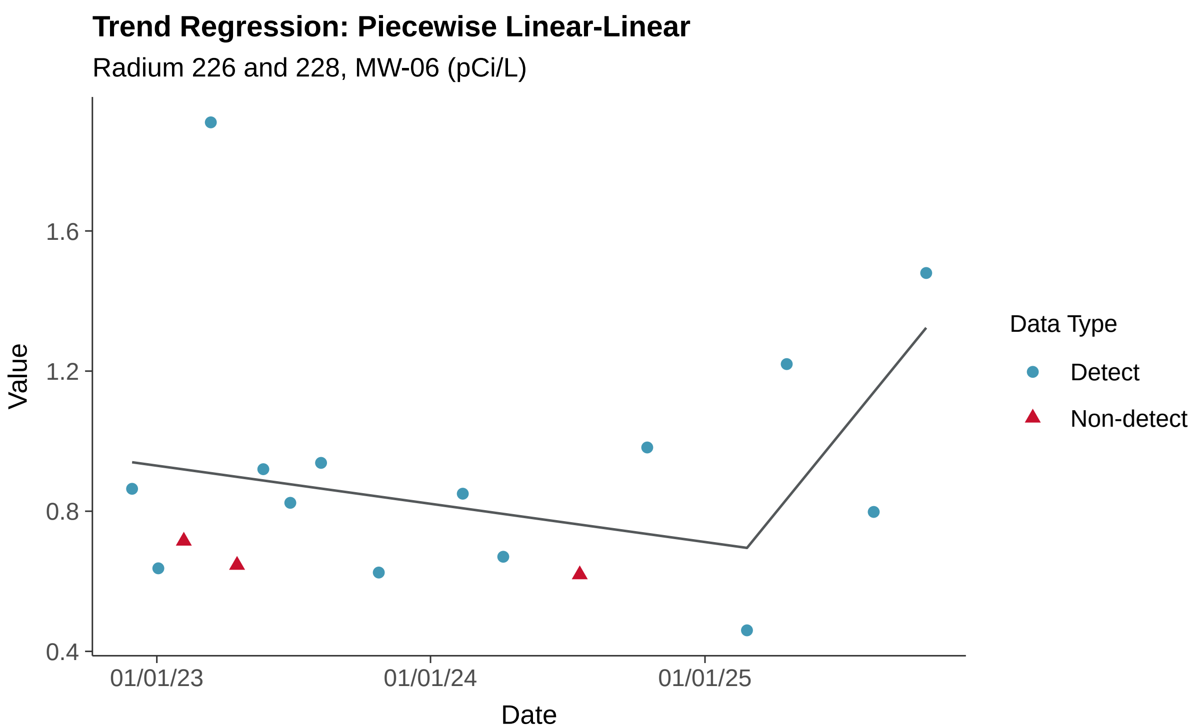


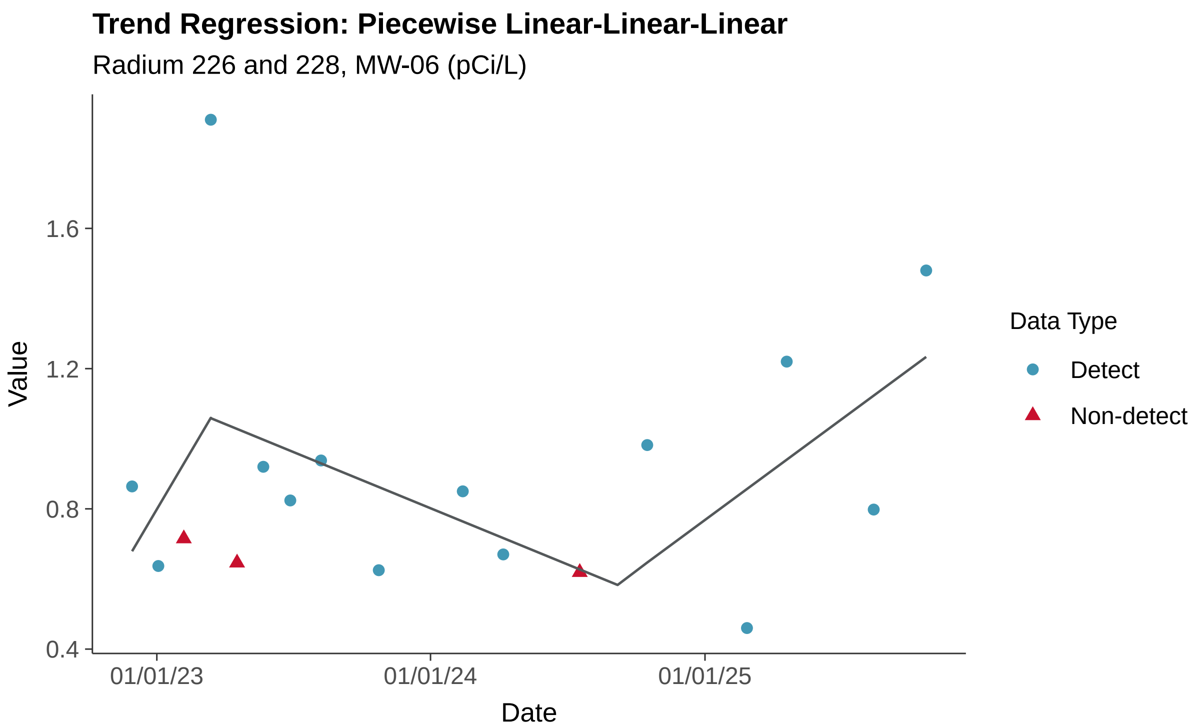
Gamma Q-Q plot using ROS Imputed Estimates

Radium 226 and 228, MW-06 (pCi/L)



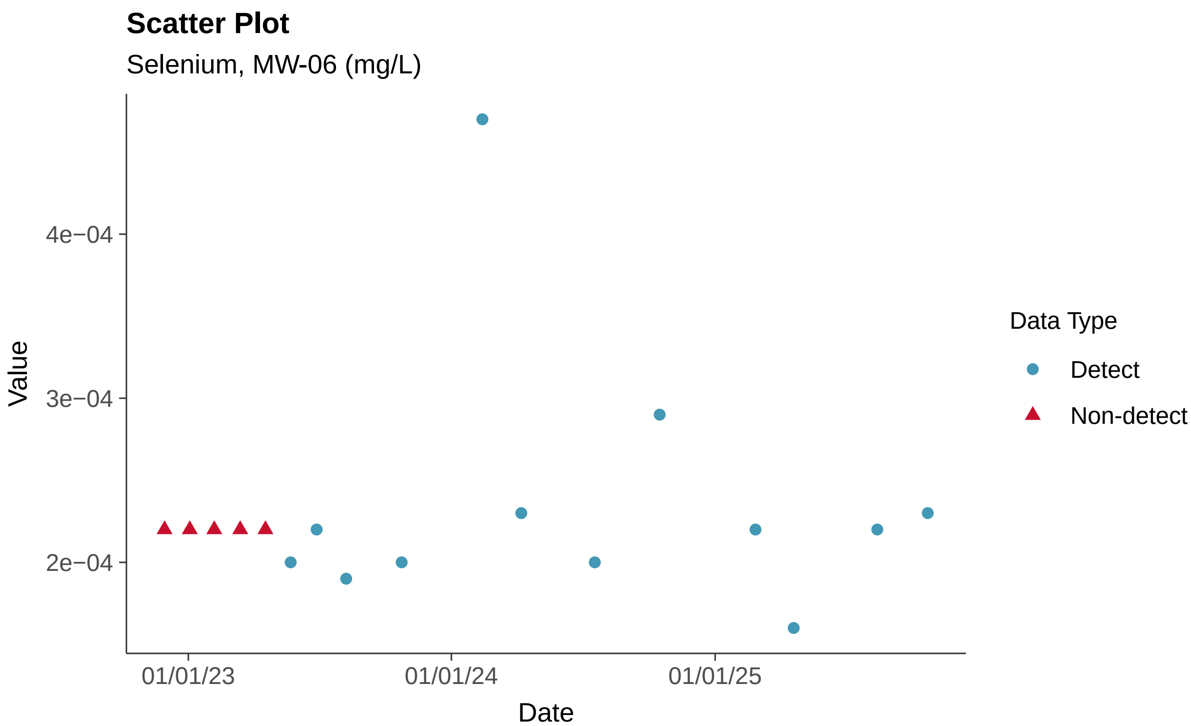

Trend Regression: Lognormal MLE
Radium 226 and 228, MW-06 (pCi/L)
log(Value)
0.4
0.0
−0.4
−0.8
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

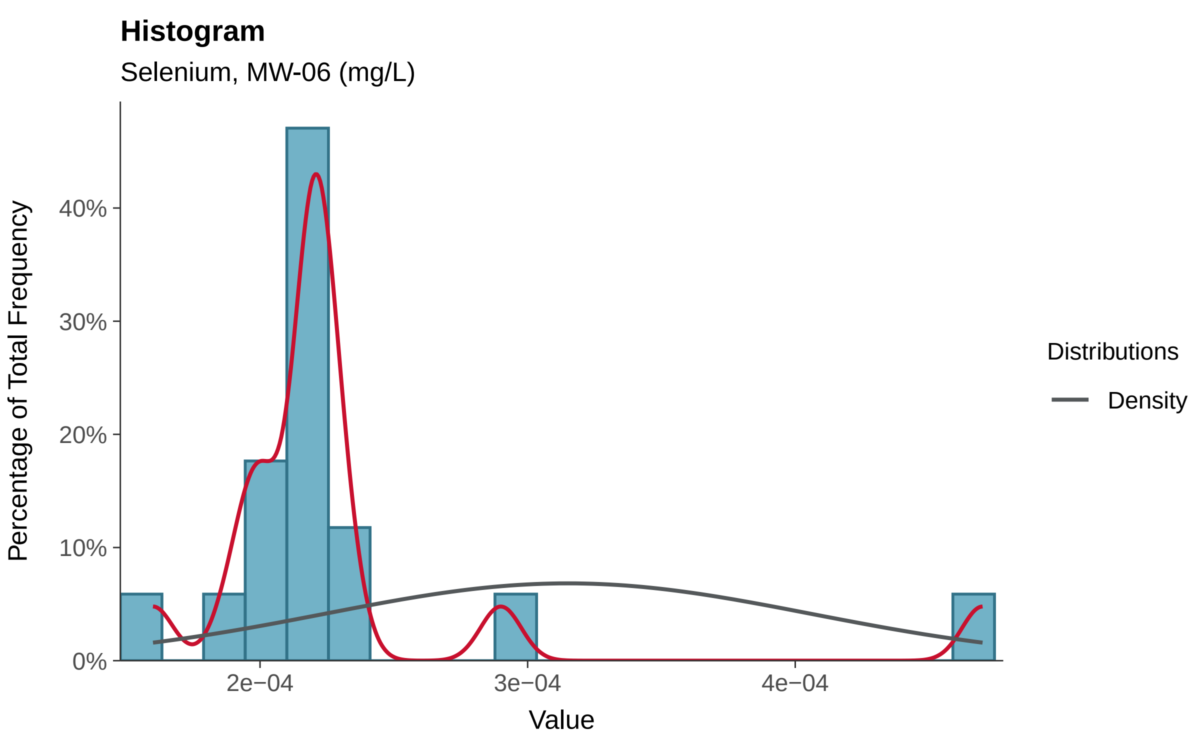

Trend Regression: Piecewise Linear-Linear
Radium 226 and 228, MW-06 (pCi/L)
Value
1.6
1.2
0.8
0.4
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear-Linear
Radium 226 and 228, MW-06 (pCi/L)
Value
1.6
1.2
0.8
0.4
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Appendix IV: Selenium, MW-06

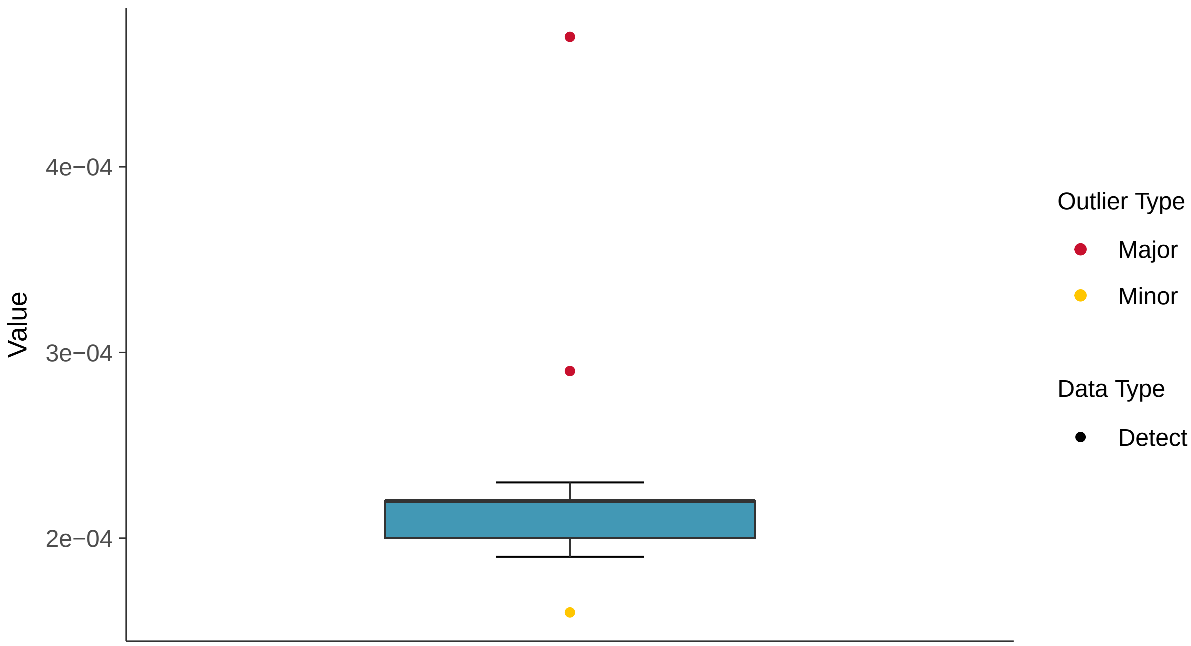
ID: 16_1_4_122





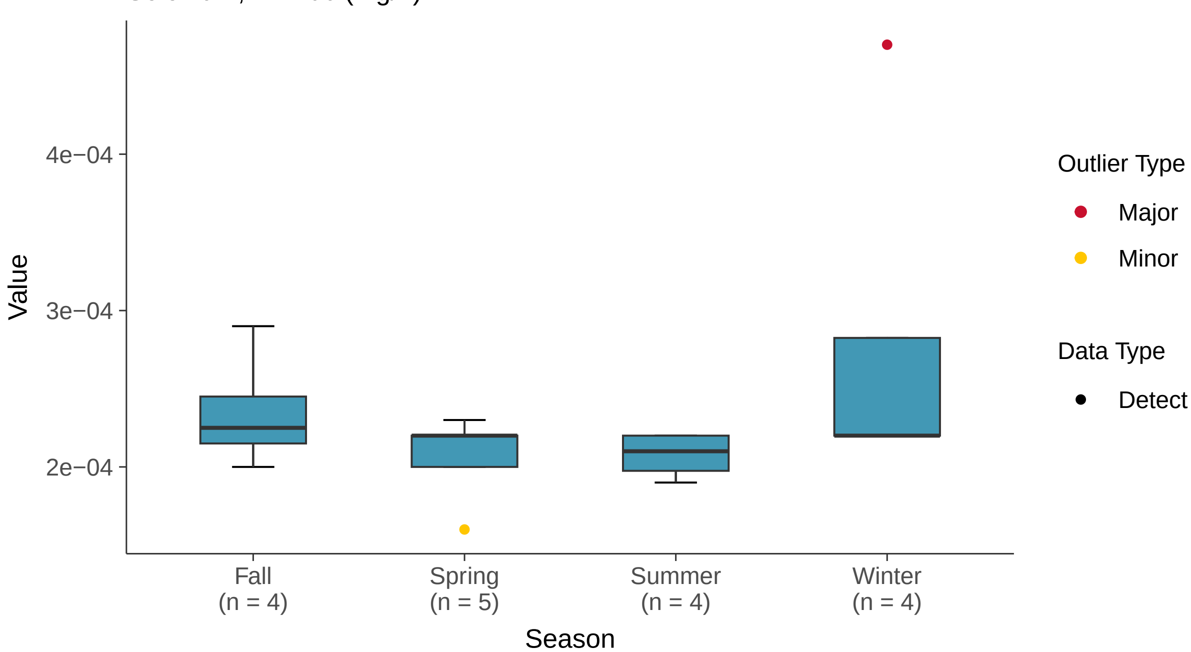
Boxplot

Selenium, MW-06 (mg/L)



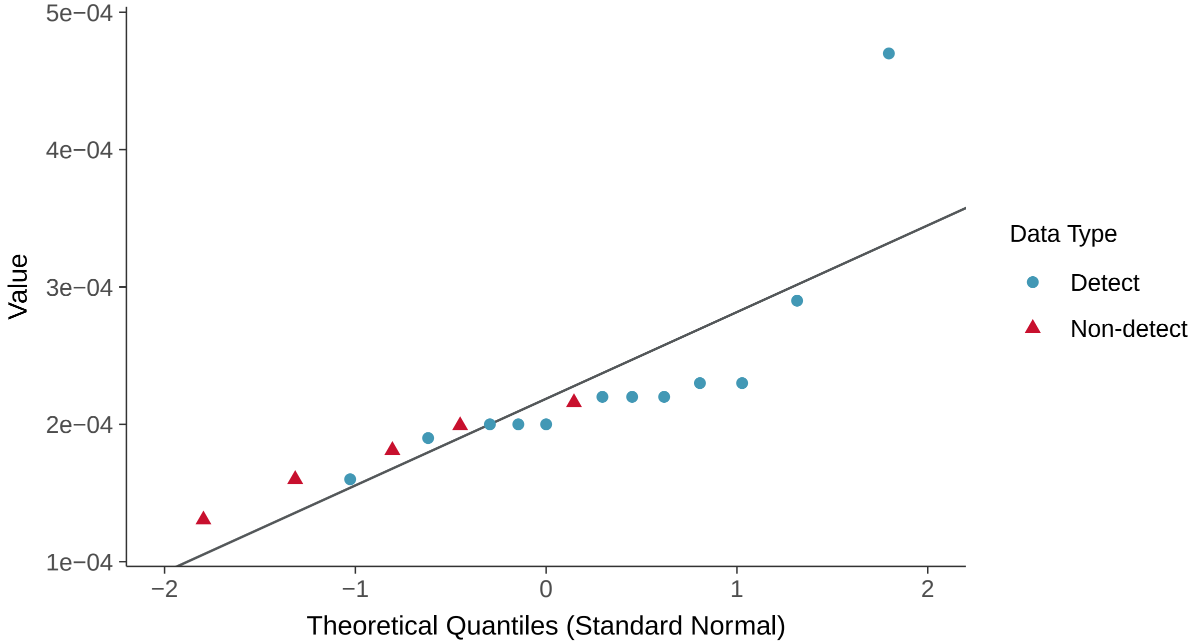
Boxplot by Season

Selenium, MW-06 (mg/L)



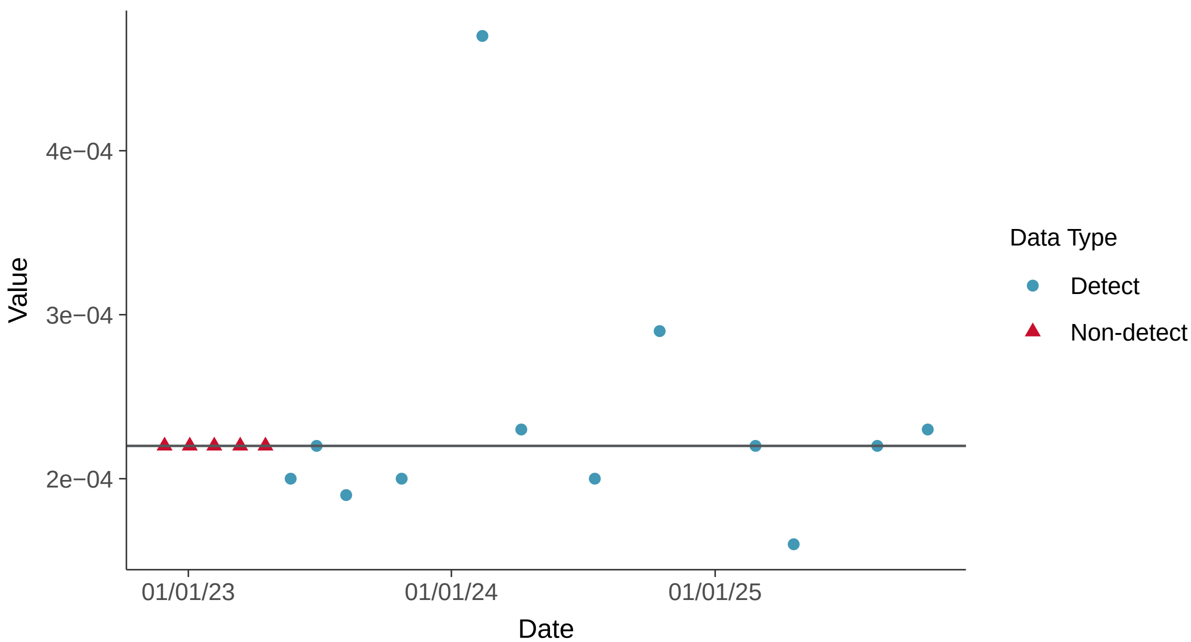
Normal Q-Q plot using ROS Imputed Estimates

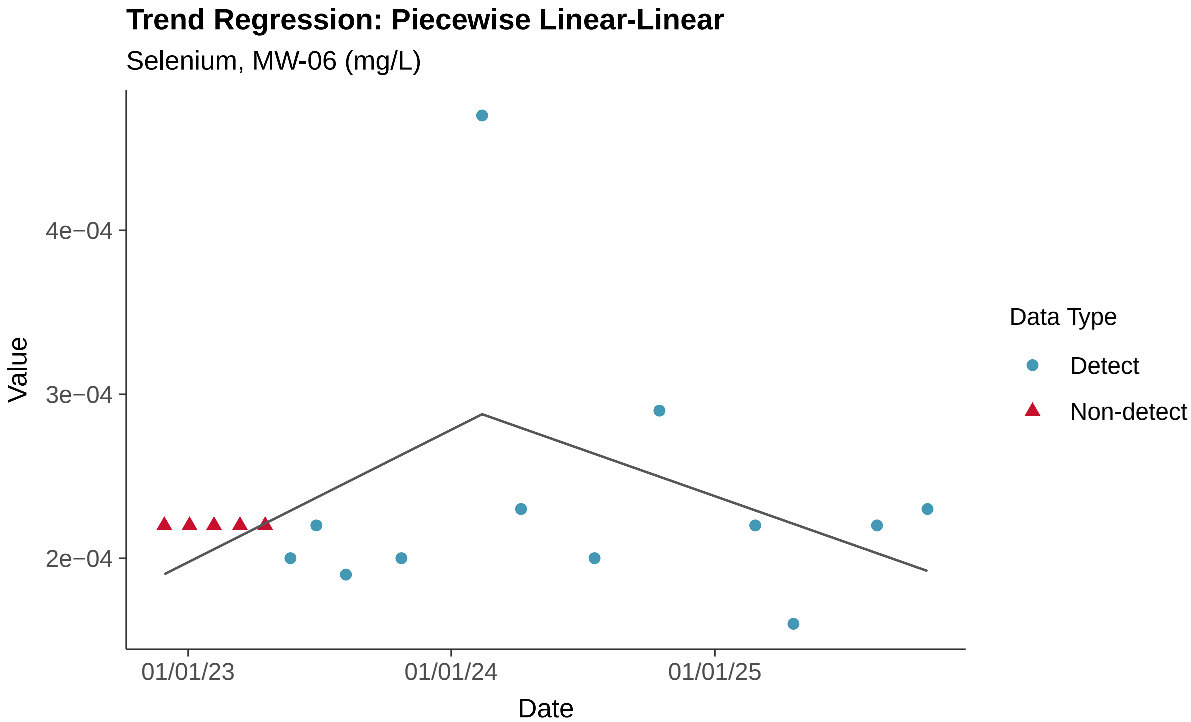
Selenium, MW-06 (mg/L)

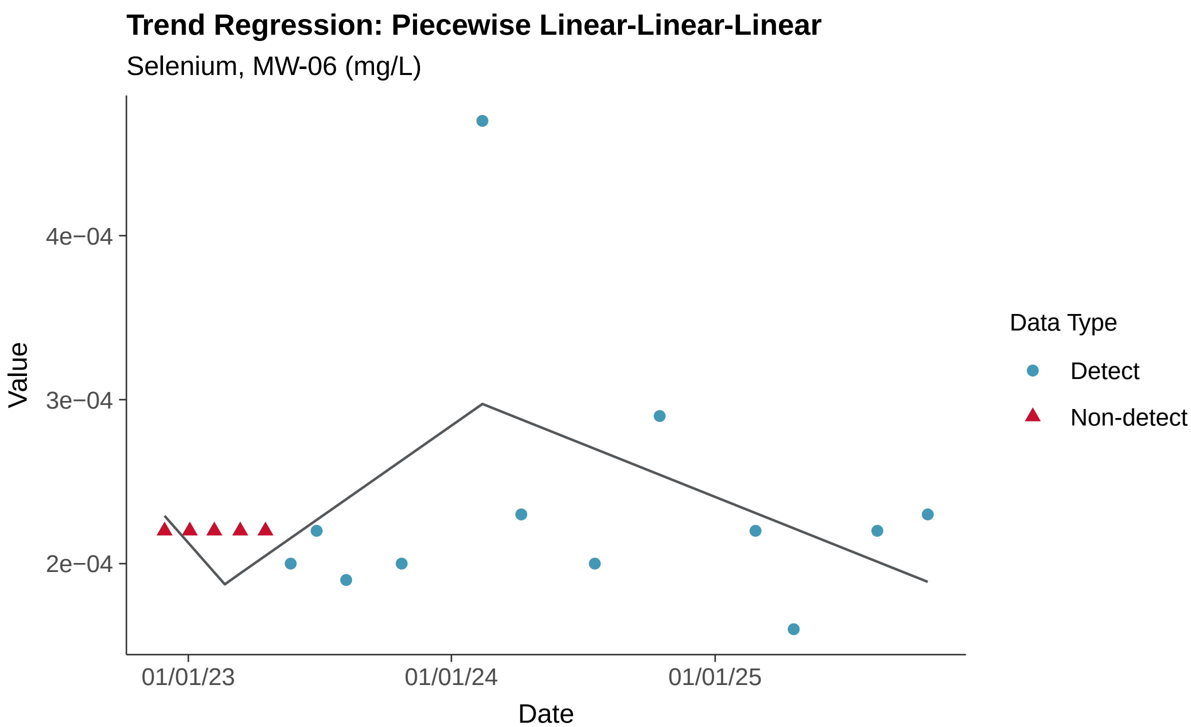


Trend Regression: Mann-Kendall/Theil-Sen Estimate

Selenium, MW-06 (mg/L)

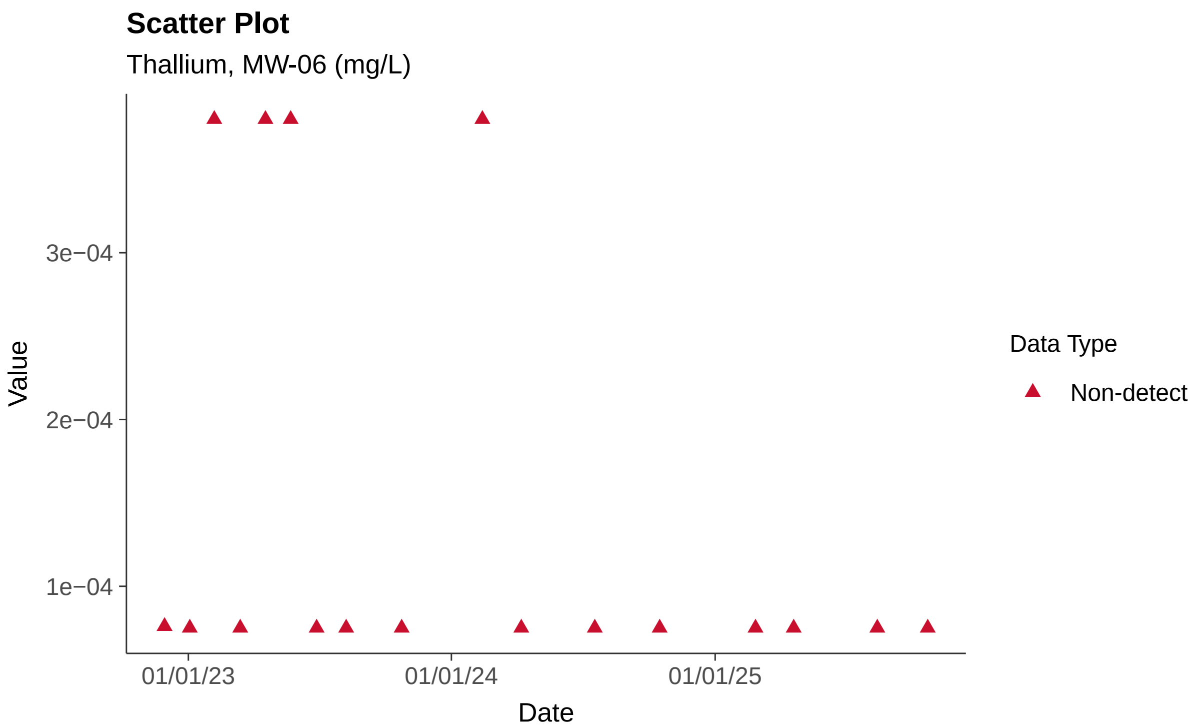


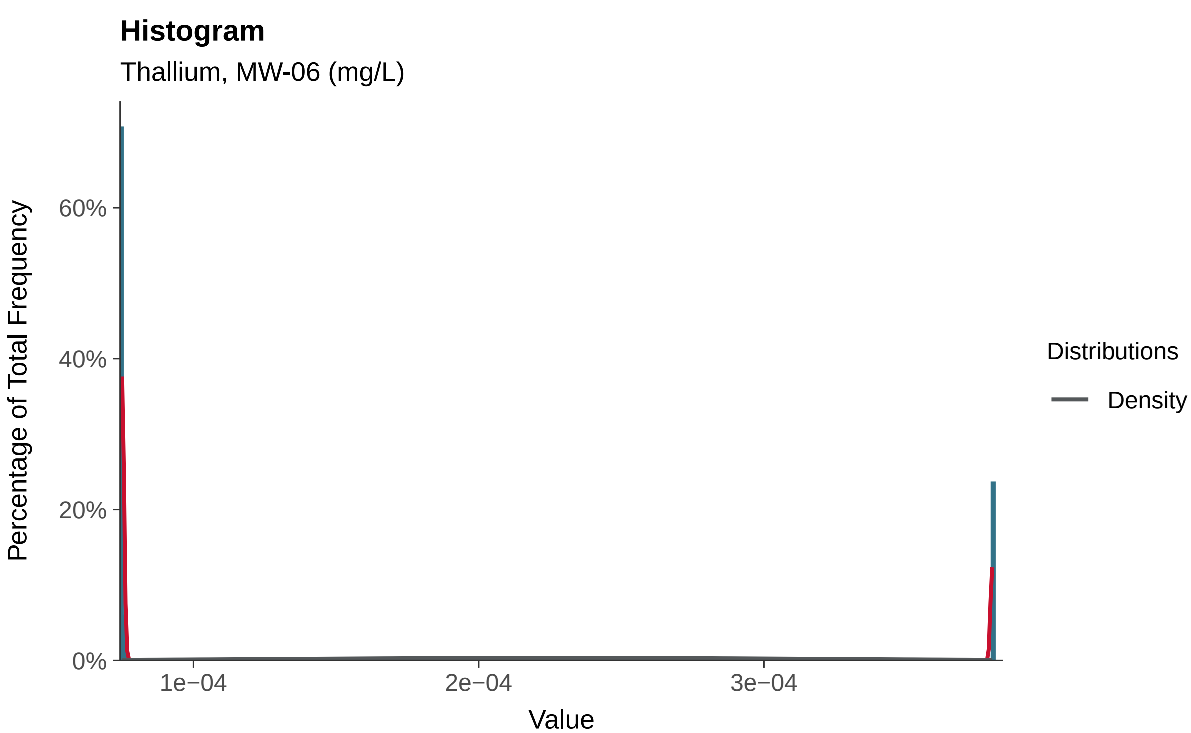

Trend Regression: Piecewise Linear-Linear
Selenium, MW-06 (mg/L)
Value
4e−04
3e−04
2e−04
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear-Linear
Selenium, MW-06 (mg/L)
Value
4e−04
3e−04
2e−04
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Appendix IV: Thallium, MW-06

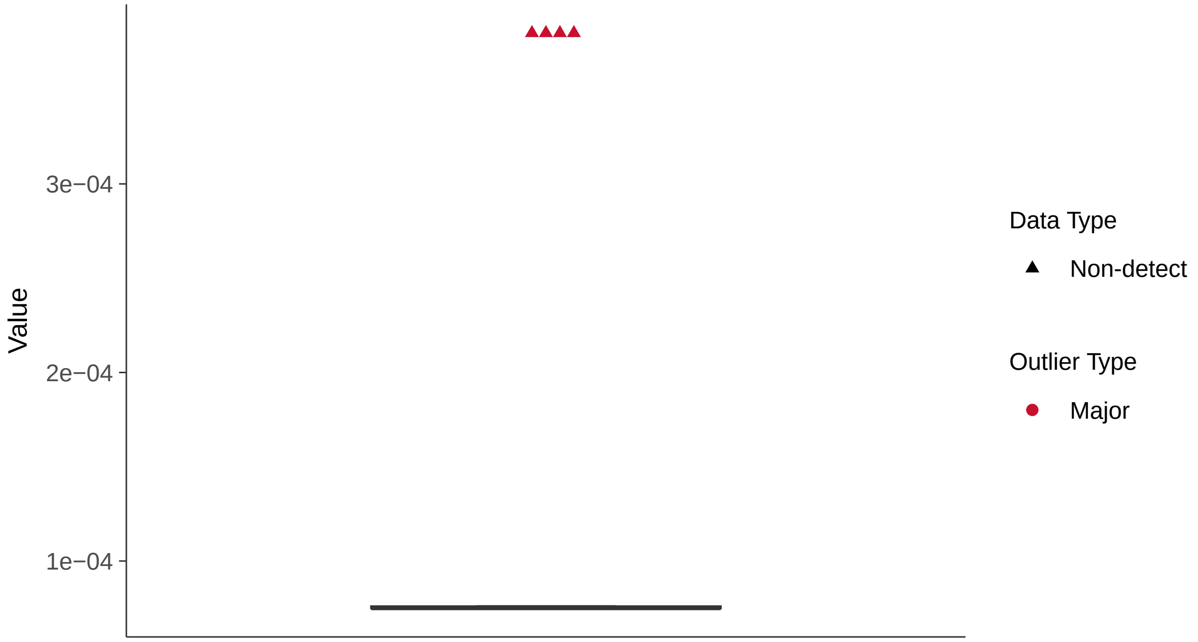
ID: 16_1_4_125





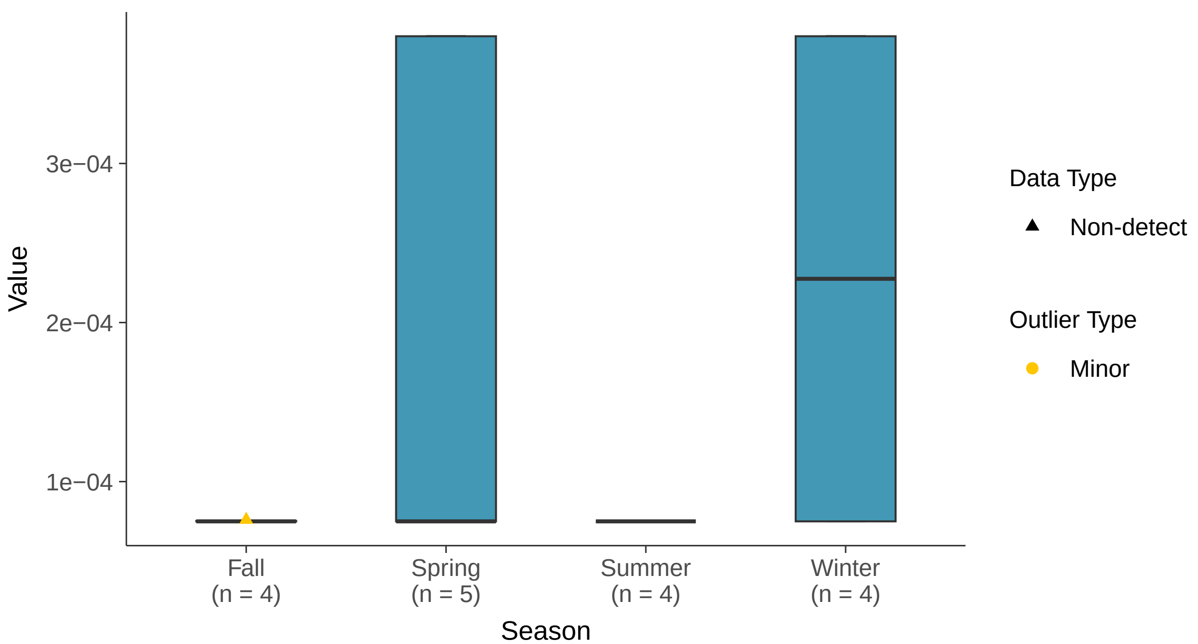
Boxplot

Thallium, MW-06 (mg/L)



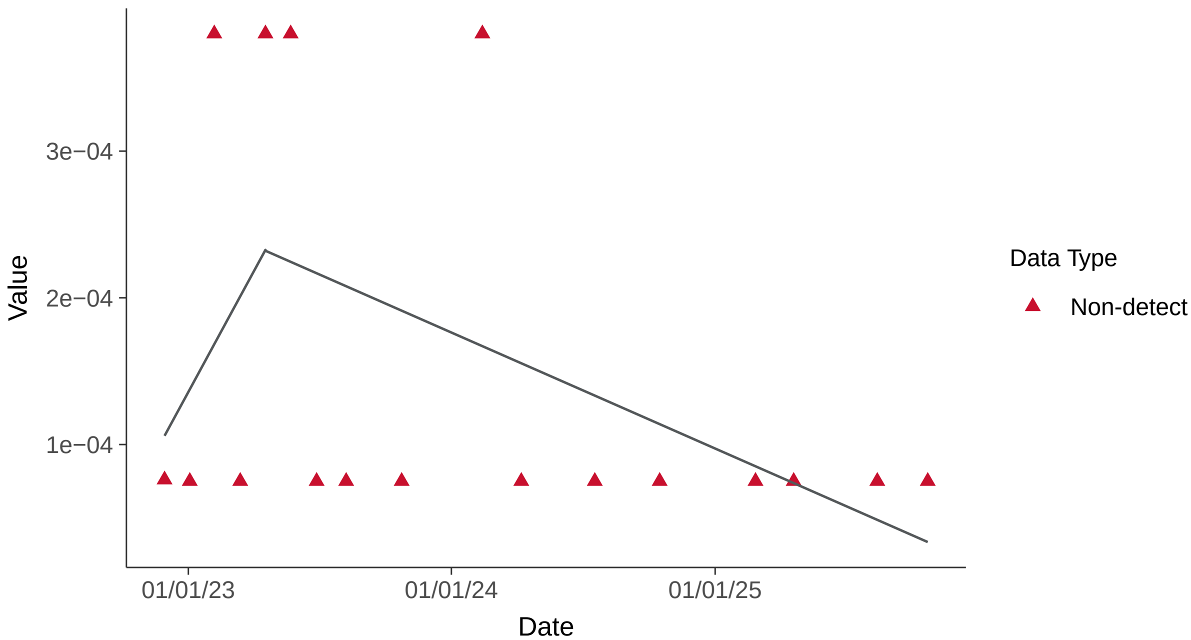
Boxplot by Season

Thallium, MW-06 (mg/L)



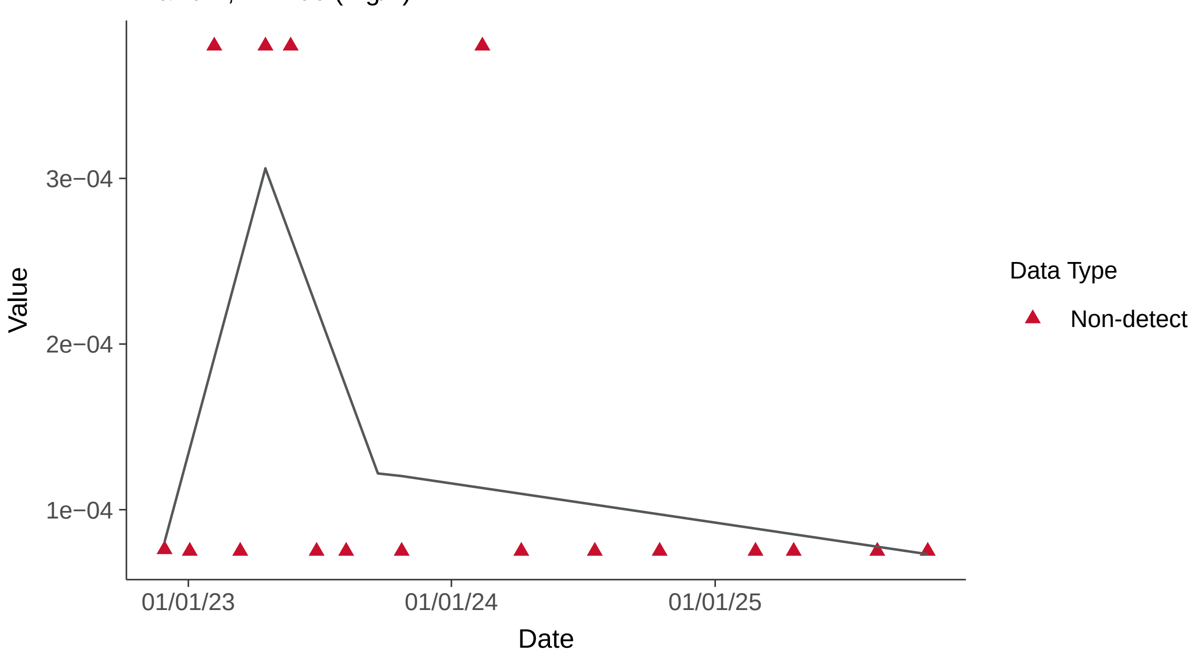
Trend Regression: Piecewise Linear-Linear

Thallium, MW-06 (mg/L)



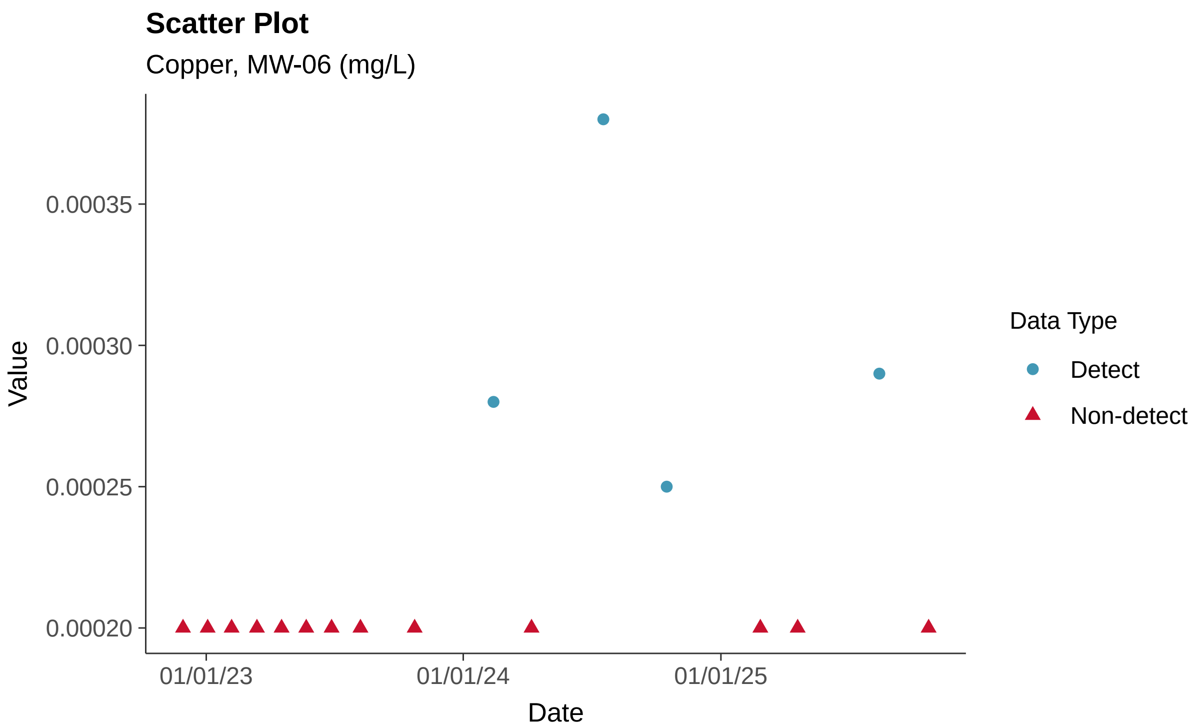
Trend Regression: Piecewise Linear-Linear-Linear

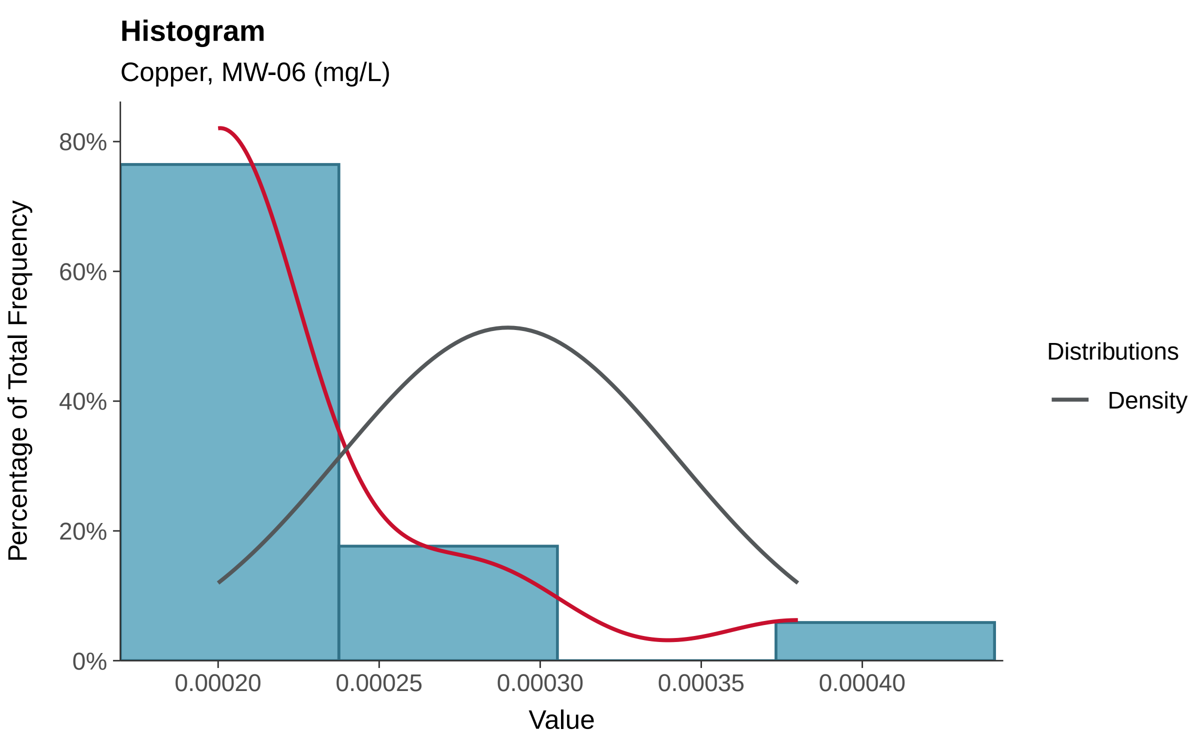
Thallium, MW-06 (mg/L)



Part 115: Copper, MW-06

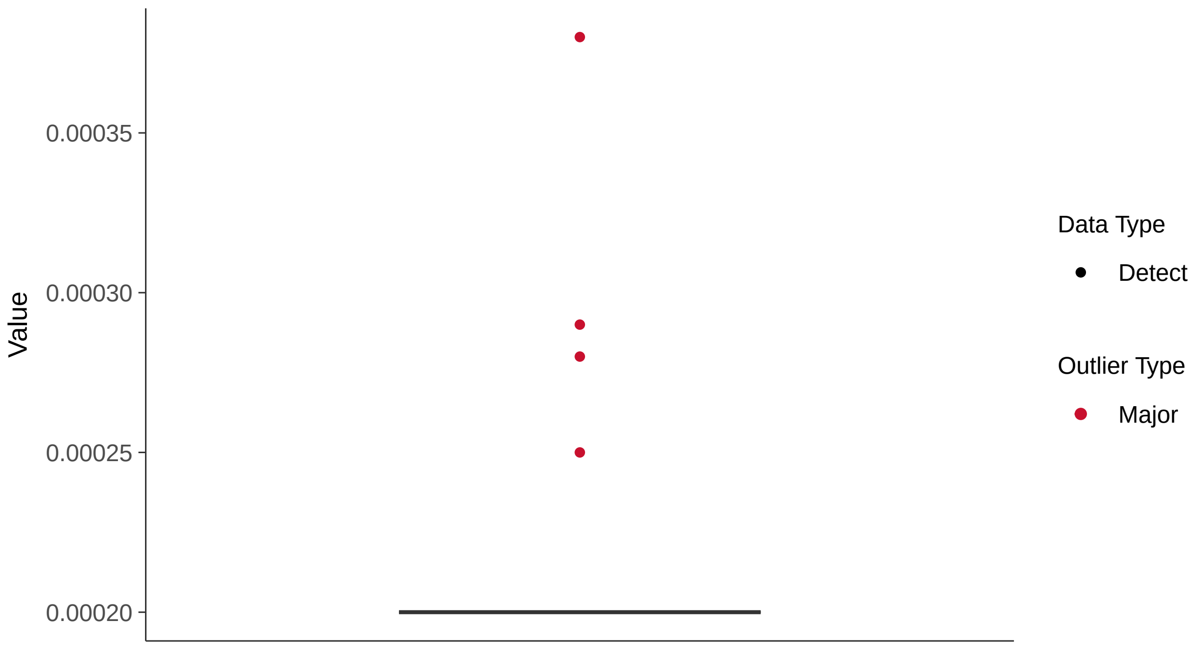
ID: 16_1_5_111





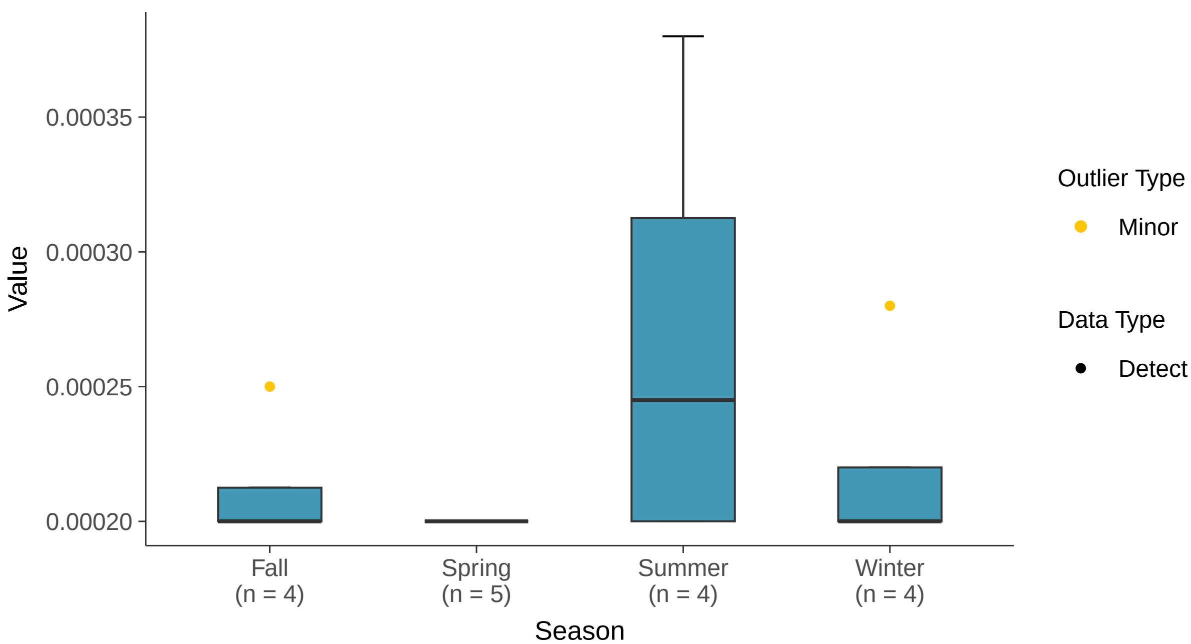
Boxplot

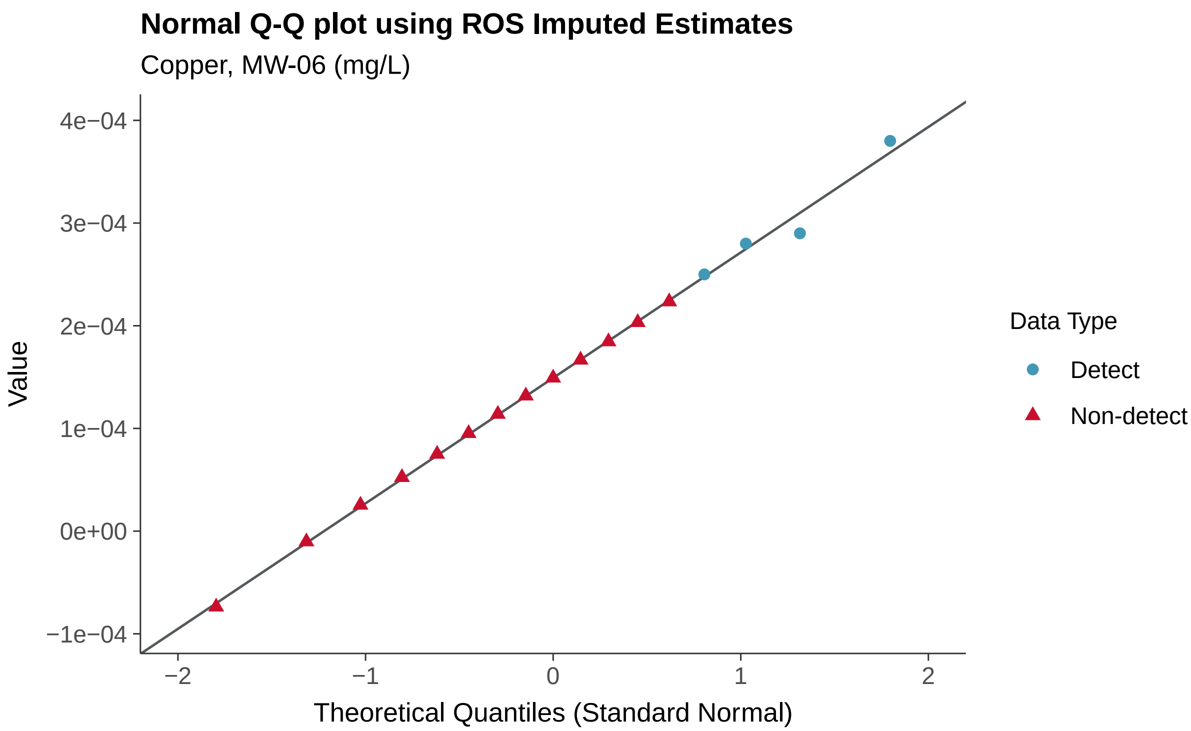
Copper, MW-06 (mg/L)

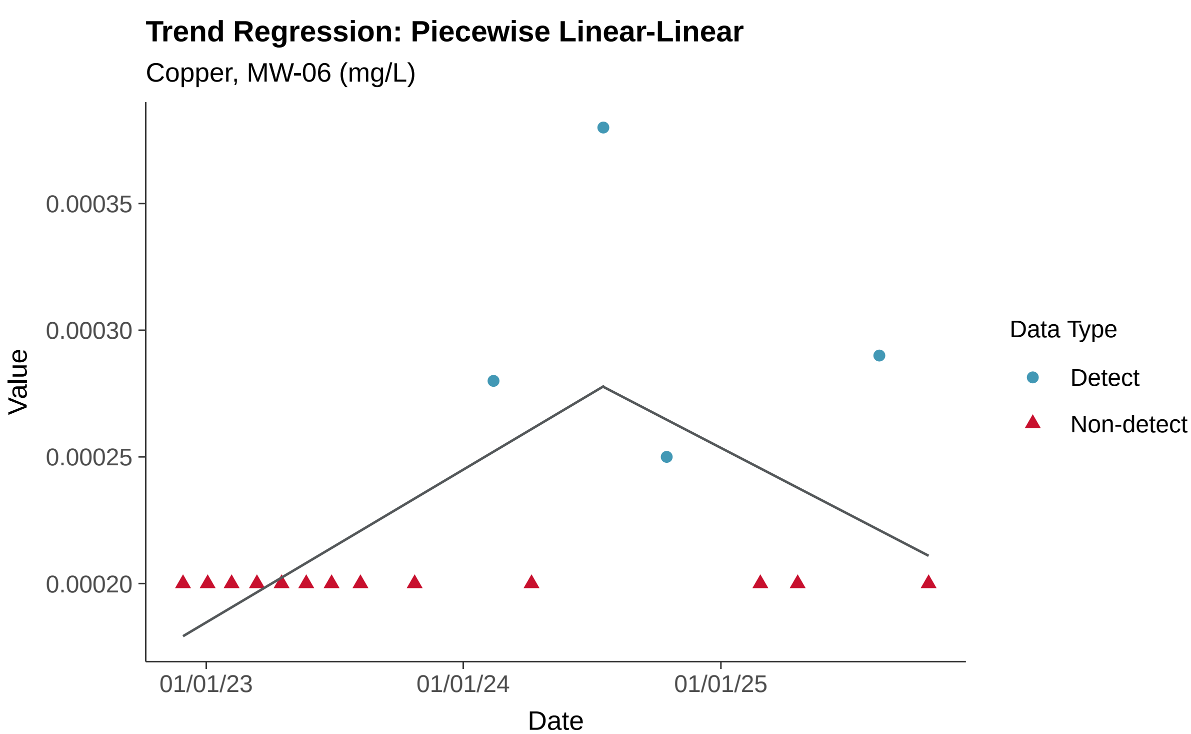


Boxplot by Season

Copper, MW-06 (mg/L)

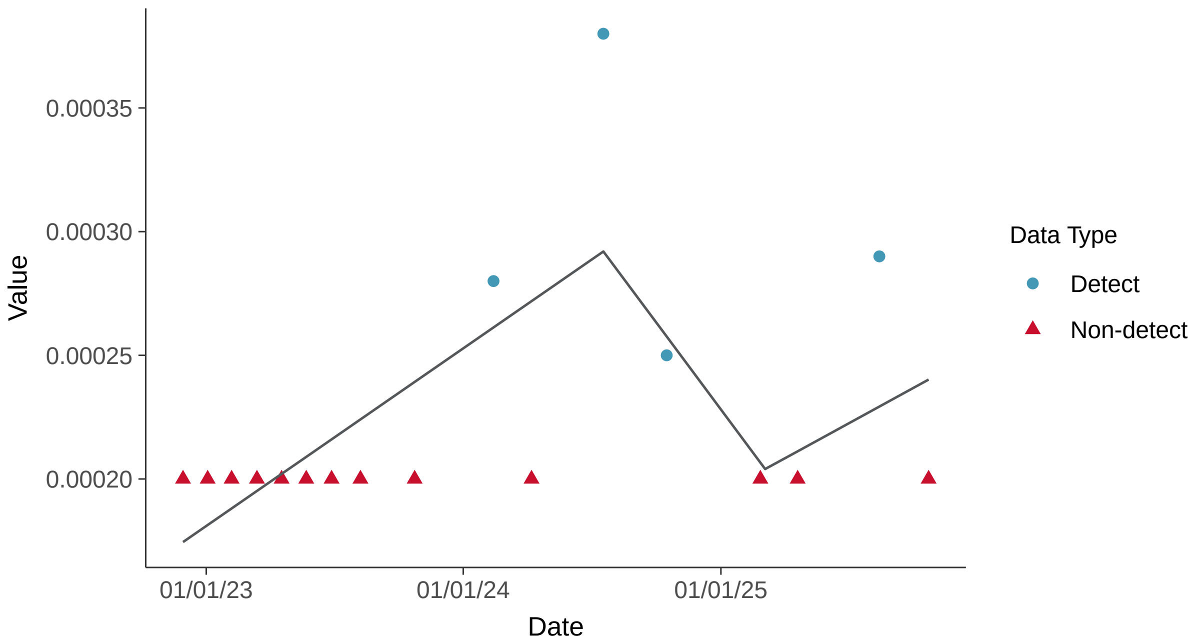



Normal Q-Q plot using ROS Imputed Estimates
Copper, MW-06 (mg/L)
Value
4e−04
3e−04
2e−04
1e−04
0e+00
−1e−04
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Copper, MW-06 (mg/L)
Value
0.00035
0.00030
0.00025
0.00020
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

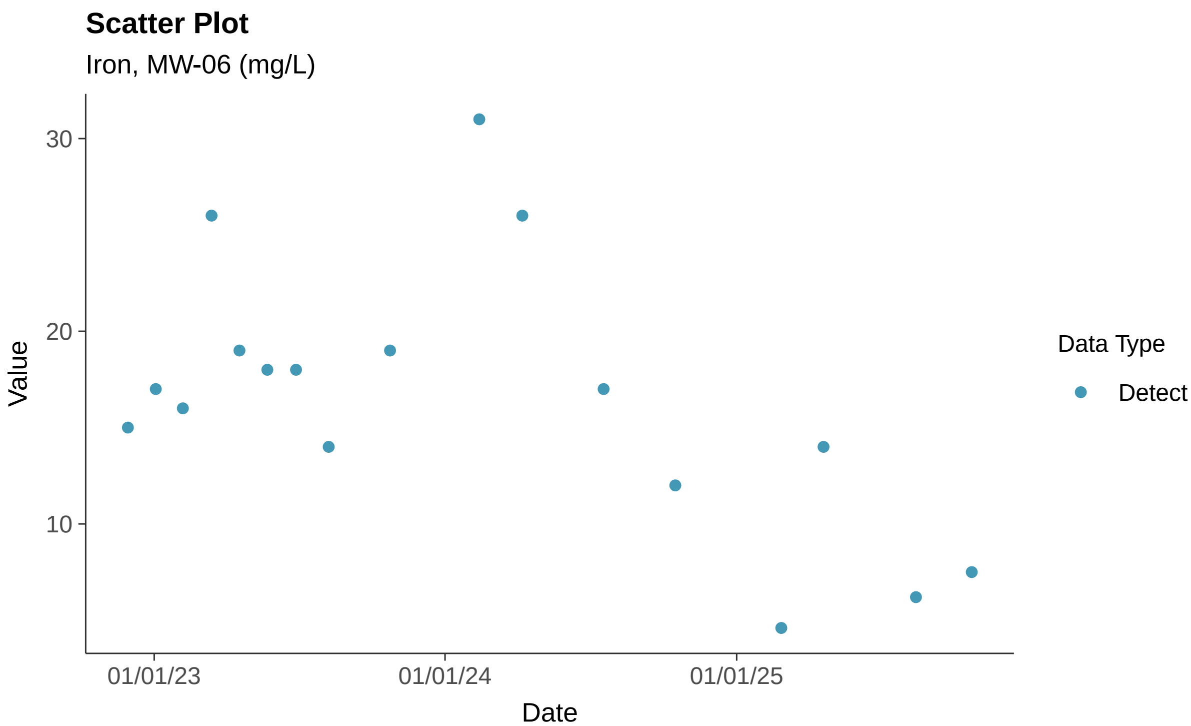
Trend Regression: Piecewise Linear-Linear-Linear

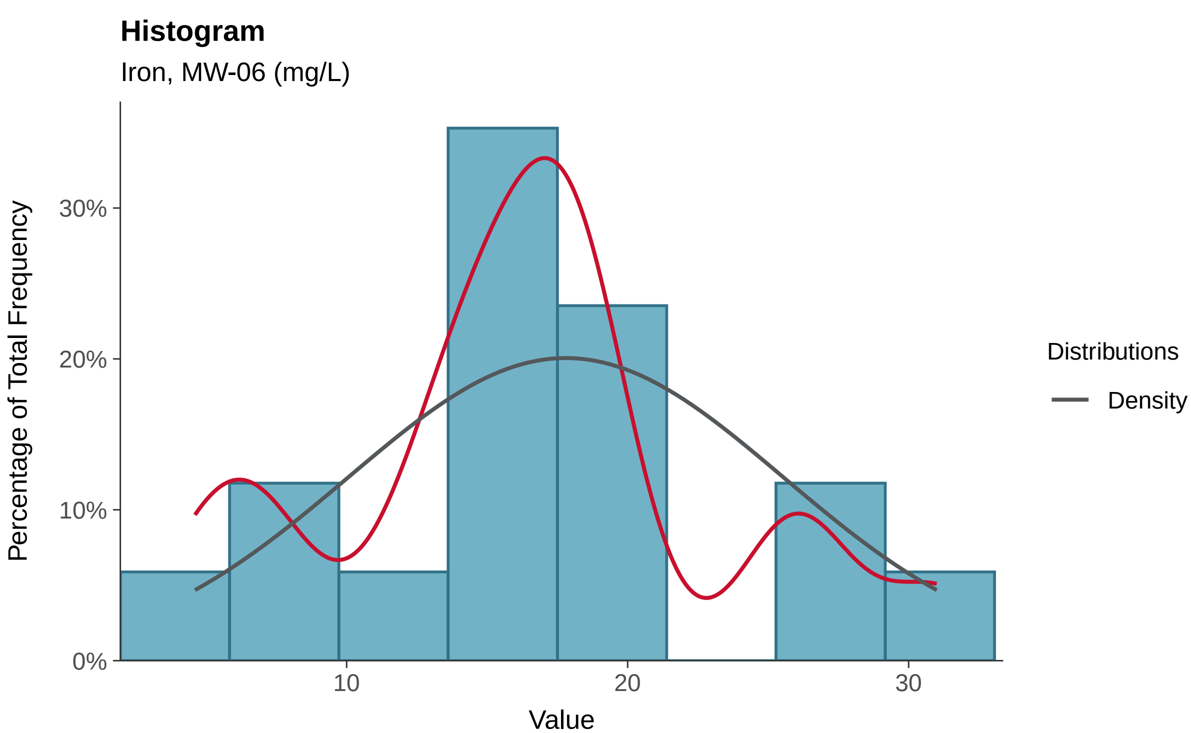
Copper, MW-06 (mg/L)



Part 115: Iron, MW-06

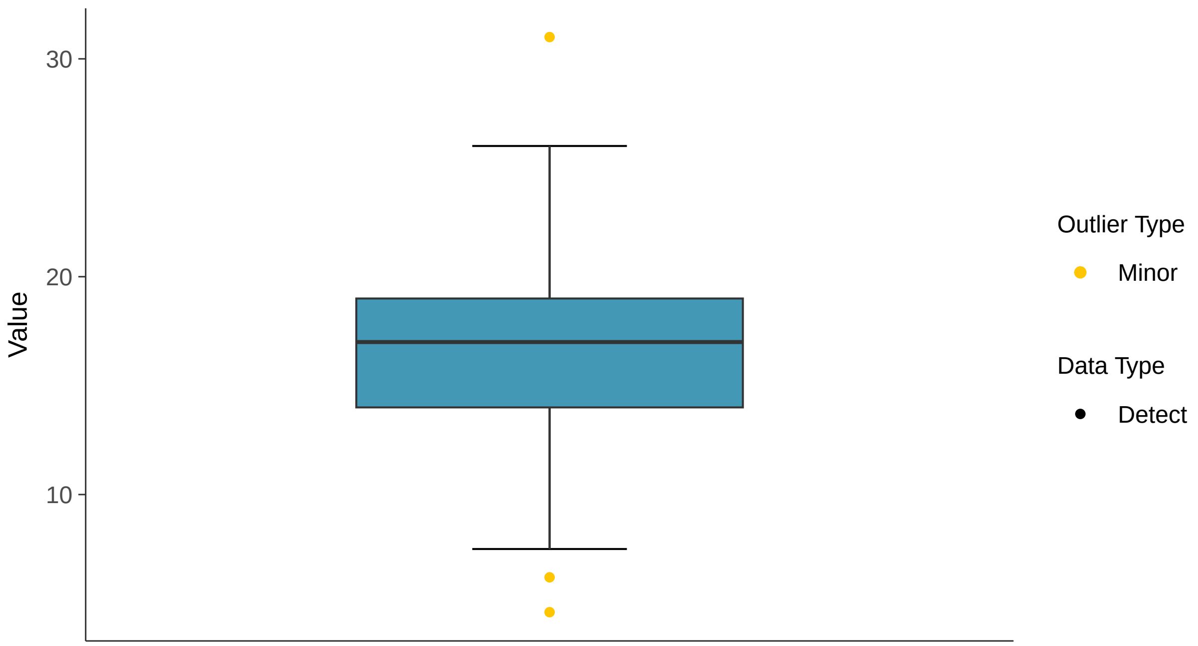
ID: 16_1_5_114





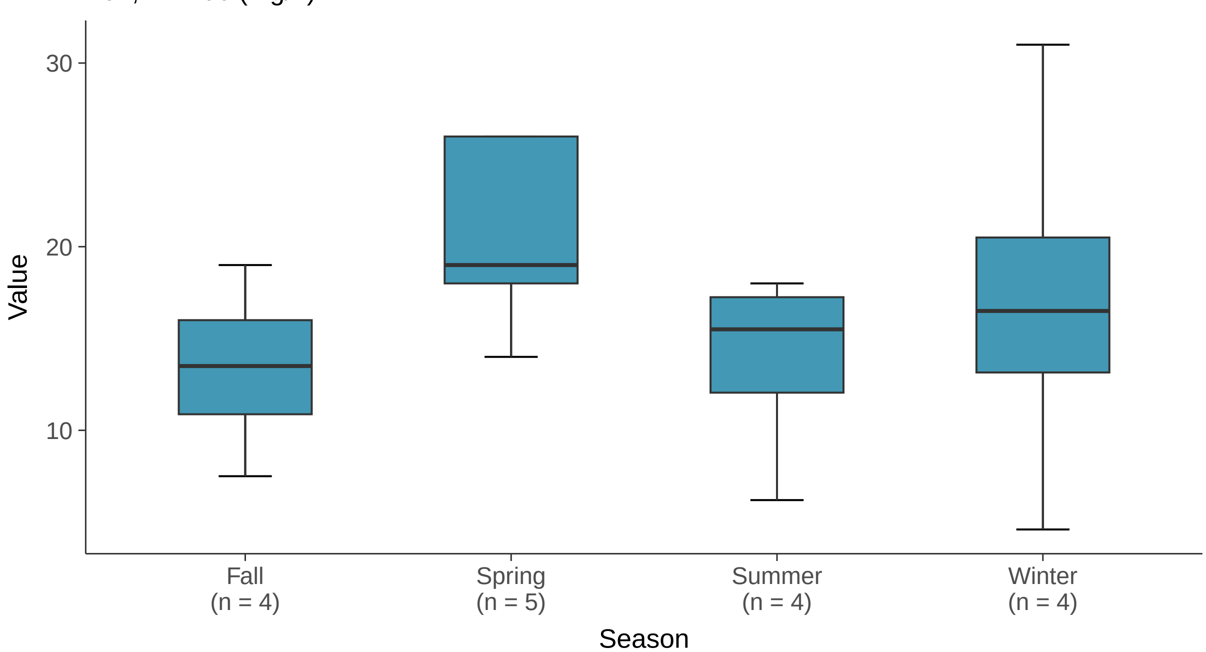
Boxplot

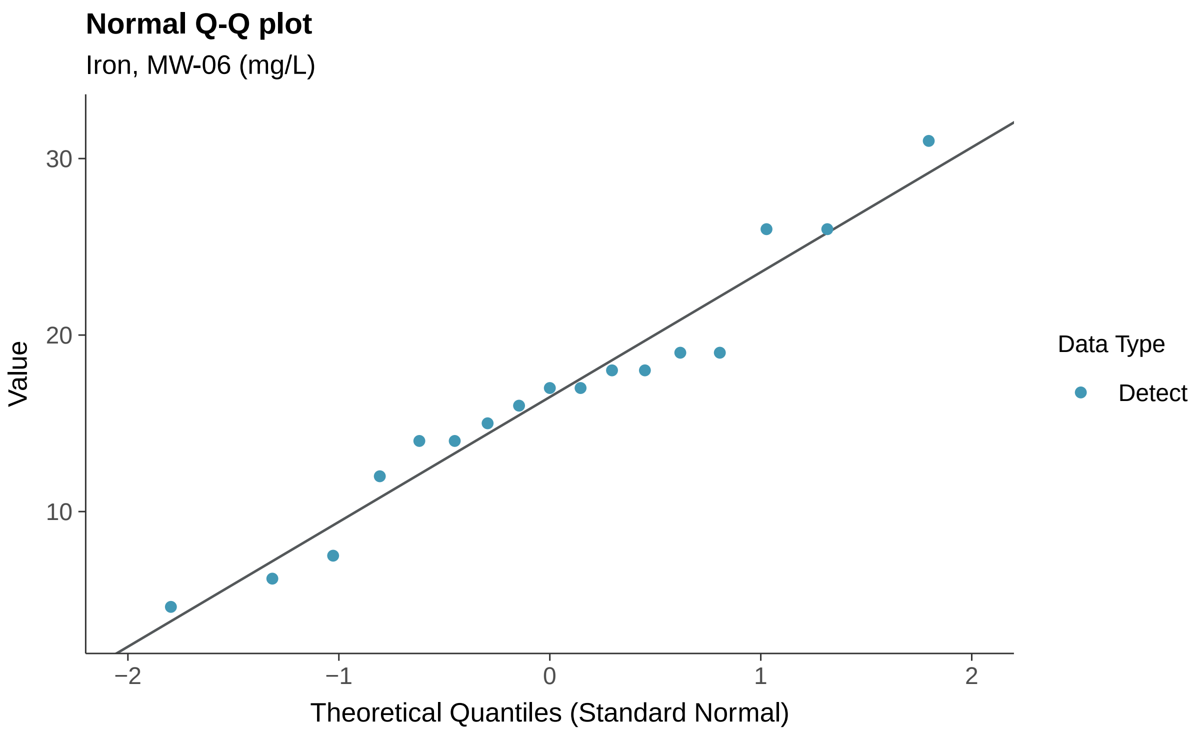
Iron, MW-06 (mg/L)

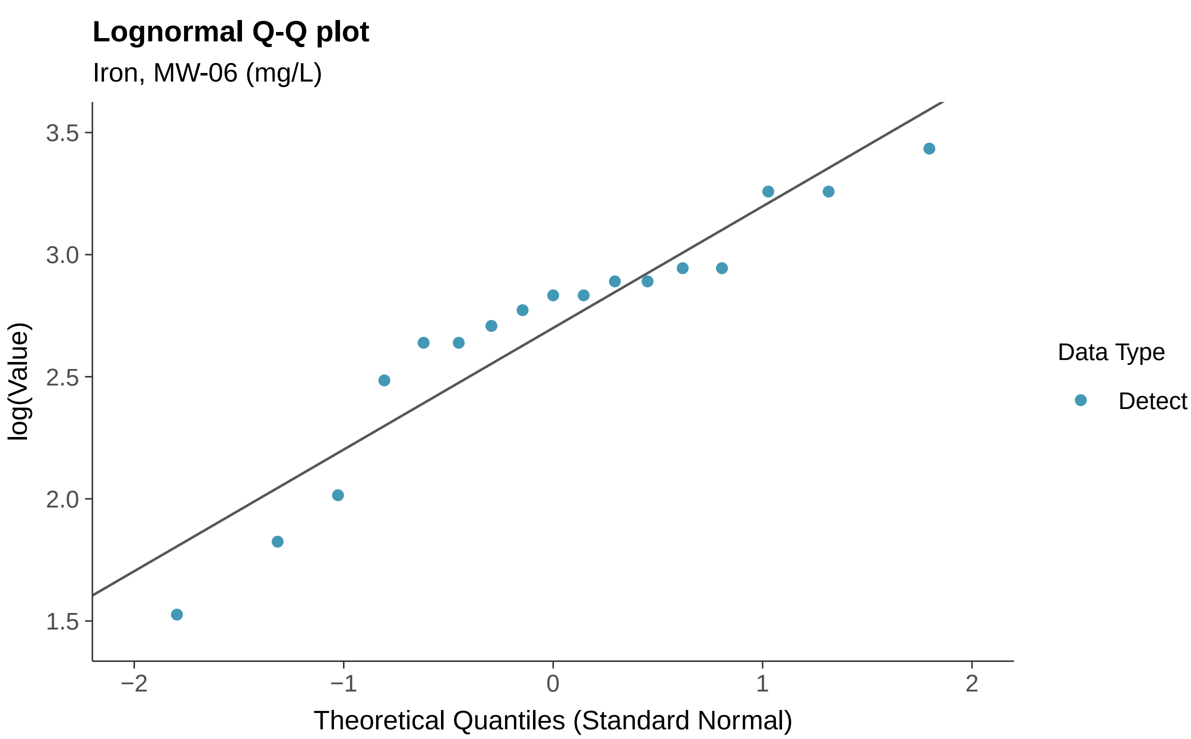


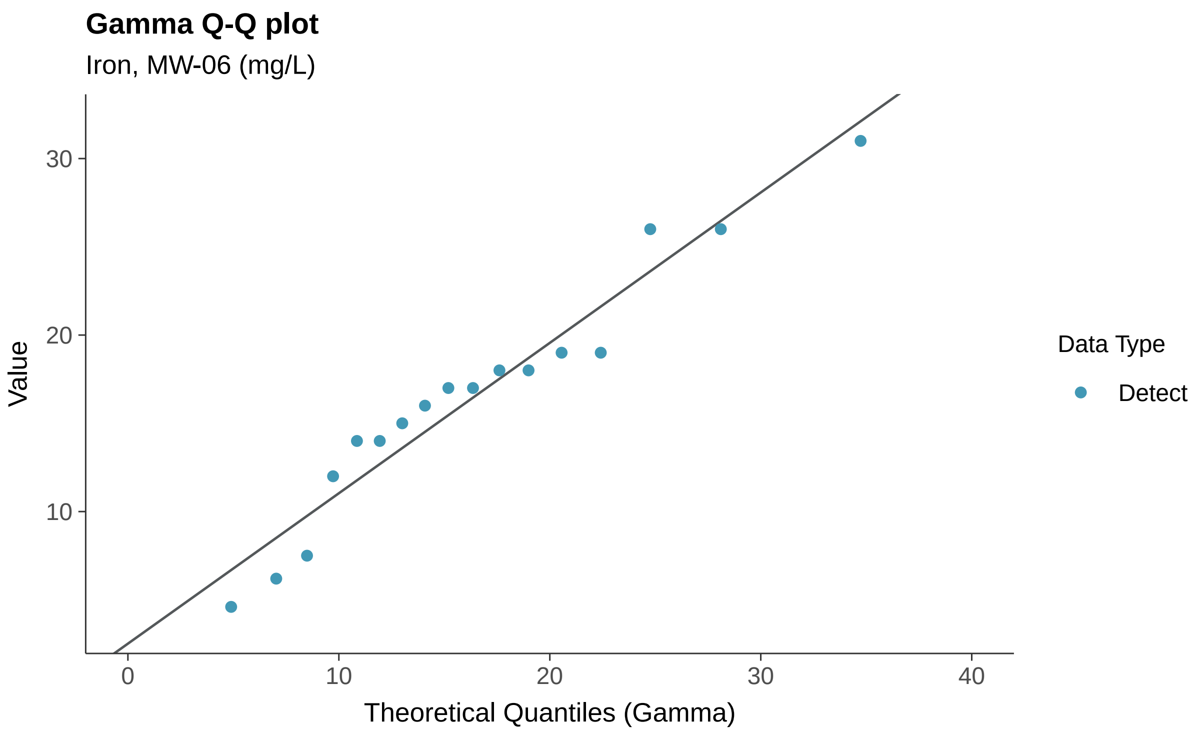
Boxplot by Season

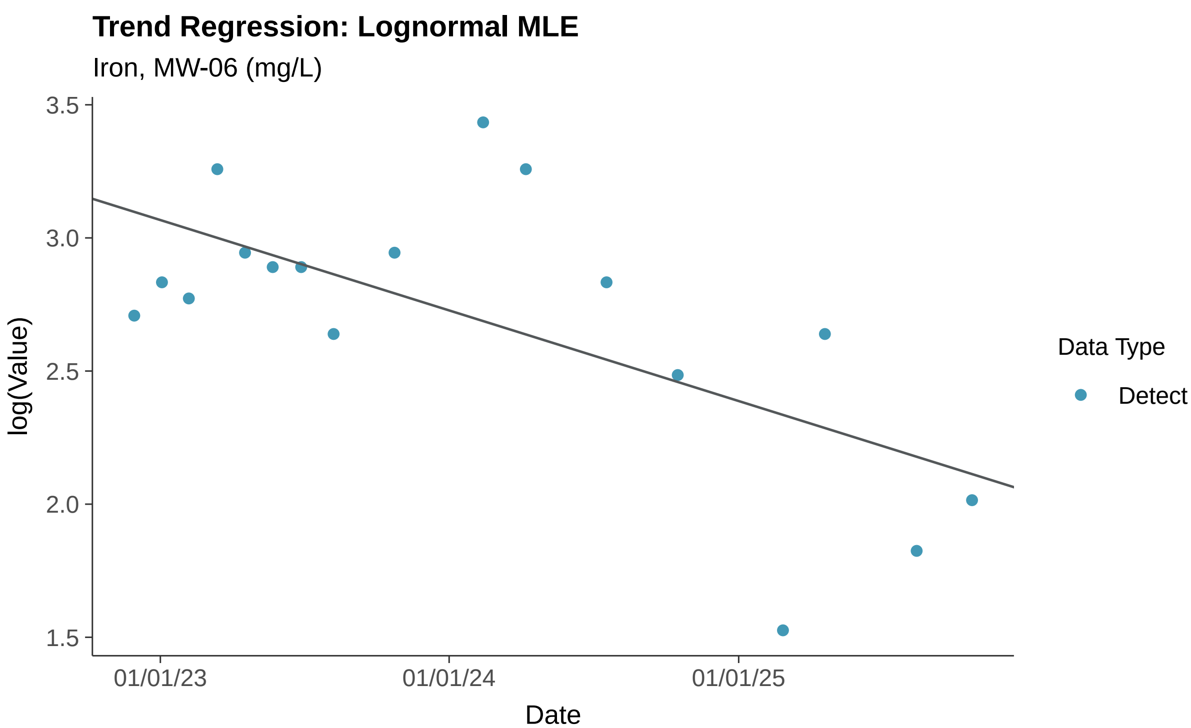
Iron, MW-06 (mg/L)




Normal Q-Q plot
Iron, MW-06 (mg/L)
Value
30
20
10
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

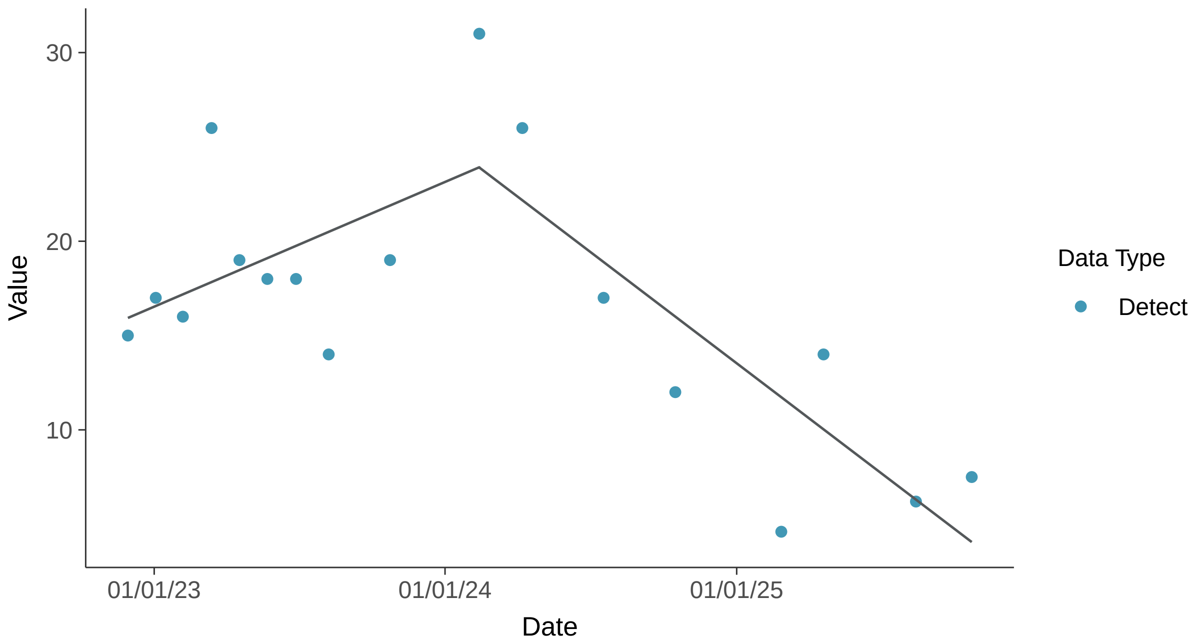

Lognormal Q-Q plot
Iron, MW-06 (mg/L)
log(Value)
3.5
3.0
2.5
2.0
1.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Iron, MW-06 (mg/L)
Value
30
20
10
0
10
20
30
40
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Iron, MW-06 (mg/L)
log(Value)
3.5
3.0
2.5
2.0
1.5
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

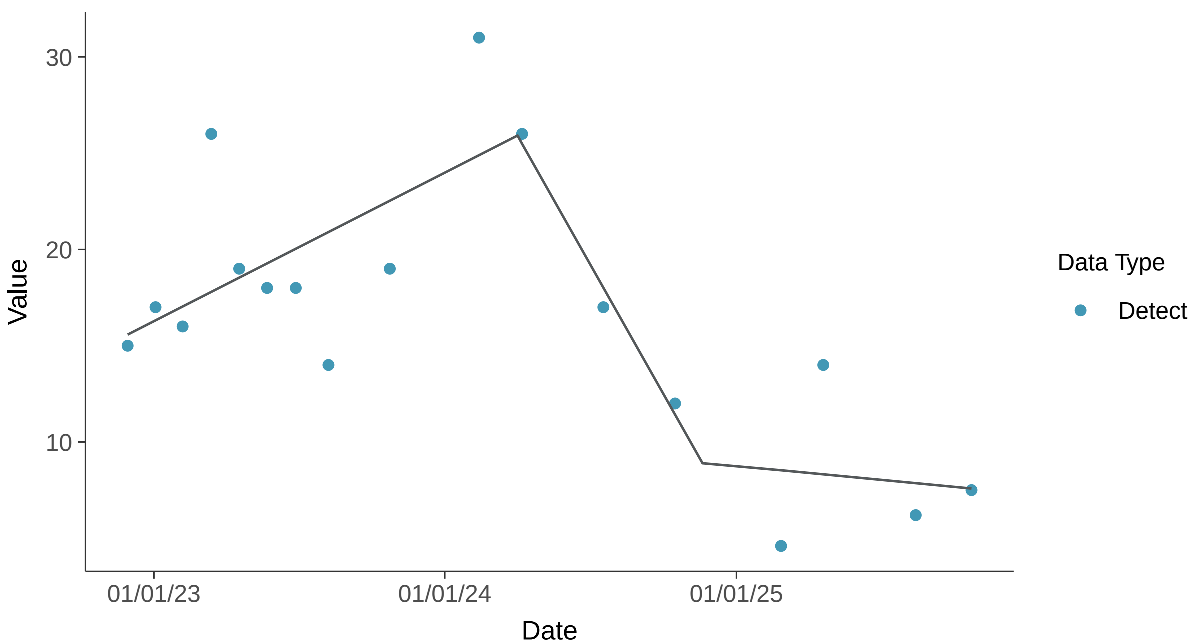
Trend Regression: Piecewise Linear-Linear

Iron, MW-06 (mg/L)



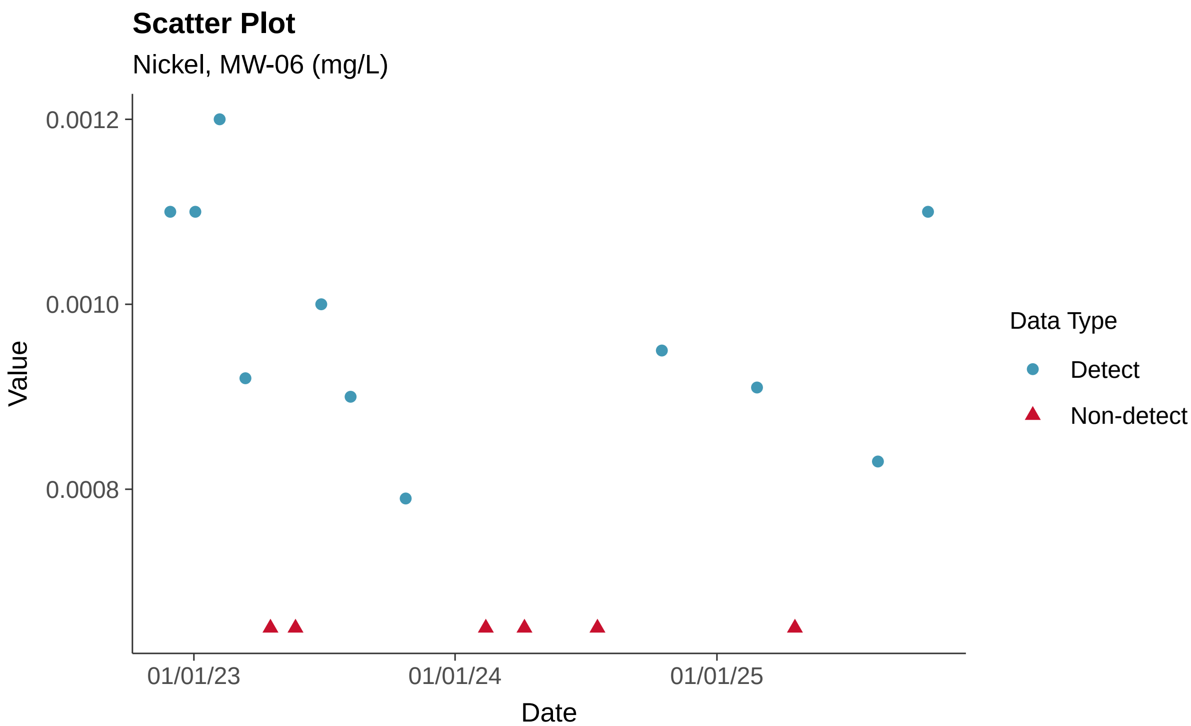
Trend Regression: Piecewise Linear-Linear-Linear

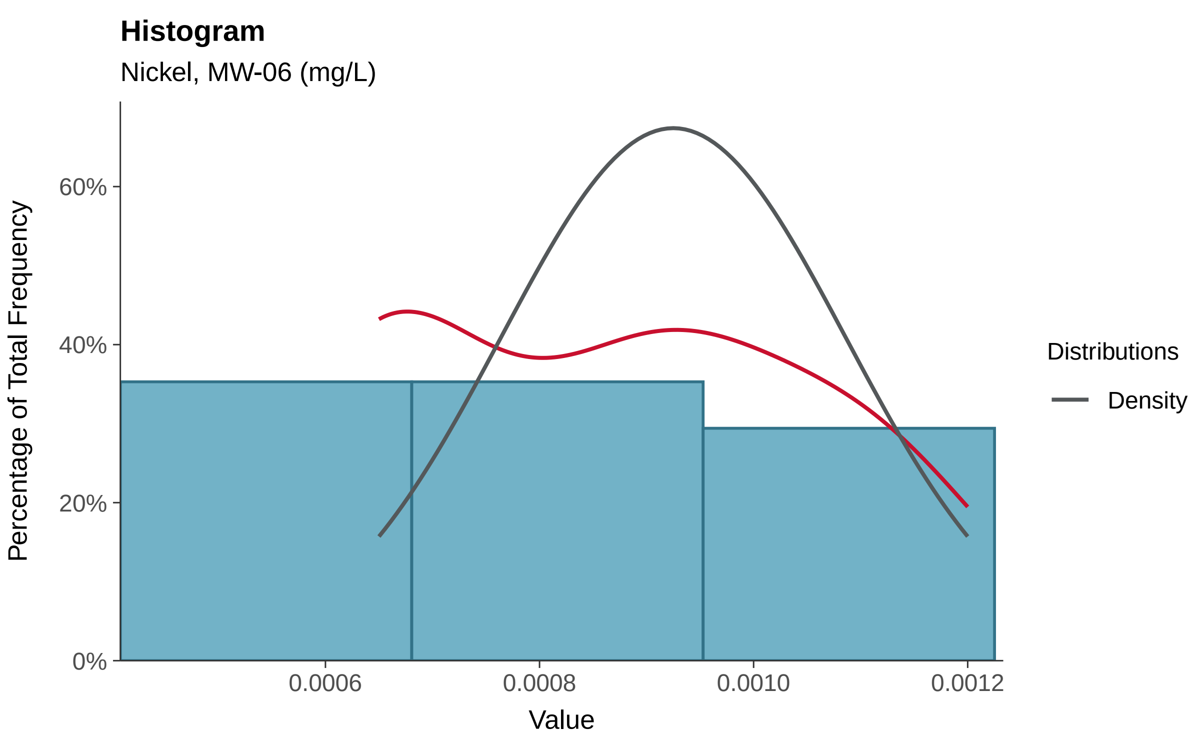
Iron, MW-06 (mg/L)



Part 115: Nickel, MW-06

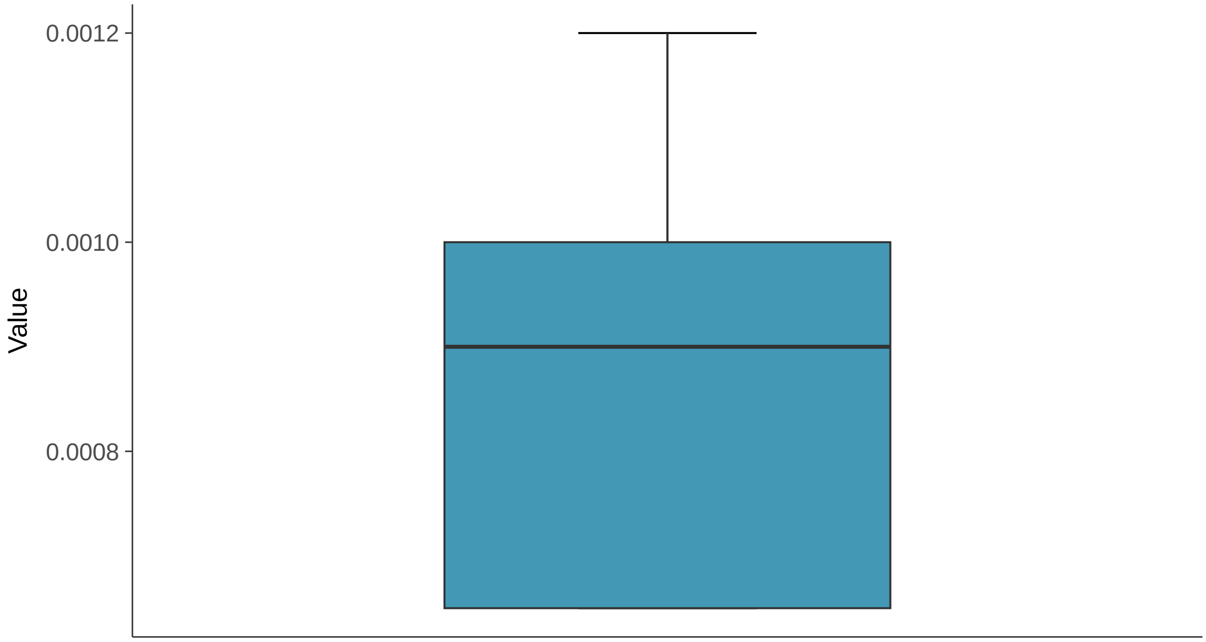
ID: 16_1_5_119





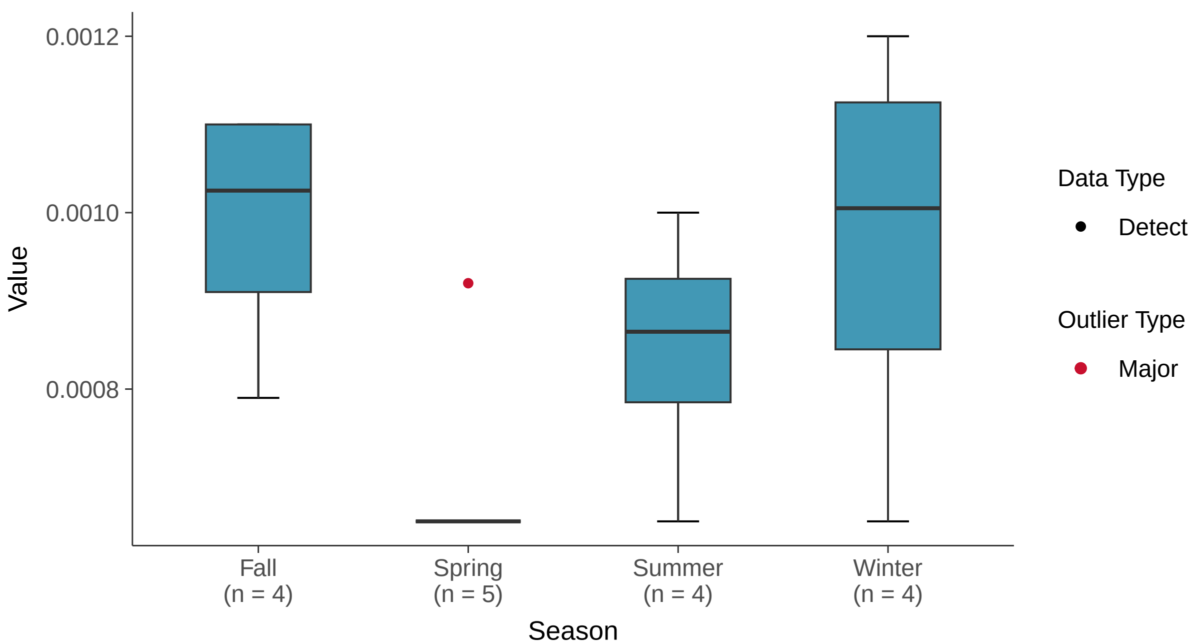
Boxplot

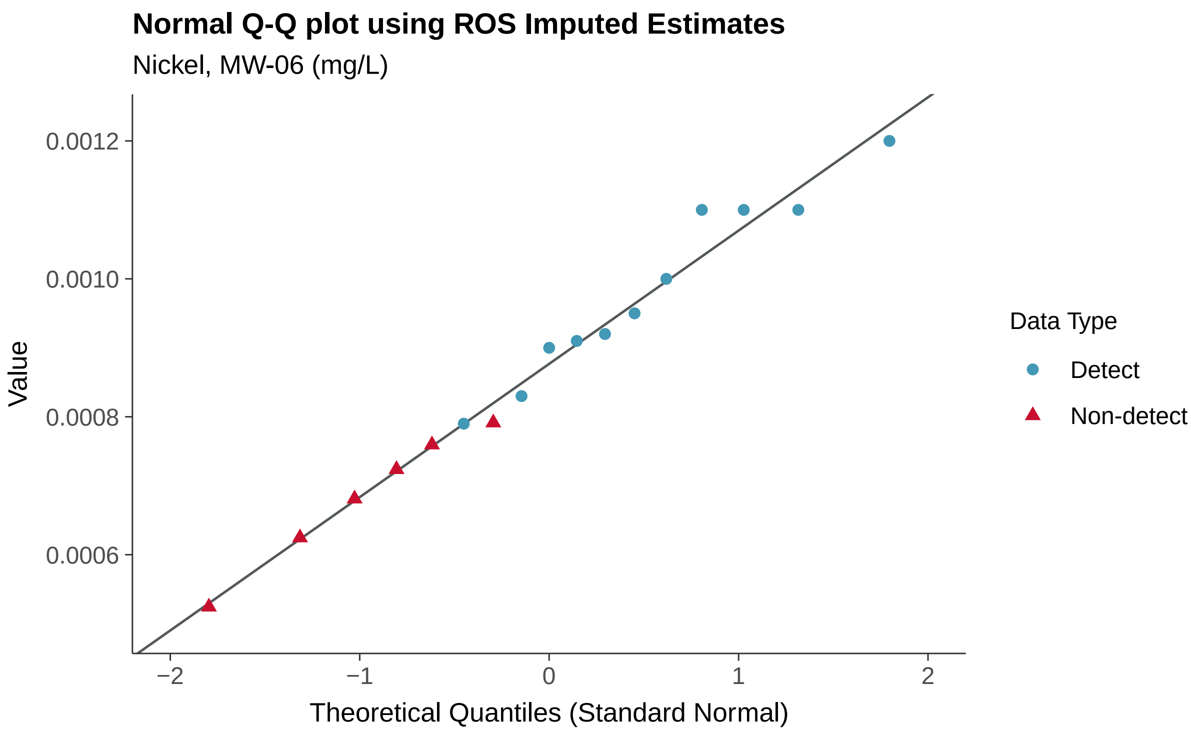
Nickel, MW-06 (mg/L)

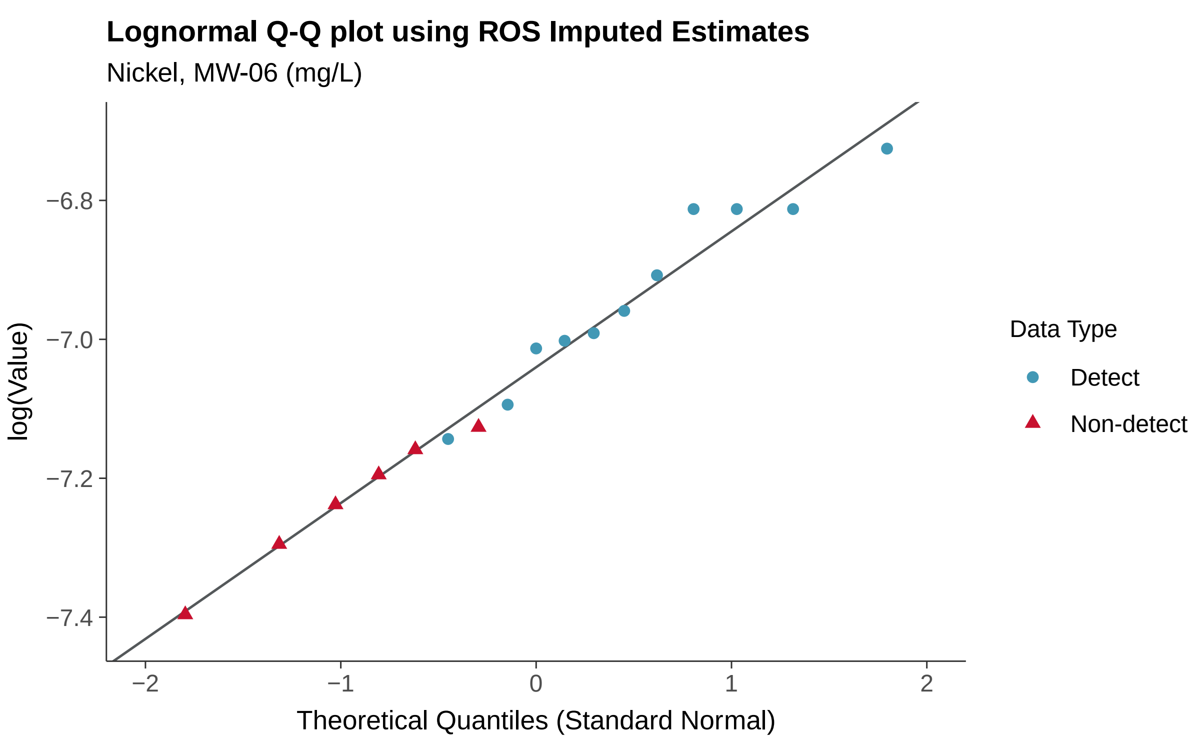


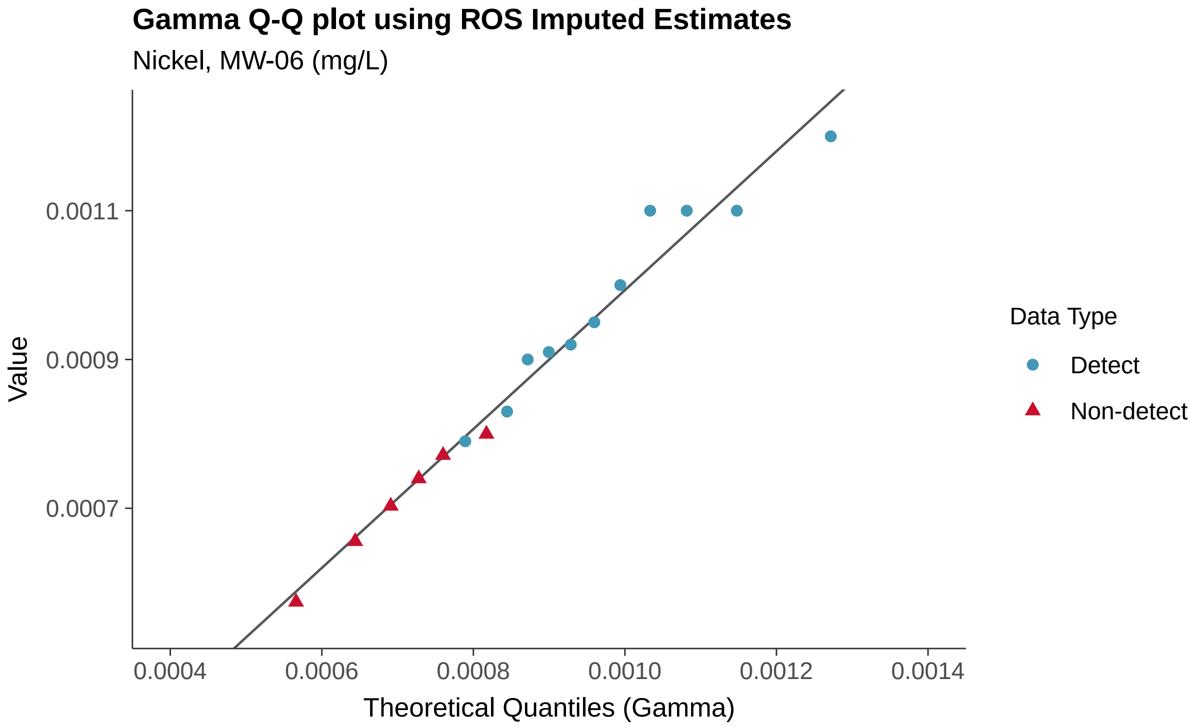
Boxplot by Season

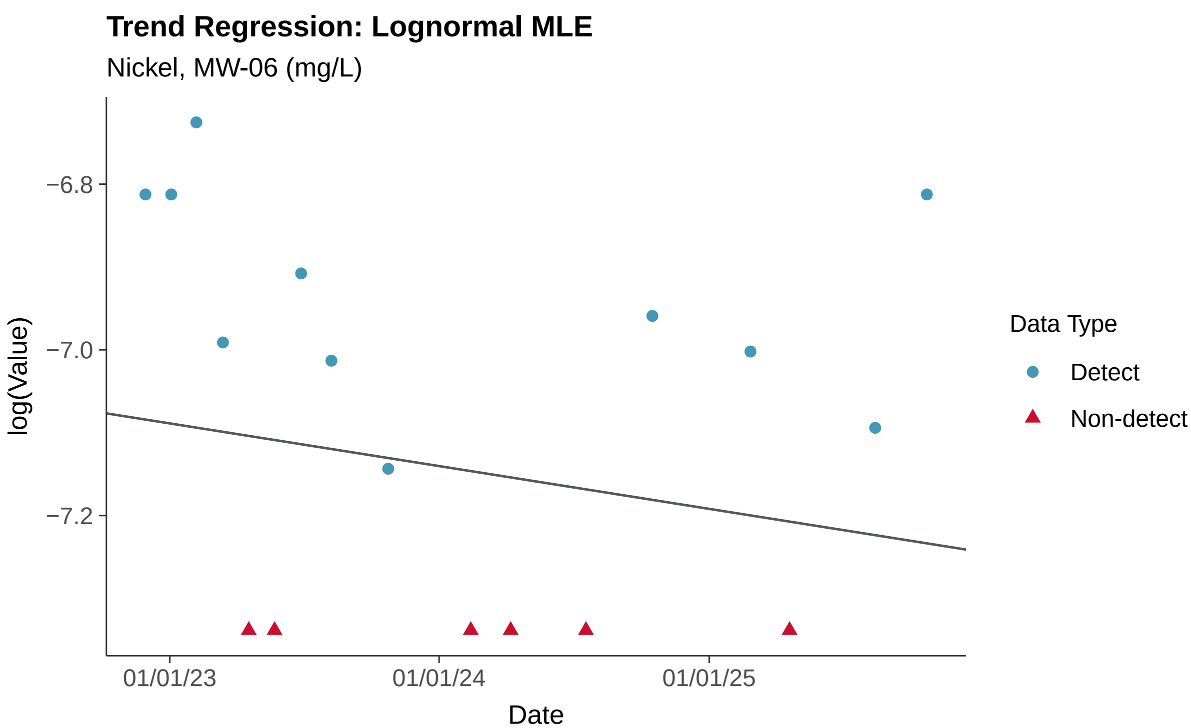
Nickel, MW-06 (mg/L)

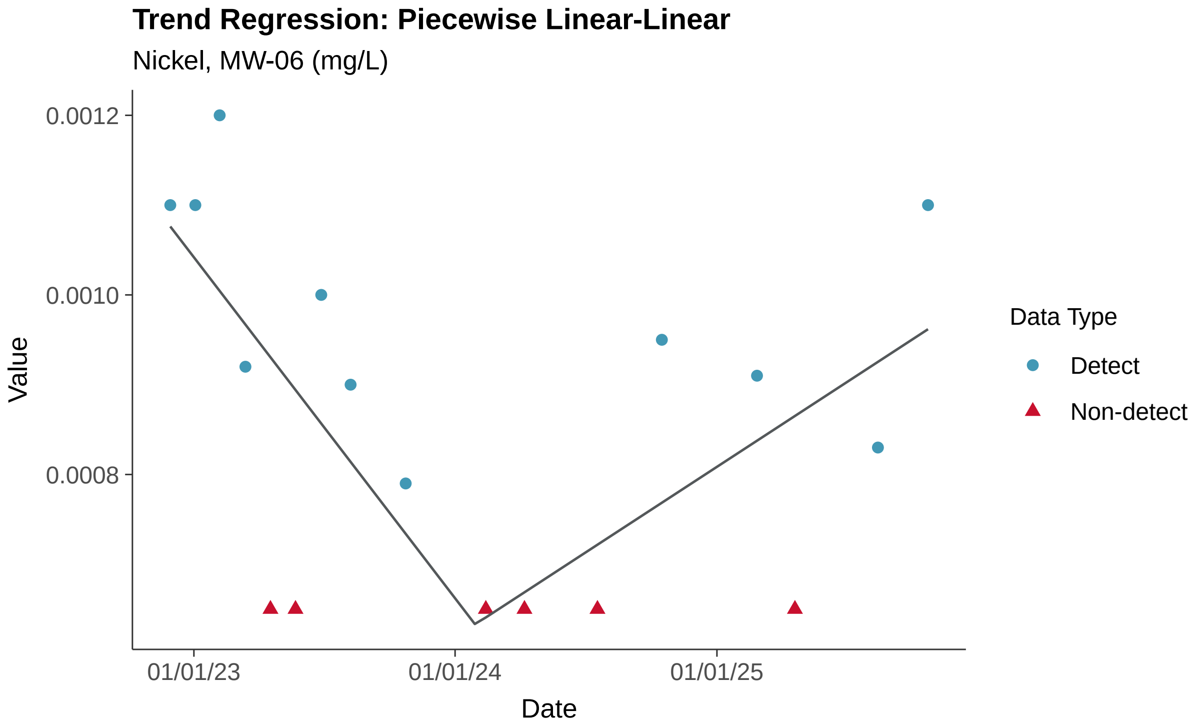


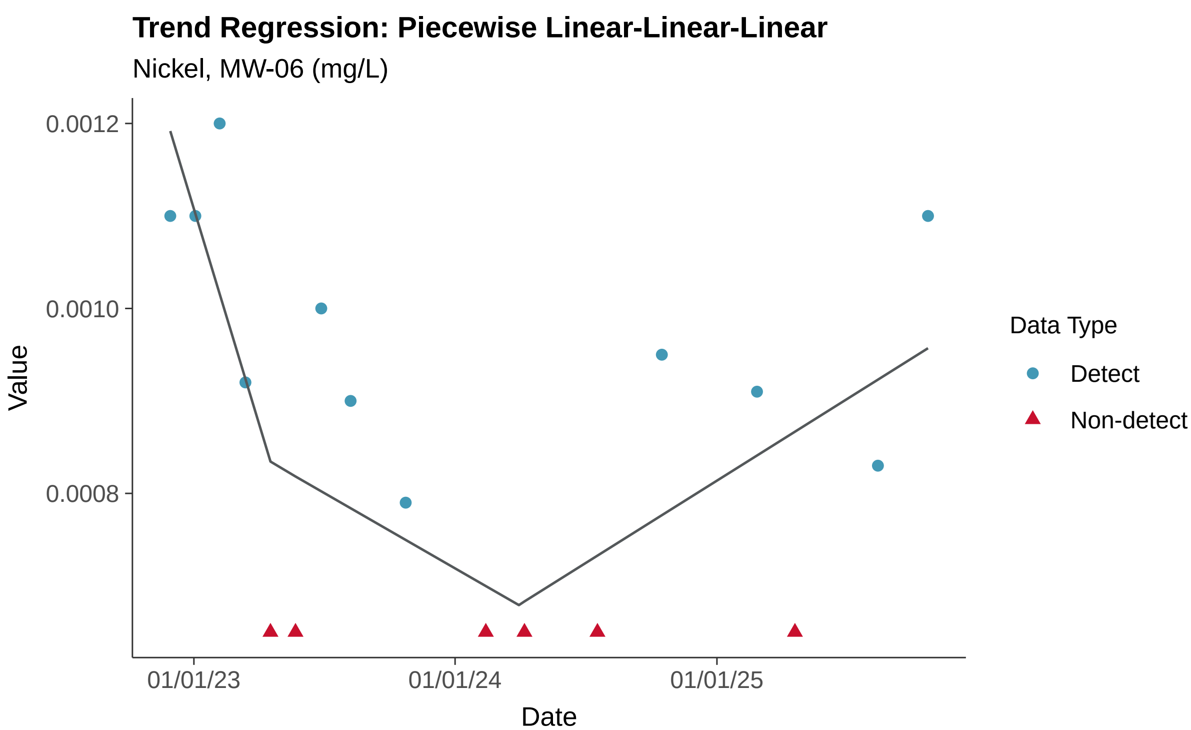

Normal Q-Q plot using ROS Imputed Estimates
Nickel, MW-06 (mg/L)
Value
0.0012
0.0010
0.0008
0.0006
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Lognormal Q-Q plot using ROS Imputed Estimates
Nickel, MW-06 (mg/L)
log(Value)
−6.8
−7.0
−7.2
−7.4
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Gamma Q-Q plot using ROS Imputed Estimates
Nickel, MW-06 (mg/L)
Value
0.0011
0.0009
0.0007
0.0004
0.0006
0.0008
0.0010
0.0012
0.0014
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect

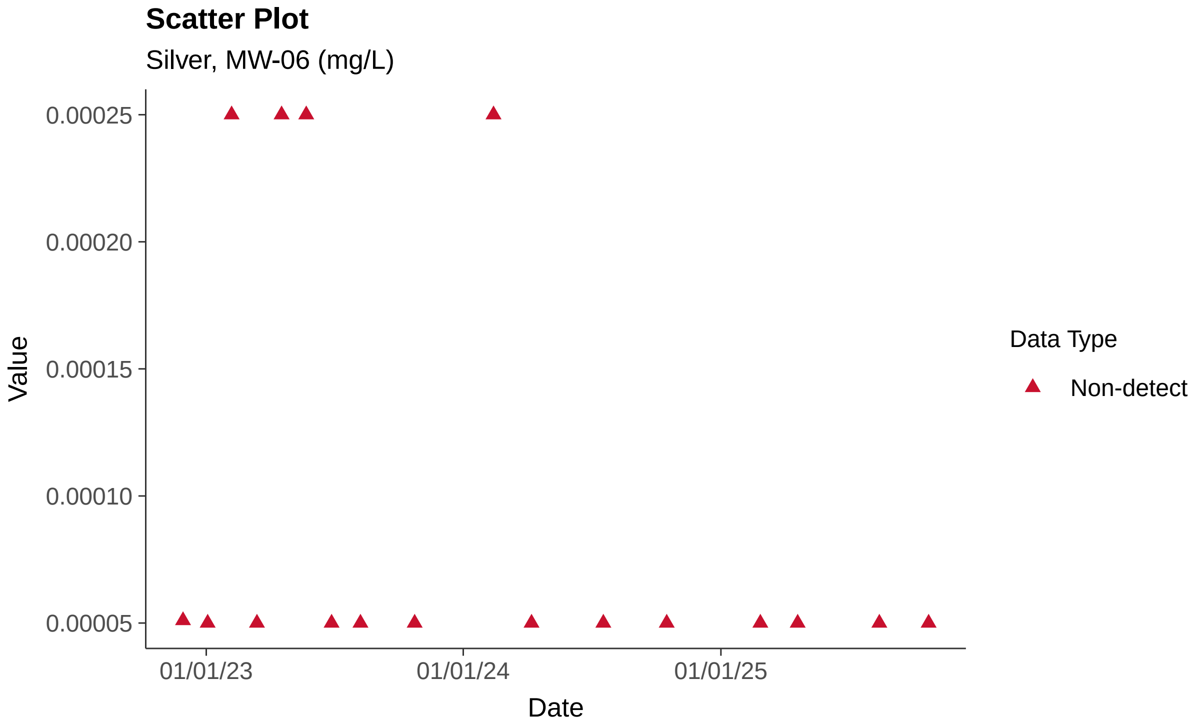

Trend Regression: Lognormal MLE
Nickel, MW-06 (mg/L)
log(Value)
−6.8
−7.0
−7.2
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

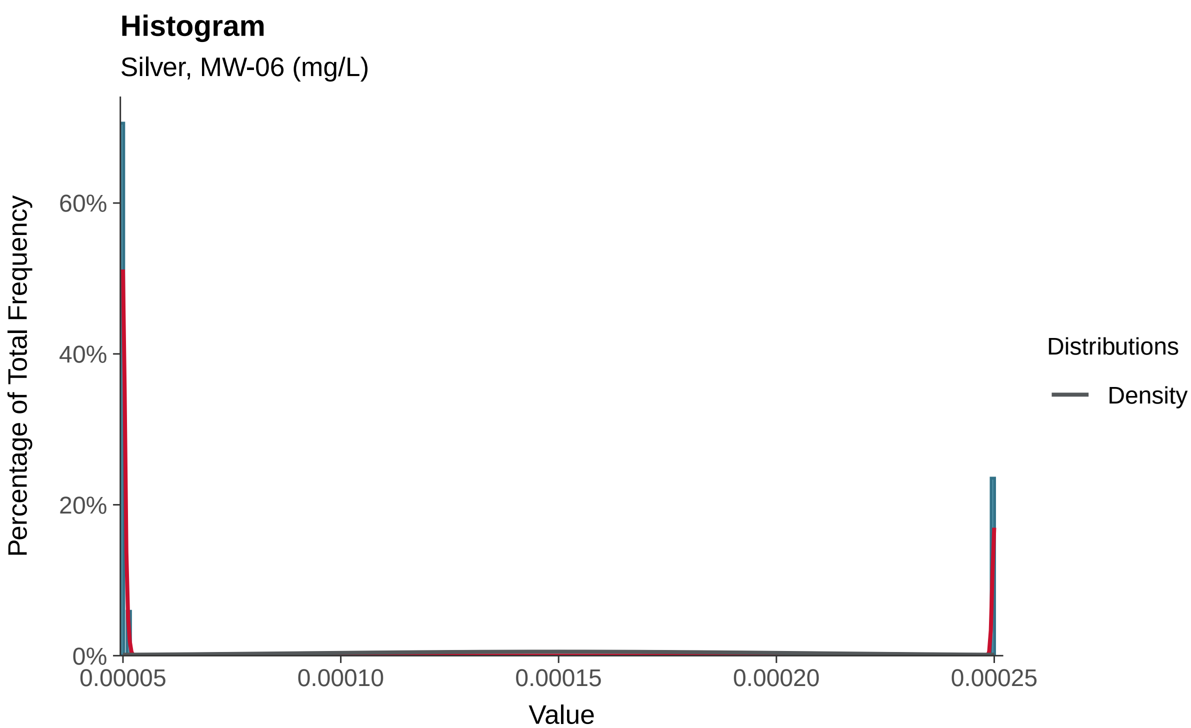

Trend Regression: Piecewise Linear-Linear
Nickel, MW-06 (mg/L)
0.0012
0.0010
0.0008
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear-Linear
Nickel, MW-06 (mg/L)
0.0012
0.0010
0.0008
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Part 115: Silver, MW-06

ID: 16_1_5_123



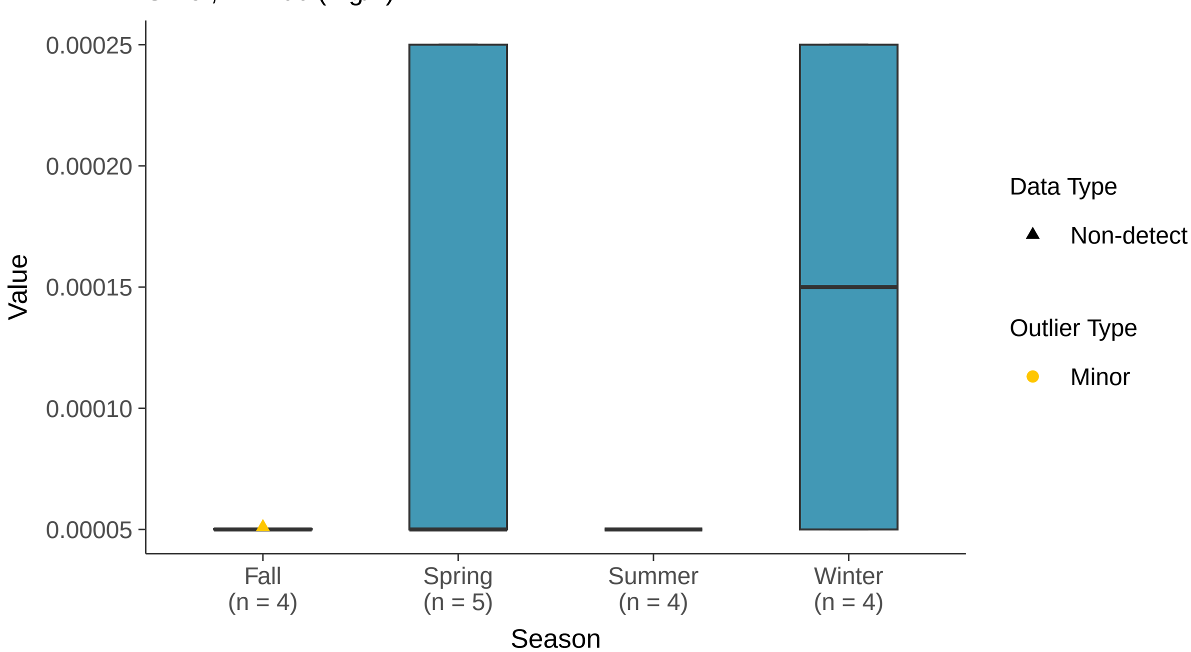


Boxplot

Silver, MW-06 (mg/L)

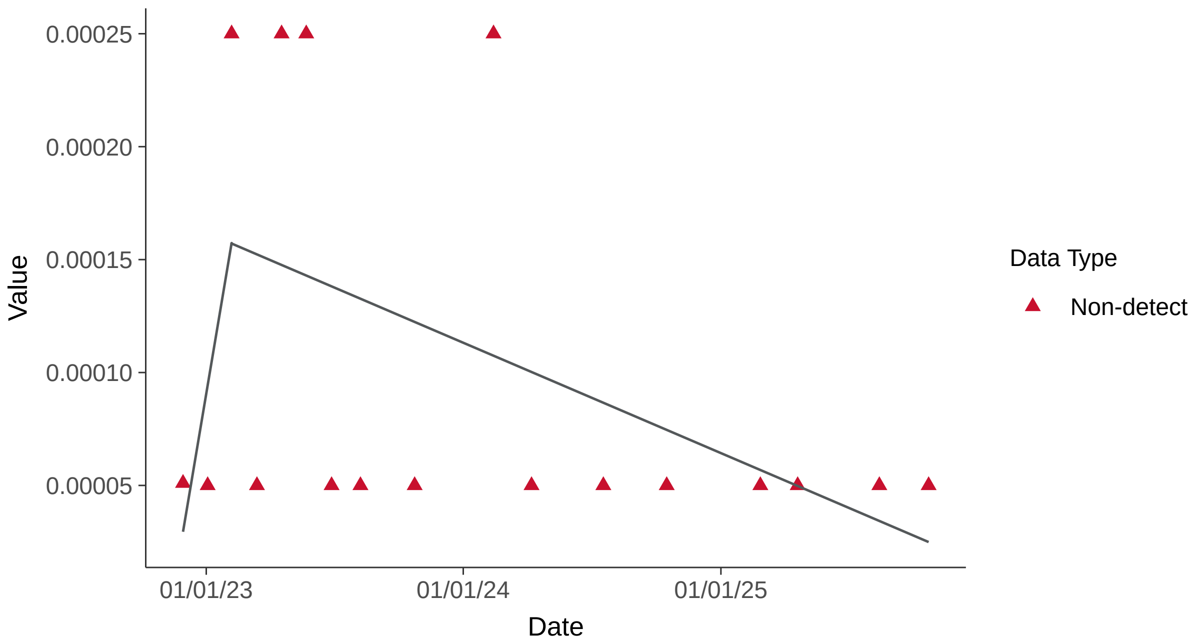
Boxplot by Season

Silver, MW-06 (mg/L)



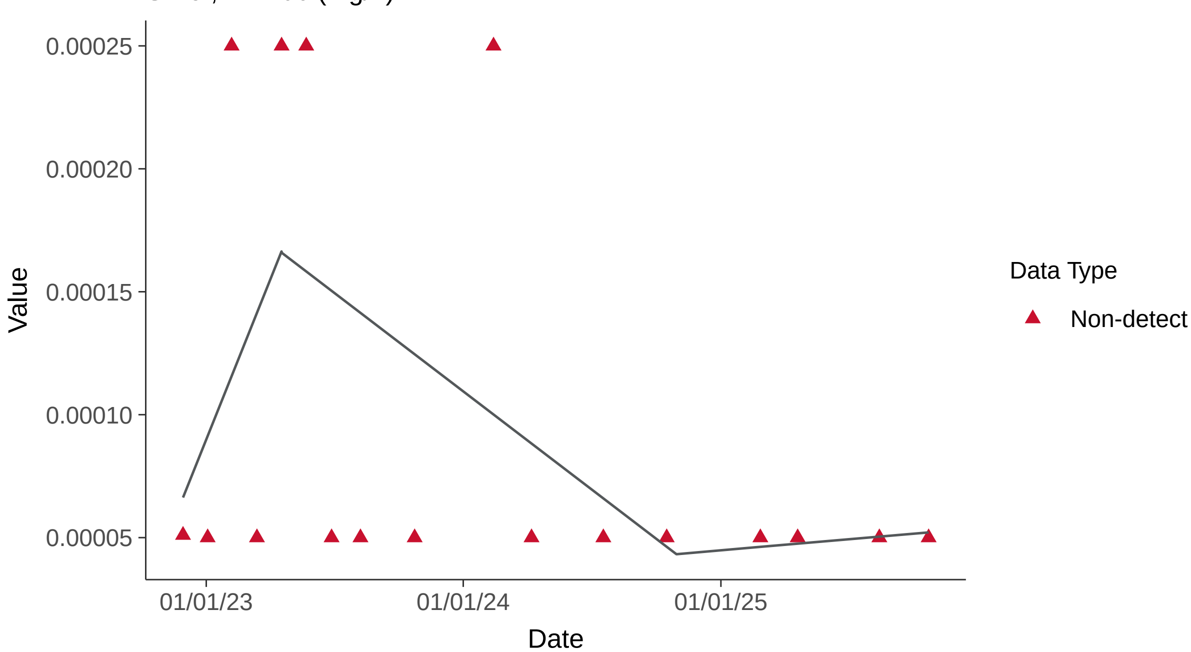
Trend Regression: Piecewise Linear-Linear

Silver, MW-06 (mg/L)



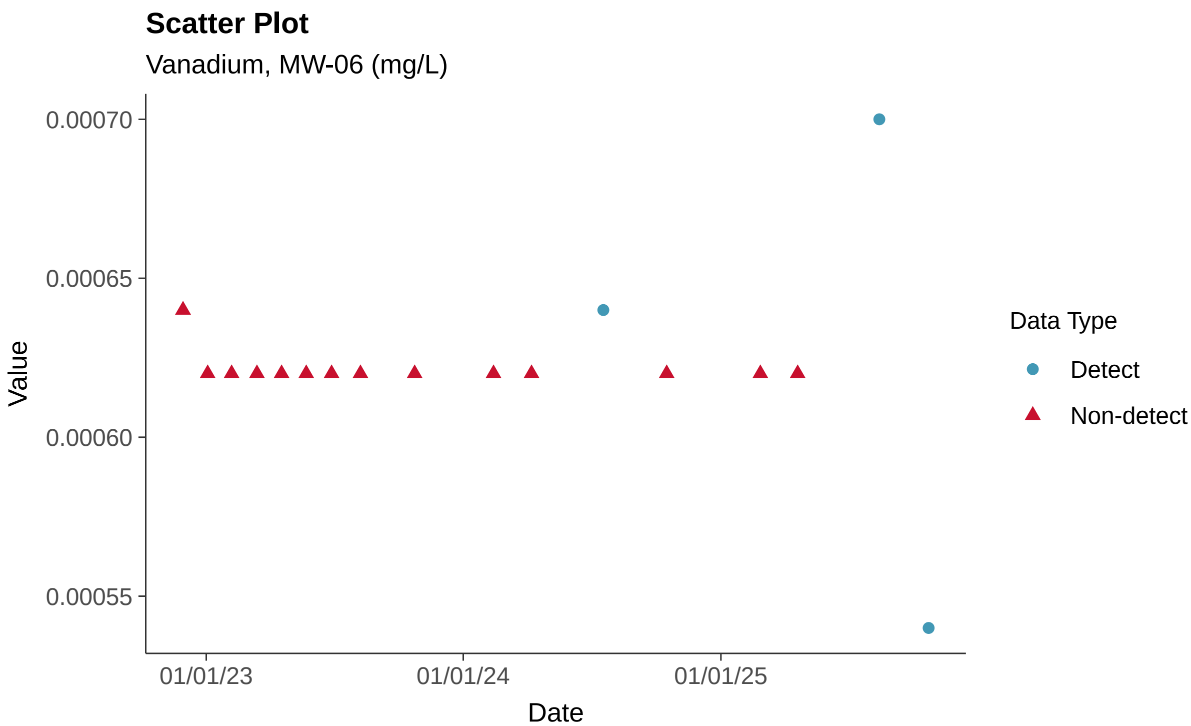
Trend Regression: Piecewise Linear-Linear-Linear

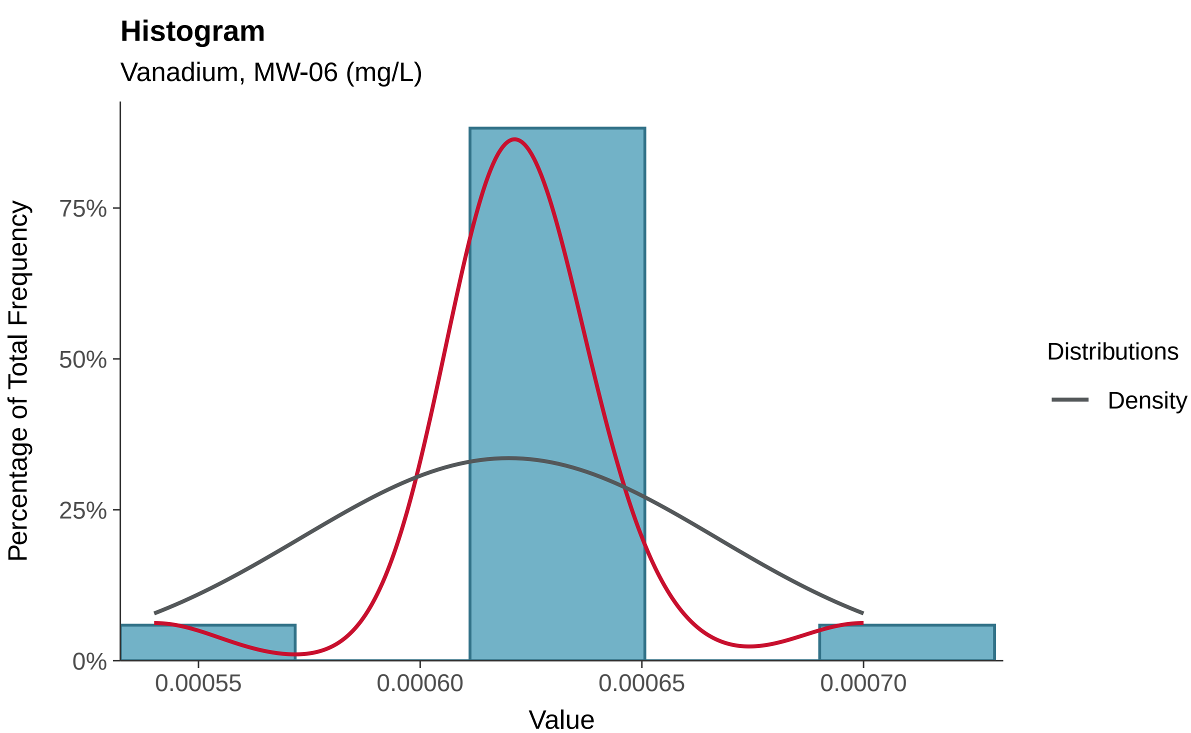
Silver, MW-06 (mg/L)



Part 115: Vanadium, MW-06

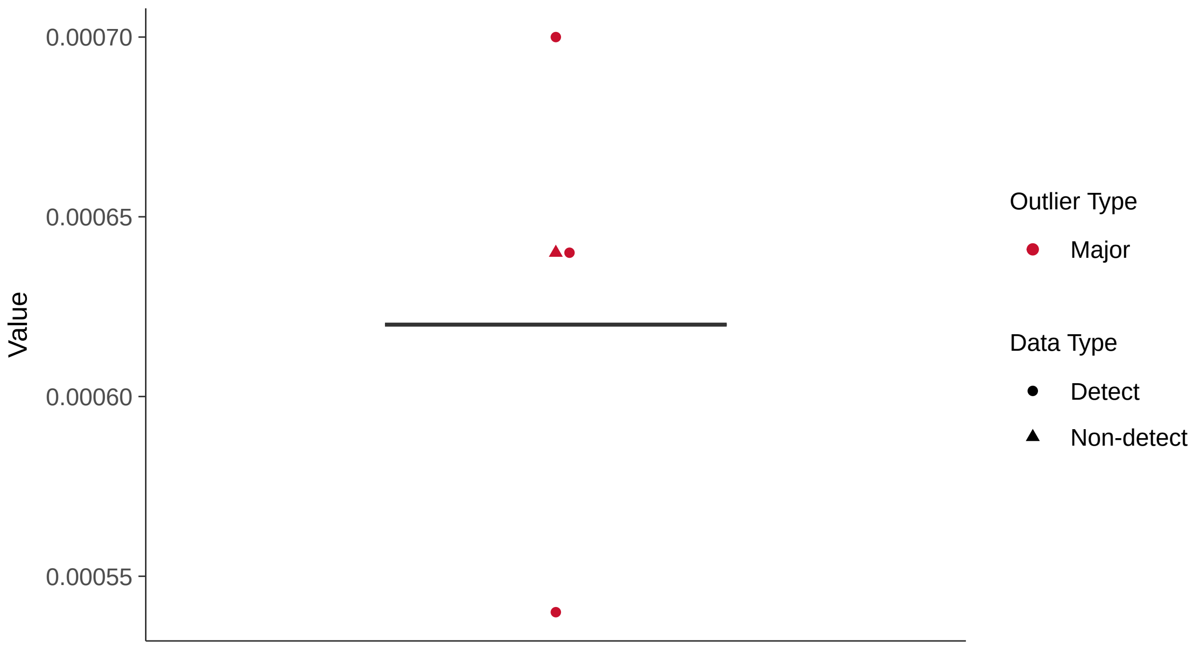
ID: 16_1_5_128





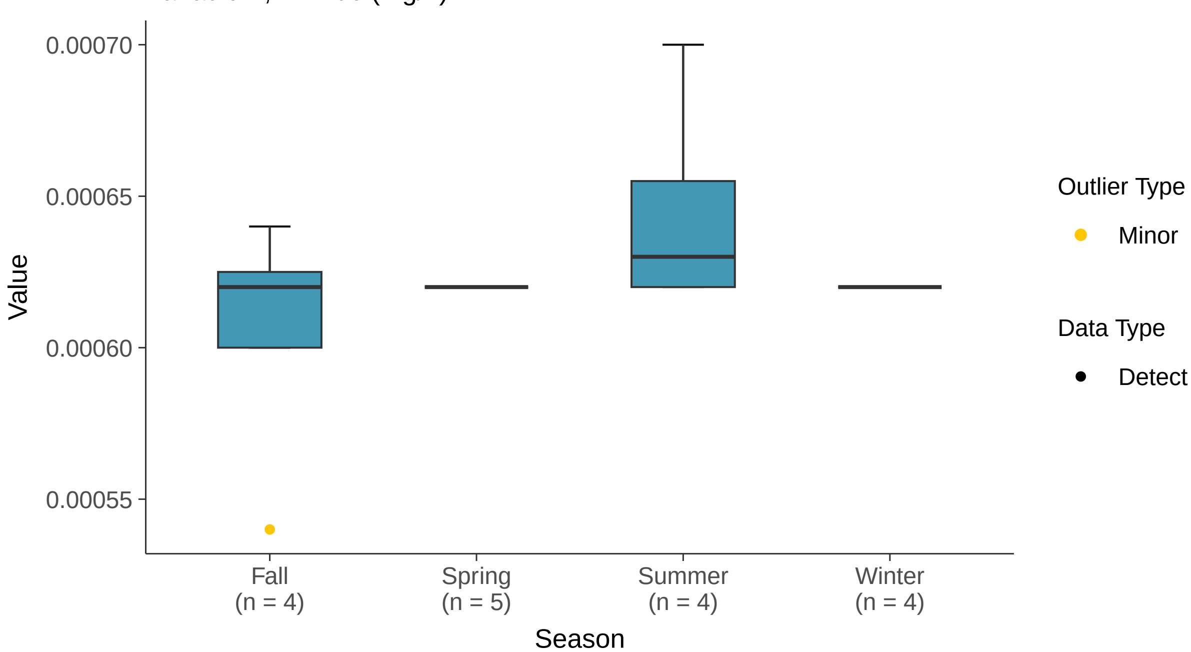
Boxplot

Vanadium, MW-06 (mg/L)



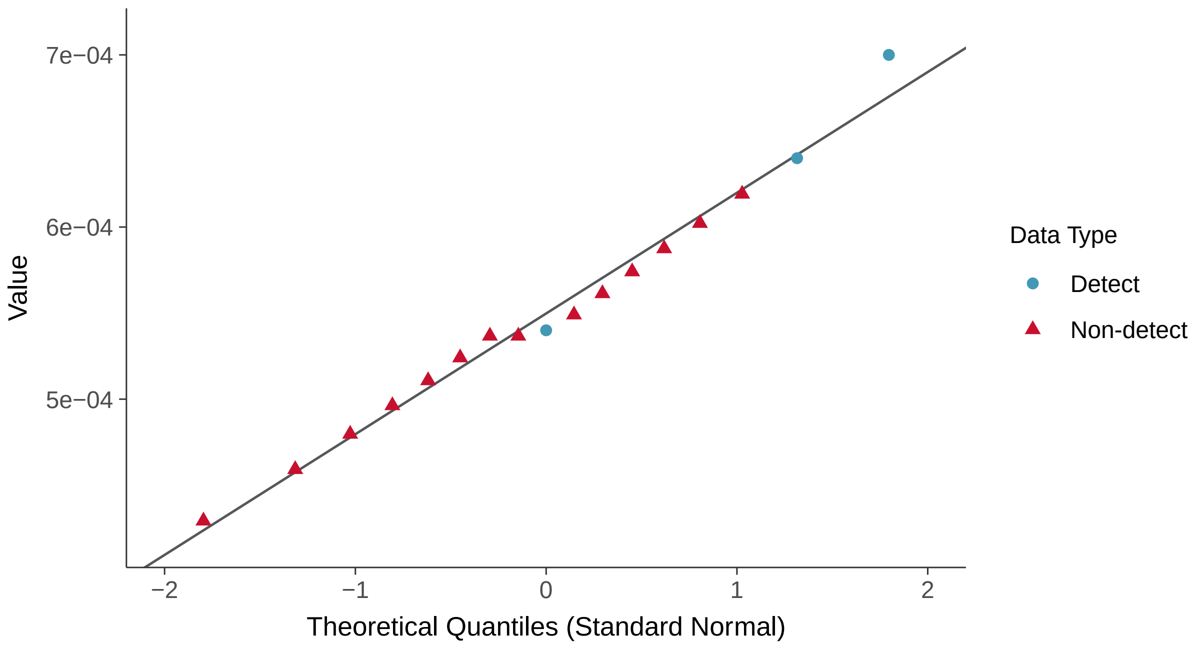
Boxplot by Season

Vanadium, MW-06 (mg/L)



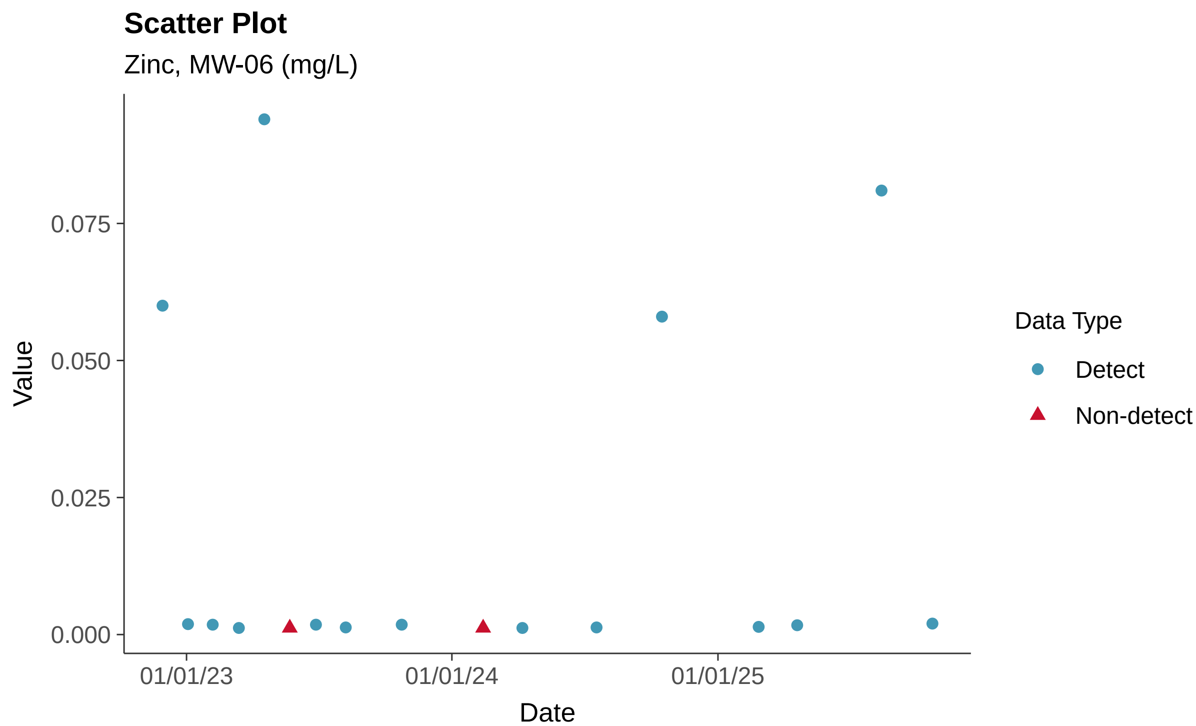
Normal Q-Q plot using ROS Imputed Estimates

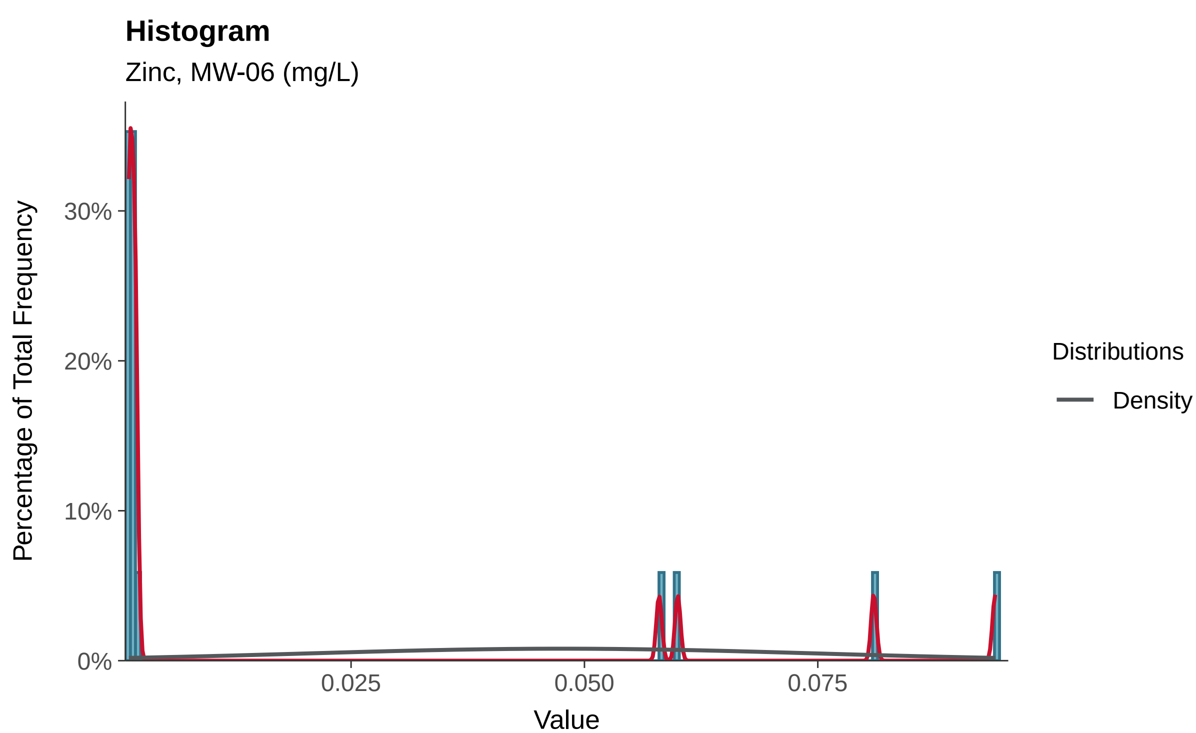
Vanadium, MW-06 (mg/L)



Part 115: Zinc, MW-06

ID: 16_1_5_129



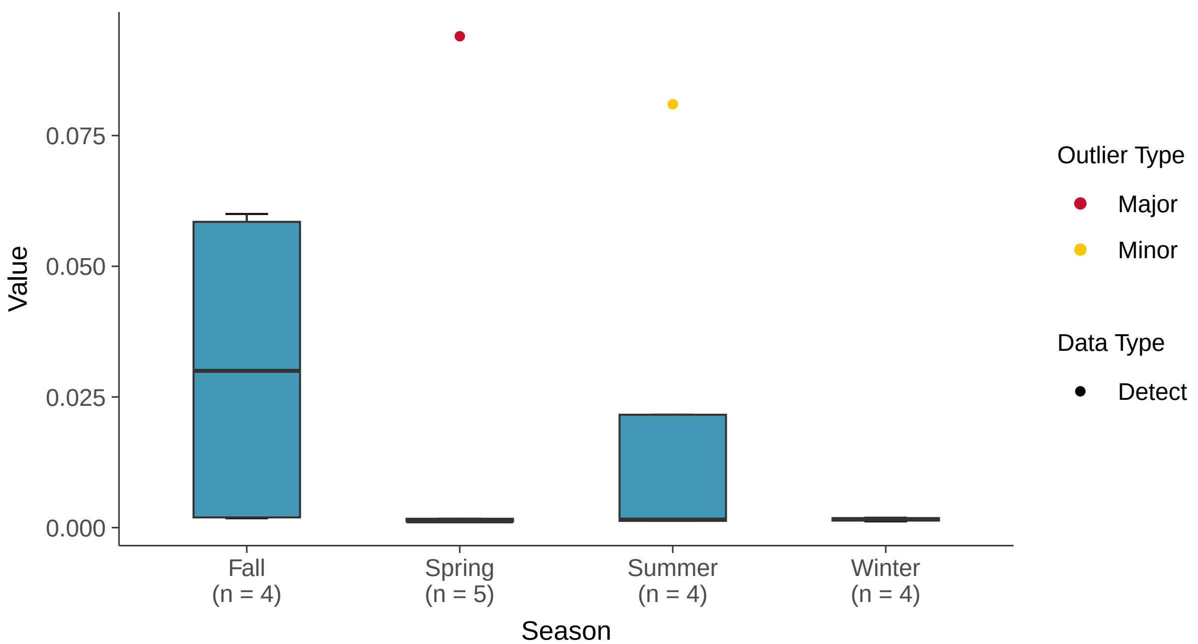


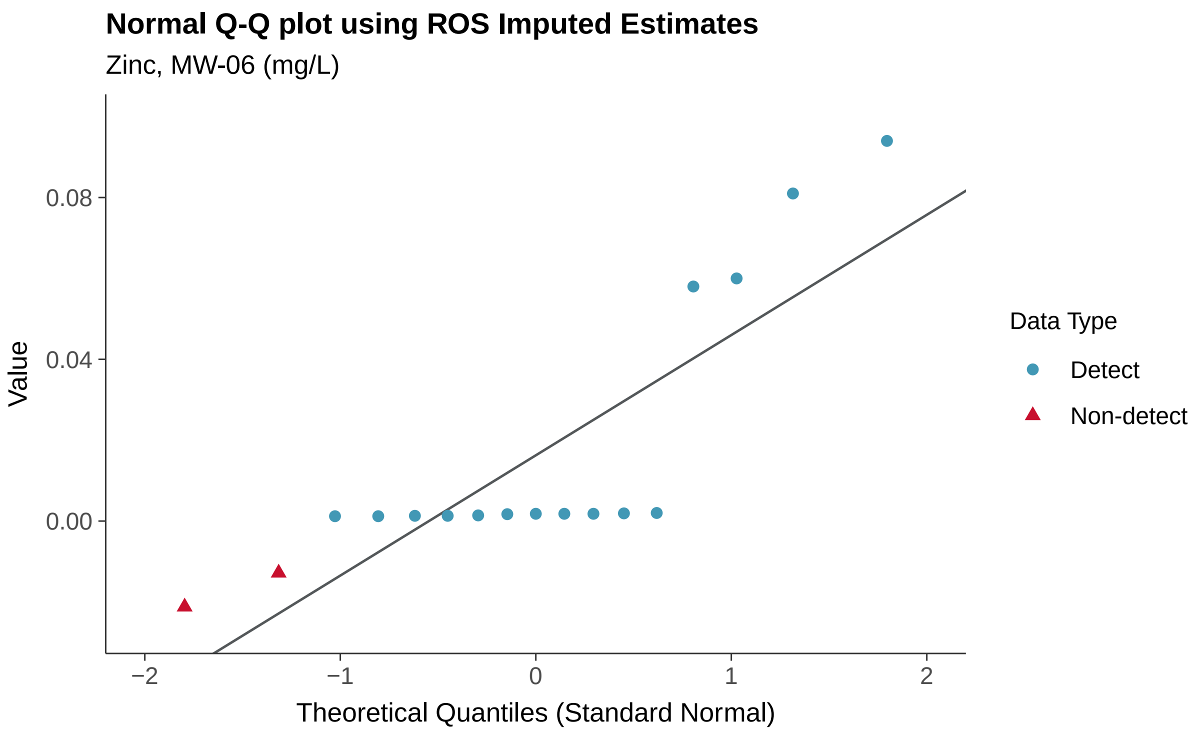
Boxplot

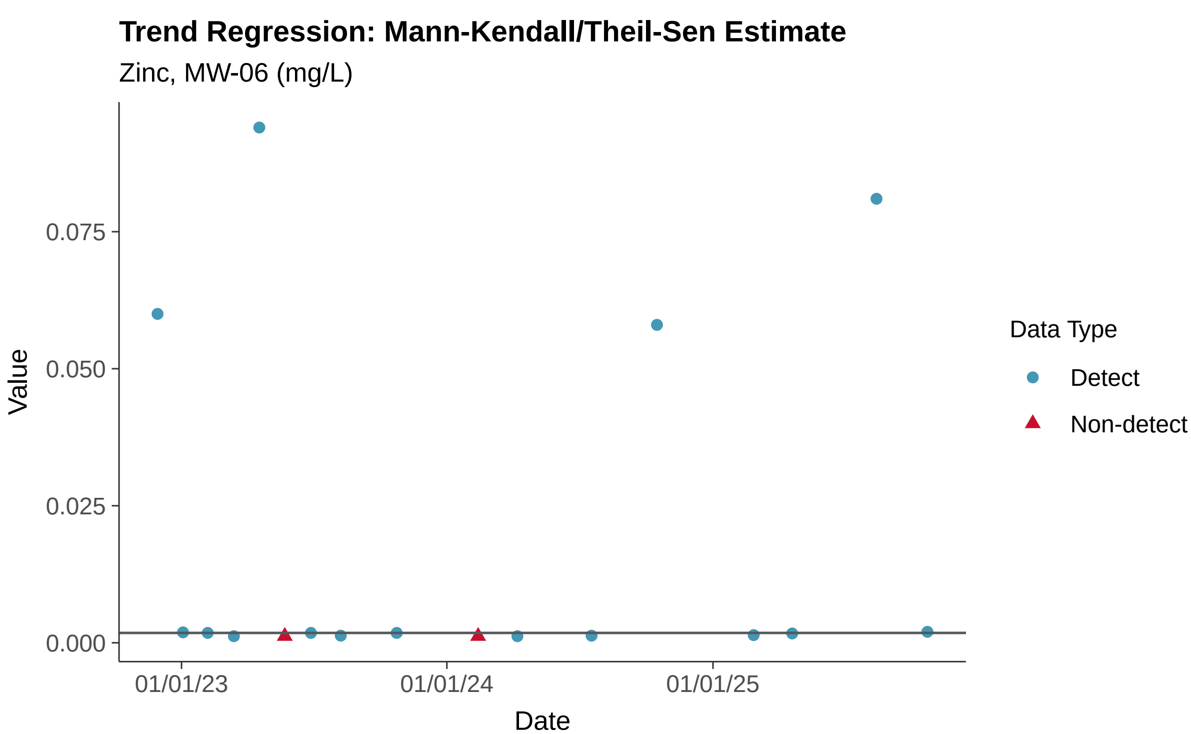
Zinc, MW-06 (mg/L)

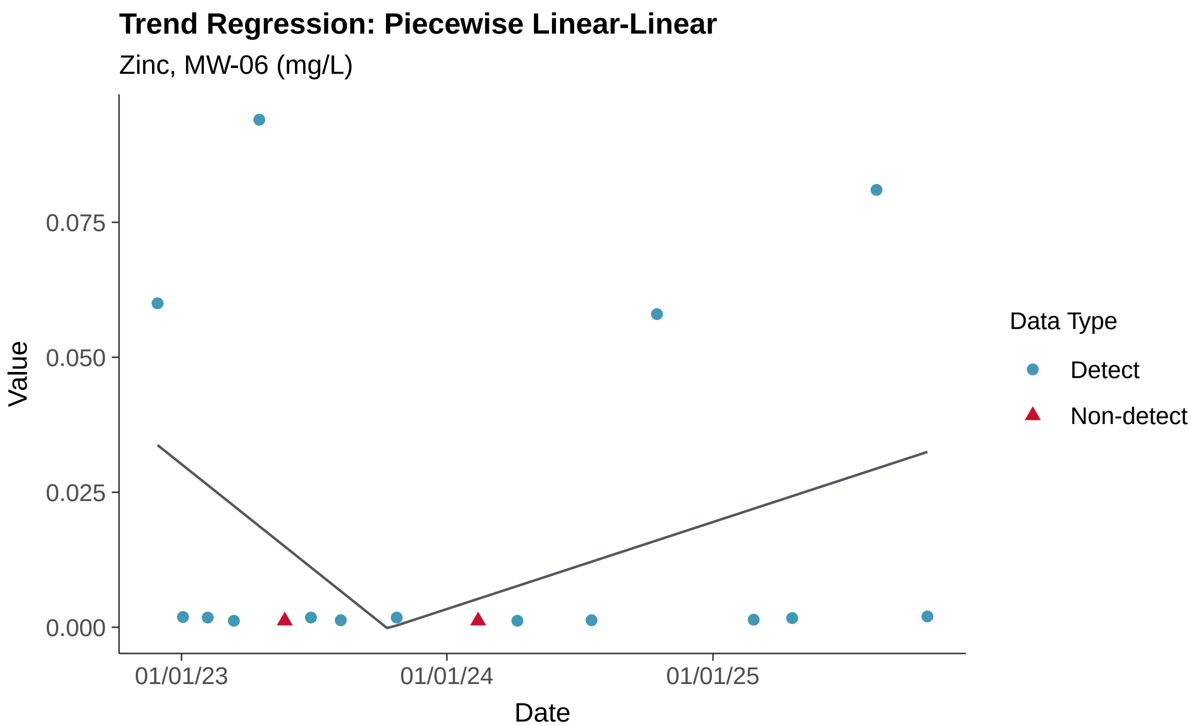
Boxplot by Season

Zinc, MW-06 (mg/L)




Normal Q-Q plot using ROS Imputed Estimates
Zinc, MW-06 (mg/L)
Value
0.08
0.04
0.00
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Trend Regression: Mann-Kendall/Theil-Sen Estimate
Zinc, MW-06 (mg/L)
Value
0.075
0.050
0.025
0.000
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

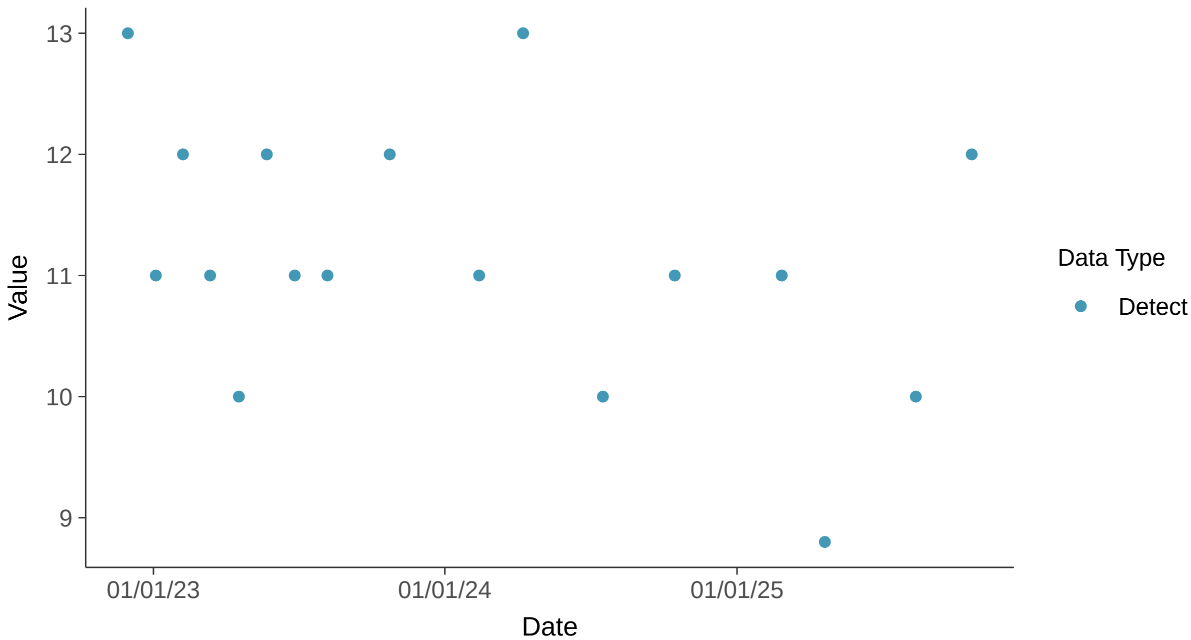

Trend Regression: Piecewise Linear-Linear
Zinc, MW-06 (mg/L)
Value
0.075
0.050
0.025
0.000
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Appendix III: Boron, MW-07

ID: 17_1_3_105

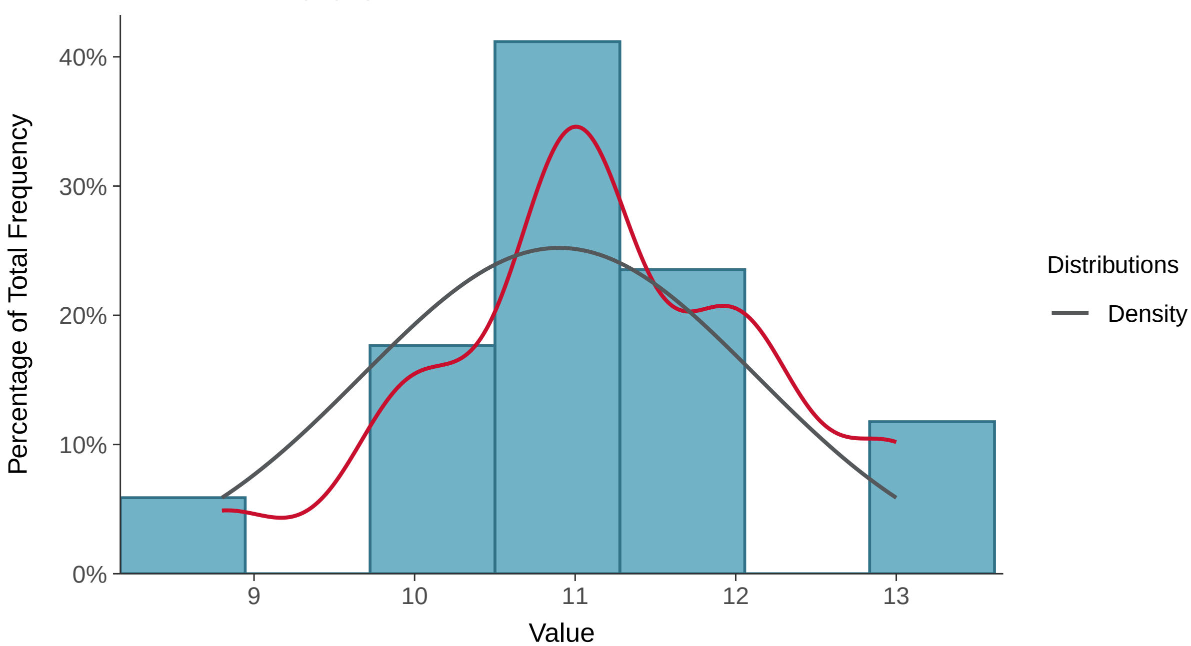
Scatter Plot

Boron, MW-07 (mg/L)



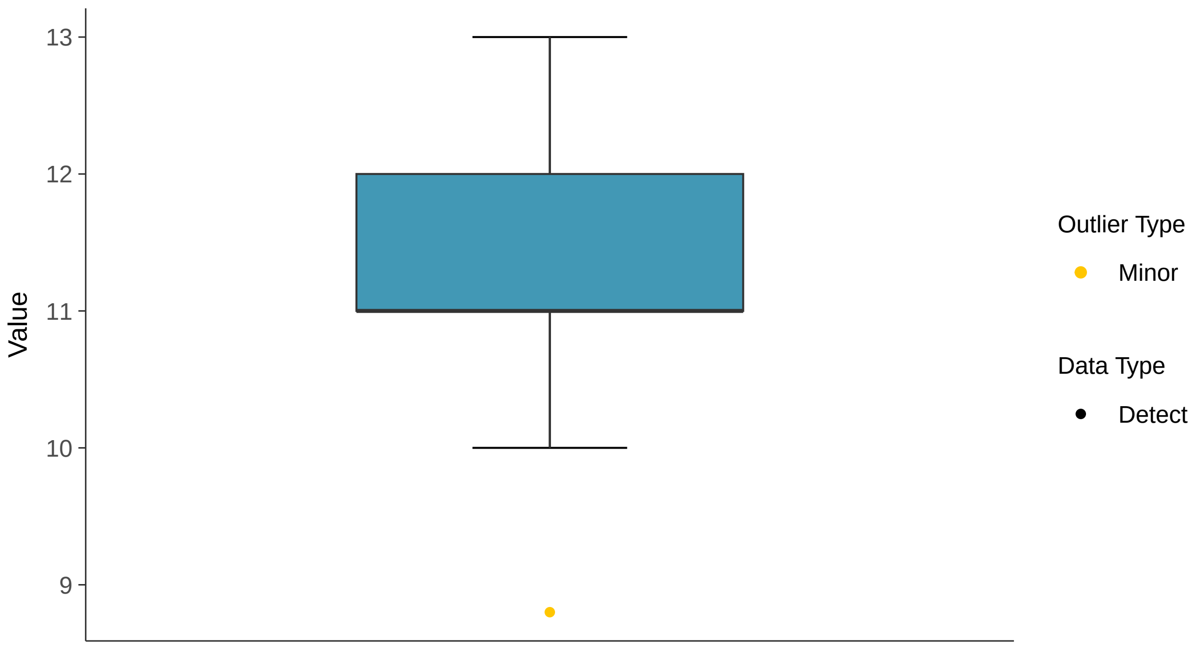
Histogram

Boron, MW-07 (mg/L)



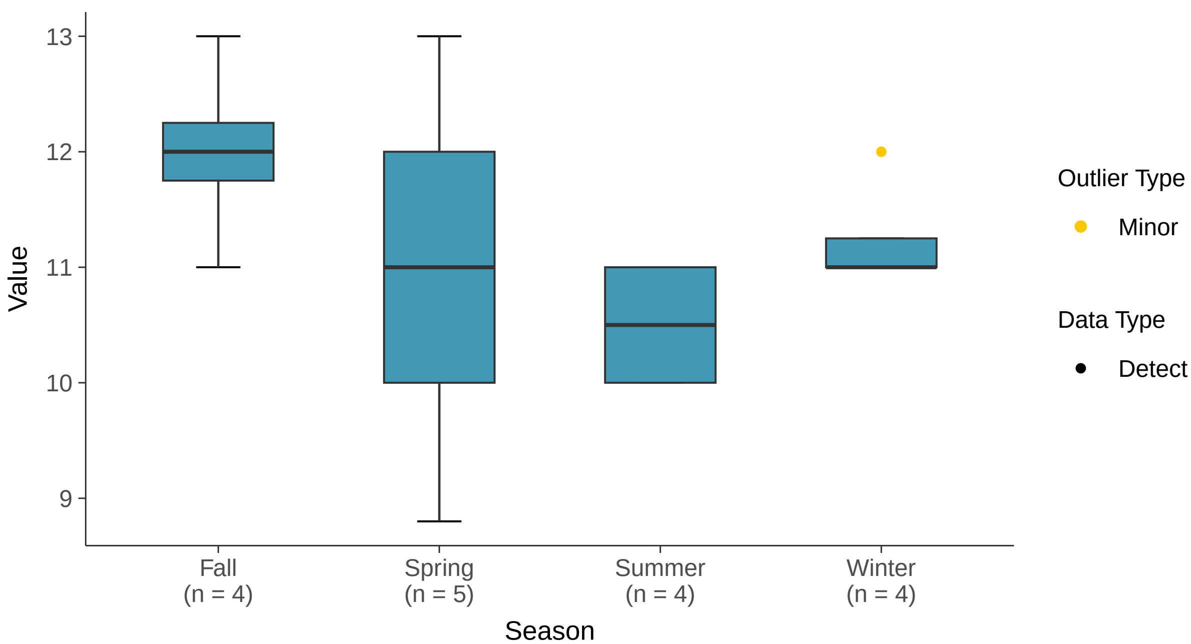
Boxplot

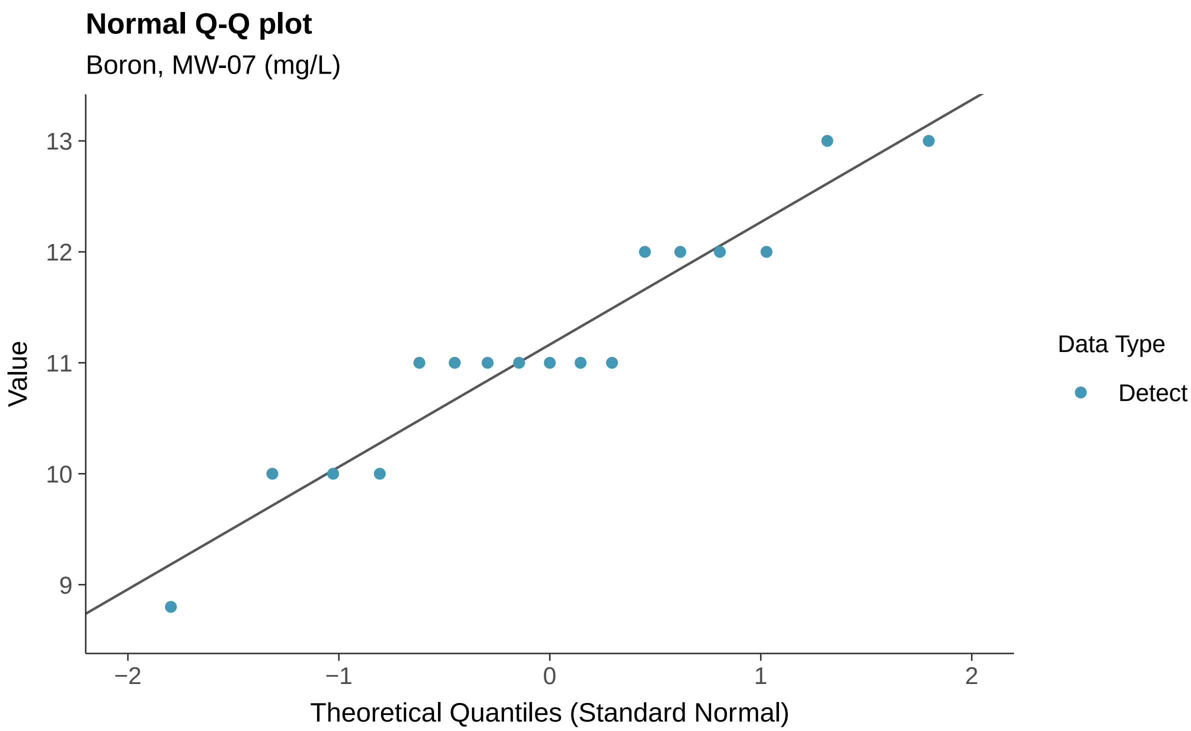
Boron, MW-07 (mg/L)

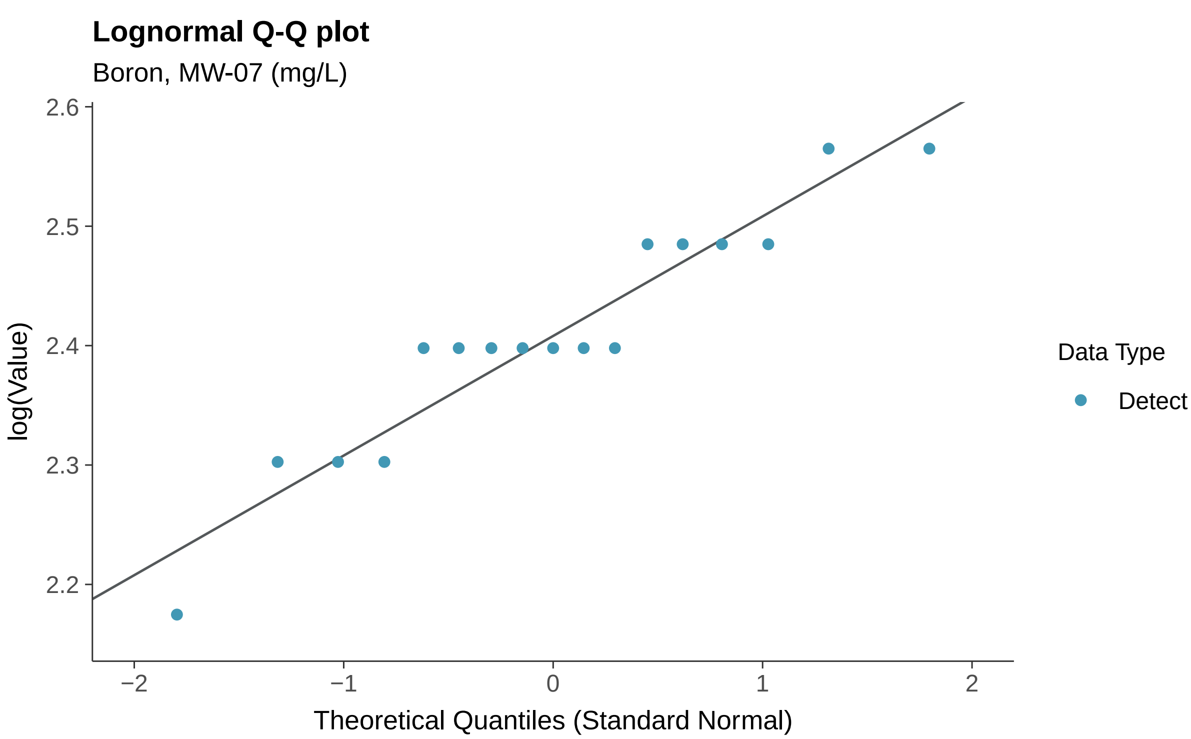


Boxplot by Season

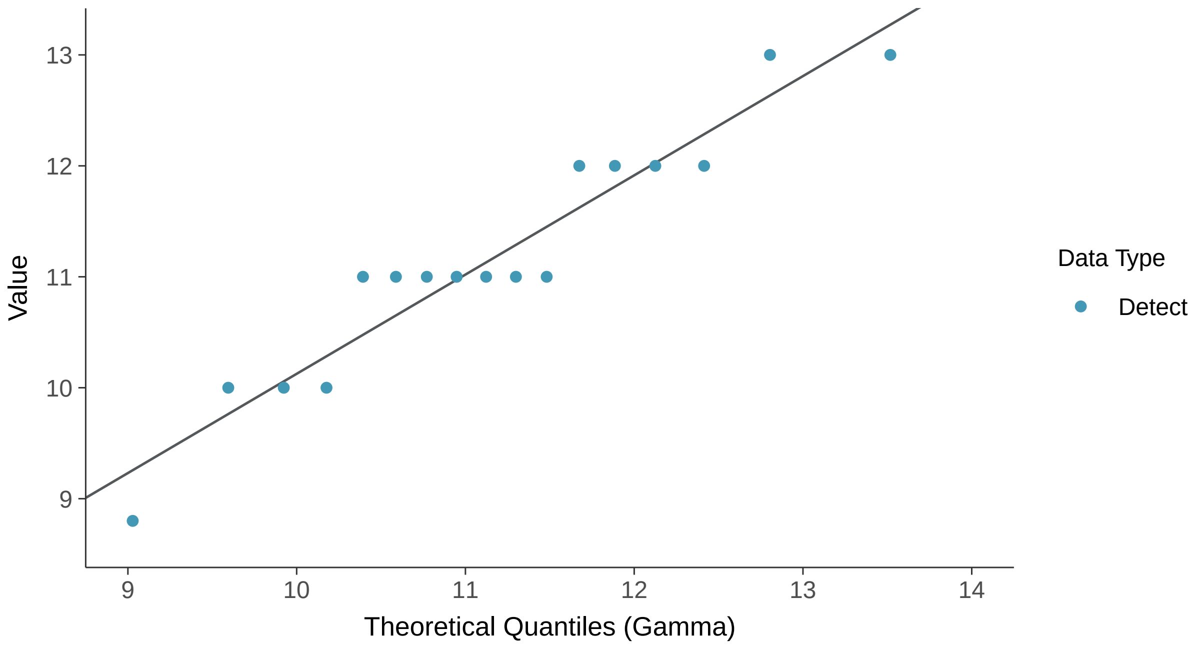
Boron, MW-07 (mg/L)



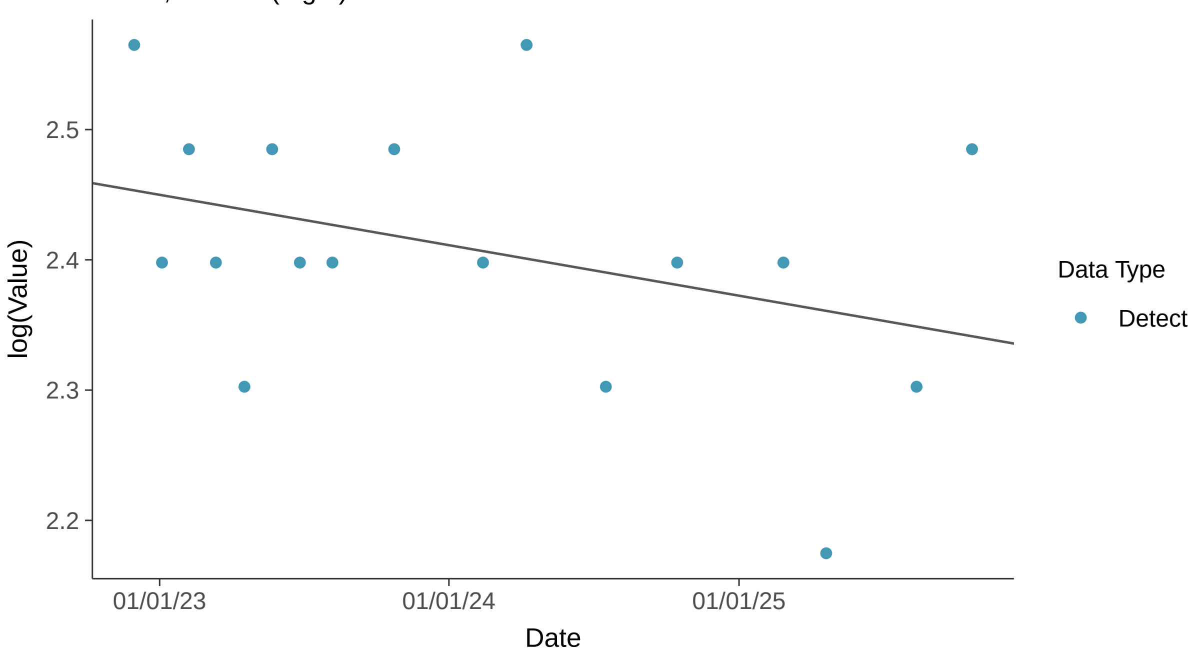

Normal Q-Q plot
Boron, MW-07 (mg/L)
Value
13
12
11
10
9
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Boron, MW-07 (mg/L)
log(Value)
2.6
2.5
2.4
2.3
2.2
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Gamma Q-Q plot
Boron, MW-07 (mg/L)



Trend Regression: Lognormal MLE
Boron, MW-07 (mg/L)

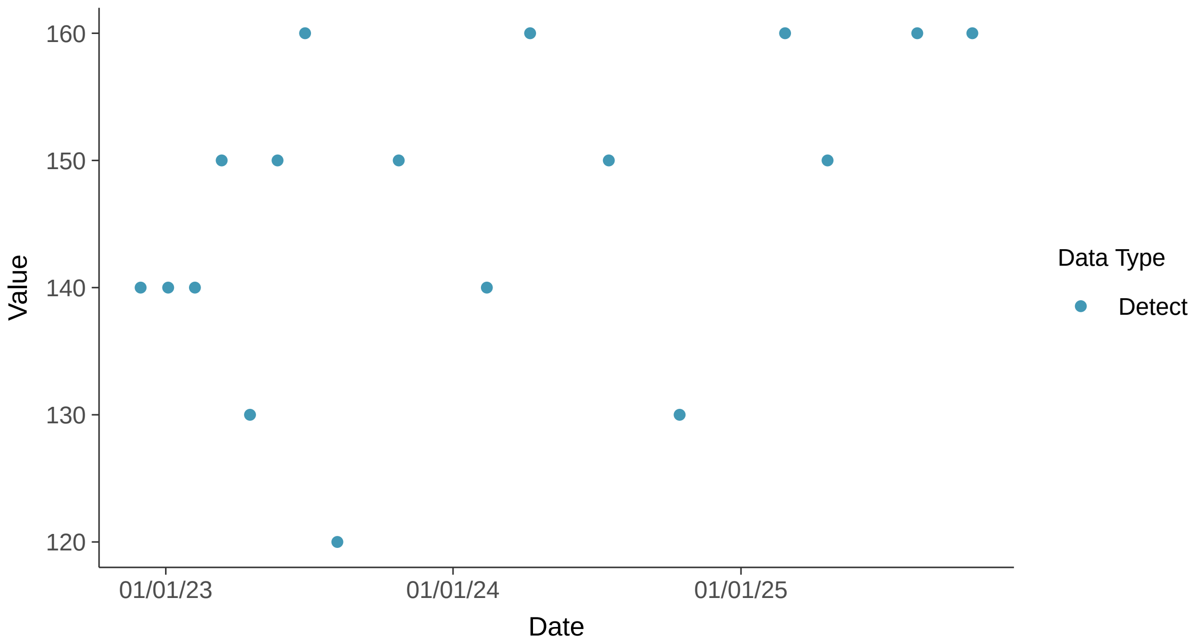


Appendix III: Calcium, MW-07

ID: 17_1_3_107

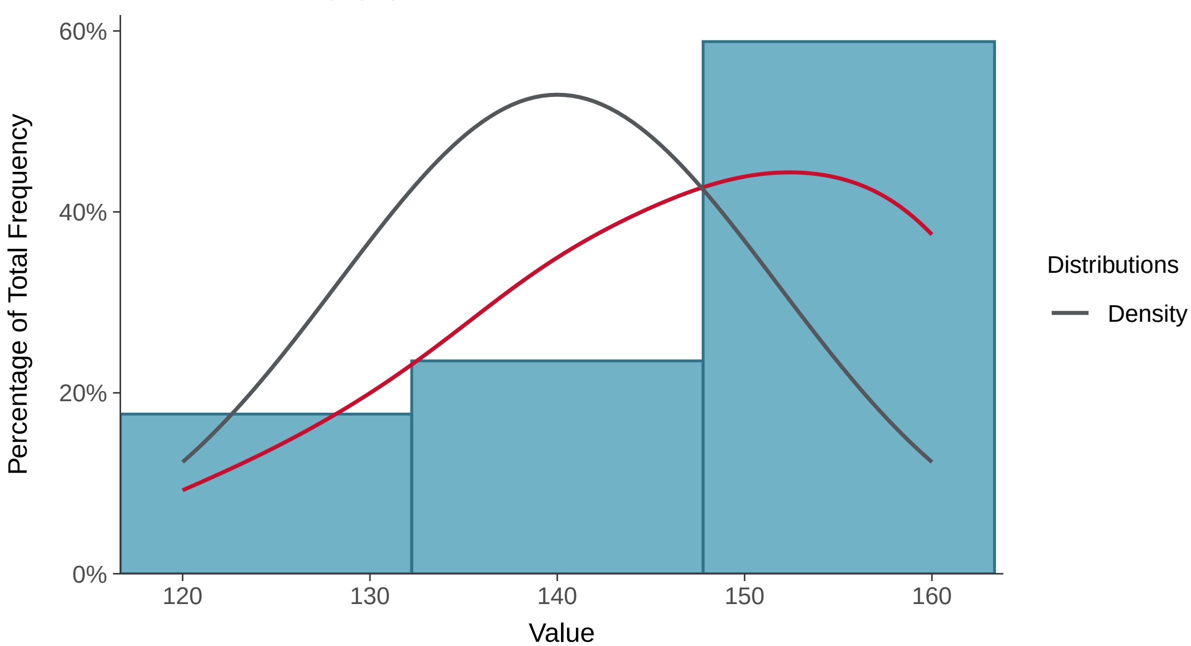
Scatter Plot

Calcium, MW-07 (mg/L)



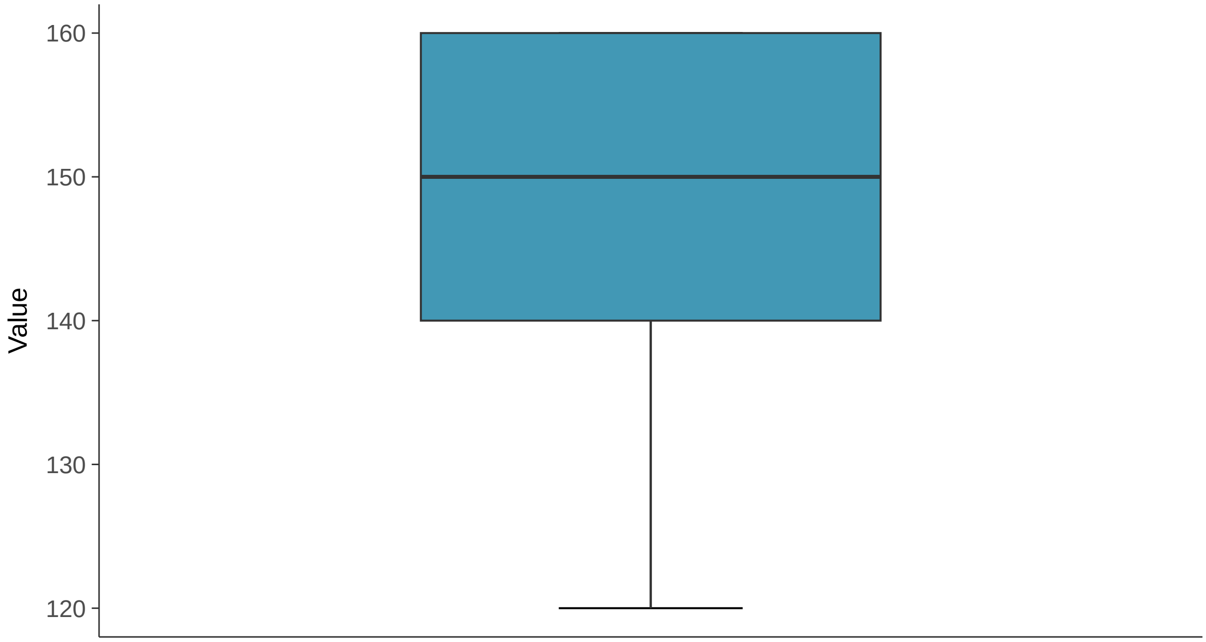
Histogram

Calcium, MW-07 (mg/L)



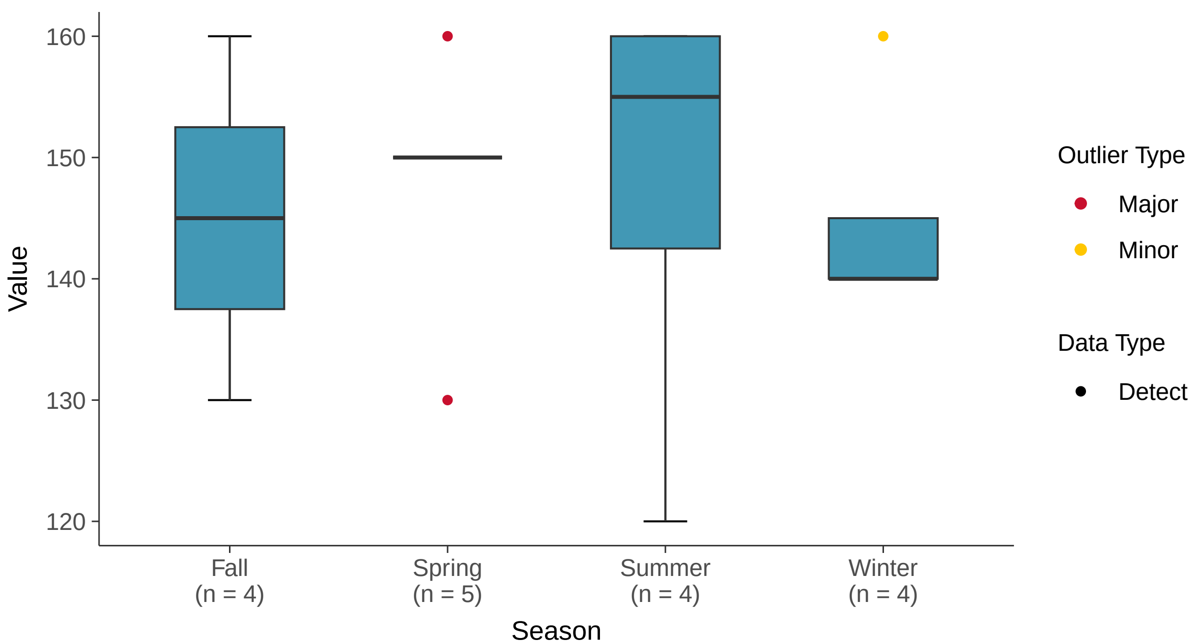
Boxplot

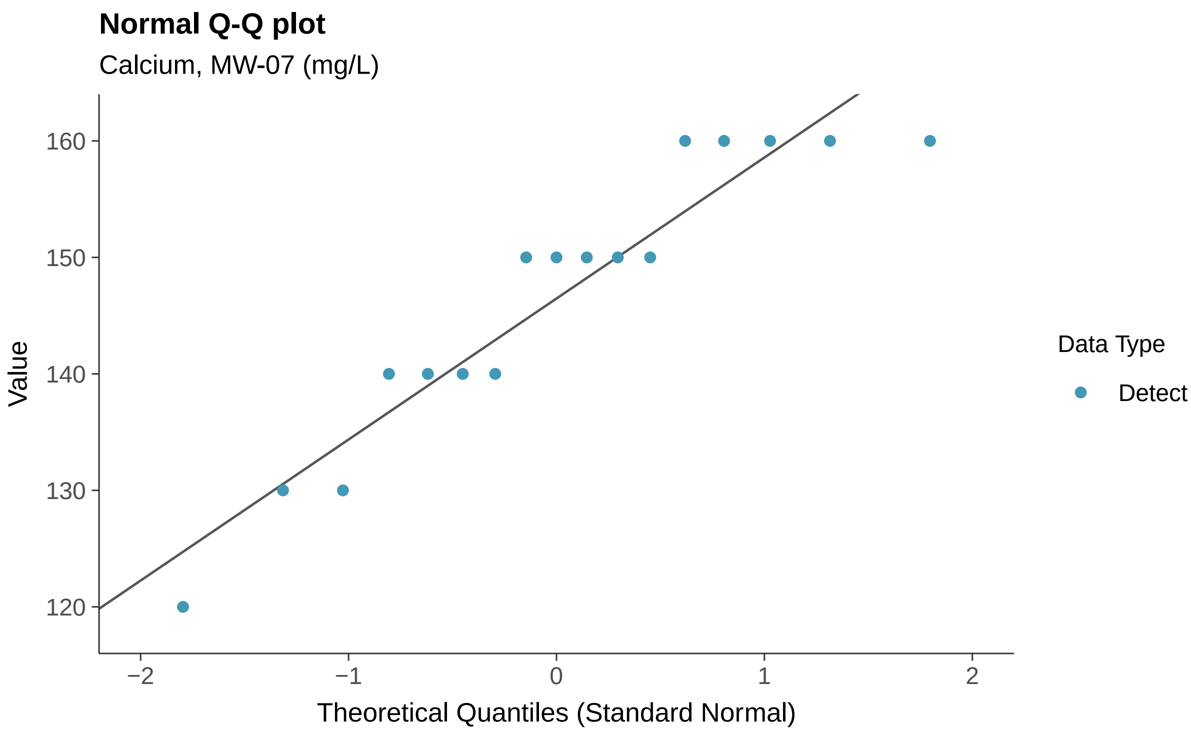
Calcium, MW-07 (mg/L)

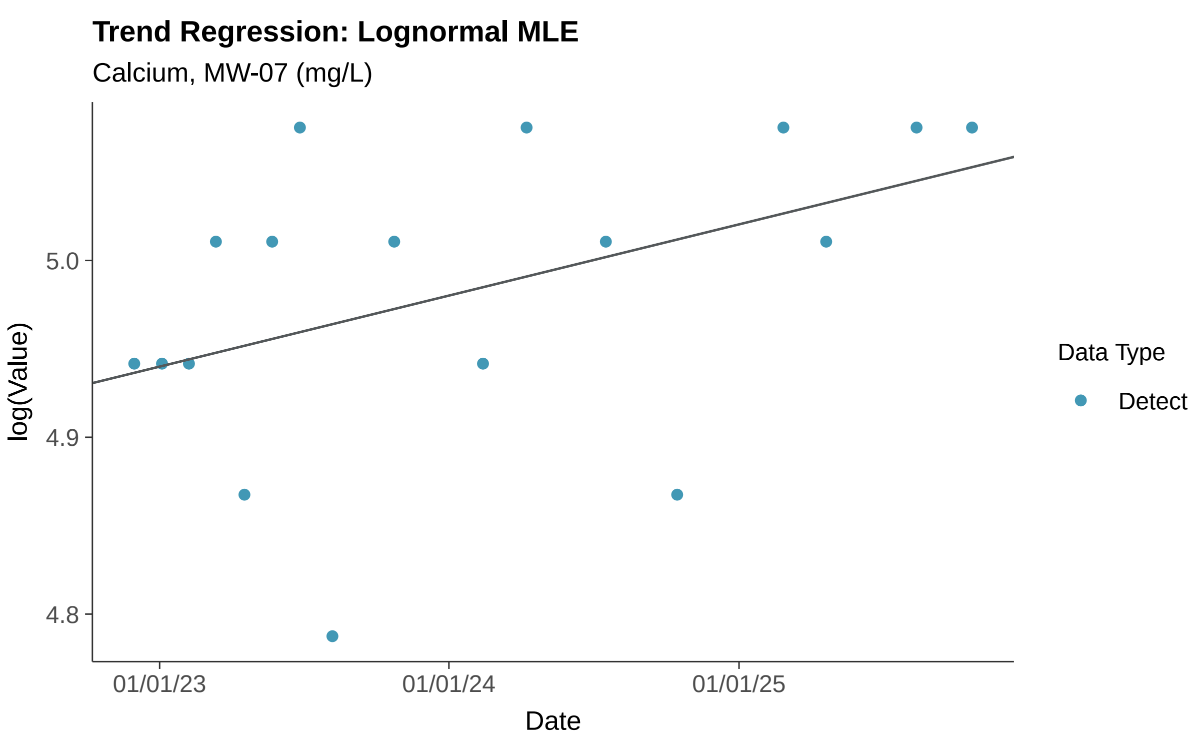


Boxplot by Season

Calcium, MW-07 (mg/L)

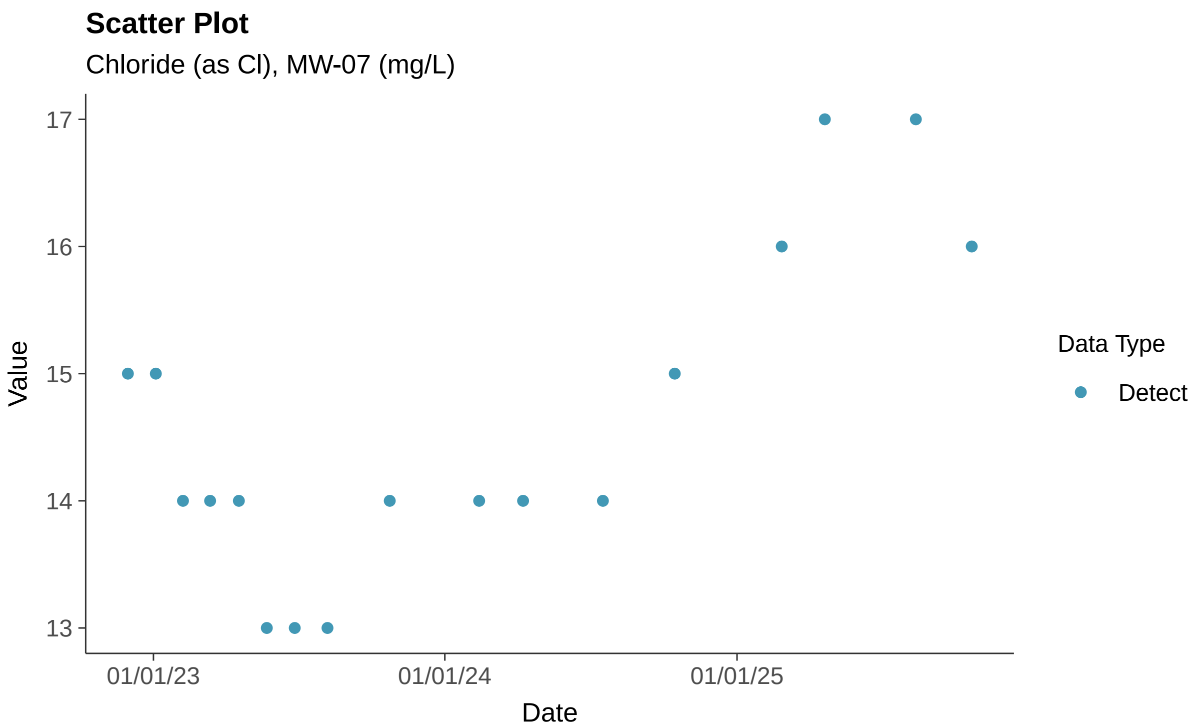


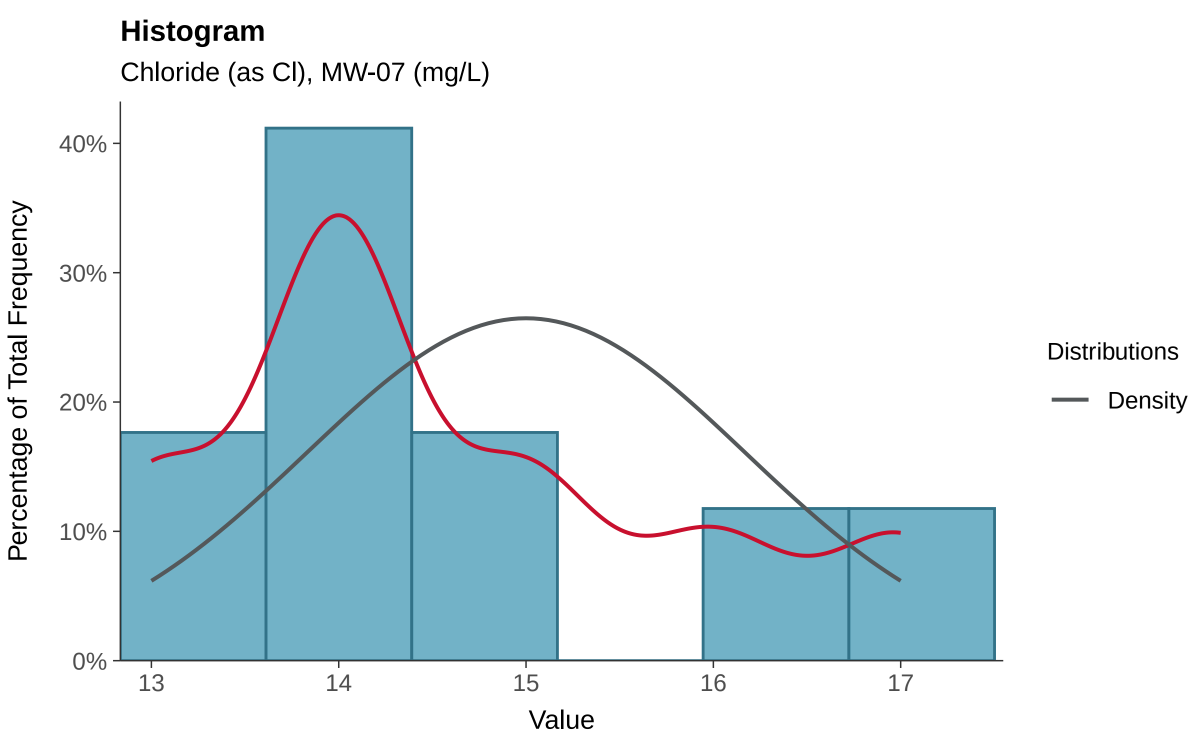

Normal Q-Q plot
Calcium, MW-07 (mg/L)
Value
160
150
140
130
120
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Lognormal MLE
Calcium, MW-07 (mg/L)
log(Value)
5.0
4.9
4.8
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Appendix III: Chloride (as Cl), MW-07

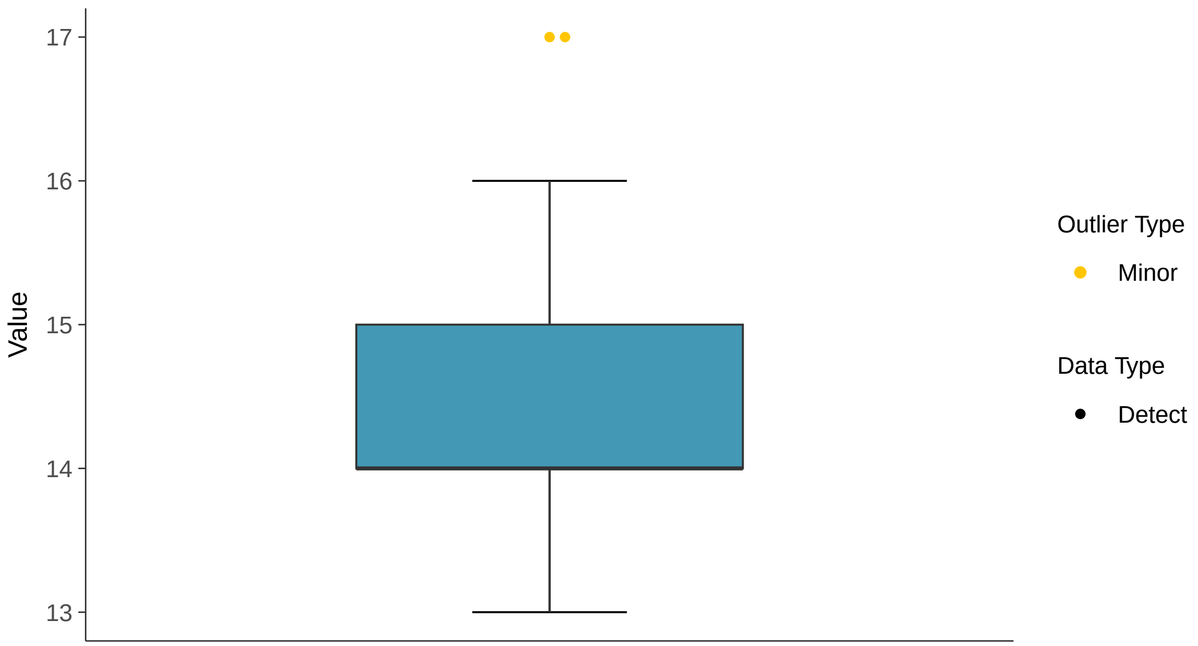
ID: 17_1_3_108





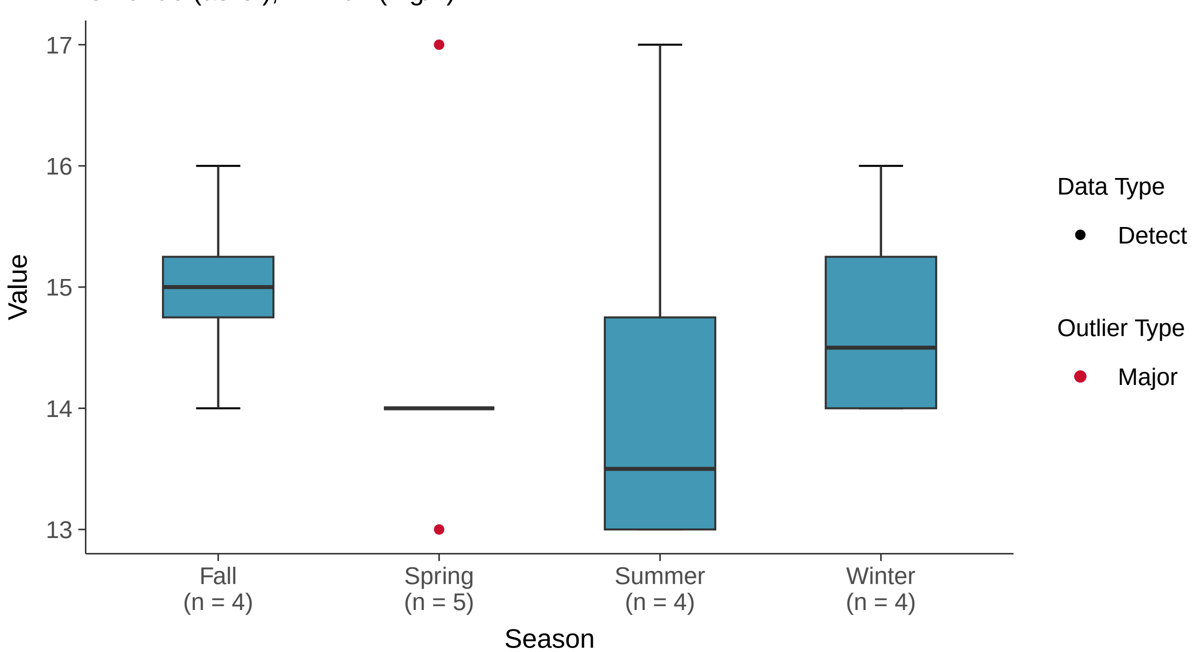
Boxplot

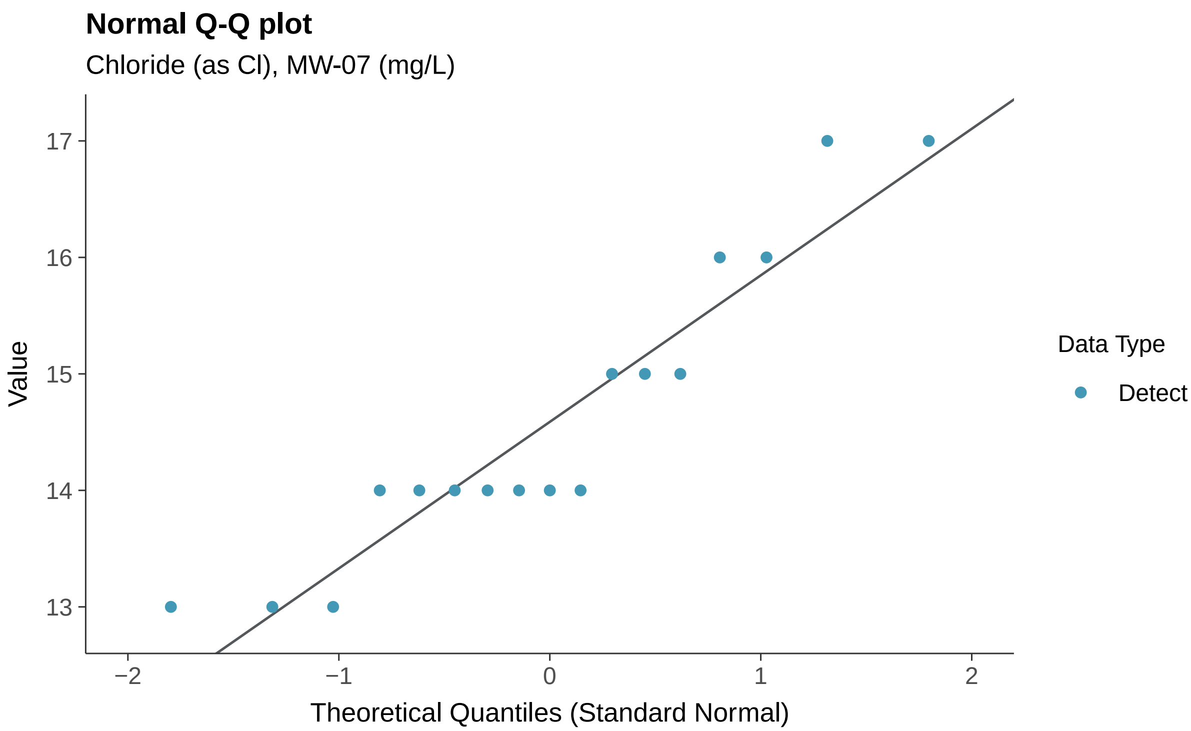
Chloride (as Cl), MW-07 (mg/L)

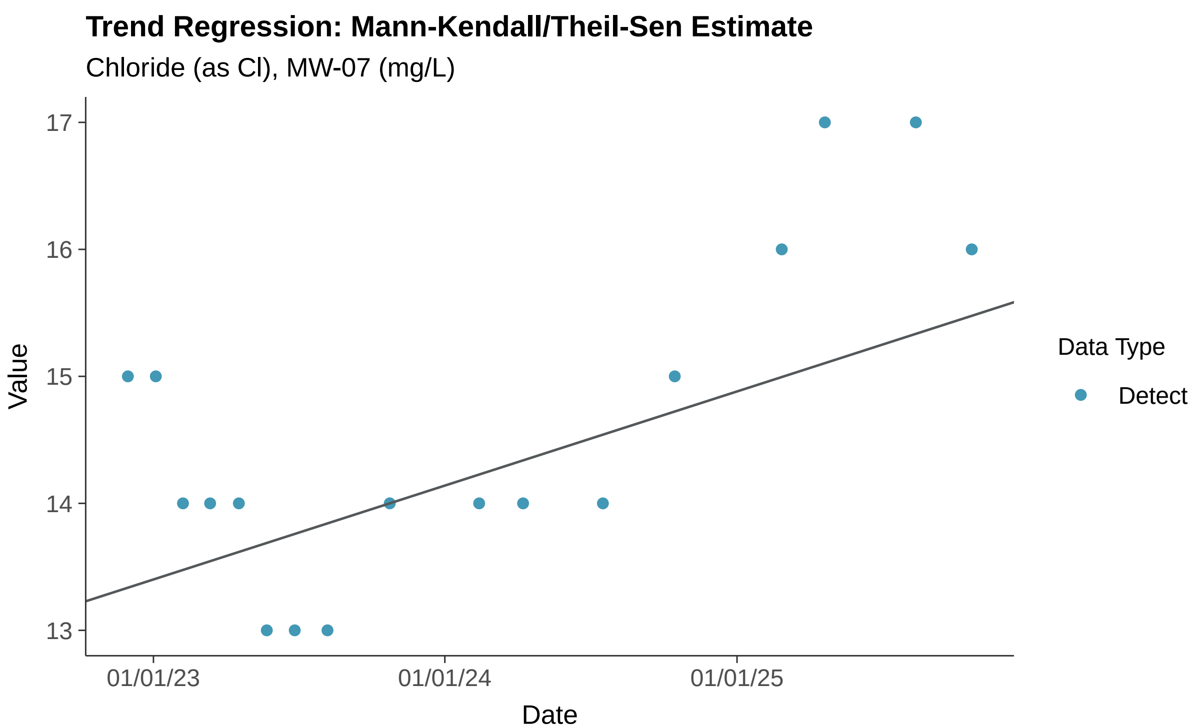


Boxplot by Season

Chloride (as Cl), MW-07 (mg/L)

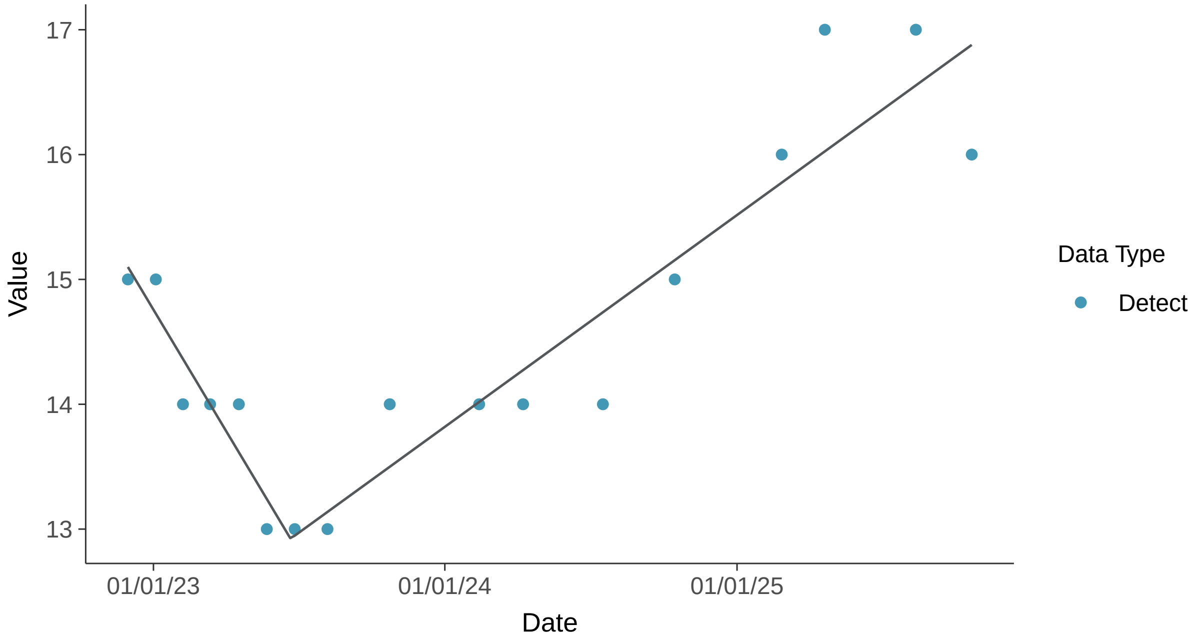



Normal Q-Q plot
Chloride (as Cl), MW-07 (mg/L)
Value
17
16
15
14
13
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Mann-Kendall/Theil-Sen Estimate
Chloride (as Cl), MW-07 (mg/L)
Value
17
16
15
14
13
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

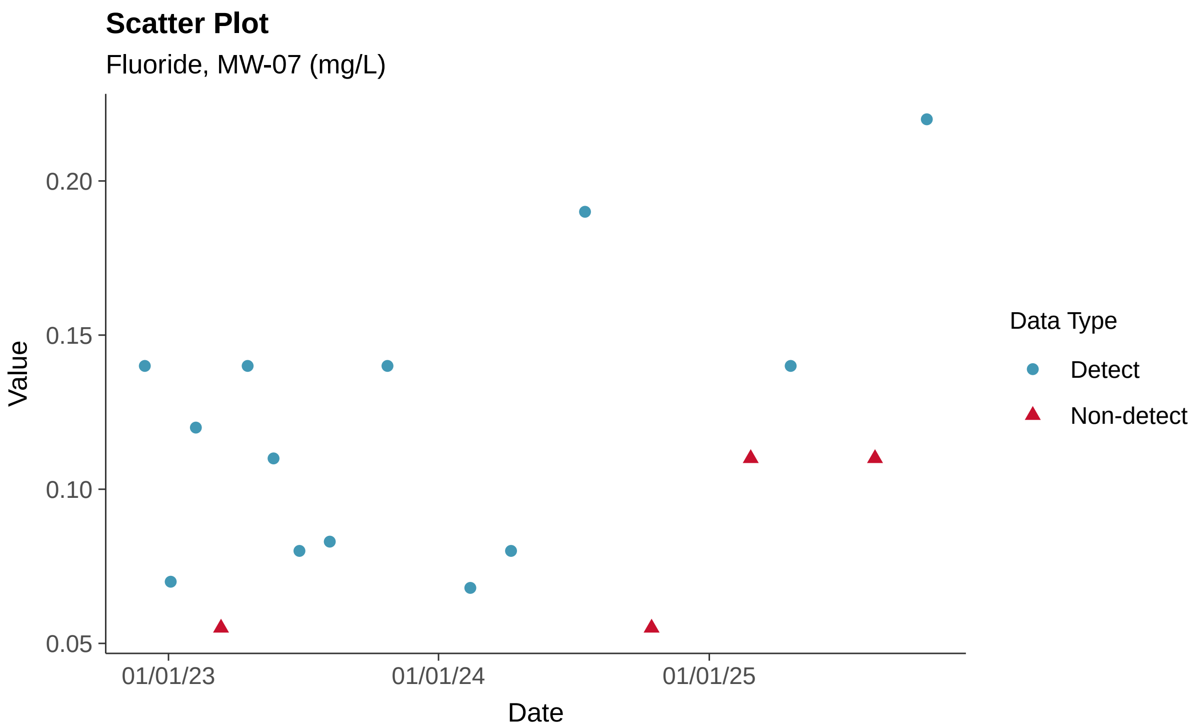
Trend Regression: Piecewise Linear-Linear

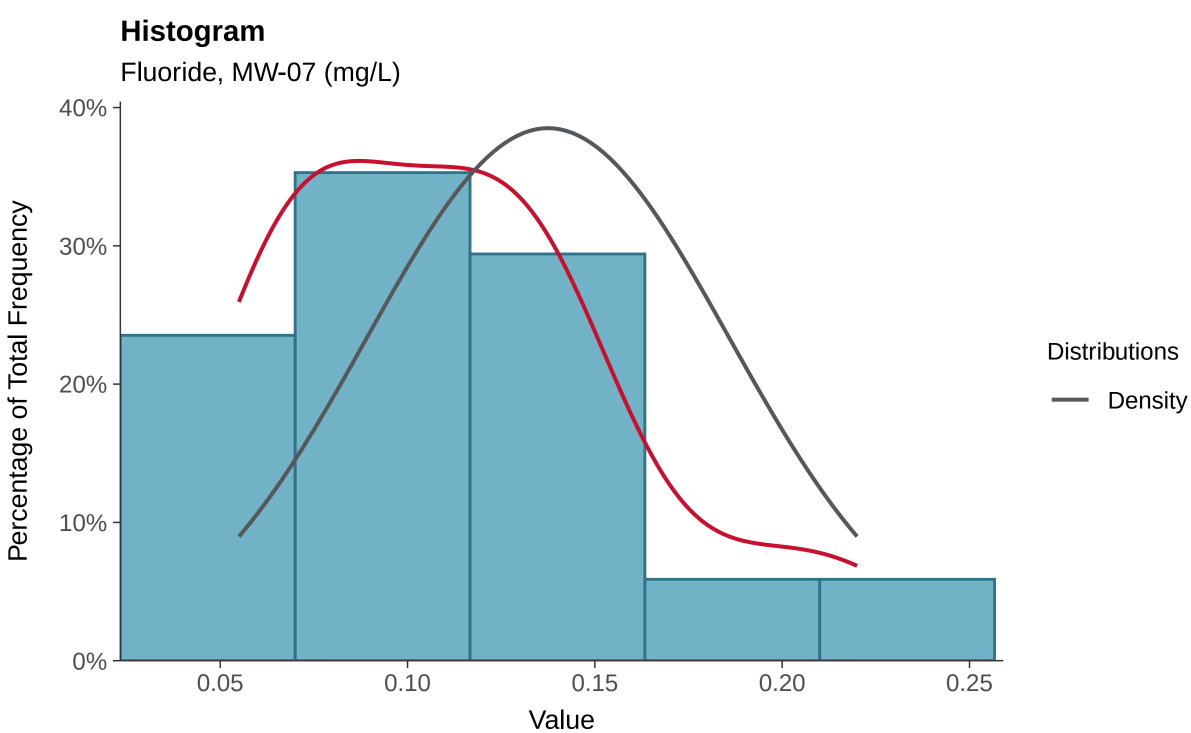
Chloride (as Cl), MW-07 (mg/L)



Appendix III: Fluoride, MW-07

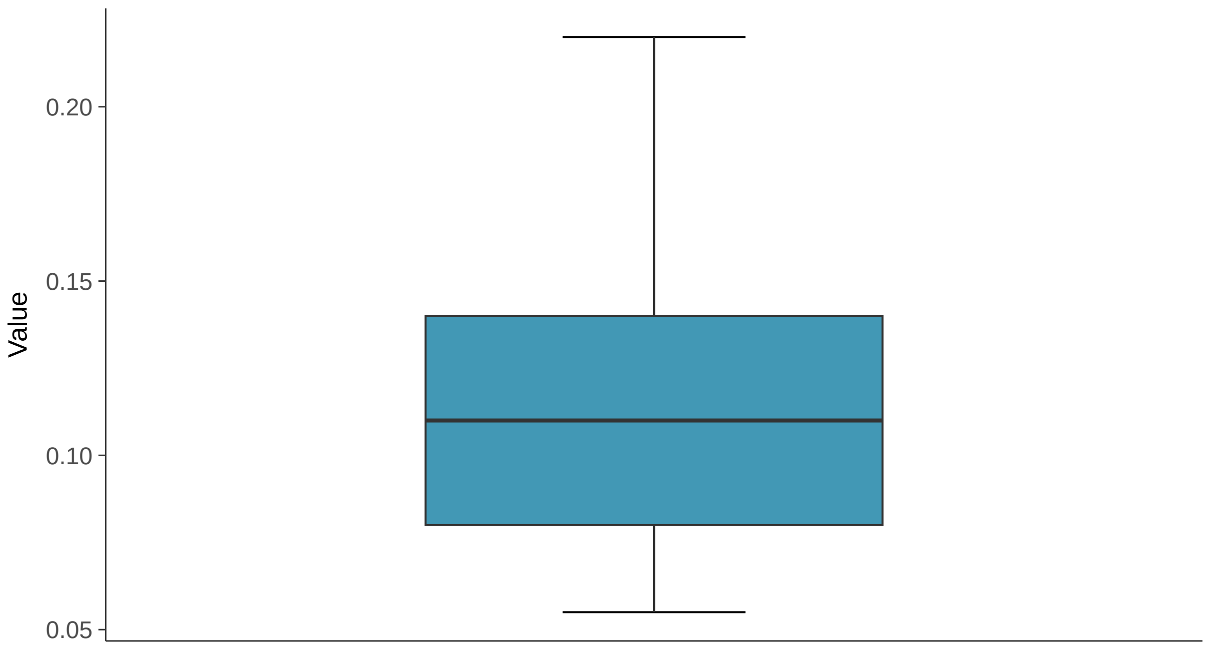
ID: 17_1_3_112





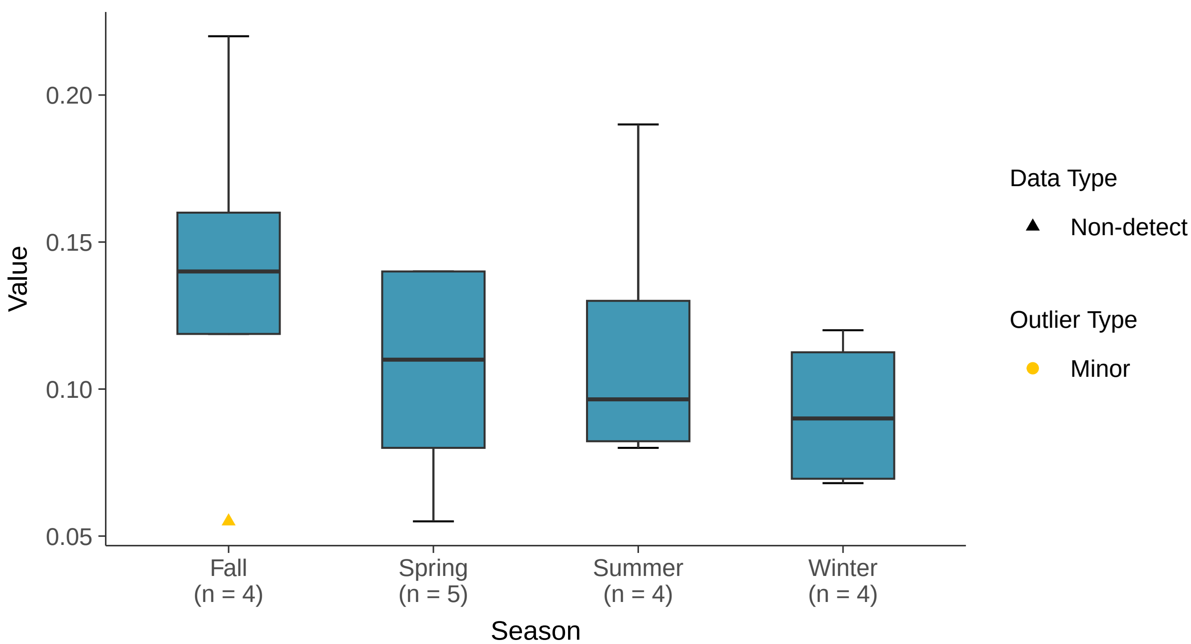
Boxplot

Fluoride, MW-07 (mg/L)



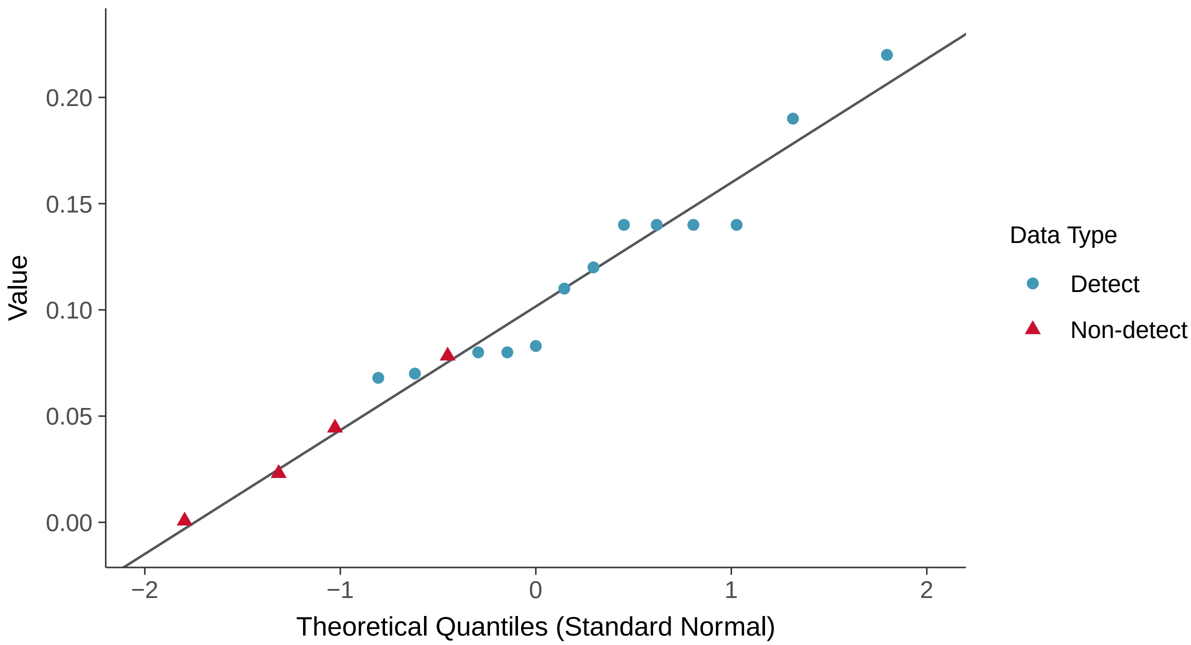
Boxplot by Season

Fluoride, MW-07 (mg/L)



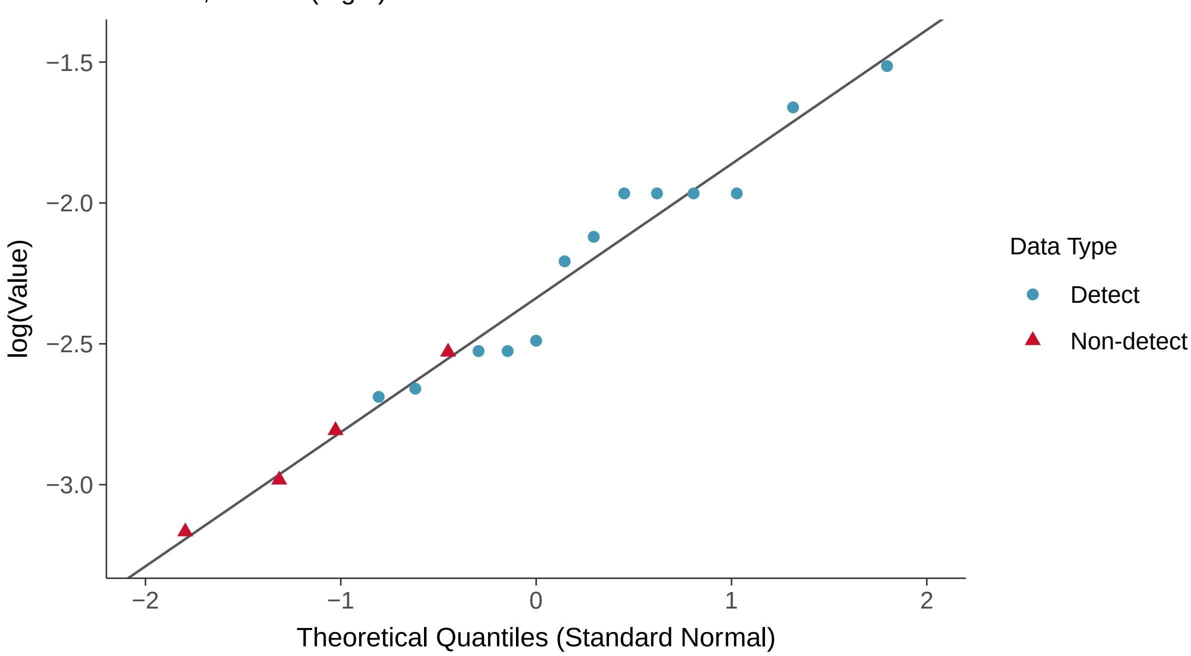
Normal Q-Q plot using ROS Imputed Estimates

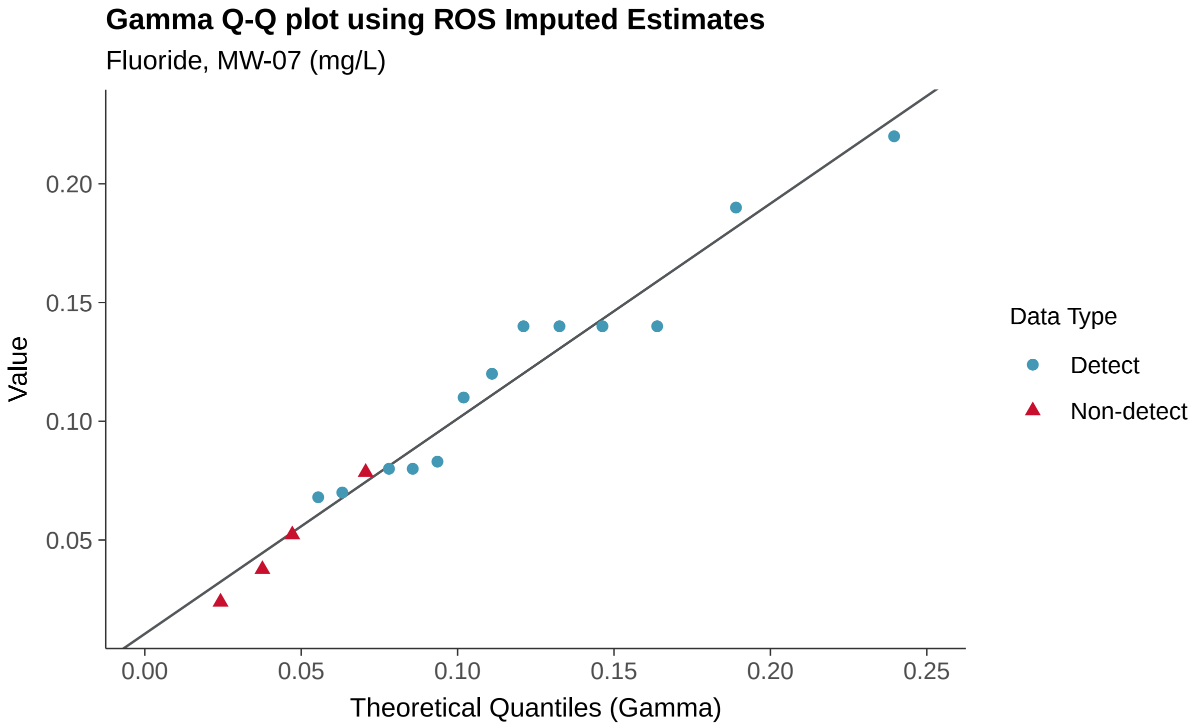
Fluoride, MW-07 (mg/L)

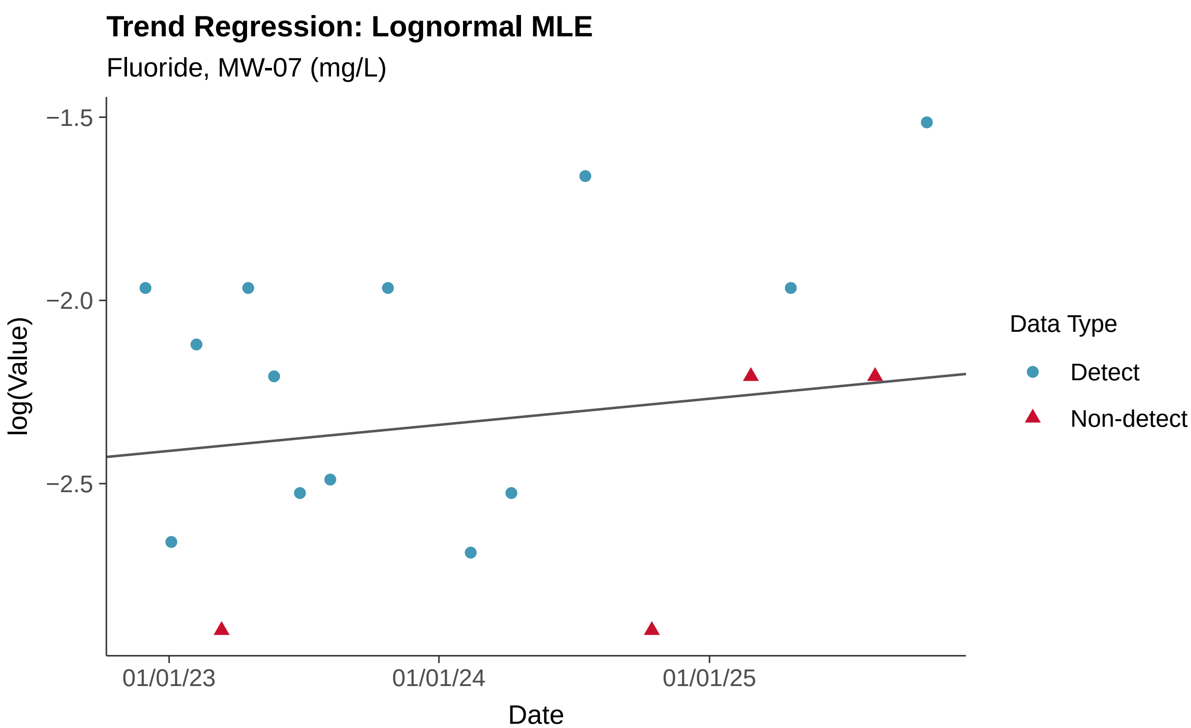


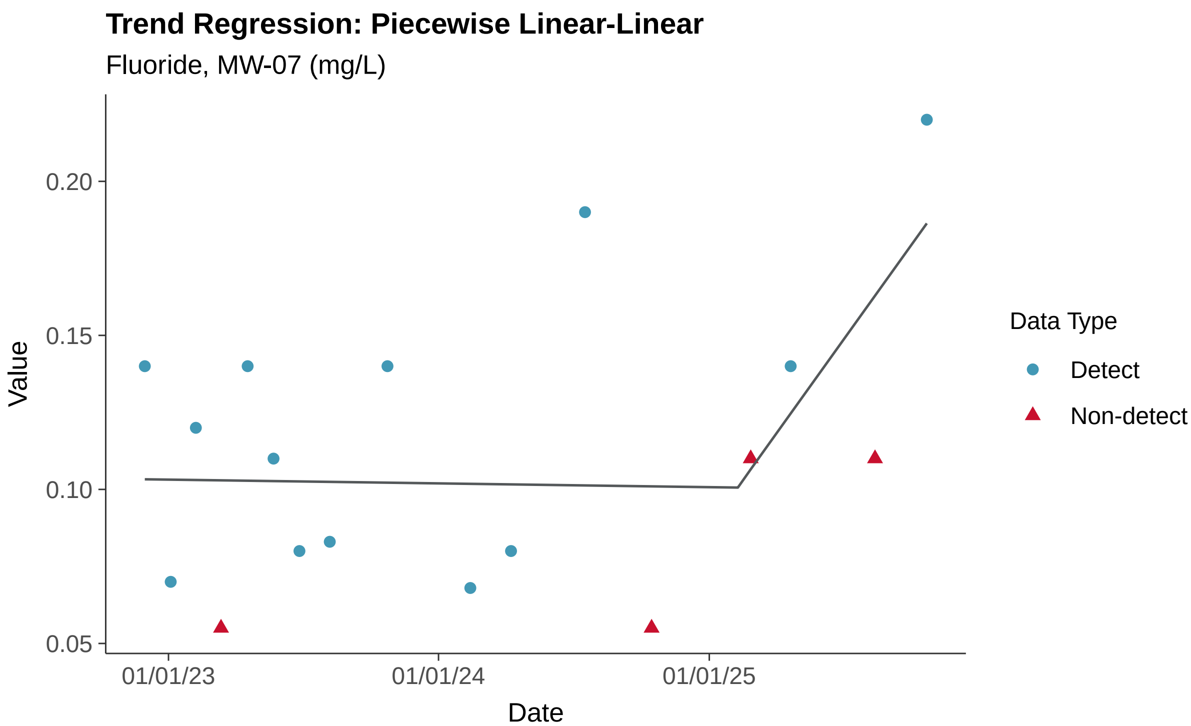
Lognormal Q-Q plot using ROS Imputed Estimates

Fluoride, MW-07 (mg/L)



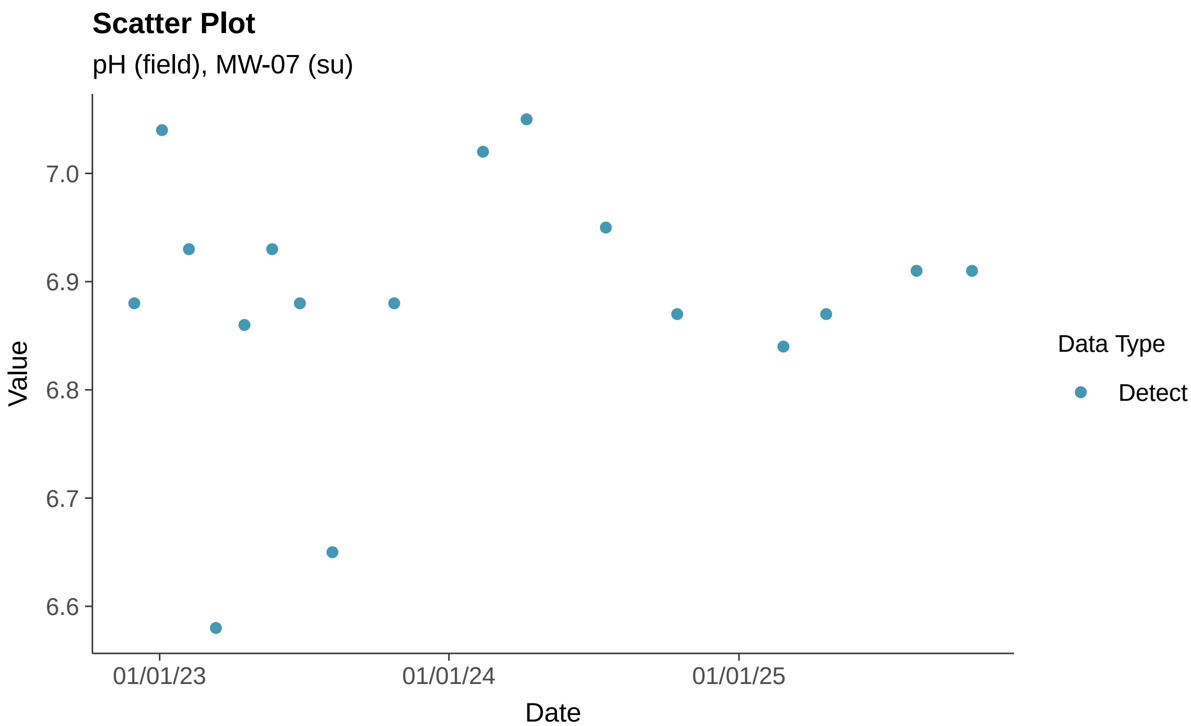

Gamma Q-Q plot using ROS Imputed Estimates
Fluoride, MW-07 (mg/L)
Value
0.20
0.15
0.10
0.05
0.00
0.05
0.10
0.15
0.20
0.25
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect

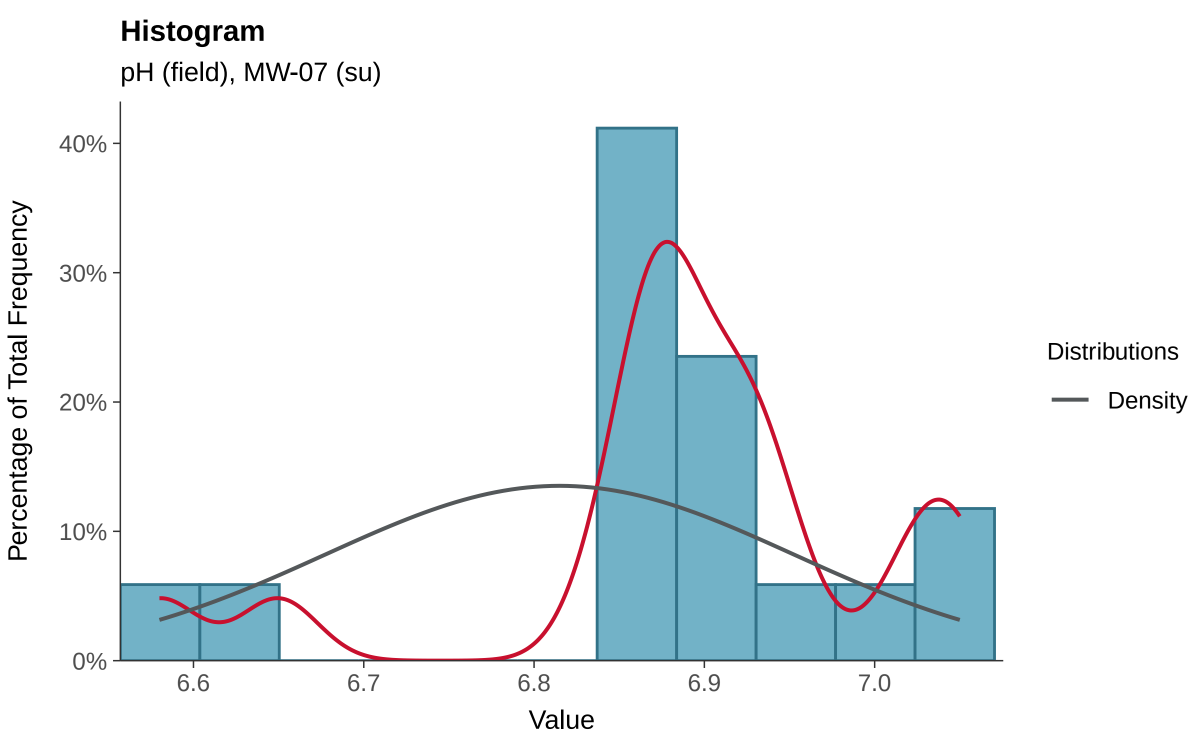

Trend Regression: Lognormal MLE
Fluoride, MW-07 (mg/L)
log(Value)
−1.5
−2.0
−2.5
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

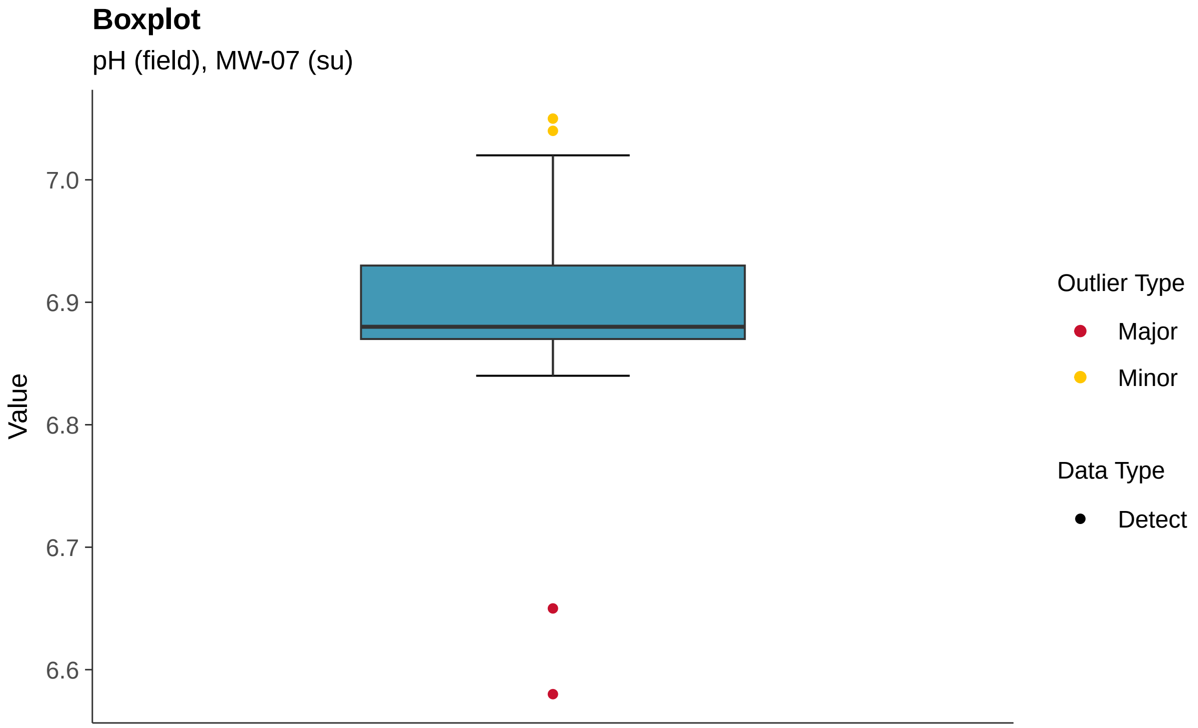

Trend Regression: Piecewise Linear-Linear
Fluoride, MW-07 (mg/L)
Value
0.20
0.15
0.10
0.05
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

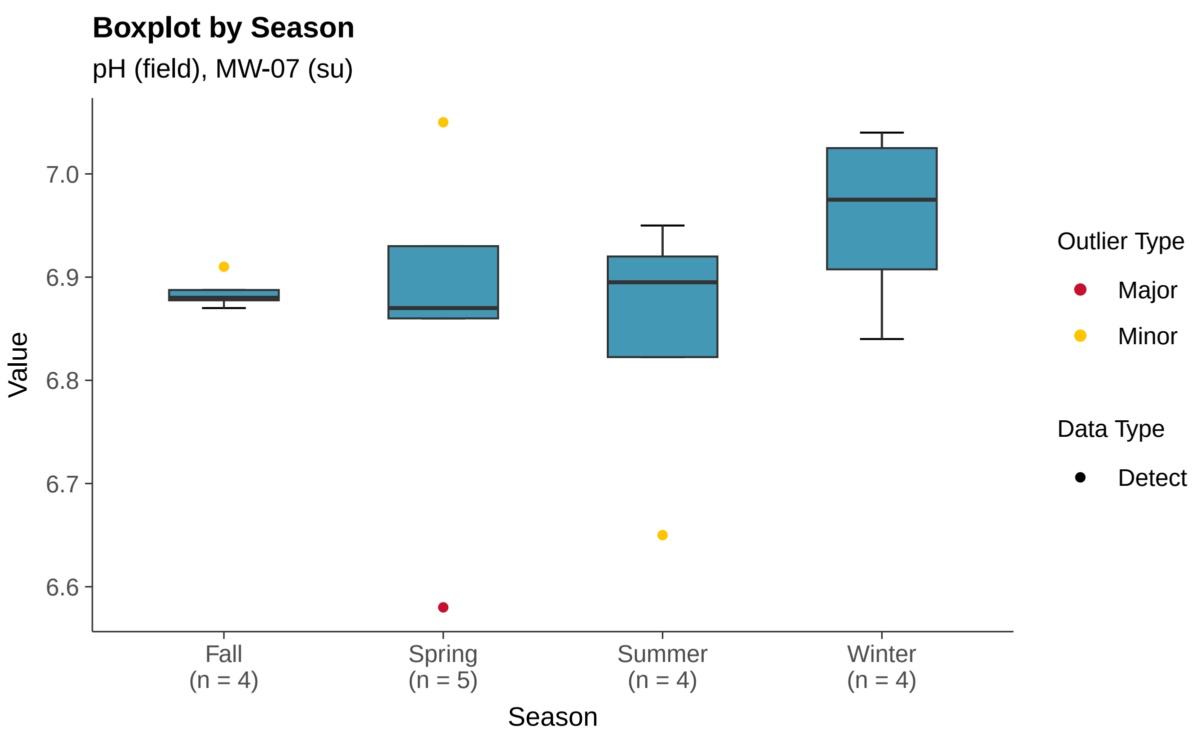
Appendix III: pH (field), MW-07

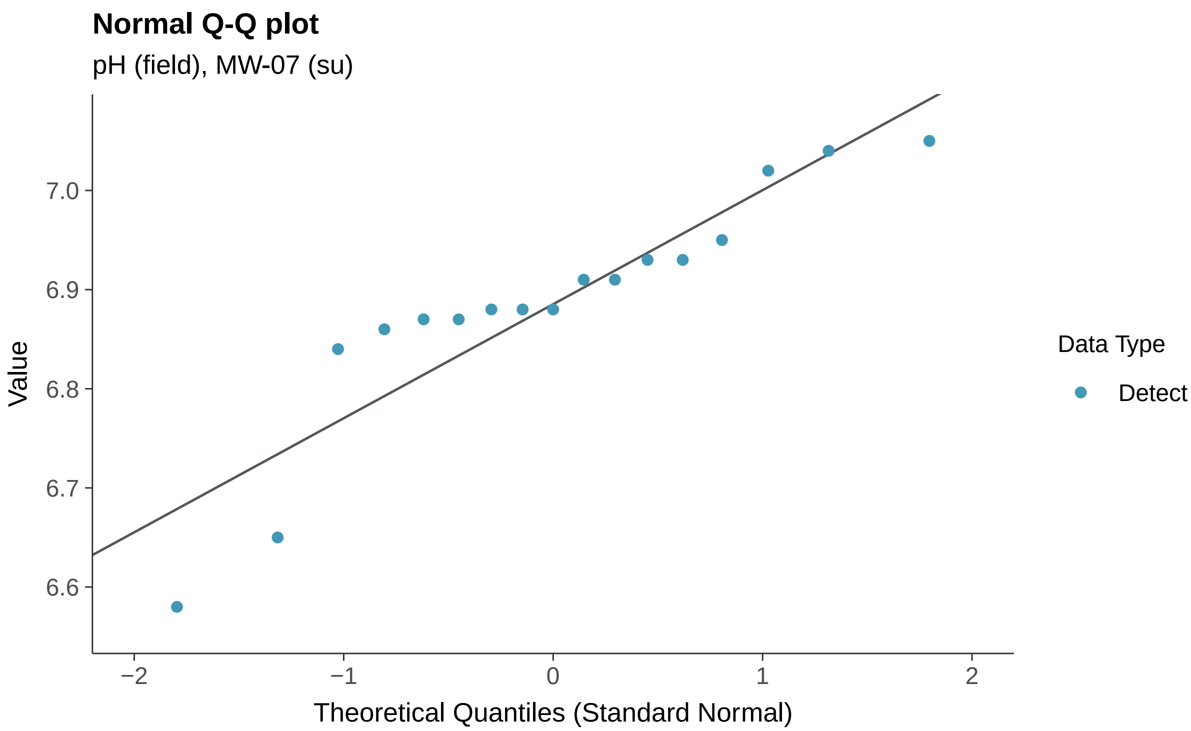
ID: 17_1_3_120

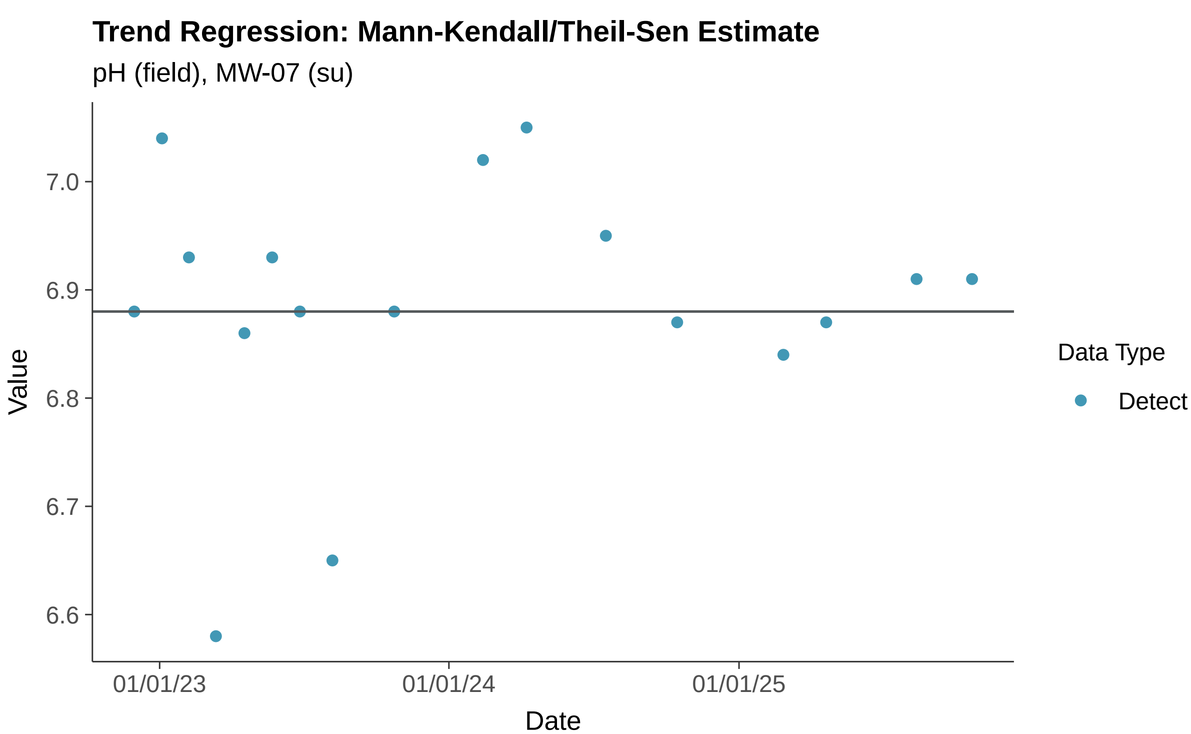





Boxplot
pH (field), MW-07 (su)
Value
7.0
6.9
6.8
6.7
6.6
Outlier Type
Major
Minor
Data Type
Detect

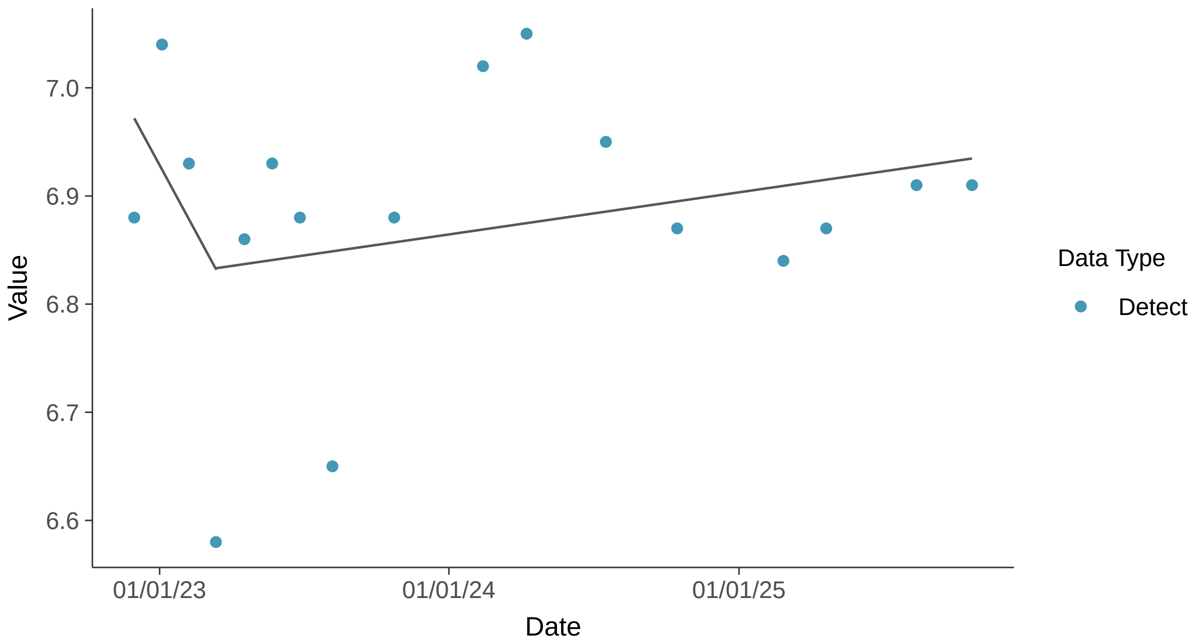

Boxplot by Season
pH (field), MW-07 (su)
Value
7.0
6.9
6.8
6.7
6.6
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Major
Minor
Data Type
Detect


Normal Q-Q plot
pH (field), MW-07 (su)
Value
7.0
6.9
6.8
6.7
6.6
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Mann-Kendall/Theil-Sen Estimate
pH (field), MW-07 (su)
Value
7.0
6.9
6.8
6.7
6.6
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear

pH (field), MW-07 (su)

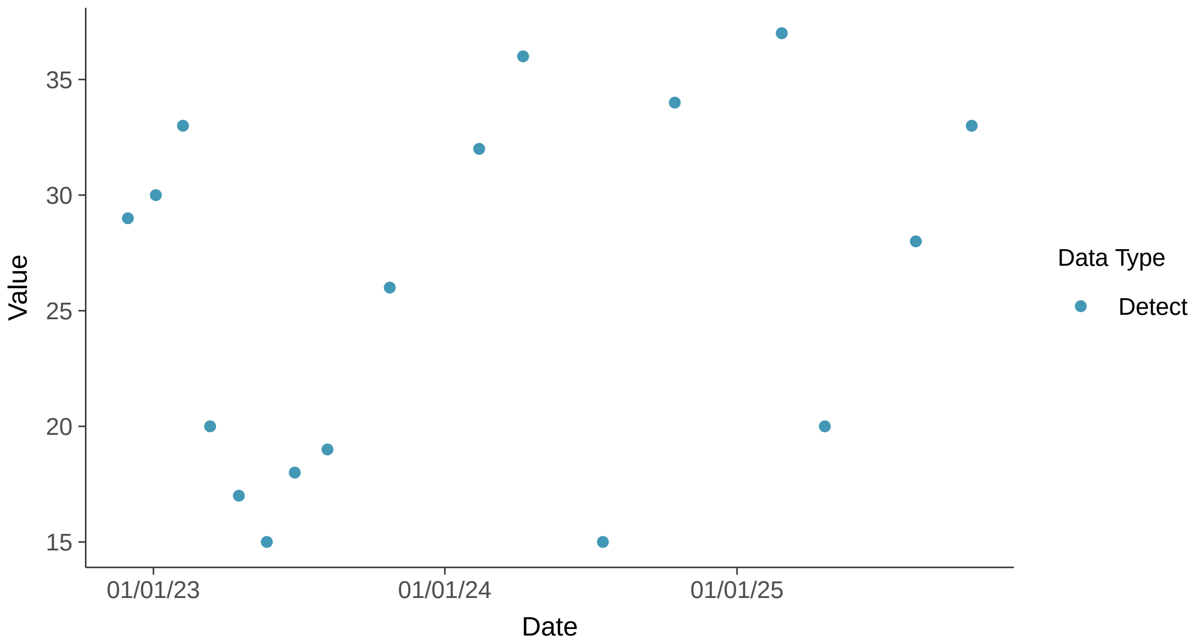


Appendix III: Sulfate (as SO4), MW-07

ID: 17_1_3_124

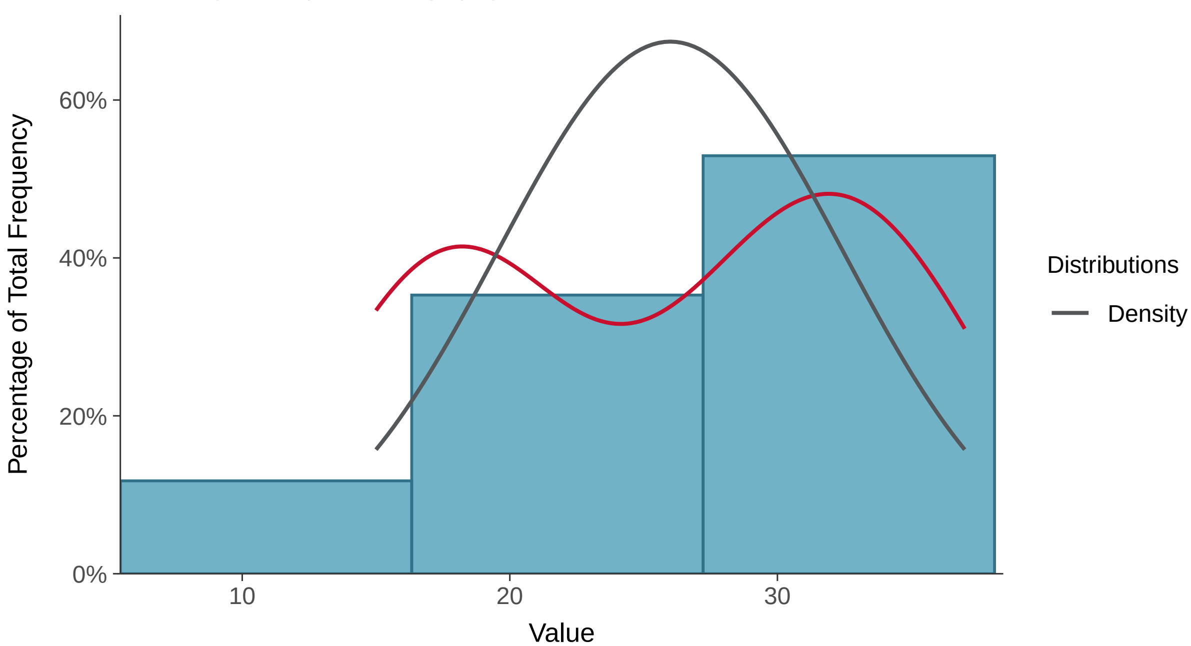
Scatter Plot

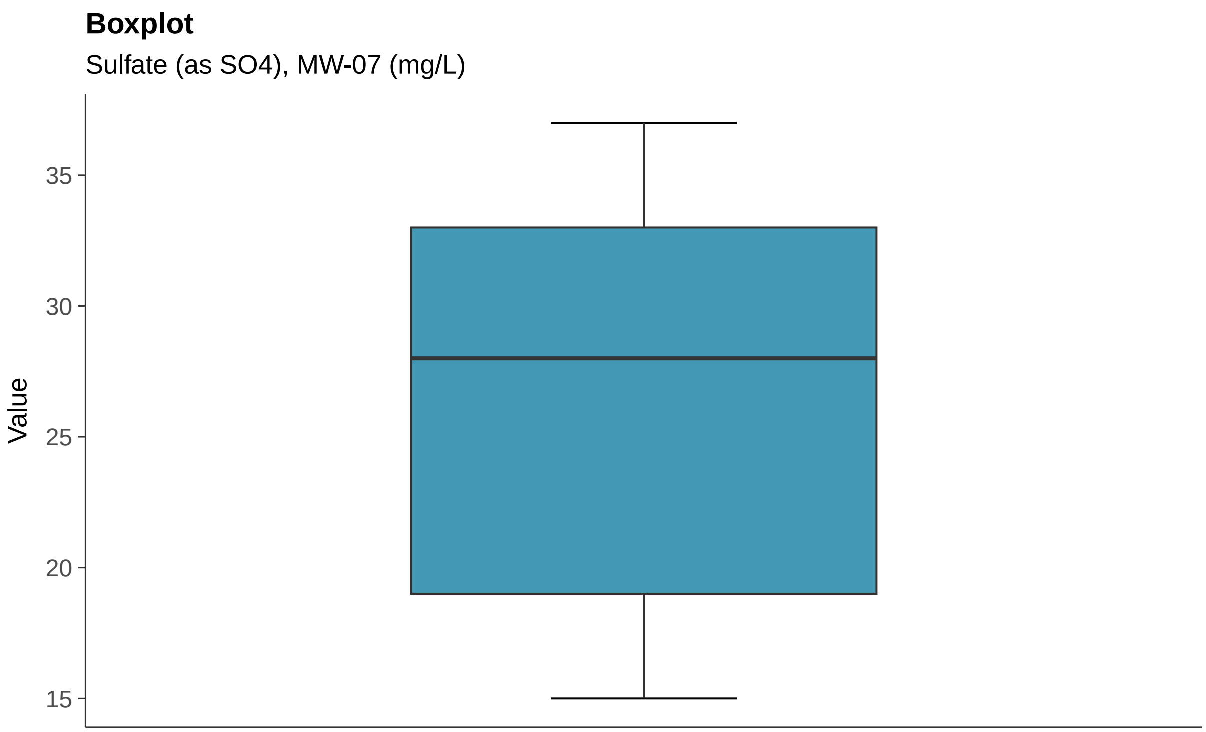
Sulfate (as SO4), MW-07 (mg/L)

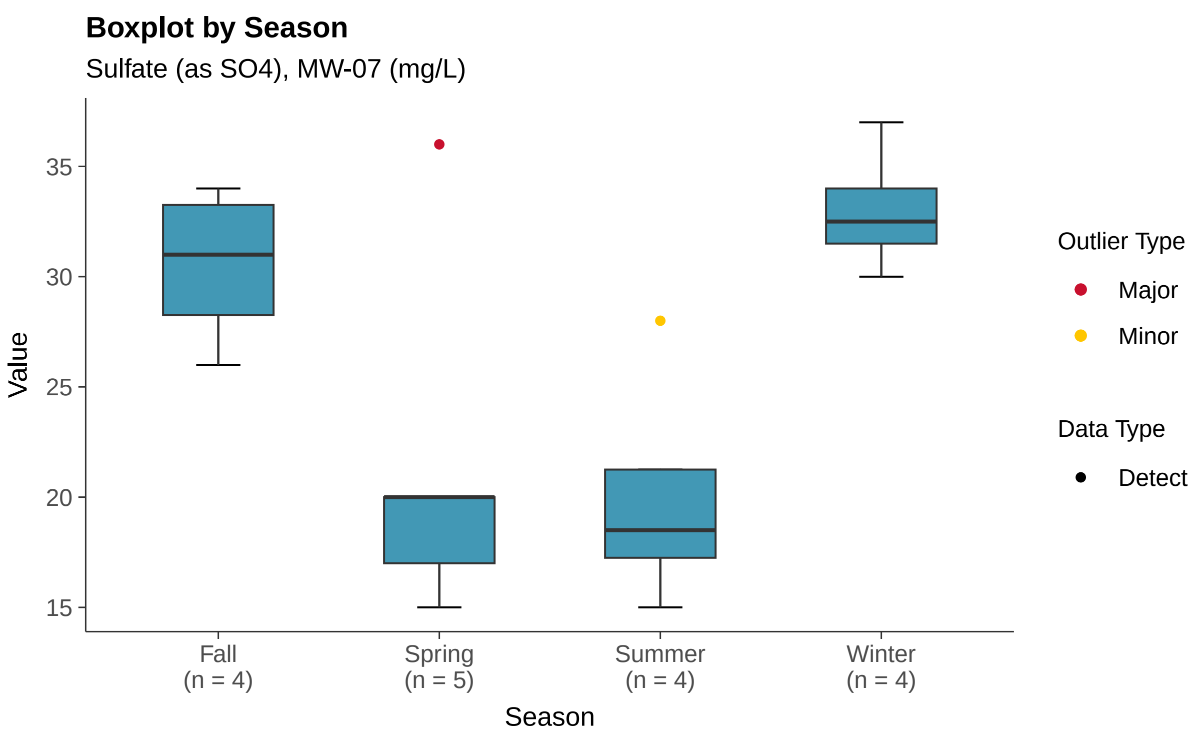


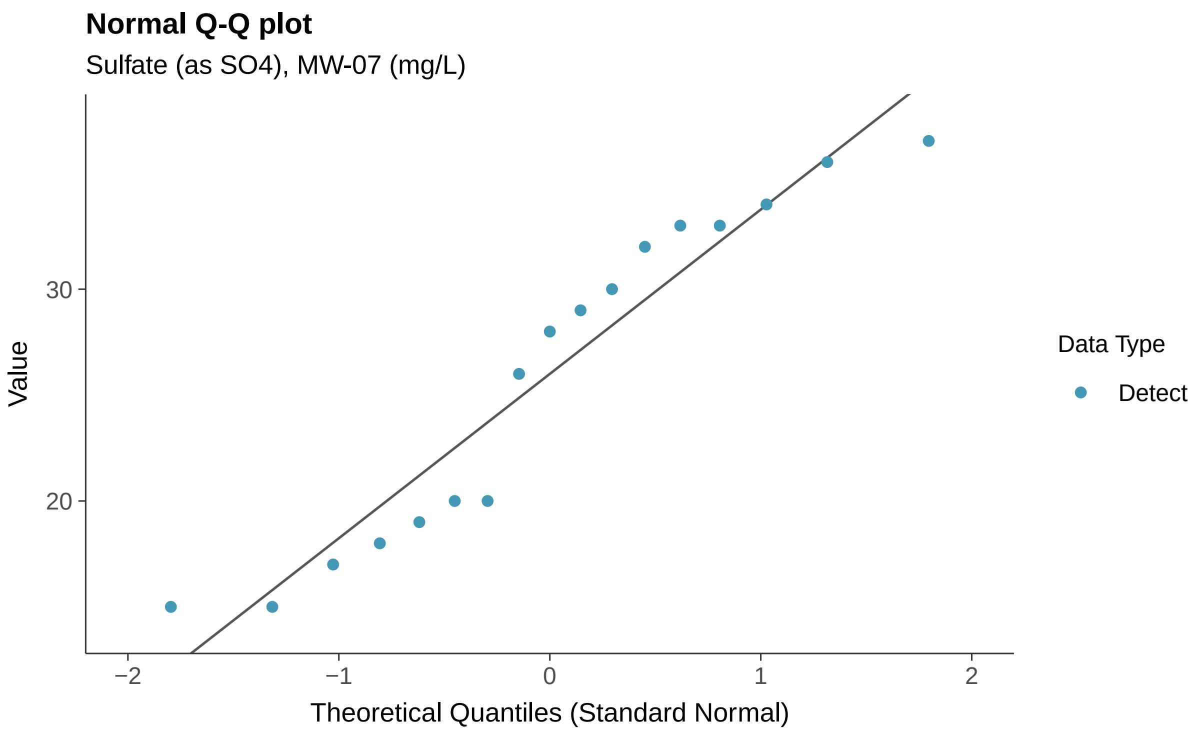
Histogram

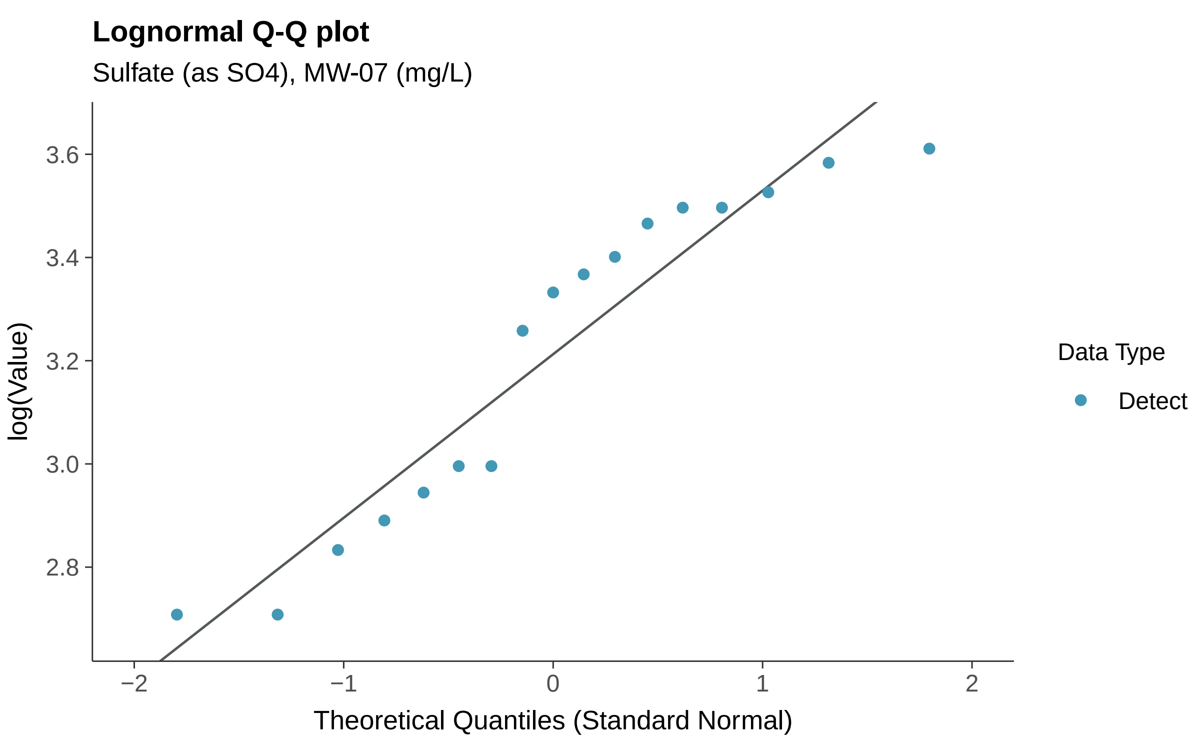
Sulfate (as SO4), MW-07 (mg/L)




Boxplot
Sulfate (as SO4), MW-07 (mg/L)
Value
35
30
25
20
15

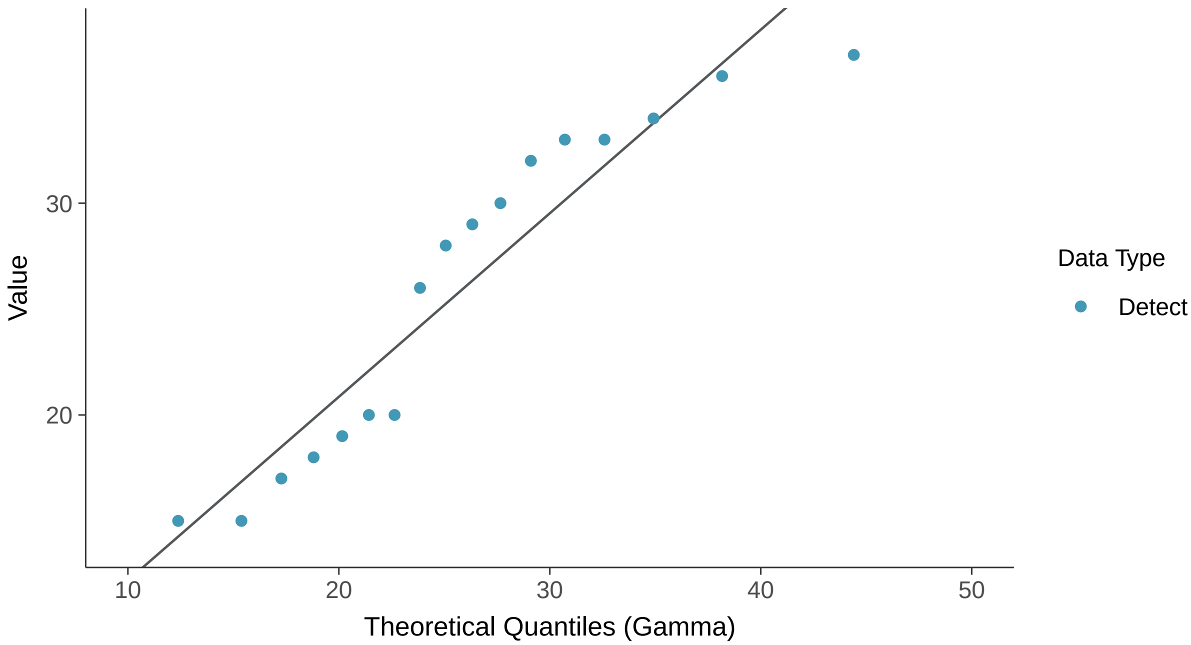

Boxplot by Season
Sulfate (as SO4), MW-07 (mg/L)
Value
35
30
25
20
15
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Major
Minor
Data Type
Detect


Normal Q-Q plot
Sulfate (as SO4), MW-07 (mg/L)
Value
30
20
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Sulfate (as SO4), MW-07 (mg/L)
log(Value)
3.6
3.4
3.2
3.0
2.8
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

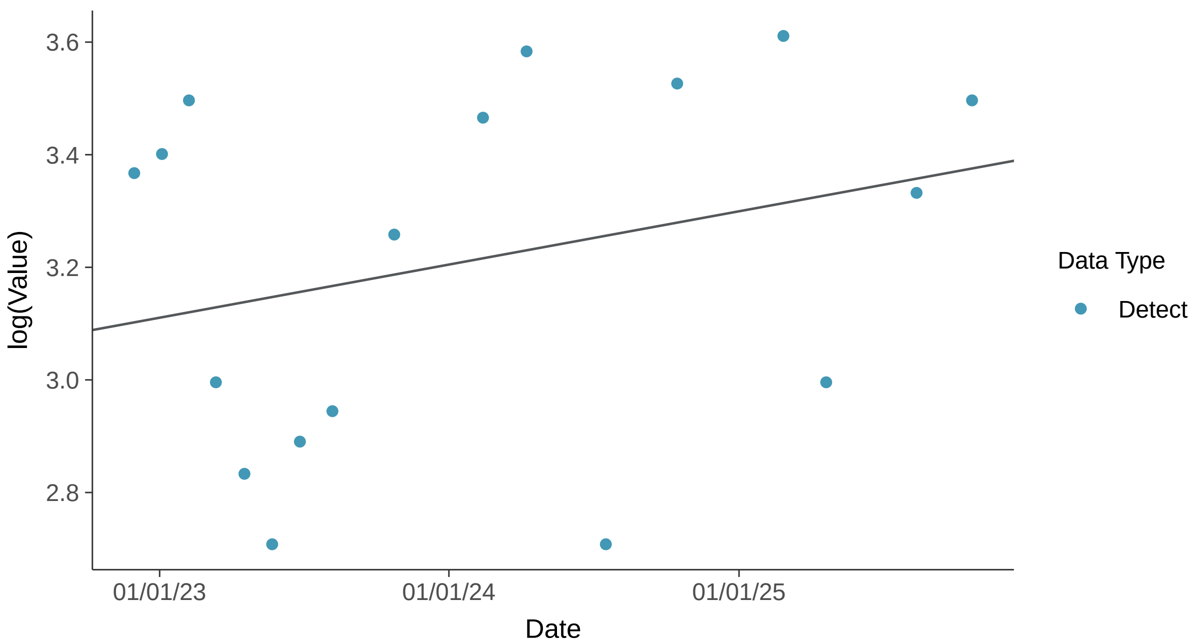
Gamma Q-Q plot

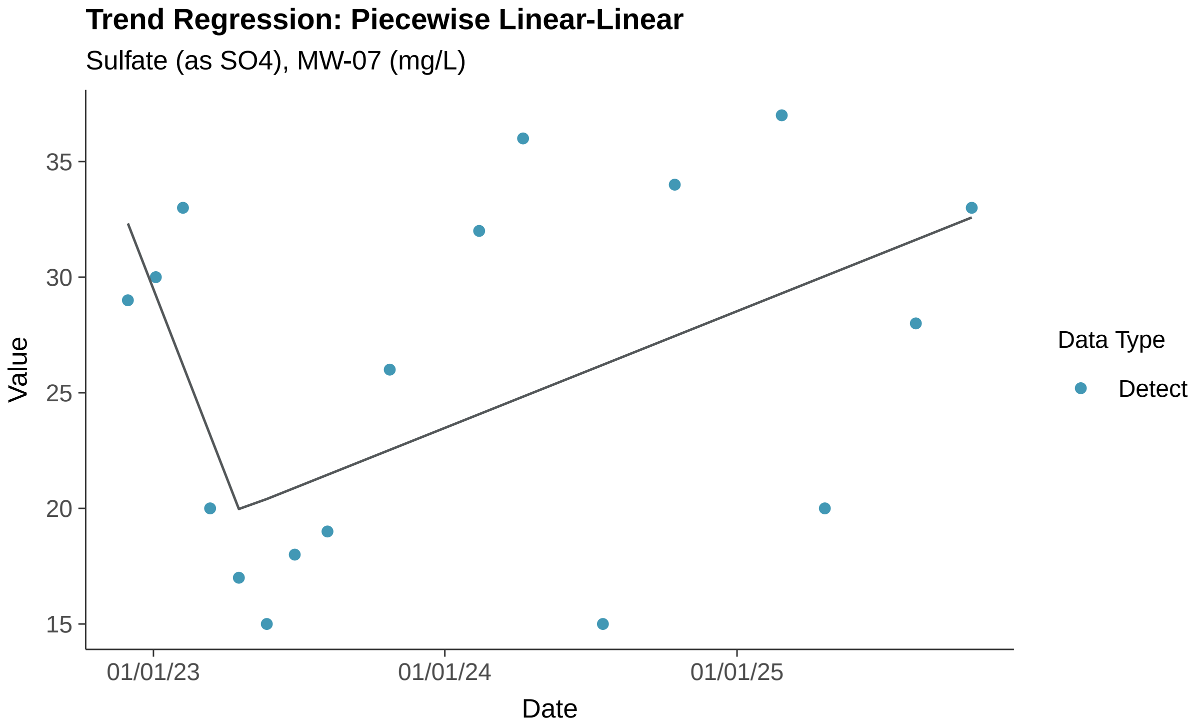
Sulfate (as SO4), MW-07 (mg/L)

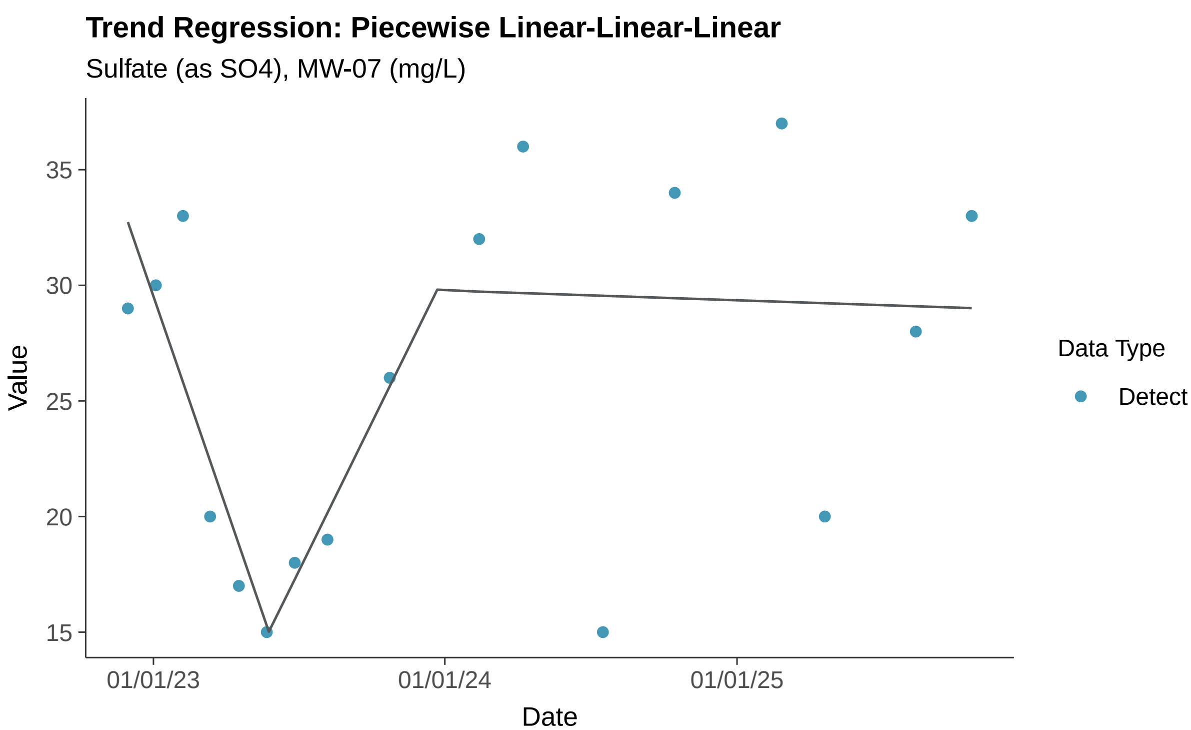


Trend Regression: Lognormal MLE

Sulfate (as SO4), MW-07 (mg/L)

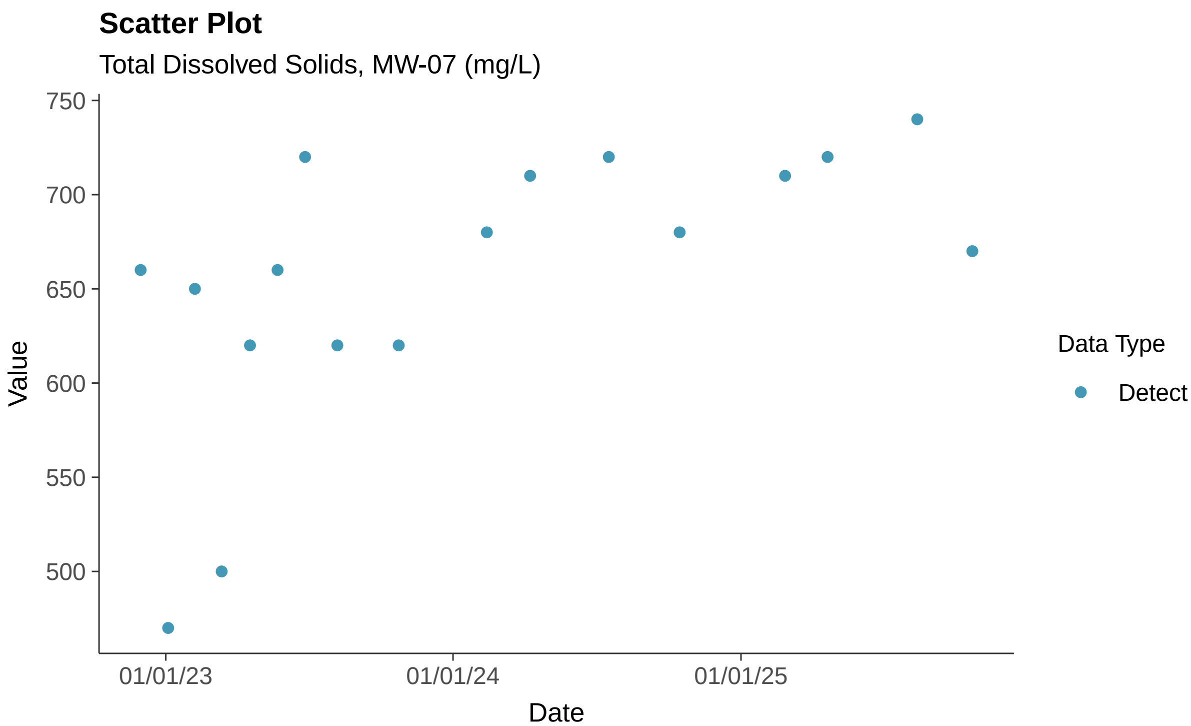


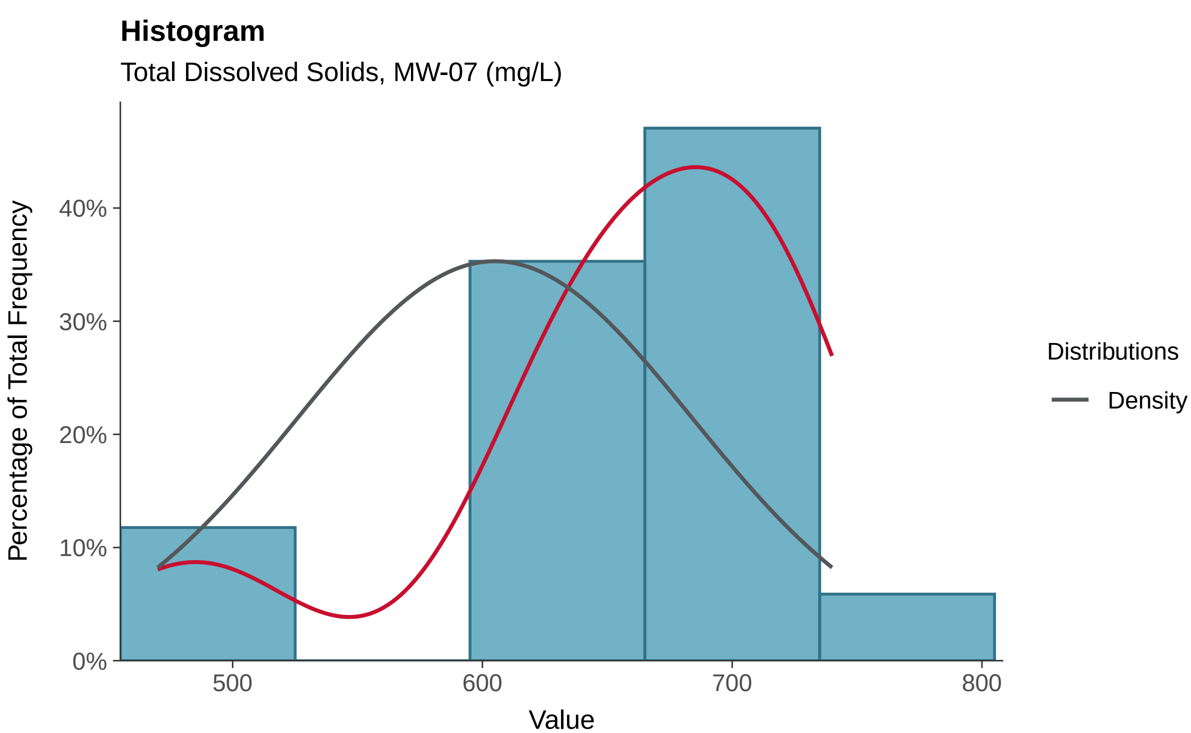

Trend Regression: Piecewise Linear-Linear
Sulfate (as SO4), MW-07 (mg/L)
Value
35
30
25
20
15
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
Sulfate (as SO4), MW-07 (mg/L)
Value
35
30
25
20
15
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Appendix III: Total Dissolved Solids, MW-07

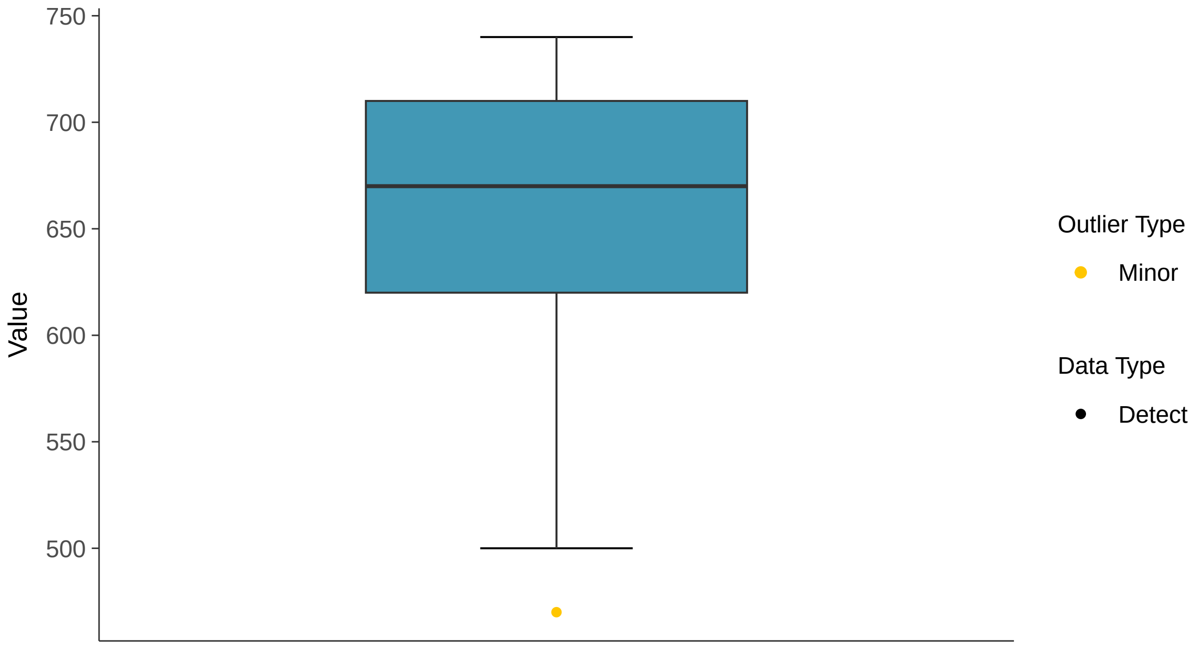
ID: 17_1_3_126





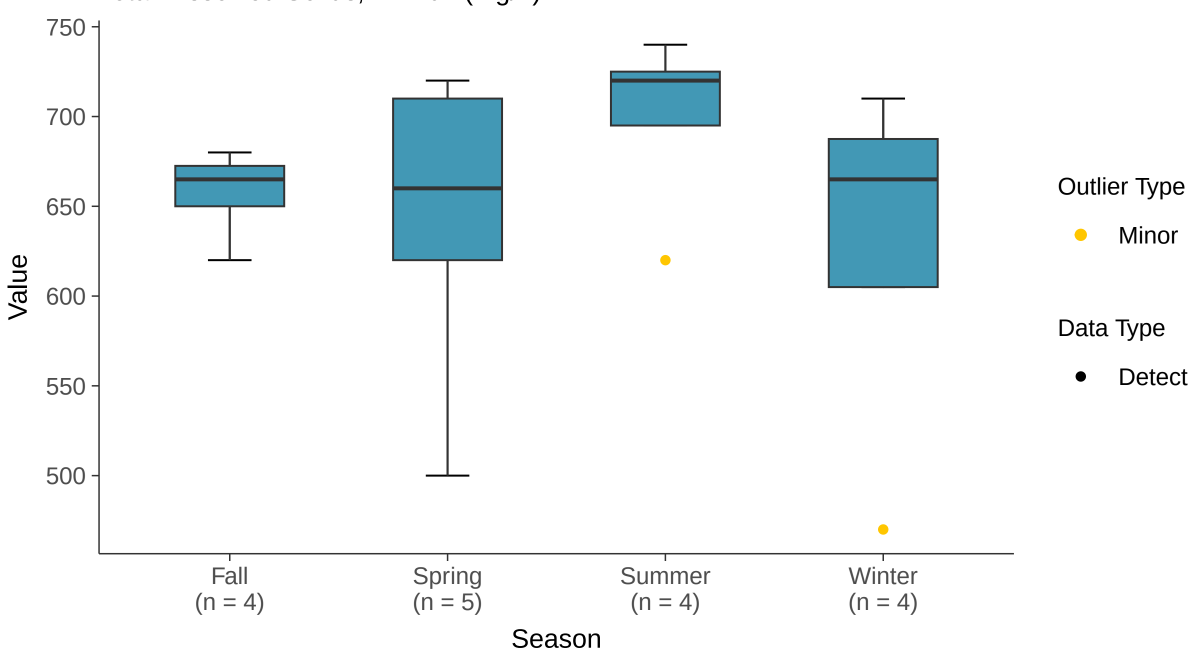
Boxplot

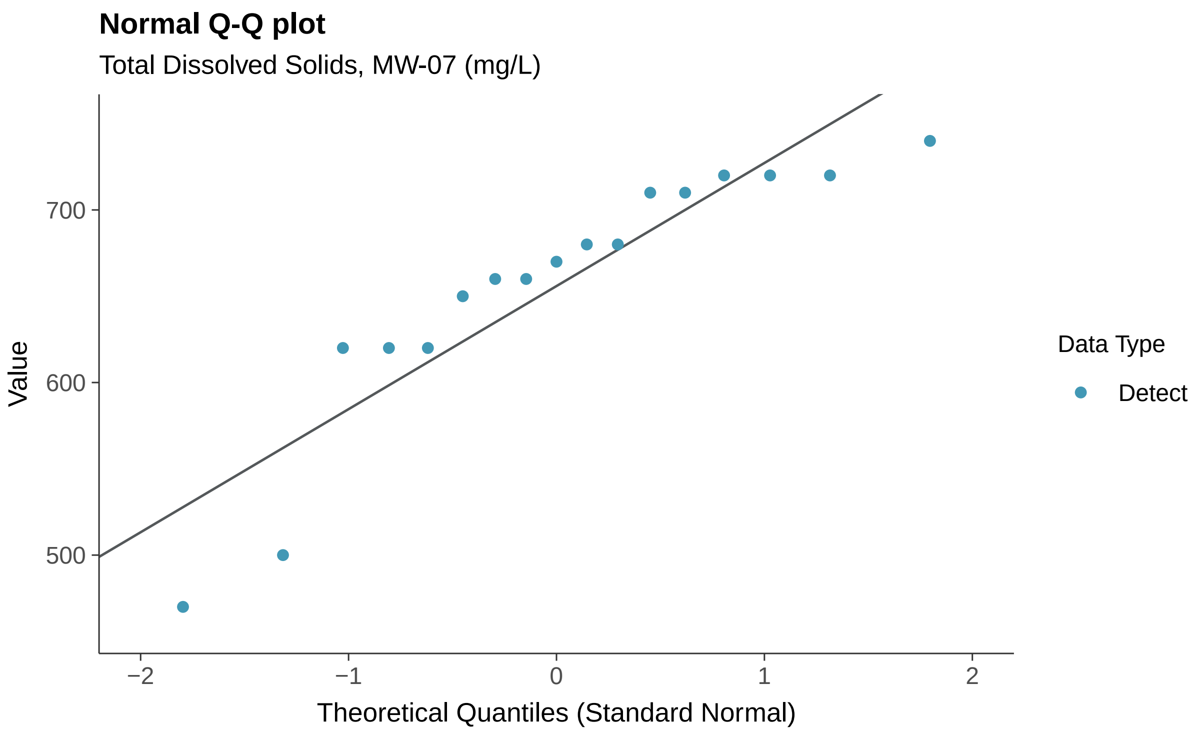
Total Dissolved Solids, MW-07 (mg/L)

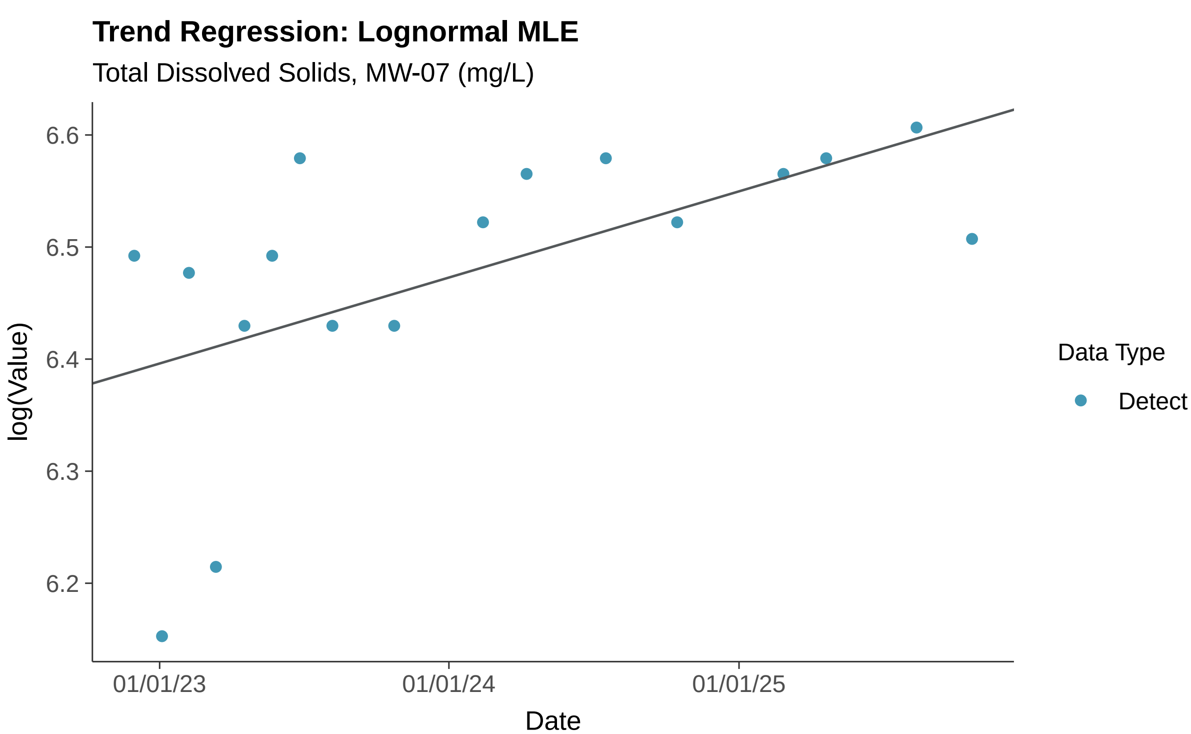


Boxplot by Season

Total Dissolved Solids, MW-07 (mg/L)

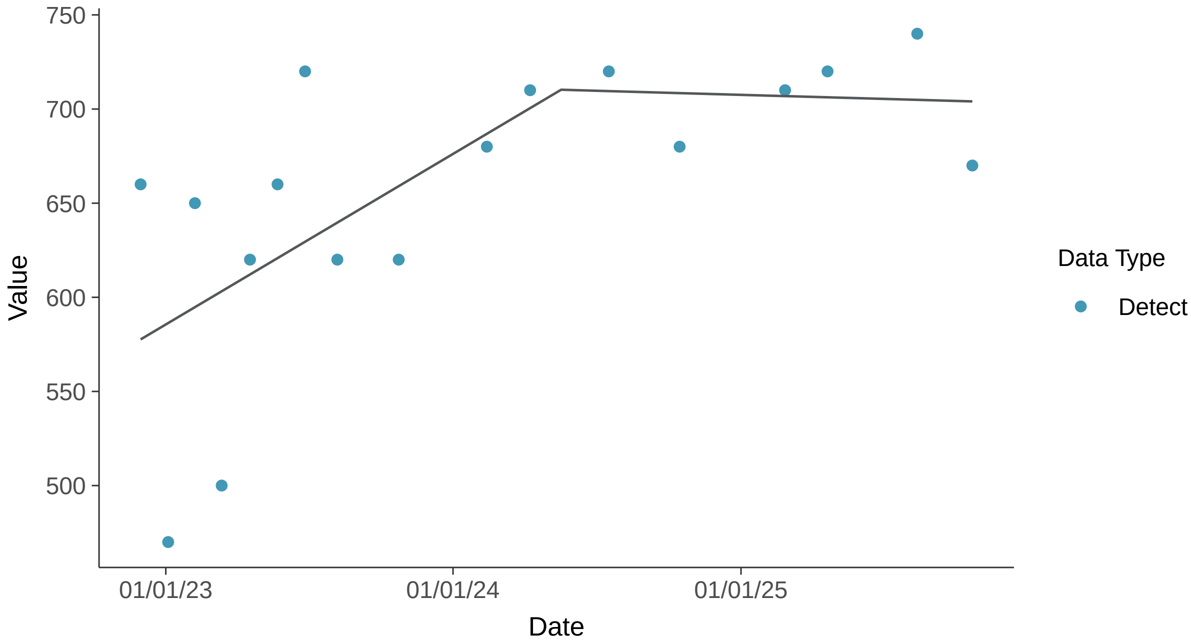



Normal Q-Q plot
Total Dissolved Solids, MW-07 (mg/L)
Value
700
600
500
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Lognormal MLE
Total Dissolved Solids, MW-07 (mg/L)
log(Value)
6.6
6.5
6.4
6.3
6.2
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

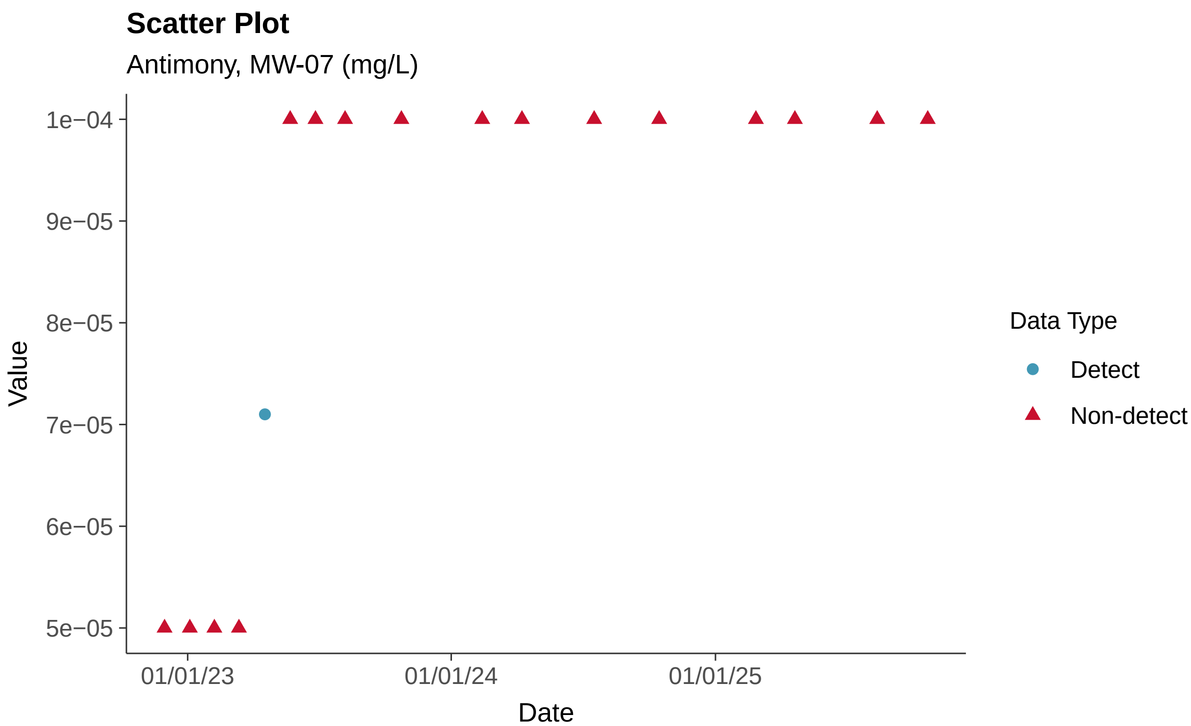
Trend Regression: Piecewise Linear-Linear

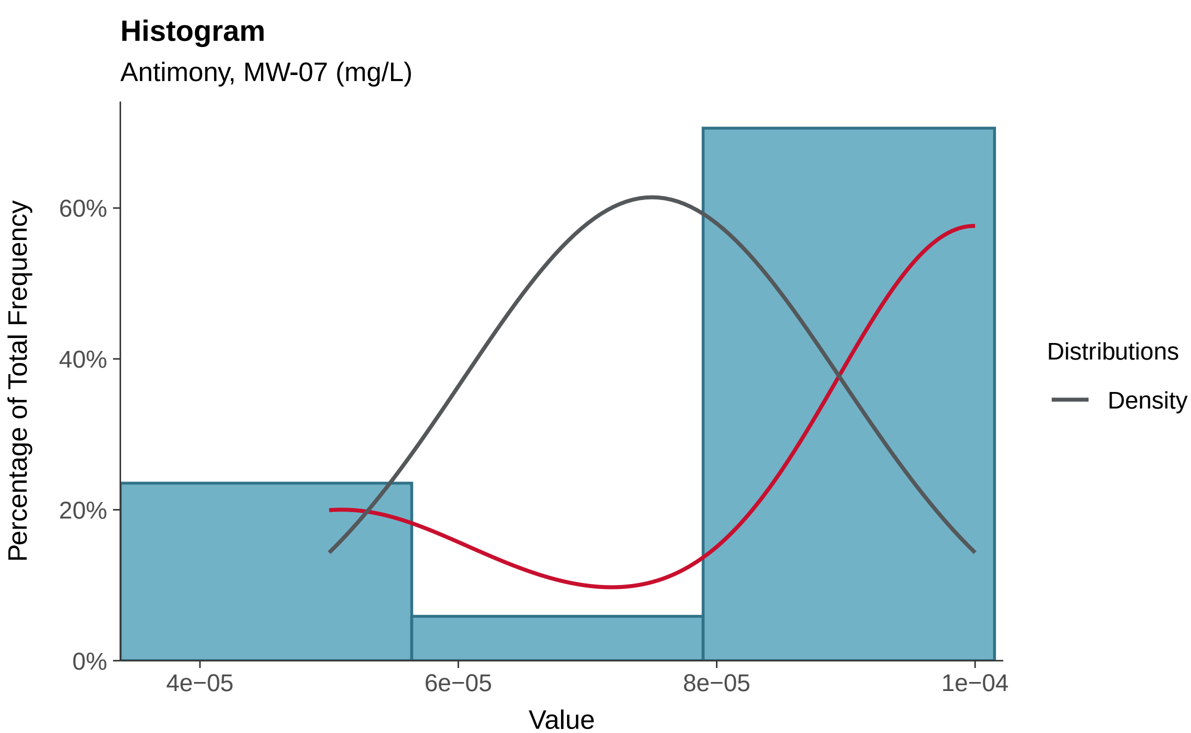
Total Dissolved Solids, MW-07 (mg/L)



Appendix IV: Antimony, MW-07

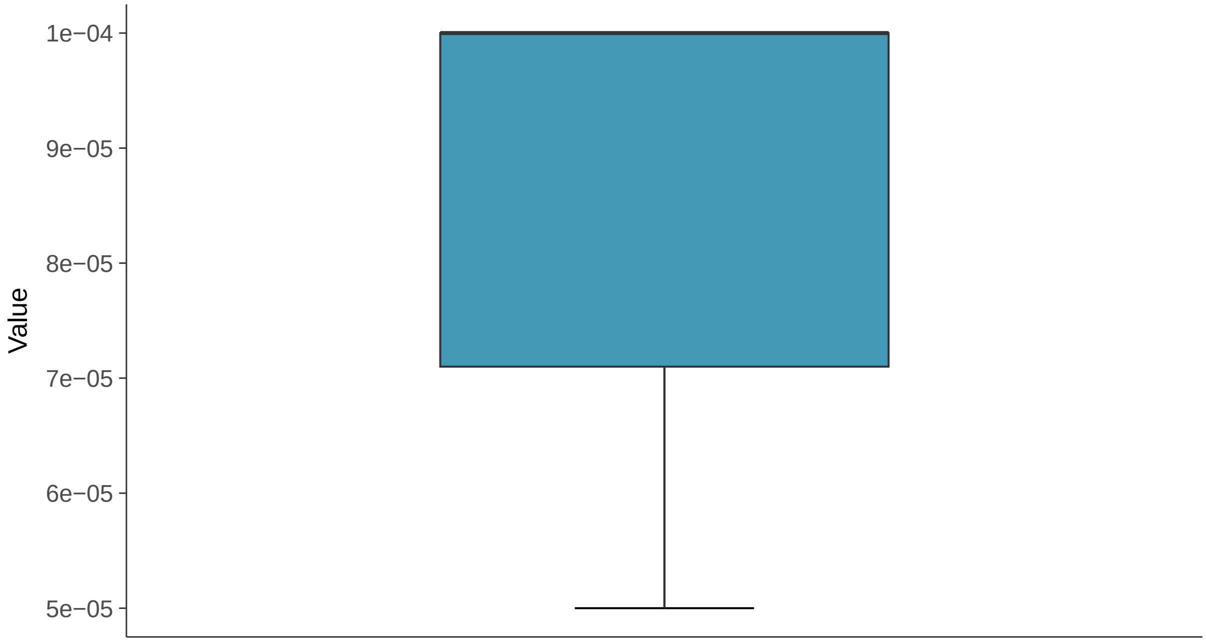
ID: 17_1_4_101





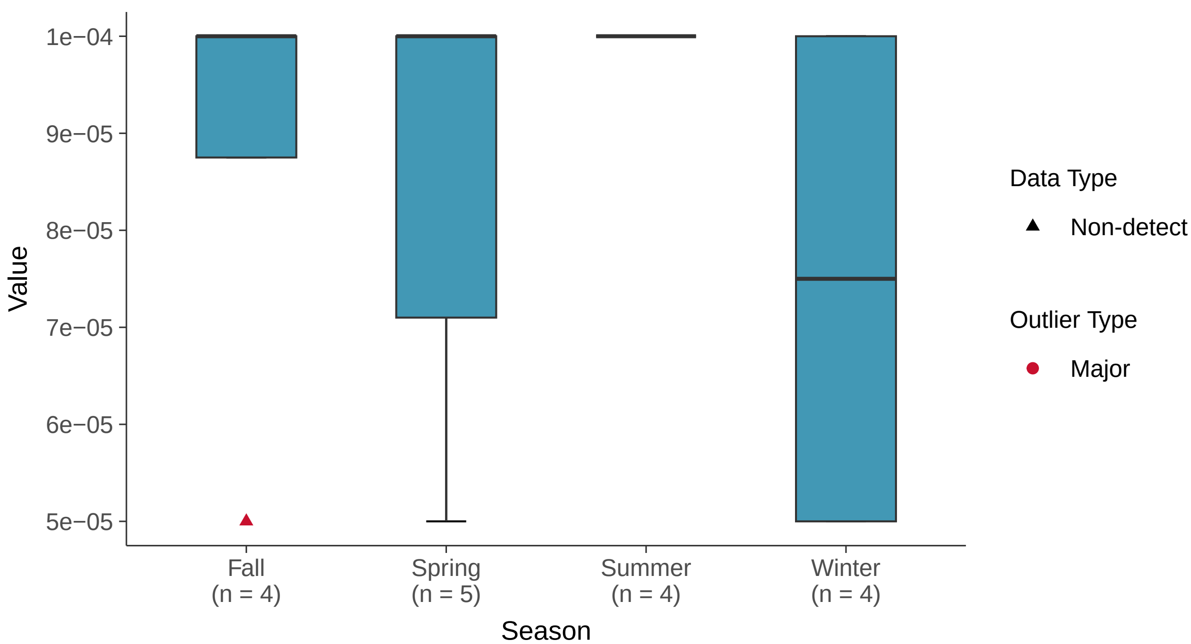
Boxplot

Antimony, MW-07 (mg/L)



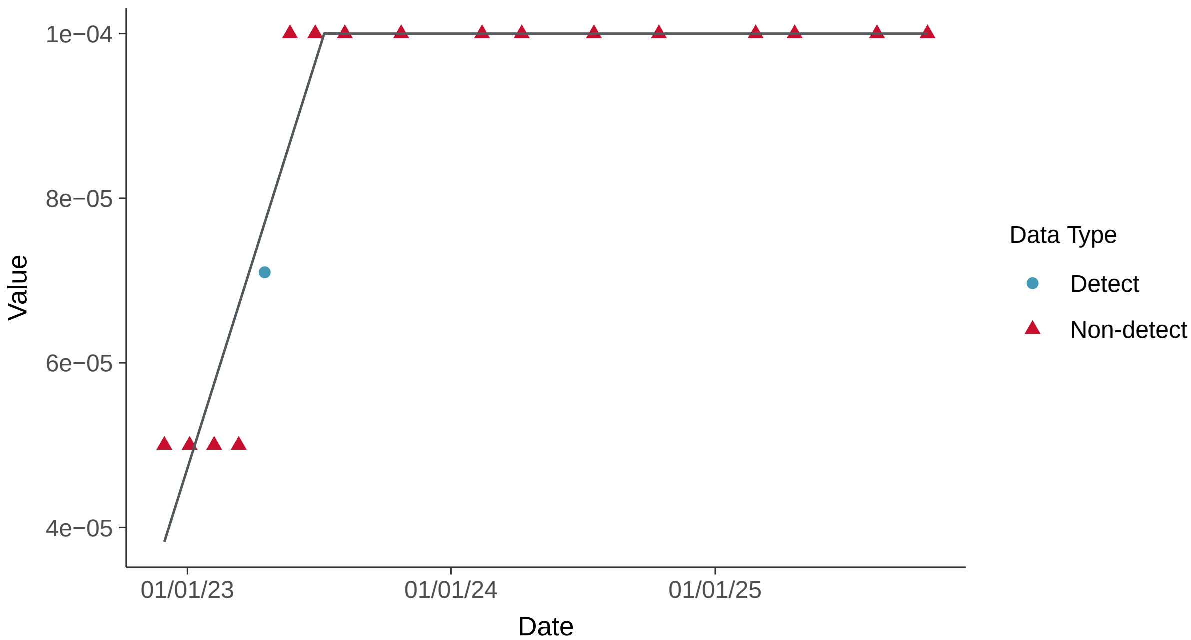
Boxplot by Season

Antimony, MW-07 (mg/L)



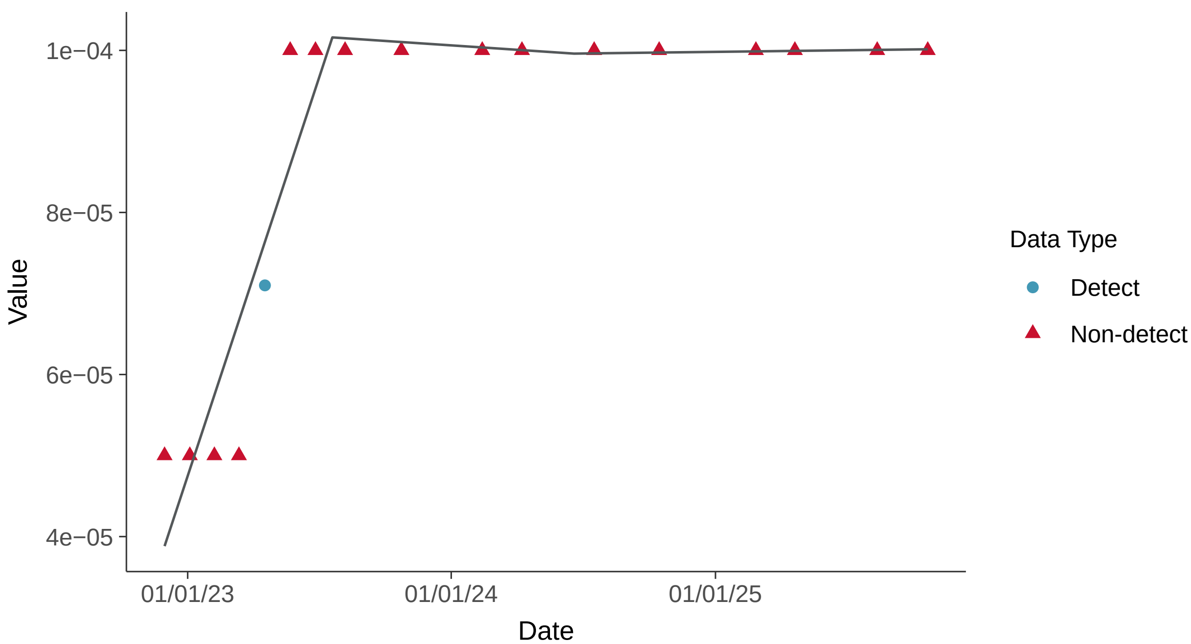
Trend Regression: Piecewise Linear-Linear

Antimony, MW-07 (mg/L)



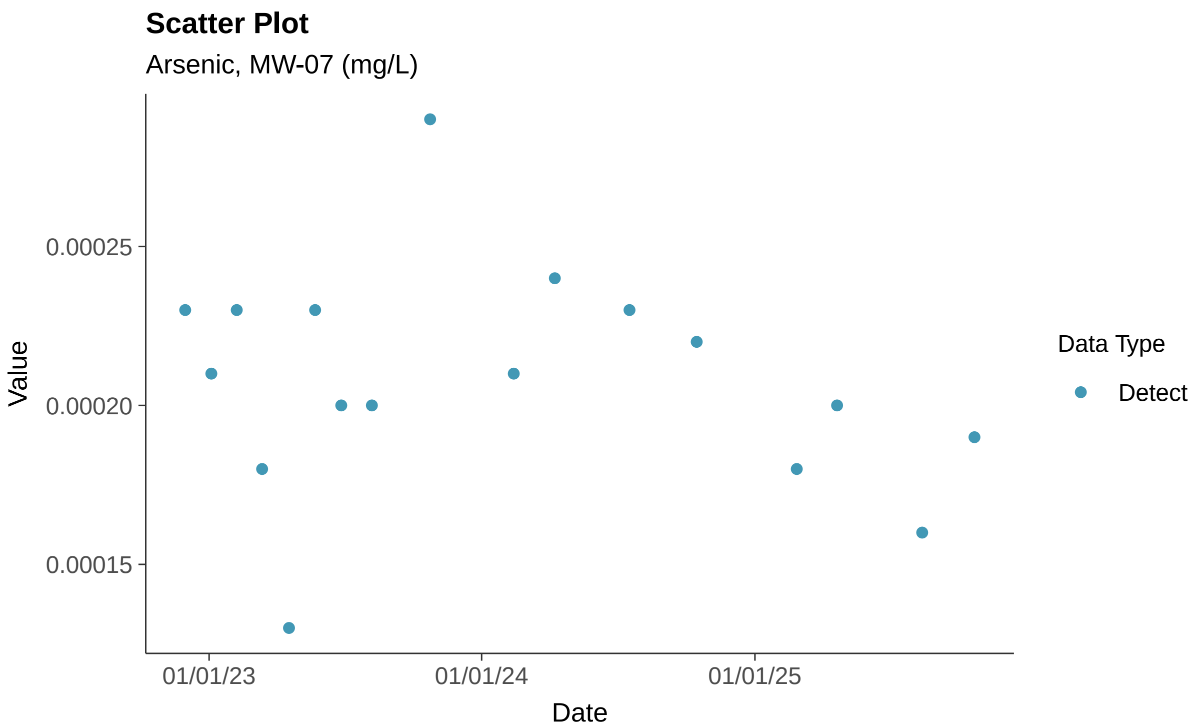
Trend Regression: Piecewise Linear-Linear-Linear

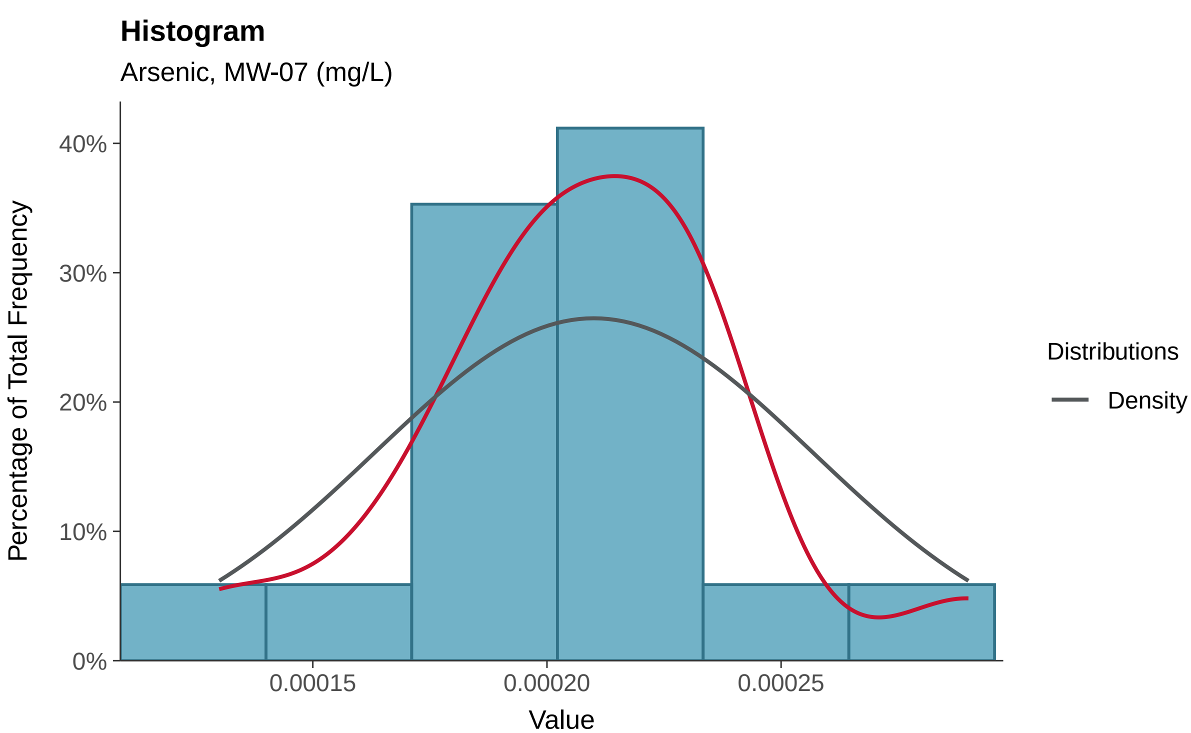
Antimony, MW-07 (mg/L)



Appendix IV: Arsenic, MW-07

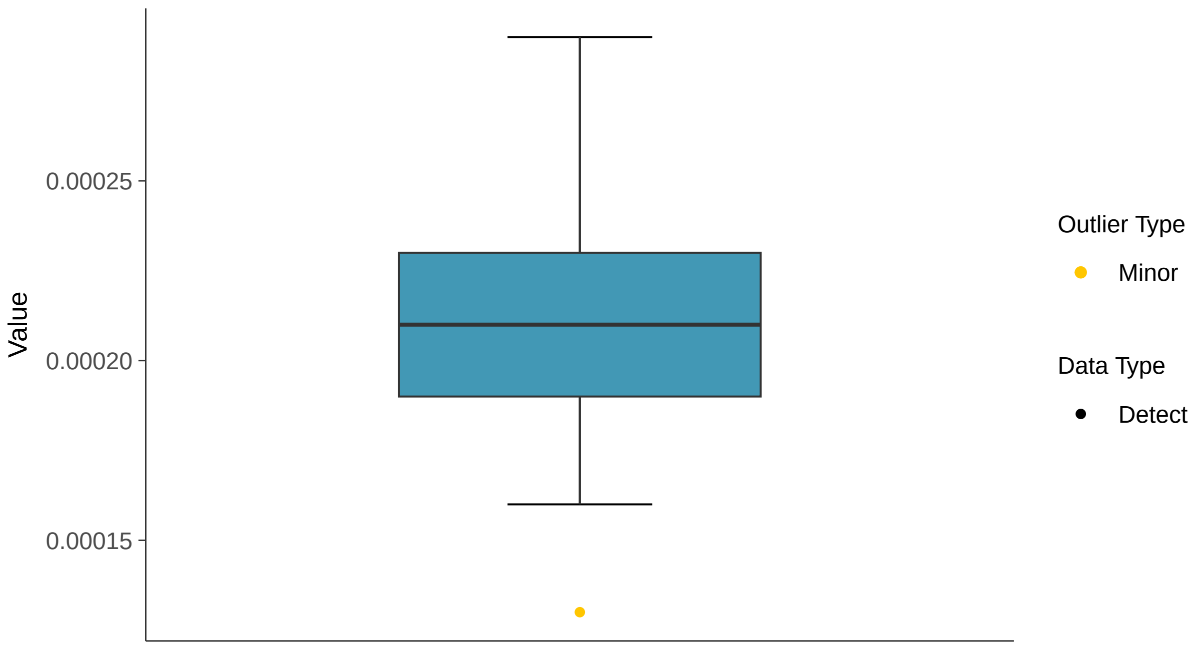
ID: 17_1_4_102





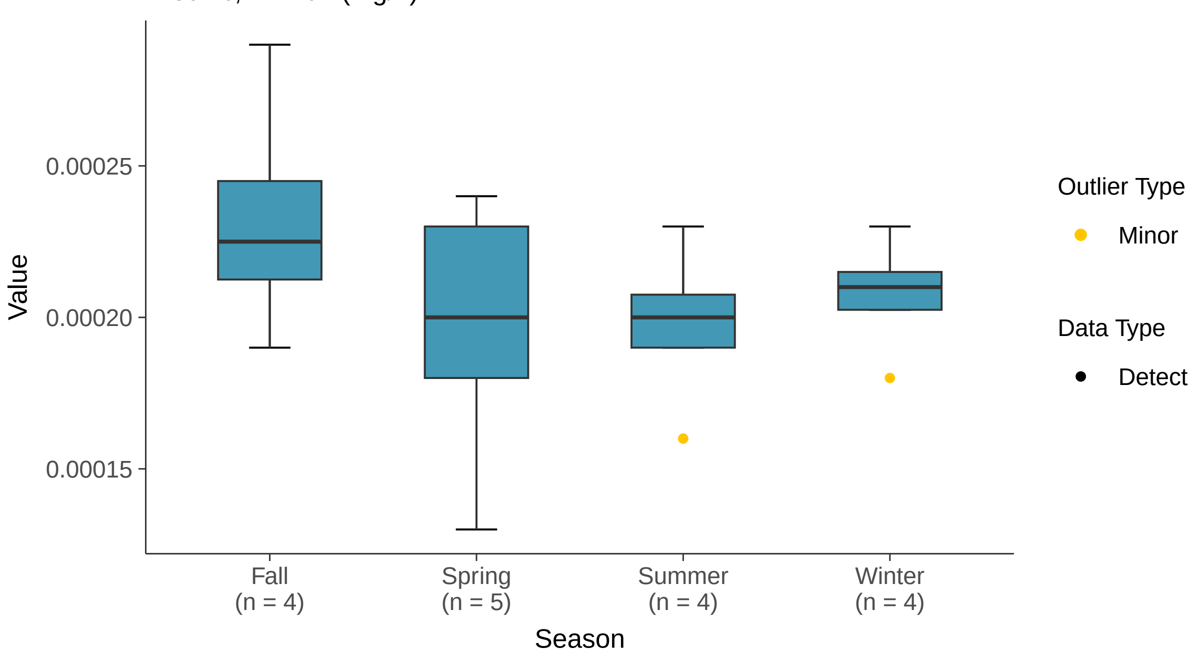
Boxplot

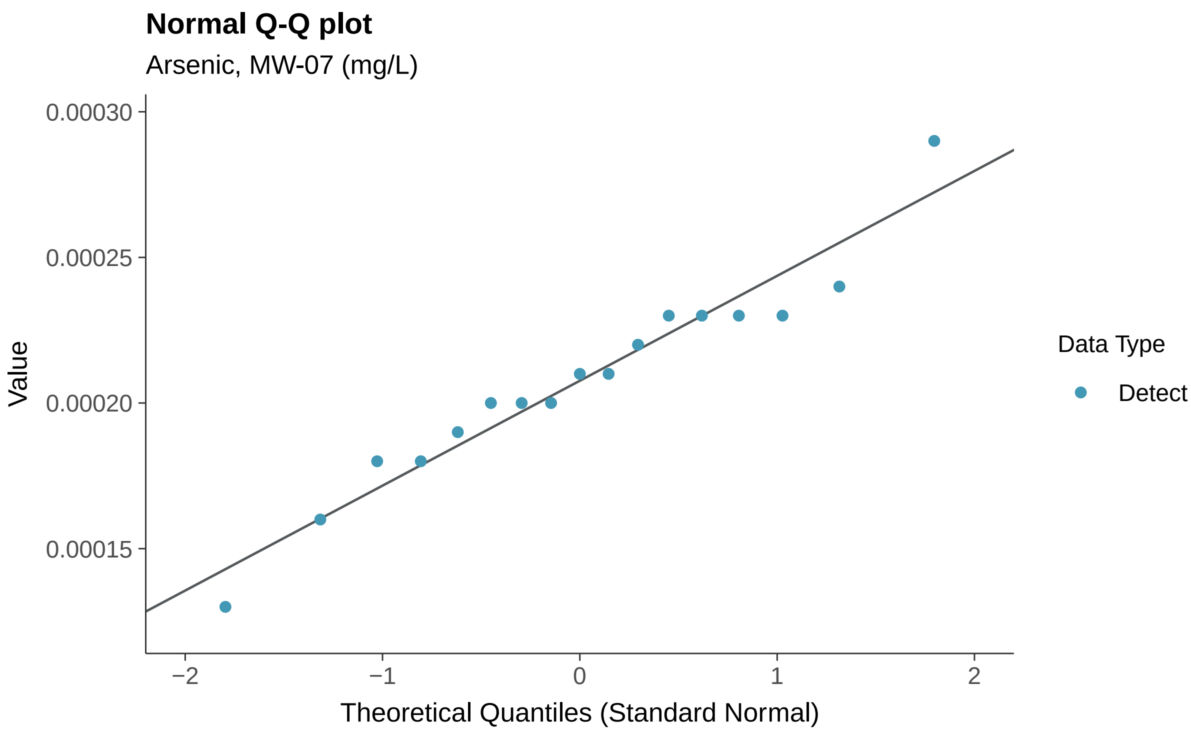
Arsenic, MW-07 (mg/L)

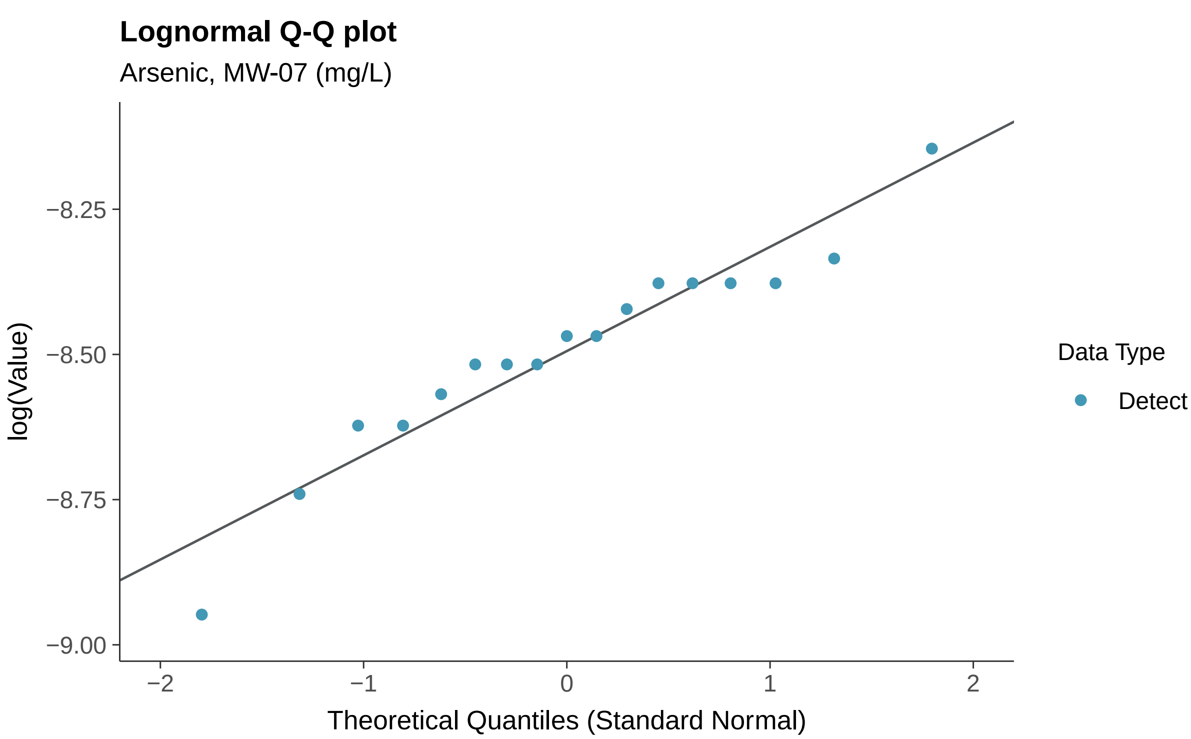


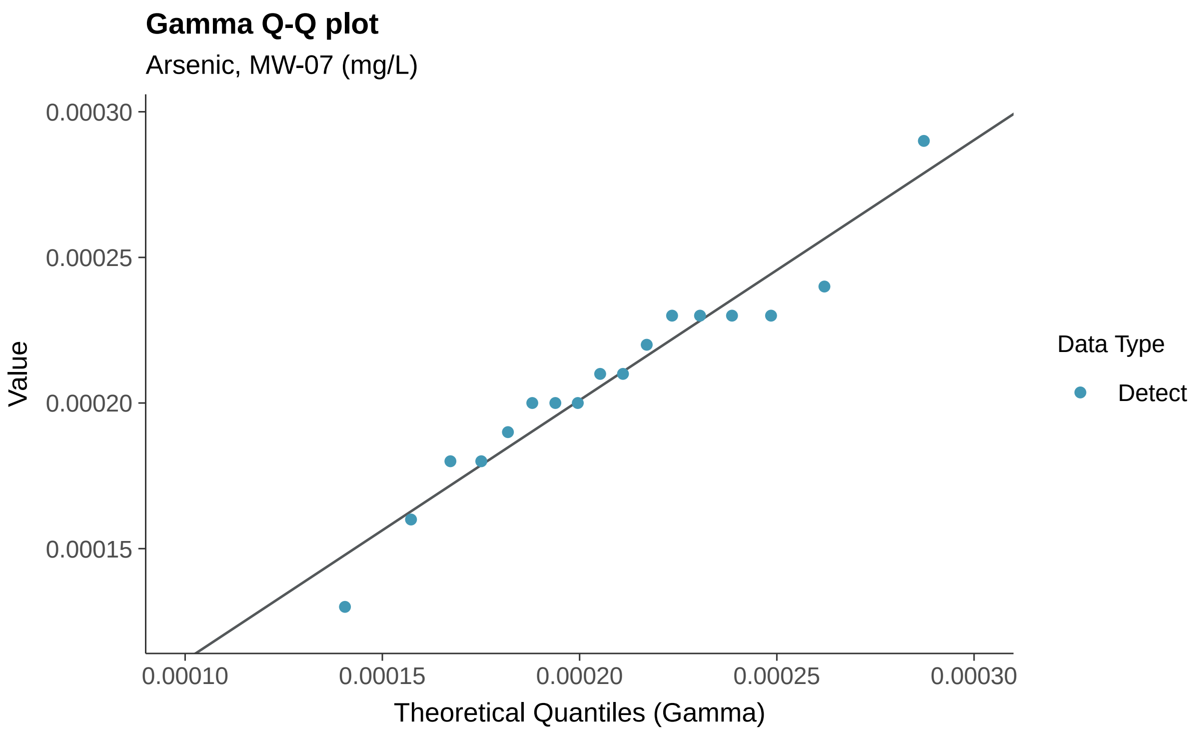
Boxplot by Season

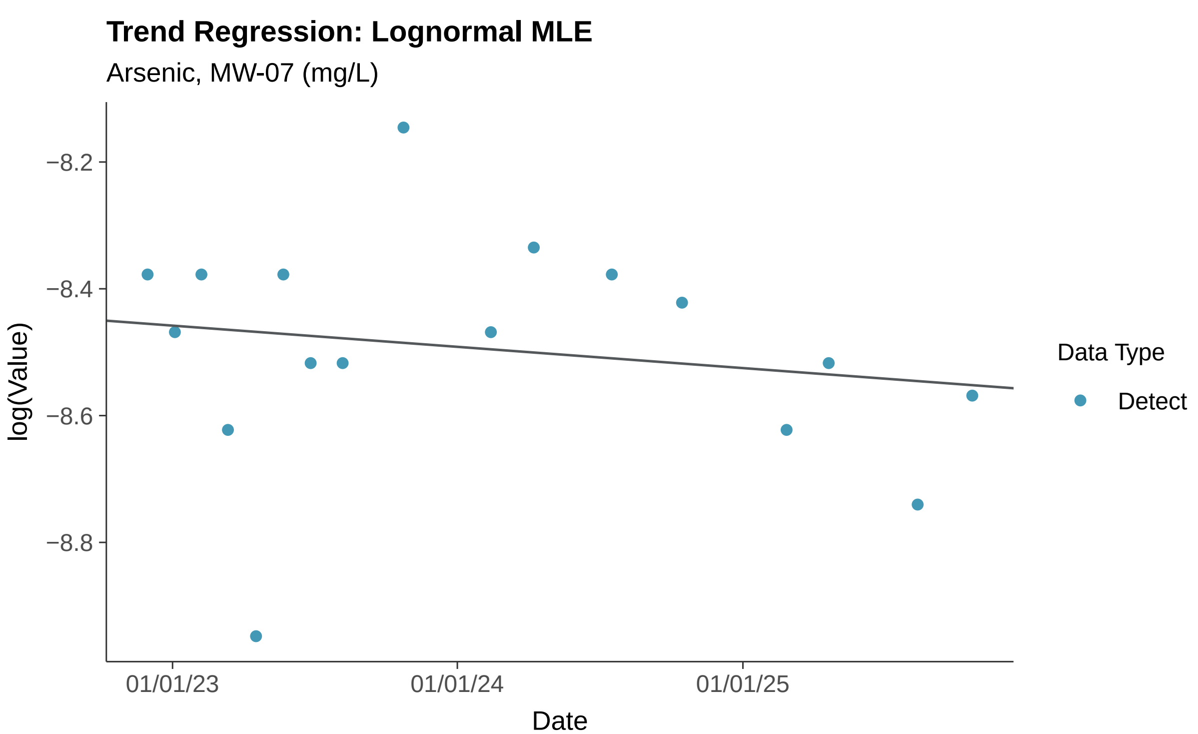
Arsenic, MW-07 (mg/L)

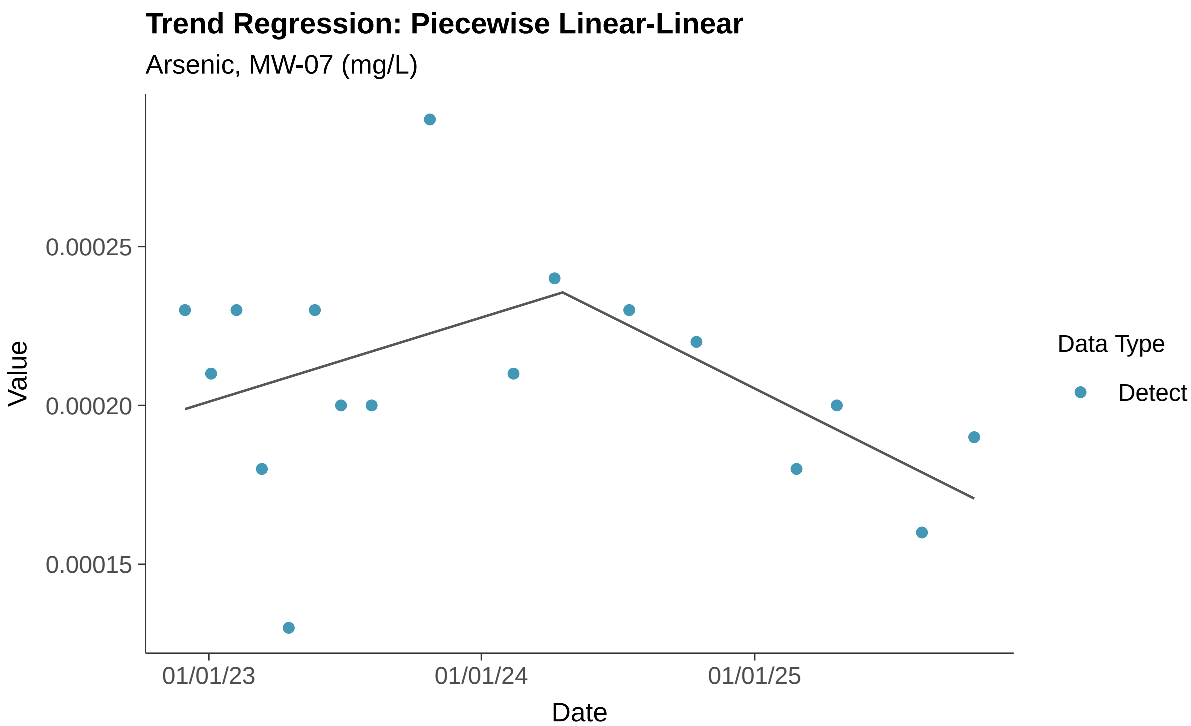


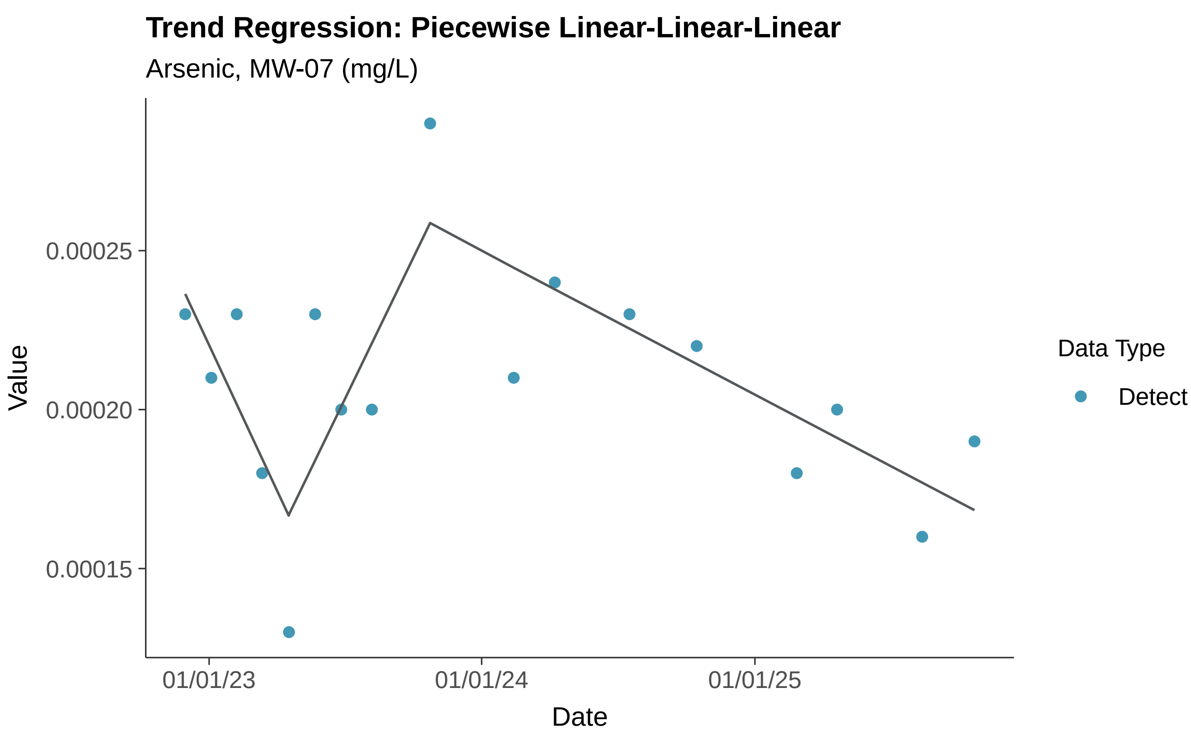

Normal Q-Q plot
Arsenic, MW-07 (mg/L)
Value
0.00030
0.00025
0.00020
0.00015
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Arsenic, MW-07 (mg/L)
log(Value)
−8.25
−8.50
−8.75
−9.00
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Arsenic, MW-07 (mg/L)
Value
0.00030
0.00025
0.00020
0.00015
0.00010
0.00015
0.00020
0.00025
0.00030
Theoretical Quantiles (Gamma)
Data Type
Detect

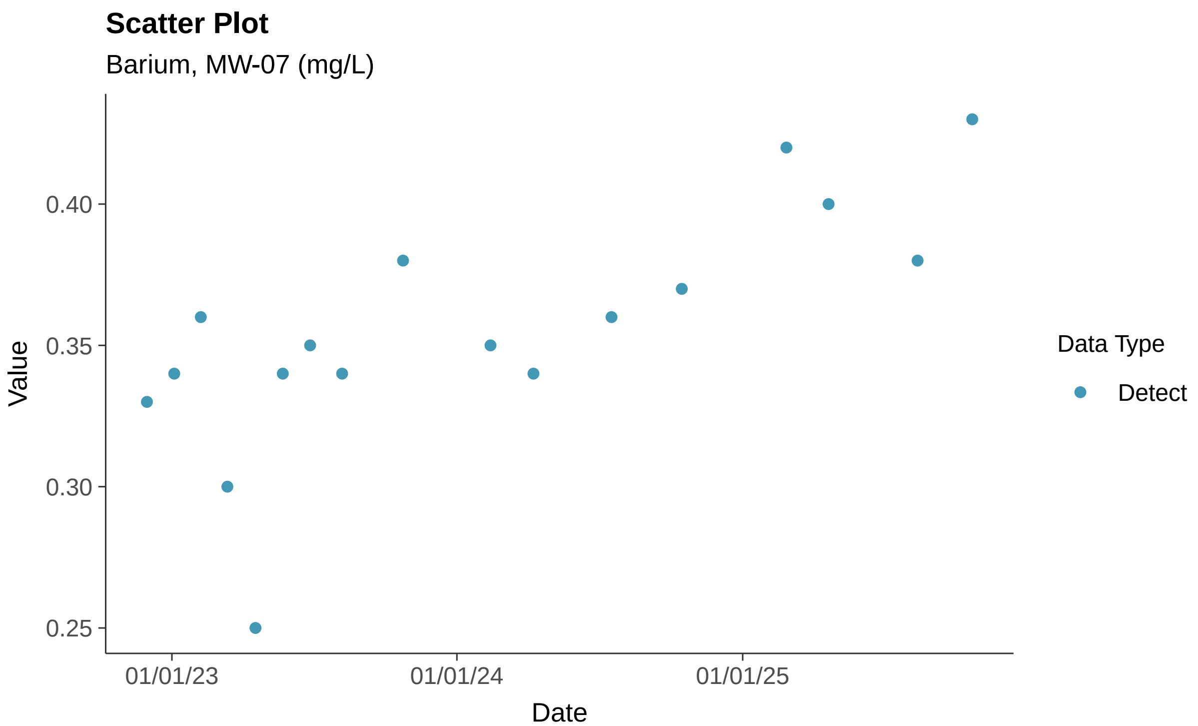

Trend Regression: Lognormal MLE
Arsenic, MW-07 (mg/L)
log(Value)
−8.2
−8.4
−8.6
−8.8
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

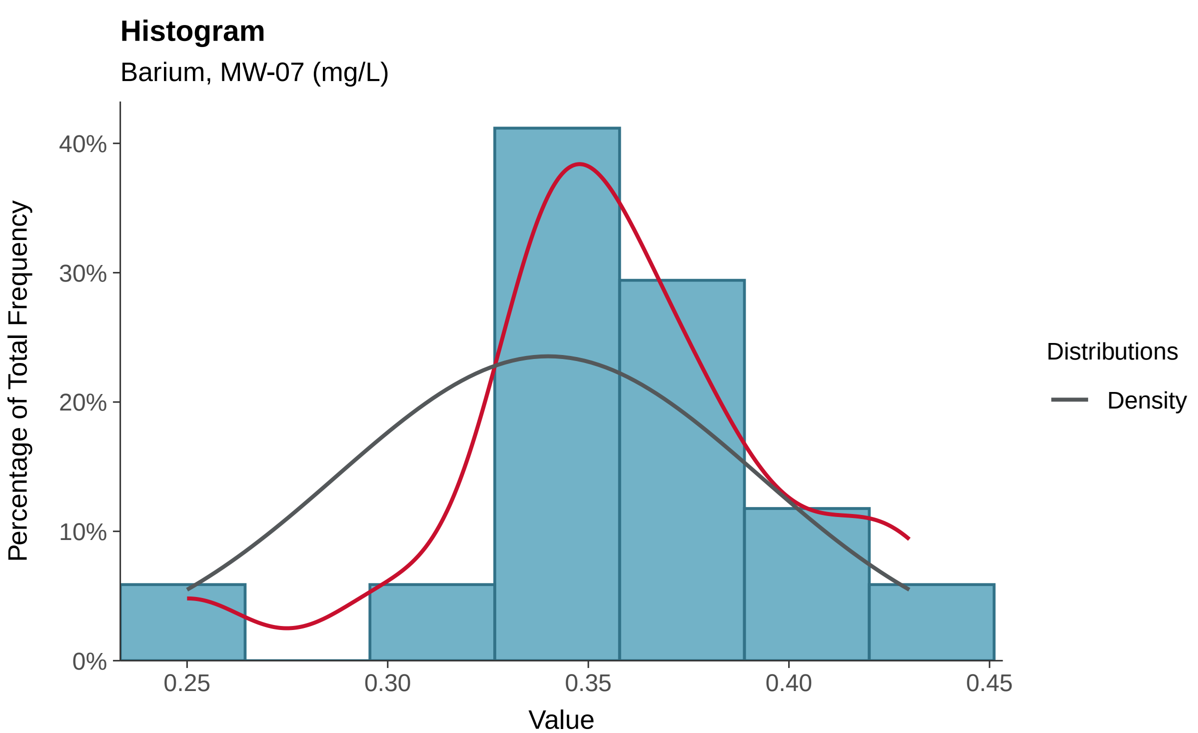

Trend Regression: Piecewise Linear-Linear
Arsenic, MW-07 (mg/L)
Value
0.00025
0.00020
0.00015
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

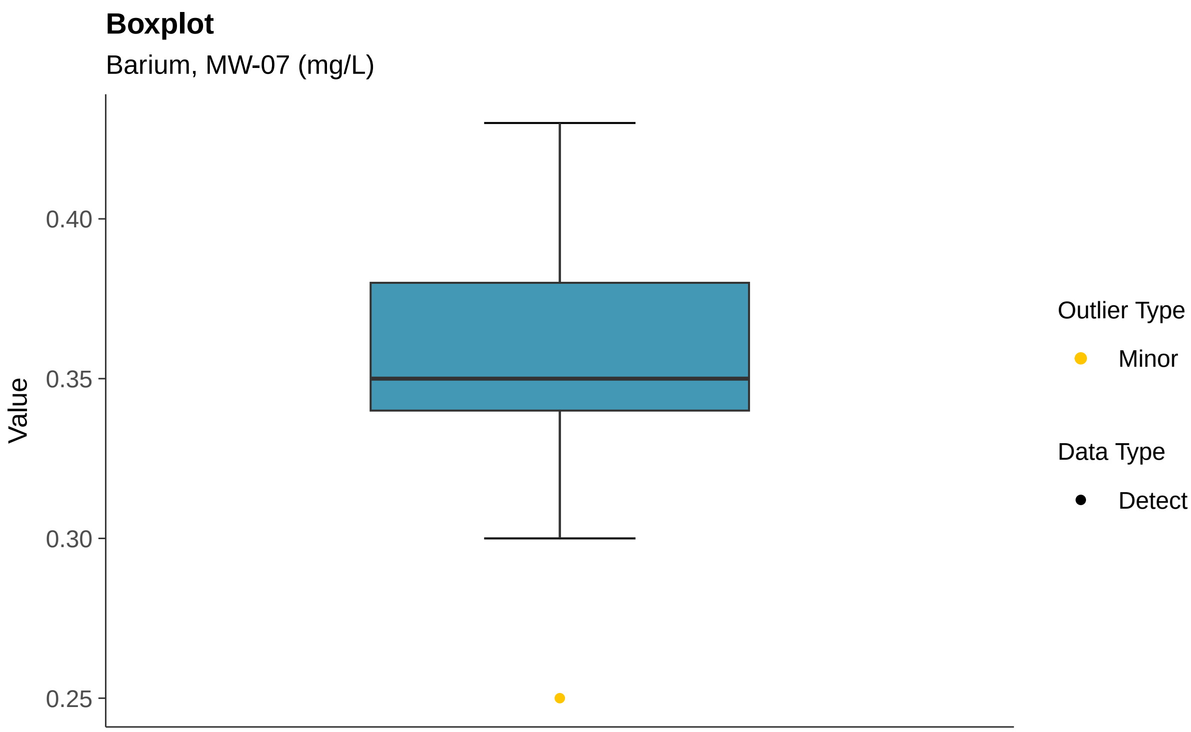

Trend Regression: Piecewise Linear-Linear-Linear
Arsenic, MW-07 (mg/L)
Value
0.00025
0.00020
0.00015
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

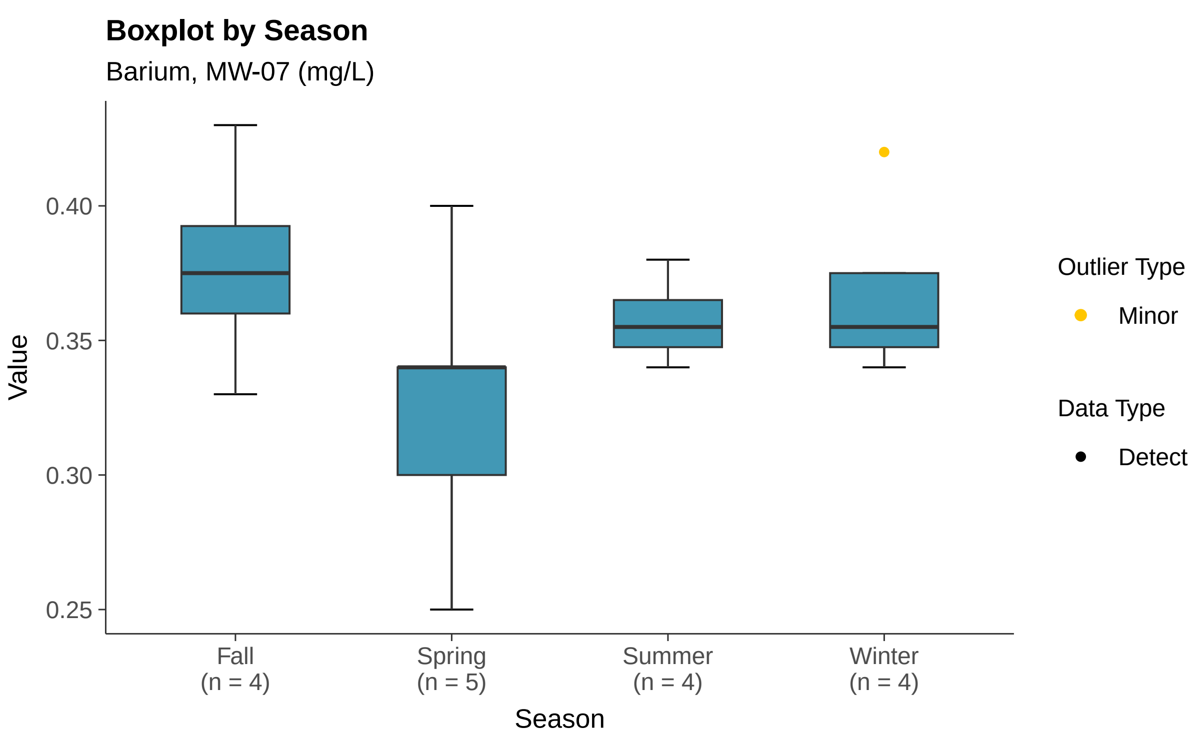
Appendix IV: Barium, MW-07

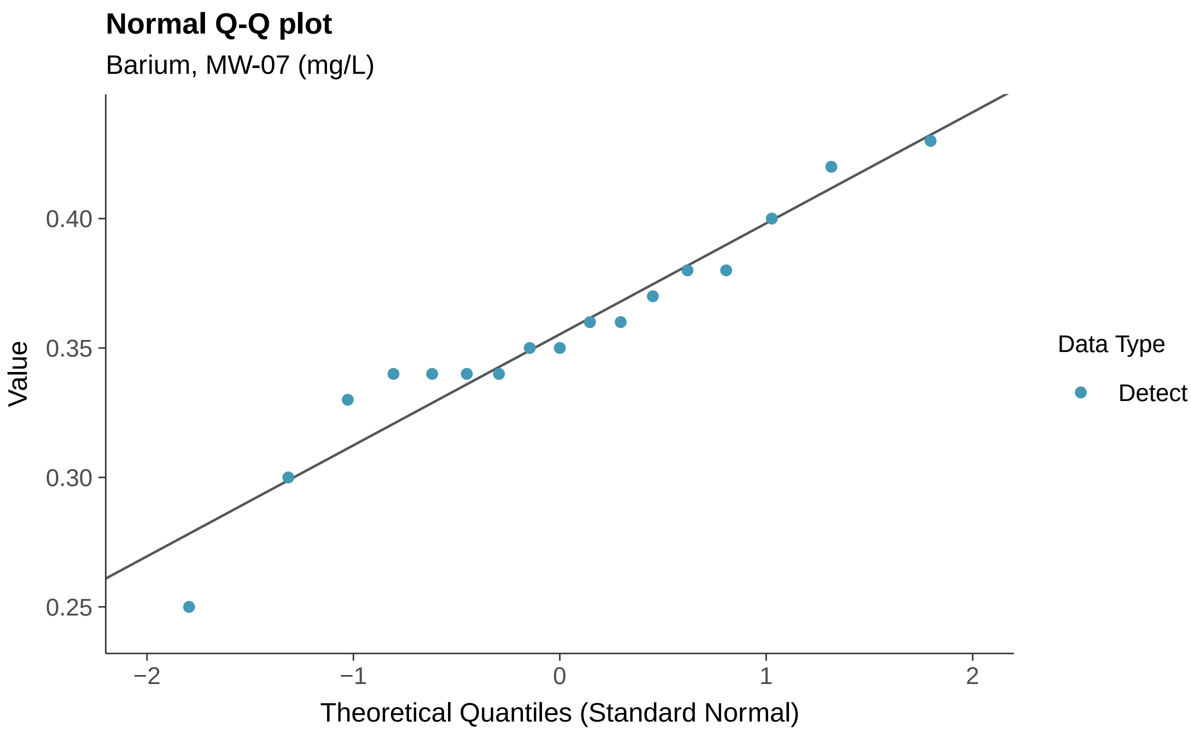
ID: 17_1_4_103

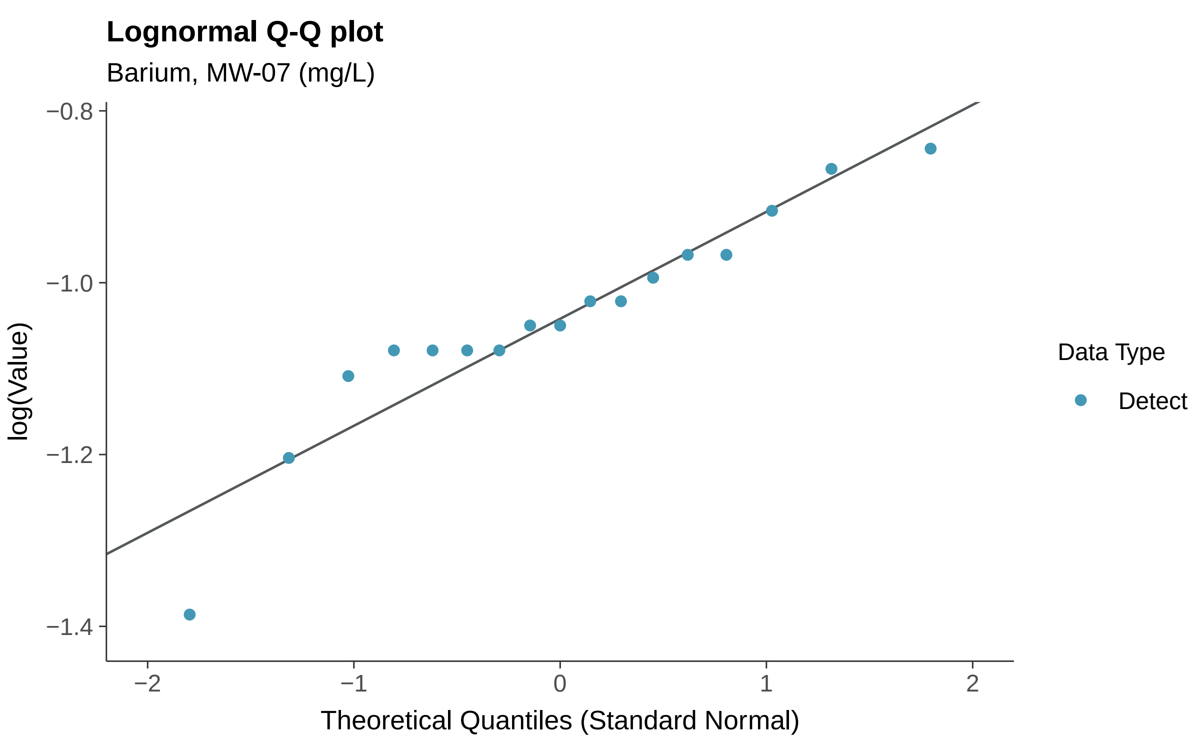





Boxplot
Barium, MW-07 (mg/L)
Value
0.40
0.35
0.30
0.25
Outlier Type
Minor
Data Type
Detect

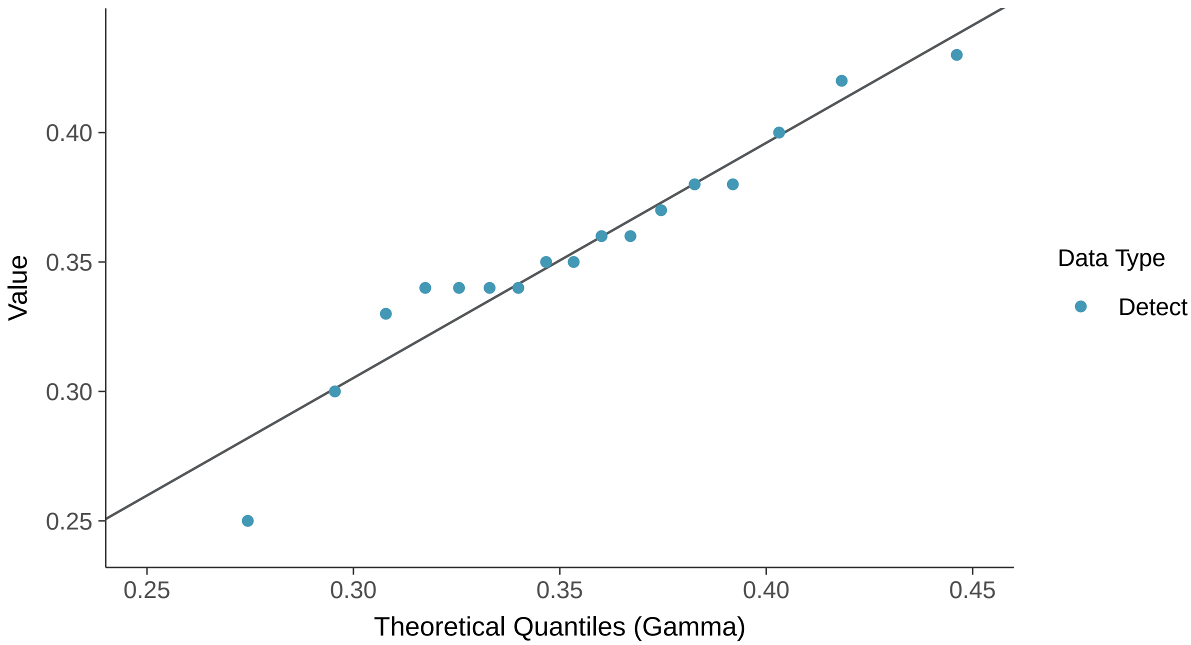

Boxplot by Season
Barium, MW-07 (mg/L)
Value
0.40
0.35
0.30
0.25
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Minor
Data Type
Detect


Normal Q-Q plot
Barium, MW-07 (mg/L)
Value
0.40
0.35
0.30
0.25
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Barium, MW-07 (mg/L)
log(Value)
−0.8
−1.0
−1.2
−1.4
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

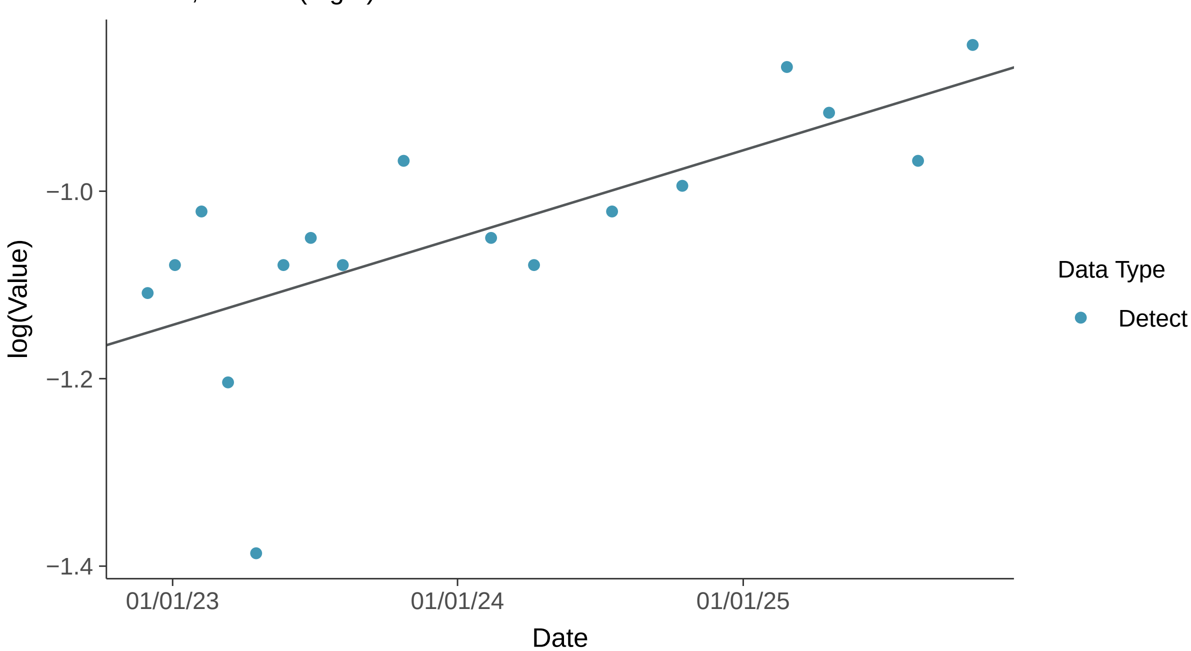
Gamma Q-Q plot

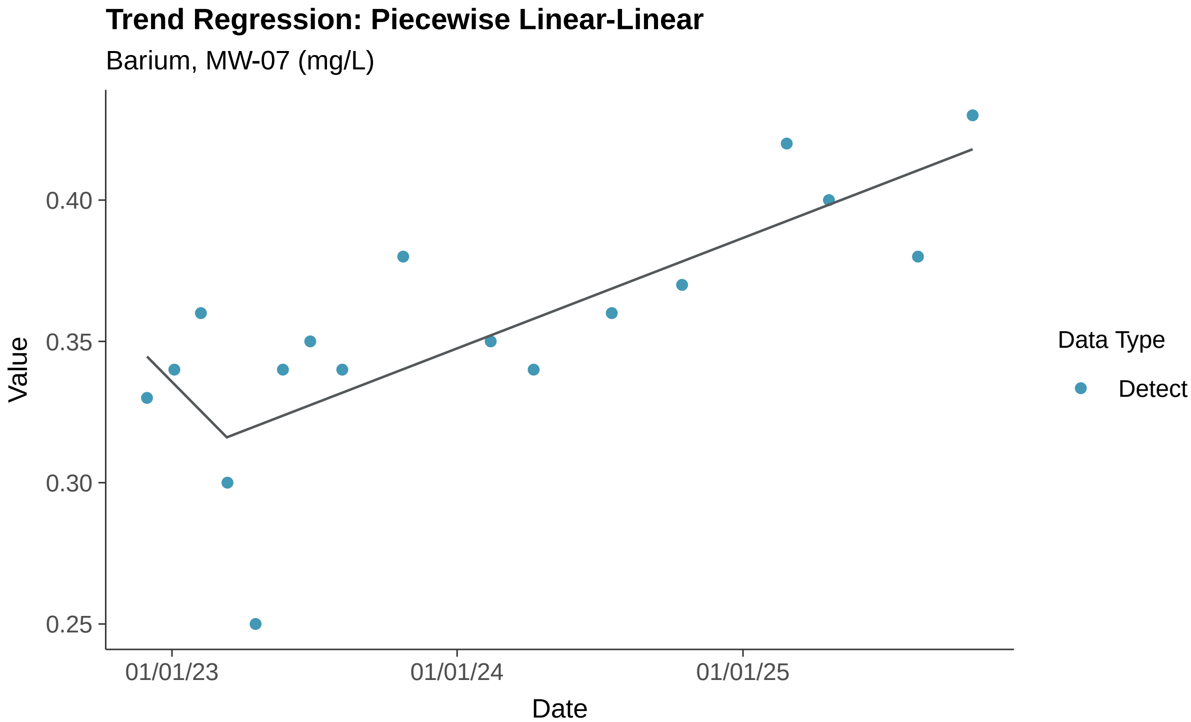
Barium, MW-07 (mg/L)

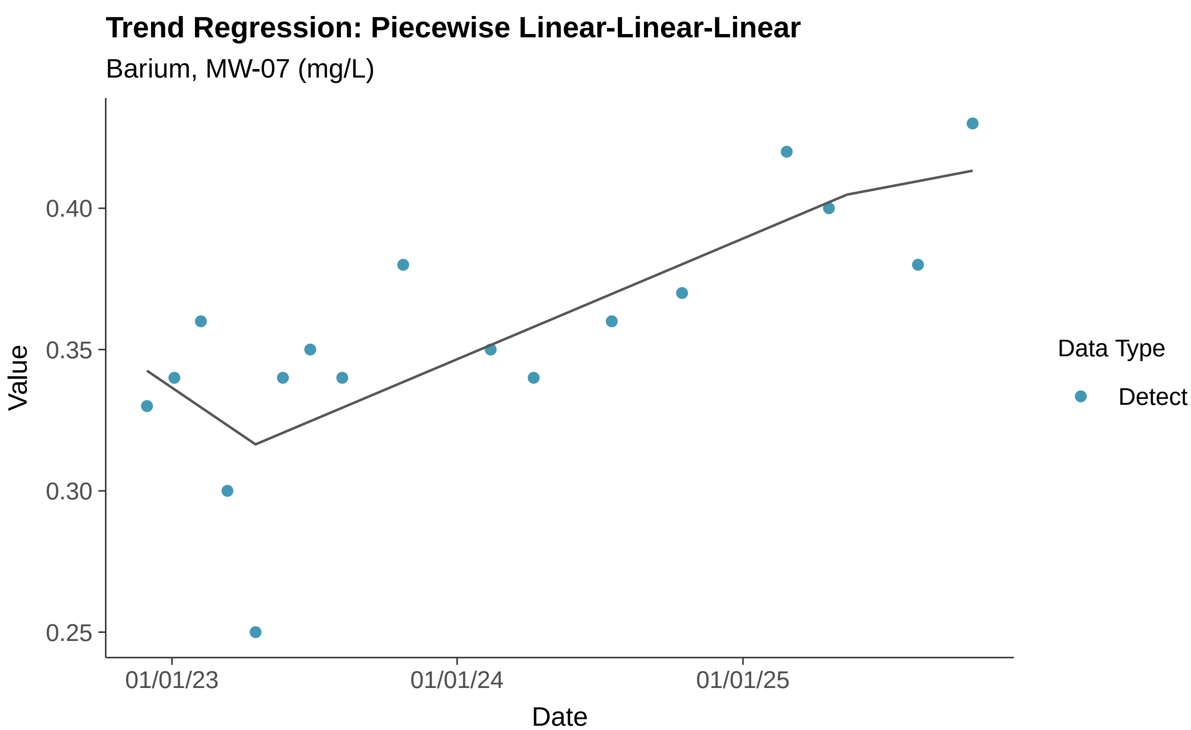


Trend Regression: Lognormal MLE

Barium, MW-07 (mg/L)




Trend Regression: Piecewise Linear-Linear
Barium, MW-07 (mg/L)
Value
0.40
0.35
0.30
0.25
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

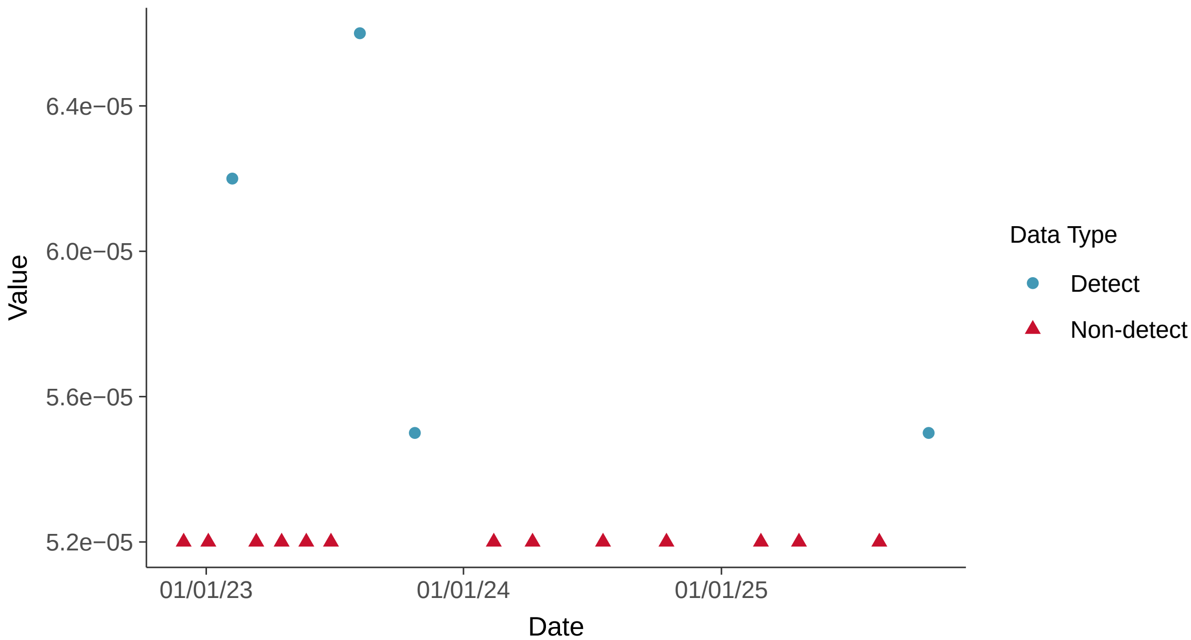

Trend Regression: Piecewise Linear-Linear-Linear
Barium, MW-07 (mg/L)
Value
0.40
0.35
0.30
0.25
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Appendix IV: Beryllium, MW-07

ID: 17_1_4_104

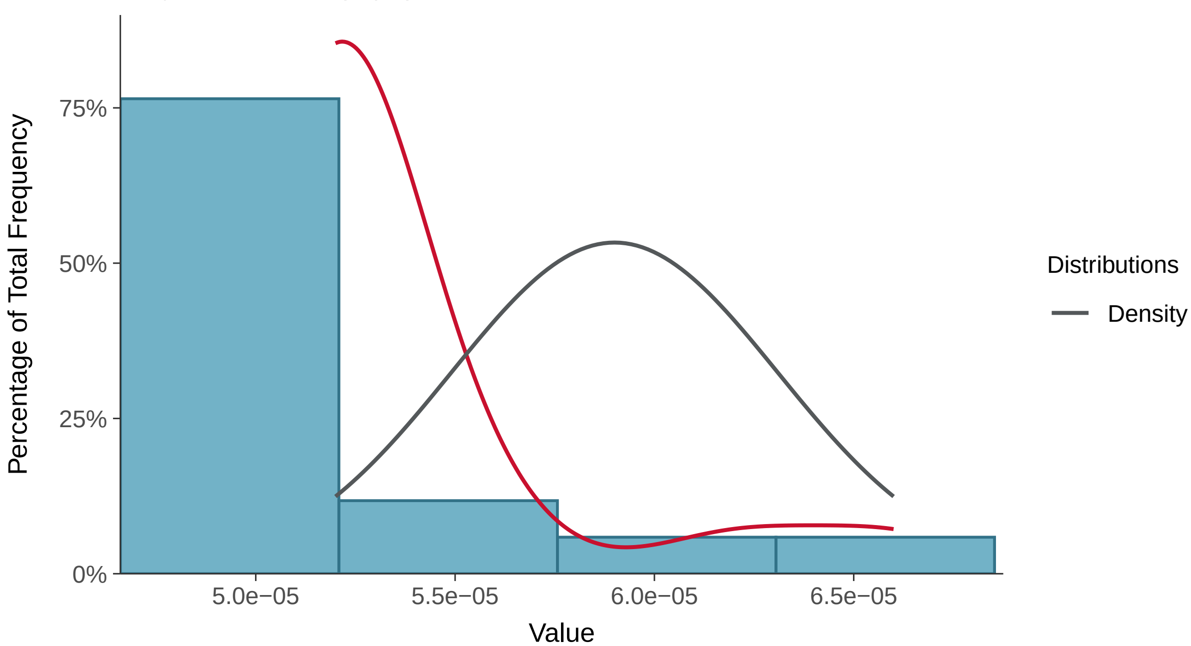
Scatter Plot

Beryllium, MW-07 (mg/L)



Histogram

Beryllium, MW-07 (mg/L)

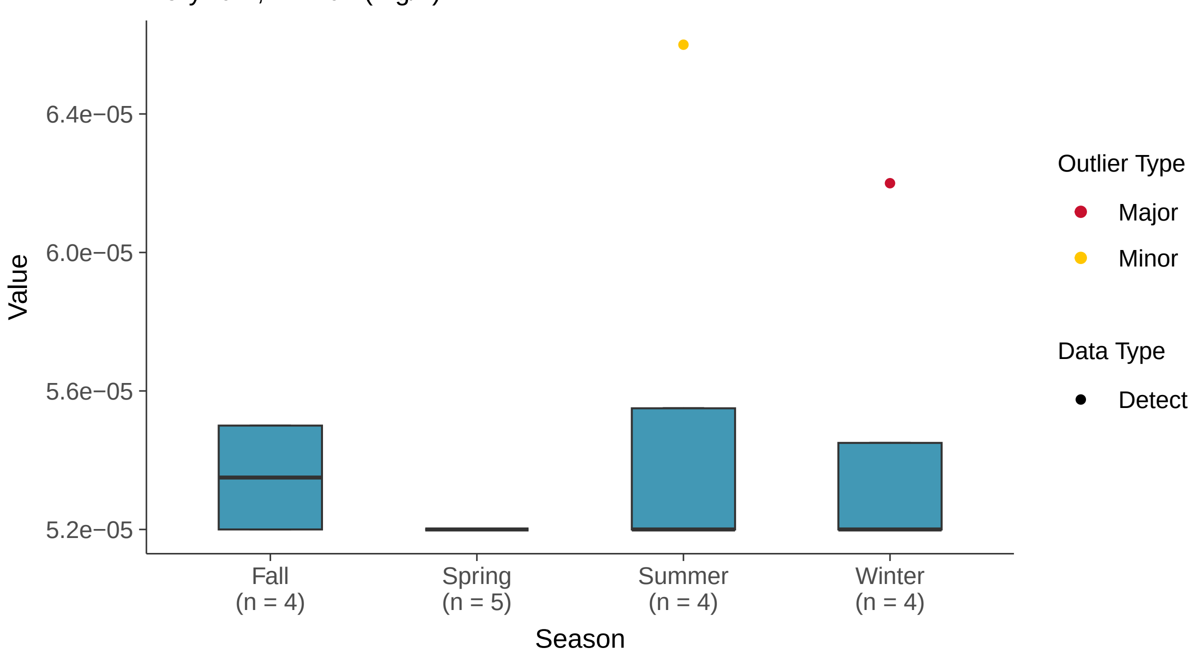


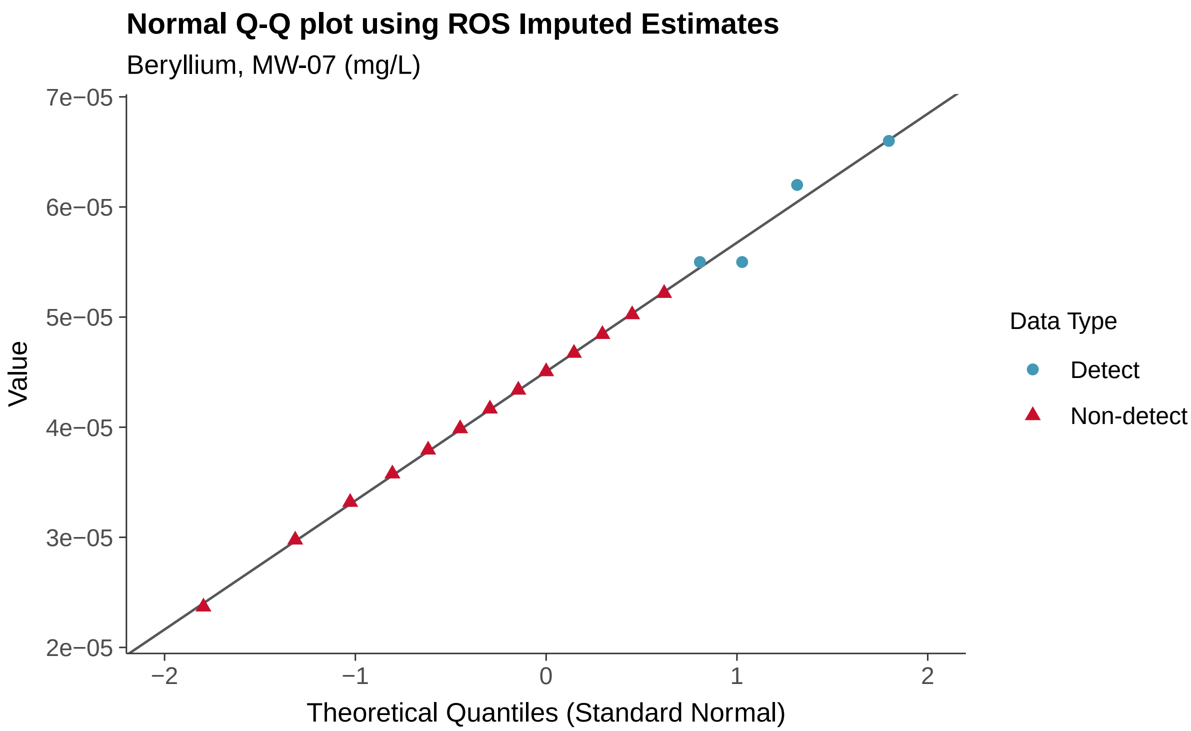
Boxplot

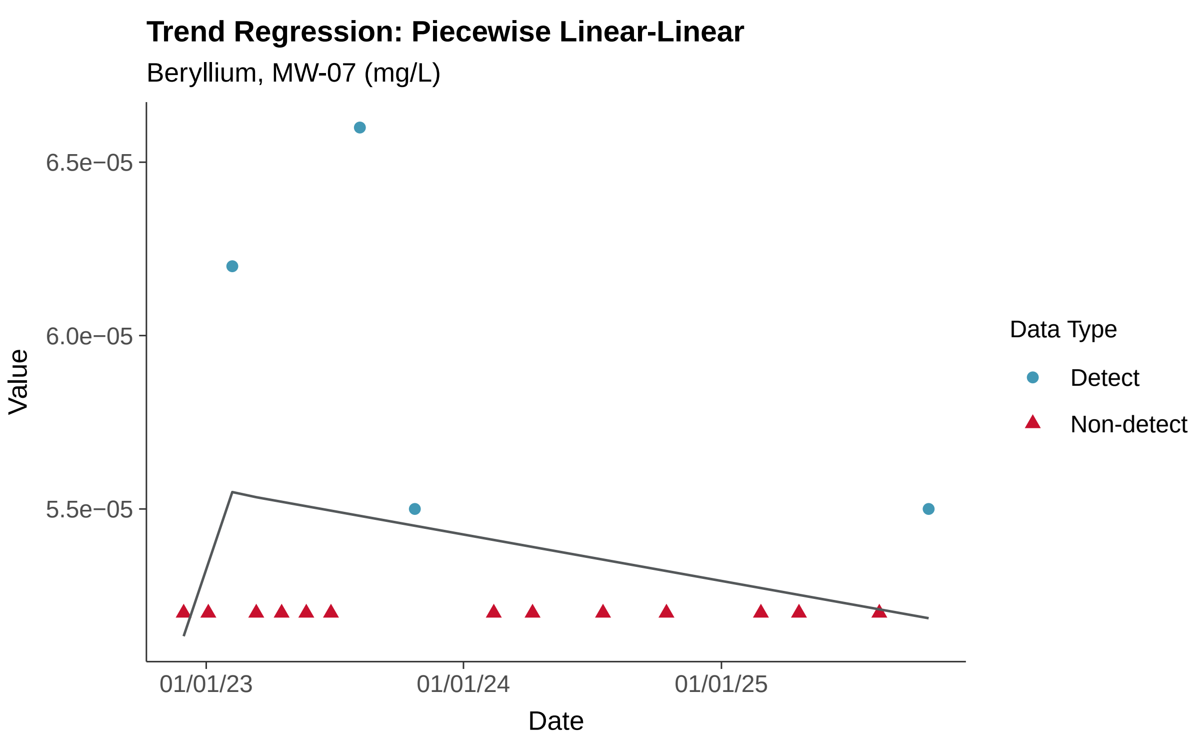
Beryllium, MW-07 (mg/L)

Boxplot by Season

Beryllium, MW-07 (mg/L)

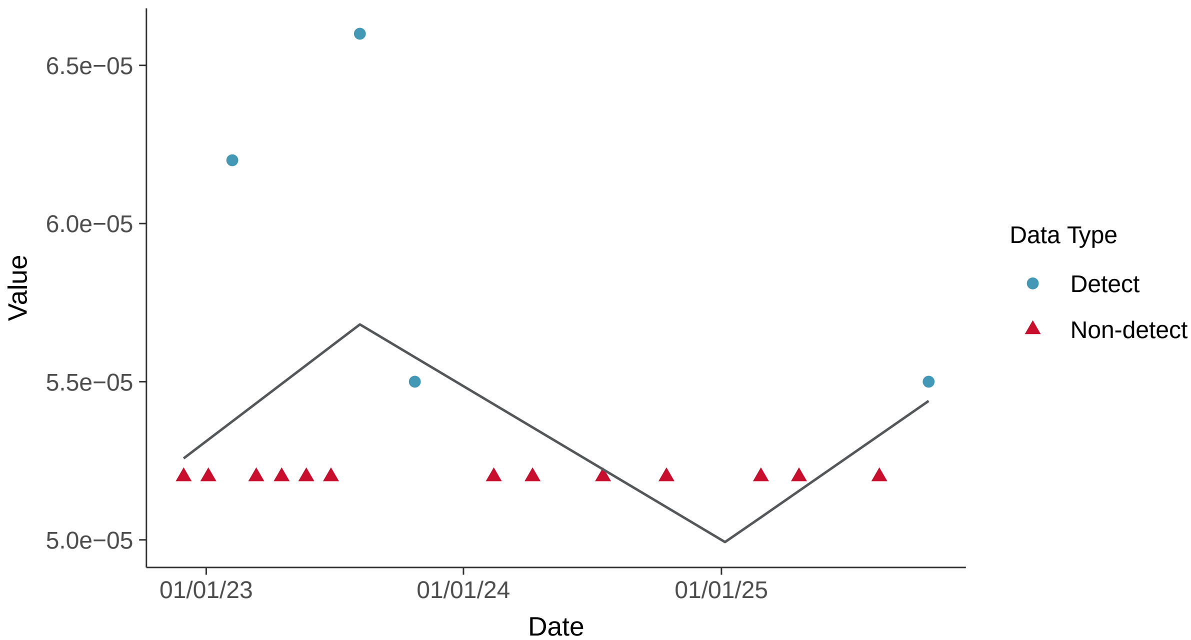



Normal Q-Q plot using ROS Imputed Estimates
Beryllium, MW-07 (mg/L)
Value
7e−05
6e−05
5e−05
4e−05
3e−05
2e−05
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Beryllium, MW-07 (mg/L)
Value
6.5e−05
6.0e−05
5.5e−05
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

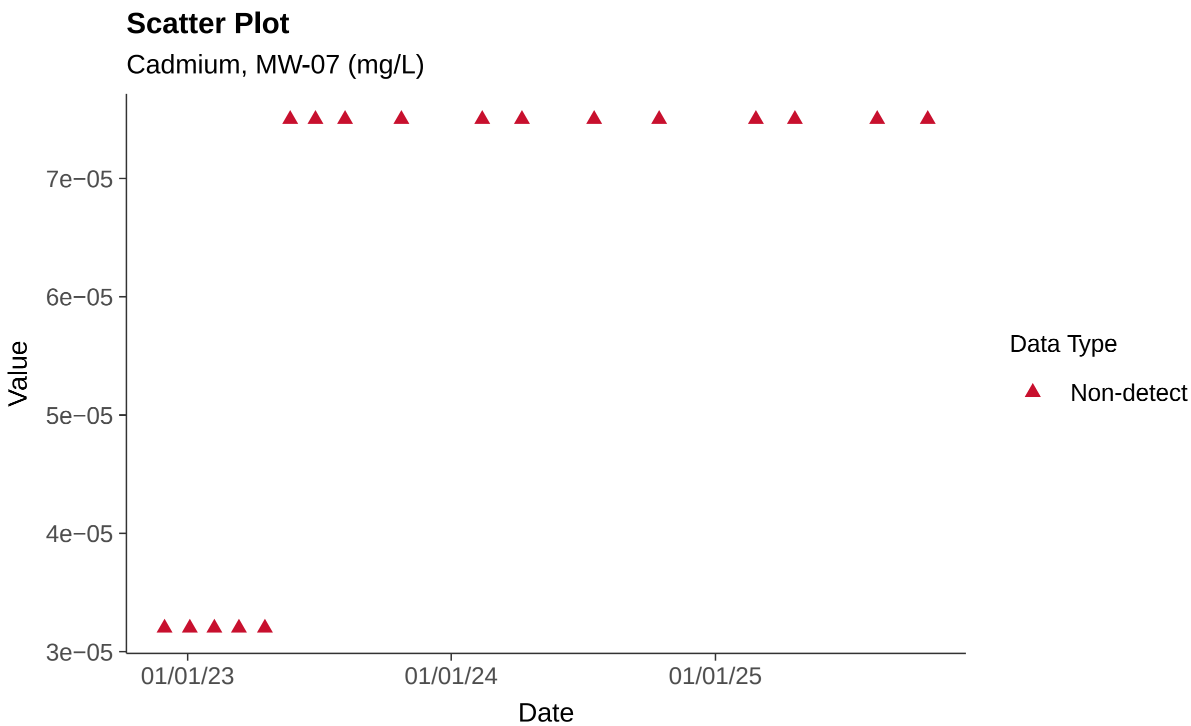
Trend Regression: Piecewise Linear-Linear-Linear

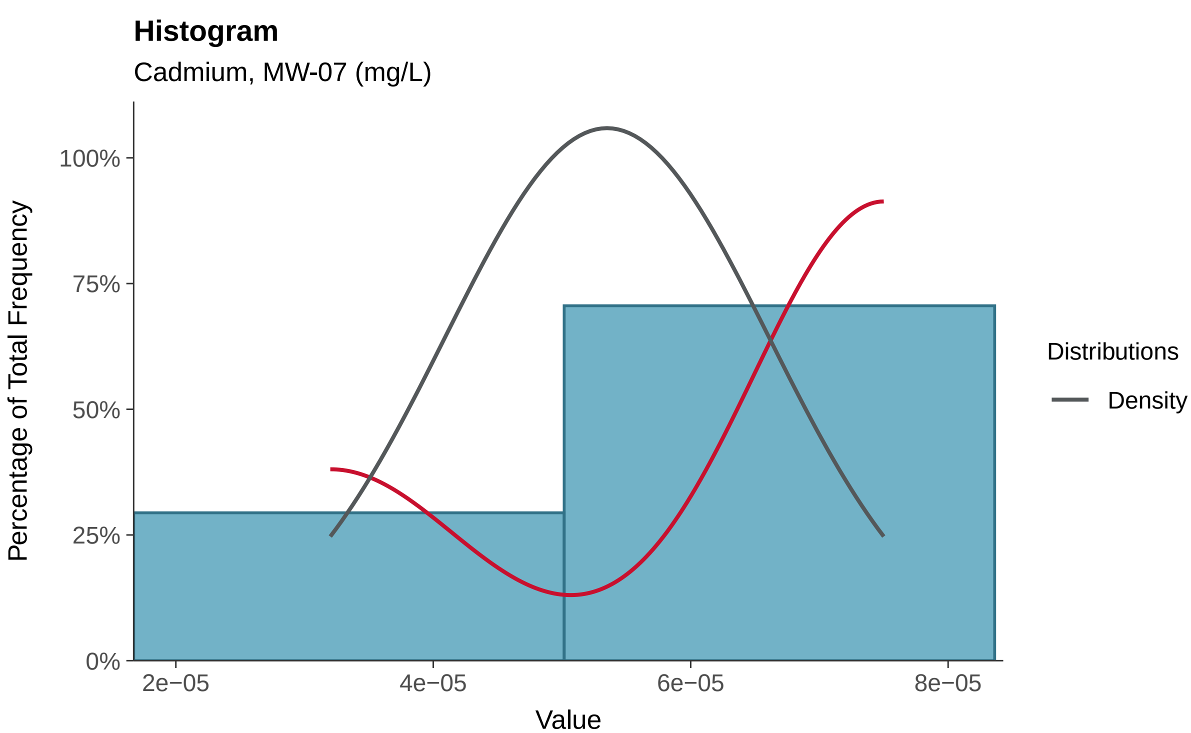
Beryllium, MW-07 (mg/L)



Appendix IV: Cadmium, MW-07

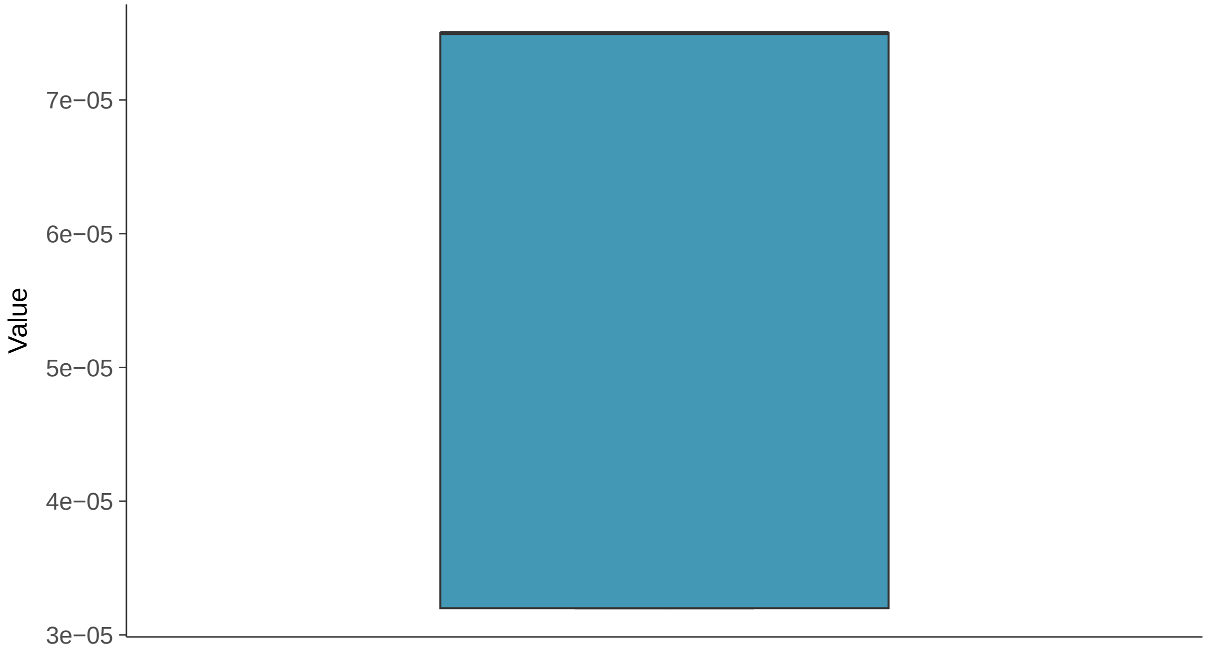
ID: 17_1_4_106





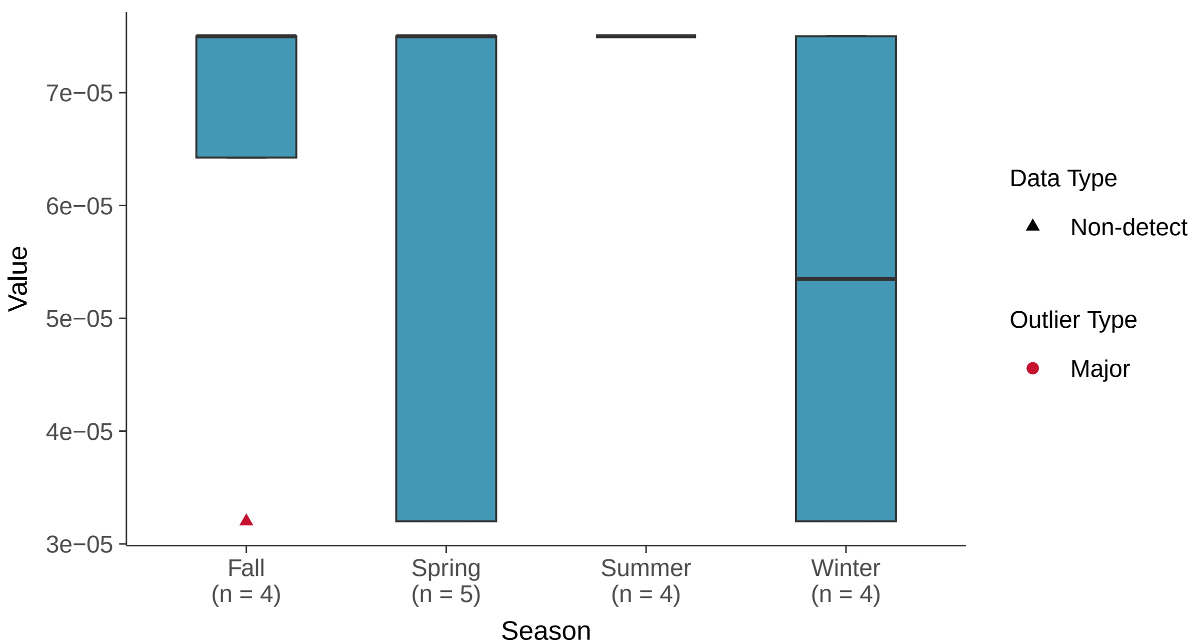
Boxplot

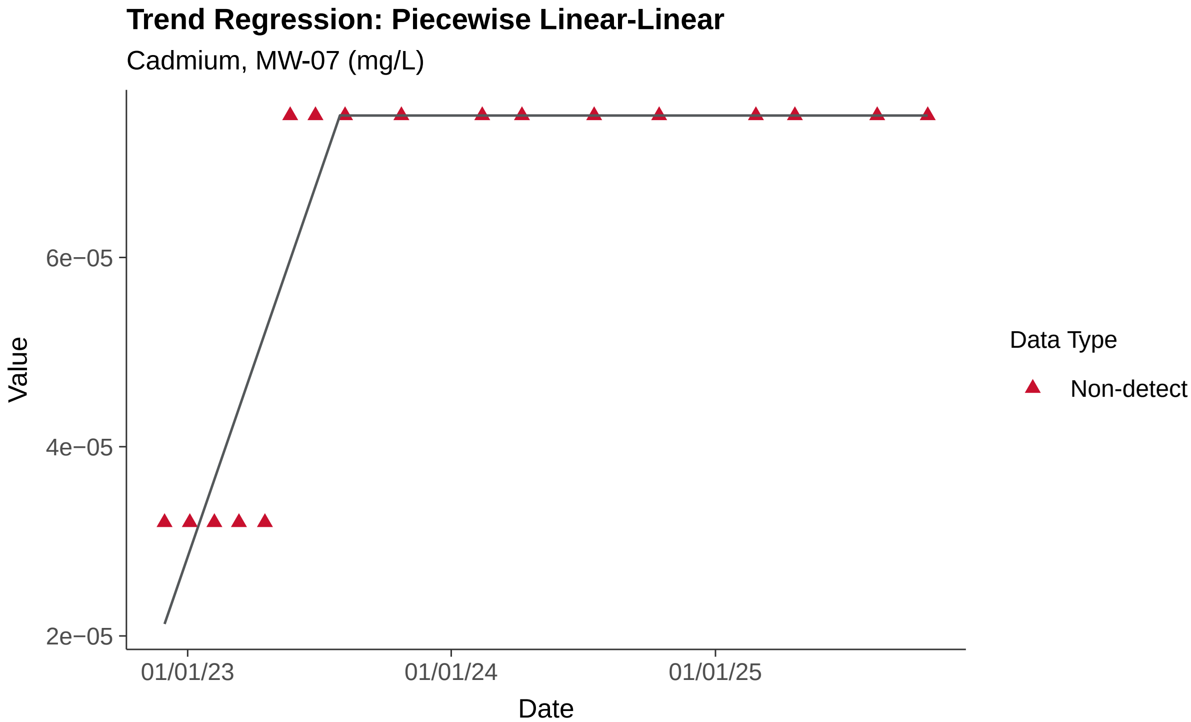
Cadmium, MW-07 (mg/L)

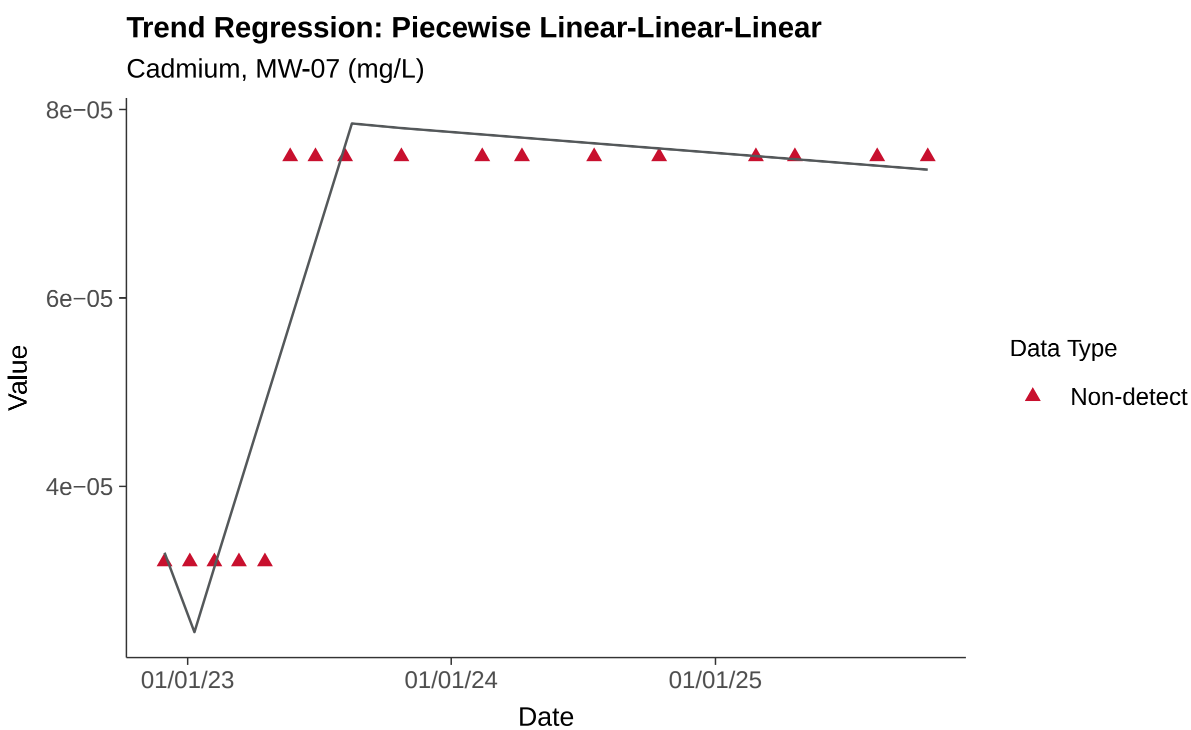


Boxplot by Season

Cadmium, MW-07 (mg/L)

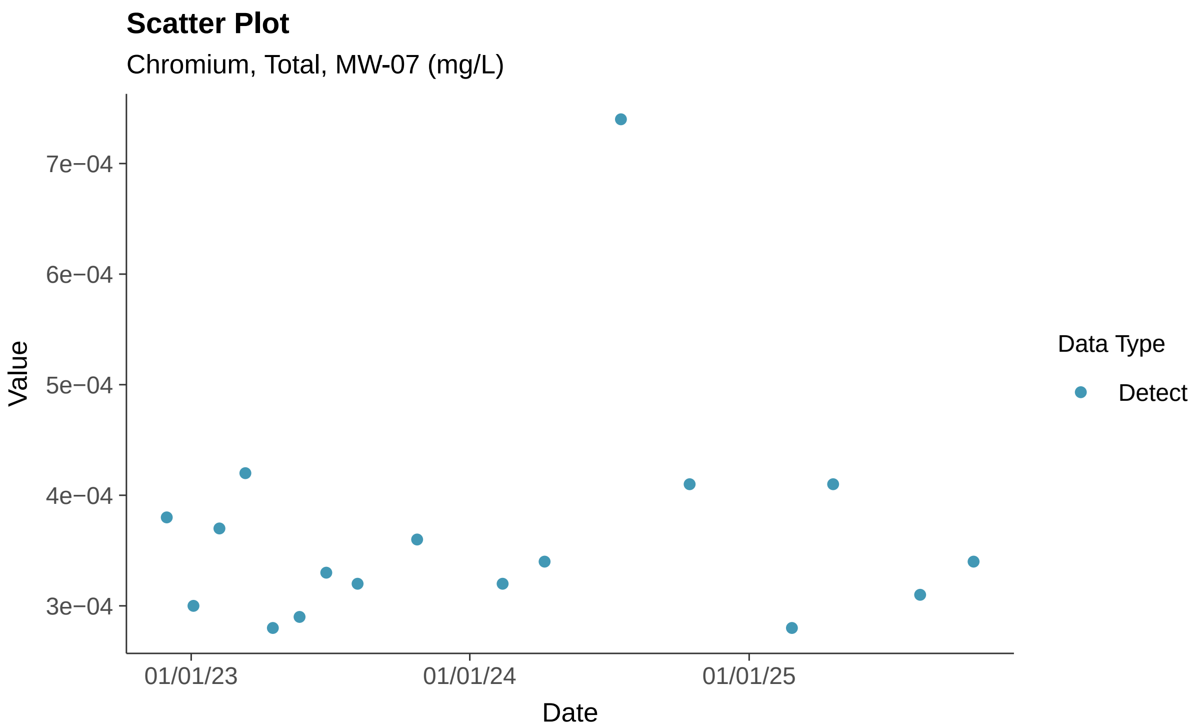


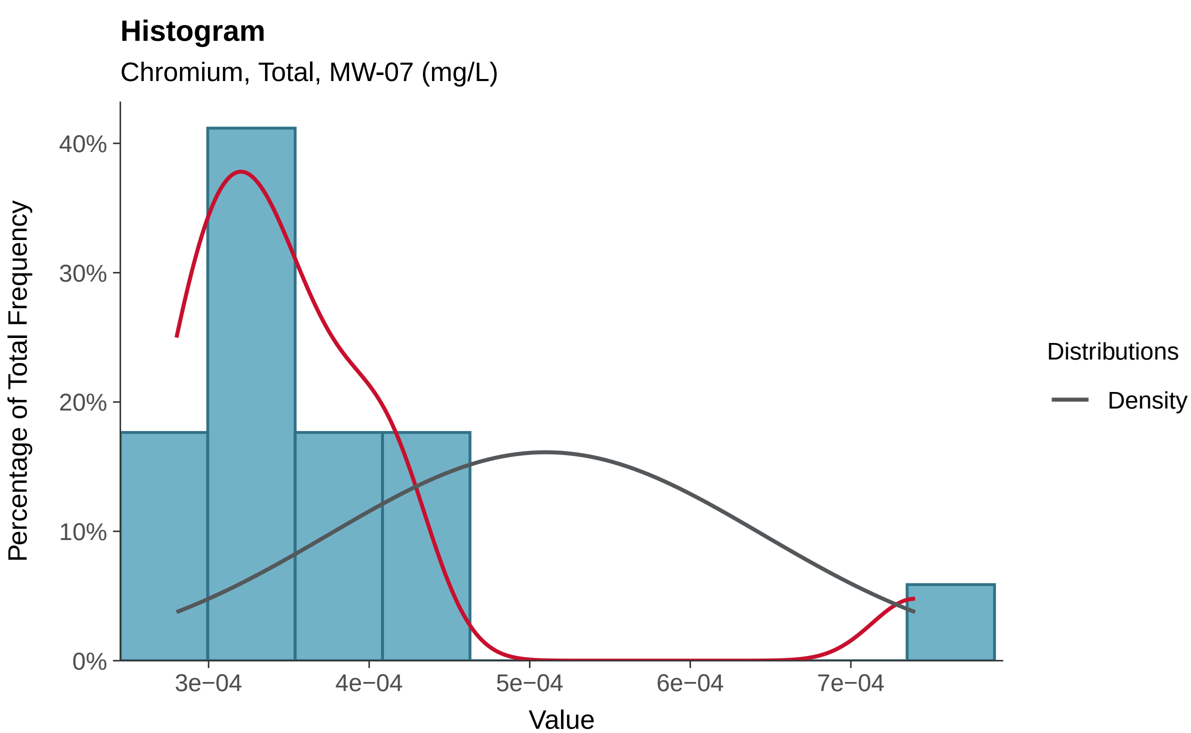

Trend Regression: Piecewise Linear-Linear
Cadmium, MW-07 (mg/L)
Value
6e−05
4e−05
2e−05
01/01/23
01/01/24
01/01/25
Date
Data Type
Non-detect

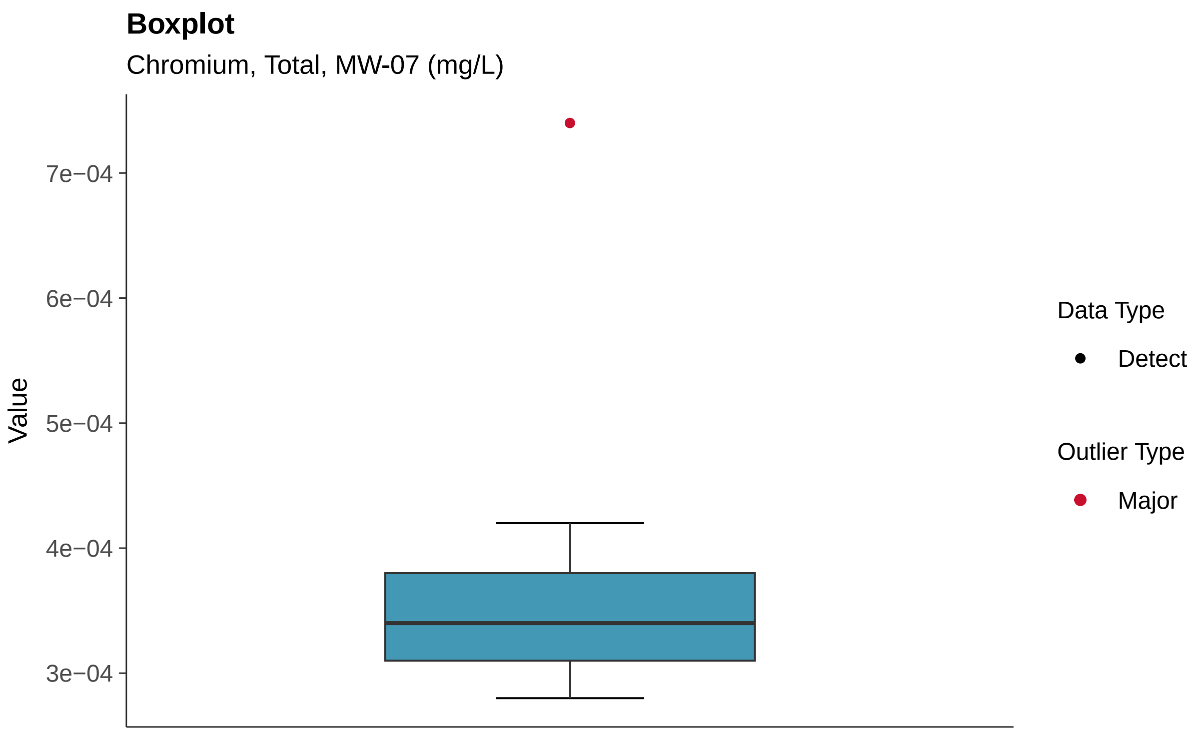

Trend Regression: Piecewise Linear-Linear-Linear
Cadmium, MW-07 (mg/L)
Value
8e−05
6e−05
4e−05
01/01/23
01/01/24
01/01/25
Date
Data Type
Non-detect

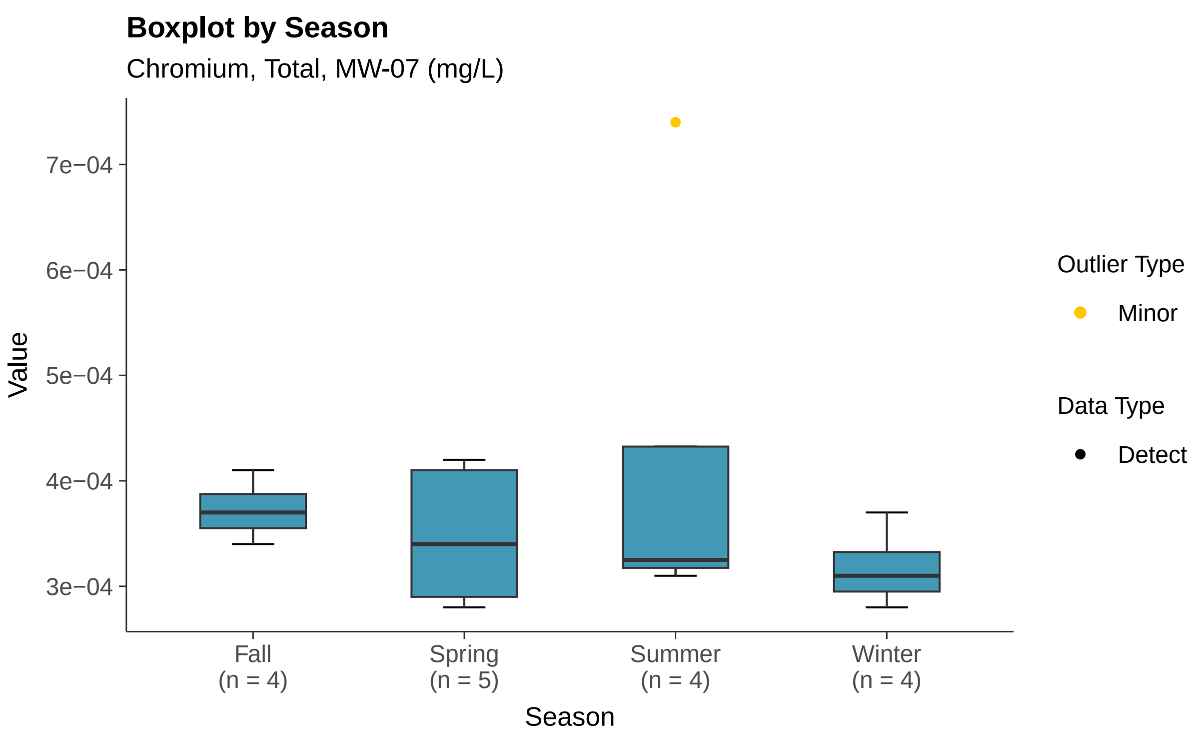
Appendix IV: Chromium, Total, MW-07

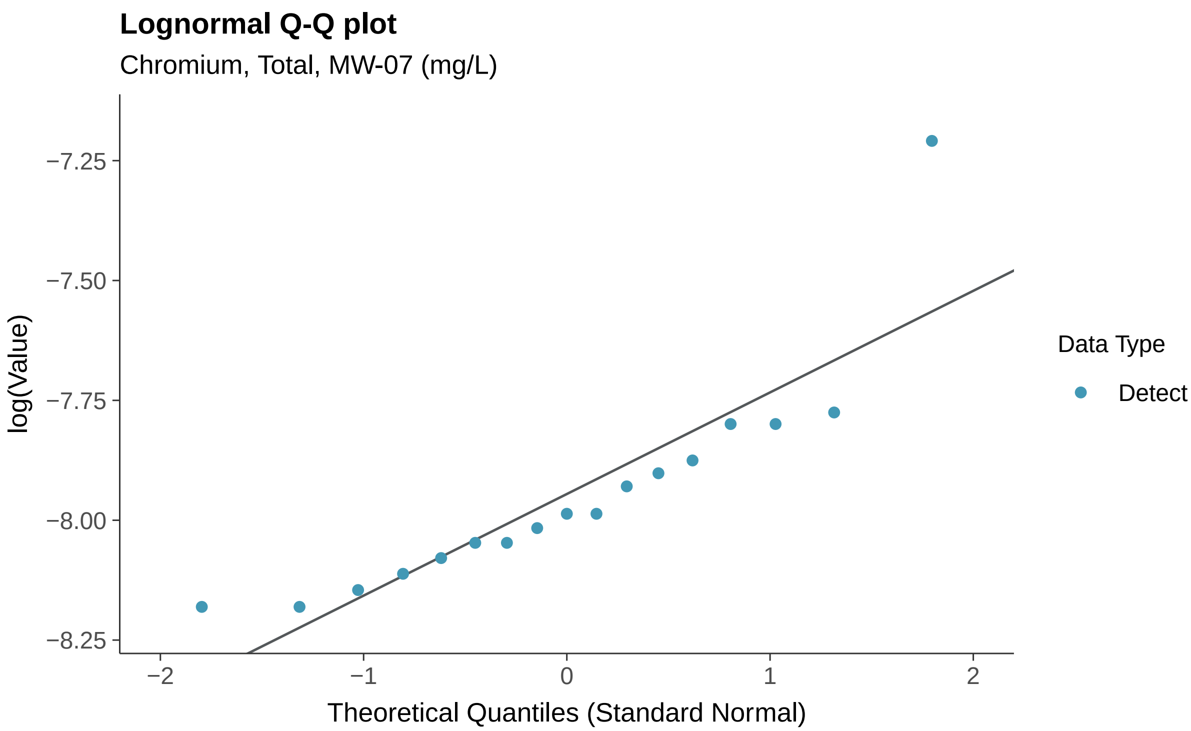
ID: 17_1_4_109

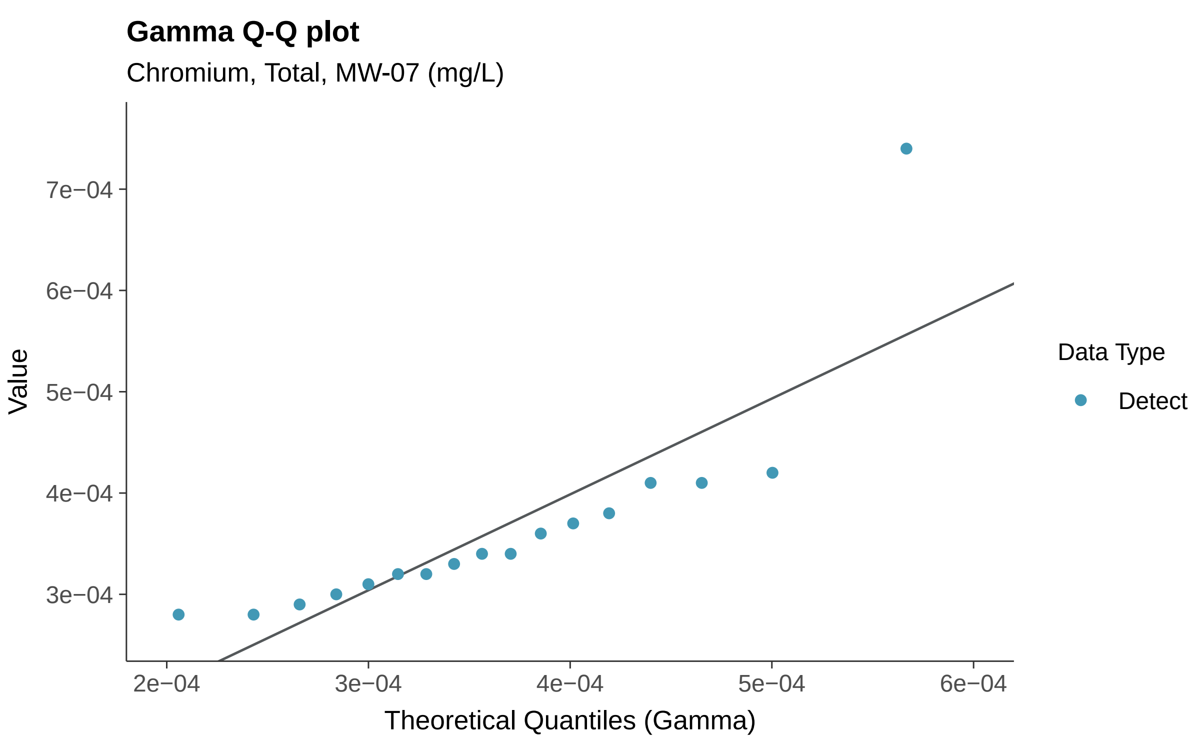


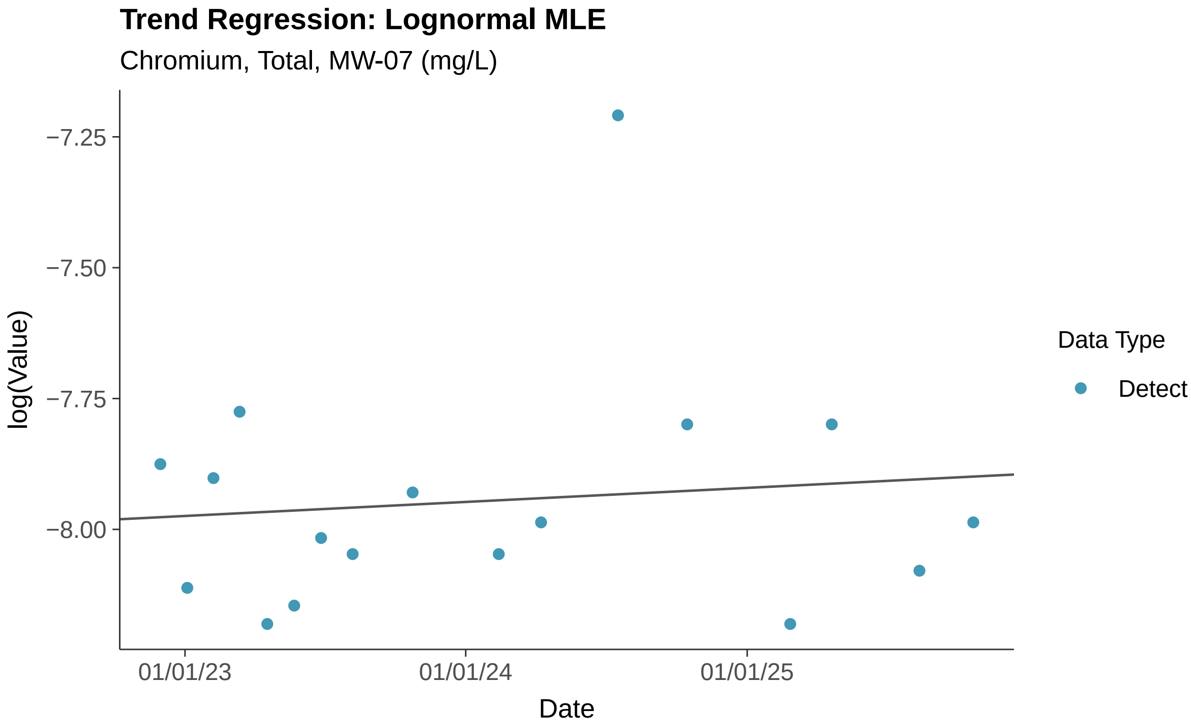


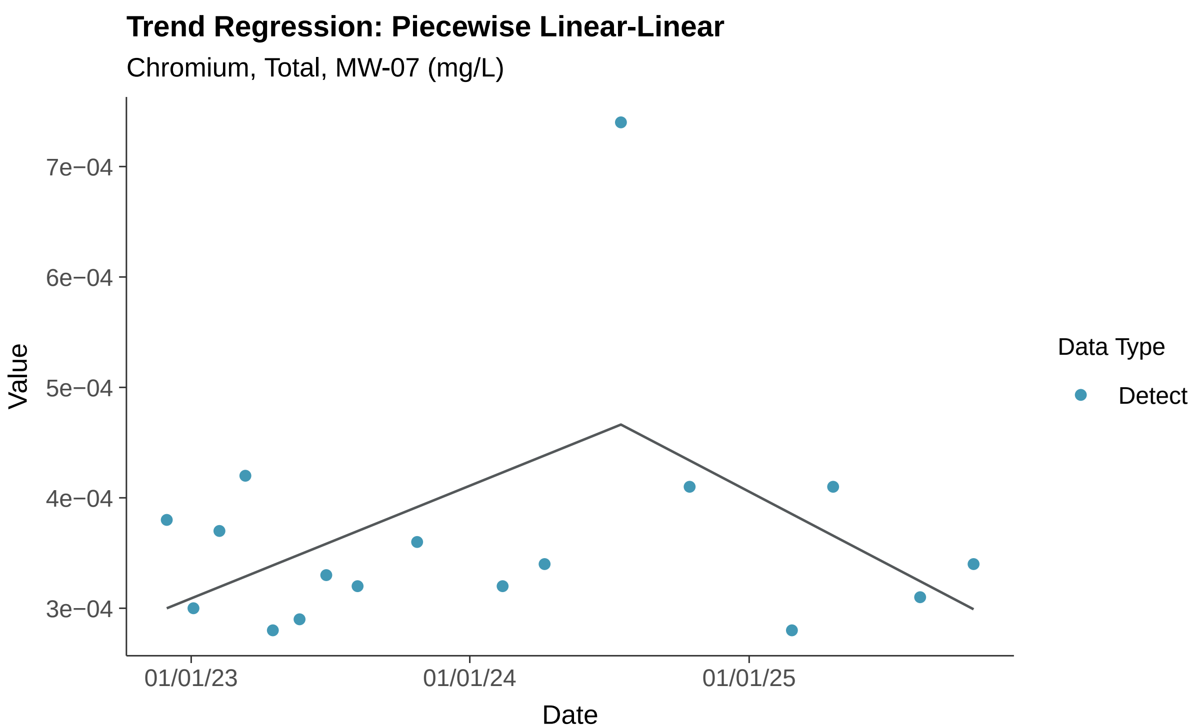

Boxplot
Chromium, Total, MW-07 (mg/L)
Value
7e−04
6e−04
5e−04
4e−04
3e−04
Data Type
Detect
Outlier Type
Major

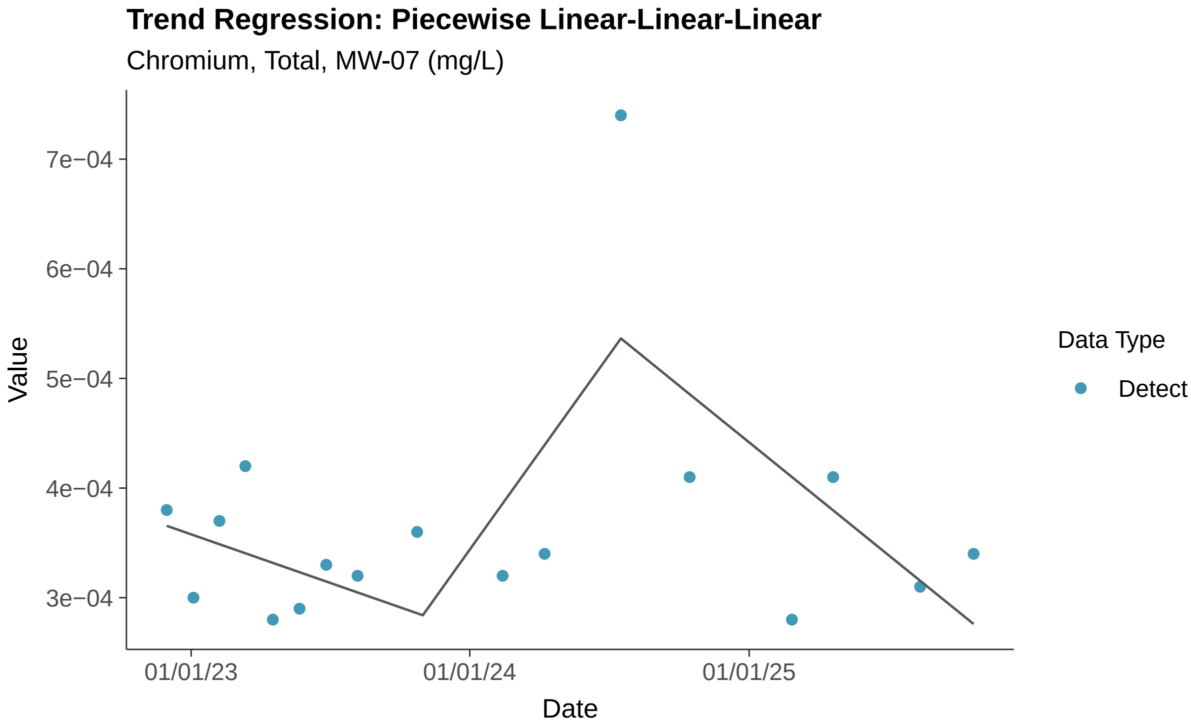

Boxplot by Season
Chromium, Total, MW-07 (mg/L)
Value
7e−04
6e−04
5e−04
4e−04
3e−04
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Minor
Data Type
Detect


Lognormal Q-Q plot
Chromium, Total, MW-07 (mg/L)
log(Value)
−7.25
−7.50
−7.75
−8.00
−8.25
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Chromium, Total, MW-07 (mg/L)
Value
7e−04
6e−04
5e−04
4e−04
3e−04
2e−04
3e−04
4e−04
5e−04
6e−04
Theoretical Quantiles (Gamma)
Data Type
Detect

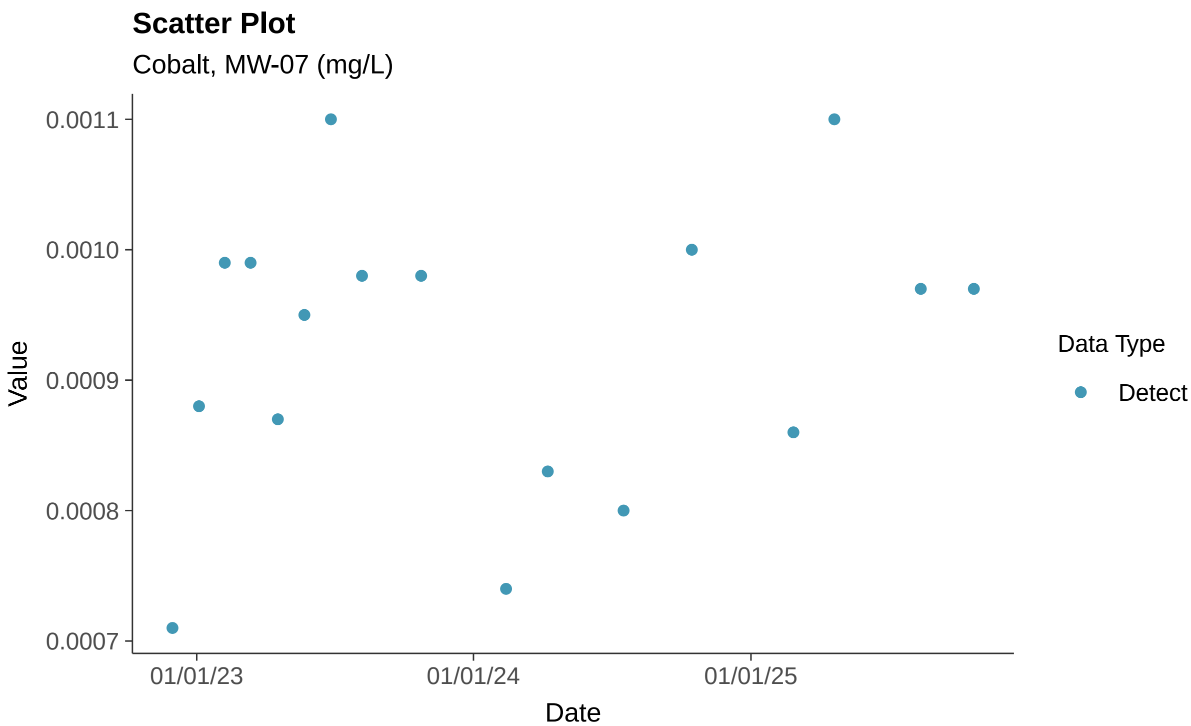

Trend Regression: Lognormal MLE
Chromium, Total, MW-07 (mg/L)
−7.25
−7.50
−7.75
−8.00
log(Value)
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

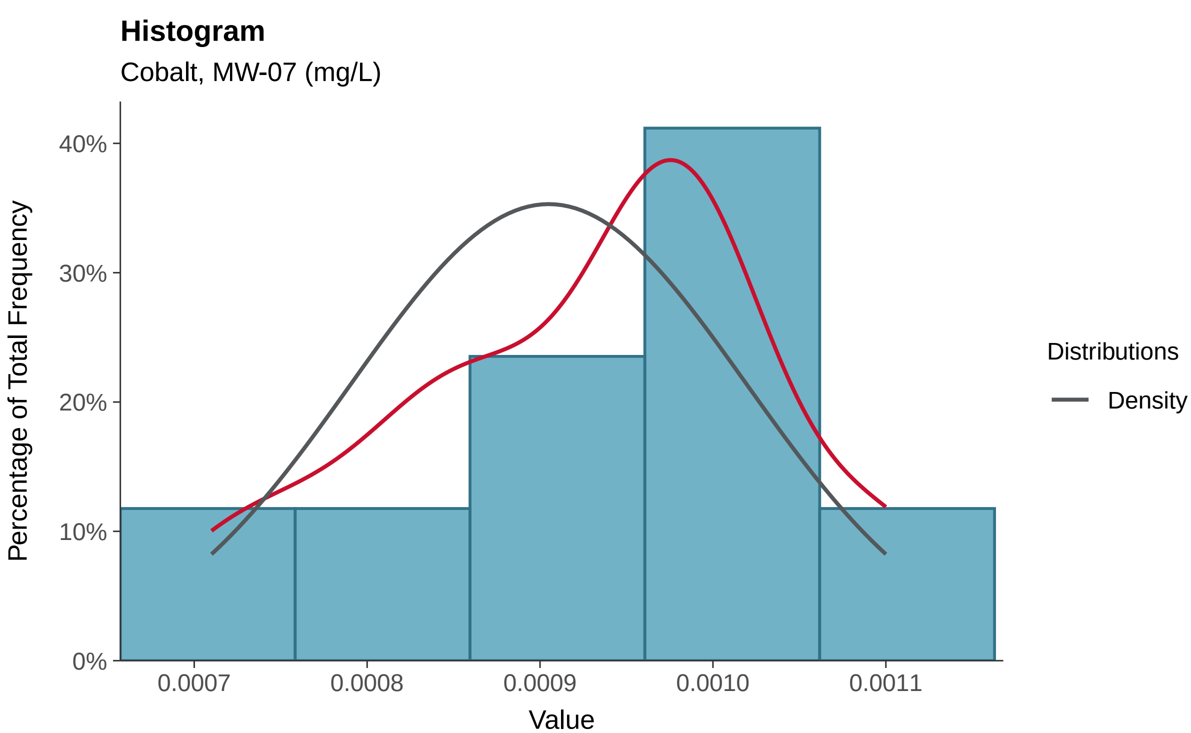

Trend Regression: Piecewise Linear-Linear
Chromium, Total, MW-07 (mg/L)
7e−04
6e−04
5e−04
4e−04
3e−04
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

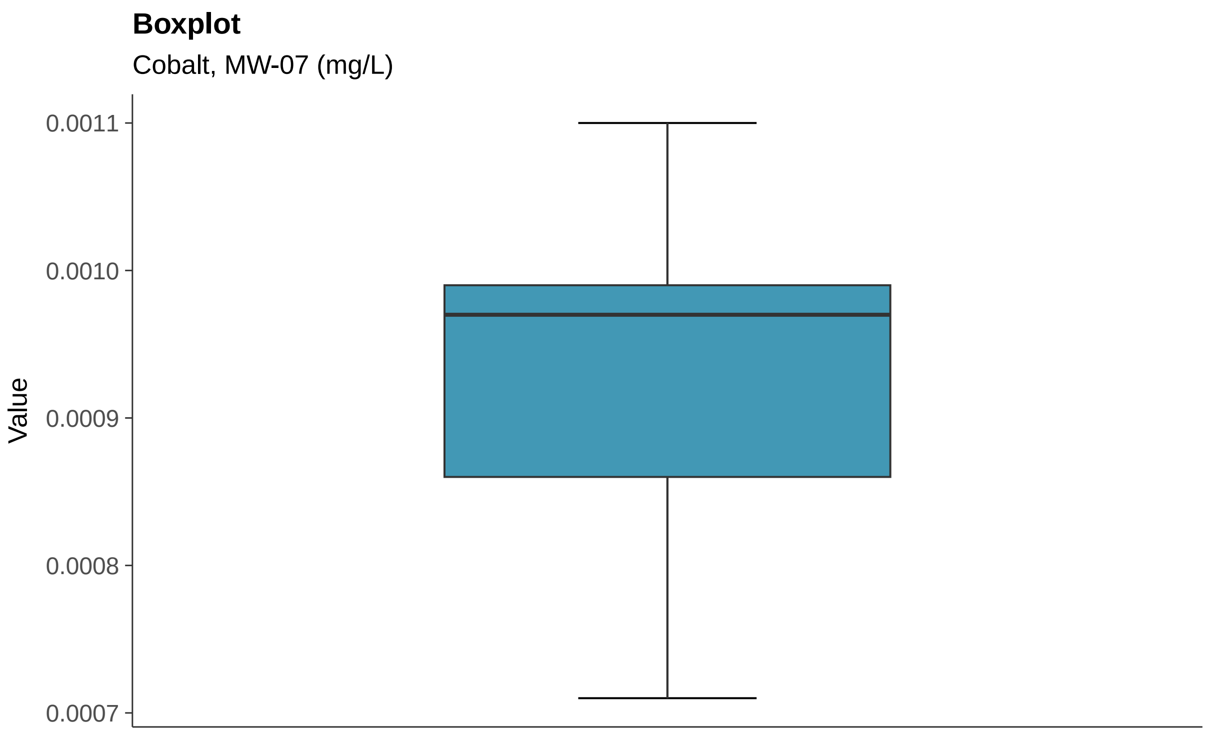

Trend Regression: Piecewise Linear-Linear-Linear
Chromium, Total, MW-07 (mg/L)
Value
7e−04
6e−04
5e−04
4e−04
3e−04
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

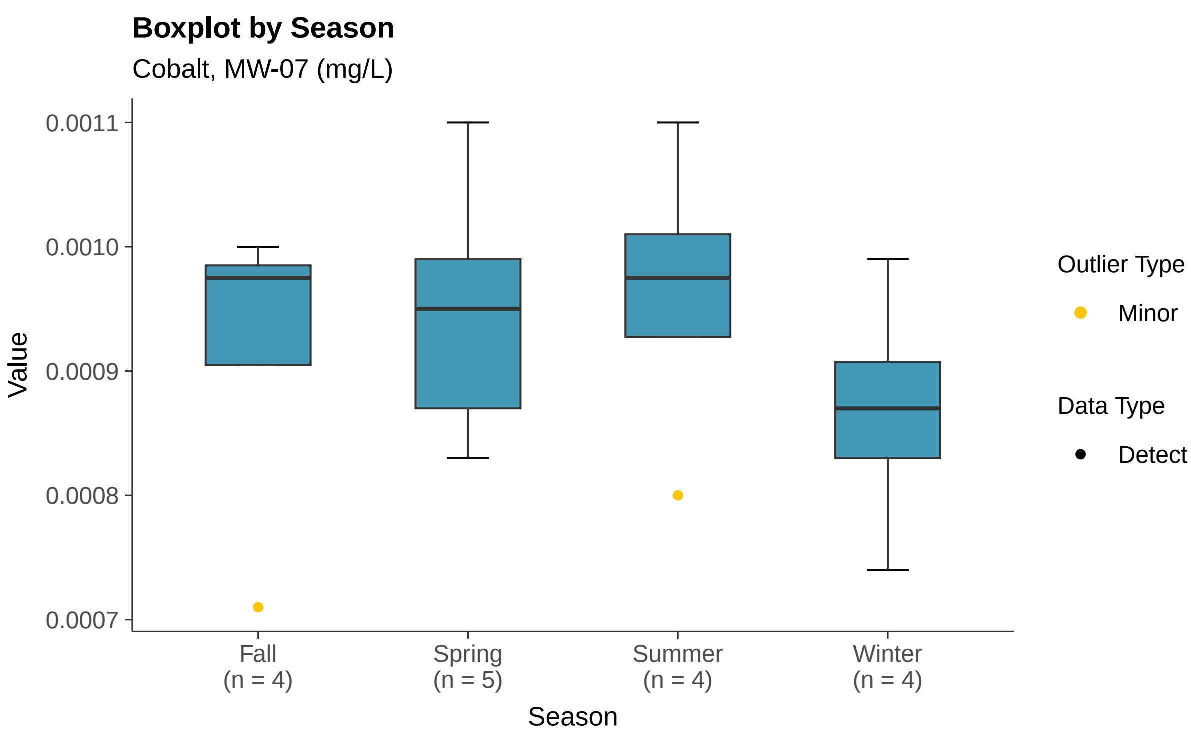
Appendix IV: Cobalt, MW-07

ID: 17_1_4_110



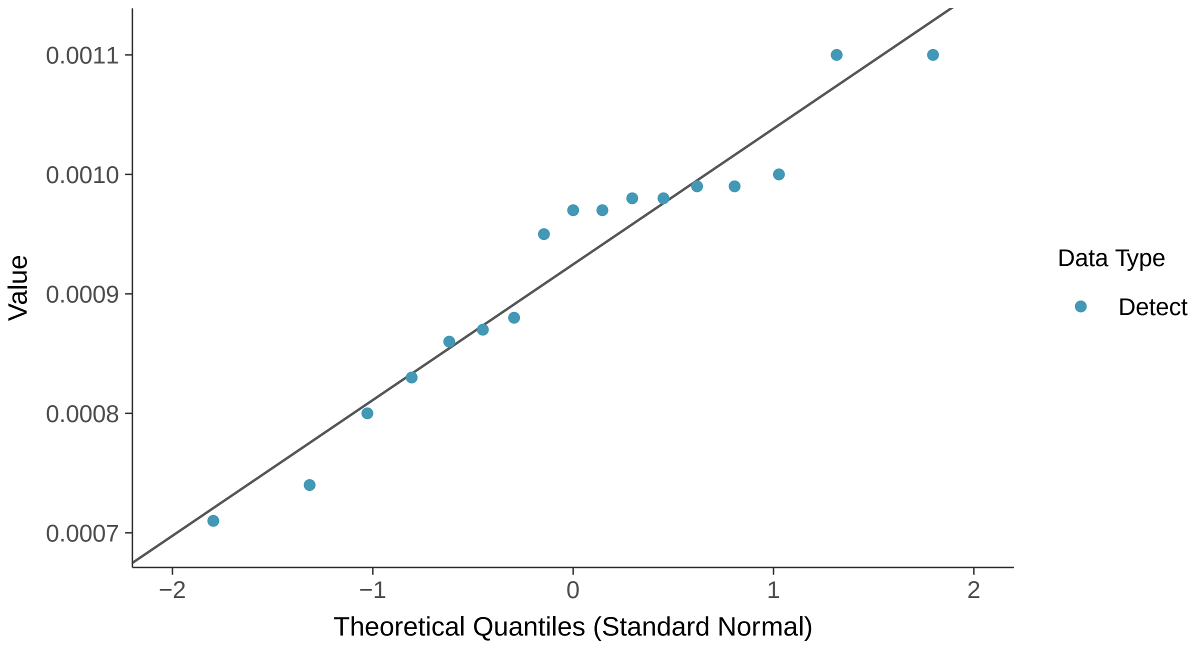



Boxplot
Cobalt, MW-07 (mg/L)
Value
0.0011
0.0010
0.0009
0.0008
0.0007


Boxplot by Season
Cobalt, MW-07 (mg/L)
Value
0.0011
0.0010
0.0009
0.0008
0.0007
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Minor
Data Type
Detect

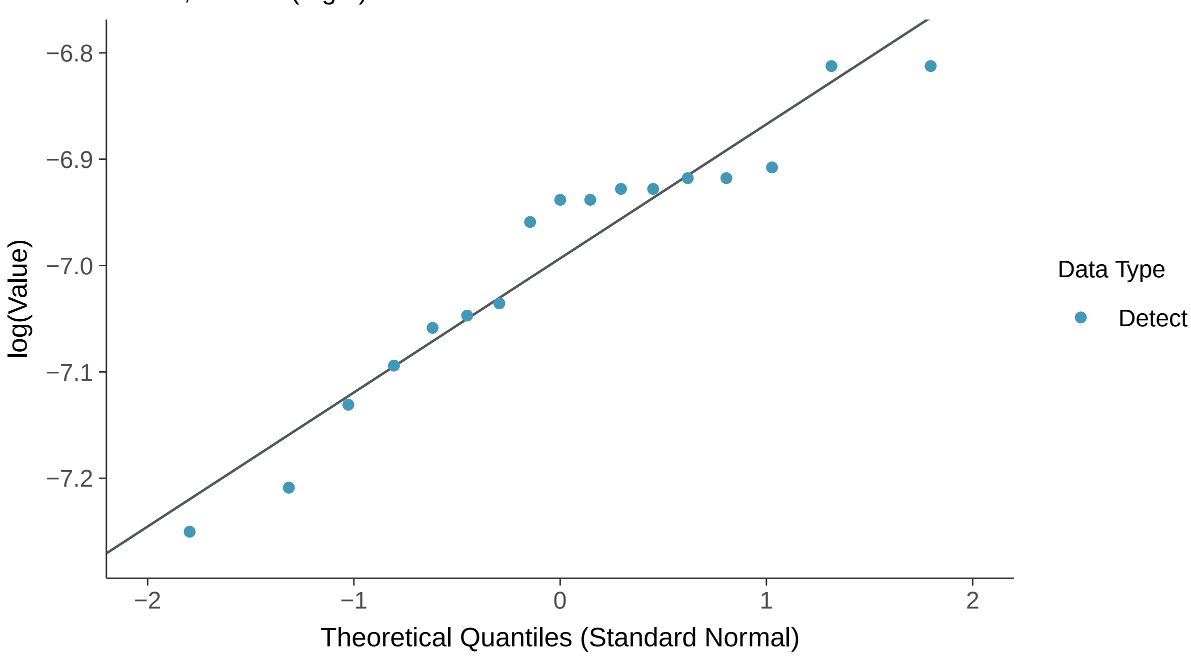
Normal Q-Q plot

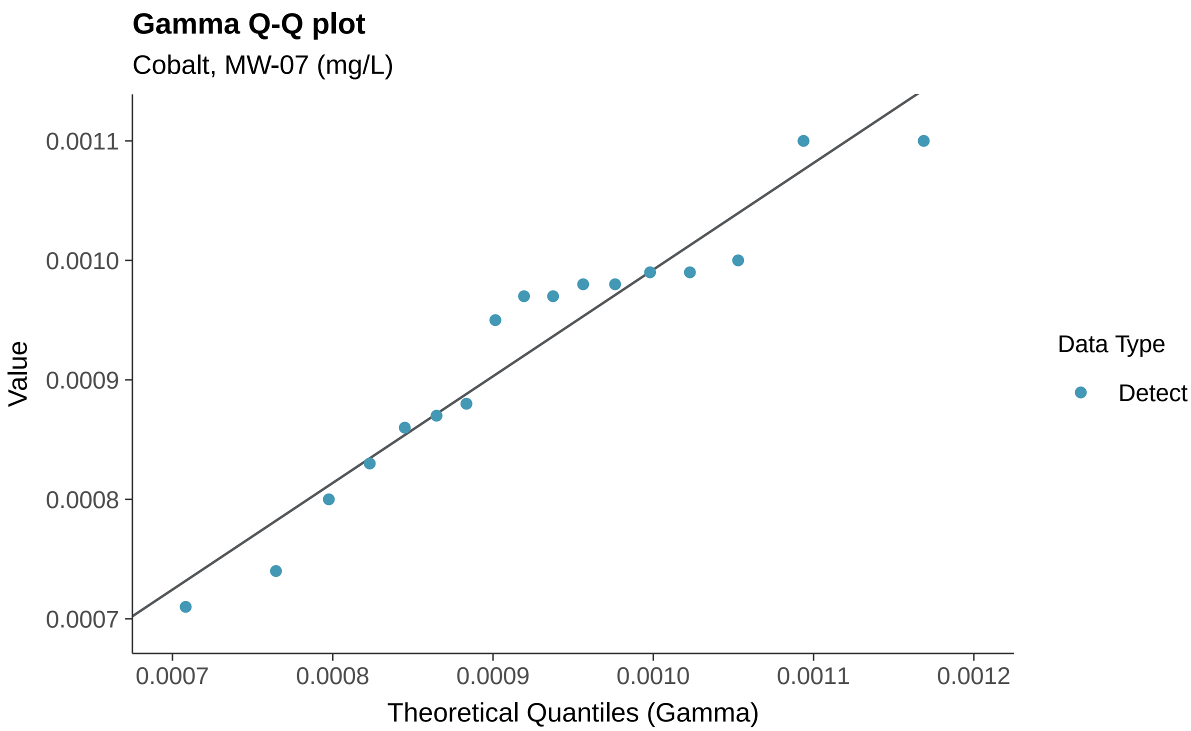
Cobalt, MW-07 (mg/L)

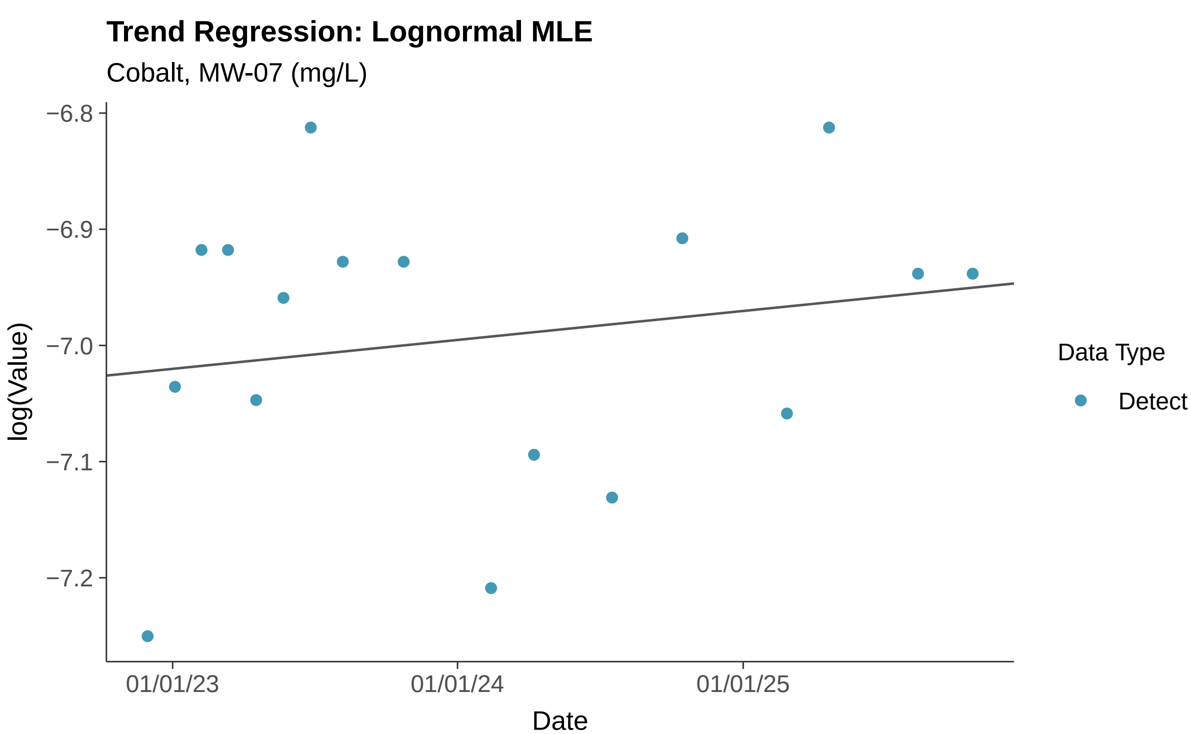


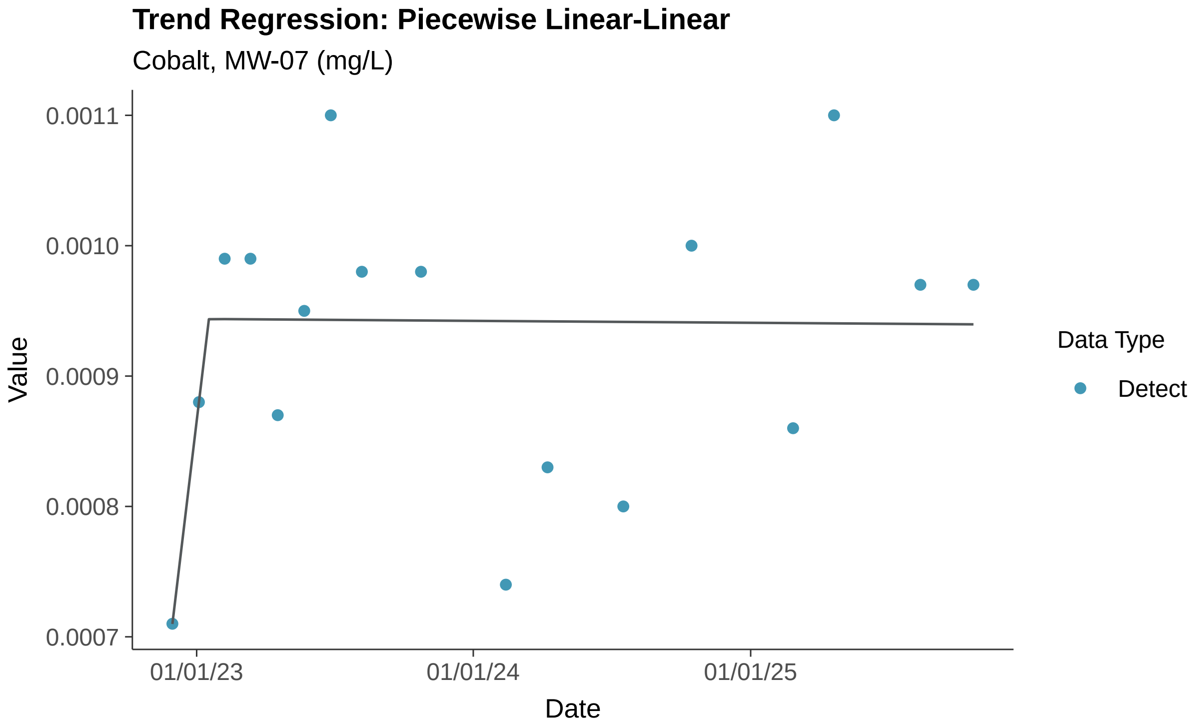
Lognormal Q-Q plot

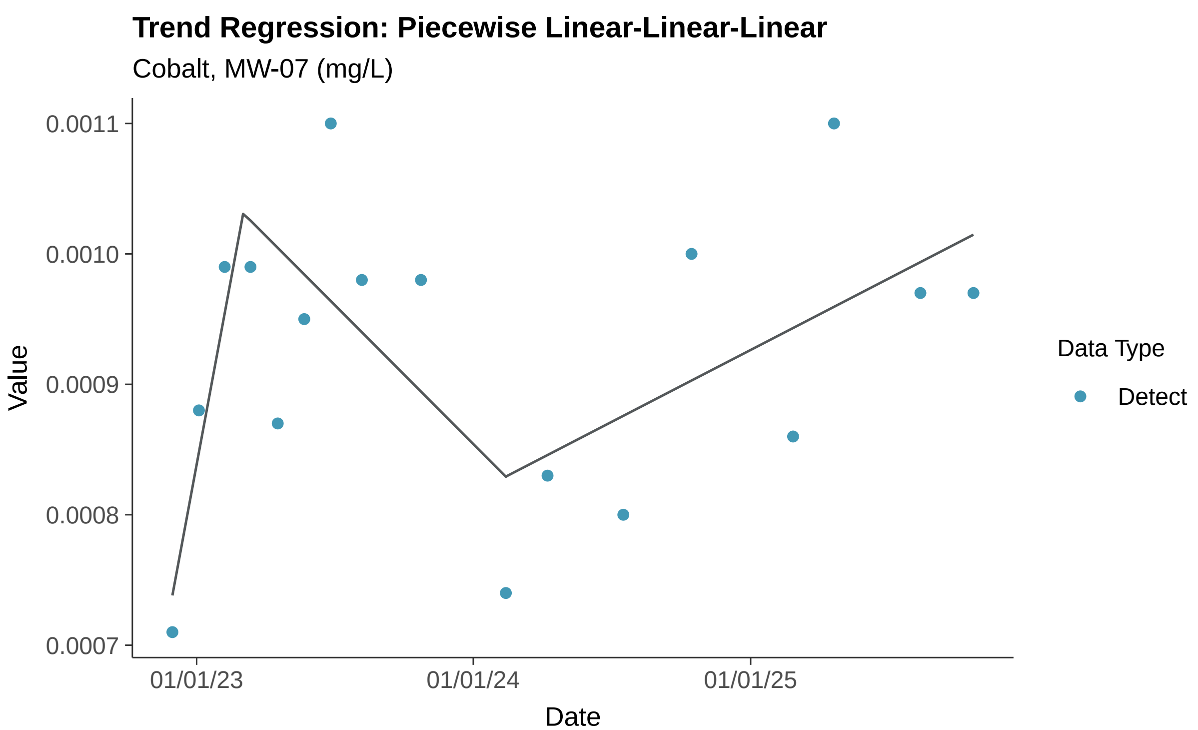
Cobalt, MW-07 (mg/L)




Gamma Q-Q plot
Cobalt, MW-07 (mg/L)
Value
0.0011
0.0010
0.0009
0.0008
0.0007
0.0007
0.0008
0.0009
0.0010
0.0011
0.0012
Theoretical Quantiles (Gamma)
Data Type
Detect

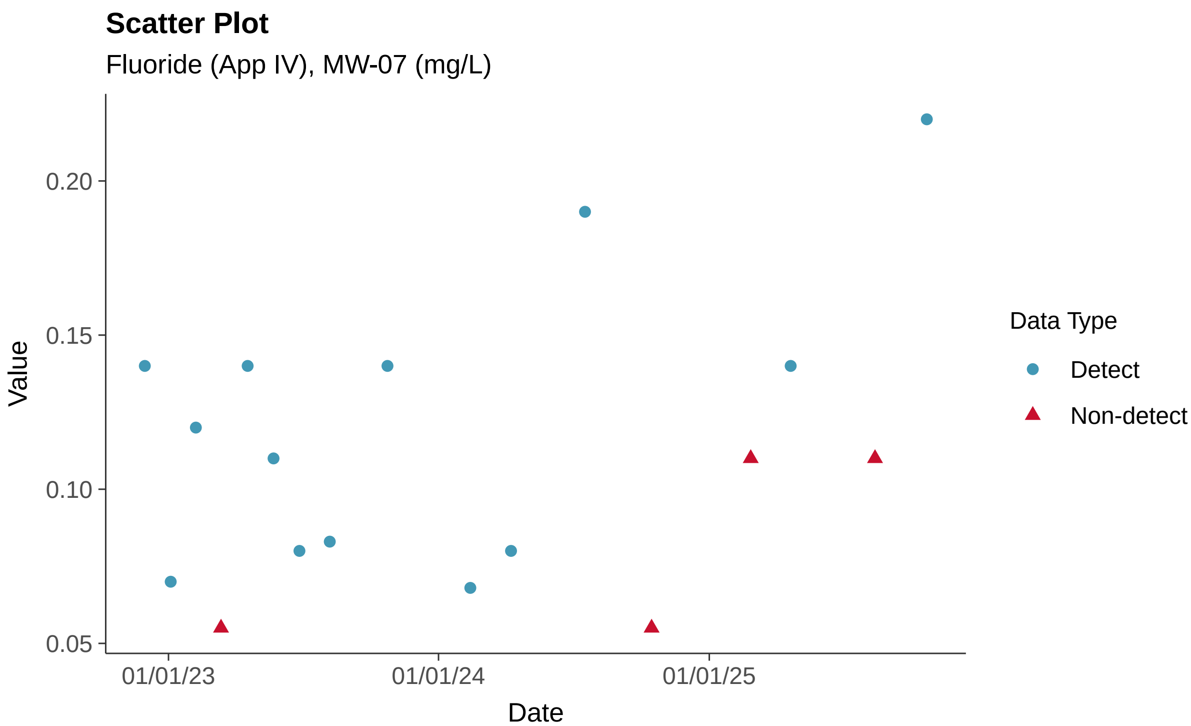

Trend Regression: Lognormal MLE
Cobalt, MW-07 (mg/L)
log(Value)
−6.8
−6.9
−7.0
−7.1
−7.2
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

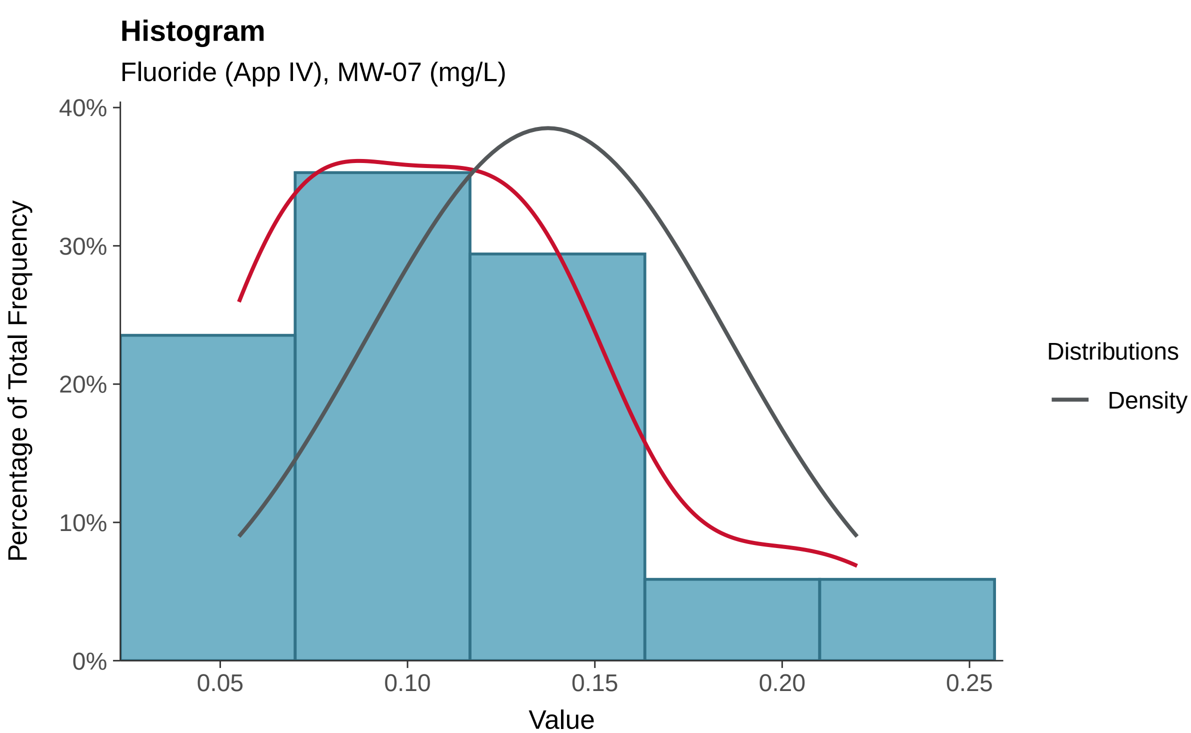

Trend Regression: Piecewise Linear-Linear
Cobalt, MW-07 (mg/L)
0.0011
0.0010
0.0009
0.0008
0.0007
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
Cobalt, MW-07 (mg/L)
0.0011
0.0010
0.0009
0.0008
0.0007
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Appendix IV: Fluoride (App IV), MW-07

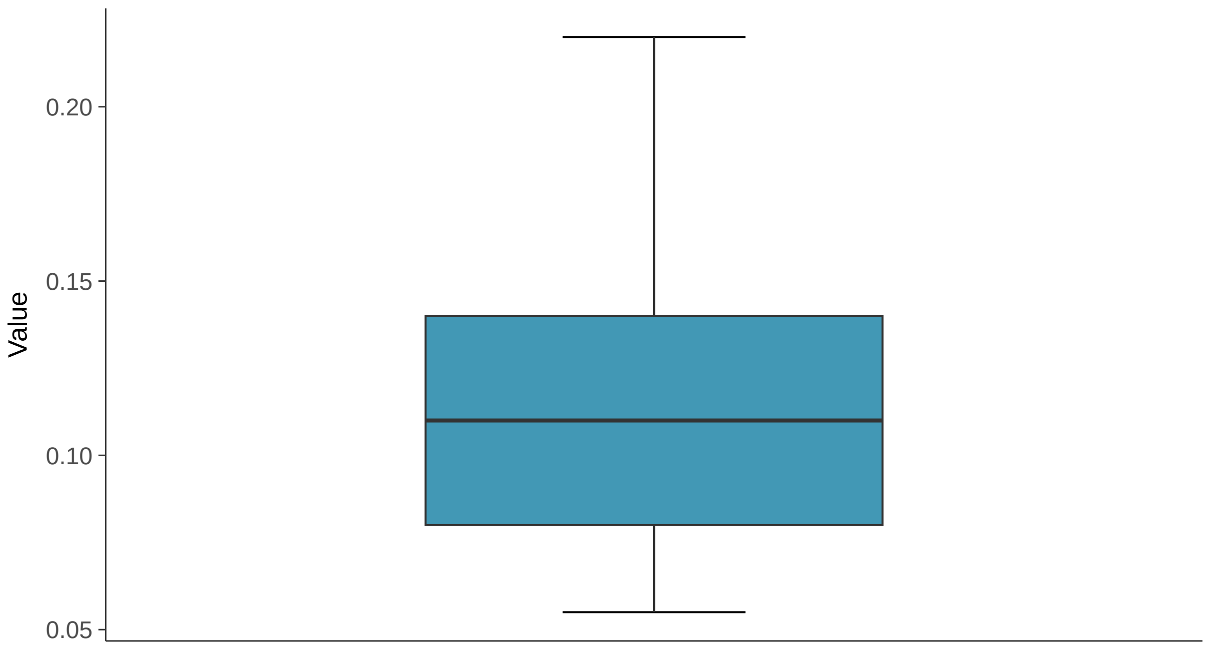
ID: 17_1_4_113





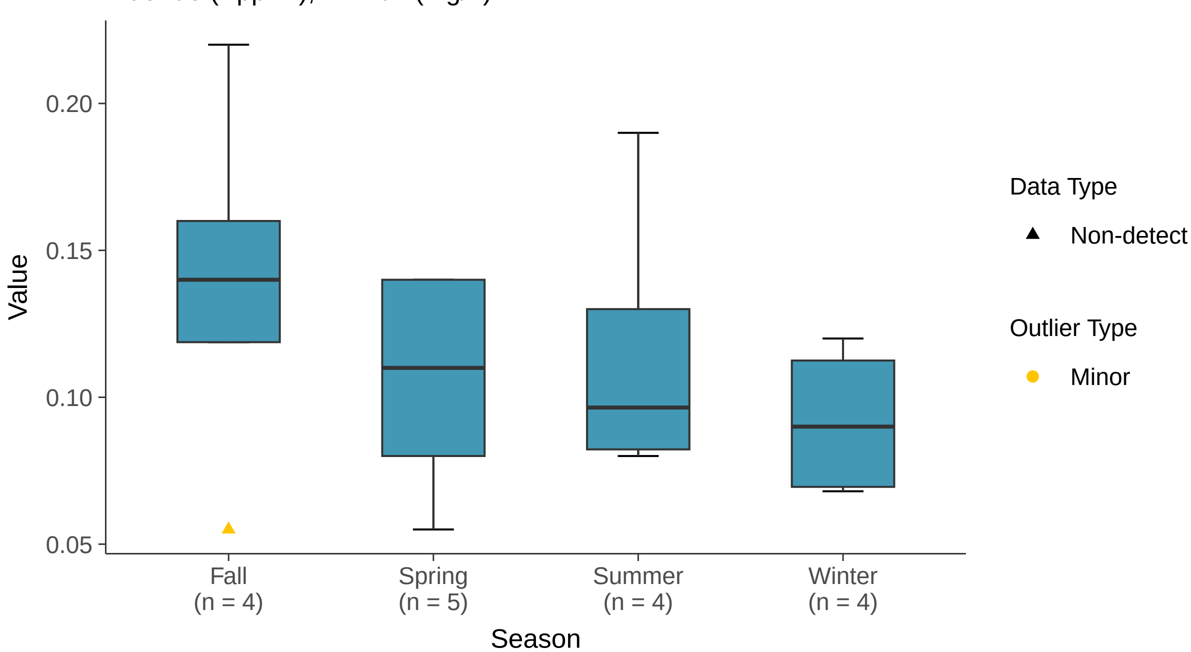
Boxplot

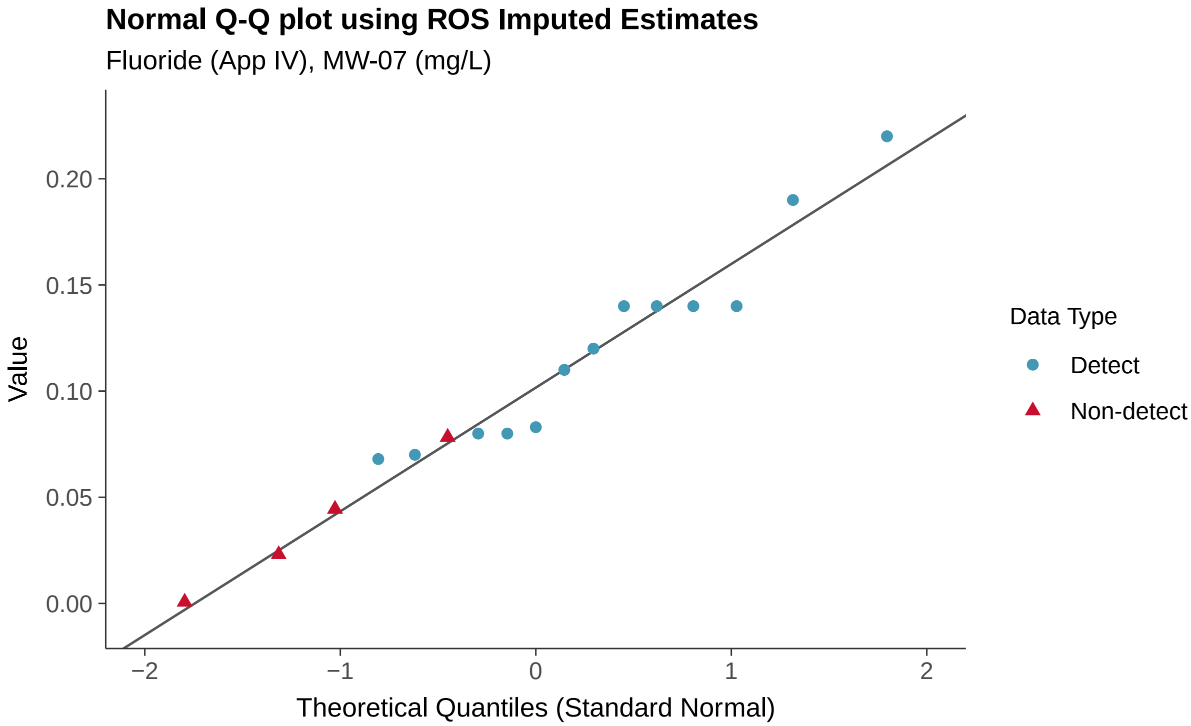
Fluoride (App IV), MW-07 (mg/L)

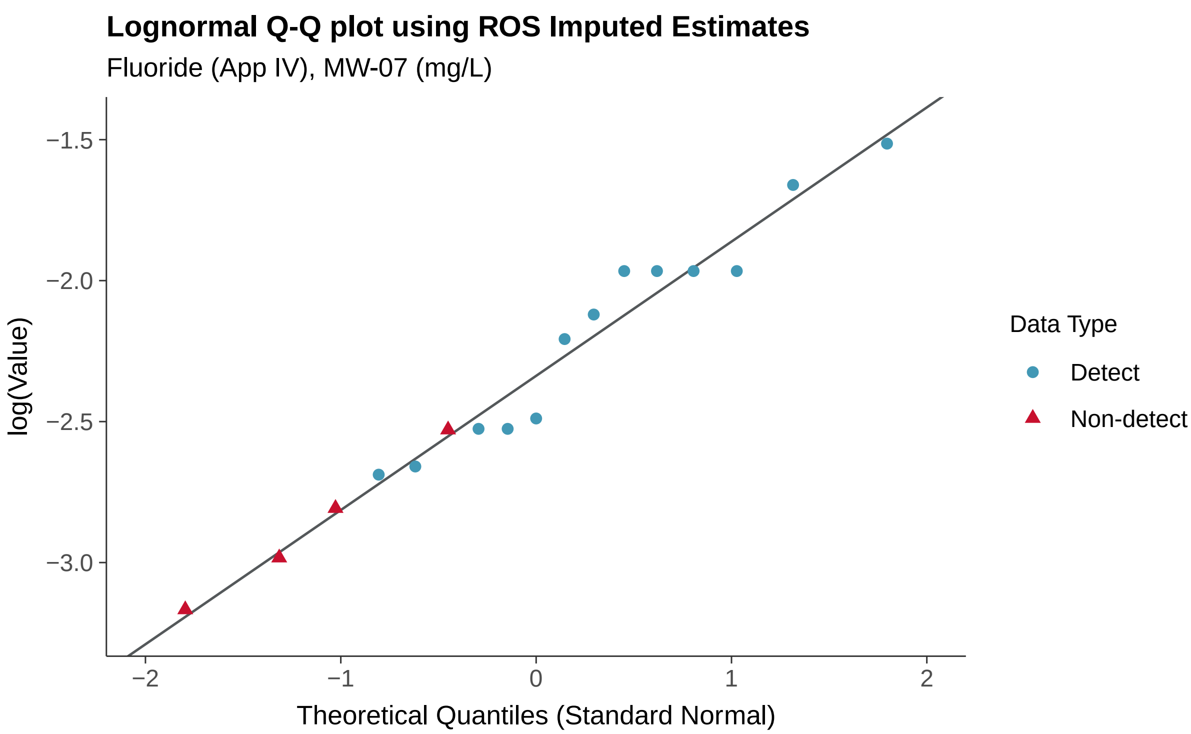


Boxplot by Season

Fluoride (App IV), MW-07 (mg/L)

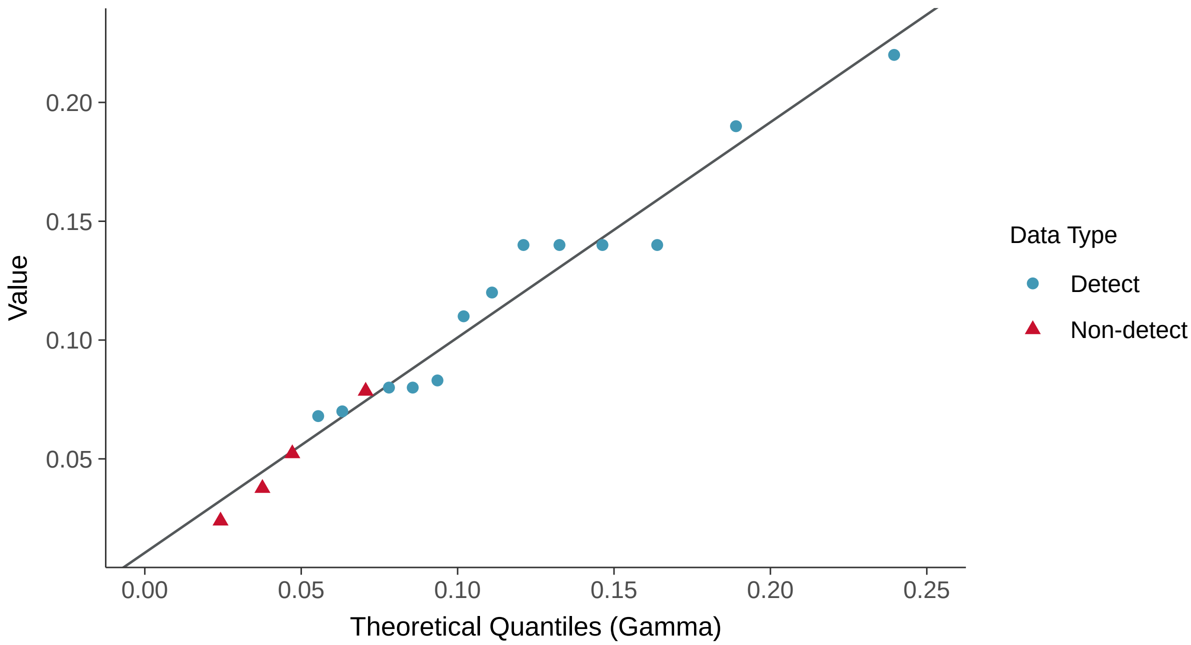



Normal Q-Q plot using ROS Imputed Estimates
Fluoride (App IV), MW-07 (mg/L)
Value
0.20
0.15
0.10
0.05
0.00
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Lognormal Q-Q plot using ROS Imputed Estimates
Fluoride (App IV), MW-07 (mg/L)
log(Value)
−1.5
−2.0
−2.5
−3.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

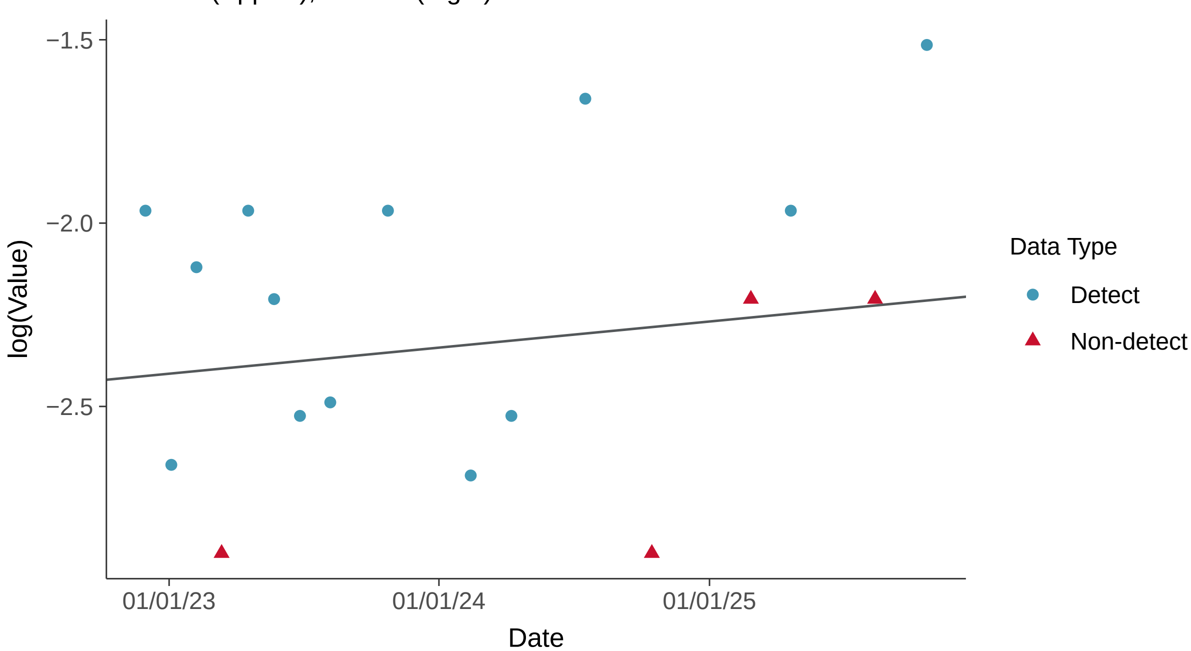
Gamma Q-Q plot using ROS Imputed Estimates

Fluoride (App IV), MW-07 (mg/L)



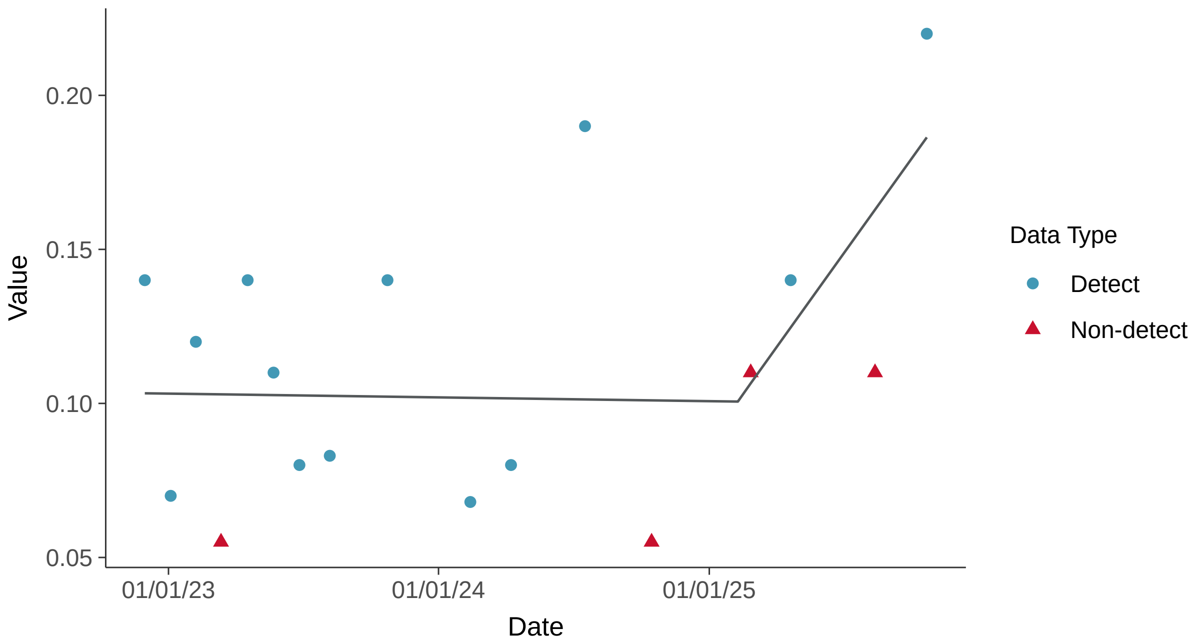
Trend Regression: Lognormal MLE

Fluoride (App IV), MW-07 (mg/L)



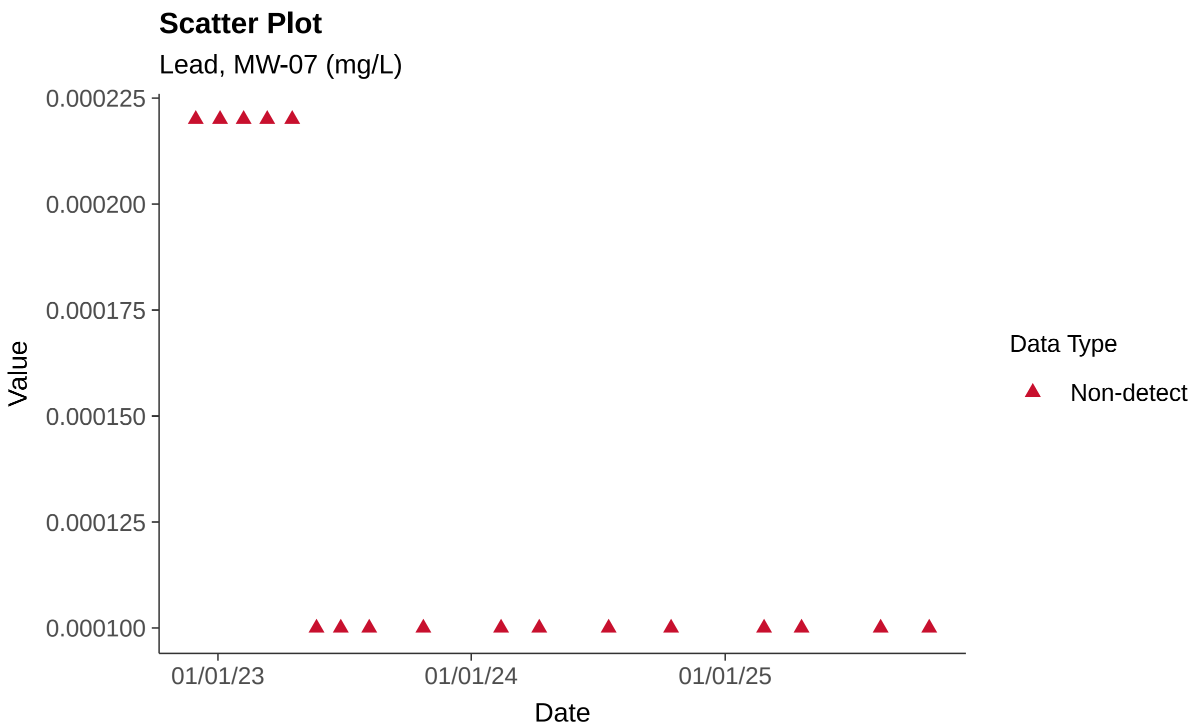
Trend Regression: Piecewise Linear-Linear

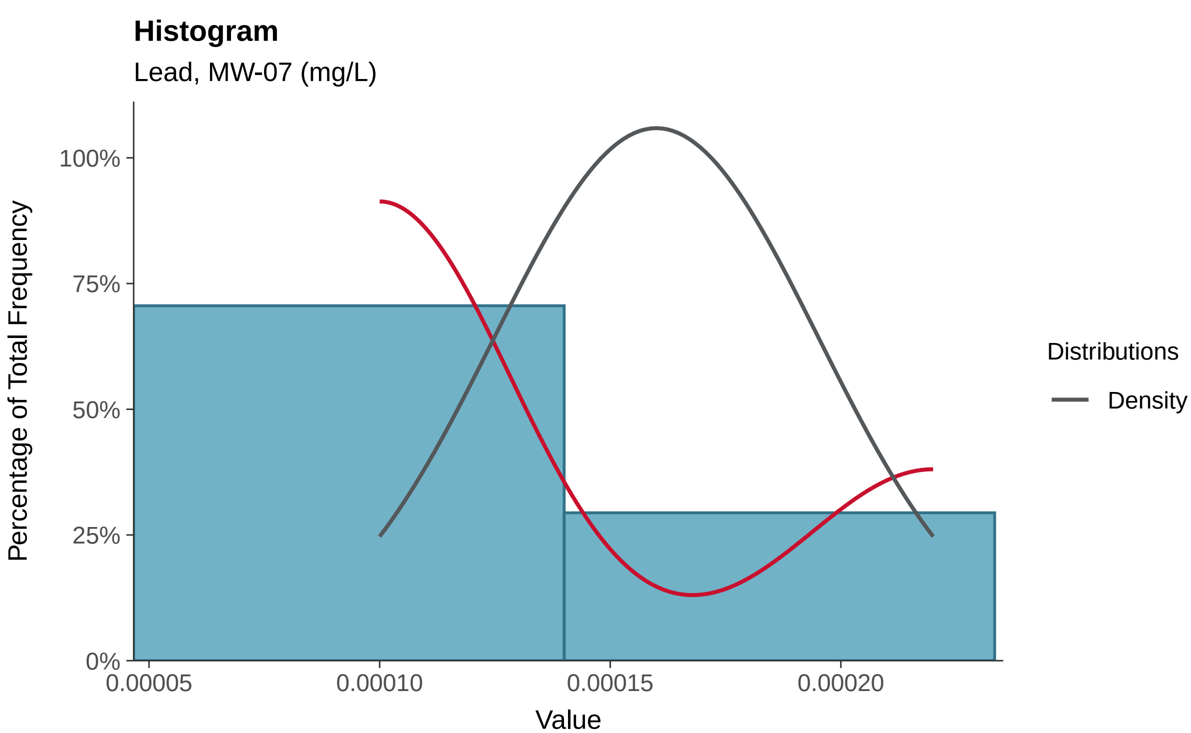
Fluoride (App IV), MW-07 (mg/L)

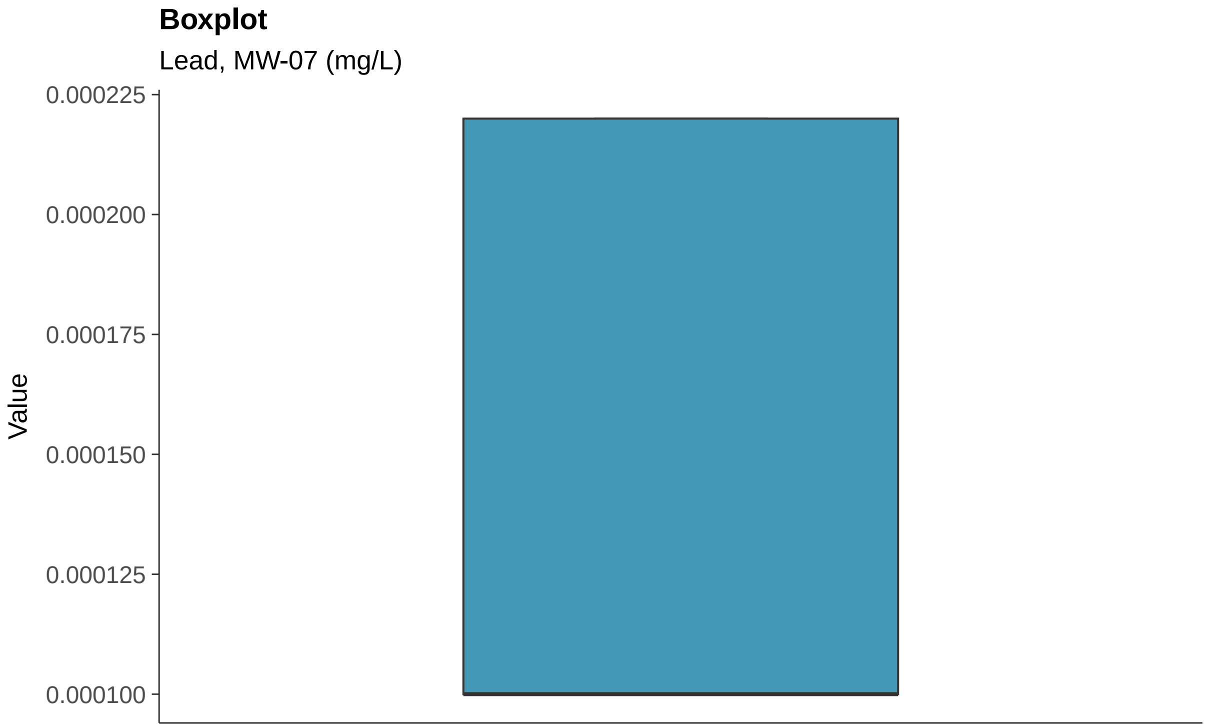


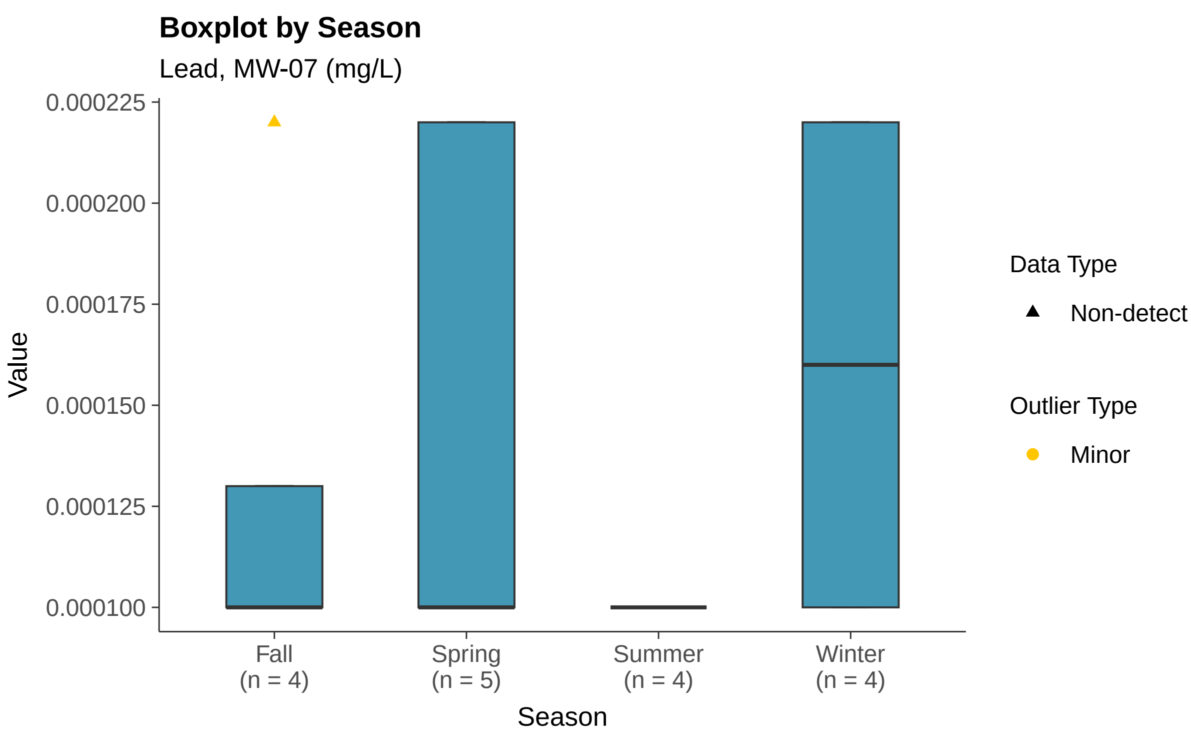
Appendix IV: Lead, MW-07

ID: 17_1_4_115



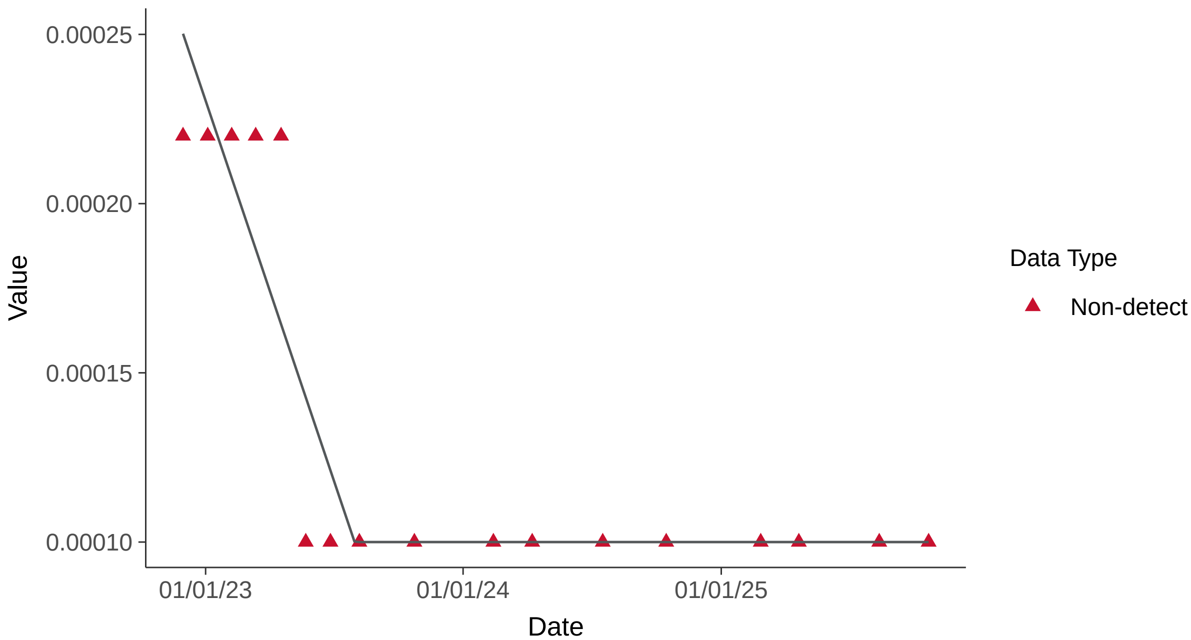



Boxplot
Lead, MW-07 (mg/L)
Value
0.000225
0.000200
0.000175
0.000150
0.000125
0.000100


Boxplot by Season
Lead, MW-07 (mg/L)
Value
0.000225
0.000200
0.000175
0.000150
0.000125
0.000100
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Data Type
Non-detect
Outlier Type
Minor

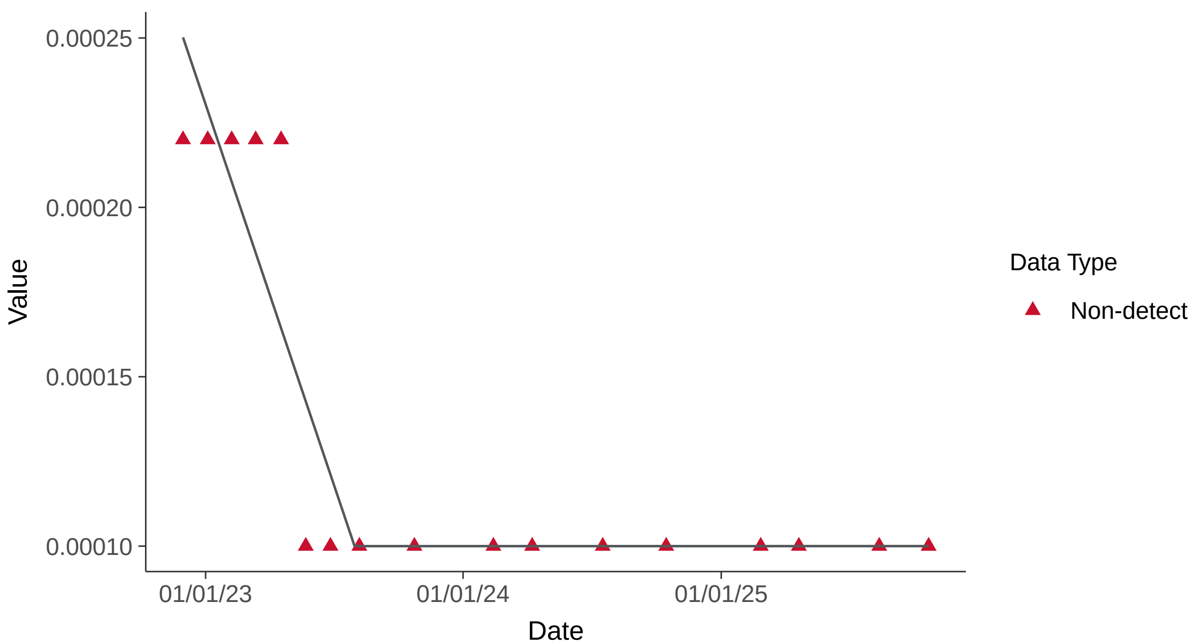
Trend Regression: Piecewise Linear-Linear

Lead, MW-07 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Lead, MW-07 (mg/L)

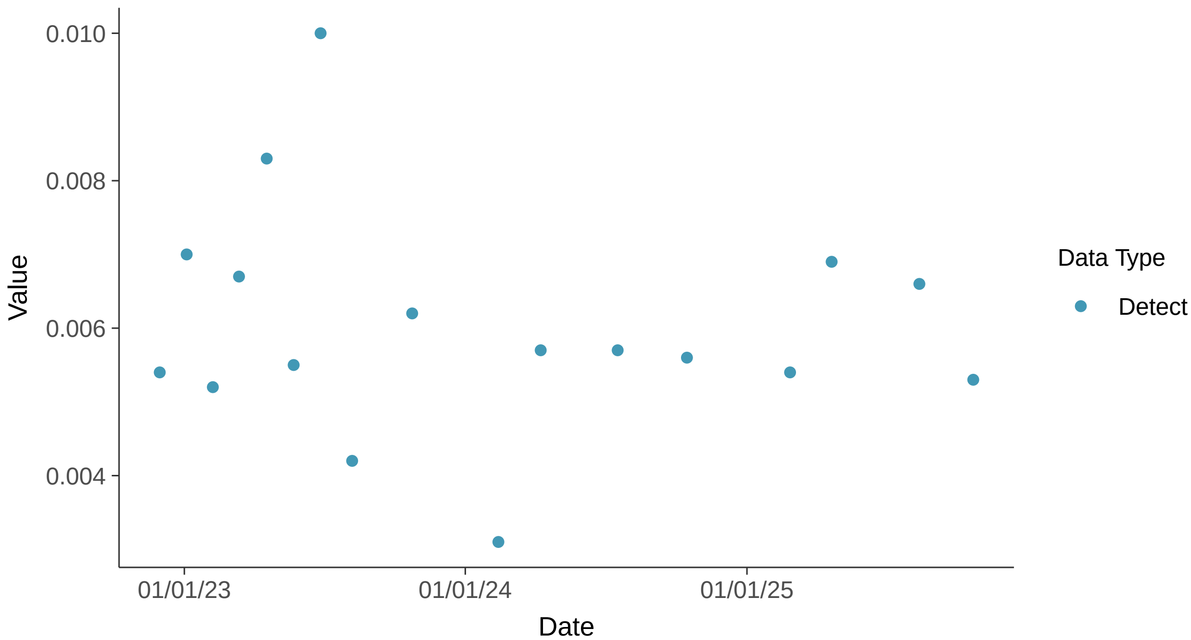


Appendix IV: Lithium, MW-07

ID: 17_1_4_116

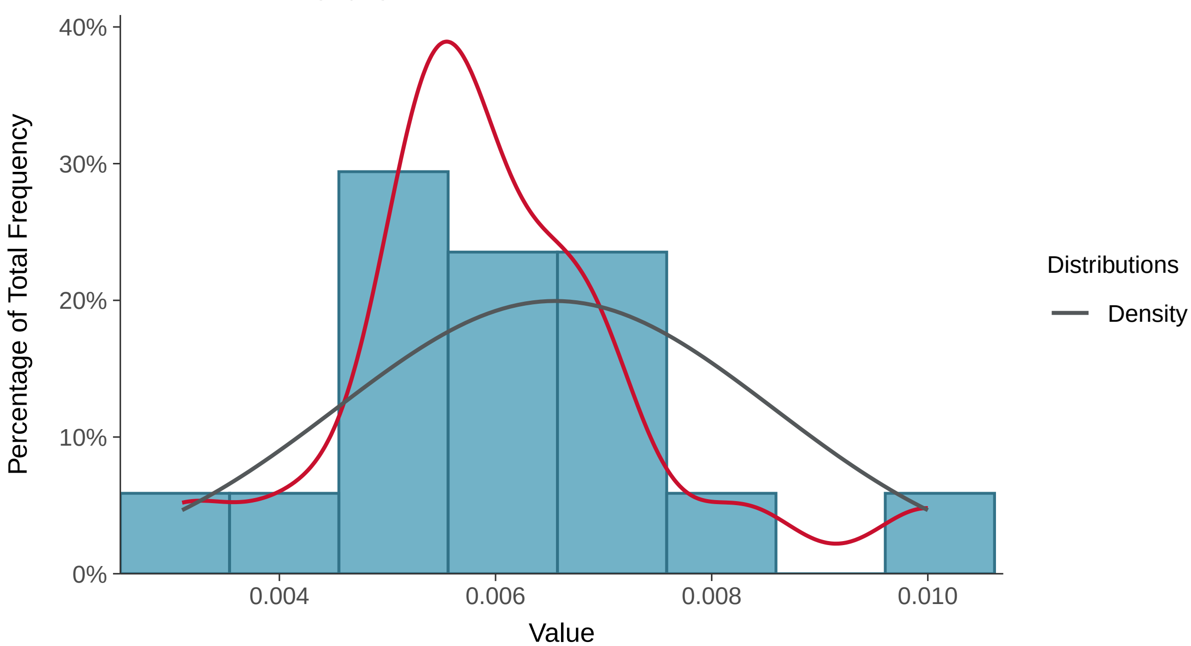
Scatter Plot

Lithium, MW-07 (mg/L)



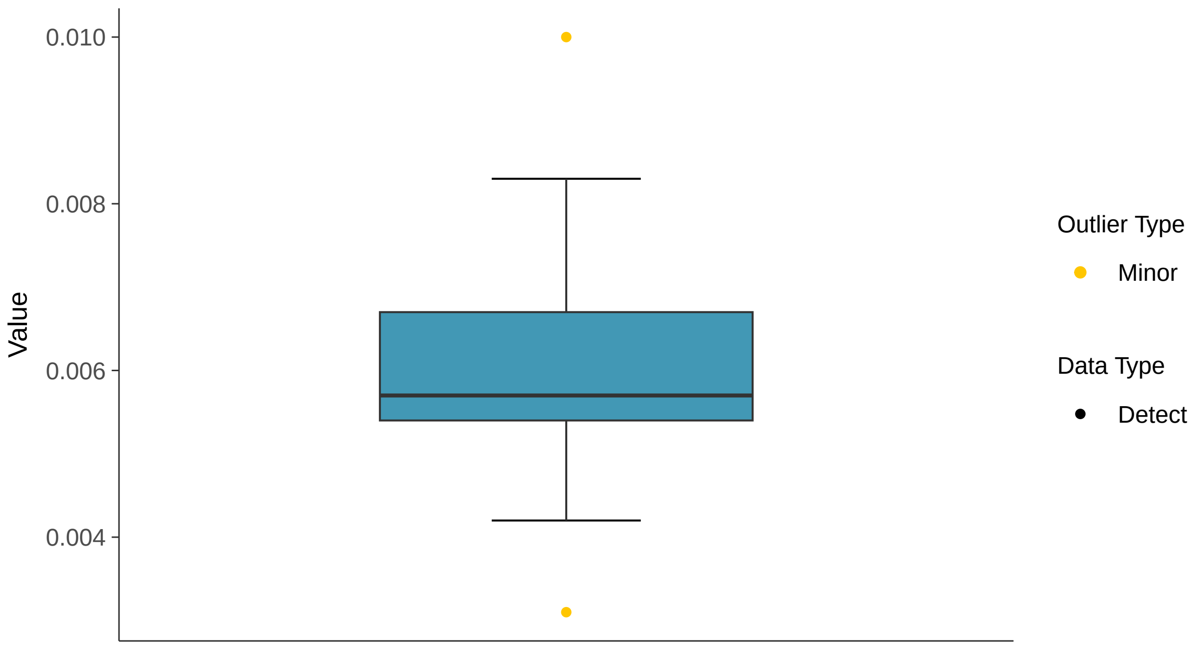
Histogram

Lithium, MW-07 (mg/L)



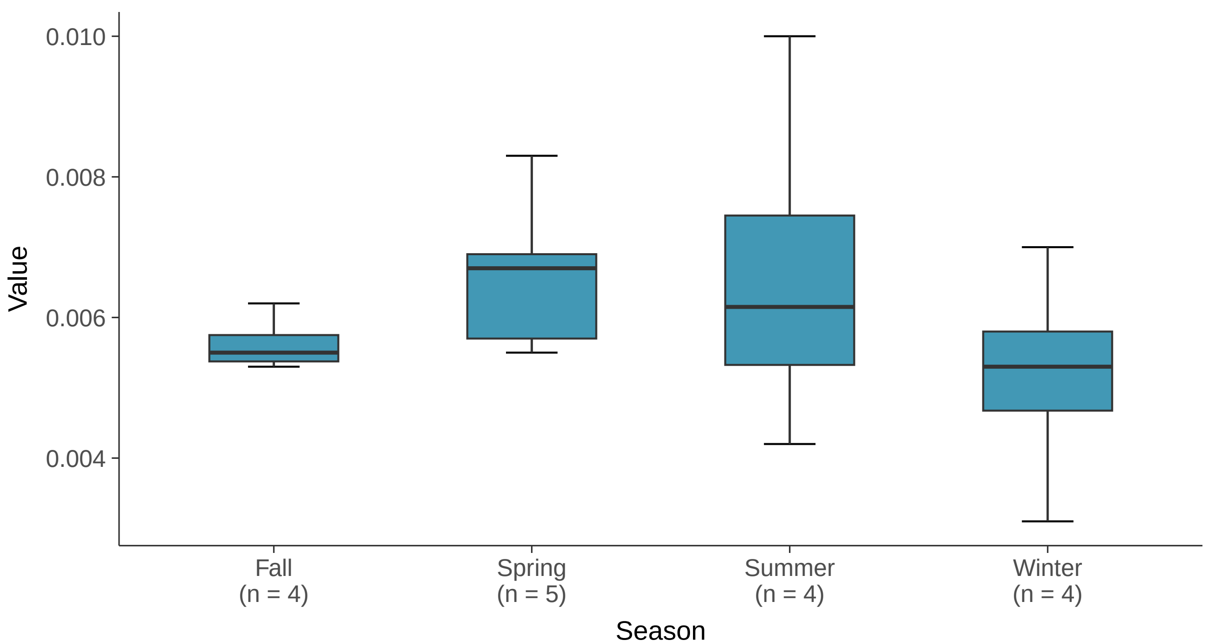
Boxplot

Lithium, MW-07 (mg/L)



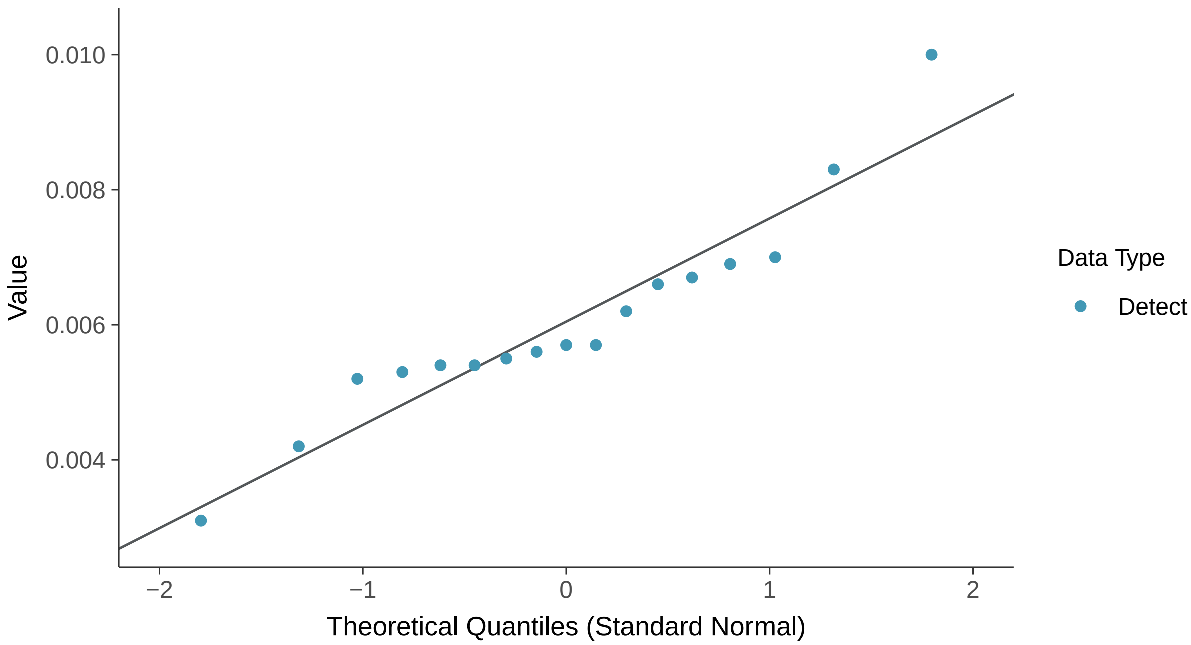
Boxplot by Season

Lithium, MW-07 (mg/L)



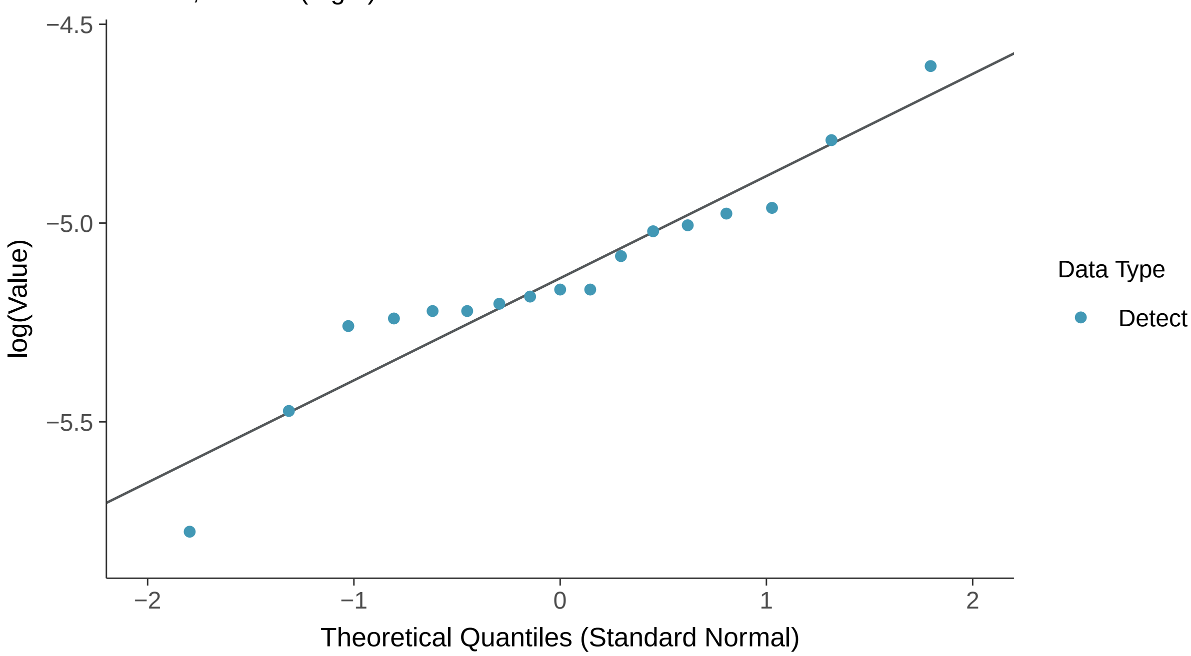
Normal Q-Q plot

Lithium, MW-07 (mg/L)



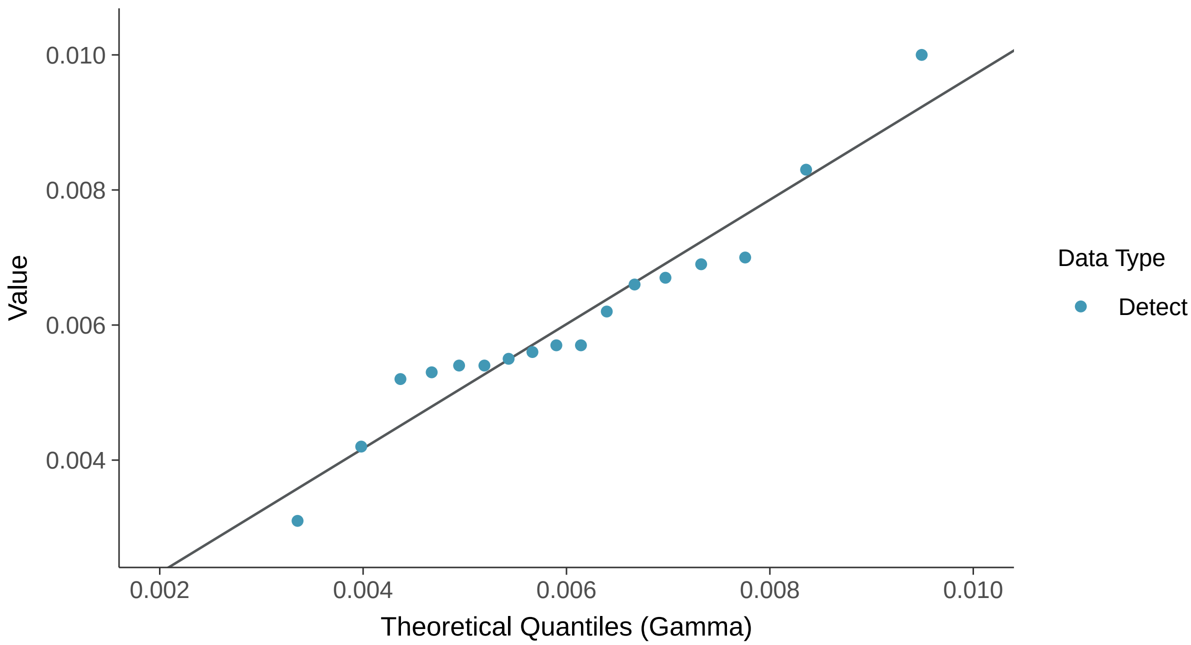
Lognormal Q-Q plot

Lithium, MW-07 (mg/L)



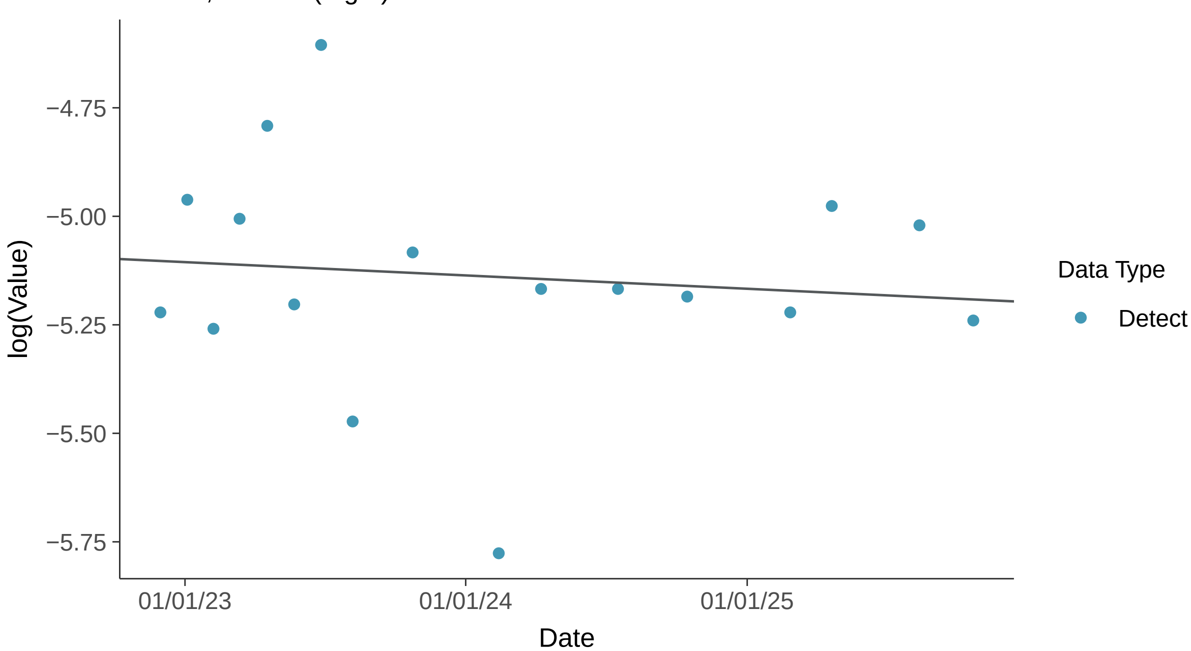
Gamma Q-Q plot

Lithium, MW-07 (mg/L)



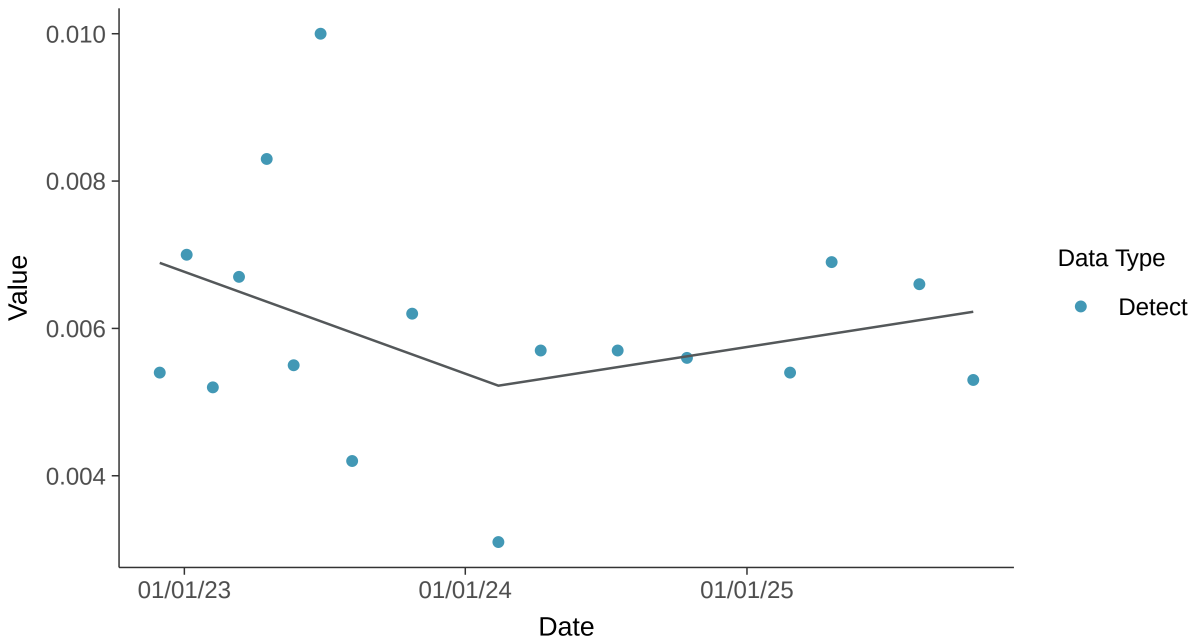
Trend Regression: Lognormal MLE

Lithium, MW-07 (mg/L)



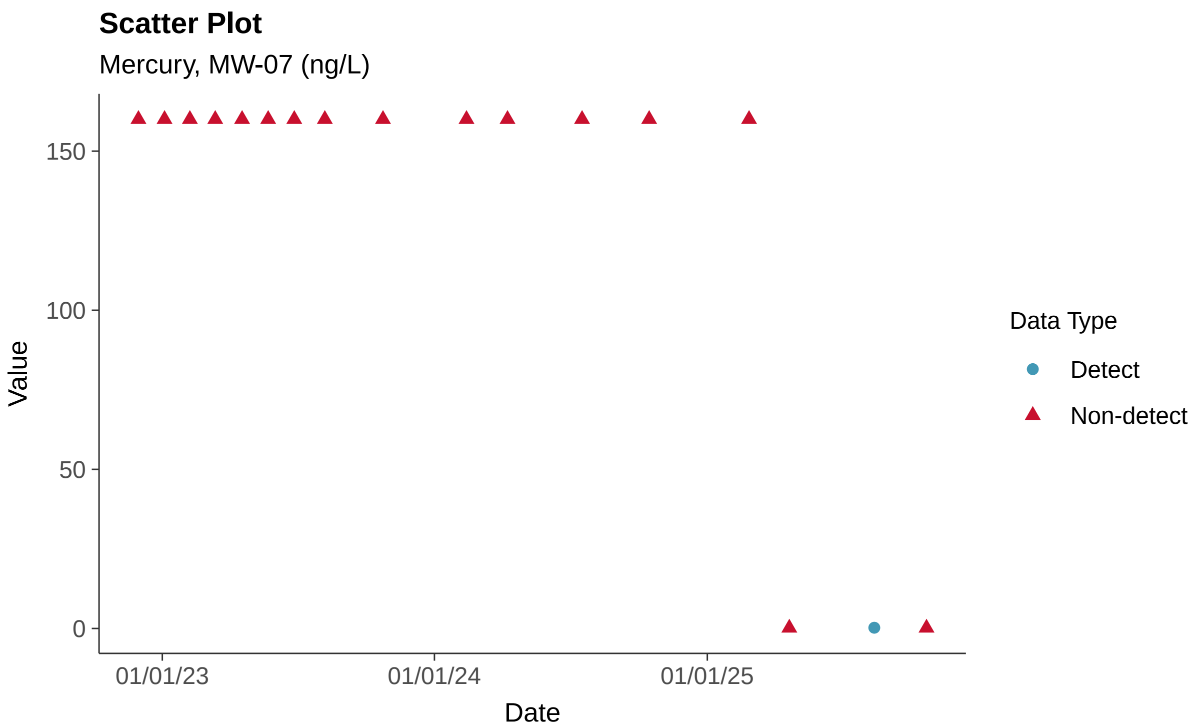
Trend Regression: Piecewise Linear-Linear

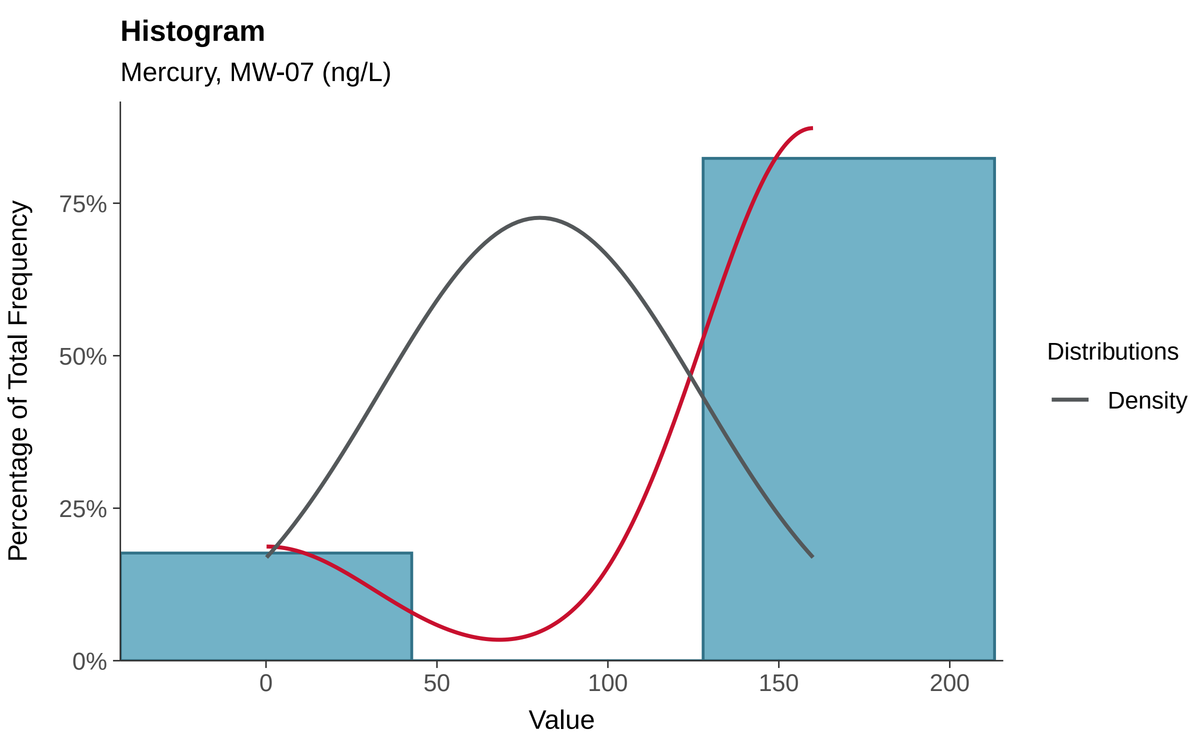
Lithium, MW-07 (mg/L)

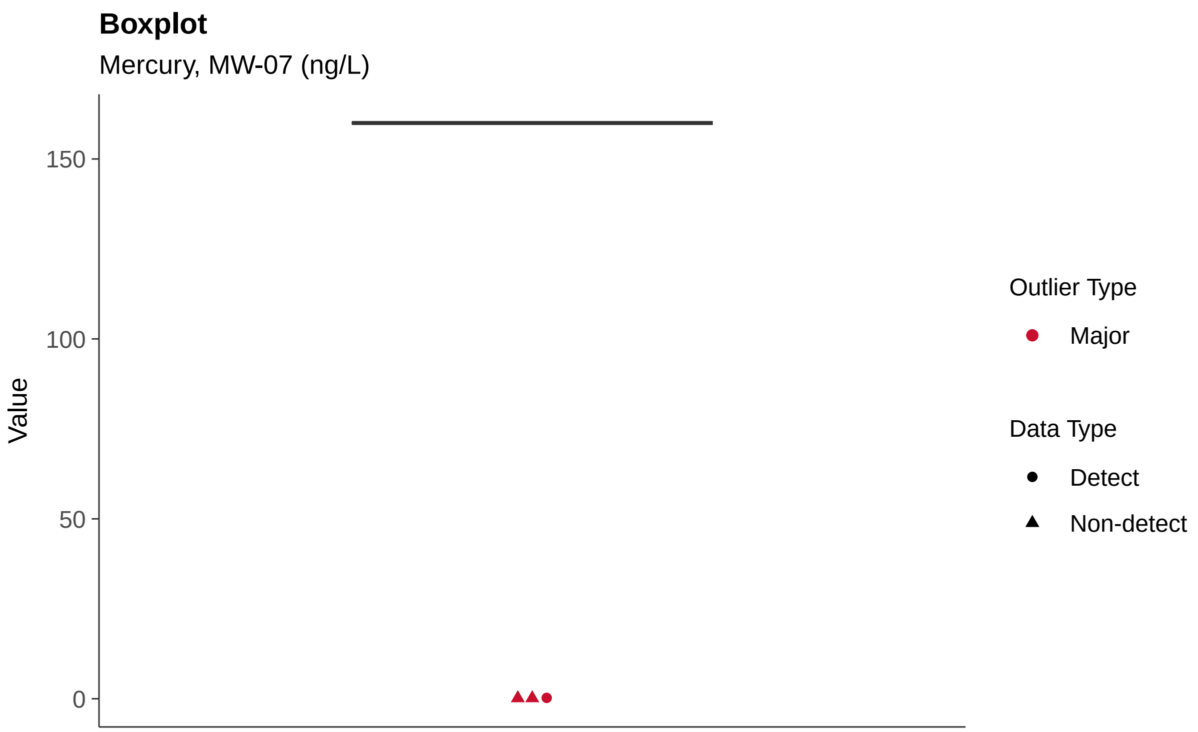


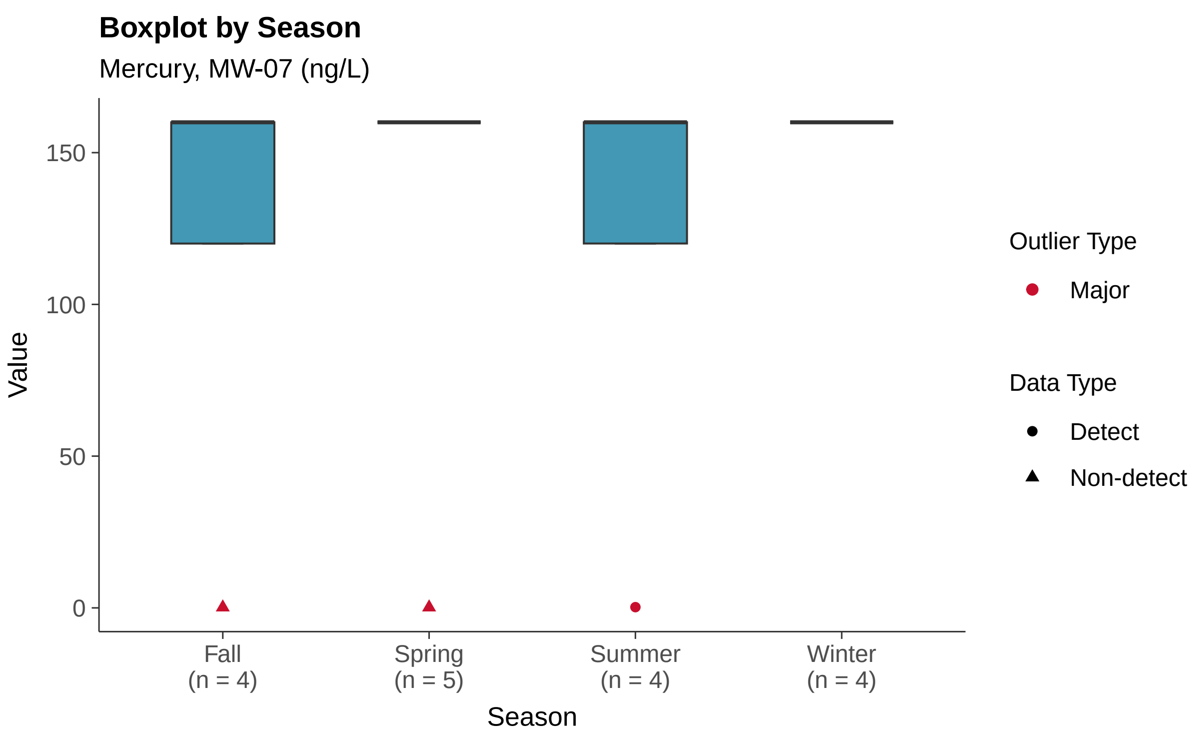
Appendix IV: Mercury, MW-07

ID: 17_1_4_117



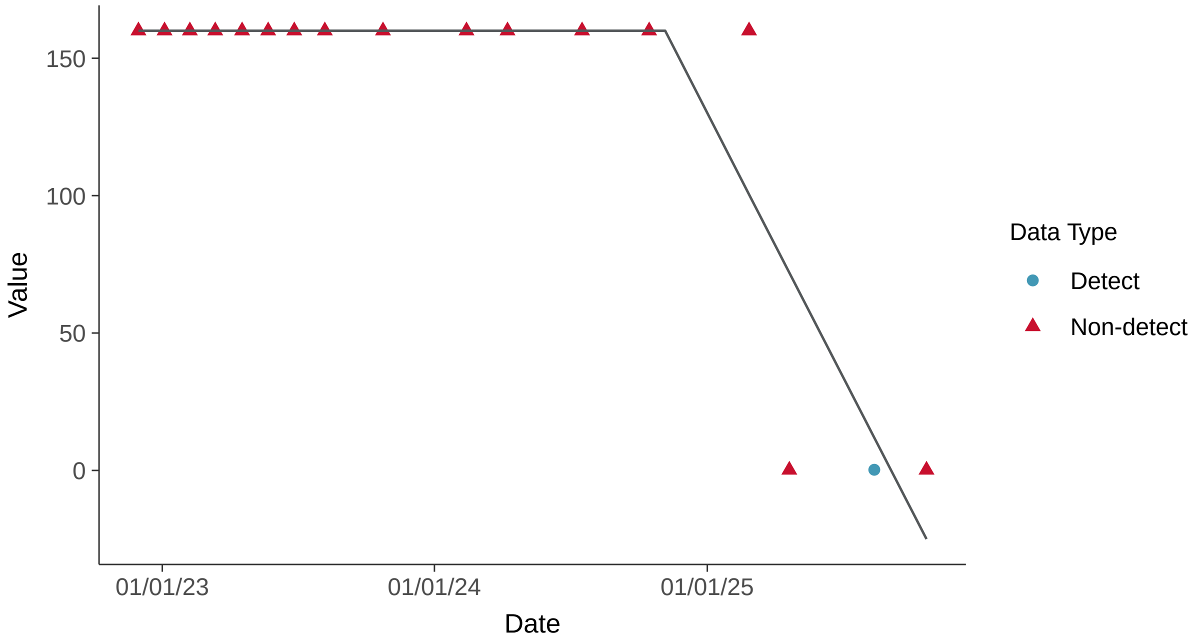



Boxplot
Mercury, MW-07 (ng/L)
Value
150
100
50
0
Outlier Type
Major
Data Type
Detect
Non-detect


Boxplot by Season
Mercury, MW-07 (ng/L)
Value
150
100
50
0
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Major
Data Type
Detect
Non-detect

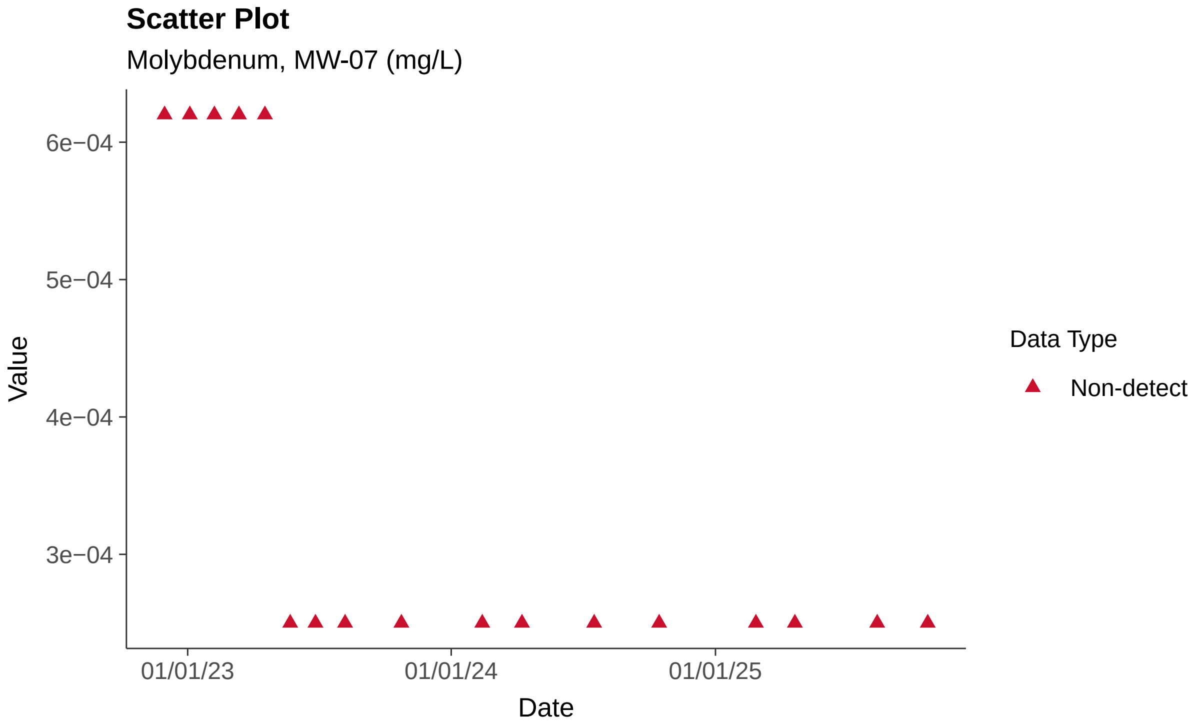
Trend Regression: Piecewise Linear-Linear

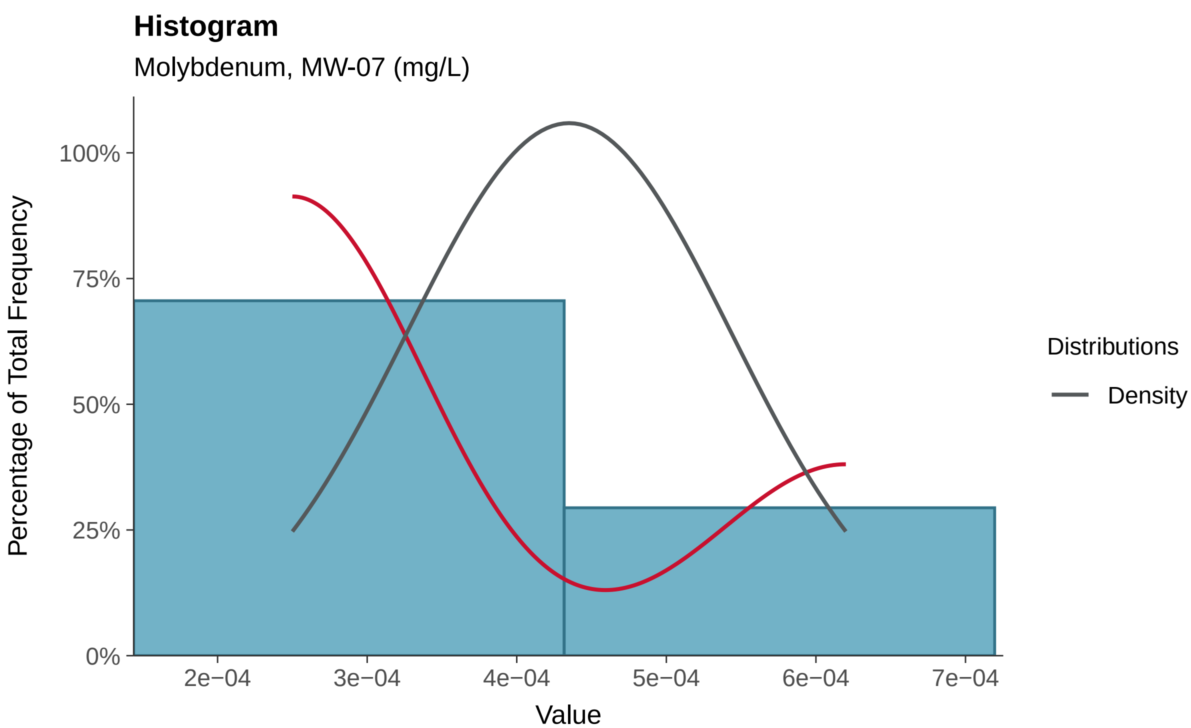
Mercury, MW-07 (ng/L)

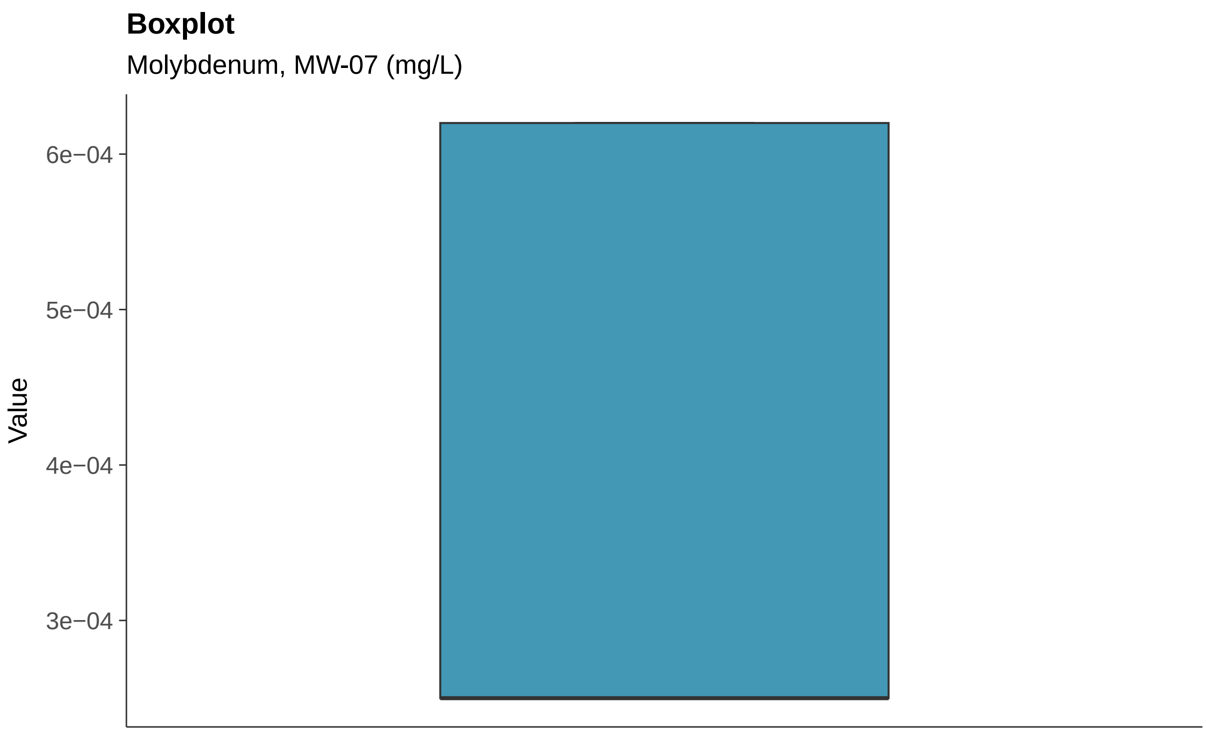


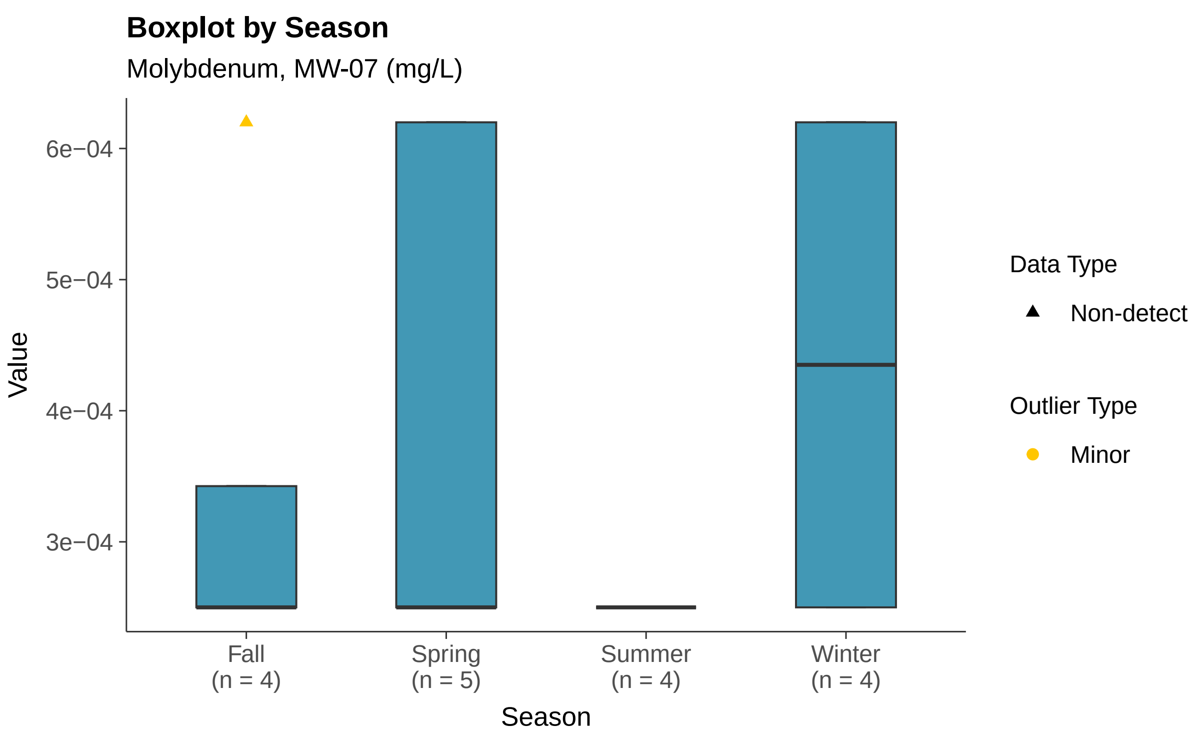
Appendix IV: Molybdenum, MW-07

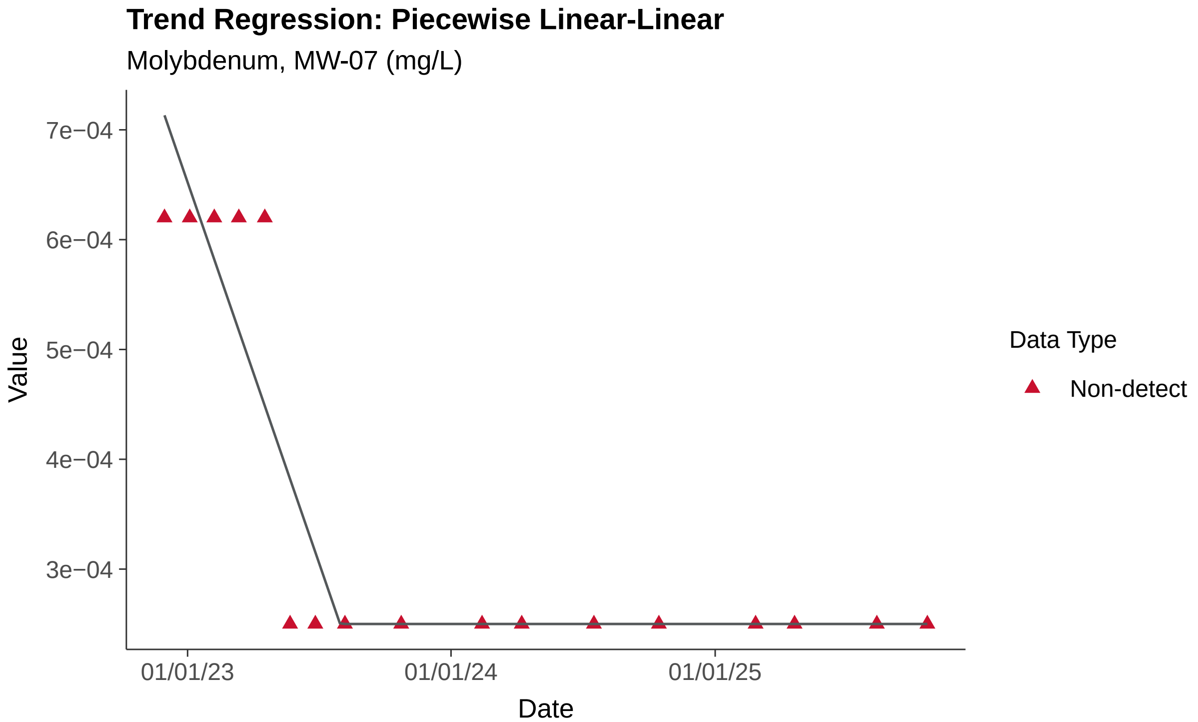
ID: 17_1_4_118

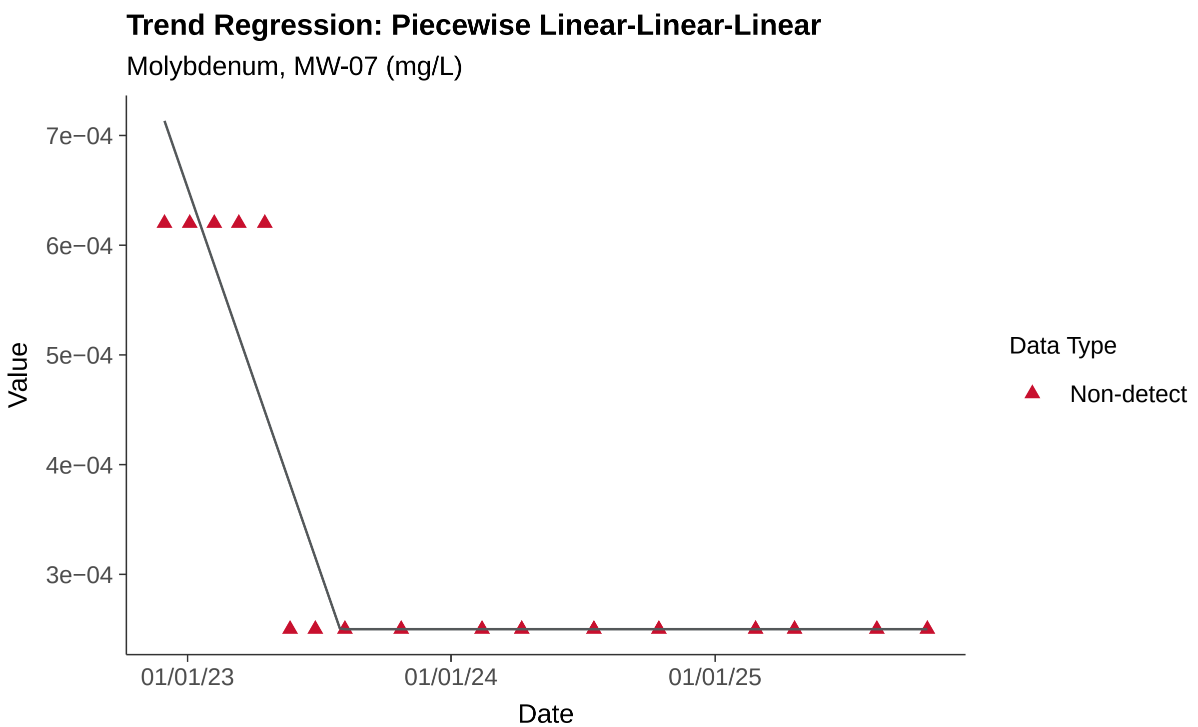





Boxplot
Molybdenum, MW-07 (mg/L)
Value
6e−04
5e−04
4e−04
3e−04


Boxplot by Season
Molybdenum, MW-07 (mg/L)
Value
6e−04
5e−04
4e−04
3e−04
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Data Type
Non-detect
Outlier Type
Minor


Trend Regression: Piecewise Linear-Linear
Molybdenum, MW-07 (mg/L)
7e−04
6e−04
5e−04
4e−04
3e−04
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Non-detect

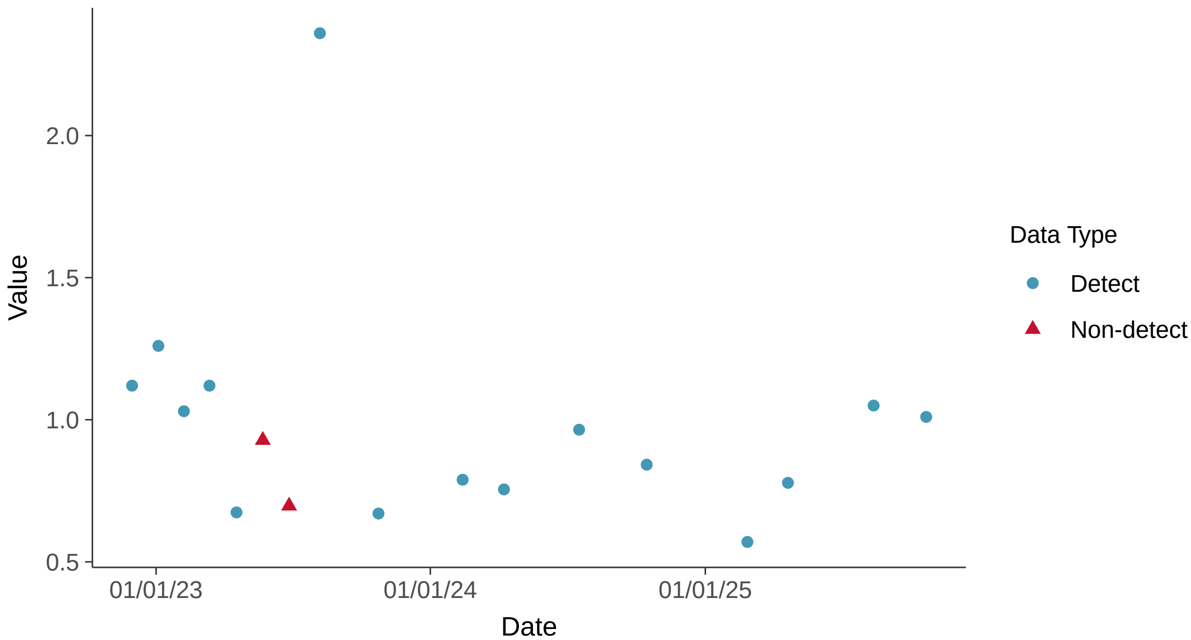

Trend Regression: Piecewise Linear-Linear-Linear
Molybdenum, MW-07 (mg/L)
7e−04
6e−04
5e−04
4e−04
3e−04
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Non-detect

Appendix IV: Radium 226 and 228, MW-07

ID: 17_1_4_121

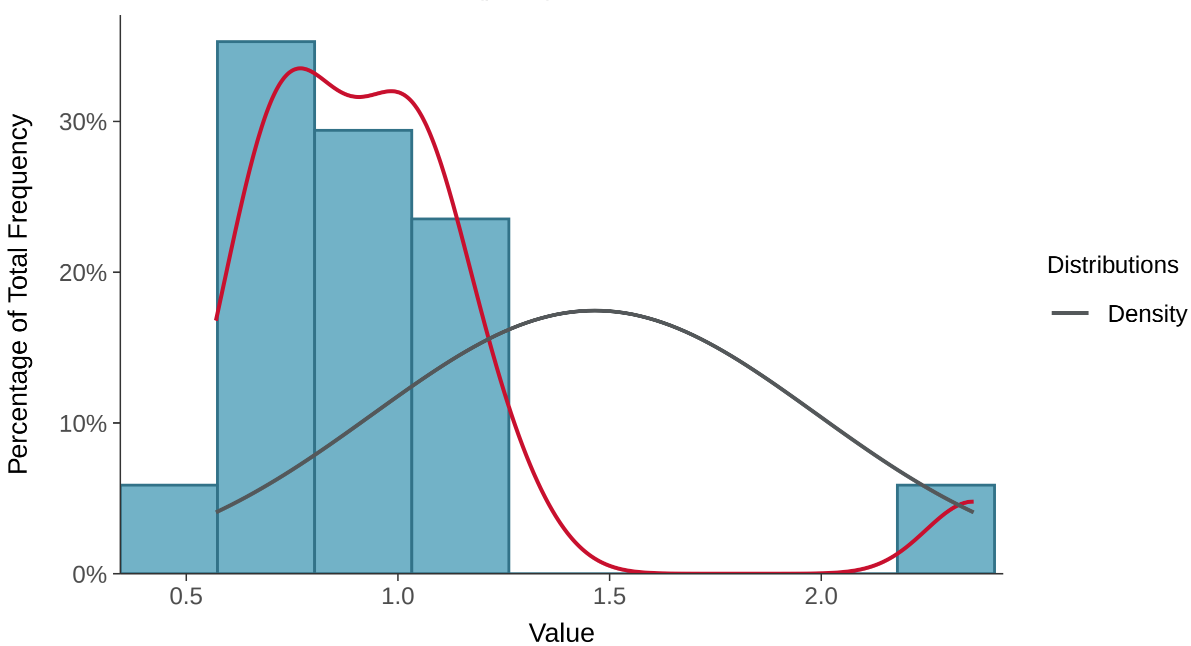
Scatter Plot

Radium 226 and 228, MW-07 (pCi/L)



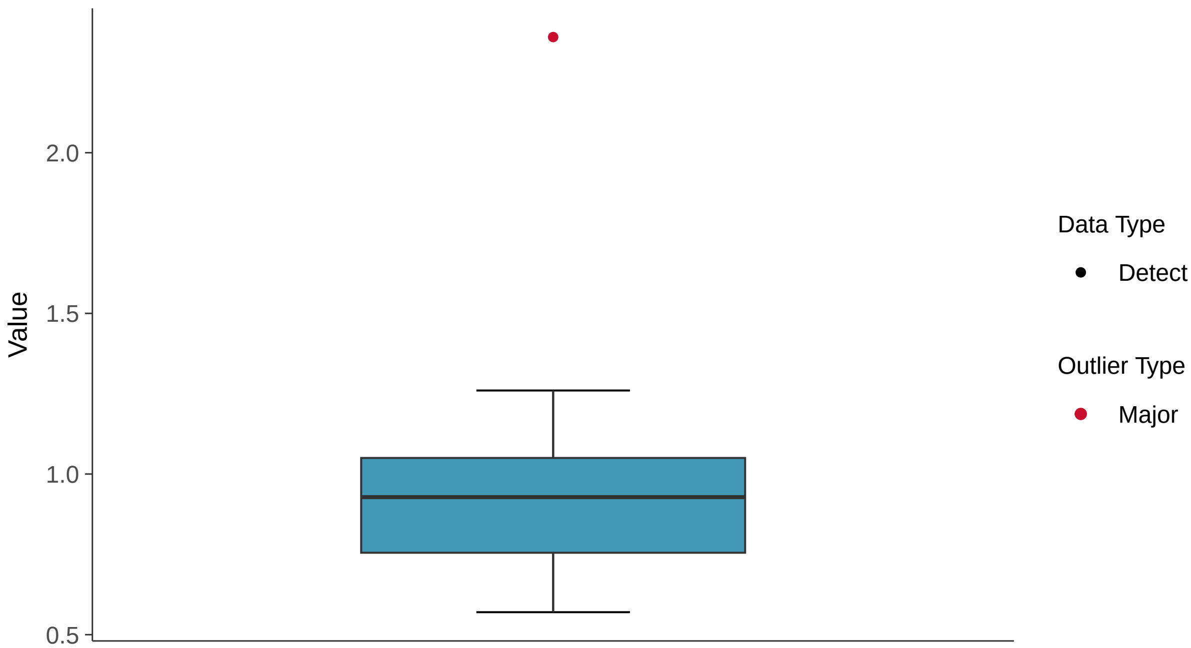
Histogram

Radium 226 and 228, MW-07 (pCi/L)



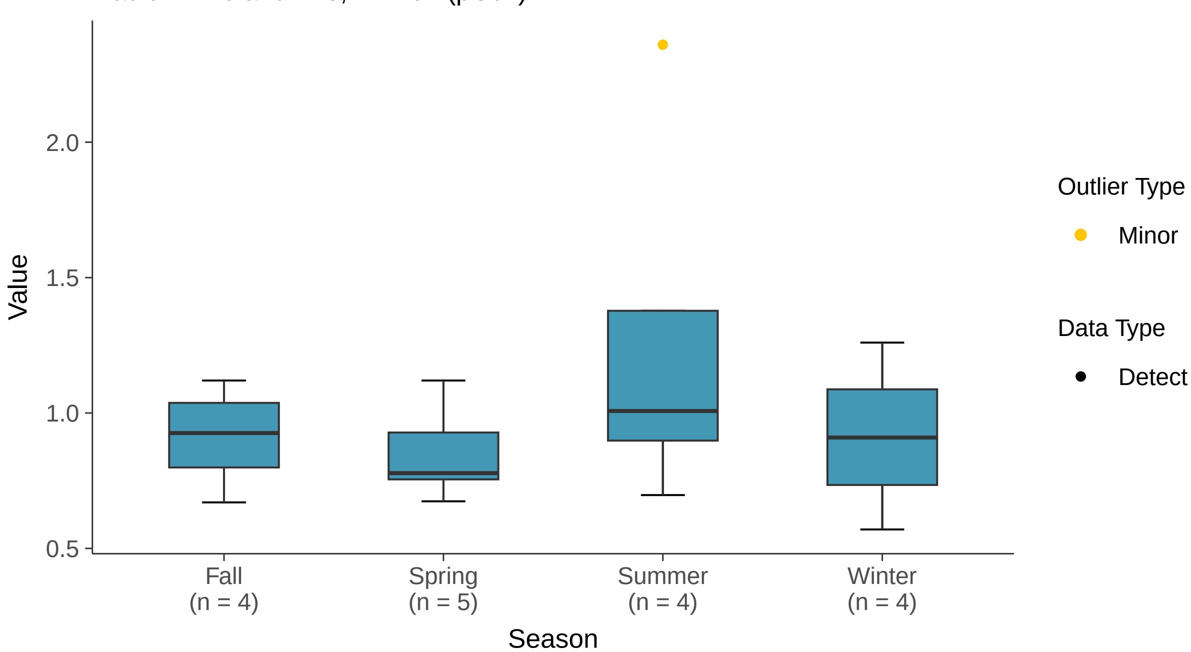
Boxplot

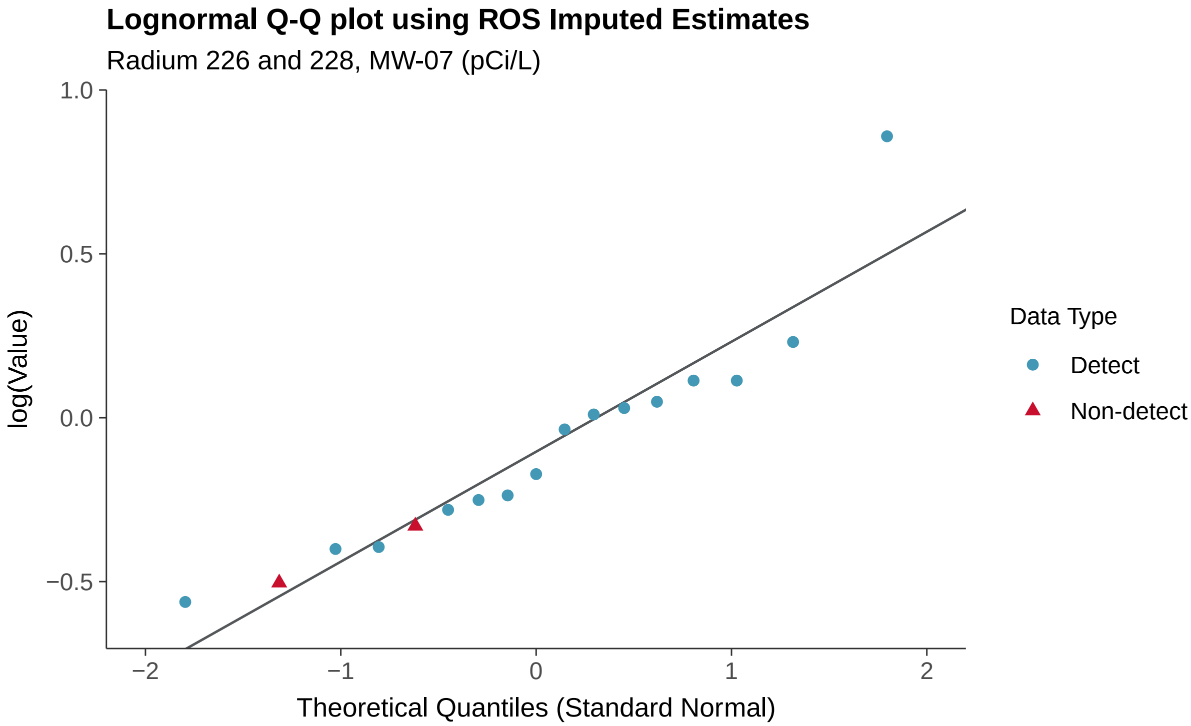
Radium 226 and 228, MW-07 (pCi/L)

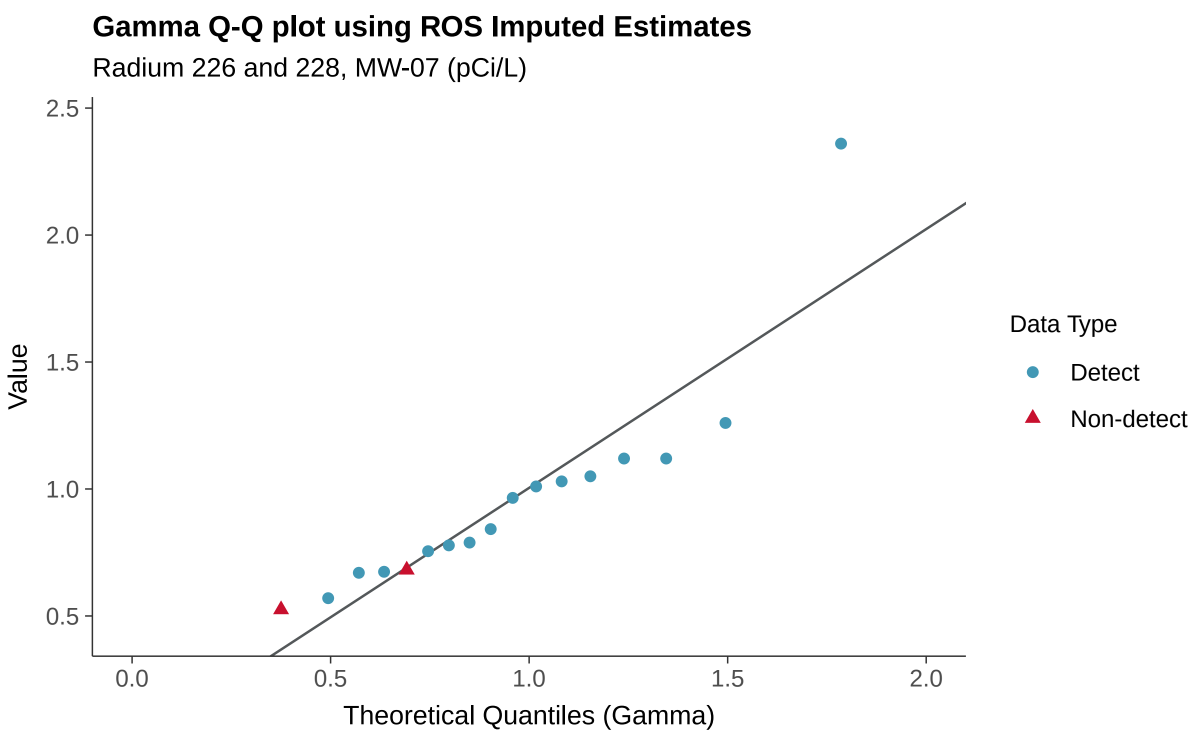


Boxplot by Season

Radium 226 and 228, MW-07 (pCi/L)

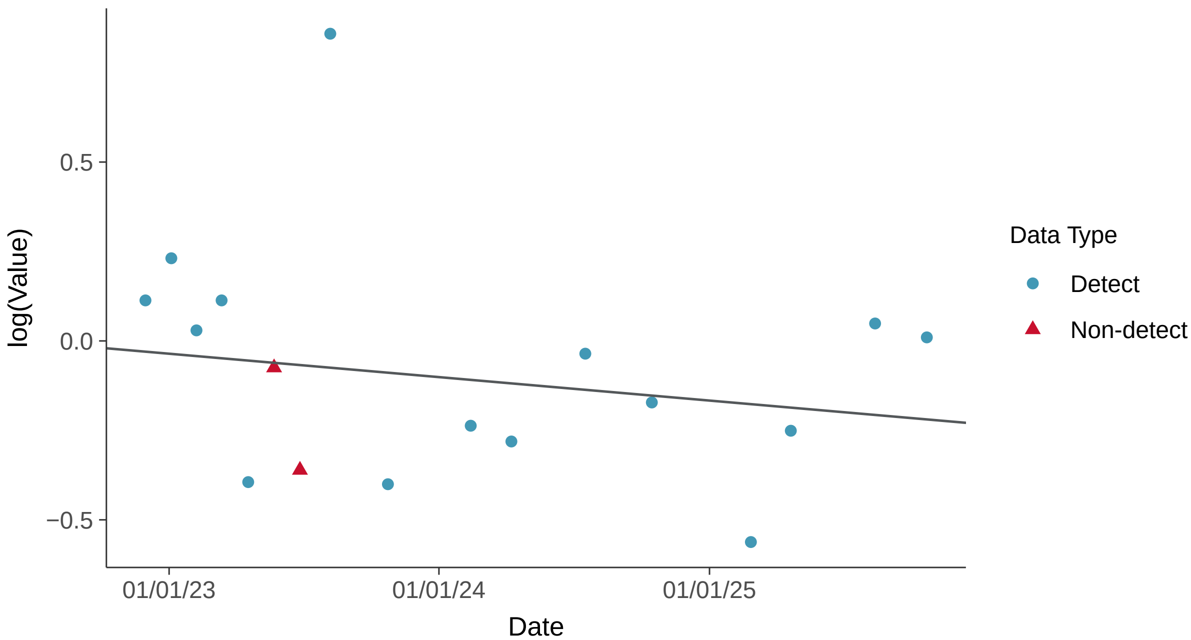



Lognormal Q-Q plot using ROS Imputed Estimates
Radium 226 and 228, MW-07 (pCi/L)
1.0
0.5
0.0
−0.5
log(Value)
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Gamma Q-Q plot using ROS Imputed Estimates
Radium 226 and 228, MW-07 (pCi/L)
2.5
2.0
1.5
1.0
0.5
Value
0.0
0.5
1.0
1.5
2.0
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect

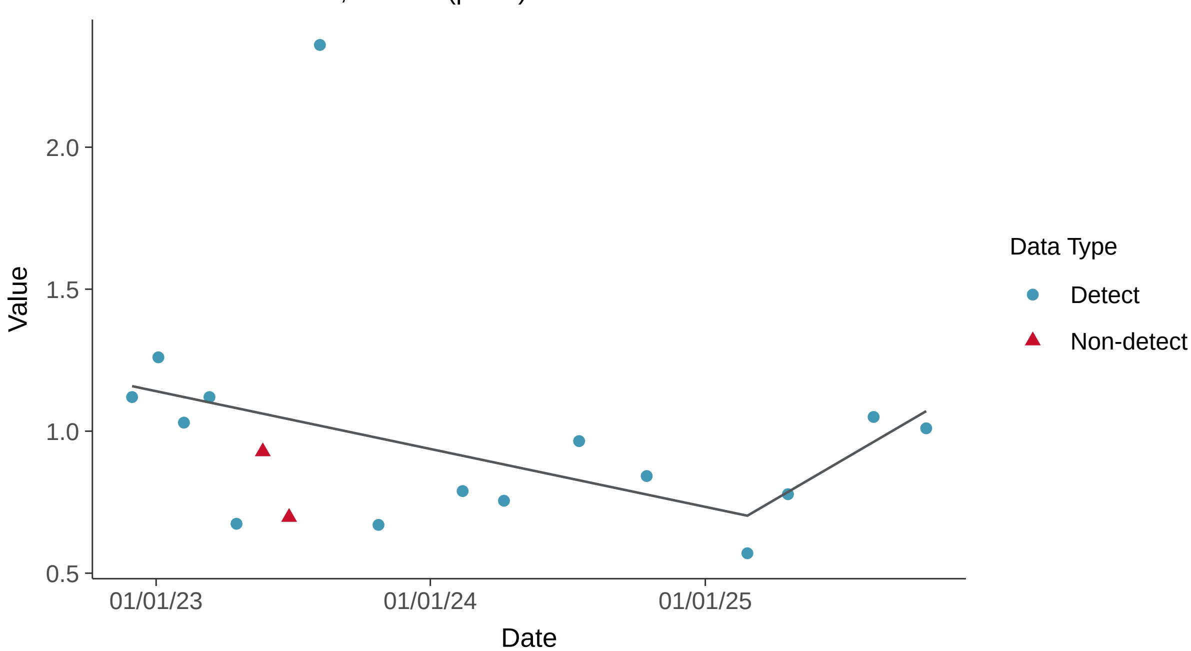
Trend Regression: Lognormal MLE

Radium 226 and 228, MW-07 (pCi/L)



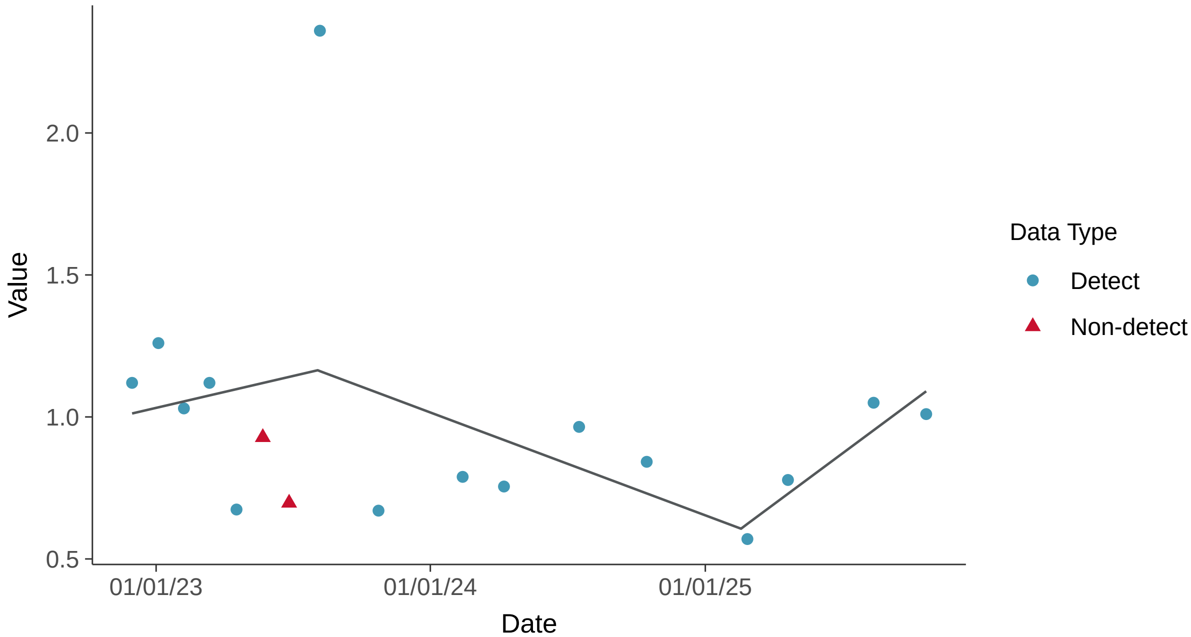
Trend Regression: Piecewise Linear-Linear

Radium 226 and 228, MW-07 (pCi/L)



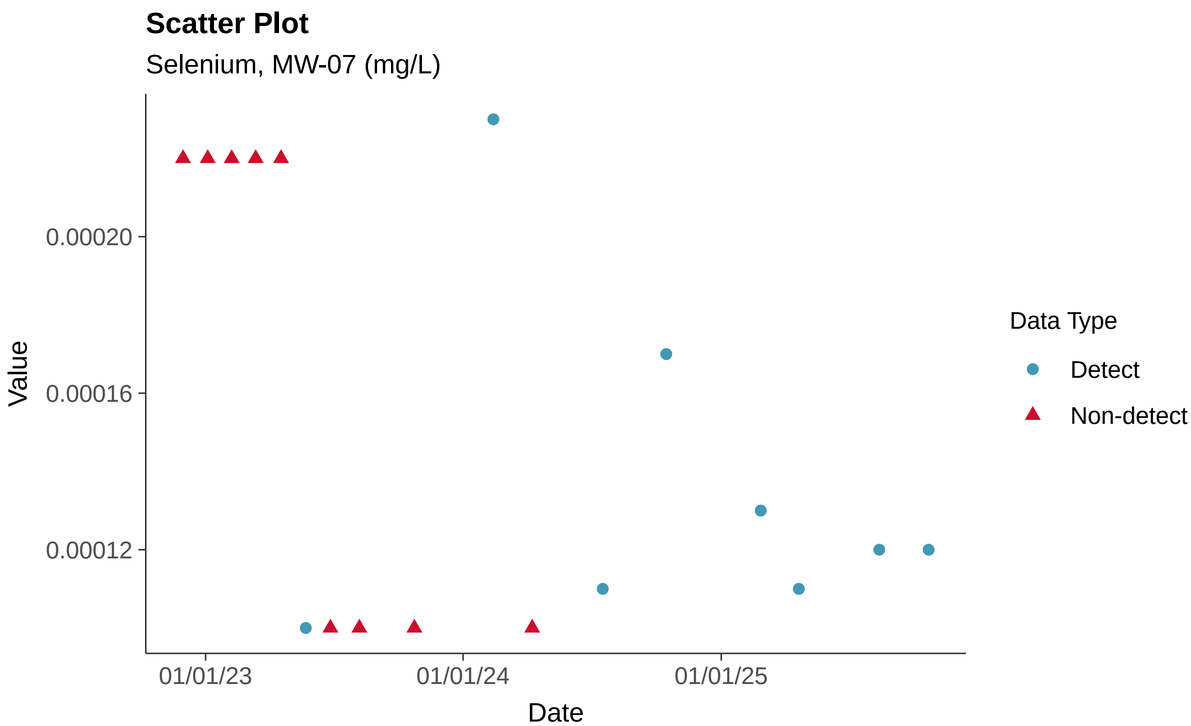
Trend Regression: Piecewise Linear-Linear-Linear

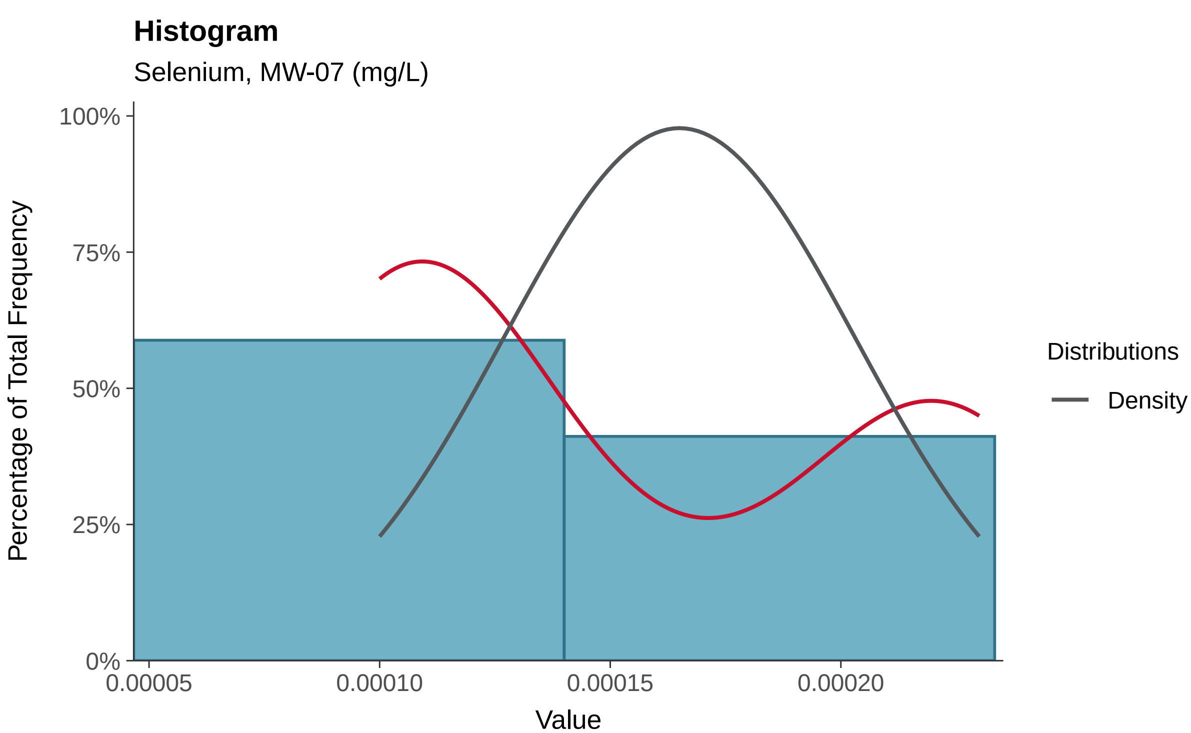
Radium 226 and 228, MW-07 (pCi/L)

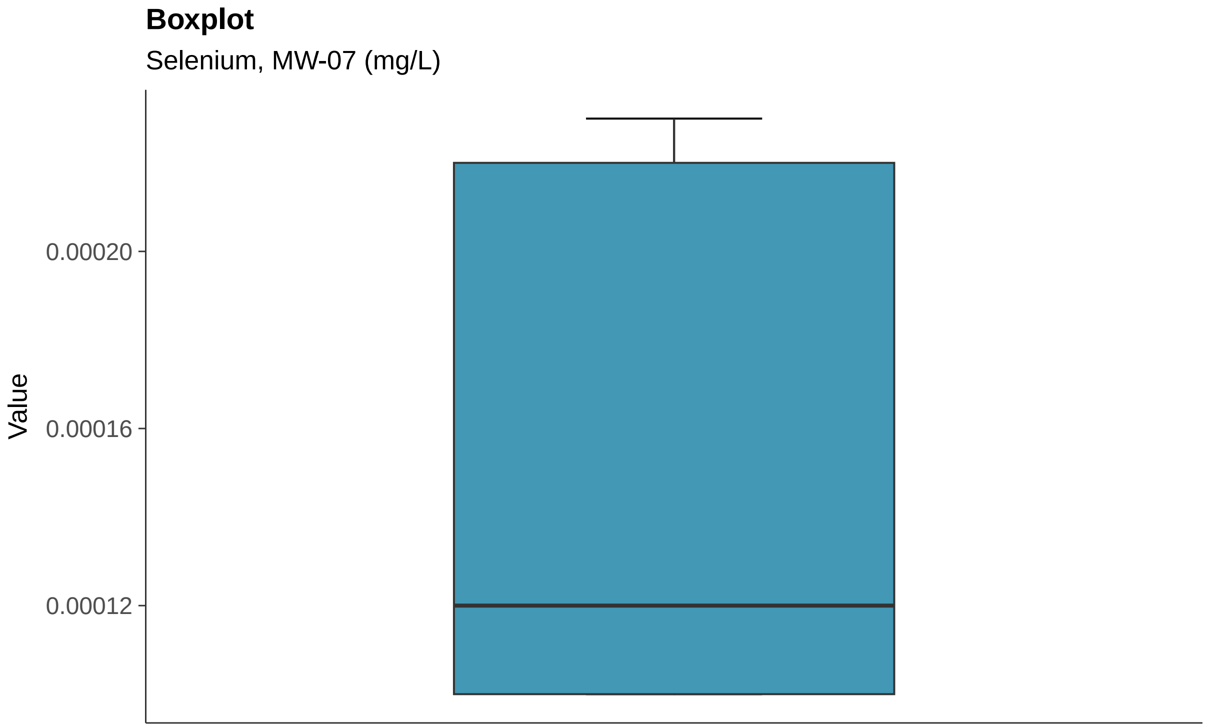


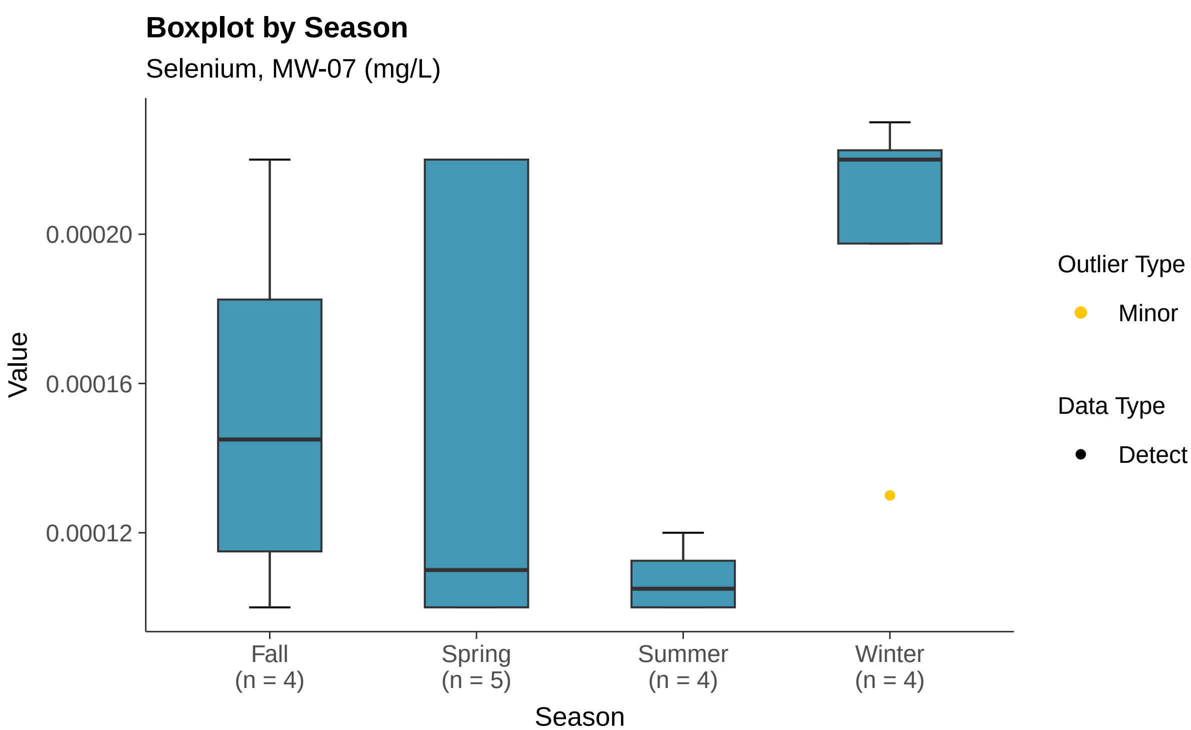
Appendix IV: Selenium, MW-07

ID: 17_1_4_122

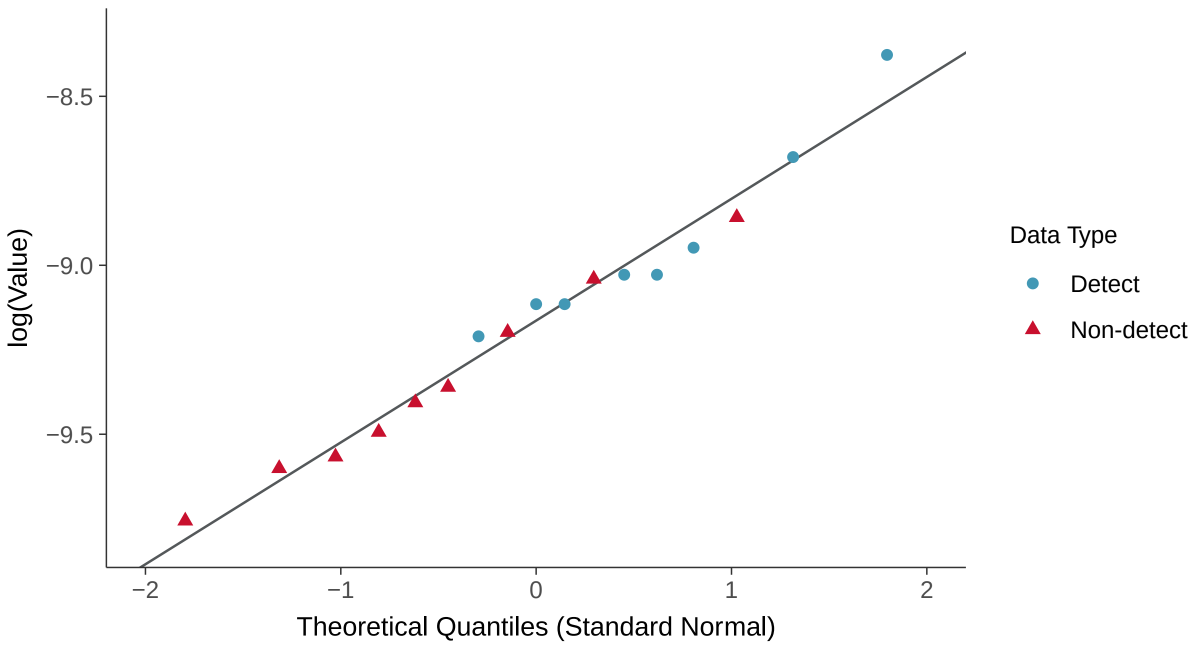




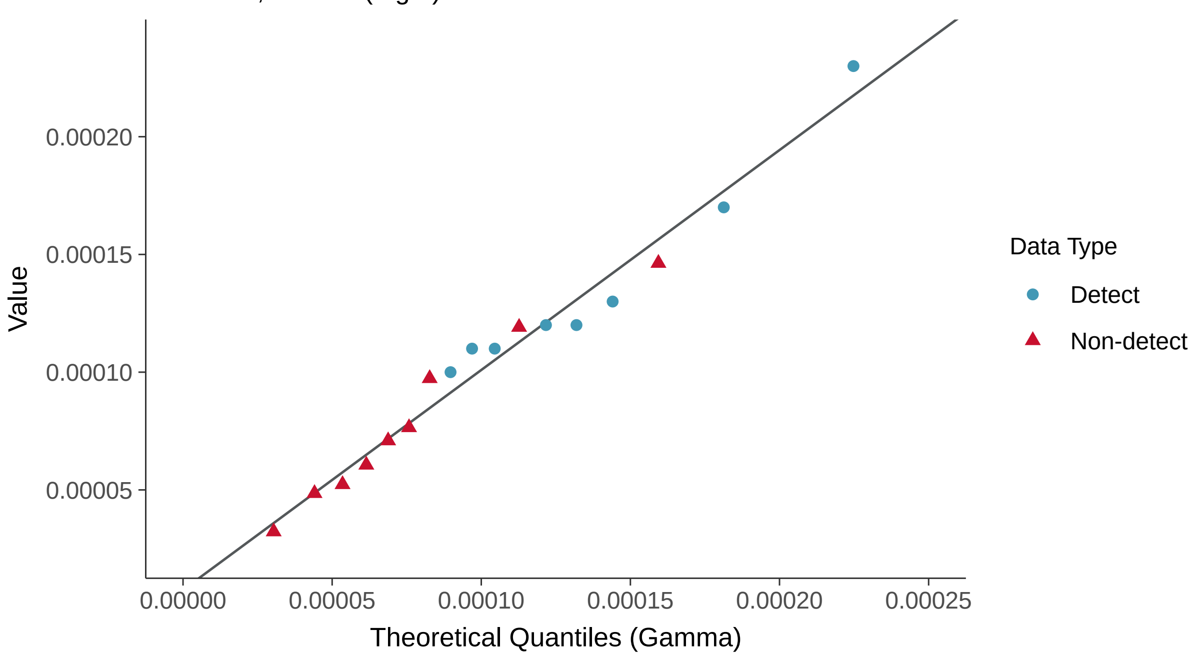

Boxplot
Selenium, MW-07 (mg/L)
Value
0.00020
0.00016
0.00012

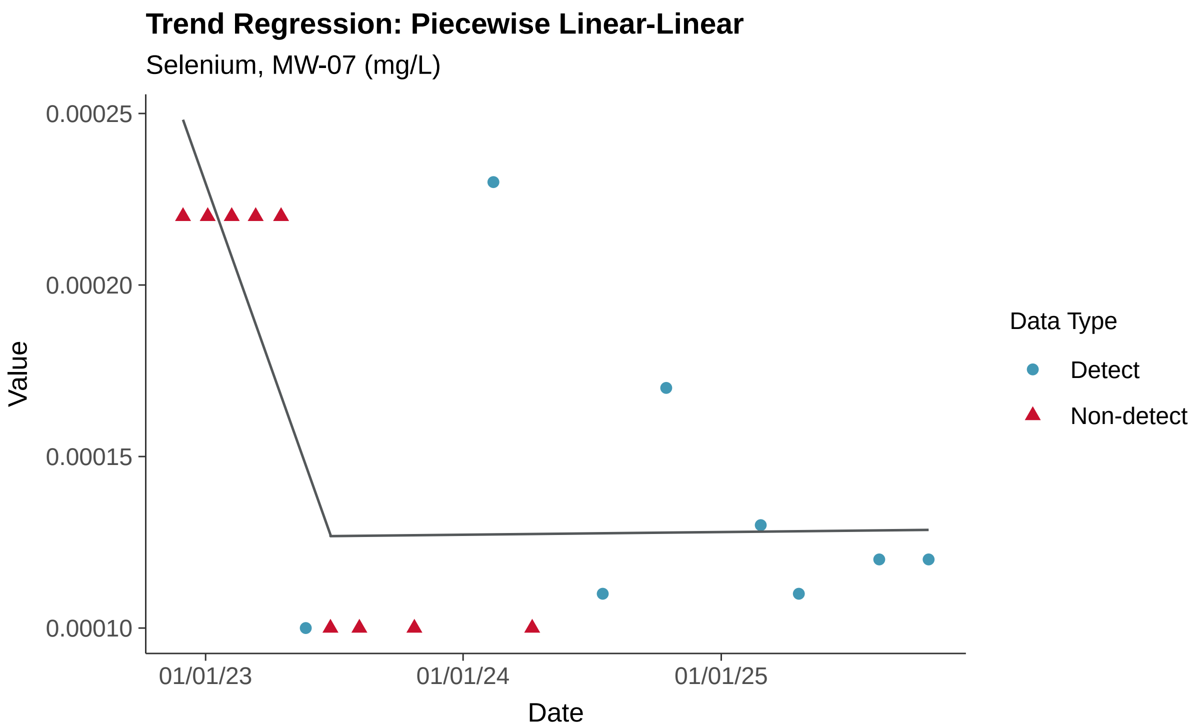

Boxplot by Season
Selenium, MW-07 (mg/L)
Value
0.00020
0.00016
0.00012
Fall (n = 4)
Spring (n = 5)
Summer (n = 4)
Winter (n = 4)
Season
Outlier Type
Minor
Data Type
Detect

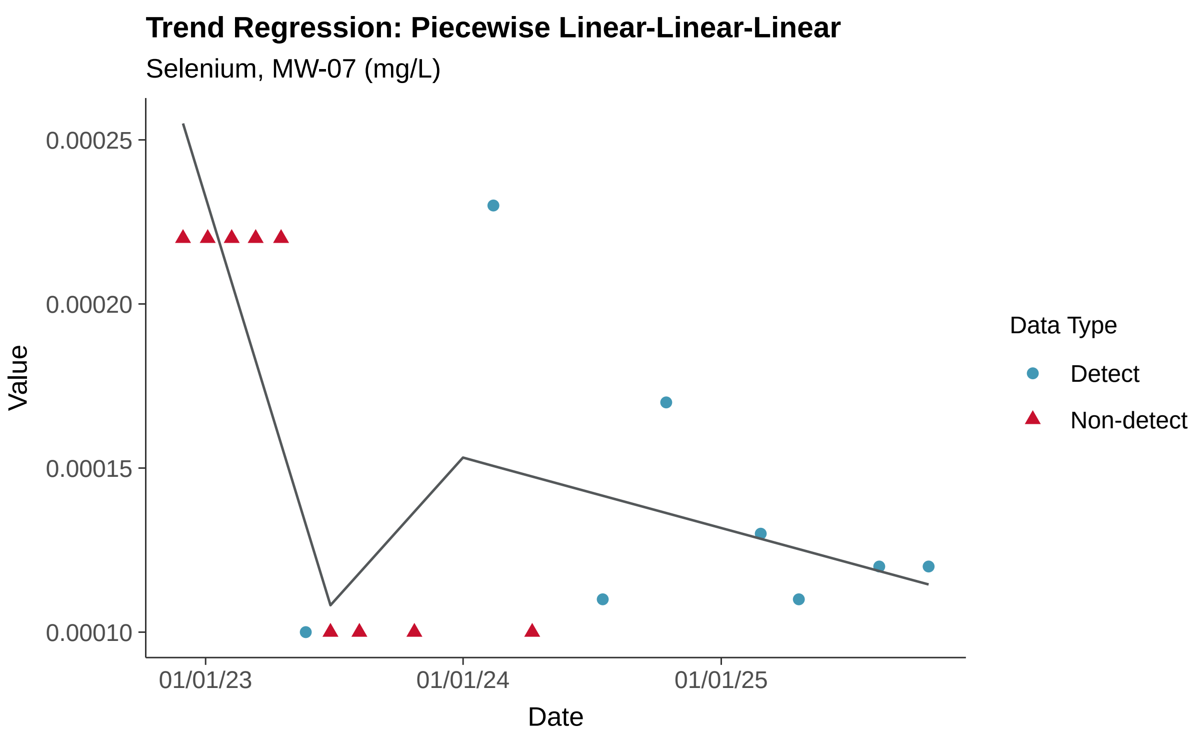
Lognormal Q-Q plot using ROS Imputed Estimates
Selenium, MW-07 (mg/L)



Gamma Q-Q plot using ROS Imputed Estimates
Selenium, MW-07 (mg/L)

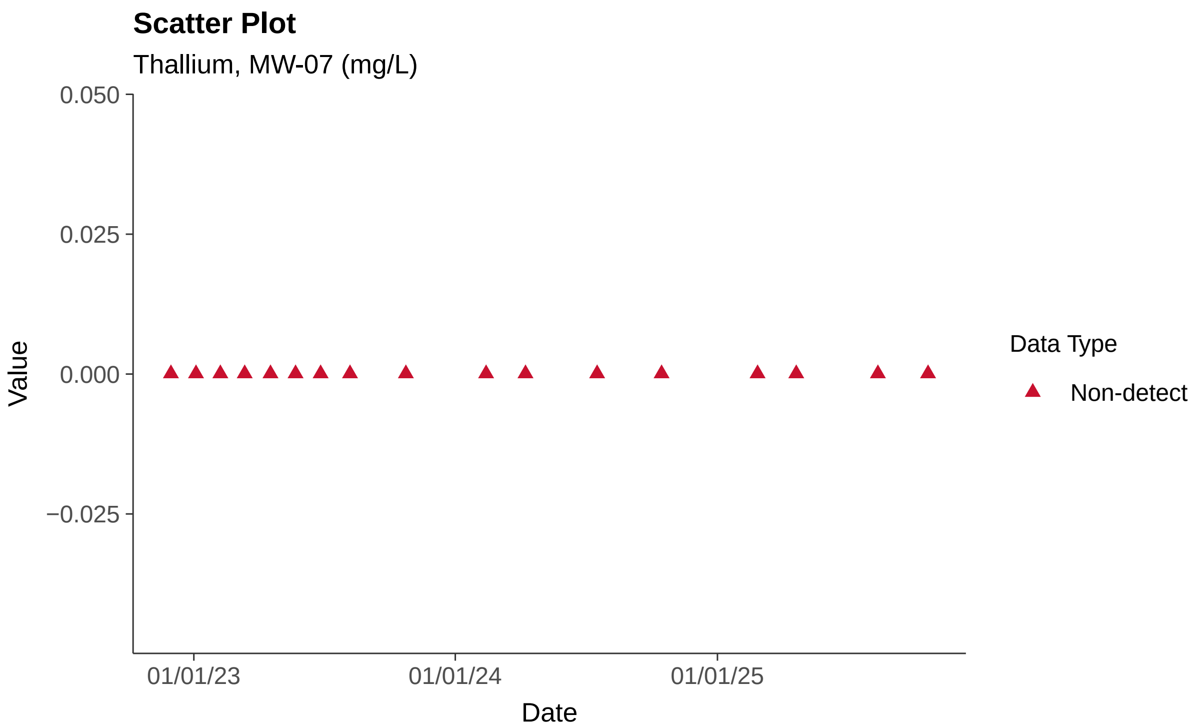


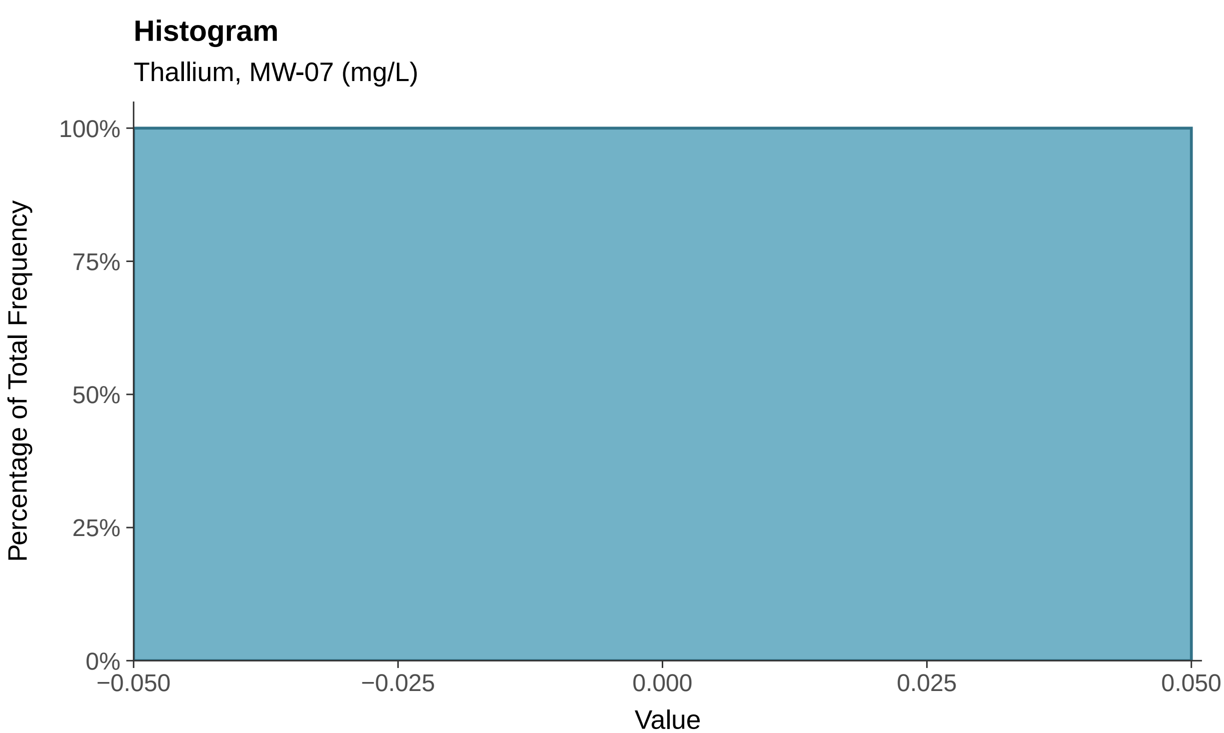

Trend Regression: Piecewise Linear-Linear
Selenium, MW-07 (mg/L)
0.00025
0.00020
0.00015
0.00010
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

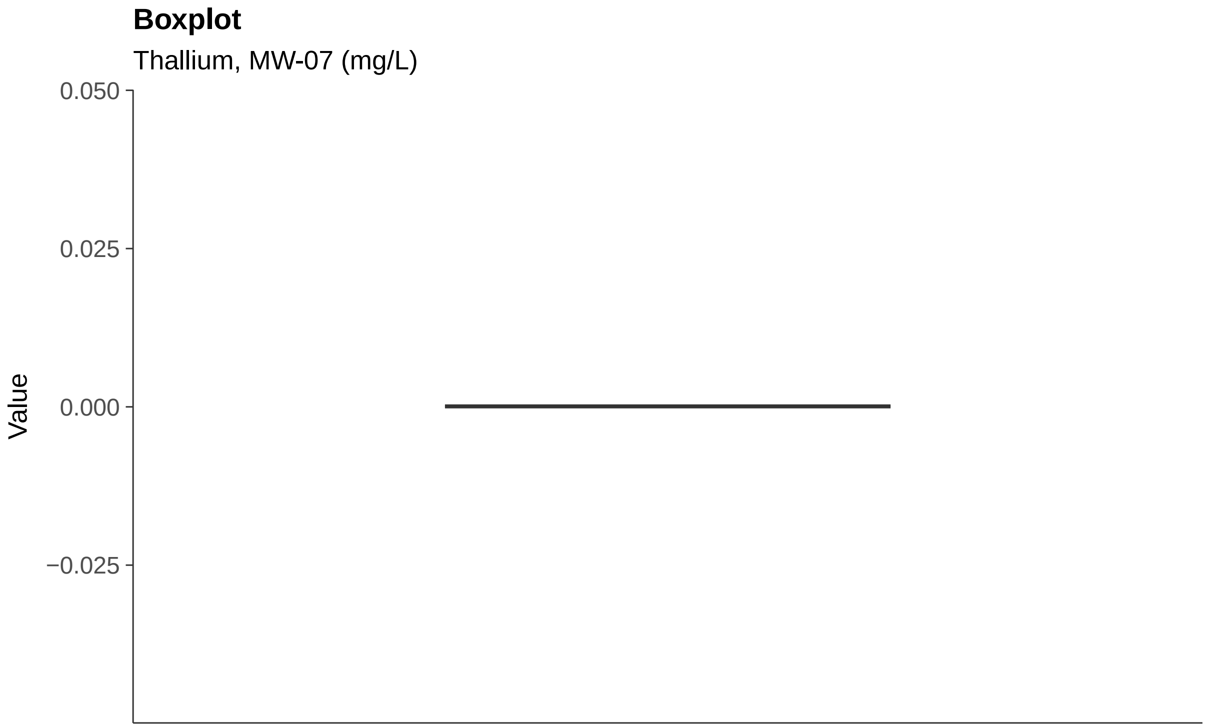

Trend Regression: Piecewise Linear-Linear-Linear
Selenium, MW-07 (mg/L)
0.00025
0.00020
0.00015
0.00010
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

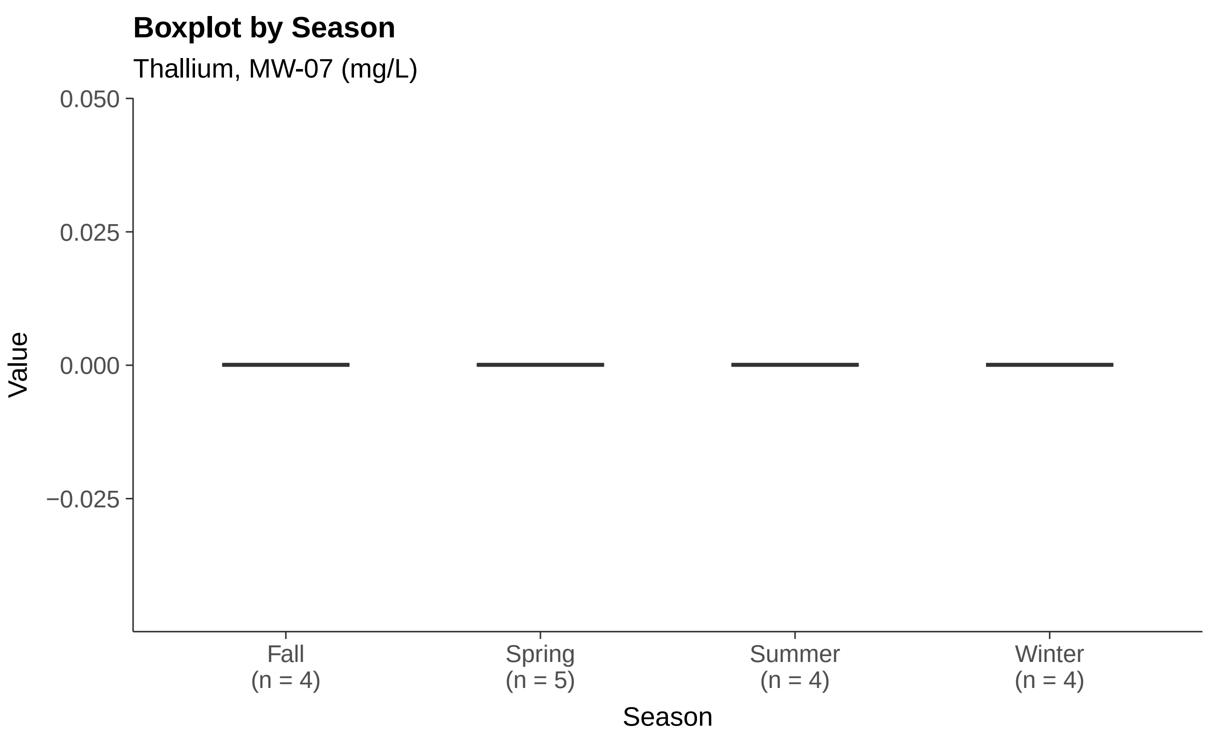
Appendix IV: Thallium, MW-07

ID: 17_1_4_125






Boxplot
Thallium, MW-07 (mg/L)
0.050
0.025
0.000
−0.025
Value

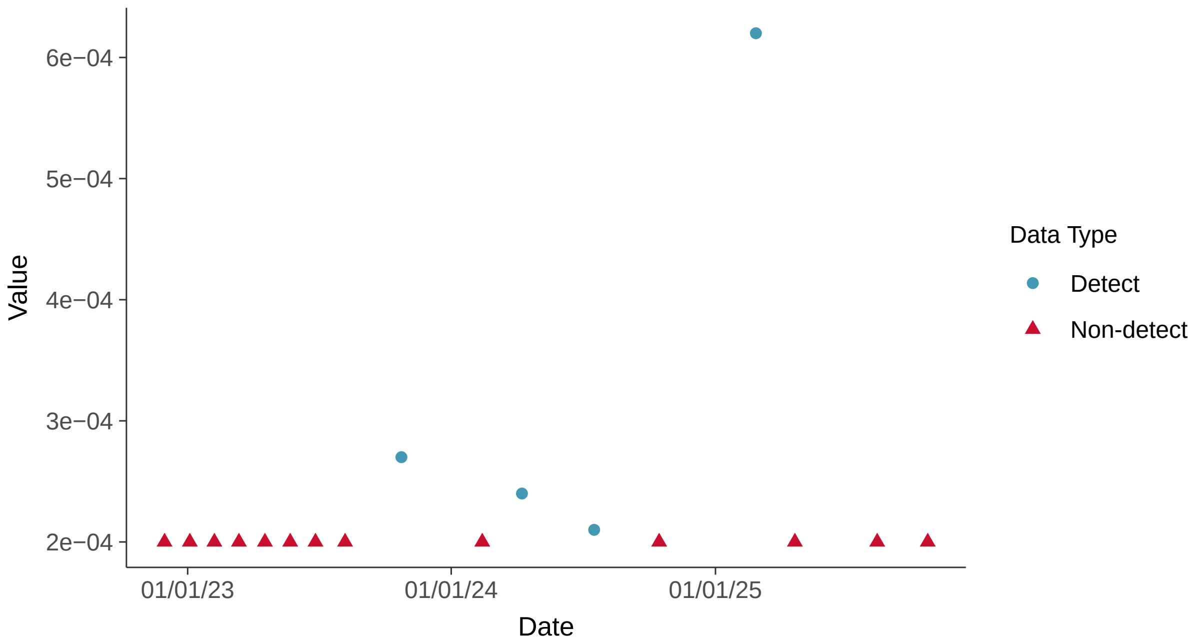

Boxplot by Season
Thallium, MW-07 (mg/L)
0.050
0.025
0.000
−0.025
Value
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season

Part 115: Copper, MW-07

ID: 17_1_5_111

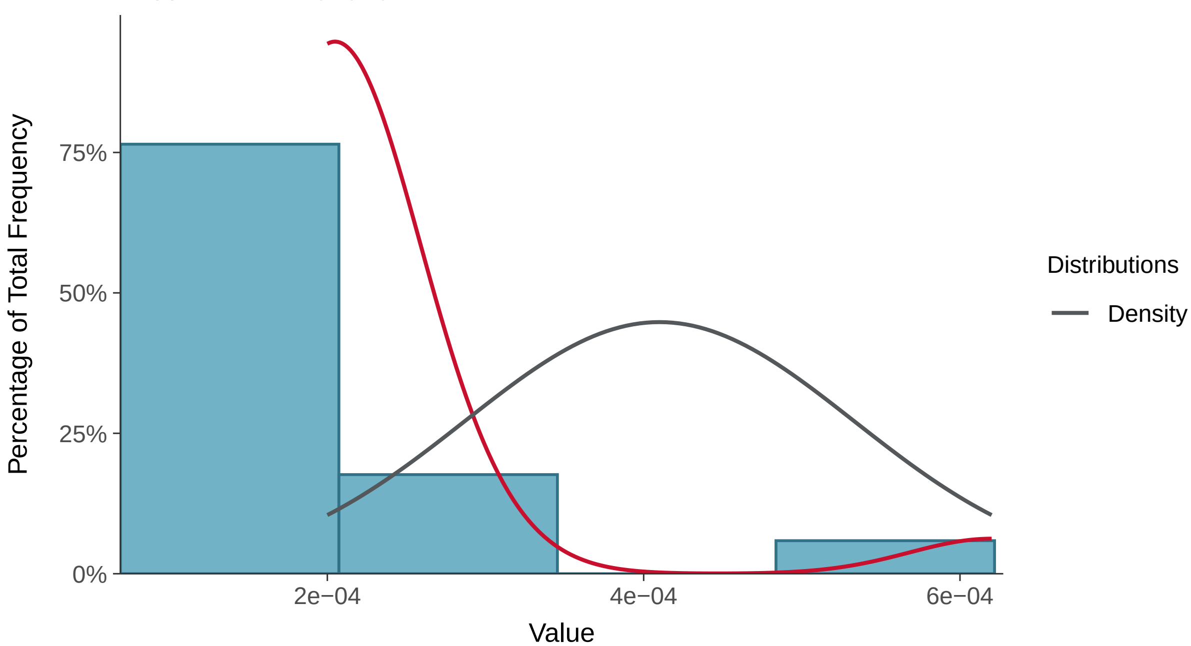
Scatter Plot

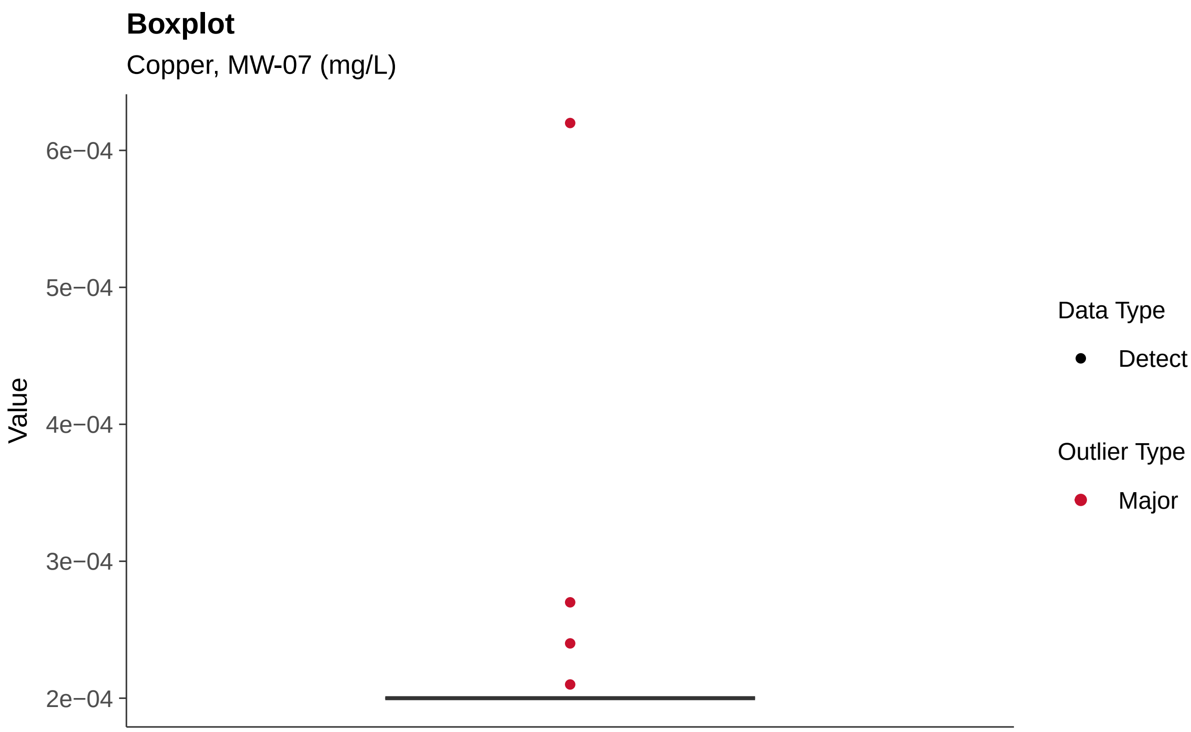
Copper, MW-07 (mg/L)

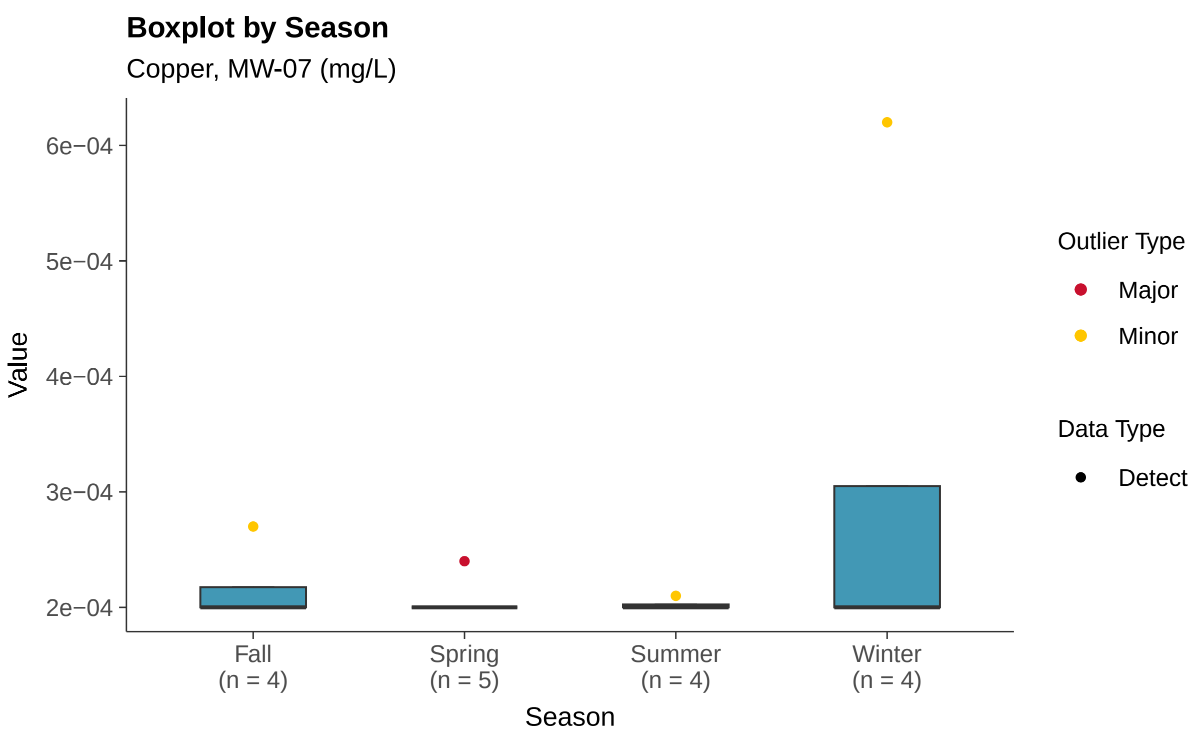


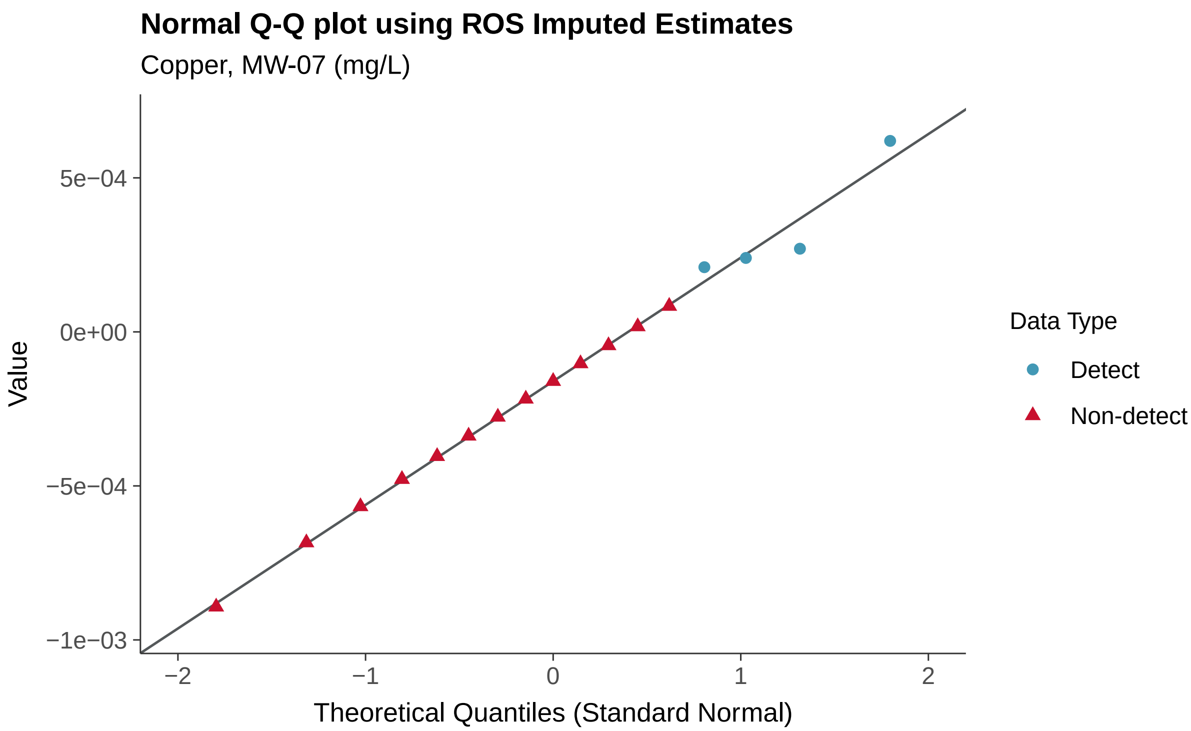
Histogram

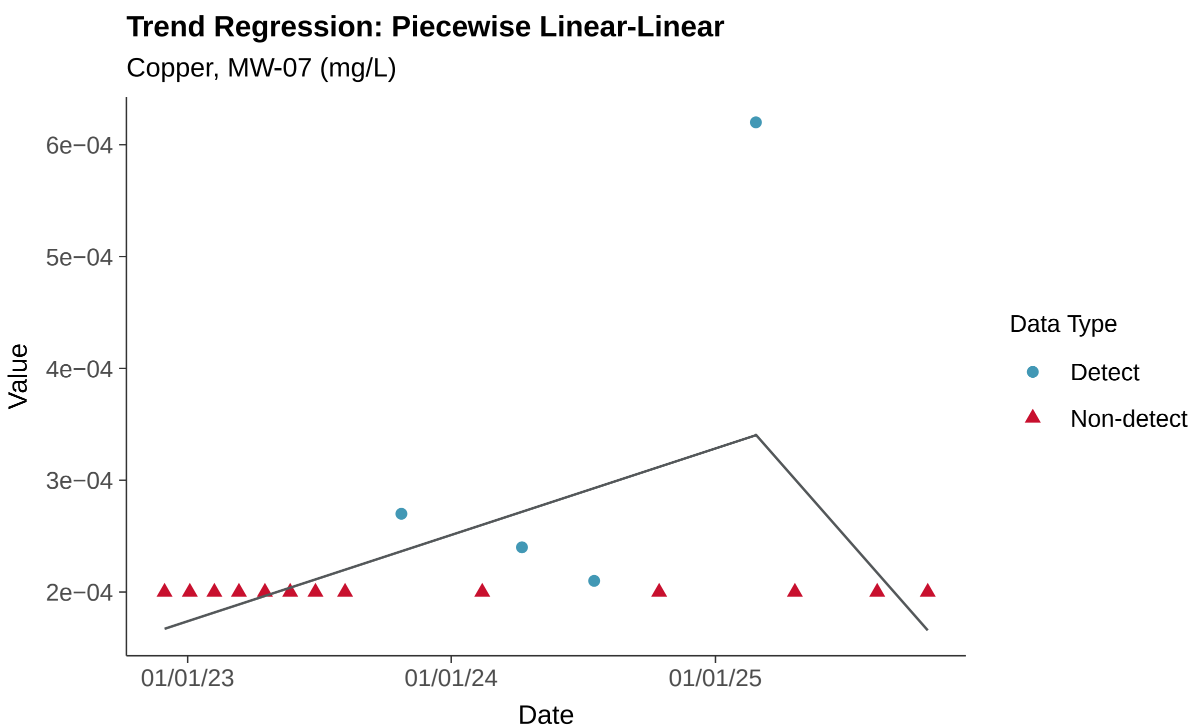
Copper, MW-07 (mg/L)




Boxplot
Copper, MW-07 (mg/L)
Value
6e−04
5e−04
4e−04
3e−04
2e−04
Data Type
Detect
Outlier Type
Major

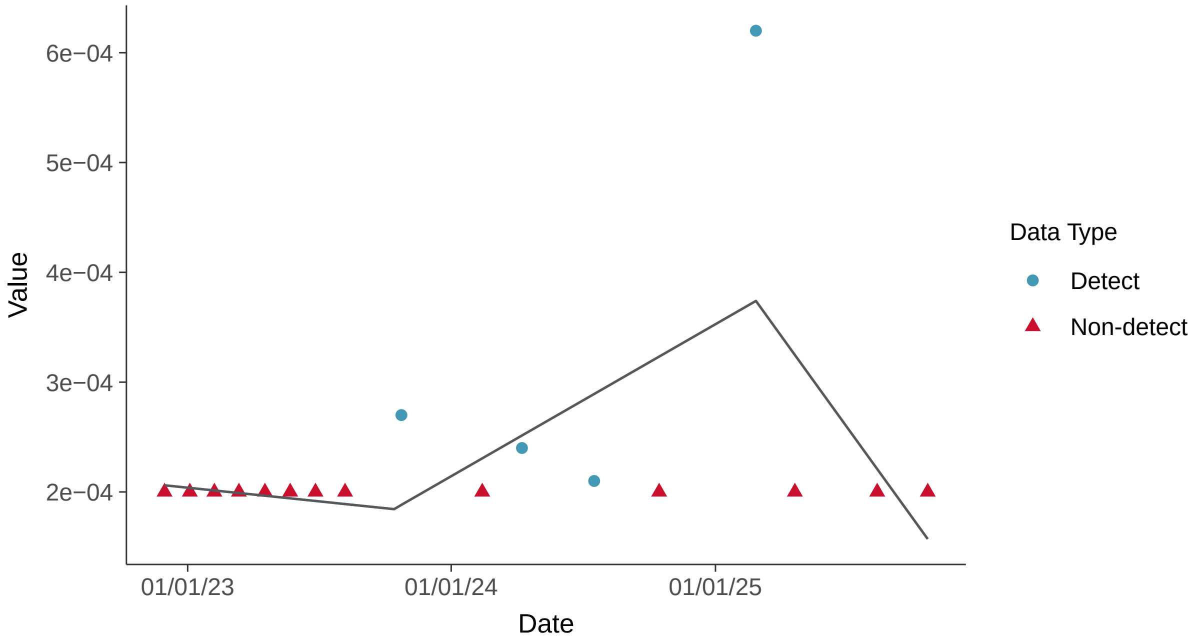

Boxplot by Season
Copper, MW-07 (mg/L)
Value
6e−04
5e−04
4e−04
3e−04
2e−04
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Major
Minor
Data Type
Detect


Normal Q-Q plot using ROS Imputed Estimates
Copper, MW-07 (mg/L)
Value
5e−04
0e+00
−5e−04
−1e−03
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Copper, MW-07 (mg/L)
Value
6e−04
5e−04
4e−04
3e−04
2e−04
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

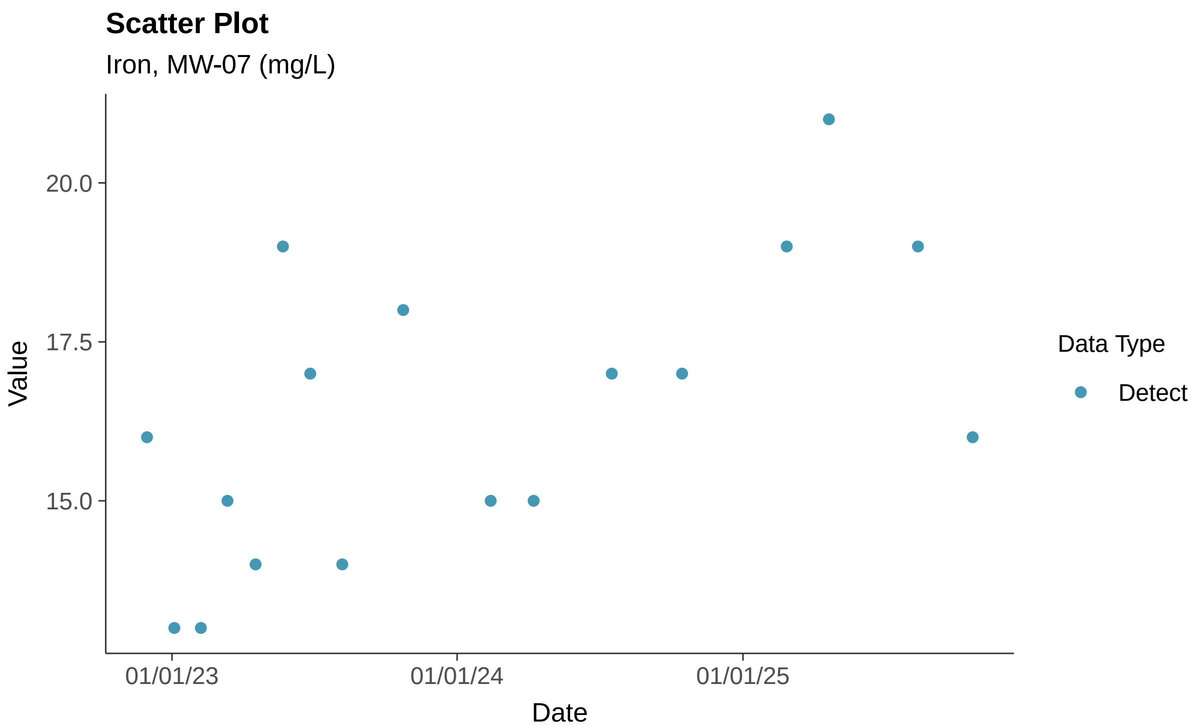
Trend Regression: Piecewise Linear-Linear-Linear

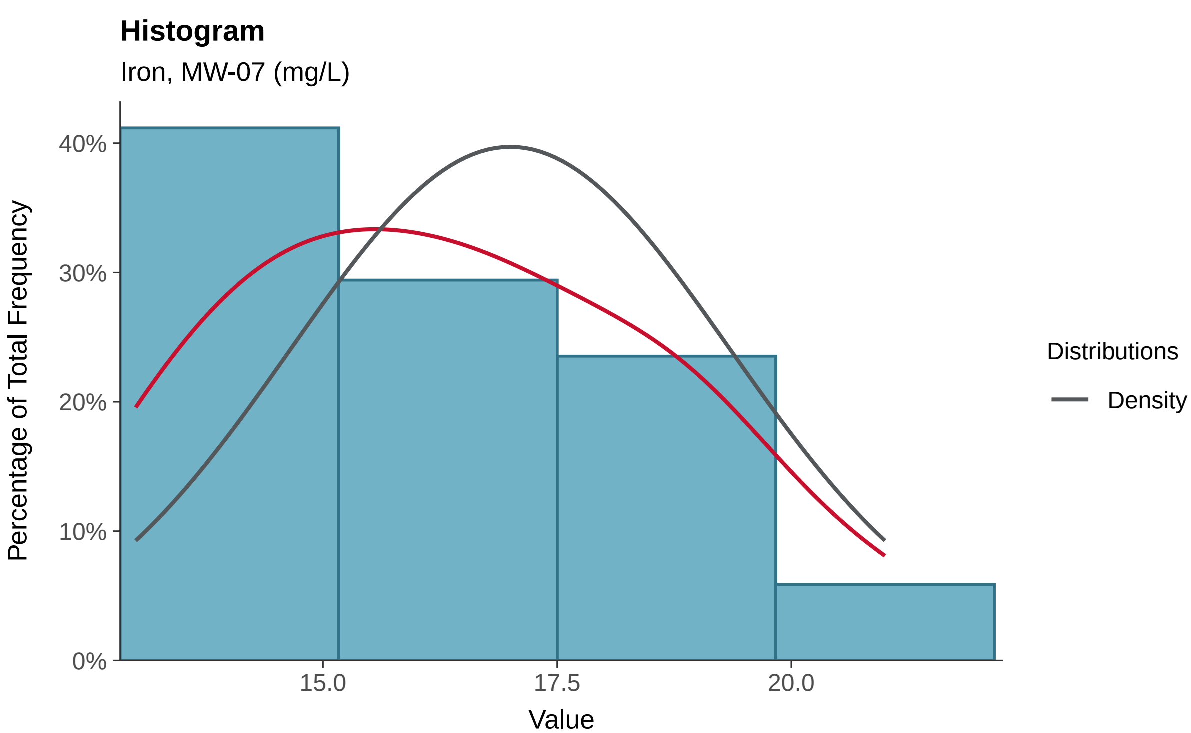
Copper, MW-07 (mg/L)



Part 115: Iron, MW-07

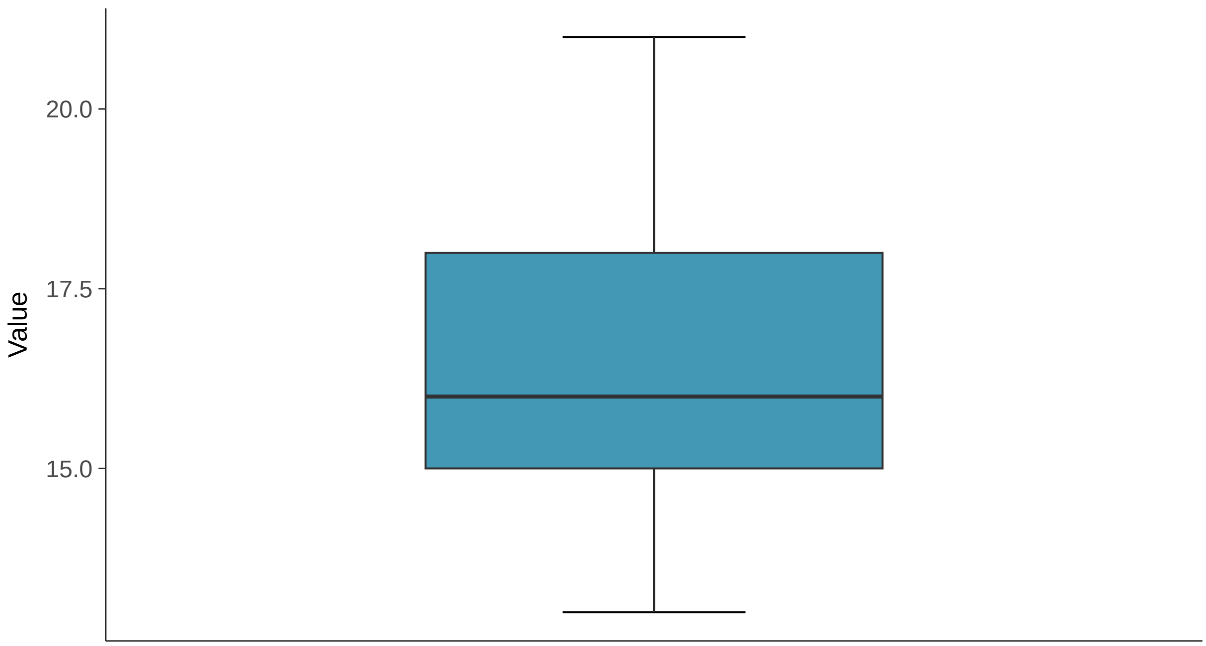
ID: 17_1_5_114





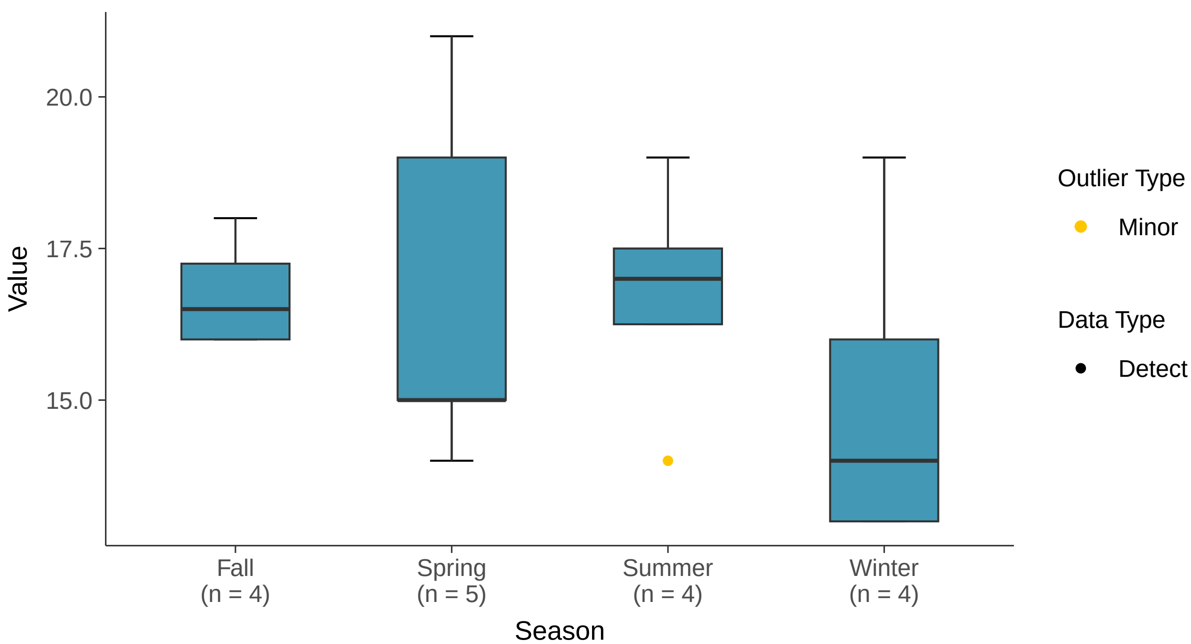
Boxplot

Iron, MW-07 (mg/L)



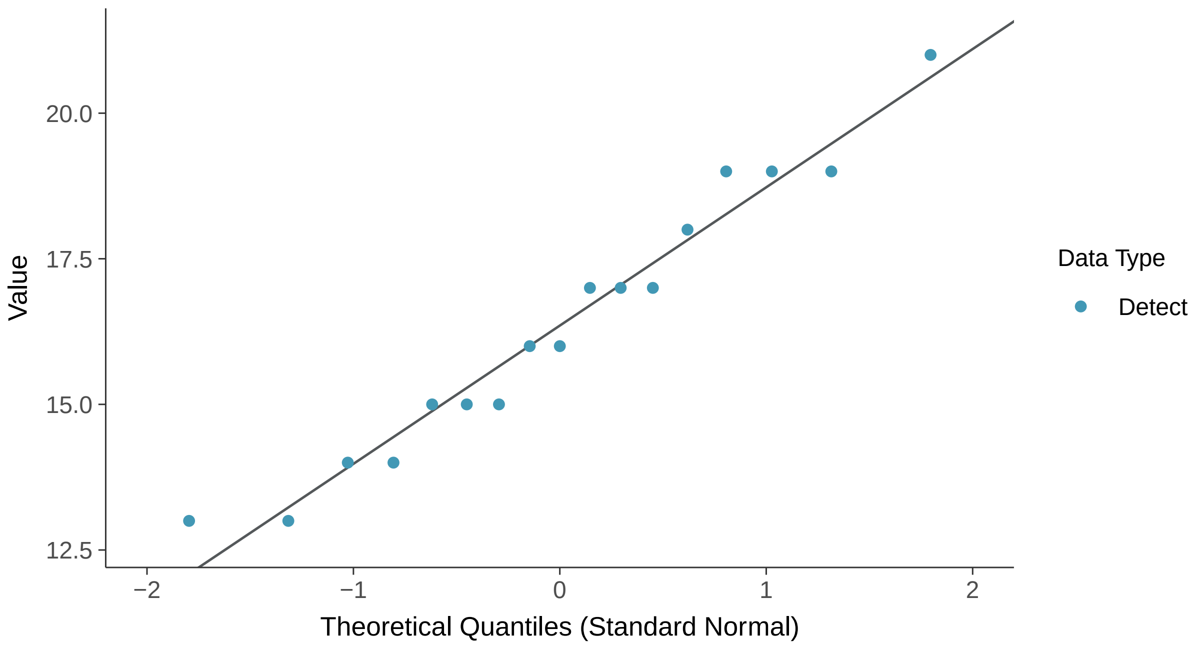
Boxplot by Season

Iron, MW-07 (mg/L)



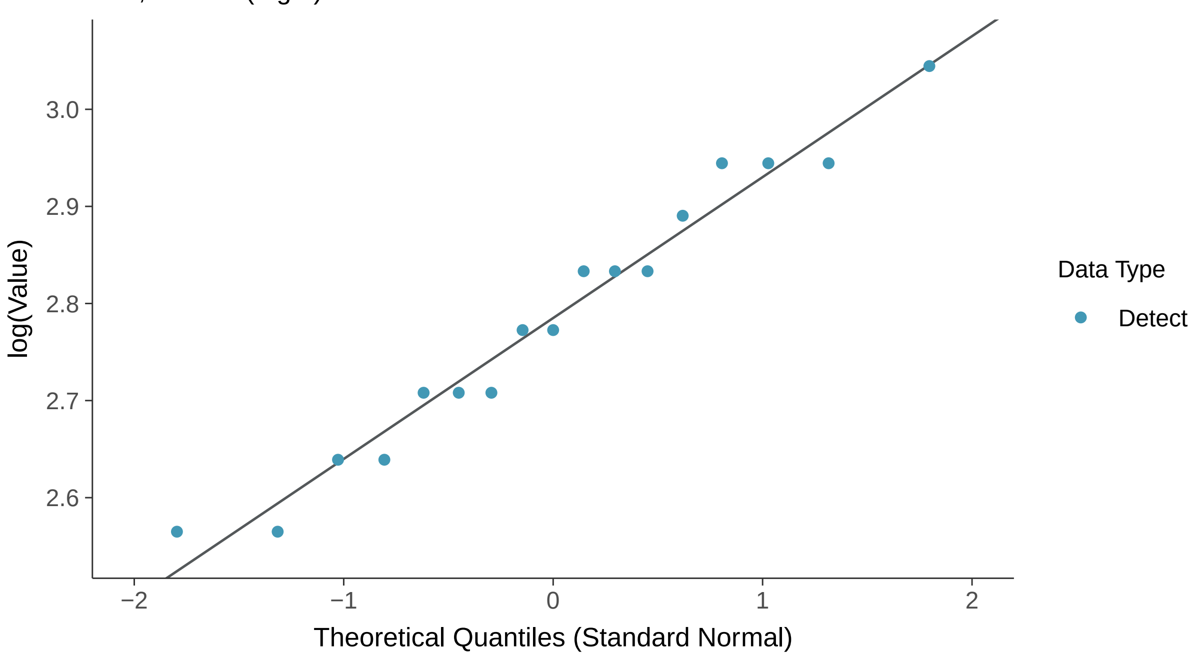
Normal Q-Q plot

Iron, MW-07 (mg/L)



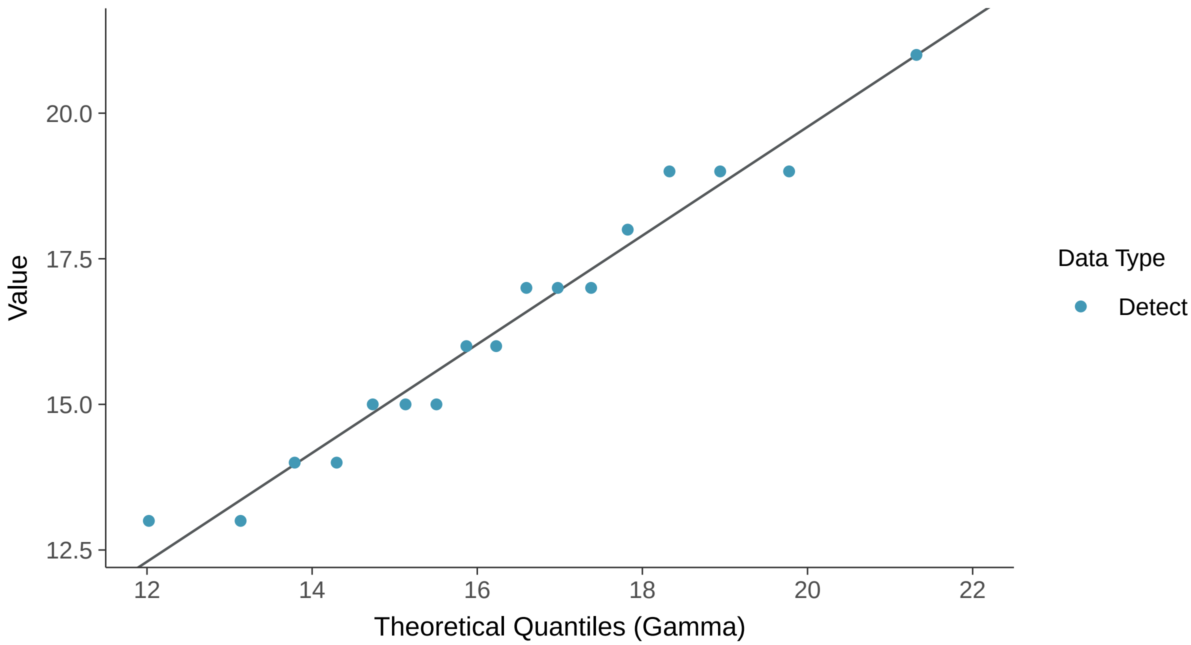
Lognormal Q-Q plot

Iron, MW-07 (mg/L)



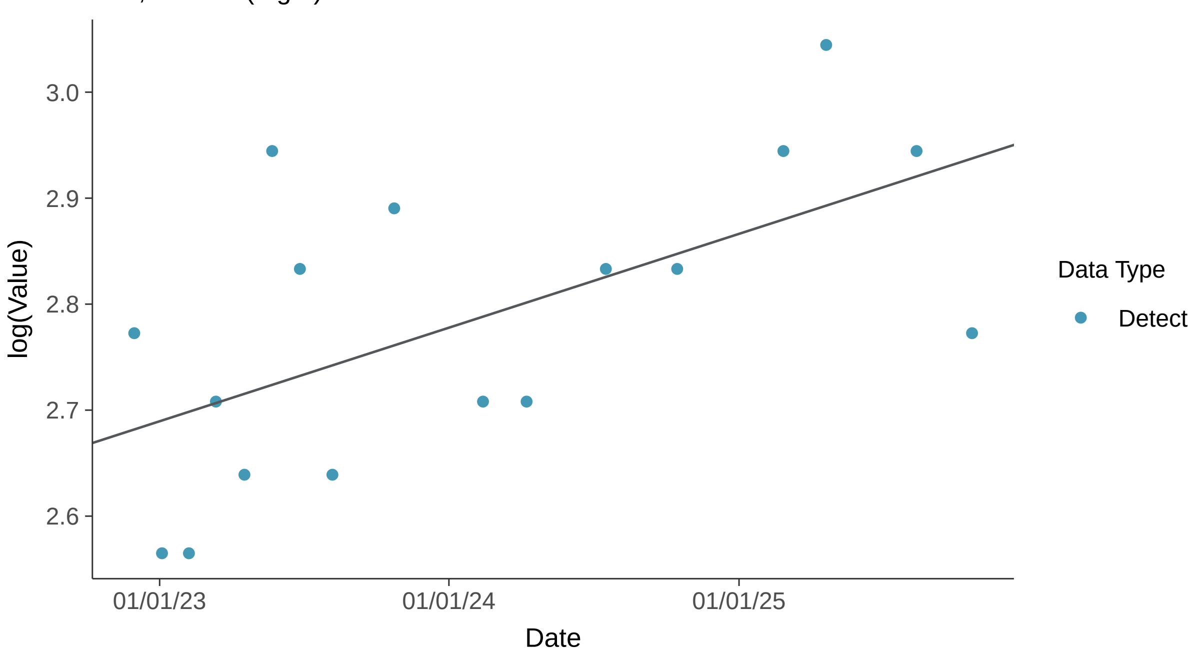
Gamma Q-Q plot

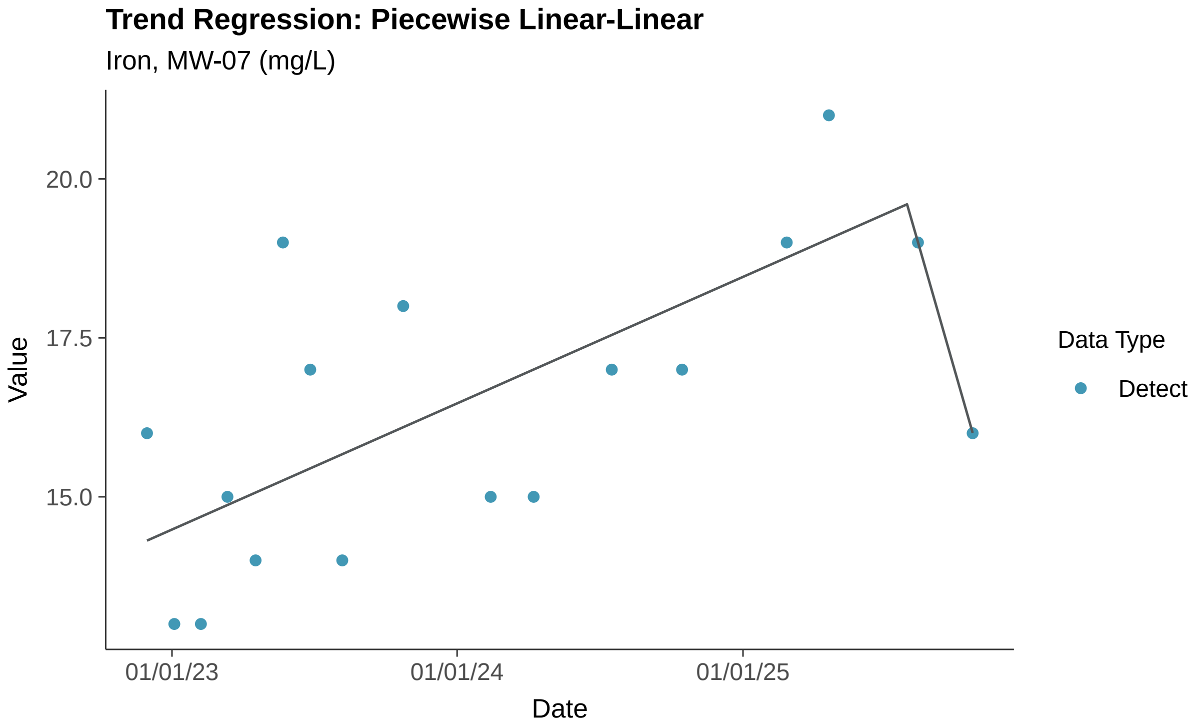
Iron, MW-07 (mg/L)

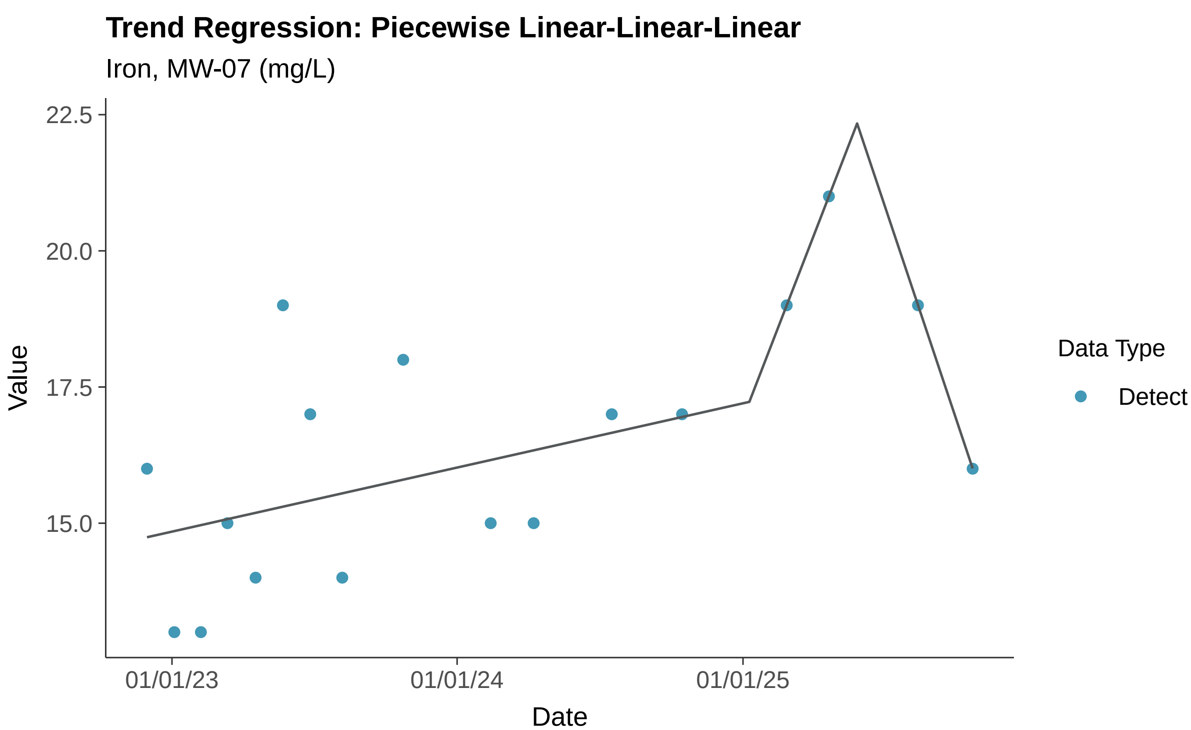


Trend Regression: Lognormal MLE

Iron, MW-07 (mg/L)

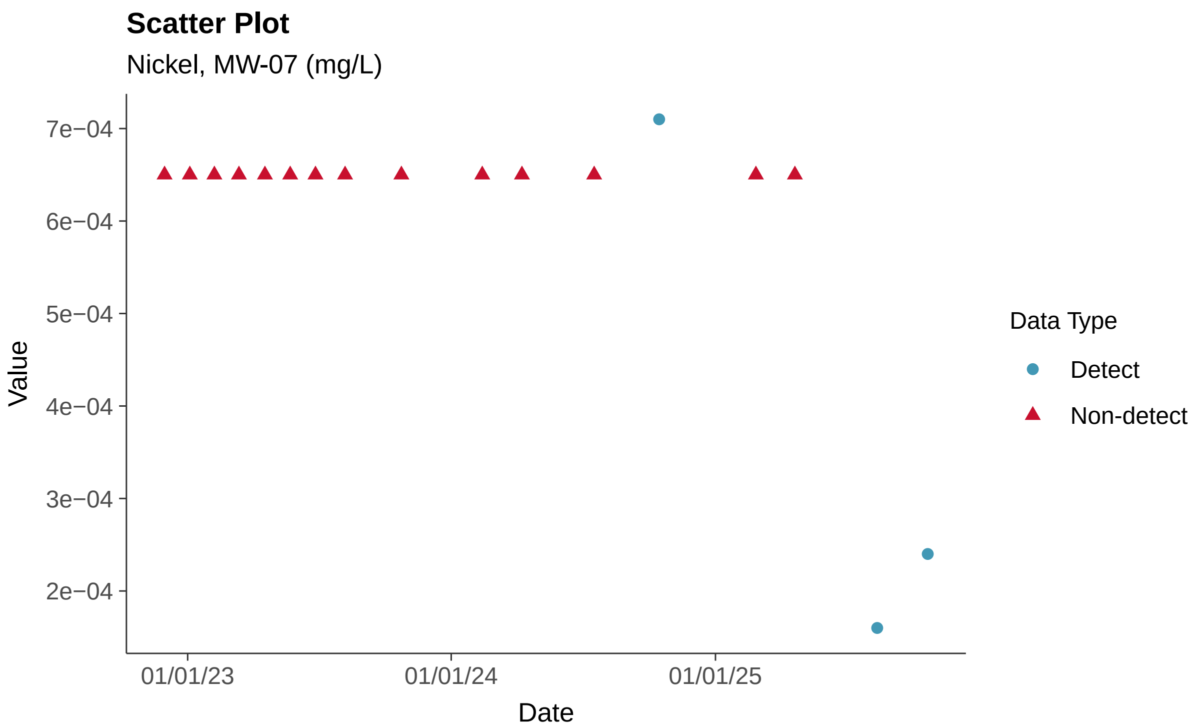


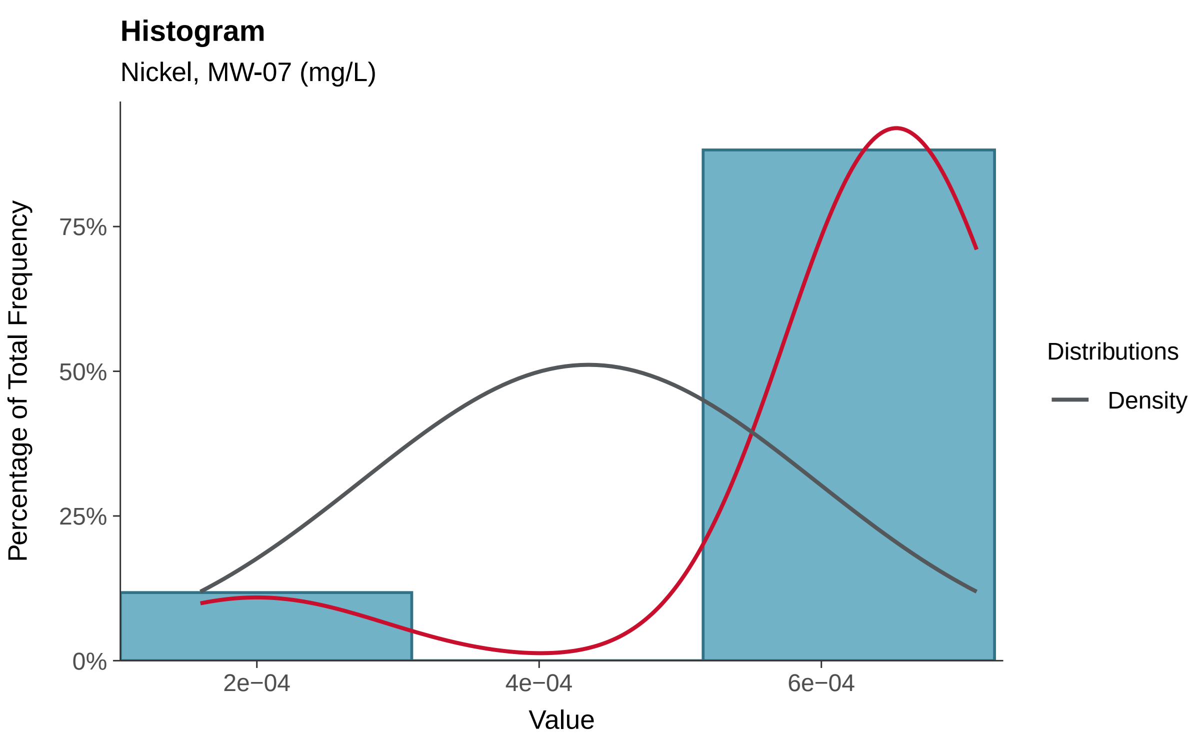

Trend Regression: Piecewise Linear-Linear
Iron, MW-07 (mg/L)
Value
20.0
17.5
15.0
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

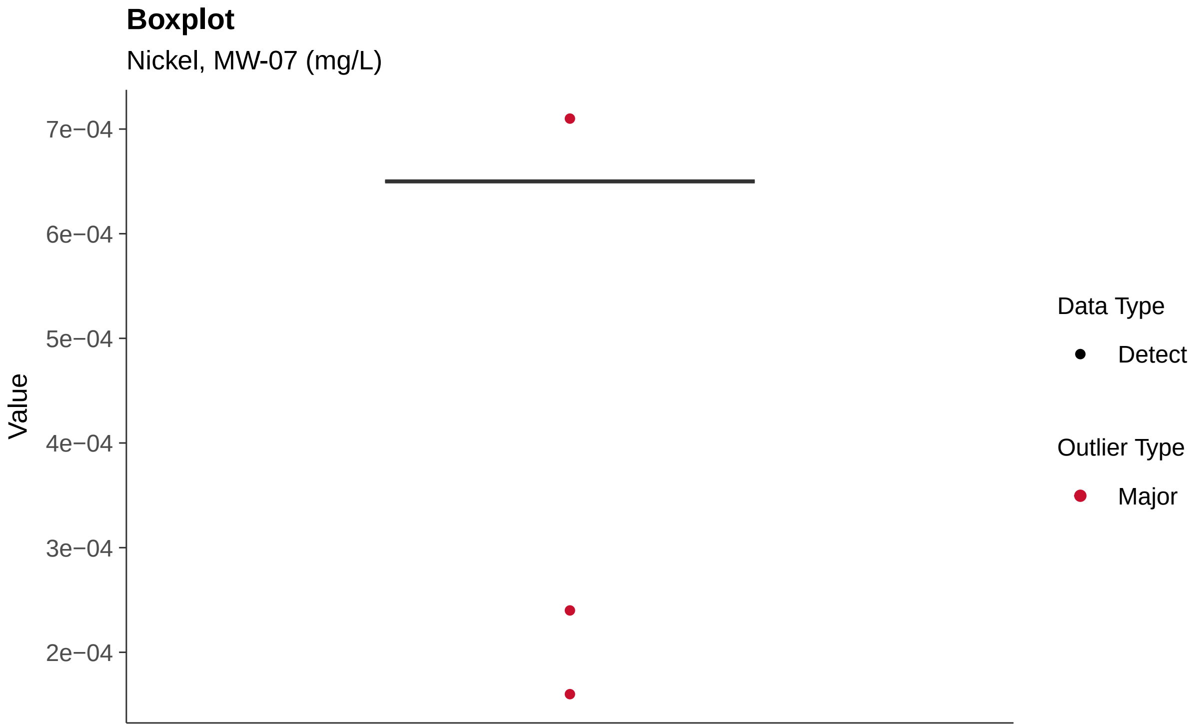

Trend Regression: Piecewise Linear-Linear-Linear
Iron, MW-07 (mg/L)
Value
22.5
20.0
17.5
15.0
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

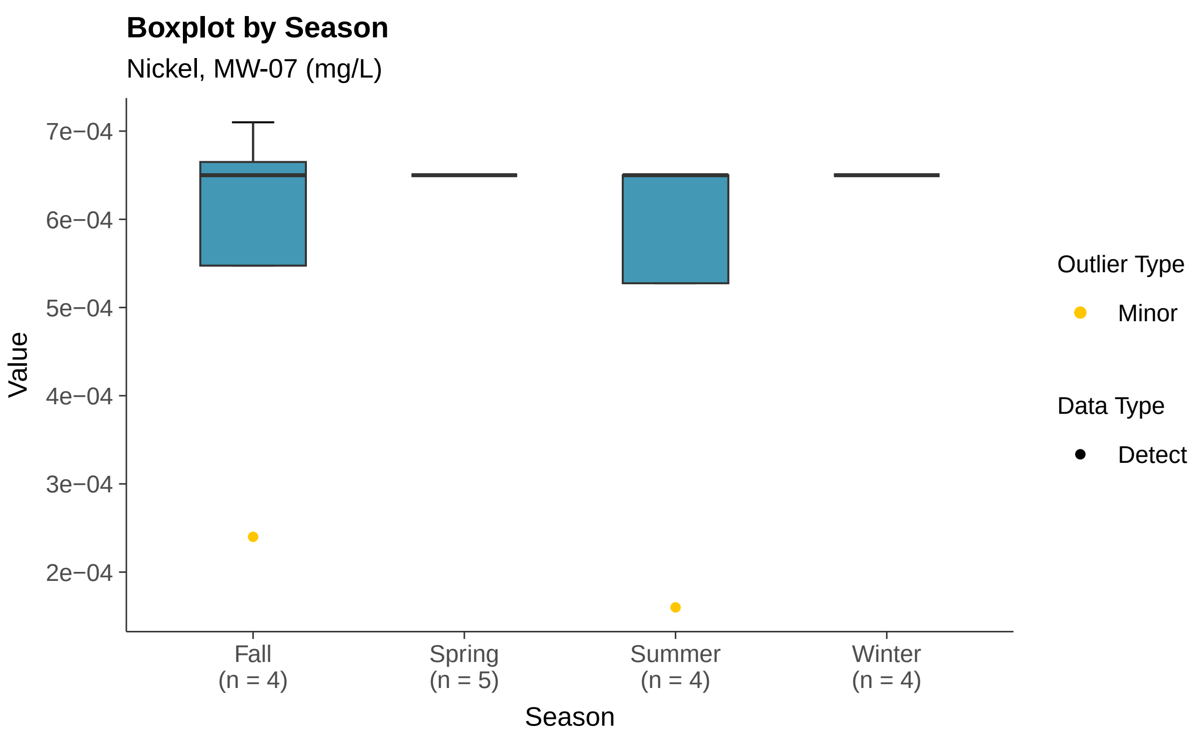
Part 115: Nickel, MW-07

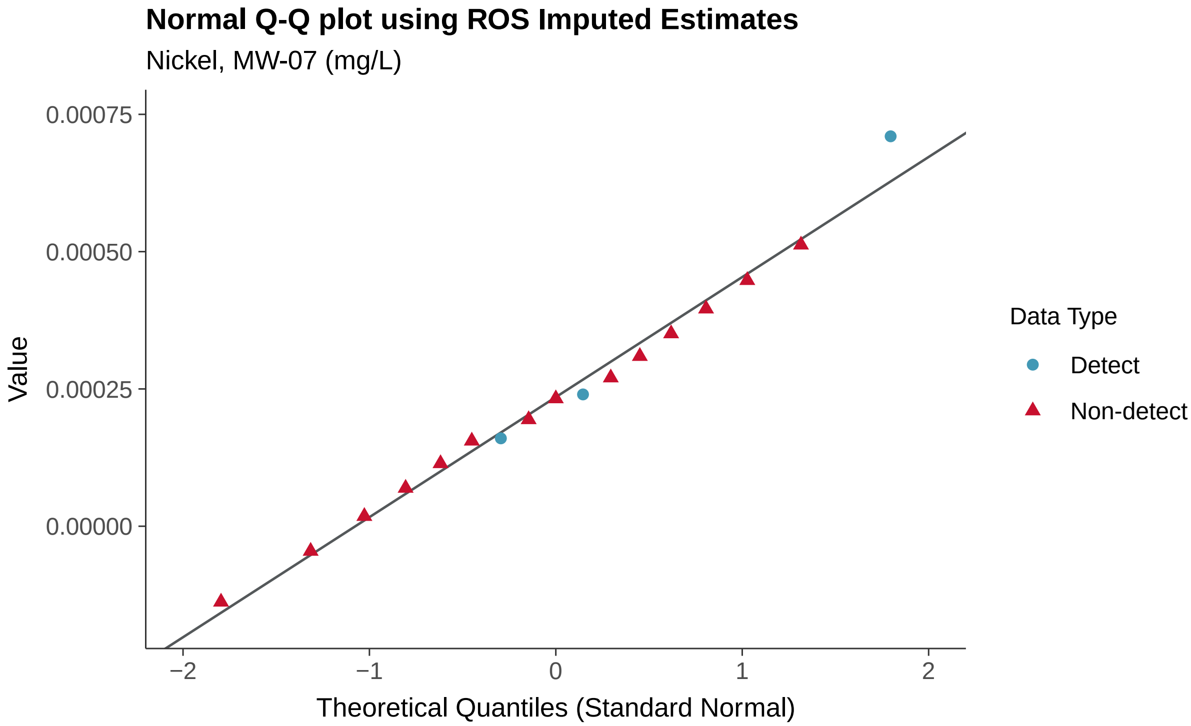
ID: 17_1_5_119

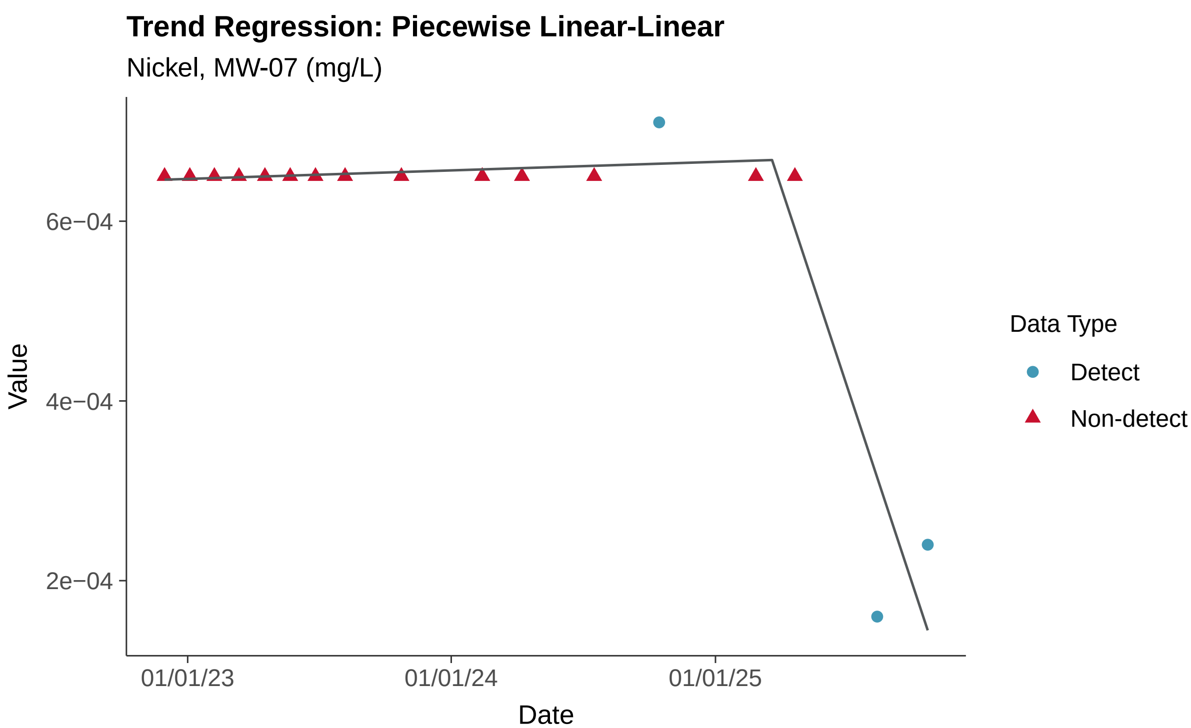





Boxplot
Nickel, MW-07 (mg/L)
Value
7e−04
6e−04
5e−04
4e−04
3e−04
2e−04
Data Type
Detect
Outlier Type
Major

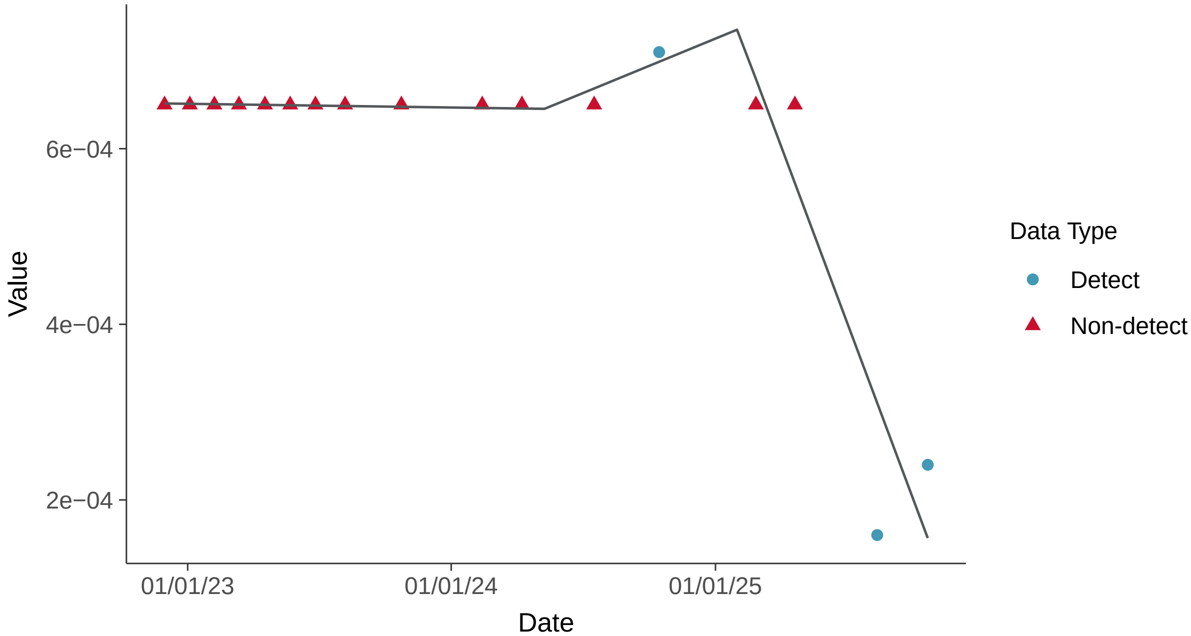

Boxplot by Season
Nickel, MW-07 (mg/L)
Value
7e−04
6e−04
5e−04
4e−04
3e−04
2e−04
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Minor
Data Type
Detect


Normal Q-Q plot using ROS Imputed Estimates
Nickel, MW-07 (mg/L)
Value
0.00075
0.00050
0.00025
0.00000
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Nickel, MW-07 (mg/L)
Value
6e−04
4e−04
2e−04
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

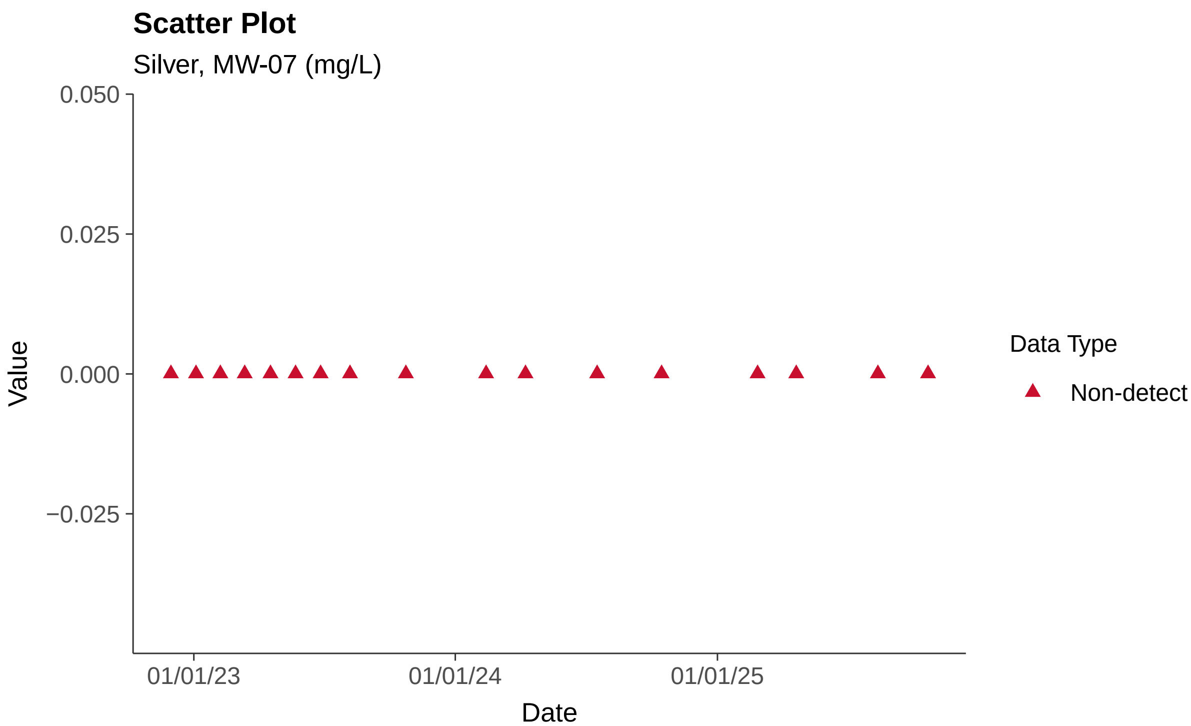
Trend Regression: Piecewise Linear-Linear-Linear

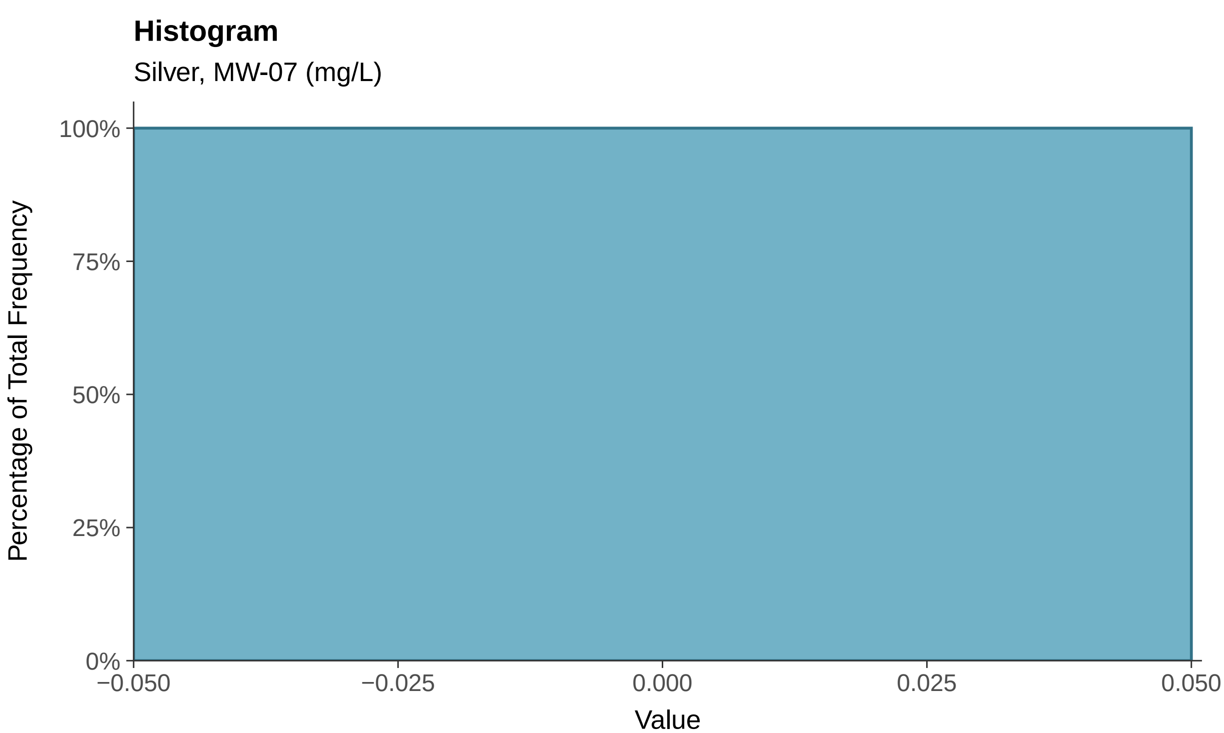
Nickel, MW-07 (mg/L)



Part 115: Silver, MW-07

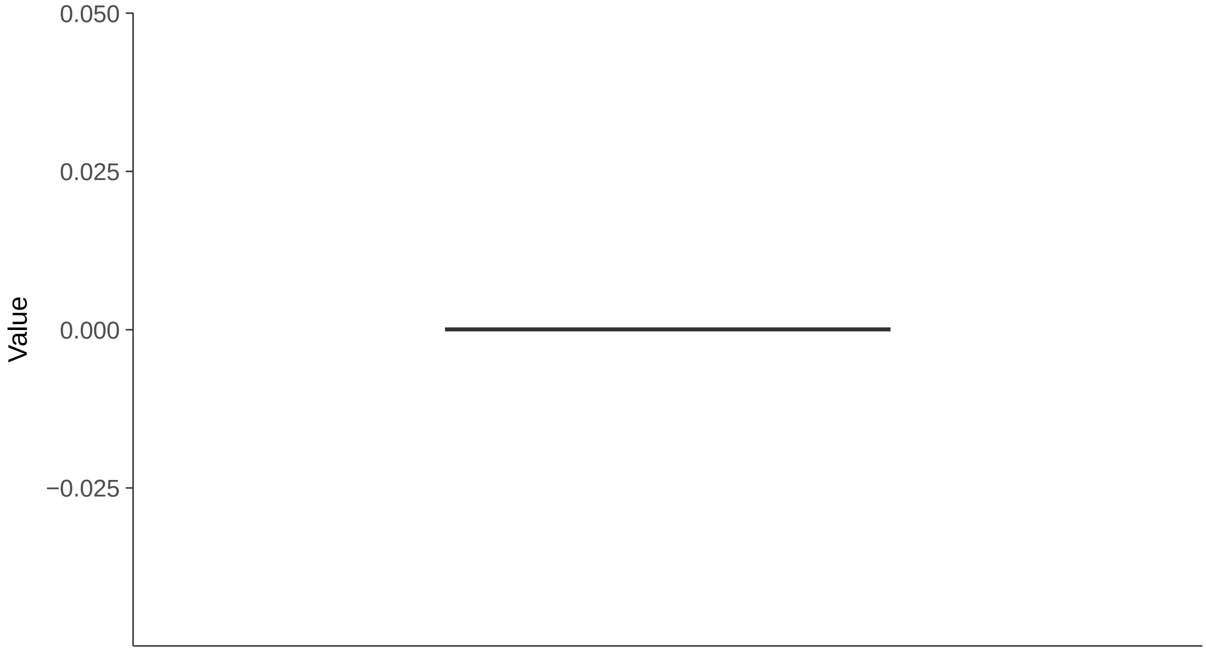
ID: 17_1_5_123





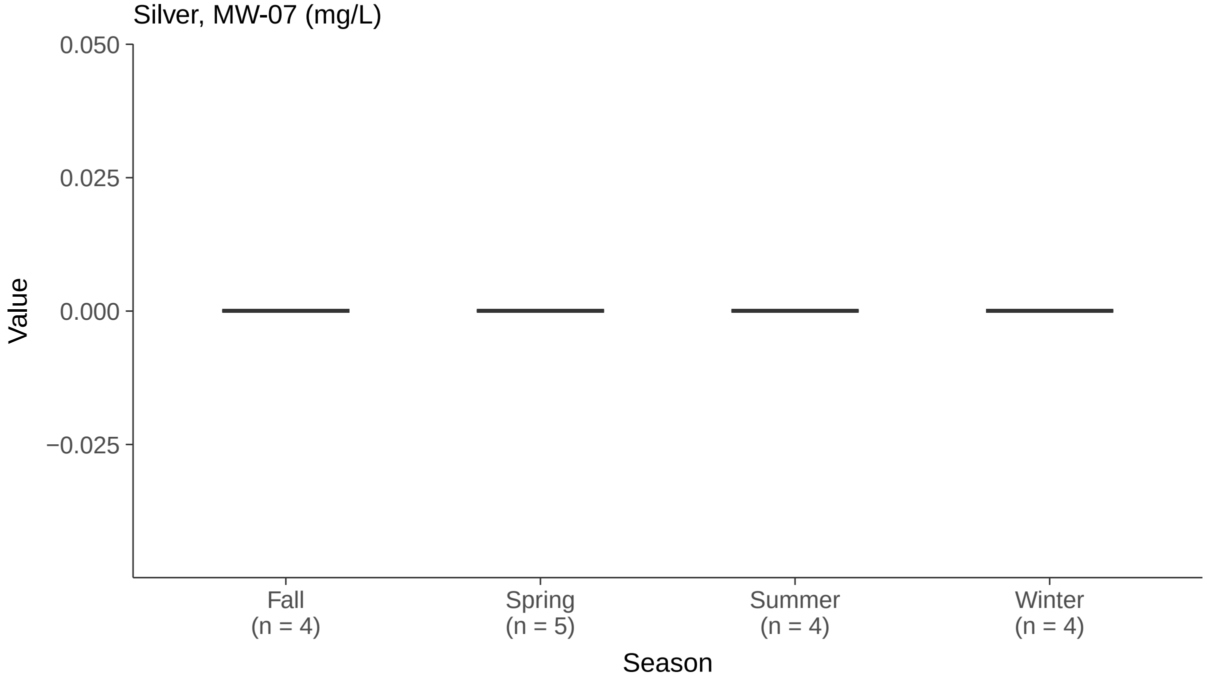
Boxplot

Silver, MW-07 (mg/L)



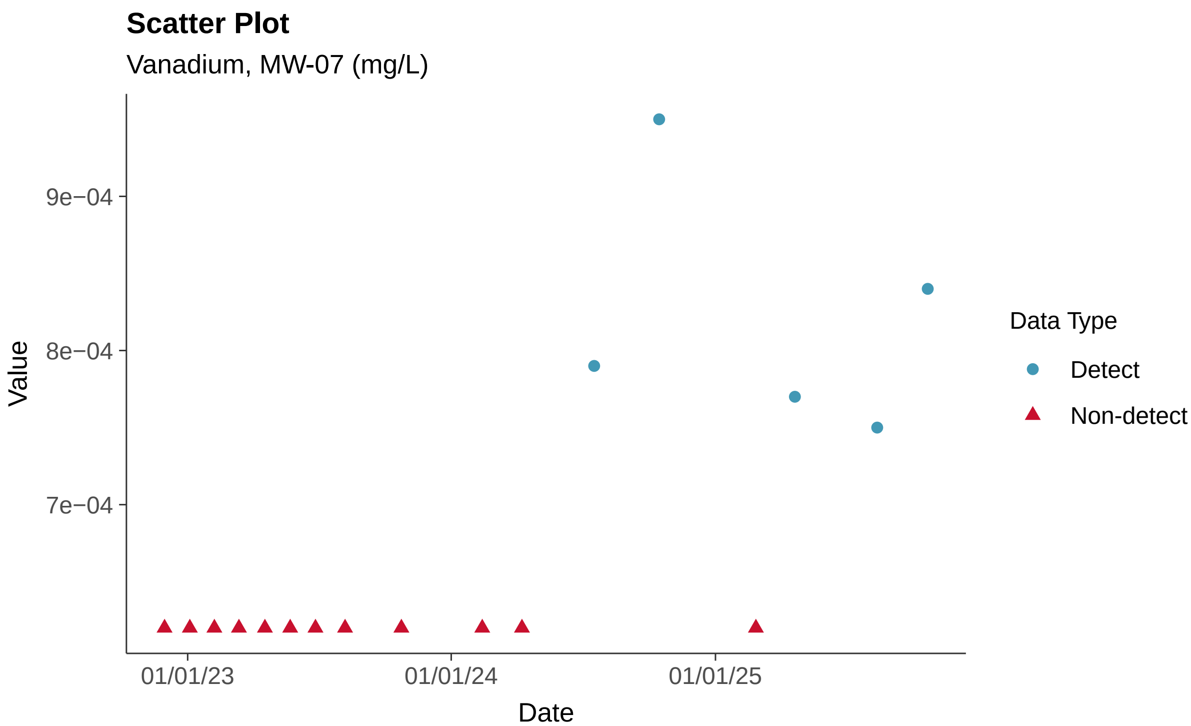
Boxplot by Season

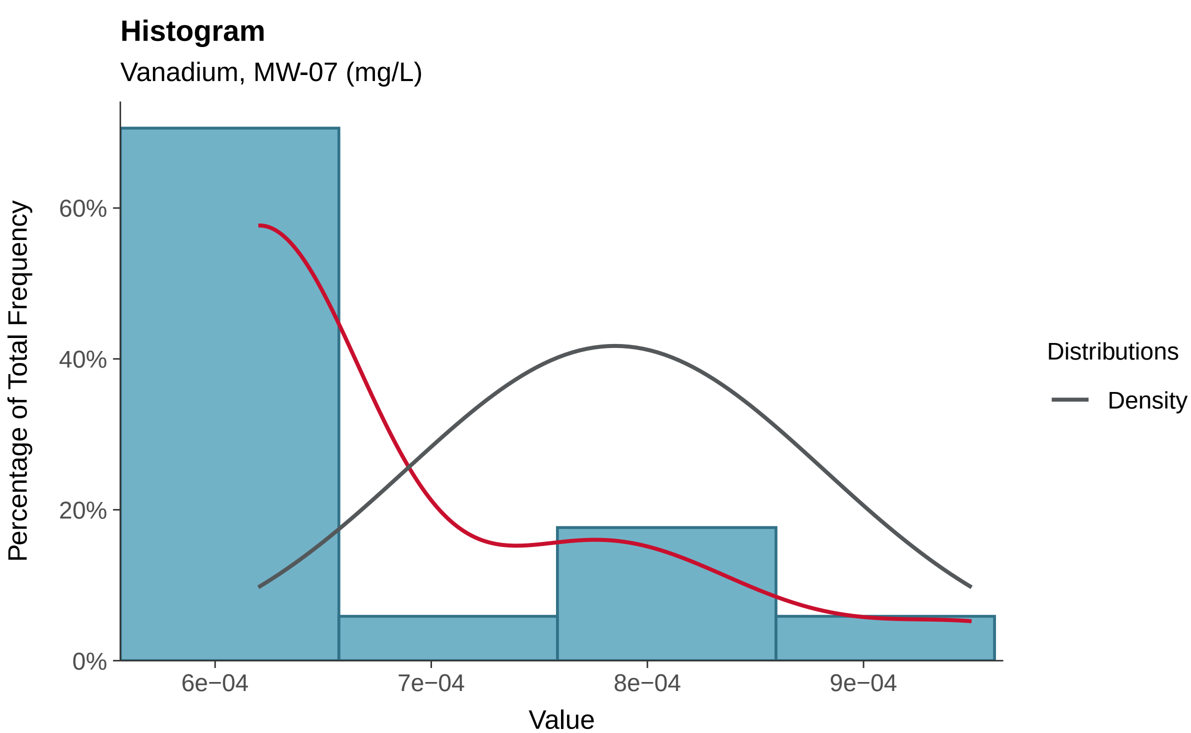
Silver, MW-07 (mg/L)



Part 115: Vanadium, MW-07

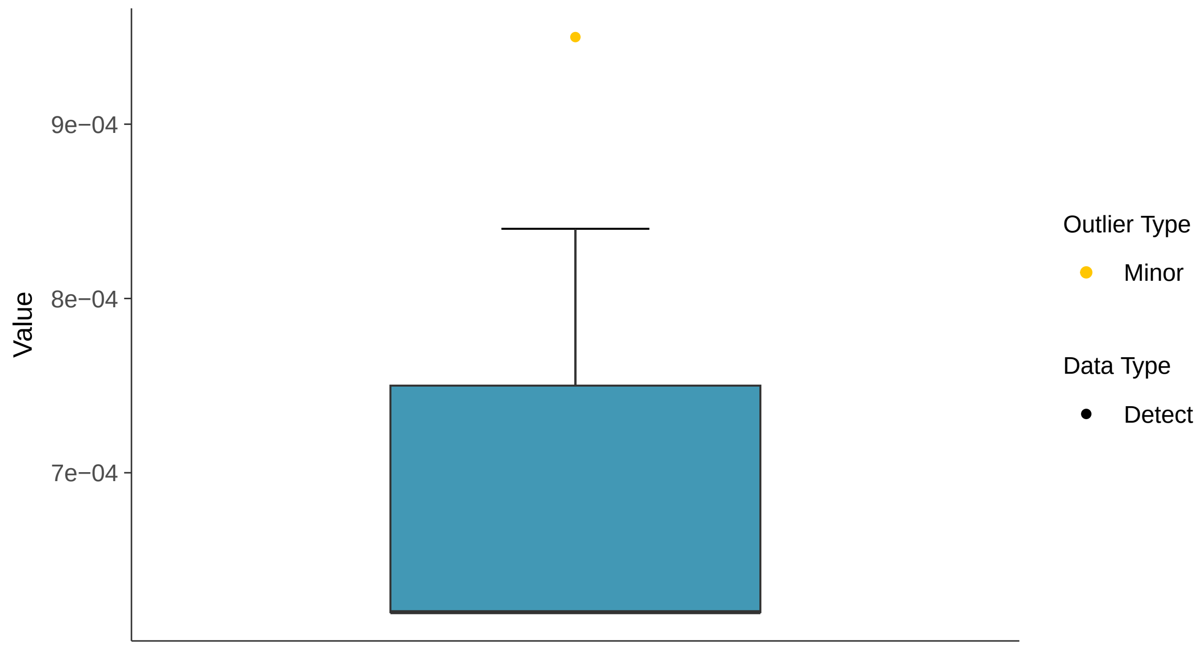
ID: 17_1_5_128





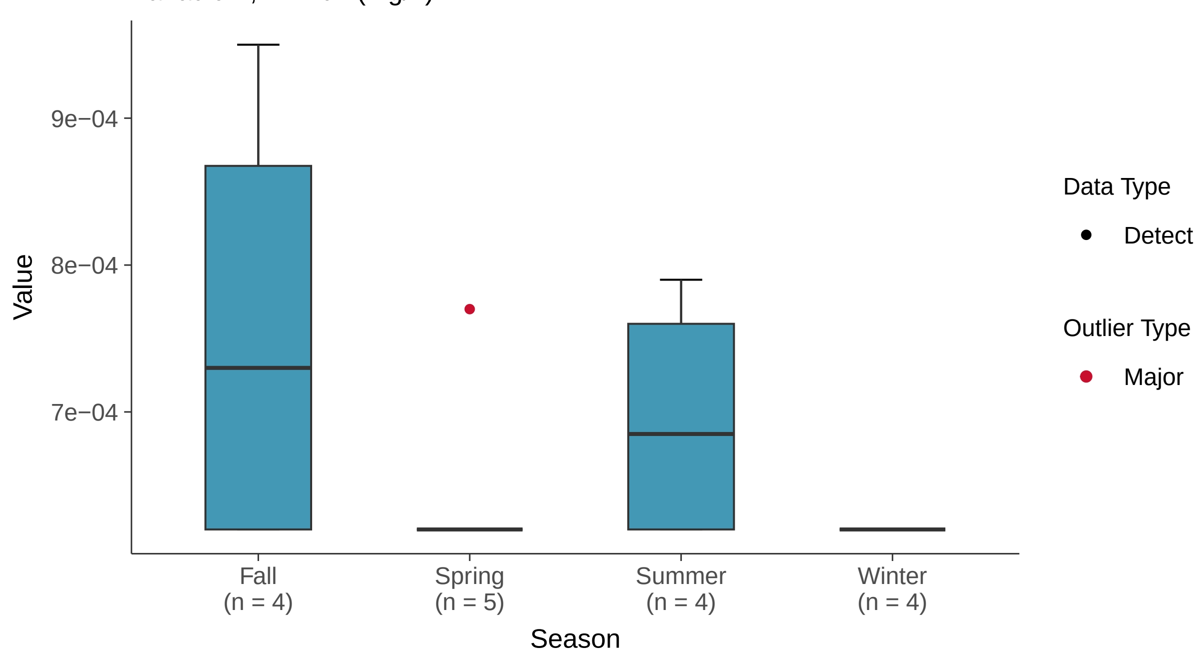
Boxplot

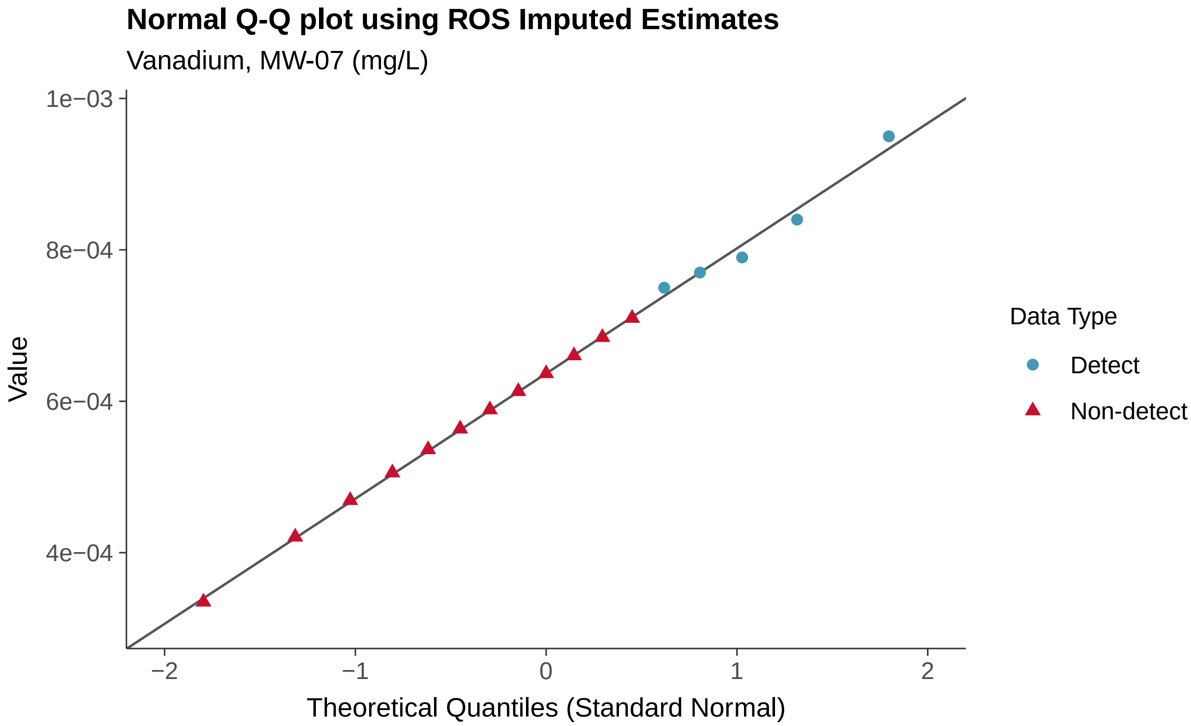
Vanadium, MW-07 (mg/L)

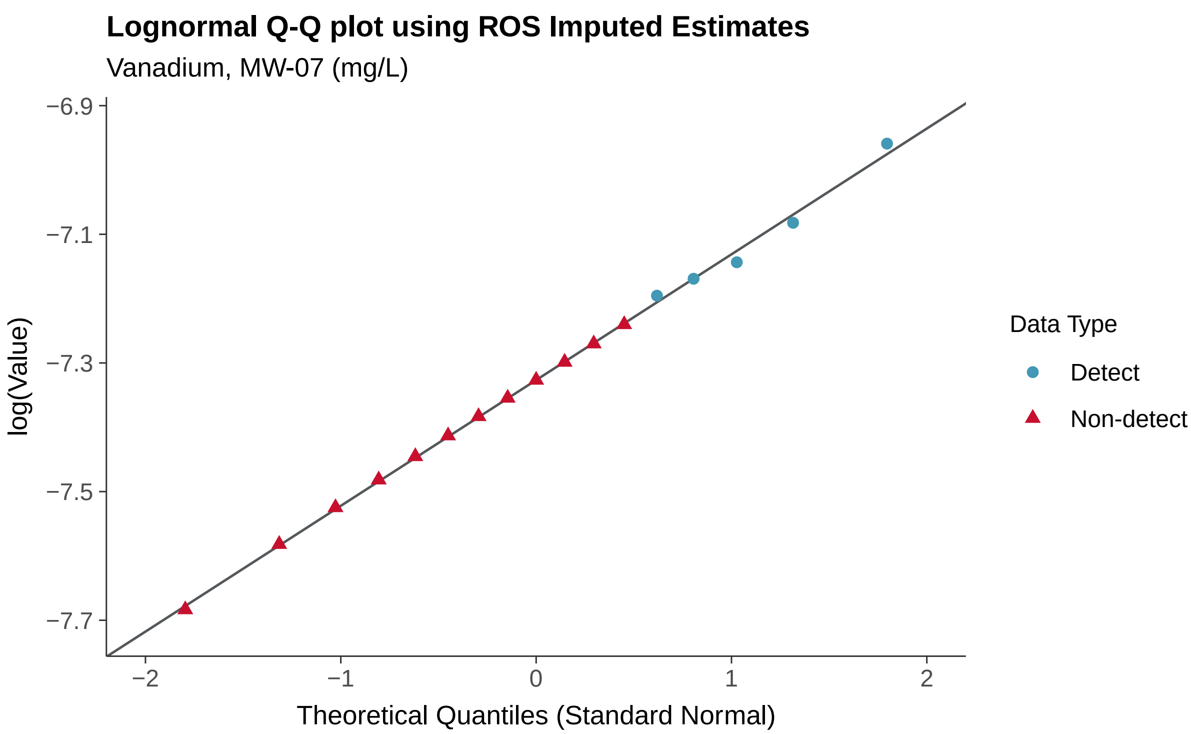


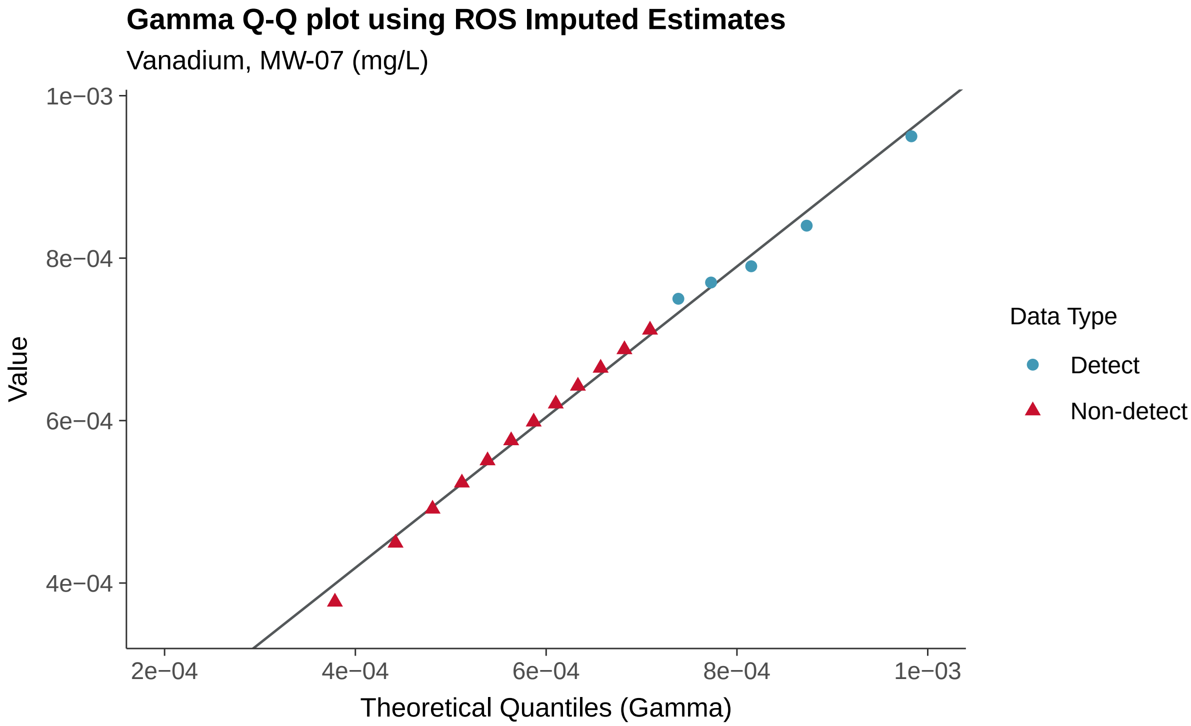
Boxplot by Season

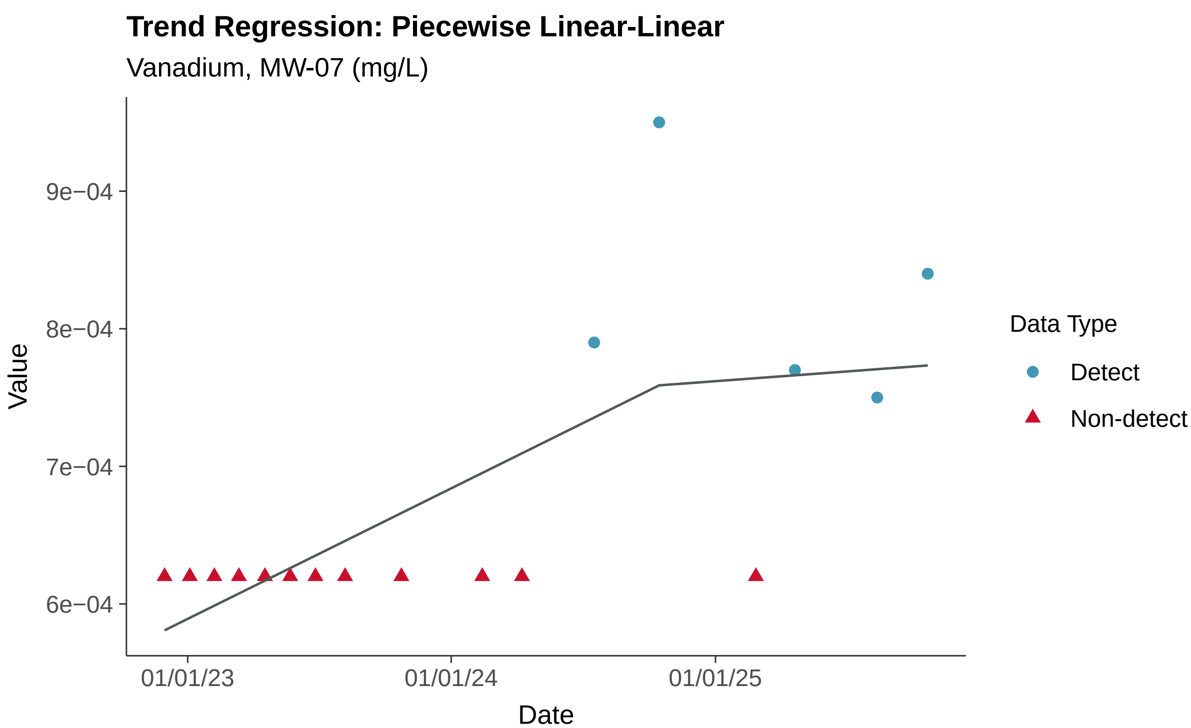
Vanadium, MW-07 (mg/L)

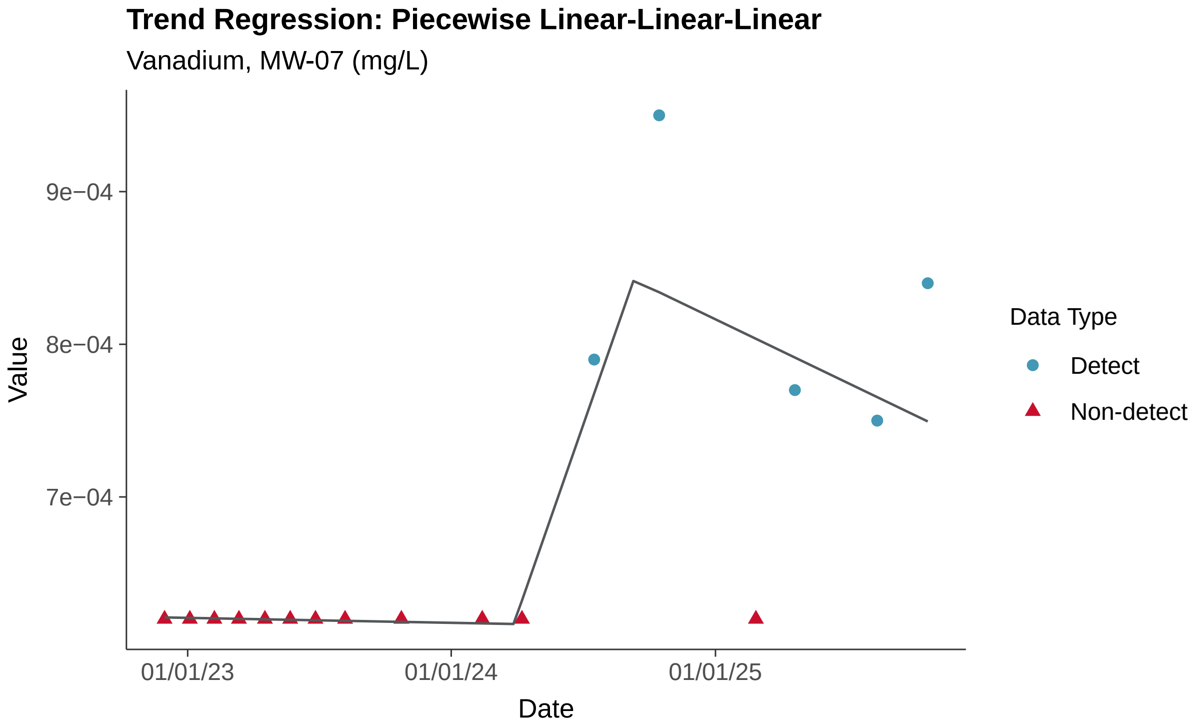



Normal Q-Q plot using ROS Imputed Estimates
Vanadium, MW-07 (mg/L)
Value
1e−03
8e−04
6e−04
4e−04
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Lognormal Q-Q plot using ROS Imputed Estimates
Vanadium, MW-07 (mg/L)
log(Value)
−6.9
−7.1
−7.3
−7.5
−7.7
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Gamma Q-Q plot using ROS Imputed Estimates
Vanadium, MW-07 (mg/L)
Value
1e−03
8e−04
6e−04
4e−04
2e−04
4e−04
6e−04
8e−04
1e−03
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Vanadium, MW-07 (mg/L)
Value
9e−04
8e−04
7e−04
6e−04
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

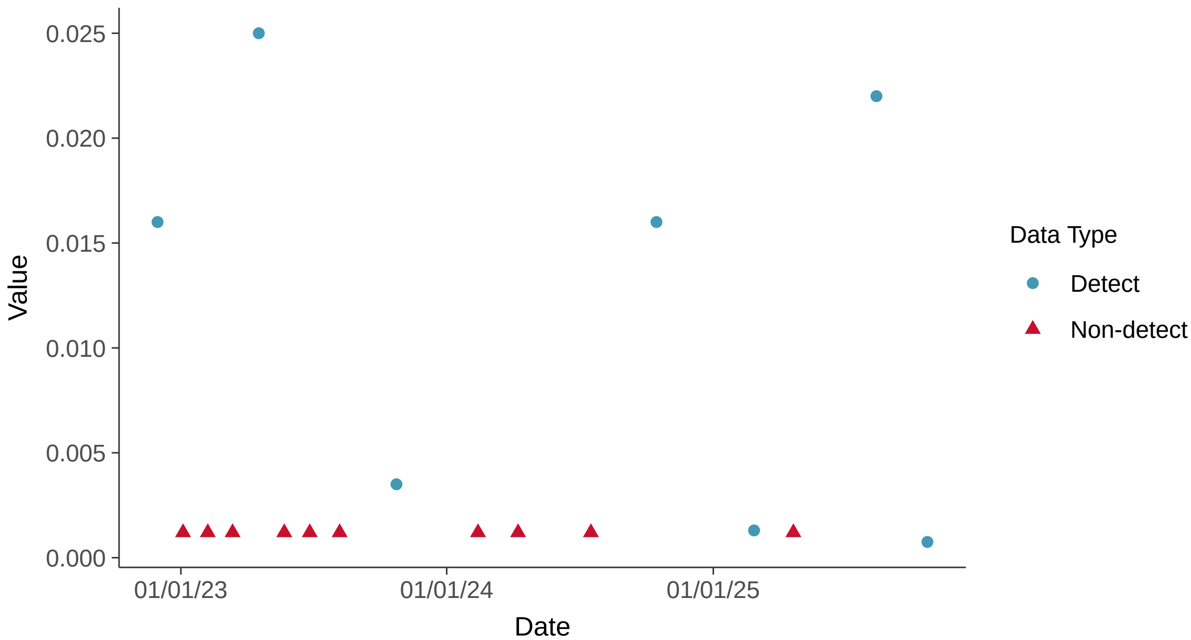

Trend Regression: Piecewise Linear-Linear-Linear
Vanadium, MW-07 (mg/L)
Value
9e−04
8e−04
7e−04
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Part 115: Zinc, MW-07

ID: 17_1_5_129

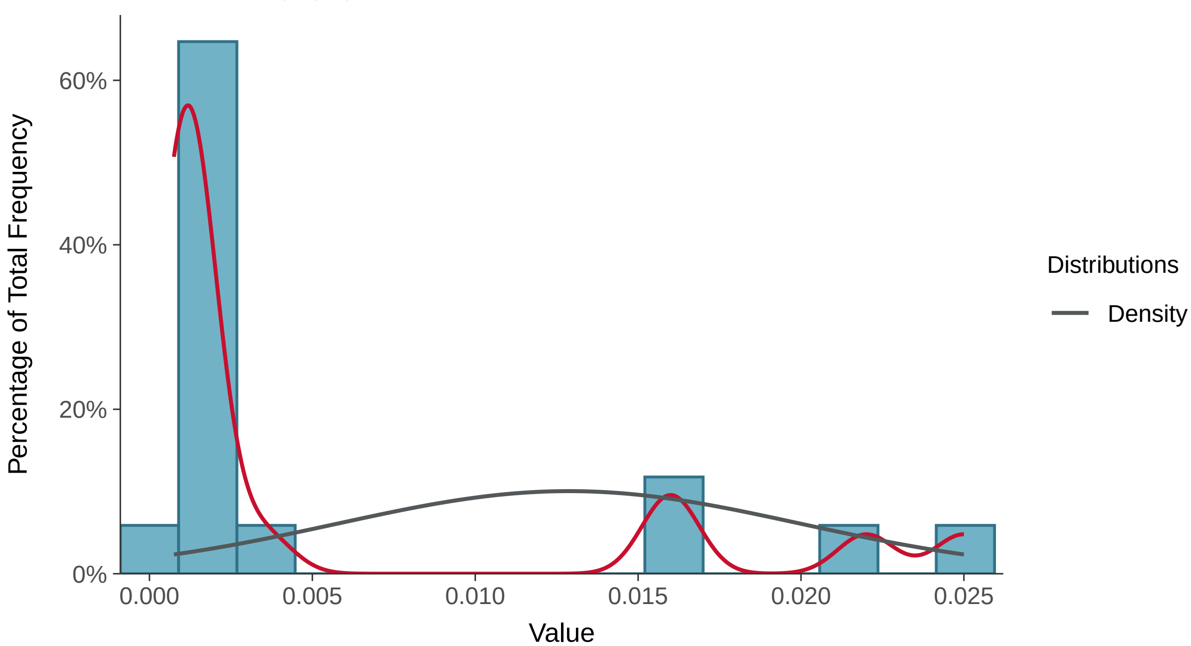
Scatter Plot

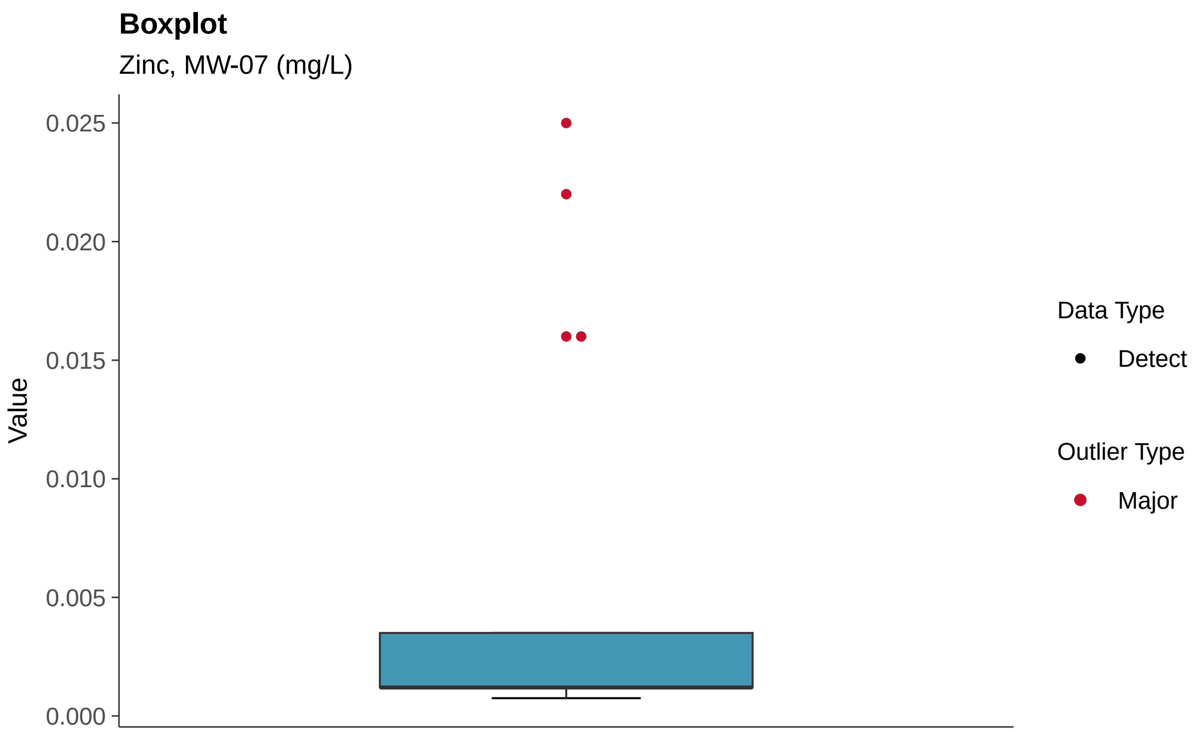
Zinc, MW-07 (mg/L)

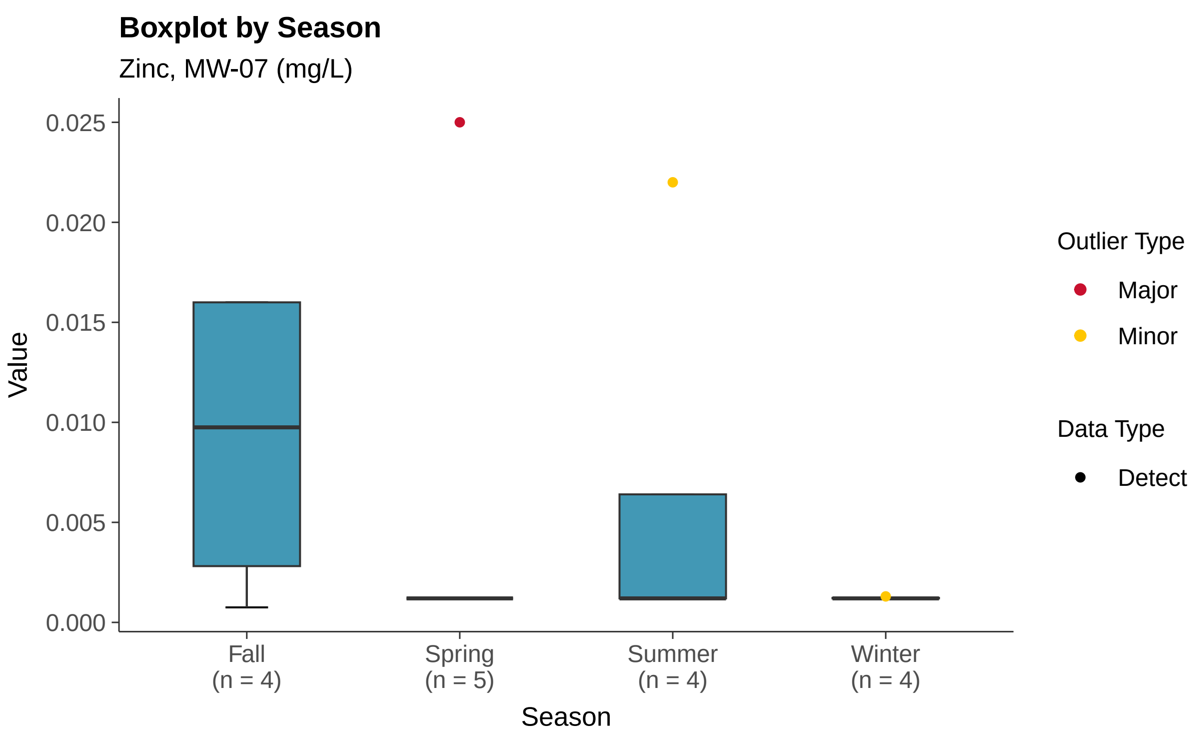


Histogram

Zinc, MW-07 (mg/L)

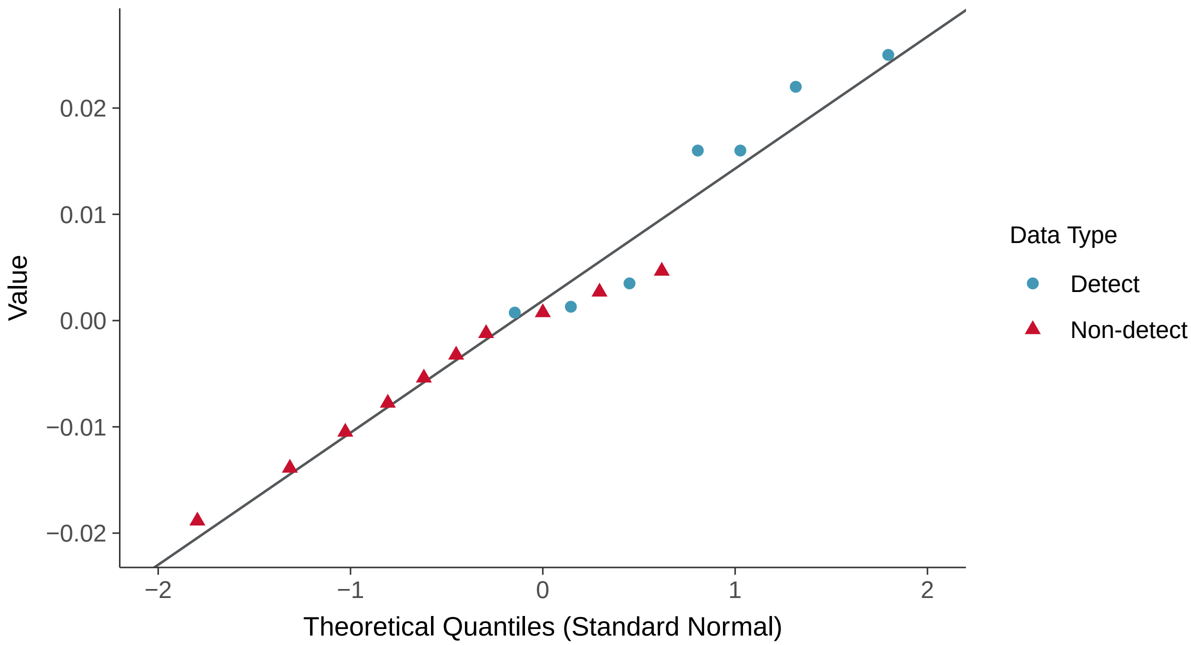



Boxplot
Zinc, MW-07 (mg/L)
Value
0.025
0.020
0.015
0.010
0.005
0.000
Data Type
Detect
Outlier Type
Major


Boxplot by Season
Zinc, MW-07 (mg/L)
Value
0.025
0.020
0.015
0.010
0.005
0.000
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Major
Minor
Data Type
Detect

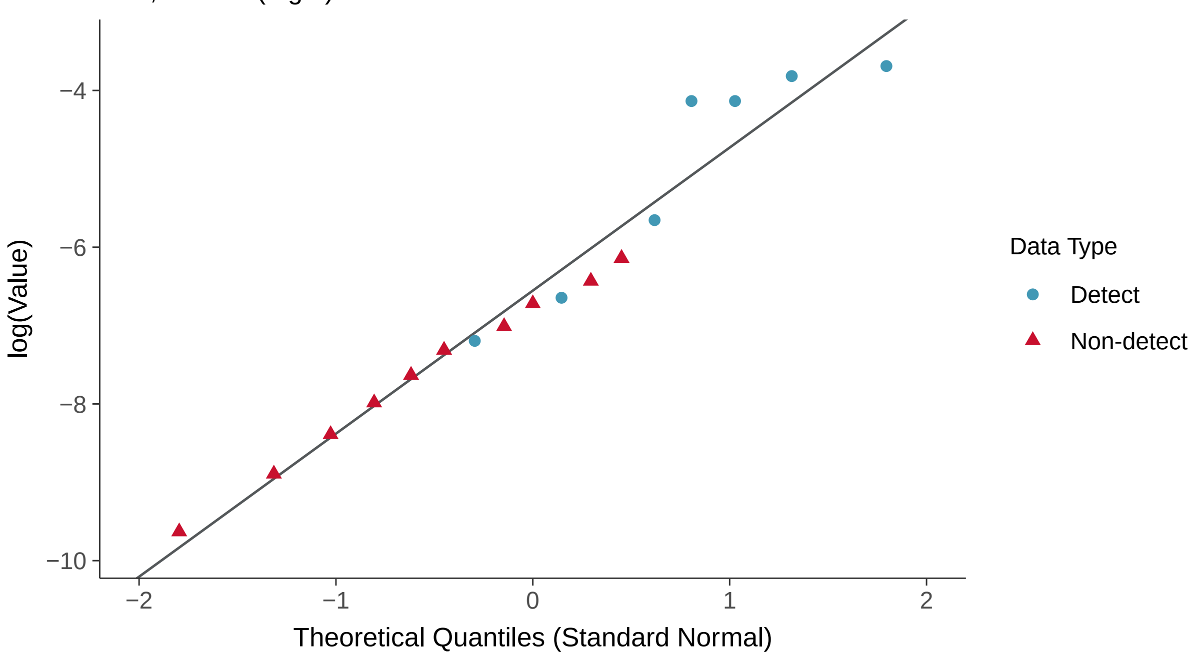
Normal Q-Q plot using ROS Imputed Estimates

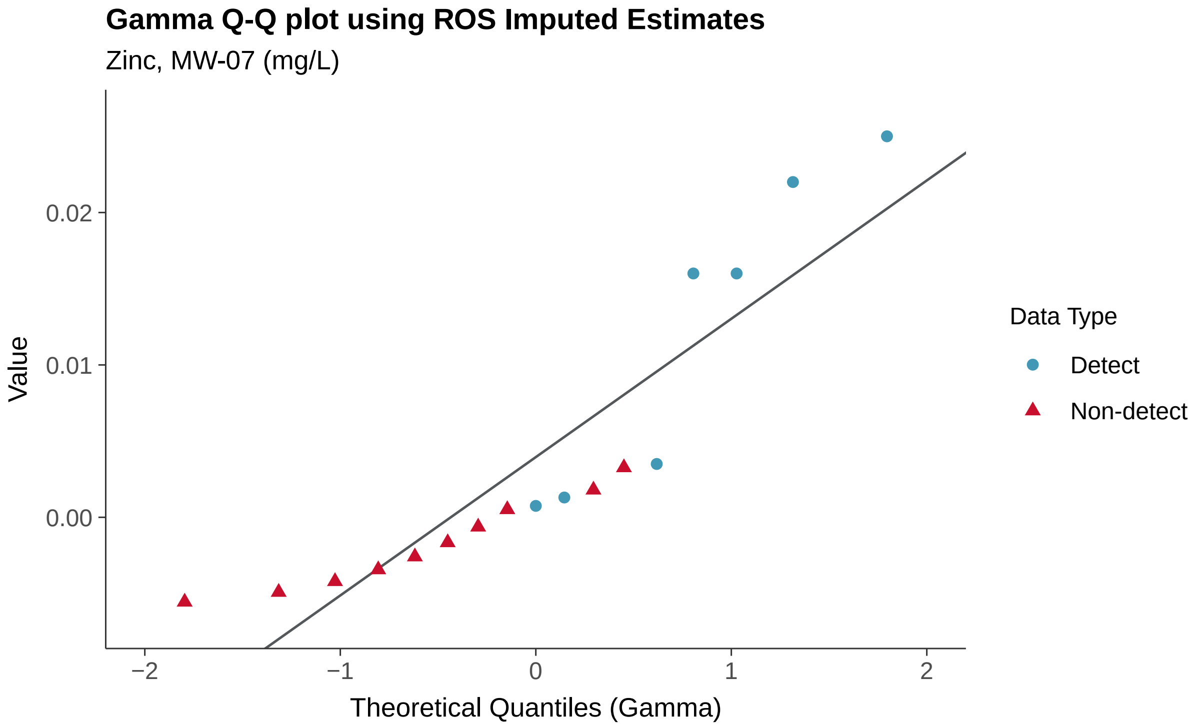
Zinc, MW-07 (mg/L)

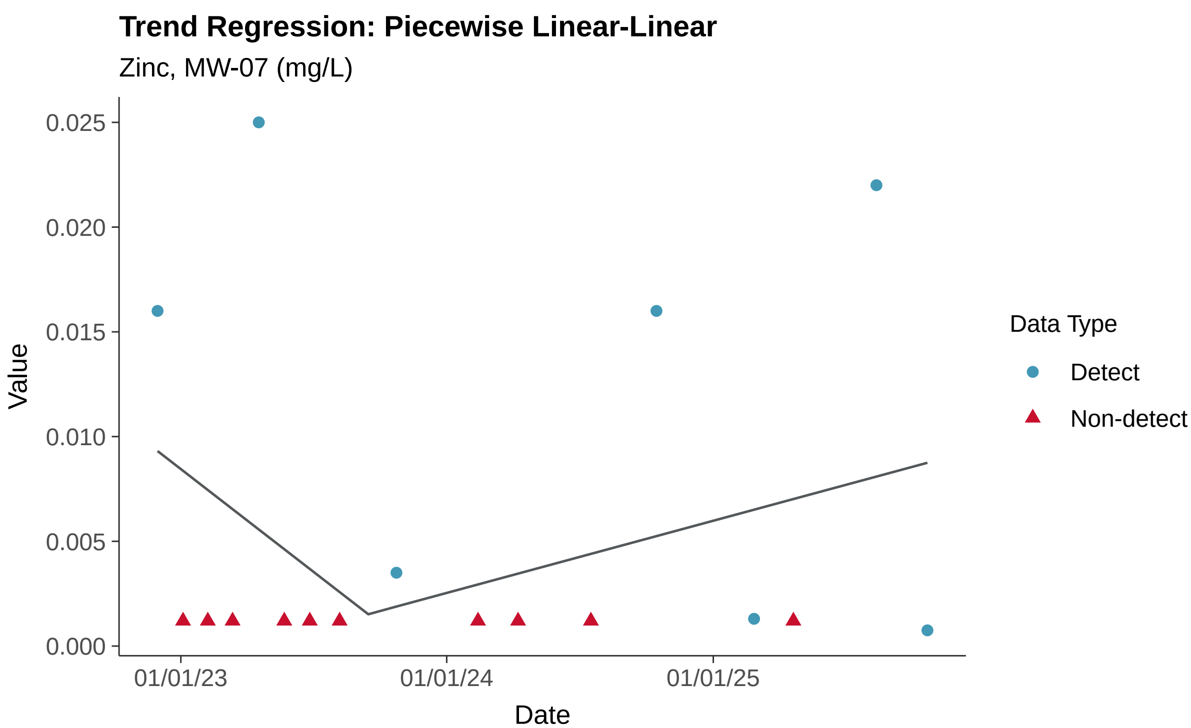


Lognormal Q-Q plot using ROS Imputed Estimates

Zinc, MW-07 (mg/L)

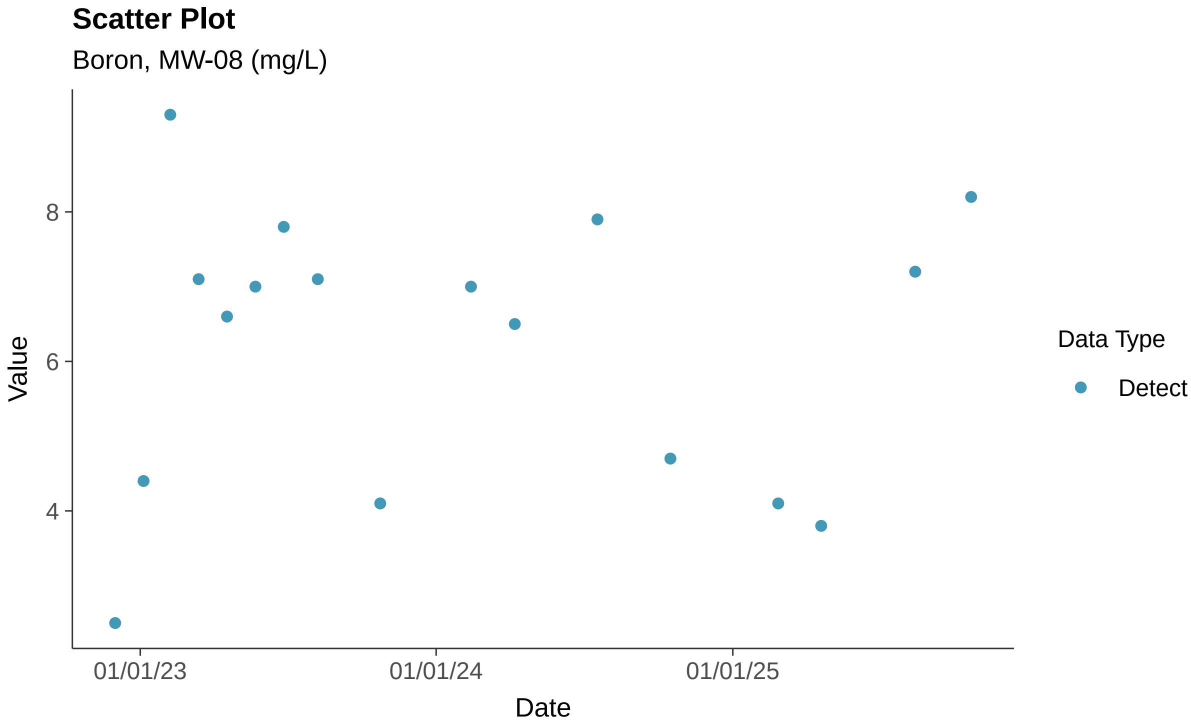


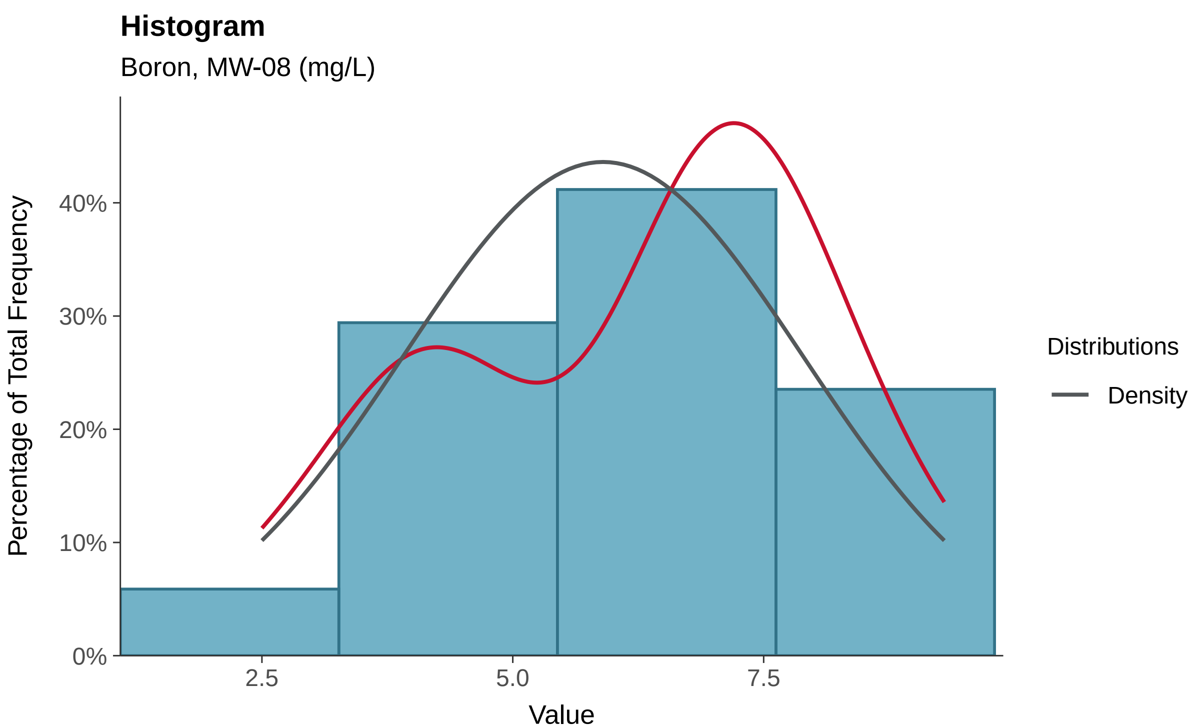

Gamma Q-Q plot using ROS Imputed Estimates
Zinc, MW-07 (mg/L)
Value
0.02
0.01
0.00
−2
−1
0
1
2
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect

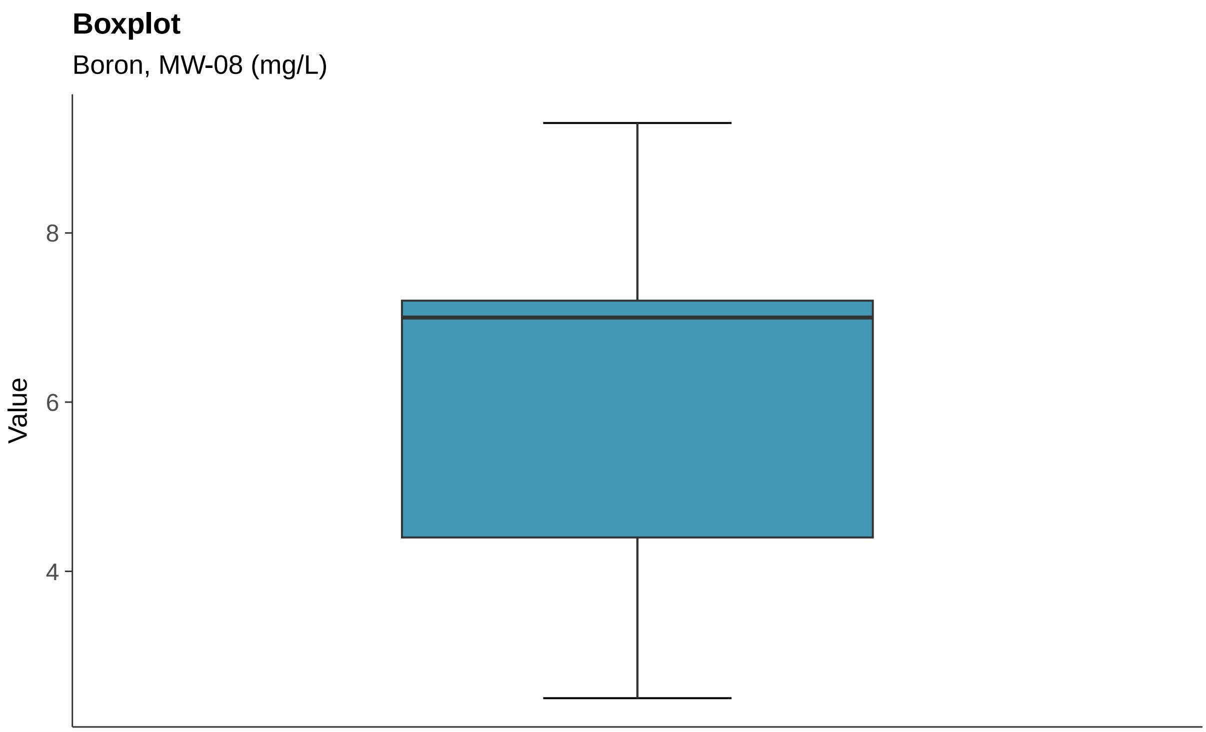

Trend Regression: Piecewise Linear-Linear
Zinc, MW-07 (mg/L)
Value
0.025
0.020
0.015
0.010
0.005
0.000
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

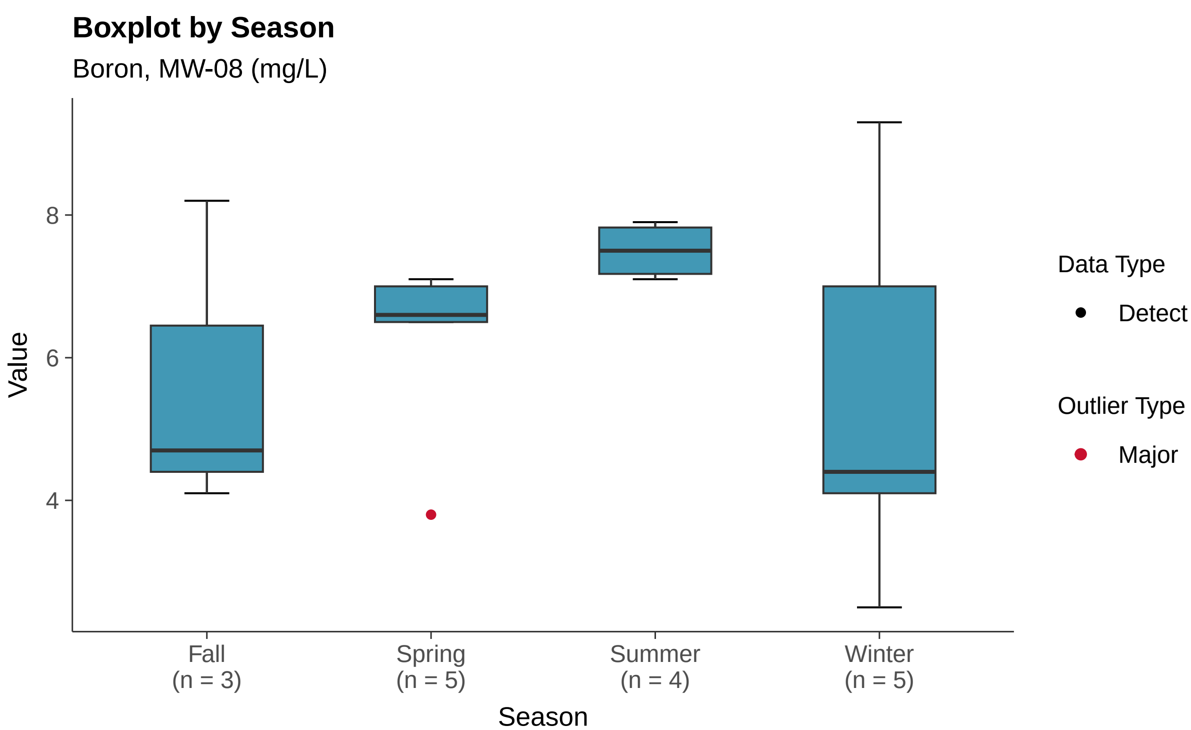
Appendix III: Boron, MW-08

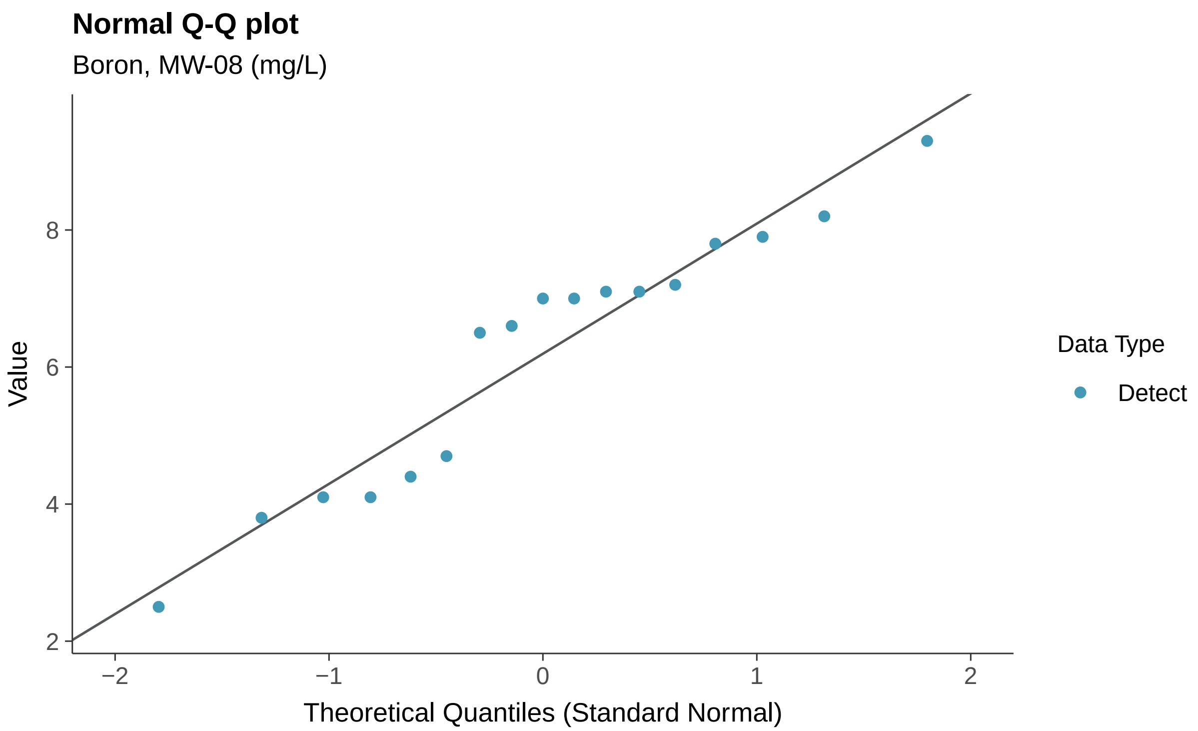
ID: 18_1_3_105

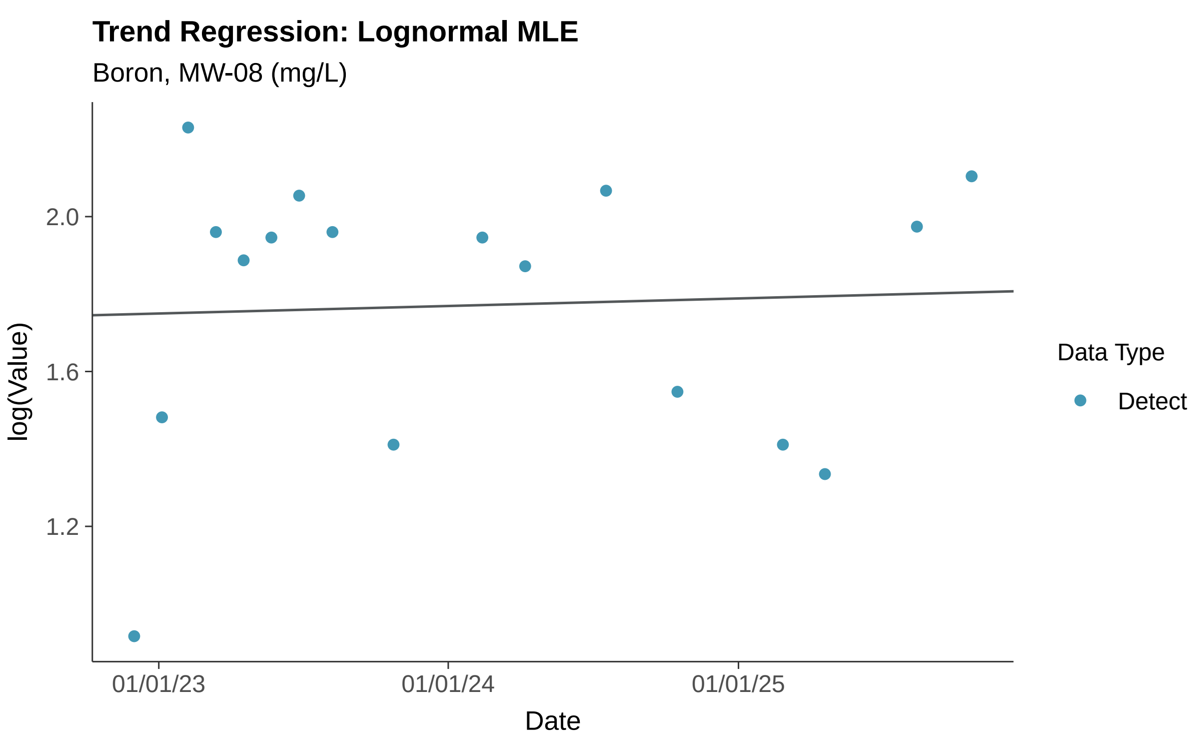





Boxplot
Boron, MW-08 (mg/L)
Value
8
6
4

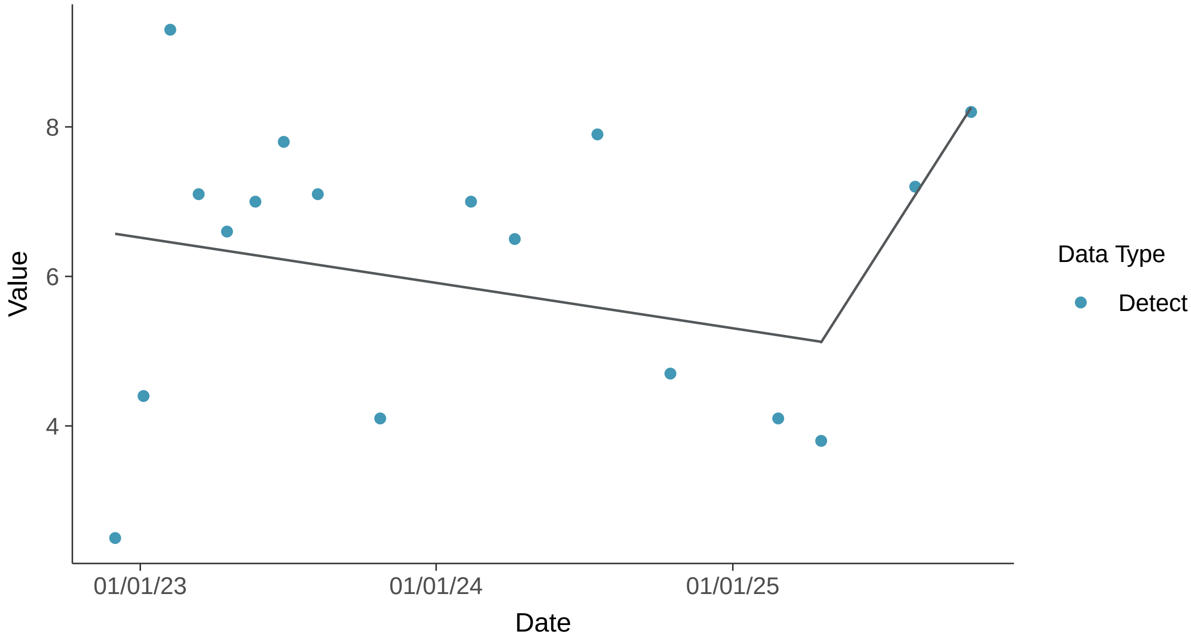

Boxplot by Season
Boron, MW-08 (mg/L)
Value
8
6
4
Fall
(n = 3)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 5)
Season
Data Type
Detect
Outlier Type
Major


Normal Q-Q plot
Boron, MW-08 (mg/L)
Value
8
6
4
2
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Lognormal MLE
Boron, MW-08 (mg/L)
log(Value)
2.0
1.6
1.2
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

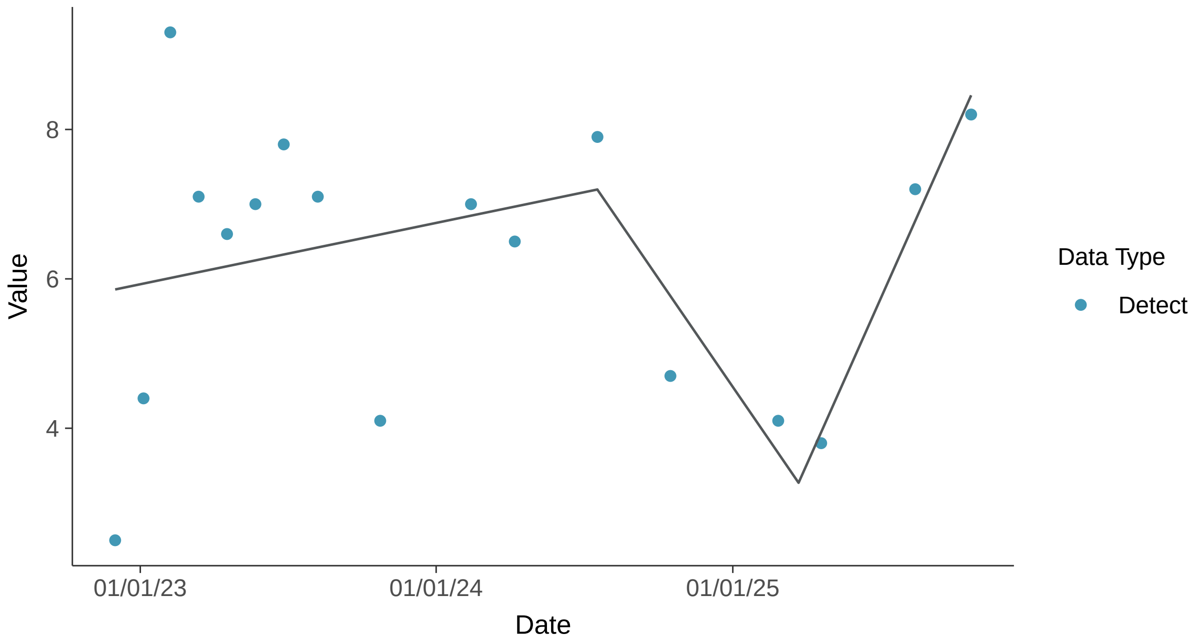
Trend Regression: Piecewise Linear-Linear

Boron, MW-08 (mg/L)



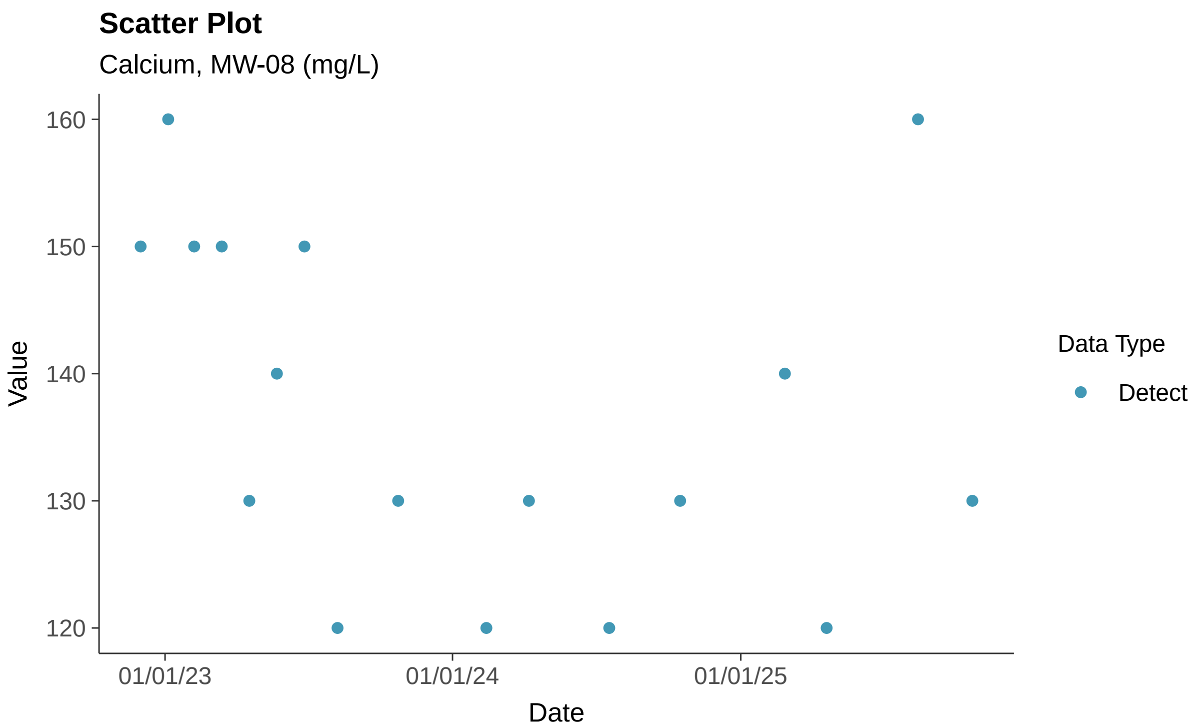
Trend Regression: Piecewise Linear-Linear-Linear

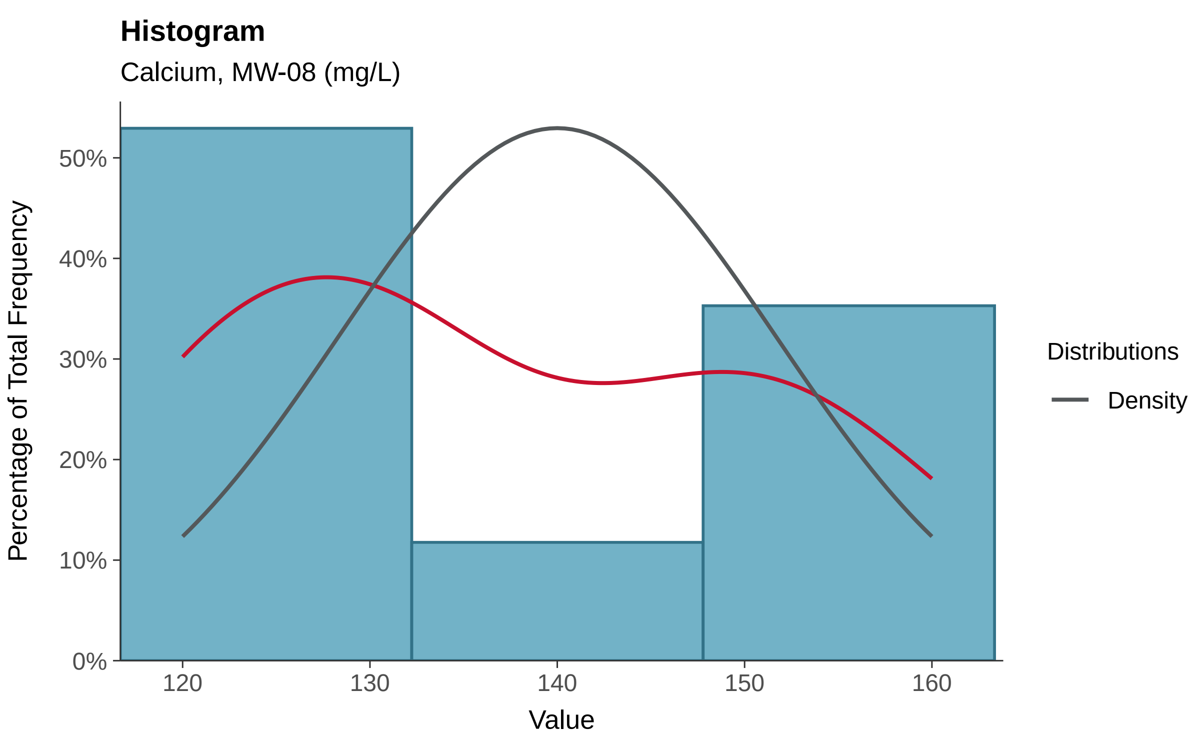
Boron, MW-08 (mg/L)



Appendix III: Calcium, MW-08

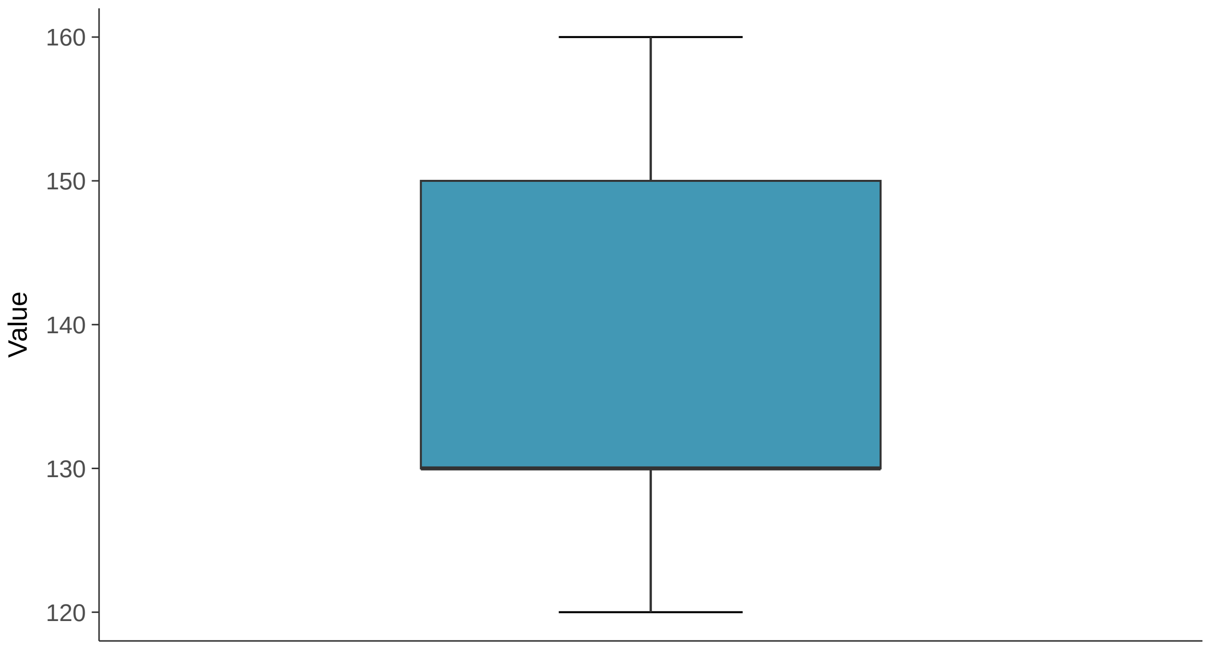
ID: 18_1_3_107





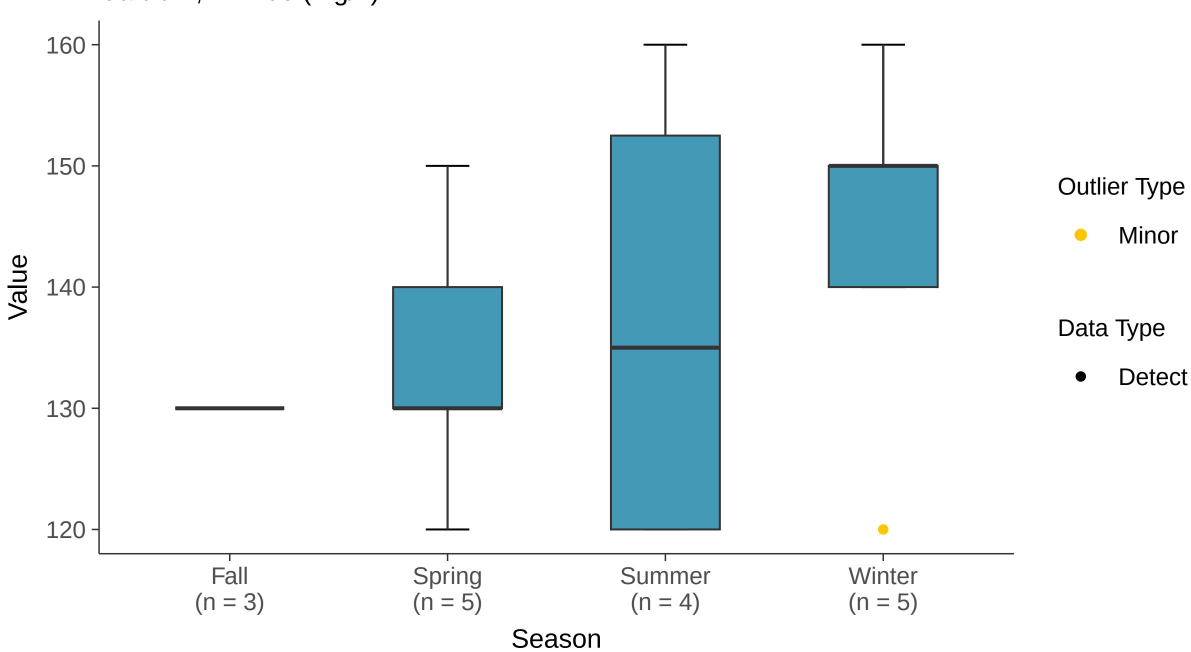
Boxplot

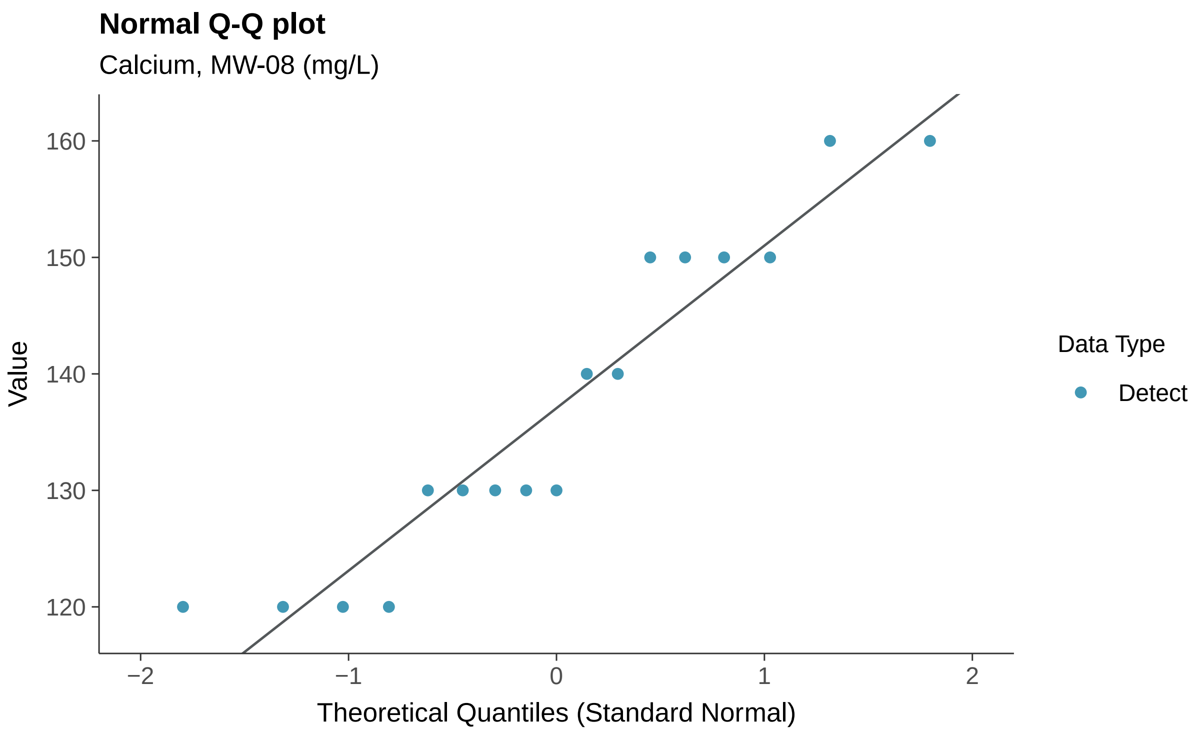
Calcium, MW-08 (mg/L)

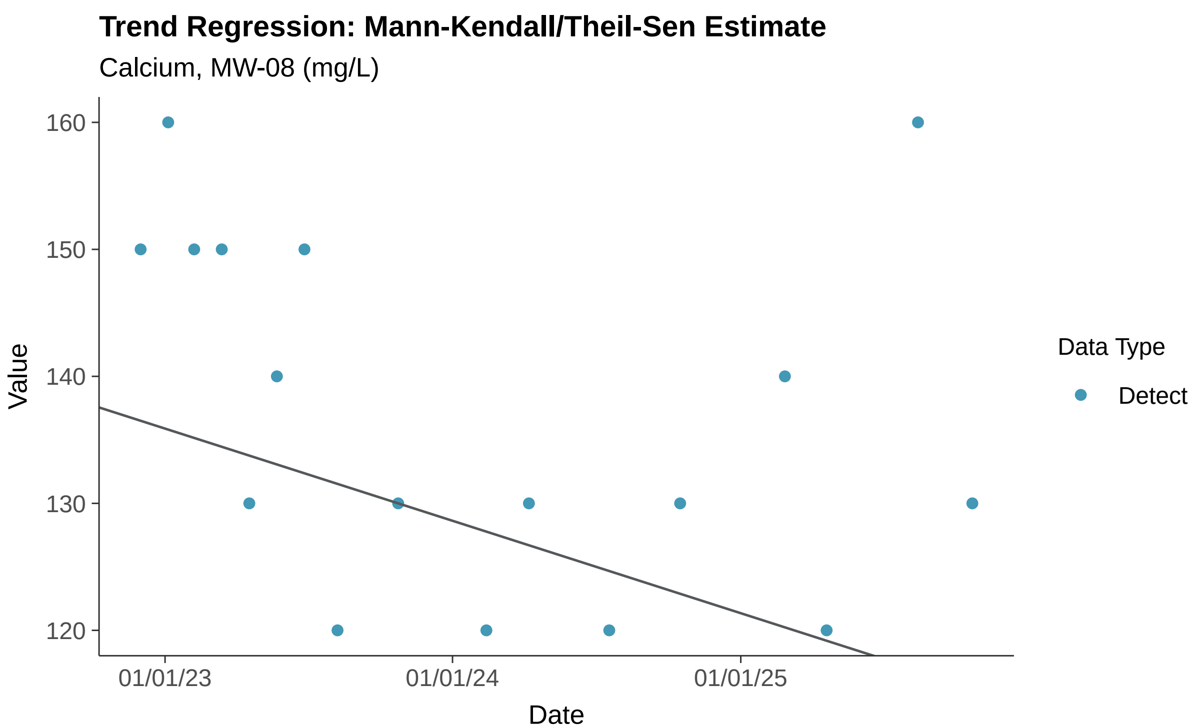


Boxplot by Season

Calcium, MW-08 (mg/L)

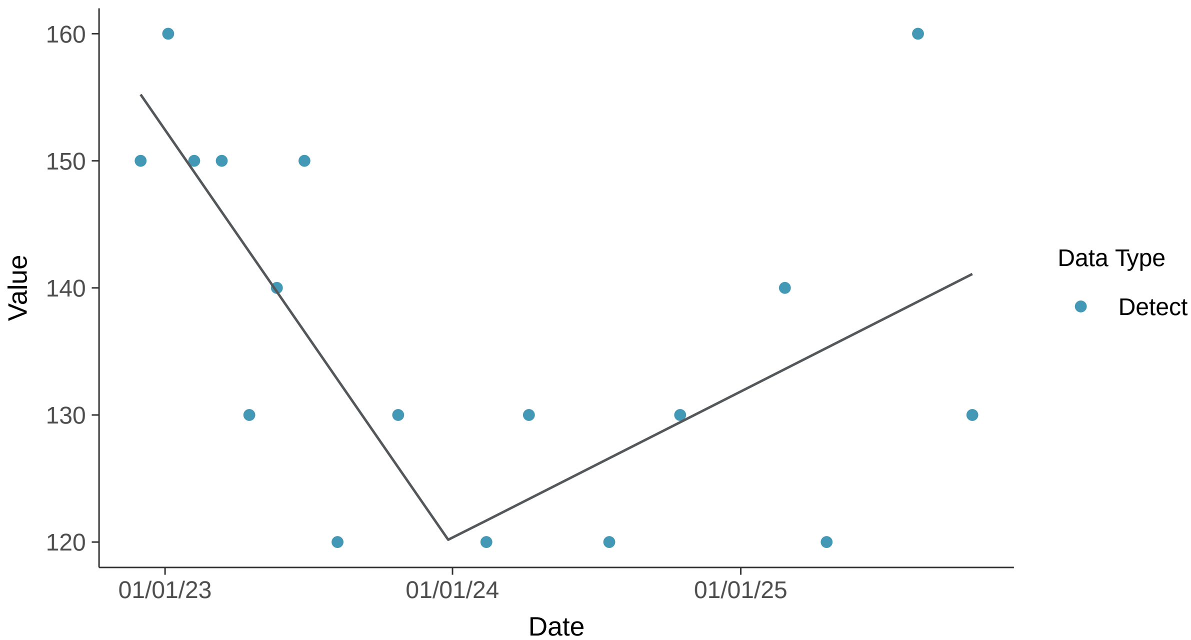



Normal Q-Q plot
Calcium, MW-08 (mg/L)
Value
160
150
140
130
120
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Mann-Kendall/Theil-Sen Estimate
Calcium, MW-08 (mg/L)
Value
160
150
140
130
120
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear

Calcium, MW-08 (mg/L)

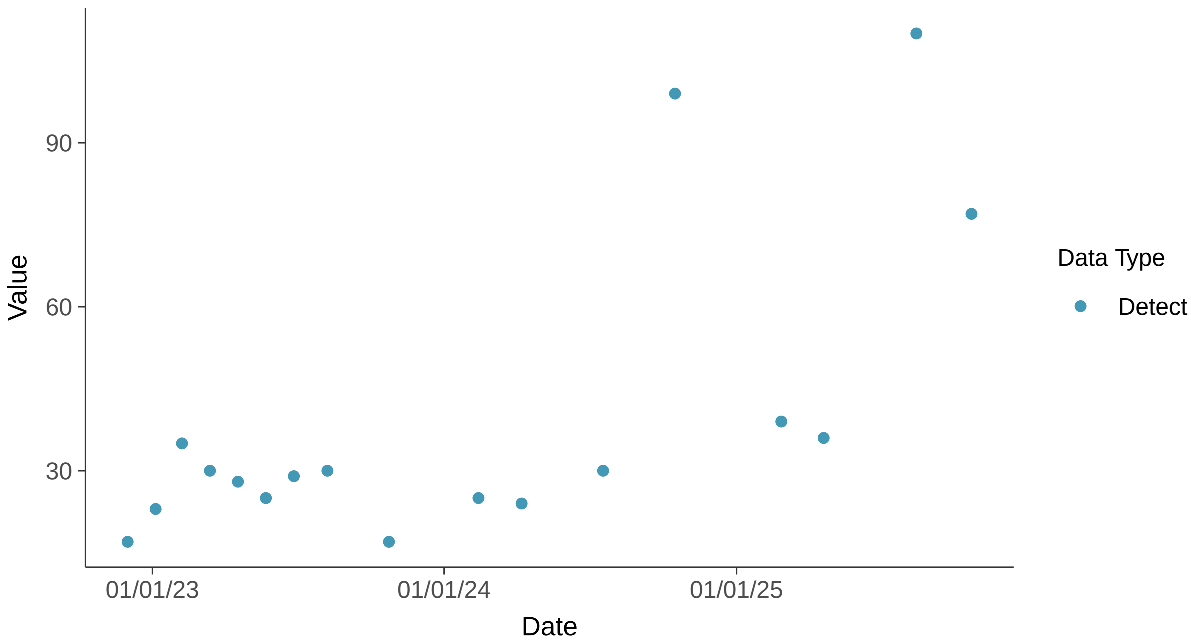


Appendix III: Chloride (as Cl), MW-08

ID: 18_1_3_108

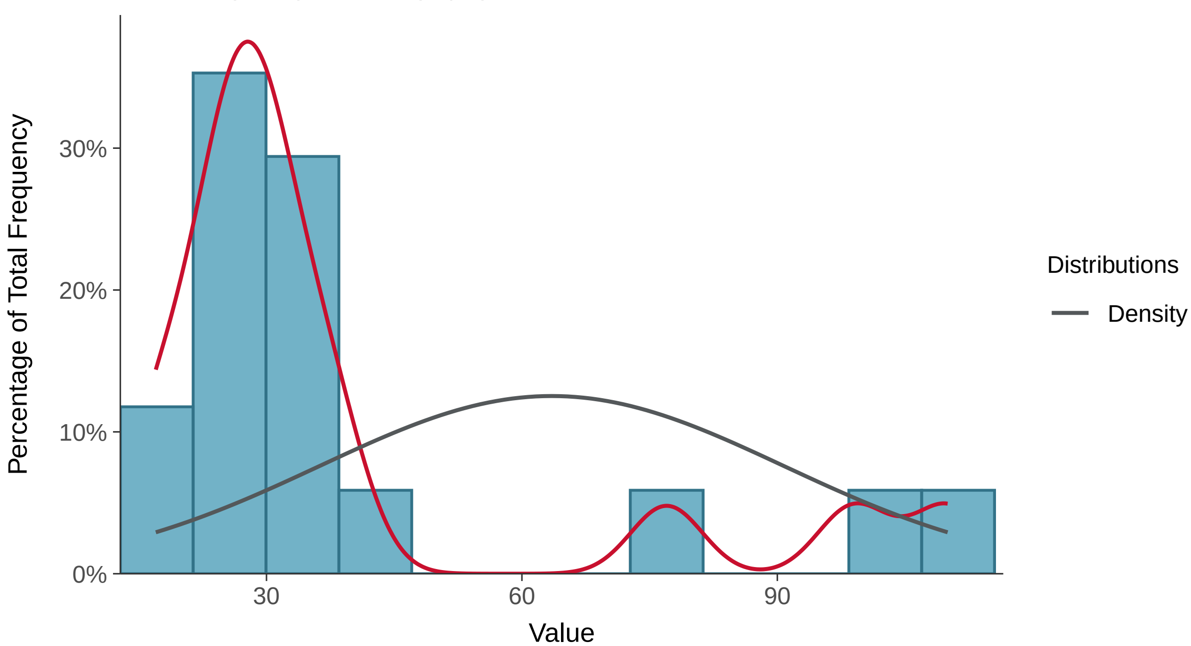
Scatter Plot

Chloride (as Cl), MW-08 (mg/L)



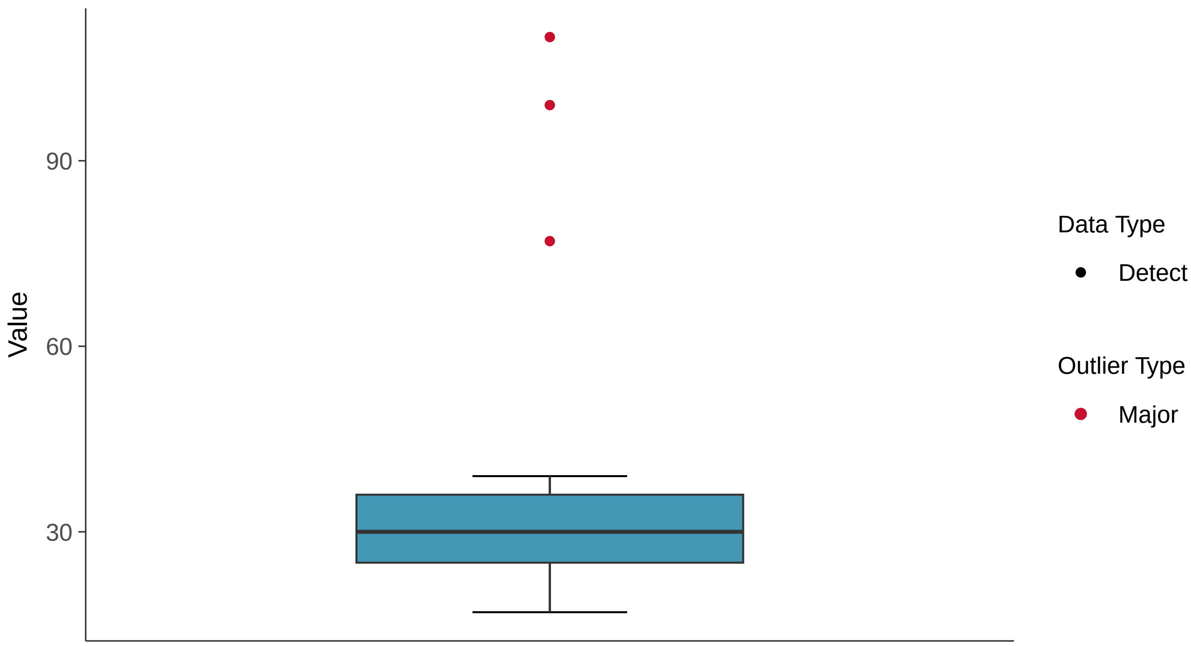
Histogram

Chloride (as Cl), MW-08 (mg/L)



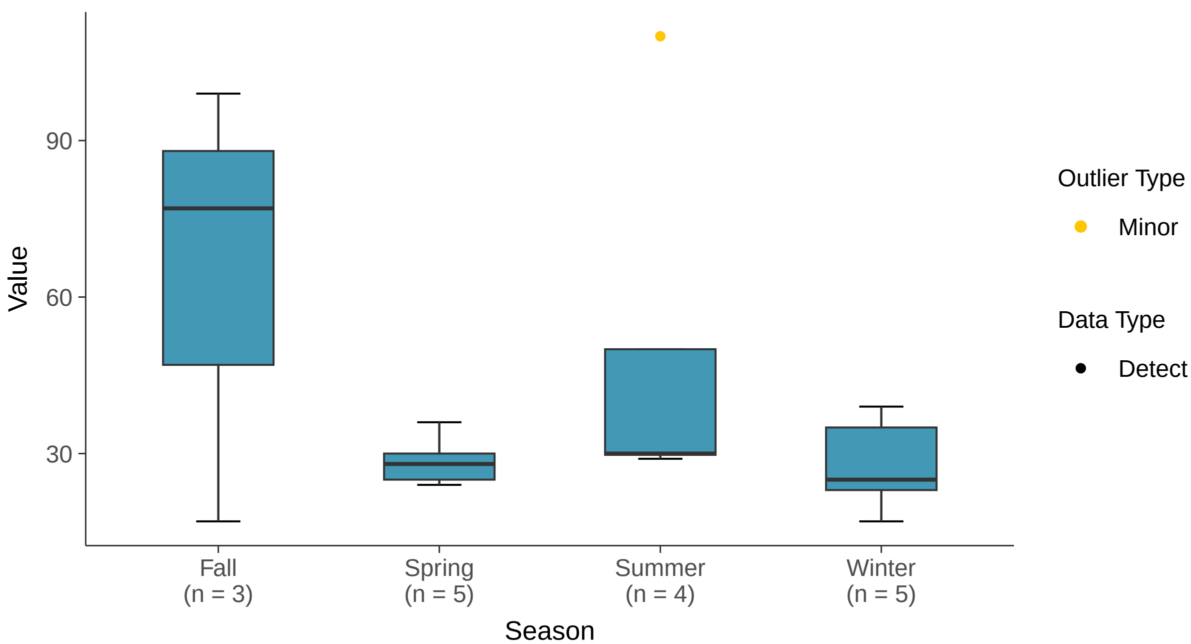
Boxplot

Chloride (as Cl), MW-08 (mg/L)



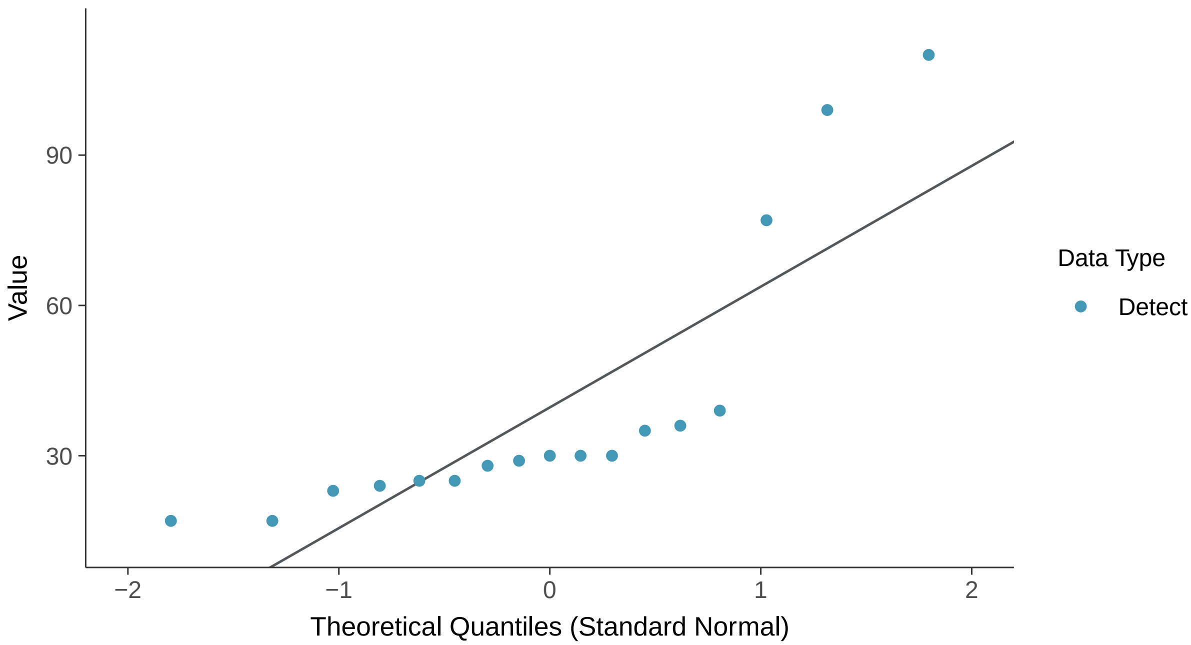
Boxplot by Season

Chloride (as Cl), MW-08 (mg/L)



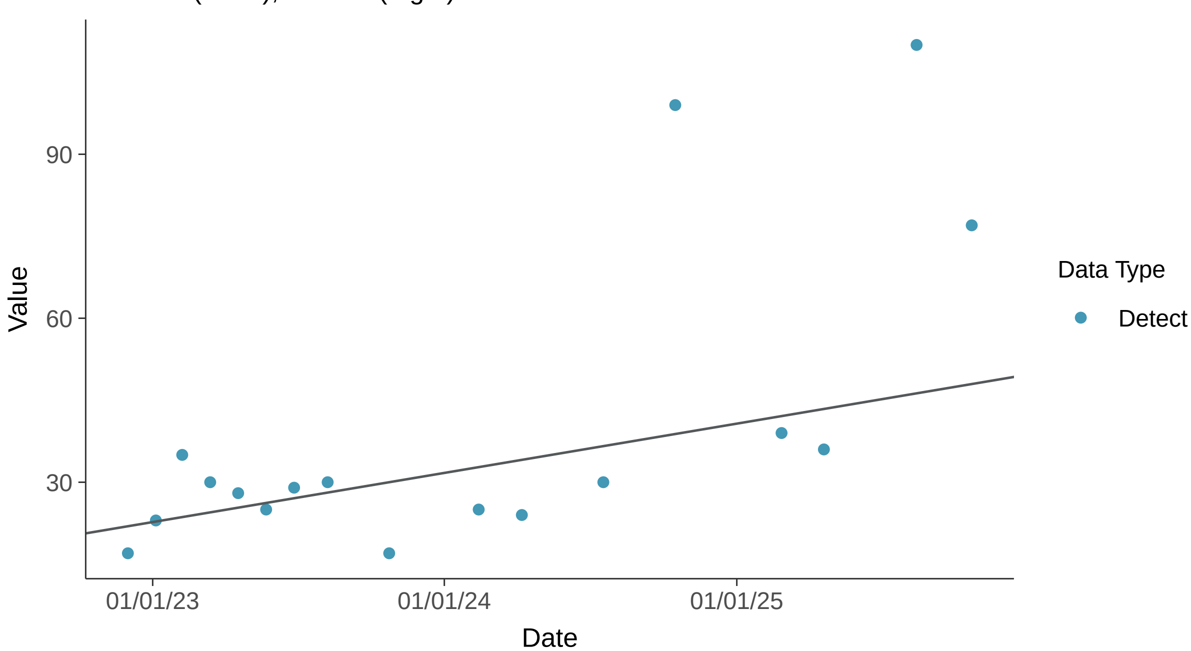
Normal Q-Q plot

Chloride (as Cl), MW-08 (mg/L)



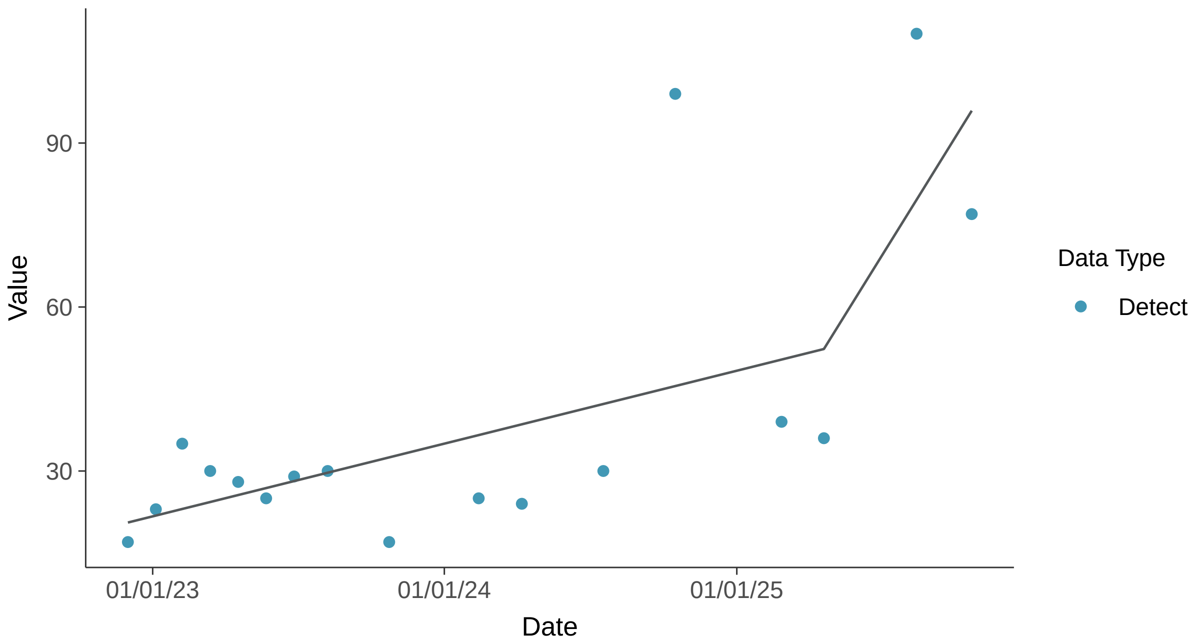
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Chloride (as Cl), MW-08 (mg/L)



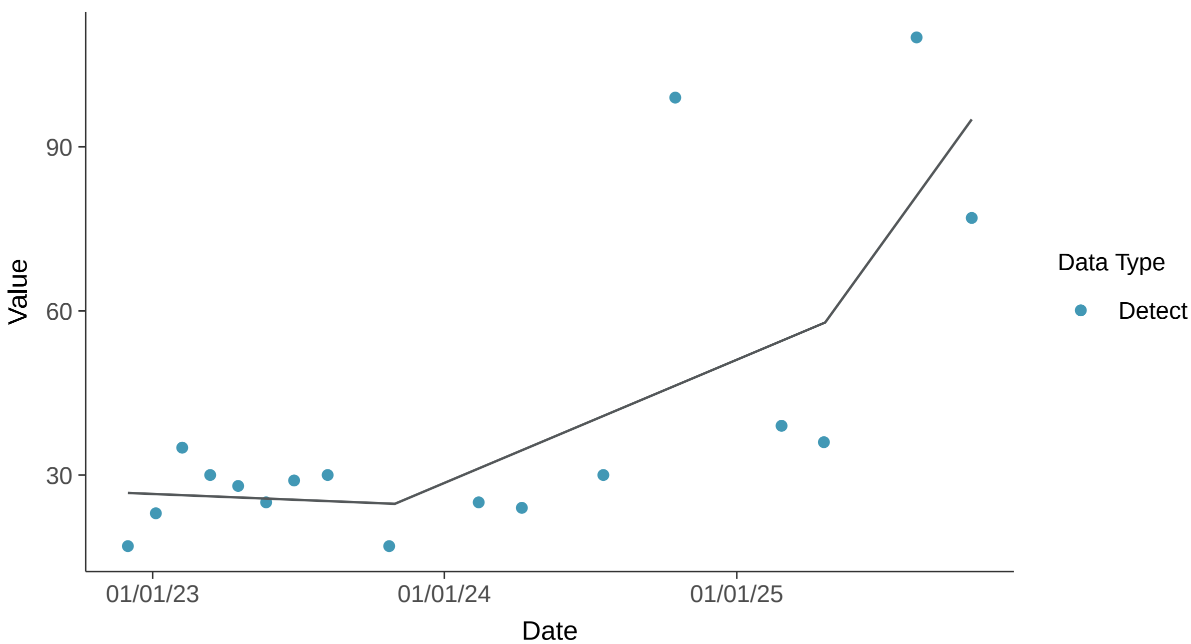
Trend Regression: Piecewise Linear-Linear

Chloride (as Cl), MW-08 (mg/L)



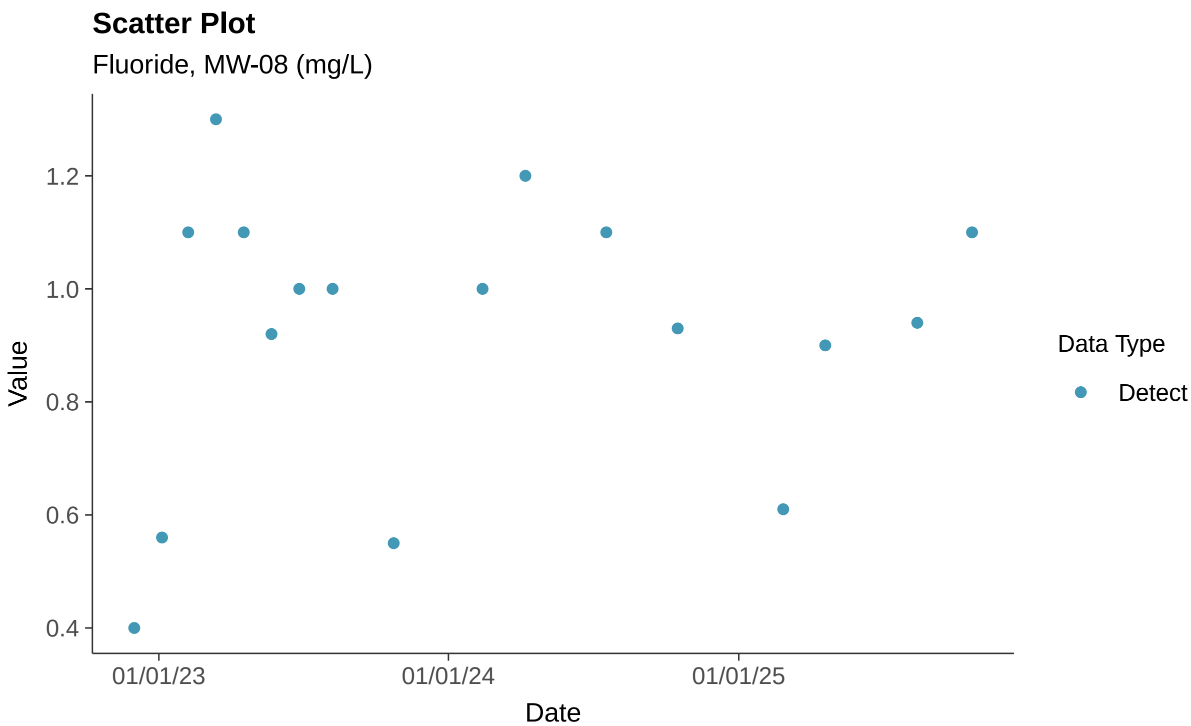
Trend Regression: Piecewise Linear-Linear-Linear

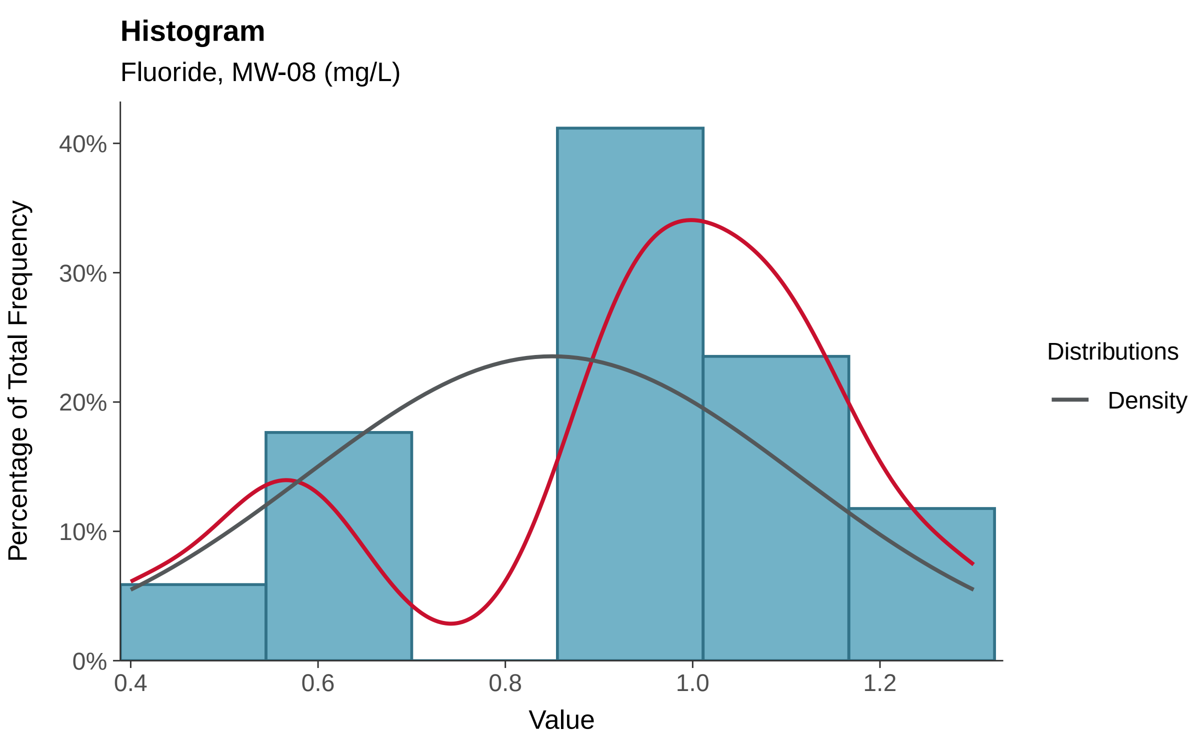
Chloride (as Cl), MW-08 (mg/L)



Appendix III: Fluoride, MW-08

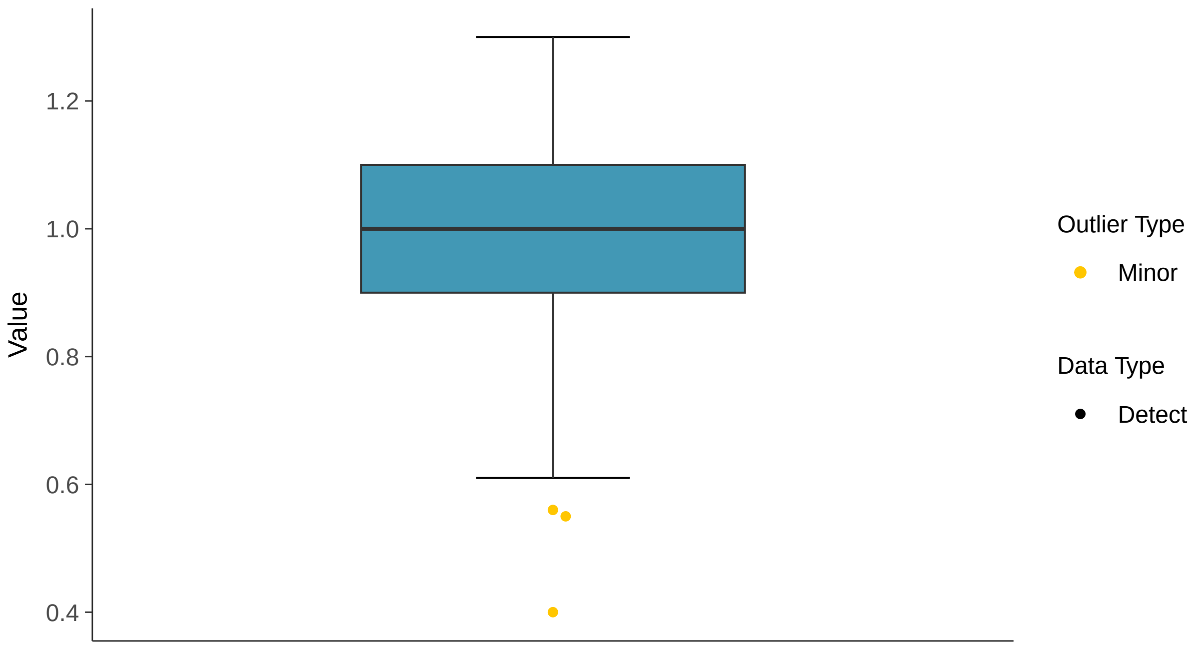
ID: 18_1_3_112





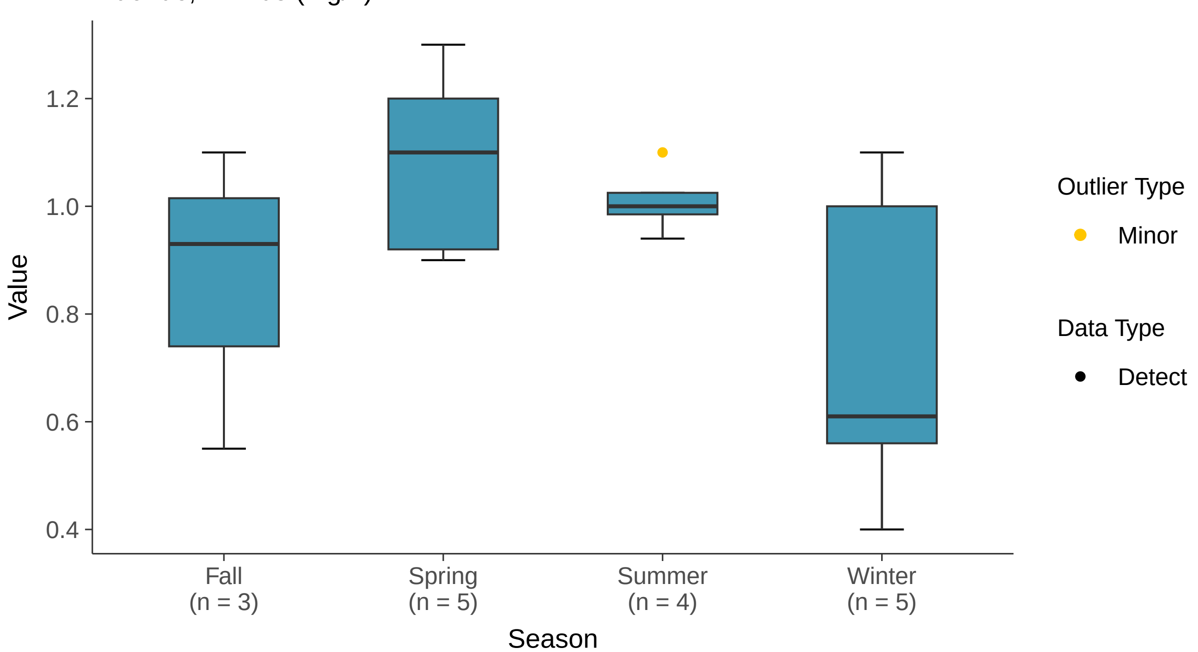
Boxplot

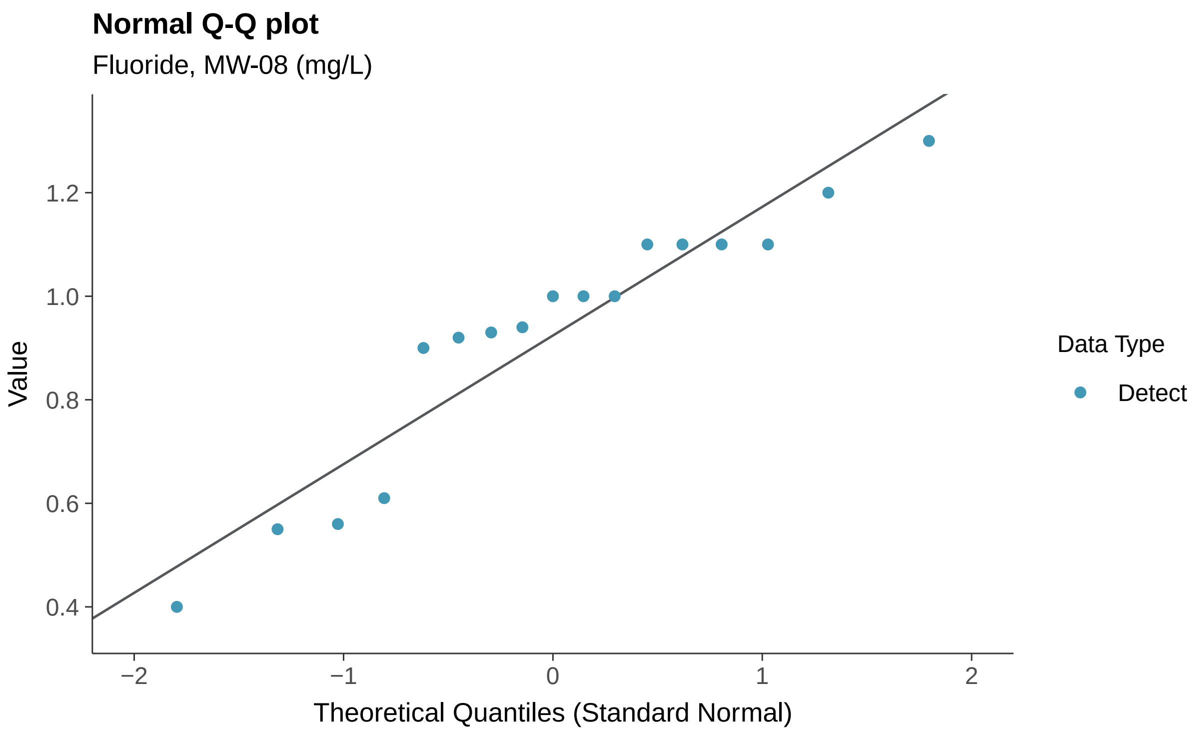
Fluoride, MW-08 (mg/L)

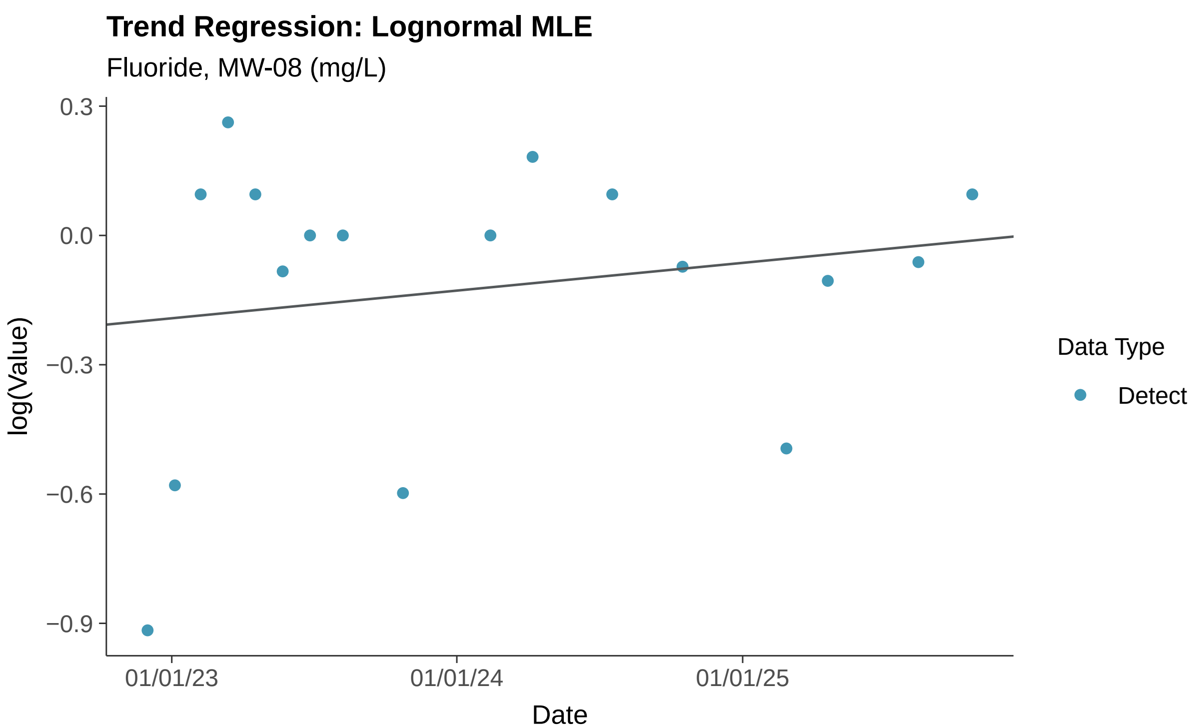


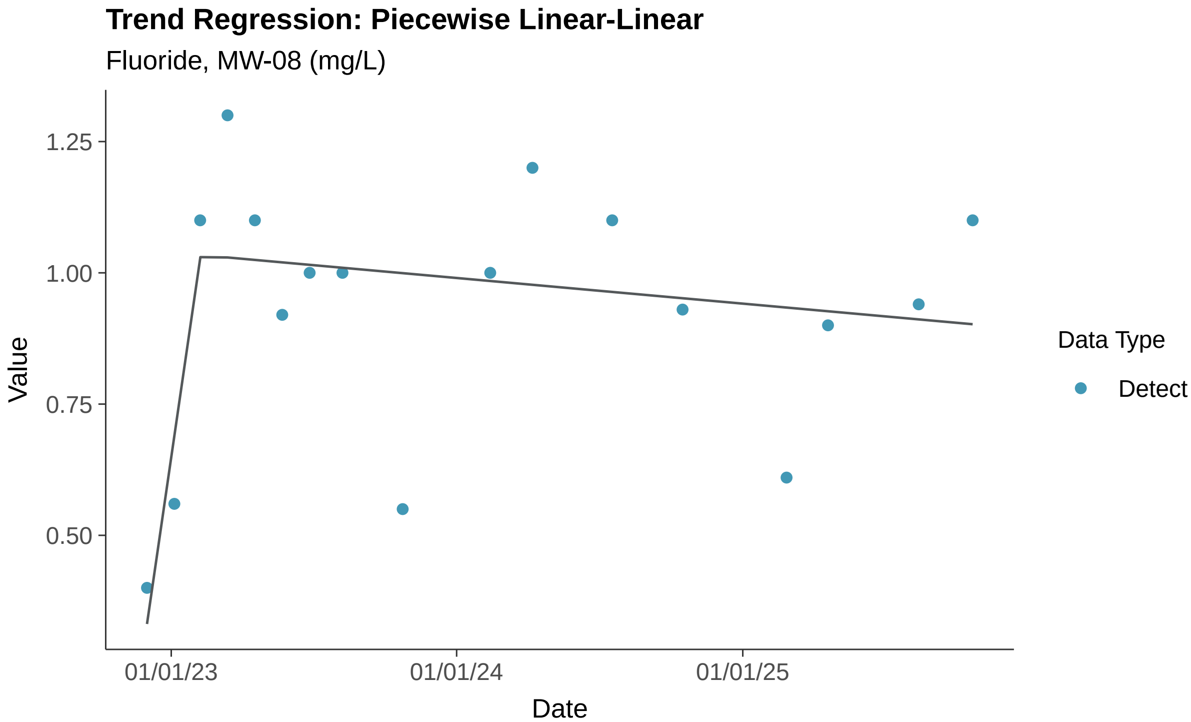
Boxplot by Season

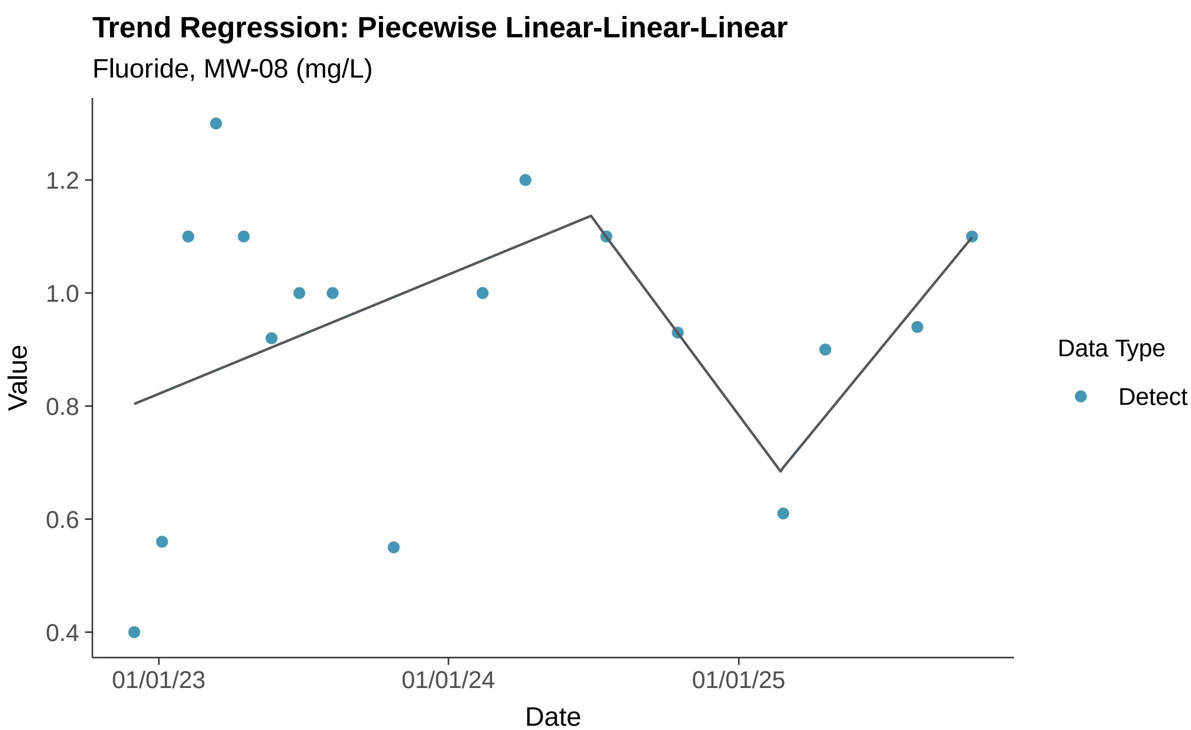
Fluoride, MW-08 (mg/L)




Normal Q-Q plot
Fluoride, MW-08 (mg/L)
Value
1.2
1.0
0.8
0.6
0.4
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Lognormal MLE
Fluoride, MW-08 (mg/L)
log(Value)
0.3
0.0
−0.3
−0.6
−0.9
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear
Fluoride, MW-08 (mg/L)
Value
1.25
1.00
0.75
0.50
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

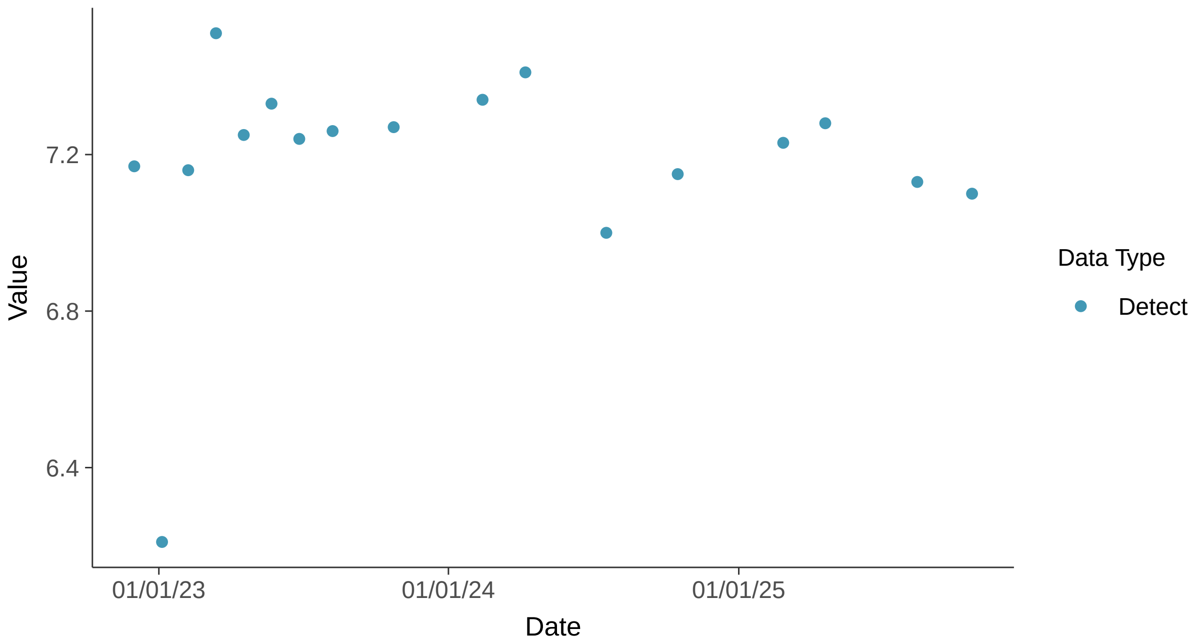

Trend Regression: Piecewise Linear-Linear-Linear
Fluoride, MW-08 (mg/L)
Value
1.2
1.0
0.8
0.6
0.4
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Appendix III: pH (field), MW-08

ID: 18_1_3_120

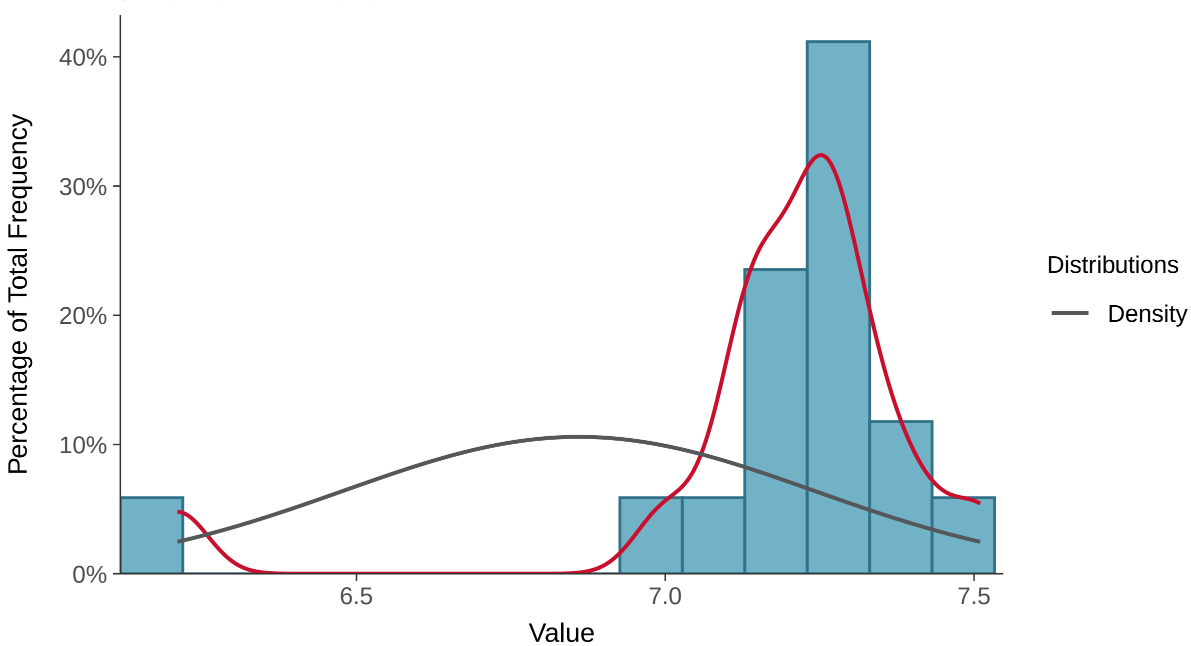
Scatter Plot

pH (field), MW-08 (su)



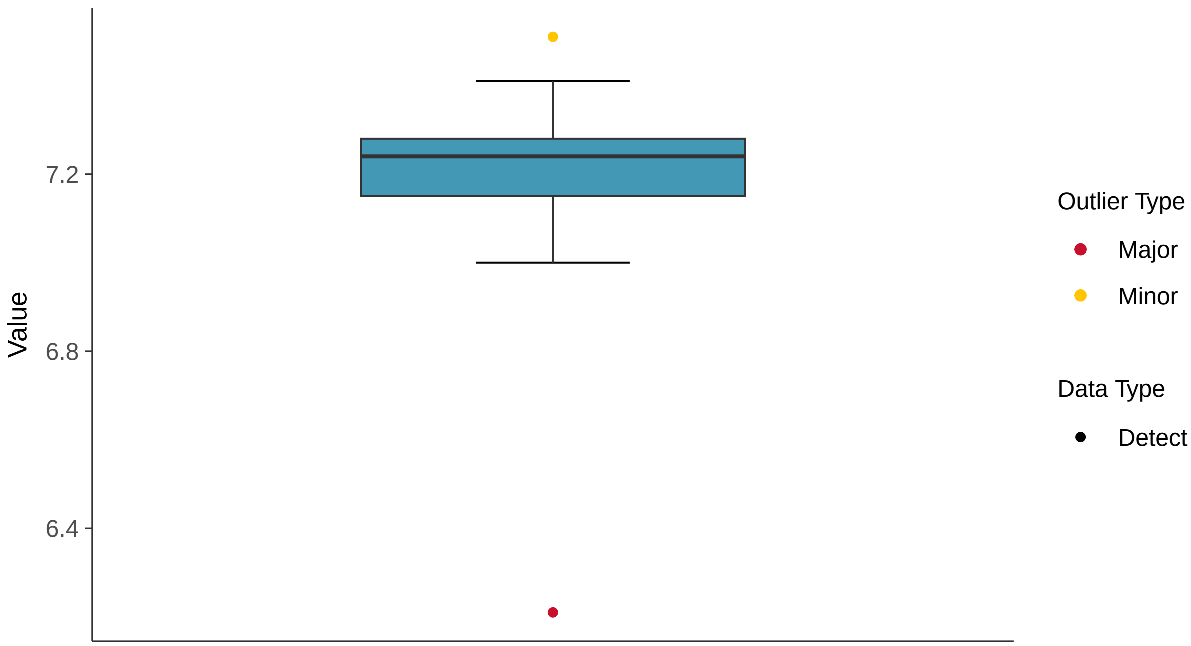
Histogram

pH (field), MW-08 (su)



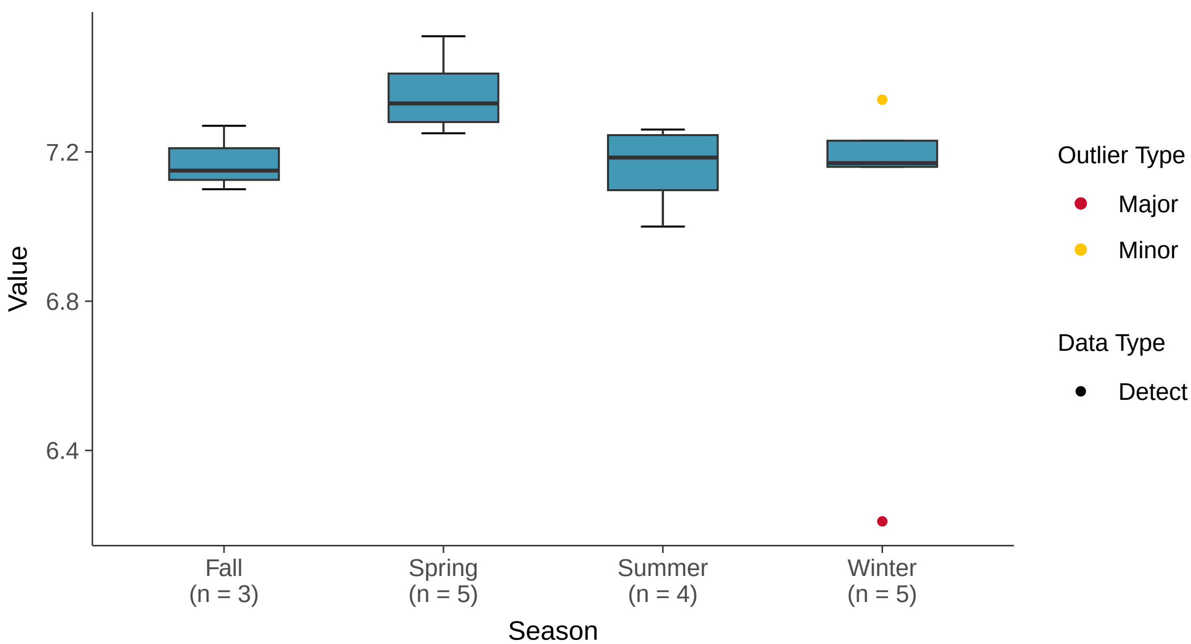
Boxplot

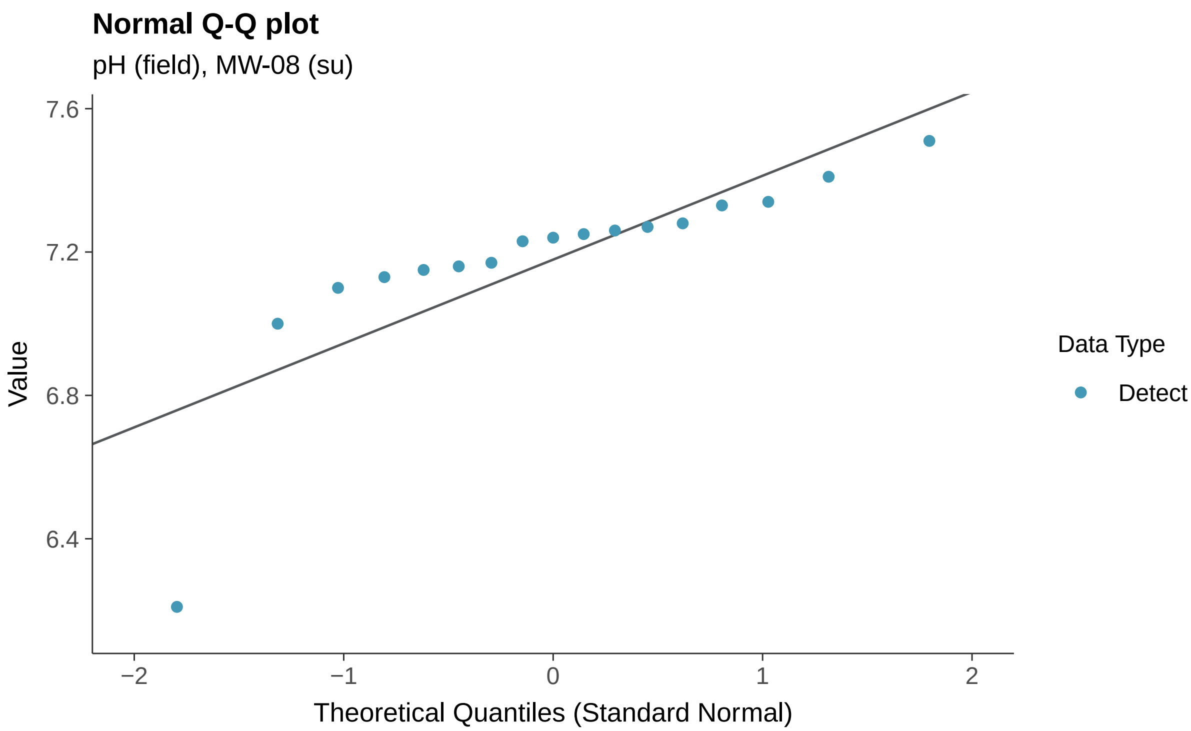
pH (field), MW-08 (su)

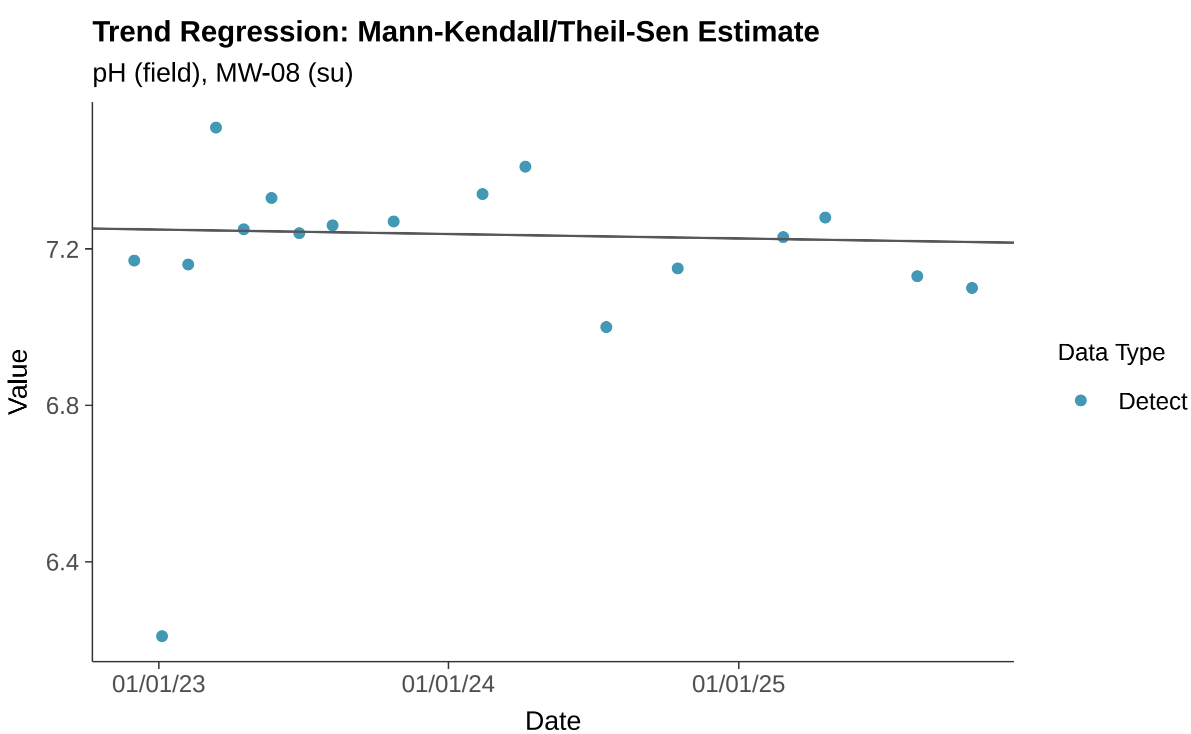


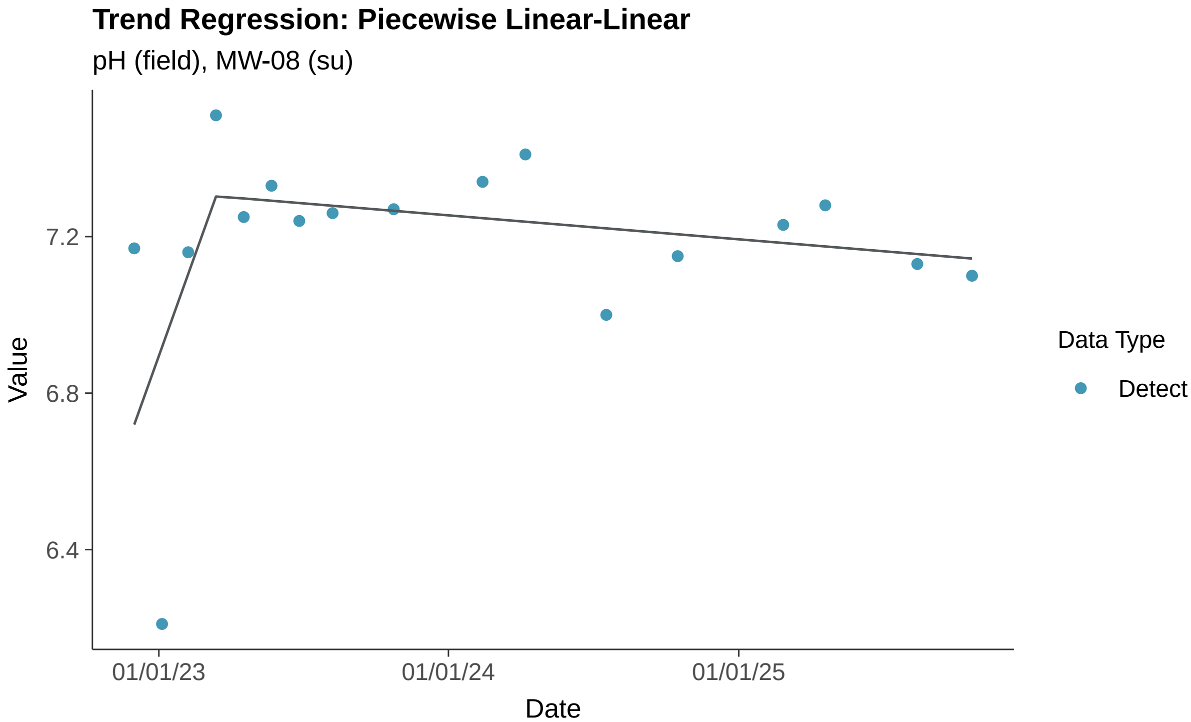
Boxplot by Season

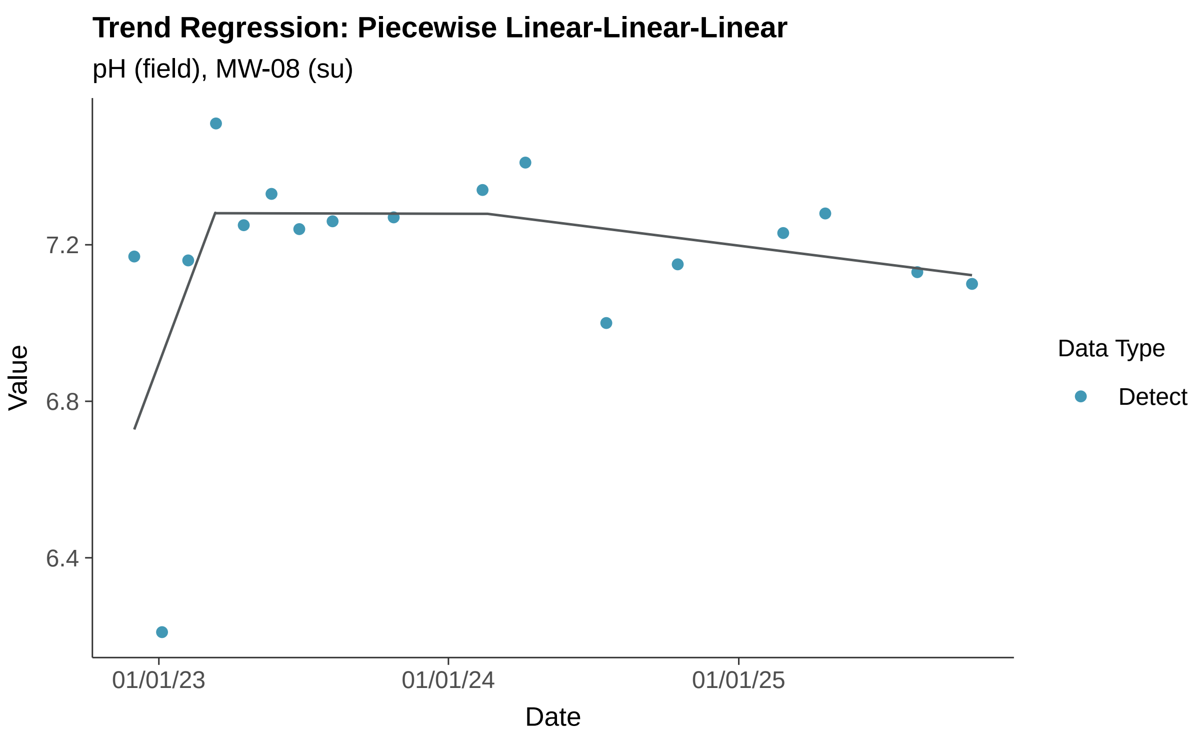
pH (field), MW-08 (su)




Normal Q-Q plot
pH (field), MW-08 (su)
Value
7.6
7.2
6.8
6.4
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

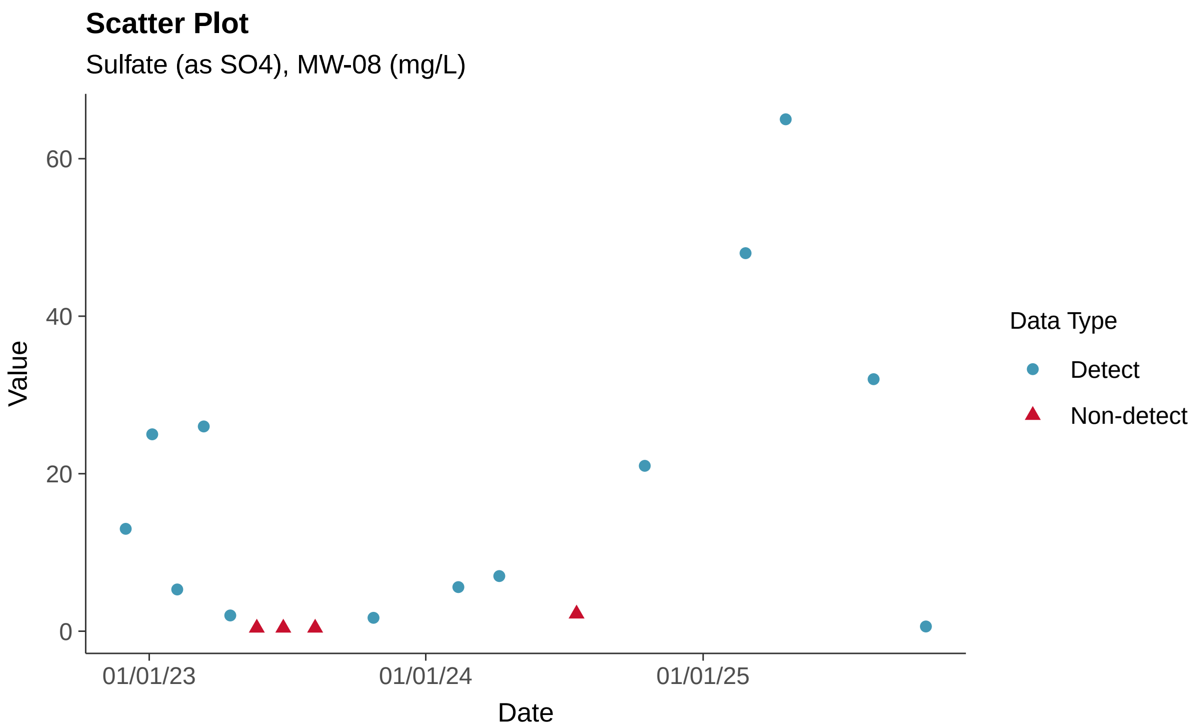

Trend Regression: Mann-Kendall/Theil-Sen Estimate
pH (field), MW-08 (su)
Value
7.2
6.8
6.4
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

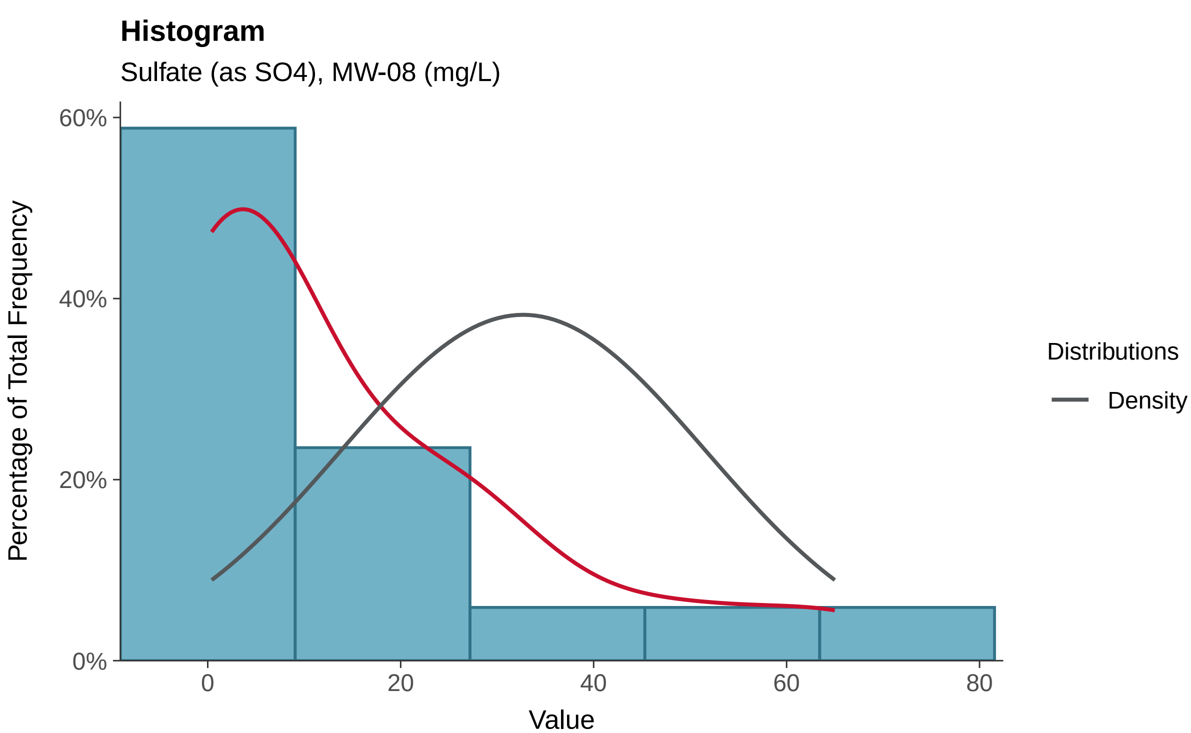

Trend Regression: Piecewise Linear-Linear
pH (field), MW-08 (su)
Value
7.2
6.8
6.4
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
pH (field), MW-08 (su)
Value
7.2
6.8
6.4
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Appendix III: Sulfate (as SO4), MW-08

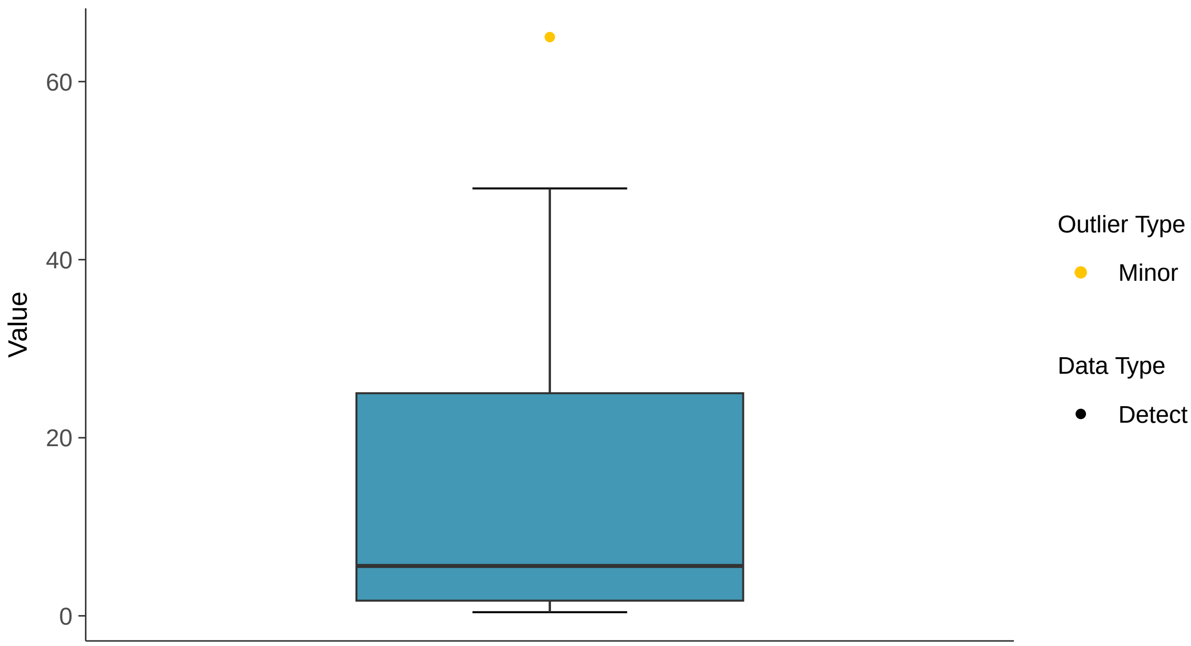
ID: 18_1_3_124





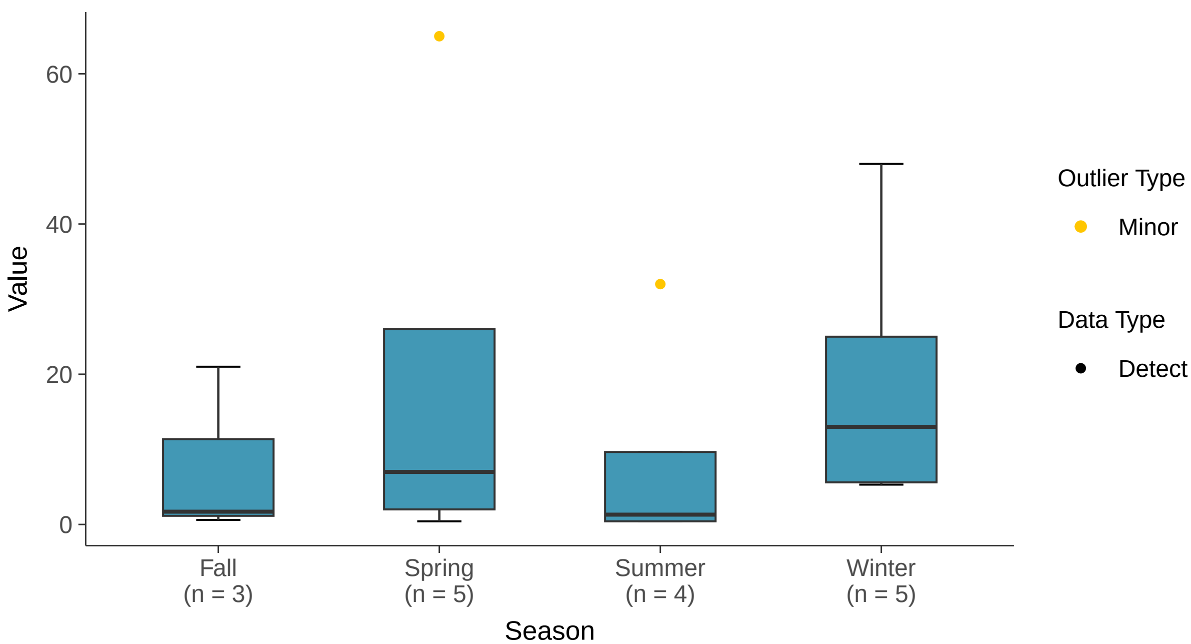
Boxplot

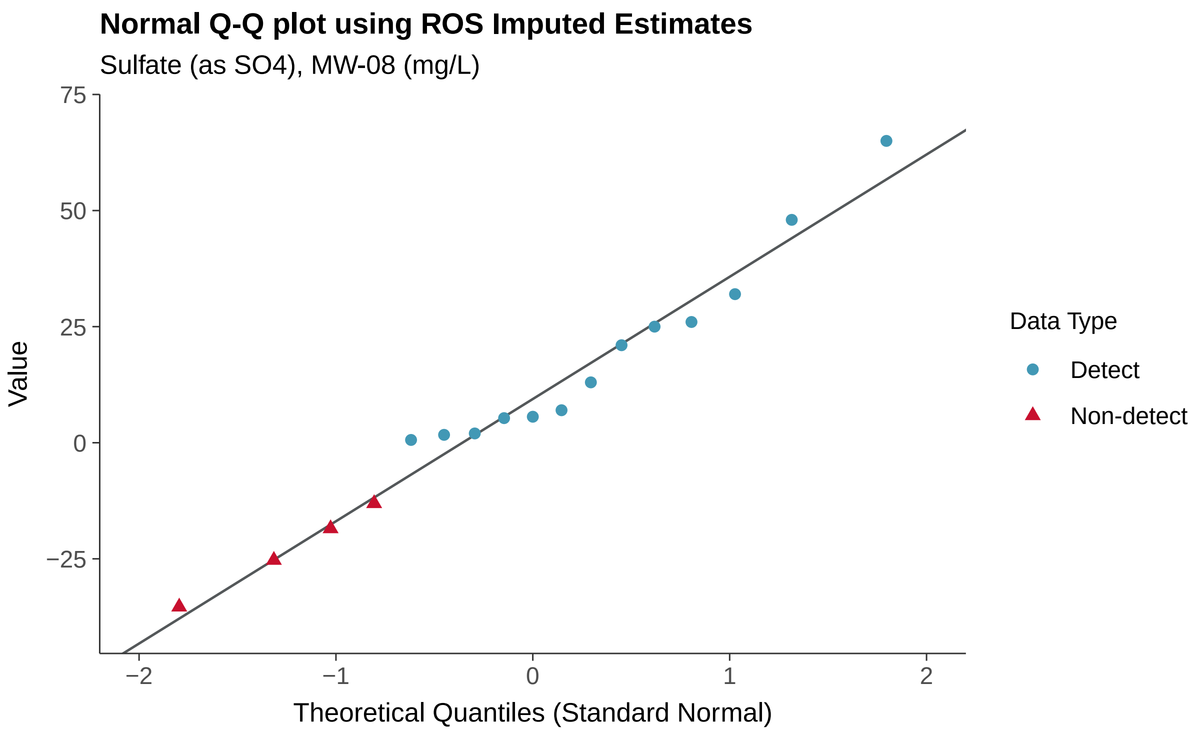
Sulfate (as SO4), MW-08 (mg/L)

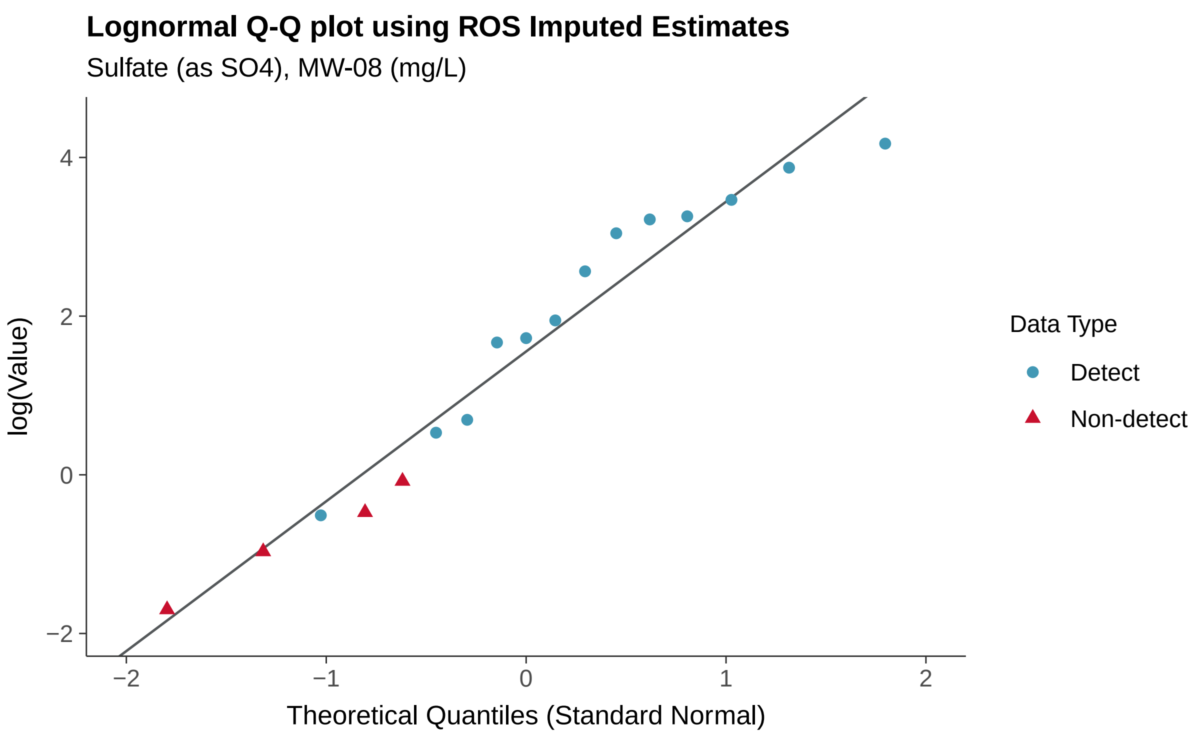


Boxplot by Season

Sulfate (as SO4), MW-08 (mg/L)

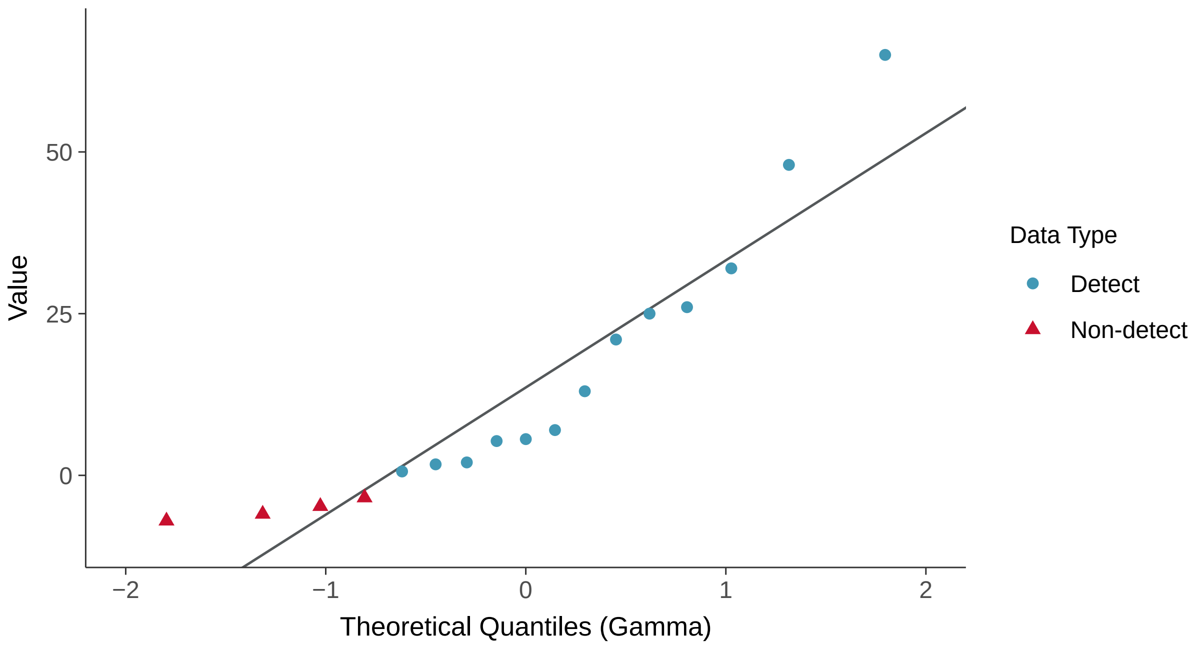



Normal Q-Q plot using ROS Imputed Estimates
Sulfate (as SO4), MW-08 (mg/L)
Value
75
50
25
0
−25
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Lognormal Q-Q plot using ROS Imputed Estimates
Sulfate (as SO4), MW-08 (mg/L)
log(Value)
4
2
0
−2
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

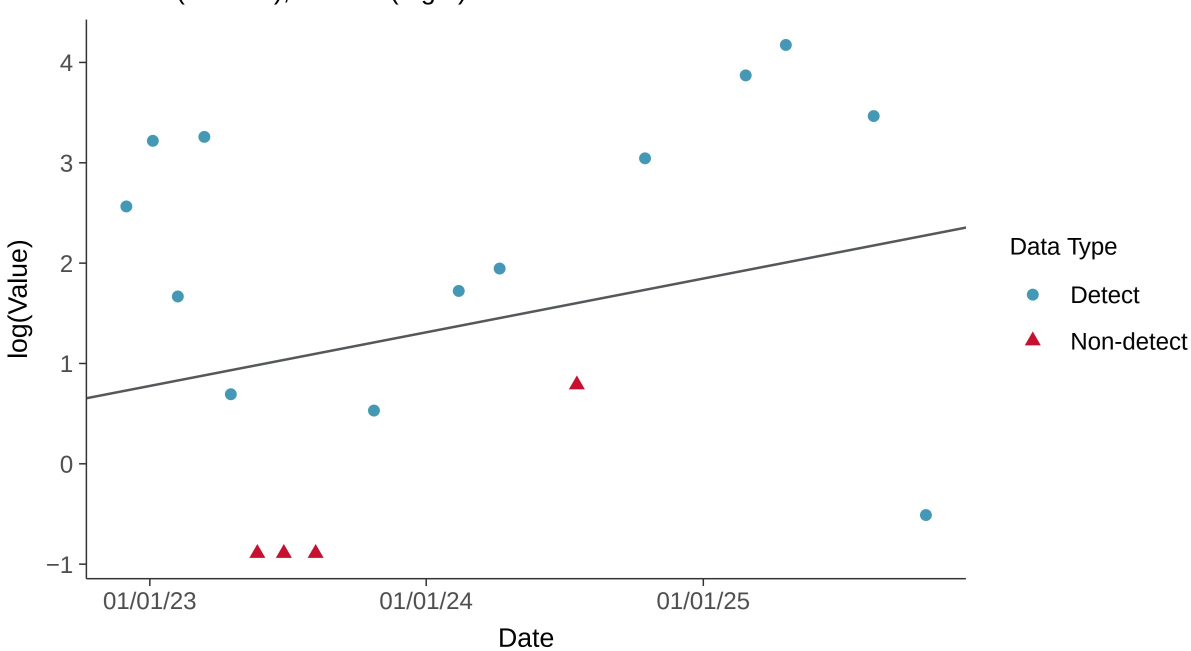
Gamma Q-Q plot using ROS Imputed Estimates

Sulfate (as SO4), MW-08 (mg/L)



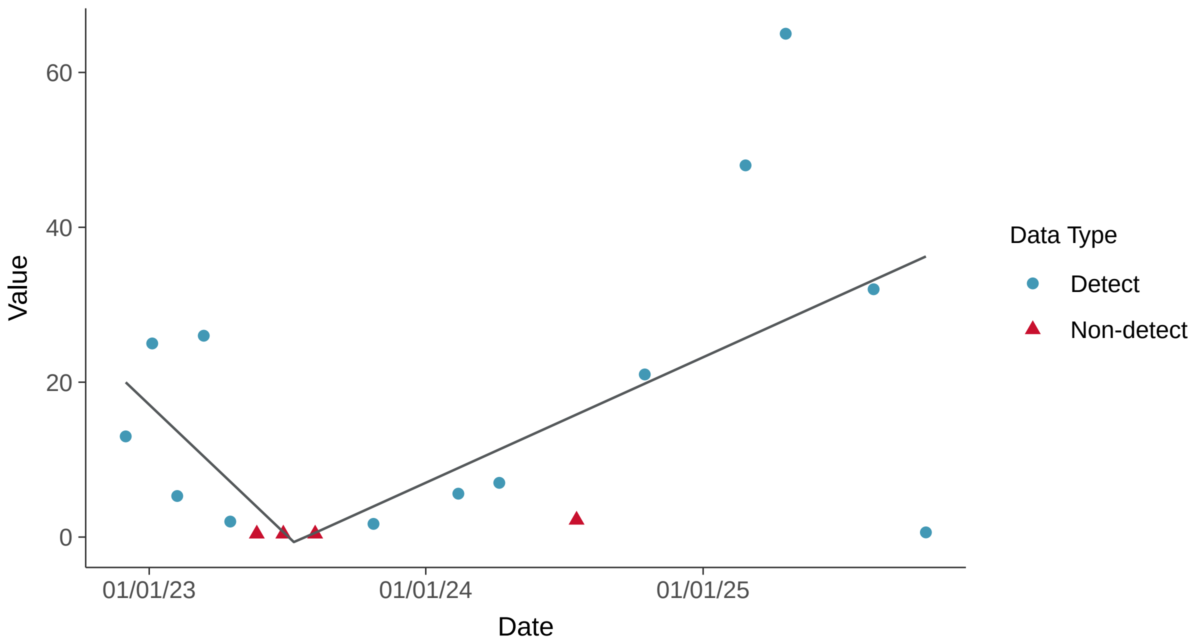
Trend Regression: Lognormal MLE

Sulfate (as SO4), MW-08 (mg/L)



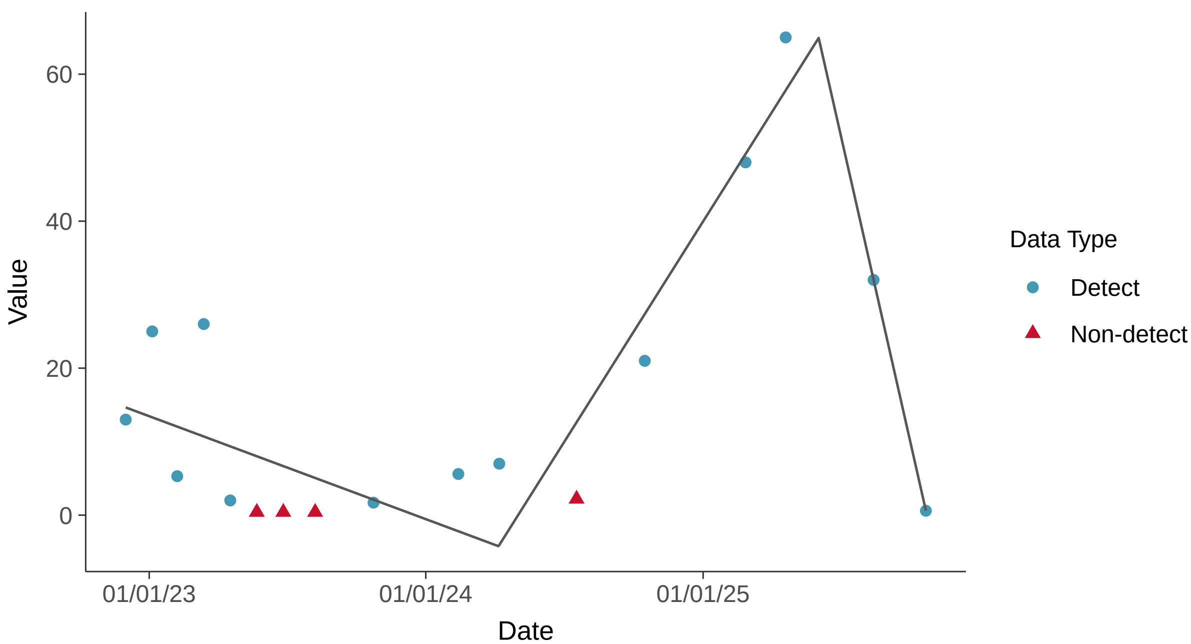
Trend Regression: Piecewise Linear-Linear

Sulfate (as SO4), MW-08 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Sulfate (as SO4), MW-08 (mg/L)

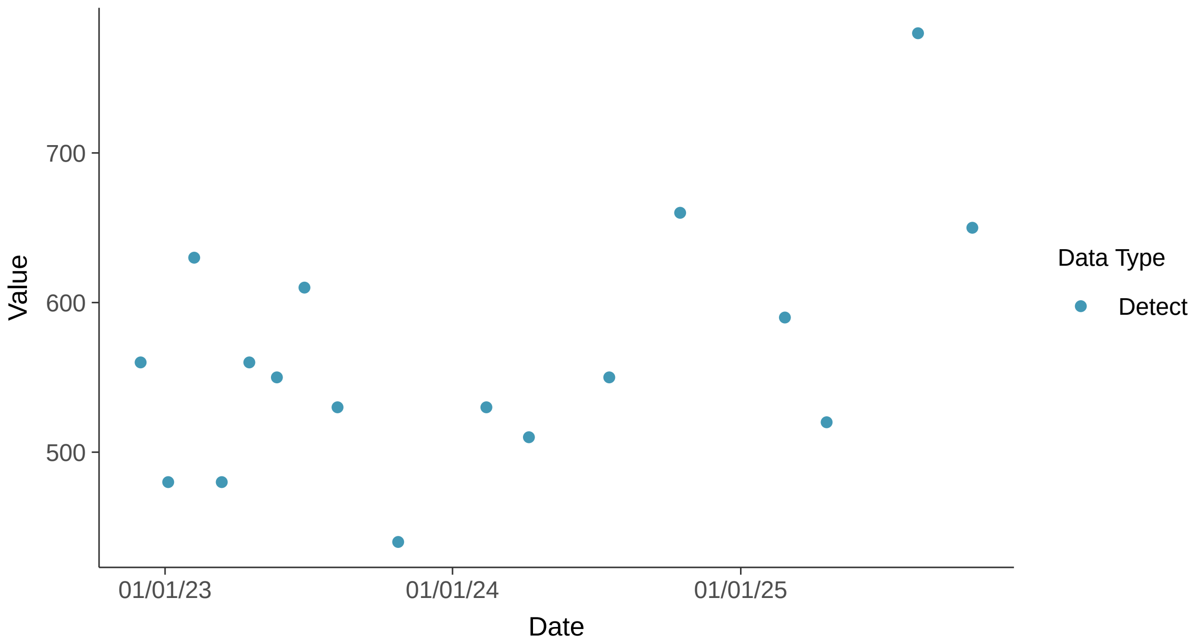


Appendix III: Total Dissolved Solids, MW-08

ID: 18_1_3_126

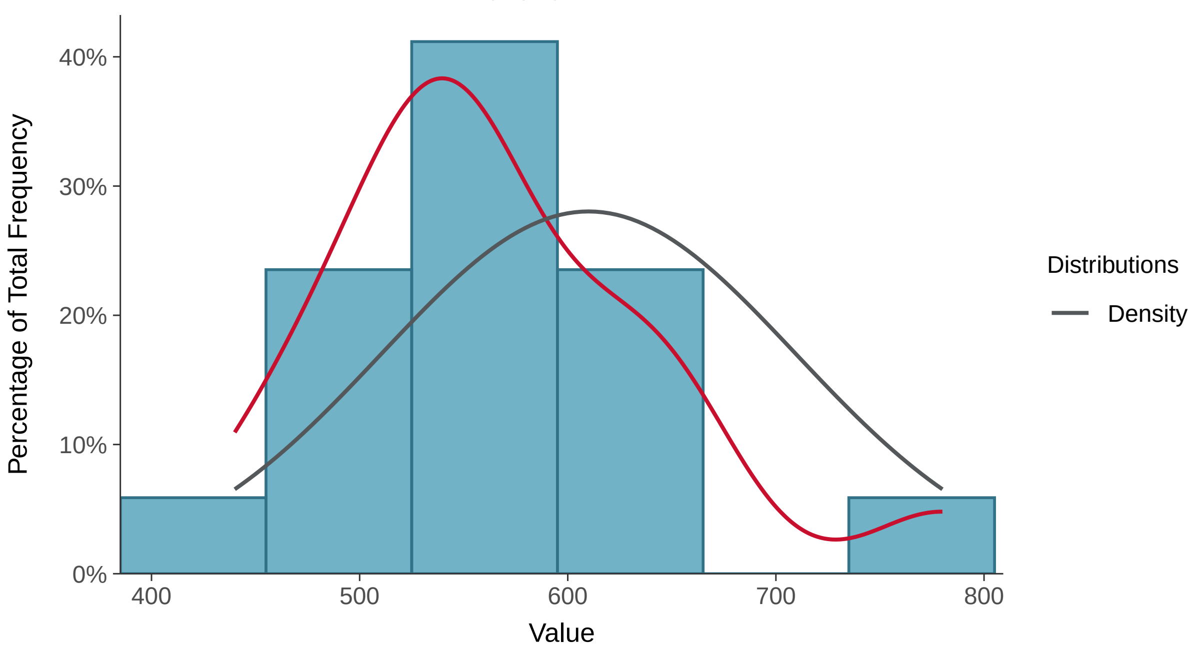
Scatter Plot

Total Dissolved Solids, MW-08 (mg/L)



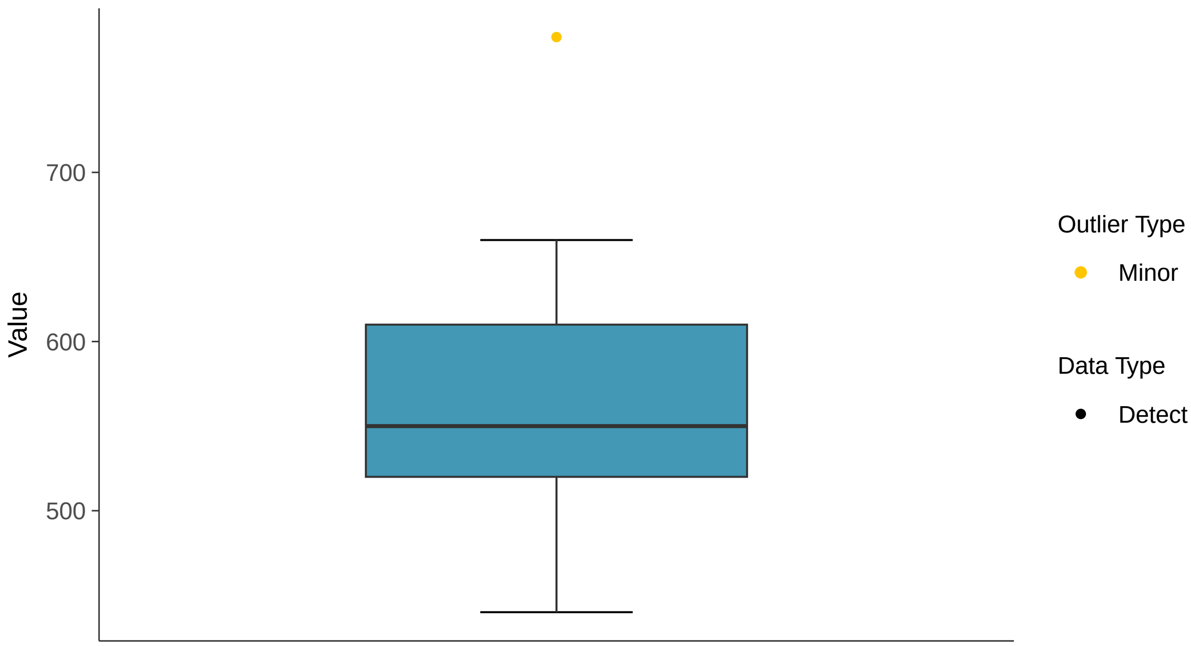
Histogram

Total Dissolved Solids, MW-08 (mg/L)



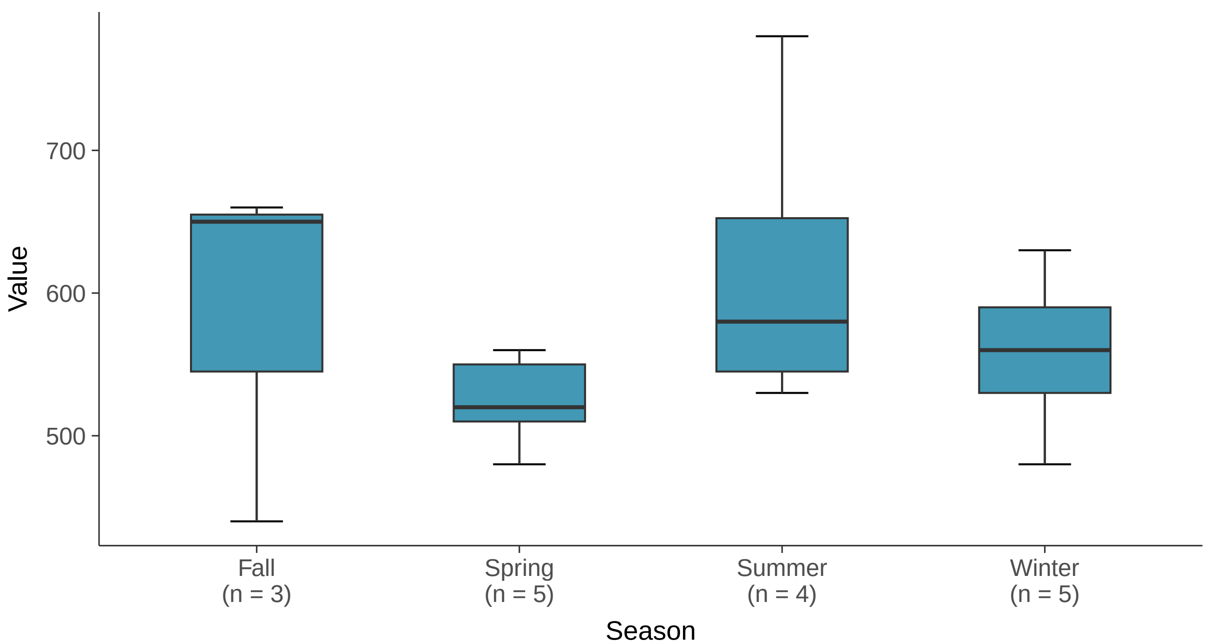
Boxplot

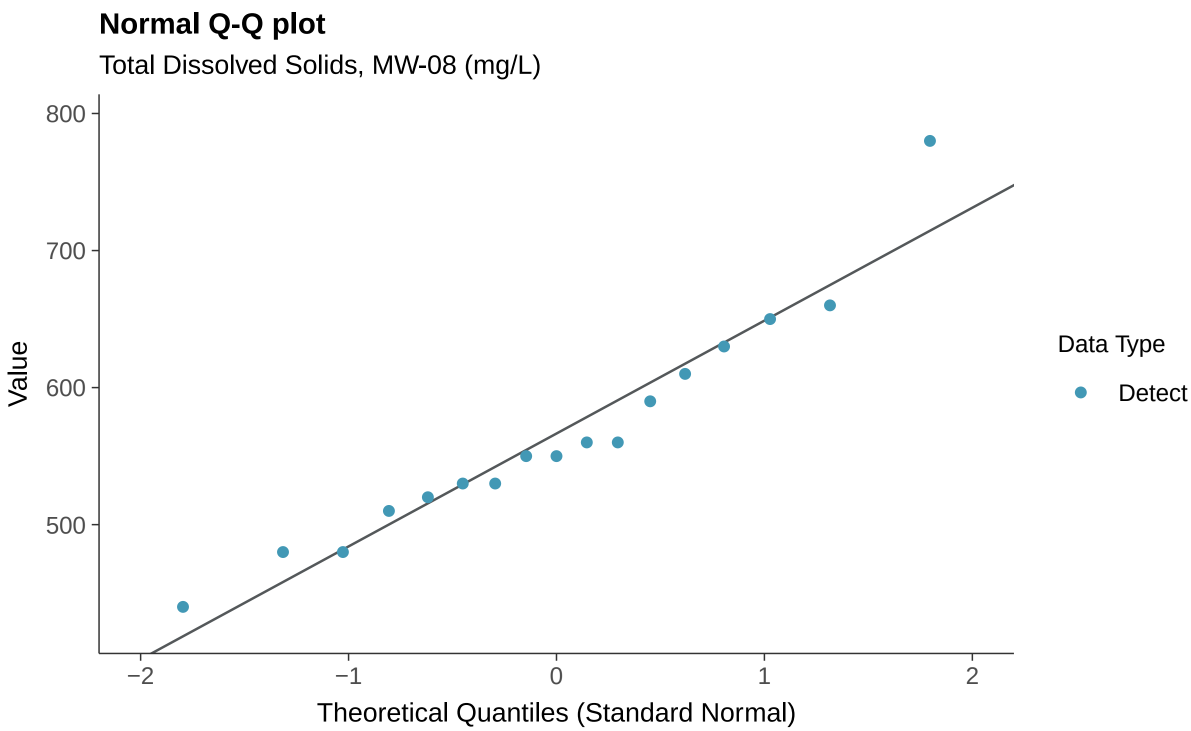
Total Dissolved Solids, MW-08 (mg/L)

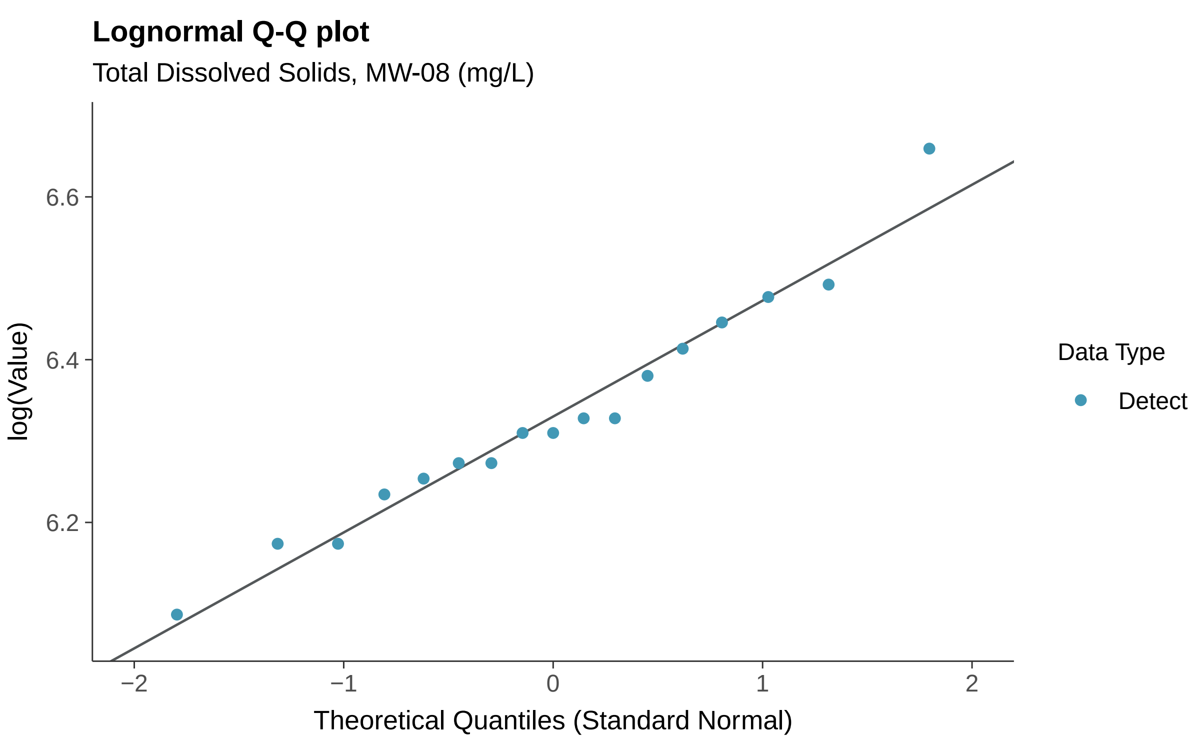


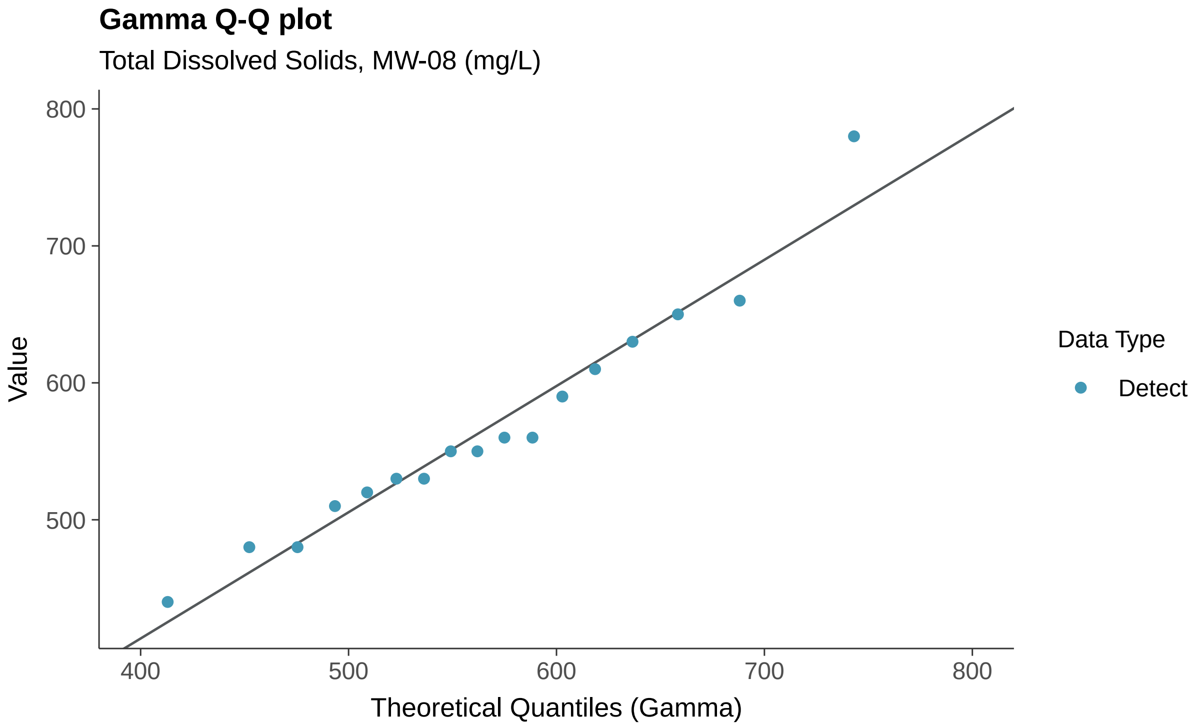
Boxplot by Season

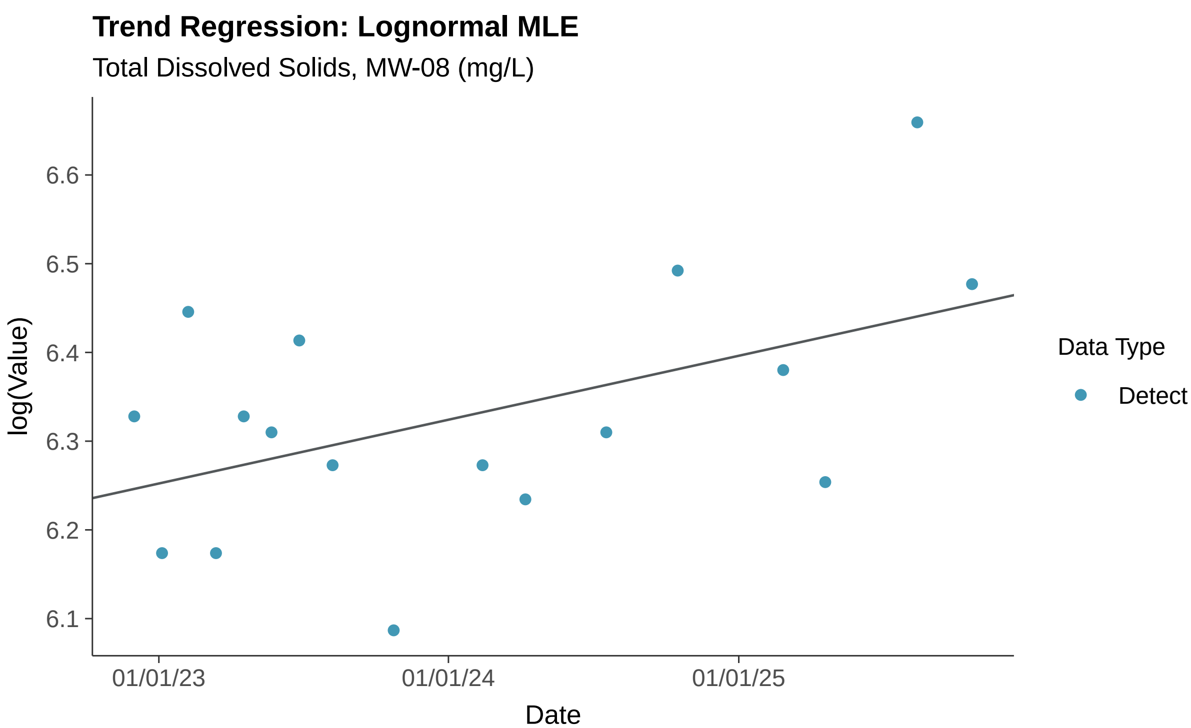
Total Dissolved Solids, MW-08 (mg/L)




Normal Q-Q plot
Total Dissolved Solids, MW-08 (mg/L)
800
700
600
500
Value
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

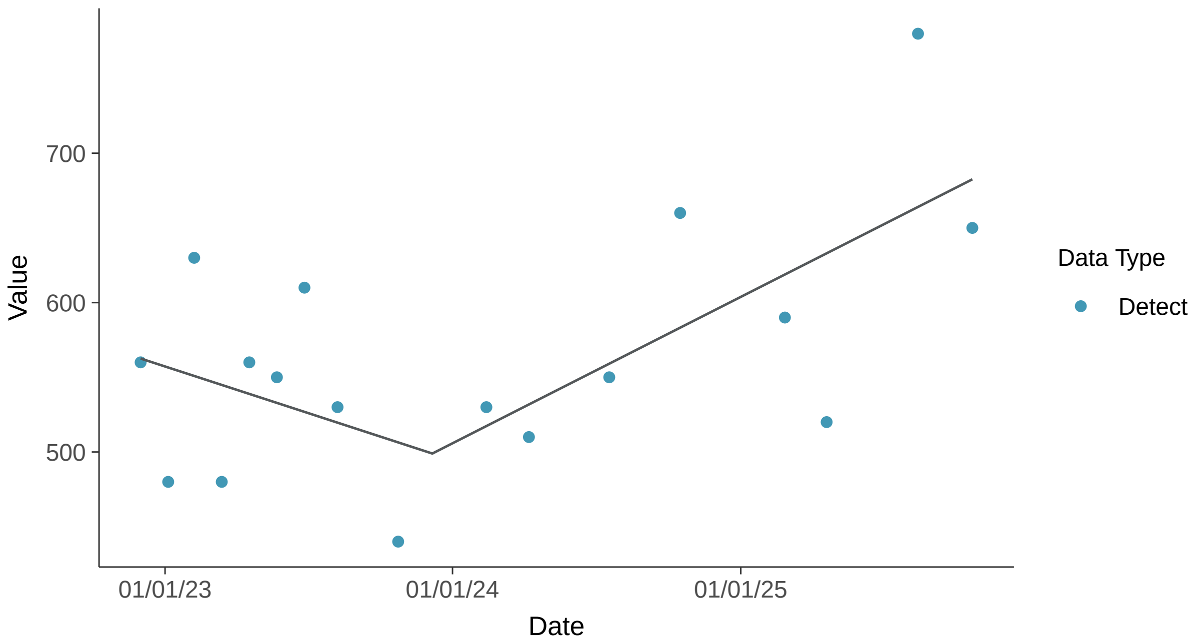

Lognormal Q-Q plot
Total Dissolved Solids, MW-08 (mg/L)
6.6
6.4
6.2
log(Value)
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Total Dissolved Solids, MW-08 (mg/L)
Value
800
700
600
500
400
500
600
700
800
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Total Dissolved Solids, MW-08 (mg/L)
log(Value)
6.6
6.5
6.4
6.3
6.2
6.1
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

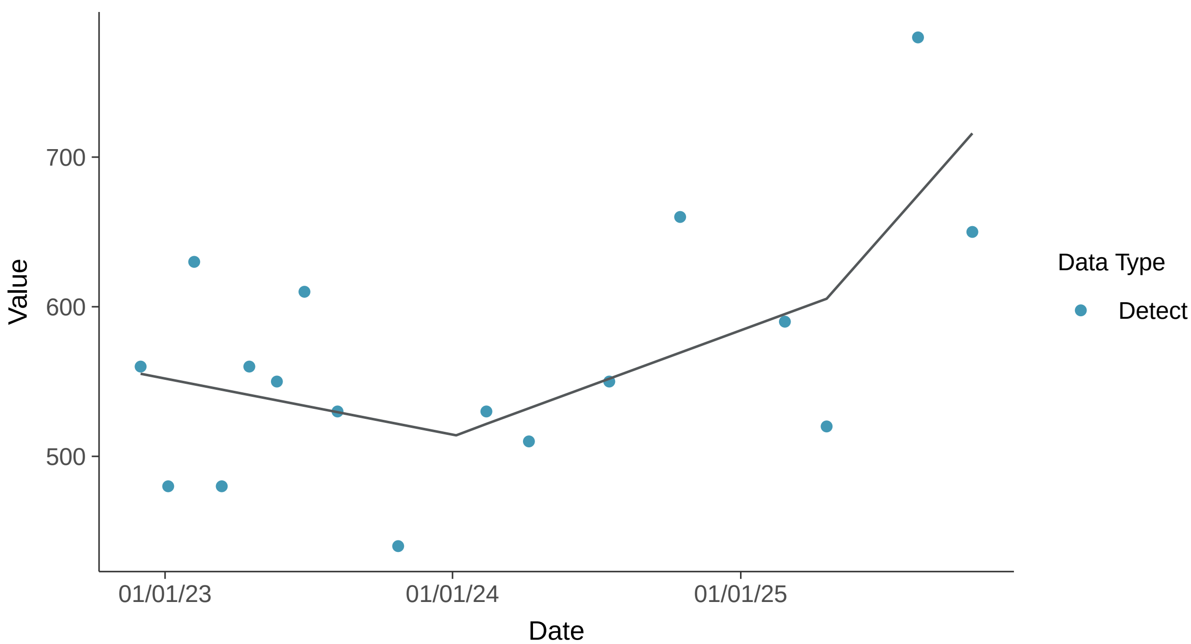
Trend Regression: Piecewise Linear-Linear

Total Dissolved Solids, MW-08 (mg/L)



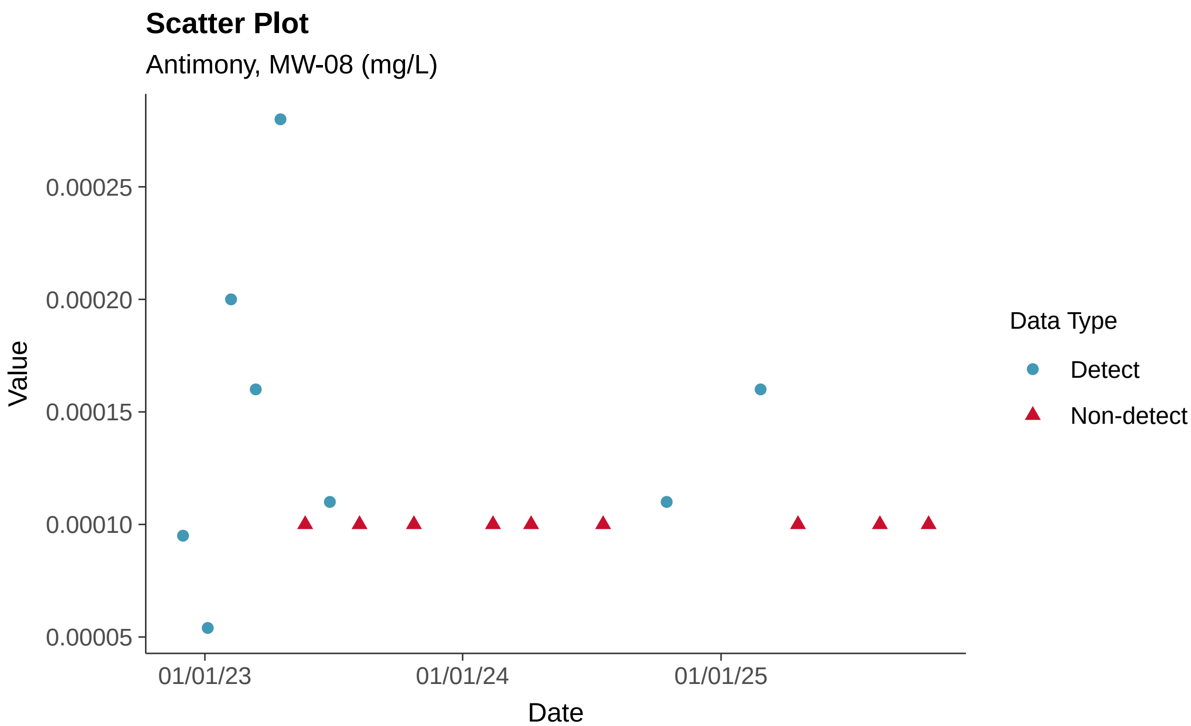
Trend Regression: Piecewise Linear-Linear-Linear

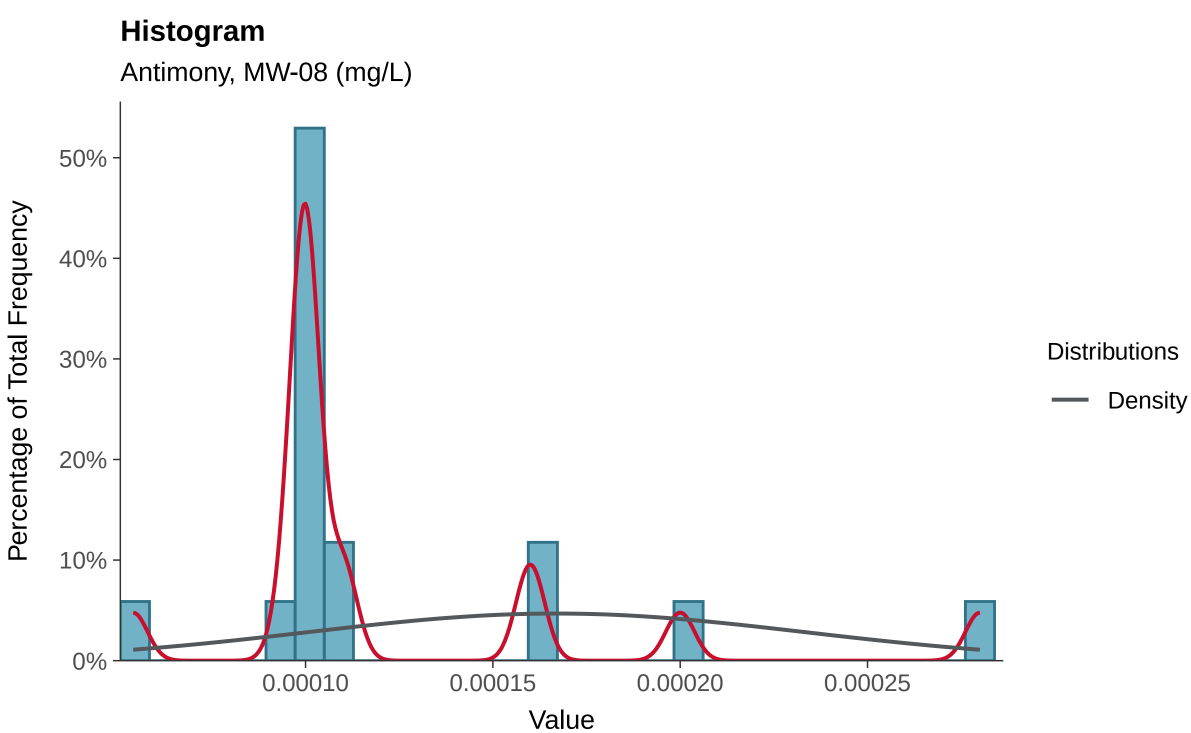
Total Dissolved Solids, MW-08 (mg/L)



Appendix IV: Antimony, MW-08

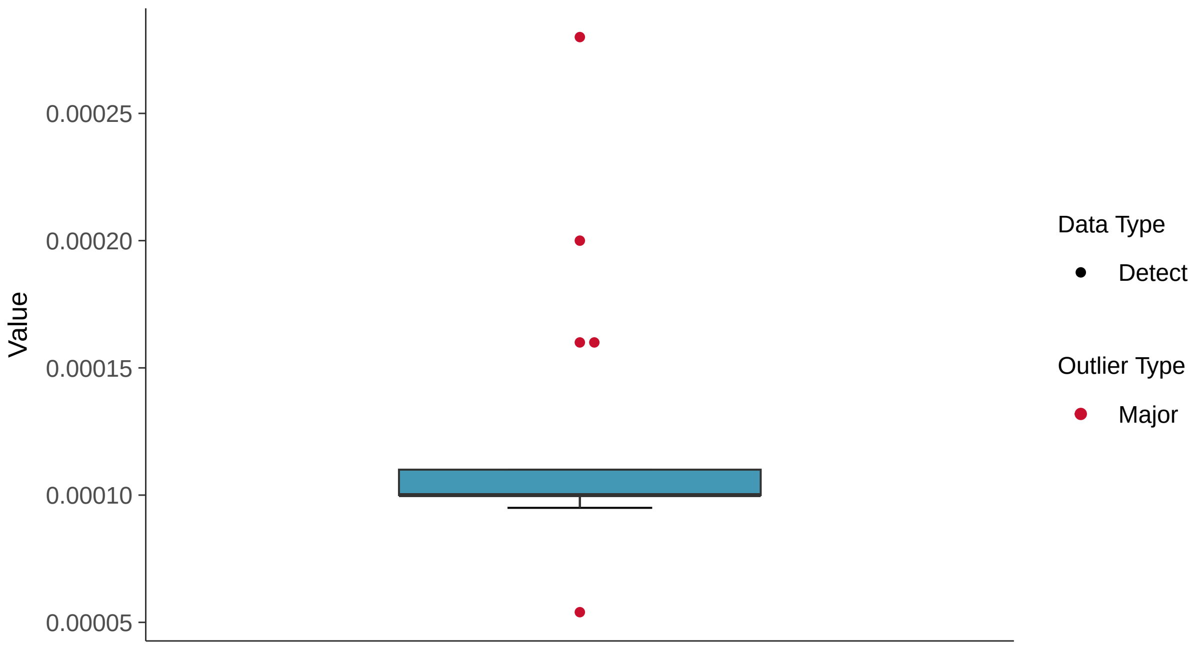
ID: 18_1_4_101





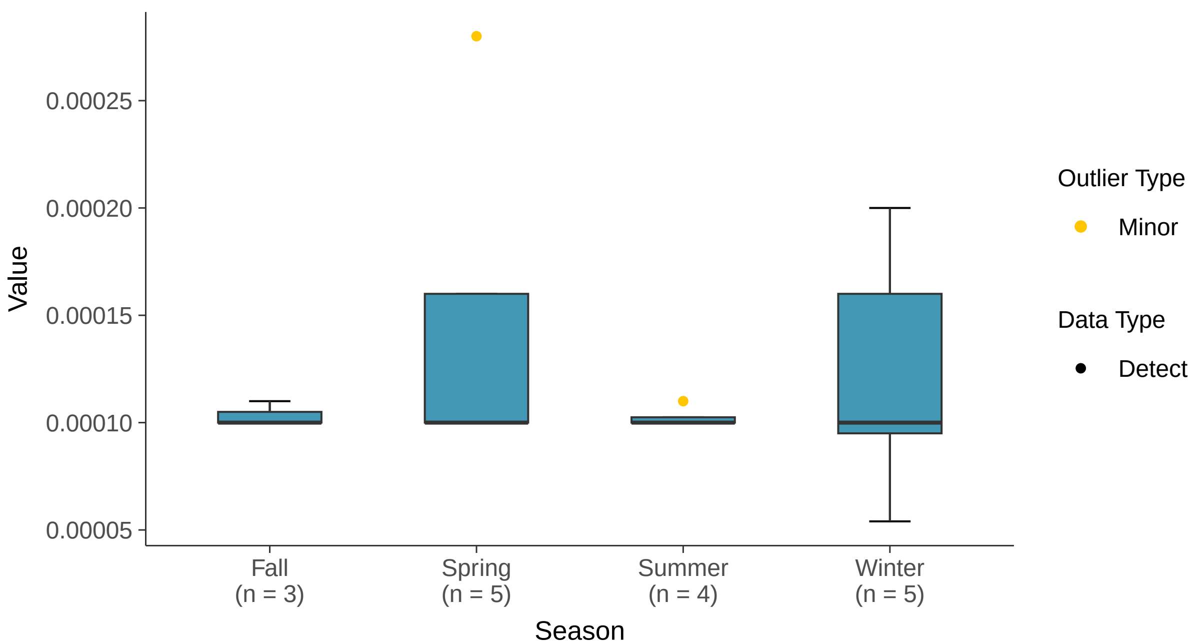
Boxplot

Antimony, MW-08 (mg/L)



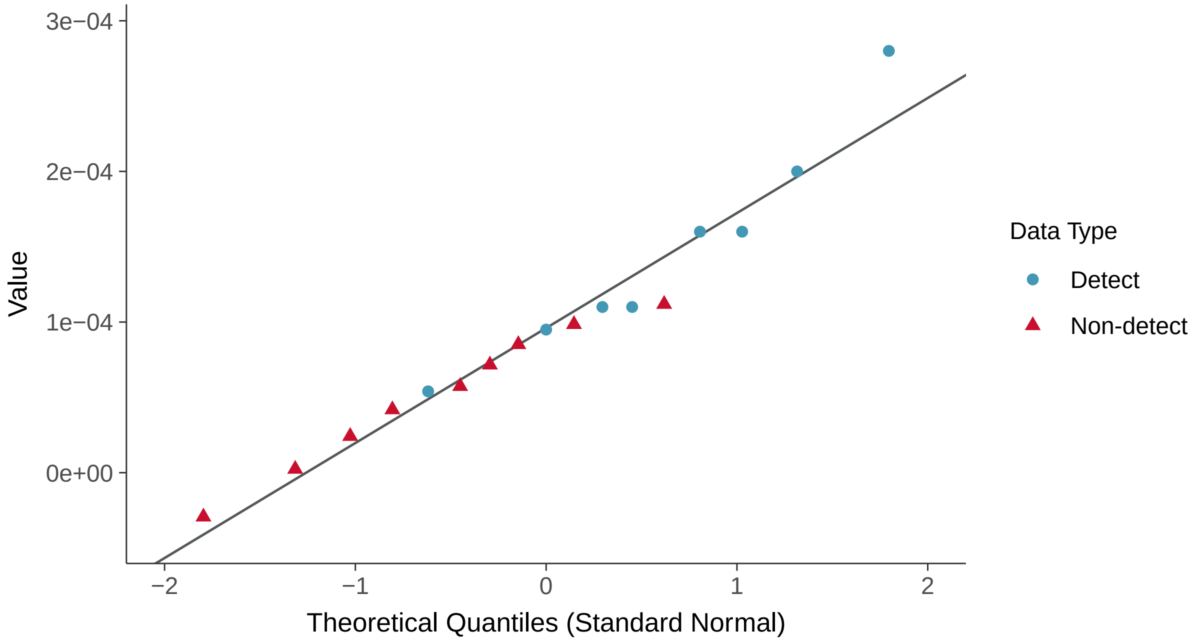
Boxplot by Season

Antimony, MW-08 (mg/L)



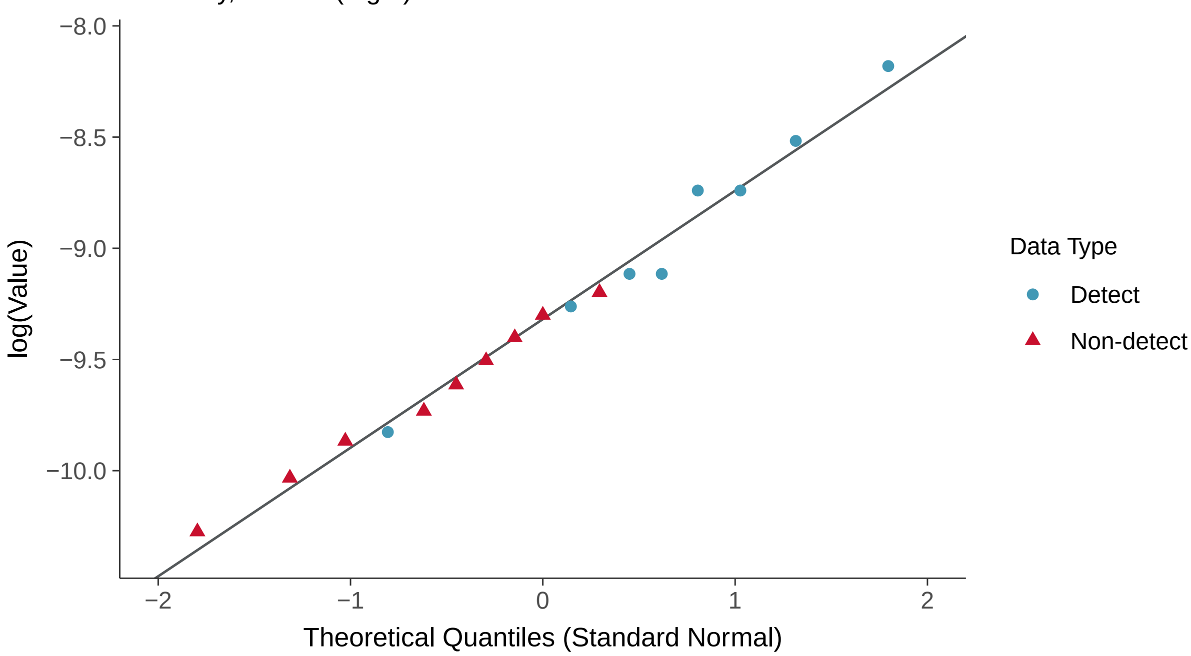
Normal Q-Q plot using ROS Imputed Estimates

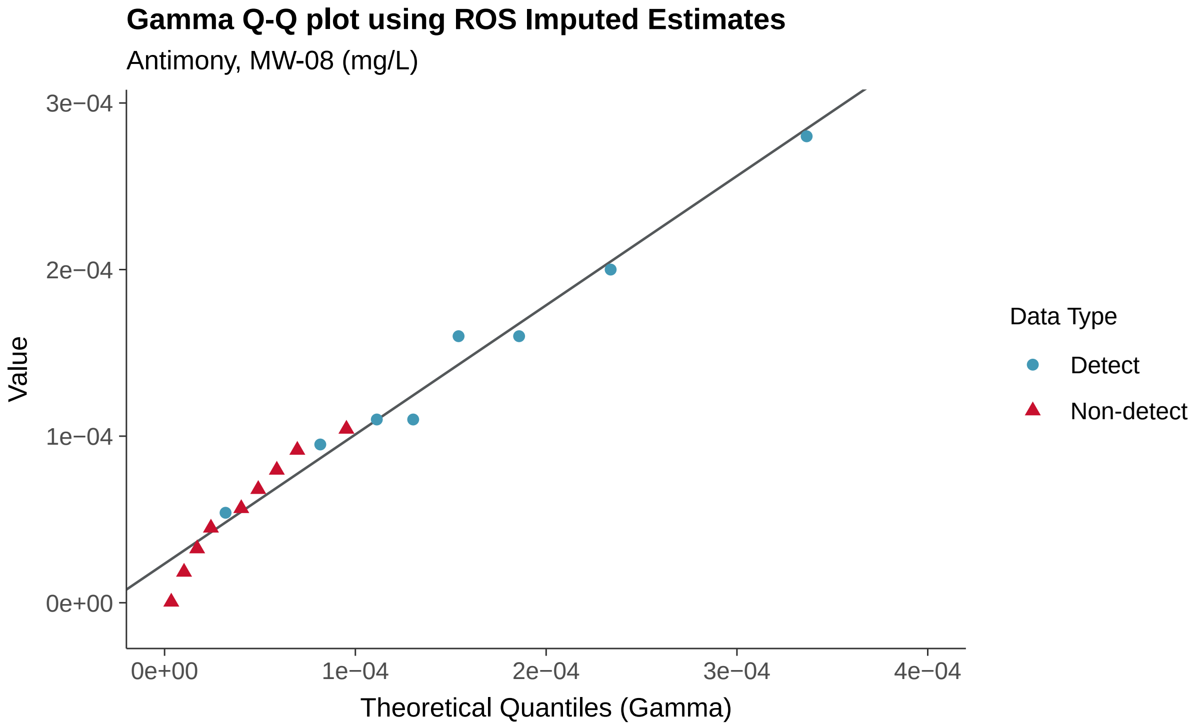
Antimony, MW-08 (mg/L)

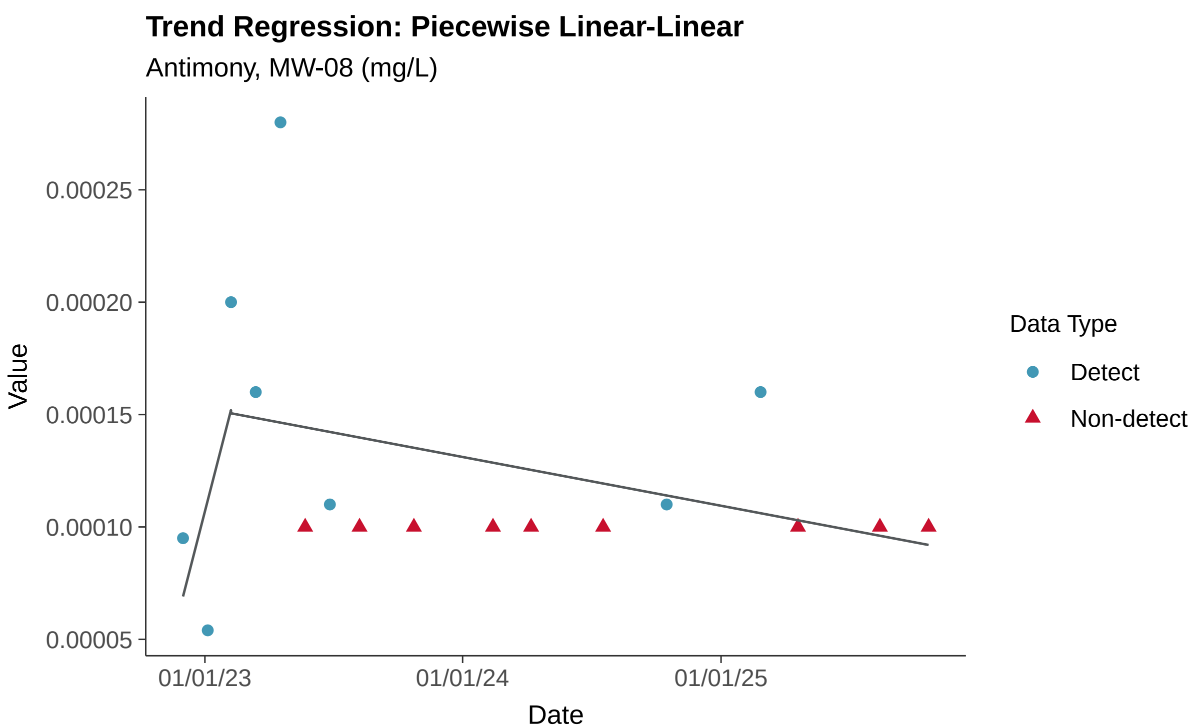


Lognormal Q-Q plot using ROS Imputed Estimates

Antimony, MW-08 (mg/L)



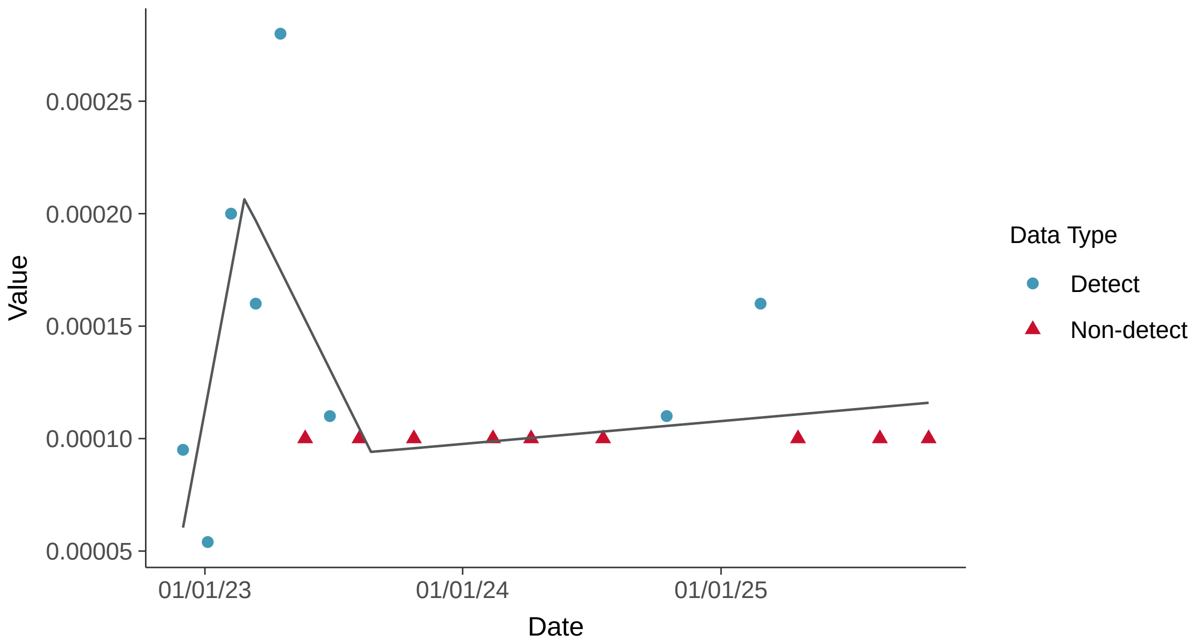

Gamma Q-Q plot using ROS Imputed Estimates
Antimony, MW-08 (mg/L)
Value
3e−04
2e−04
1e−04
0e+00
0e+00
1e−04
2e−04
3e−04
4e−04
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Antimony, MW-08 (mg/L)
Value
0.00025
0.00020
0.00015
0.00010
0.00005
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Grand Haven
Downgradient Wells as of October 2025

Trend Regression: Piecewise Linear-Linear-Linear

Antimony, MW-08 (mg/L)

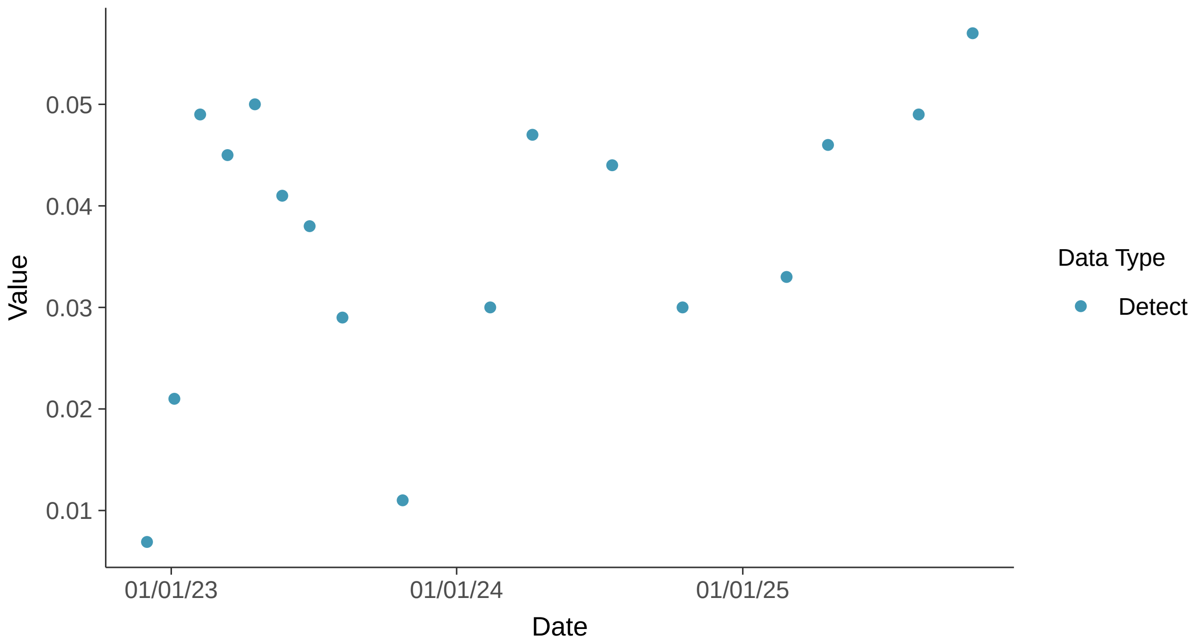


Appendix IV: Arsenic, MW-08

ID: 18_1_4_102

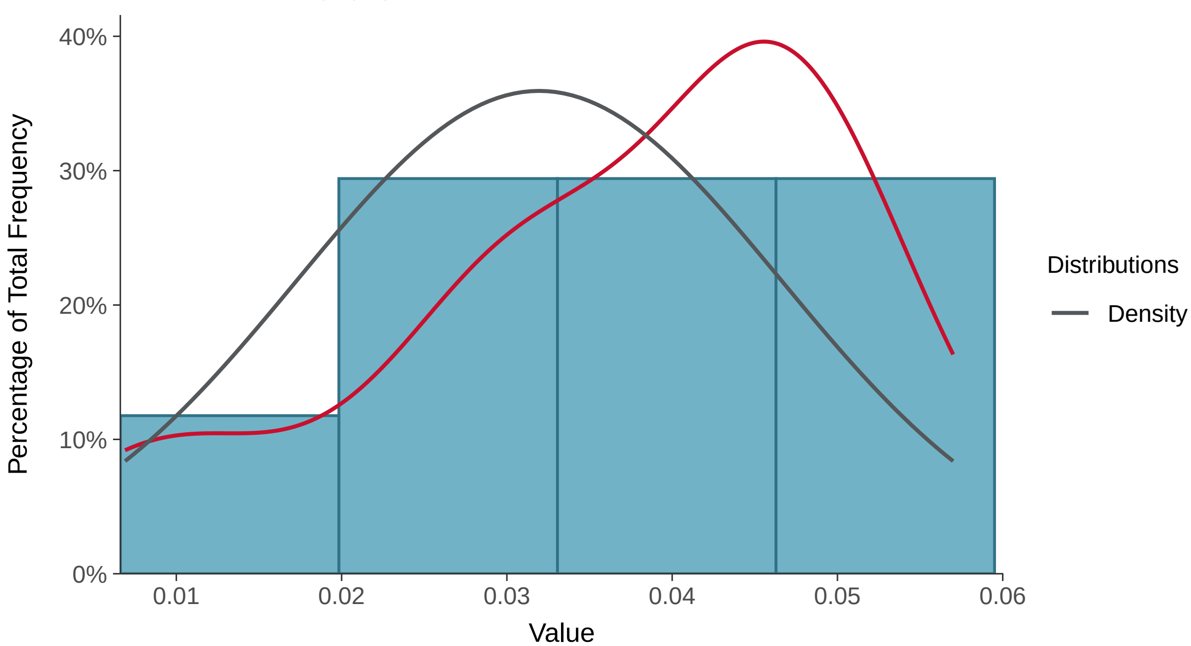
Scatter Plot

Arsenic, MW-08 (mg/L)



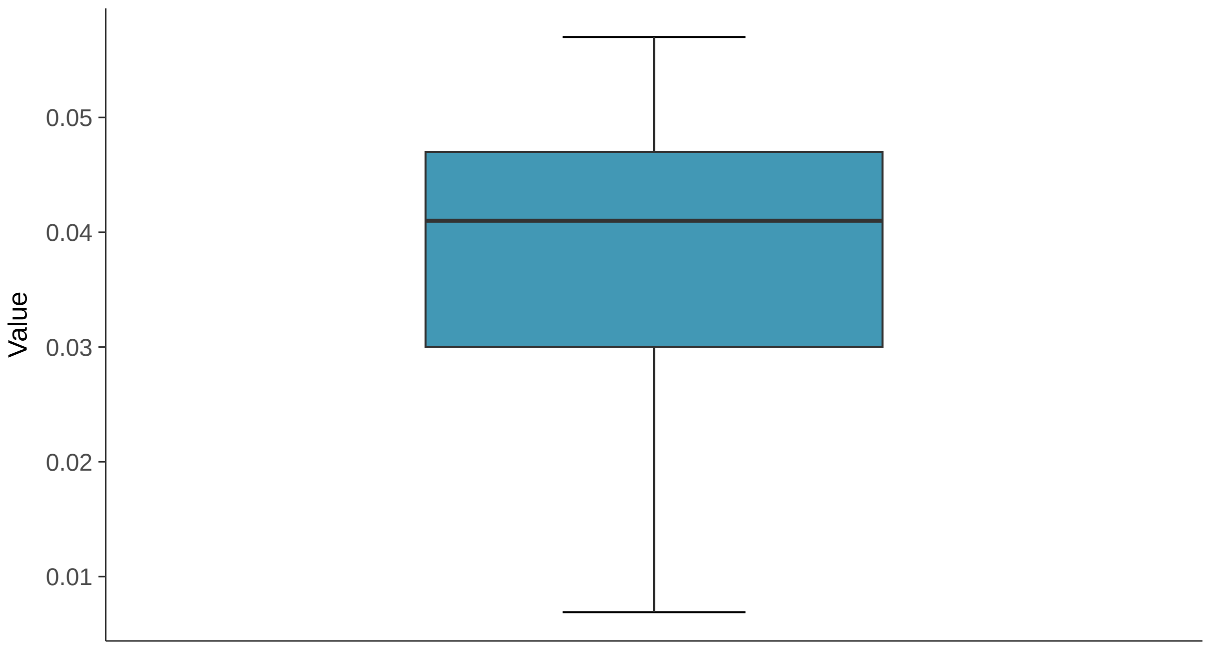
Histogram

Arsenic, MW-08 (mg/L)



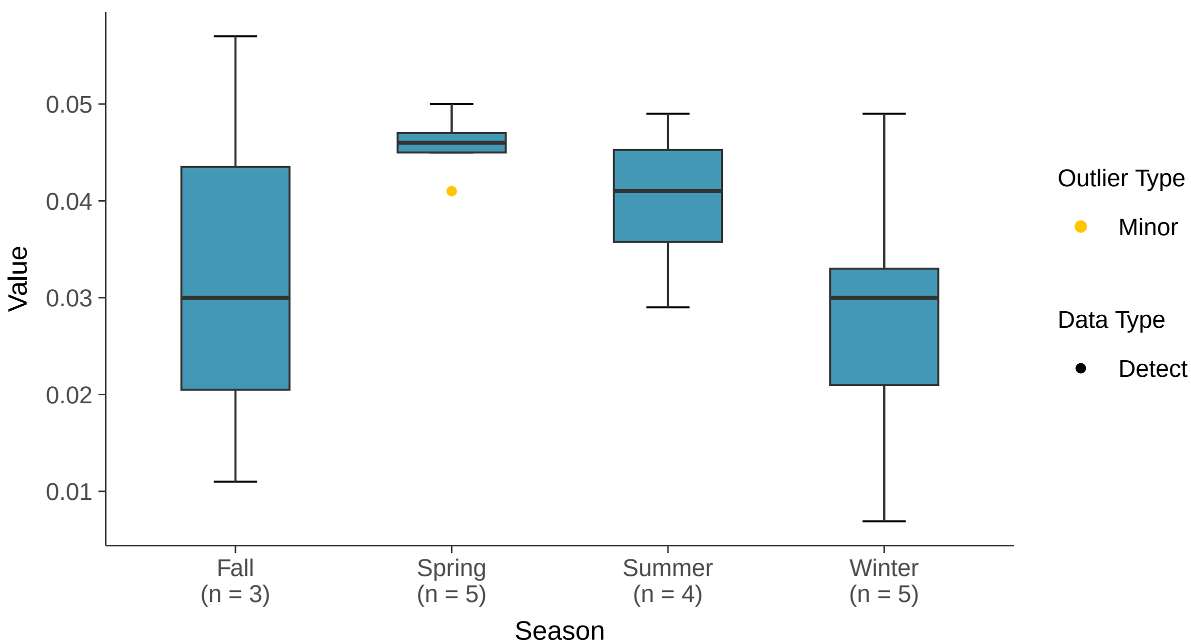
Boxplot

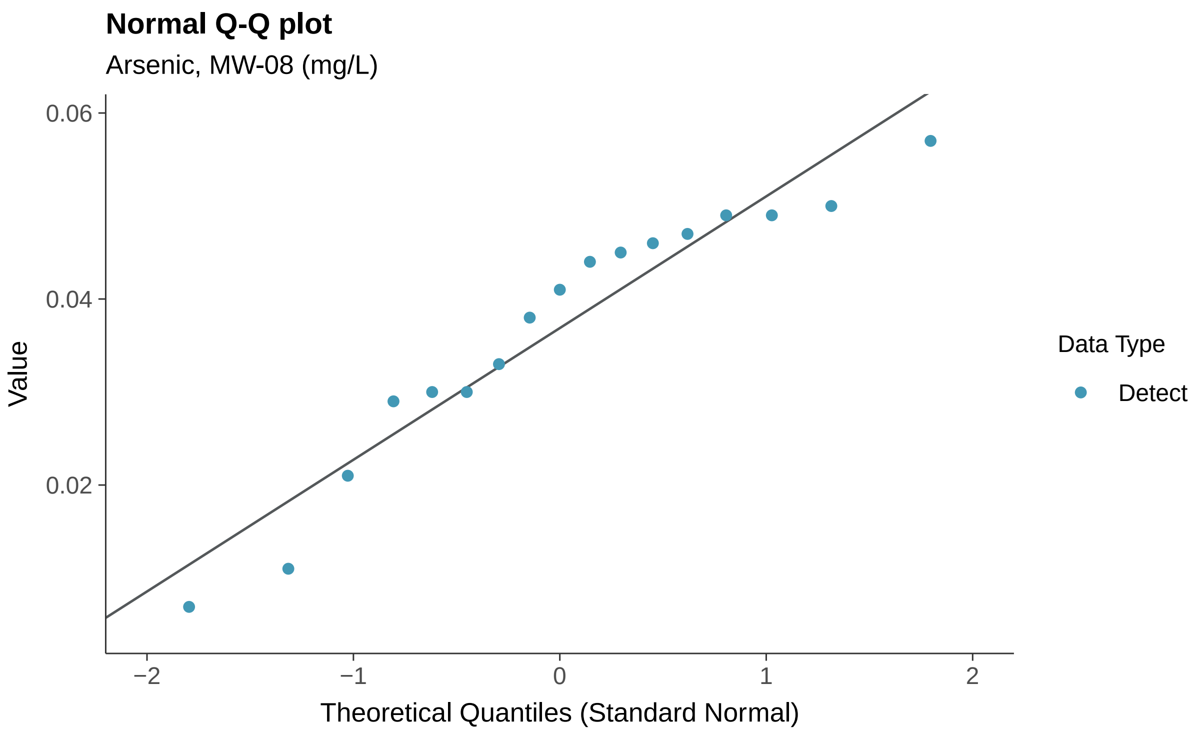
Arsenic, MW-08 (mg/L)

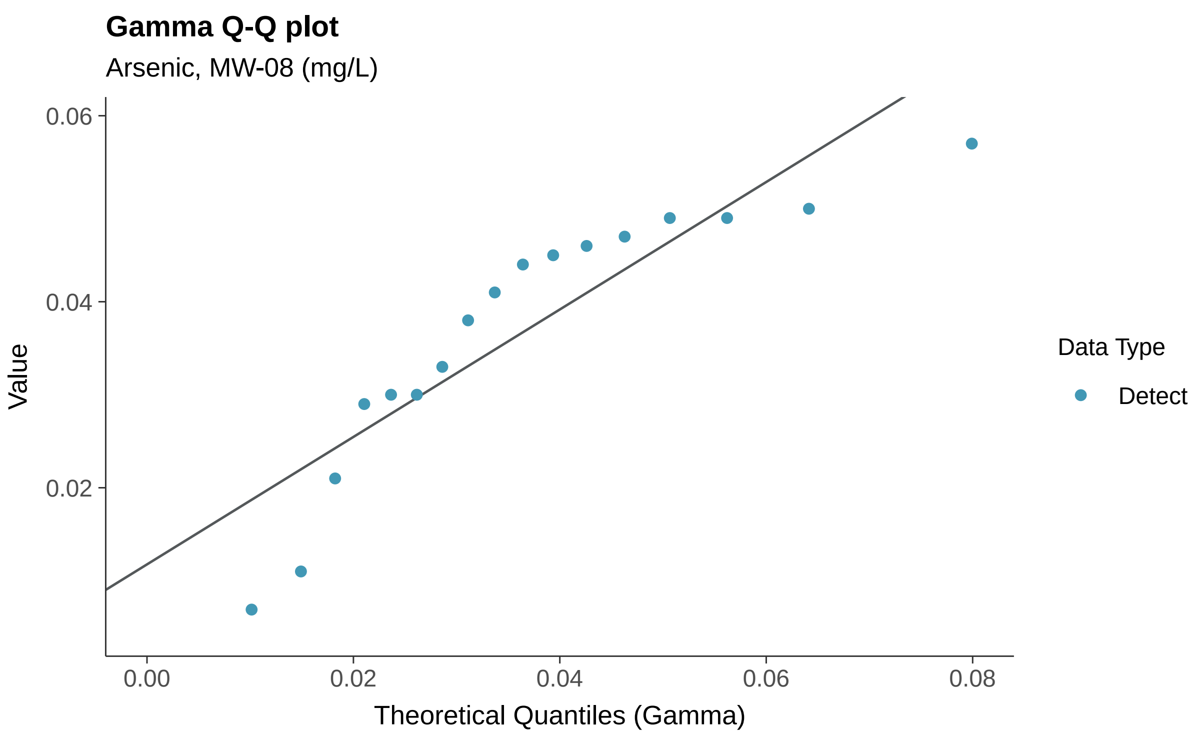


Boxplot by Season

Arsenic, MW-08 (mg/L)

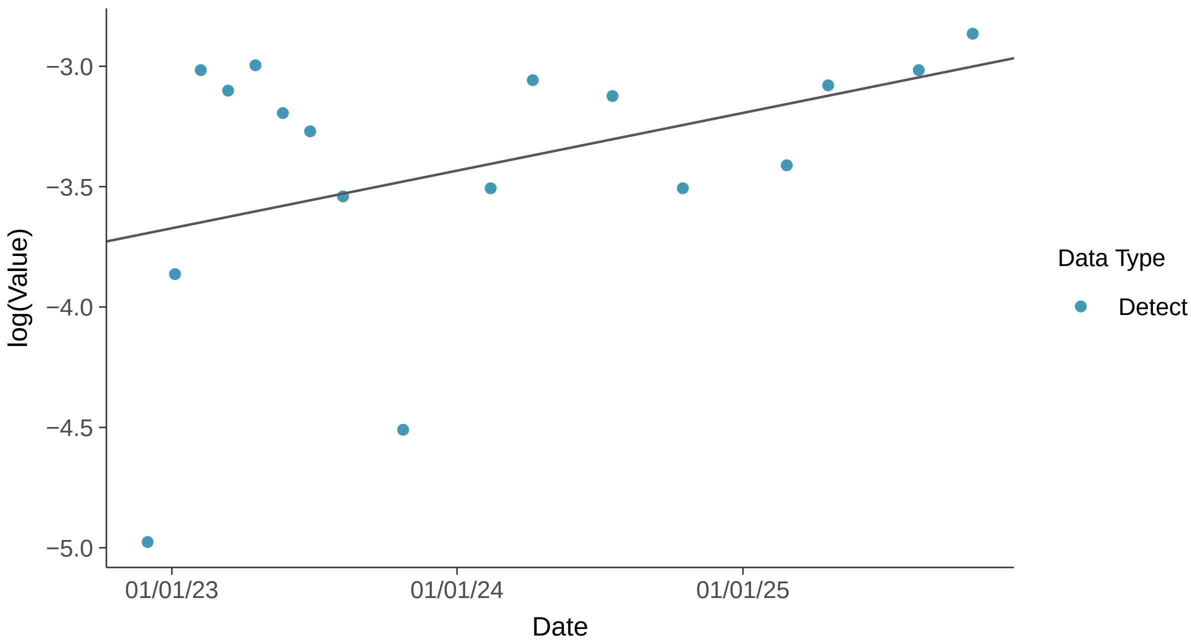



Normal Q-Q plot
Arsenic, MW-08 (mg/L)
0.06
0.04
0.02
Value
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Arsenic, MW-08 (mg/L)
0.06
0.04
0.02
Value
0.00
0.02
0.04
0.06
0.08
Theoretical Quantiles (Gamma)
Data Type
Detect

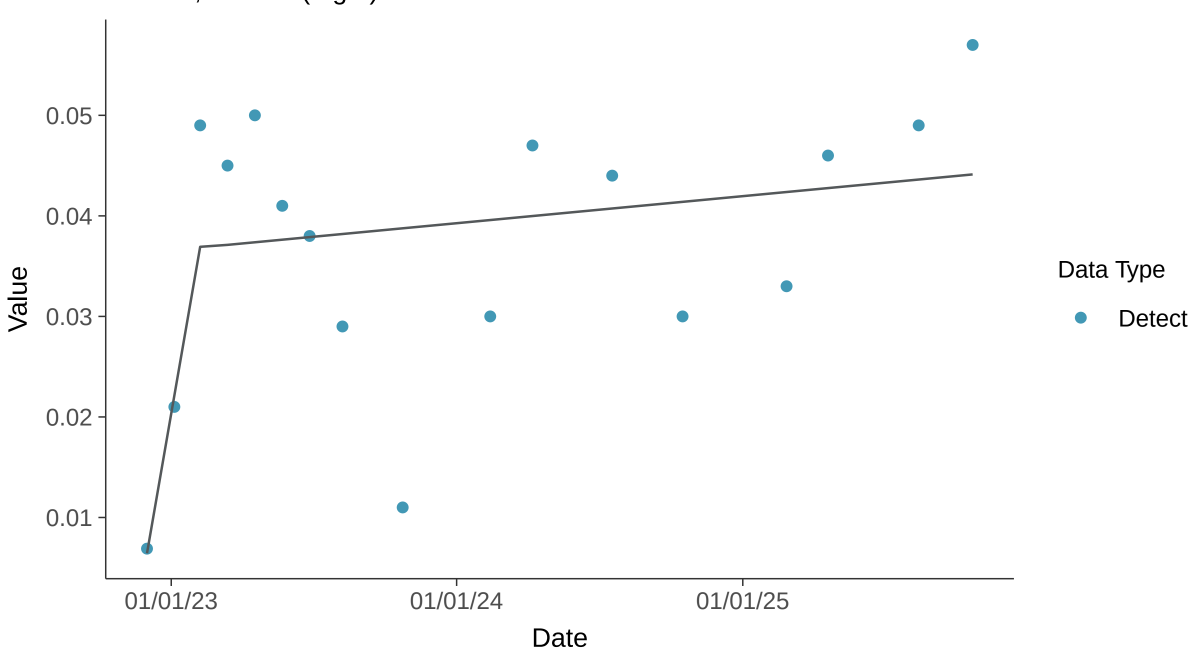
Trend Regression: Lognormal MLE

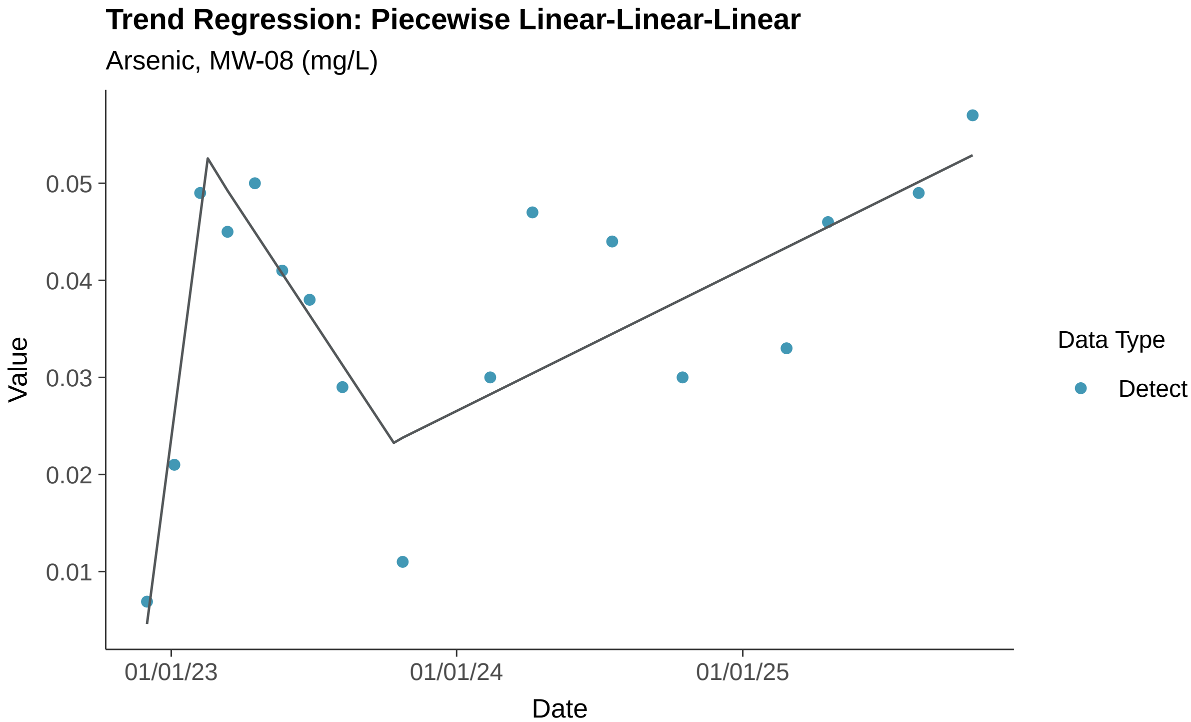
Arsenic, MW-08 (mg/L)



Trend Regression: Piecewise Linear-Linear

Arsenic, MW-08 (mg/L)



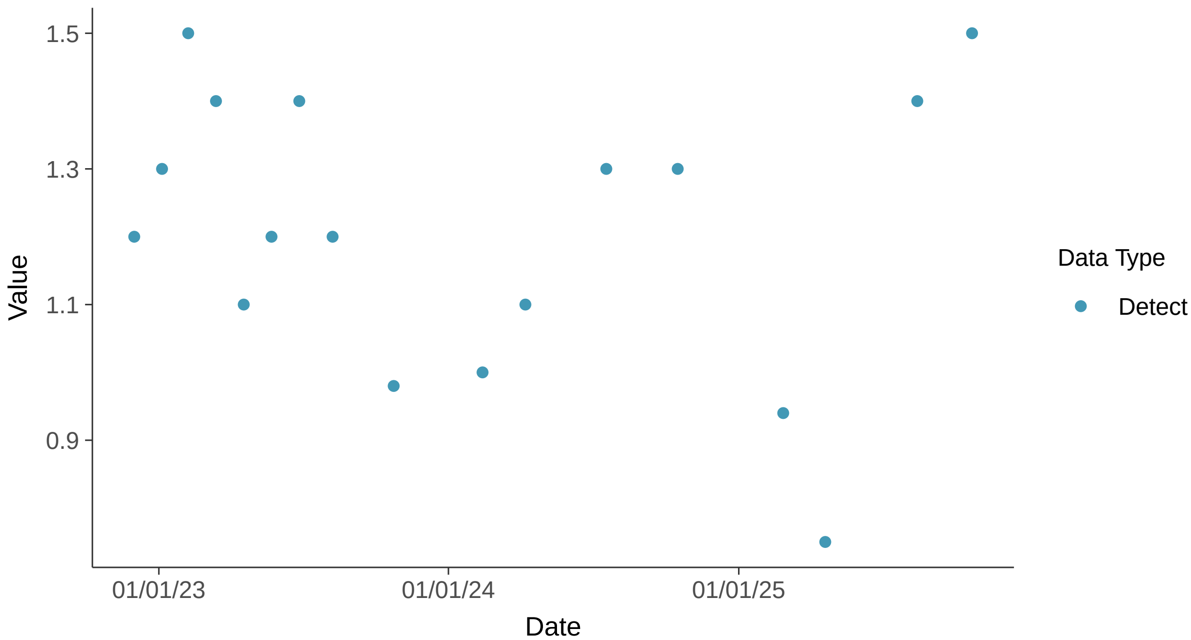

Trend Regression: Piecewise Linear-Linear-Linear
Arsenic, MW-08 (mg/L)
Value
0.05
0.04
0.03
0.02
0.01
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Appendix IV: Barium, MW-08

ID: 18_1_4_103

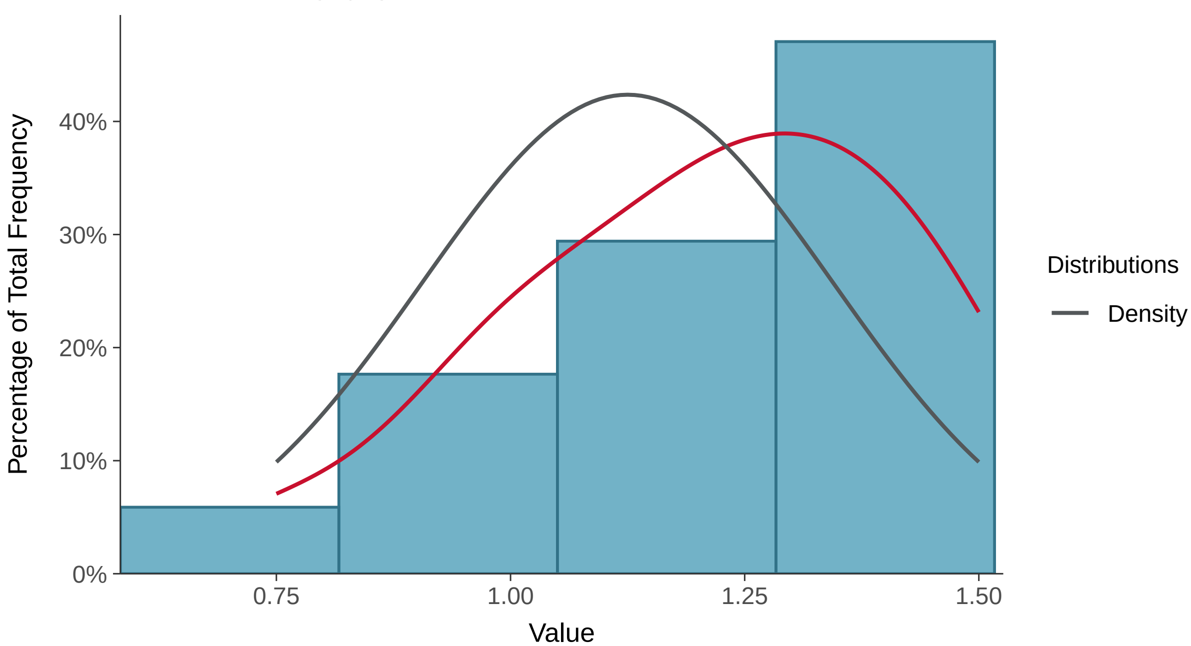
Scatter Plot

Barium, MW-08 (mg/L)



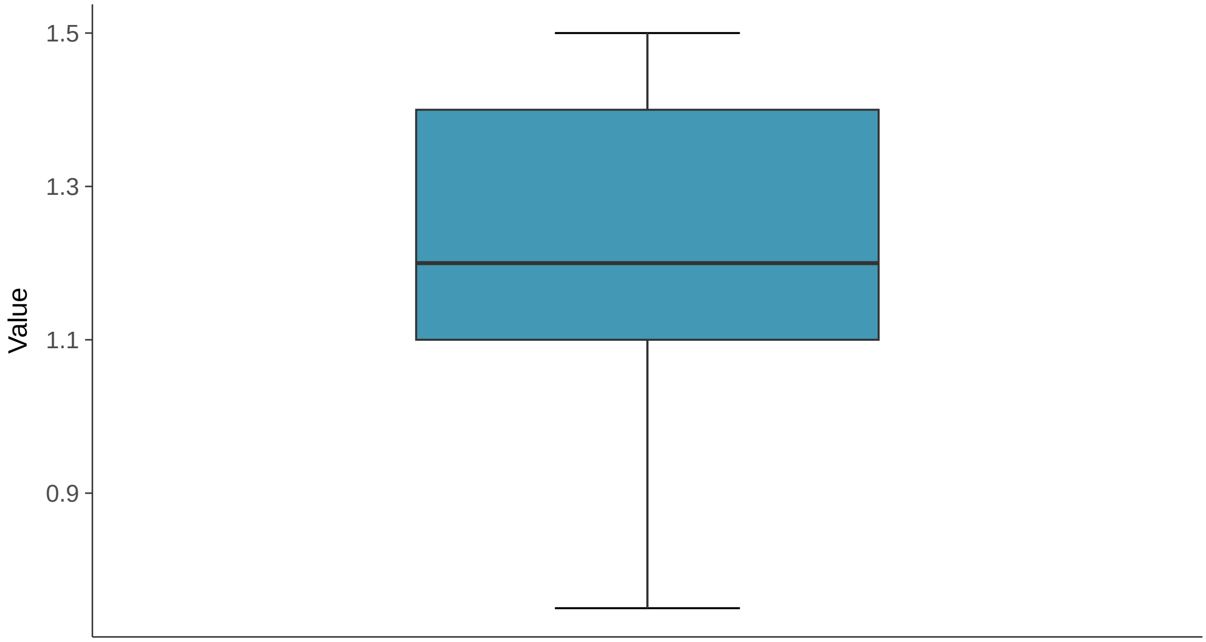
Histogram

Barium, MW-08 (mg/L)



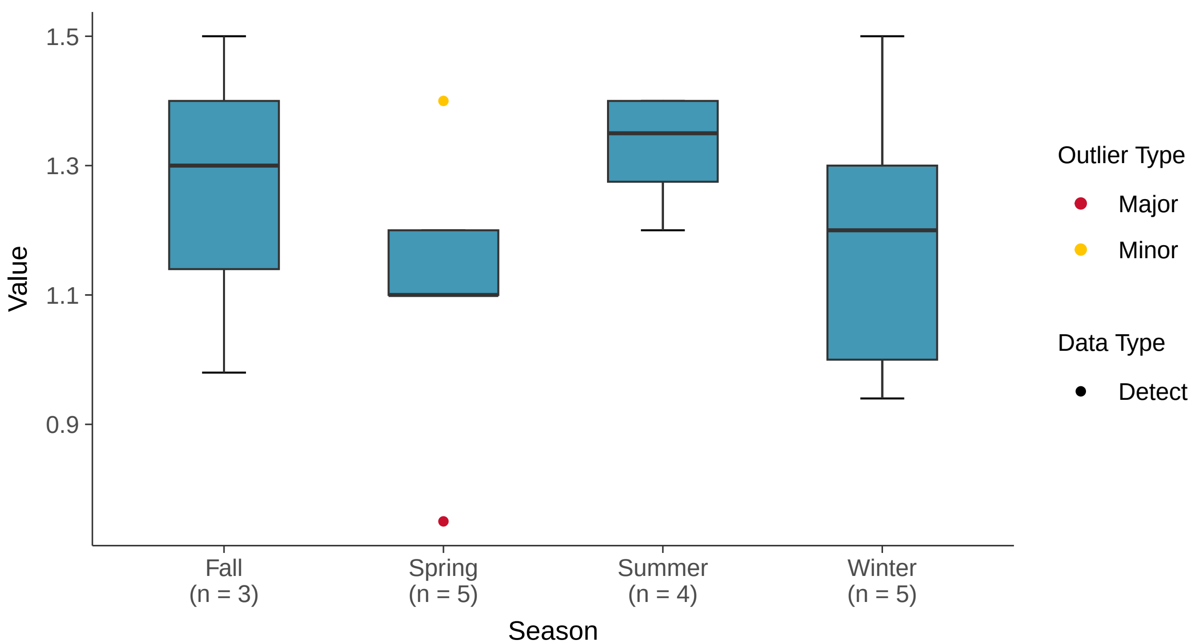
Boxplot

Barium, MW-08 (mg/L)



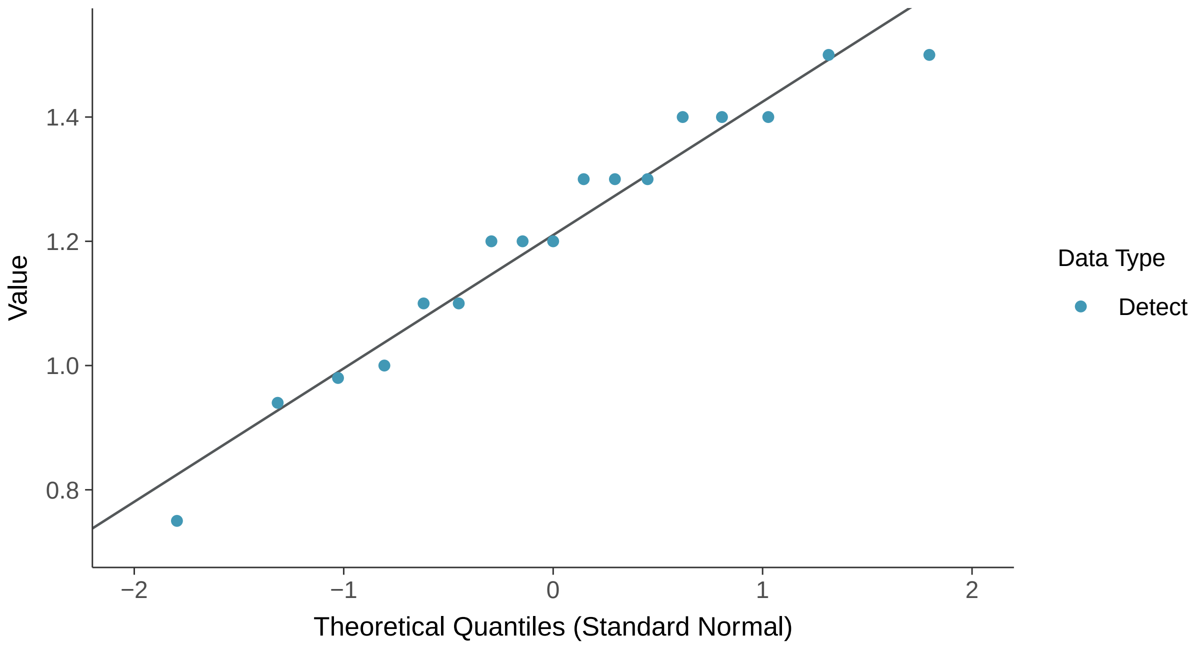
Boxplot by Season

Barium, MW-08 (mg/L)



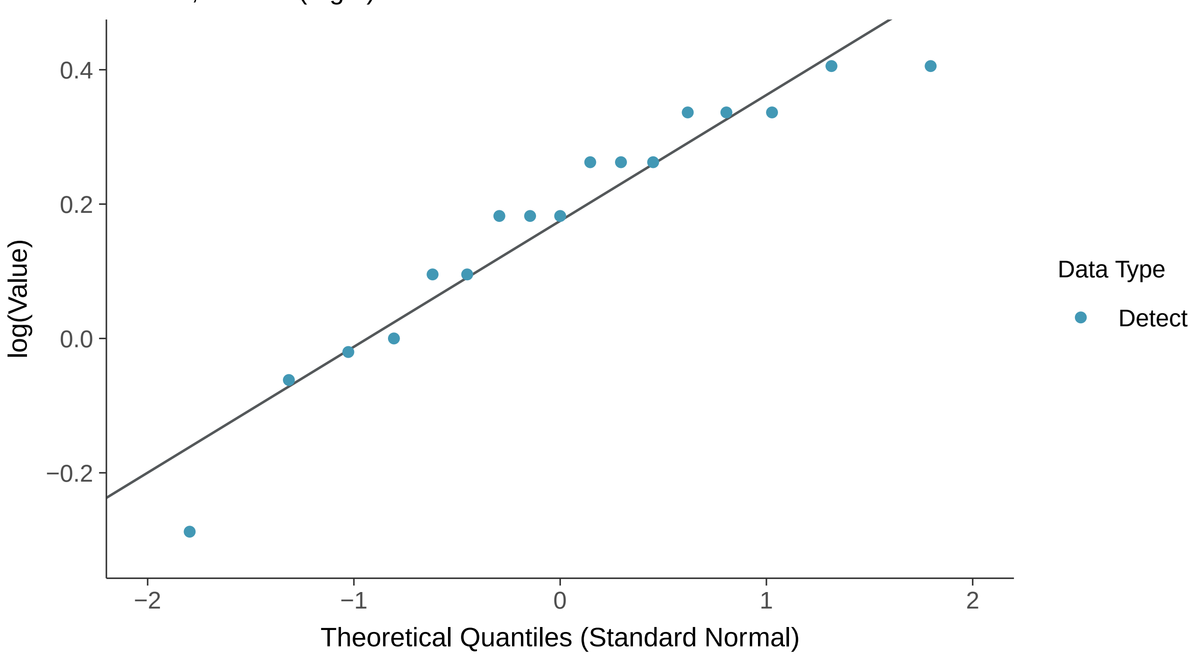
Normal Q-Q plot

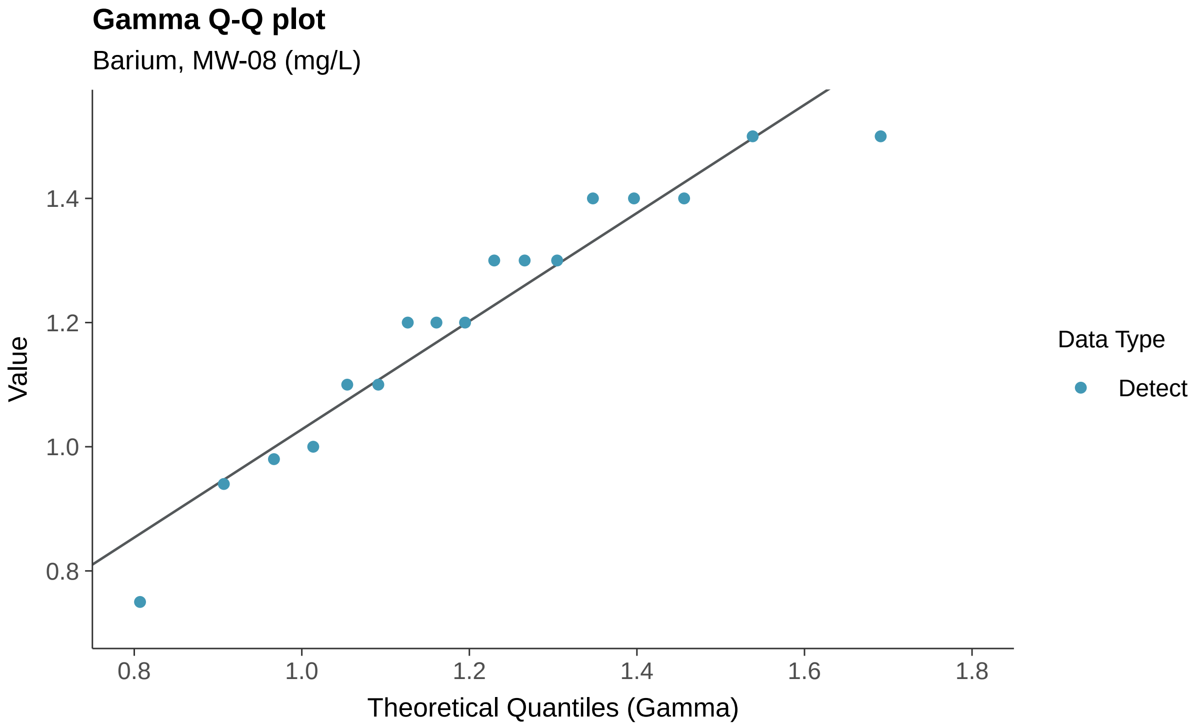
Barium, MW-08 (mg/L)

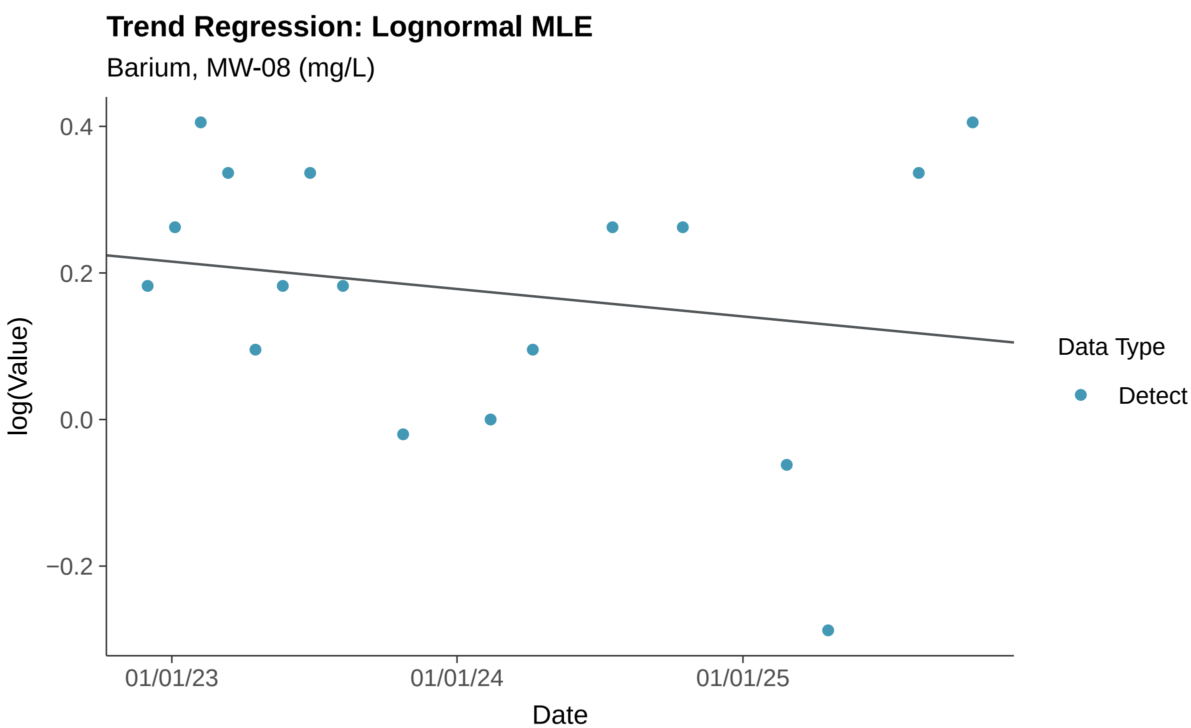


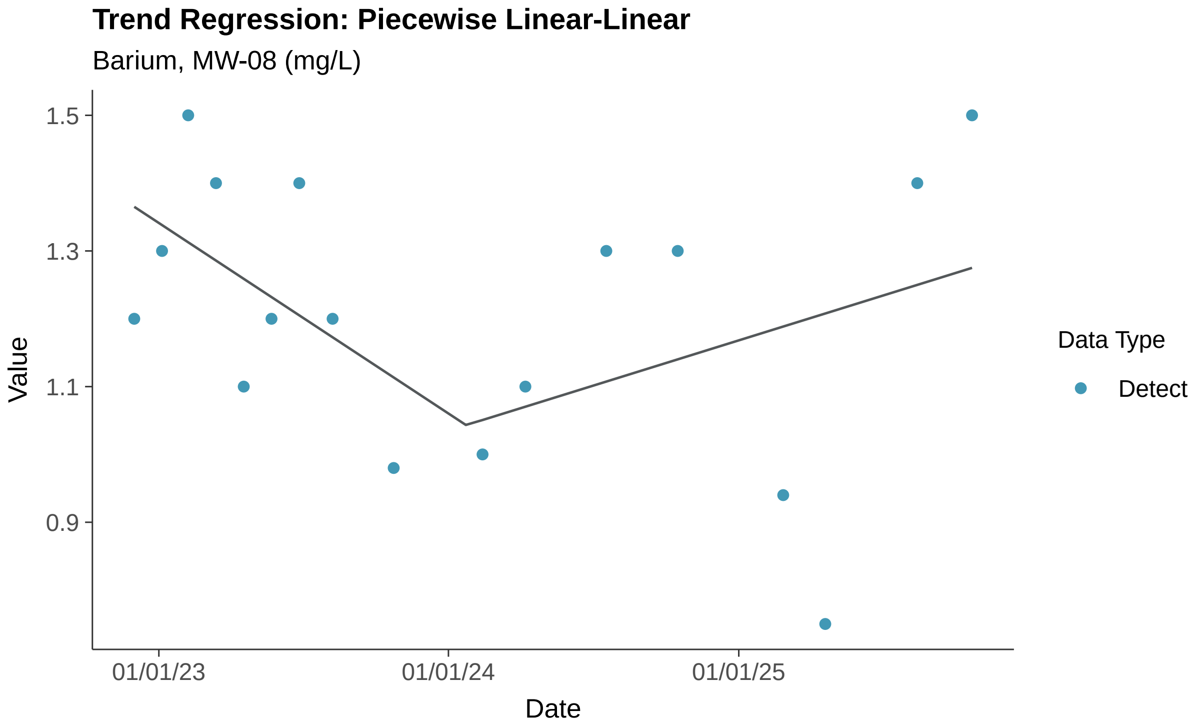
Lognormal Q-Q plot

Barium, MW-08 (mg/L)




Gamma Q-Q plot
Barium, MW-08 (mg/L)
Value
1.4
1.2
1.0
0.8
0.8
1.0
1.2
1.4
1.6
1.8
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Barium, MW-08 (mg/L)
log(Value)
0.4
0.2
0.0
−0.2
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

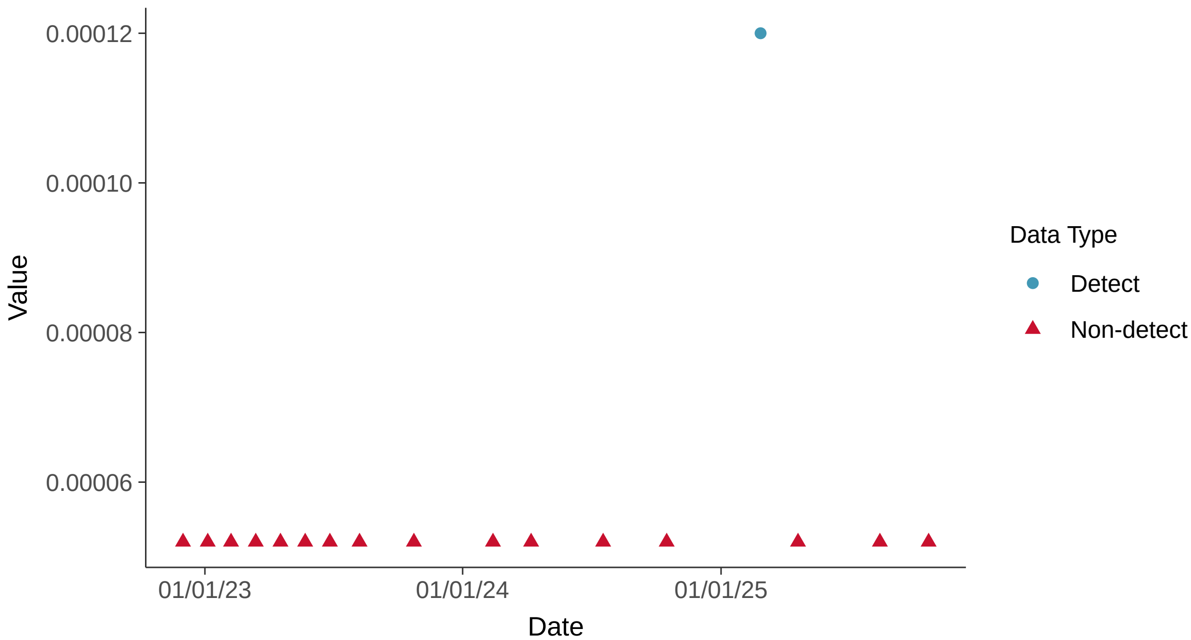

Trend Regression: Piecewise Linear-Linear
Barium, MW-08 (mg/L)
Value
1.5
1.3
1.1
0.9
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Appendix IV: Beryllium, MW-08

ID: 18_1_4_104

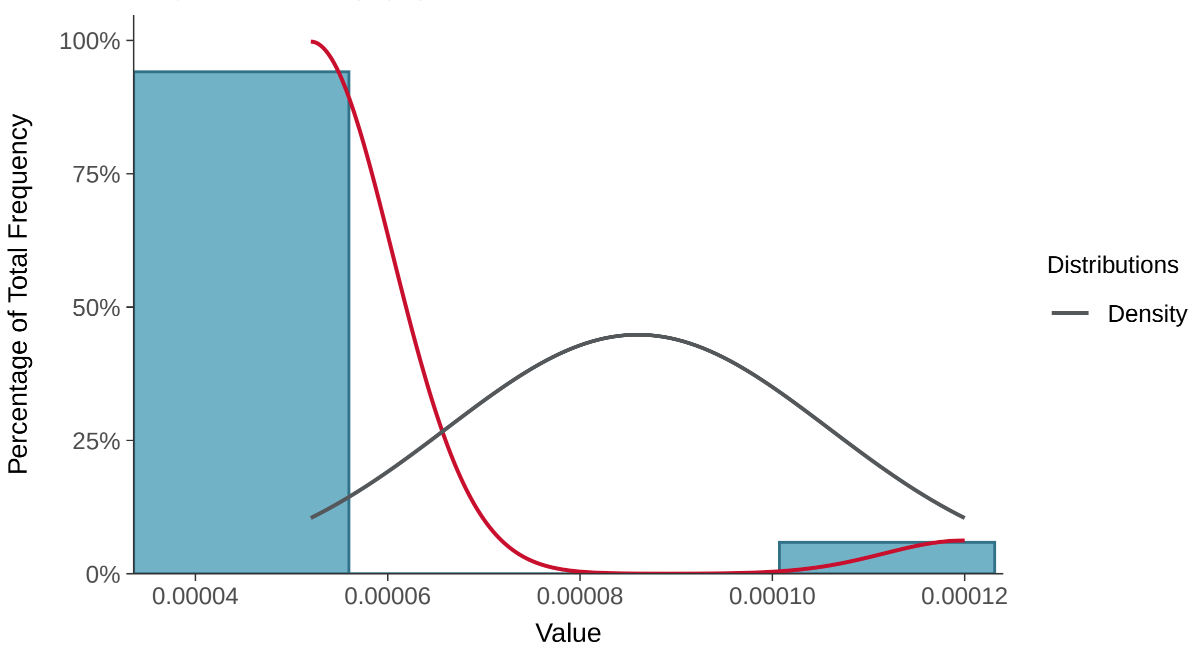
Scatter Plot

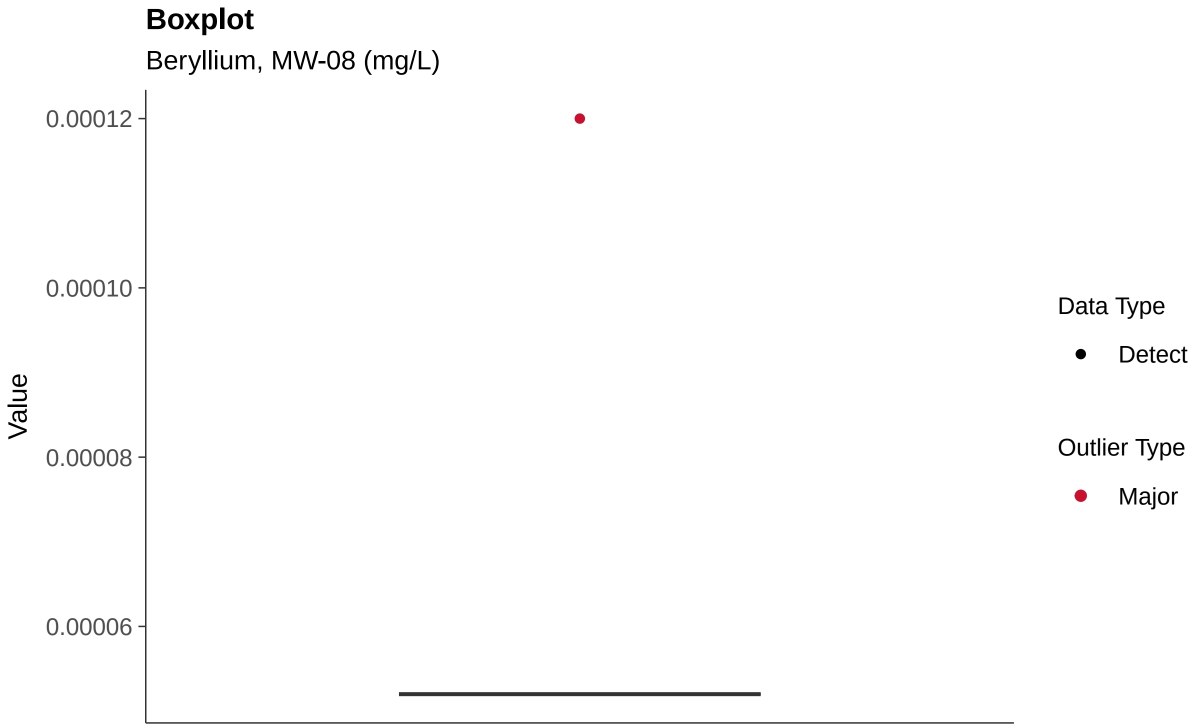
Beryllium, MW-08 (mg/L)

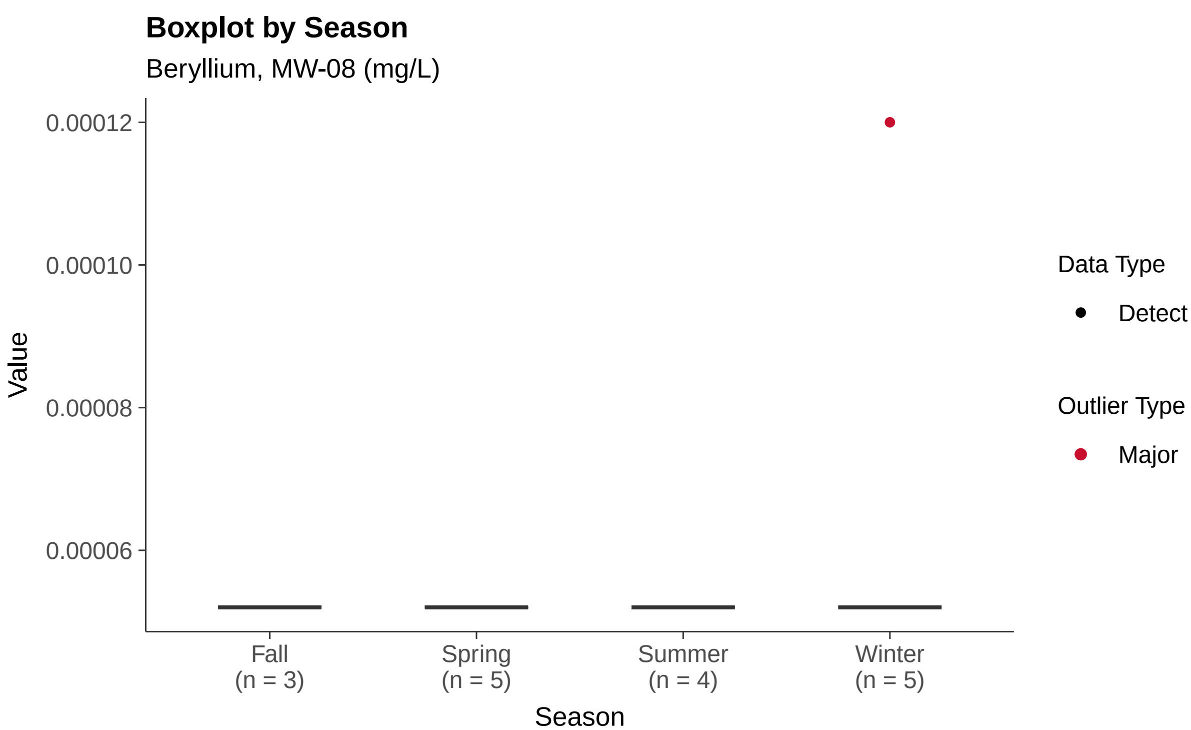


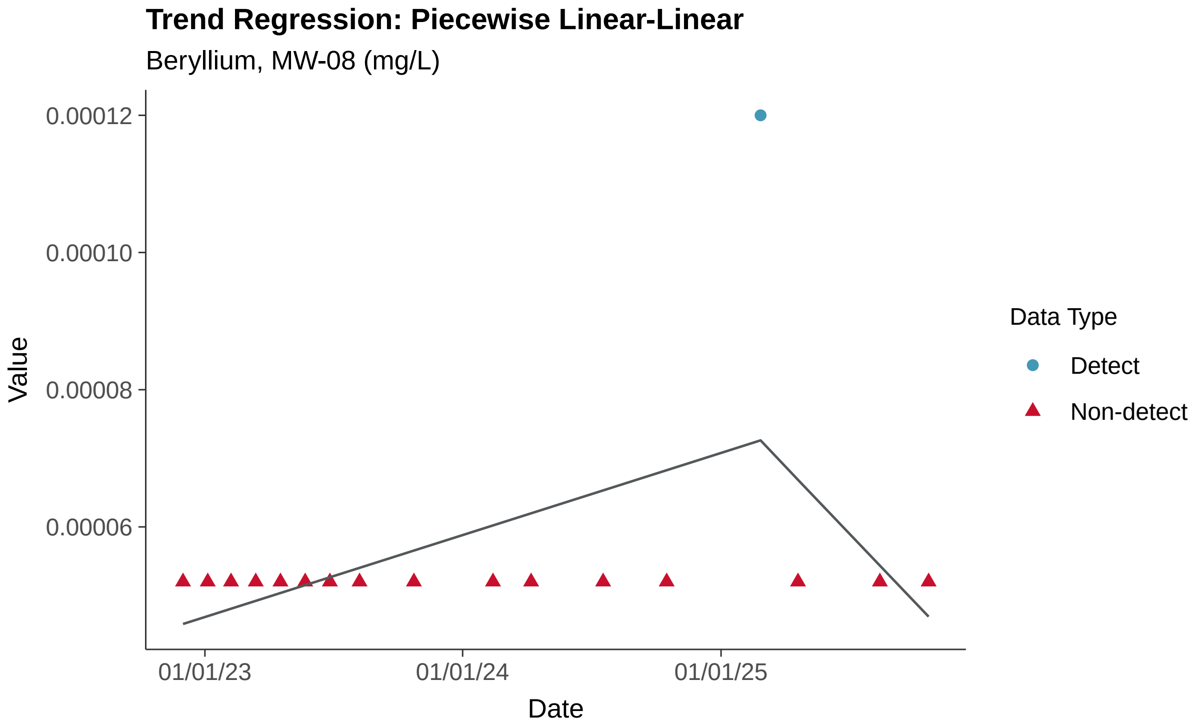
Histogram

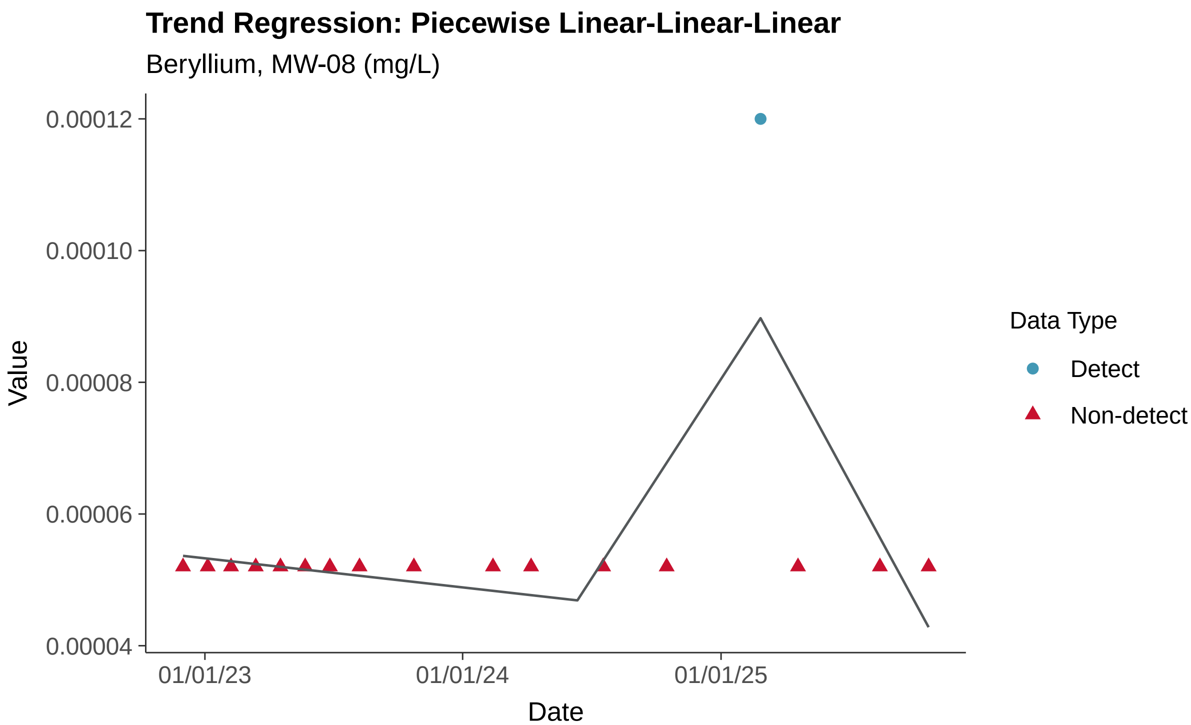
Beryllium, MW-08 (mg/L)




Boxplot
Beryllium, MW-08 (mg/L)
0.00012
0.00010
0.00008
0.00006
Value
Data Type
Detect
Outlier Type
Major

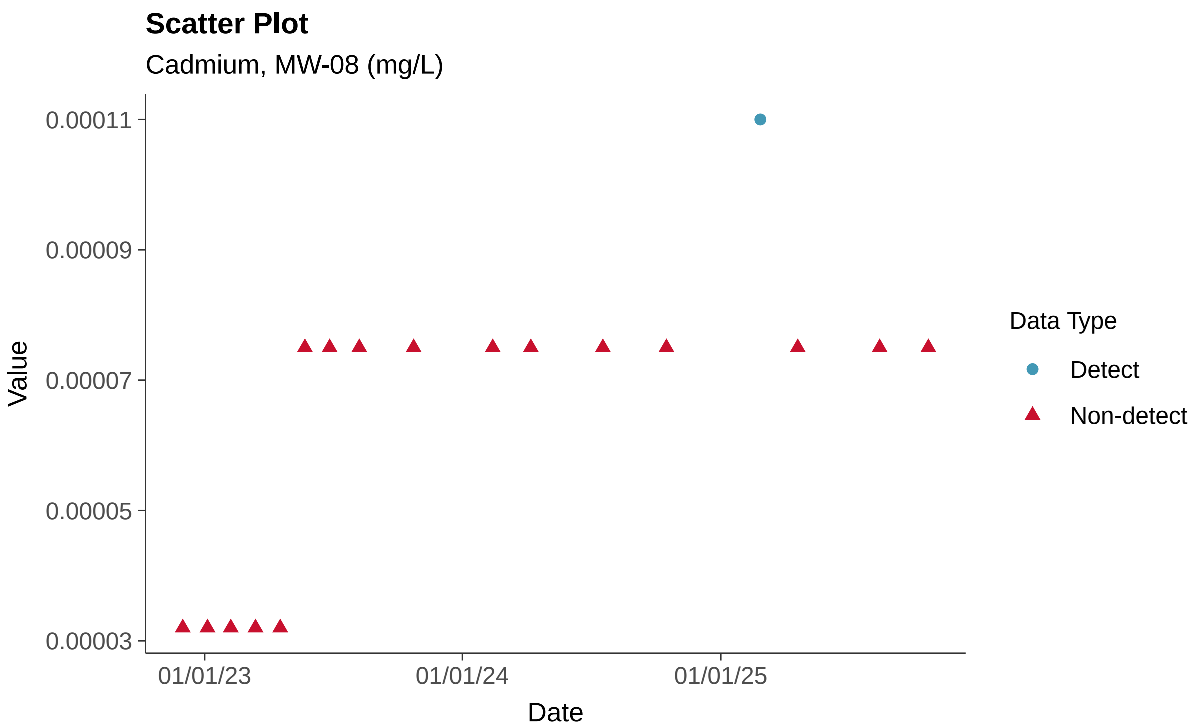

Boxplot by Season
Beryllium, MW-08 (mg/L)
0.00012
0.00010
0.00008
0.00006
Value
Fall
(n = 3)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 5)
Season
Data Type
Detect
Outlier Type
Major

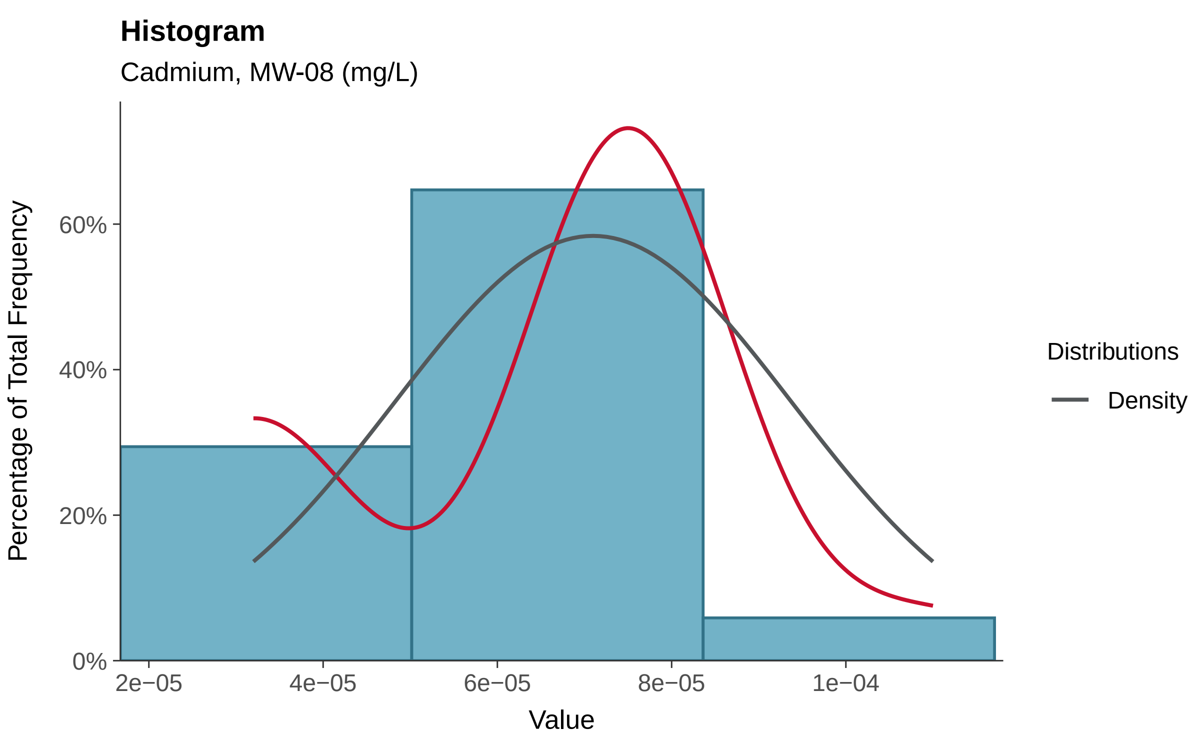

Trend Regression: Piecewise Linear-Linear
Beryllium, MW-08 (mg/L)
Value
0.00012
0.00010
0.00008
0.00006
Date
01/01/23
01/01/24
01/01/25
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear-Linear
Beryllium, MW-08 (mg/L)
Value
0.00012
0.00010
0.00008
0.00006
0.00004
Date
01/01/23
01/01/24
01/01/25
Data Type
Detect
Non-detect

Appendix IV: Cadmium, MW-08

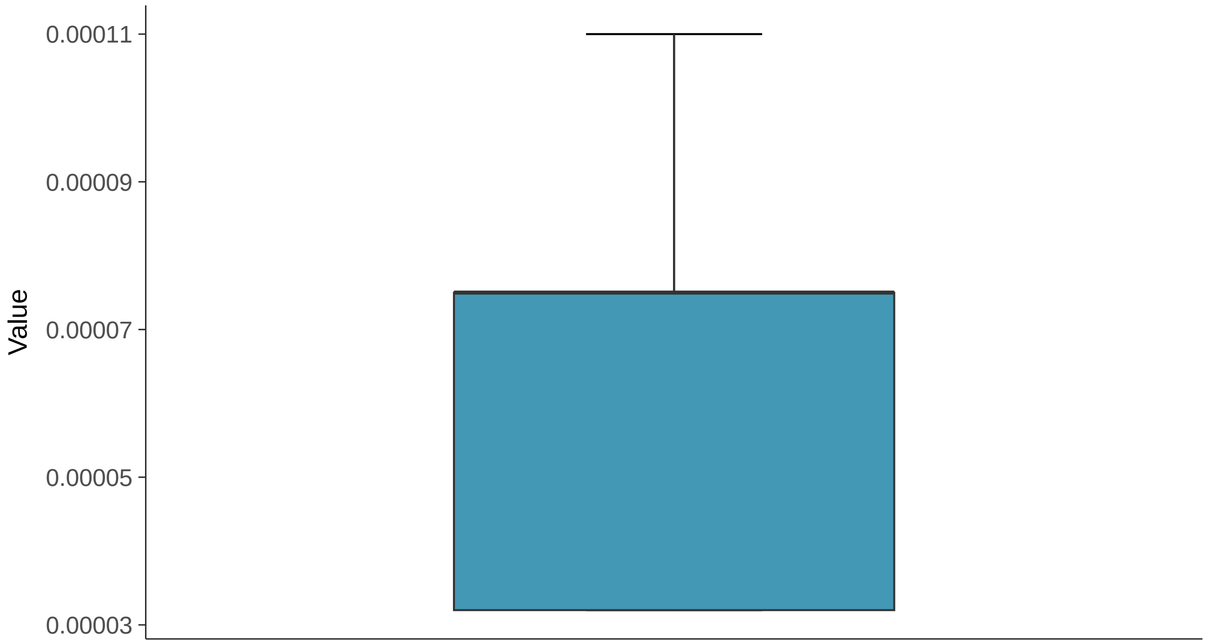
ID: 18_1_4_106





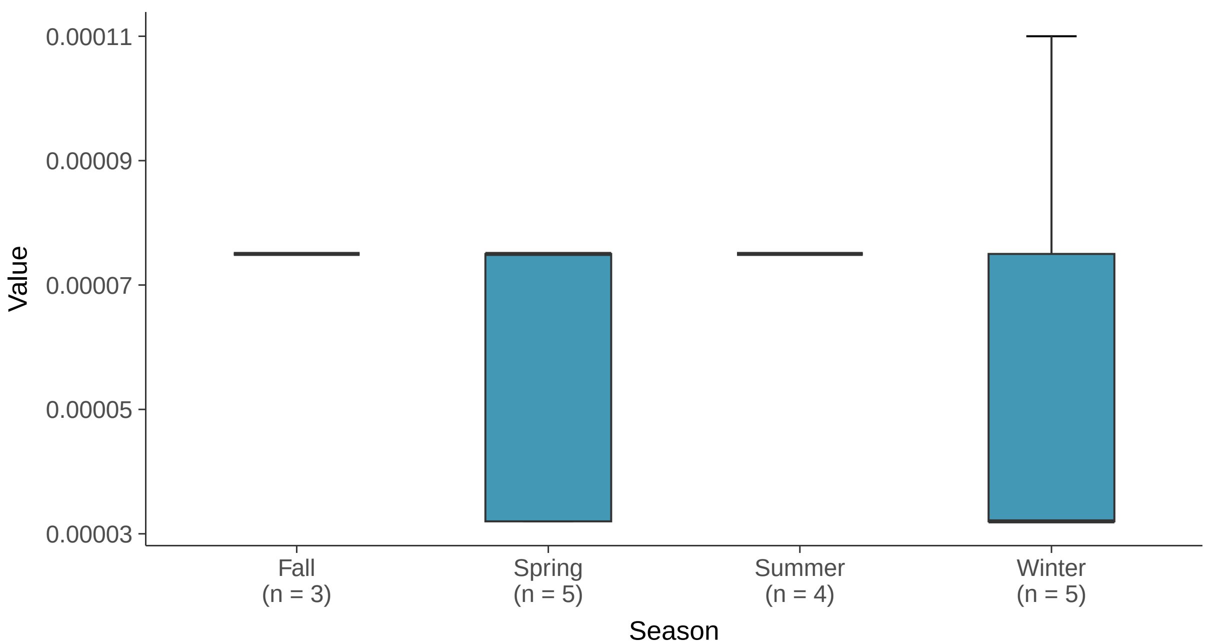
Boxplot

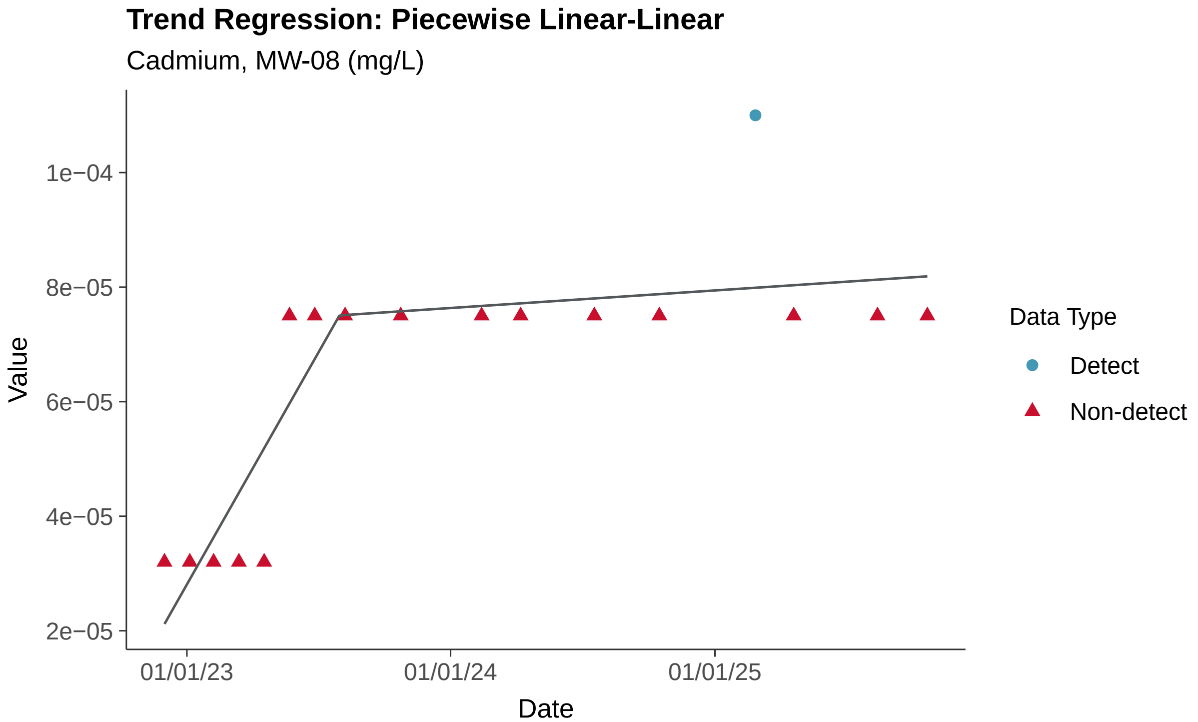
Cadmium, MW-08 (mg/L)

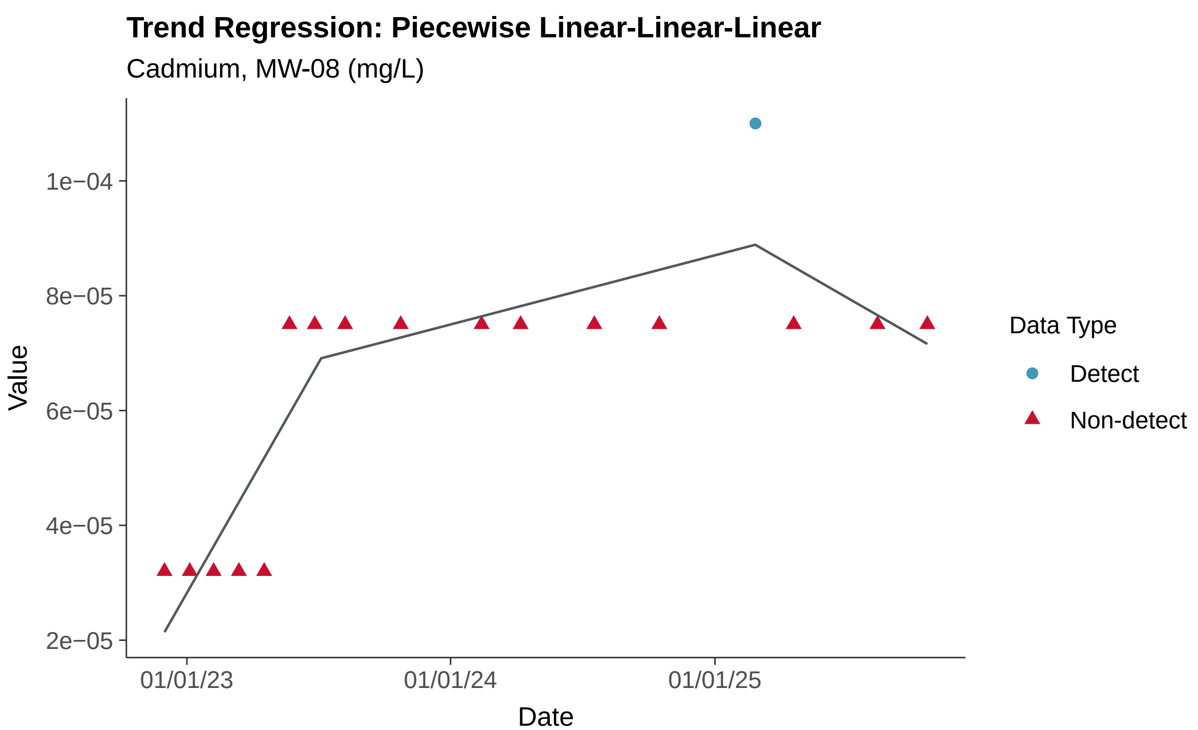


Boxplot by Season

Cadmium, MW-08 (mg/L)




Trend Regression: Piecewise Linear-Linear
Cadmium, MW-08 (mg/L)
Value
1e−04
8e−05
6e−05
4e−05
2e−05
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

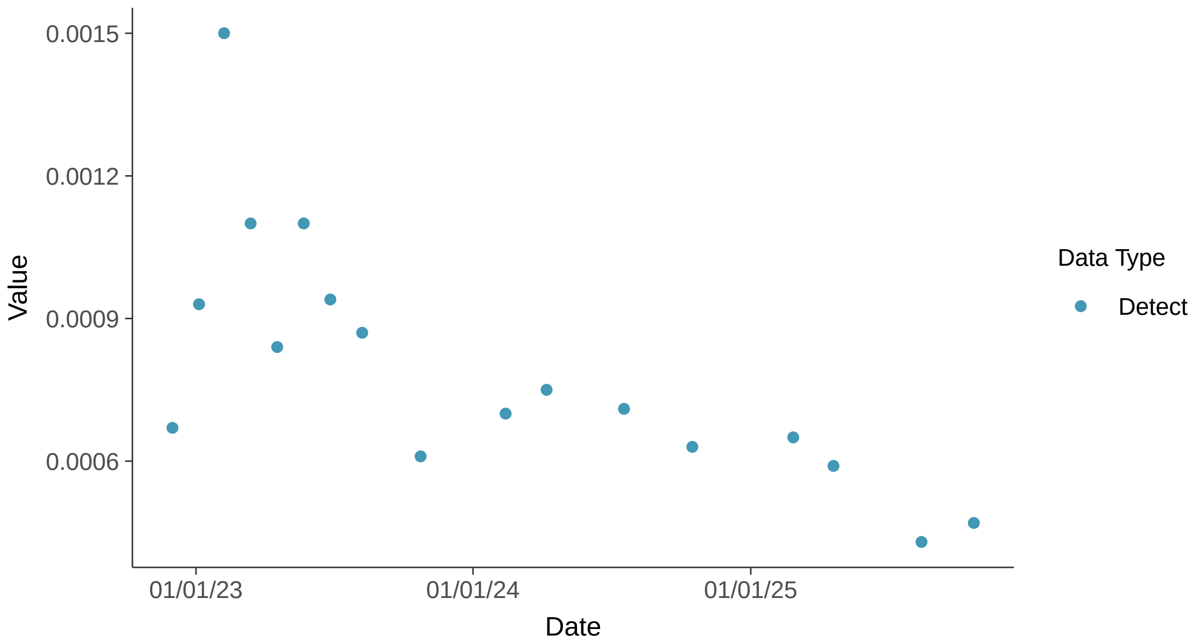

Trend Regression: Piecewise Linear-Linear-Linear
Cadmium, MW-08 (mg/L)
Value
1e−04
8e−05
6e−05
4e−05
2e−05
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Appendix IV: Chromium, Total, MW-08

ID: 18_1_4_109

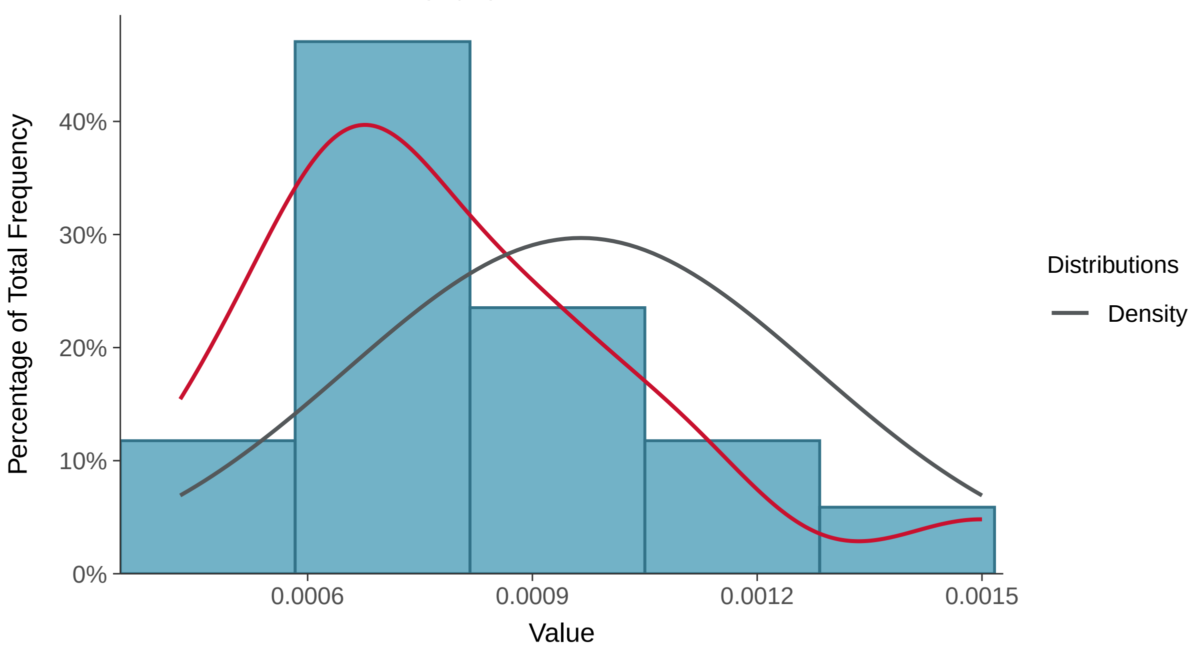
Scatter Plot

Chromium, Total, MW-08 (mg/L)



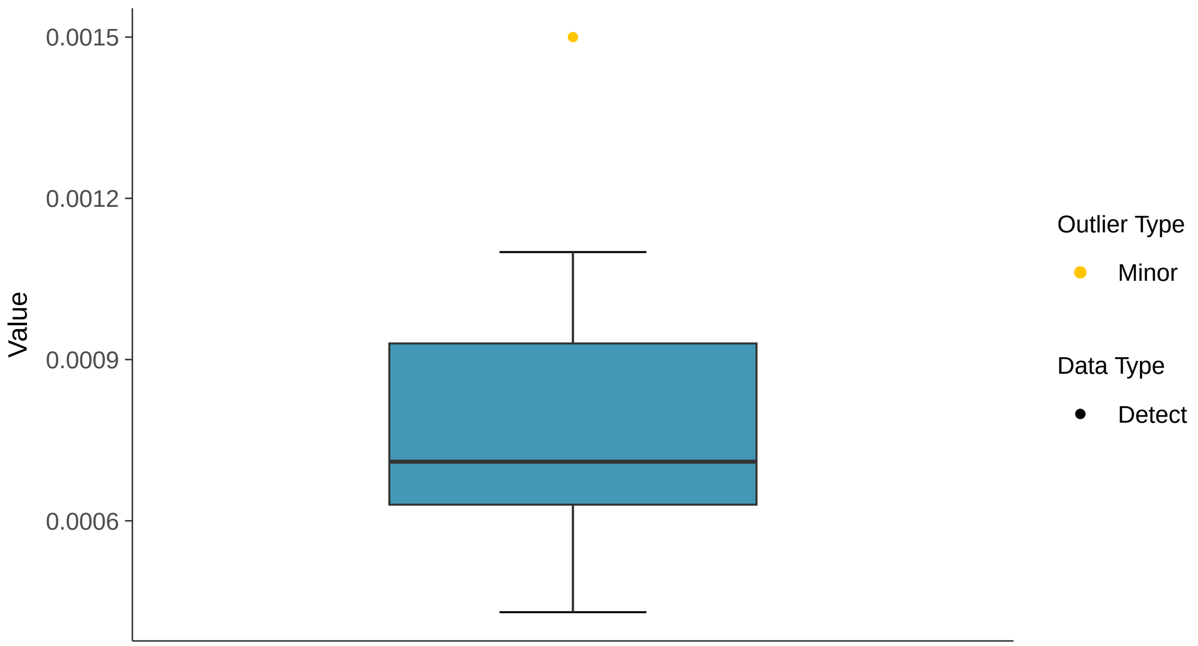
Histogram

Chromium, Total, MW-08 (mg/L)



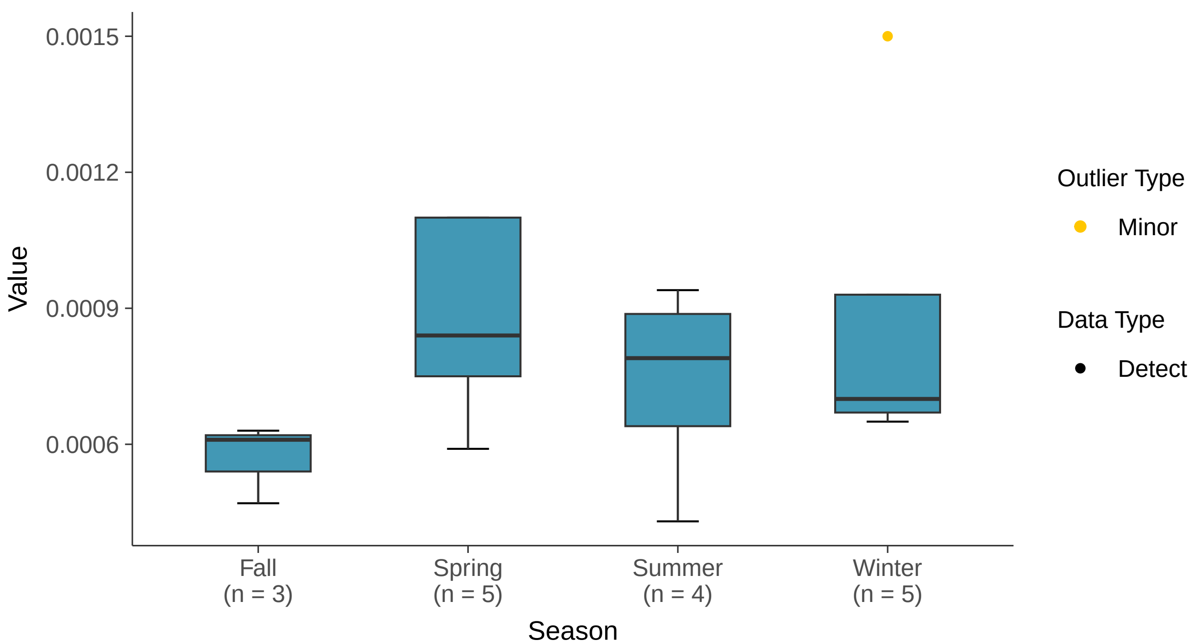
Boxplot

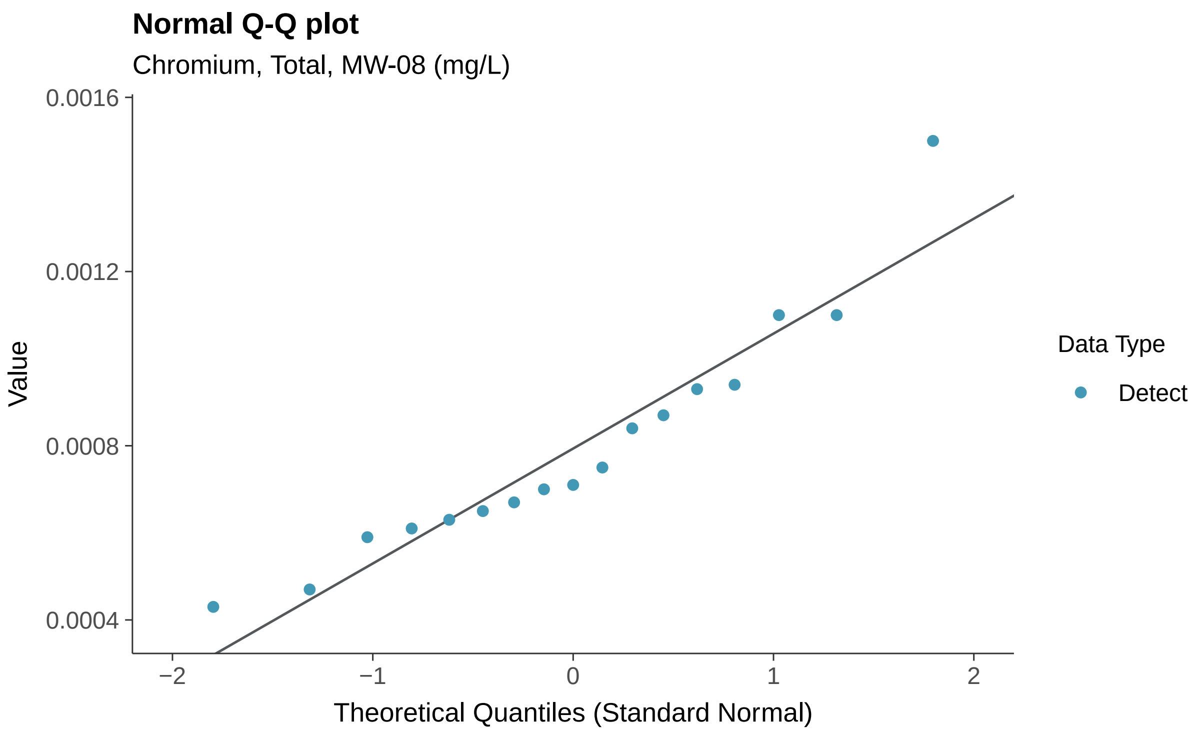
Chromium, Total, MW-08 (mg/L)

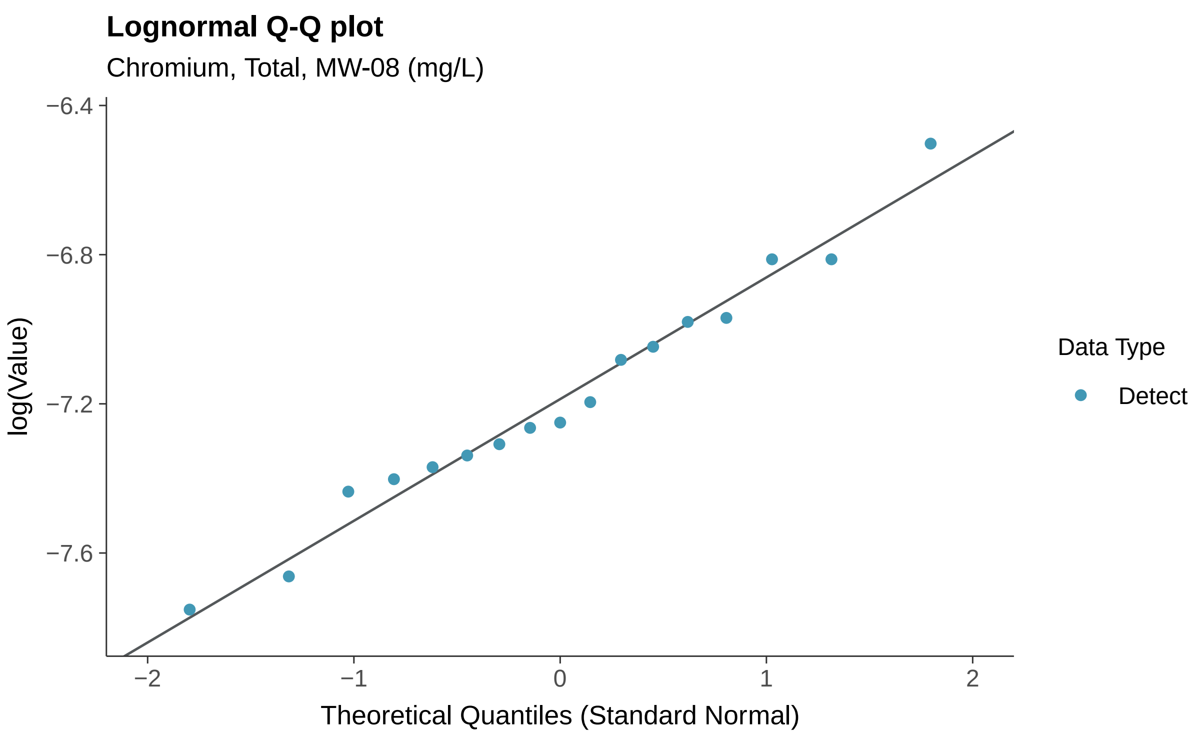


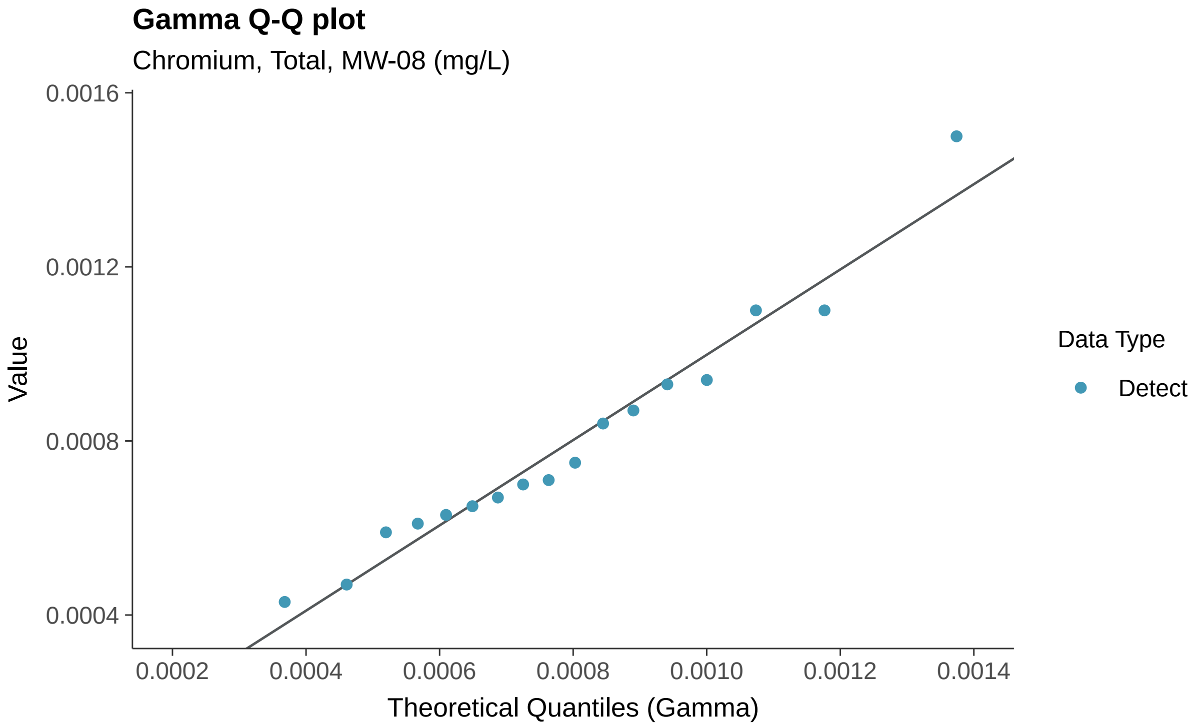
Boxplot by Season

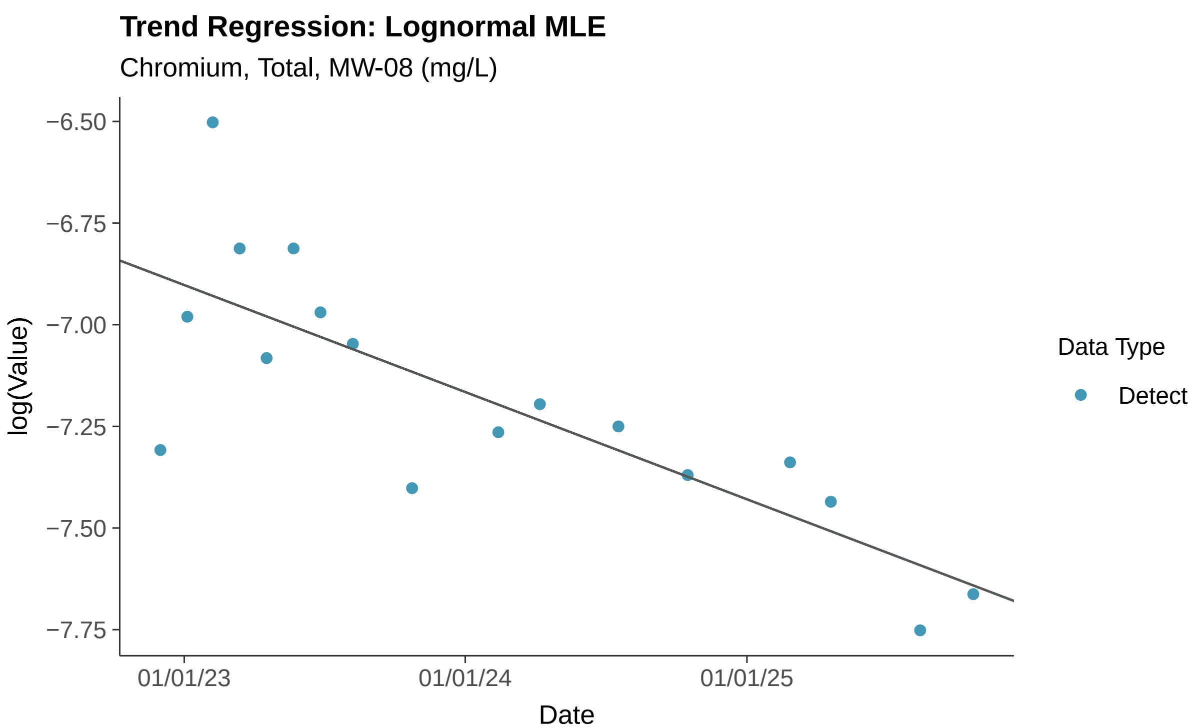
Chromium, Total, MW-08 (mg/L)



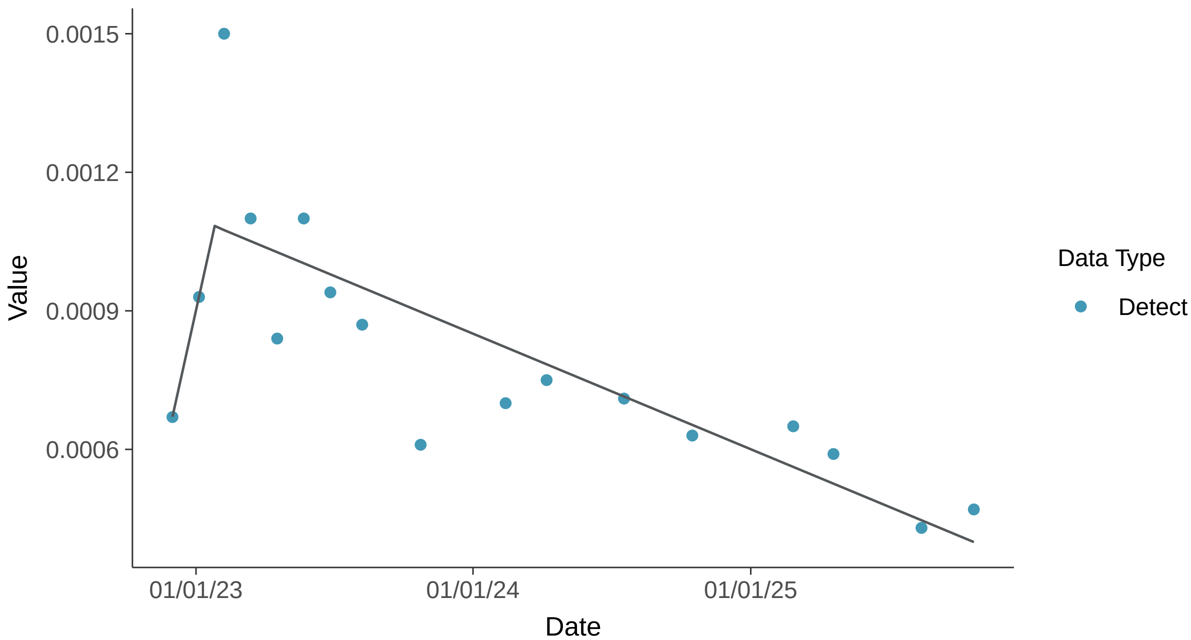

Normal Q-Q plot
Chromium, Total, MW-08 (mg/L)
0.0016
0.0012
0.0008
0.0004
Value
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Chromium, Total, MW-08 (mg/L)
−6.4
−6.8
−7.2
−7.6
log(Value)
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

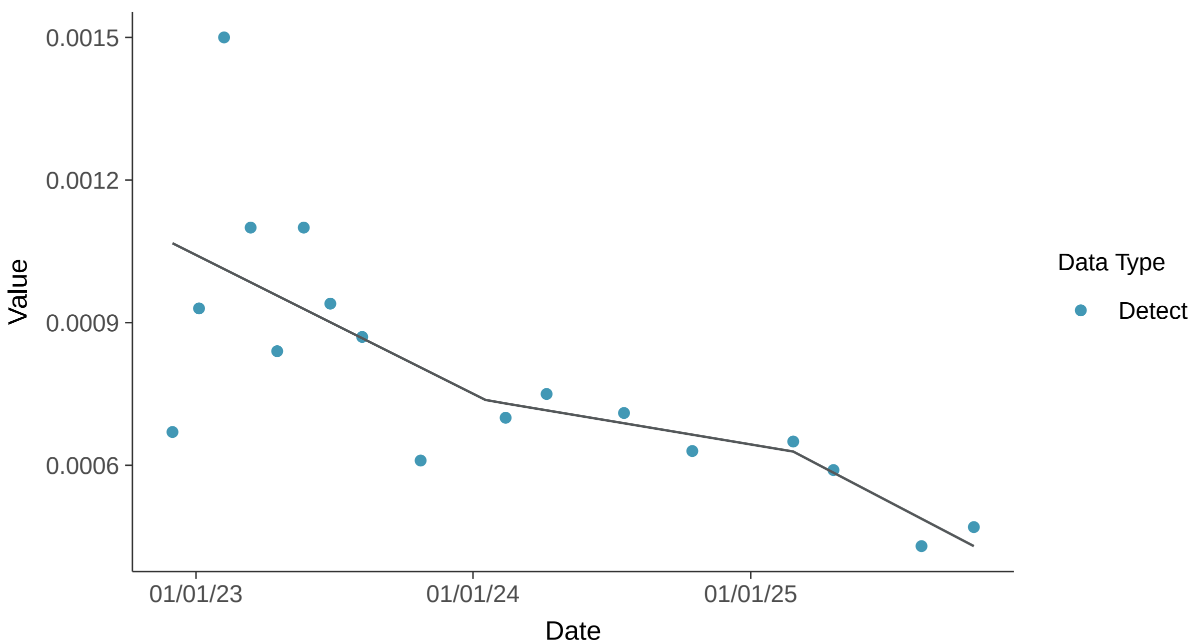

Gamma Q-Q plot
Chromium, Total, MW-08 (mg/L)
Value
0.0016
0.0012
0.0008
0.0004
0.0002
0.0004
0.0006
0.0008
0.0010
0.0012
0.0014
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Chromium, Total, MW-08 (mg/L)
log(Value)
−6.50
−6.75
−7.00
−7.25
−7.50
−7.75
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear
Chromium, Total, MW-08 (mg/L)

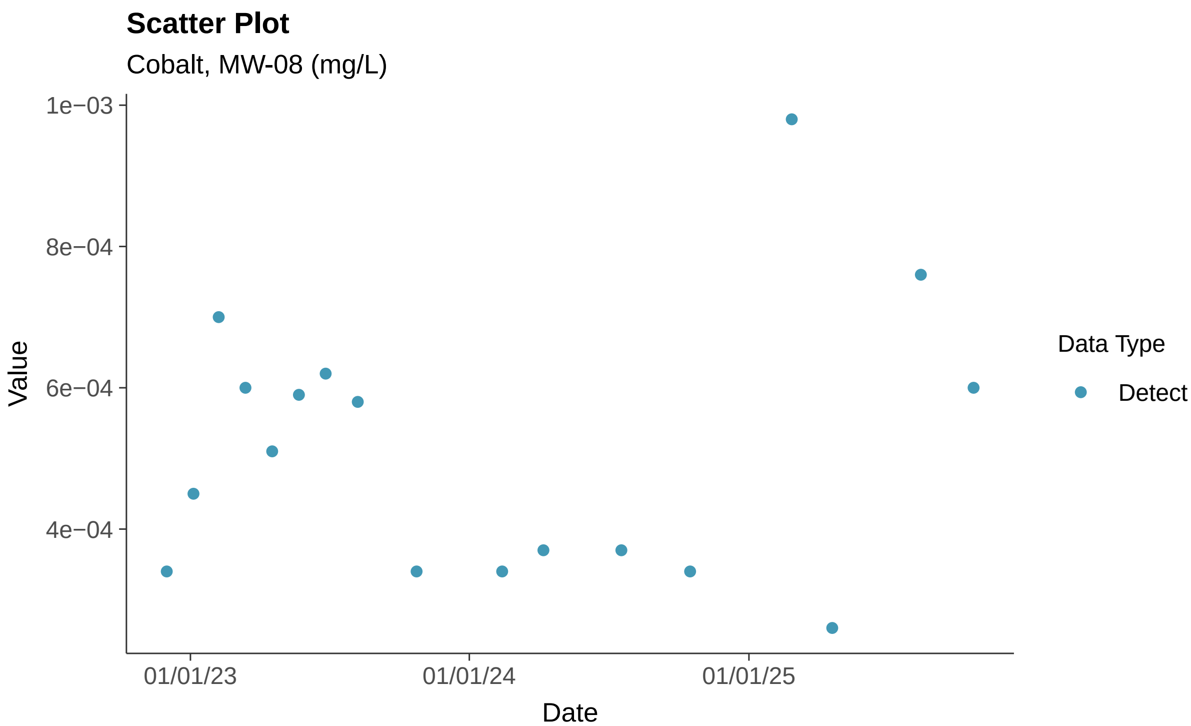


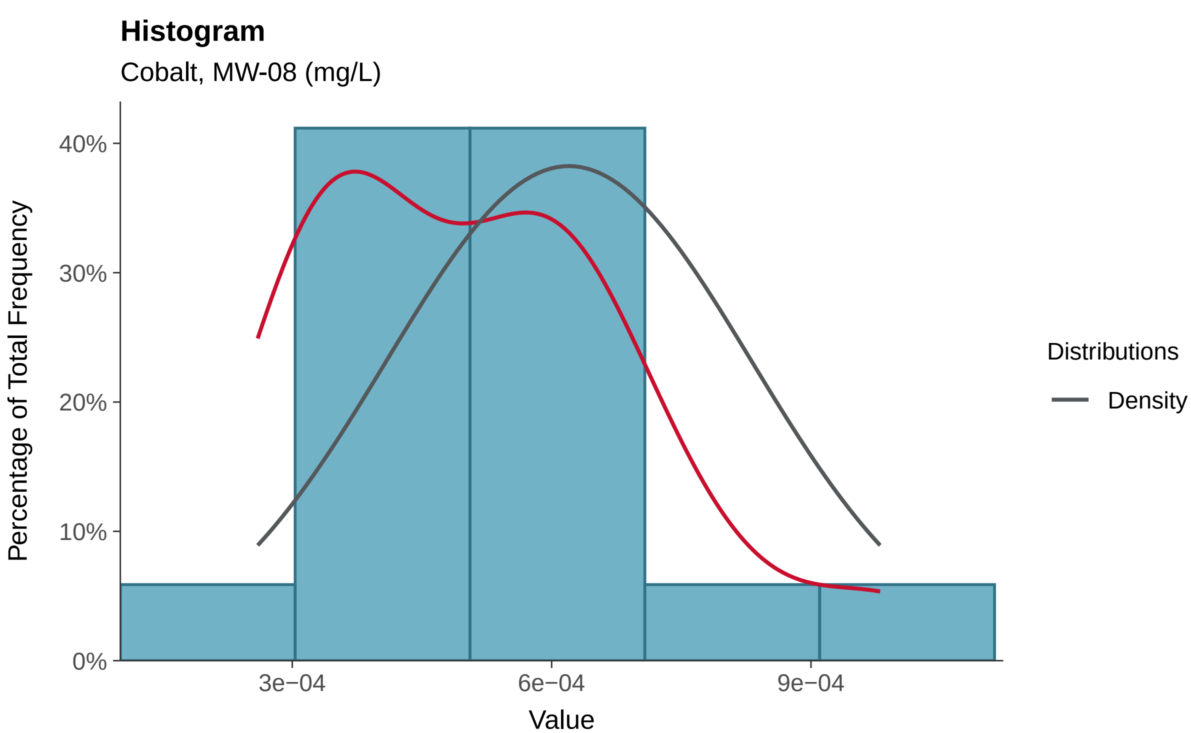
Trend Regression: Piecewise Linear-Linear-Linear
Chromium, Total, MW-08 (mg/L)



Appendix IV: Cobalt, MW-08

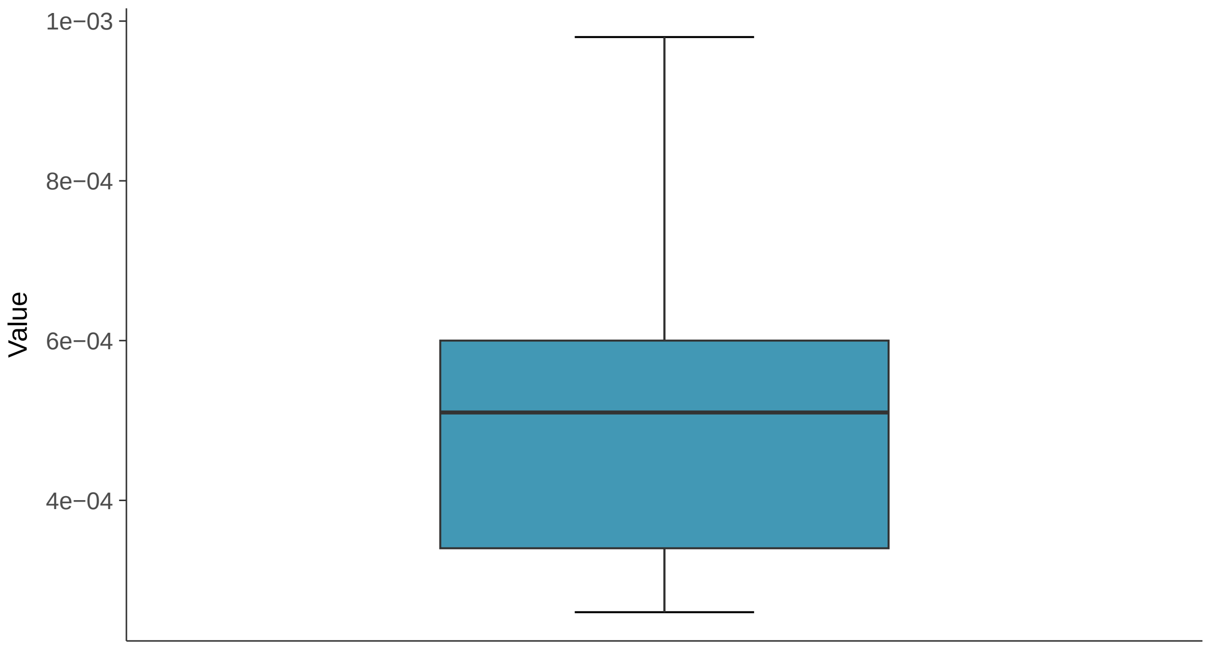
ID: 18_1_4_110





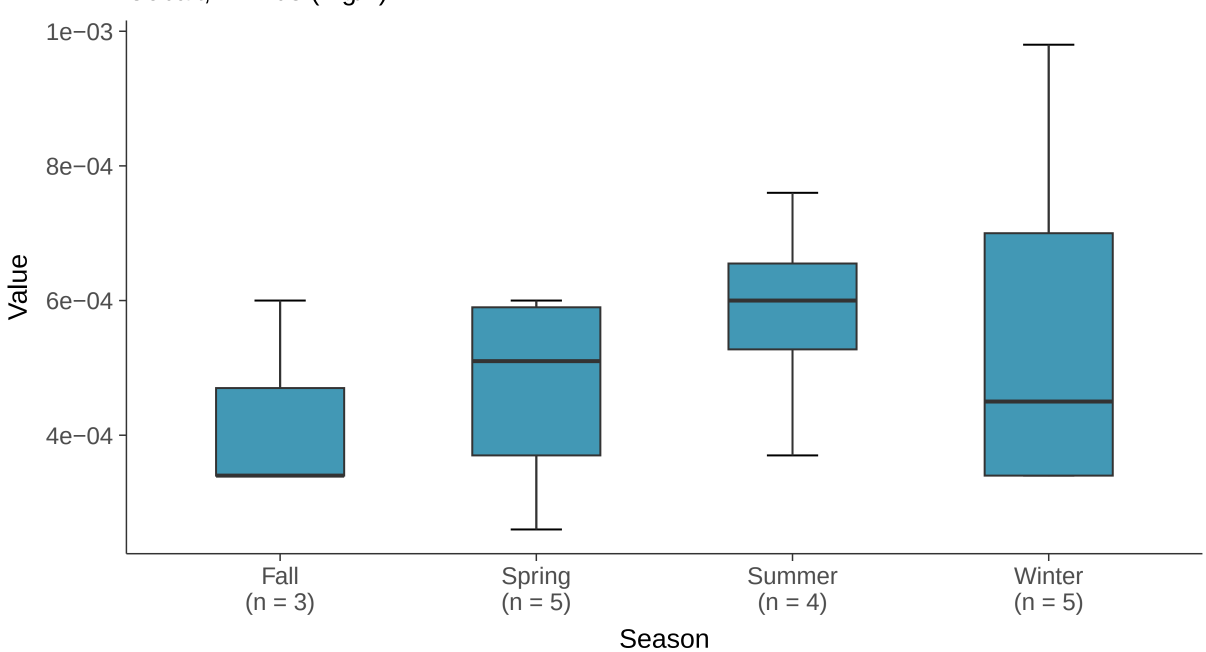
Boxplot

Cobalt, MW-08 (mg/L)



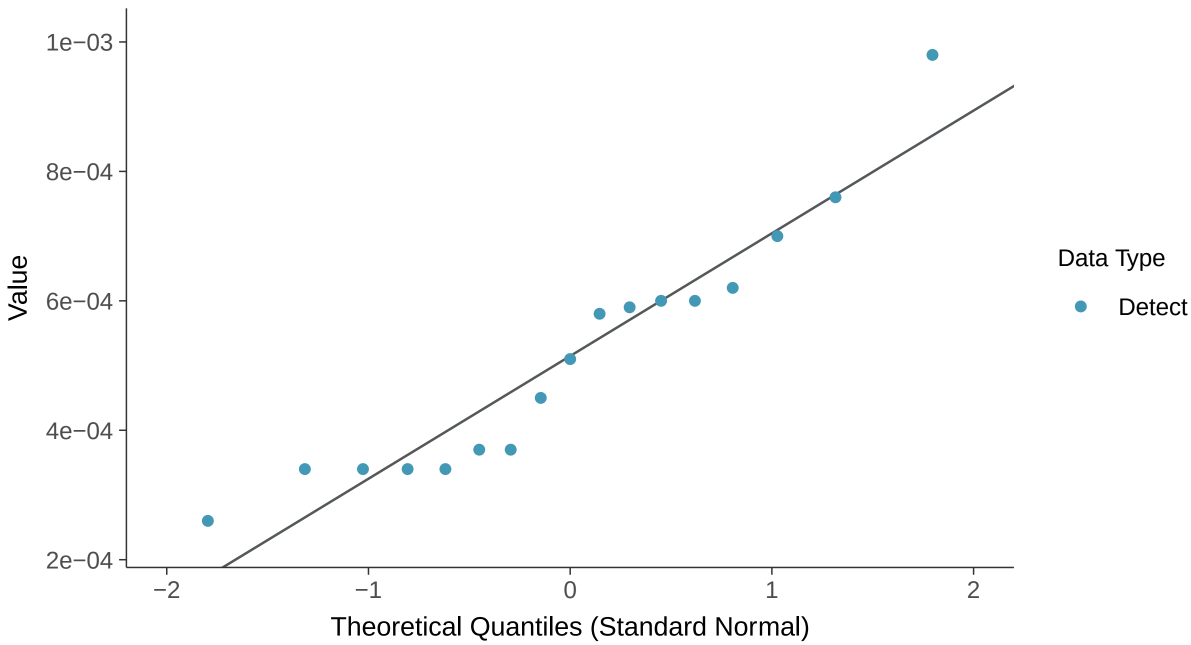
Boxplot by Season

Cobalt, MW-08 (mg/L)



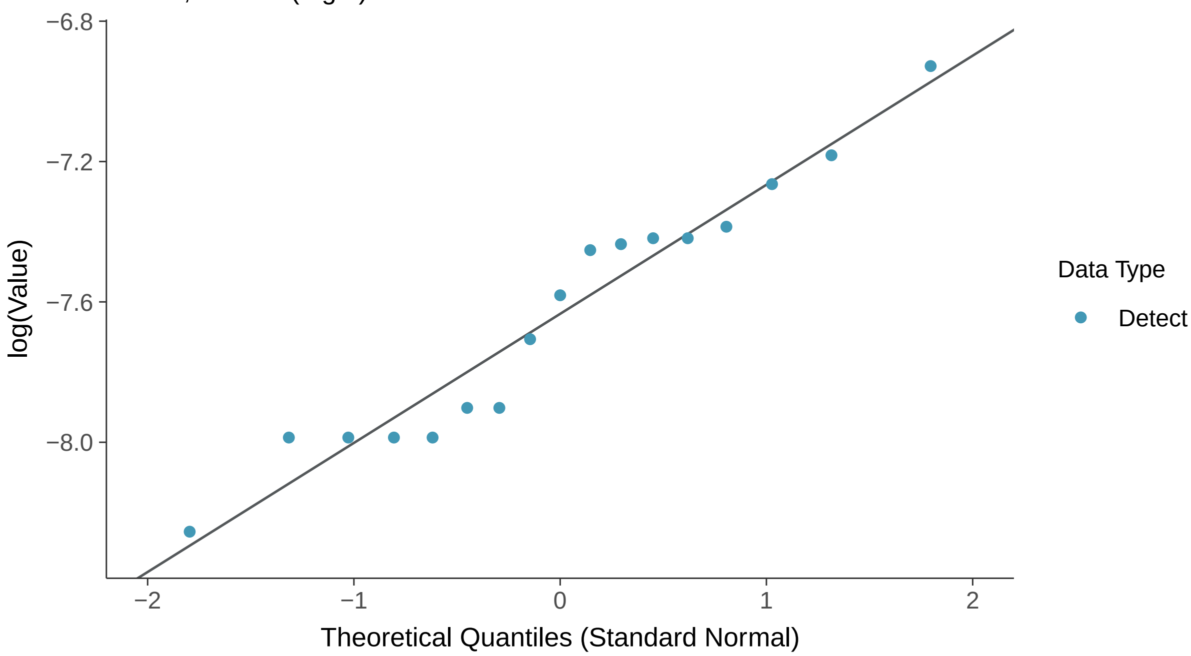
Normal Q-Q plot

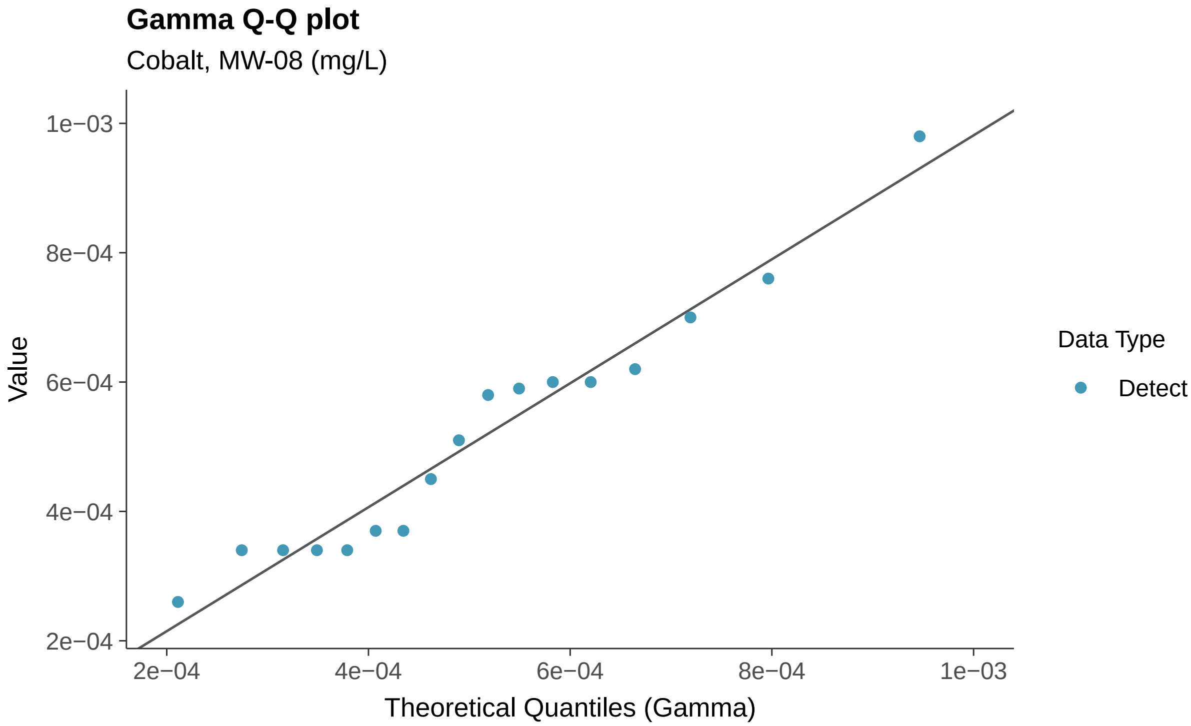
Cobalt, MW-08 (mg/L)

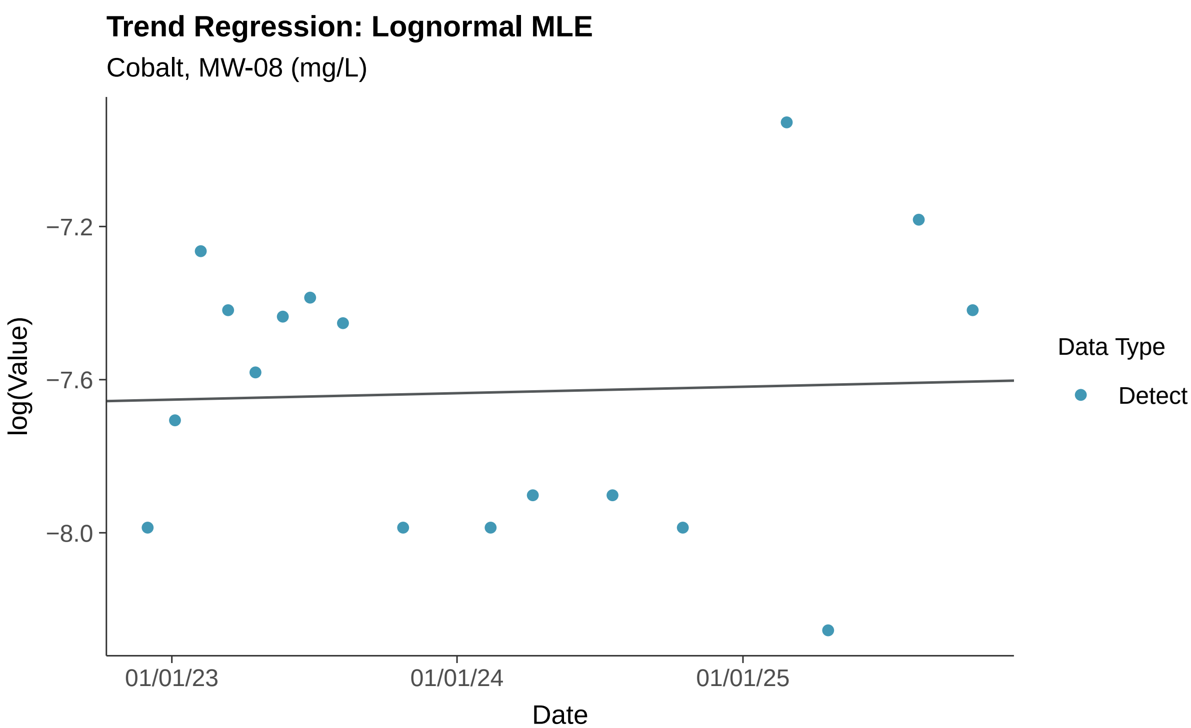


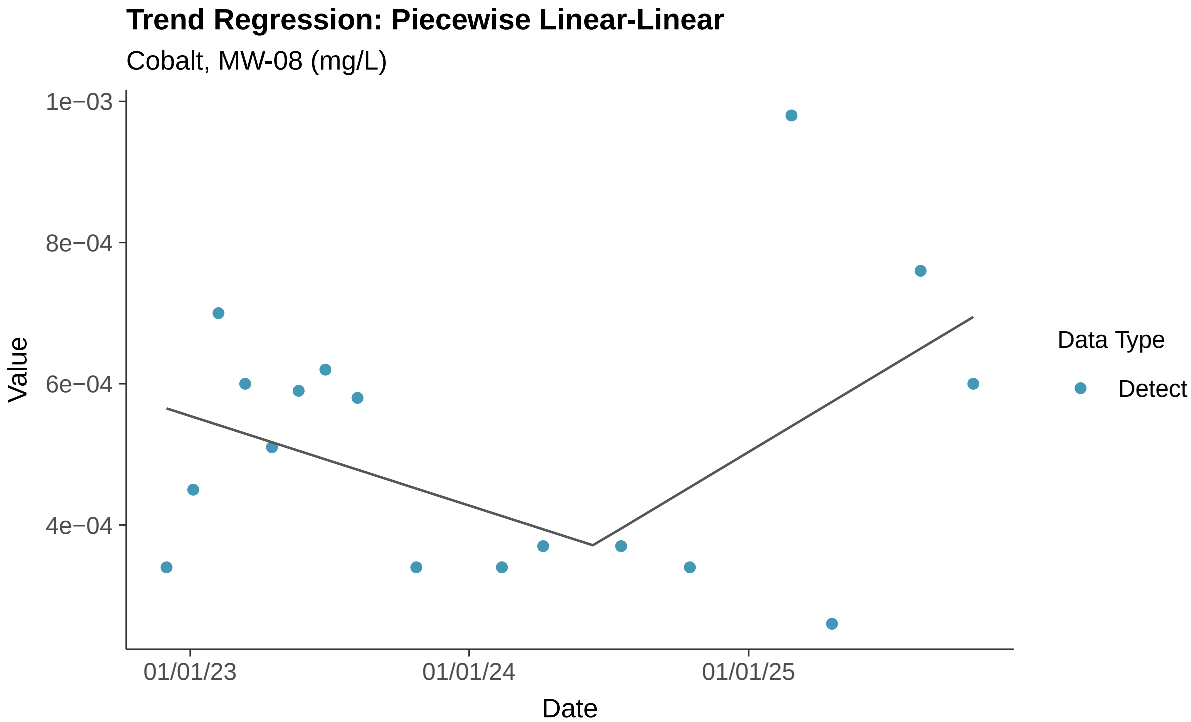
Lognormal Q-Q plot

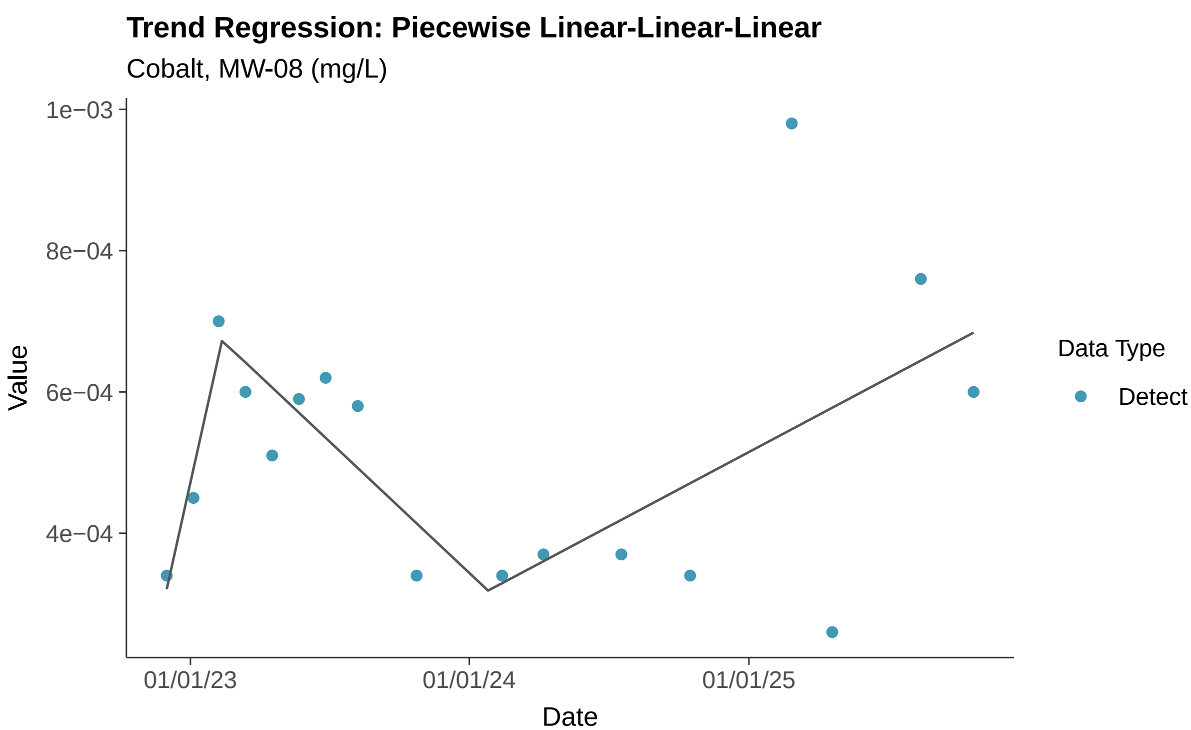
Cobalt, MW-08 (mg/L)




Gamma Q-Q plot
Cobalt, MW-08 (mg/L)
Value
1e−03
8e−04
6e−04
4e−04
2e−04
2e−04
4e−04
6e−04
8e−04
1e−03
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Cobalt, MW-08 (mg/L)
log(Value)
−7.2
−7.6
−8.0
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear
Cobalt, MW-08 (mg/L)
1e−03
8e−04
6e−04
4e−04
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

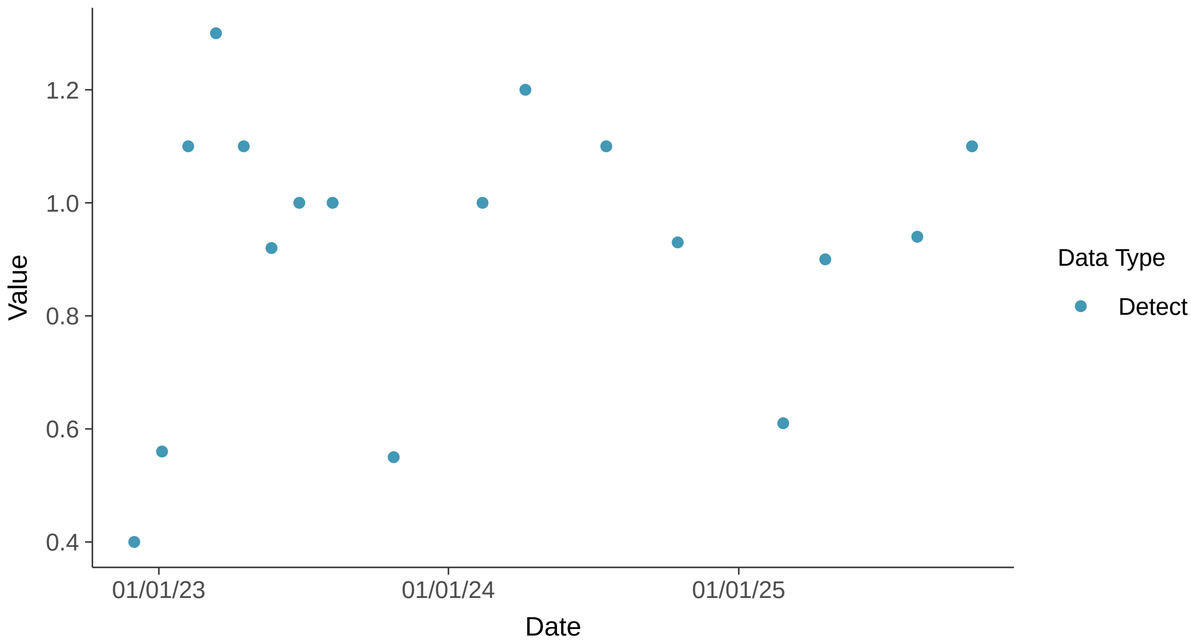

Trend Regression: Piecewise Linear-Linear-Linear
Cobalt, MW-08 (mg/L)
1e−03
8e−04
6e−04
4e−04
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Appendix IV: Fluoride (App IV), MW-08

ID: 18_1_4_113

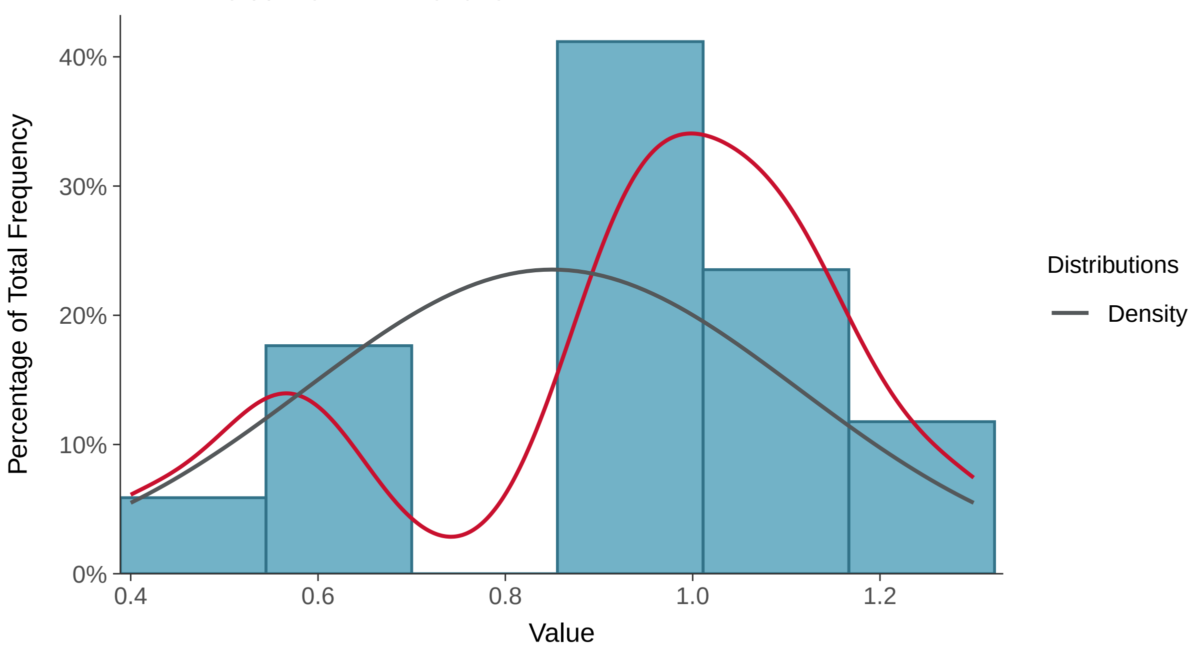
Scatter Plot

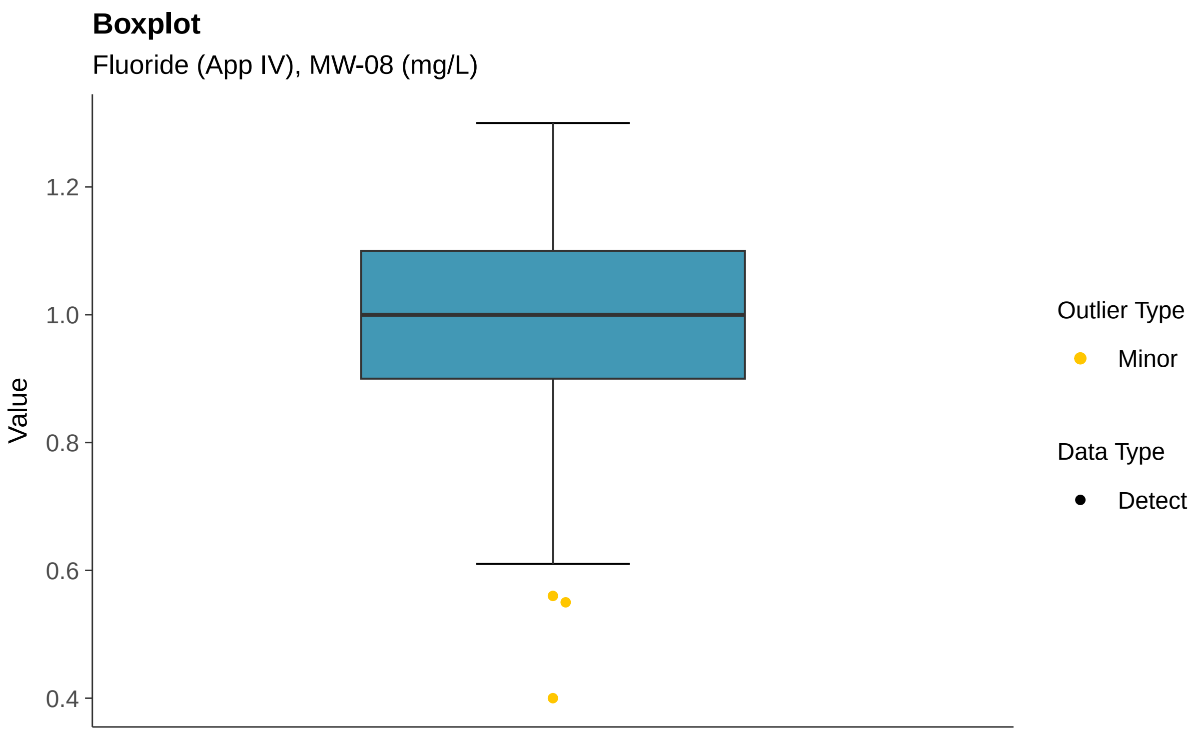
Fluoride (App IV), MW-08 (mg/L)

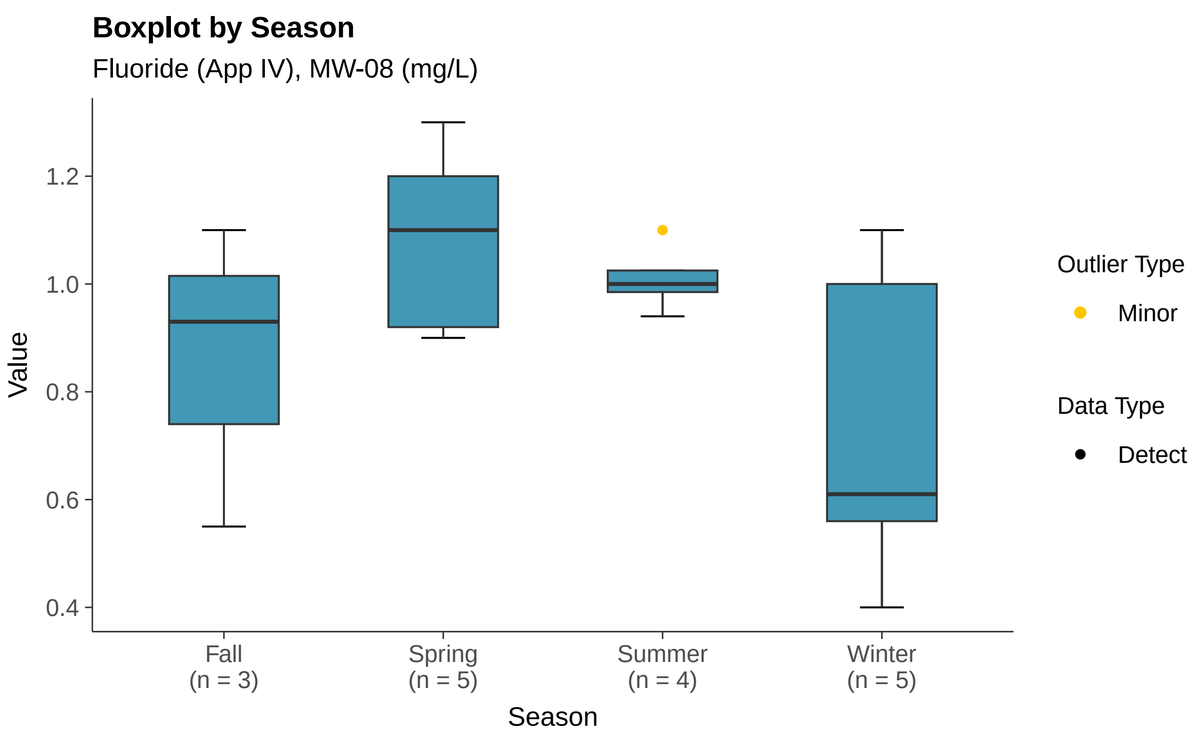


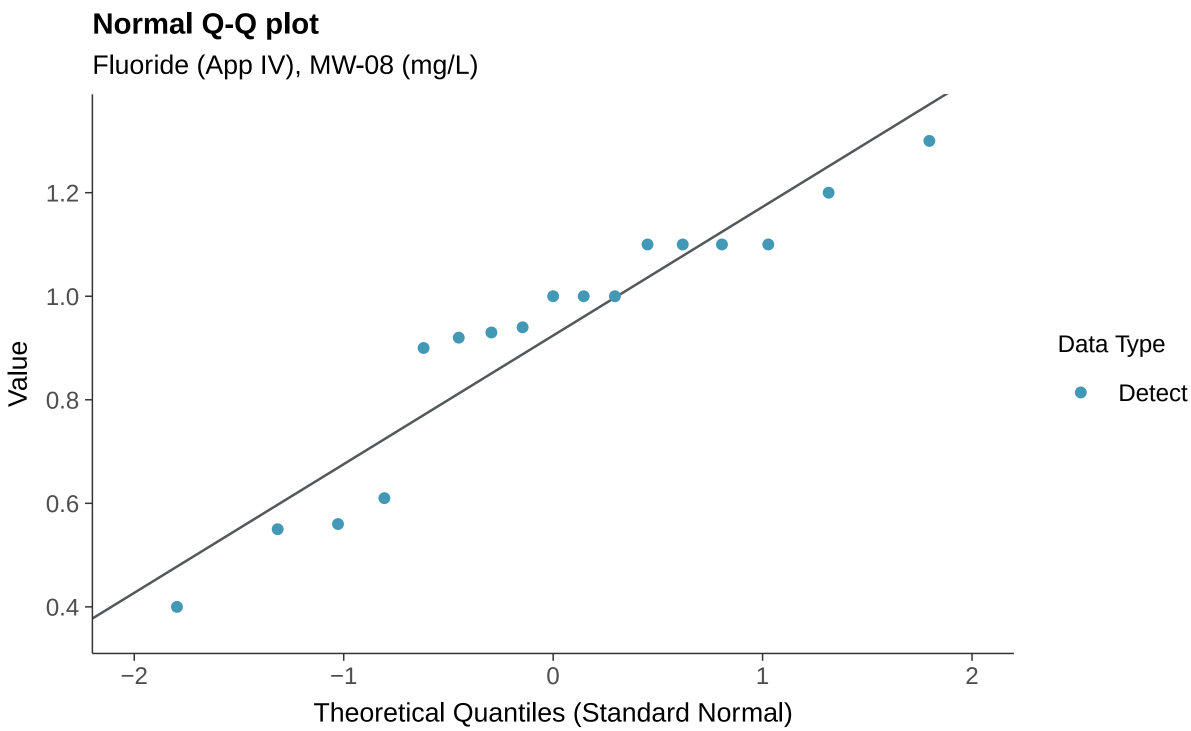
Histogram

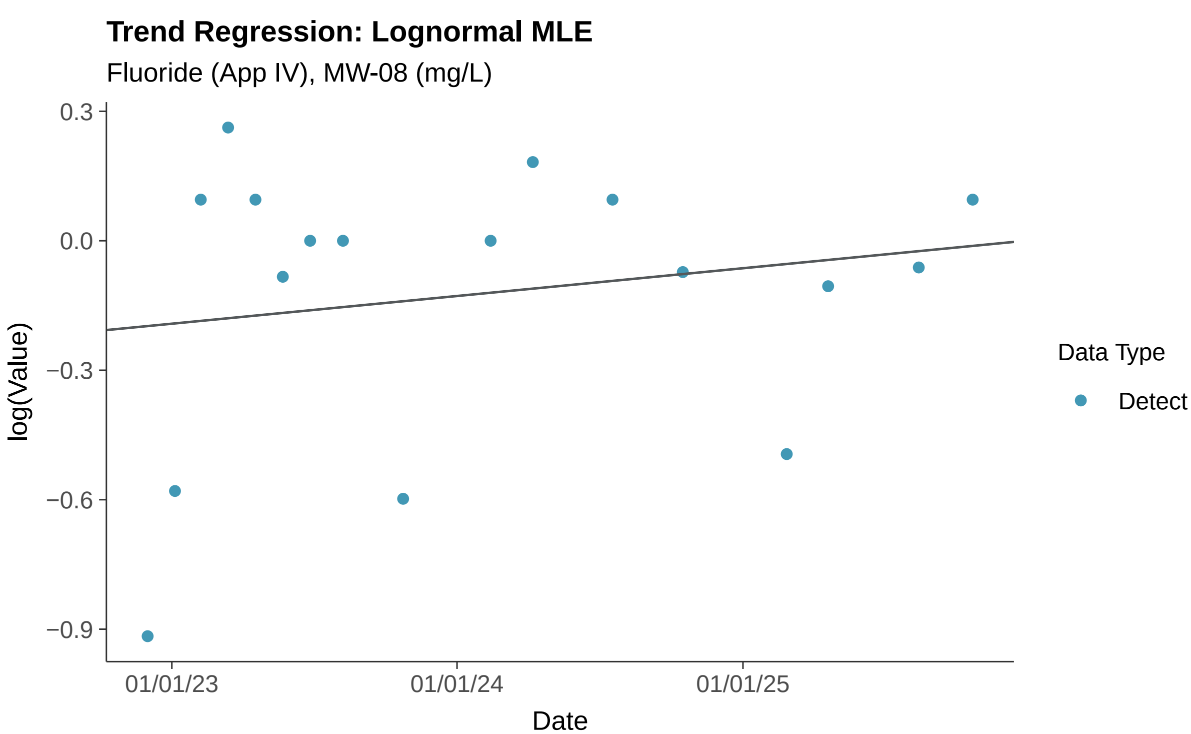
Fluoride (App IV), MW-08 (mg/L)

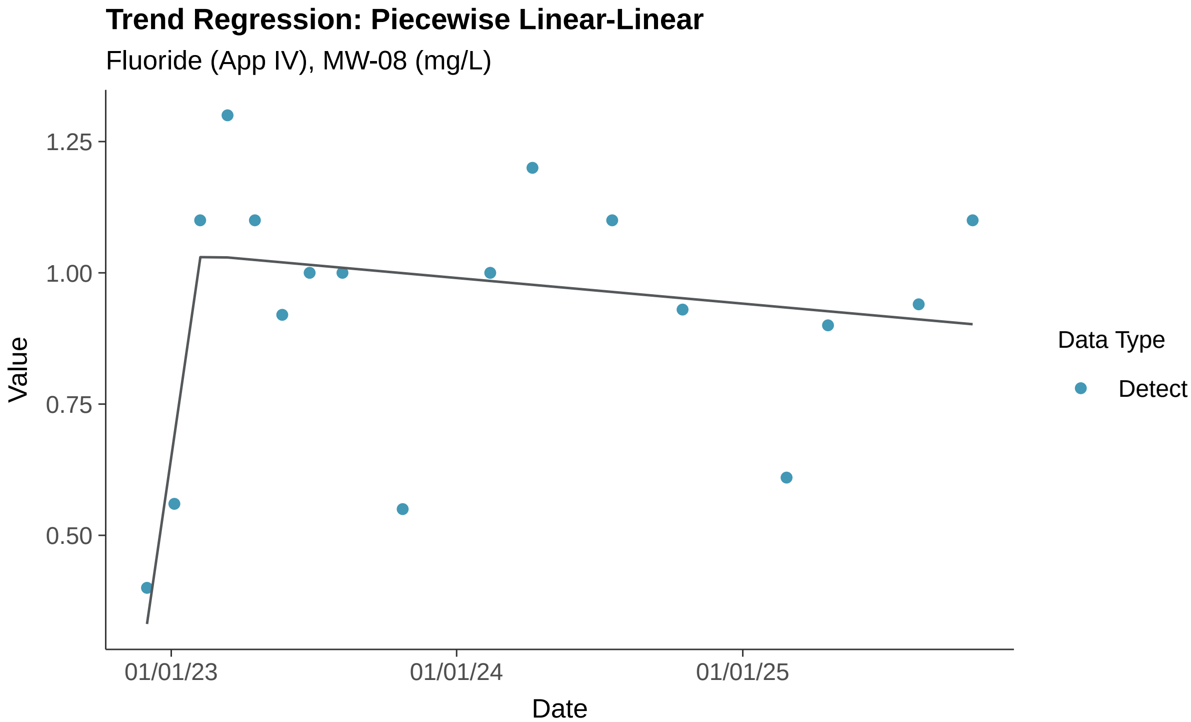


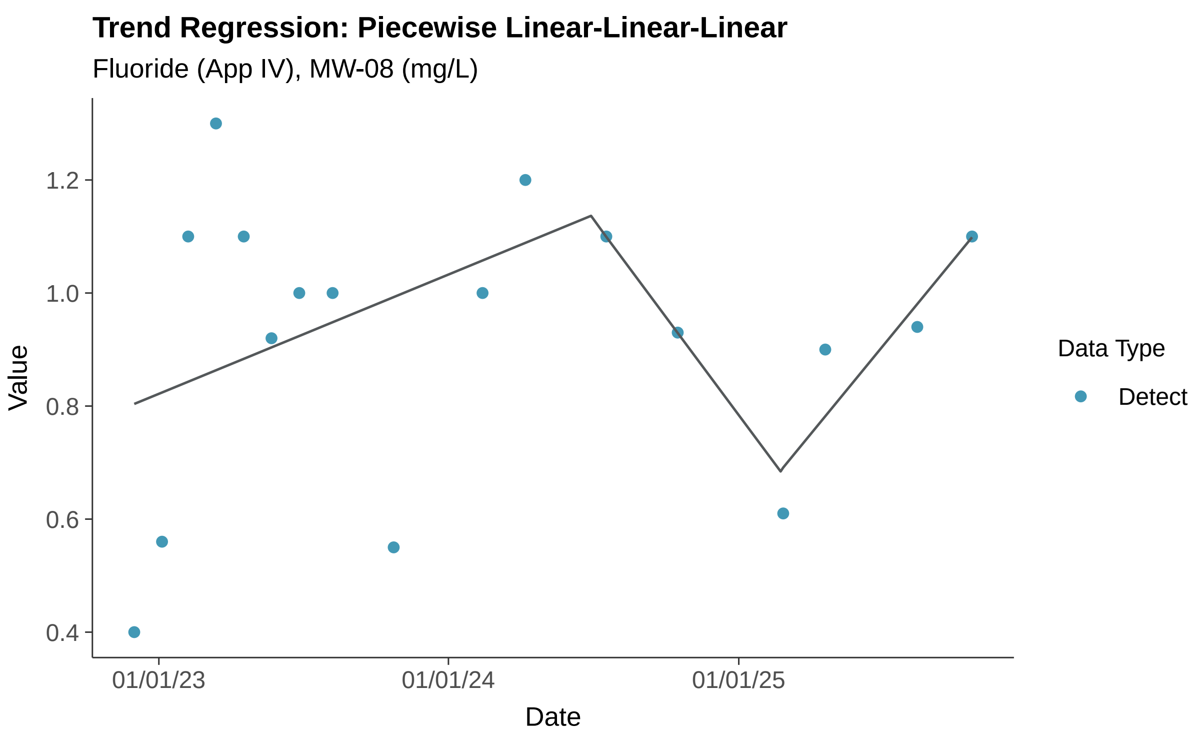

Boxplot
Fluoride (App IV), MW-08 (mg/L)
Value
1.2
1.0
0.8
0.6
0.4
Outlier Type
Minor
Data Type
Detect


Boxplot by Season
Fluoride (App IV), MW-08 (mg/L)
Value
1.2
1.0
0.8
0.6
0.4
Fall
(n = 3)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 5)
Season
Outlier Type
Minor
Data Type
Detect


Normal Q-Q plot
Fluoride (App IV), MW-08 (mg/L)
Value
1.2
1.0
0.8
0.6
0.4
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Lognormal MLE
Fluoride (App IV), MW-08 (mg/L)
log(Value)
0.3
0.0
−0.3
−0.6
−0.9
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear
Fluoride (App IV), MW-08 (mg/L)
Value
1.25
1.00
0.75
0.50
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

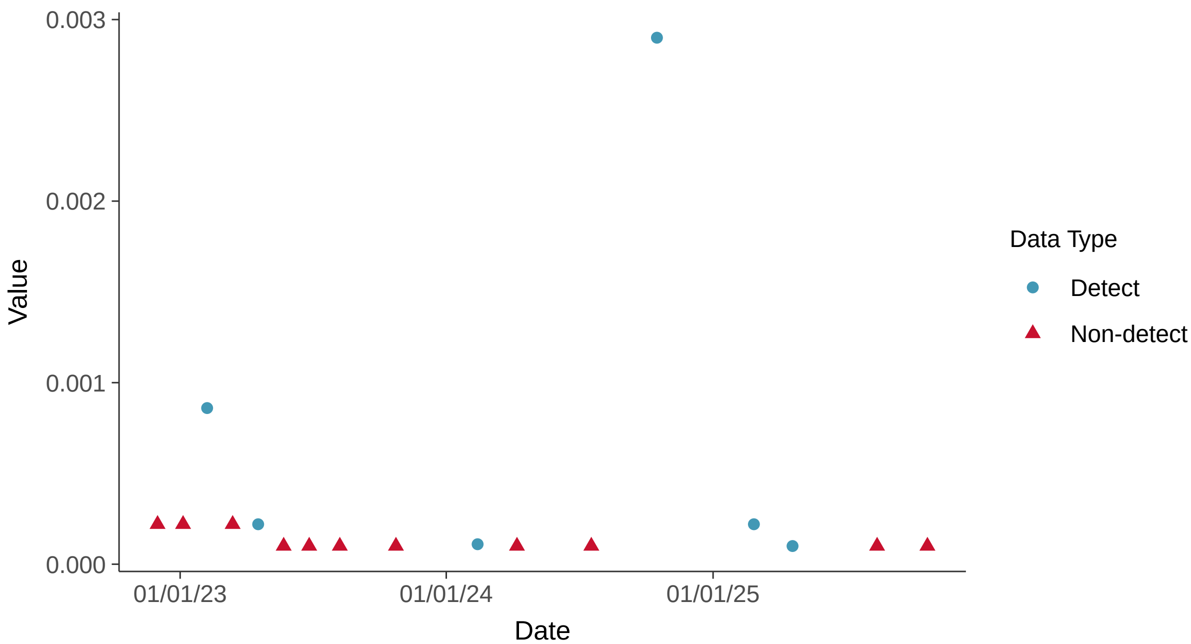

Trend Regression: Piecewise Linear-Linear-Linear
Fluoride (App IV), MW-08 (mg/L)
Value
1.2
1.0
0.8
0.6
0.4
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Appendix IV: Lead, MW-08

ID: 18_1_4_115

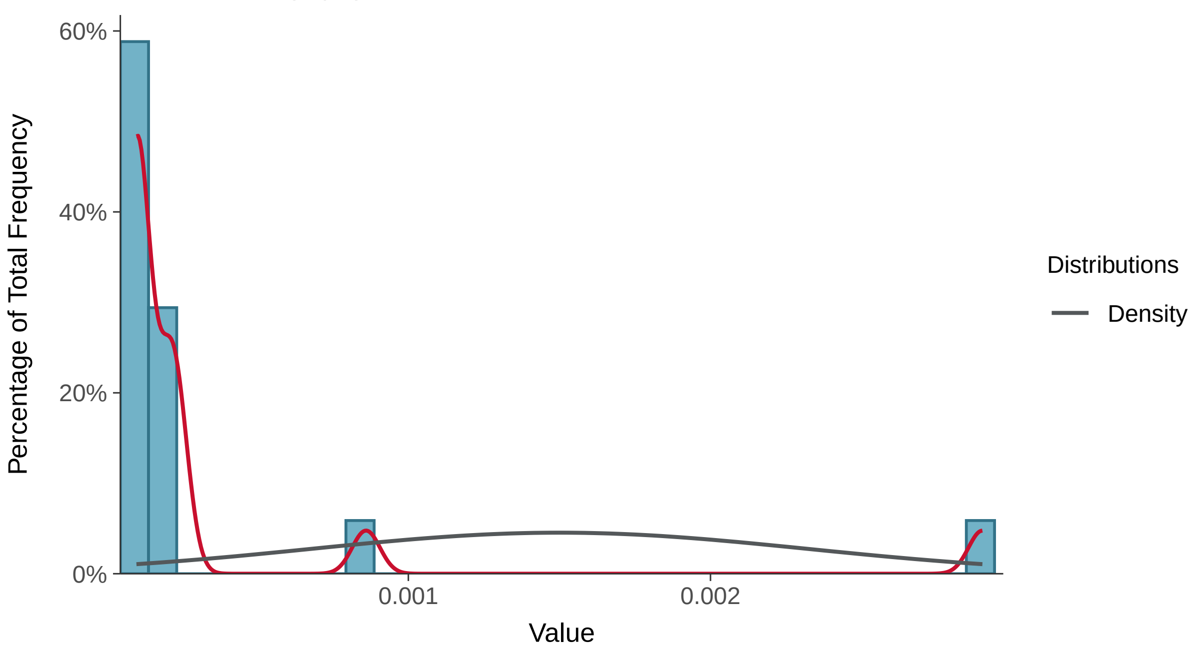
Scatter Plot

Lead, MW-08 (mg/L)



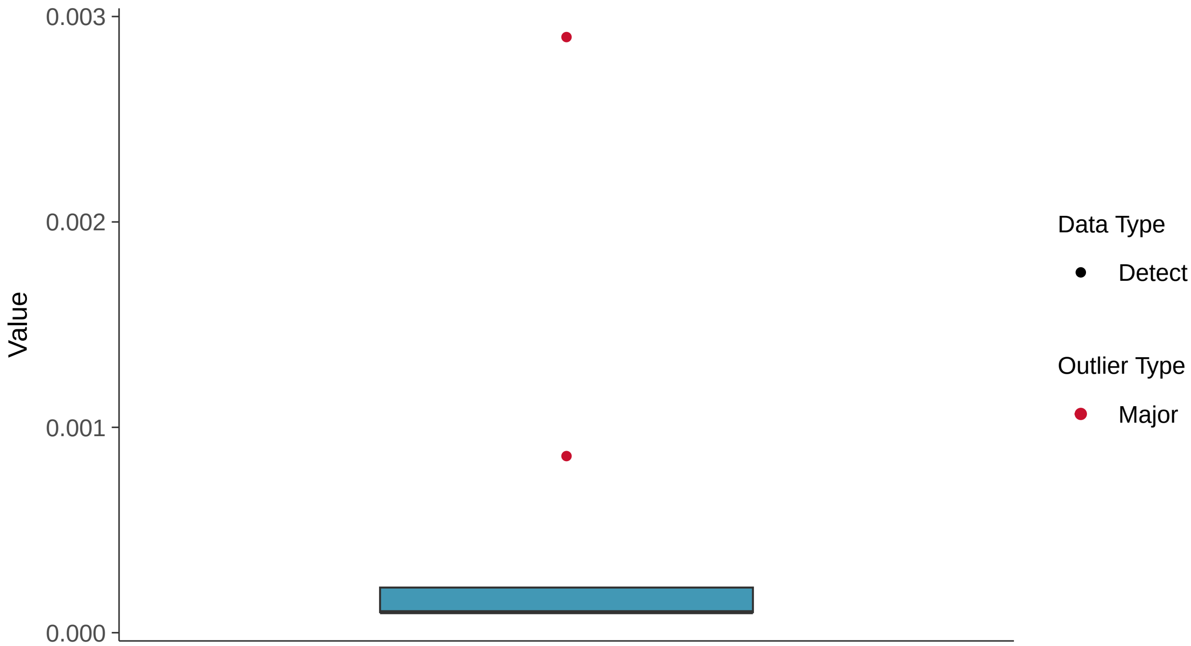
Histogram

Lead, MW-08 (mg/L)



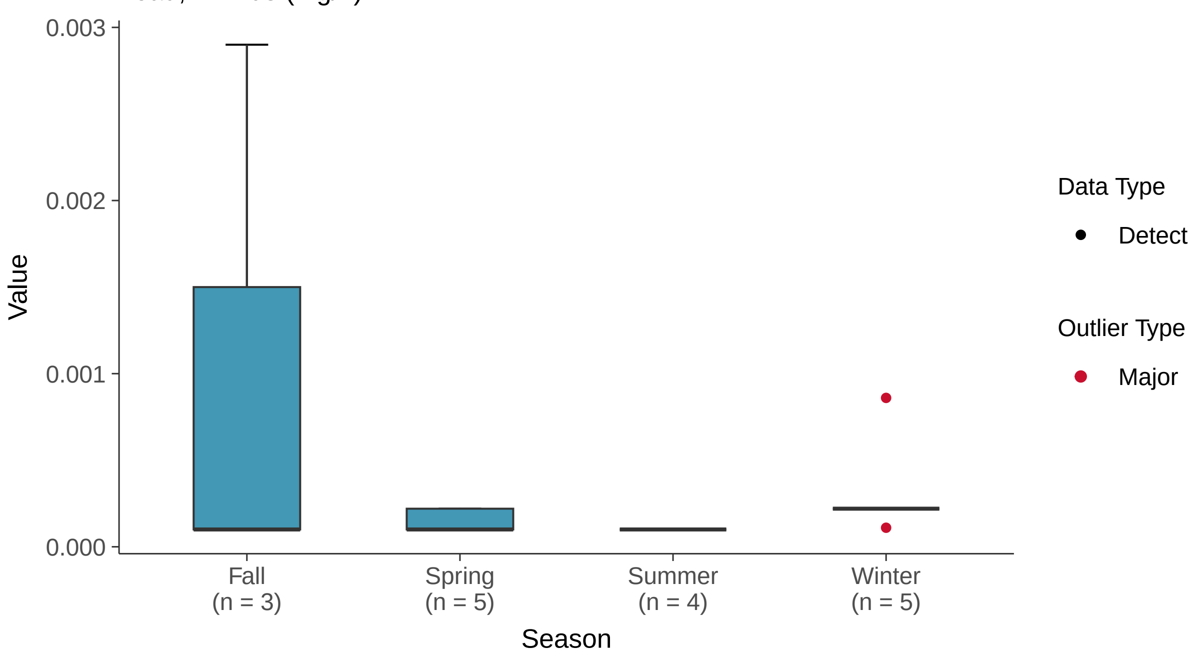
Boxplot

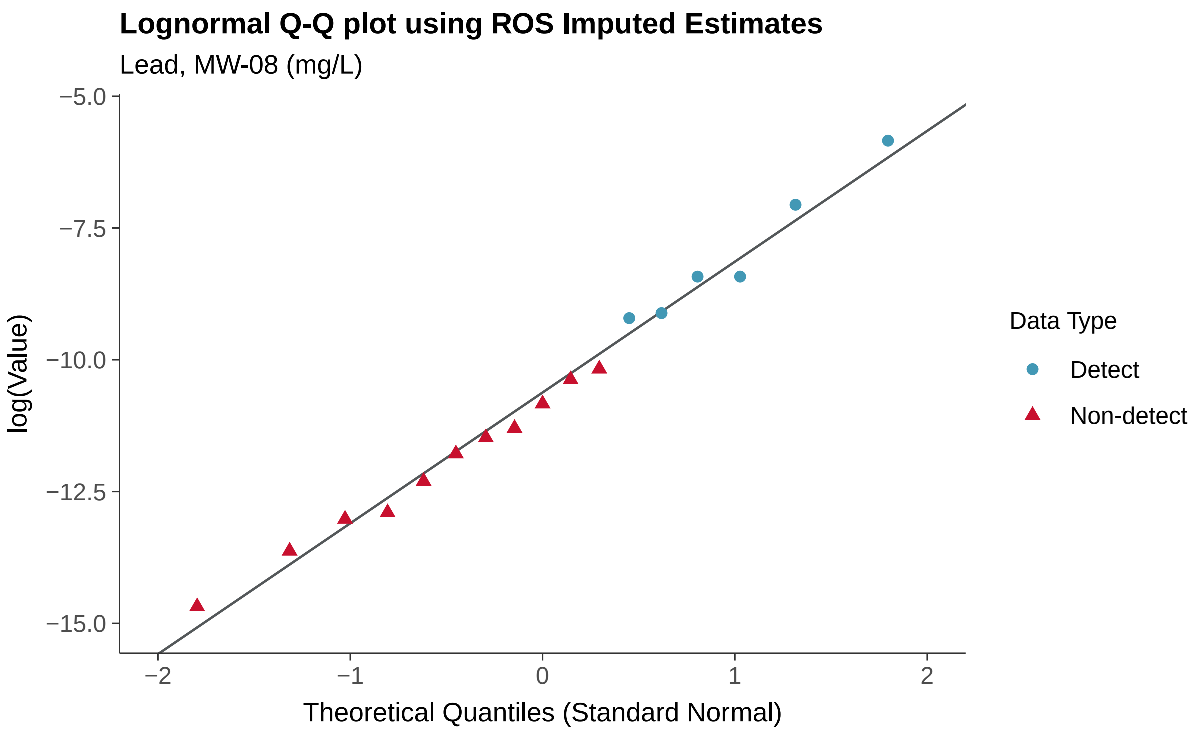
Lead, MW-08 (mg/L)

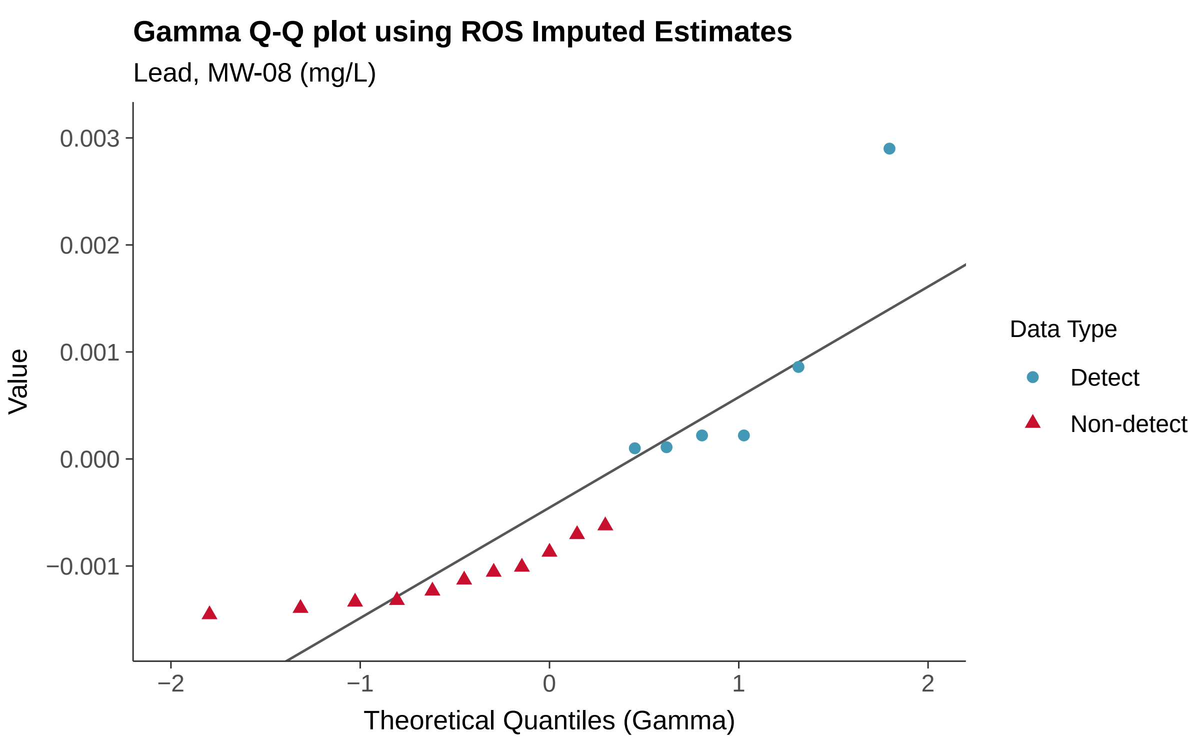


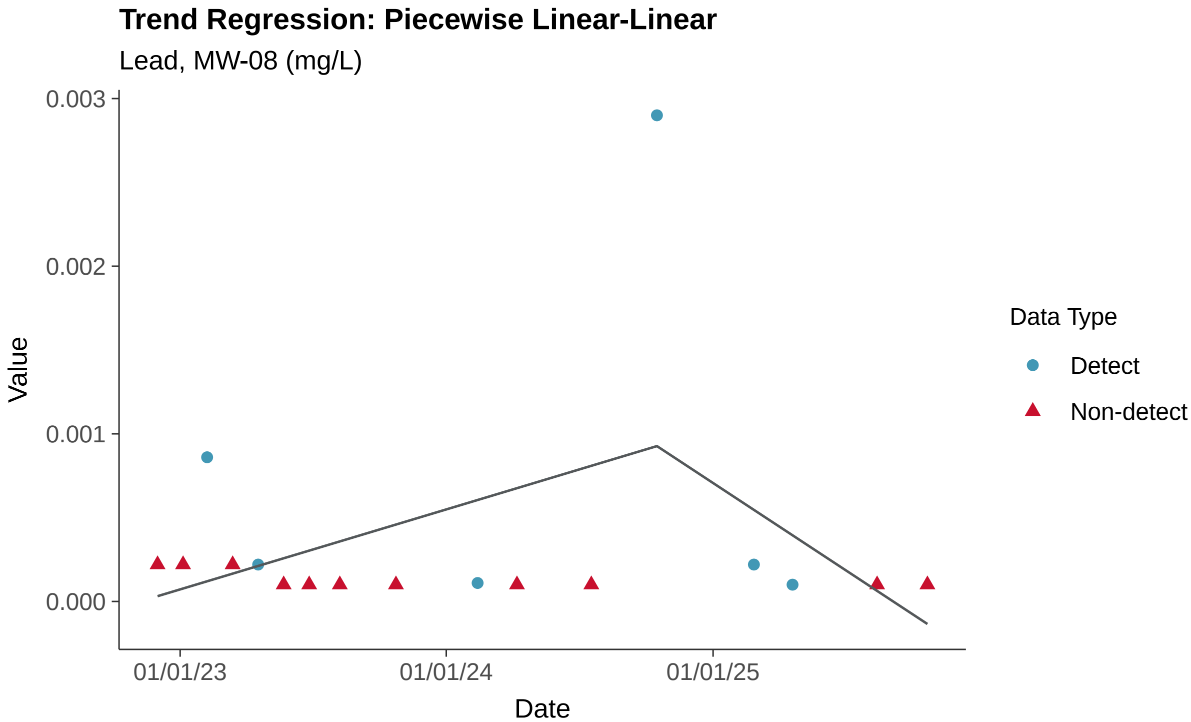
Boxplot by Season

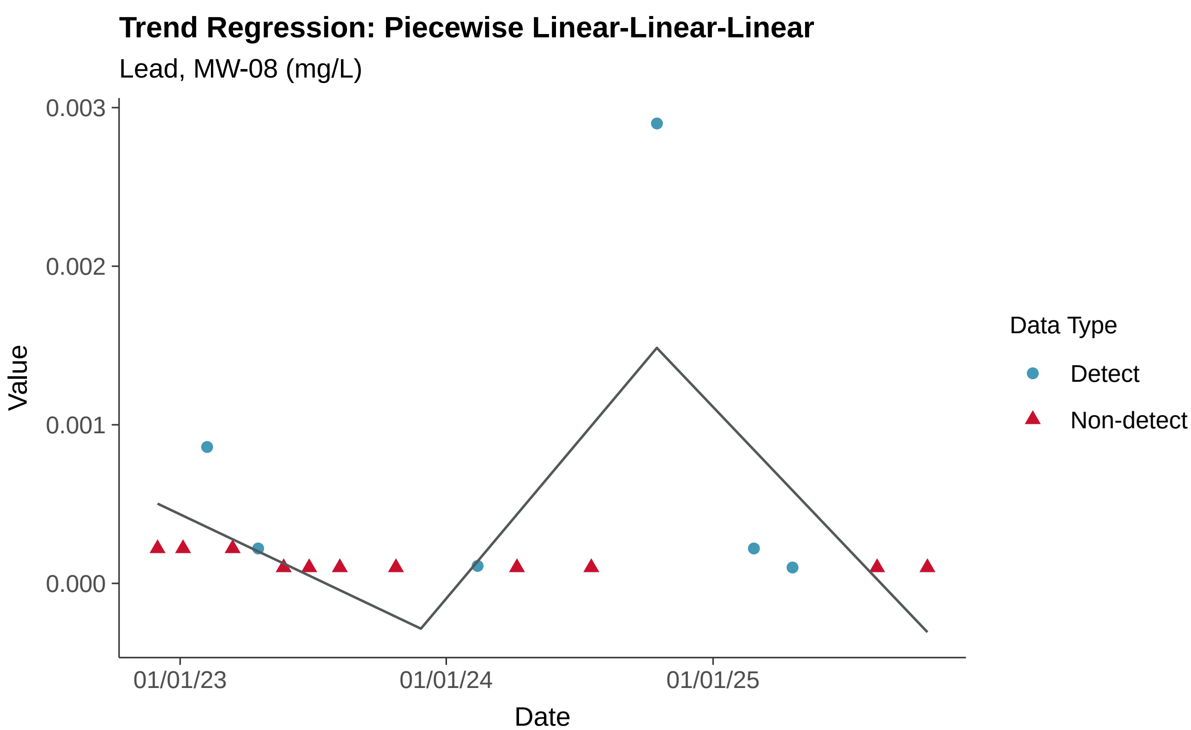
Lead, MW-08 (mg/L)




Lognormal Q-Q plot using ROS Imputed Estimates
Lead, MW-08 (mg/L)
log(Value)
−5.0
−7.5
−10.0
−12.5
−15.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Gamma Q-Q plot using ROS Imputed Estimates
Lead, MW-08 (mg/L)
Value
0.003
0.002
0.001
0.000
−0.001
−2
−1
0
1
2
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Lead, MW-08 (mg/L)
0.003
0.002
0.001
0.000
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

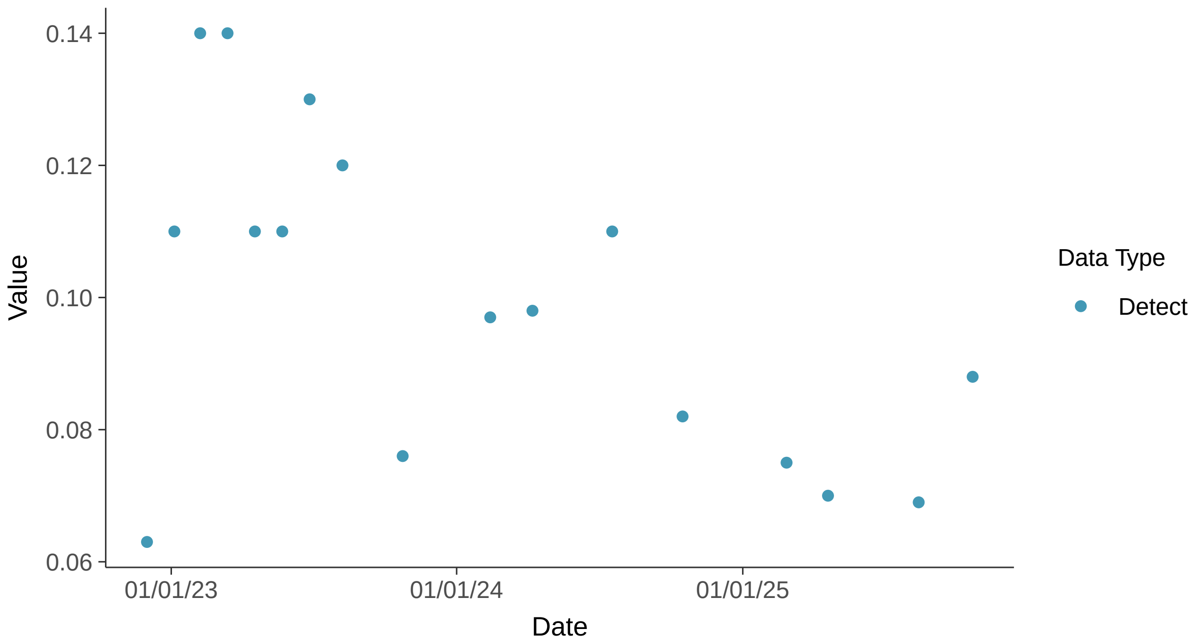

Trend Regression: Piecewise Linear-Linear-Linear
Lead, MW-08 (mg/L)
0.003
0.002
0.001
0.000
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Appendix IV: Lithium, MW-08

ID: 18_1_4_116

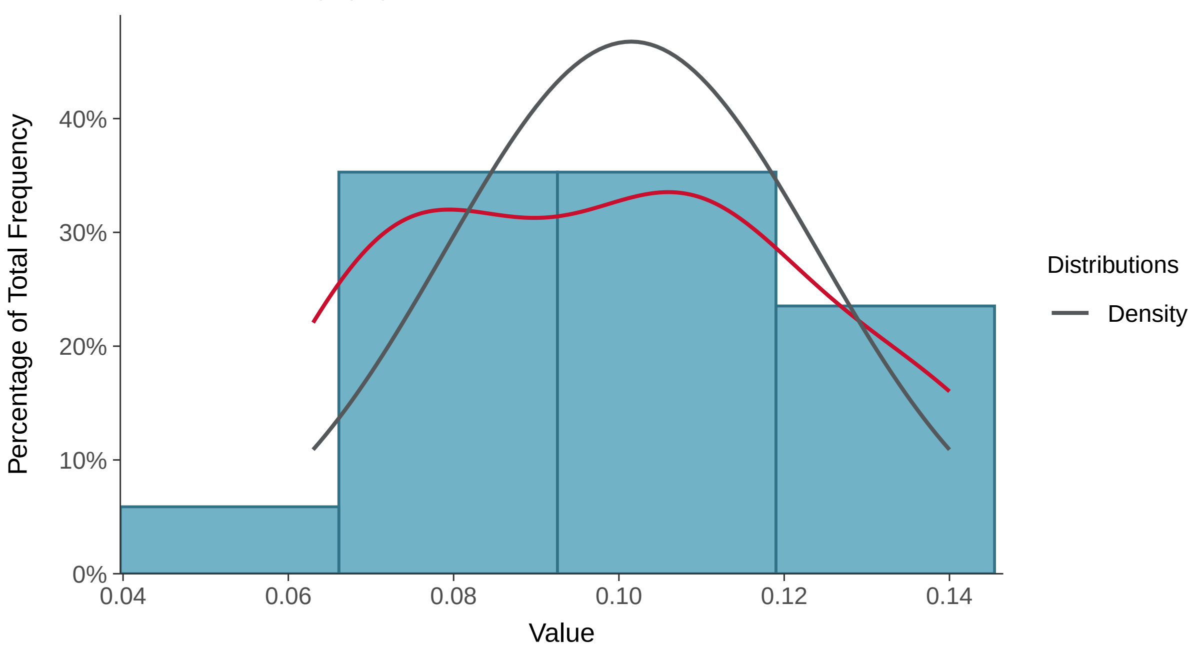
Scatter Plot

Lithium, MW-08 (mg/L)



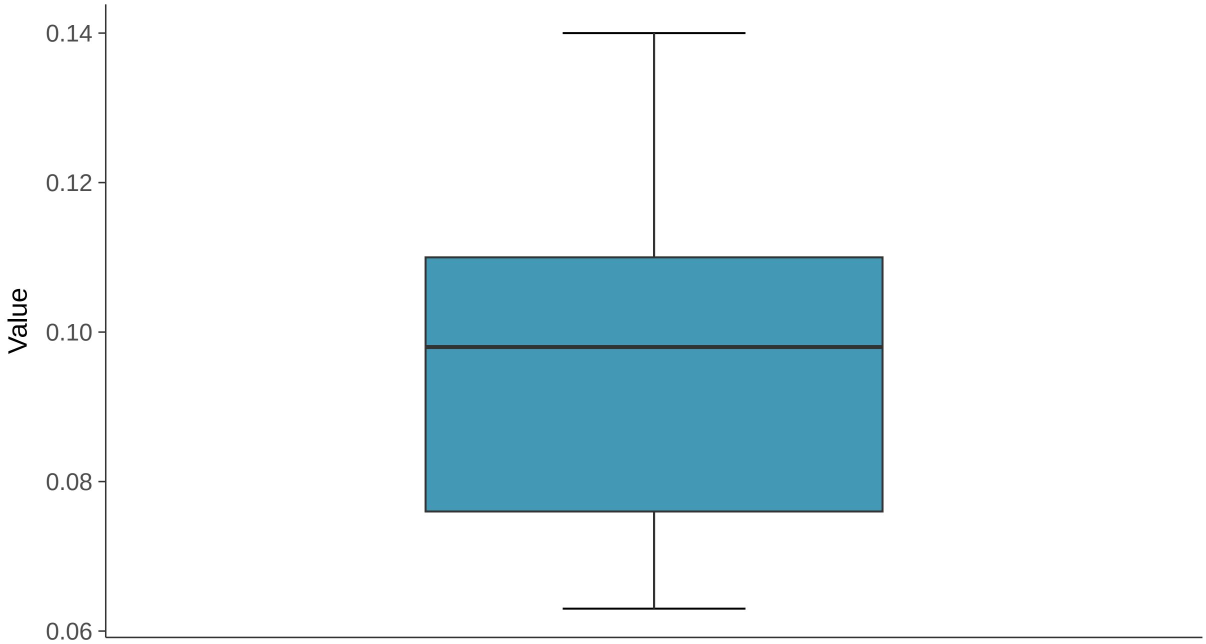
Histogram

Lithium, MW-08 (mg/L)



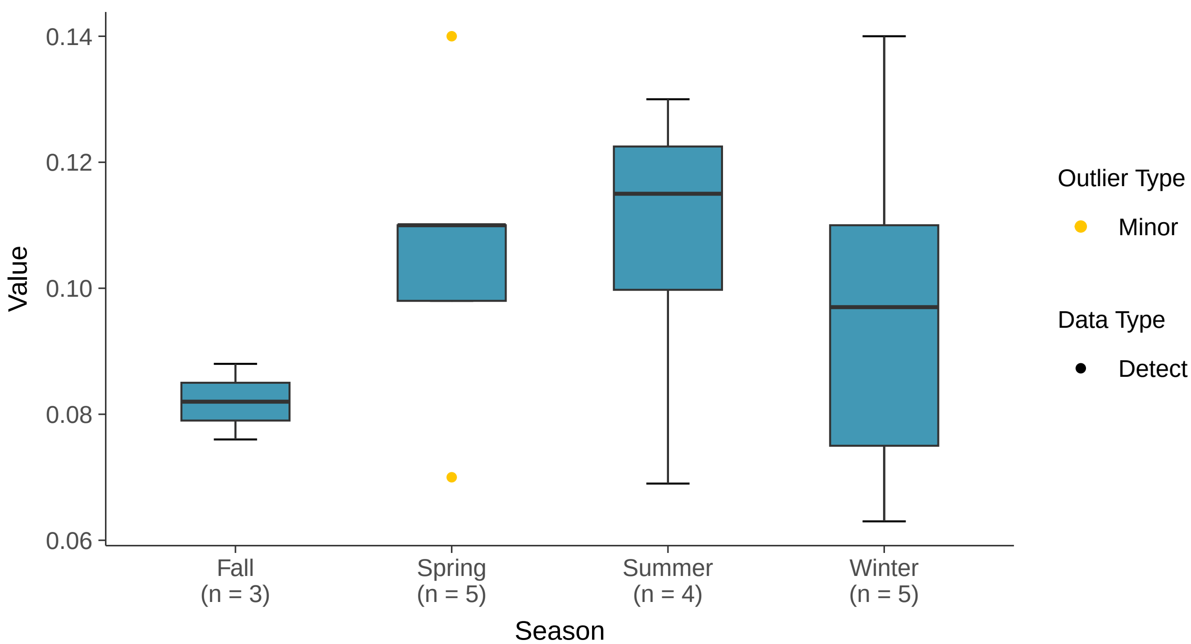
Boxplot

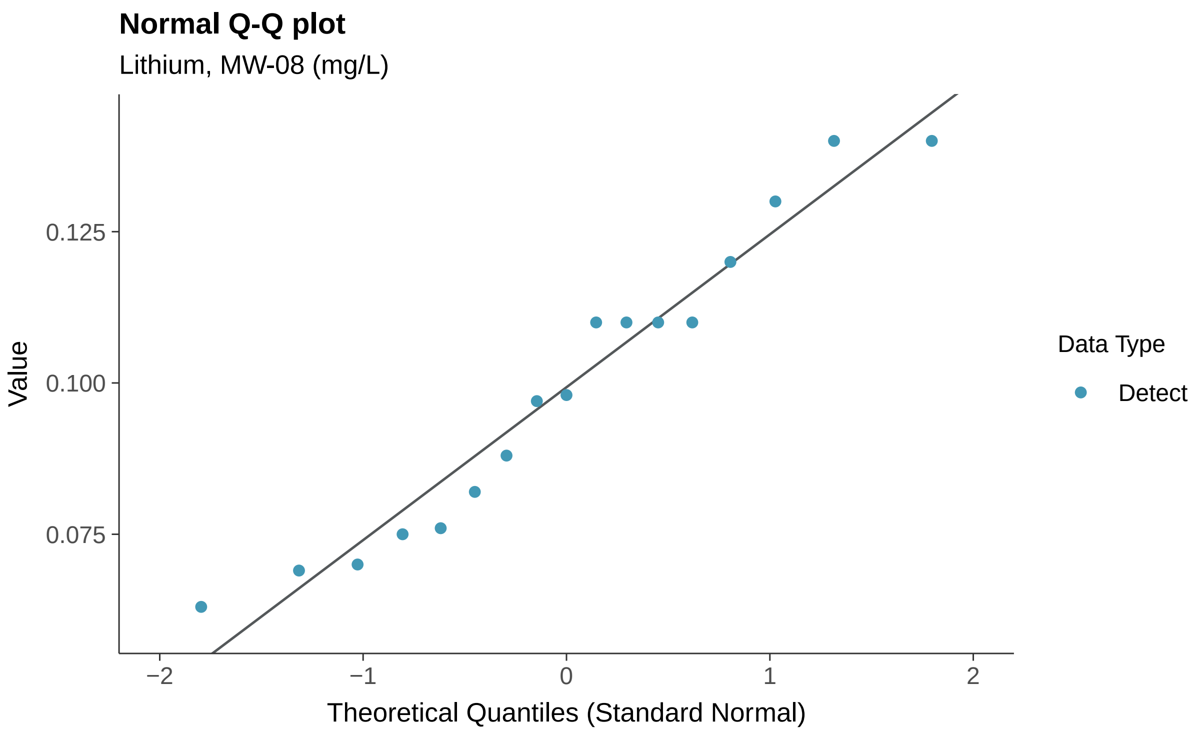
Lithium, MW-08 (mg/L)

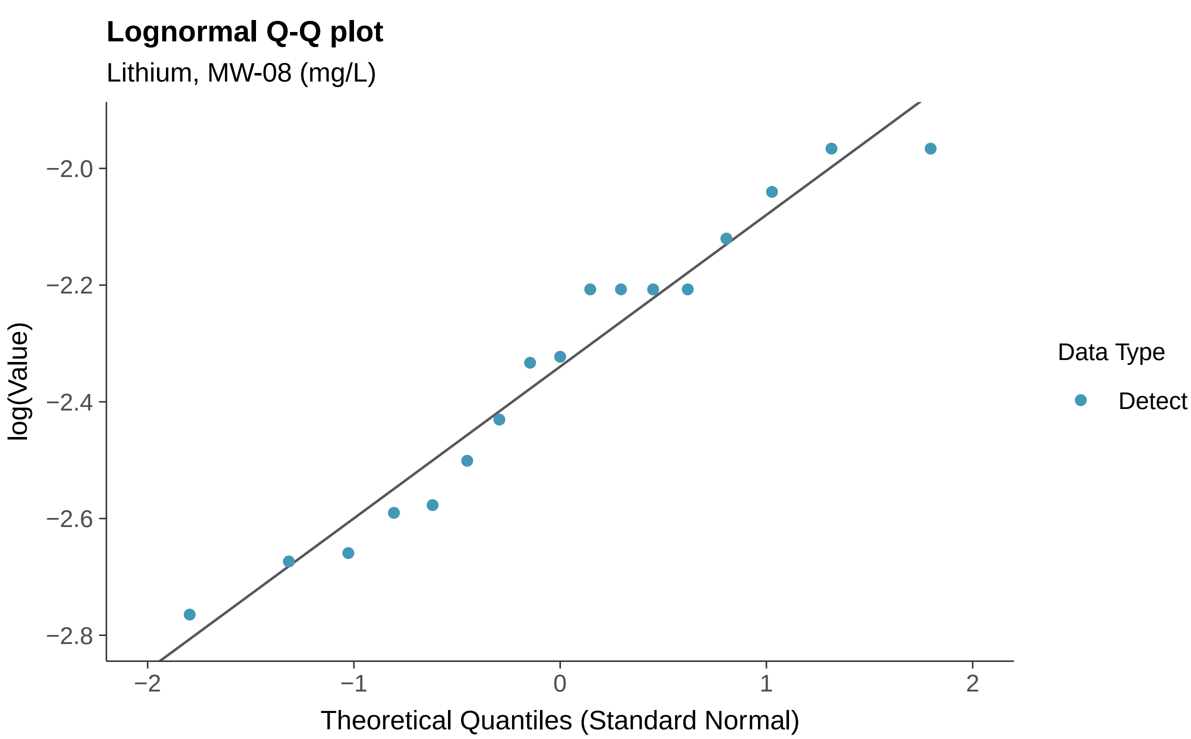


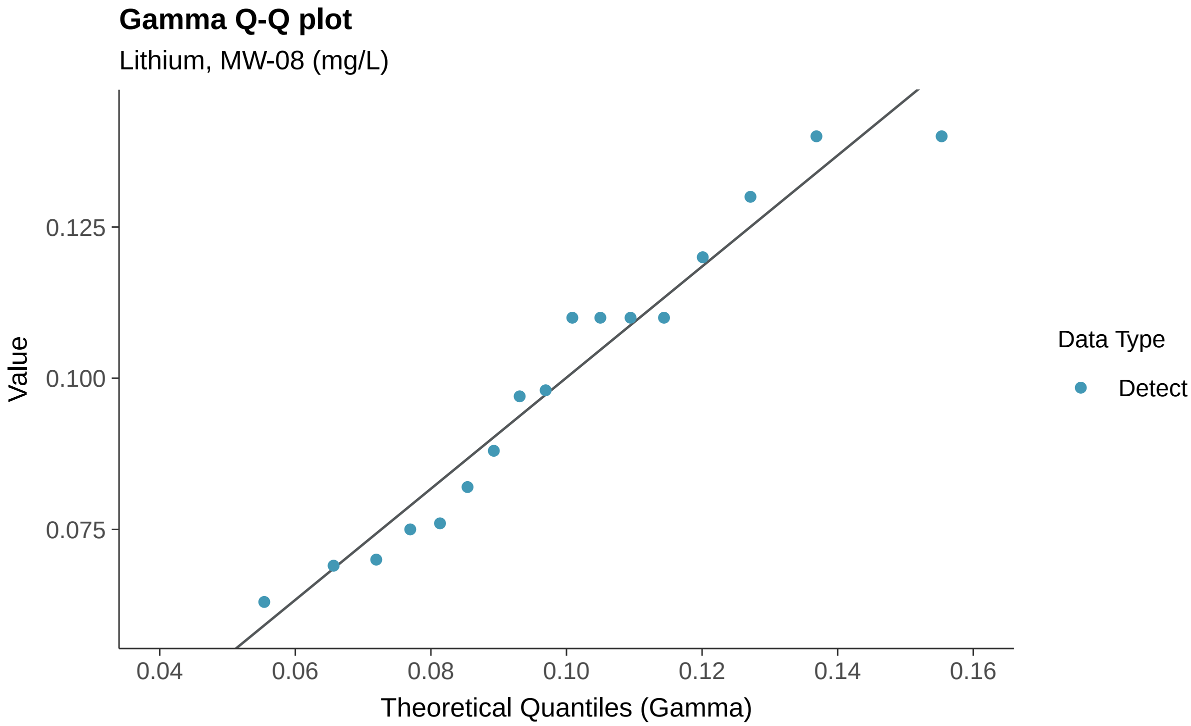
Boxplot by Season

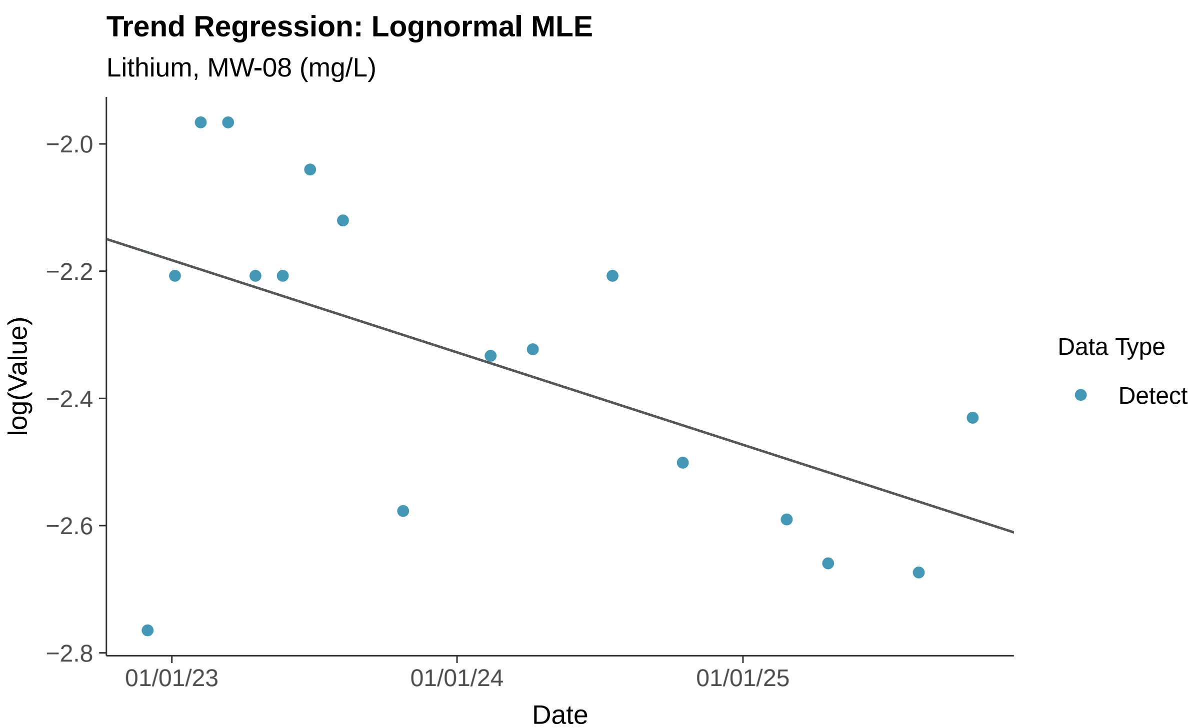
Lithium, MW-08 (mg/L)




Normal Q-Q plot
Lithium, MW-08 (mg/L)
Value
0.125
0.100
0.075
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

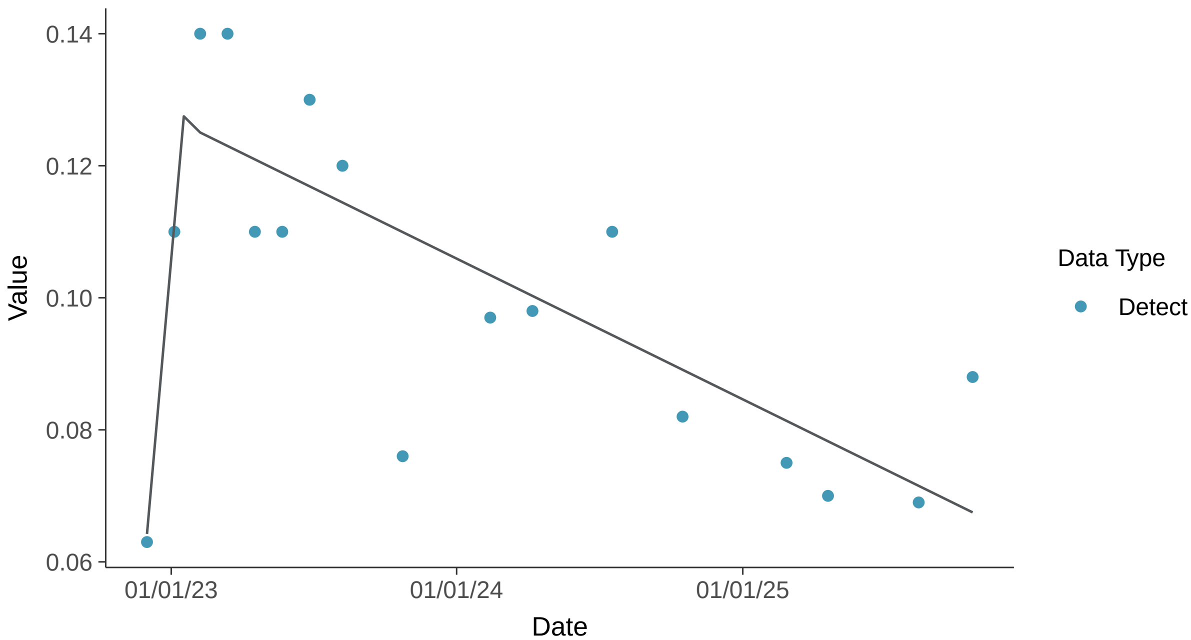

Lognormal Q-Q plot
Lithium, MW-08 (mg/L)
log(Value)
−2.0
−2.2
−2.4
−2.6
−2.8
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Lithium, MW-08 (mg/L)
Value
0.125
0.100
0.075
0.04
0.06
0.08
0.10
0.12
0.14
0.16
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Lithium, MW-08 (mg/L)
log(Value)
−2.0
−2.2
−2.4
−2.6
−2.8
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

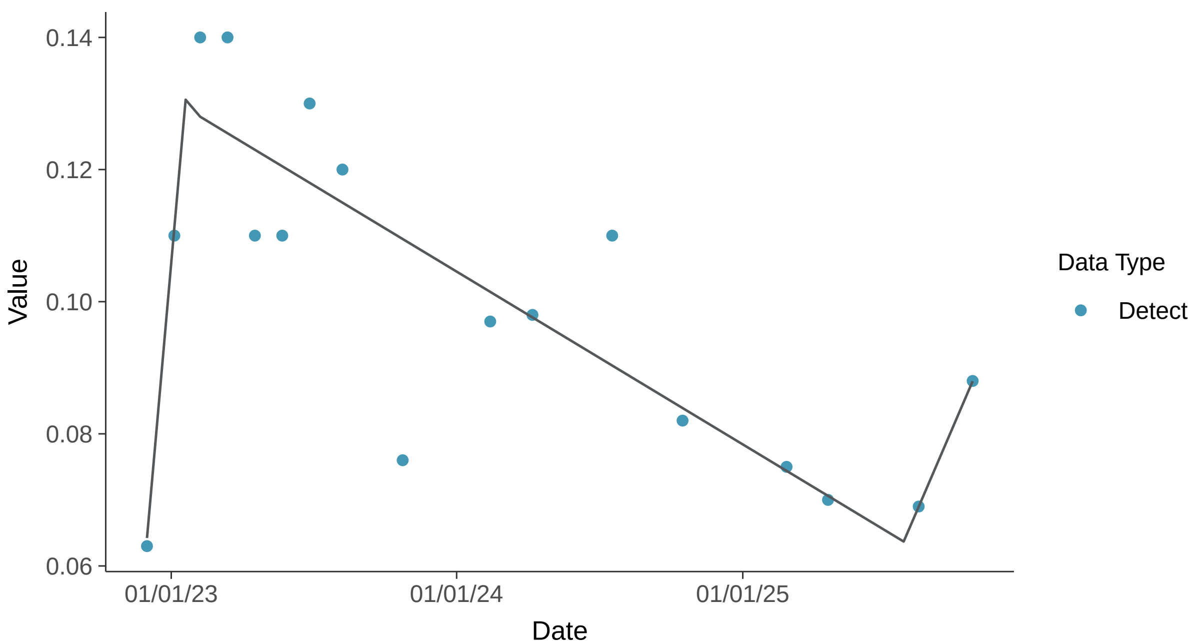
Trend Regression: Piecewise Linear-Linear

Lithium, MW-08 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Lithium, MW-08 (mg/L)

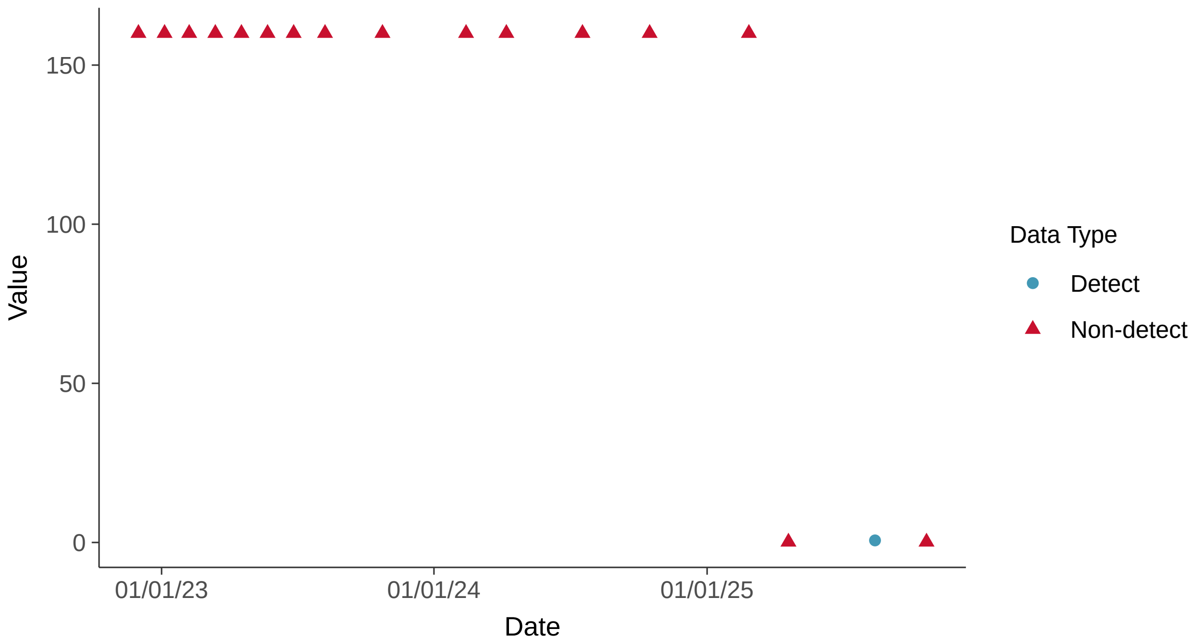


Appendix IV: Mercury, MW-08

ID: 18_1_4_117

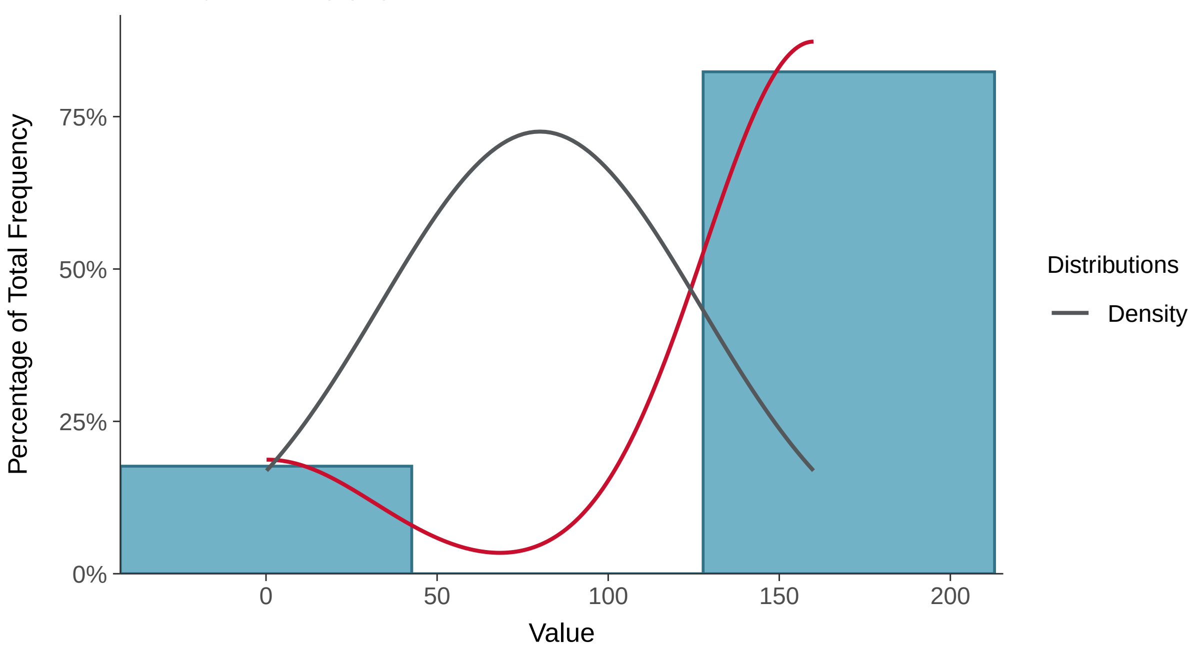
Scatter Plot

Mercury, MW-08 (ng/L)



Histogram

Mercury, MW-08 (ng/L)

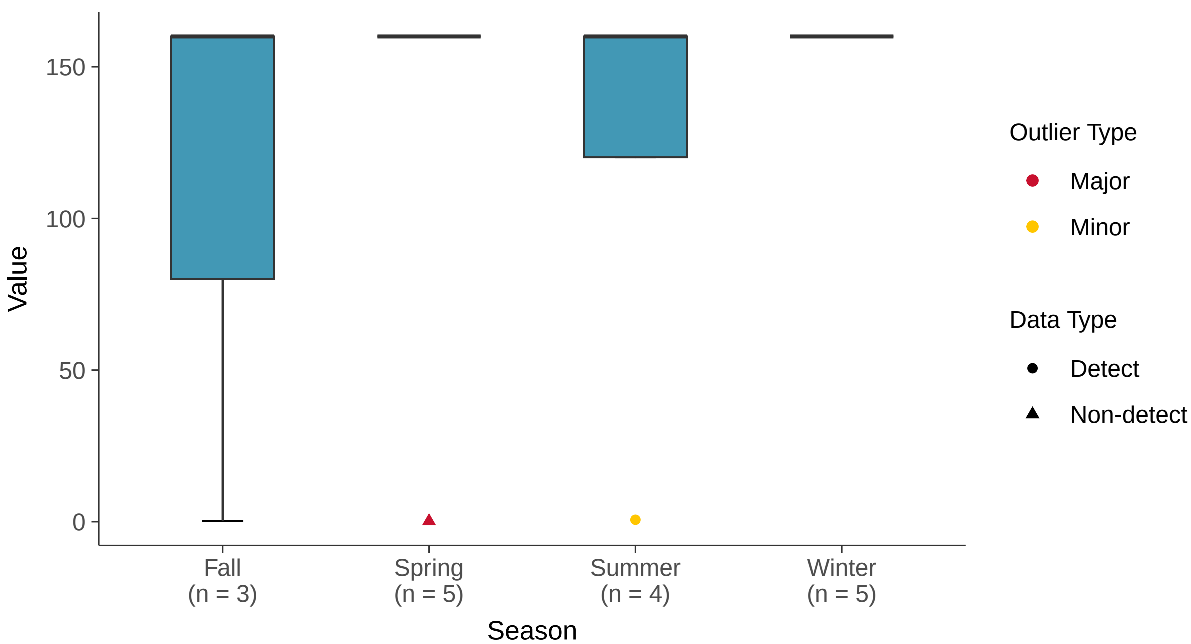


Boxplot

Mercury, MW-08 (ng/L)

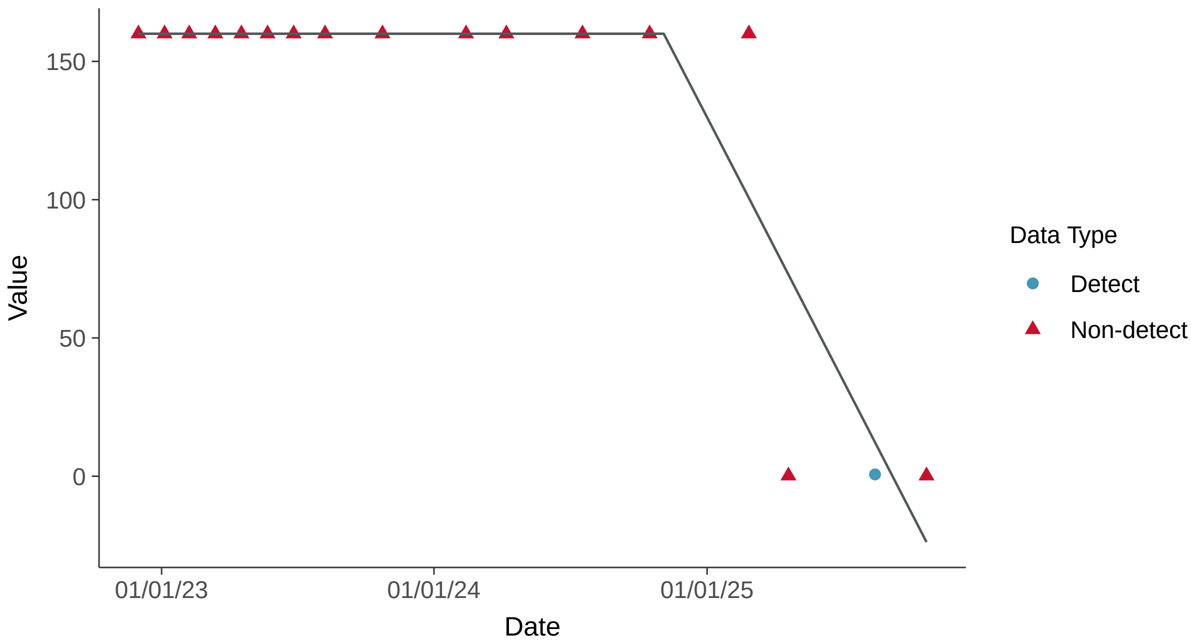
Boxplot by Season

Mercury, MW-08 (ng/L)



Trend Regression: Piecewise Linear-Linear

Mercury, MW-08 (ng/L)

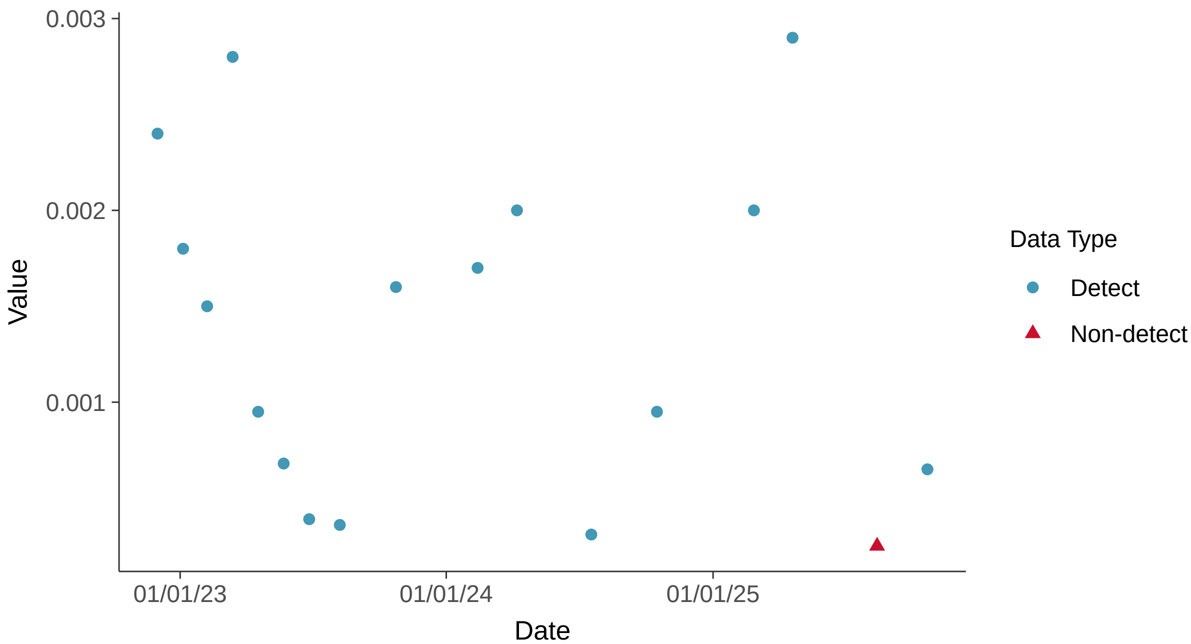


Appendix IV: Molybdenum, MW-08

ID: 18_1_4_118

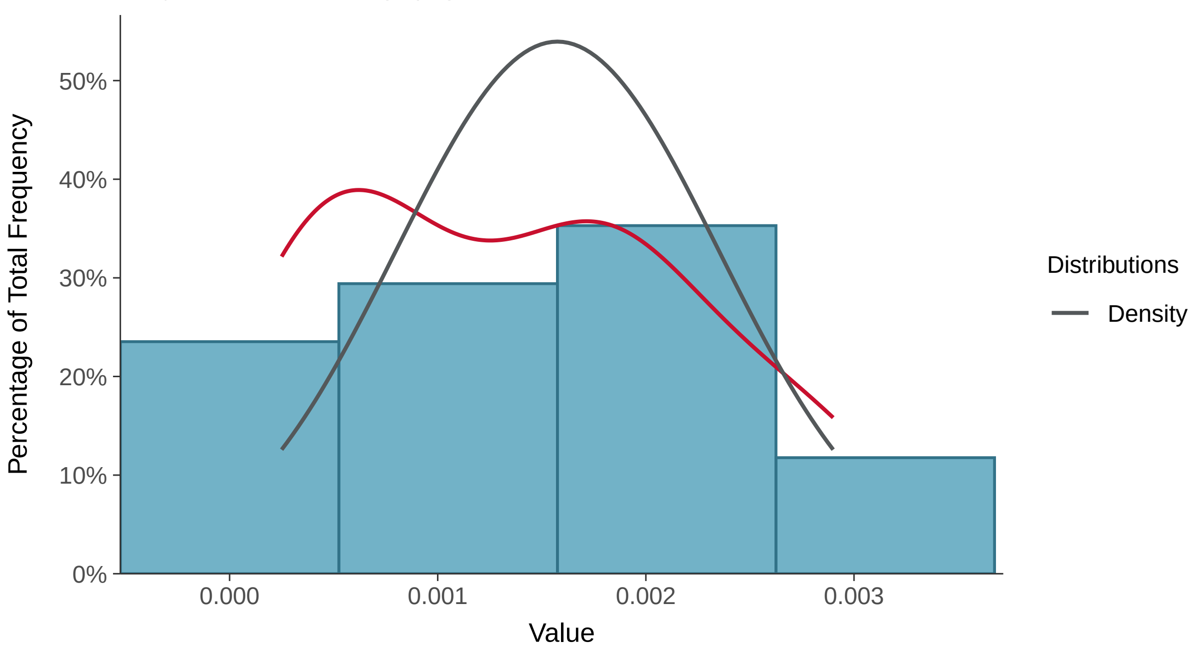
Scatter Plot

Molybdenum, MW-08 (mg/L)



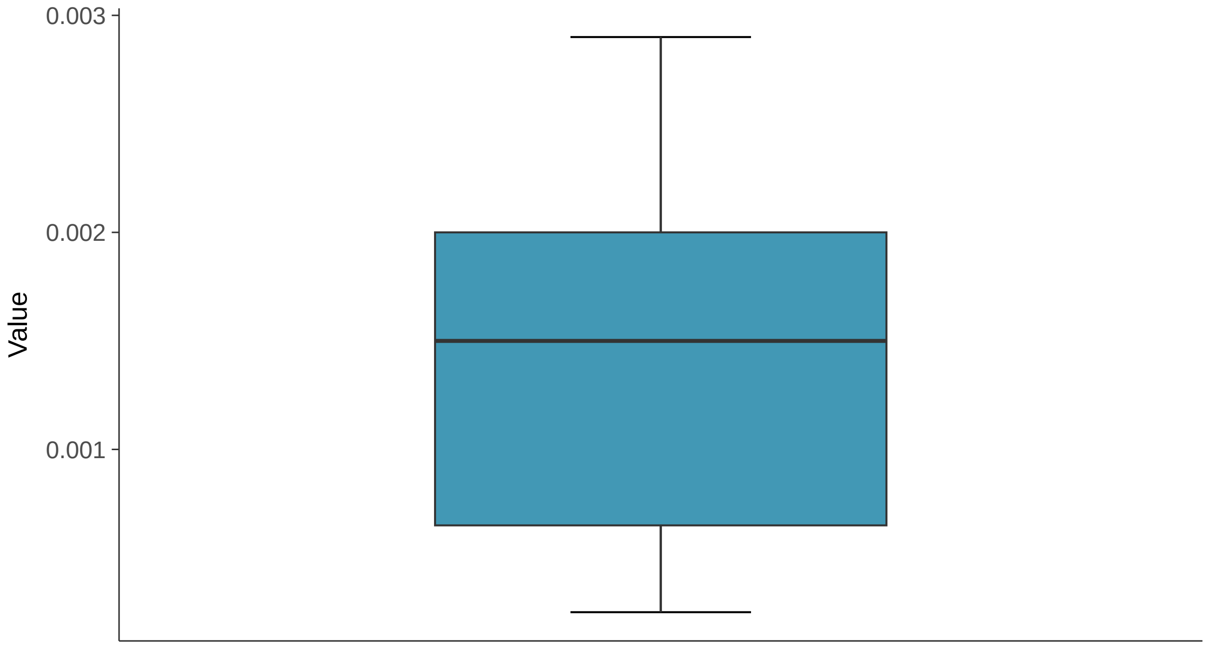
Histogram

Molybdenum, MW-08 (mg/L)



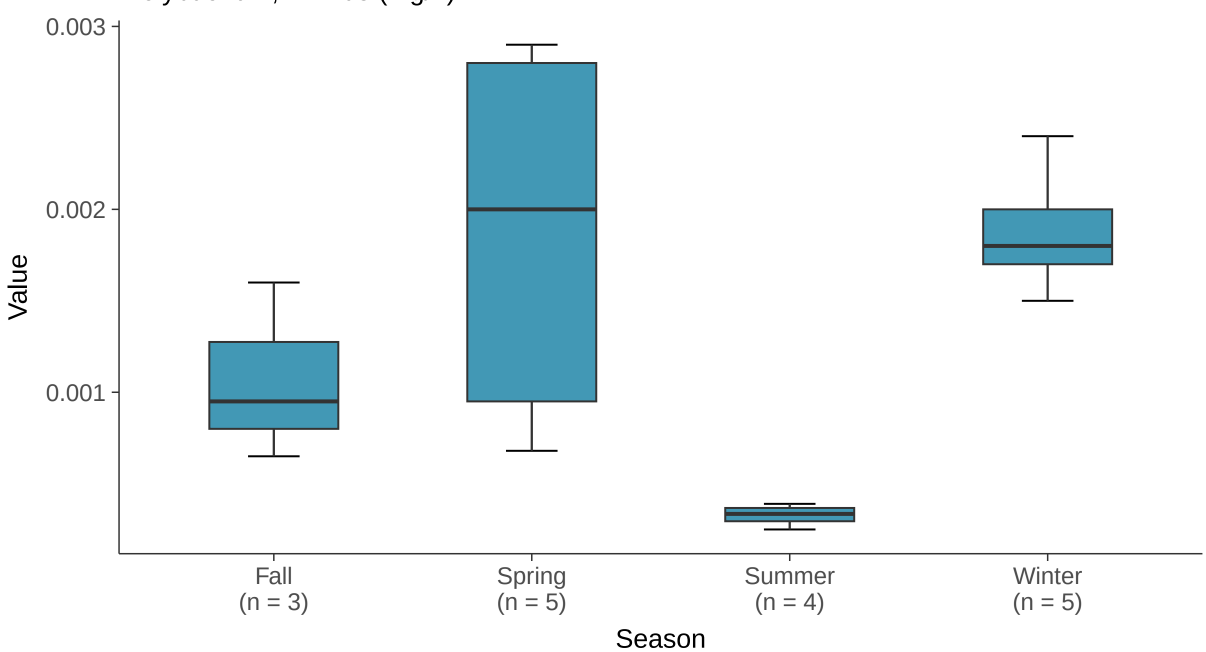
Boxplot

Molybdenum, MW-08 (mg/L)

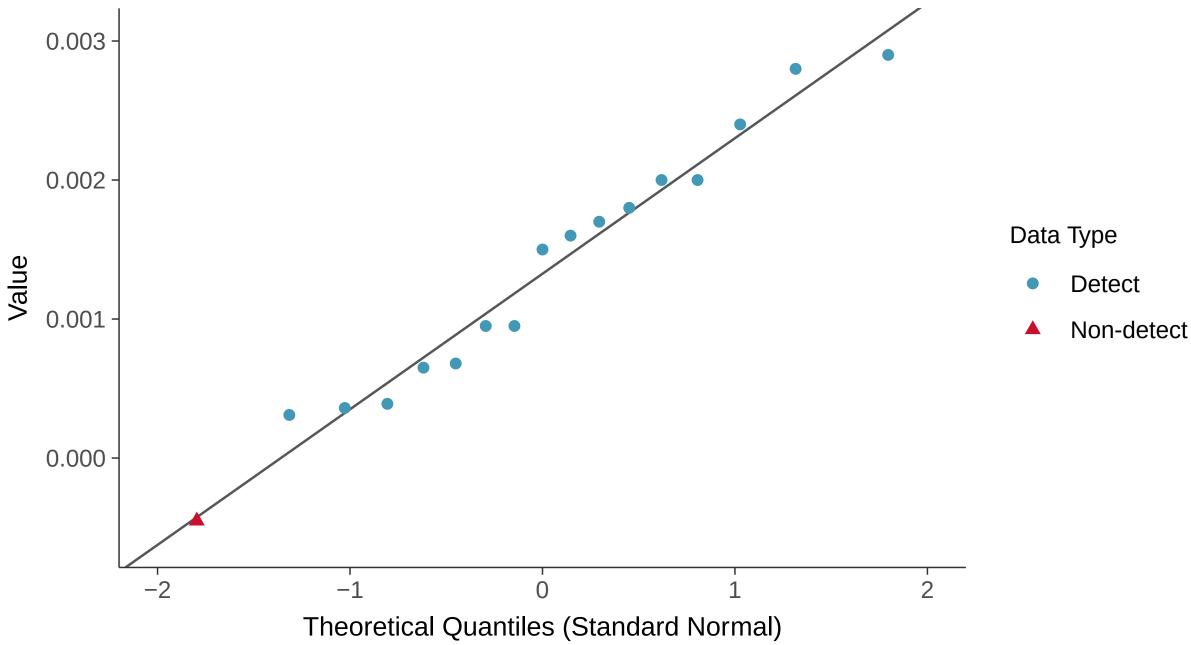


Boxplot by Season

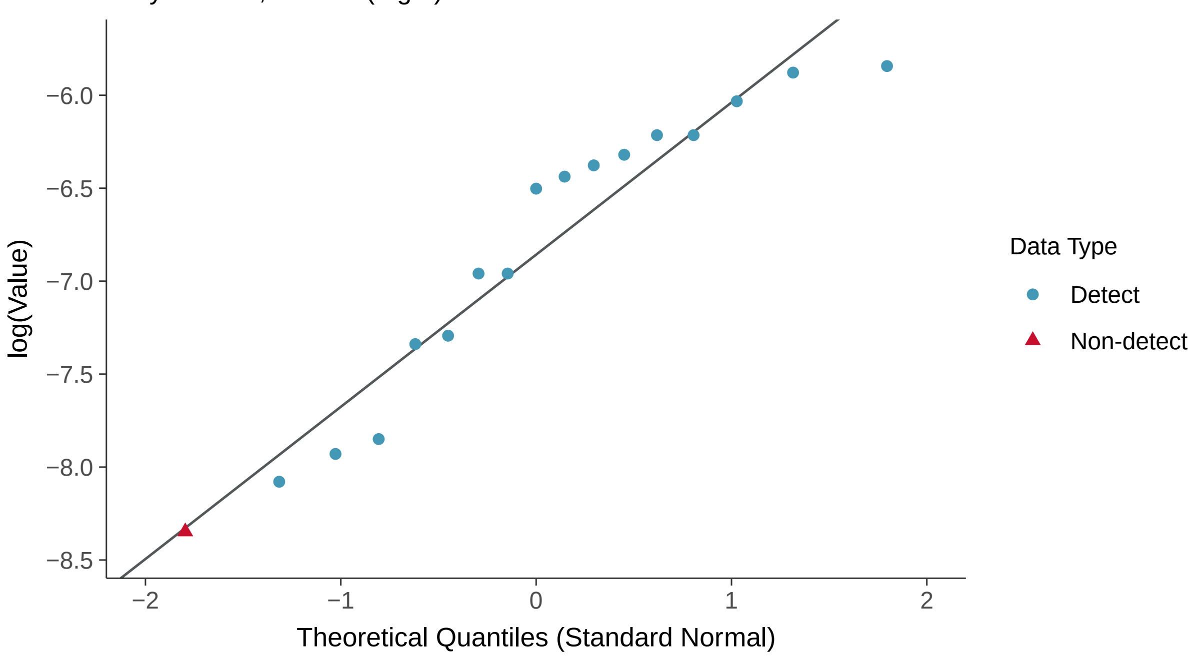
Molybdenum, MW-08 (mg/L)



Normal Q-Q plot using ROS Imputed Estimates
Molybdenum, MW-08 (mg/L)

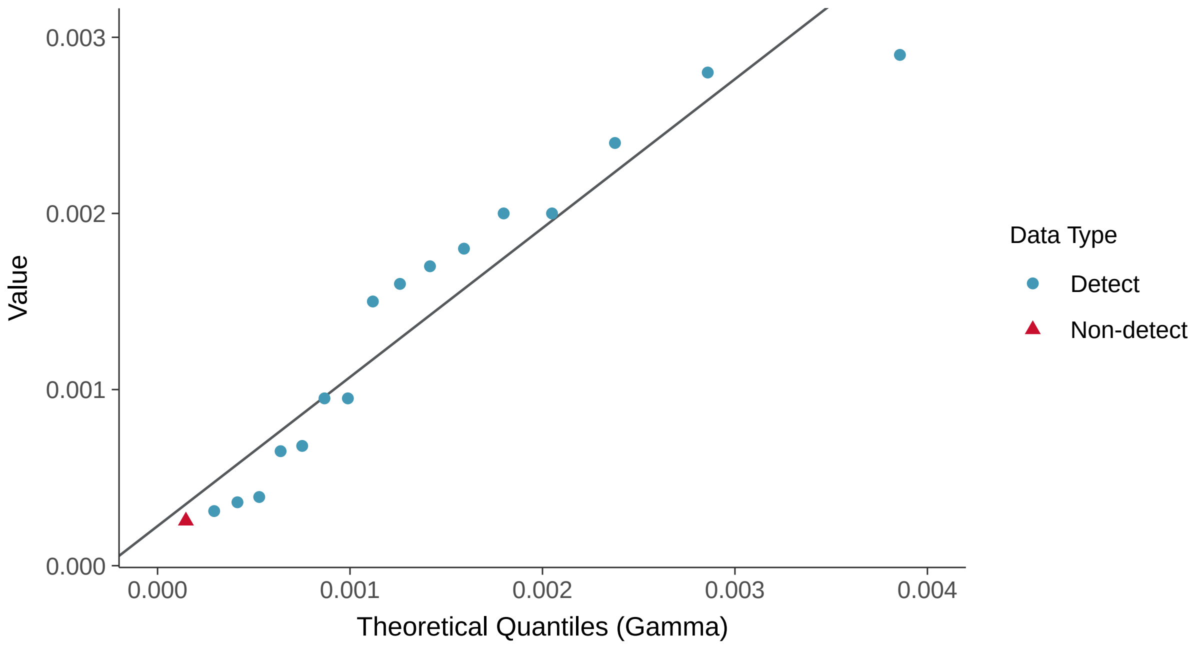


Lognormal Q-Q plot using ROS Imputed Estimates
Molybdenum, MW-08 (mg/L)



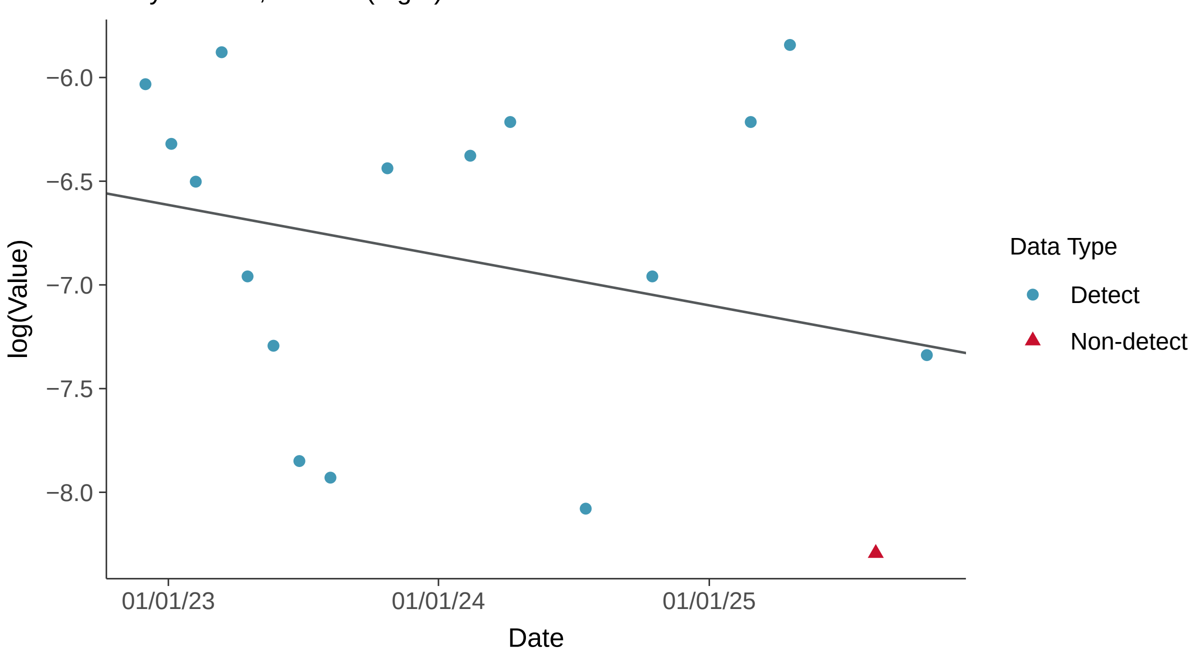
Gamma Q-Q plot using ROS Imputed Estimates

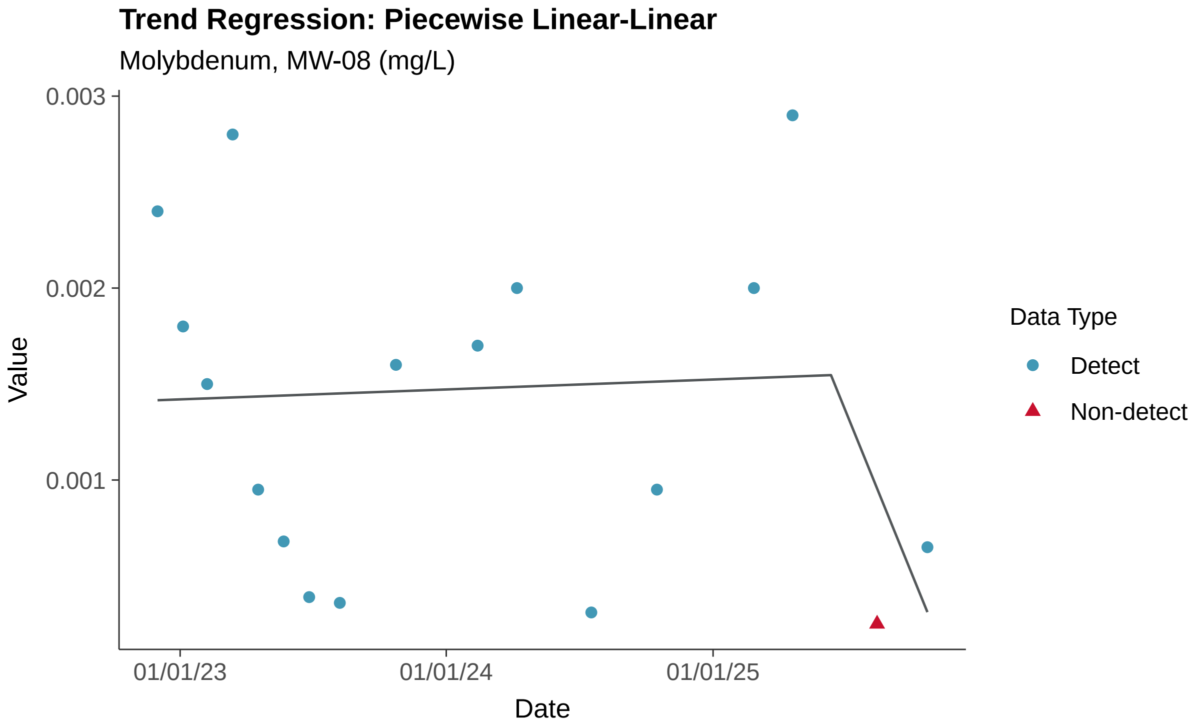
Molybdenum, MW-08 (mg/L)

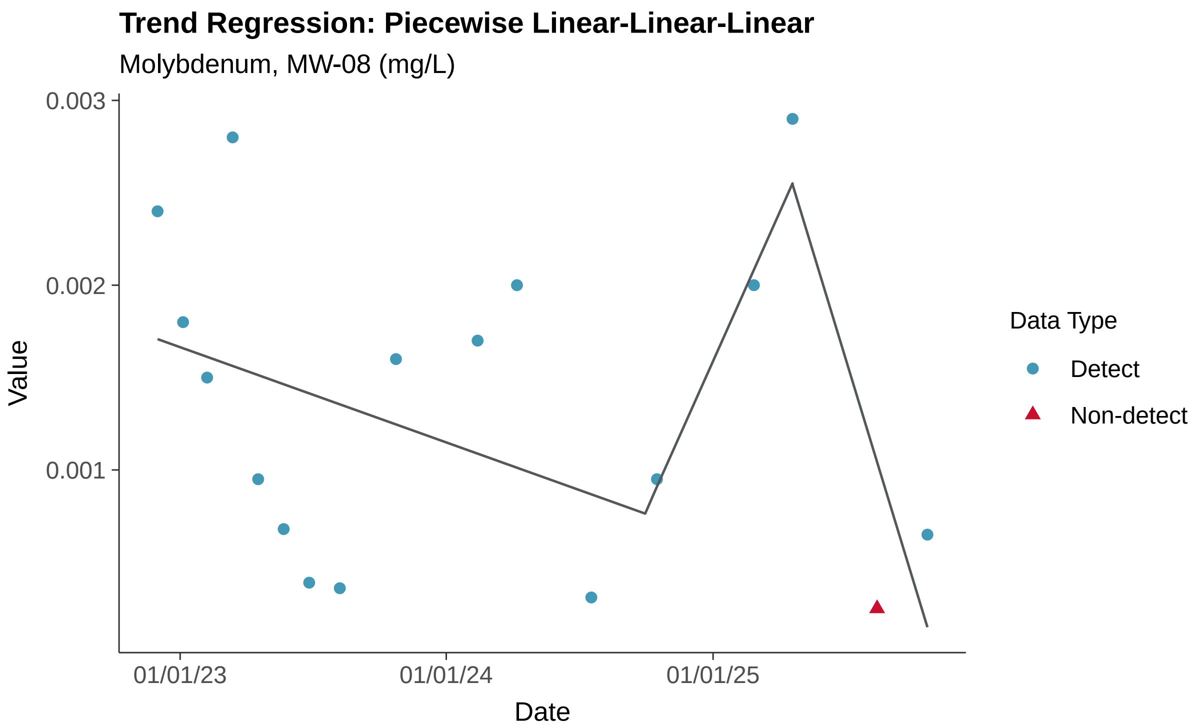


Trend Regression: Lognormal MLE

Molybdenum, MW-08 (mg/L)




Trend Regression: Piecewise Linear-Linear
Molybdenum, MW-08 (mg/L)
0.003
0.002
0.001
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

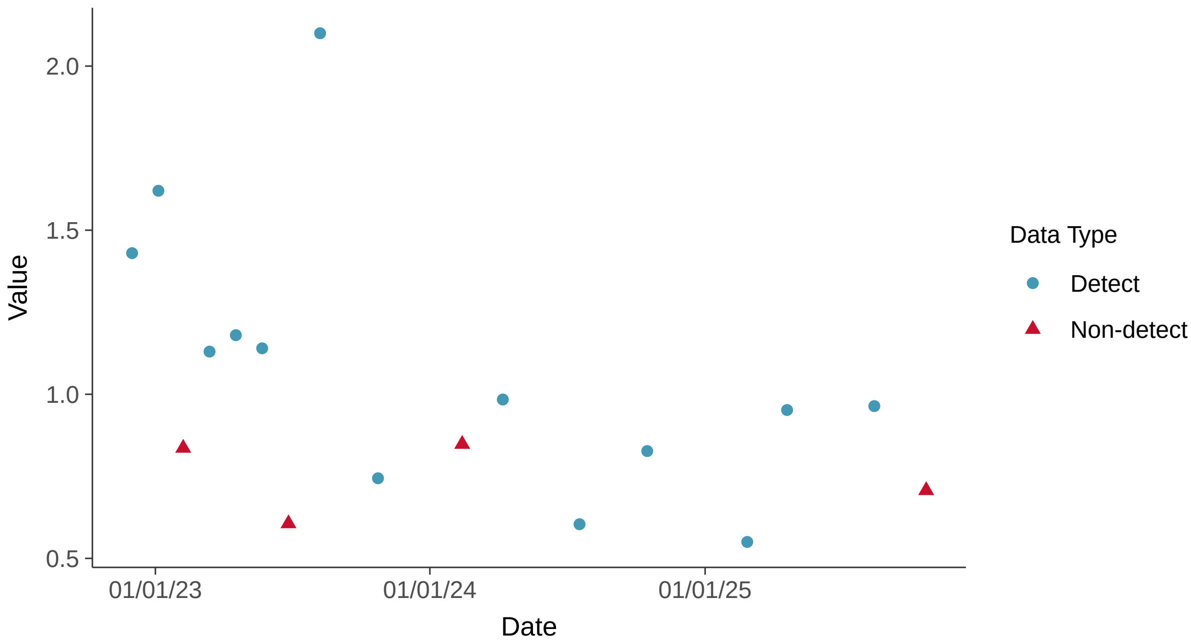

Trend Regression: Piecewise Linear-Linear-Linear
Molybdenum, MW-08 (mg/L)
0.003
0.002
0.001
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Appendix IV: Radium 226 and 228, MW-08

ID: 18_1_4_121

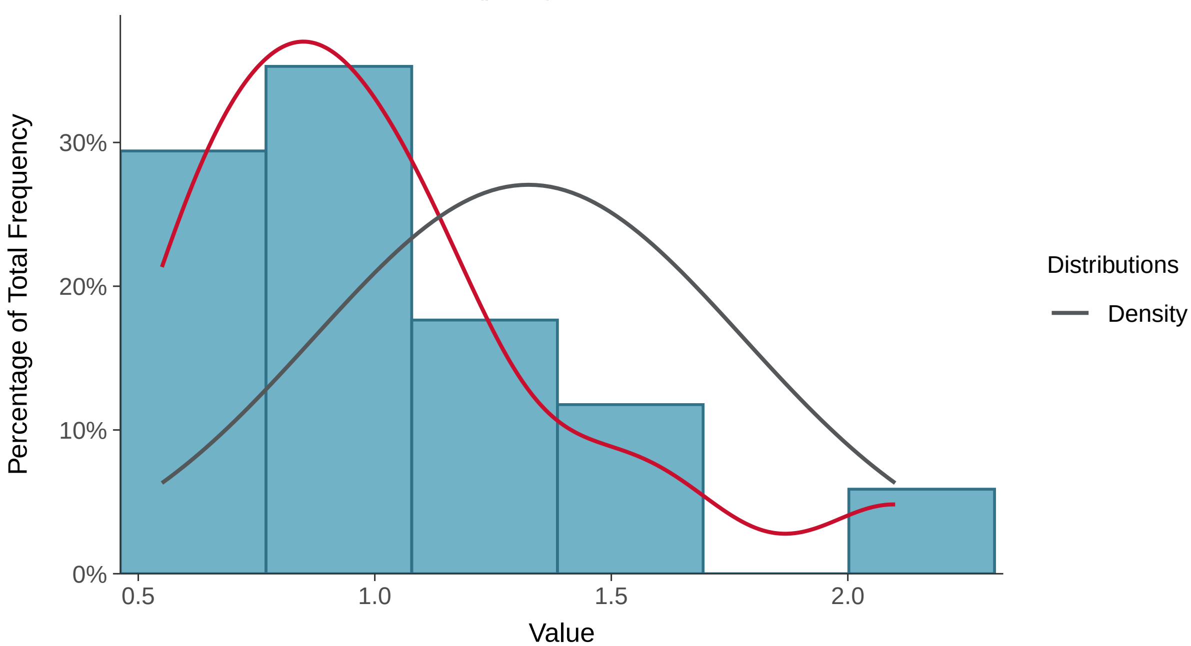
Scatter Plot

Radium 226 and 228, MW-08 (pCi/L)



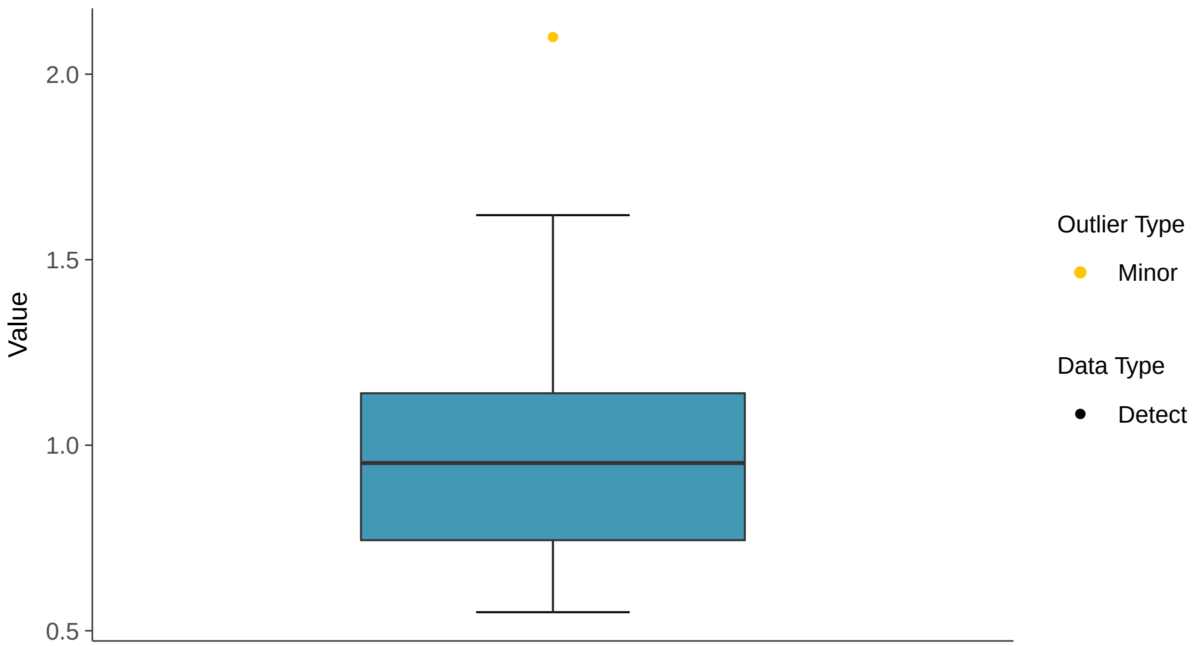
Histogram

Radium 226 and 228, MW-08 (pCi/L)



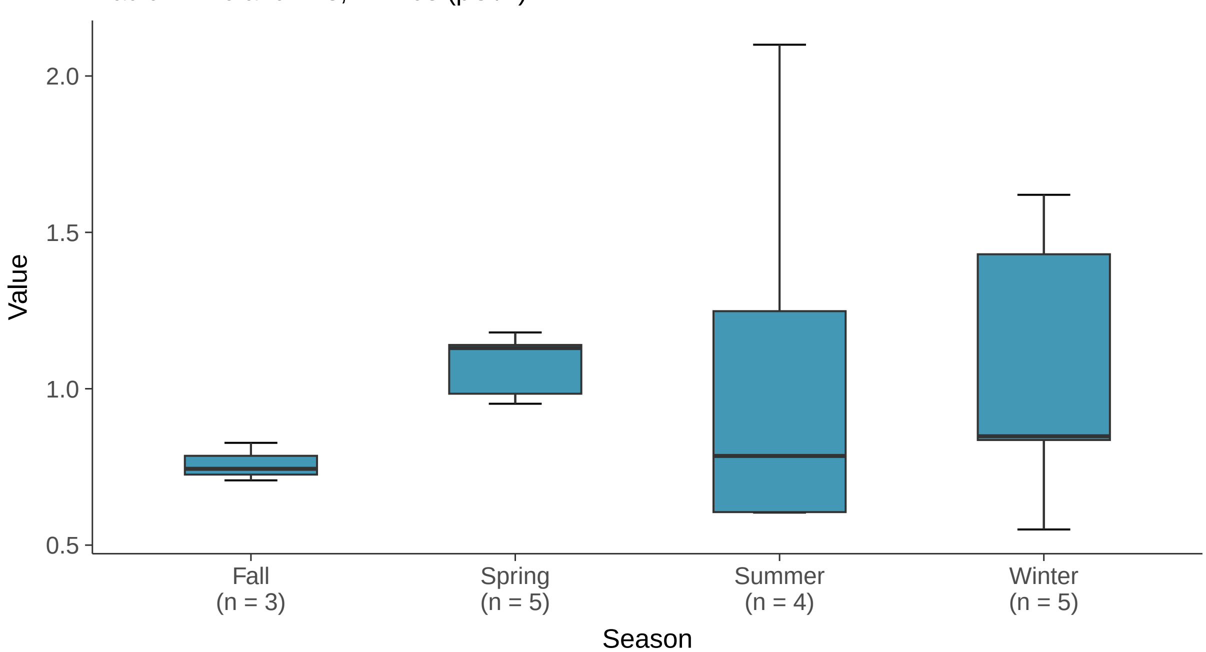
Boxplot

Radium 226 and 228, MW-08 (pCi/L)



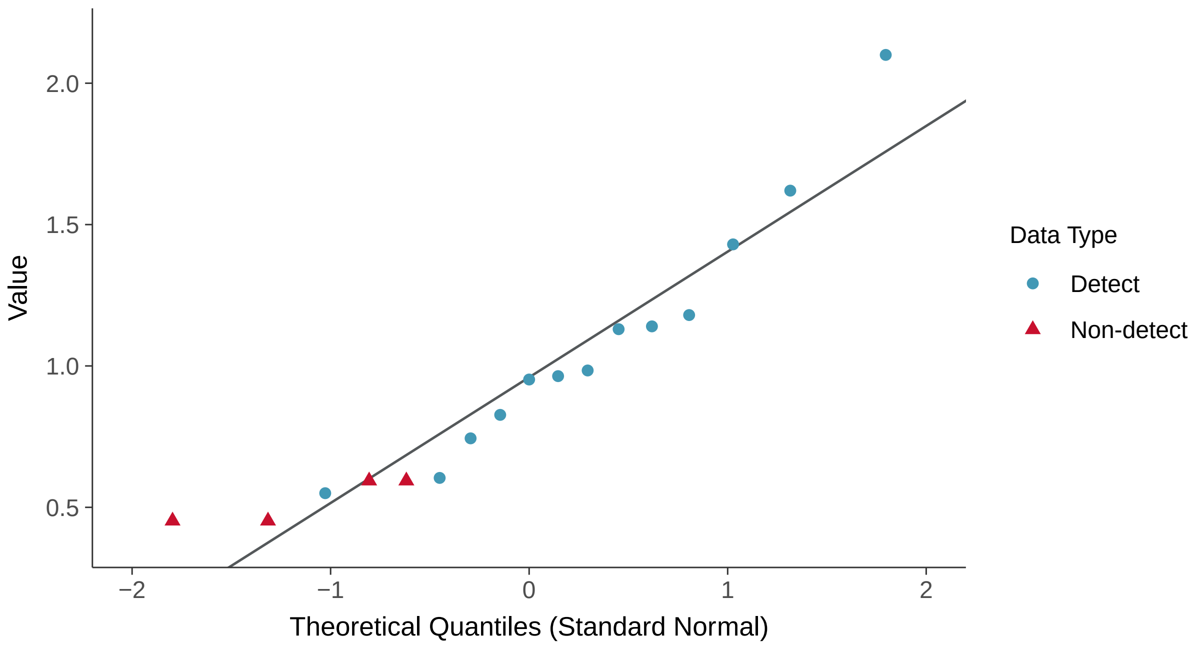
Boxplot by Season

Radium 226 and 228, MW-08 (pCi/L)



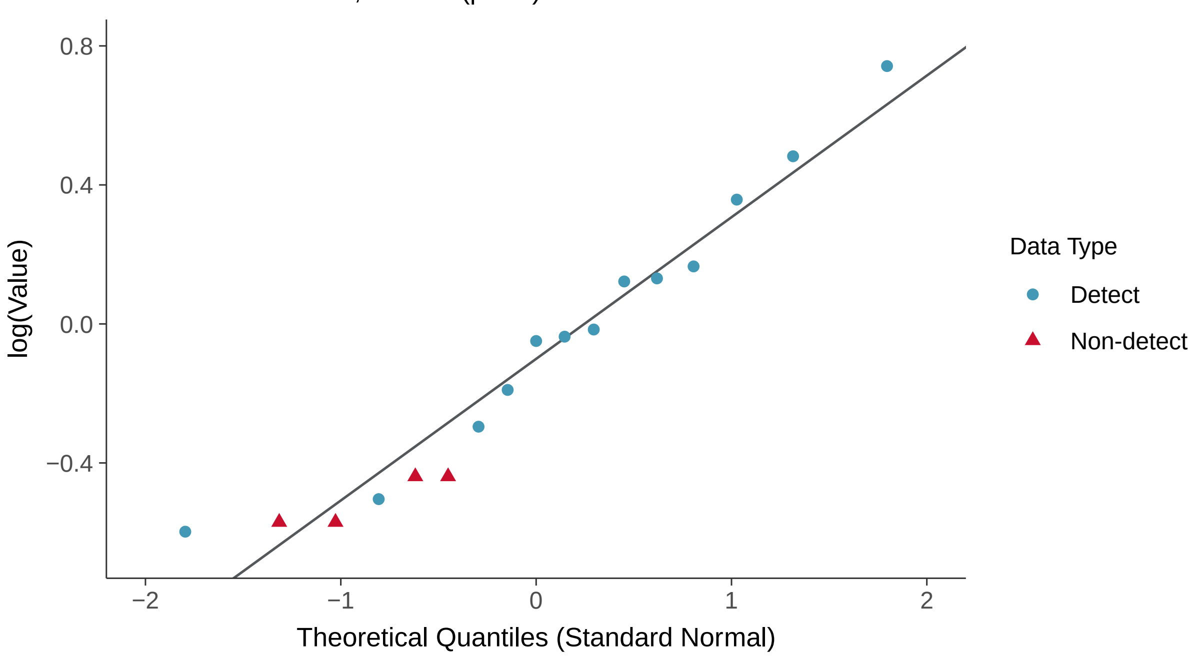
Normal Q-Q plot using ROS Imputed Estimates

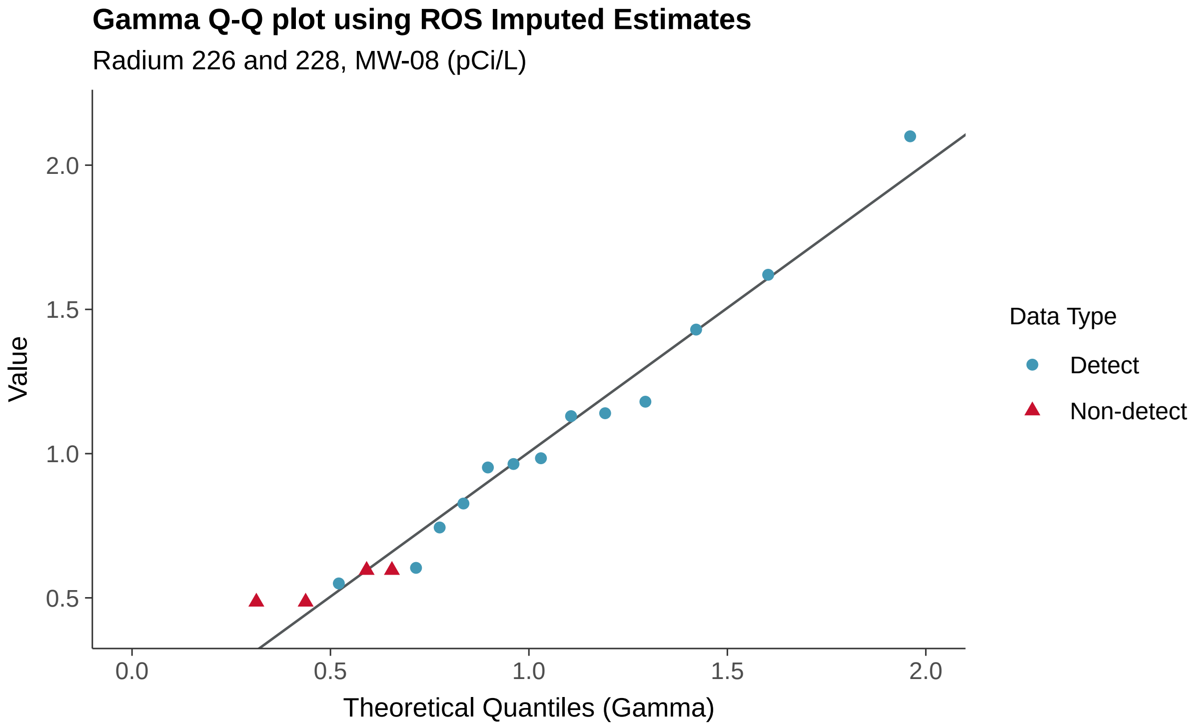
Radium 226 and 228, MW-08 (pCi/L)

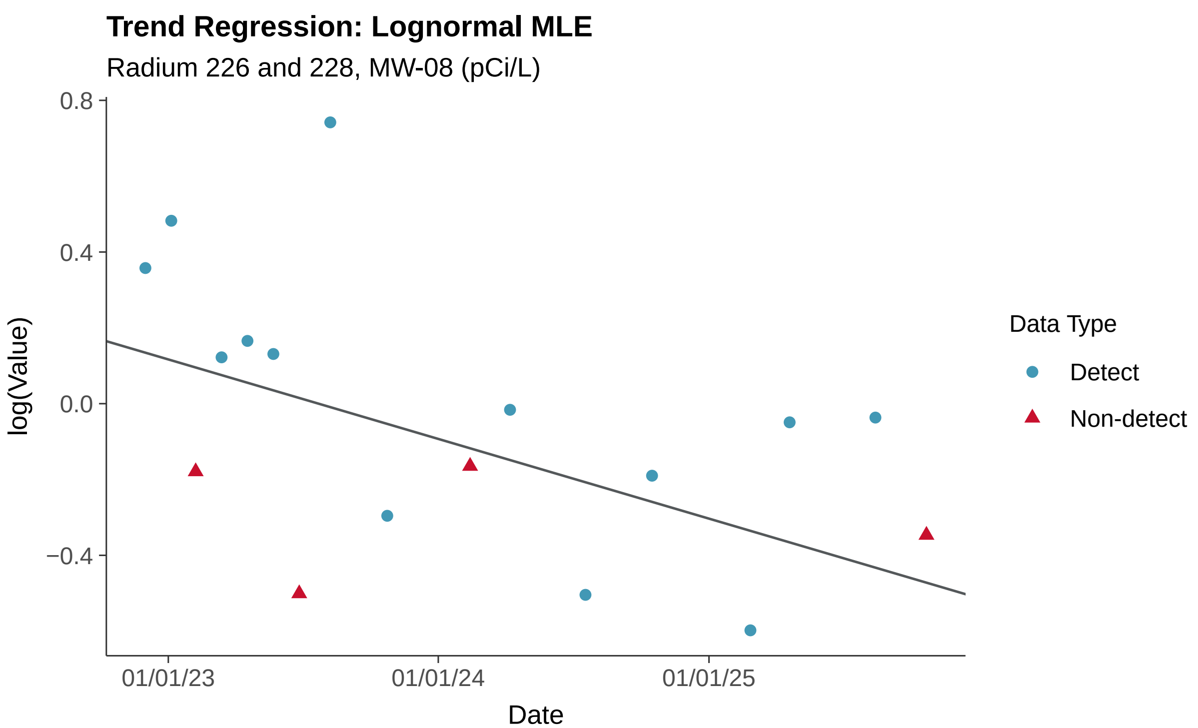


Lognormal Q-Q plot using ROS Imputed Estimates

Radium 226 and 228, MW-08 (pCi/L)

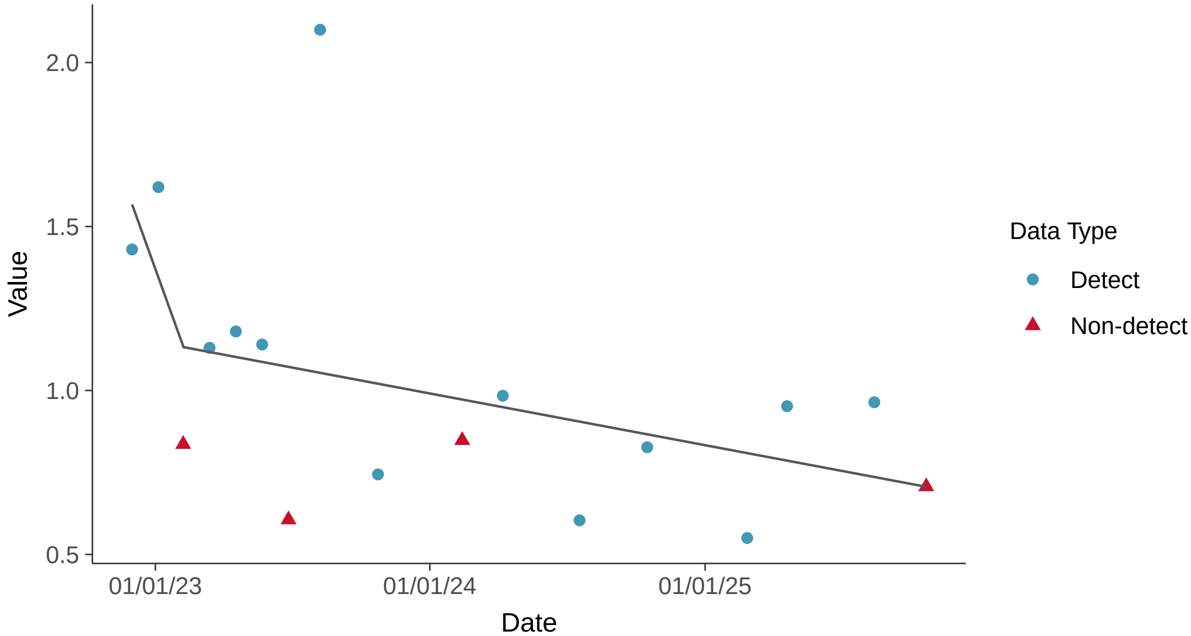



Gamma Q-Q plot using ROS Imputed Estimates
Radium 226 and 228, MW-08 (pCi/L)
Value
2.0
1.5
1.0
0.5
0.0
0.5
1.0
1.5
2.0
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect


Trend Regression: Lognormal MLE
Radium 226 and 228, MW-08 (pCi/L)
log(Value)
0.8
0.4
0.0
−0.4
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

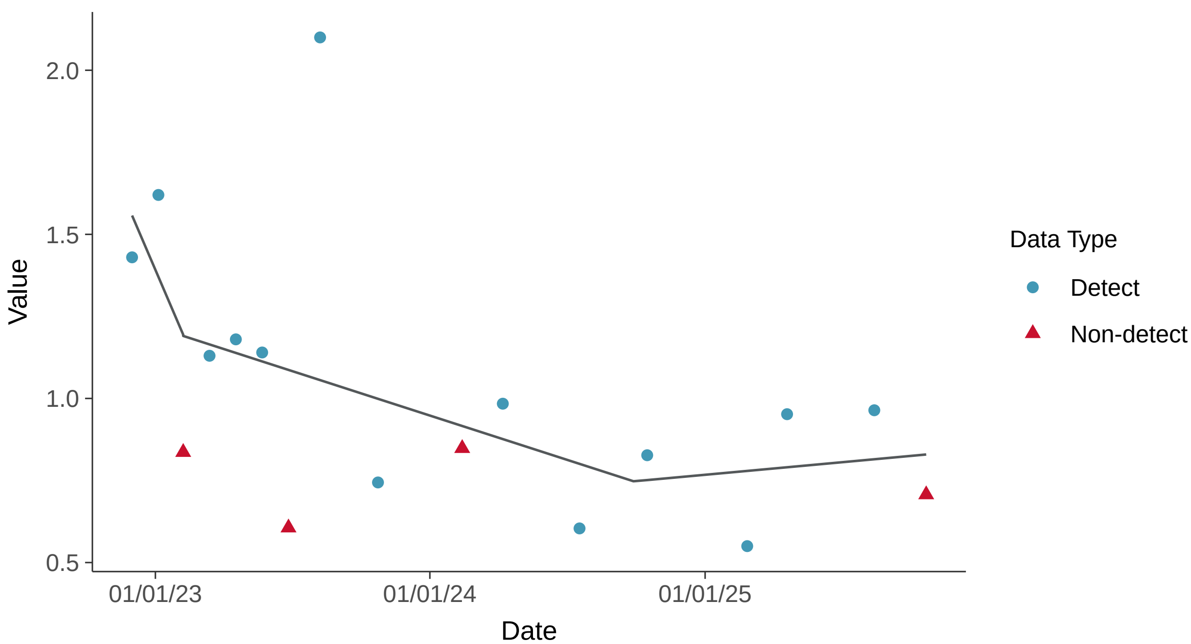
Trend Regression: Piecewise Linear-Linear

Radium 226 and 228, MW-08 (pCi/L)



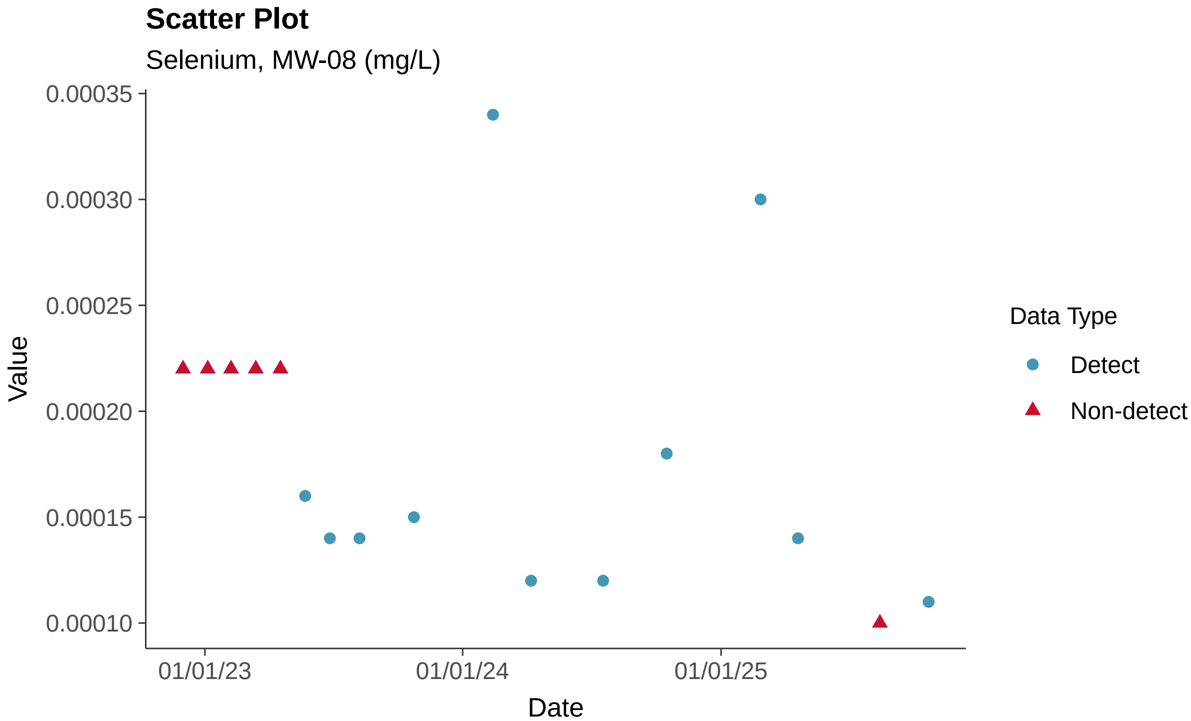
Trend Regression: Piecewise Linear-Linear-Linear

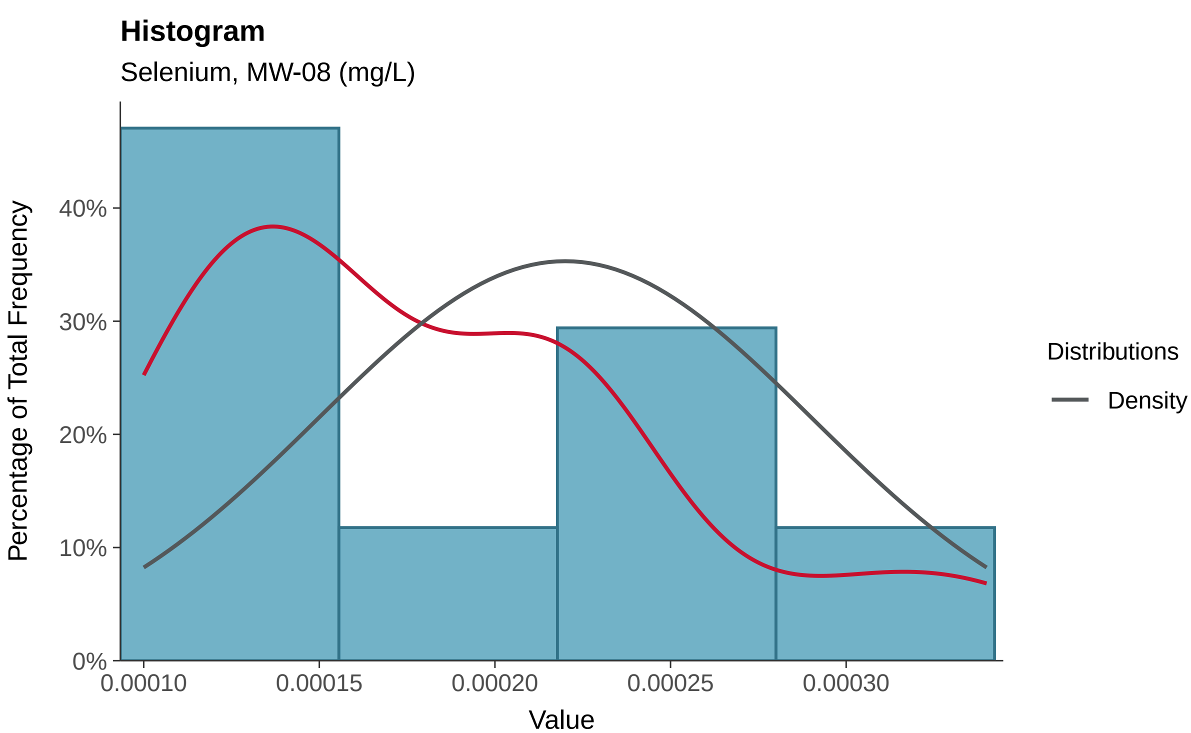
Radium 226 and 228, MW-08 (pCi/L)

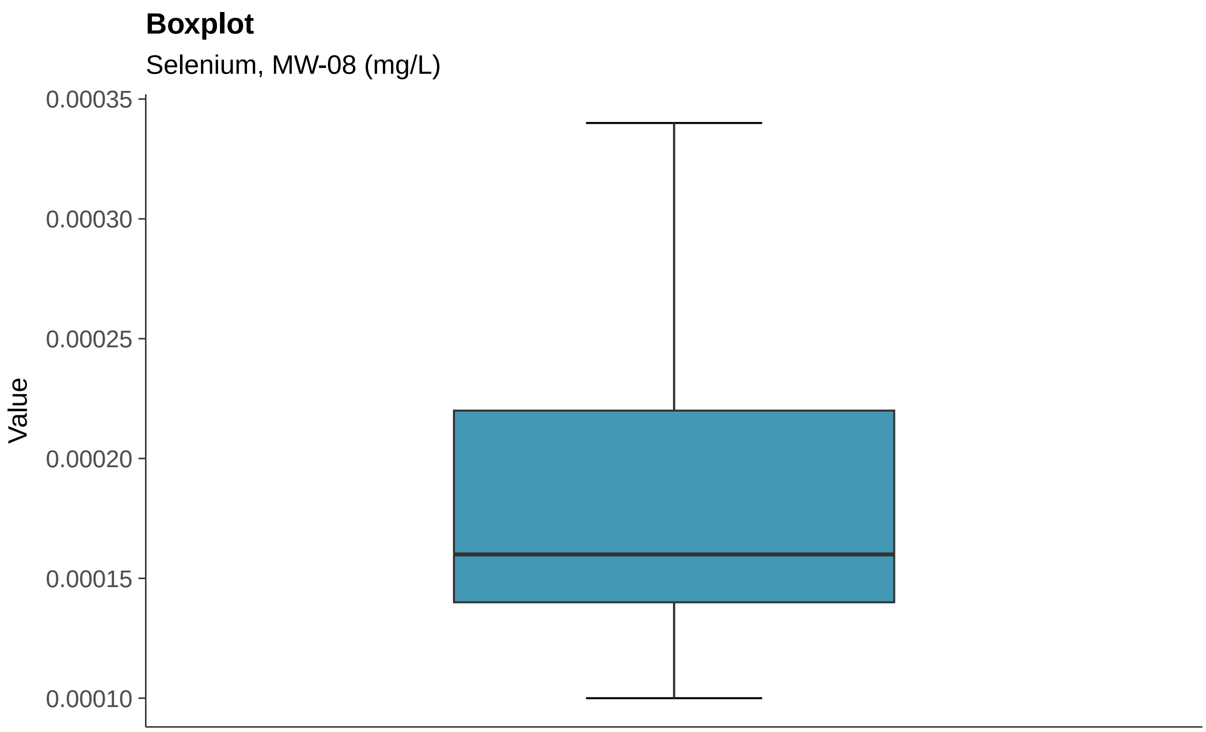


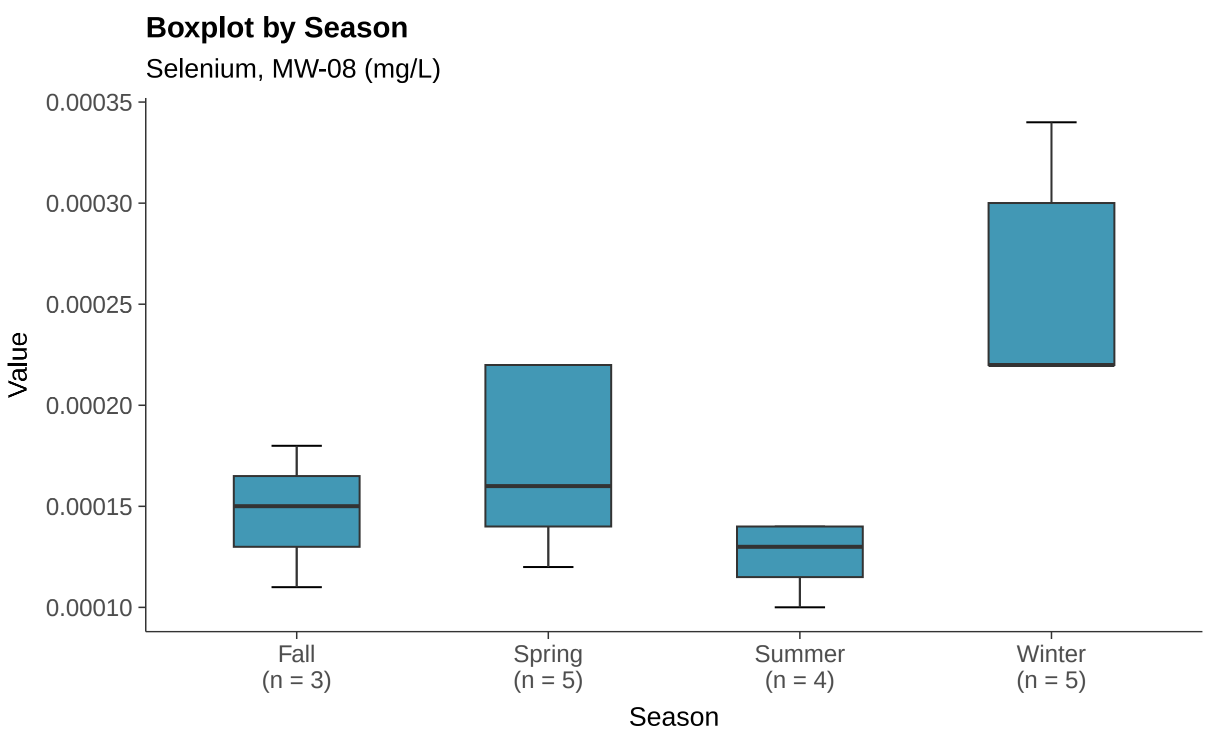
Appendix IV: Selenium, MW-08

ID: 18_1_4_122



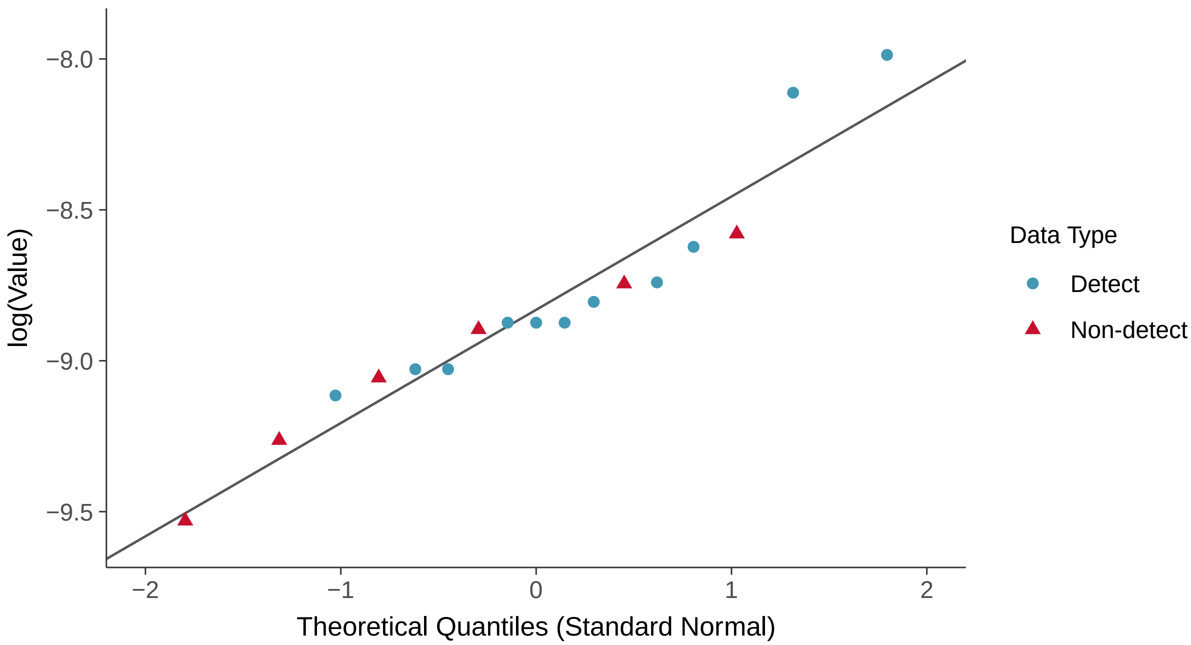



Boxplot
Selenium, MW-08 (mg/L)
0.00035
0.00030
0.00025
0.00020
0.00015
0.00010
Value


Boxplot by Season
Selenium, MW-08 (mg/L)
0.00035
0.00030
0.00025
0.00020
0.00015
0.00010
Value
Fall
(n = 3)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 5)
Season

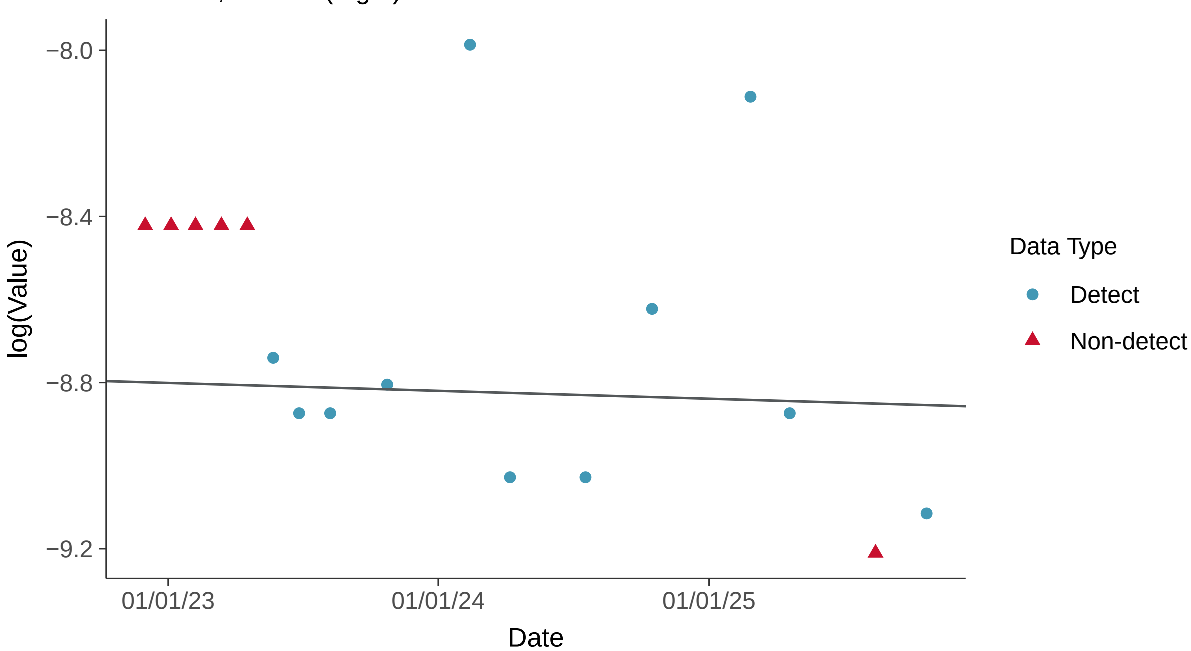
Lognormal Q-Q plot using ROS Imputed Estimates

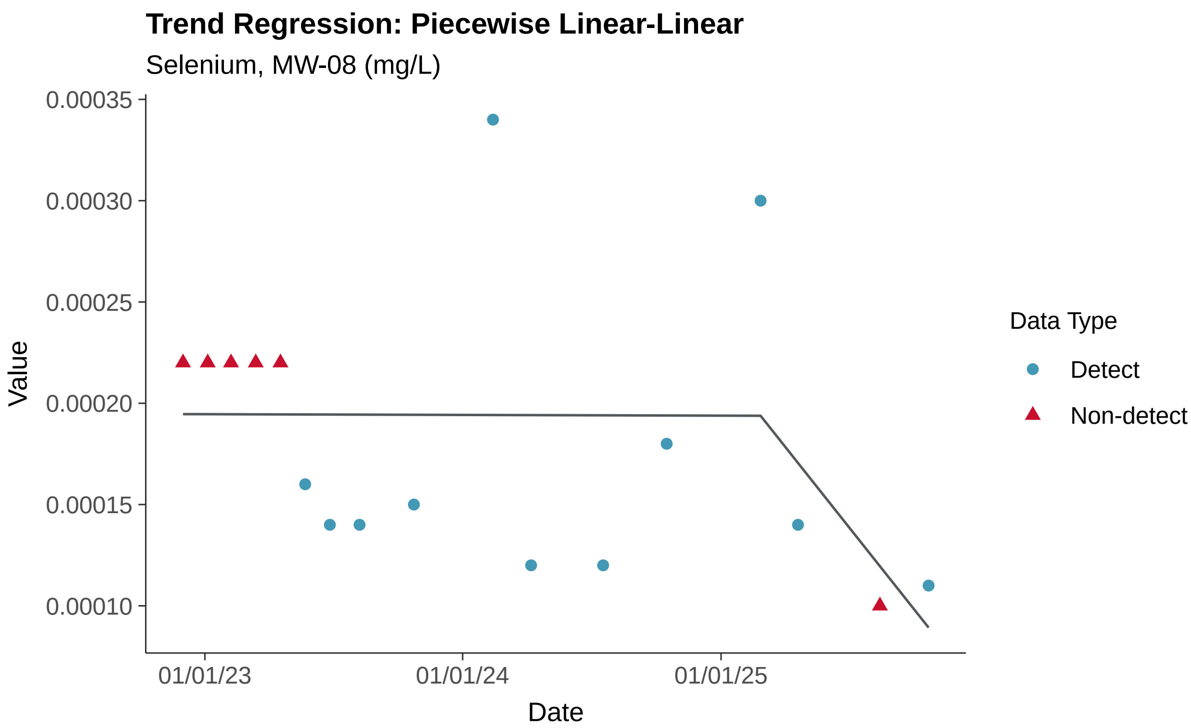
Selenium, MW-08 (mg/L)



Trend Regression: Lognormal MLE

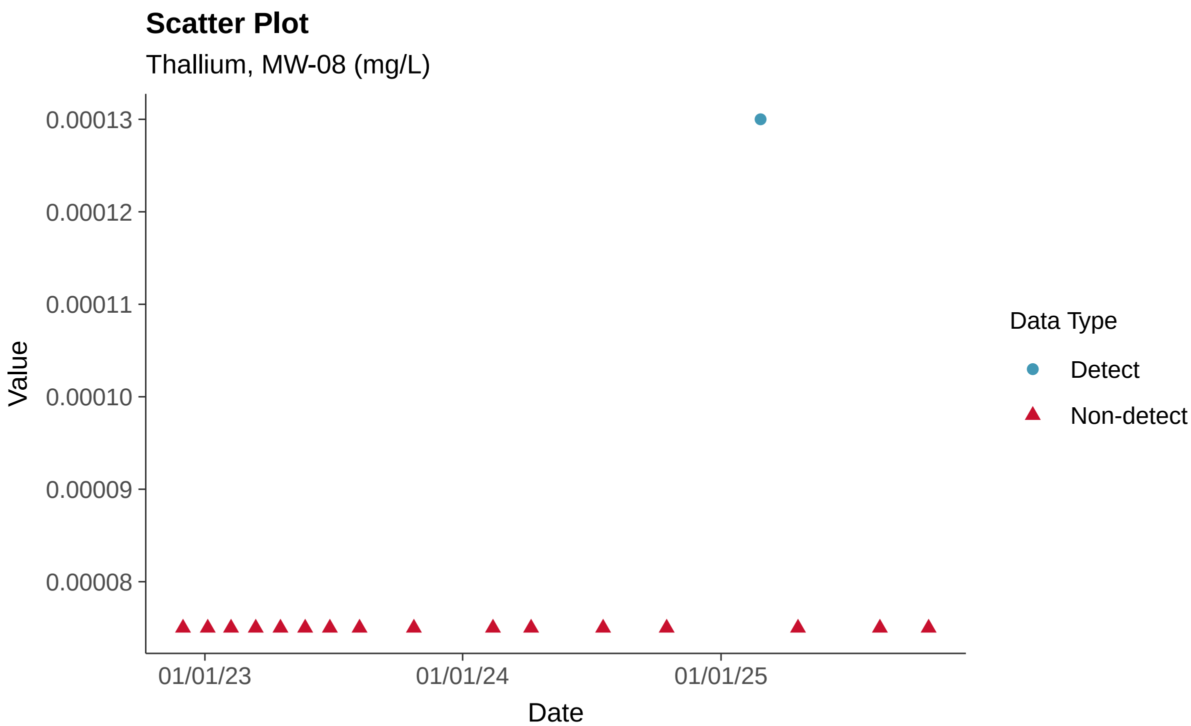
Selenium, MW-08 (mg/L)

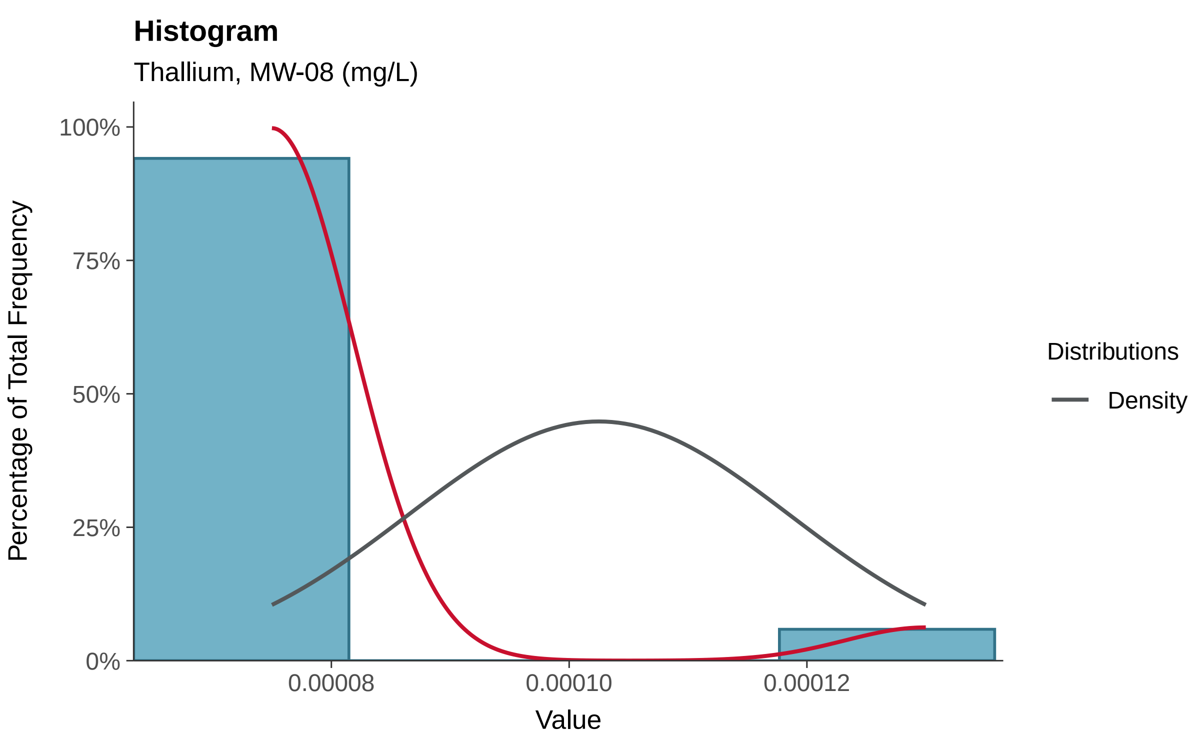



Trend Regression: Piecewise Linear-Linear
Selenium, MW-08 (mg/L)
0.00035
0.00030
0.00025
0.00020
0.00015
0.00010
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Appendix IV: Thallium, MW-08

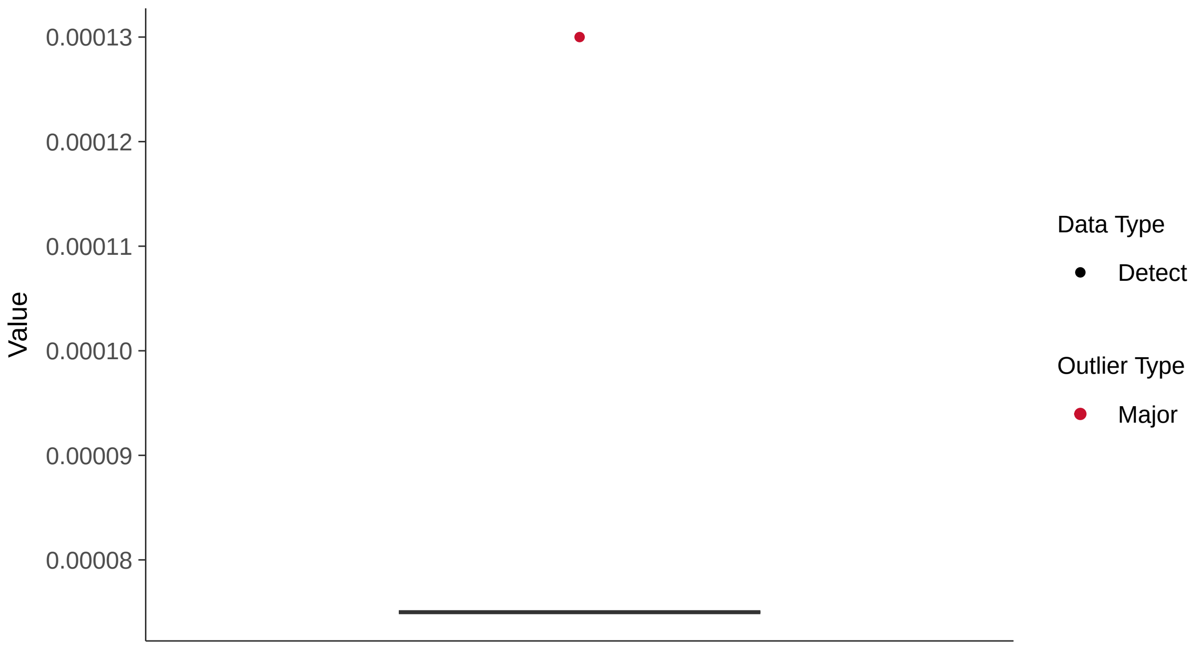
ID: 18_1_4_125





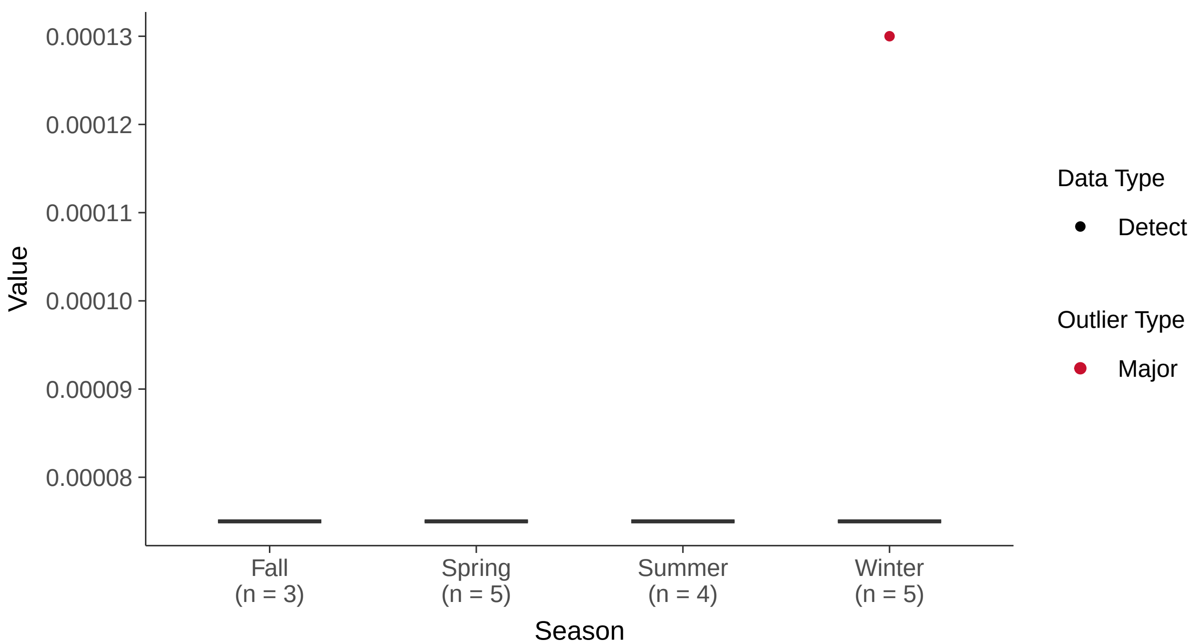
Boxplot

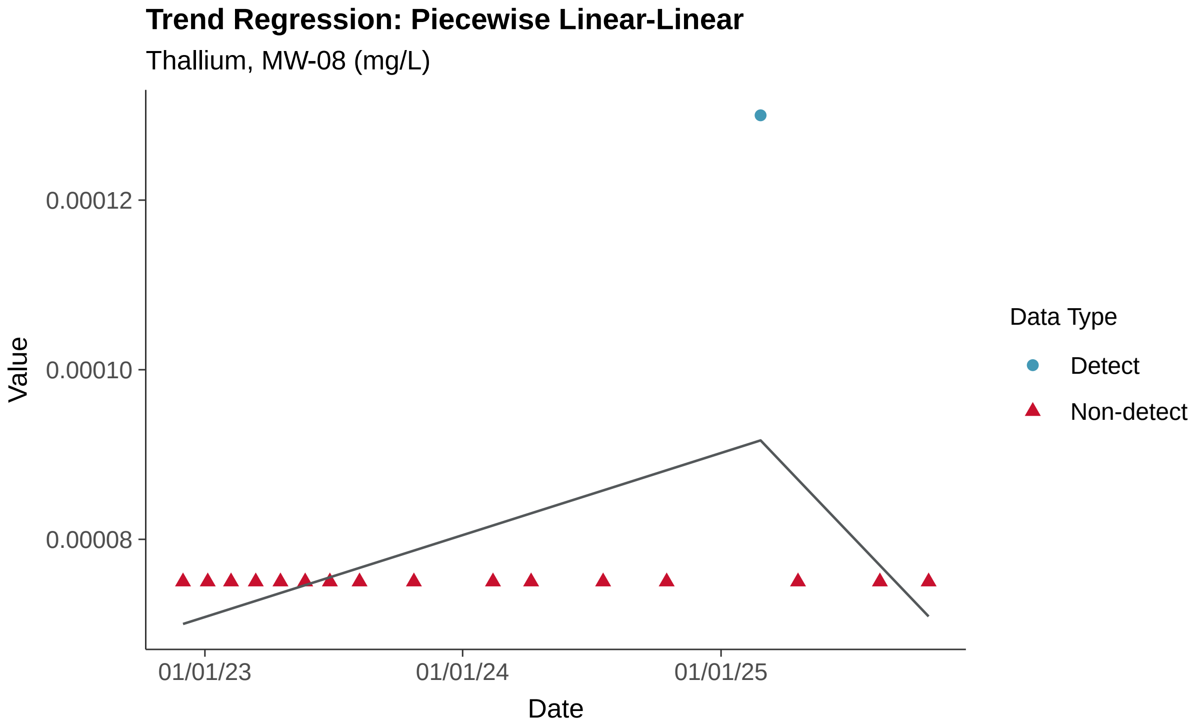
Thallium, MW-08 (mg/L)

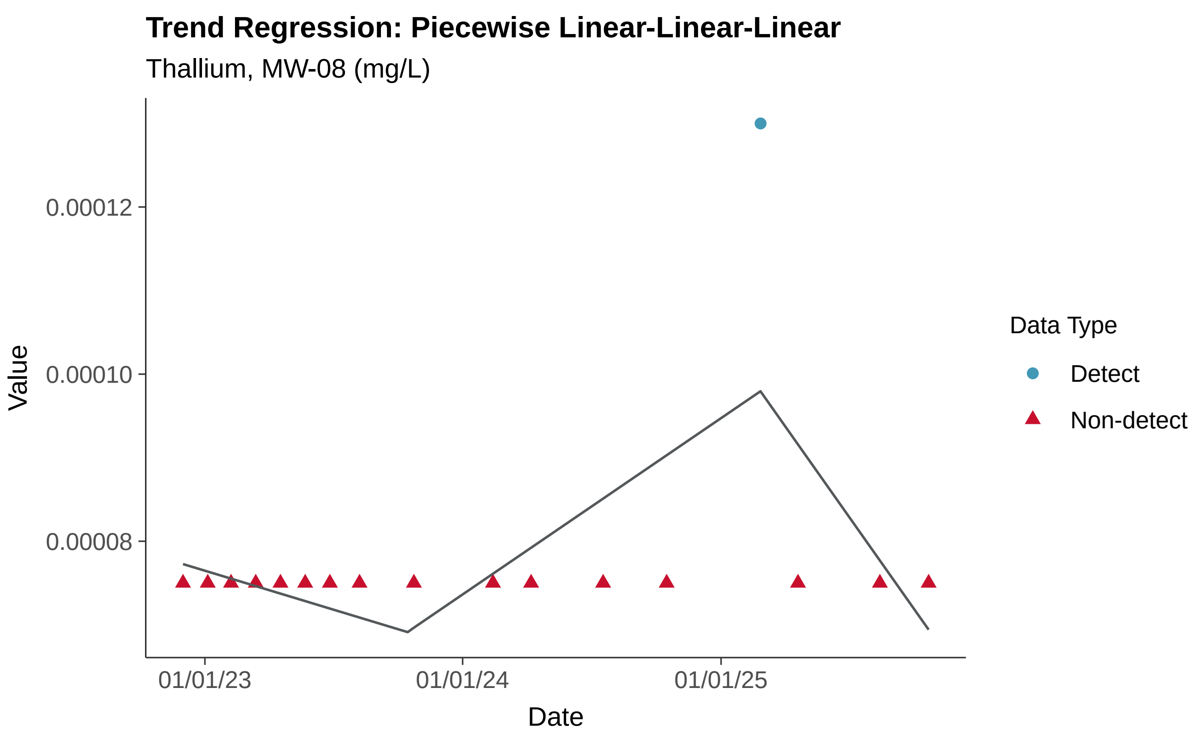


Boxplot by Season

Thallium, MW-08 (mg/L)




Trend Regression: Piecewise Linear-Linear
Thallium, MW-08 (mg/L)
Value
0.00012
0.00010
0.00008
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

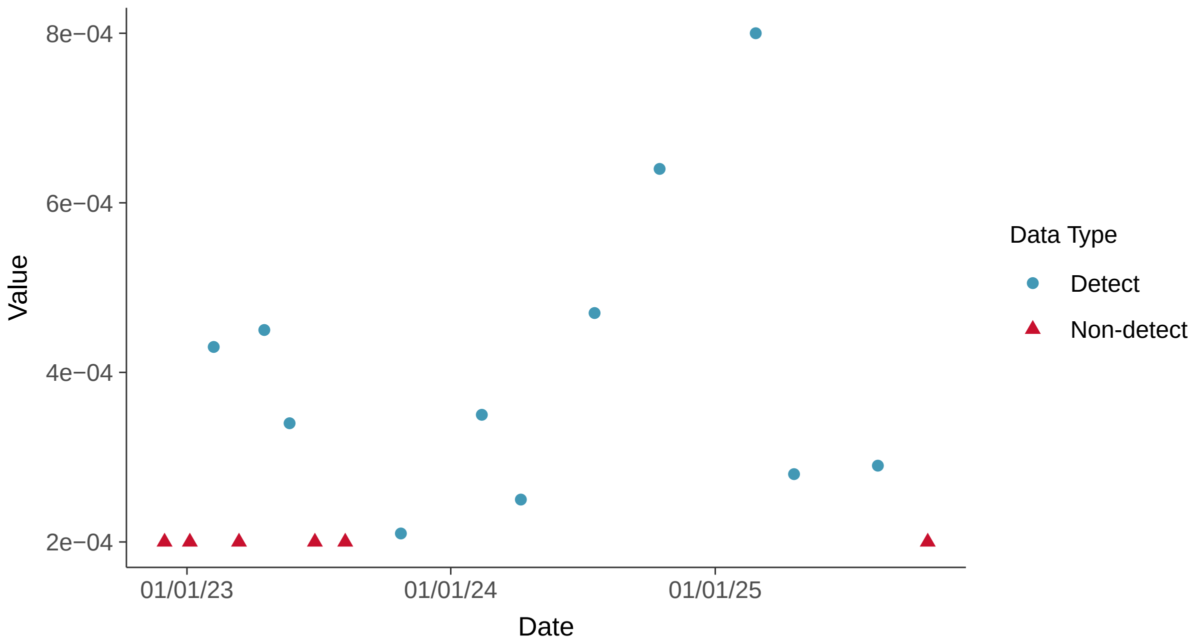

Trend Regression: Piecewise Linear-Linear-Linear
Thallium, MW-08 (mg/L)
Value
0.00012
0.00010
0.00008
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Part 115: Copper, MW-08

ID: 18_1_5_111

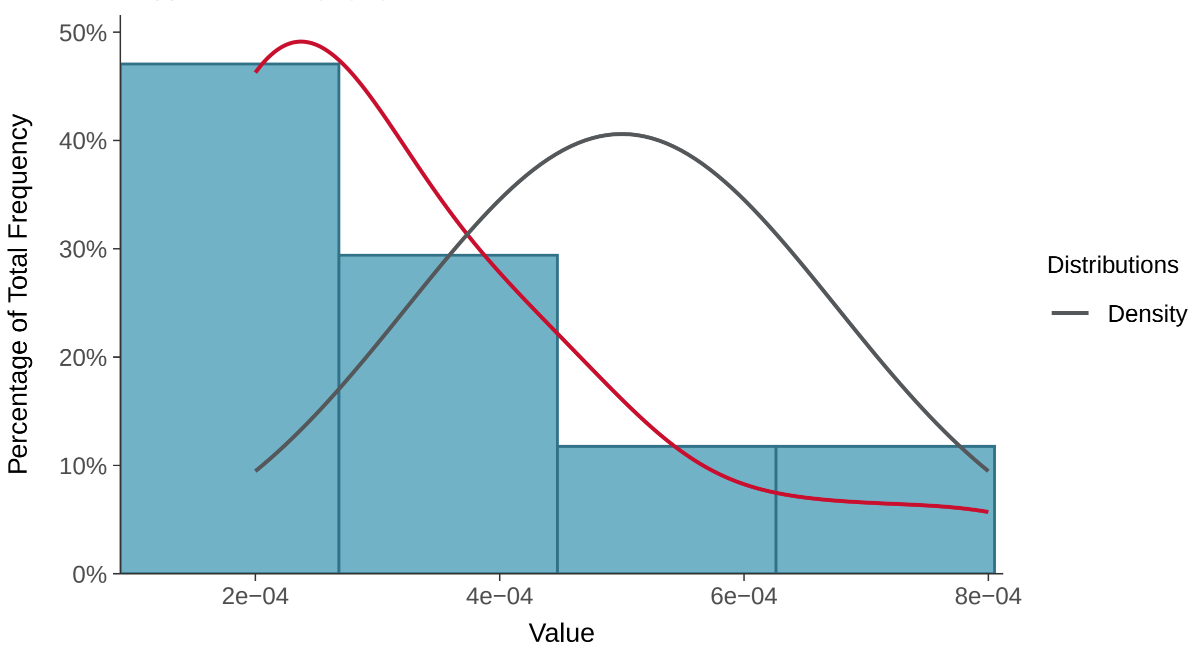
Scatter Plot

Copper, MW-08 (mg/L)



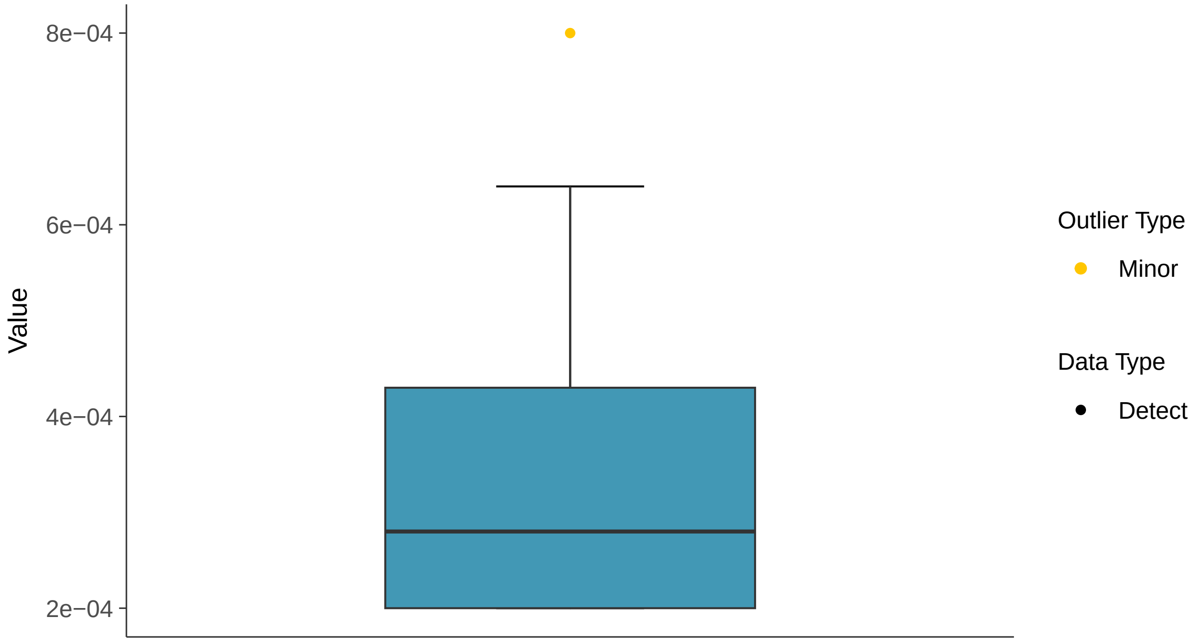
Histogram

Copper, MW-08 (mg/L)



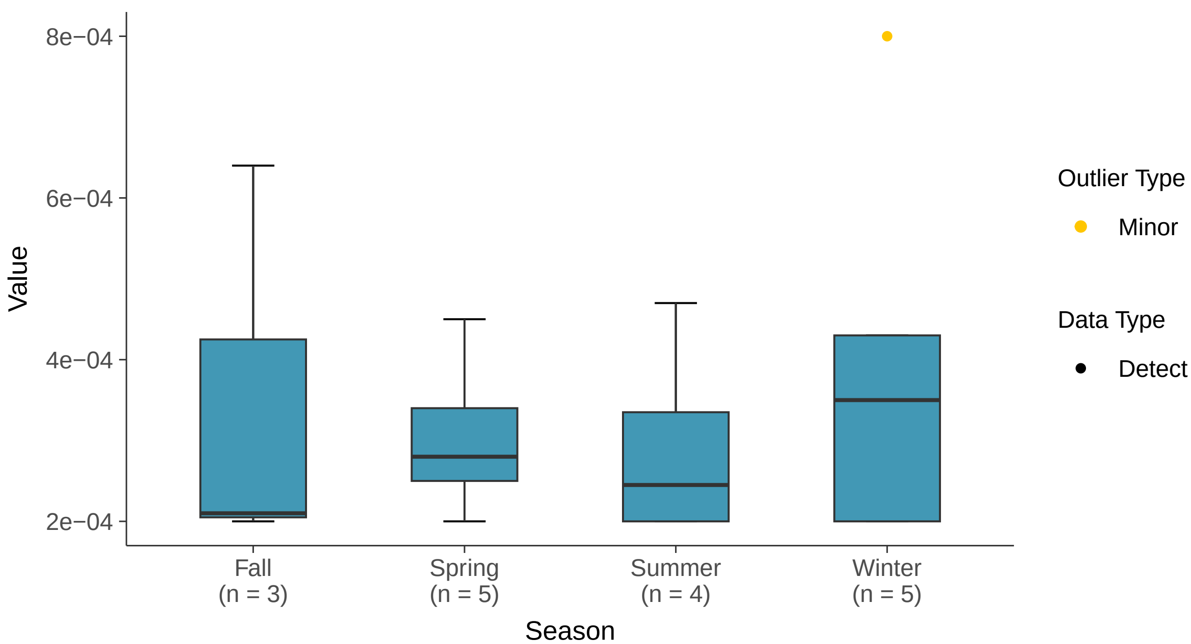
Boxplot

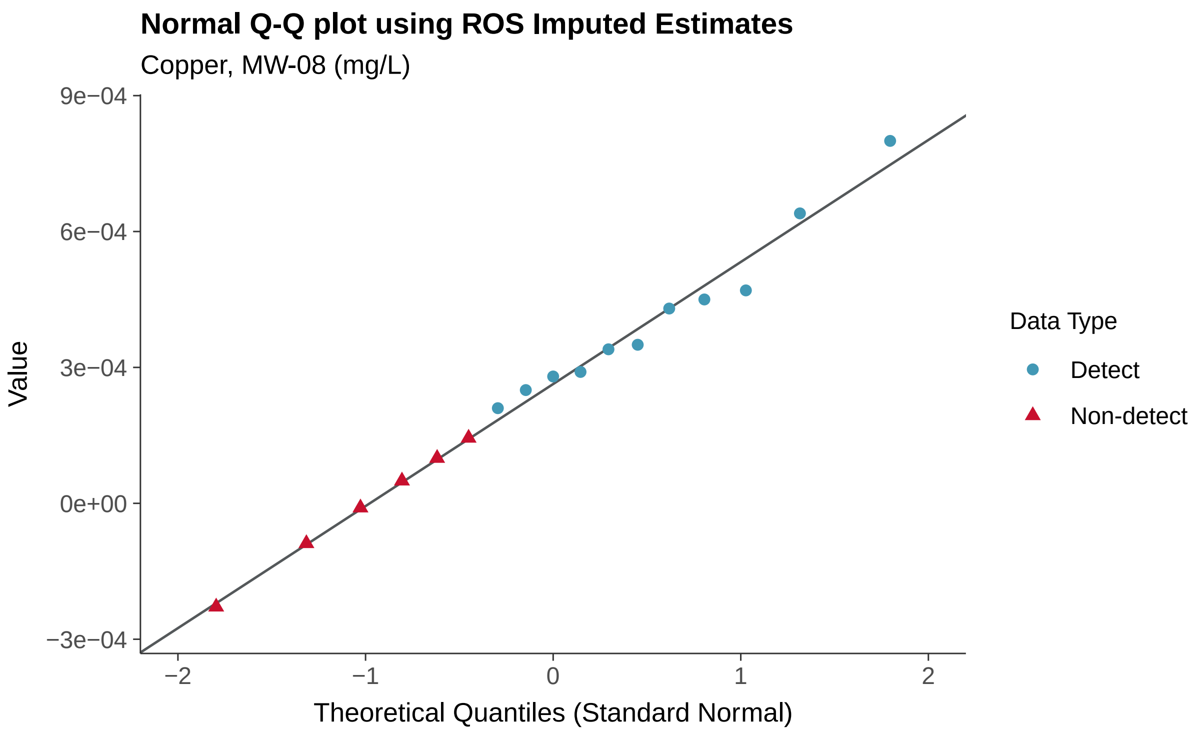
Copper, MW-08 (mg/L)

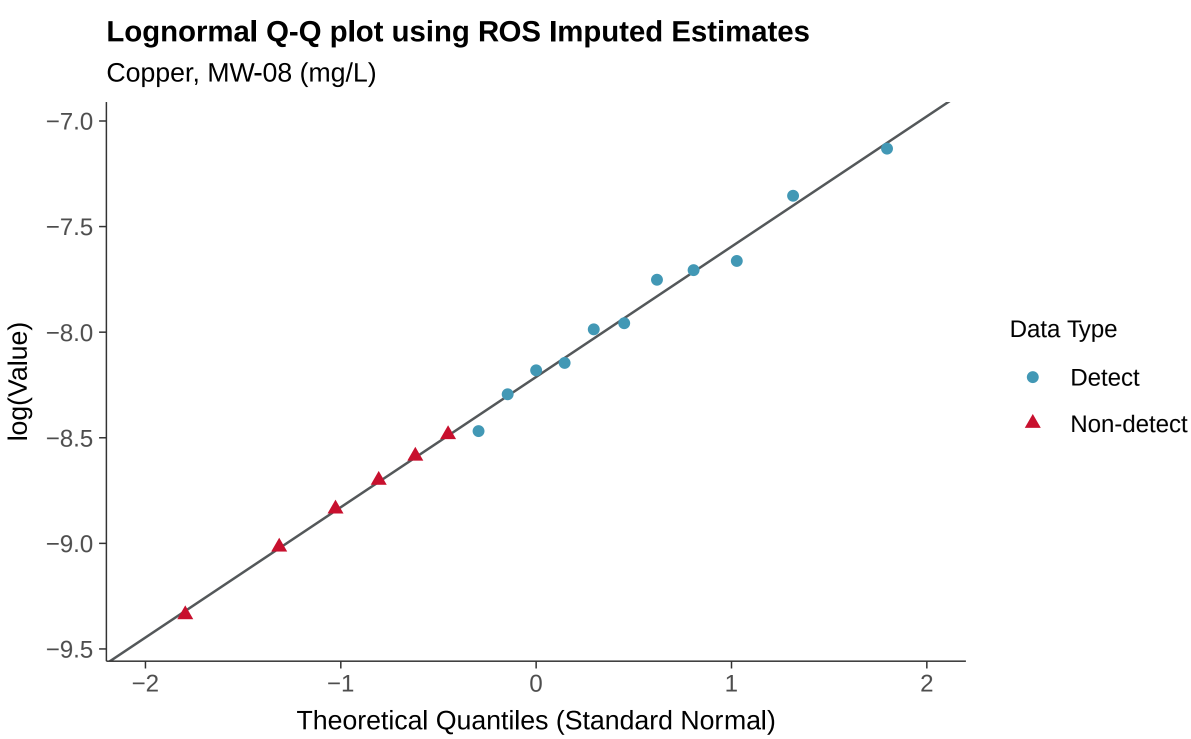


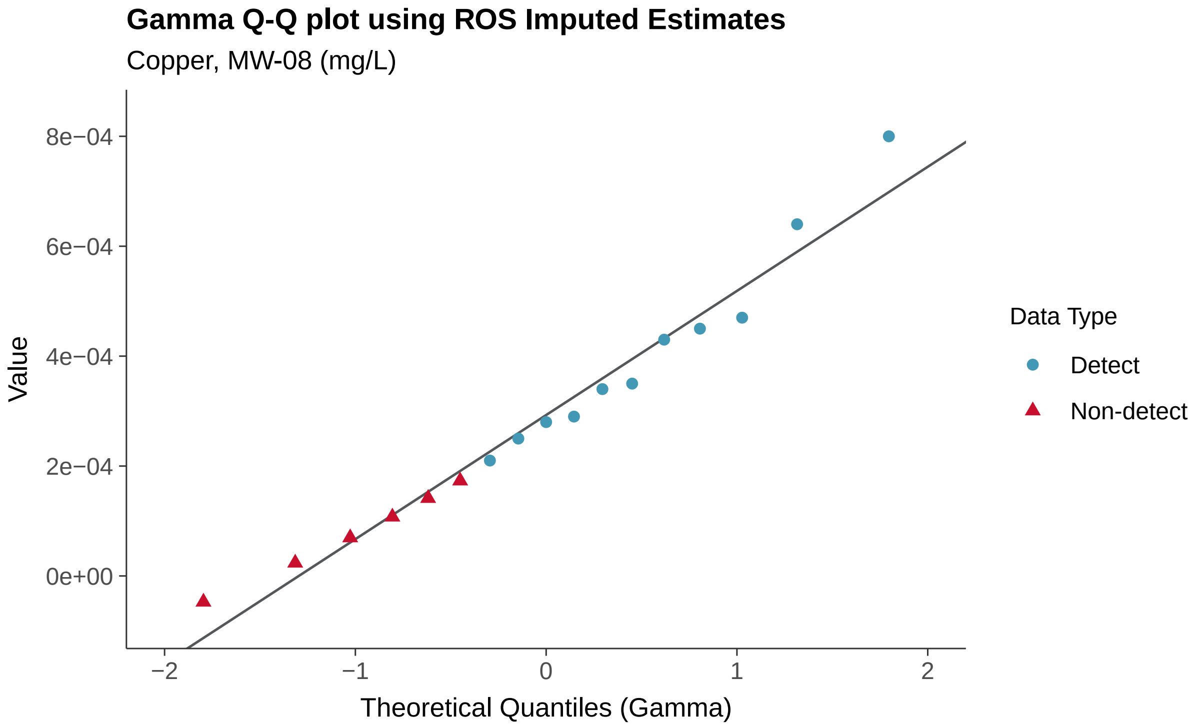
Boxplot by Season

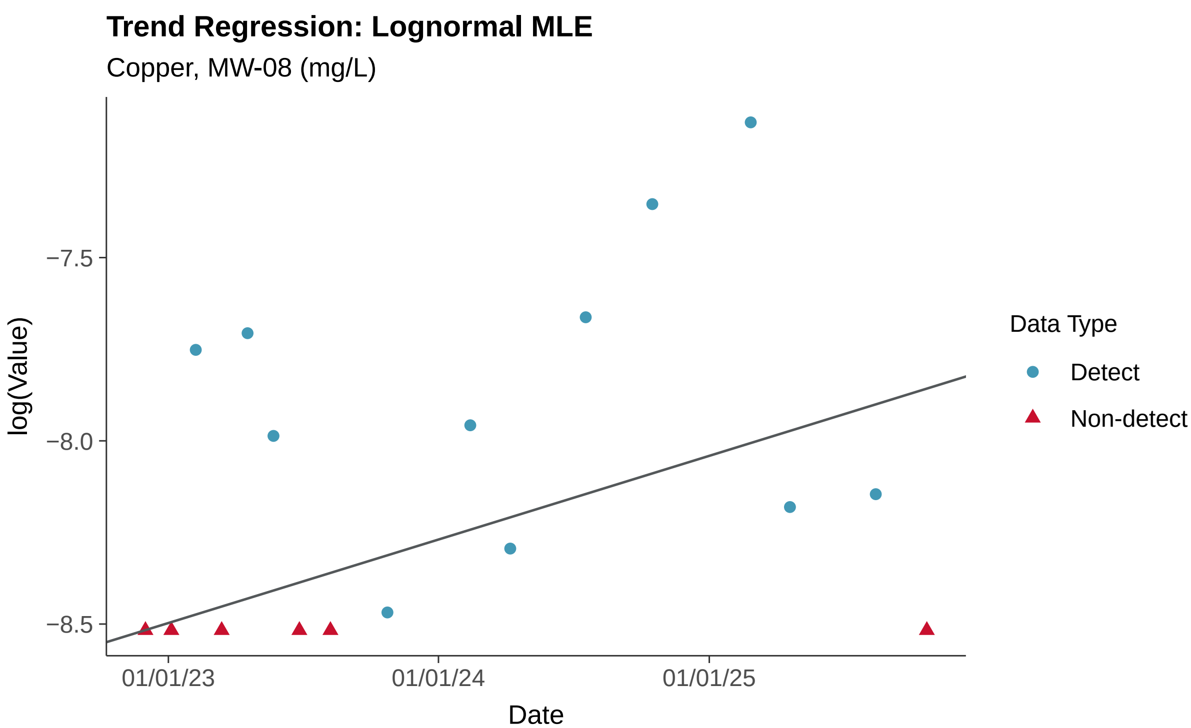
Copper, MW-08 (mg/L)

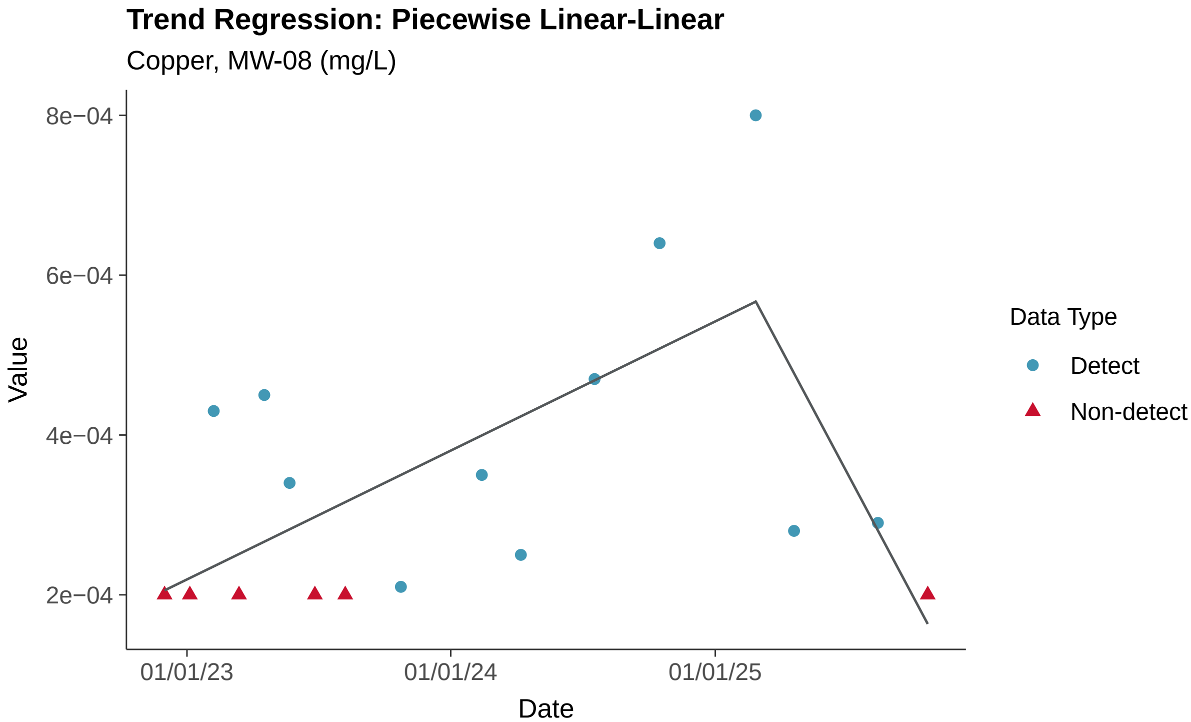


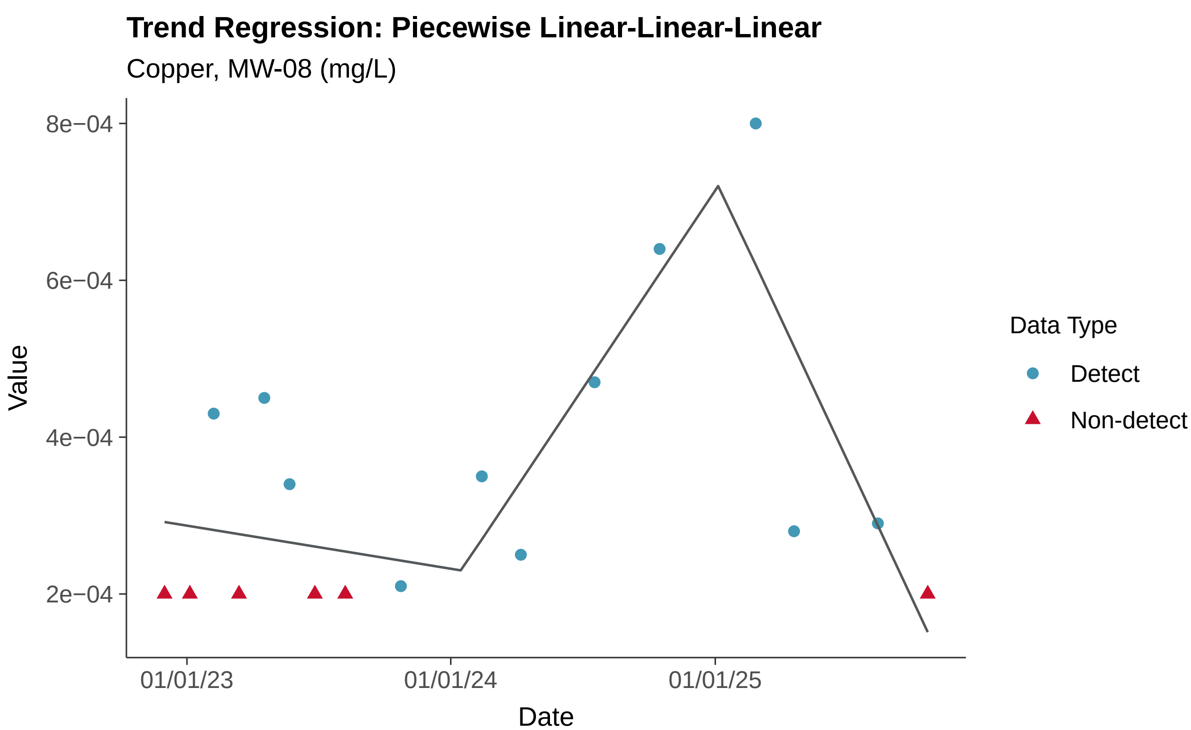

Normal Q-Q plot using ROS Imputed Estimates
Copper, MW-08 (mg/L)
Value
9e−04
6e−04
3e−04
0e+00
−3e−04
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Lognormal Q-Q plot using ROS Imputed Estimates
Copper, MW-08 (mg/L)
log(Value)
−7.0
−7.5
−8.0
−8.5
−9.0
−9.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Gamma Q-Q plot using ROS Imputed Estimates
Copper, MW-08 (mg/L)
Value
8e−04
6e−04
4e−04
2e−04
0e+00
−2
−1
0
1
2
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect


Trend Regression: Lognormal MLE
Copper, MW-08 (mg/L)
log(Value)
−7.5
−8.0
−8.5
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Copper, MW-08 (mg/L)
8e−04
6e−04
4e−04
2e−04
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

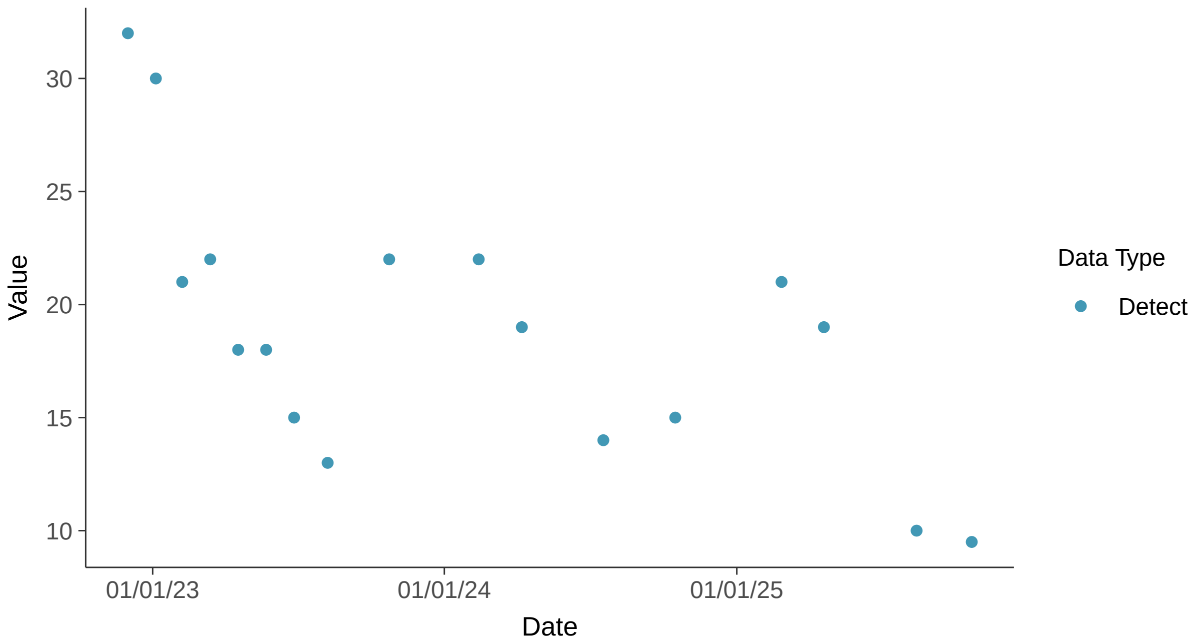

Trend Regression: Piecewise Linear-Linear-Linear
Copper, MW-08 (mg/L)
8e−04
6e−04
4e−04
2e−04
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Part 115: Iron, MW-08

ID: 18_1_5_114

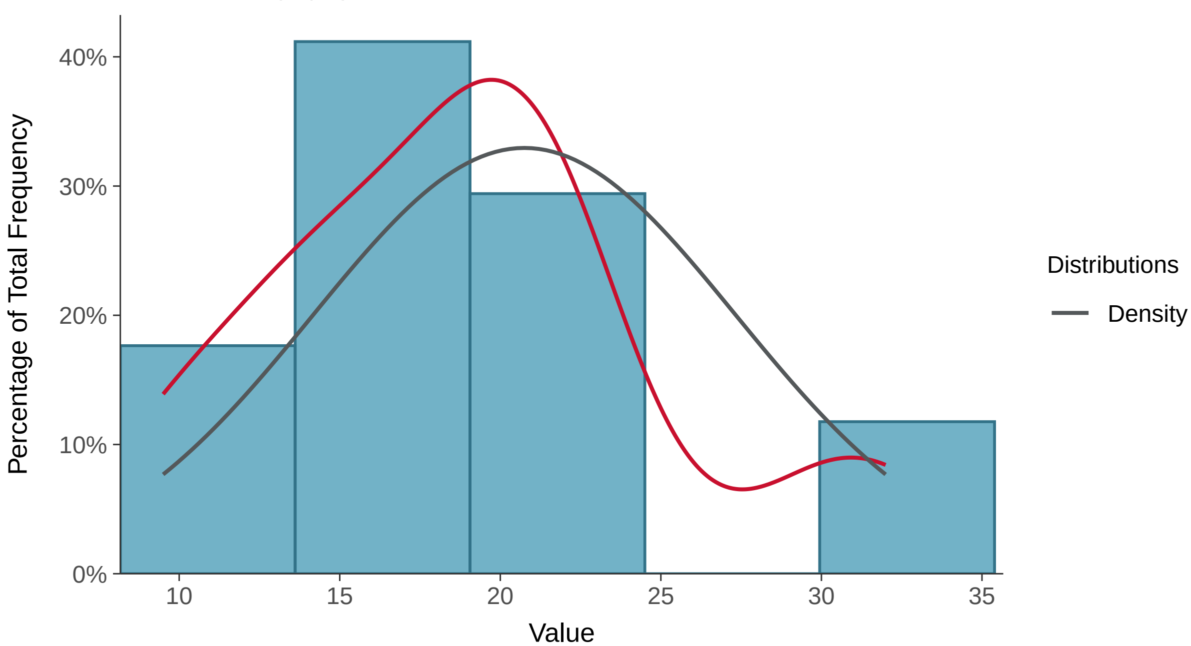
Scatter Plot

Iron, MW-08 (mg/L)



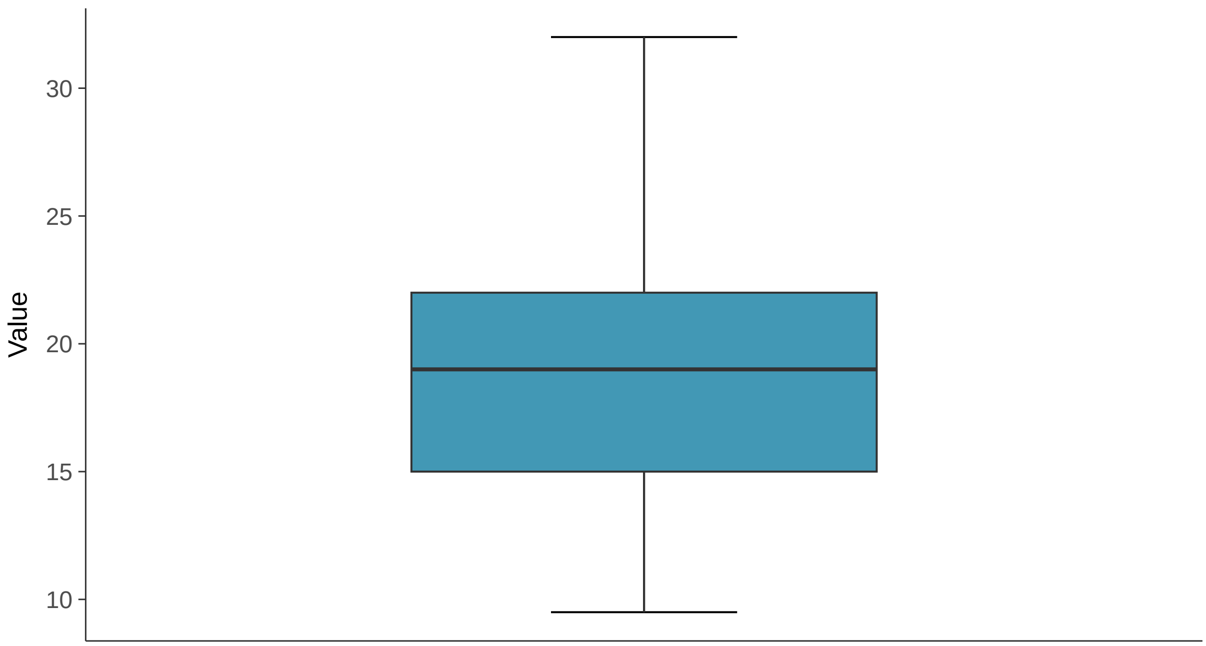
Histogram

Iron, MW-08 (mg/L)



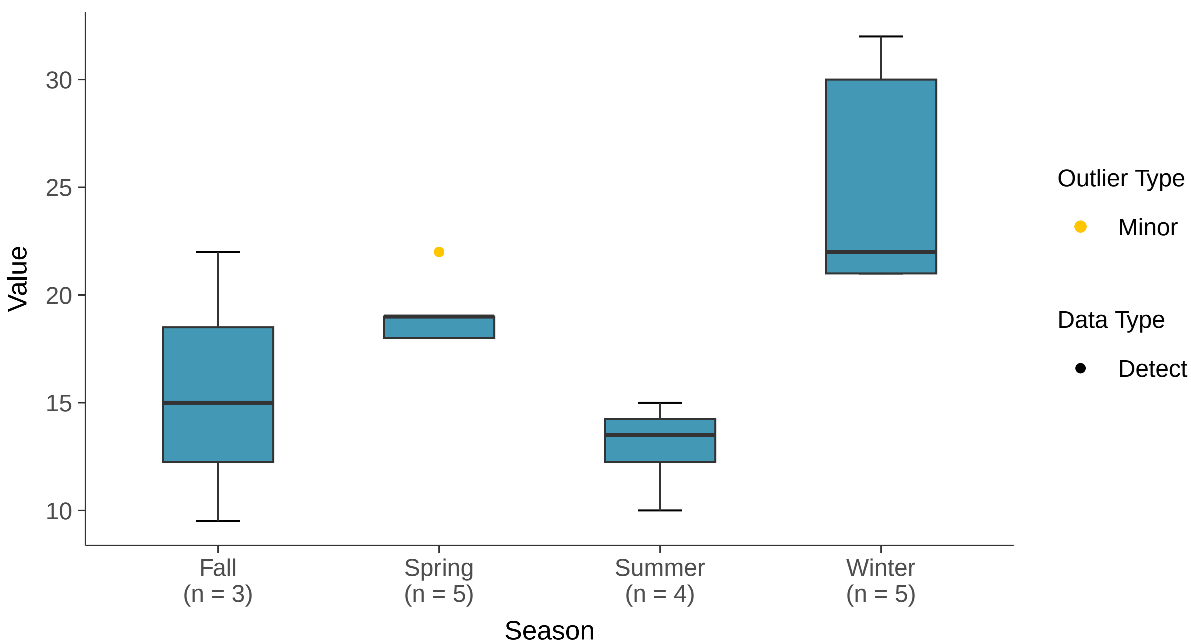
Boxplot

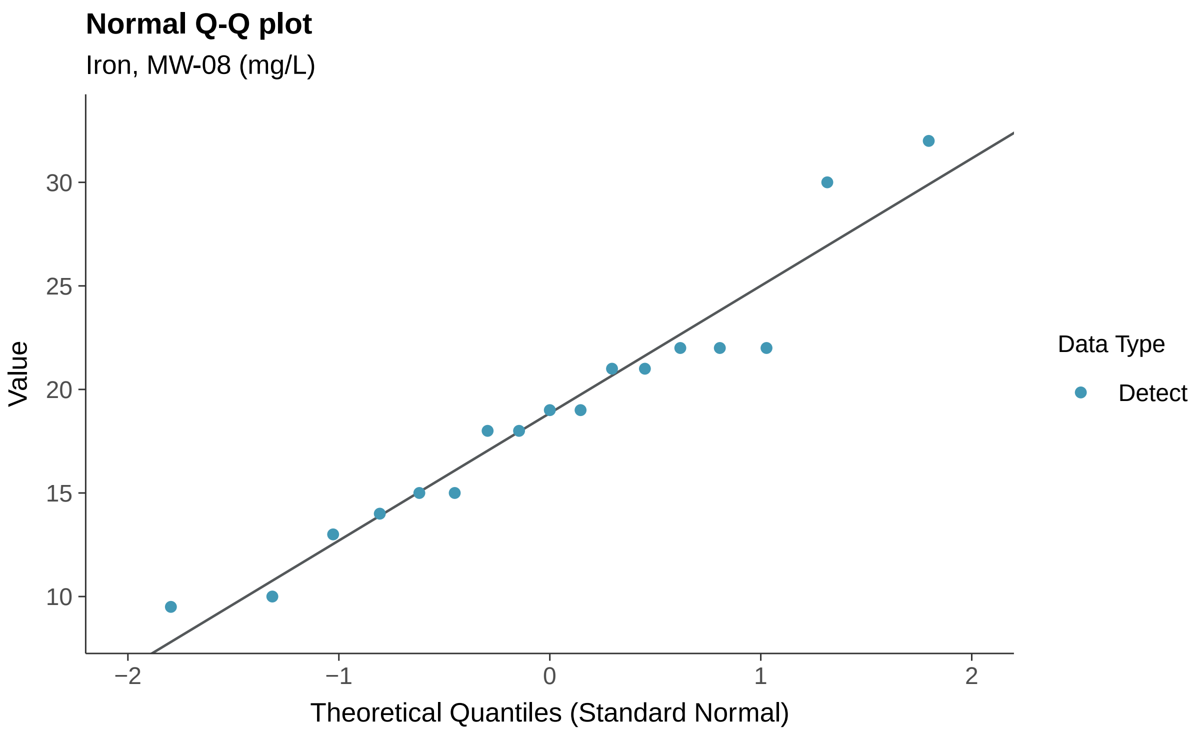
Iron, MW-08 (mg/L)

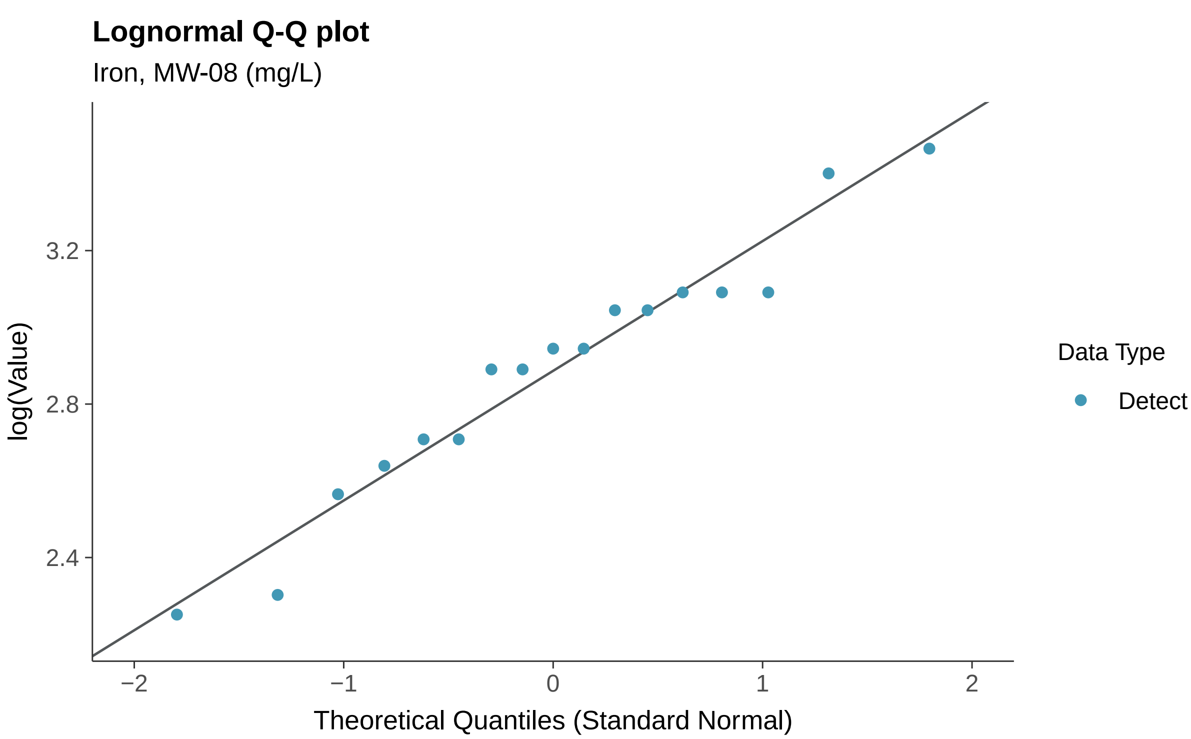


Boxplot by Season

Iron, MW-08 (mg/L)

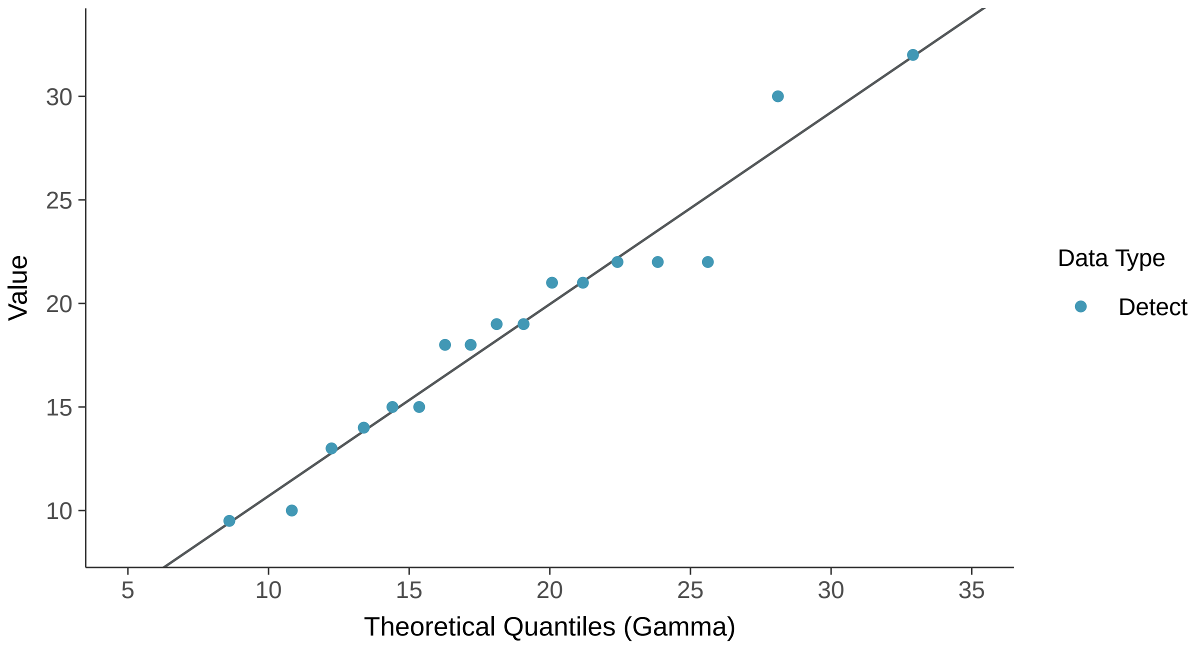



Normal Q-Q plot
Iron, MW-08 (mg/L)
Value
30
25
20
15
10
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Iron, MW-08 (mg/L)
log(Value)
3.2
2.8
2.4
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

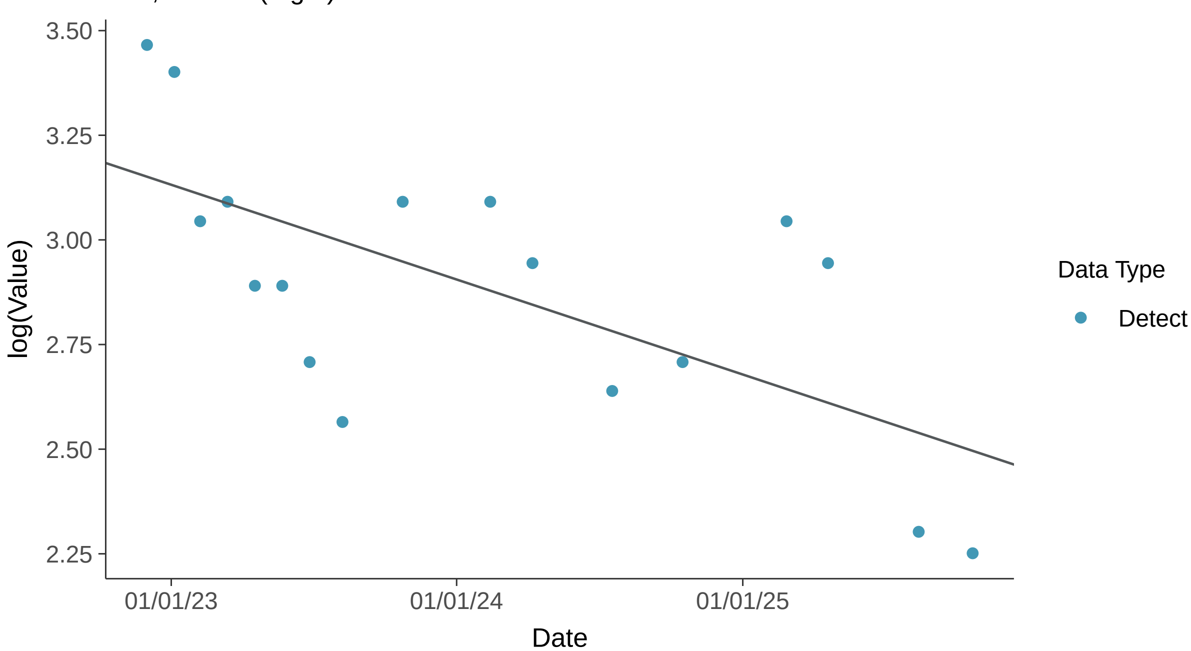
Gamma Q-Q plot

Iron, MW-08 (mg/L)



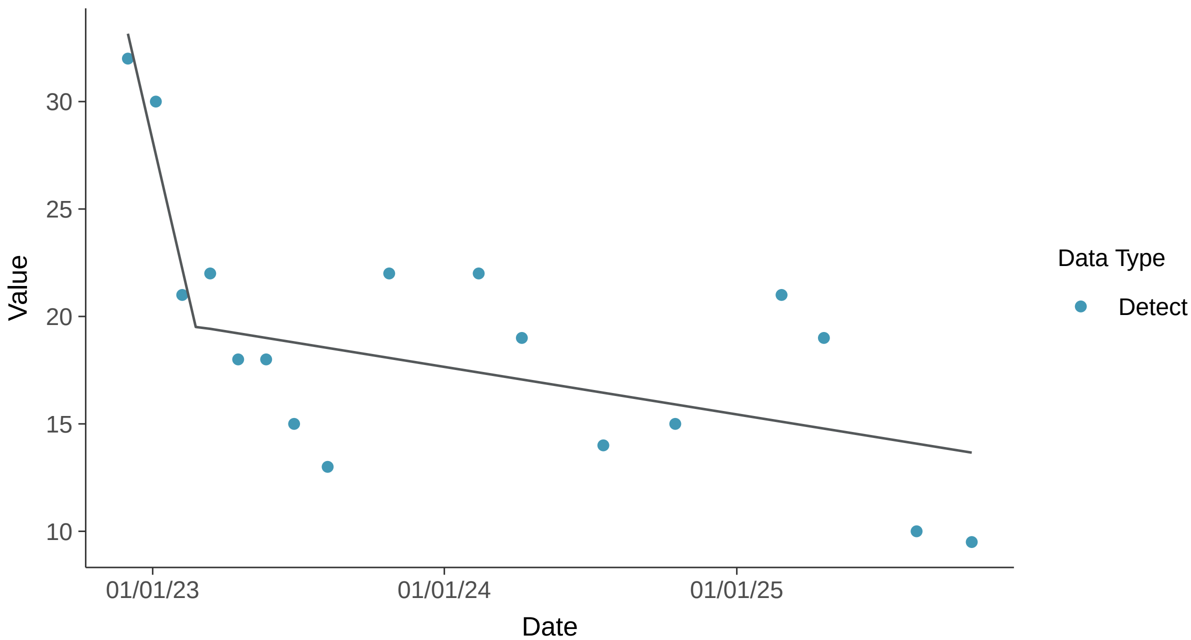
Trend Regression: Lognormal MLE

Iron, MW-08 (mg/L)



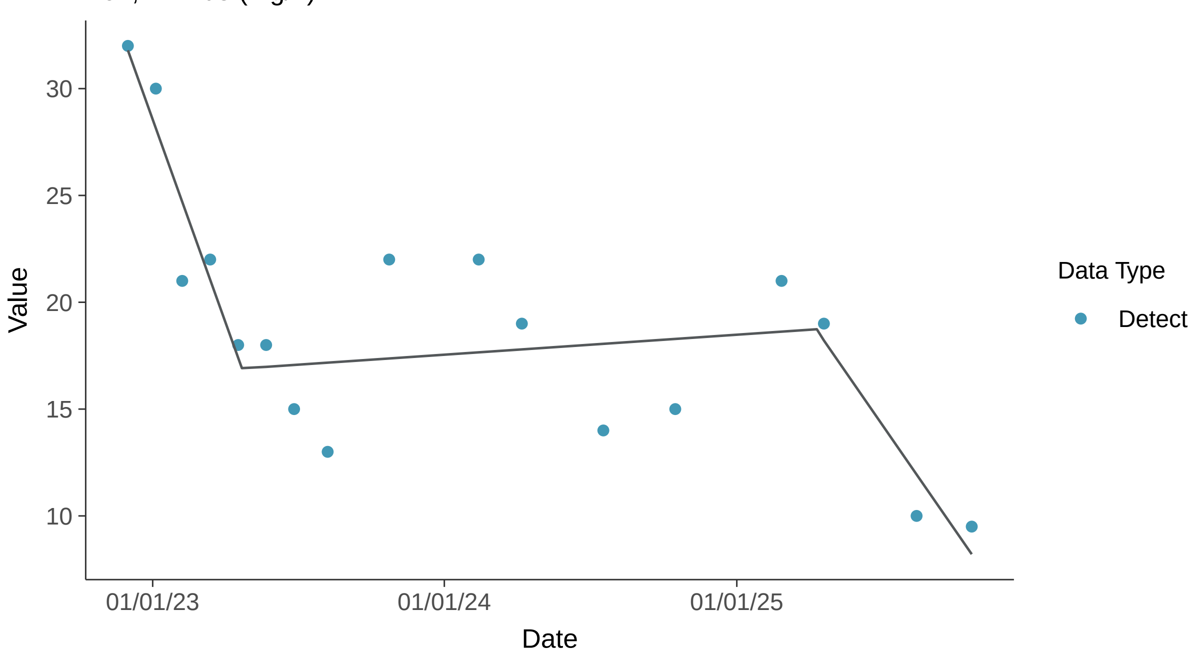
Trend Regression: Piecewise Linear-Linear

Iron, MW-08 (mg/L)



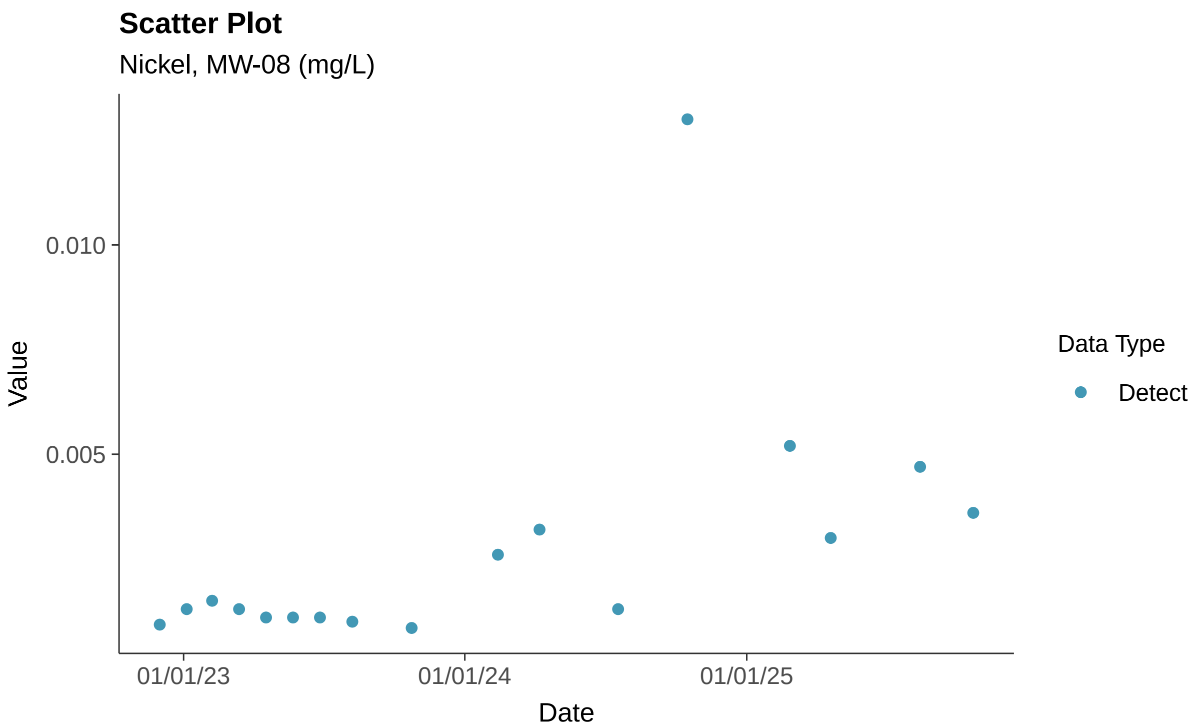
Trend Regression: Piecewise Linear-Linear-Linear

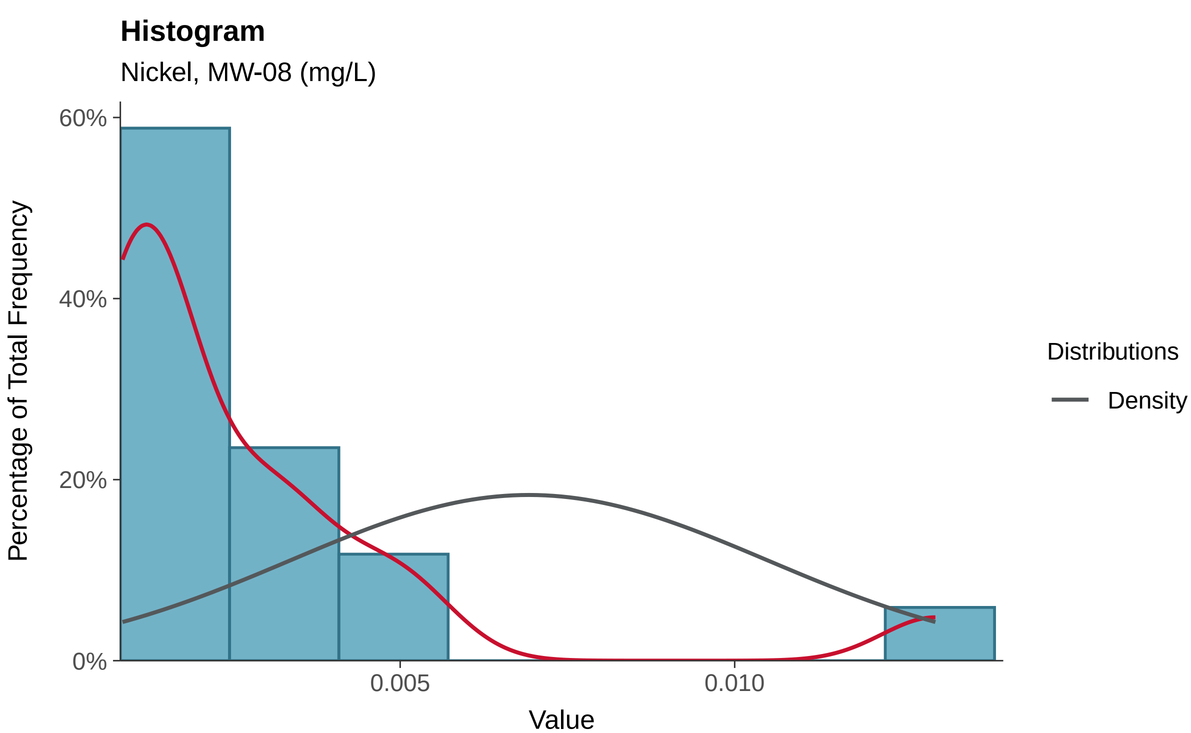
Iron, MW-08 (mg/L)



Part 115: Nickel, MW-08

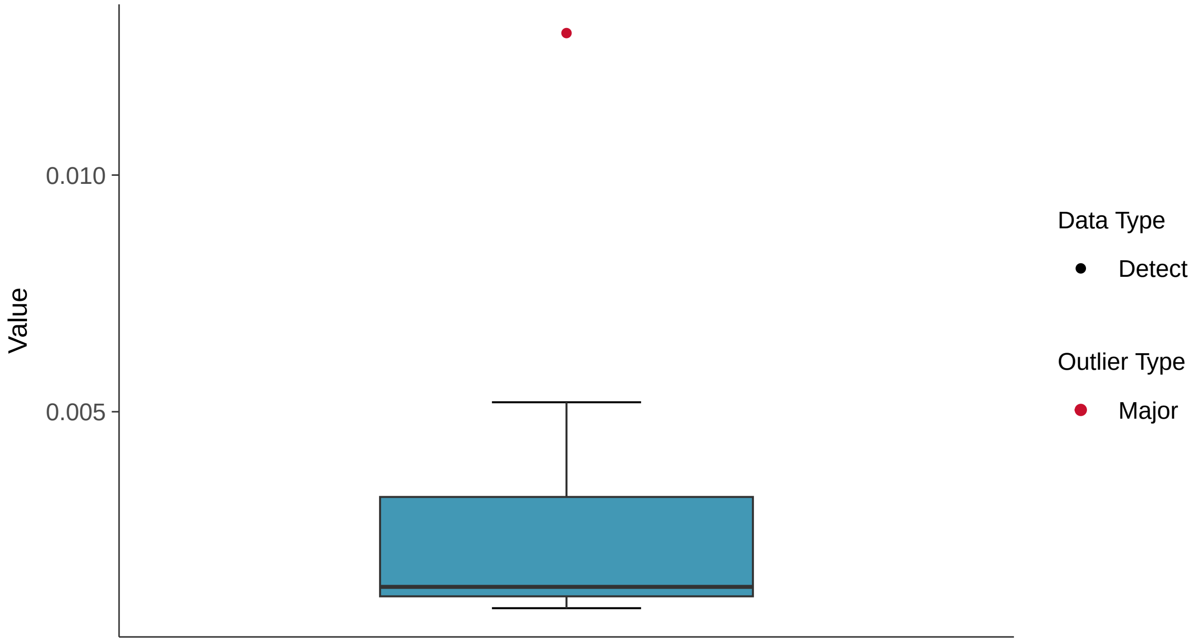
ID: 18_1_5_119





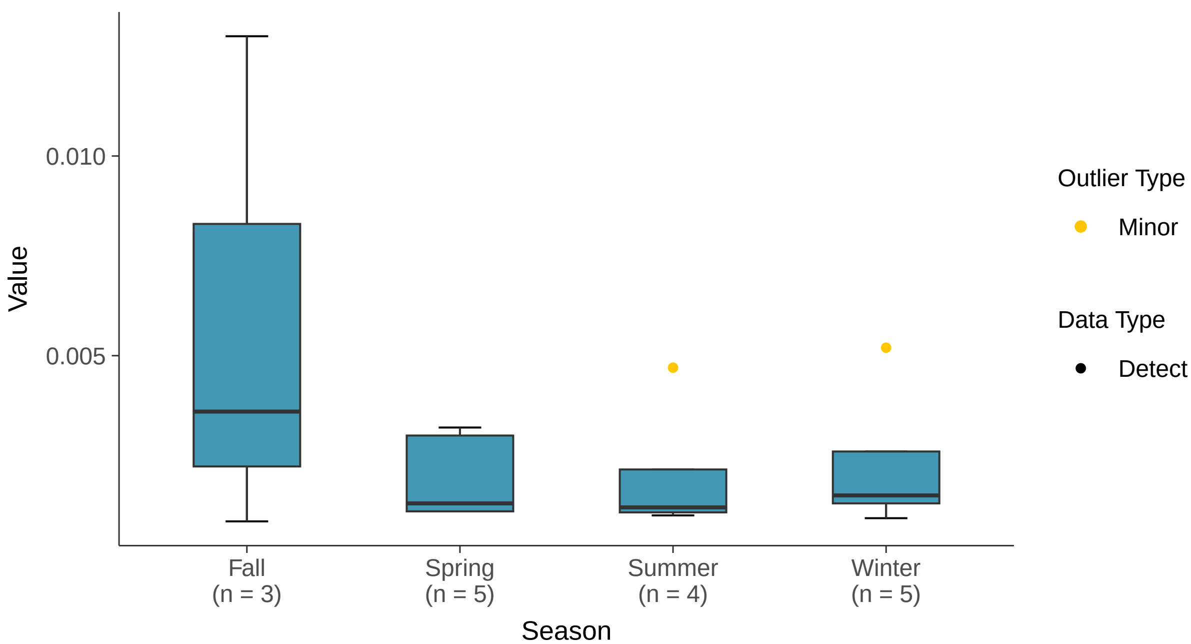
Boxplot

Nickel, MW-08 (mg/L)



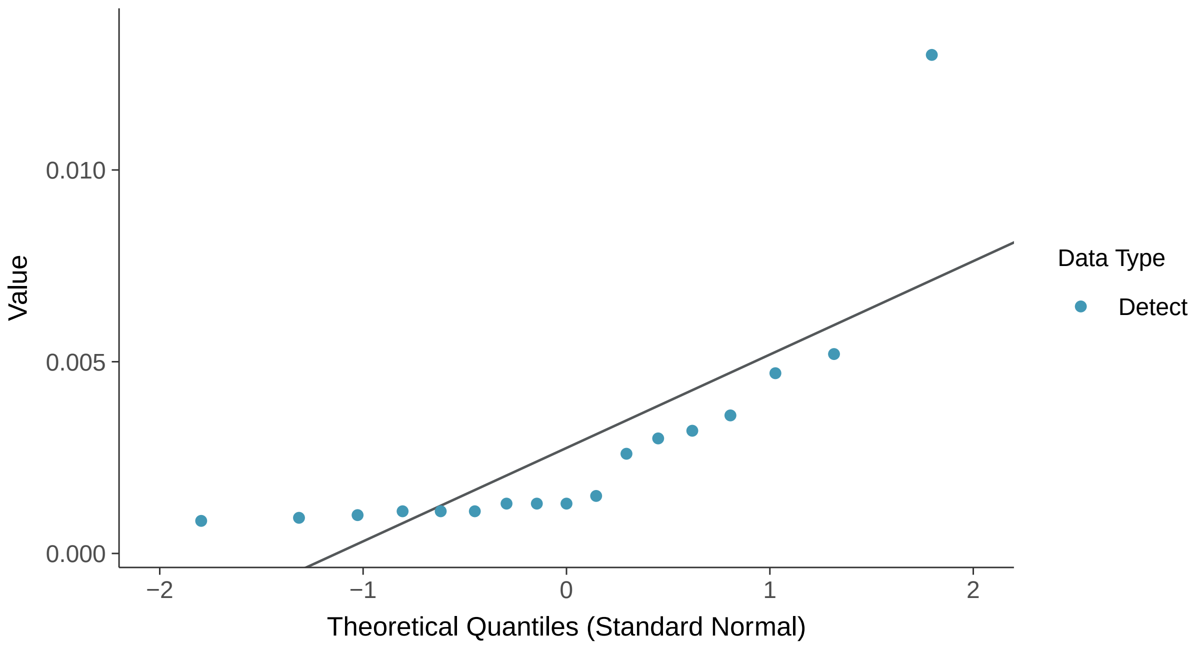
Boxplot by Season

Nickel, MW-08 (mg/L)



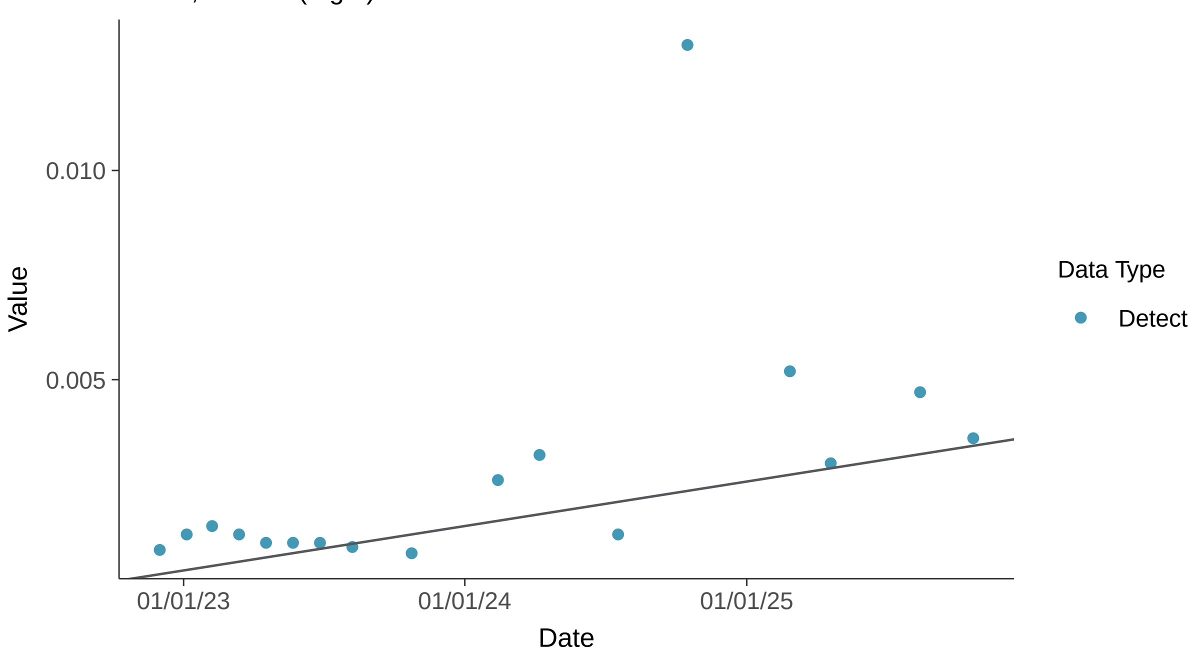
Normal Q-Q plot

Nickel, MW-08 (mg/L)



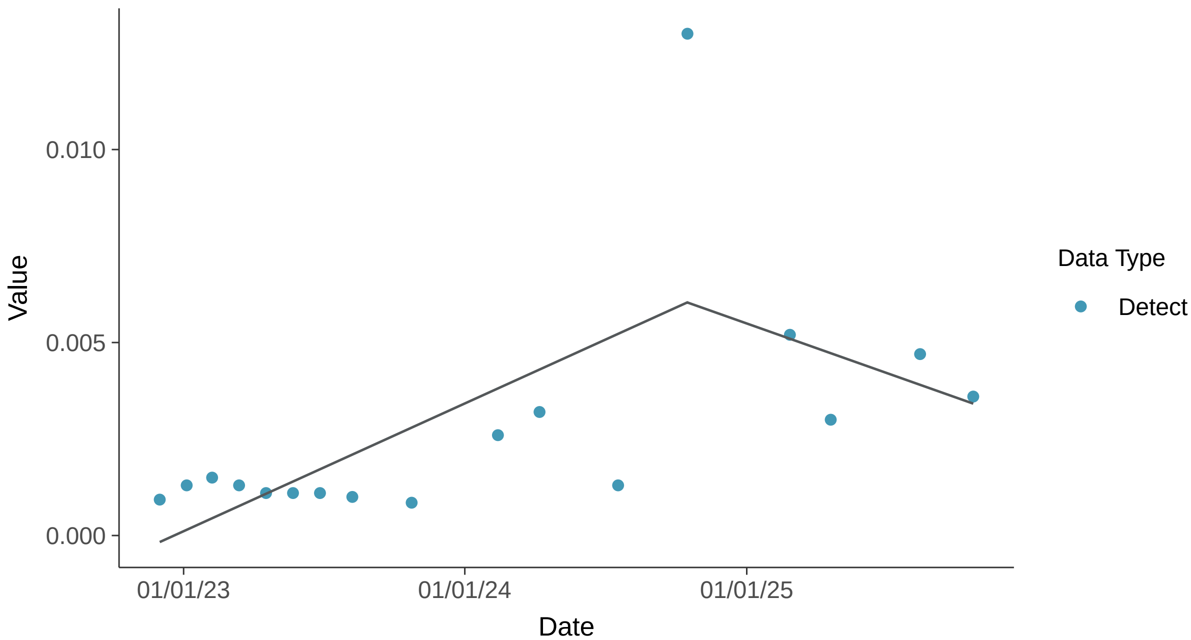
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Nickel, MW-08 (mg/L)



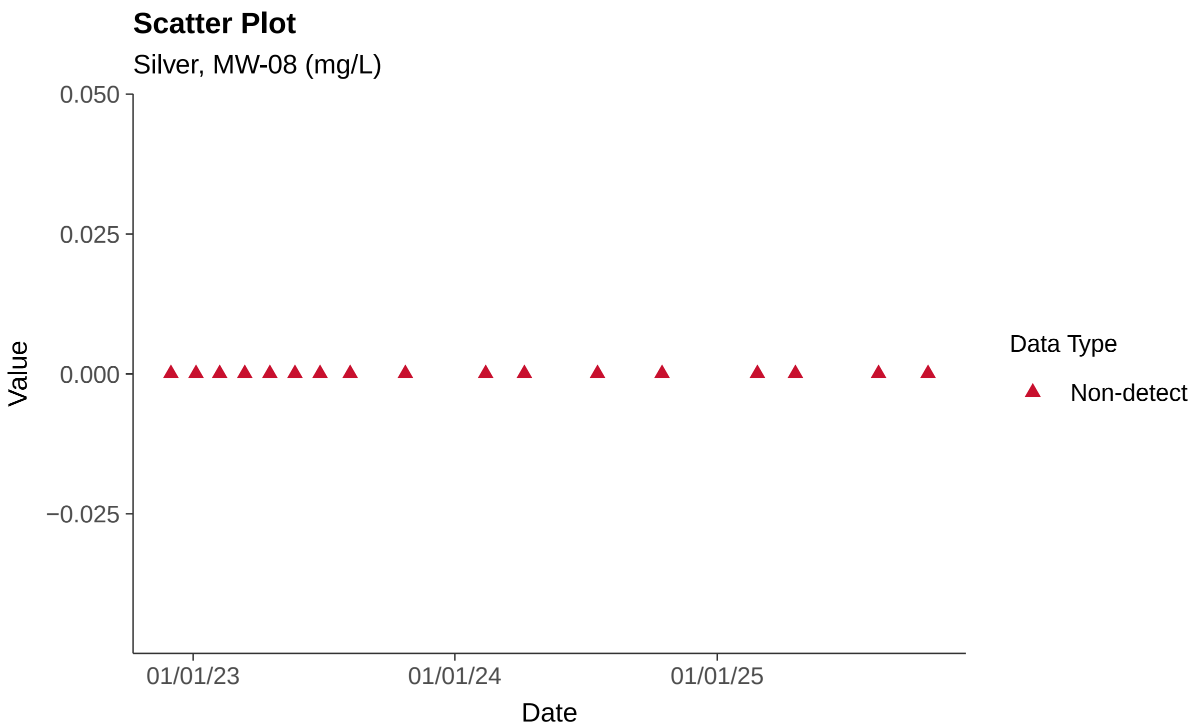
Trend Regression: Piecewise Linear-Linear

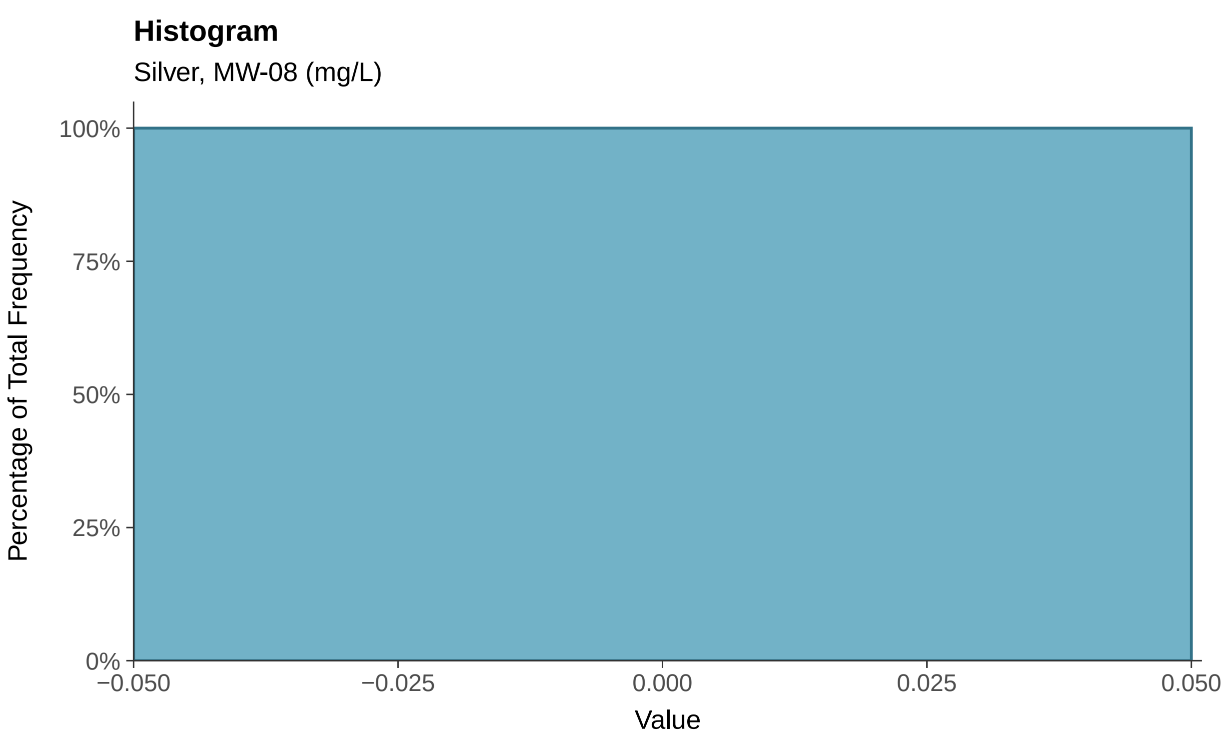
Nickel, MW-08 (mg/L)



Part 115: Silver, MW-08

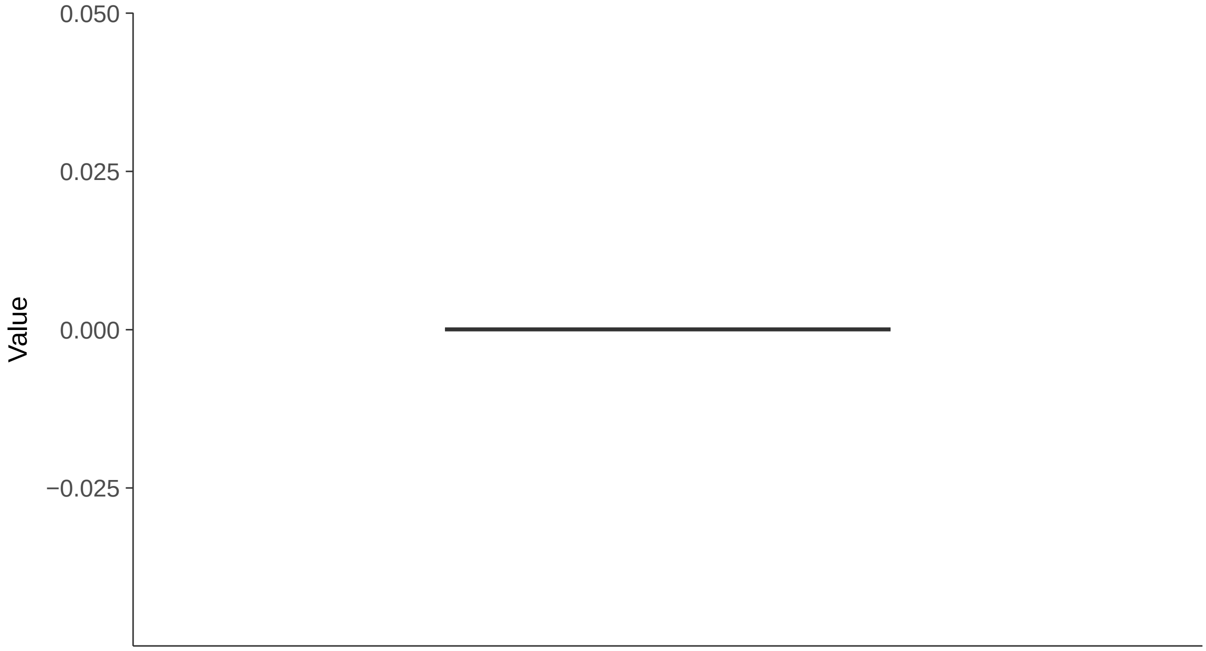
ID: 18_1_5_123





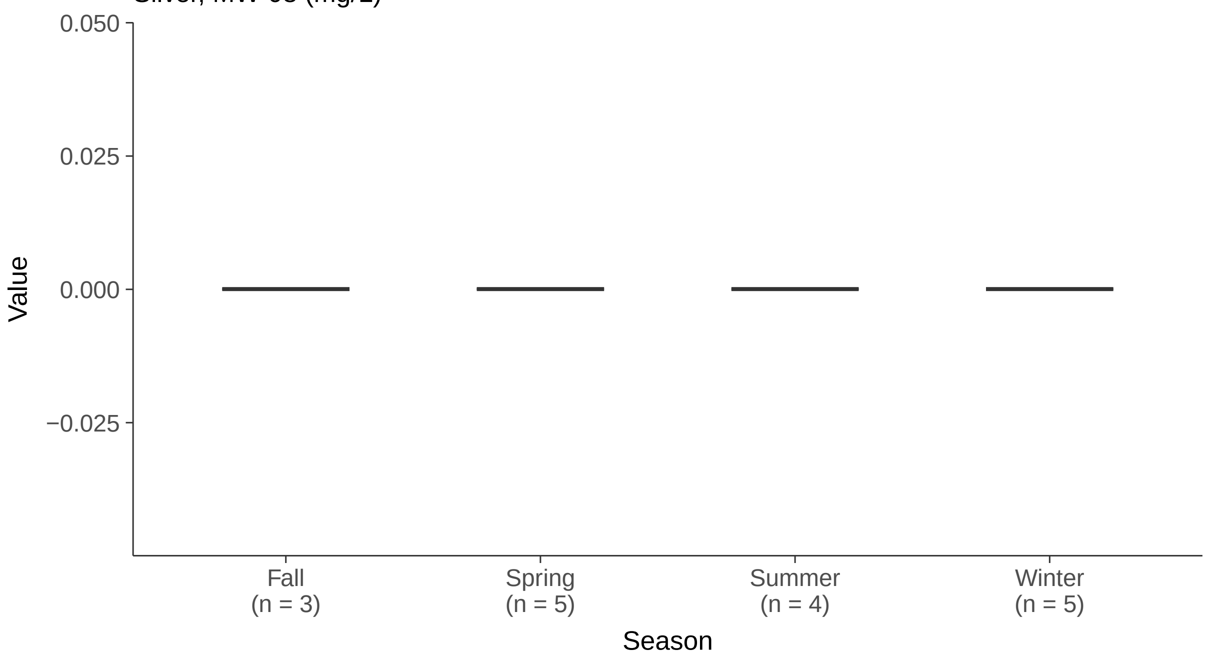
Boxplot

Silver, MW-08 (mg/L)



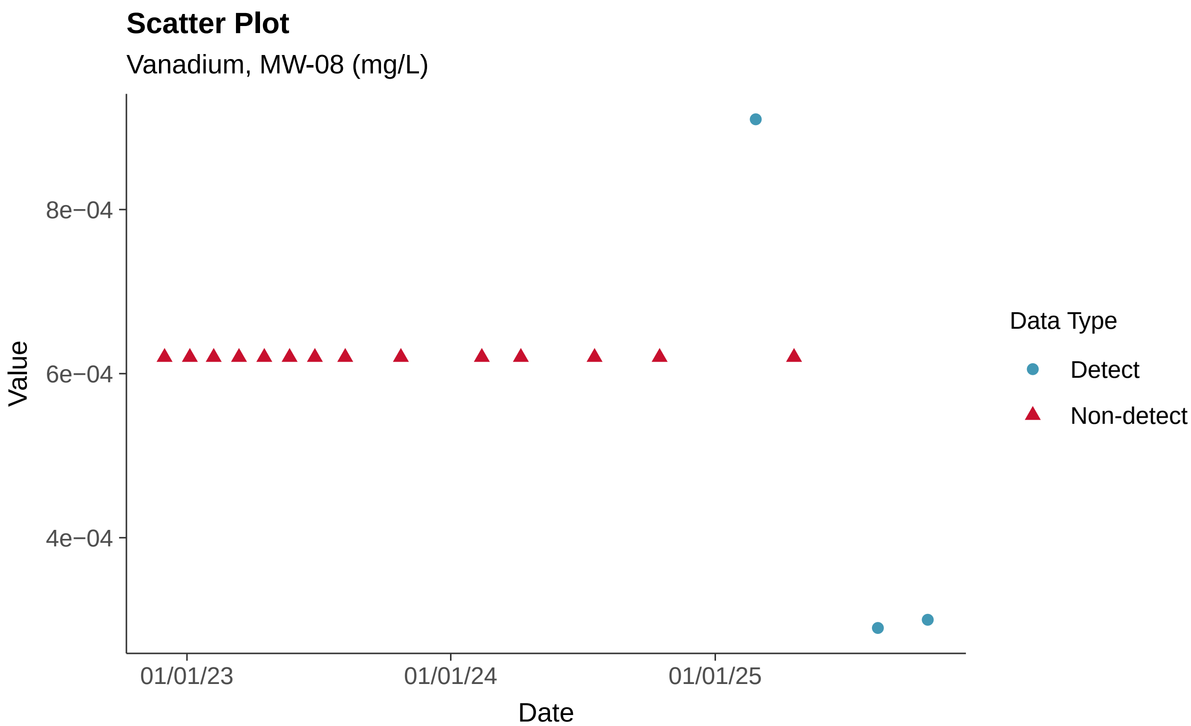
Boxplot by Season

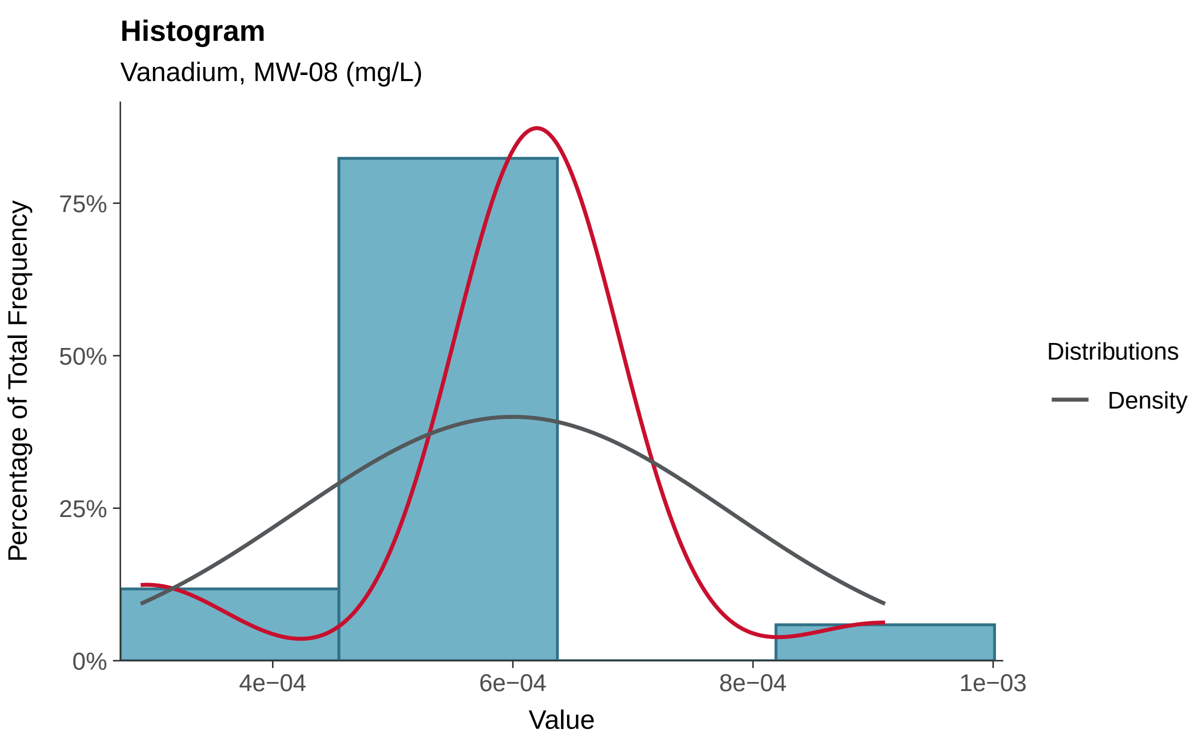
Silver, MW-08 (mg/L)

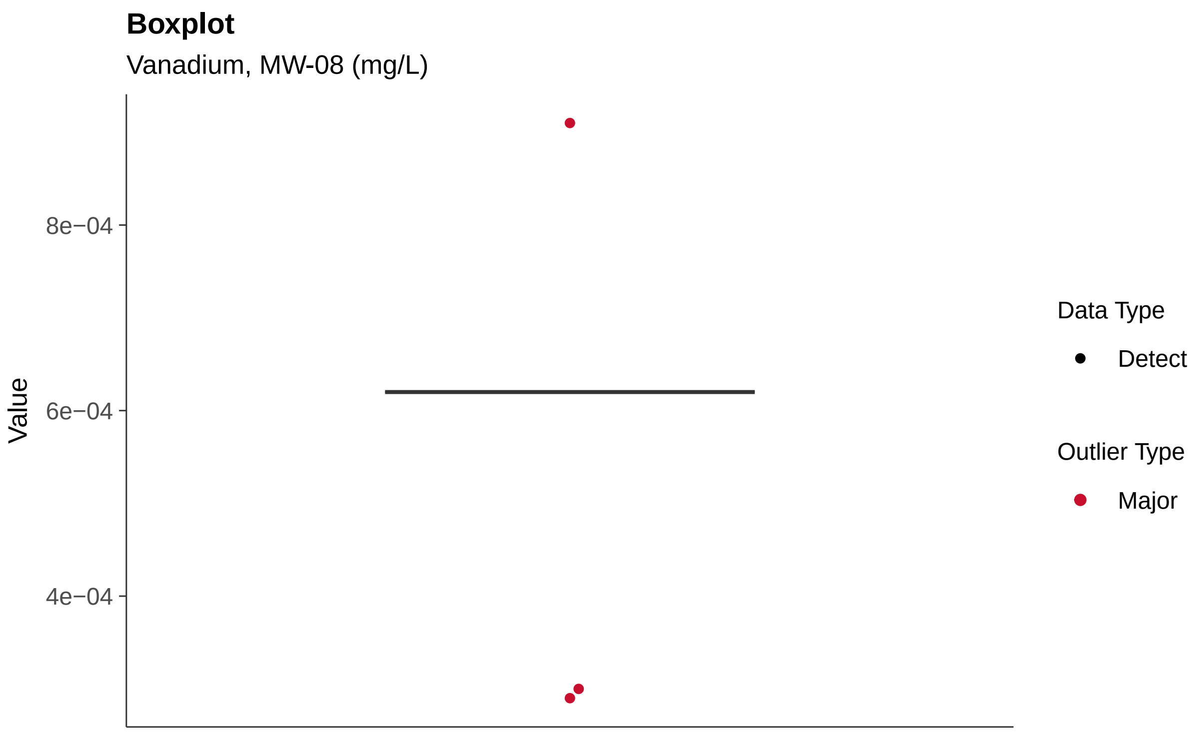


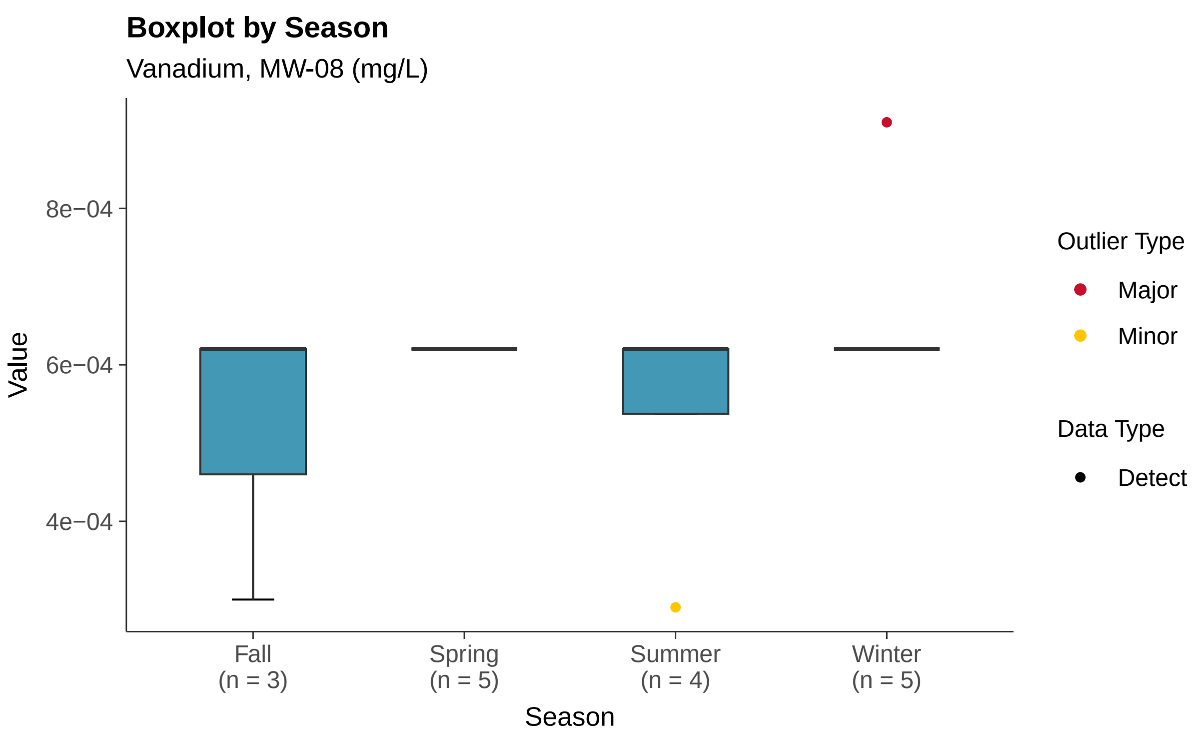
Part 115: Vanadium, MW-08

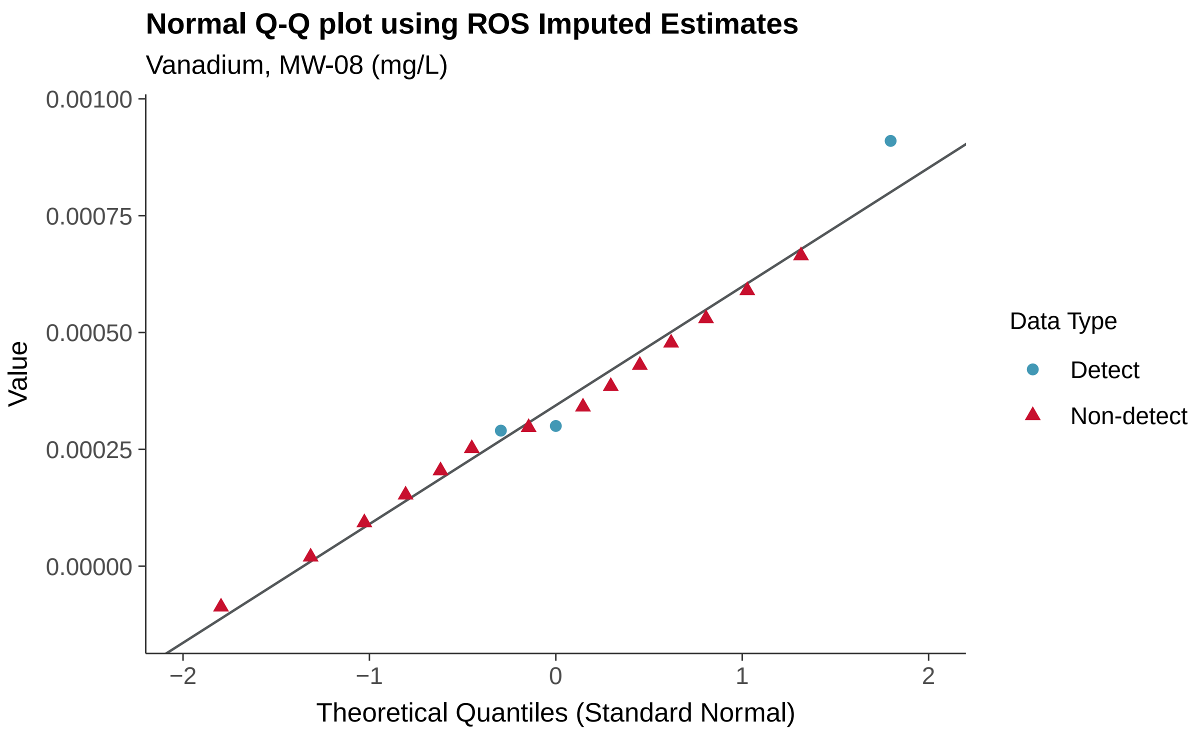
ID: 18_1_5_128

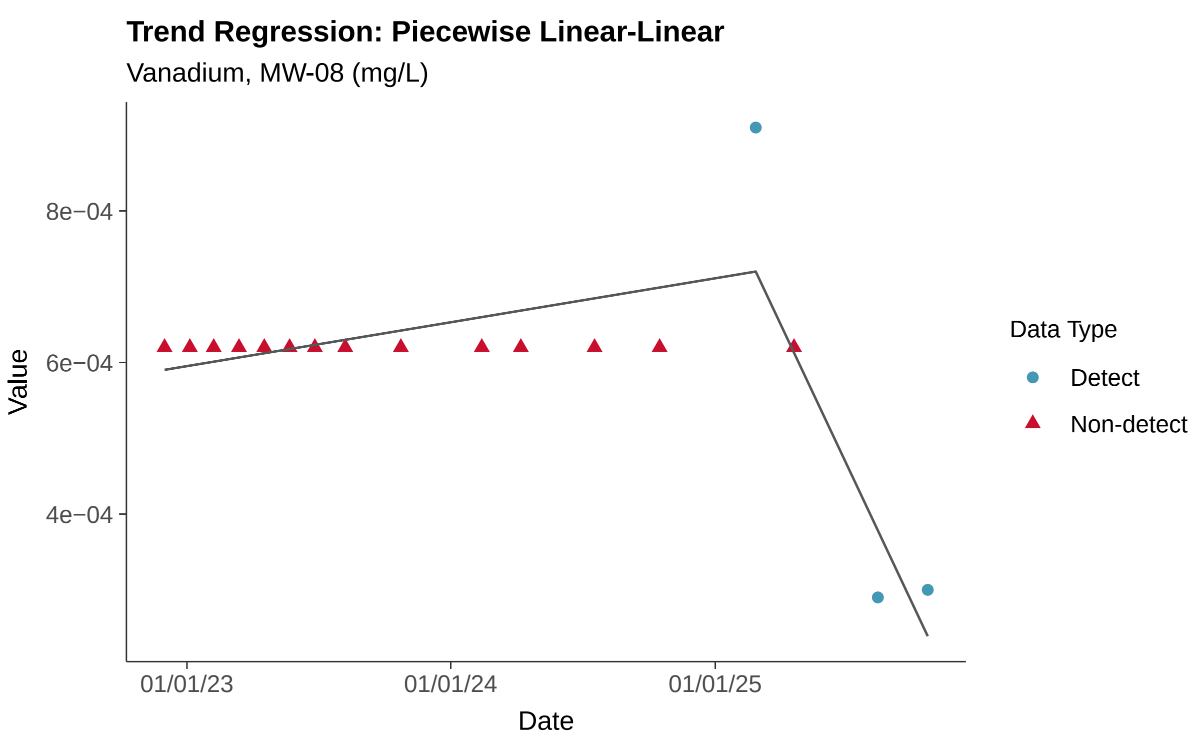





Boxplot
Vanadium, MW-08 (mg/L)
Value
8e−04
6e−04
4e−04
Data Type
Detect
Outlier Type
Major

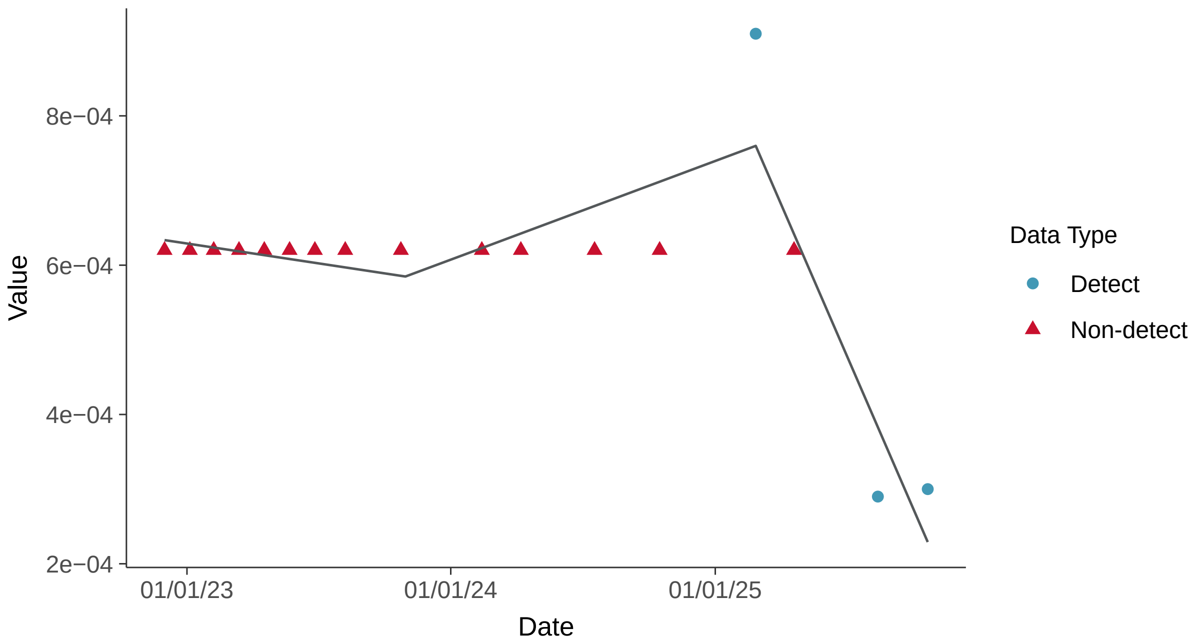

Boxplot by Season
Vanadium, MW-08 (mg/L)
Value
8e−04
6e−04
4e−04
Fall
(n = 3)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 5)
Season
Outlier Type
Major
Minor
Data Type
Detect


Normal Q-Q plot using ROS Imputed Estimates
Vanadium, MW-08 (mg/L)
Value
0.00100
0.00075
0.00050
0.00025
0.00000
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Vanadium, MW-08 (mg/L)
Value
8e−04
6e−04
4e−04
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

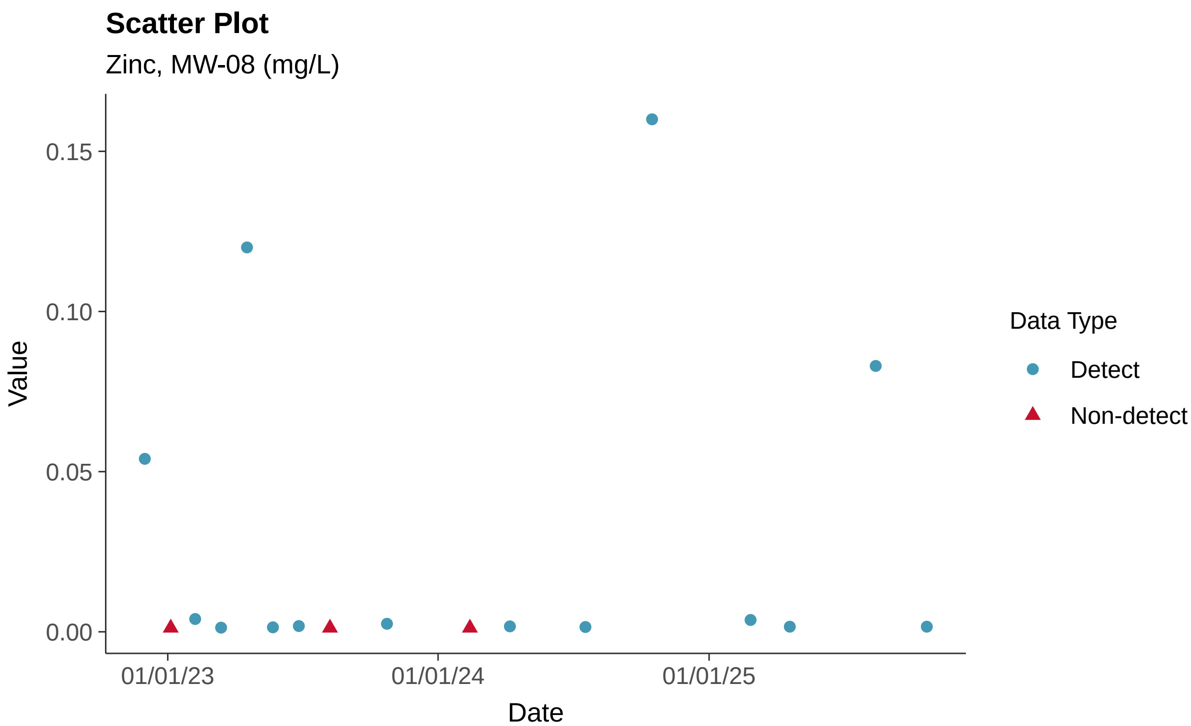
Trend Regression: Piecewise Linear-Linear-Linear

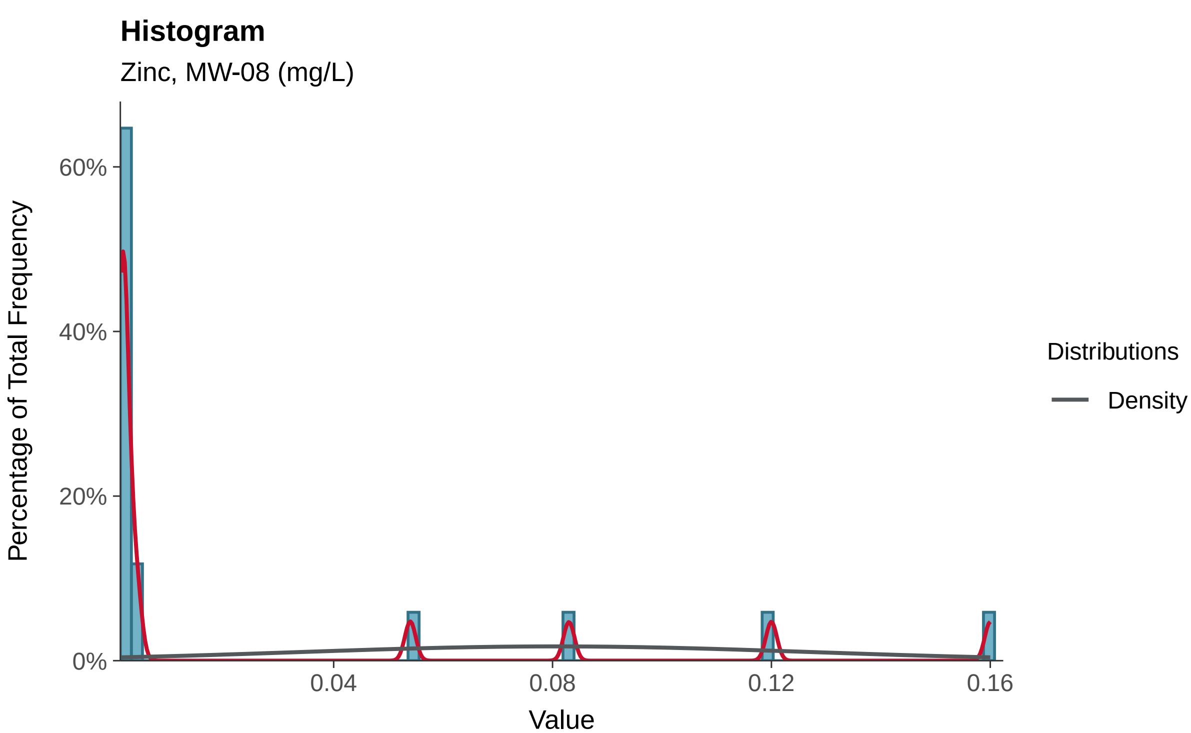
Vanadium, MW-08 (mg/L)



Part 115: Zinc, MW-08

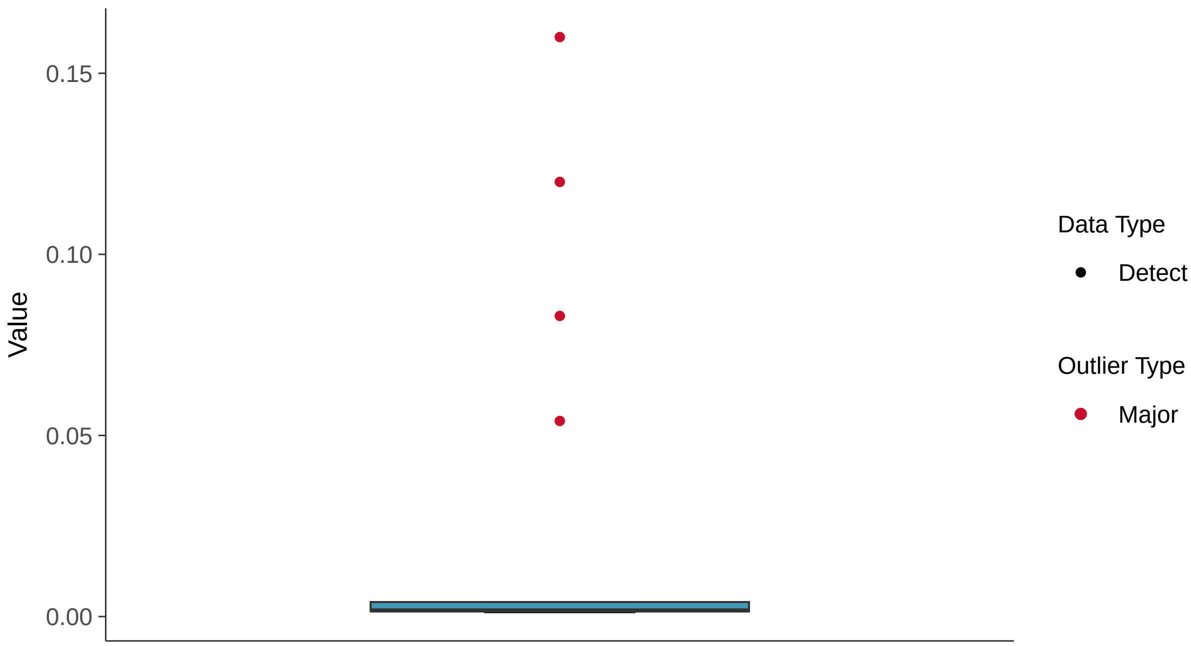
ID: 18_1_5_129





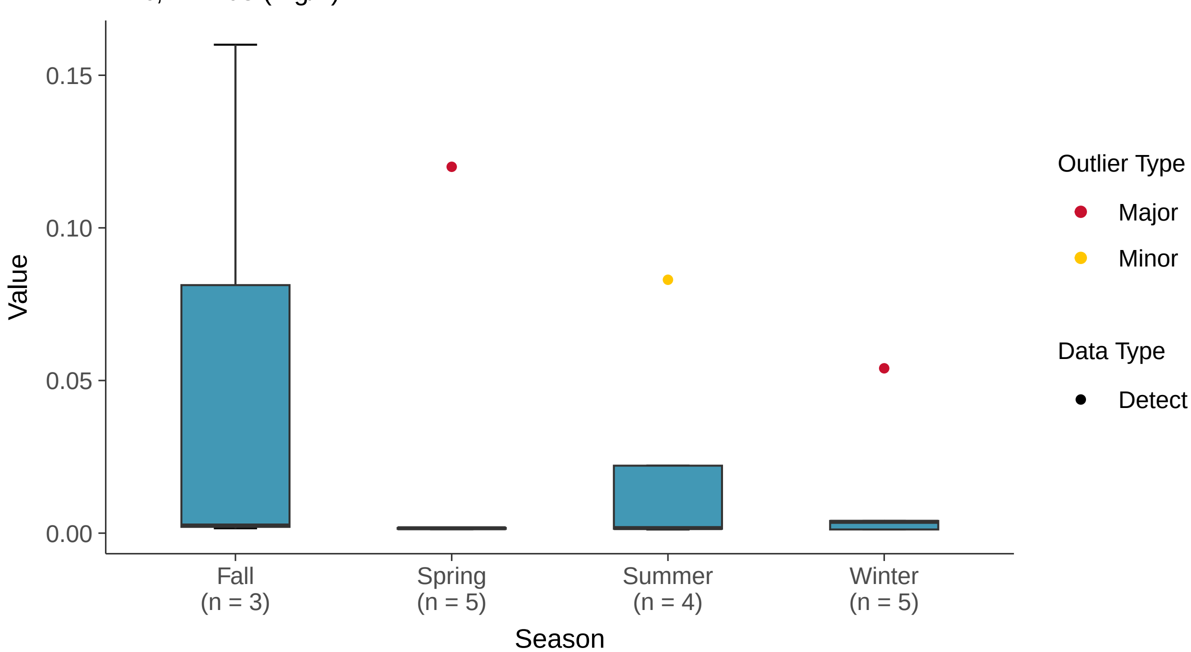
Boxplot

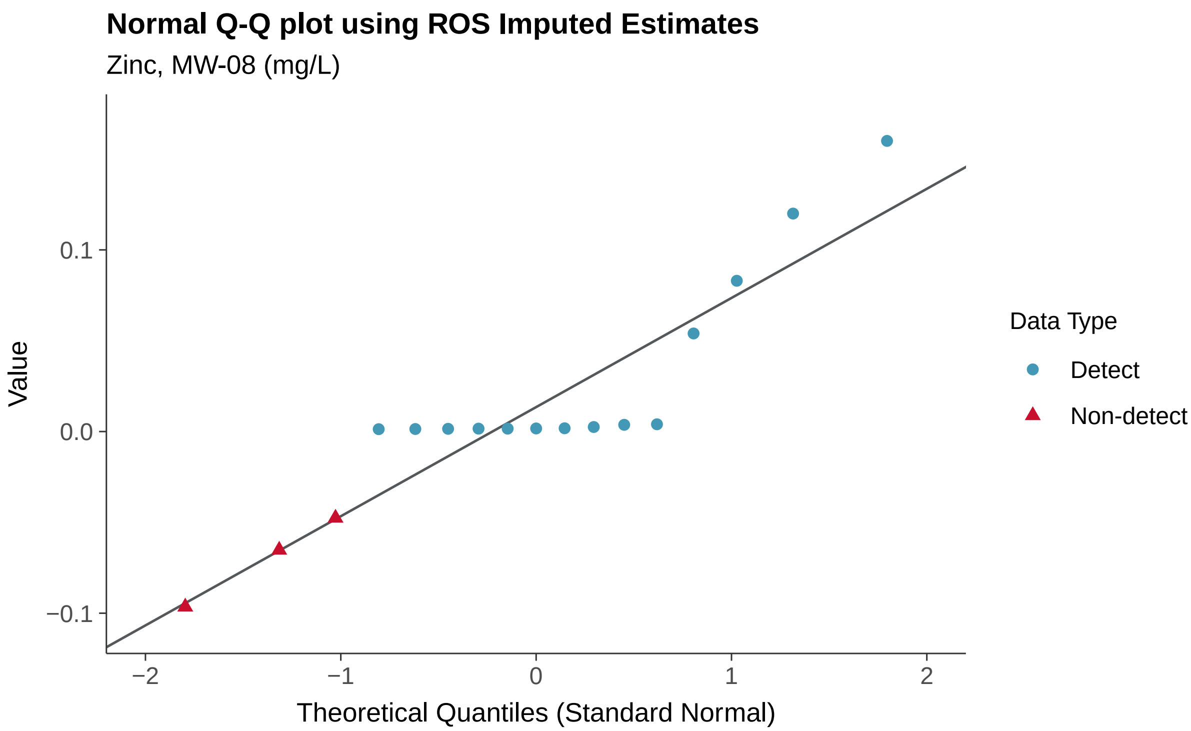
Zinc, MW-08 (mg/L)

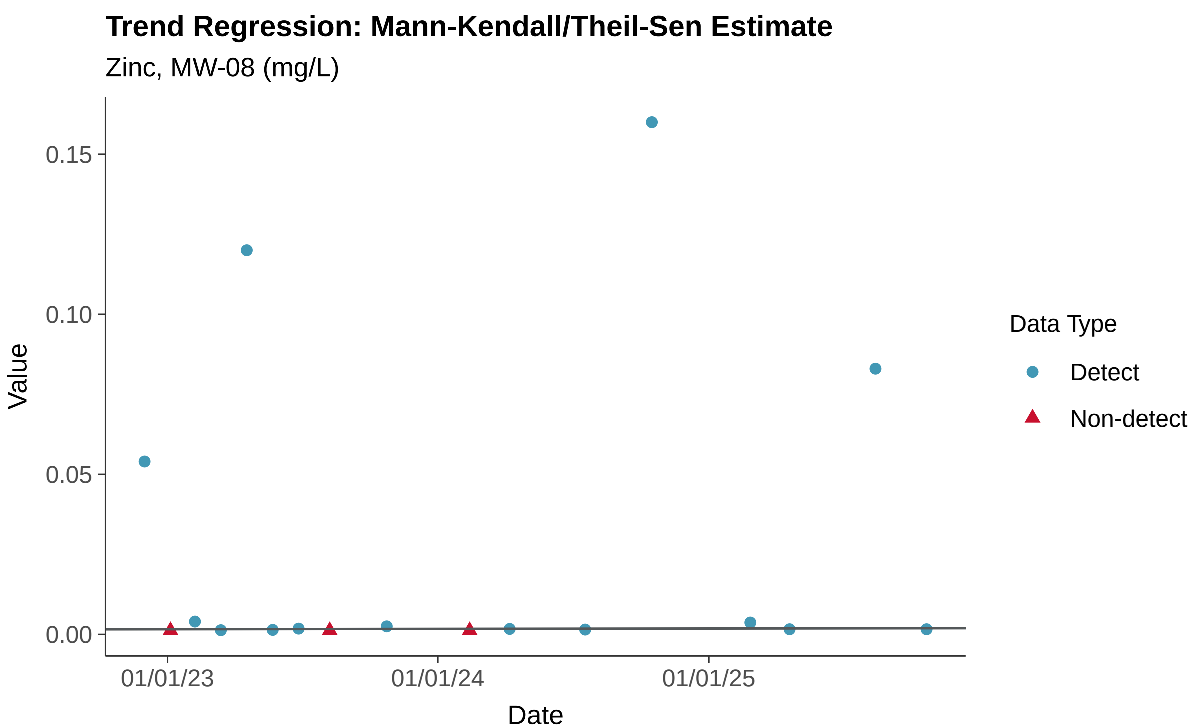


Boxplot by Season

Zinc, MW-08 (mg/L)

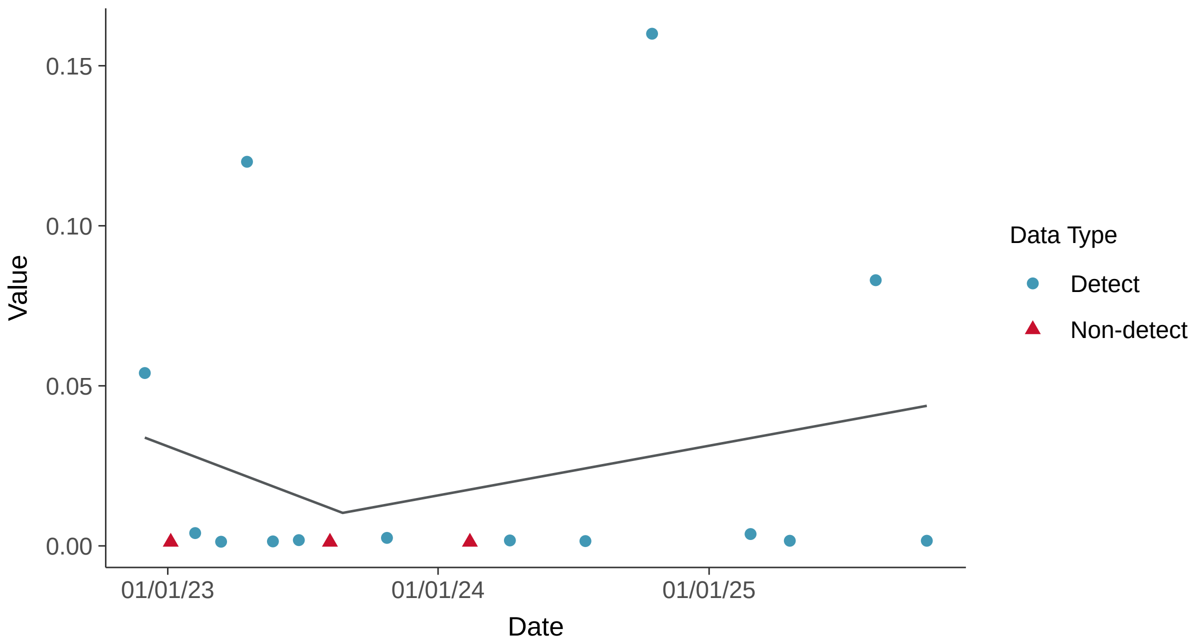



Normal Q-Q plot using ROS Imputed Estimates
Zinc, MW-08 (mg/L)
Value
0.1
0.0
−0.1
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Trend Regression: Mann-Kendall/Theil-Sen Estimate
Zinc, MW-08 (mg/L)
Value
0.15
0.10
0.05
0.00
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

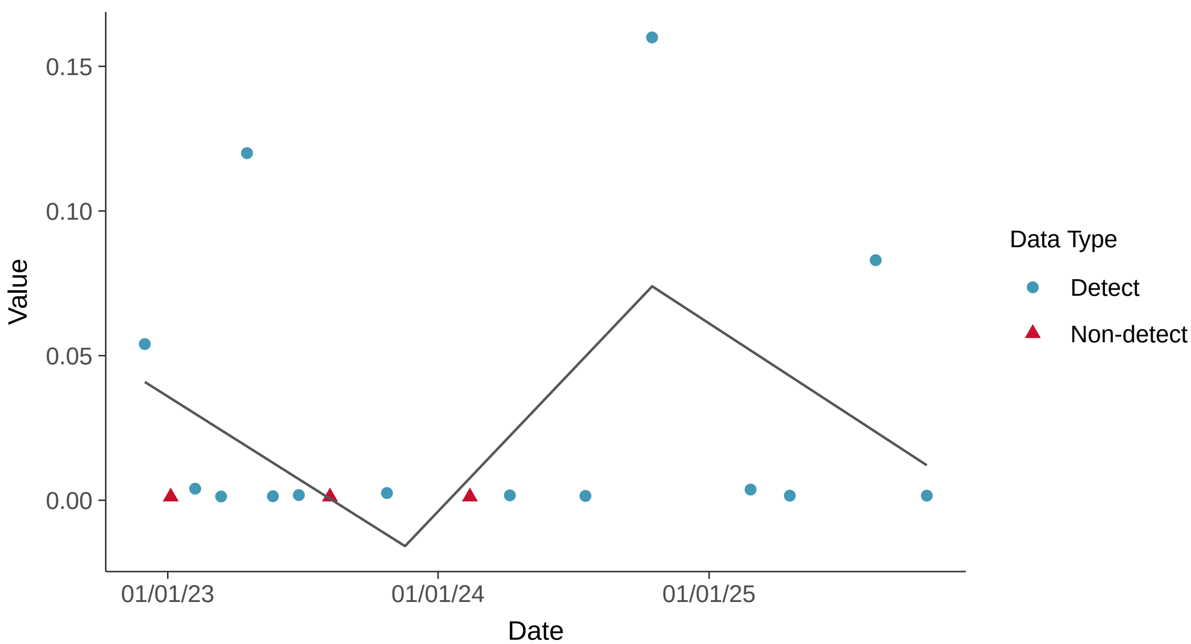
Trend Regression: Piecewise Linear-Linear

Zinc, MW-08 (mg/L)



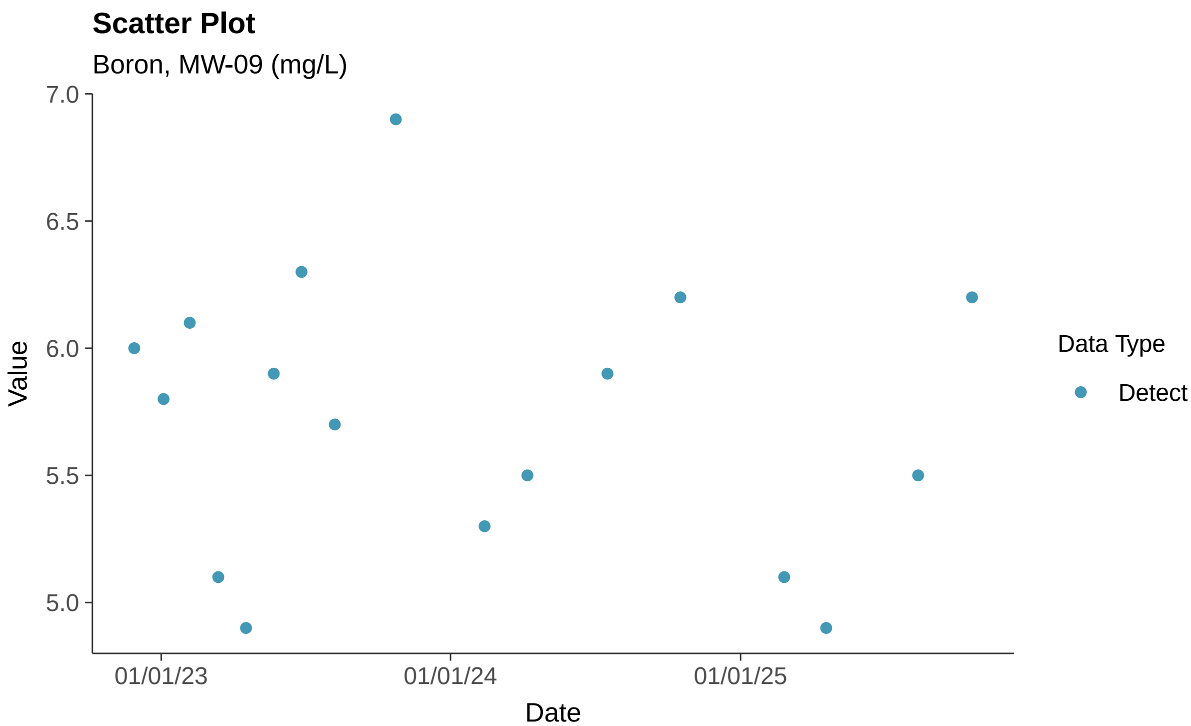
Trend Regression: Piecewise Linear-Linear-Linear

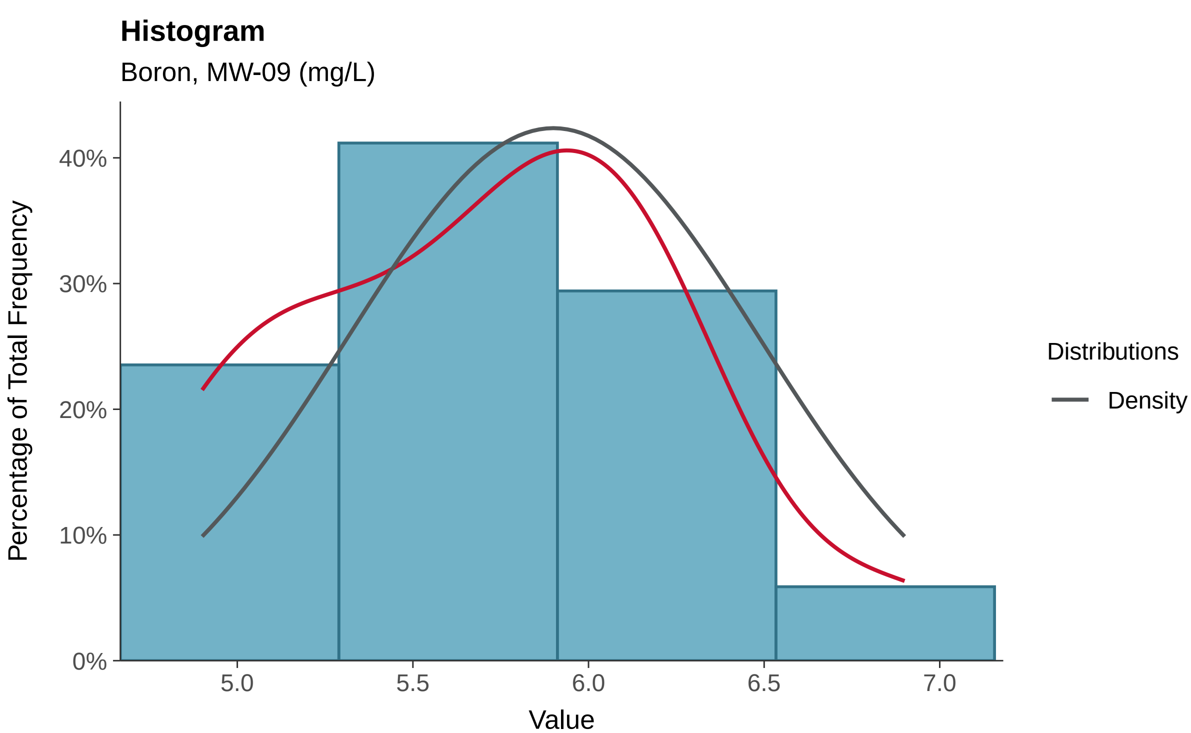
Zinc, MW-08 (mg/L)



Appendix III: Boron, MW-09

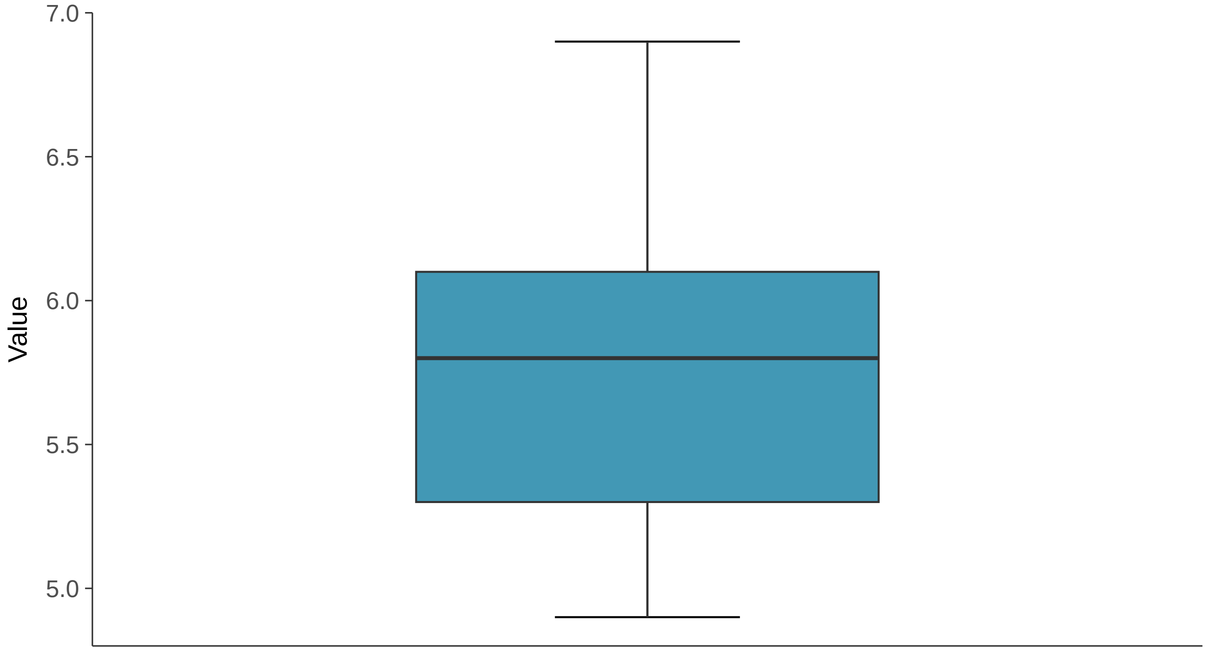
ID: 19_2_3_105





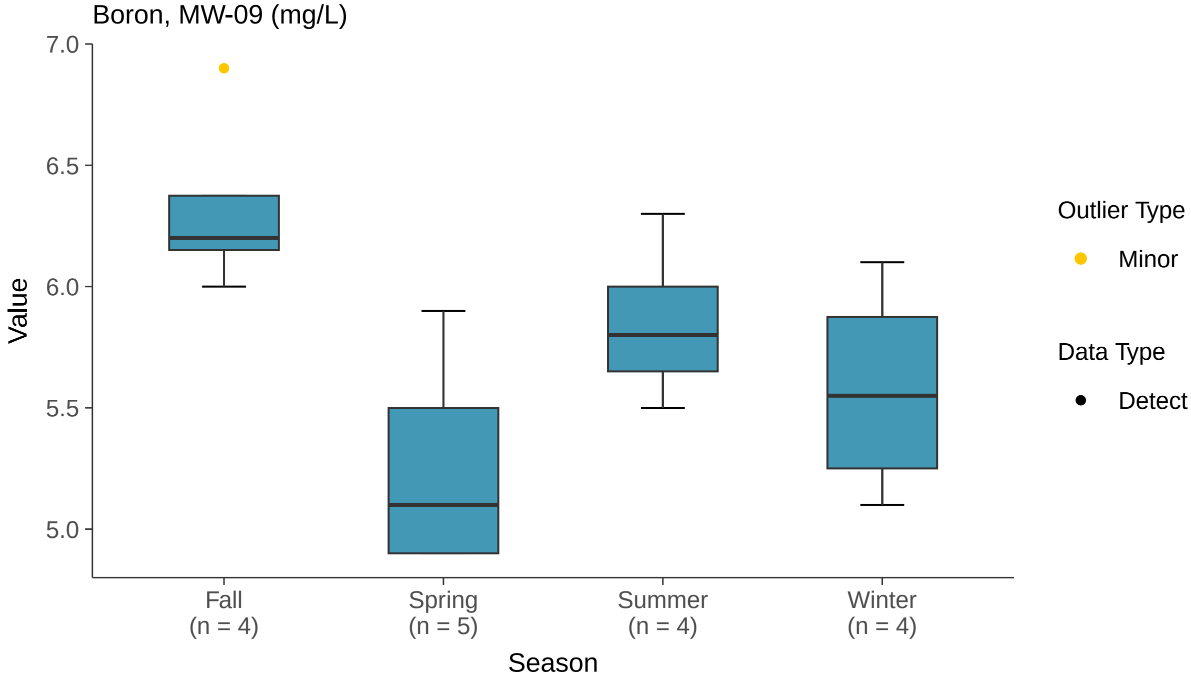
Boxplot

Boron, MW-09 (mg/L)



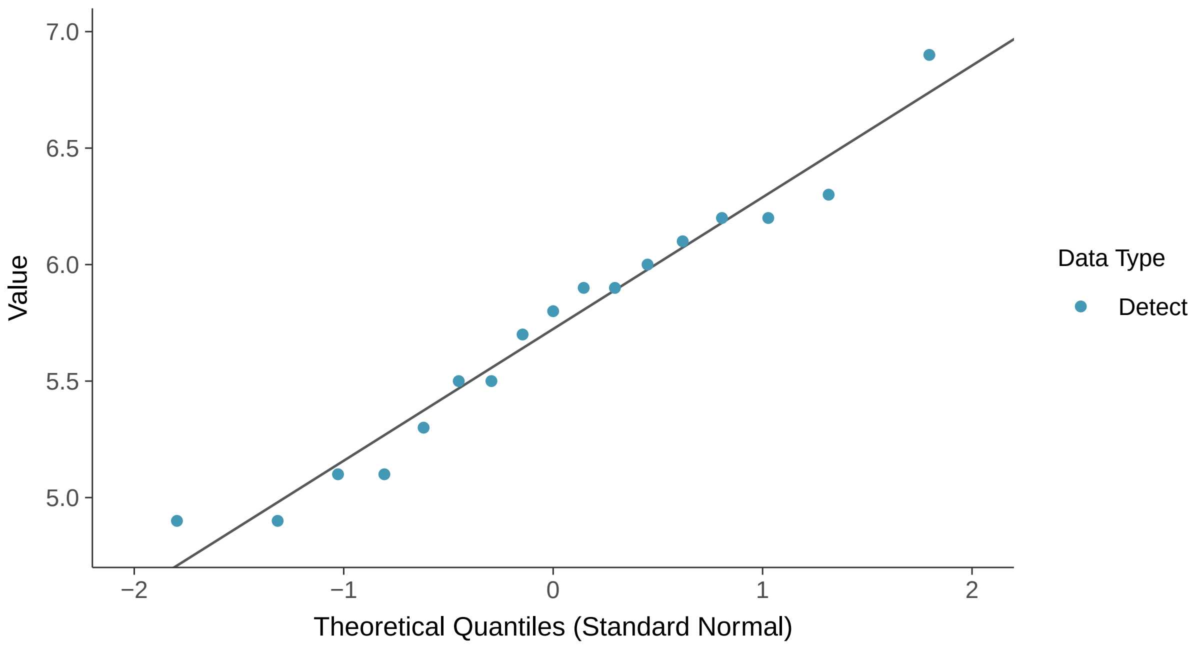
Boxplot by Season

Boron, MW-09 (mg/L)



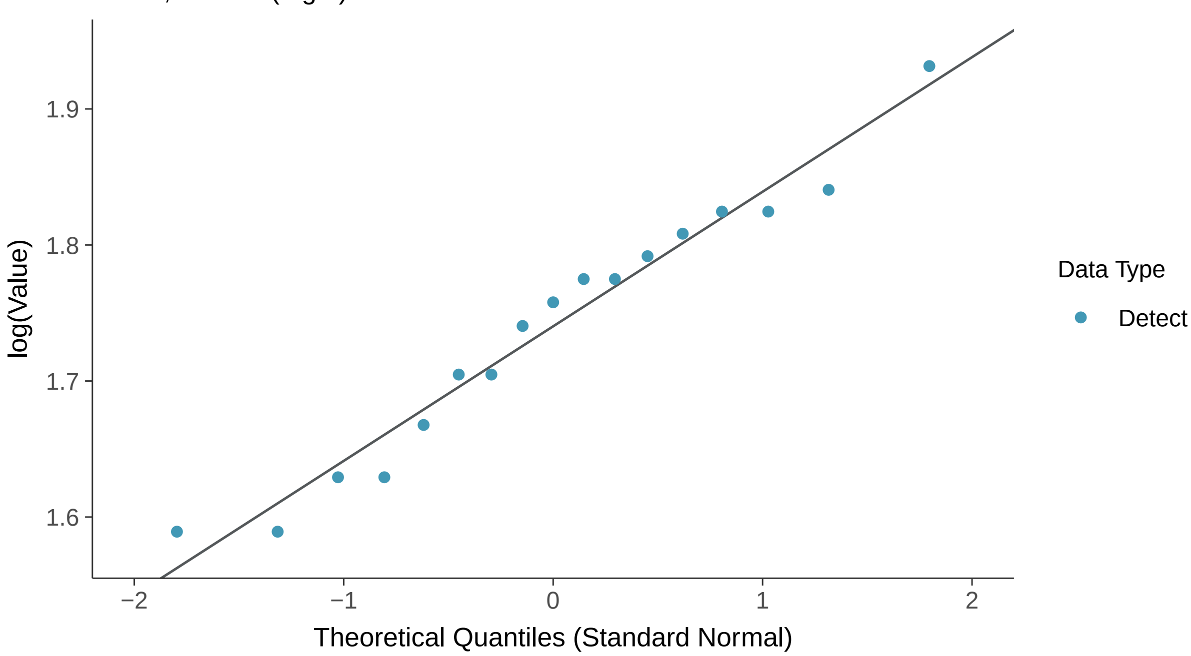
Normal Q-Q plot

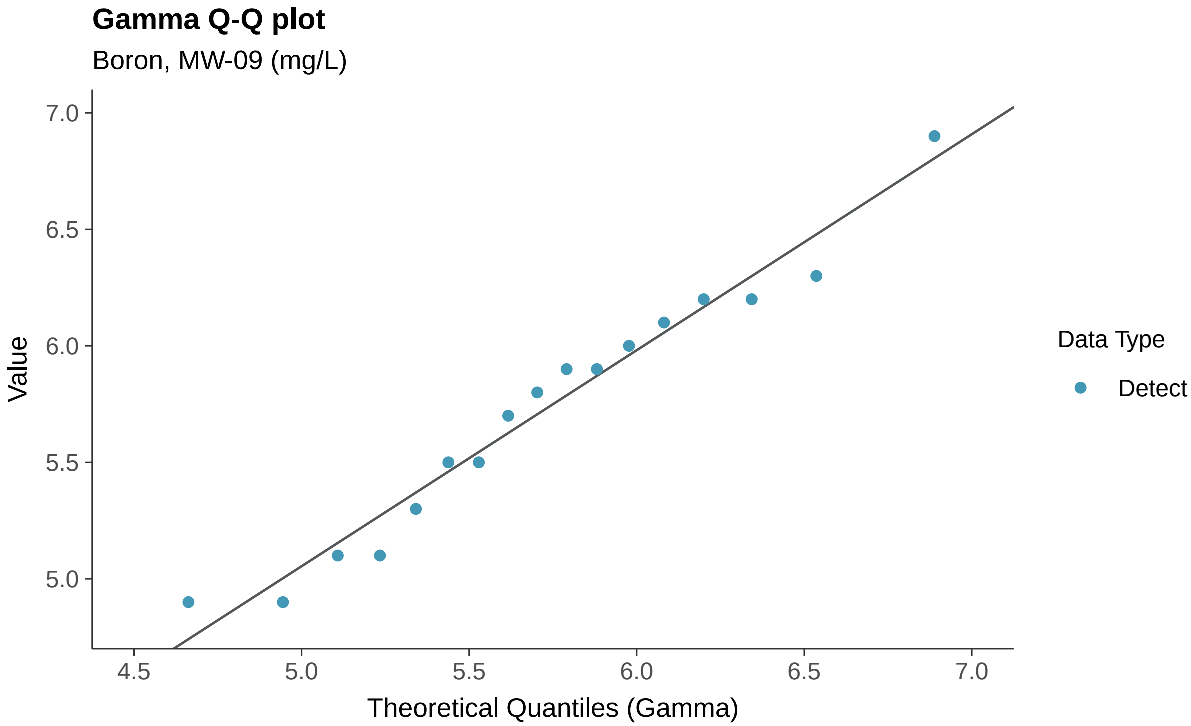
Boron, MW-09 (mg/L)

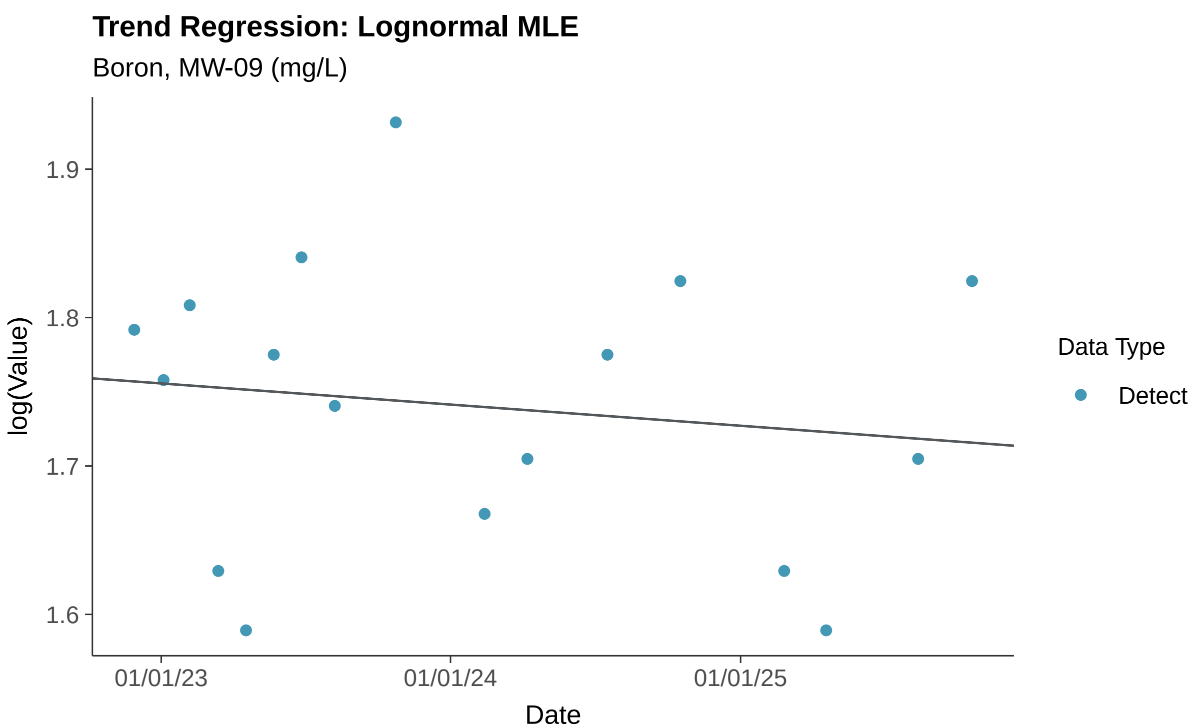


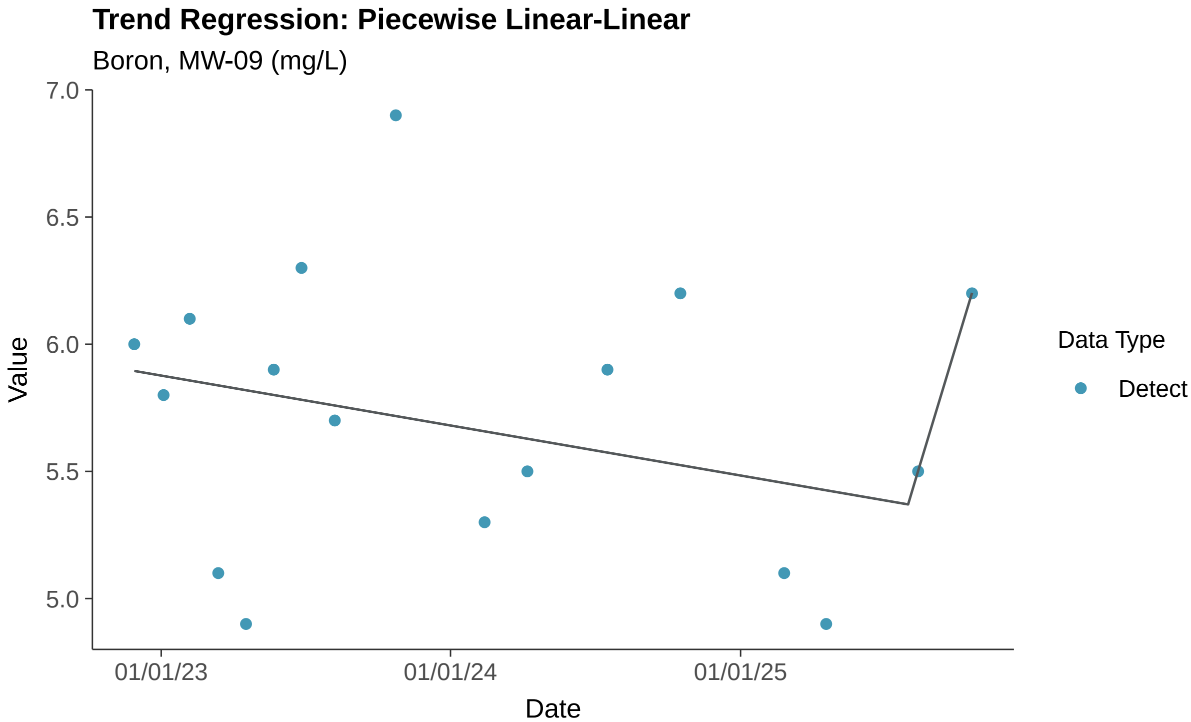
Lognormal Q-Q plot

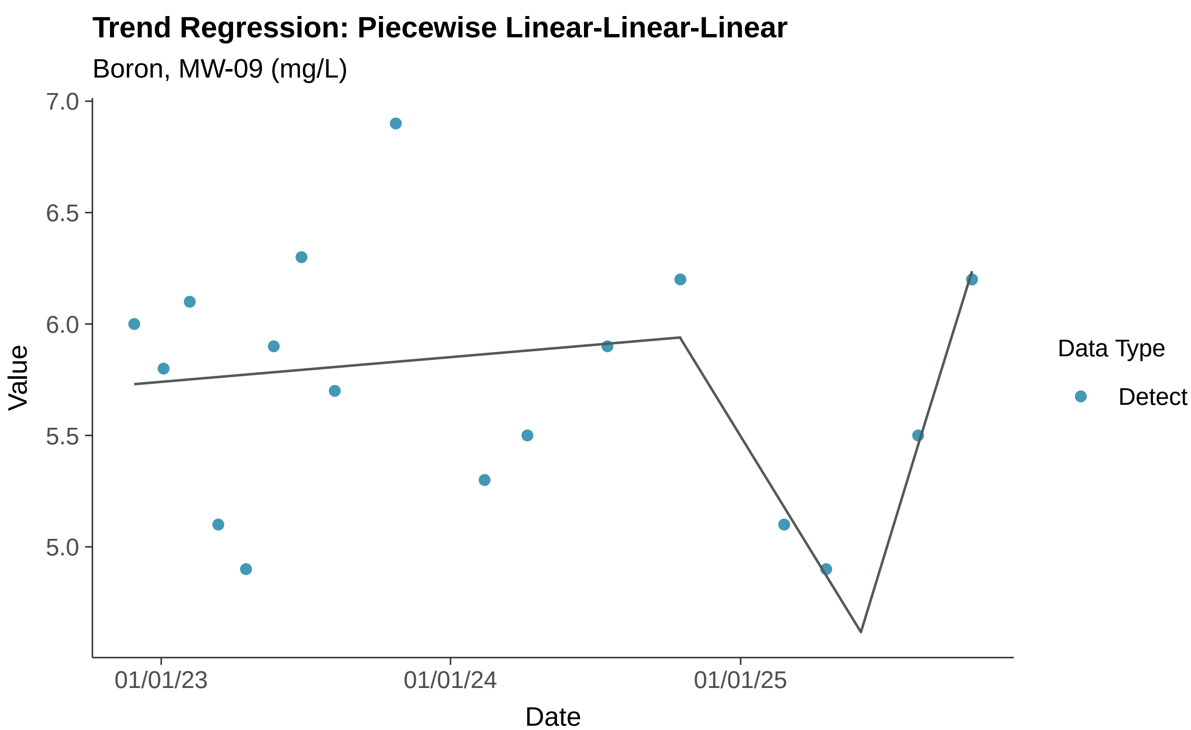
Boron, MW-09 (mg/L)




Gamma Q-Q plot
Boron, MW-09 (mg/L)
Value
7.0
6.5
6.0
5.5
5.0
4.5
5.0
5.5
6.0
6.5
7.0
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Boron, MW-09 (mg/L)
log(Value)
1.9
1.8
1.7
1.6
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear
Boron, MW-09 (mg/L)
7.0
6.5
6.0
5.5
5.0
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

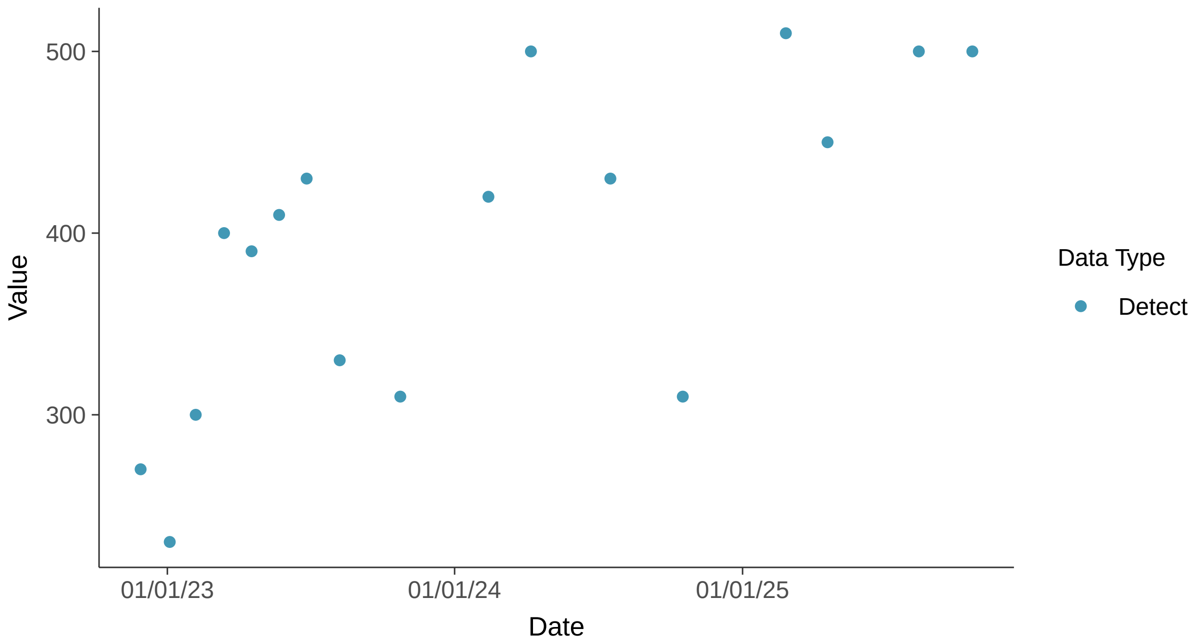

Trend Regression: Piecewise Linear-Linear-Linear
Boron, MW-09 (mg/L)
7.0
6.5
6.0
5.5
5.0
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Appendix III: Calcium, MW-09

ID: 19_2_3_107

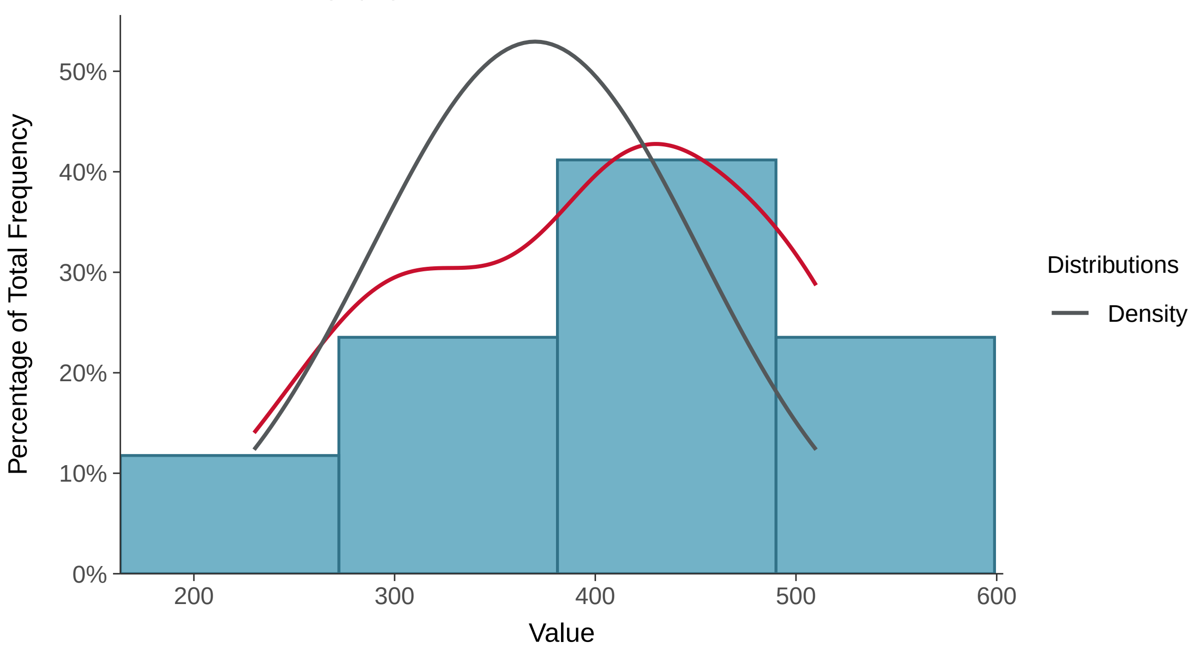
Scatter Plot

Calcium, MW-09 (mg/L)



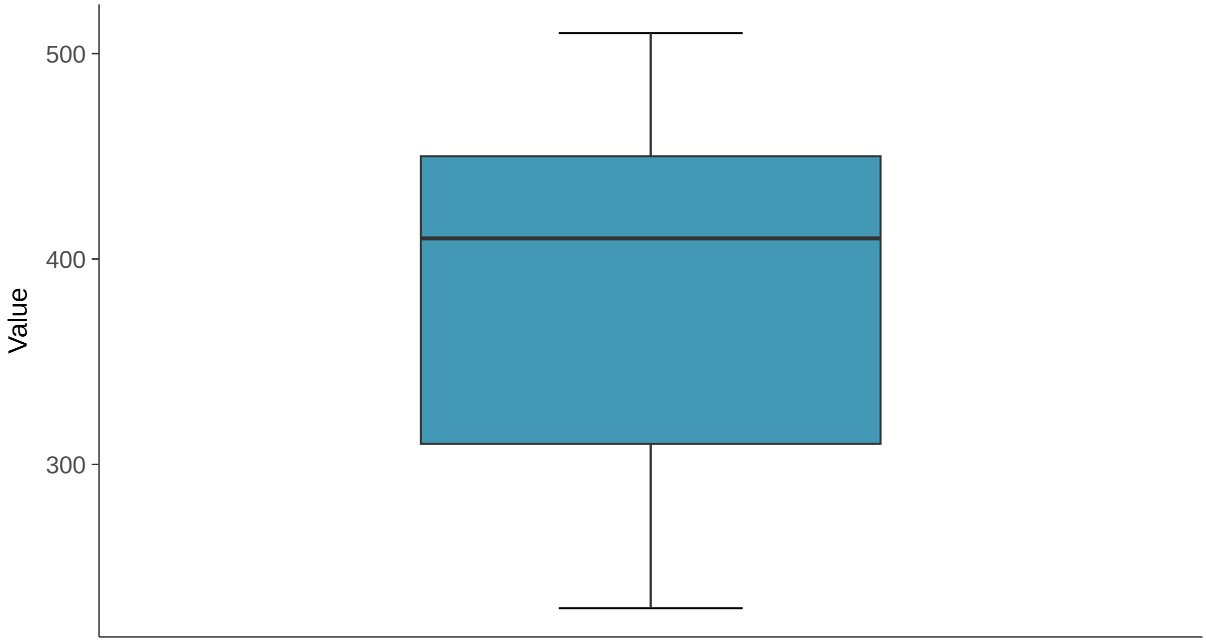
Histogram

Calcium, MW-09 (mg/L)



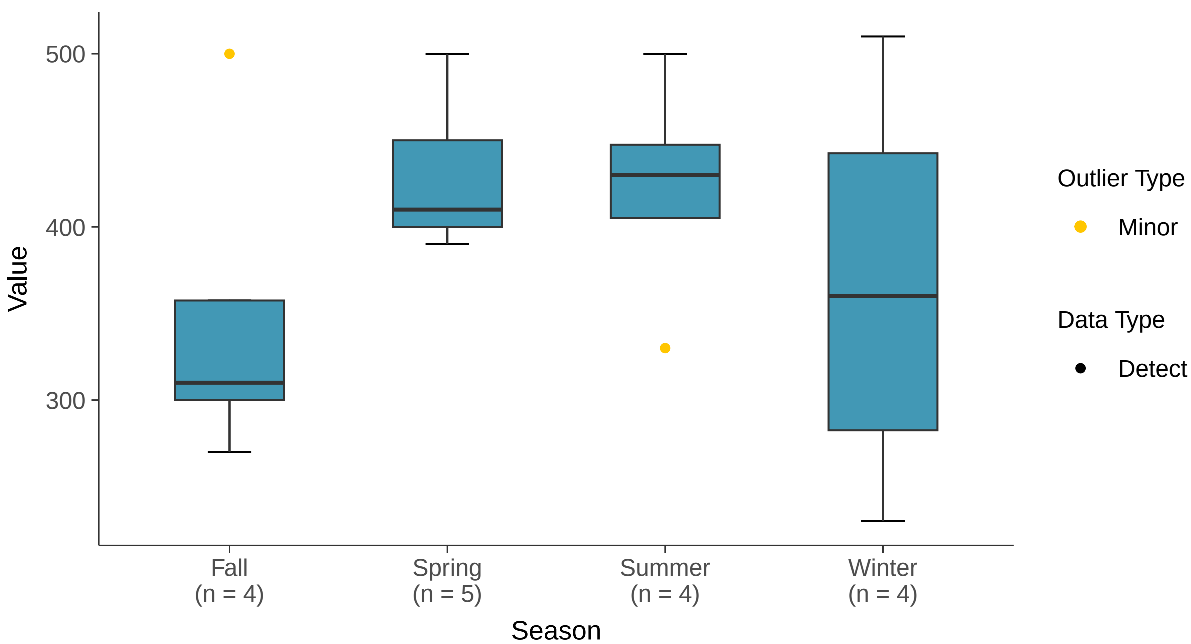
Boxplot

Calcium, MW-09 (mg/L)



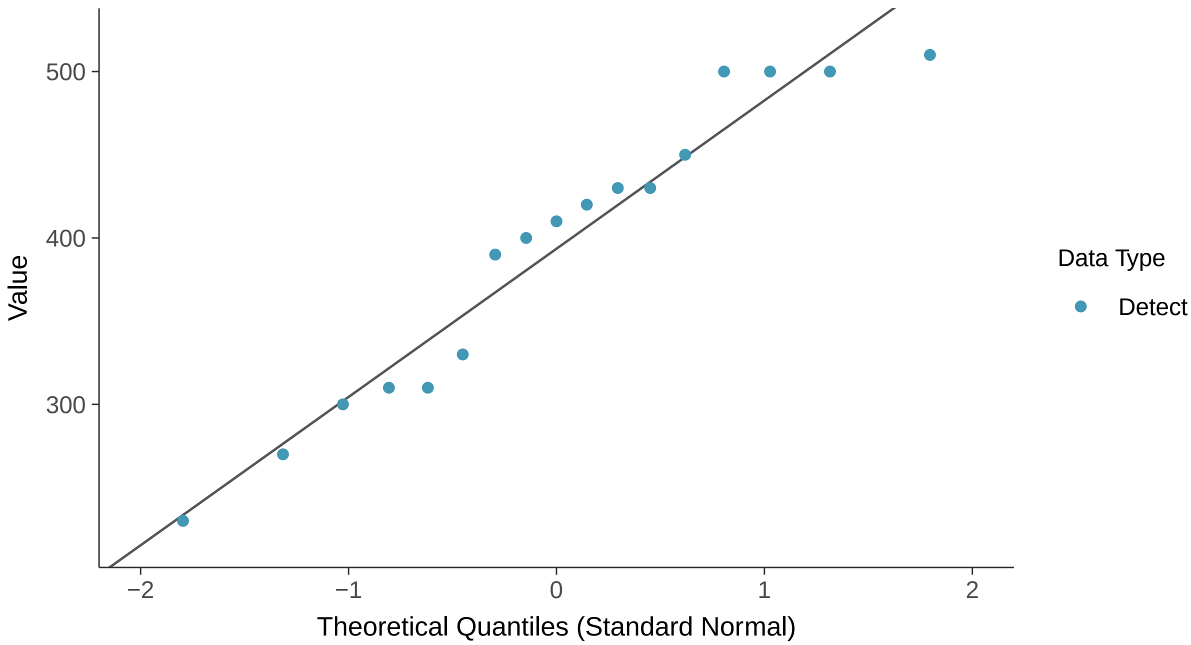
Boxplot by Season

Calcium, MW-09 (mg/L)



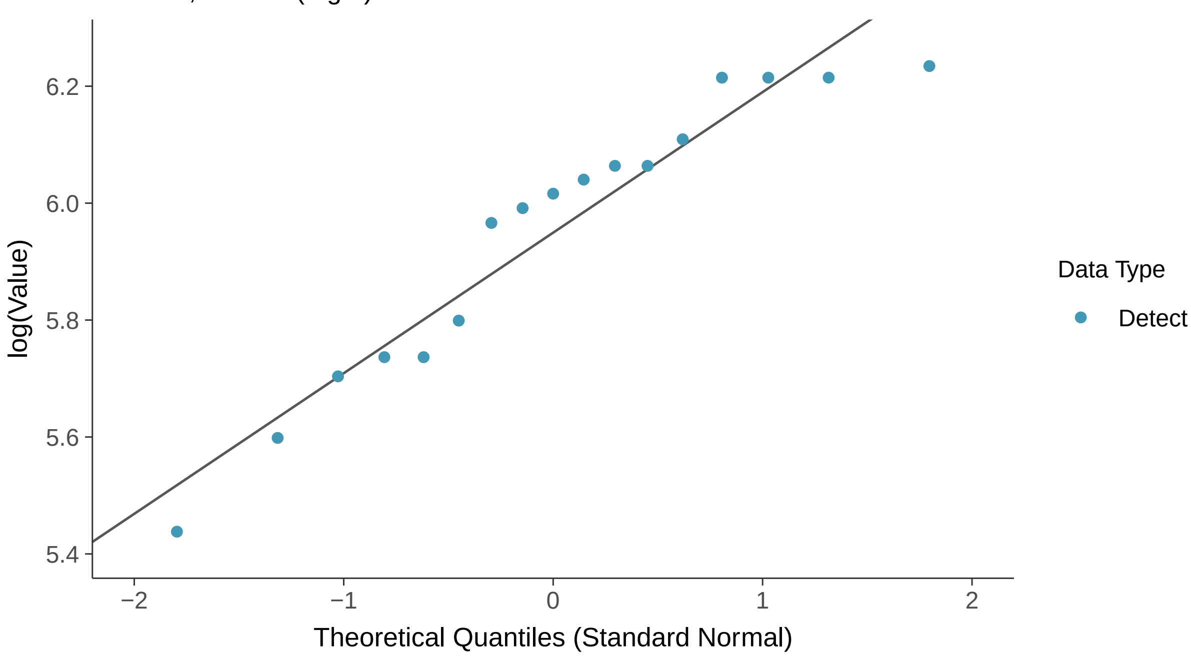
Normal Q-Q plot

Calcium, MW-09 (mg/L)



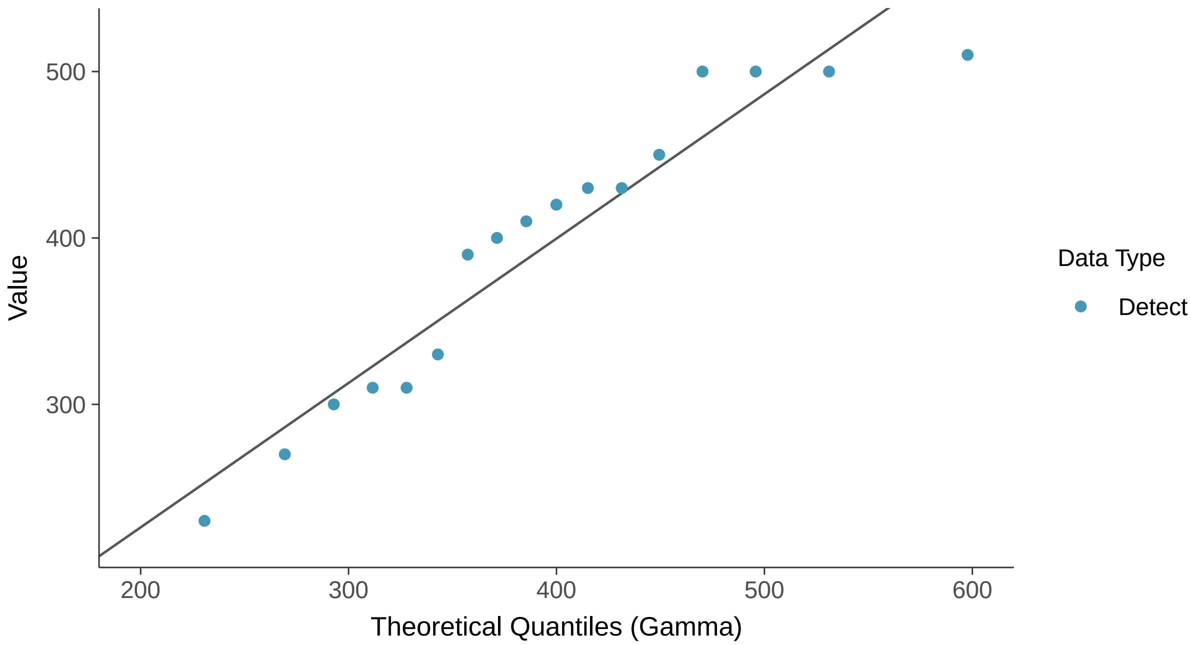
Lognormal Q-Q plot

Calcium, MW-09 (mg/L)



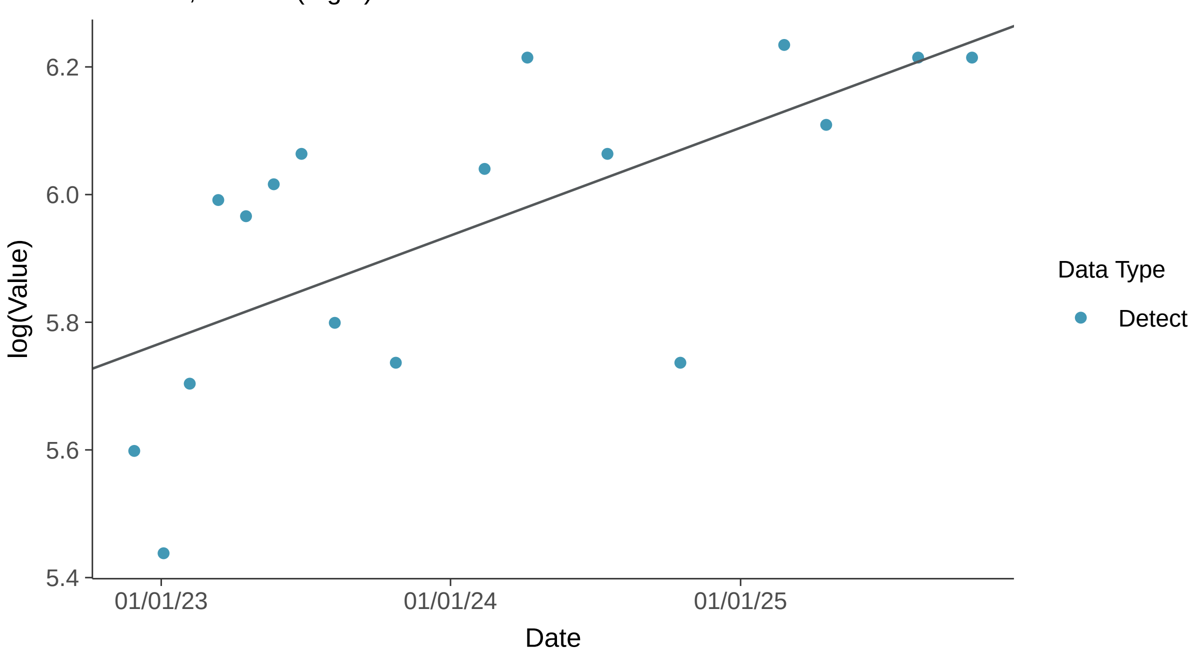
Gamma Q-Q plot

Calcium, MW-09 (mg/L)



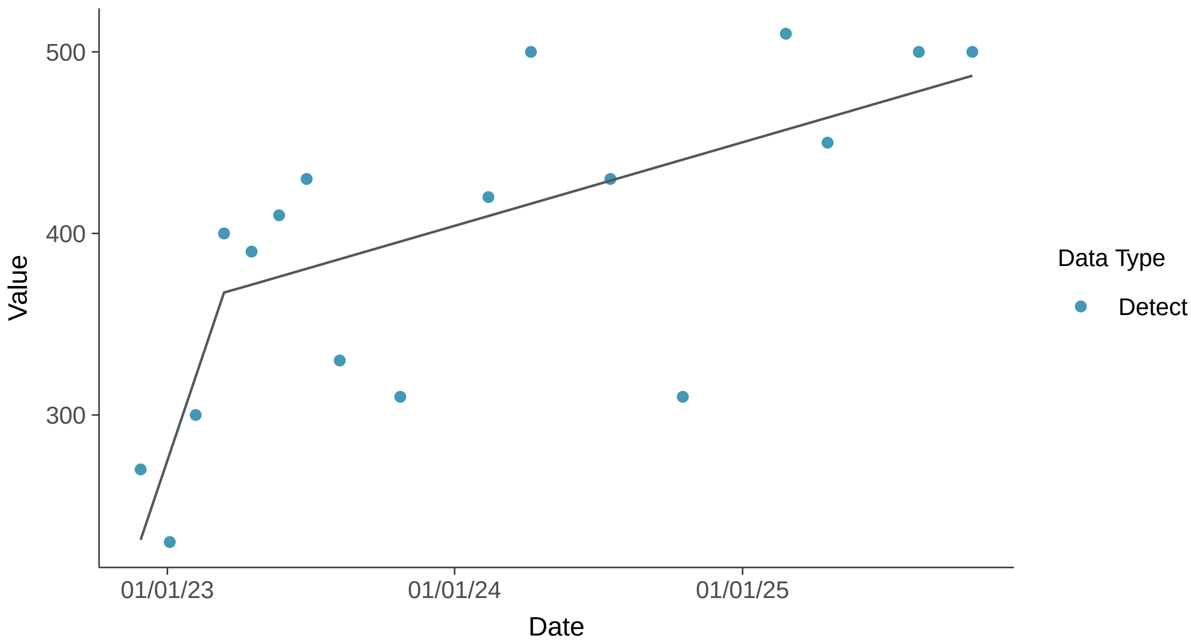
Trend Regression: Lognormal MLE

Calcium, MW-09 (mg/L)



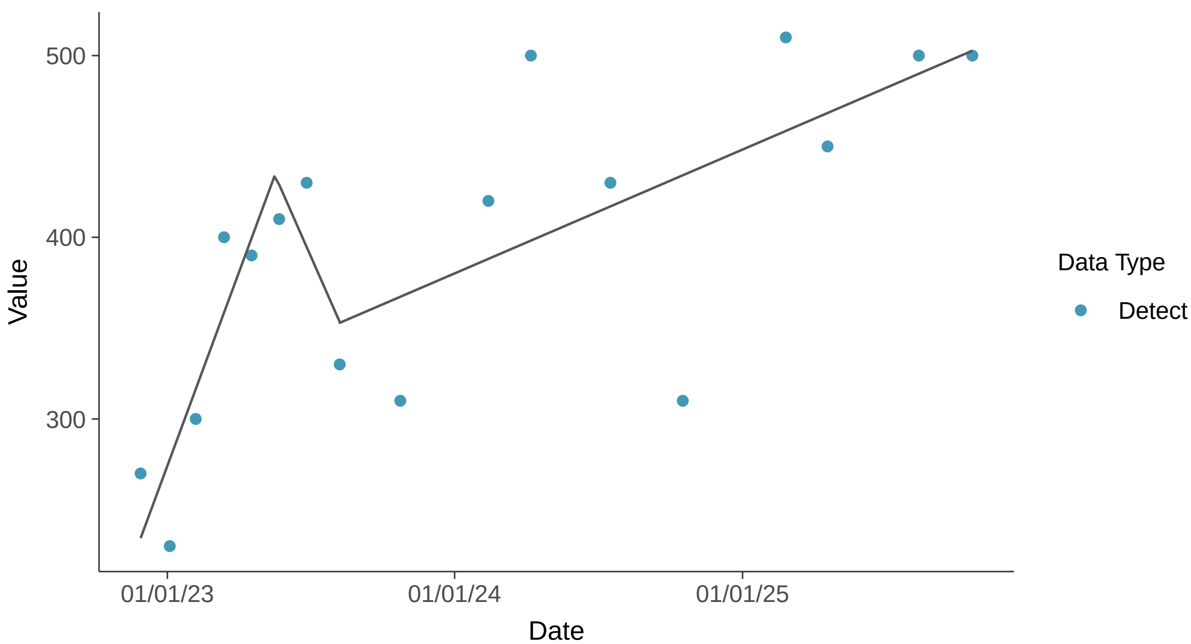
Trend Regression: Piecewise Linear-Linear

Calcium, MW-09 (mg/L)



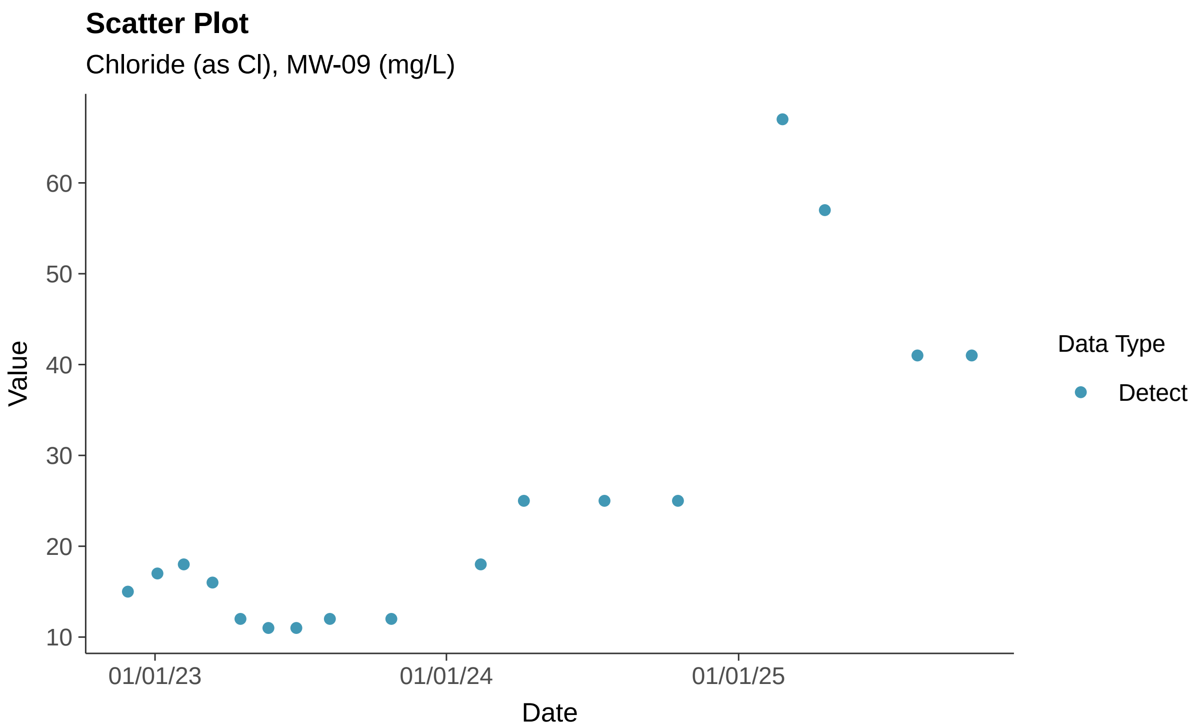
Trend Regression: Piecewise Linear-Linear-Linear

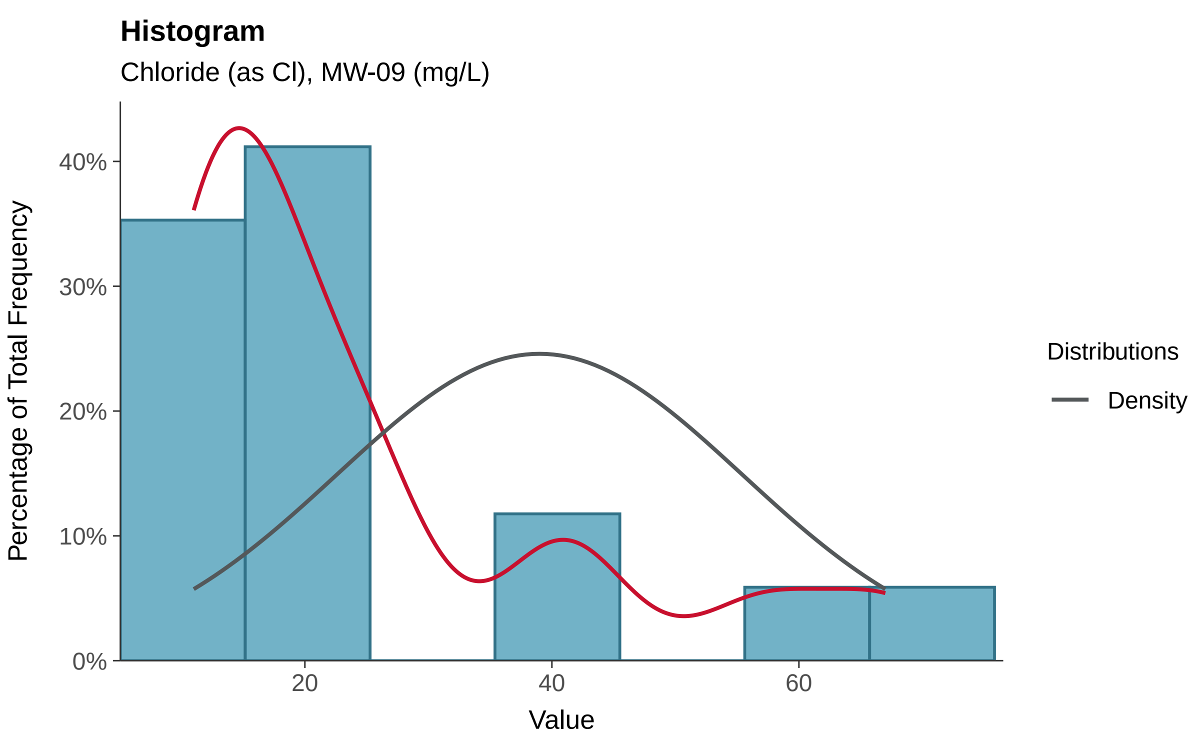
Calcium, MW-09 (mg/L)



Appendix III: Chloride (as Cl), MW-09

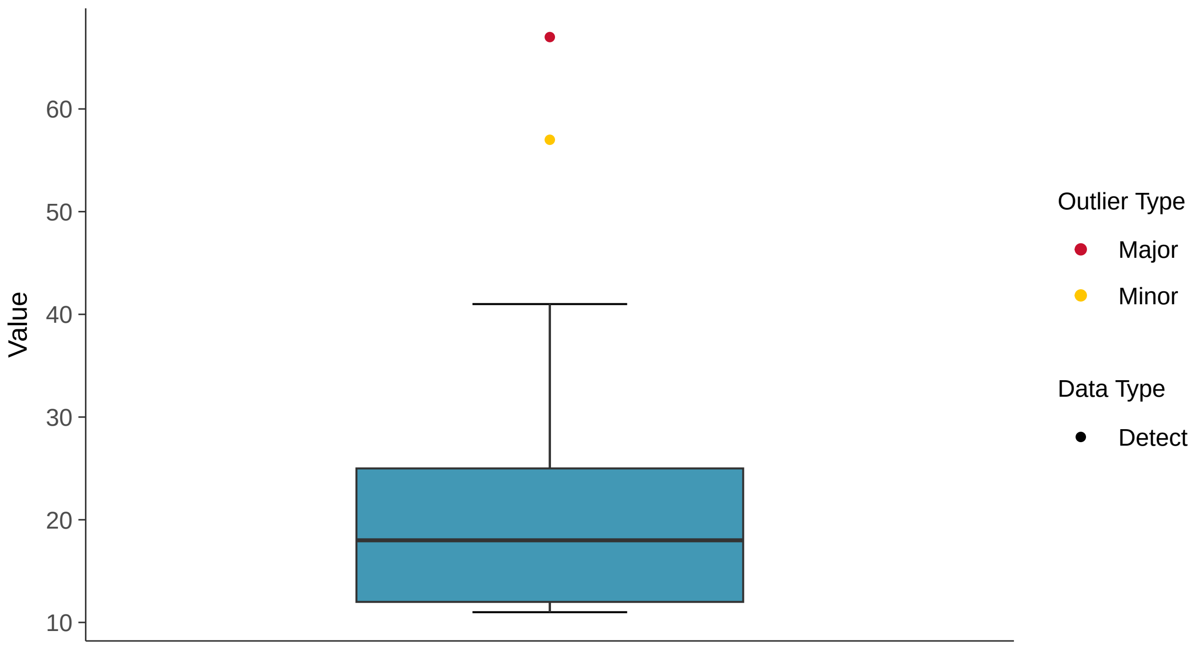
ID: 19_2_3_108





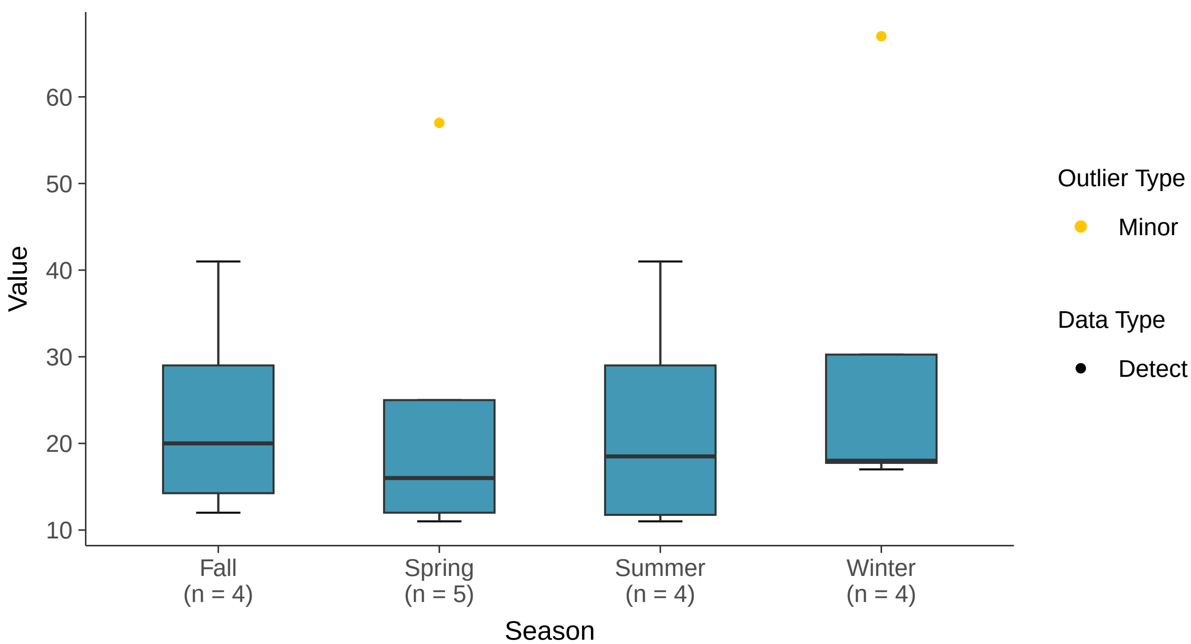
Boxplot

Chloride (as Cl), MW-09 (mg/L)



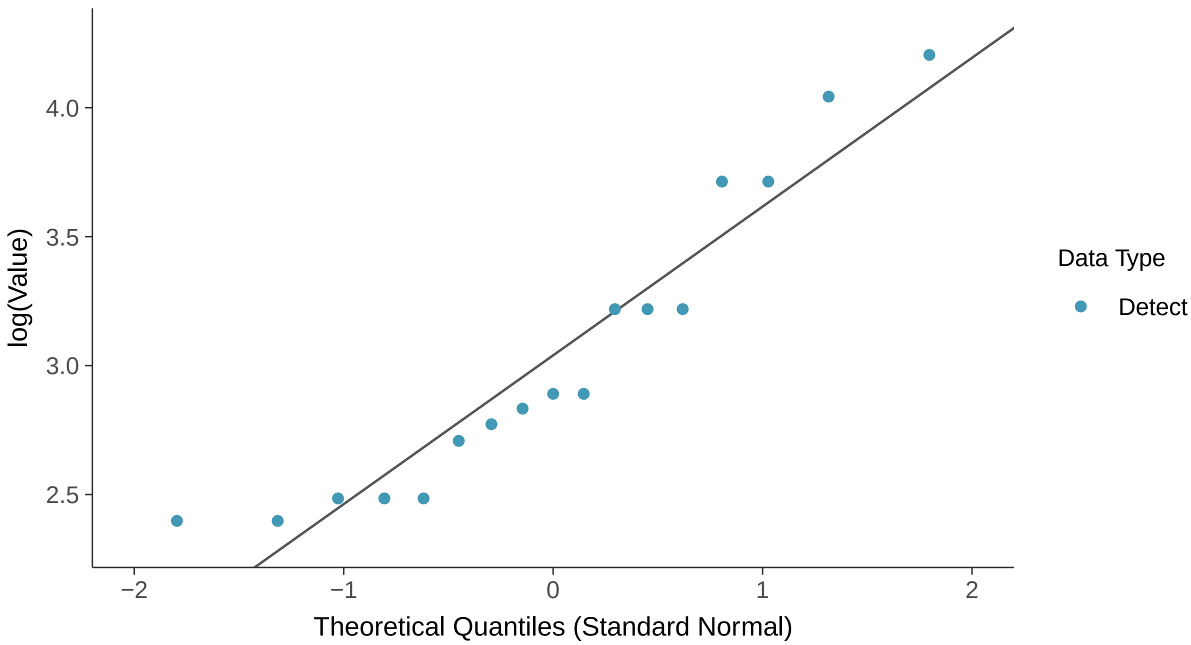
Boxplot by Season

Chloride (as Cl), MW-09 (mg/L)



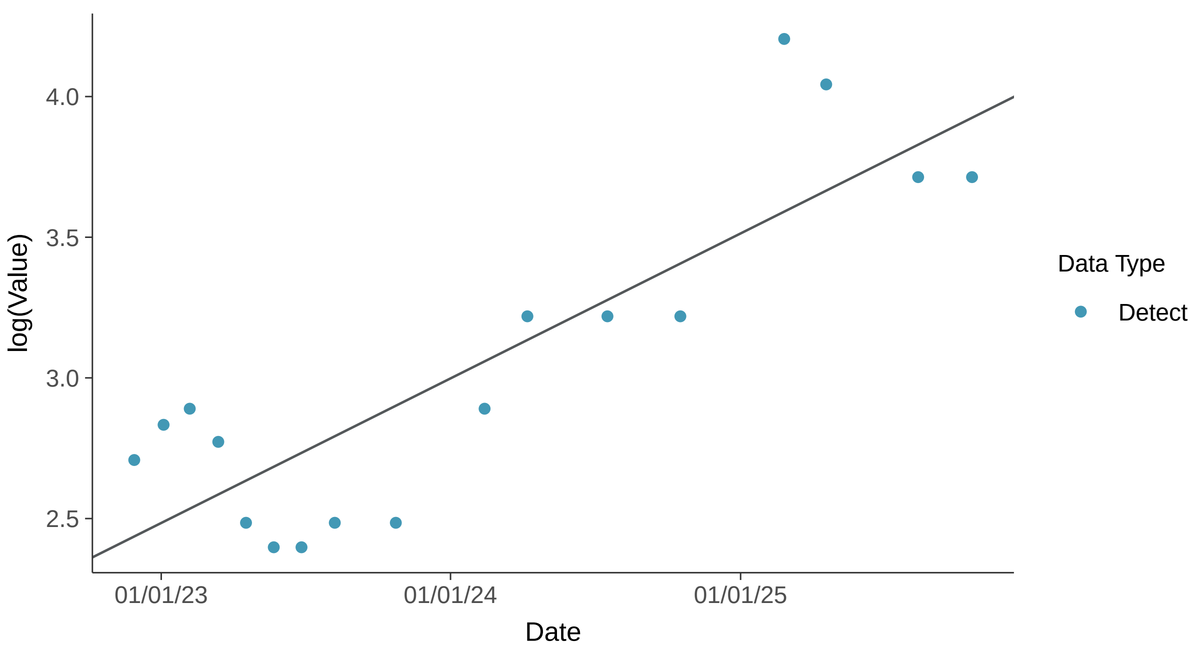
Lognormal Q-Q plot

Chloride (as Cl), MW-09 (mg/L)



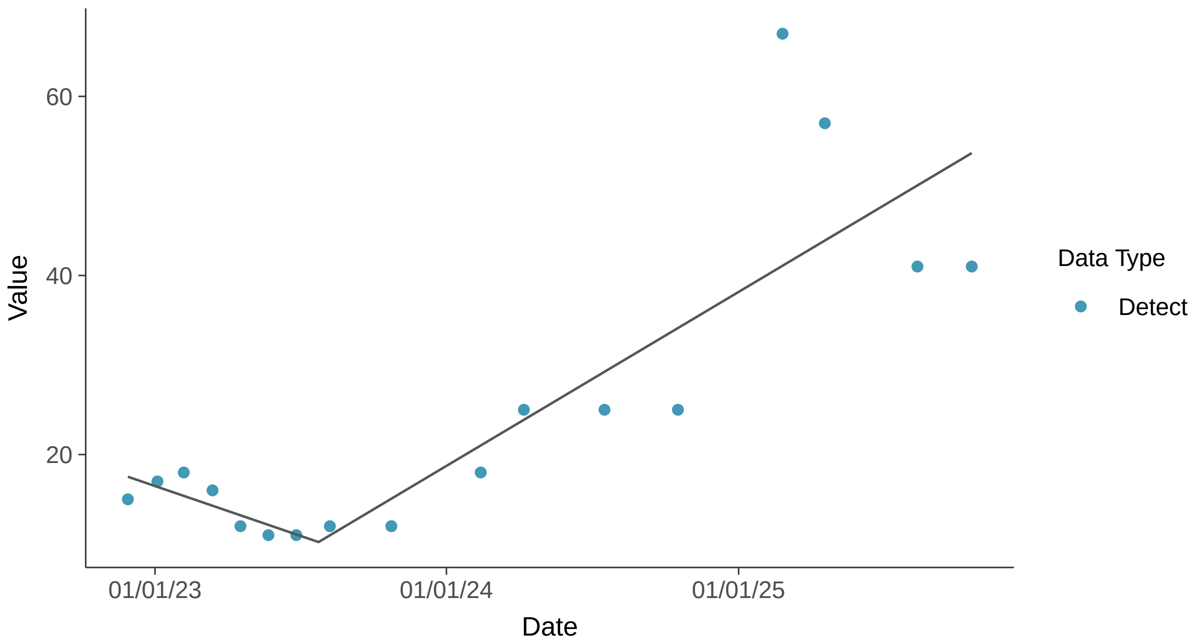
Trend Regression: Lognormal MLE

Chloride (as Cl), MW-09 (mg/L)



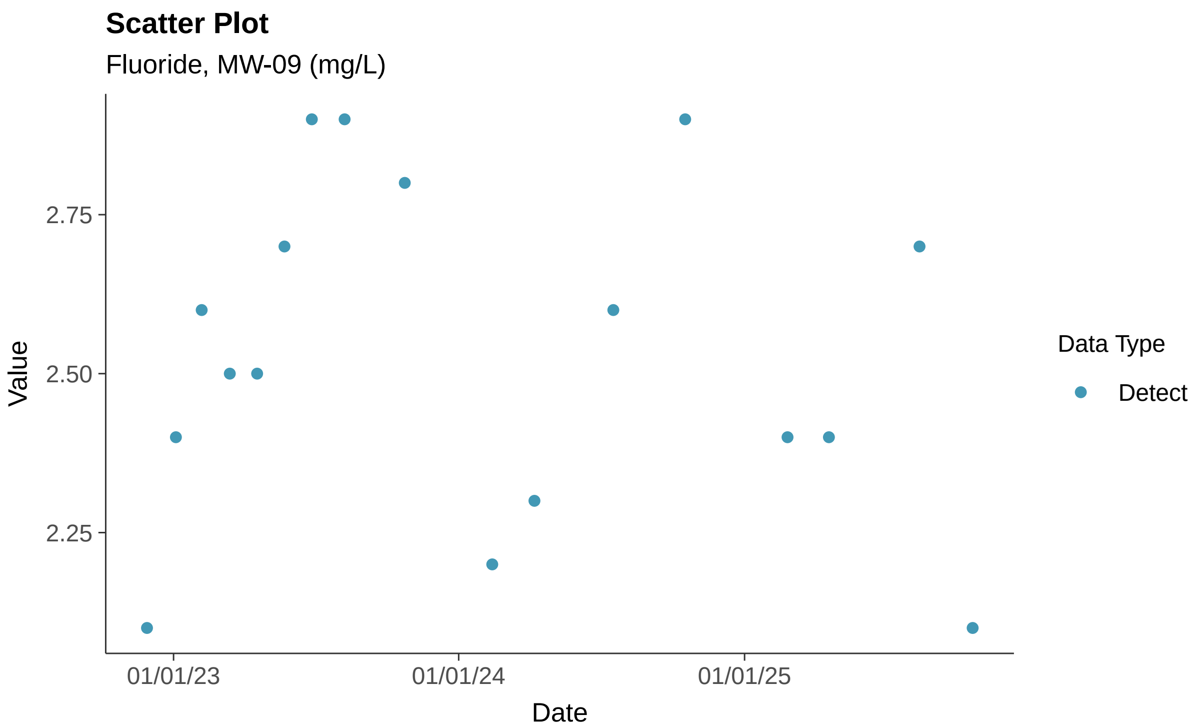
Trend Regression: Piecewise Linear-Linear

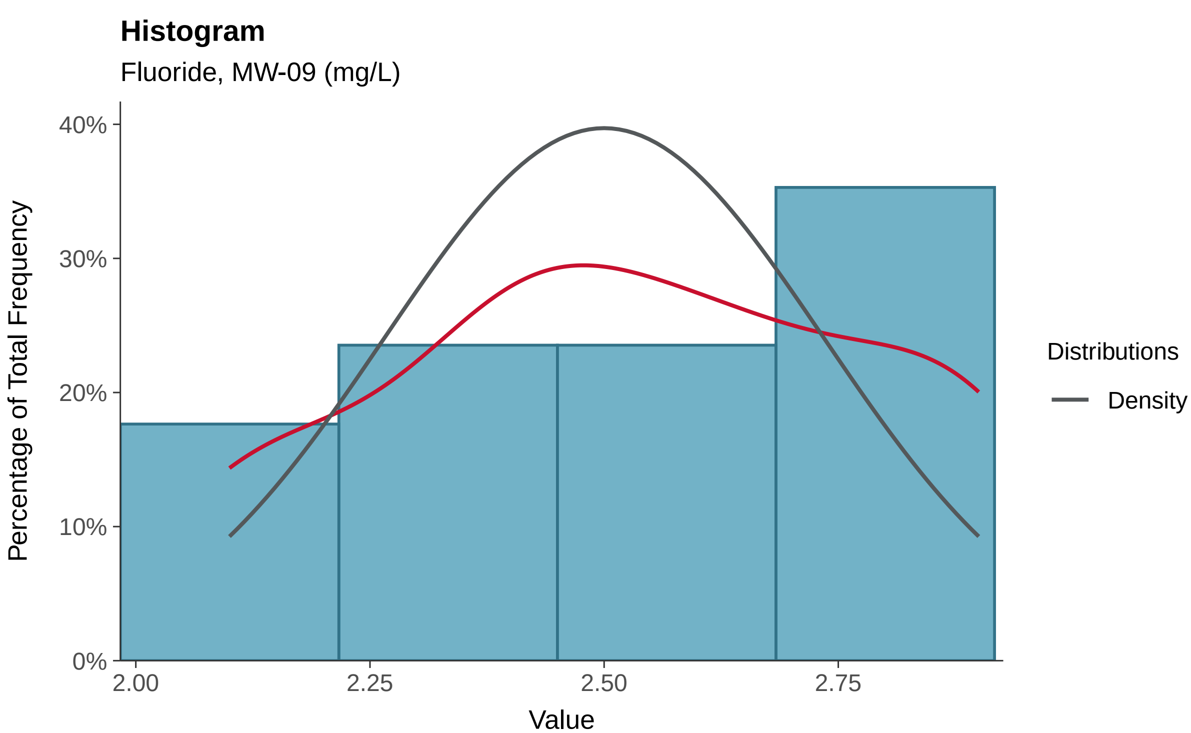
Chloride (as Cl), MW-09 (mg/L)



Appendix III: Fluoride, MW-09

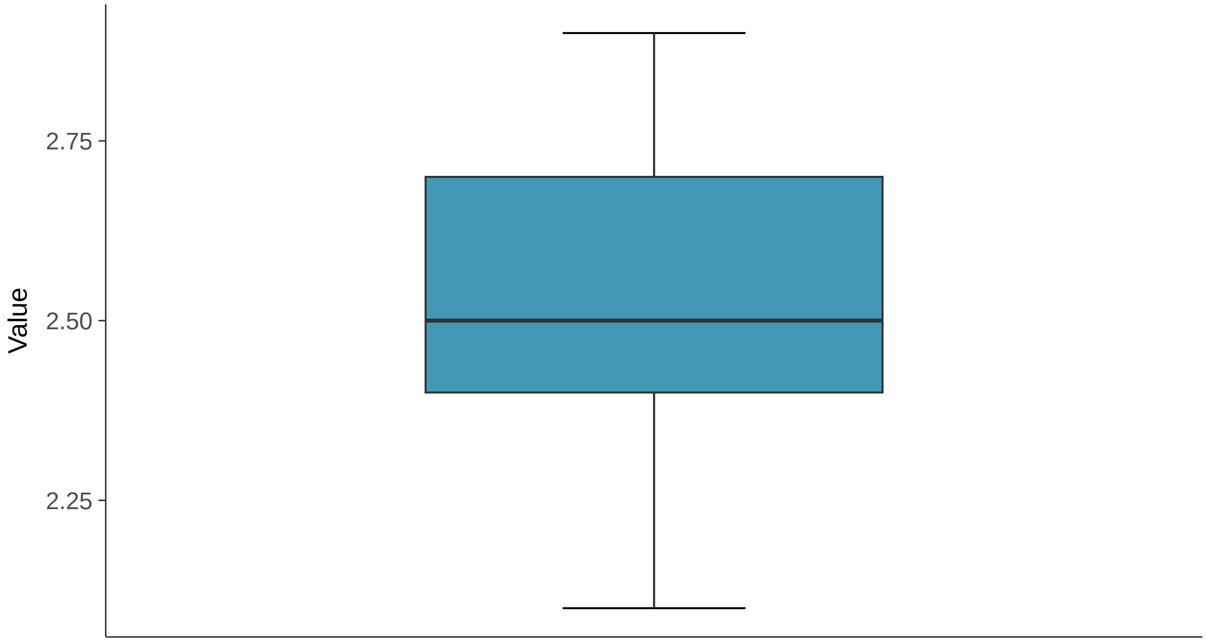
ID: 19_2_3_112





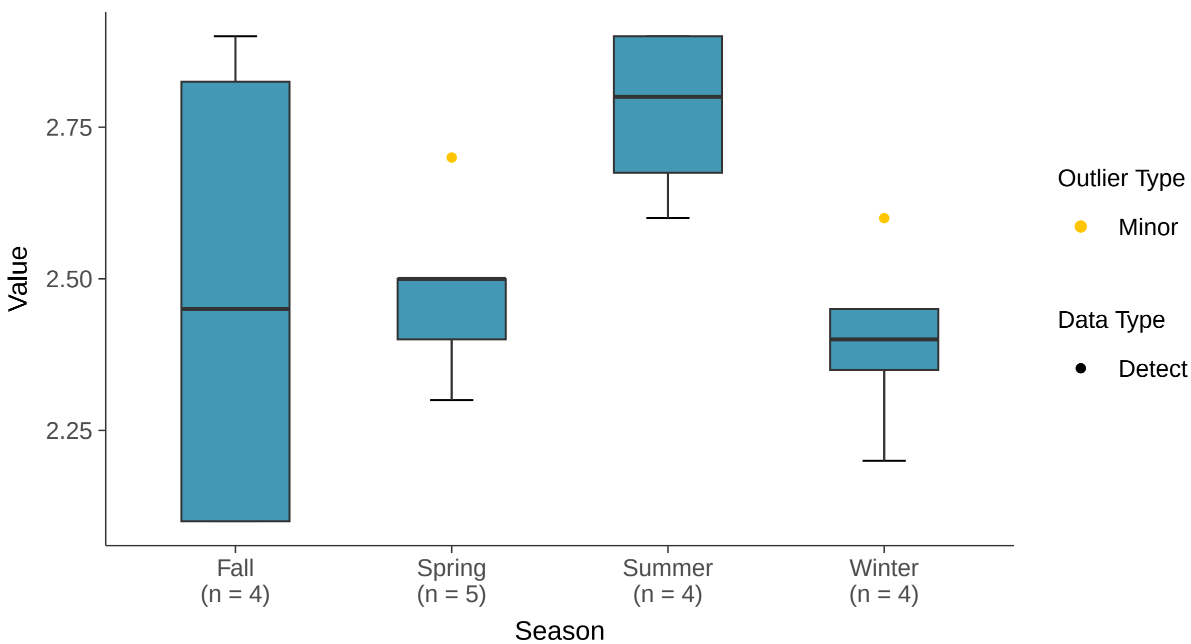
Boxplot

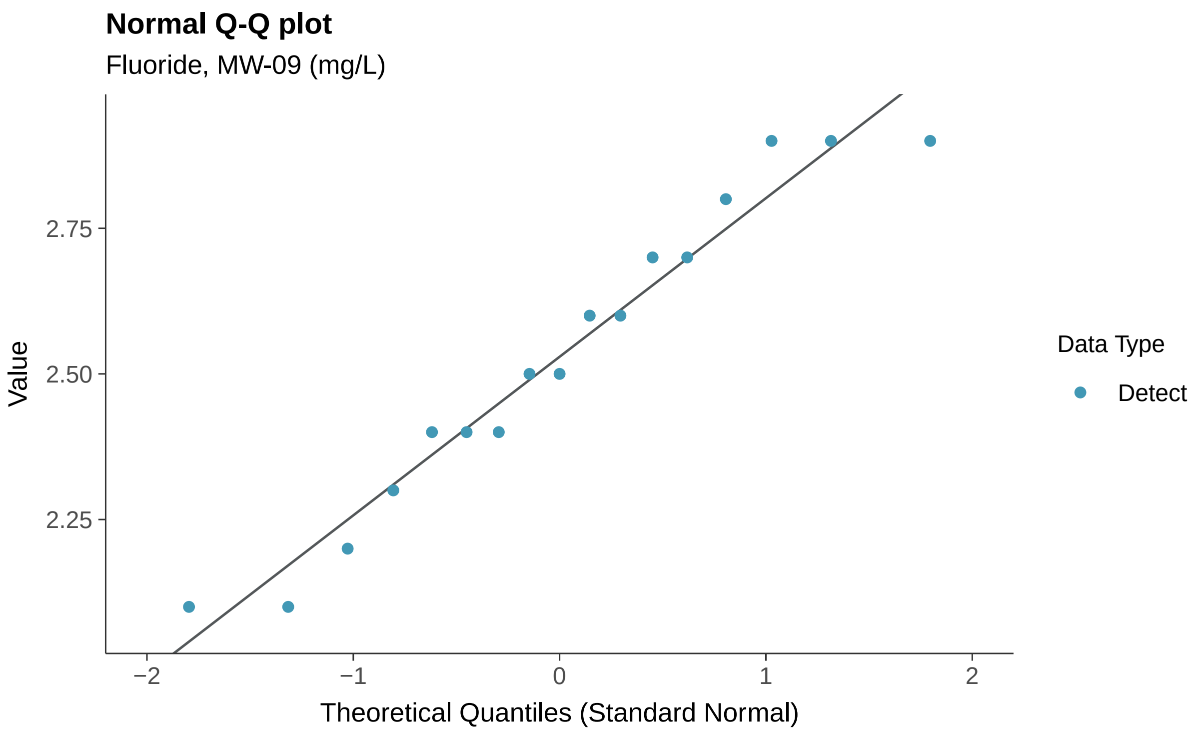
Fluoride, MW-09 (mg/L)

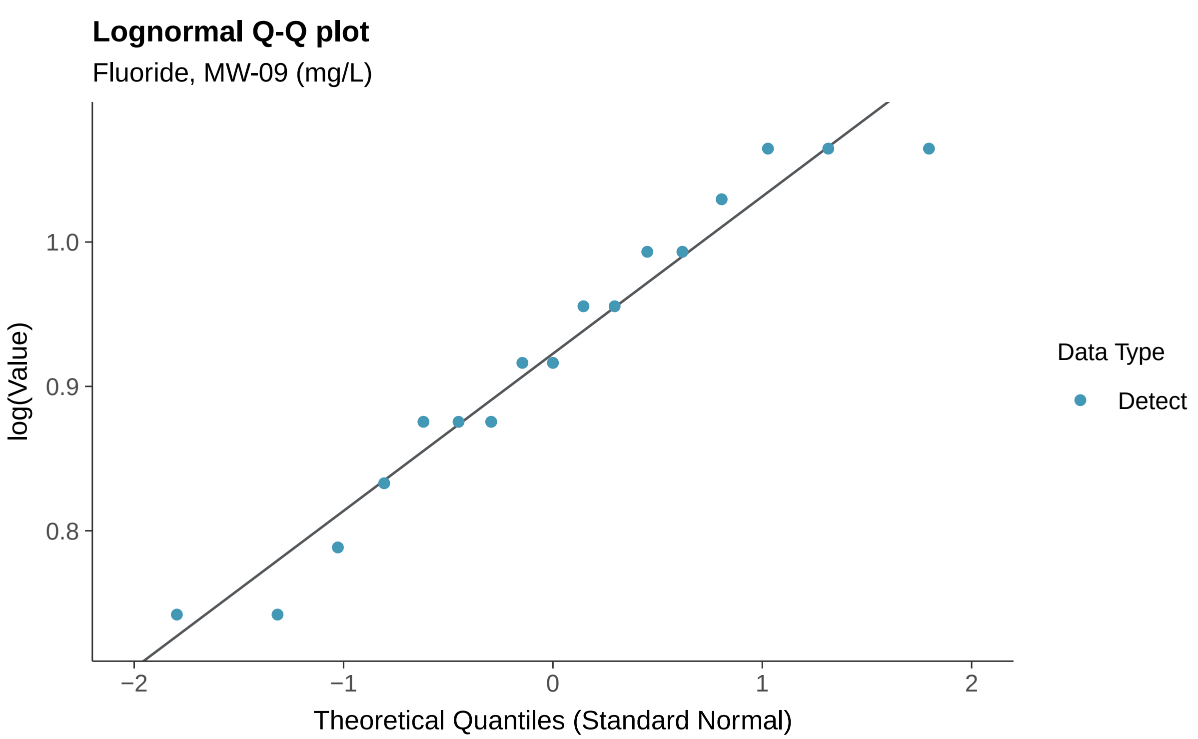


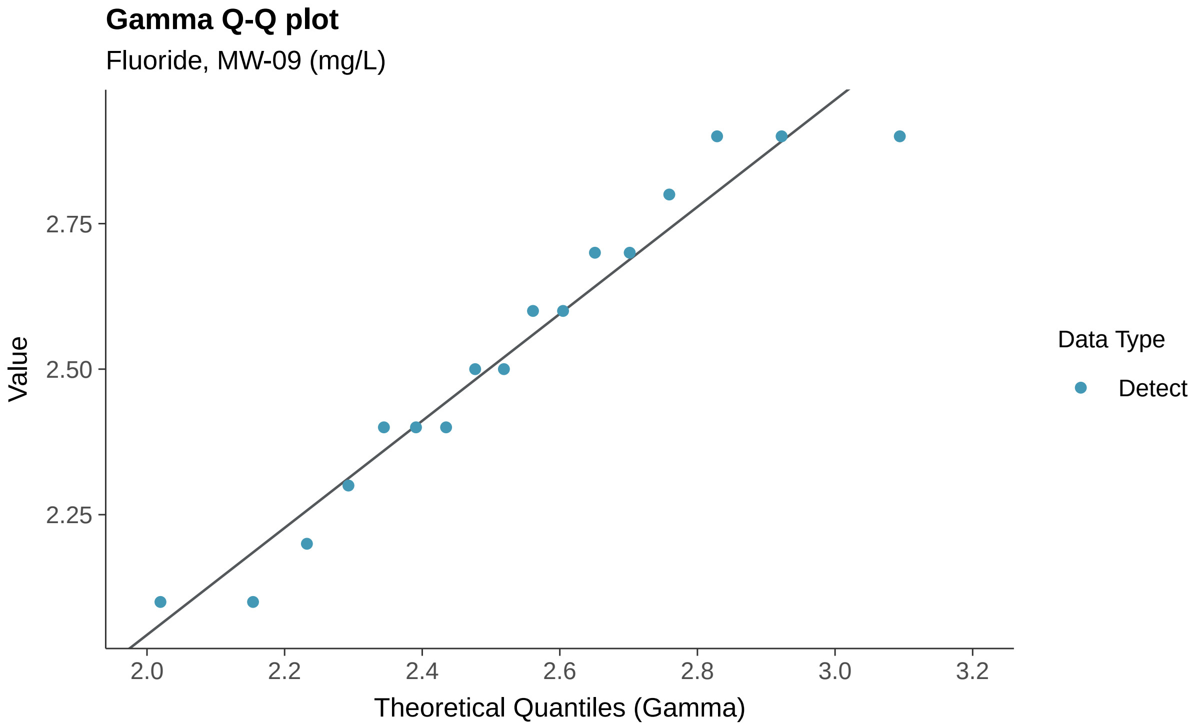
Boxplot by Season

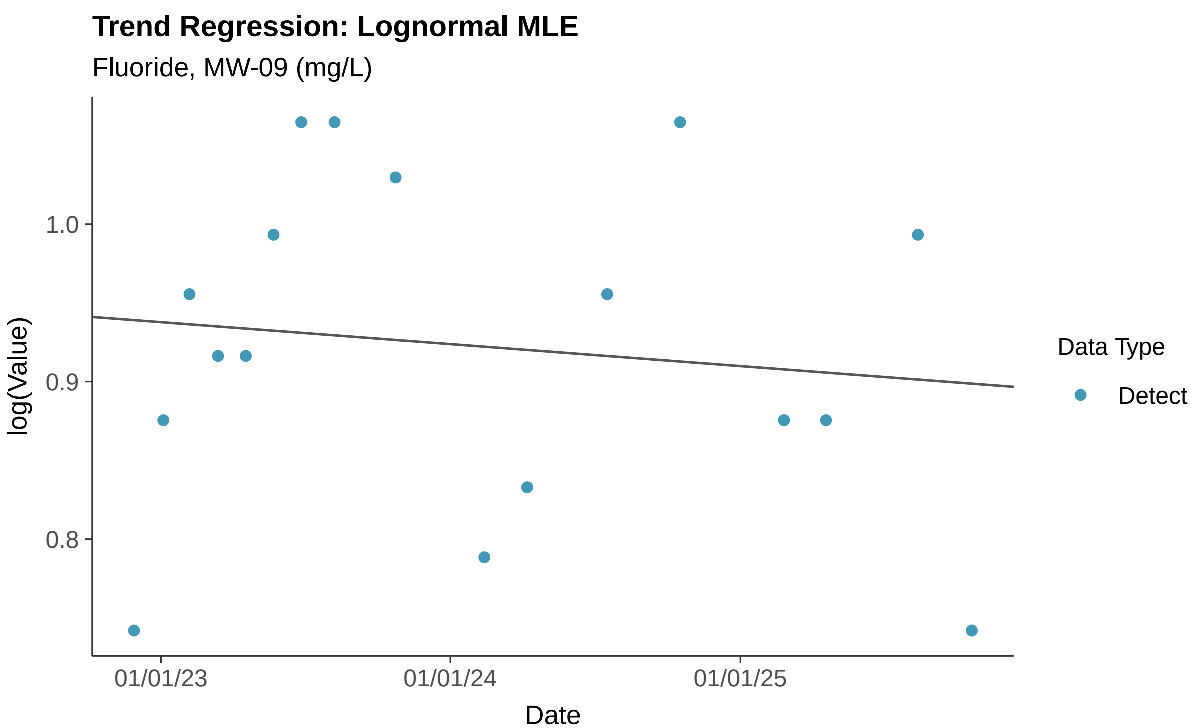
Fluoride, MW-09 (mg/L)




Normal Q-Q plot
Fluoride, MW-09 (mg/L)
Value
2.75
2.50
2.25
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

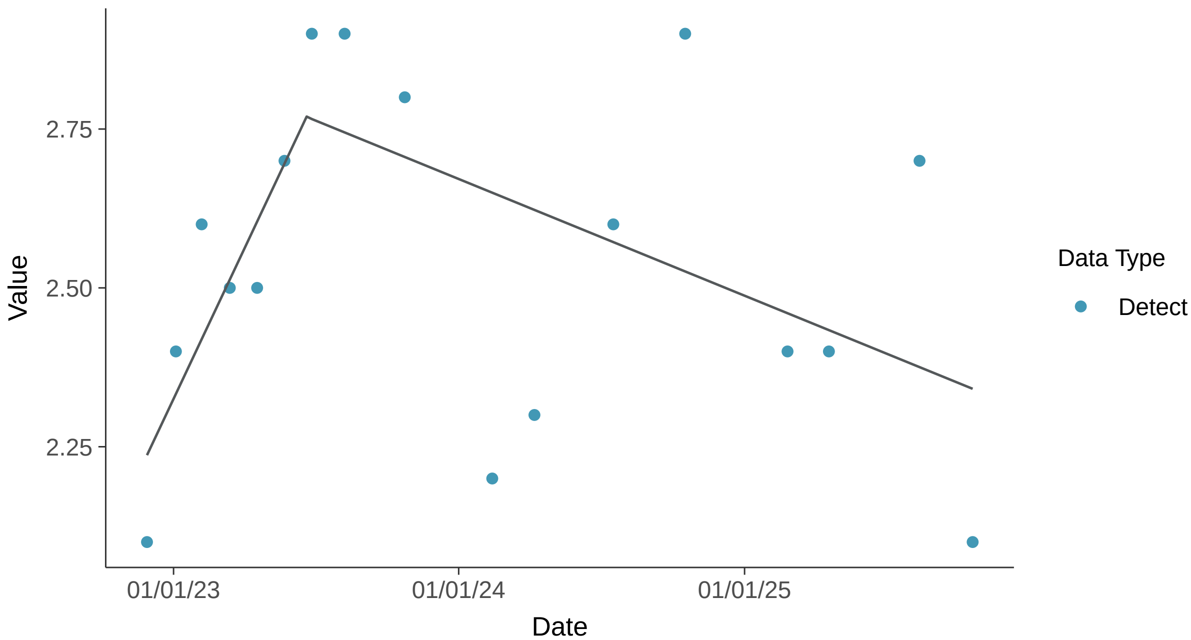

Lognormal Q-Q plot
Fluoride, MW-09 (mg/L)
log(Value)
1.0
0.9
0.8
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Fluoride, MW-09 (mg/L)
Value
2.75
2.50
2.25
2.0
2.2
2.4
2.6
2.8
3.0
3.2
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Fluoride, MW-09 (mg/L)
log(Value)
1.0
0.9
0.8
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

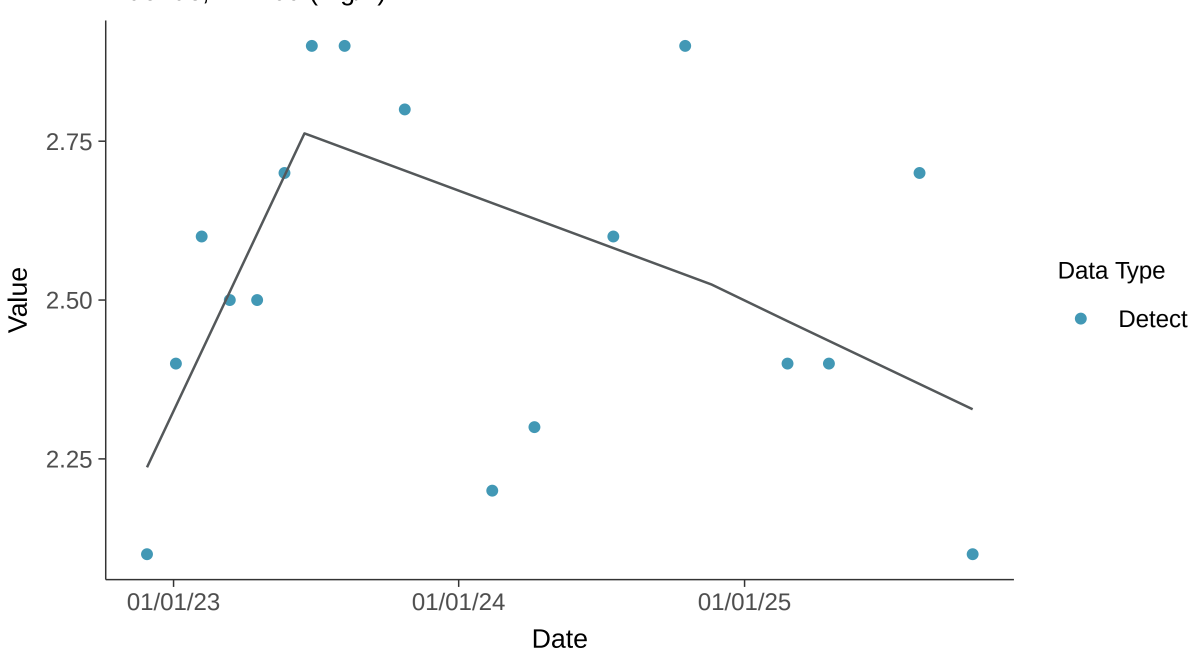
Trend Regression: Piecewise Linear-Linear

Fluoride, MW-09 (mg/L)



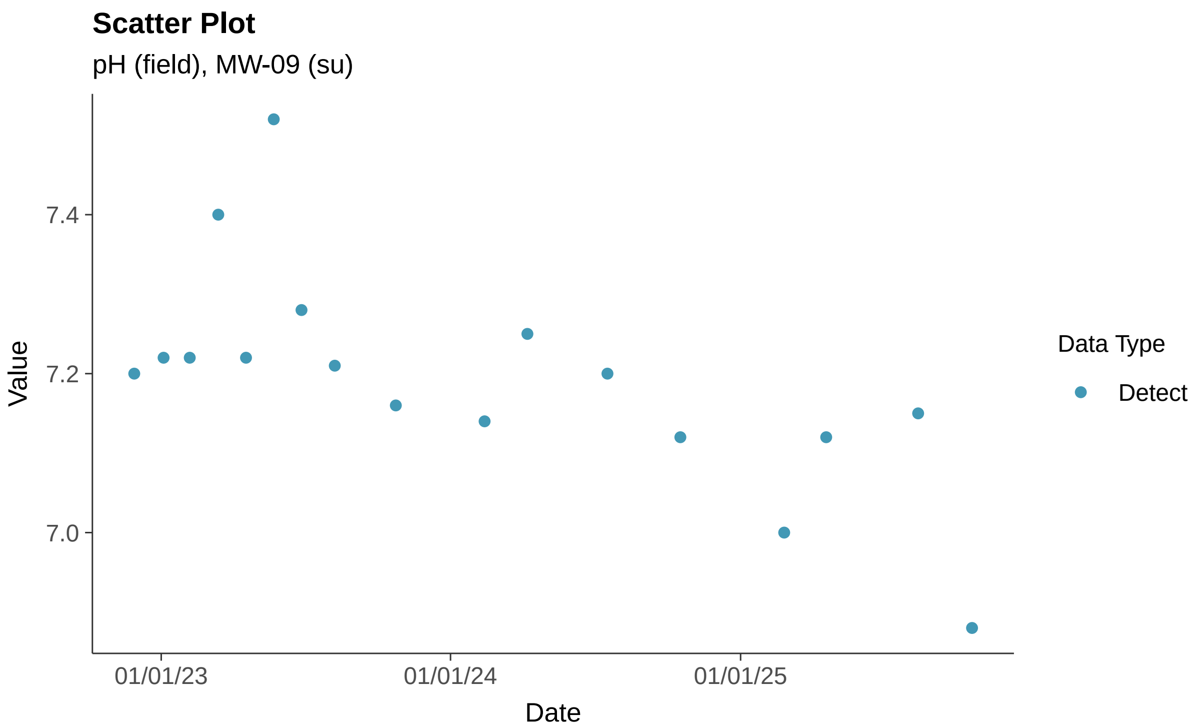
Trend Regression: Piecewise Linear-Linear-Linear

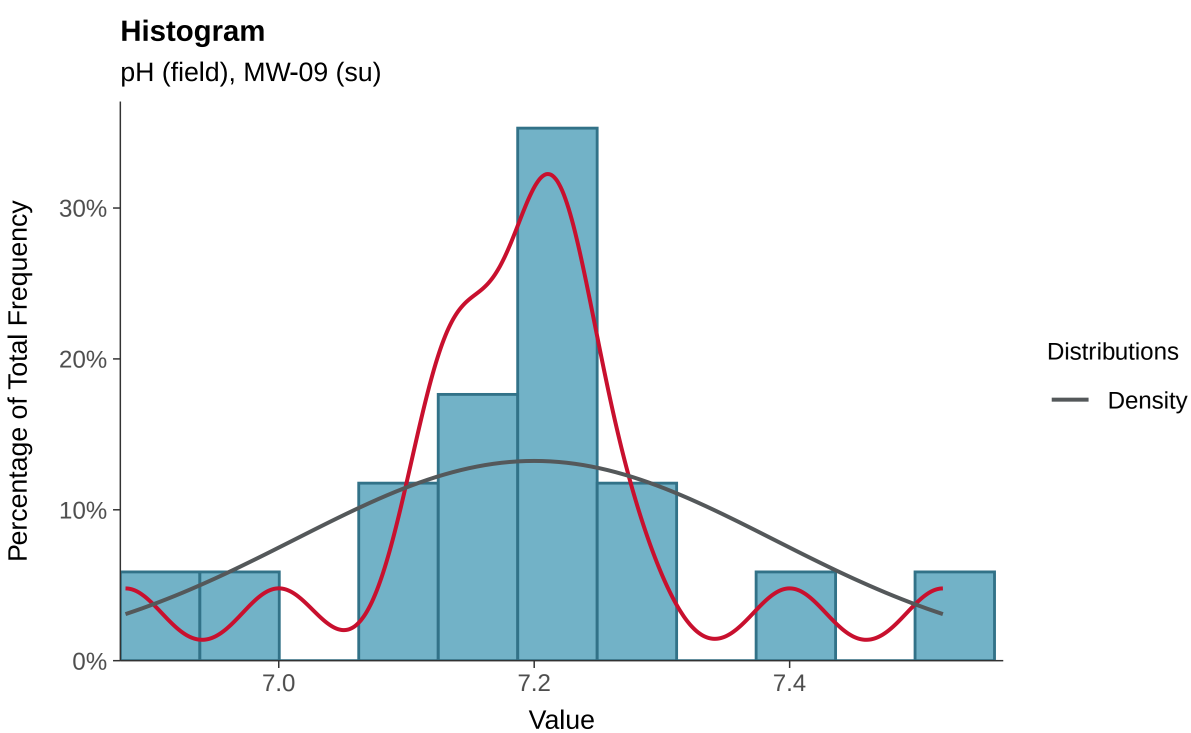
Fluoride, MW-09 (mg/L)



Appendix III: pH (field), MW-09

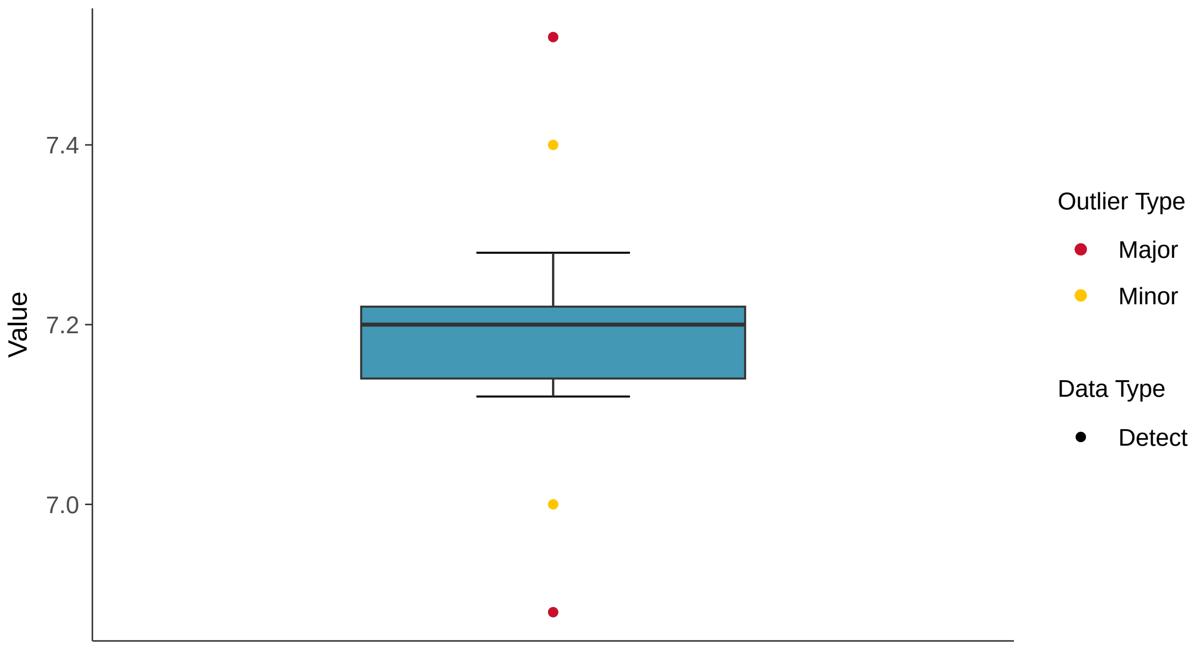
ID: 19_2_3_120





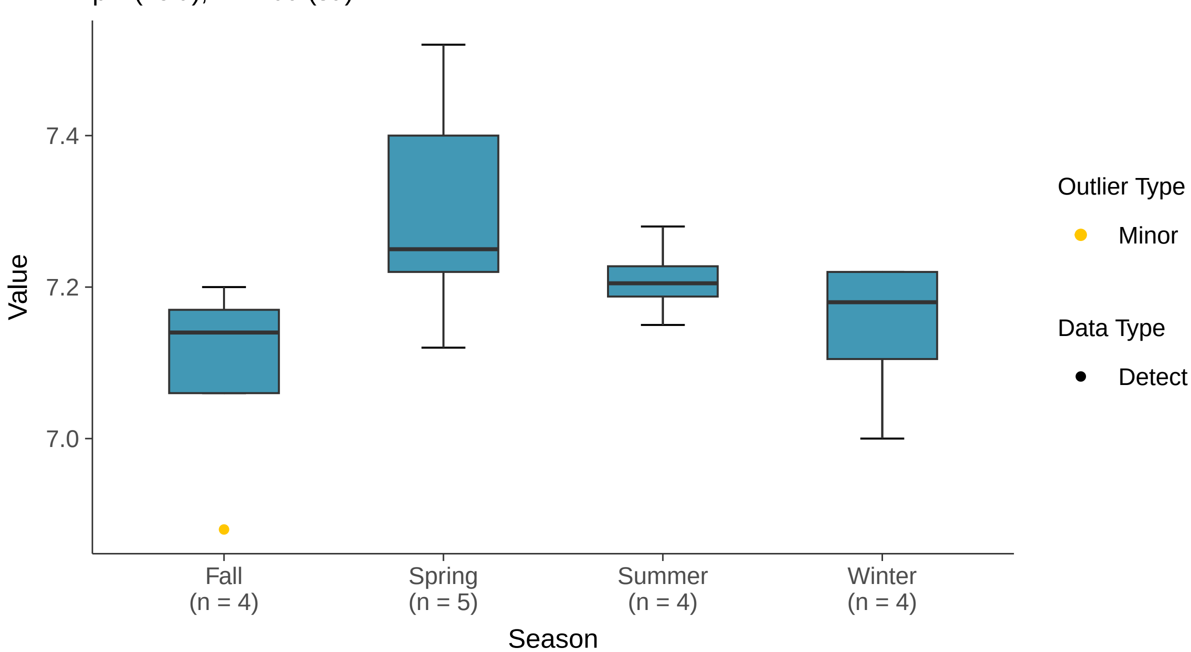
Boxplot

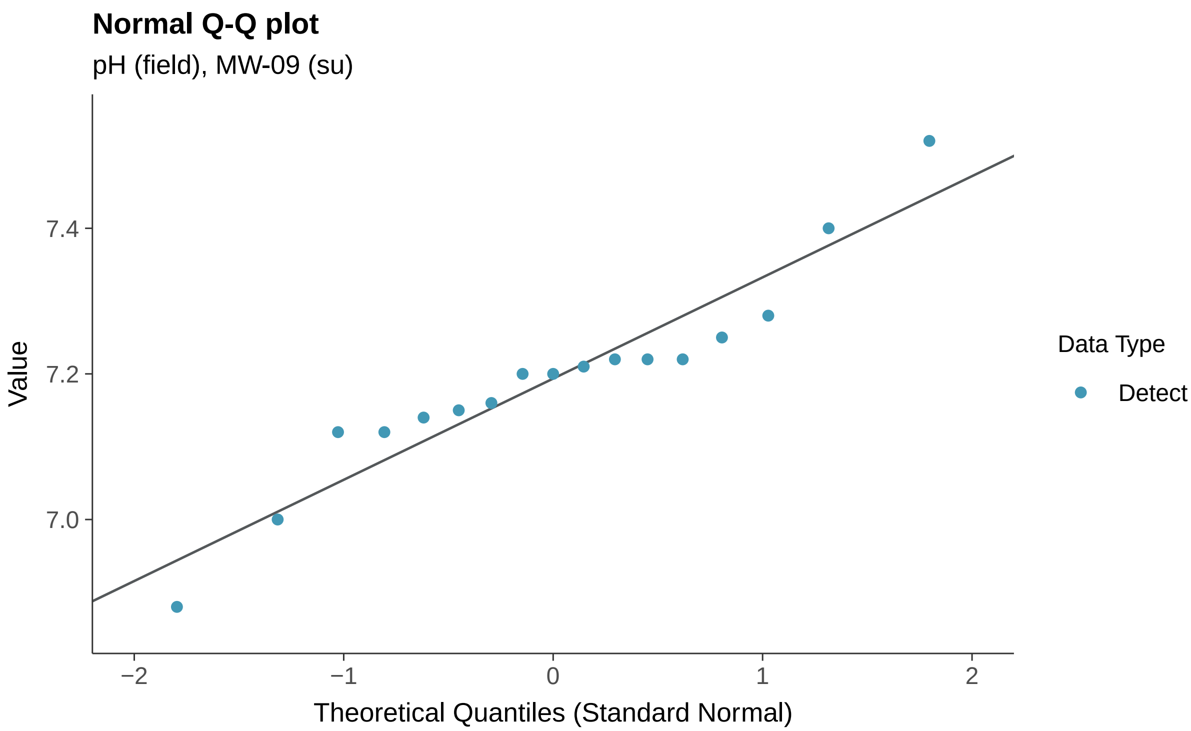
pH (field), MW-09 (su)

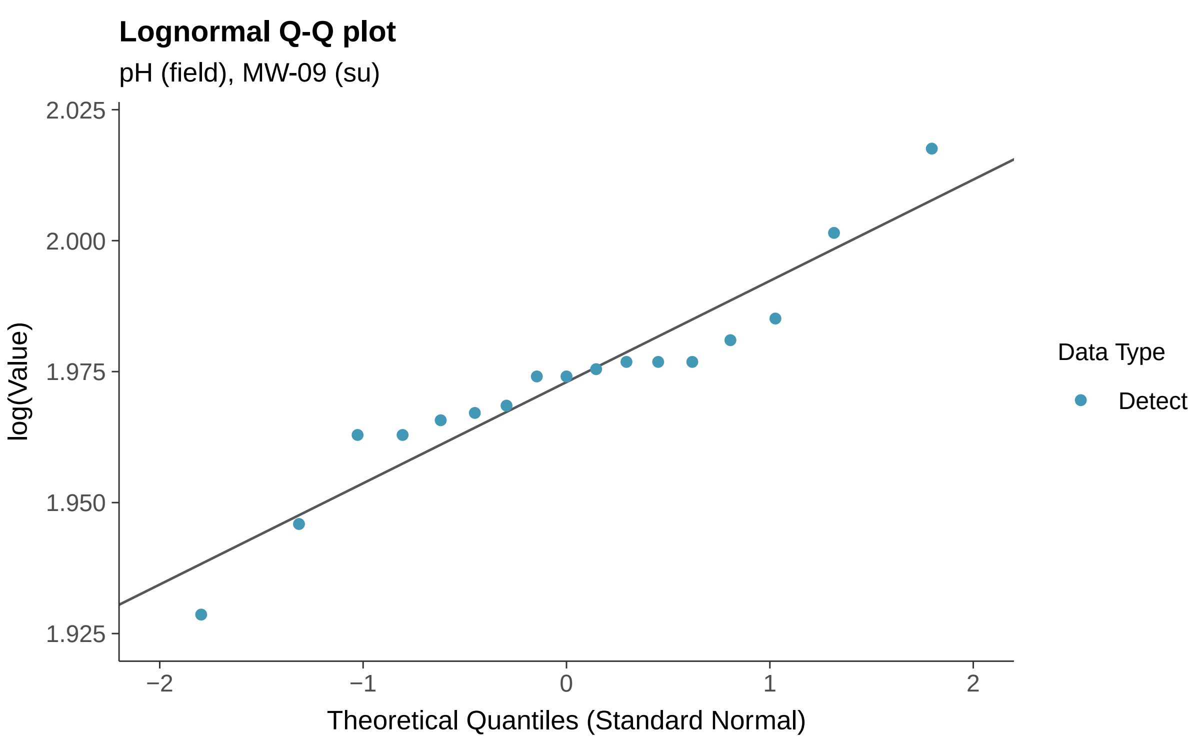


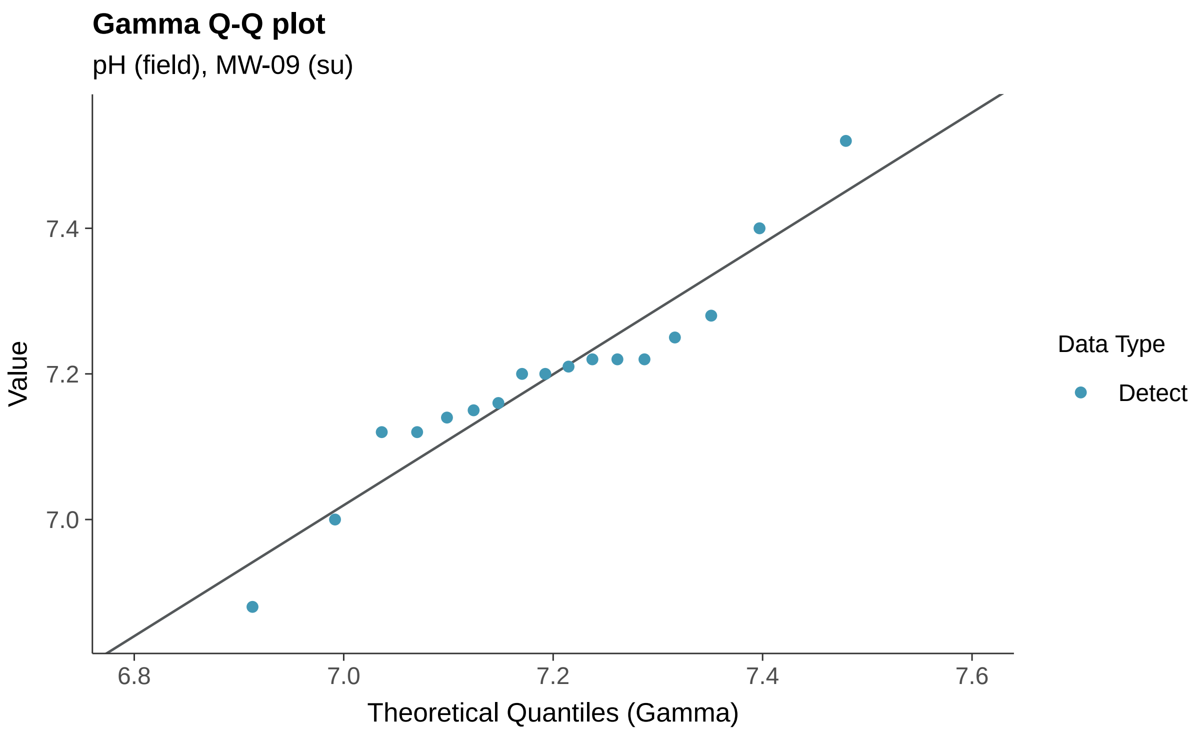
Boxplot by Season

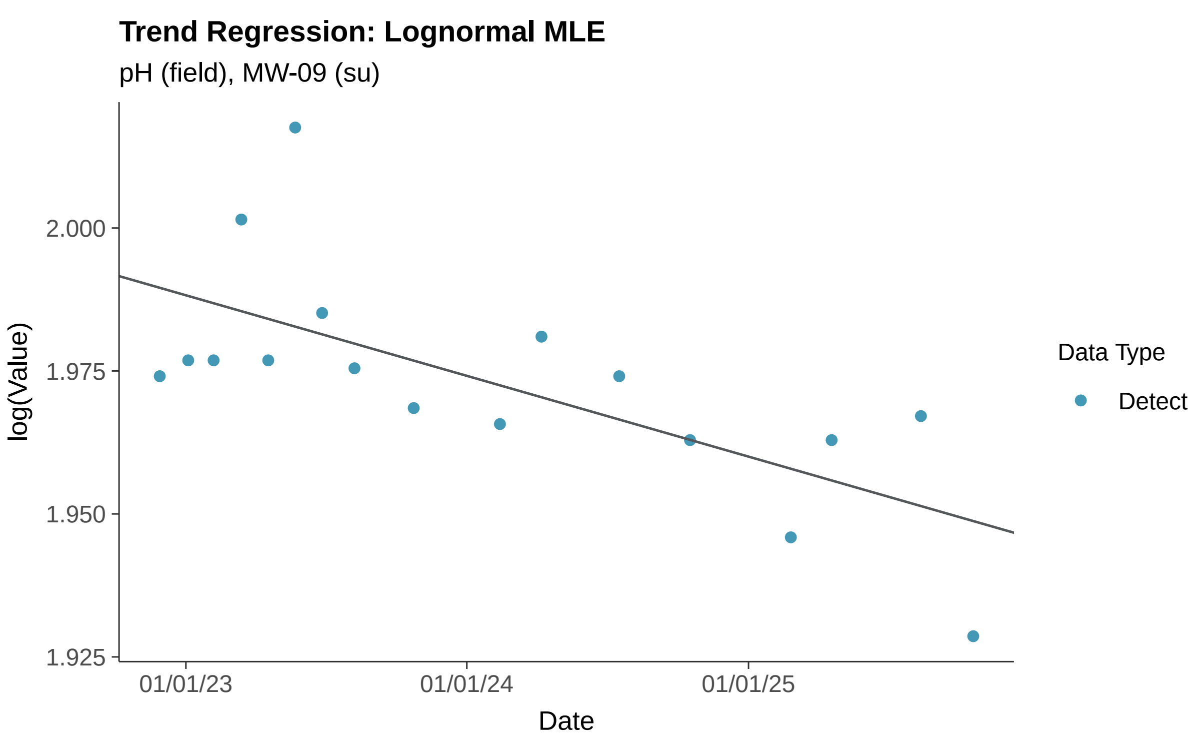
pH (field), MW-09 (su)




Normal Q-Q plot
pH (field), MW-09 (su)
Value
7.4
7.2
7.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

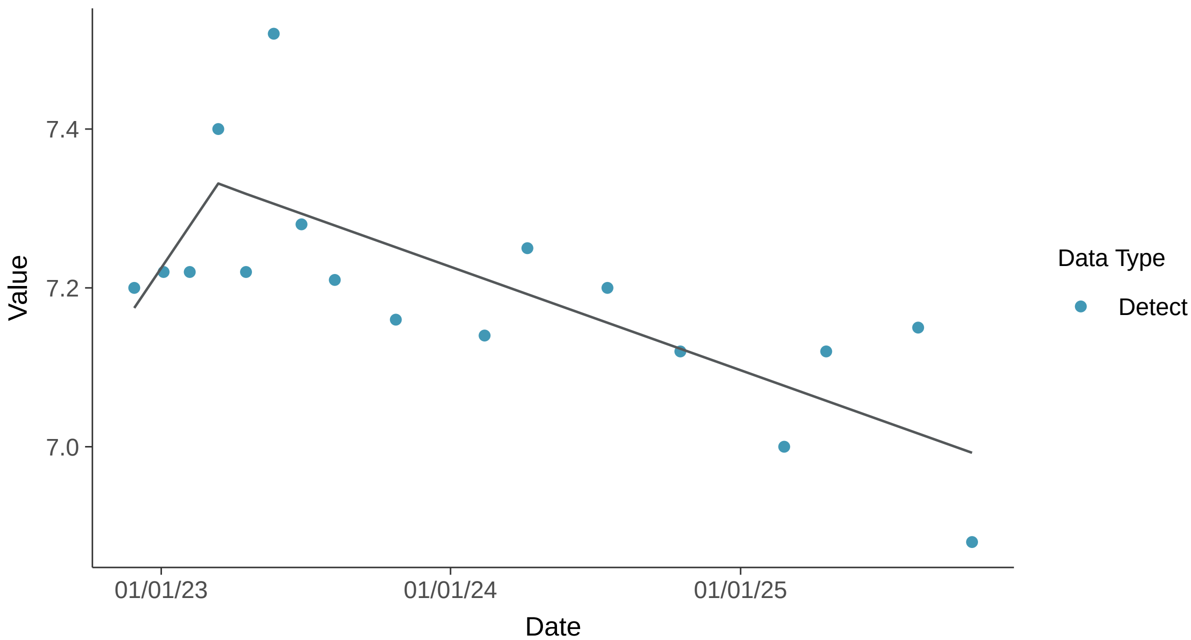

Lognormal Q-Q plot
pH (field), MW-09 (su)
log(Value)
2.025
2.000
1.975
1.950
1.925
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
pH (field), MW-09 (su)
Value
7.4
7.2
7.0
6.8
7.0
7.2
7.4
7.6
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
pH (field), MW-09 (su)
log(Value)
2.000
1.975
1.950
1.925
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

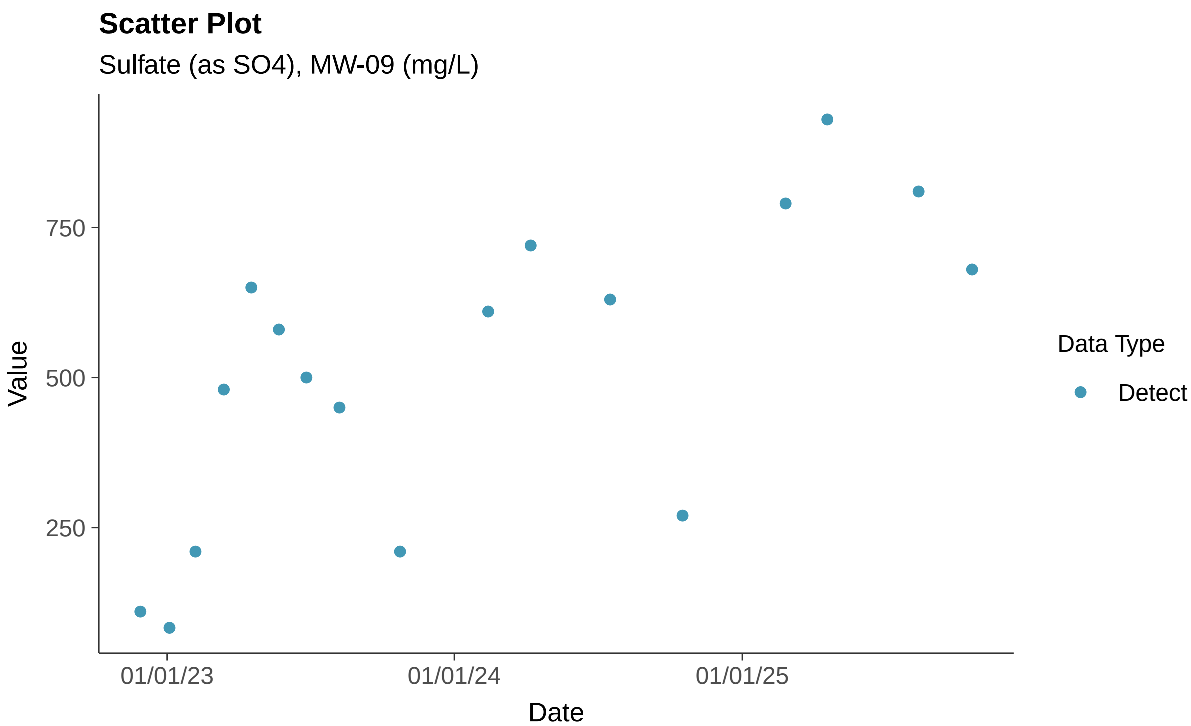
Trend Regression: Piecewise Linear-Linear

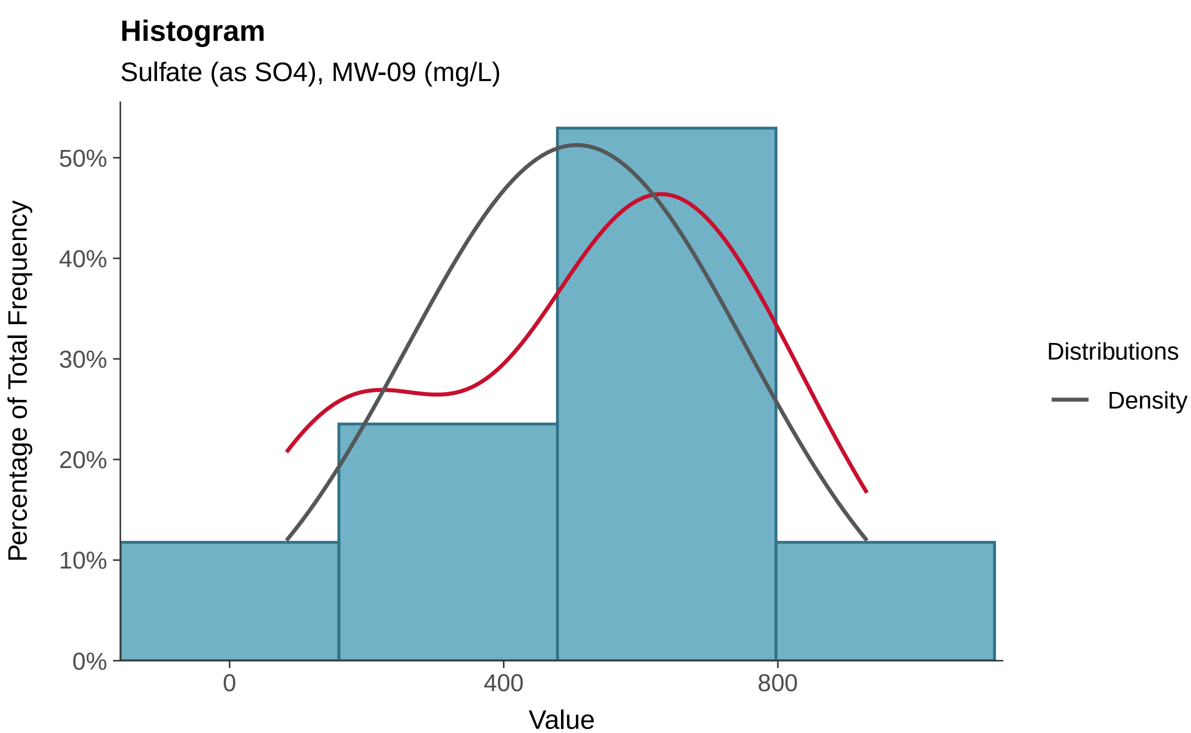
pH (field), MW-09 (su)

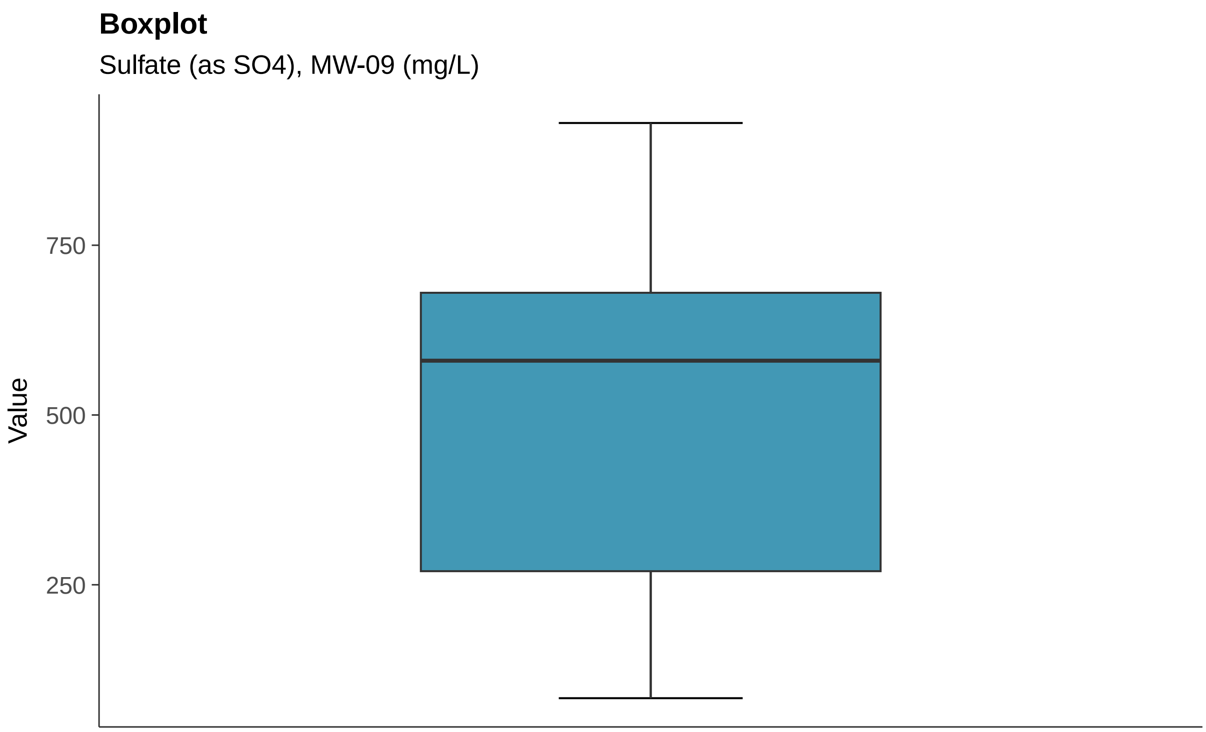


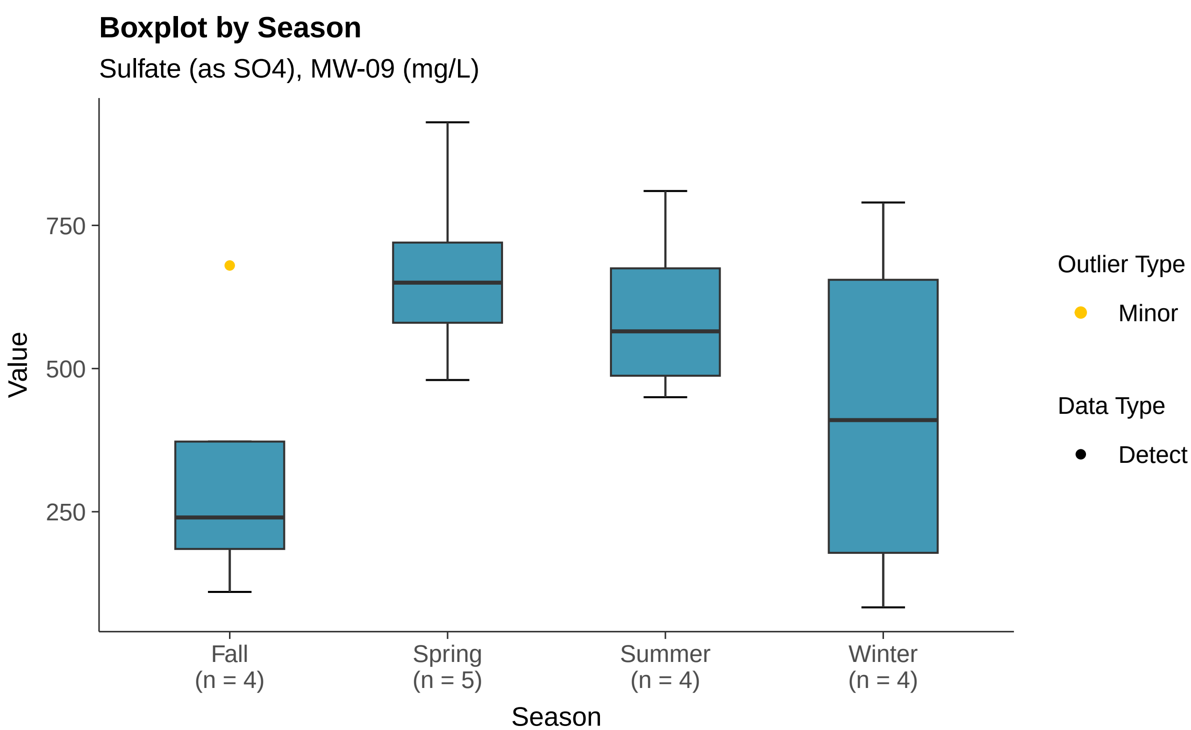
Appendix III: Sulfate (as SO4), MW-09

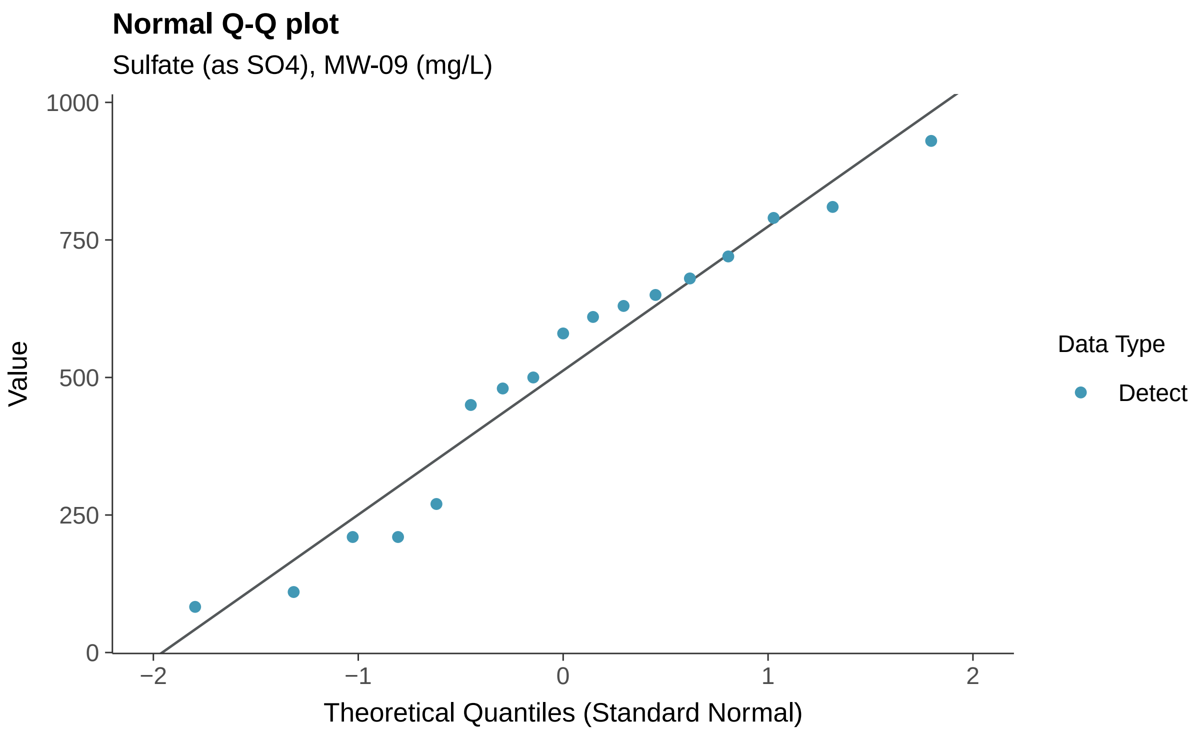
ID: 19_2_3_124

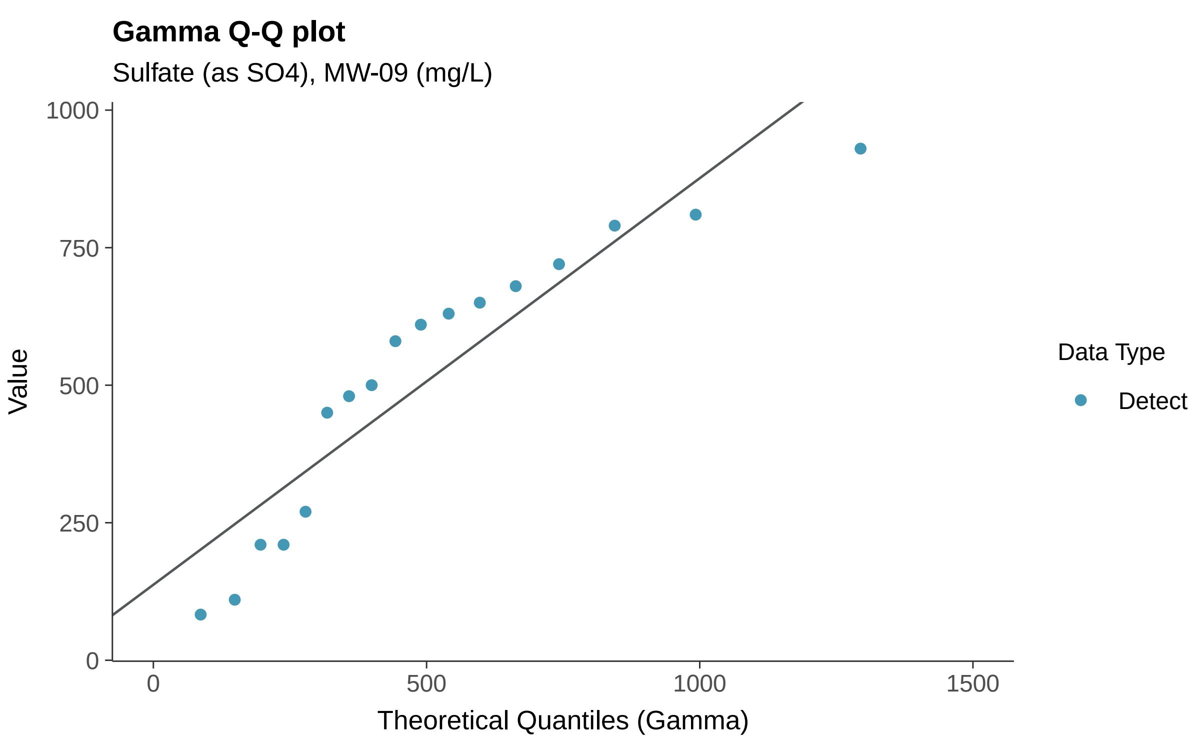





Boxplot
Sulfate (as SO4), MW-09 (mg/L)
Value
750
500
250

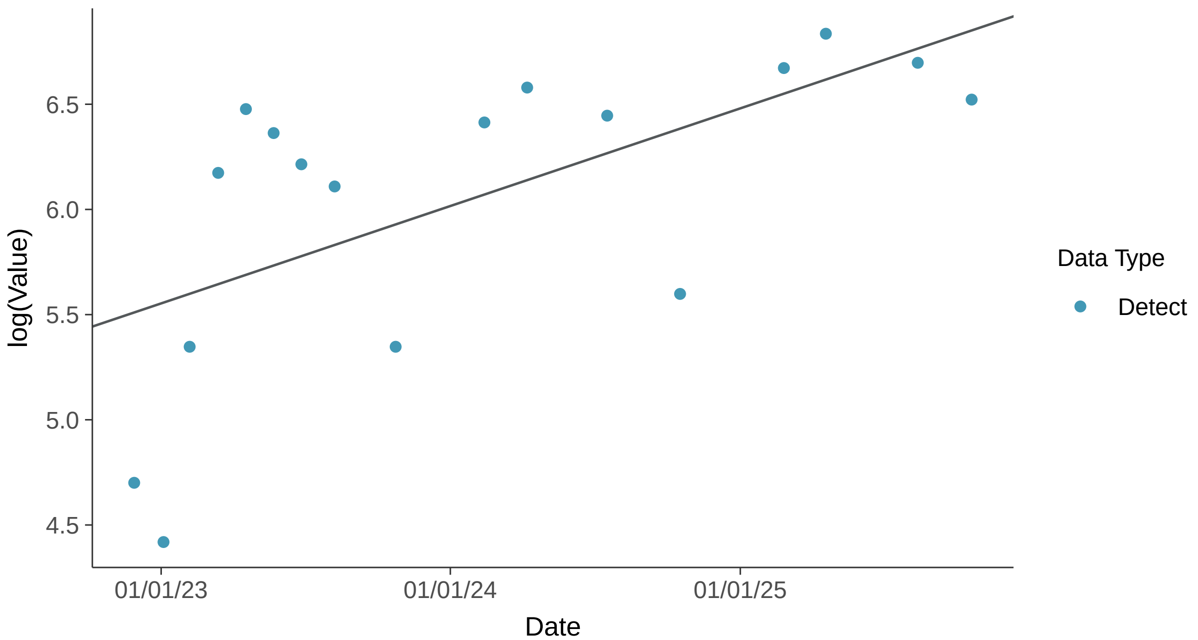

Boxplot by Season
Sulfate (as SO4), MW-09 (mg/L)
Value
750
500
250
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Minor
Data Type
Detect


Normal Q-Q plot
Sulfate (as SO4), MW-09 (mg/L)
1000
750
500
250
0
Value
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Sulfate (as SO4), MW-09 (mg/L)
1000
750
500
250
0
Value
0
500
1000
1500
Theoretical Quantiles (Gamma)
Data Type
Detect

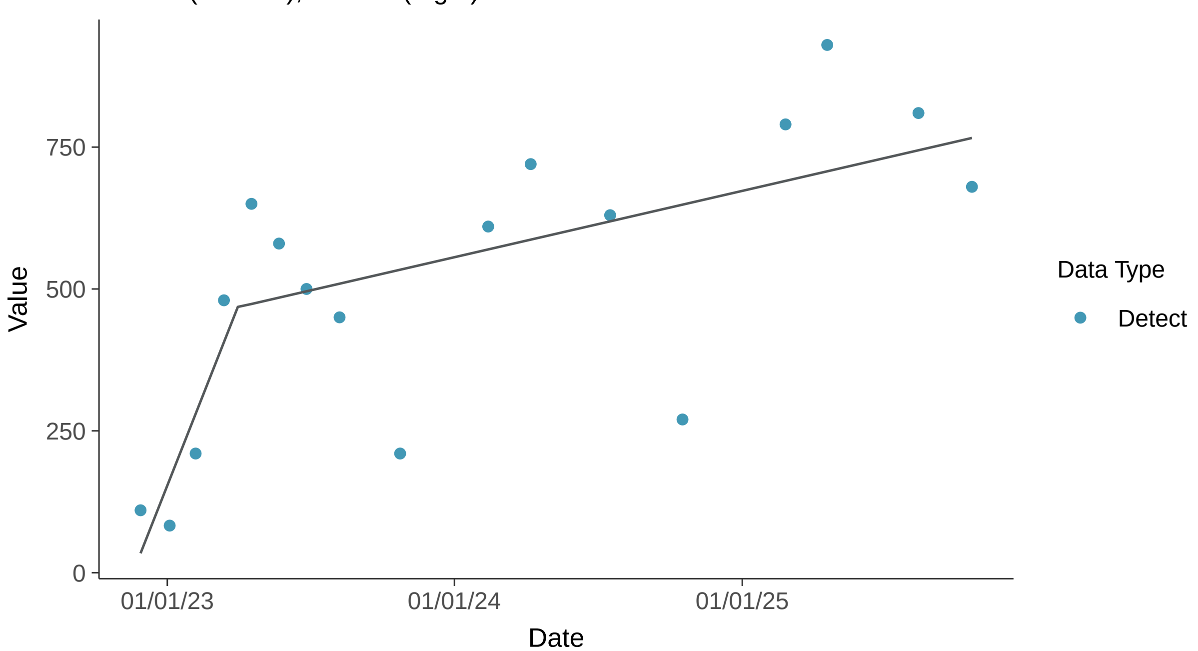
Trend Regression: Lognormal MLE

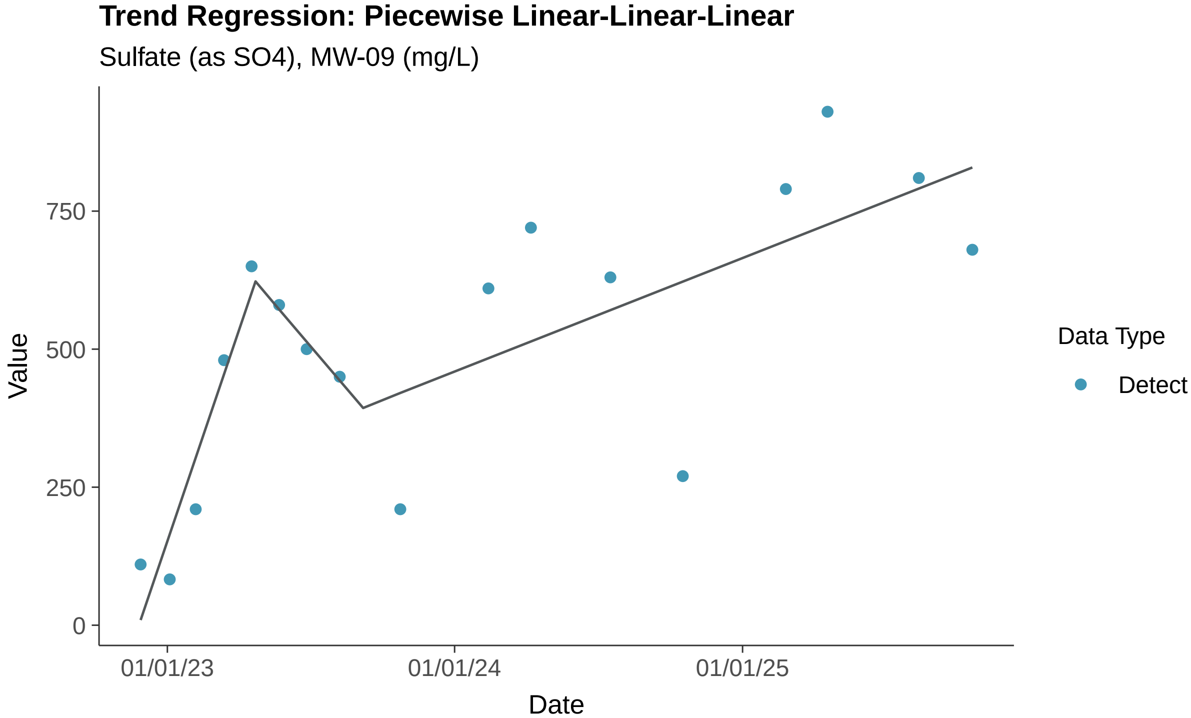
Sulfate (as SO4), MW-09 (mg/L)



Trend Regression: Piecewise Linear-Linear

Sulfate (as SO4), MW-09 (mg/L)



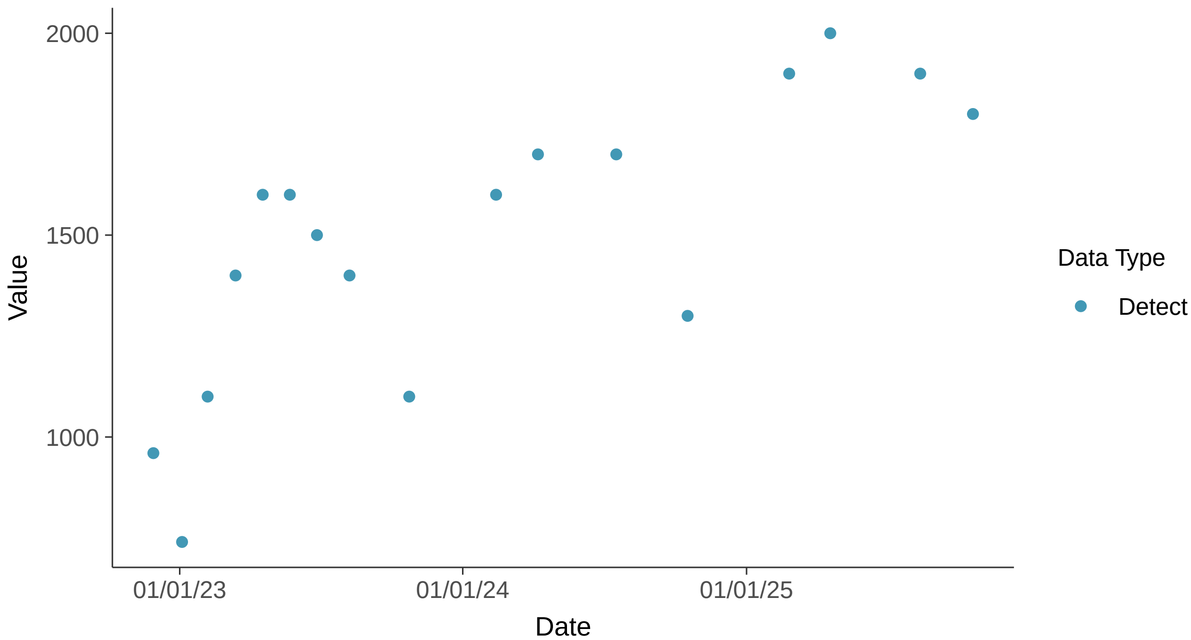

Trend Regression: Piecewise Linear-Linear-Linear
Sulfate (as SO4), MW-09 (mg/L)
Value
750
500
250
0
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Appendix III: Total Dissolved Solids, MW-09

ID: 19_2_3_126

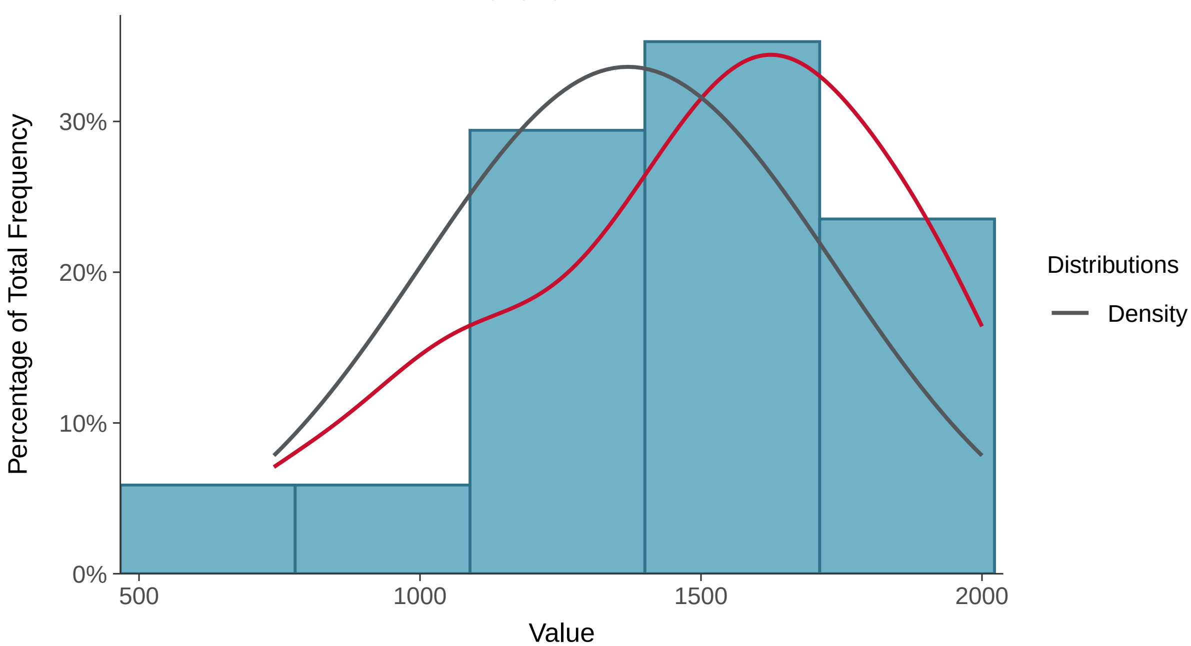
Scatter Plot

Total Dissolved Solids, MW-09 (mg/L)



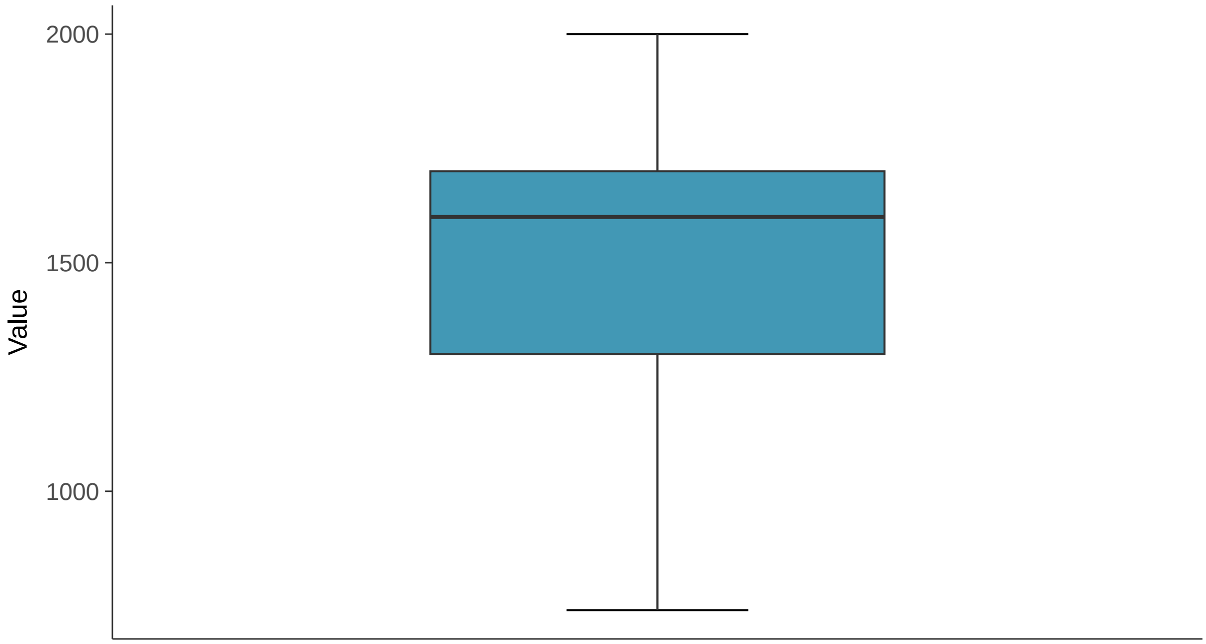
Histogram

Total Dissolved Solids, MW-09 (mg/L)



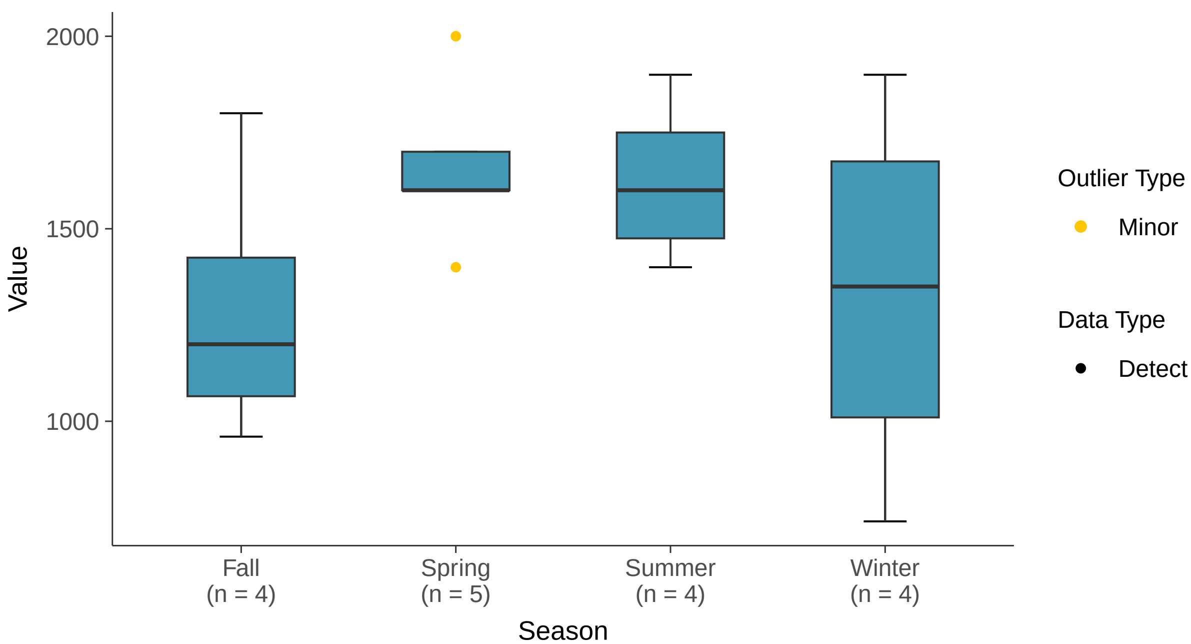
Boxplot

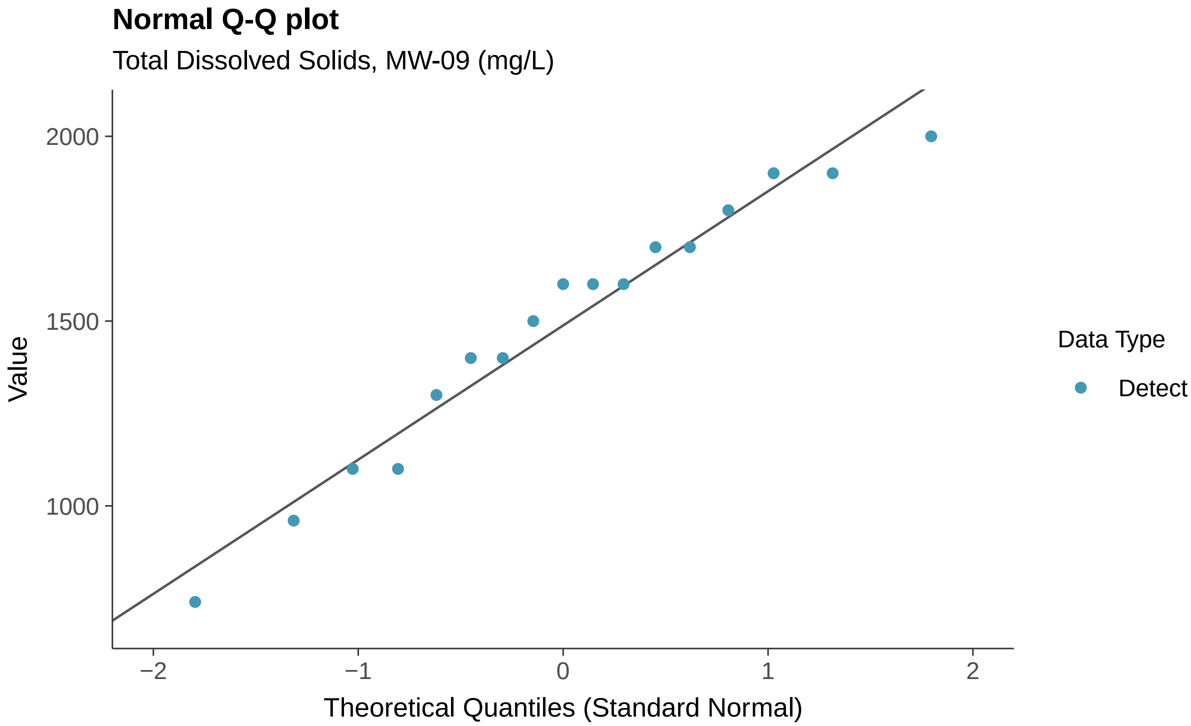
Total Dissolved Solids, MW-09 (mg/L)

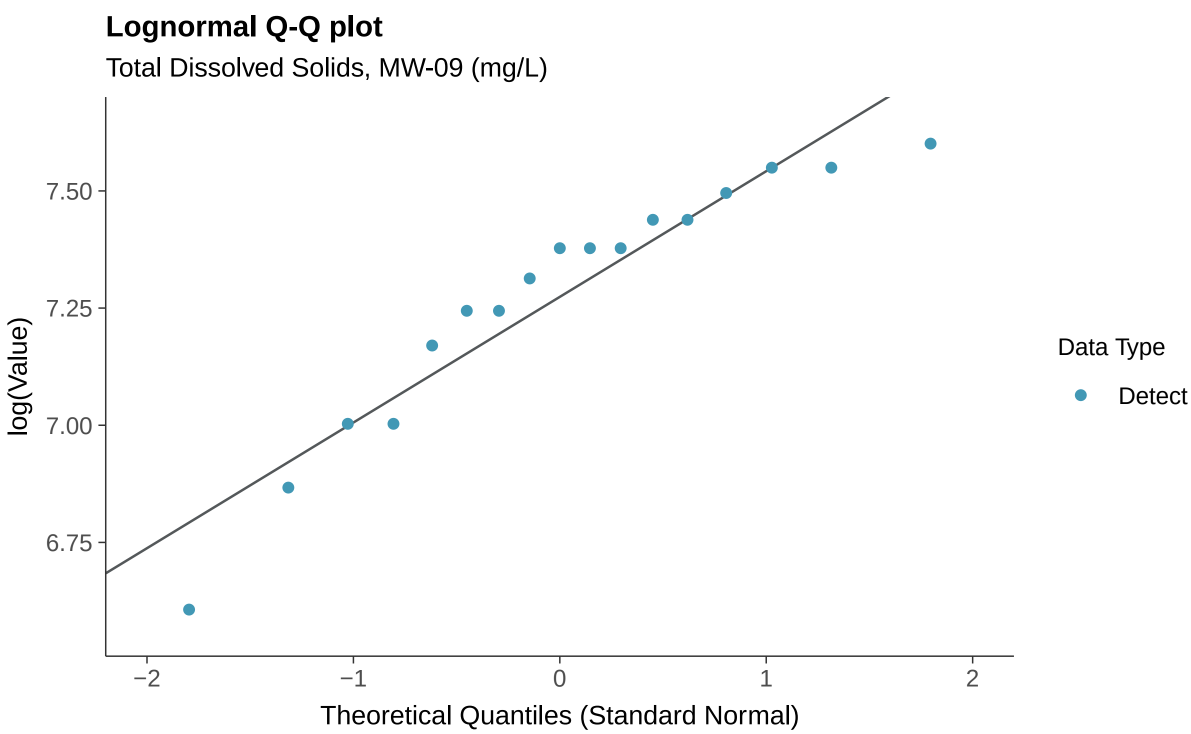


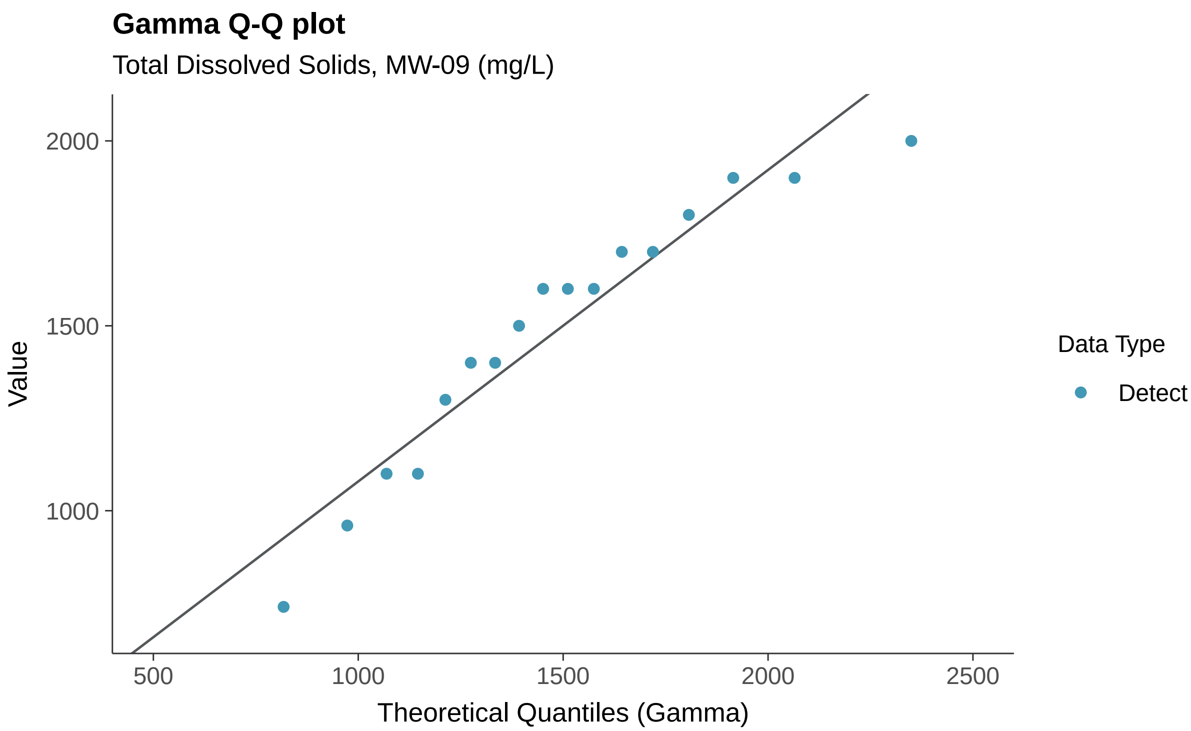
Boxplot by Season

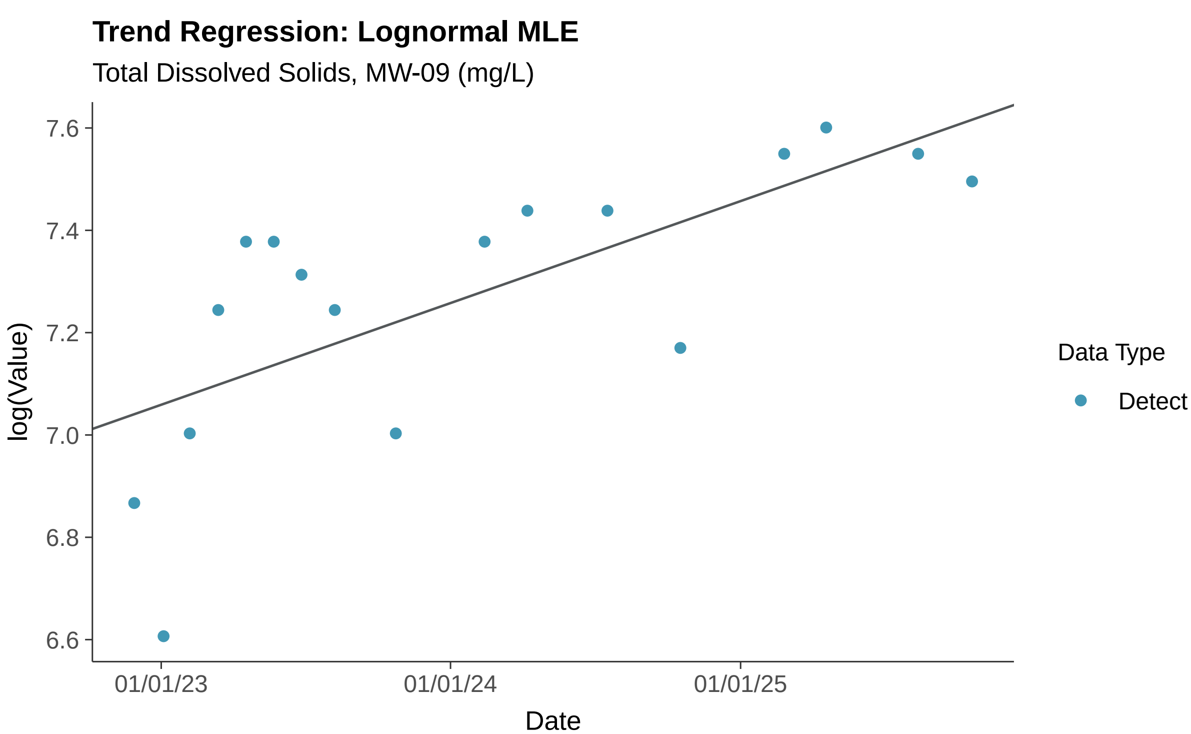
Total Dissolved Solids, MW-09 (mg/L)

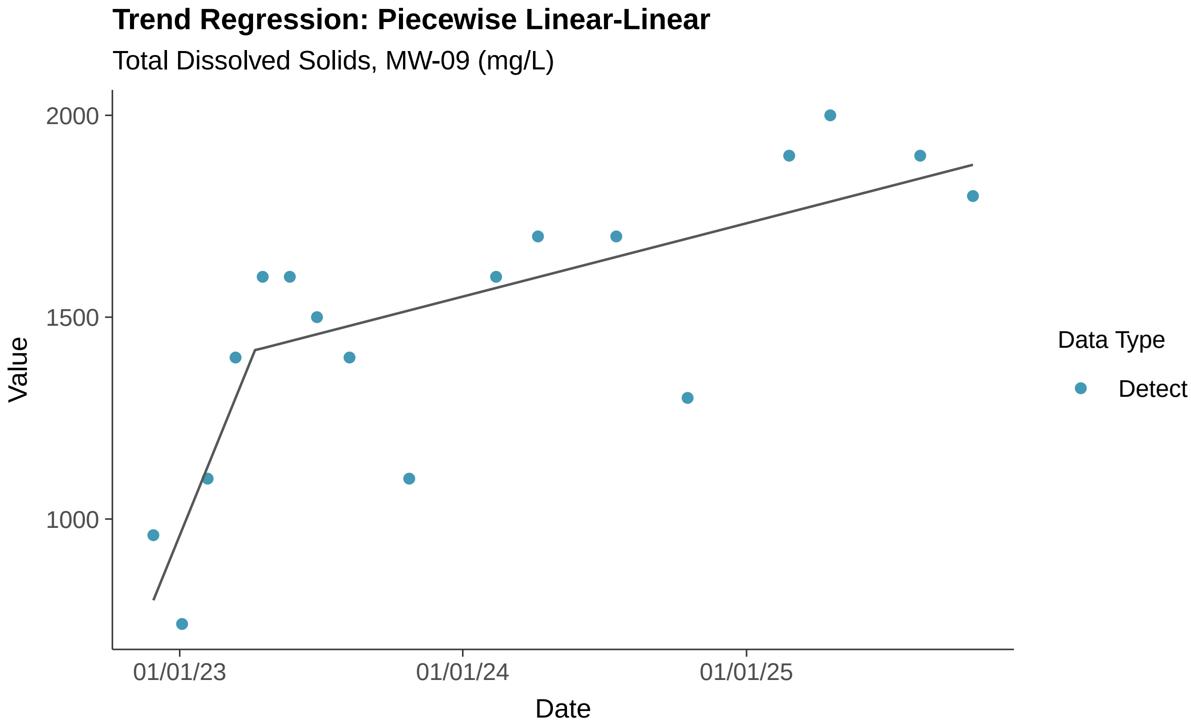


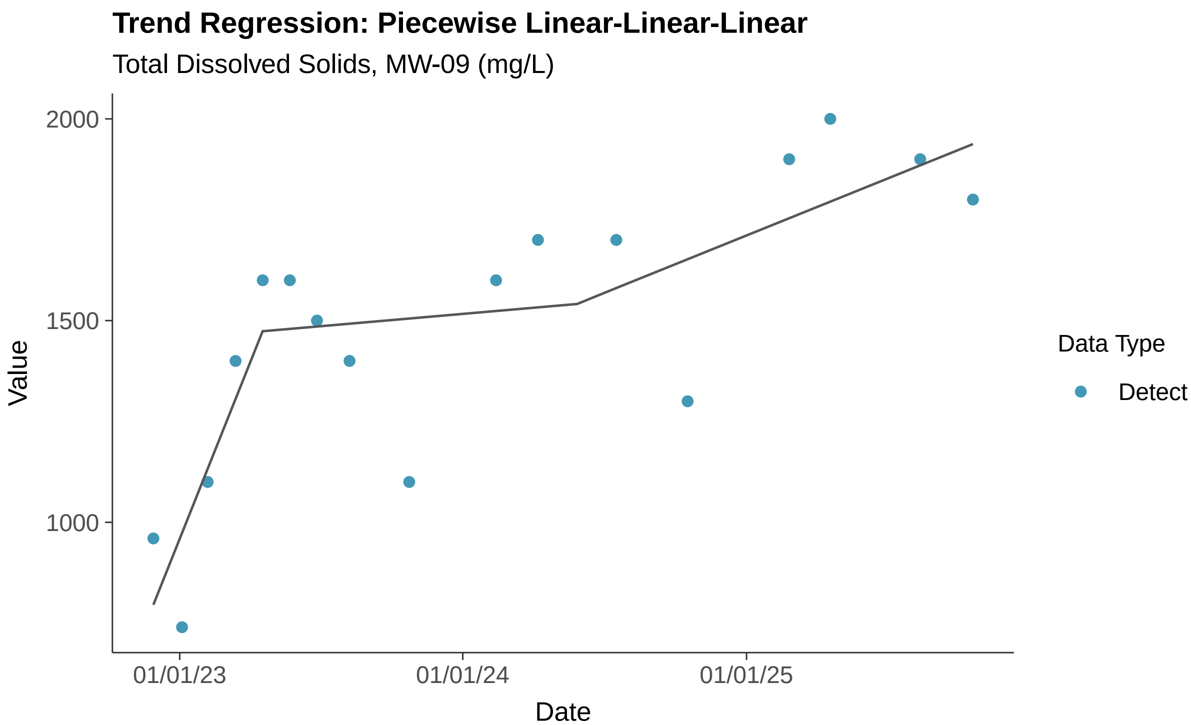

Normal Q-Q plot
Total Dissolved Solids, MW-09 (mg/L)
Value
2000
1500
1000
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Total Dissolved Solids, MW-09 (mg/L)
log(Value)
7.50
7.25
7.00
6.75
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Total Dissolved Solids, MW-09 (mg/L)
Value
2000
1500
1000
500
1000
1500
2000
2500
Theoretical Quantiles (Gamma)
Data Type
Detect

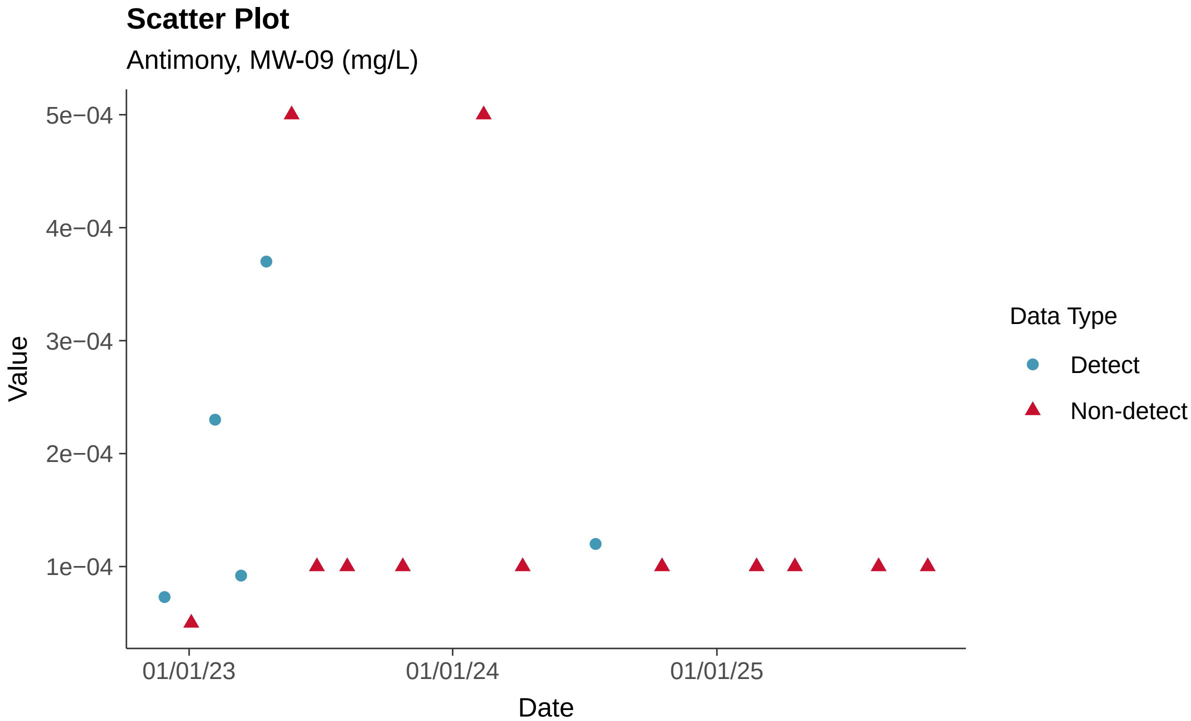

Trend Regression: Lognormal MLE
Total Dissolved Solids, MW-09 (mg/L)
log(Value)
7.6
7.4
7.2
7.0
6.8
6.6
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

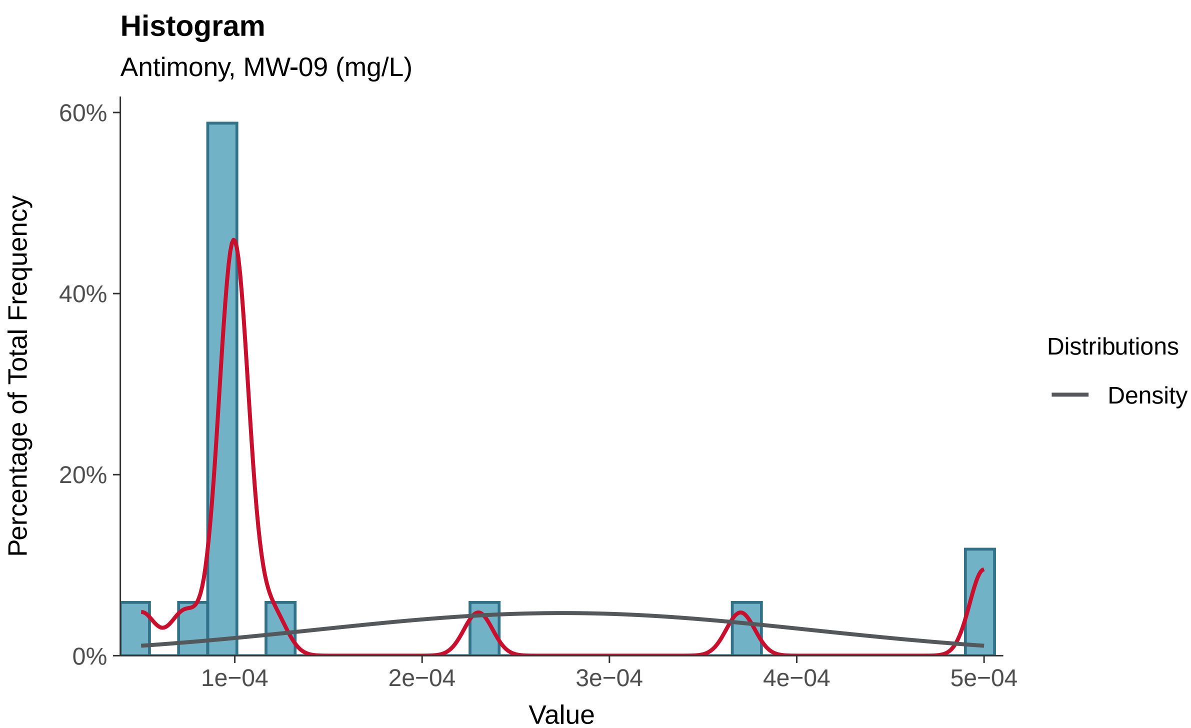

Trend Regression: Piecewise Linear-Linear
Total Dissolved Solids, MW-09 (mg/L)
Value
2000
1500
1000
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
Total Dissolved Solids, MW-09 (mg/L)
Value
2000
1500
1000
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Appendix IV: Antimony, MW-09

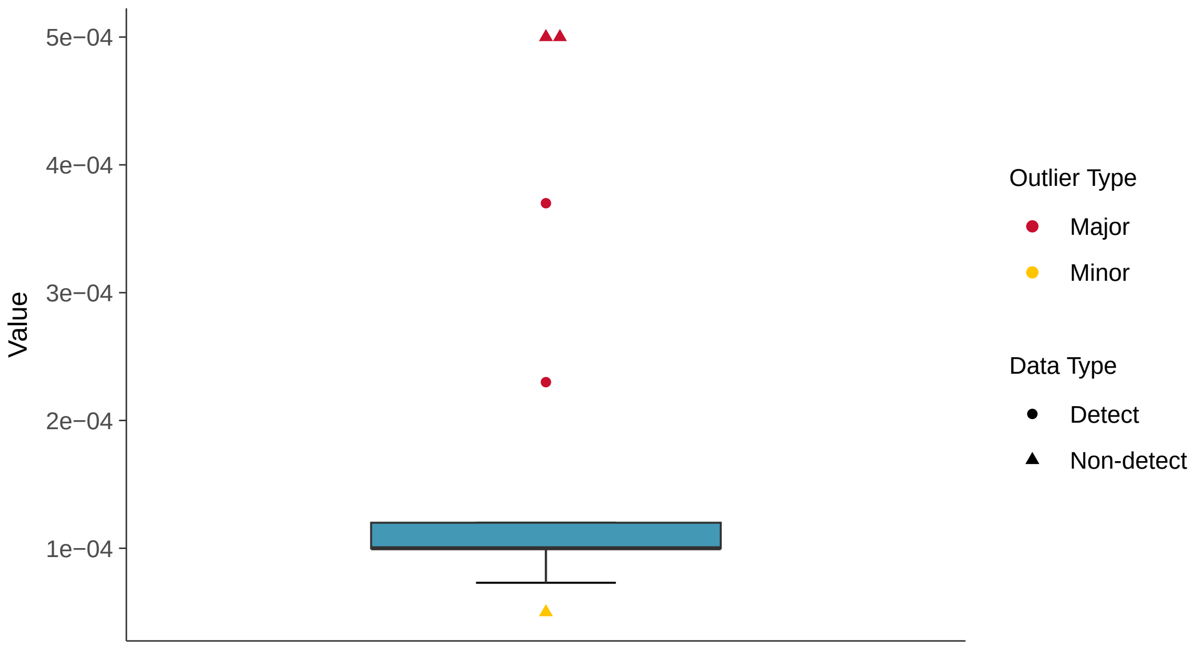
ID: 19_2_4_101





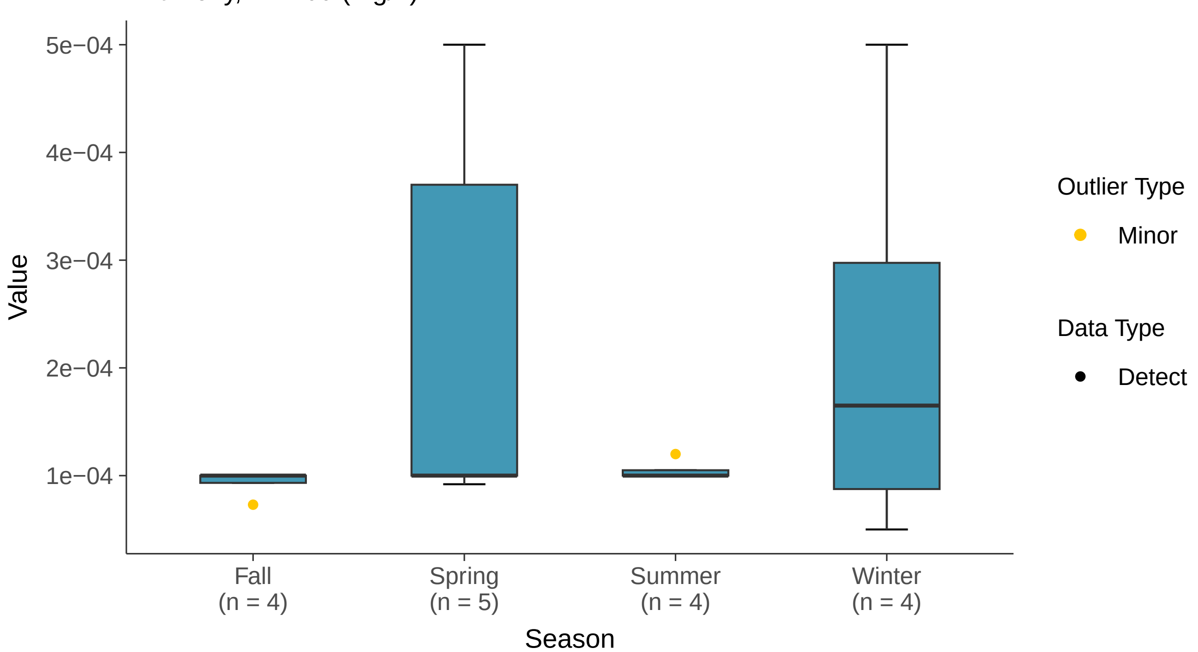
Boxplot

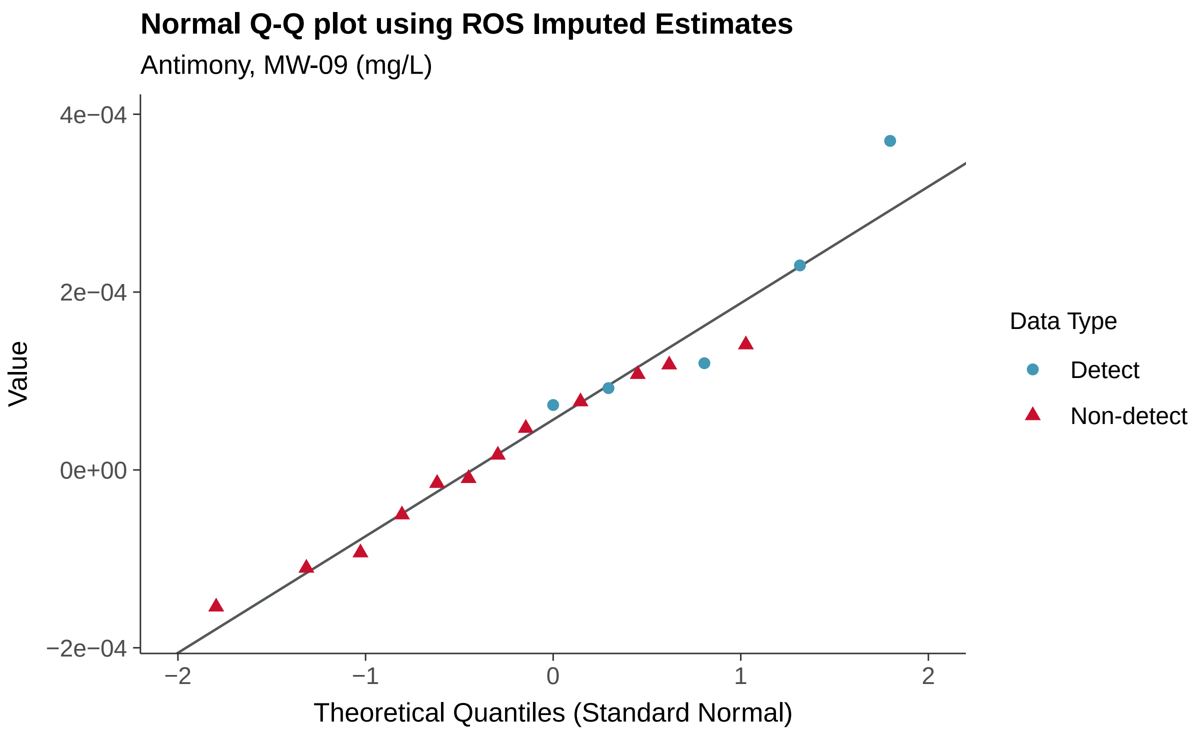
Antimony, MW-09 (mg/L)

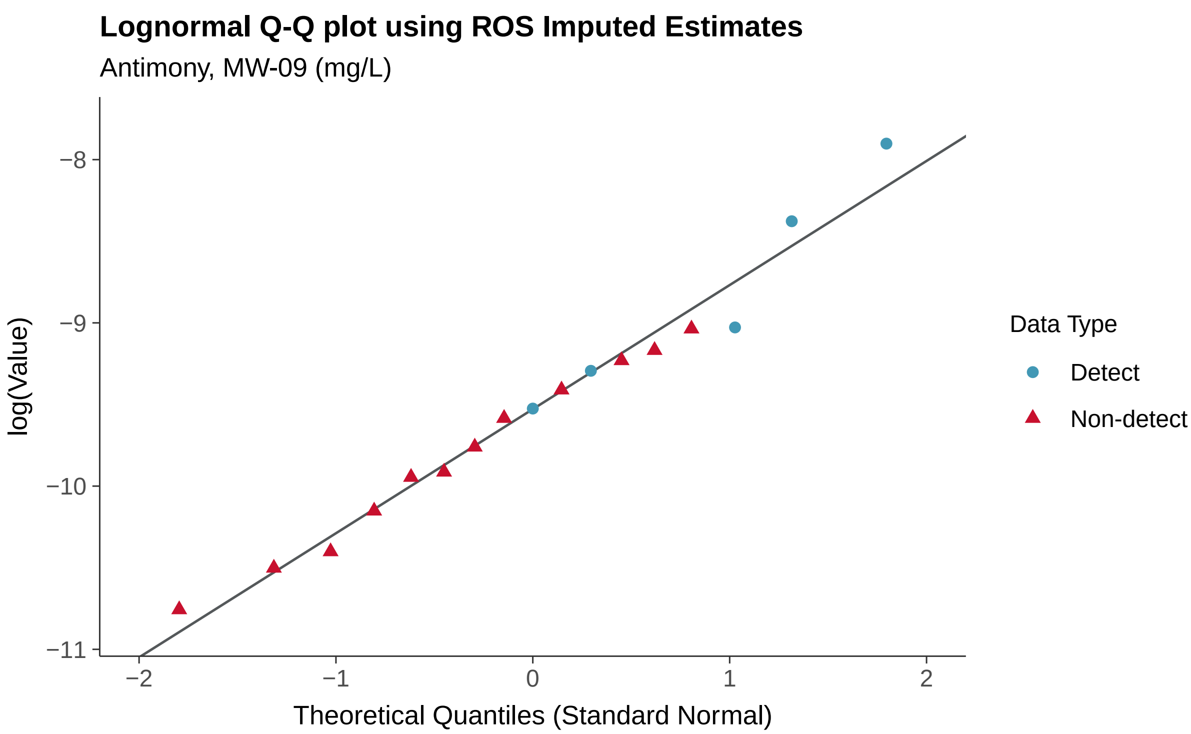


Boxplot by Season

Antimony, MW-09 (mg/L)

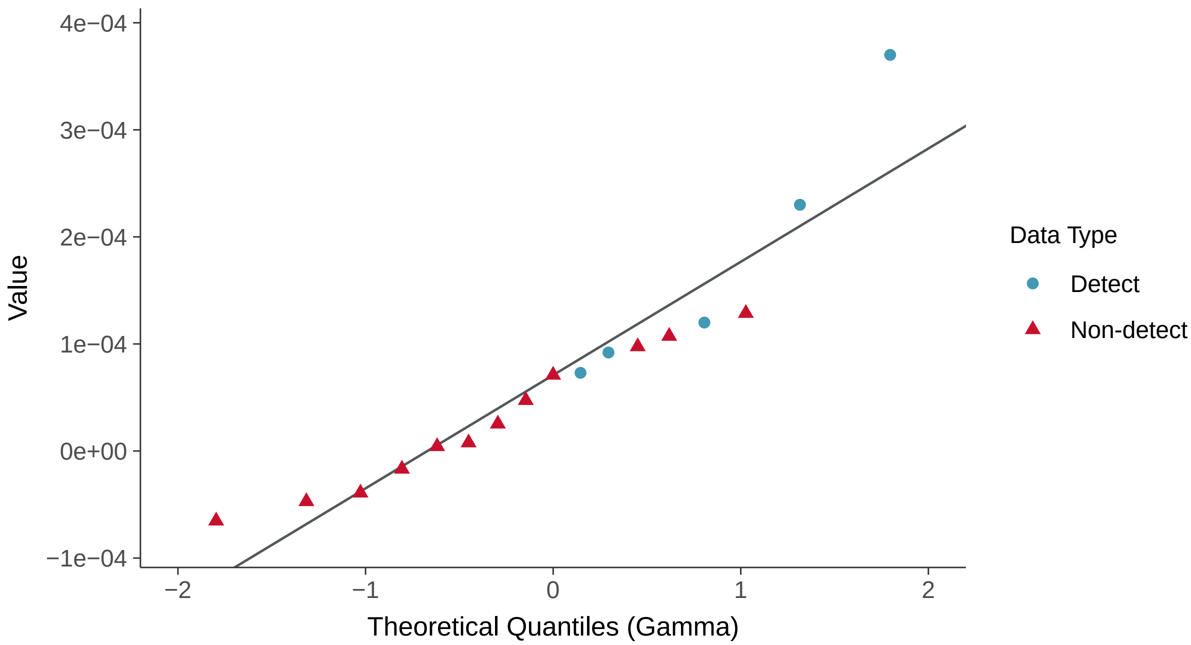



Normal Q-Q plot using ROS Imputed Estimates
Antimony, MW-09 (mg/L)
Value
4e−04
2e−04
0e+00
−2e−04
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Lognormal Q-Q plot using ROS Imputed Estimates
Antimony, MW-09 (mg/L)
log(Value)
−8
−9
−10
−11
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

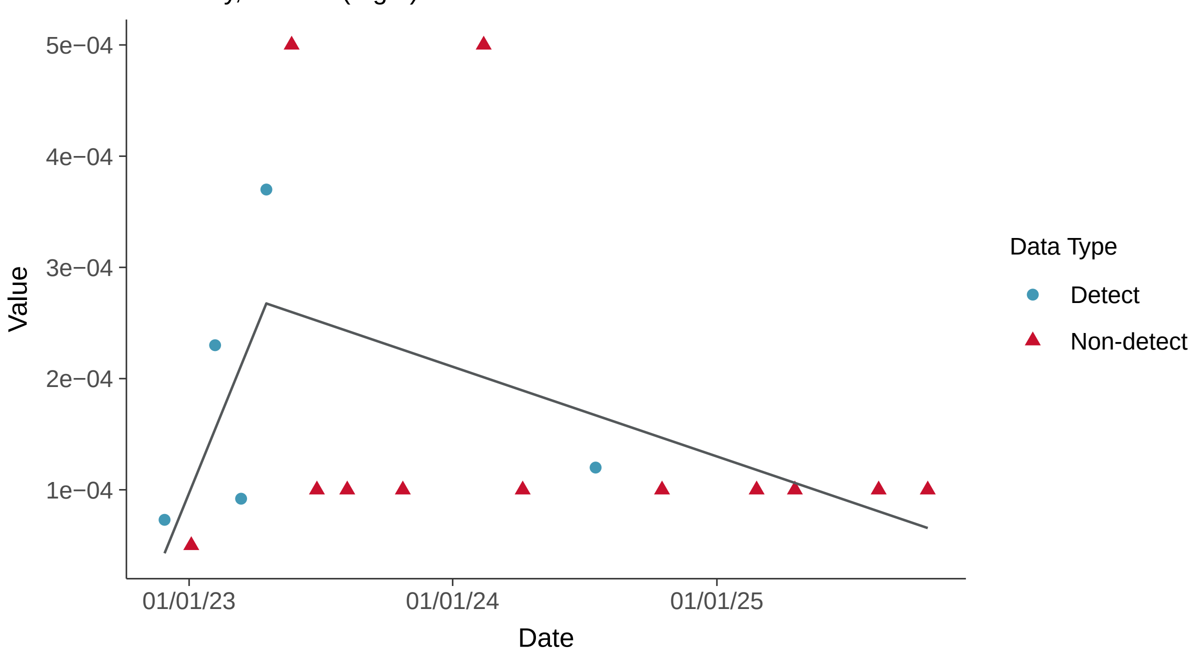
Gamma Q-Q plot using ROS Imputed Estimates

Antimony, MW-09 (mg/L)

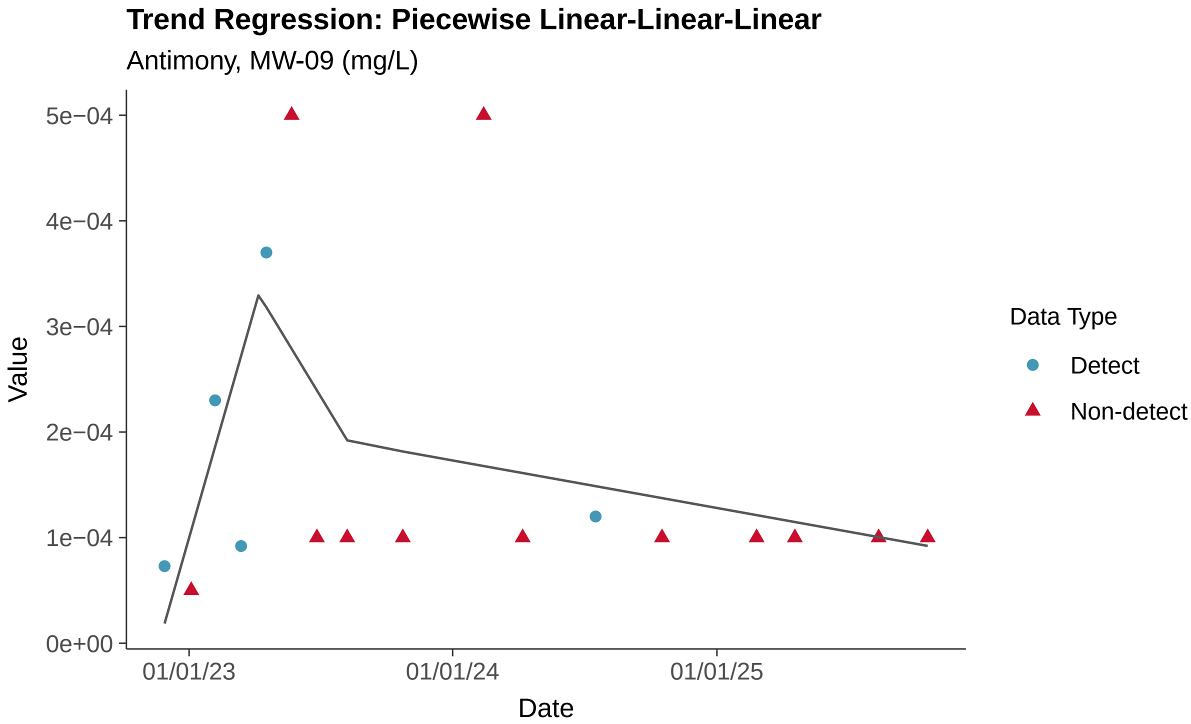


Trend Regression: Piecewise Linear-Linear

Antimony, MW-09 (mg/L)

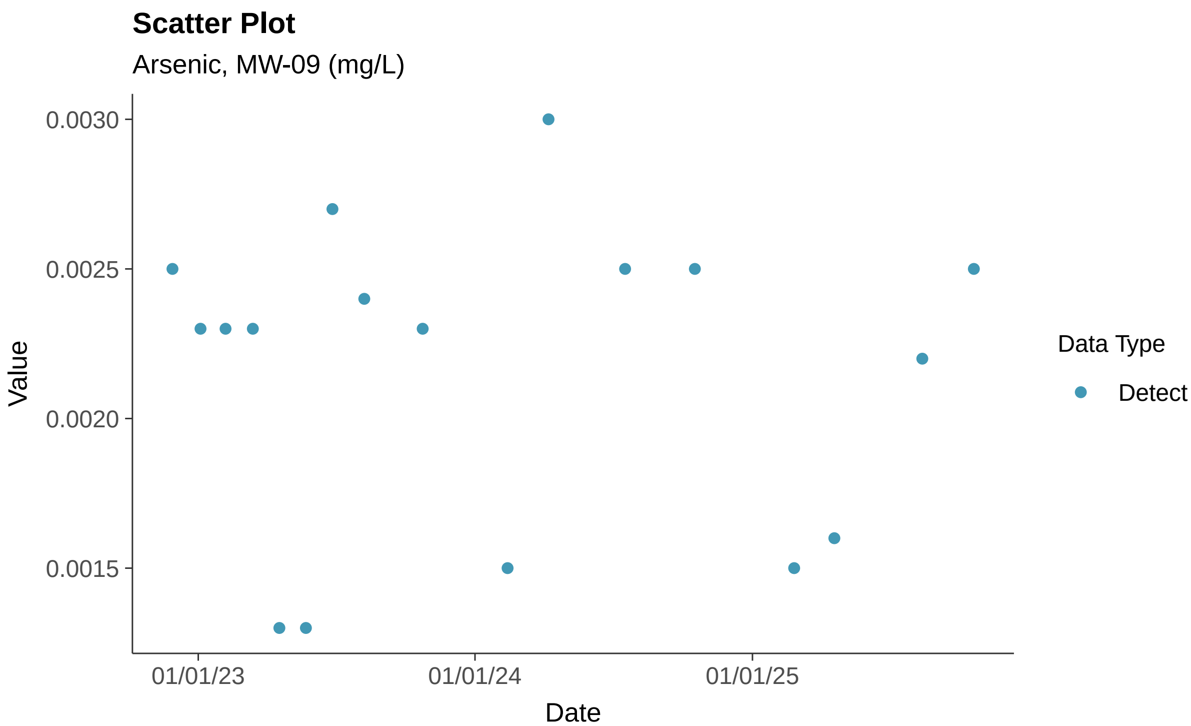


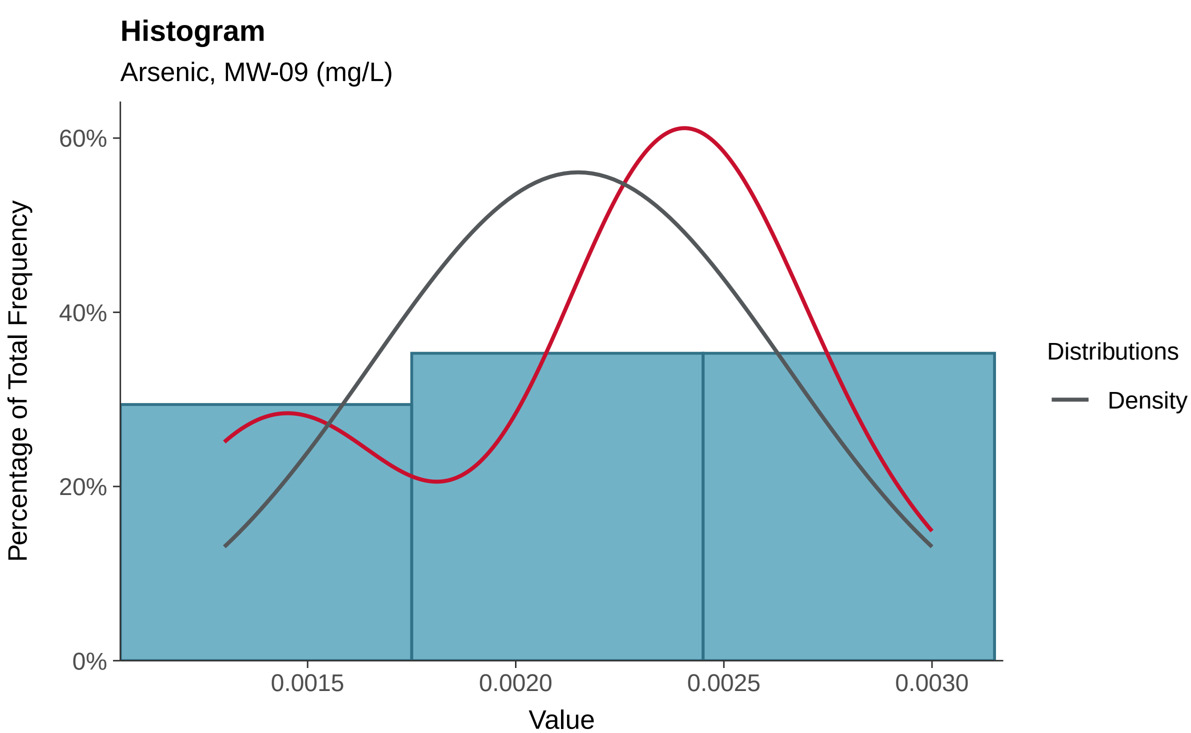
Grand Haven
Downgradient Wells as of October 2025



Appendix IV: Arsenic, MW-09

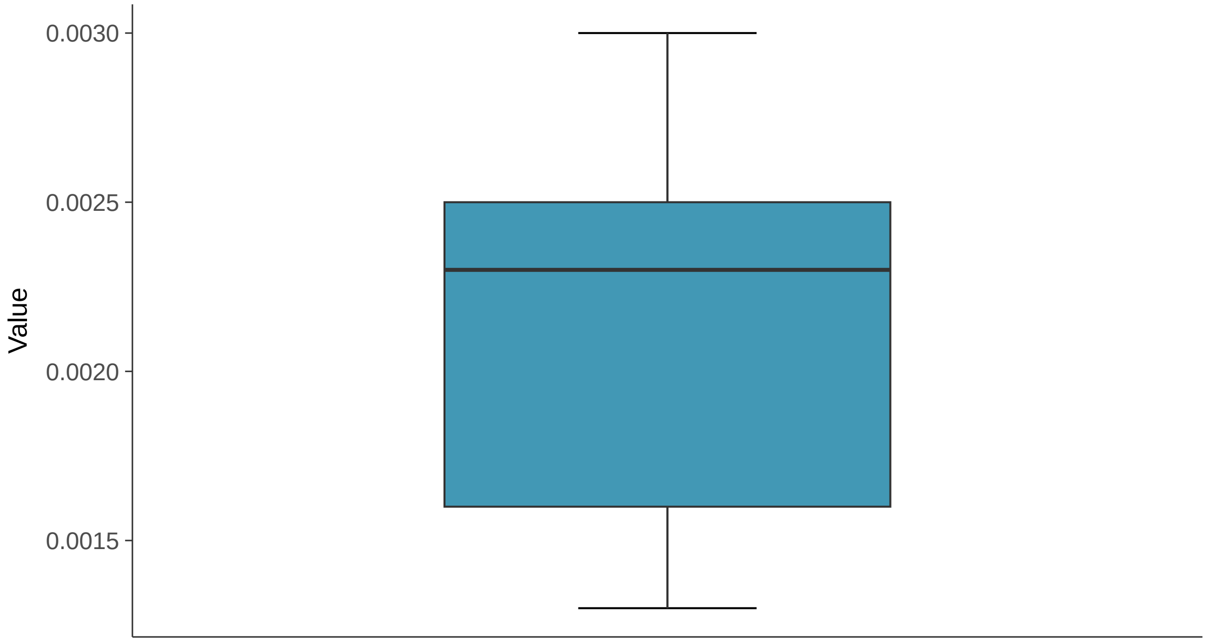
ID: 19_2_4_102





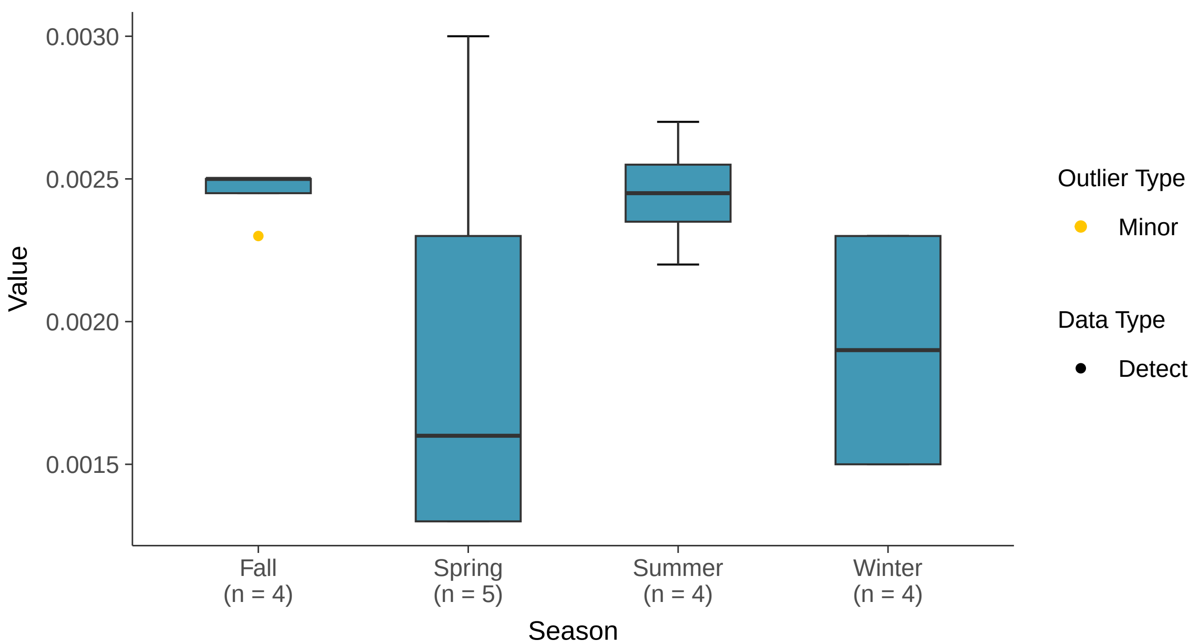
Boxplot

Arsenic, MW-09 (mg/L)



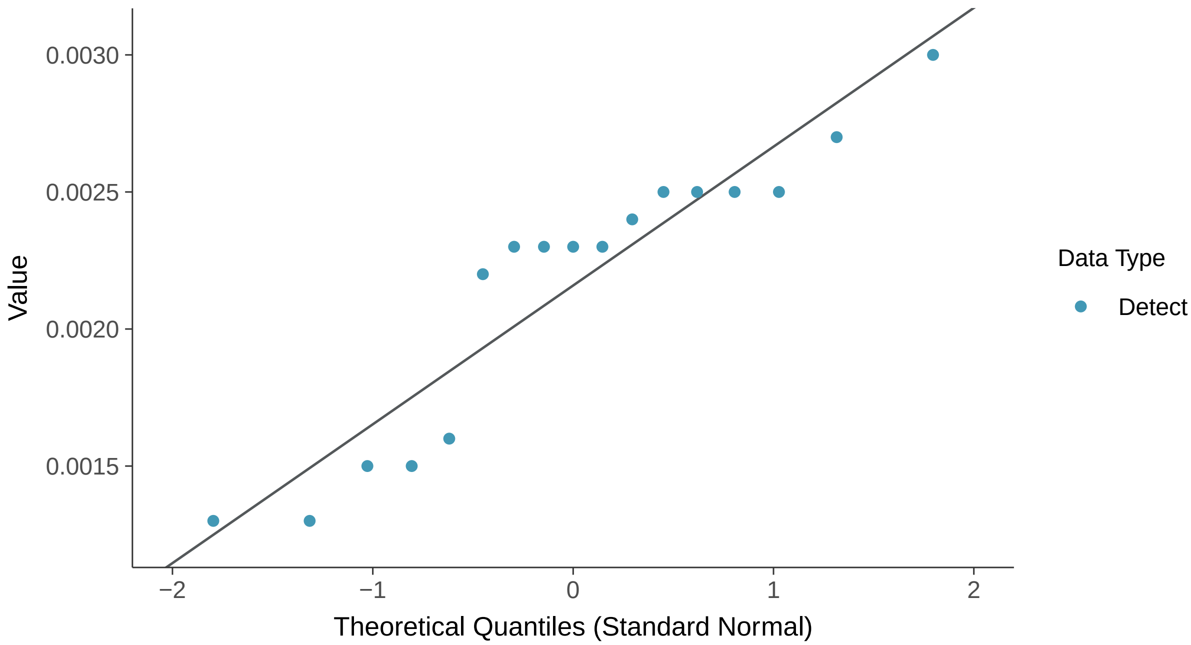
Boxplot by Season

Arsenic, MW-09 (mg/L)



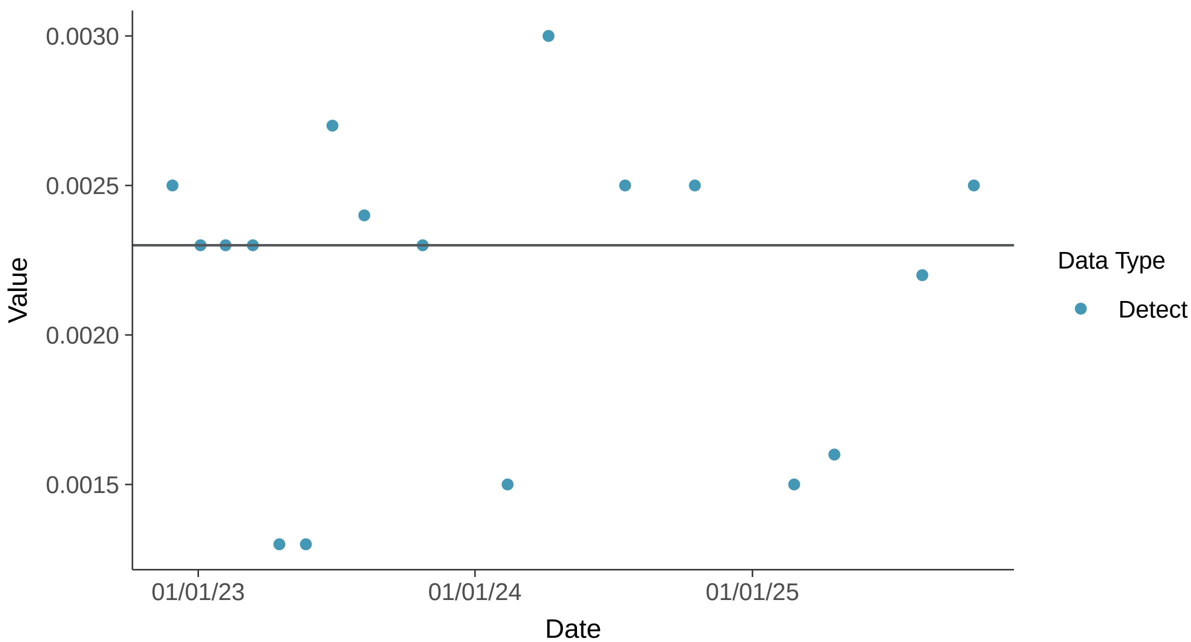
Normal Q-Q plot

Arsenic, MW-09 (mg/L)



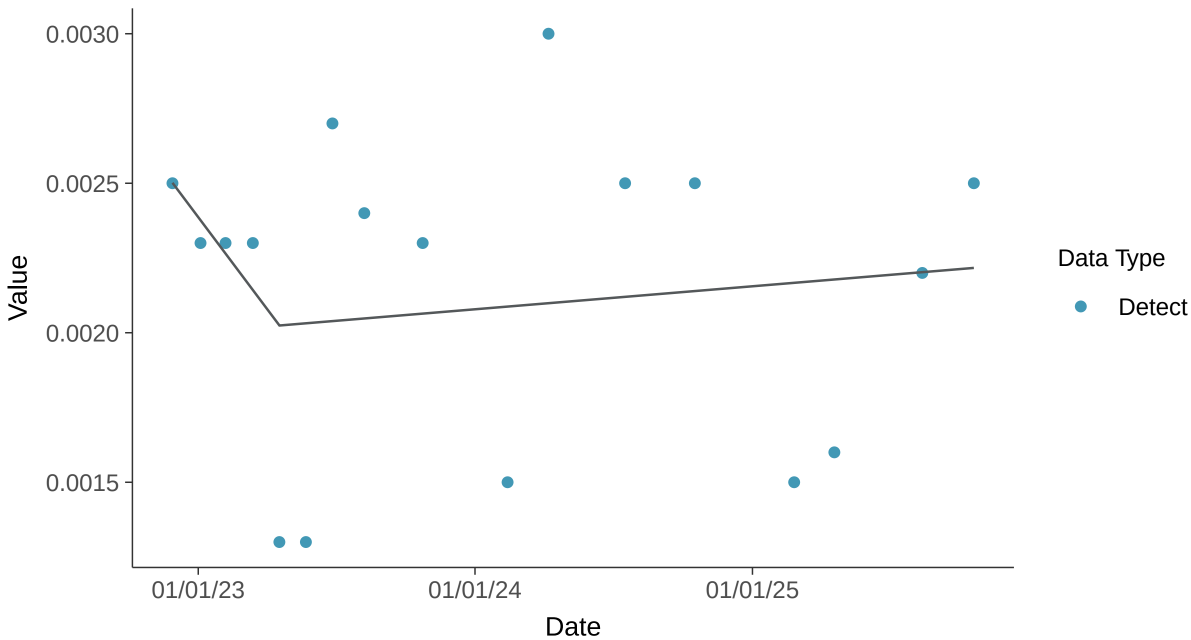
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Arsenic, MW-09 (mg/L)



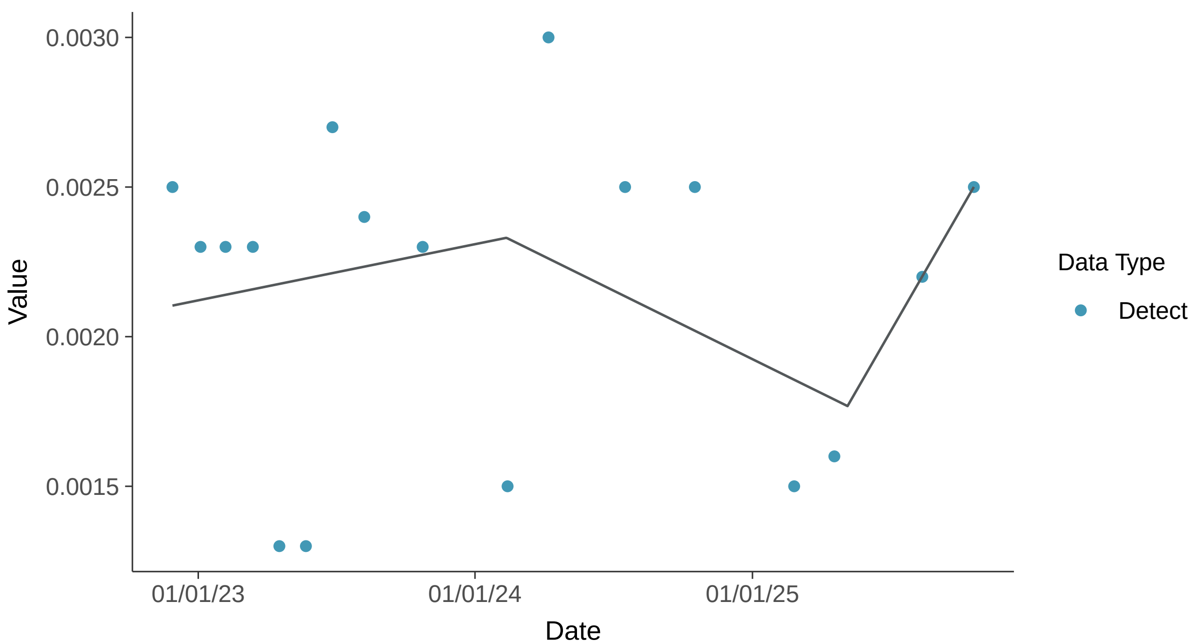
Trend Regression: Piecewise Linear-Linear

Arsenic, MW-09 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Arsenic, MW-09 (mg/L)

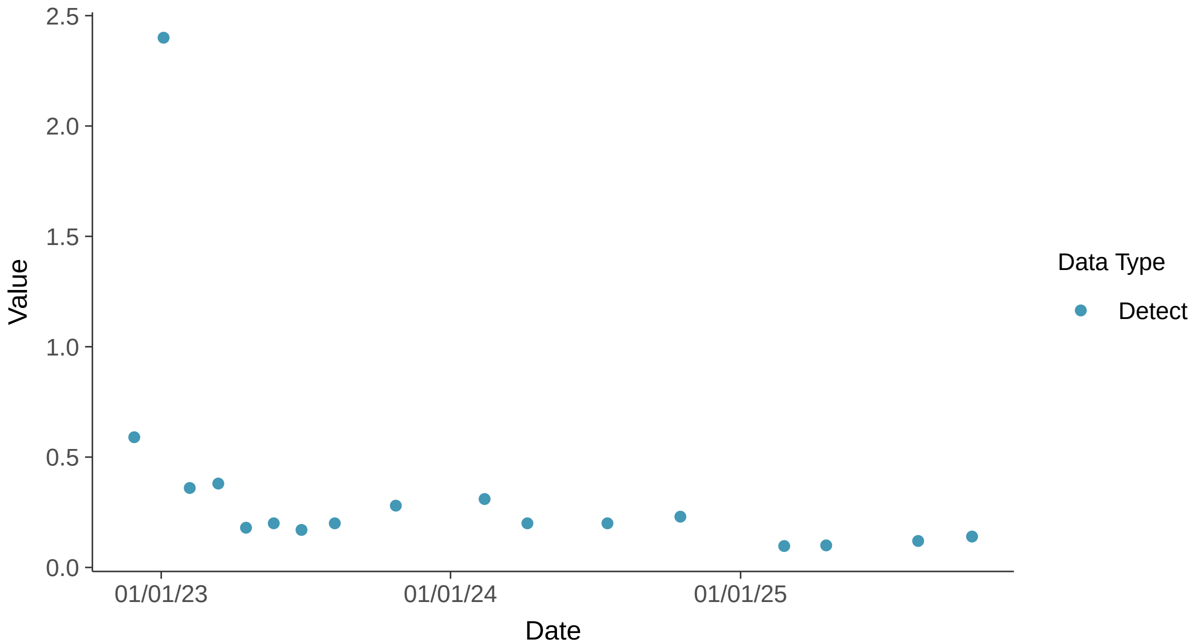


Appendix IV: Barium, MW-09

ID: 19_2_4_103

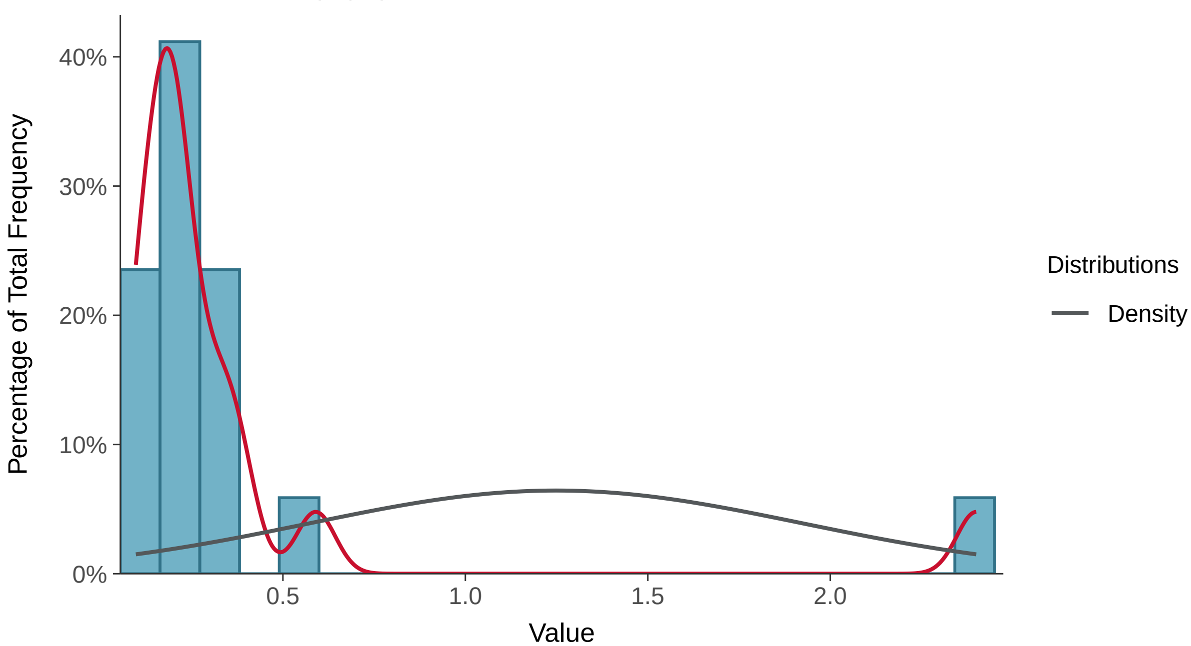
Scatter Plot

Barium, MW-09 (mg/L)



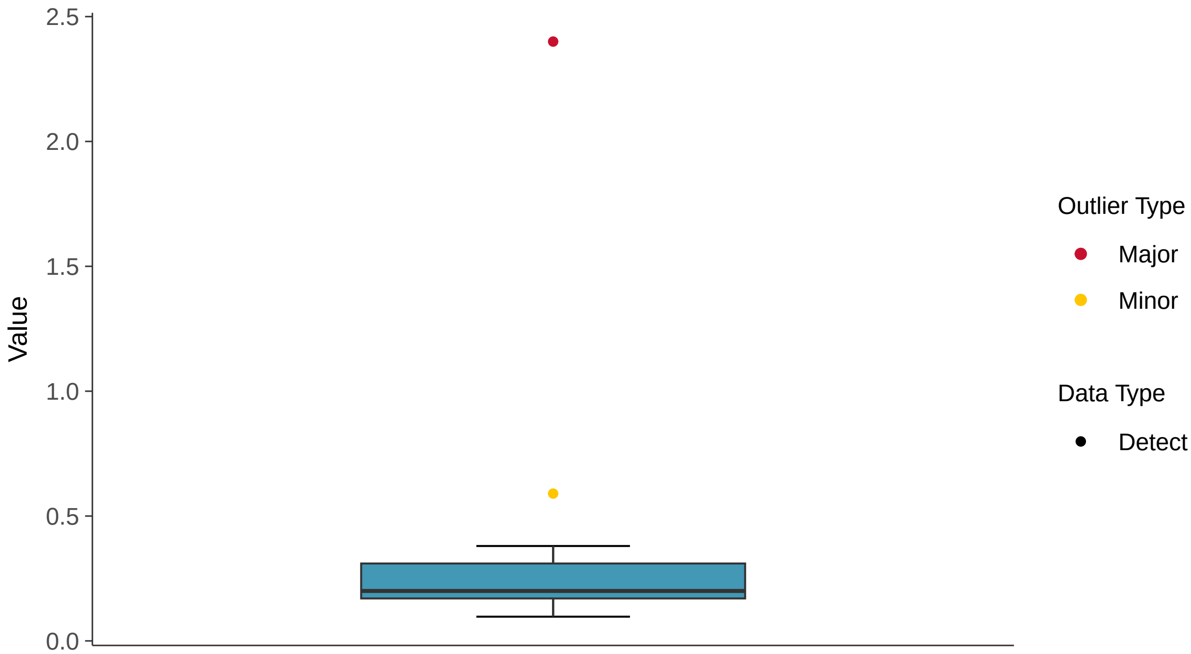
Histogram

Barium, MW-09 (mg/L)



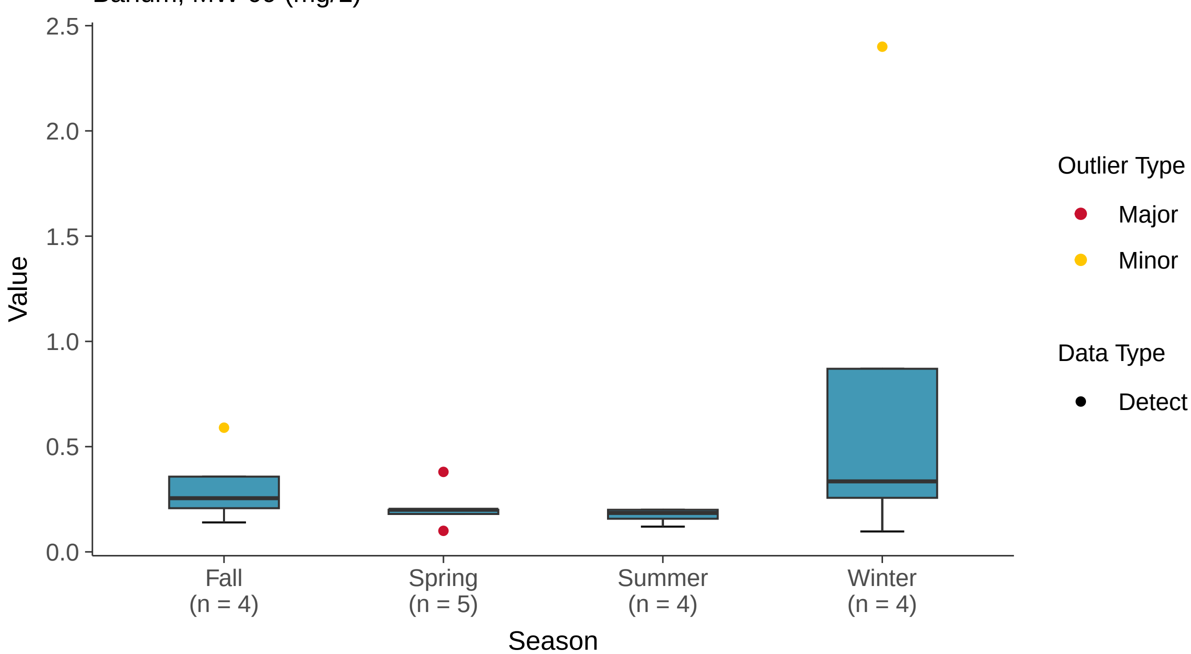
Boxplot

Barium, MW-09 (mg/L)



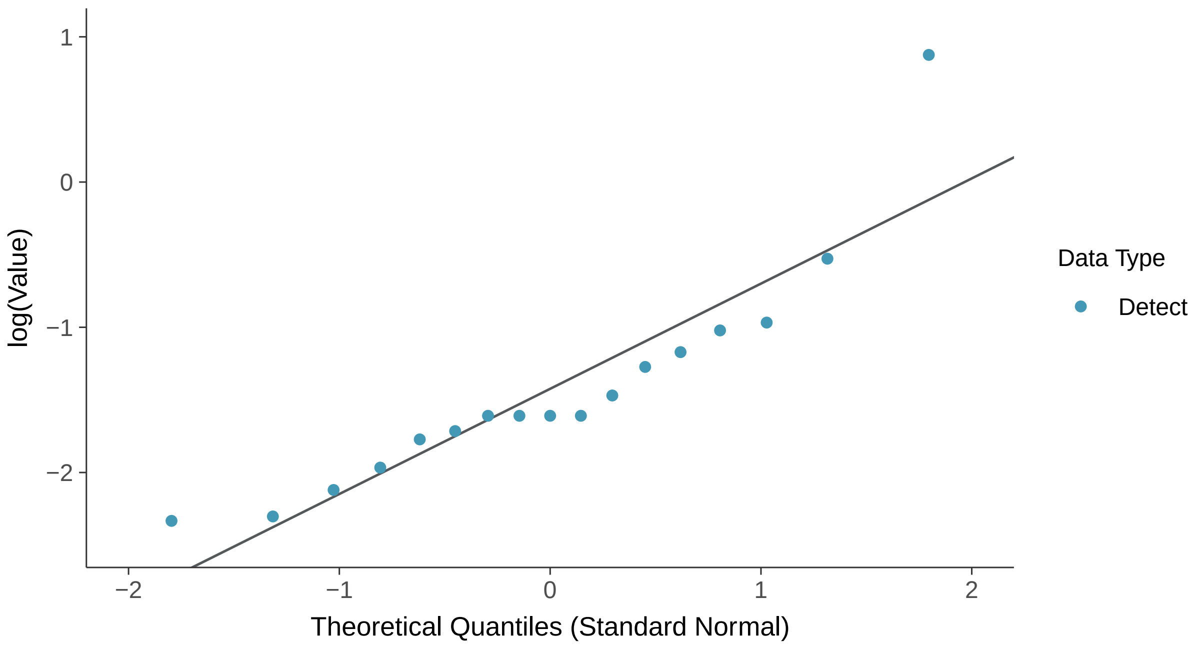
Boxplot by Season

Barium, MW-09 (mg/L)



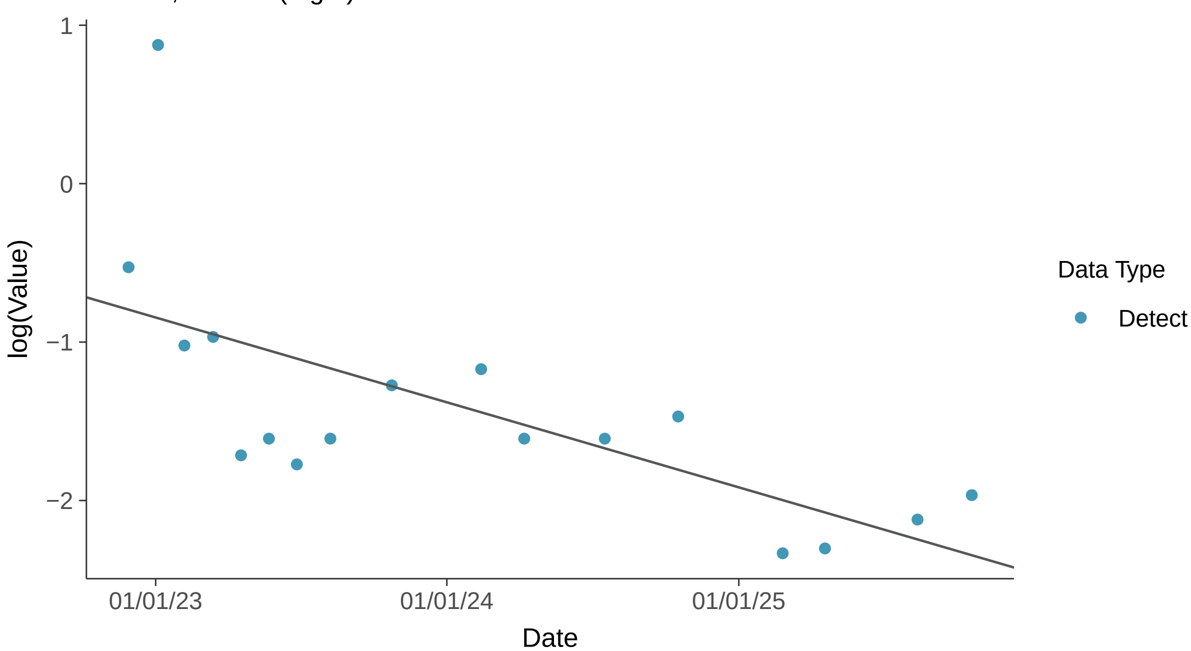
Lognormal Q-Q plot

Barium, MW-09 (mg/L)

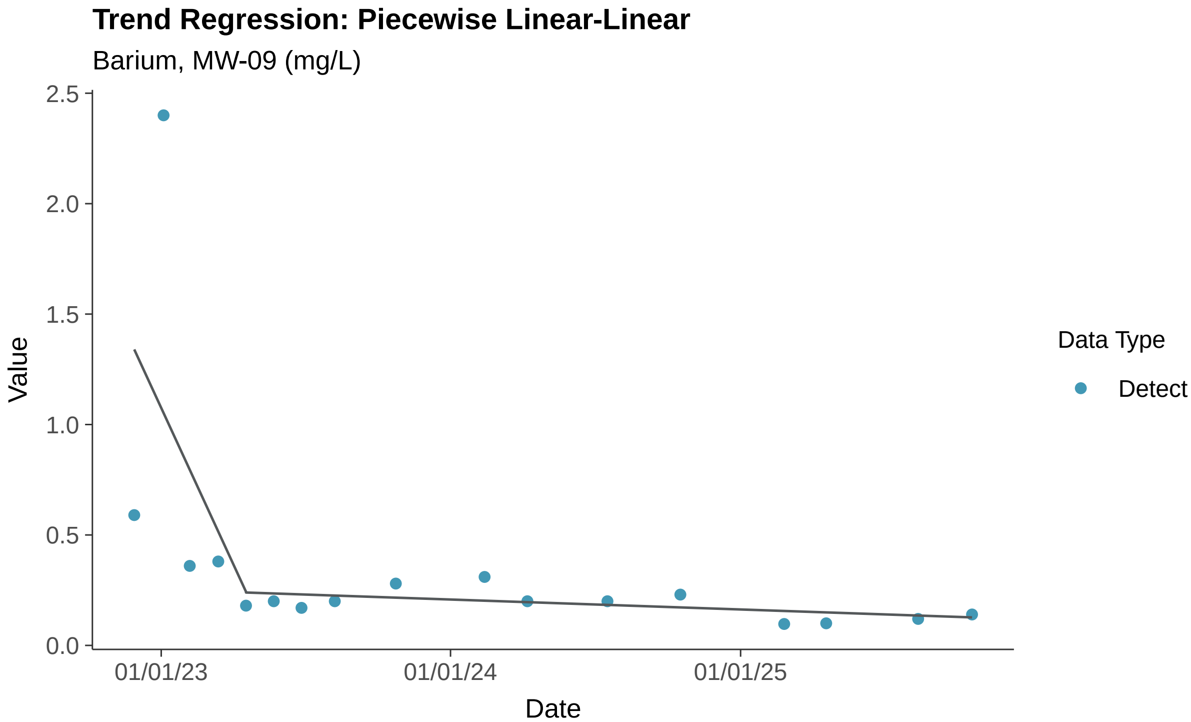


Trend Regression: Lognormal MLE

Barium, MW-09 (mg/L)



Grand Haven
Downgradient Wells as of October 2025

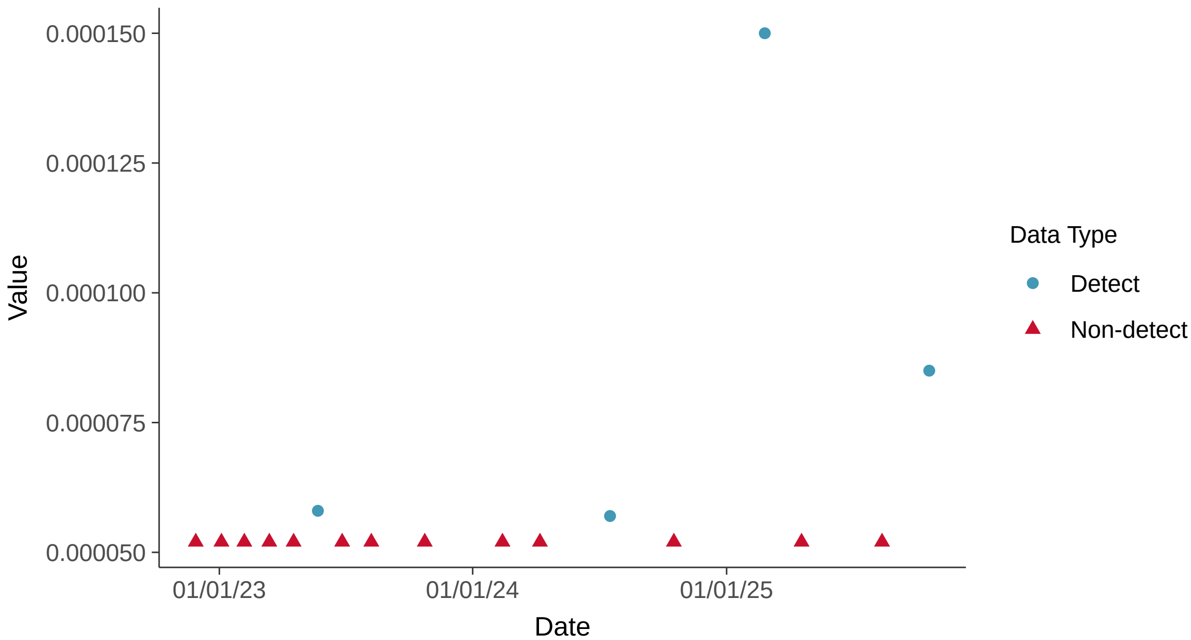


Appendix IV: Beryllium, MW-09

ID: 19_2_4_104

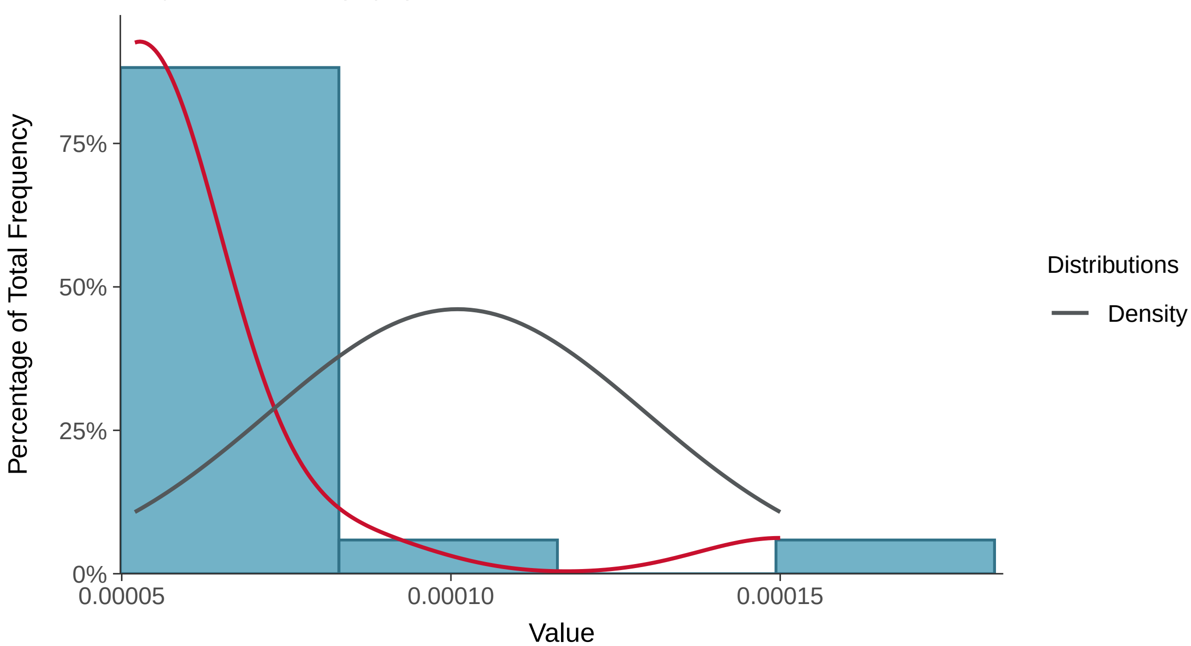
Scatter Plot

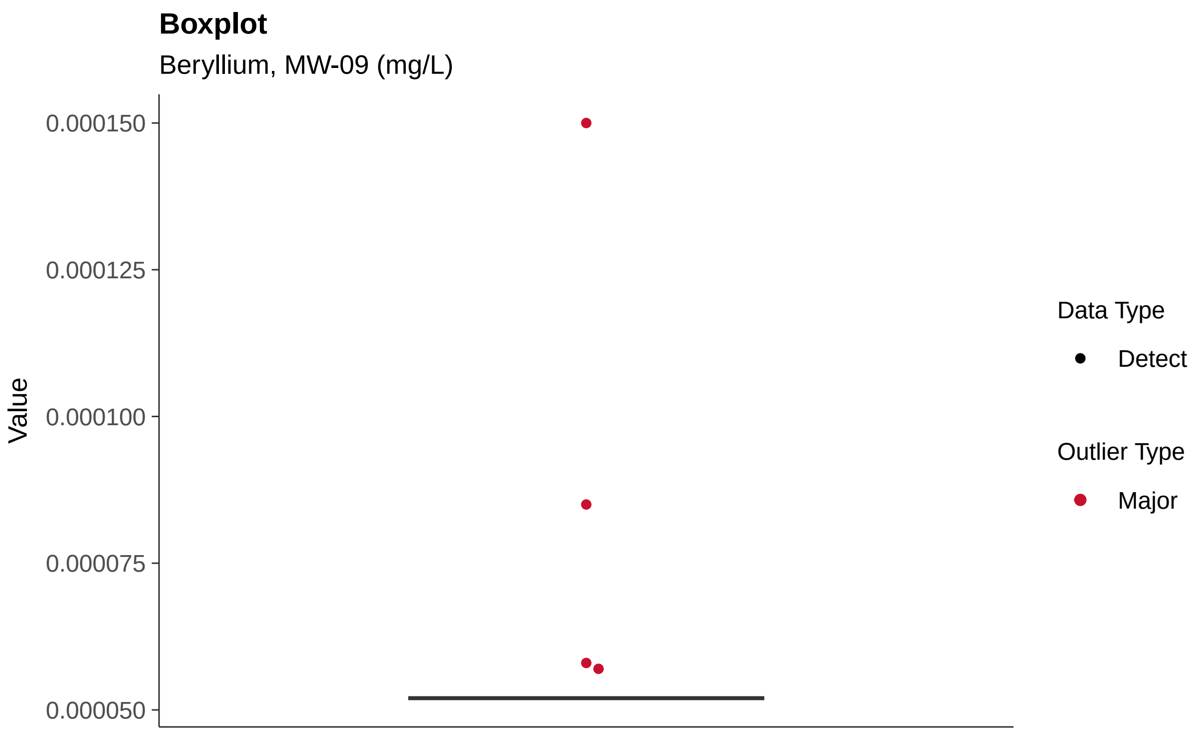
Beryllium, MW-09 (mg/L)

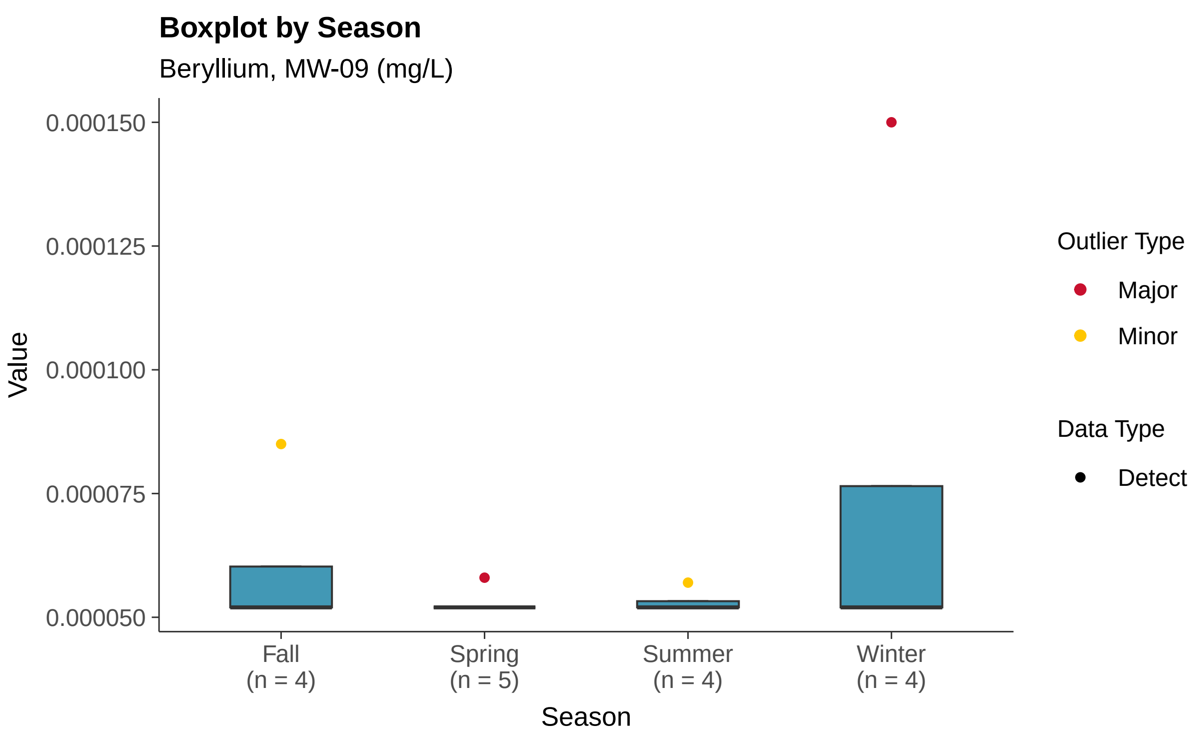


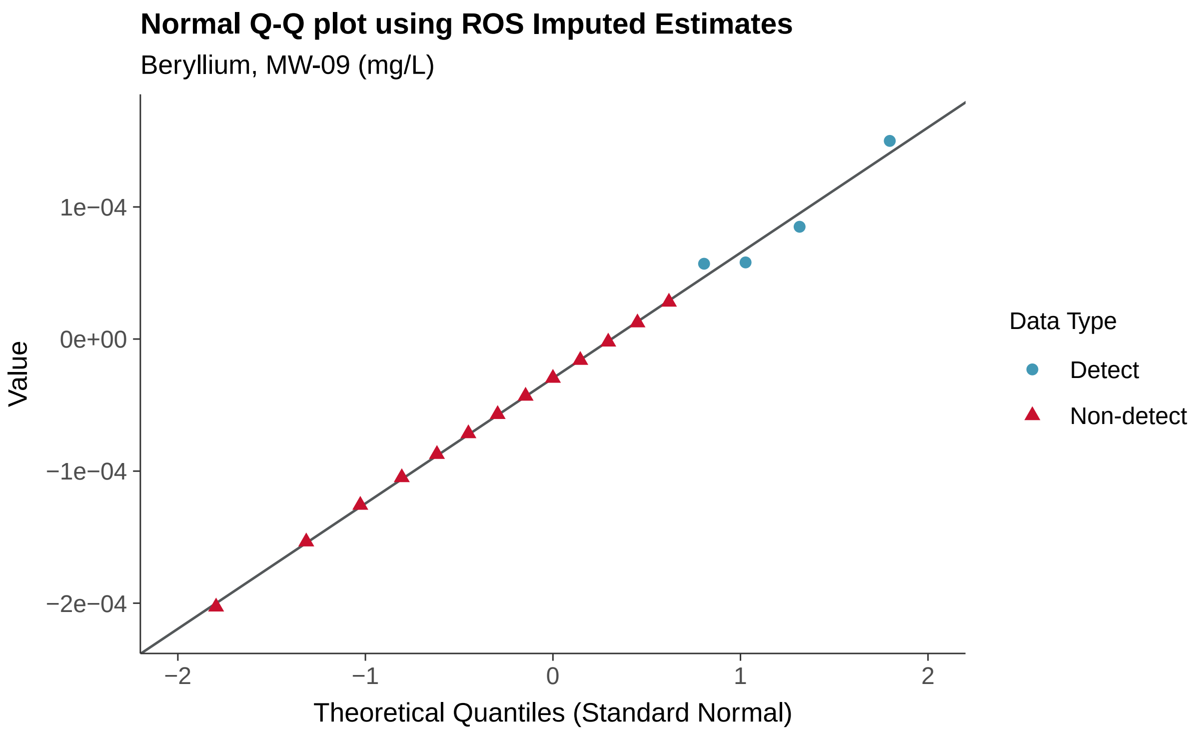
Histogram

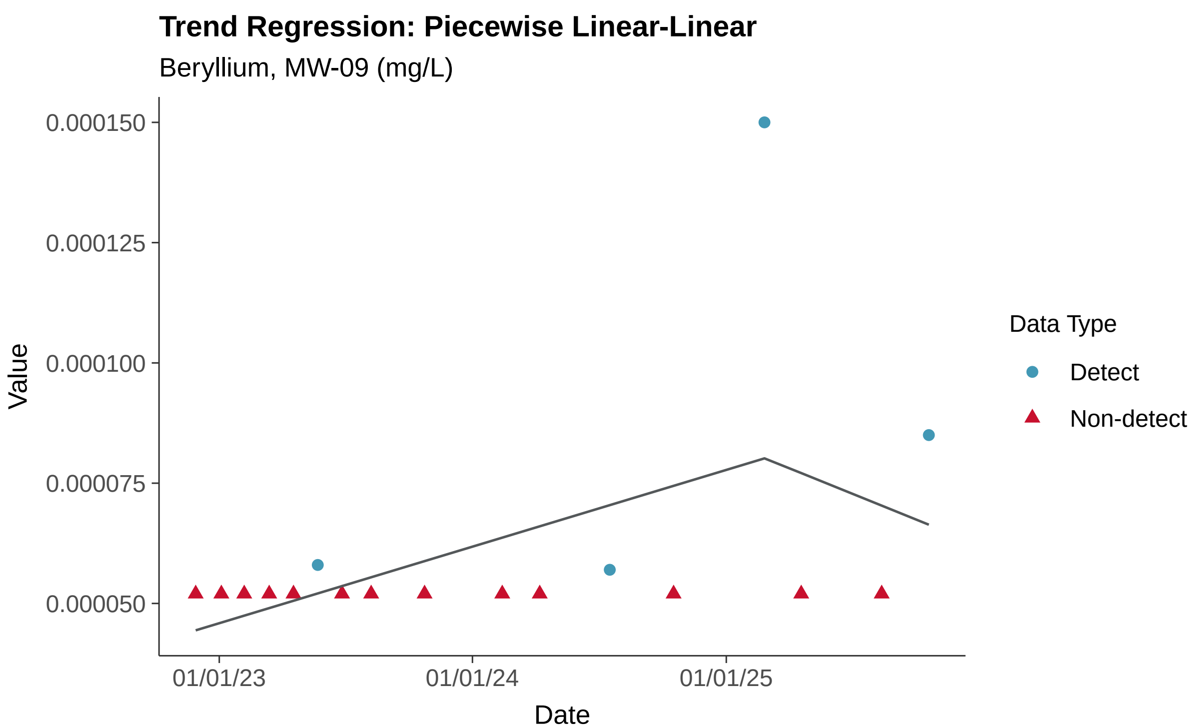
Beryllium, MW-09 (mg/L)




Boxplot
Beryllium, MW-09 (mg/L)
0.000150
0.000125
0.000100
0.000075
0.000050
Value
Data Type
Detect
Outlier Type
Major

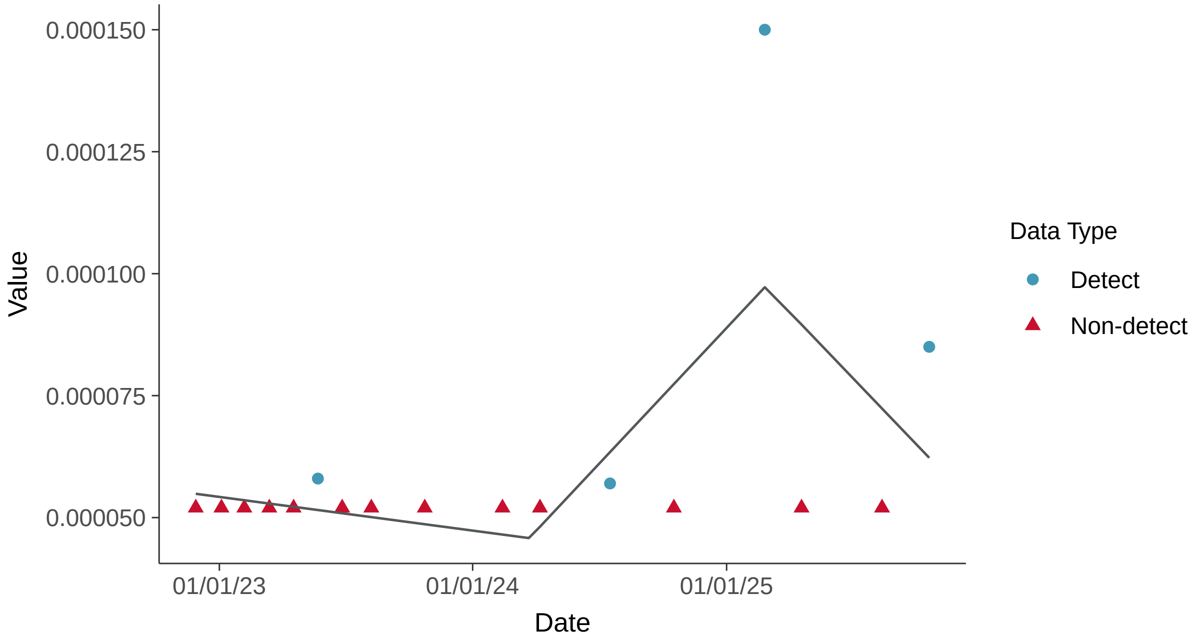

Boxplot by Season
Beryllium, MW-09 (mg/L)
0.000150
0.000125
0.000100
0.000075
0.000050
Value
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Major
Minor
Data Type
Detect


Normal Q-Q plot using ROS Imputed Estimates
Beryllium, MW-09 (mg/L)
Value
1e−04
0e+00
−1e−04
−2e−04
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Beryllium, MW-09 (mg/L)
Value
0.000150
0.000125
0.000100
0.000075
0.000050
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

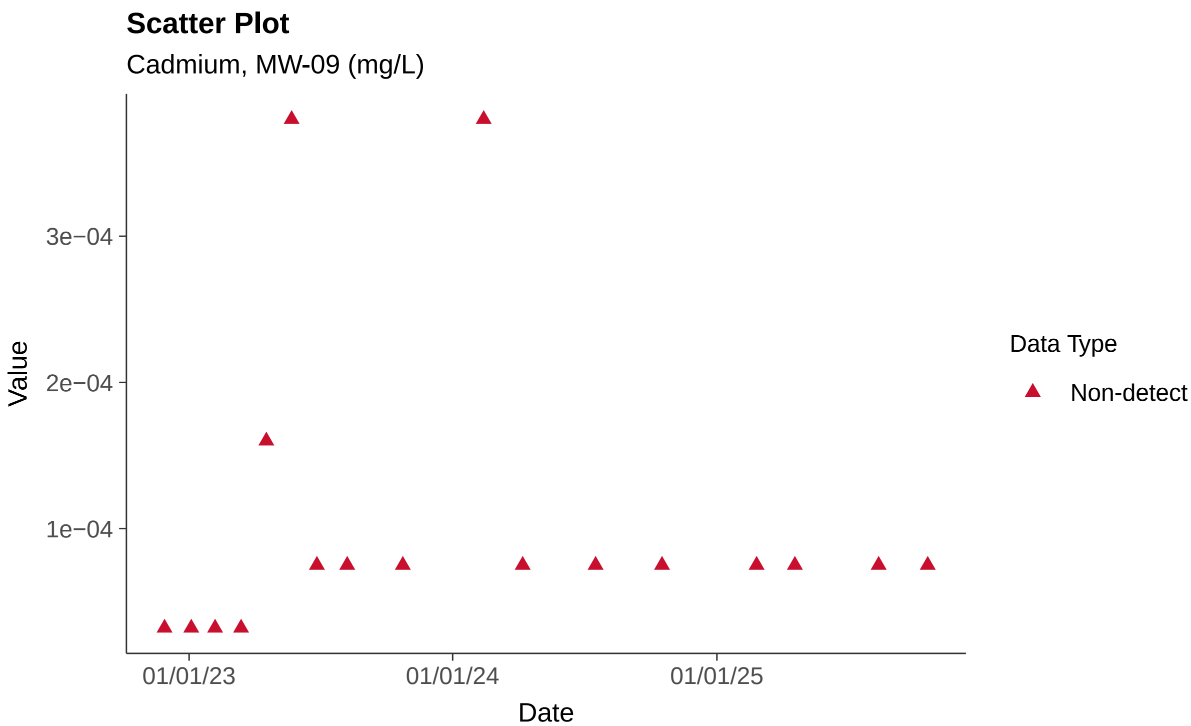
Trend Regression: Piecewise Linear-Linear-Linear

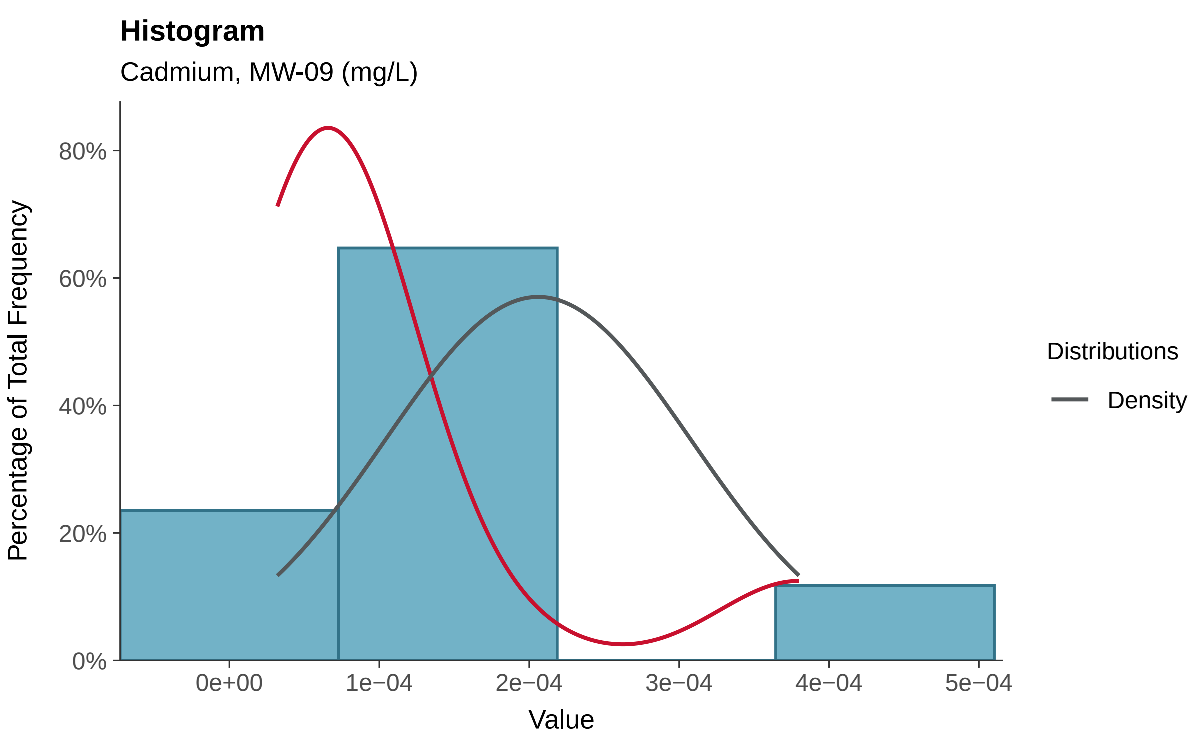
Beryllium, MW-09 (mg/L)



Appendix IV: Cadmium, MW-09

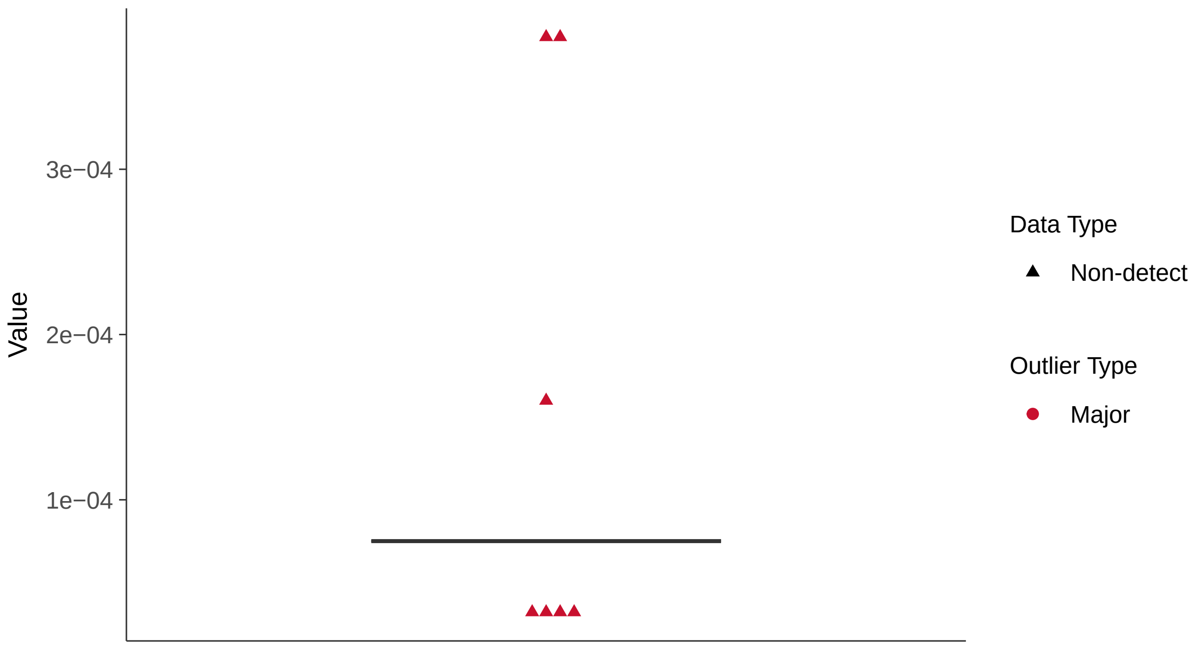
ID: 19_2_4_106





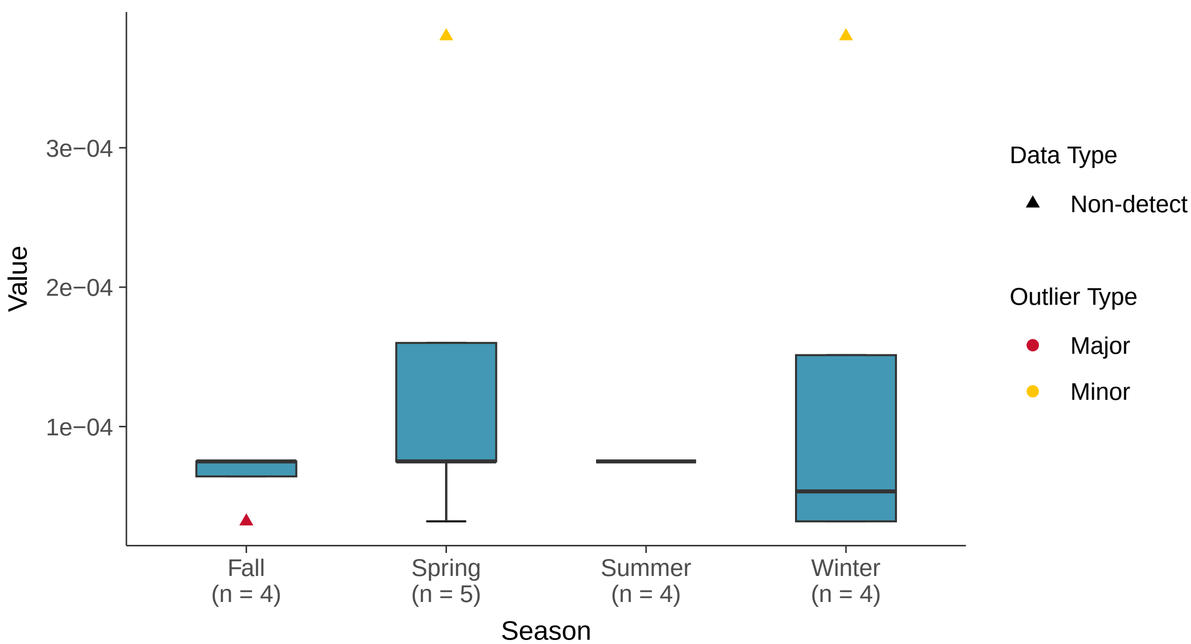
Boxplot

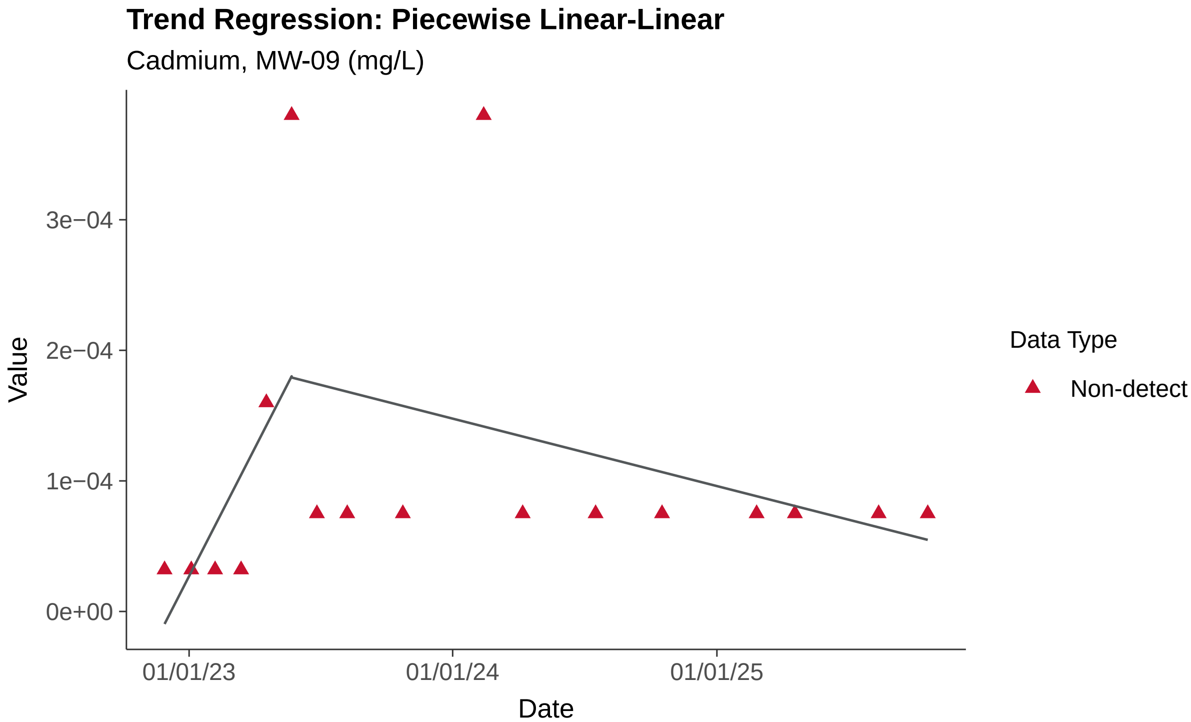
Cadmium, MW-09 (mg/L)

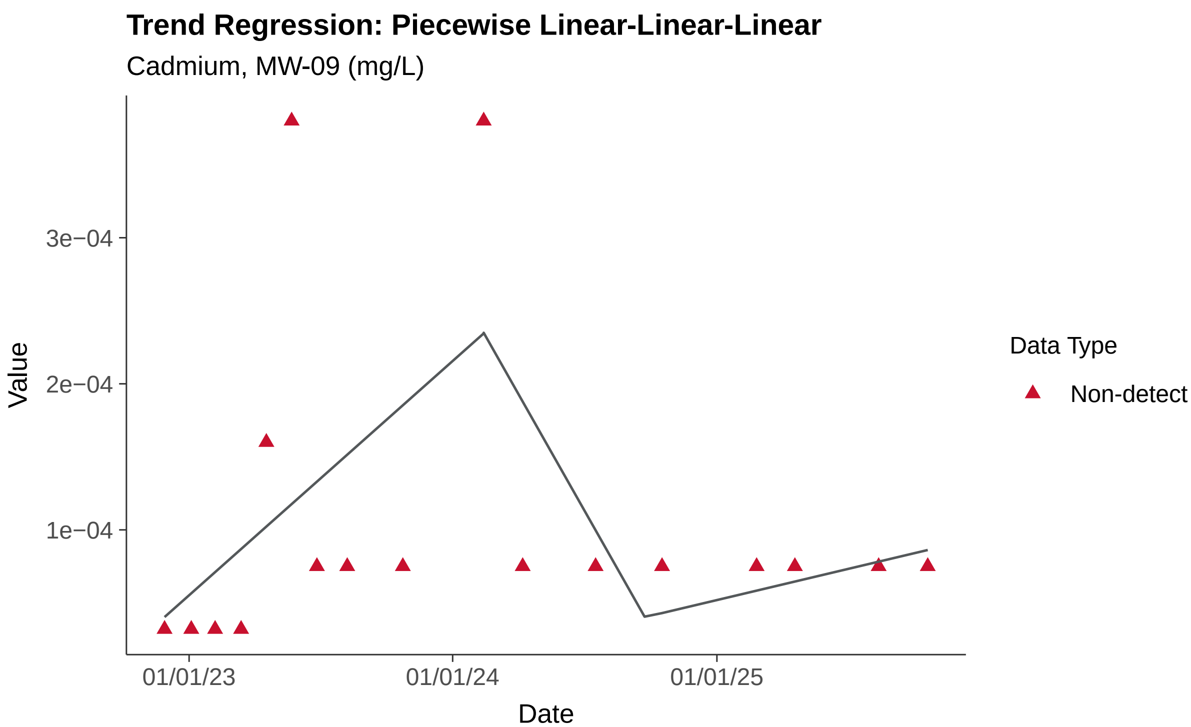


Boxplot by Season

Cadmium, MW-09 (mg/L)

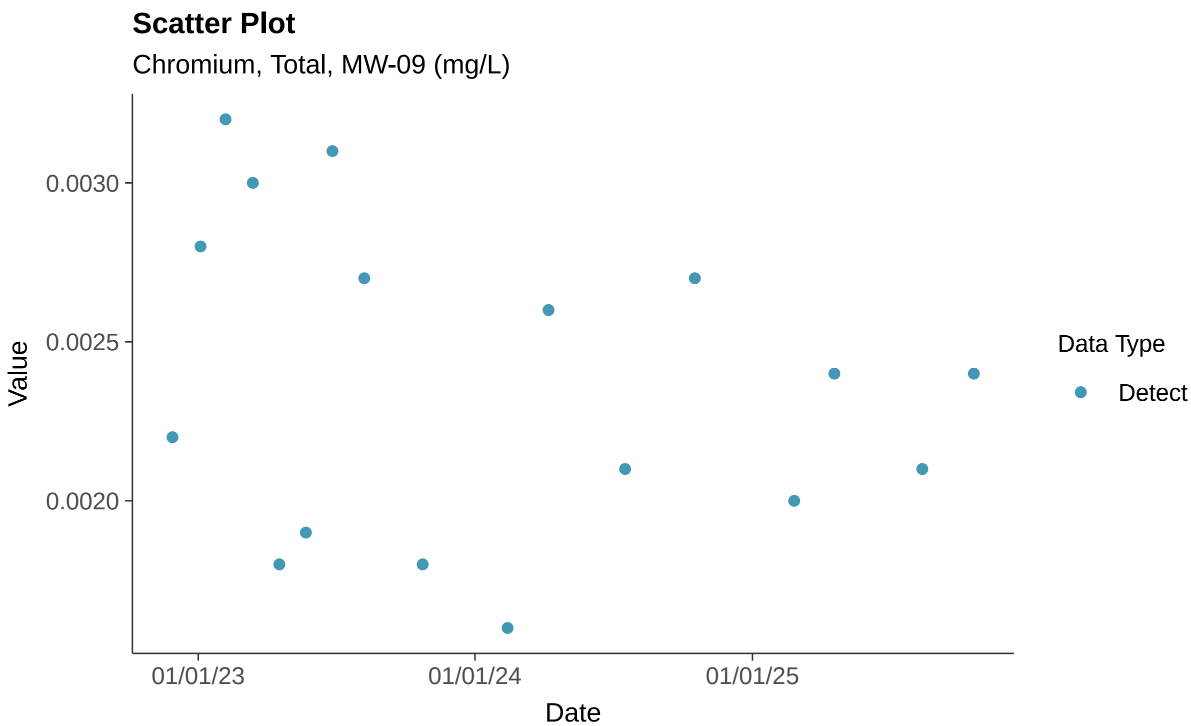


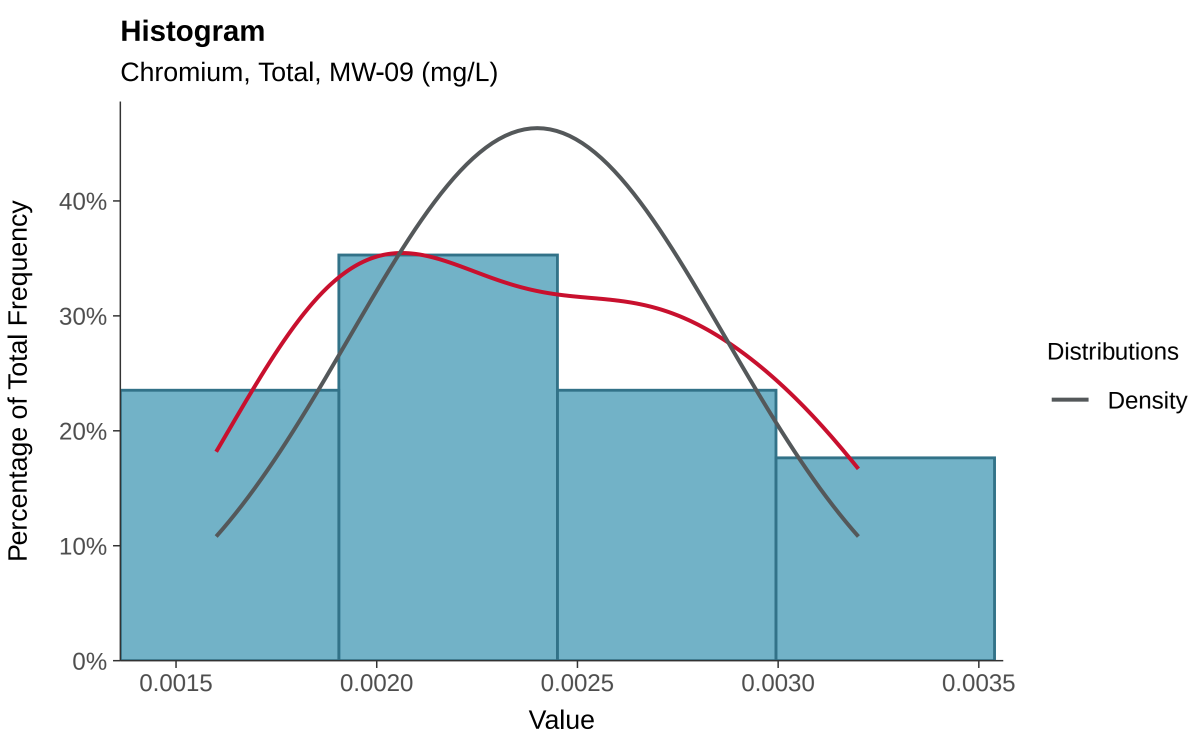

Trend Regression: Piecewise Linear-Linear
Cadmium, MW-09 (mg/L)
Value
3e−04
2e−04
1e−04
0e+00
01/01/23
01/01/24
01/01/25
Date
Data Type
Non-detect


Trend Regression: Piecewise Linear-Linear-Linear
Cadmium, MW-09 (mg/L)
Value
3e−04
2e−04
1e−04
01/01/23
01/01/24
01/01/25
Date
Data Type
Non-detect

Appendix IV: Chromium, Total, MW-09

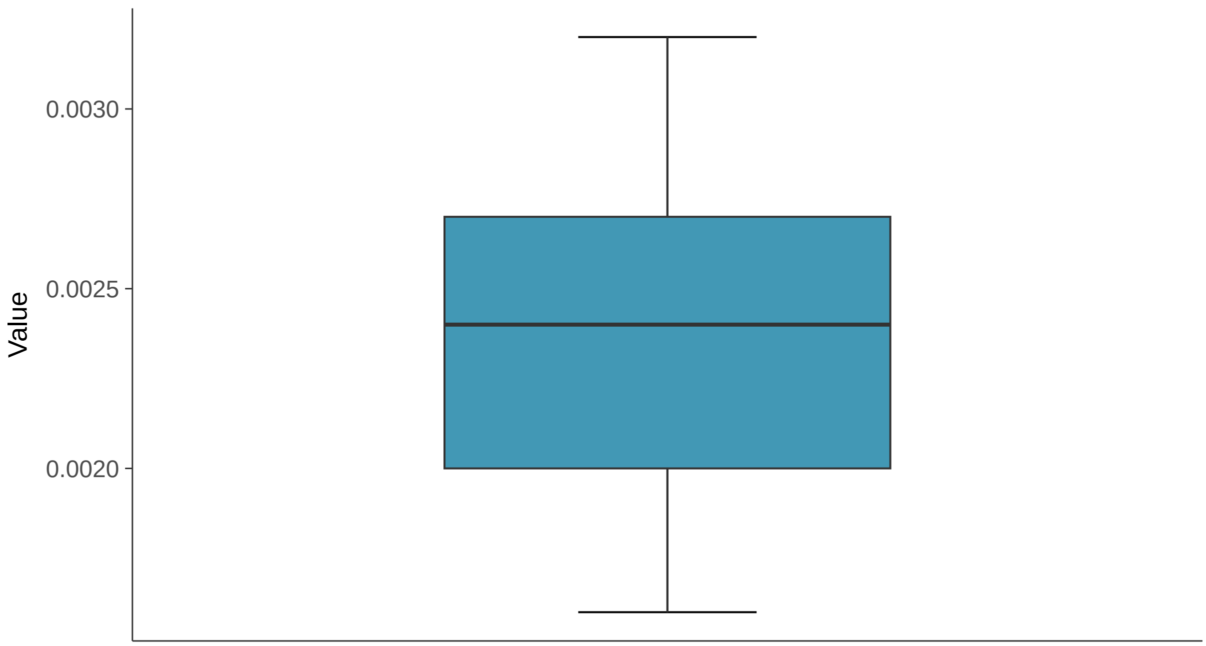
ID: 19_2_4_109





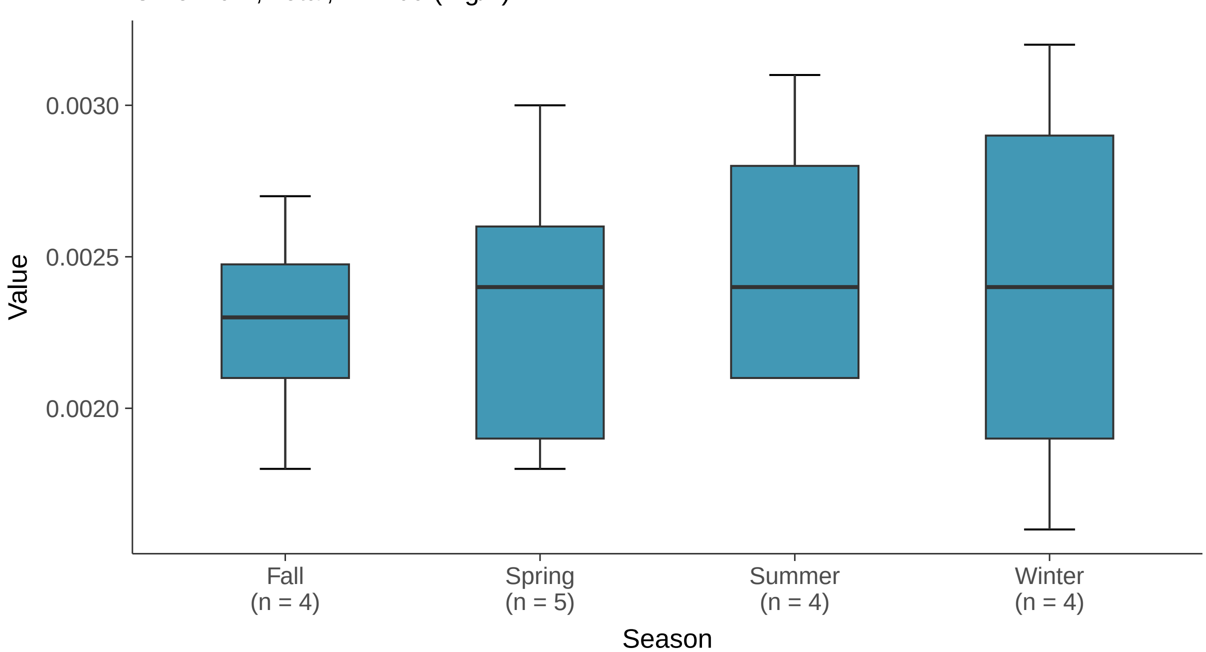
Boxplot

Chromium, Total, MW-09 (mg/L)



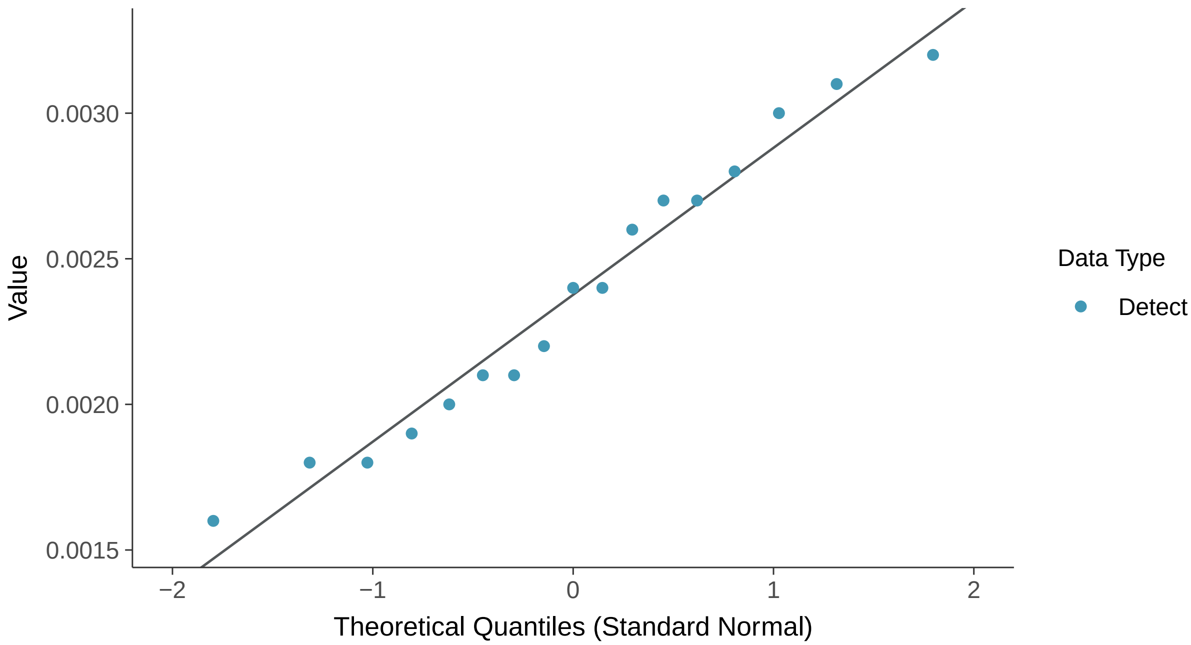
Boxplot by Season

Chromium, Total, MW-09 (mg/L)



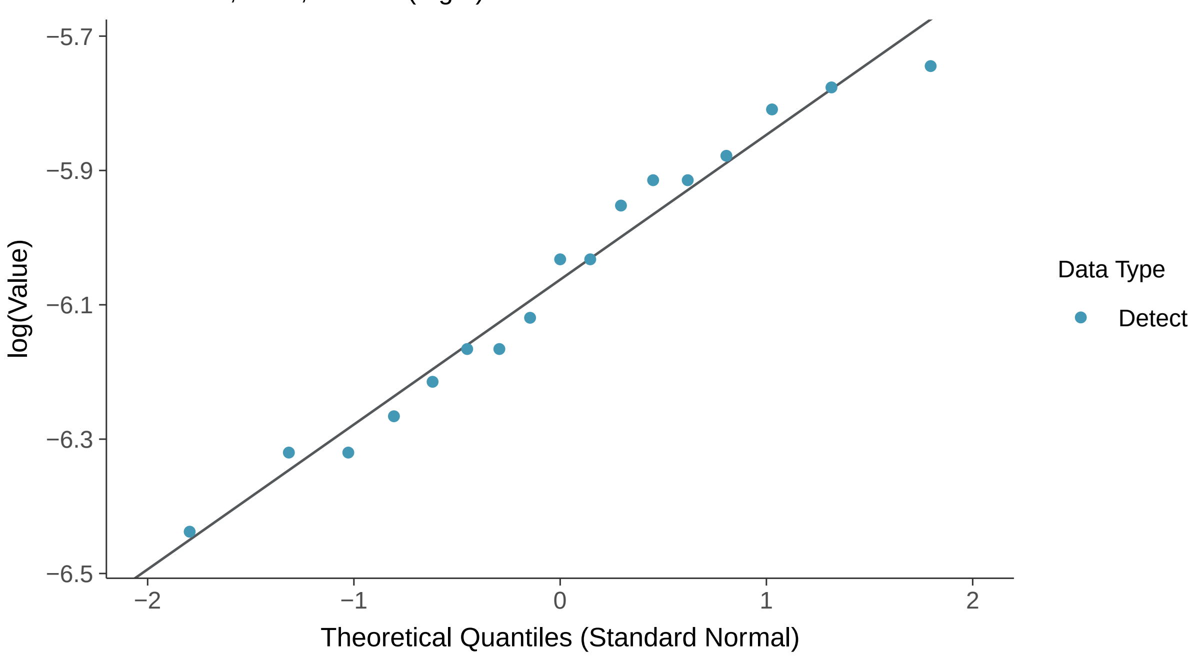
Normal Q-Q plot

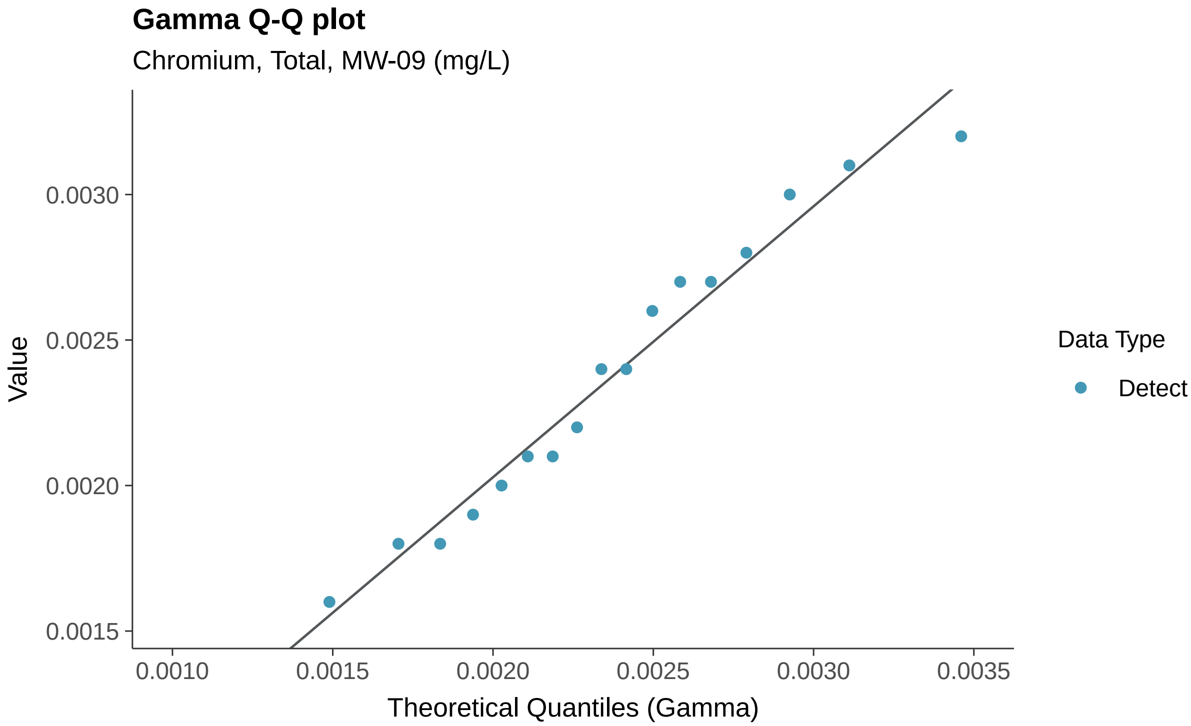
Chromium, Total, MW-09 (mg/L)

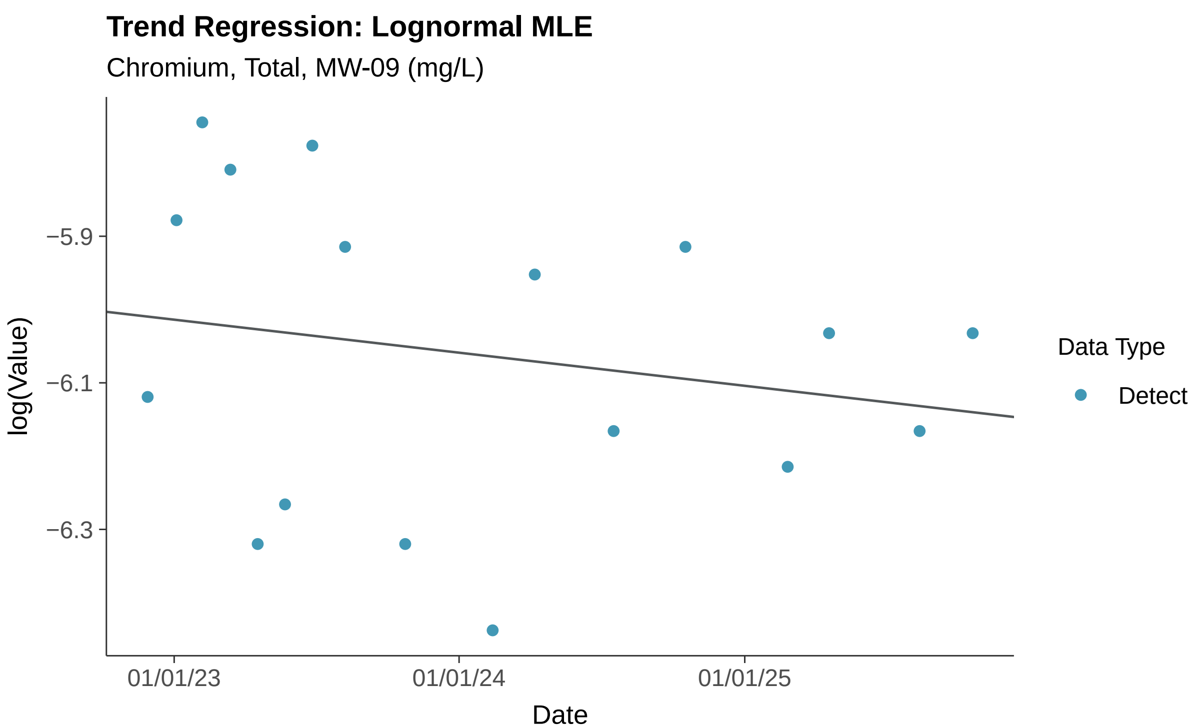


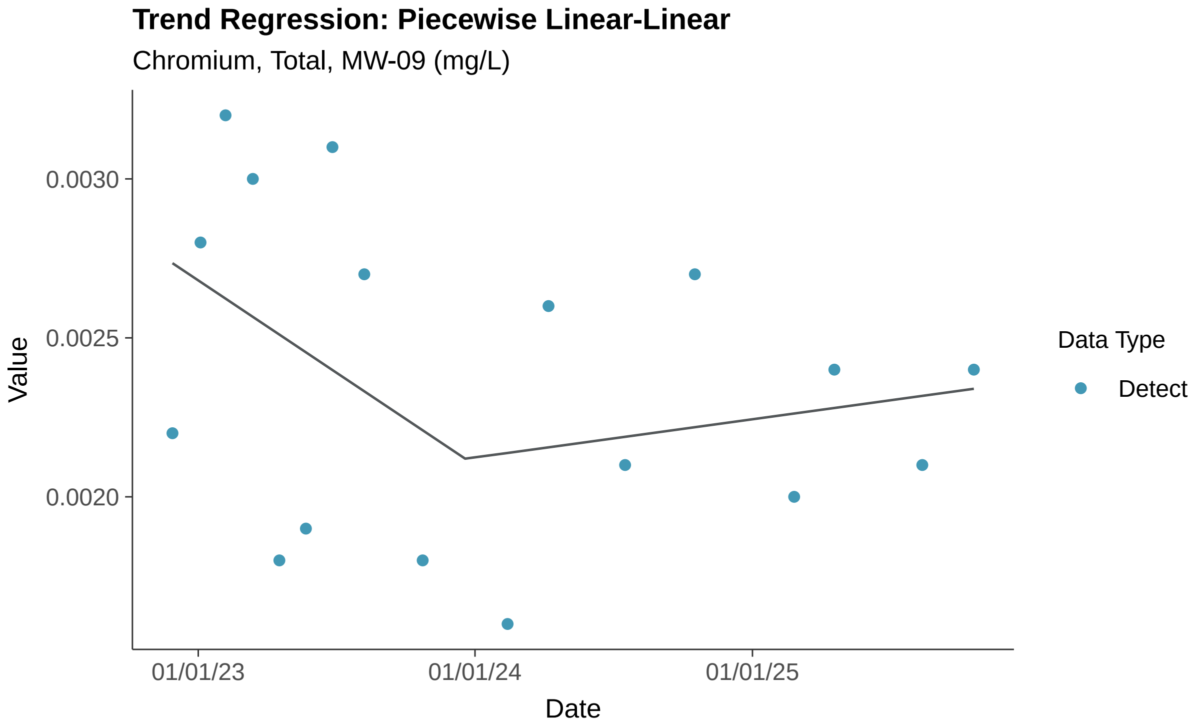
Lognormal Q-Q plot

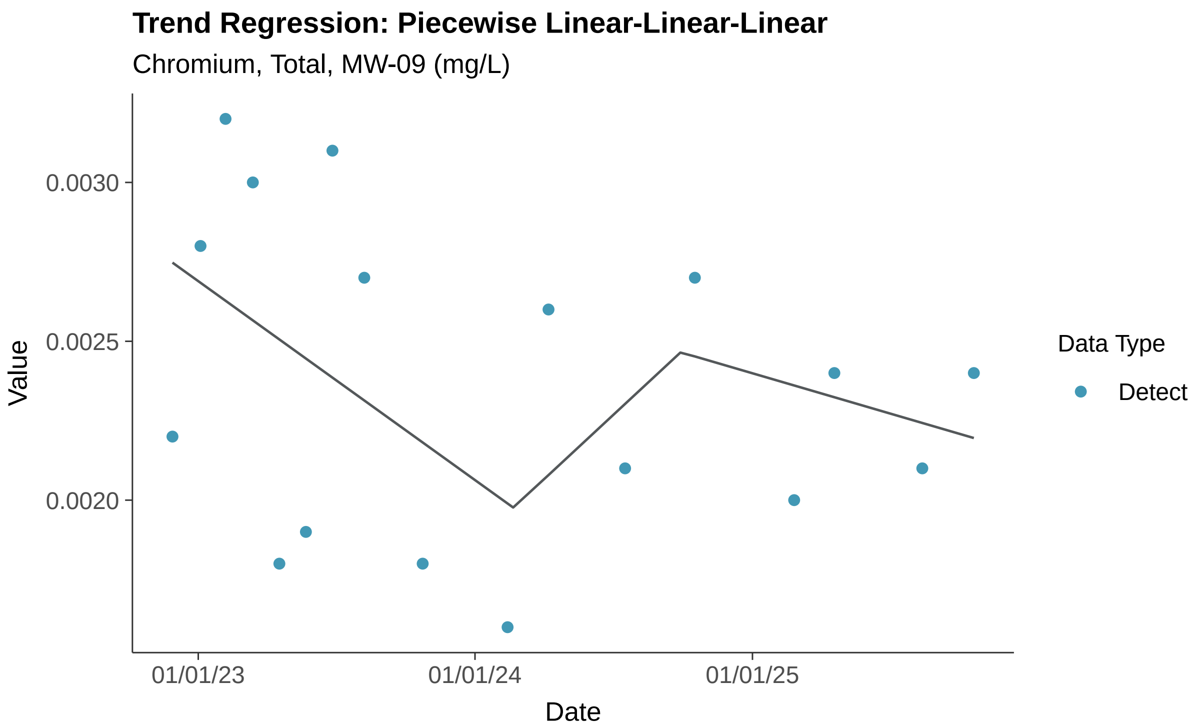
Chromium, Total, MW-09 (mg/L)




Gamma Q-Q plot
Chromium, Total, MW-09 (mg/L)
Value
0.0030
0.0025
0.0020
0.0015
0.0010
0.0015
0.0020
0.0025
0.0030
0.0035
Theoretical Quantiles (Gamma)
Data Type
Detect

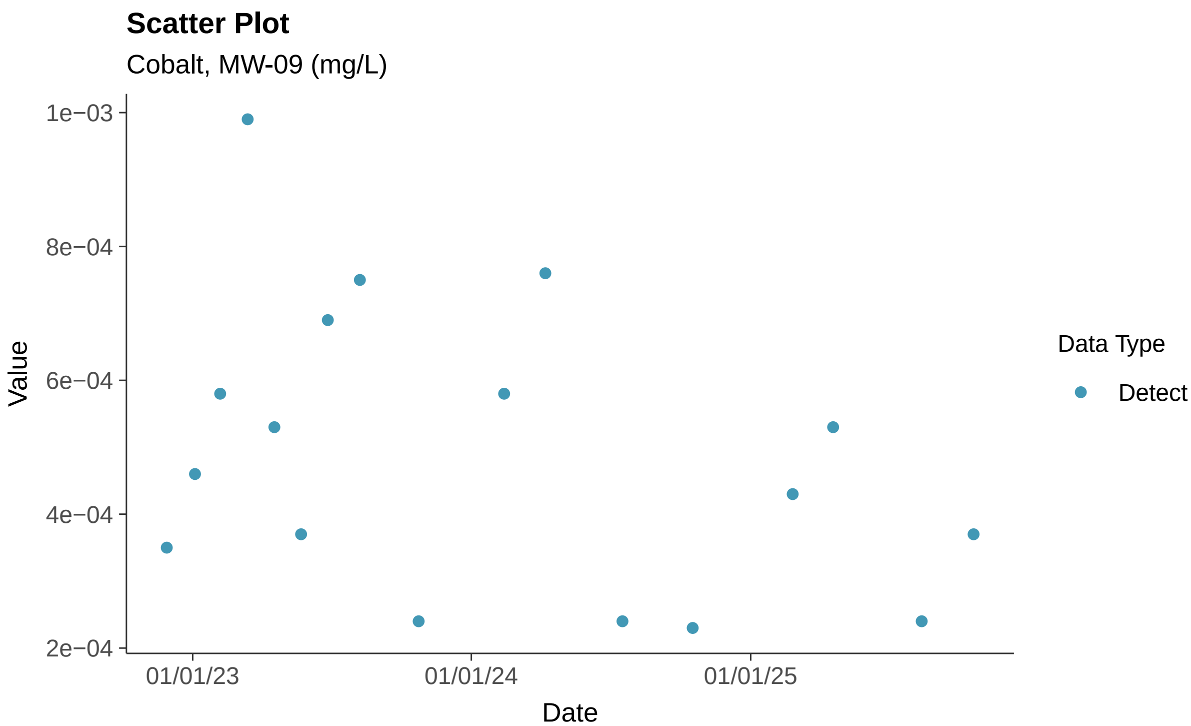

Trend Regression: Lognormal MLE
Chromium, Total, MW-09 (mg/L)
log(Value)
−5.9
−6.1
−6.3
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

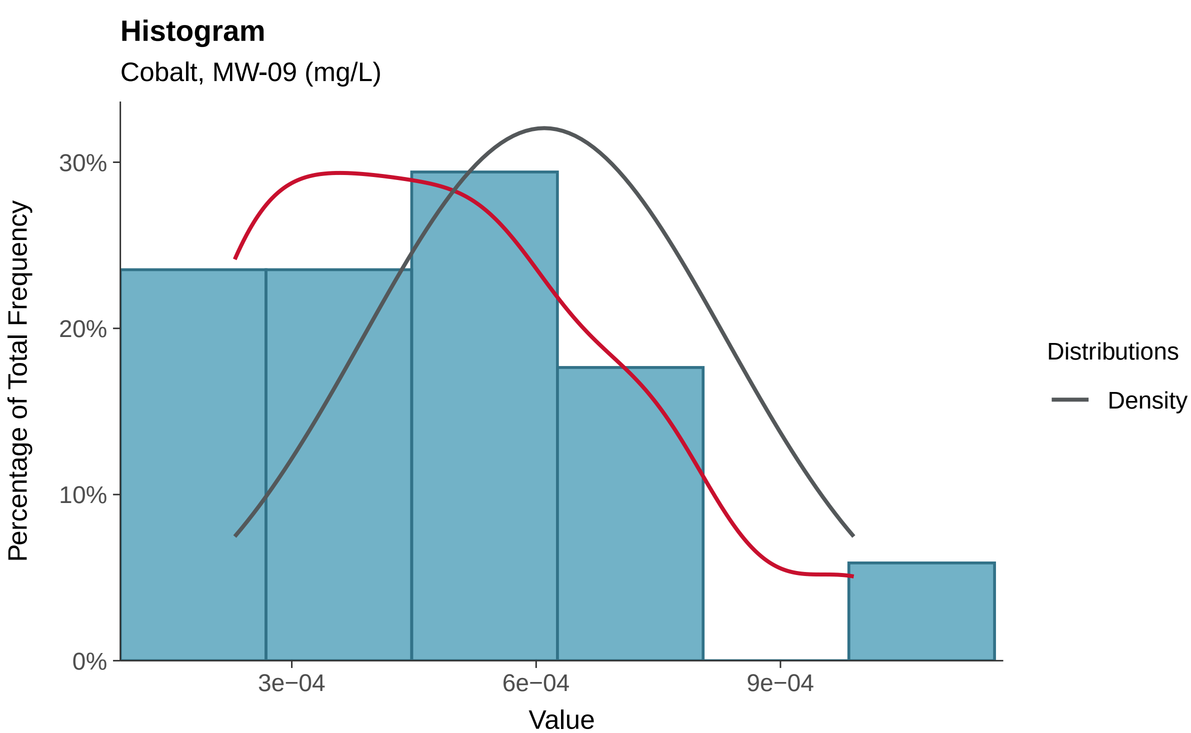

Trend Regression: Piecewise Linear-Linear
Chromium, Total, MW-09 (mg/L)
Value
0.0030
0.0025
0.0020
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
Chromium, Total, MW-09 (mg/L)
Value
0.0030
0.0025
0.0020
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Appendix IV: Cobalt, MW-09

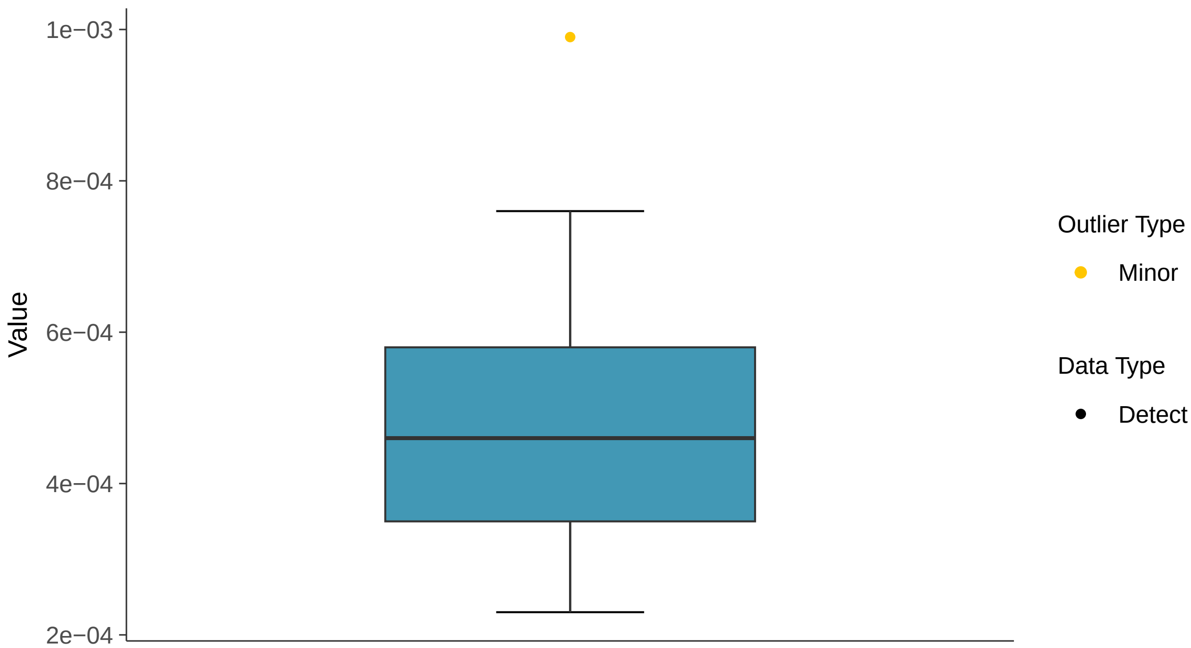
ID: 19_2_4_110





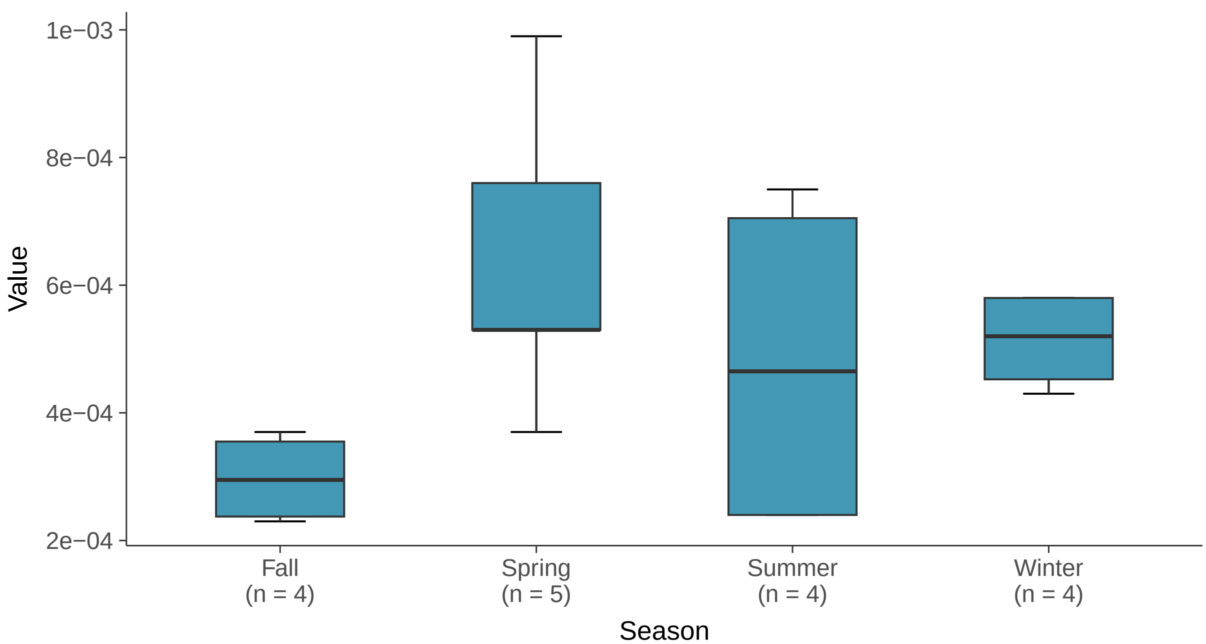
Boxplot

Cobalt, MW-09 (mg/L)



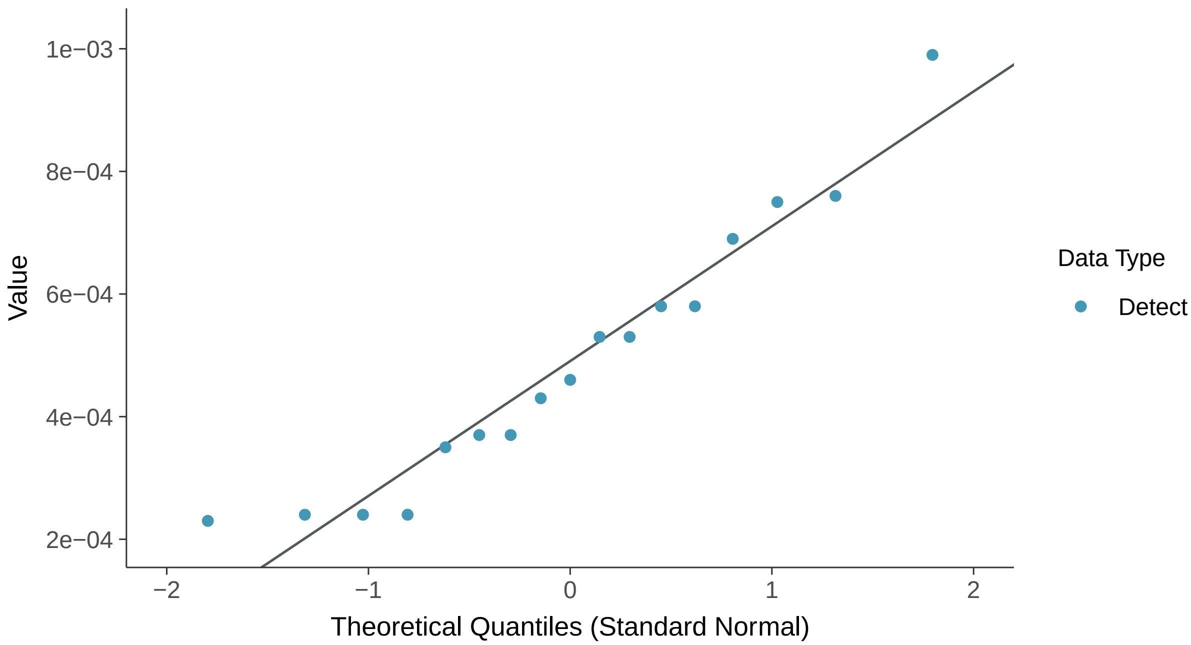
Boxplot by Season

Cobalt, MW-09 (mg/L)



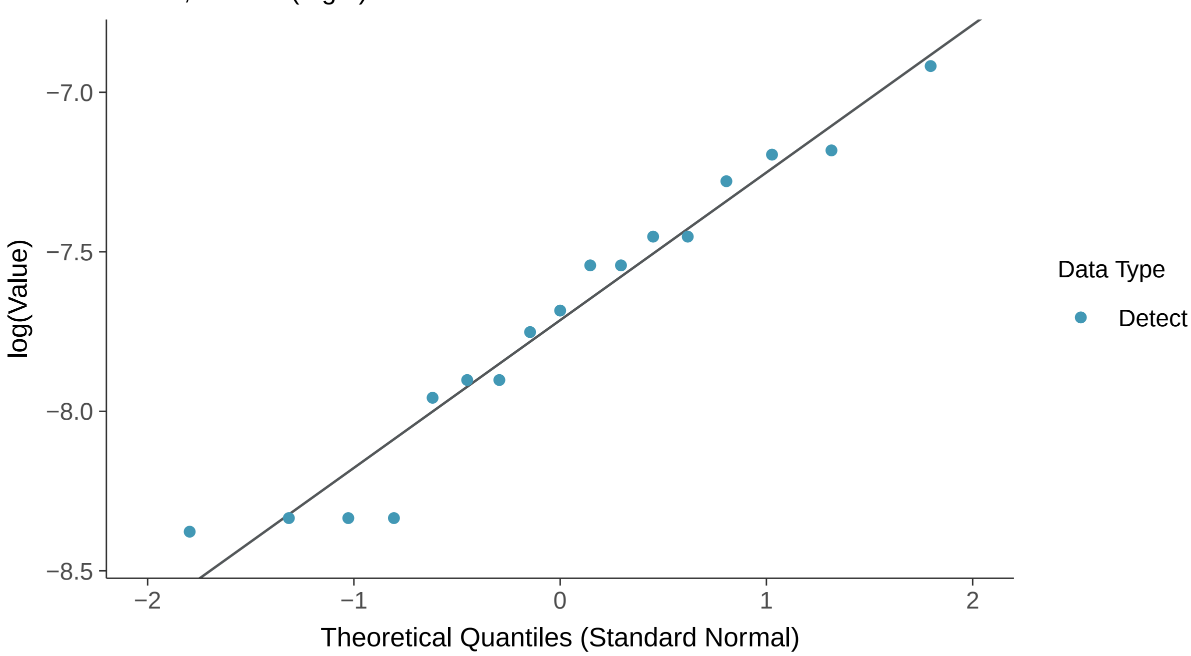
Normal Q-Q plot

Cobalt, MW-09 (mg/L)



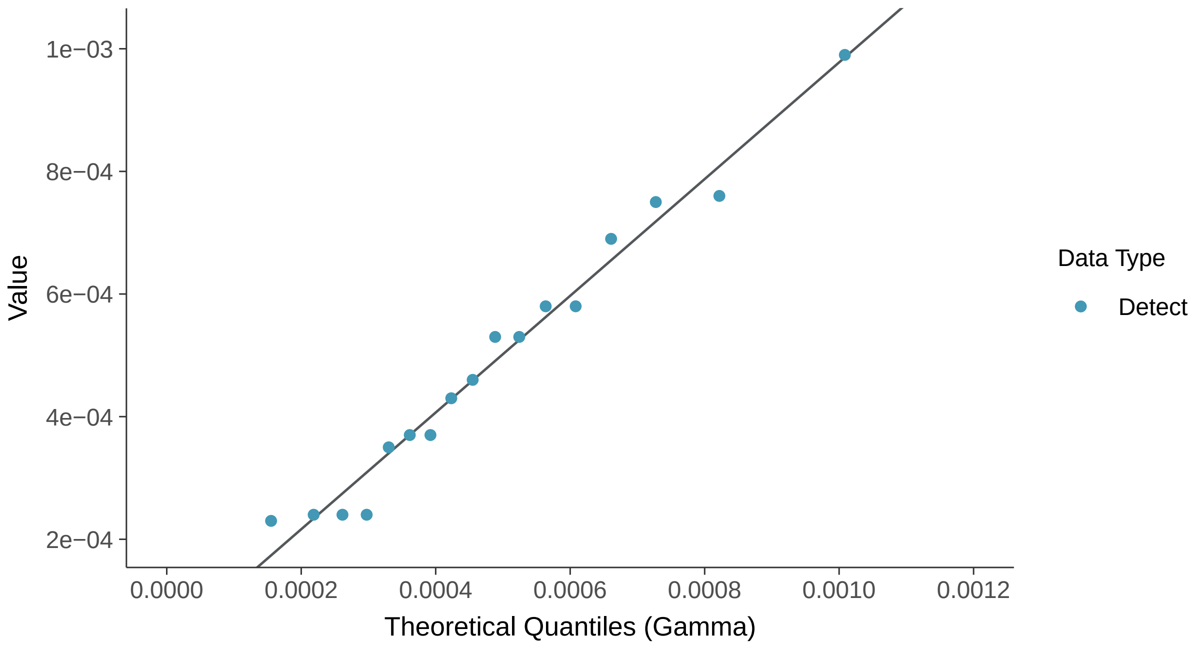
Lognormal Q-Q plot

Cobalt, MW-09 (mg/L)



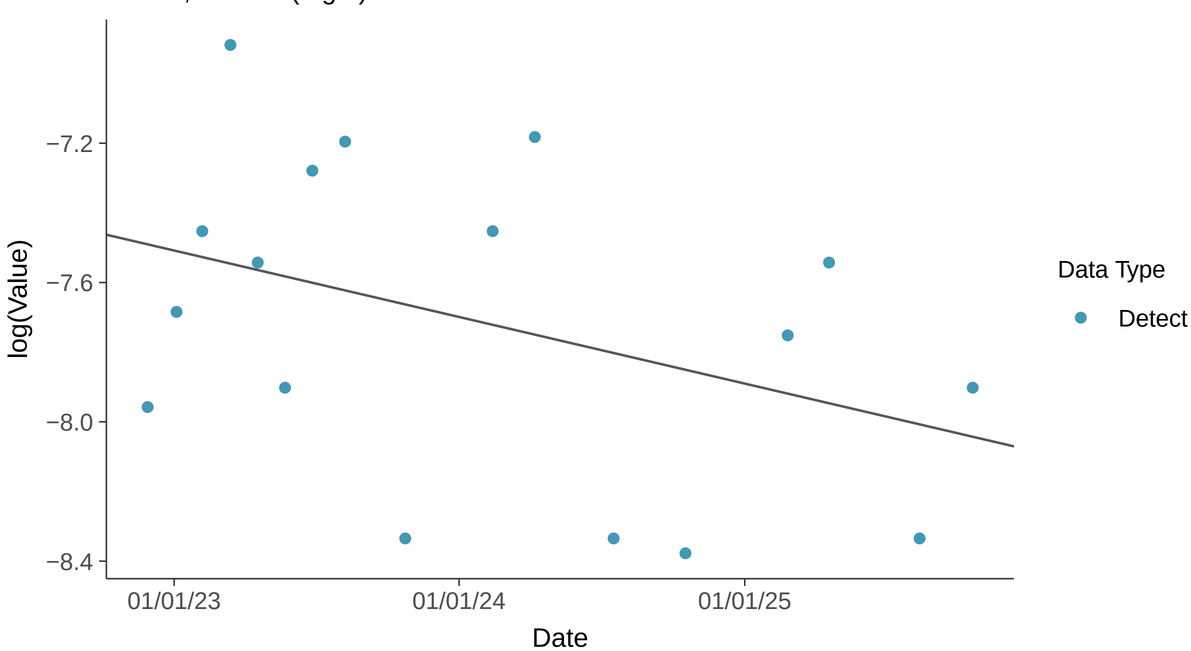
Gamma Q-Q plot

Cobalt, MW-09 (mg/L)



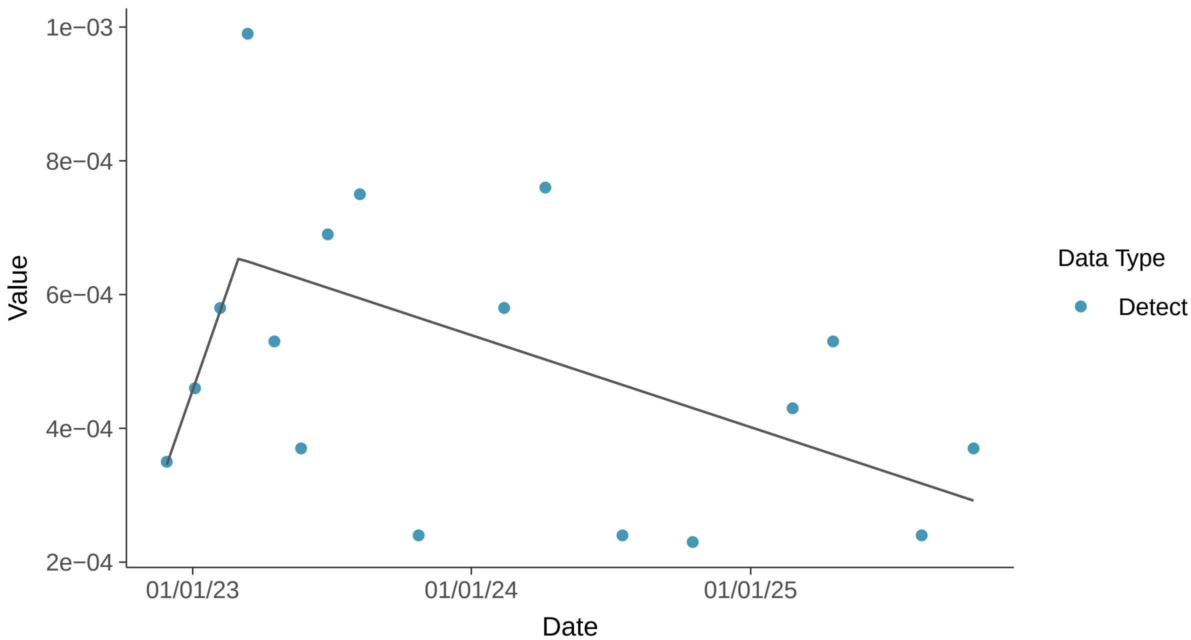
Trend Regression: Lognormal MLE

Cobalt, MW-09 (mg/L)



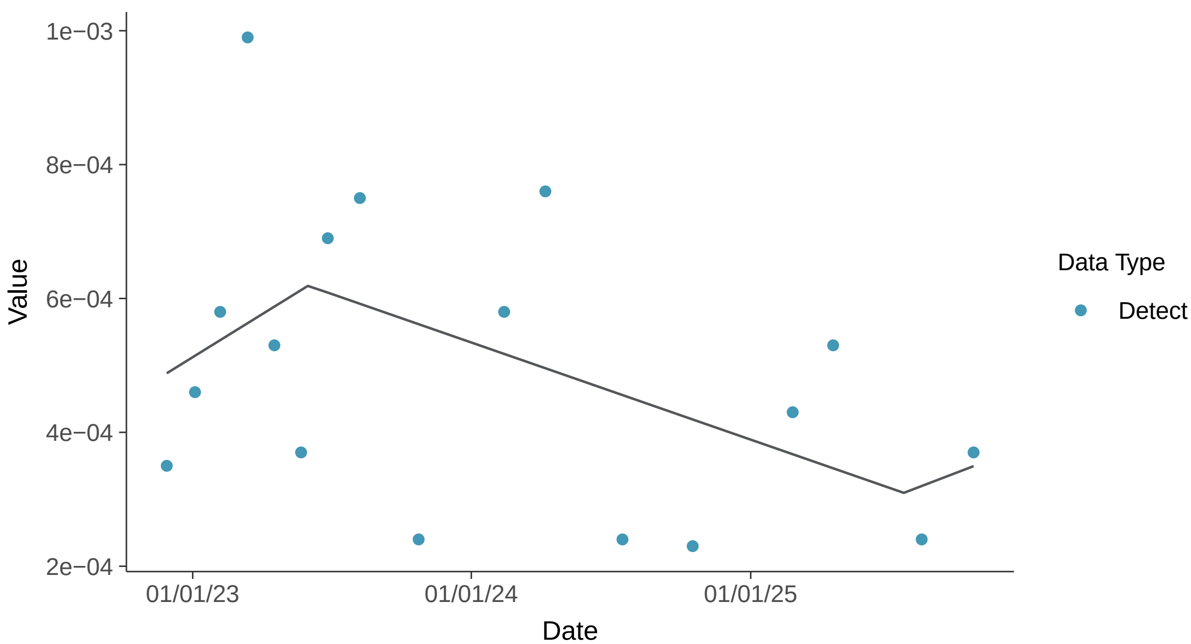
Trend Regression: Piecewise Linear-Linear

Cobalt, MW-09 (mg/L)



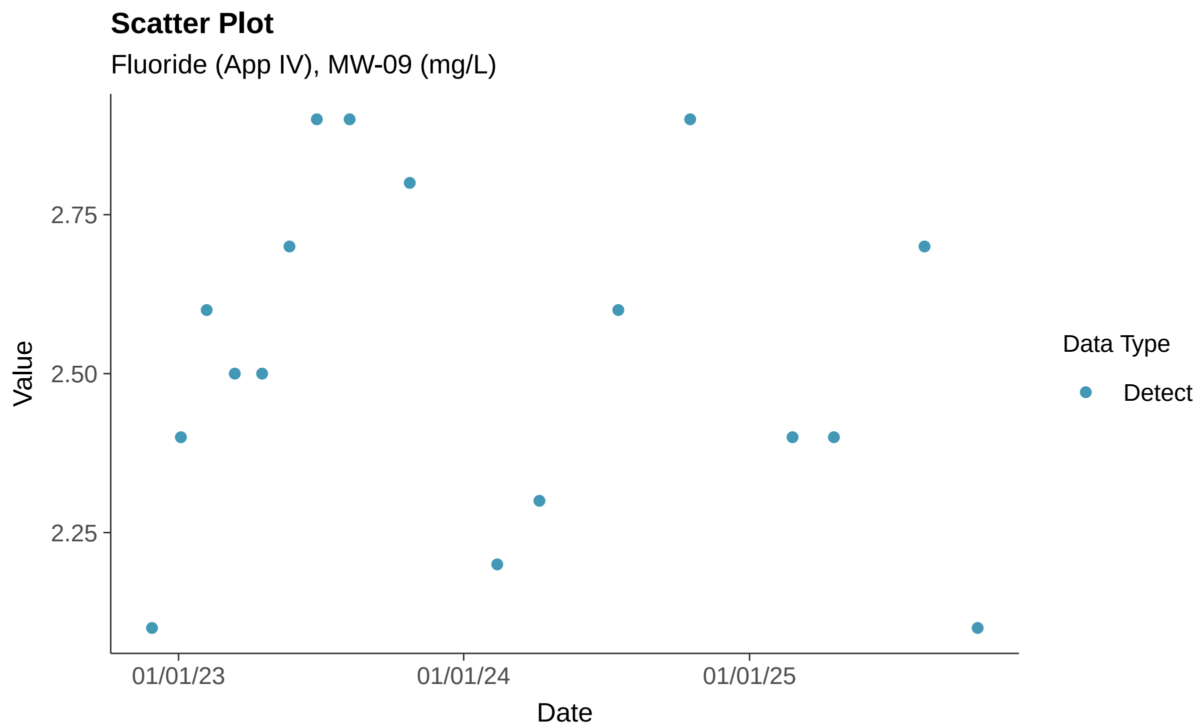
Trend Regression: Piecewise Linear-Linear-Linear

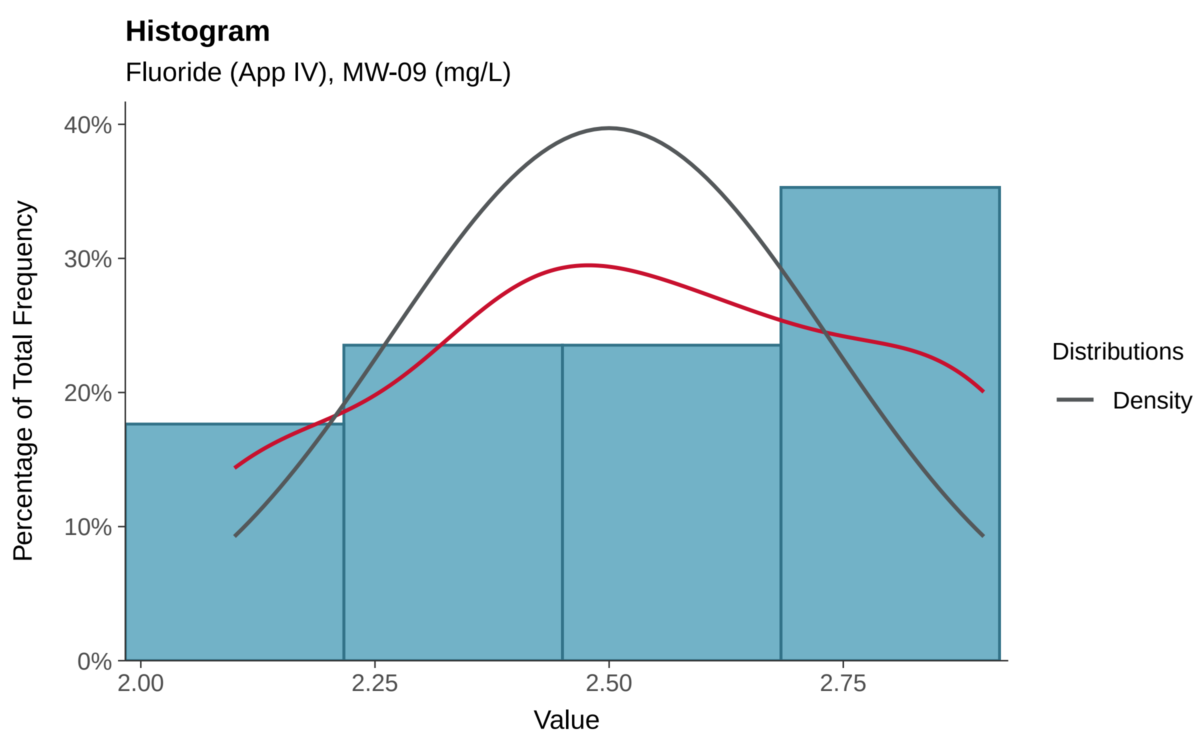
Cobalt, MW-09 (mg/L)



Appendix IV: Fluoride (App IV), MW-09

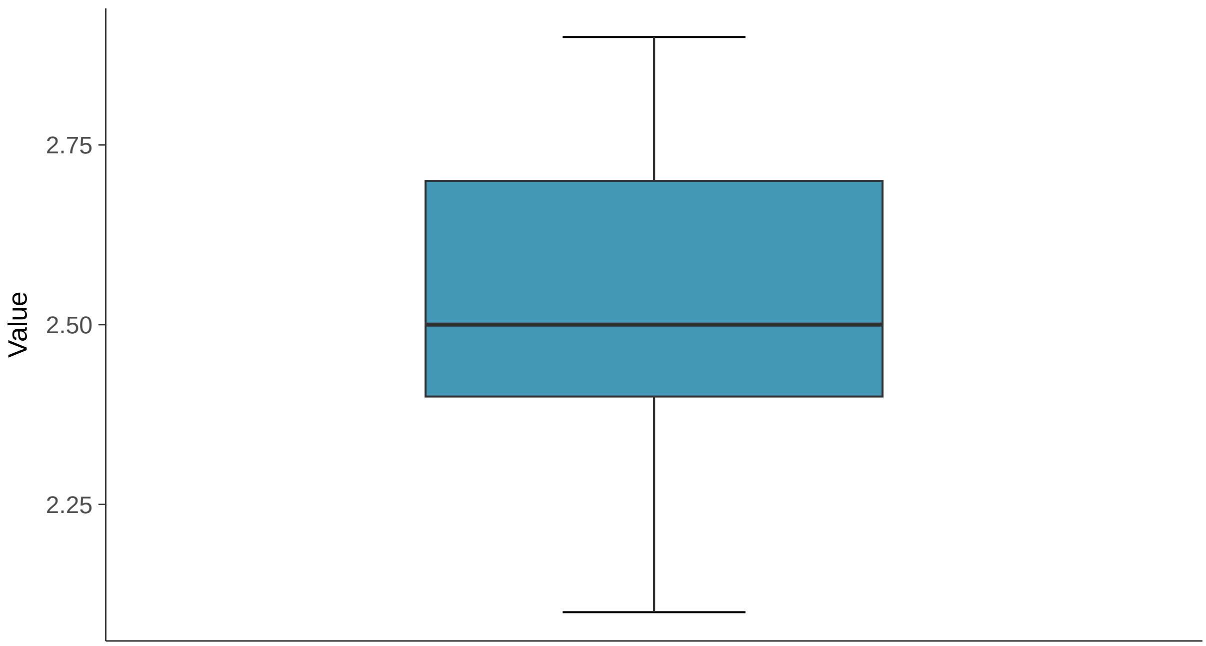
ID: 19_2_4_113





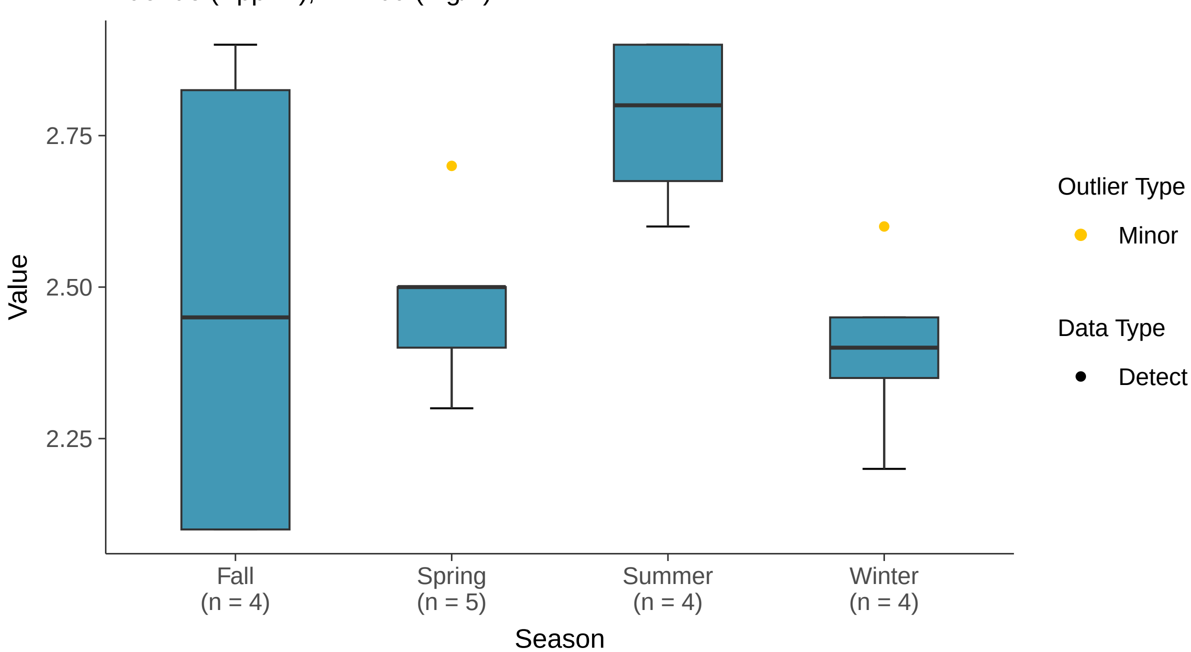
Boxplot

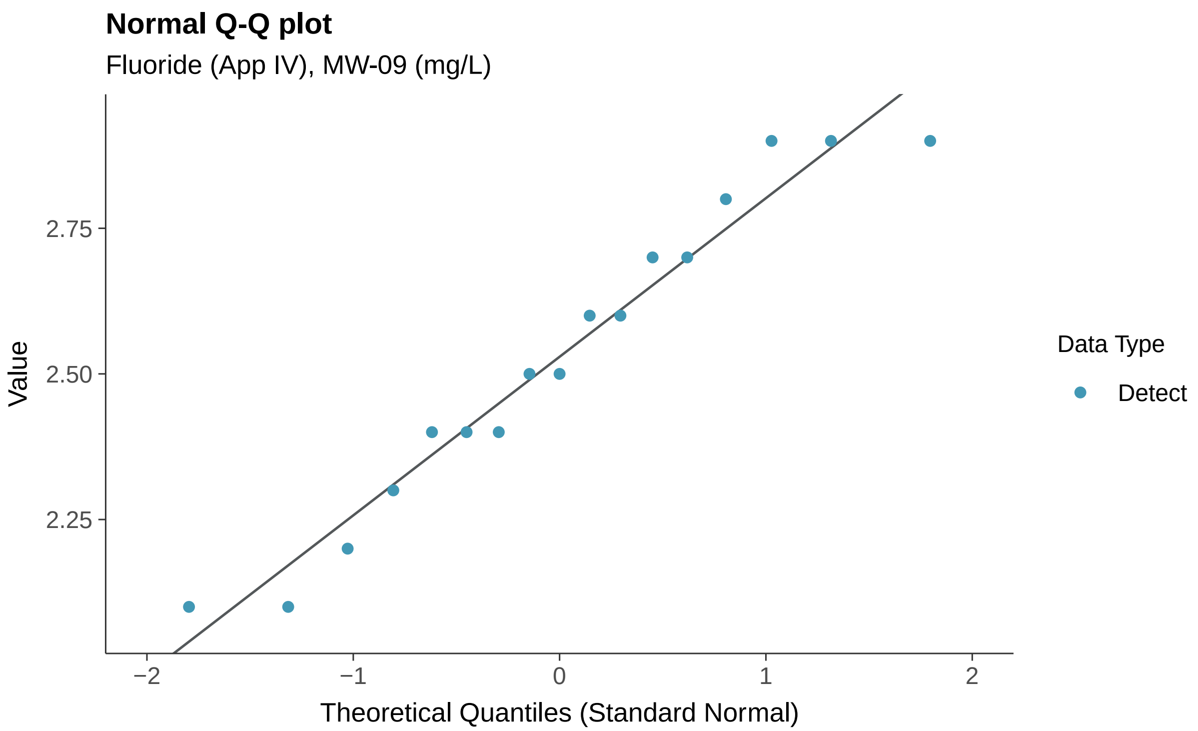
Fluoride (App IV), MW-09 (mg/L)

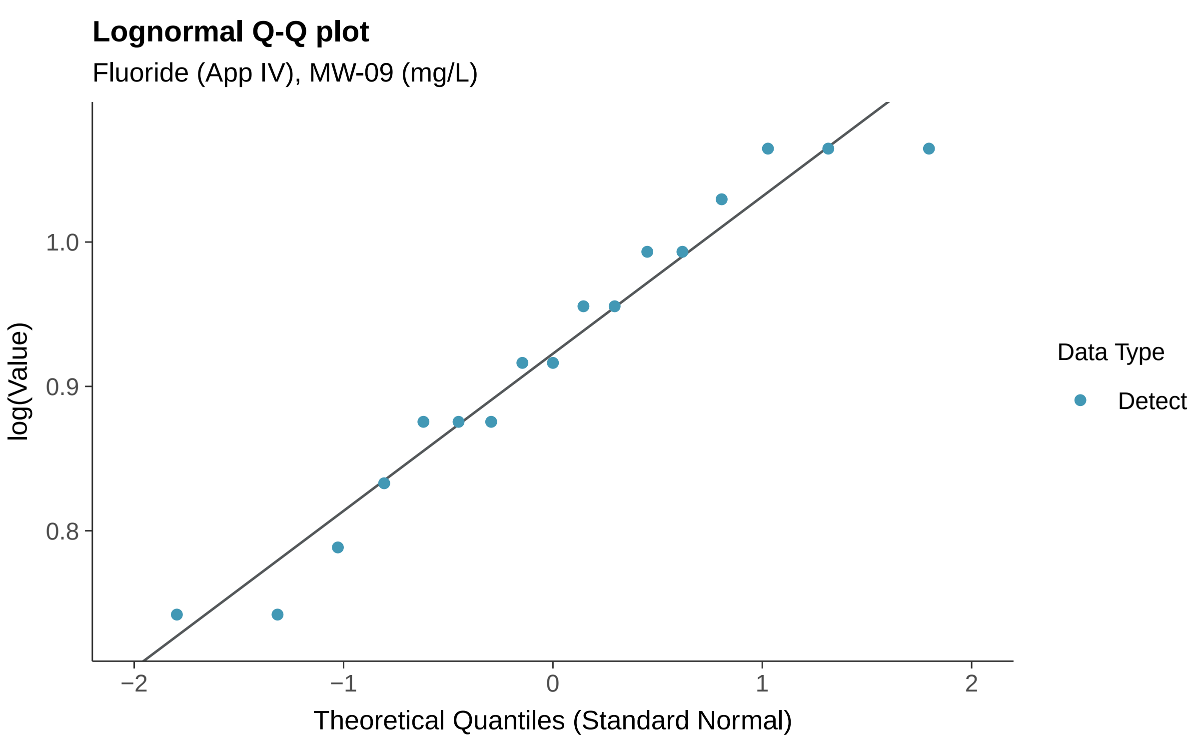


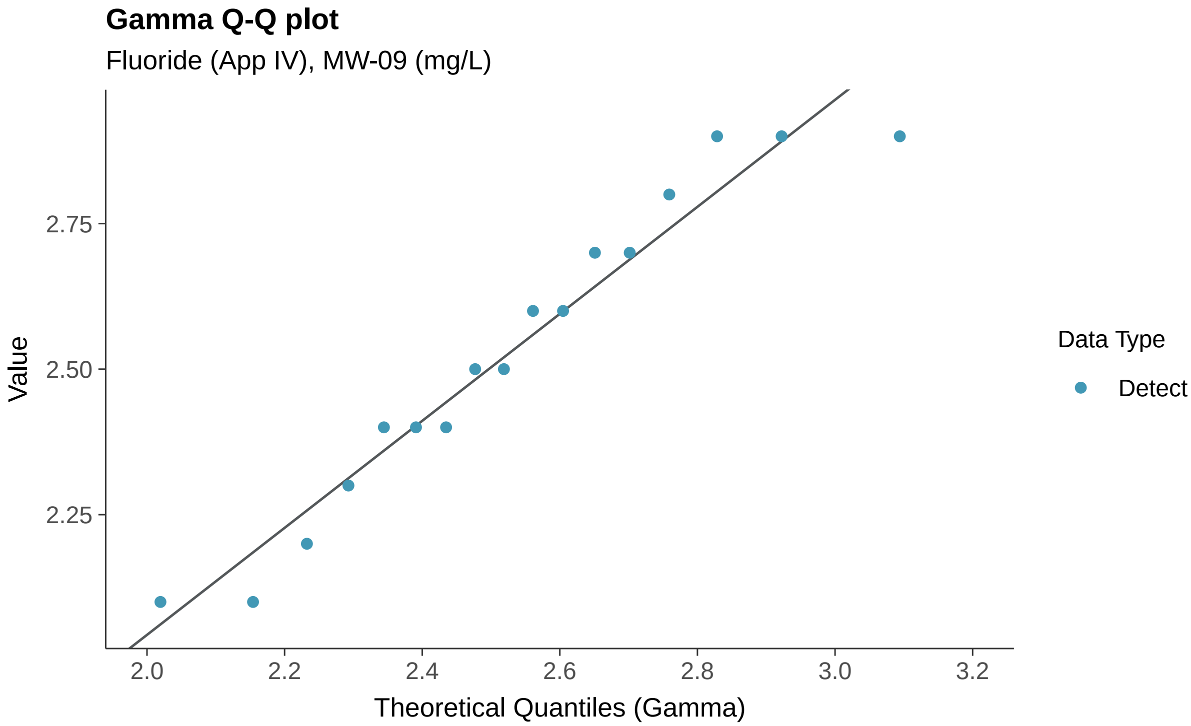
Boxplot by Season

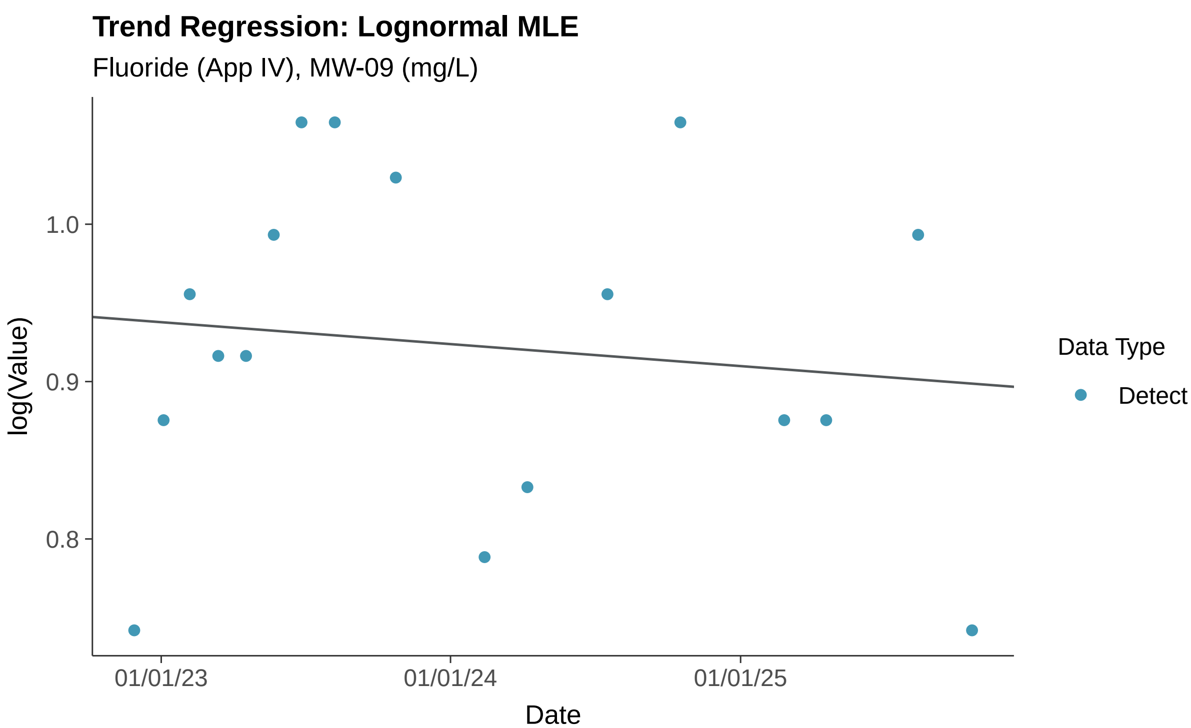
Fluoride (App IV), MW-09 (mg/L)




Normal Q-Q plot
Fluoride (App IV), MW-09 (mg/L)
Value
2.75
2.50
2.25
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

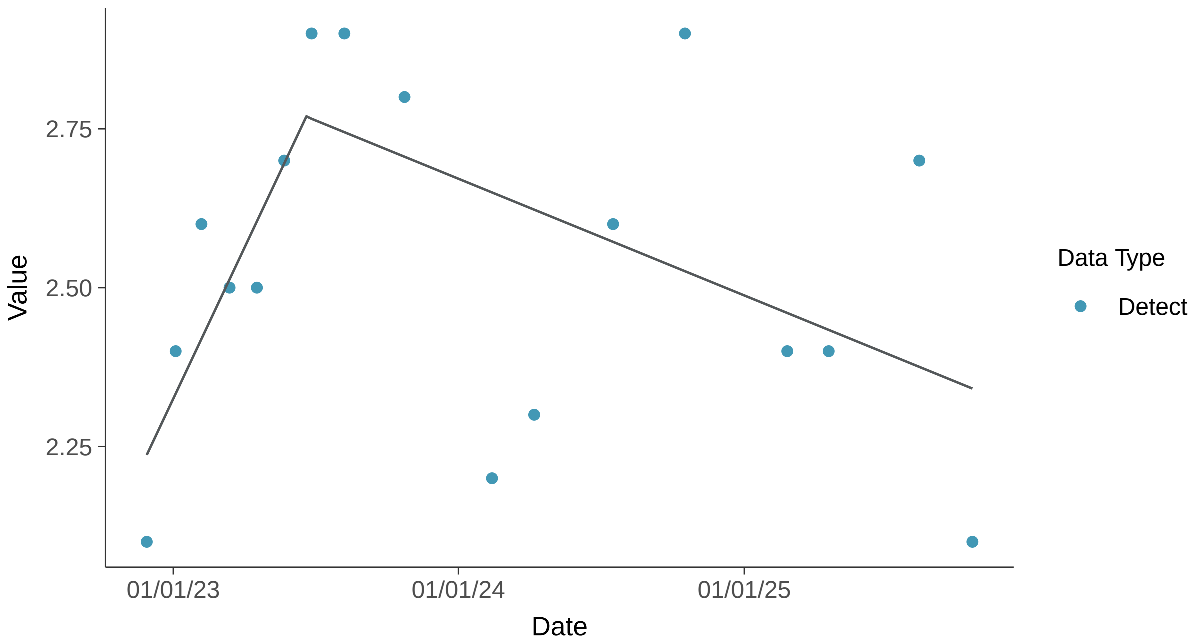

Lognormal Q-Q plot
Fluoride (App IV), MW-09 (mg/L)
log(Value)
1.0
0.9
0.8
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Fluoride (App IV), MW-09 (mg/L)
Value
2.75
2.50
2.25
2.0
2.2
2.4
2.6
2.8
3.0
3.2
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Fluoride (App IV), MW-09 (mg/L)
log(Value)
1.0
0.9
0.8
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

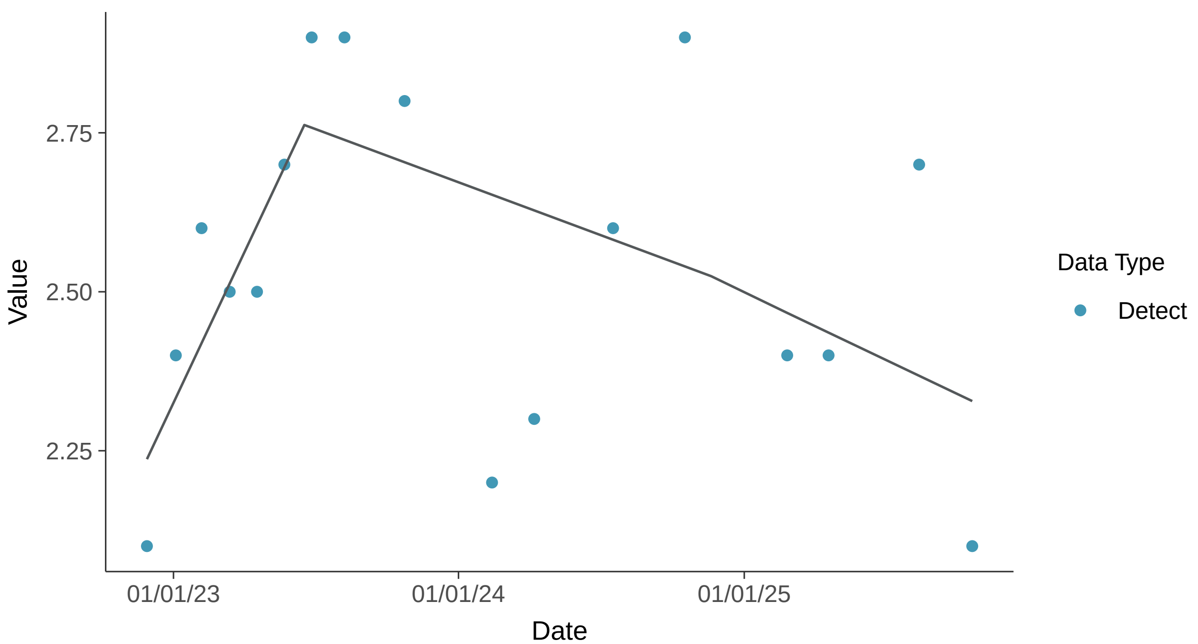
Trend Regression: Piecewise Linear-Linear

Fluoride (App IV), MW-09 (mg/L)



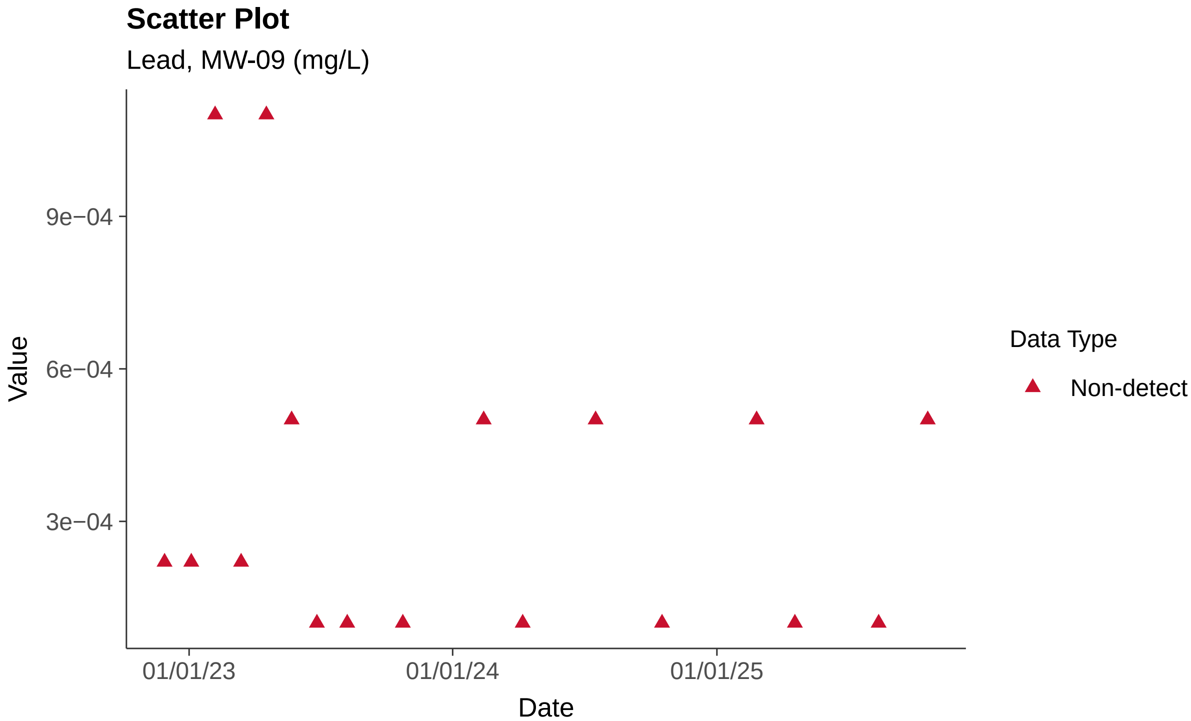
Trend Regression: Piecewise Linear-Linear-Linear

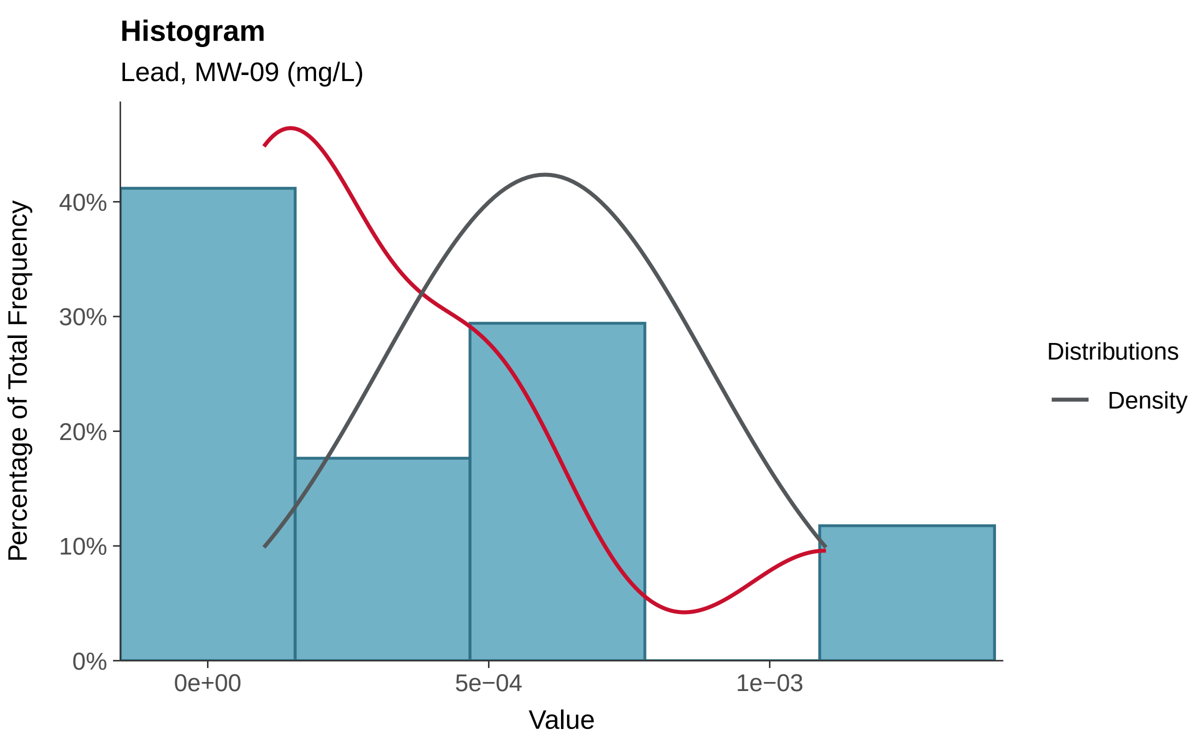
Fluoride (App IV), MW-09 (mg/L)



Appendix IV: Lead, MW-09

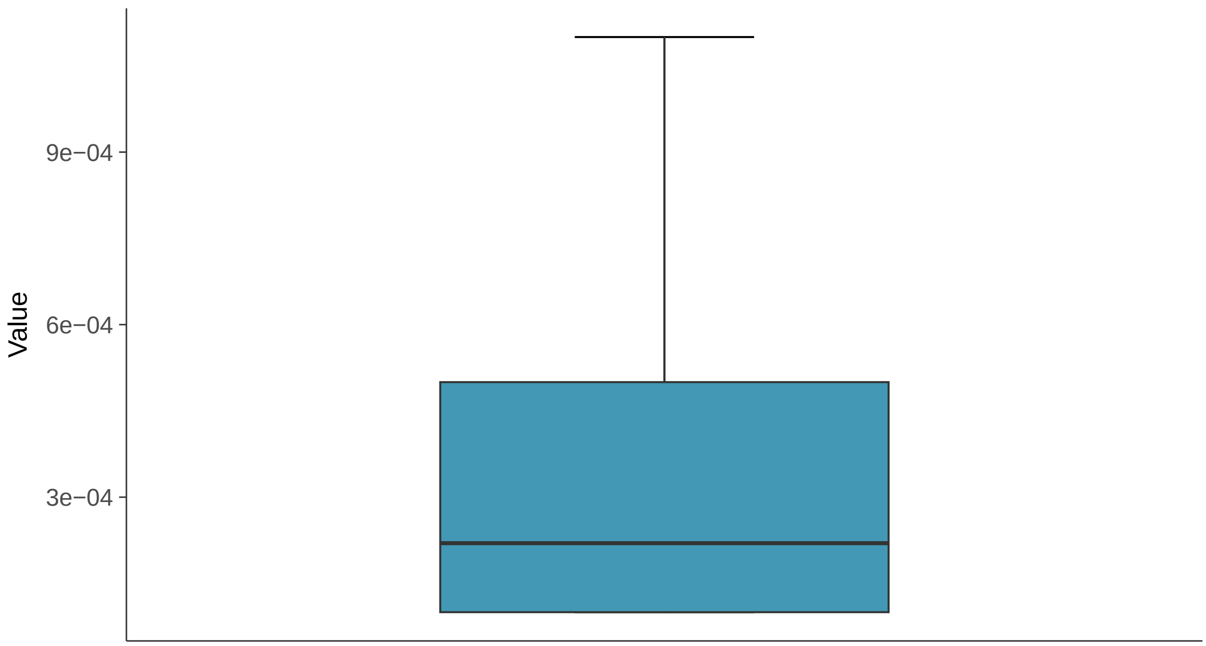
ID: 19_2_4_115





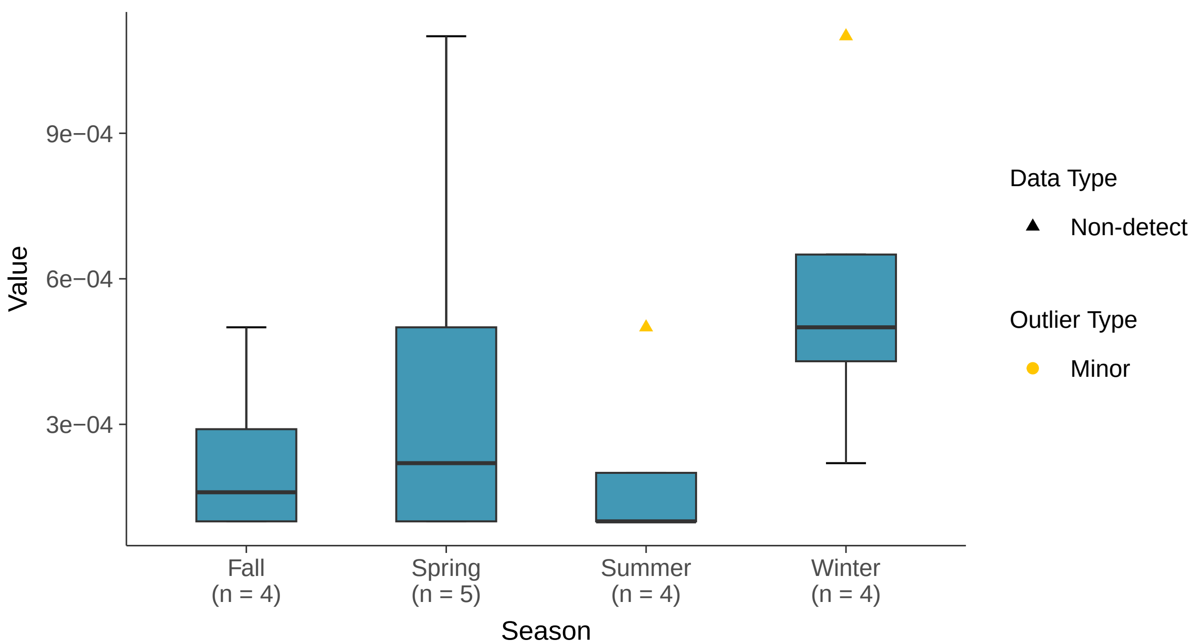
Boxplot

Lead, MW-09 (mg/L)



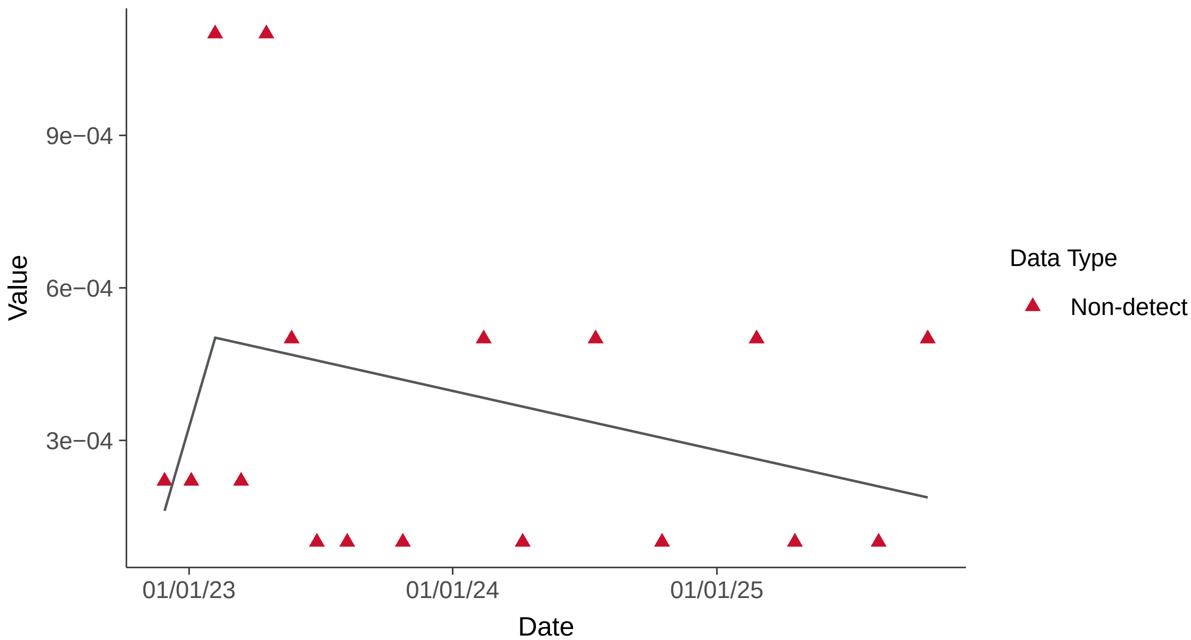
Boxplot by Season

Lead, MW-09 (mg/L)



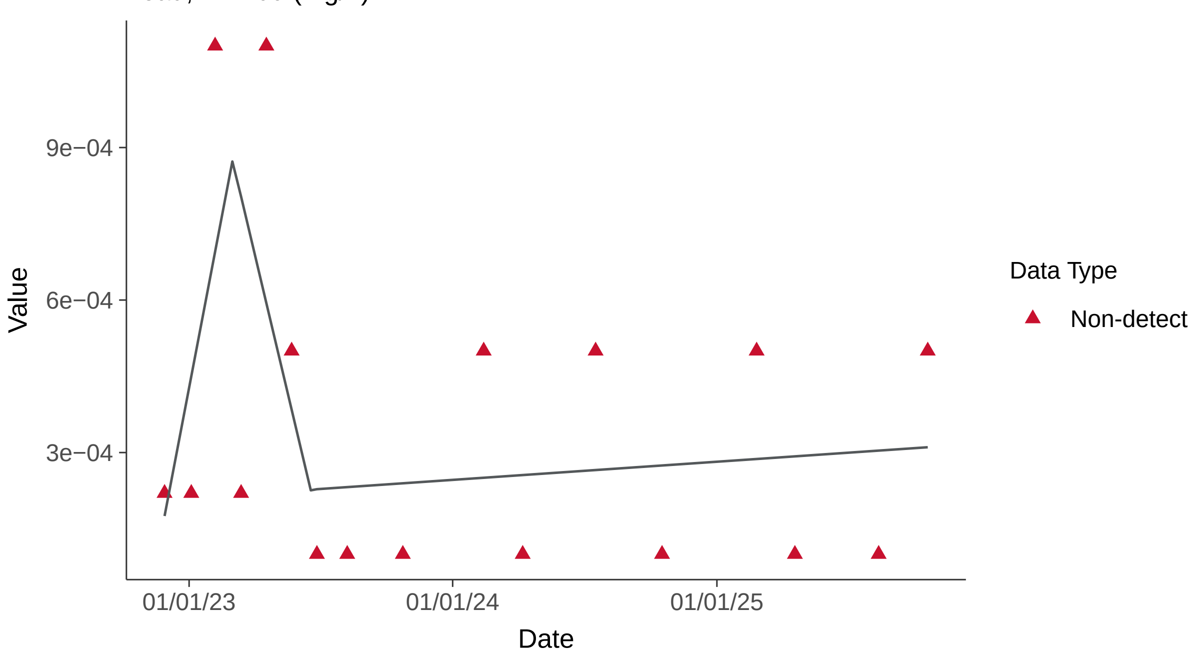
Trend Regression: Piecewise Linear-Linear

Lead, MW-09 (mg/L)



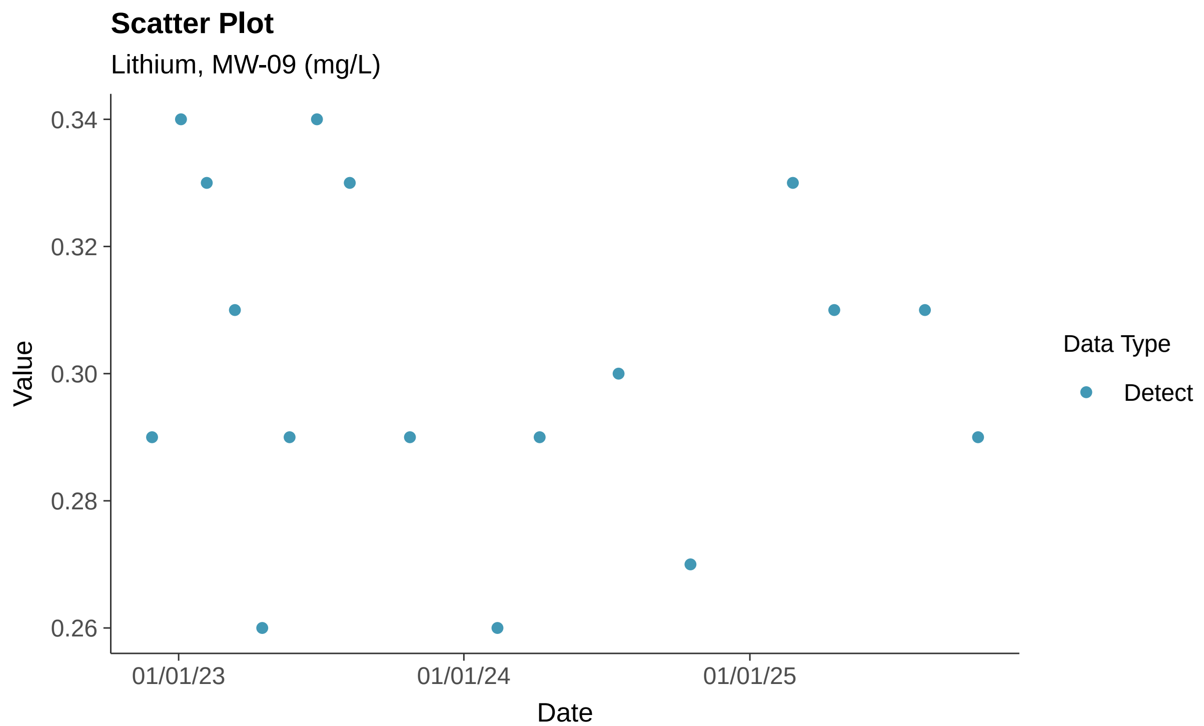
Trend Regression: Piecewise Linear-Linear-Linear

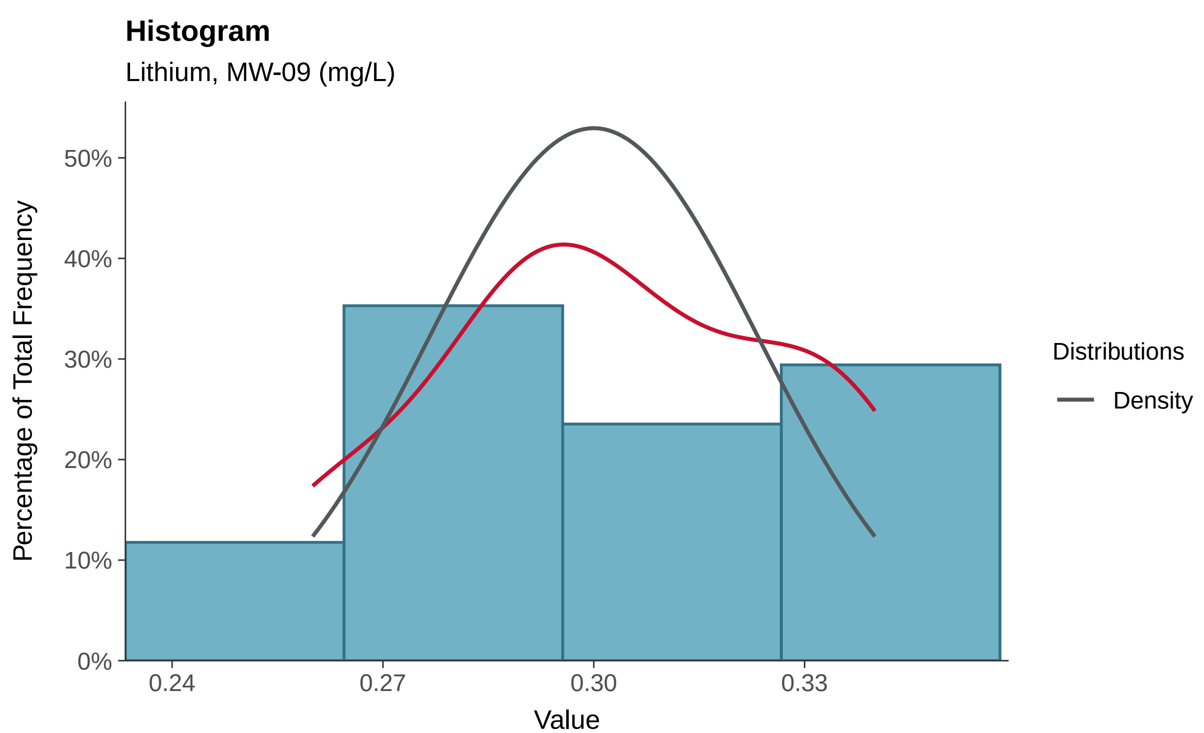
Lead, MW-09 (mg/L)



Appendix IV: Lithium, MW-09

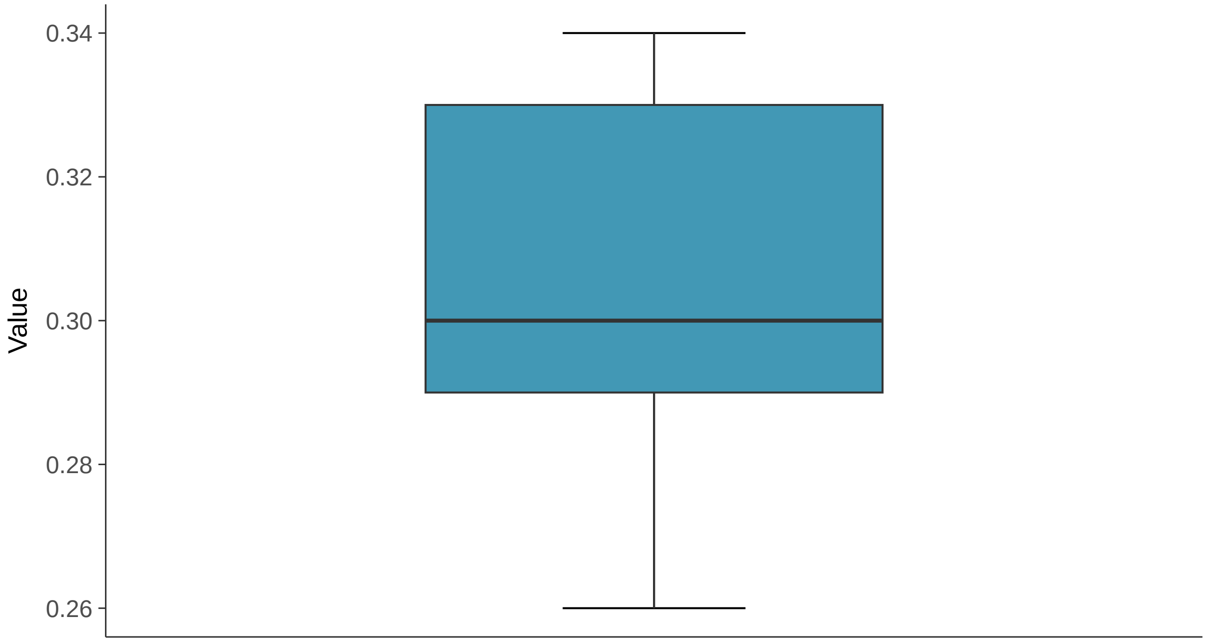
ID: 19_2_4_116





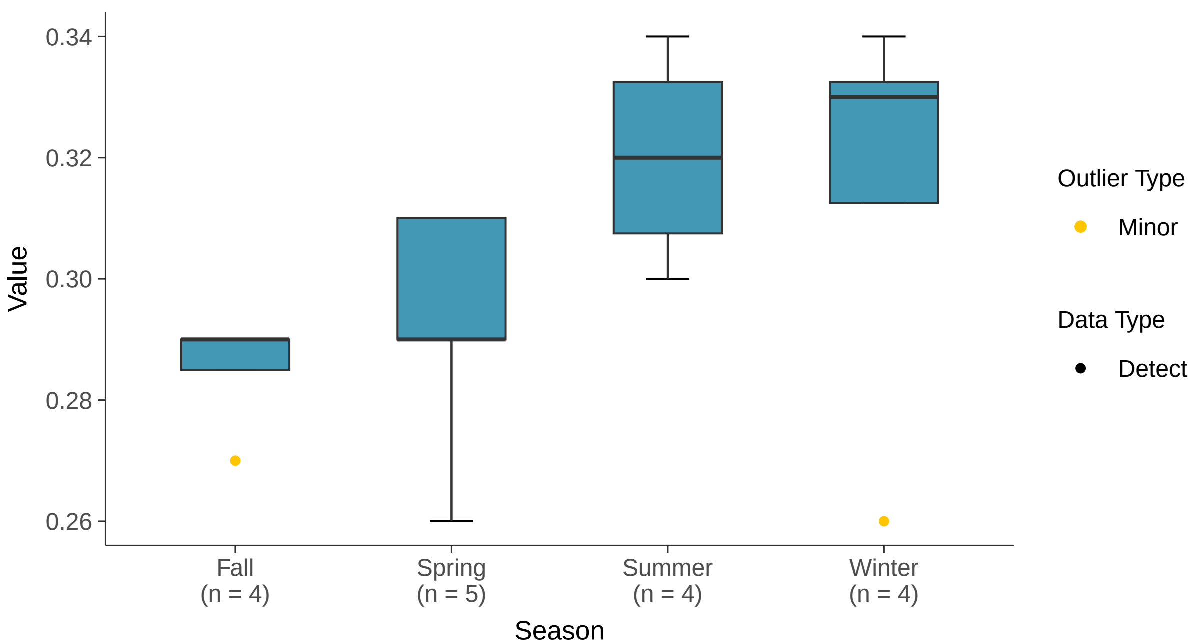
Boxplot

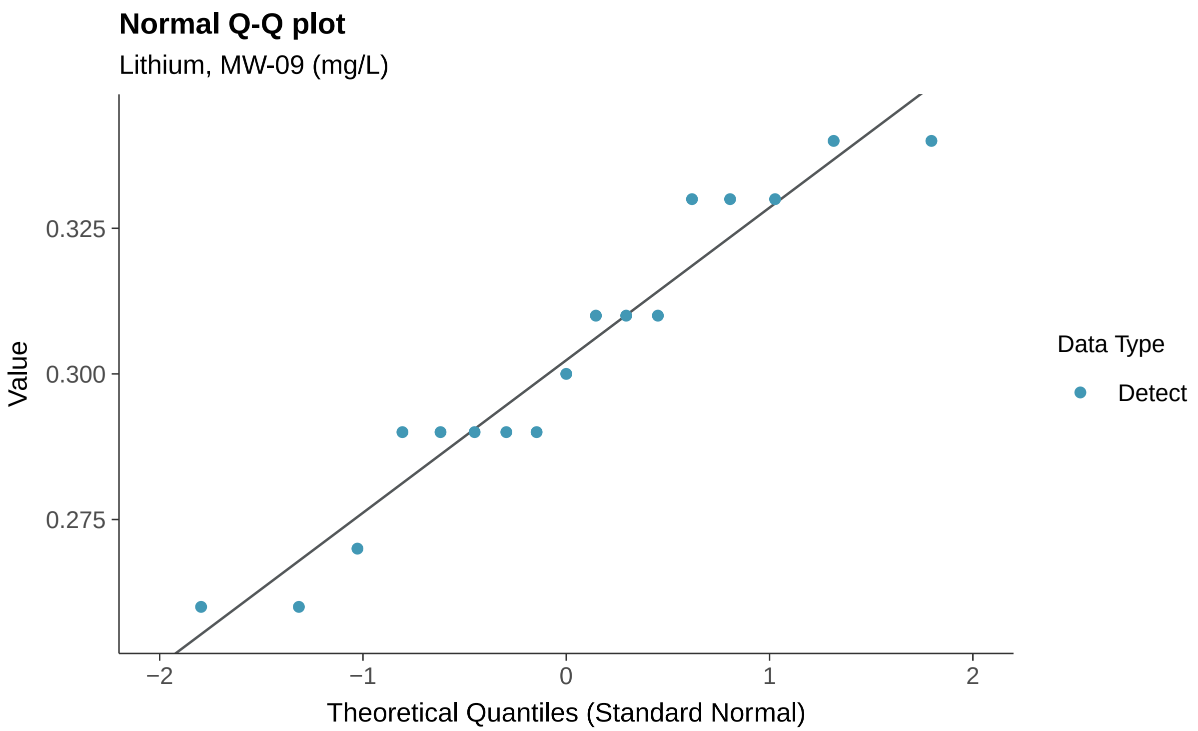
Lithium, MW-09 (mg/L)

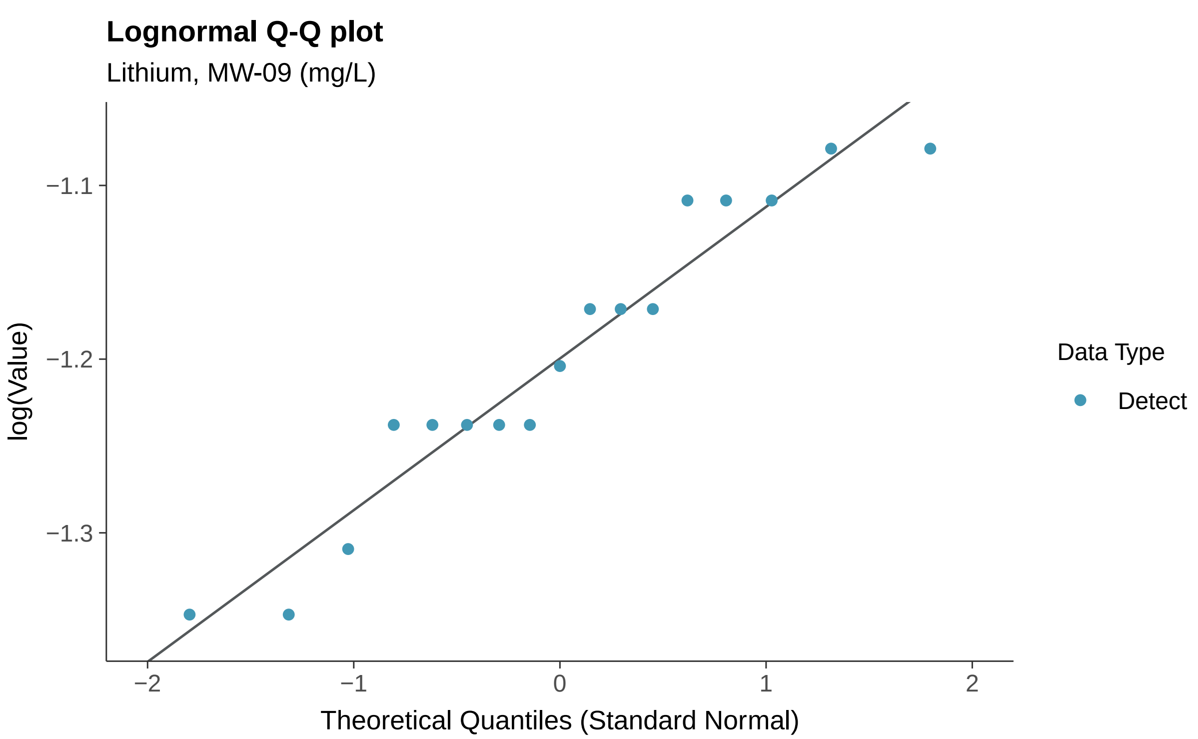


Boxplot by Season

Lithium, MW-09 (mg/L)

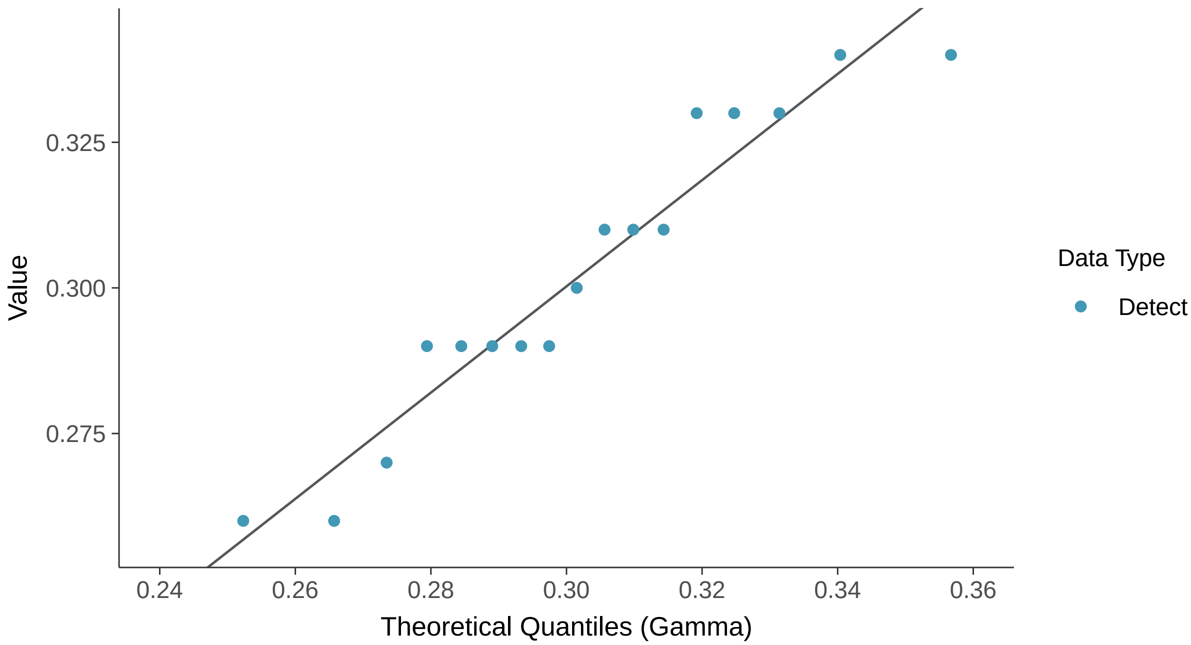



Normal Q-Q plot
Lithium, MW-09 (mg/L)
Value
0.325
0.300
0.275
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Lithium, MW-09 (mg/L)
log(Value)
−1.1
−1.2
−1.3
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

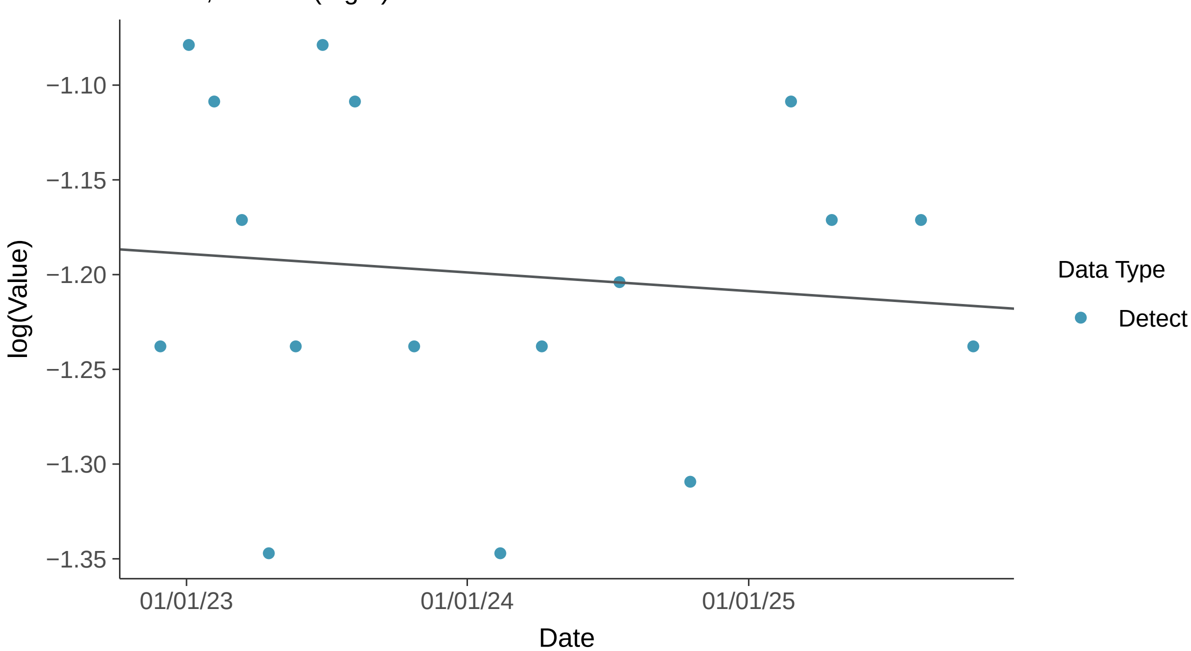
Gamma Q-Q plot

Lithium, MW-09 (mg/L)



Trend Regression: Lognormal MLE

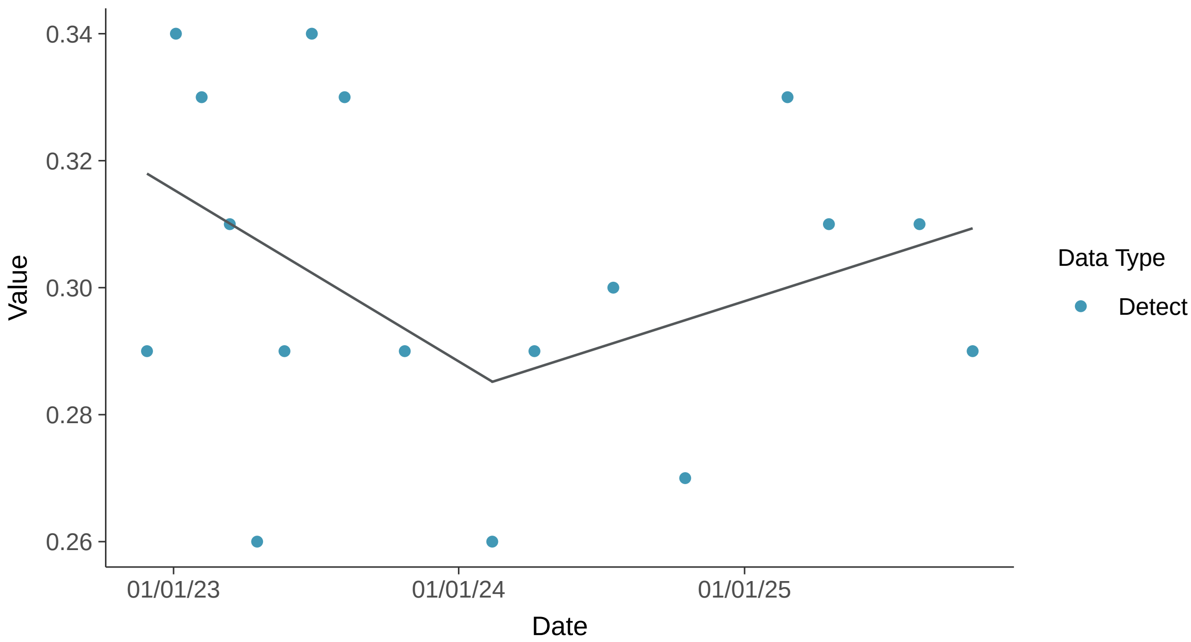
Lithium, MW-09 (mg/L)



Grand Haven
Downgradient Wells as of October 2025

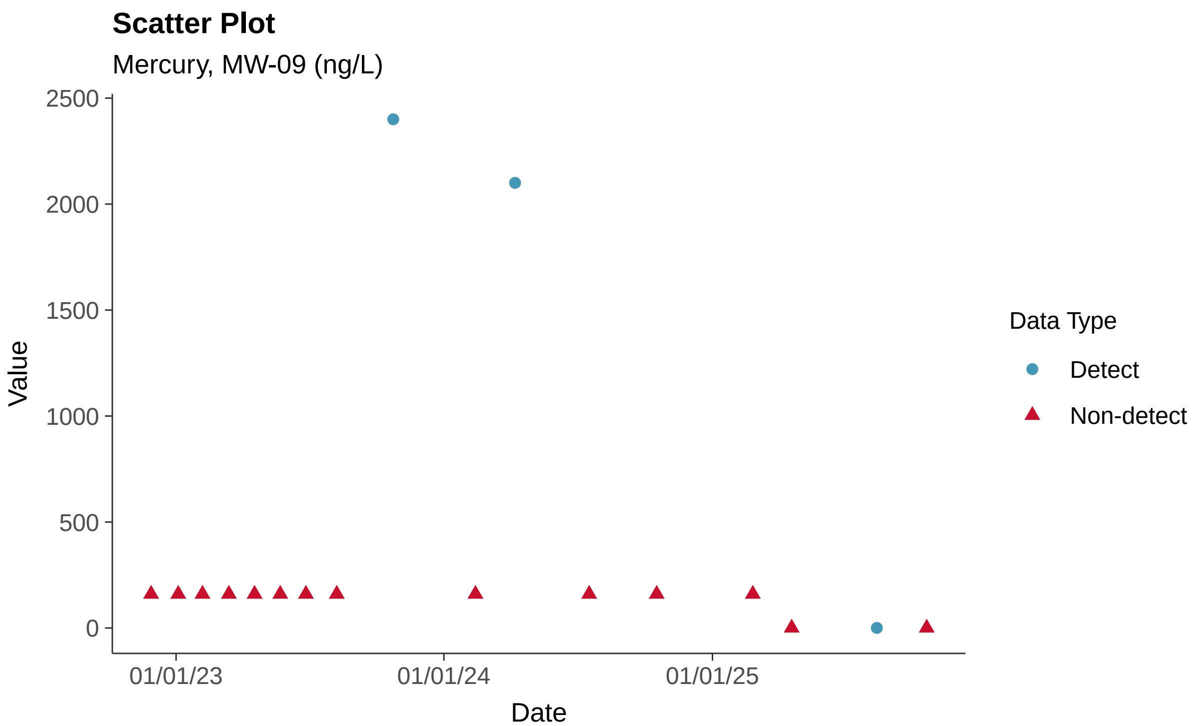
Trend Regression: Piecewise Linear-Linear

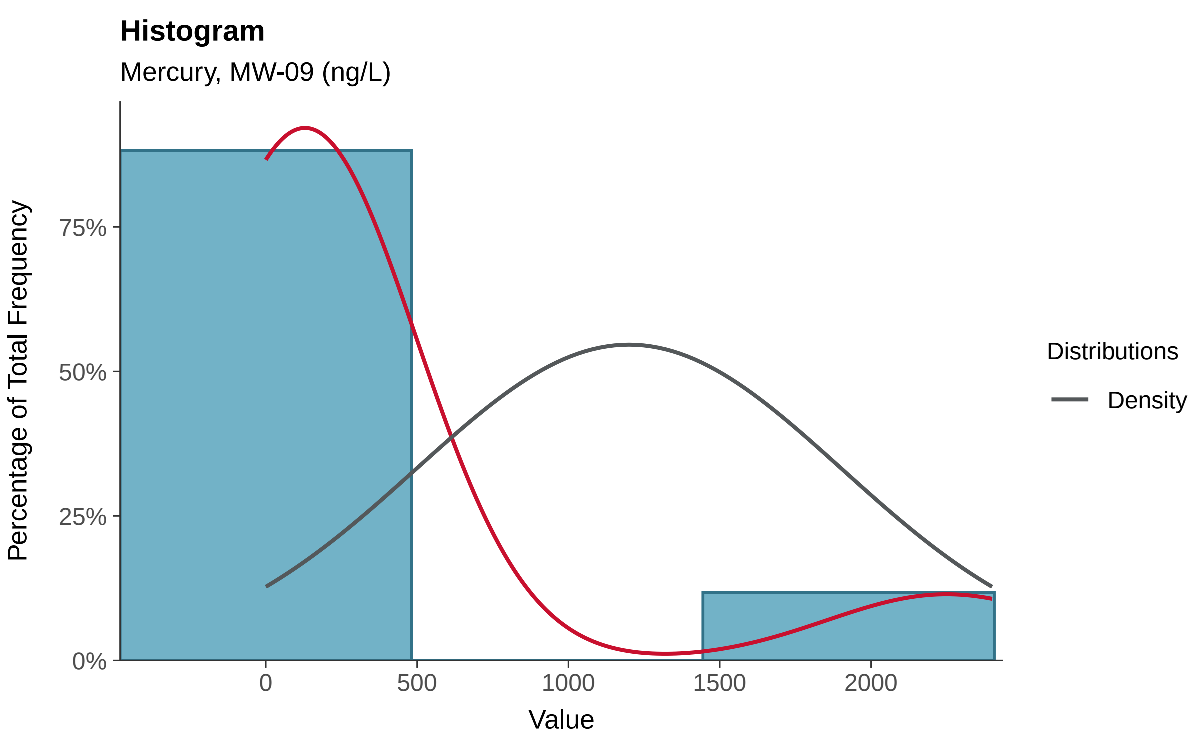
Lithium, MW-09 (mg/L)

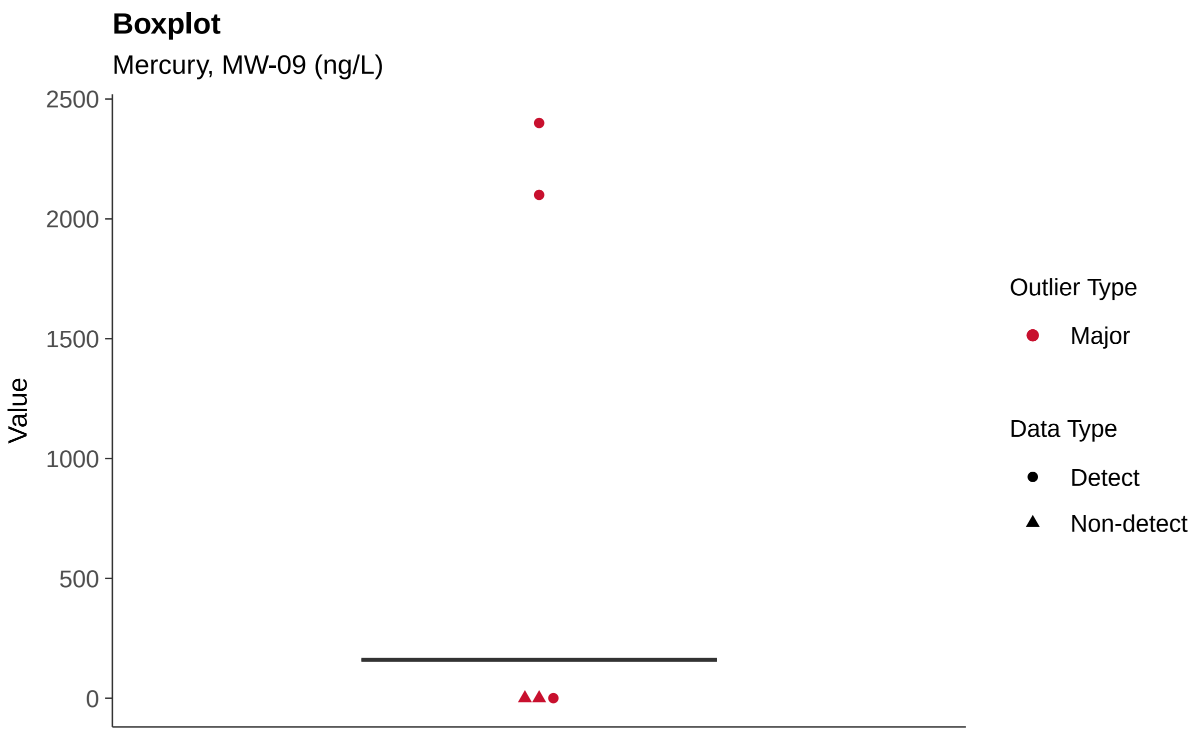


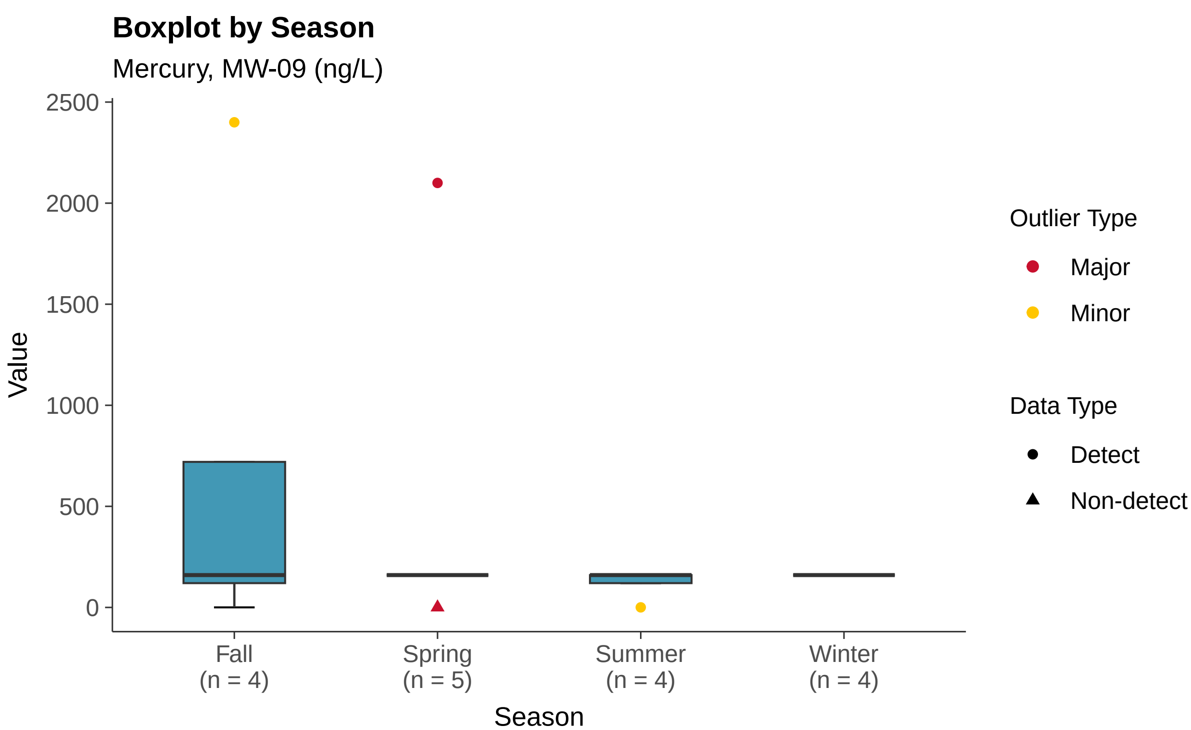
Appendix IV: Mercury, MW-09

ID: 19_2_4_117



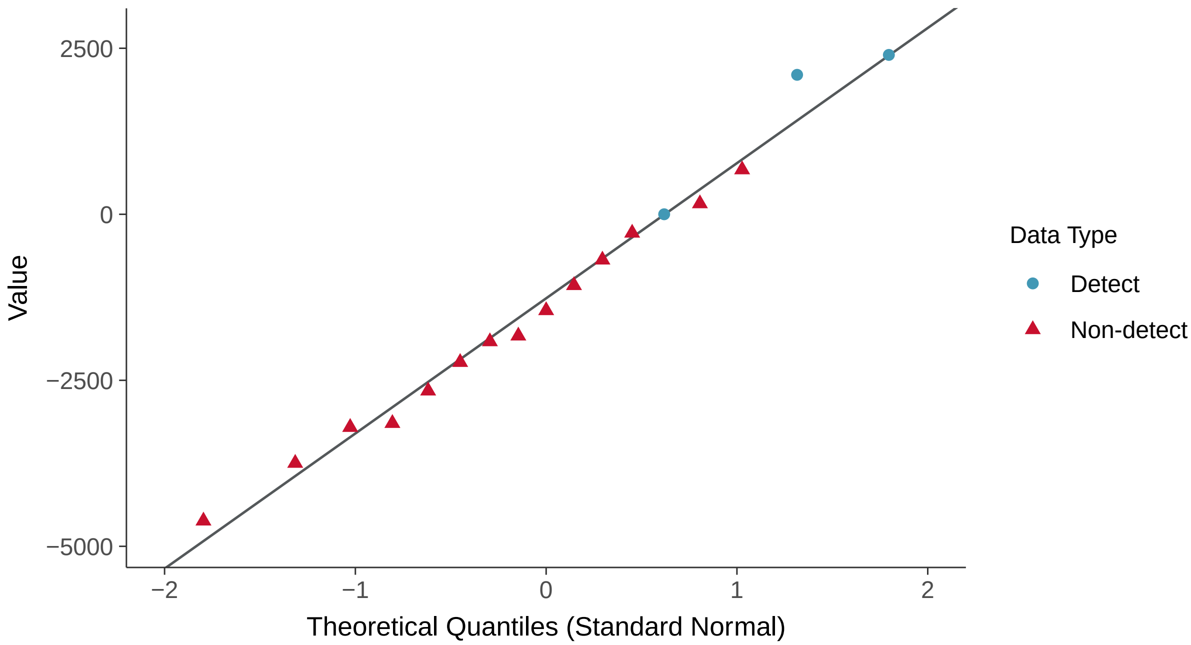



Boxplot
Mercury, MW-09 (ng/L)
Value
2500
2000
1500
1000
500
0
Outlier Type
Major
Data Type
Detect
Non-detect


Boxplot by Season
Mercury, MW-09 (ng/L)
Value
2500
2000
1500
1000
500
0
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Major
Minor
Data Type
Detect
Non-detect

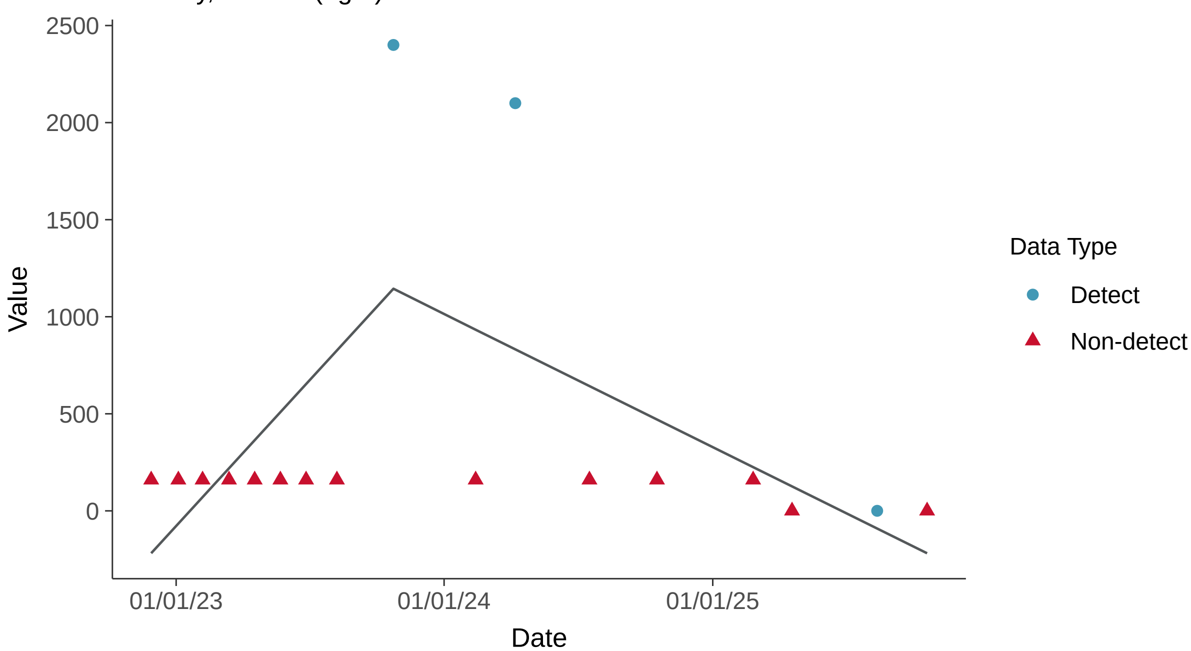
Normal Q-Q plot using ROS Imputed Estimates

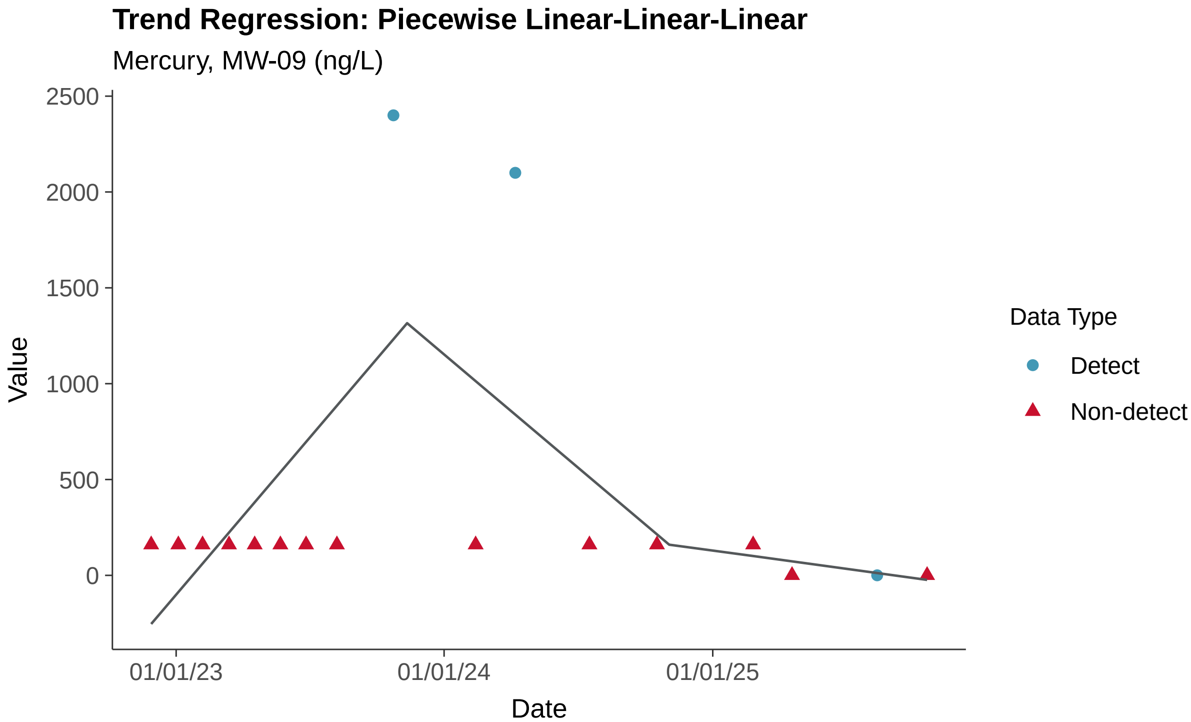
Mercury, MW-09 (ng/L)



Trend Regression: Piecewise Linear-Linear

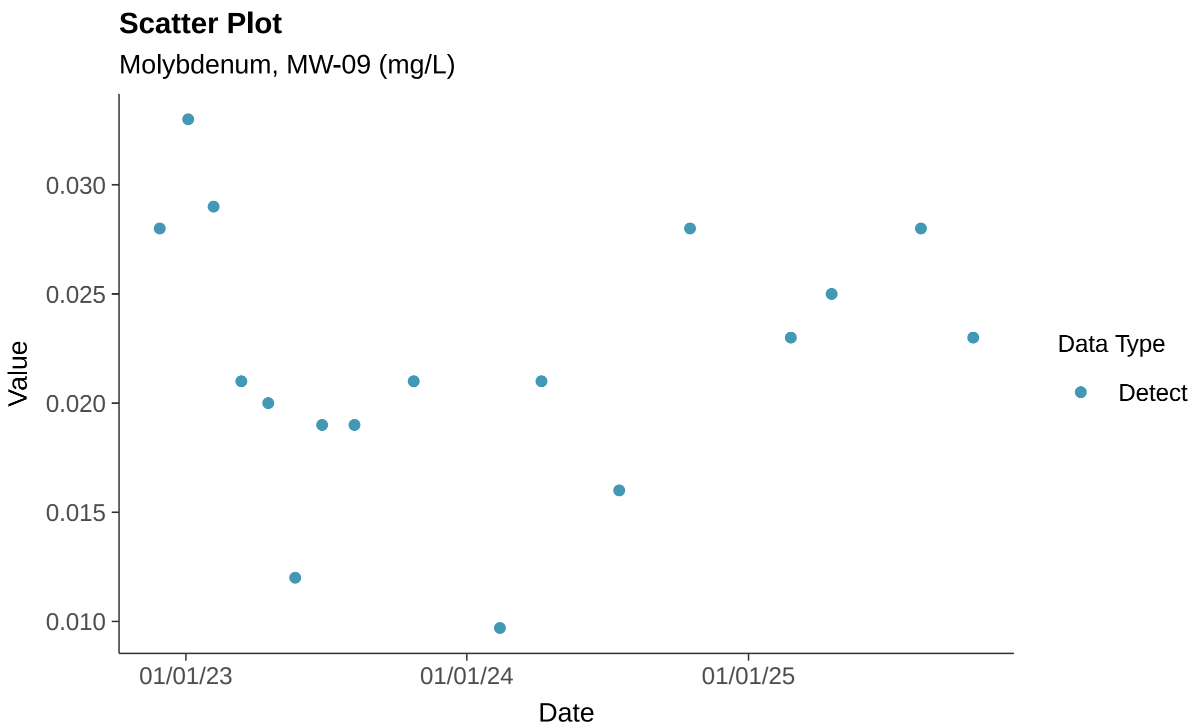
Mercury, MW-09 (ng/L)

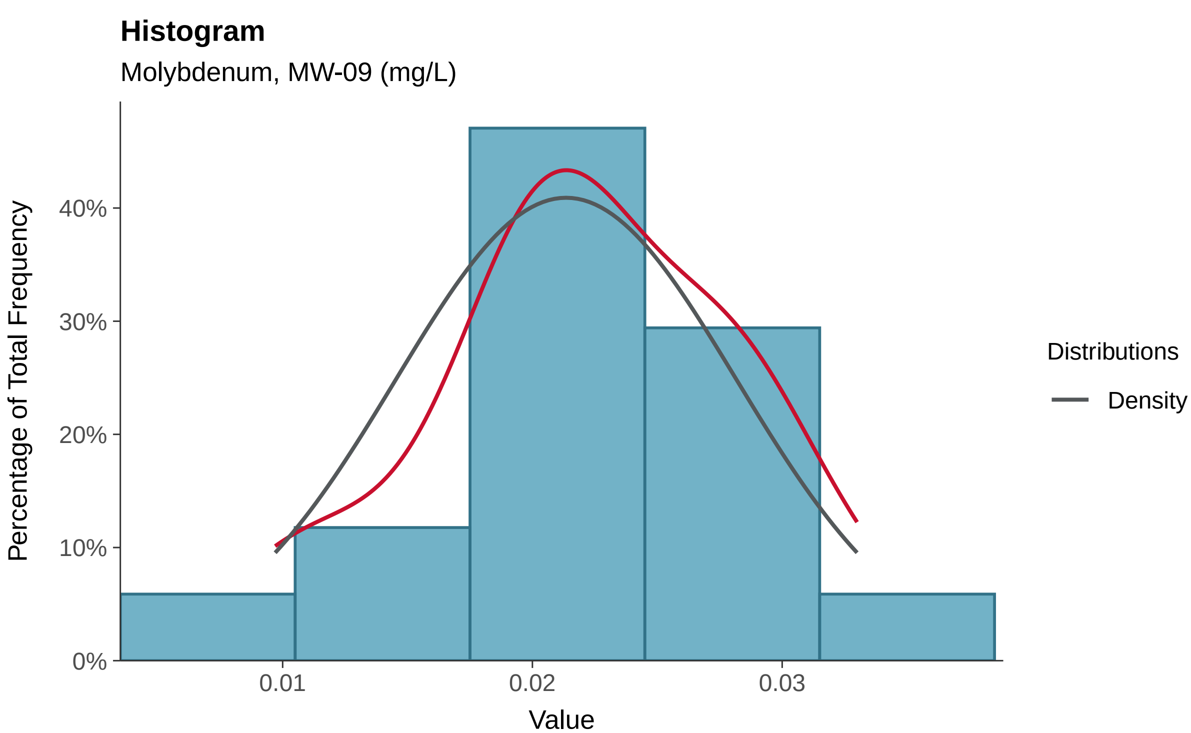



Trend Regression: Piecewise Linear-Linear-Linear
Mercury, MW-09 (ng/L)
2500
2000
1500
1000
500
0
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Appendix IV: Molybdenum, MW-09

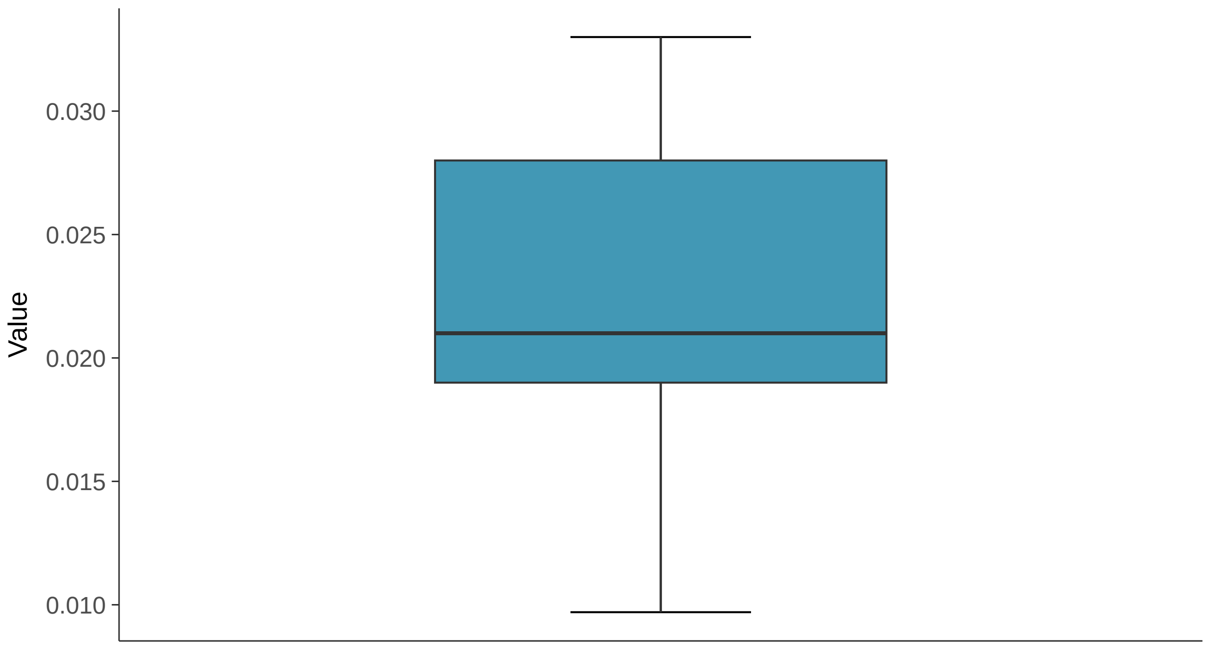
ID: 19_2_4_118





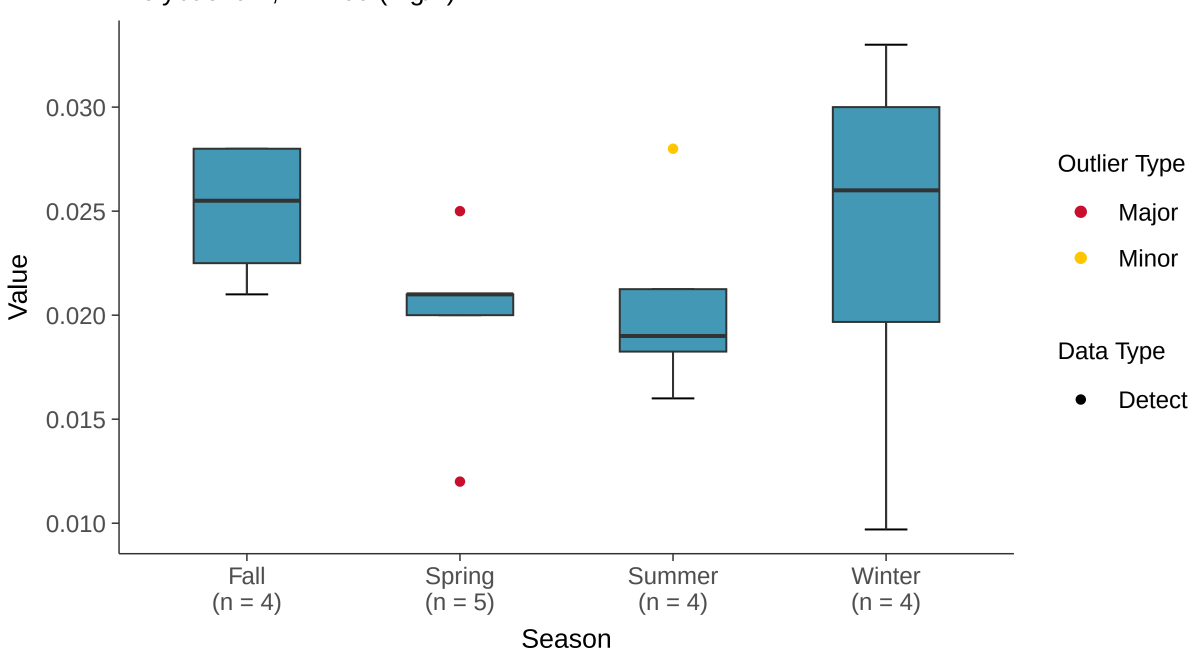
Boxplot

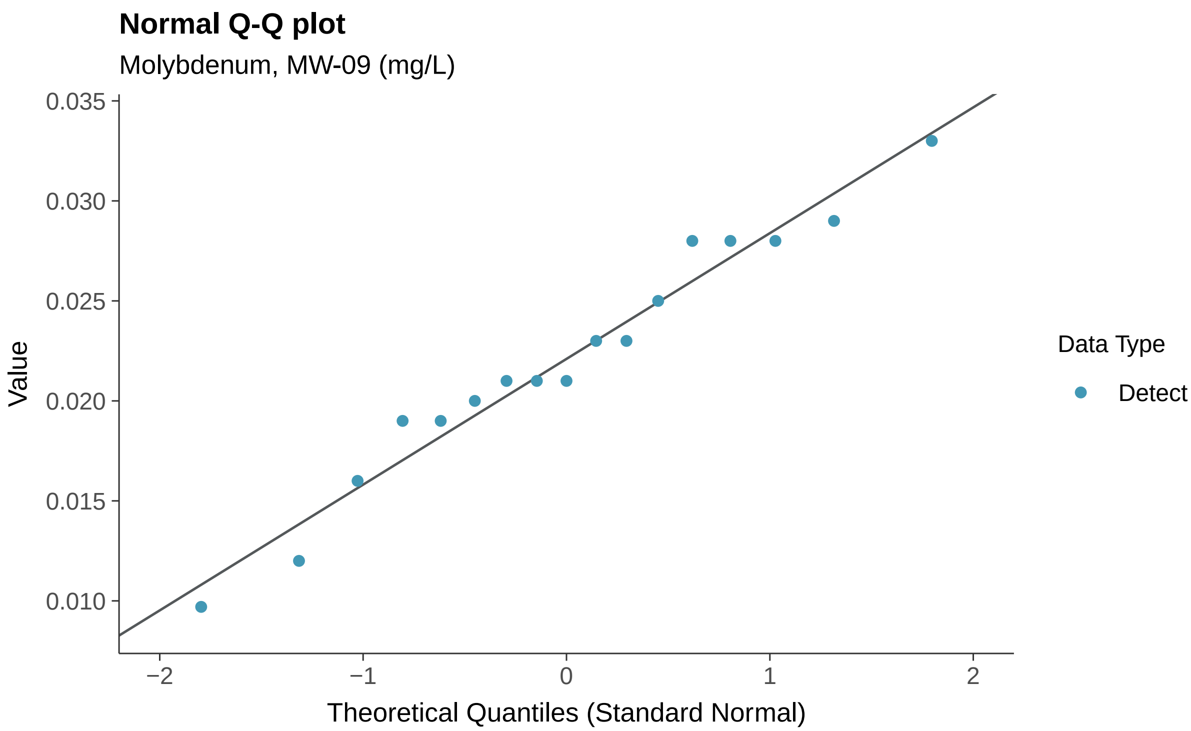
Molybdenum, MW-09 (mg/L)

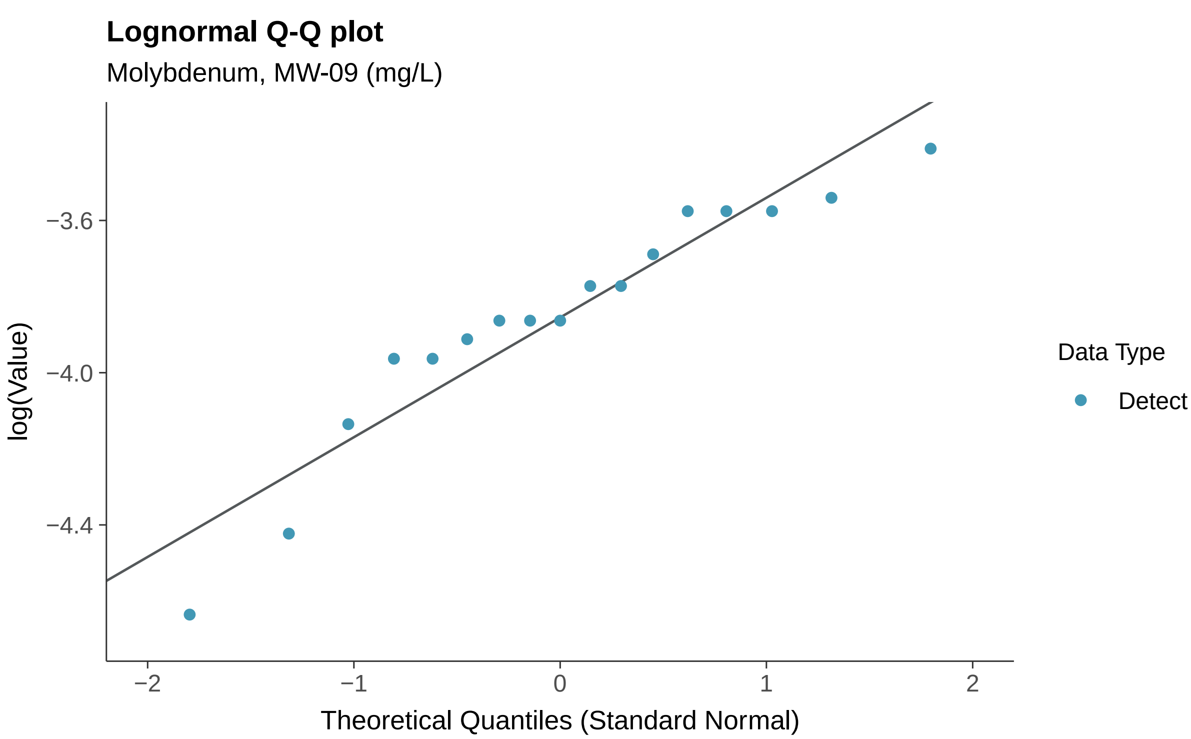


Boxplot by Season

Molybdenum, MW-09 (mg/L)

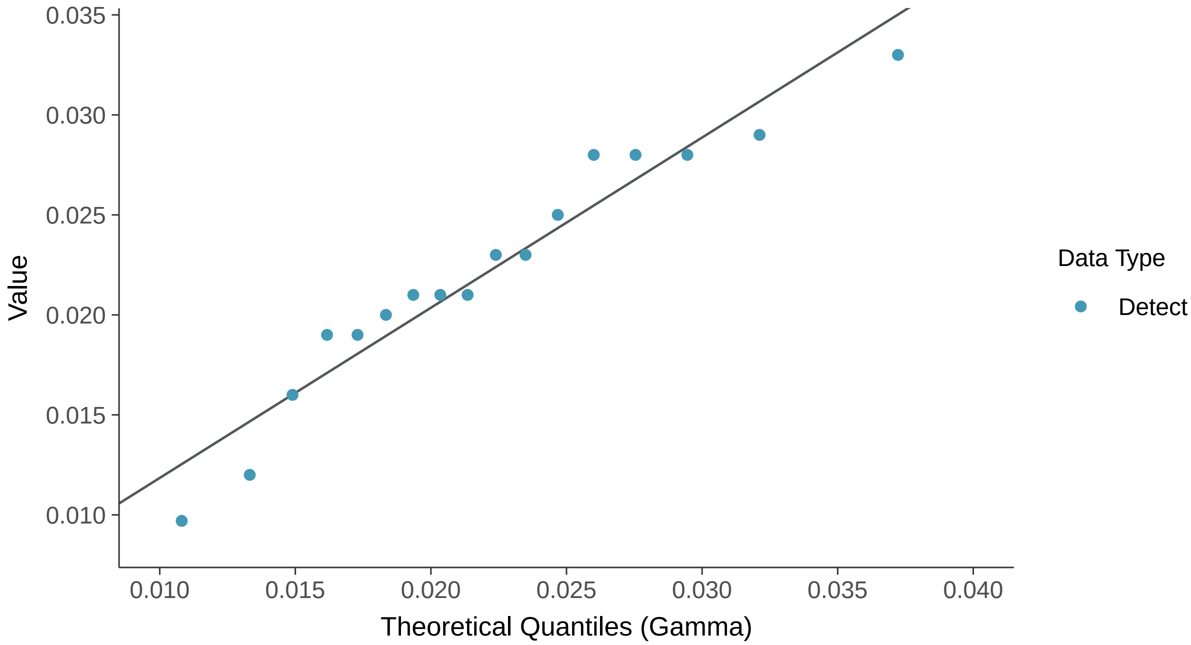



Normal Q-Q plot
Molybdenum, MW-09 (mg/L)
Value
0.035
0.030
0.025
0.020
0.015
0.010
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Molybdenum, MW-09 (mg/L)
log(Value)
−3.6
−4.0
−4.4
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

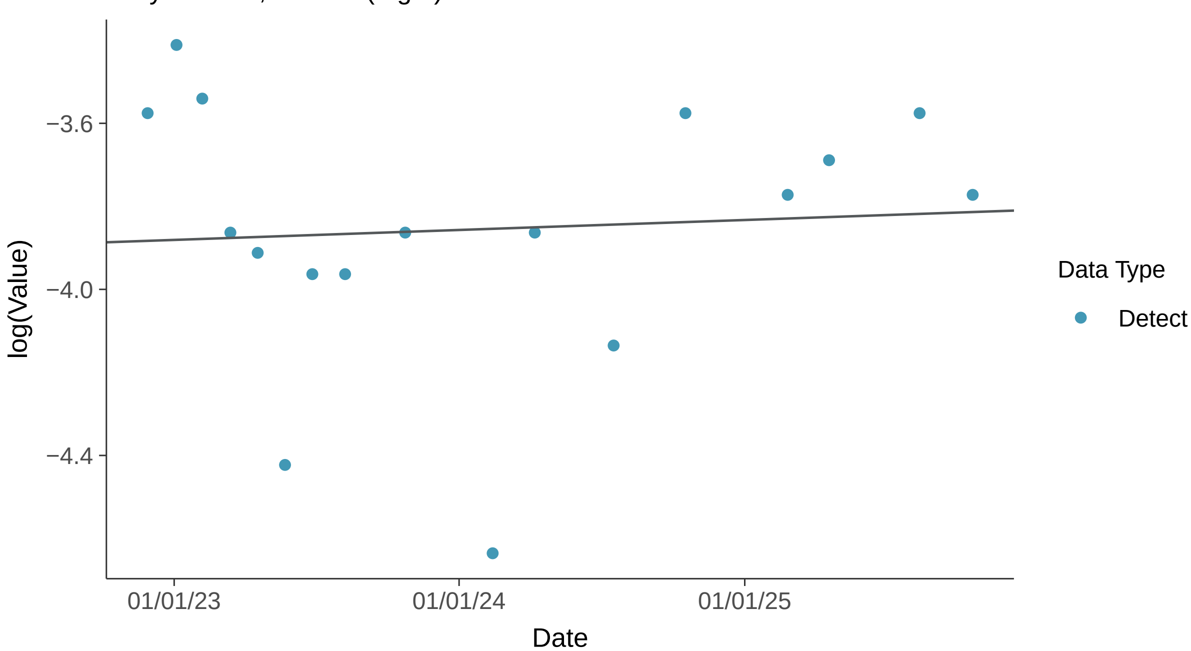
Gamma Q-Q plot

Molybdenum, MW-09 (mg/L)



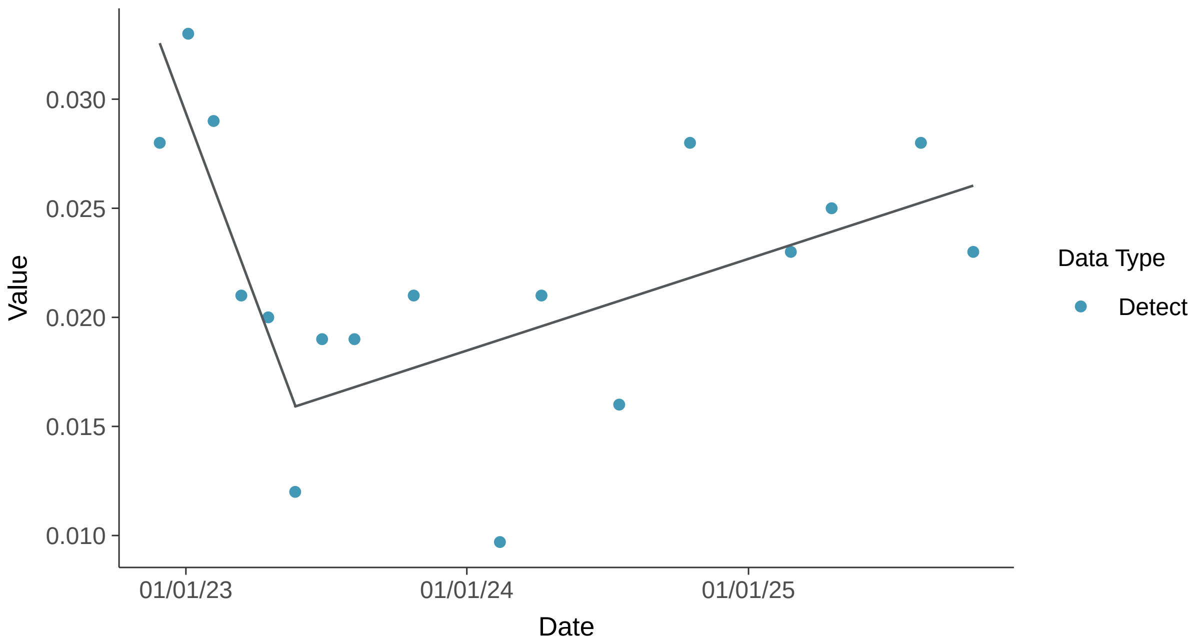
Trend Regression: Lognormal MLE

Molybdenum, MW-09 (mg/L)



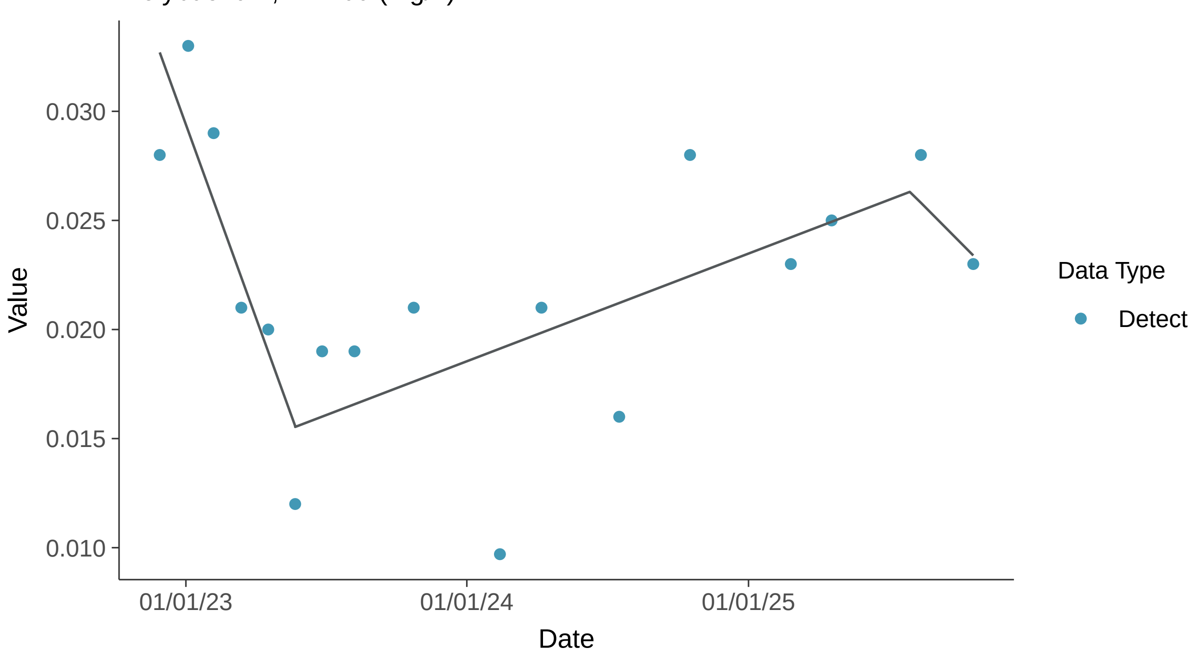
Trend Regression: Piecewise Linear-Linear

Molybdenum, MW-09 (mg/L)



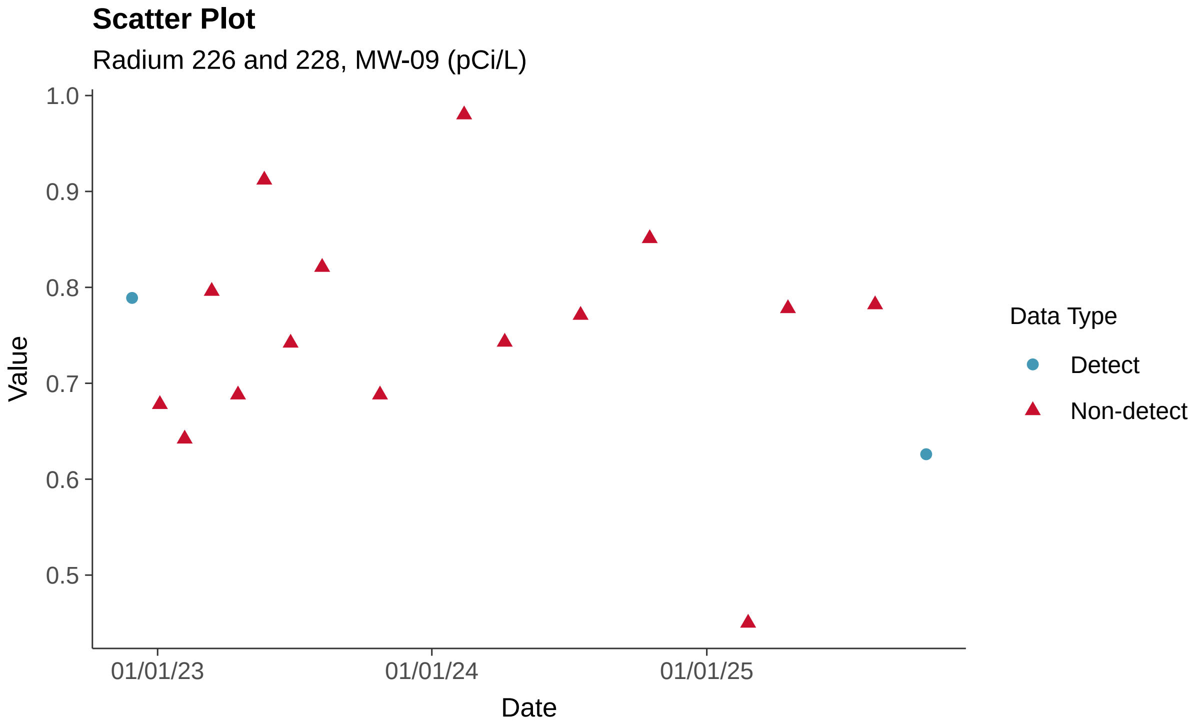
Trend Regression: Piecewise Linear-Linear-Linear

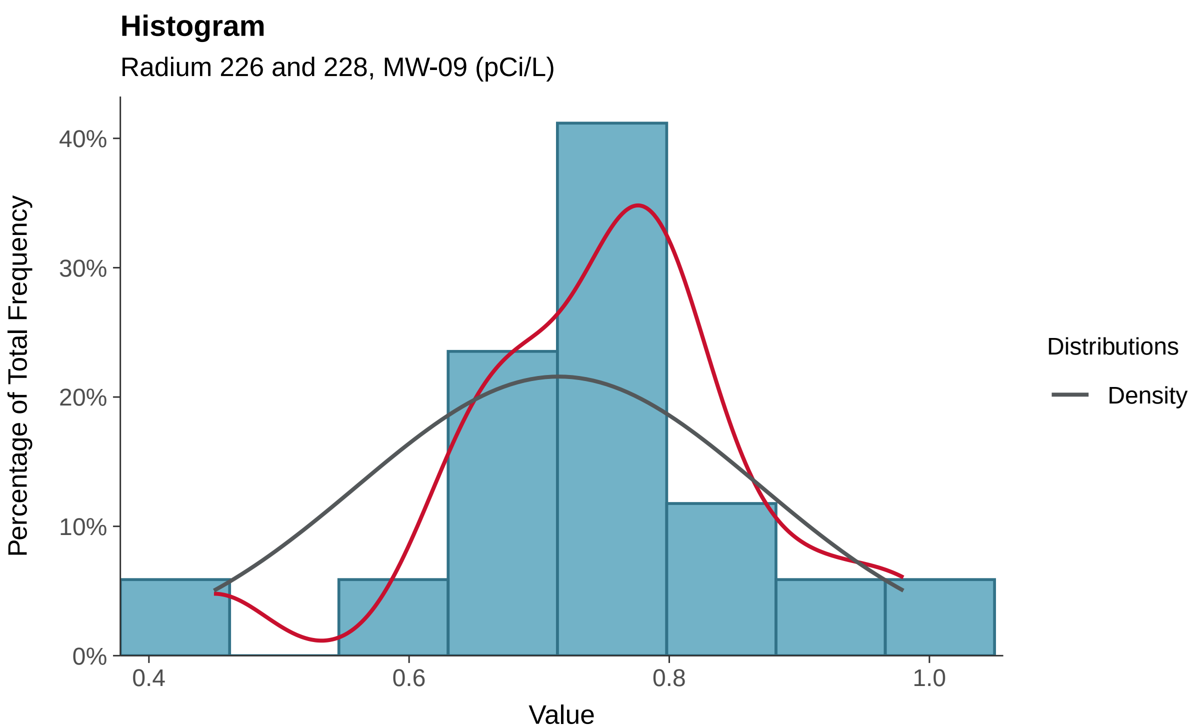
Molybdenum, MW-09 (mg/L)



Appendix IV: Radium 226 and 228, MW-09

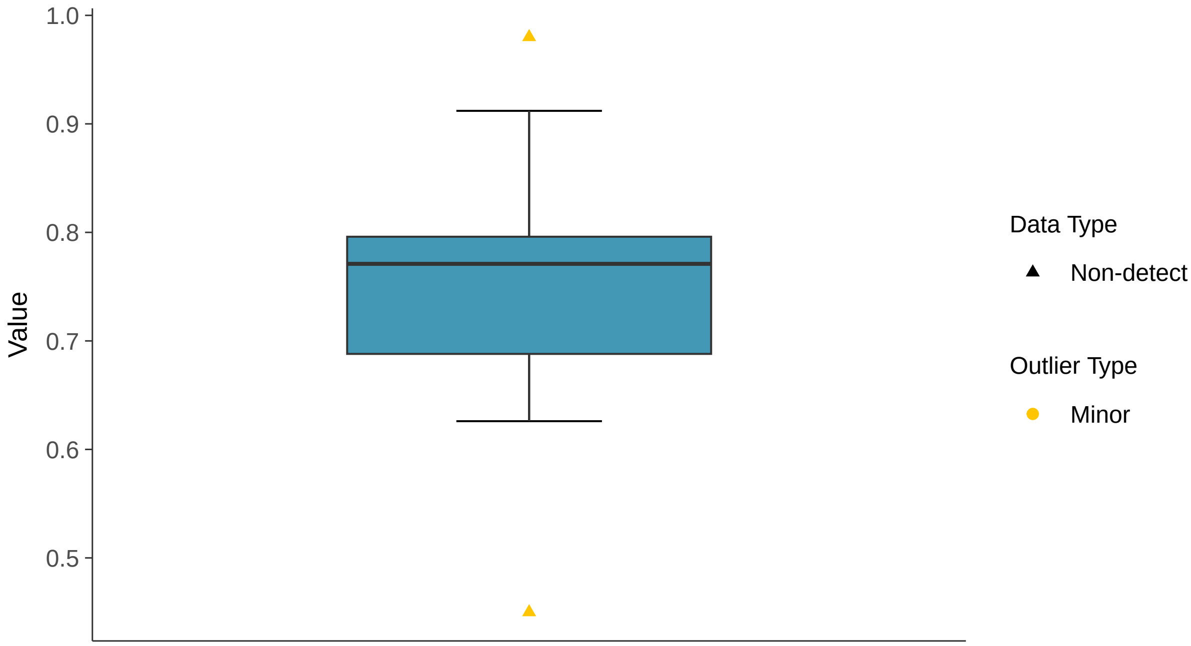
ID: 19_2_4_121





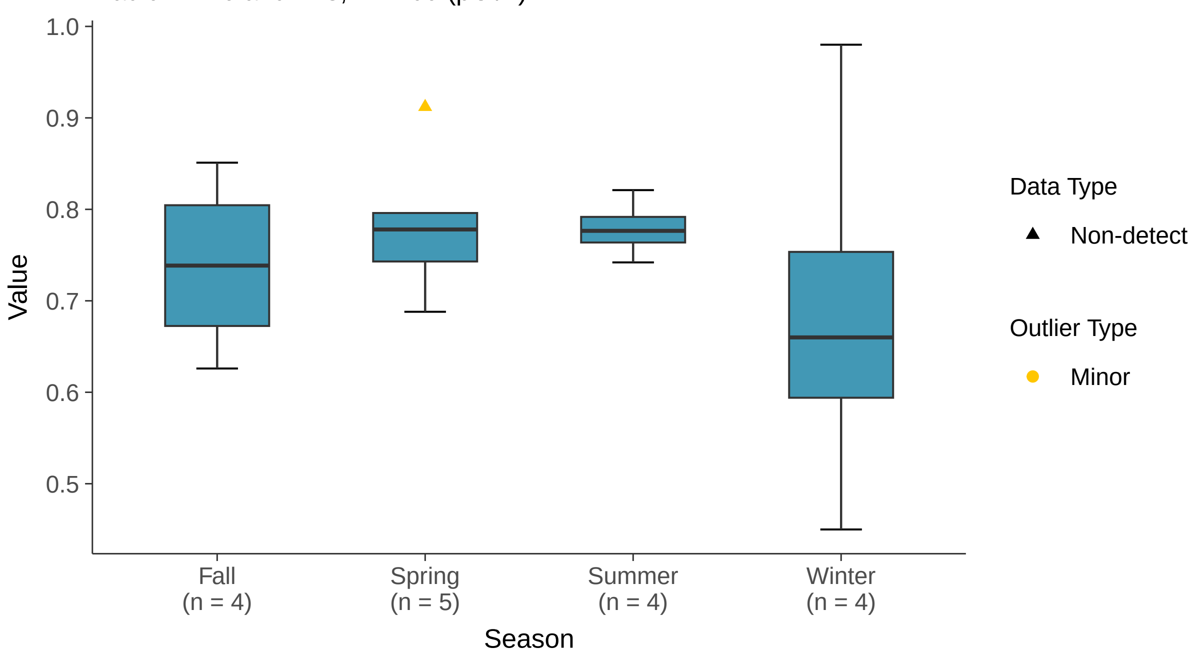
Boxplot

Radium 226 and 228, MW-09 (pCi/L)



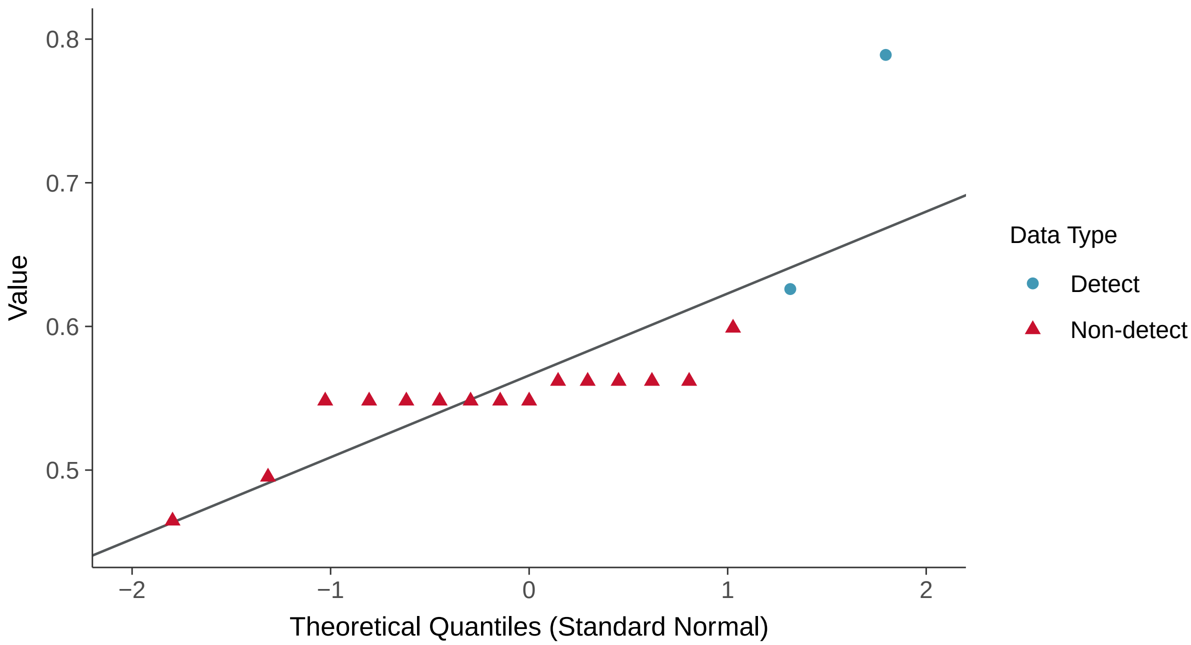
Boxplot by Season

Radium 226 and 228, MW-09 (pCi/L)



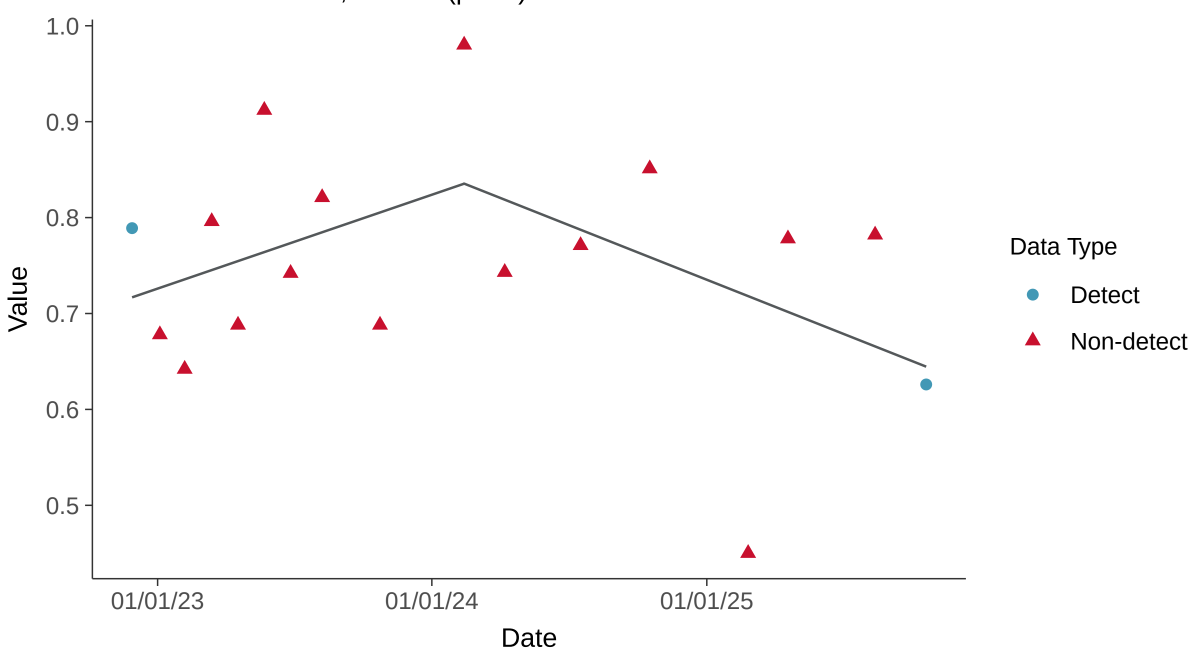
Normal Q-Q plot using ROS Imputed Estimates

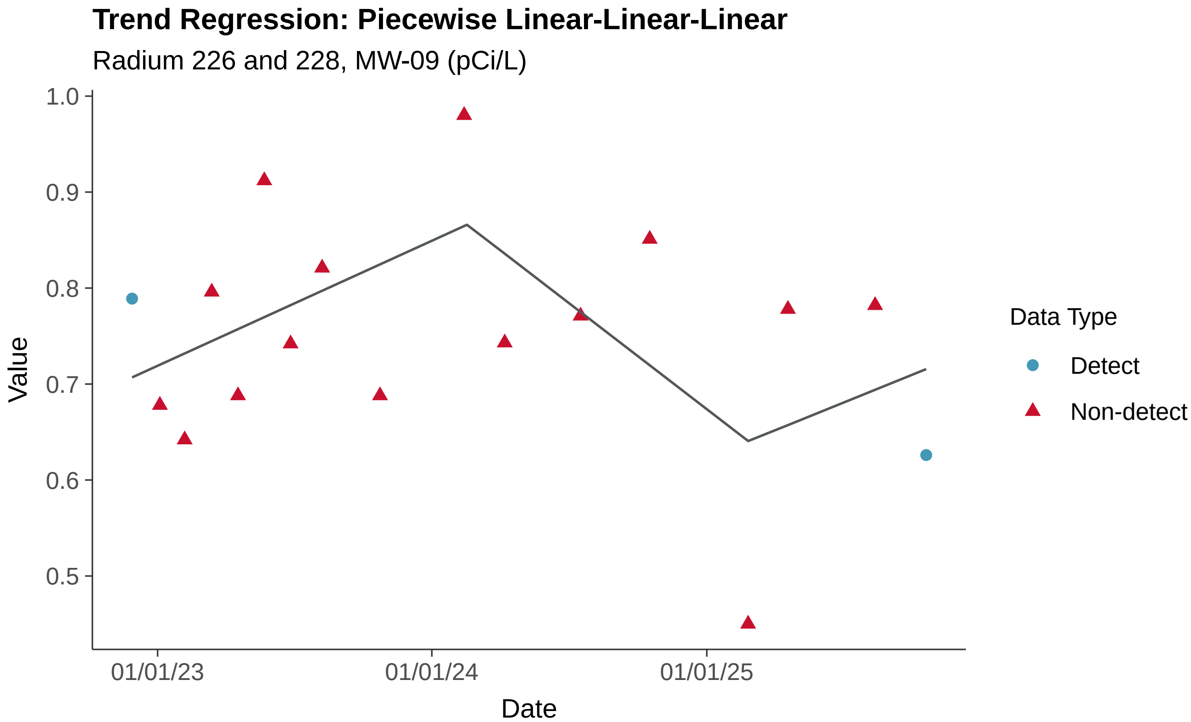
Radium 226 and 228, MW-09 (pCi/L)



Trend Regression: Piecewise Linear-Linear

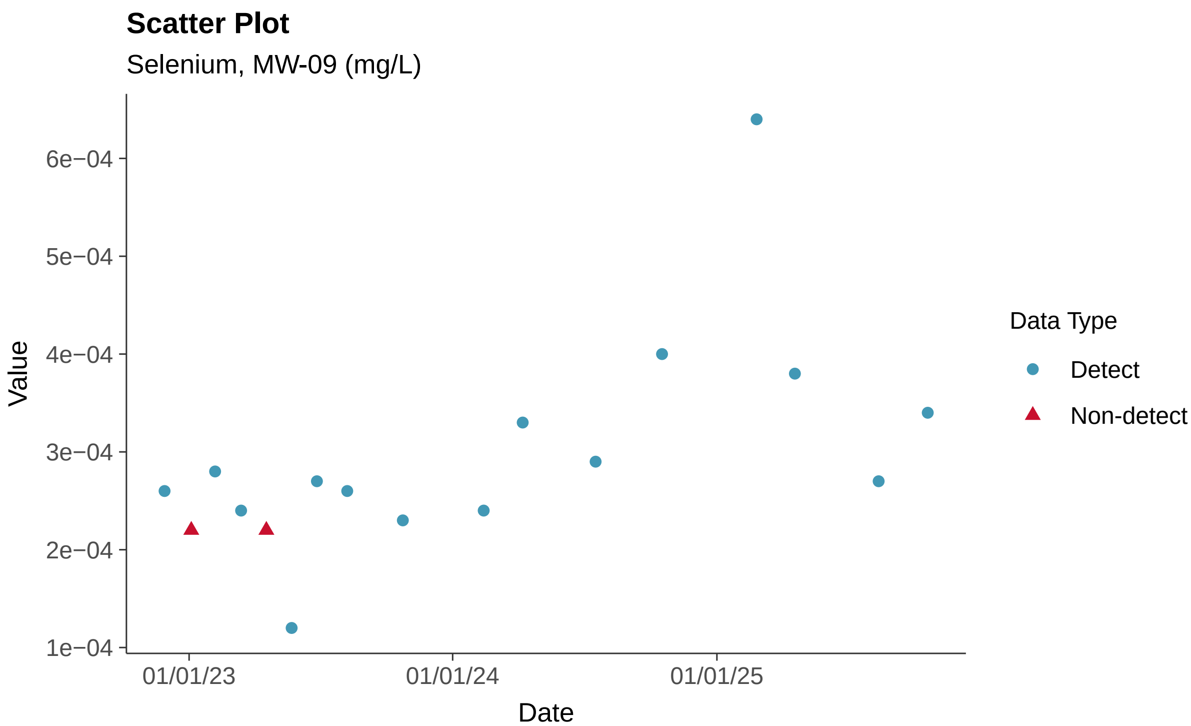
Radium 226 and 228, MW-09 (pCi/L)

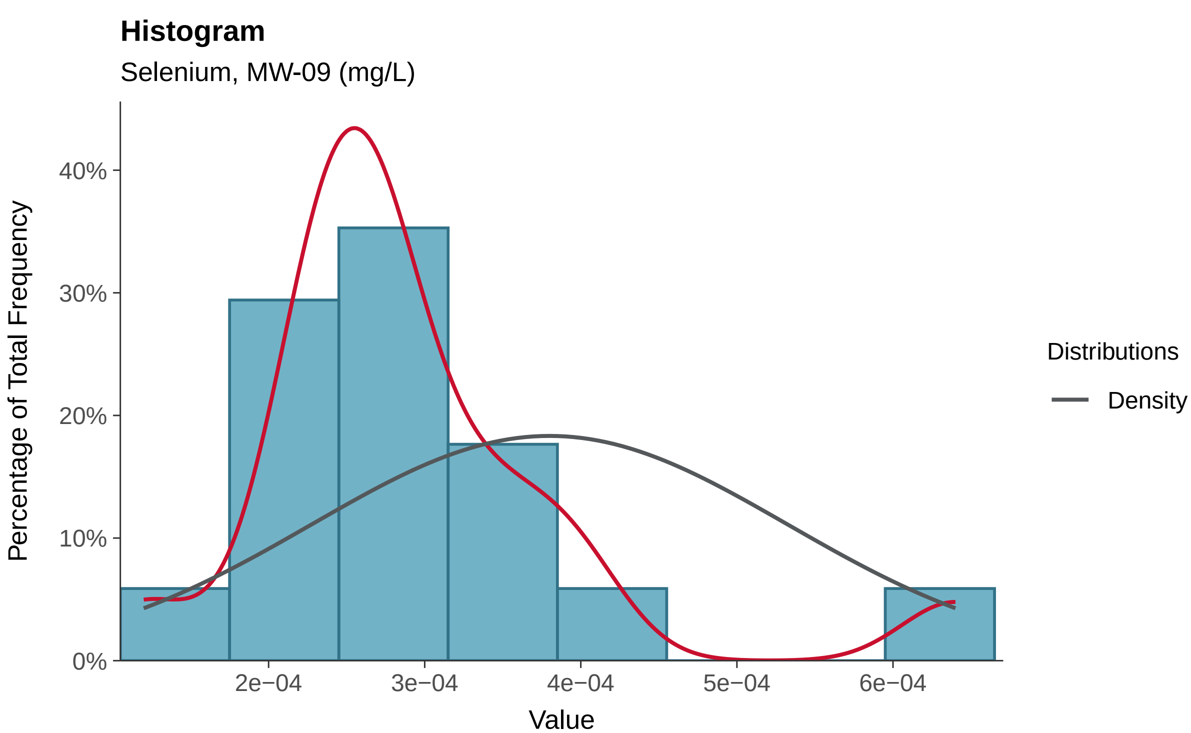



Trend Regression: Piecewise Linear-Linear-Linear
Radium 226 and 228, MW-09 (pCi/L)
Value
1.0
0.9
0.8
0.7
0.6
0.5
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Appendix IV: Selenium, MW-09

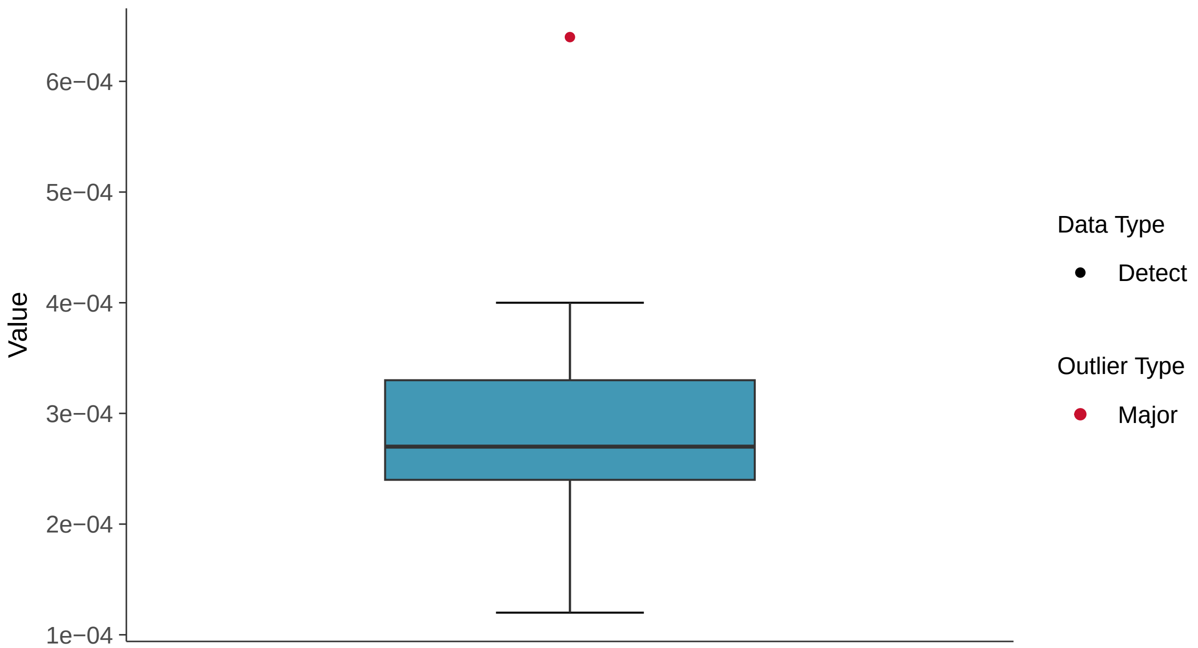
ID: 19_2_4_122





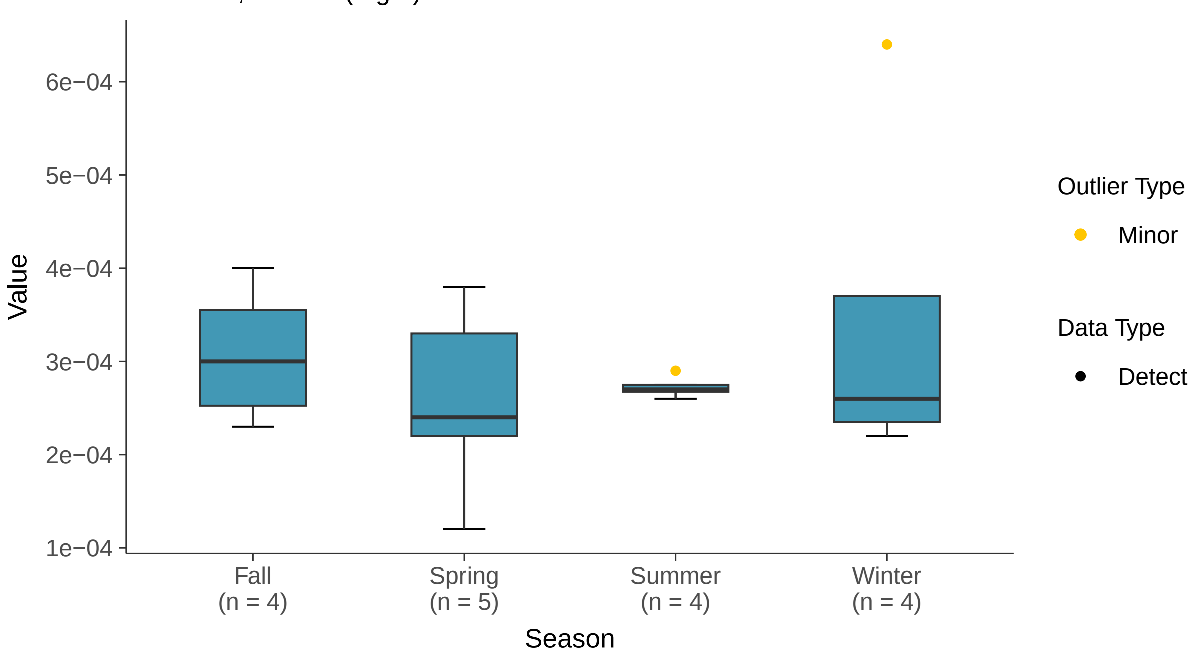
Boxplot

Selenium, MW-09 (mg/L)



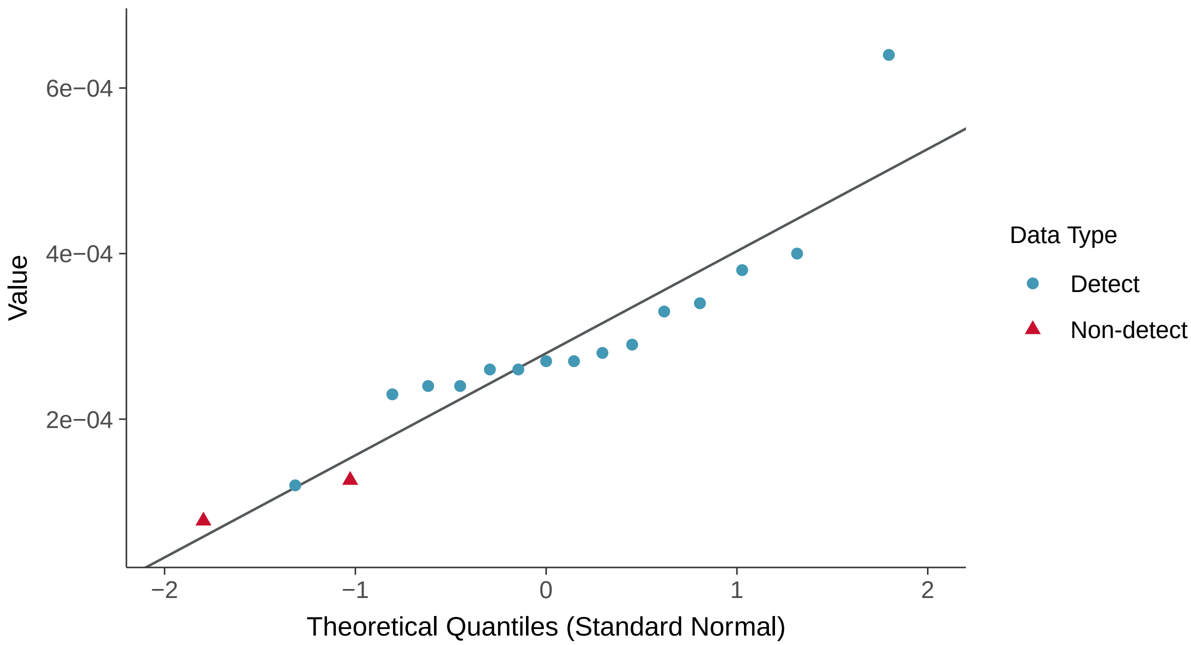
Boxplot by Season

Selenium, MW-09 (mg/L)



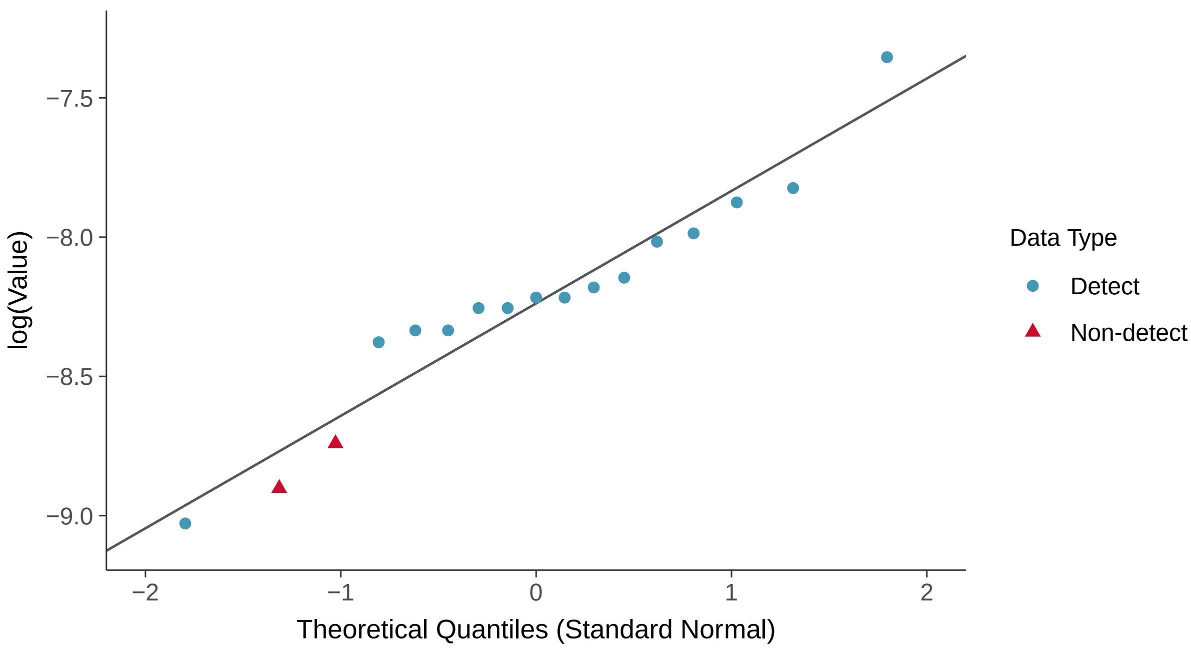
Normal Q-Q plot using ROS Imputed Estimates

Selenium, MW-09 (mg/L)

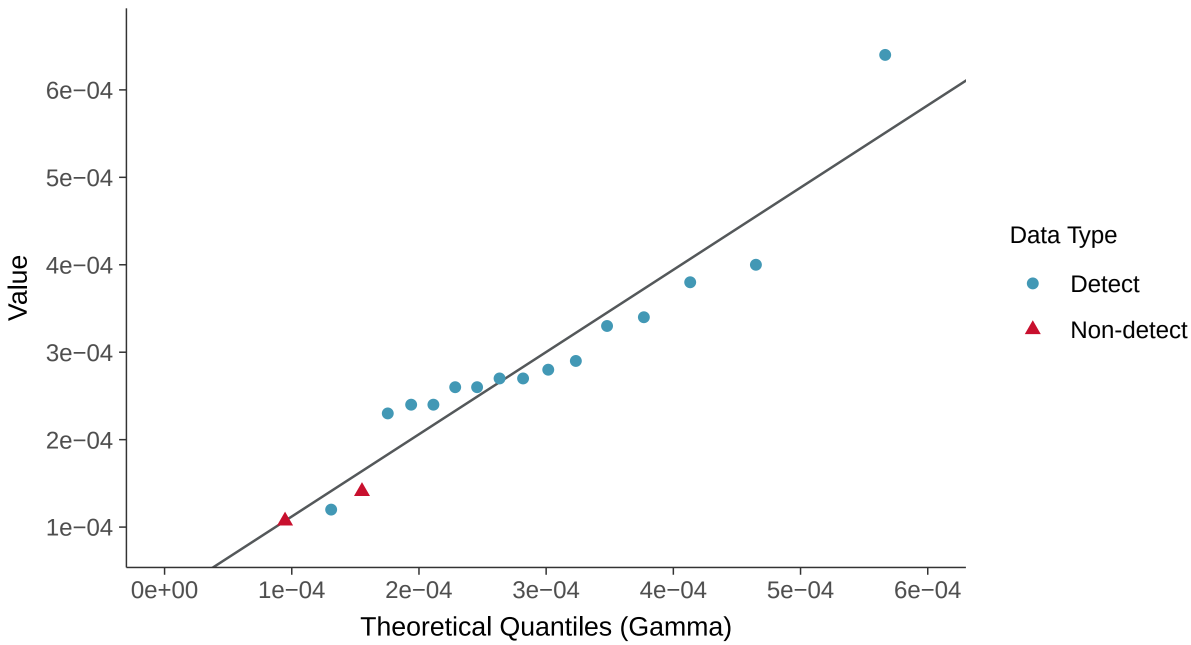


Lognormal Q-Q plot using ROS Imputed Estimates

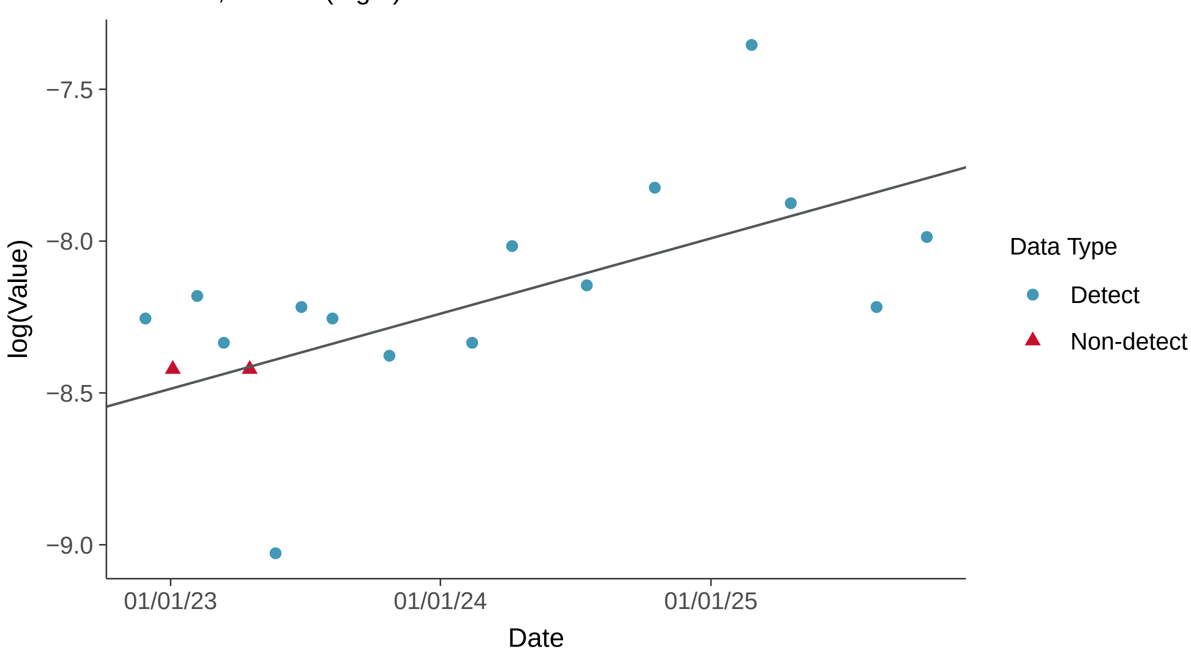
Selenium, MW-09 (mg/L)



Gamma Q-Q plot using ROS Imputed Estimates
Selenium, MW-09 (mg/L)

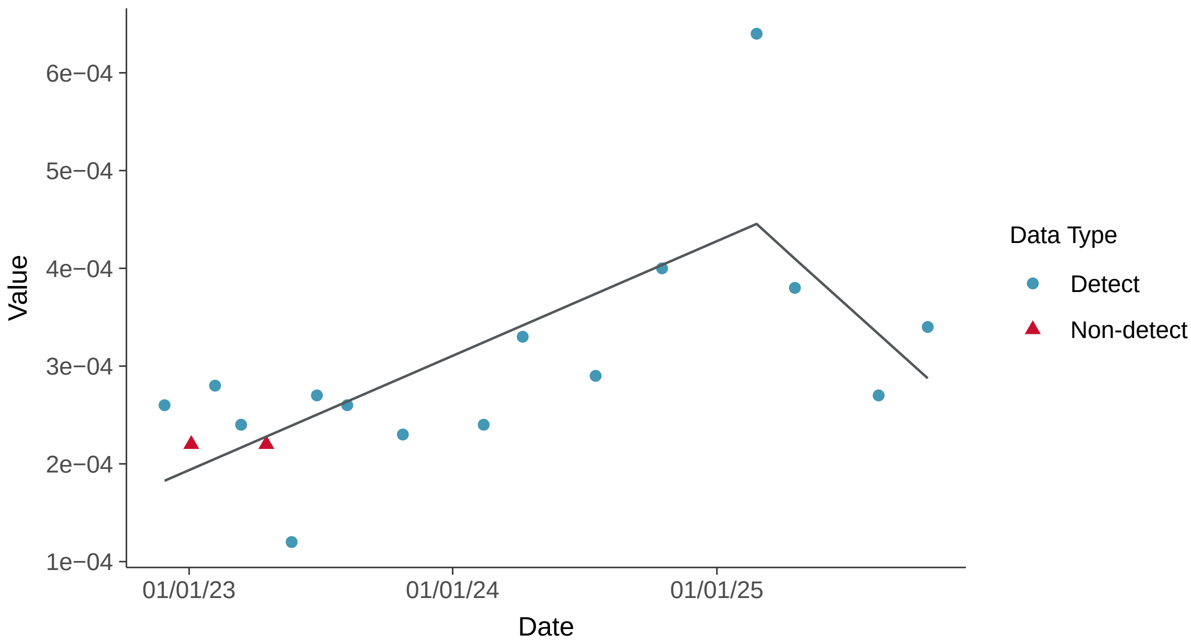


Trend Regression: Lognormal MLE
Selenium, MW-09 (mg/L)



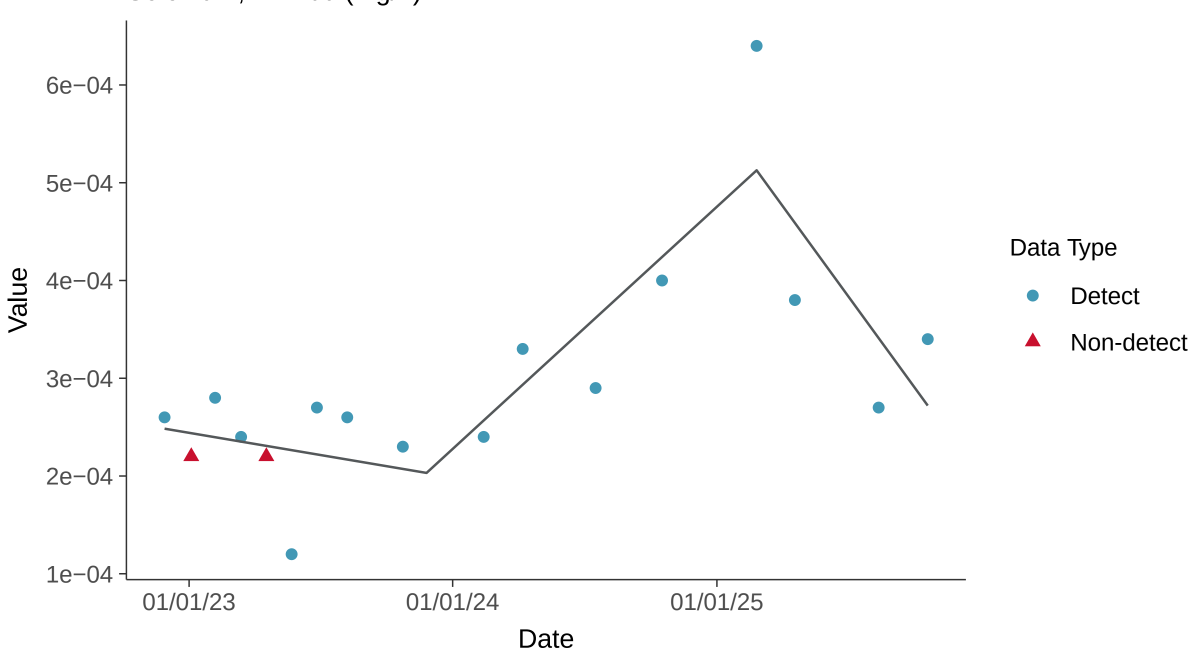
Trend Regression: Piecewise Linear-Linear

Selenium, MW-09 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Selenium, MW-09 (mg/L)

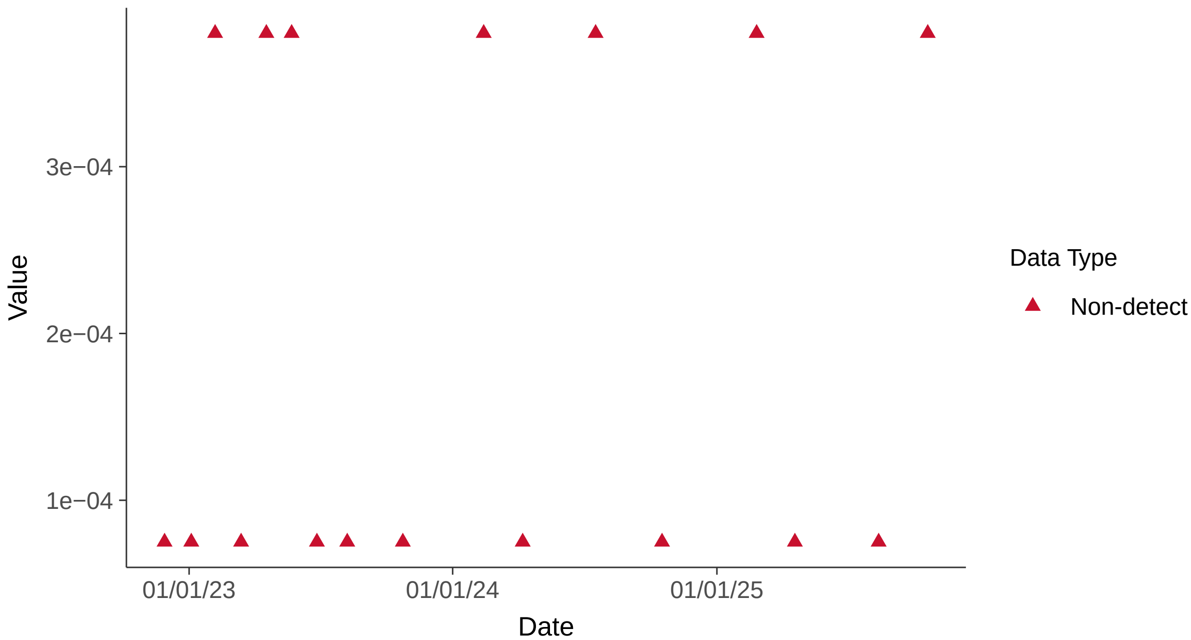


Appendix IV: Thallium, MW-09

ID: 19_2_4_125

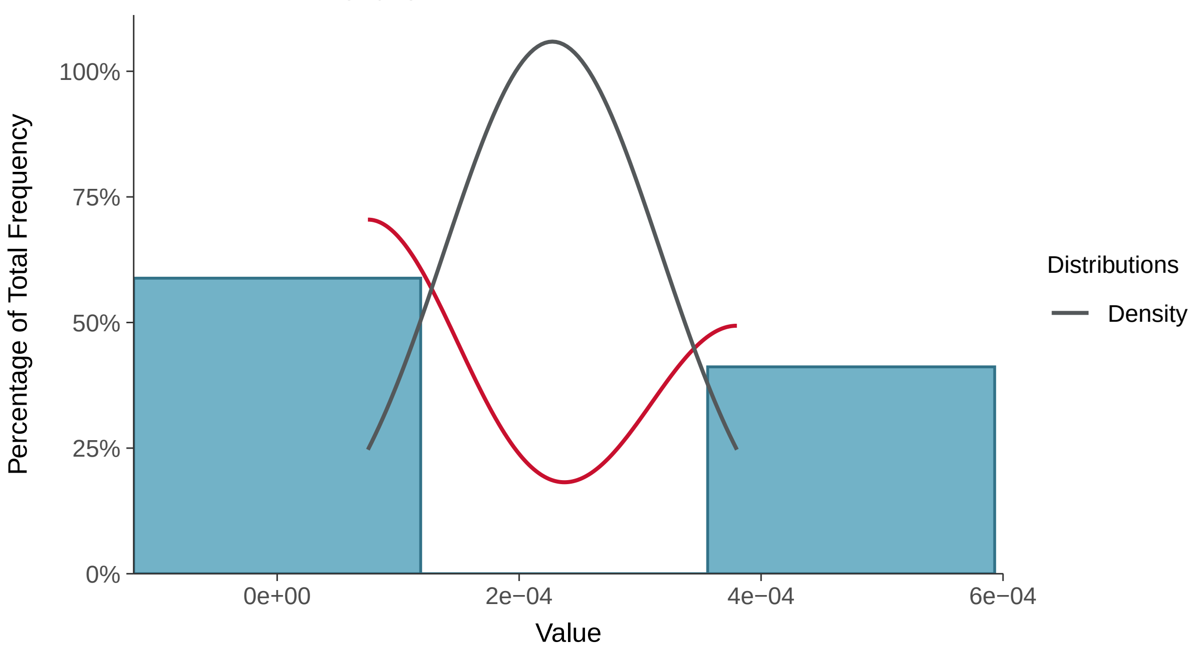
Scatter Plot

Thallium, MW-09 (mg/L)



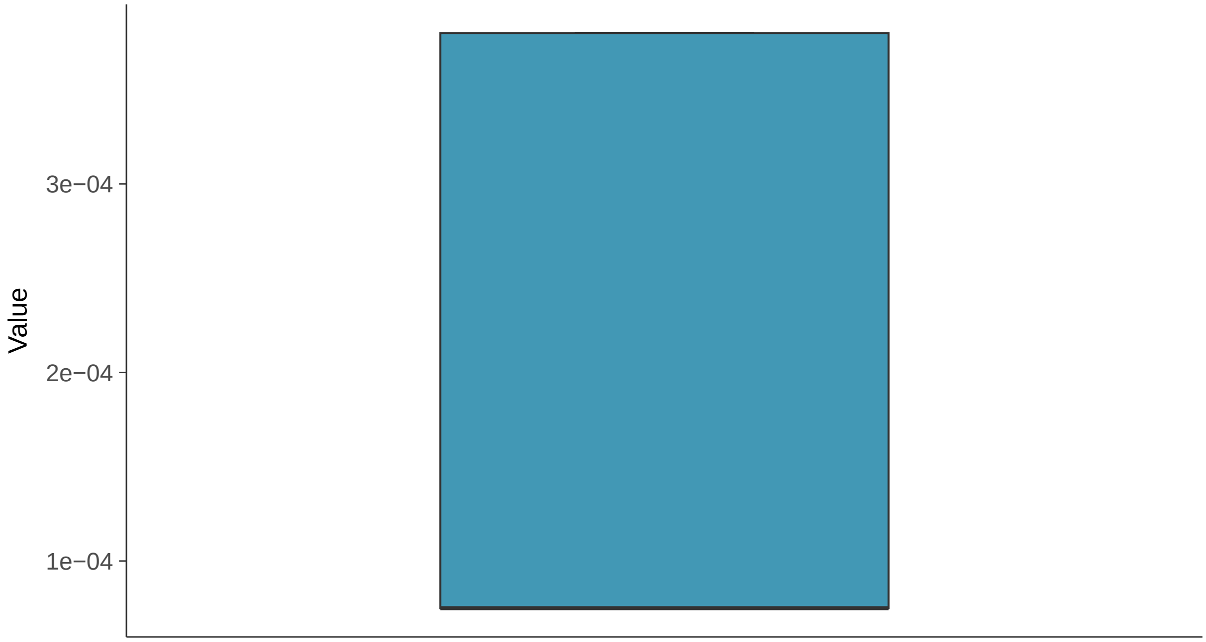
Histogram

Thallium, MW-09 (mg/L)



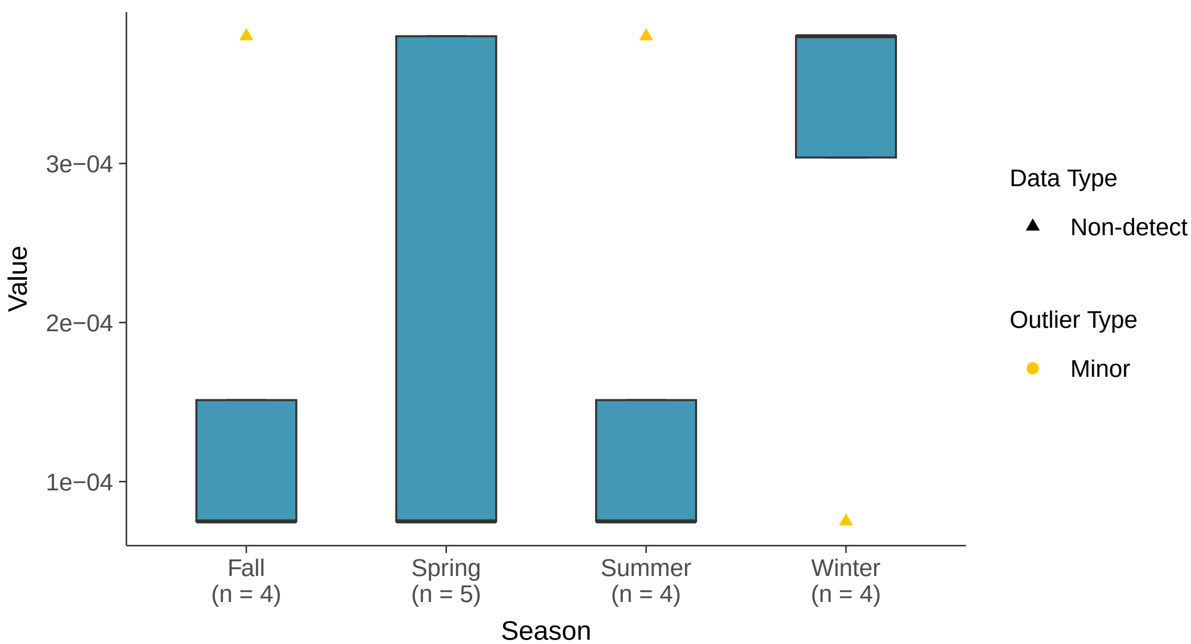
Boxplot

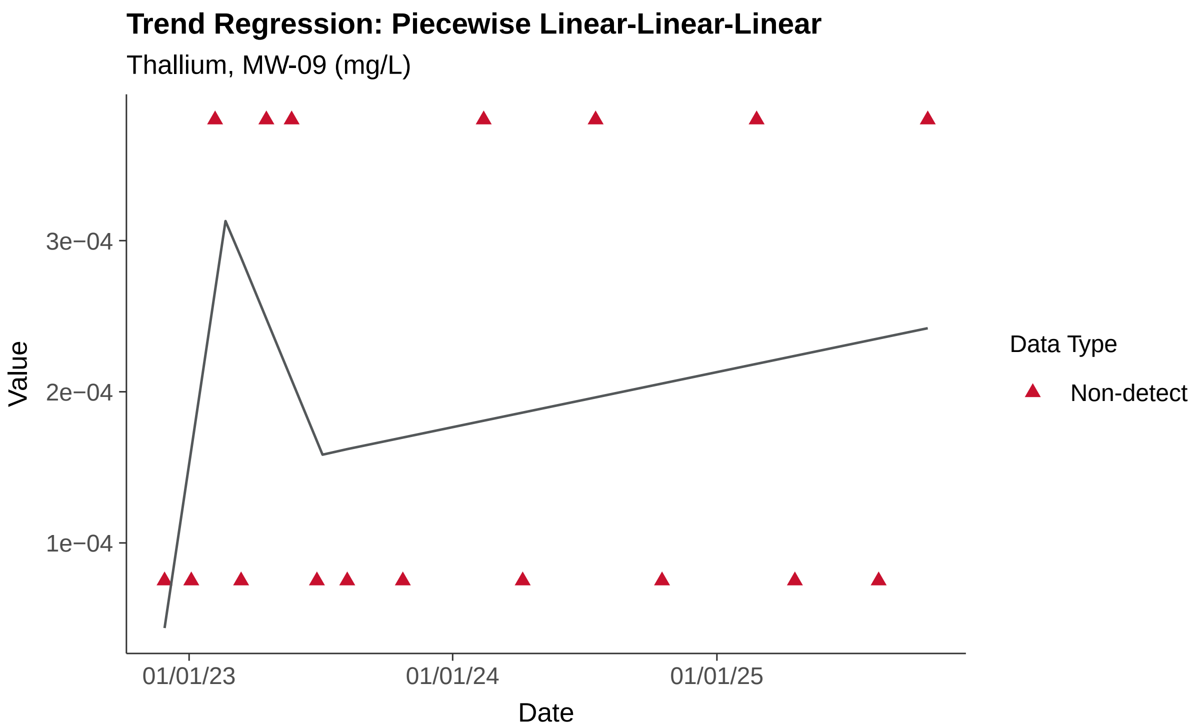
Thallium, MW-09 (mg/L)



Boxplot by Season

Thallium, MW-09 (mg/L)



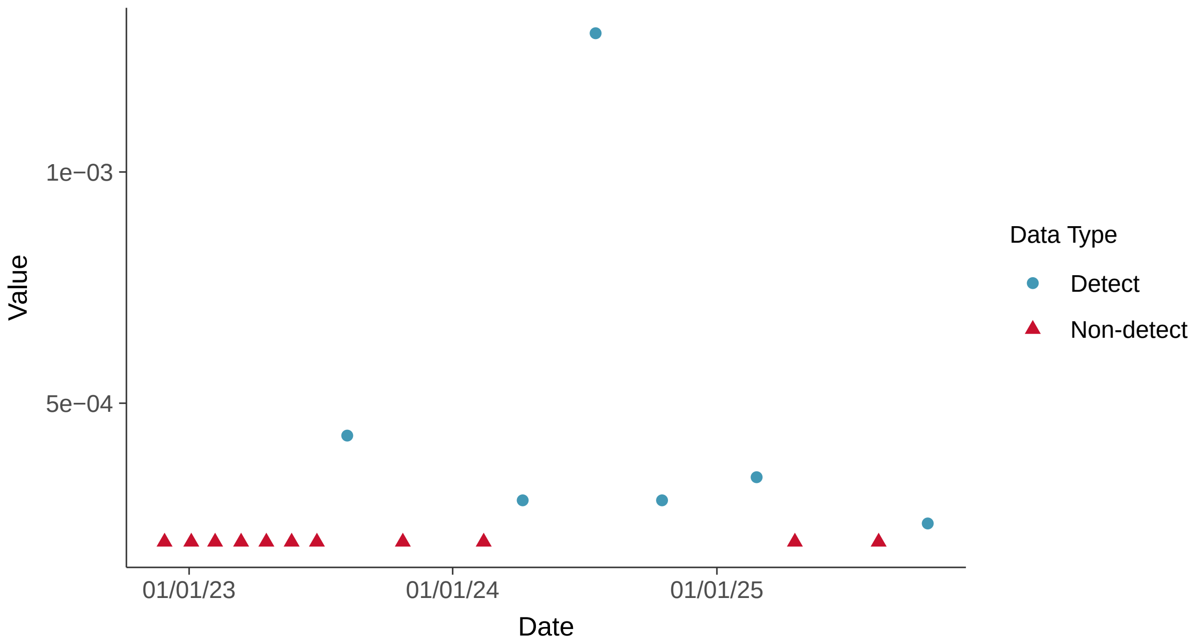

Trend Regression: Piecewise Linear-Linear-Linear
Thallium, MW-09 (mg/L)
Value
3e−04
2e−04
1e−04
01/01/23
01/01/24
01/01/25
Date
Data Type
Non-detect

Part 115: Copper, MW-09

ID: 19_2_5_111

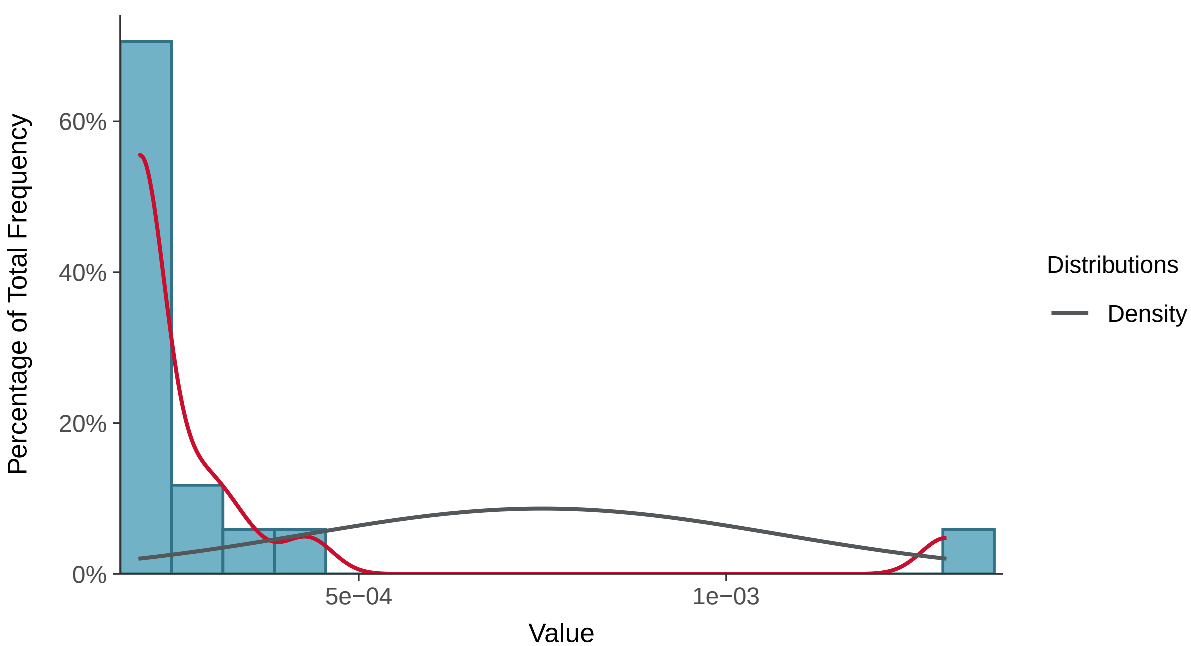
Scatter Plot

Copper, MW-09 (mg/L)



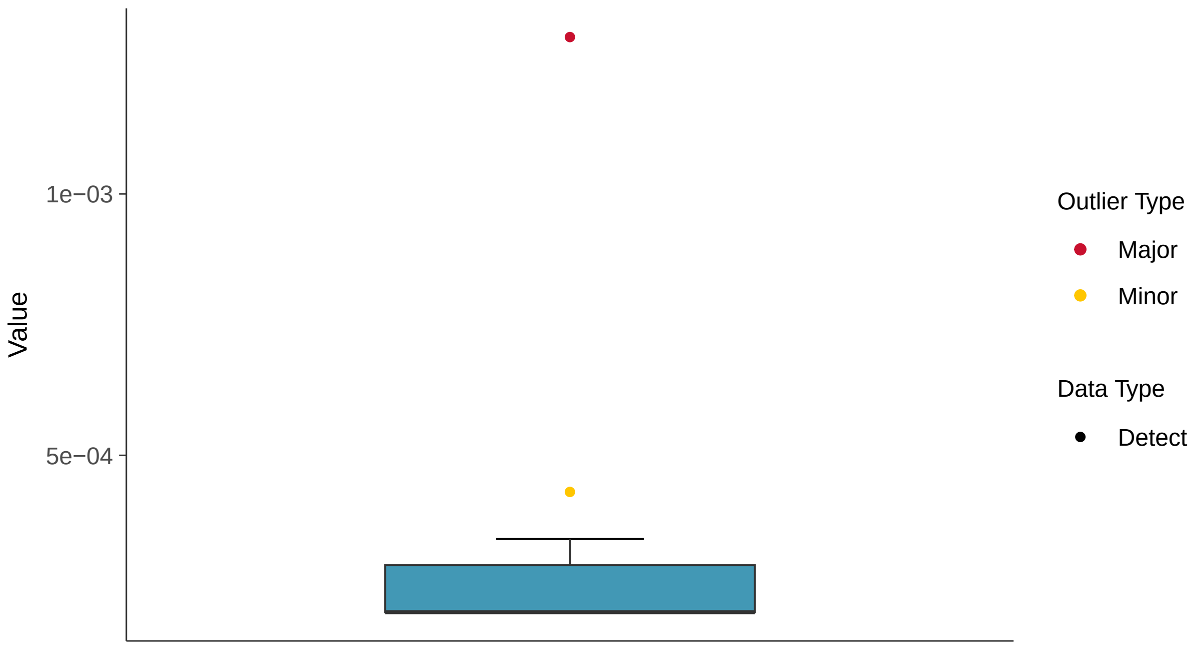
Histogram

Copper, MW-09 (mg/L)



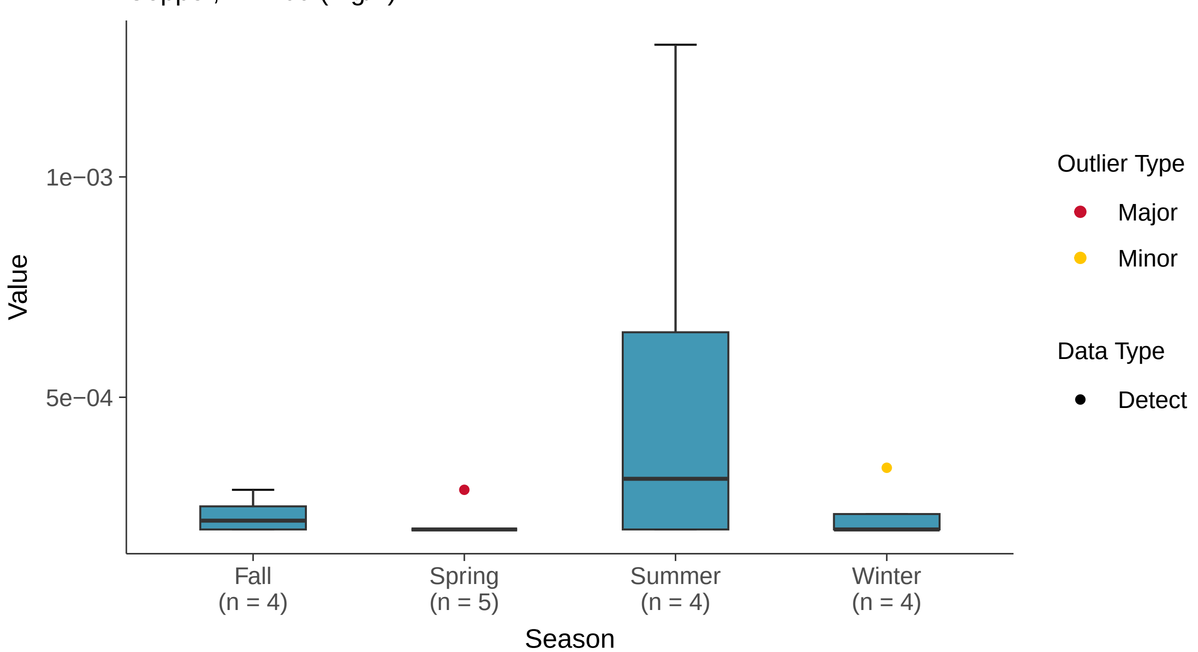
Boxplot

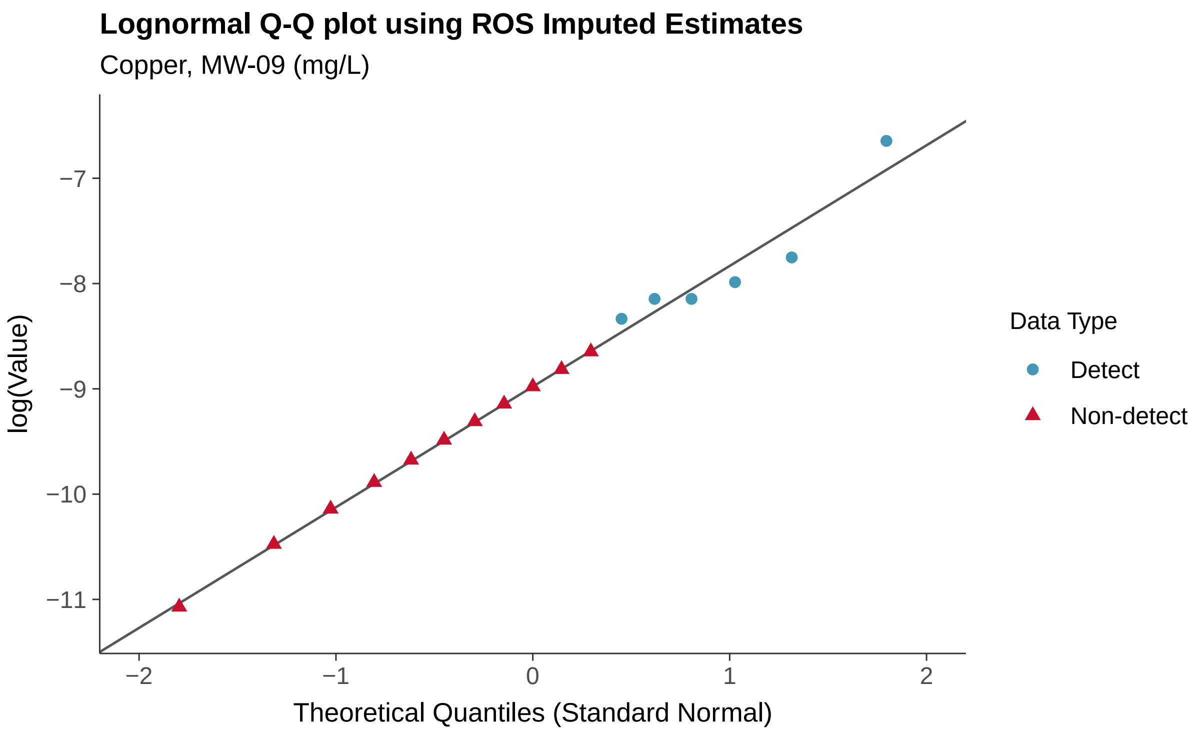
Copper, MW-09 (mg/L)

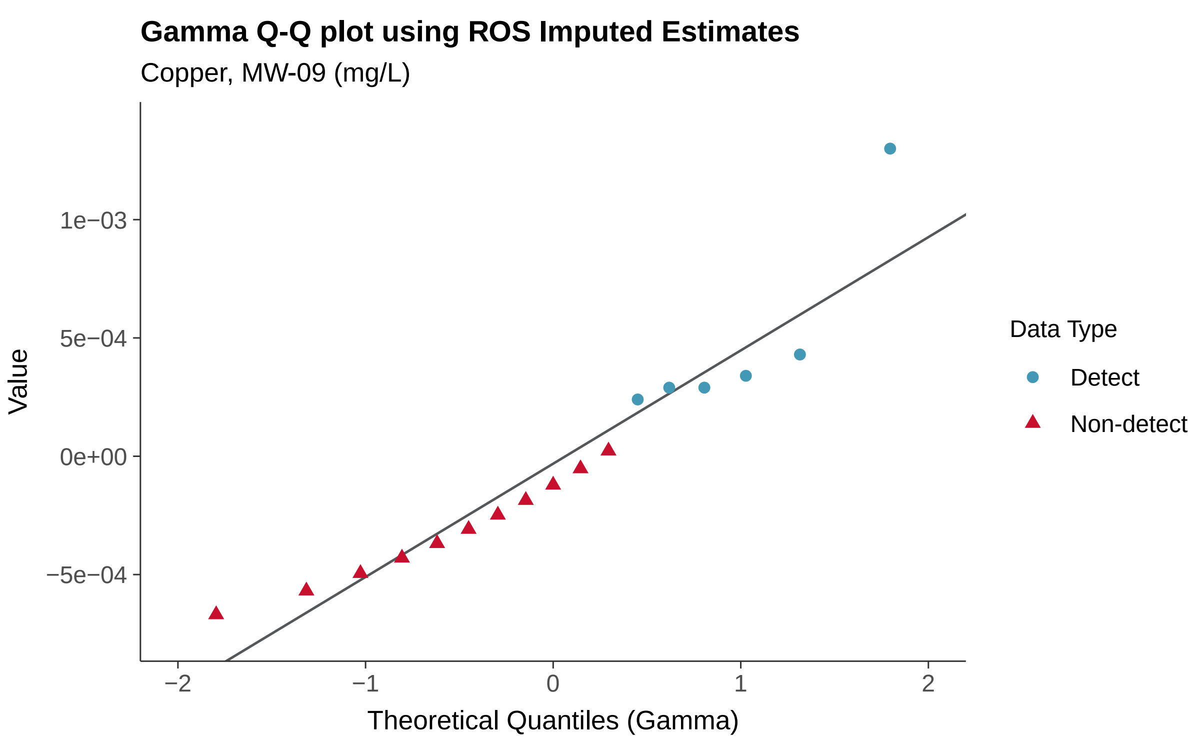


Boxplot by Season

Copper, MW-09 (mg/L)

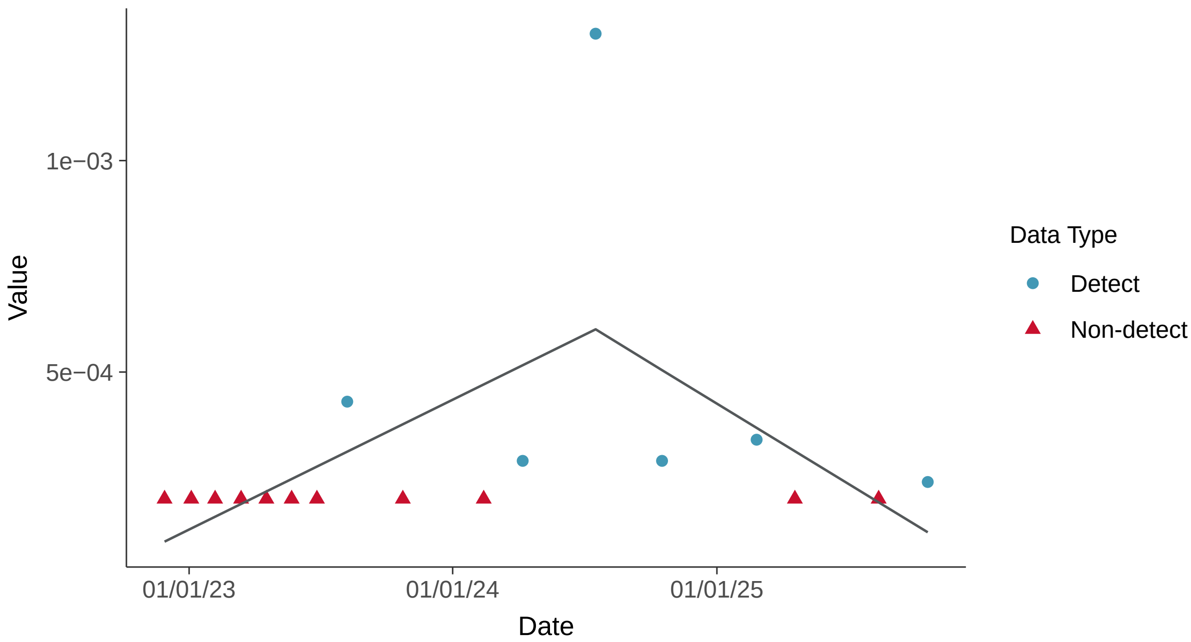



Lognormal Q-Q plot using ROS Imputed Estimates
Copper, MW-09 (mg/L)
log(Value)
−7
−8
−9
−10
−11
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Gamma Q-Q plot using ROS Imputed Estimates
Copper, MW-09 (mg/L)
Value
1e−03
5e−04
0e+00
−5e−04
−2
−1
0
1
2
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect

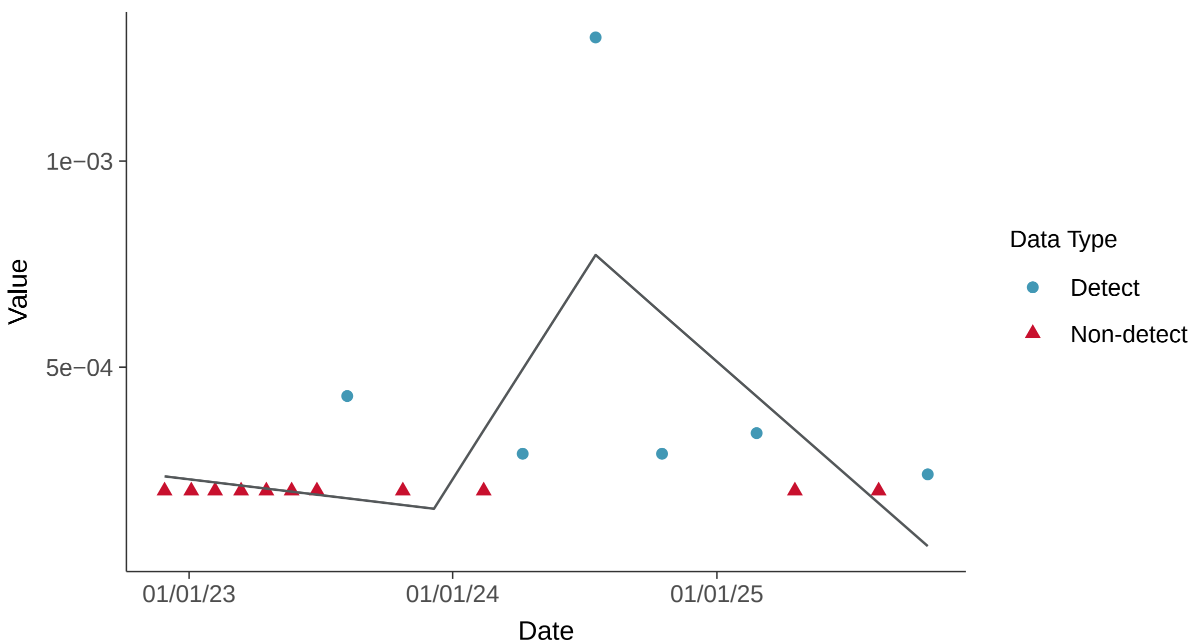
Trend Regression: Piecewise Linear-Linear

Copper, MW-09 (mg/L)



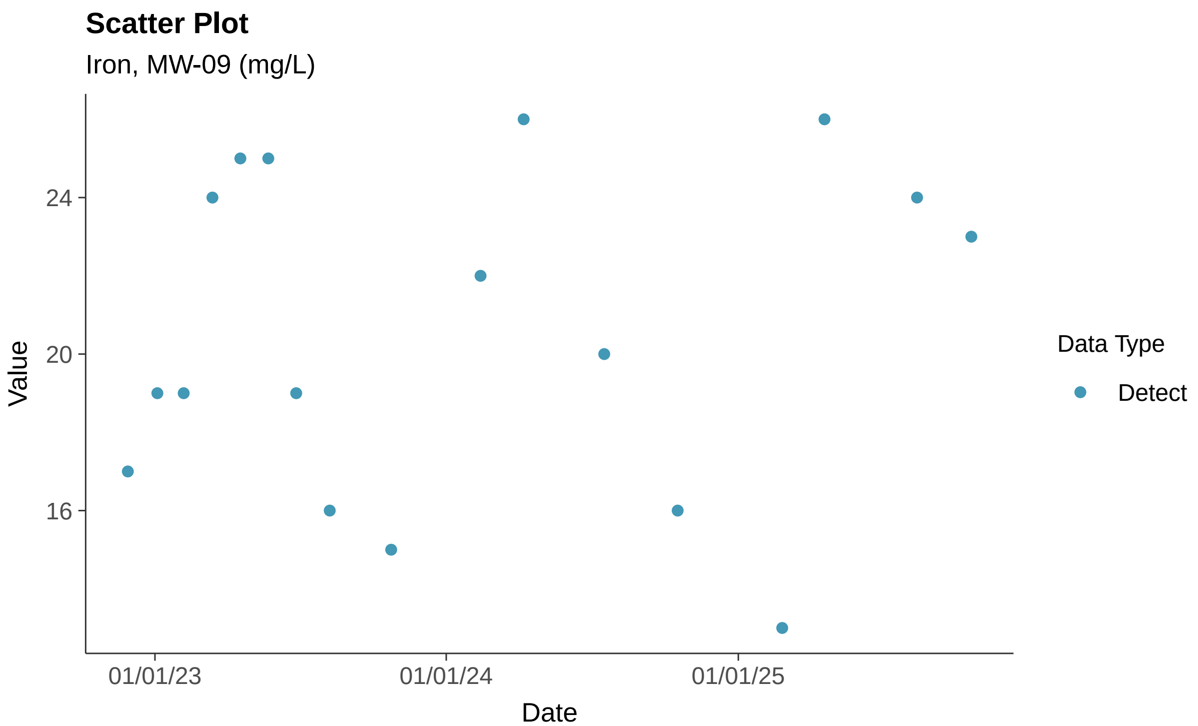
Trend Regression: Piecewise Linear-Linear-Linear

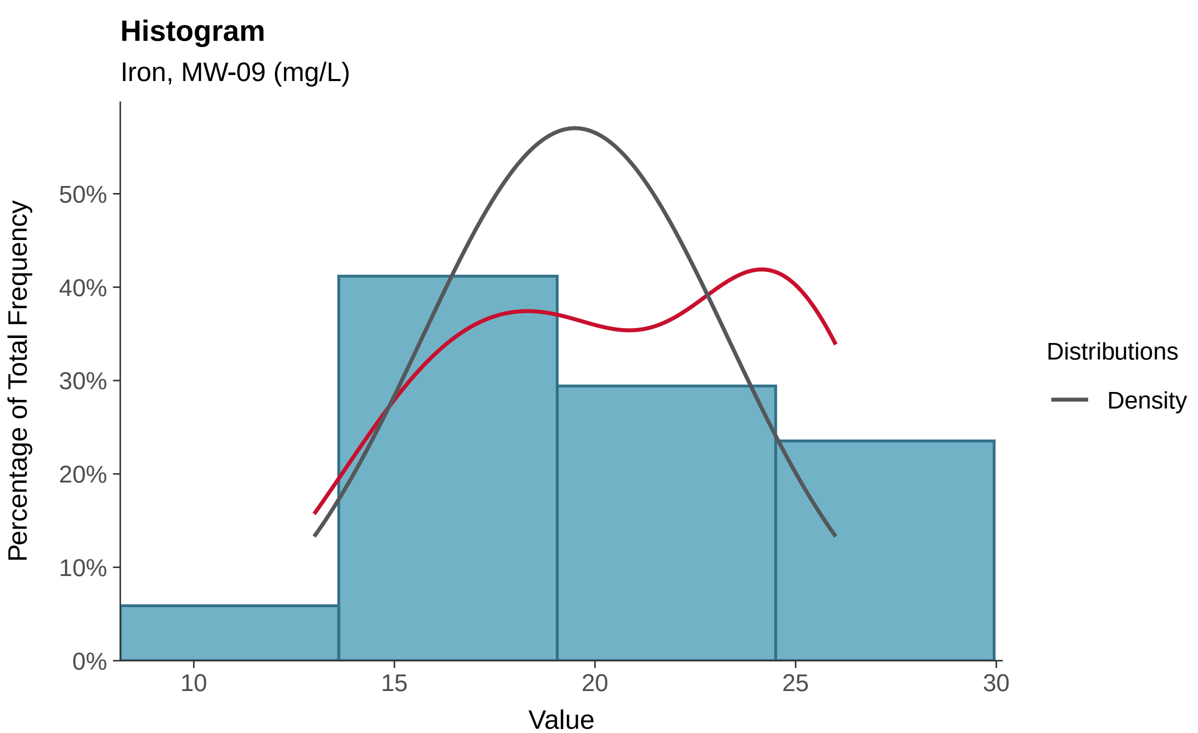
Copper, MW-09 (mg/L)



Part 115: Iron, MW-09

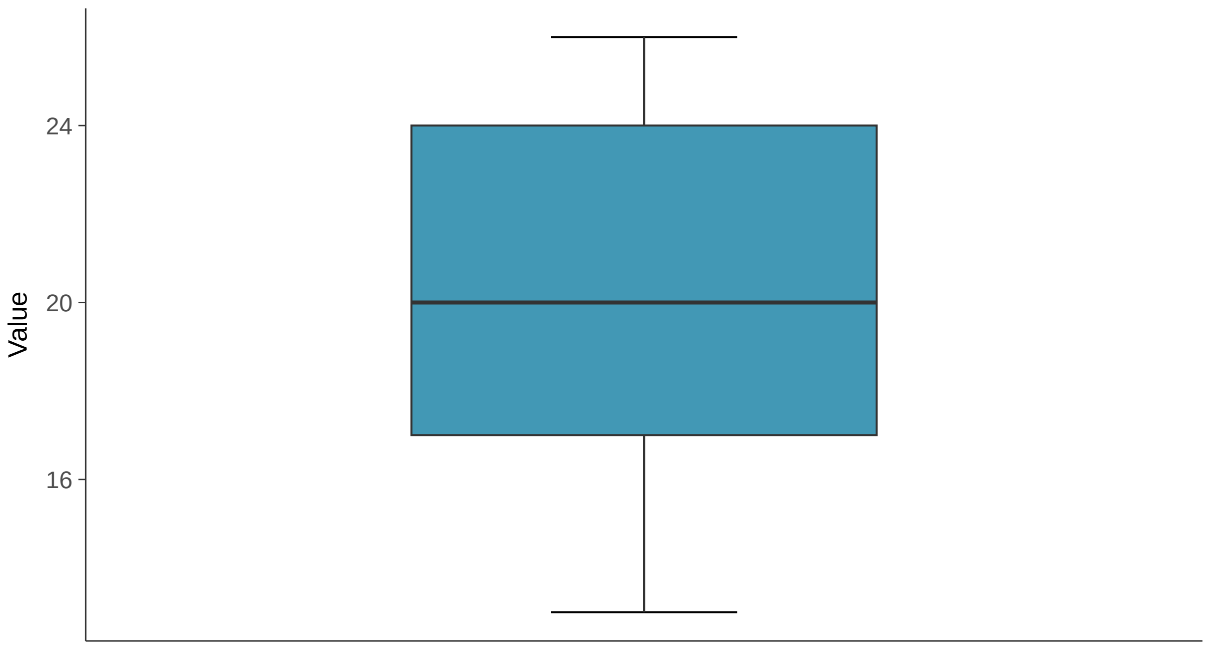
ID: 19_2_5_114





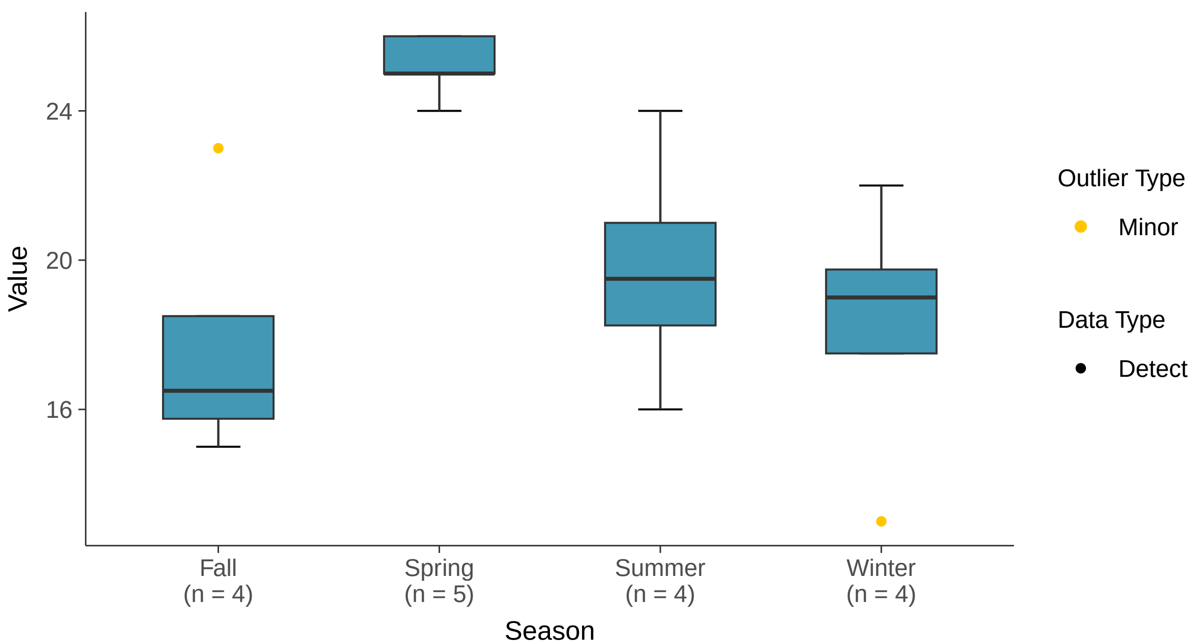
Boxplot

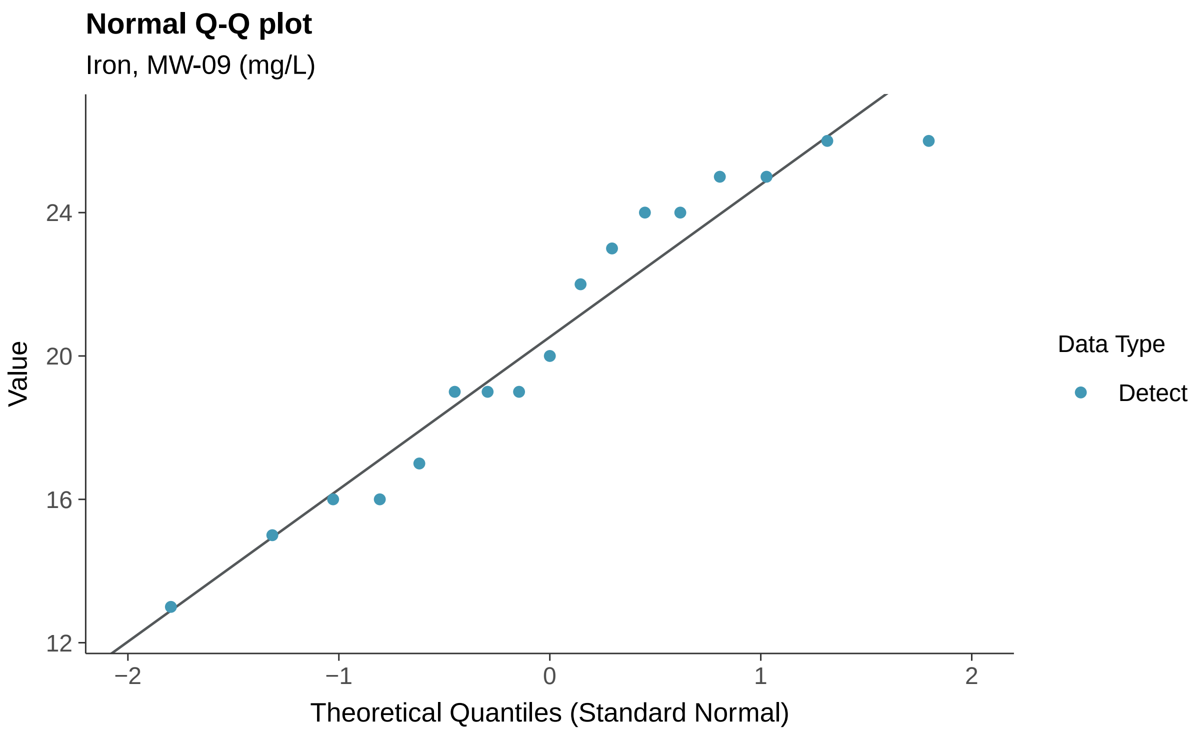
Iron, MW-09 (mg/L)

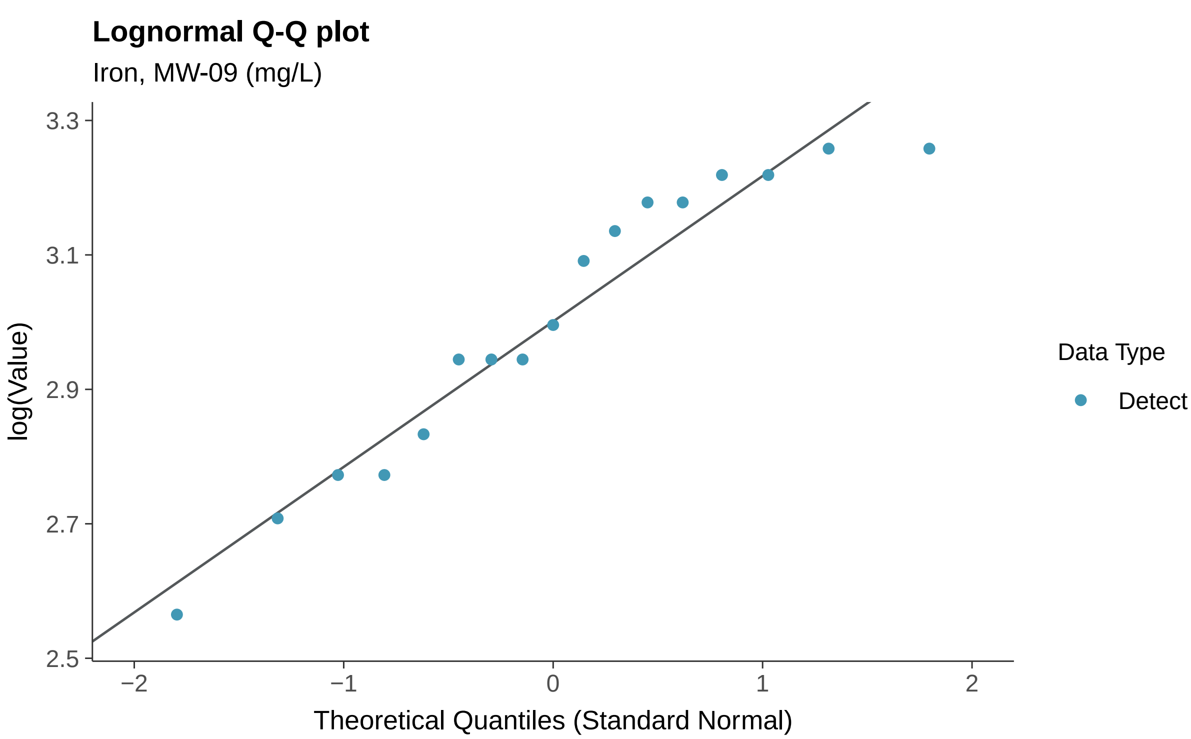


Boxplot by Season

Iron, MW-09 (mg/L)

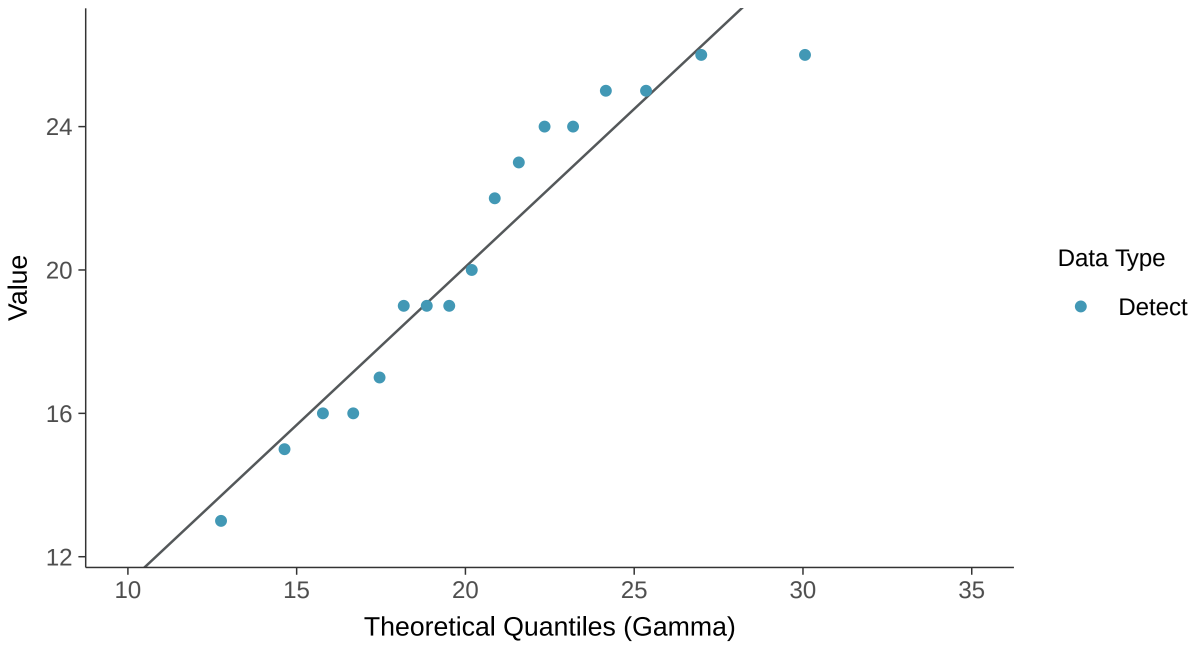



Normal Q-Q plot
Iron, MW-09 (mg/L)
Value
24
20
16
12
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Iron, MW-09 (mg/L)
log(Value)
3.3
3.1
2.9
2.7
2.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

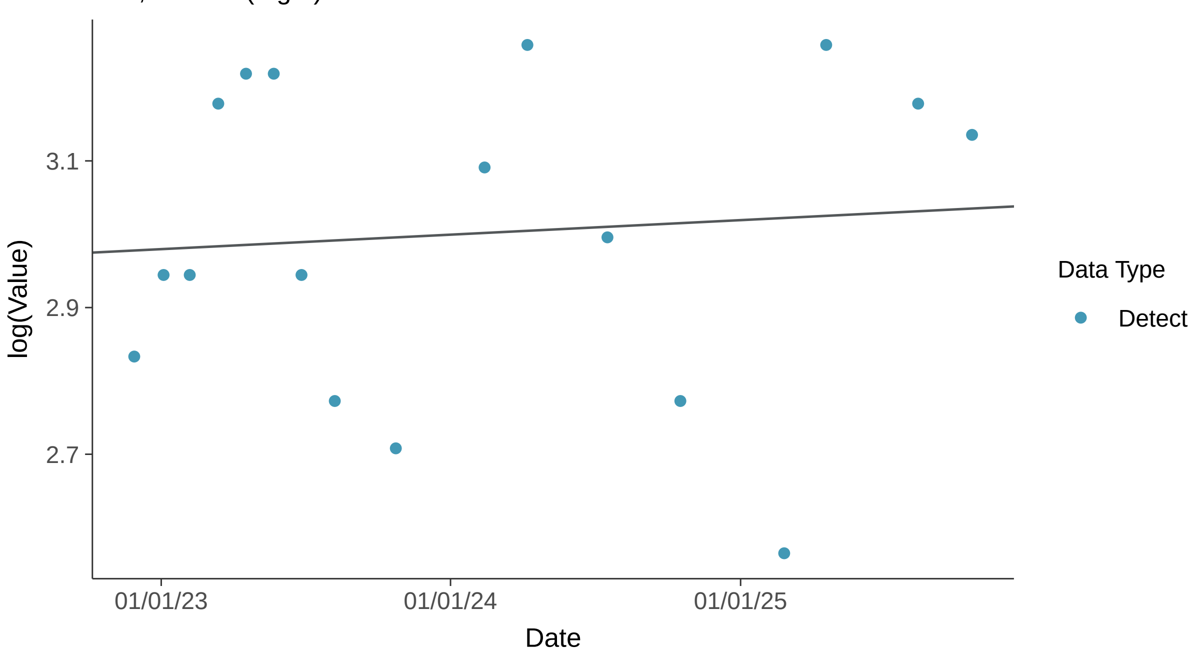
Gamma Q-Q plot

Iron, MW-09 (mg/L)



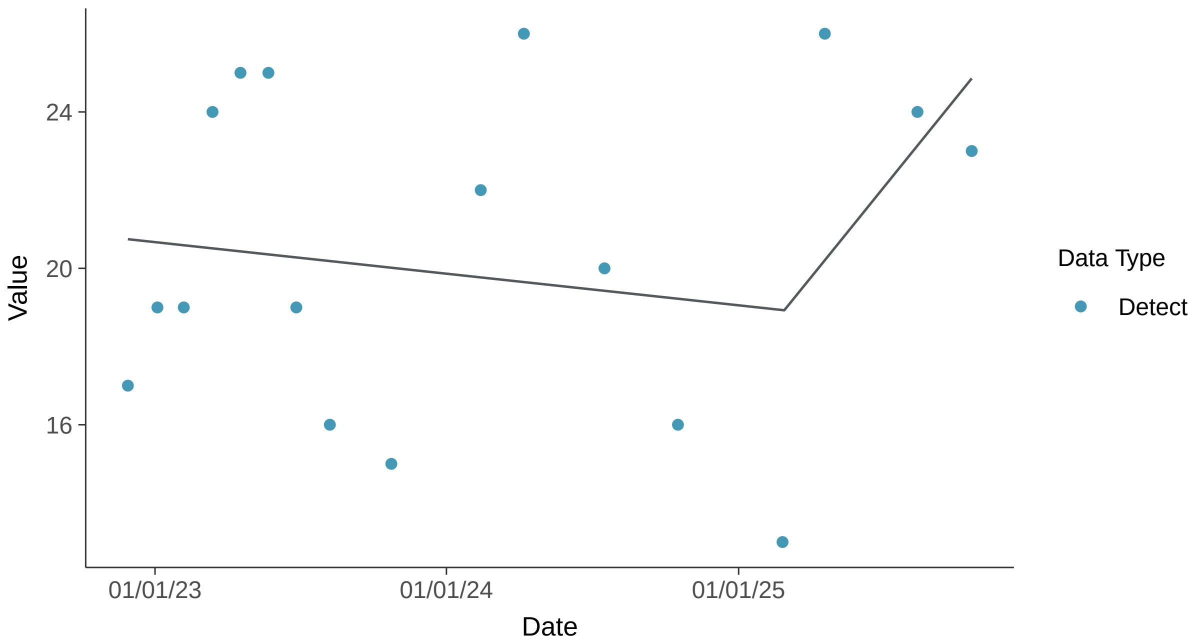
Trend Regression: Lognormal MLE

Iron, MW-09 (mg/L)



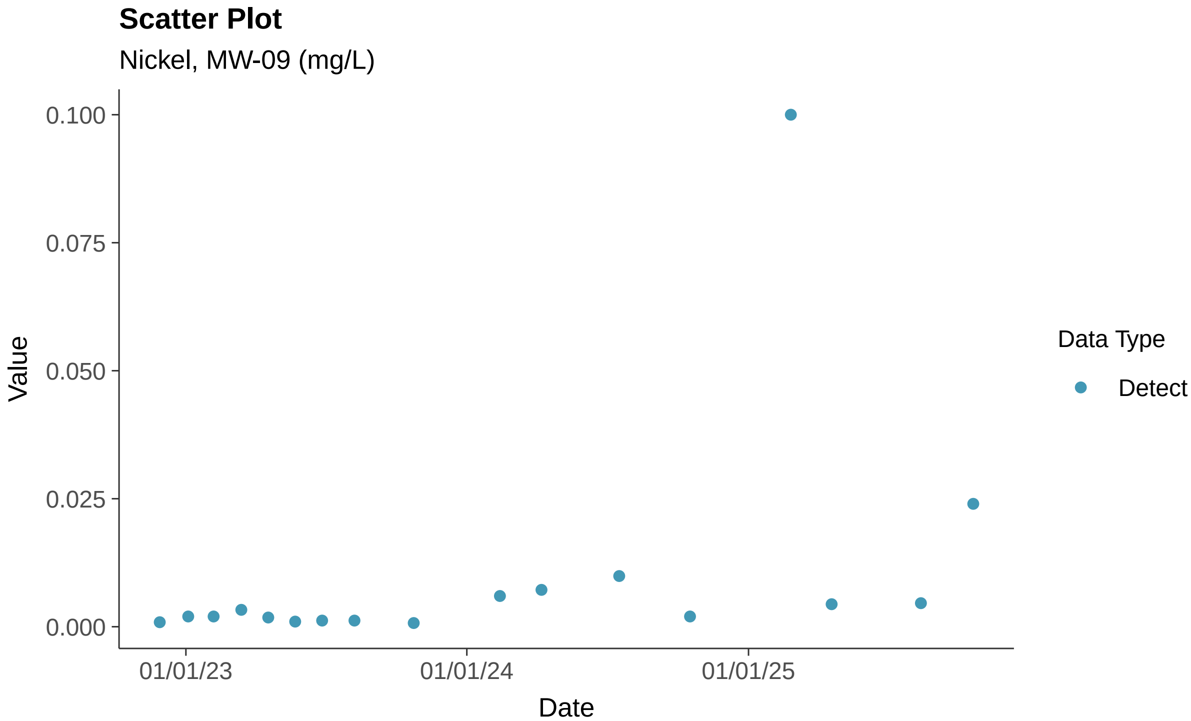
Trend Regression: Piecewise Linear-Linear

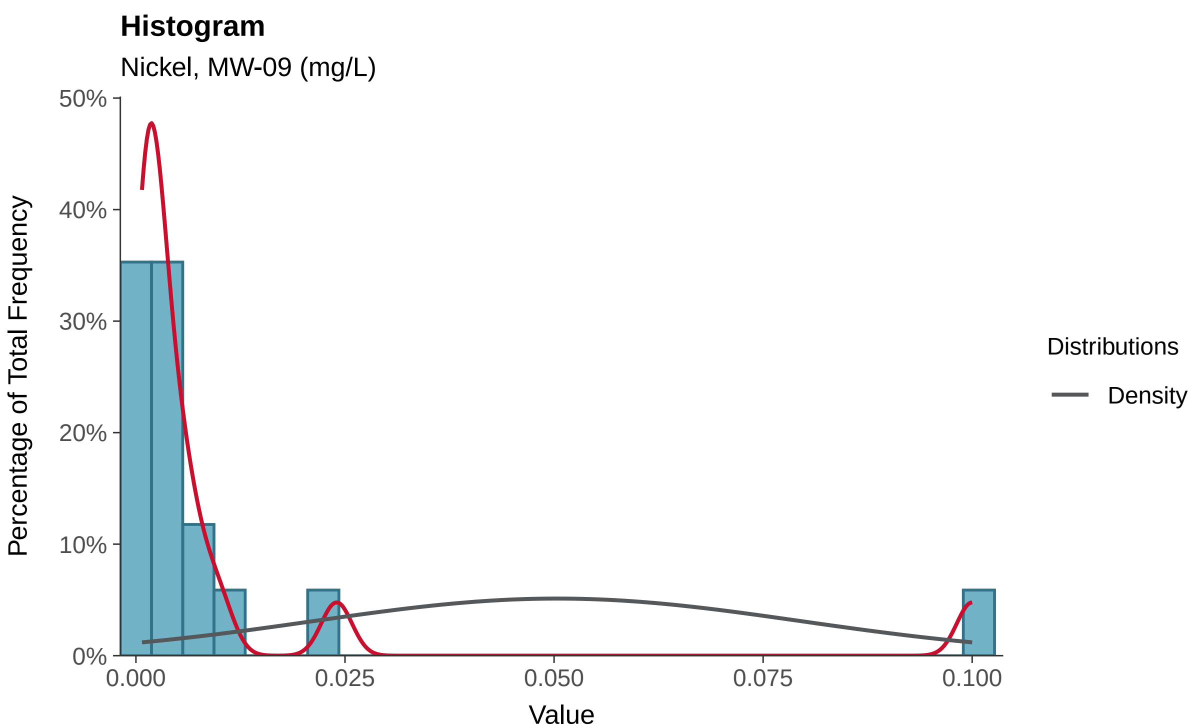
Iron, MW-09 (mg/L)

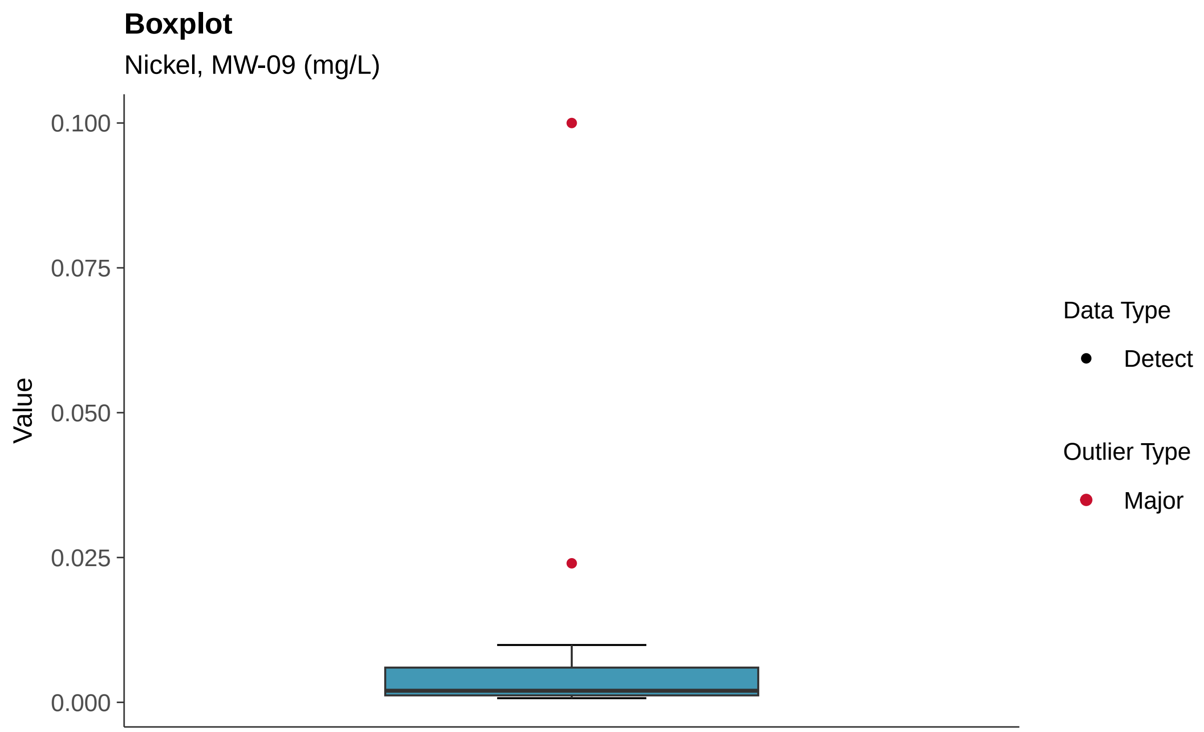


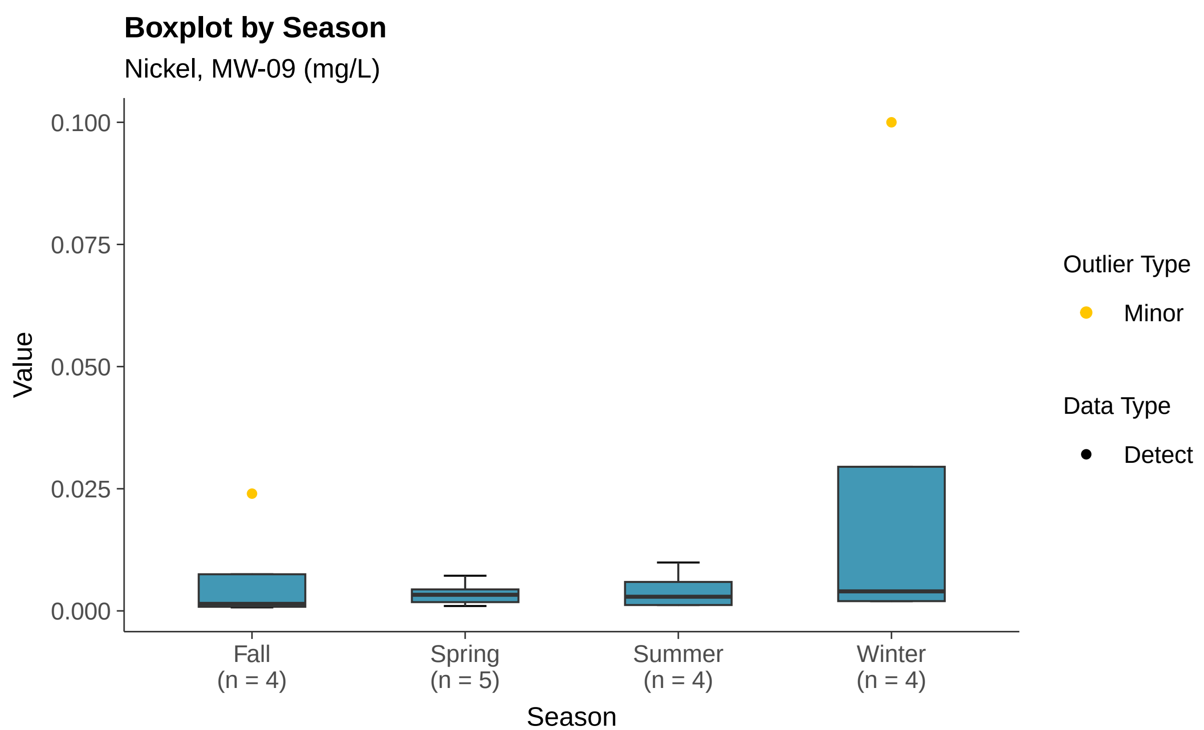
Part 115: Nickel, MW-09

ID: 19_2_5_119



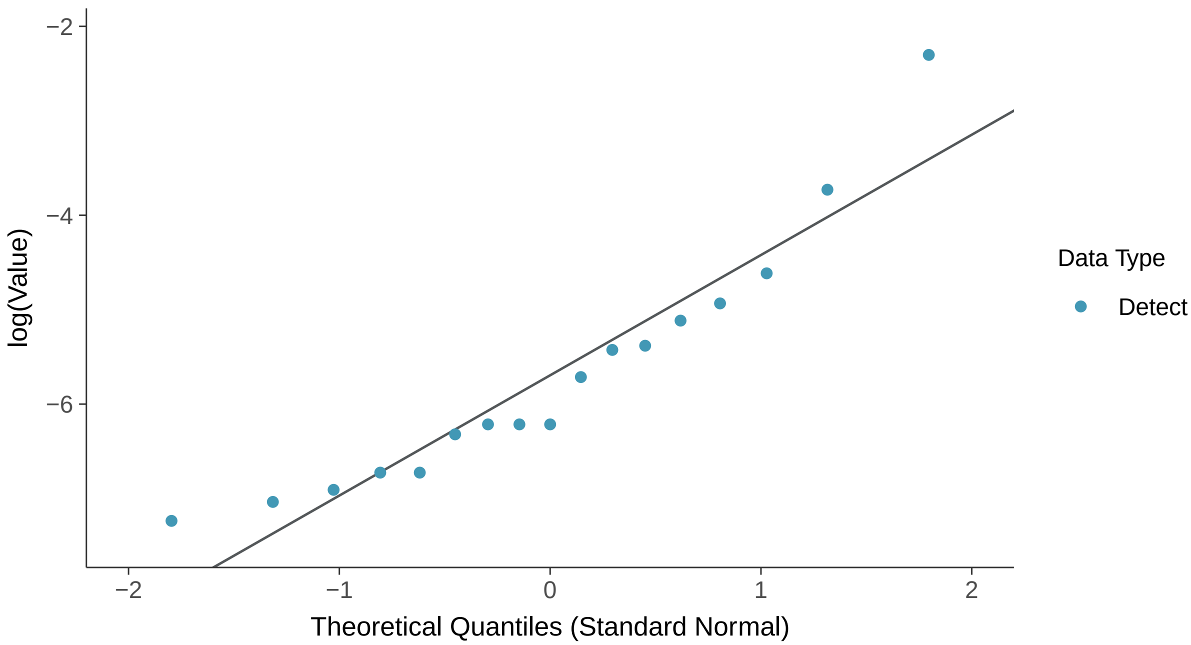



Boxplot
Nickel, MW-09 (mg/L)
0.100
0.075
0.050
0.025
0.000
Value
Data Type
Detect
Outlier Type
Major


Boxplot by Season
Nickel, MW-09 (mg/L)
0.100
0.075
0.050
0.025
0.000
Value
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Minor
Data Type
Detect

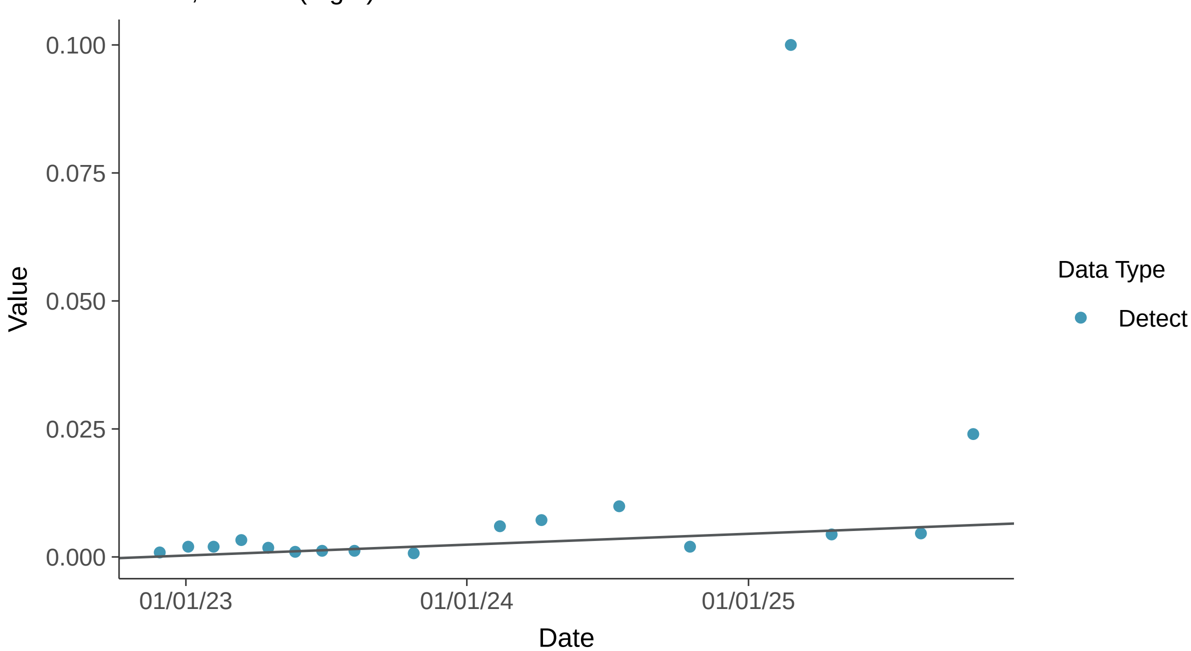
Lognormal Q-Q plot

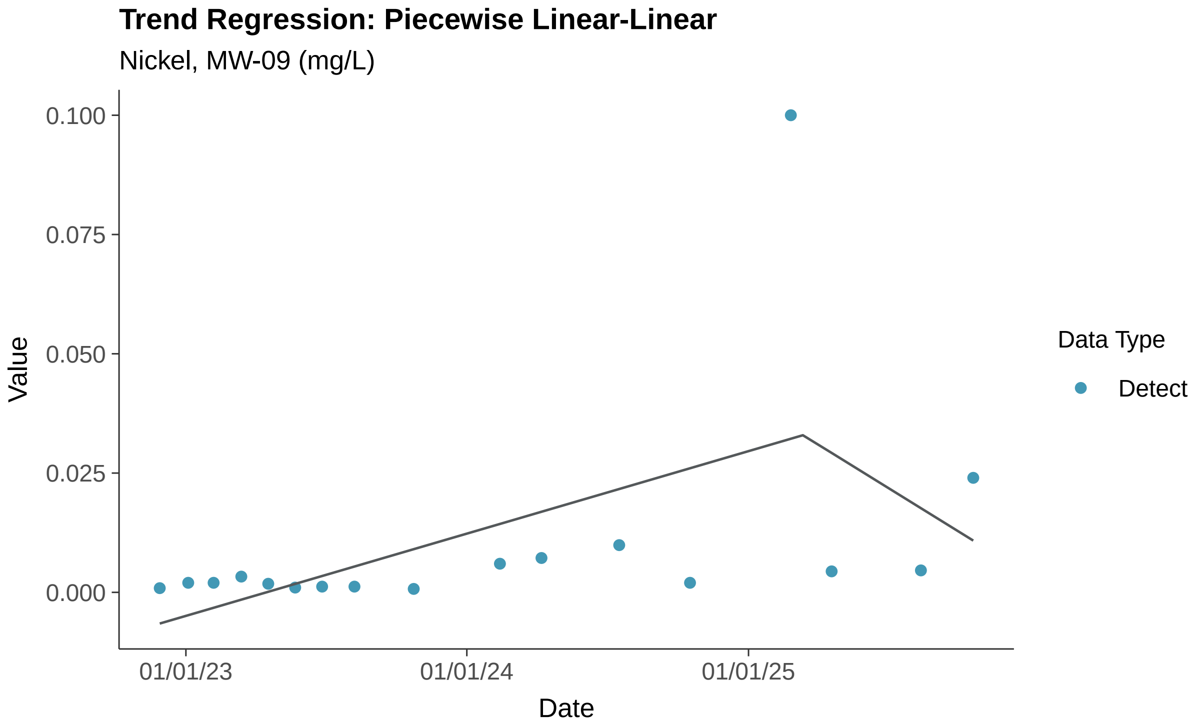
Nickel, MW-09 (mg/L)



Trend Regression: Mann-Kendall/Theil-Sen Estimate

Nickel, MW-09 (mg/L)



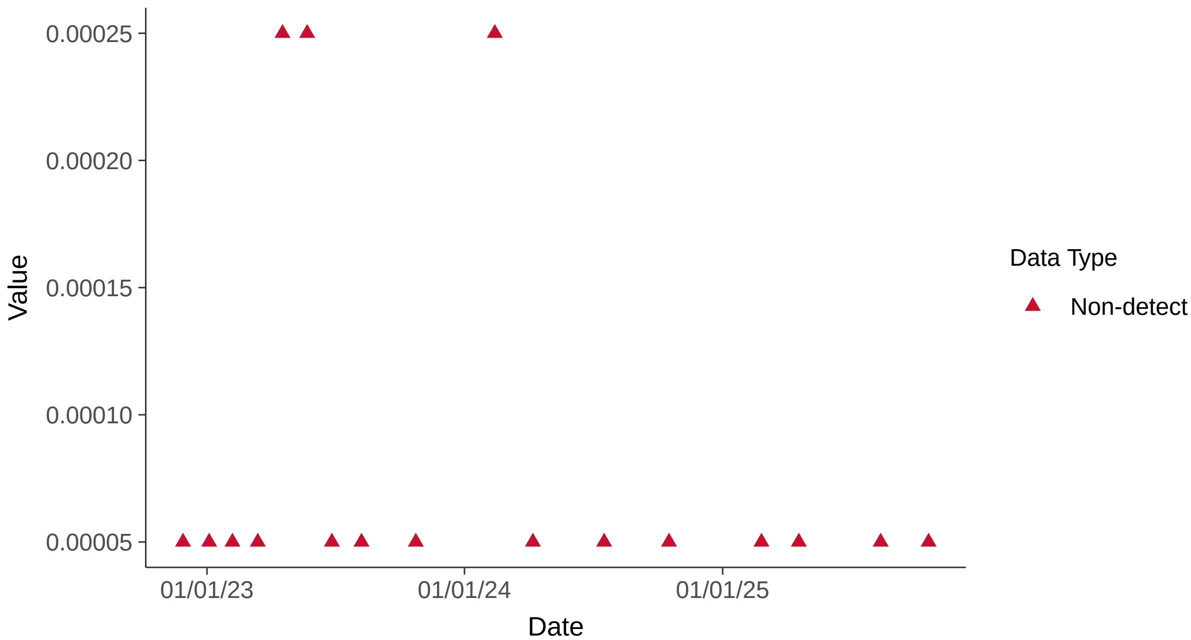

Trend Regression: Piecewise Linear-Linear
Nickel, MW-09 (mg/L)
Value
0.100
0.075
0.050
0.025
0.000
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Part 115: Silver, MW-09

ID: 19_2_5_123

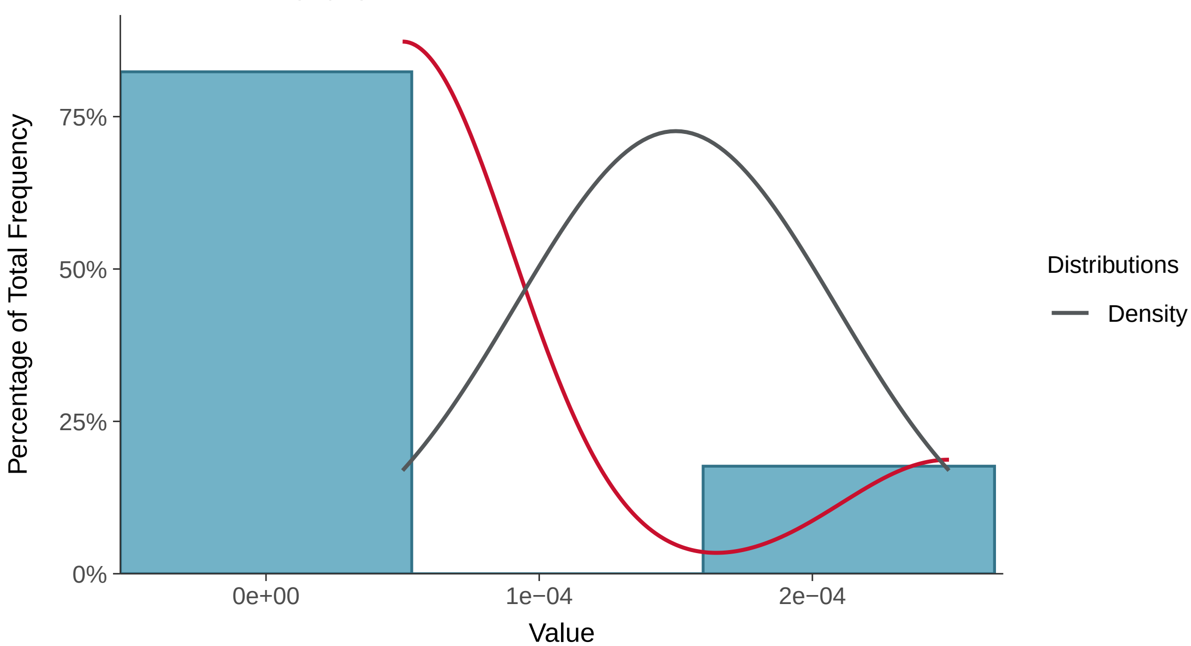
Scatter Plot

Silver, MW-09 (mg/L)



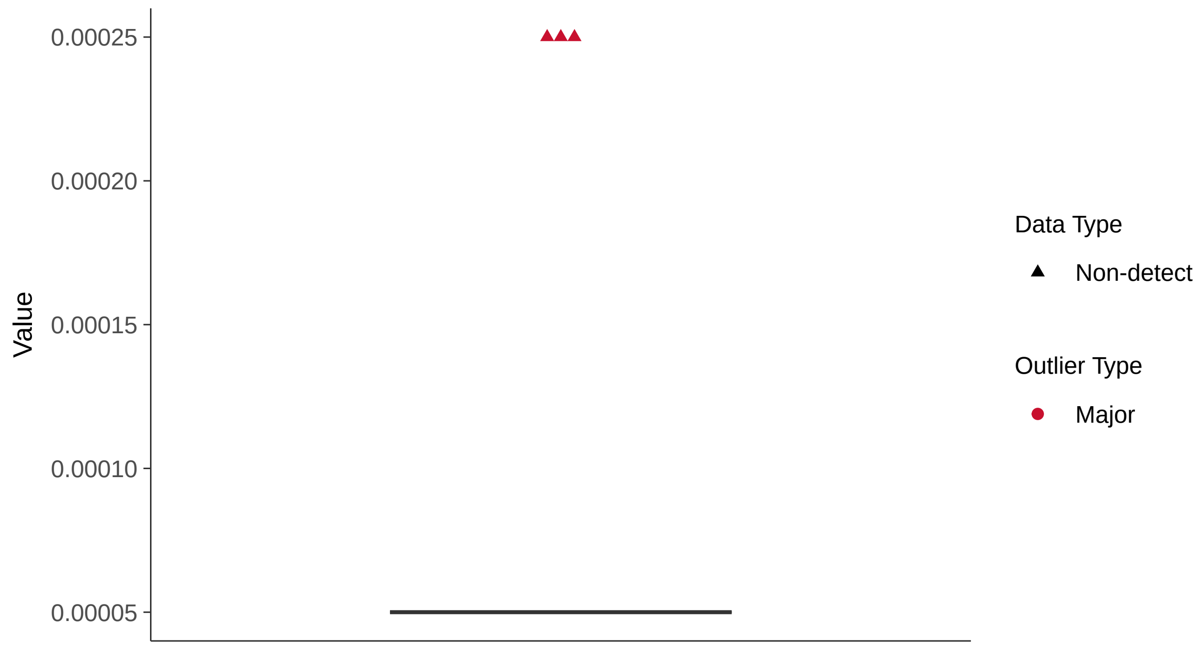
Histogram

Silver, MW-09 (mg/L)



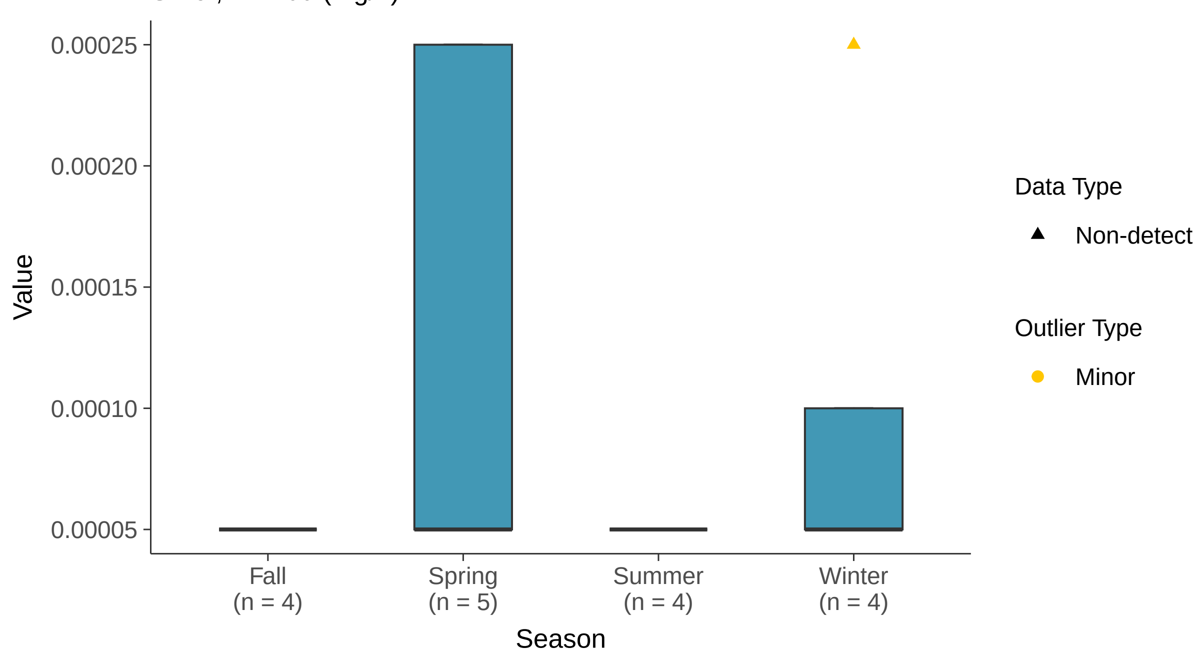
Boxplot

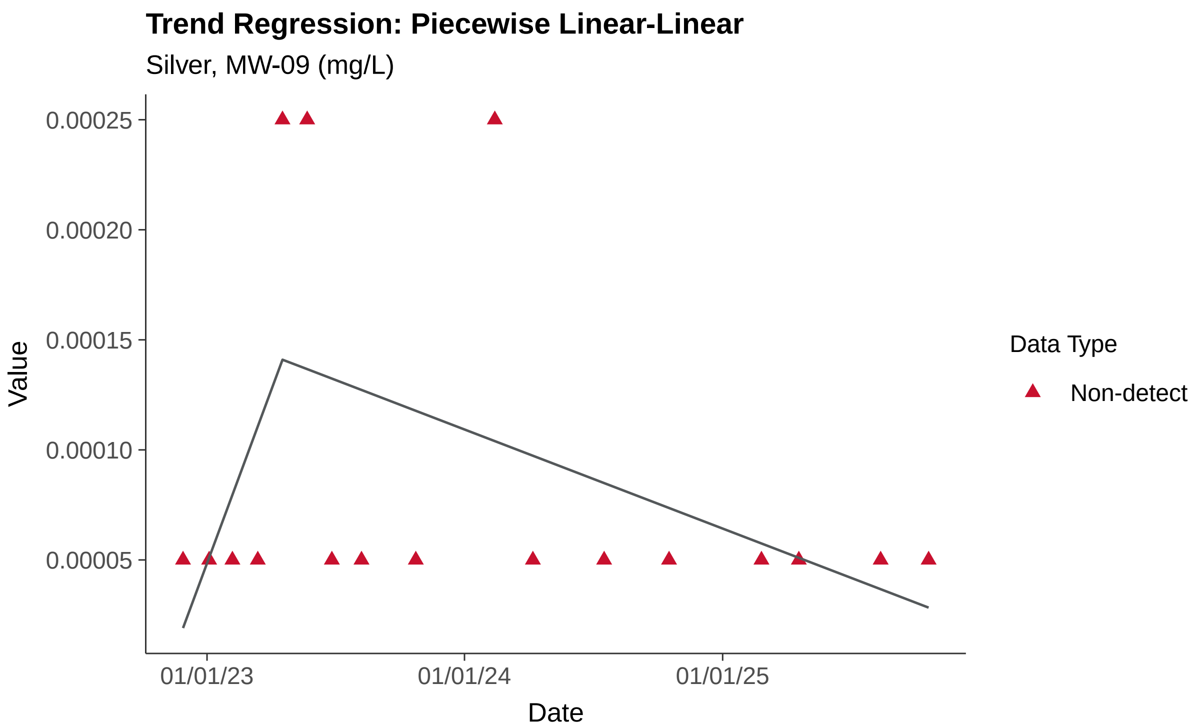
Silver, MW-09 (mg/L)

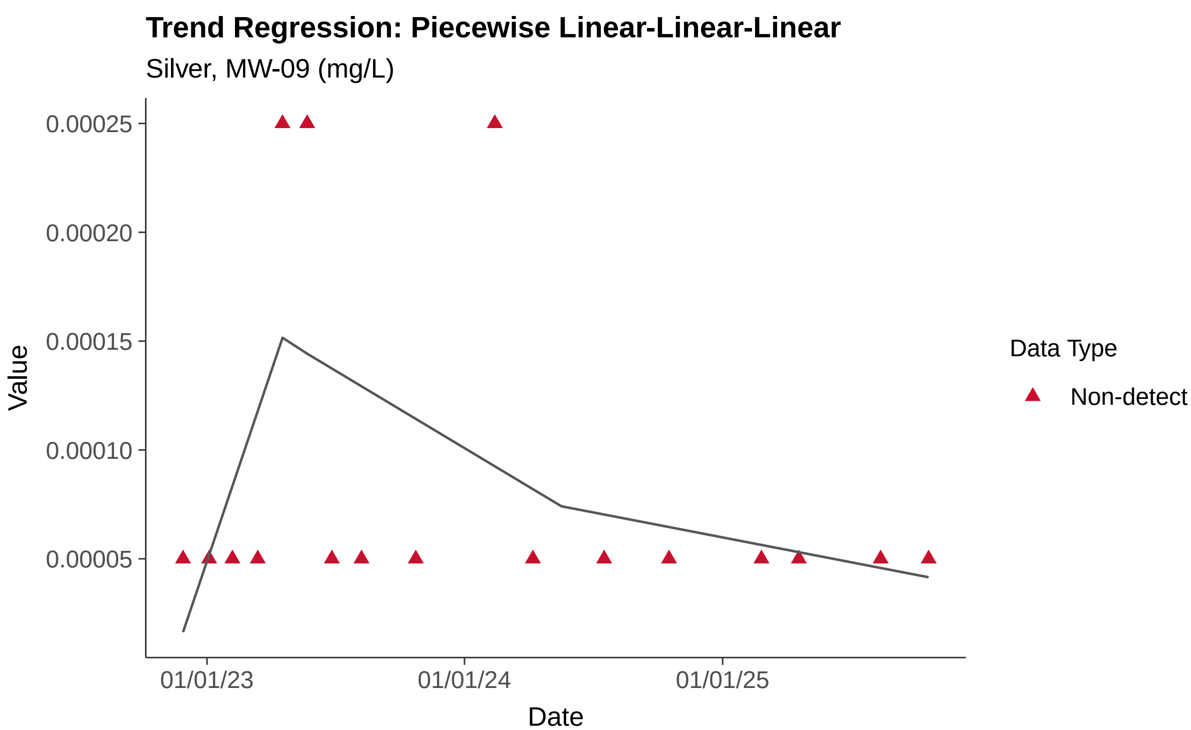


Boxplot by Season

Silver, MW-09 (mg/L)

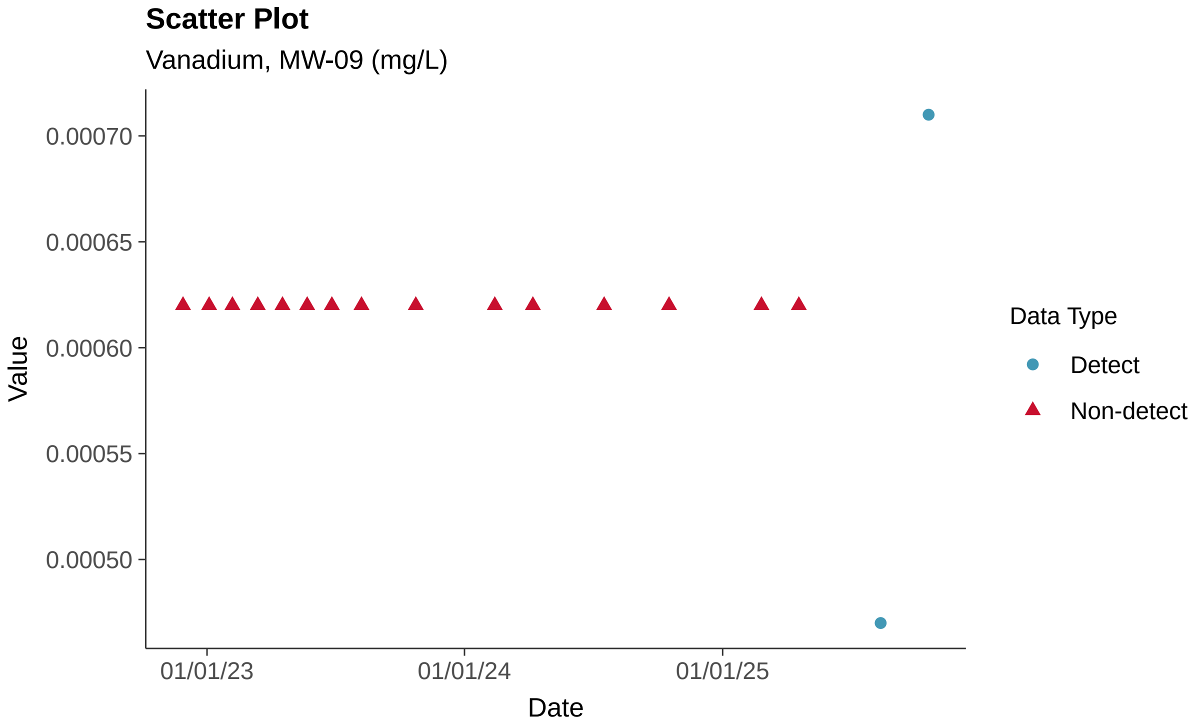


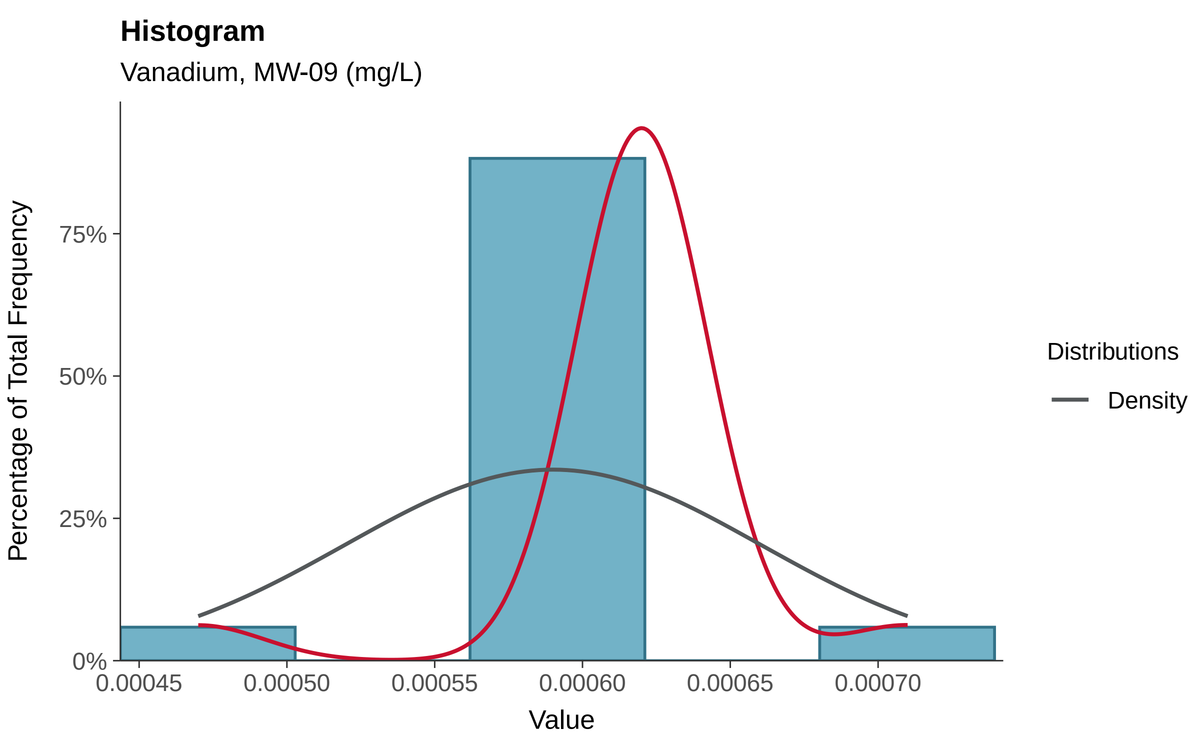

Trend Regression: Piecewise Linear-Linear
Silver, MW-09 (mg/L)
Value
0.00025
0.00020
0.00015
0.00010
0.00005
01/01/23
01/01/24
01/01/25
Date
Data Type
Non-detect


Trend Regression: Piecewise Linear-Linear-Linear
Silver, MW-09 (mg/L)
Value
0.00025
0.00020
0.00015
0.00010
0.00005
01/01/23
01/01/24
01/01/25
Date
Data Type
Non-detect

Part 115: Vanadium, MW-09

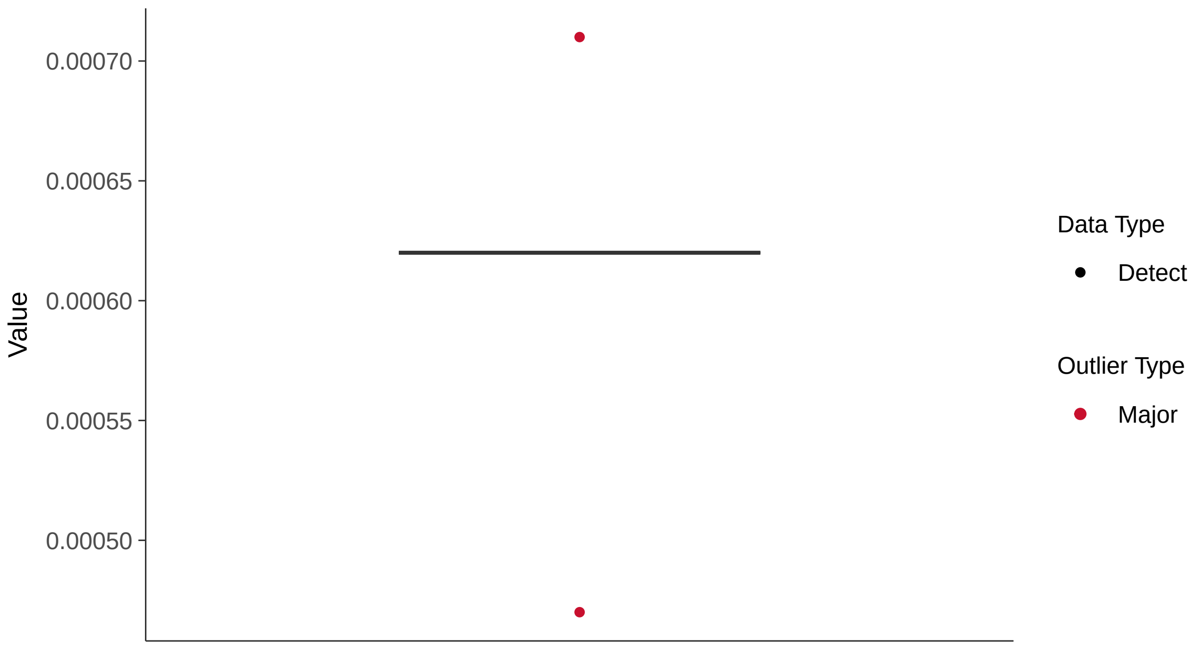
ID: 19_2_5_128





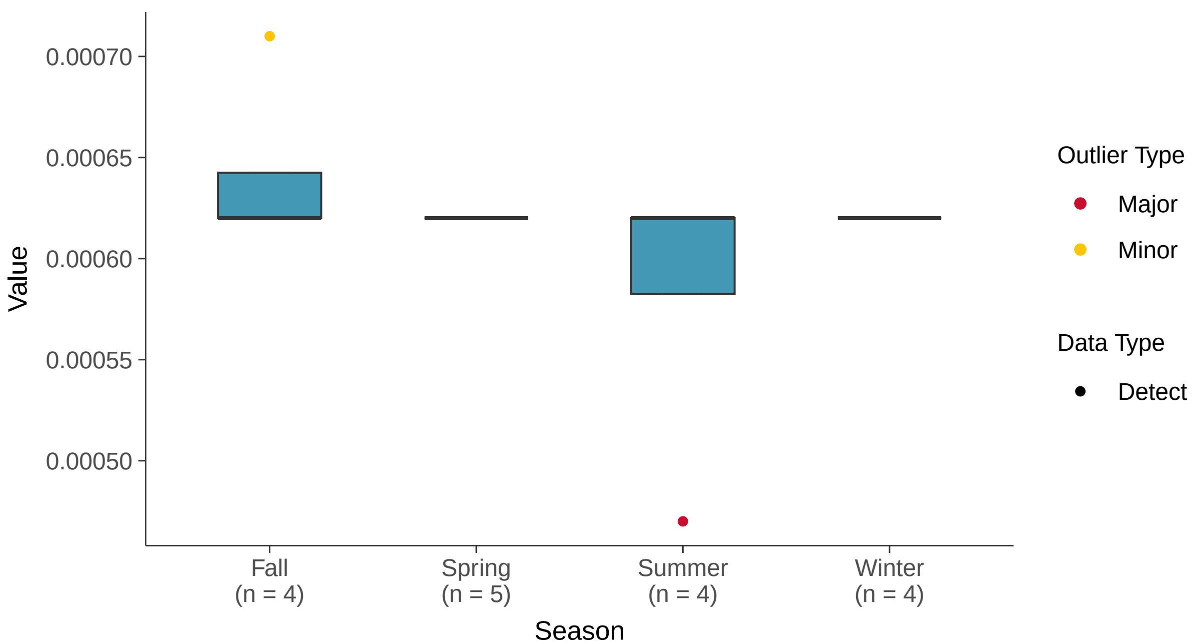
Boxplot

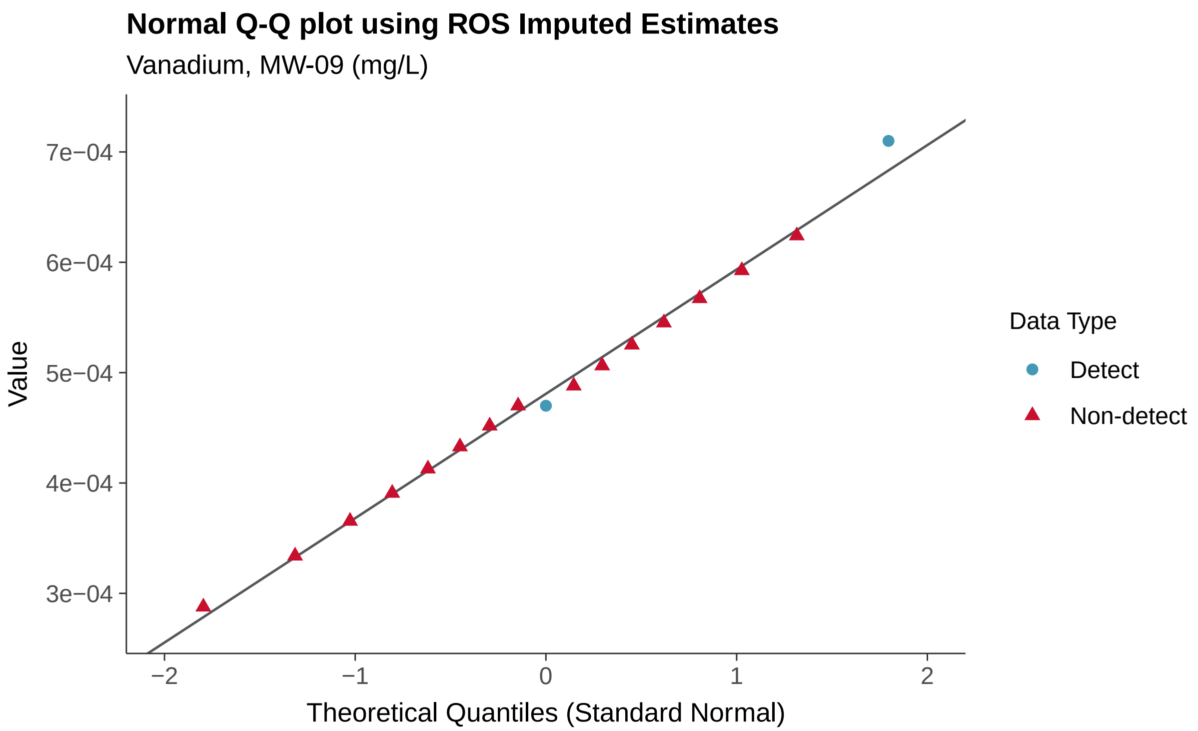
Vanadium, MW-09 (mg/L)

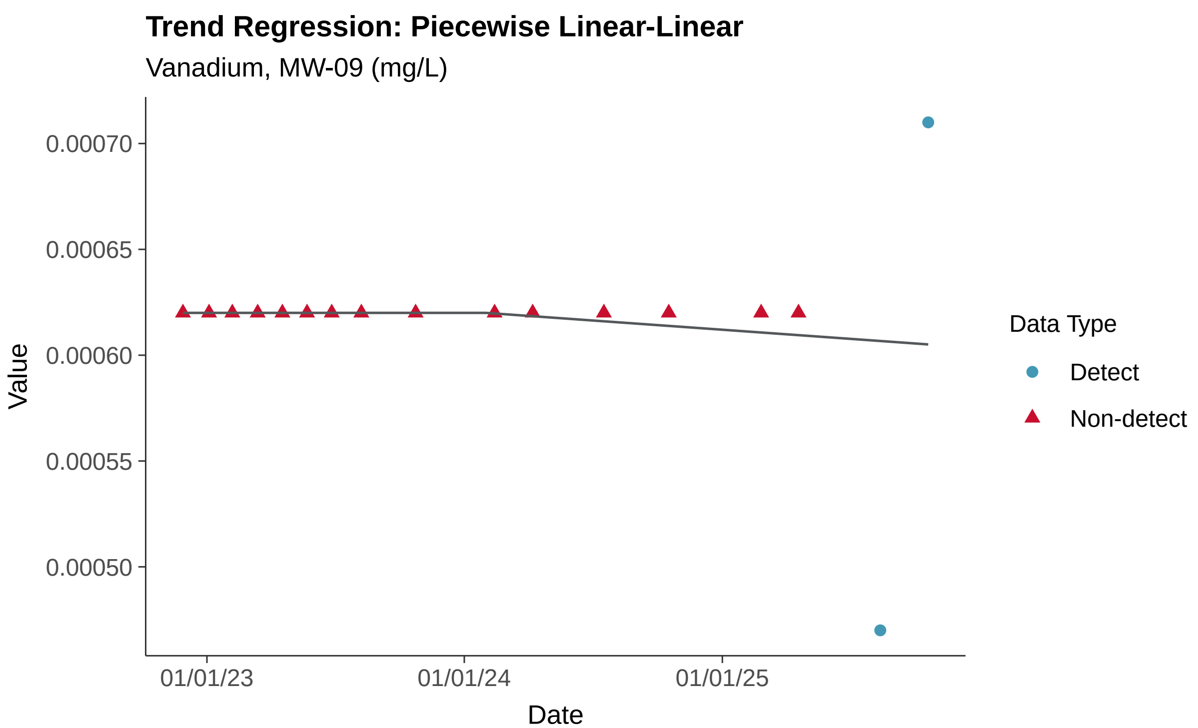


Boxplot by Season

Vanadium, MW-09 (mg/L)




Normal Q-Q plot using ROS Imputed Estimates
Vanadium, MW-09 (mg/L)
Value
7e−04
6e−04
5e−04
4e−04
3e−04
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

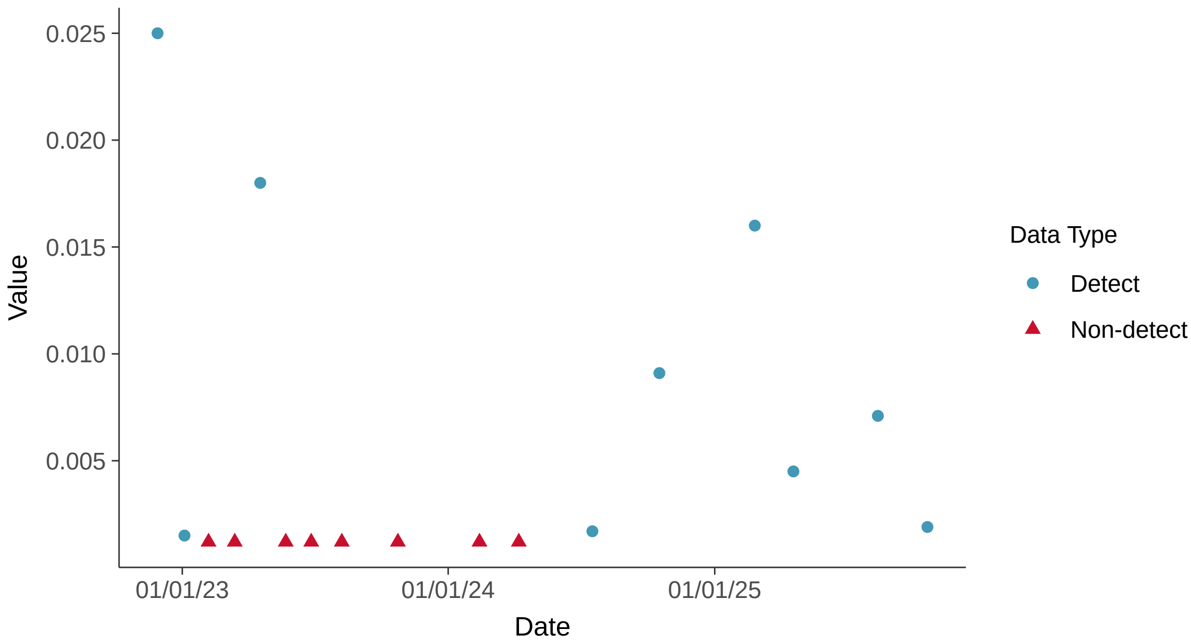

Trend Regression: Piecewise Linear-Linear
Vanadium, MW-09 (mg/L)
Value
0.00070
0.00065
0.00060
0.00055
0.00050
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Part 115: Zinc, MW-09

ID: 19_2_5_129

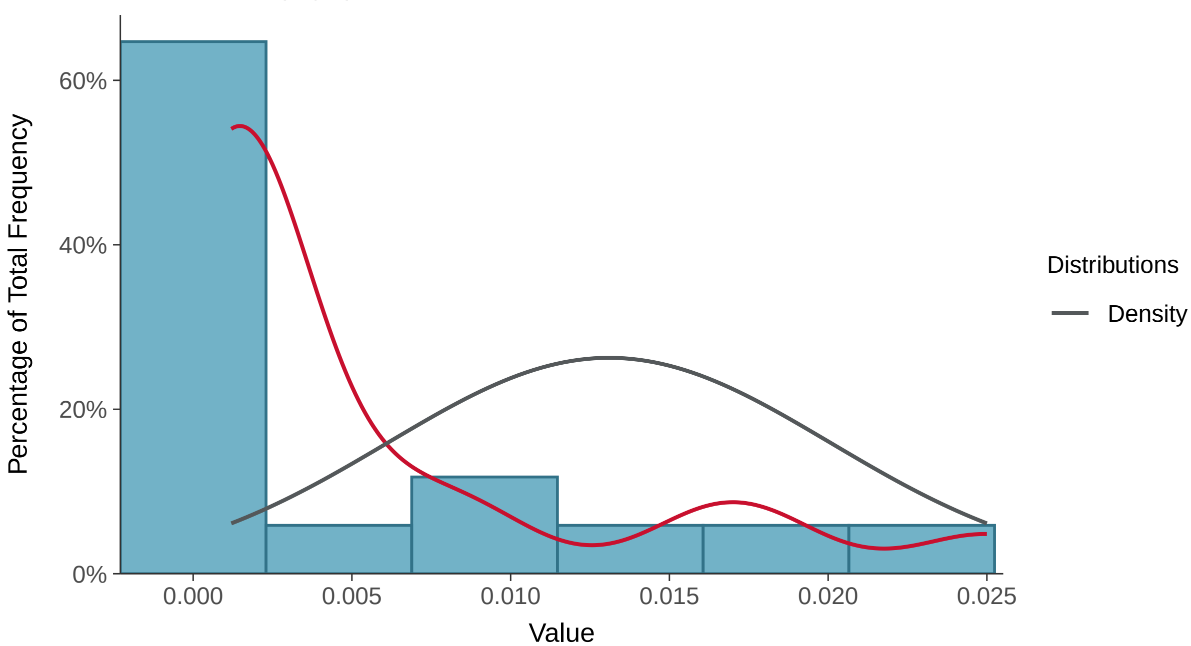
Scatter Plot

Zinc, MW-09 (mg/L)



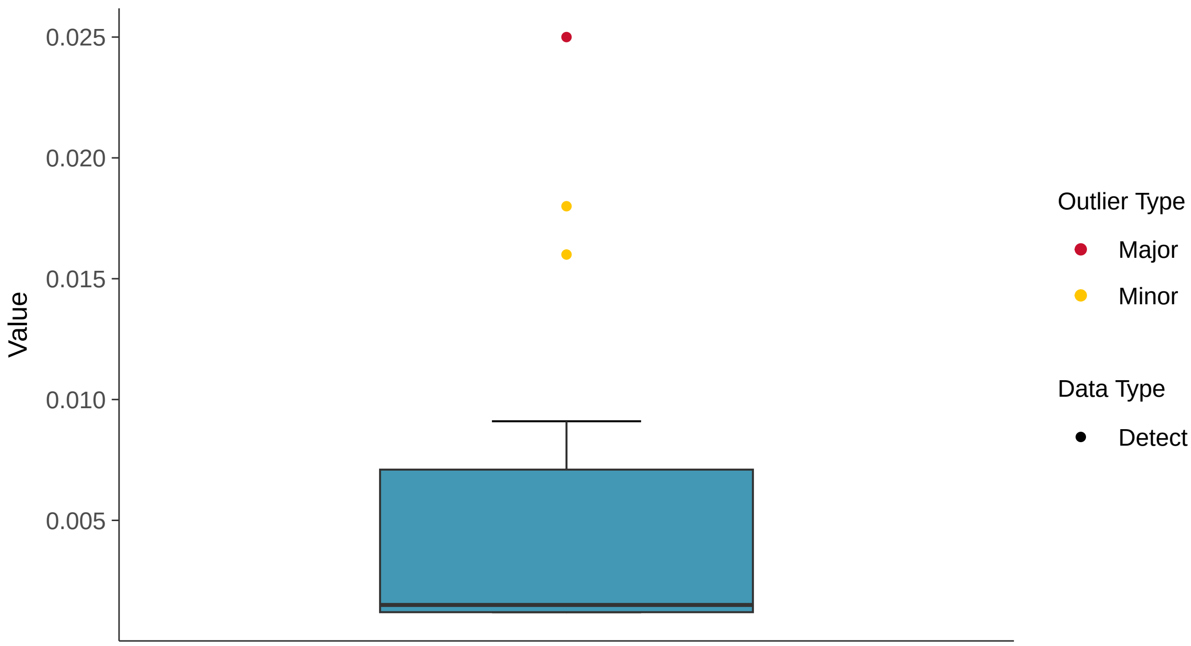
Histogram

Zinc, MW-09 (mg/L)



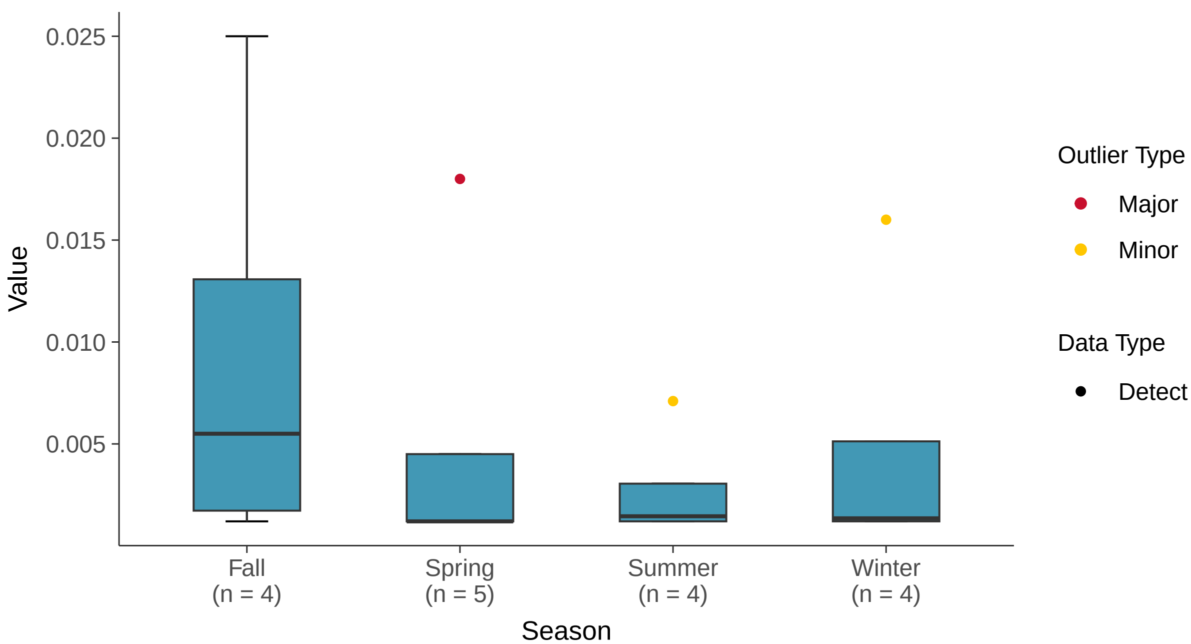
Boxplot

Zinc, MW-09 (mg/L)



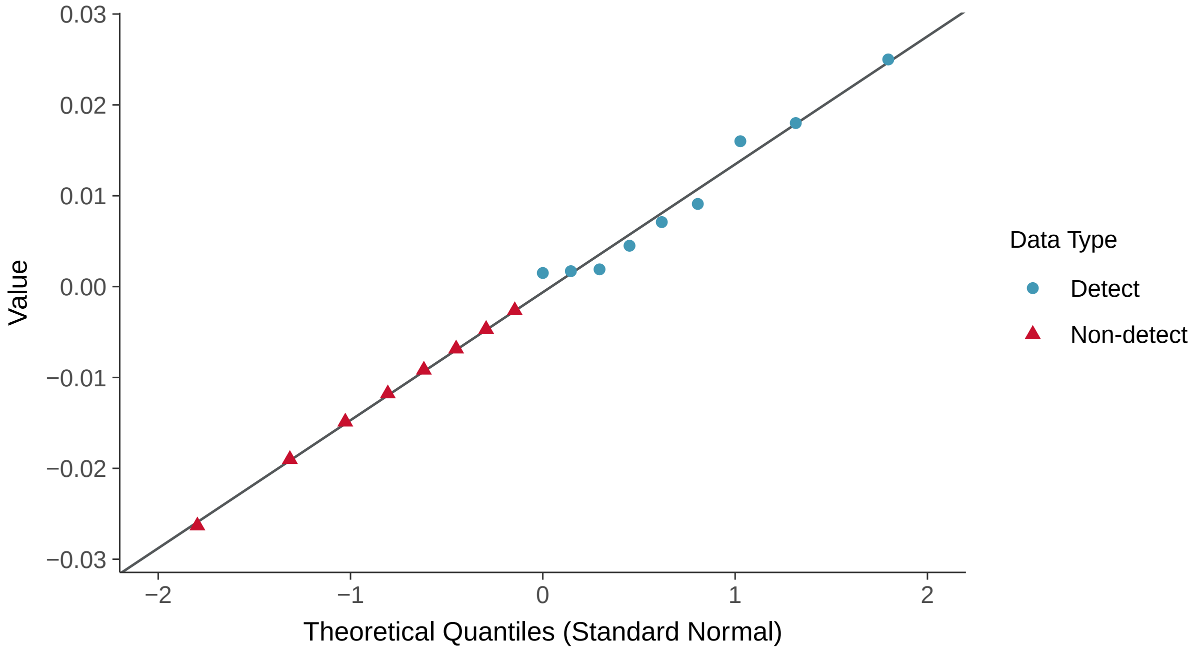
Boxplot by Season

Zinc, MW-09 (mg/L)



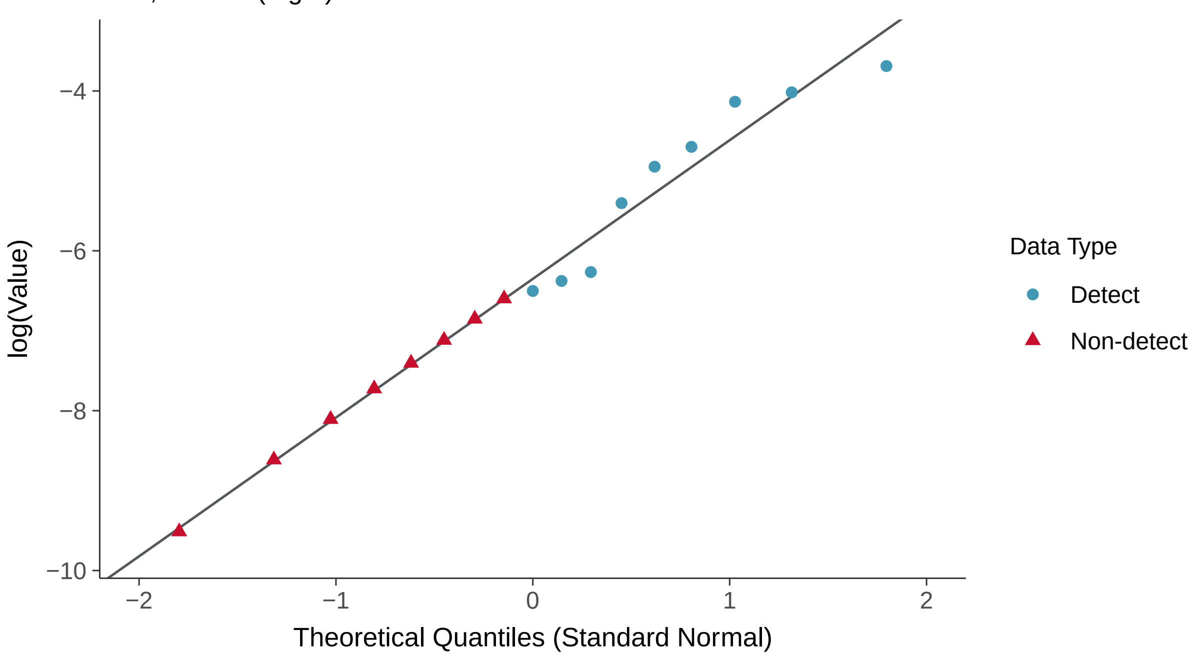
Normal Q-Q plot using ROS Imputed Estimates

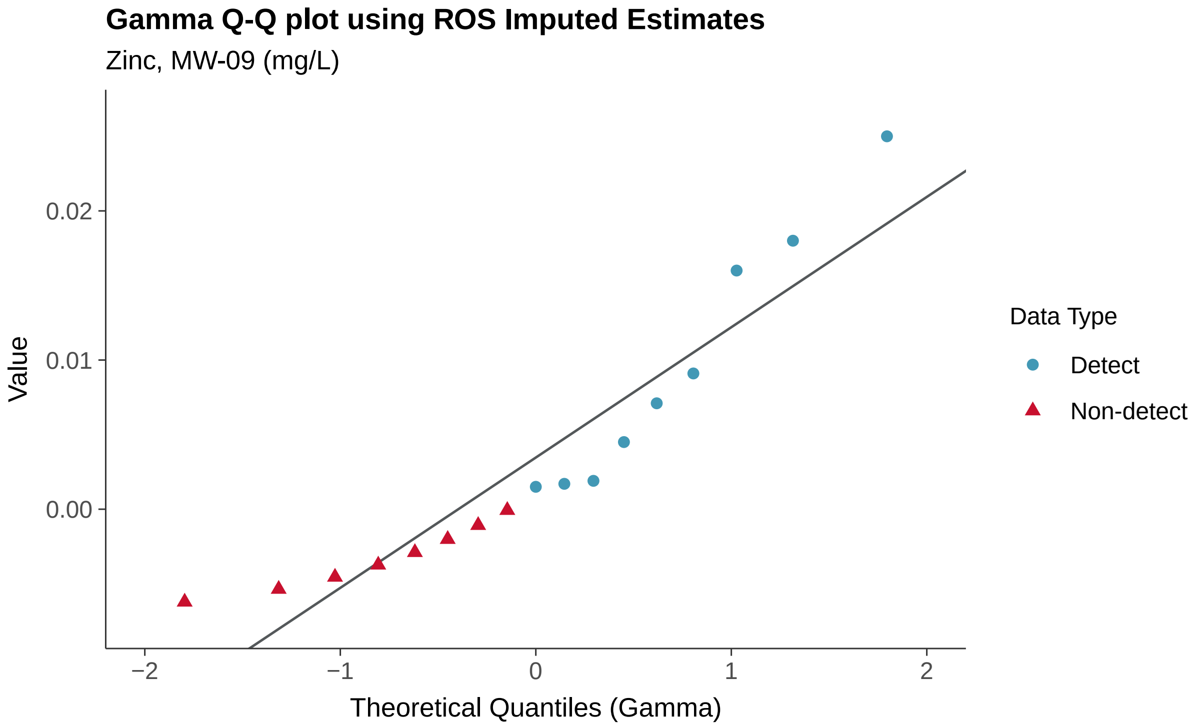
Zinc, MW-09 (mg/L)

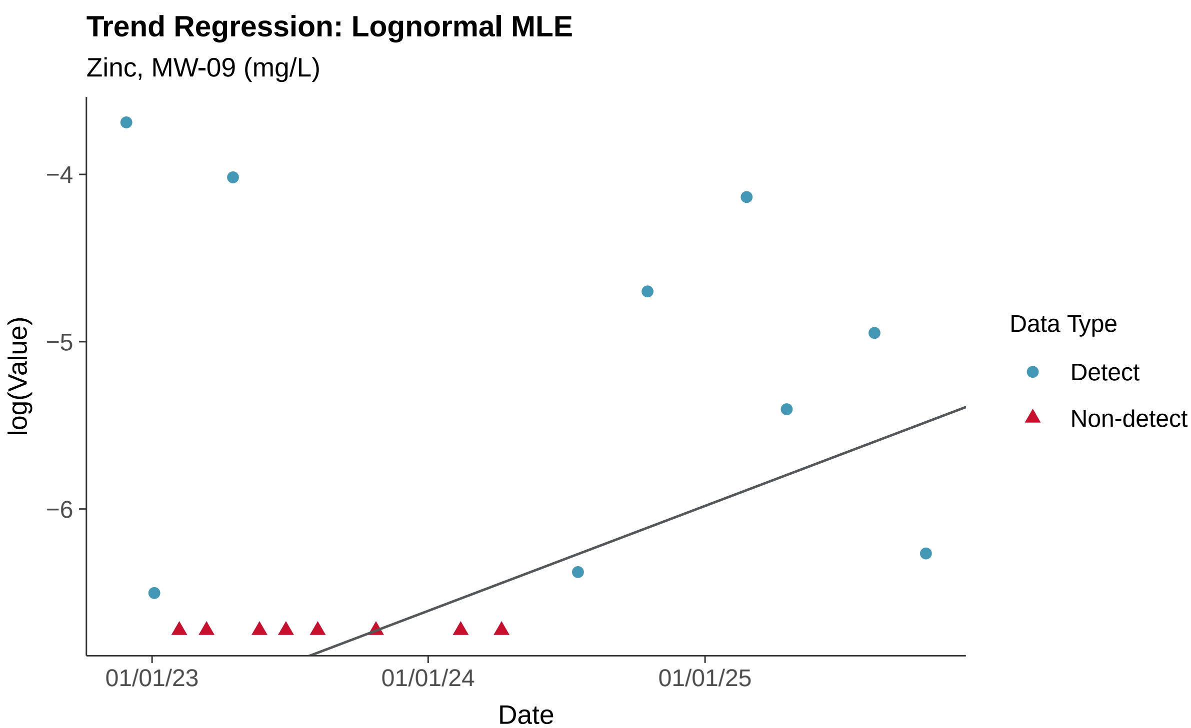


Lognormal Q-Q plot using ROS Imputed Estimates

Zinc, MW-09 (mg/L)

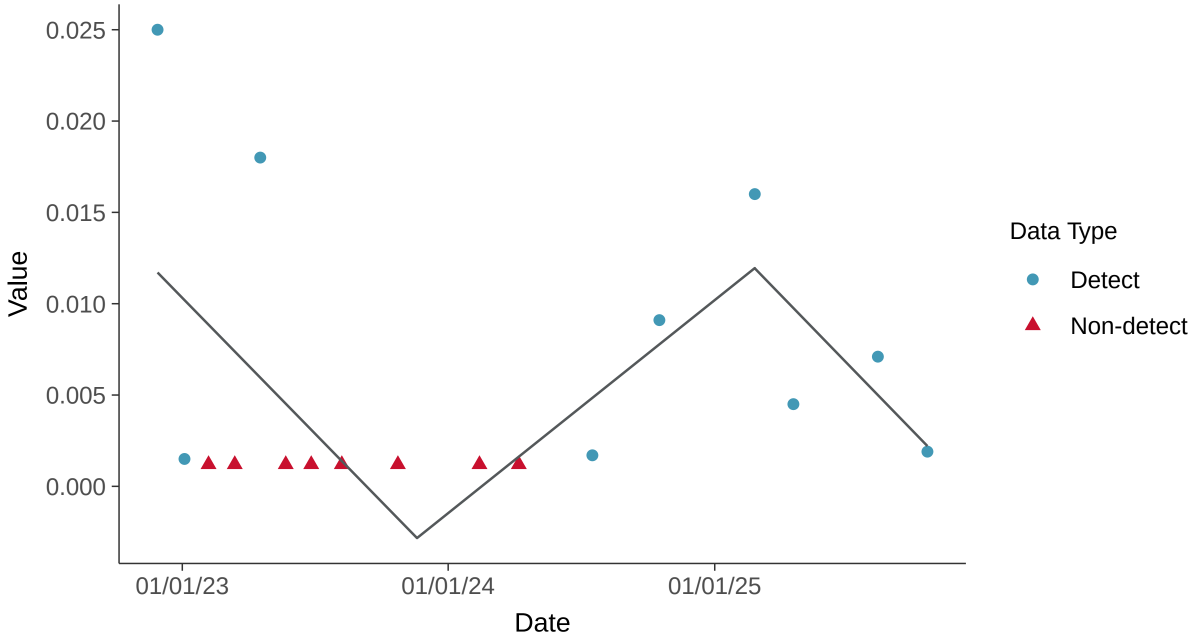



Gamma Q-Q plot using ROS Imputed Estimates
Zinc, MW-09 (mg/L)
Value
0.02
0.01
0.00
−2
−1
0
1
2
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect


Trend Regression: Lognormal MLE
Zinc, MW-09 (mg/L)
log(Value)
−4
−5
−6
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Trend Regression: Piecewise Linear-Linear-Linear

Zinc, MW-09 (mg/L)

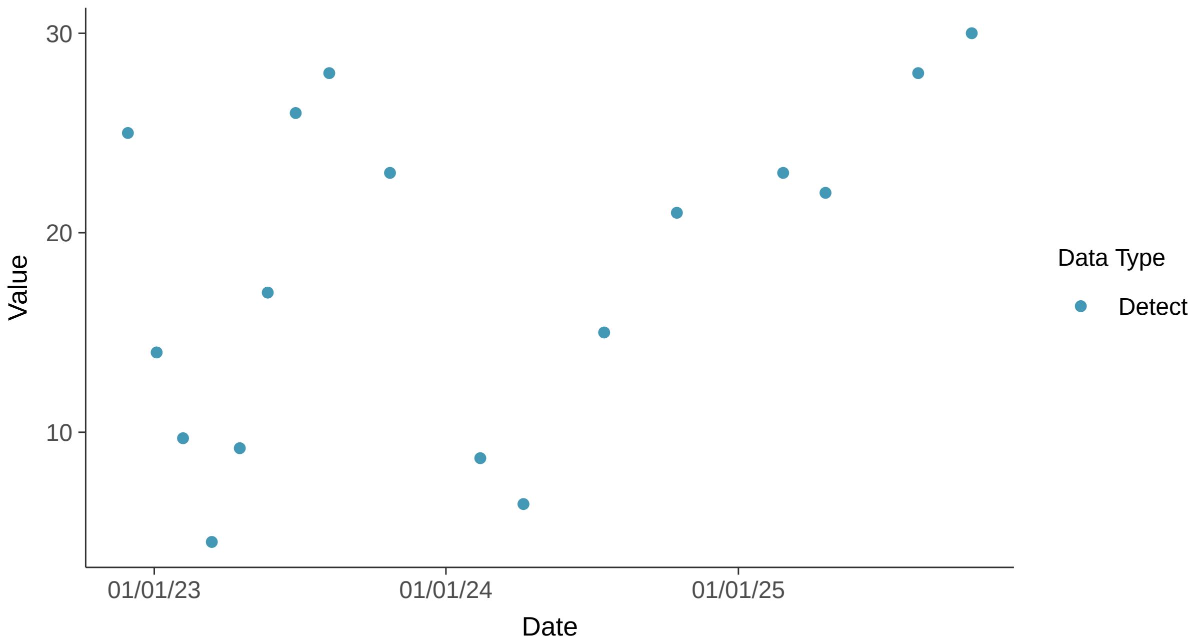


Appendix III: Boron, MW-10

ID: 20_3_3_105

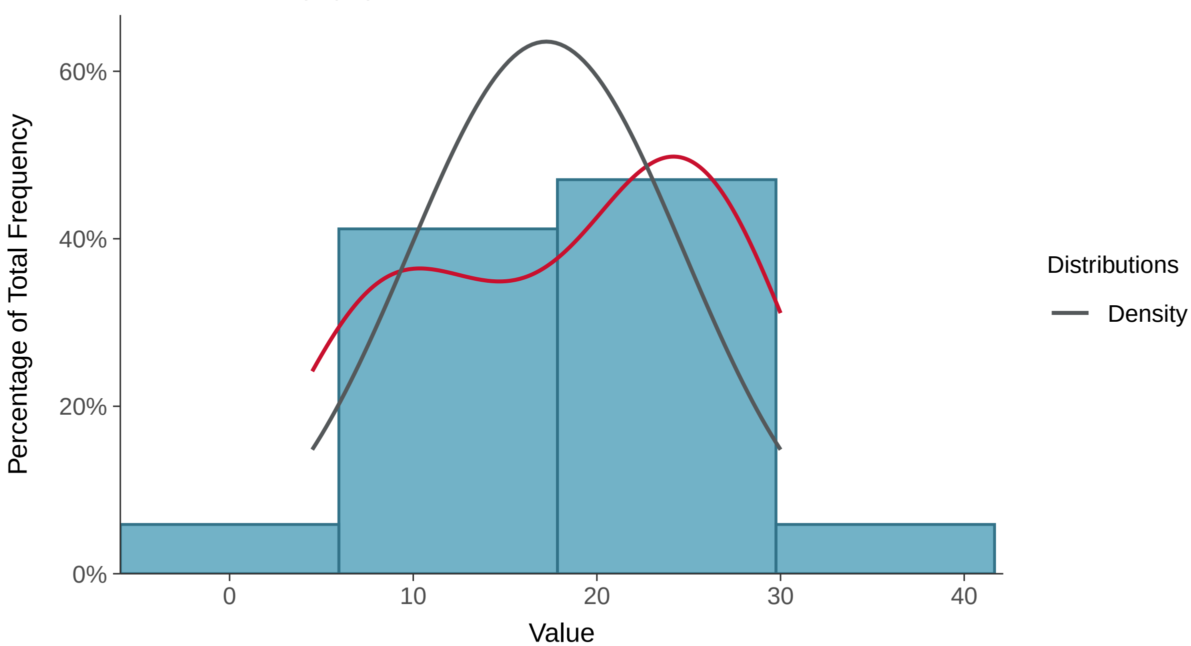
Scatter Plot

Boron, MW-10 (mg/L)



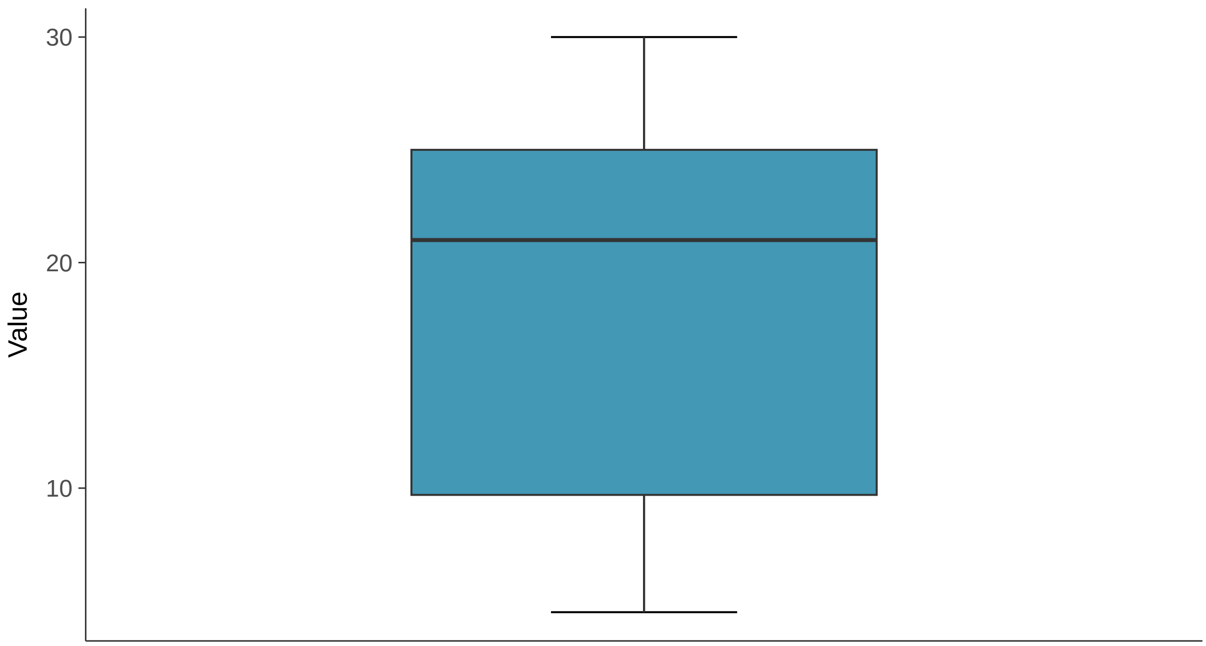
Histogram

Boron, MW-10 (mg/L)



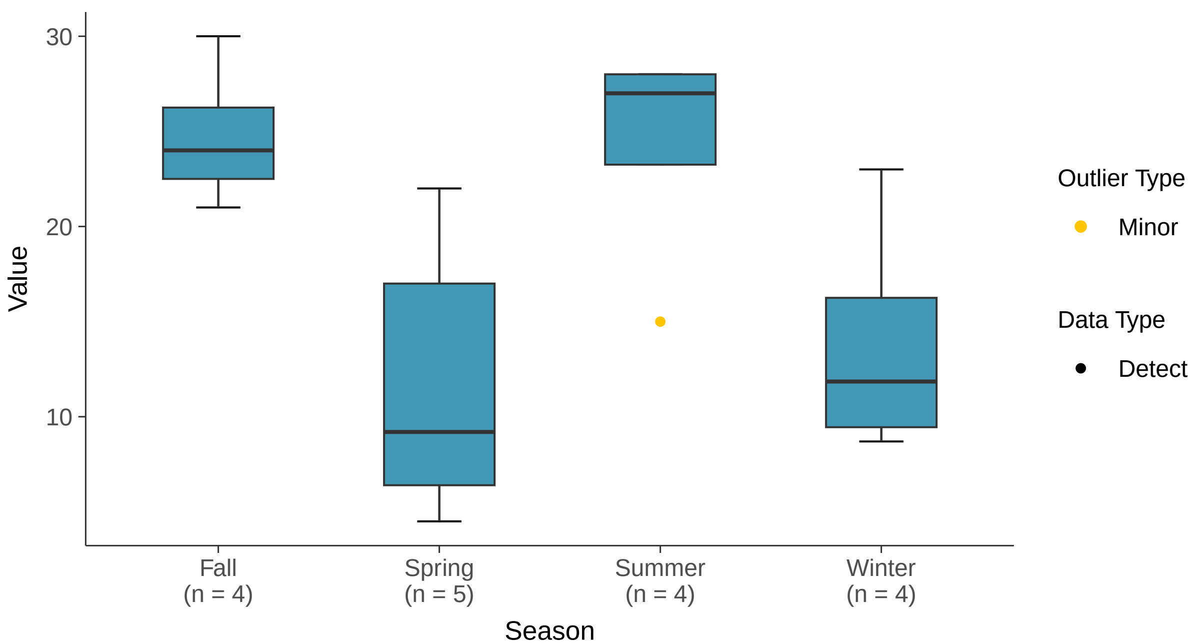
Boxplot

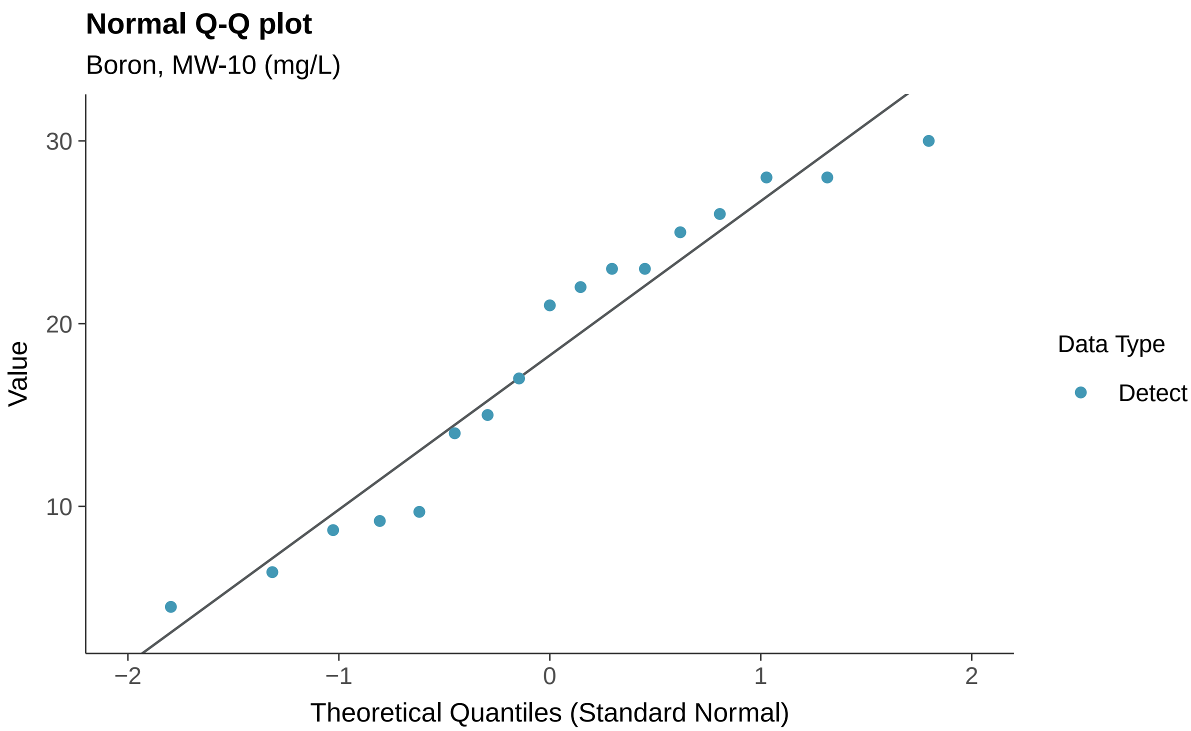
Boron, MW-10 (mg/L)

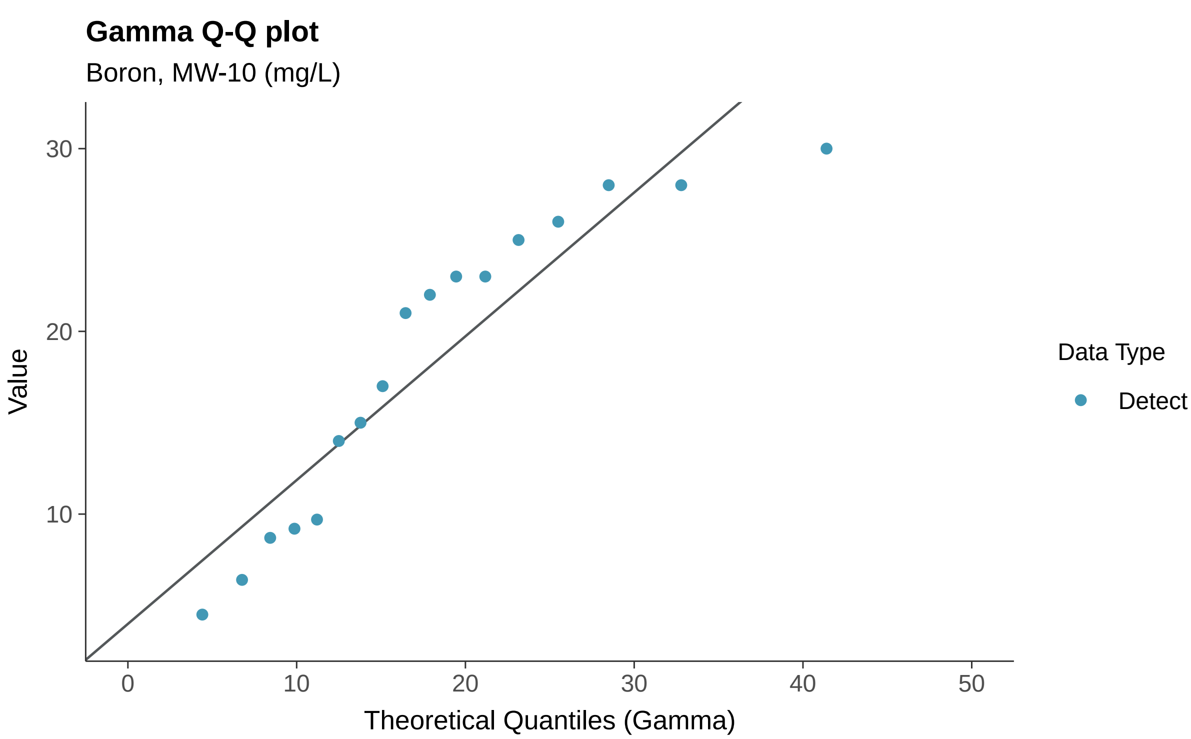


Boxplot by Season

Boron, MW-10 (mg/L)

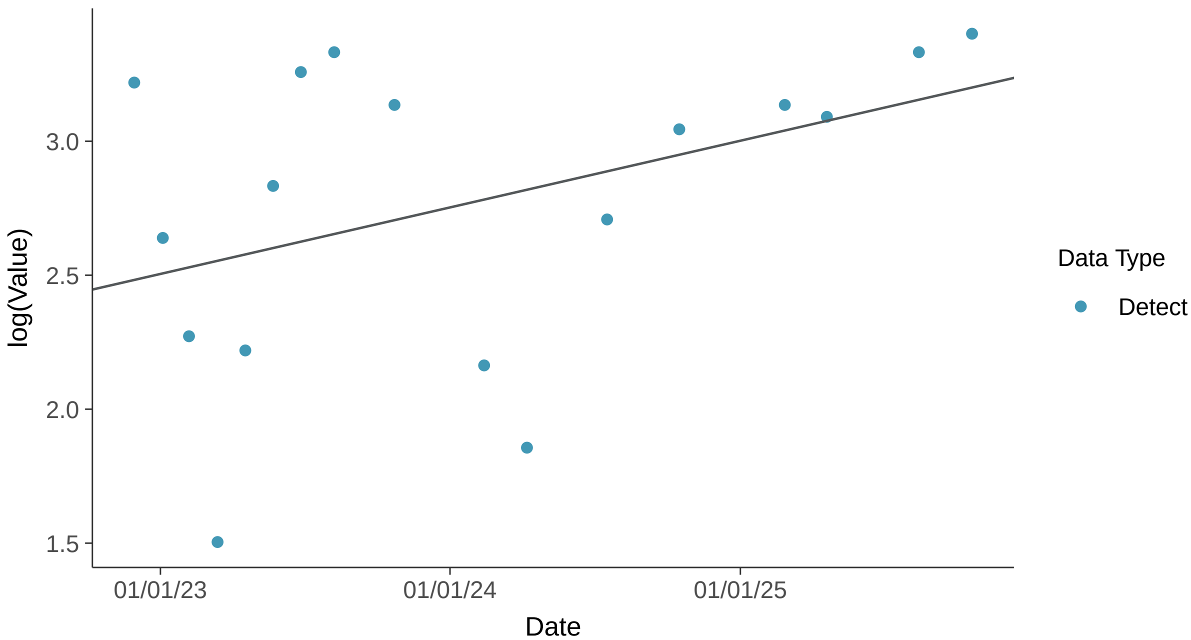



Normal Q-Q plot
Boron, MW-10 (mg/L)
Value
30
20
10
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Boron, MW-10 (mg/L)
Value
30
20
10
0
10
20
30
40
50
Theoretical Quantiles (Gamma)
Data Type
Detect

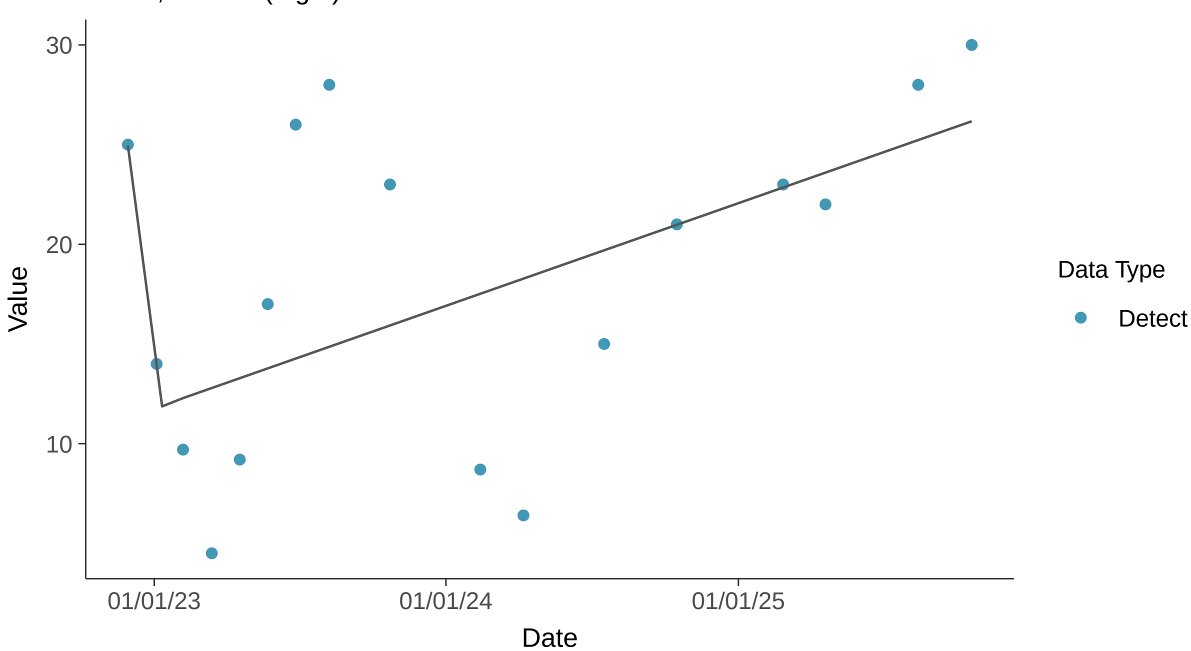
Trend Regression: Lognormal MLE

Boron, MW-10 (mg/L)



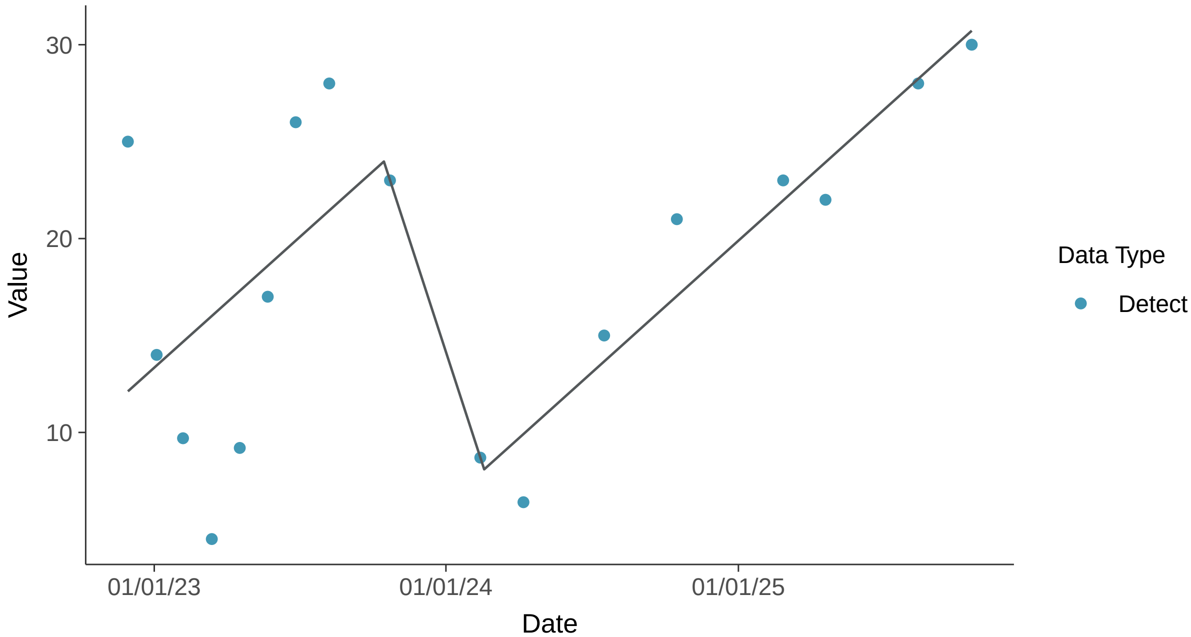
Trend Regression: Piecewise Linear-Linear

Boron, MW-10 (mg/L)



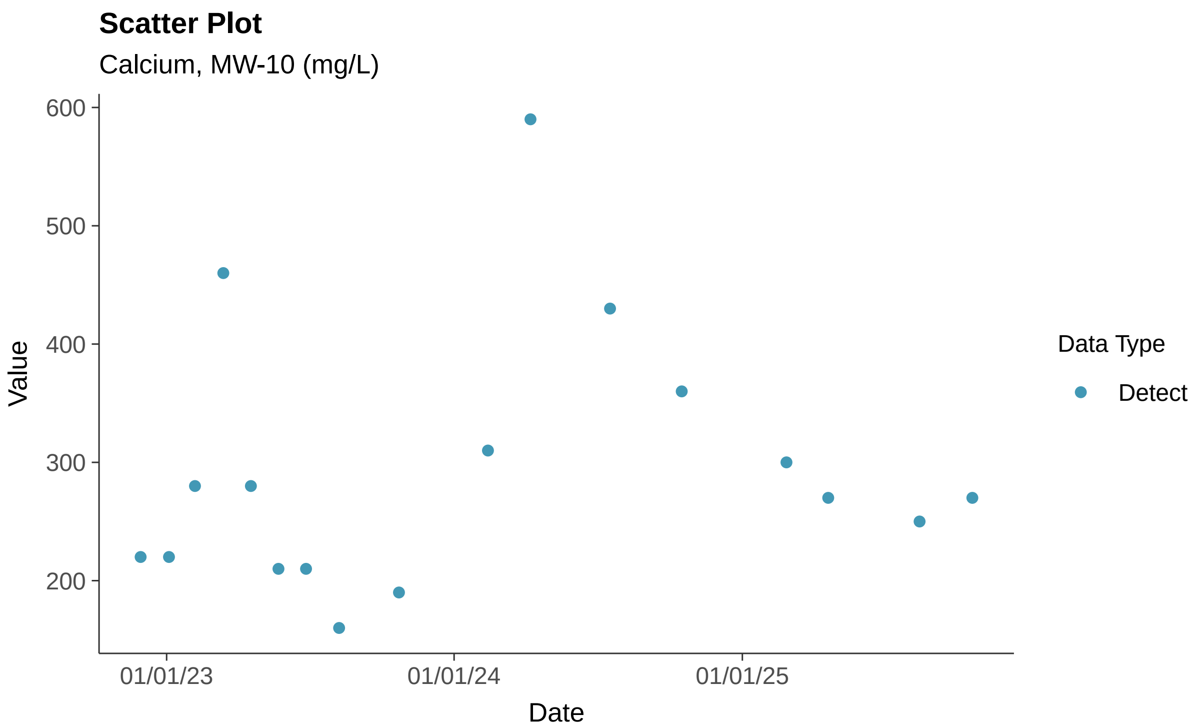
Trend Regression: Piecewise Linear-Linear-Linear

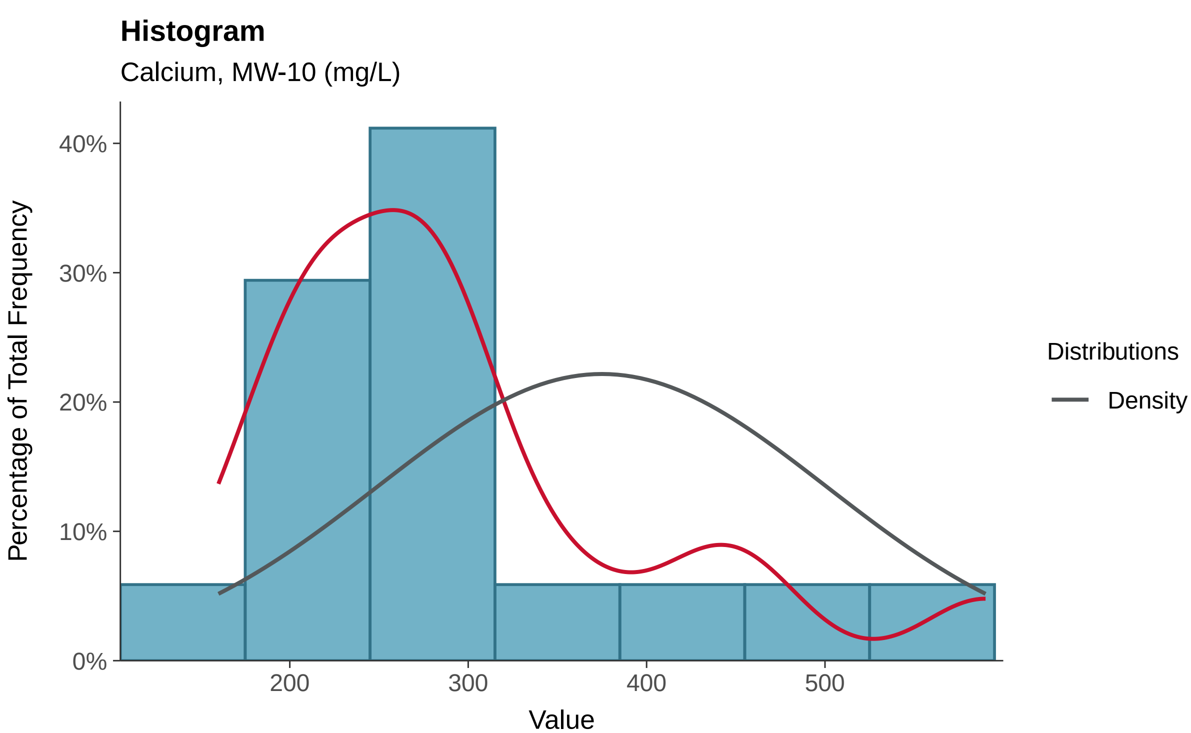
Boron, MW-10 (mg/L)



Appendix III: Calcium, MW-10

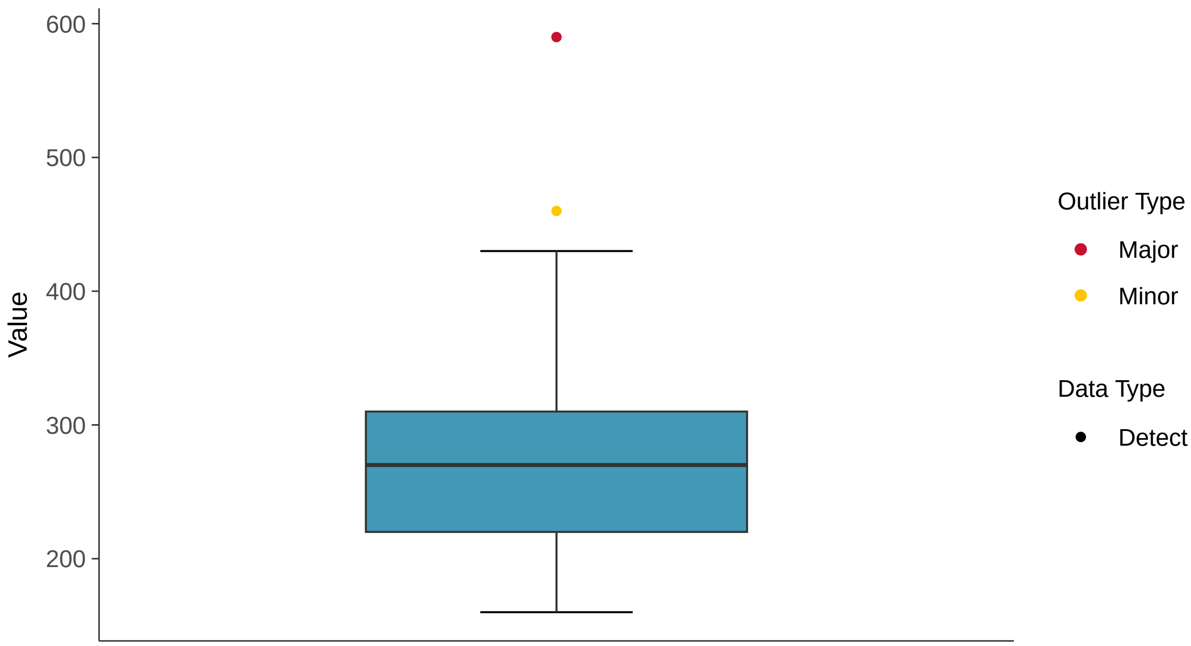
ID: 20_3_3_107





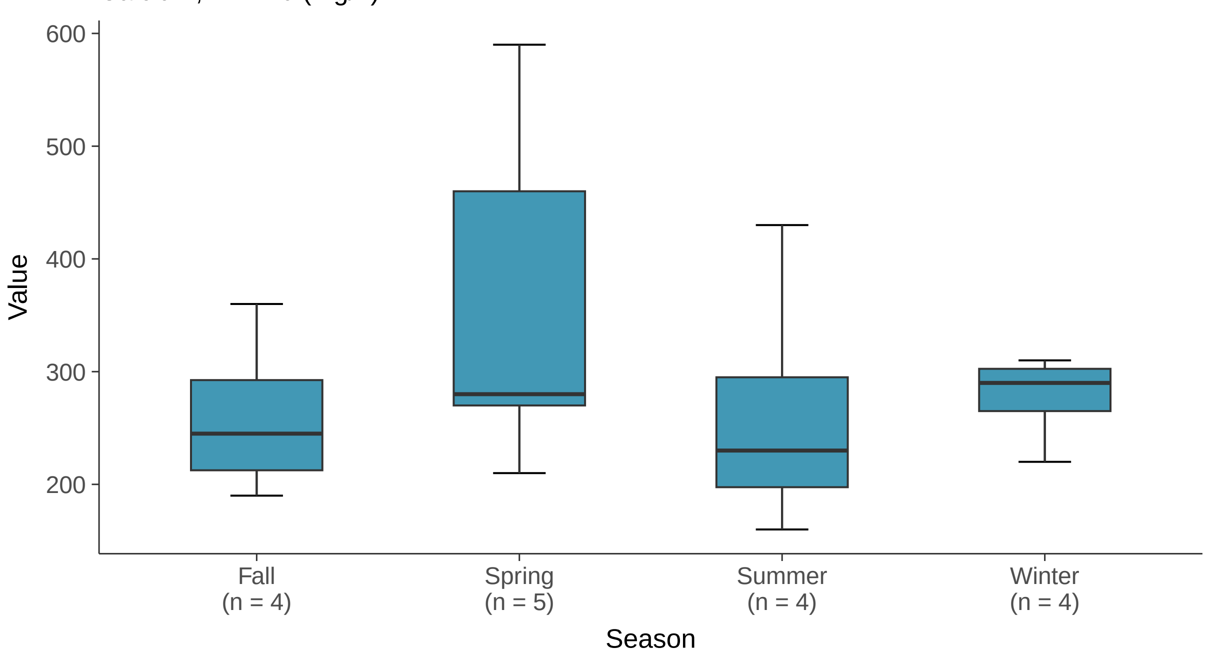
Boxplot

Calcium, MW-10 (mg/L)



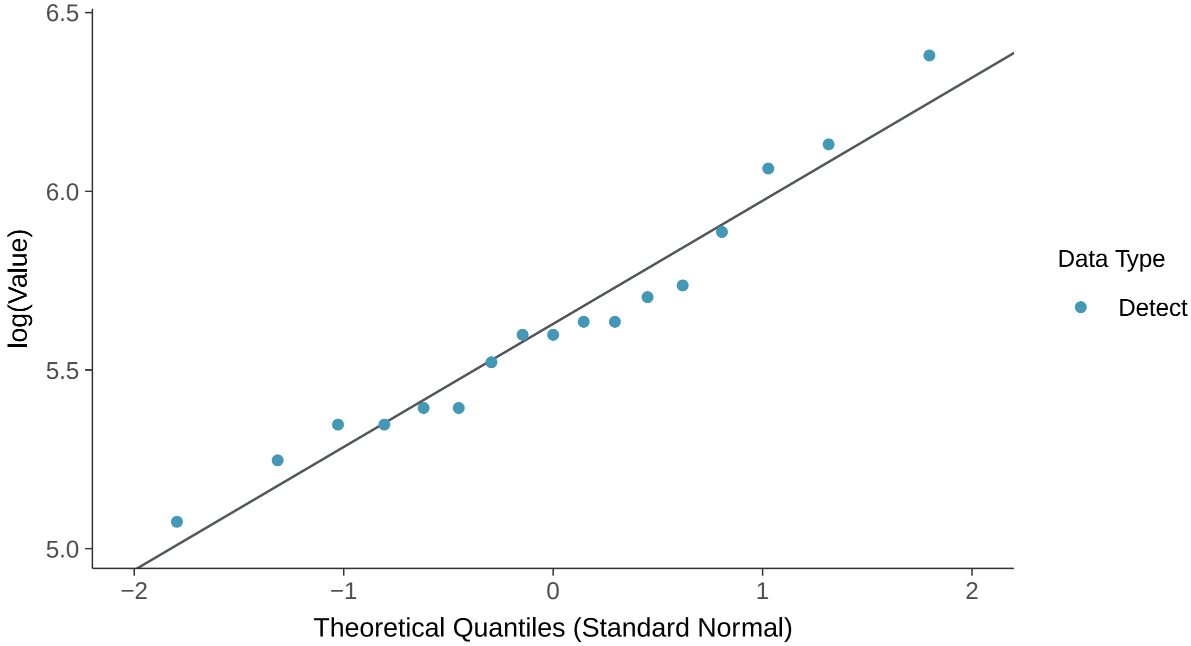
Boxplot by Season

Calcium, MW-10 (mg/L)



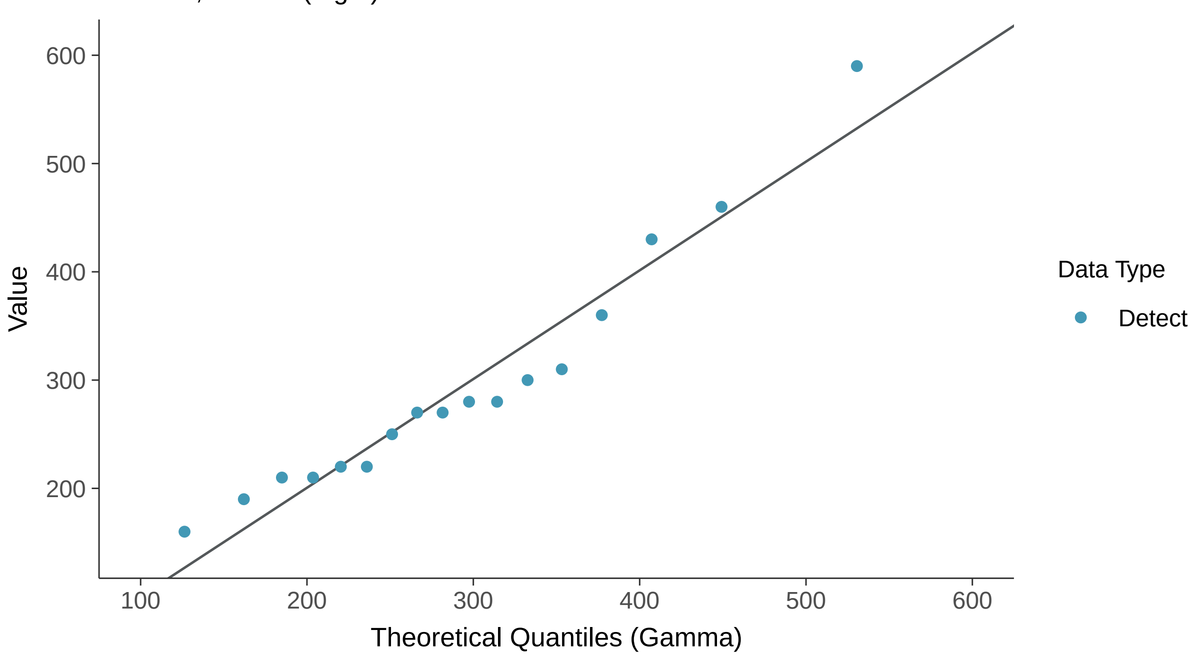
Lognormal Q-Q plot

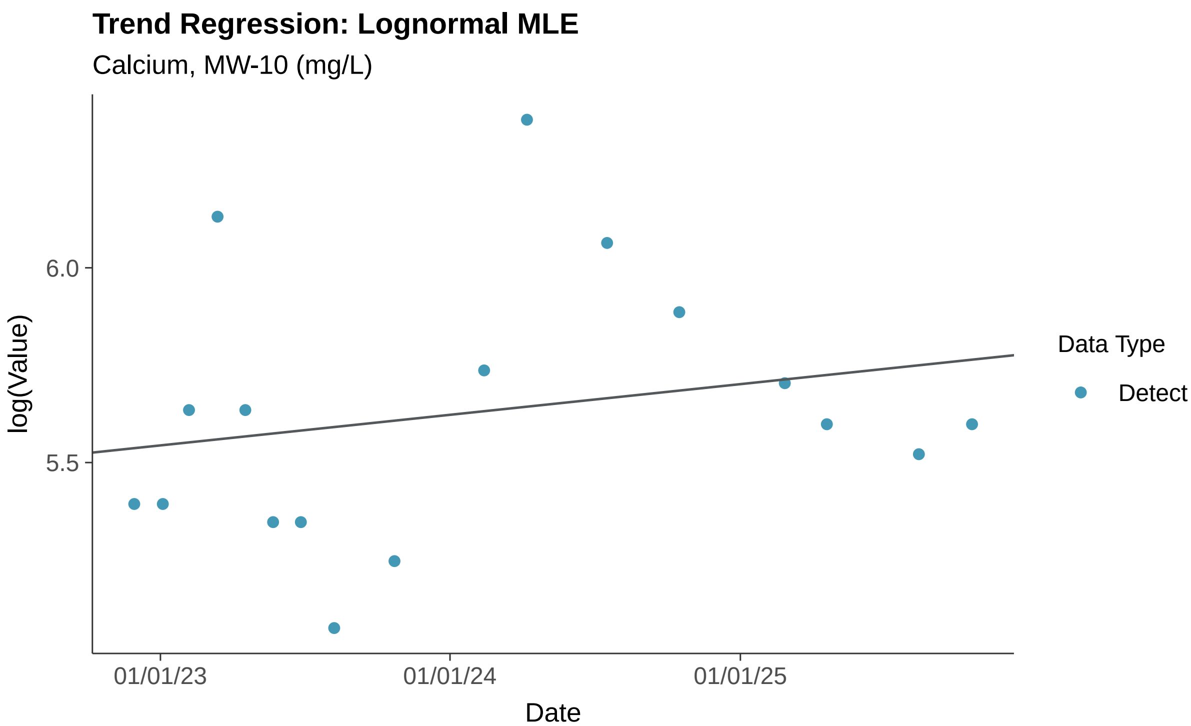
Calcium, MW-10 (mg/L)

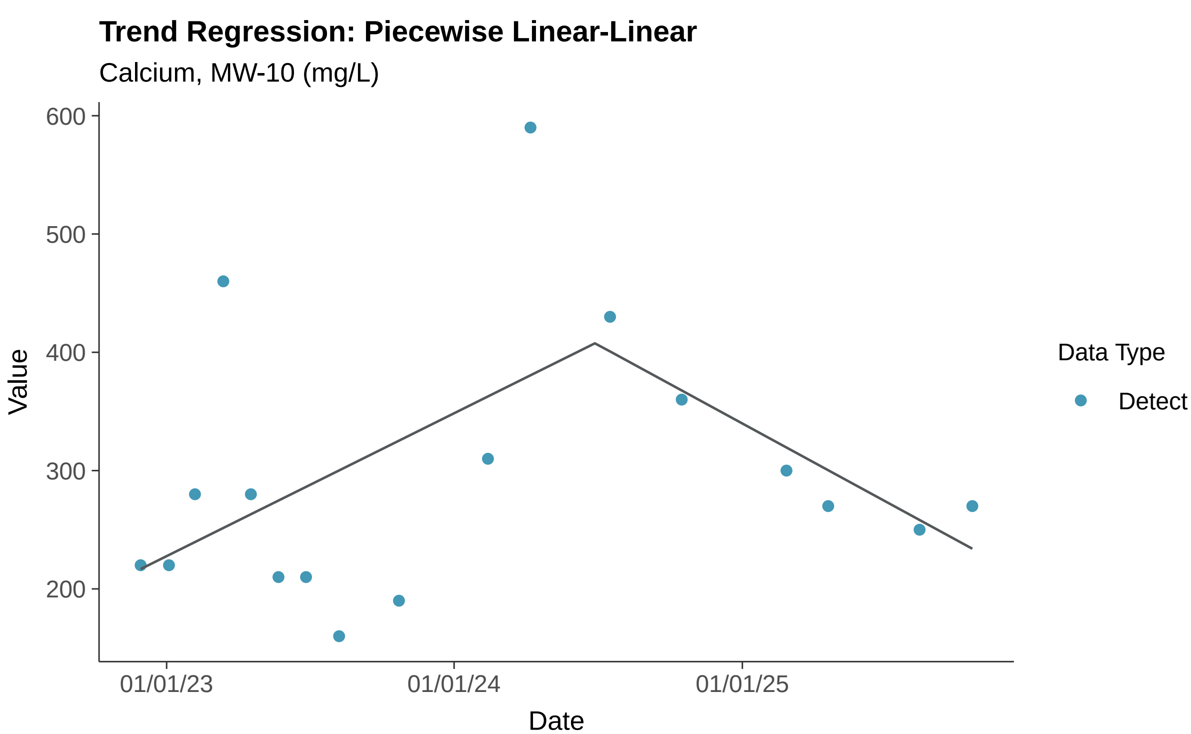


Gamma Q-Q plot

Calcium, MW-10 (mg/L)

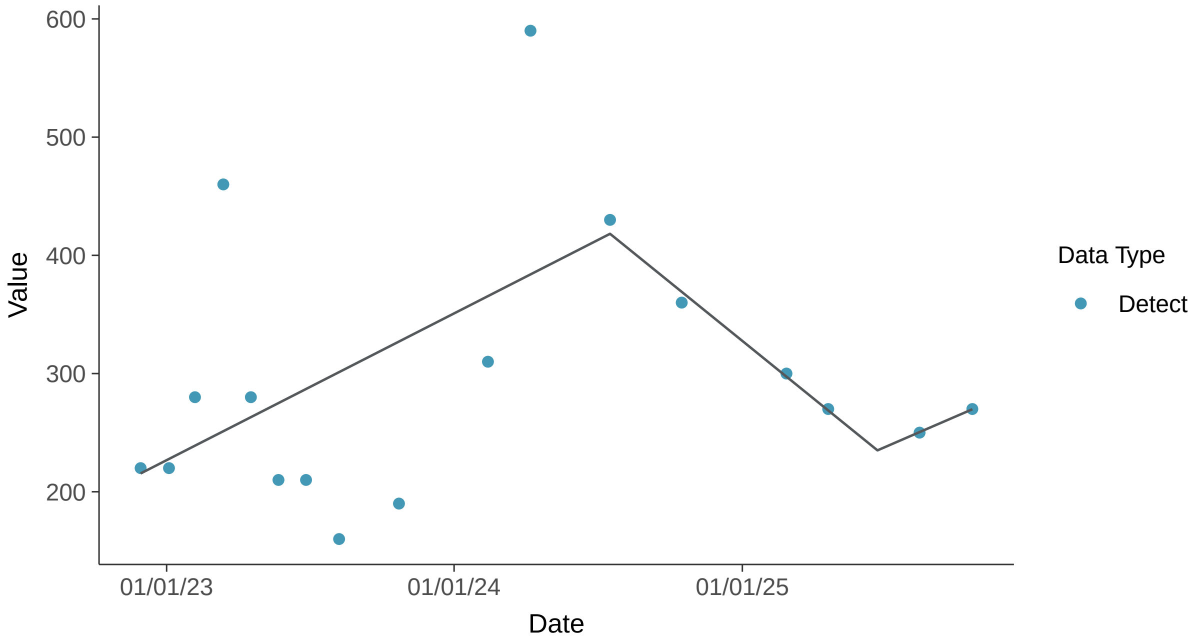



Trend Regression: Lognormal MLE
Calcium, MW-10 (mg/L)
log(Value)
6.0
5.5
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear
Calcium, MW-10 (mg/L)
Value
600
500
400
300
200
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear-Linear

Calcium, MW-10 (mg/L)

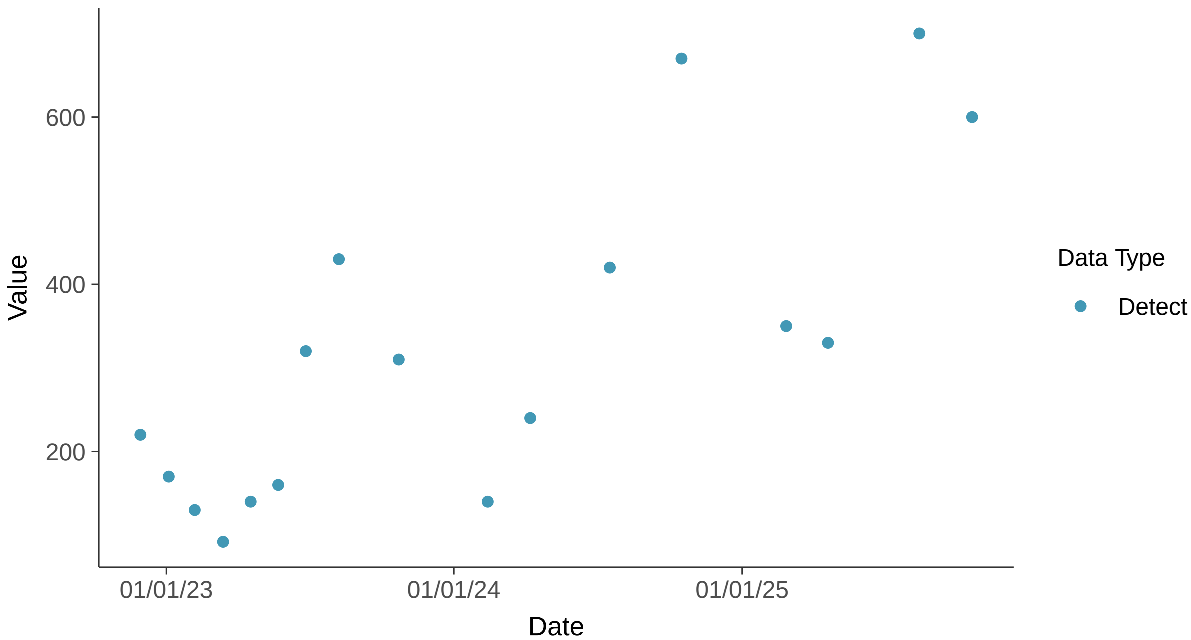


Appendix III: Chloride (as Cl), MW-10

ID: 20_3_3_108

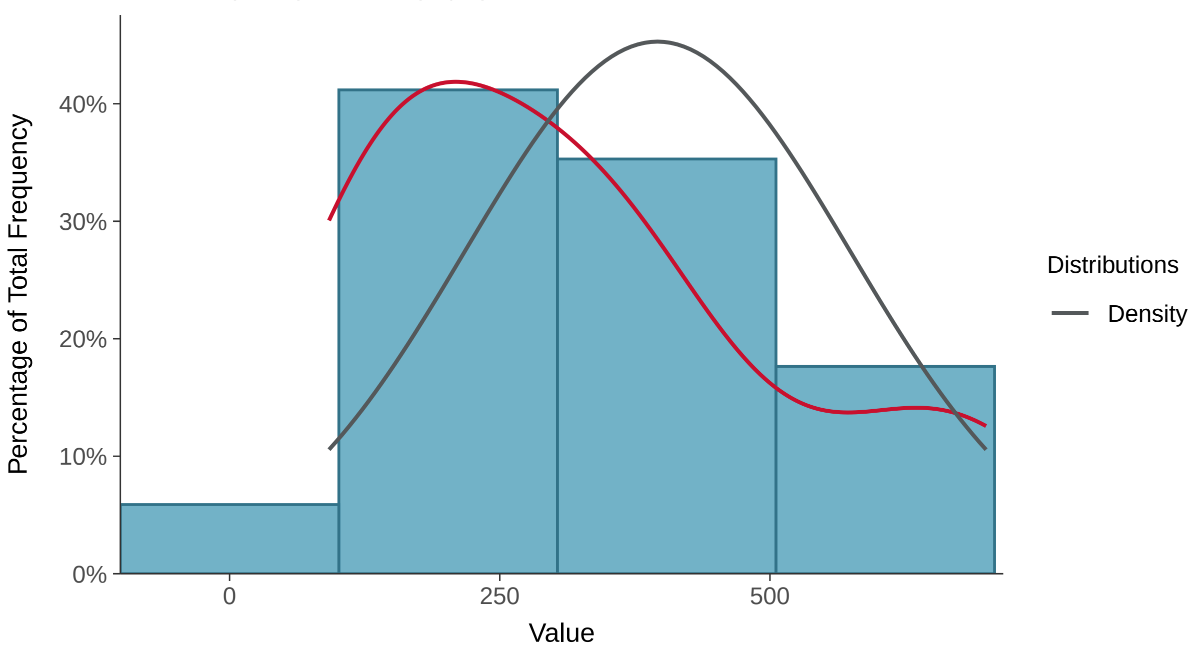
Scatter Plot

Chloride (as Cl), MW-10 (mg/L)



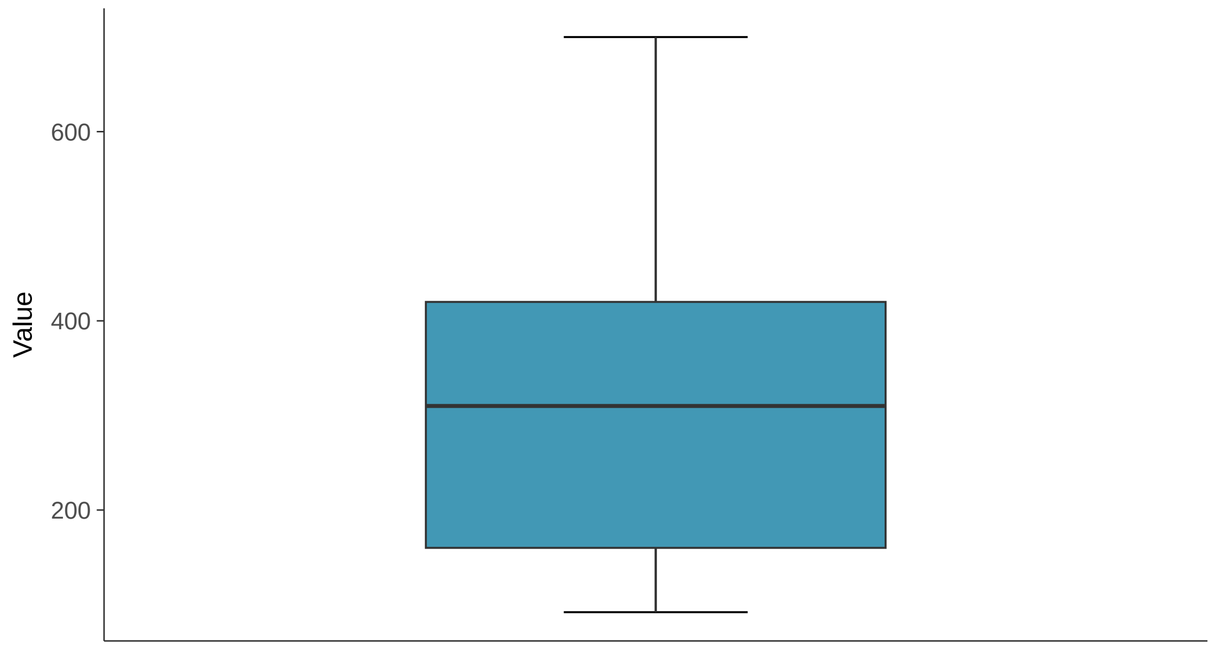
Histogram

Chloride (as Cl), MW-10 (mg/L)



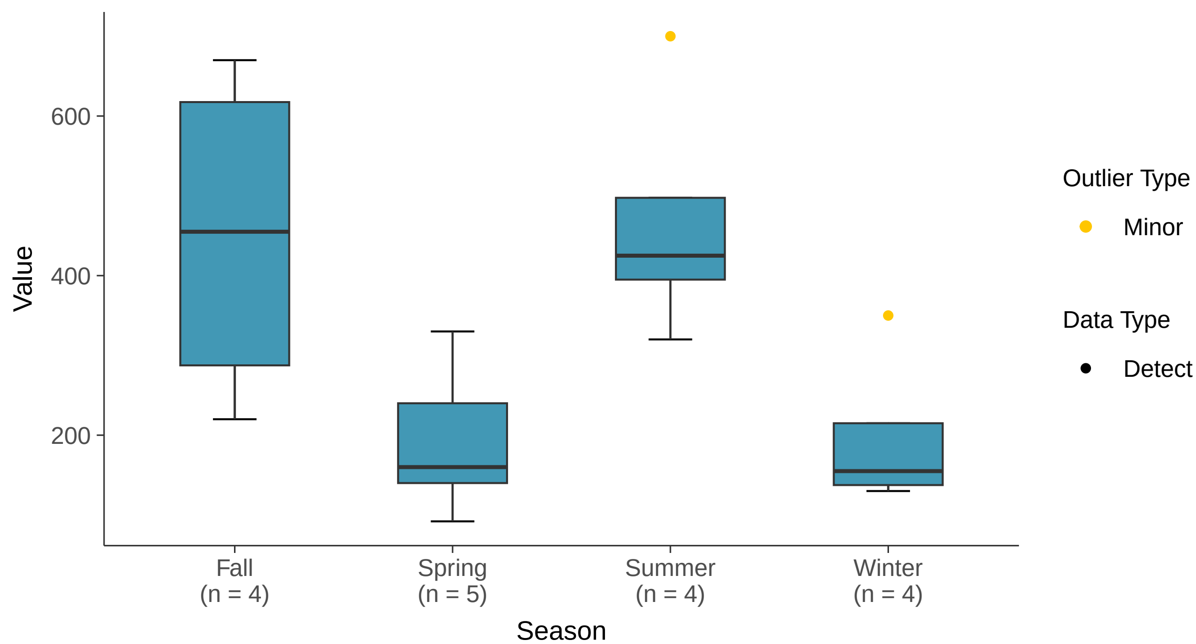
Boxplot

Chloride (as Cl), MW-10 (mg/L)



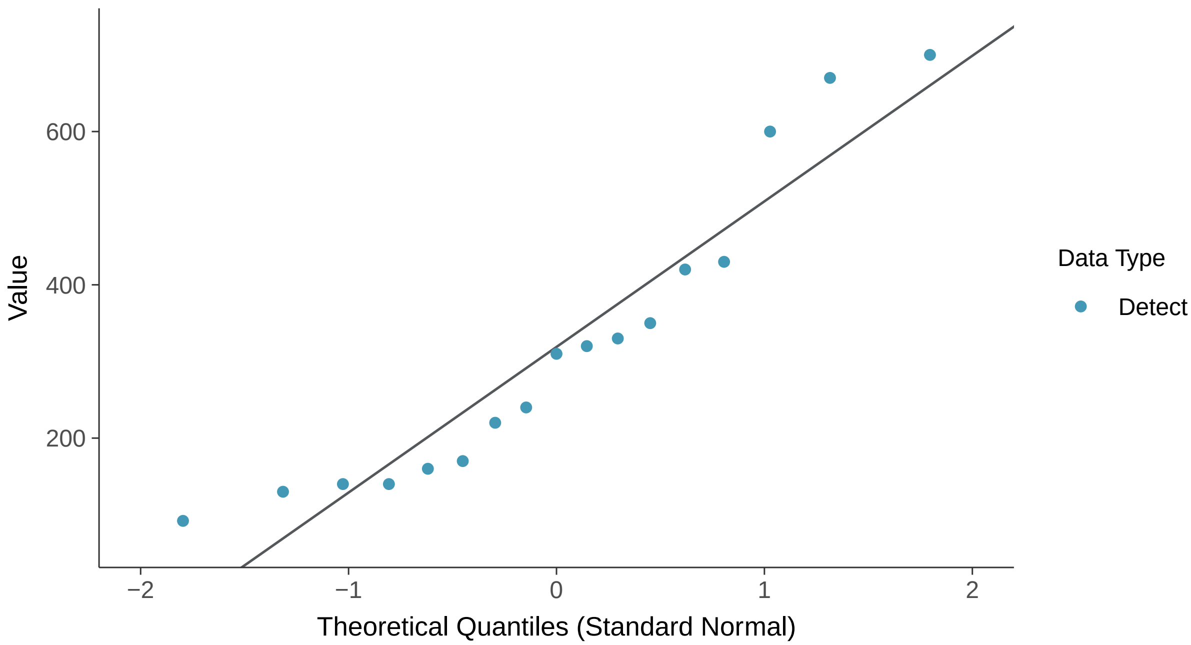
Boxplot by Season

Chloride (as Cl), MW-10 (mg/L)



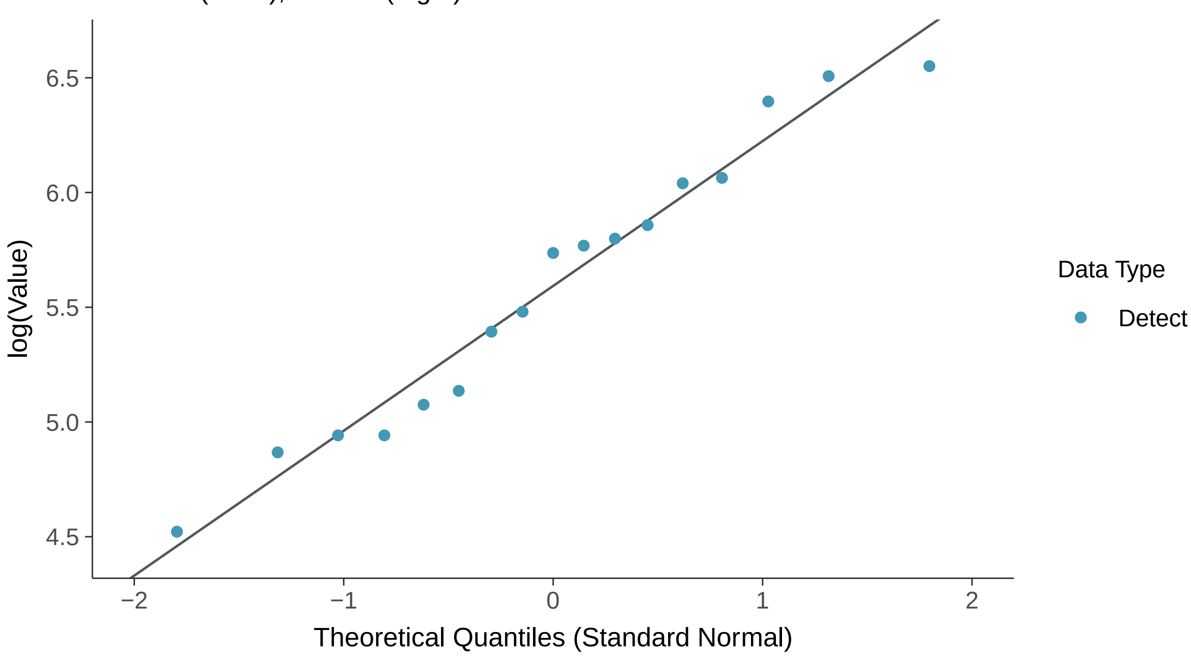
Normal Q-Q plot

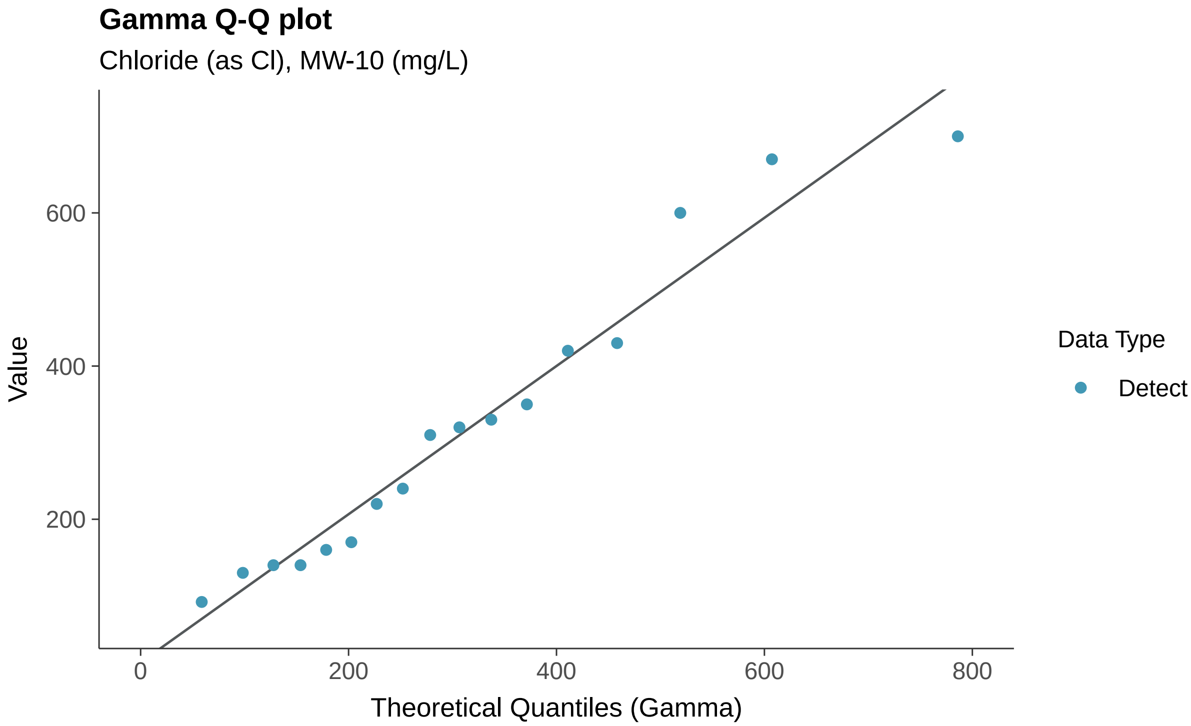
Chloride (as Cl), MW-10 (mg/L)

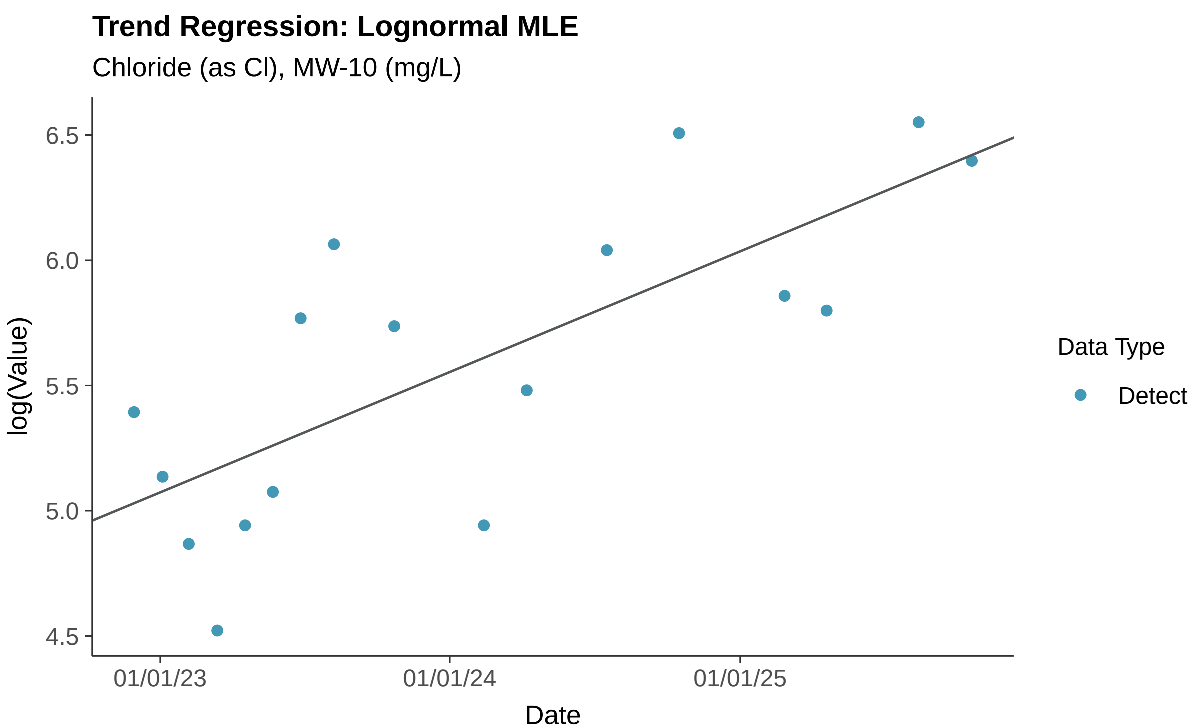


Lognormal Q-Q plot

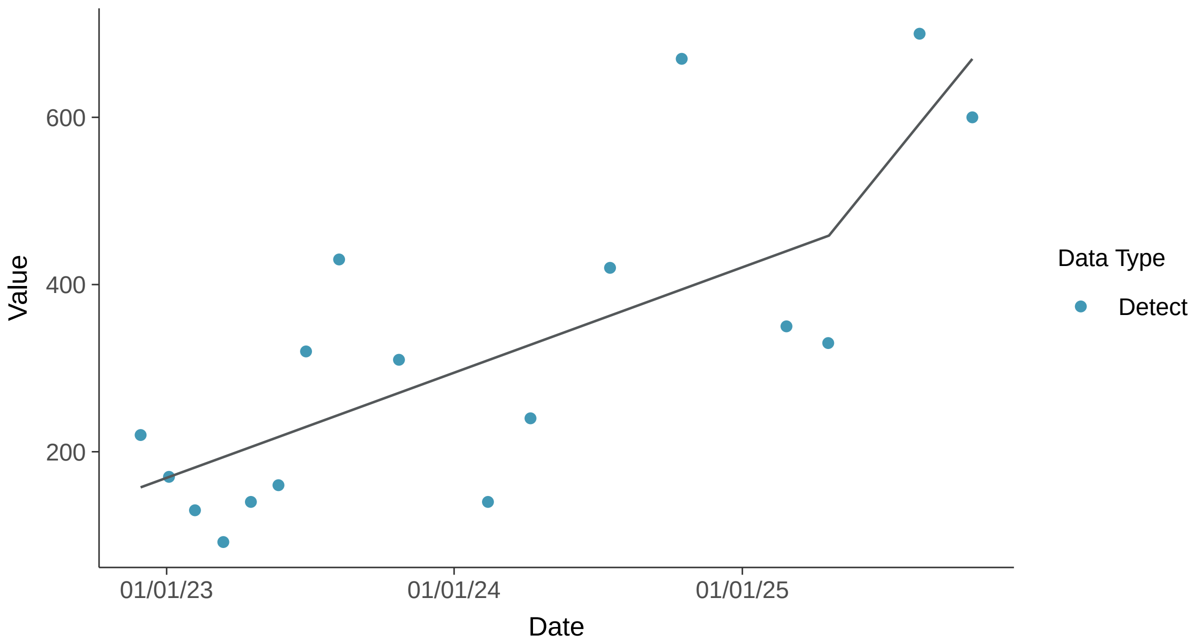
Chloride (as Cl), MW-10 (mg/L)



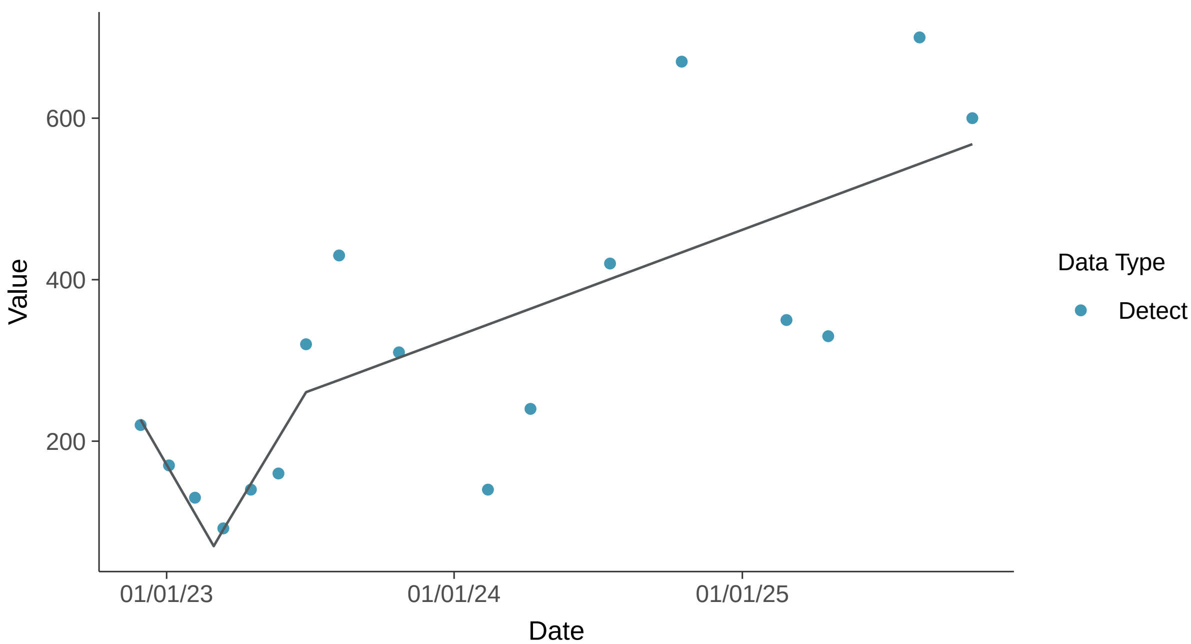

Gamma Q-Q plot
Chloride (as Cl), MW-10 (mg/L)
Value
600
400
200
0
200
400
600
800
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Chloride (as Cl), MW-10 (mg/L)
log(Value)
6.5
6.0
5.5
5.0
4.5
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear
Chloride (as Cl), MW-10 (mg/L)

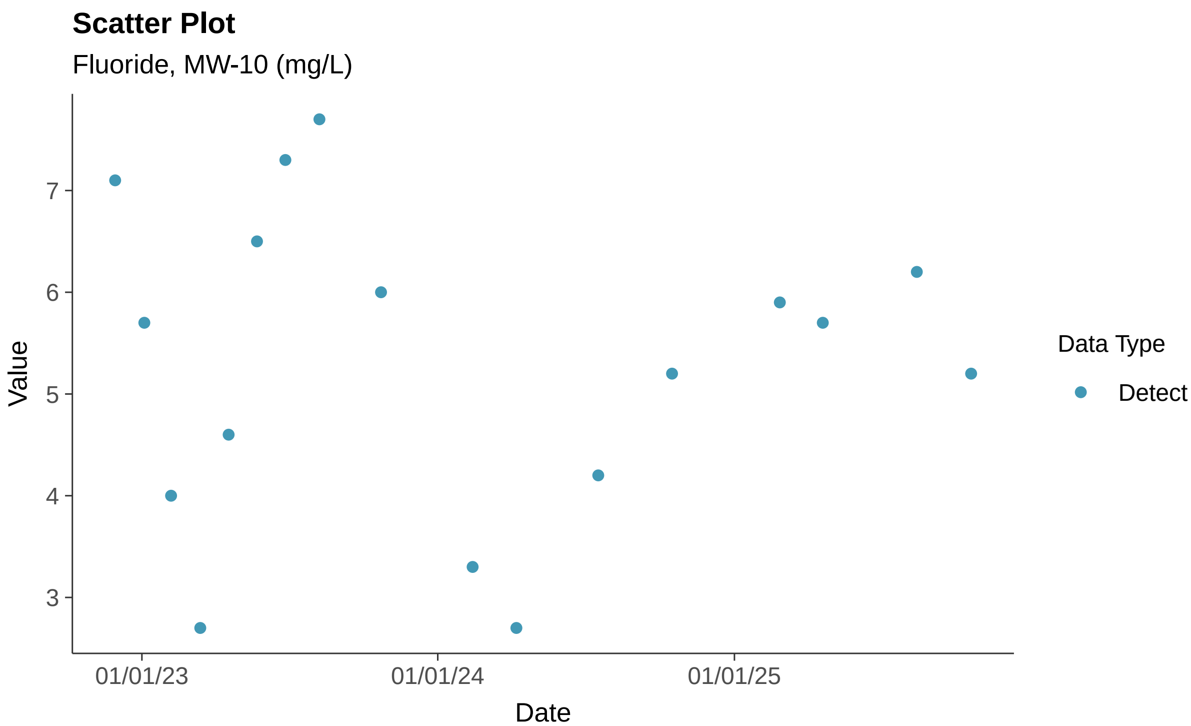


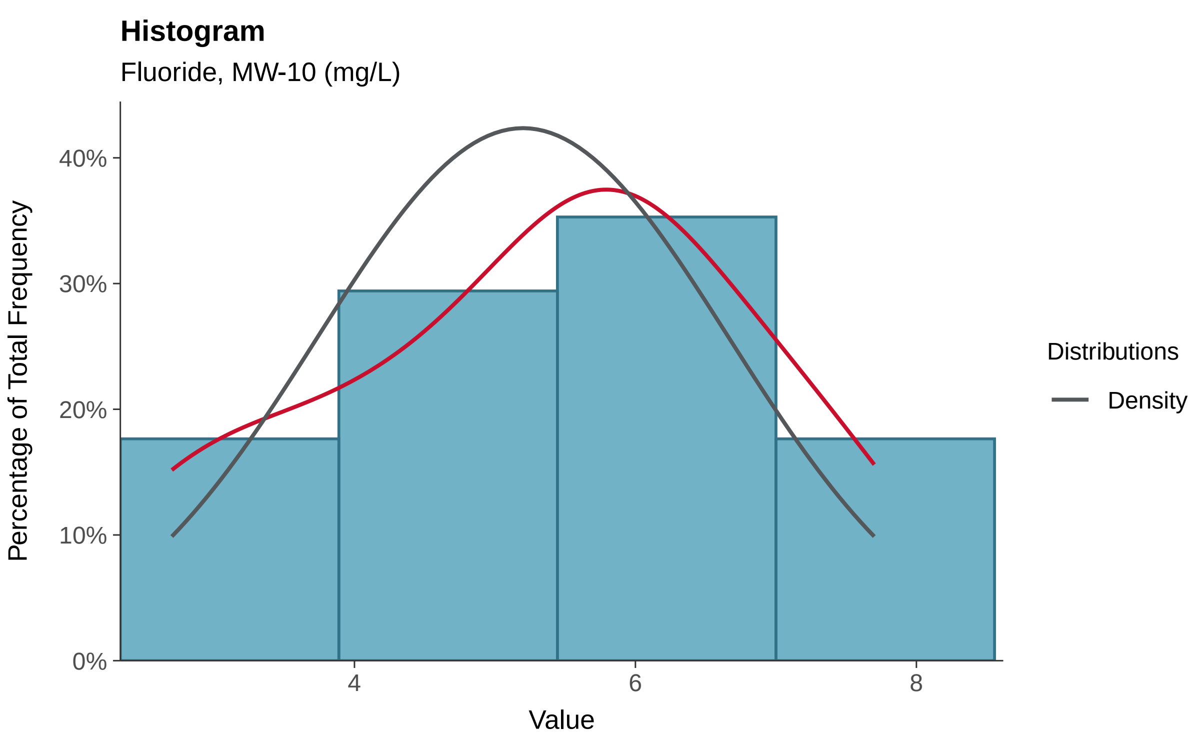
Trend Regression: Piecewise Linear-Linear-Linear
Chloride (as Cl), MW-10 (mg/L)



Appendix III: Fluoride, MW-10

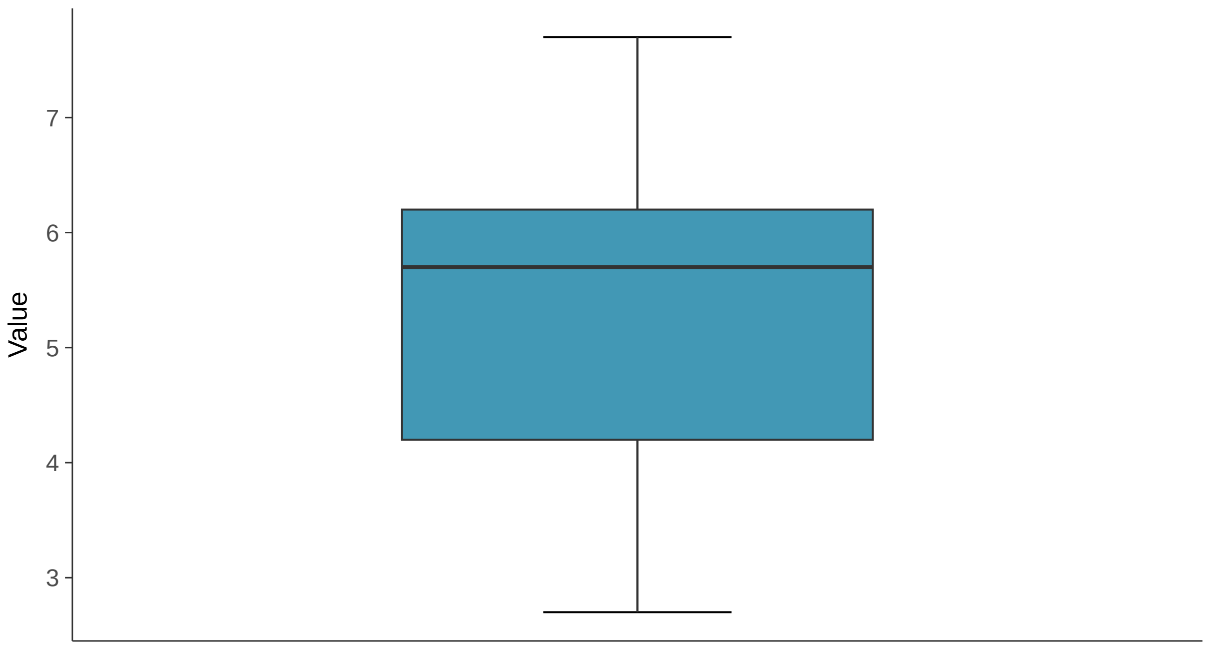
ID: 20_3_3_112





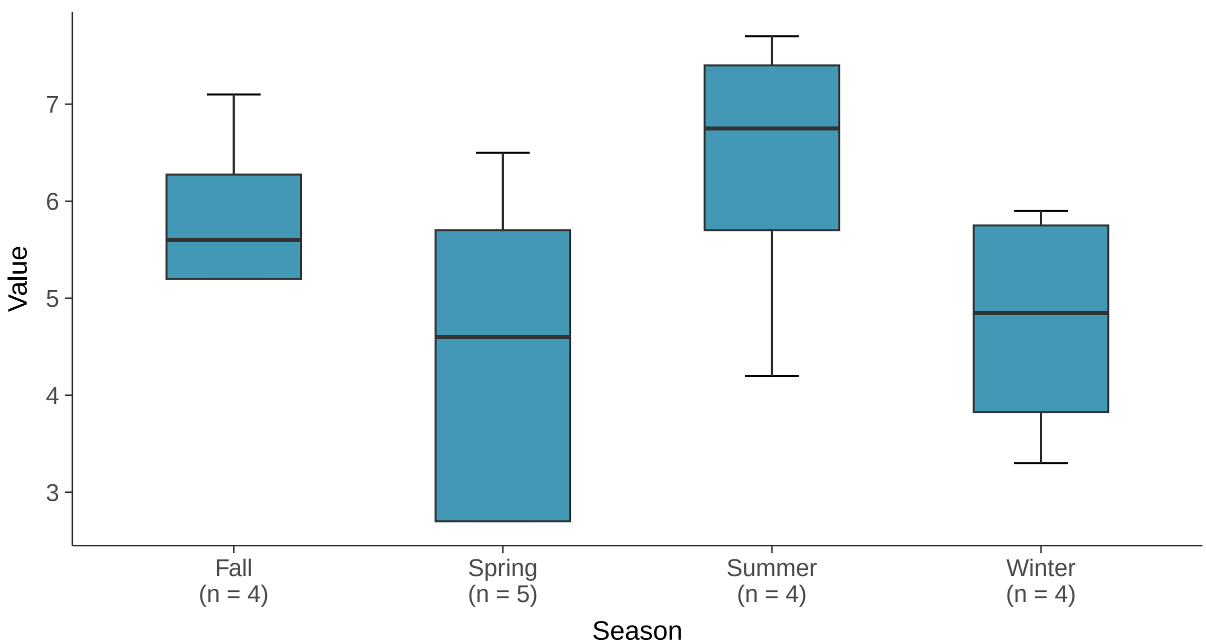
Boxplot

Fluoride, MW-10 (mg/L)



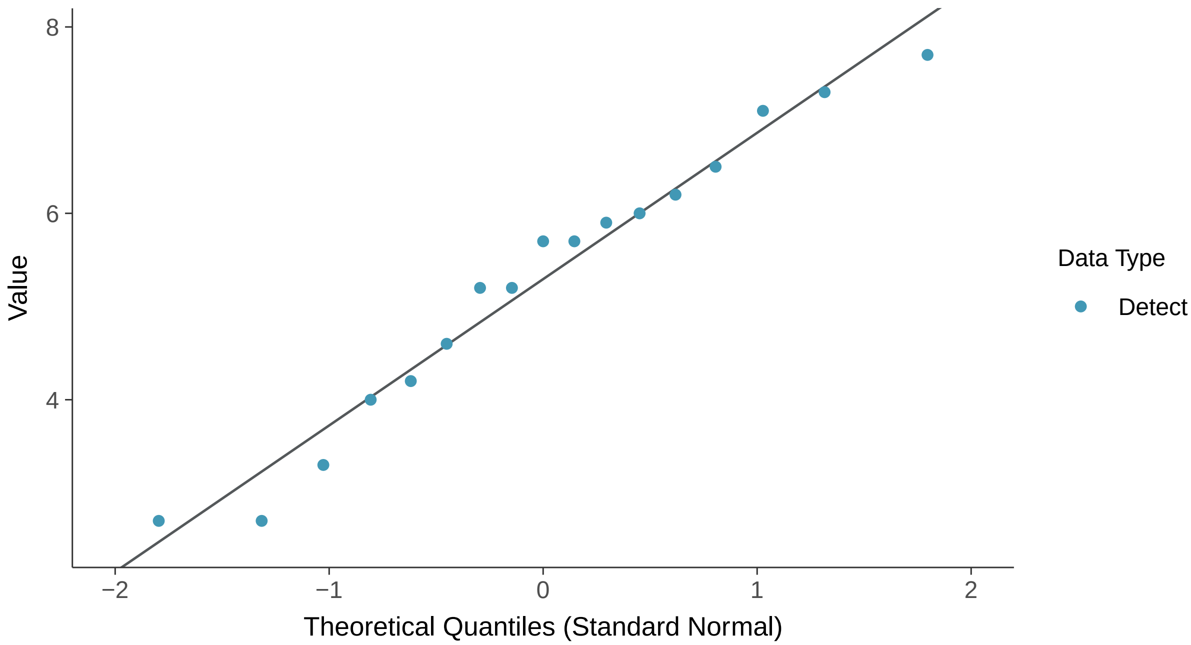
Boxplot by Season

Fluoride, MW-10 (mg/L)



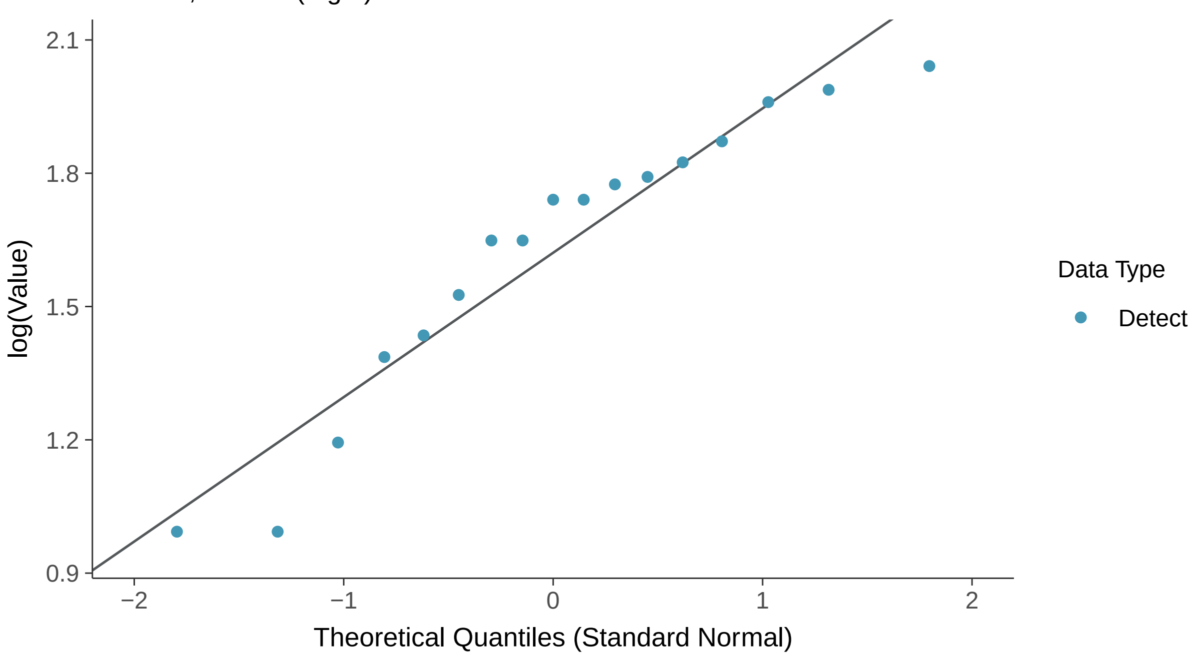
Normal Q-Q plot

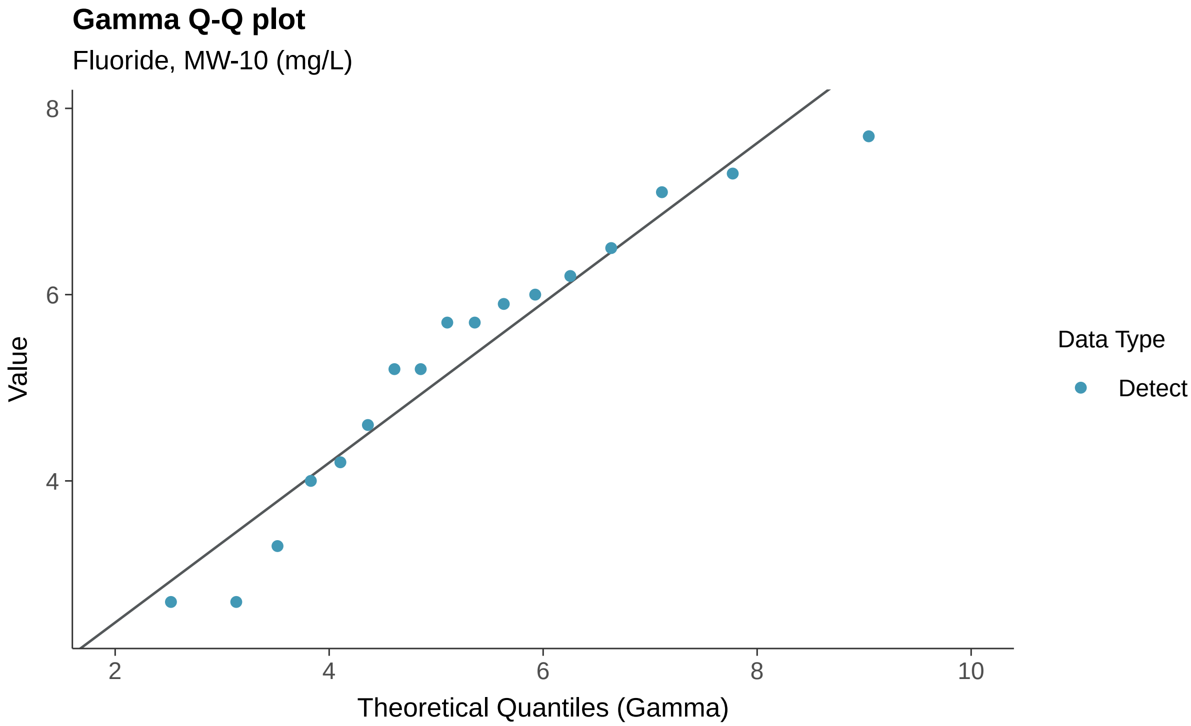
Fluoride, MW-10 (mg/L)

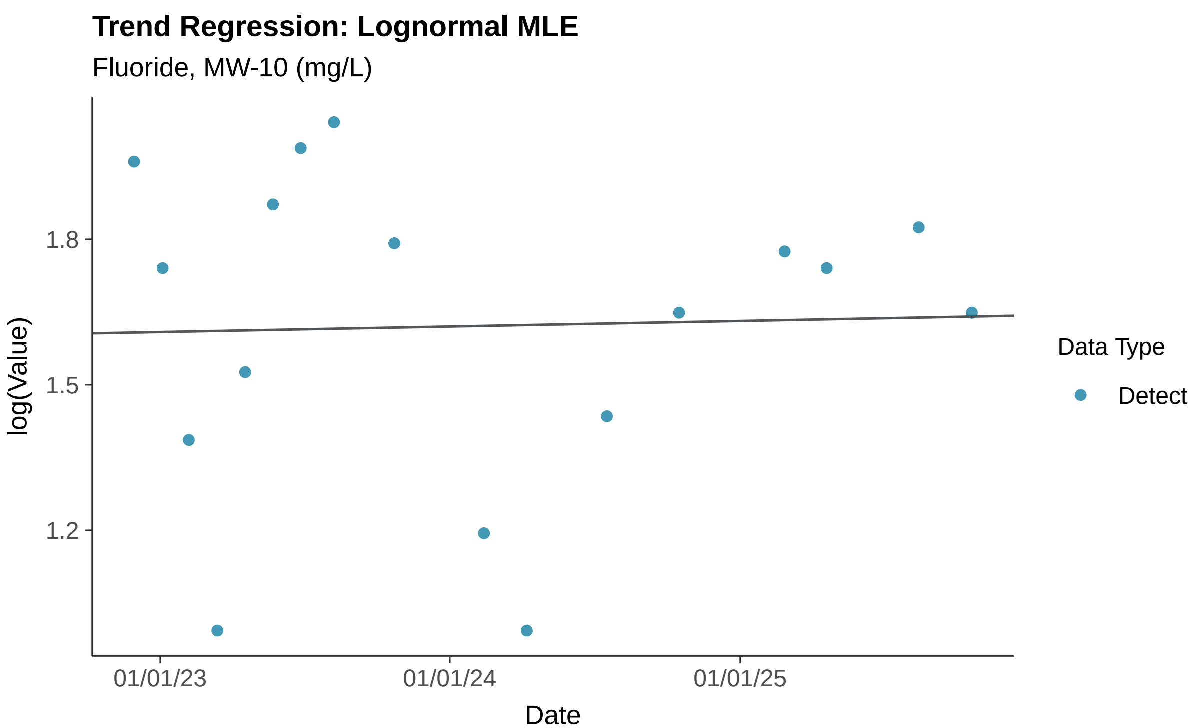


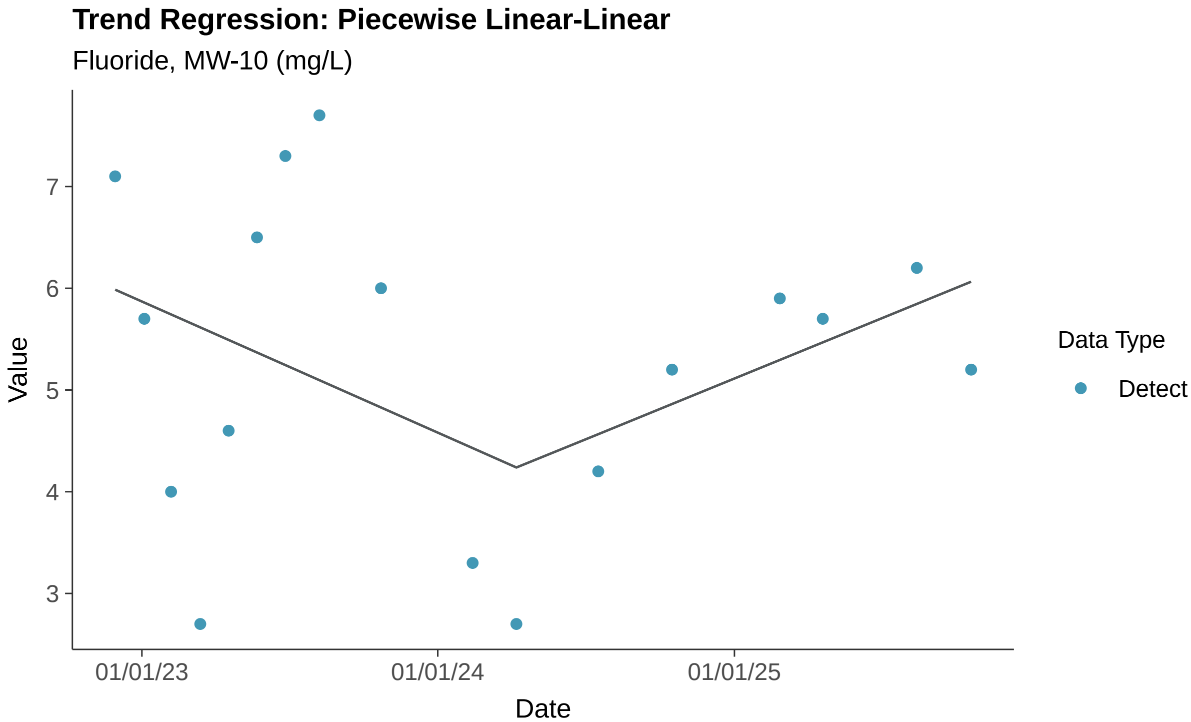
Lognormal Q-Q plot

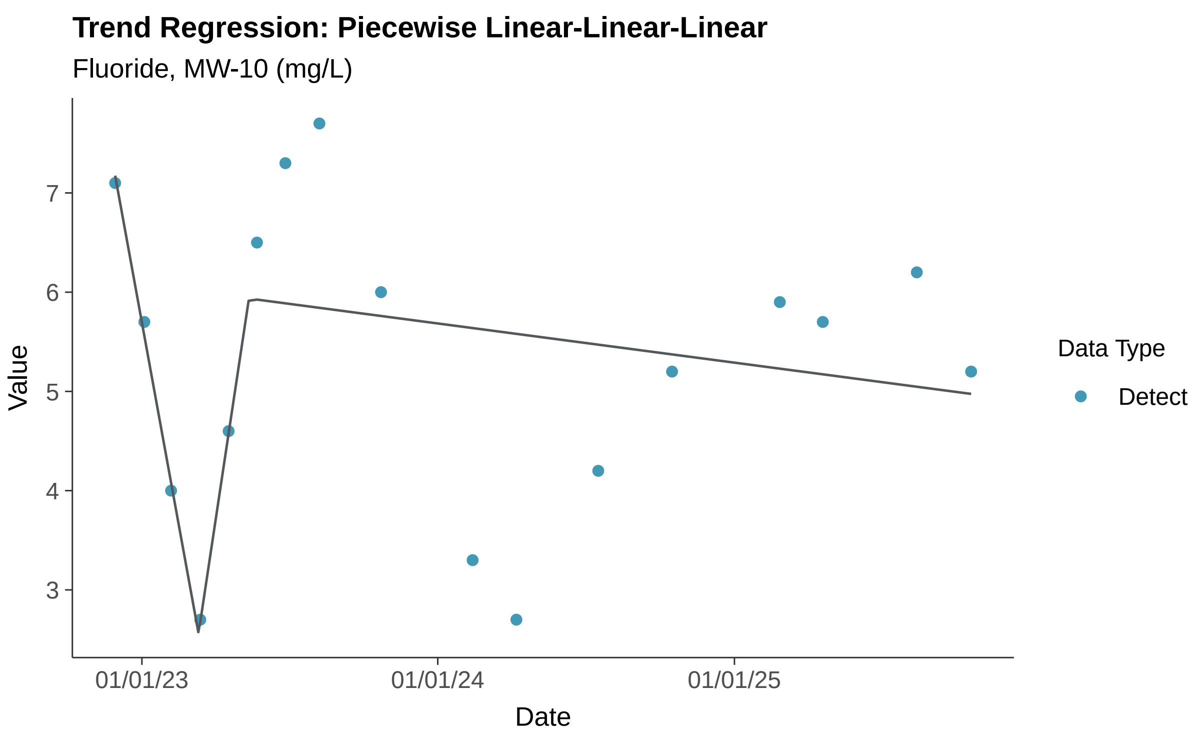
Fluoride, MW-10 (mg/L)




Gamma Q-Q plot
Fluoride, MW-10 (mg/L)
Value
Theoretical Quantiles (Gamma)
2
4
6
8
10
Data Type
Detect

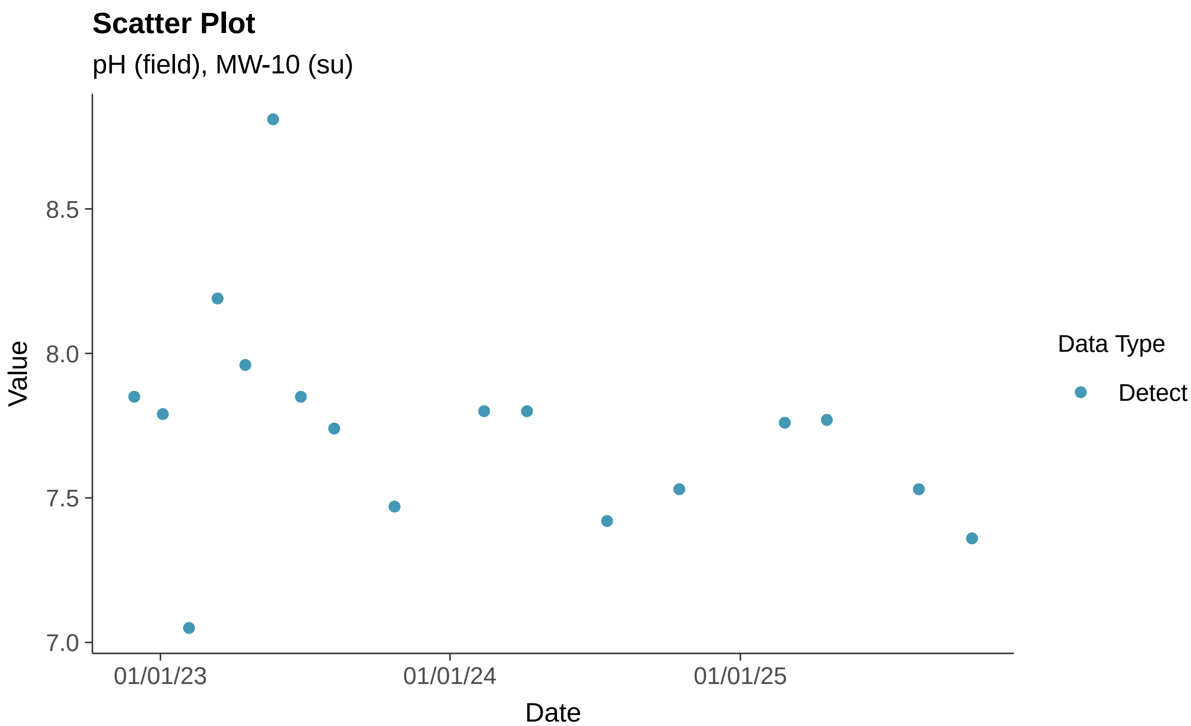

Trend Regression: Lognormal MLE
Fluoride, MW-10 (mg/L)
log(Value)
1.2
1.5
1.8
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

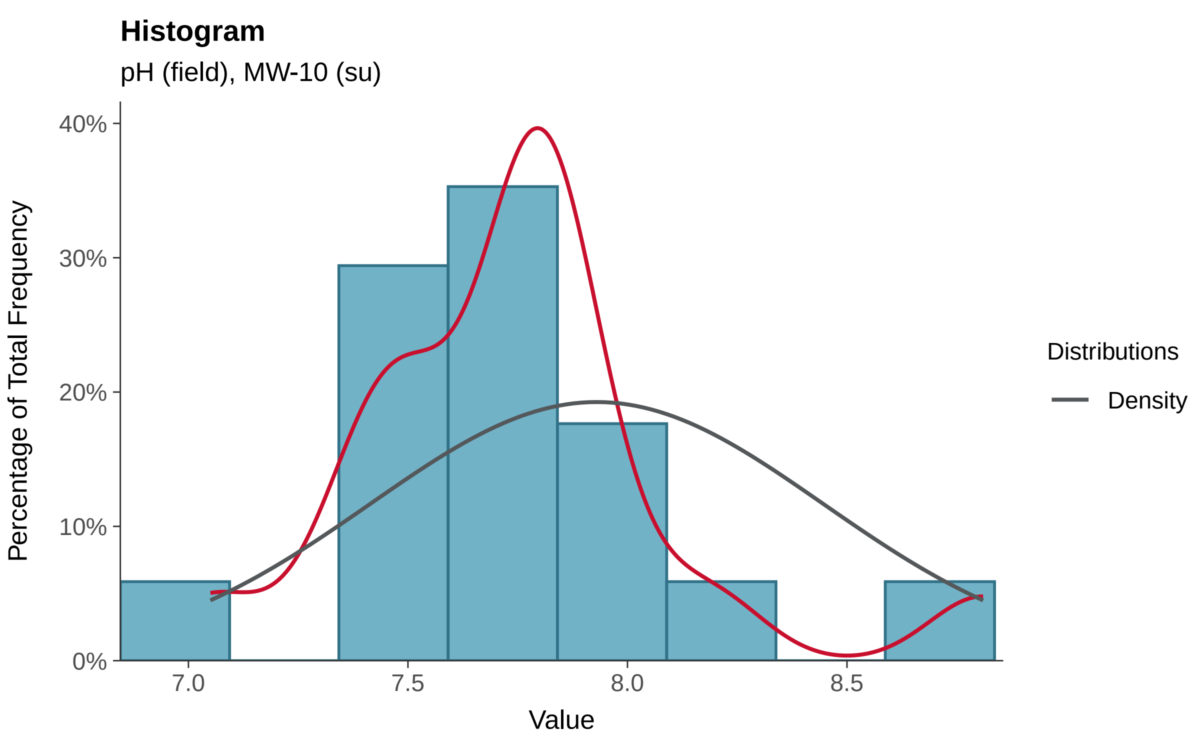

Trend Regression: Piecewise Linear-Linear
Fluoride, MW-10 (mg/L)
Value
7
6
5
4
3
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
Fluoride, MW-10 (mg/L)
Value
7
6
5
4
3
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Appendix III: pH (field), MW-10

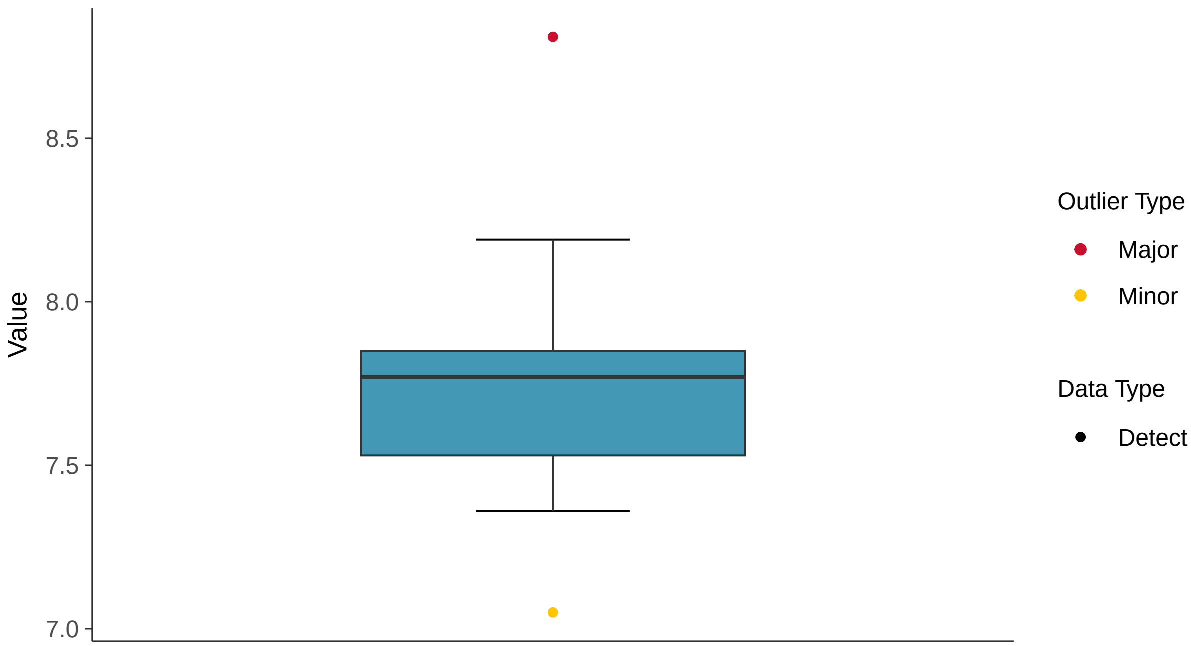
ID: 20_3_3_120





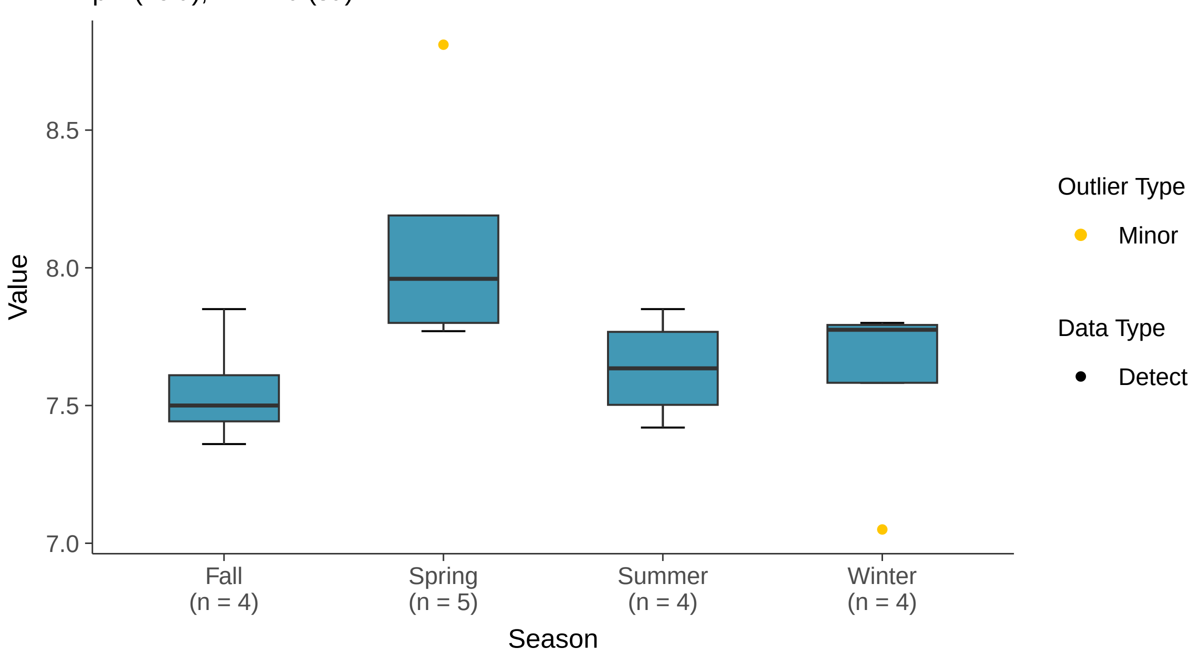
Boxplot

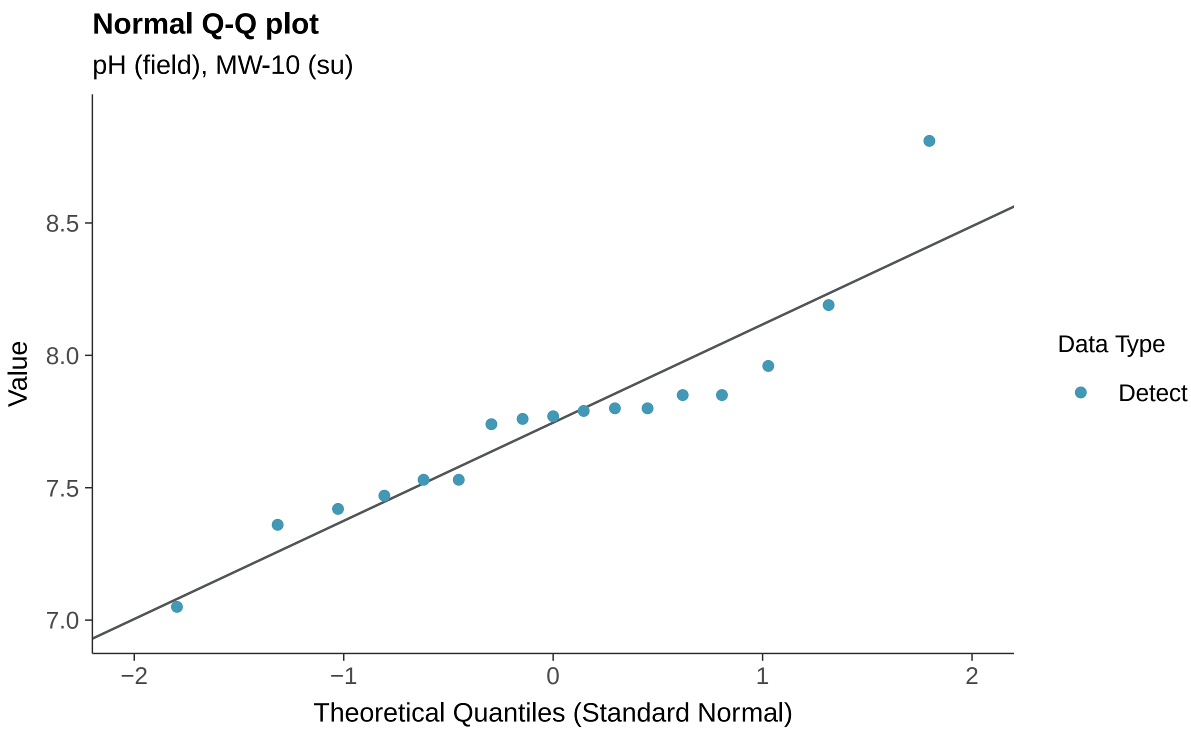
pH (field), MW-10 (su)

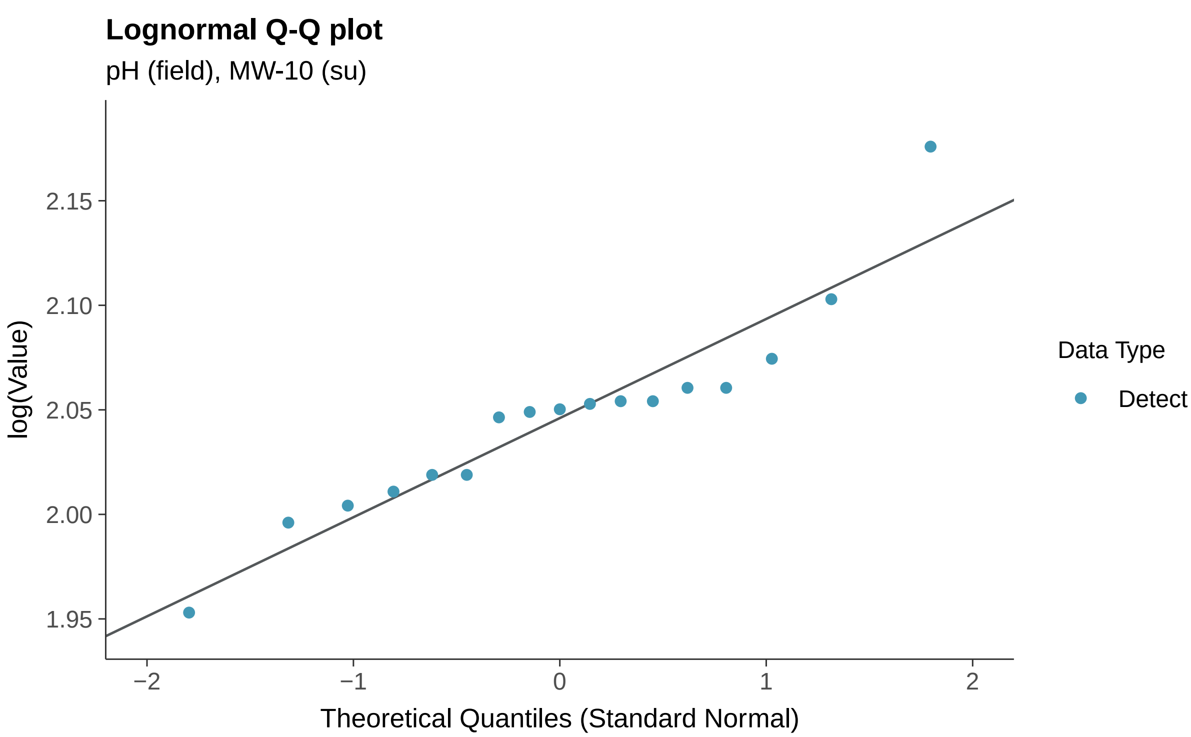


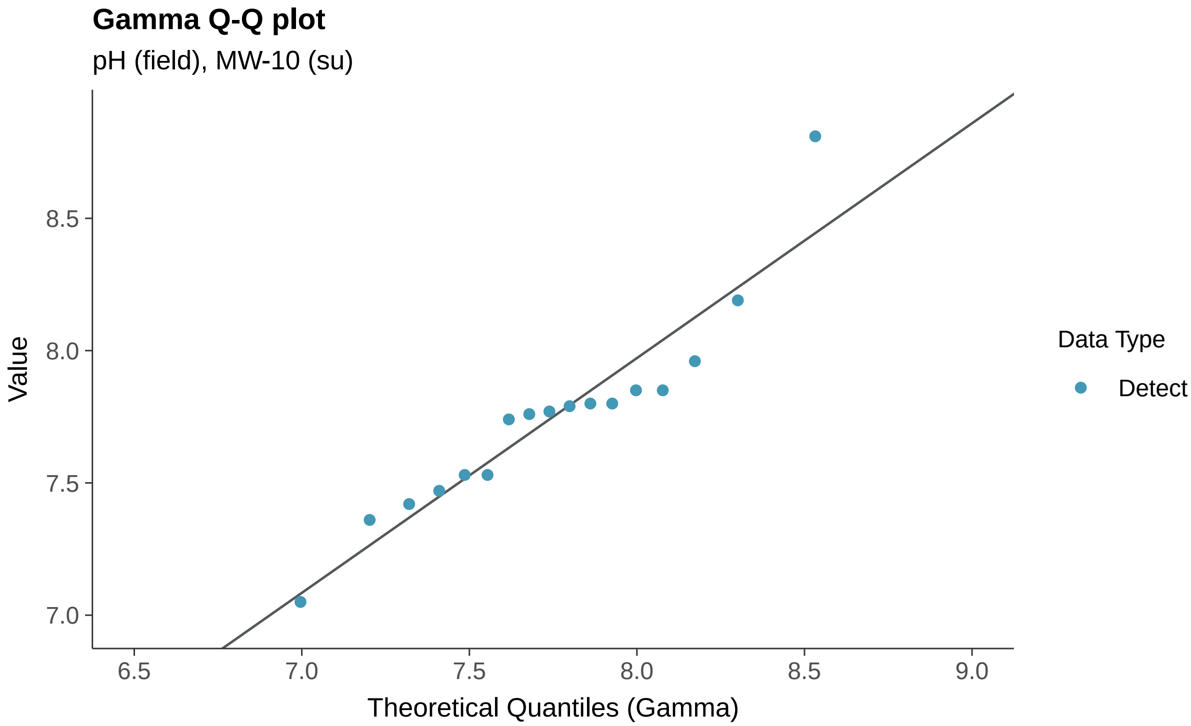
Boxplot by Season

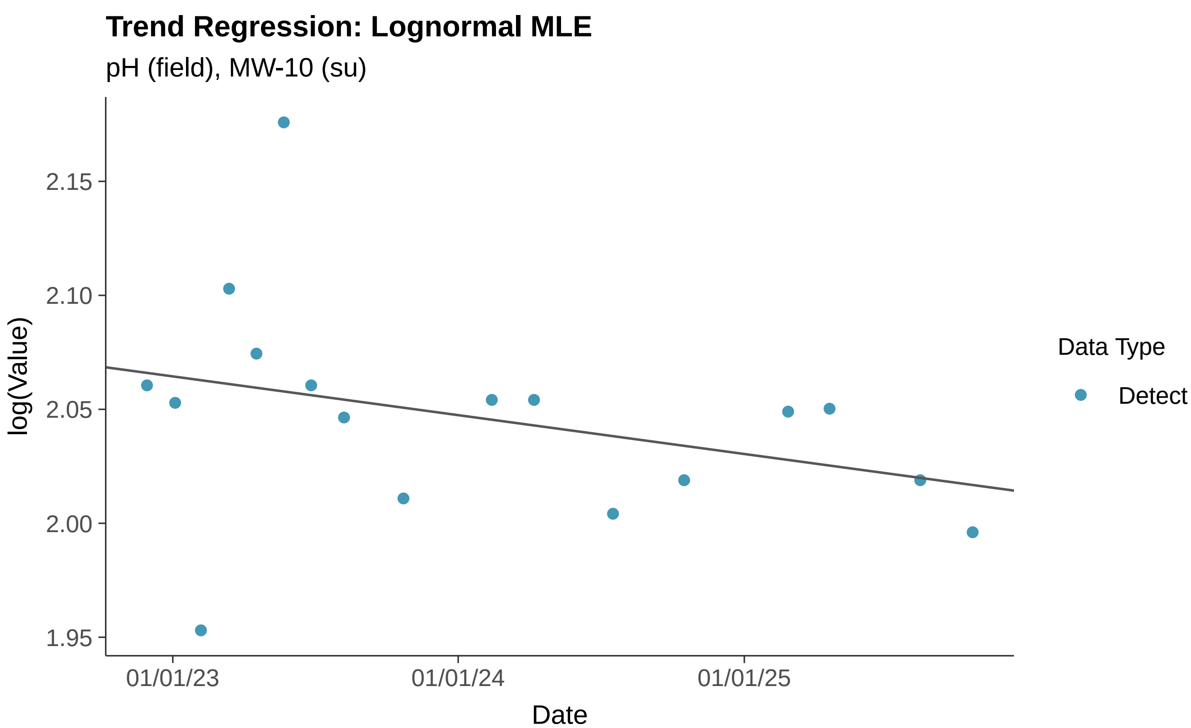
pH (field), MW-10 (su)




Normal Q-Q plot
pH (field), MW-10 (su)
Value
8.5
8.0
7.5
7.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

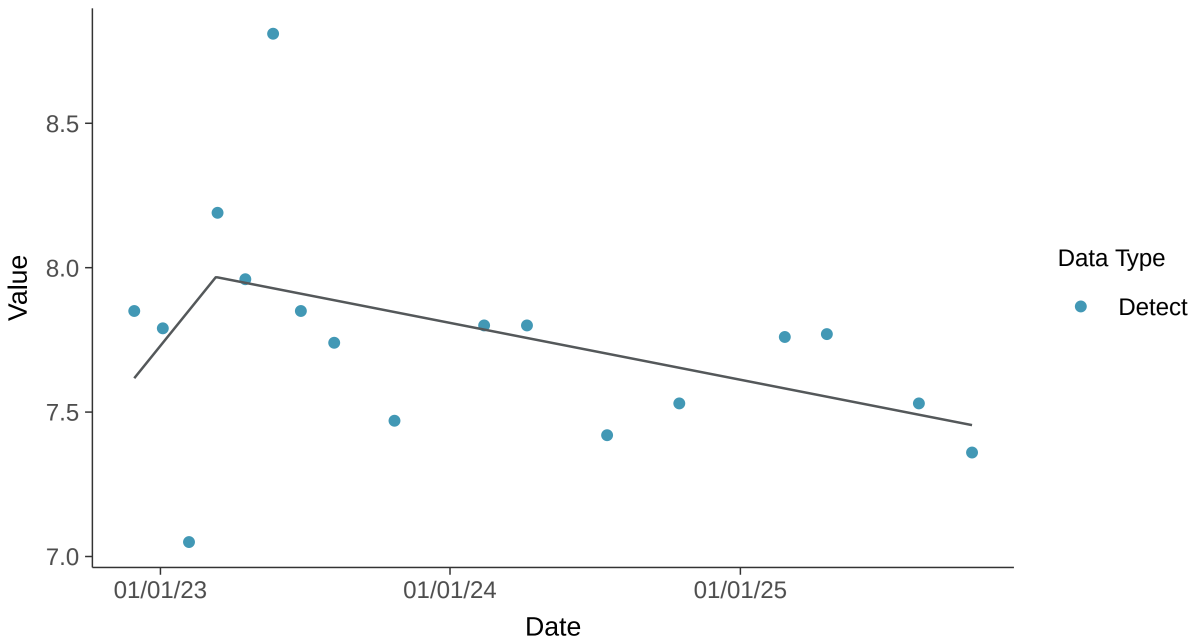

Lognormal Q-Q plot
pH (field), MW-10 (su)
log(Value)
2.15
2.10
2.05
2.00
1.95
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
pH (field), MW-10 (su)
Value
8.5
8.0
7.5
7.0
6.5
7.0
7.5
8.0
8.5
9.0
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
pH (field), MW-10 (su)
log(Value)
2.15
2.10
2.05
2.00
1.95
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

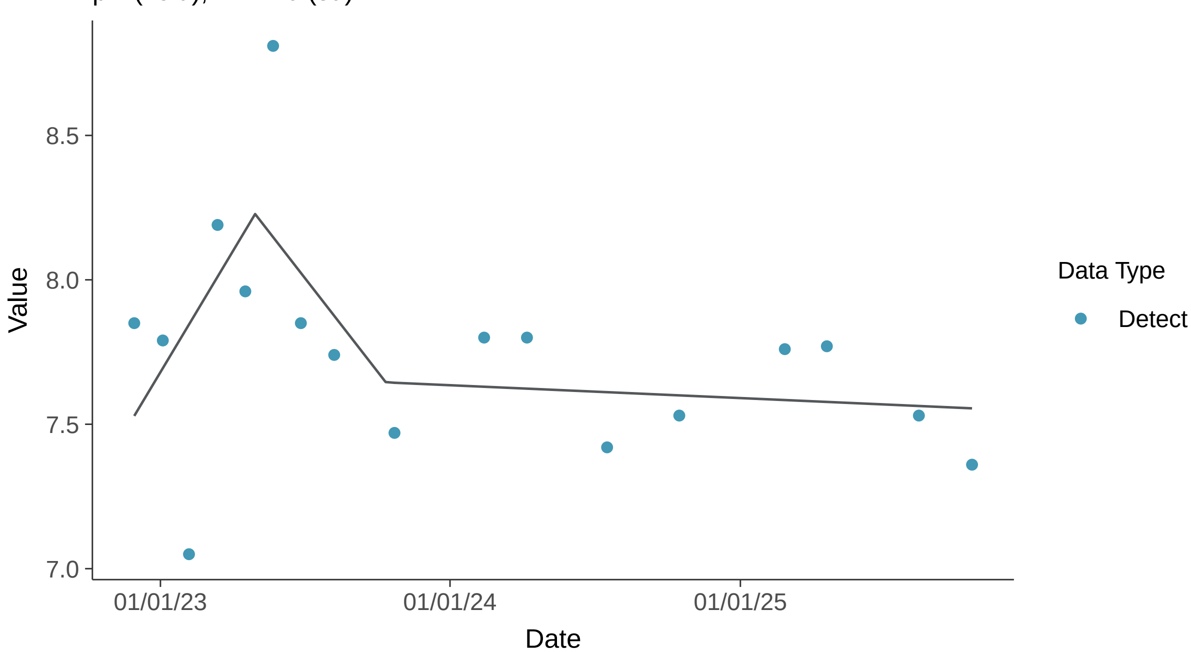
Trend Regression: Piecewise Linear-Linear

pH (field), MW-10 (su)



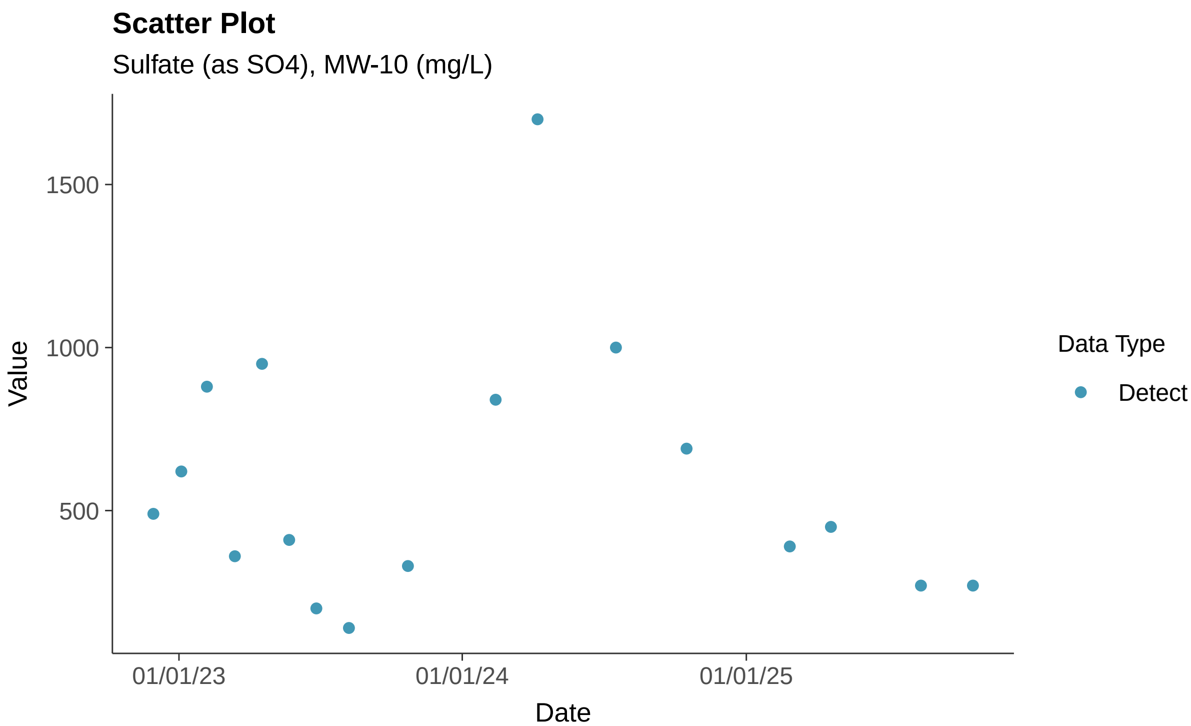
Trend Regression: Piecewise Linear-Linear-Linear

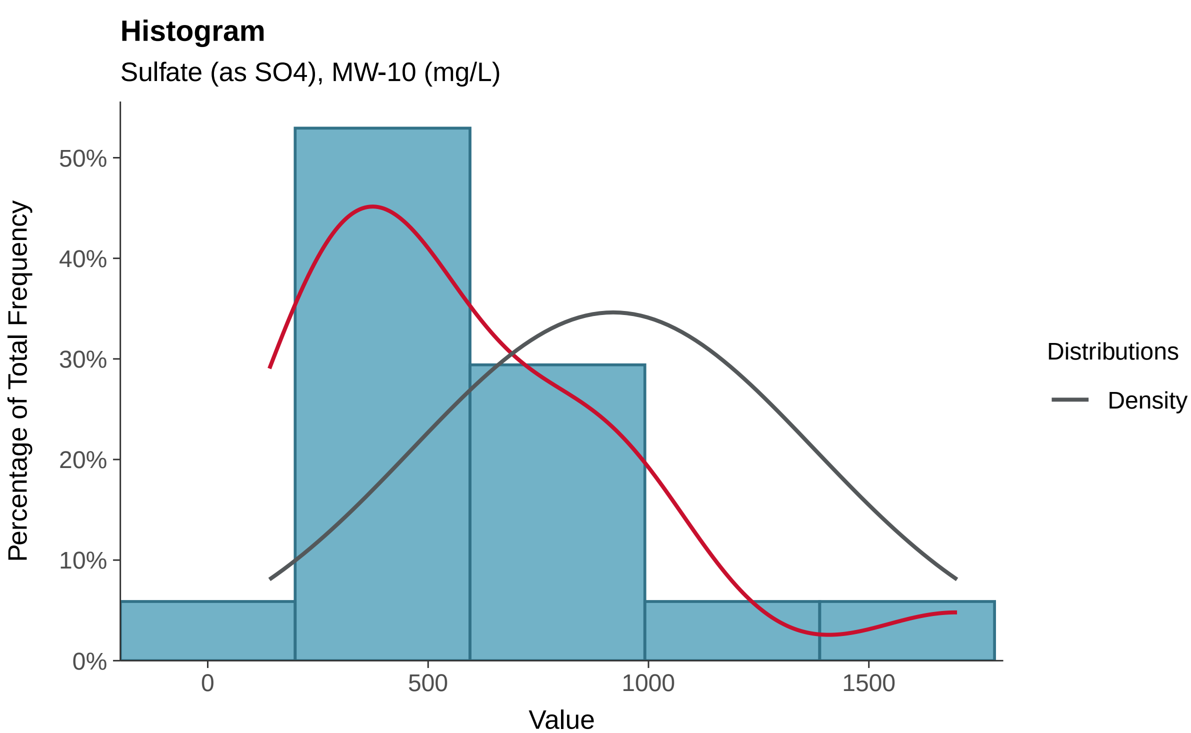
pH (field), MW-10 (su)



Appendix III: Sulfate (as SO4), MW-10

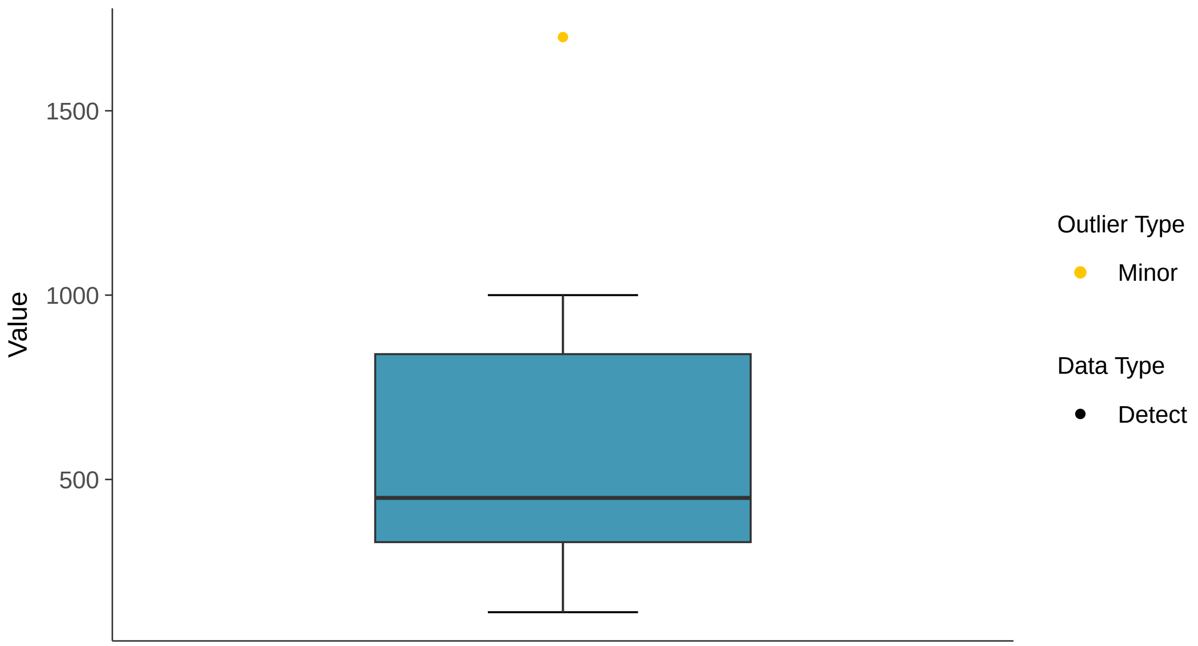
ID: 20_3_3_124





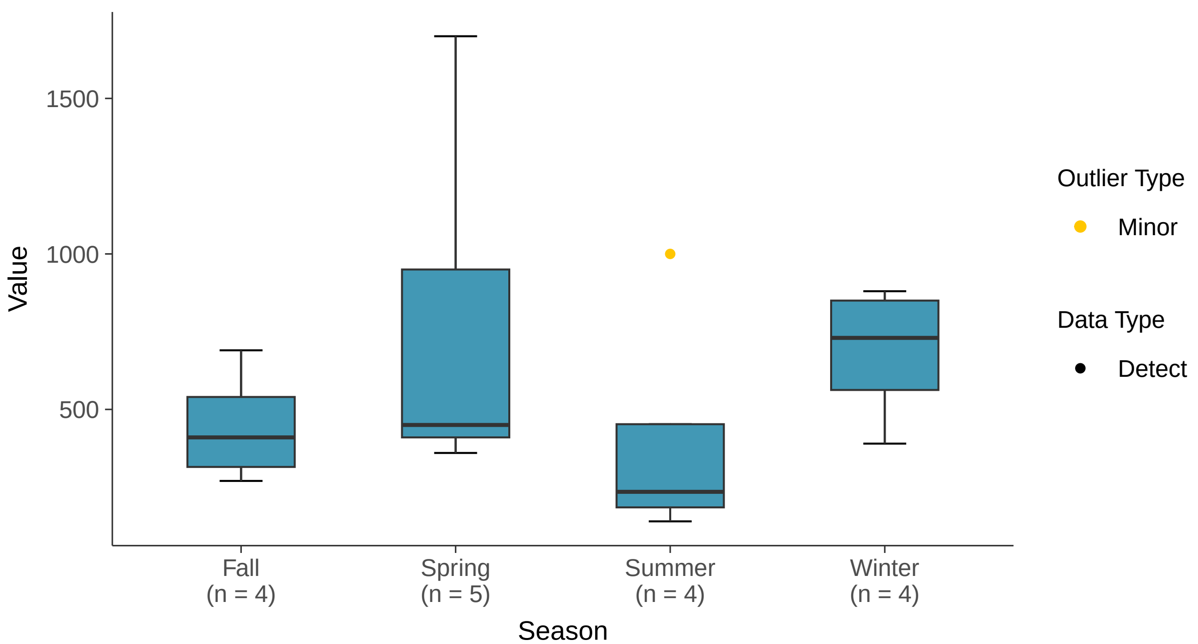
Boxplot

Sulfate (as SO4), MW-10 (mg/L)



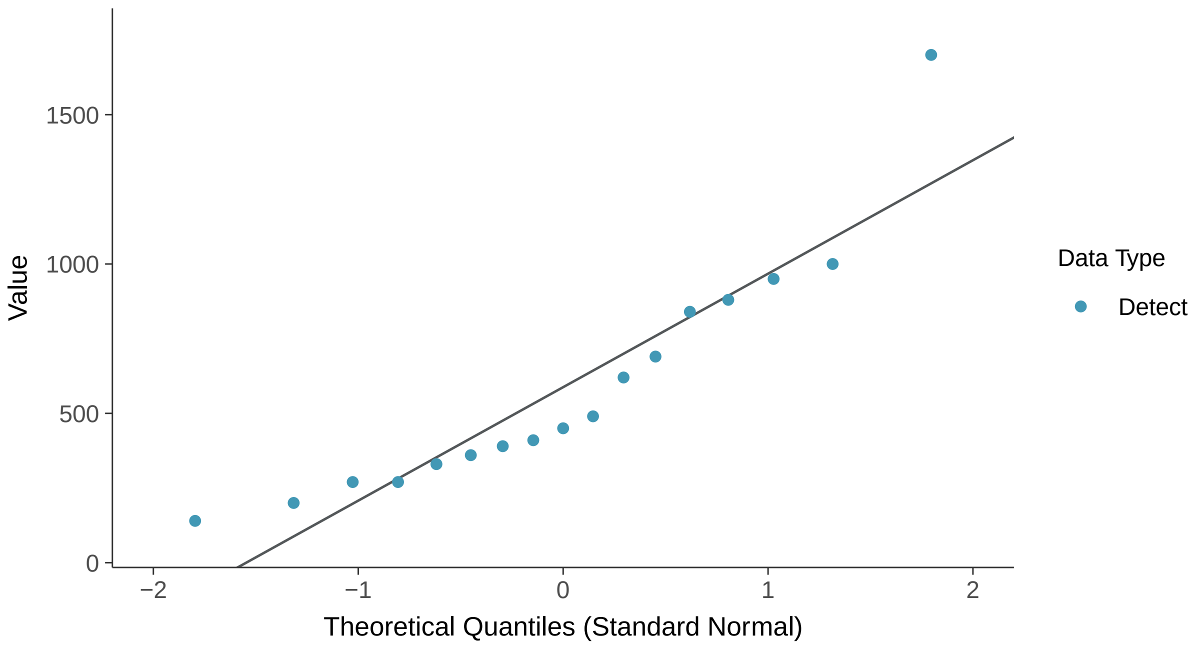
Boxplot by Season

Sulfate (as SO4), MW-10 (mg/L)



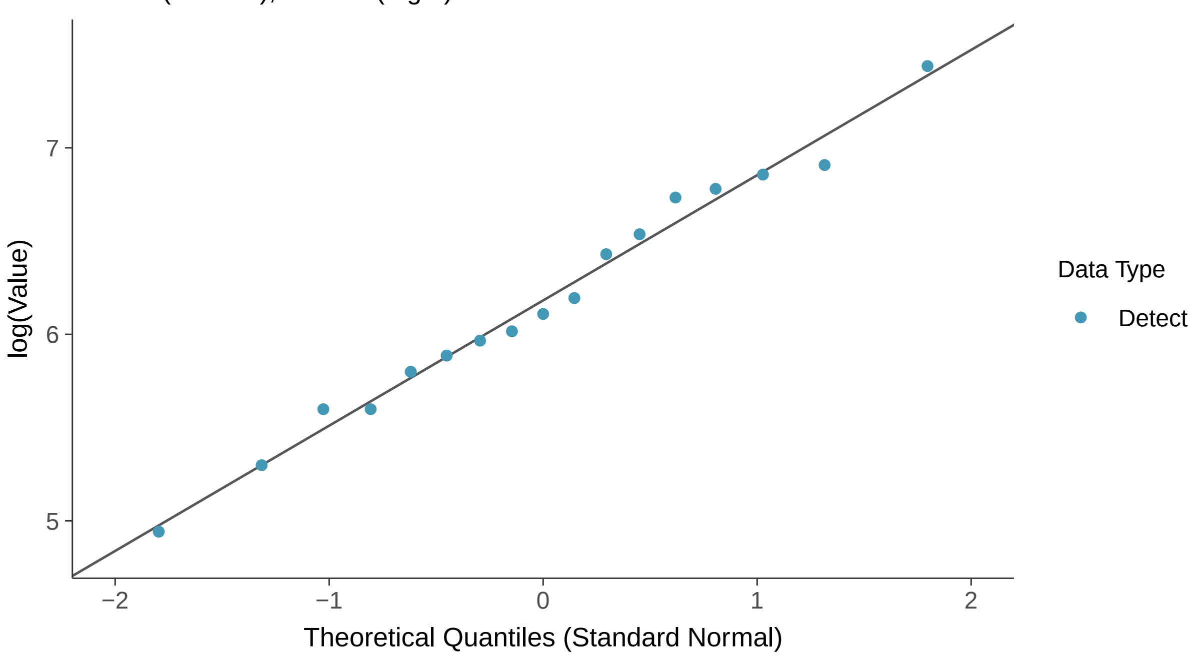
Normal Q-Q plot

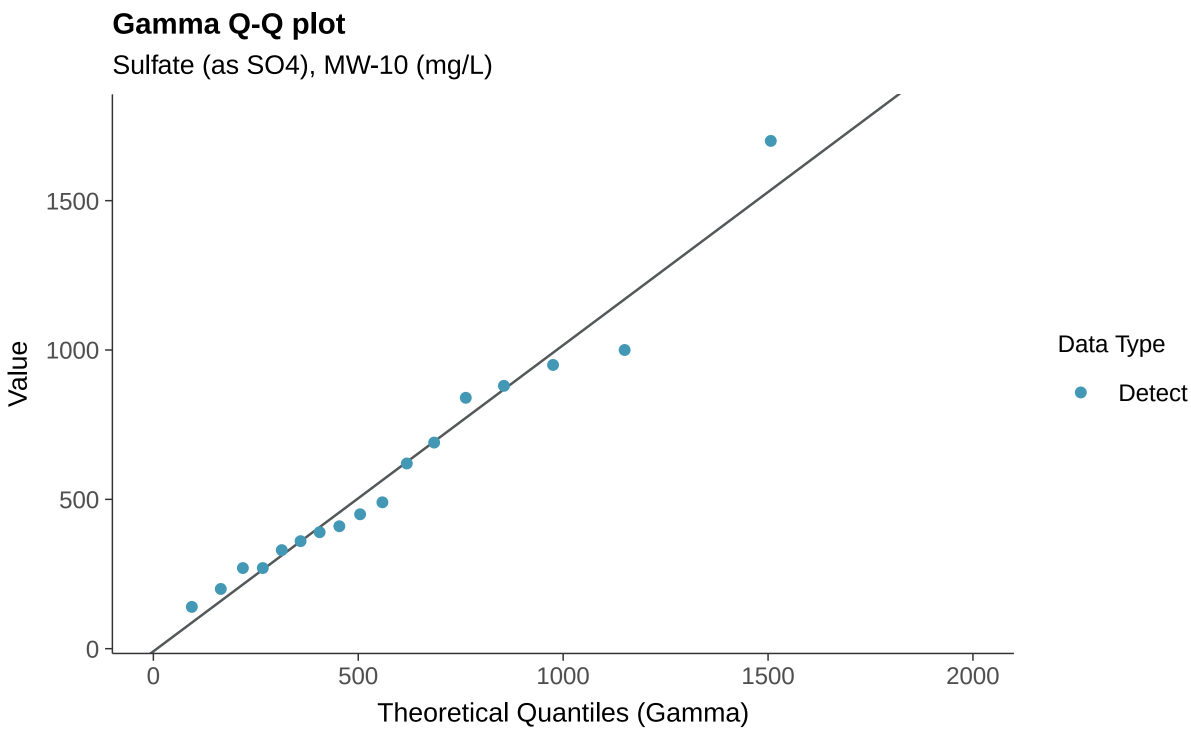
Sulfate (as SO4), MW-10 (mg/L)

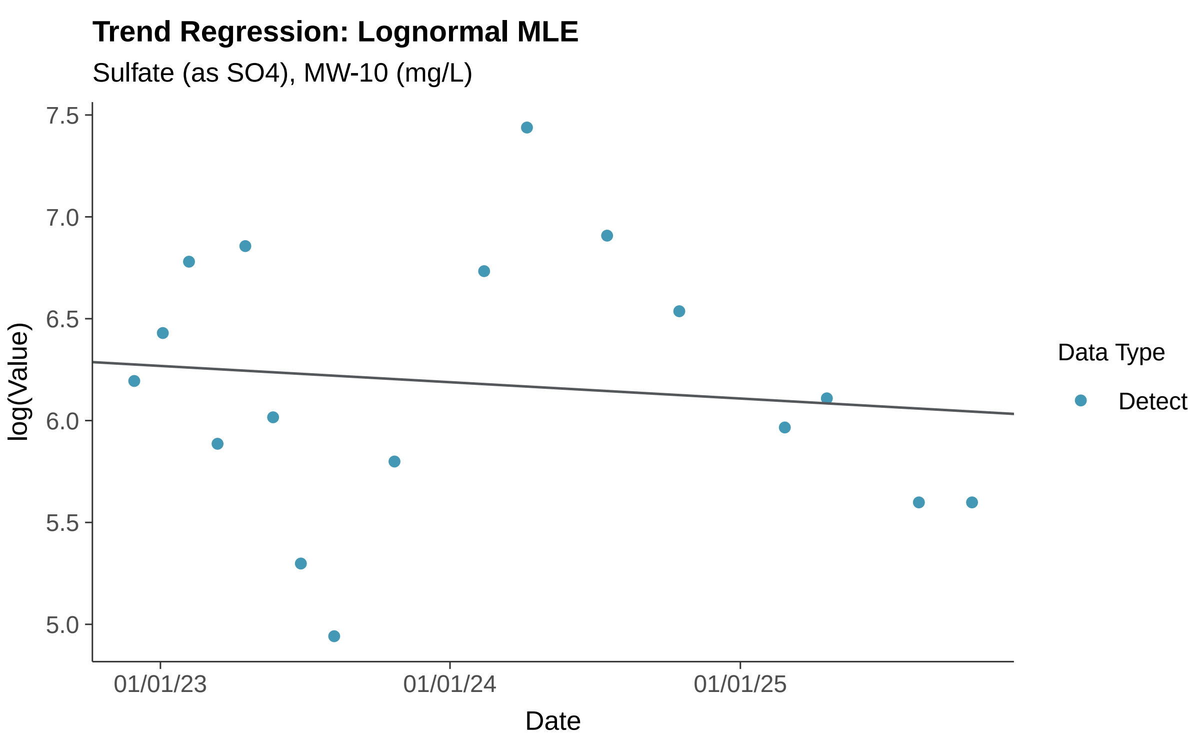


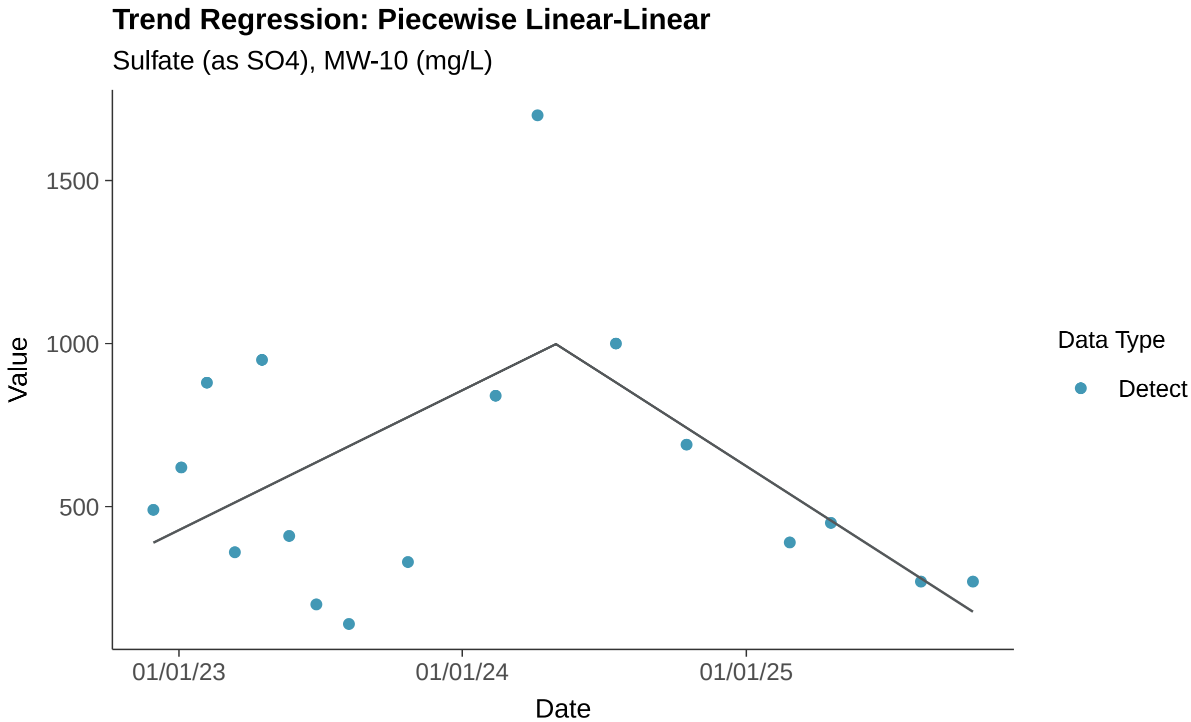
Lognormal Q-Q plot

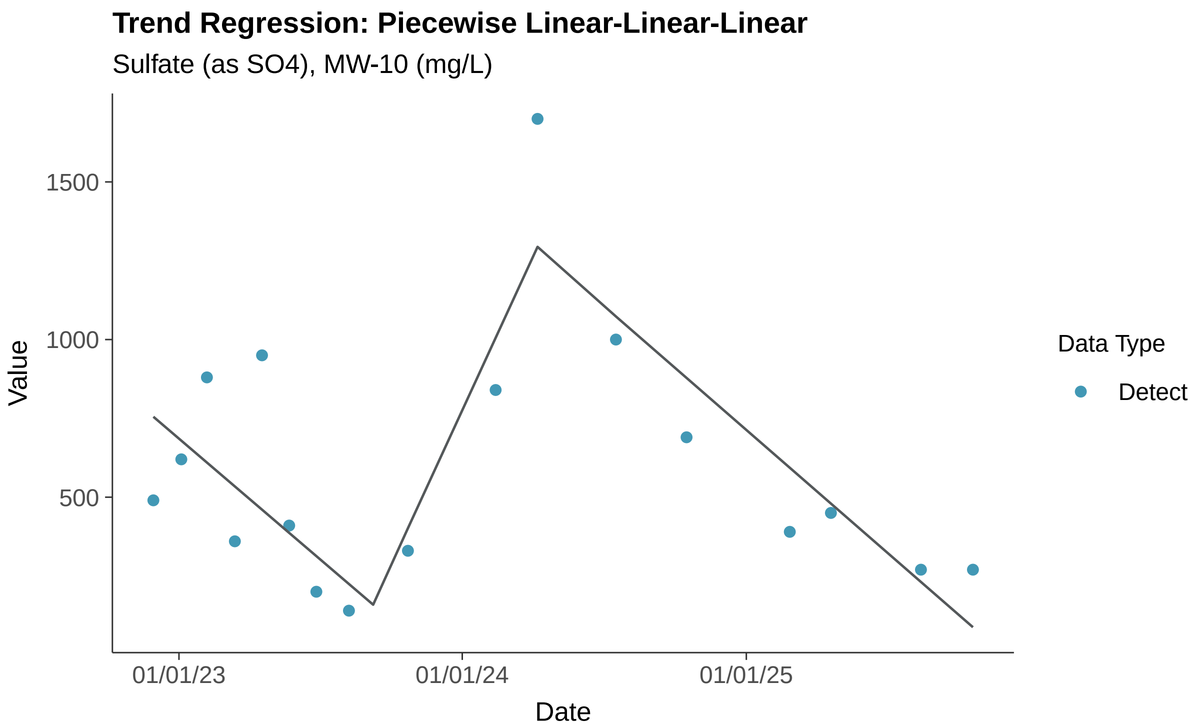
Sulfate (as SO4), MW-10 (mg/L)




Gamma Q-Q plot
Sulfate (as SO4), MW-10 (mg/L)
Value
0
500
1000
1500
0
500
1000
1500
2000
Theoretical Quantiles (Gamma)
Data Type
Detect

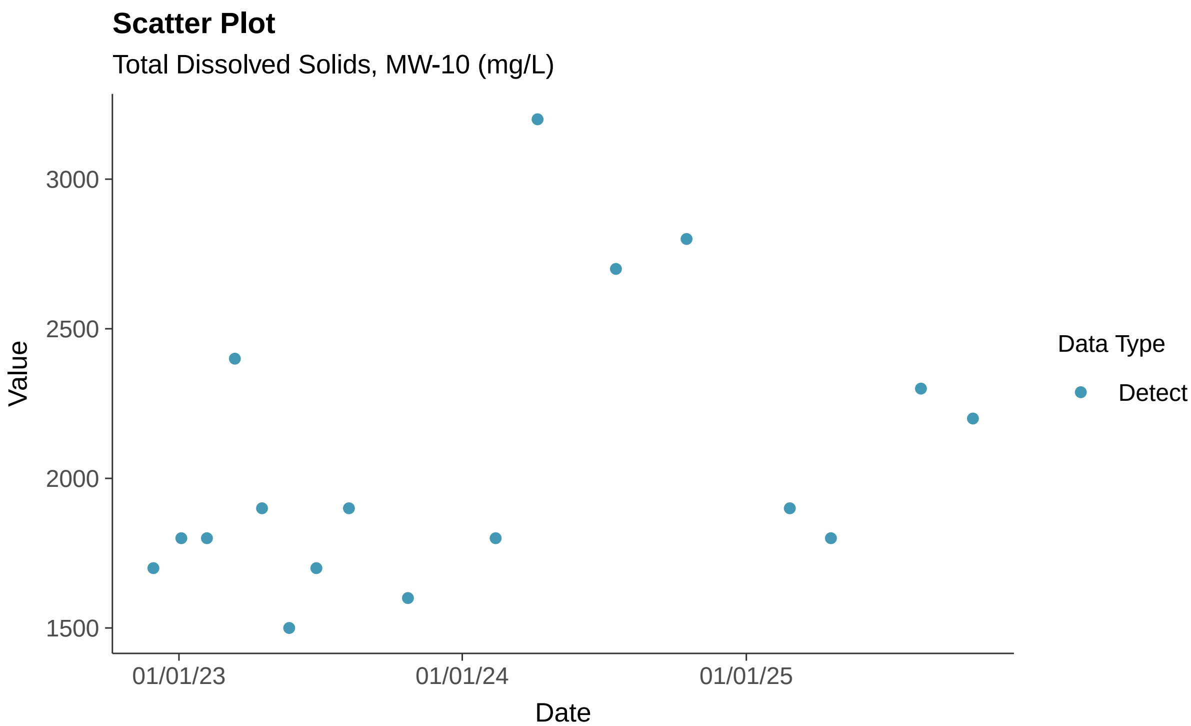

Trend Regression: Lognormal MLE
Sulfate (as SO4), MW-10 (mg/L)
log(Value)
7.5
7.0
6.5
6.0
5.5
5.0
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

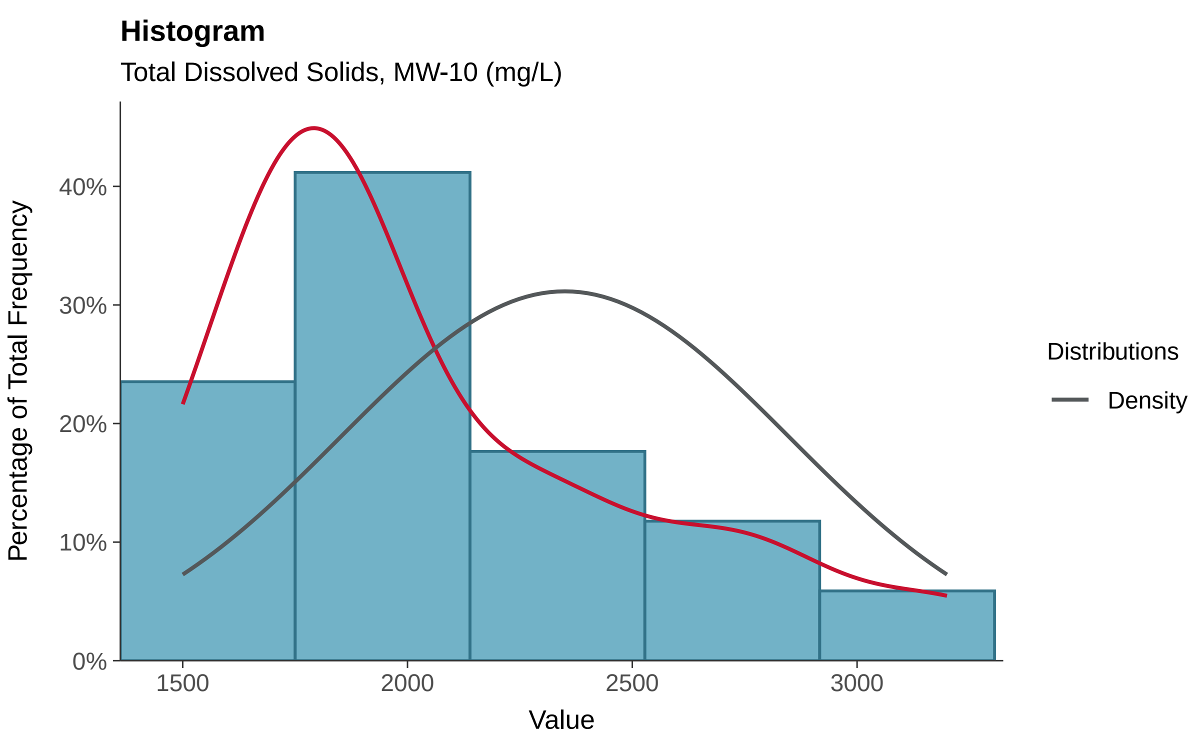

Trend Regression: Piecewise Linear-Linear
Sulfate (as SO4), MW-10 (mg/L)
Value
1500
1000
500
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
Sulfate (as SO4), MW-10 (mg/L)
Value
1500
1000
500
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Appendix III: Total Dissolved Solids, MW-10

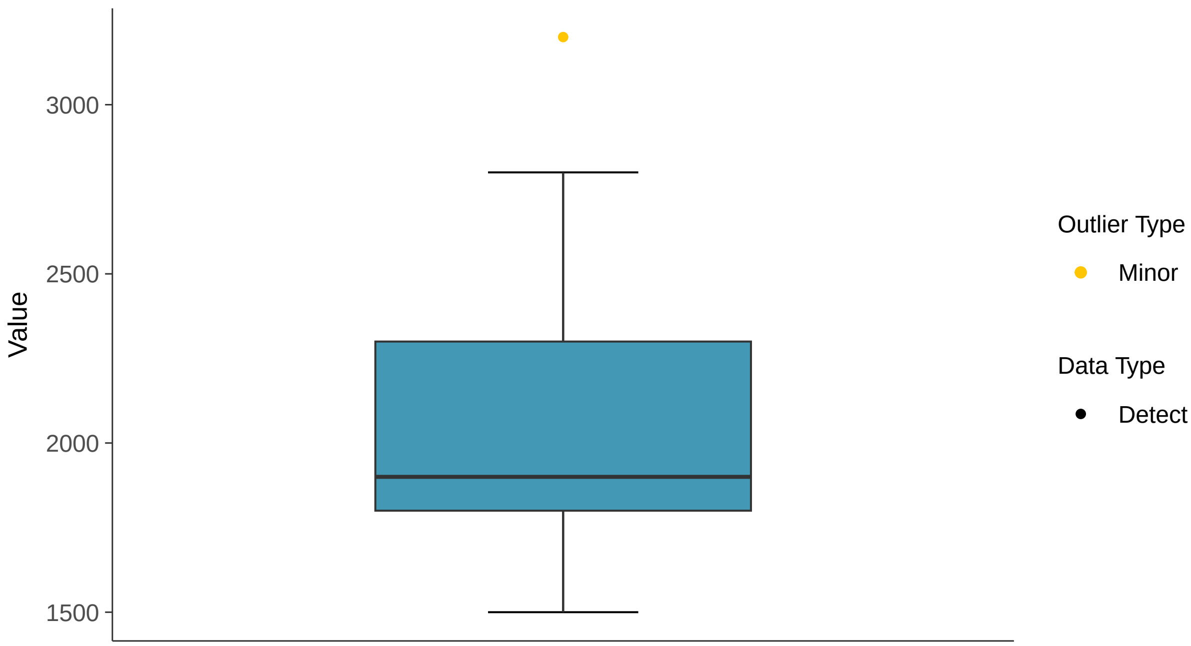
ID: 20_3_3_126





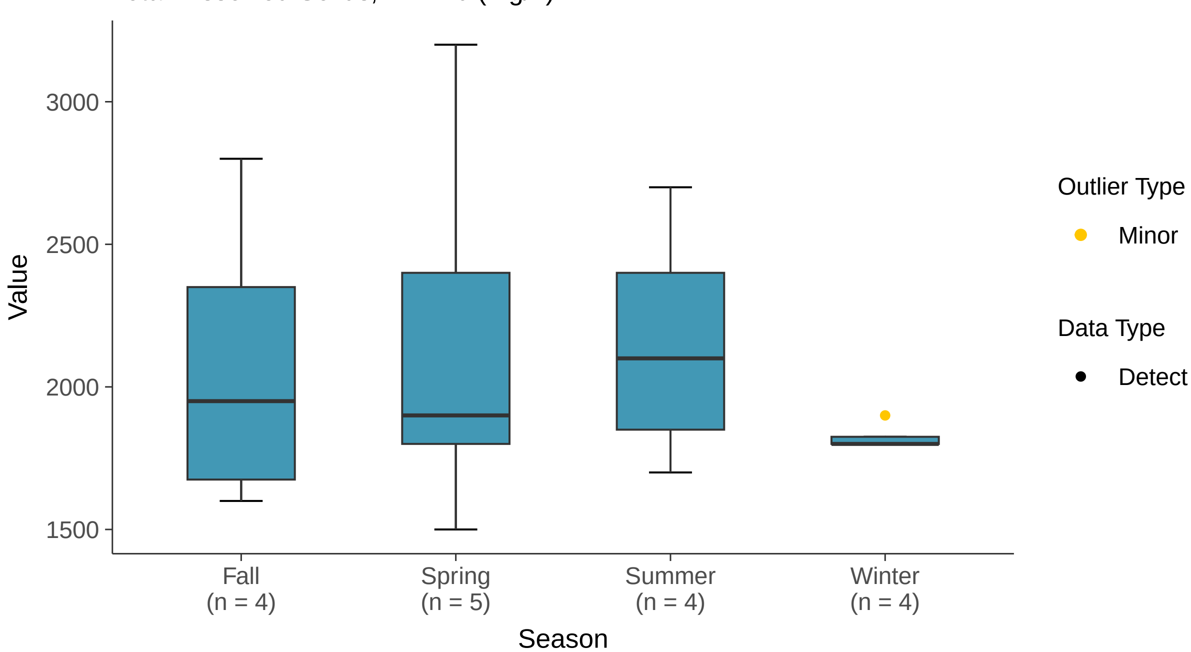
Boxplot

Total Dissolved Solids, MW-10 (mg/L)



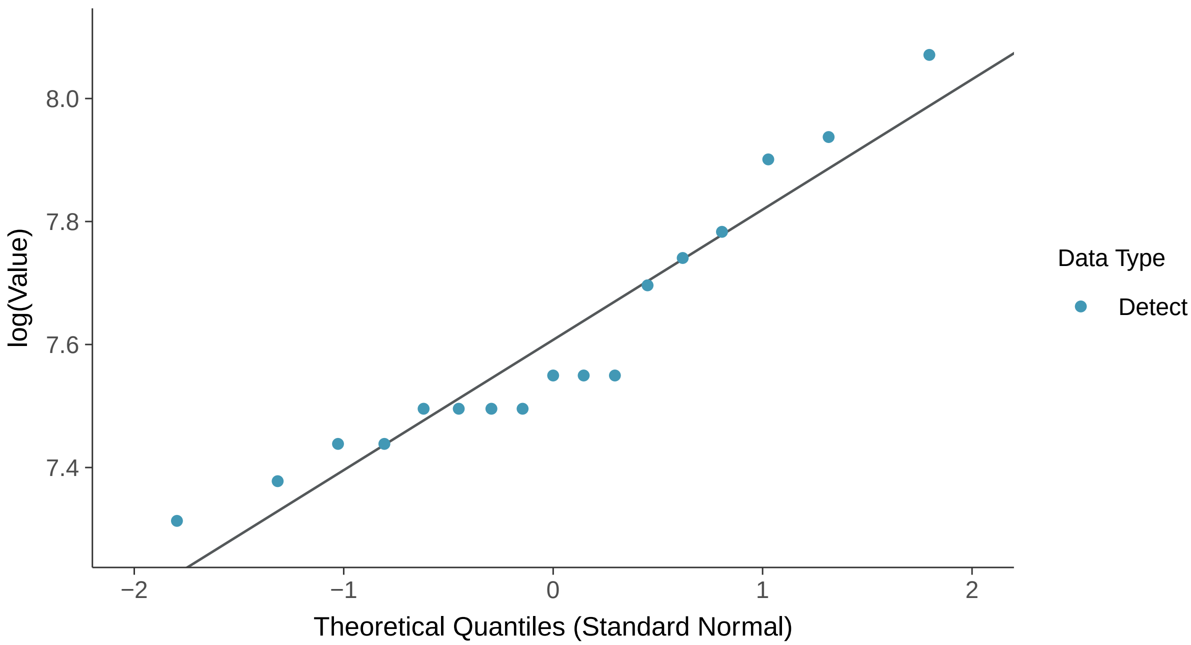
Boxplot by Season

Total Dissolved Solids, MW-10 (mg/L)



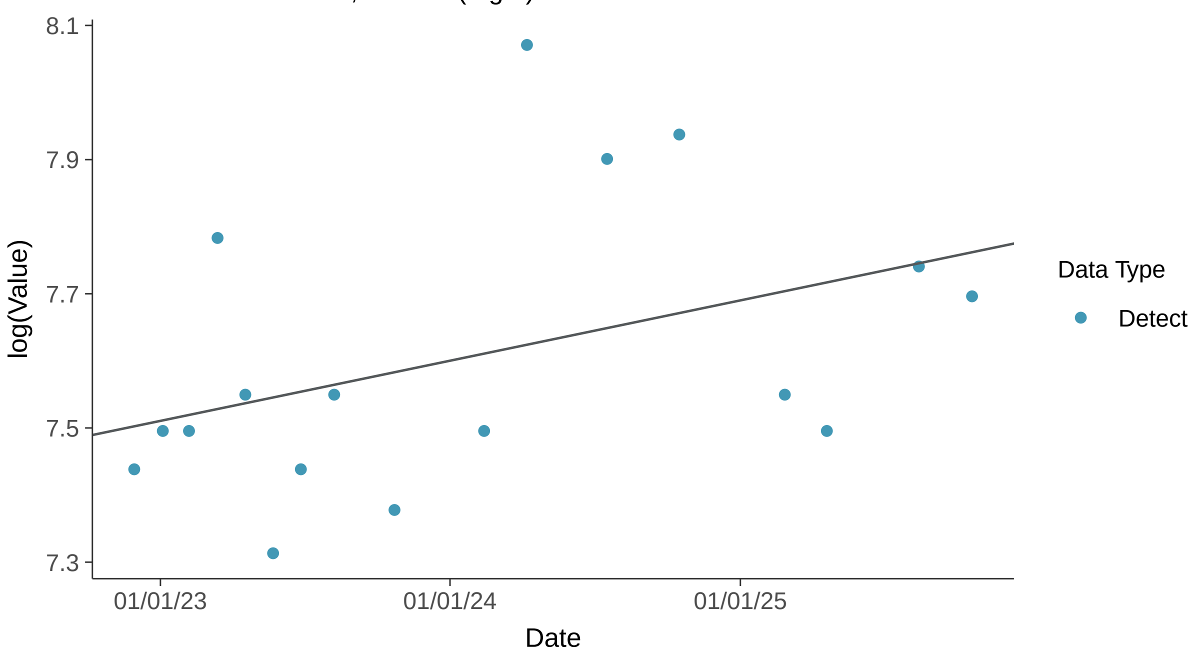
Lognormal Q-Q plot

Total Dissolved Solids, MW-10 (mg/L)



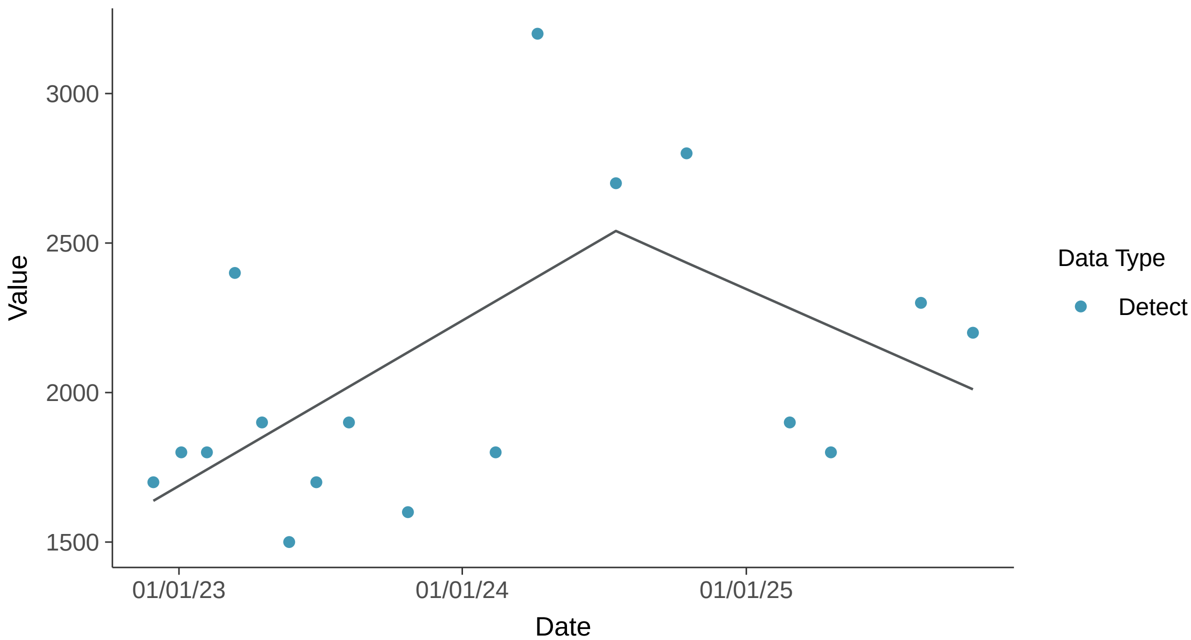
Trend Regression: Lognormal MLE

Total Dissolved Solids, MW-10 (mg/L)



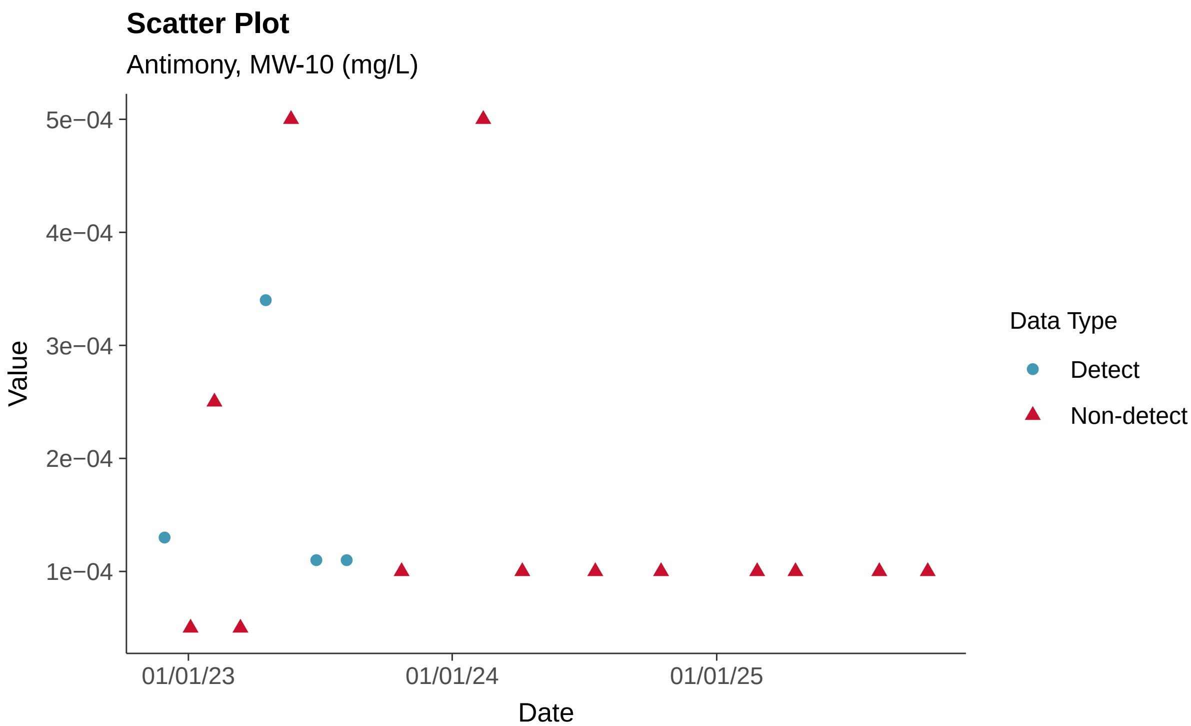
Trend Regression: Piecewise Linear-Linear

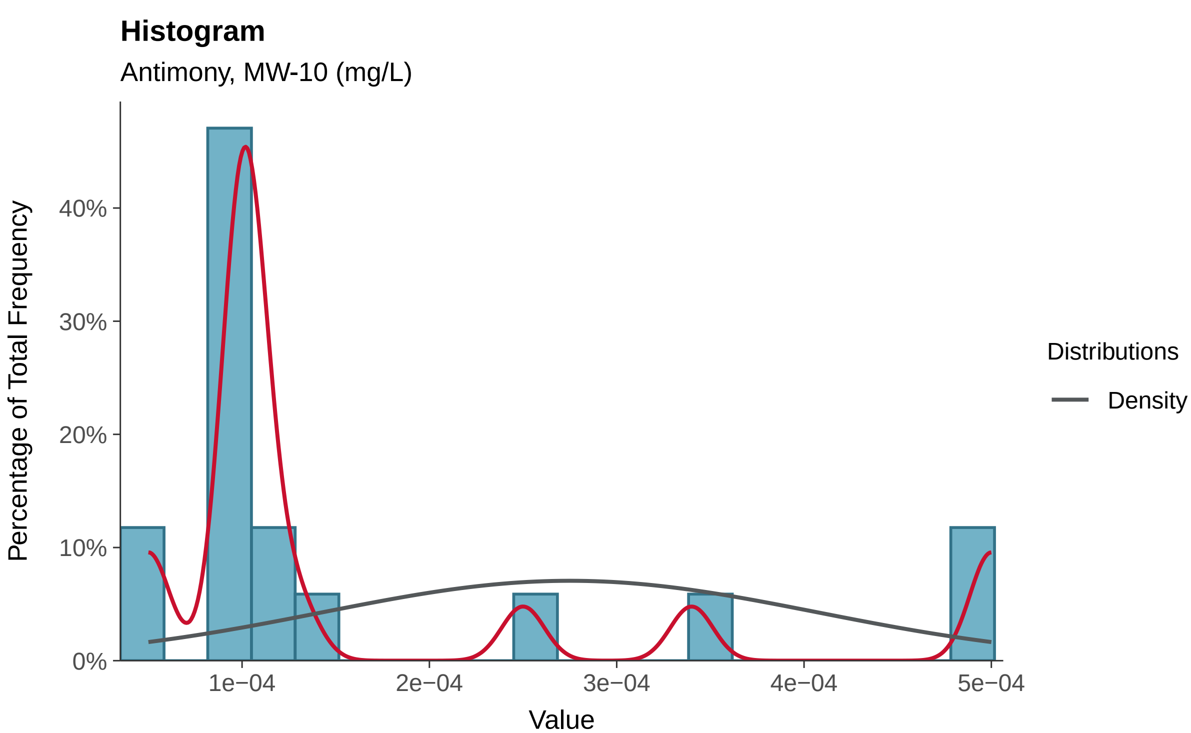
Total Dissolved Solids, MW-10 (mg/L)



Appendix IV: Antimony, MW-10

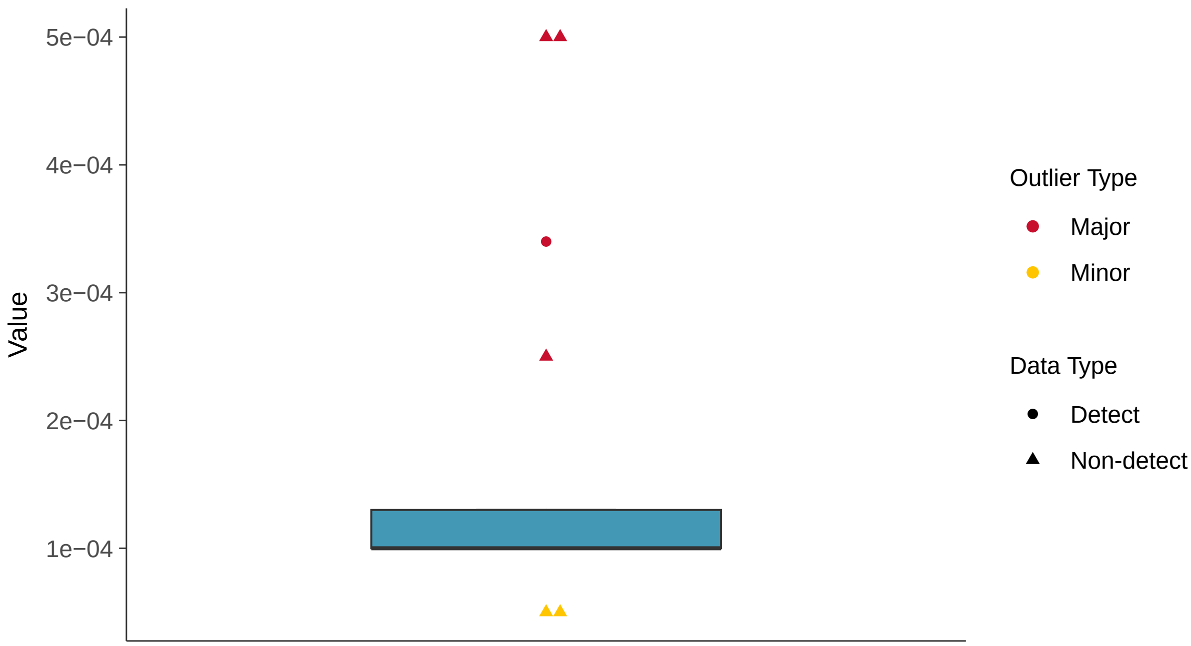
ID: 20_3_4_101





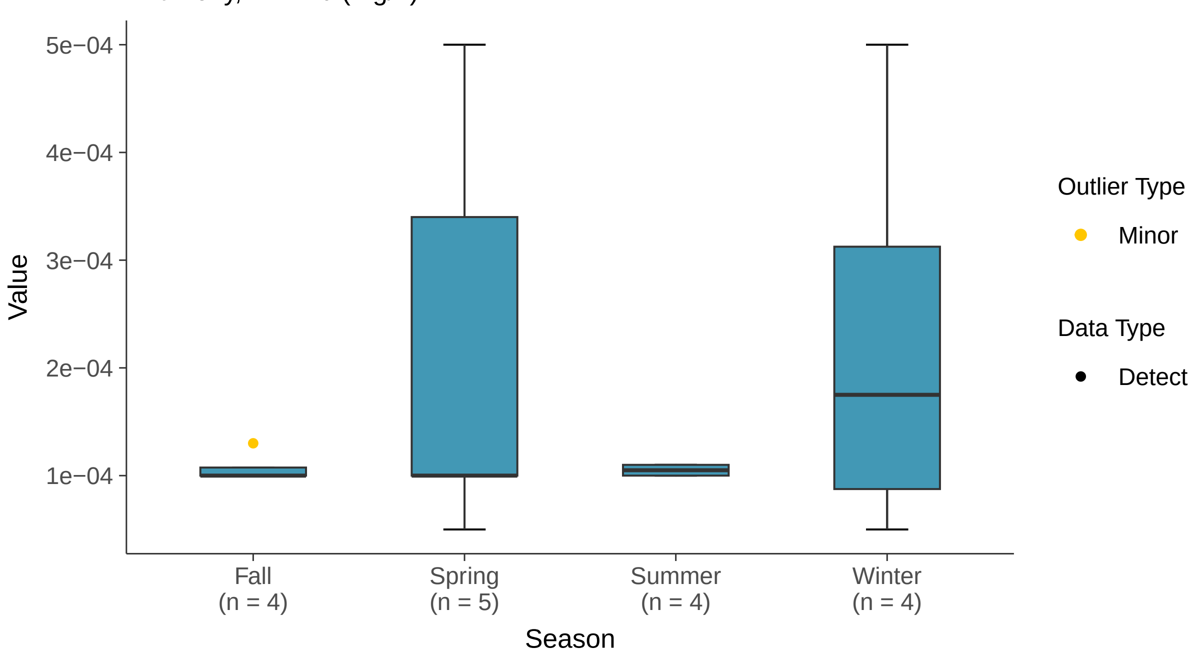
Boxplot

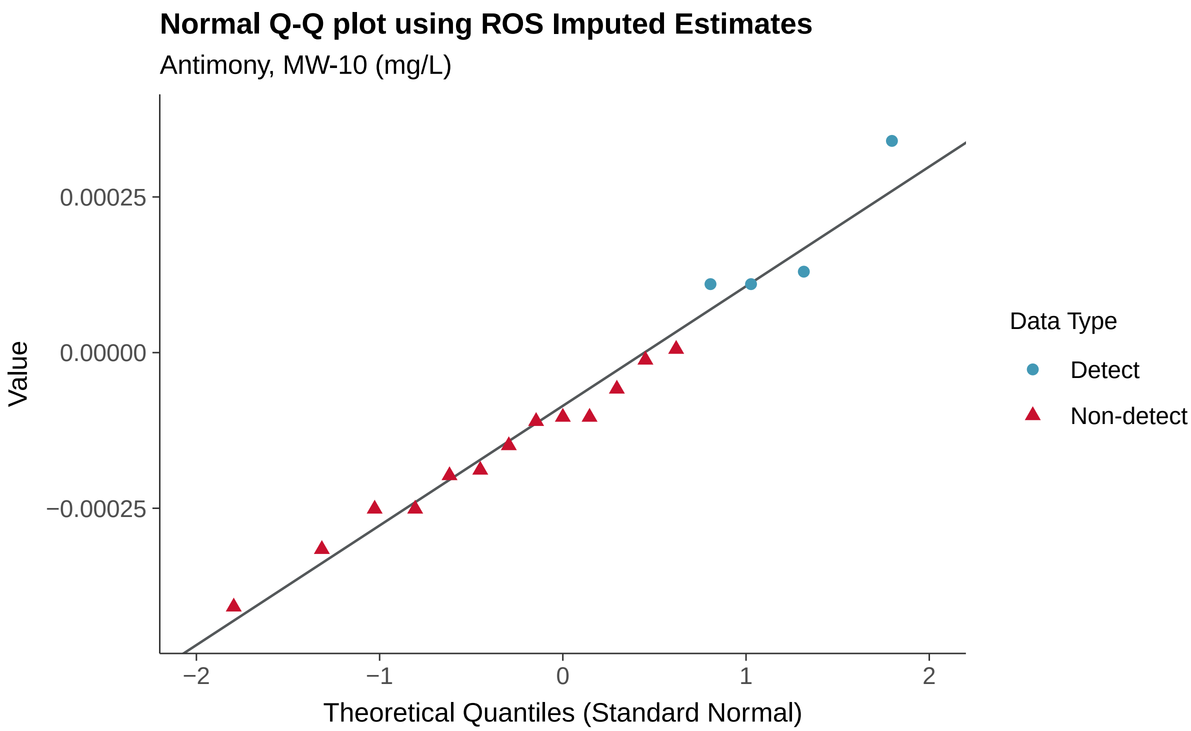
Antimony, MW-10 (mg/L)

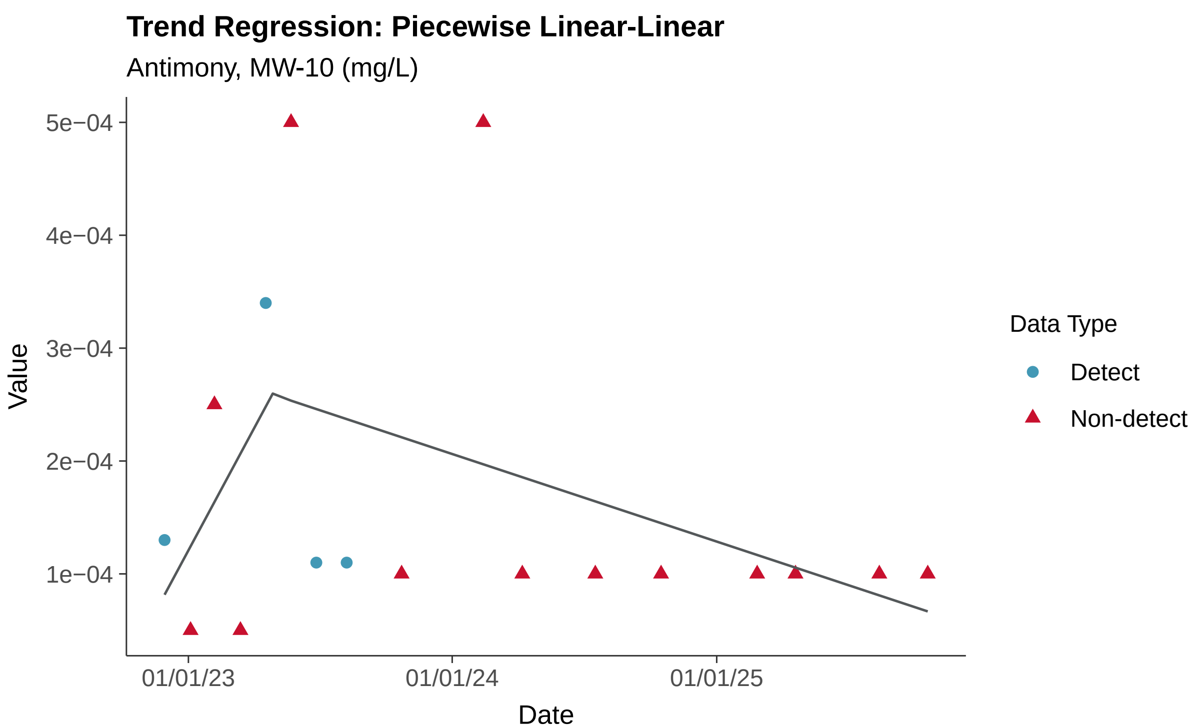


Boxplot by Season

Antimony, MW-10 (mg/L)

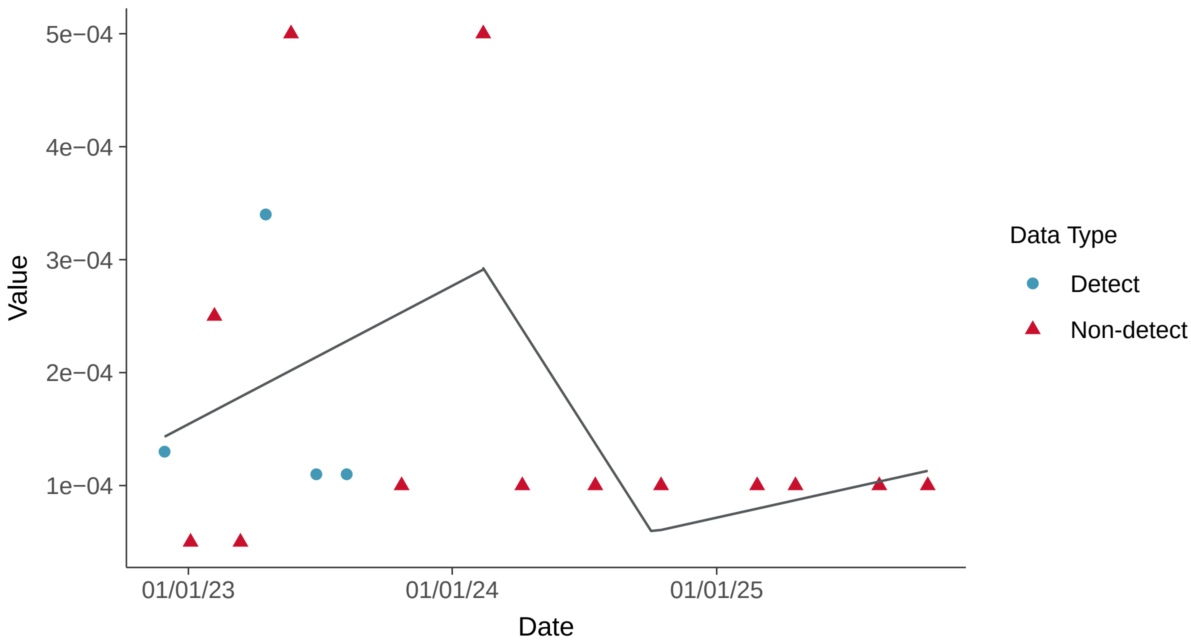



Normal Q-Q plot using ROS Imputed Estimates
Antimony, MW-10 (mg/L)
Value
0.00025
0.00000
−0.00025
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Antimony, MW-10 (mg/L)
Value
5e−04
4e−04
3e−04
2e−04
1e−04
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

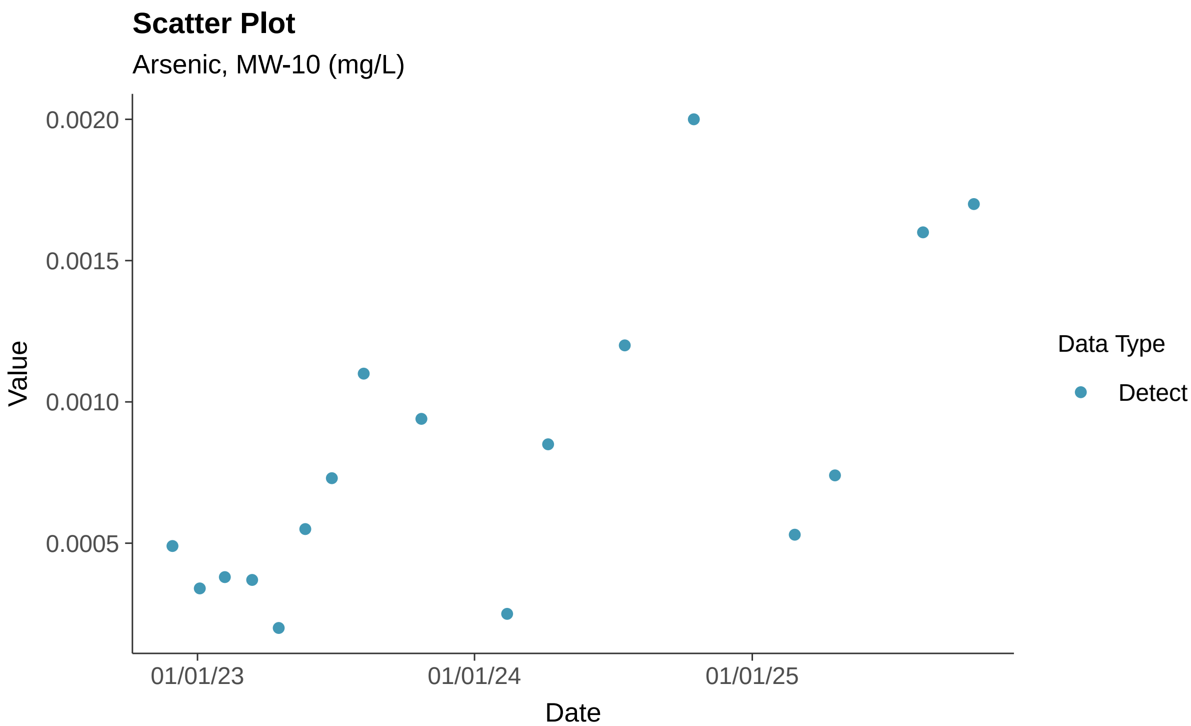
Trend Regression: Piecewise Linear-Linear-Linear

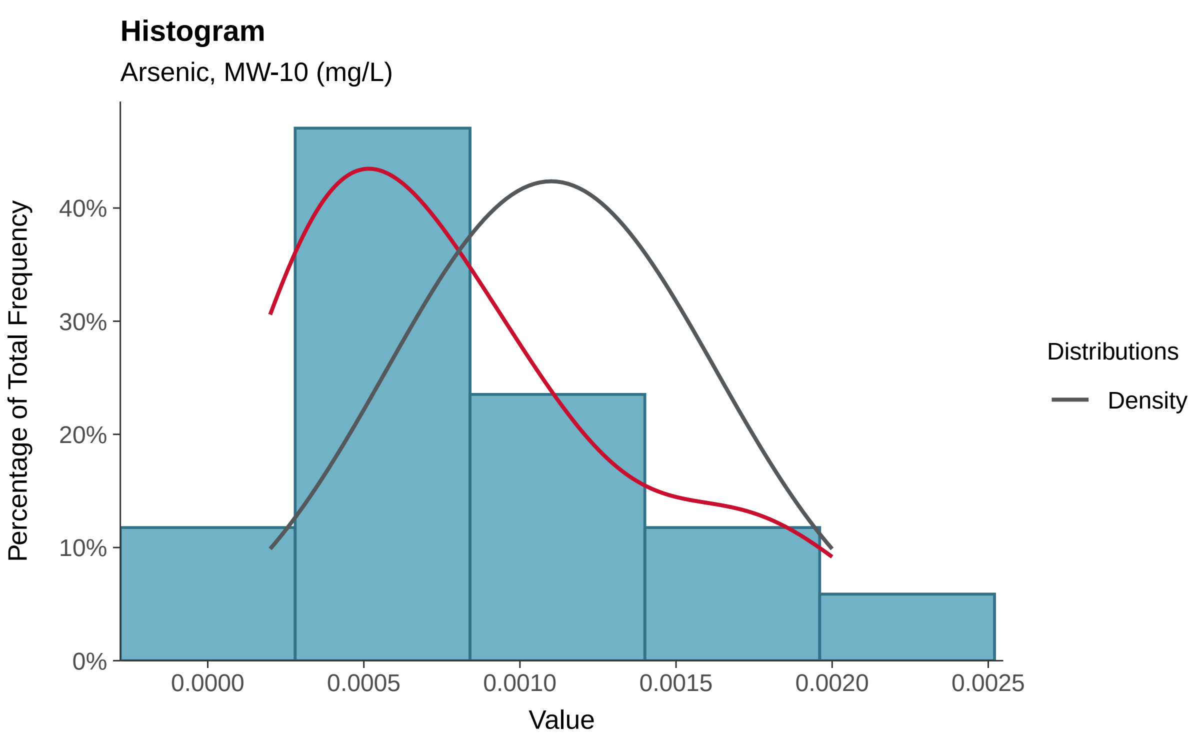
Antimony, MW-10 (mg/L)



Appendix IV: Arsenic, MW-10

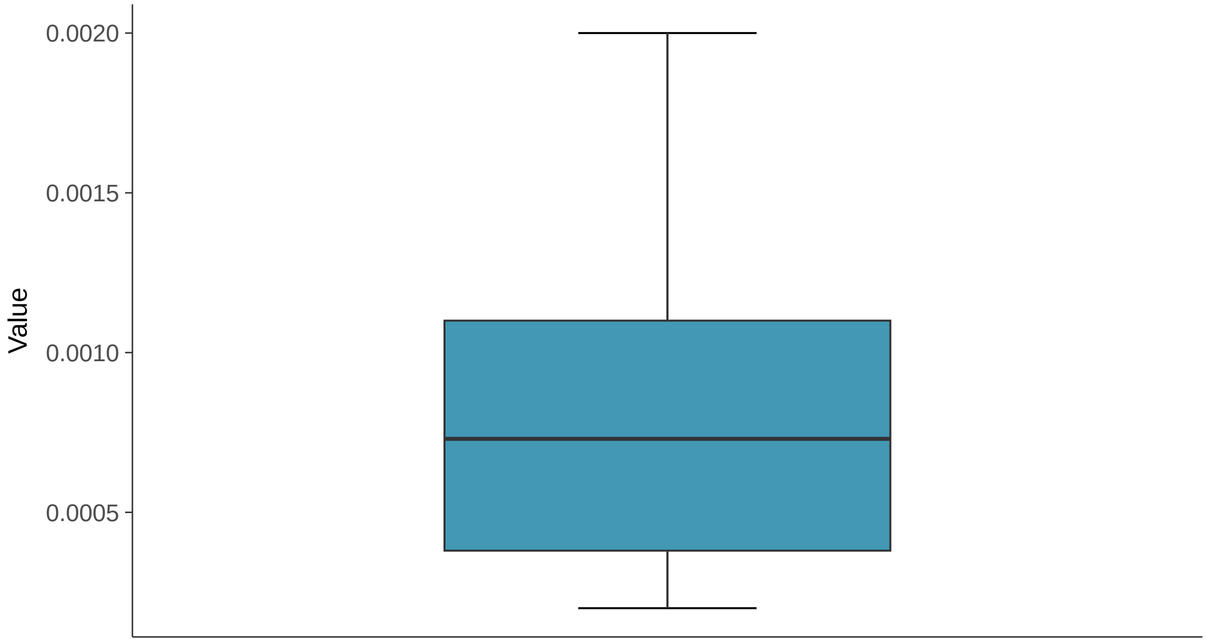
ID: 20_3_4_102





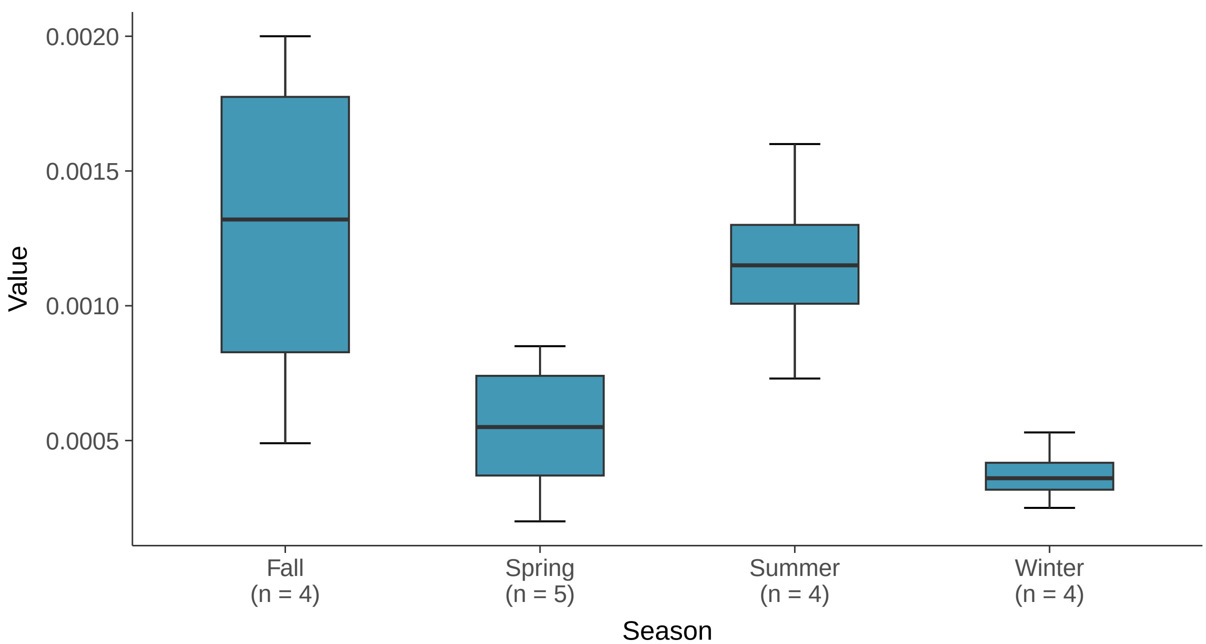
Boxplot

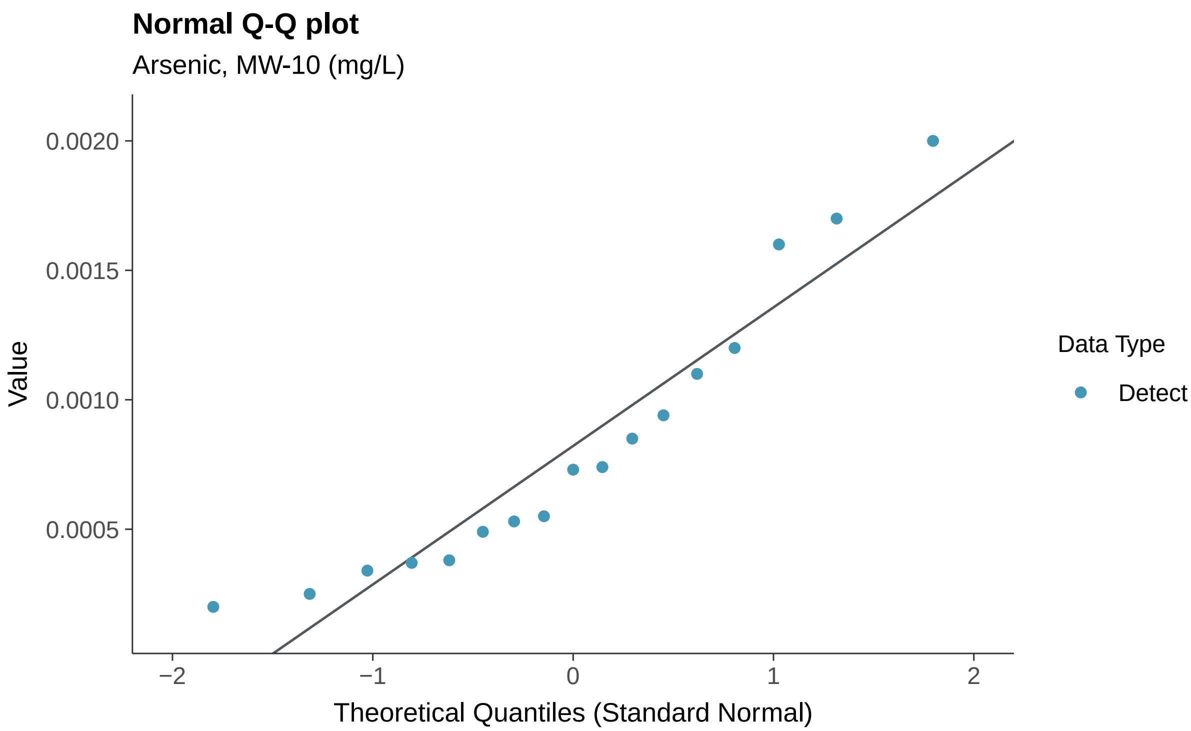
Arsenic, MW-10 (mg/L)

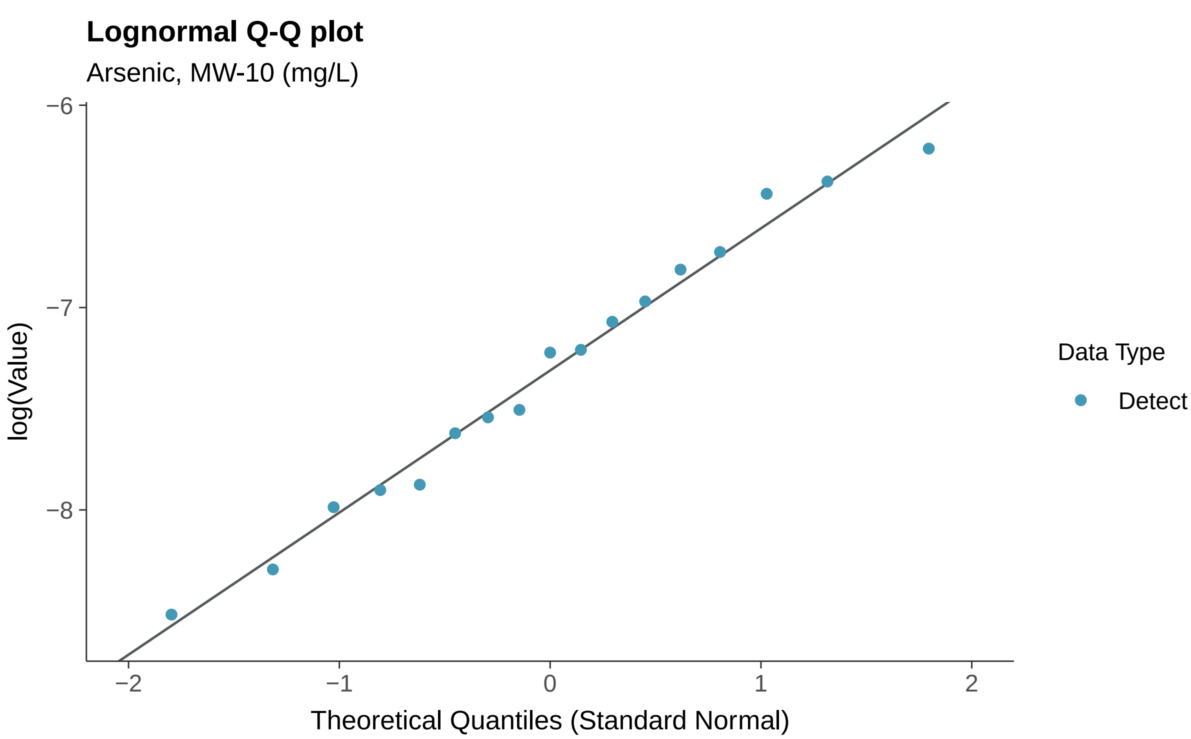


Boxplot by Season

Arsenic, MW-10 (mg/L)

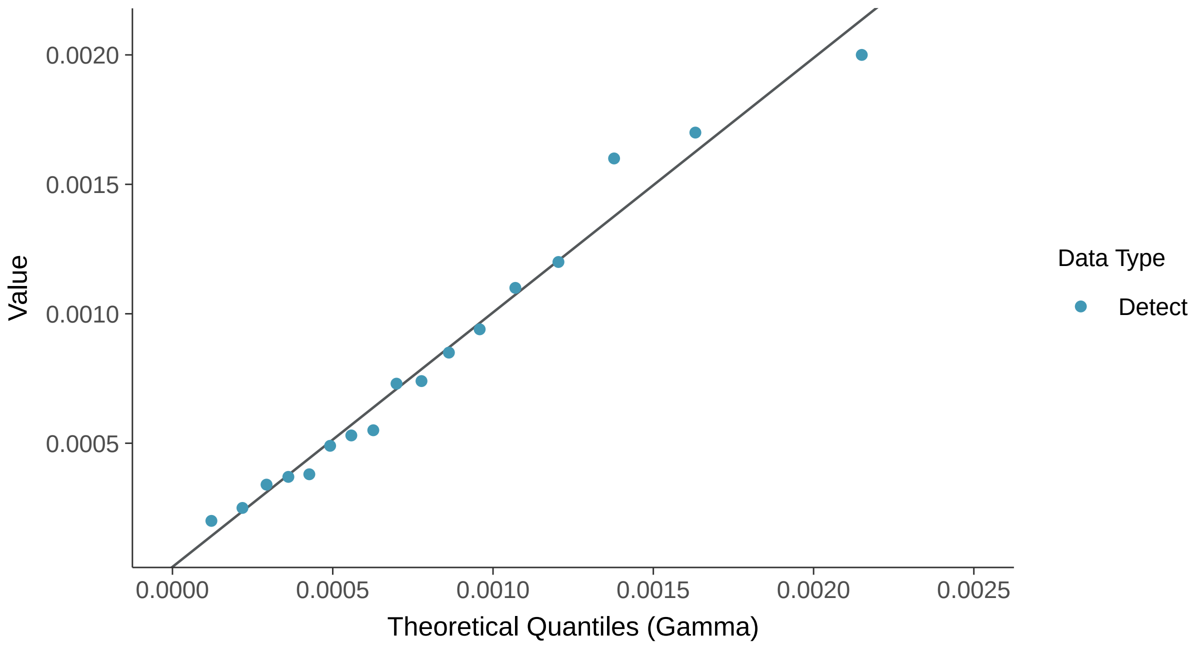



Normal Q-Q plot
Arsenic, MW-10 (mg/L)
Value
0.0020
0.0015
0.0010
0.0005
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Arsenic, MW-10 (mg/L)
log(Value)
−6
−7
−8
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

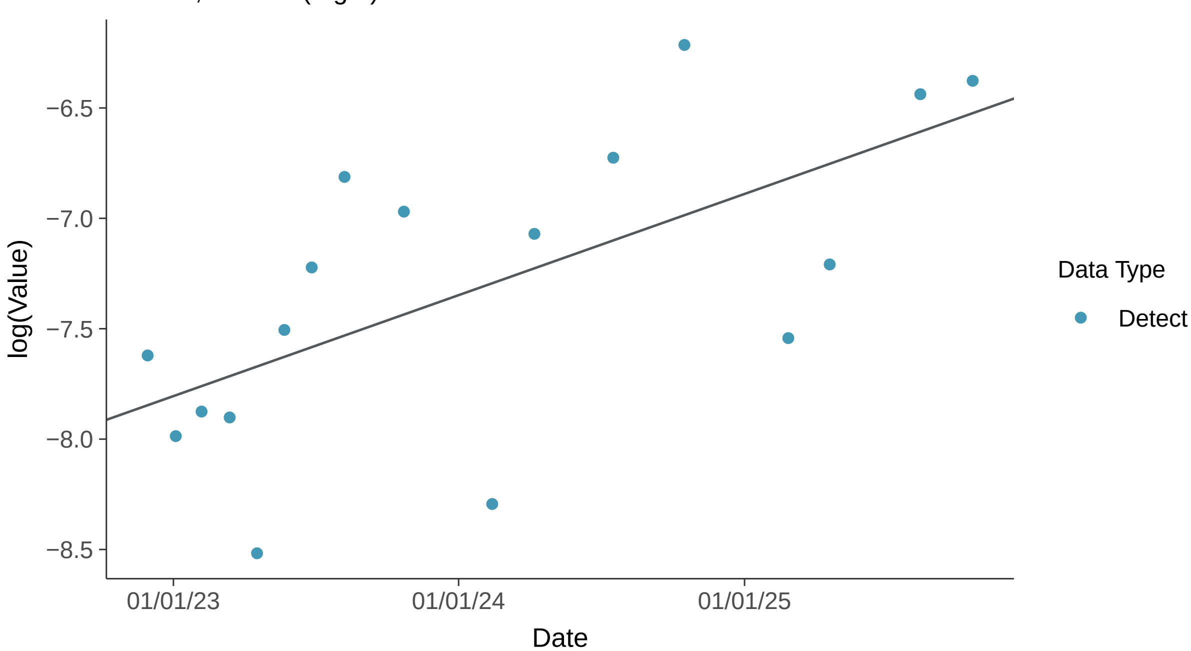
Gamma Q-Q plot

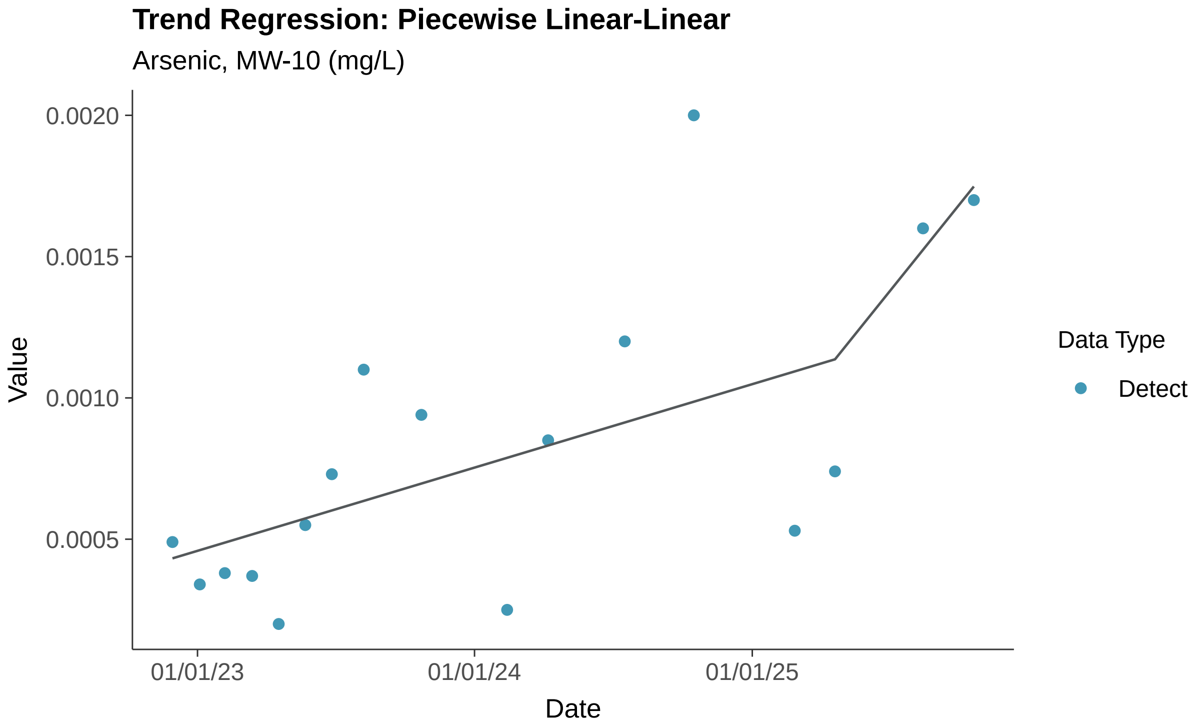
Arsenic, MW-10 (mg/L)

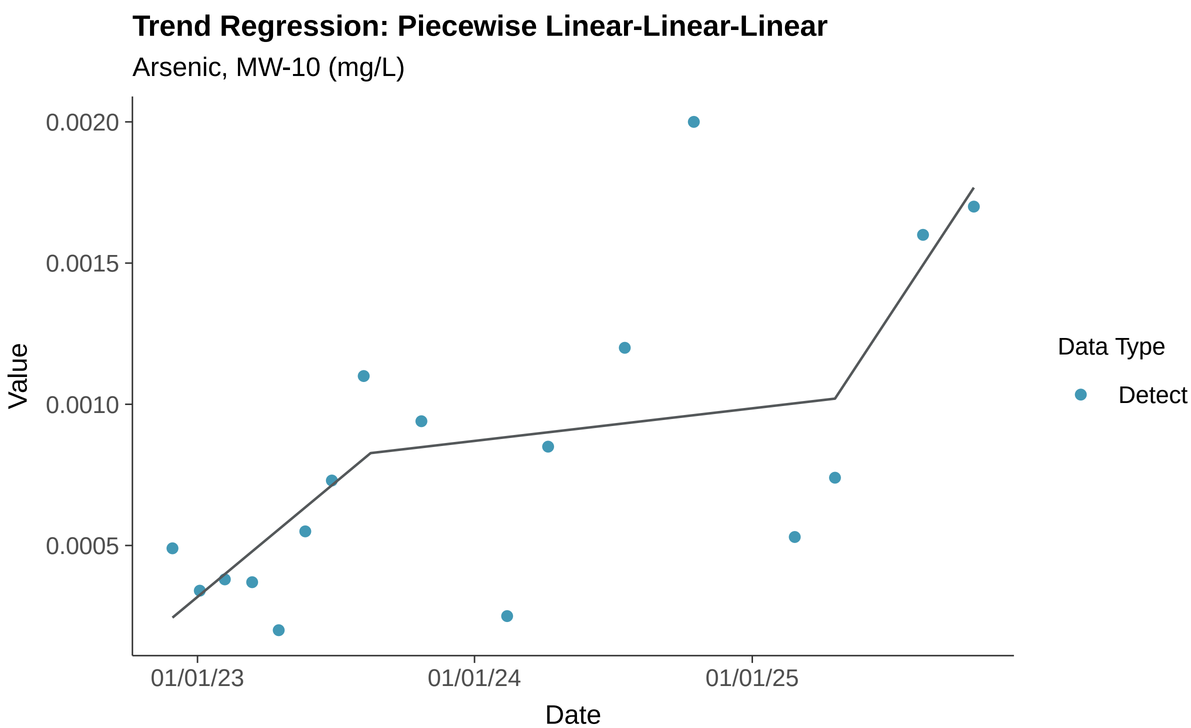


Trend Regression: Lognormal MLE

Arsenic, MW-10 (mg/L)

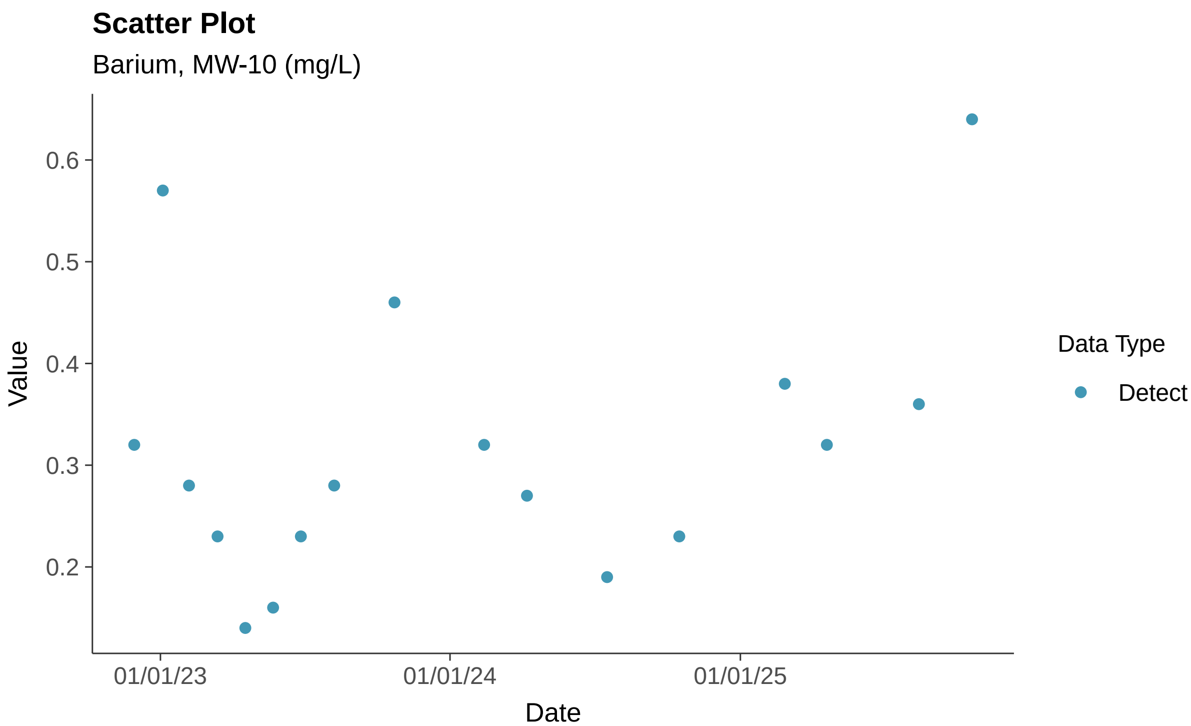


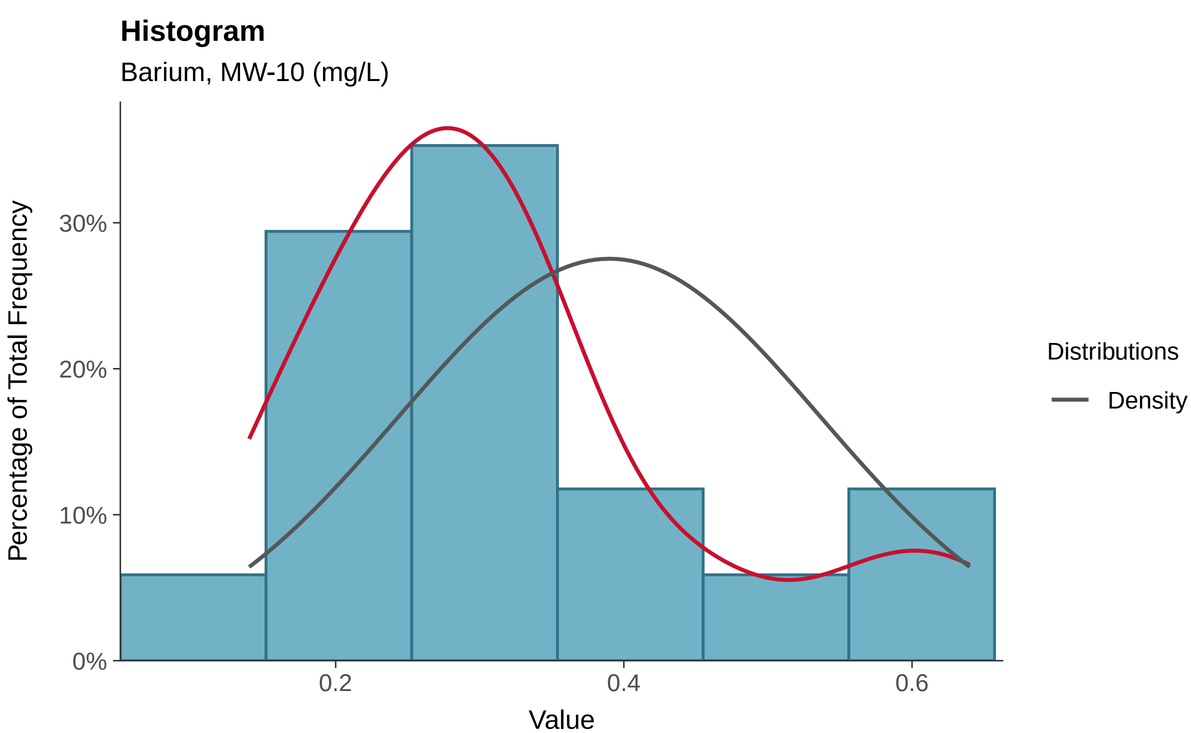

Trend Regression: Piecewise Linear-Linear
Arsenic, MW-10 (mg/L)
0.0020
0.0015
0.0010
0.0005
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

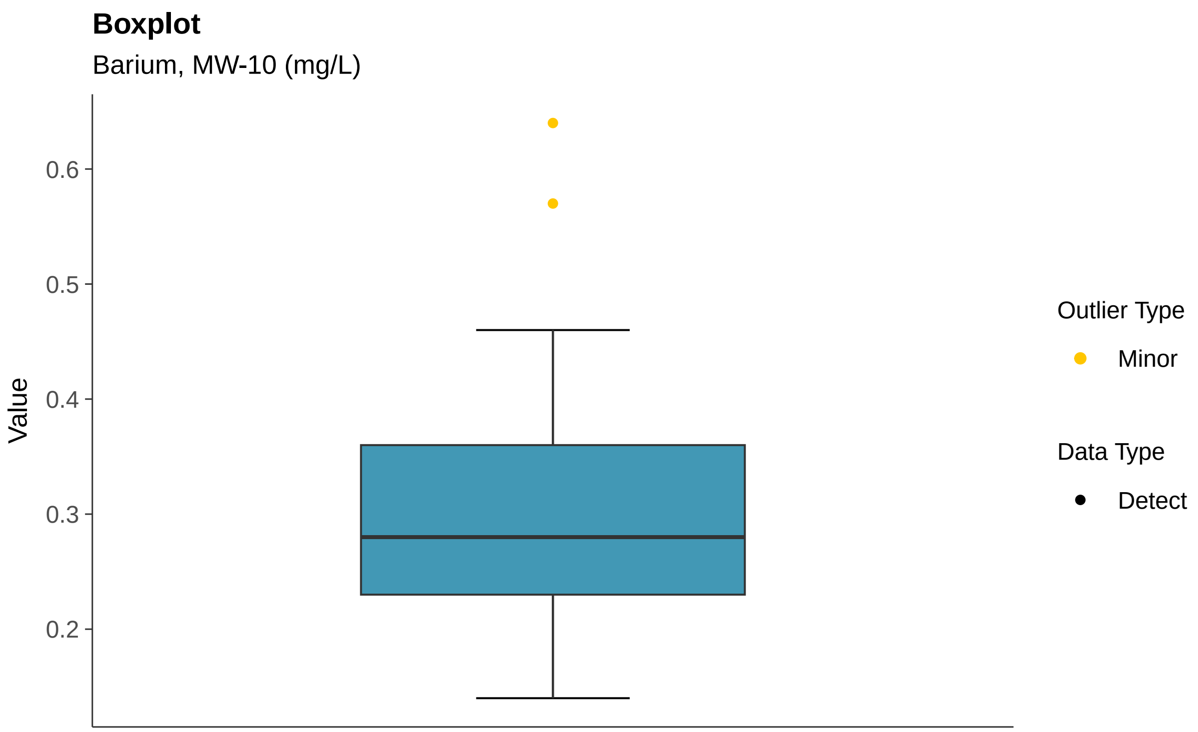

Trend Regression: Piecewise Linear-Linear-Linear
Arsenic, MW-10 (mg/L)
0.0020
0.0015
0.0010
0.0005
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

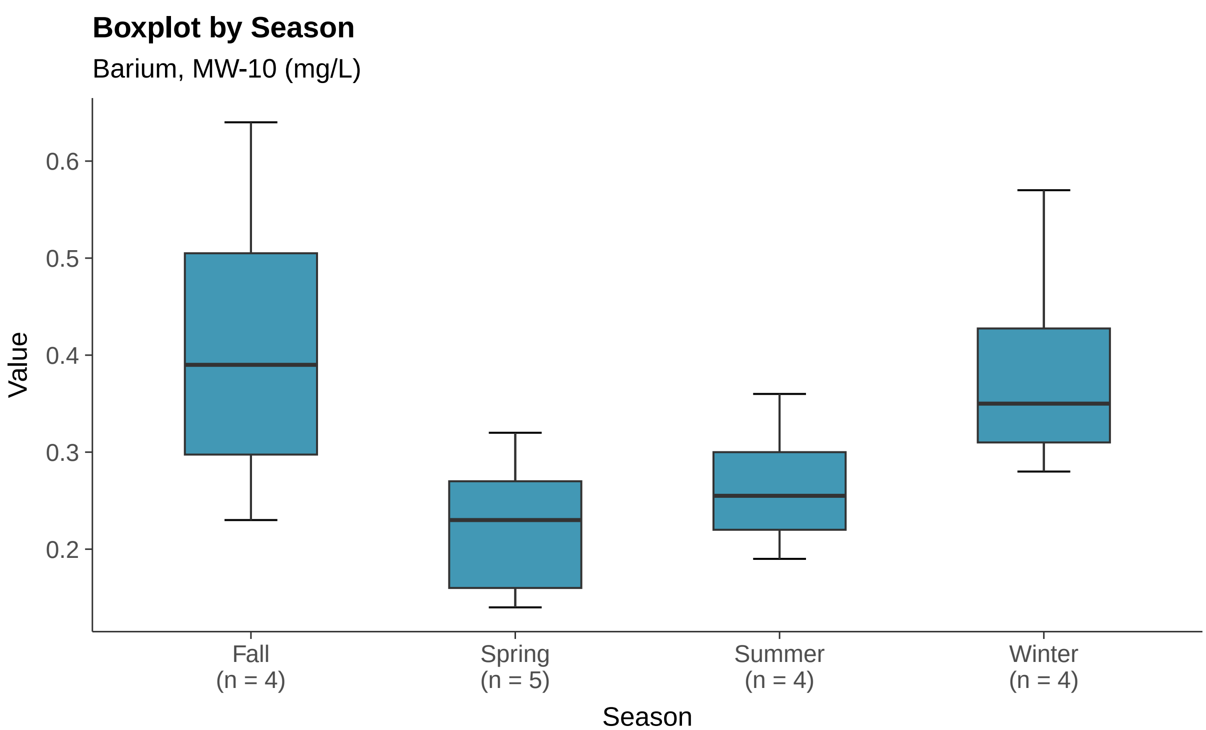
Appendix IV: Barium, MW-10

ID: 20_3_4_103



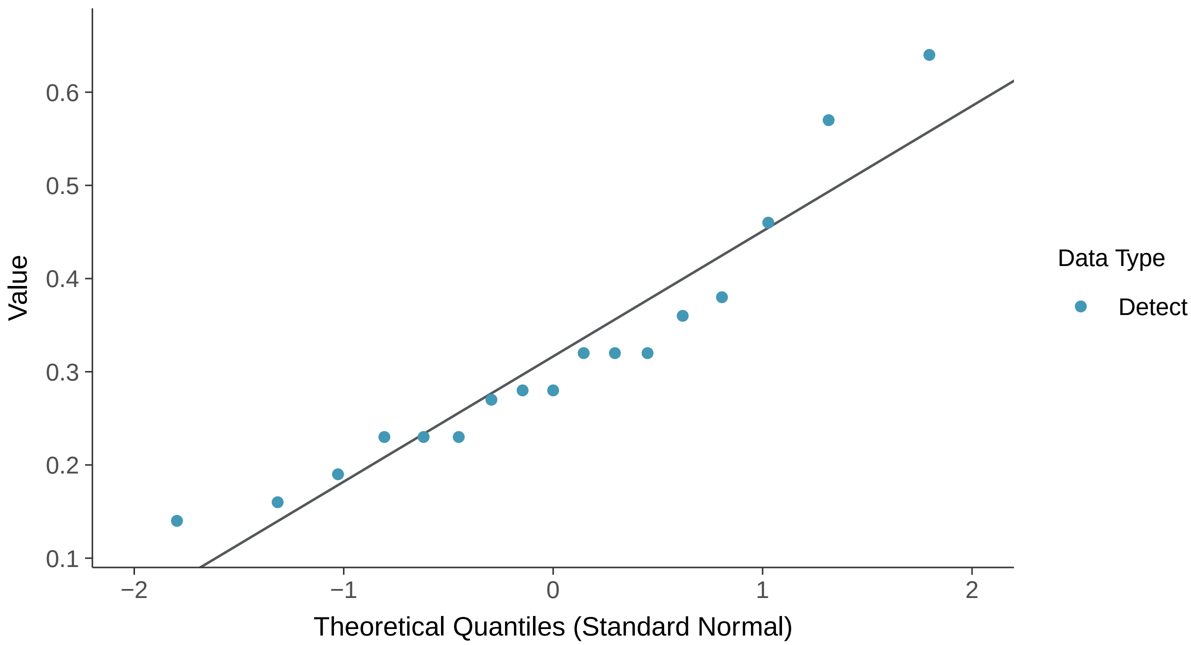



Boxplot
Barium, MW-10 (mg/L)
Value
0.6
0.5
0.4
0.3
0.2
Outlier Type
Minor
Data Type
Detect


Boxplot by Season
Barium, MW-10 (mg/L)
Value
0.6
0.5
0.4
0.3
0.2
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season

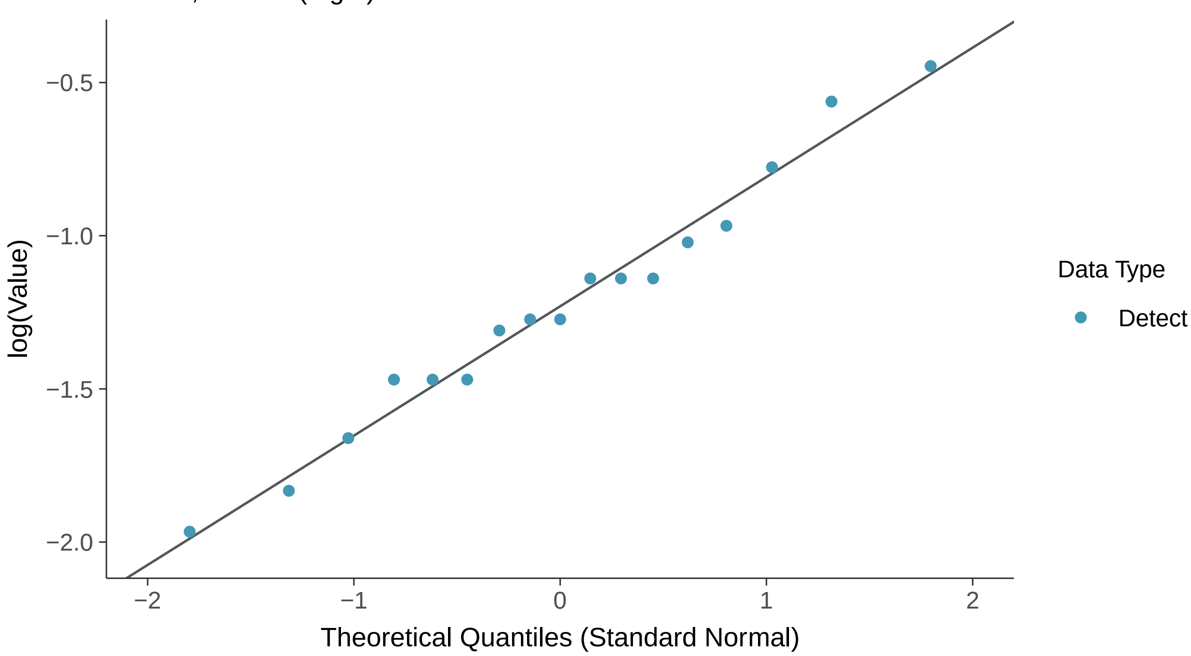
Normal Q-Q plot

Barium, MW-10 (mg/L)



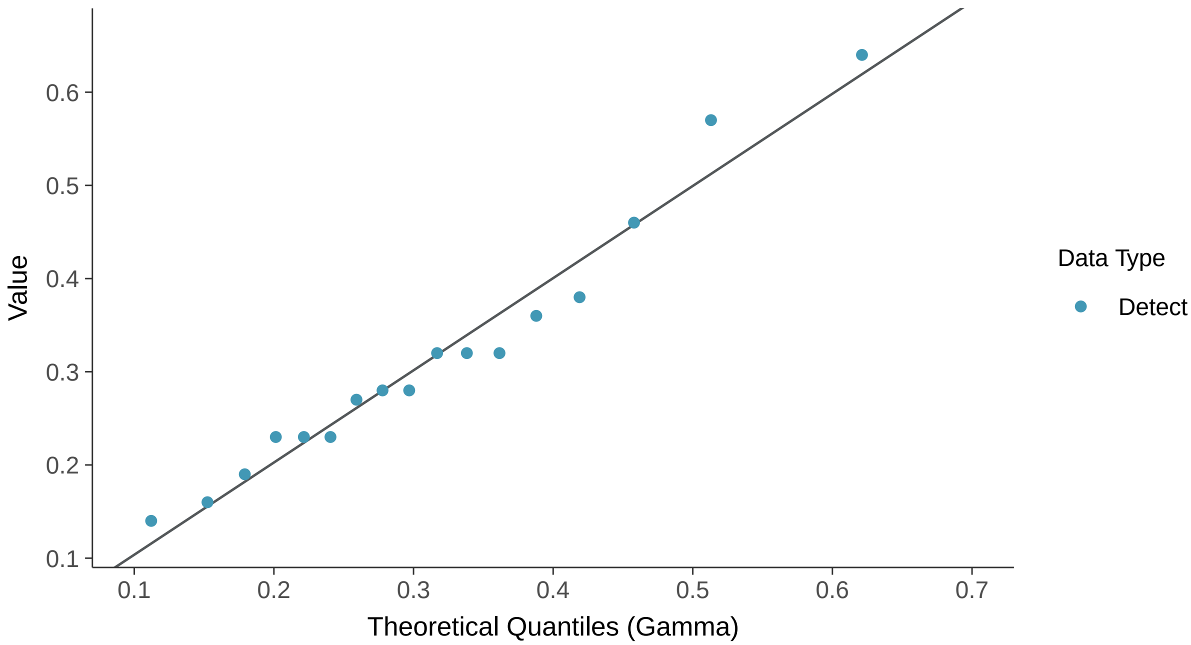
Lognormal Q-Q plot

Barium, MW-10 (mg/L)



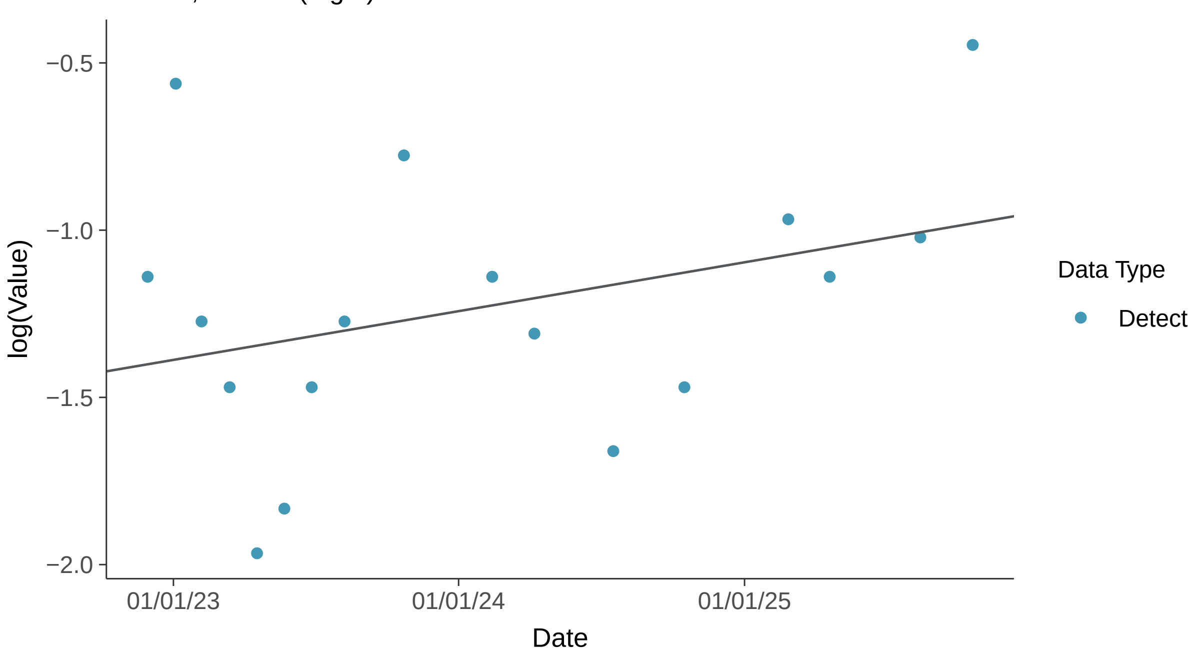
Gamma Q-Q plot

Barium, MW-10 (mg/L)



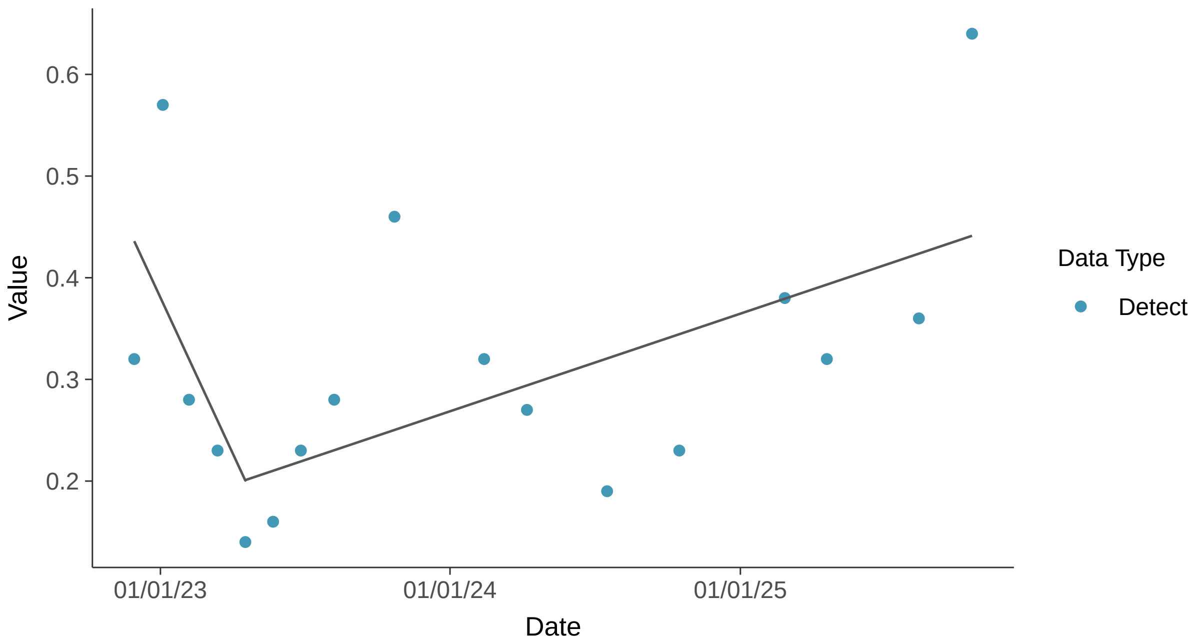
Trend Regression: Lognormal MLE

Barium, MW-10 (mg/L)



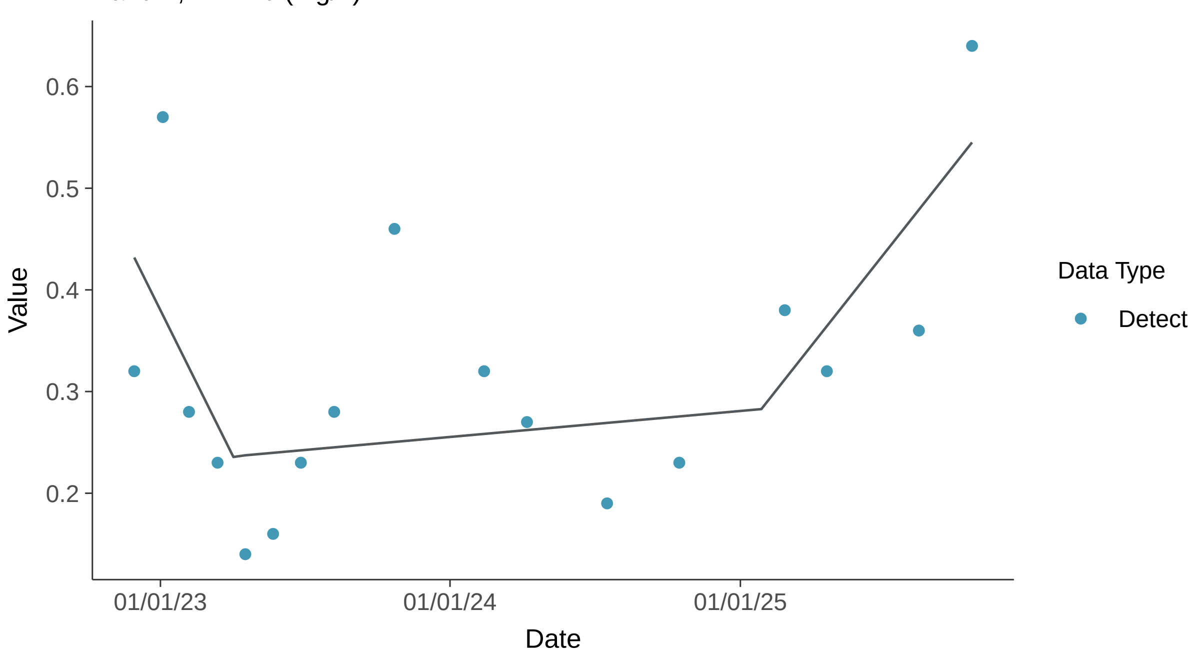
Trend Regression: Piecewise Linear-Linear

Barium, MW-10 (mg/L)



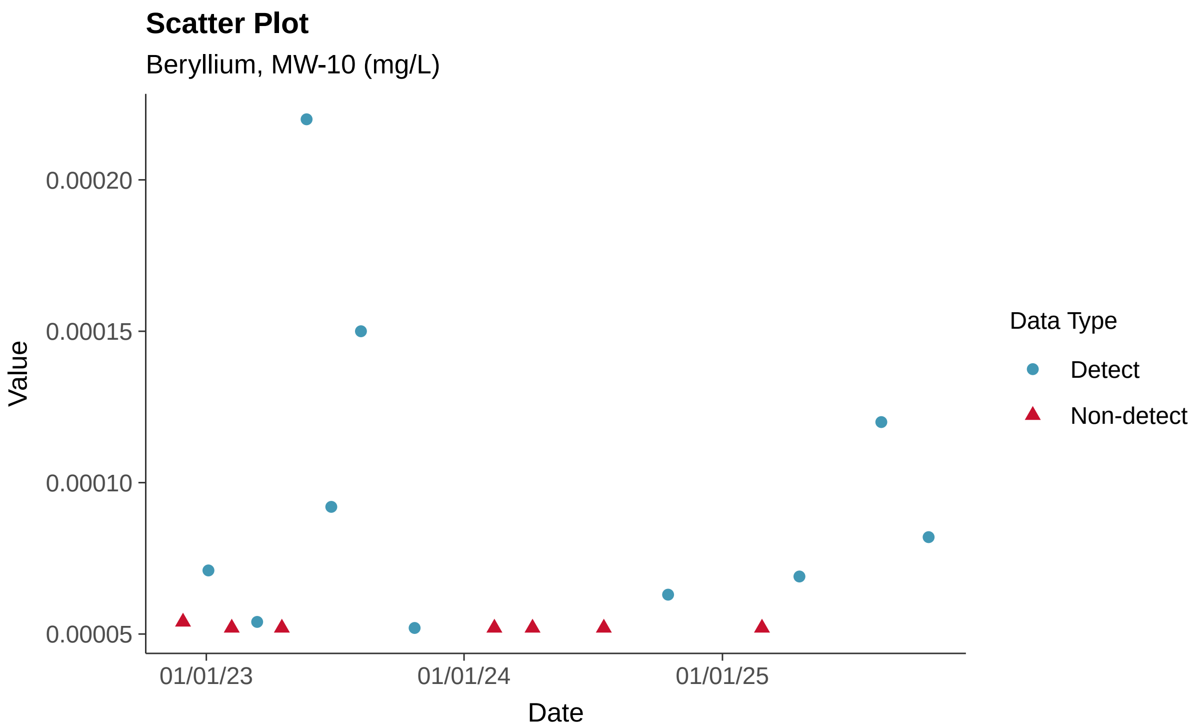
Trend Regression: Piecewise Linear-Linear-Linear

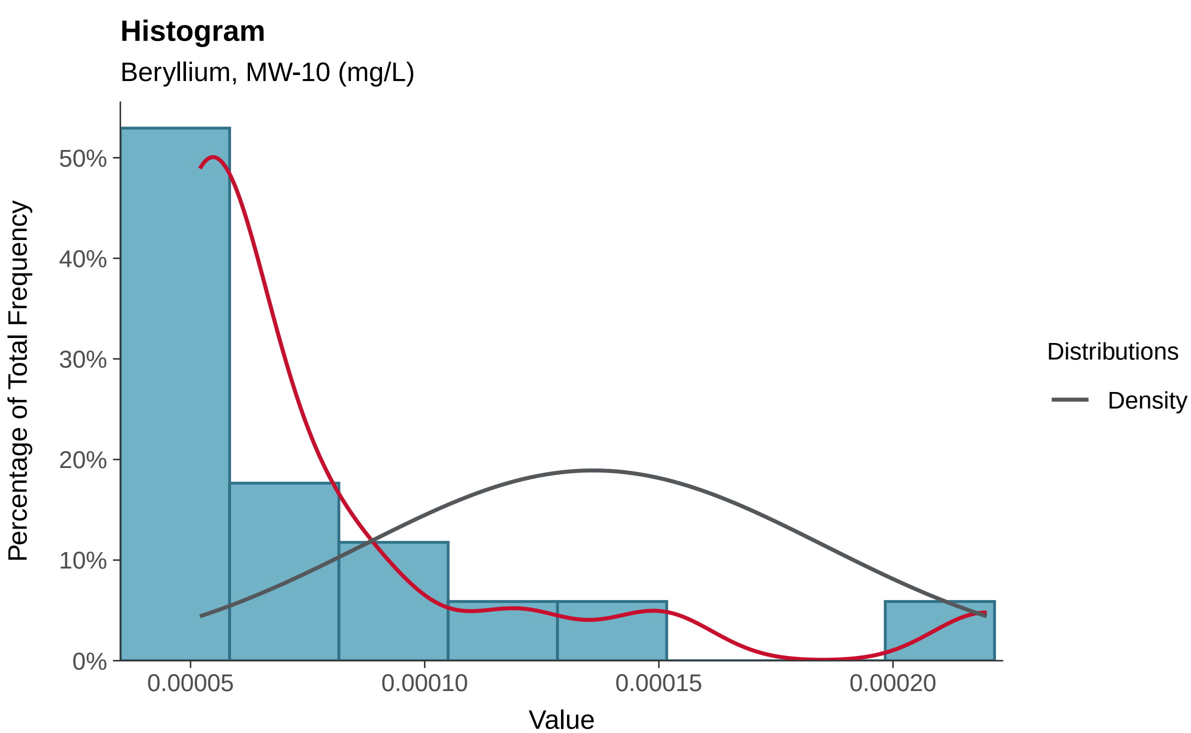
Barium, MW-10 (mg/L)



Appendix IV: Beryllium, MW-10

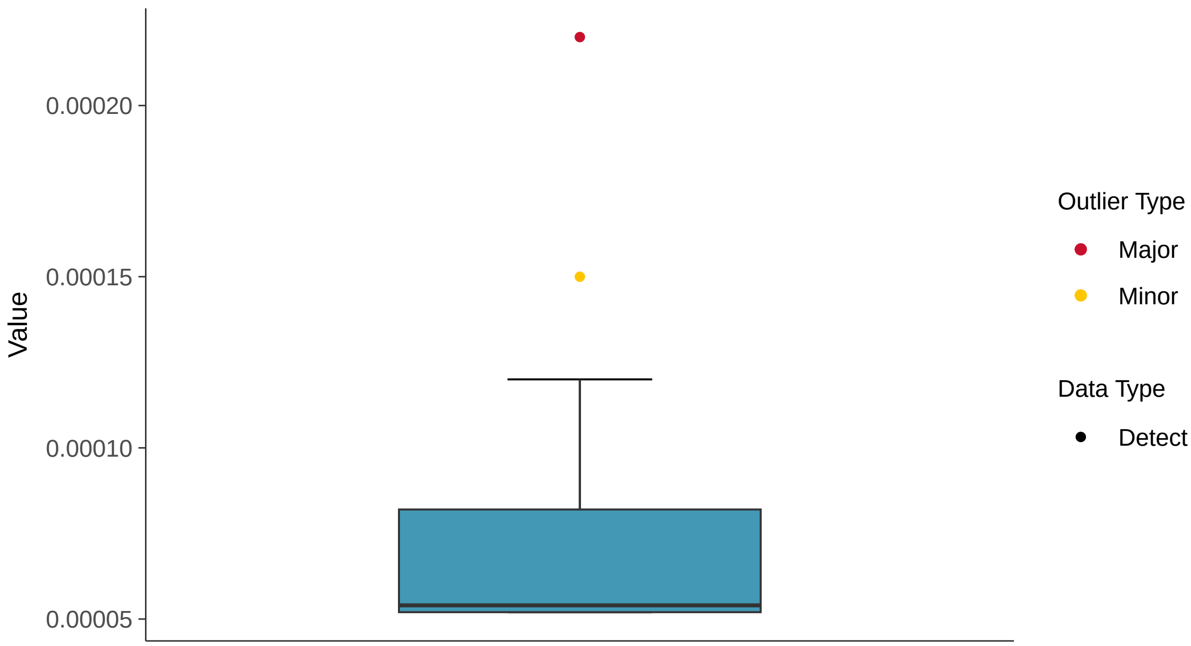
ID: 20_3_4_104





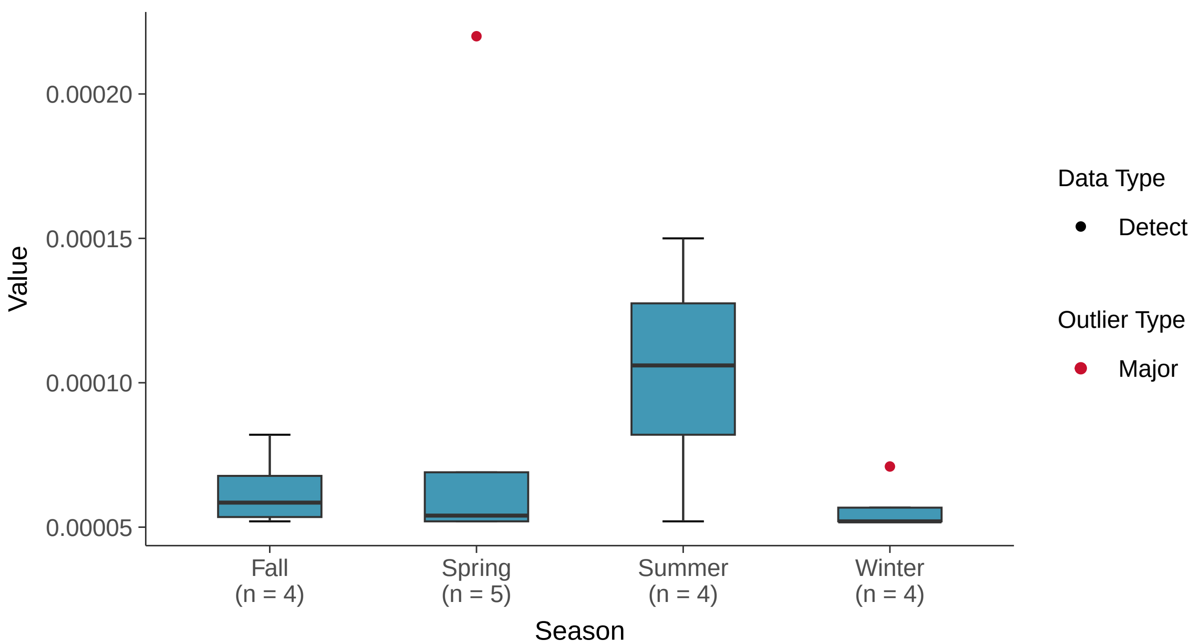
Boxplot

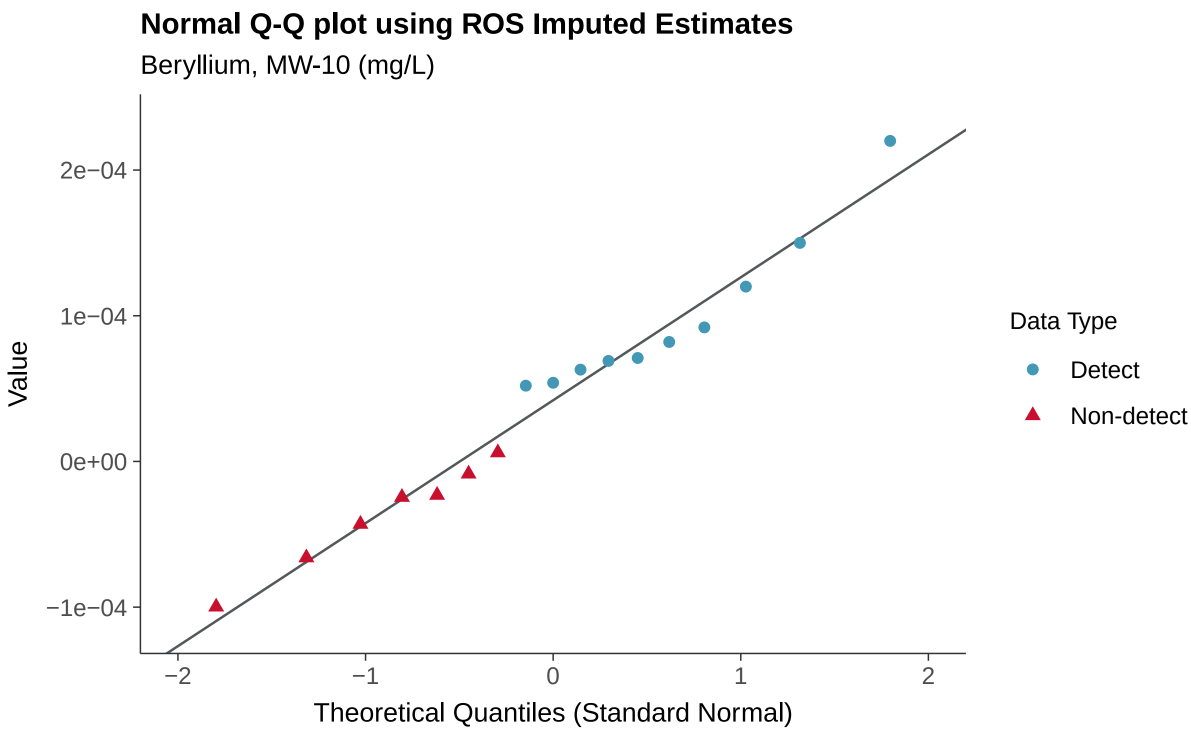
Beryllium, MW-10 (mg/L)

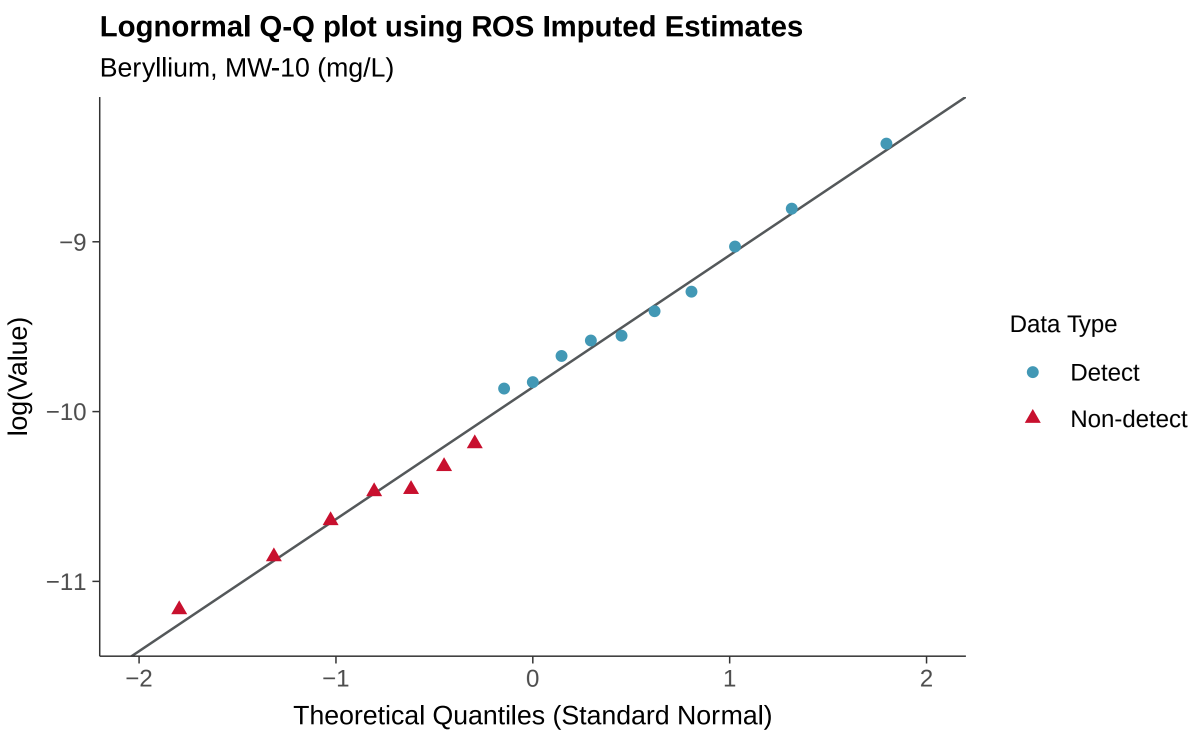


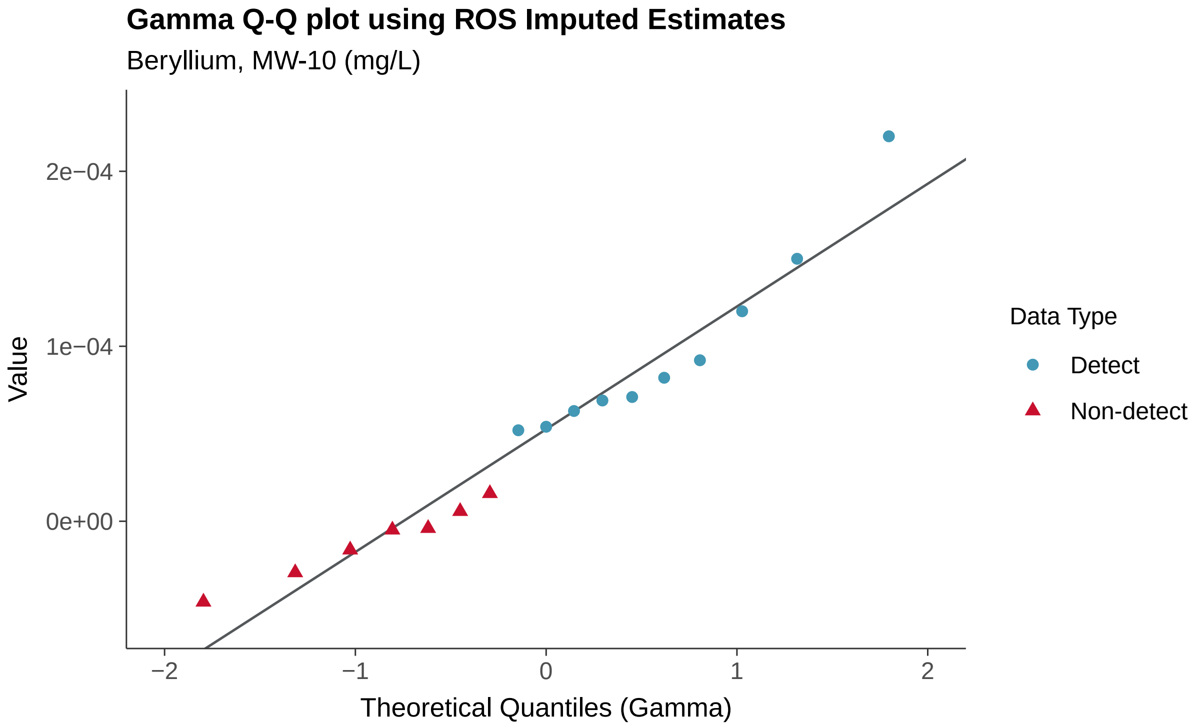
Boxplot by Season

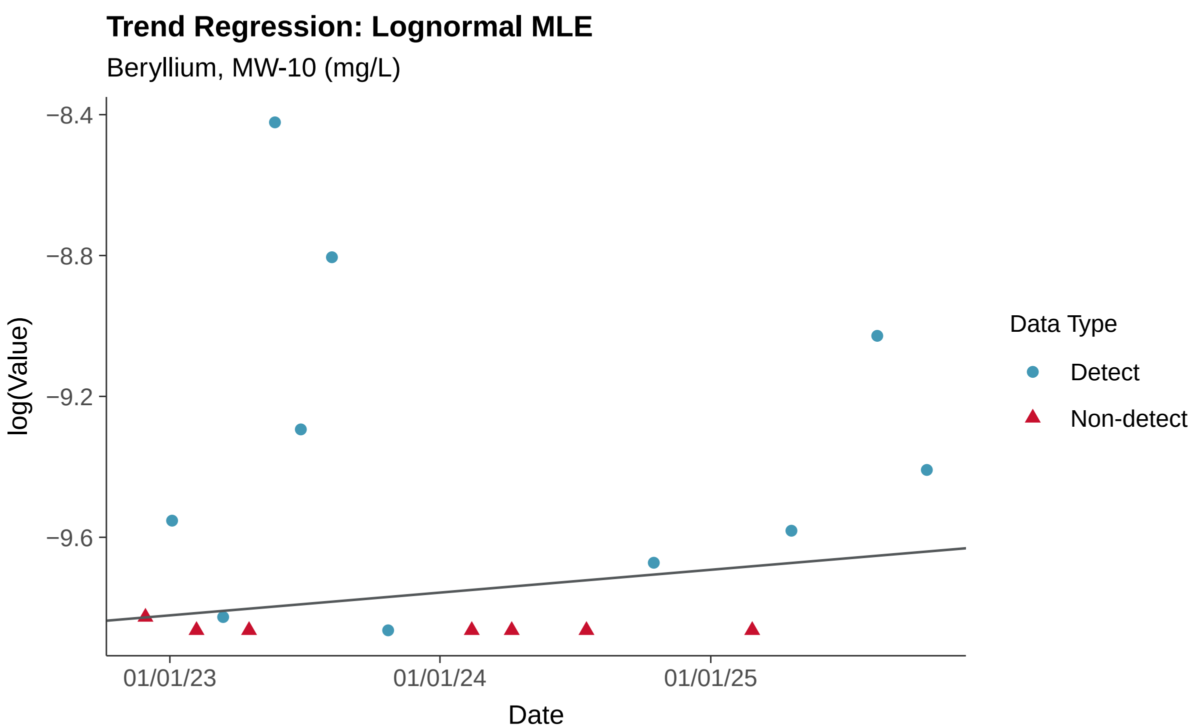
Beryllium, MW-10 (mg/L)




Normal Q-Q plot using ROS Imputed Estimates
Beryllium, MW-10 (mg/L)
Value
2e−04
1e−04
0e+00
−1e−04
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

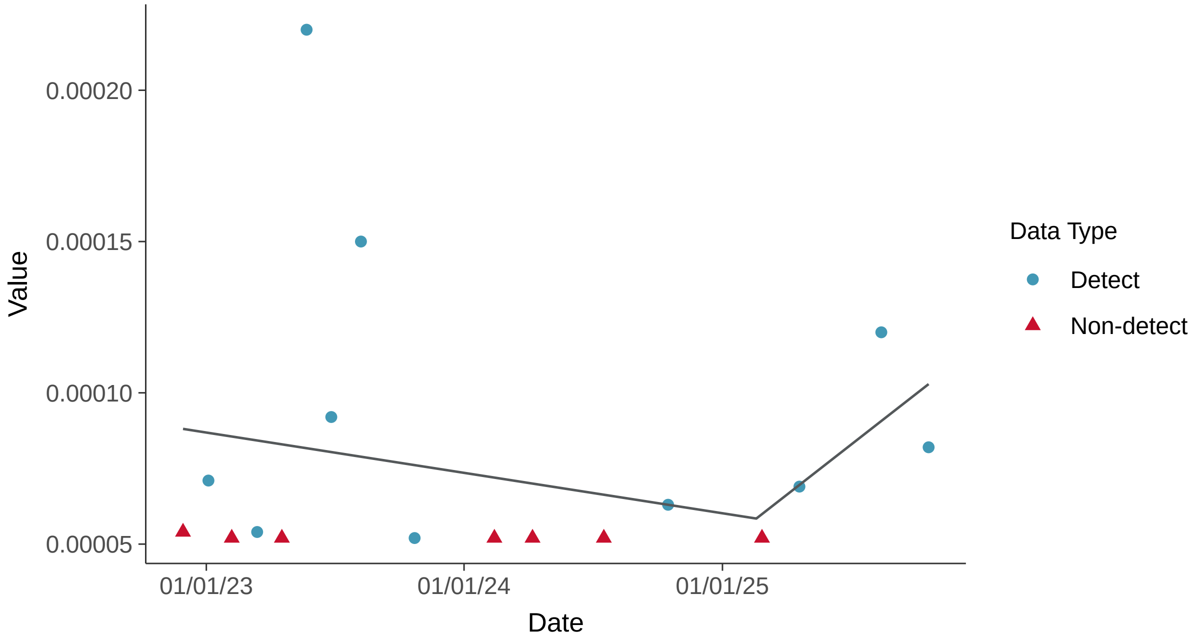

Lognormal Q-Q plot using ROS Imputed Estimates
Beryllium, MW-10 (mg/L)
log(Value)
−9
−10
−11
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Gamma Q-Q plot using ROS Imputed Estimates
Beryllium, MW-10 (mg/L)
Value
2e−04
1e−04
0e+00
−2
−1
0
1
2
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect


Trend Regression: Lognormal MLE
Beryllium, MW-10 (mg/L)
log(Value)
−8.4
−8.8
−9.2
−9.6
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

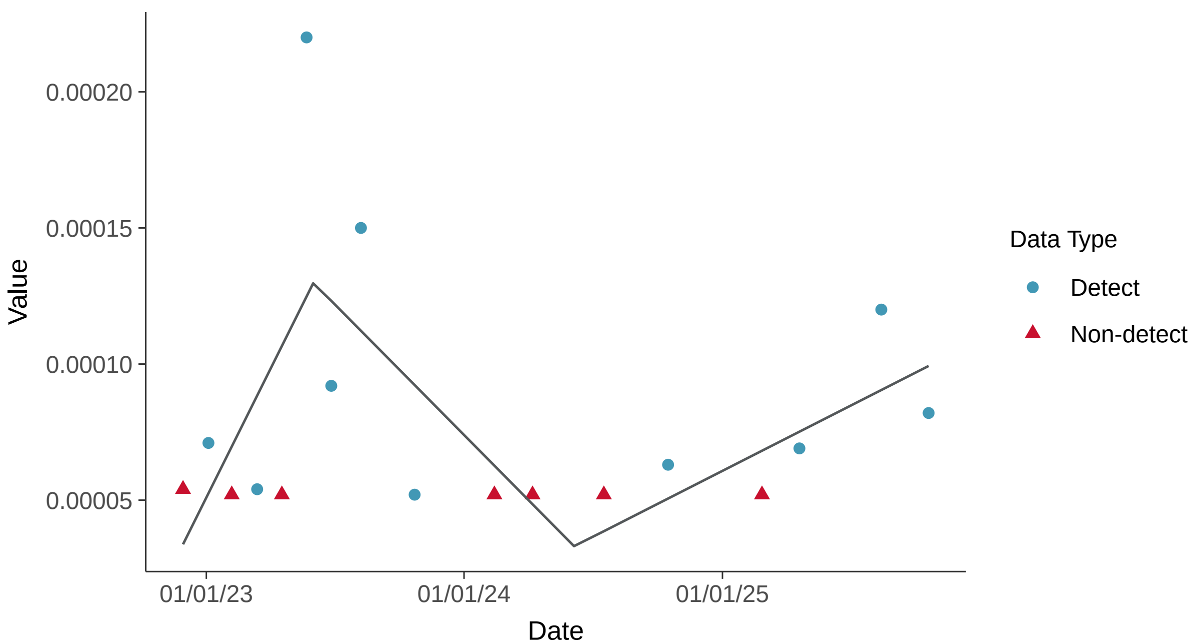
Trend Regression: Piecewise Linear-Linear

Beryllium, MW-10 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Beryllium, MW-10 (mg/L)

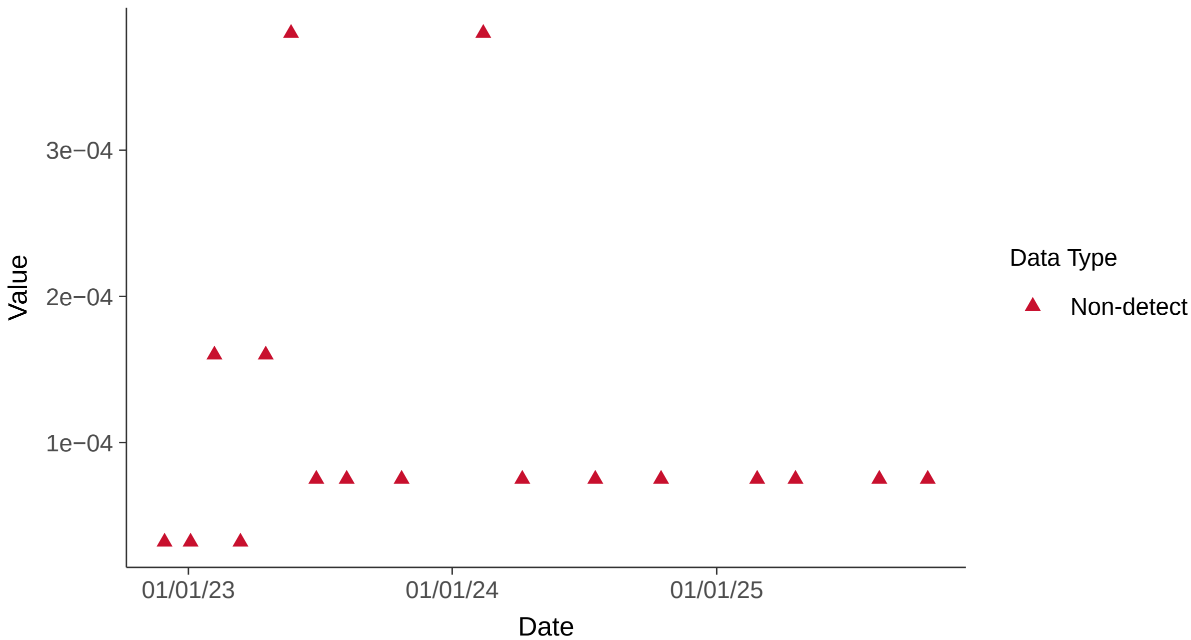


Appendix IV: Cadmium, MW-10

ID: 20_3_4_106

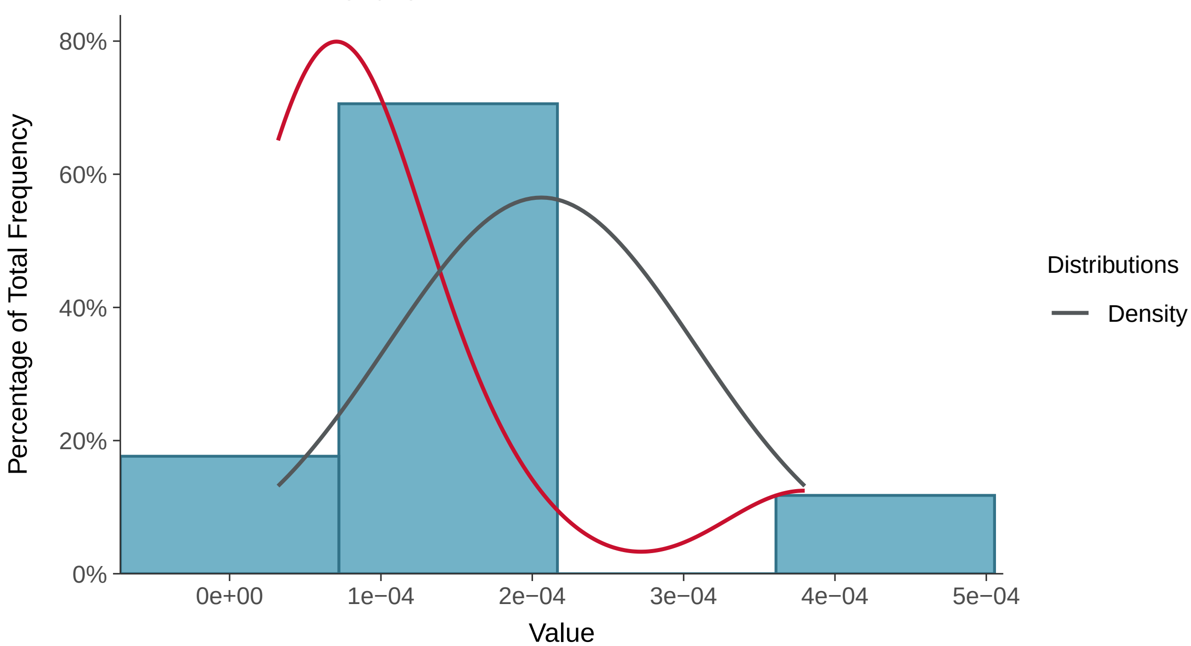
Scatter Plot

Cadmium, MW-10 (mg/L)



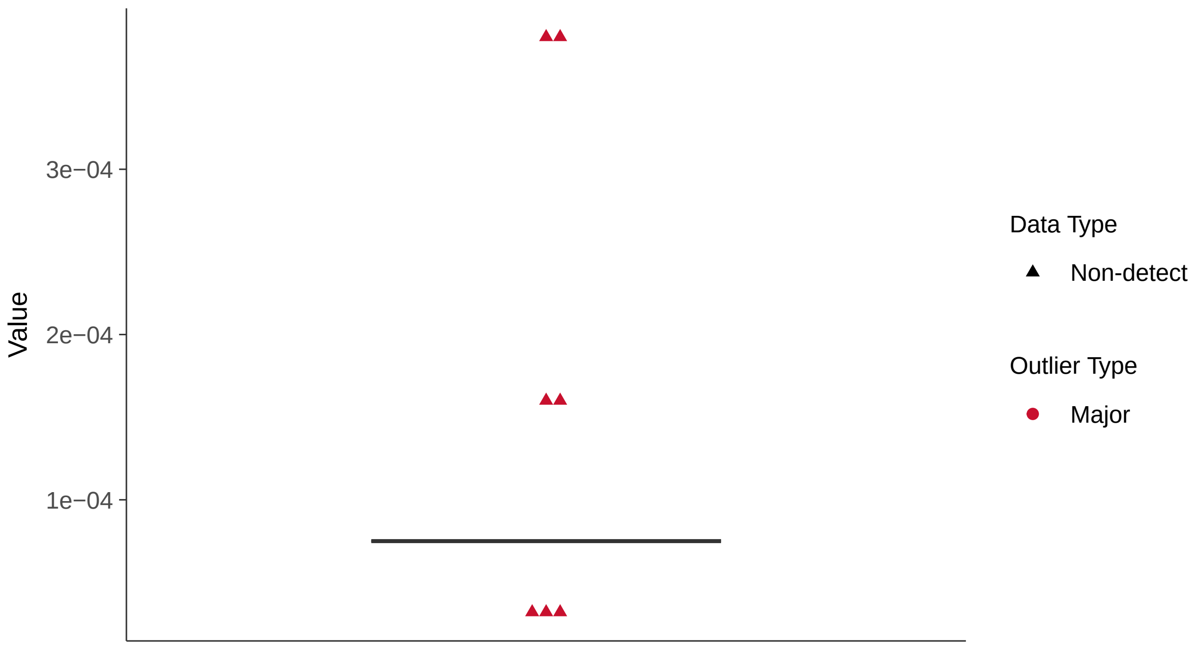
Histogram

Cadmium, MW-10 (mg/L)



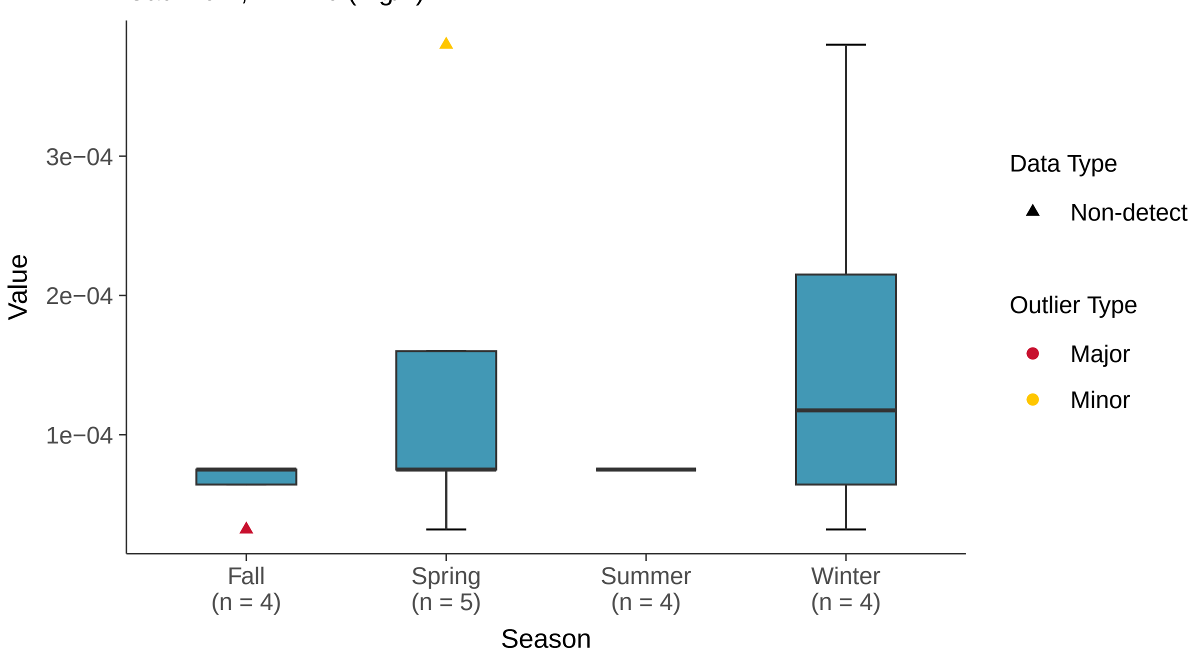
Boxplot

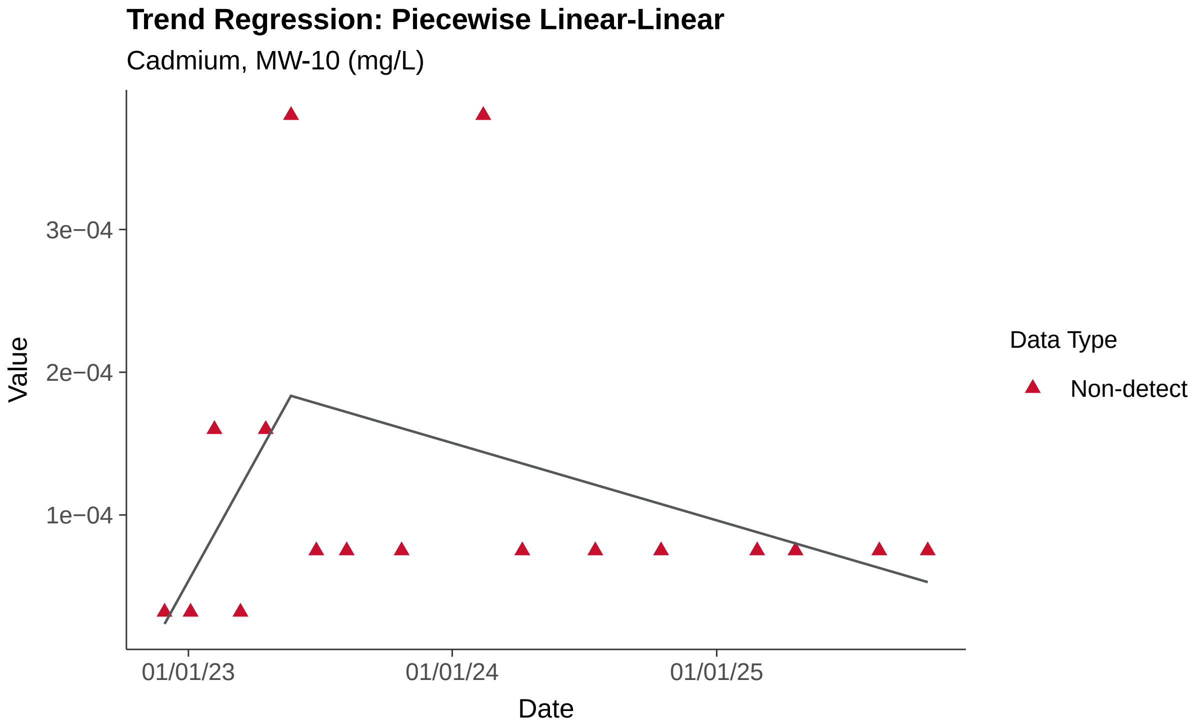
Cadmium, MW-10 (mg/L)

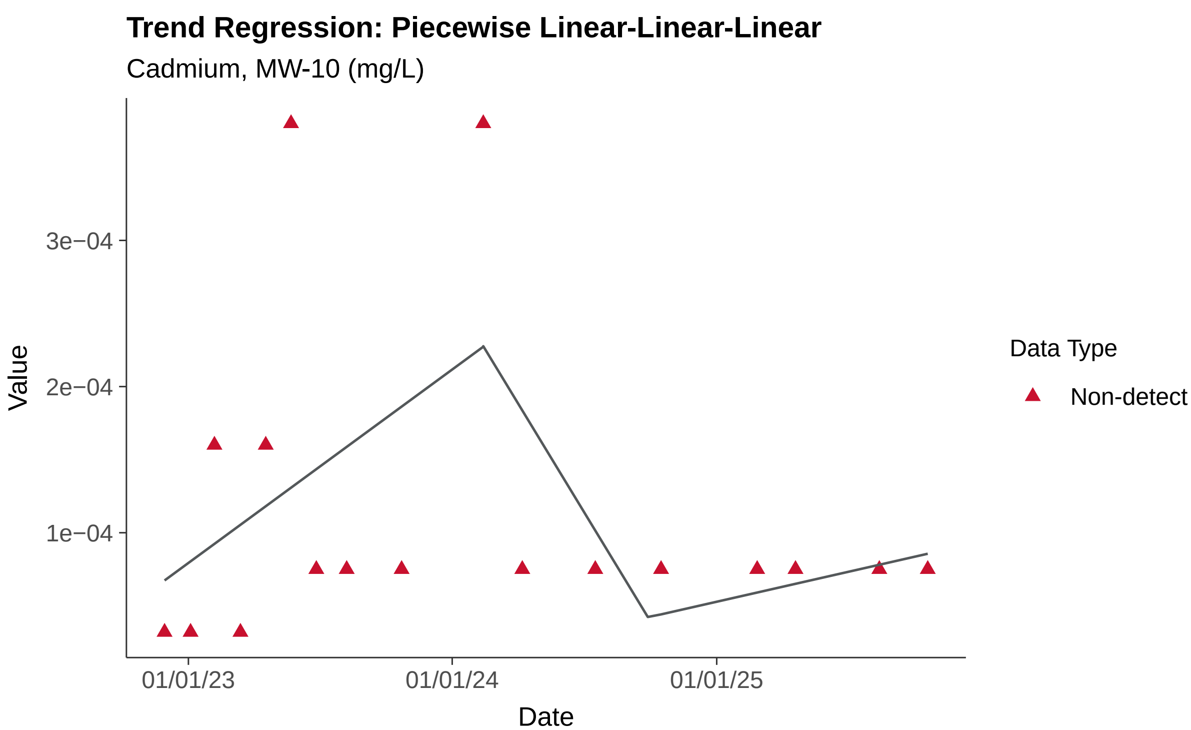


Boxplot by Season

Cadmium, MW-10 (mg/L)




Trend Regression: Piecewise Linear-Linear
Cadmium, MW-10 (mg/L)
Value
3e−04
2e−04
1e−04
01/01/23
01/01/24
01/01/25
Date
Data Type
Non-detect

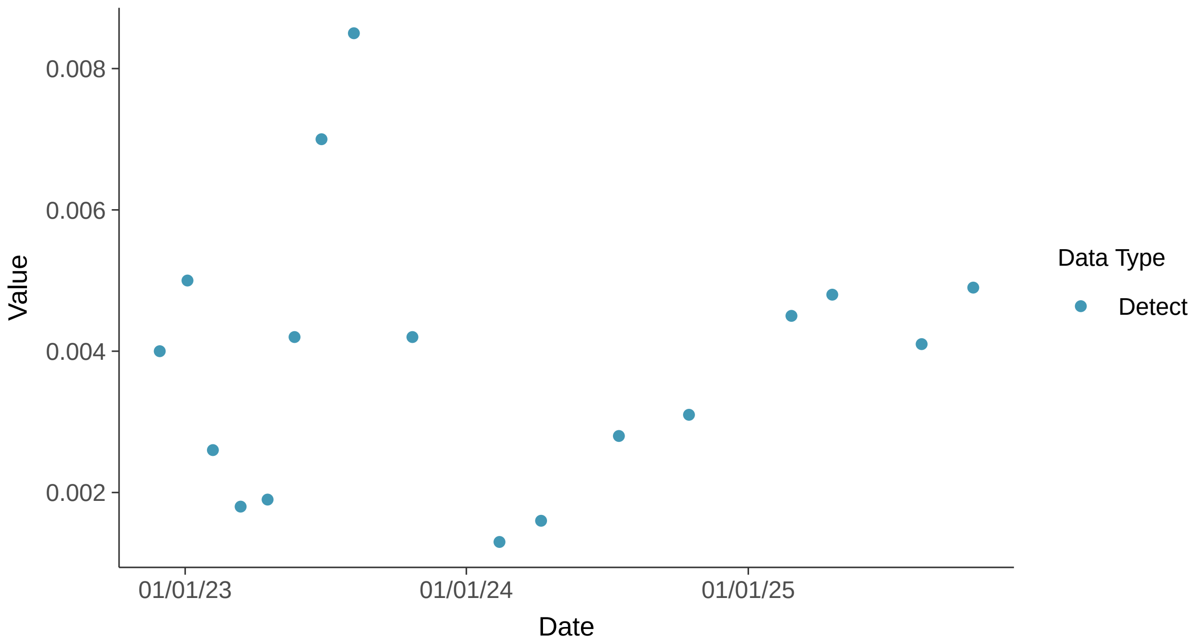

Trend Regression: Piecewise Linear-Linear-Linear
Cadmium, MW-10 (mg/L)
Value
3e−04
2e−04
1e−04
01/01/23
01/01/24
01/01/25
Date
Data Type
Non-detect

Appendix IV: Chromium, Total, MW-10

ID: 20_3_4_109

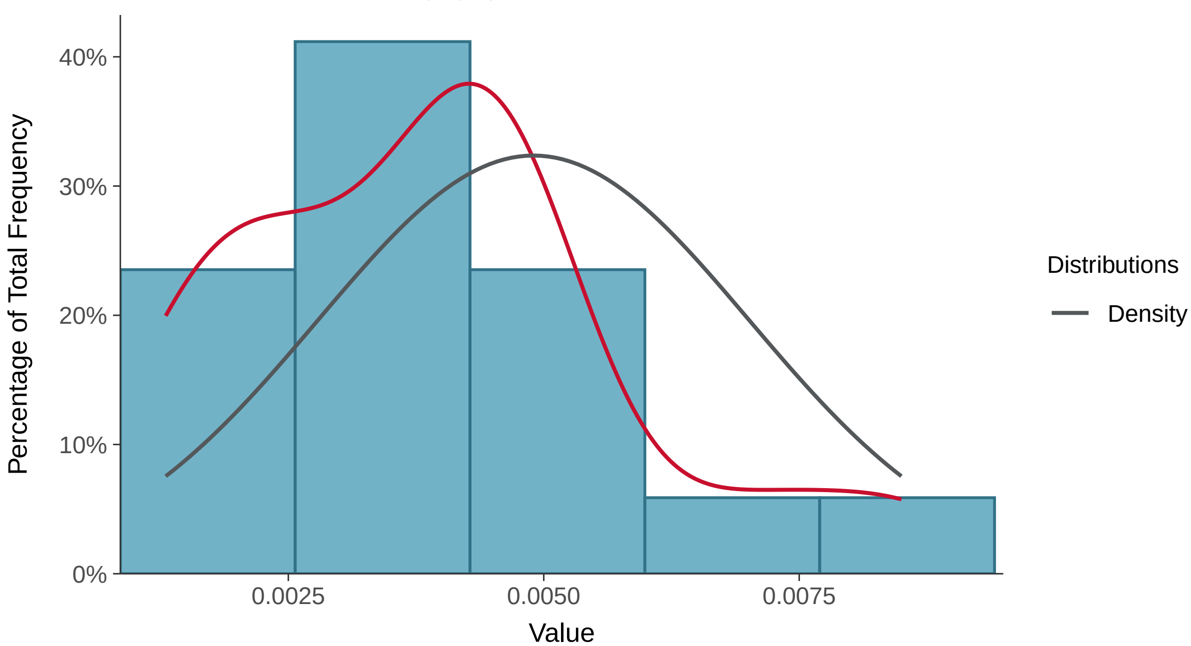
Scatter Plot

Chromium, Total, MW-10 (mg/L)



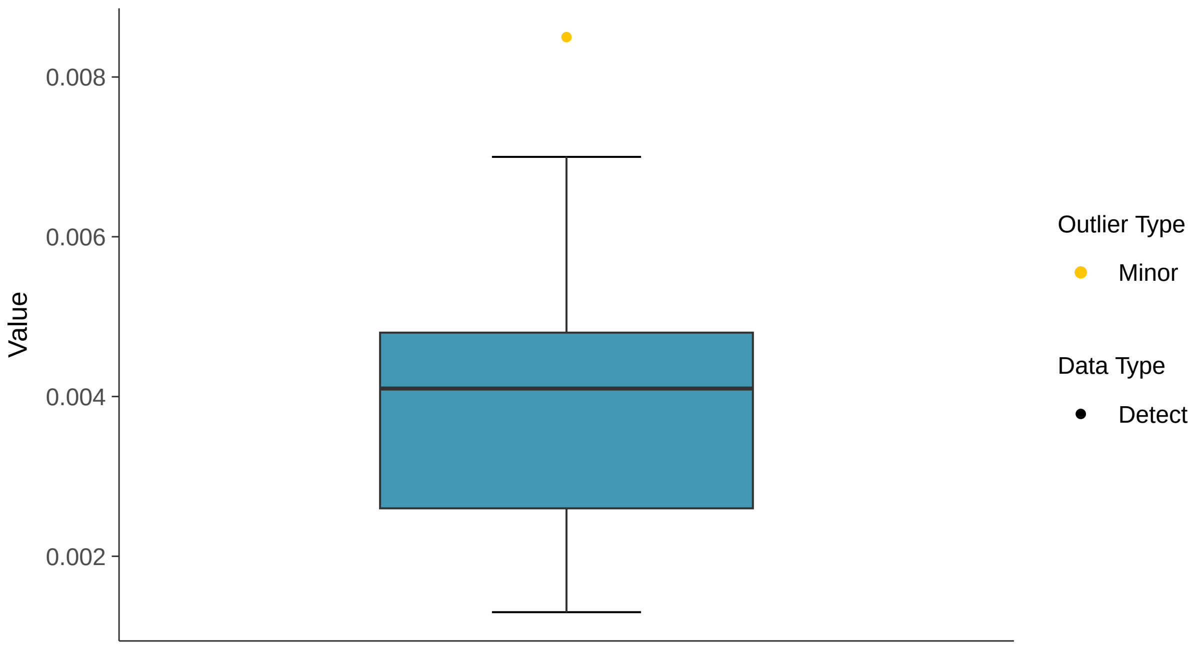
Histogram

Chromium, Total, MW-10 (mg/L)



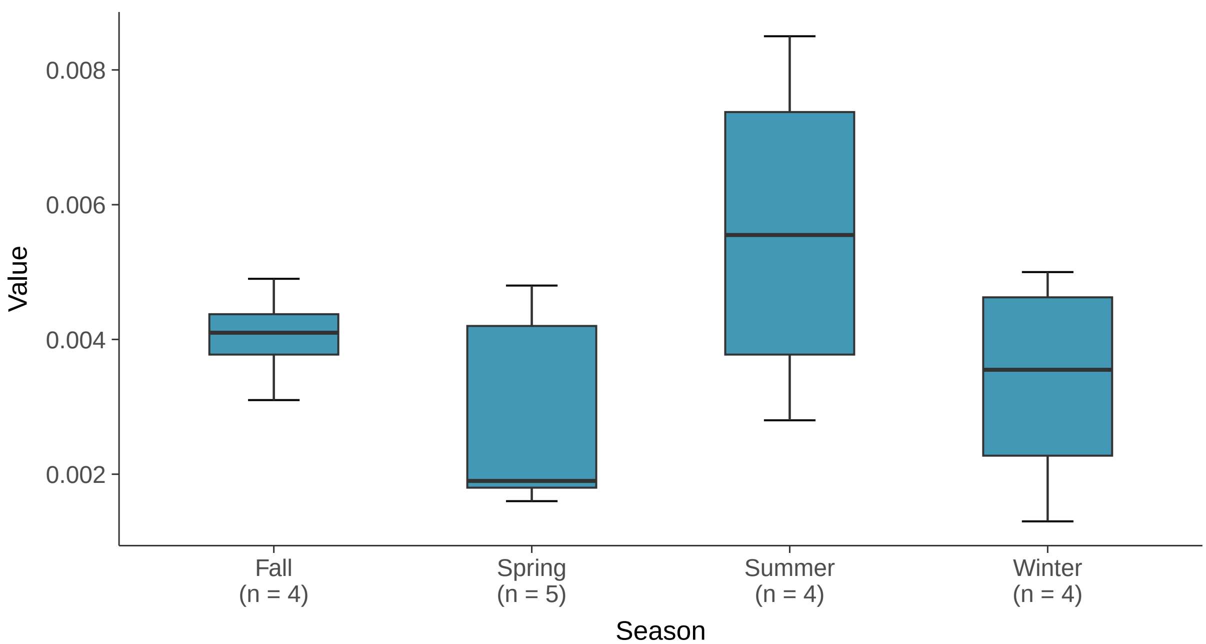
Boxplot

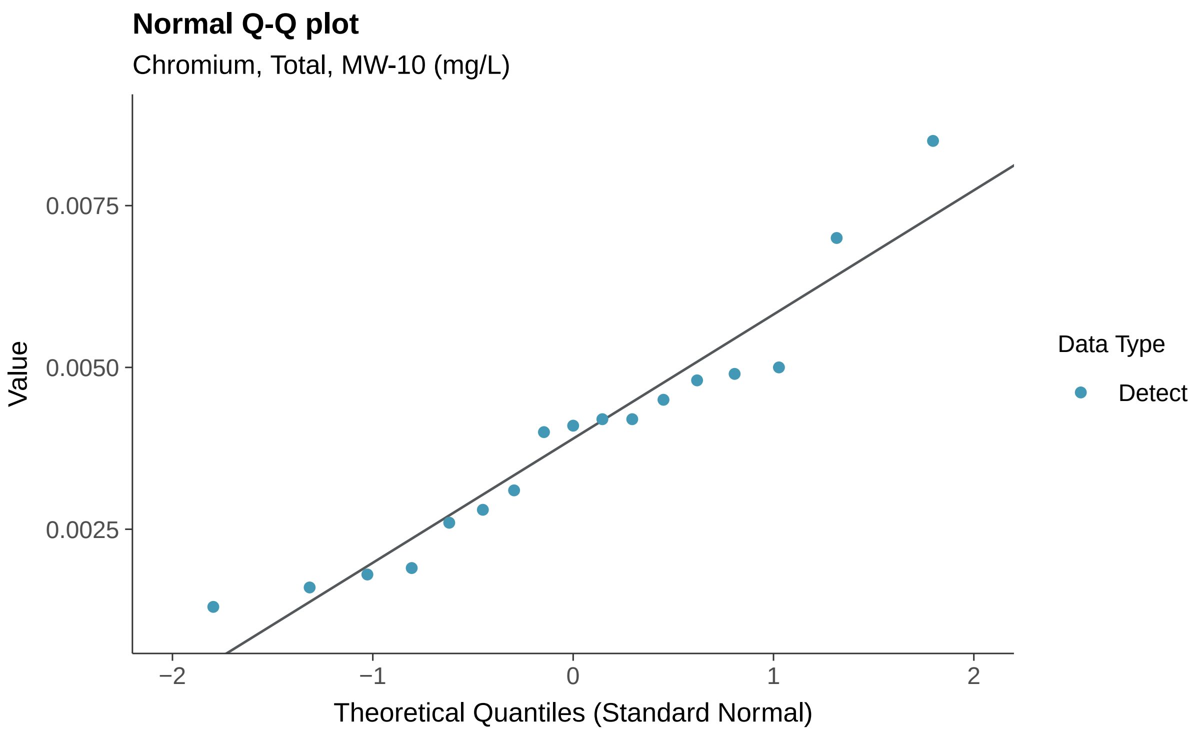
Chromium, Total, MW-10 (mg/L)

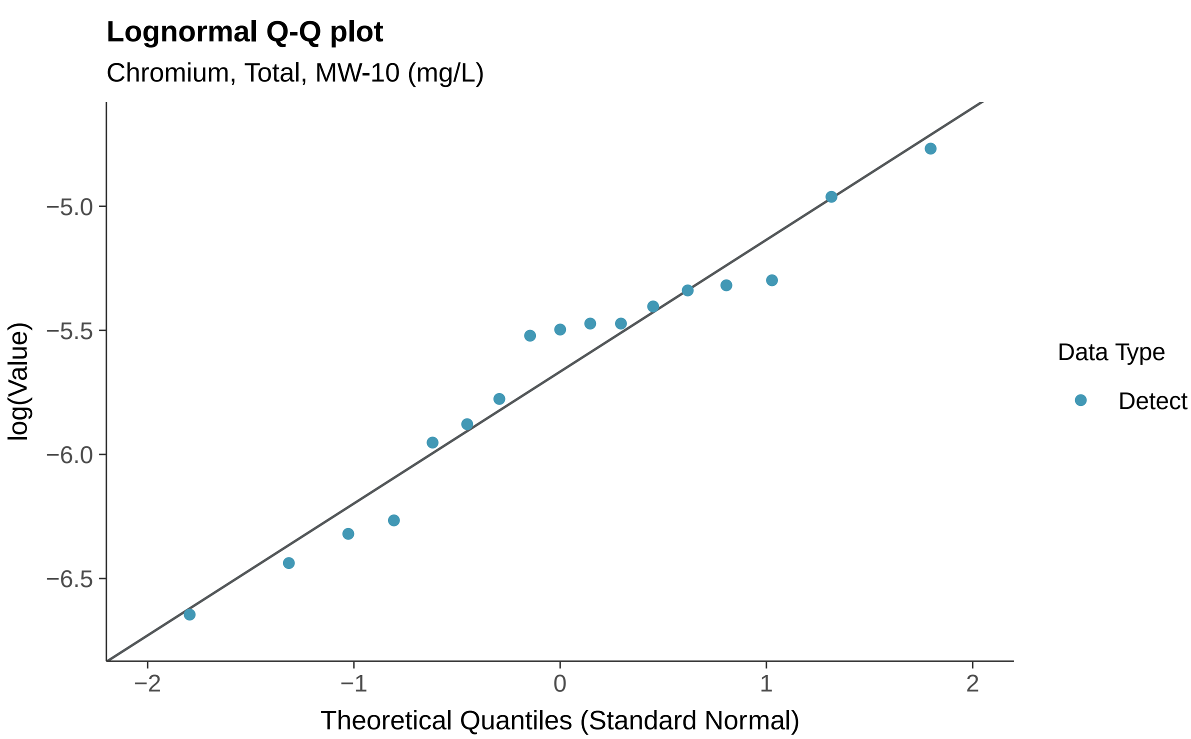


Boxplot by Season

Chromium, Total, MW-10 (mg/L)

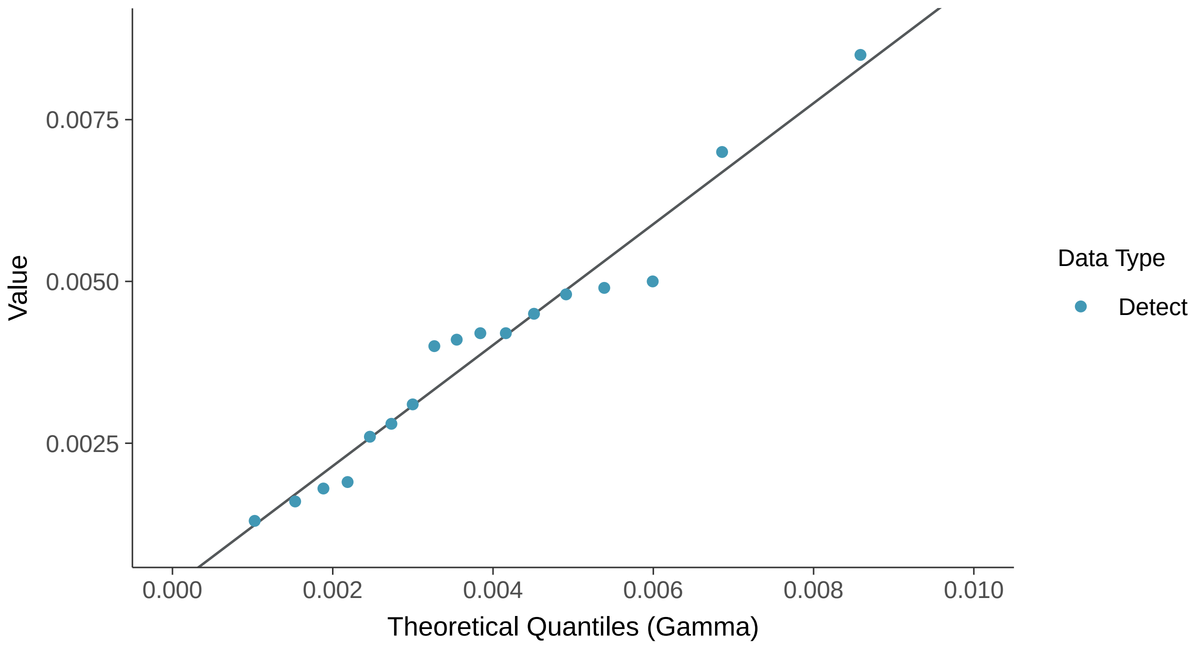



Normal Q-Q plot
Chromium, Total, MW-10 (mg/L)
Value
0.0075
0.0050
0.0025
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Chromium, Total, MW-10 (mg/L)
log(Value)
−5.0
−5.5
−6.0
−6.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

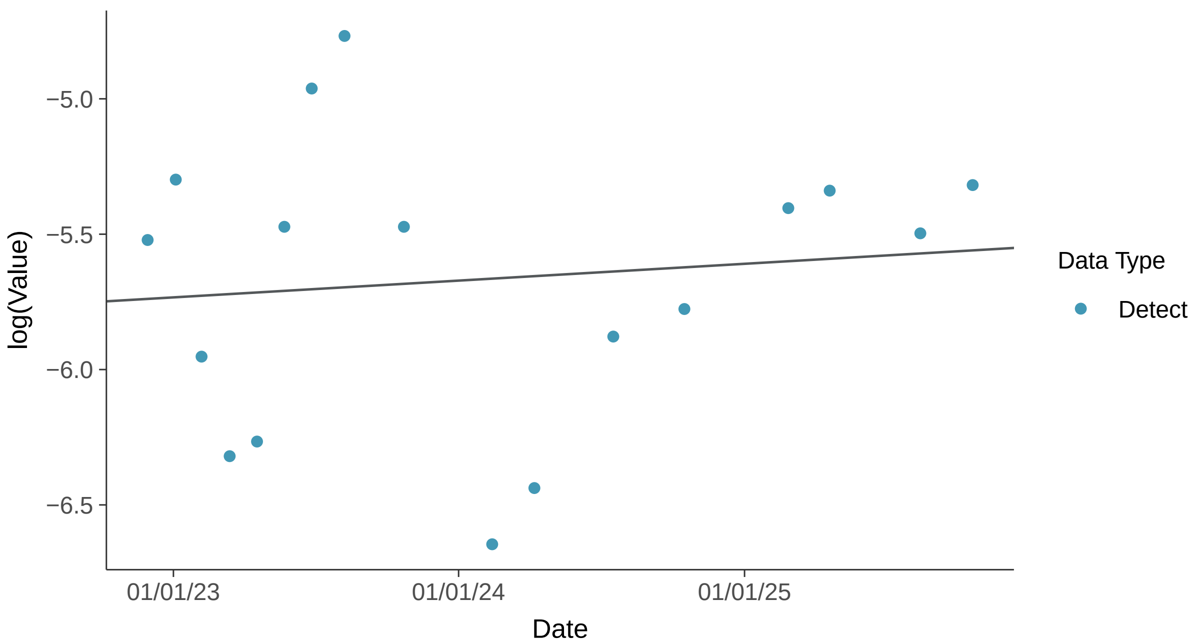
Gamma Q-Q plot

Chromium, Total, MW-10 (mg/L)



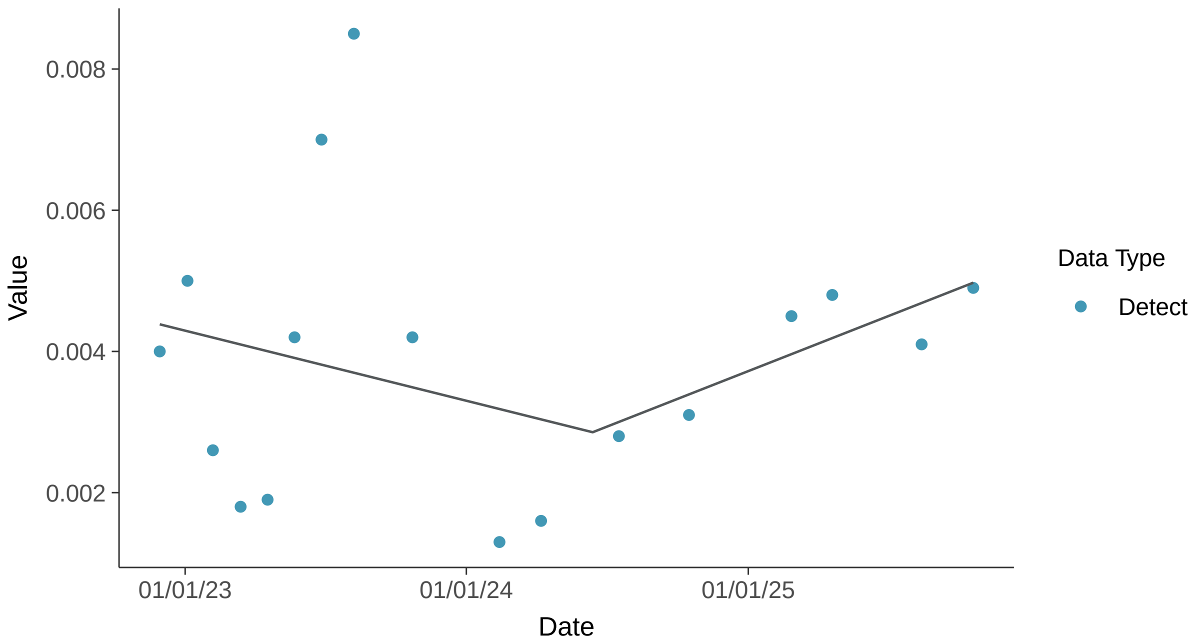
Trend Regression: Lognormal MLE

Chromium, Total, MW-10 (mg/L)



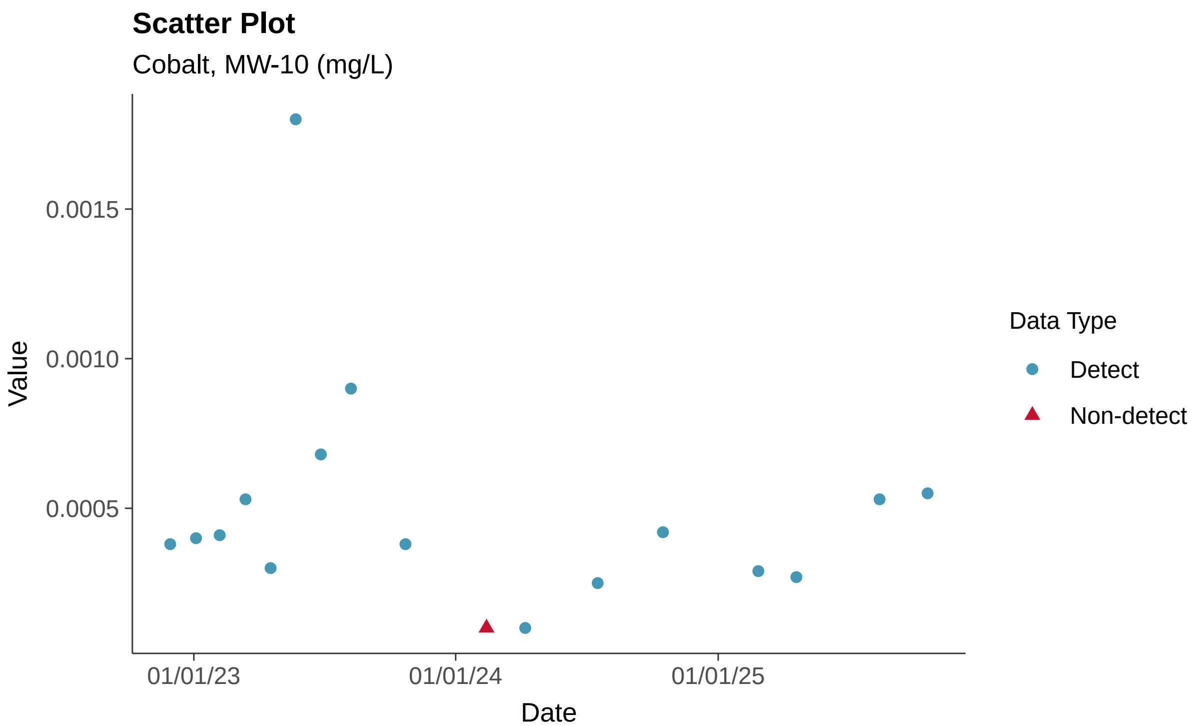
Trend Regression: Piecewise Linear-Linear

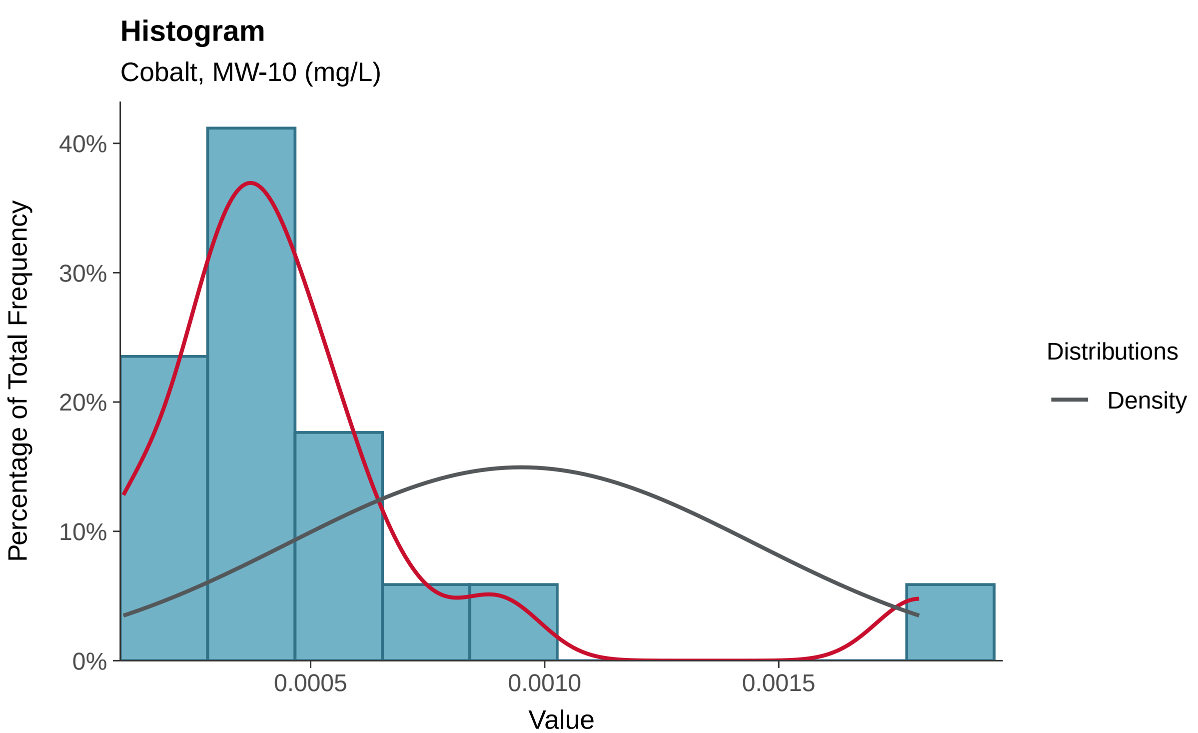
Chromium, Total, MW-10 (mg/L)



Appendix IV: Cobalt, MW-10

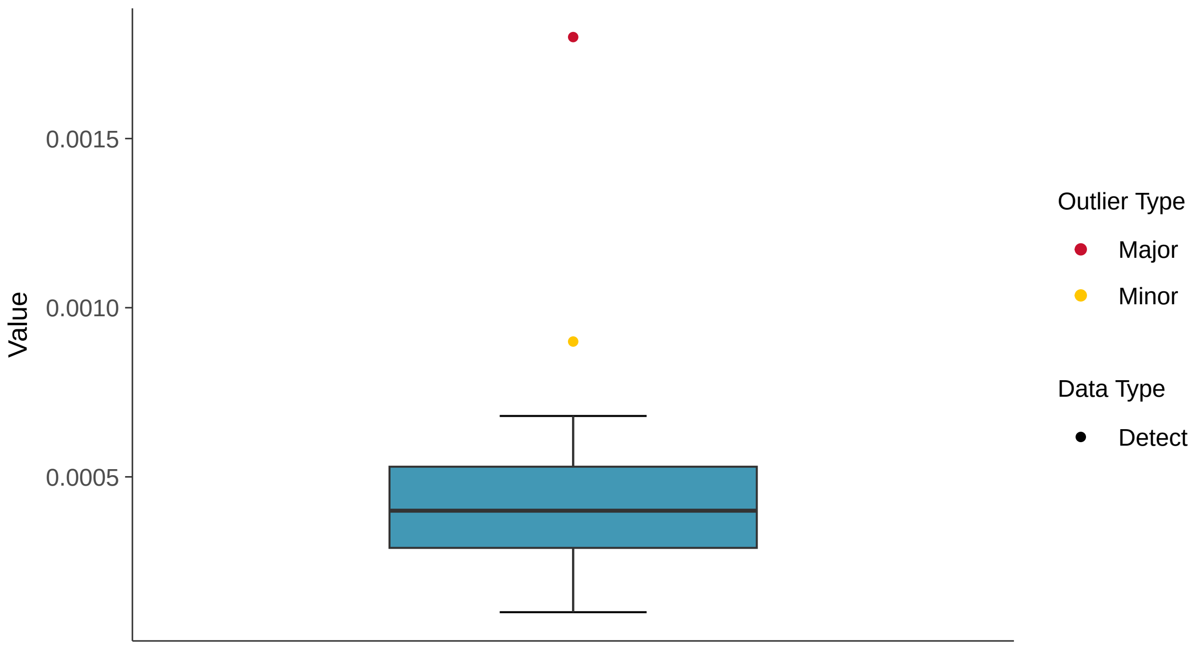
ID: 20_3_4_110





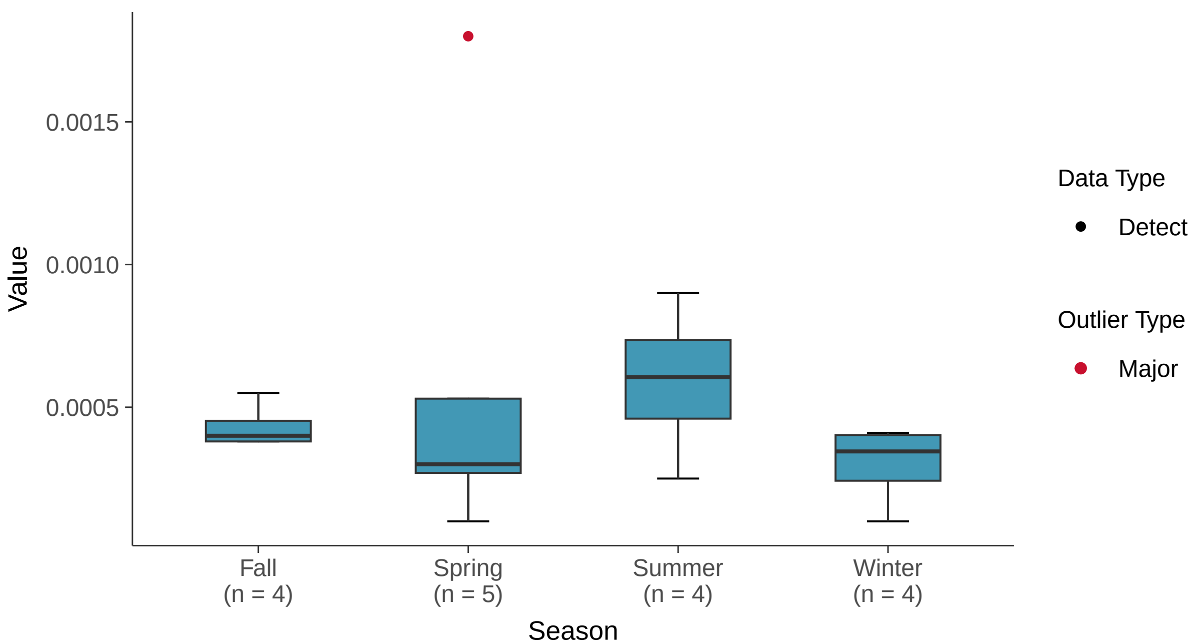
Boxplot

Cobalt, MW-10 (mg/L)



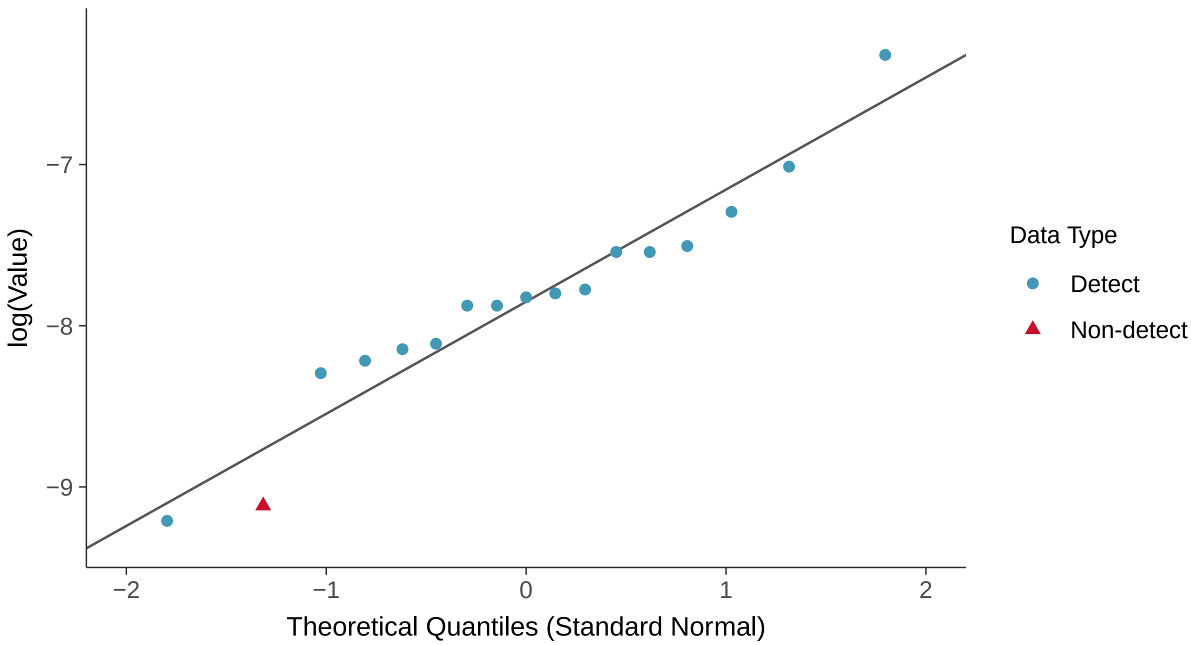
Boxplot by Season

Cobalt, MW-10 (mg/L)



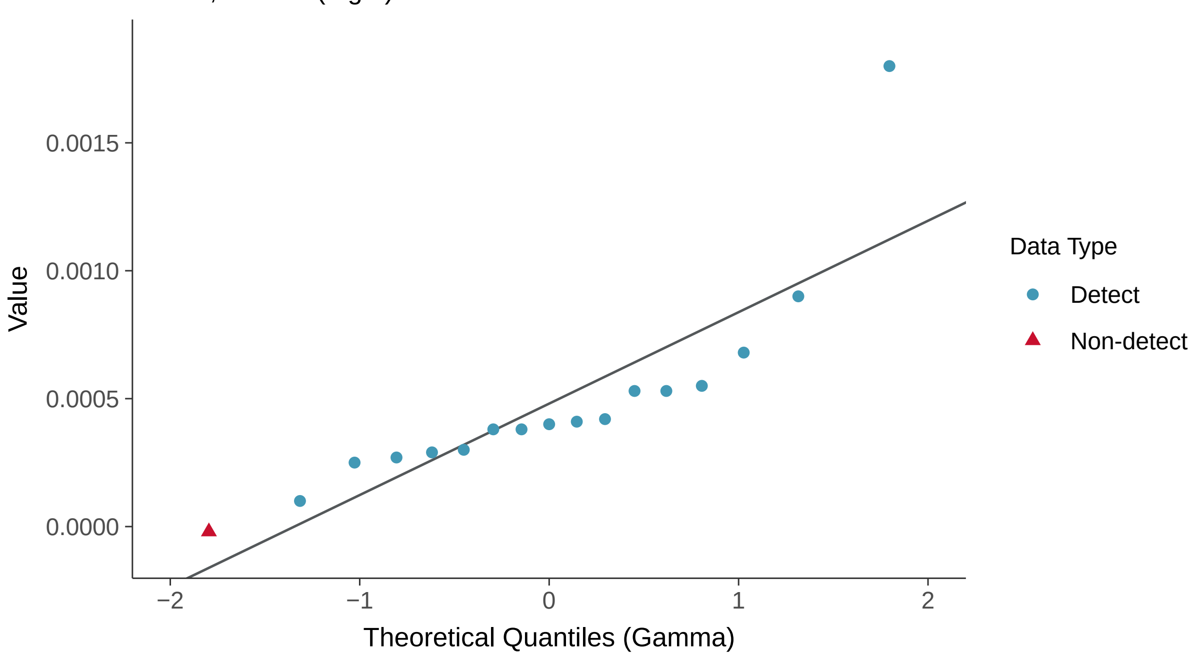
Lognormal Q-Q plot using ROS Imputed Estimates

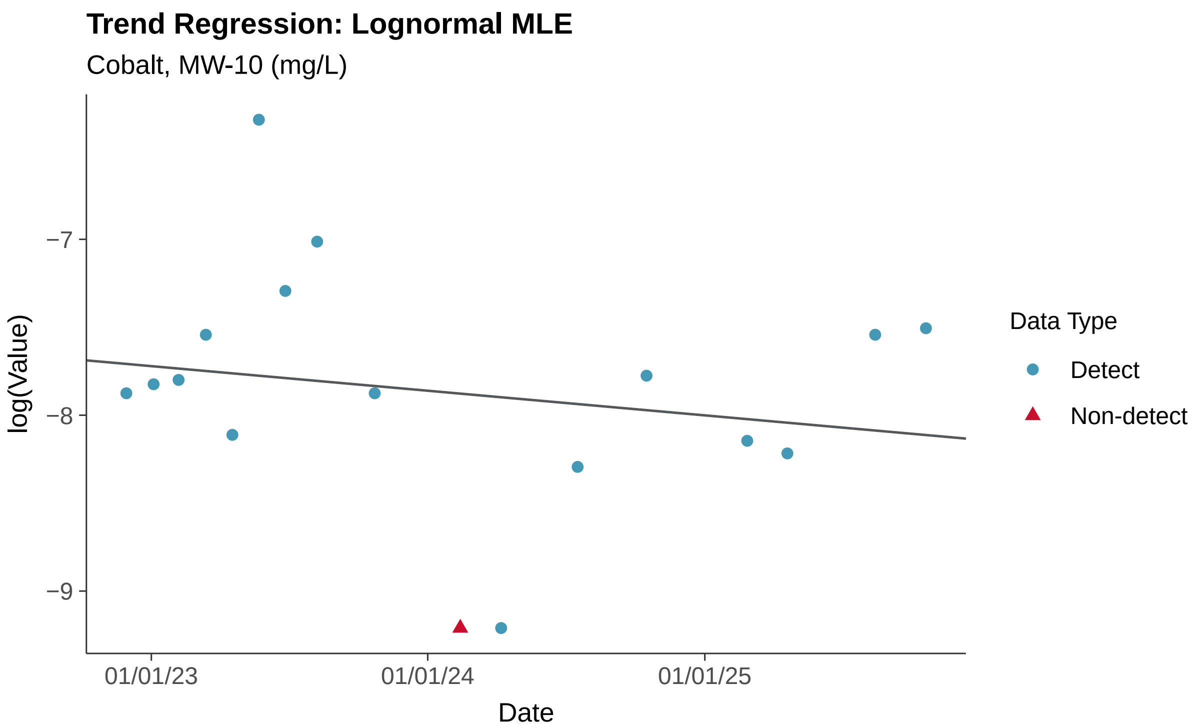
Cobalt, MW-10 (mg/L)

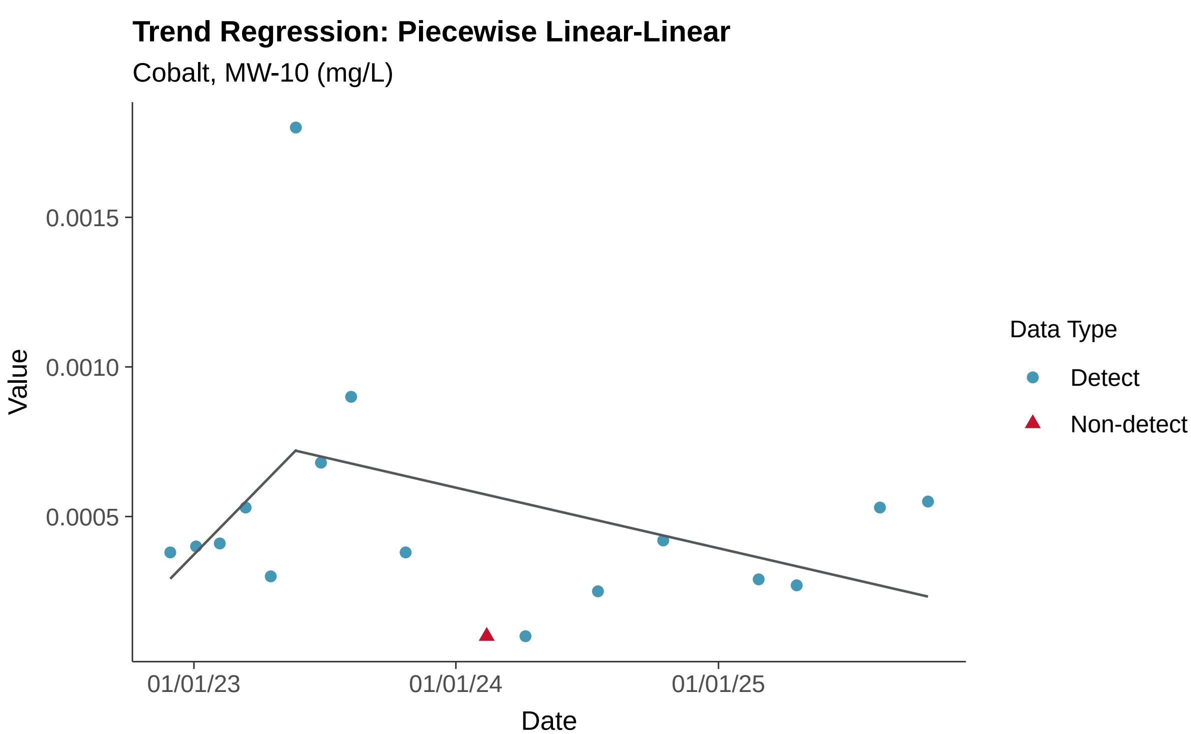


Gamma Q-Q plot using ROS Imputed Estimates

Cobalt, MW-10 (mg/L)

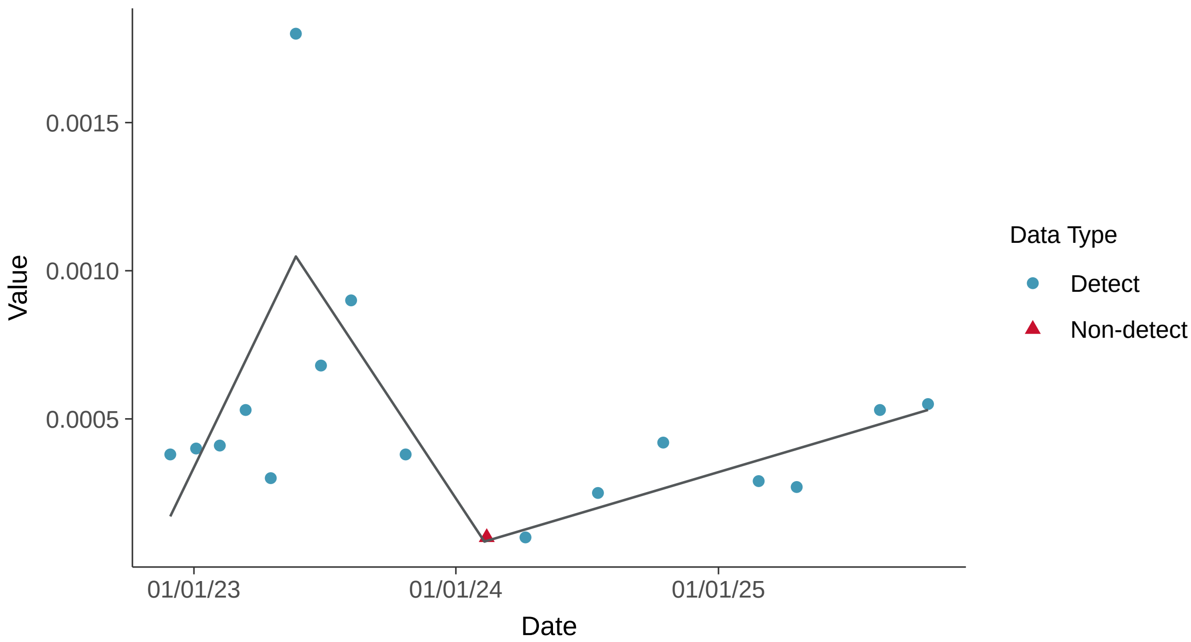



Trend Regression: Lognormal MLE
Cobalt, MW-10 (mg/L)
log(Value)
−7
−8
−9
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Cobalt, MW-10 (mg/L)
Value
0.0015
0.0010
0.0005
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Trend Regression: Piecewise Linear-Linear-Linear

Cobalt, MW-10 (mg/L)

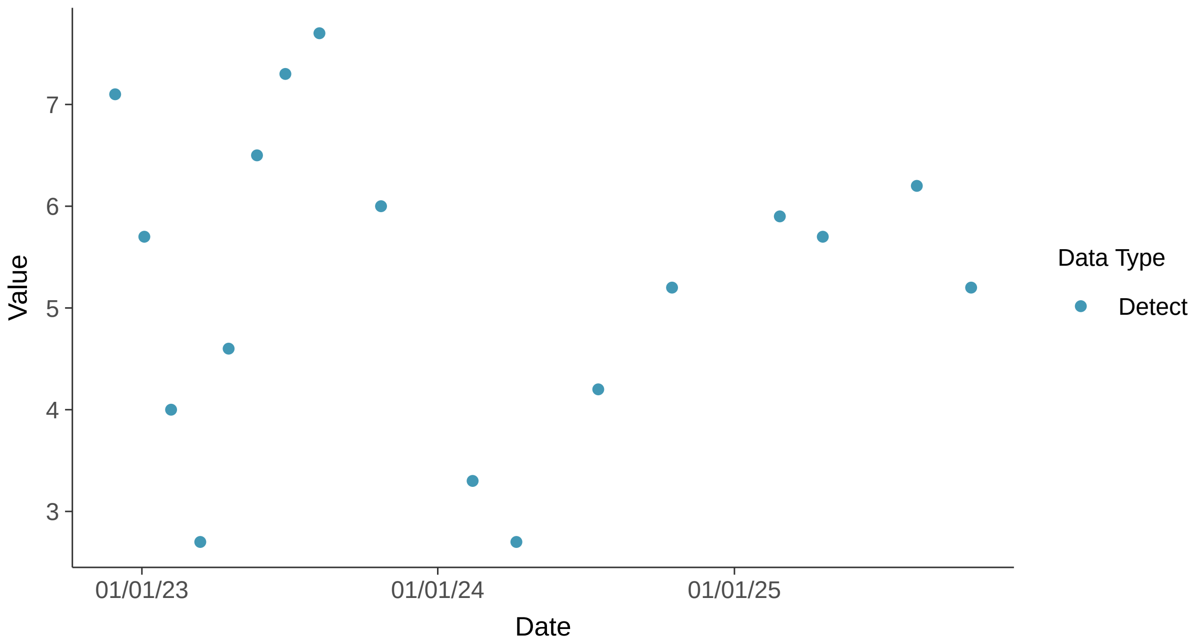


Appendix IV: Fluoride (App IV), MW-10

ID: 20_3_4_113

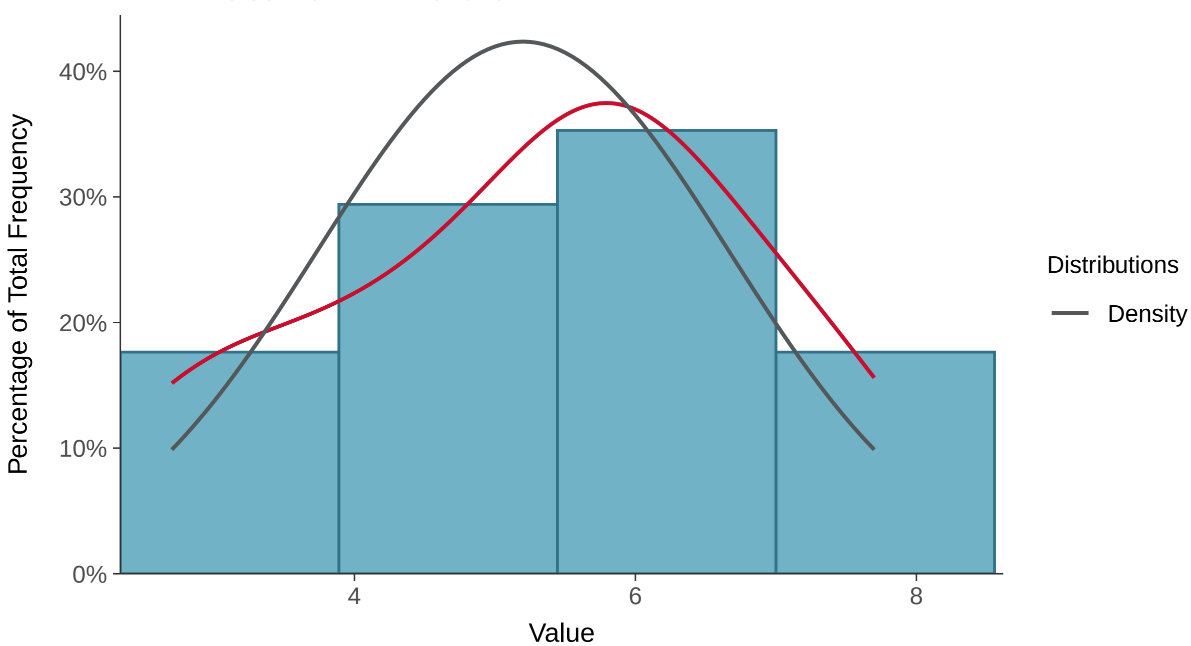
Scatter Plot

Fluoride (App IV), MW-10 (mg/L)



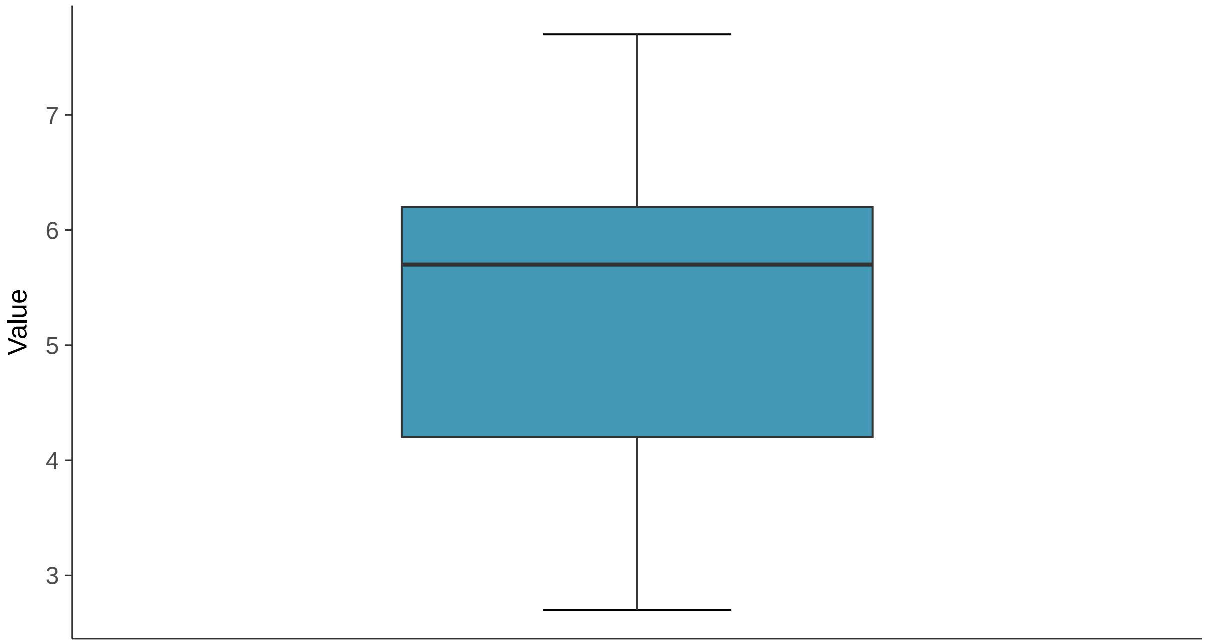
Histogram

Fluoride (App IV), MW-10 (mg/L)



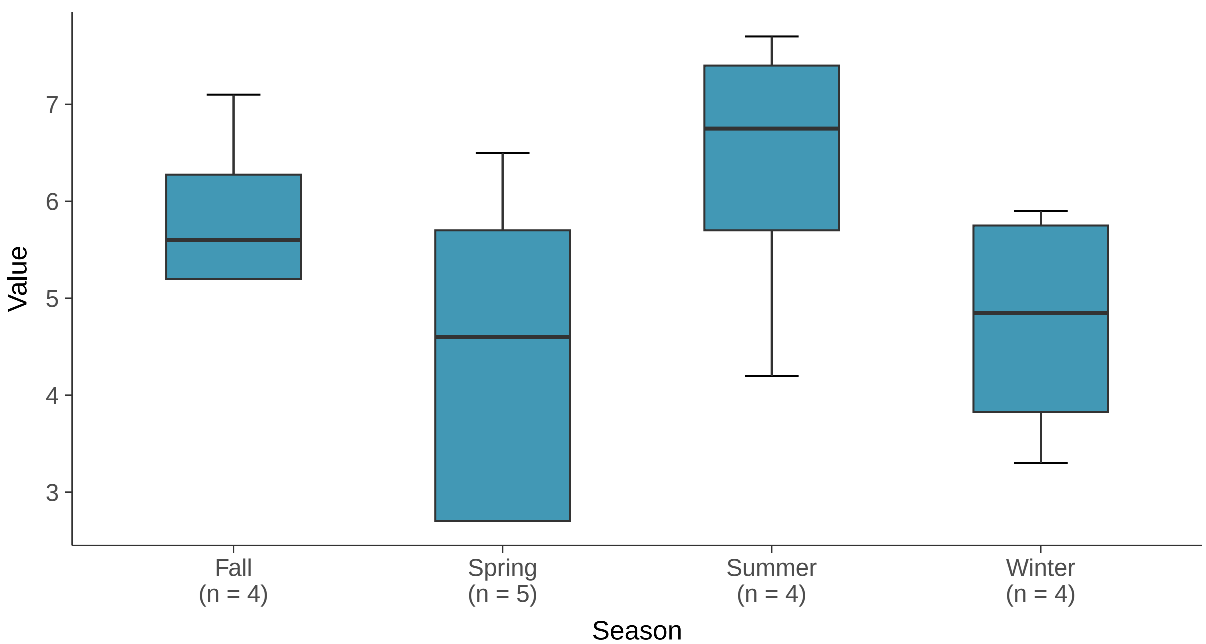
Boxplot

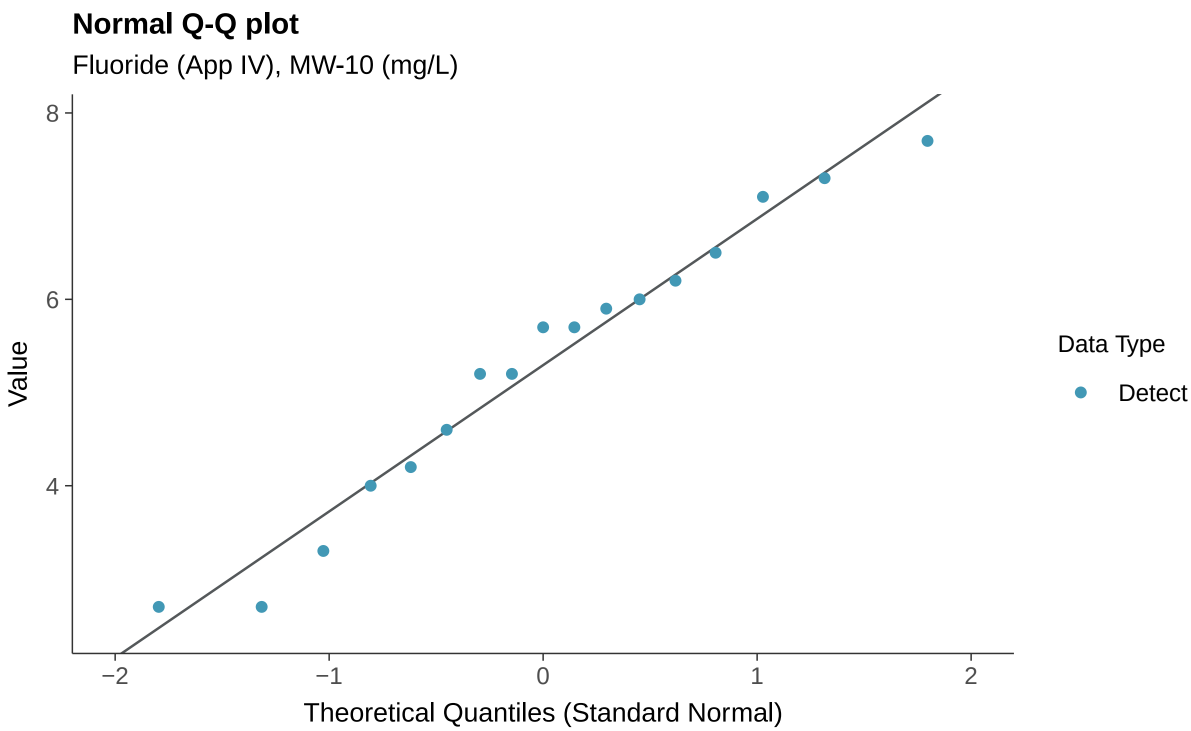
Fluoride (App IV), MW-10 (mg/L)

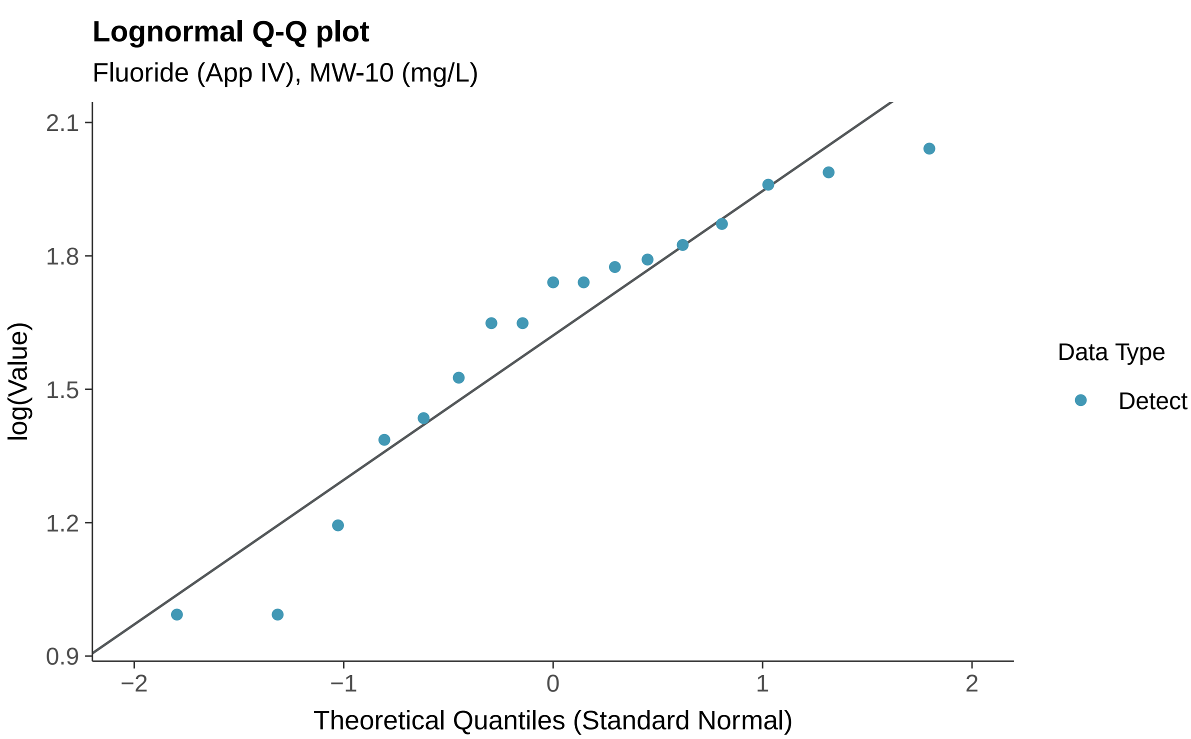


Boxplot by Season

Fluoride (App IV), MW-10 (mg/L)

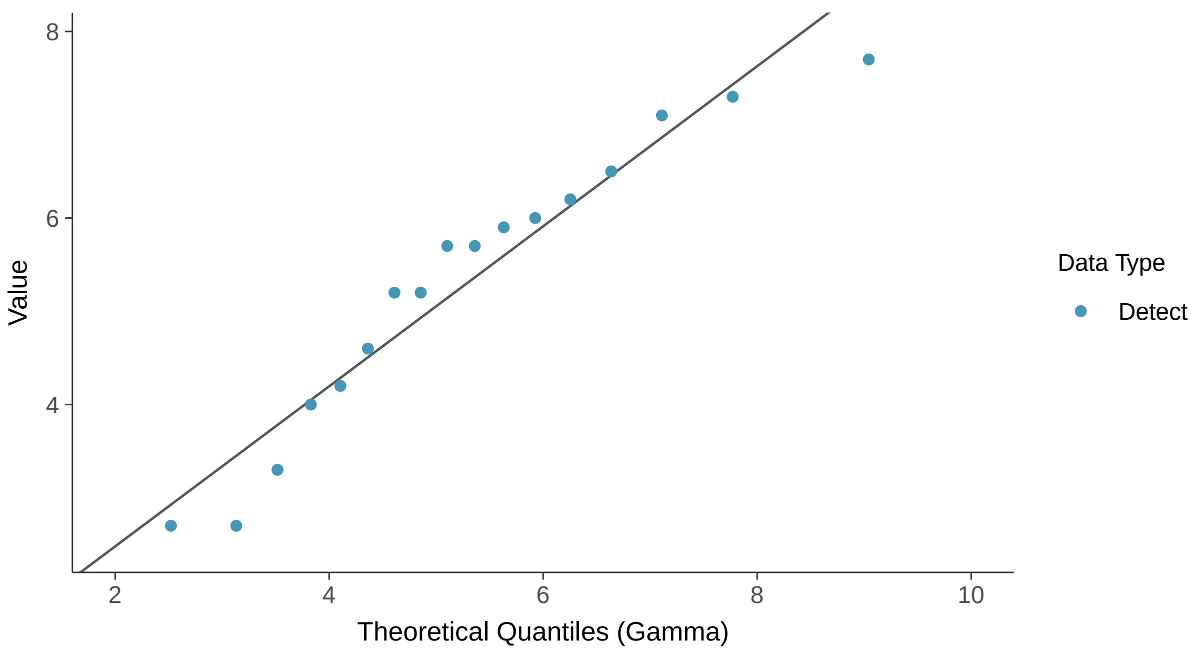



Normal Q-Q plot
Fluoride (App IV), MW-10 (mg/L)
Value
8
6
4
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Fluoride (App IV), MW-10 (mg/L)
log(Value)
2.1
1.8
1.5
1.2
0.9
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

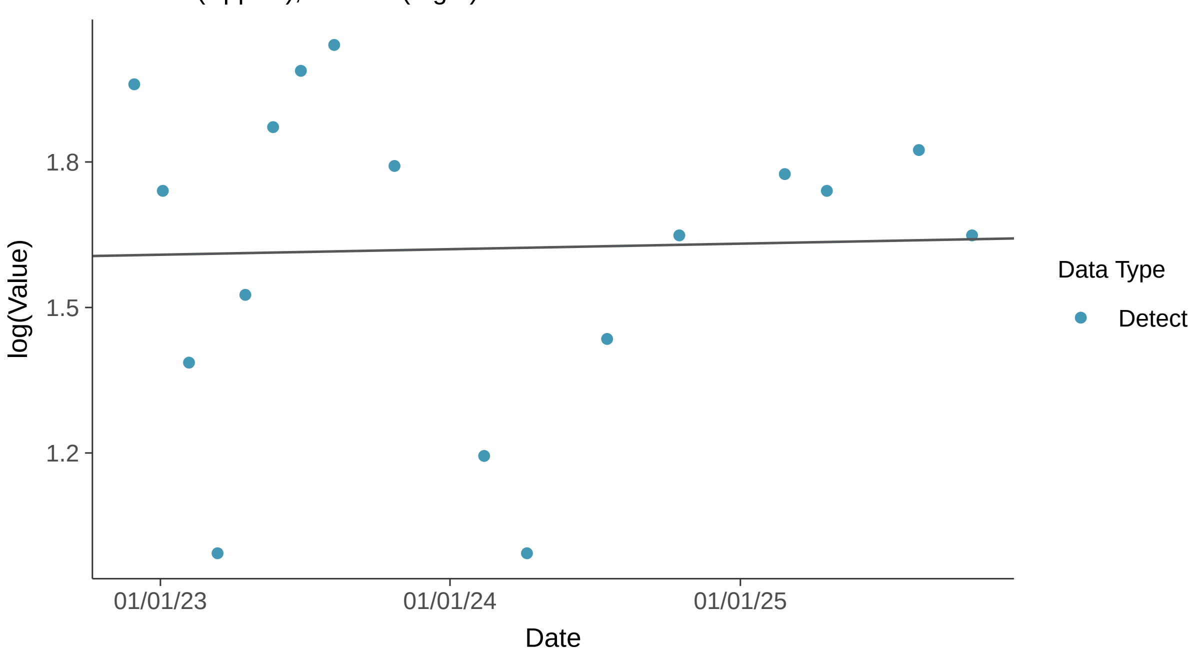
Gamma Q-Q plot

Fluoride (App IV), MW-10 (mg/L)



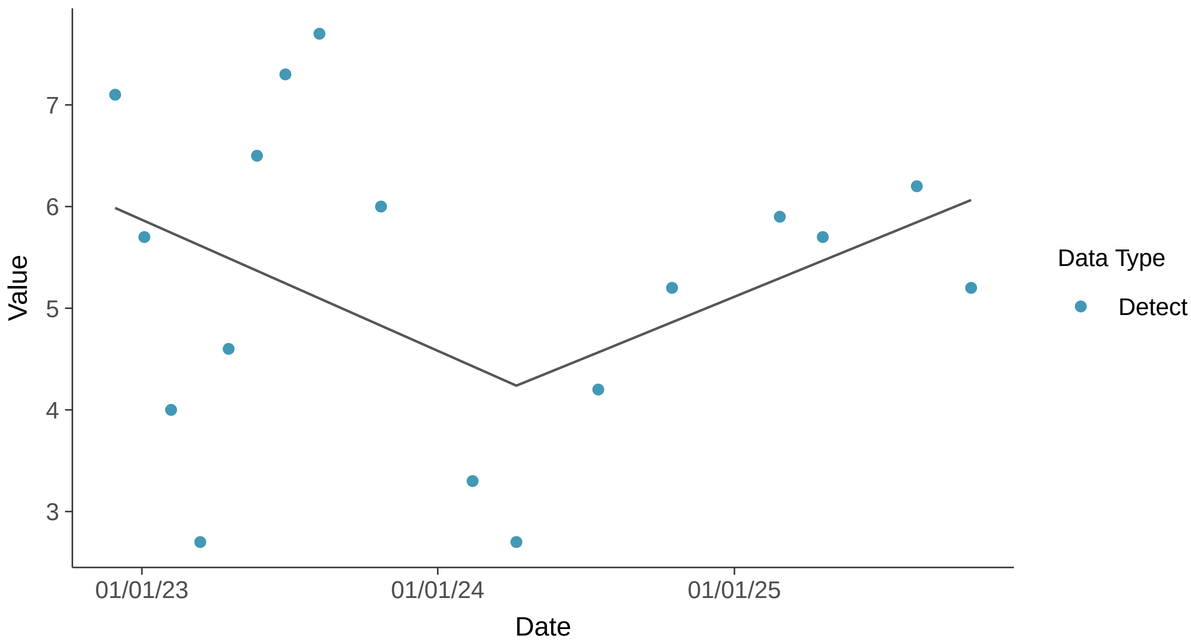
Trend Regression: Lognormal MLE

Fluoride (App IV), MW-10 (mg/L)



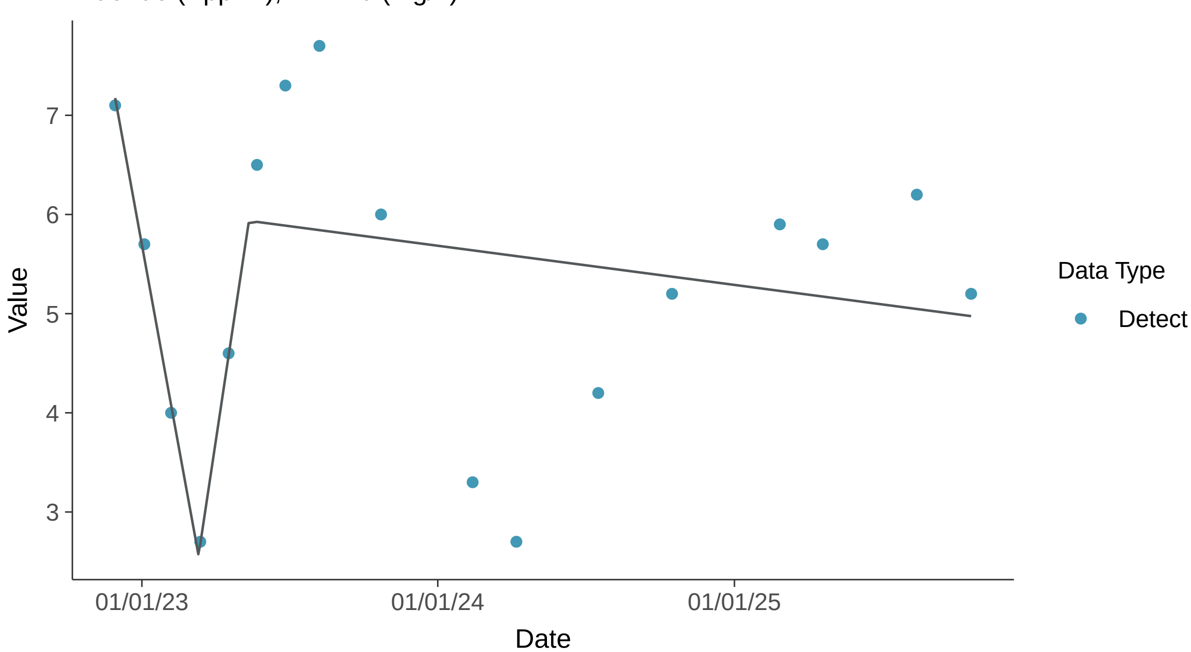
Trend Regression: Piecewise Linear-Linear

Fluoride (App IV), MW-10 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Fluoride (App IV), MW-10 (mg/L)

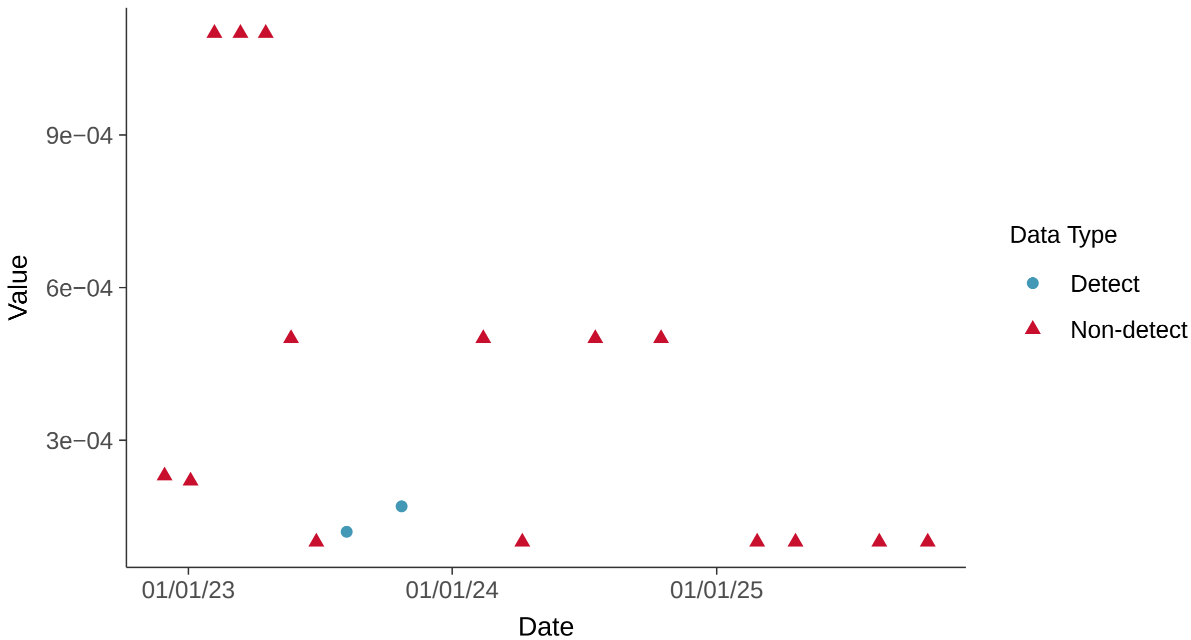


Appendix IV: Lead, MW-10

ID: 20_3_4_115

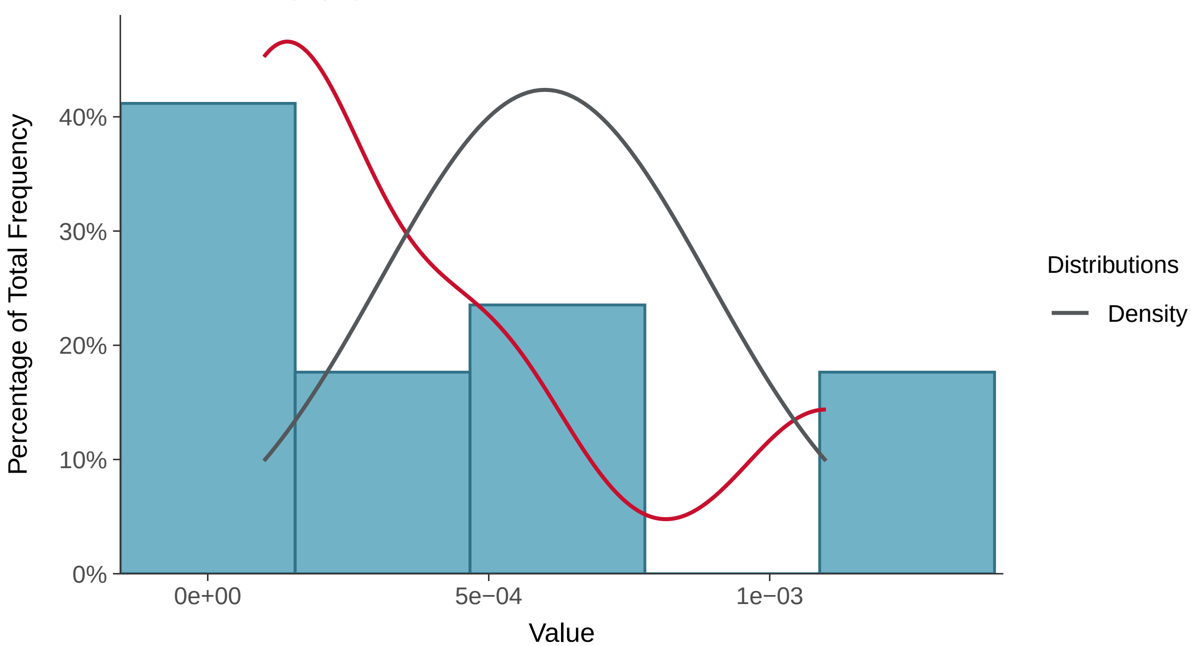
Scatter Plot

Lead, MW-10 (mg/L)



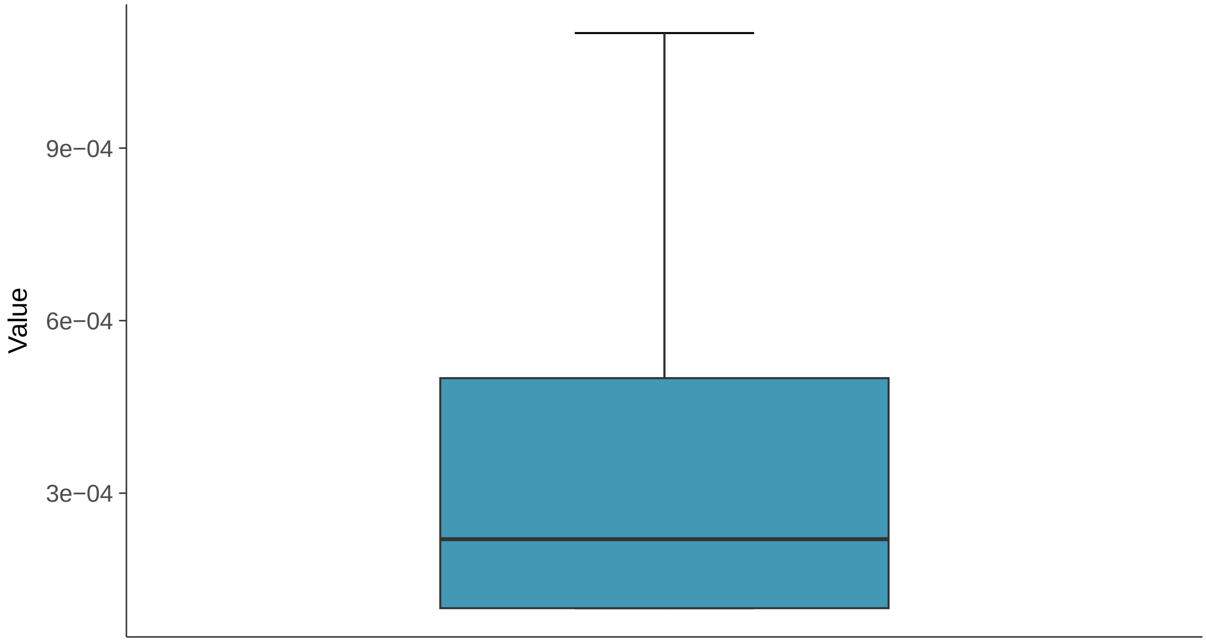
Histogram

Lead, MW-10 (mg/L)



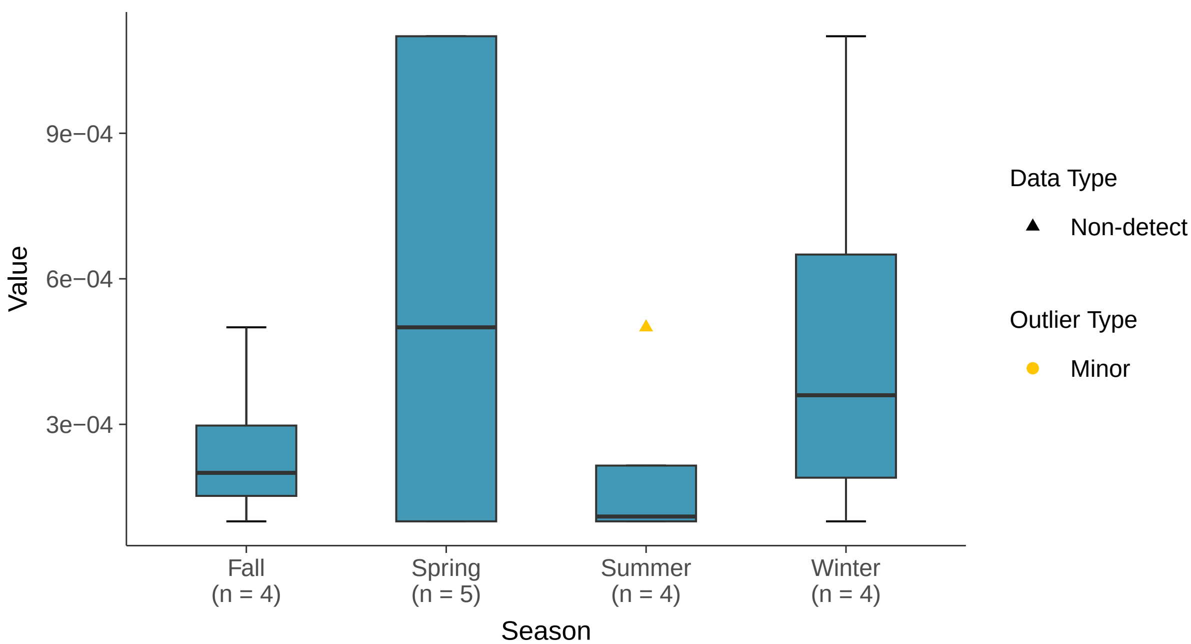
Boxplot

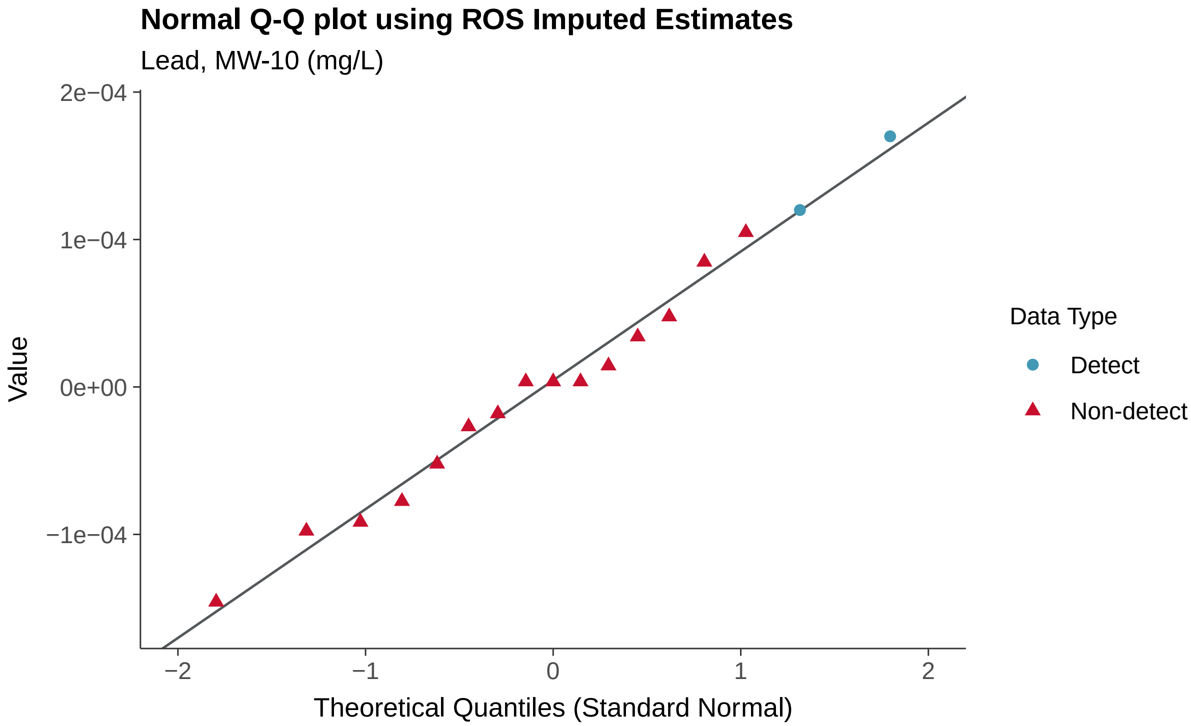
Lead, MW-10 (mg/L)

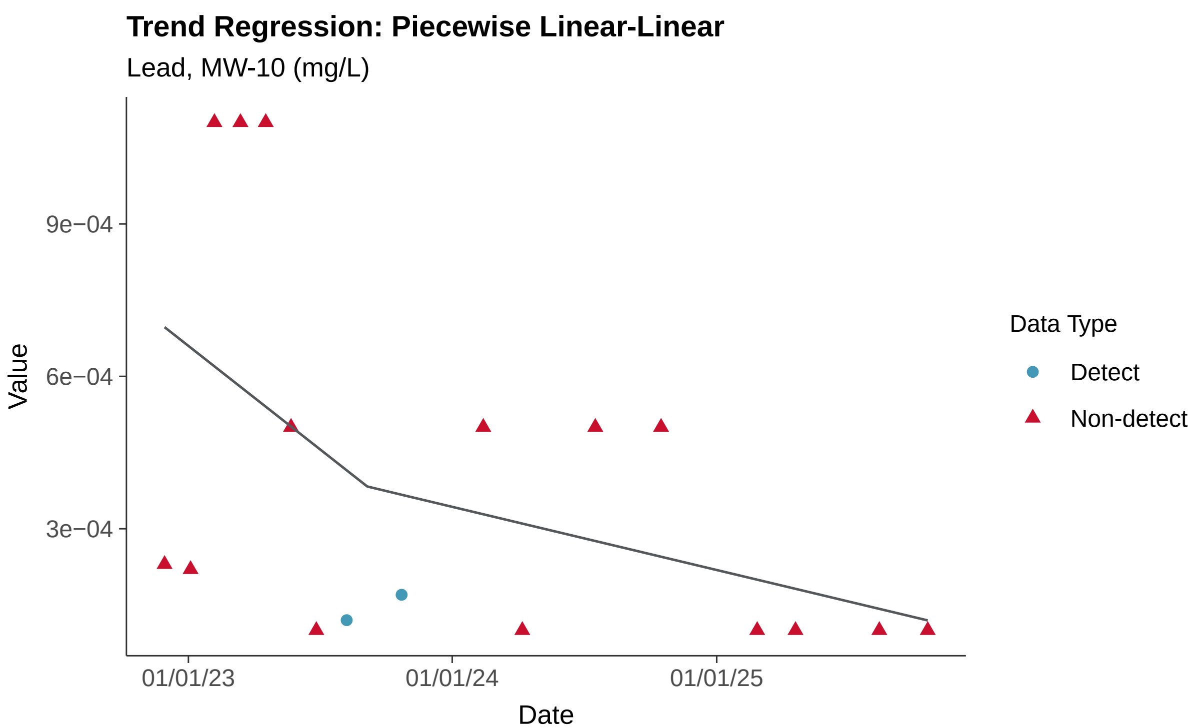


Boxplot by Season

Lead, MW-10 (mg/L)

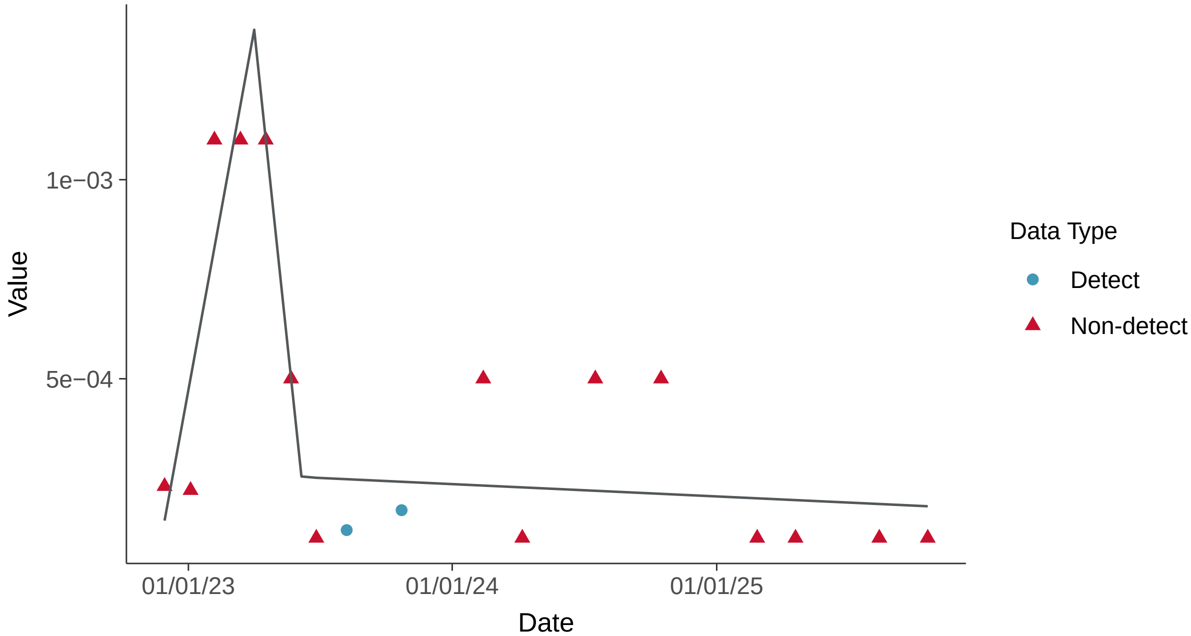



Normal Q-Q plot using ROS Imputed Estimates
Lead, MW-10 (mg/L)
2e−04
1e−04
0e+00
−1e−04
Value
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Lead, MW-10 (mg/L)
9e−04
6e−04
3e−04
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

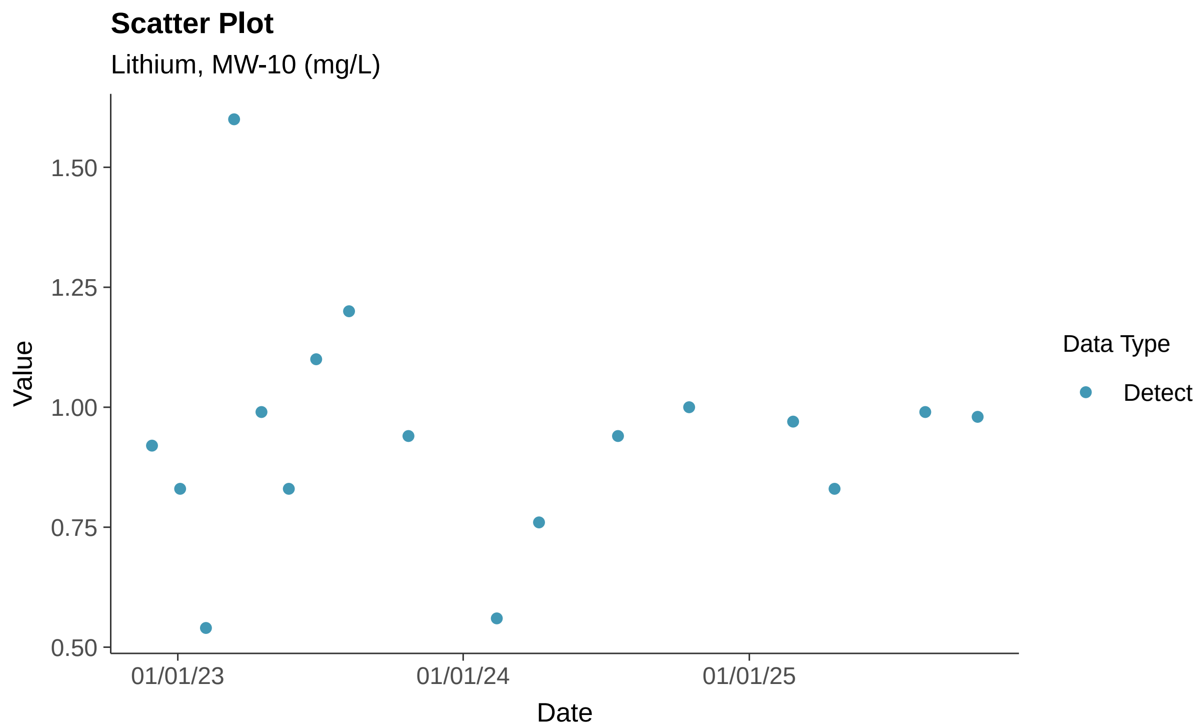
Trend Regression: Piecewise Linear-Linear-Linear

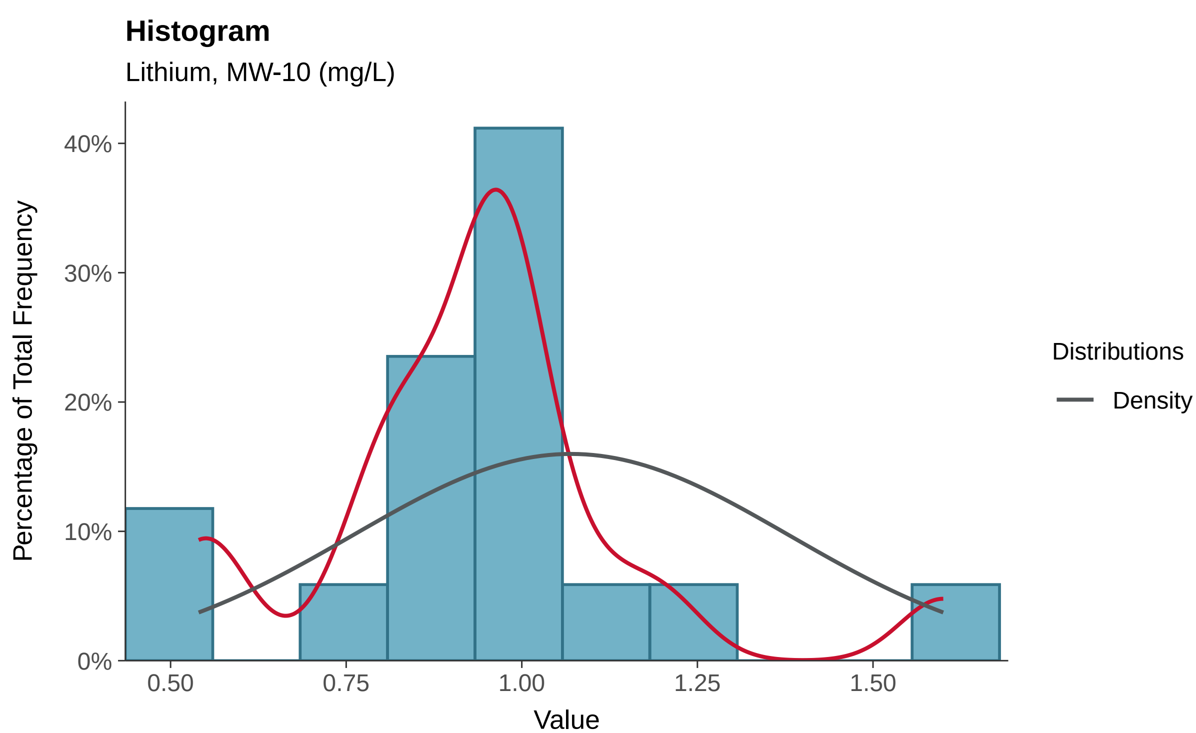
Lead, MW-10 (mg/L)



Appendix IV: Lithium, MW-10

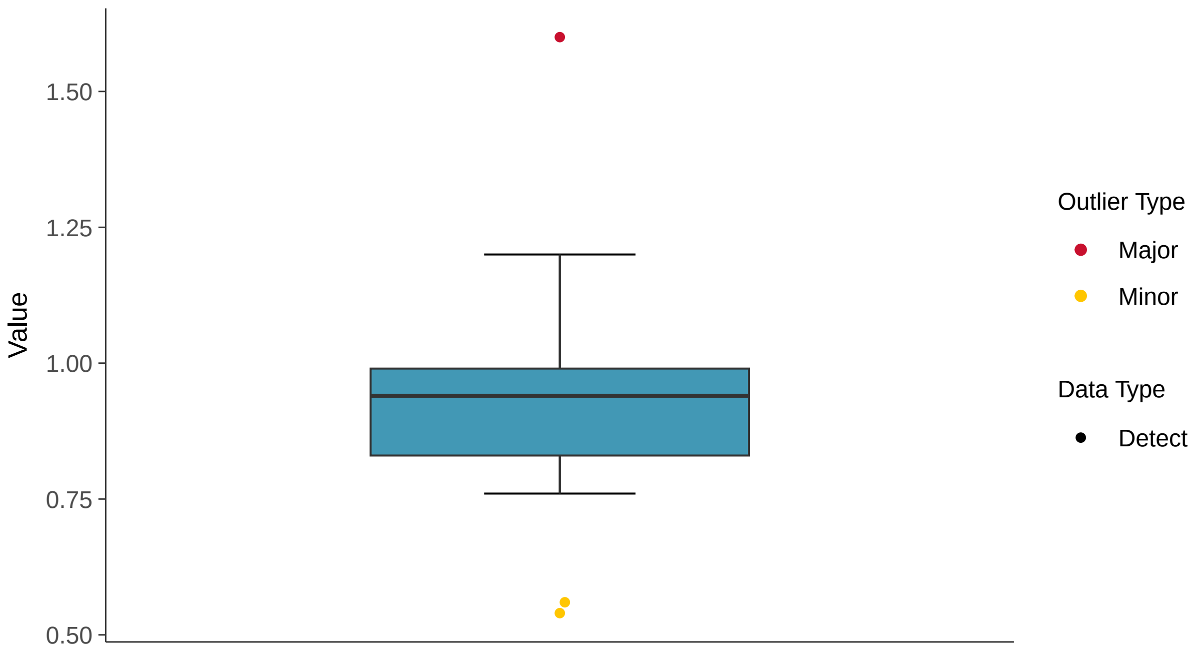
ID: 20_3_4_116





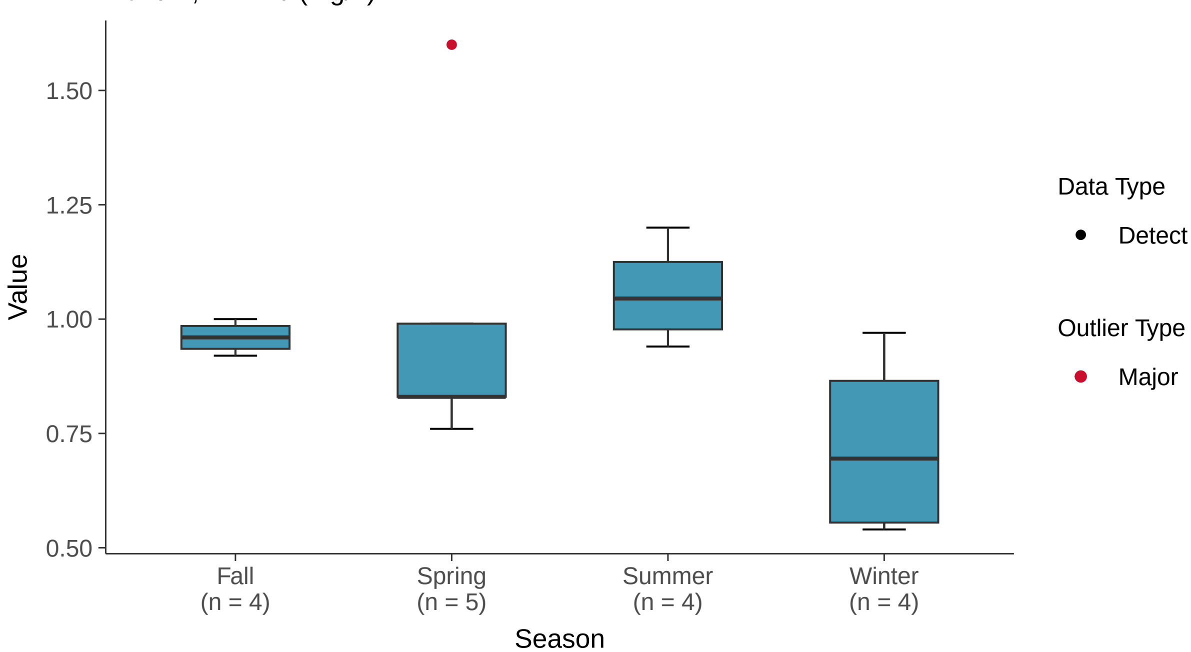
Boxplot

Lithium, MW-10 (mg/L)

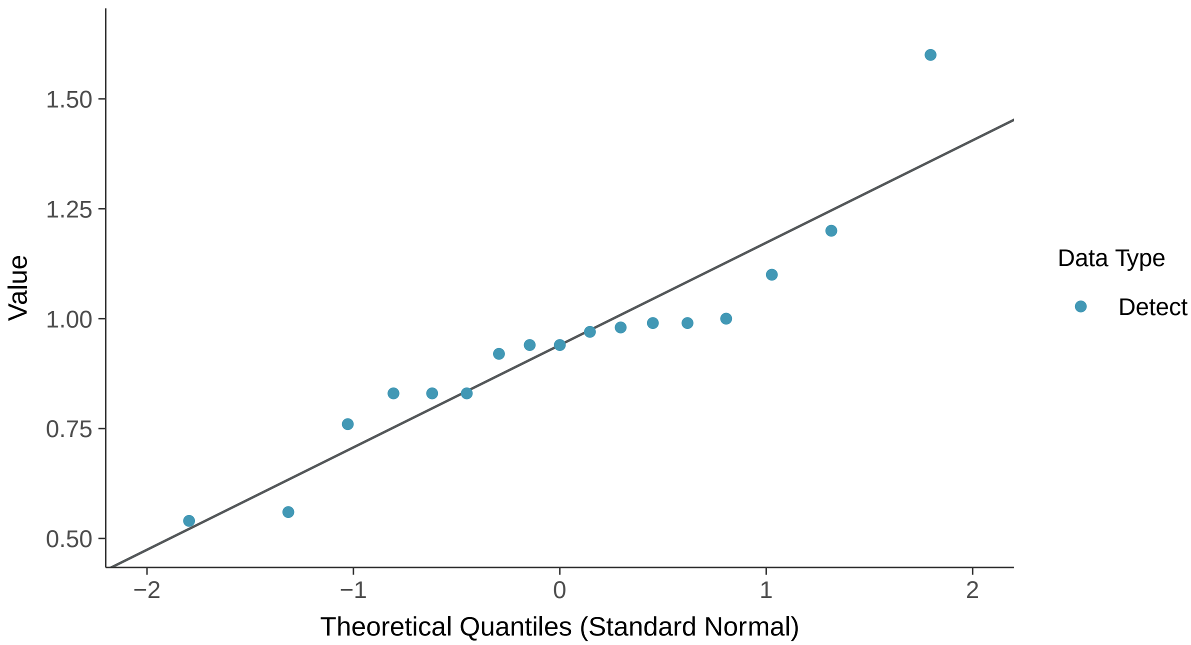


Boxplot by Season

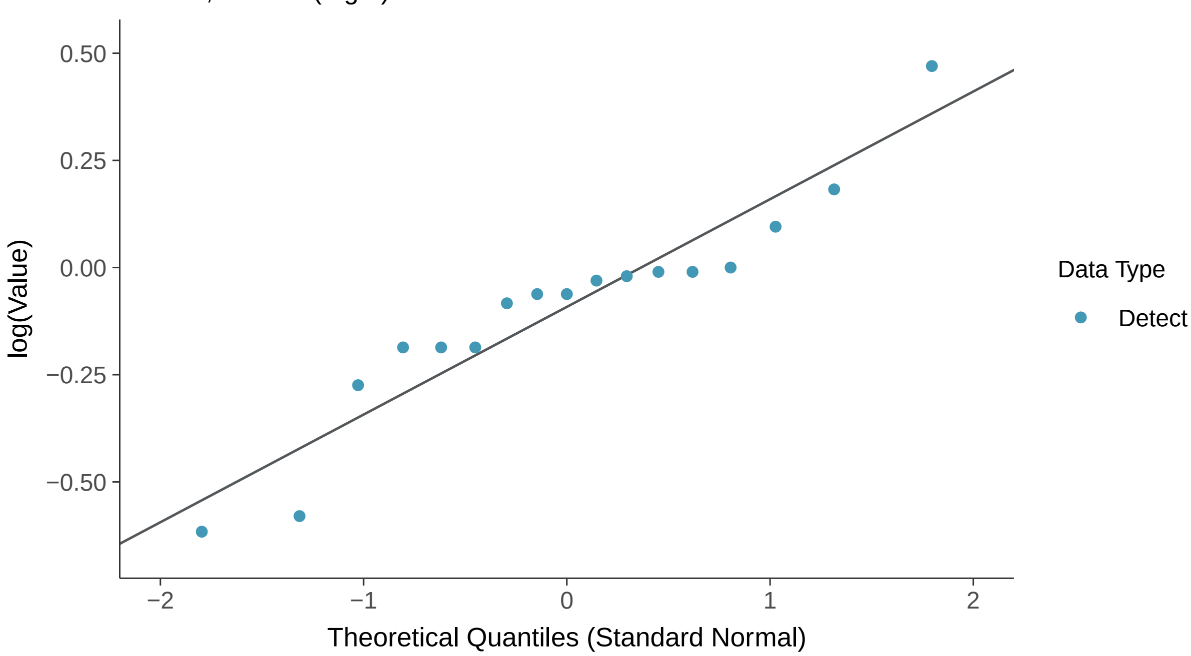
Lithium, MW-10 (mg/L)

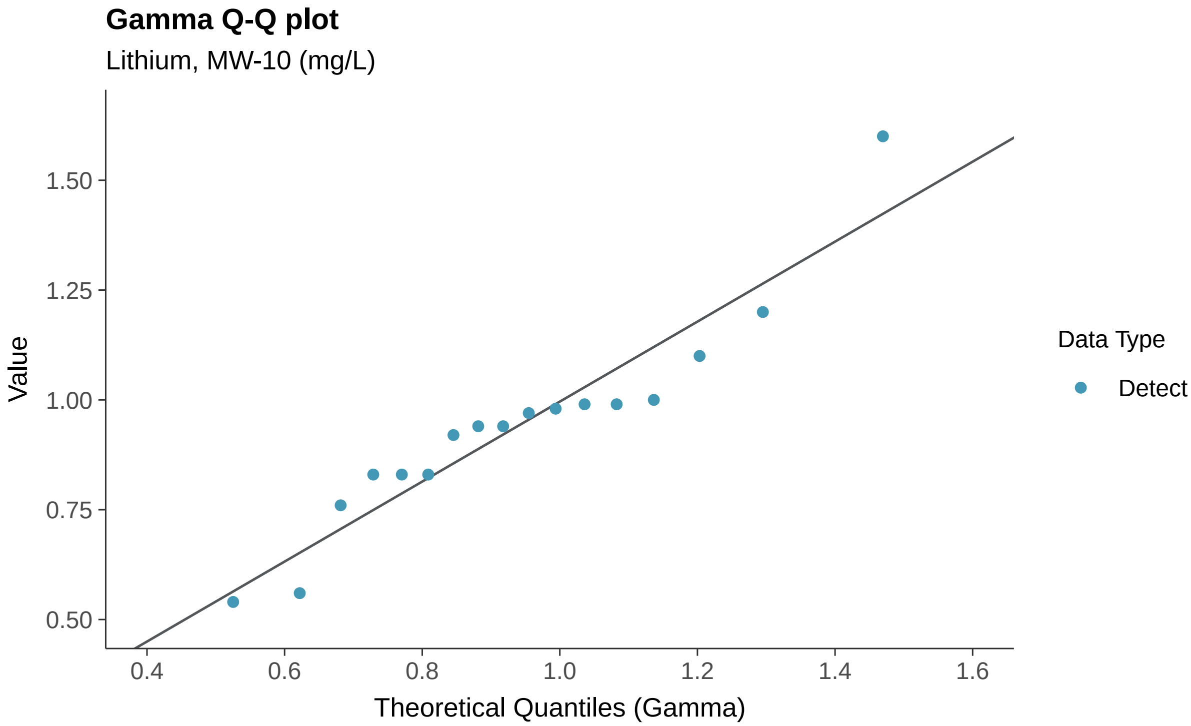


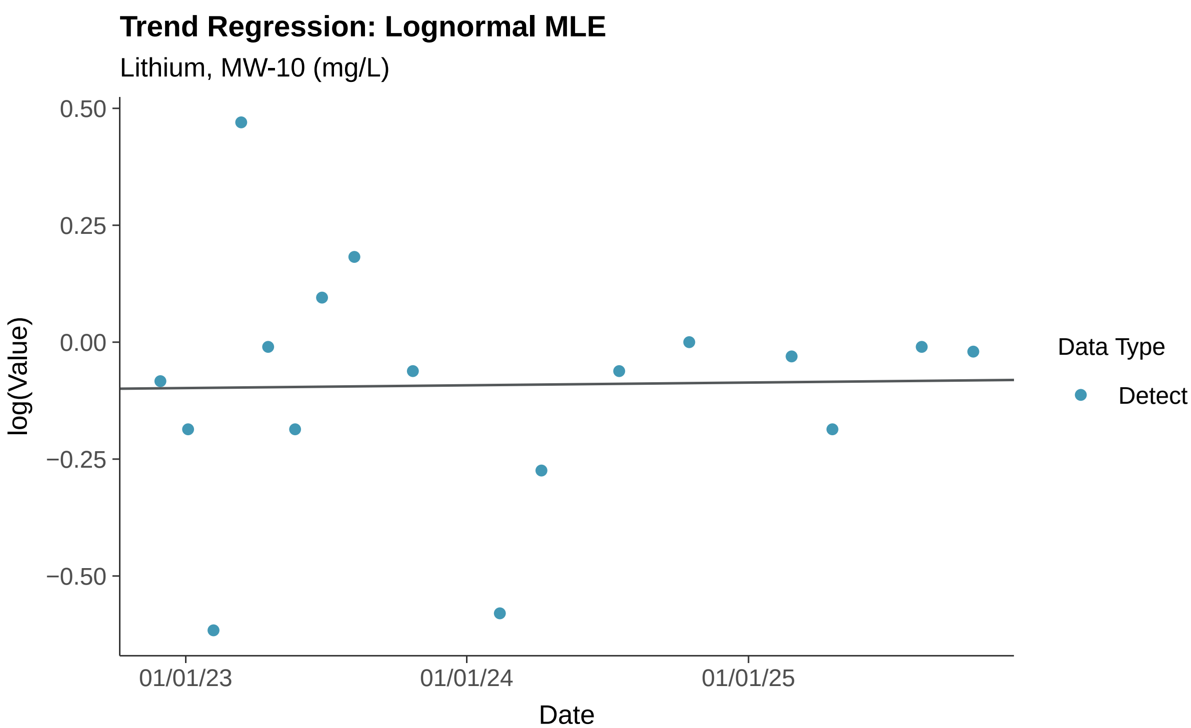
Normal Q-Q plot
Lithium, MW-10 (mg/L)



Lognormal Q-Q plot
Lithium, MW-10 (mg/L)

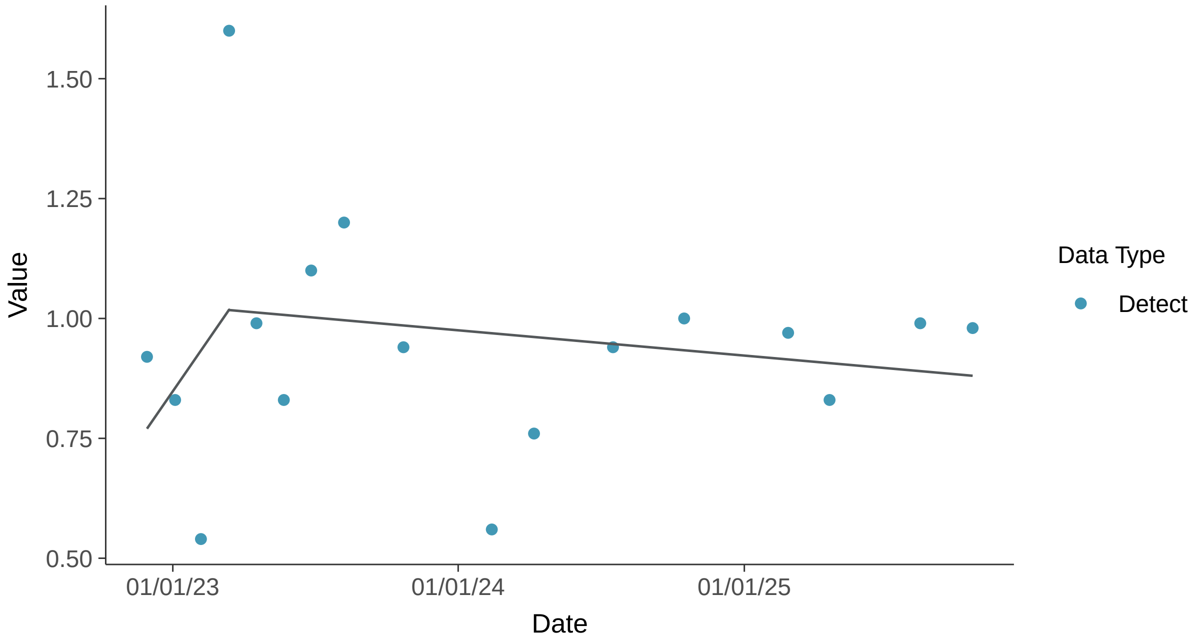



Gamma Q-Q plot
Lithium, MW-10 (mg/L)
Value
1.50
1.25
1.00
0.75
0.50
0.4
0.6
0.8
1.0
1.2
1.4
1.6
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Lithium, MW-10 (mg/L)
log(Value)
0.50
0.25
0.00
−0.25
−0.50
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

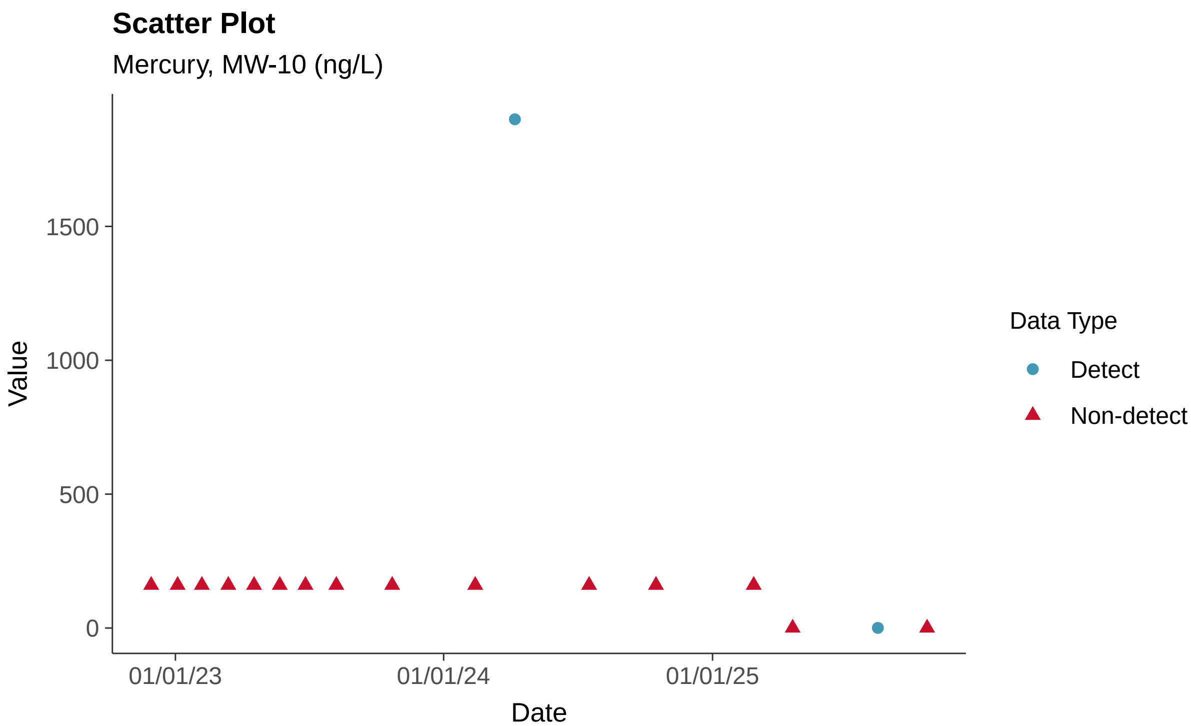
Trend Regression: Piecewise Linear-Linear

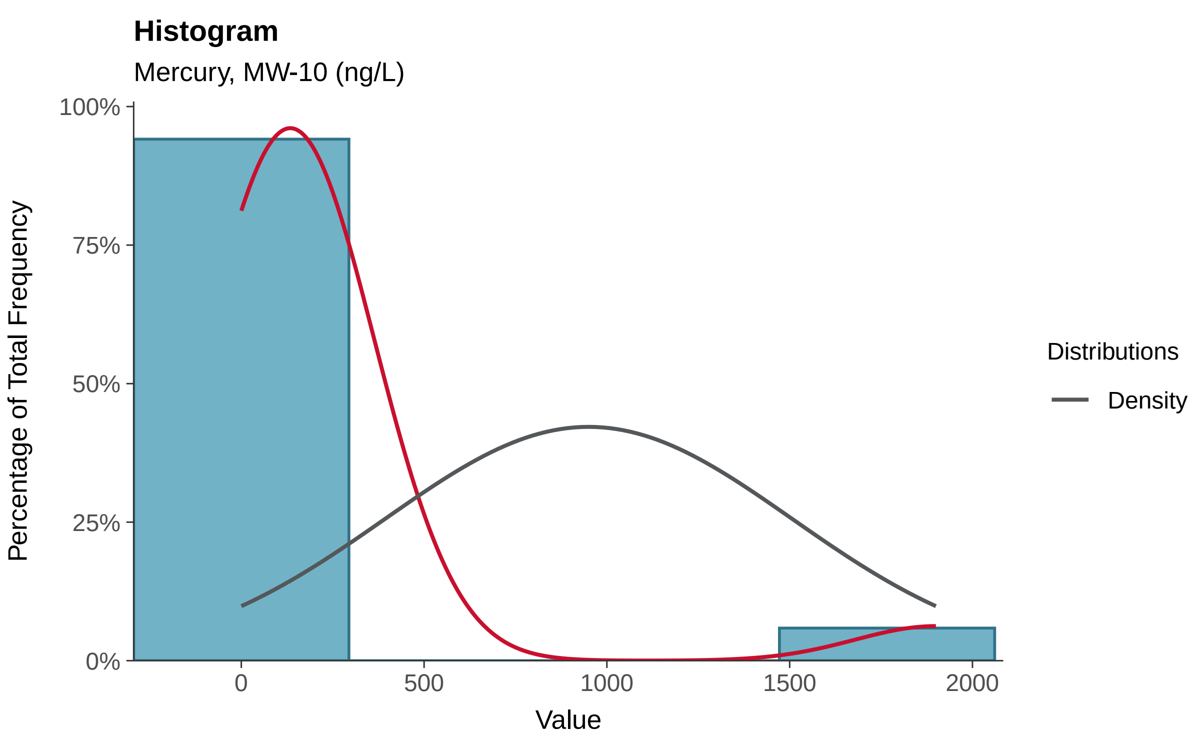
Lithium, MW-10 (mg/L)



Appendix IV: Mercury, MW-10

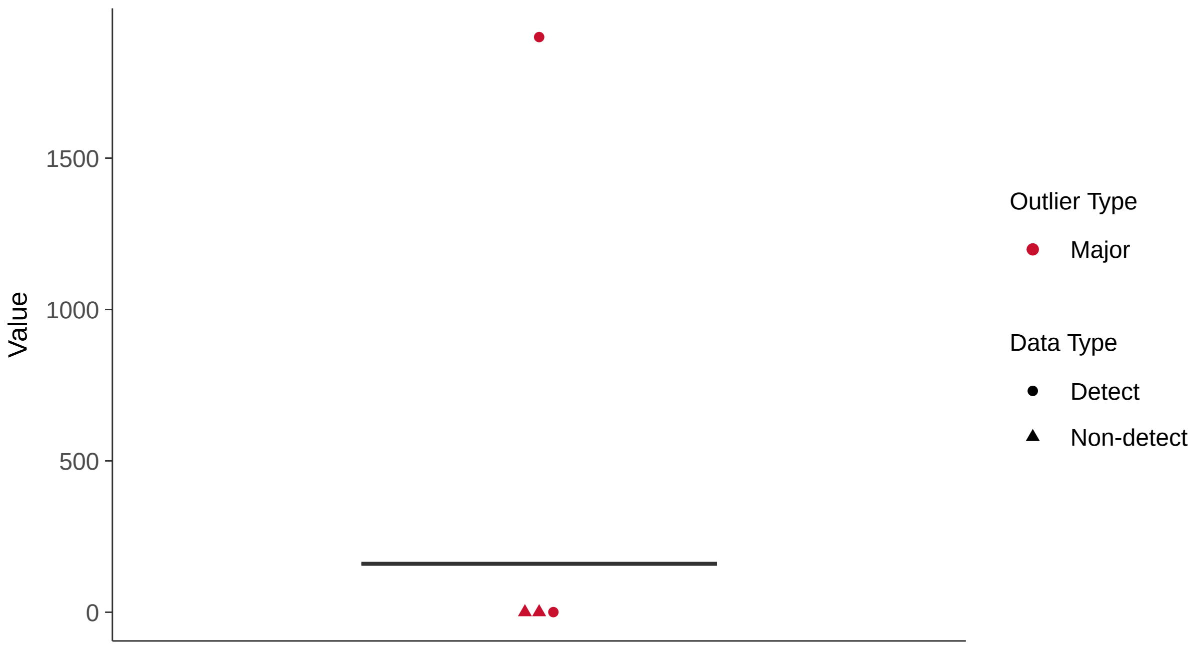
ID: 20_3_4_117





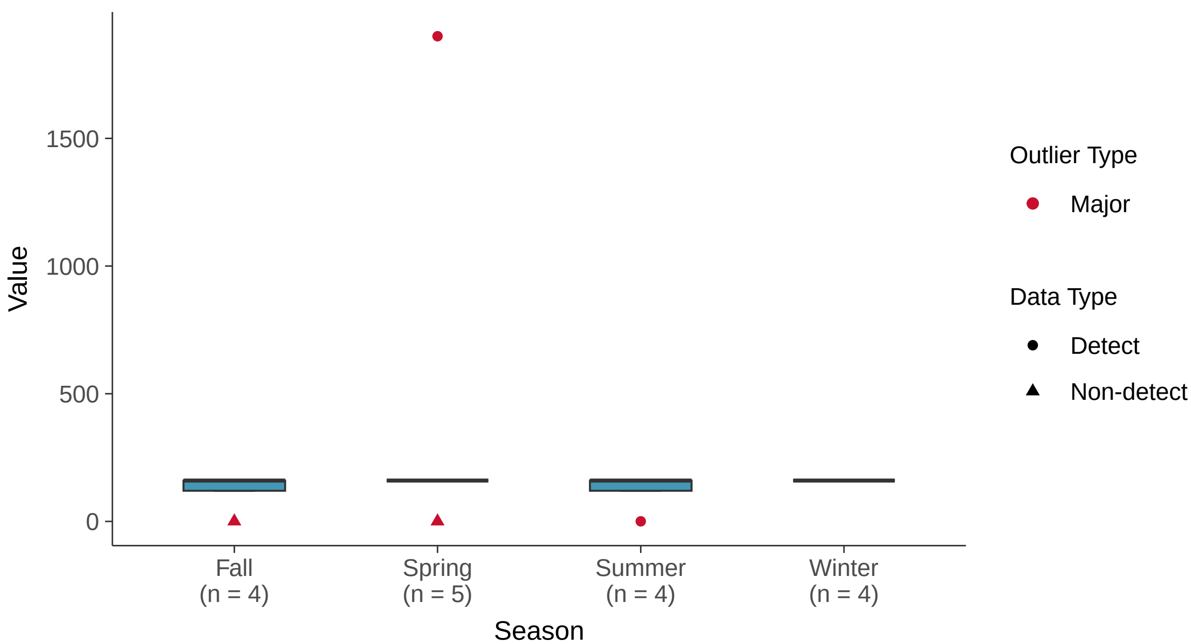
Boxplot

Mercury, MW-10 (ng/L)



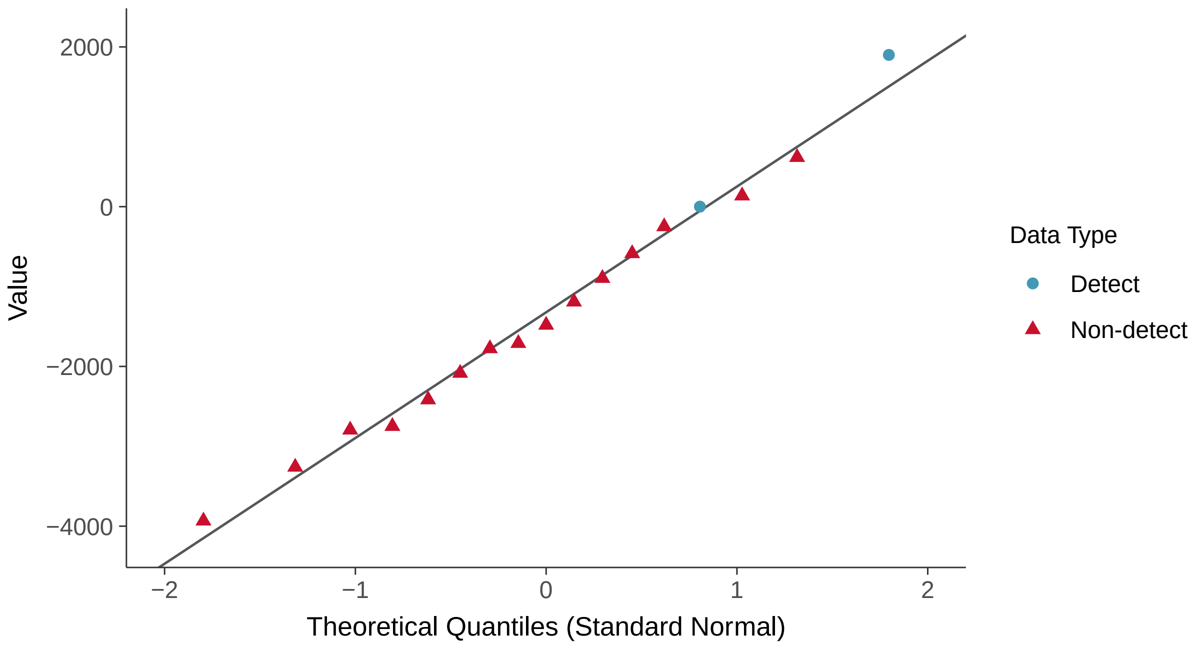
Boxplot by Season

Mercury, MW-10 (ng/L)



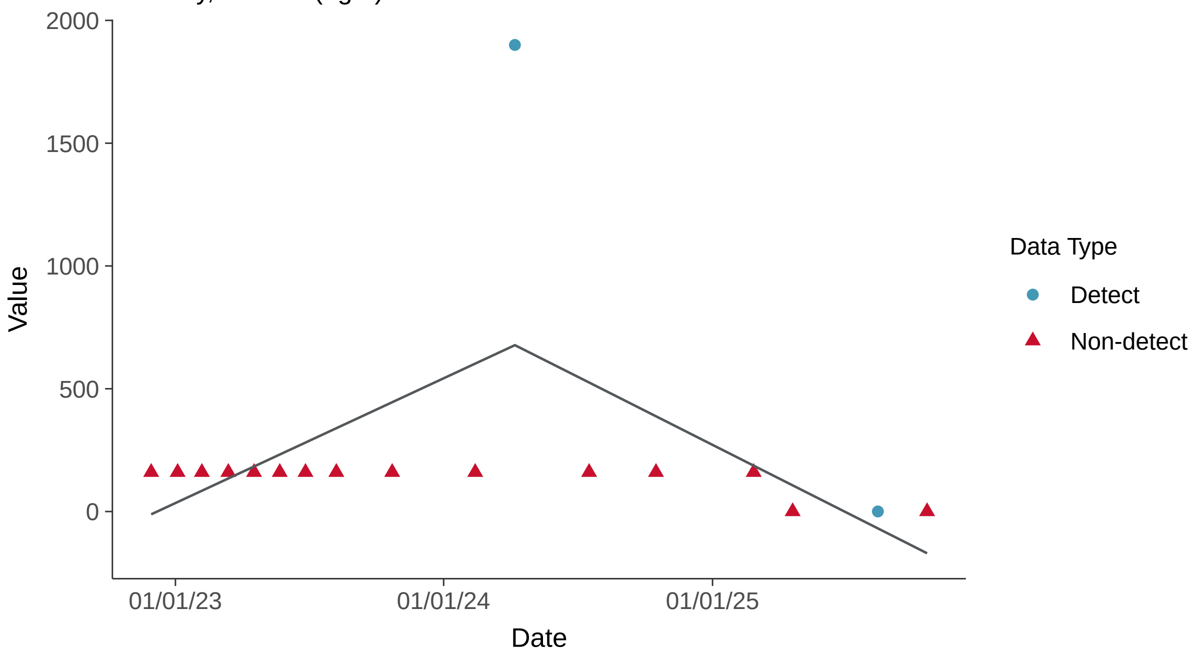
Normal Q-Q plot using ROS Imputed Estimates

Mercury, MW-10 (ng/L)



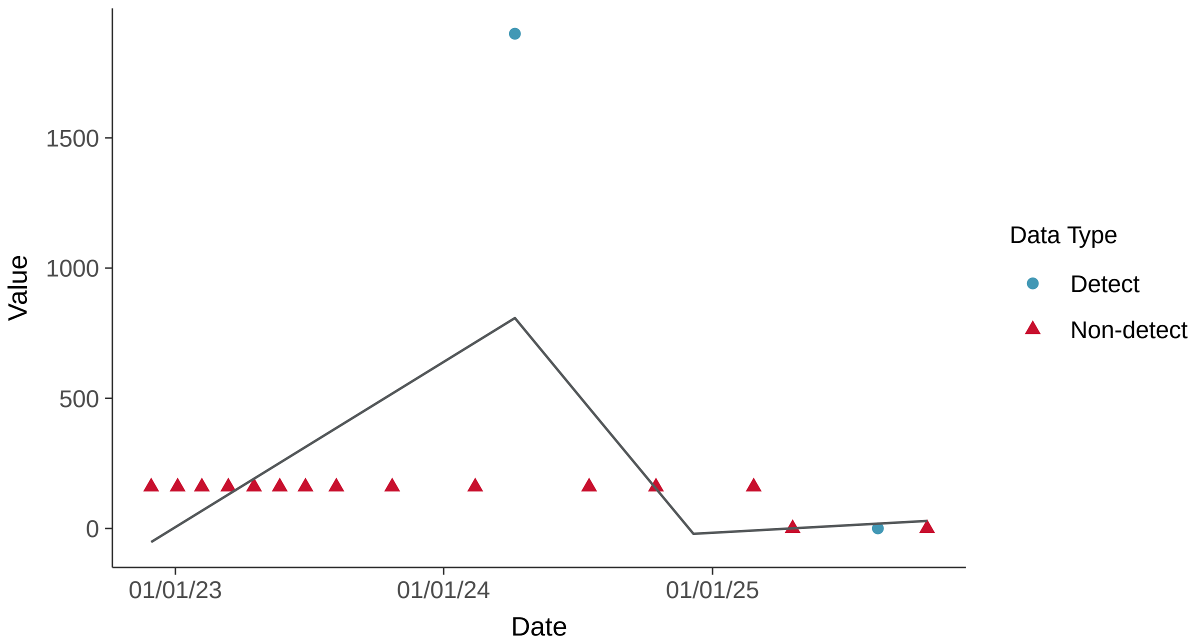
Trend Regression: Piecewise Linear-Linear

Mercury, MW-10 (ng/L)



Trend Regression: Piecewise Linear-Linear-Linear

Mercury, MW-10 (ng/L)

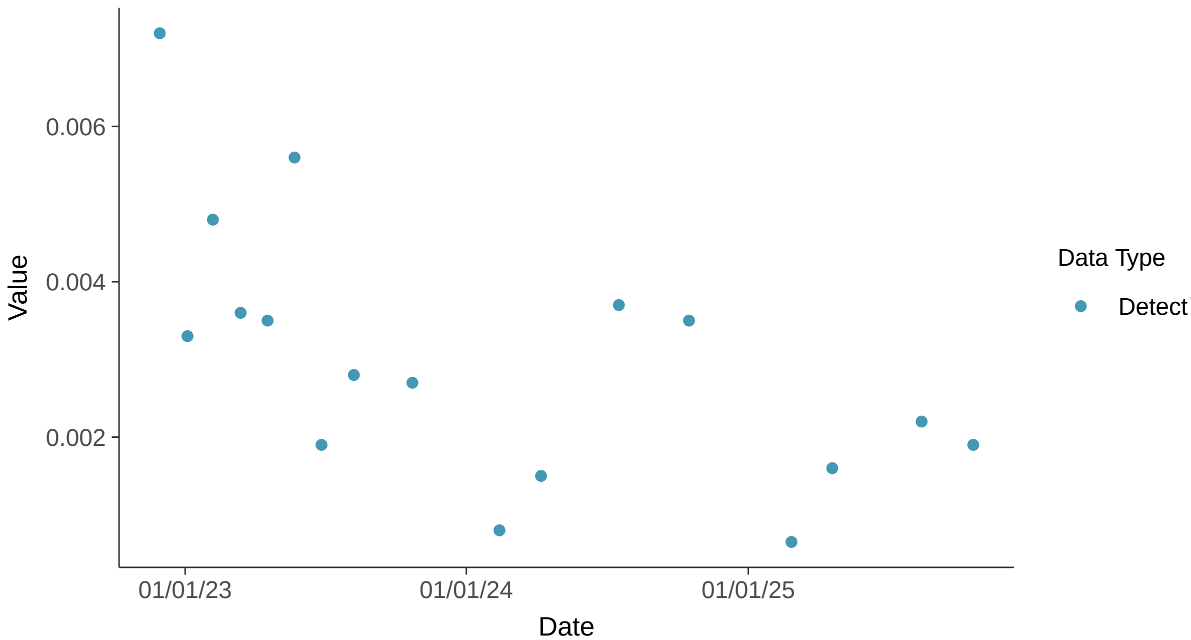


Appendix IV: Molybdenum, MW-10

ID: 20_3_4_118

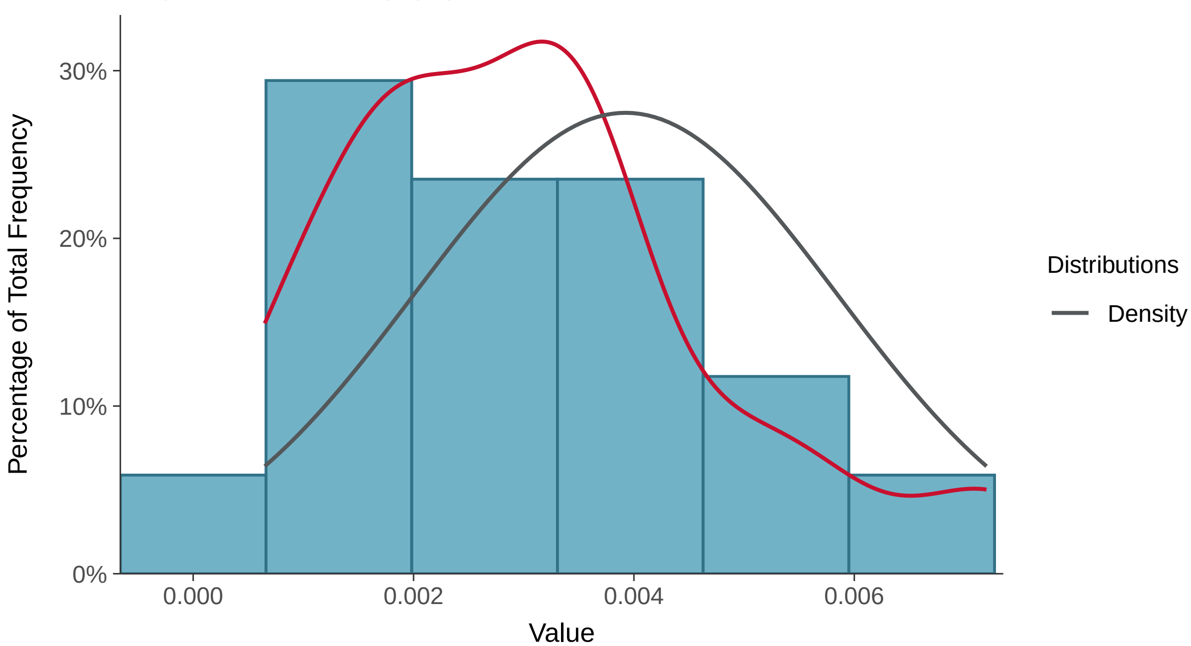
Scatter Plot

Molybdenum, MW-10 (mg/L)



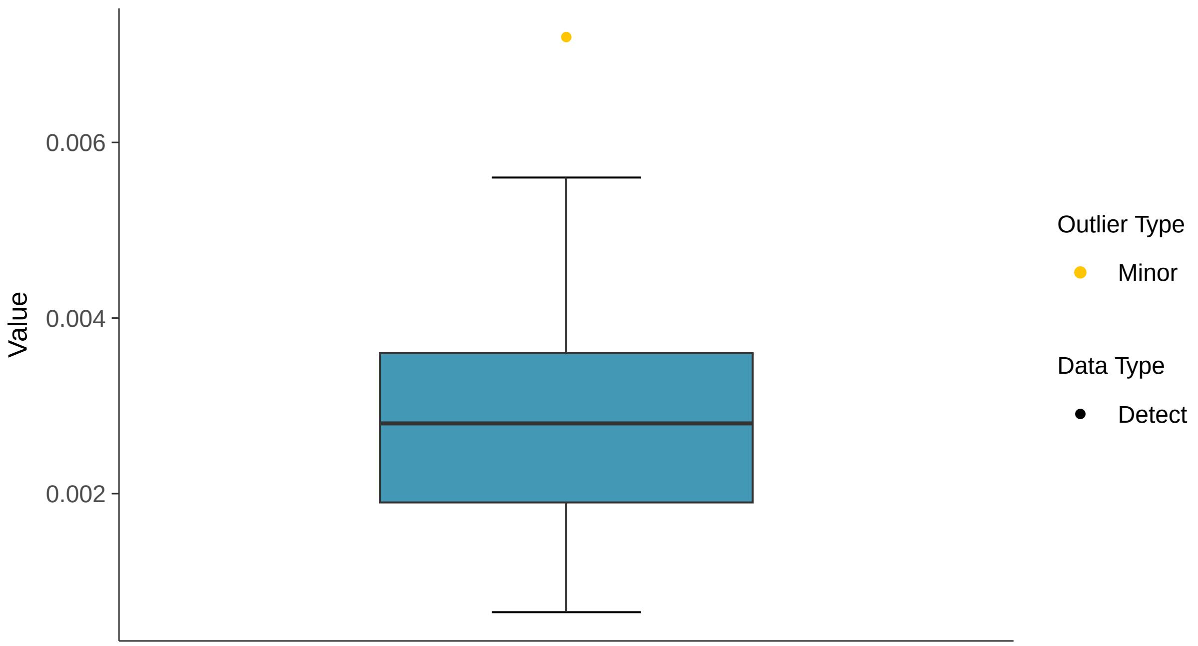
Histogram

Molybdenum, MW-10 (mg/L)



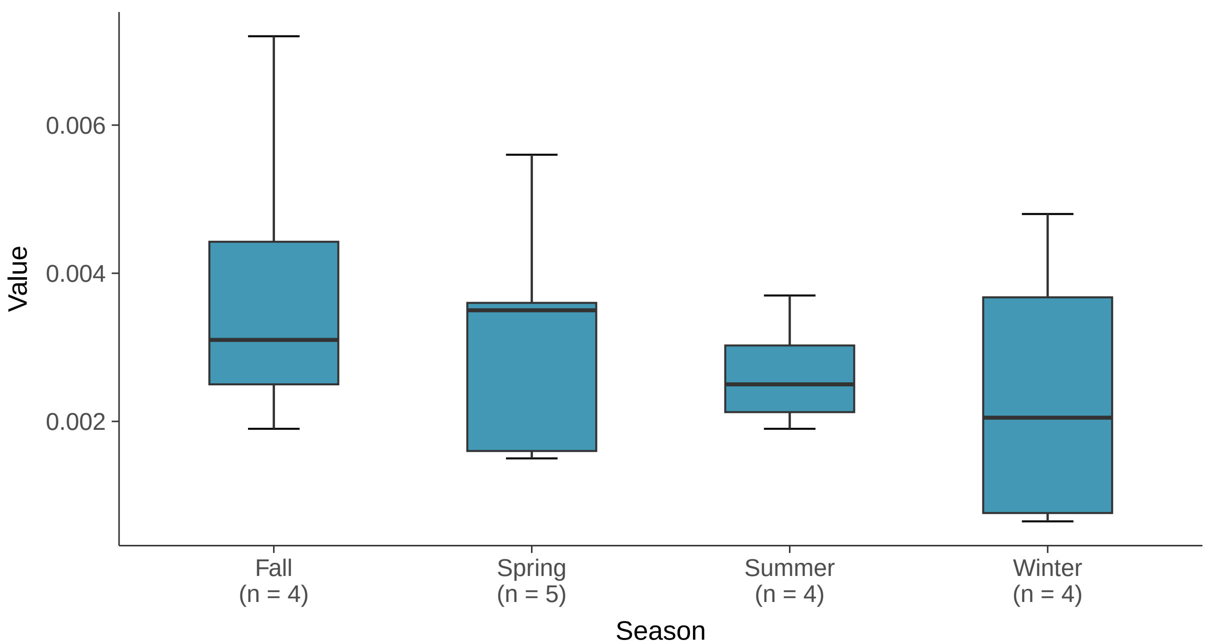
Boxplot

Molybdenum, MW-10 (mg/L)



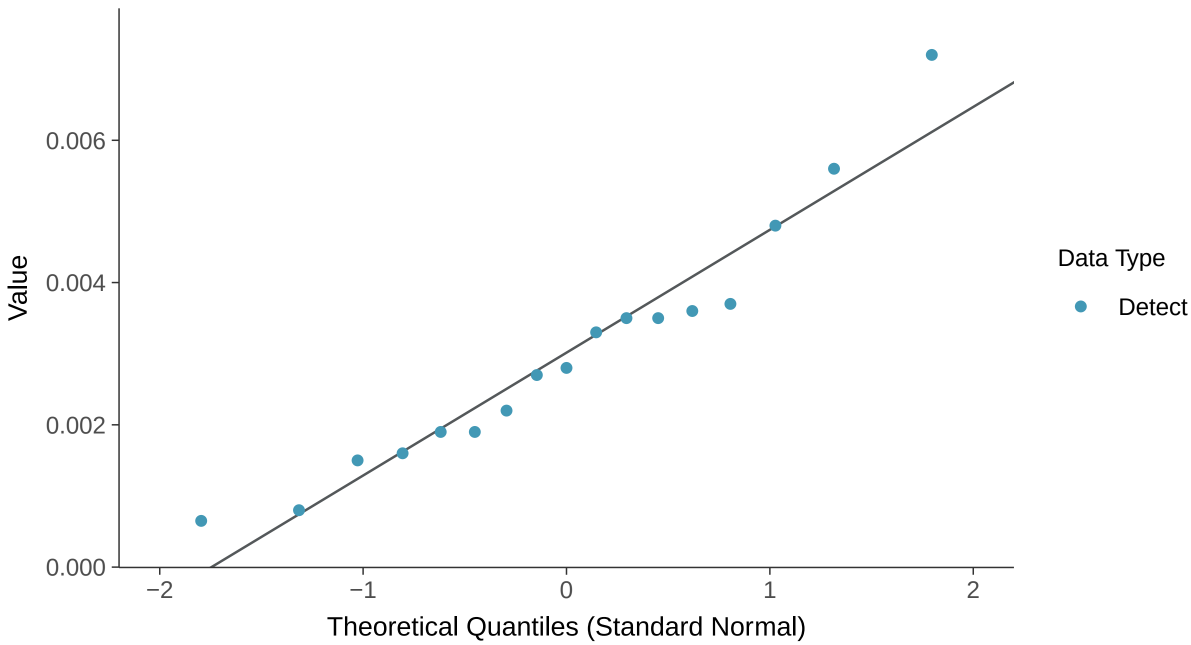
Boxplot by Season

Molybdenum, MW-10 (mg/L)



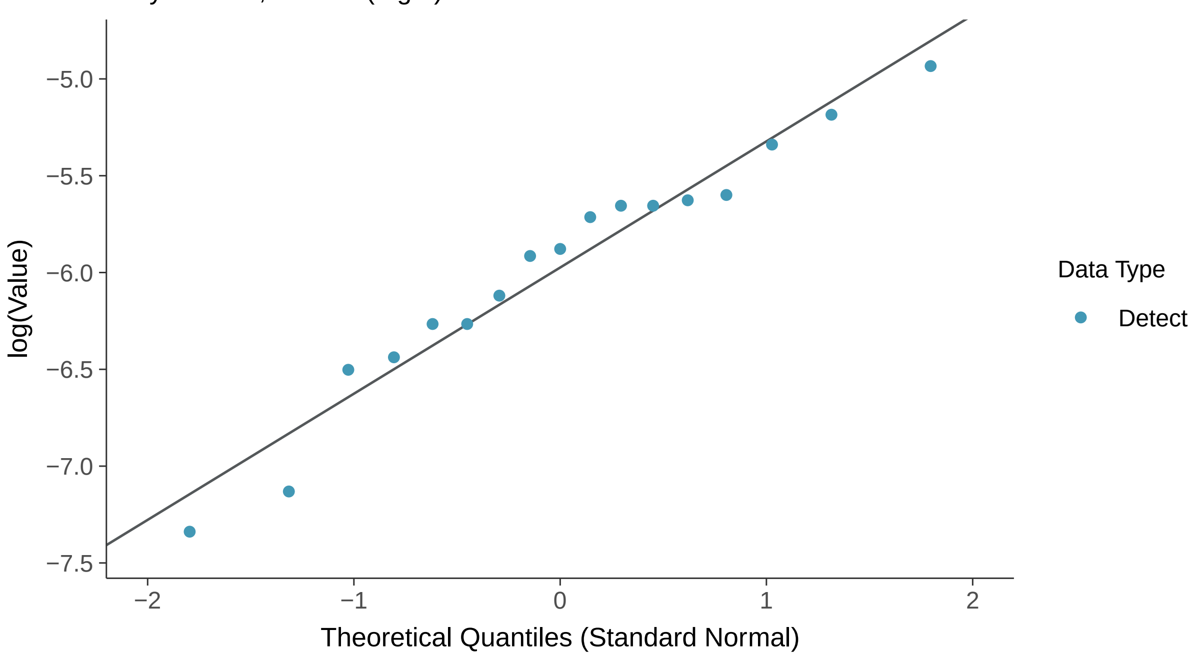
Normal Q-Q plot

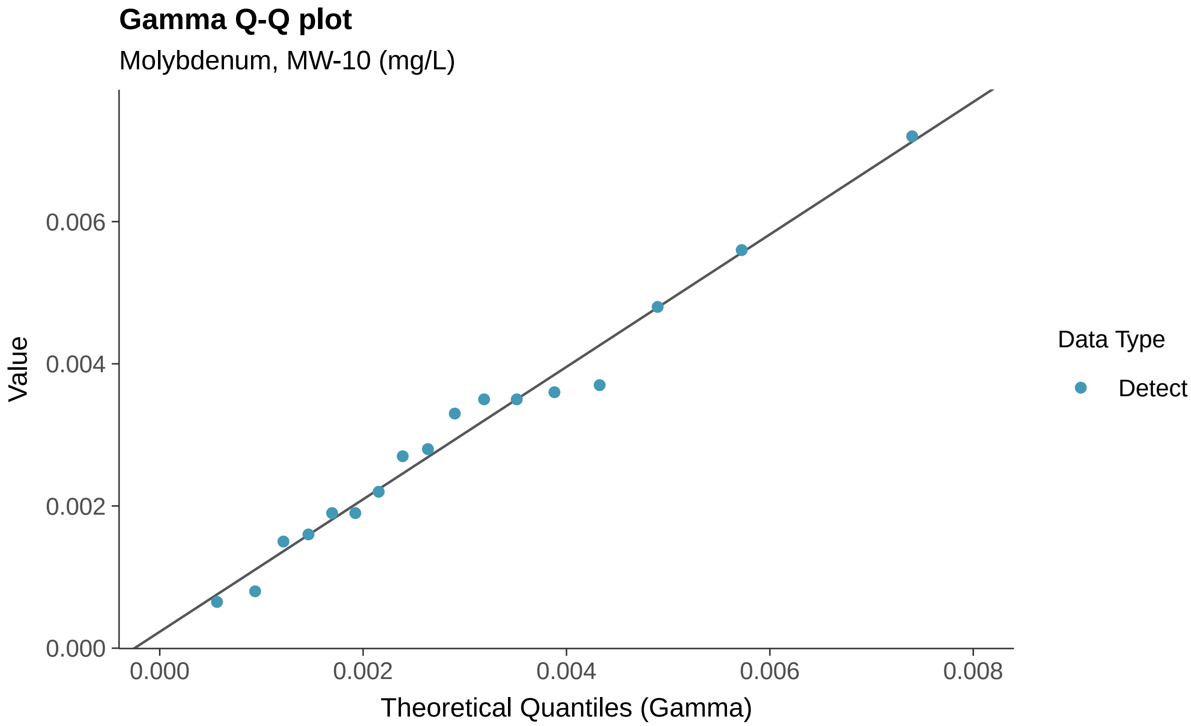
Molybdenum, MW-10 (mg/L)

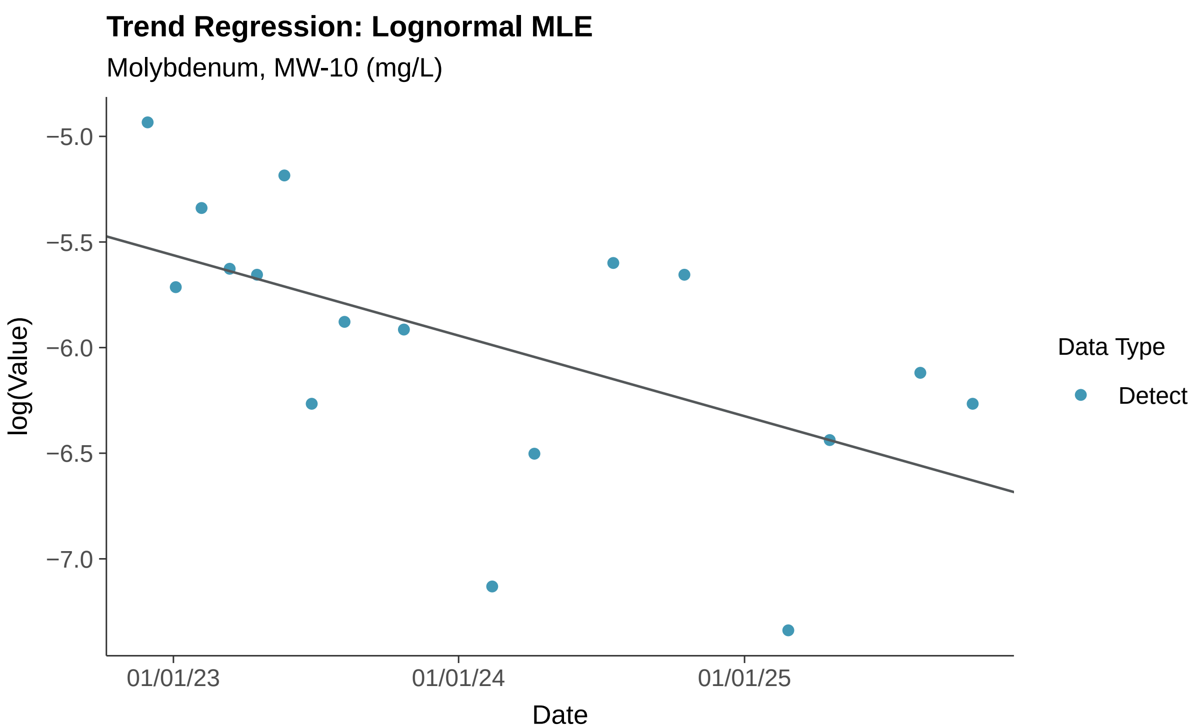


Lognormal Q-Q plot

Molybdenum, MW-10 (mg/L)

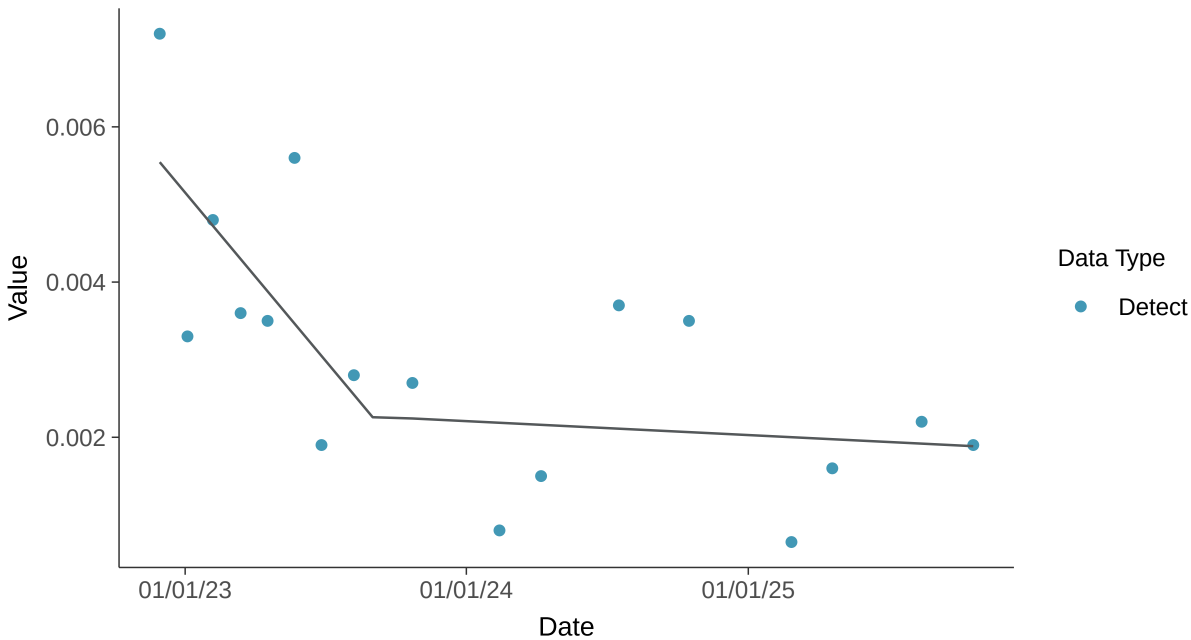



Gamma Q-Q plot
Molybdenum, MW-10 (mg/L)
Value
0.006
0.004
0.002
0.000
0.000
0.002
0.004
0.006
0.008
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Molybdenum, MW-10 (mg/L)
log(Value)
−5.0
−5.5
−6.0
−6.5
−7.0
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear

Molybdenum, MW-10 (mg/L)

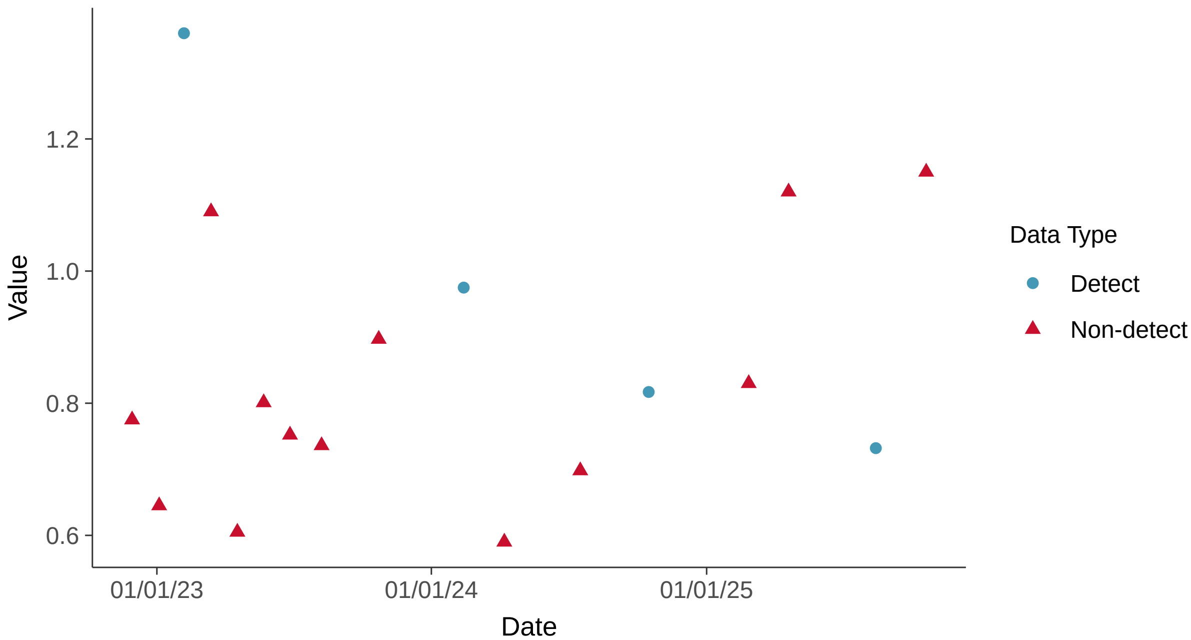


Appendix IV: Radium 226 and 228, MW-10

ID: 20_3_4_121

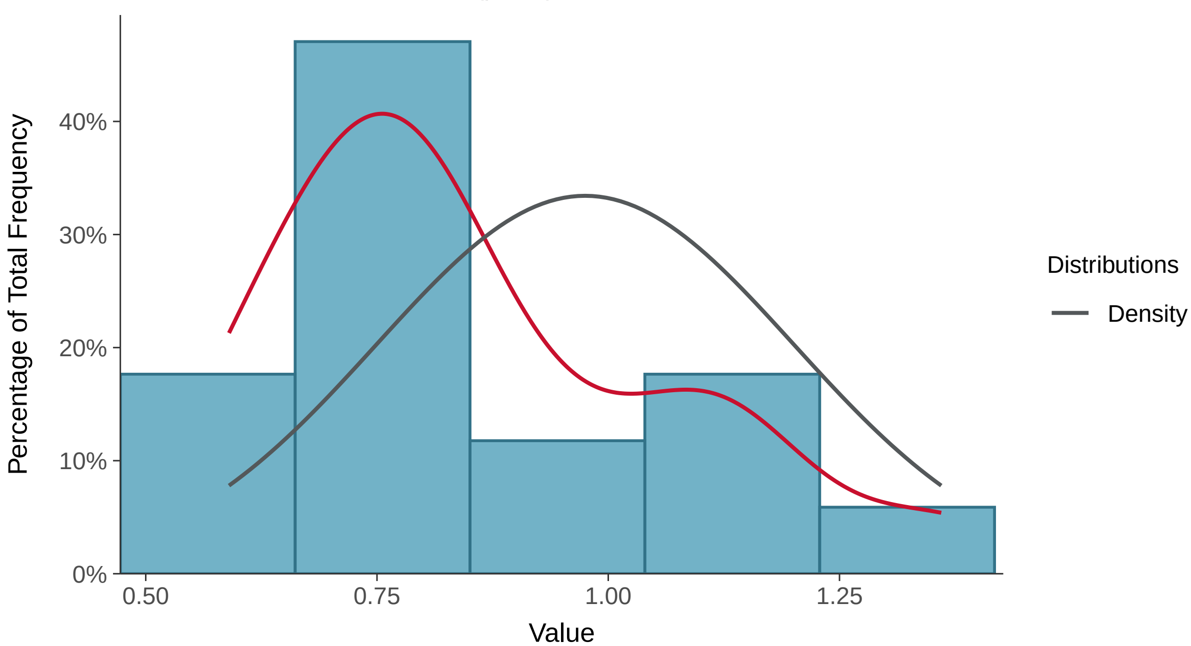
Scatter Plot

Radium 226 and 228, MW-10 (pCi/L)



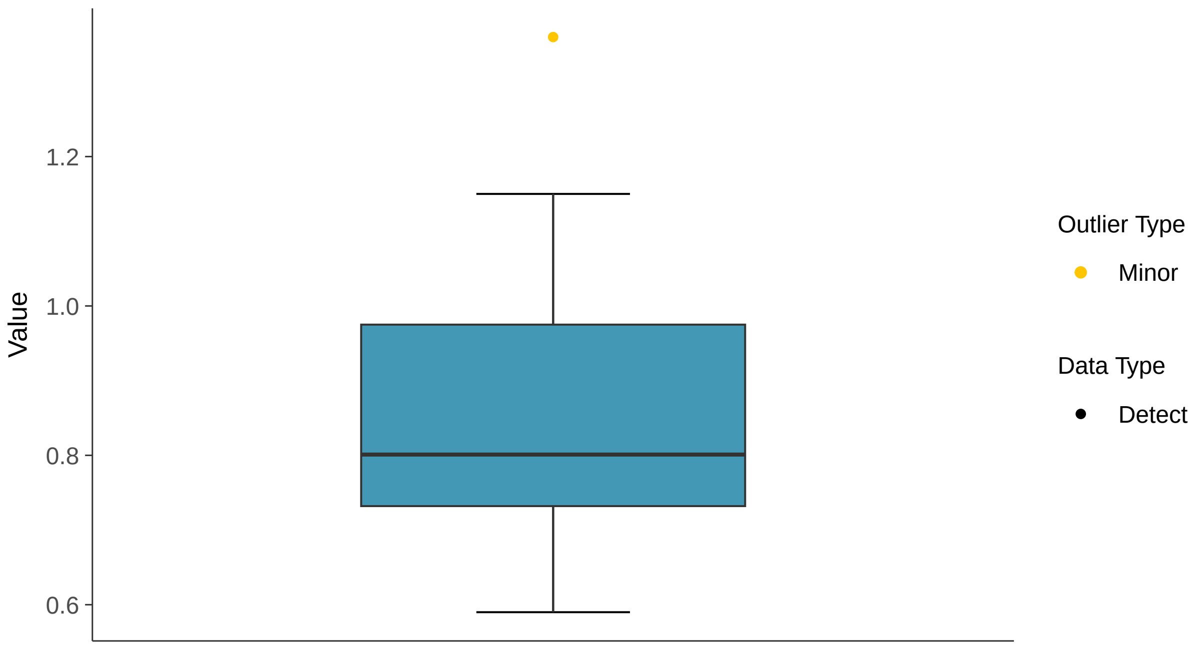
Histogram

Radium 226 and 228, MW-10 (pCi/L)



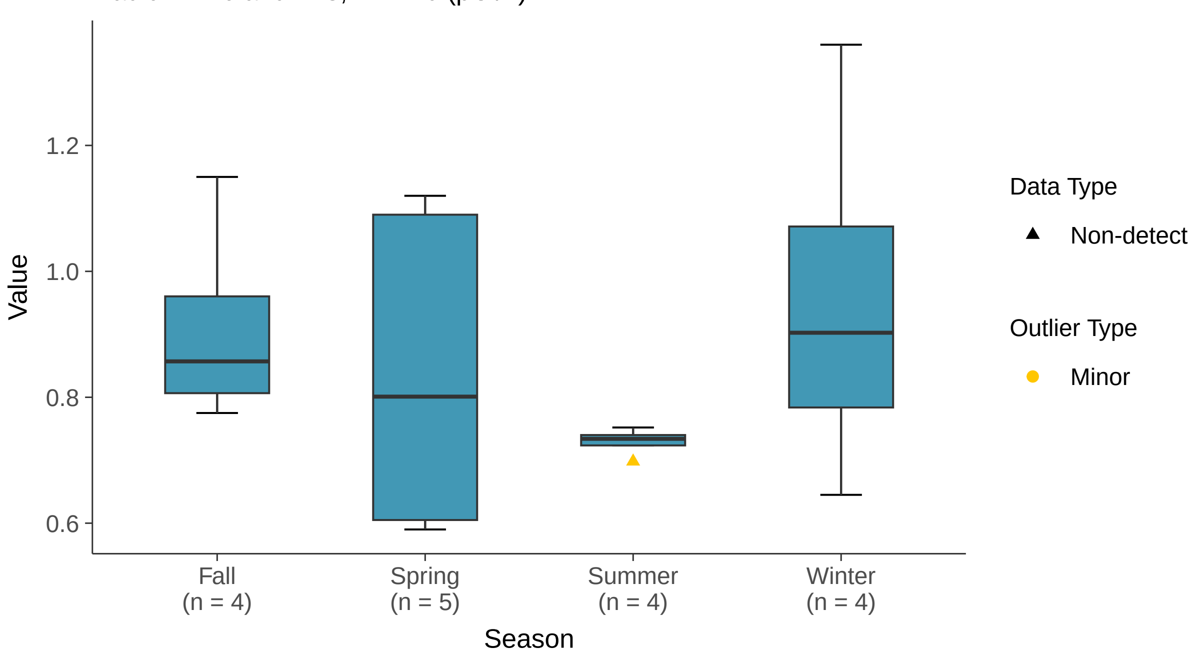
Boxplot

Radium 226 and 228, MW-10 (pCi/L)



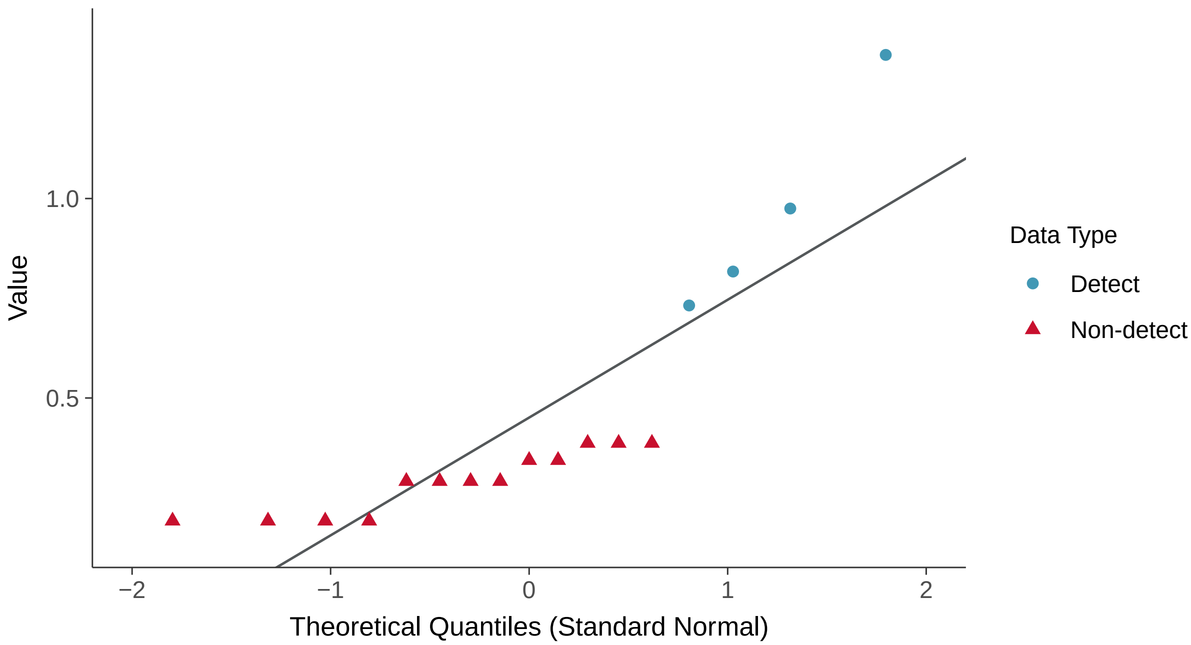
Boxplot by Season

Radium 226 and 228, MW-10 (pCi/L)



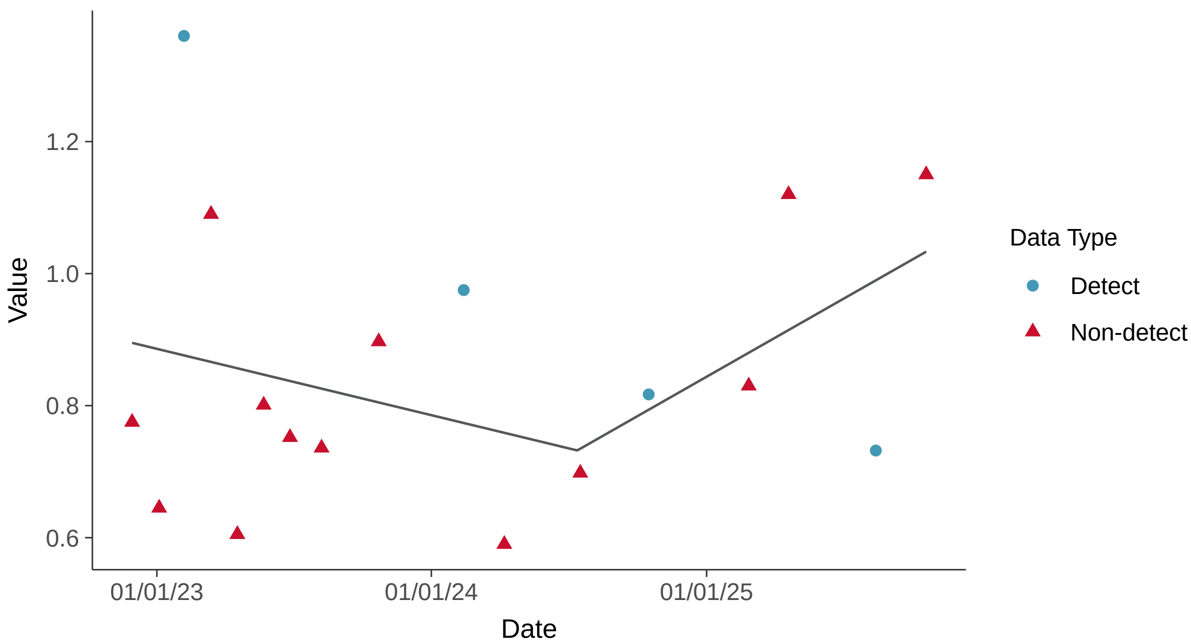
Normal Q-Q plot using ROS Imputed Estimates

Radium 226 and 228, MW-10 (pCi/L)



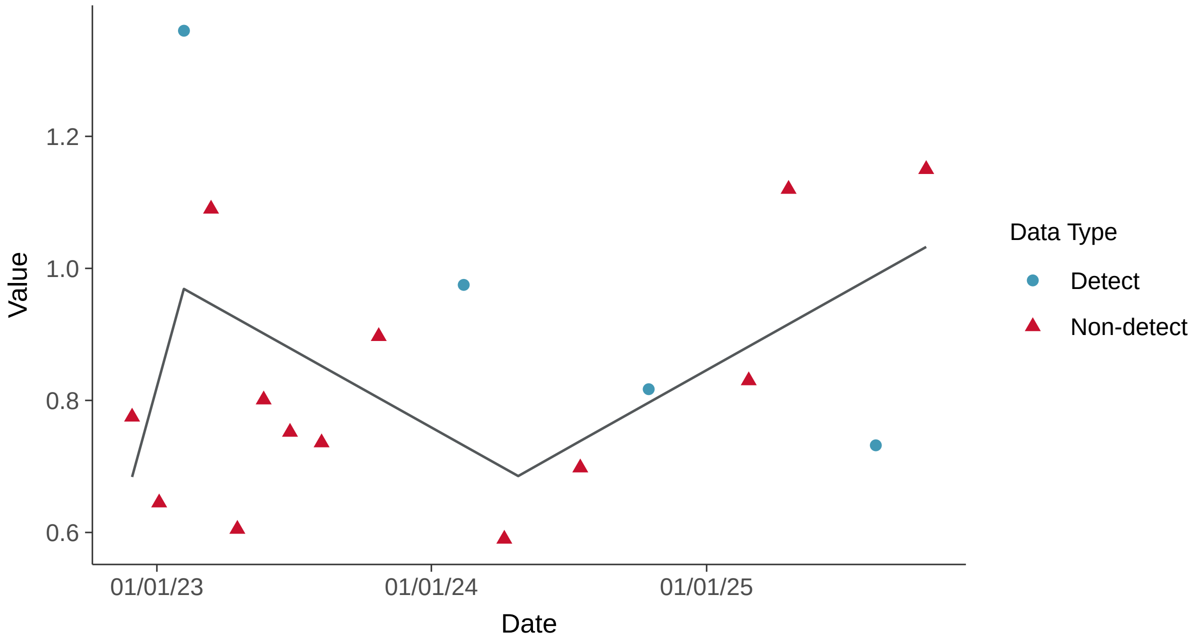
Trend Regression: Piecewise Linear-Linear

Radium 226 and 228, MW-10 (pCi/L)



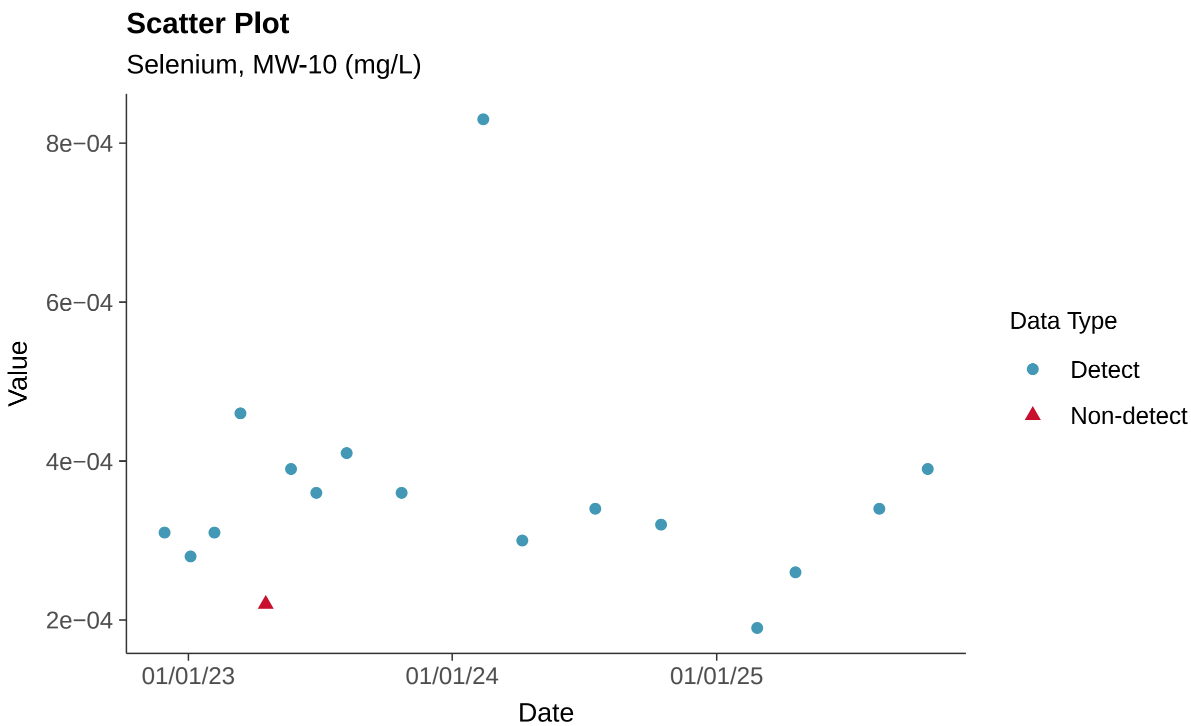
Trend Regression: Piecewise Linear-Linear-Linear

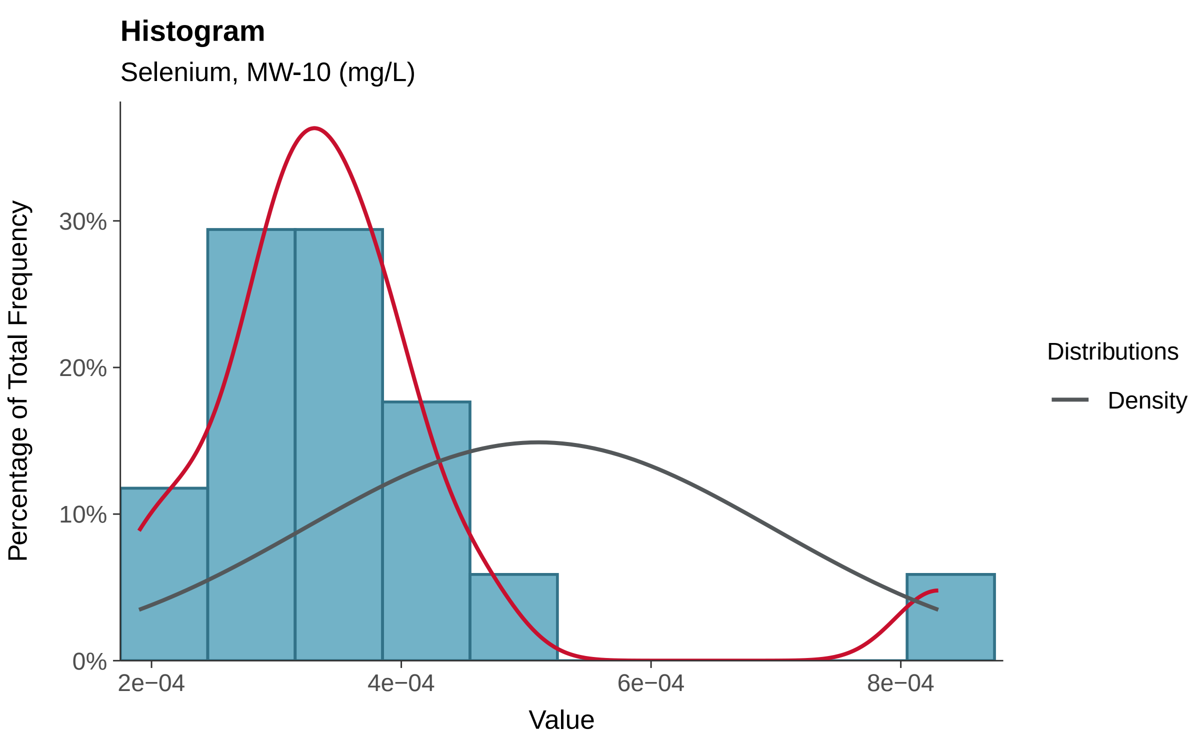
Radium 226 and 228, MW-10 (pCi/L)



Appendix IV: Selenium, MW-10

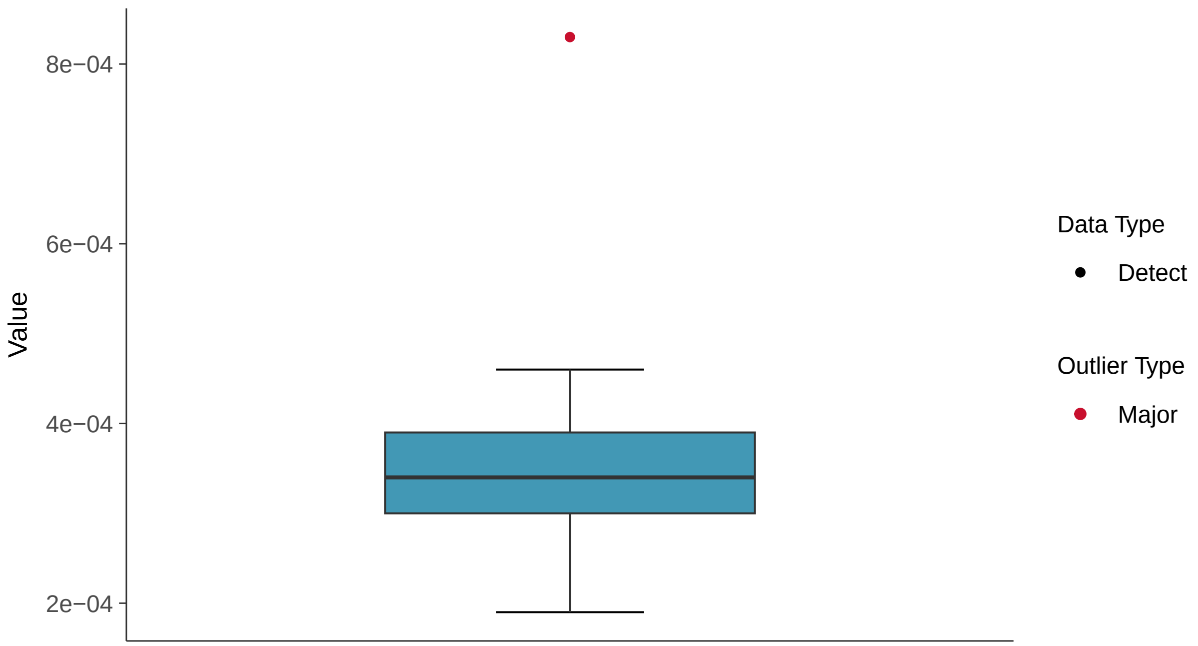
ID: 20_3_4_122





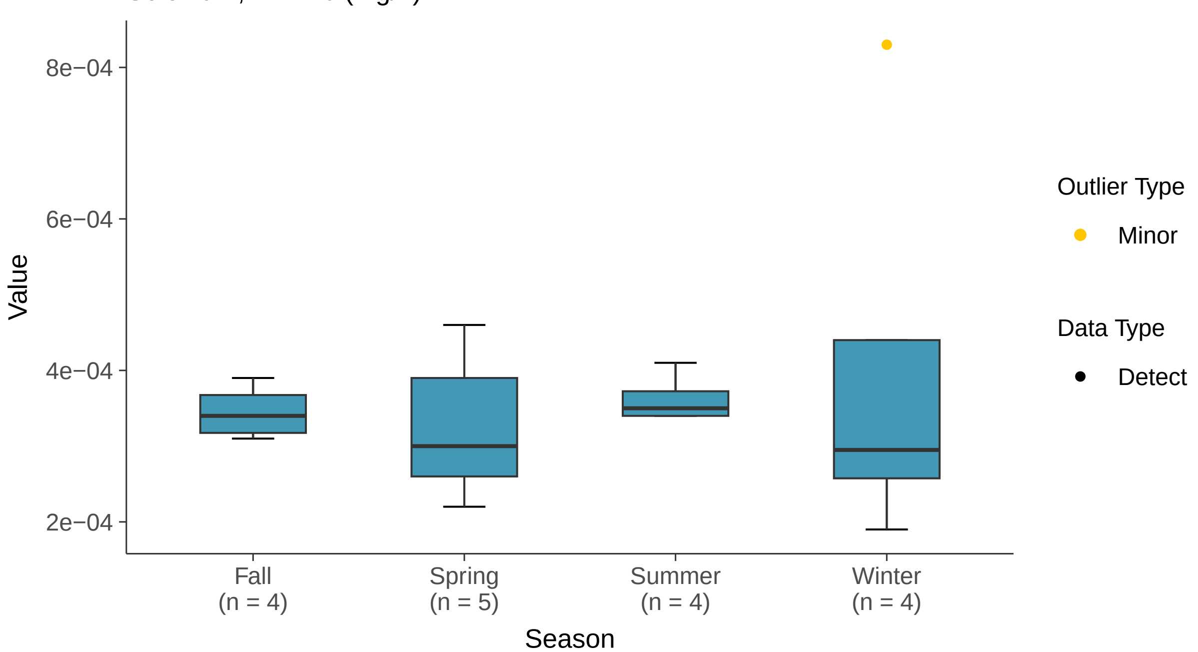
Boxplot

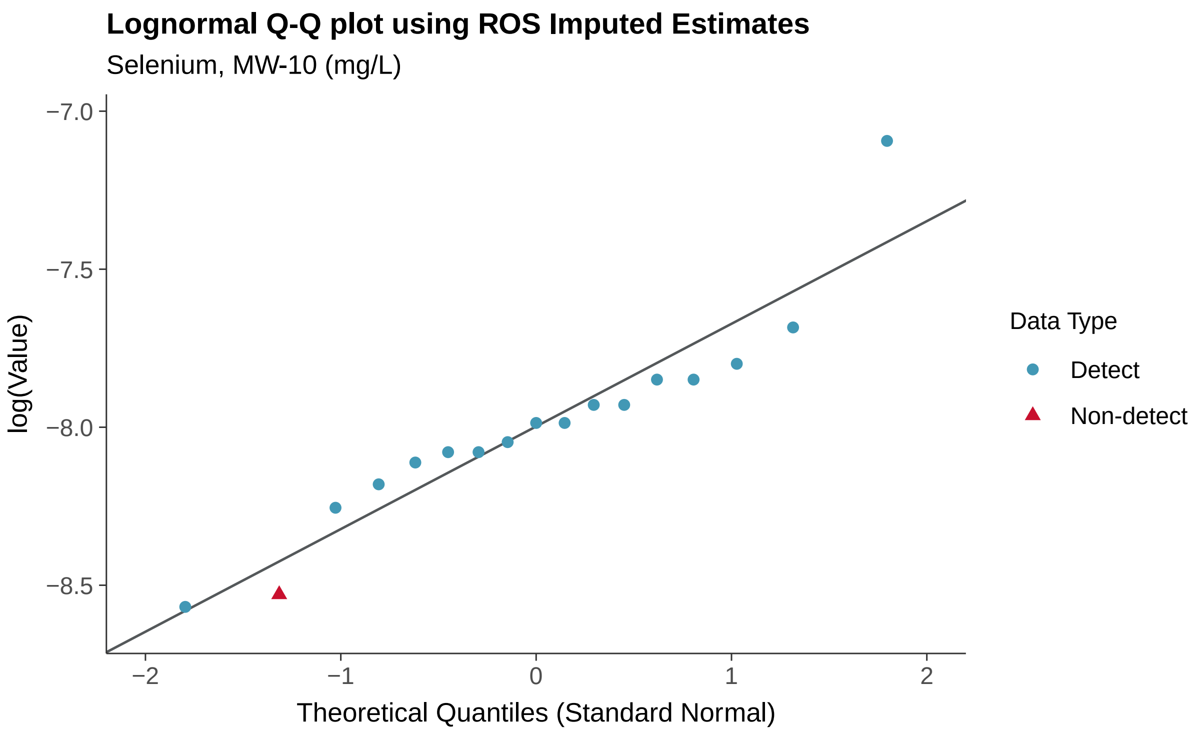
Selenium, MW-10 (mg/L)

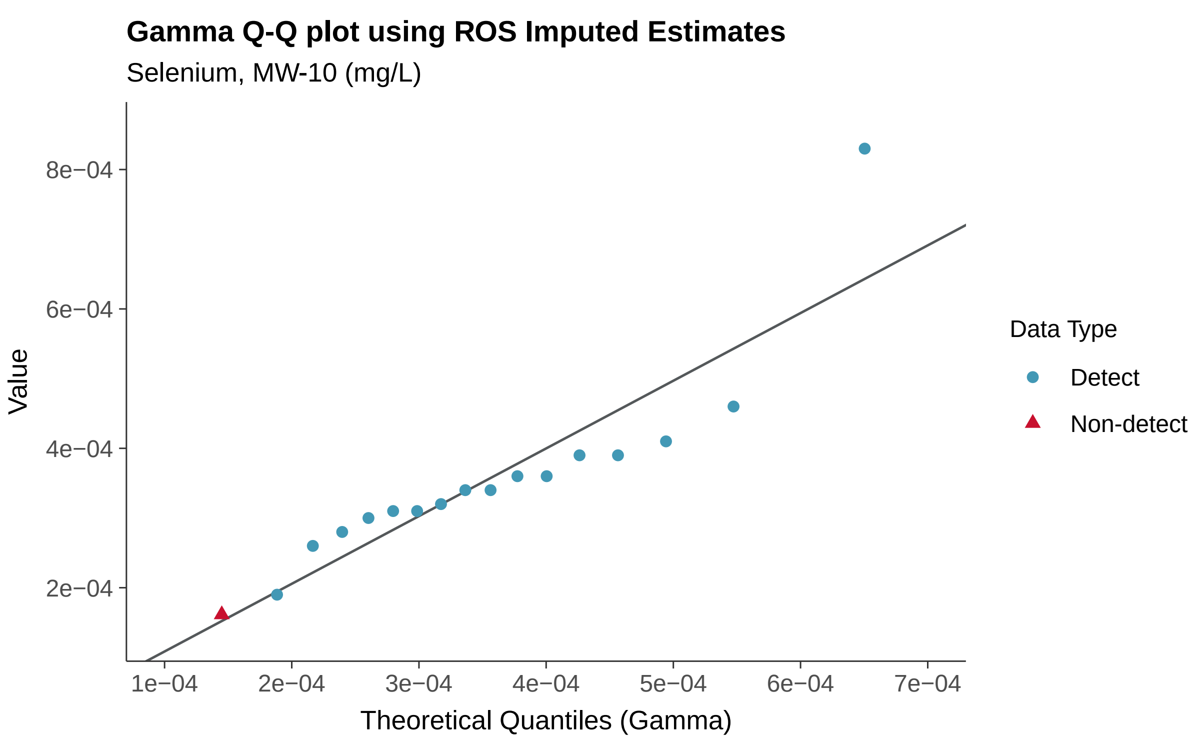


Boxplot by Season

Selenium, MW-10 (mg/L)

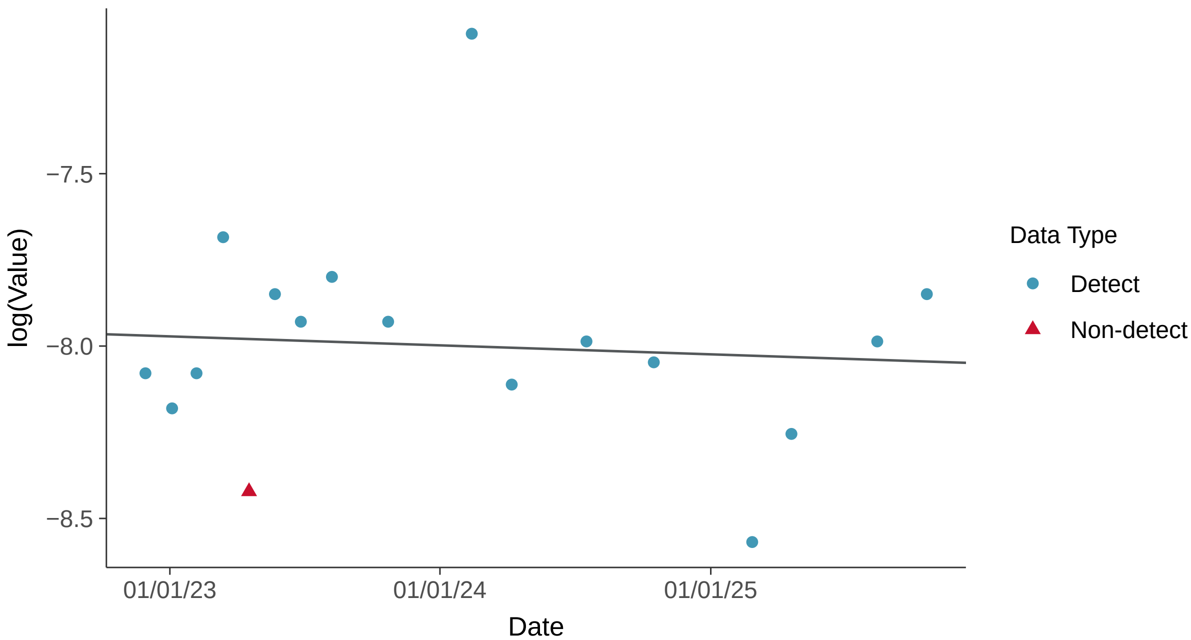



Lognormal Q-Q plot using ROS Imputed Estimates
Selenium, MW-10 (mg/L)
log(Value)
−7.0
−7.5
−8.0
−8.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Gamma Q-Q plot using ROS Imputed Estimates
Selenium, MW-10 (mg/L)
Value
8e−04
6e−04
4e−04
2e−04
1e−04
2e−04
3e−04
4e−04
5e−04
6e−04
7e−04
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect

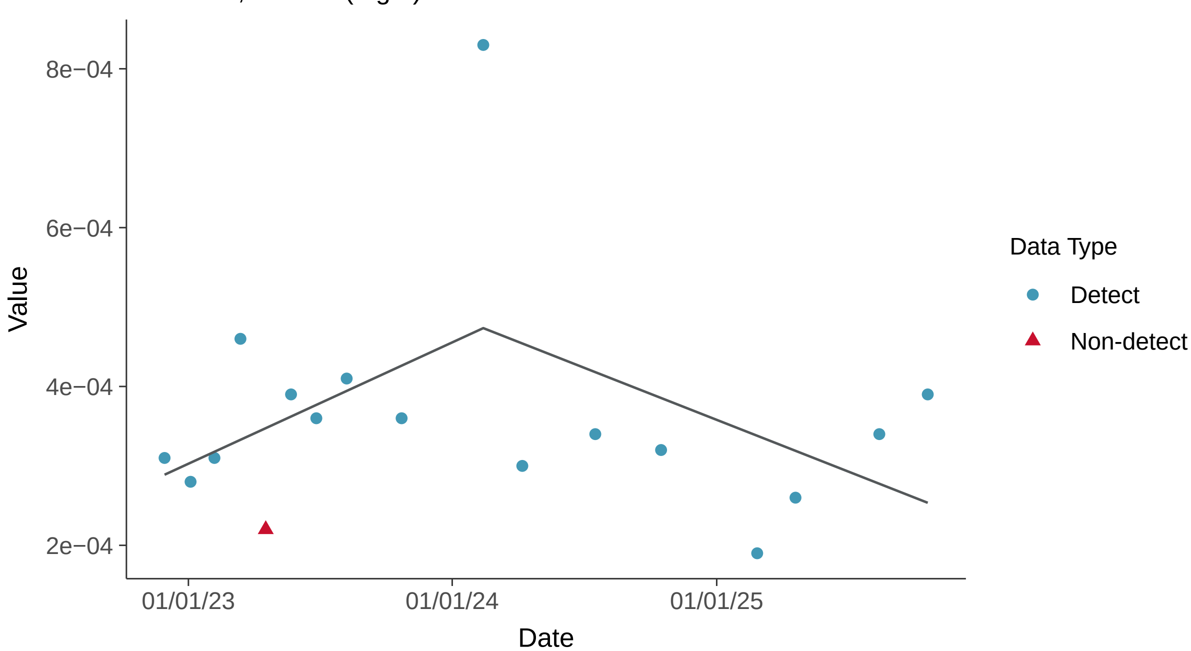
Trend Regression: Lognormal MLE

Selenium, MW-10 (mg/L)



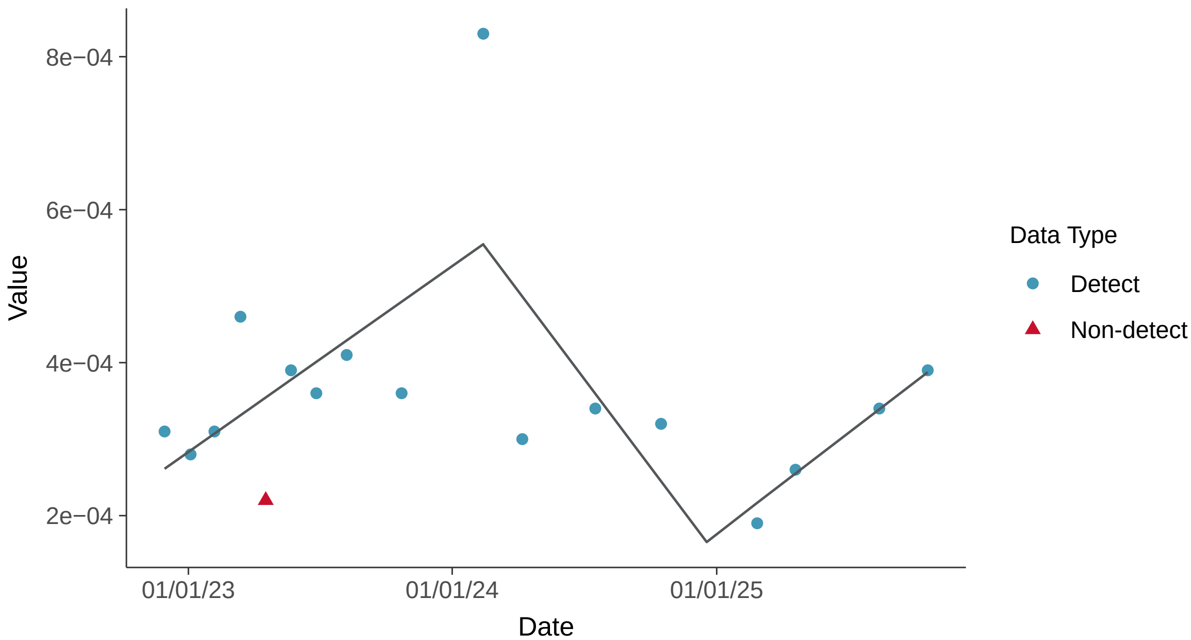
Trend Regression: Piecewise Linear-Linear

Selenium, MW-10 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Selenium, MW-10 (mg/L)

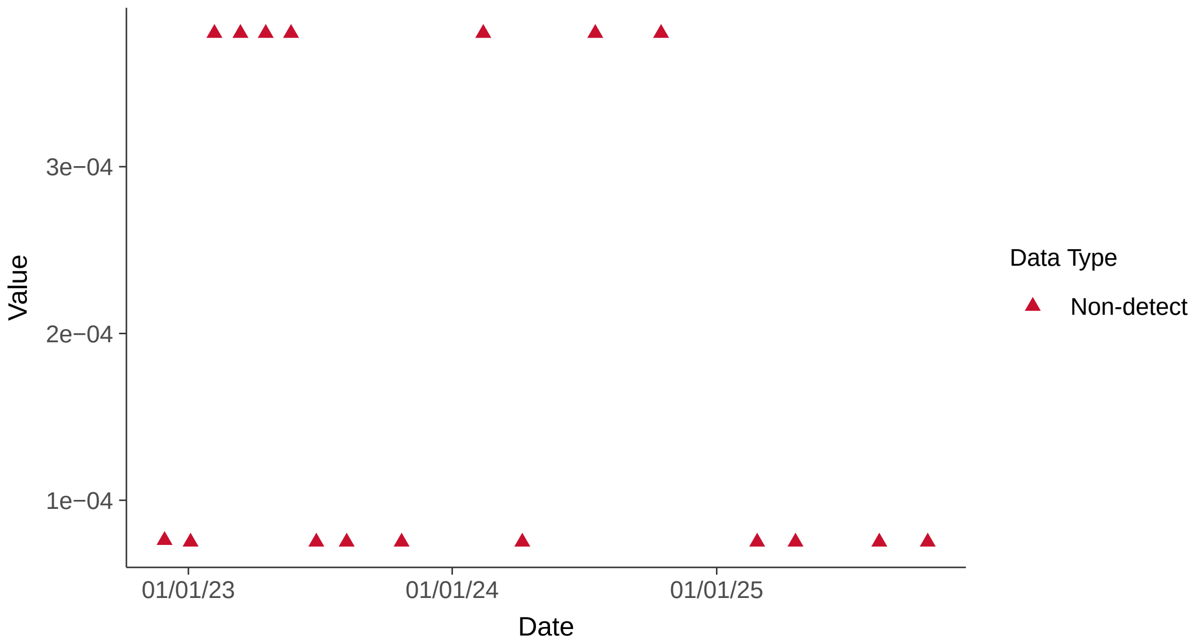


Appendix IV: Thallium, MW-10

ID: 20_3_4_125

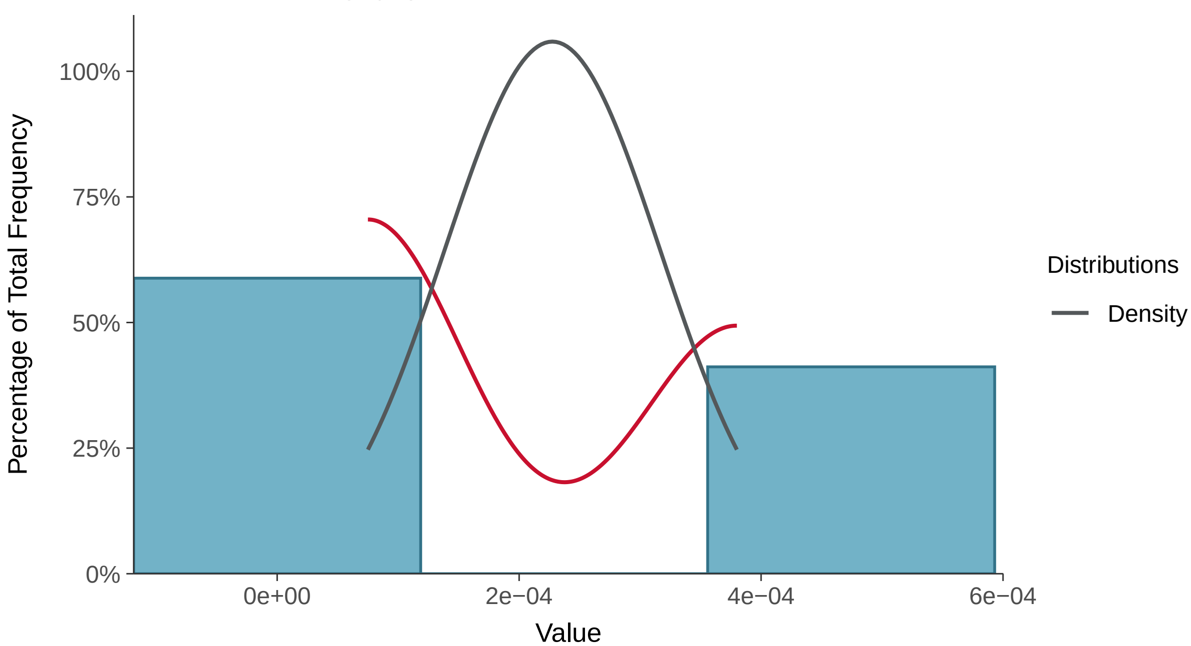
Scatter Plot

Thallium, MW-10 (mg/L)



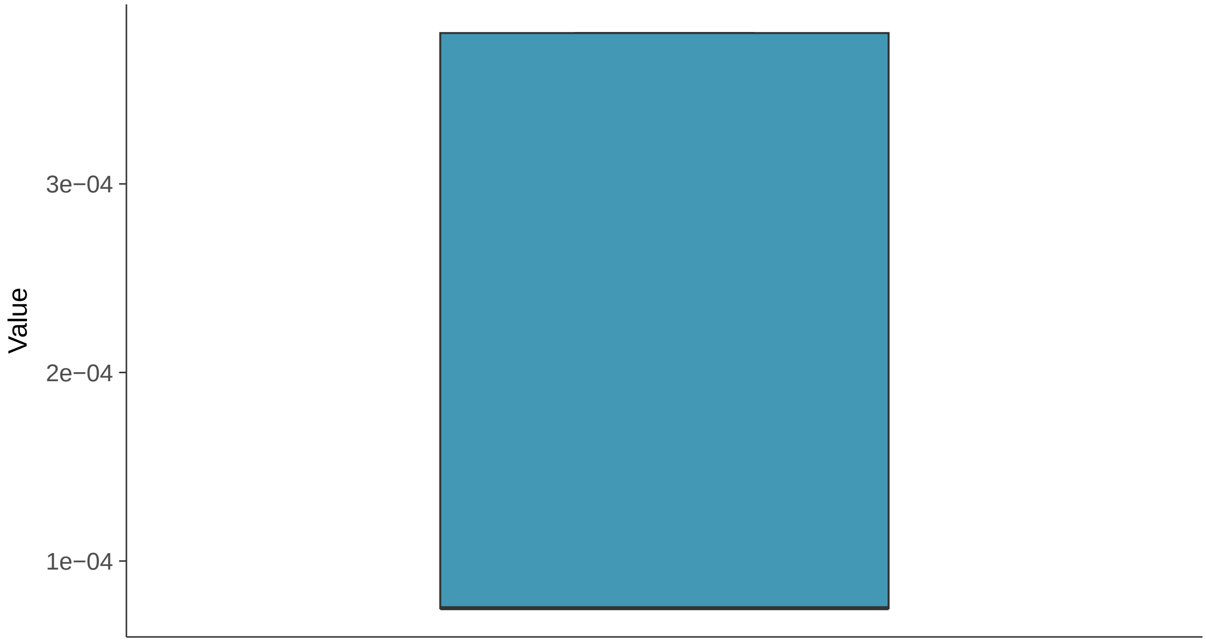
Histogram

Thallium, MW-10 (mg/L)



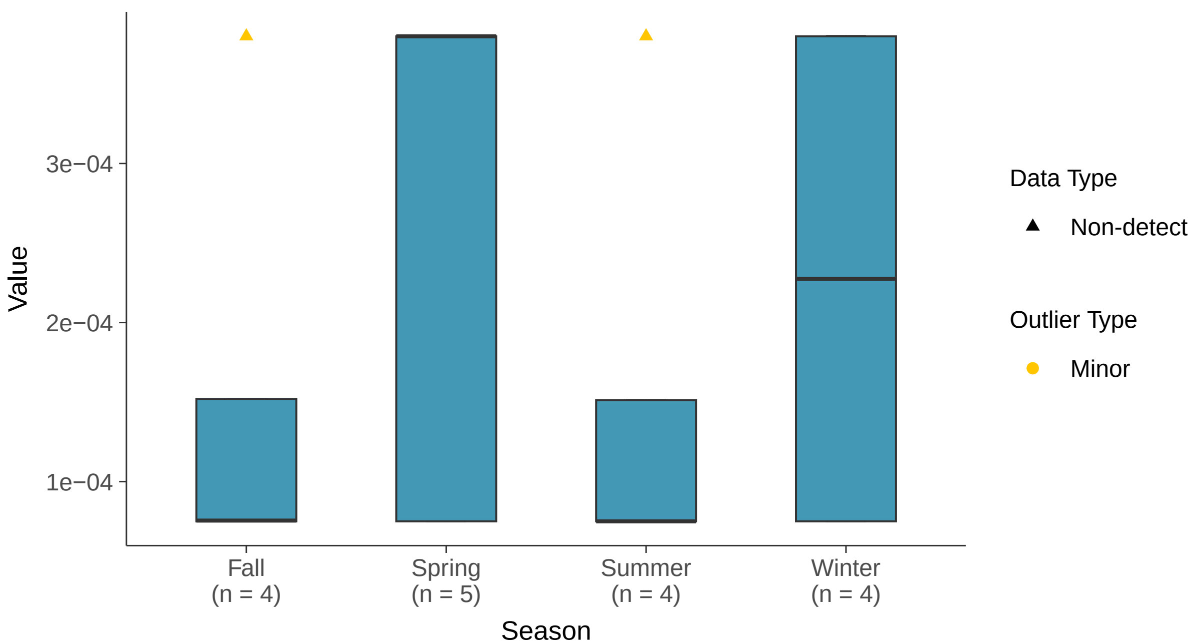
Boxplot

Thallium, MW-10 (mg/L)



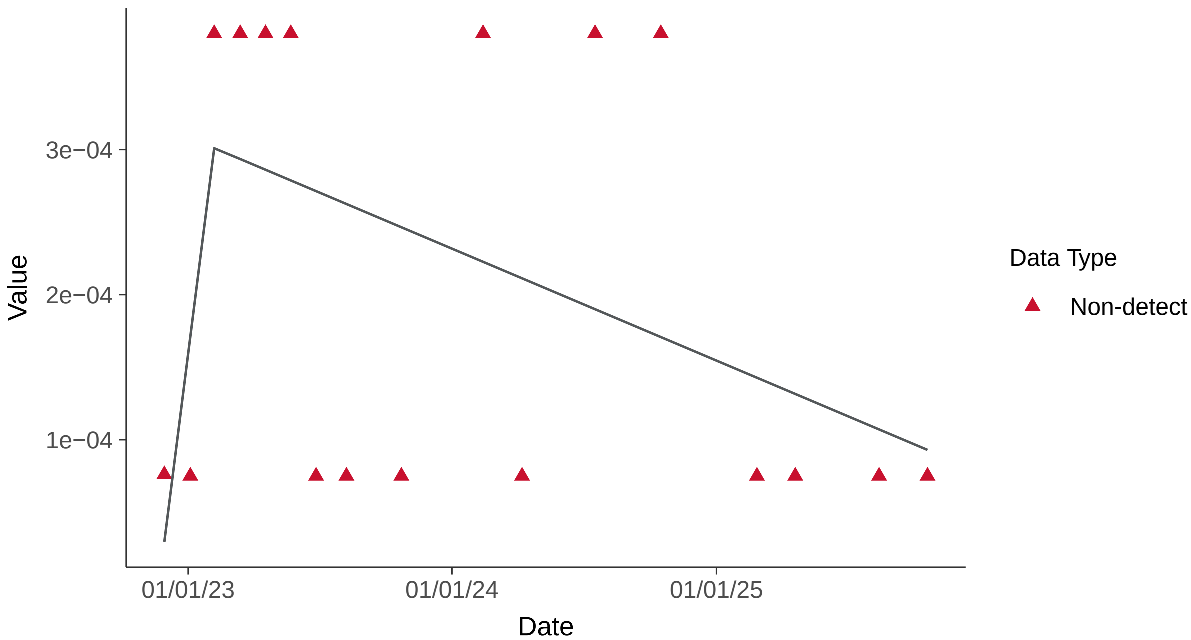
Boxplot by Season

Thallium, MW-10 (mg/L)



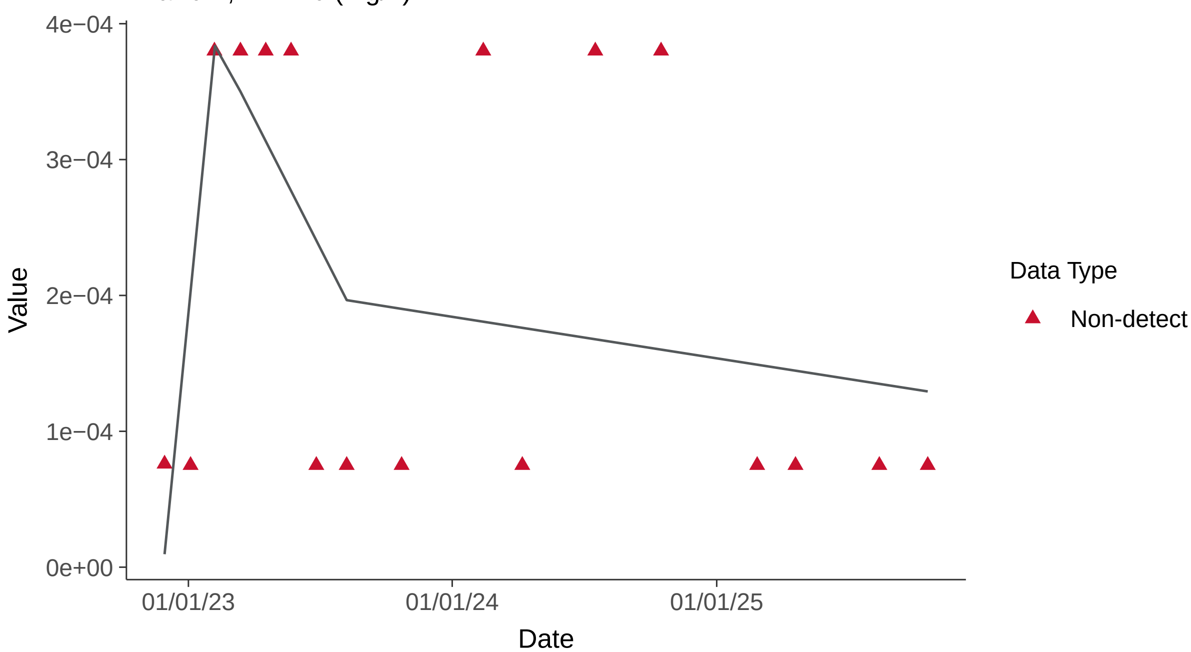
Trend Regression: Piecewise Linear-Linear

Thallium, MW-10 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Thallium, MW-10 (mg/L)

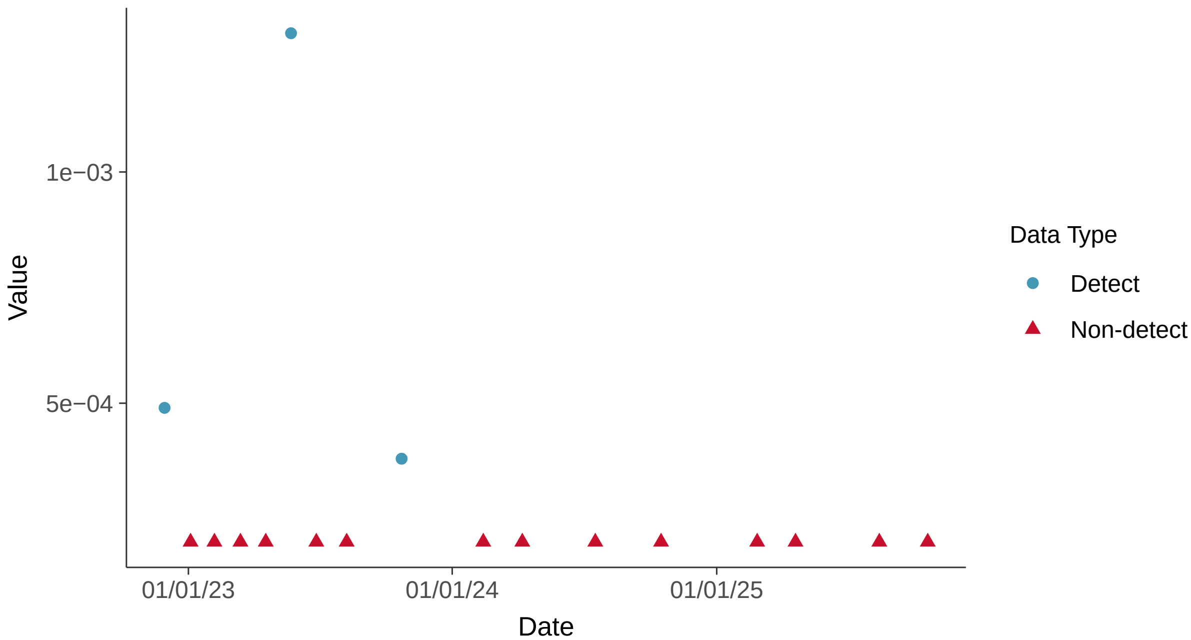


Part 115: Copper, MW-10

ID: 20_3_5_111

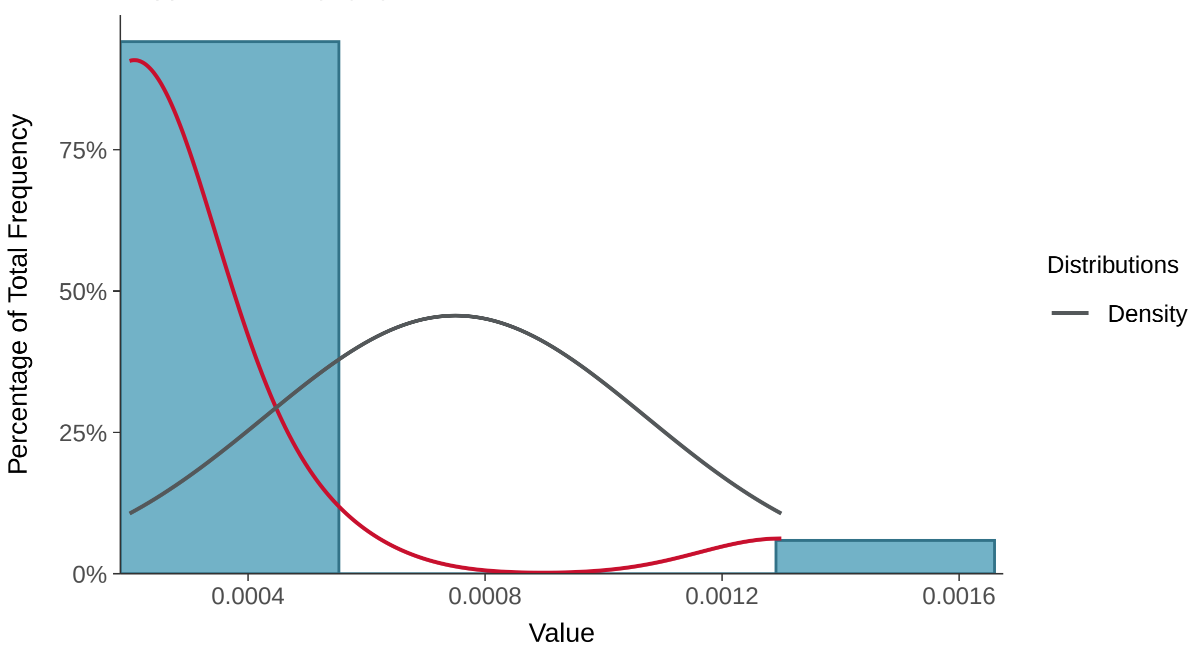
Scatter Plot

Copper, MW-10 (mg/L)



Histogram

Copper, MW-10 (mg/L)

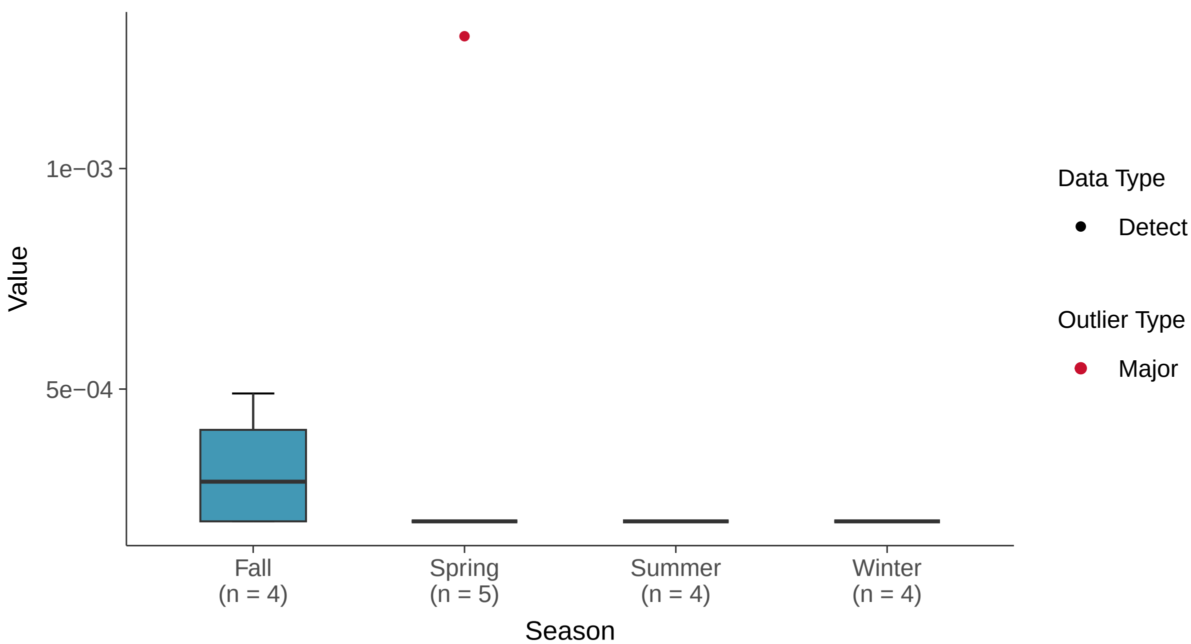


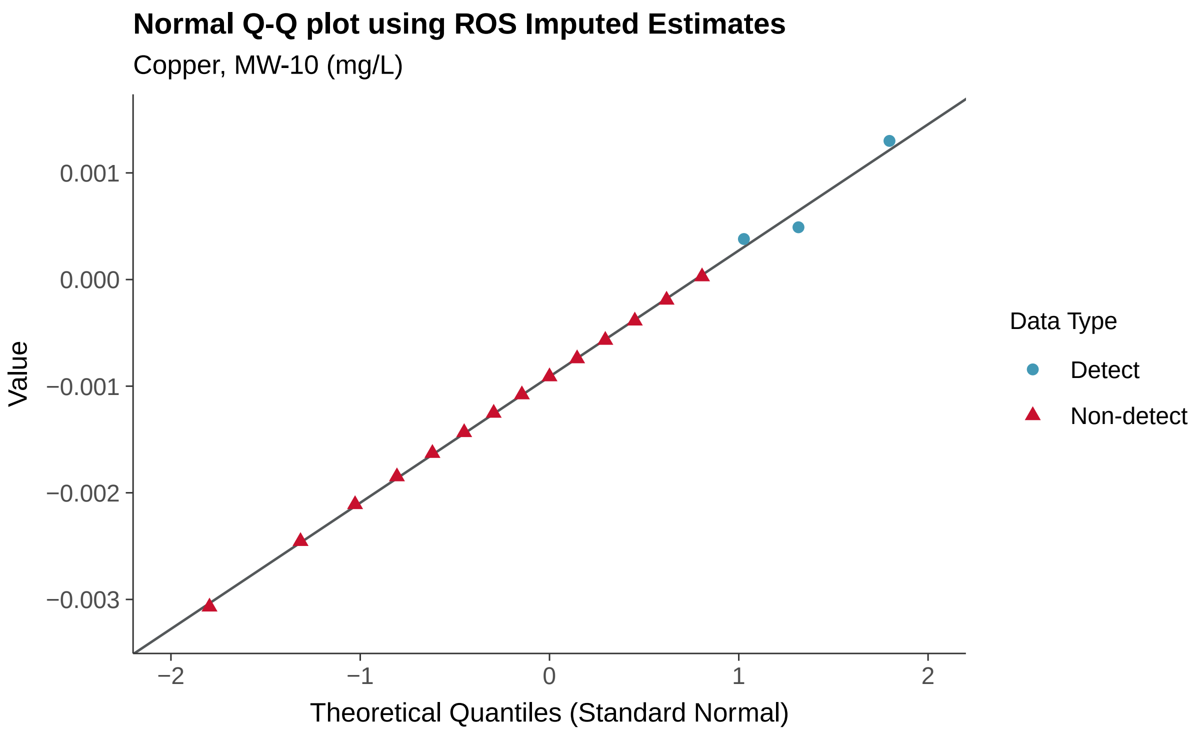
Boxplot

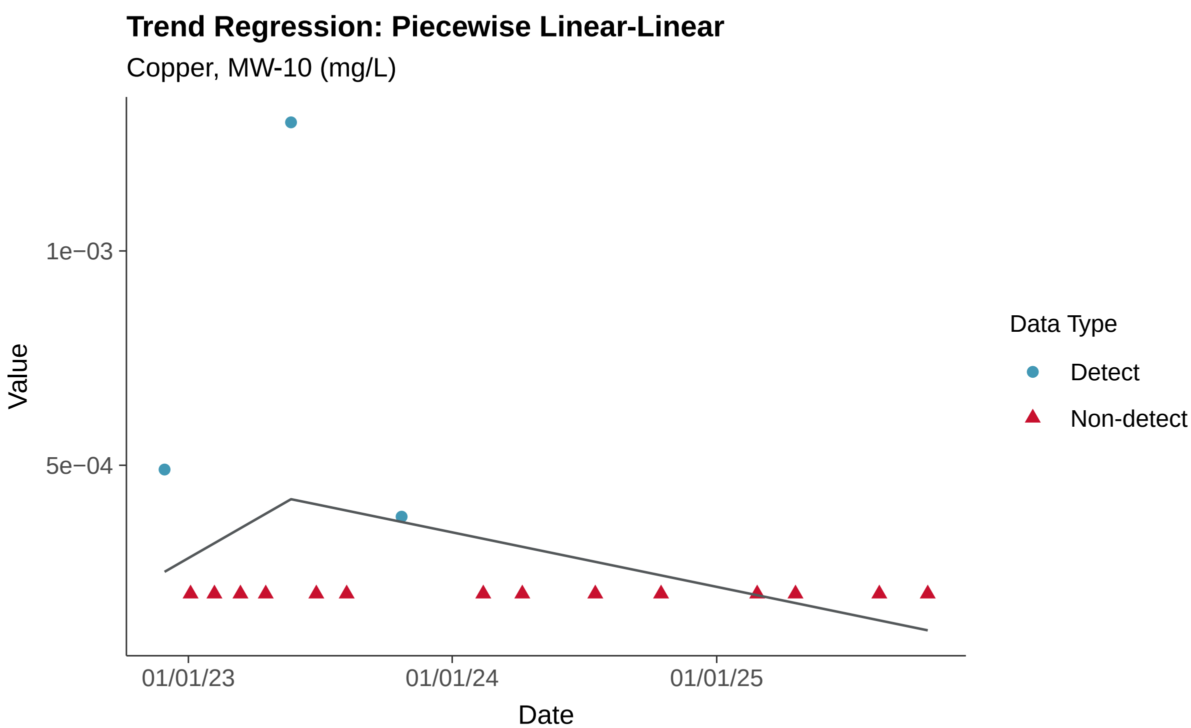
Copper, MW-10 (mg/L)

Boxplot by Season

Copper, MW-10 (mg/L)

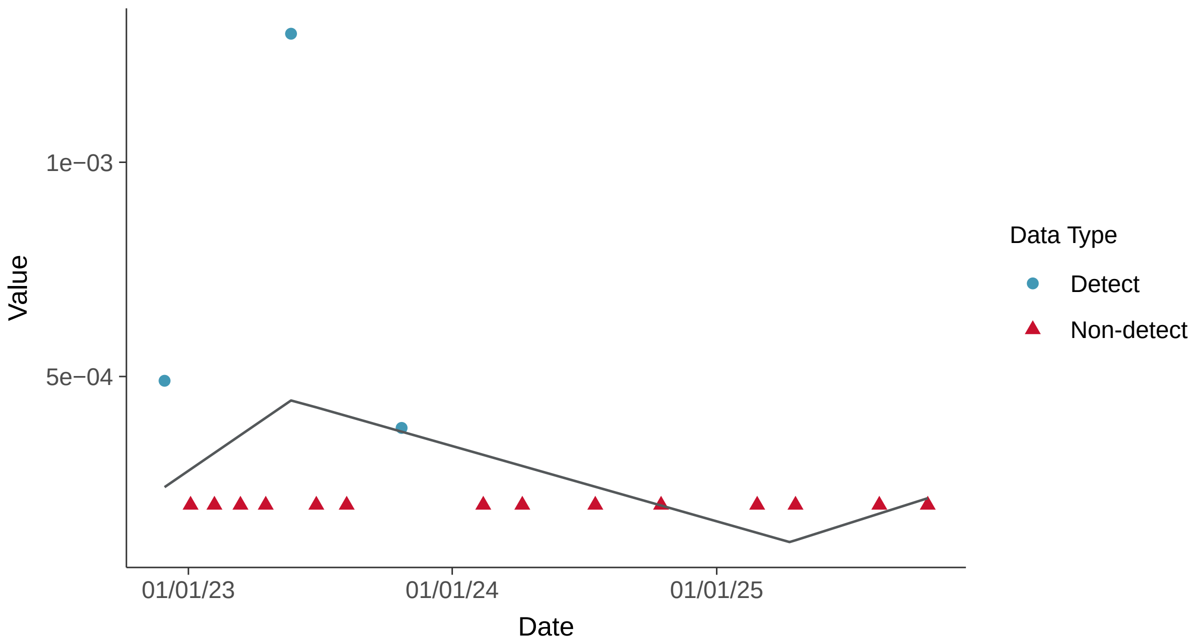



Normal Q-Q plot using ROS Imputed Estimates
Copper, MW-10 (mg/L)
Value
0.001
0.000
−0.001
−0.002
−0.003
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Copper, MW-10 (mg/L)
Value
1e−03
5e−04
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

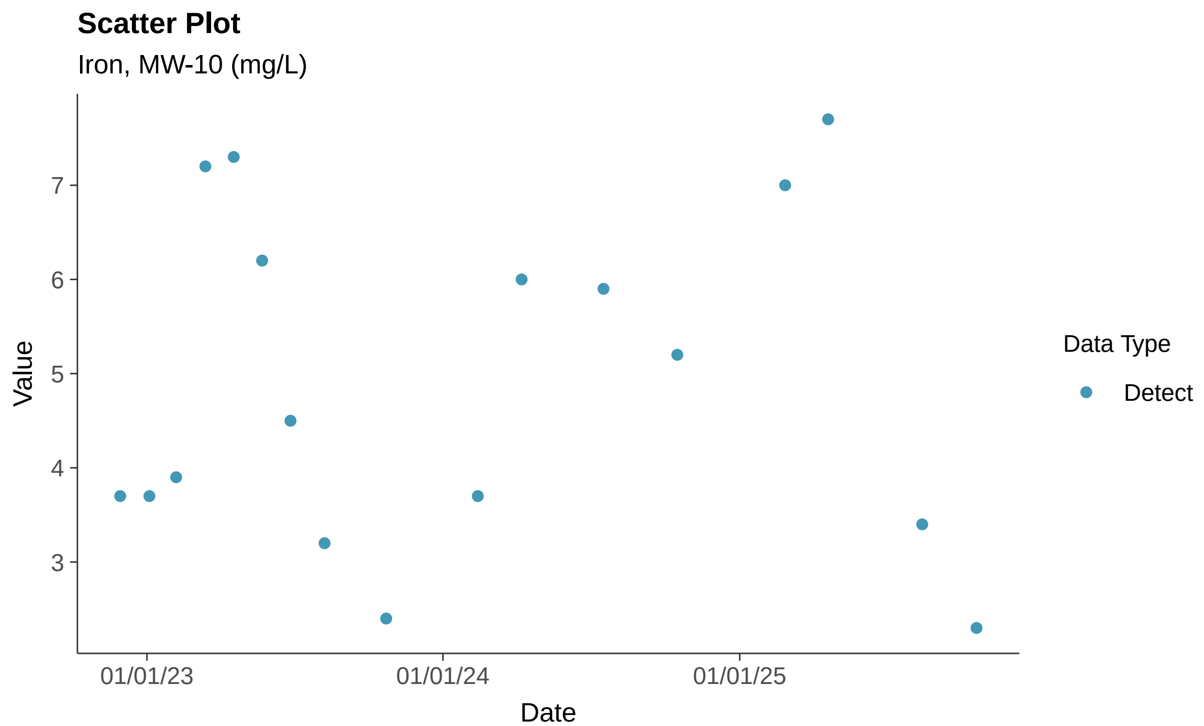
Trend Regression: Piecewise Linear-Linear-Linear

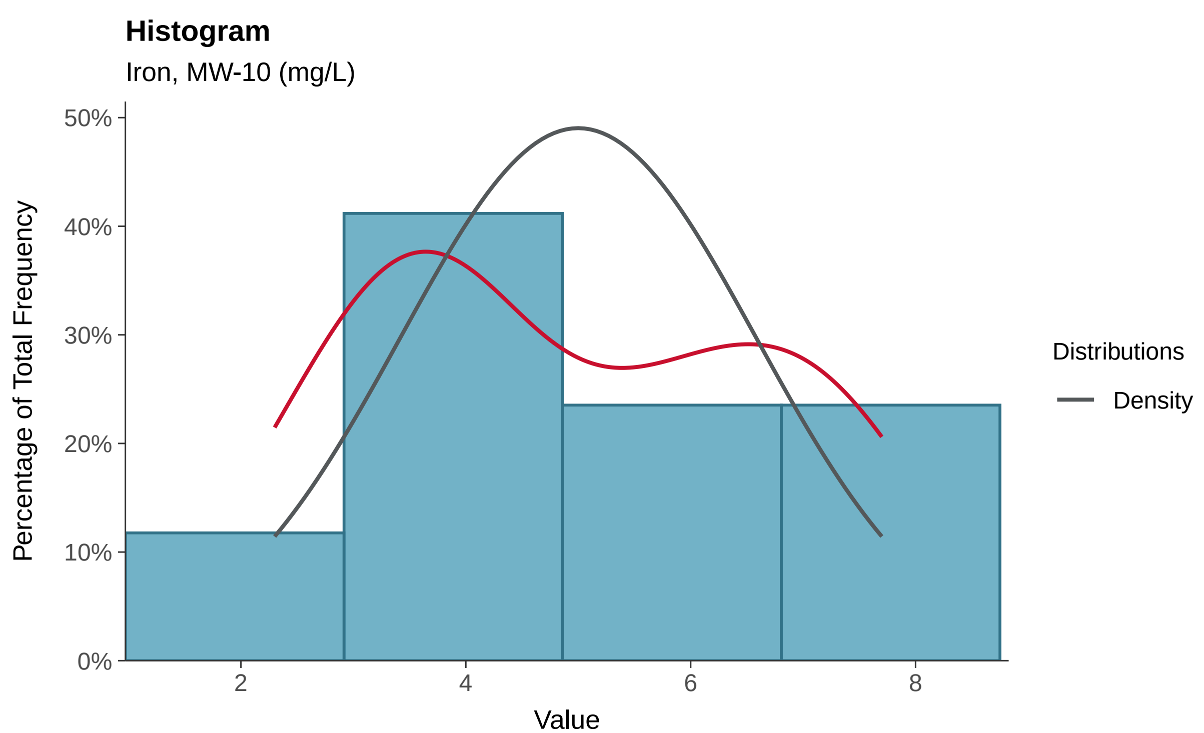
Copper, MW-10 (mg/L)



Part 115: Iron, MW-10

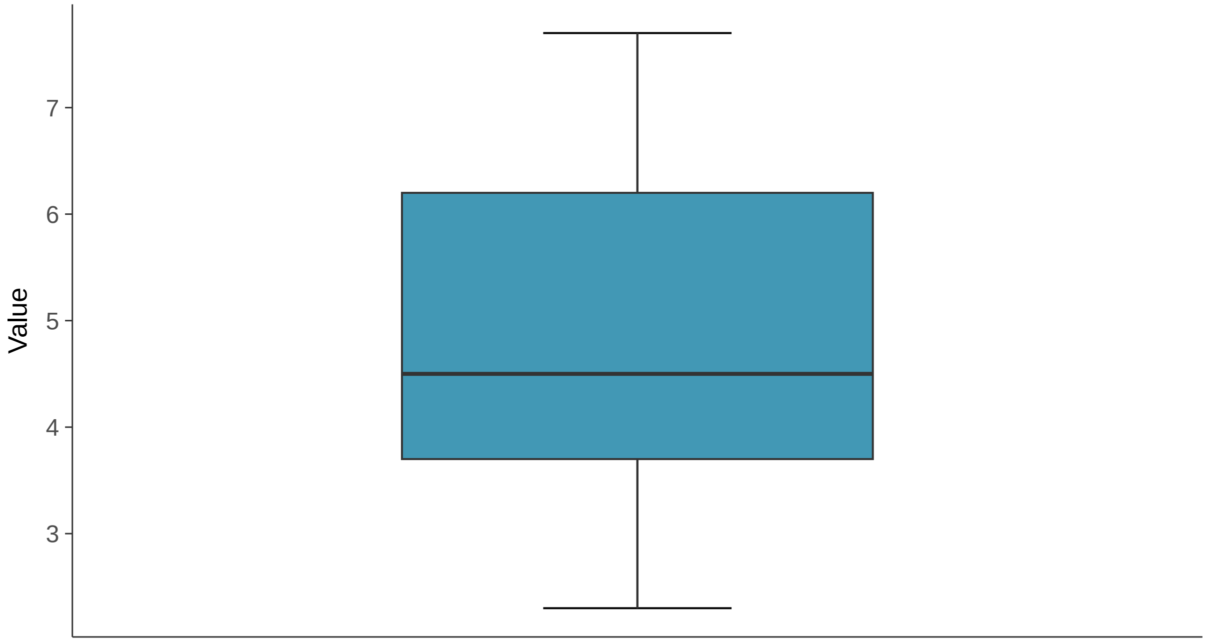
ID: 20_3_5_114





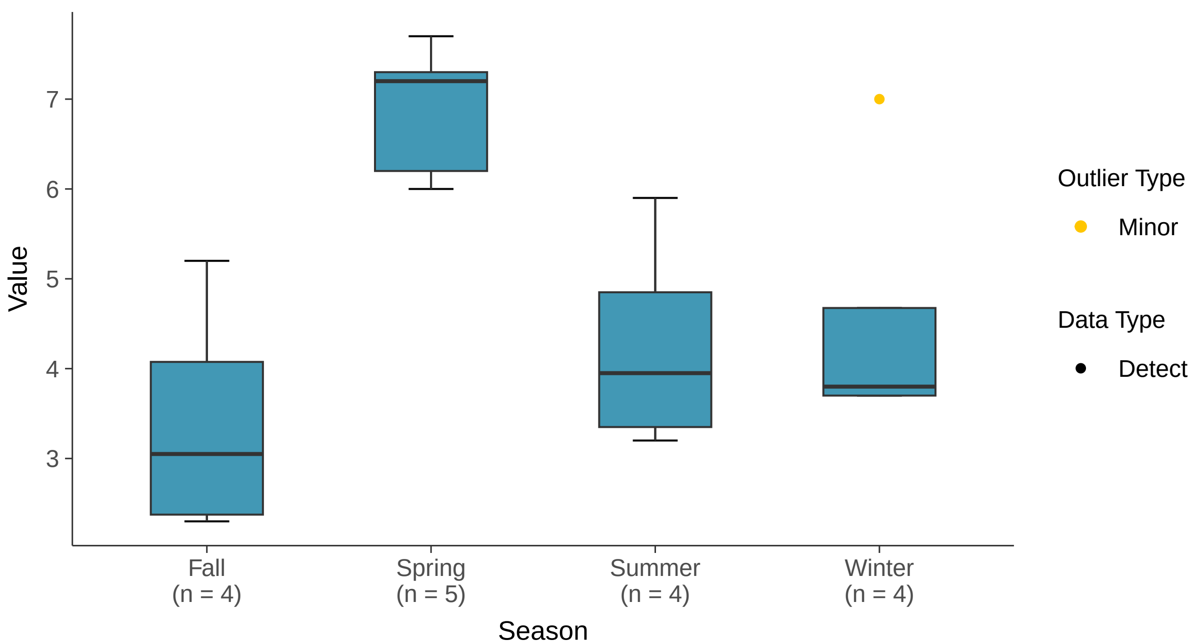
Boxplot

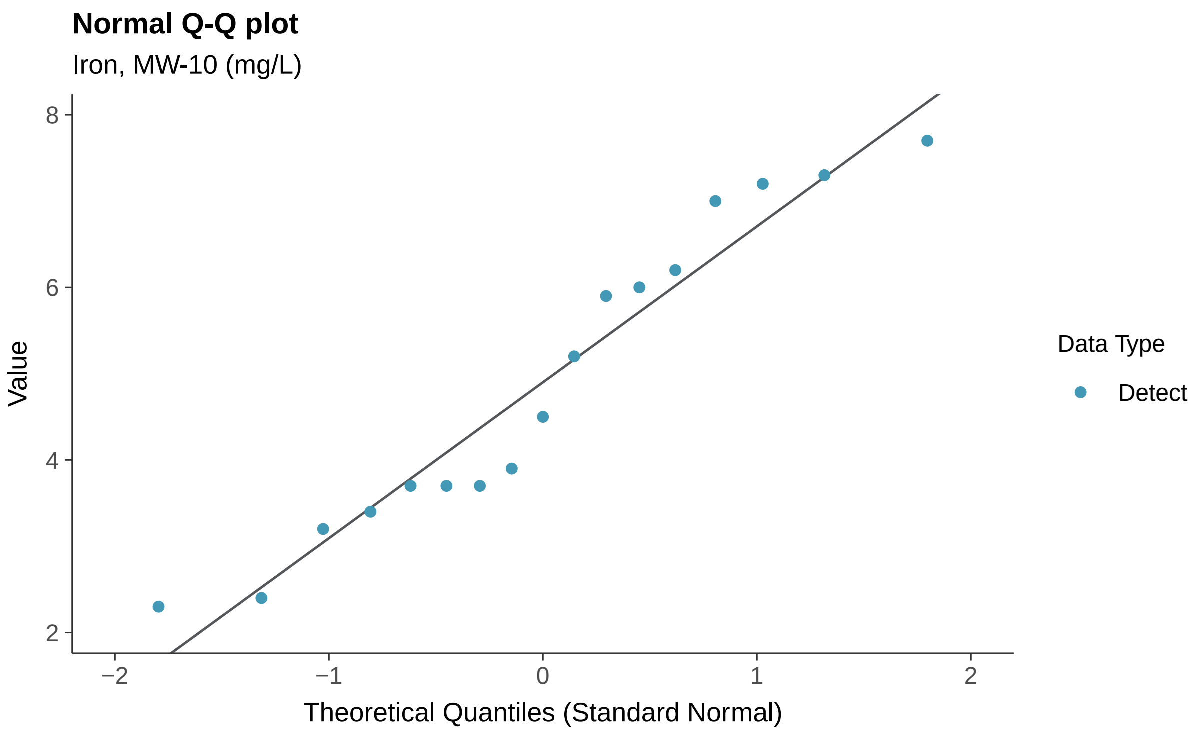
Iron, MW-10 (mg/L)

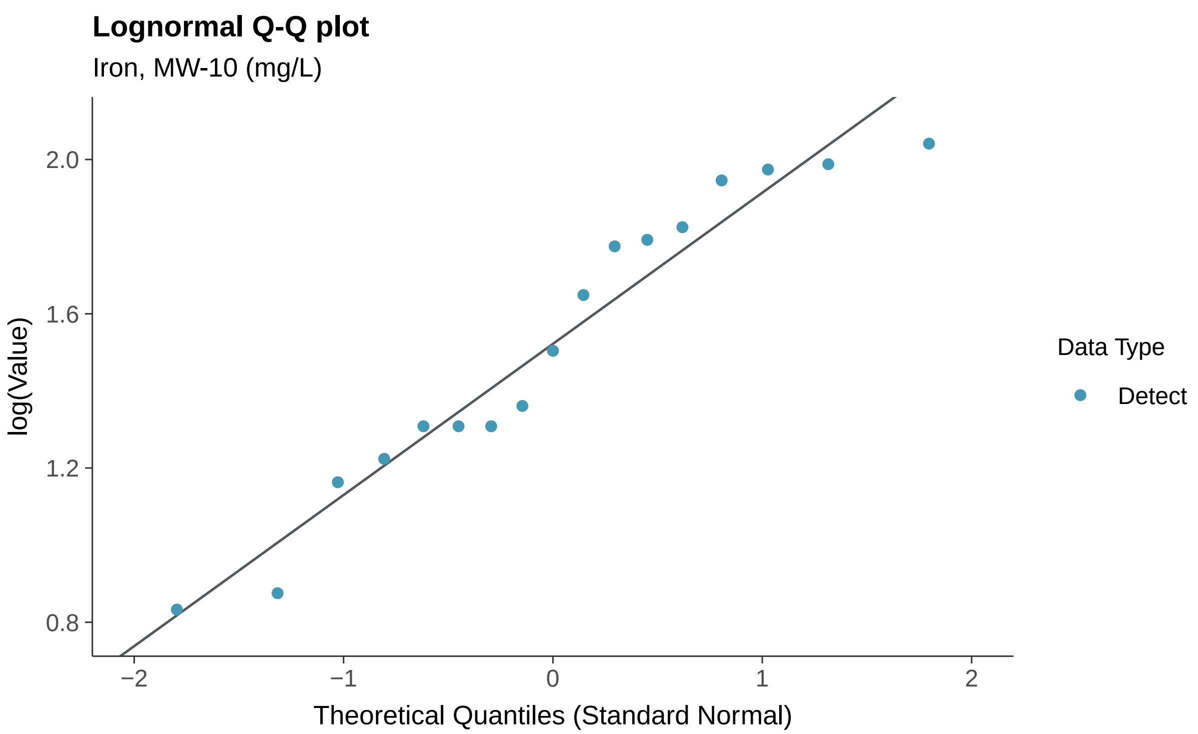


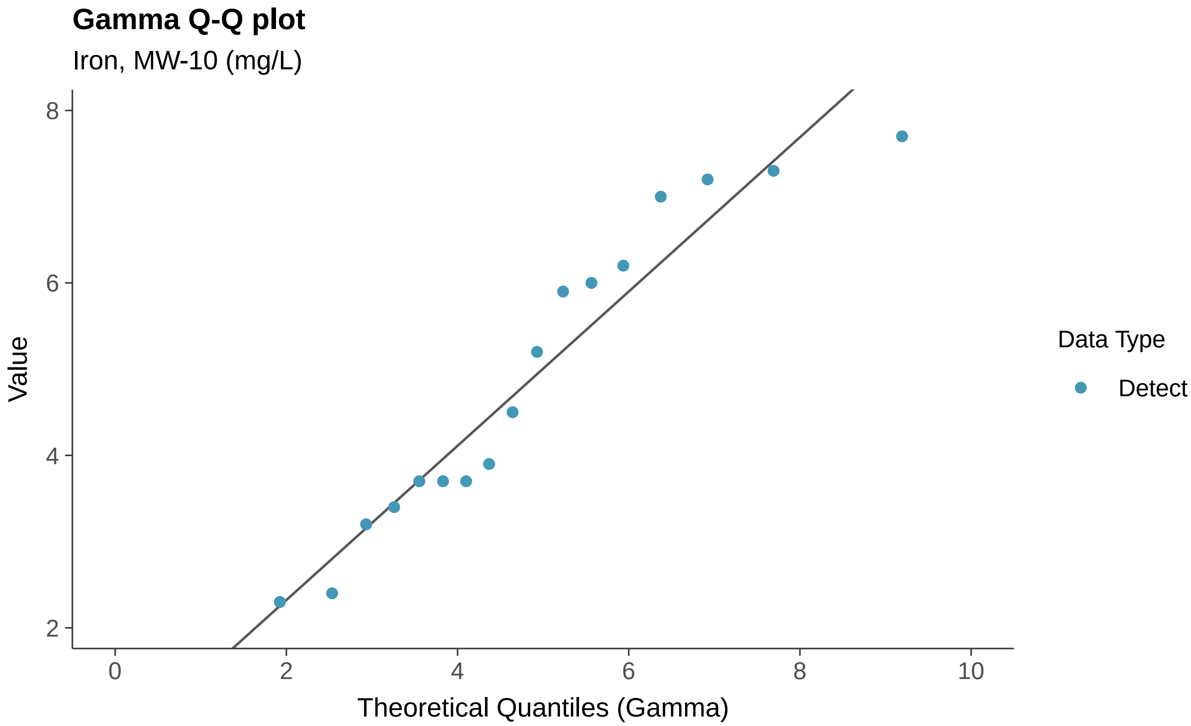
Boxplot by Season

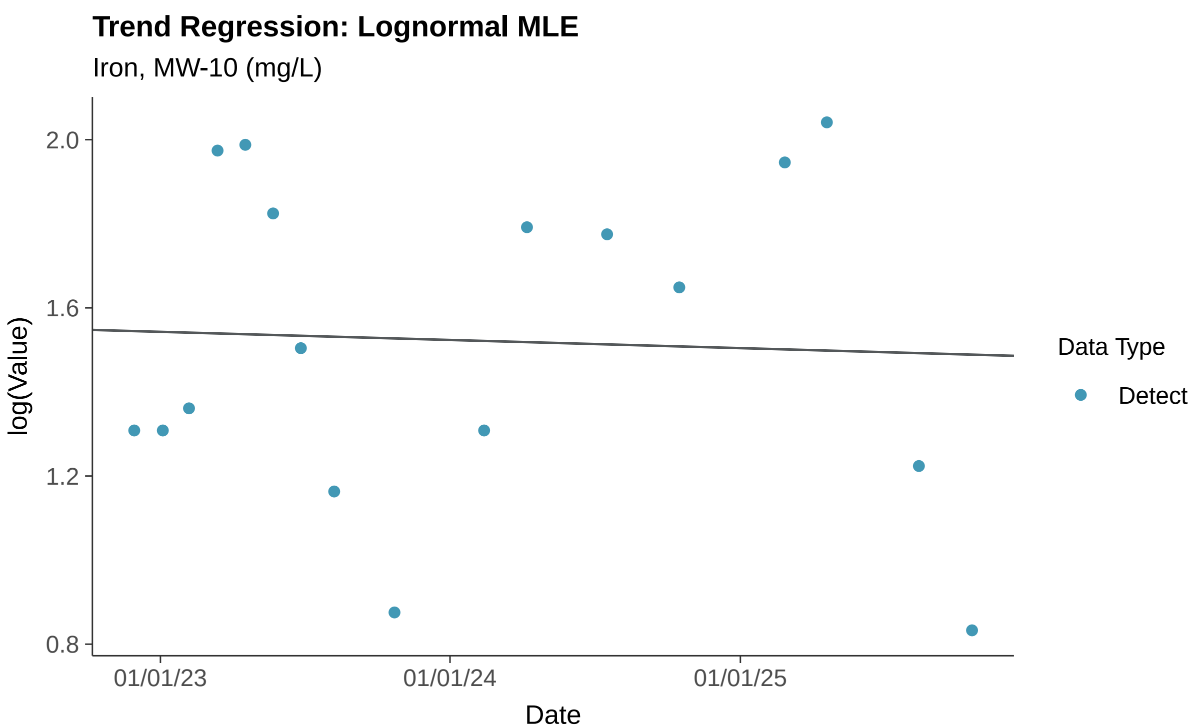
Iron, MW-10 (mg/L)




Normal Q-Q plot
Iron, MW-10 (mg/L)
Value
8
6
4
2
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

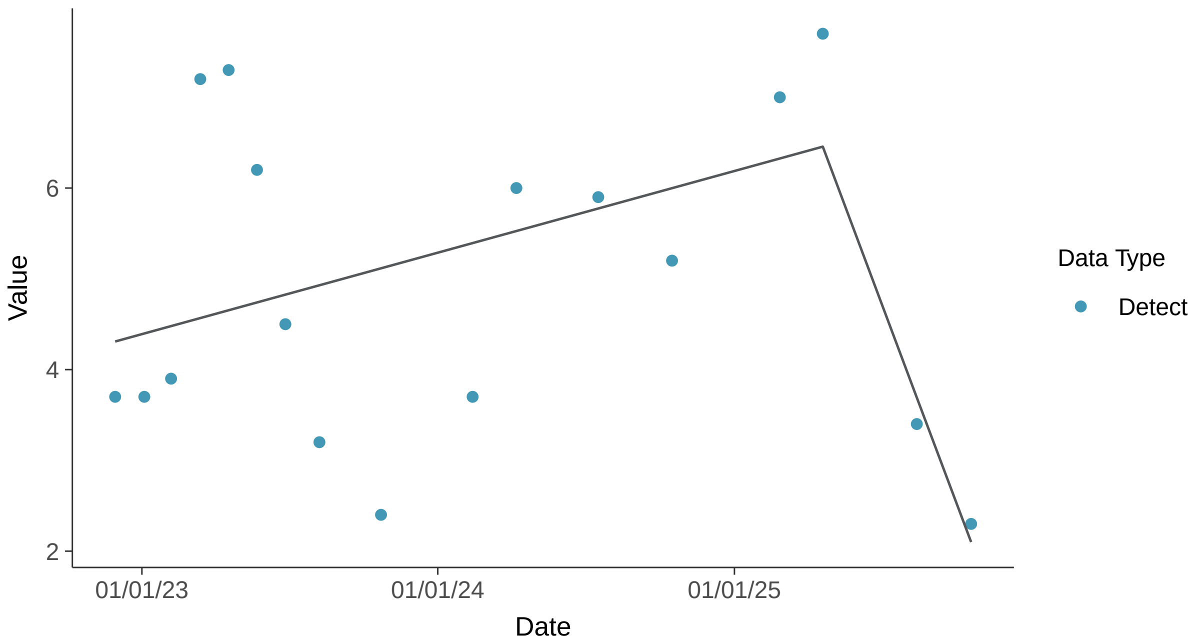

Lognormal Q-Q plot
Iron, MW-10 (mg/L)
log(Value)
2.0
1.6
1.2
0.8
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Iron, MW-10 (mg/L)
Value
8
6
4
2
0
2
4
6
8
10
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Iron, MW-10 (mg/L)
log(Value)
2.0
1.6
1.2
0.8
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

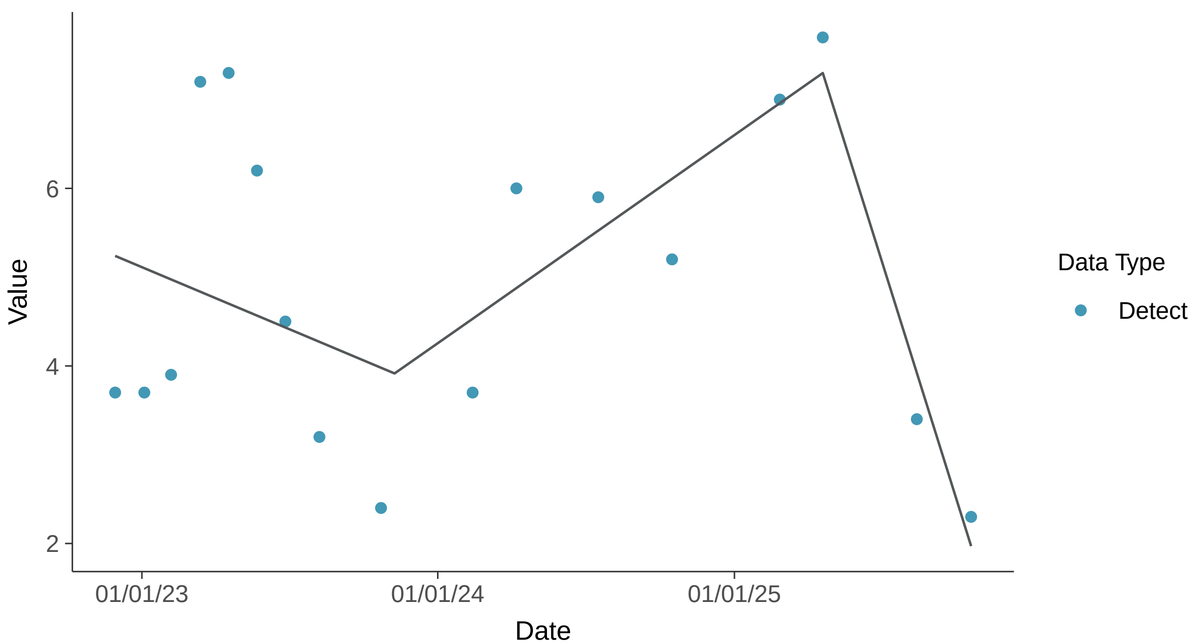
Trend Regression: Piecewise Linear-Linear

Iron, MW-10 (mg/L)



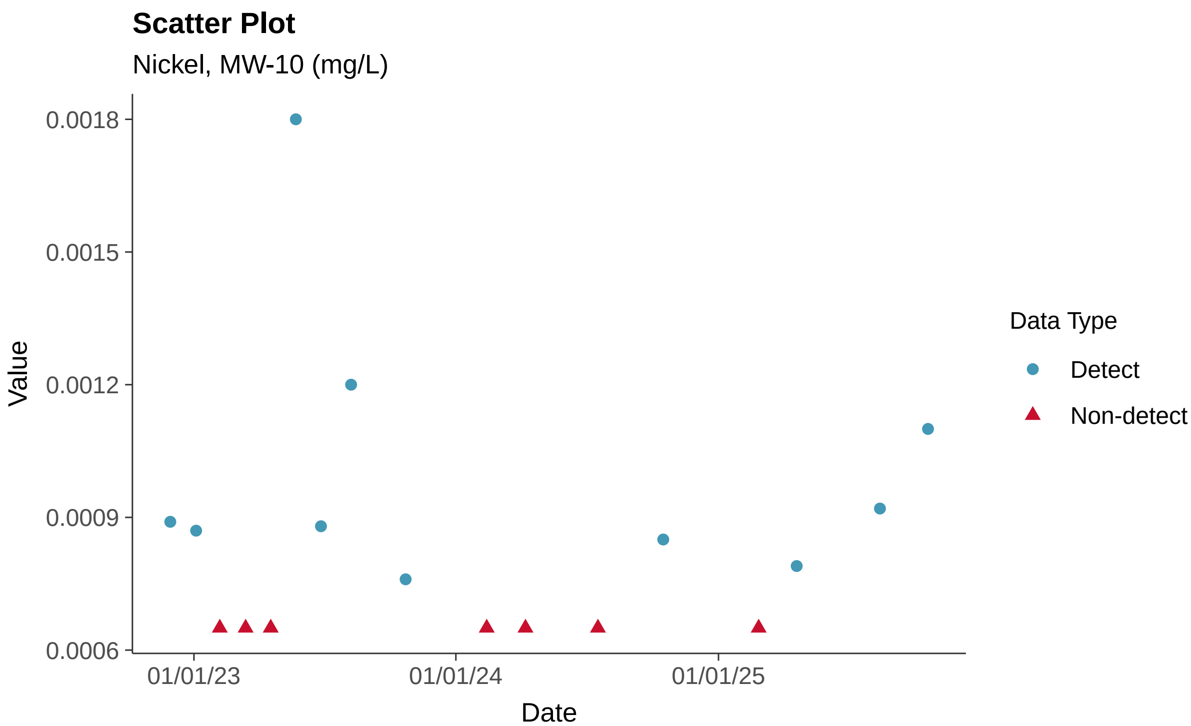
Trend Regression: Piecewise Linear-Linear-Linear

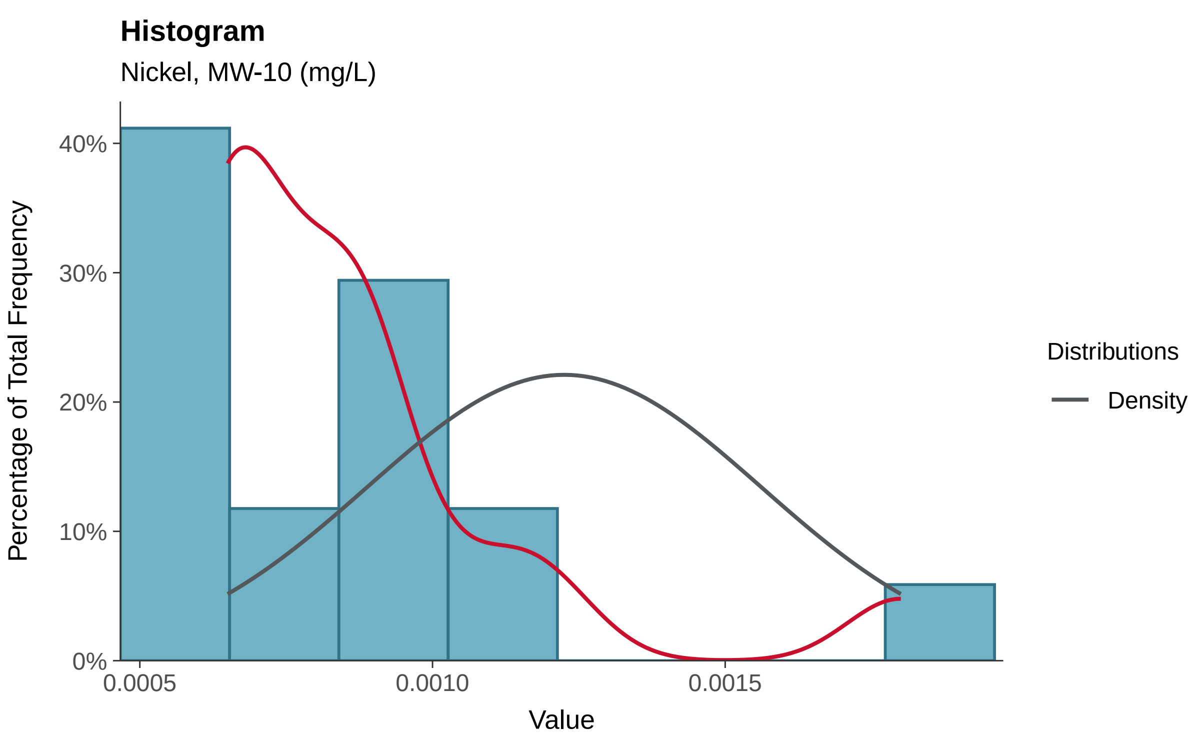
Iron, MW-10 (mg/L)

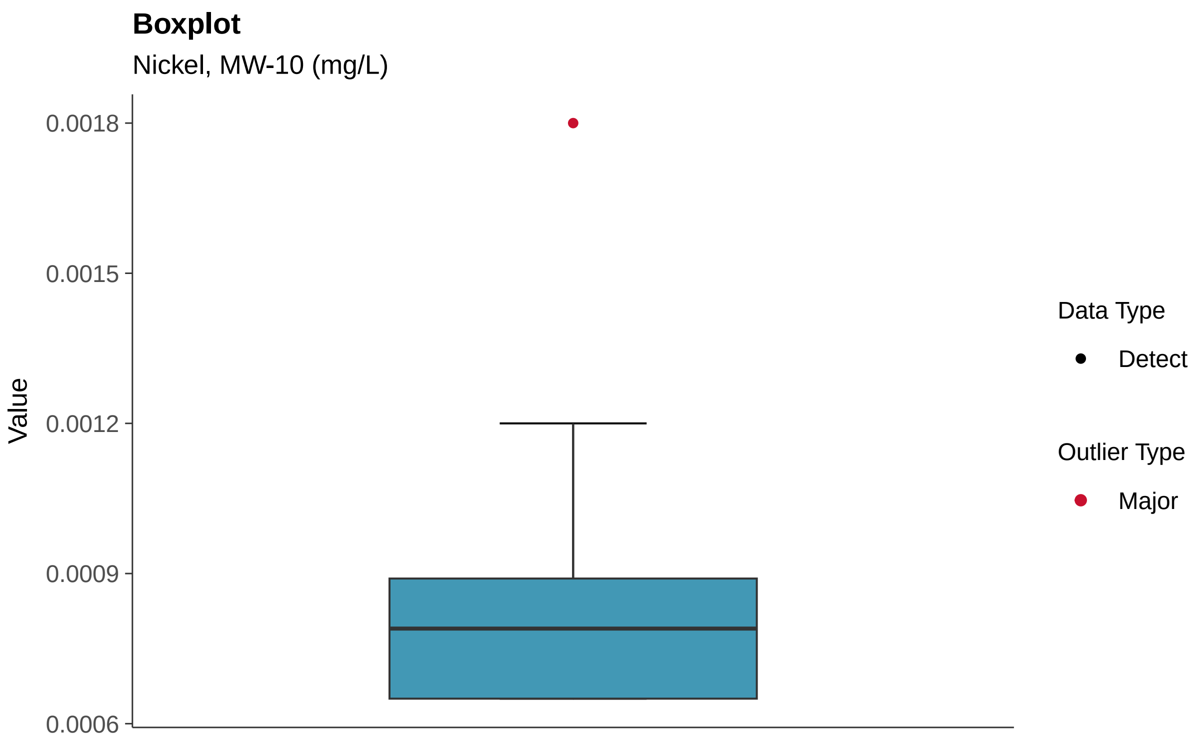


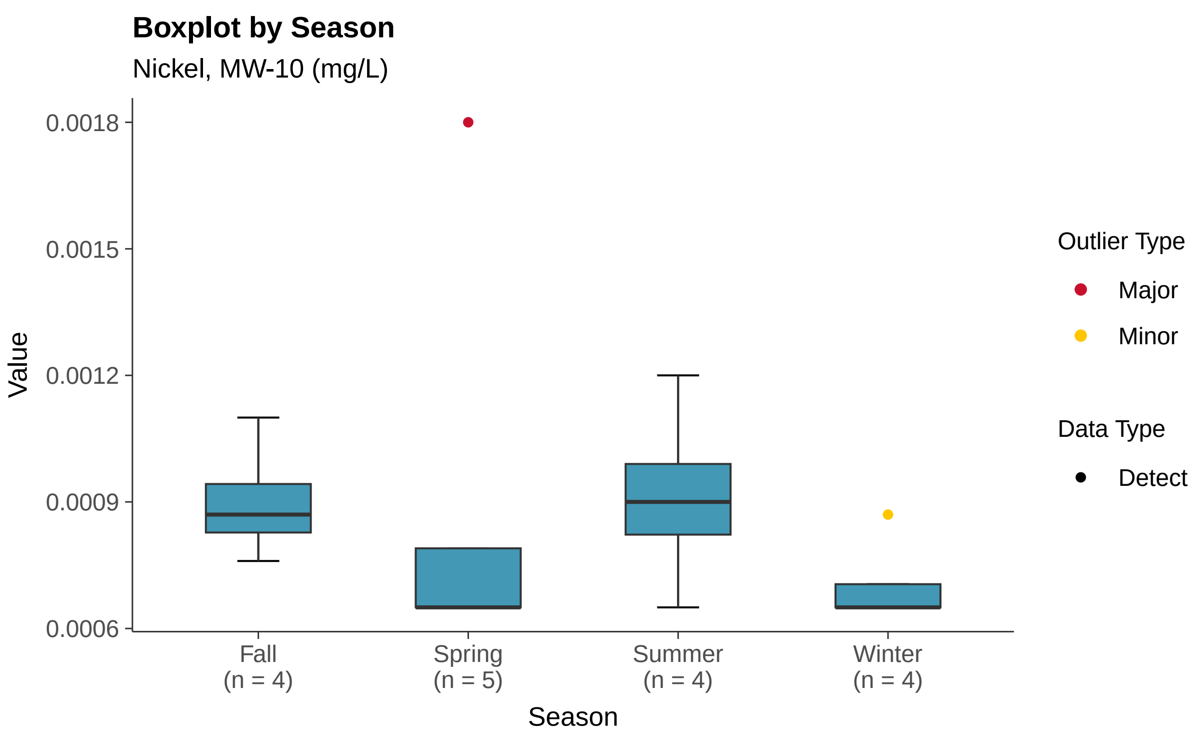
Part 115: Nickel, MW-10

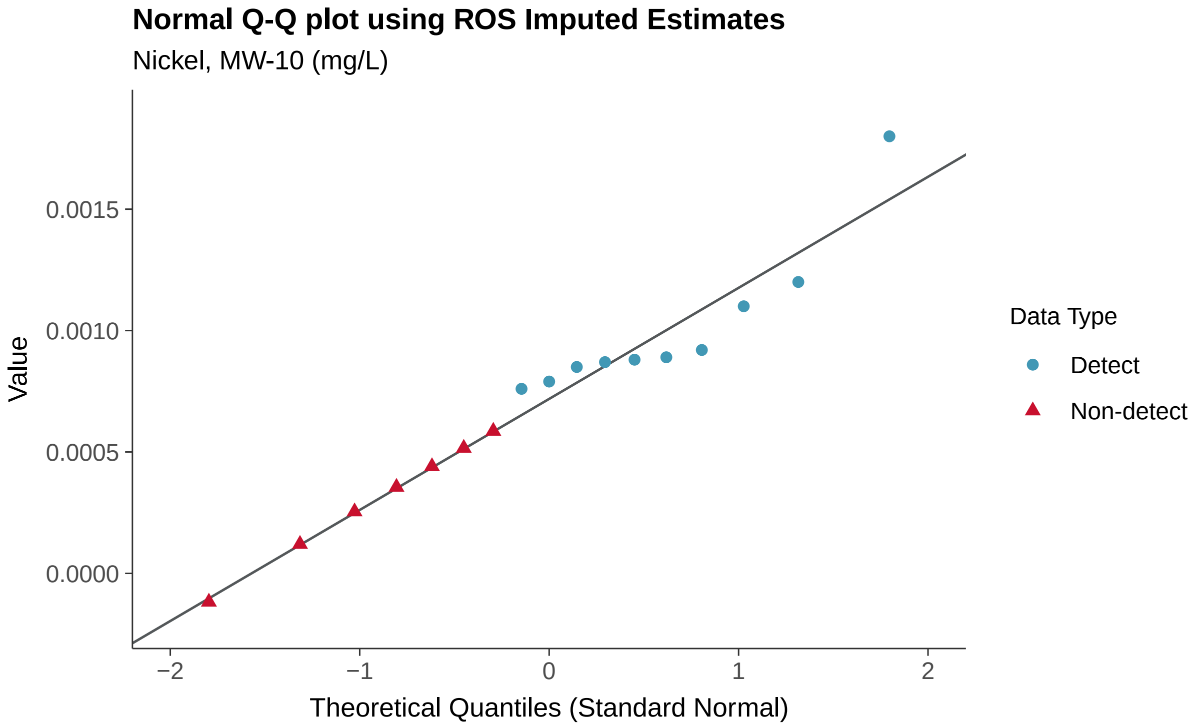
ID: 20_3_5_119

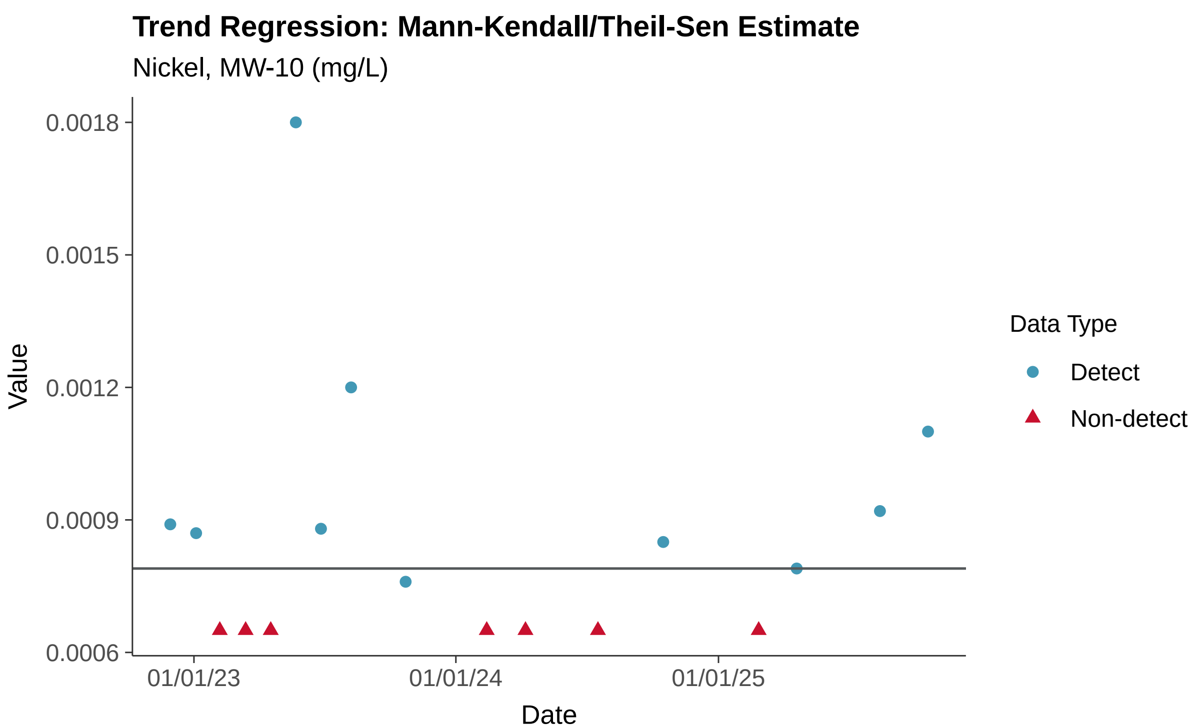


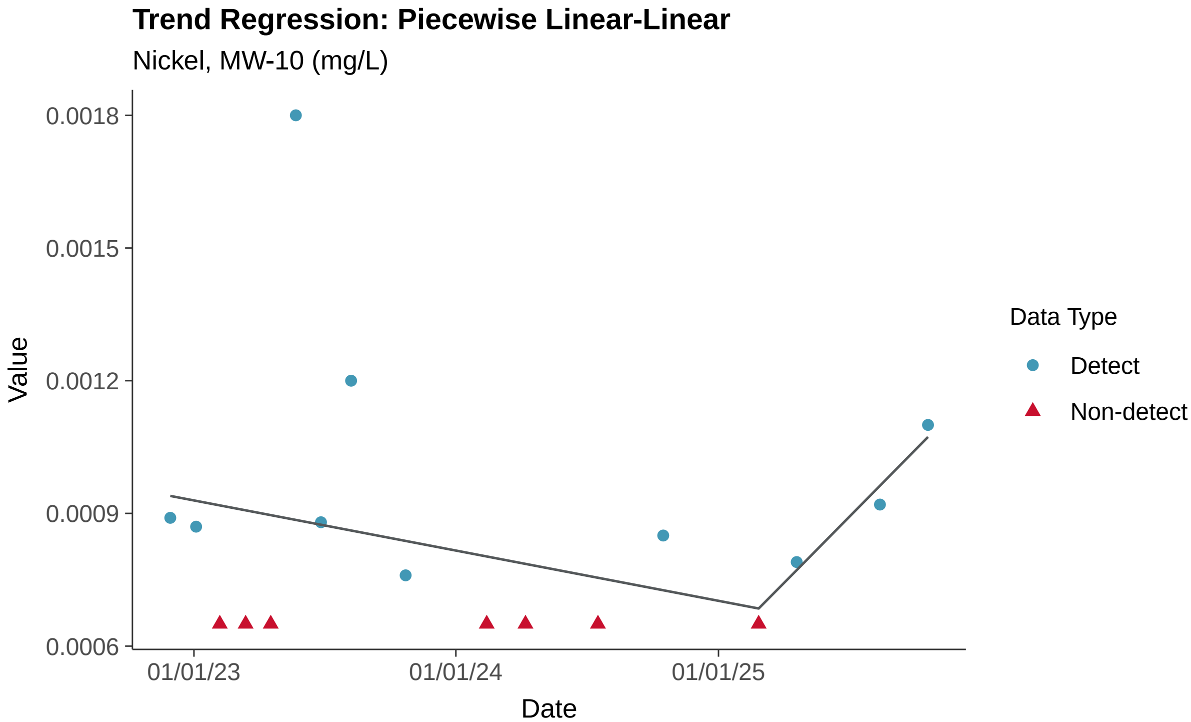


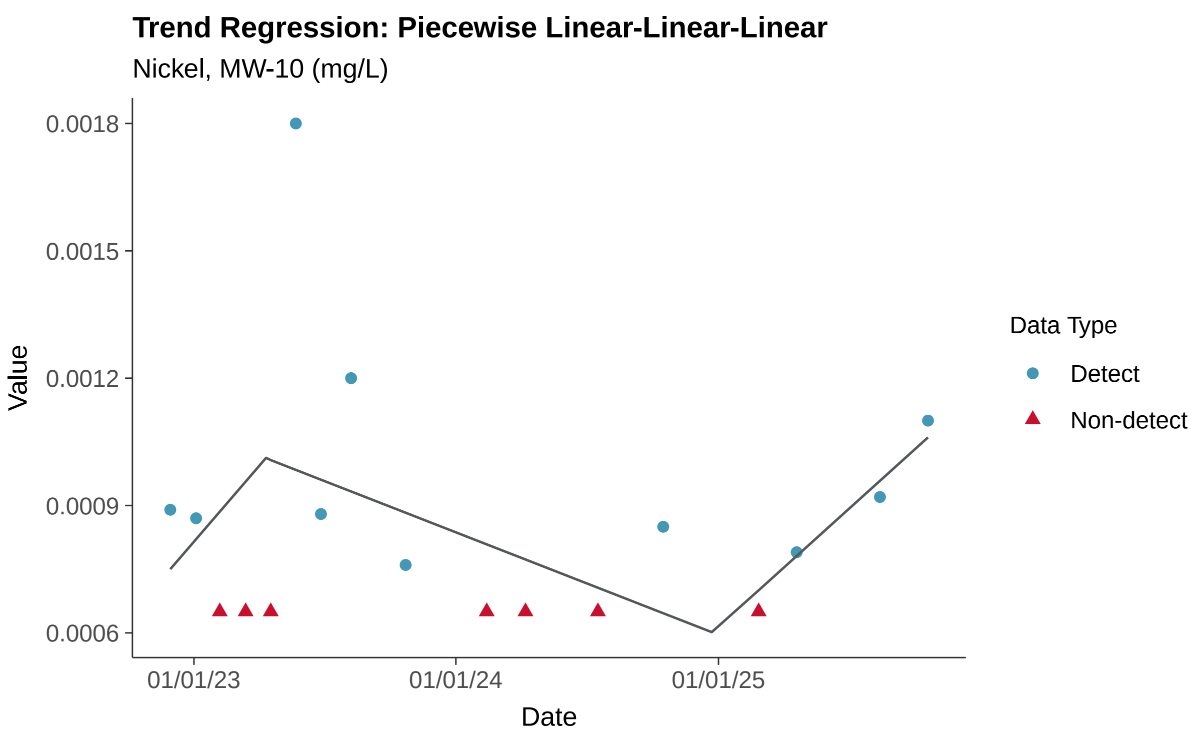

Boxplot
Nickel, MW-10 (mg/L)
Value
0.0018
0.0015
0.0012
0.0009
0.0006
Data Type
Detect
Outlier Type
Major


Boxplot by Season
Nickel, MW-10 (mg/L)
Value
0.0018
0.0015
0.0012
0.0009
0.0006
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Major
Minor
Data Type
Detect


Normal Q-Q plot using ROS Imputed Estimates
Nickel, MW-10 (mg/L)
Value
0.0015
0.0010
0.0005
0.0000
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

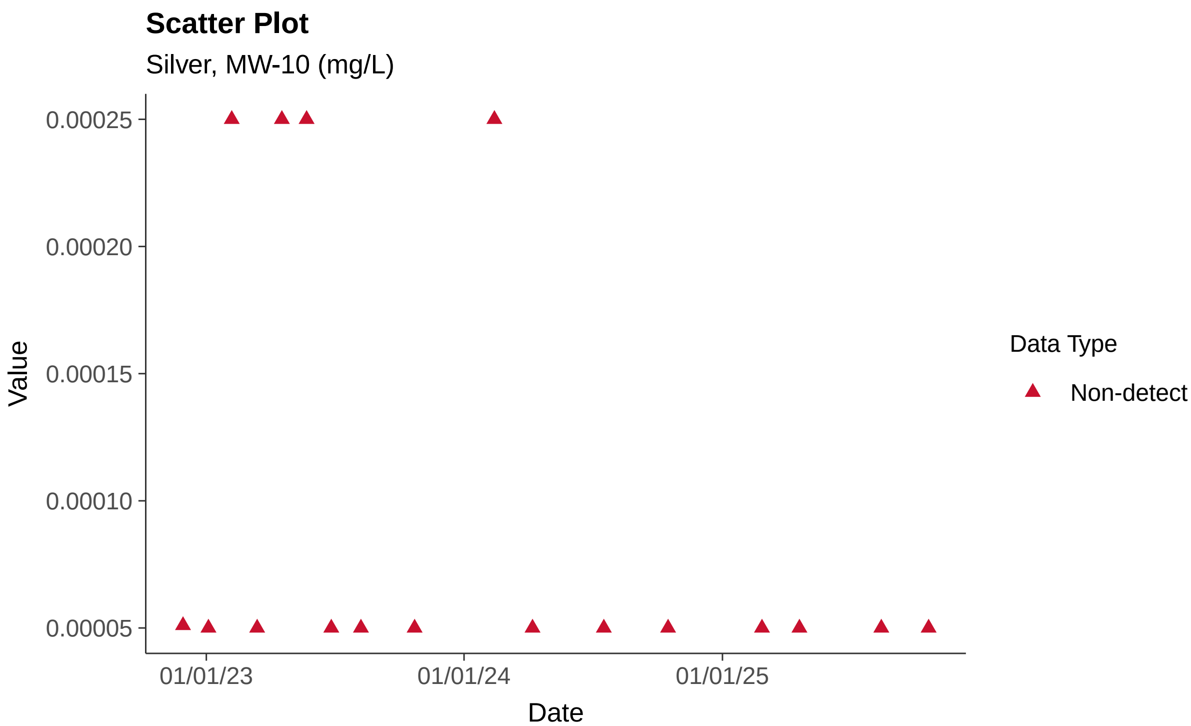

Trend Regression: Mann-Kendall/Theil-Sen Estimate
Nickel, MW-10 (mg/L)
Value
0.0018
0.0015
0.0012
0.0009
0.0006
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

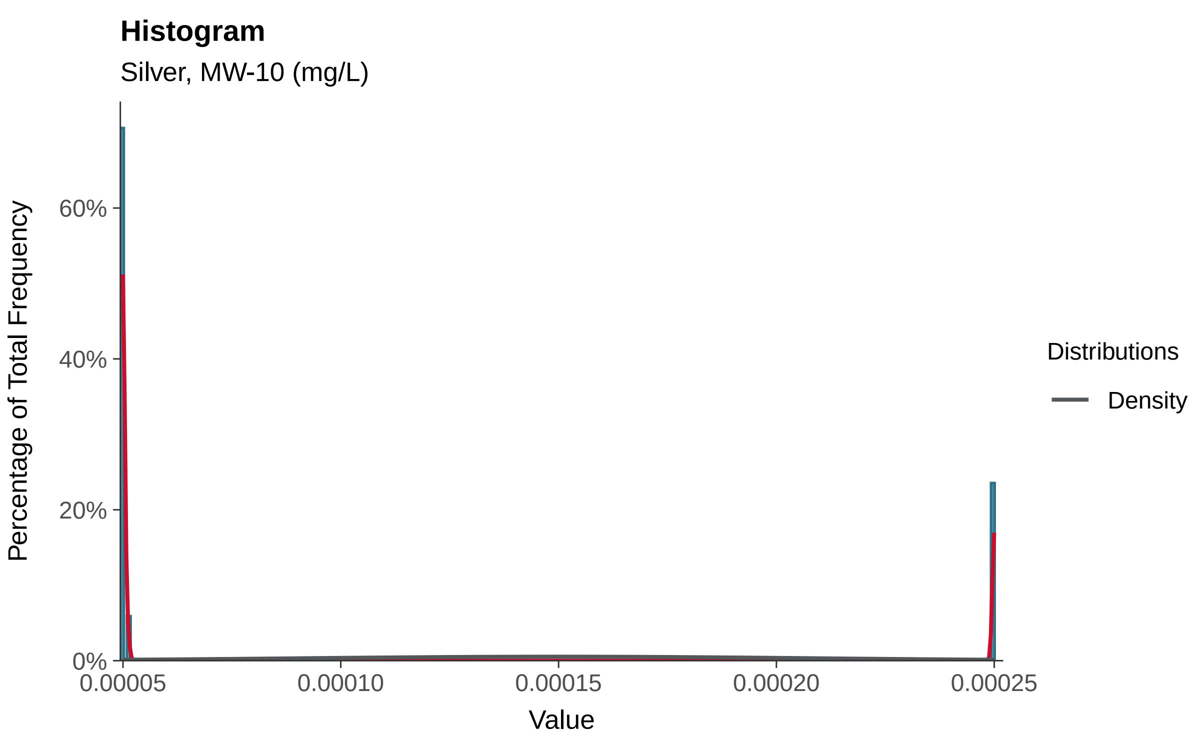

Trend Regression: Piecewise Linear-Linear
Nickel, MW-10 (mg/L)
Value
0.0018
0.0015
0.0012
0.0009
0.0006
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

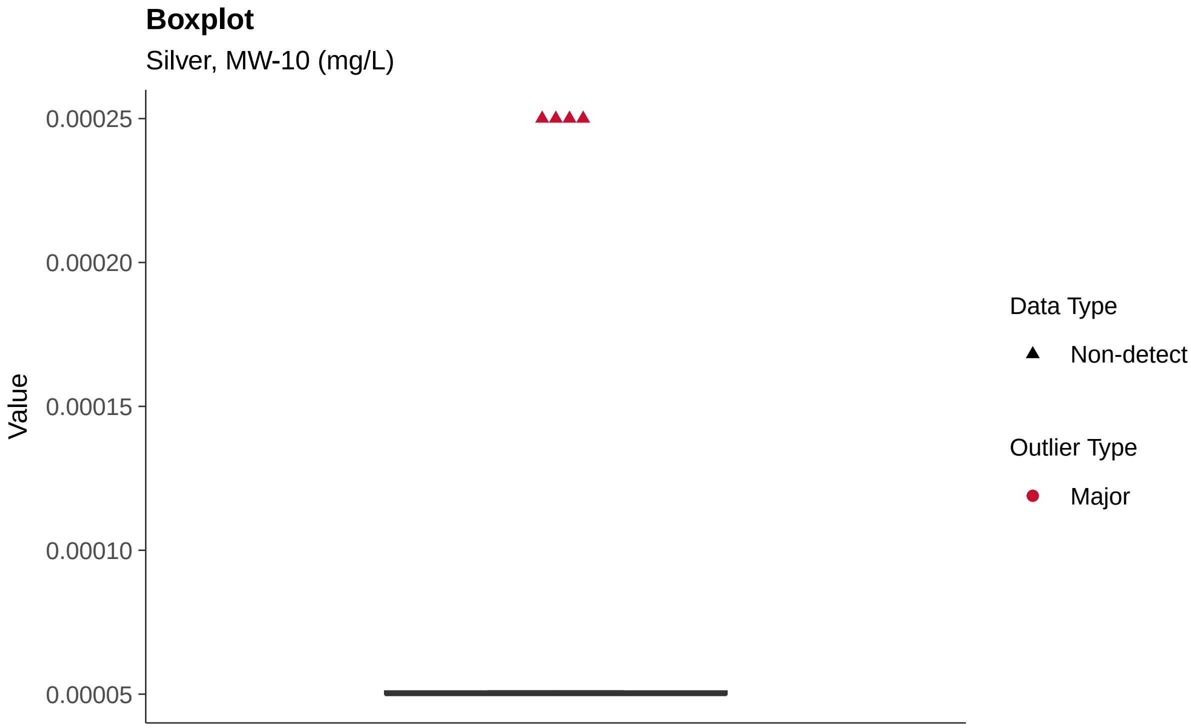

Trend Regression: Piecewise Linear-Linear-Linear
Nickel, MW-10 (mg/L)
Value
0.0018
0.0015
0.0012
0.0009
0.0006
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

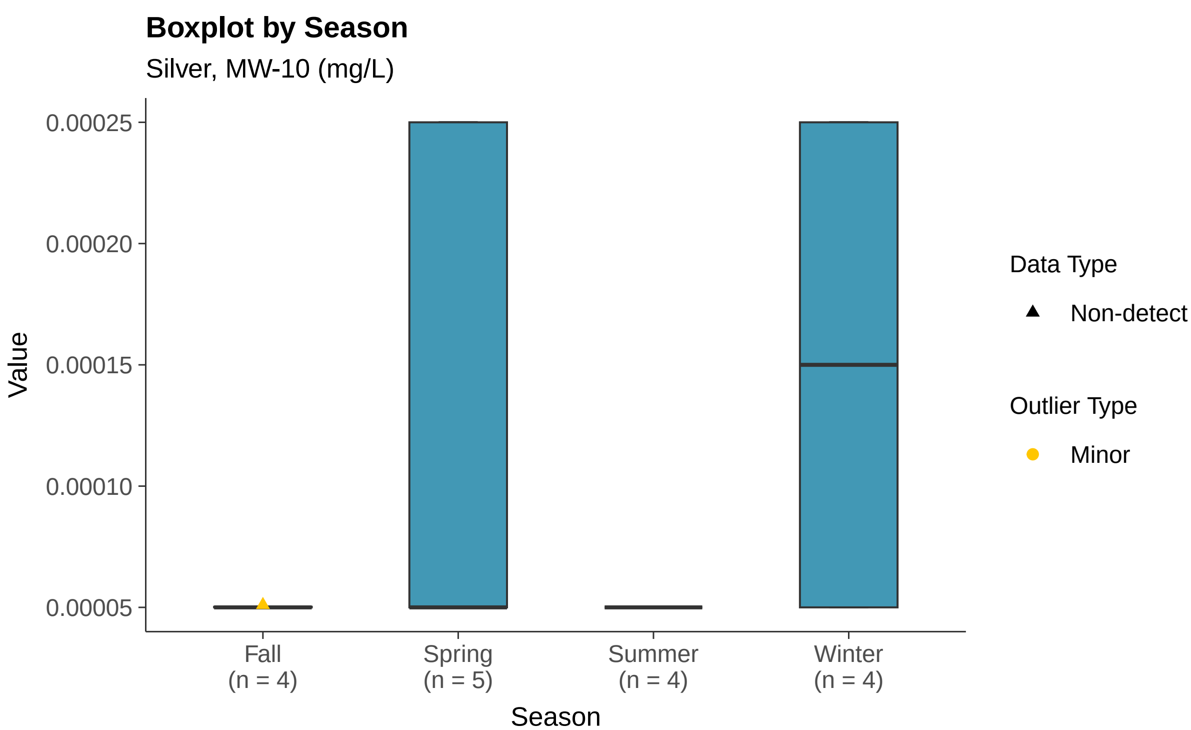
Part 115: Silver, MW-10

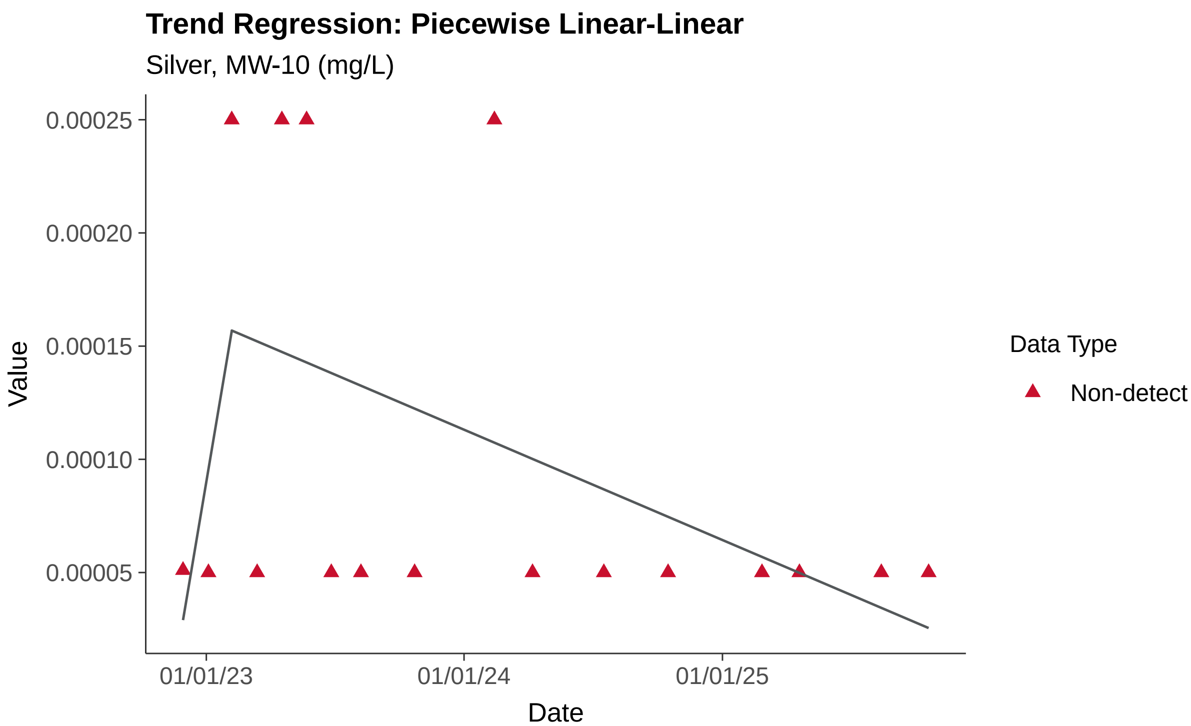
ID: 20_3_5_123

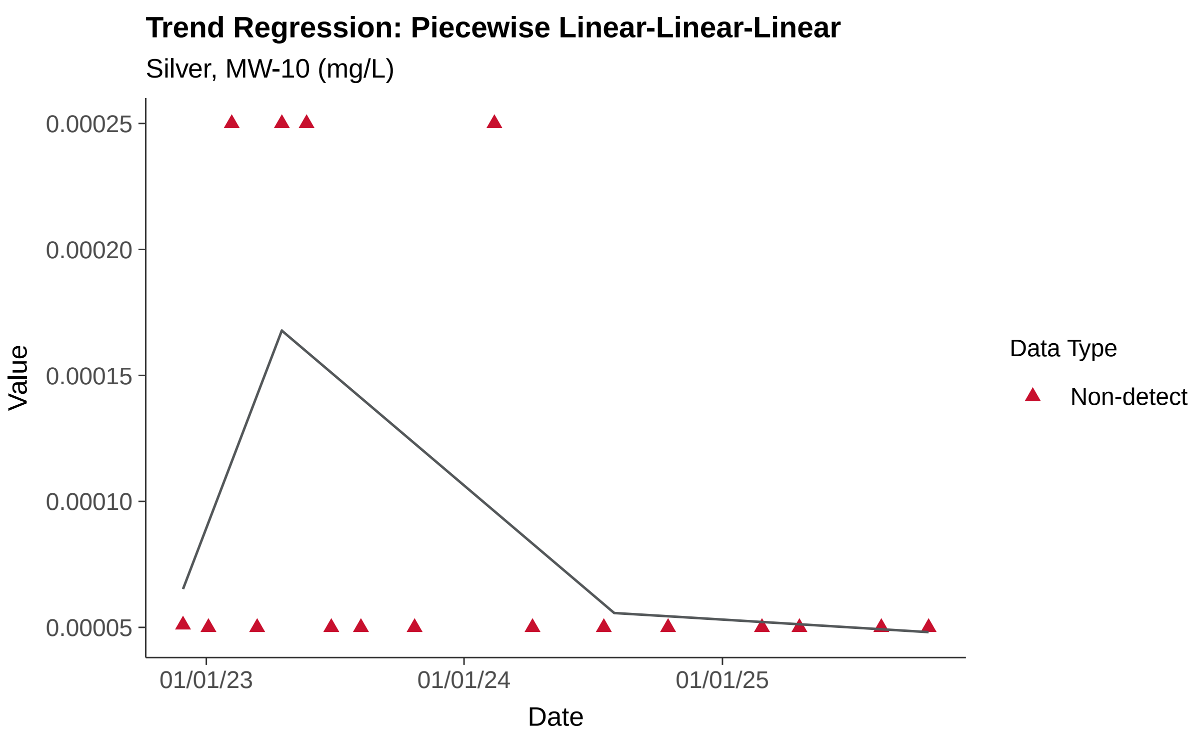





Boxplot
Silver, MW-10 (mg/L)
Value
0.00025
0.00020
0.00015
0.00010
0.00005
Data Type
Non-detect
Outlier Type
Major

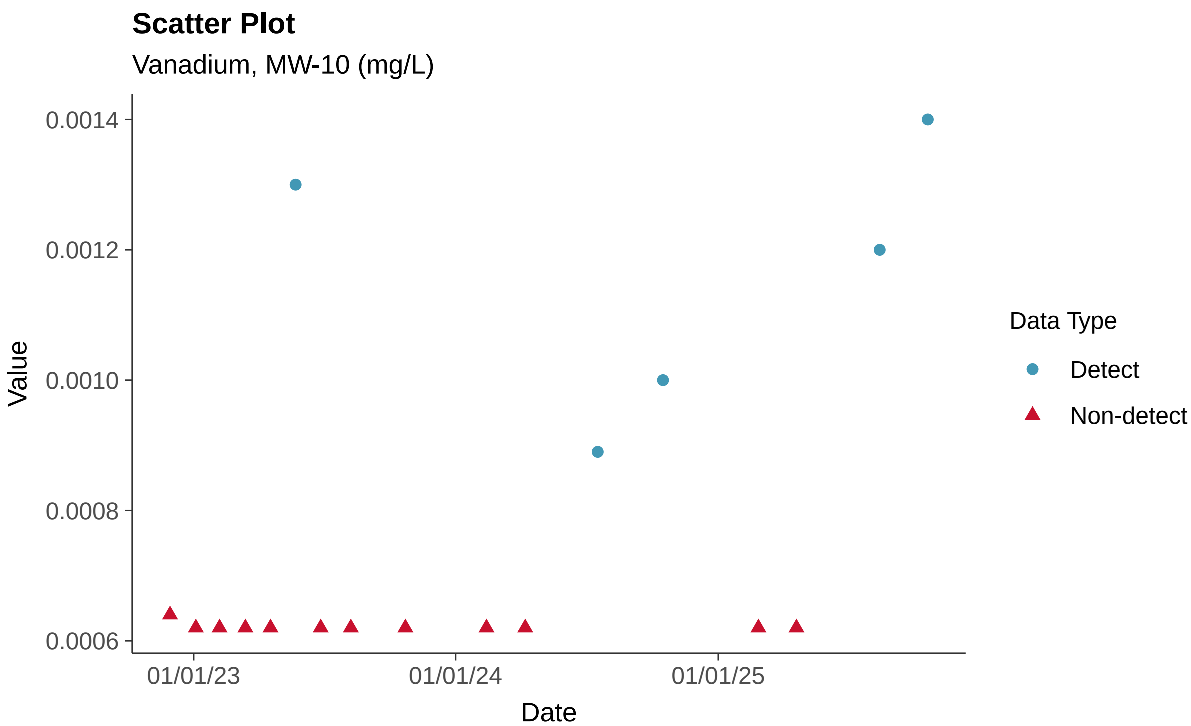

Boxplot by Season
Silver, MW-10 (mg/L)
Value
0.00025
0.00020
0.00015
0.00010
0.00005
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Data Type
Non-detect
Outlier Type
Minor

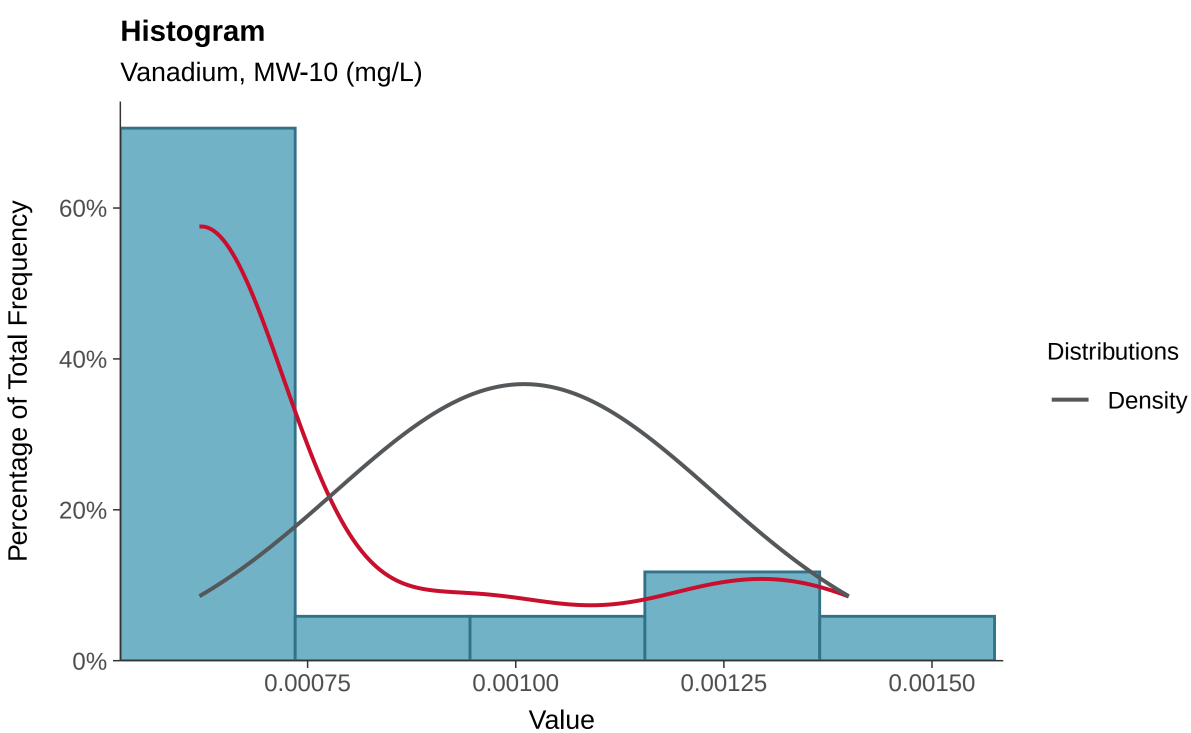

Trend Regression: Piecewise Linear-Linear
Silver, MW-10 (mg/L)
Value
0.00025
0.00020
0.00015
0.00010
0.00005
01/01/23
01/01/24
01/01/25
Date
Data Type
Non-detect

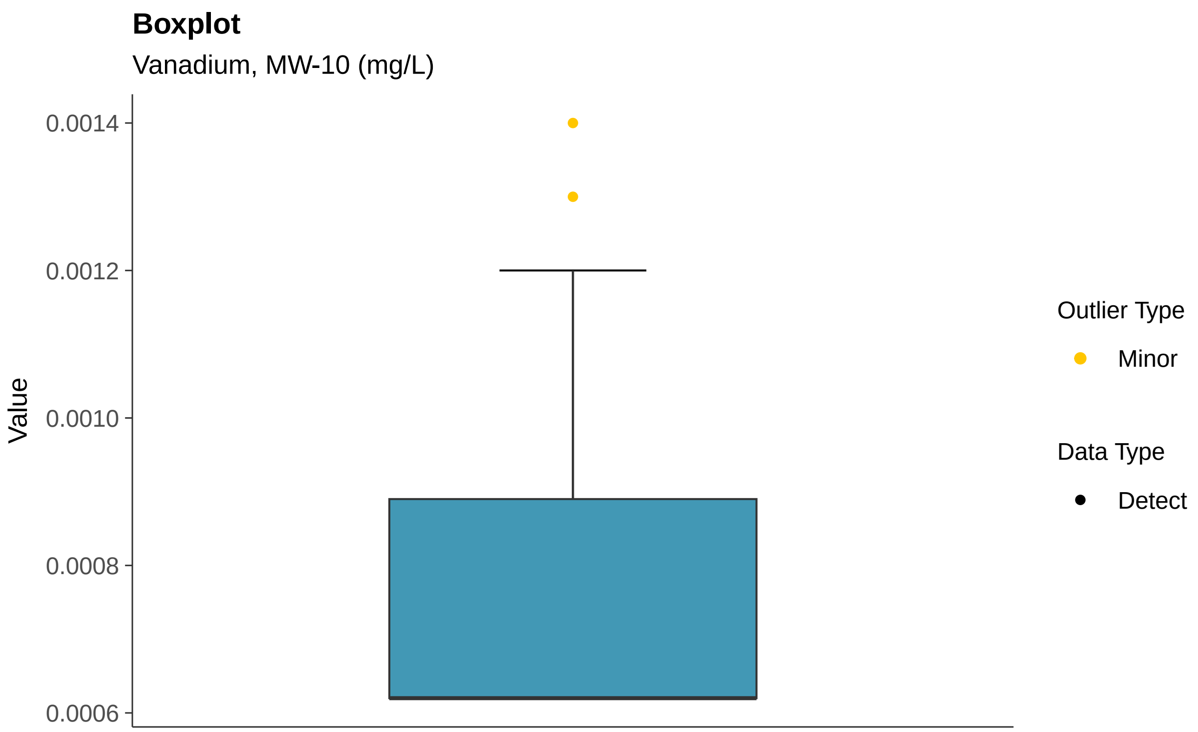

Trend Regression: Piecewise Linear-Linear-Linear
Silver, MW-10 (mg/L)
Value
0.00025
0.00020
0.00015
0.00010
0.00005
01/01/23
01/01/24
01/01/25
Date
Data Type
Non-detect

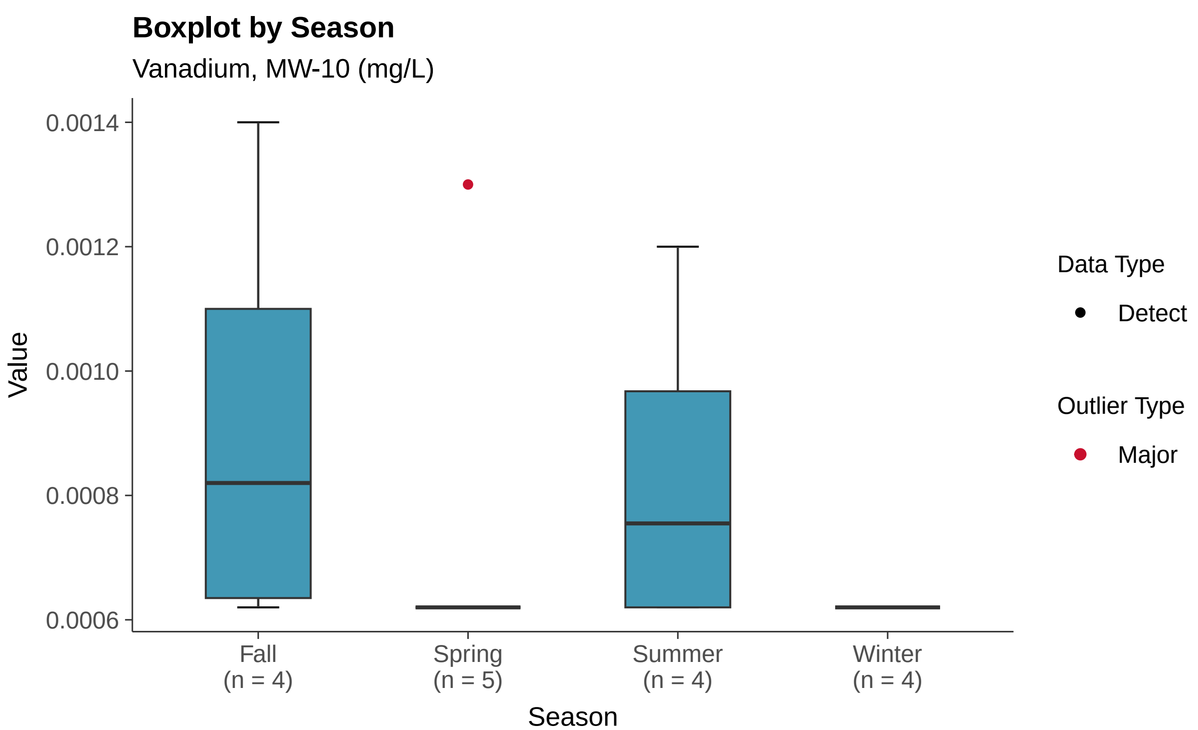
Part 115: Vanadium, MW-10

ID: 20_3_5_128



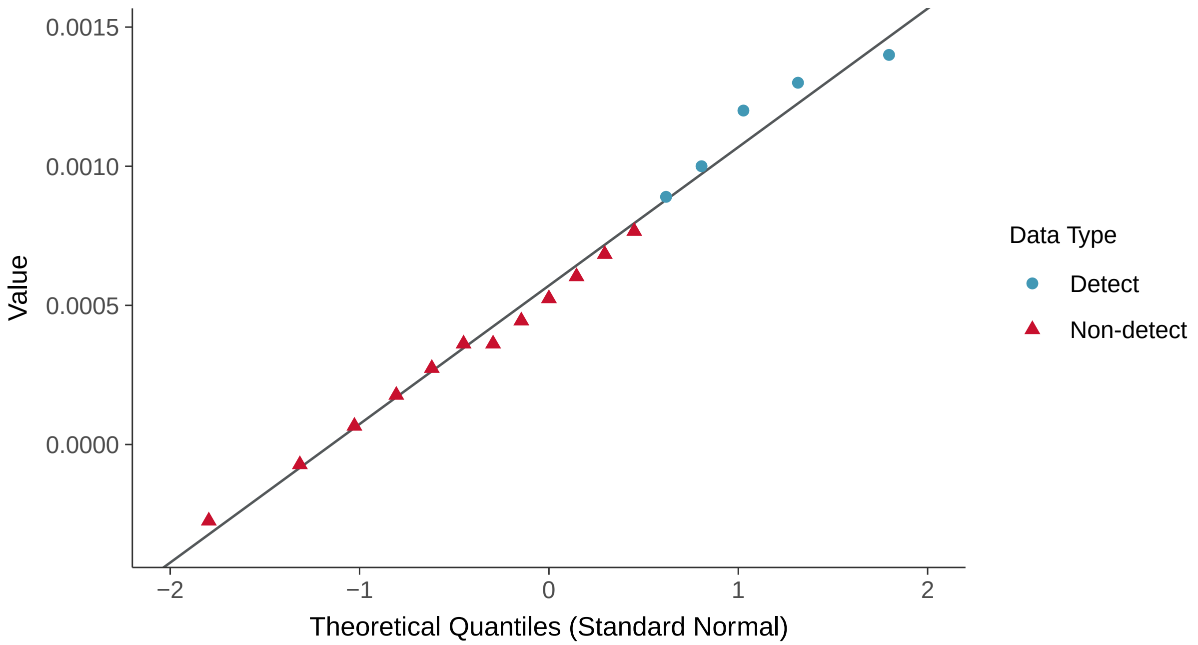



Boxplot
Vanadium, MW-10 (mg/L)
Value
0.0014
0.0012
0.0010
0.0008
0.0006
Outlier Type
Minor
Data Type
Detect


Boxplot by Season
Vanadium, MW-10 (mg/L)
Value
0.0014
0.0012
0.0010
0.0008
0.0006
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Data Type
Detect
Outlier Type
Major

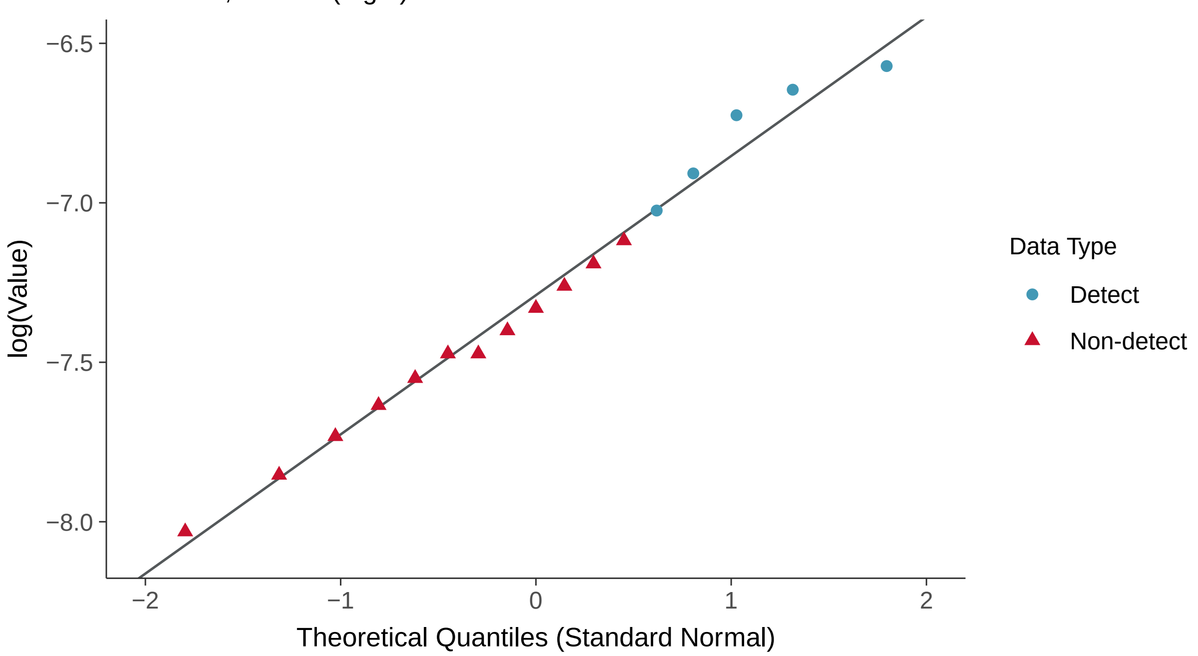
Normal Q-Q plot using ROS Imputed Estimates

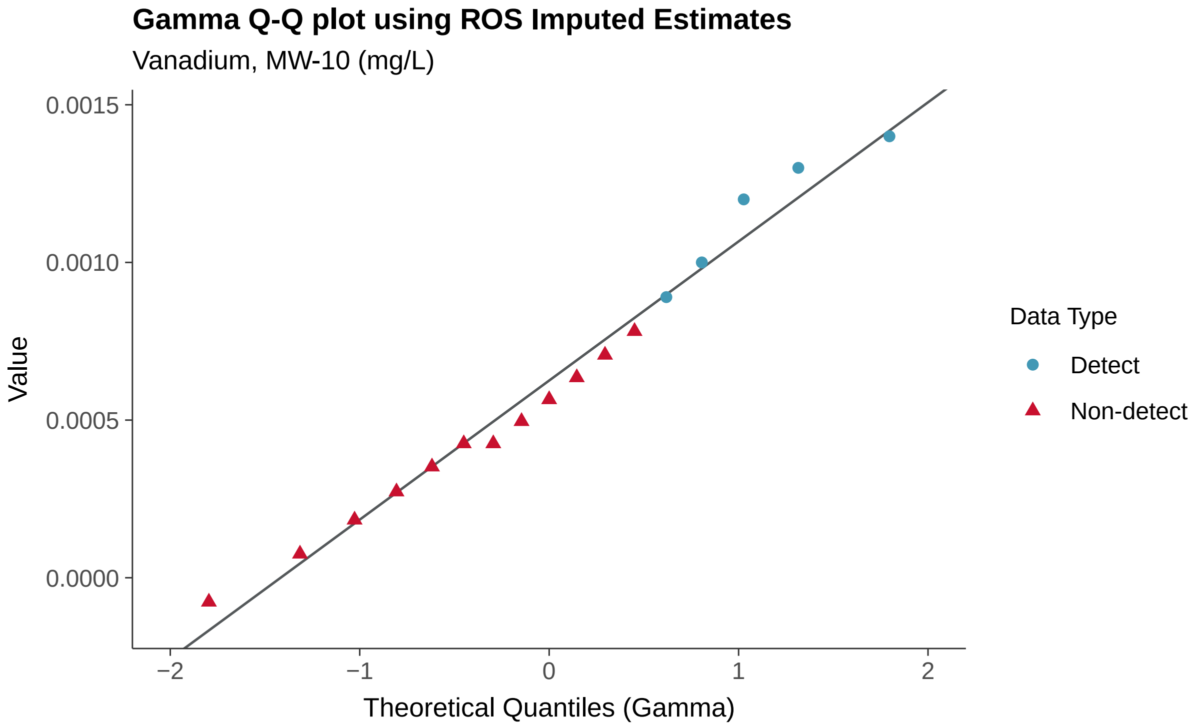
Vanadium, MW-10 (mg/L)

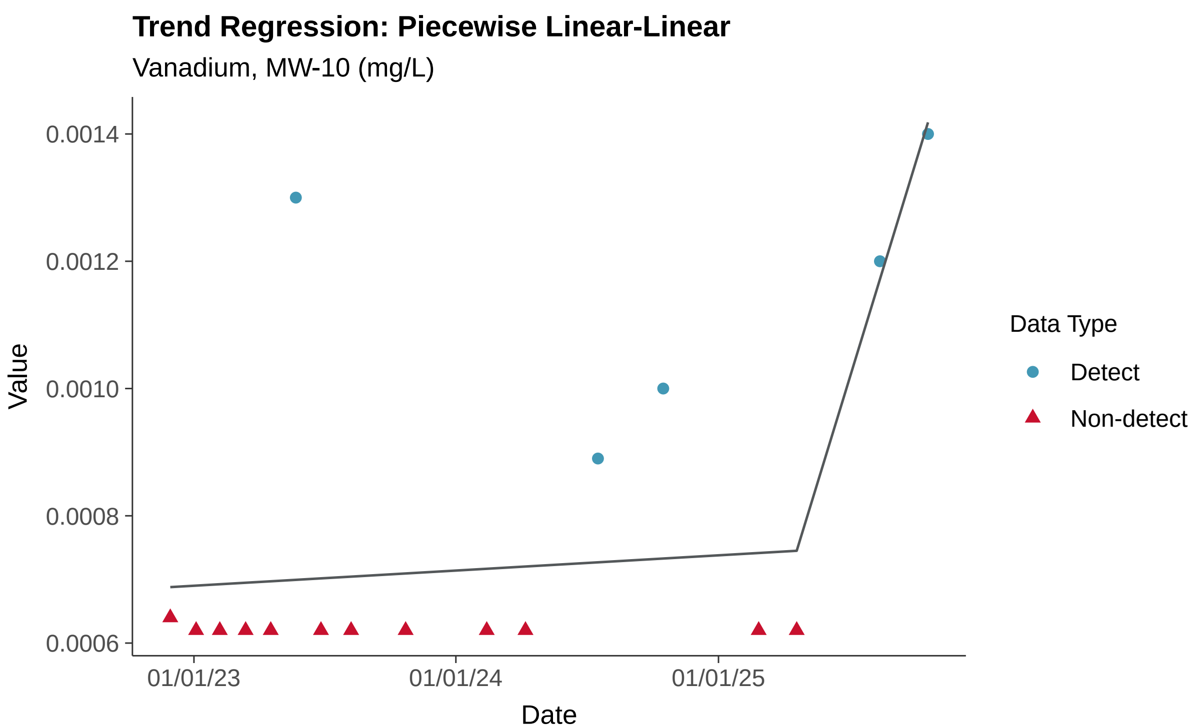


Lognormal Q-Q plot using ROS Imputed Estimates

Vanadium, MW-10 (mg/L)

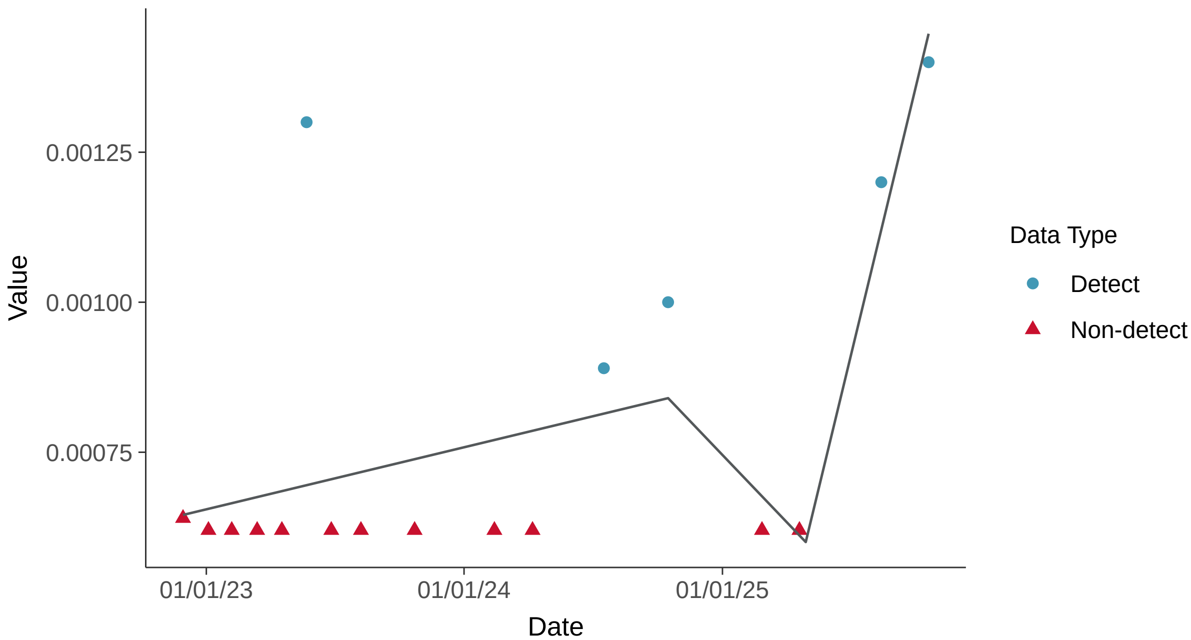



Gamma Q-Q plot using ROS Imputed Estimates
Vanadium, MW-10 (mg/L)
Value
0.0015
0.0010
0.0005
0.0000
−2
−1
0
1
2
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Vanadium, MW-10 (mg/L)
Value
0.0014
0.0012
0.0010
0.0008
0.0006
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

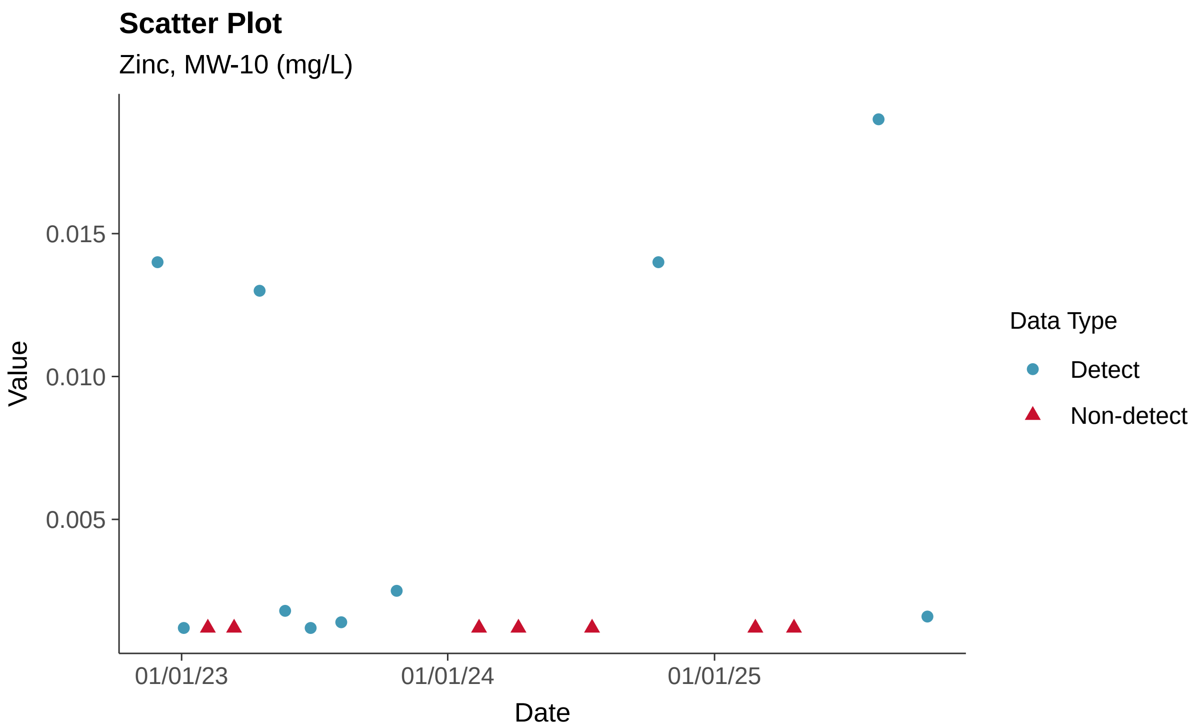
Trend Regression: Piecewise Linear-Linear-Linear

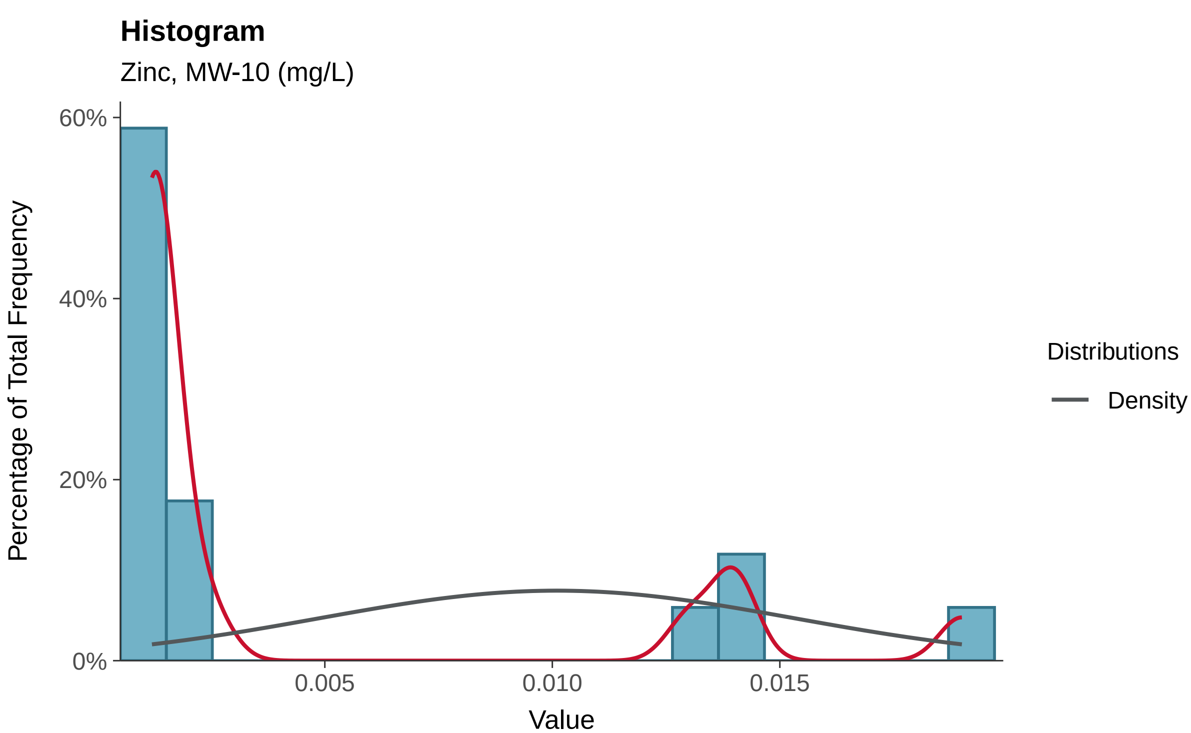
Vanadium, MW-10 (mg/L)



Part 115: Zinc, MW-10

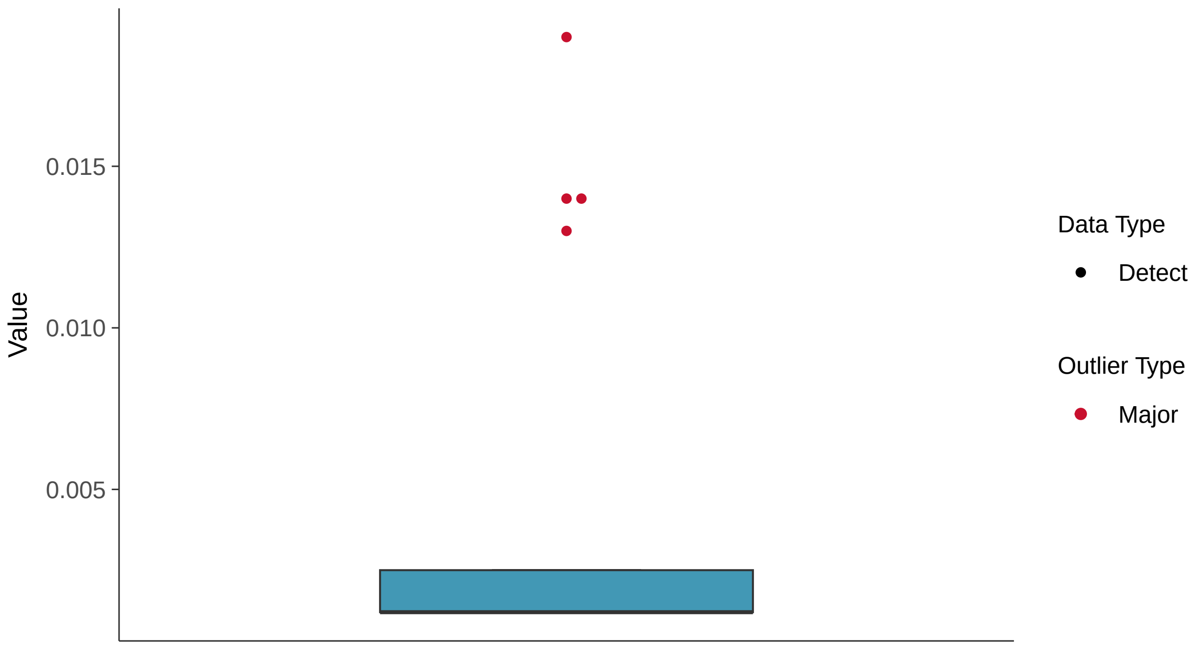
ID: 20_3_5_129





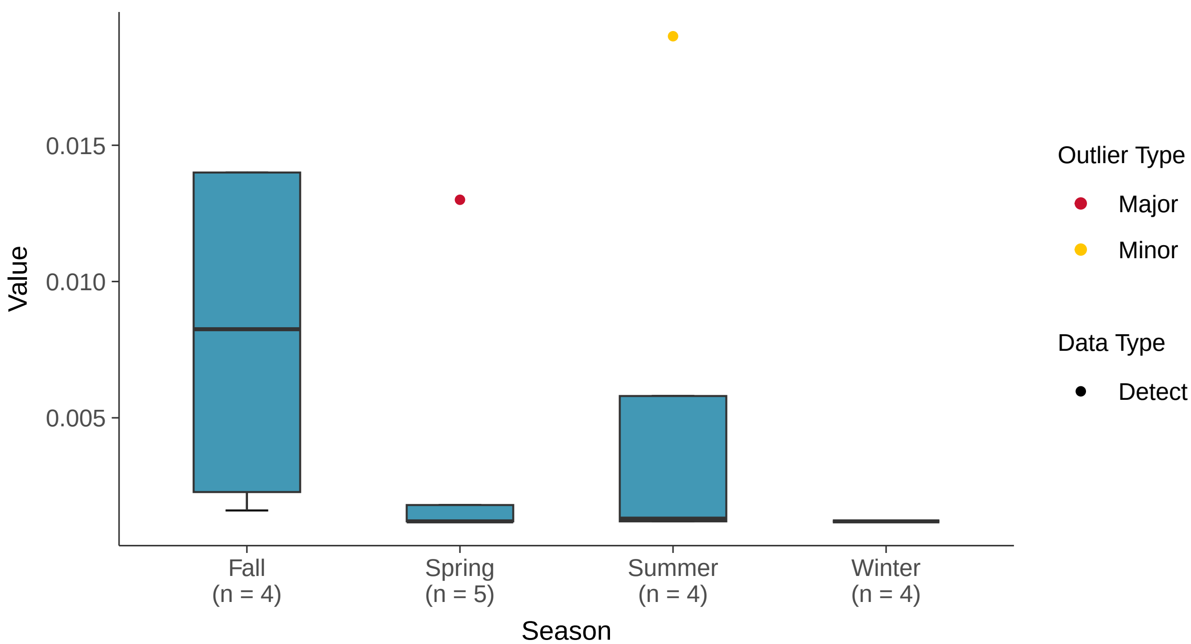
Boxplot

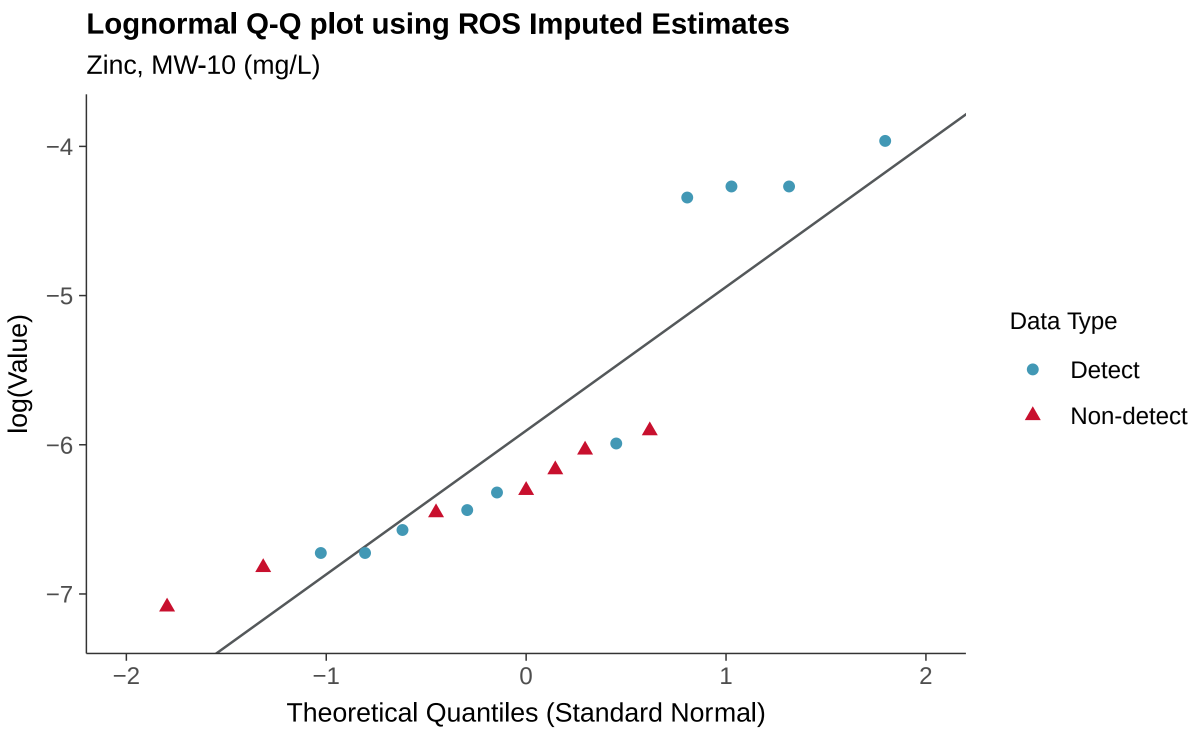
Zinc, MW-10 (mg/L)

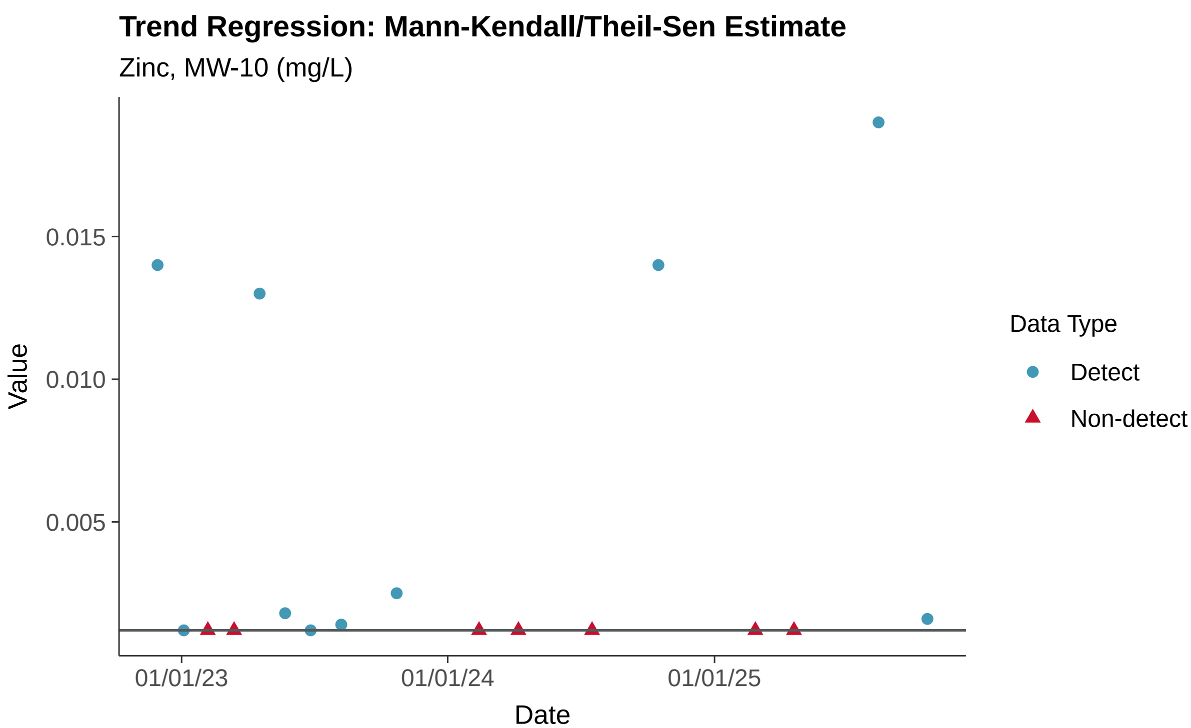


Boxplot by Season

Zinc, MW-10 (mg/L)



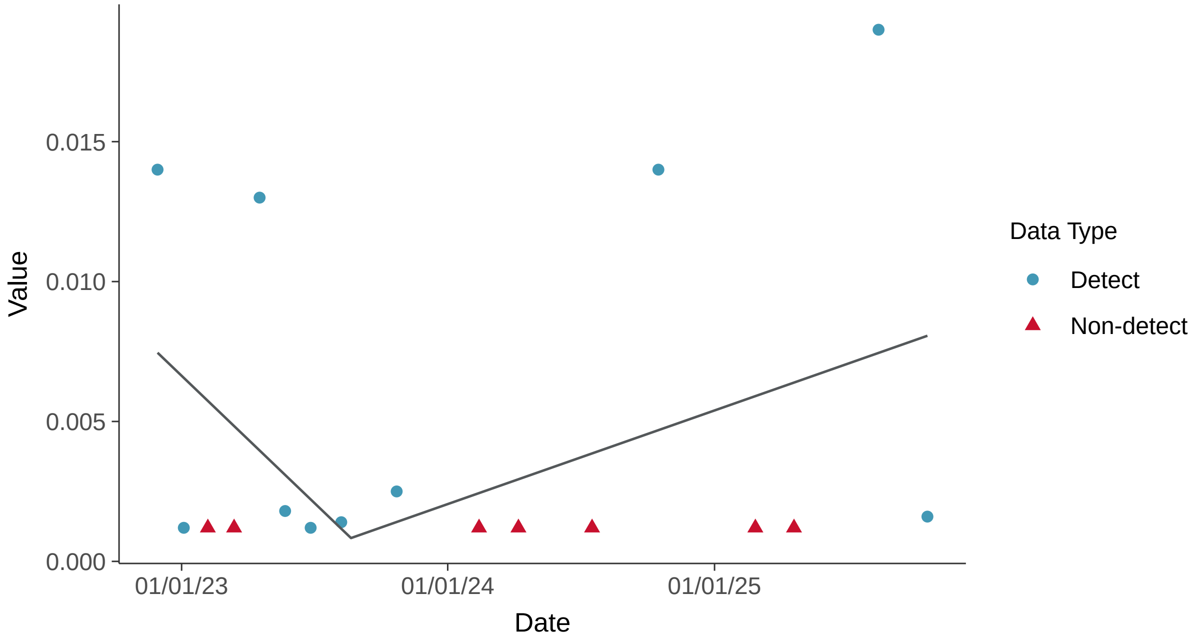

Lognormal Q-Q plot using ROS Imputed Estimates
Zinc, MW-10 (mg/L)
−4
−5
−6
−7
log(Value)
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Trend Regression: Mann-Kendall/Theil-Sen Estimate
Zinc, MW-10 (mg/L)
0.015
0.010
0.005
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Grand Haven
Downgradient Wells as of October 2025

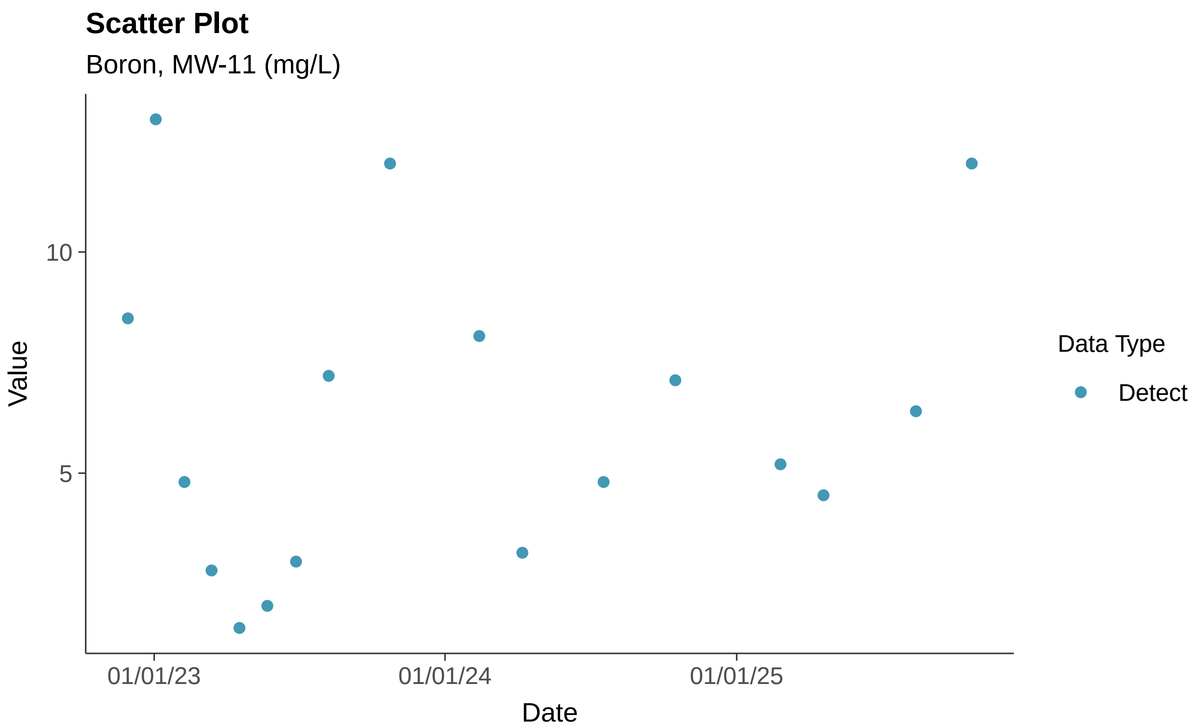
Trend Regression: Piecewise Linear-Linear

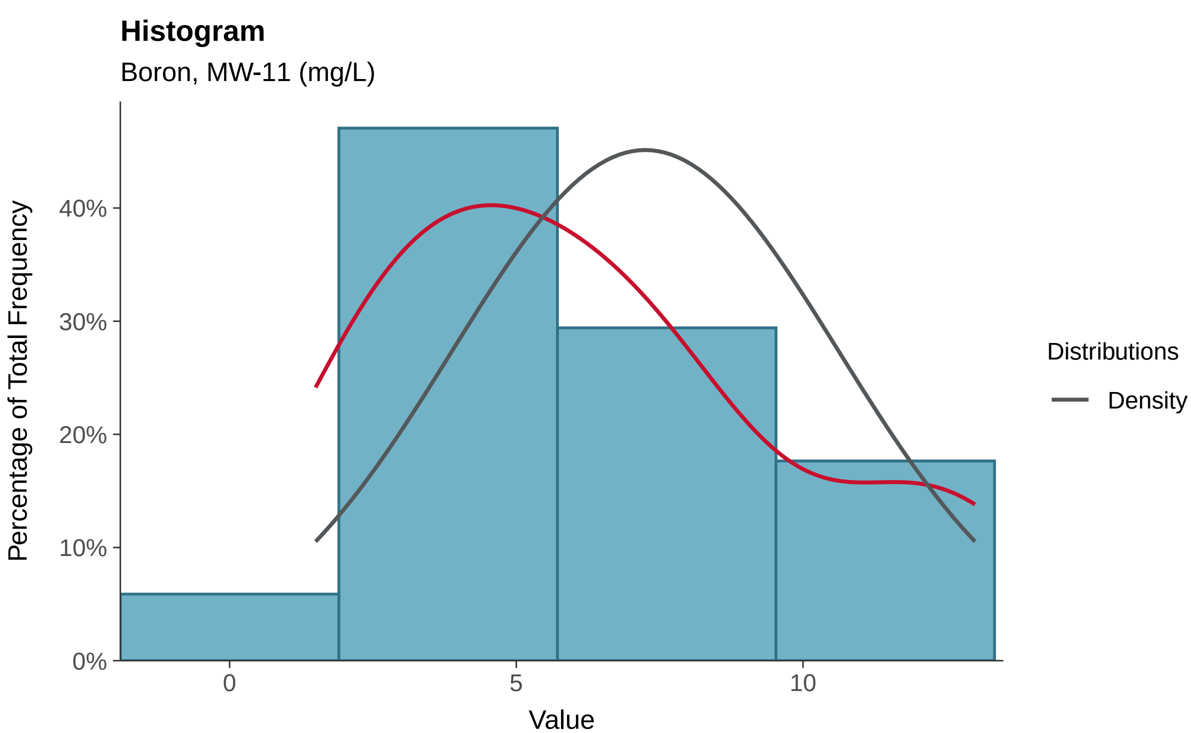
Zinc, MW-10 (mg/L)



Appendix III: Boron, MW-11

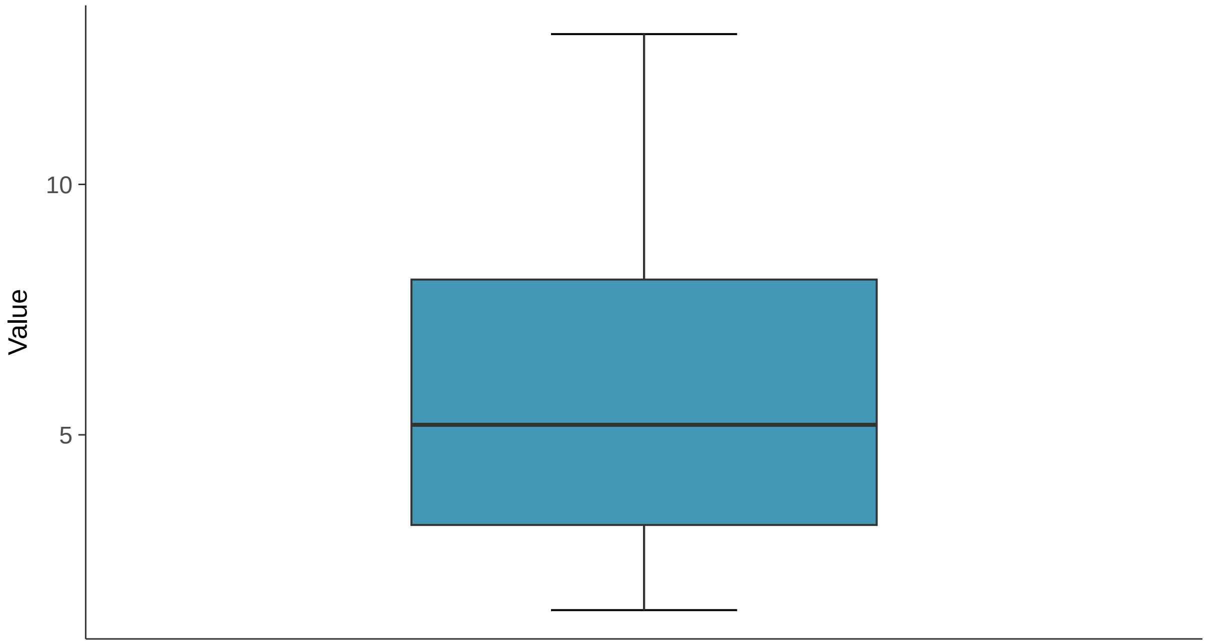
ID: 21_2_3_105





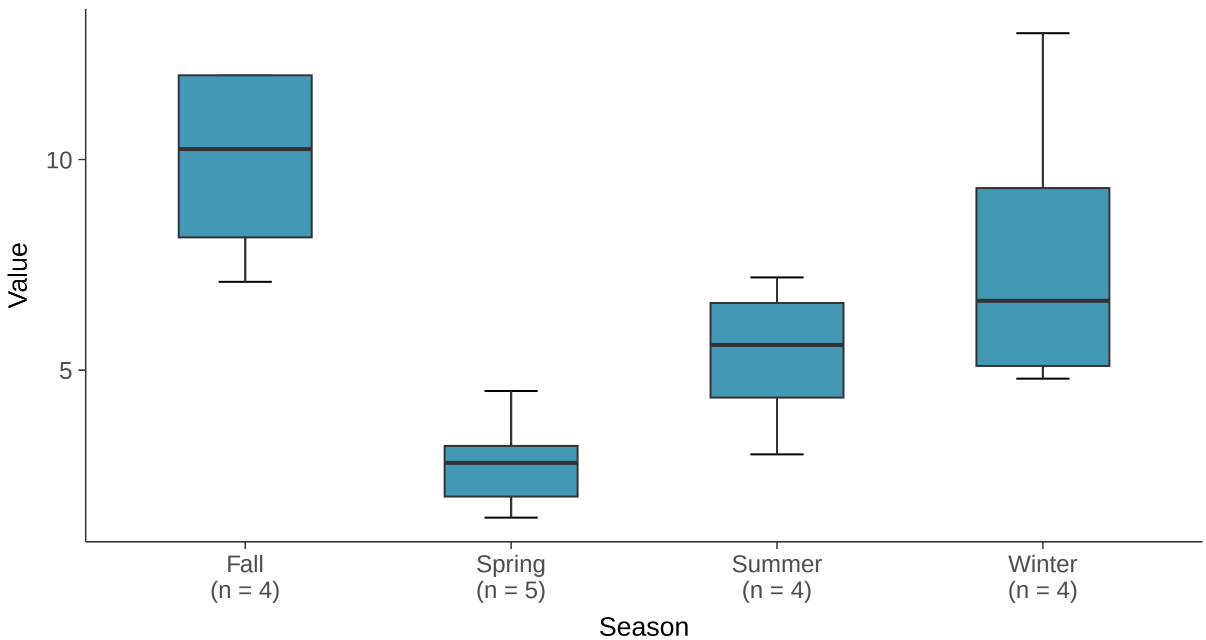
Boxplot

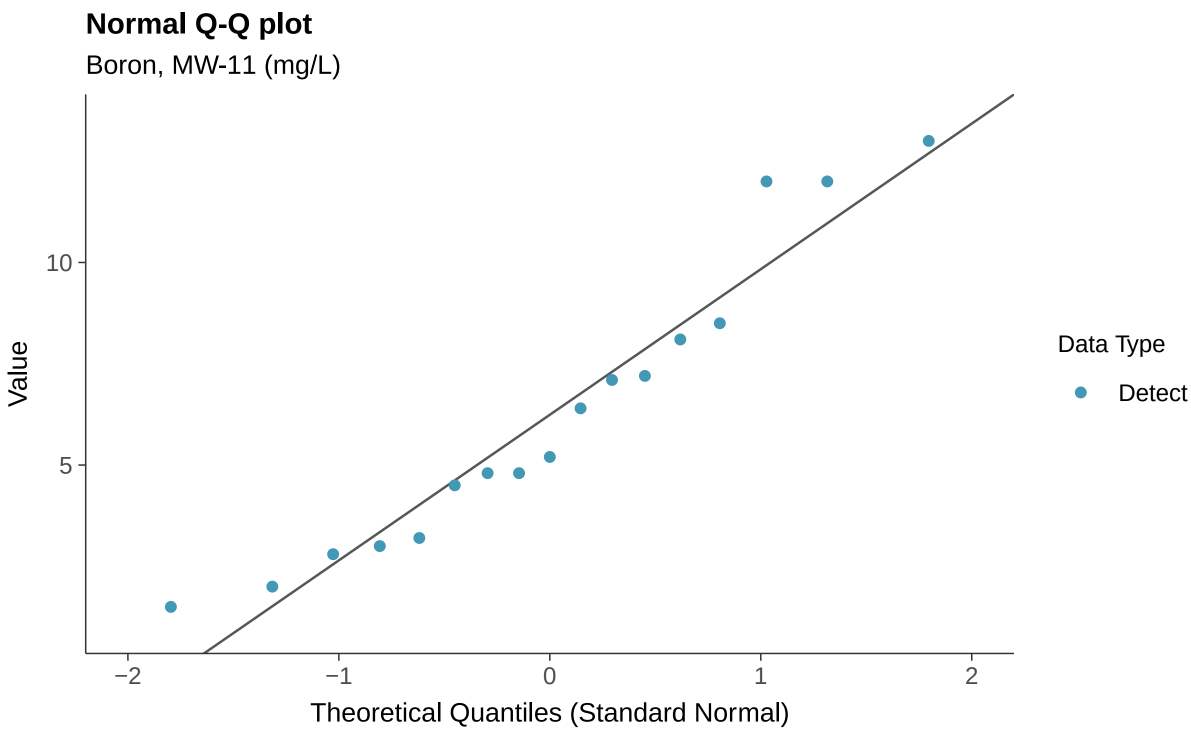
Boron, MW-11 (mg/L)

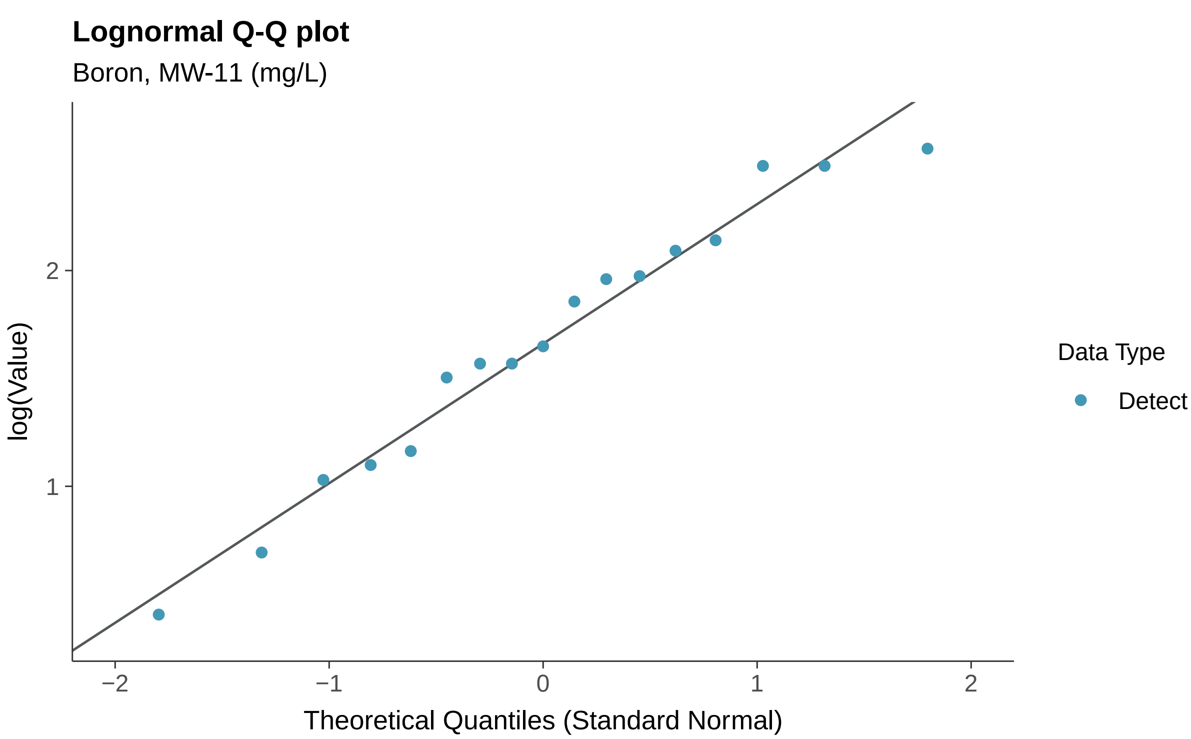


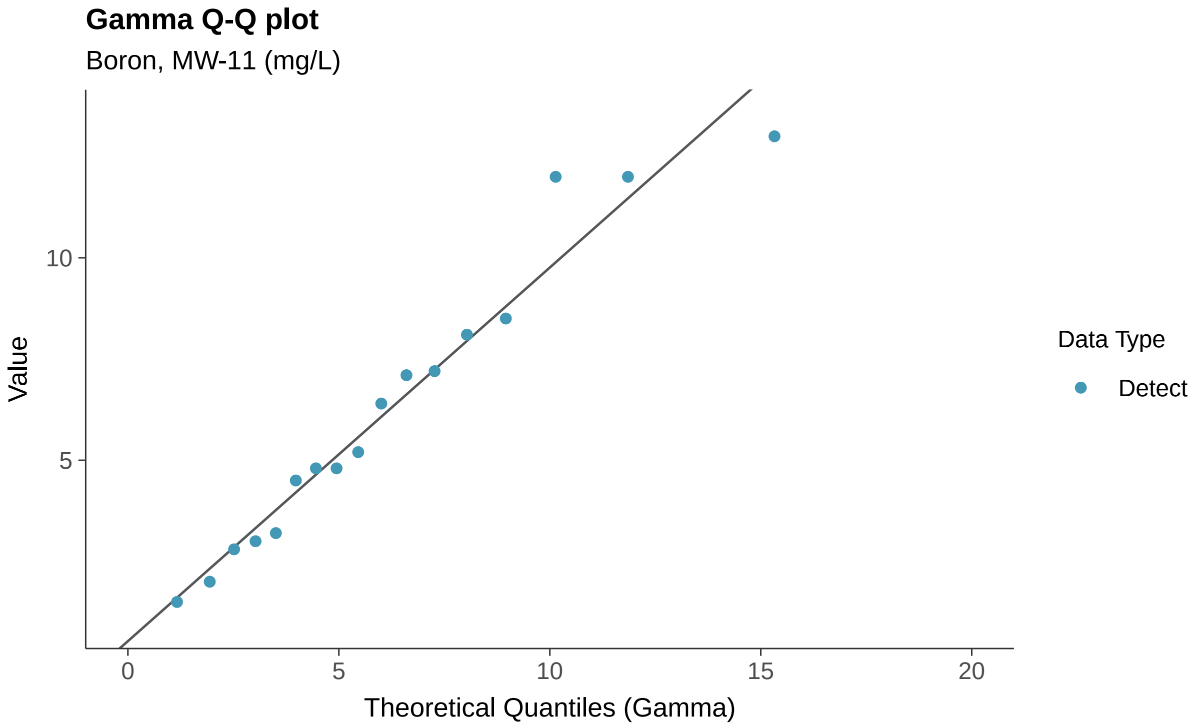
Boxplot by Season

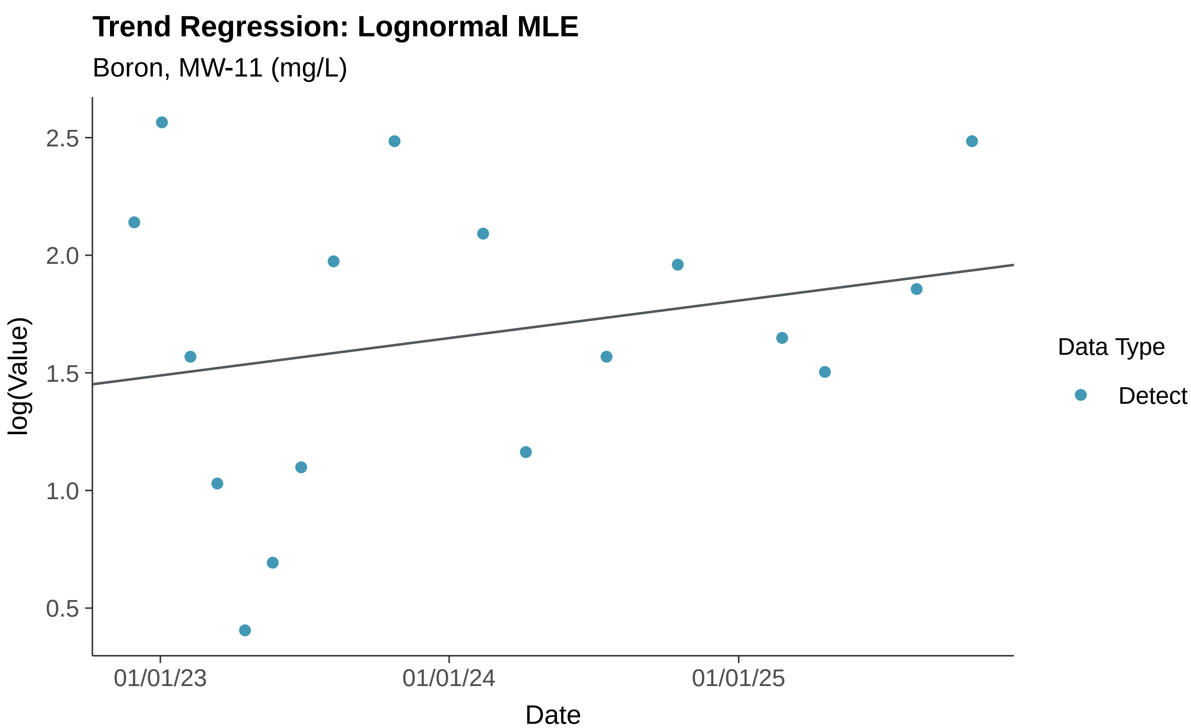
Boron, MW-11 (mg/L)

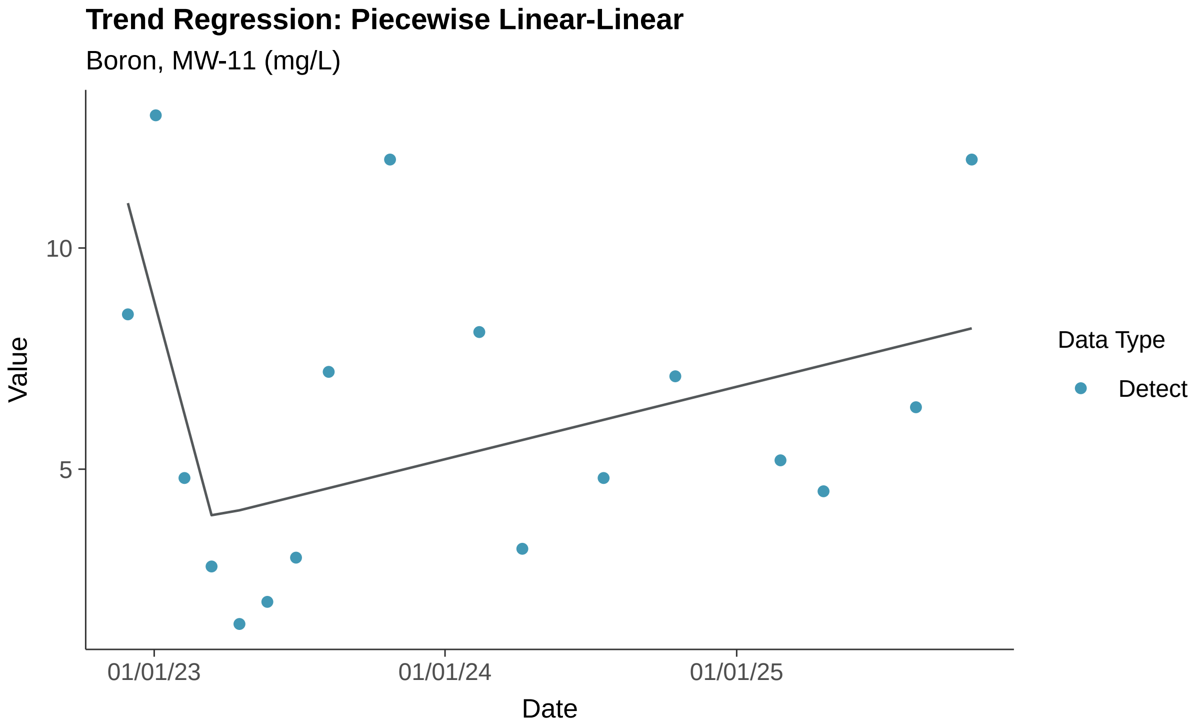


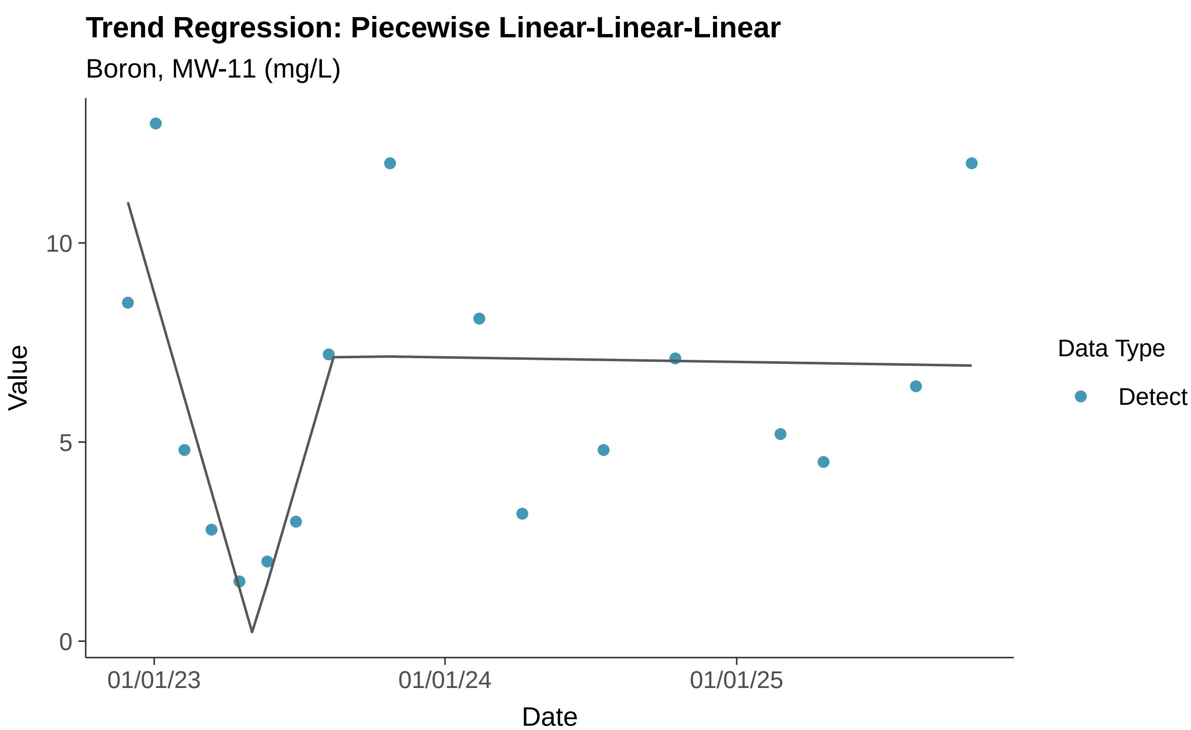

Normal Q-Q plot
Boron, MW-11 (mg/L)
Value
10
5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Boron, MW-11 (mg/L)
log(Value)
2
1
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Boron, MW-11 (mg/L)
Value
10
5
0
5
10
15
20
Theoretical Quantiles (Gamma)
Data Type
Detect

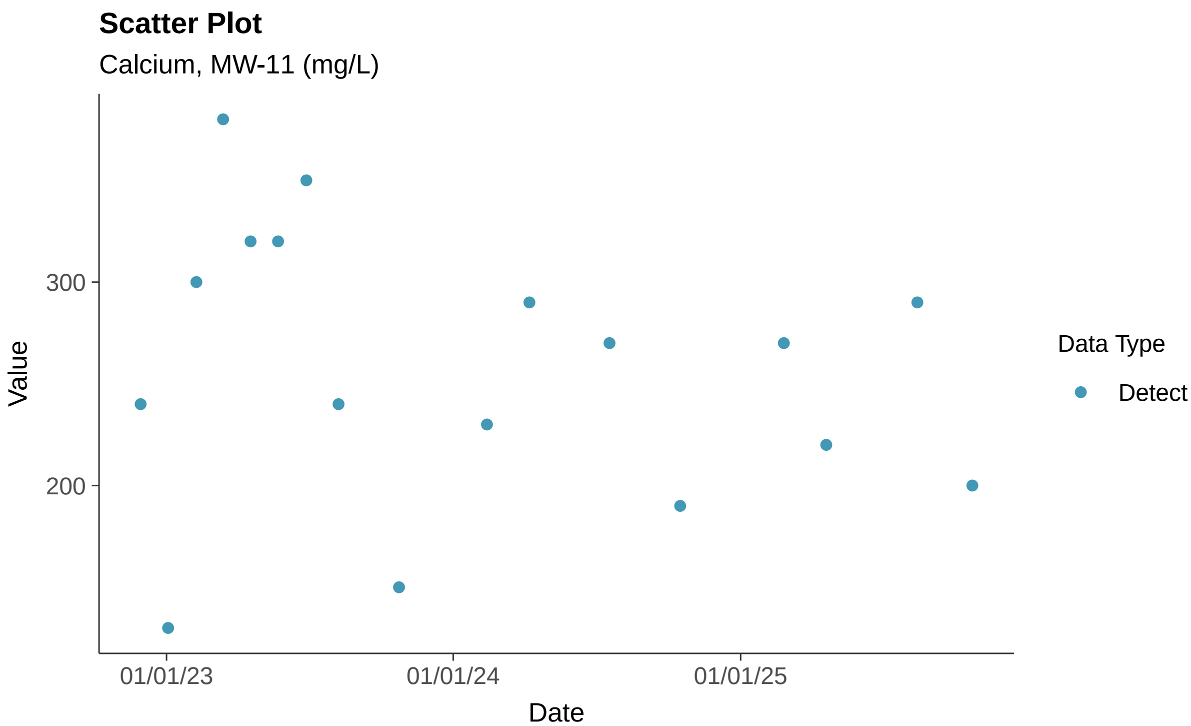

Trend Regression: Lognormal MLE
Boron, MW-11 (mg/L)
log(Value)
2.5
2.0
1.5
1.0
0.5
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

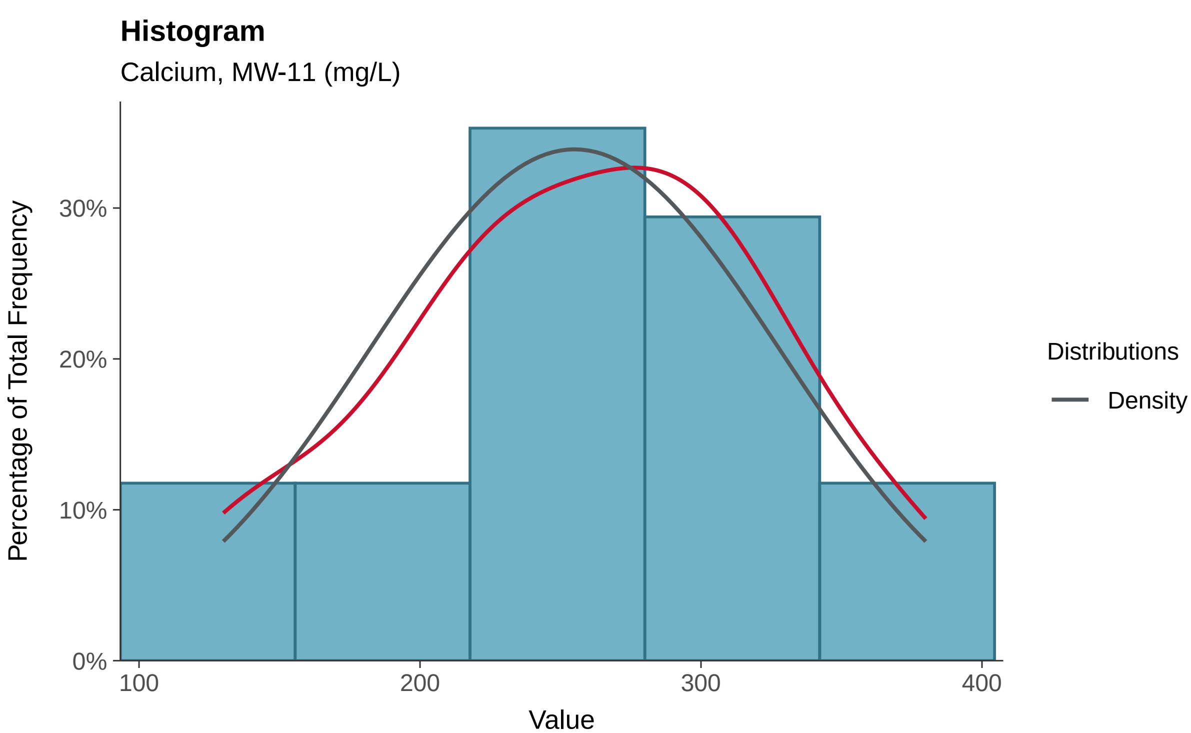

Trend Regression: Piecewise Linear-Linear
Boron, MW-11 (mg/L)
Value
10
5
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
Boron, MW-11 (mg/L)
Value
10
5
0
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Appendix III: Calcium, MW-11

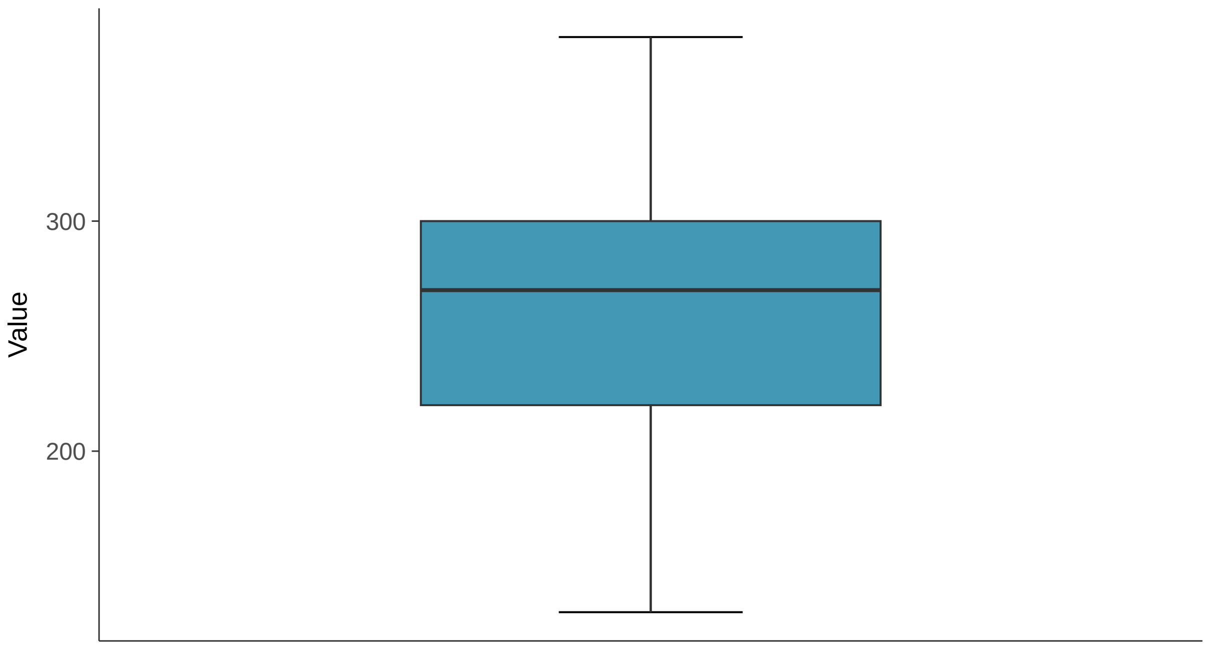
ID: 21_2_3_107





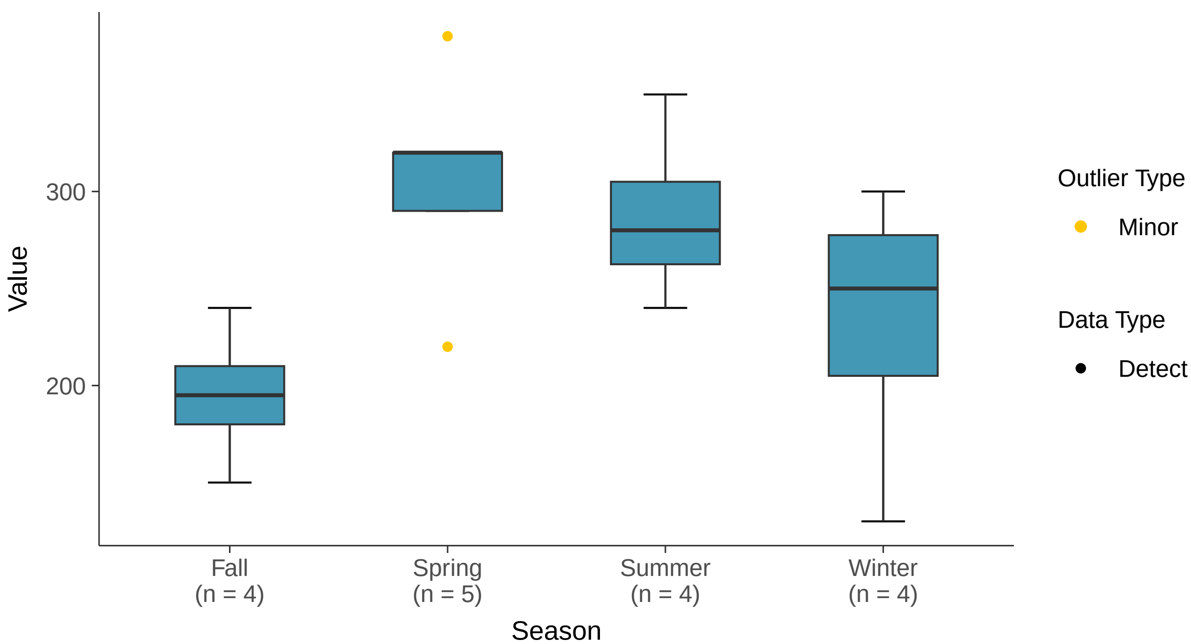
Boxplot

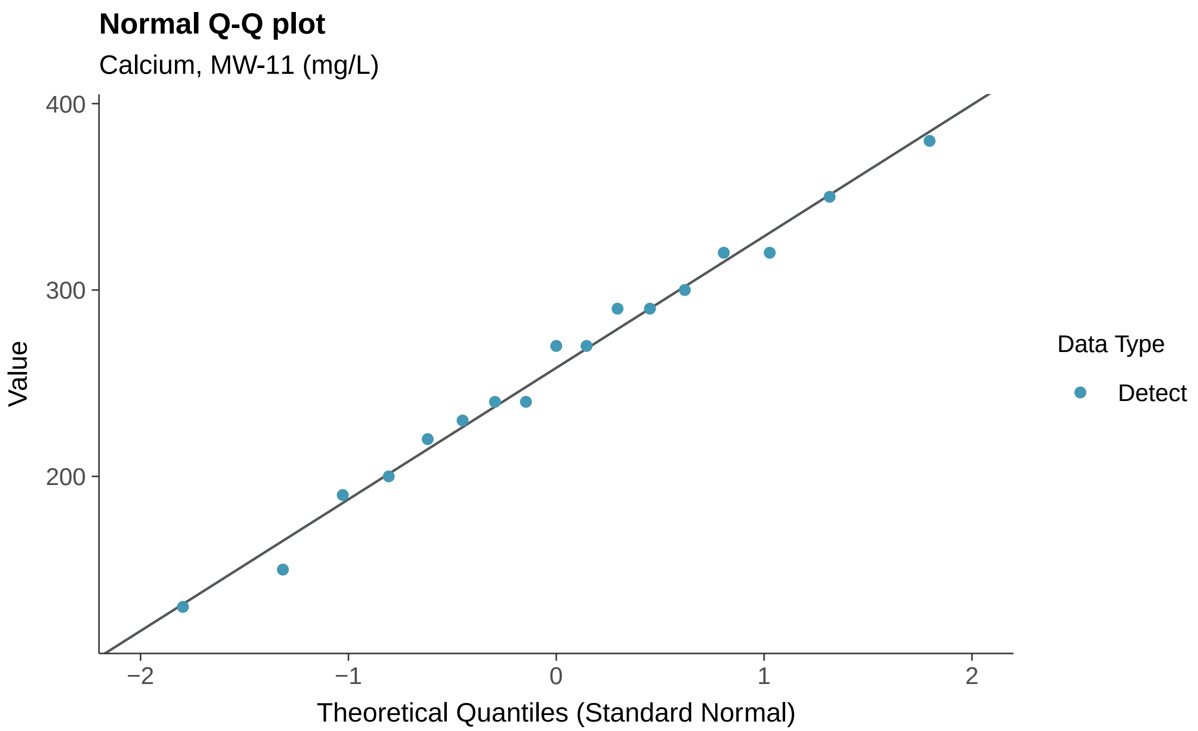
Calcium, MW-11 (mg/L)

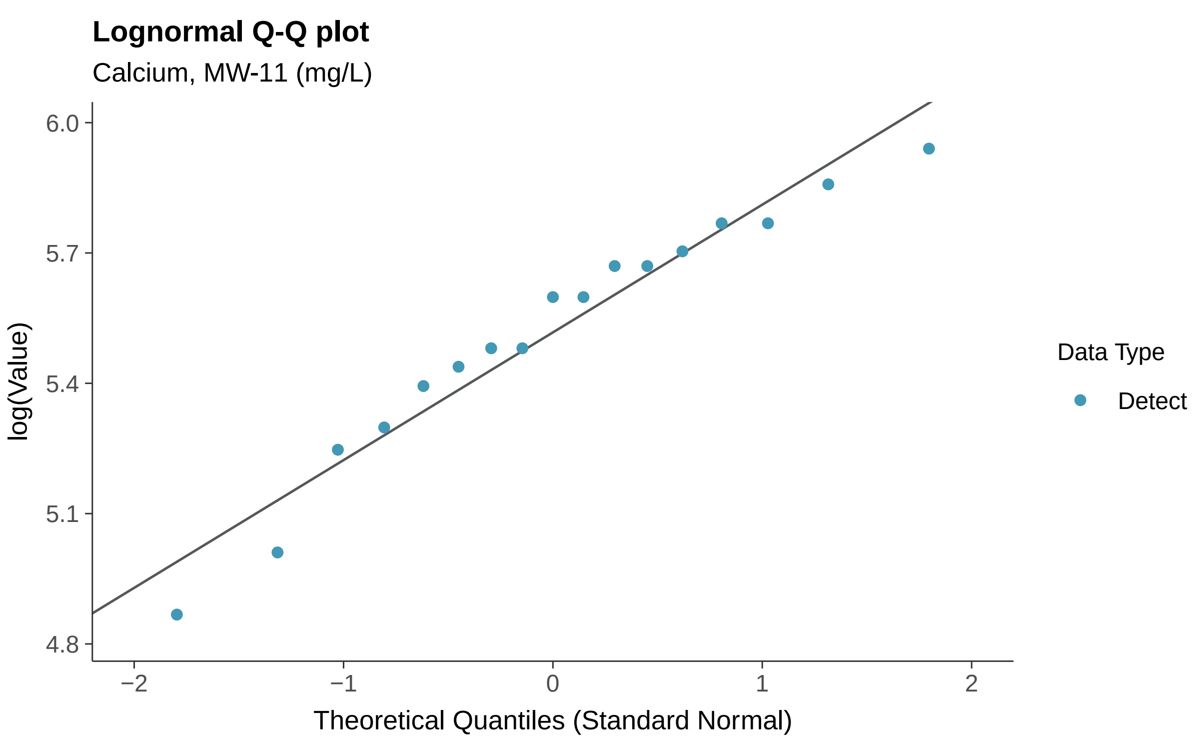


Boxplot by Season

Calcium, MW-11 (mg/L)

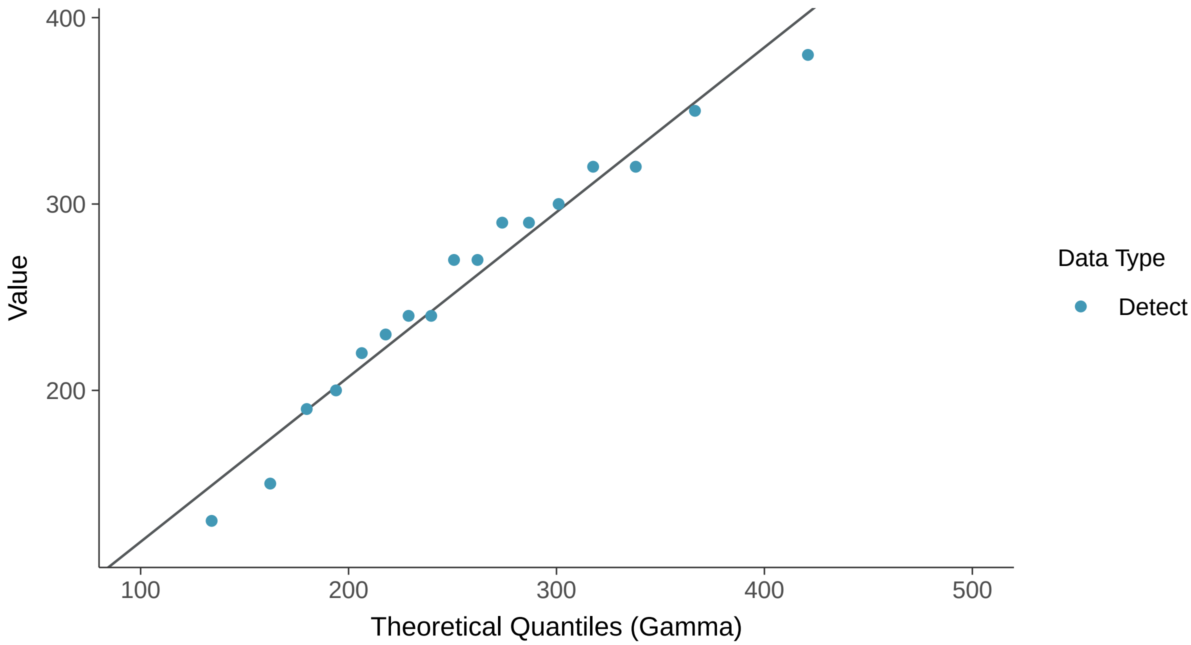



Normal Q-Q plot
Calcium, MW-11 (mg/L)
Value
400
300
200
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Calcium, MW-11 (mg/L)
log(Value)
6.0
5.7
5.4
5.1
4.8
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

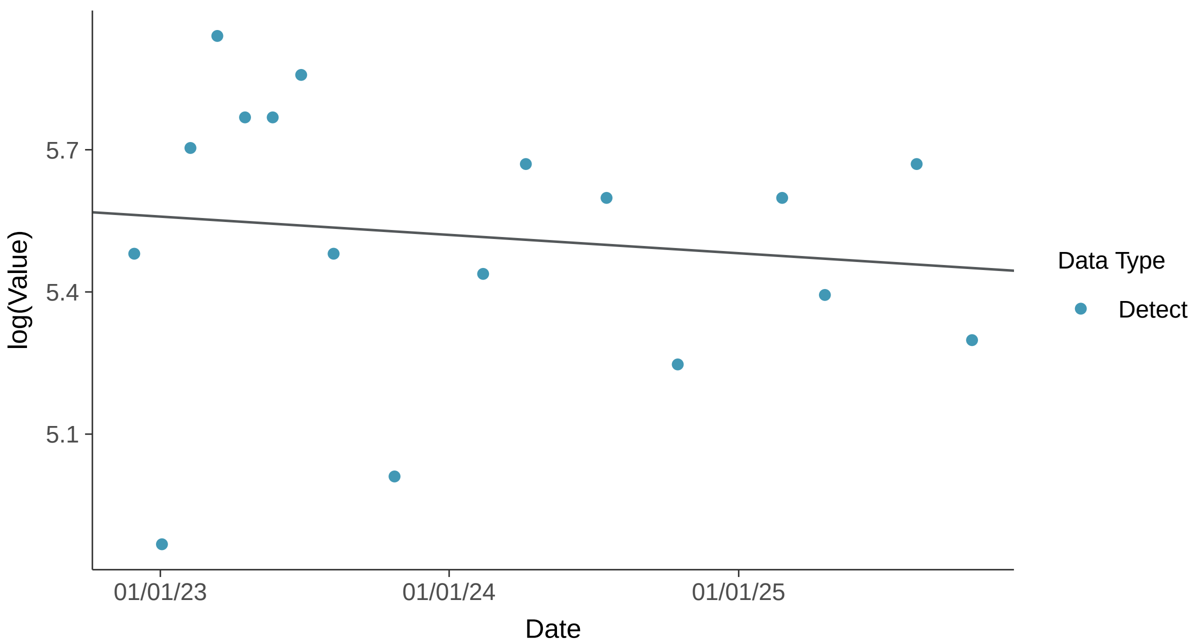
Gamma Q-Q plot

Calcium, MW-11 (mg/L)



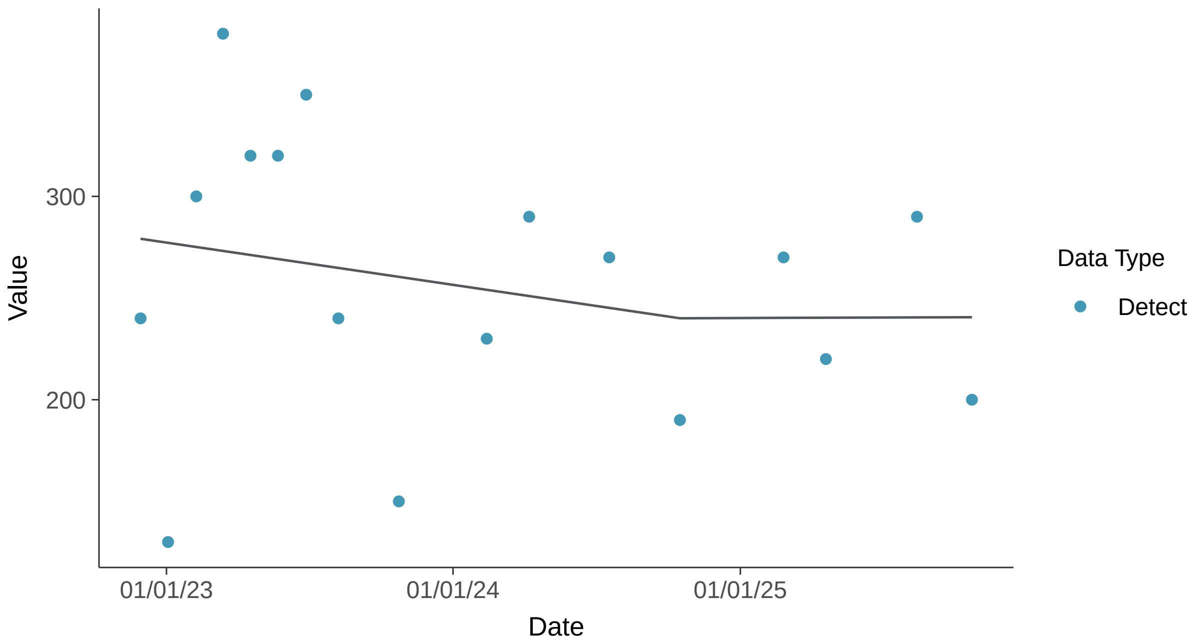
Trend Regression: Lognormal MLE

Calcium, MW-11 (mg/L)



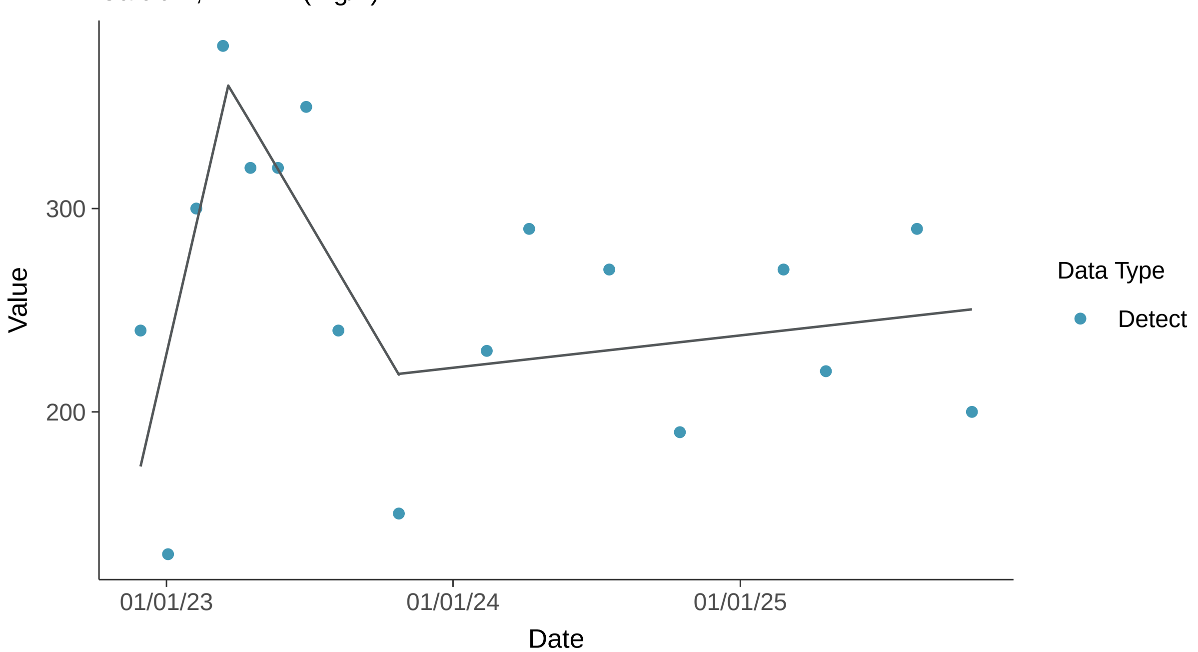
Trend Regression: Piecewise Linear-Linear

Calcium, MW-11 (mg/L)



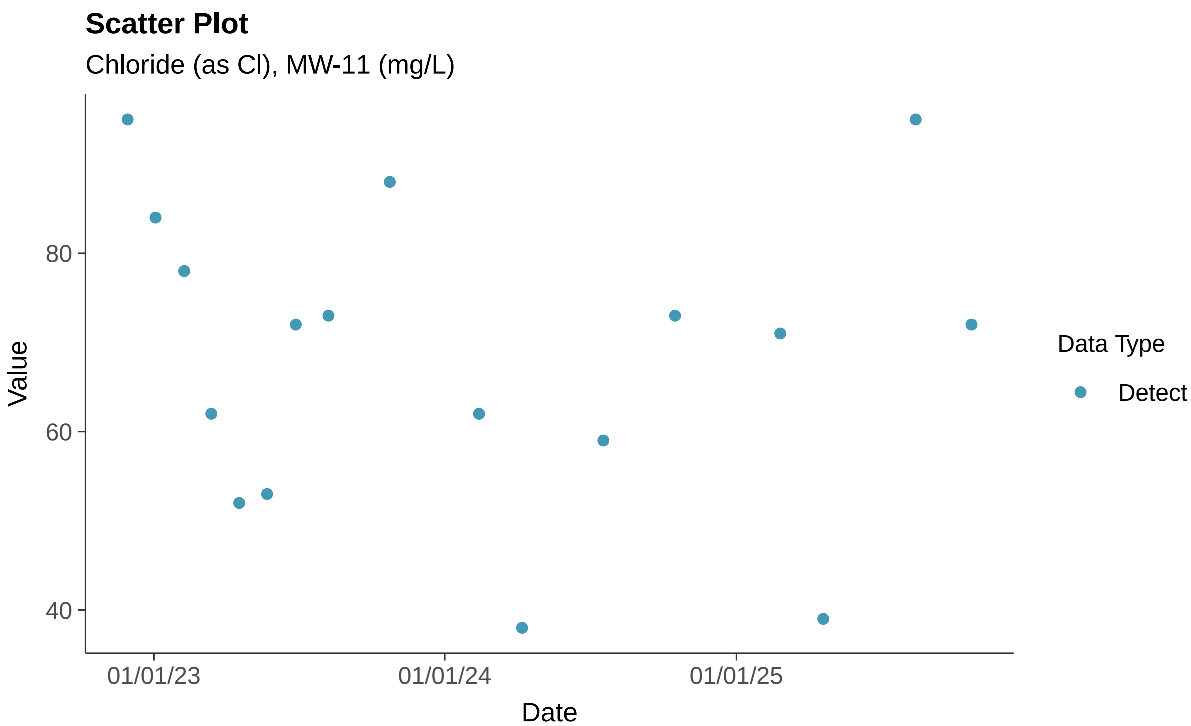
Trend Regression: Piecewise Linear-Linear-Linear

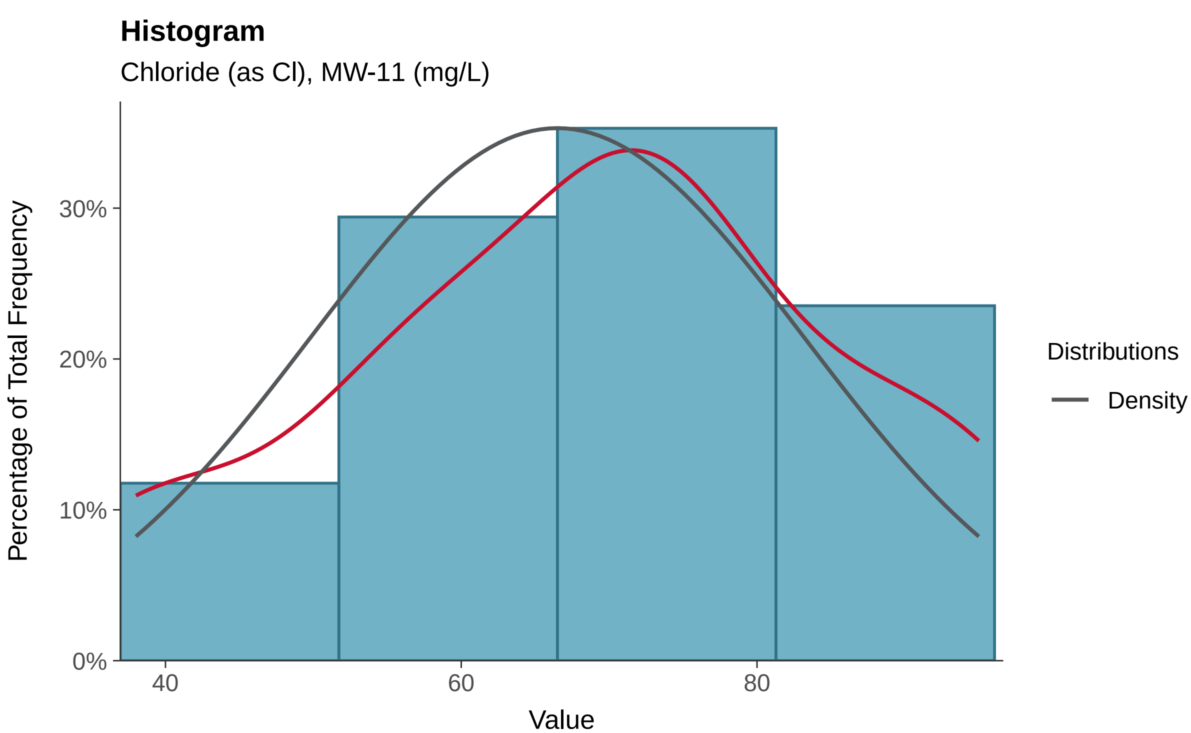
Calcium, MW-11 (mg/L)



Appendix III: Chloride (as Cl), MW-11

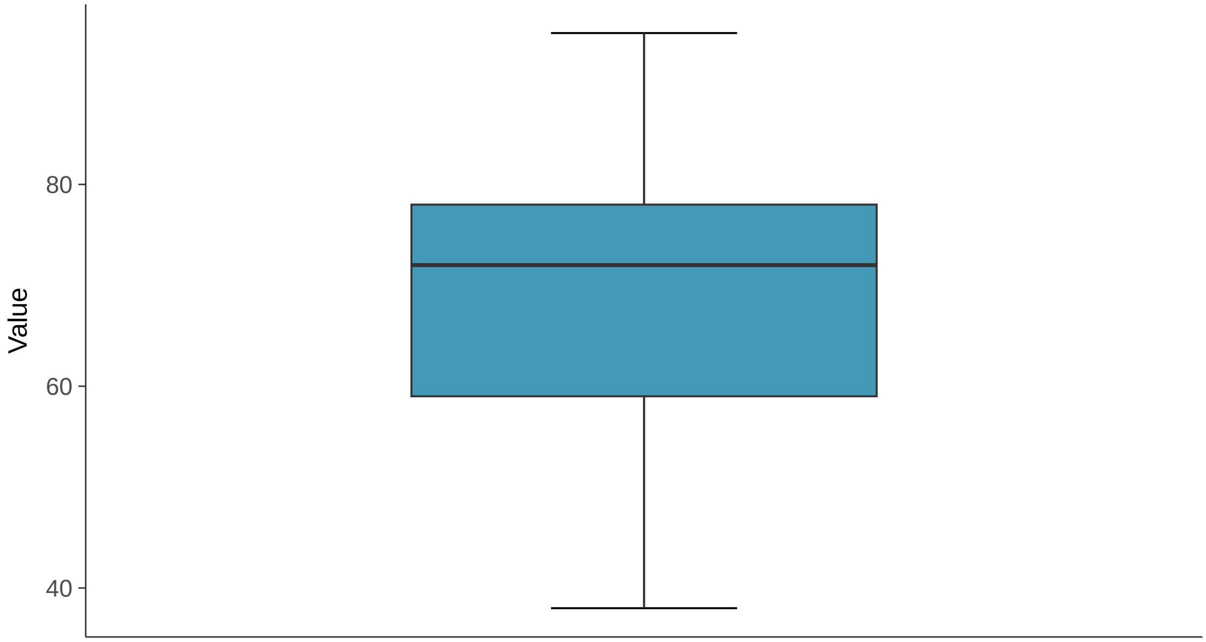
ID: 21_2_3_108





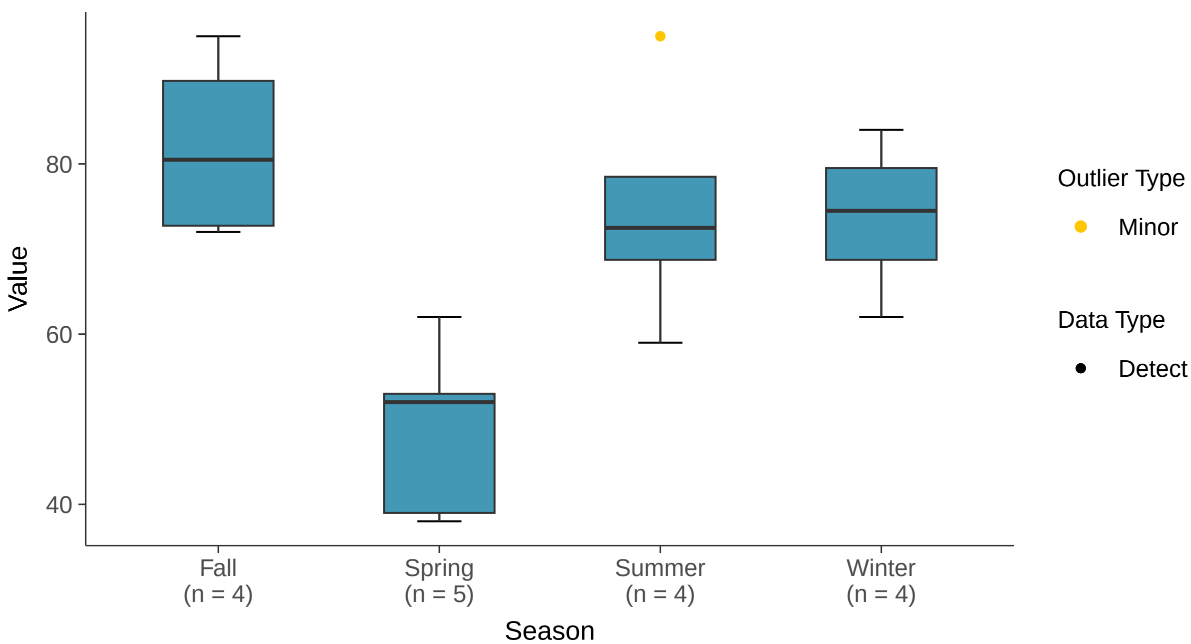
Boxplot

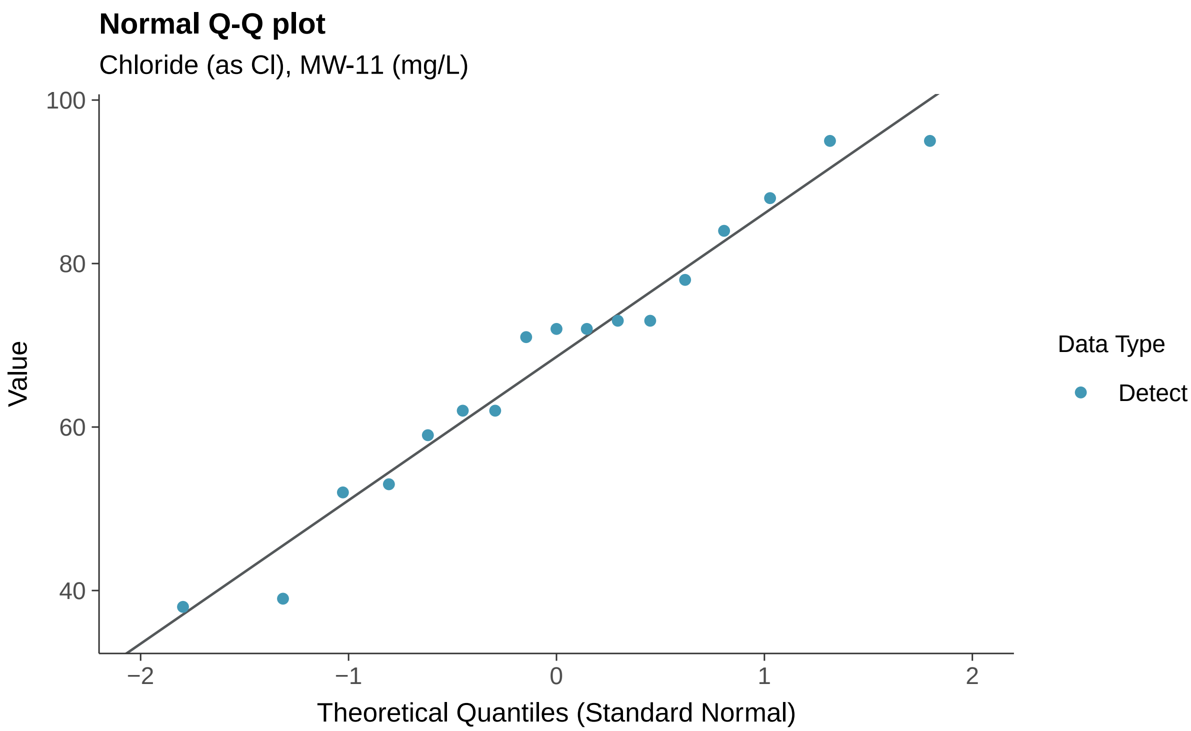
Chloride (as Cl), MW-11 (mg/L)

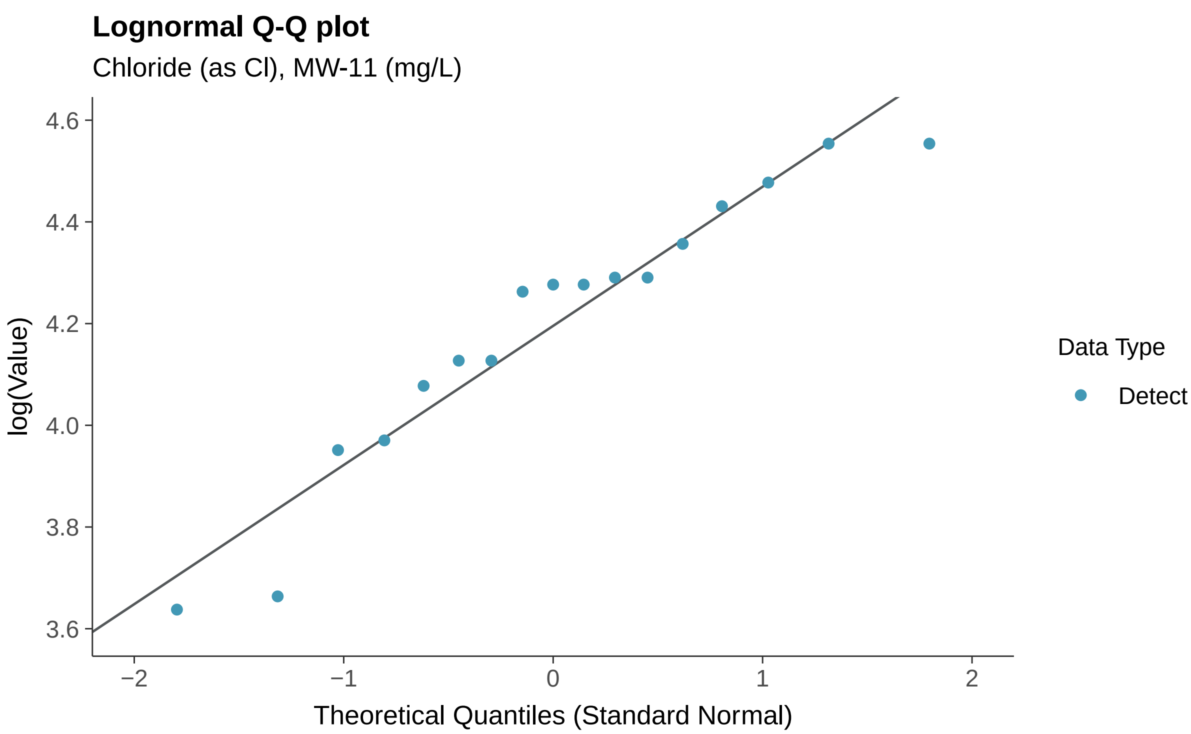


Boxplot by Season

Chloride (as Cl), MW-11 (mg/L)

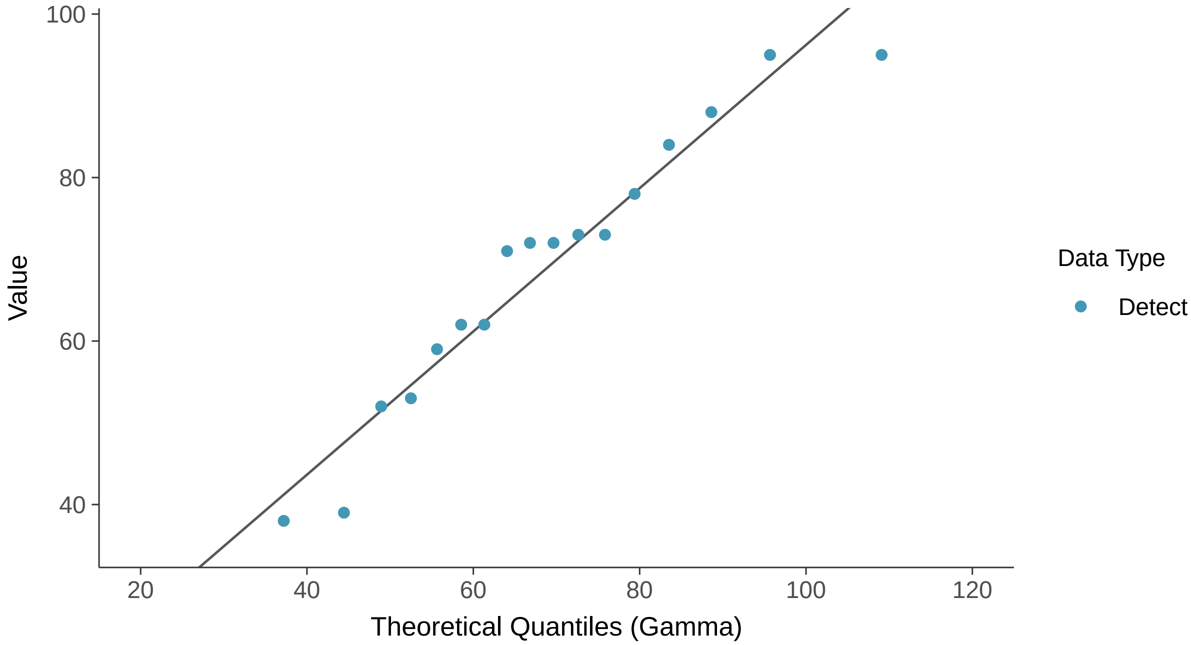



Normal Q-Q plot
Chloride (as Cl), MW-11 (mg/L)
Value
100
80
60
40
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Chloride (as Cl), MW-11 (mg/L)
log(Value)
4.6
4.4
4.2
4.0
3.8
3.6
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

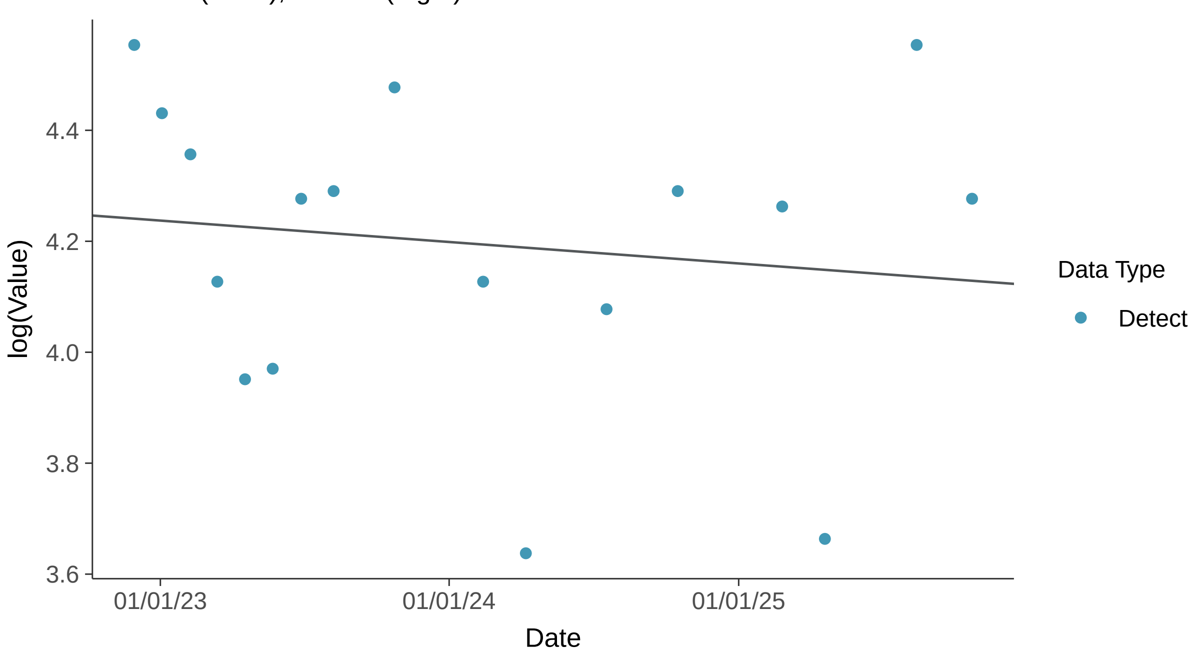
Gamma Q-Q plot

Chloride (as Cl), MW-11 (mg/L)



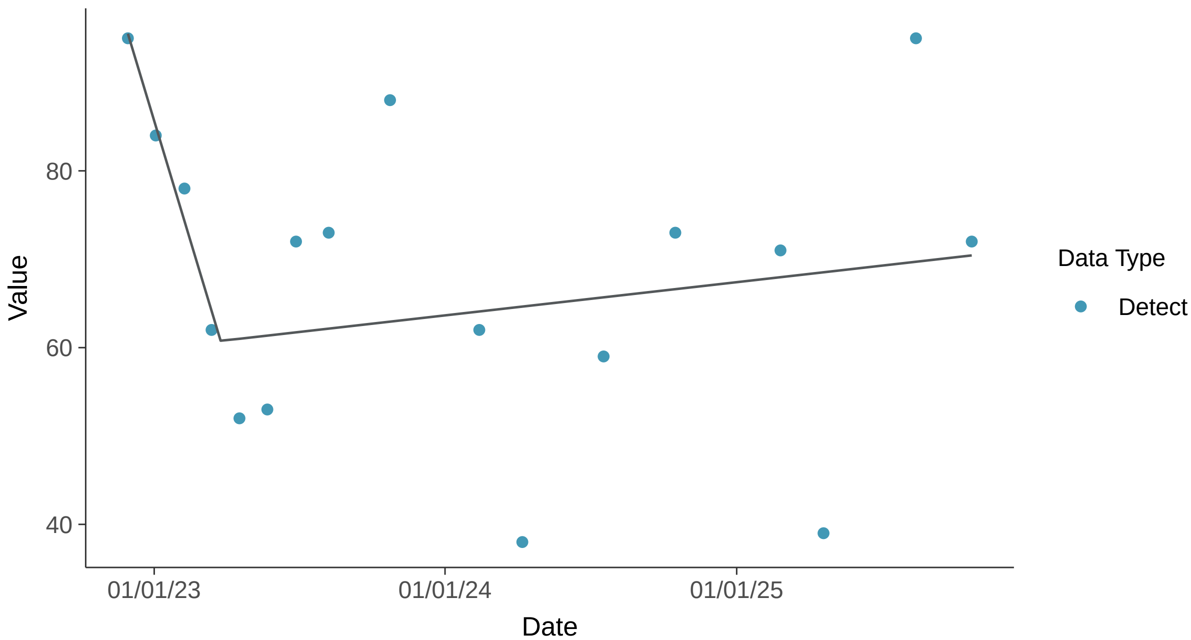
Trend Regression: Lognormal MLE

Chloride (as Cl), MW-11 (mg/L)



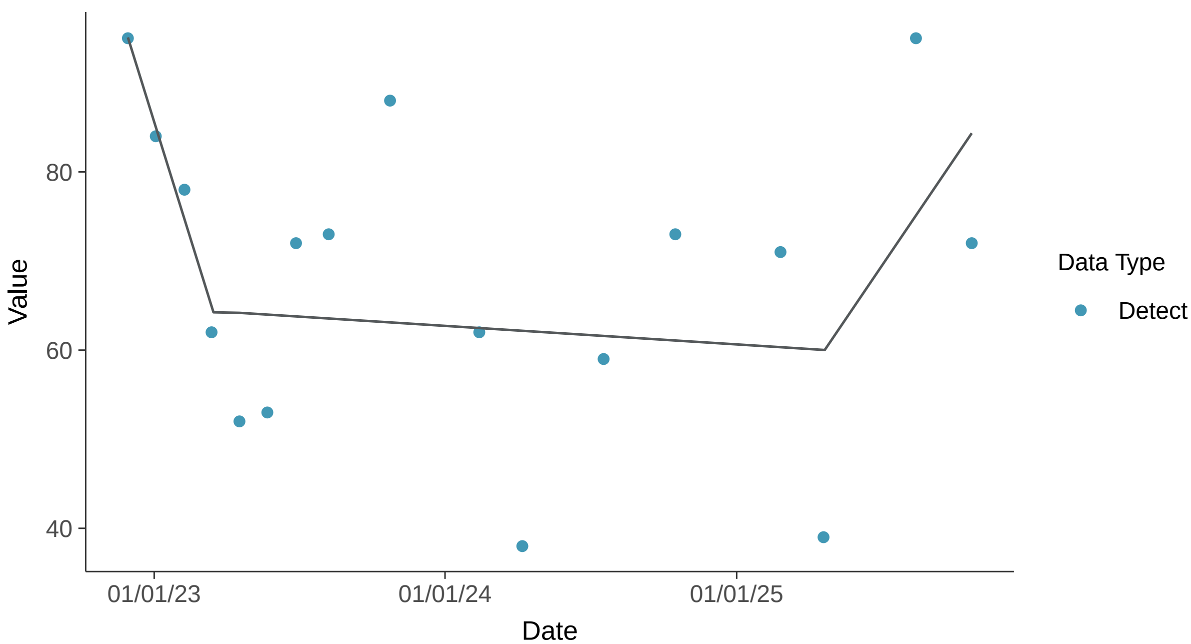
Trend Regression: Piecewise Linear-Linear

Chloride (as Cl), MW-11 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Chloride (as Cl), MW-11 (mg/L)

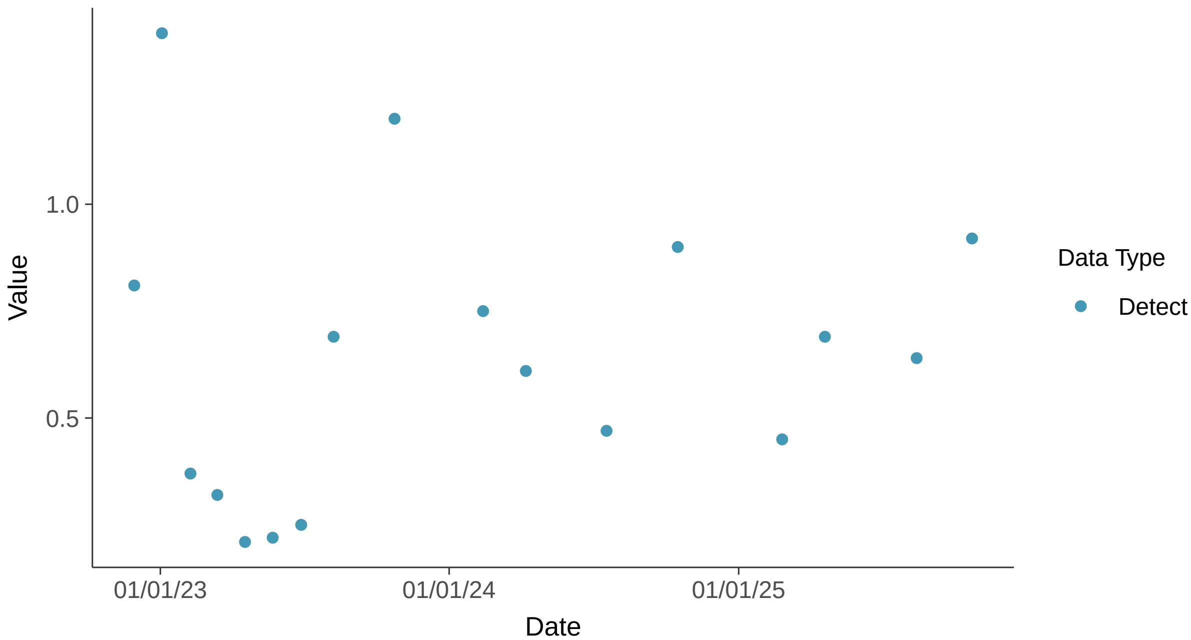


Appendix III: Fluoride, MW-11

ID: 21_2_3_112

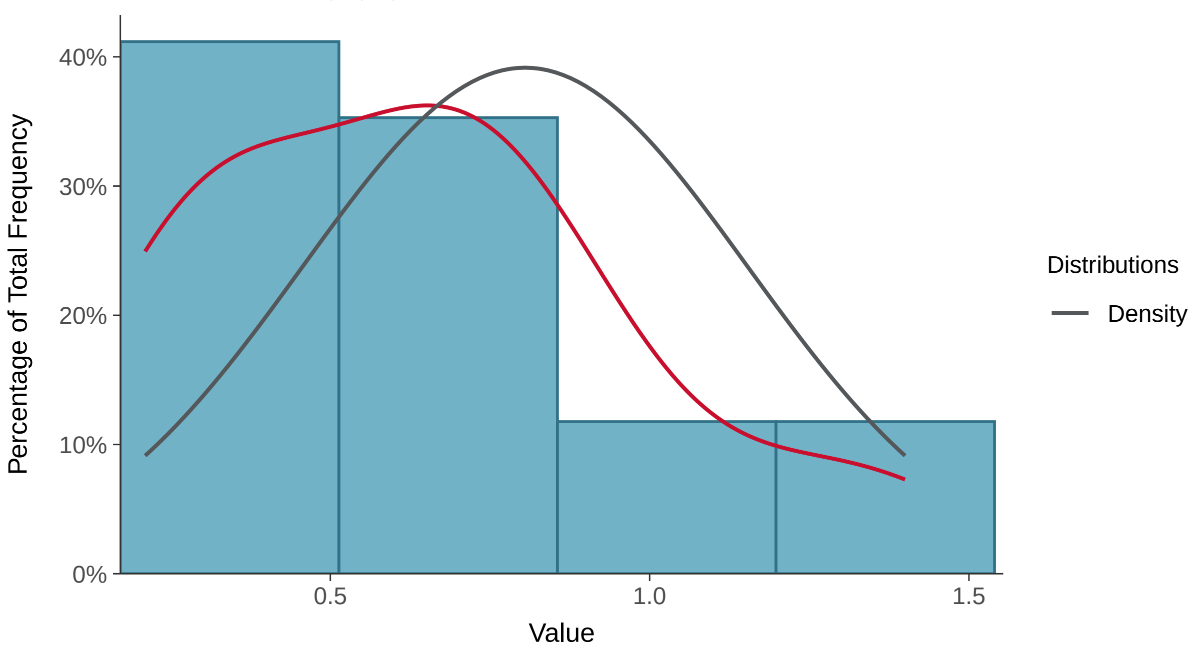
Scatter Plot

Fluoride, MW-11 (mg/L)



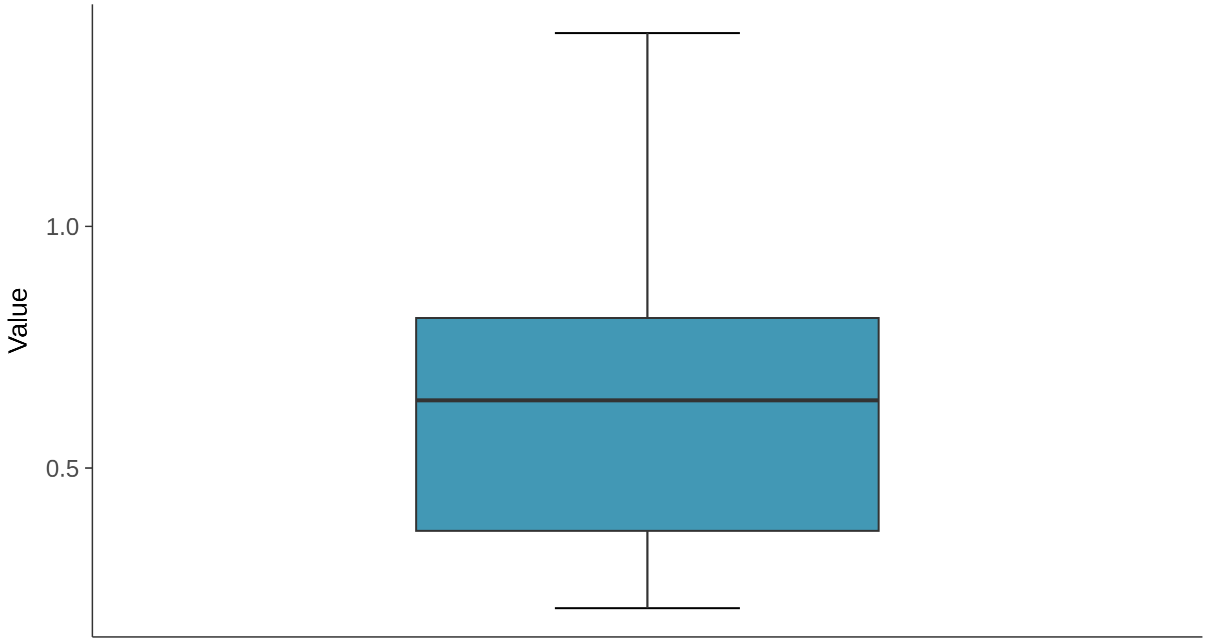
Histogram

Fluoride, MW-11 (mg/L)



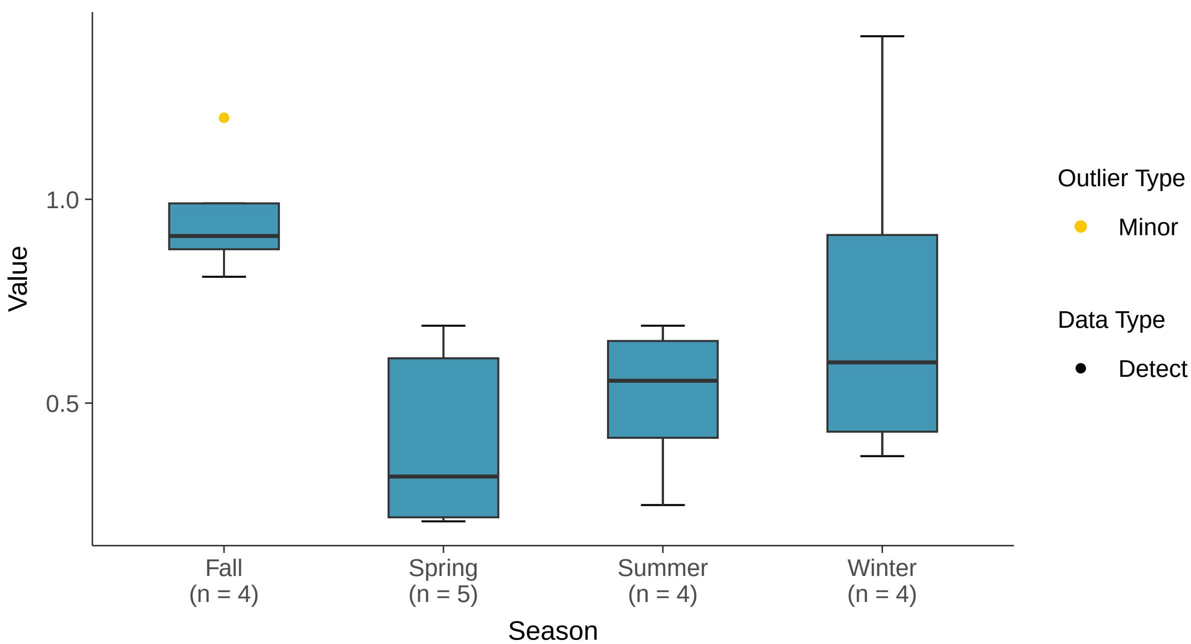
Boxplot

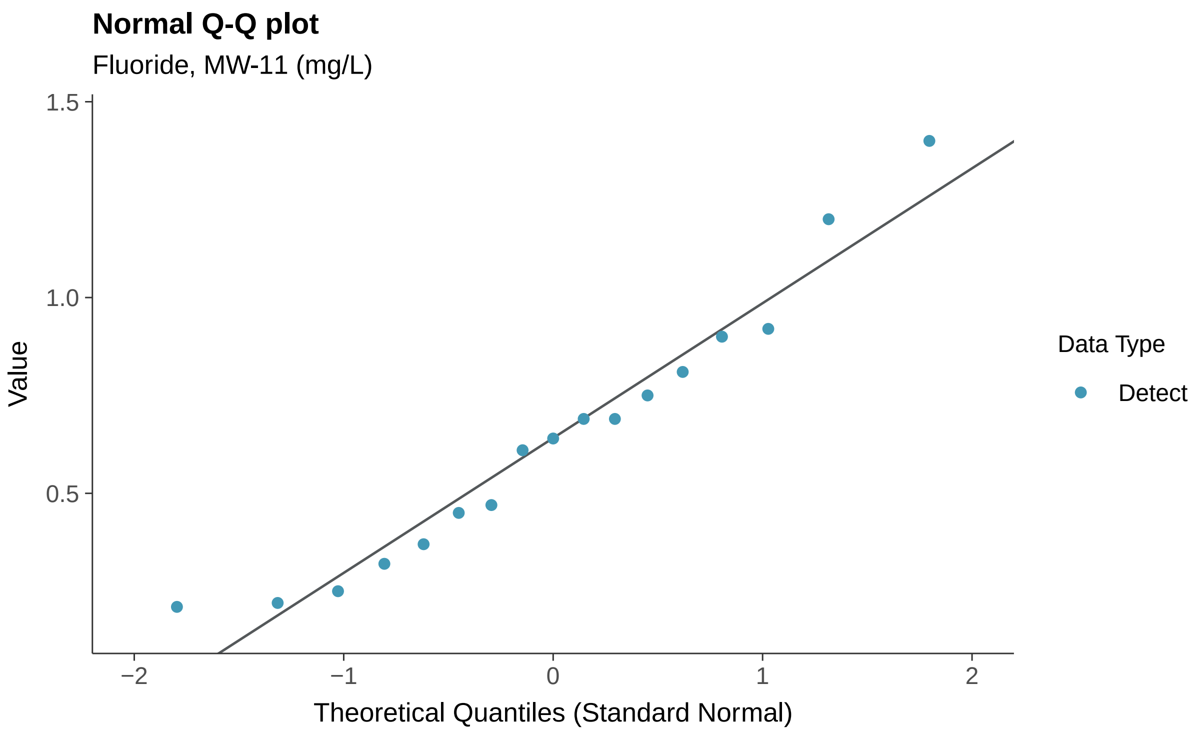
Fluoride, MW-11 (mg/L)

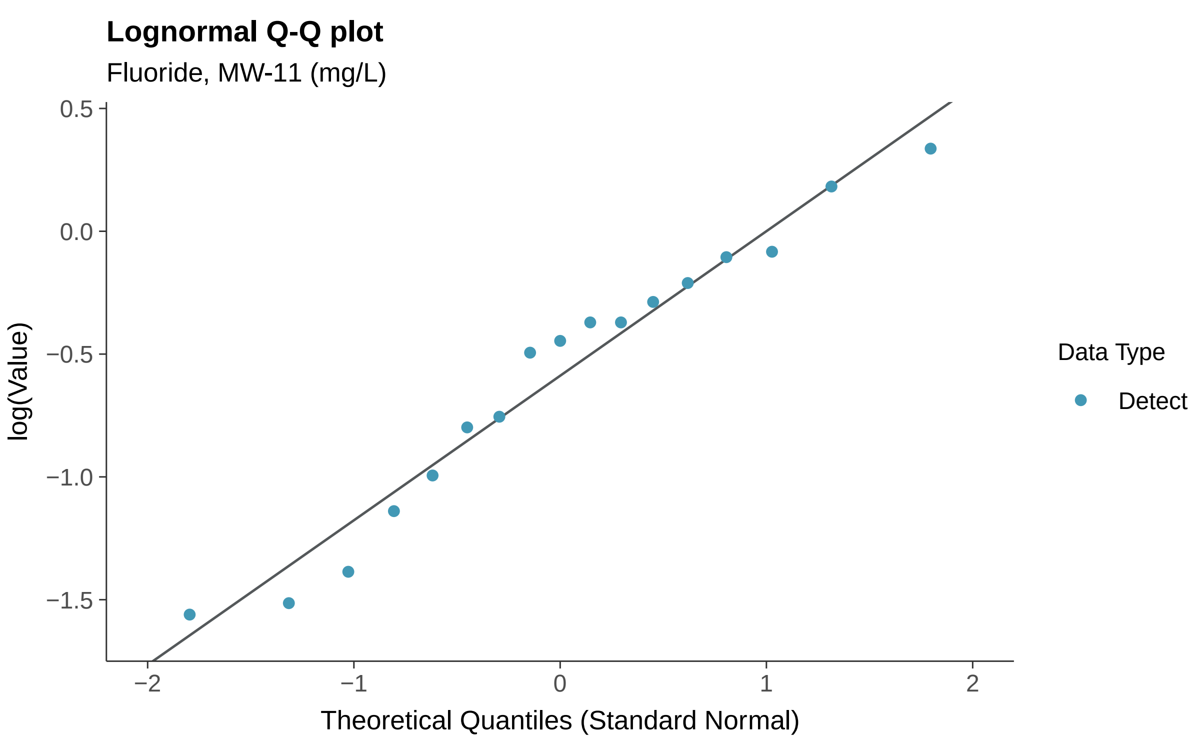


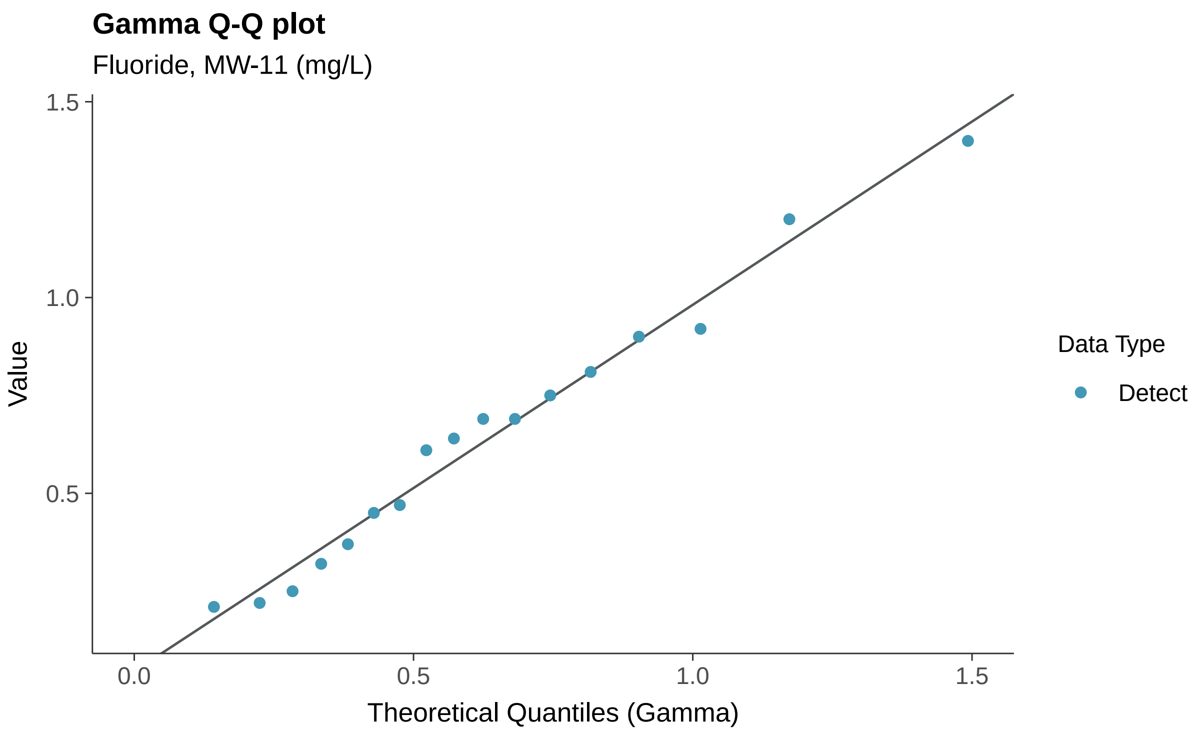
Boxplot by Season

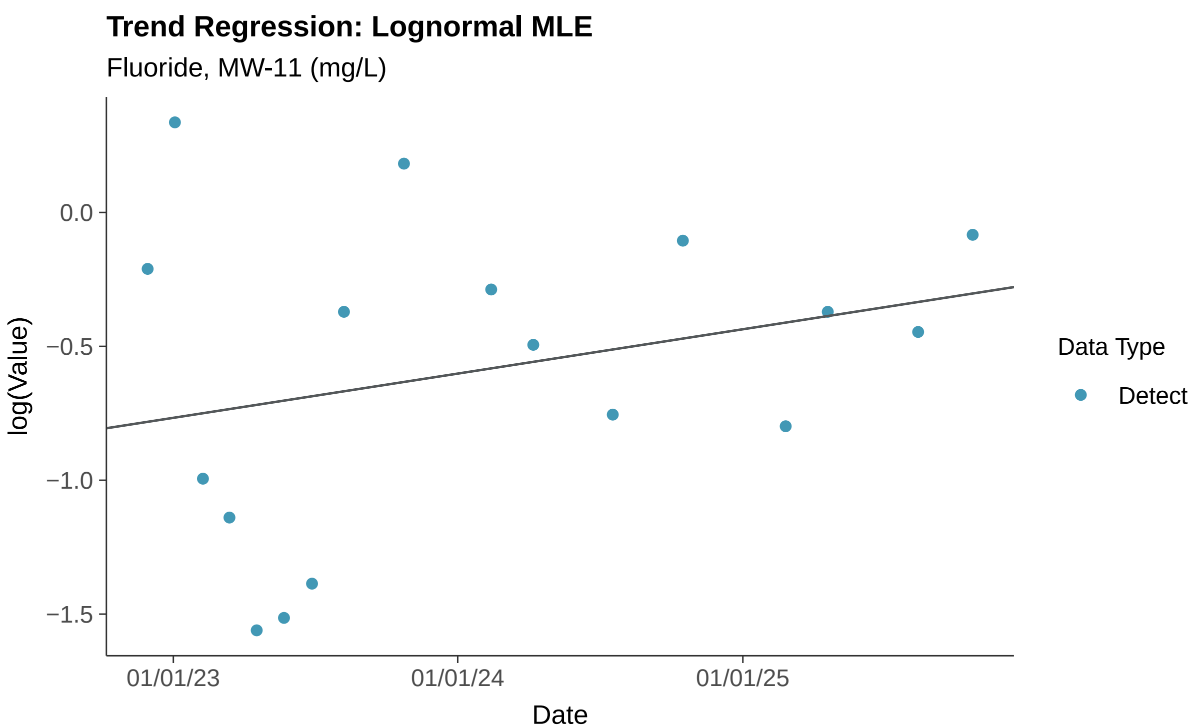
Fluoride, MW-11 (mg/L)




Normal Q-Q plot
Fluoride, MW-11 (mg/L)
Value
1.5
1.0
0.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

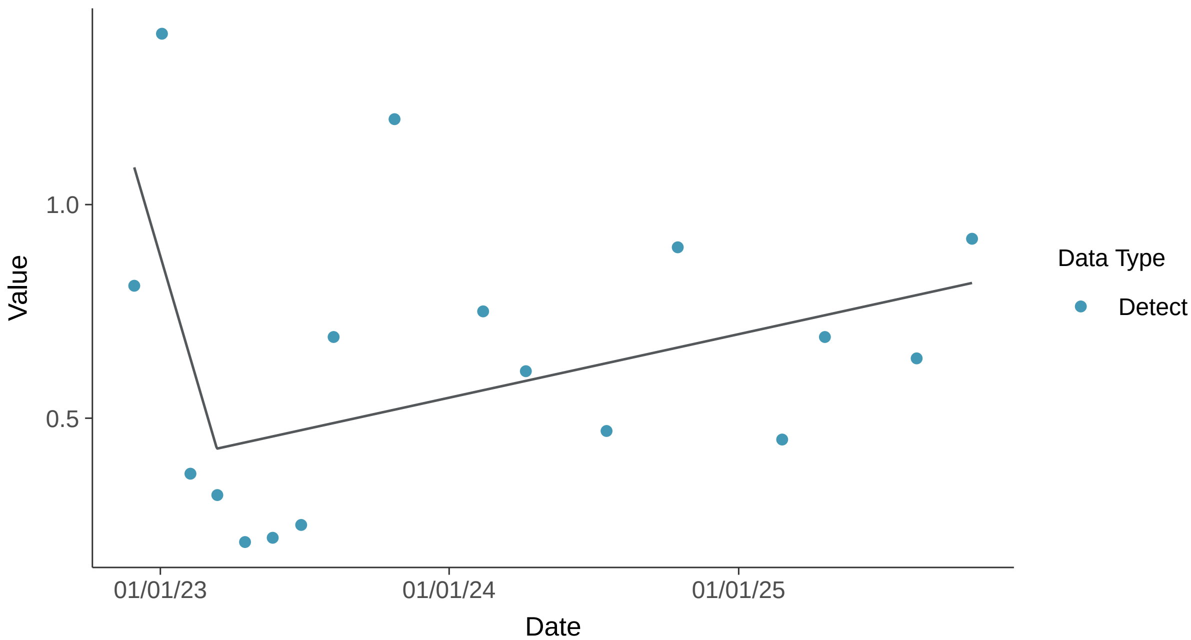

Lognormal Q-Q plot
Fluoride, MW-11 (mg/L)
log(Value)
0.5
0.0
−0.5
−1.0
−1.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Fluoride, MW-11 (mg/L)
Value
1.5
1.0
0.5
0.0
0.5
1.0
1.5
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Fluoride, MW-11 (mg/L)
log(Value)
0.0
−0.5
−1.0
−1.5
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

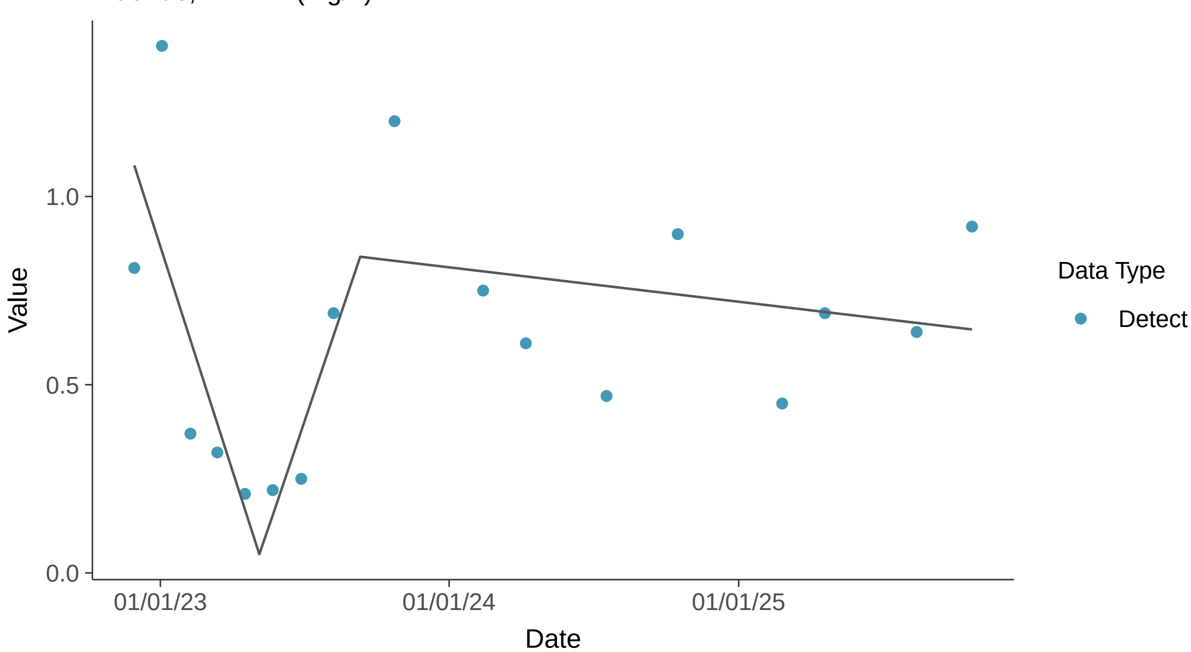
Trend Regression: Piecewise Linear-Linear

Fluoride, MW-11 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Fluoride, MW-11 (mg/L)

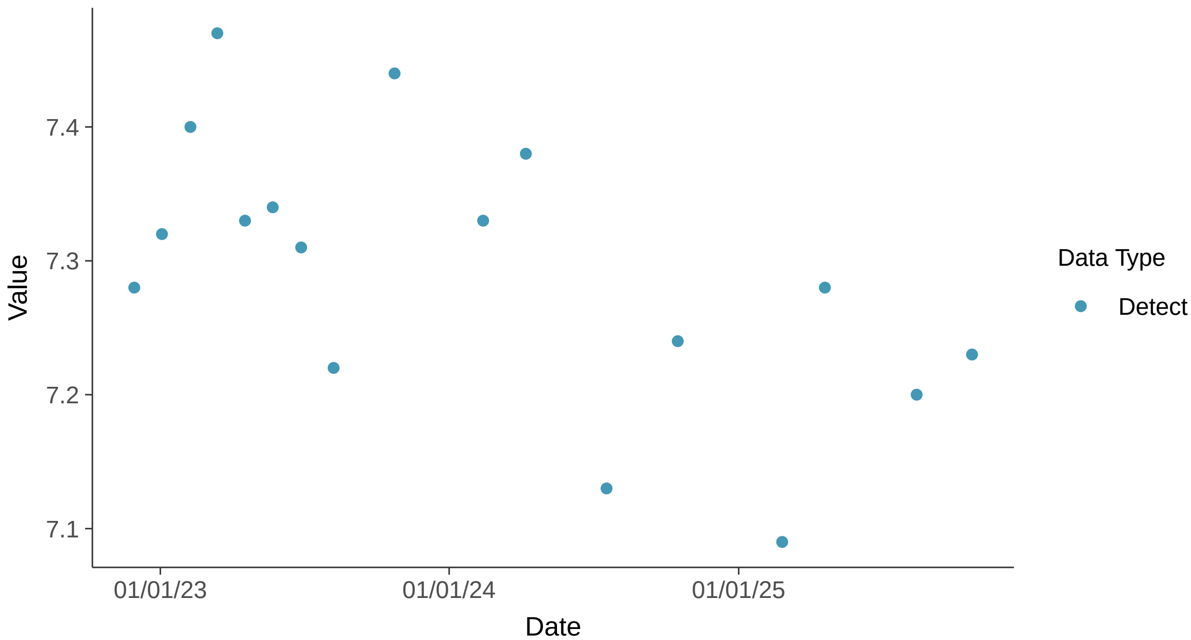


Appendix III: pH (field), MW-11

ID: 21_2_3_120

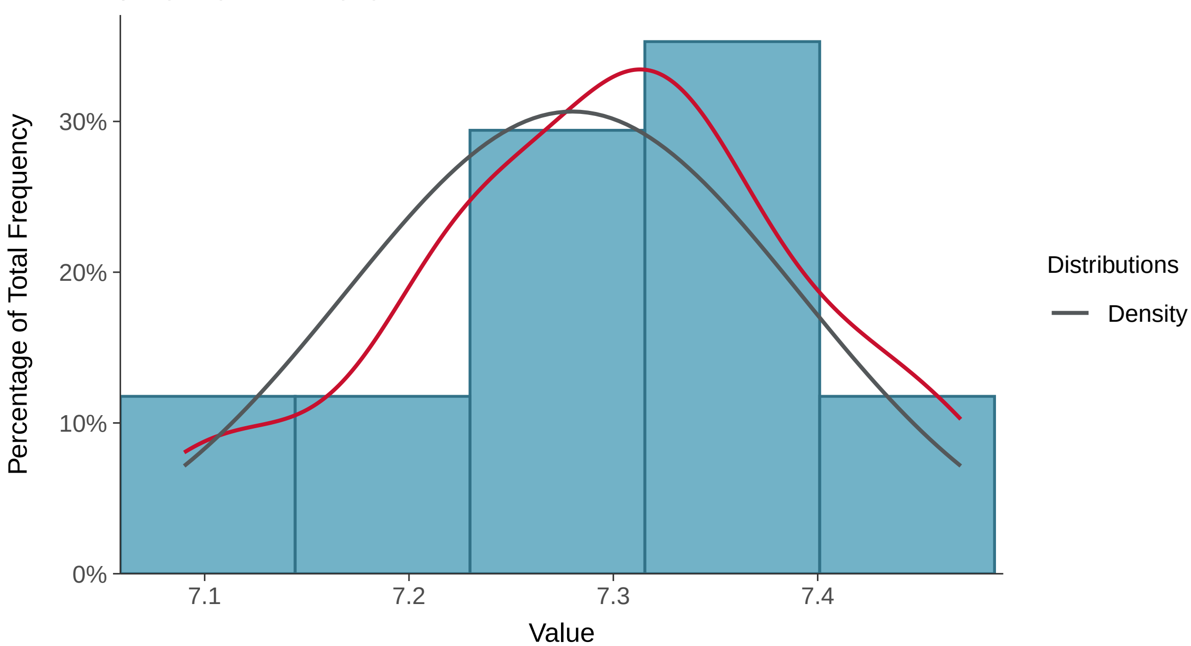
Scatter Plot

pH (field), MW-11 (su)



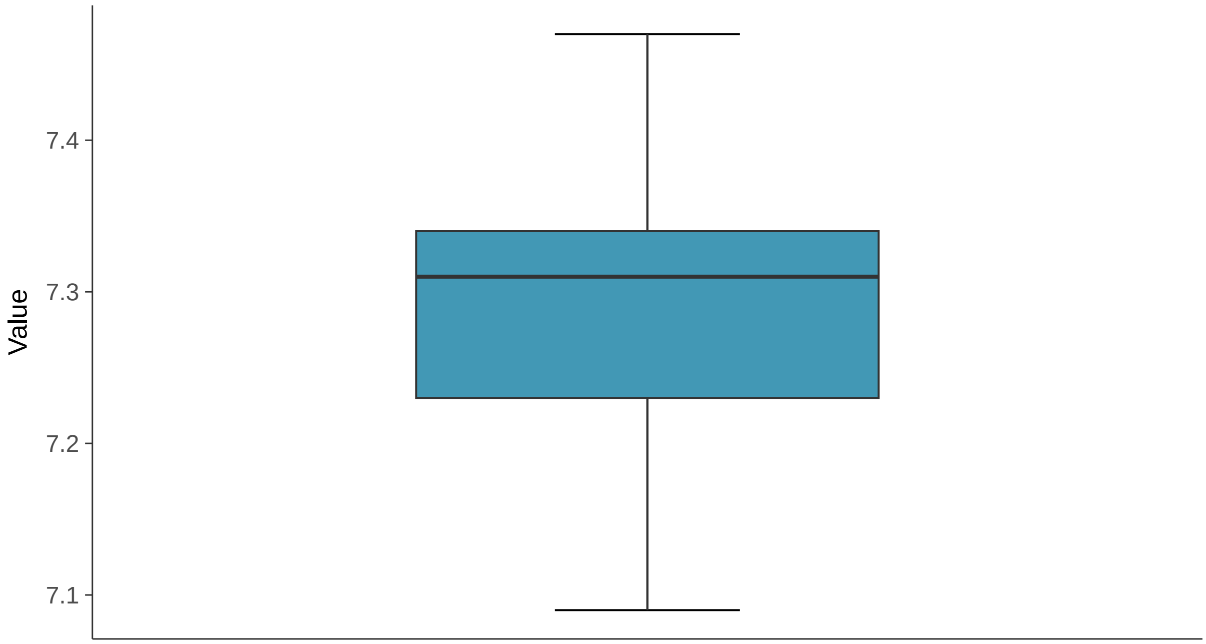
Histogram

pH (field), MW-11 (su)



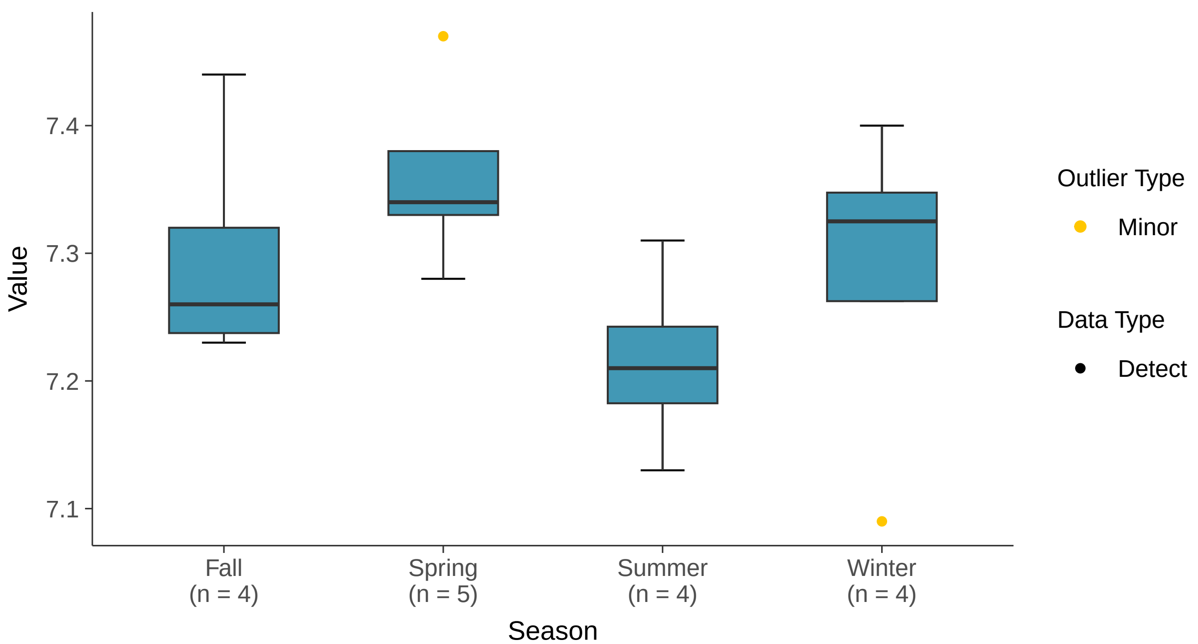
Boxplot

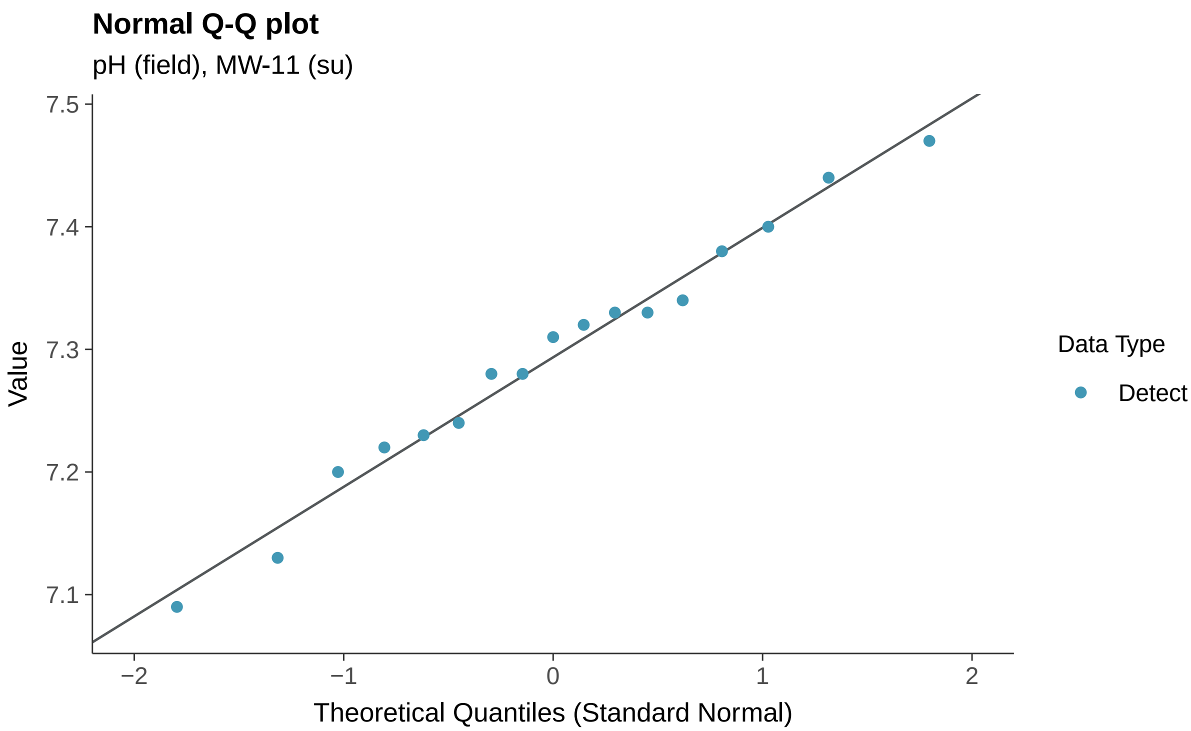
pH (field), MW-11 (su)

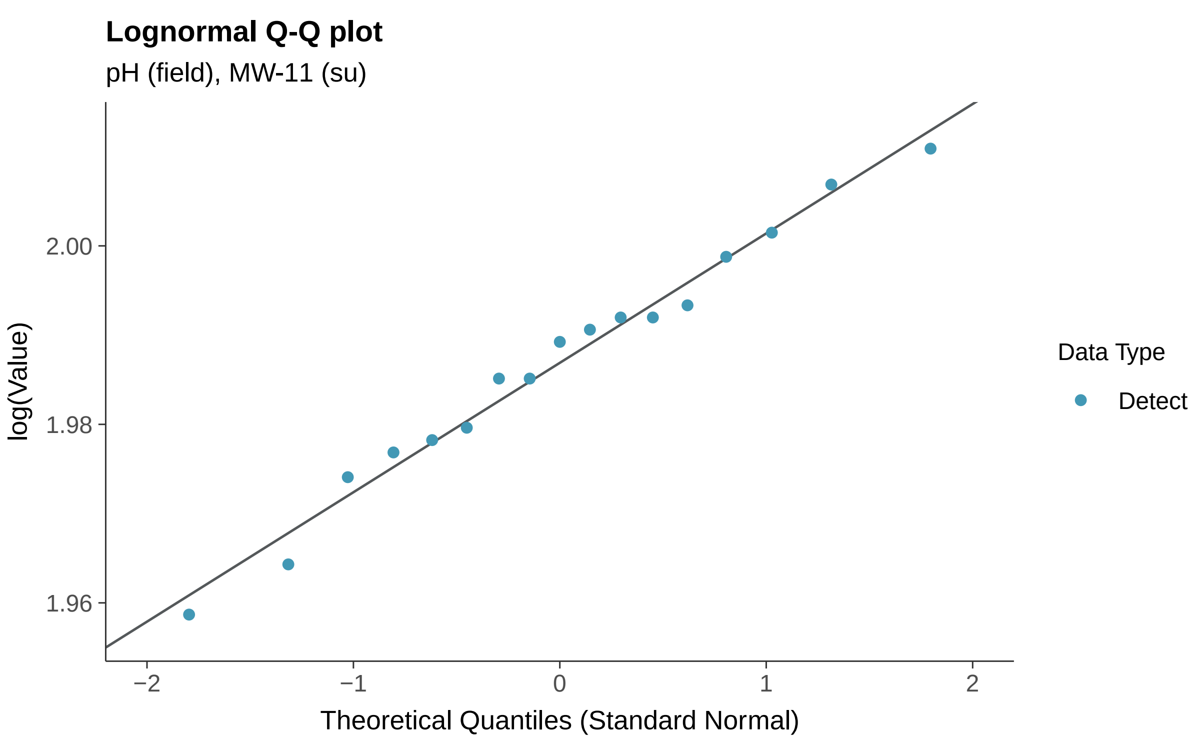


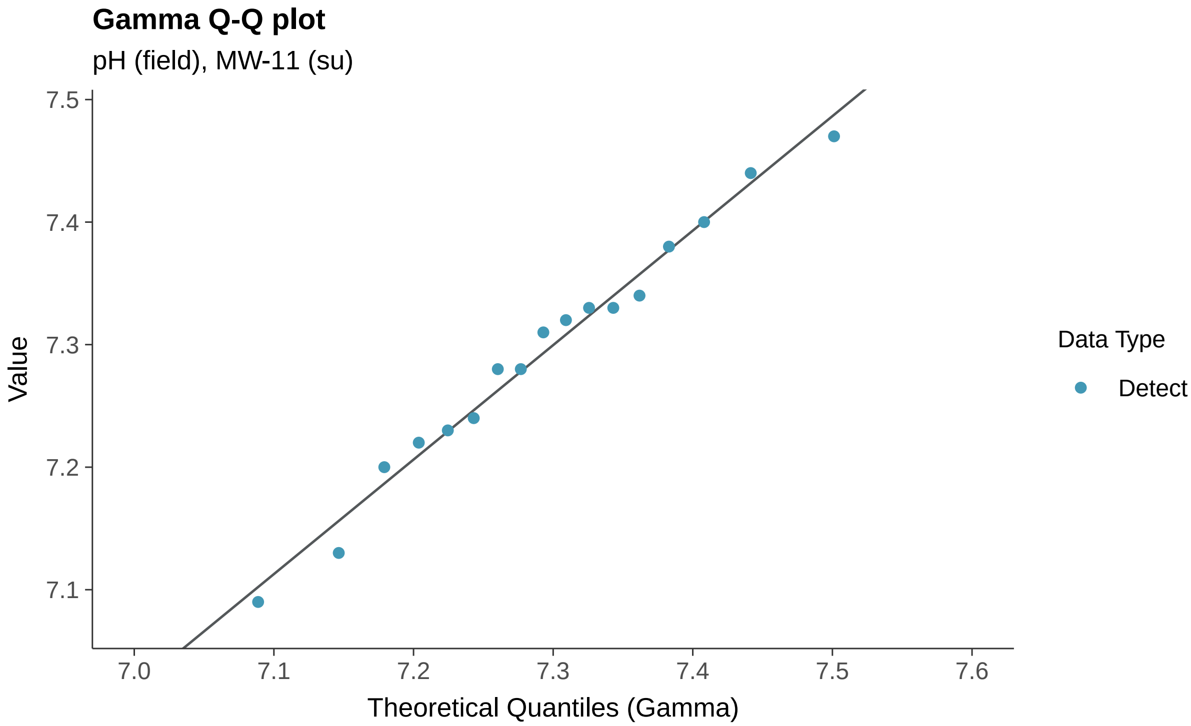
Boxplot by Season

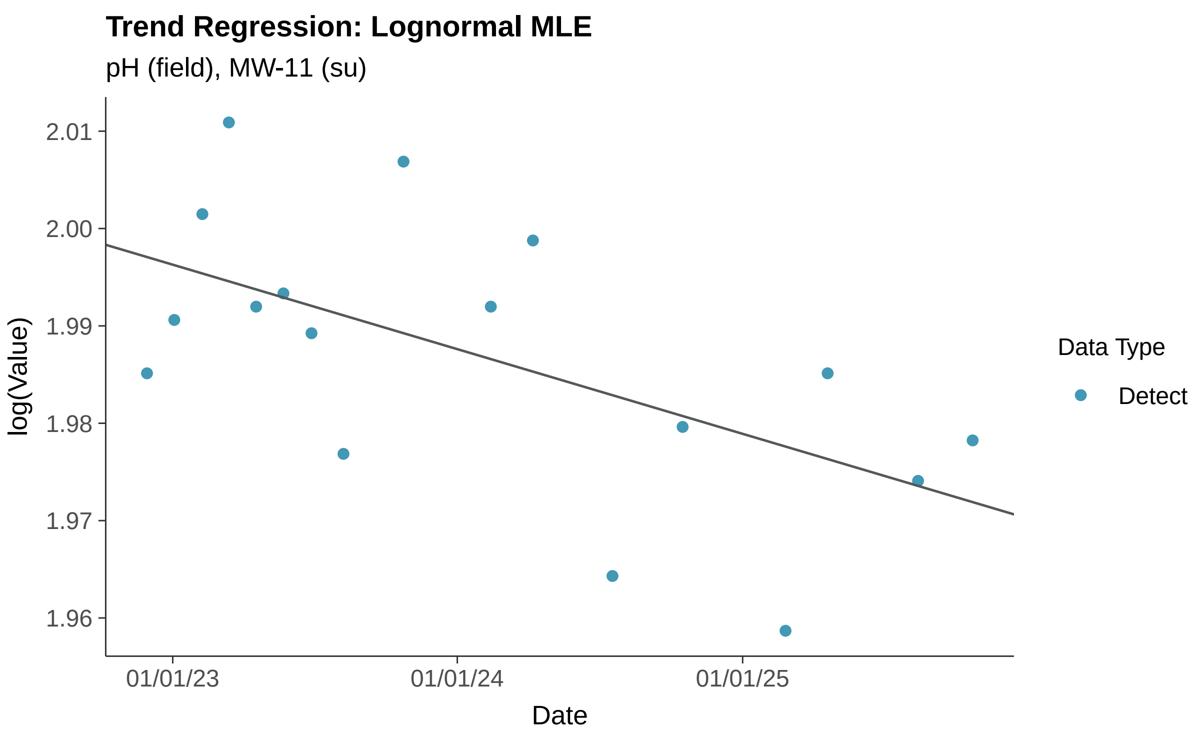
pH (field), MW-11 (su)




Normal Q-Q plot
pH (field), MW-11 (su)
Value
7.5
7.4
7.3
7.2
7.1
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

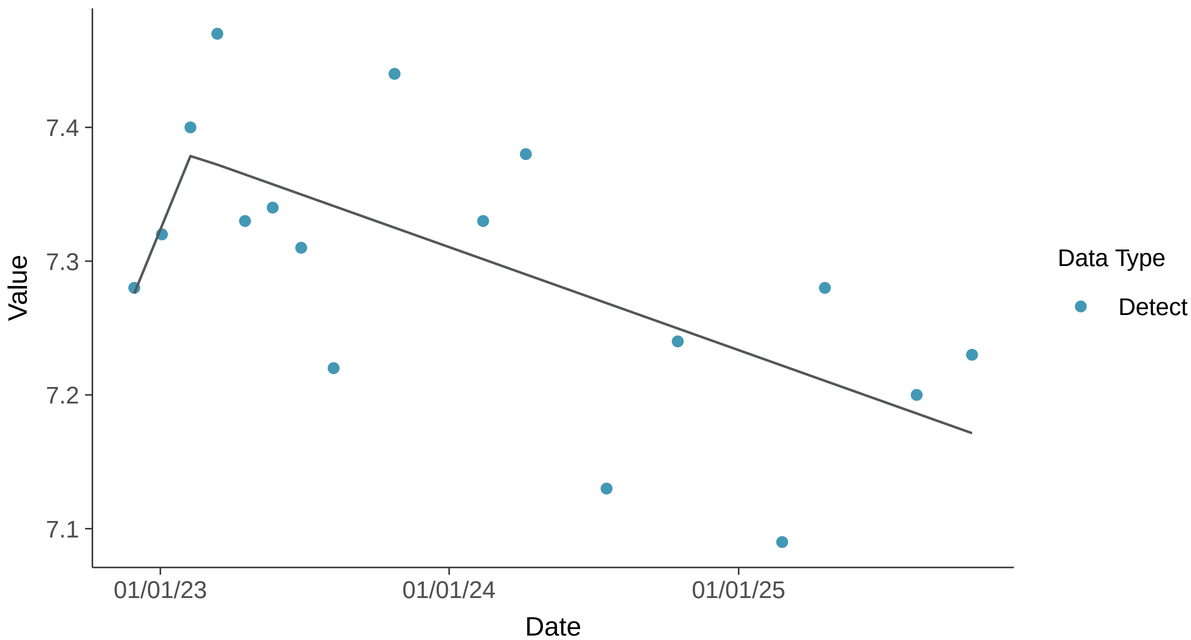

Lognormal Q-Q plot
pH (field), MW-11 (su)
log(Value)
2.00
1.98
1.96
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
pH (field), MW-11 (su)
Value
7.5
7.4
7.3
7.2
7.1
7.0
7.1
7.2
7.3
7.4
7.5
7.6
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
pH (field), MW-11 (su)
log(Value)
2.01
2.00
1.99
1.98
1.97
1.96
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear

pH (field), MW-11 (su)

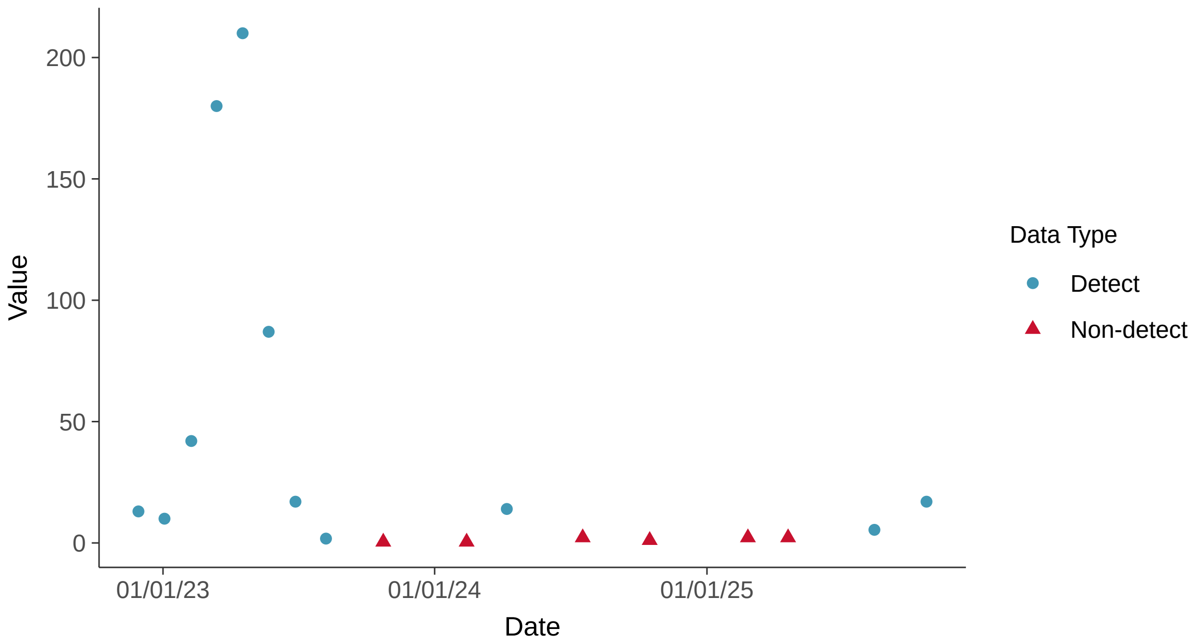


Appendix III: Sulfate (as SO4), MW-11

ID: 21_2_3_124

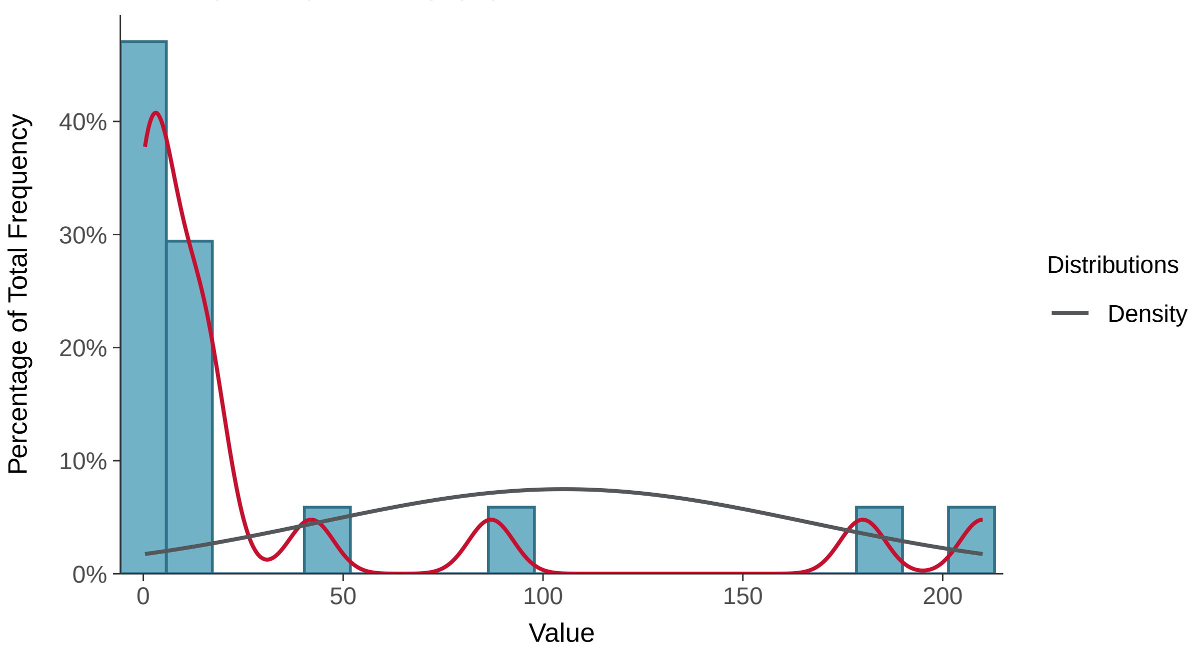
Scatter Plot

Sulfate (as SO4), MW-11 (mg/L)



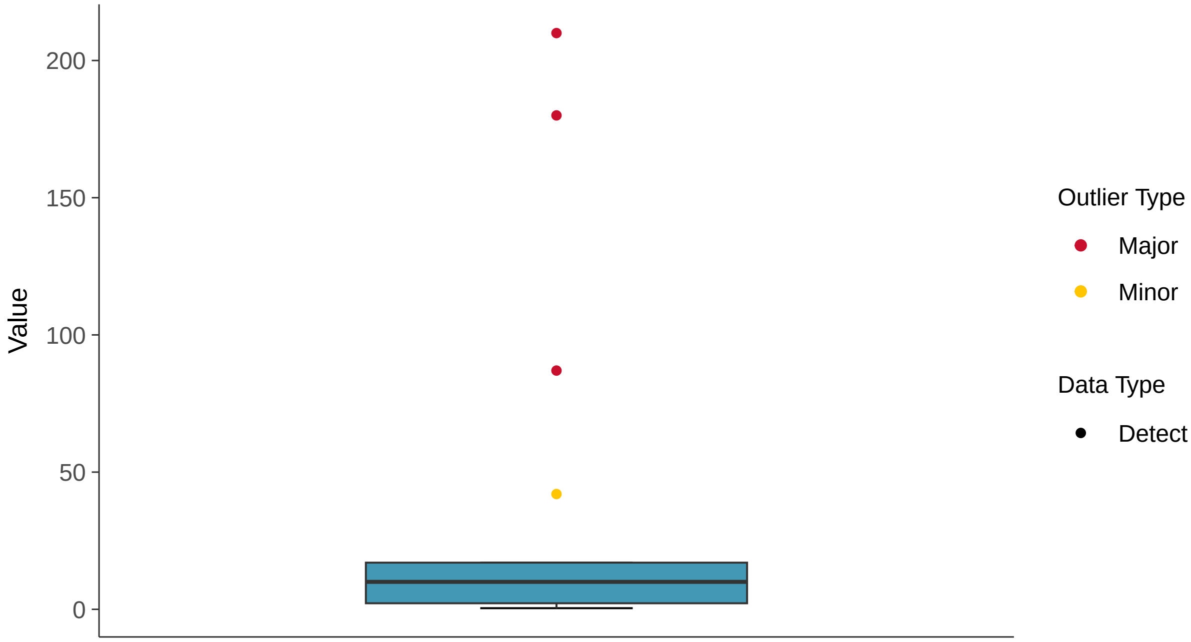
Histogram

Sulfate (as SO4), MW-11 (mg/L)



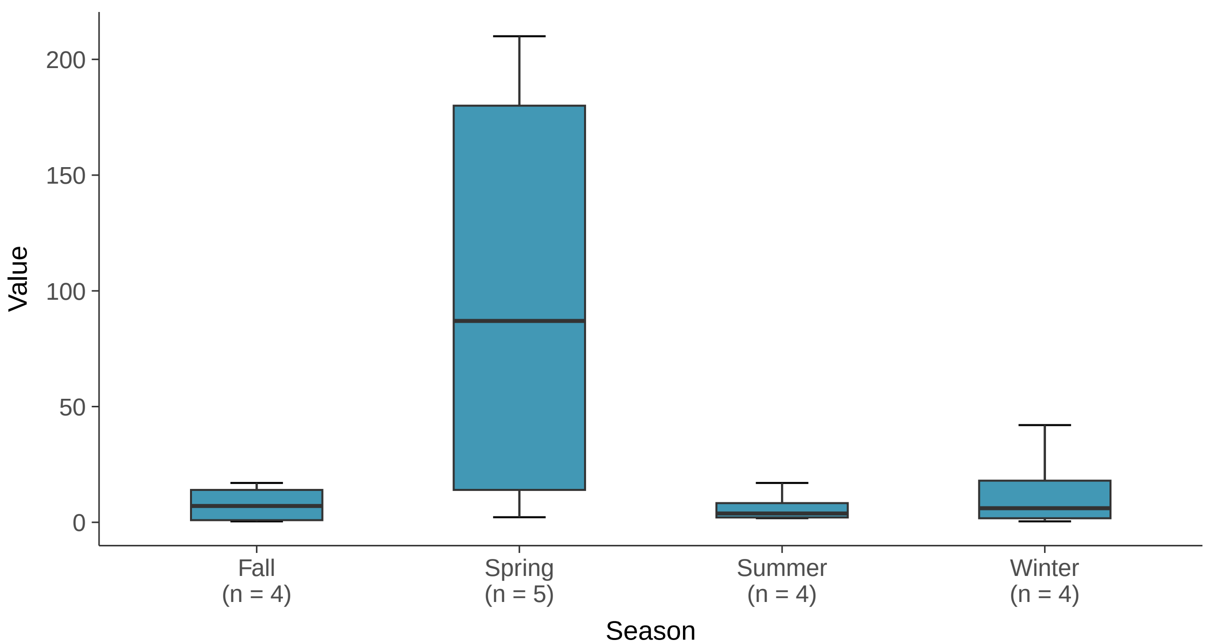
Boxplot

Sulfate (as SO4), MW-11 (mg/L)



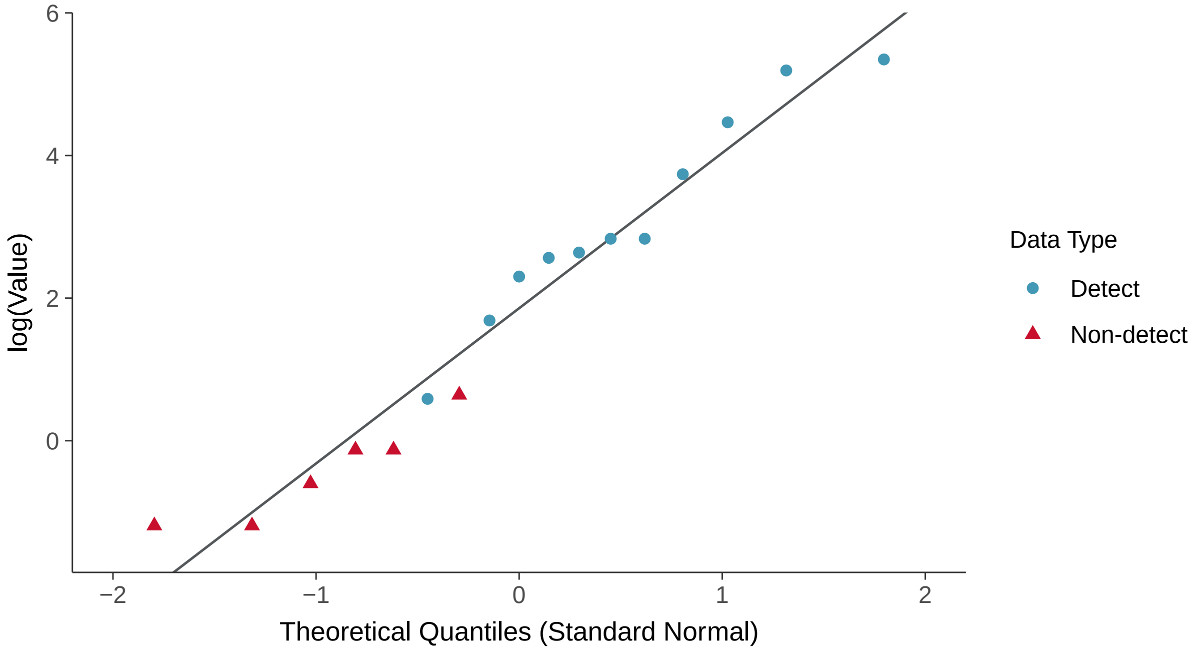
Boxplot by Season

Sulfate (as SO4), MW-11 (mg/L)



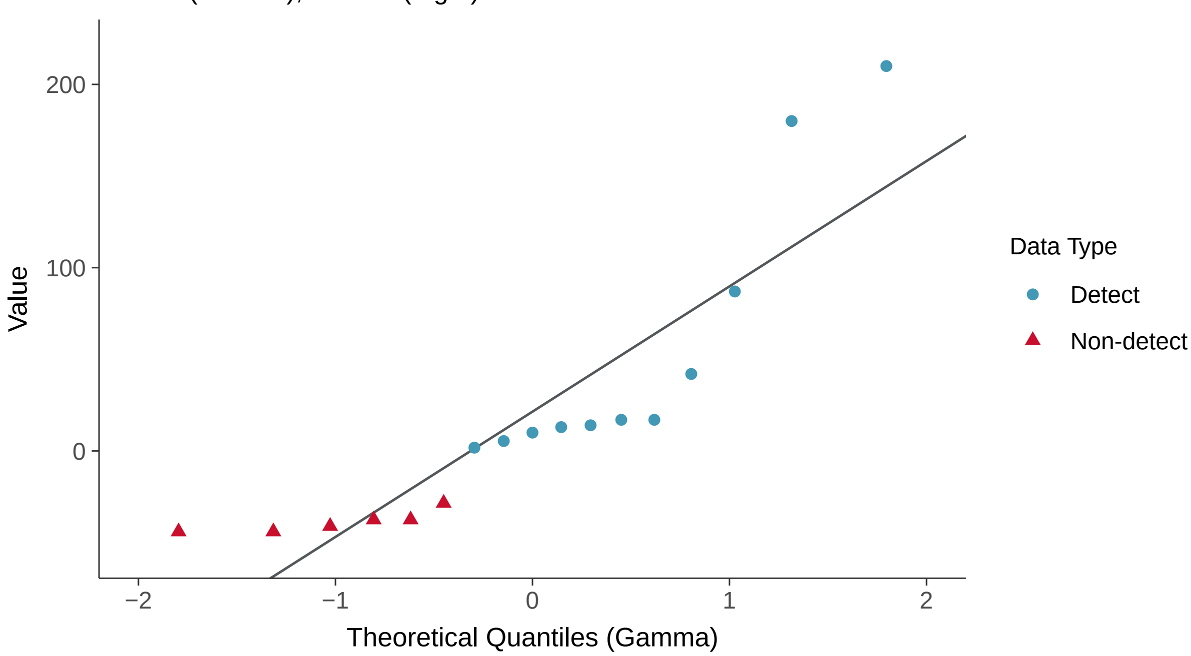
Lognormal Q-Q plot using ROS Imputed Estimates

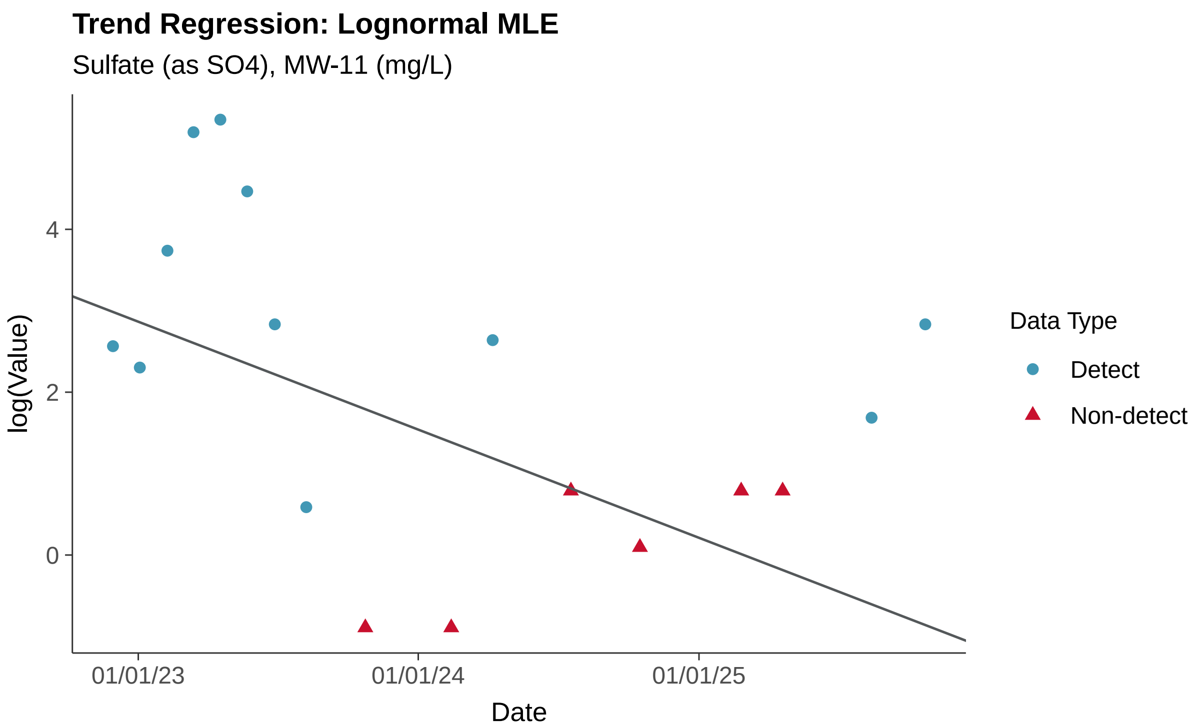
Sulfate (as SO4), MW-11 (mg/L)

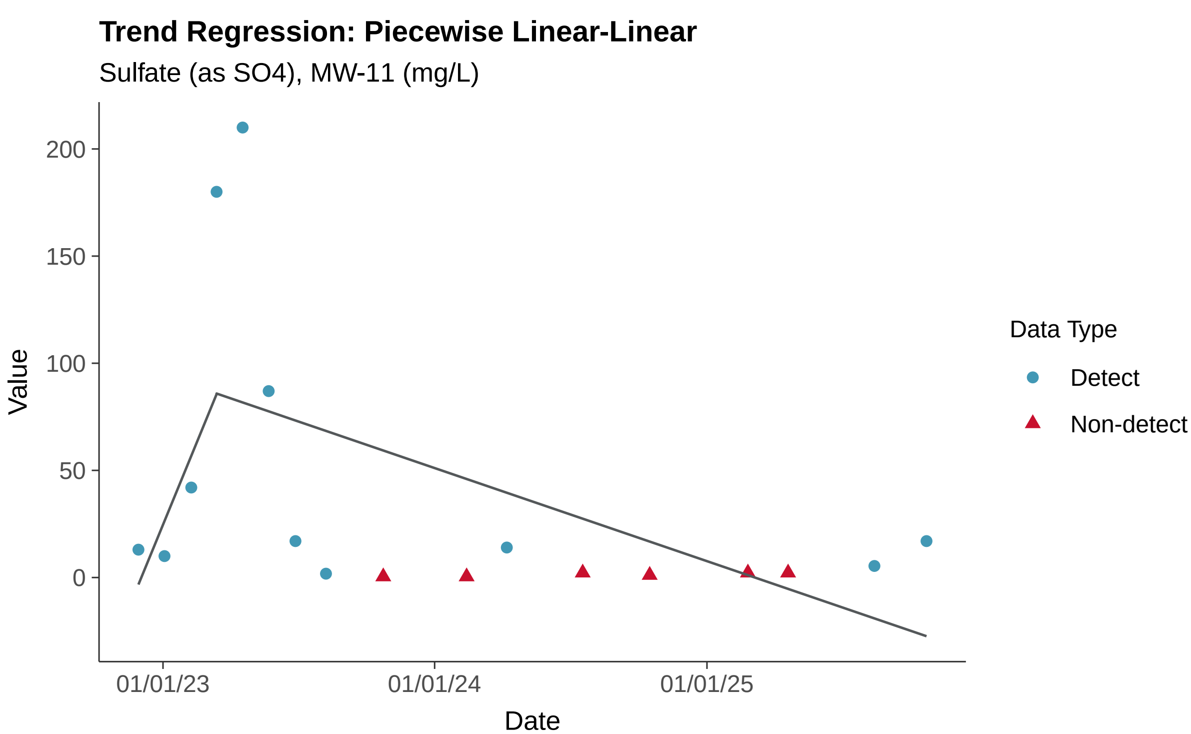


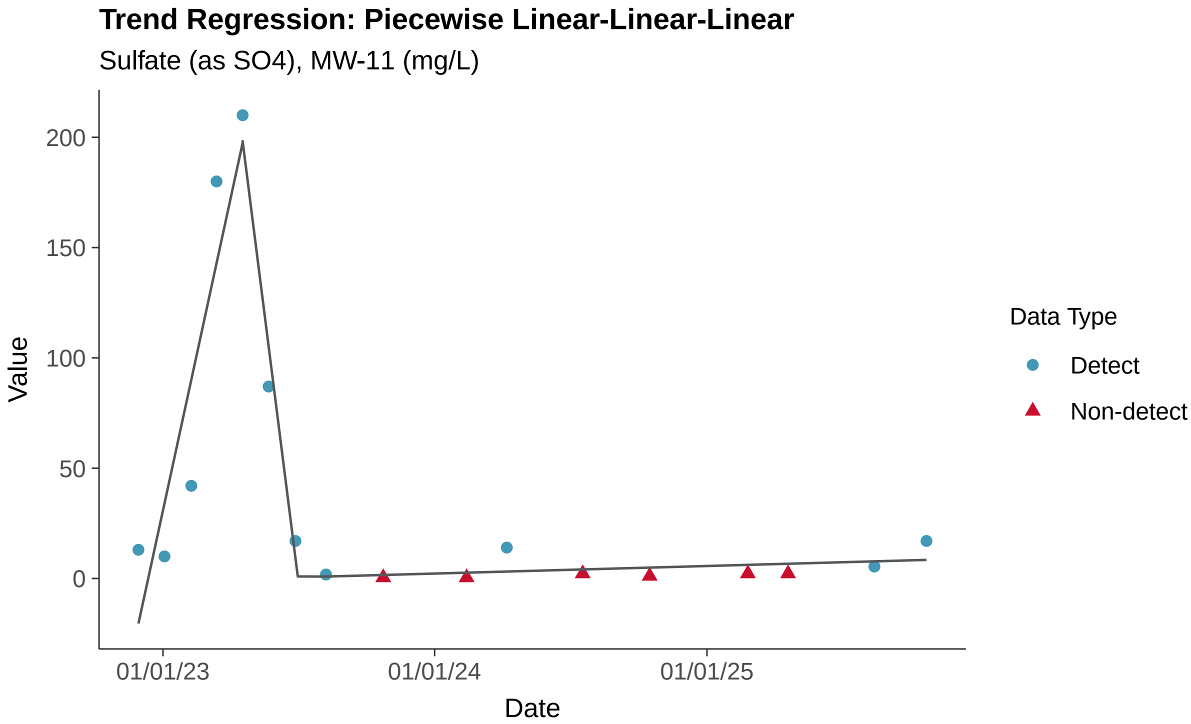
Gamma Q-Q plot using ROS Imputed Estimates

Sulfate (as SO4), MW-11 (mg/L)



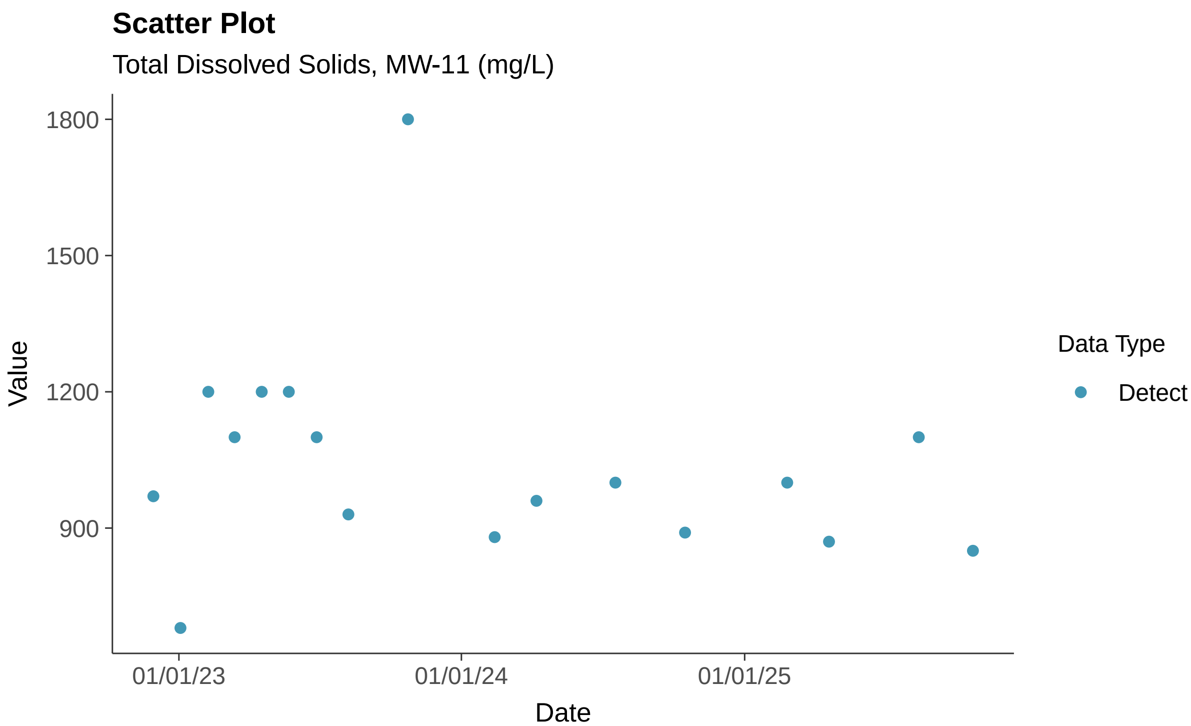

Trend Regression: Lognormal MLE
Sulfate (as SO4), MW-11 (mg/L)
log(Value)
4
2
0
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

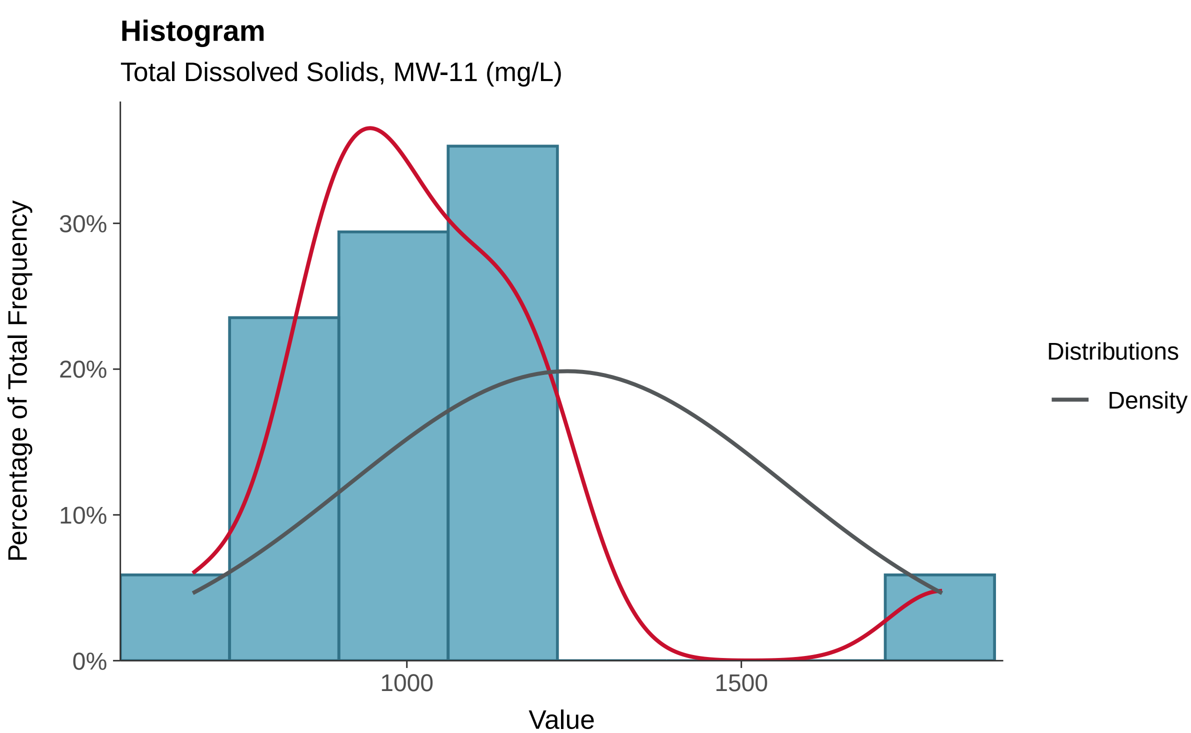

Trend Regression: Piecewise Linear-Linear
Sulfate (as SO4), MW-11 (mg/L)
Value
200
150
100
50
0
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear-Linear
Sulfate (as SO4), MW-11 (mg/L)
Value
200
150
100
50
0
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Appendix III: Total Dissolved Solids, MW-11

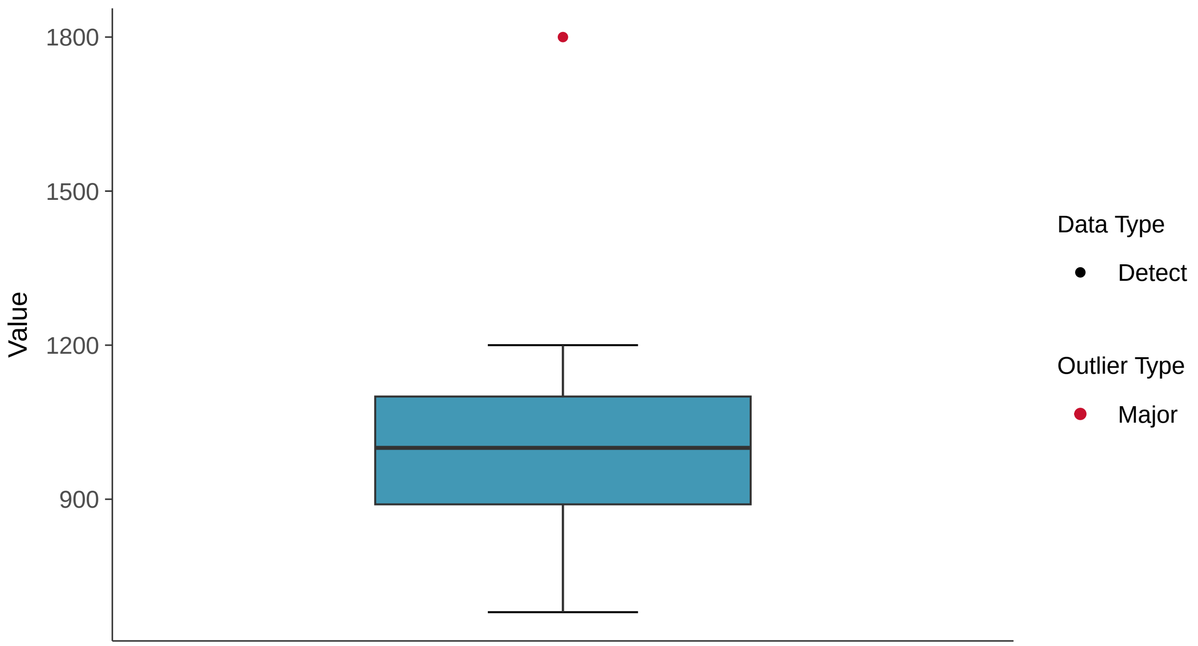
ID: 21_2_3_126





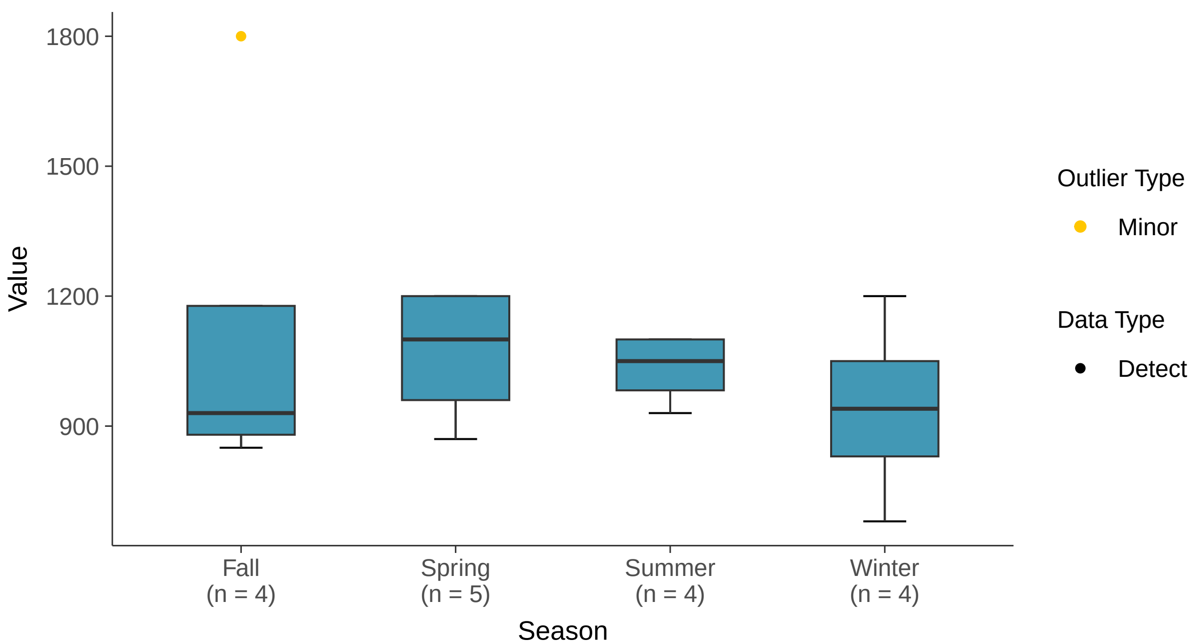
Boxplot

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



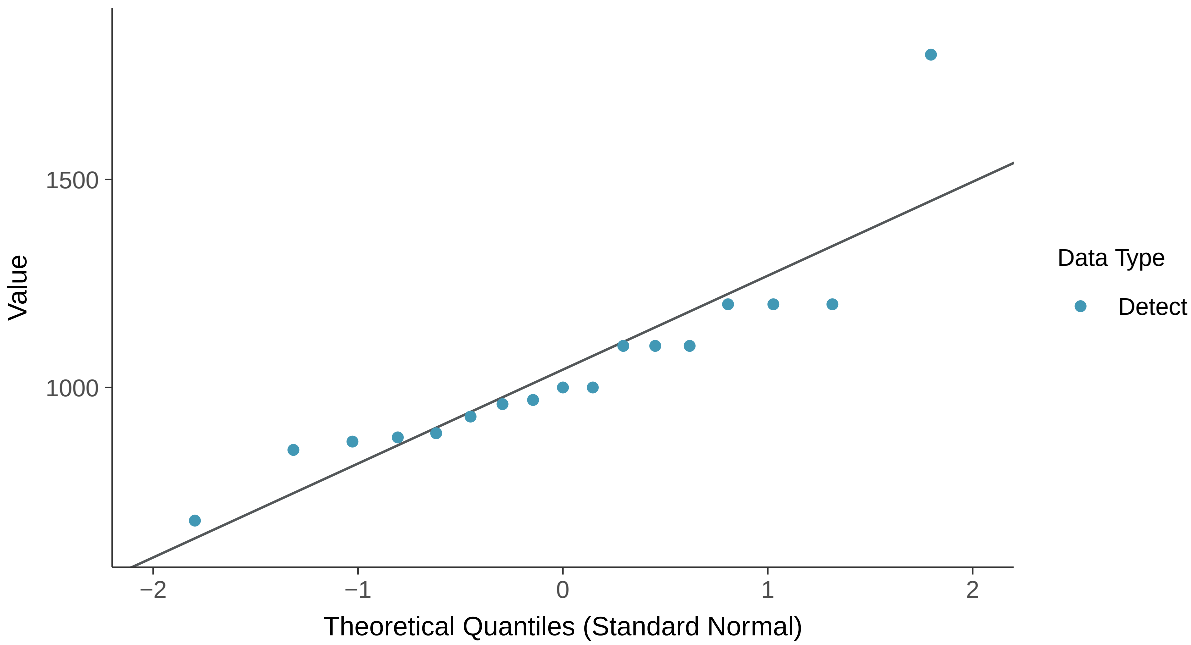
Boxplot by Season

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



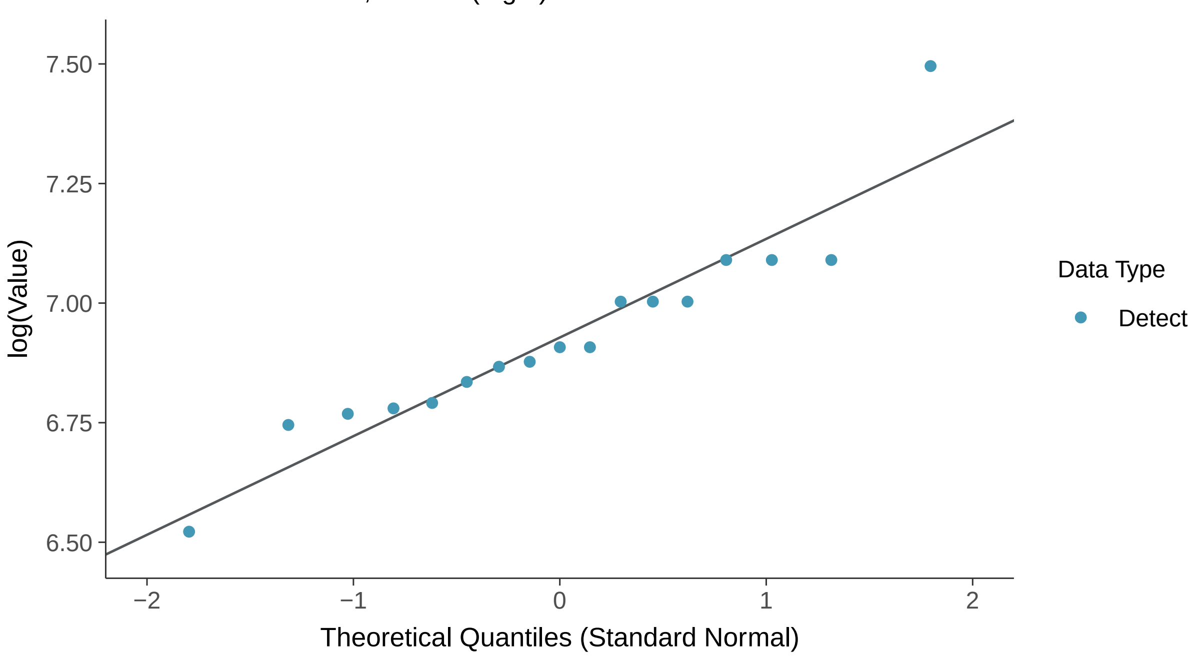
Normal Q-Q plot

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



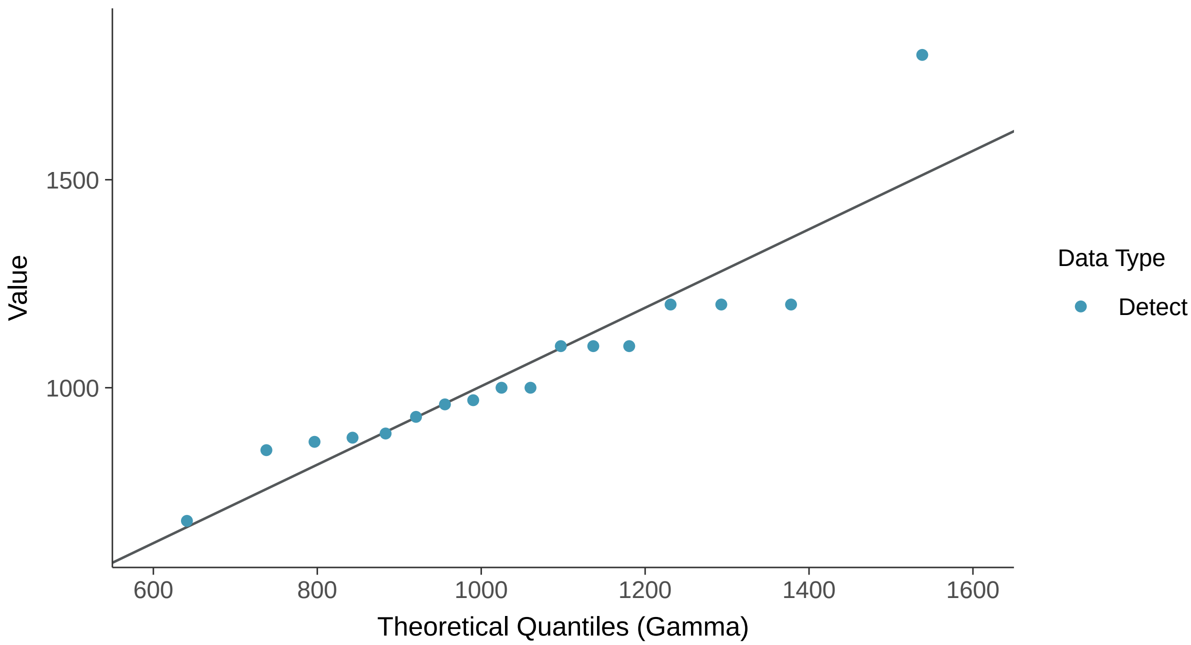
Lognormal Q-Q plot

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



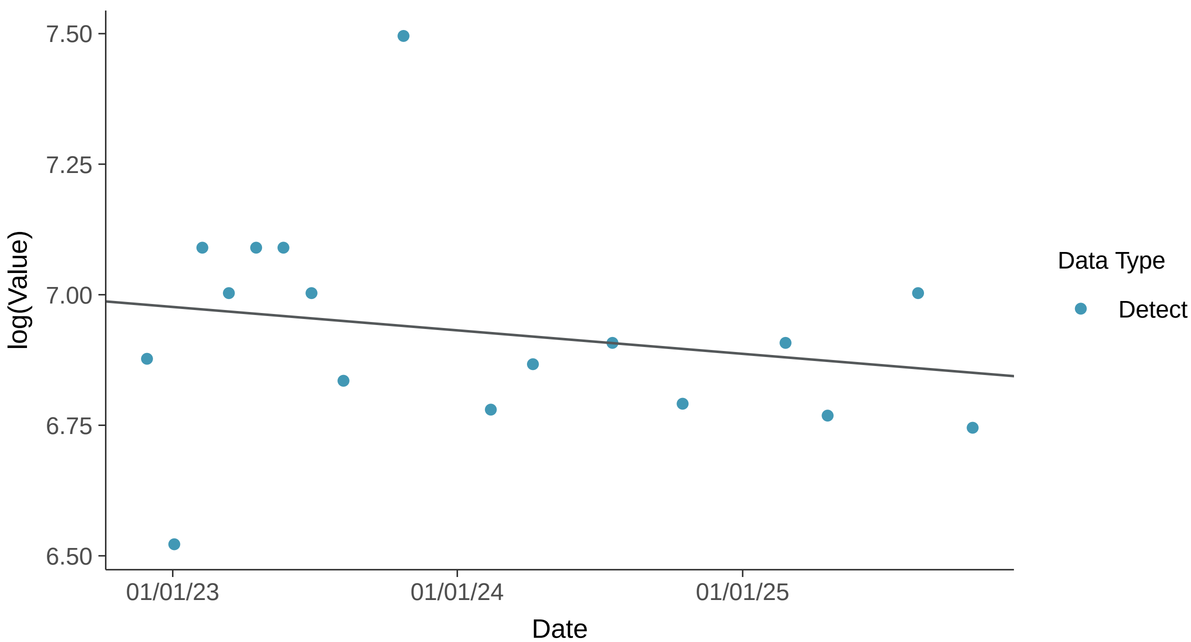
Gamma Q-Q plot

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



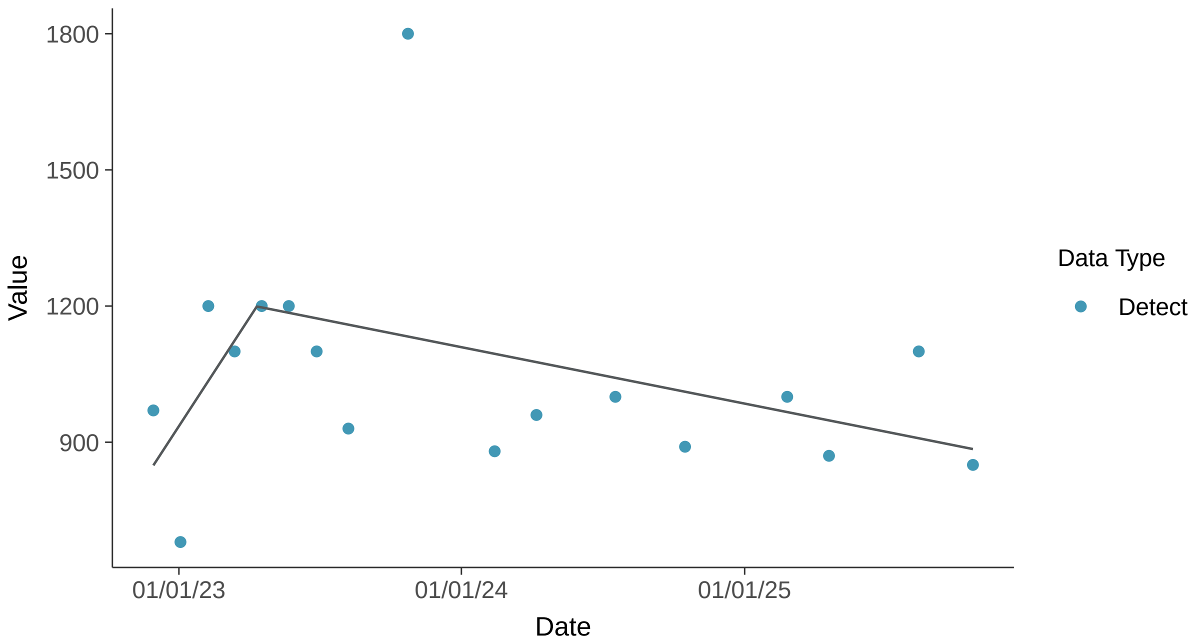
Trend Regression: Lognormal MLE

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



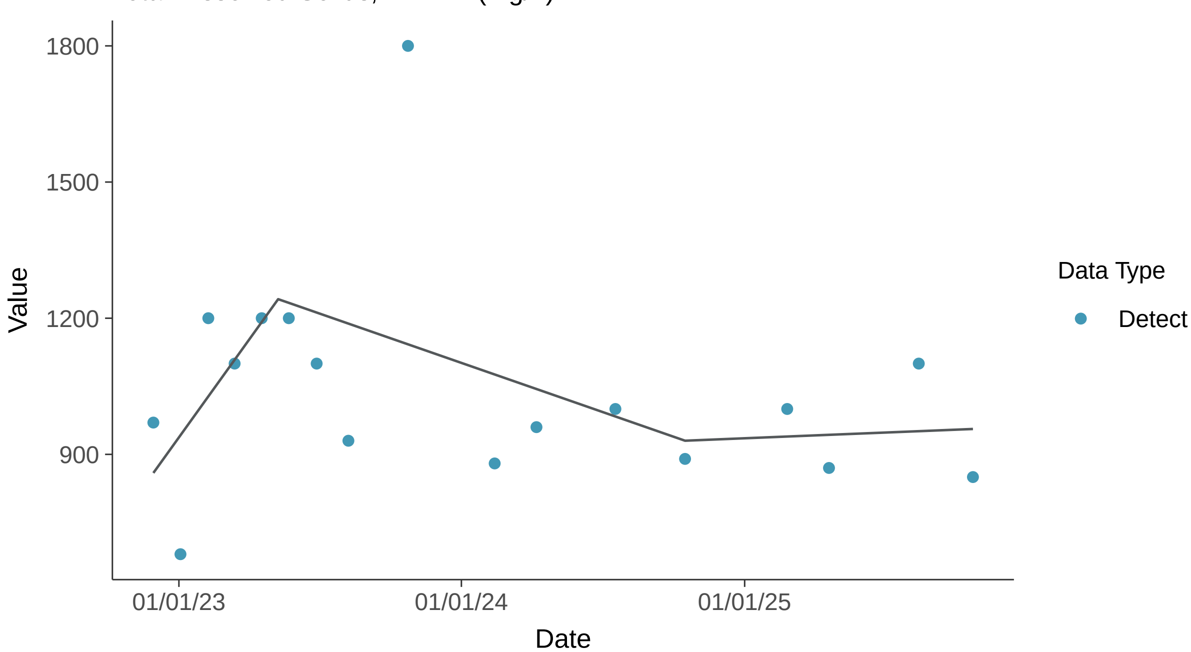
Trend Regression: Piecewise Linear-Linear

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



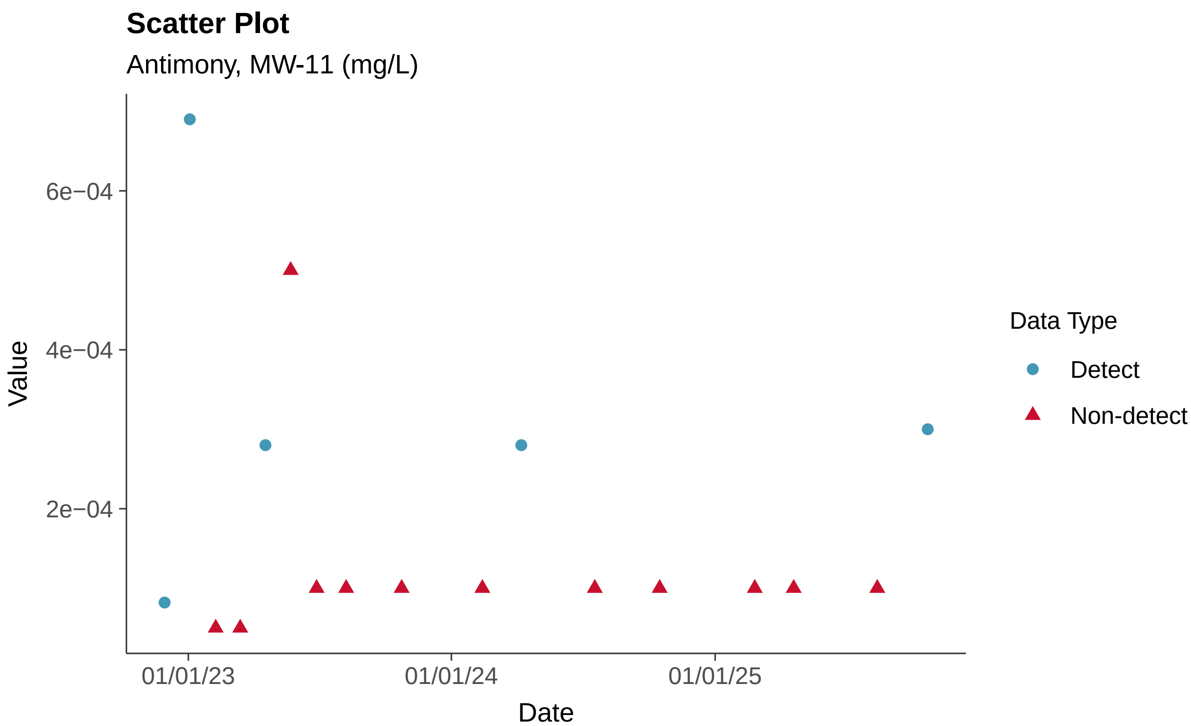
Trend Regression: Piecewise Linear-Linear-Linear

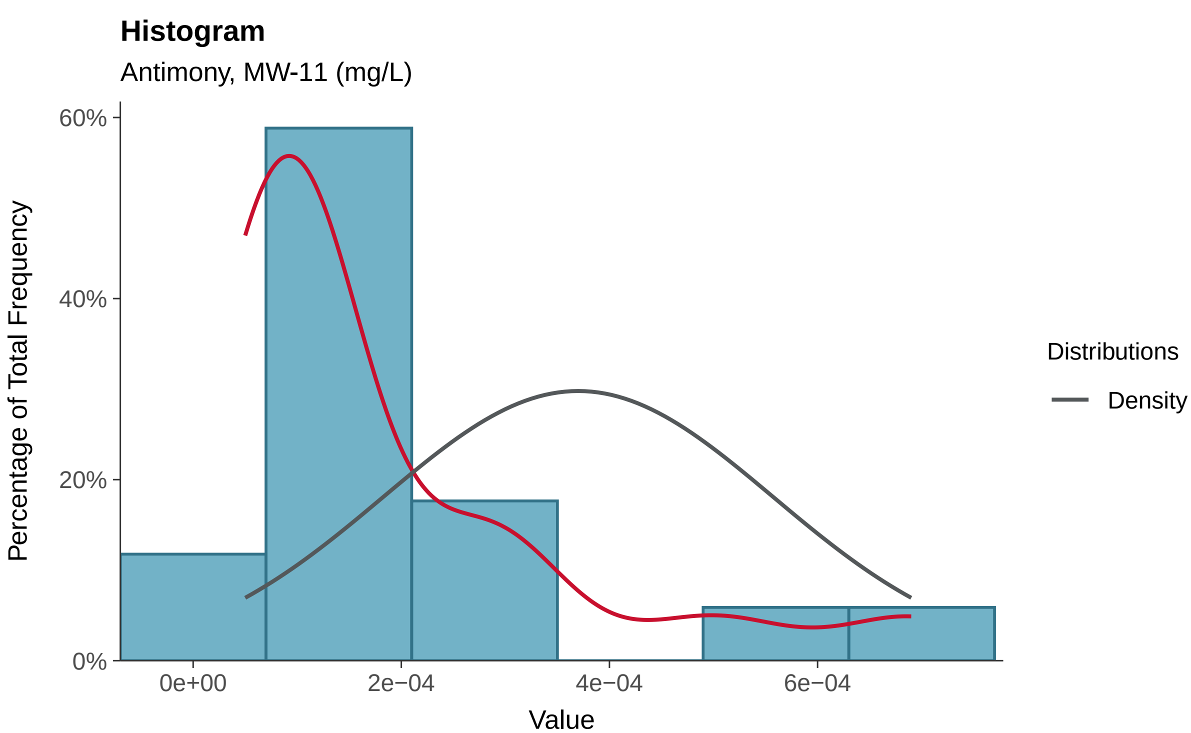
Total Dissolved Solids, MW-11 (mg/L)



Appendix IV: Antimony, MW-11

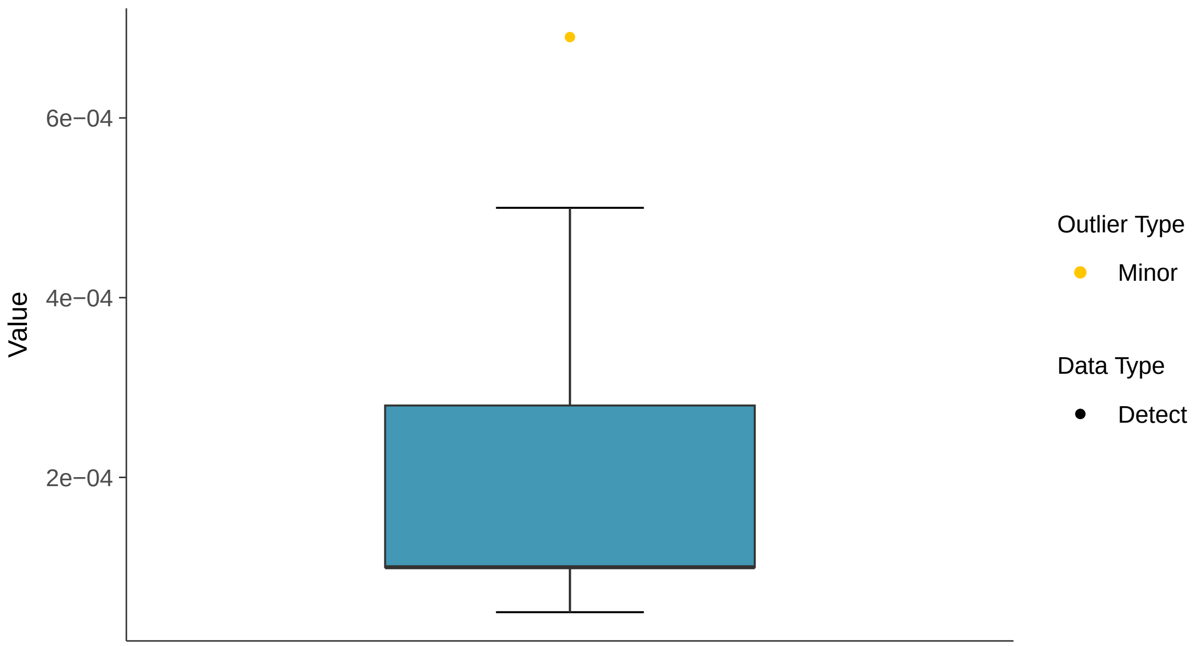
ID: 21_2_4_101





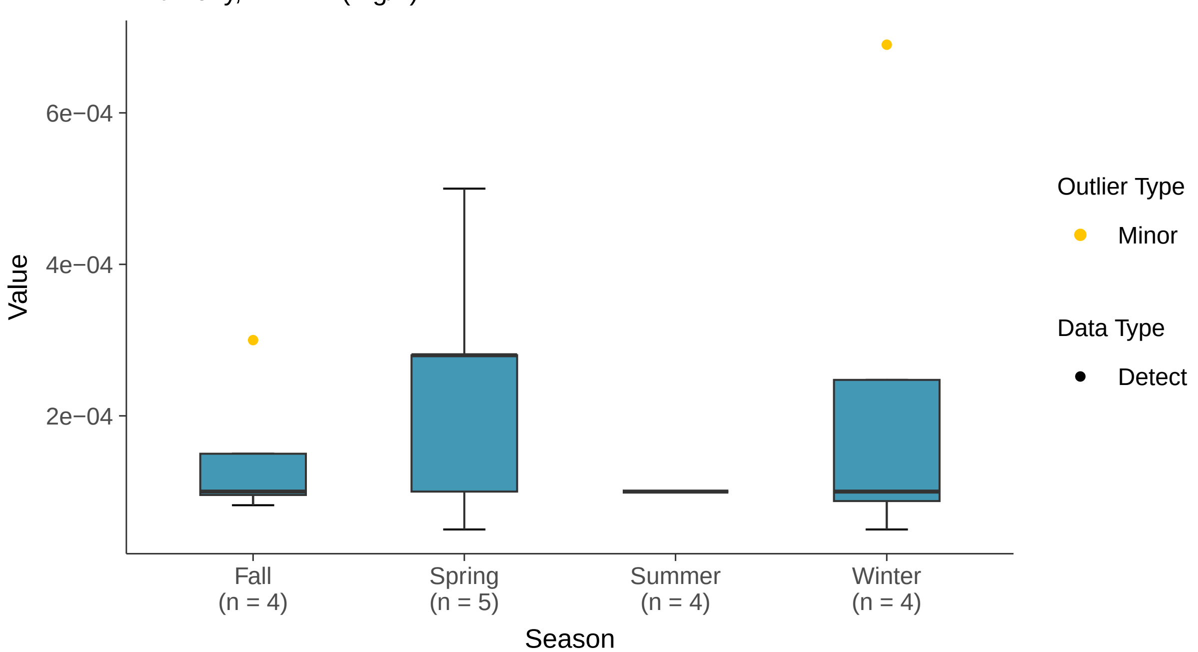
Boxplot

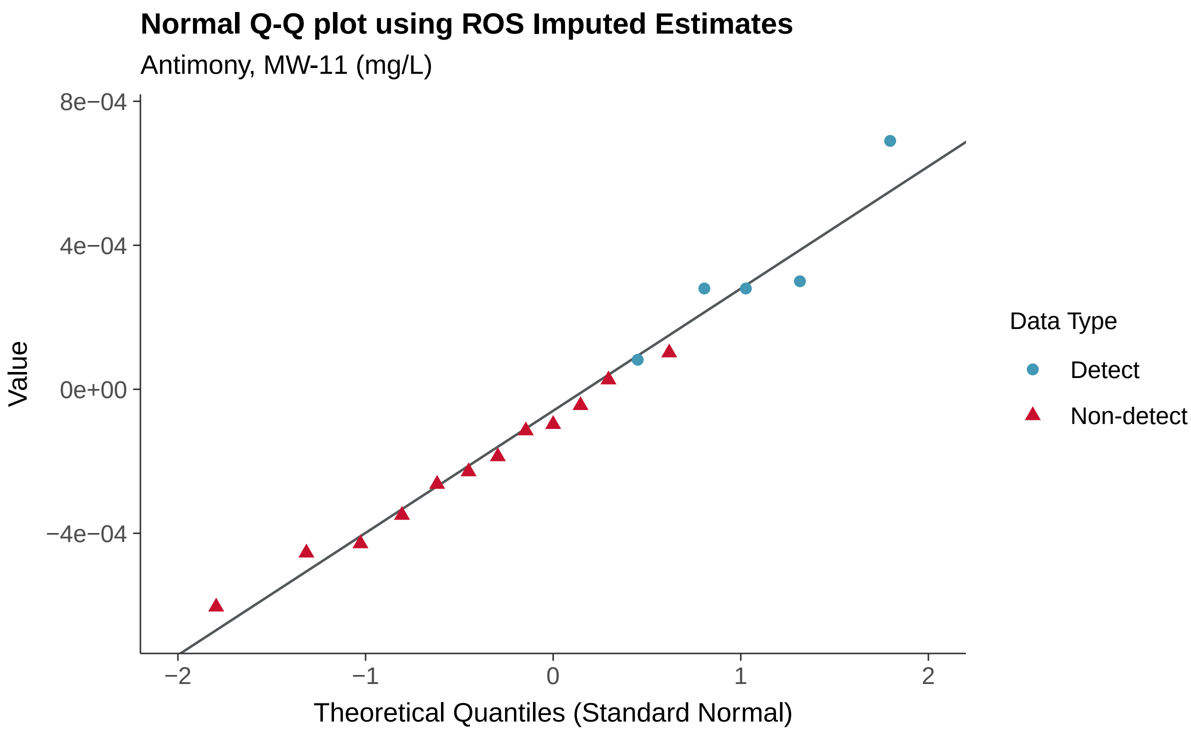
Antimony, MW-11 (mg/L)

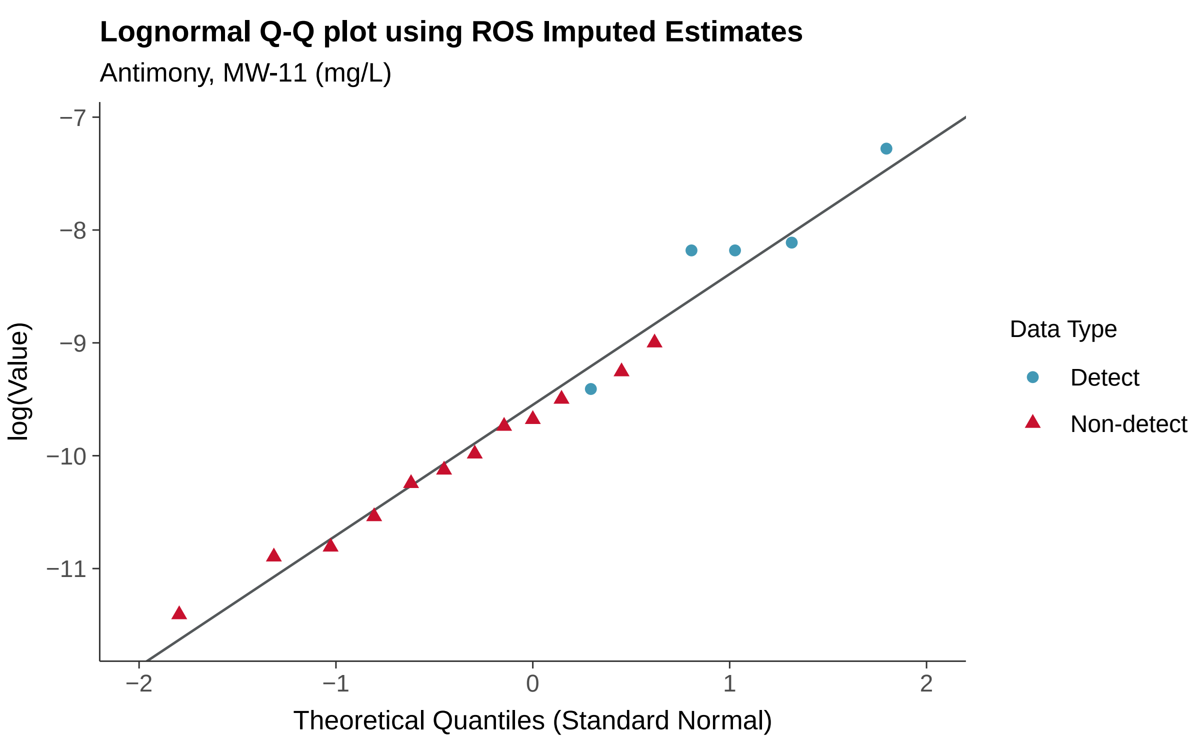


Boxplot by Season

Antimony, MW-11 (mg/L)

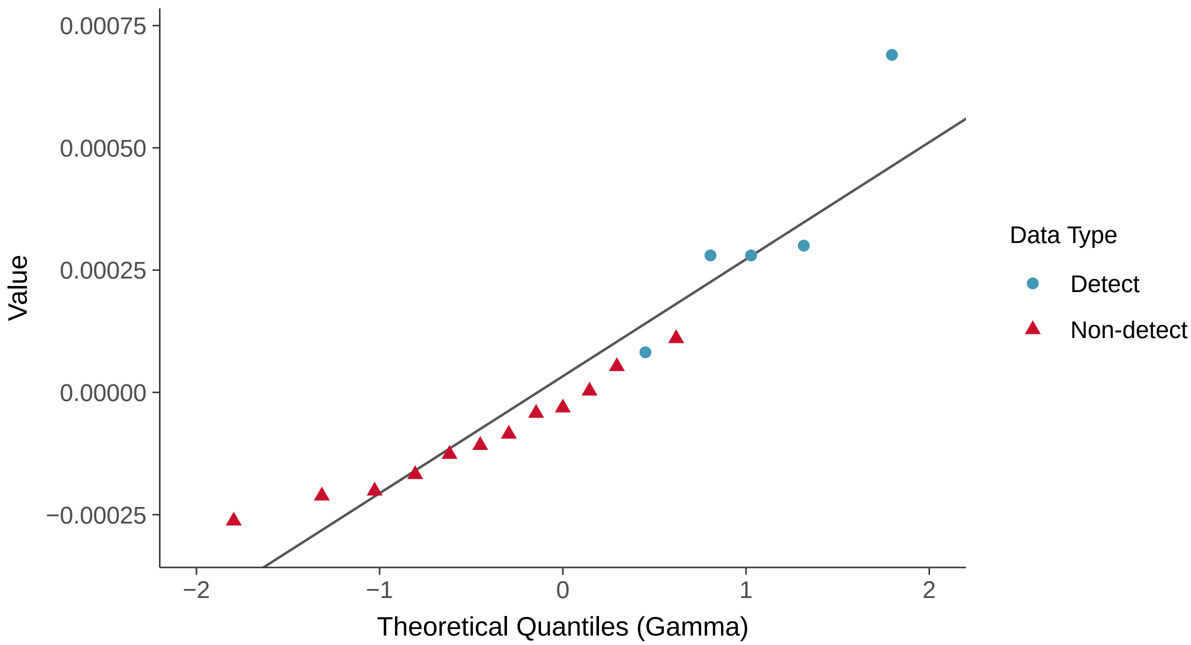



Normal Q-Q plot using ROS Imputed Estimates
Antimony, MW-11 (mg/L)
Value
8e−04
4e−04
0e+00
−4e−04
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Lognormal Q-Q plot using ROS Imputed Estimates
Antimony, MW-11 (mg/L)
log(Value)
−7
−8
−9
−10
−11
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

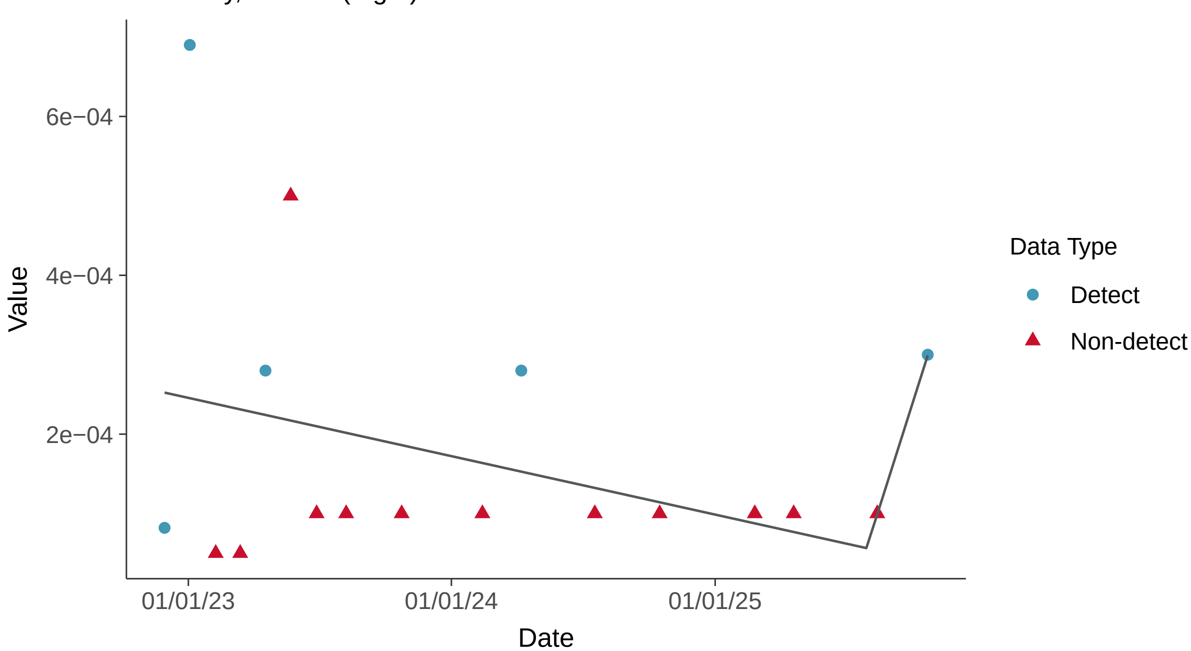
Gamma Q-Q plot using ROS Imputed Estimates

Antimony, MW-11 (mg/L)



Trend Regression: Piecewise Linear-Linear

Antimony, MW-11 (mg/L)

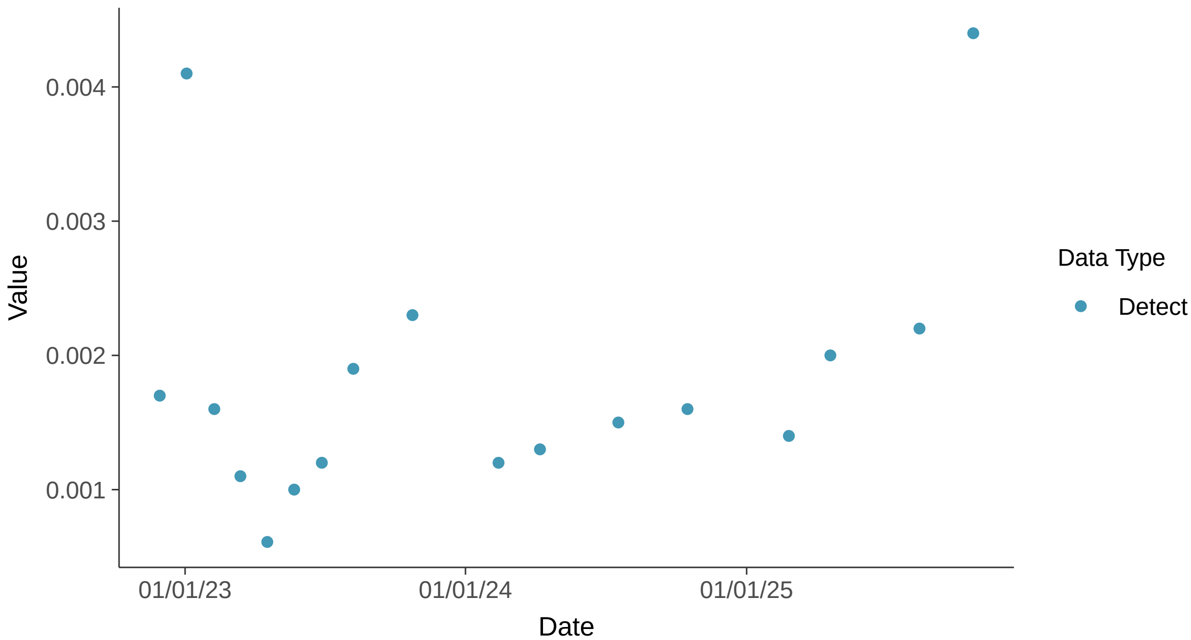


Appendix IV: Arsenic, MW-11

ID: 21_2_4_102

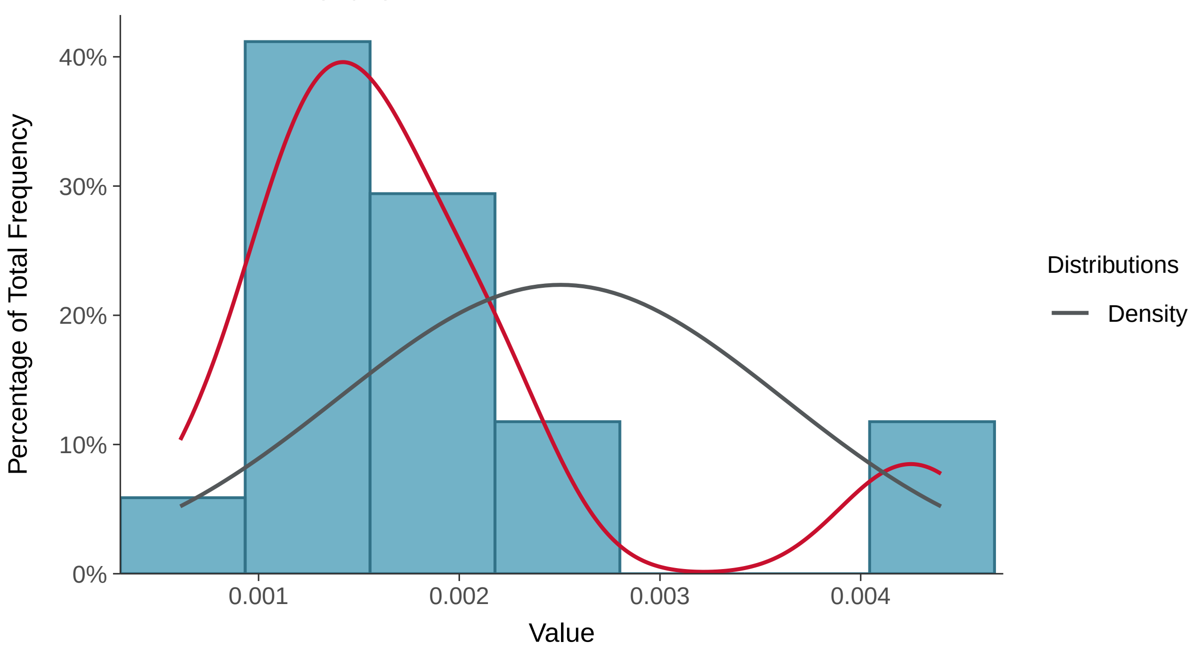
Scatter Plot

Arsenic, MW-11 (mg/L)



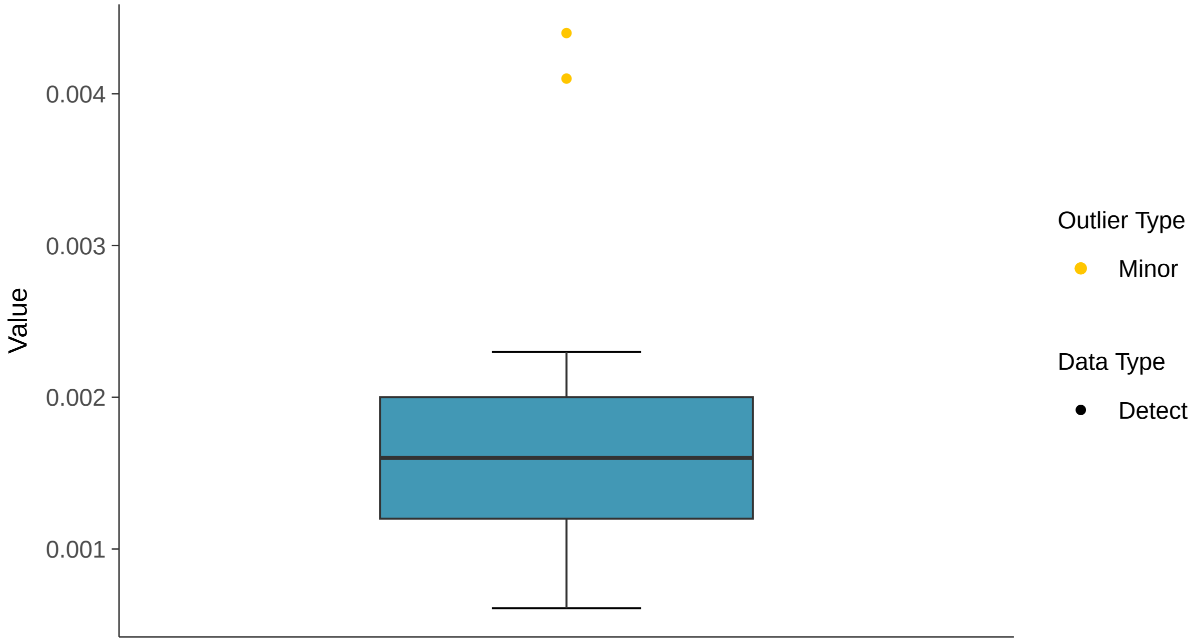
Histogram

Arsenic, MW-11 (mg/L)



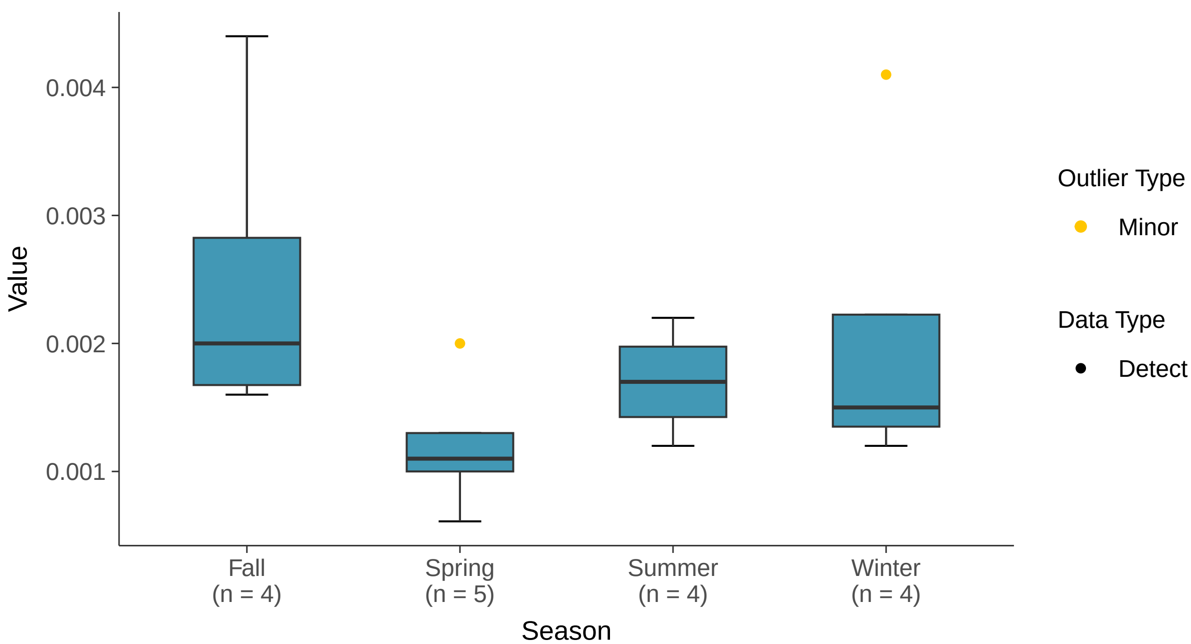
Boxplot

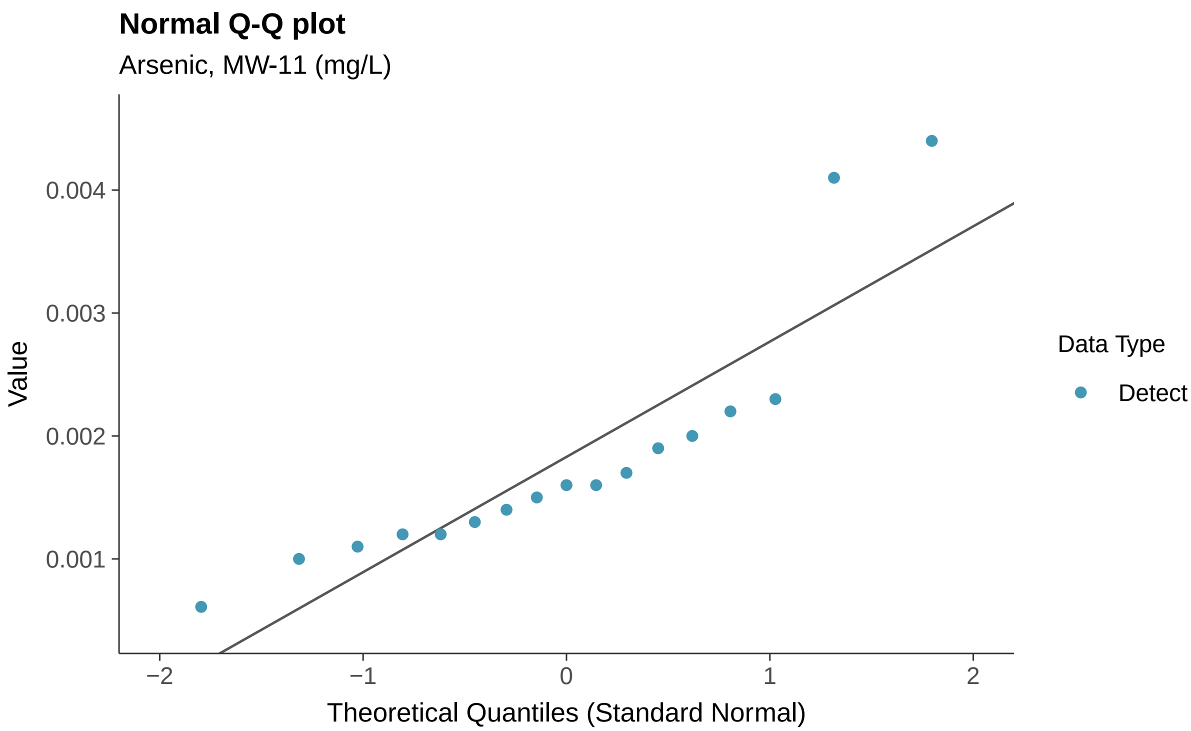
Arsenic, MW-11 (mg/L)

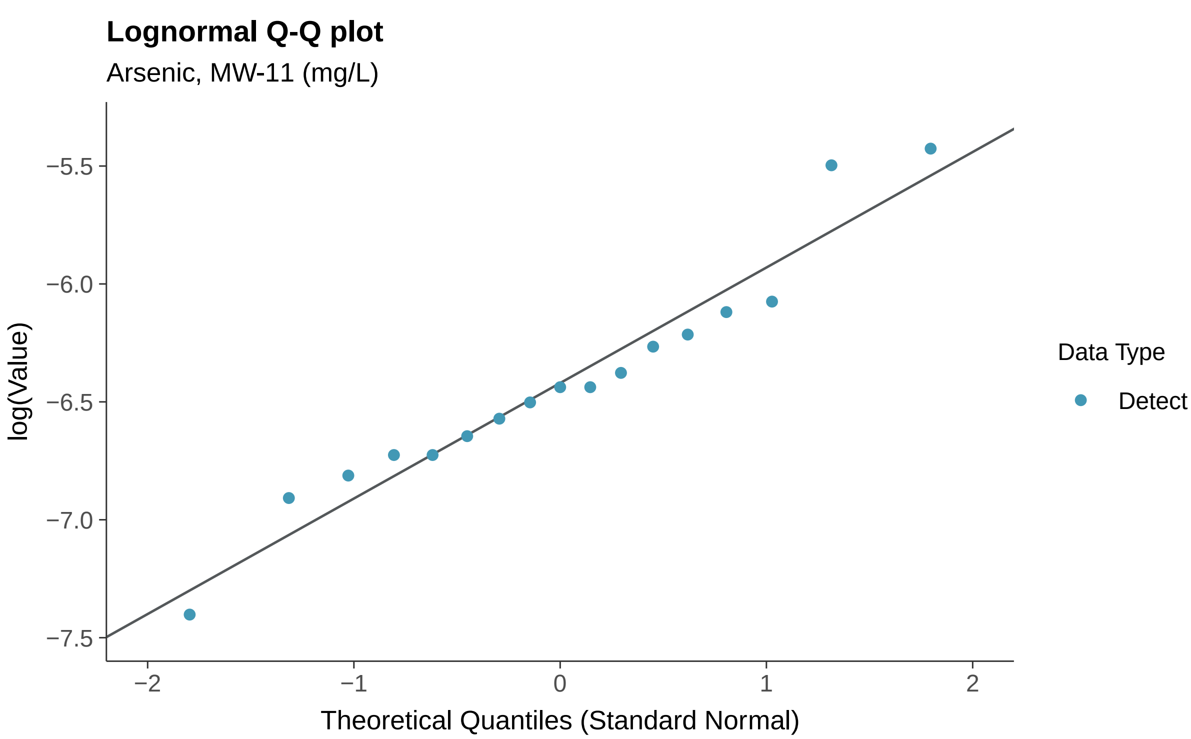


Boxplot by Season

Arsenic, MW-11 (mg/L)

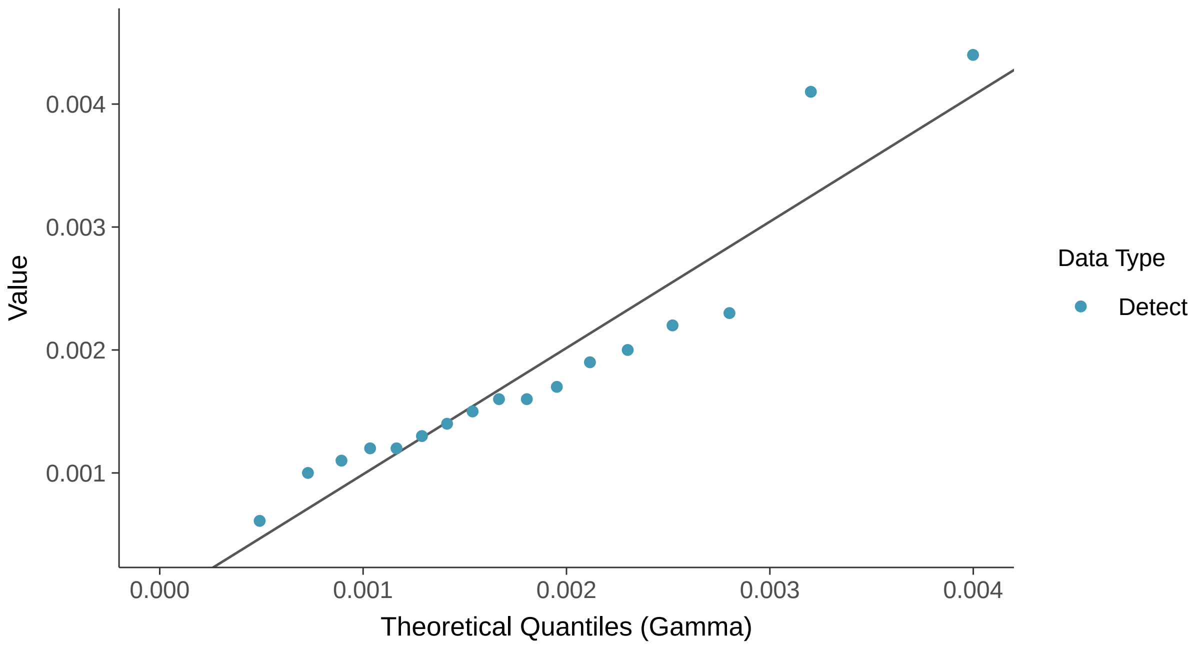



Normal Q-Q plot
Arsenic, MW-11 (mg/L)
Value
0.004
0.003
0.002
0.001
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Arsenic, MW-11 (mg/L)
log(Value)
−5.5
−6.0
−6.5
−7.0
−7.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

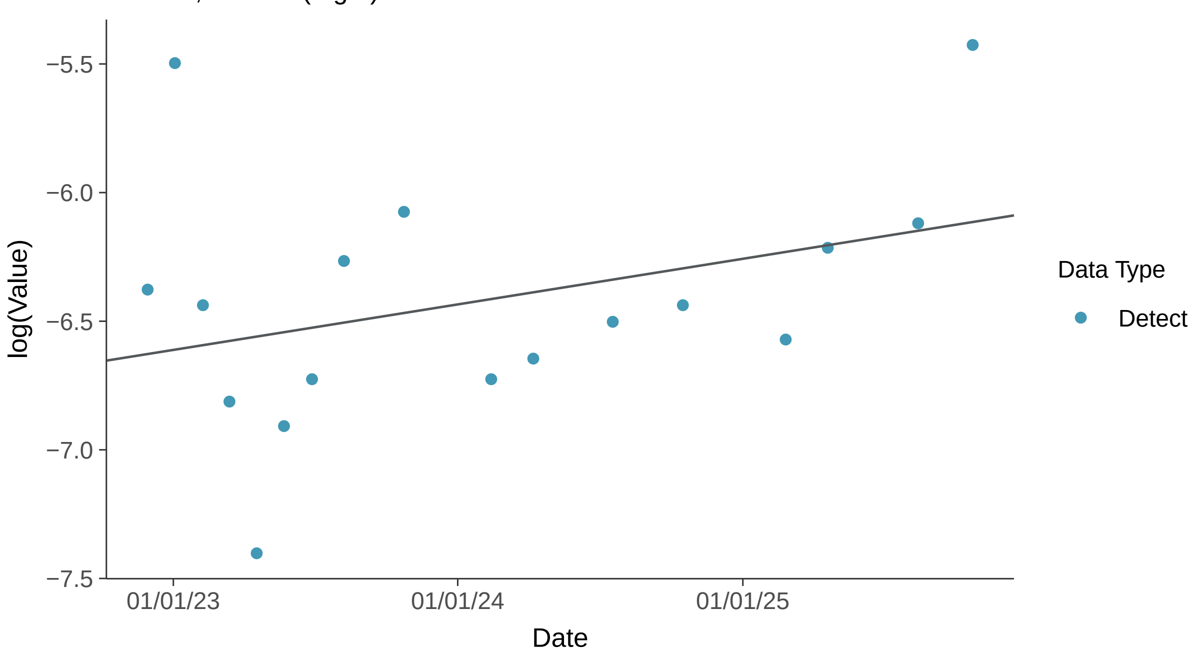
Gamma Q-Q plot

Arsenic, MW-11 (mg/L)



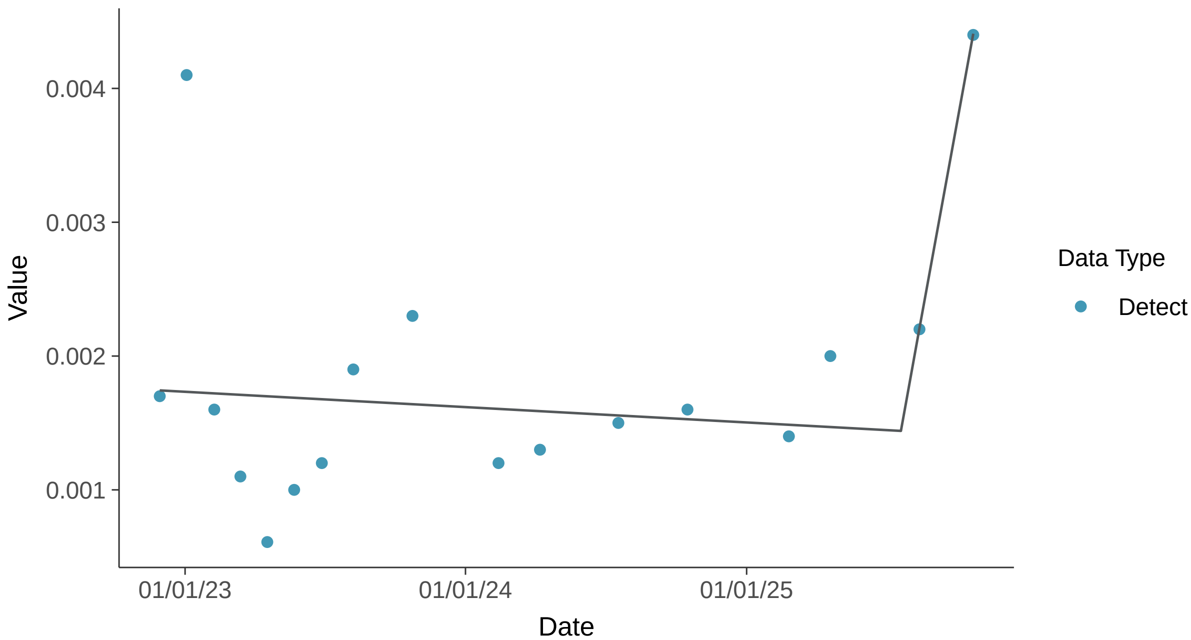
Trend Regression: Lognormal MLE

Arsenic, MW-11 (mg/L)



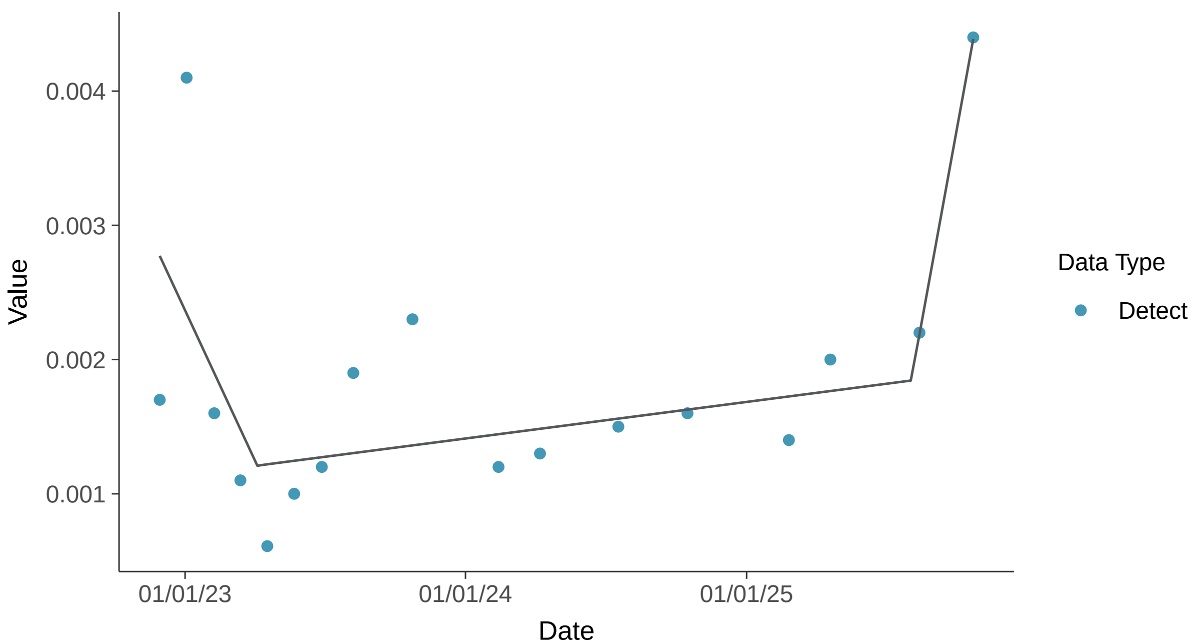
Trend Regression: Piecewise Linear-Linear

Arsenic, MW-11 (mg/L)



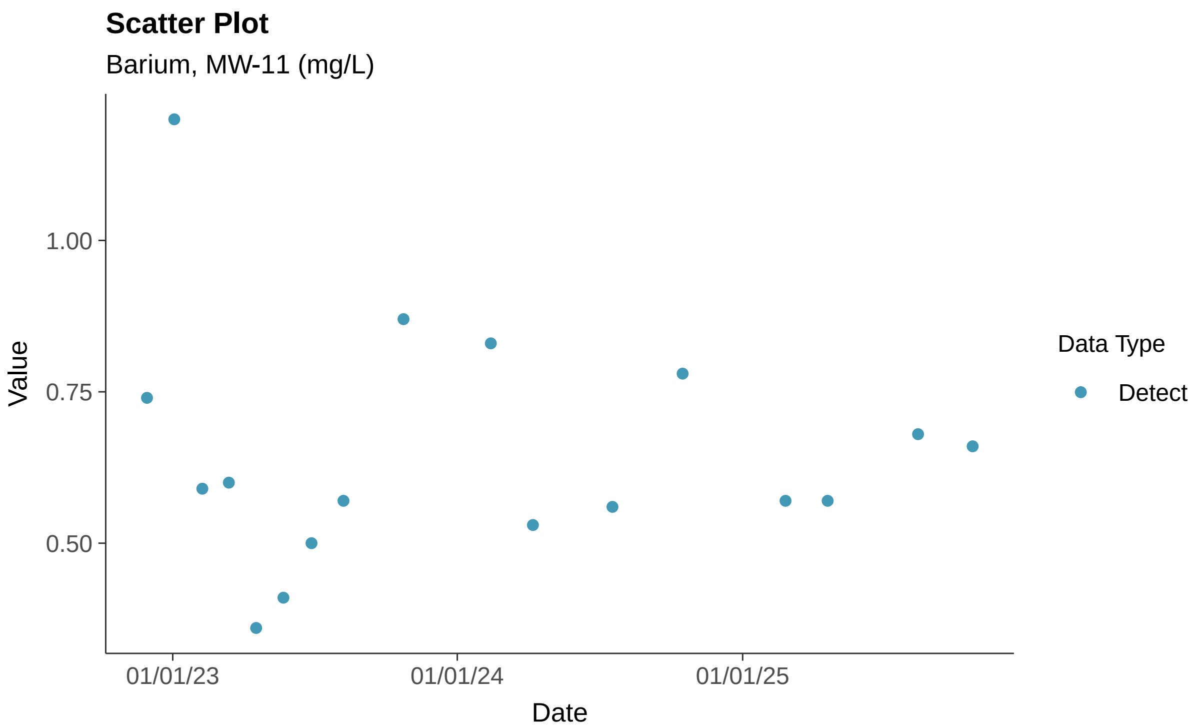
Trend Regression: Piecewise Linear-Linear-Linear

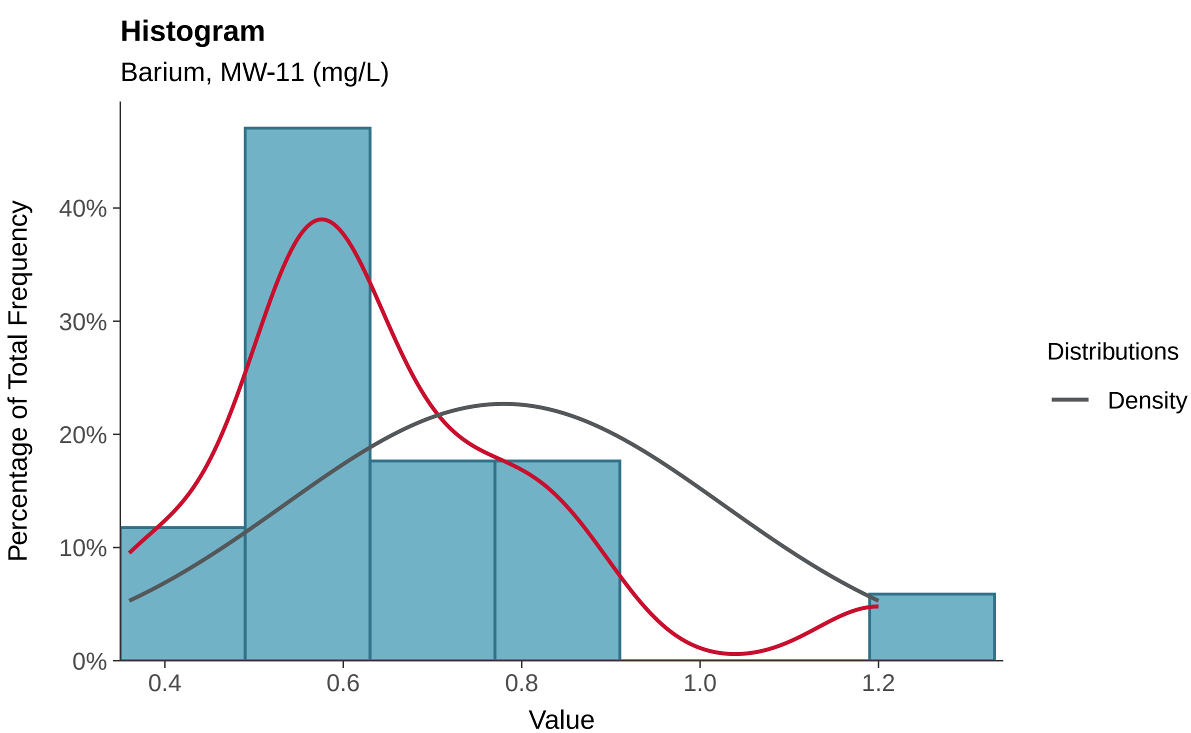
Arsenic, MW-11 (mg/L)



Appendix IV: Barium, MW-11

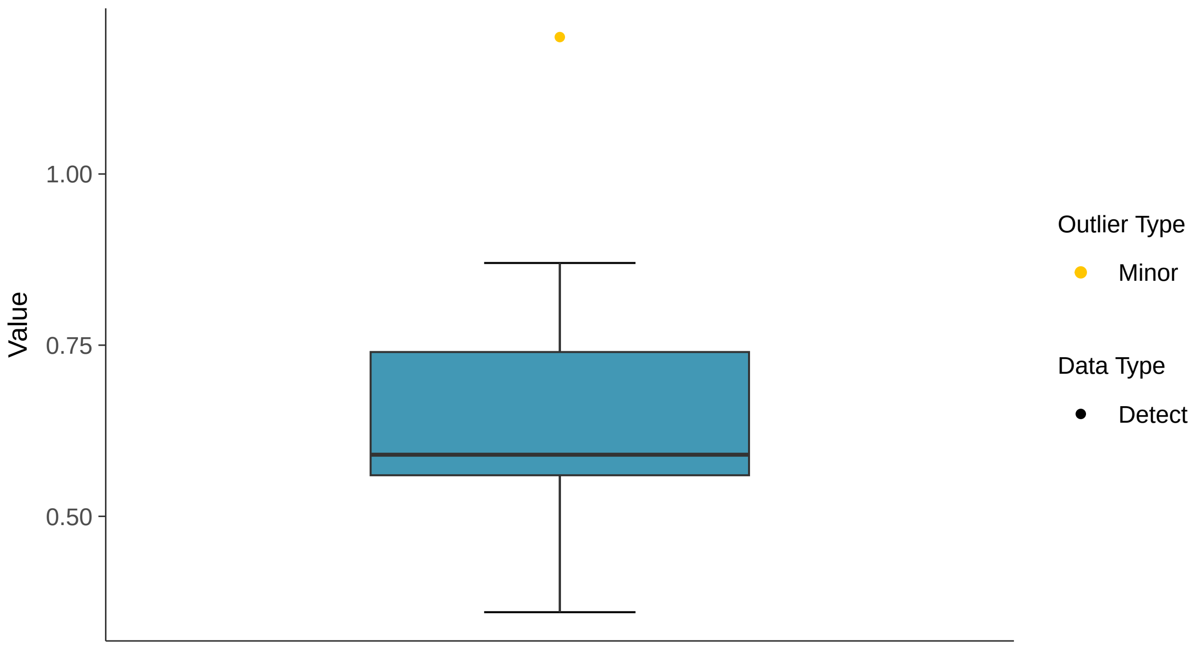
ID: 21_2_4_103





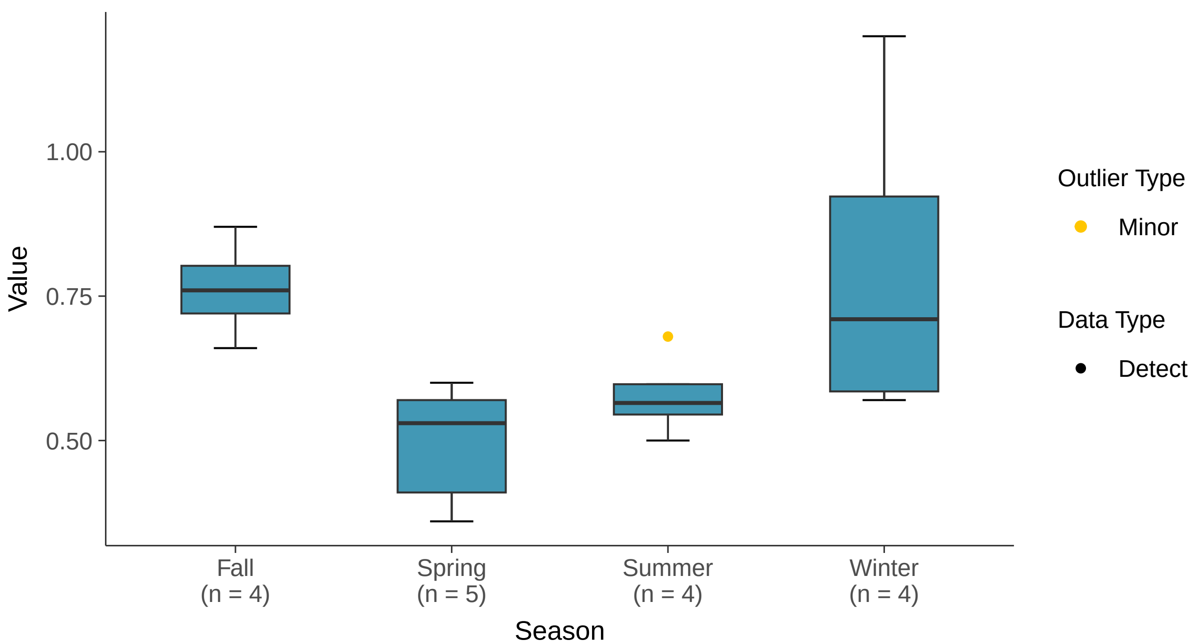
Boxplot

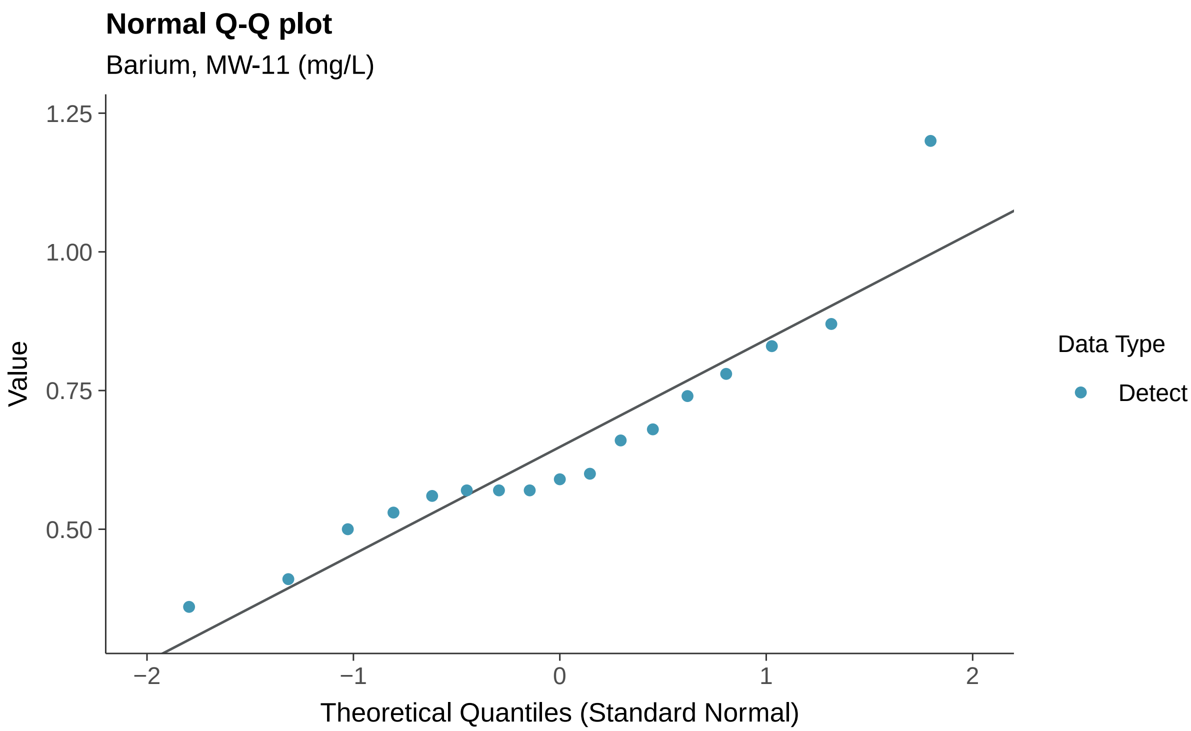
Barium, MW-11 (mg/L)

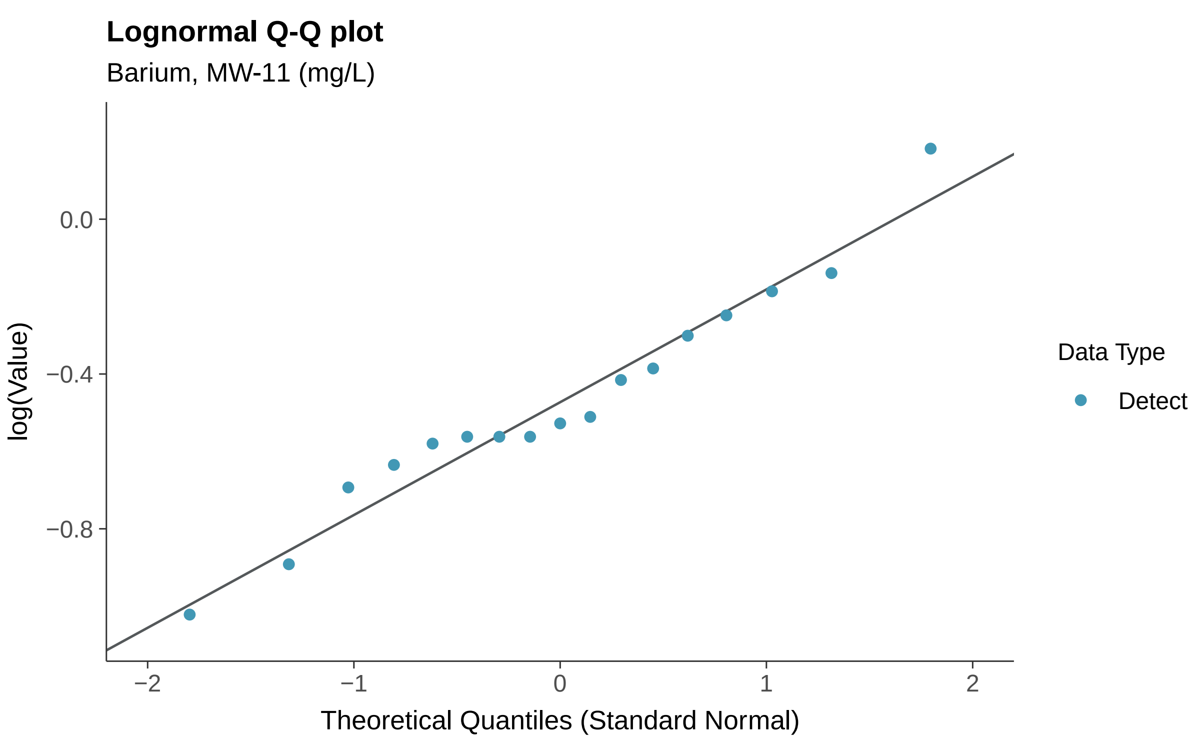


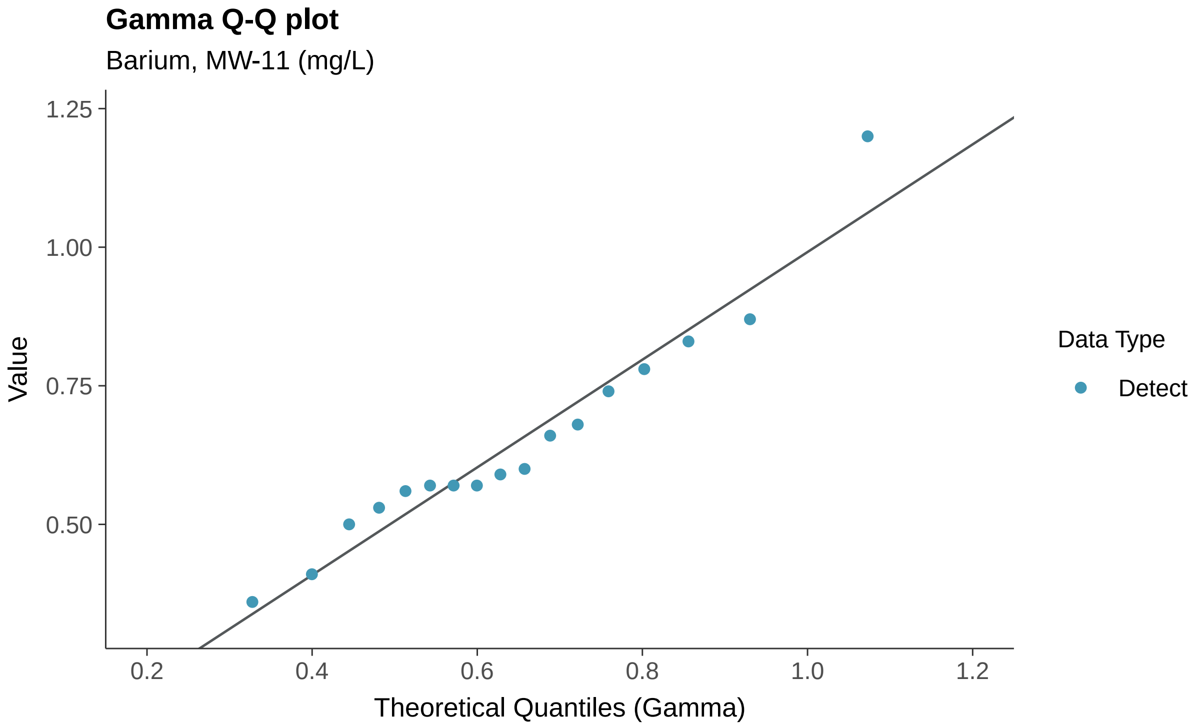
Boxplot by Season

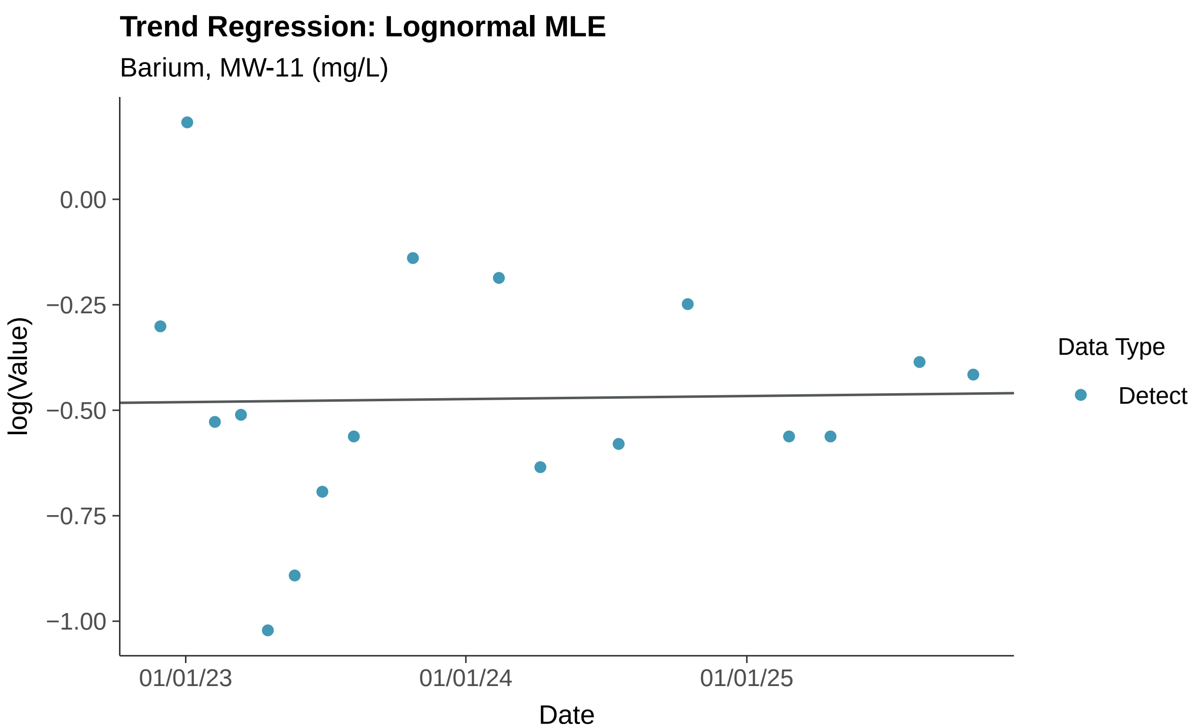
Barium, MW-11 (mg/L)




Normal Q-Q plot
Barium, MW-11 (mg/L)
1.25
1.00
0.75
0.50
Value
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

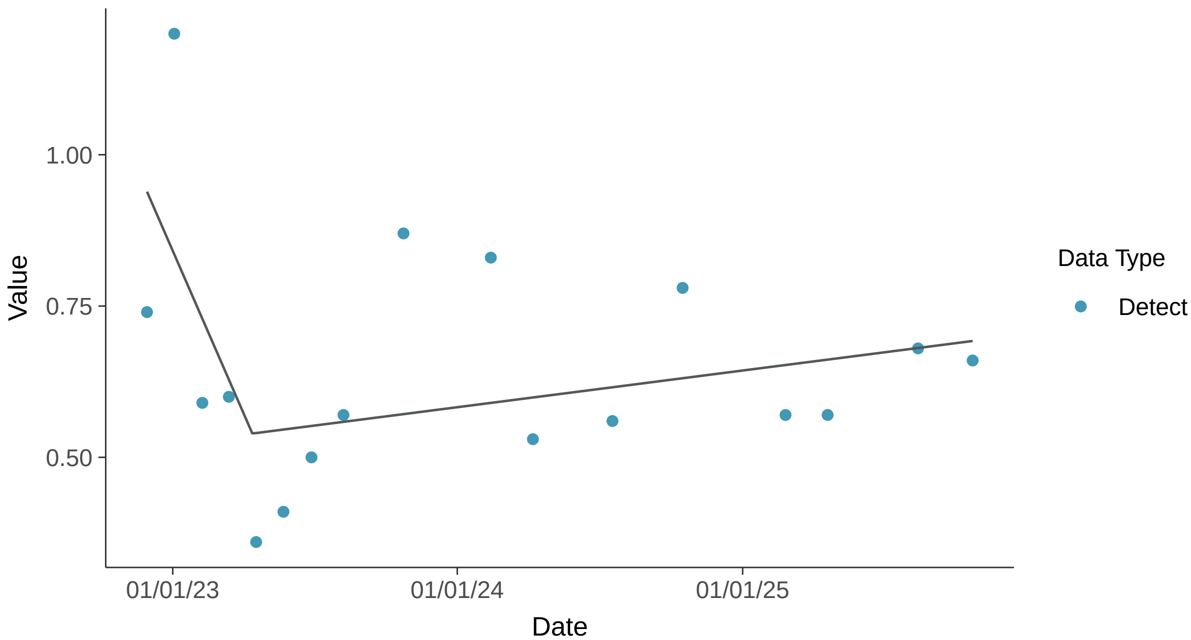

Lognormal Q-Q plot
Barium, MW-11 (mg/L)
0.0
−0.4
−0.8
log(Value)
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Barium, MW-11 (mg/L)
Value
1.25
1.00
0.75
0.50
0.2
0.4
0.6
0.8
1.0
1.2
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Barium, MW-11 (mg/L)
log(Value)
0.00
−0.25
−0.50
−0.75
−1.00
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

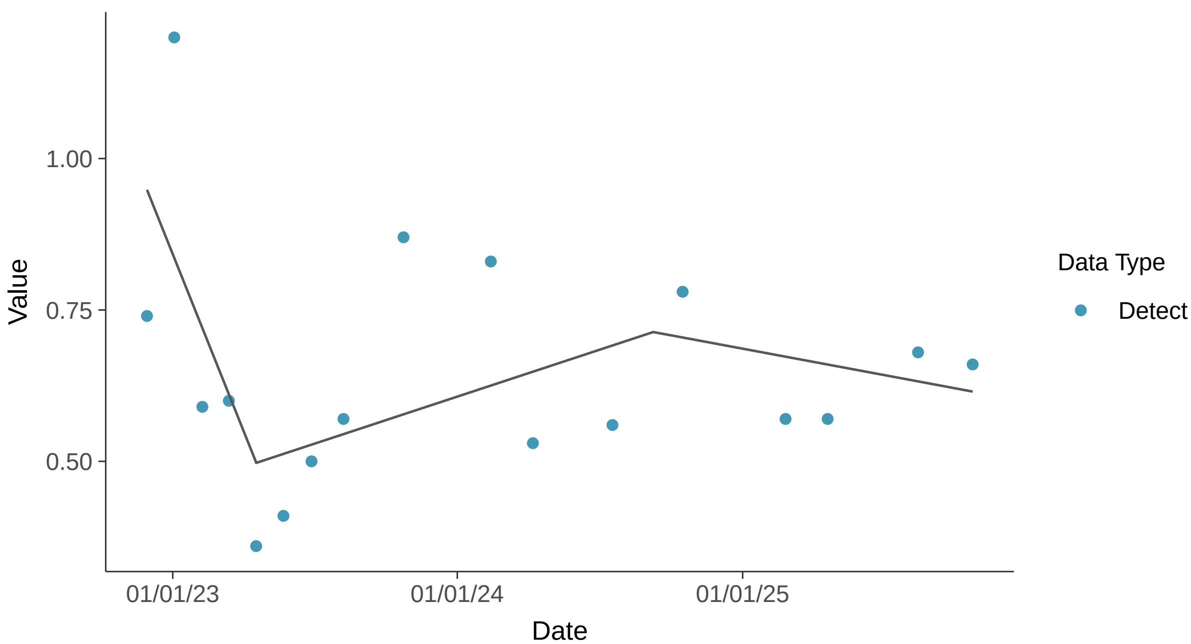
Trend Regression: Piecewise Linear-Linear

Barium, MW-11 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Barium, MW-11 (mg/L)

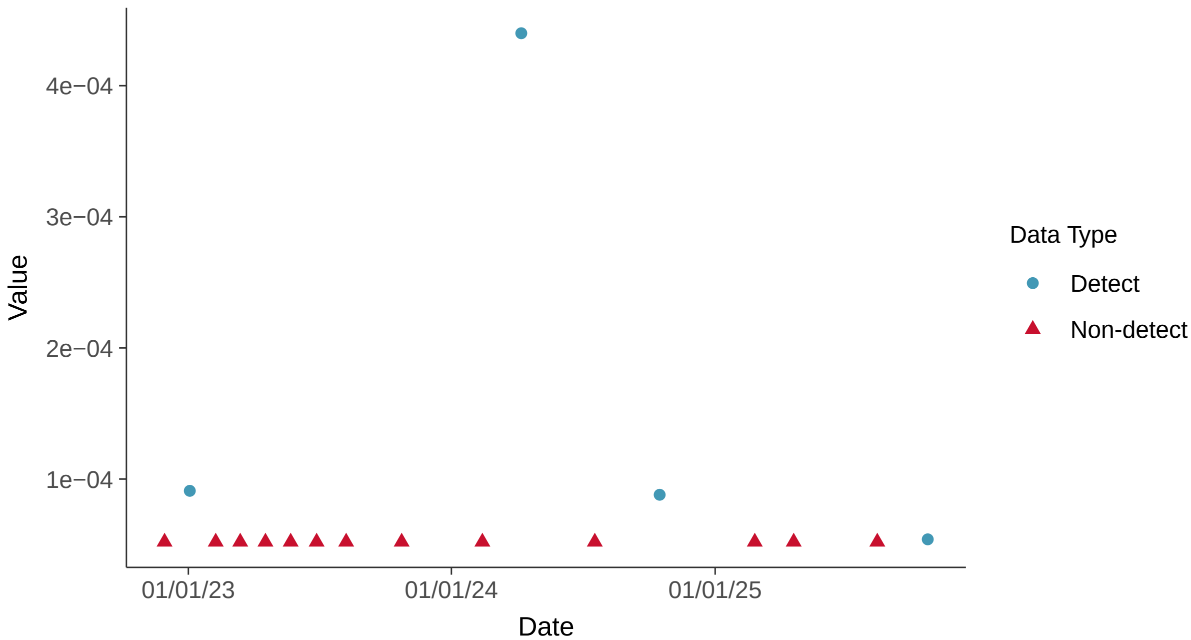


Appendix IV: Beryllium, MW-11

ID: 21_2_4_104

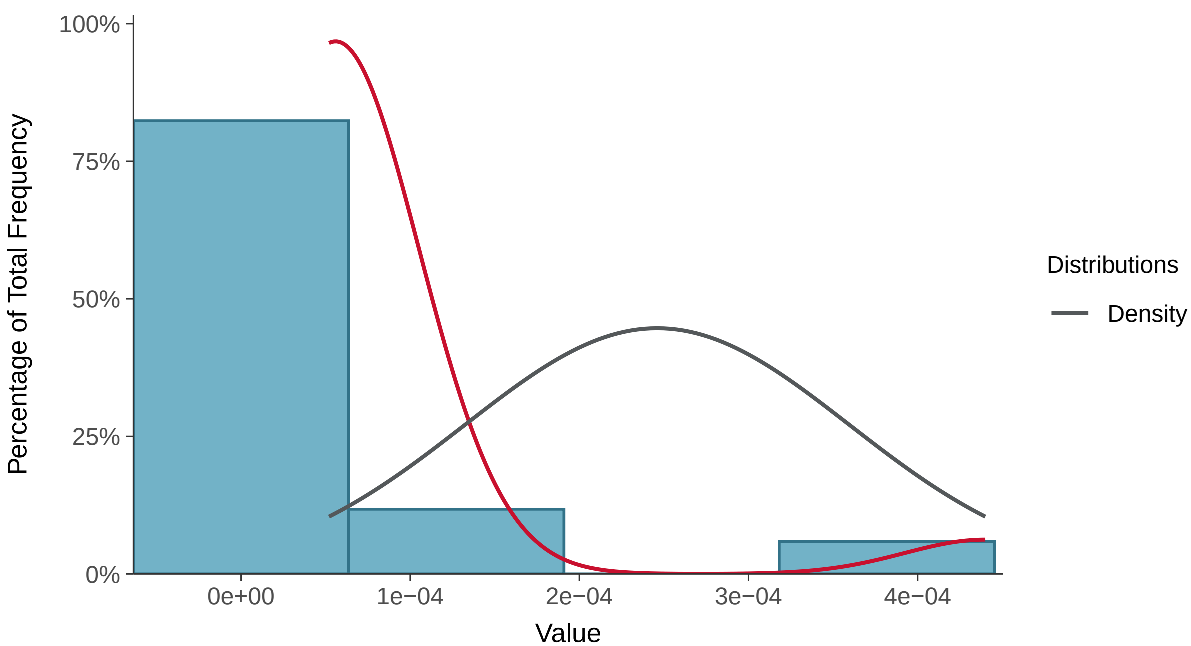
Scatter Plot

Beryllium, MW-11 (mg/L)



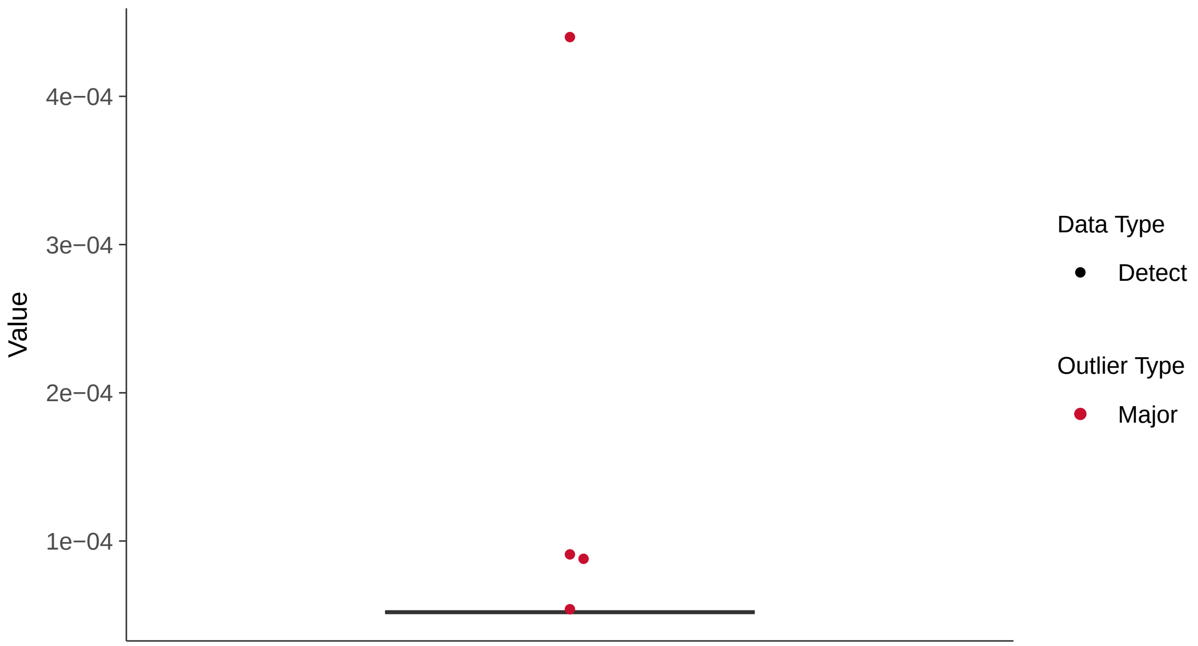
Histogram

Beryllium, MW-11 (mg/L)



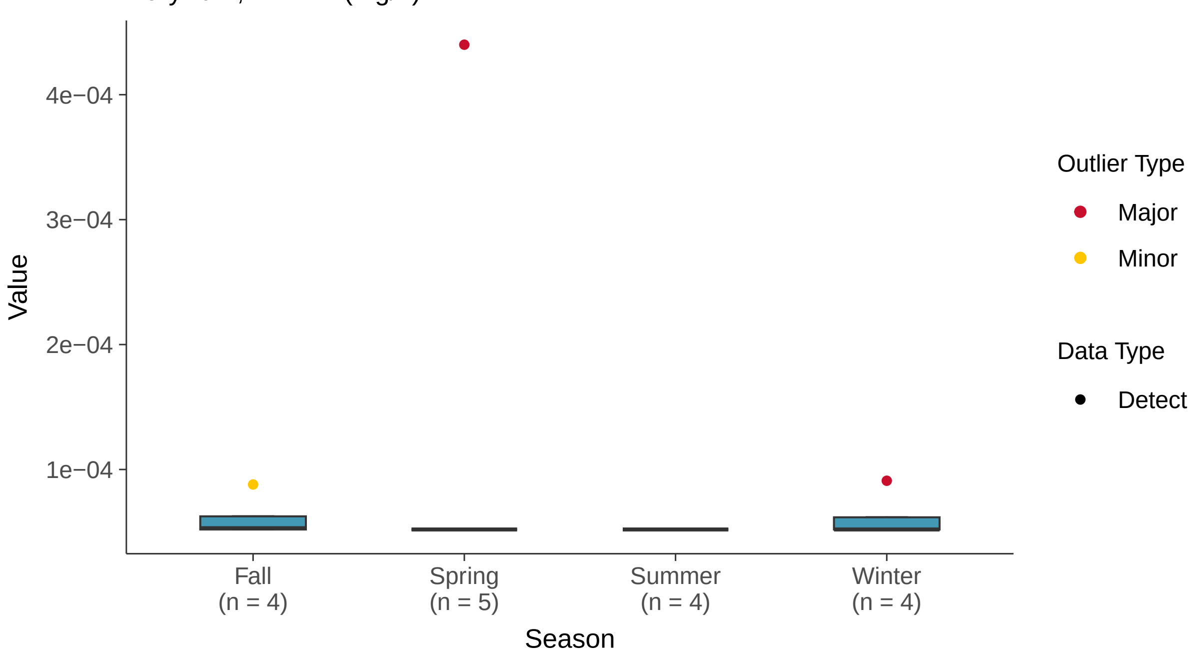
Boxplot

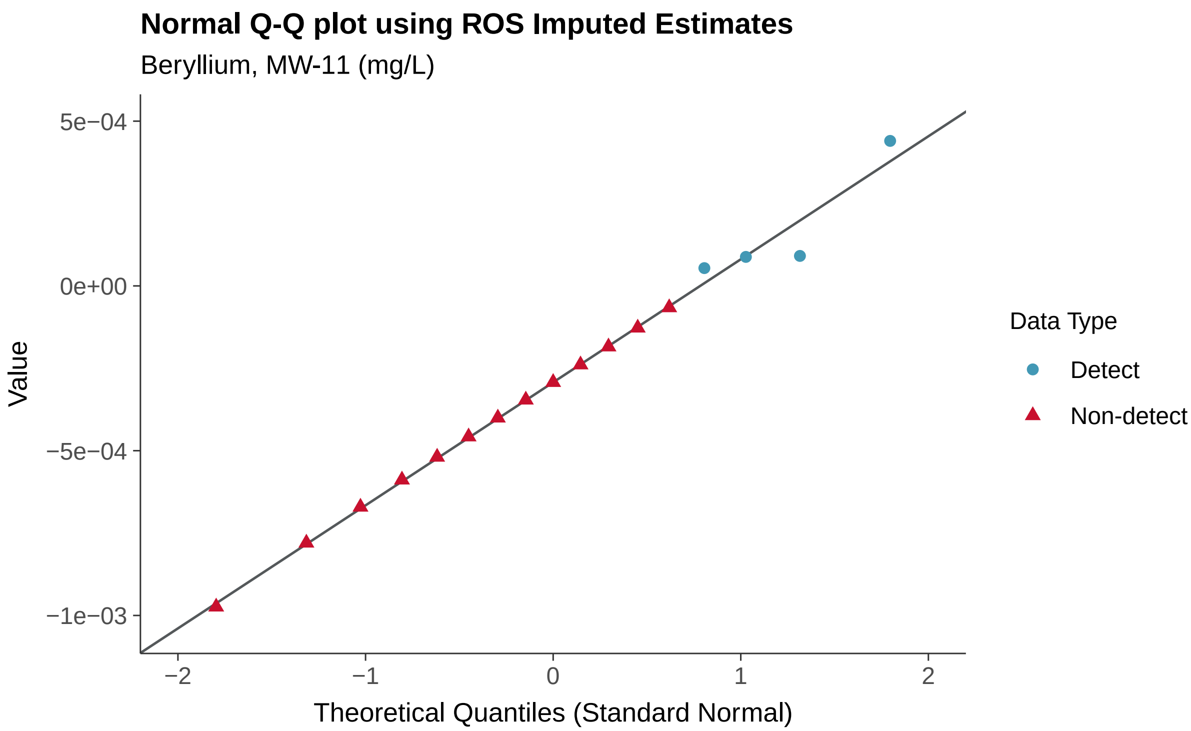
Beryllium, MW-11 (mg/L)

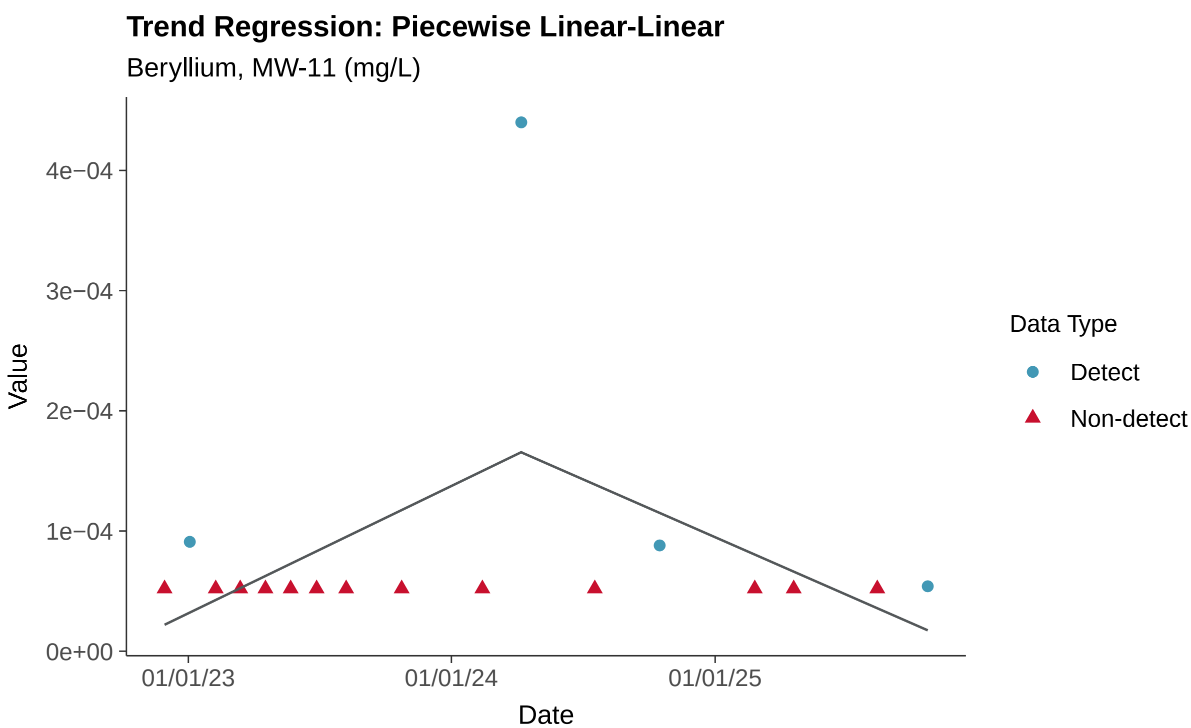


Boxplot by Season

Beryllium, MW-11 (mg/L)

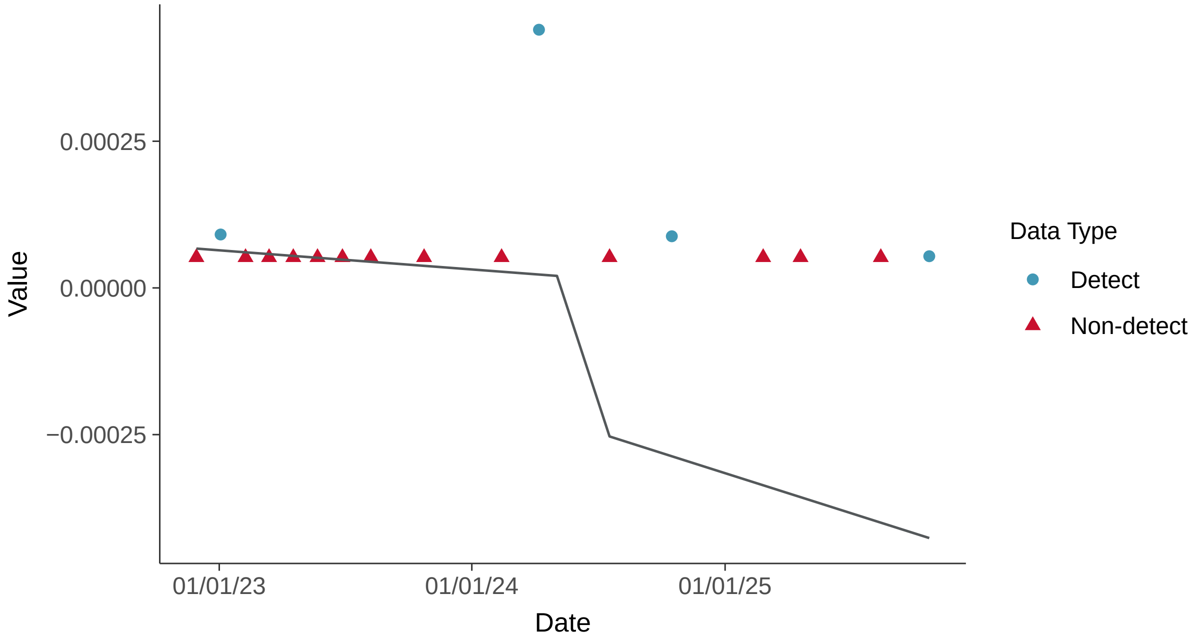



Normal Q-Q plot using ROS Imputed Estimates
Beryllium, MW-11 (mg/L)
Value
5e−04
0e+00
−5e−04
−1e−03
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Beryllium, MW-11 (mg/L)
Value
4e−04
3e−04
2e−04
1e−04
0e+00
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

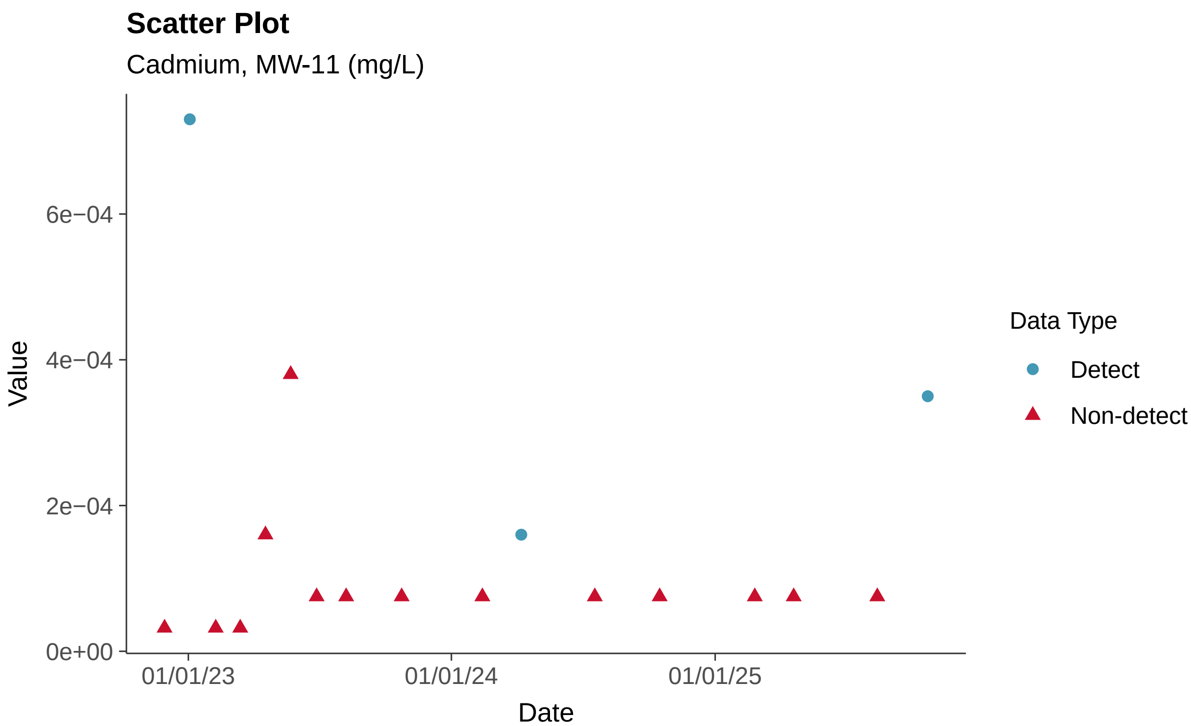
Trend Regression: Piecewise Linear-Linear-Linear

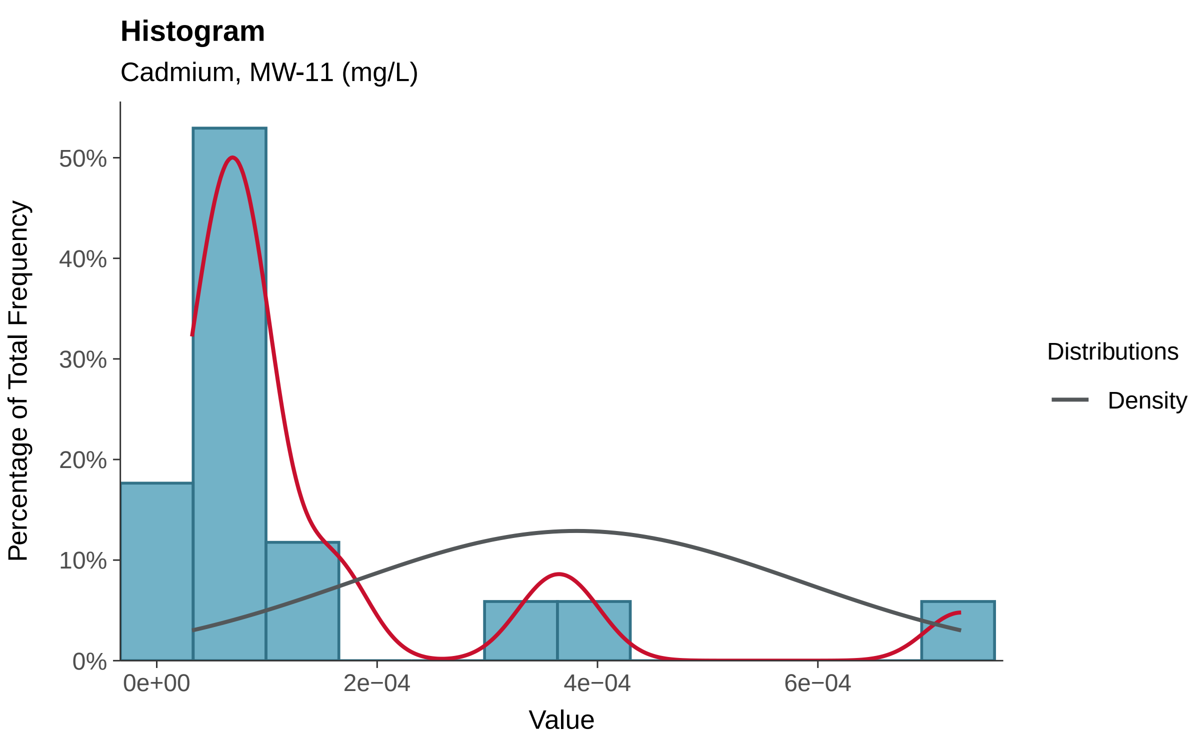
Beryllium, MW-11 (mg/L)



Appendix IV: Cadmium, MW-11

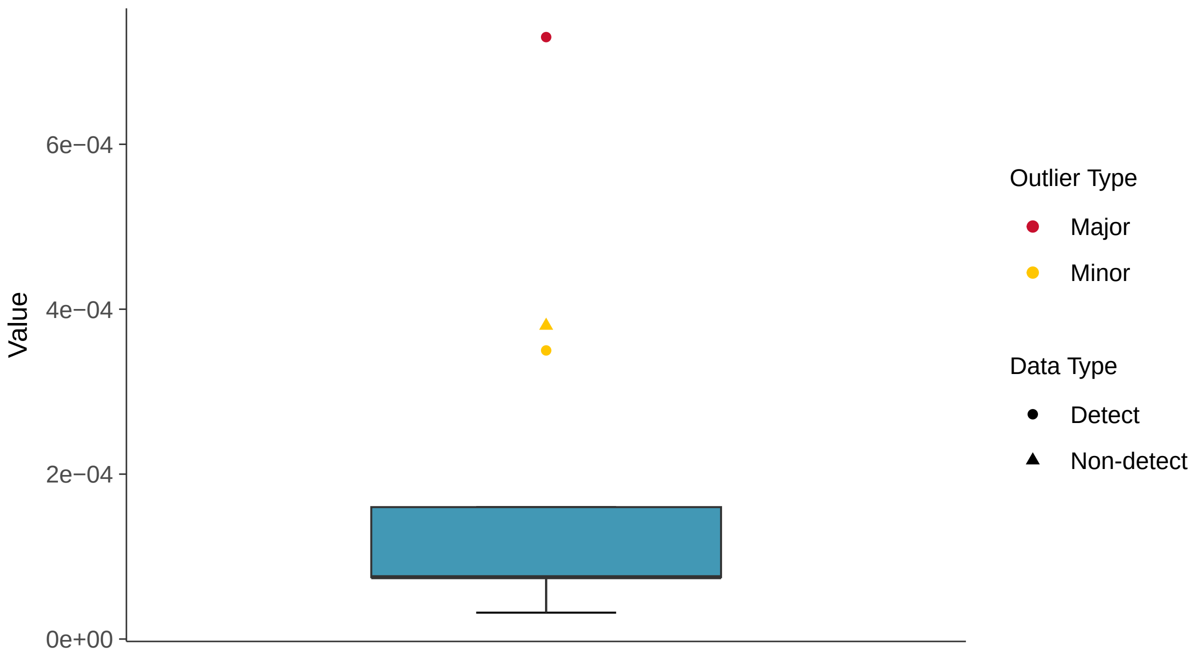
ID: 21_2_4_106





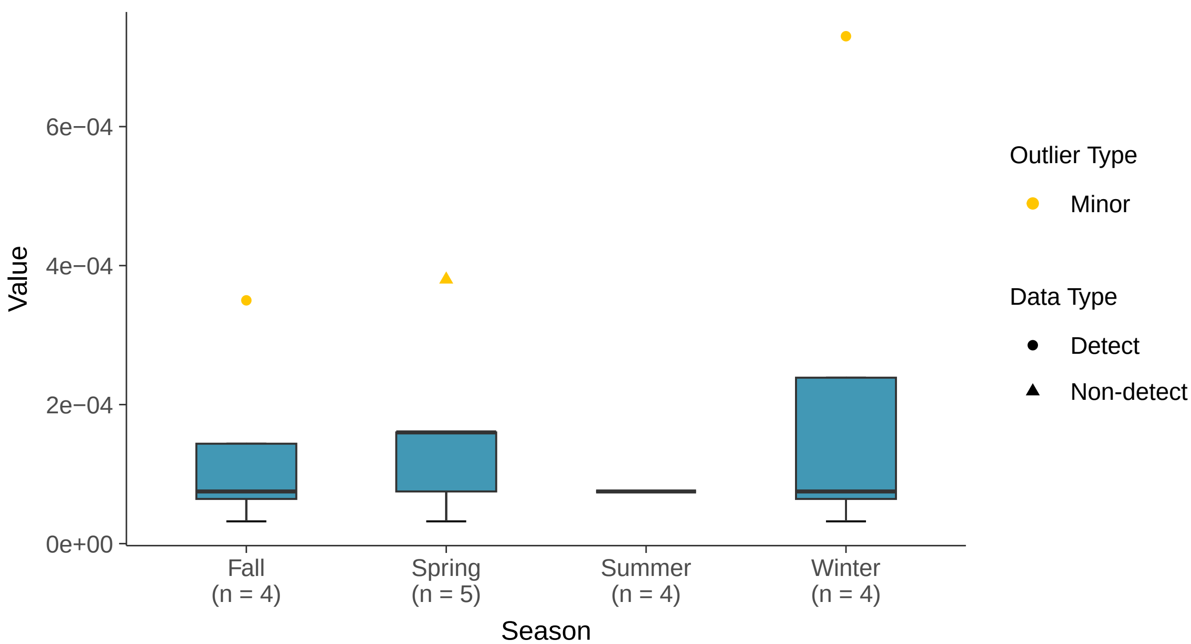
Boxplot

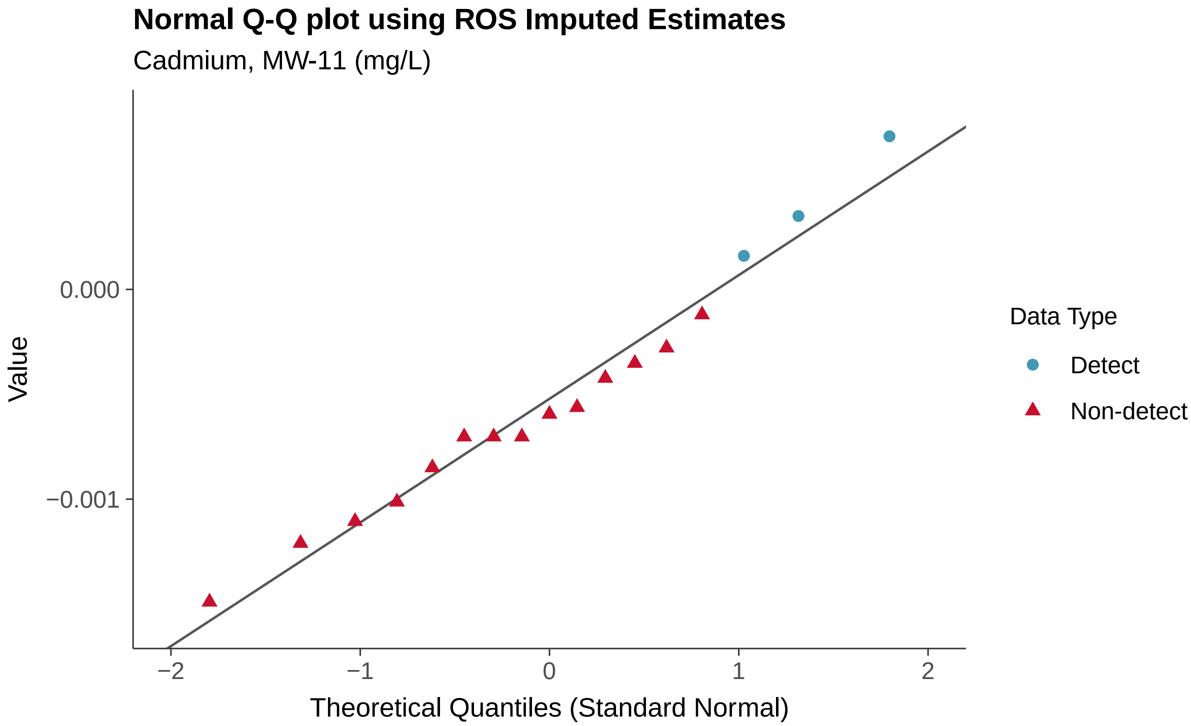
Cadmium, MW-11 (mg/L)

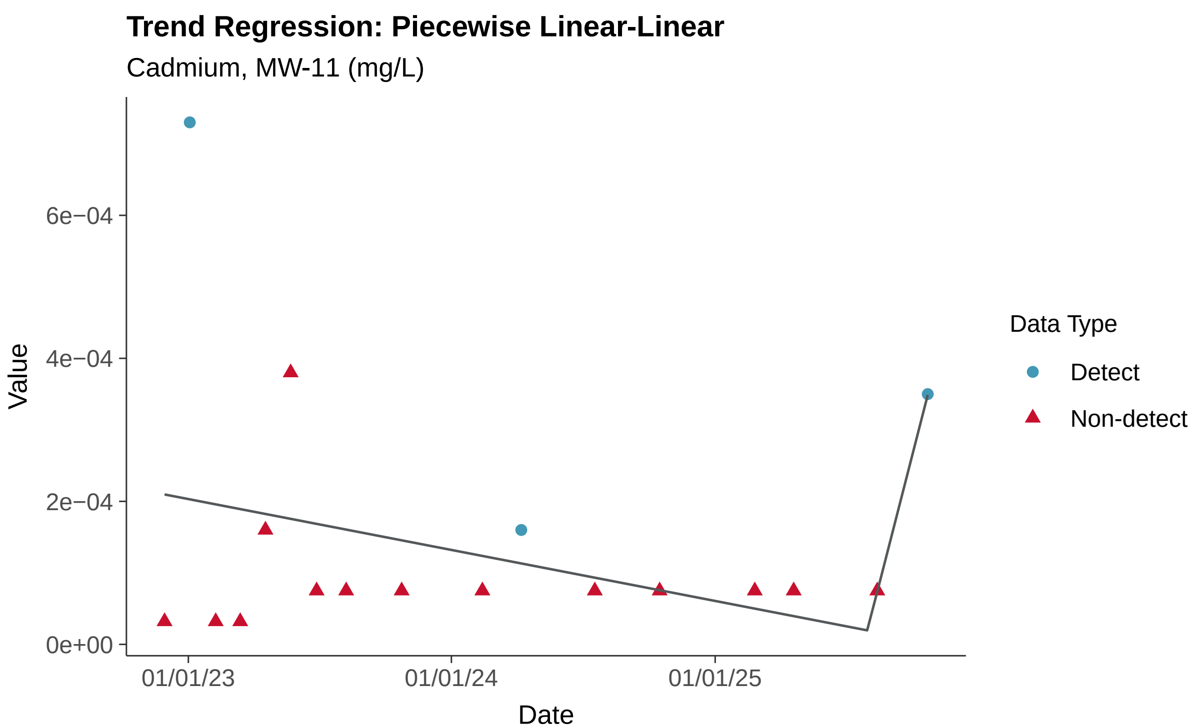


Boxplot by Season

Cadmium, MW-11 (mg/L)

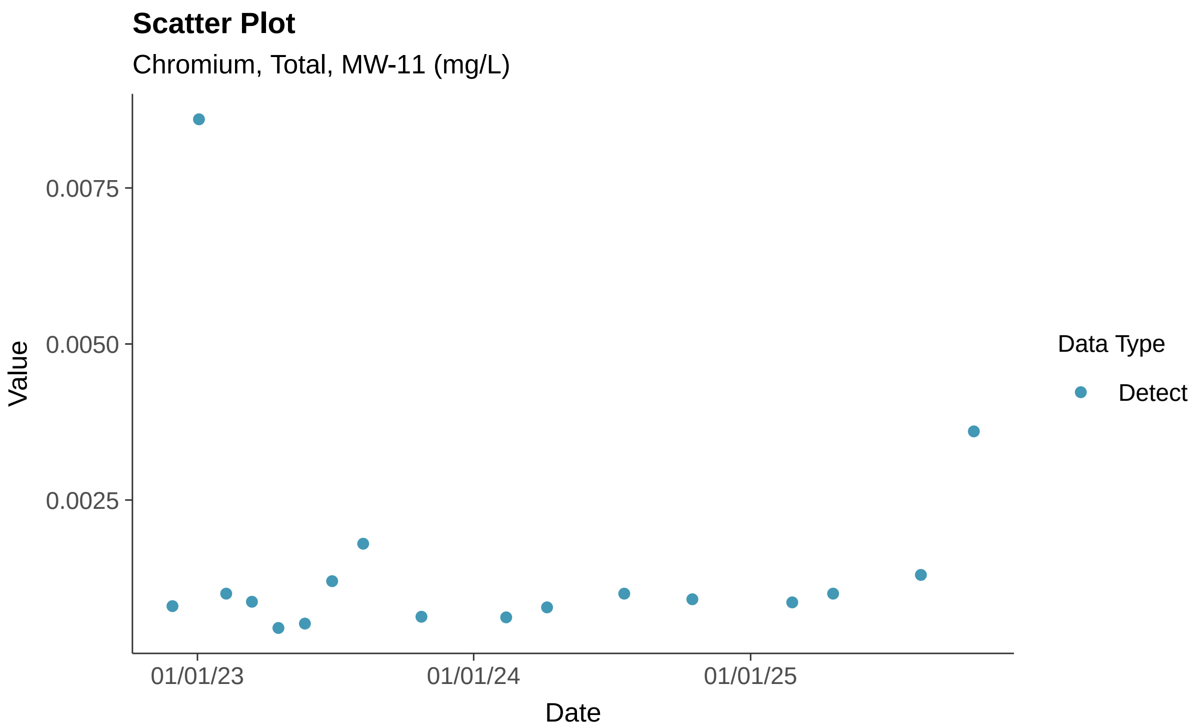


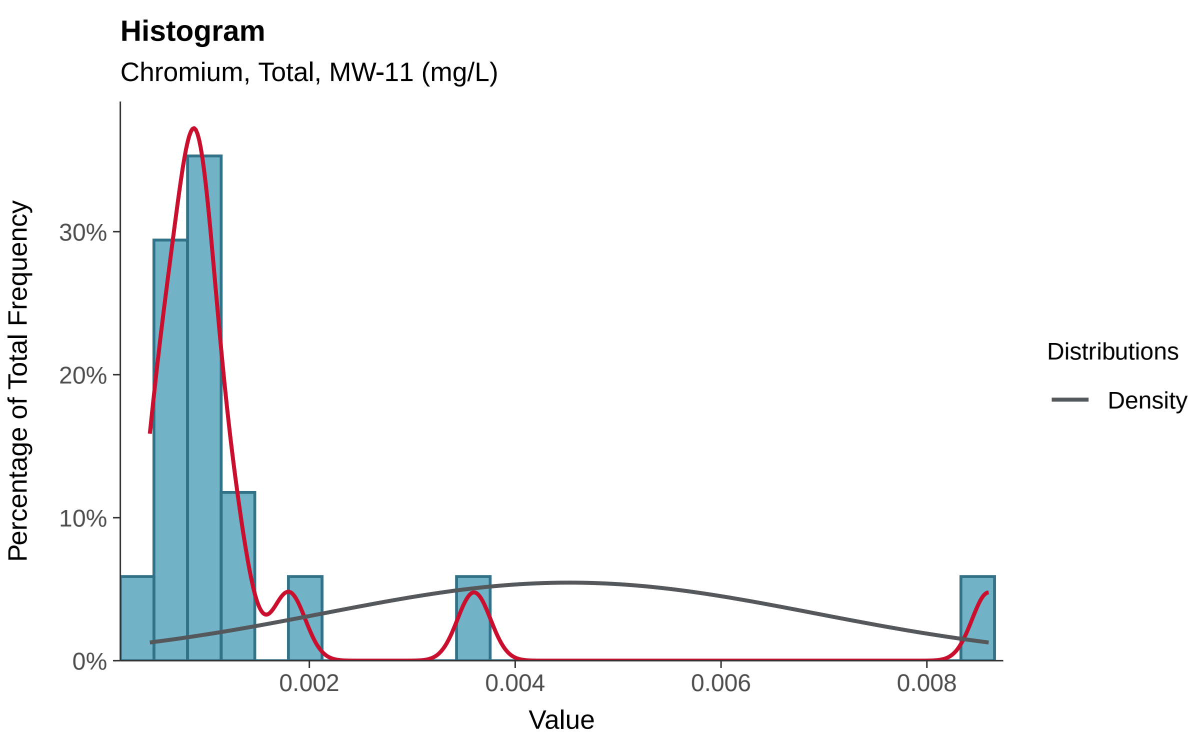

Normal Q-Q plot using ROS Imputed Estimates
Cadmium, MW-11 (mg/L)
Value
0.000
−0.001
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Cadmium, MW-11 (mg/L)
Value
6e−04
4e−04
2e−04
0e+00
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Appendix IV: Chromium, Total, MW-11

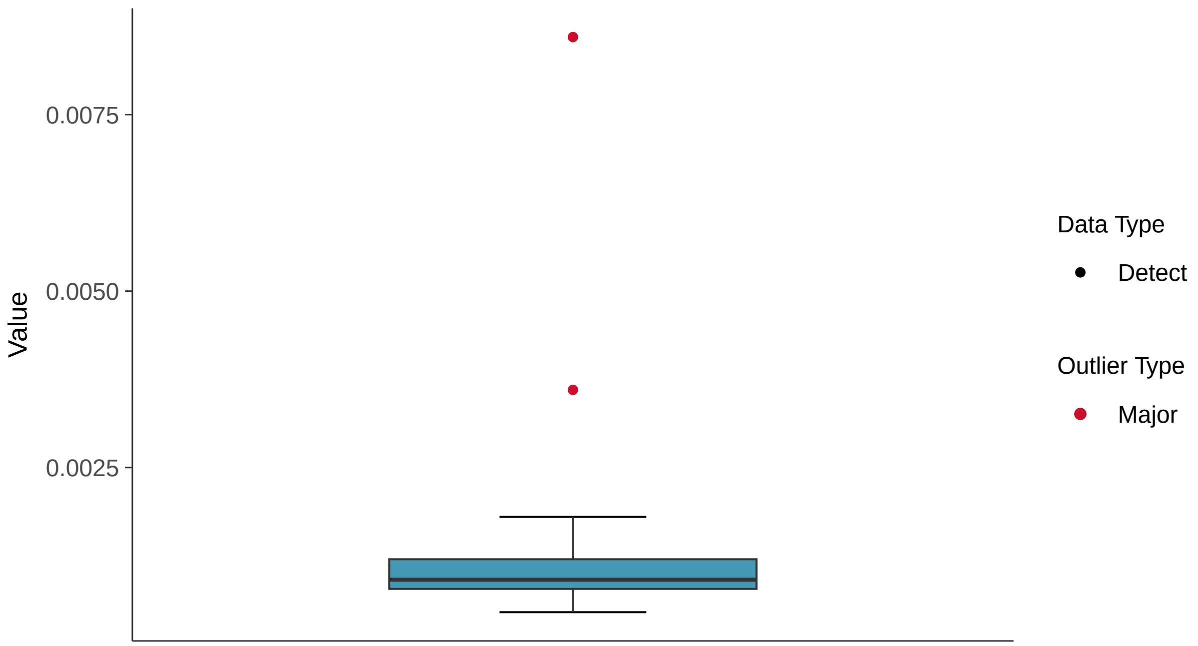
ID: 21_2_4_109





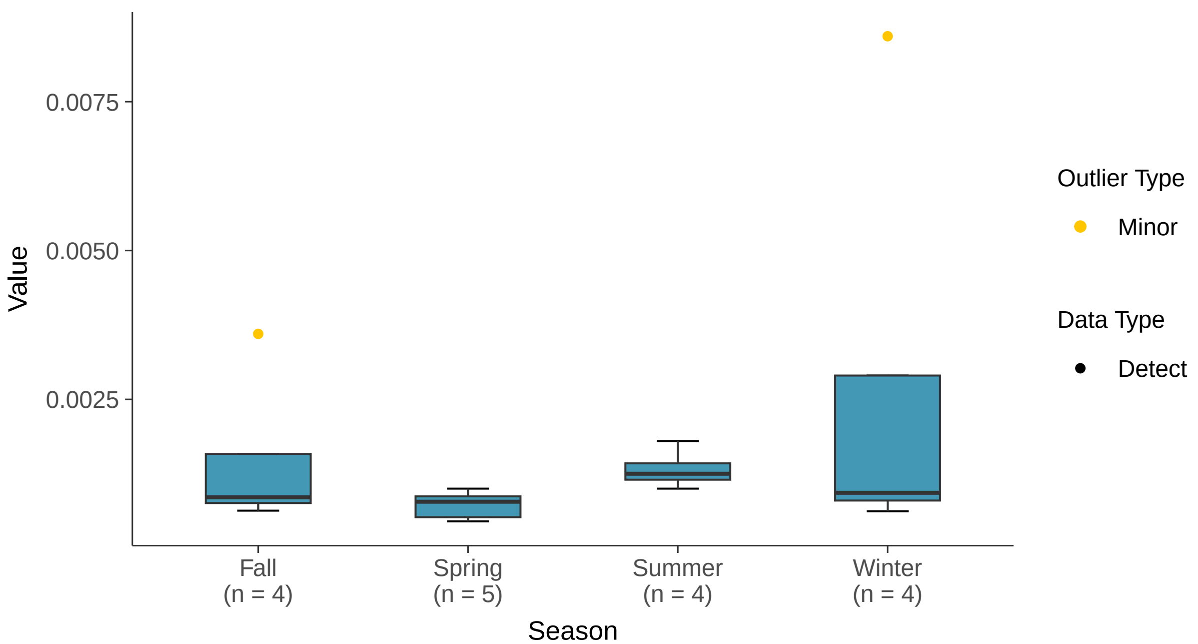
Boxplot

Chromium, Total, MW-11 (mg/L)



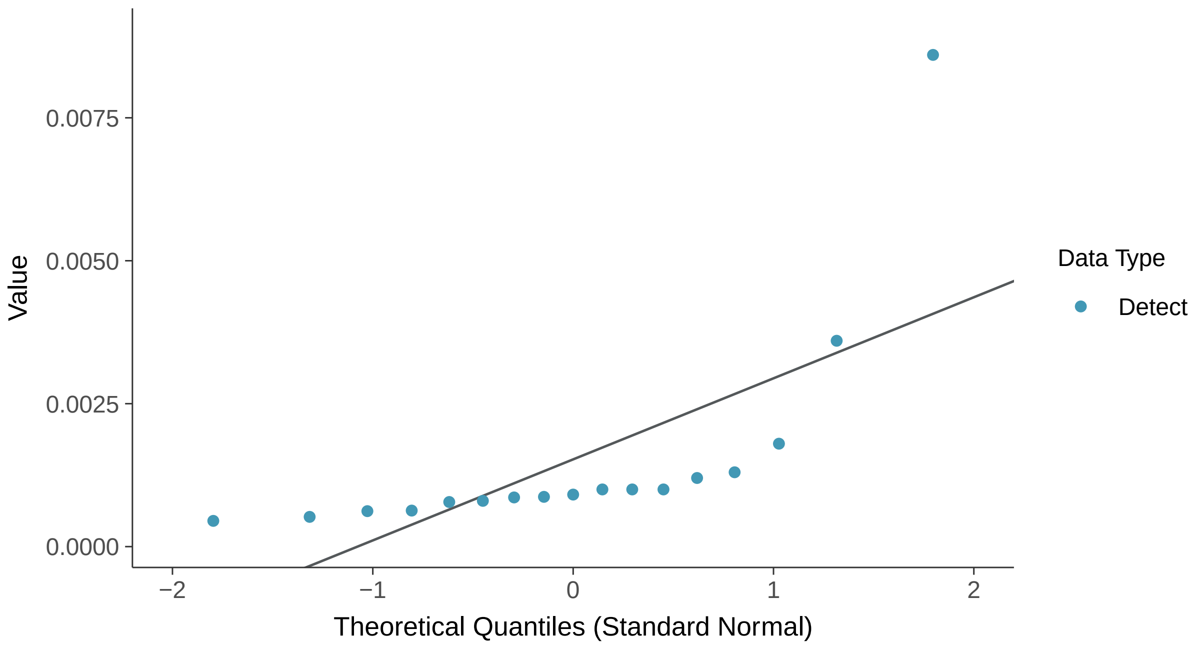
Boxplot by Season

Chromium, Total, MW-11 (mg/L)



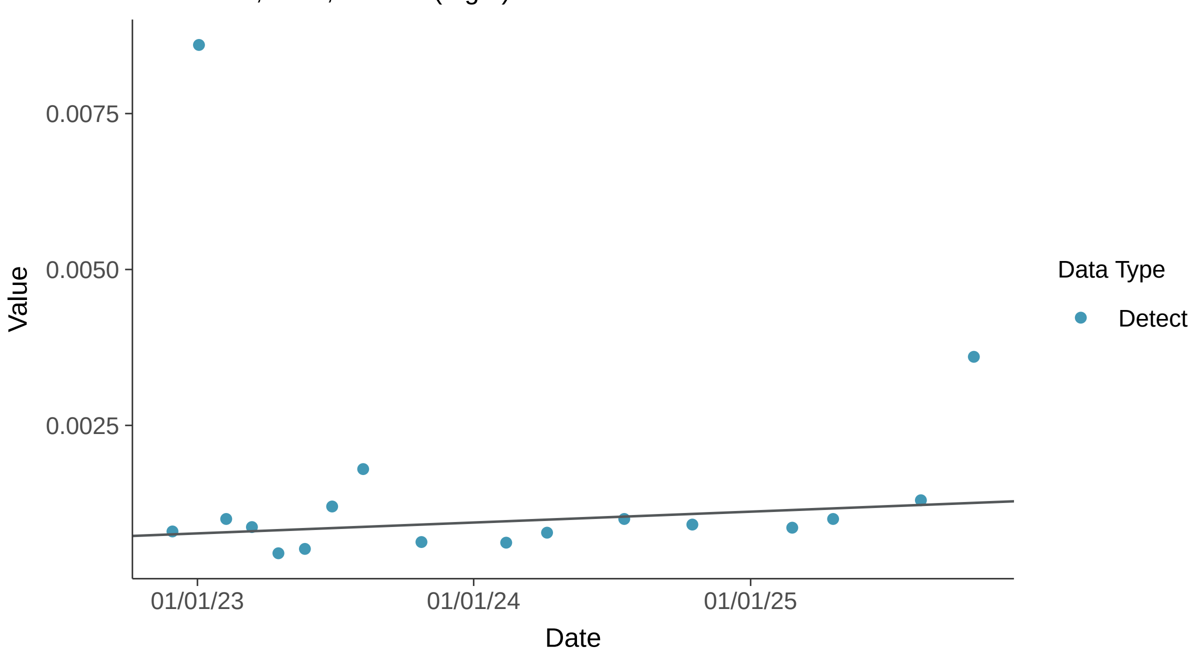
Normal Q-Q plot

Chromium, Total, MW-11 (mg/L)



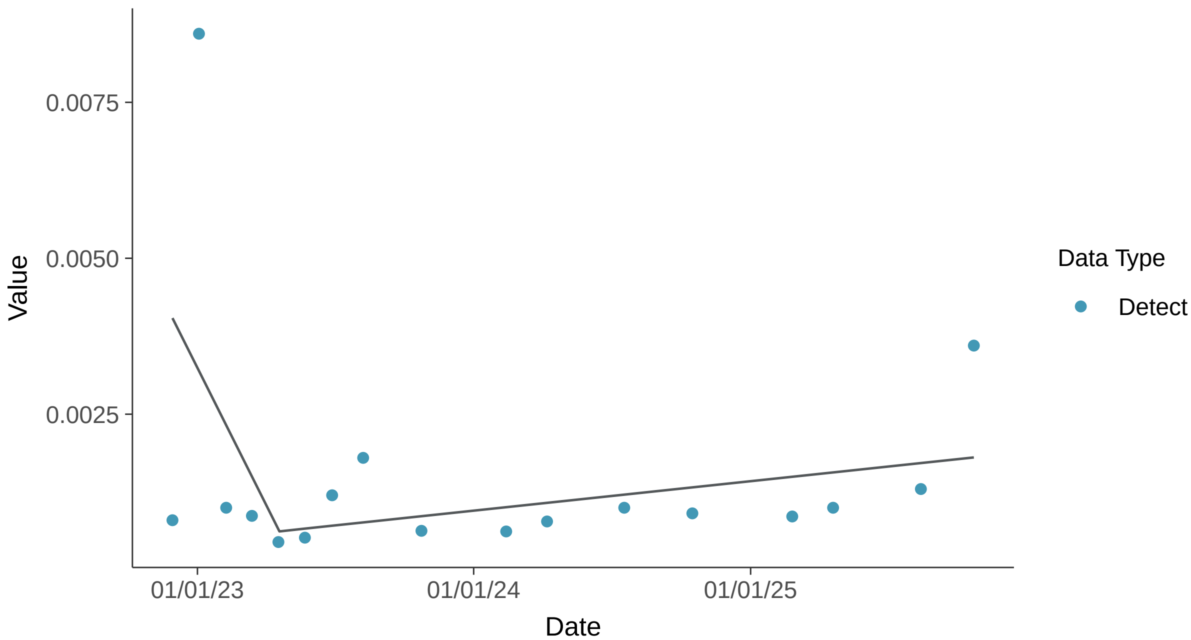
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Chromium, Total, MW-11 (mg/L)



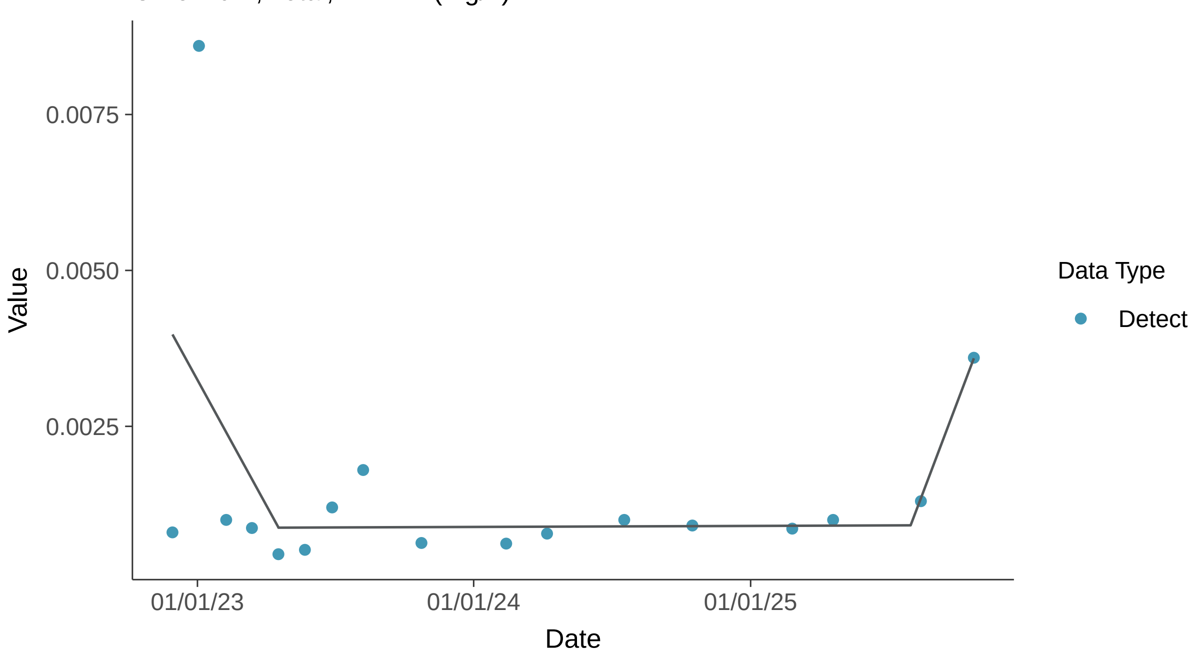
Trend Regression: Piecewise Linear-Linear

Chromium, Total, MW-11 (mg/L)



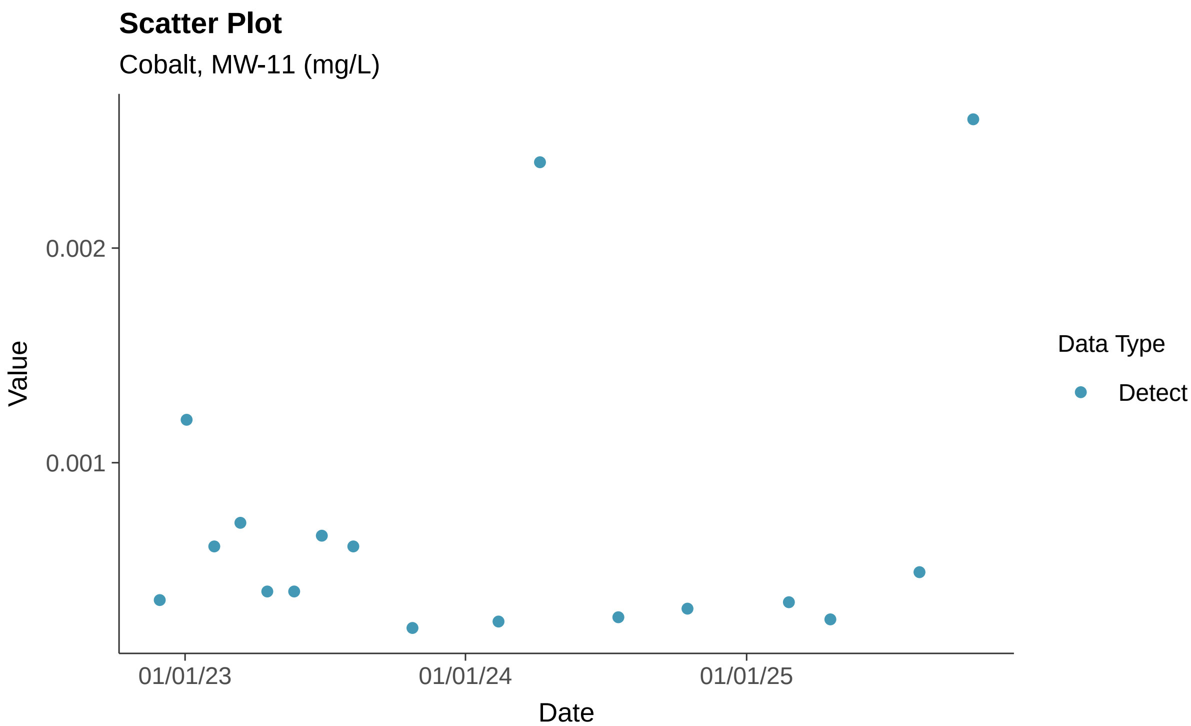
Trend Regression: Piecewise Linear-Linear-Linear

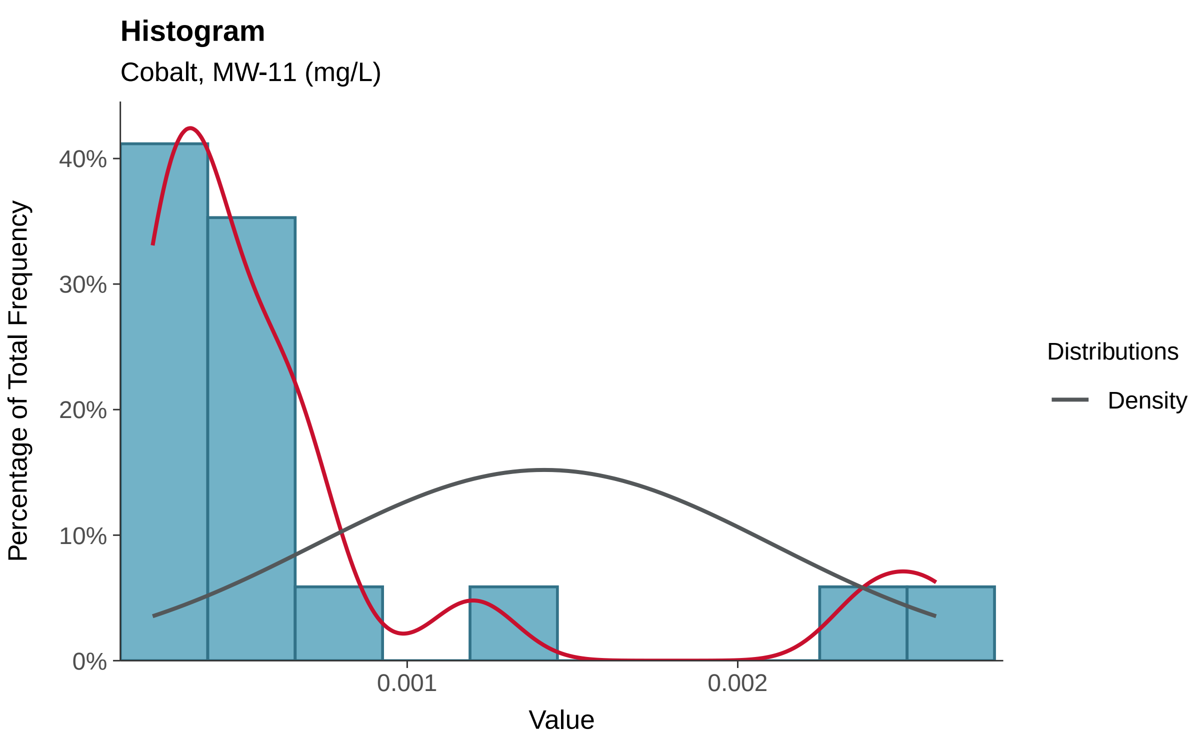
Chromium, Total, MW-11 (mg/L)



Appendix IV: Cobalt, MW-11

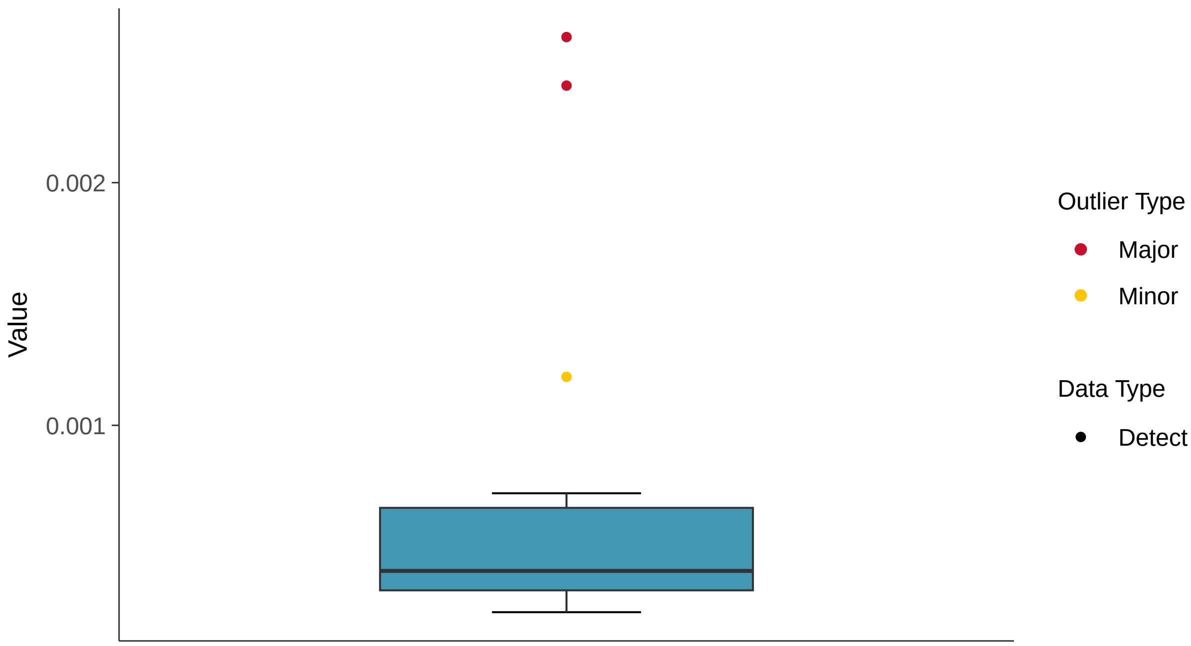
ID: 21_2_4_110





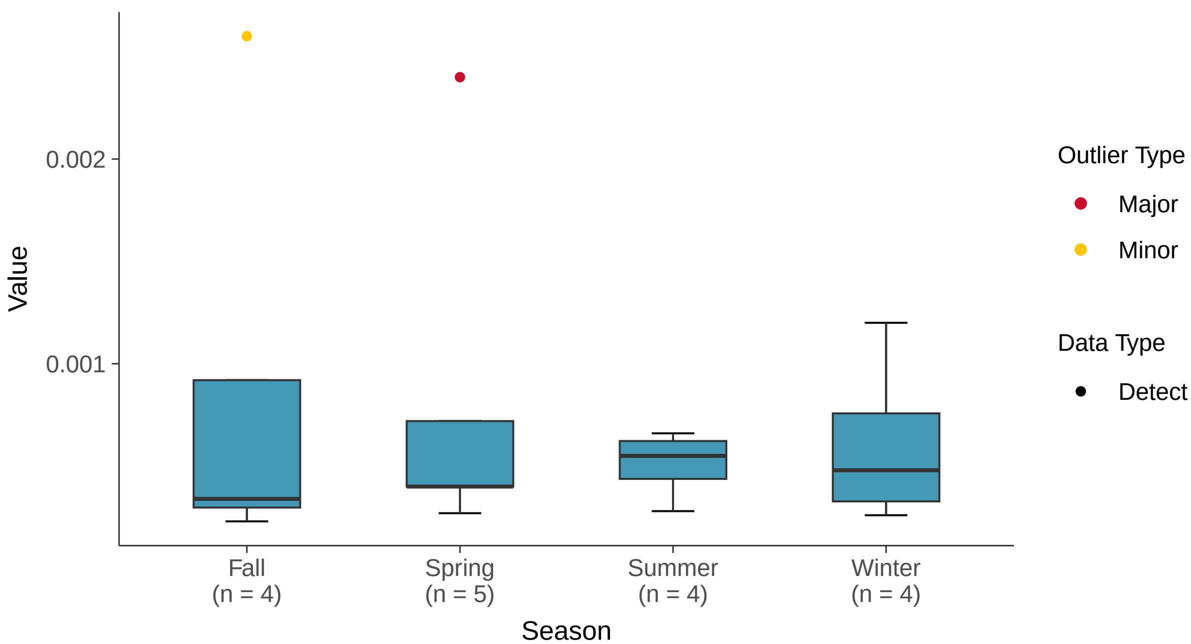
Boxplot

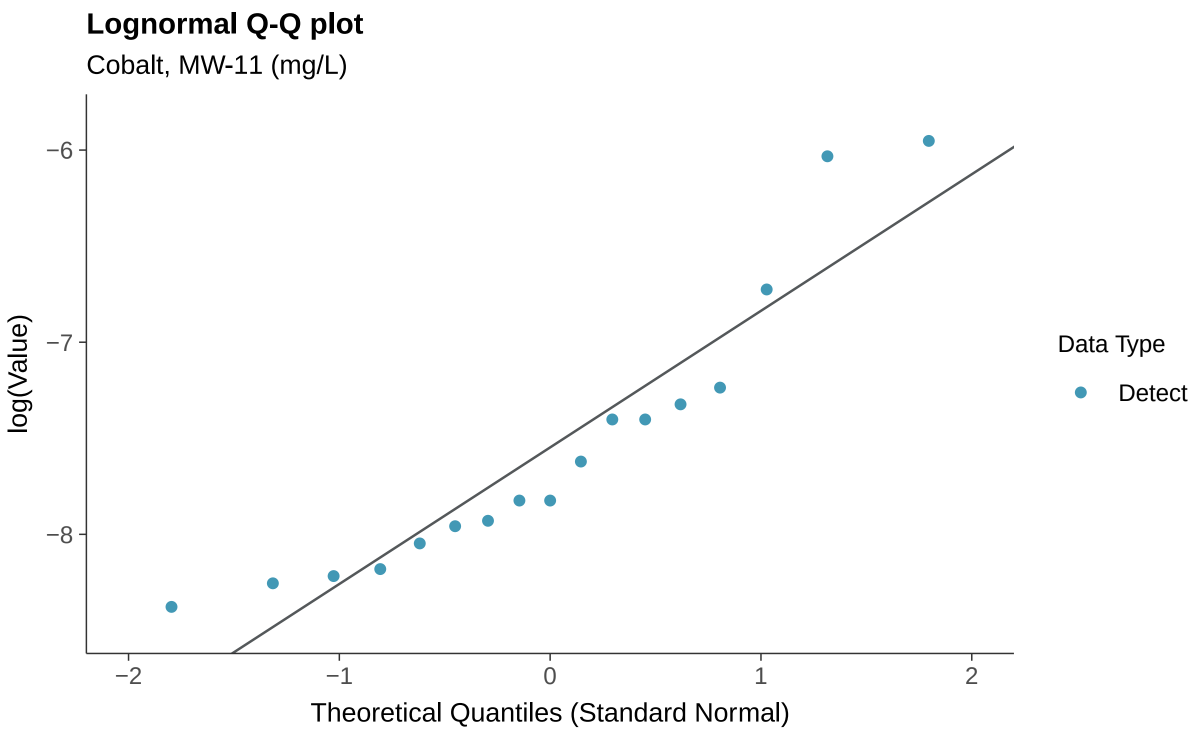
Cobalt, MW-11 (mg/L)

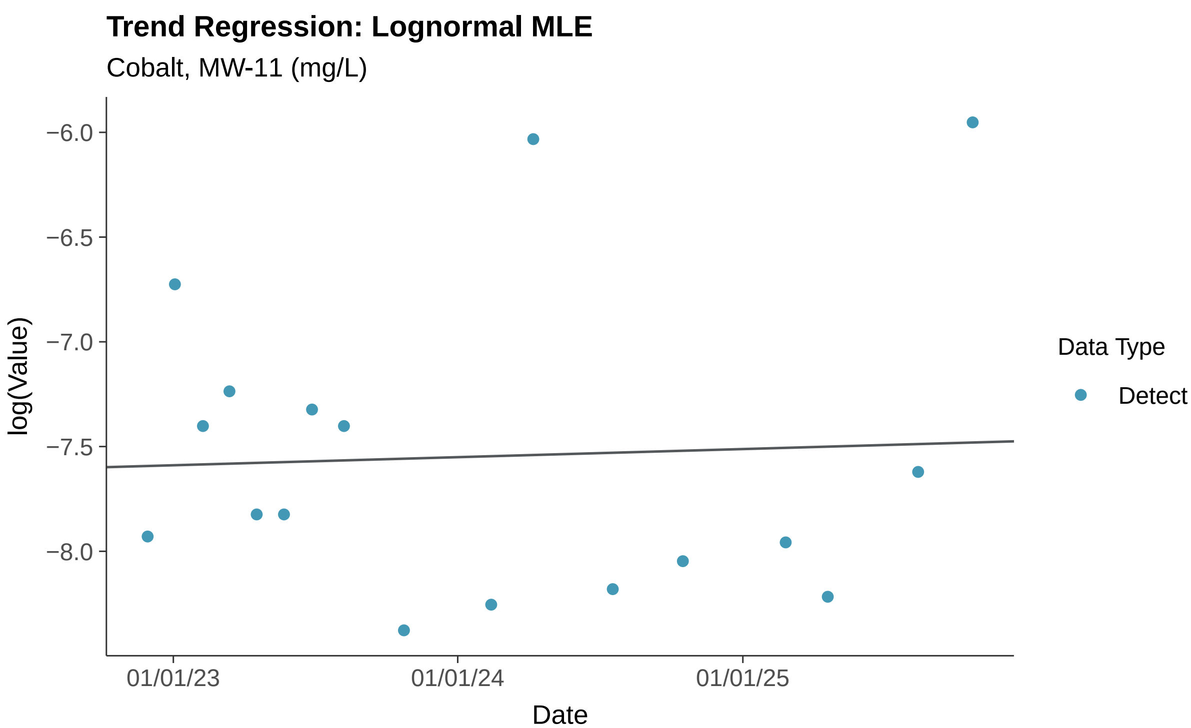


Boxplot by Season

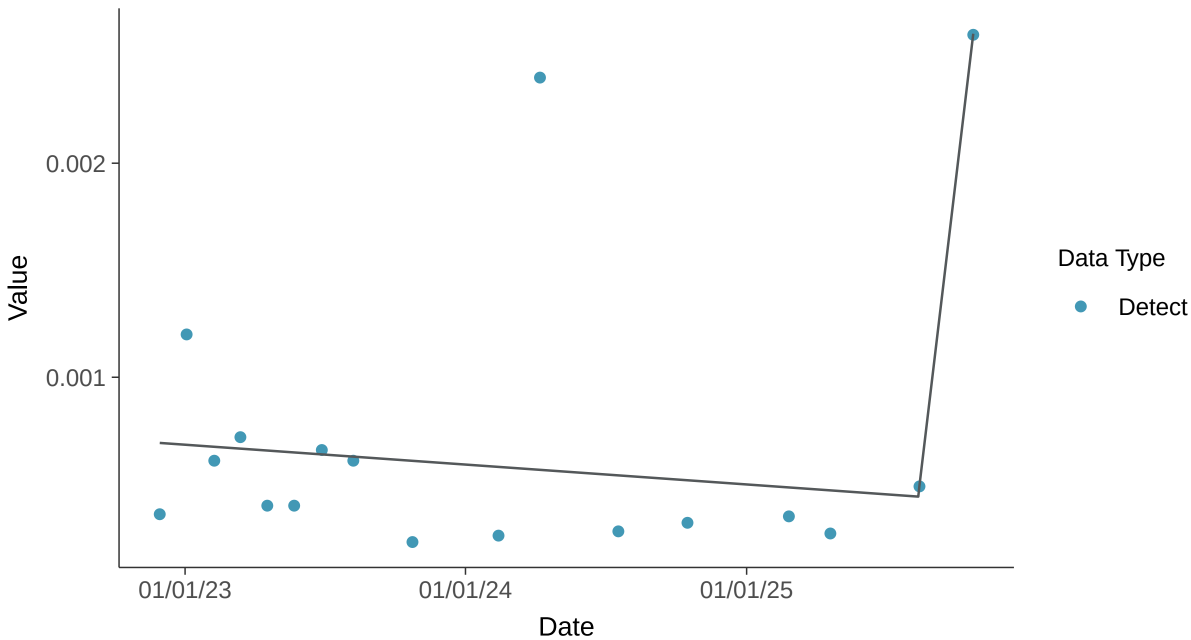
Cobalt, MW-11 (mg/L)



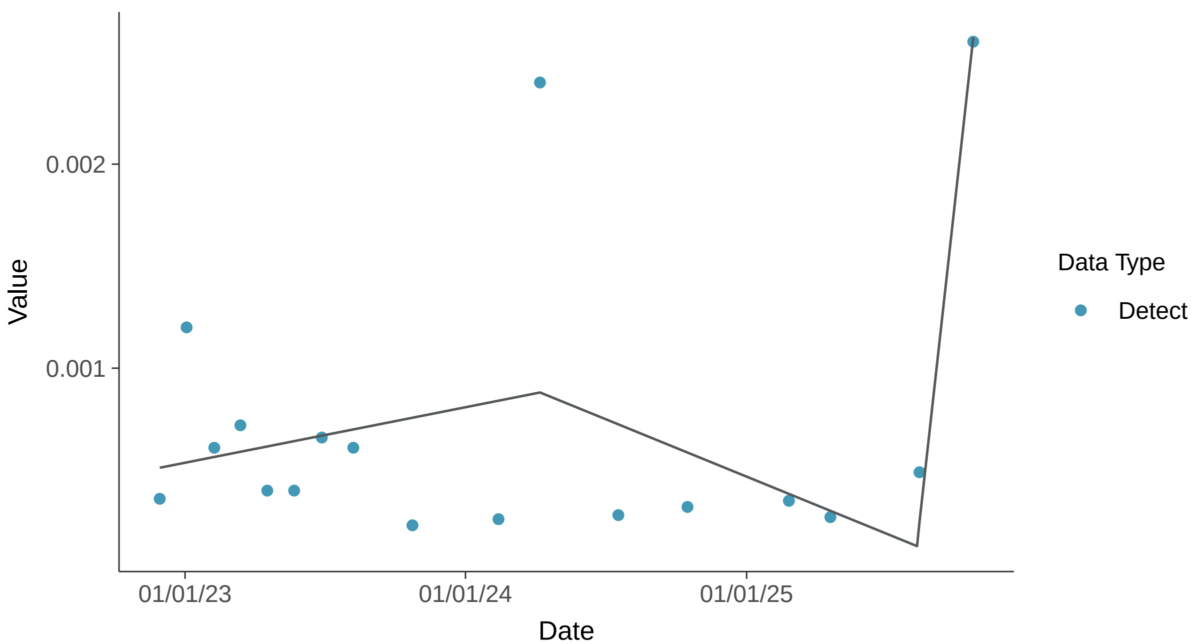

Lognormal Q-Q plot
Cobalt, MW-11 (mg/L)
log(Value)
−6
−7
−8
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Lognormal MLE
Cobalt, MW-11 (mg/L)
log(Value)
−6.0
−6.5
−7.0
−7.5
−8.0
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear
Cobalt, MW-11 (mg/L)

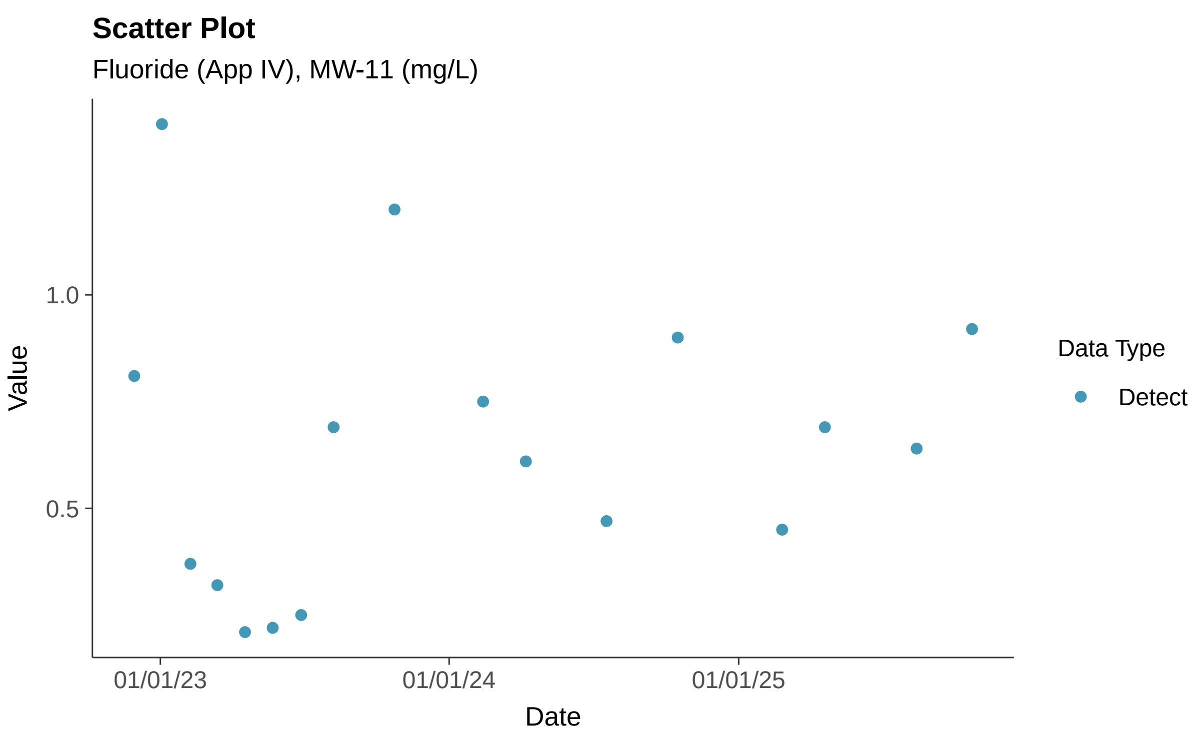


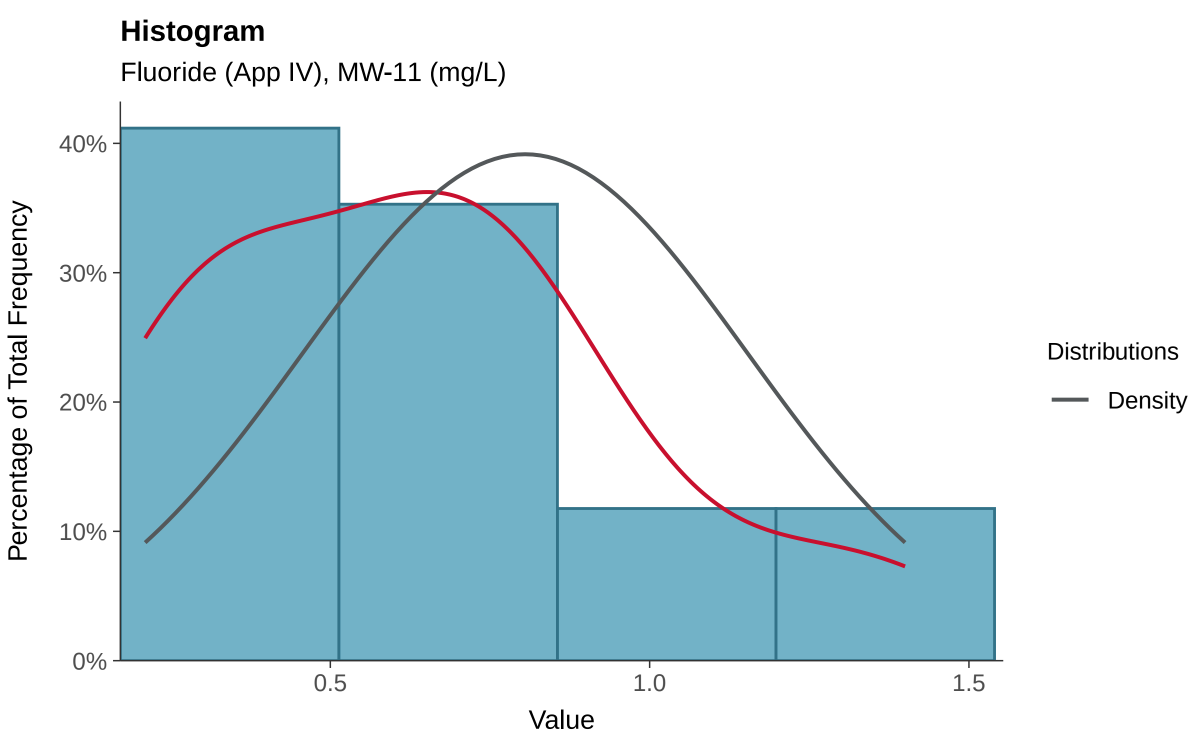
Trend Regression: Piecewise Linear-Linear-Linear
Cobalt, MW-11 (mg/L)



Appendix IV: Fluoride (App IV), MW-11

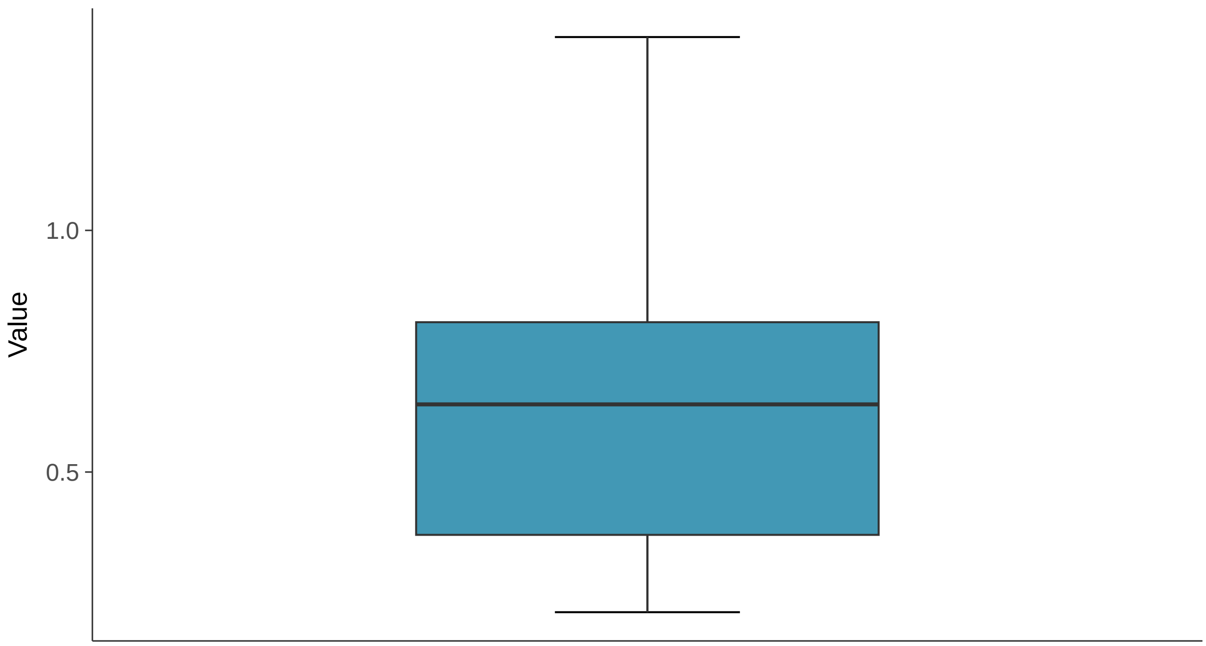
ID: 21_2_4_113





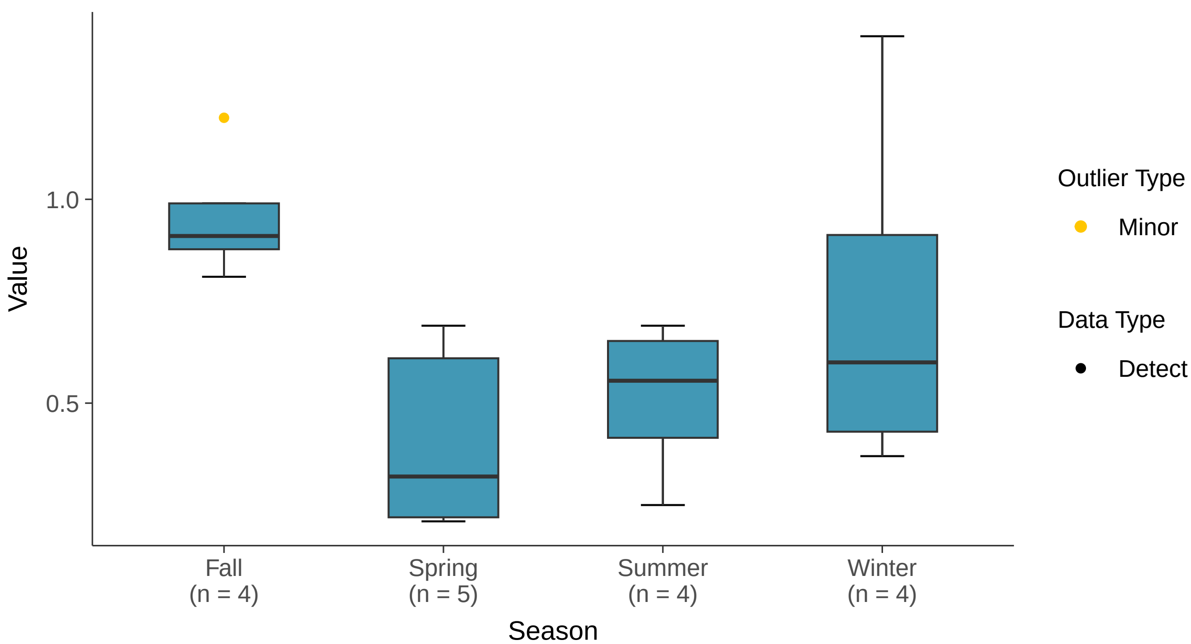
Boxplot

Fluoride (App IV), MW-11 (mg/L)



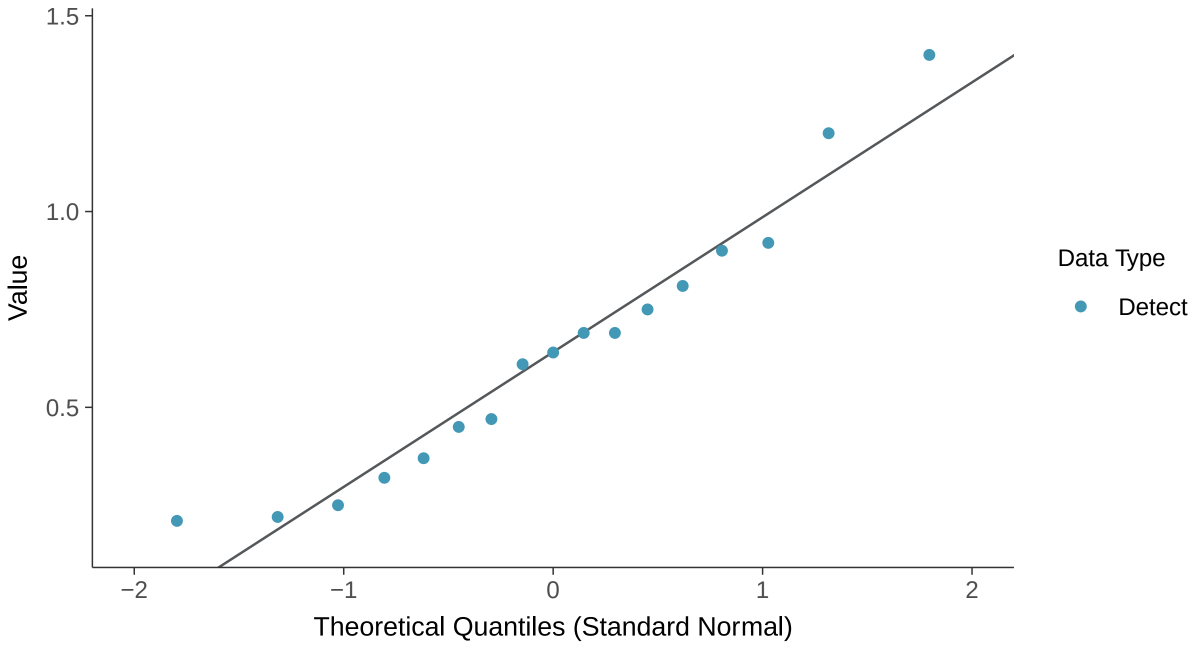
Boxplot by Season

Fluoride (App IV), MW-11 (mg/L)



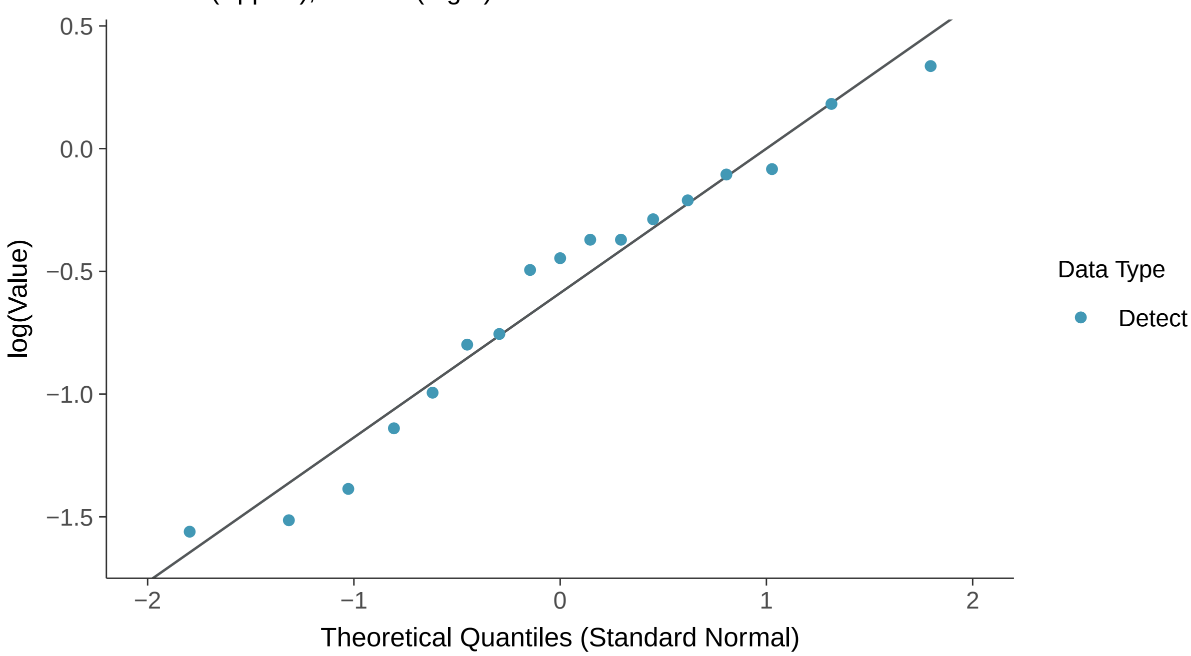
Normal Q-Q plot

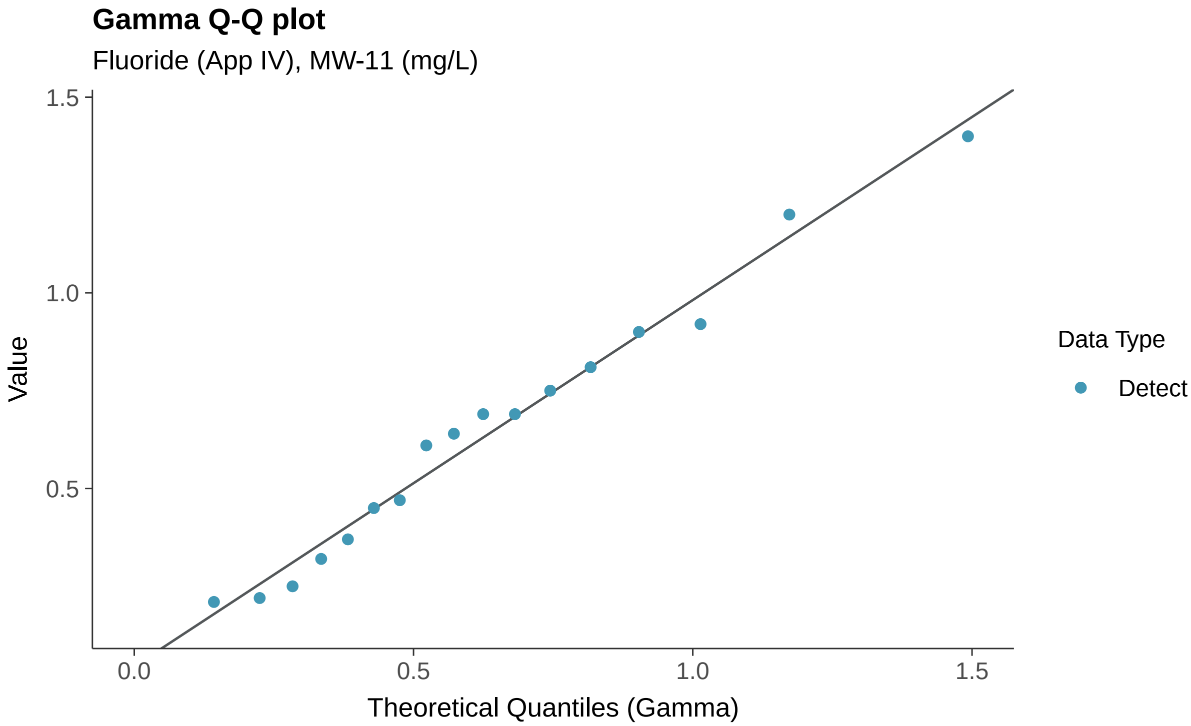
Fluoride (App IV), MW-11 (mg/L)

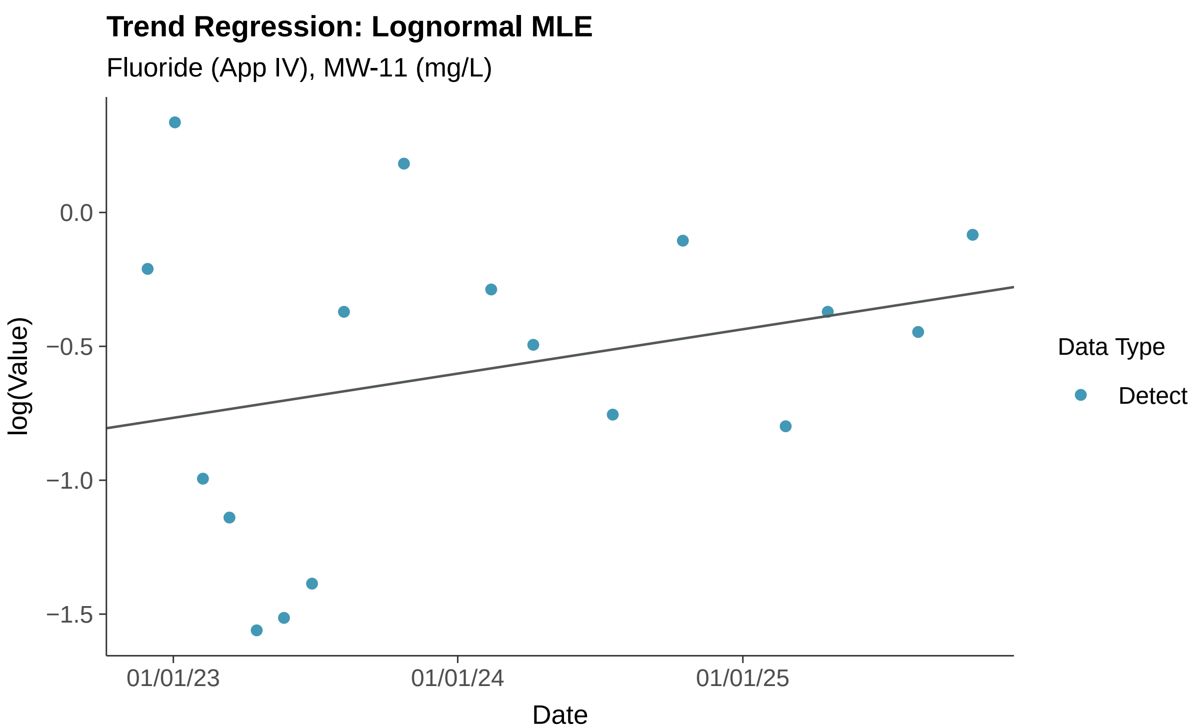


Lognormal Q-Q plot

Fluoride (App IV), MW-11 (mg/L)

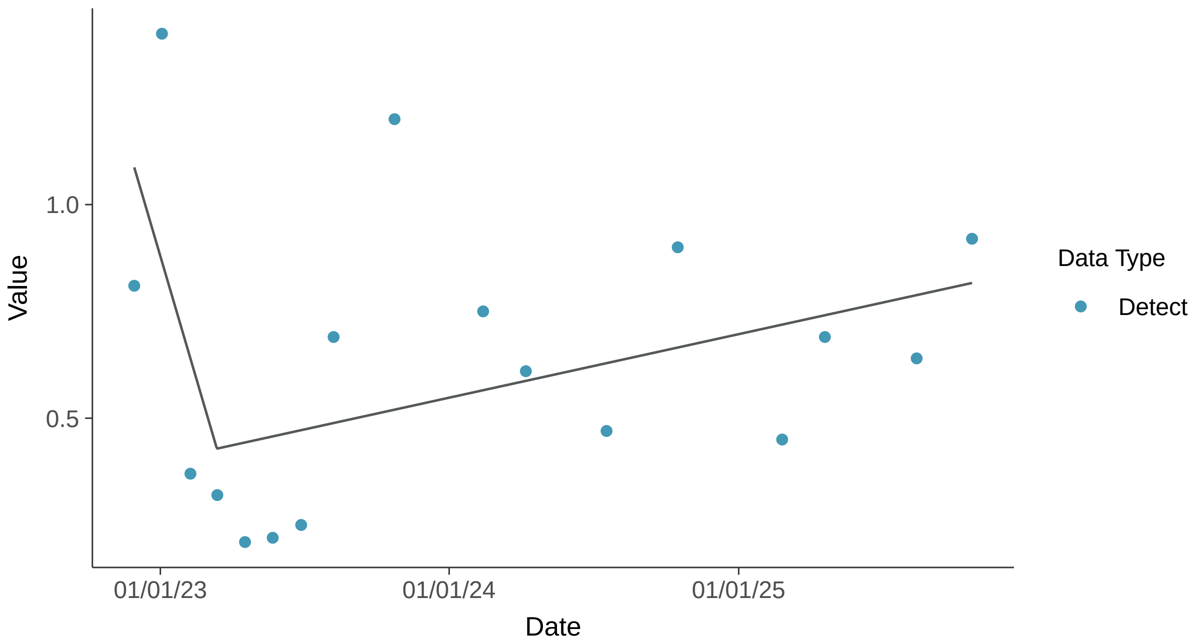



Gamma Q-Q plot
Fluoride (App IV), MW-11 (mg/L)
Value
1.5
1.0
0.5
0.0
0.5
1.0
1.5
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Fluoride (App IV), MW-11 (mg/L)
log(Value)
0.0
−0.5
−1.0
−1.5
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

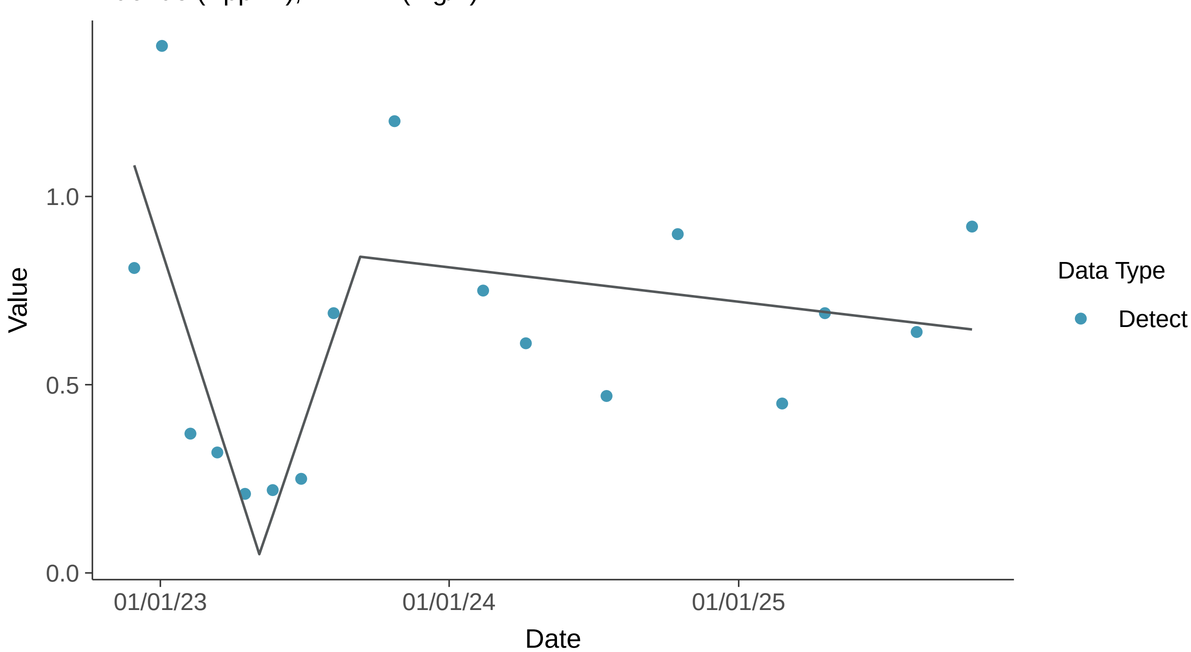
Trend Regression: Piecewise Linear-Linear

Fluoride (App IV), MW-11 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Fluoride (App IV), MW-11 (mg/L)

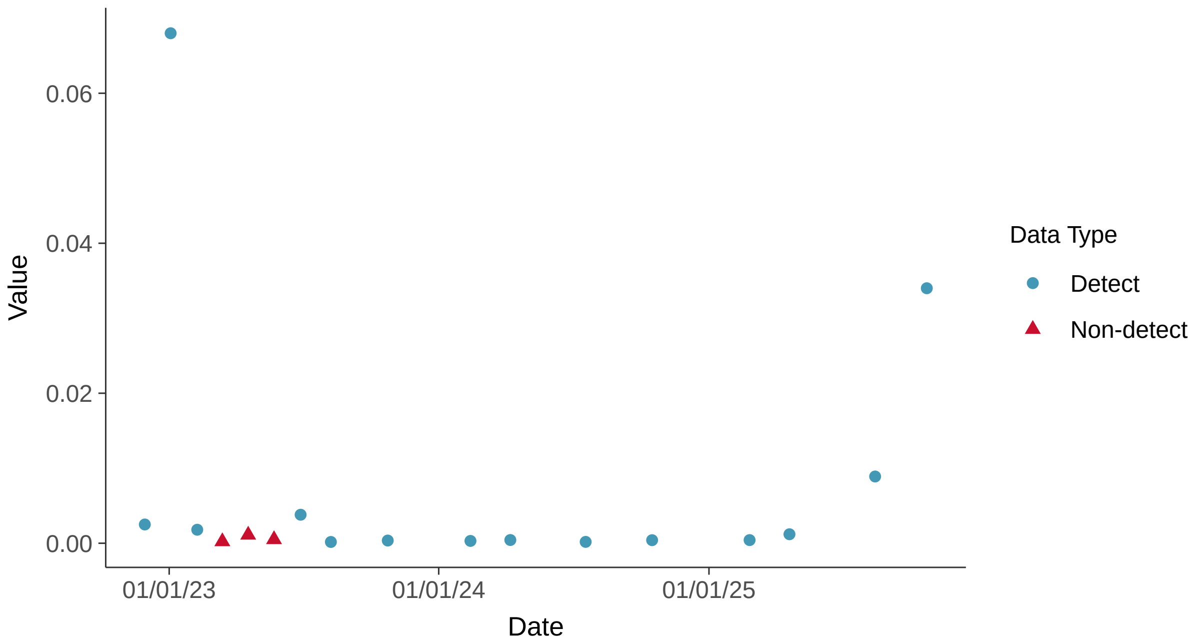


Appendix IV: Lead, MW-11

ID: 21_2_4_115

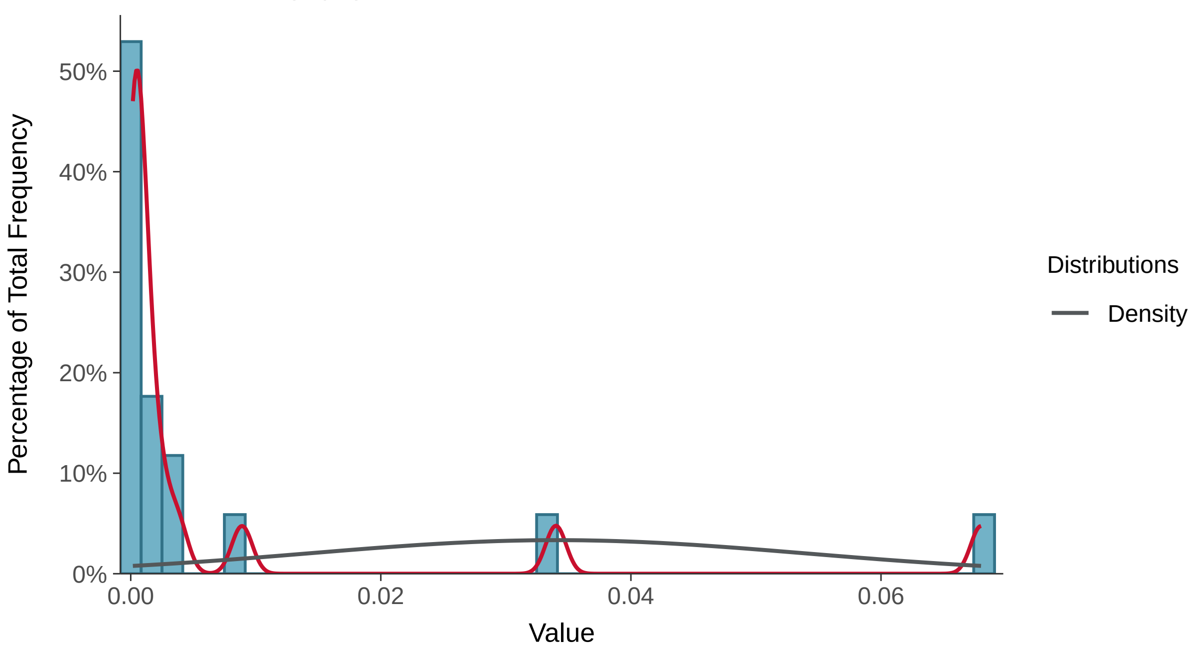
Scatter Plot

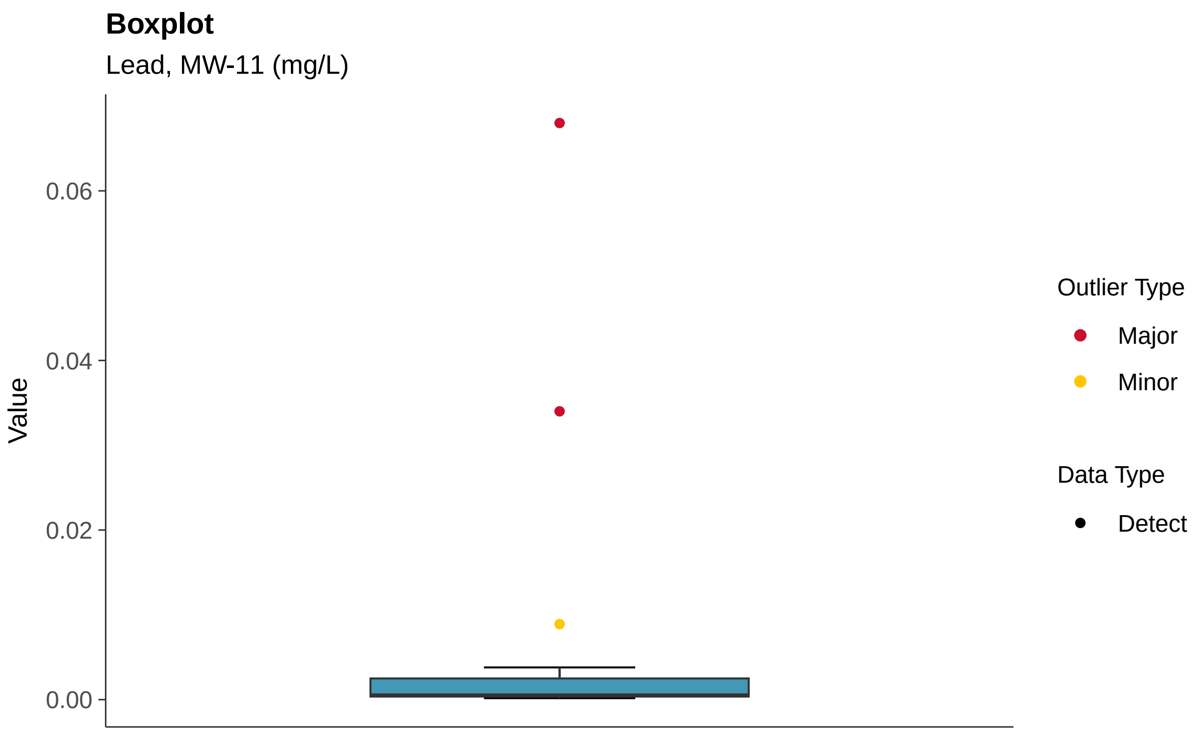
Lead, MW-11 (mg/L)

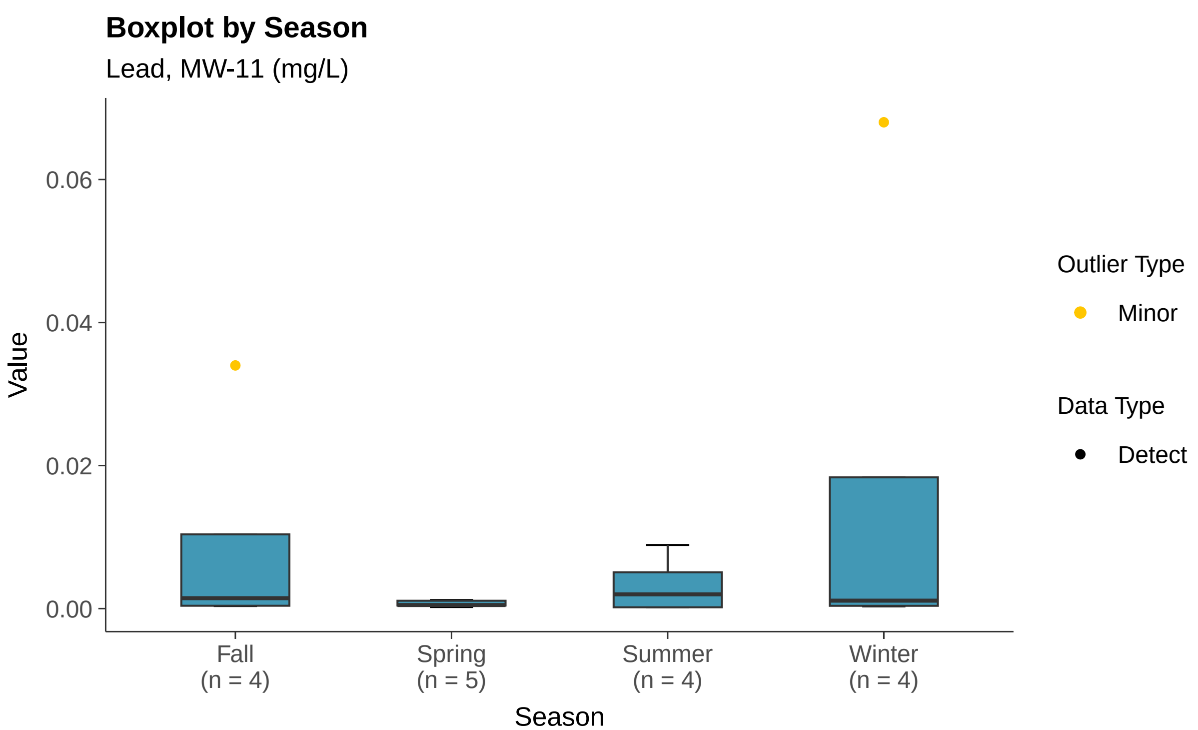


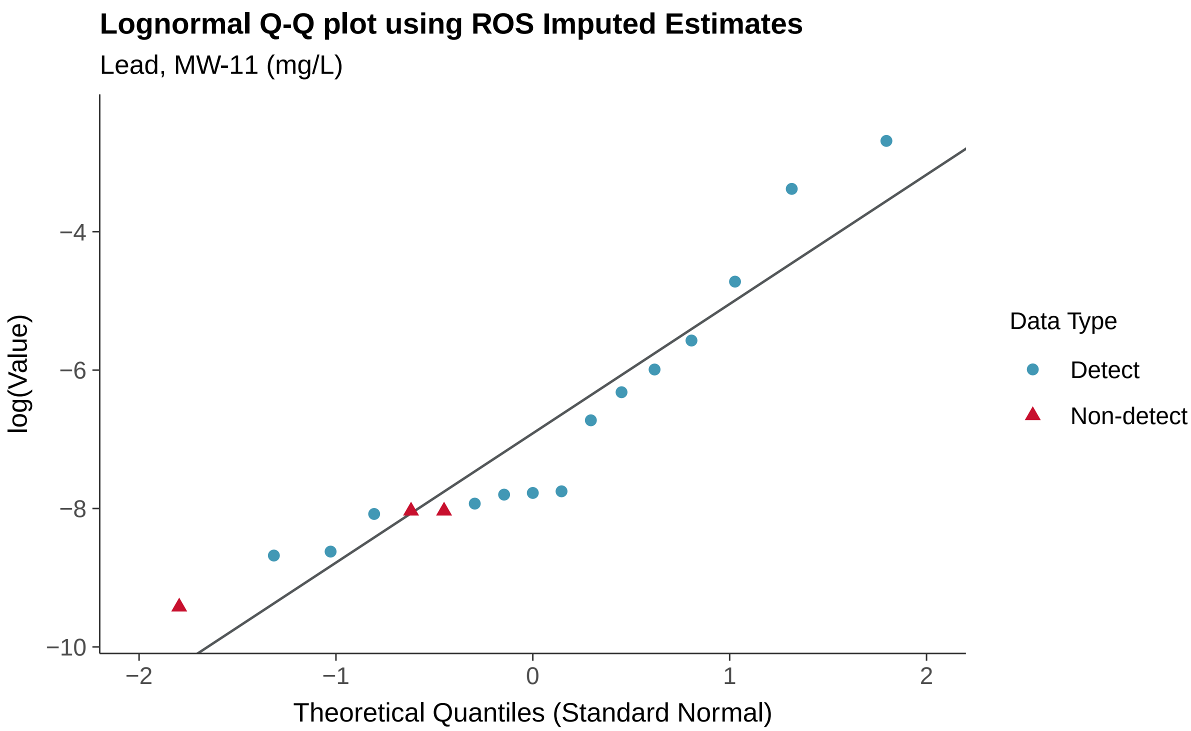
Histogram

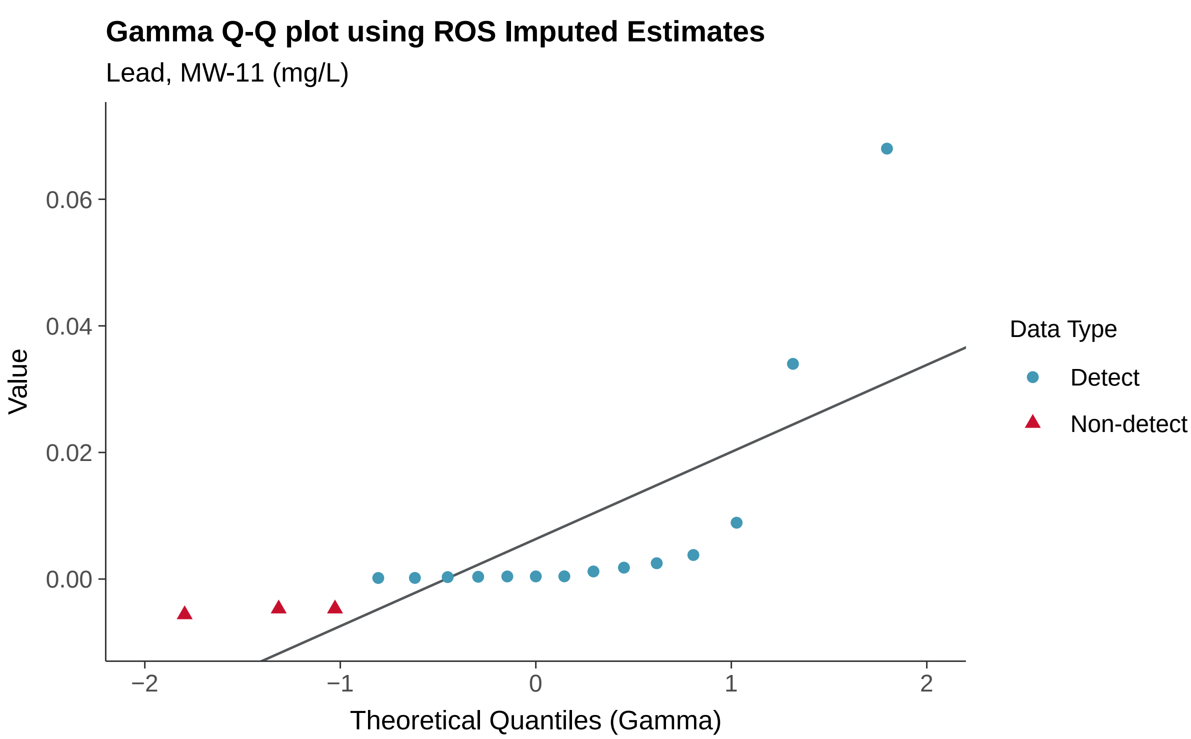
Lead, MW-11 (mg/L)




Boxplot
Lead, MW-11 (mg/L)
Value
0.06
0.04
0.02
0.00
Outlier Type
Major
Minor
Data Type
Detect

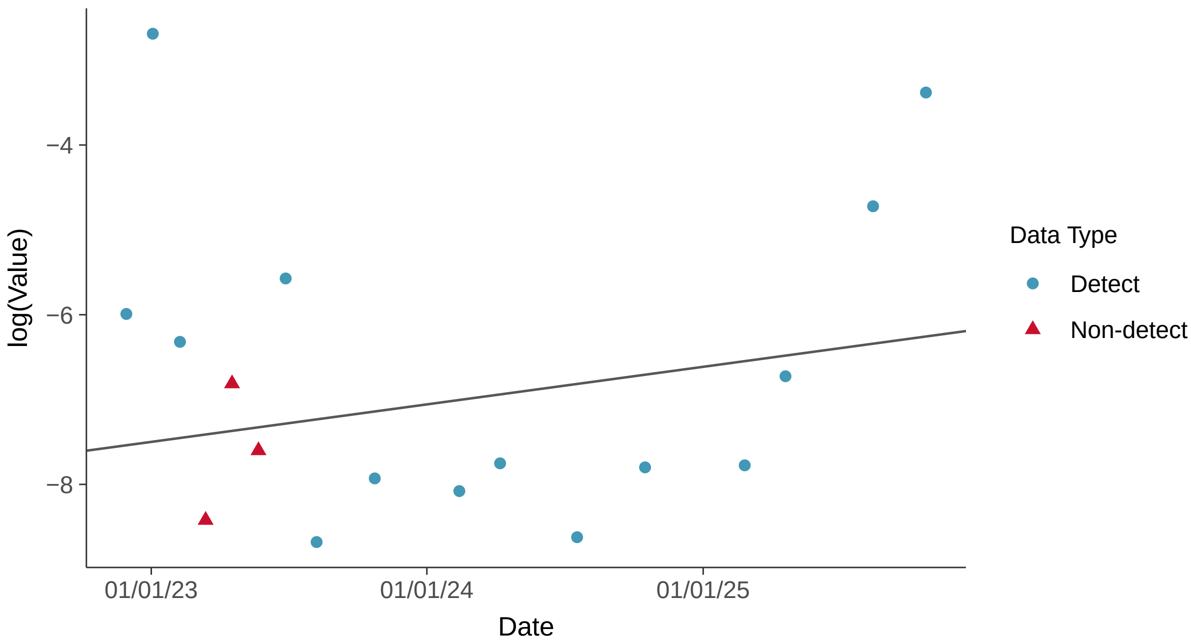

Boxplot by Season
Lead, MW-11 (mg/L)
Value
0.06
0.04
0.02
0.00
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Minor
Data Type
Detect


Lognormal Q-Q plot using ROS Imputed Estimates
Lead, MW-11 (mg/L)
log(Value)
−4
−6
−8
−10
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Gamma Q-Q plot using ROS Imputed Estimates
Lead, MW-11 (mg/L)
Value
0.06
0.04
0.02
0.00
−2
−1
0
1
2
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect

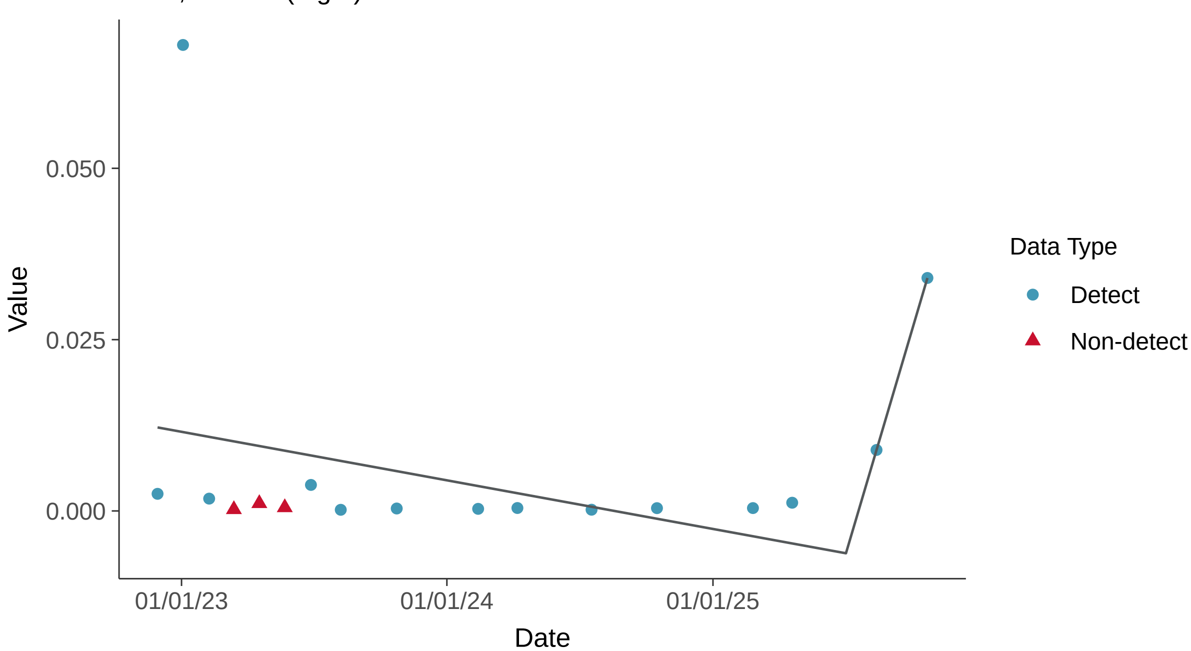
Trend Regression: Lognormal MLE

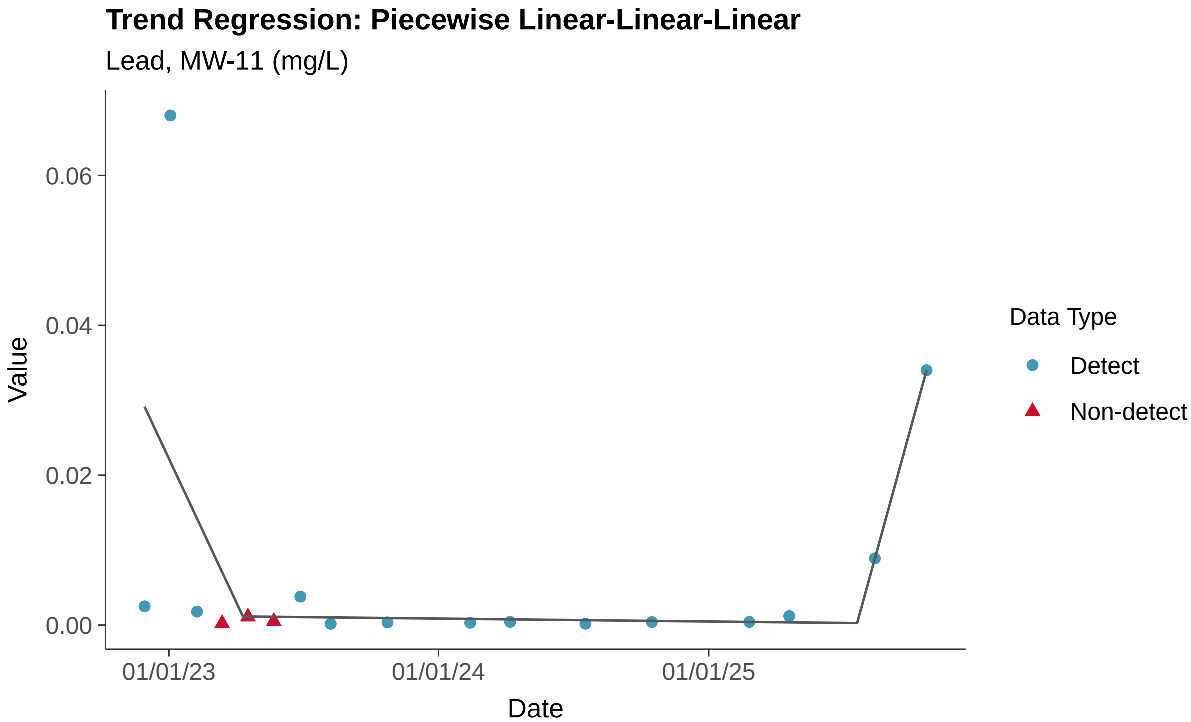
Lead, MW-11 (mg/L)



Trend Regression: Piecewise Linear-Linear

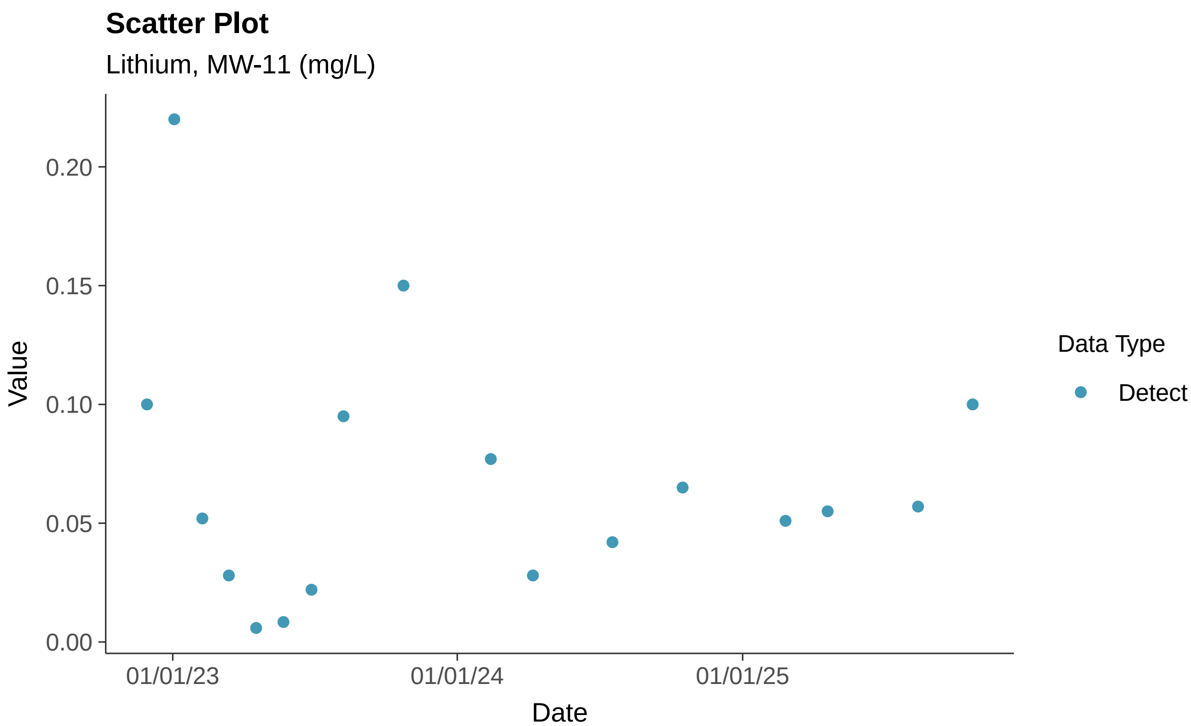
Lead, MW-11 (mg/L)

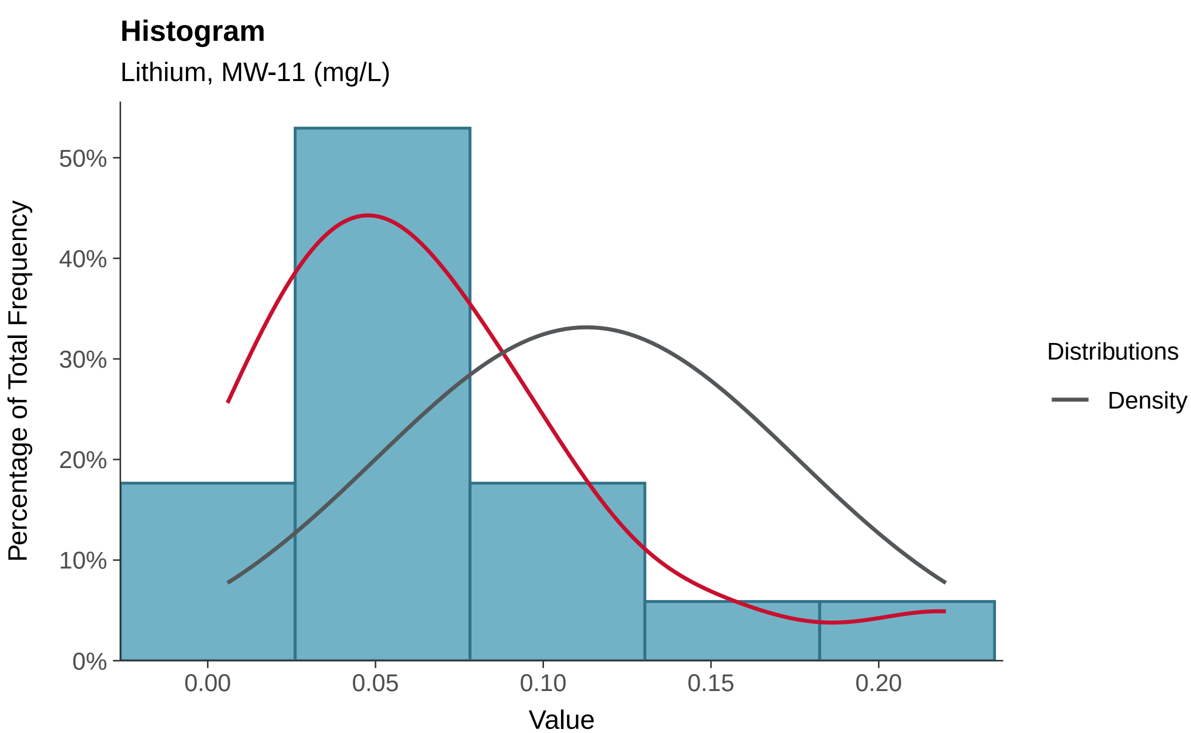



Trend Regression: Piecewise Linear-Linear-Linear
Lead, MW-11 (mg/L)
Value
0.06
0.04
0.02
0.00
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Appendix IV: Lithium, MW-11

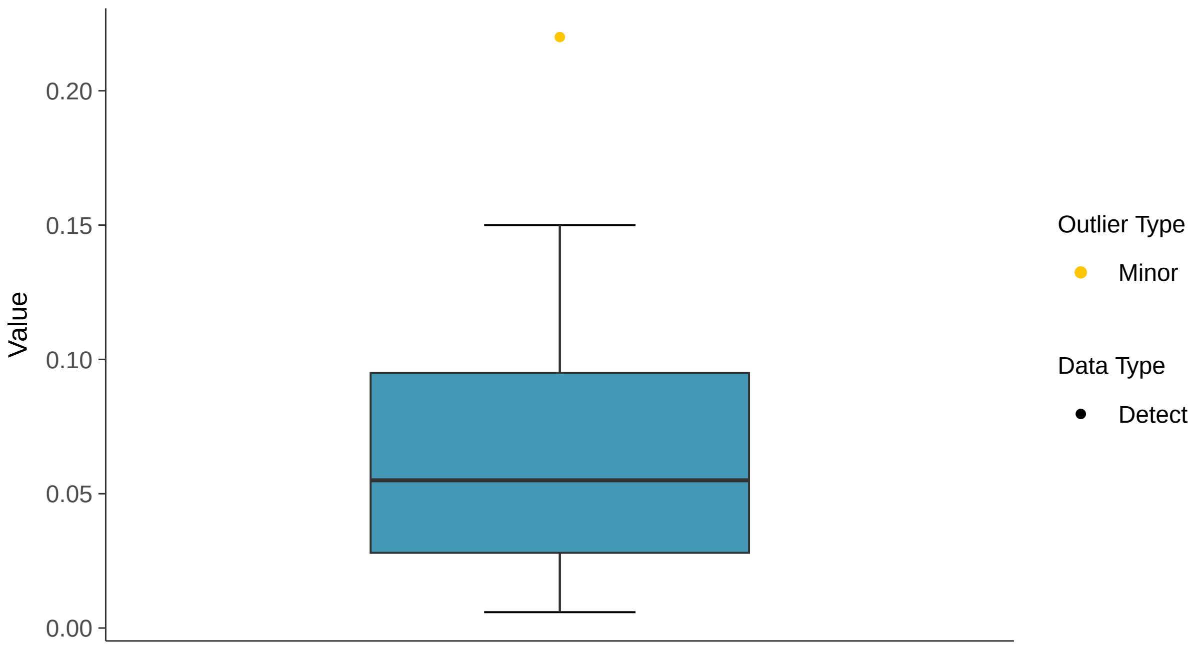
ID: 21_2_4_116





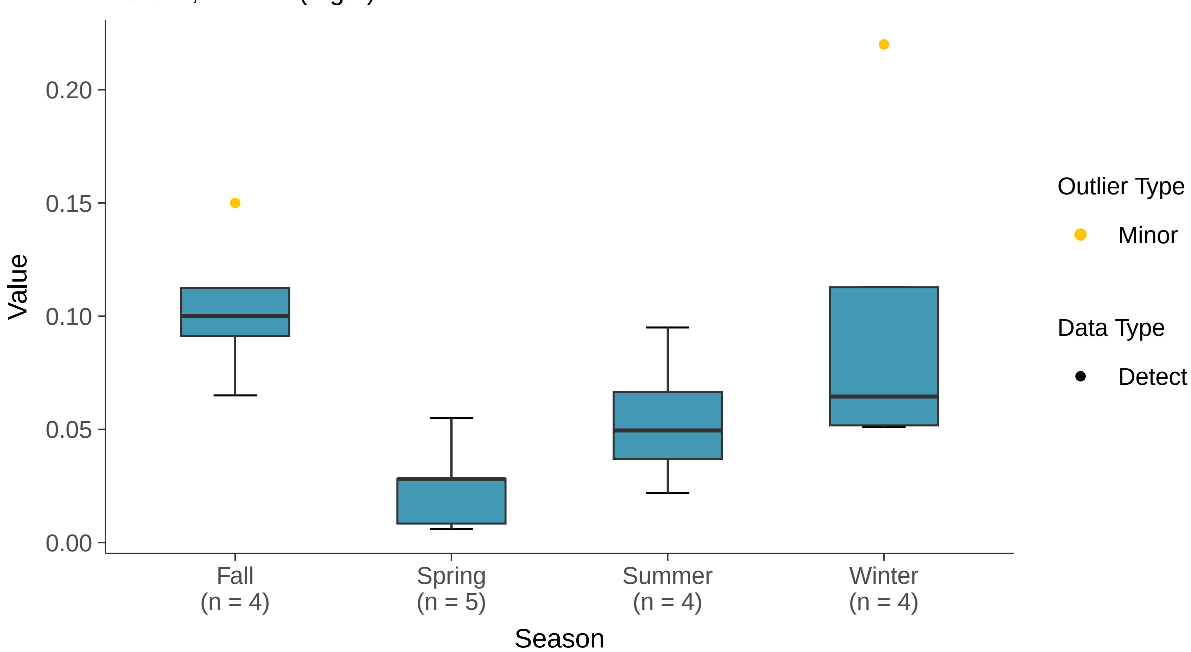
Boxplot

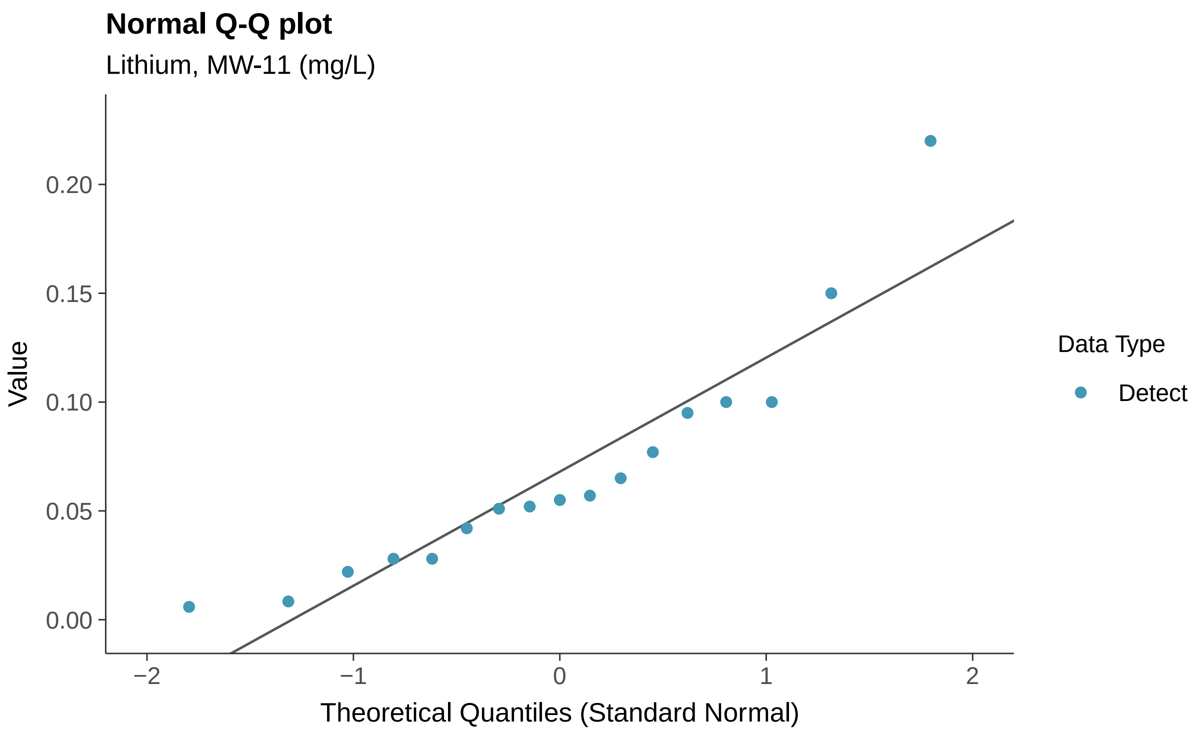
Lithium, MW-11 (mg/L)

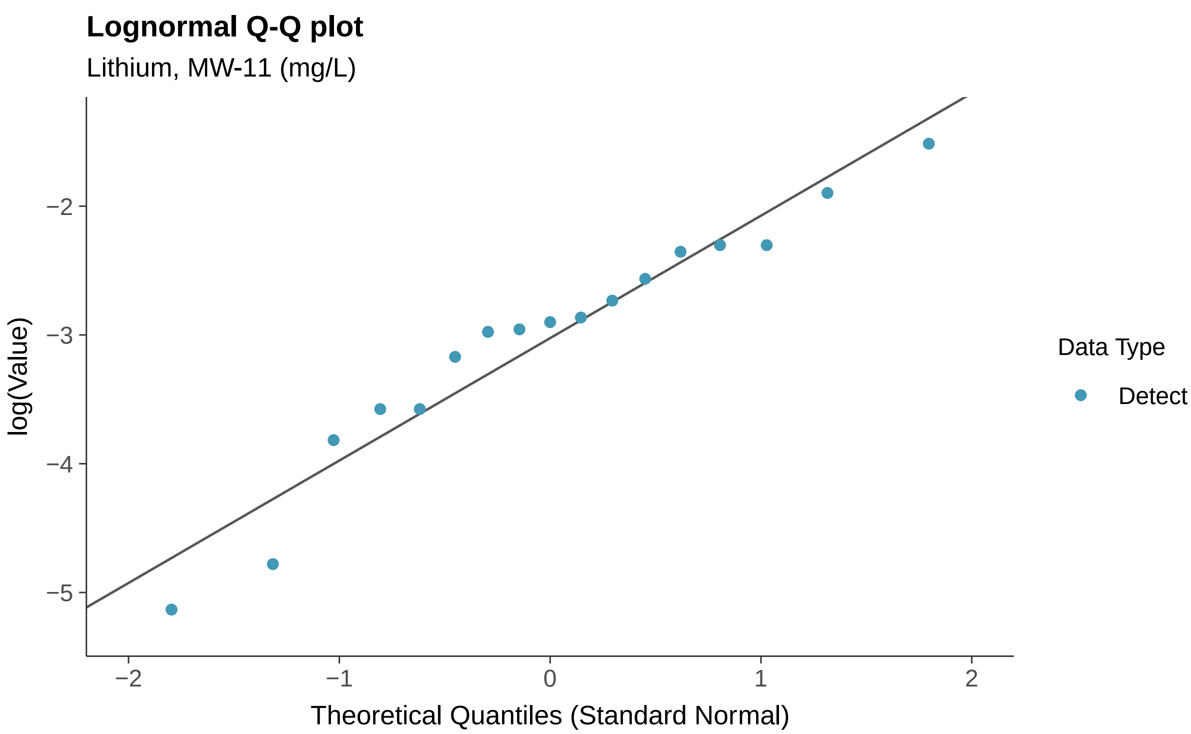


Boxplot by Season

Lithium, MW-11 (mg/L)

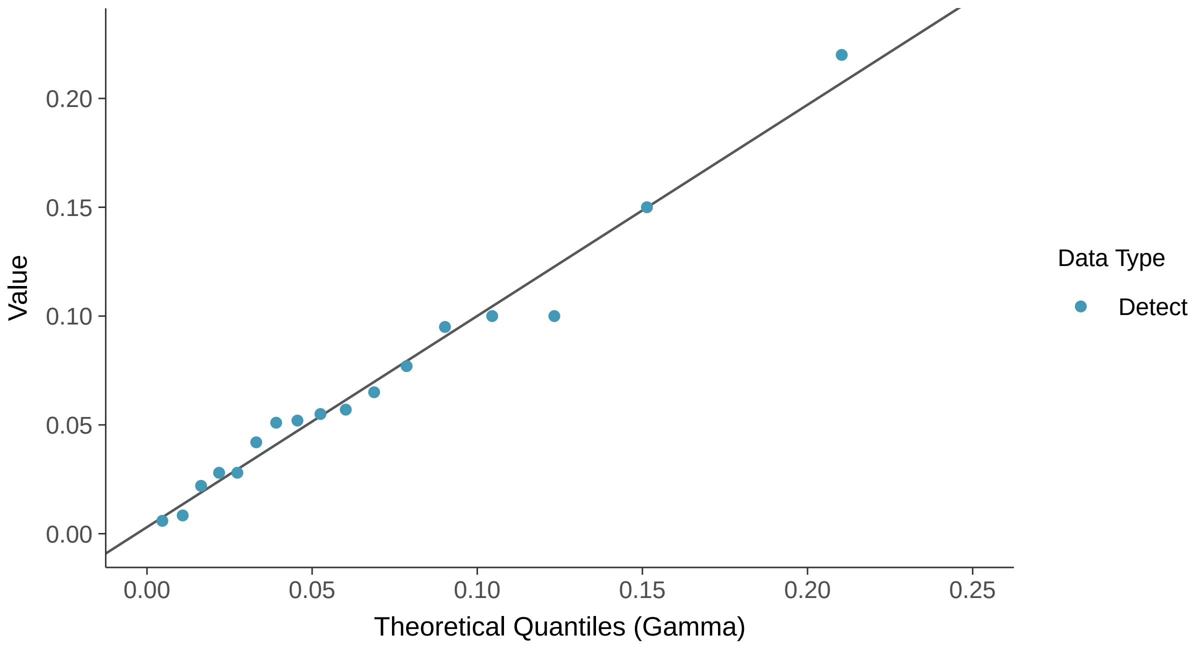



Normal Q-Q plot
Lithium, MW-11 (mg/L)
Value
0.20
0.15
0.10
0.05
0.00
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Lithium, MW-11 (mg/L)
log(Value)
−2
−3
−4
−5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

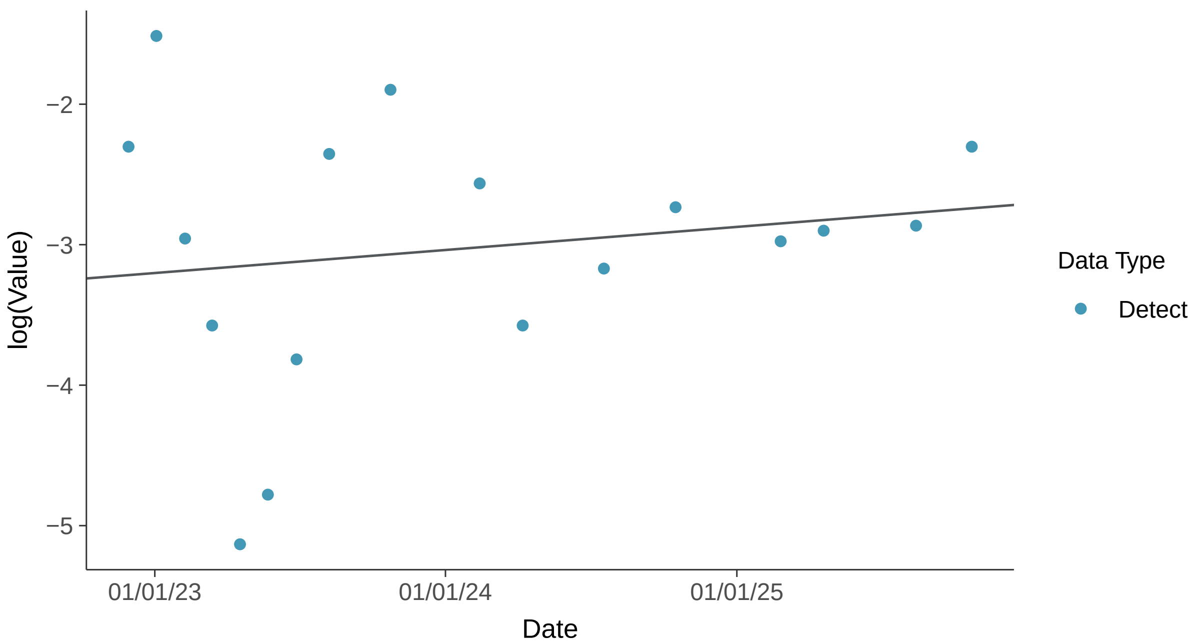
Gamma Q-Q plot

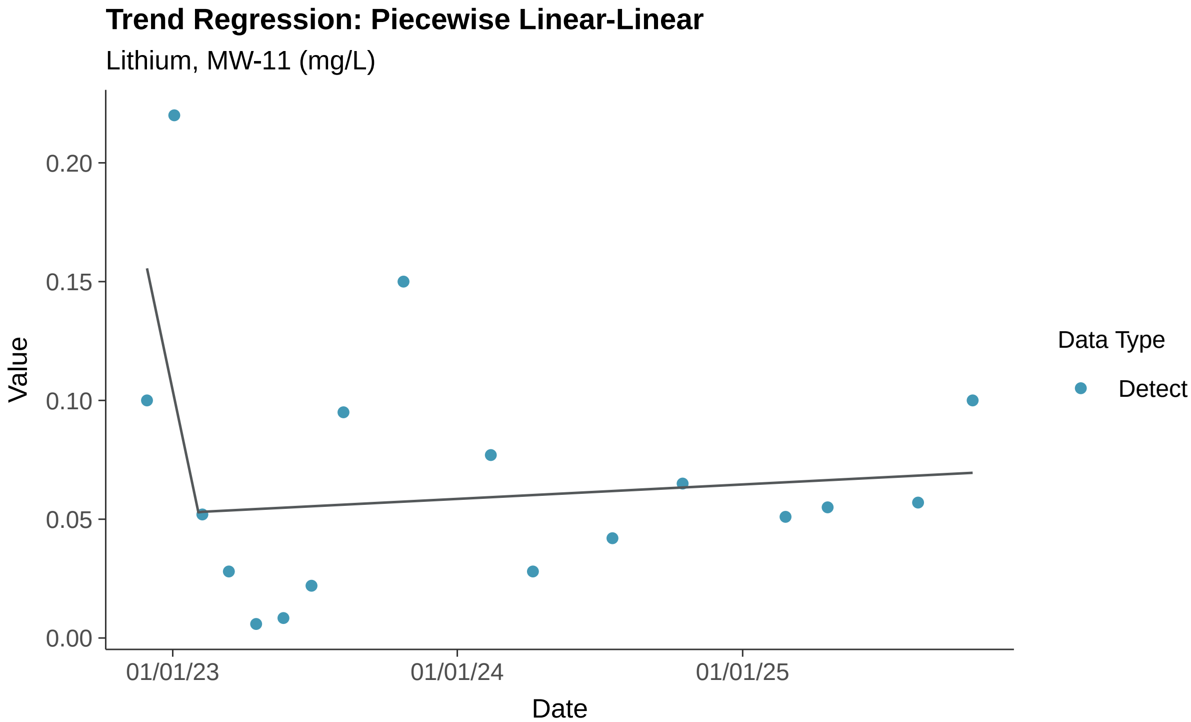
Lithium, MW-11 (mg/L)

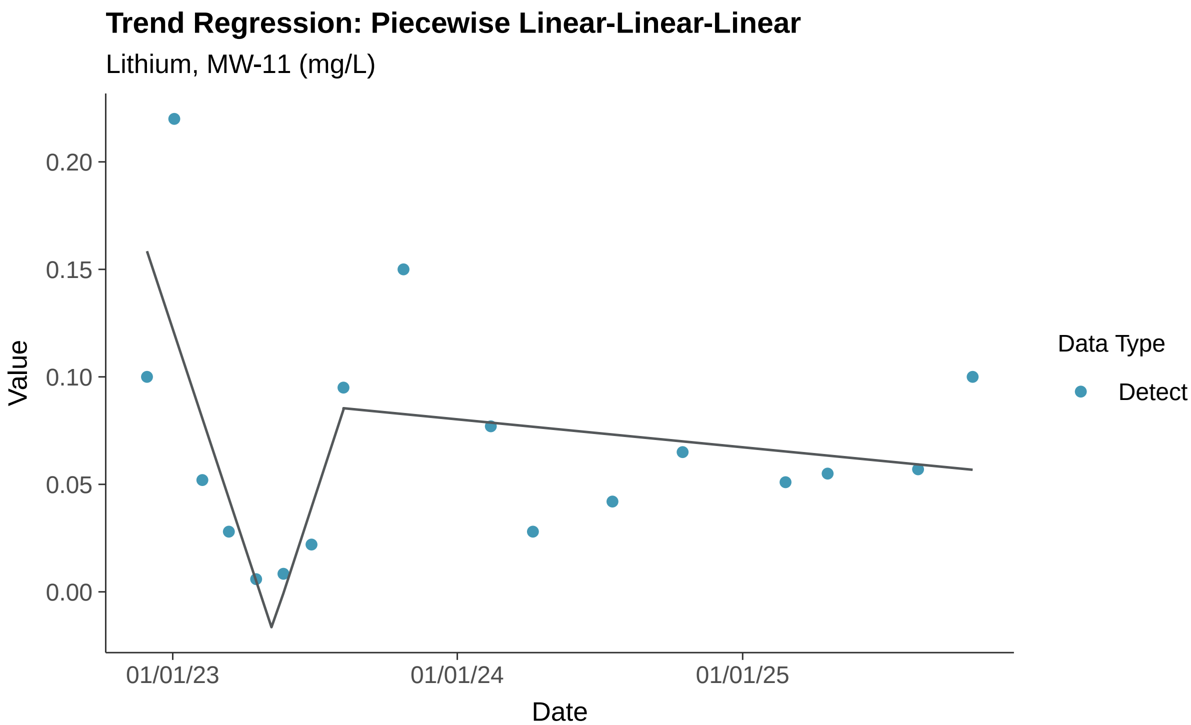


Trend Regression: Lognormal MLE

Lithium, MW-11 (mg/L)

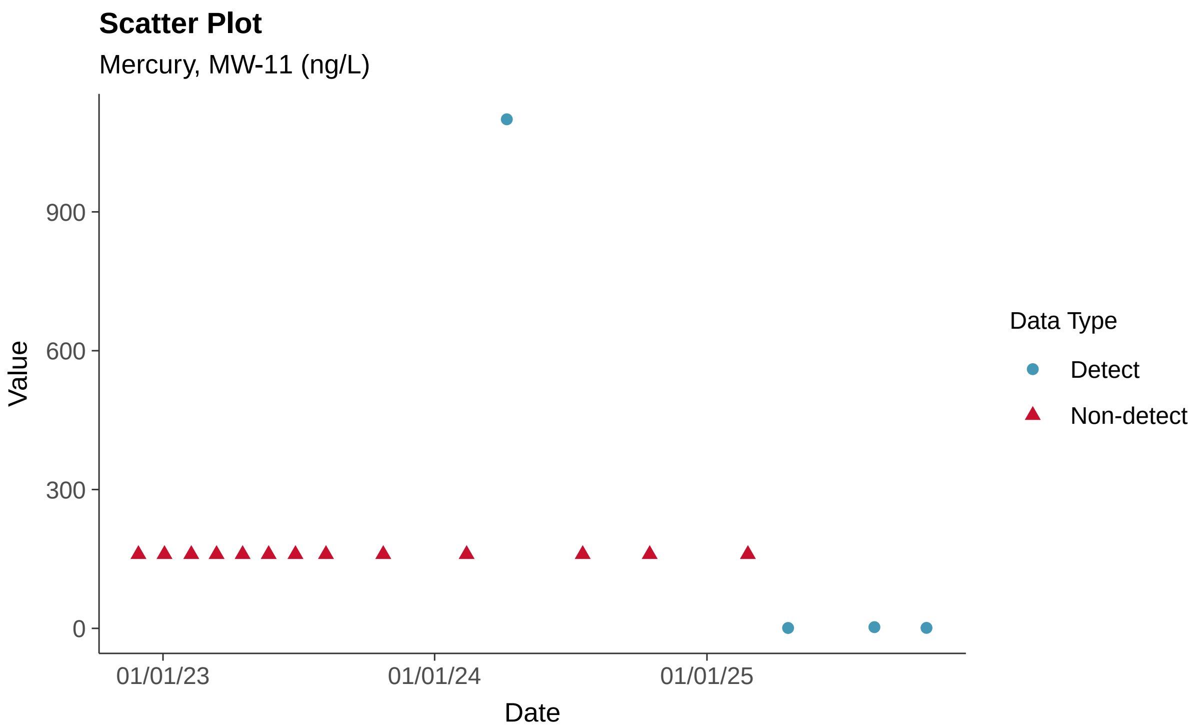


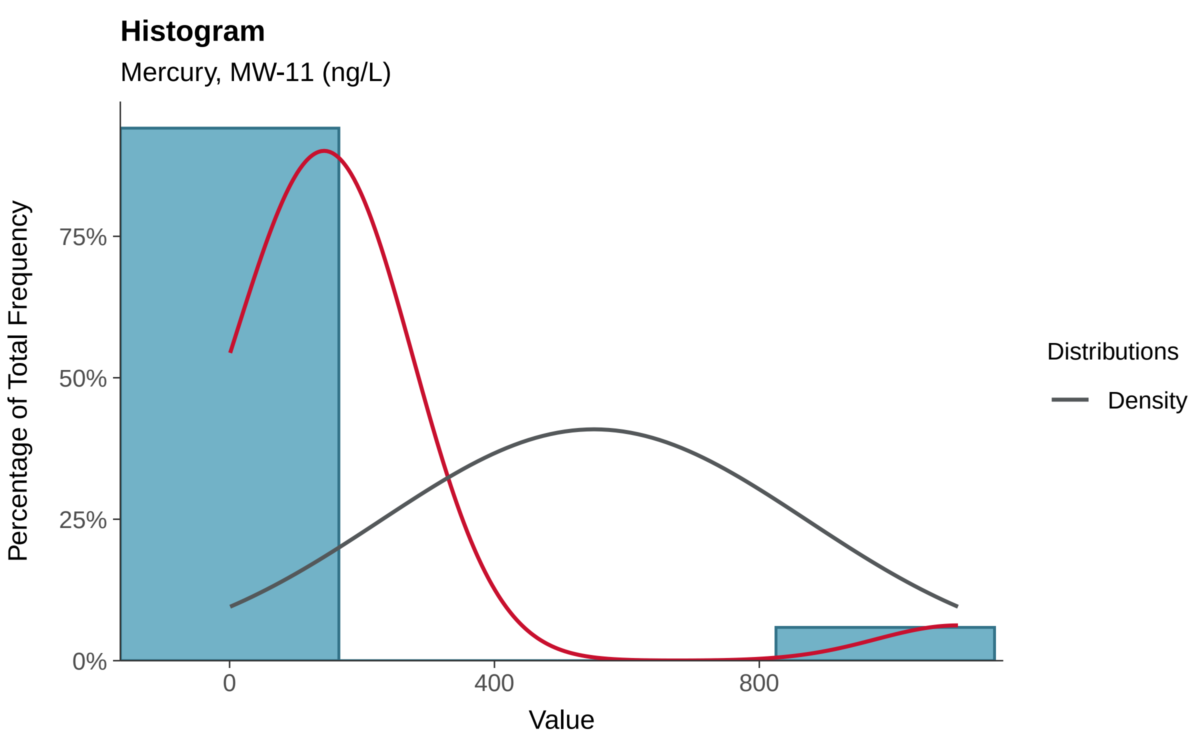

Trend Regression: Piecewise Linear-Linear
Lithium, MW-11 (mg/L)
Value
0.20
0.15
0.10
0.05
0.00
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
Lithium, MW-11 (mg/L)
Value
0.20
0.15
0.10
0.05
0.00
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Appendix IV: Mercury, MW-11

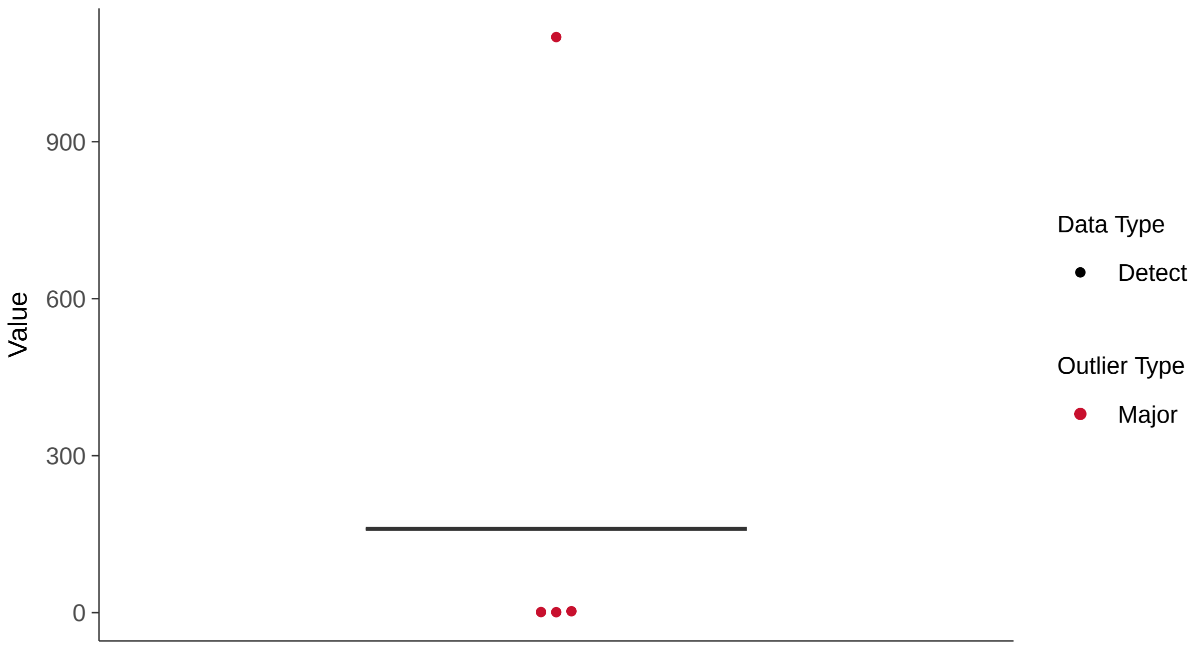
ID: 21_2_4_117





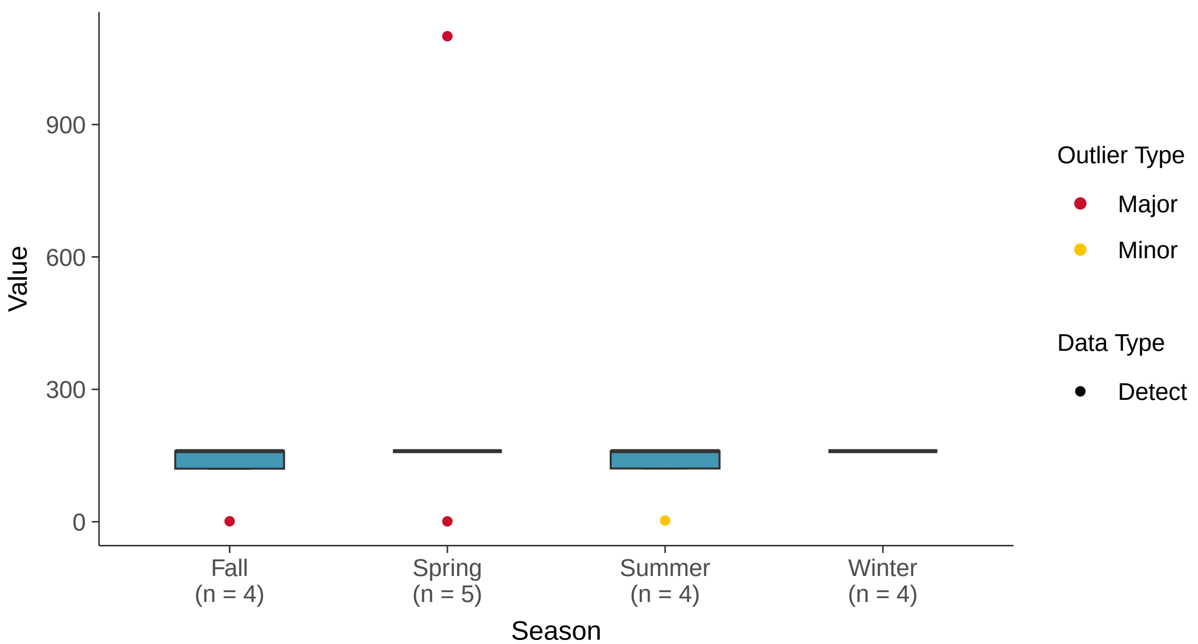
Boxplot

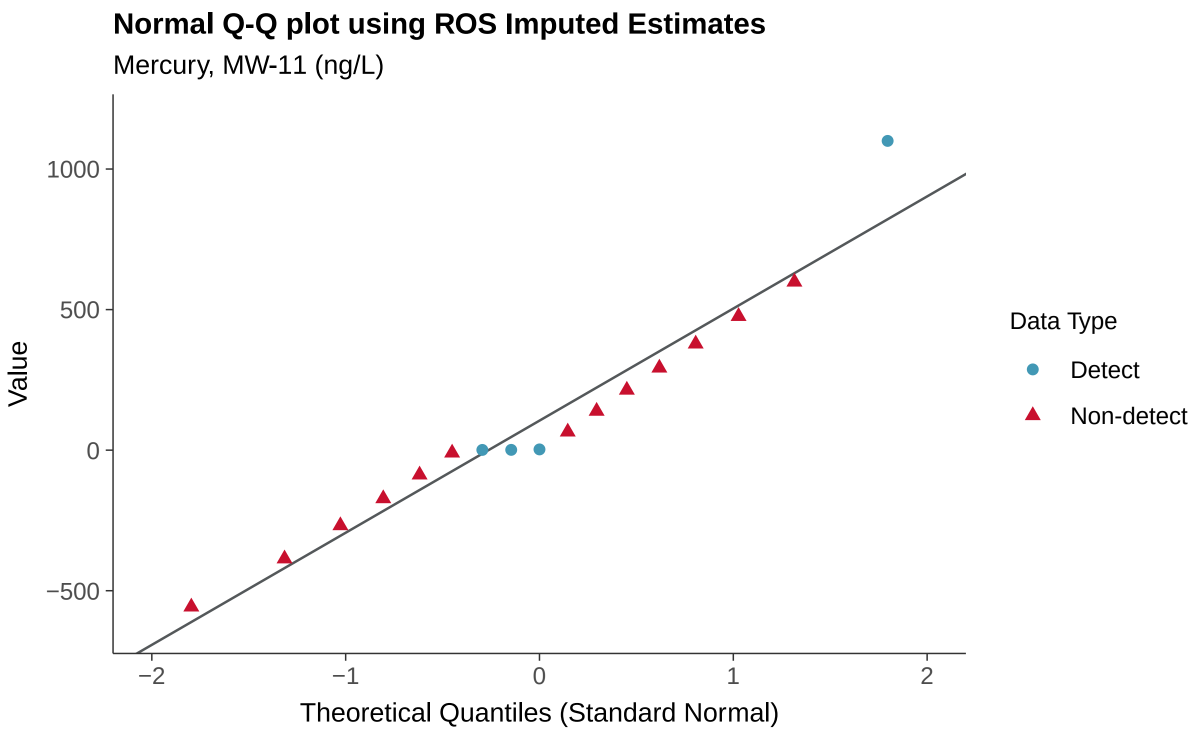
Mercury, MW-11 (ng/L)

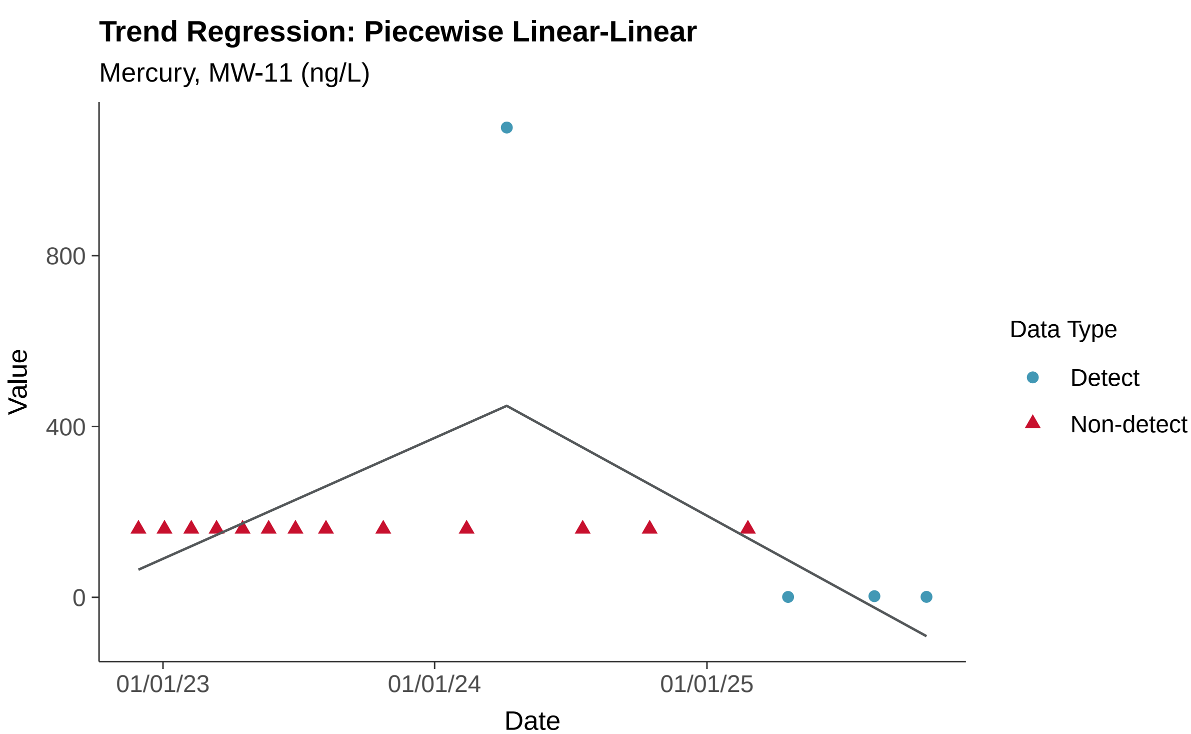


Boxplot by Season

Mercury, MW-11 (ng/L)

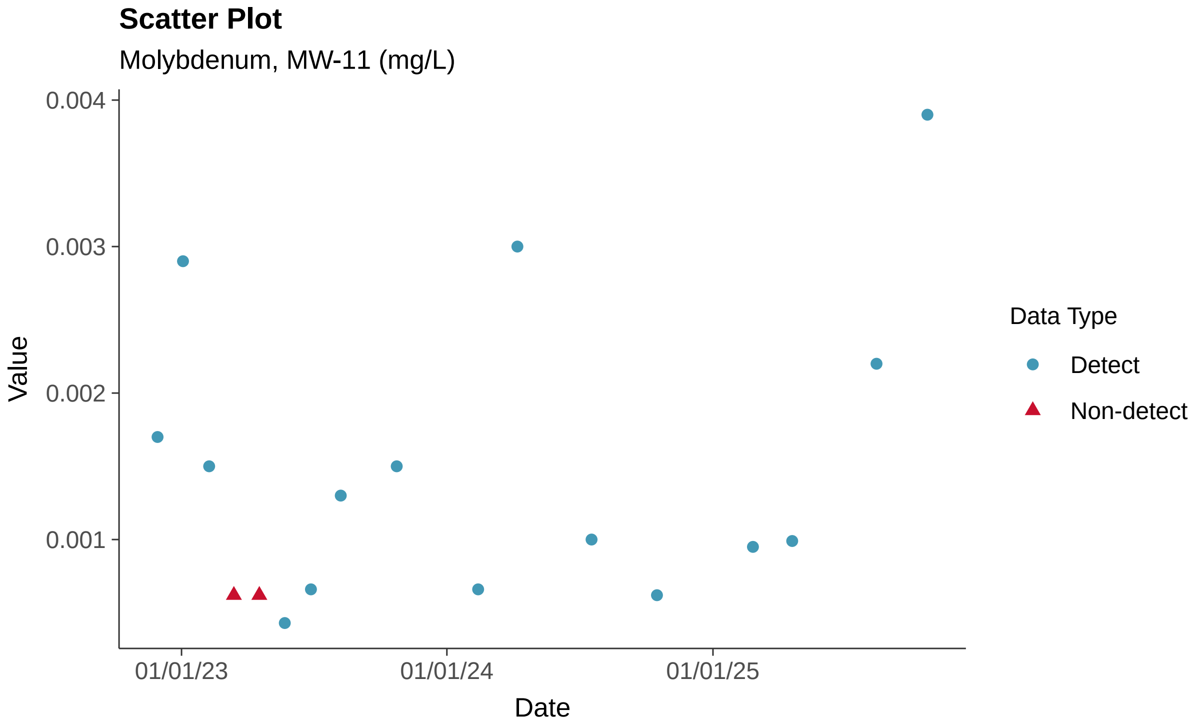


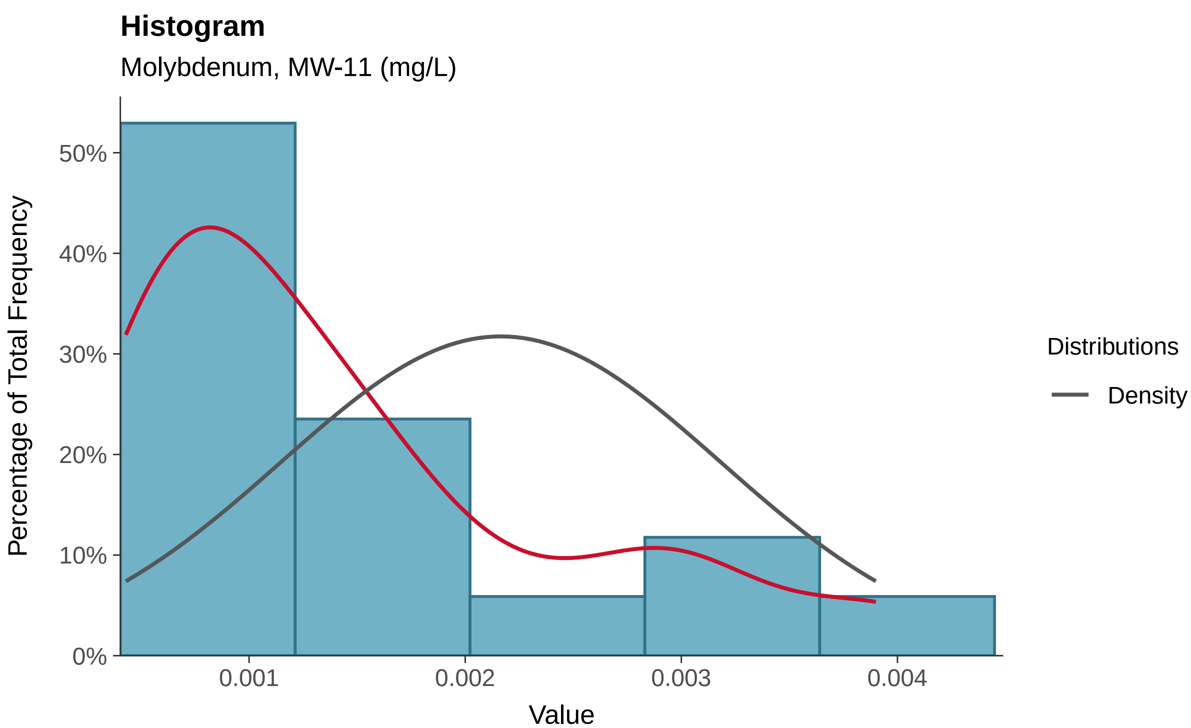

Normal Q-Q plot using ROS Imputed Estimates
Mercury, MW-11 (ng/L)
Value
1000
500
0
−500
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Mercury, MW-11 (ng/L)
Value
800
400
0
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Appendix IV: Molybdenum, MW-11

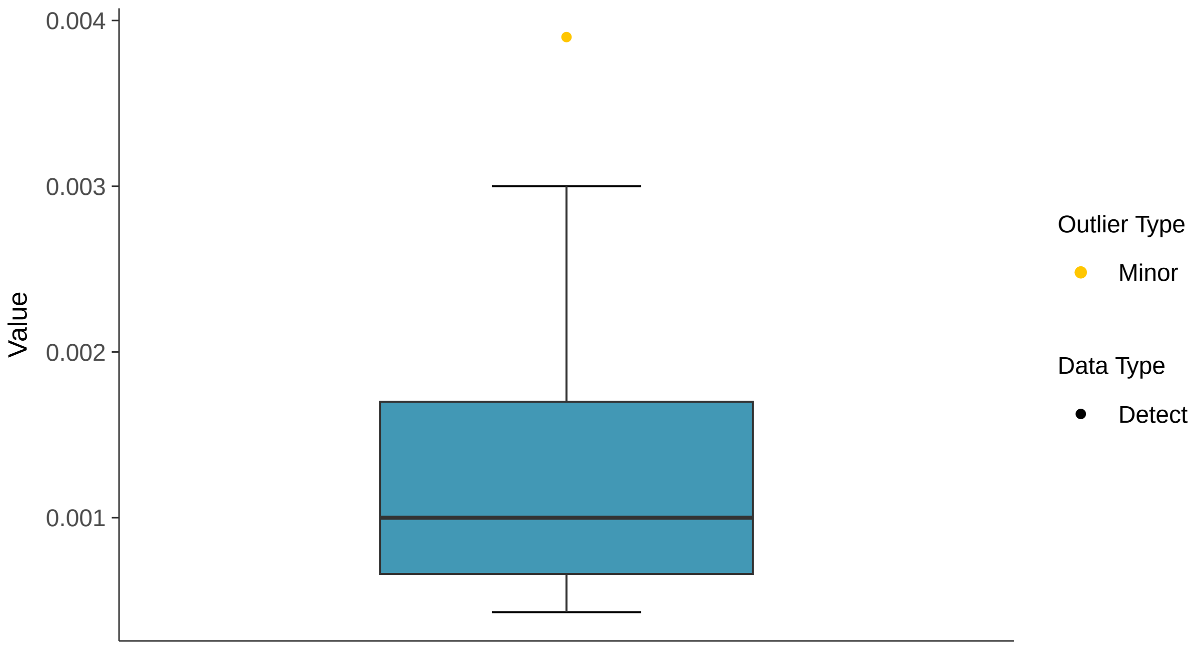
ID: 21_2_4_118





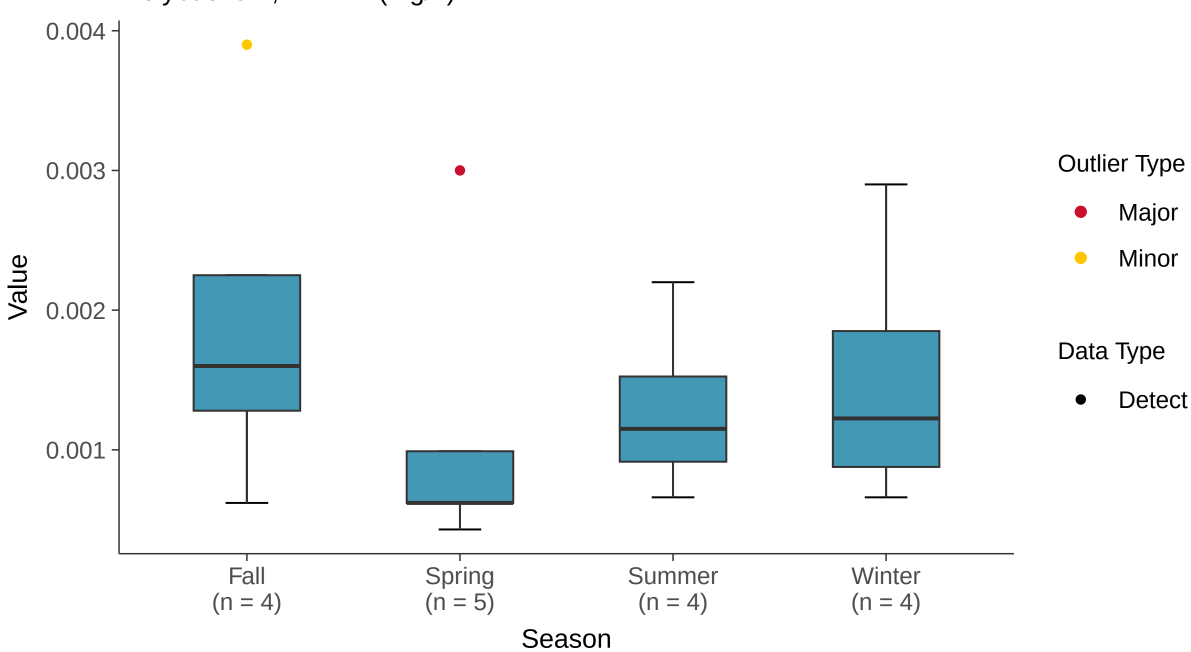
Boxplot

Molybdenum, MW-11 (mg/L)



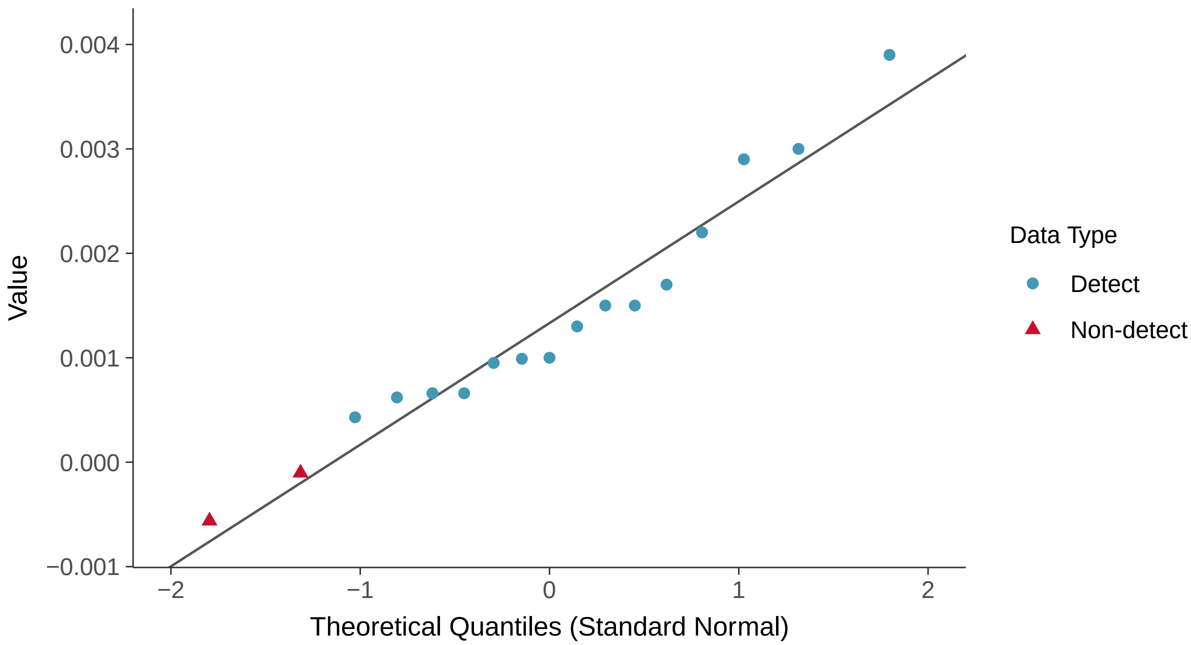
Boxplot by Season

Molybdenum, MW-11 (mg/L)



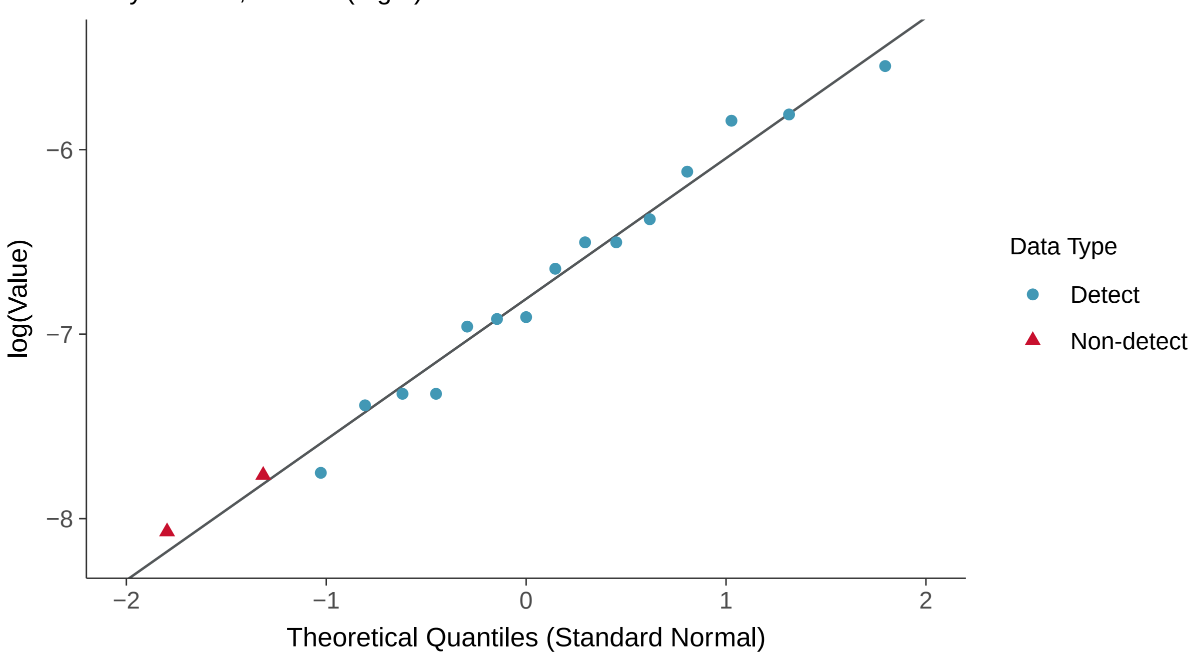
Normal Q-Q plot using ROS Imputed Estimates

Molybdenum, MW-11 (mg/L)



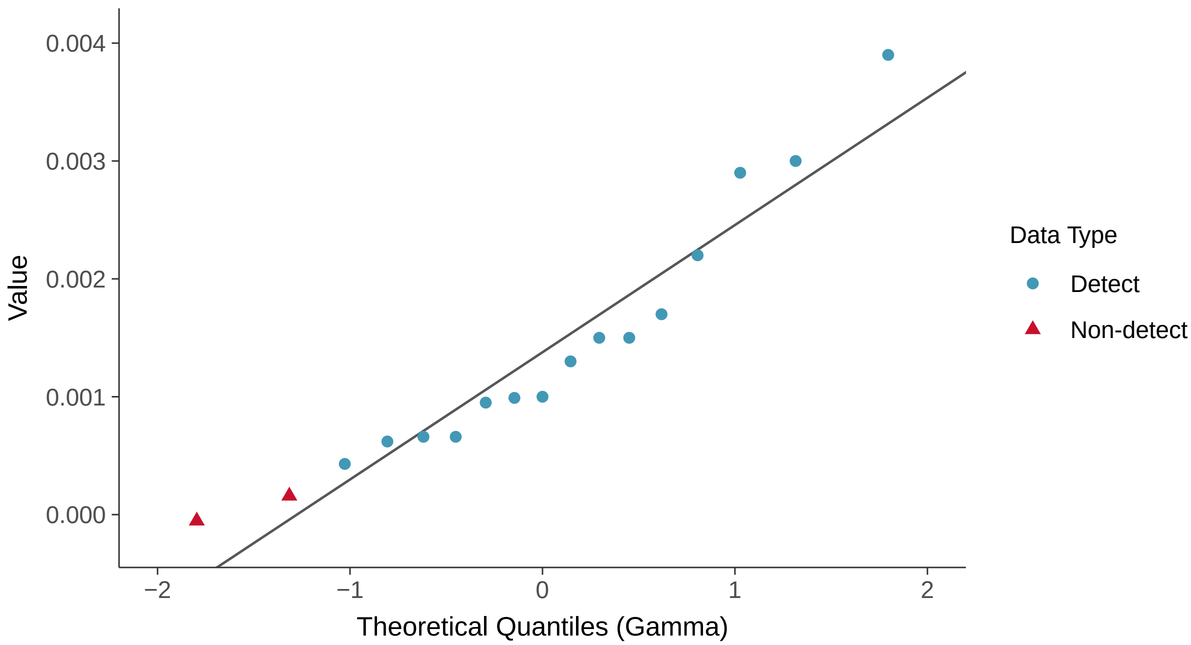
Lognormal Q-Q plot using ROS Imputed Estimates

Molybdenum, MW-11 (mg/L)



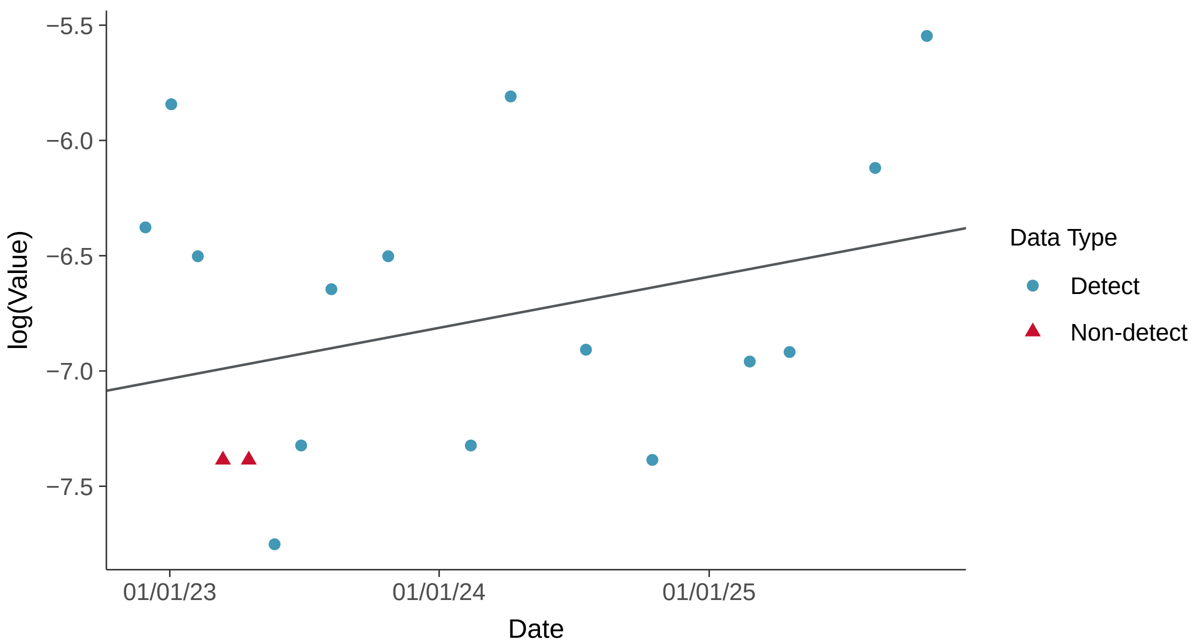
Gamma Q-Q plot using ROS Imputed Estimates

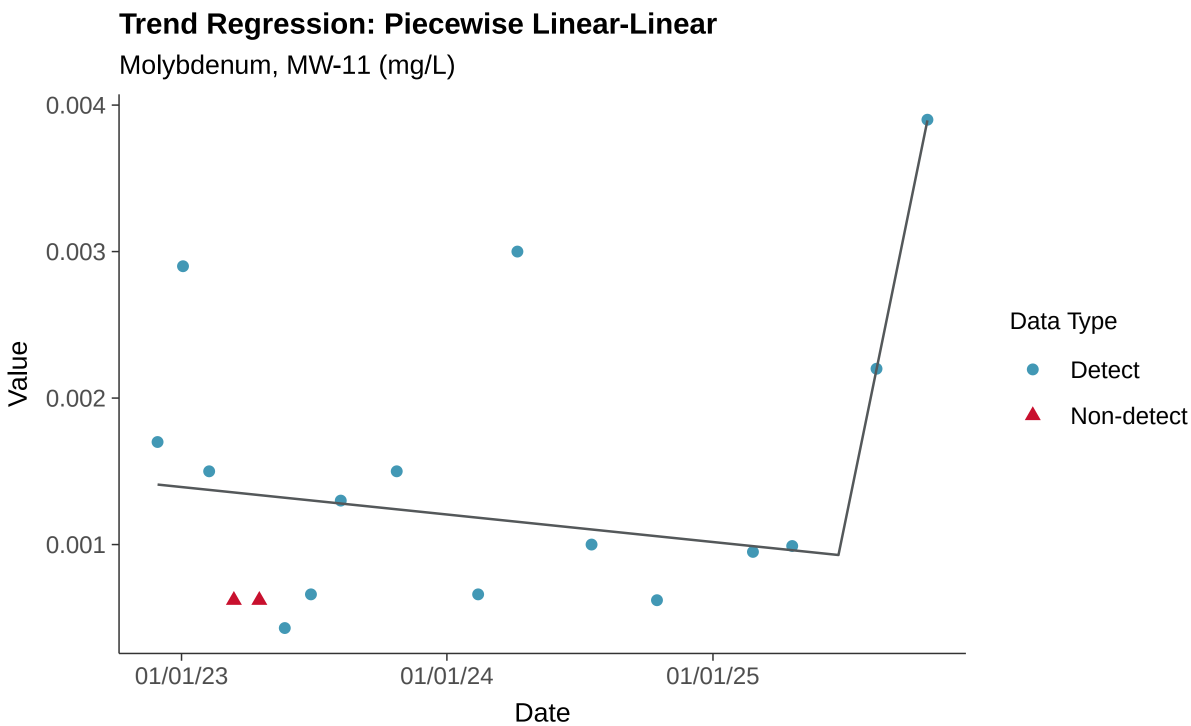
Molybdenum, MW-11 (mg/L)



Trend Regression: Lognormal MLE

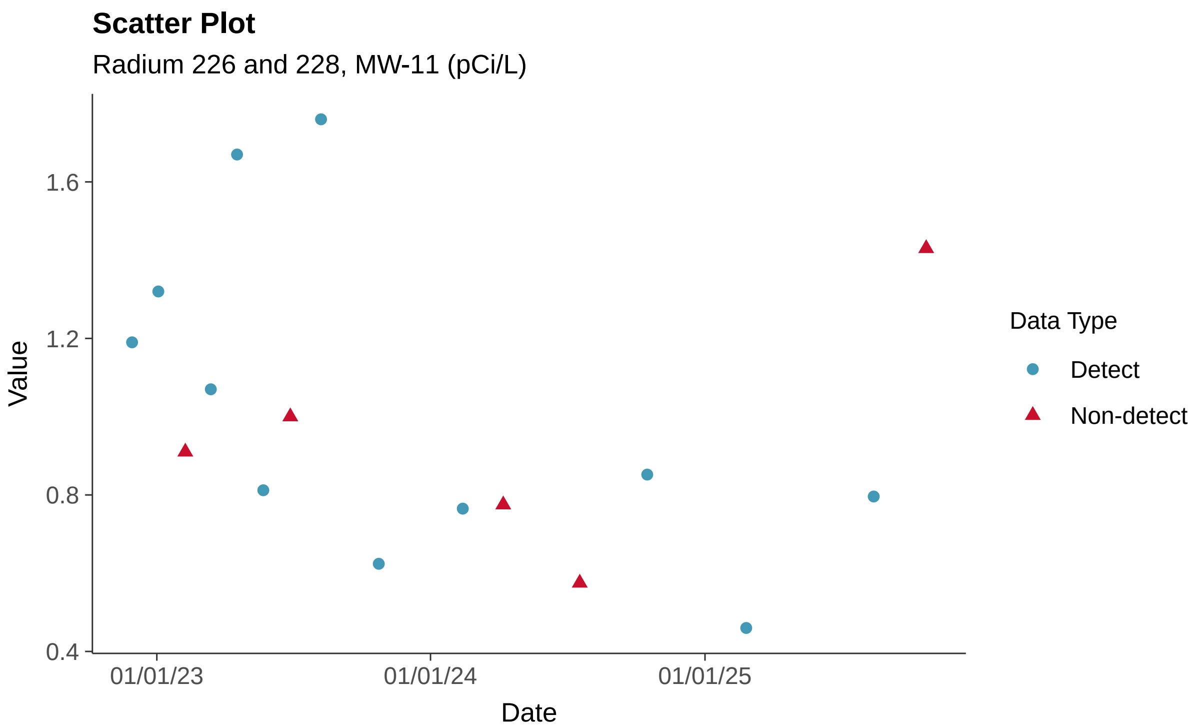
Molybdenum, MW-11 (mg/L)

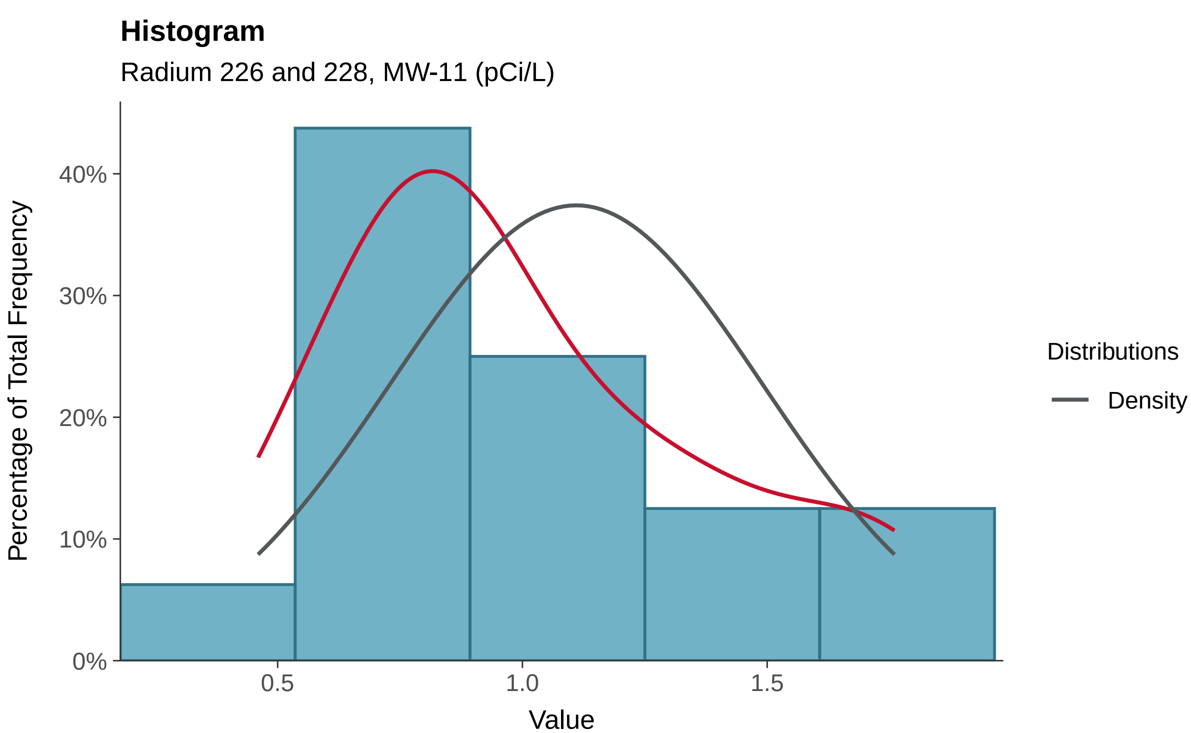



Trend Regression: Piecewise Linear-Linear
Molybdenum, MW-11 (mg/L)
Value
0.004
0.003
0.002
0.001
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Appendix IV: Radium 226 and 228, MW-11

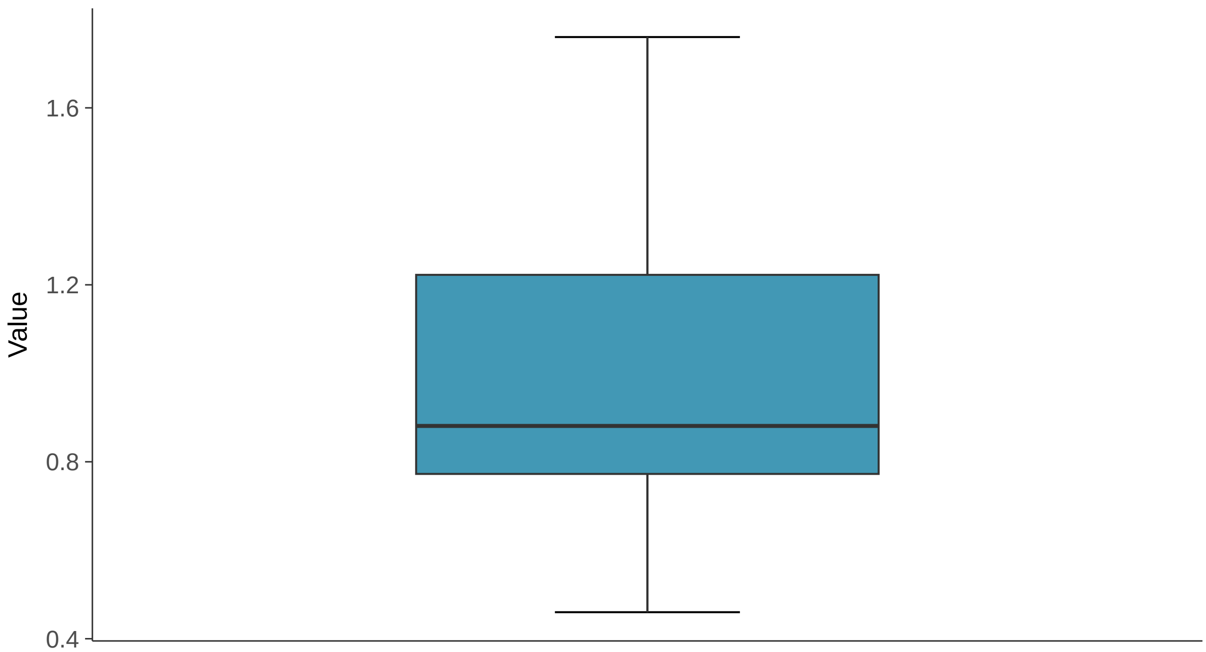
ID: 21_2_4_121





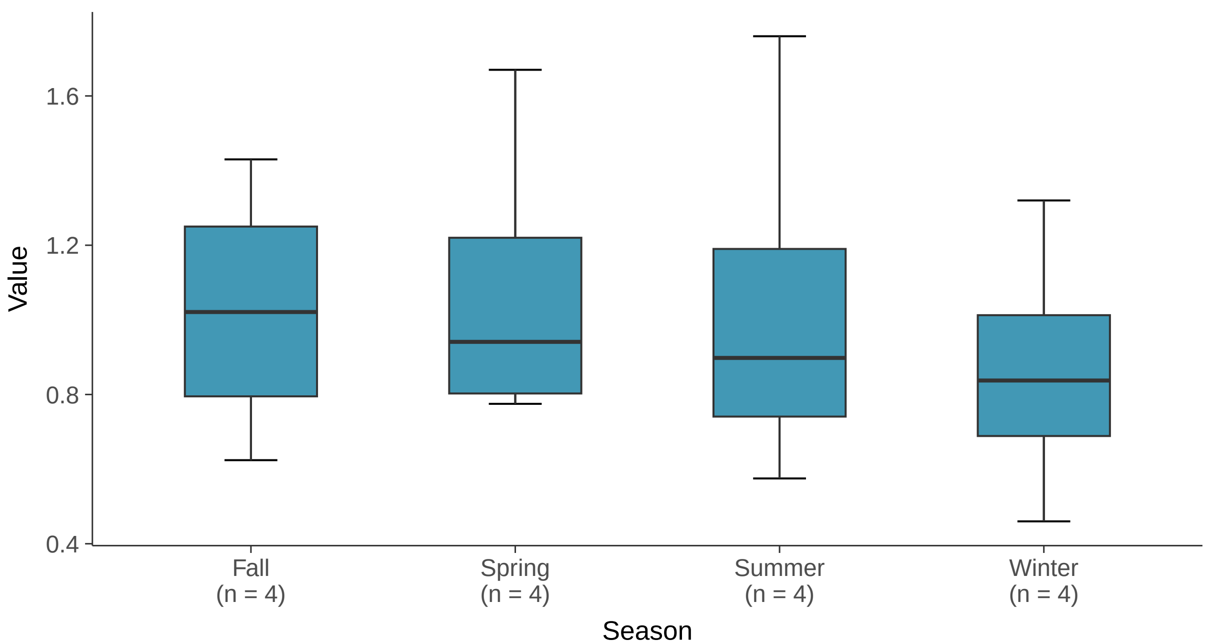
Boxplot

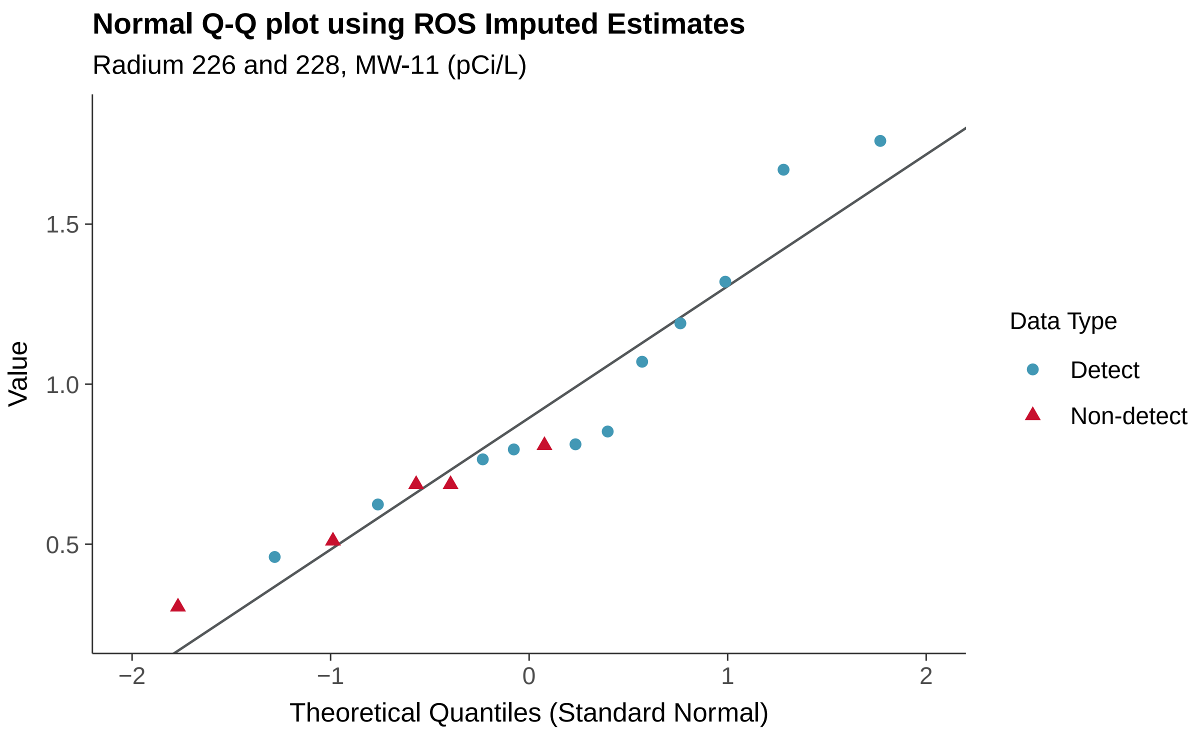
Radium 226 and 228, MW-11 (pCi/L)

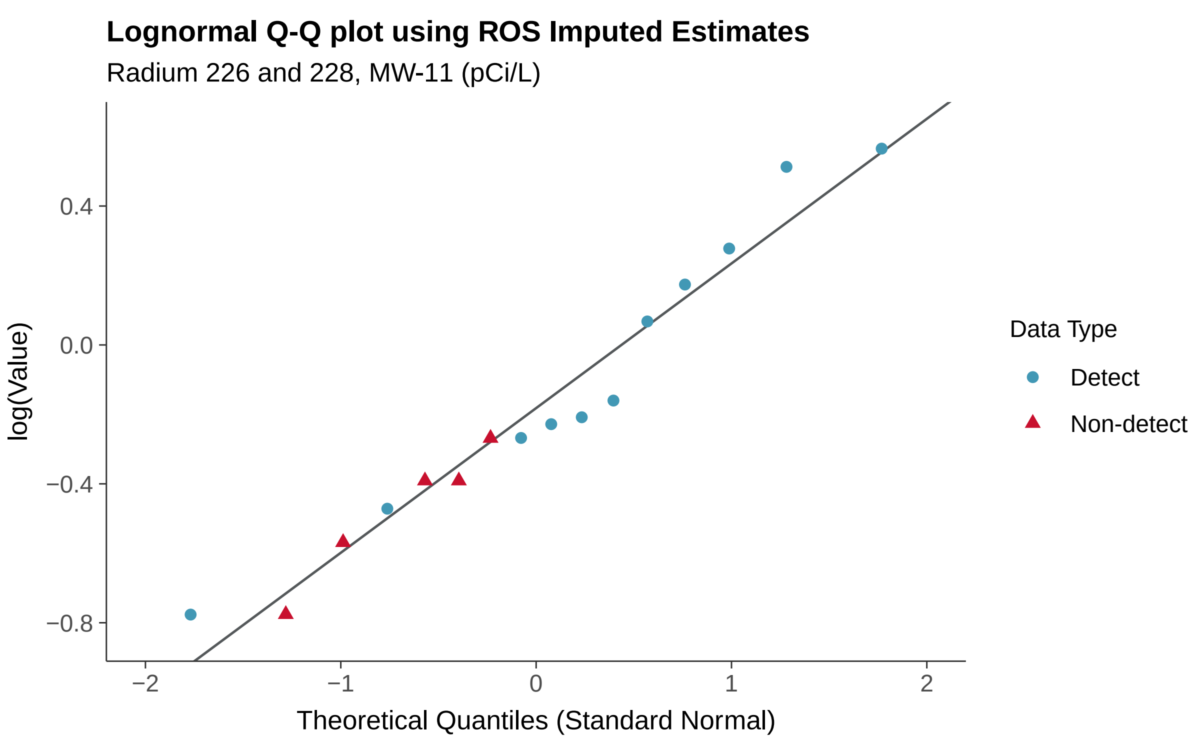


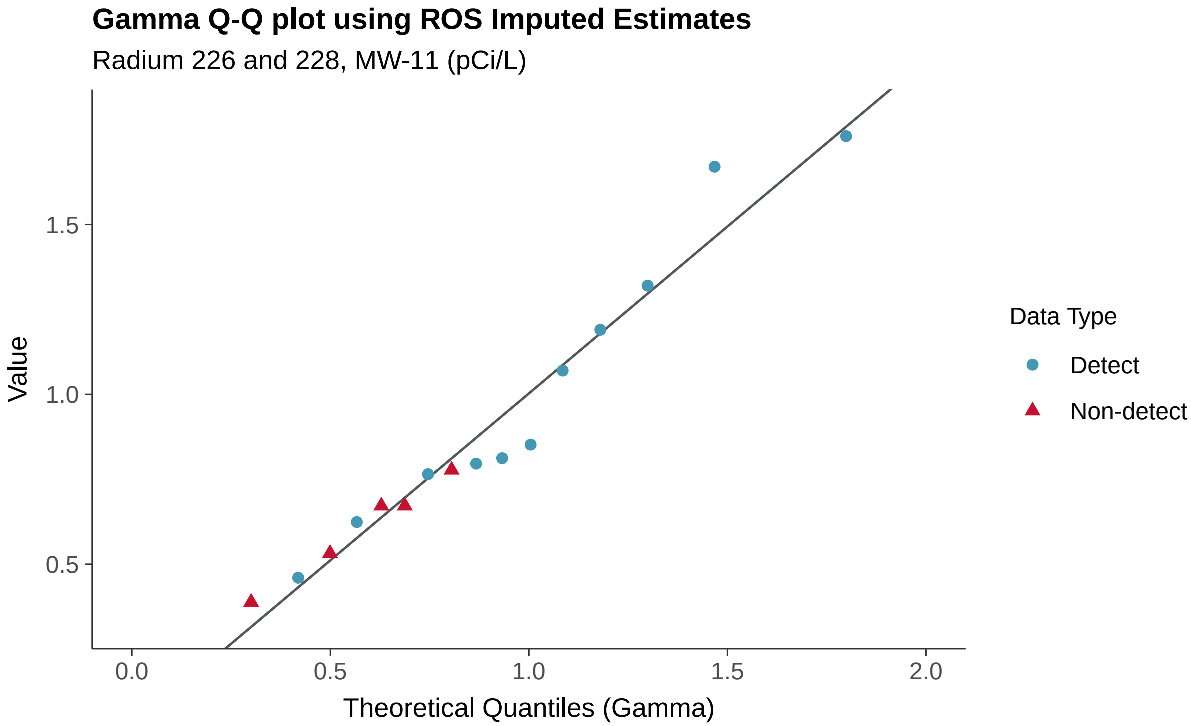
Boxplot by Season

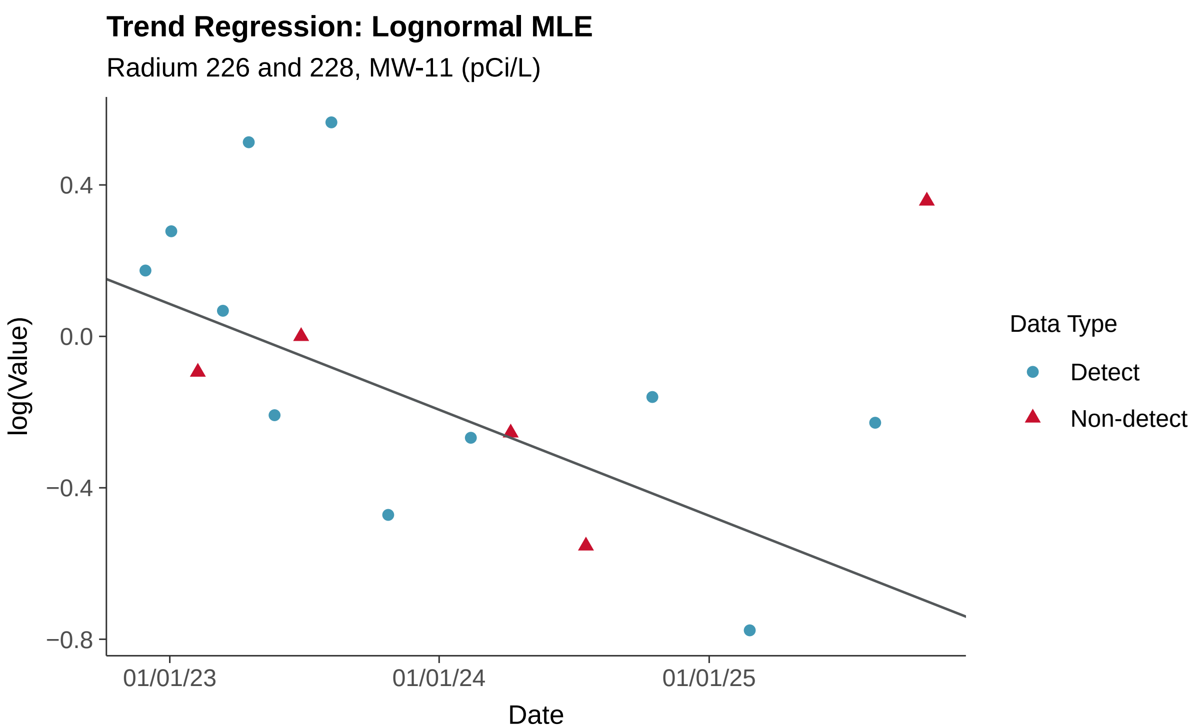
Radium 226 and 228, MW-11 (pCi/L)

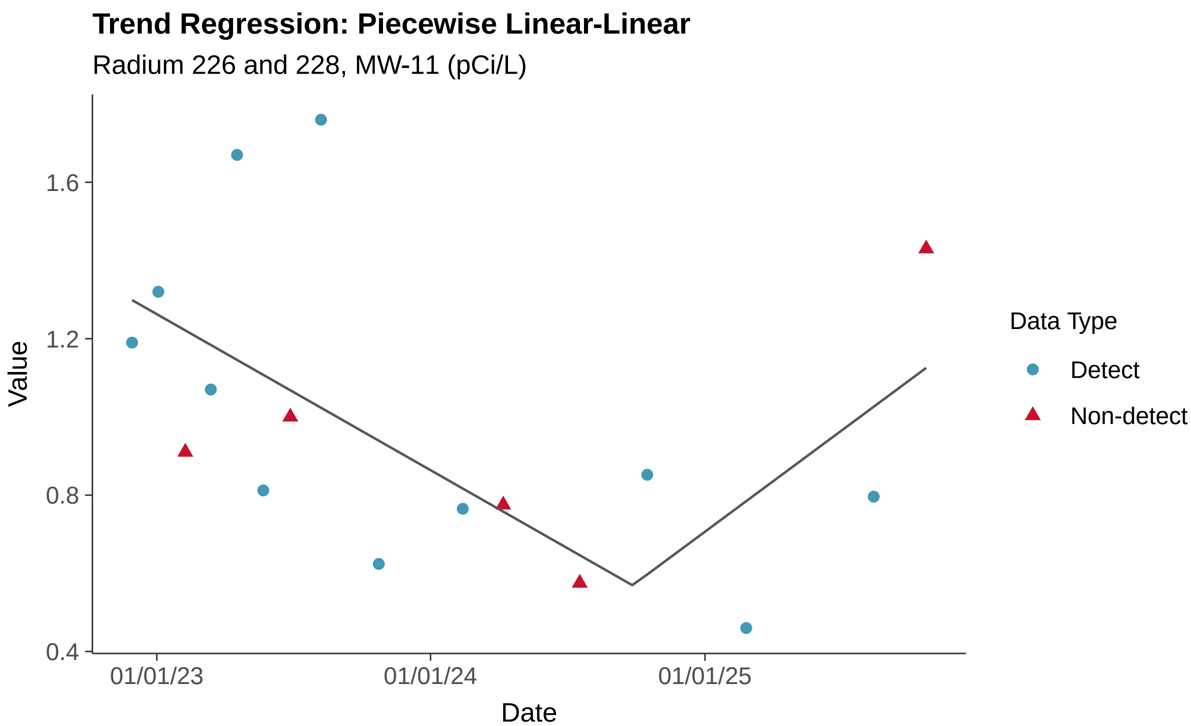



Normal Q-Q plot using ROS Imputed Estimates
Radium 226 and 228, MW-11 (pCi/L)
Value
1.5
1.0
0.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Lognormal Q-Q plot using ROS Imputed Estimates
Radium 226 and 228, MW-11 (pCi/L)
log(Value)
0.4
0.0
−0.4
−0.8
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

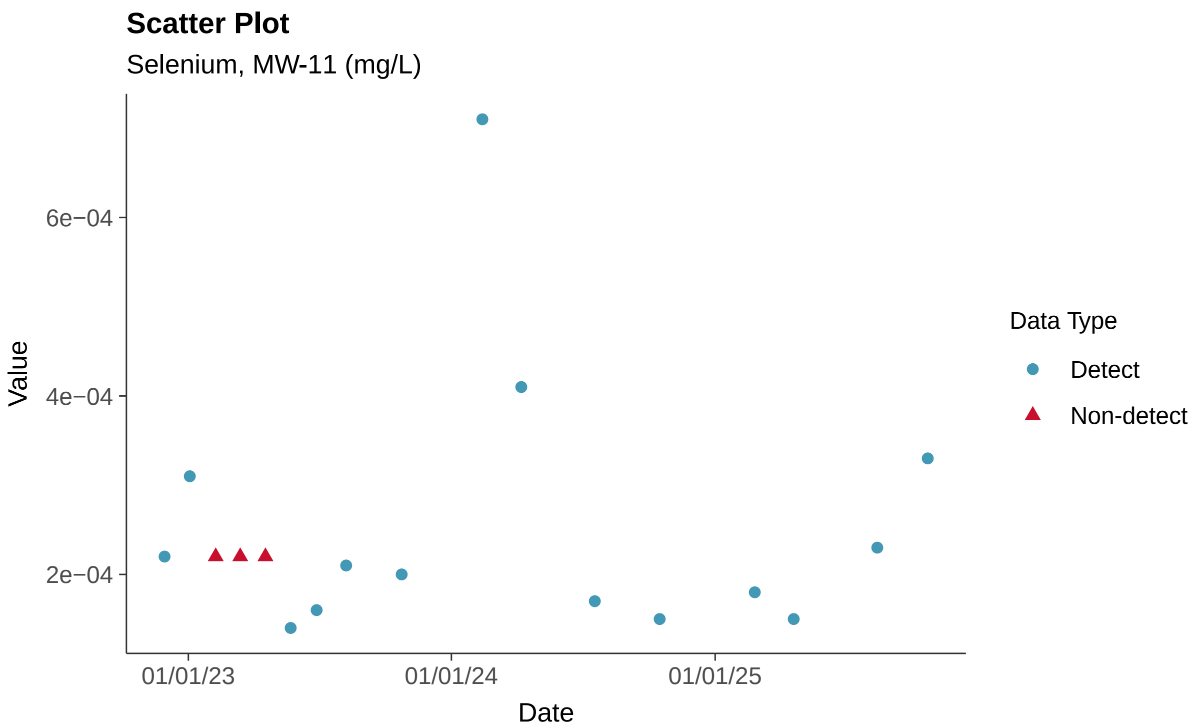

Gamma Q-Q plot using ROS Imputed Estimates
Radium 226 and 228, MW-11 (pCi/L)
Value
1.5
1.0
0.5
0.0
0.5
1.0
1.5
2.0
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect

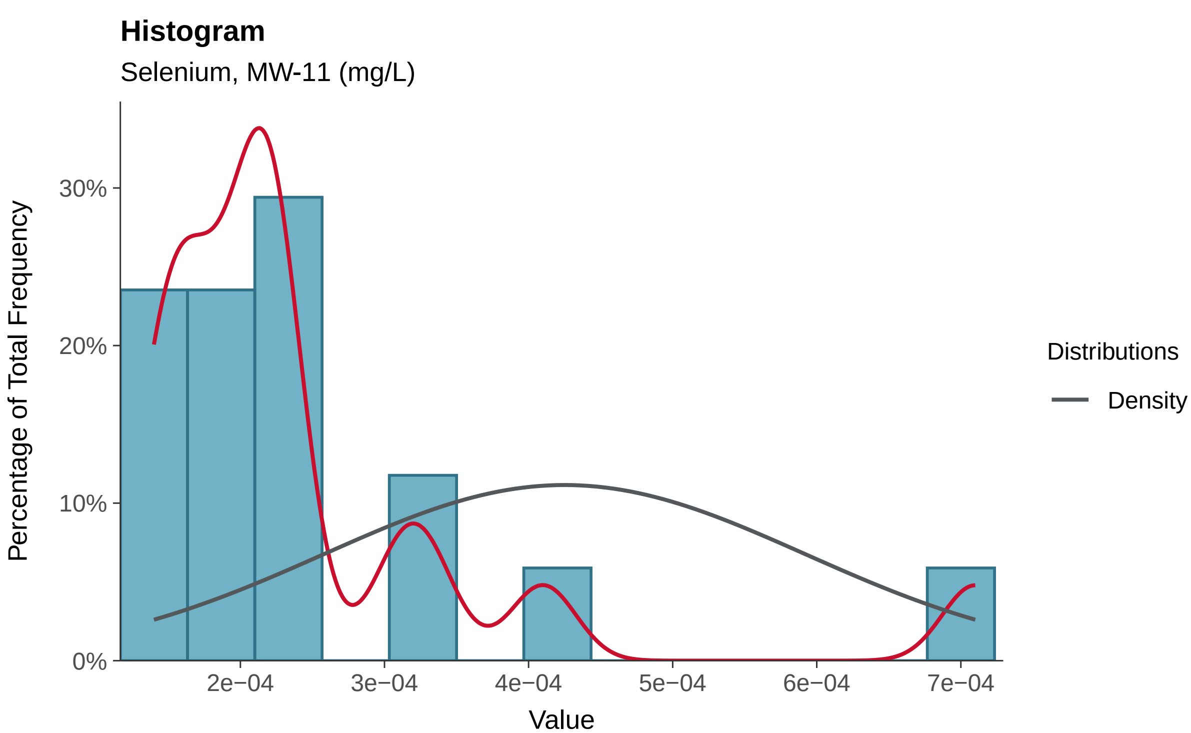

Trend Regression: Lognormal MLE
Radium 226 and 228, MW-11 (pCi/L)
log(Value)
0.4
0.0
−0.4
−0.8
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Radium 226 and 228, MW-11 (pCi/L)
Value
1.6
1.2
0.8
0.4
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Appendix IV: Selenium, MW-11

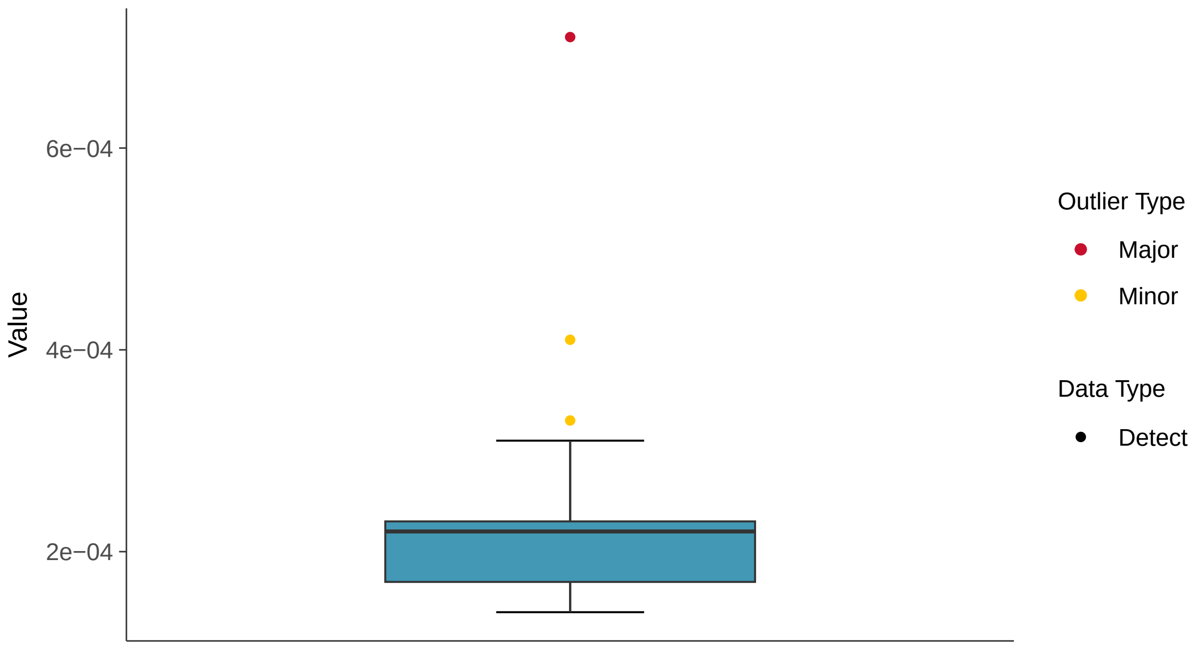
ID: 21_2_4_122





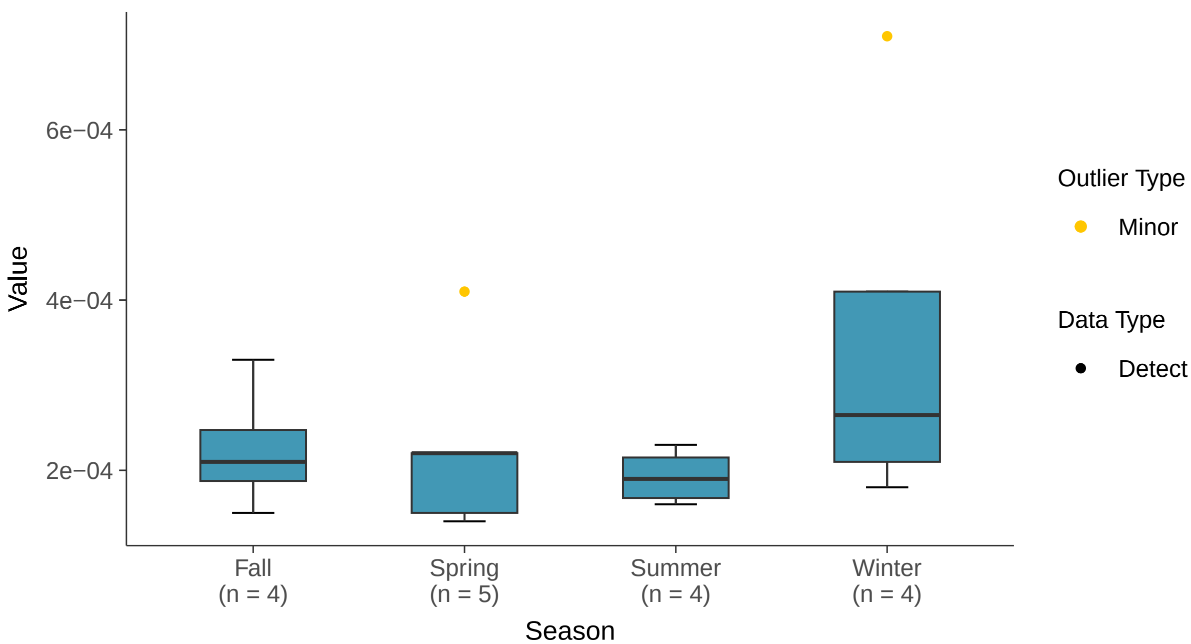
Boxplot

Selenium, MW-11 (mg/L)



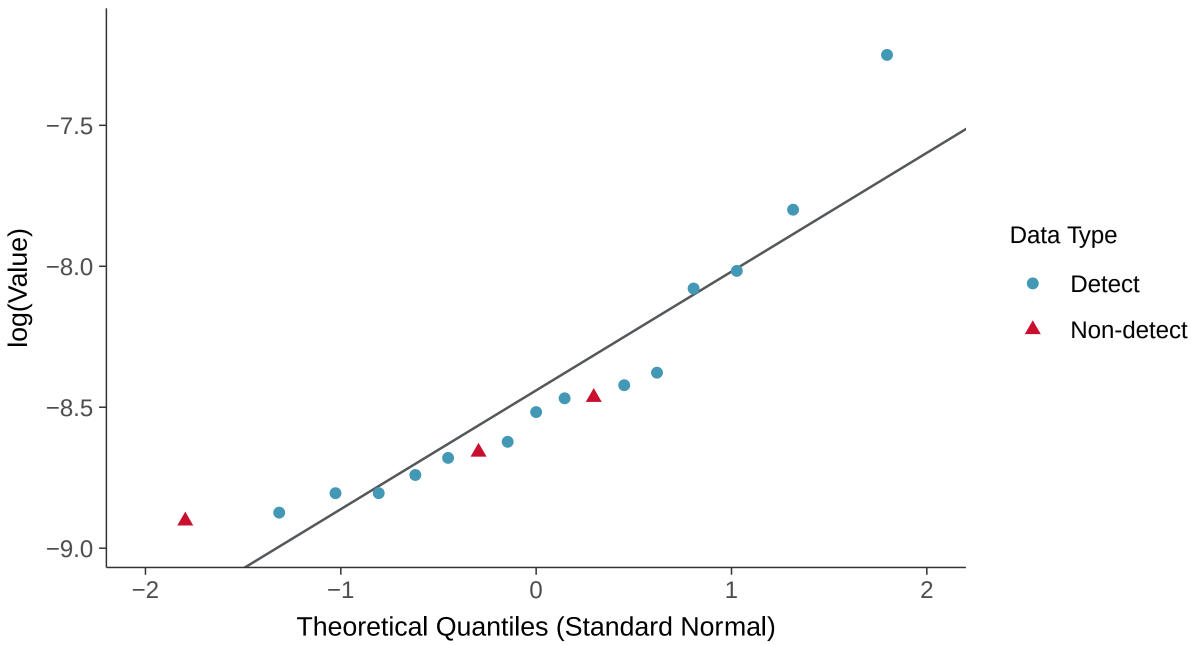
Boxplot by Season

Selenium, MW-11 (mg/L)



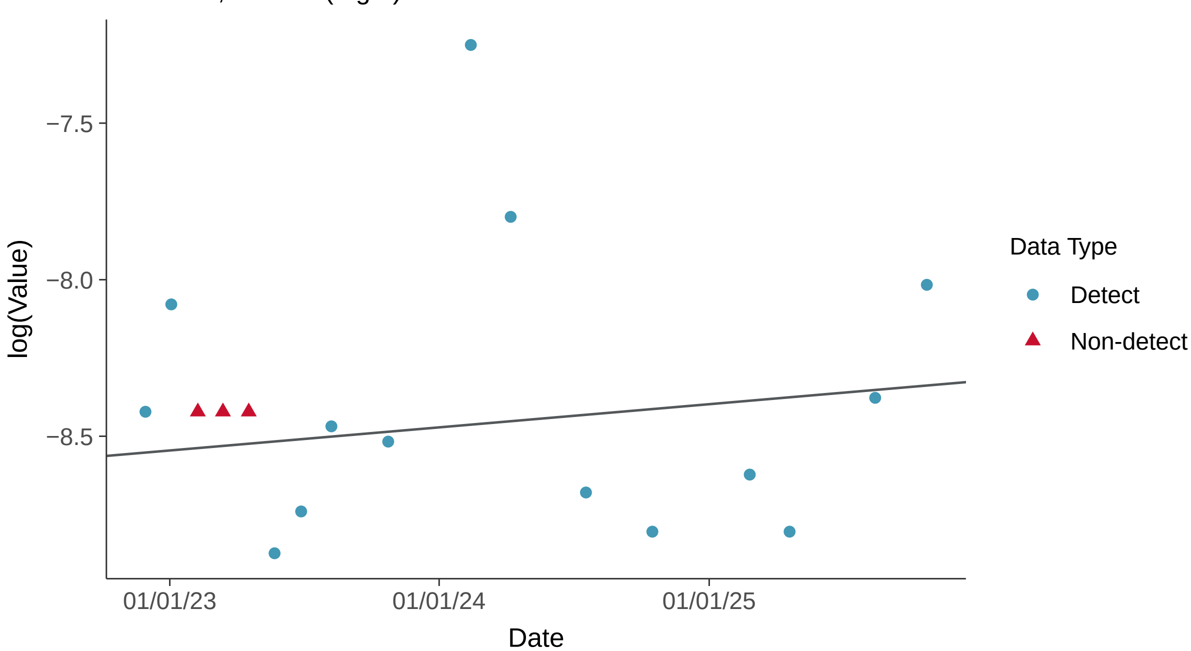
Lognormal Q-Q plot using ROS Imputed Estimates

Selenium, MW-11 (mg/L)



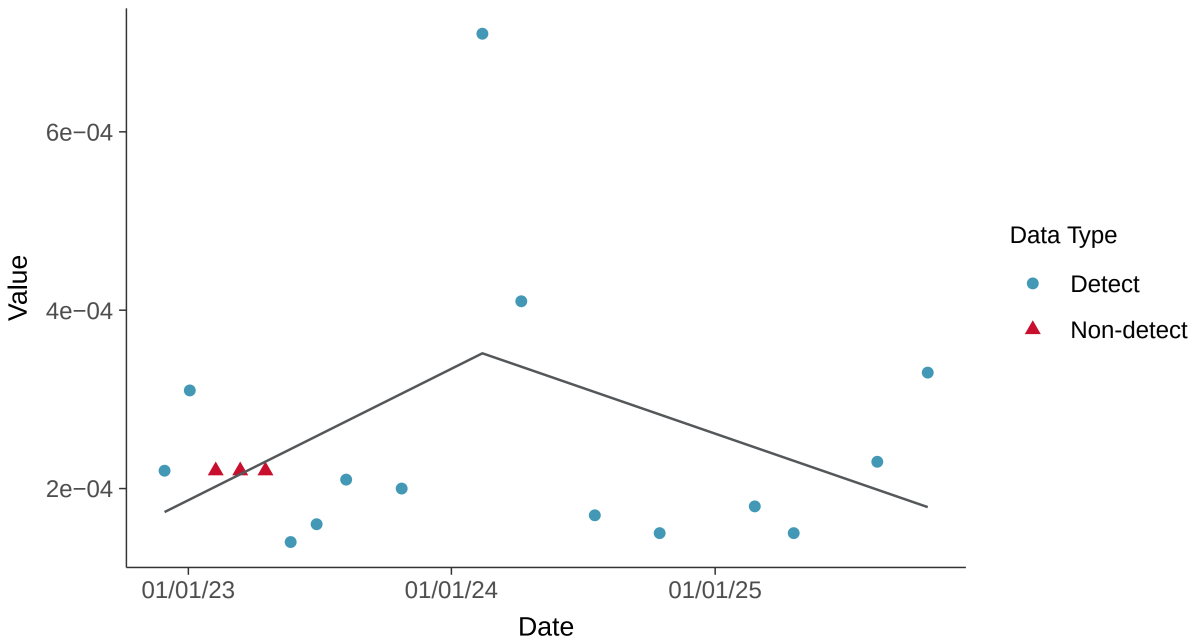
Trend Regression: Lognormal MLE

Selenium, MW-11 (mg/L)



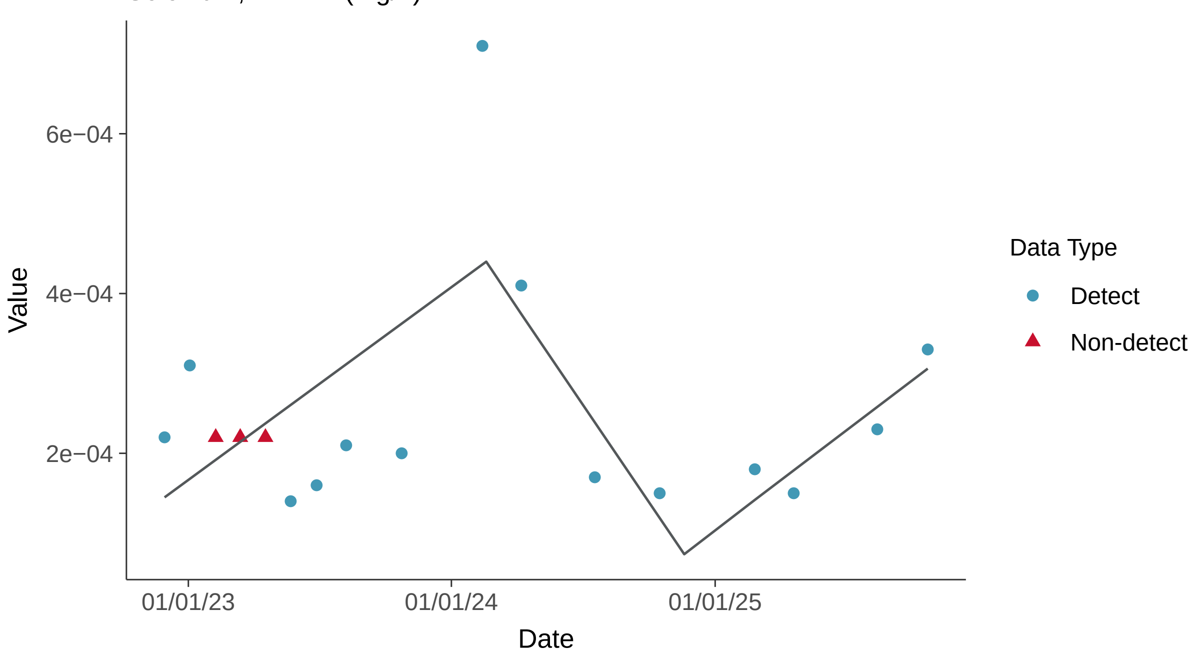
Trend Regression: Piecewise Linear-Linear

Selenium, MW-11 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Selenium, MW-11 (mg/L)

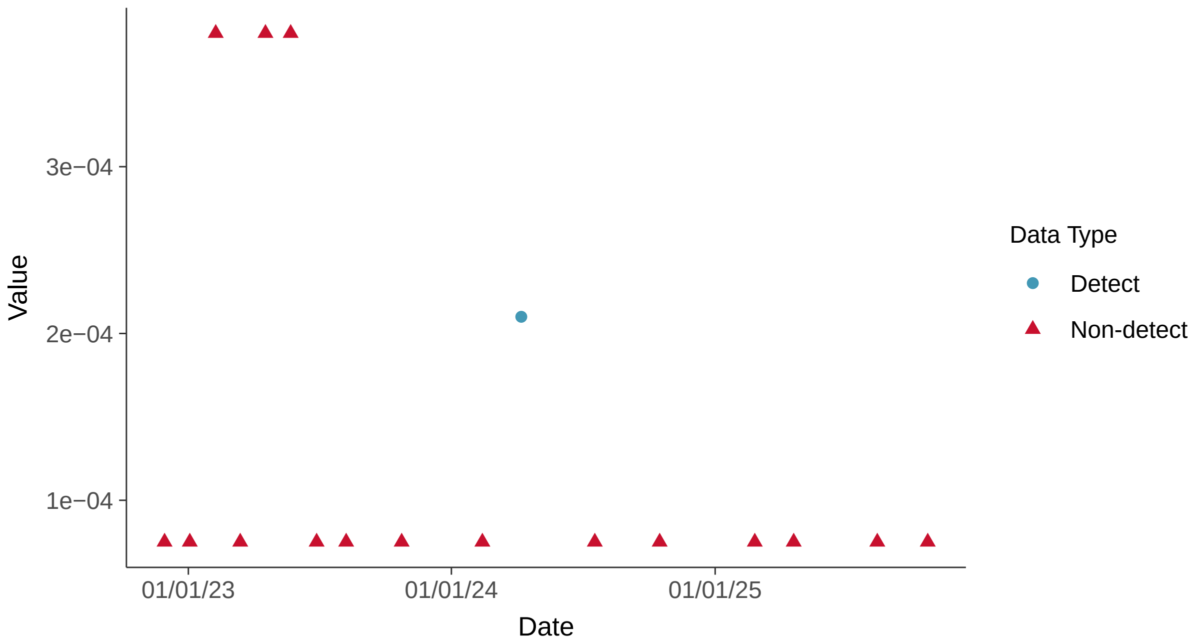


Appendix IV: Thallium, MW-11

ID: 21_2_4_125

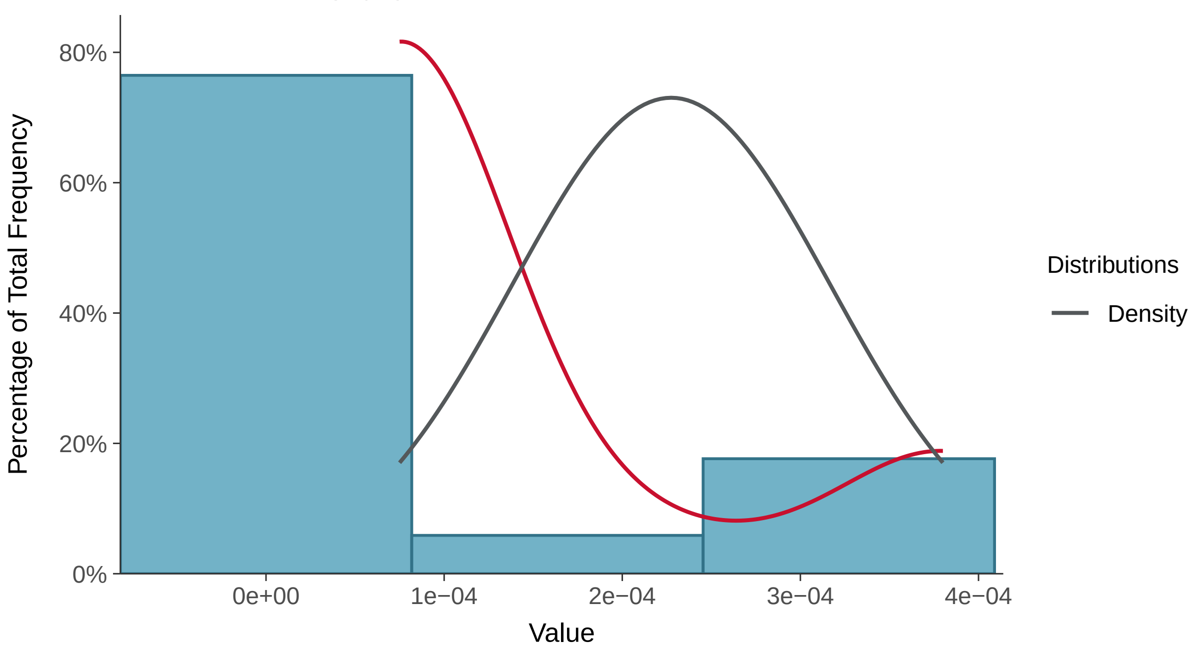
Scatter Plot

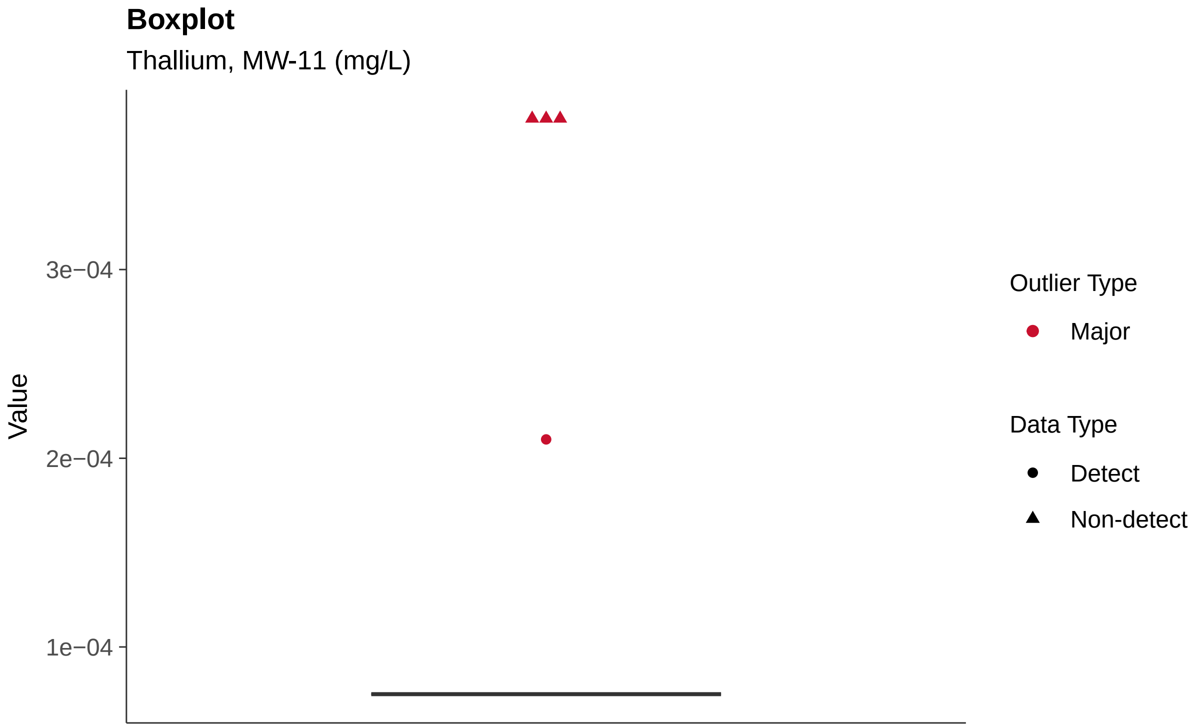
Thallium, MW-11 (mg/L)

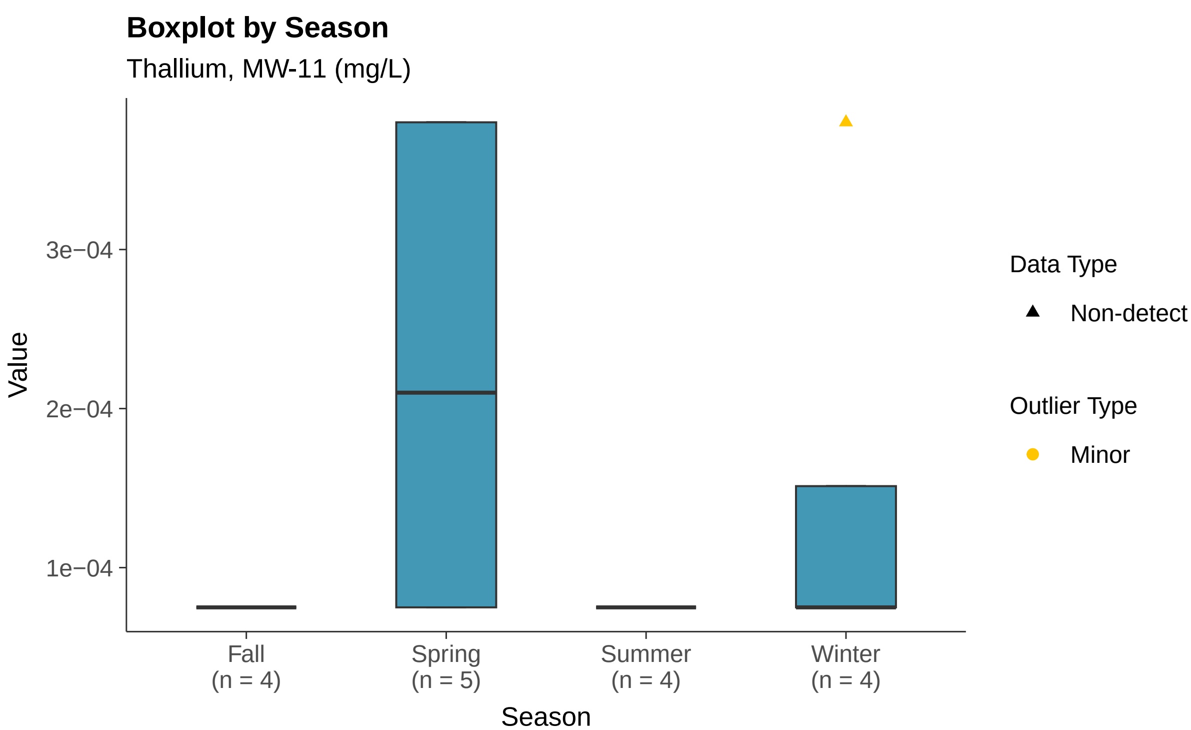


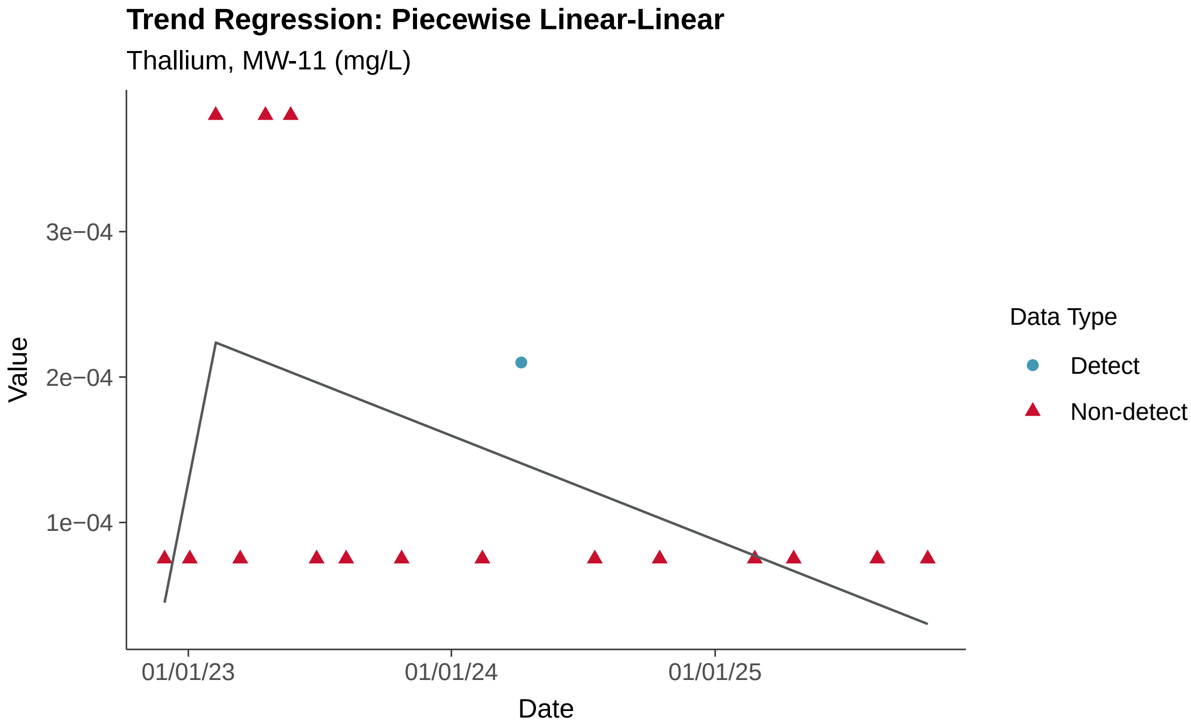
Histogram

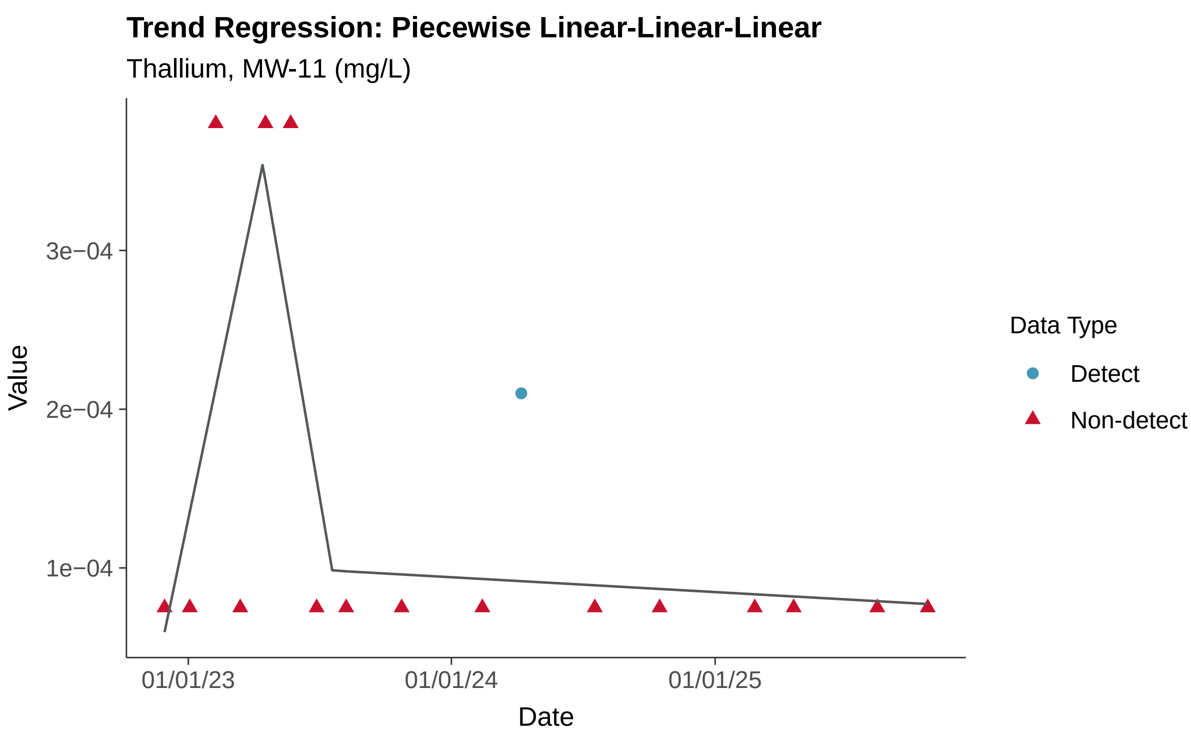
Thallium, MW-11 (mg/L)




Boxplot
Thallium, MW-11 (mg/L)
Value
3e−04
2e−04
1e−04
Outlier Type
Major
Data Type
Detect
Non-detect

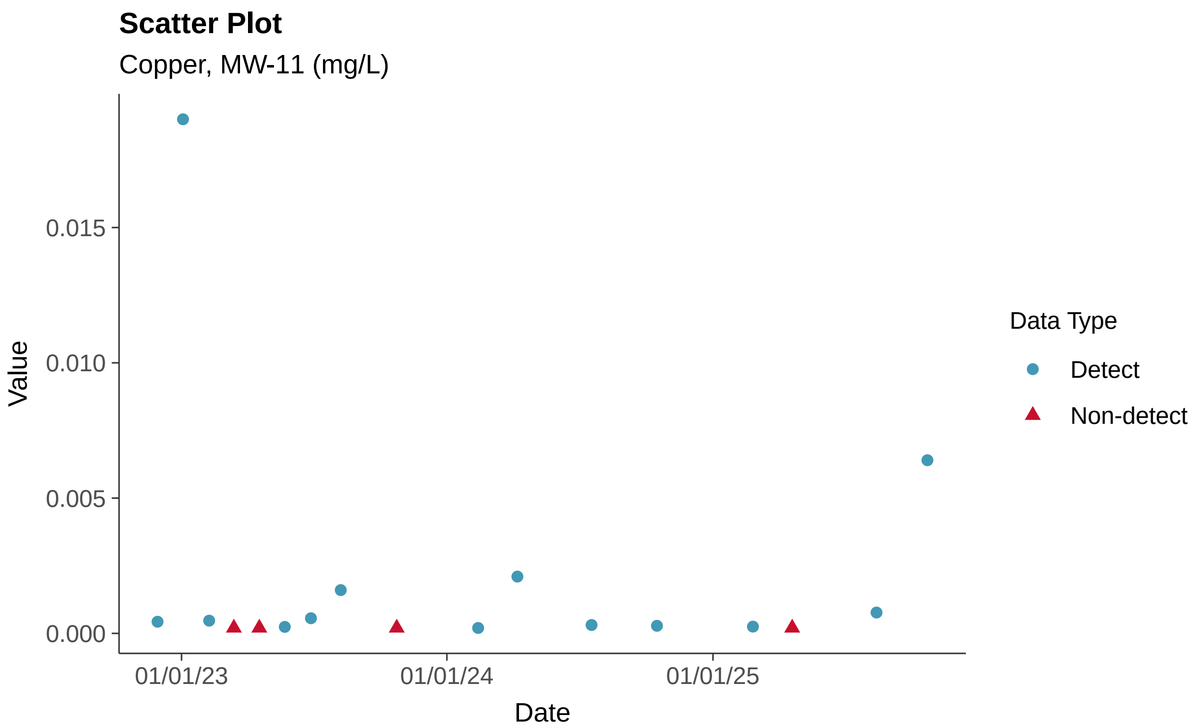

Boxplot by Season
Thallium, MW-11 (mg/L)
Value
3e−04
2e−04
1e−04
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Data Type
Non-detect
Outlier Type
Minor

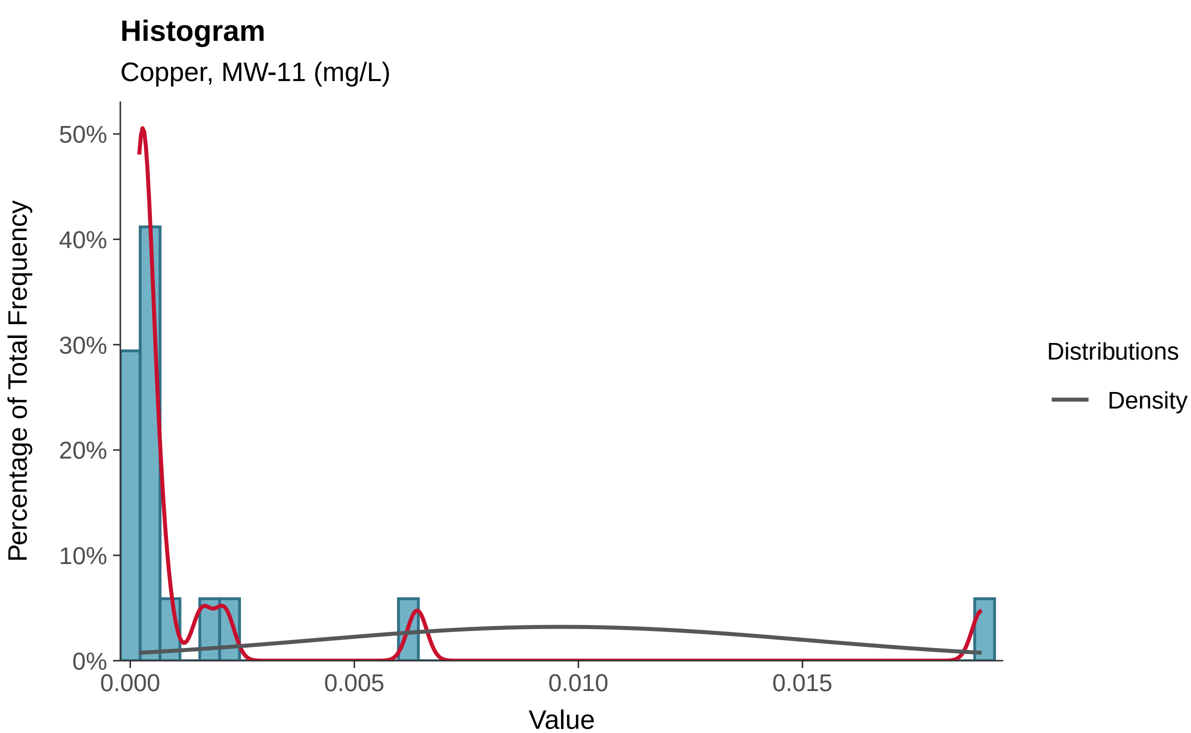

Trend Regression: Piecewise Linear-Linear
Thallium, MW-11 (mg/L)
Value
3e−04
2e−04
1e−04
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear-Linear
Thallium, MW-11 (mg/L)
Value
3e−04
2e−04
1e−04
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Part 115: Copper, MW-11

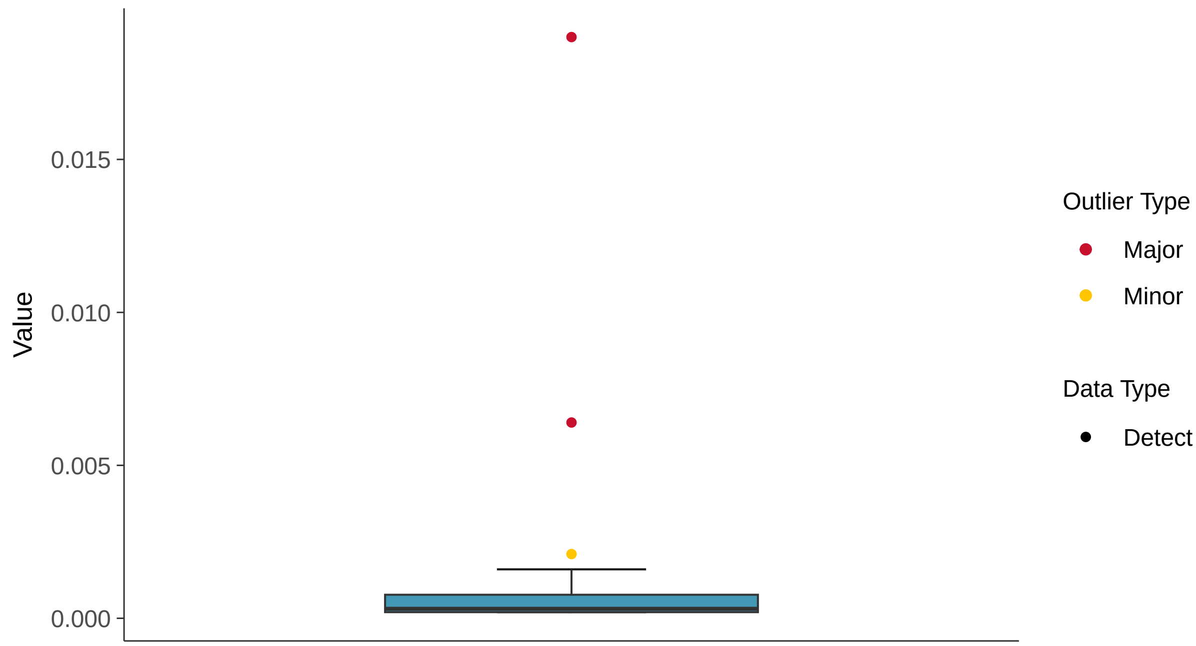
ID: 21_2_5_111





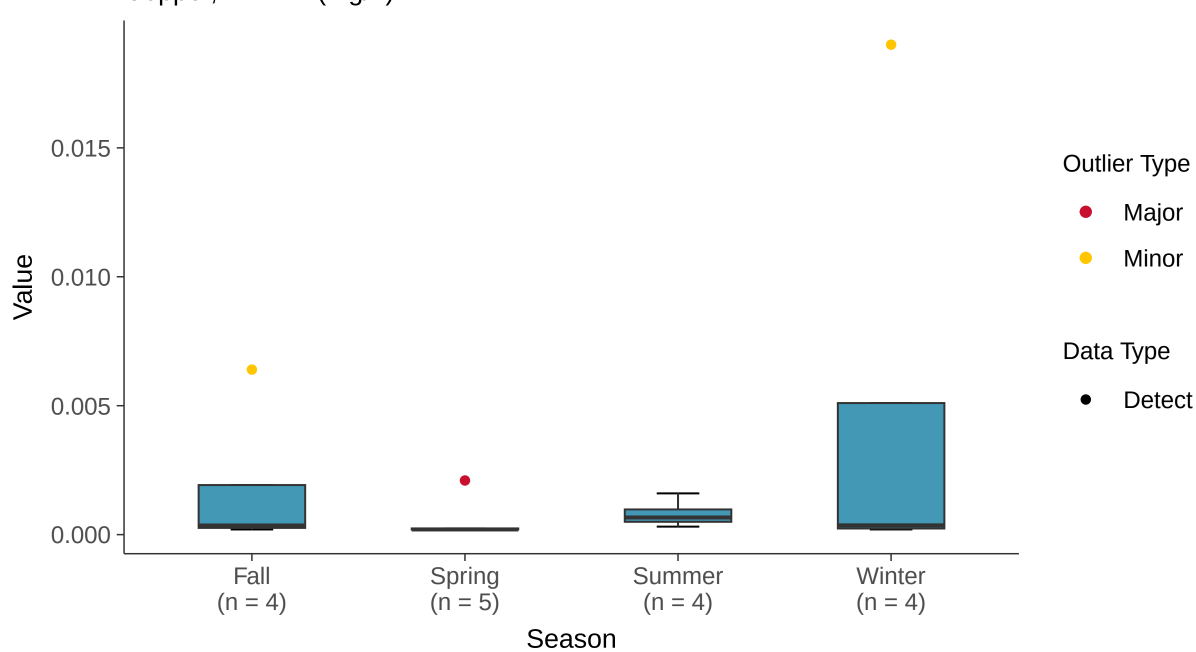
Boxplot

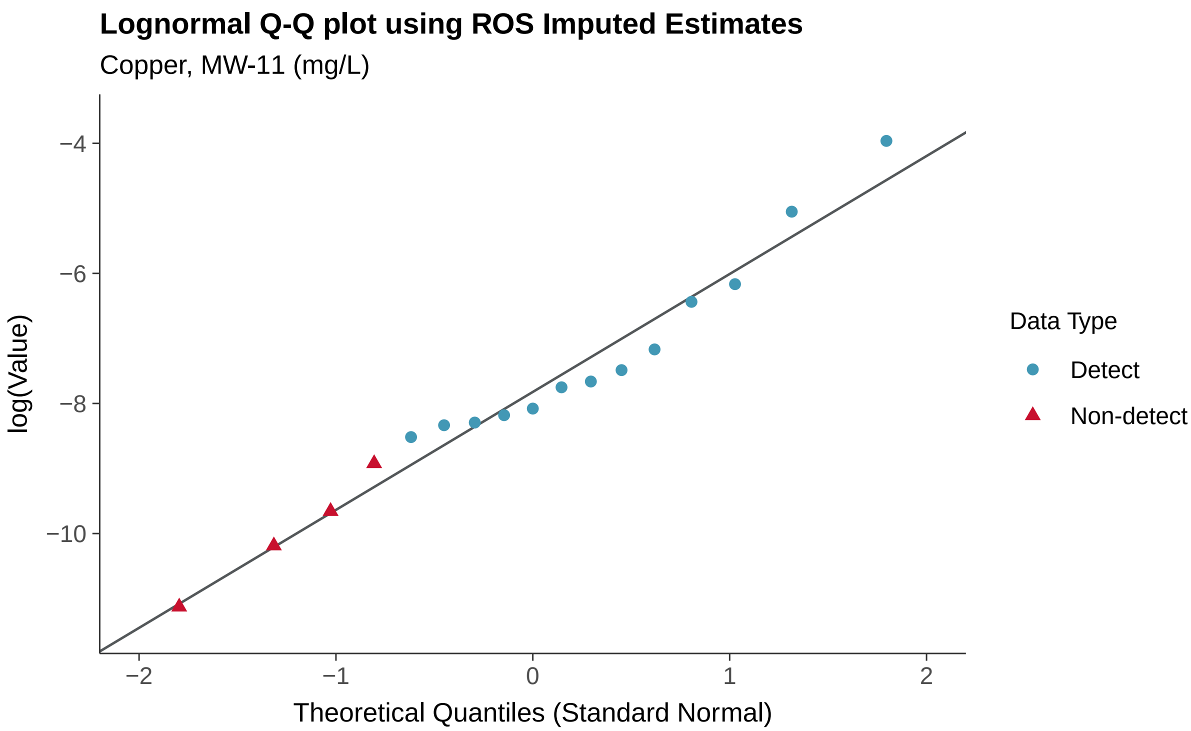
Copper, MW-11 (mg/L)

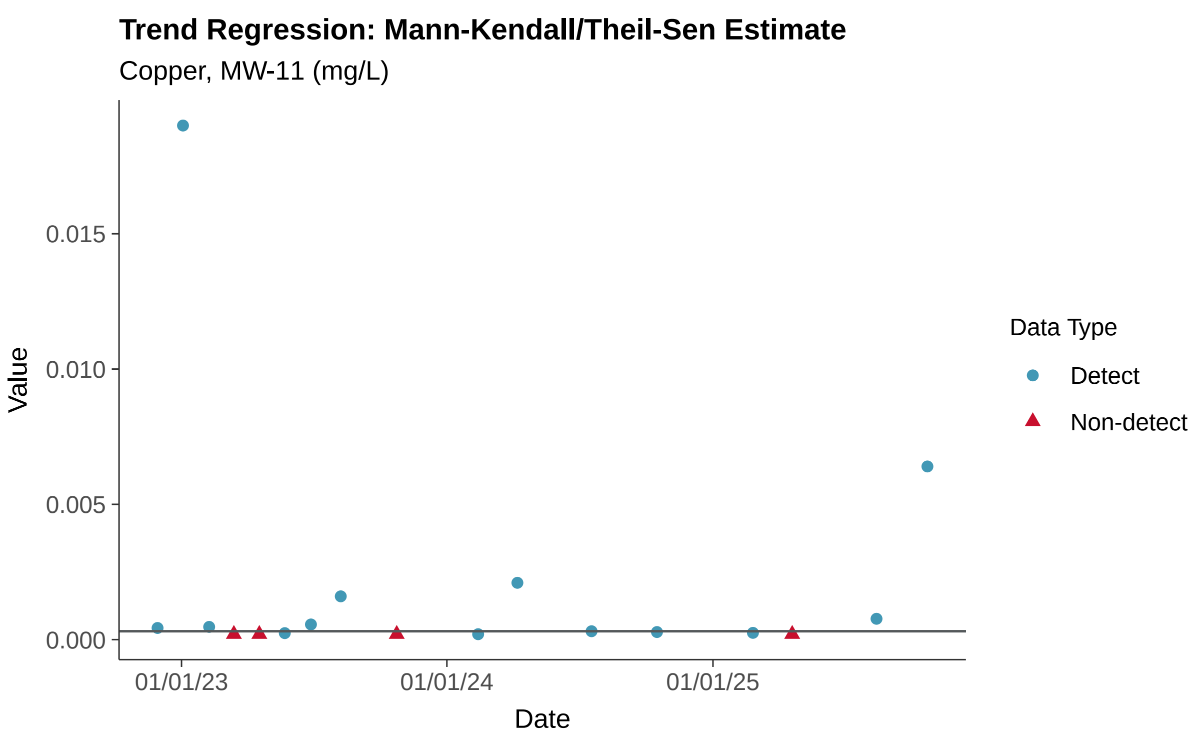


Boxplot by Season

Copper, MW-11 (mg/L)

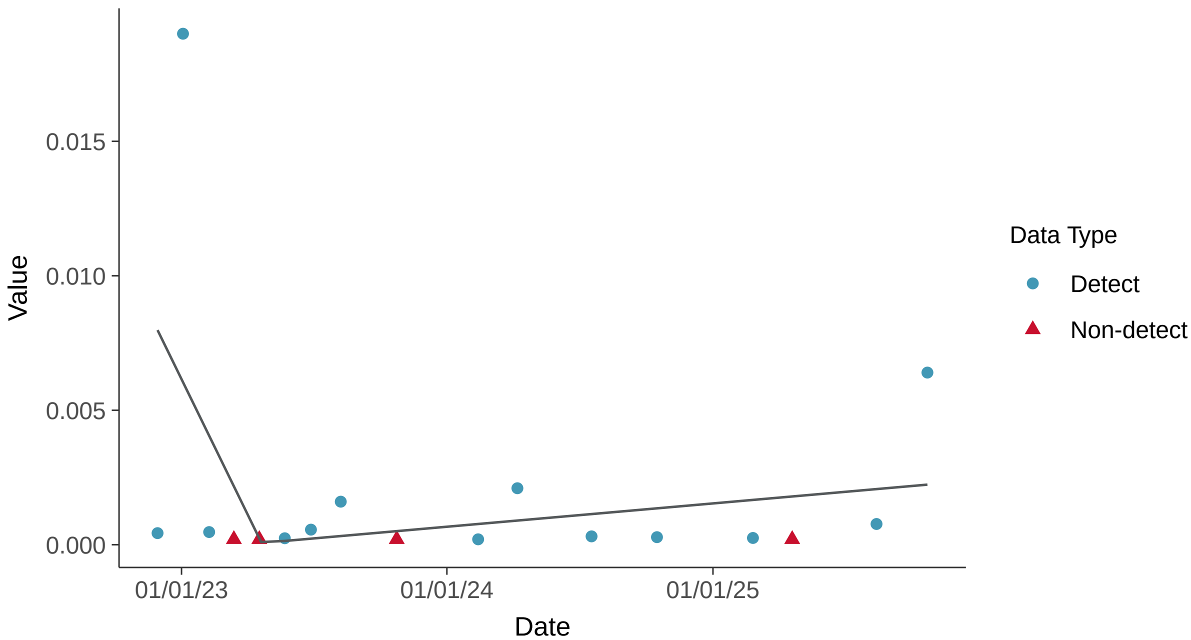



Lognormal Q-Q plot using ROS Imputed Estimates
Copper, MW-11 (mg/L)
log(Value)
−4
−6
−8
−10
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Trend Regression: Mann-Kendall/Theil-Sen Estimate
Copper, MW-11 (mg/L)
Value
0.015
0.010
0.005
0.000
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

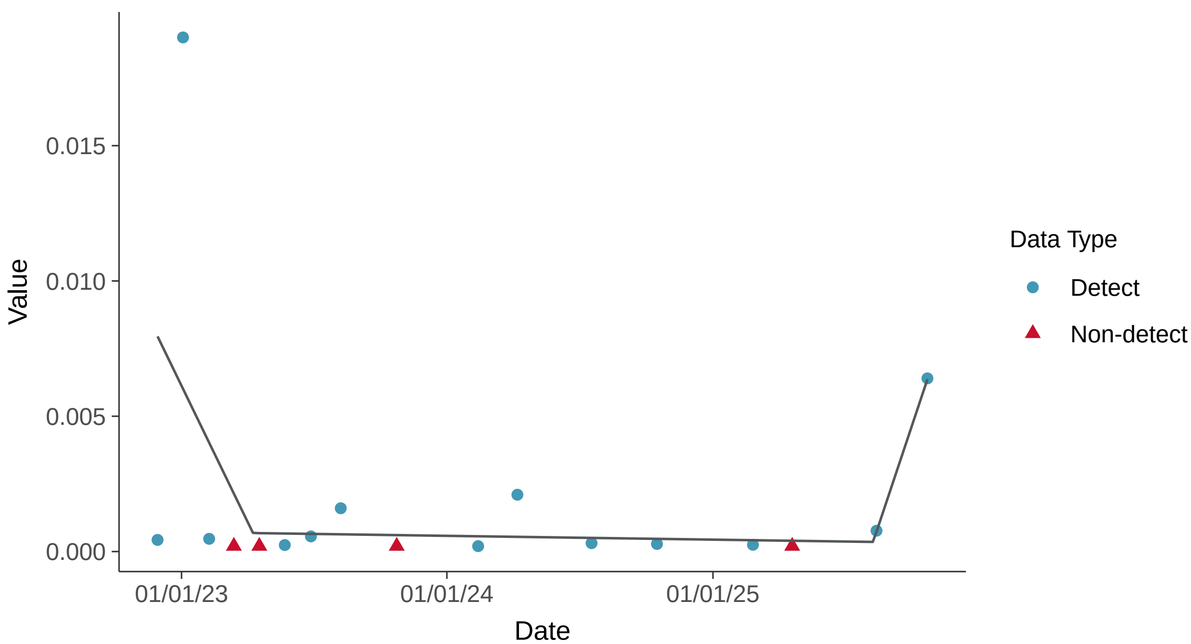
Trend Regression: Piecewise Linear-Linear

Copper, MW-11 (mg/L)



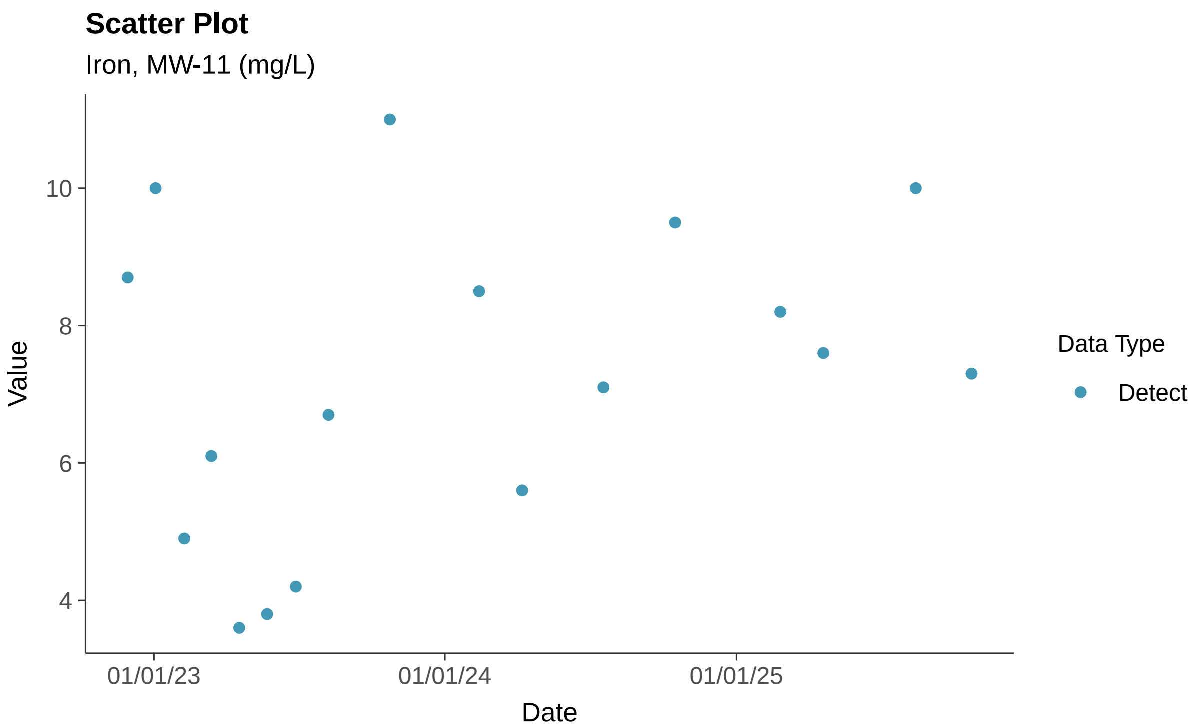
Trend Regression: Piecewise Linear-Linear-Linear

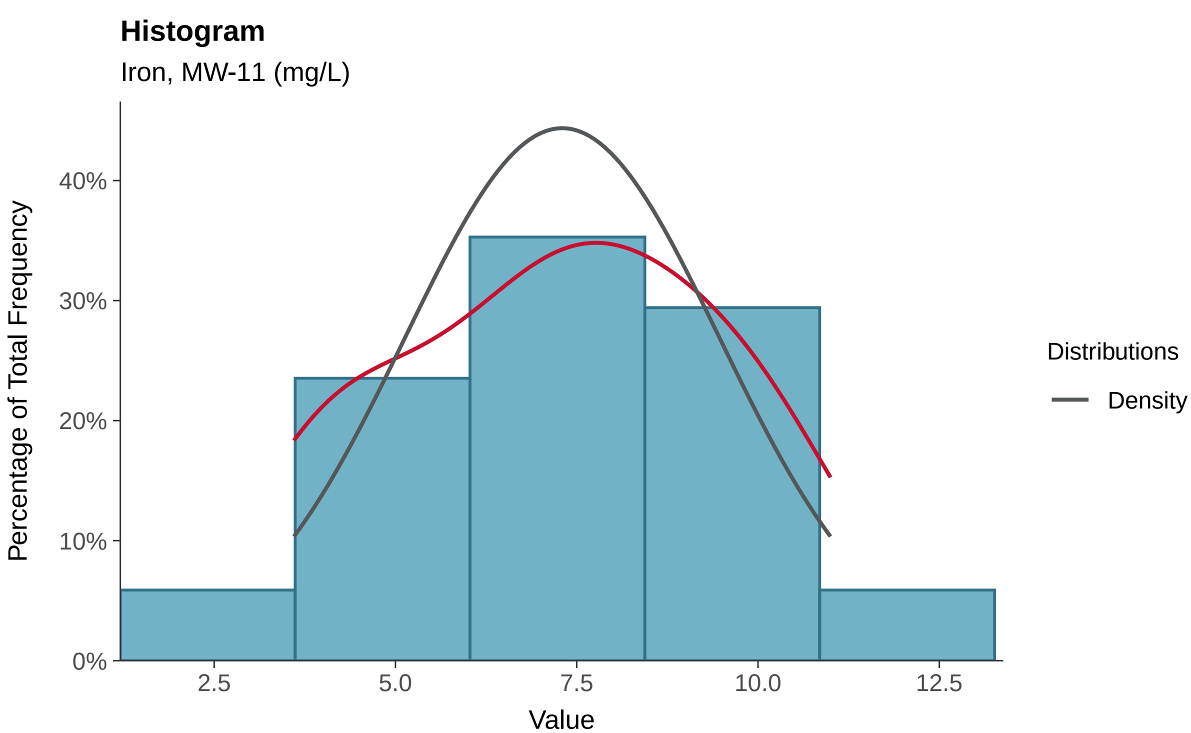
Copper, MW-11 (mg/L)



Part 115: Iron, MW-11

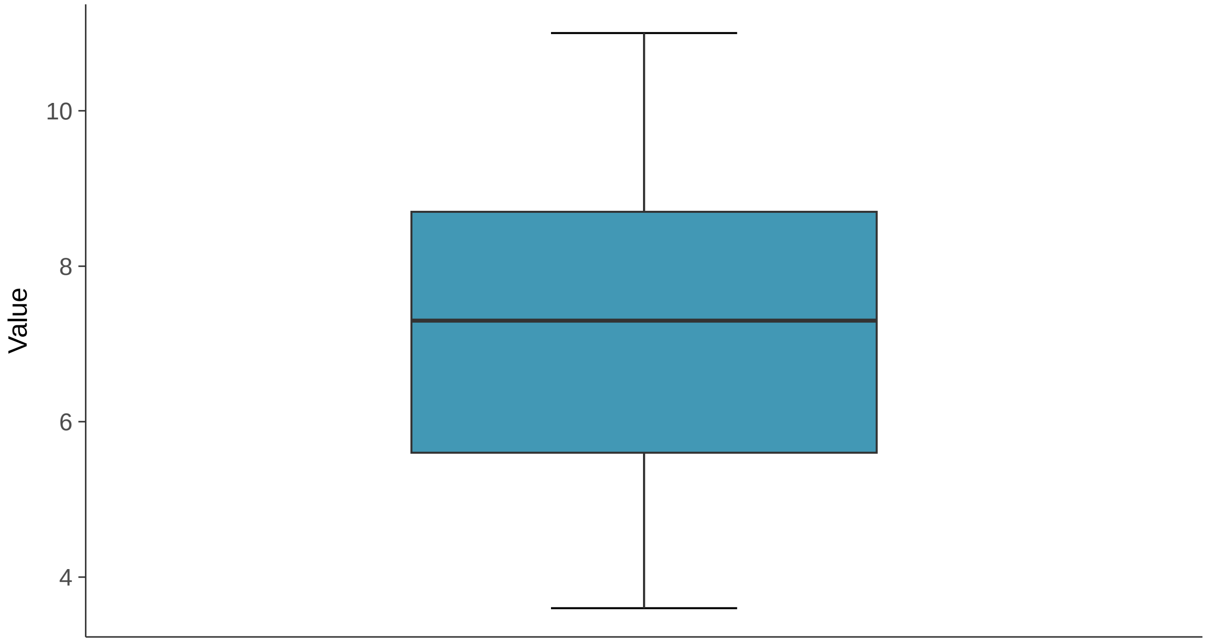
ID: 21_2_5_114





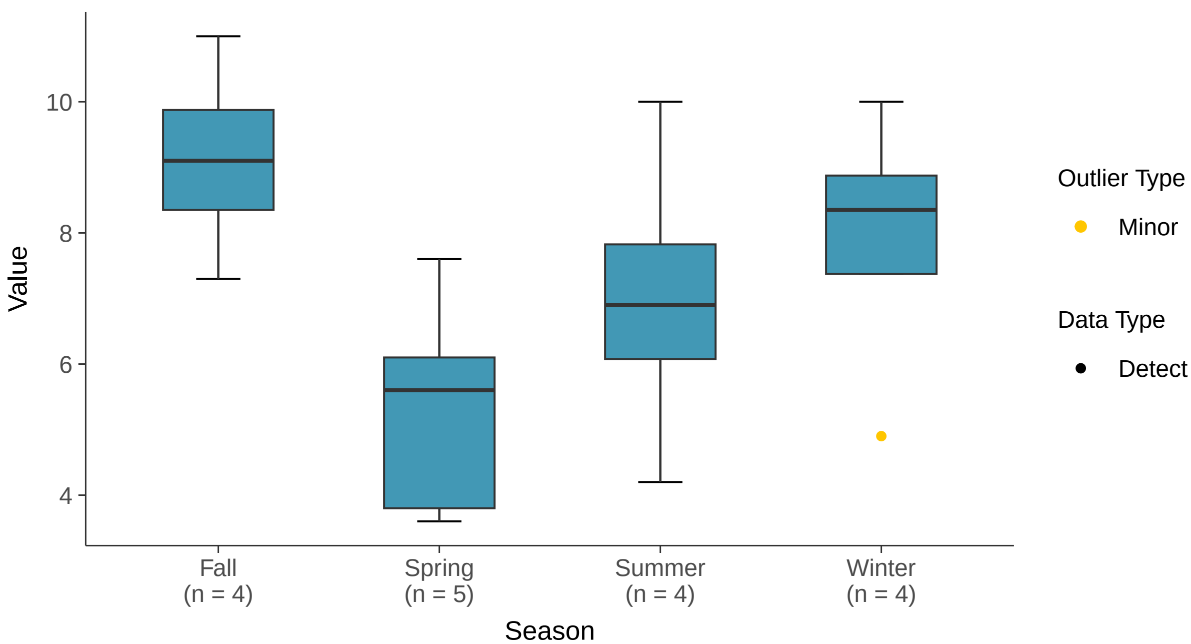
Boxplot

Iron, MW-11 (mg/L)



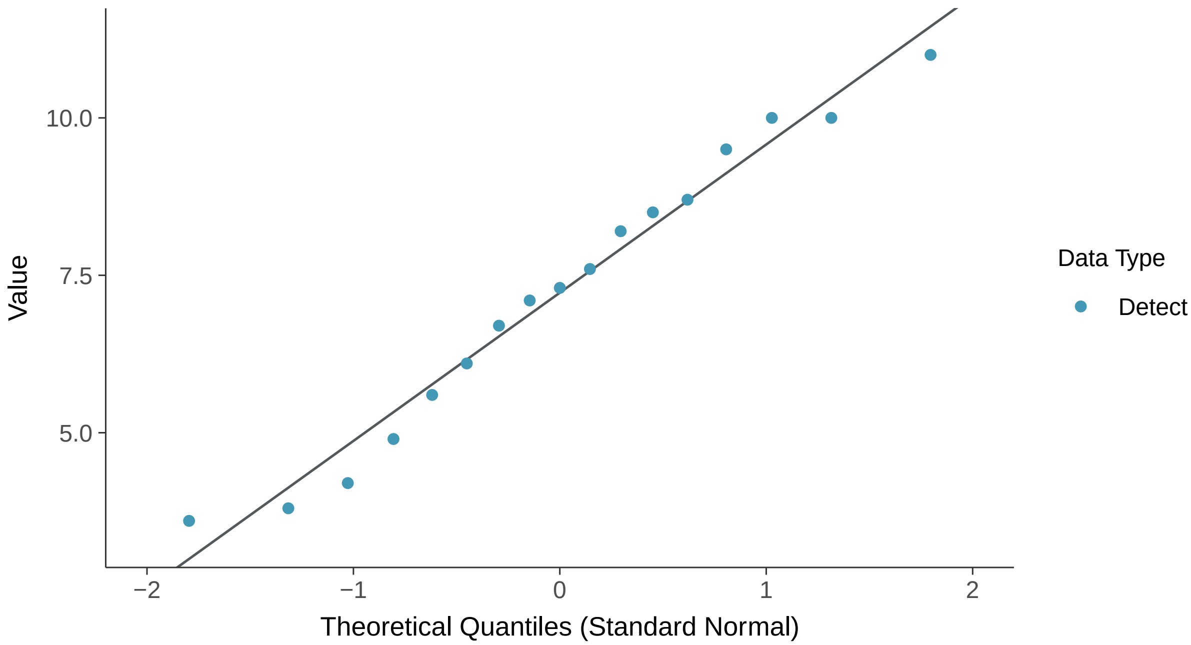
Boxplot by Season

Iron, MW-11 (mg/L)



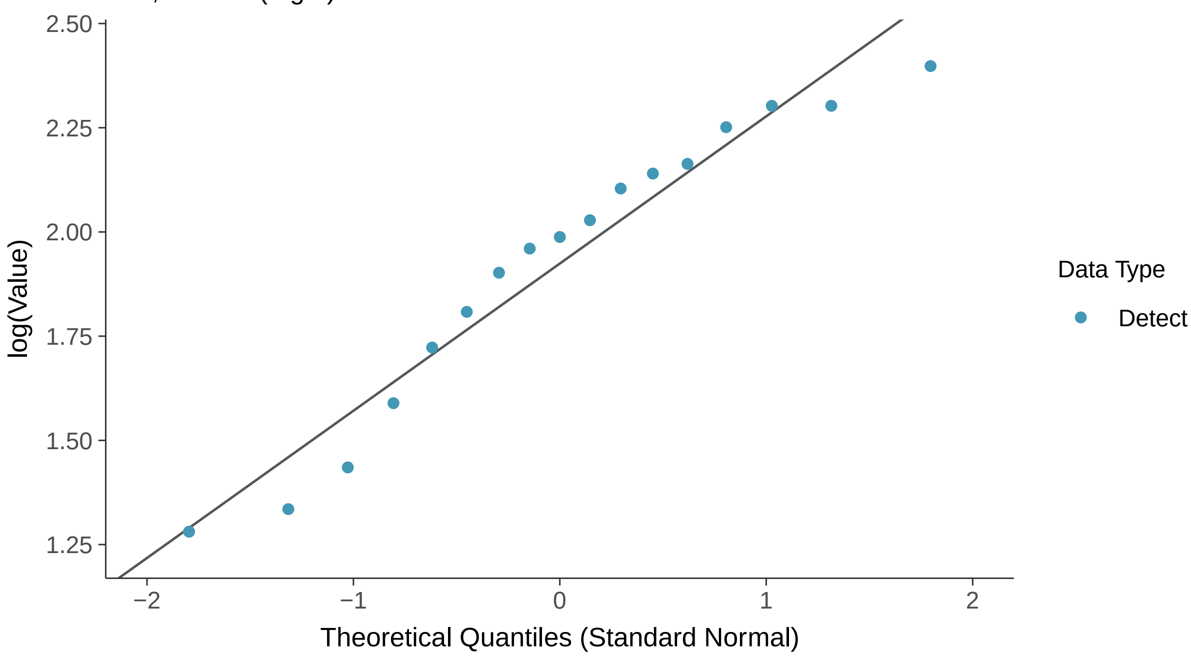
Normal Q-Q plot

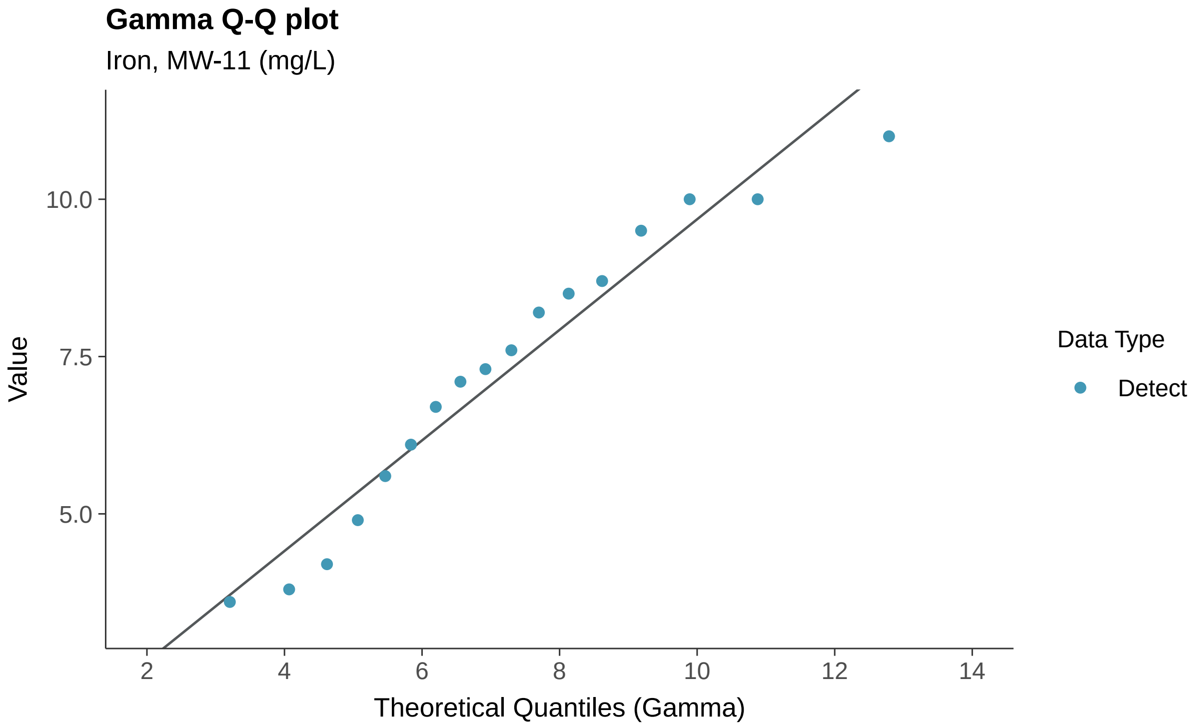
Iron, MW-11 (mg/L)

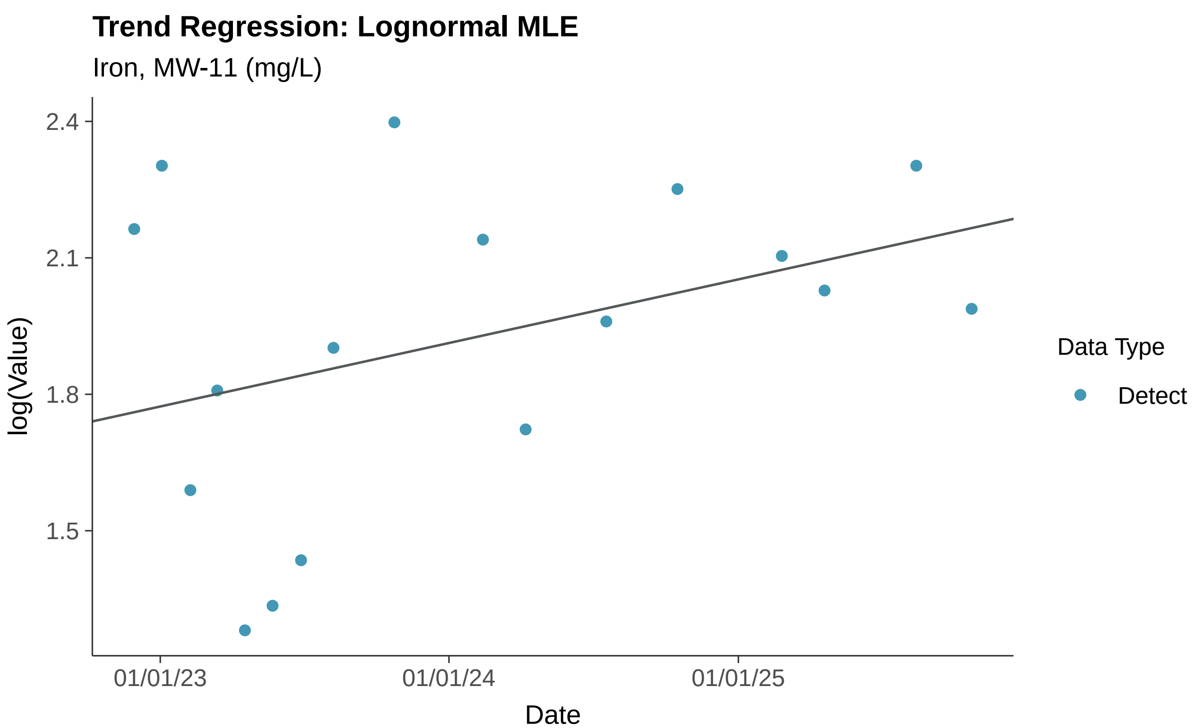


Lognormal Q-Q plot

Iron, MW-11 (mg/L)

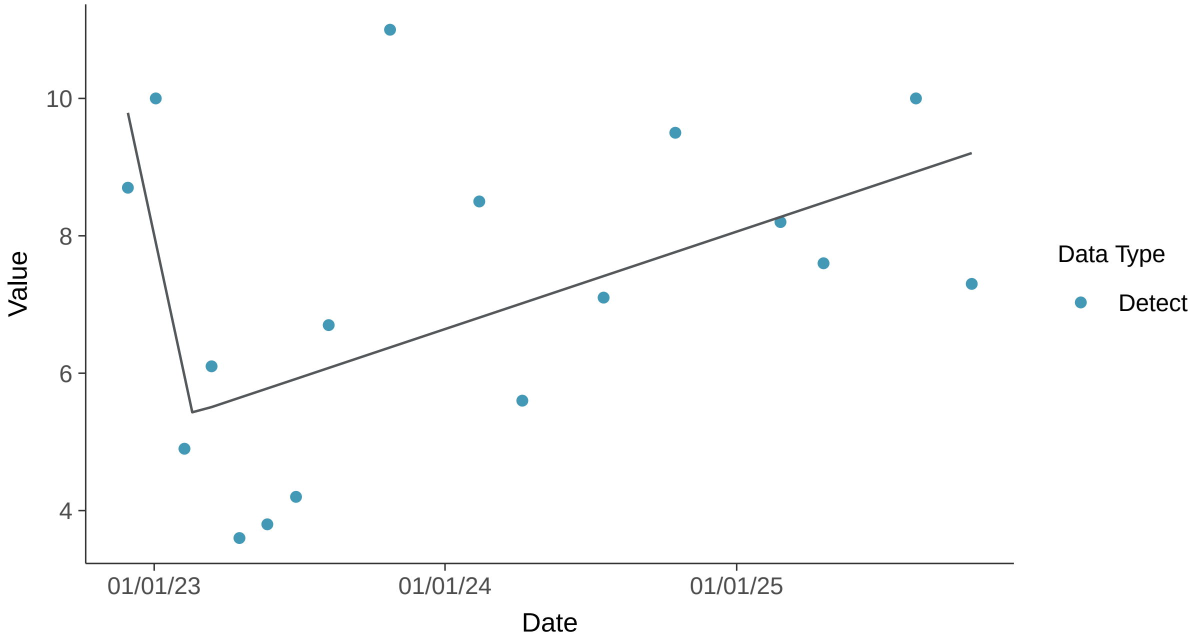



Gamma Q-Q plot
Iron, MW-11 (mg/L)
Value
10.0
7.5
5.0
2
4
6
8
10
12
14
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Iron, MW-11 (mg/L)
log(Value)
2.4
2.1
1.8
1.5
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

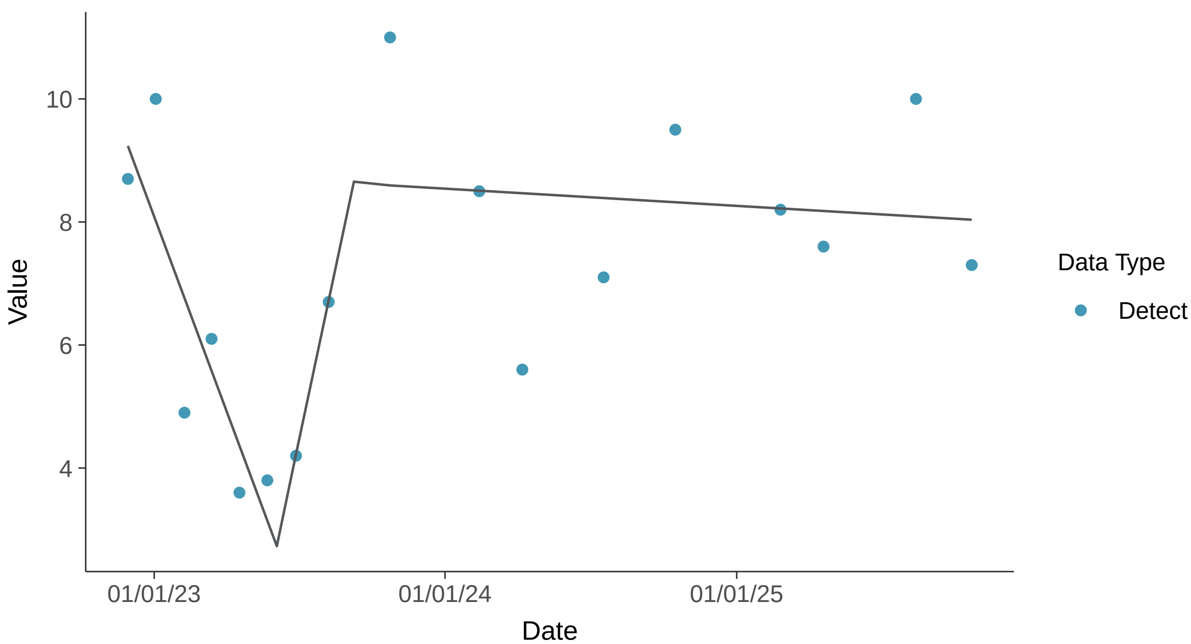
Trend Regression: Piecewise Linear-Linear

Iron, MW-11 (mg/L)



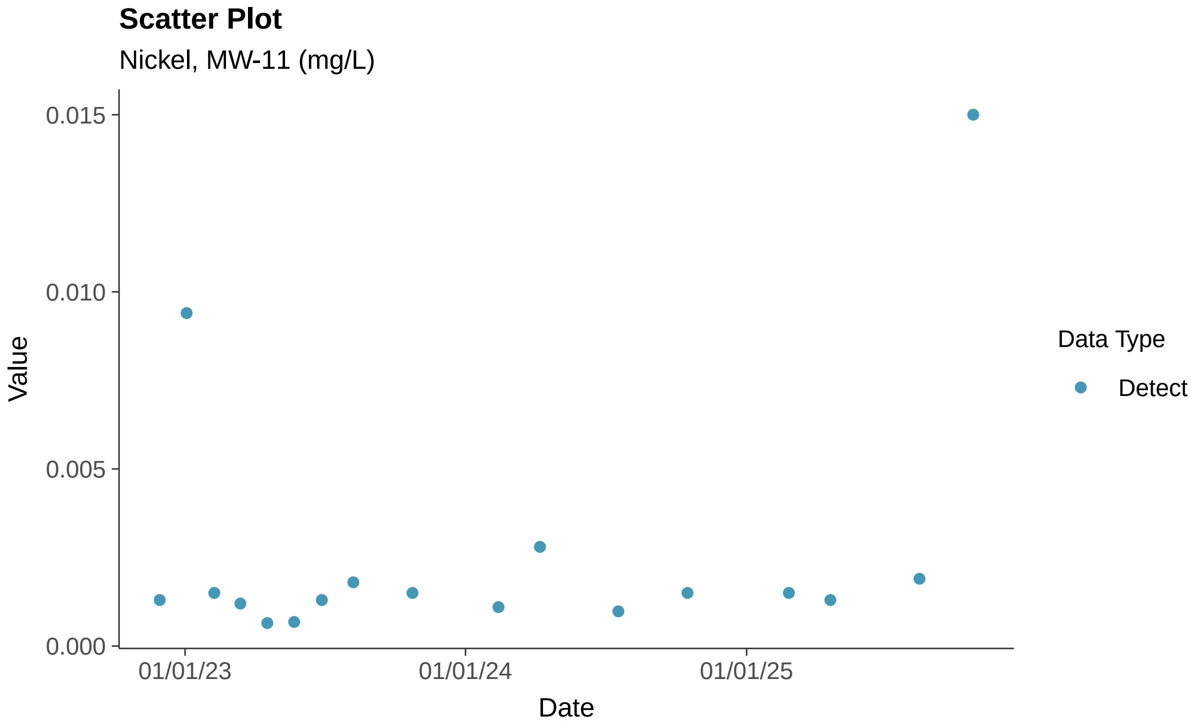
Trend Regression: Piecewise Linear-Linear-Linear

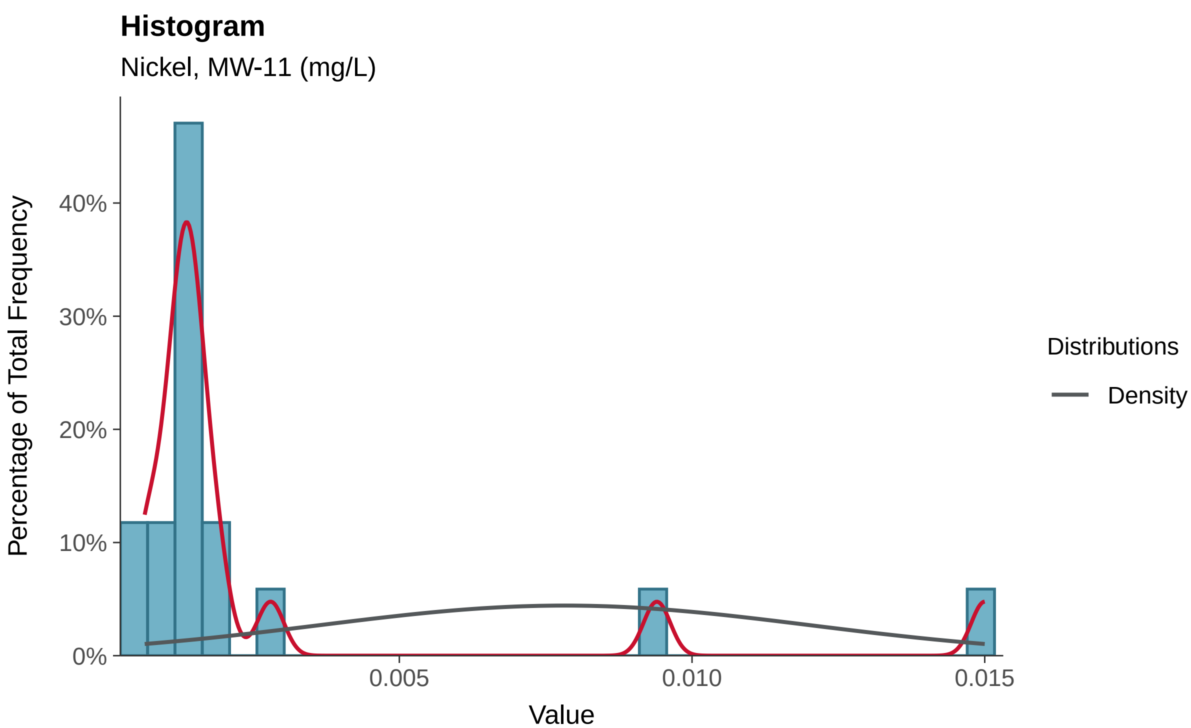
Iron, MW-11 (mg/L)



Part 115: Nickel, MW-11

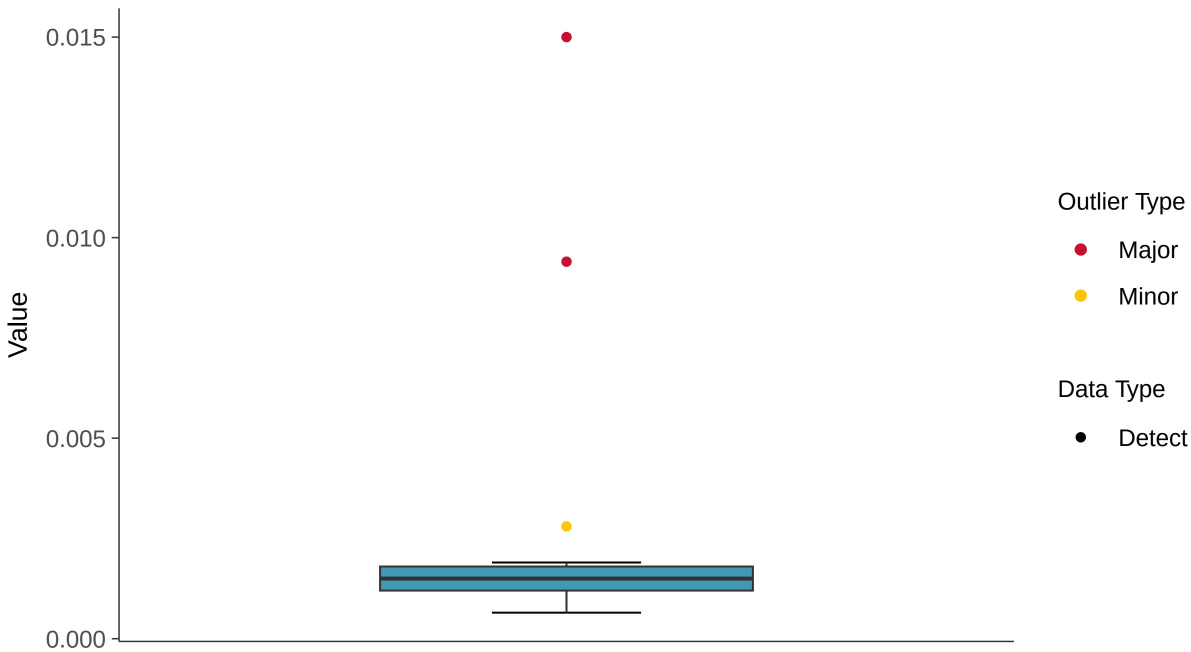
ID: 21_2_5_119





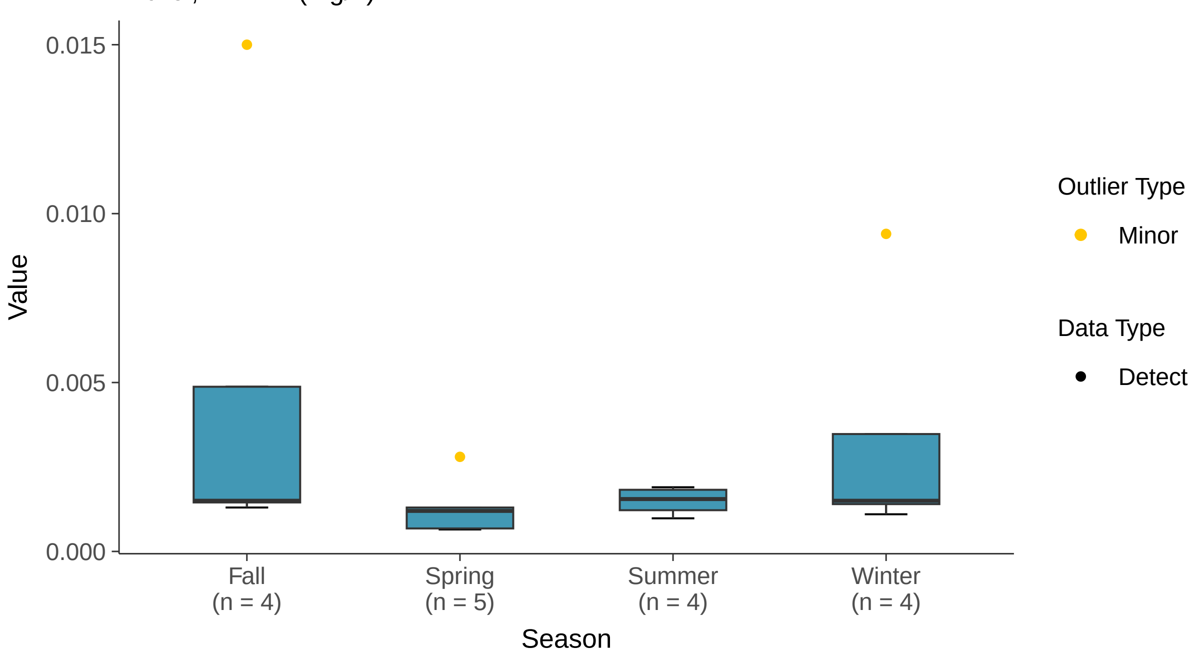
Boxplot

Nickel, MW-11 (mg/L)



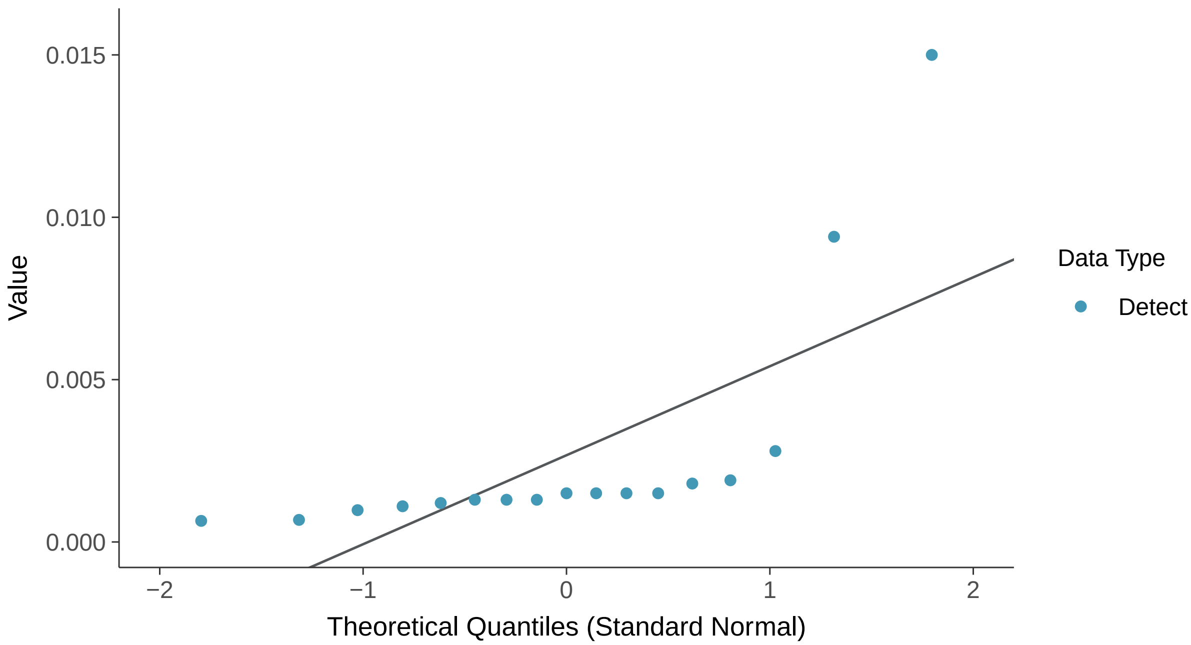
Boxplot by Season

Nickel, MW-11 (mg/L)



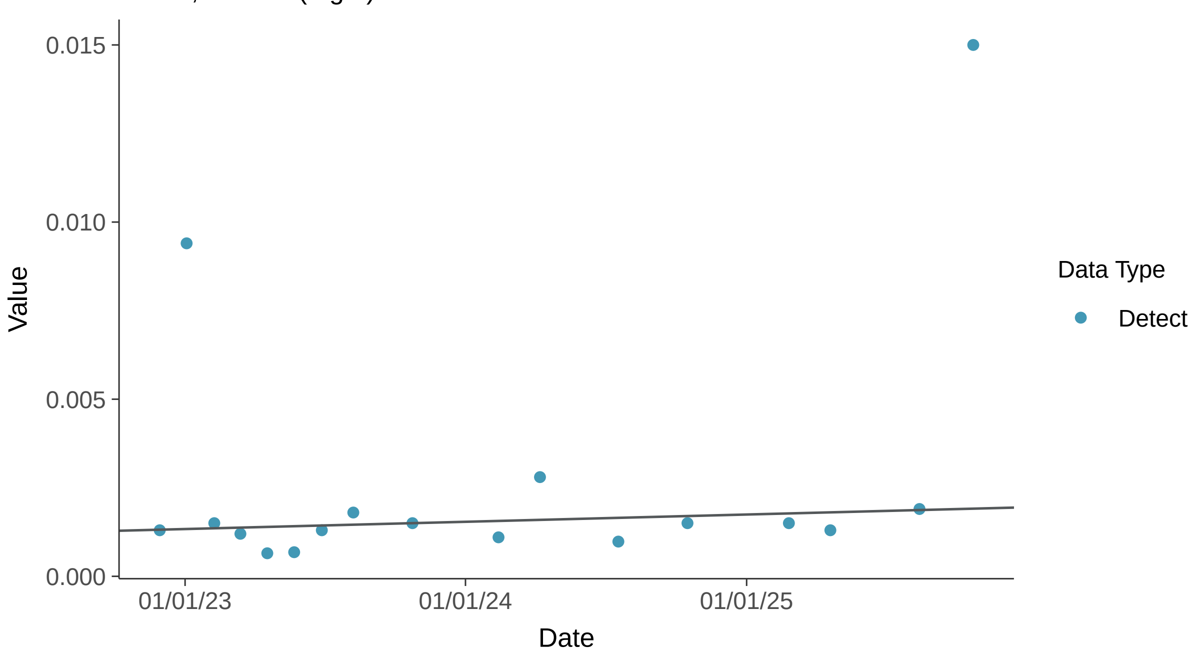
Normal Q-Q plot

Nickel, MW-11 (mg/L)



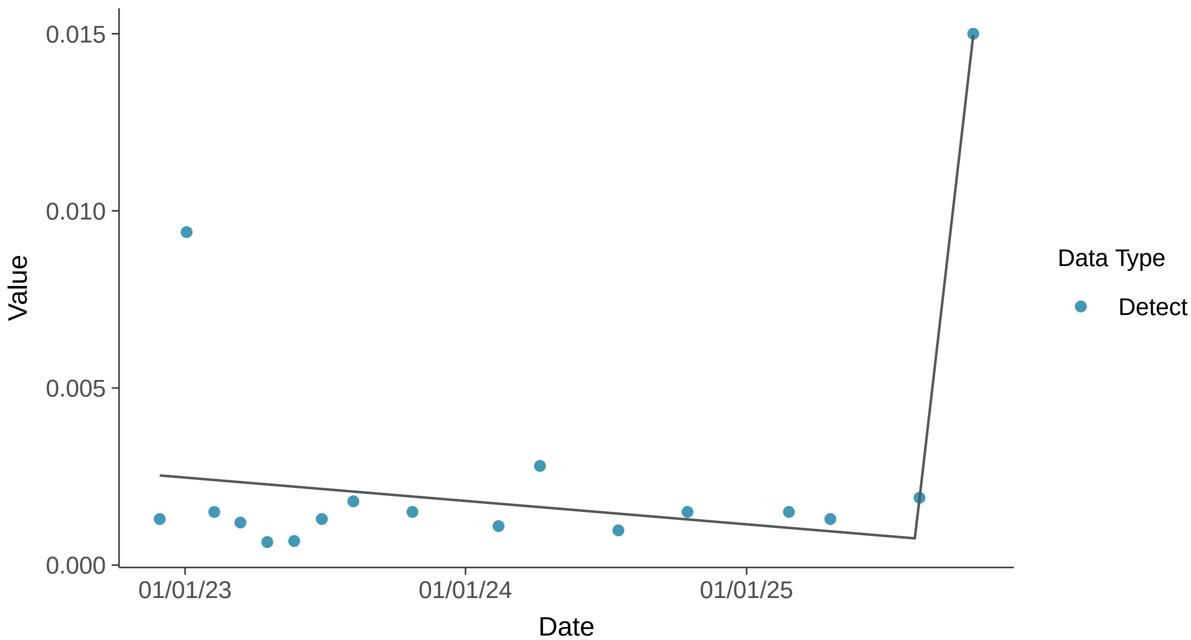
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Nickel, MW-11 (mg/L)



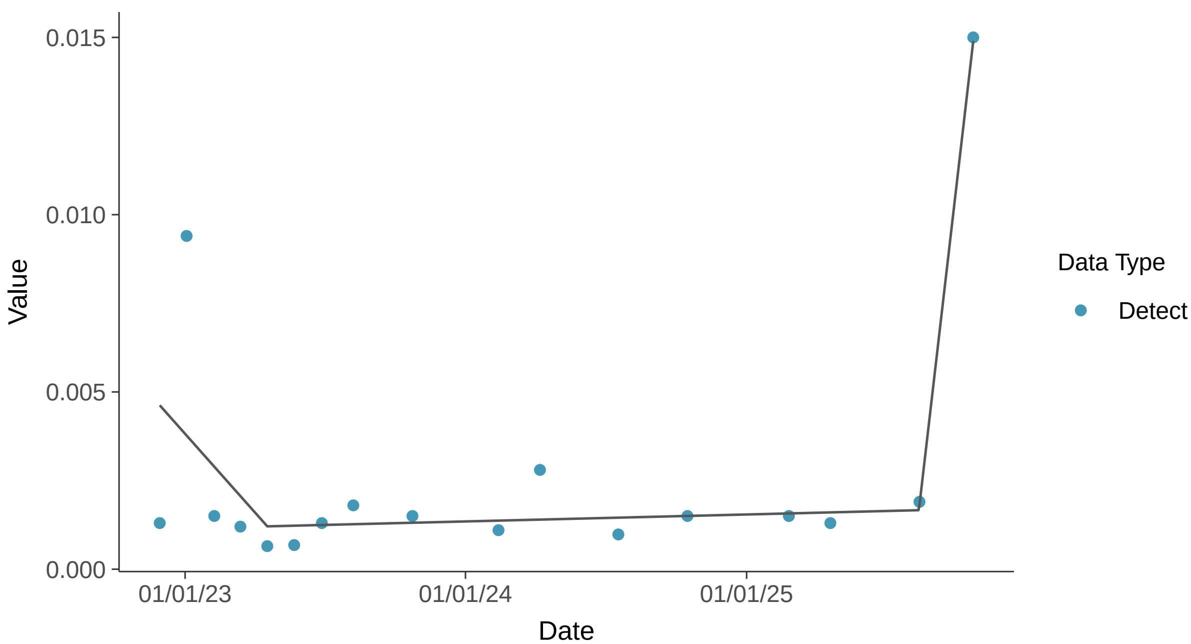
Trend Regression: Piecewise Linear-Linear

Nickel, MW-11 (mg/L)



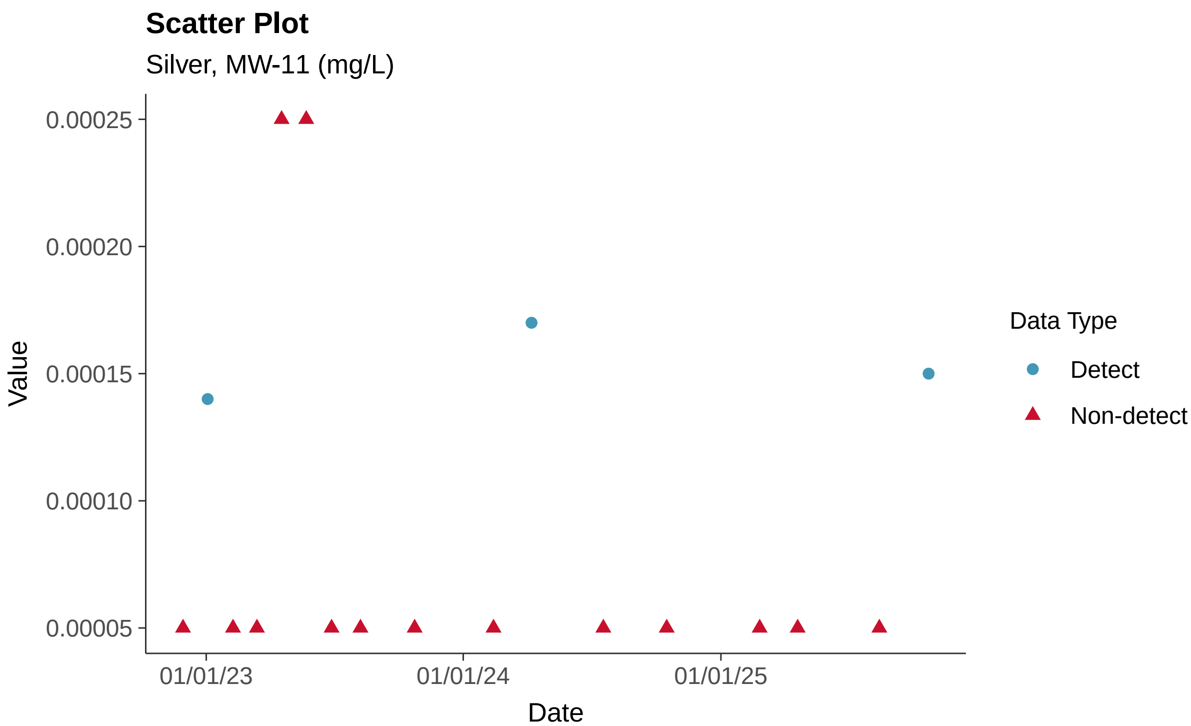
Trend Regression: Piecewise Linear-Linear-Linear

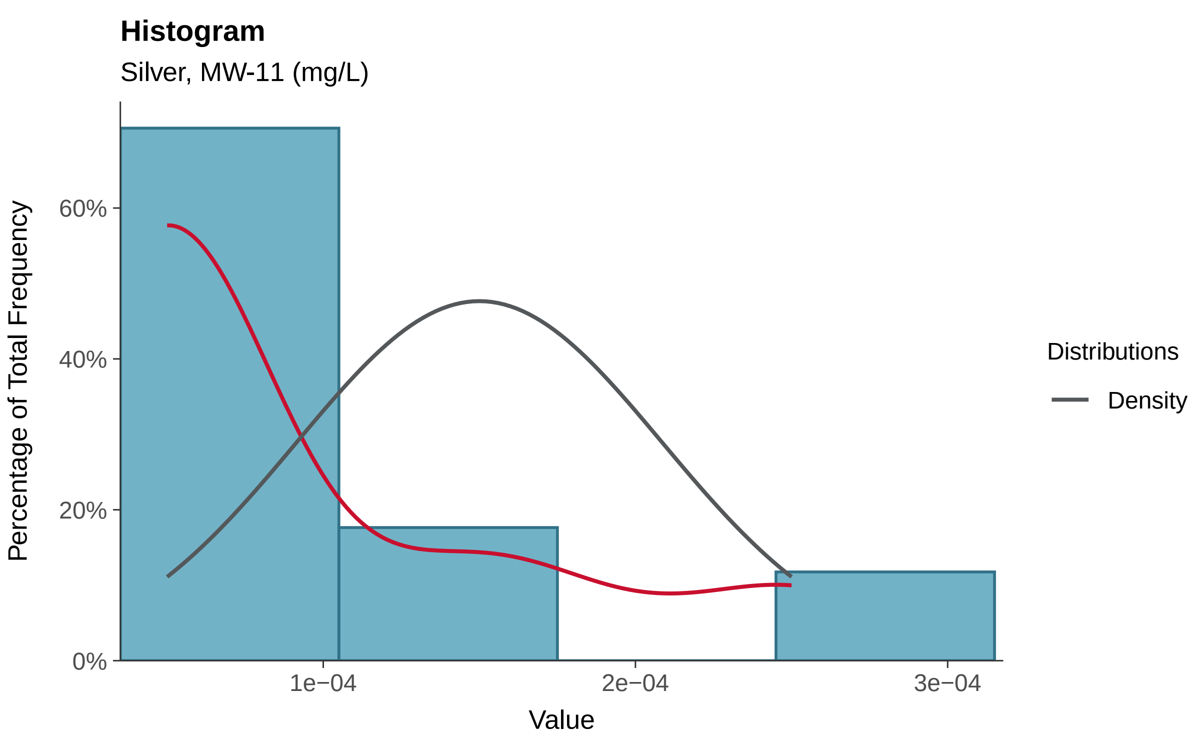
Nickel, MW-11 (mg/L)



Part 115: Silver, MW-11

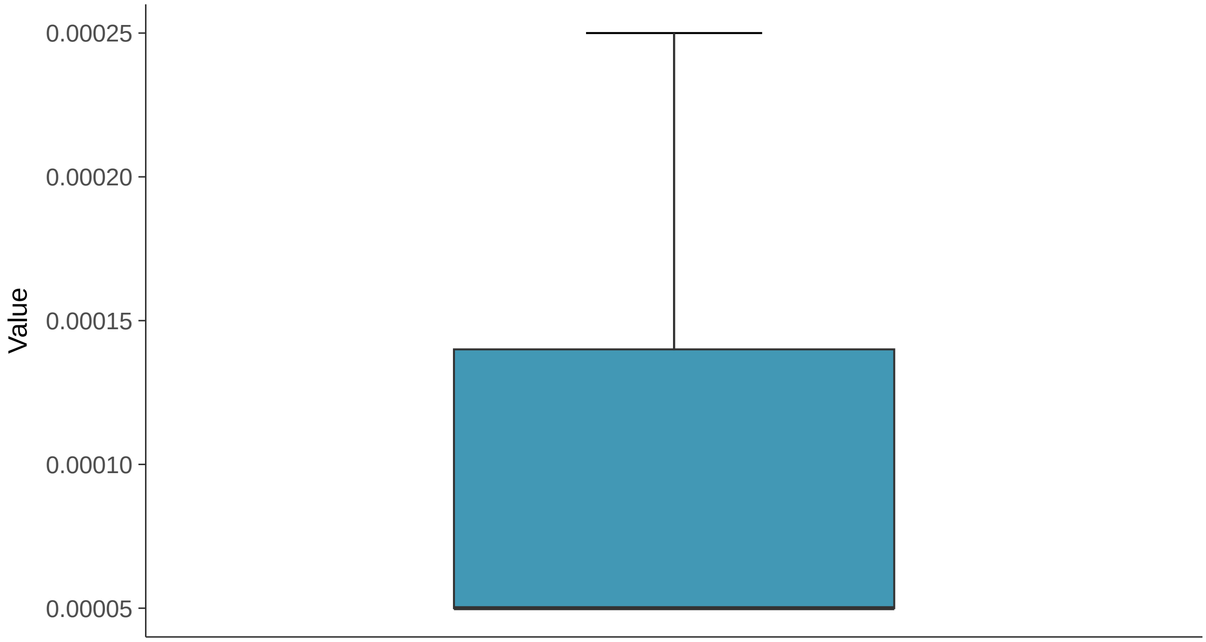
ID: 21_2_5_123





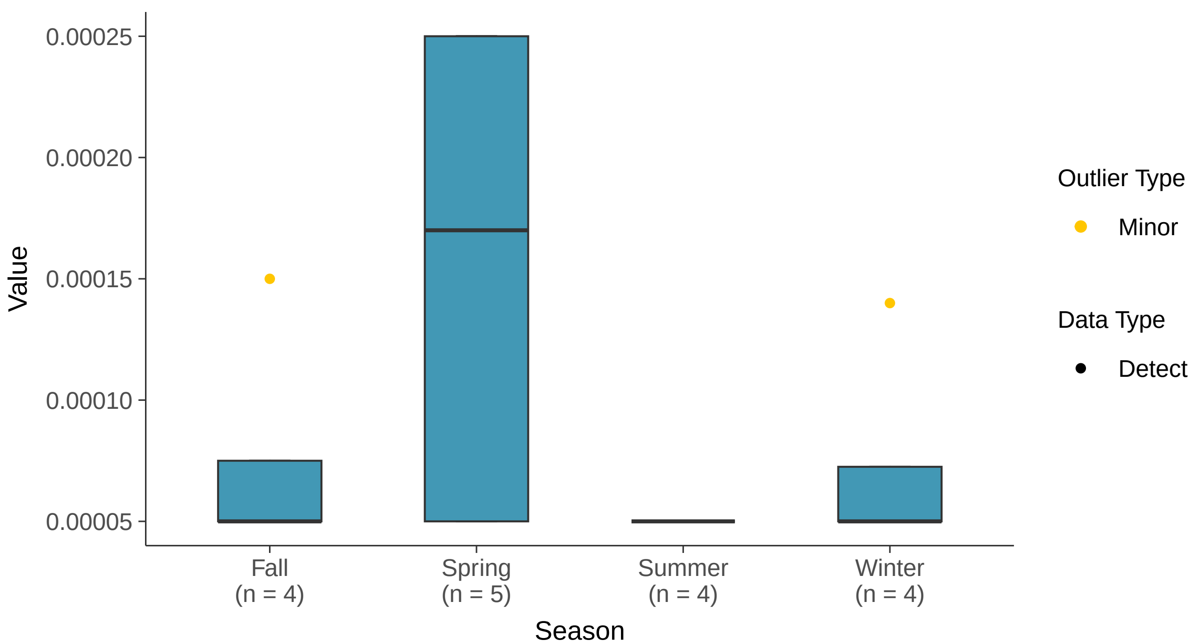
Boxplot

Silver, MW-11 (mg/L)



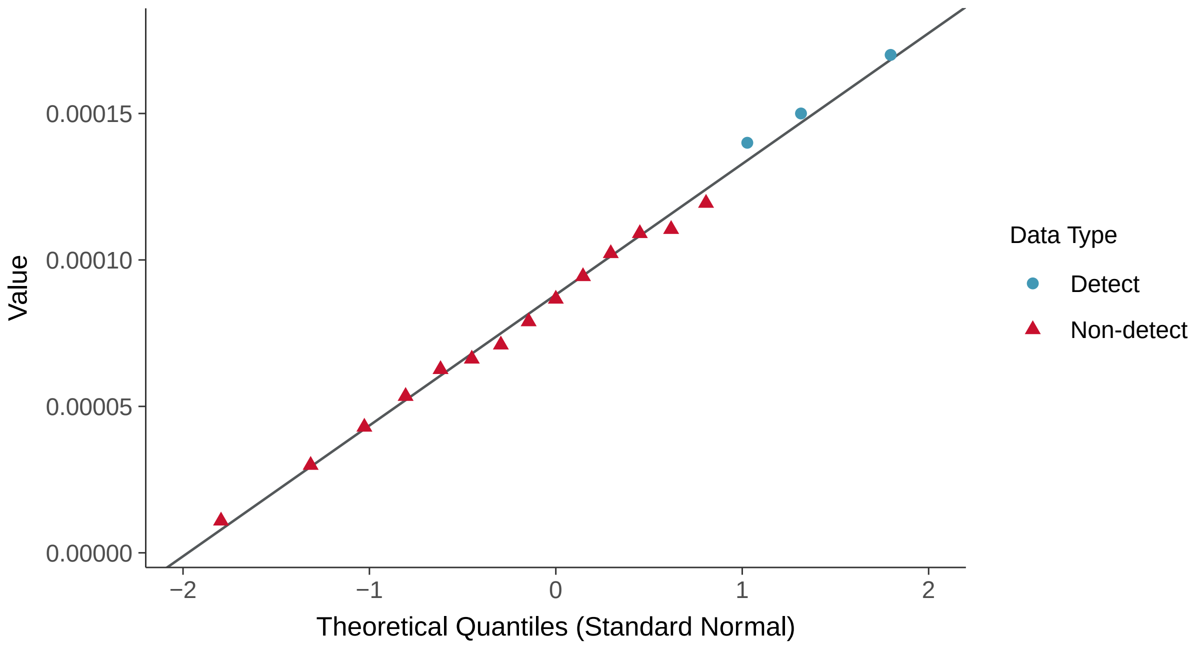
Boxplot by Season

Silver, MW-11 (mg/L)



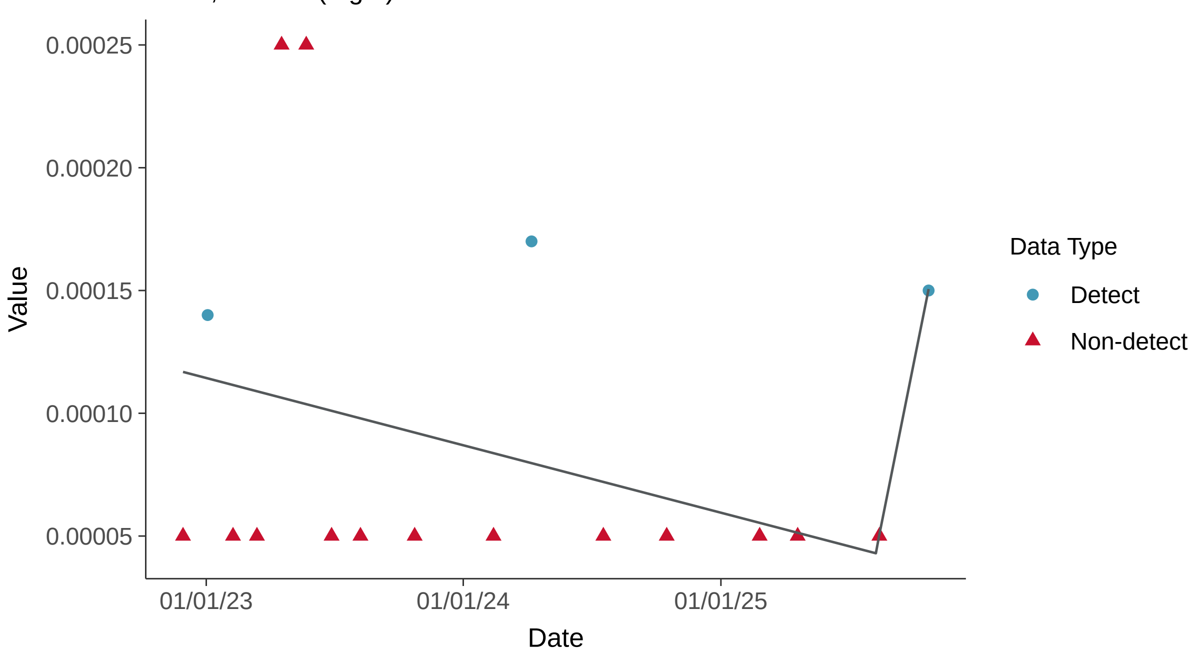
Normal Q-Q plot using ROS Imputed Estimates

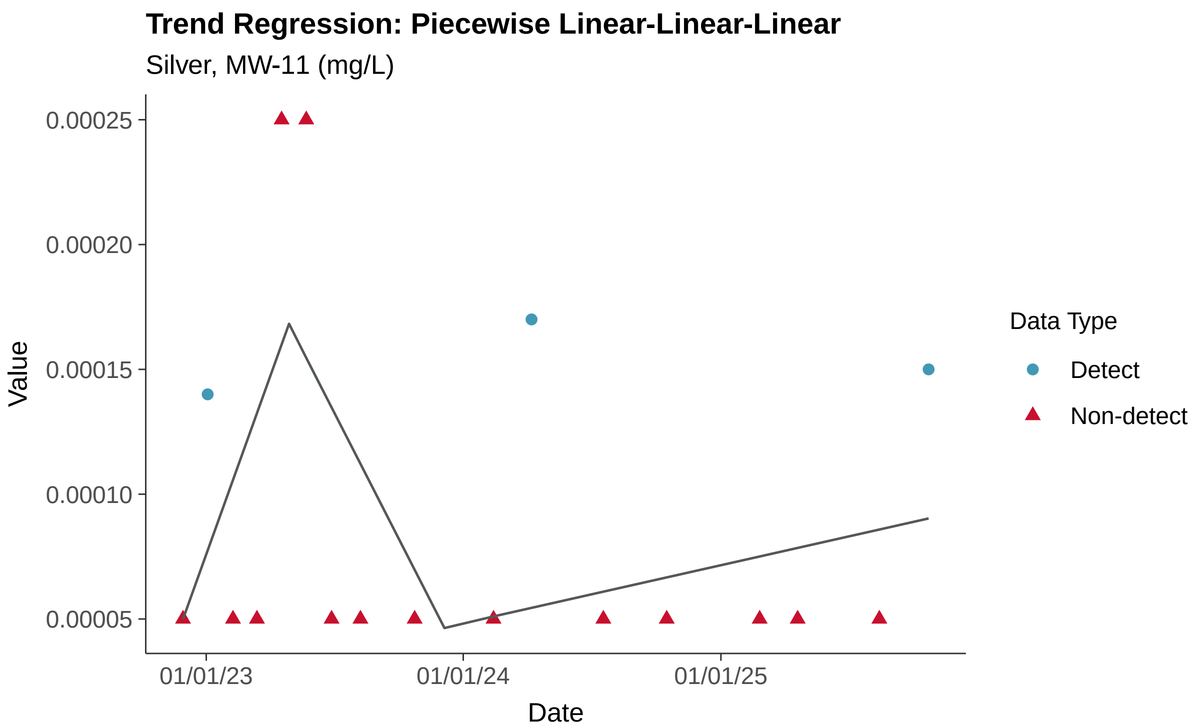
Silver, MW-11 (mg/L)



Trend Regression: Piecewise Linear-Linear

Silver, MW-11 (mg/L)



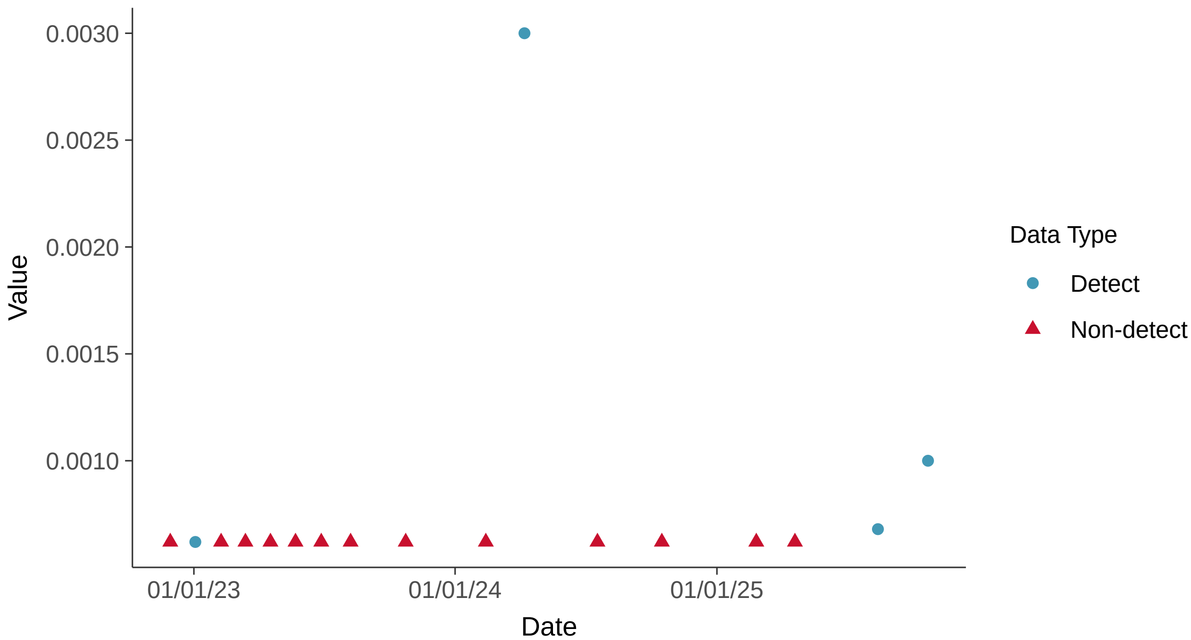

Trend Regression: Piecewise Linear-Linear-Linear
Silver, MW-11 (mg/L)
Value
0.00025
0.00020
0.00015
0.00010
0.00005
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Part 115: Vanadium, MW-11

ID: 21_2_5_128

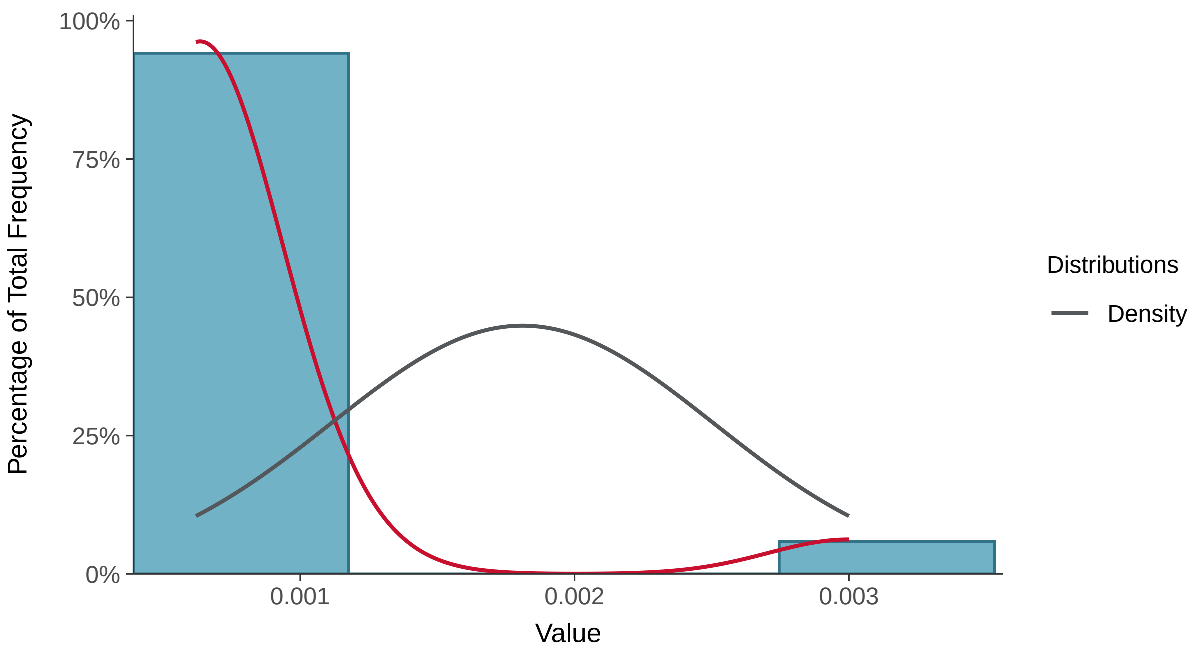
Scatter Plot

Vanadium, MW-11 (mg/L)



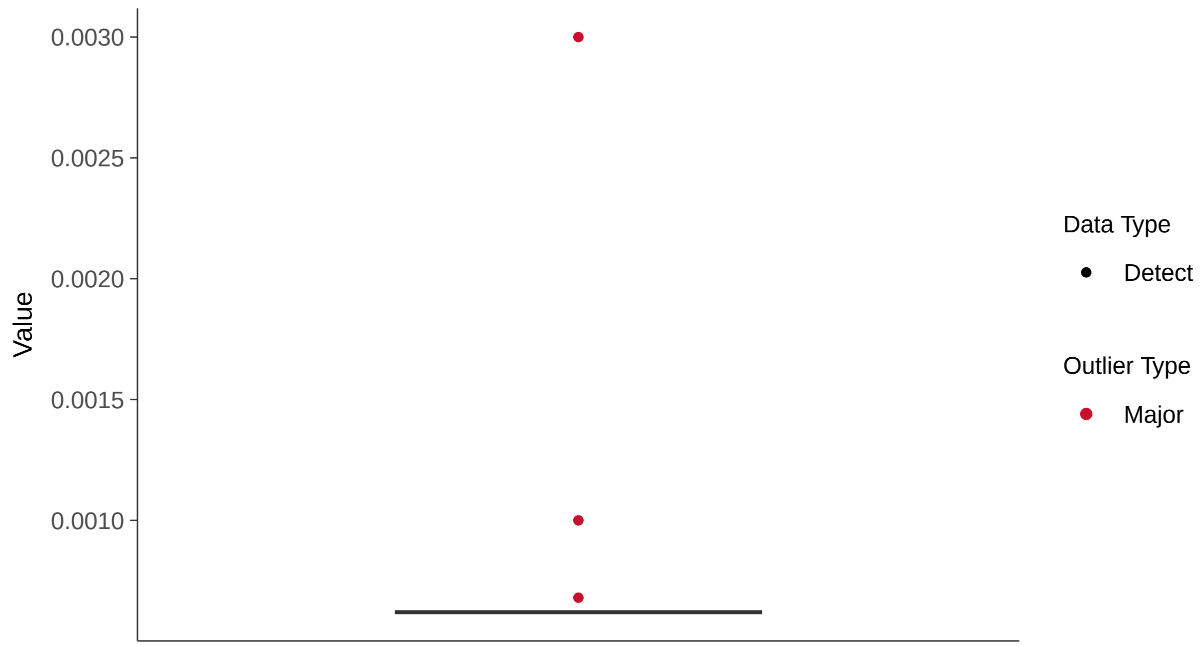
Histogram

Vanadium, MW-11 (mg/L)



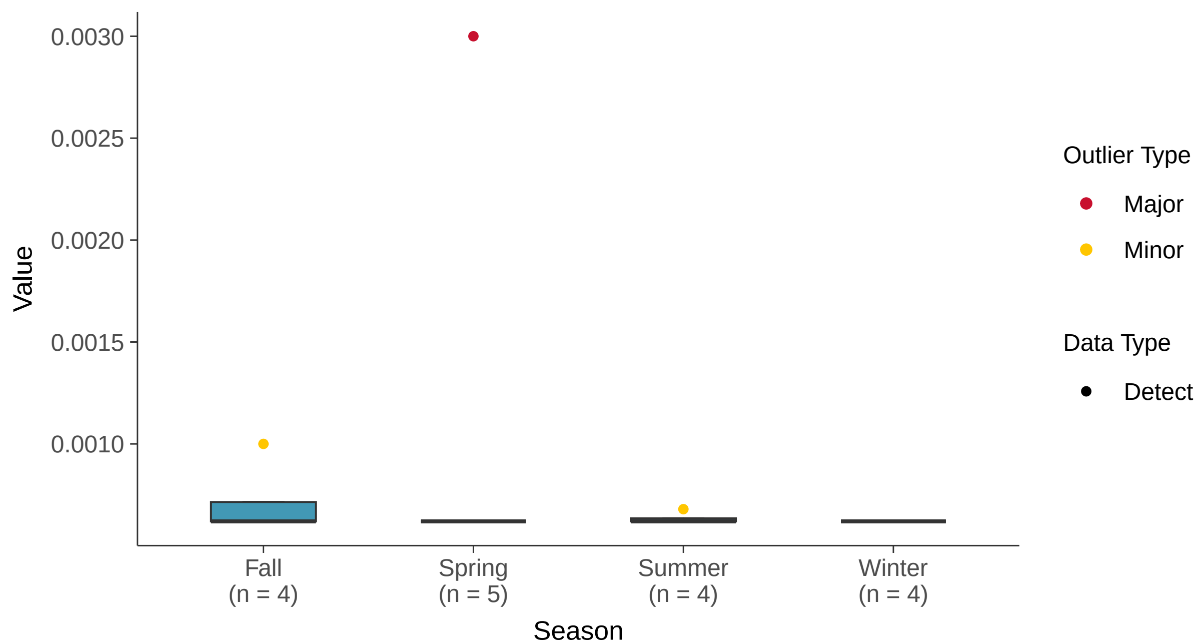
Boxplot

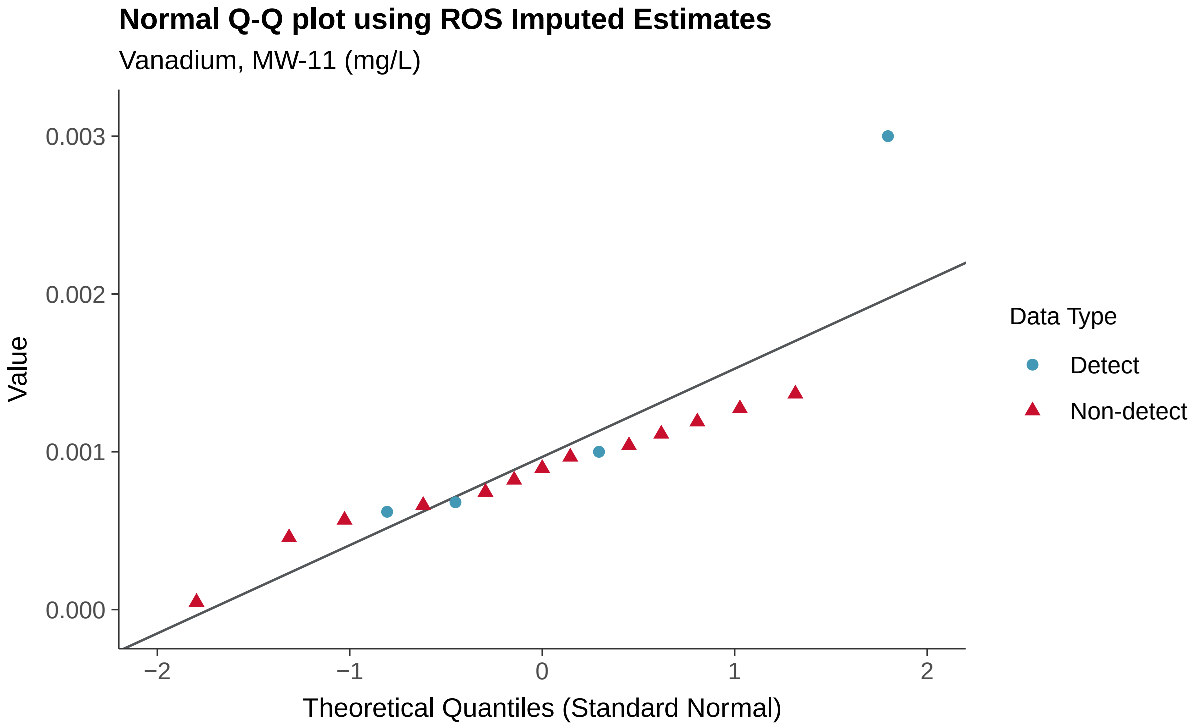
Vanadium, MW-11 (mg/L)

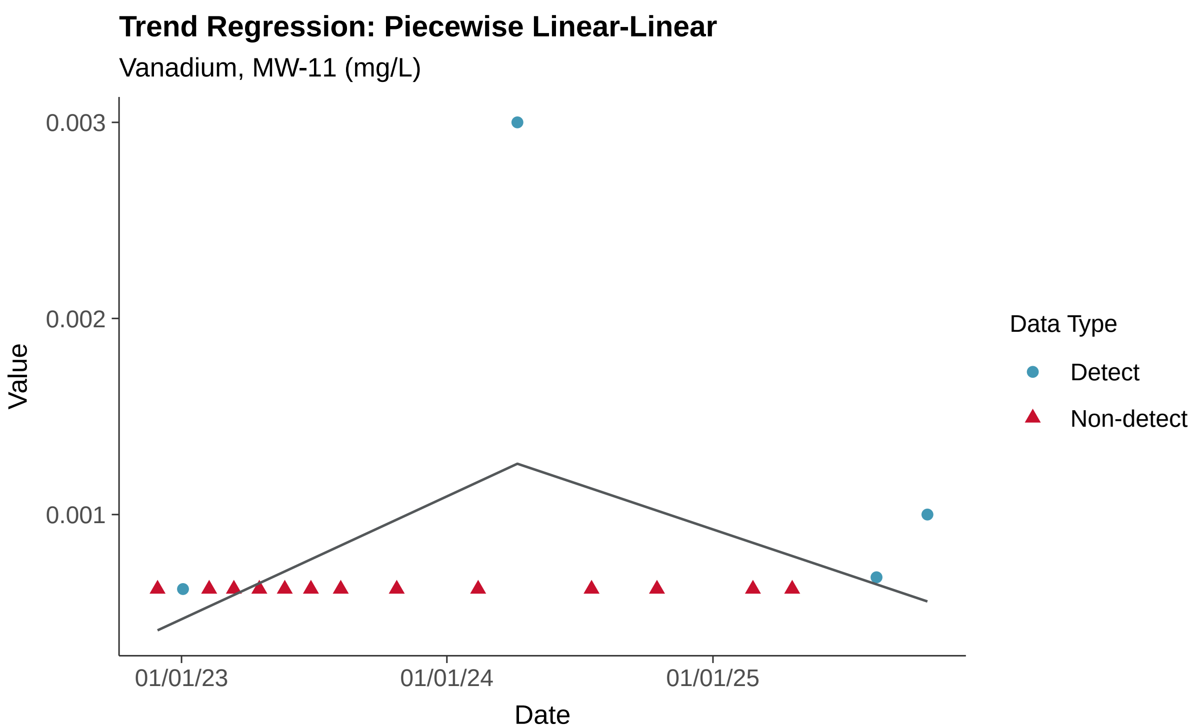


Boxplot by Season

Vanadium, MW-11 (mg/L)

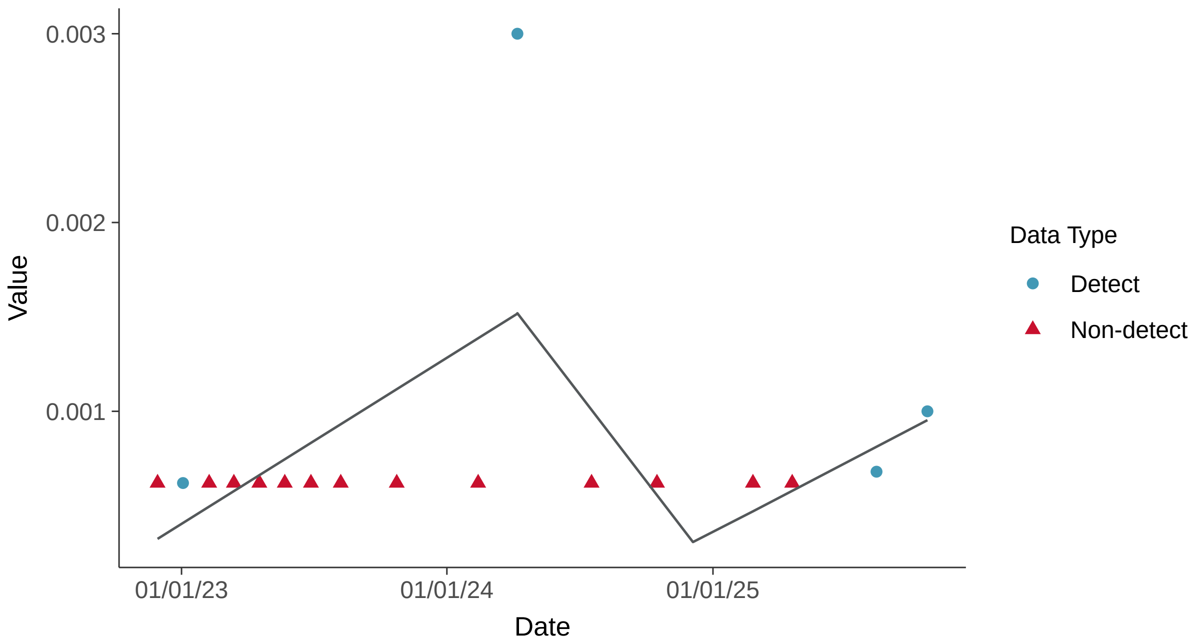



Normal Q-Q plot using ROS Imputed Estimates
Vanadium, MW-11 (mg/L)
Value
0.003
0.002
0.001
0.000
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Vanadium, MW-11 (mg/L)
Value
0.003
0.002
0.001
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

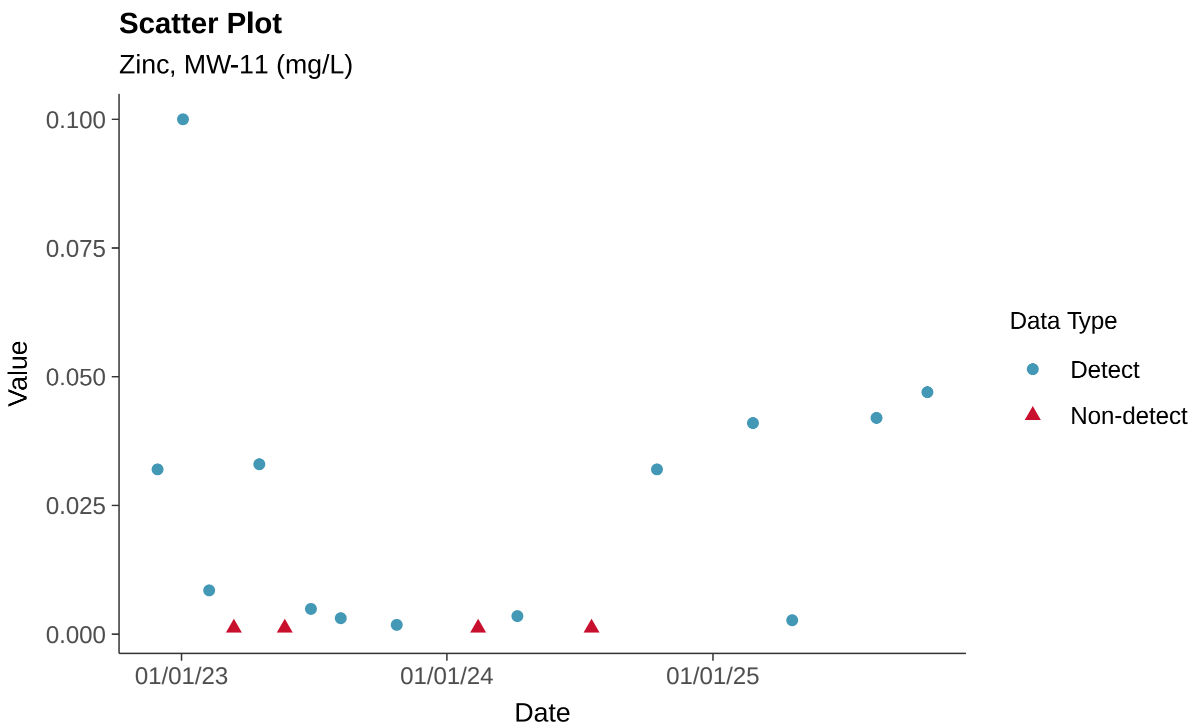
Trend Regression: Piecewise Linear-Linear-Linear

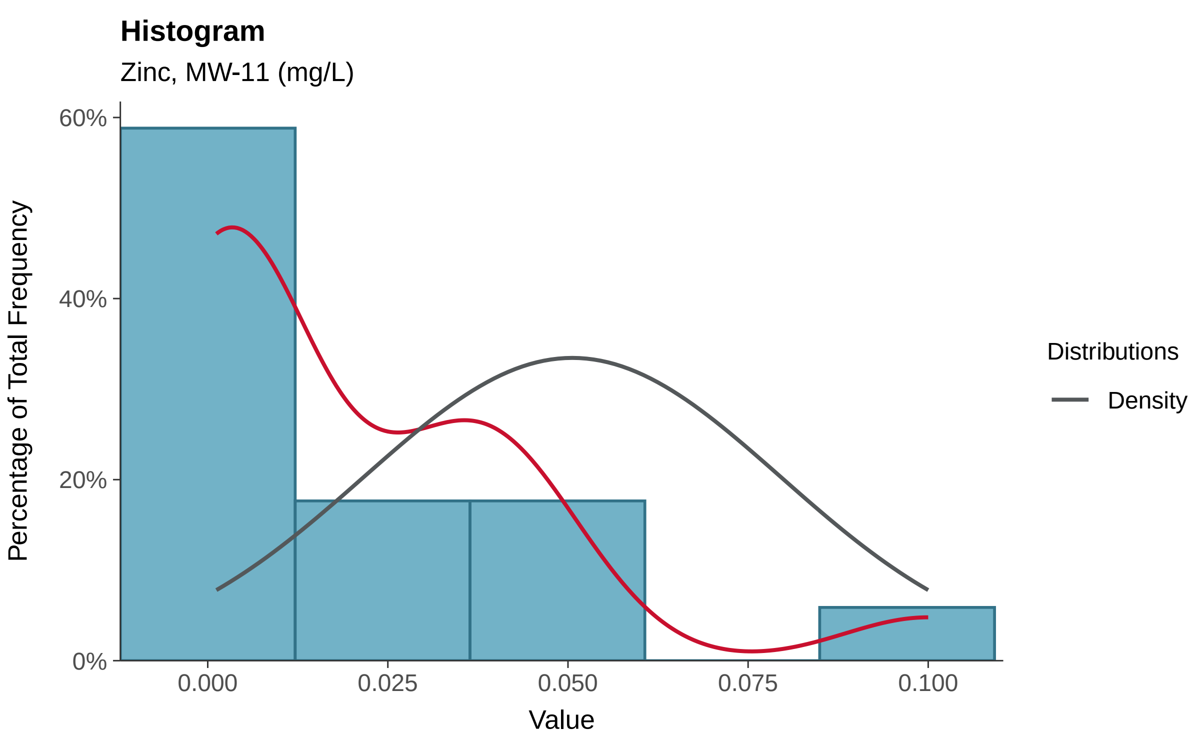
Vanadium, MW-11 (mg/L)



Part 115: Zinc, MW-11

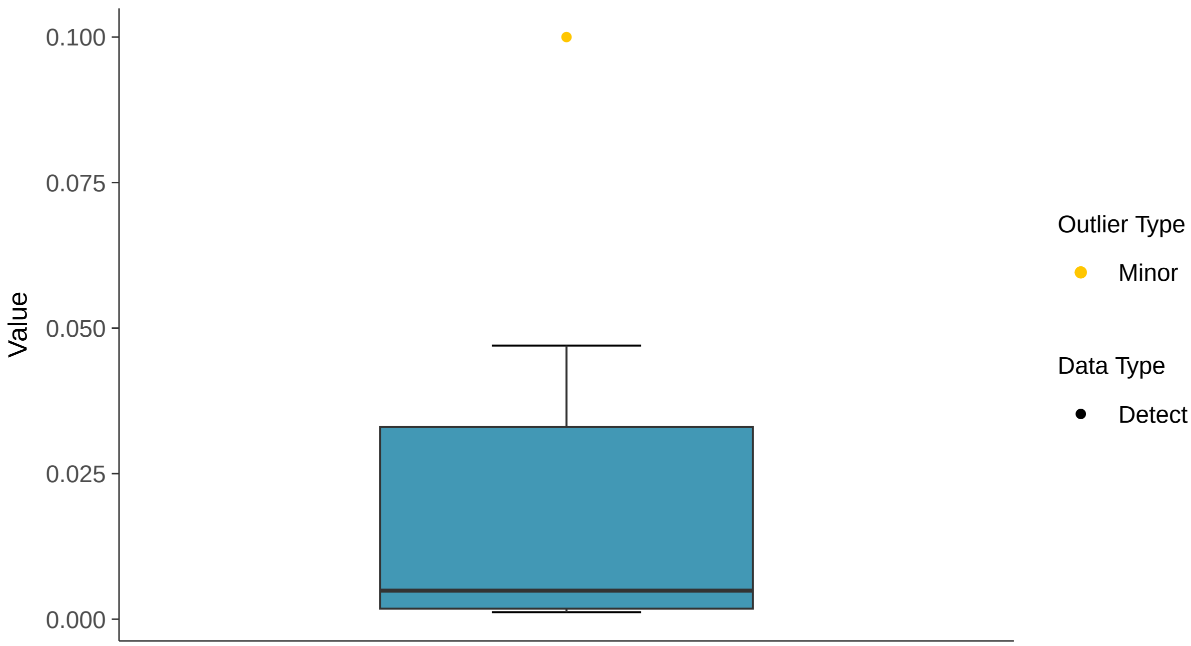
ID: 21_2_5_129





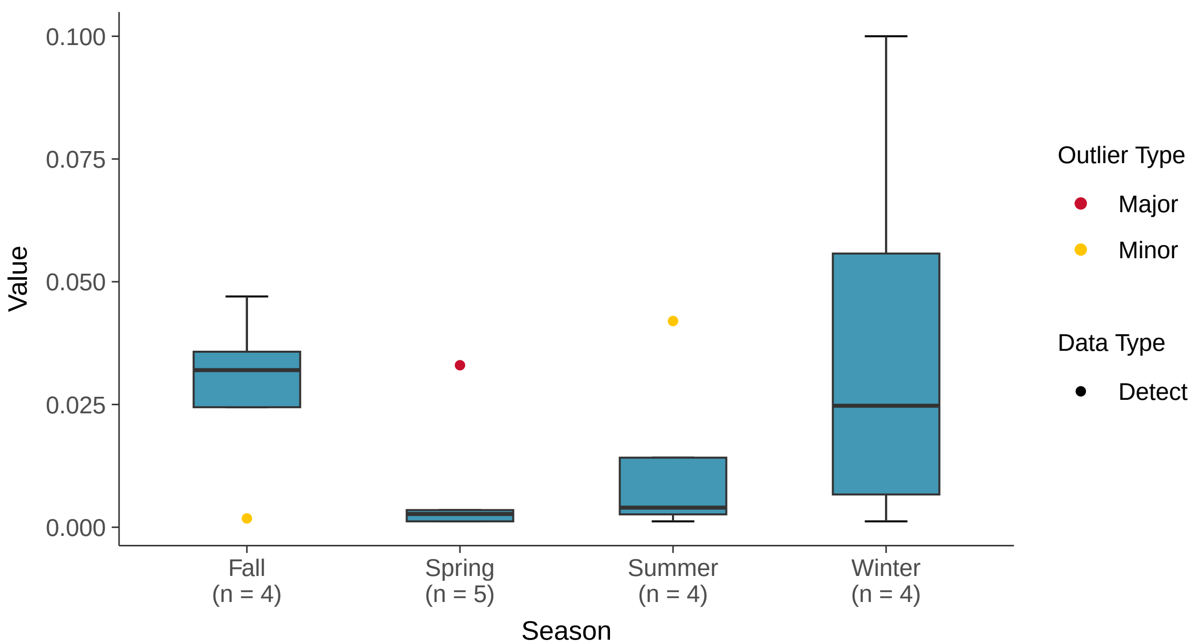
Boxplot

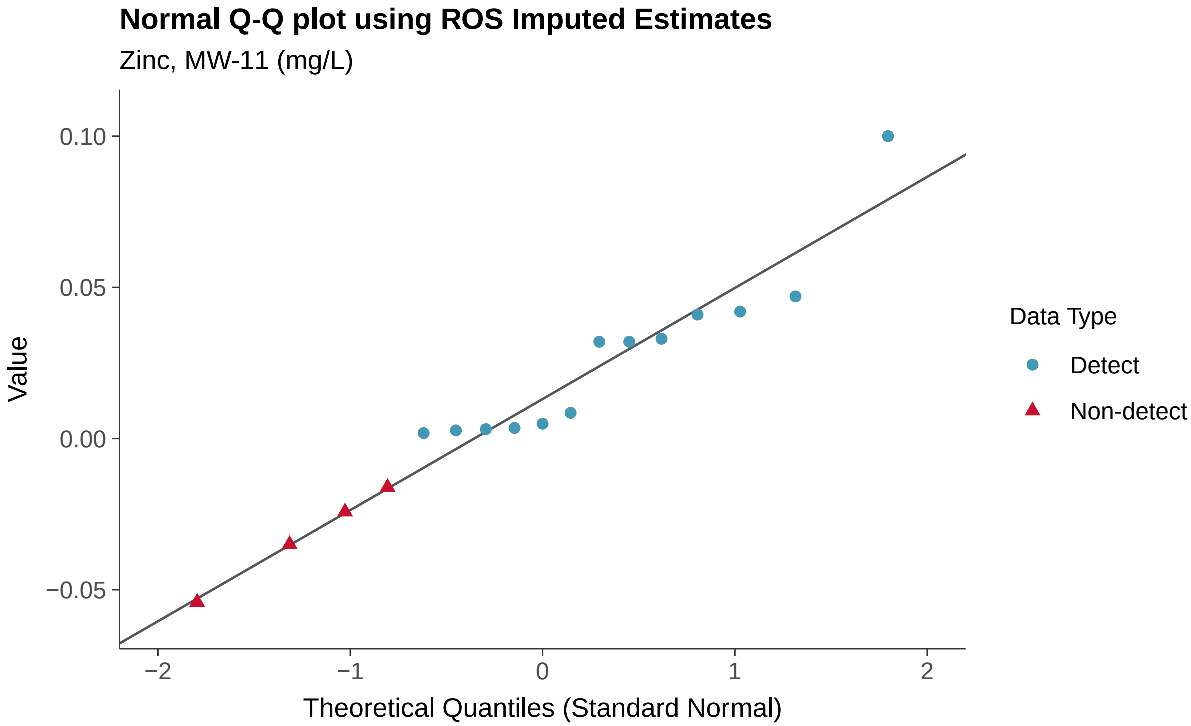
Zinc, MW-11 (mg/L)

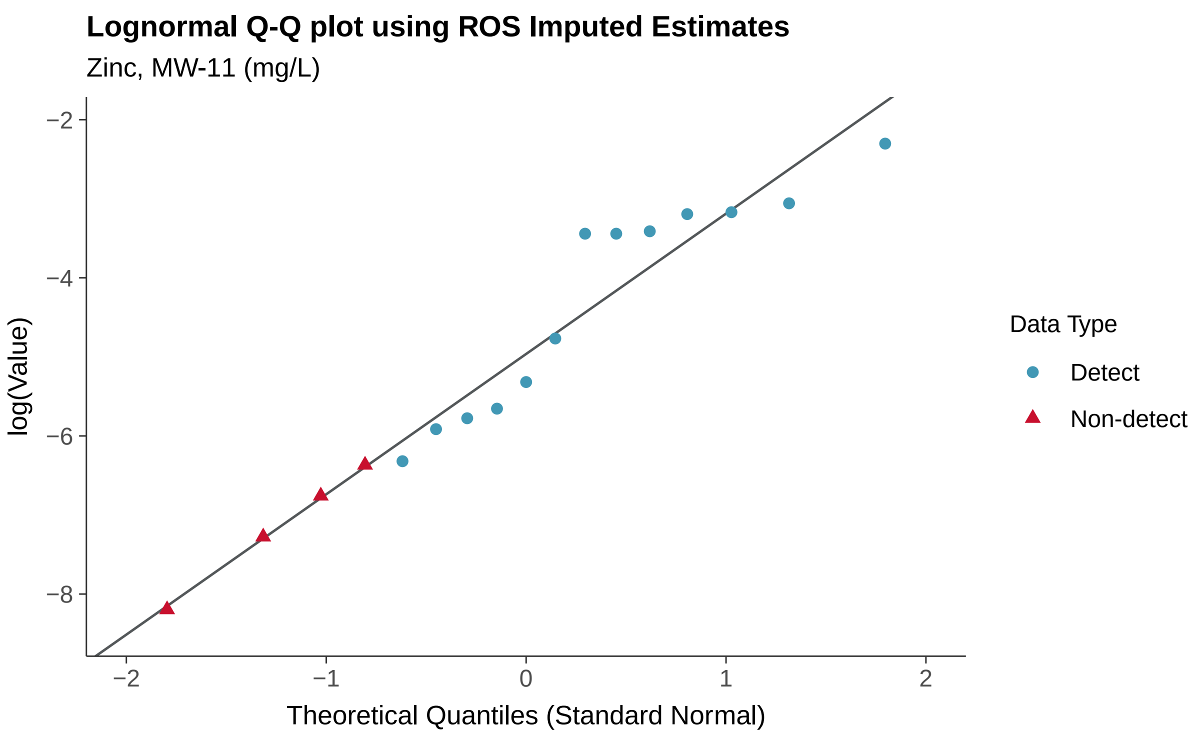


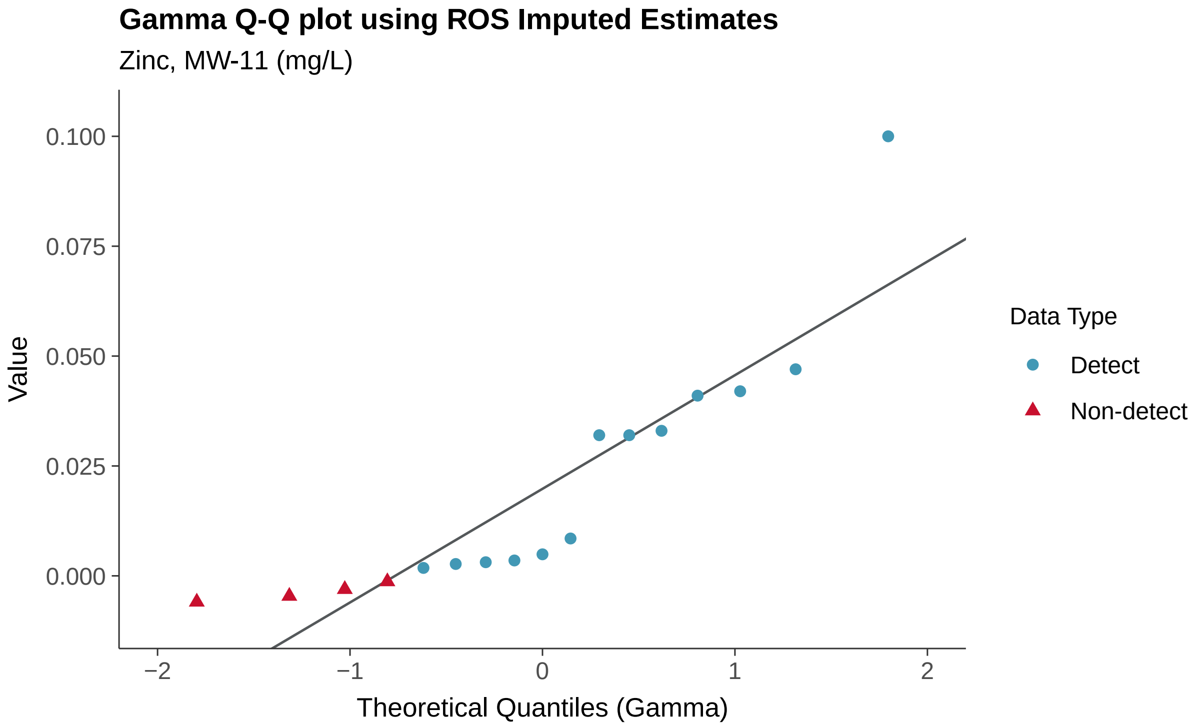
Boxplot by Season

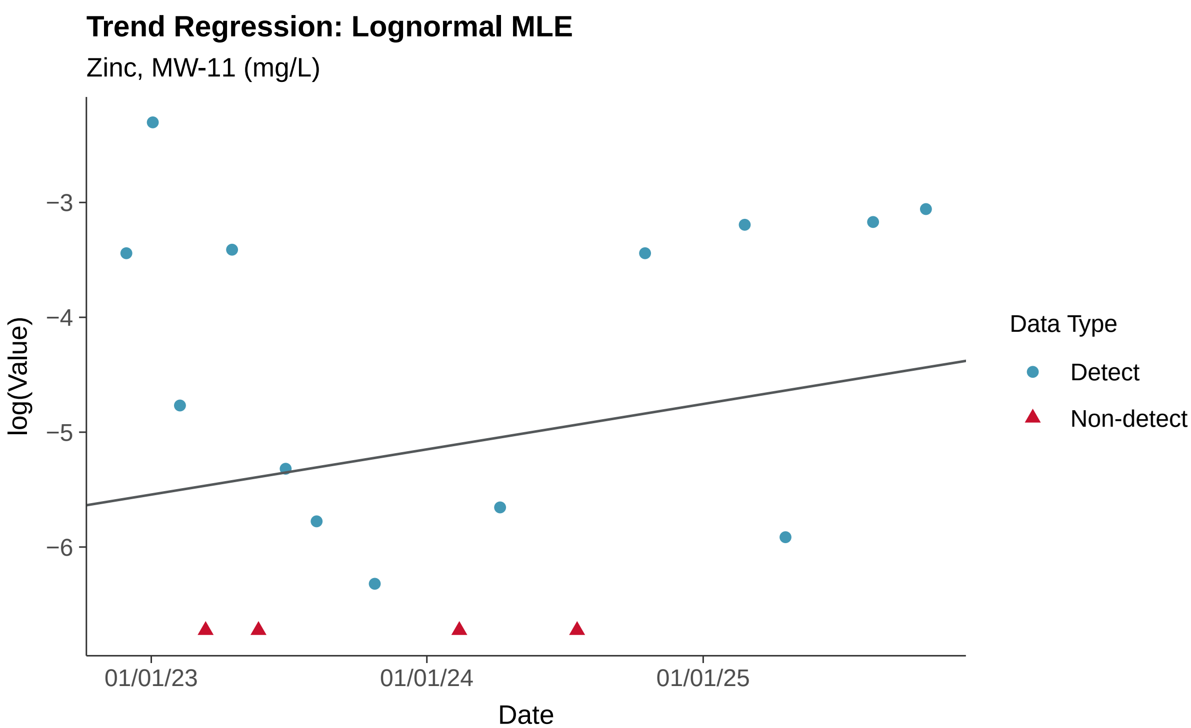
Zinc, MW-11 (mg/L)




Normal Q-Q plot using ROS Imputed Estimates
Zinc, MW-11 (mg/L)
Value
0.10
0.05
0.00
−0.05
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

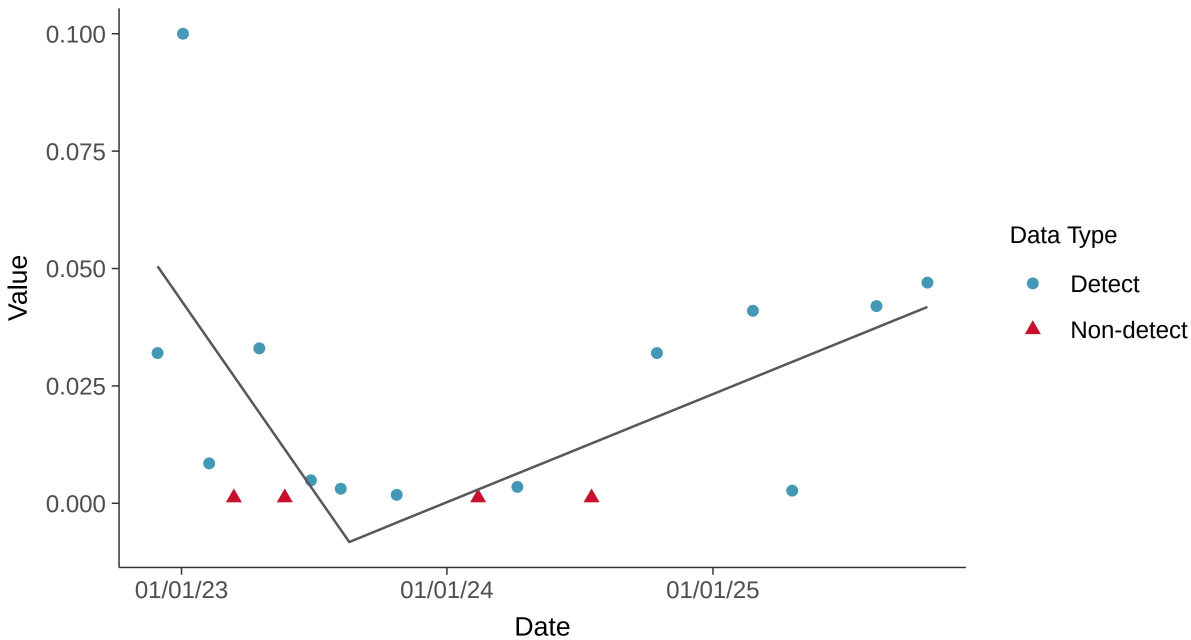

Lognormal Q-Q plot using ROS Imputed Estimates
Zinc, MW-11 (mg/L)
log(Value)
−2
−4
−6
−8
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Gamma Q-Q plot using ROS Imputed Estimates
Zinc, MW-11 (mg/L)
Value
0.100
0.075
0.050
0.025
0.000
−2
−1
0
1
2
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect


Trend Regression: Lognormal MLE
Zinc, MW-11 (mg/L)
log(Value)
−3
−4
−5
−6
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

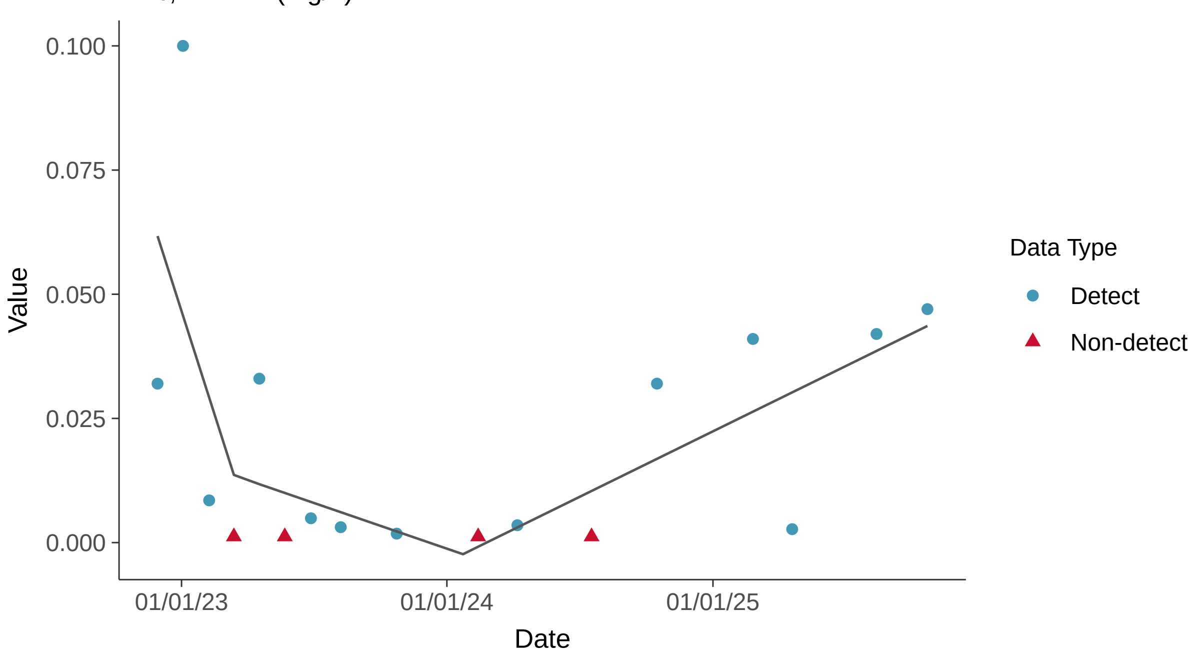
Trend Regression: Piecewise Linear-Linear

Zinc, MW-11 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Zinc, MW-11 (mg/L)

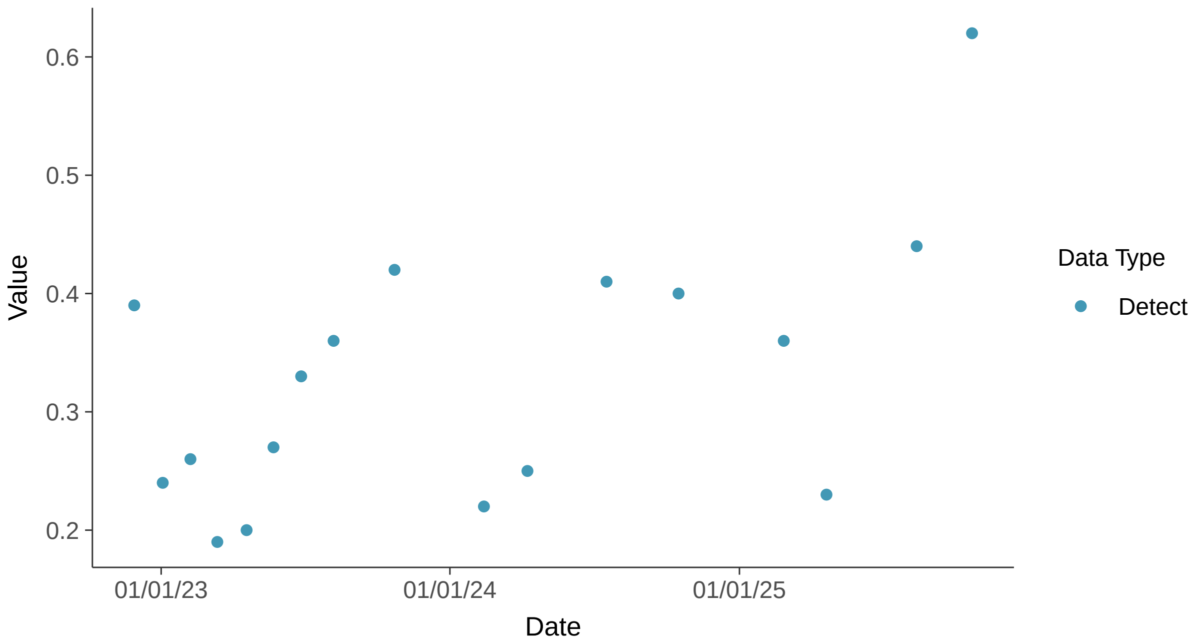


Appendix III: Boron, MW-12

ID: 22_2_3_105

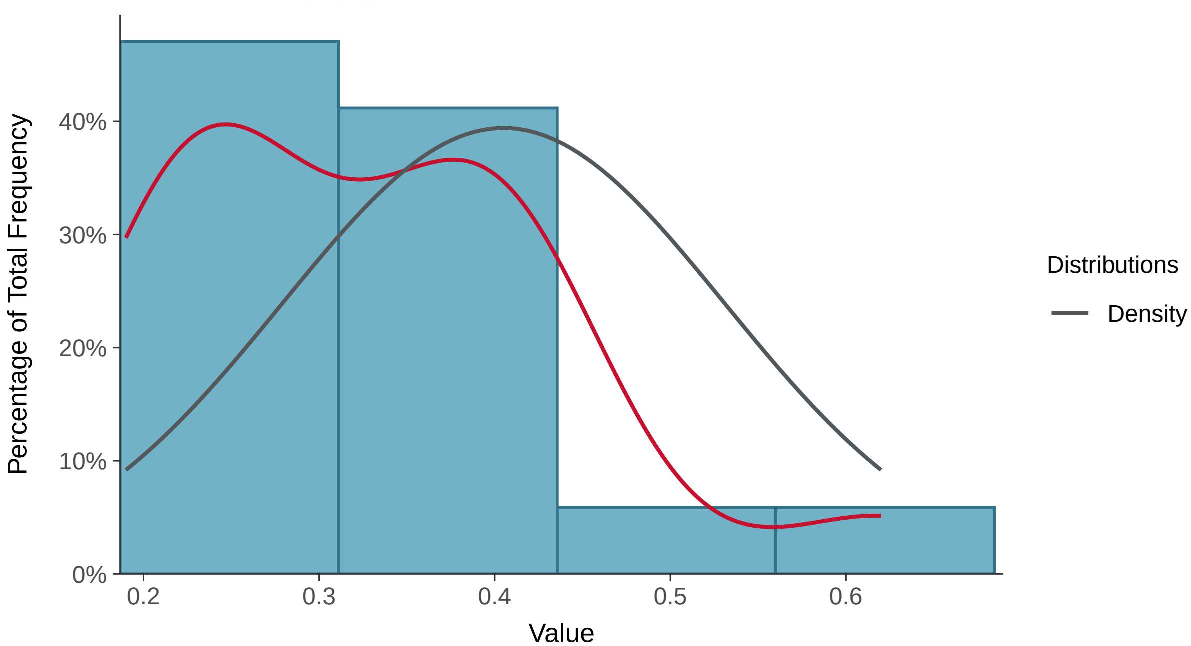
Scatter Plot

Boron, MW-12 (mg/L)



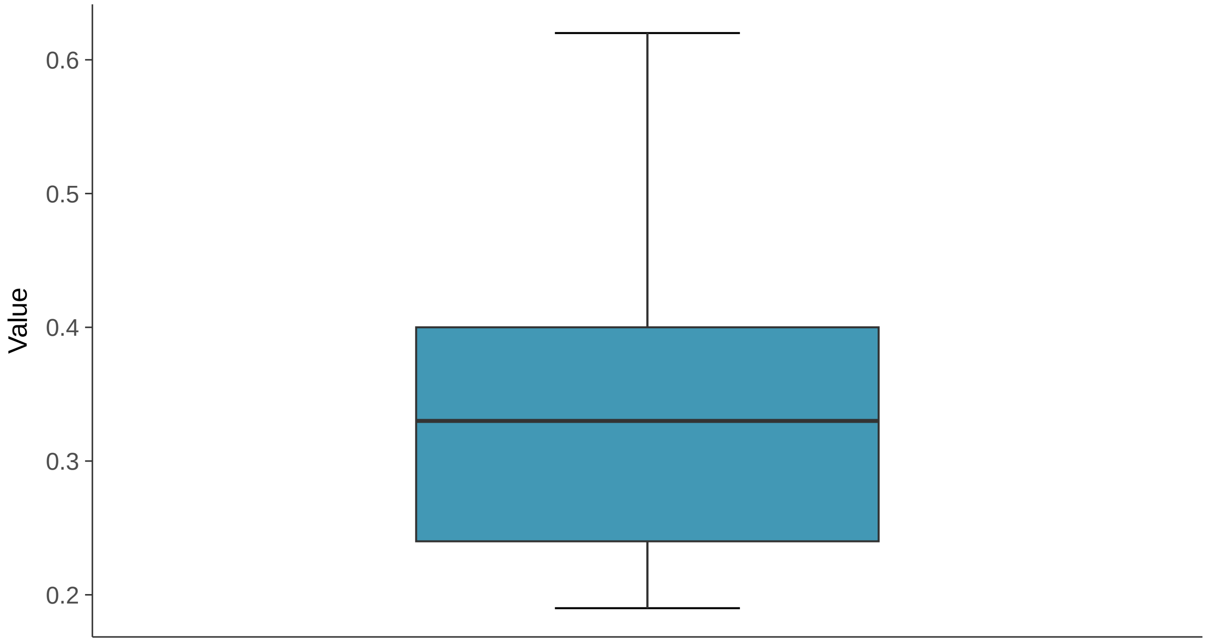
Histogram

Boron, MW-12 (mg/L)



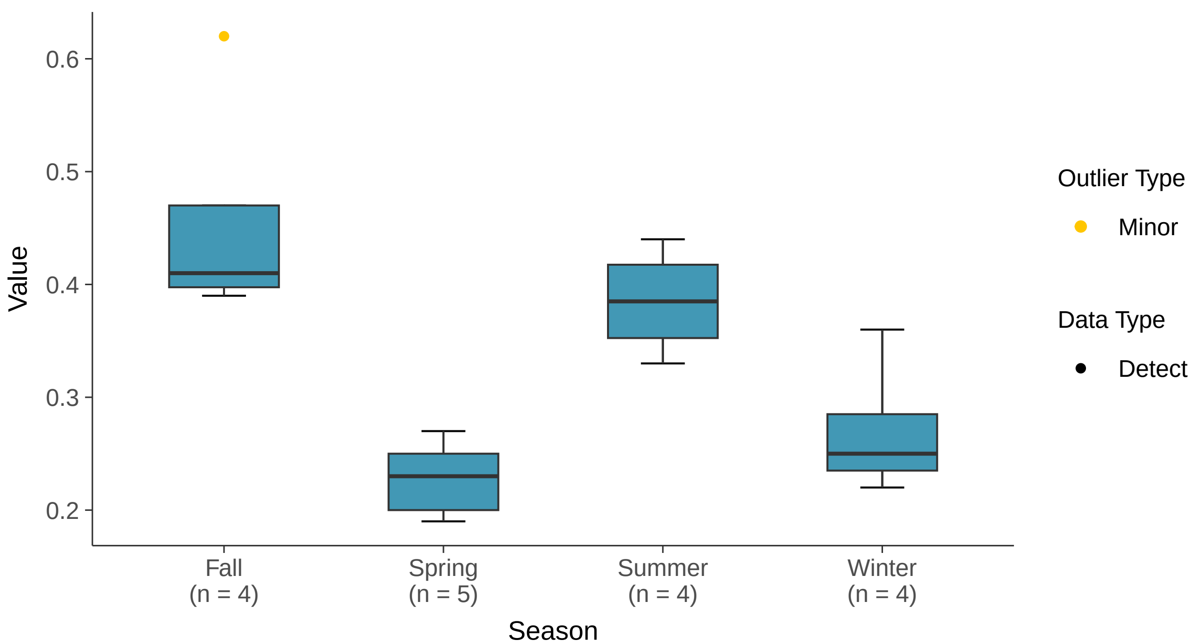
Boxplot

Boron, MW-12 (mg/L)



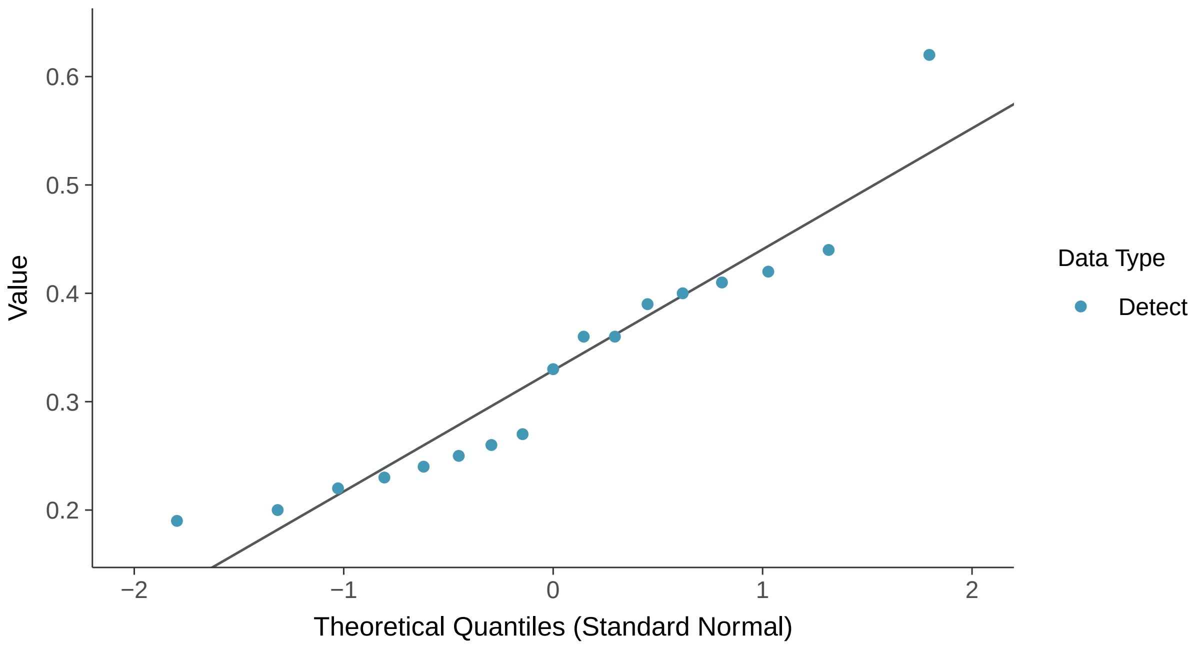
Boxplot by Season

Boron, MW-12 (mg/L)



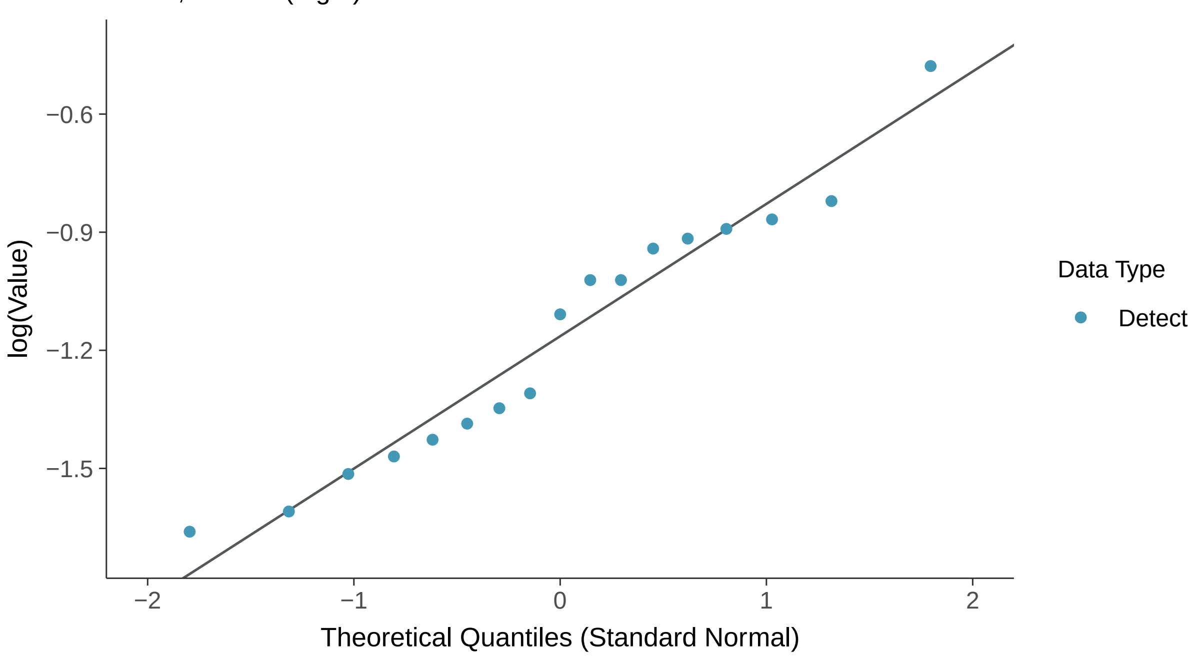
Normal Q-Q plot

Boron, MW-12 (mg/L)



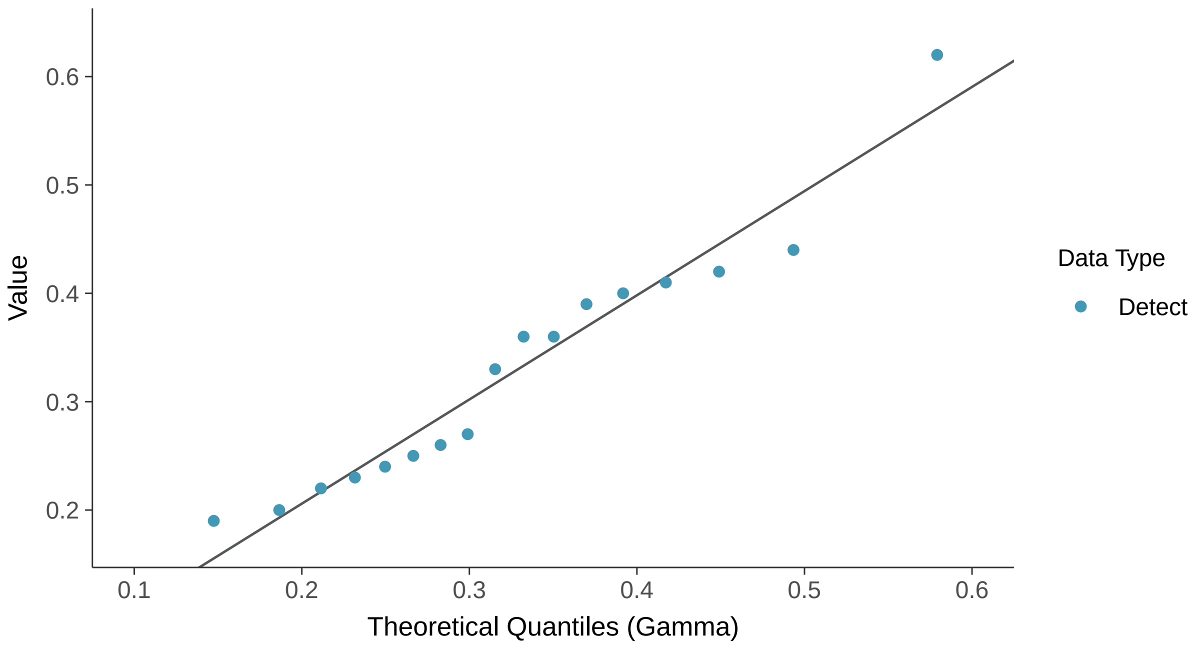
Lognormal Q-Q plot

Boron, MW-12 (mg/L)



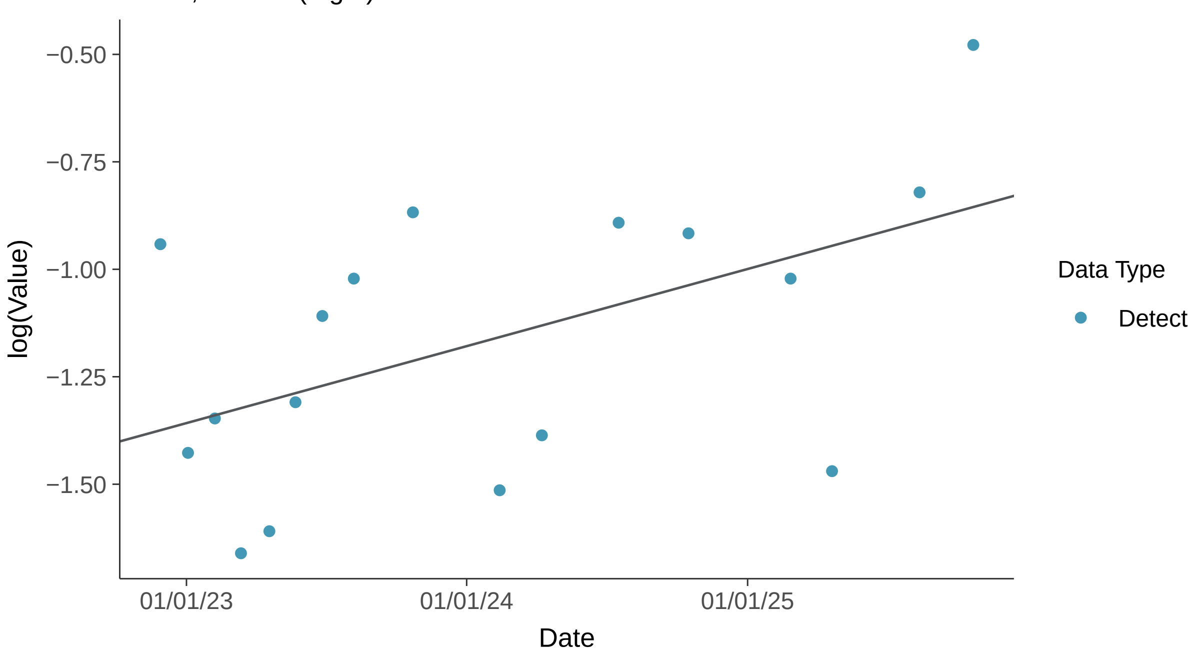
Gamma Q-Q plot

Boron, MW-12 (mg/L)



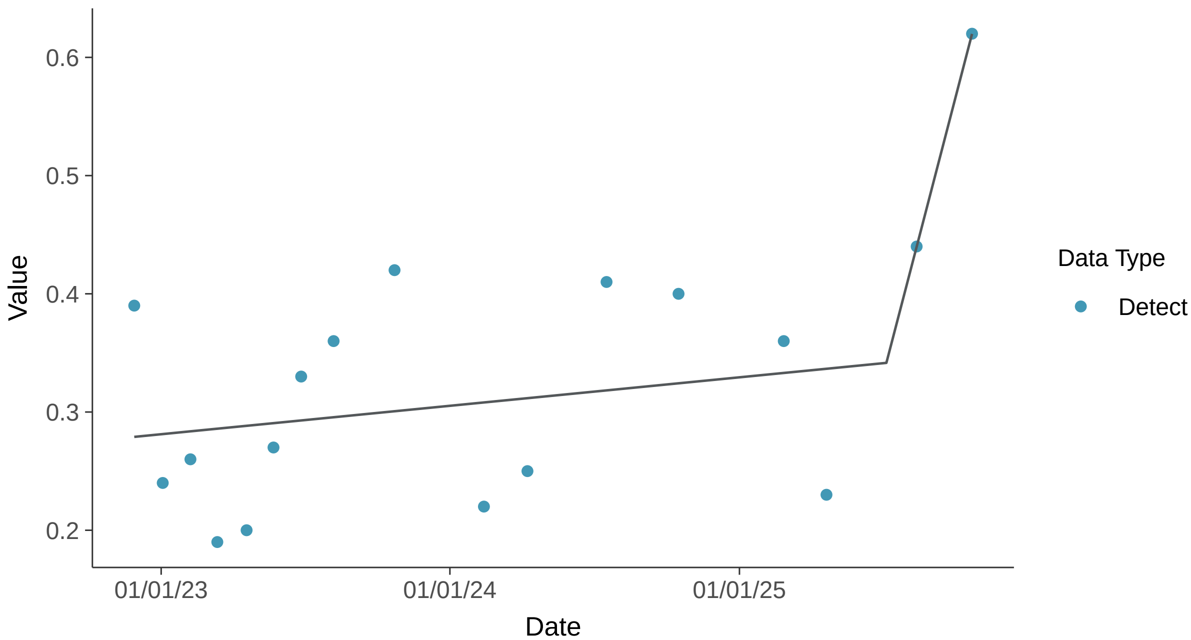
Trend Regression: Lognormal MLE

Boron, MW-12 (mg/L)



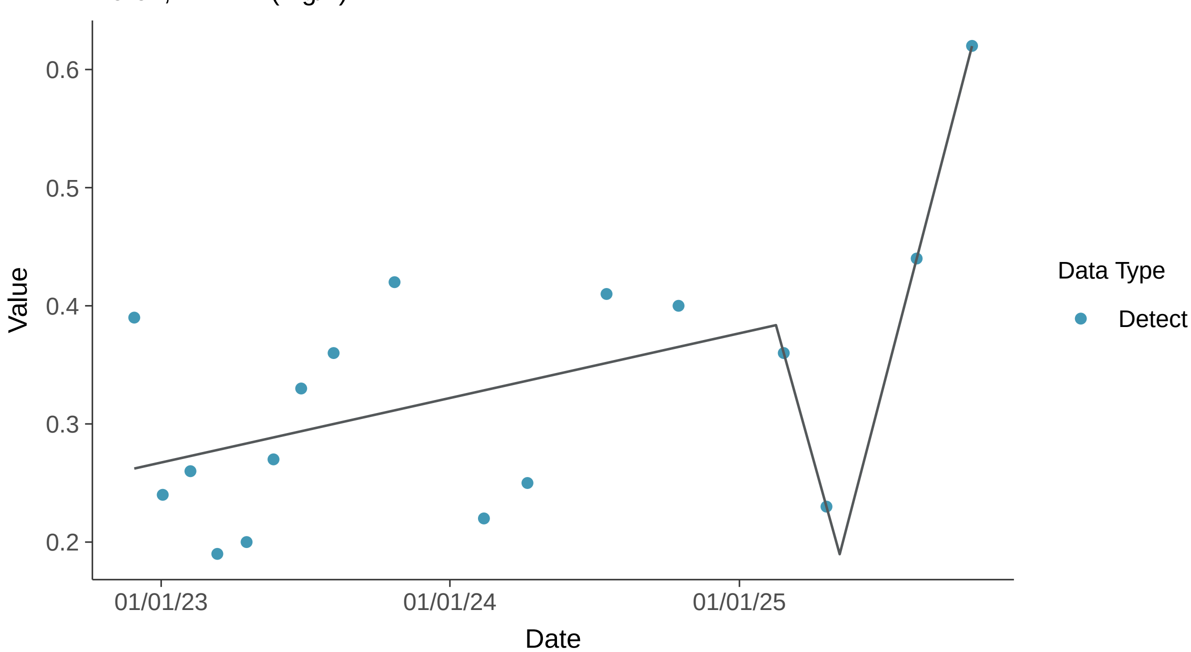
Trend Regression: Piecewise Linear-Linear

Boron, MW-12 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Boron, MW-12 (mg/L)

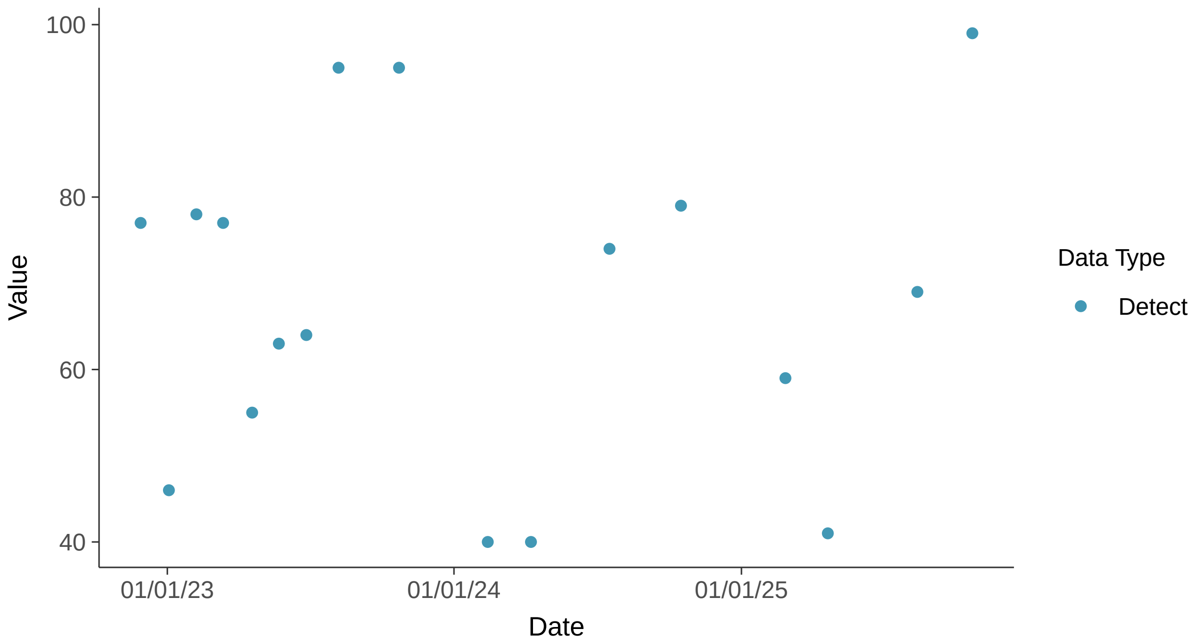


Appendix III: Calcium, MW-12

ID: 22_2_3_107

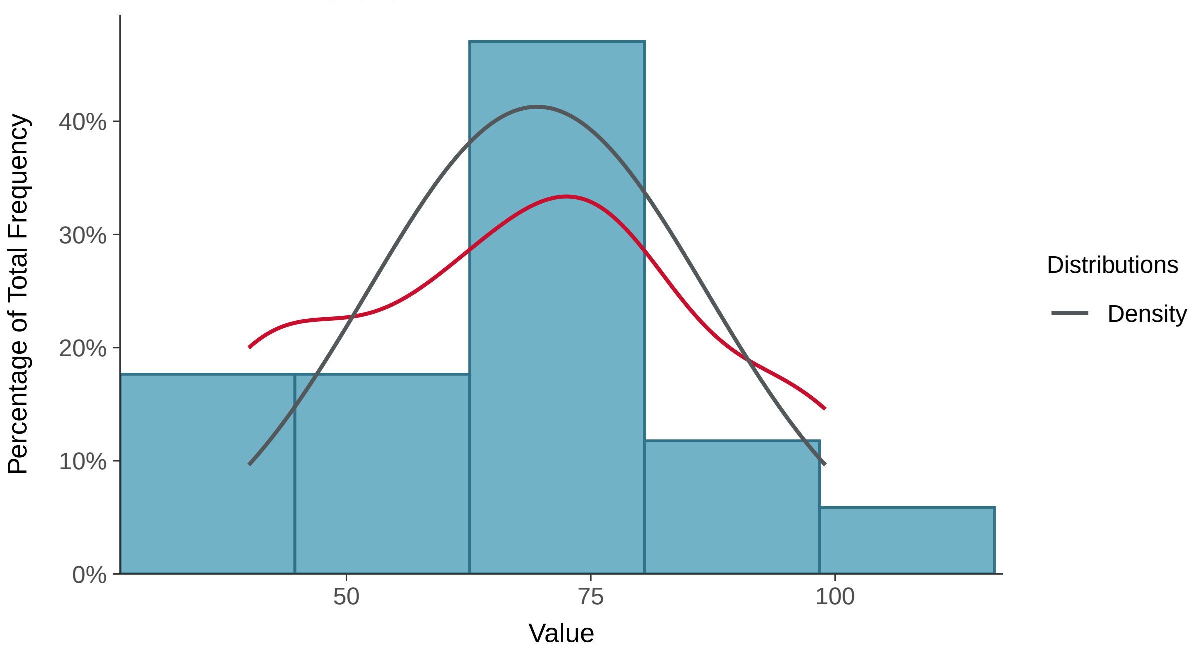
Scatter Plot

Calcium, MW-12 (mg/L)



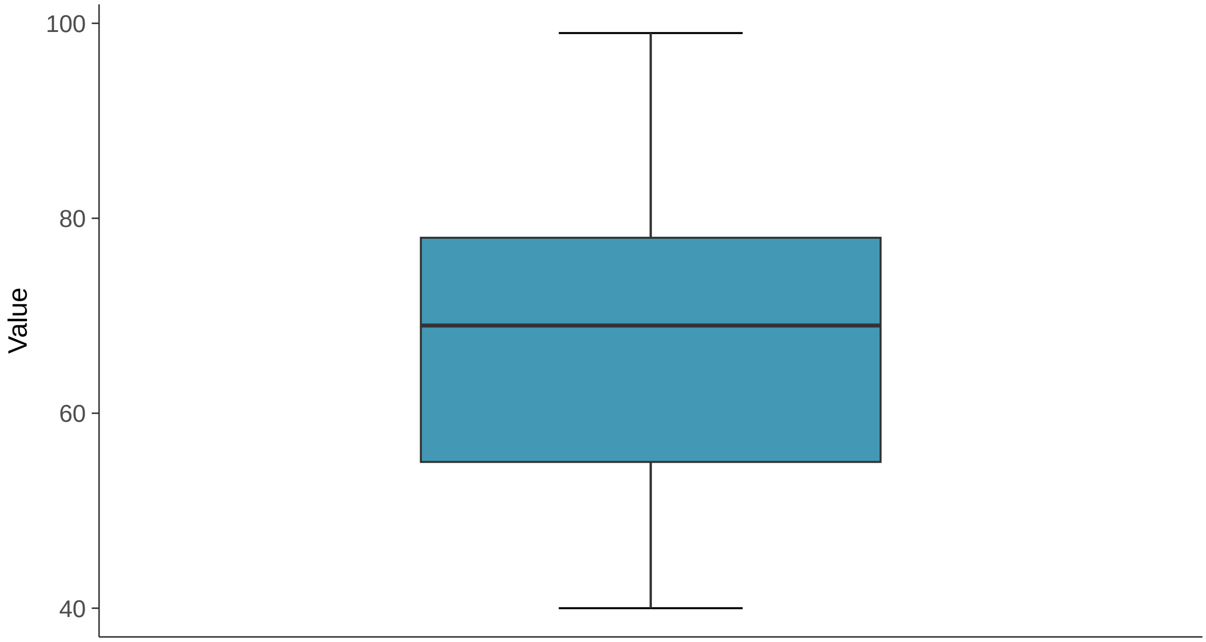
Histogram

Calcium, MW-12 (mg/L)



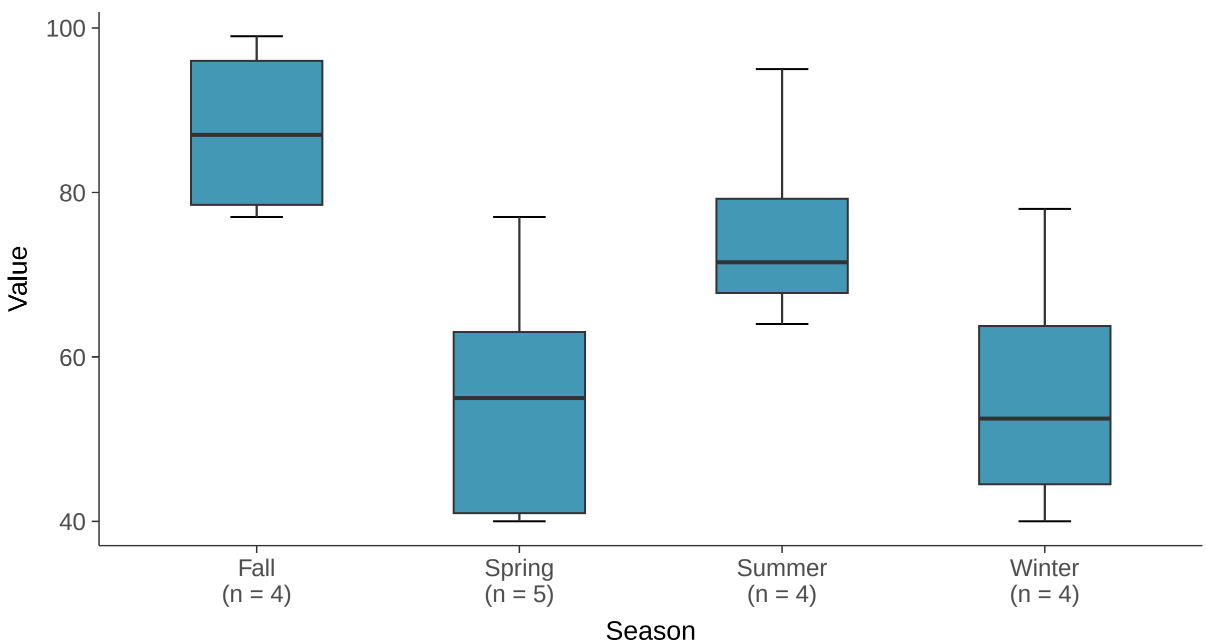
Boxplot

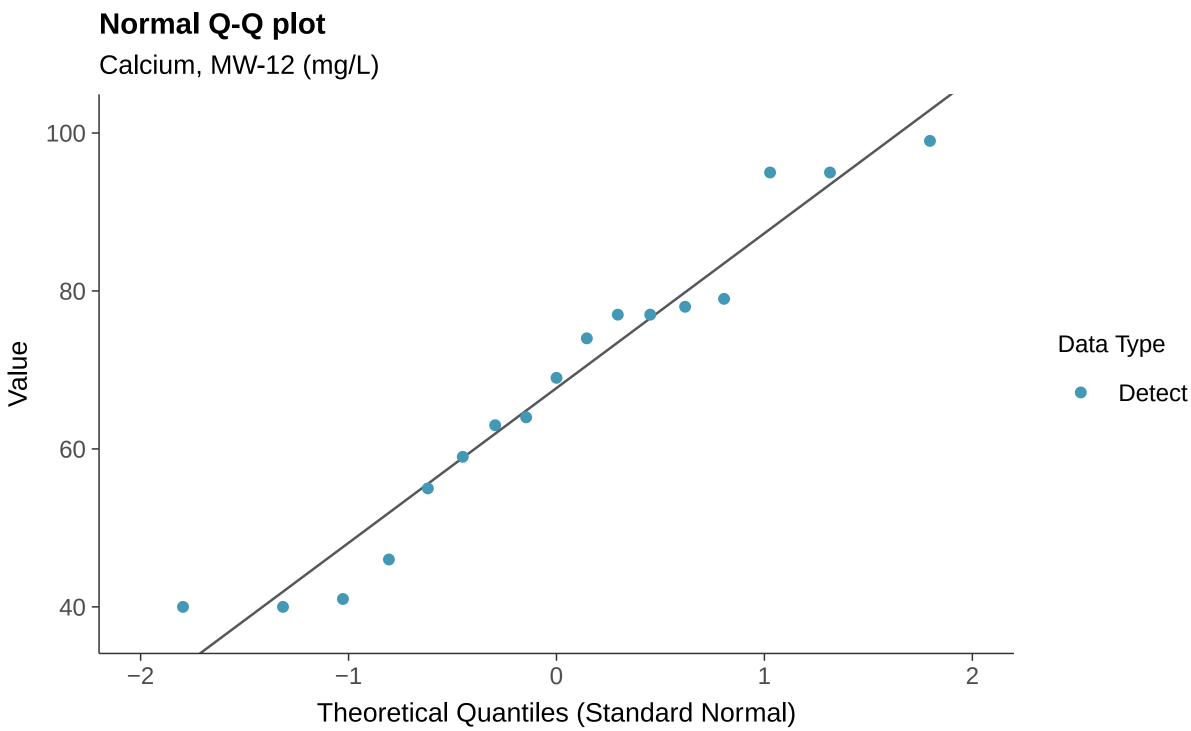
Calcium, MW-12 (mg/L)

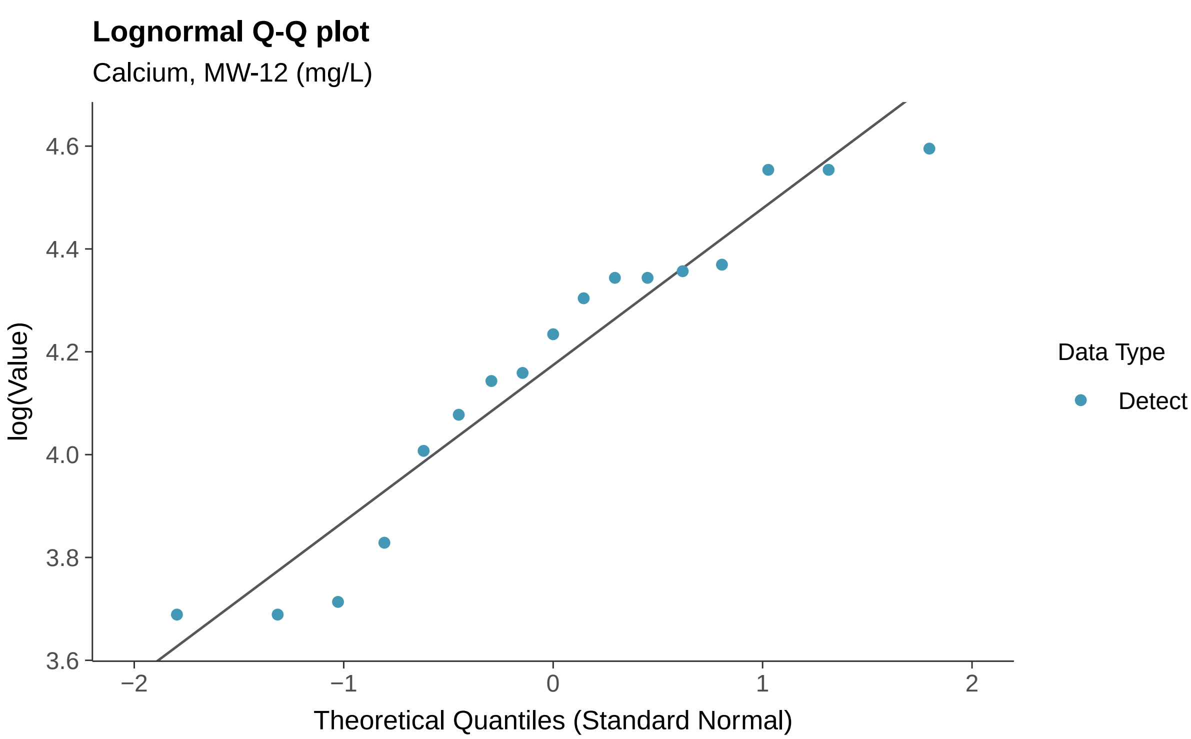


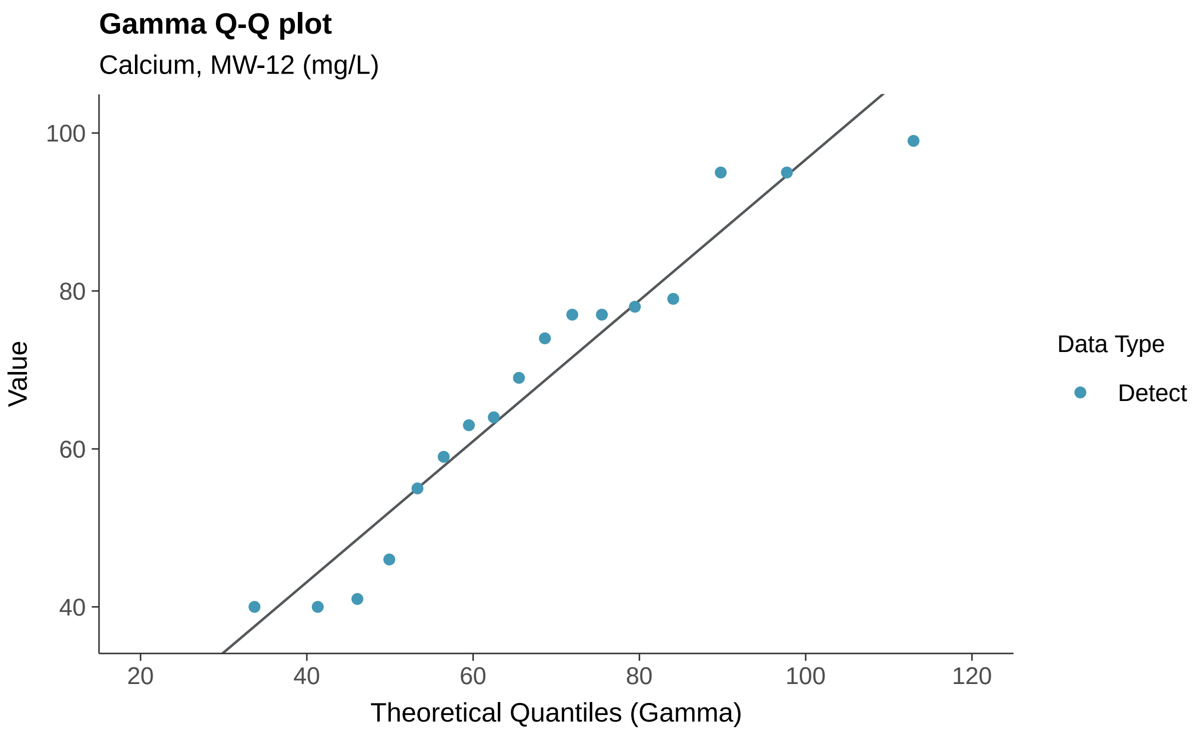
Boxplot by Season

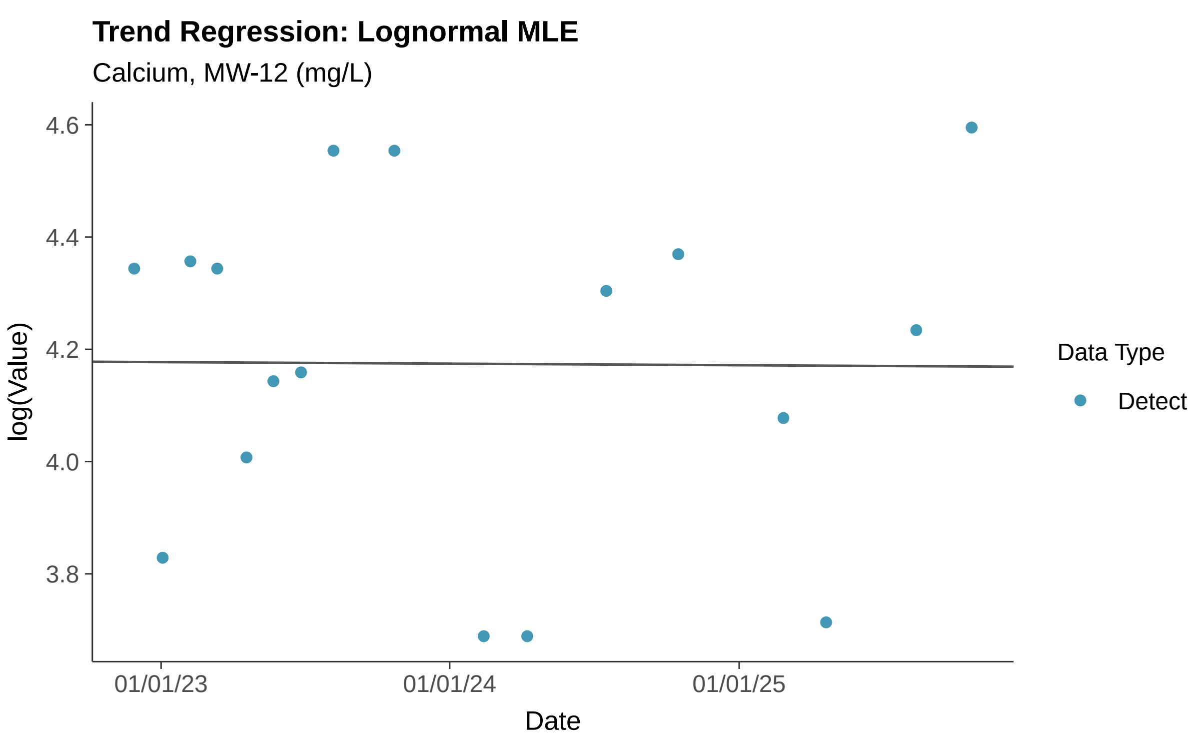
Calcium, MW-12 (mg/L)




Normal Q-Q plot
Calcium, MW-12 (mg/L)
Value
100
80
60
40
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Calcium, MW-12 (mg/L)
log(Value)
4.6
4.4
4.2
4.0
3.8
3.6
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

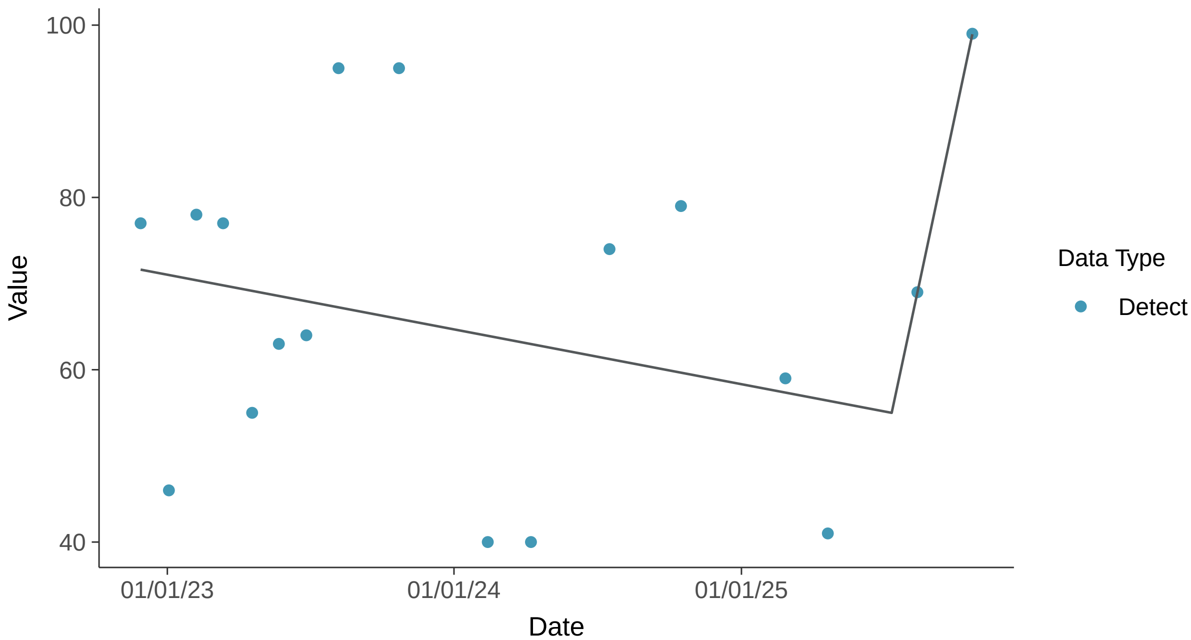

Gamma Q-Q plot
Calcium, MW-12 (mg/L)
Value
100
80
60
40
20
40
60
80
100
120
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Calcium, MW-12 (mg/L)
log(Value)
4.6
4.4
4.2
4.0
3.8
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Grand Haven
Downgradient Wells as of October 2025

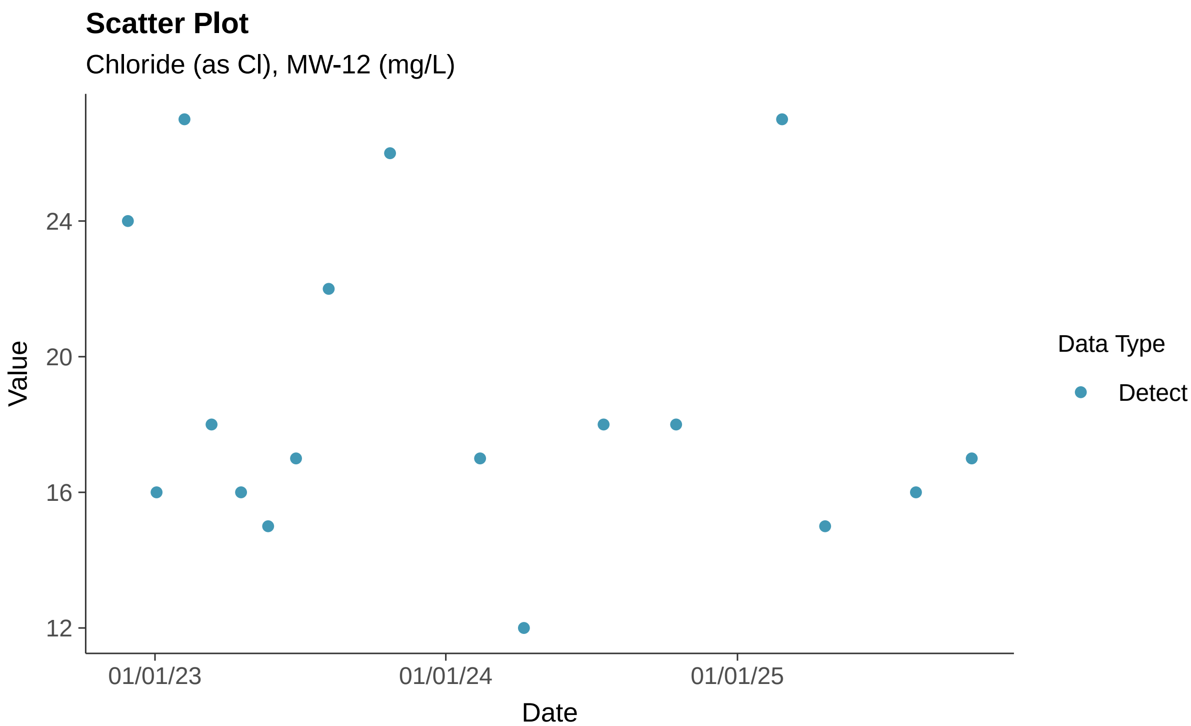
Trend Regression: Piecewise Linear-Linear

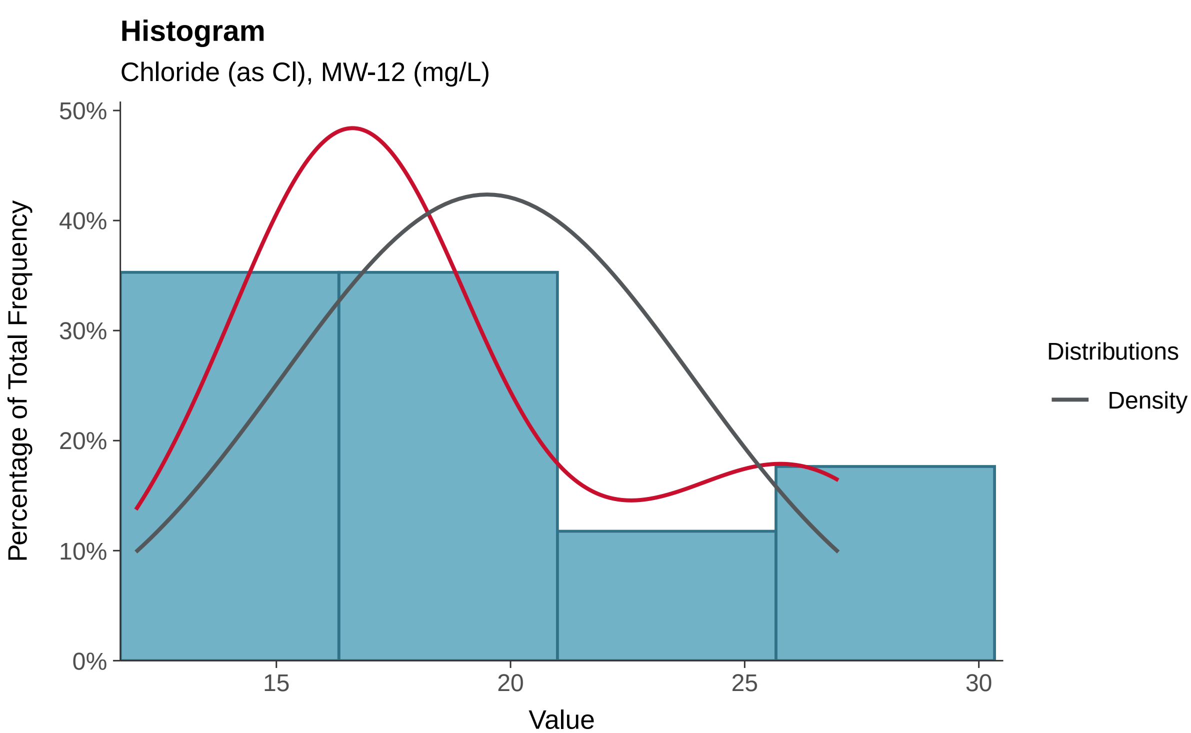
Calcium, MW-12 (mg/L)



Appendix III: Chloride (as Cl), MW-12

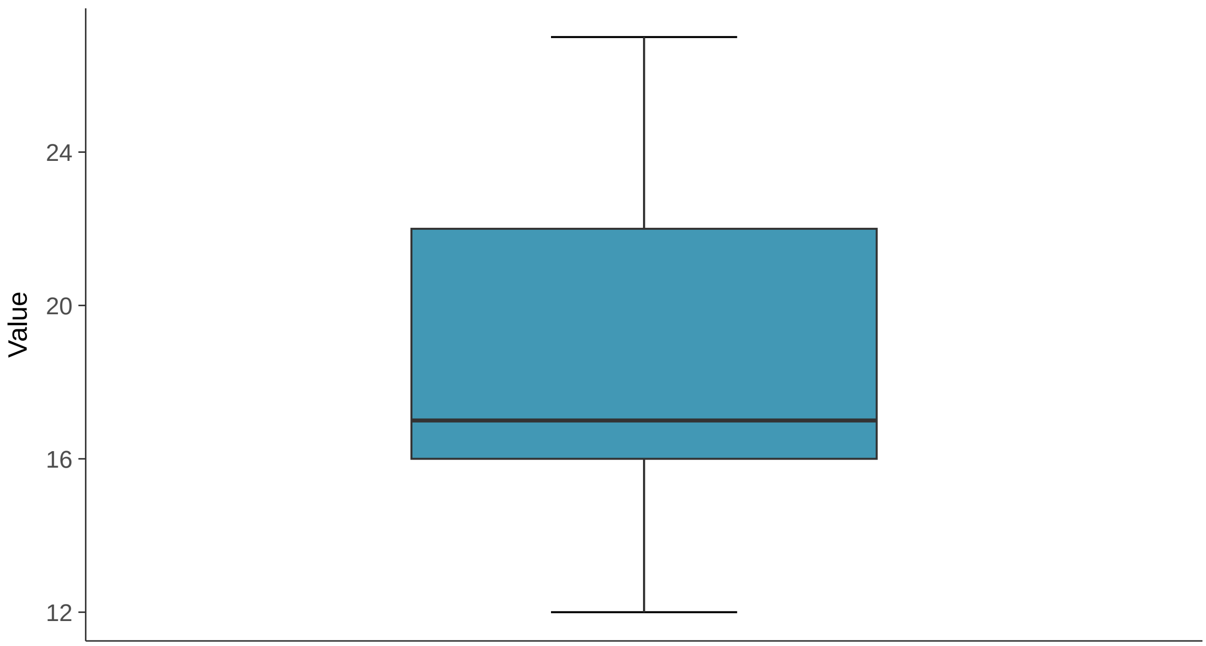
ID: 22_2_3_108





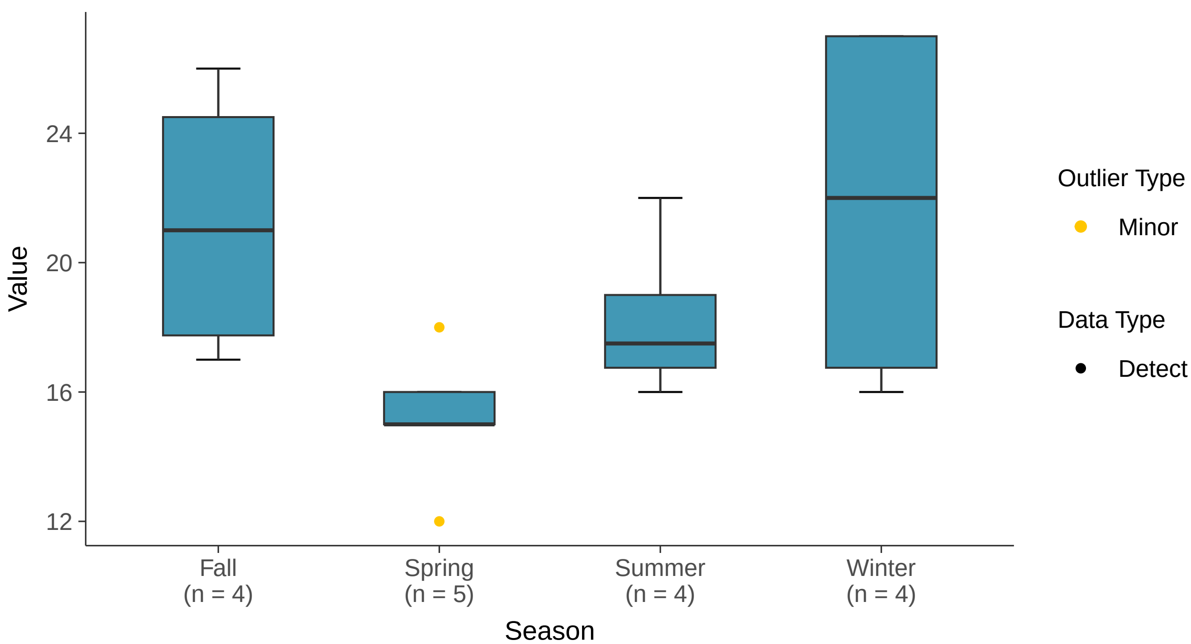
Boxplot

Chloride (as Cl), MW-12 (mg/L)



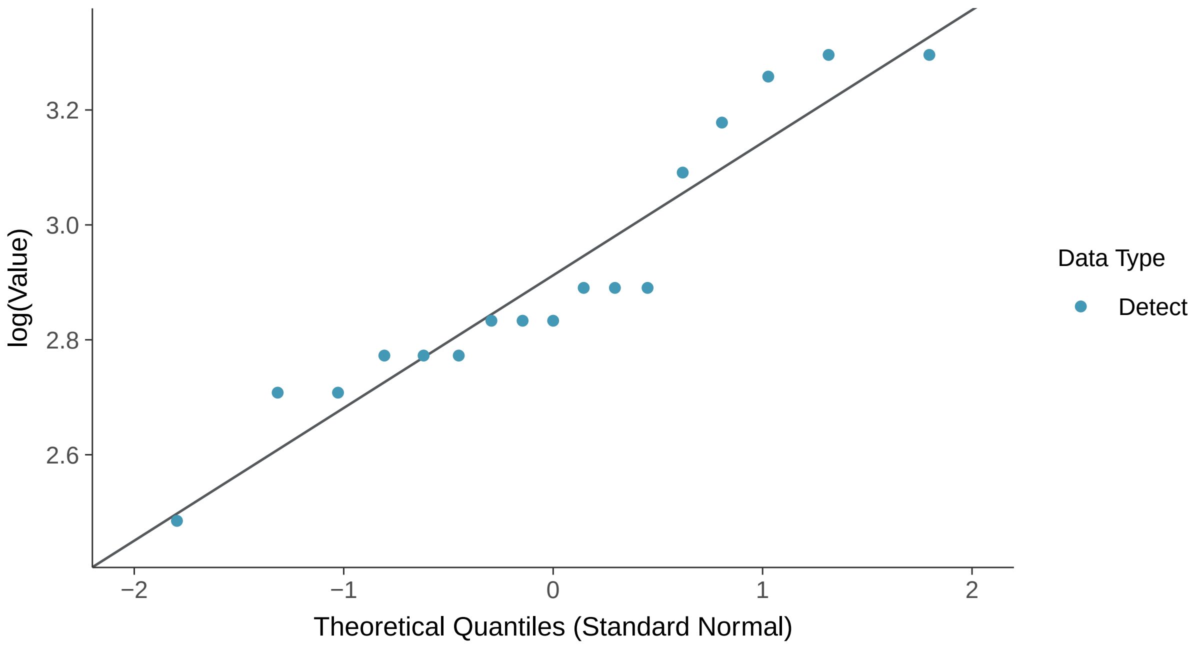
Boxplot by Season

Chloride (as Cl), MW-12 (mg/L)



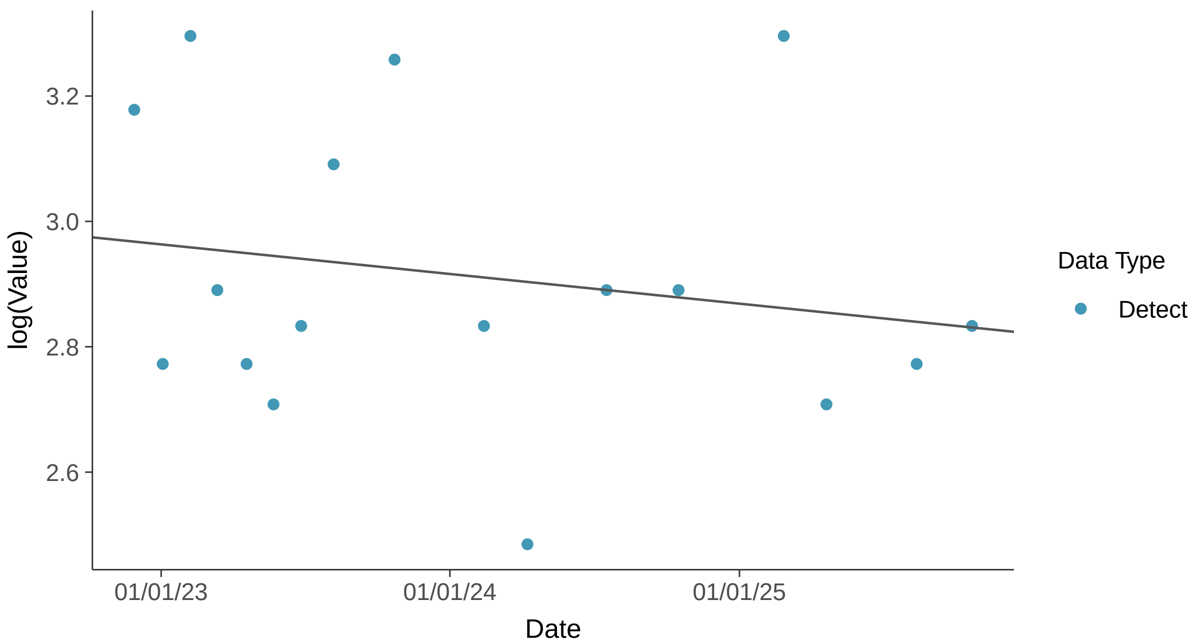
Lognormal Q-Q plot

Chloride (as Cl), MW-12 (mg/L)



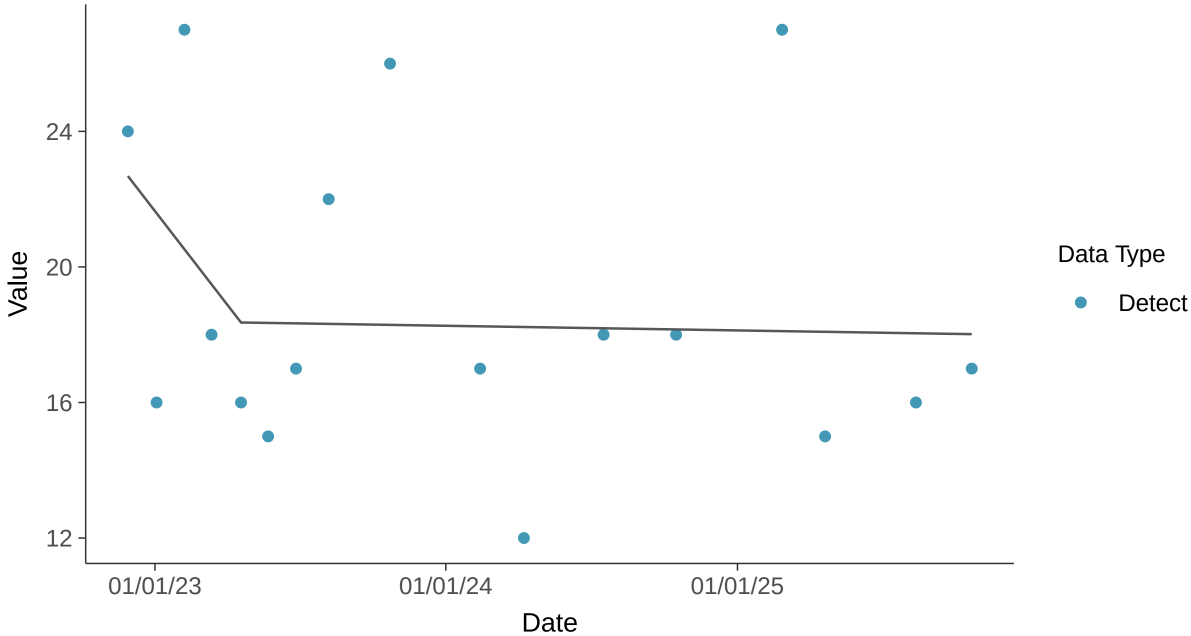
Trend Regression: Lognormal MLE

Chloride (as Cl), MW-12 (mg/L)



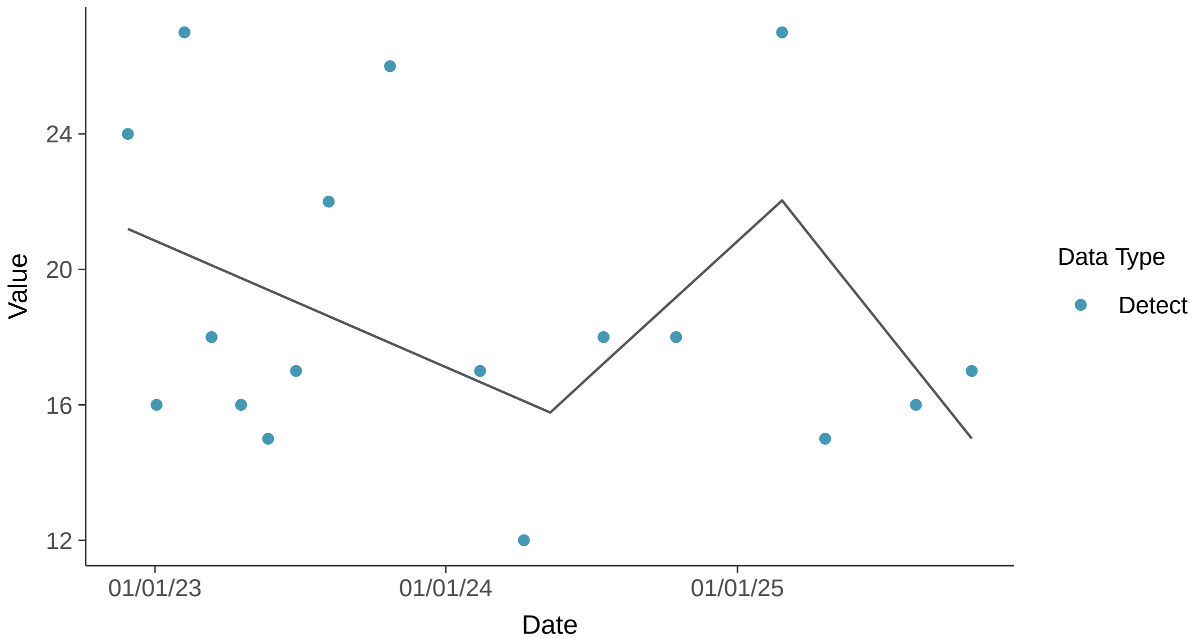
Trend Regression: Piecewise Linear-Linear

Chloride (as Cl), MW-12 (mg/L)



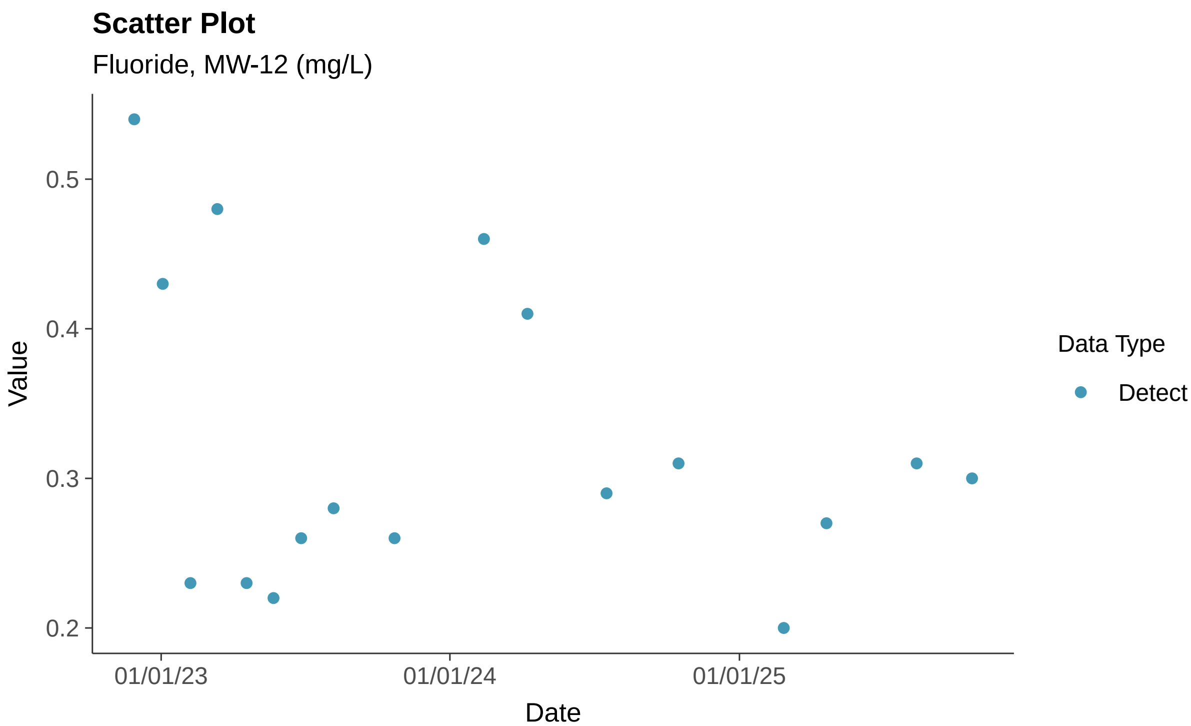
Trend Regression: Piecewise Linear-Linear-Linear

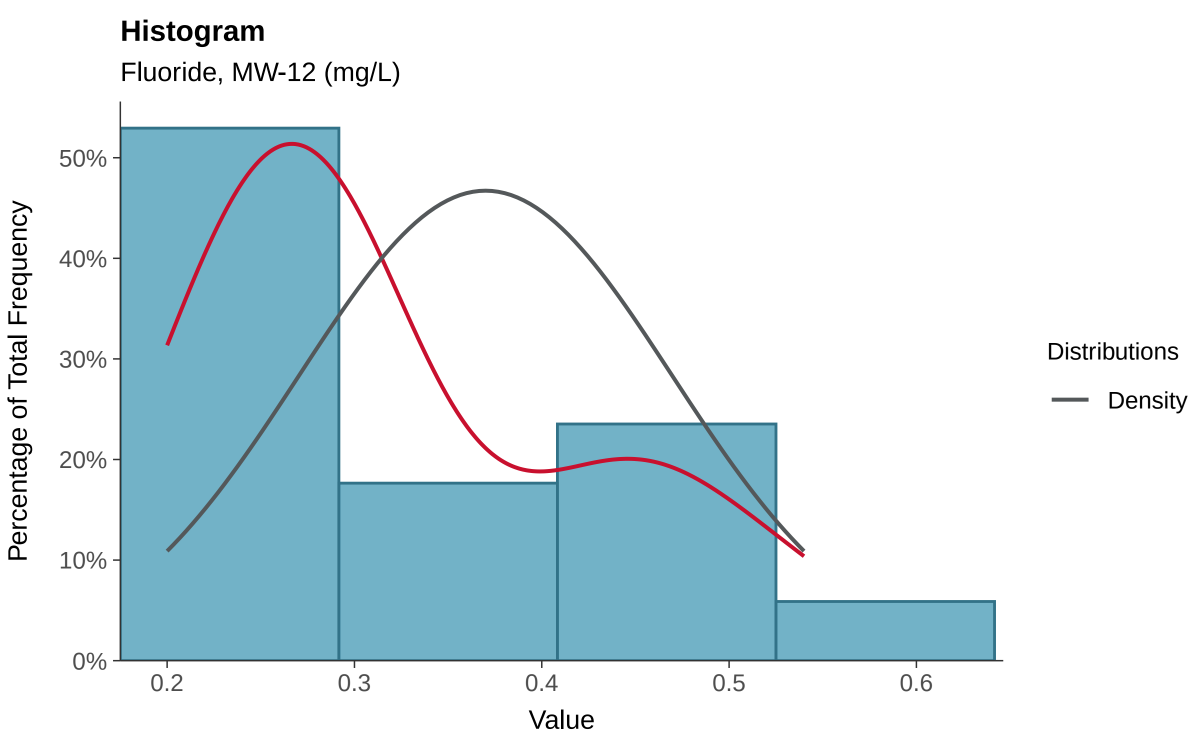
Chloride (as Cl), MW-12 (mg/L)



Appendix III: Fluoride, MW-12

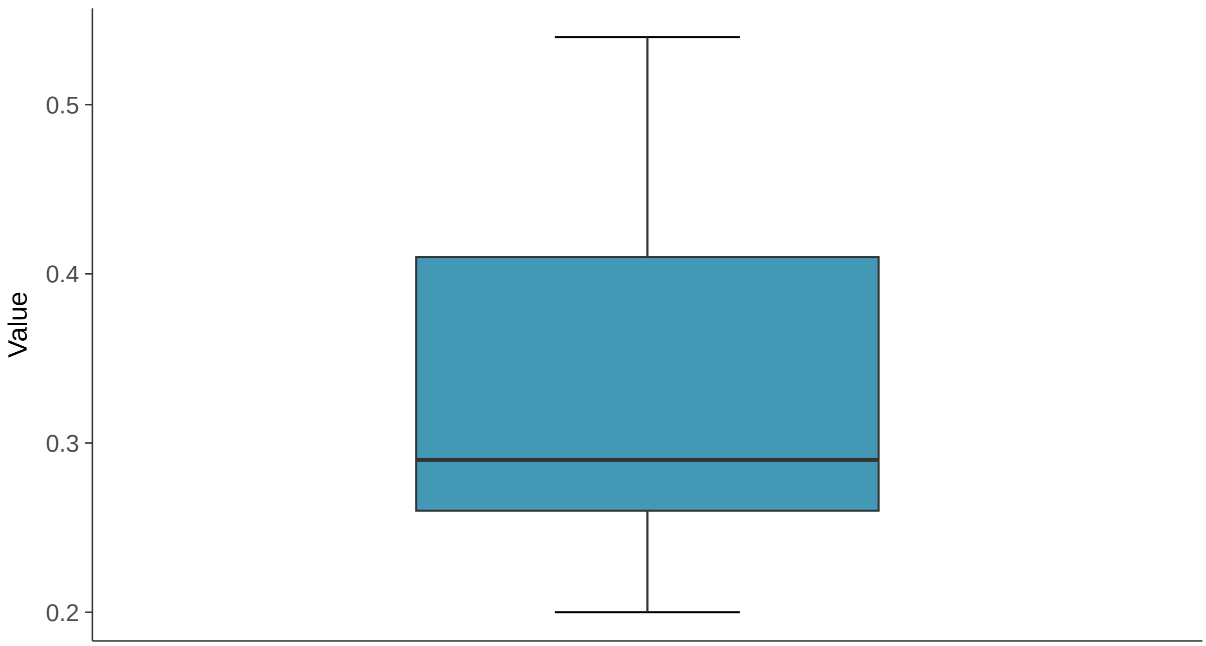
ID: 22_2_3_112





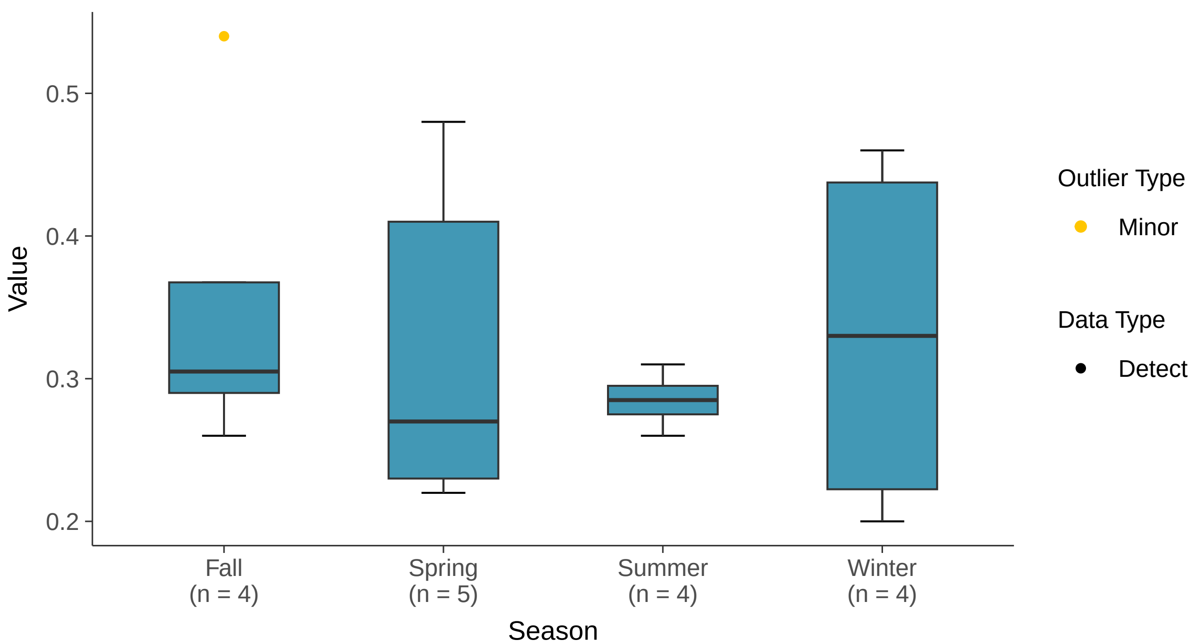
Boxplot

Fluoride, MW-12 (mg/L)



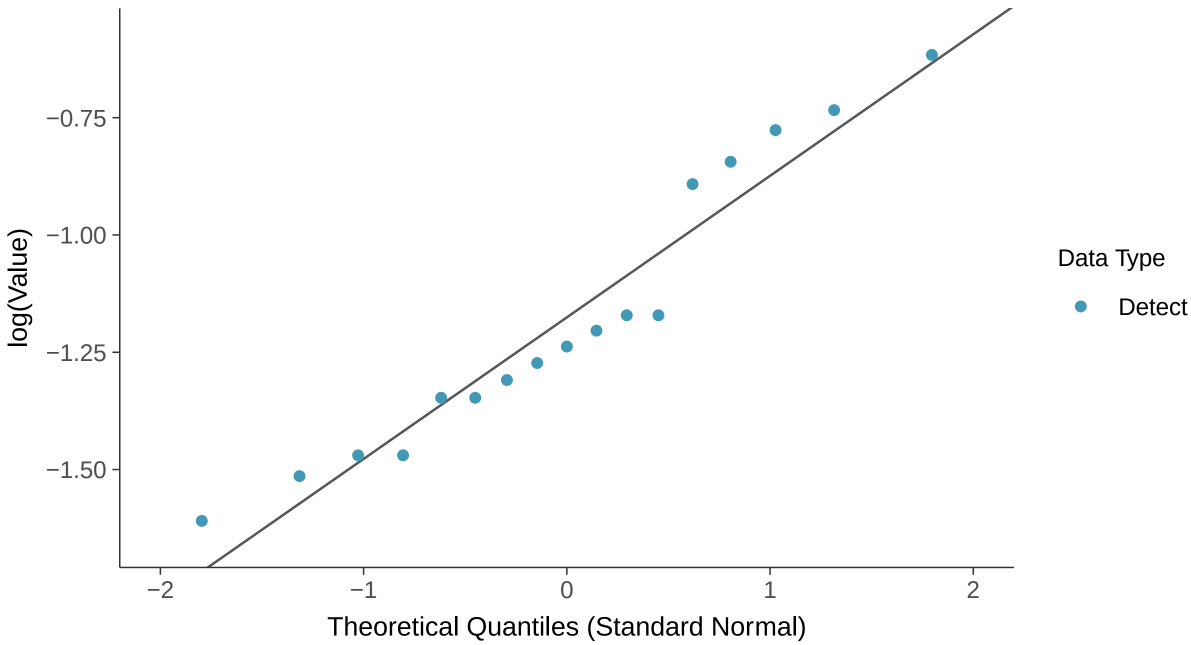
Boxplot by Season

Fluoride, MW-12 (mg/L)



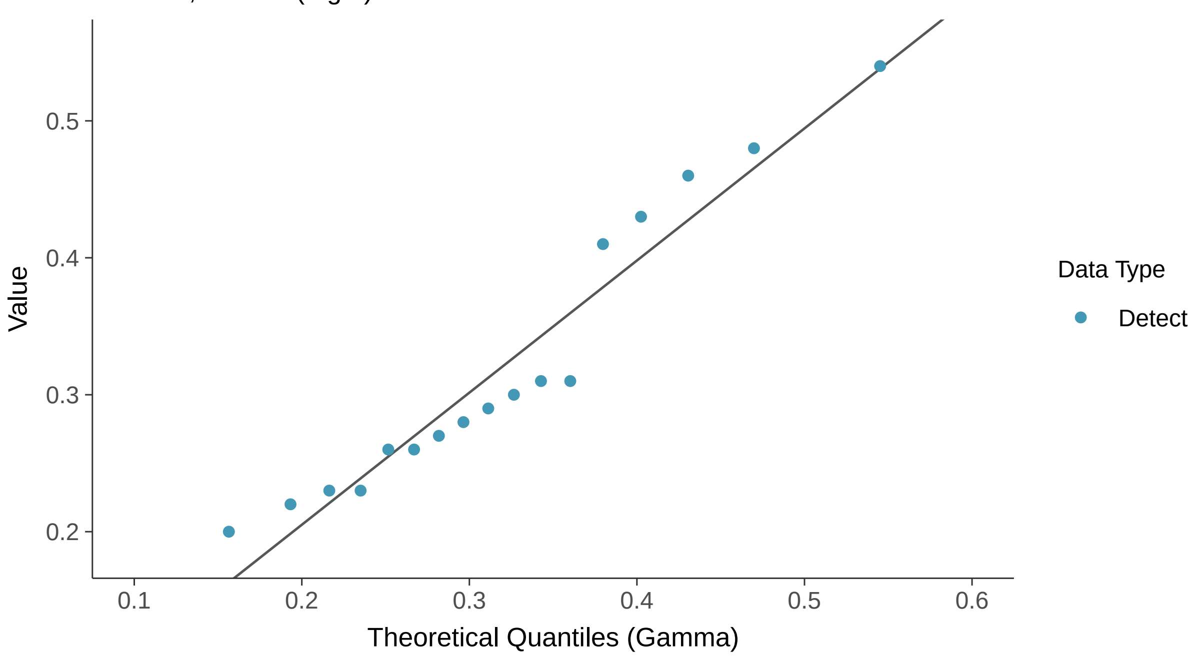
Lognormal Q-Q plot

Fluoride, MW-12 (mg/L)



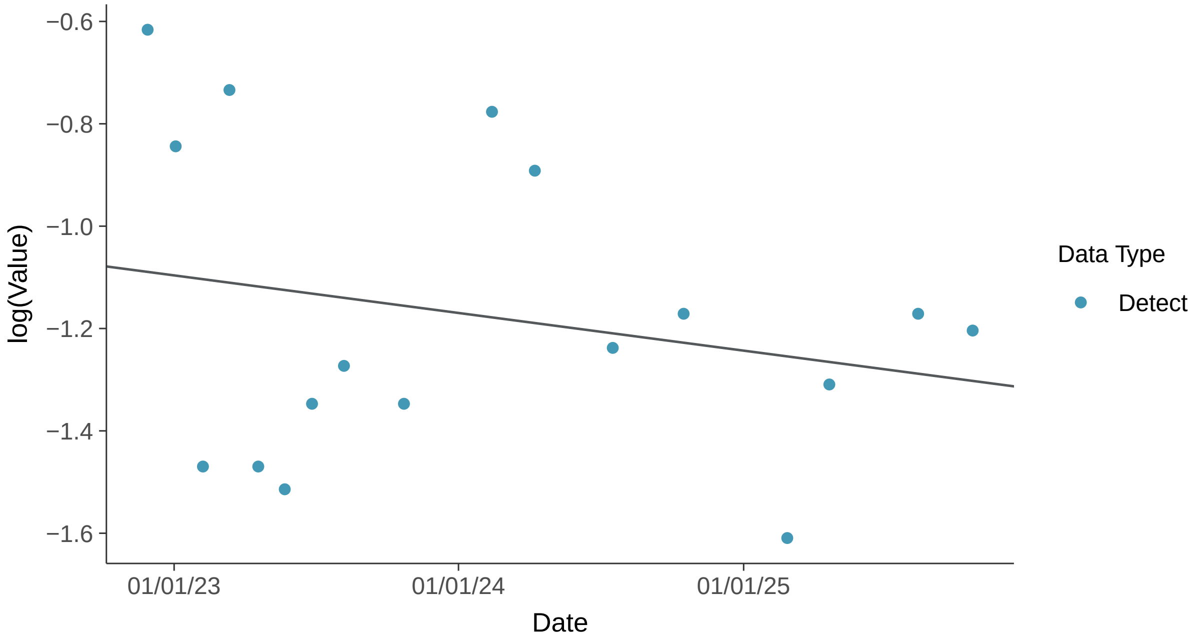
Gamma Q-Q plot

Fluoride, MW-12 (mg/L)



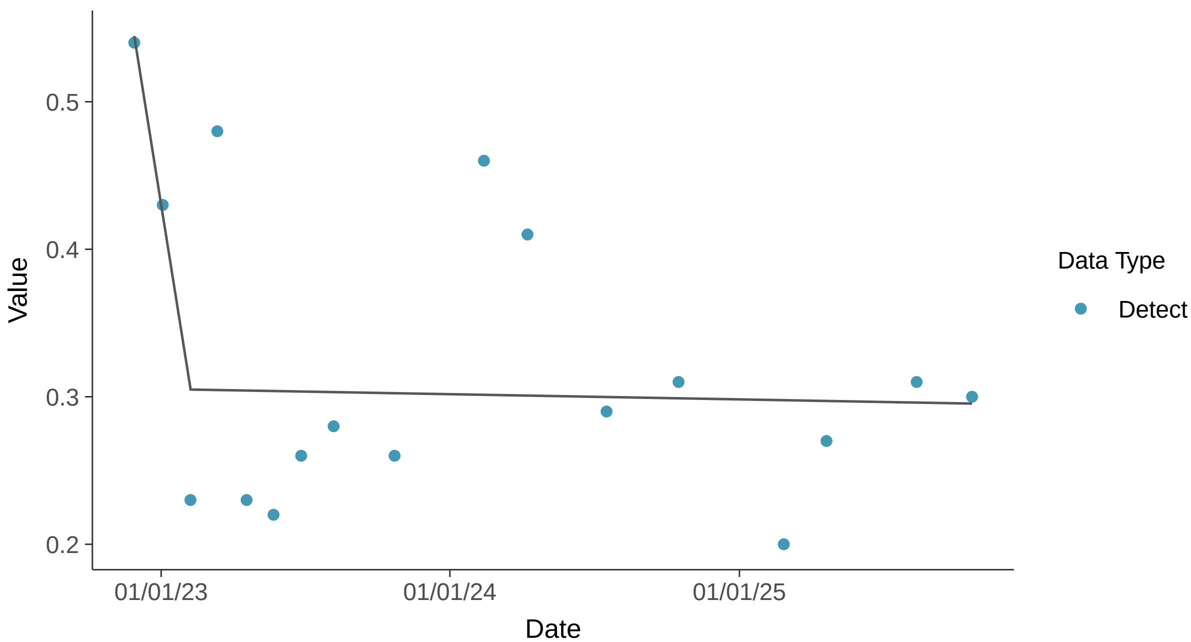
Trend Regression: Lognormal MLE

Fluoride, MW-12 (mg/L)



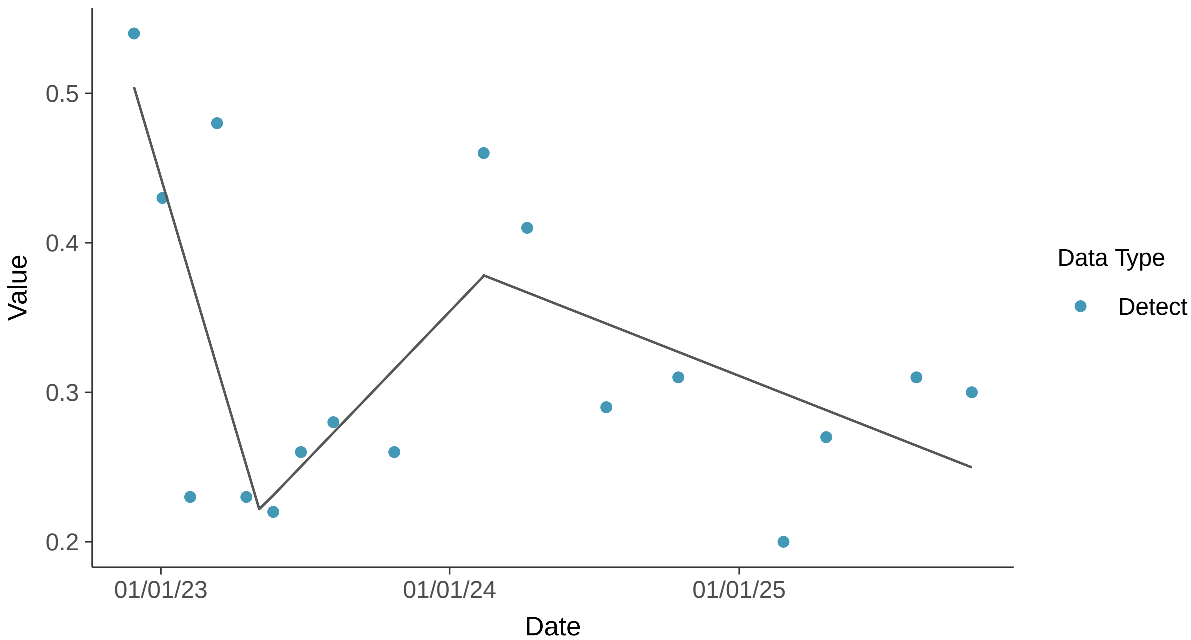
Trend Regression: Piecewise Linear-Linear

Fluoride, MW-12 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Fluoride, MW-12 (mg/L)

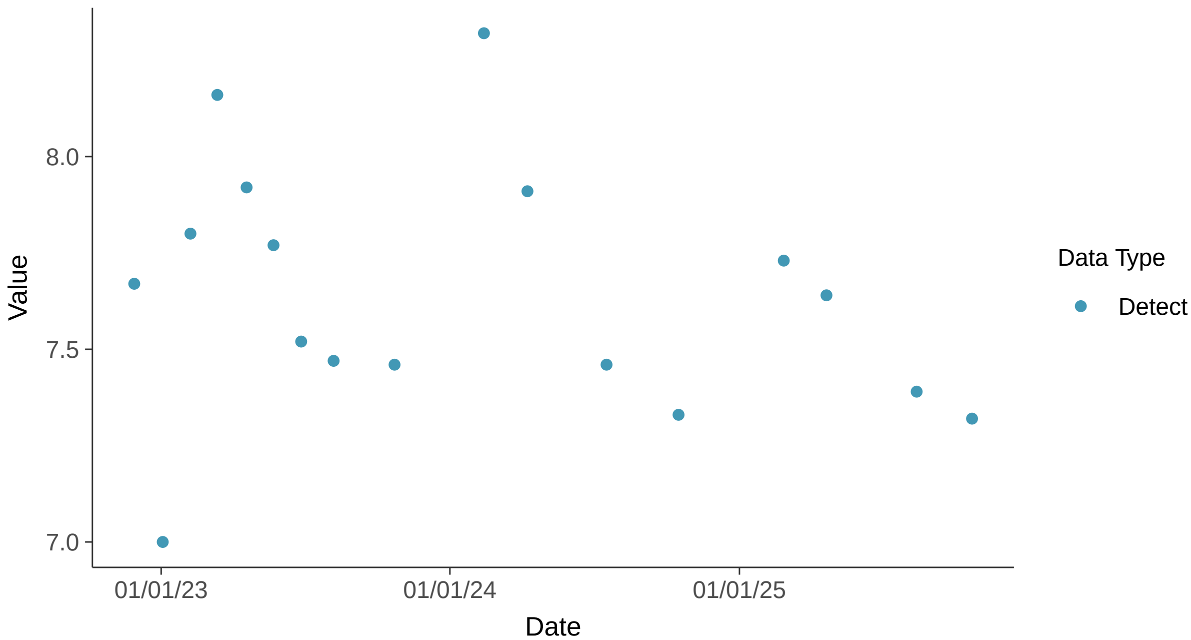


Appendix III: pH (field), MW-12

ID: 22_2_3_120

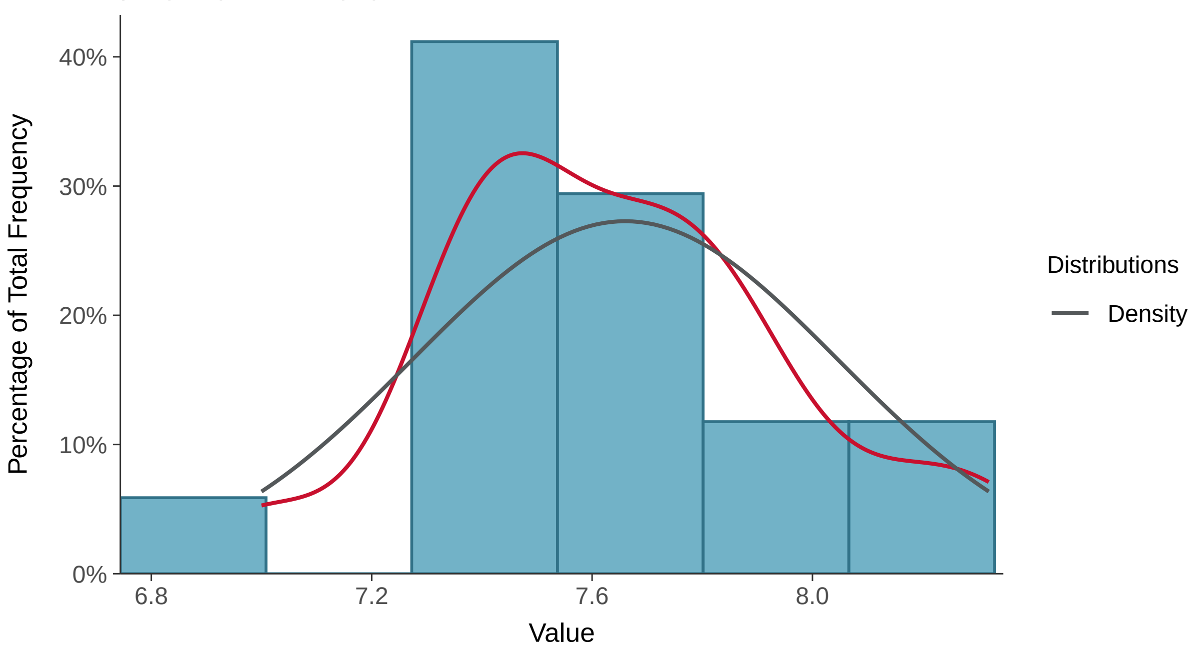
Scatter Plot

pH (field), MW-12 (su)



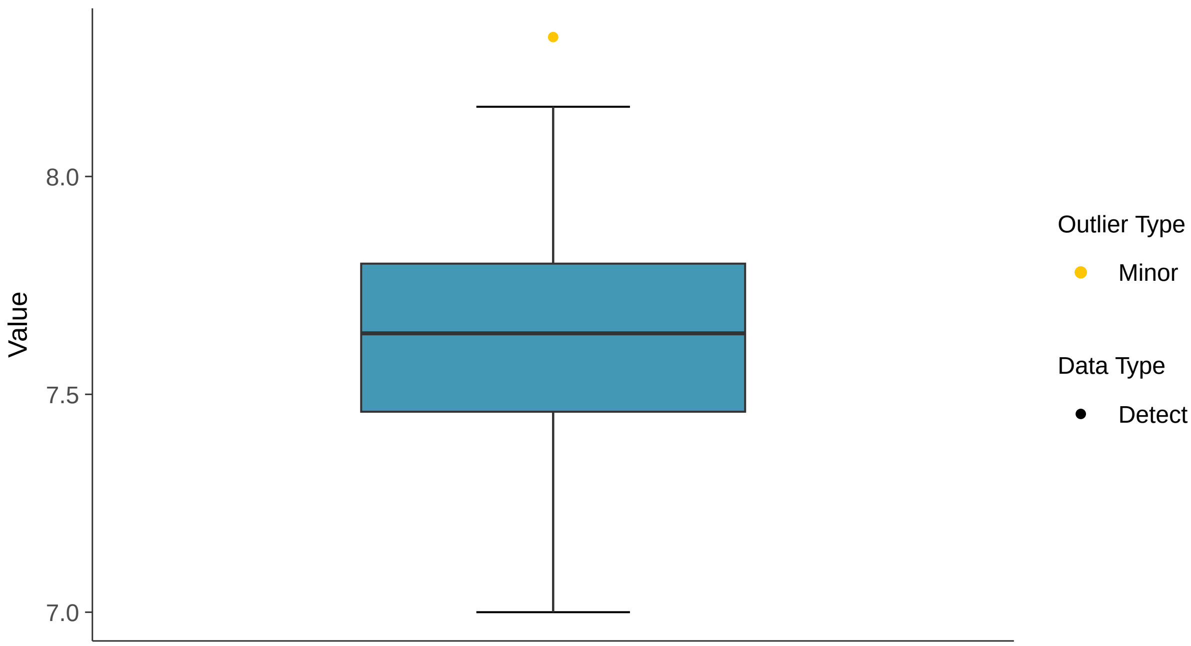
Histogram

pH (field), MW-12 (su)



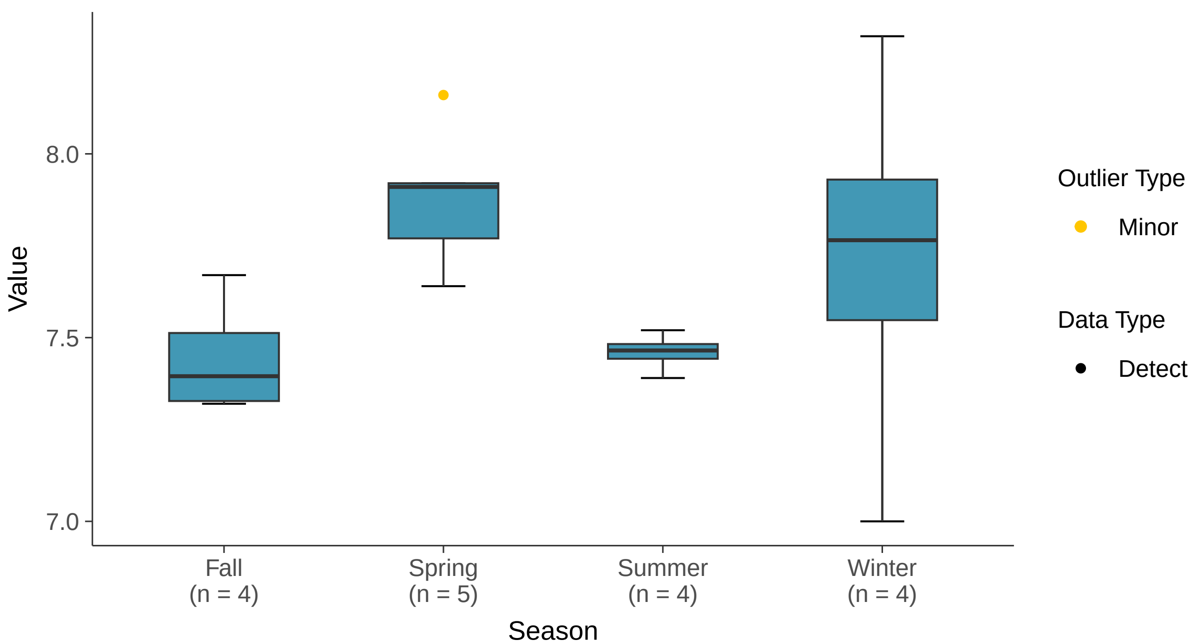
Boxplot

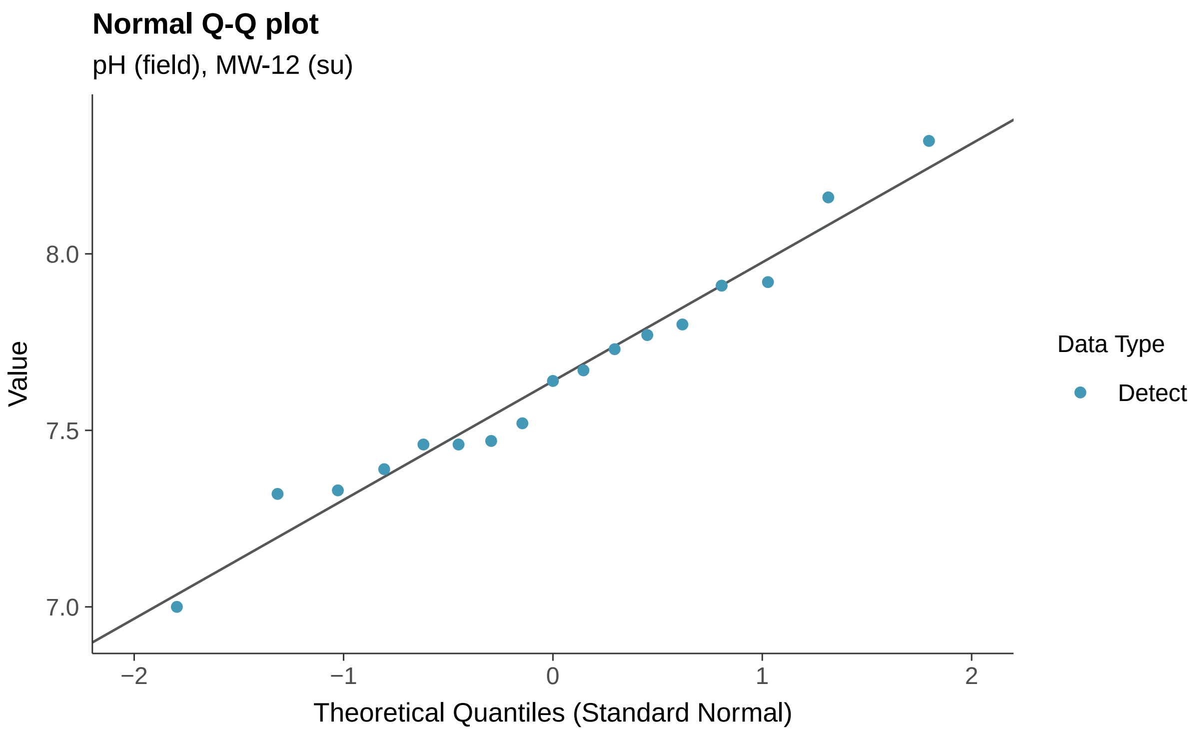
pH (field), MW-12 (su)

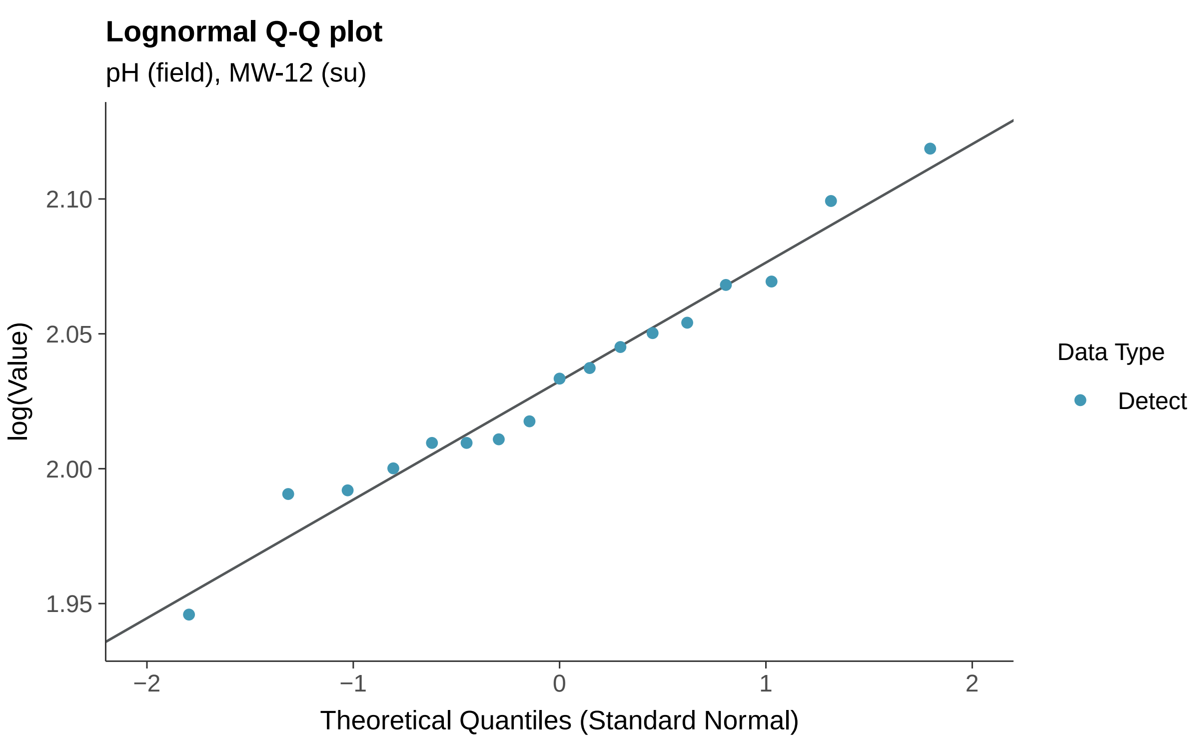


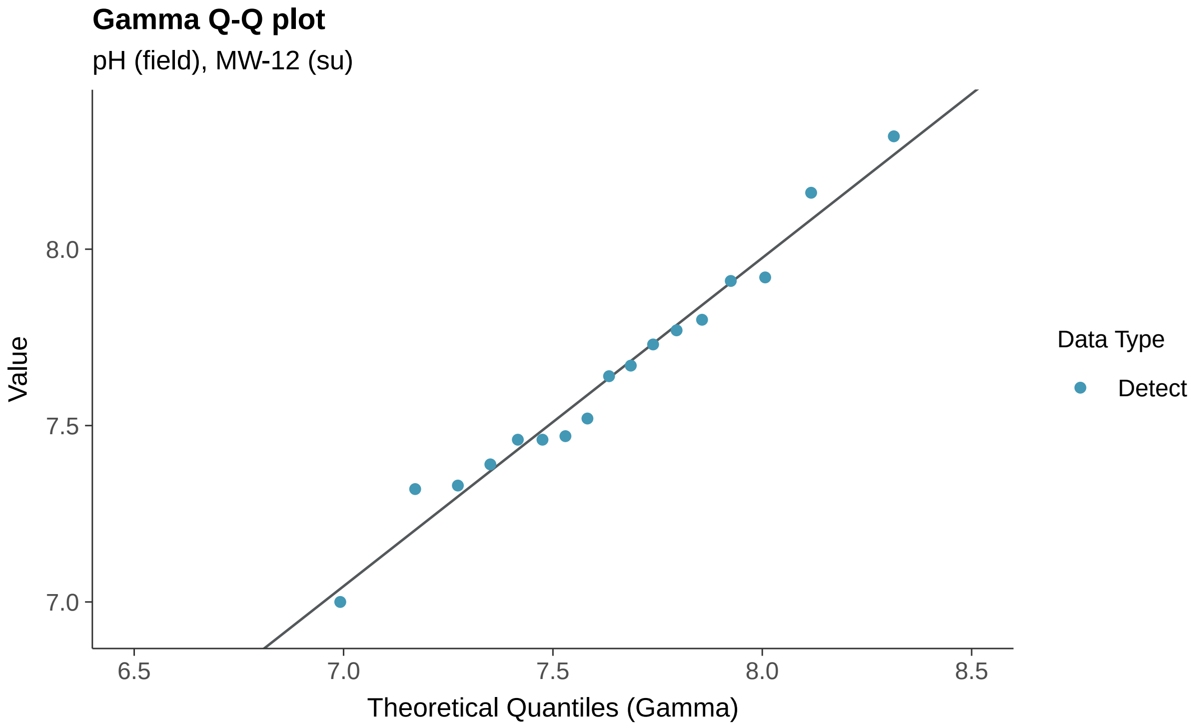
Boxplot by Season

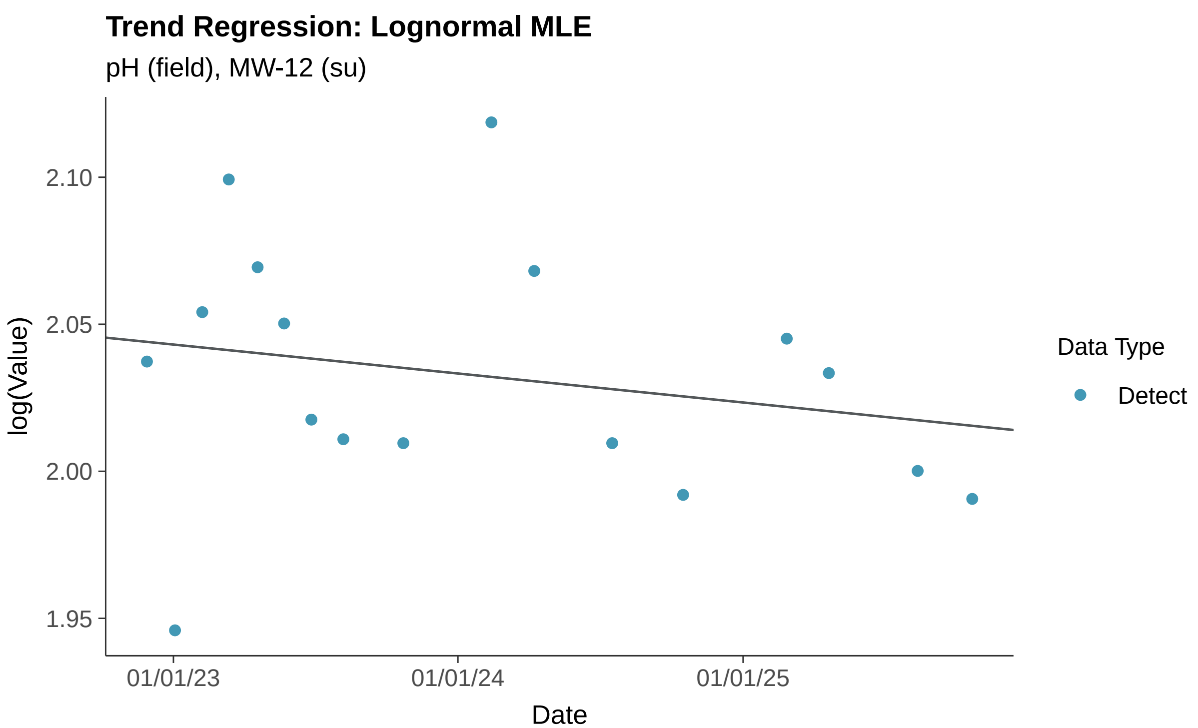
pH (field), MW-12 (su)




Normal Q-Q plot
pH (field), MW-12 (su)
Value
8.0
7.5
7.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

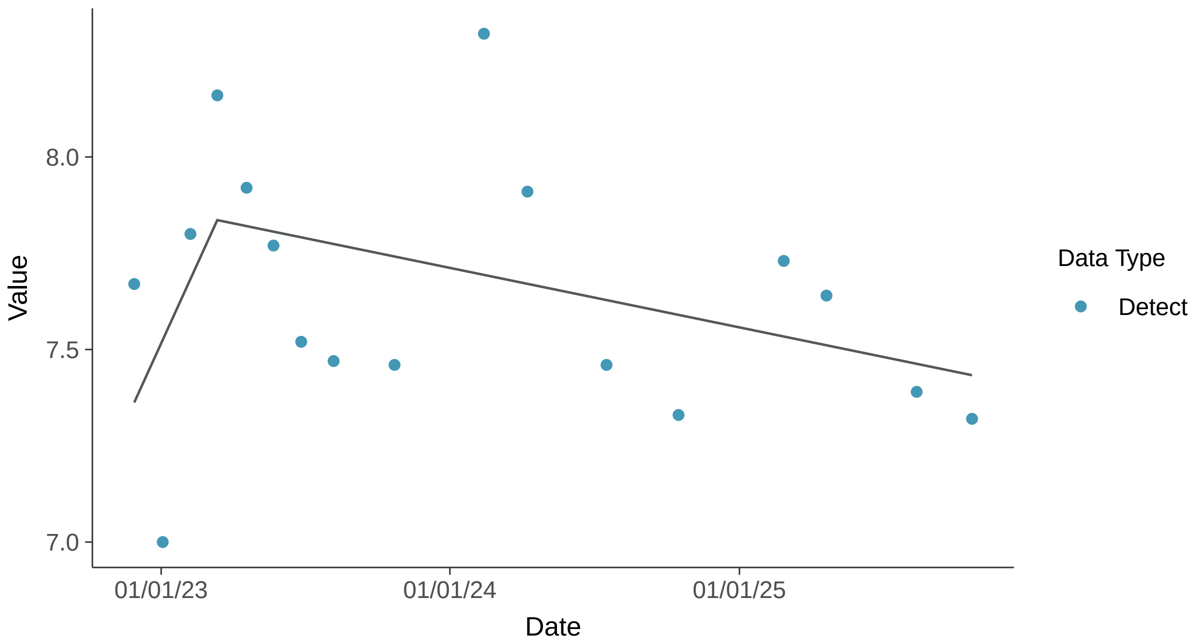

Lognormal Q-Q plot
pH (field), MW-12 (su)
log(Value)
2.10
2.05
2.00
1.95
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
pH (field), MW-12 (su)
Value
8.0
7.5
7.0
6.5
7.0
7.5
8.0
8.5
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
pH (field), MW-12 (su)
log(Value)
2.10
2.05
2.00
1.95
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear

pH (field), MW-12 (su)

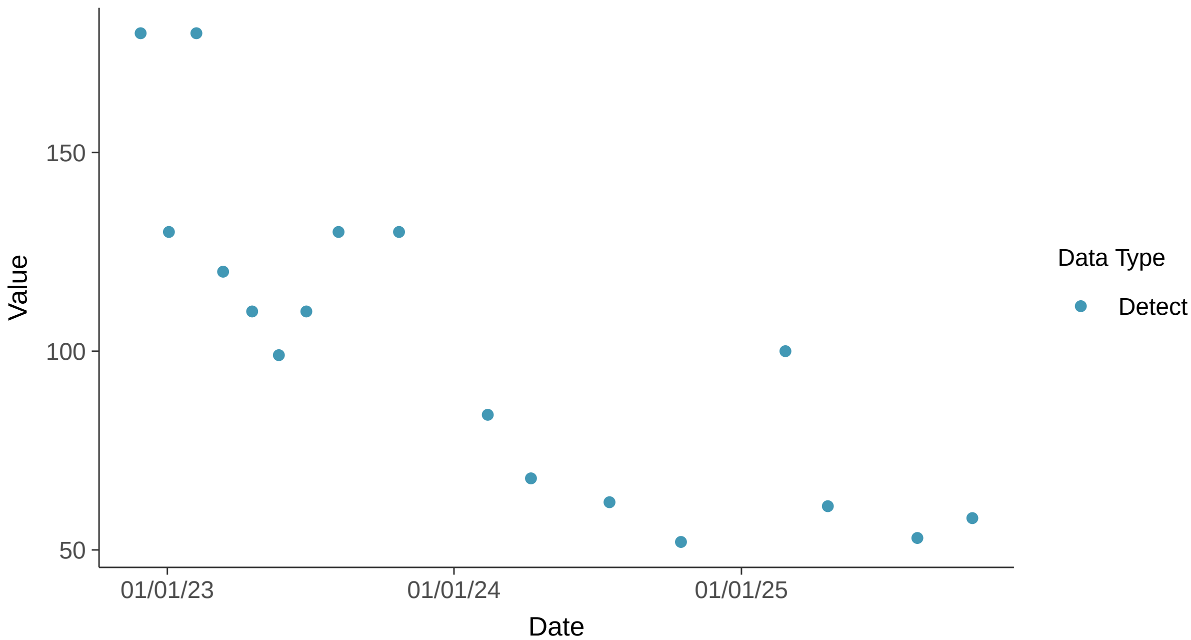


Appendix III: Sulfate (as SO4), MW-12

ID: 22_2_3_124

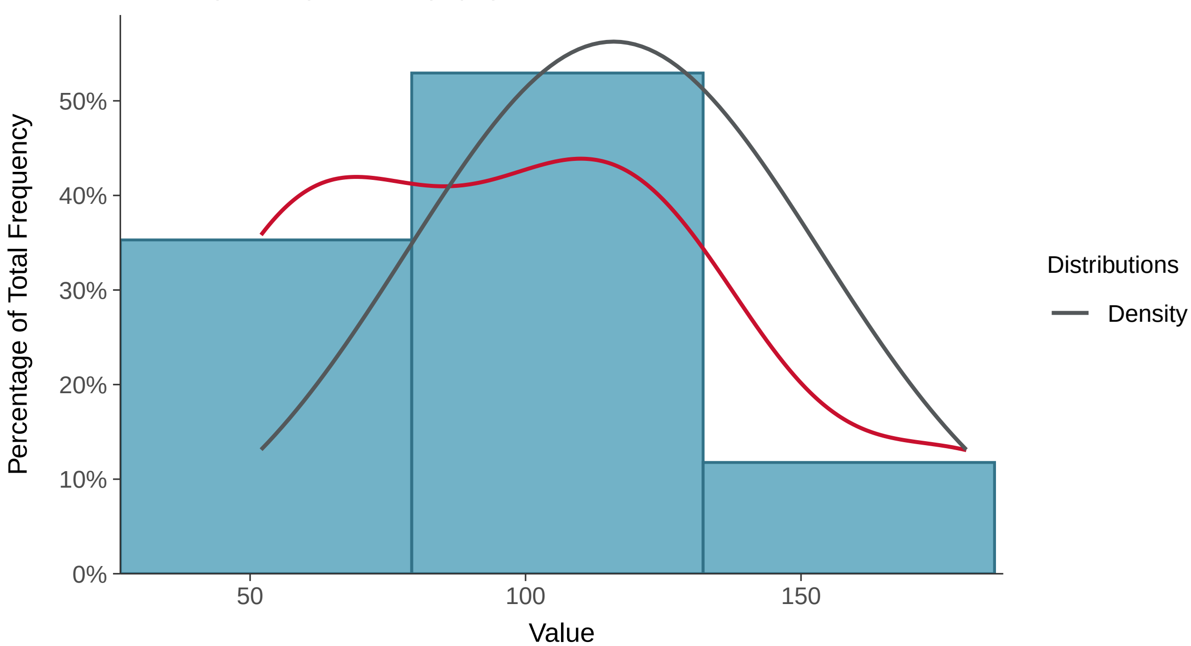
Scatter Plot

Sulfate (as SO4), MW-12 (mg/L)



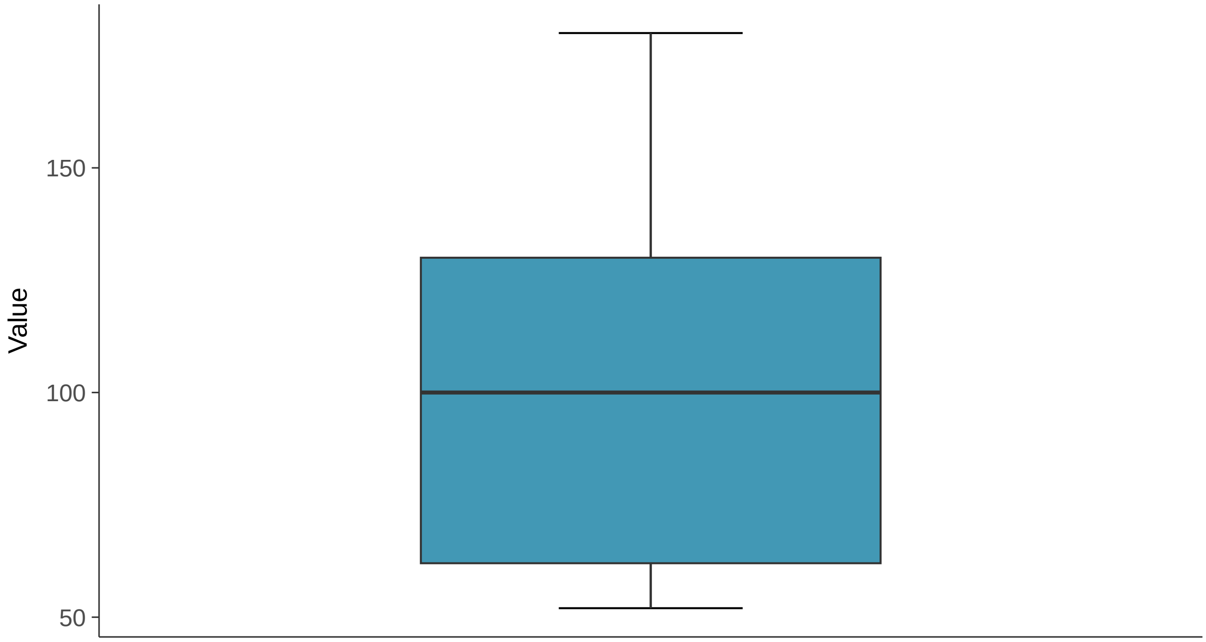
Histogram

Sulfate (as SO4), MW-12 (mg/L)



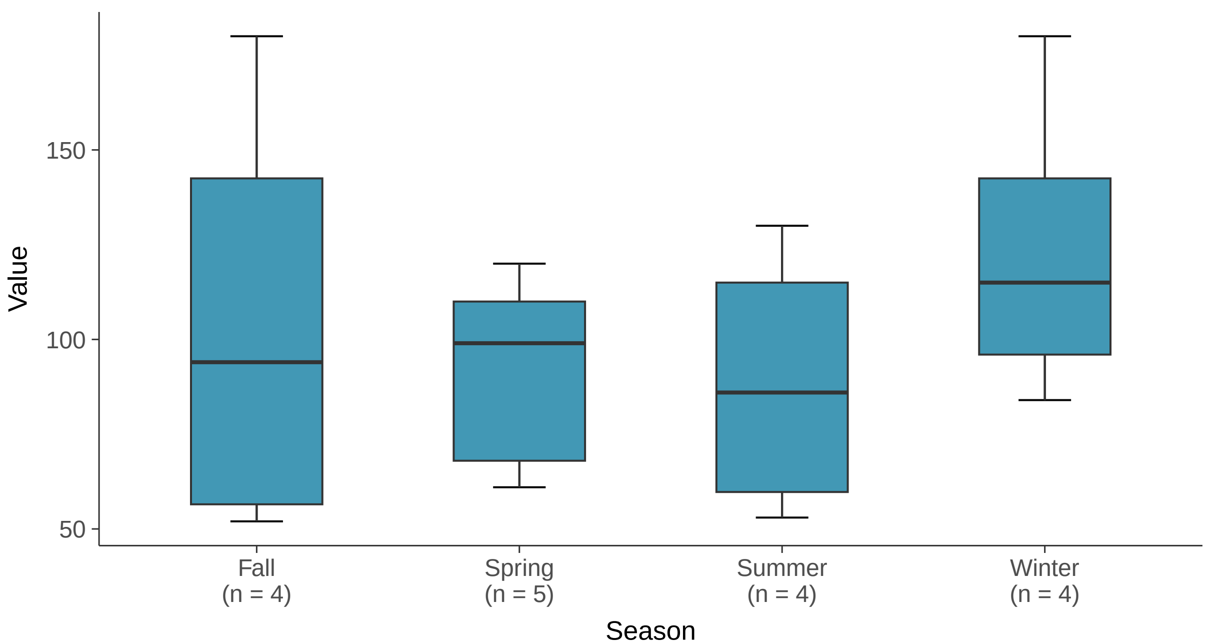
Boxplot

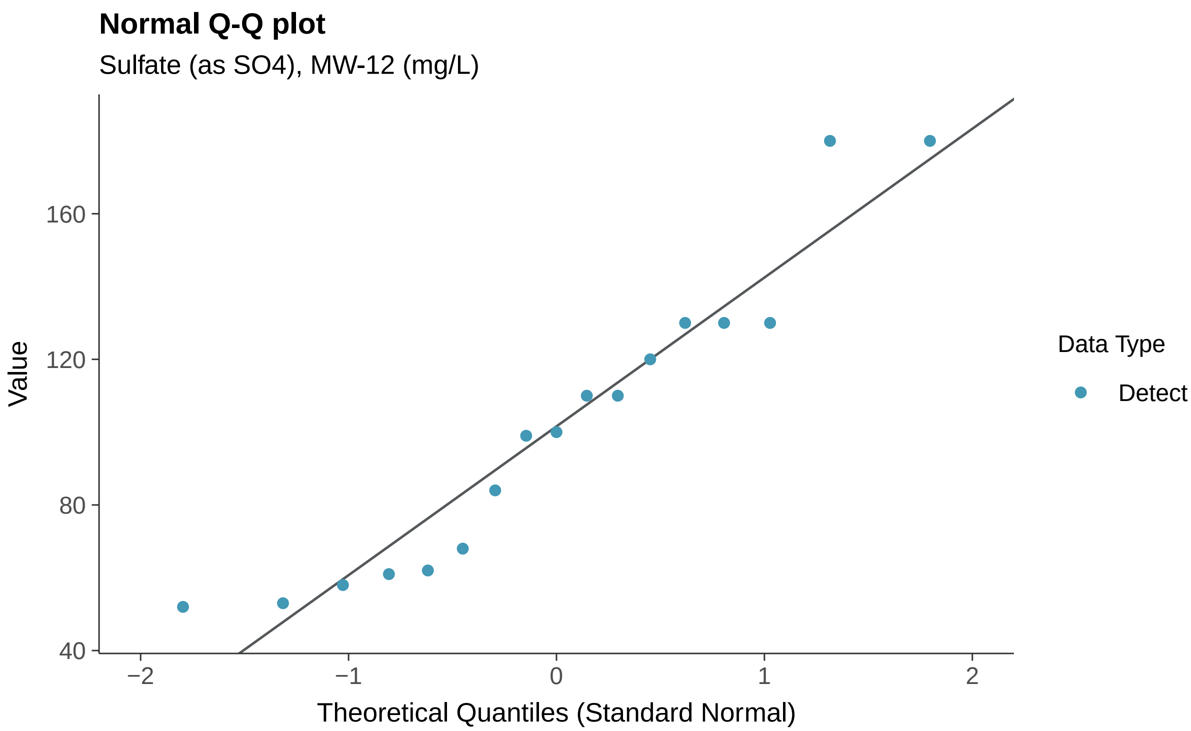
Sulfate (as SO4), MW-12 (mg/L)

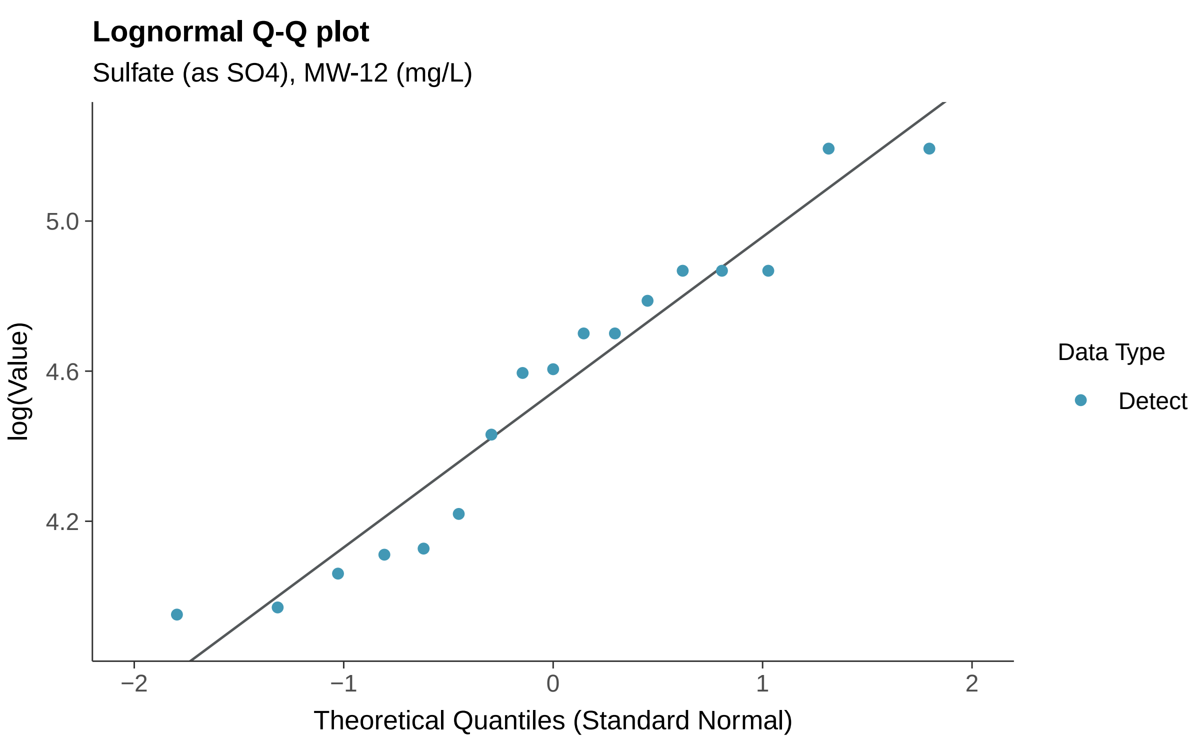


Boxplot by Season

Sulfate (as SO4), MW-12 (mg/L)

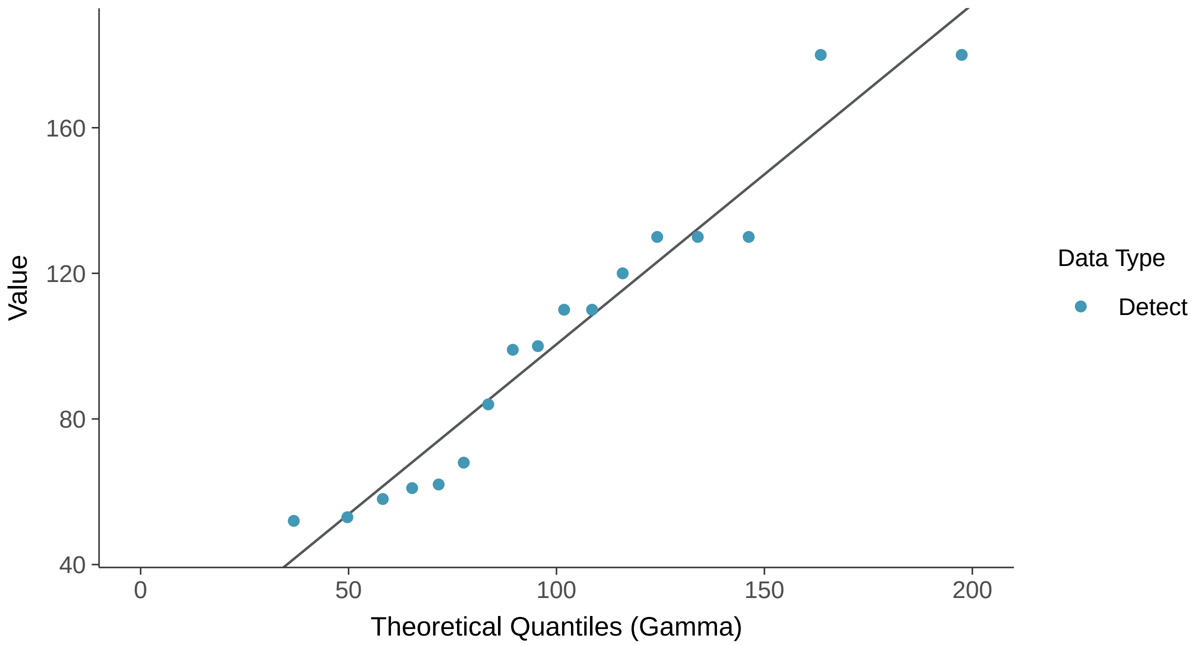



Normal Q-Q plot
Sulfate (as SO4), MW-12 (mg/L)
Value
160
120
80
40
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Sulfate (as SO4), MW-12 (mg/L)
log(Value)
5.0
4.6
4.2
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

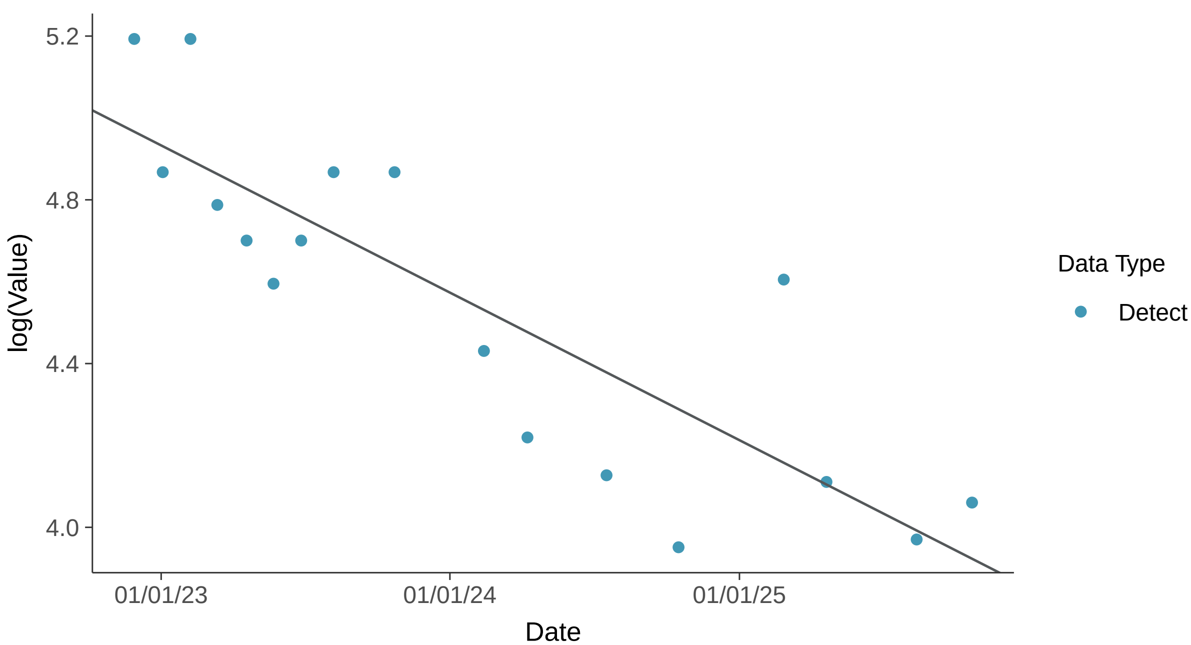
Gamma Q-Q plot

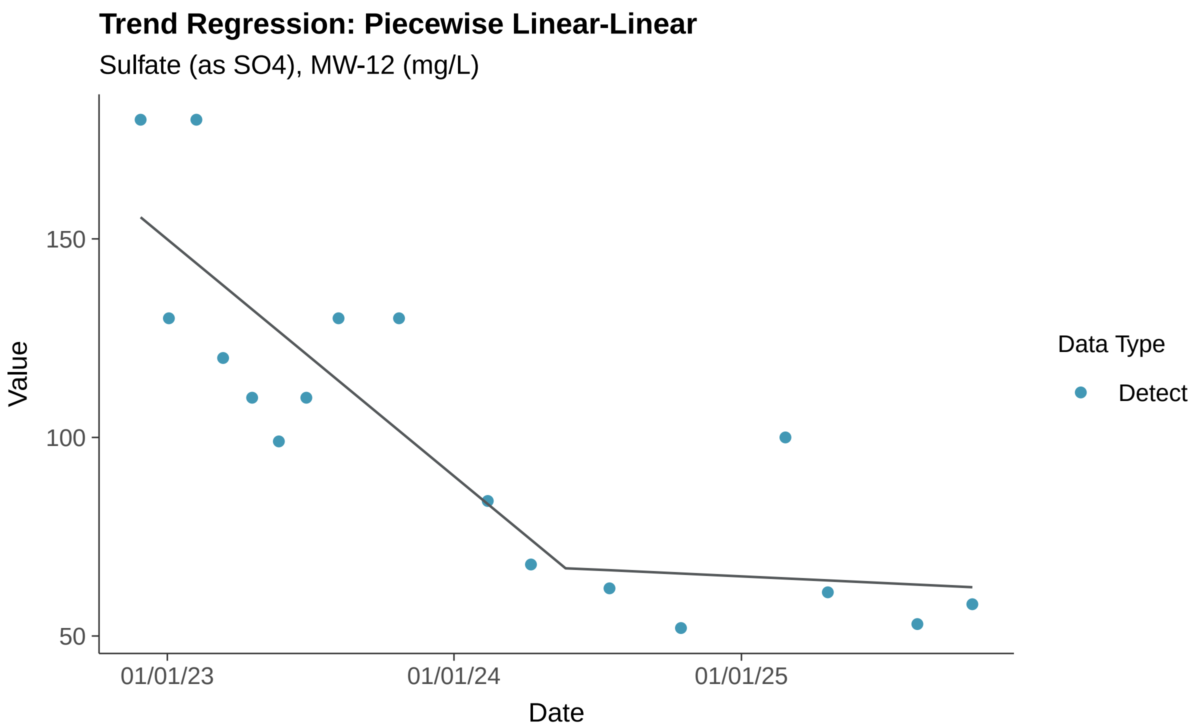
Sulfate (as SO4), MW-12 (mg/L)



Trend Regression: Lognormal MLE

Sulfate (as SO4), MW-12 (mg/L)



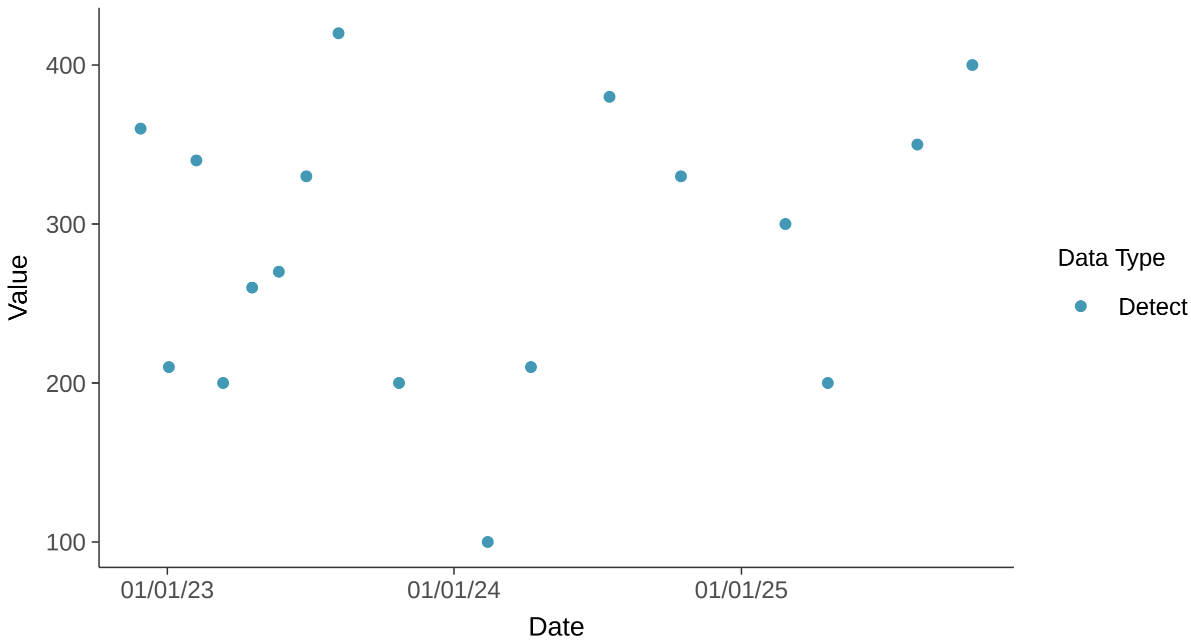

Trend Regression: Piecewise Linear-Linear
Sulfate (as SO4), MW-12 (mg/L)
Value
150
100
50
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Appendix III: Total Dissolved Solids, MW-12

ID: 22_2_3_126

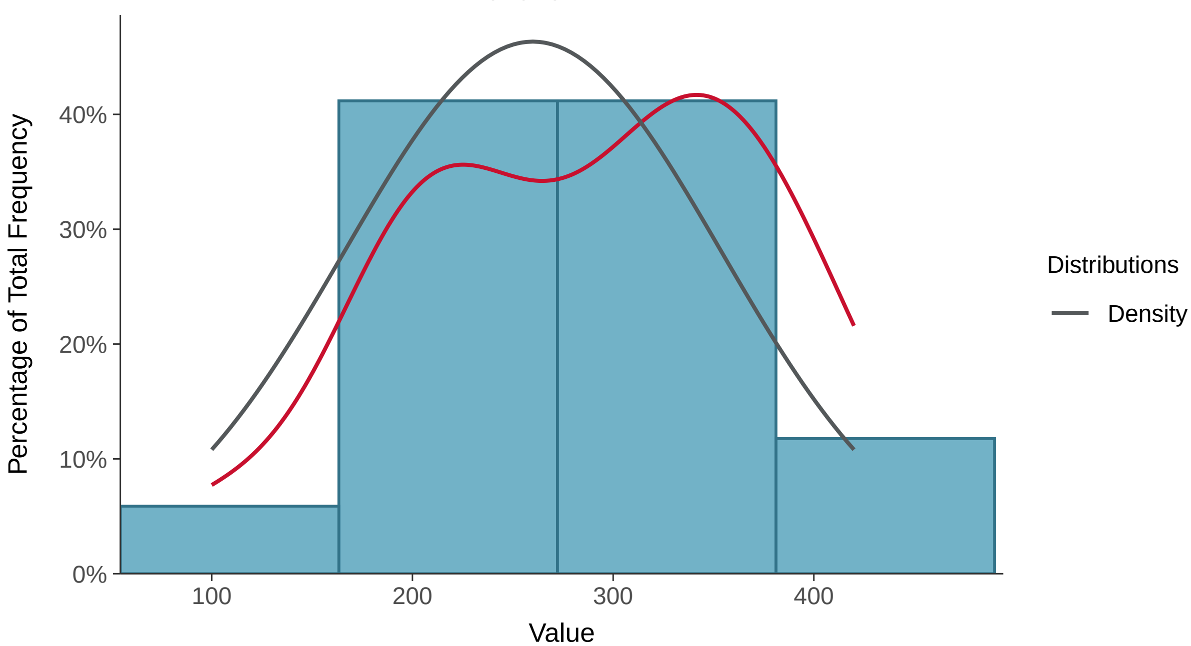
Scatter Plot

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



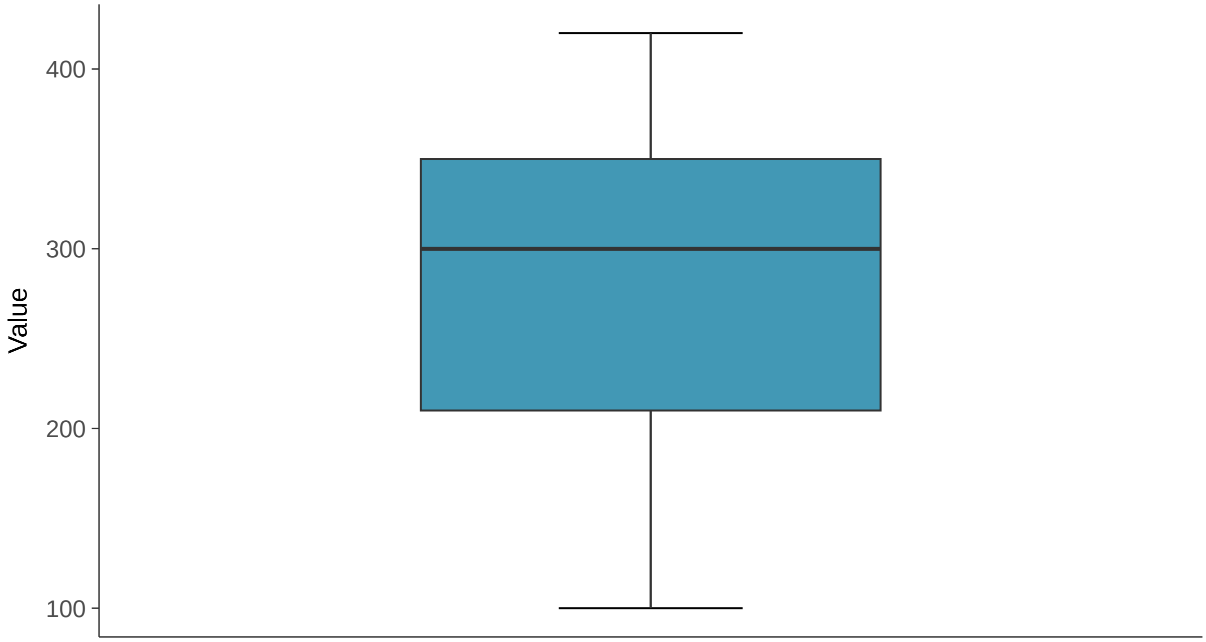
Histogram

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



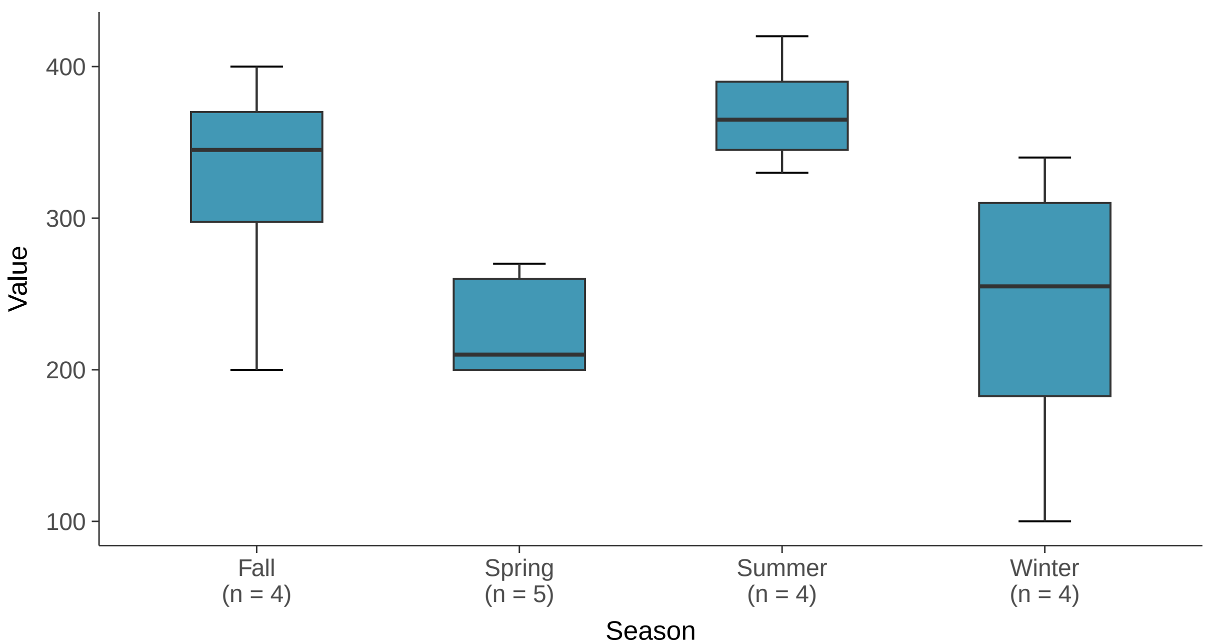
Boxplot

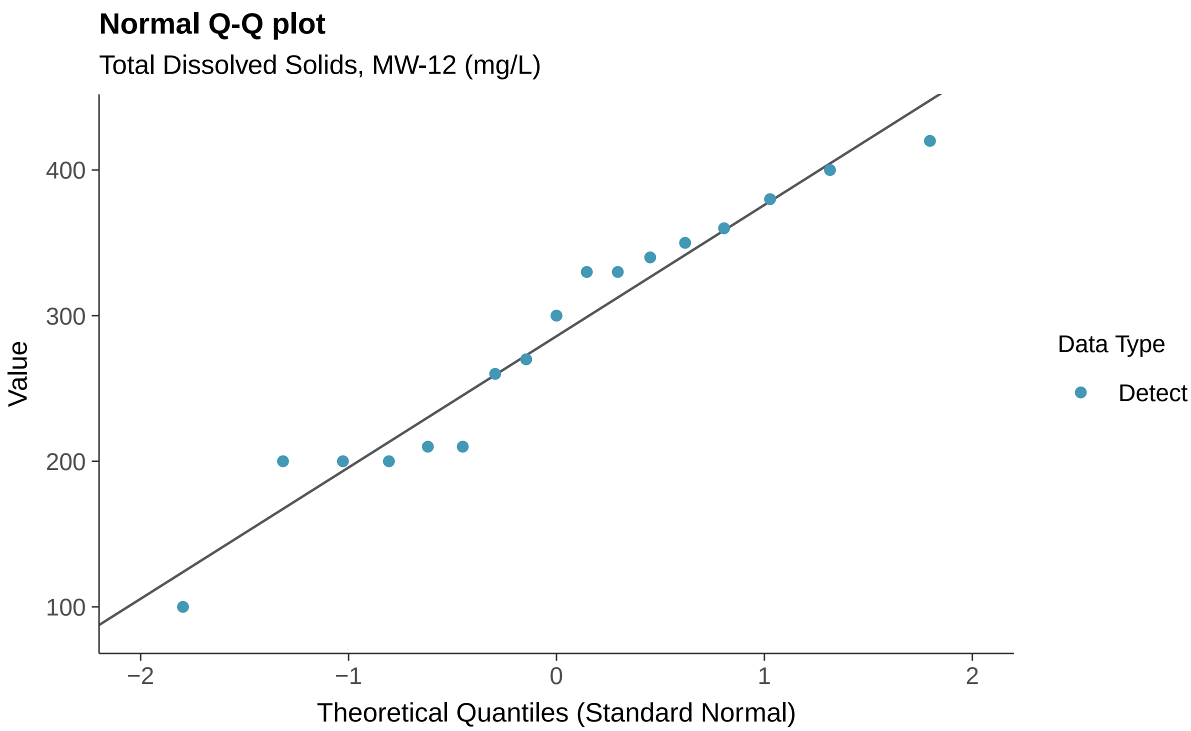
Total Dissolved Solids, MW-12 (mg/L)

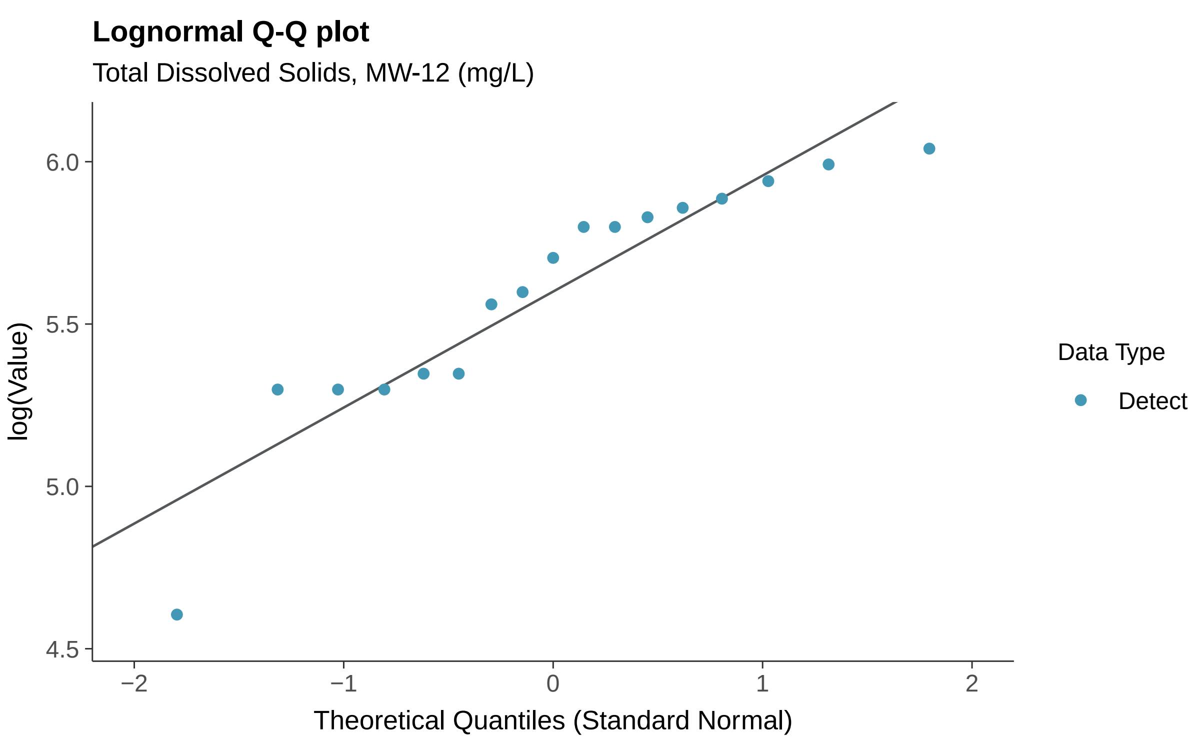


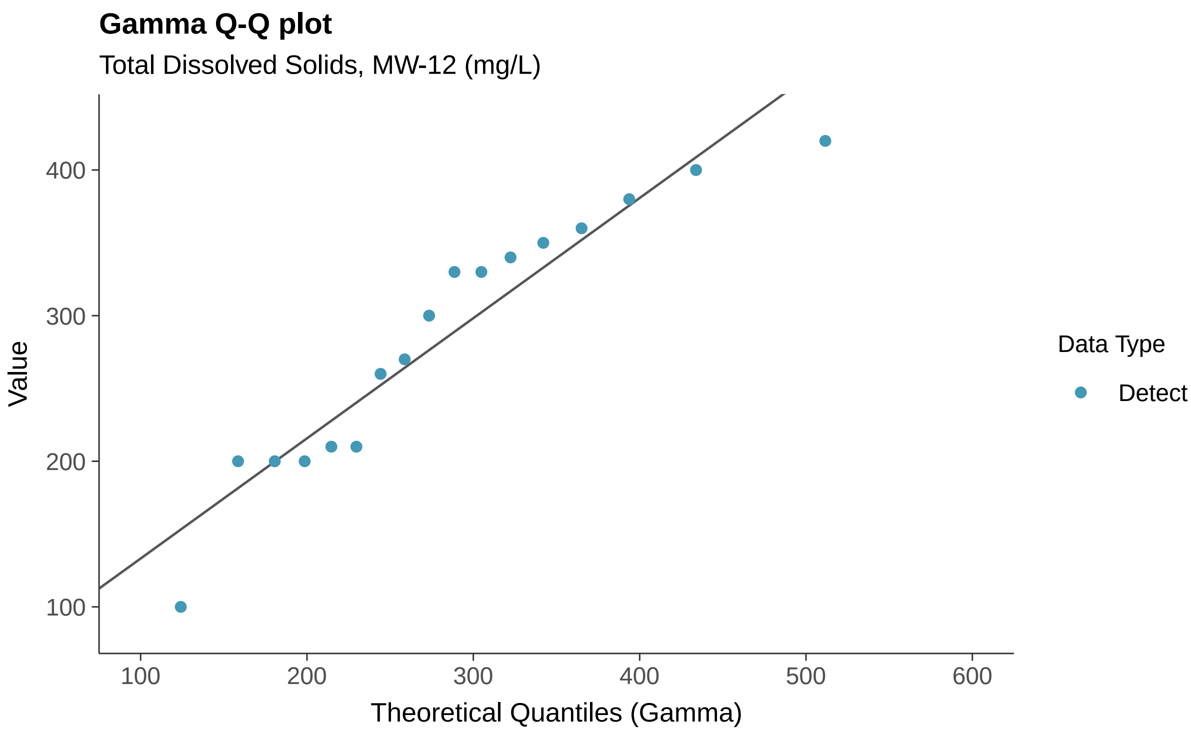
Boxplot by Season

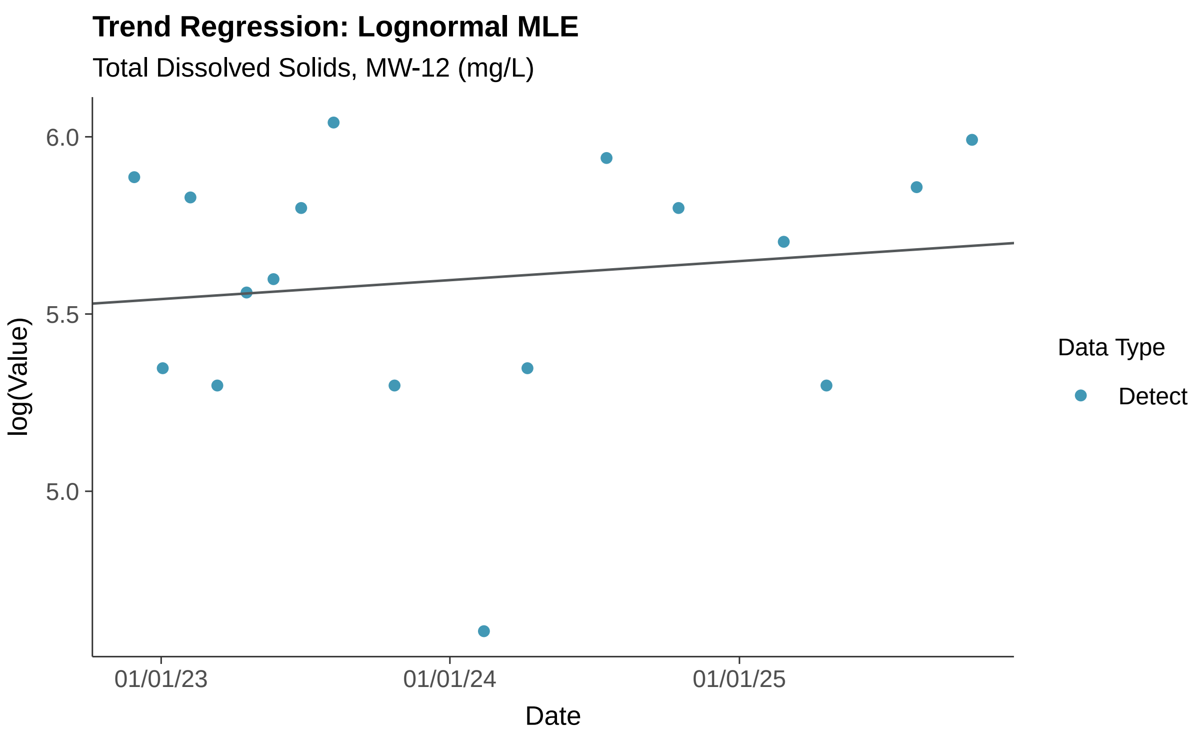
Total Dissolved Solids, MW-12 (mg/L)




Normal Q-Q plot
Total Dissolved Solids, MW-12 (mg/L)
Value
400
300
200
100
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

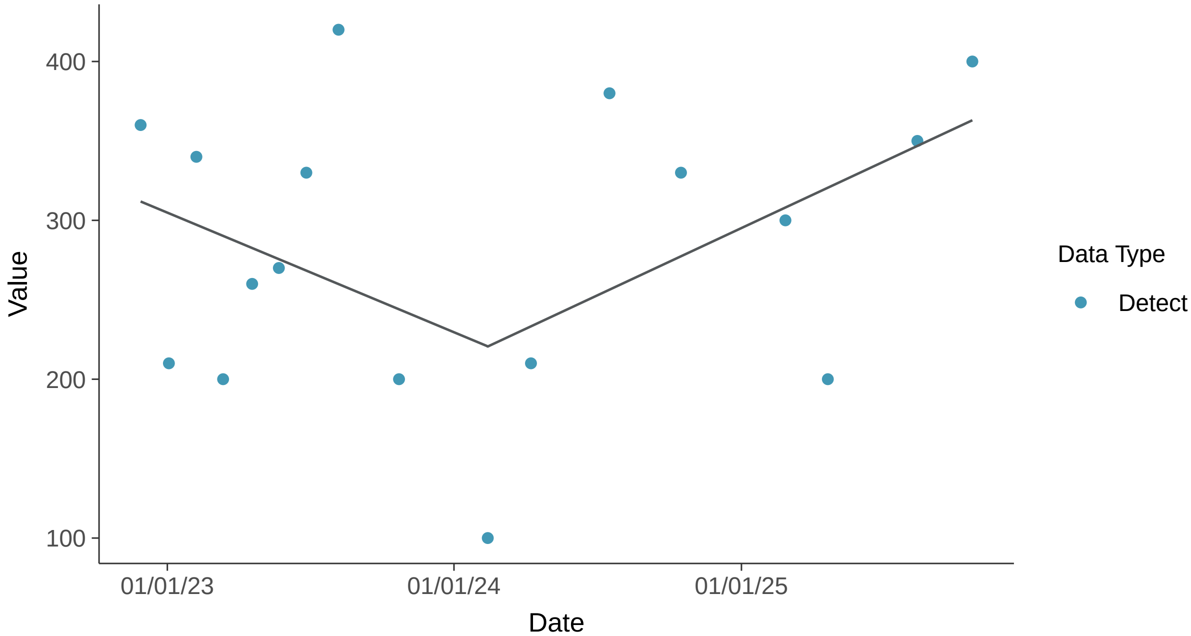

Lognormal Q-Q plot
Total Dissolved Solids, MW-12 (mg/L)
log(Value)
6.0
5.5
5.0
4.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Total Dissolved Solids, MW-12 (mg/L)
Value
400
300
200
100
100
200
300
400
500
600
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Total Dissolved Solids, MW-12 (mg/L)
log(Value)
6.0
5.5
5.0
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear

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

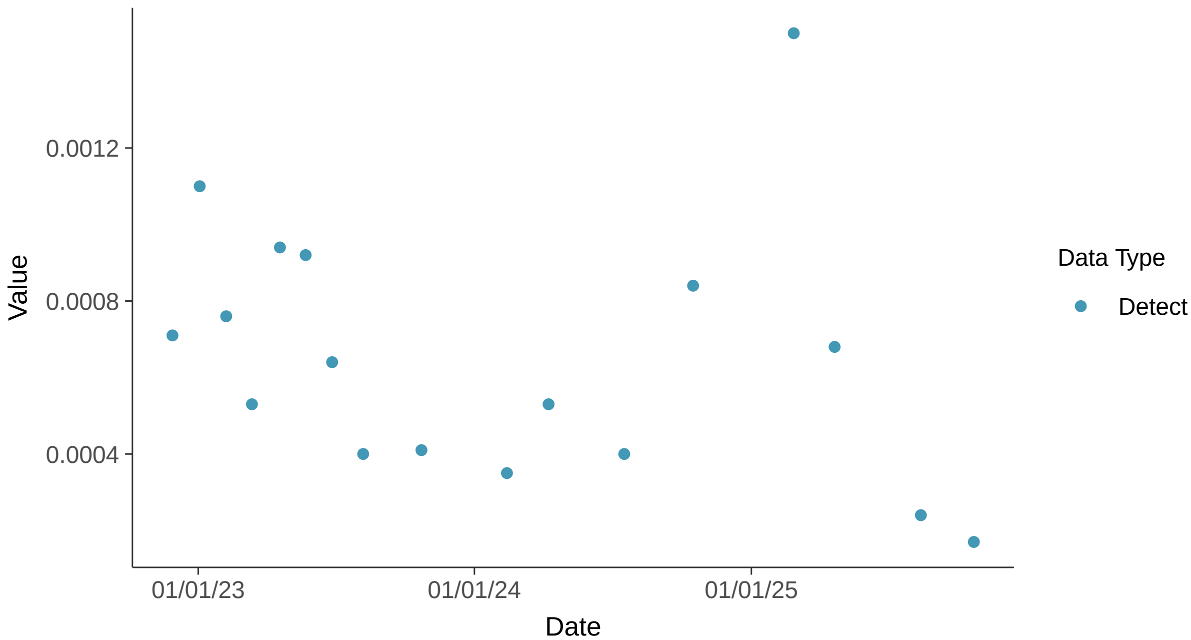


Appendix IV: Antimony, MW-12

ID: 22_2_4_101

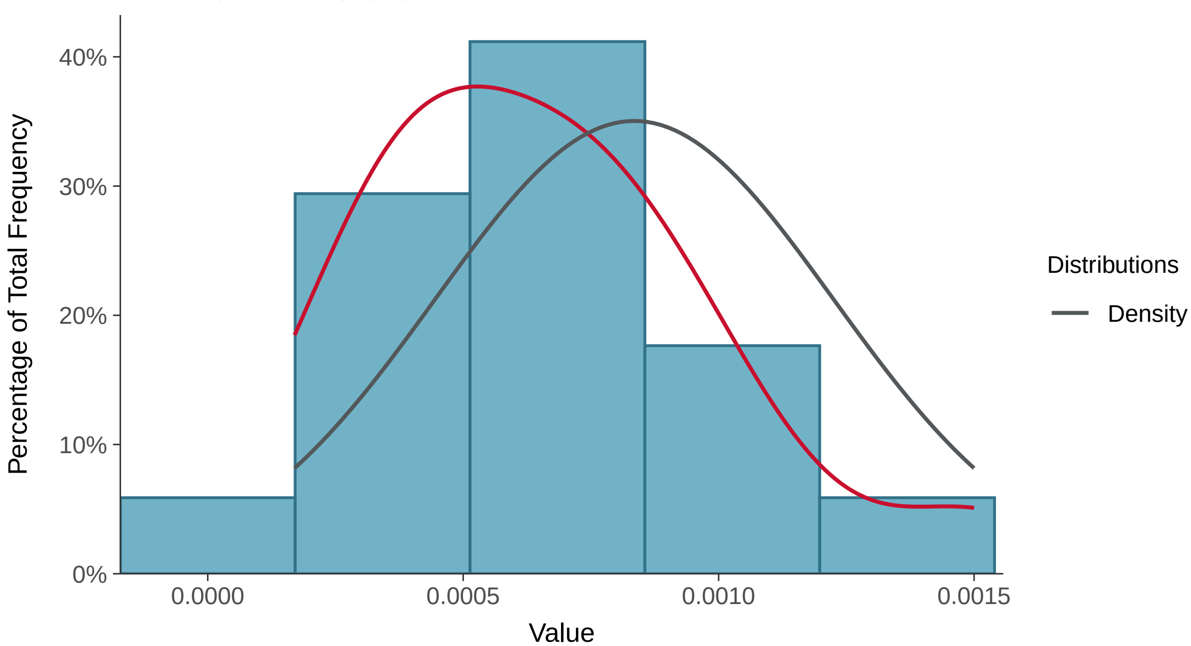
Scatter Plot

Antimony, MW-12 (mg/L)



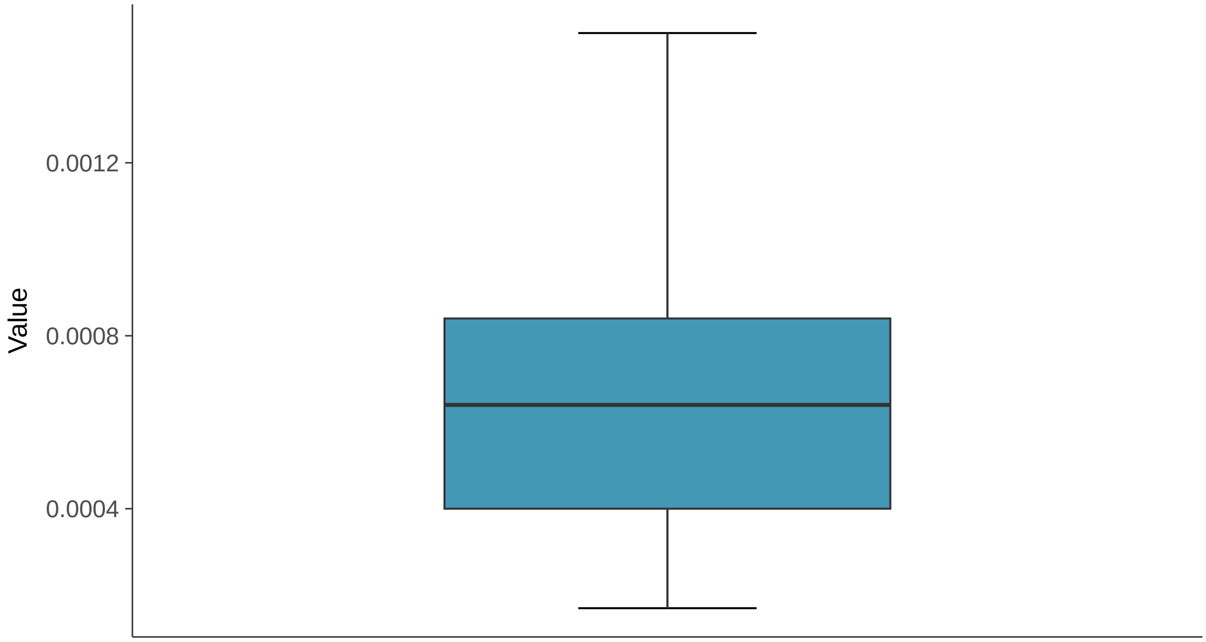
Histogram

Antimony, MW-12 (mg/L)



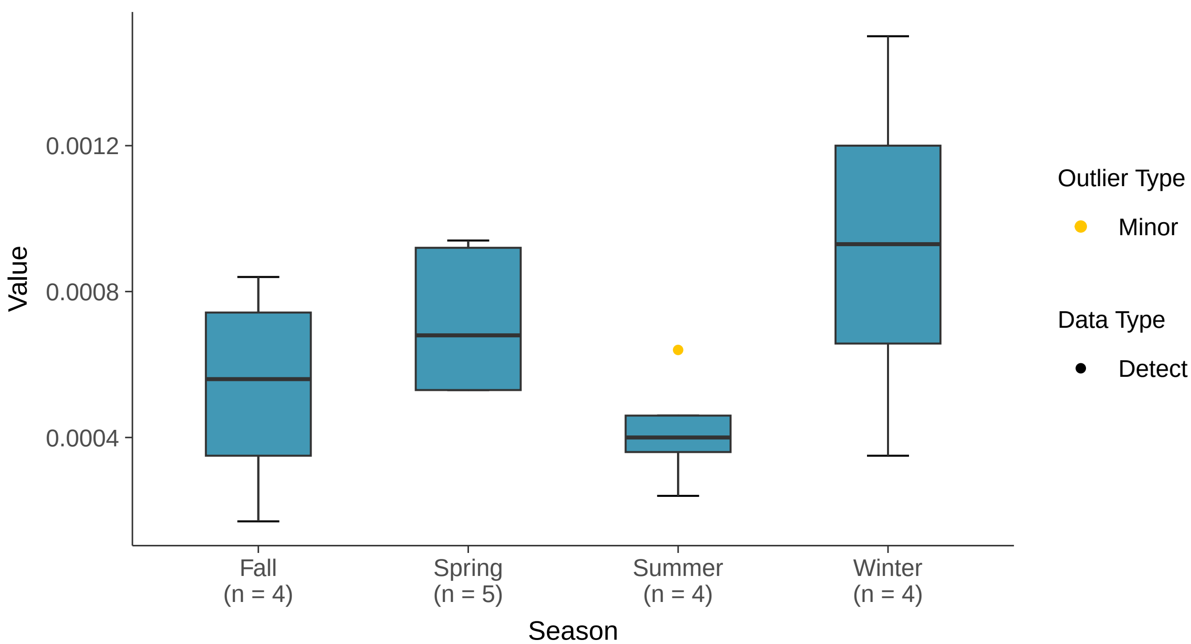
Boxplot

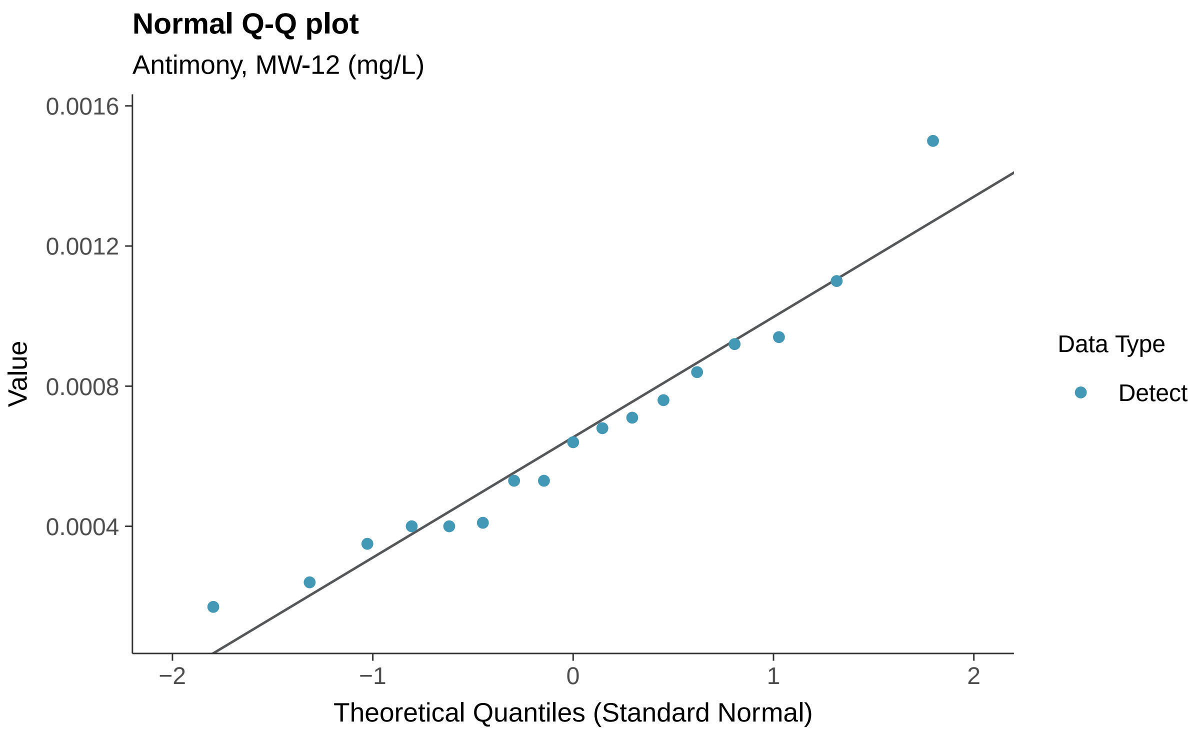
Antimony, MW-12 (mg/L)

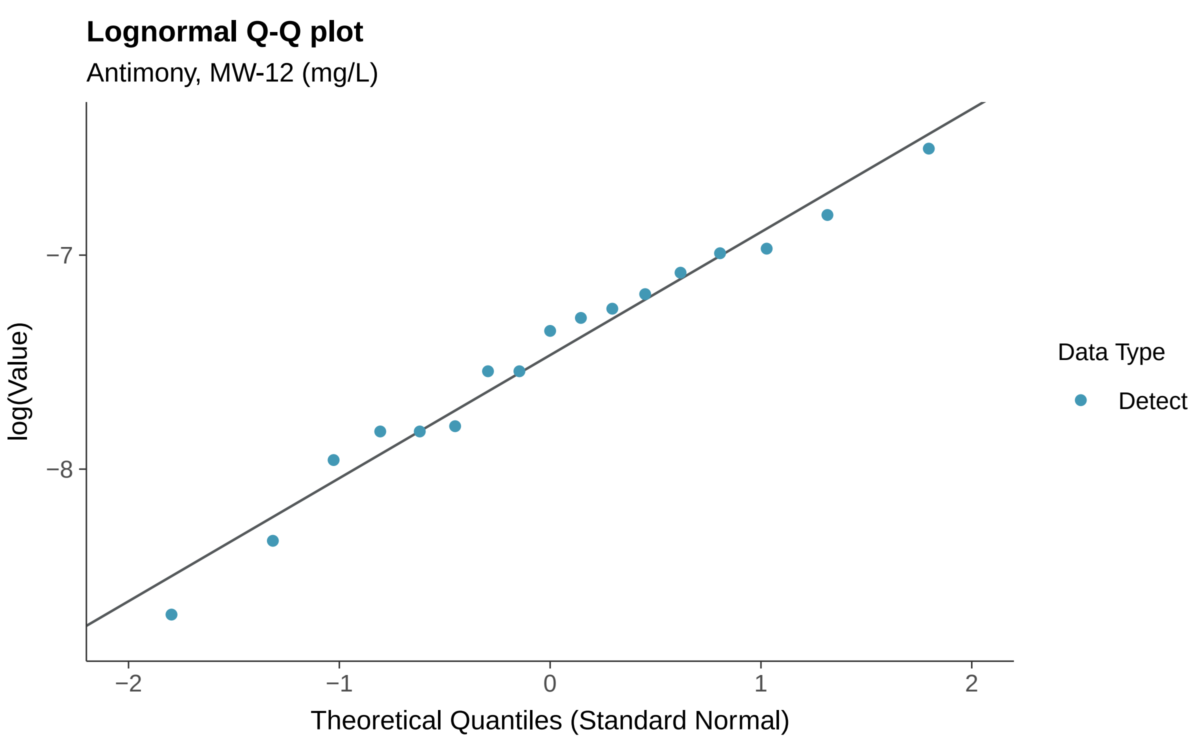


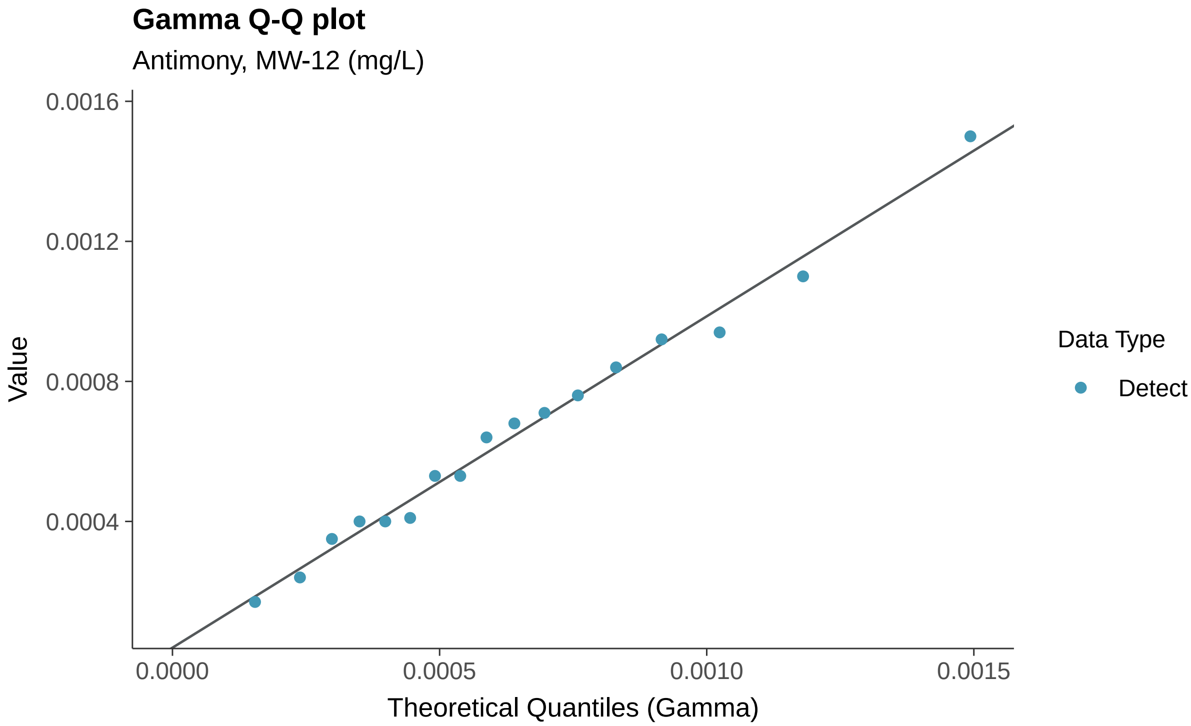
Boxplot by Season

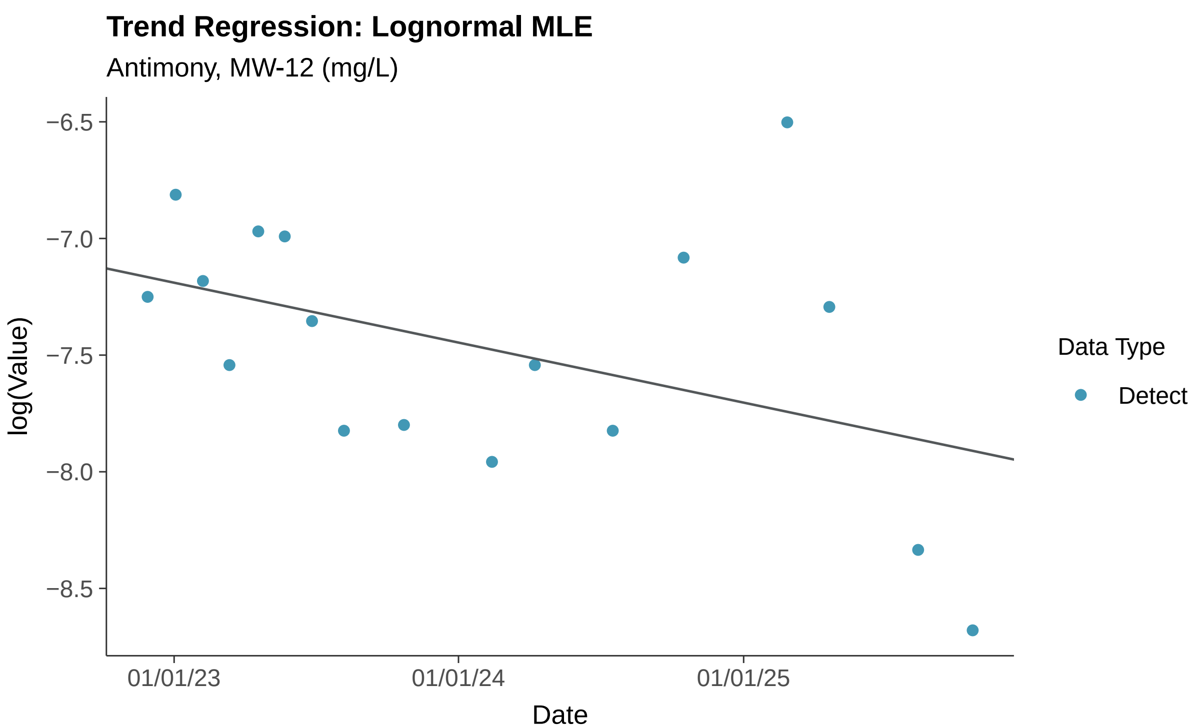
Antimony, MW-12 (mg/L)




Normal Q-Q plot
Antimony, MW-12 (mg/L)
0.0016
0.0012
0.0008
0.0004
Value
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

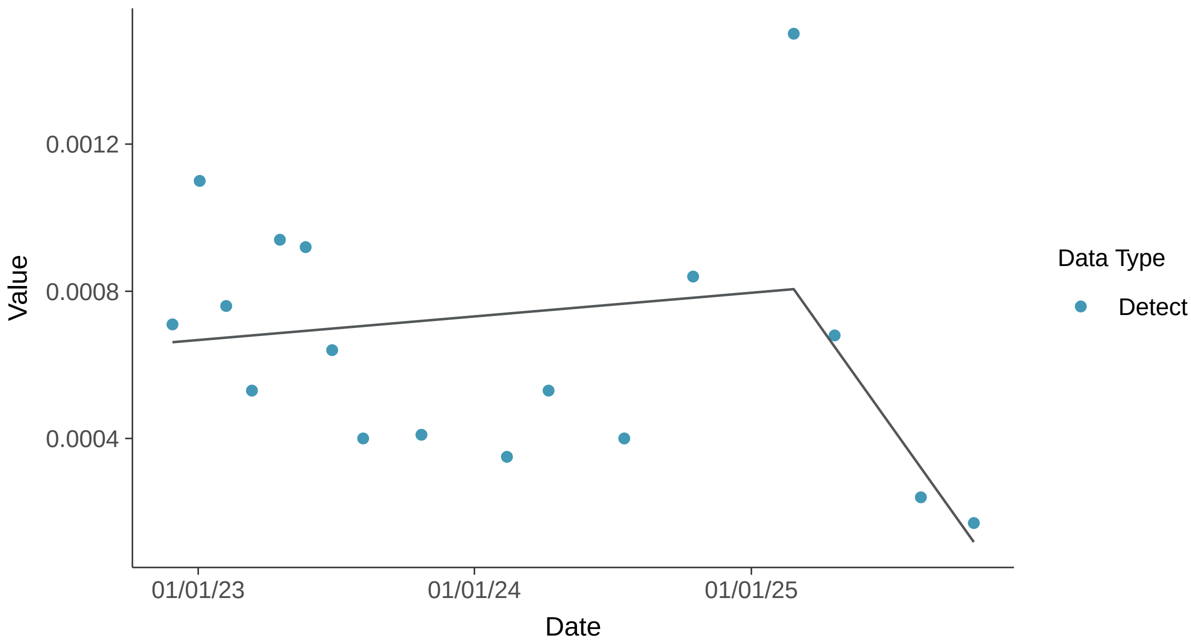

Lognormal Q-Q plot
Antimony, MW-12 (mg/L)
−7
−8
log(Value)
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Antimony, MW-12 (mg/L)
Value
0.0016
0.0012
0.0008
0.0004
0.0000
0.0005
0.0010
0.0015
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Antimony, MW-12 (mg/L)
log(Value)
−6.5
−7.0
−7.5
−8.0
−8.5
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

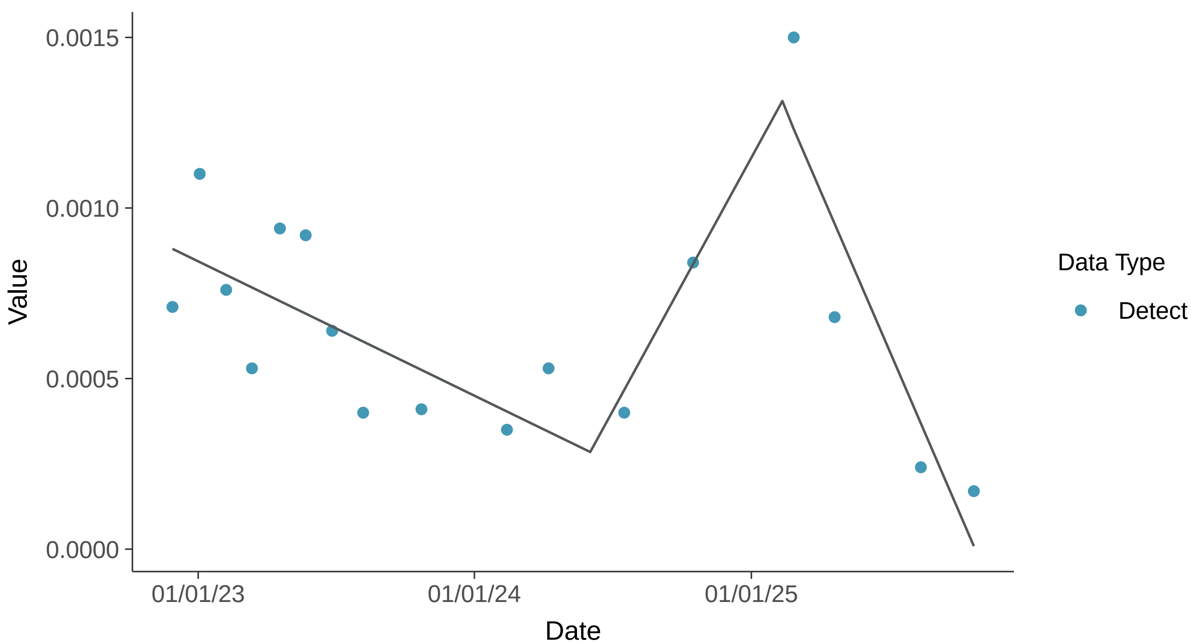
Trend Regression: Piecewise Linear-Linear

Antimony, MW-12 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Antimony, MW-12 (mg/L)

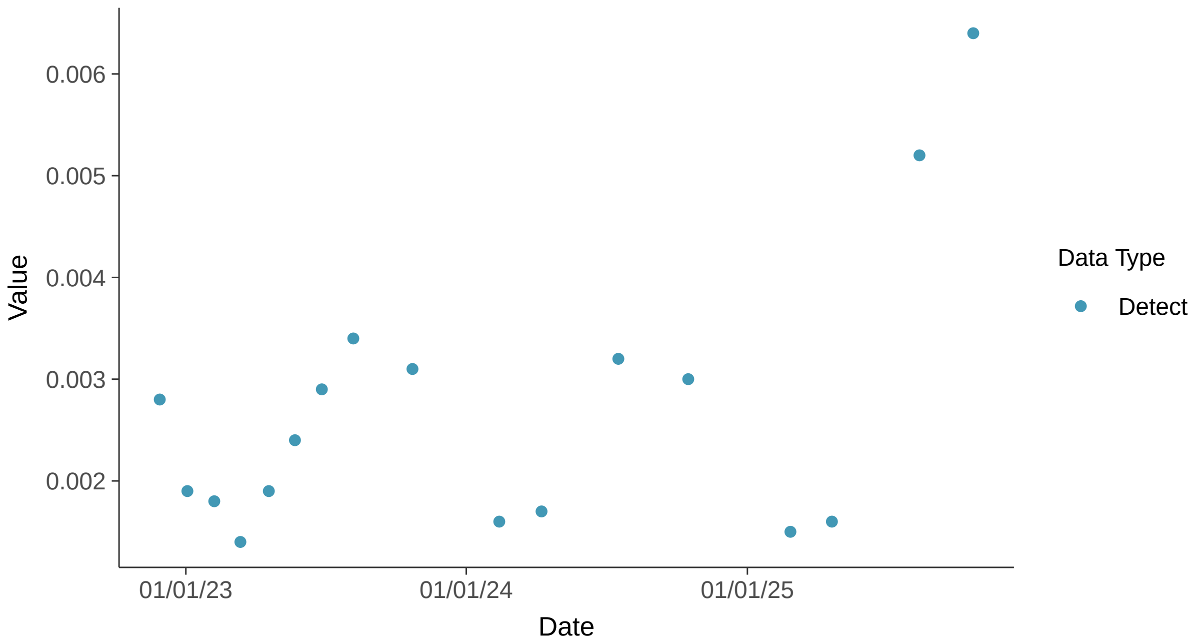


Appendix IV: Arsenic, MW-12

ID: 22_2_4_102

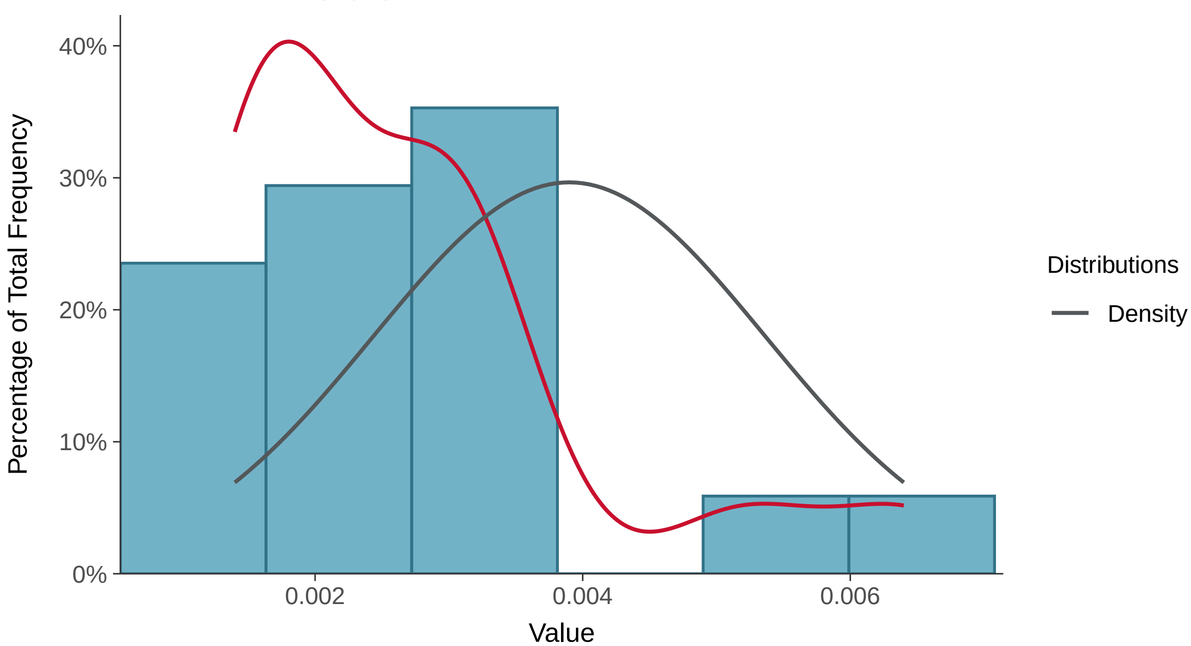
Scatter Plot

Arsenic, MW-12 (mg/L)



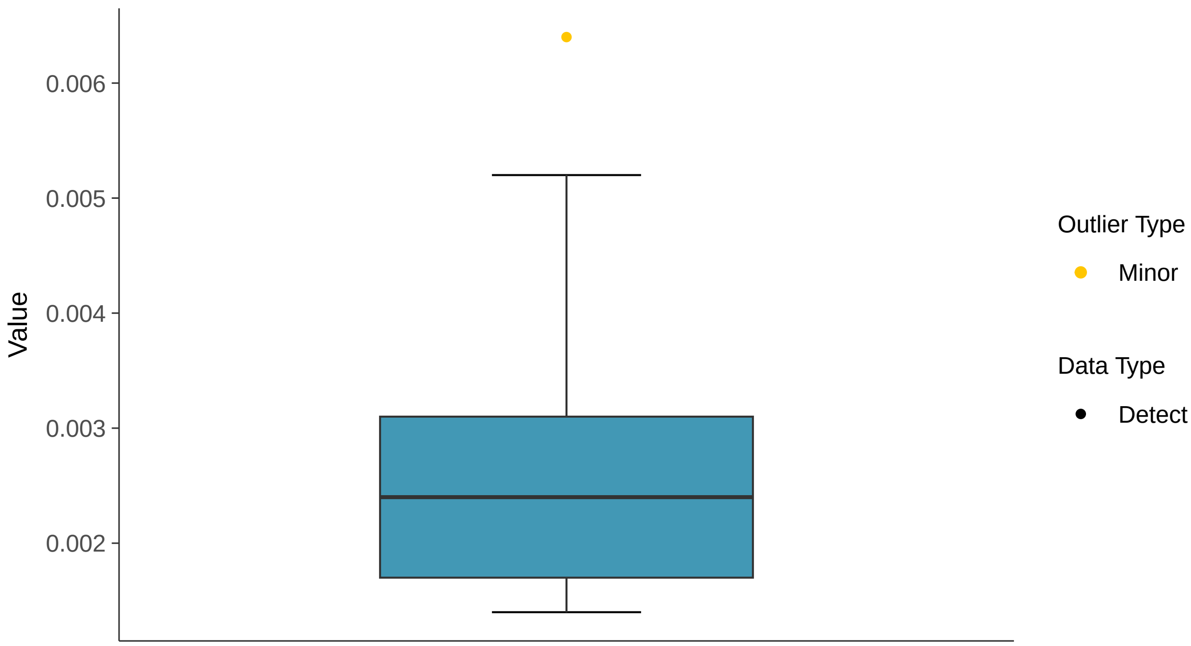
Histogram

Arsenic, MW-12 (mg/L)



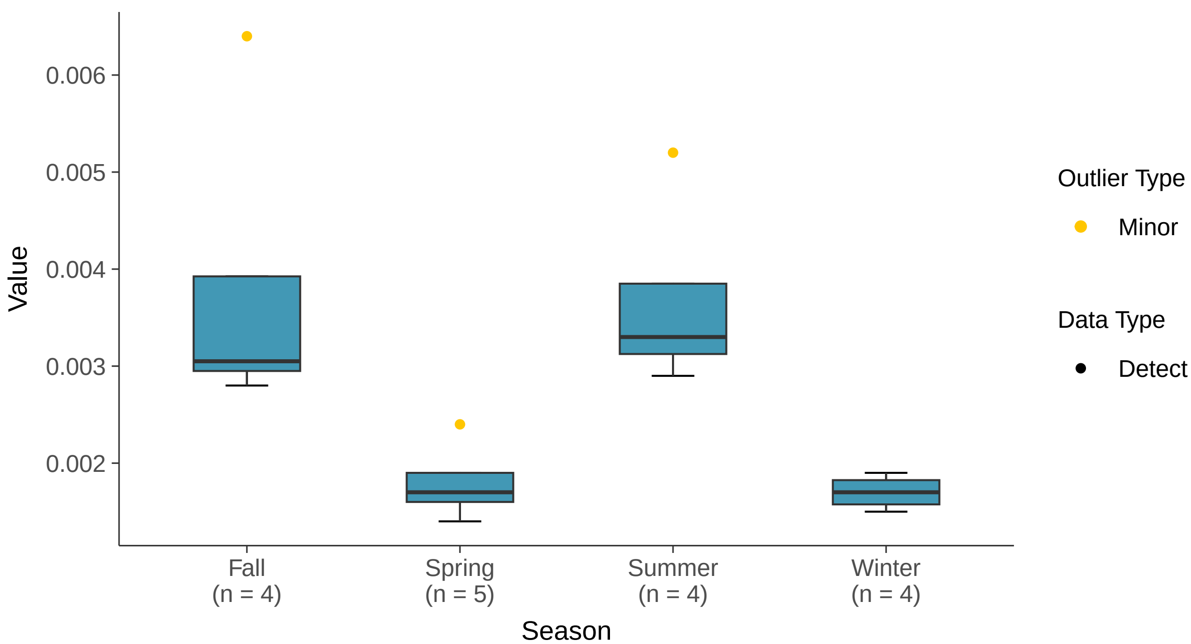
Boxplot

Arsenic, MW-12 (mg/L)



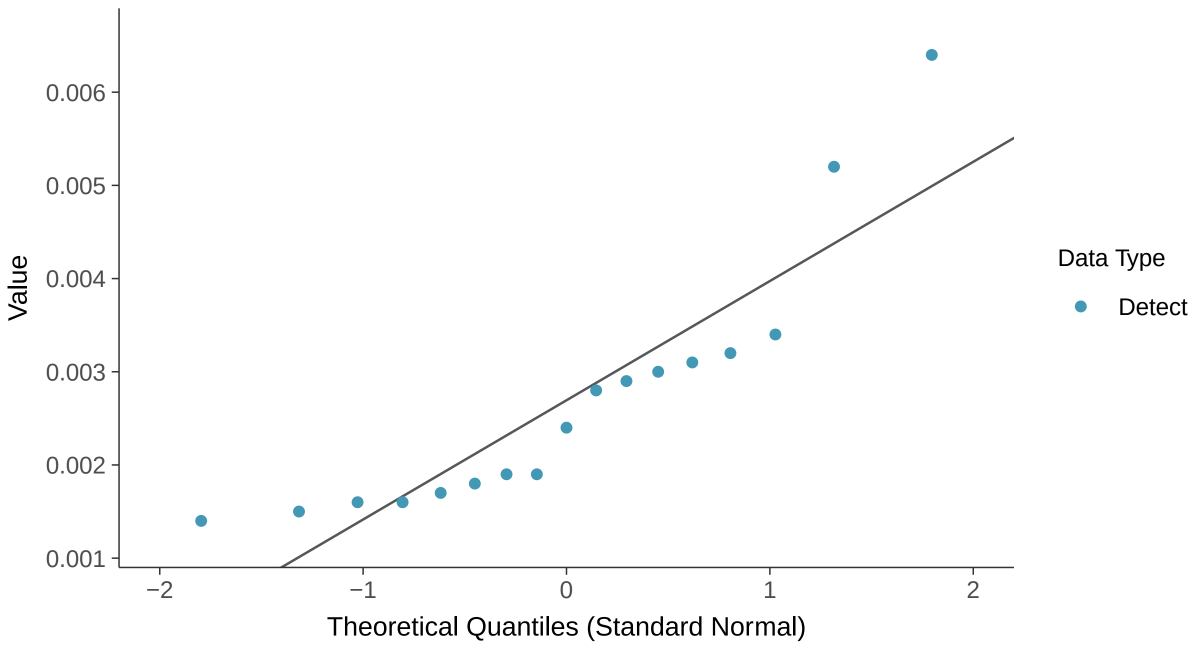
Boxplot by Season

Arsenic, MW-12 (mg/L)



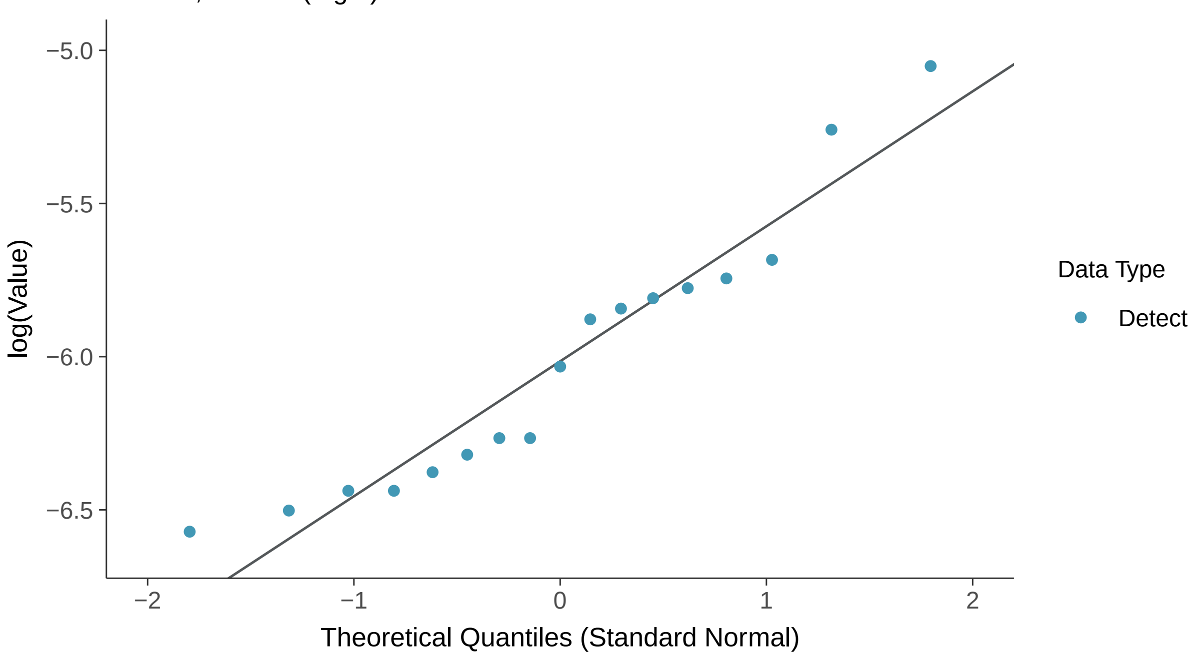
Normal Q-Q plot

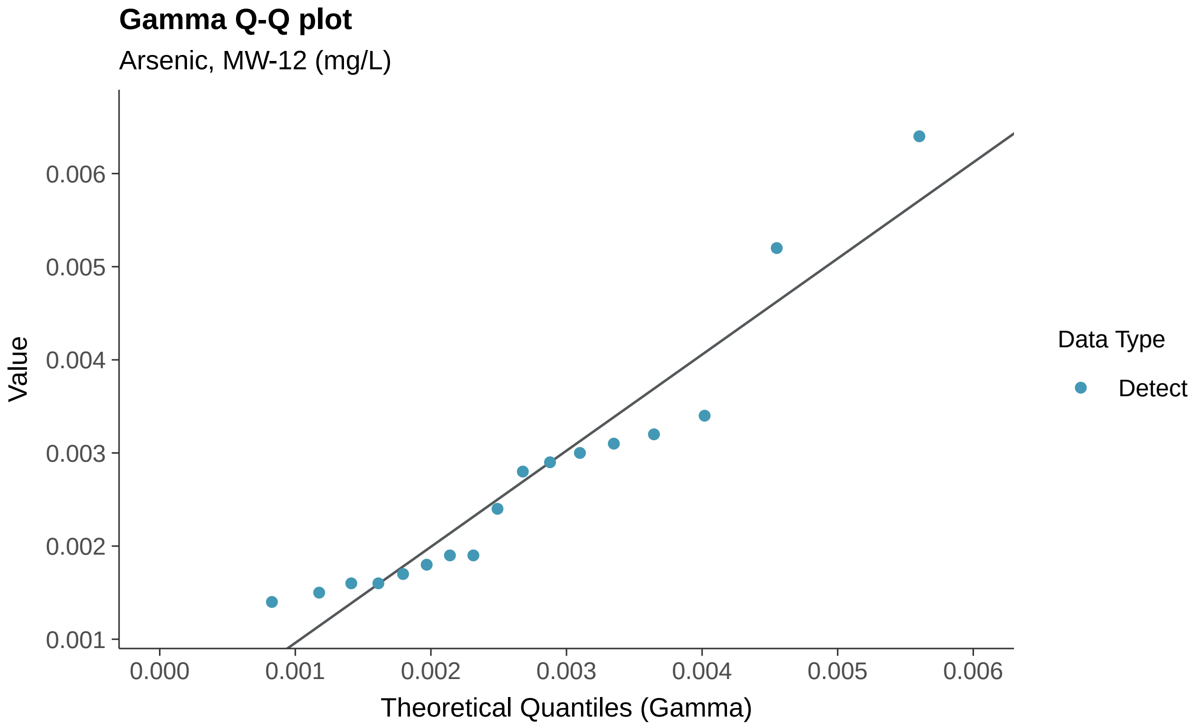
Arsenic, MW-12 (mg/L)

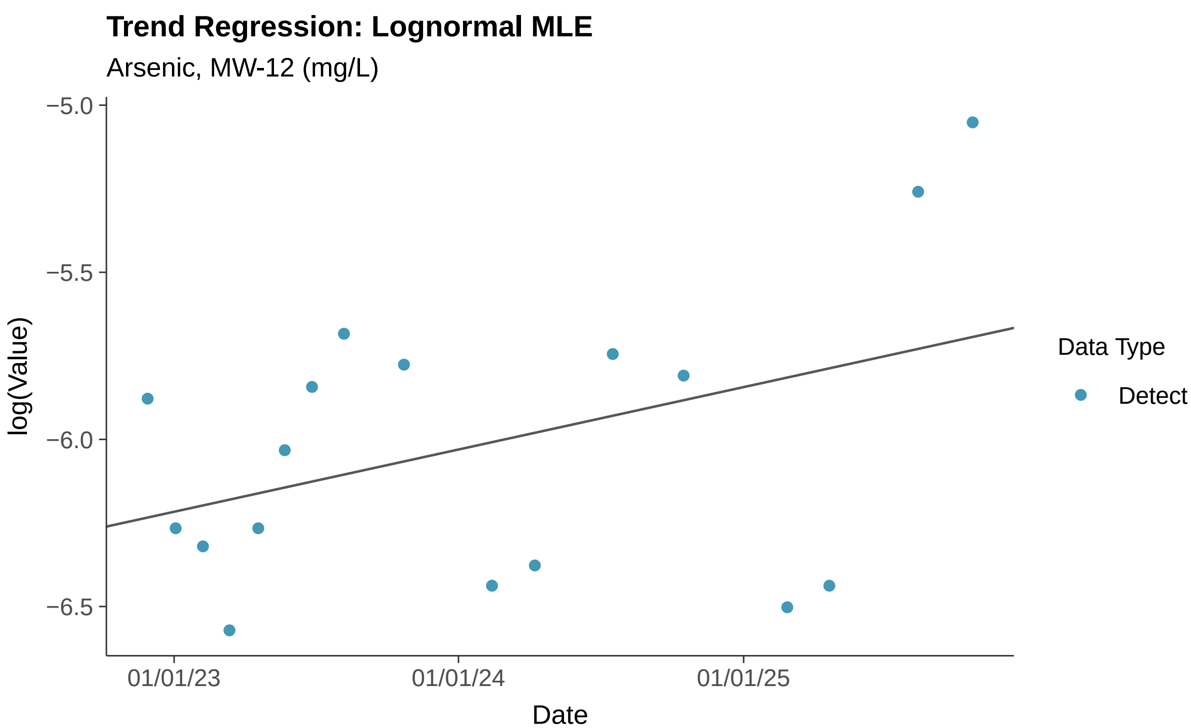


Lognormal Q-Q plot

Arsenic, MW-12 (mg/L)

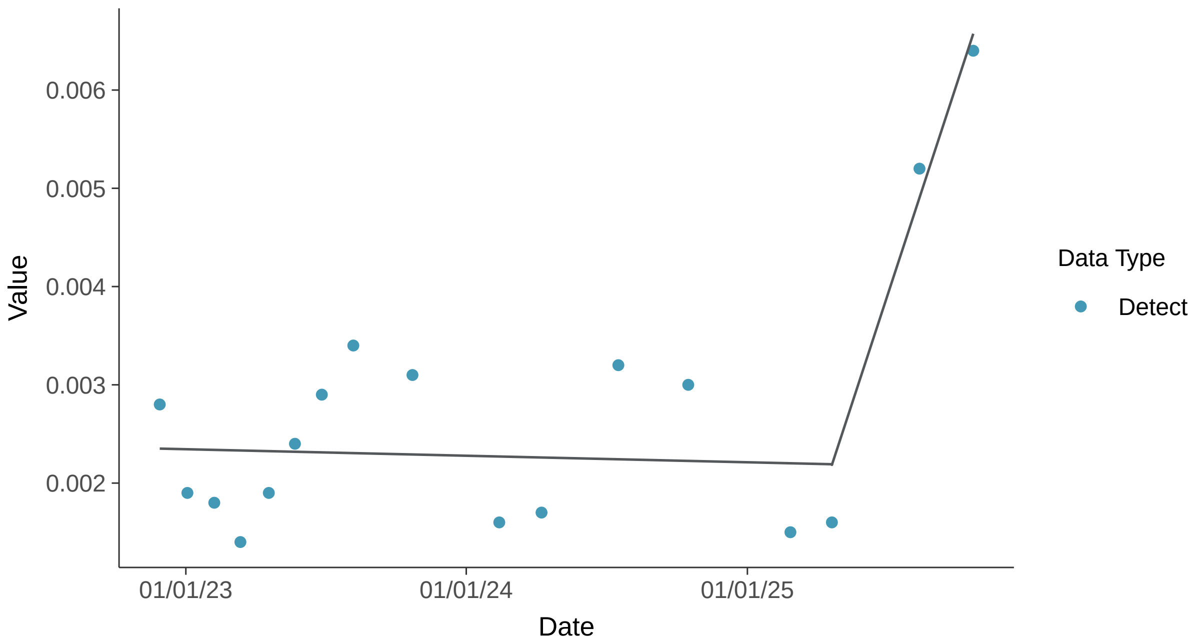



Gamma Q-Q plot
Arsenic, MW-12 (mg/L)
Value
0.006
0.005
0.004
0.003
0.002
0.001
0.000
0.001
0.002
0.003
0.004
0.005
0.006
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Arsenic, MW-12 (mg/L)
log(Value)
−5.0
−5.5
−6.0
−6.5
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

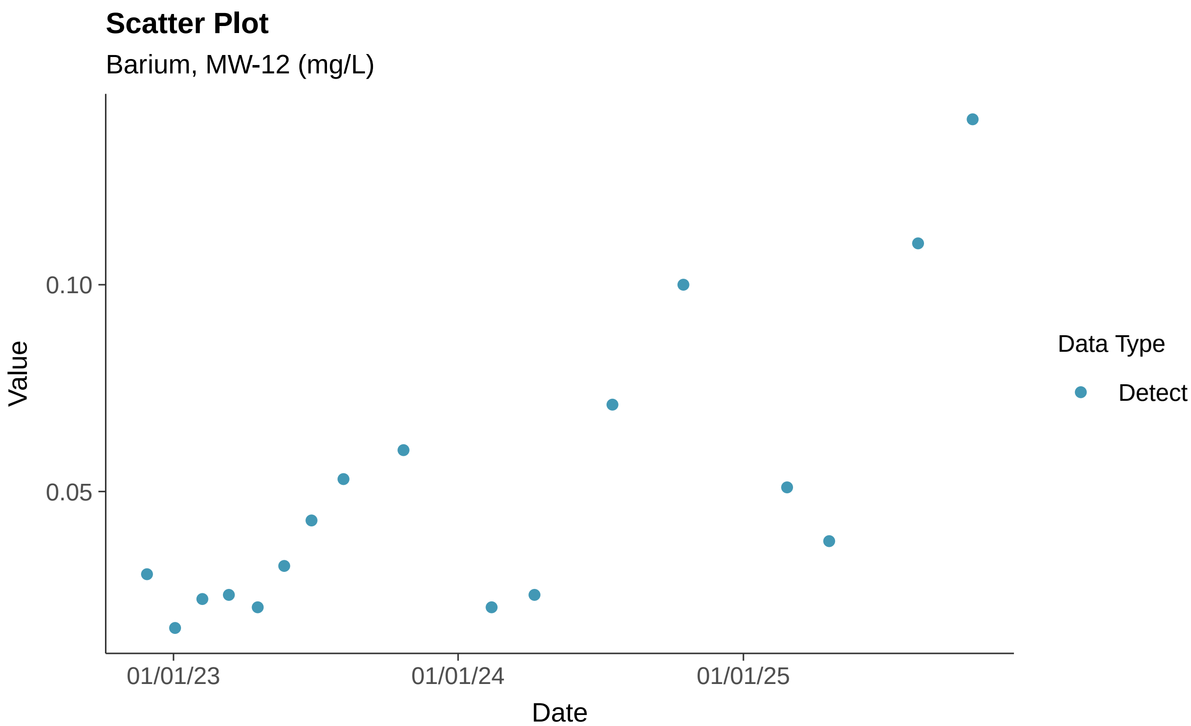
Trend Regression: Piecewise Linear-Linear

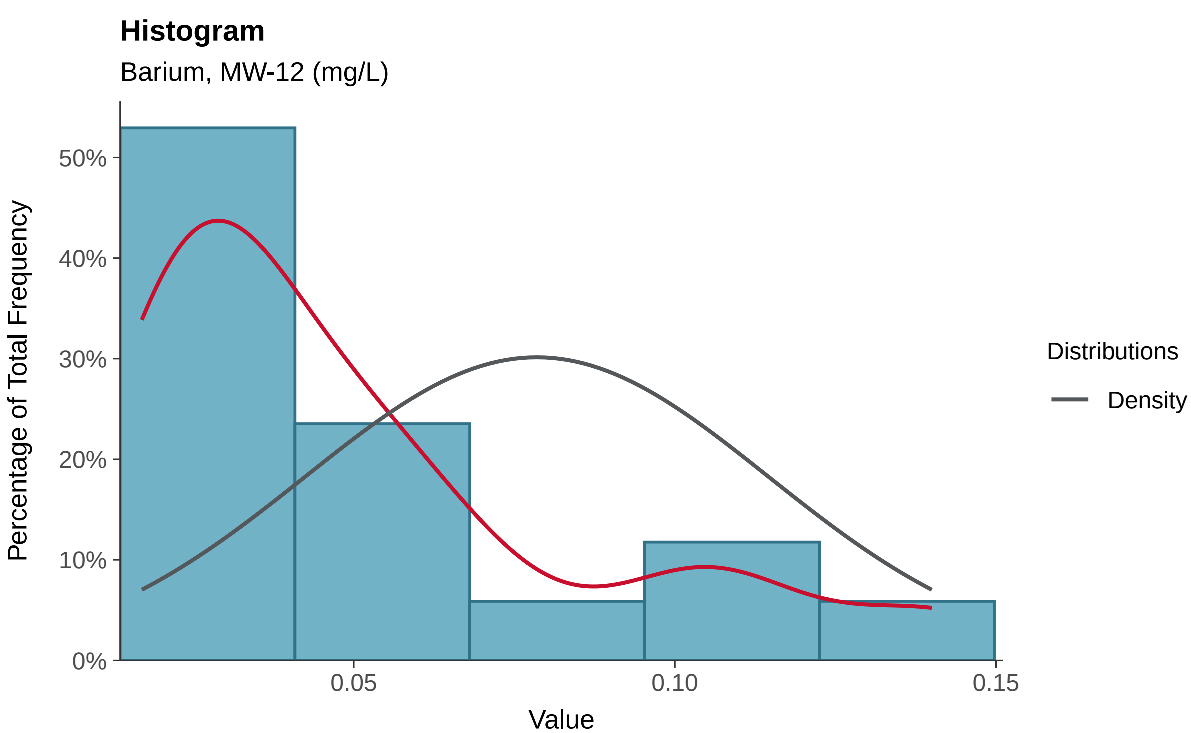
Arsenic, MW-12 (mg/L)



Appendix IV: Barium, MW-12

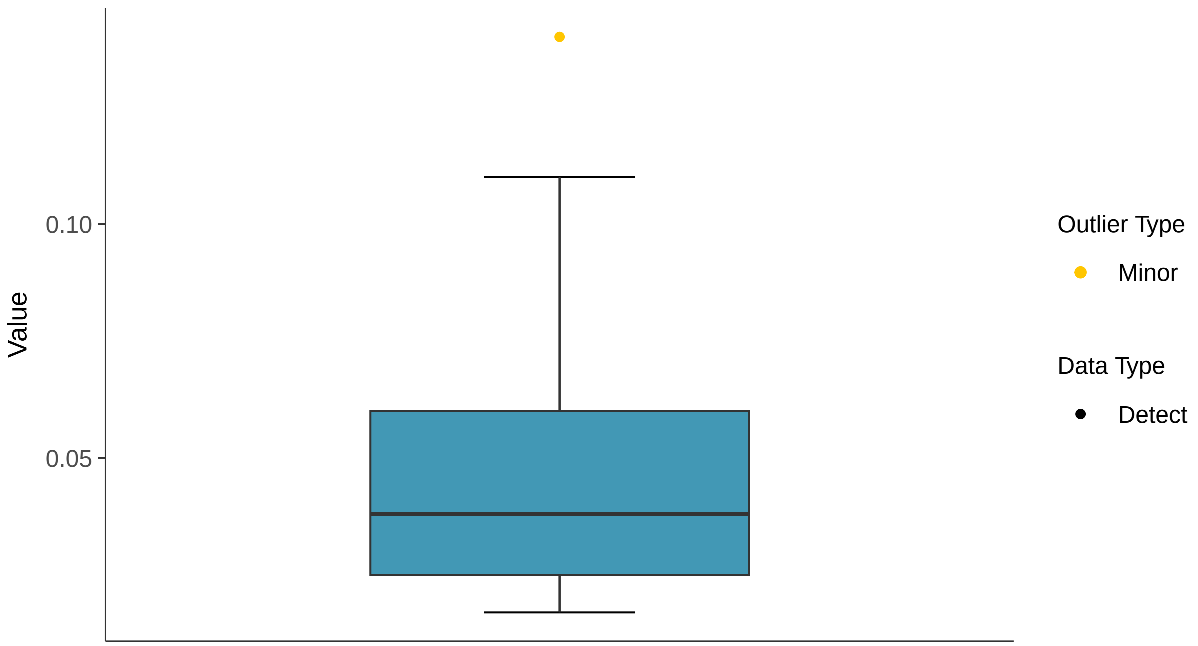
ID: 22_2_4_103





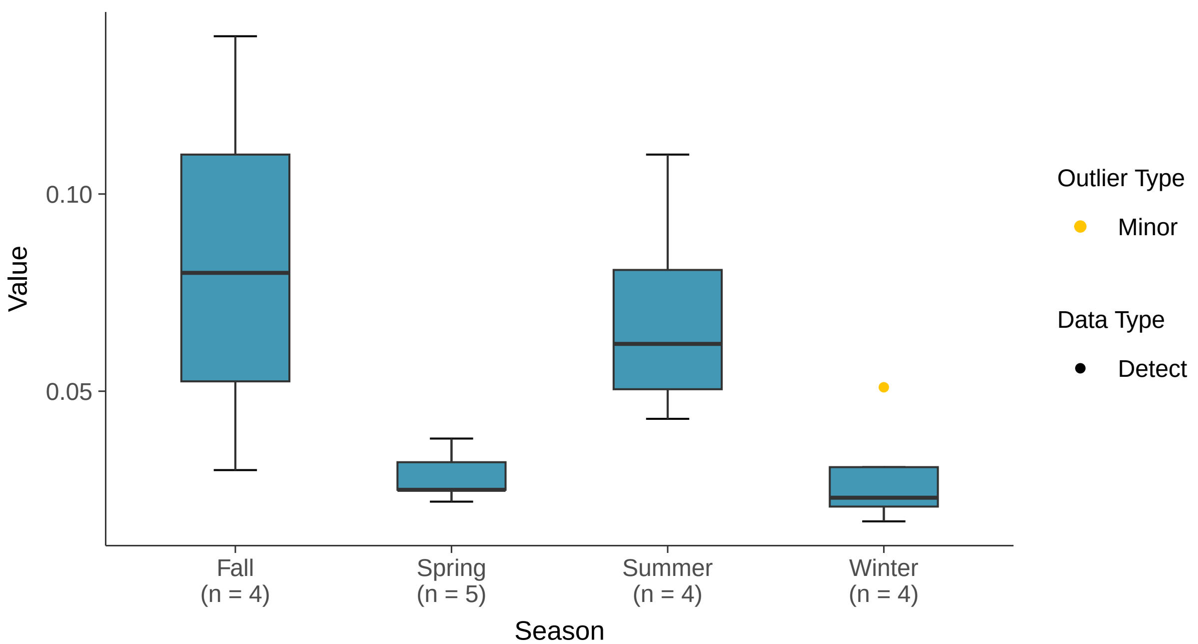
Boxplot

Barium, MW-12 (mg/L)



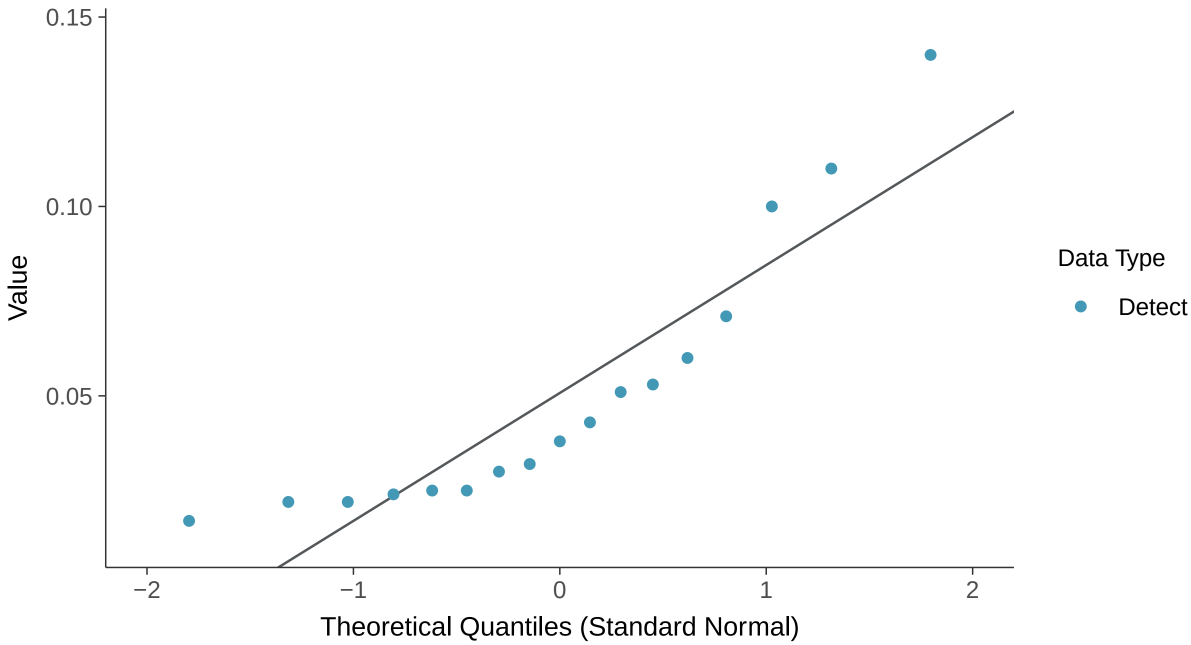
Boxplot by Season

Barium, MW-12 (mg/L)



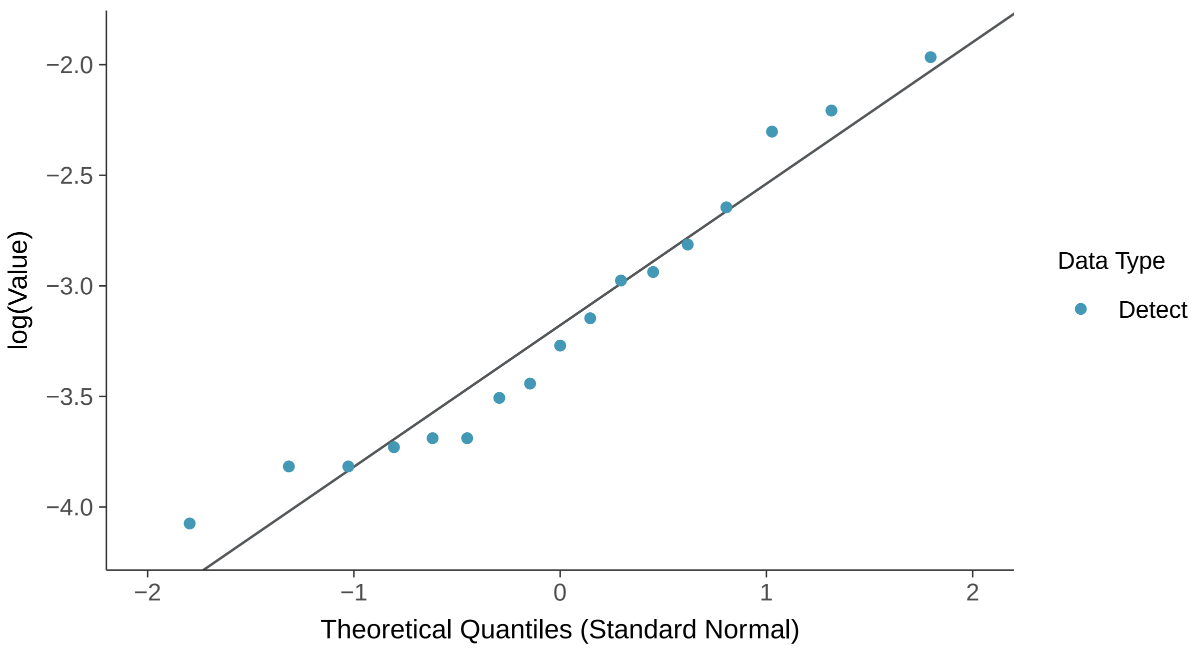
Normal Q-Q plot

Barium, MW-12 (mg/L)



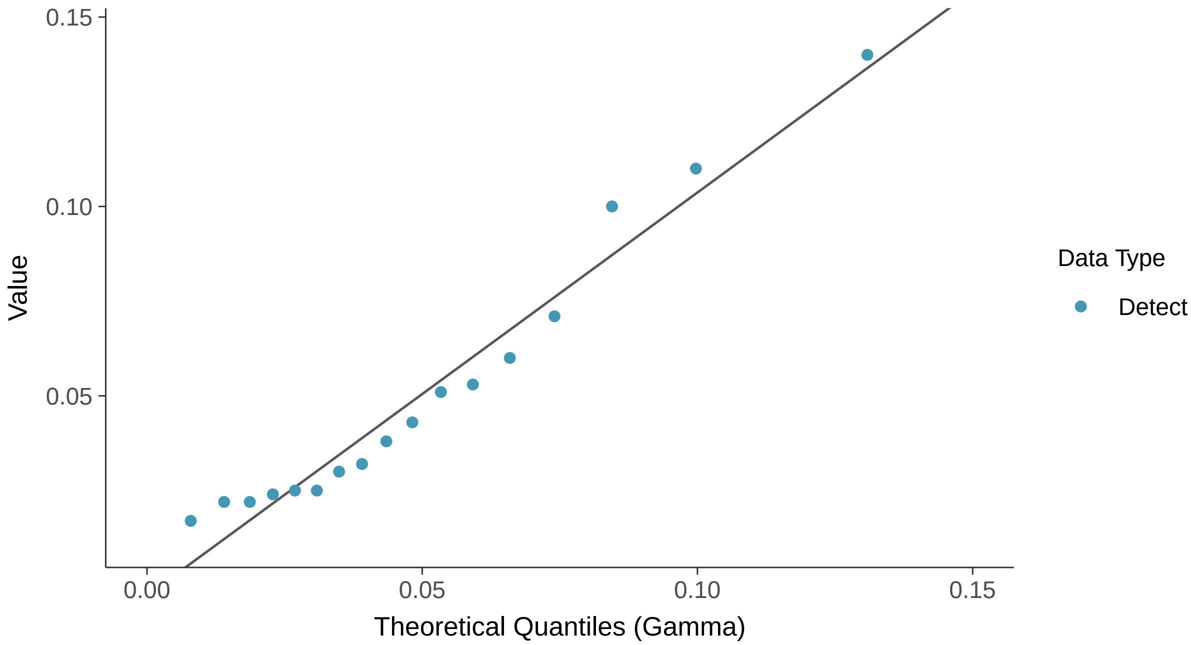
Lognormal Q-Q plot

Barium, MW-12 (mg/L)



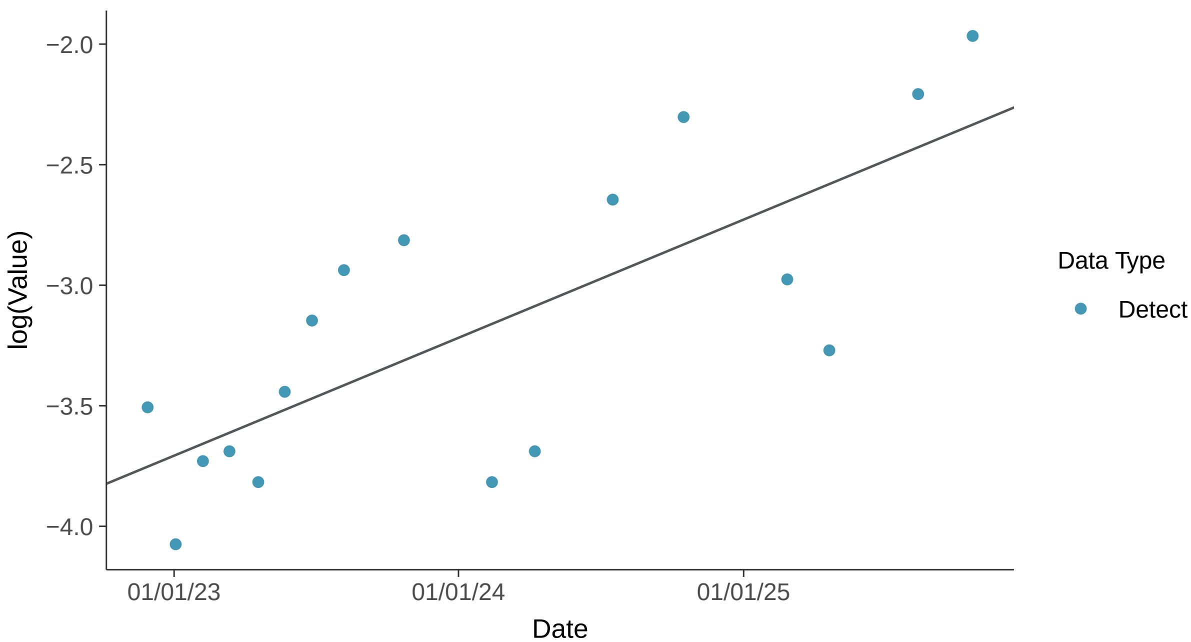
Gamma Q-Q plot

Barium, MW-12 (mg/L)



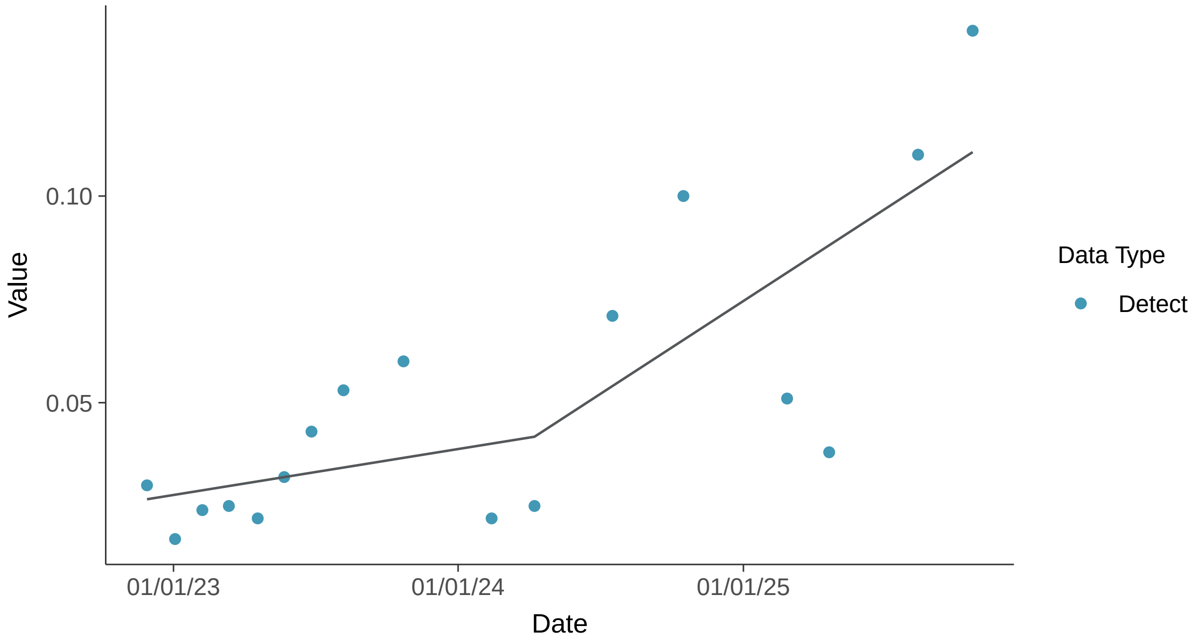
Trend Regression: Lognormal MLE

Barium, MW-12 (mg/L)



Trend Regression: Piecewise Linear-Linear

Barium, MW-12 (mg/L)

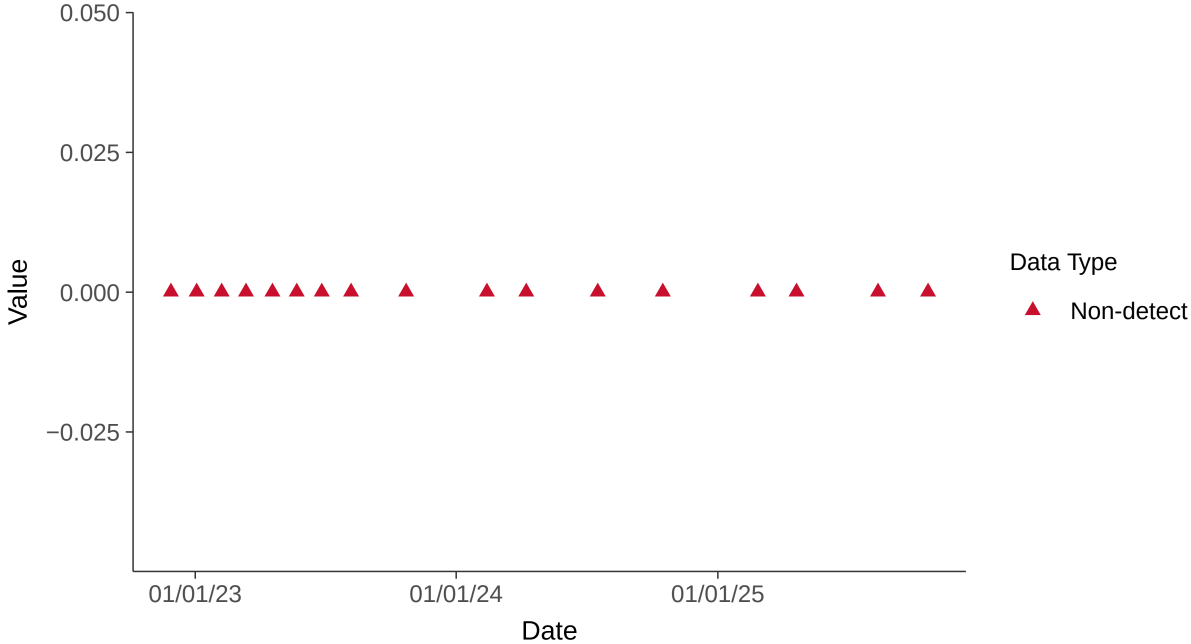


Appendix IV: Beryllium, MW-12

ID: 22_2_4_104

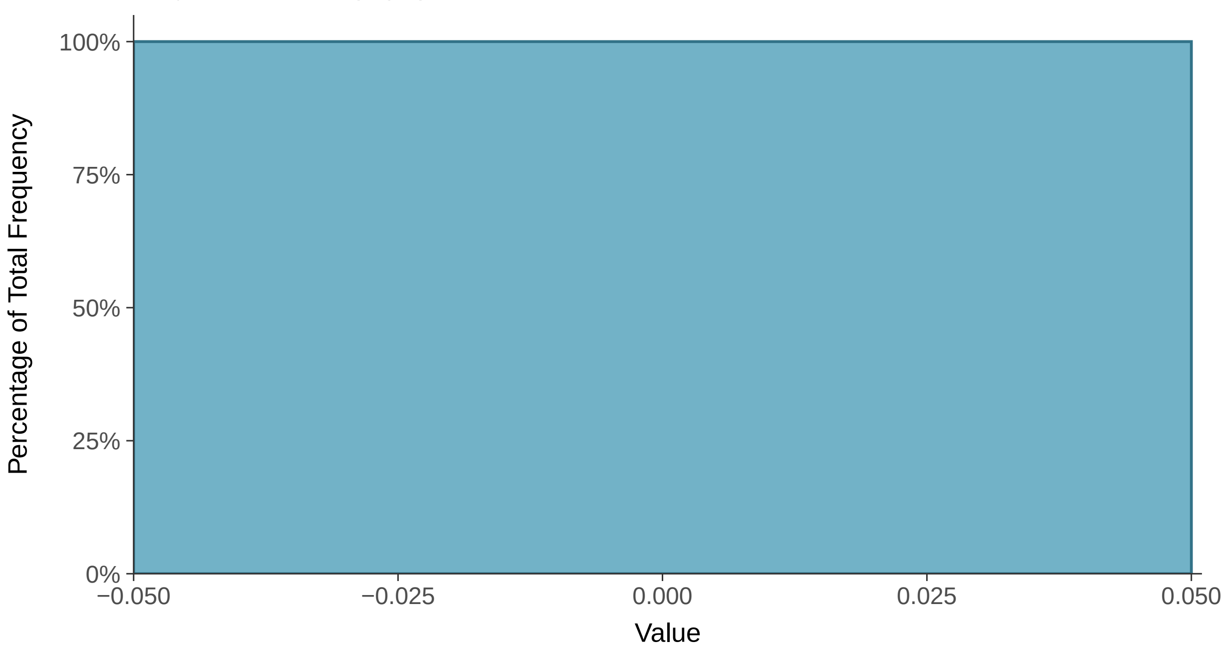
Scatter Plot

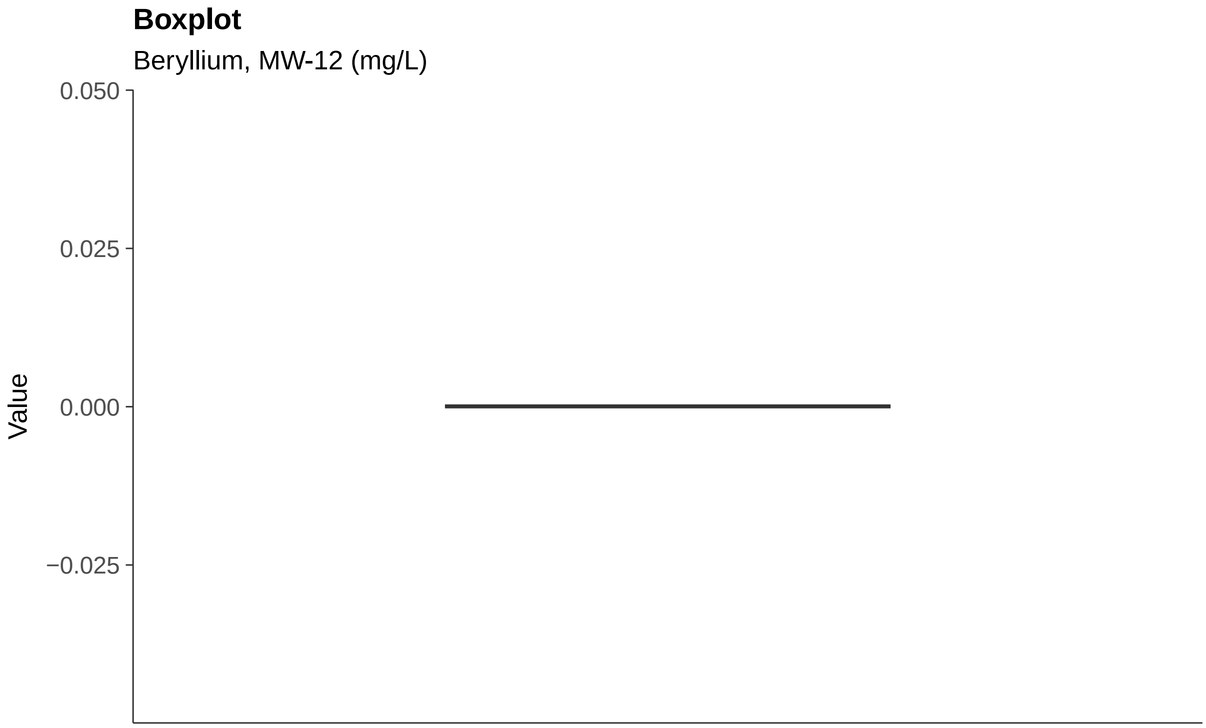
Beryllium, MW-12 (mg/L)

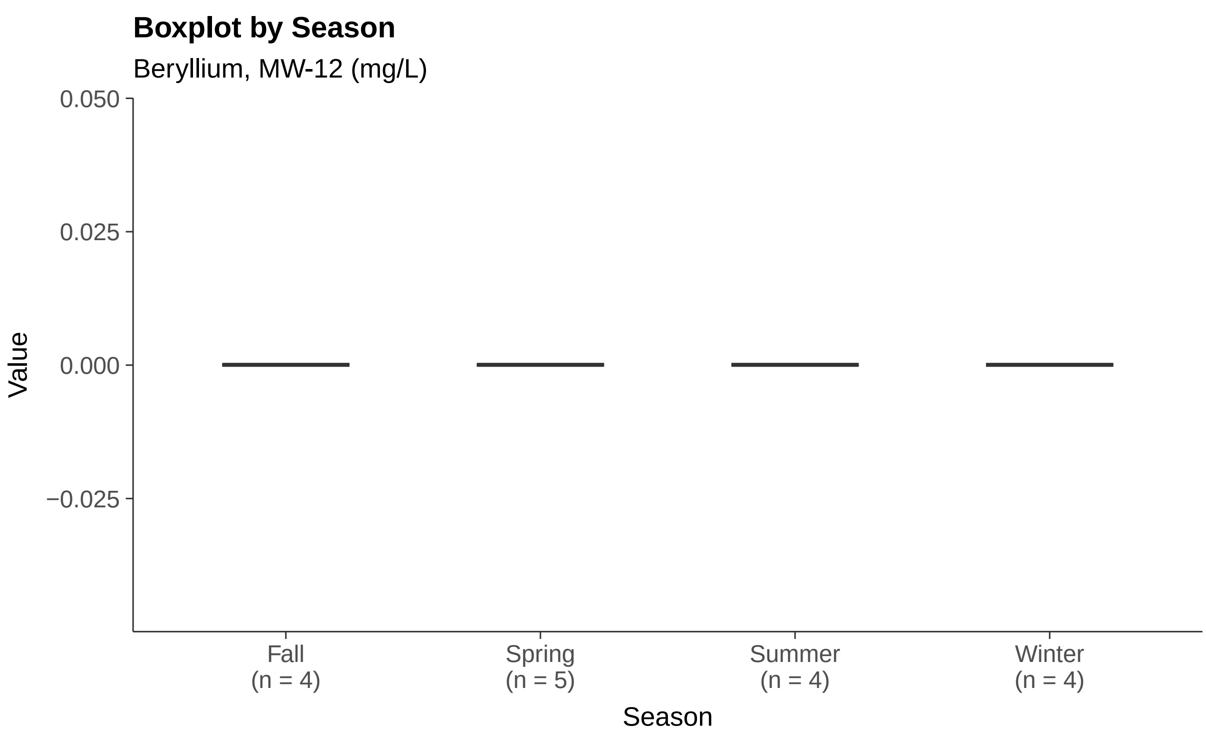


Histogram

Beryllium, MW-12 (mg/L)

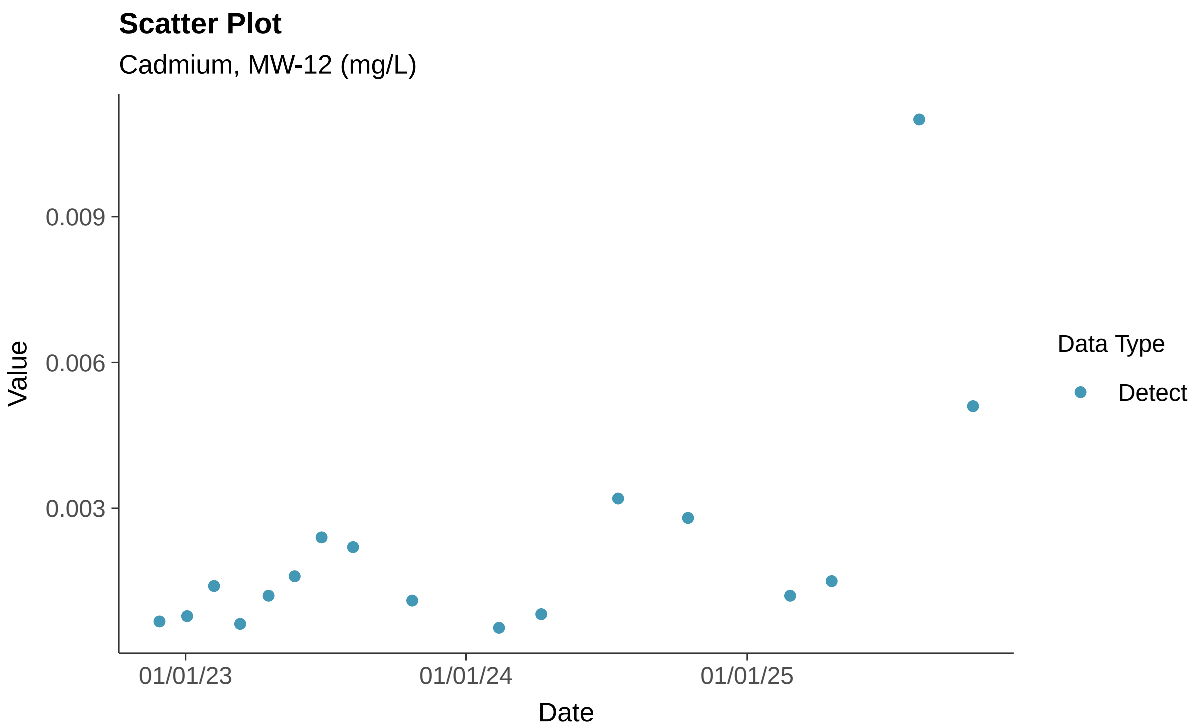


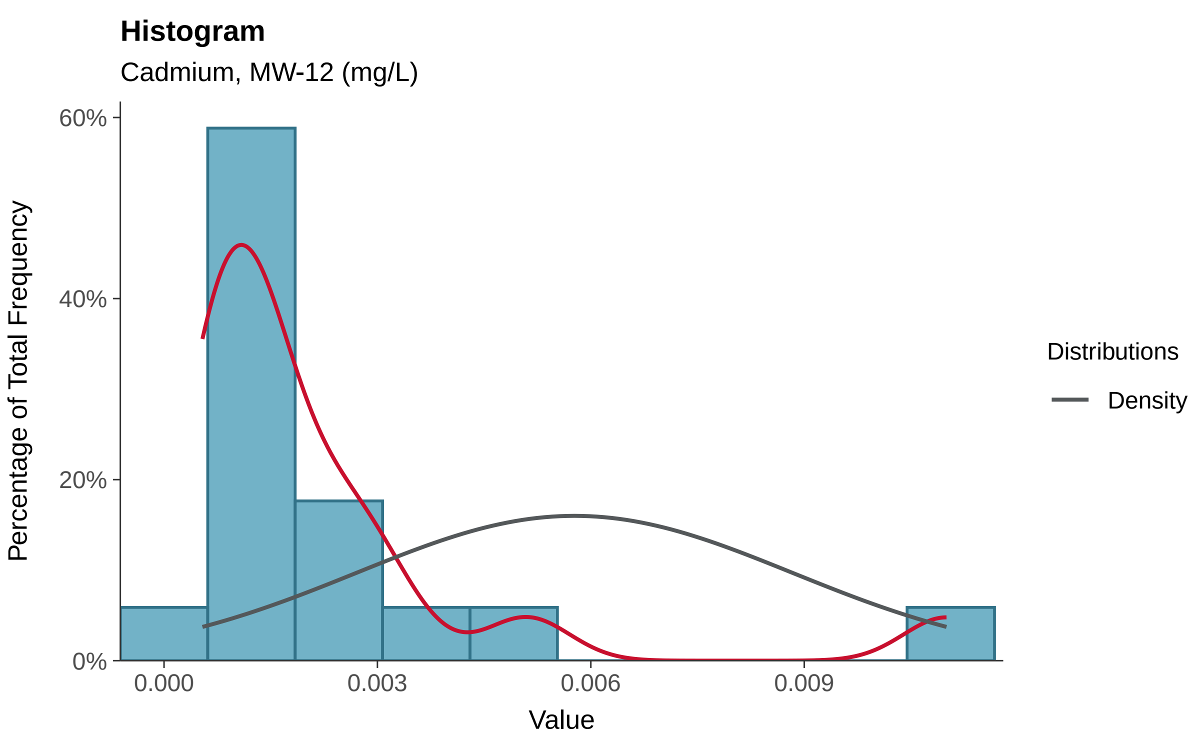

Boxplot
Beryllium, MW-12 (mg/L)
Value
0.050
0.025
0.000
−0.025


Boxplot by Season
Beryllium, MW-12 (mg/L)
Value
0.050
0.025
0.000
−0.025
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season

Appendix IV: Cadmium, MW-12

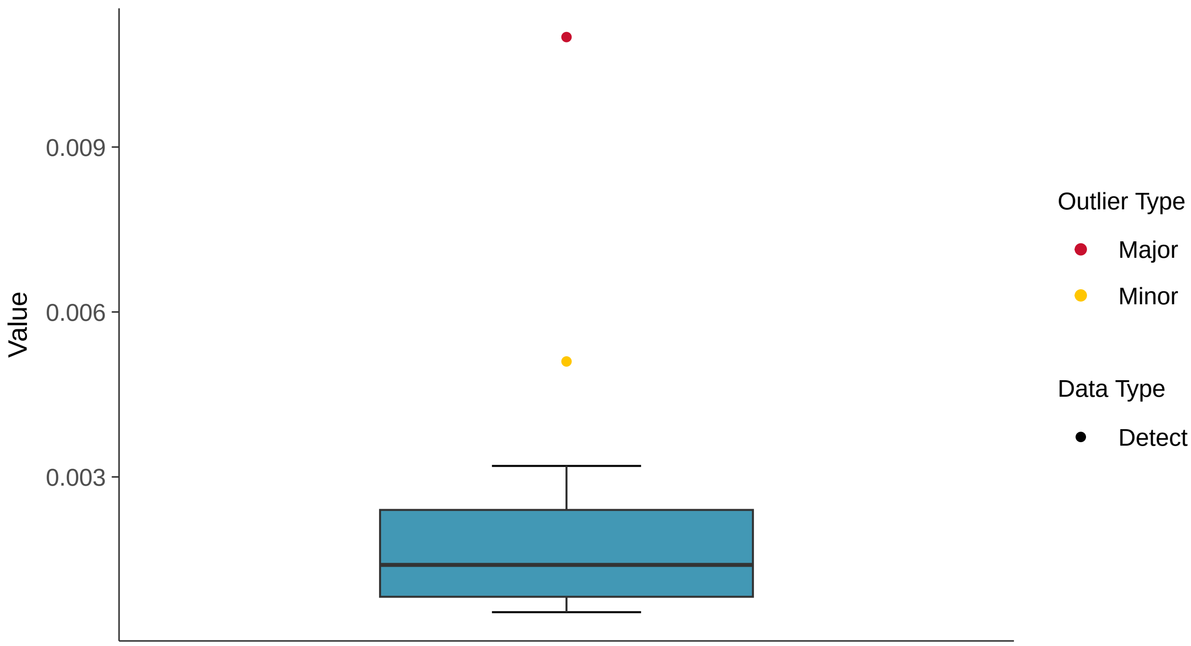
ID: 22_2_4_106





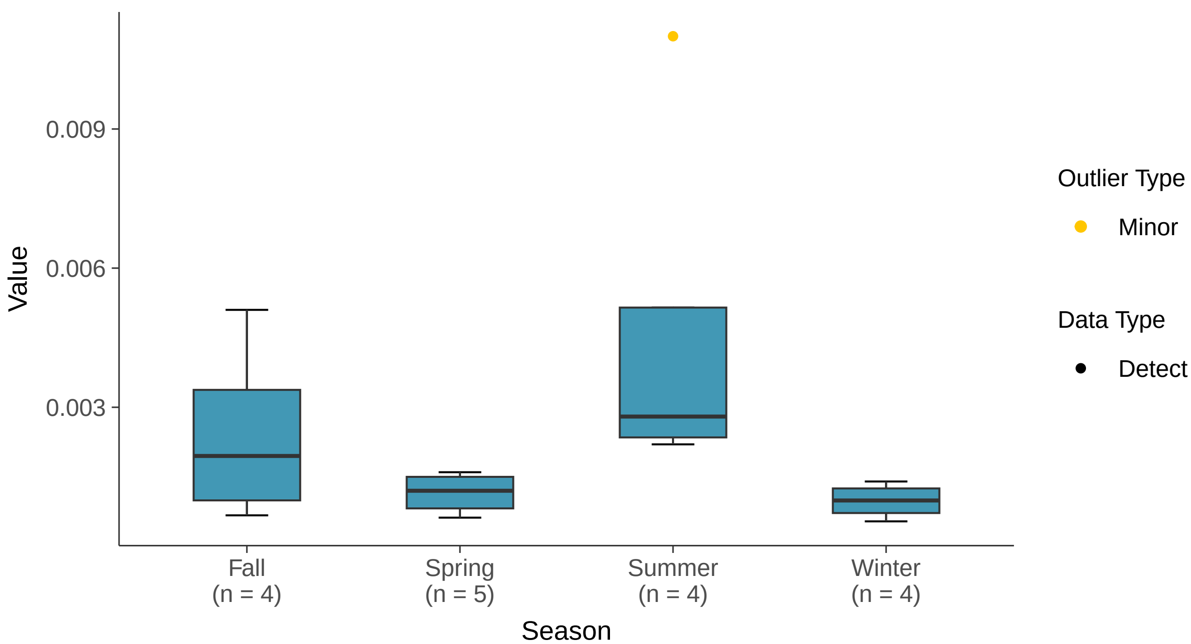
Boxplot

Cadmium, MW-12 (mg/L)



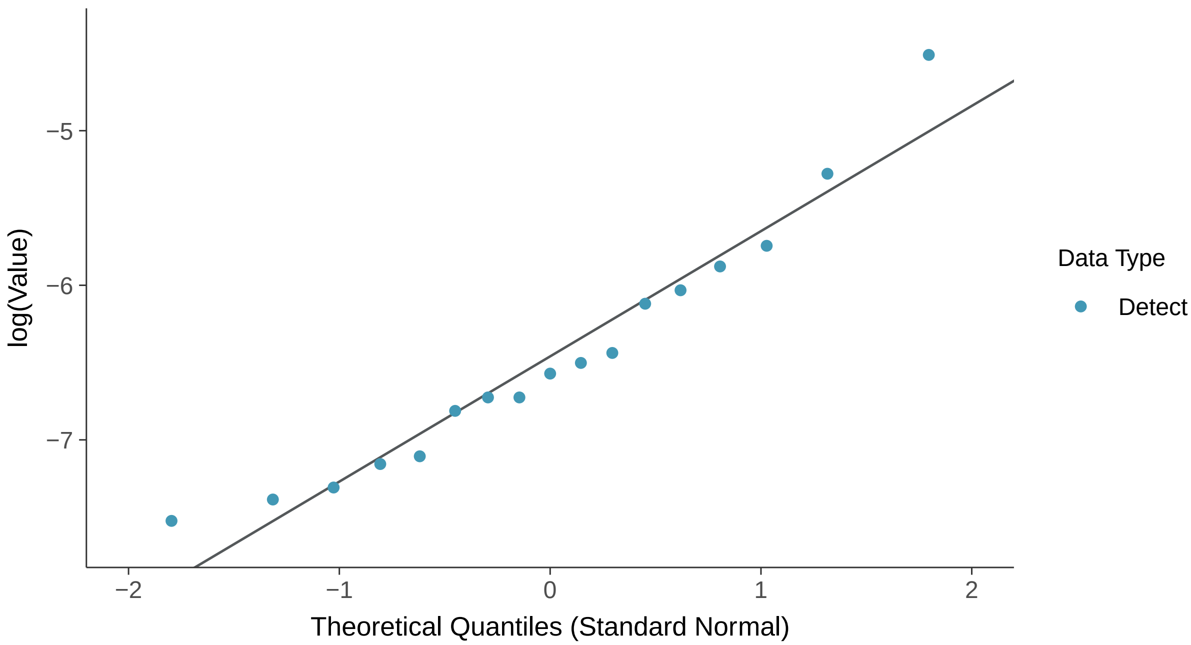
Boxplot by Season

Cadmium, MW-12 (mg/L)



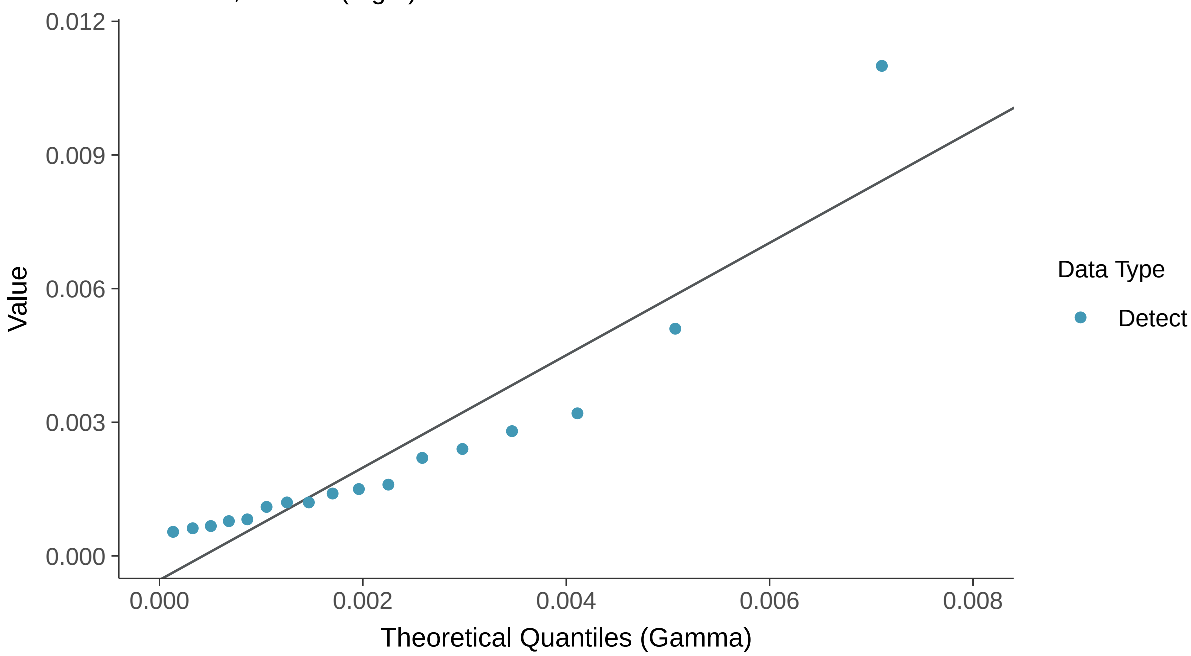
Lognormal Q-Q plot

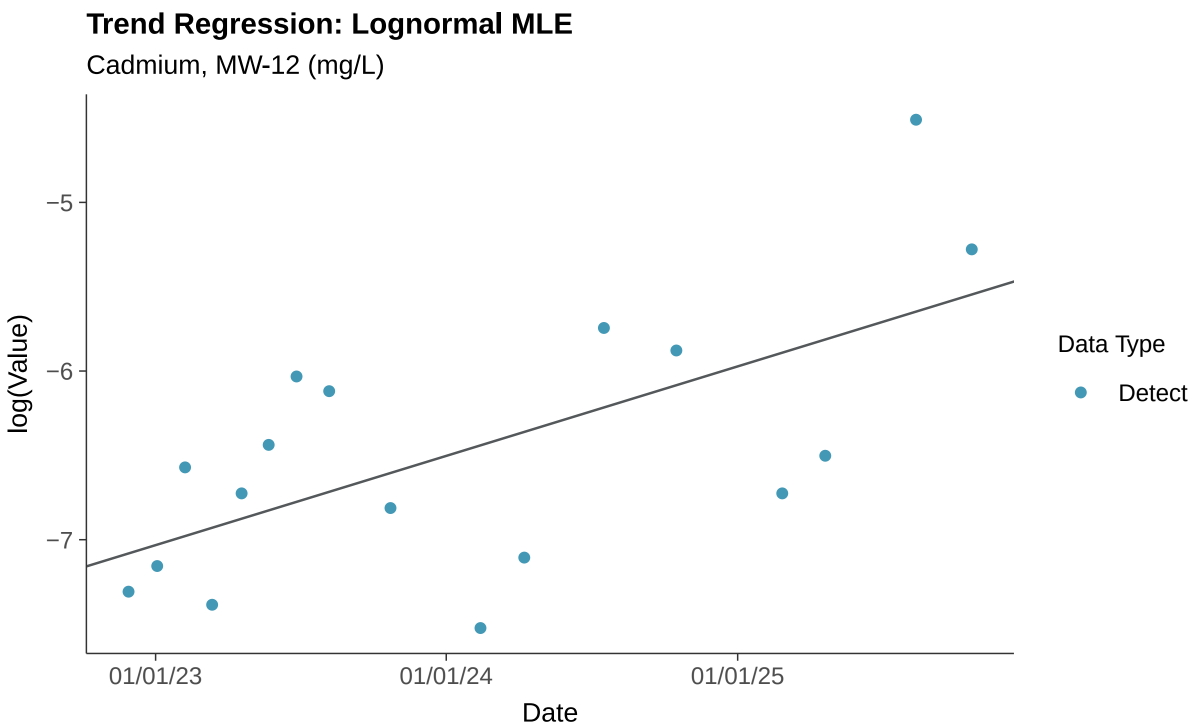
Cadmium, MW-12 (mg/L)

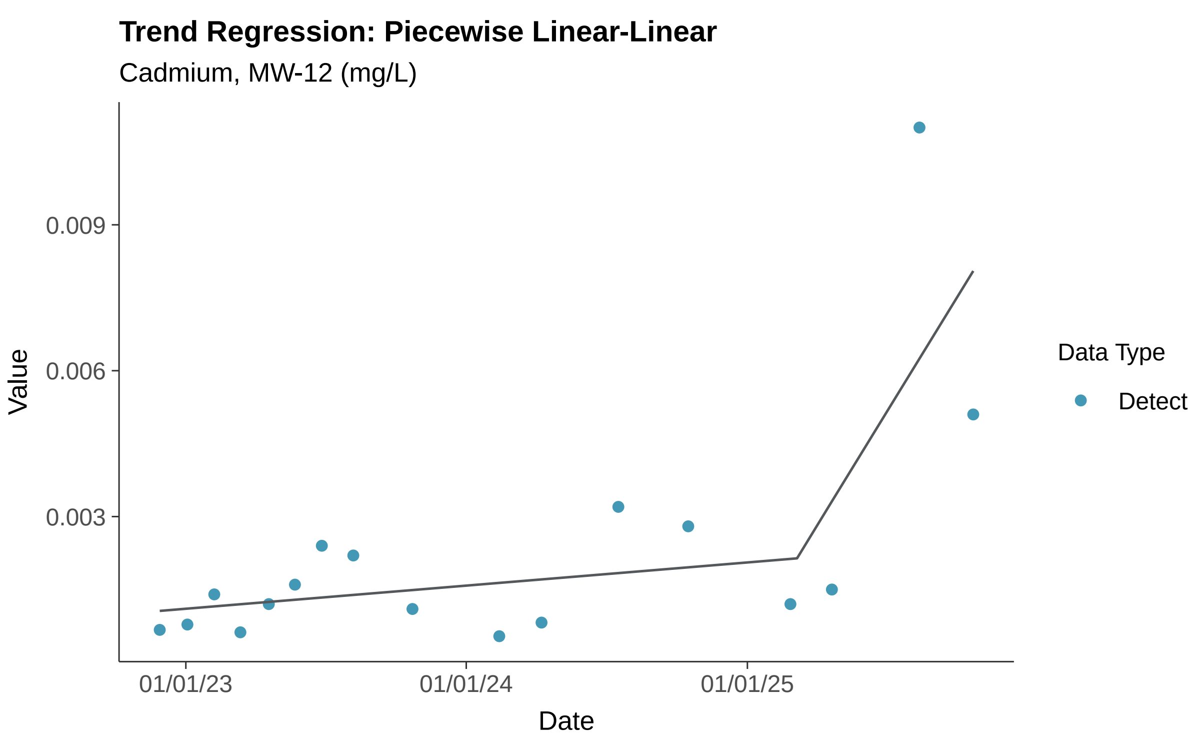


Gamma Q-Q plot

Cadmium, MW-12 (mg/L)

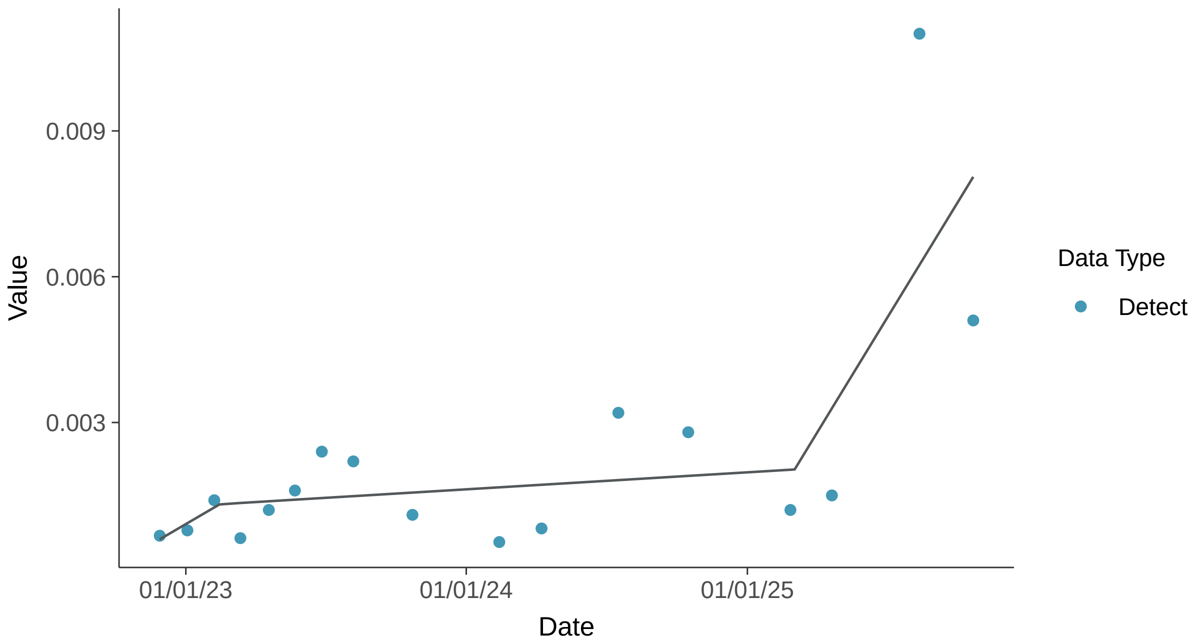



Trend Regression: Lognormal MLE
Cadmium, MW-12 (mg/L)
log(Value)
−5
−6
−7
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear
Cadmium, MW-12 (mg/L)
Value
0.009
0.006
0.003
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear-Linear

Cadmium, MW-12 (mg/L)

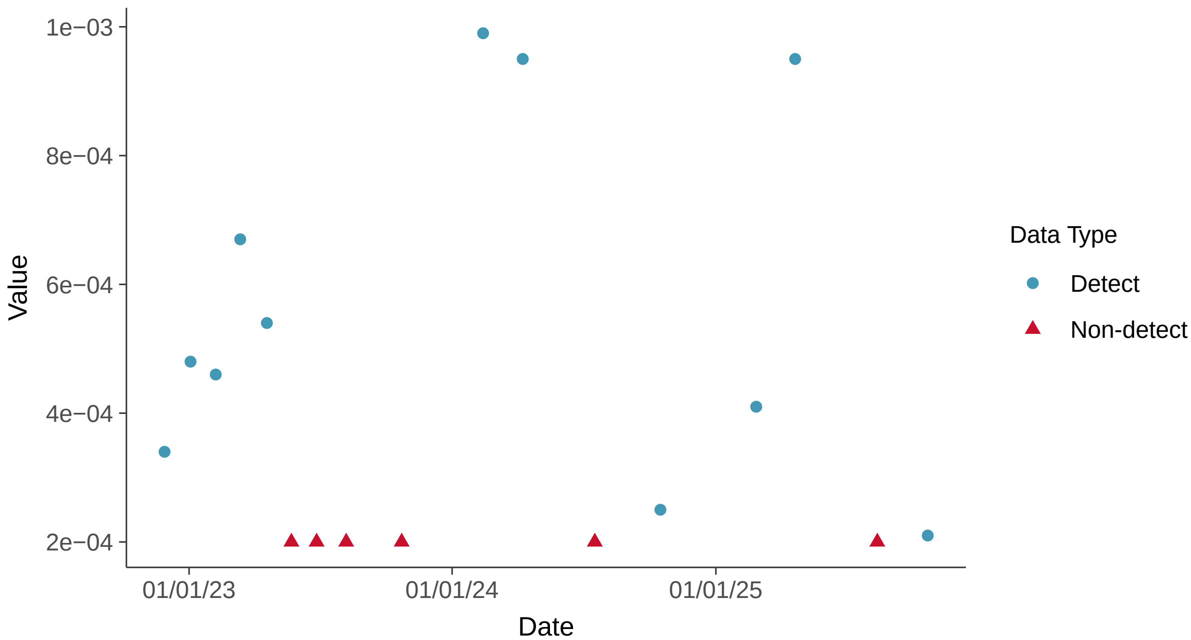


Appendix IV: Chromium, Total, MW-12

ID: 22_2_4_109

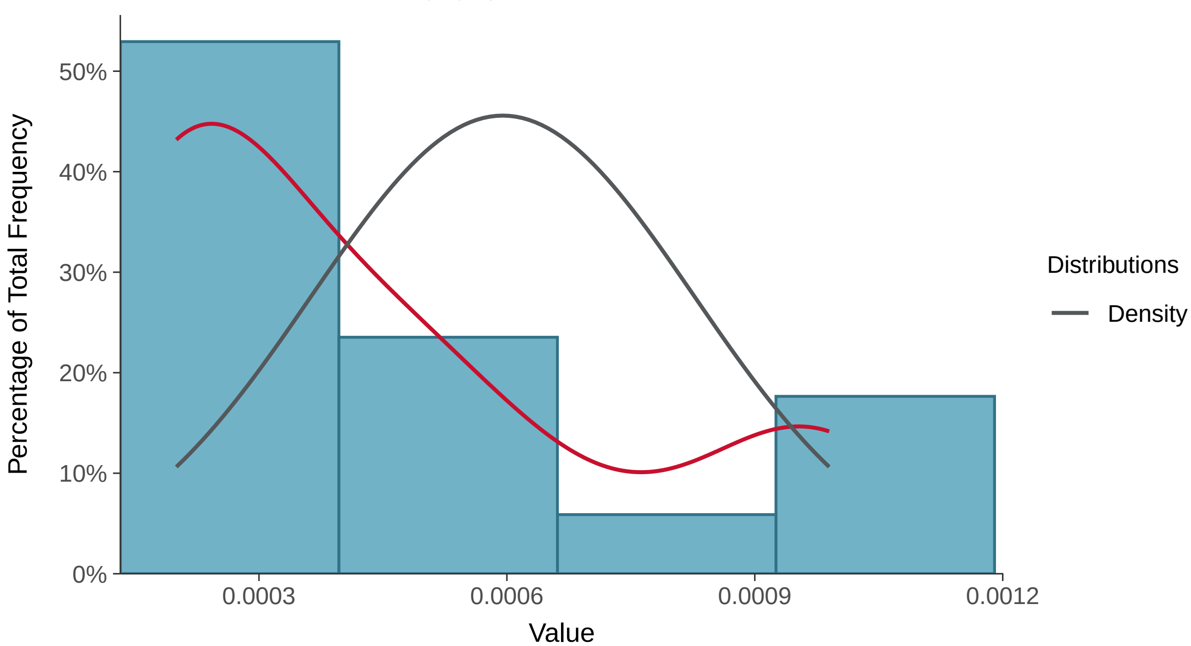
Scatter Plot

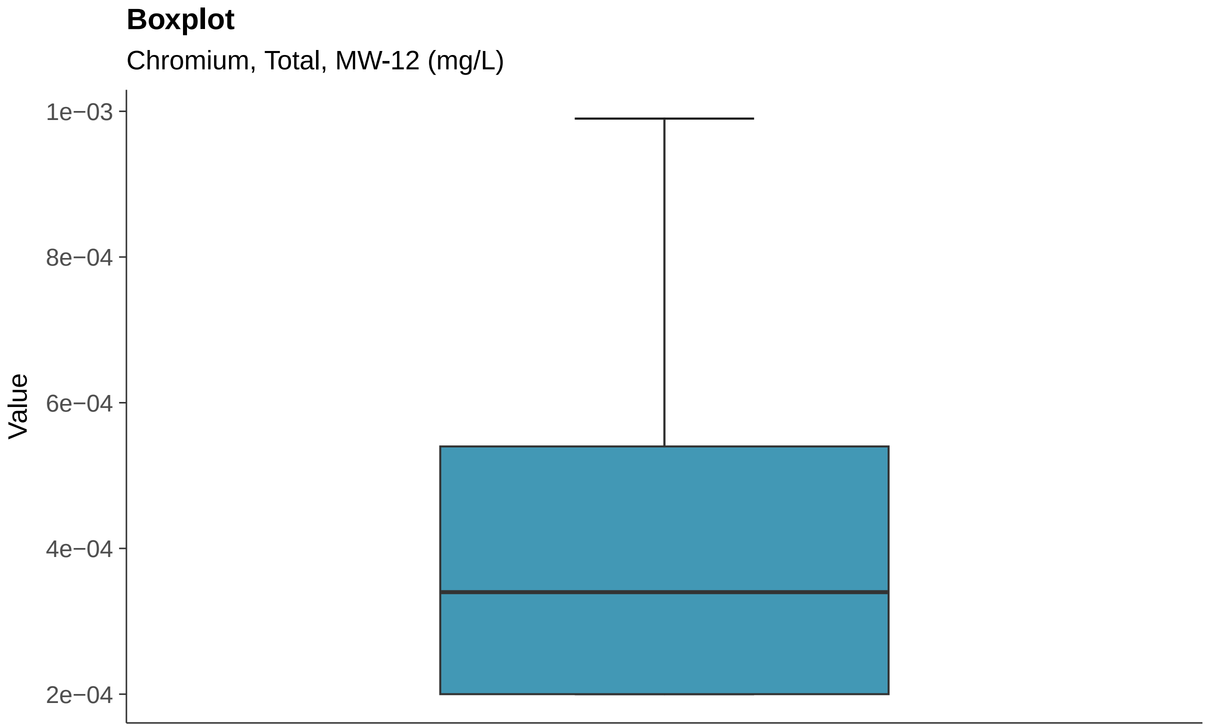
Chromium, Total, MW-12 (mg/L)

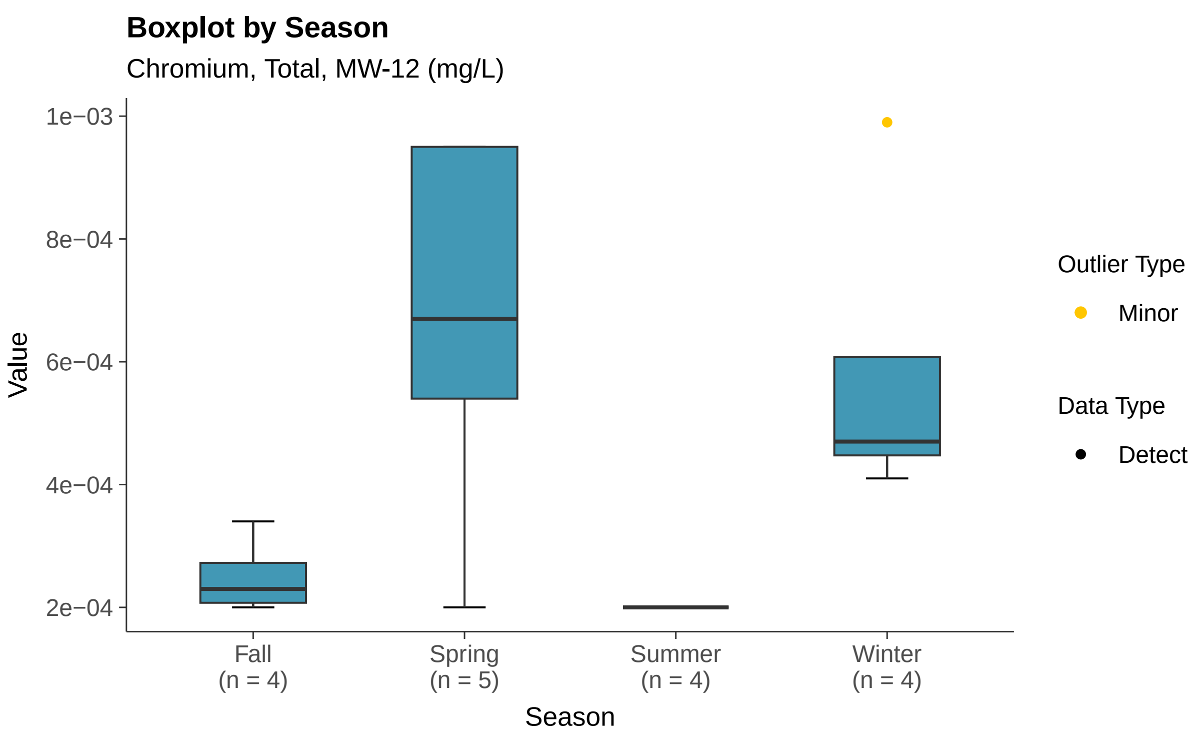


Histogram

Chromium, Total, MW-12 (mg/L)

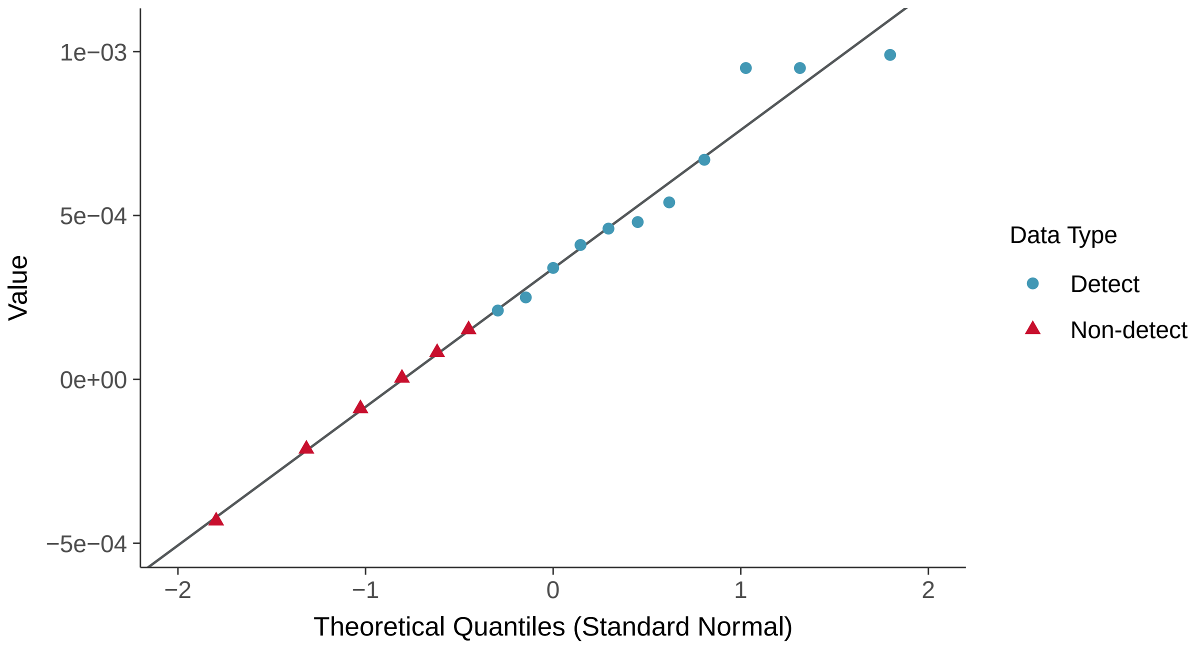



Boxplot
Chromium, Total, MW-12 (mg/L)
Value
1e−03
8e−04
6e−04
4e−04
2e−04


Boxplot by Season
Chromium, Total, MW-12 (mg/L)
Value
1e−03
8e−04
6e−04
4e−04
2e−04
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Minor
Data Type
Detect

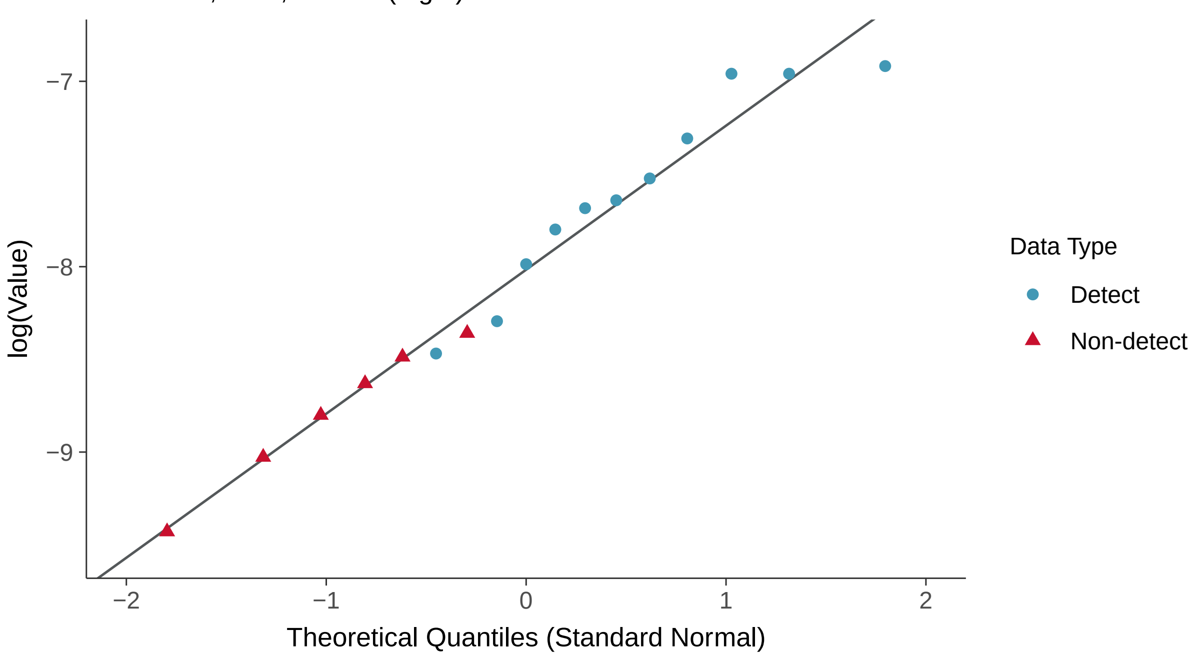
Normal Q-Q plot using ROS Imputed Estimates

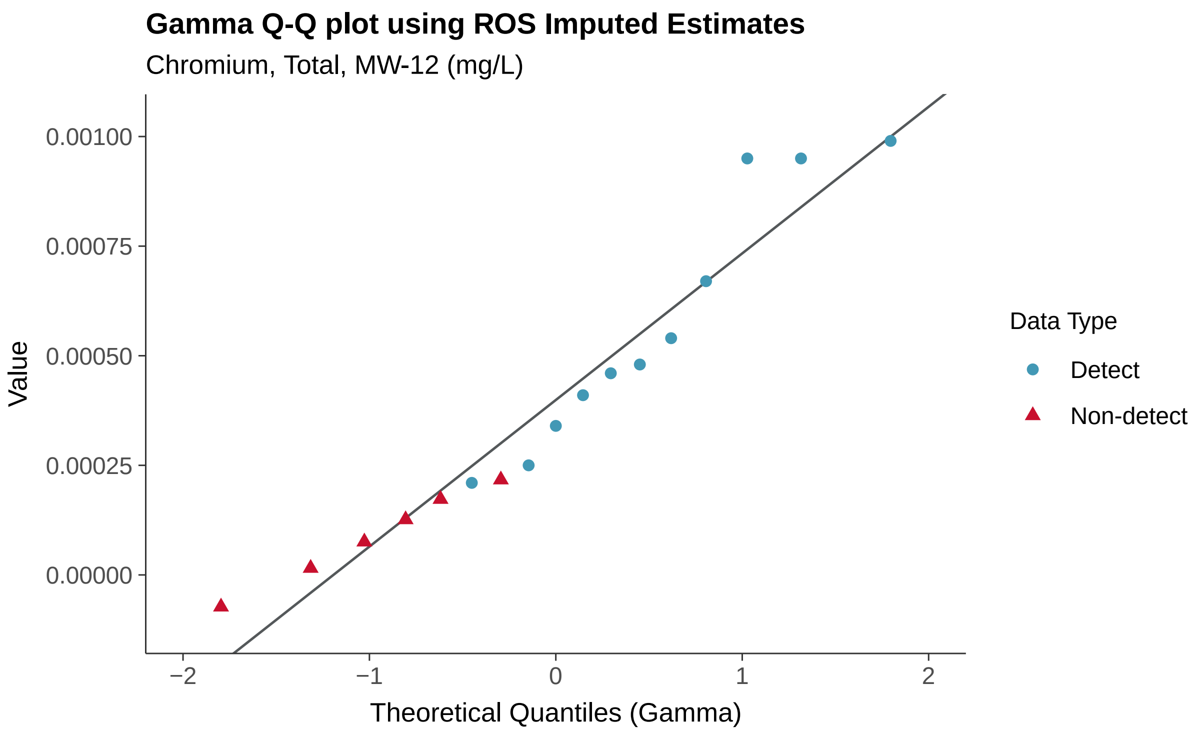
Chromium, Total, MW-12 (mg/L)

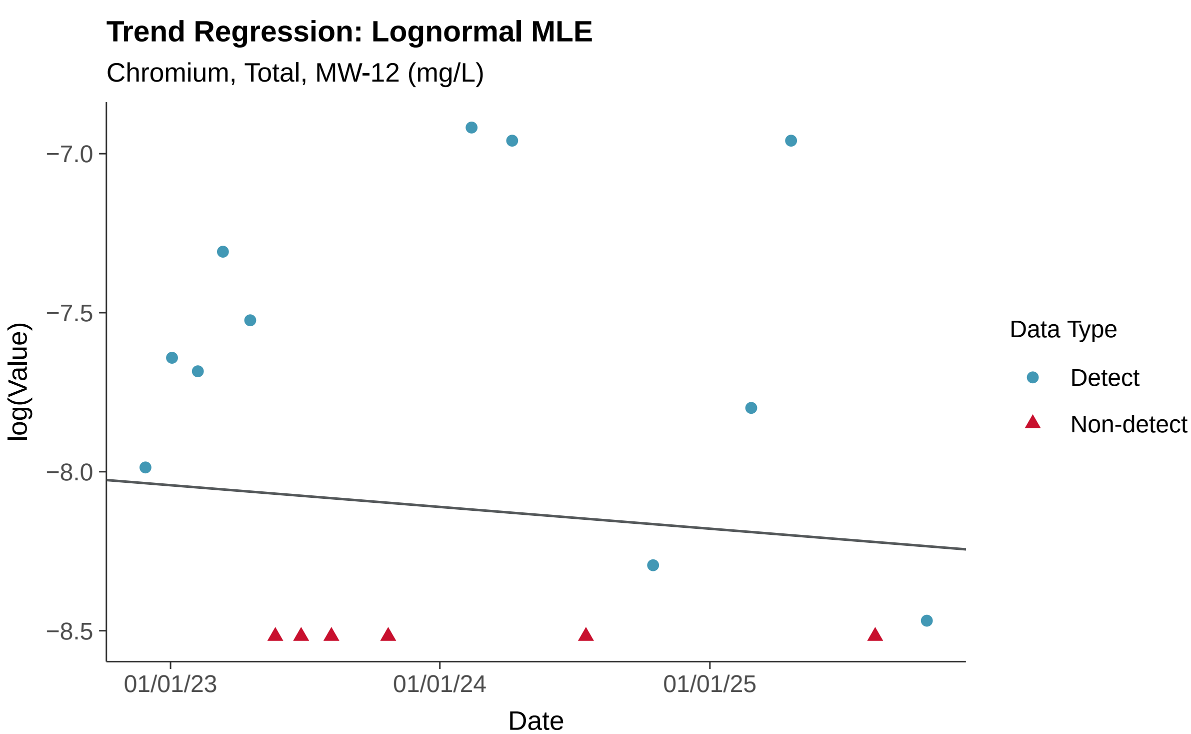


Lognormal Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-12 (mg/L)

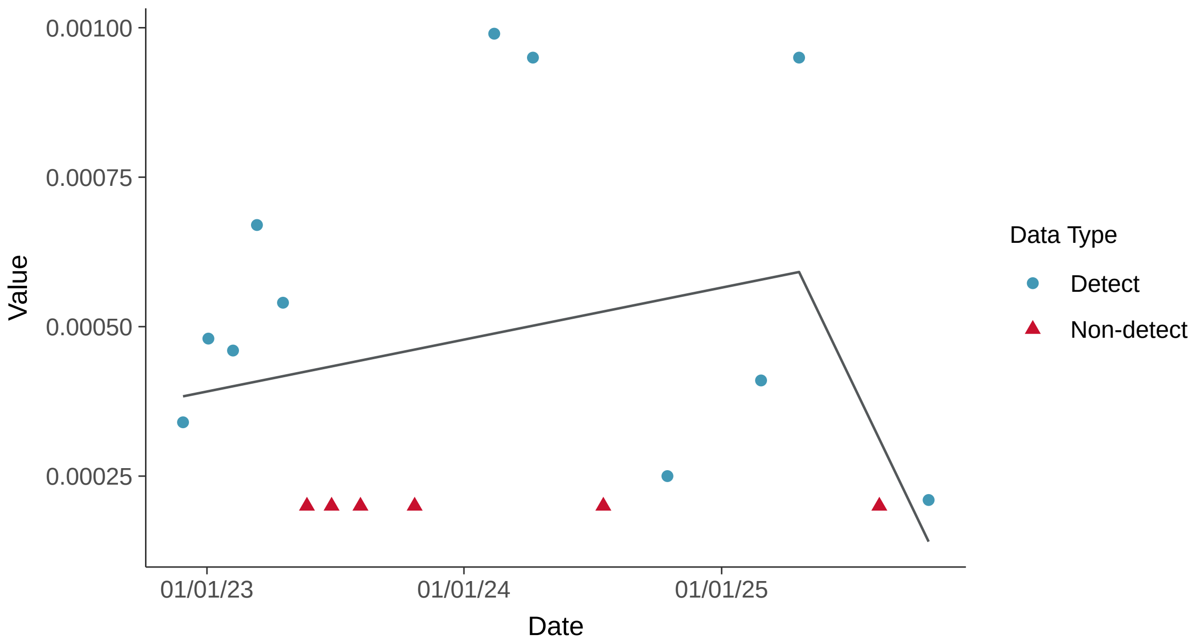



Gamma Q-Q plot using ROS Imputed Estimates
Chromium, Total, MW-12 (mg/L)
Value
0.00100
0.00075
0.00050
0.00025
0.00000
−2
−1
0
1
2
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect


Trend Regression: Lognormal MLE
Chromium, Total, MW-12 (mg/L)
log(Value)
−7.0
−7.5
−8.0
−8.5
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

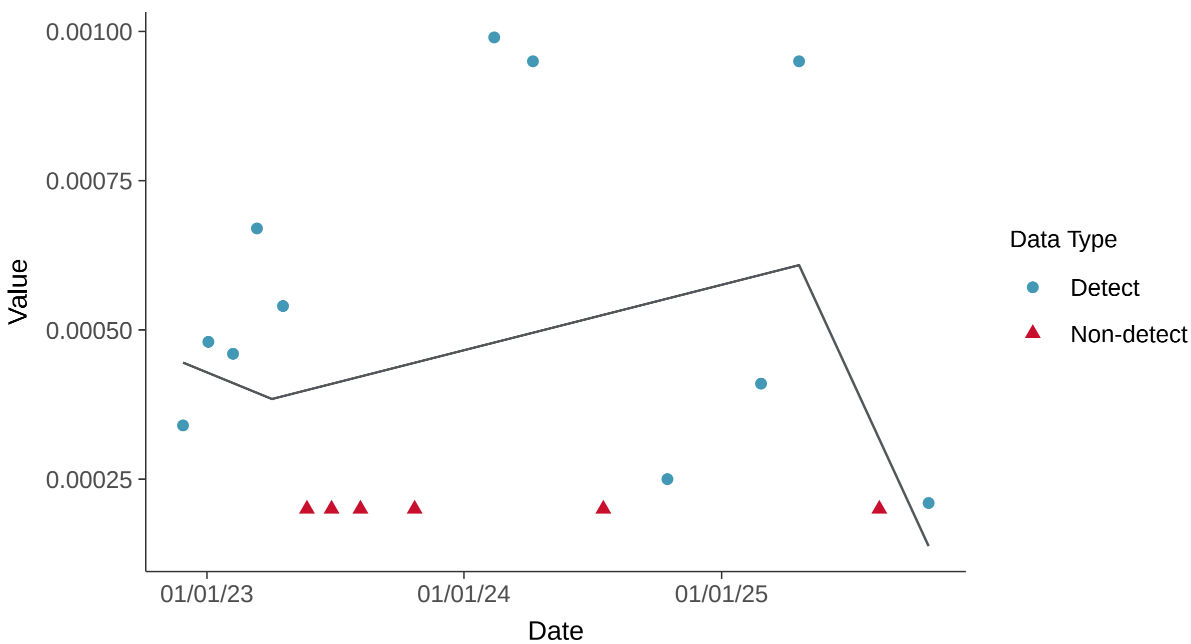
Trend Regression: Piecewise Linear-Linear

Chromium, Total, MW-12 (mg/L)



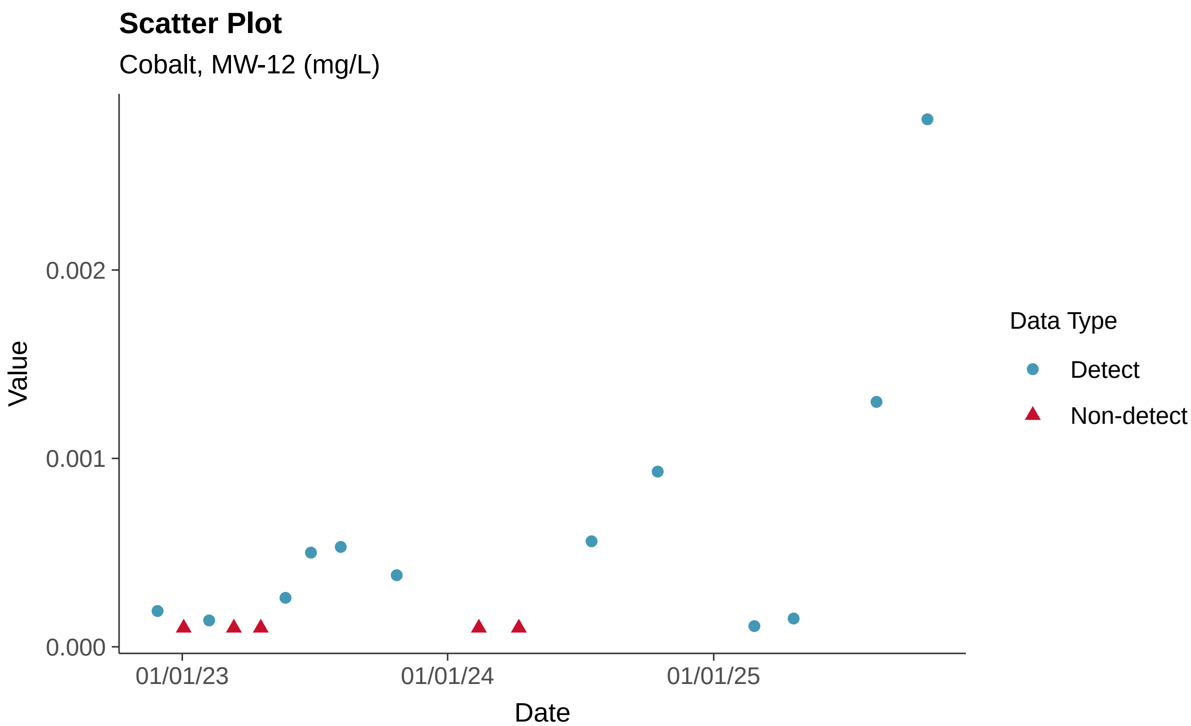
Trend Regression: Piecewise Linear-Linear-Linear

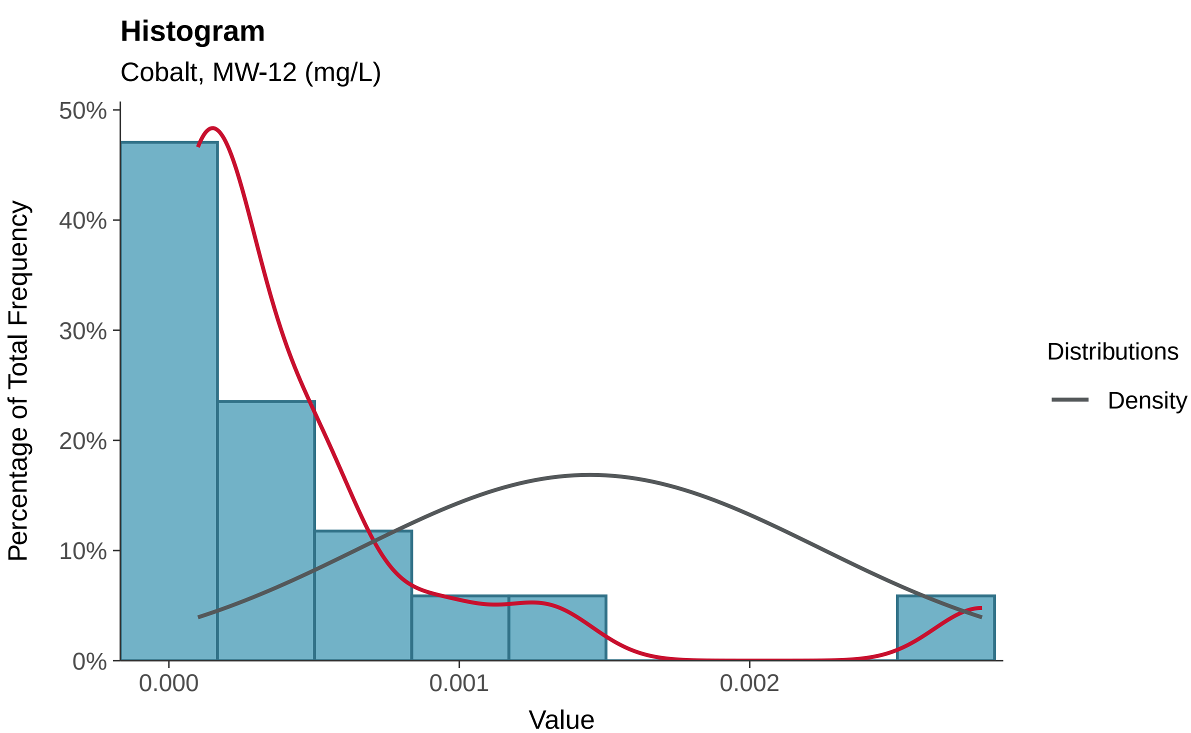
Chromium, Total, MW-12 (mg/L)



Appendix IV: Cobalt, MW-12

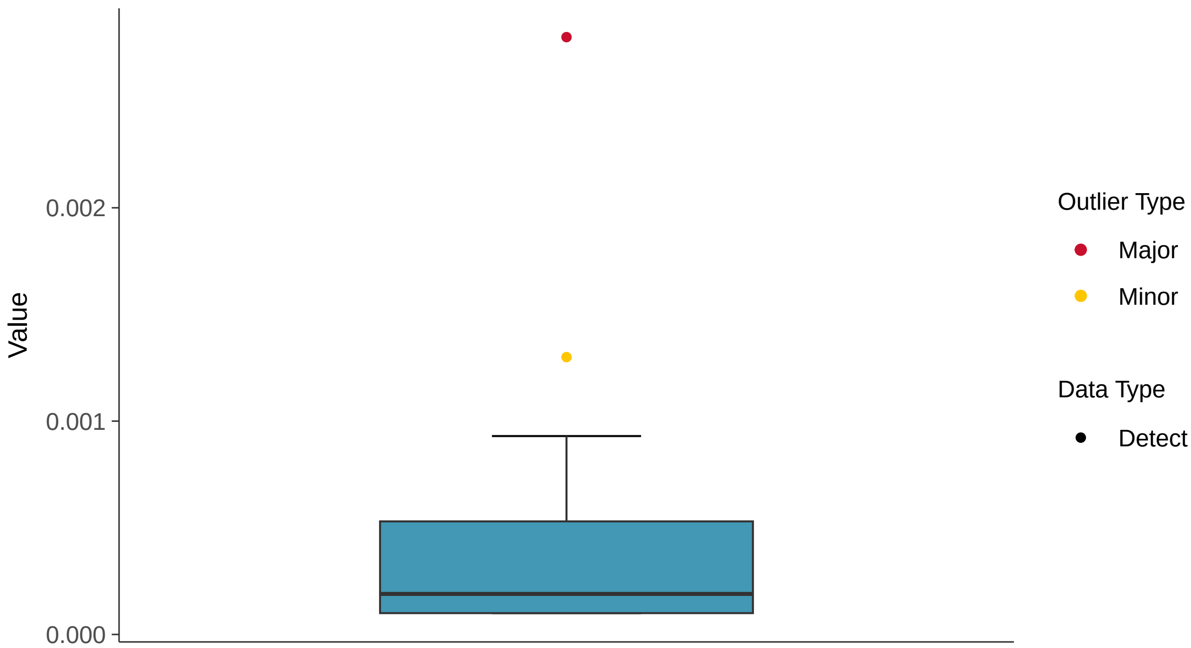
ID: 22_2_4_110





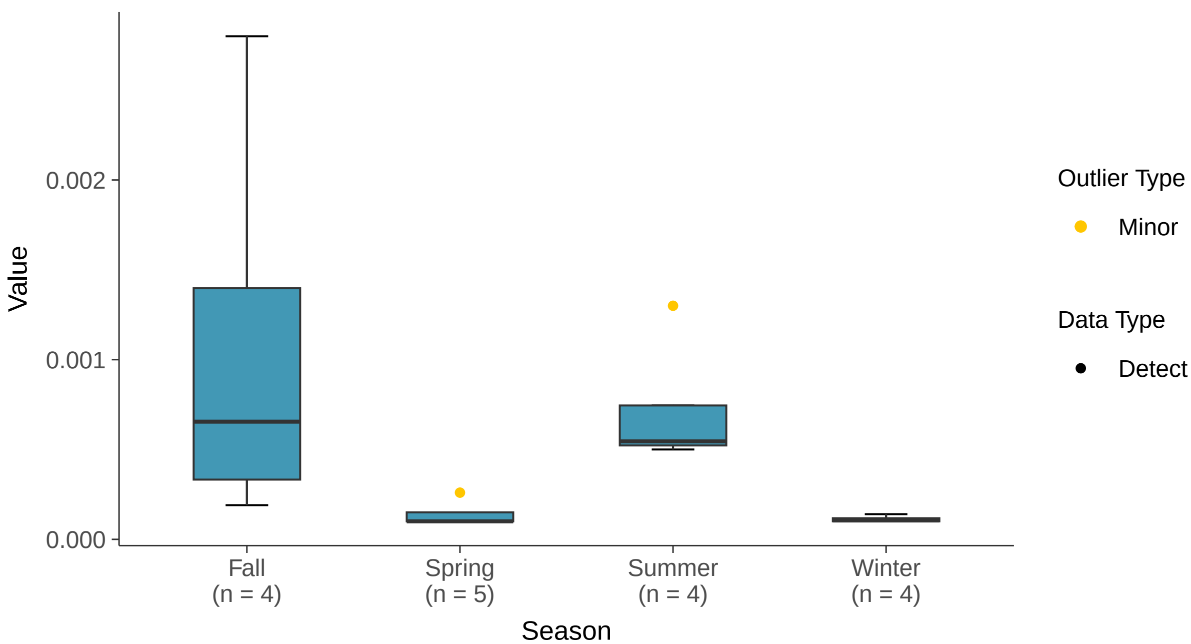
Boxplot

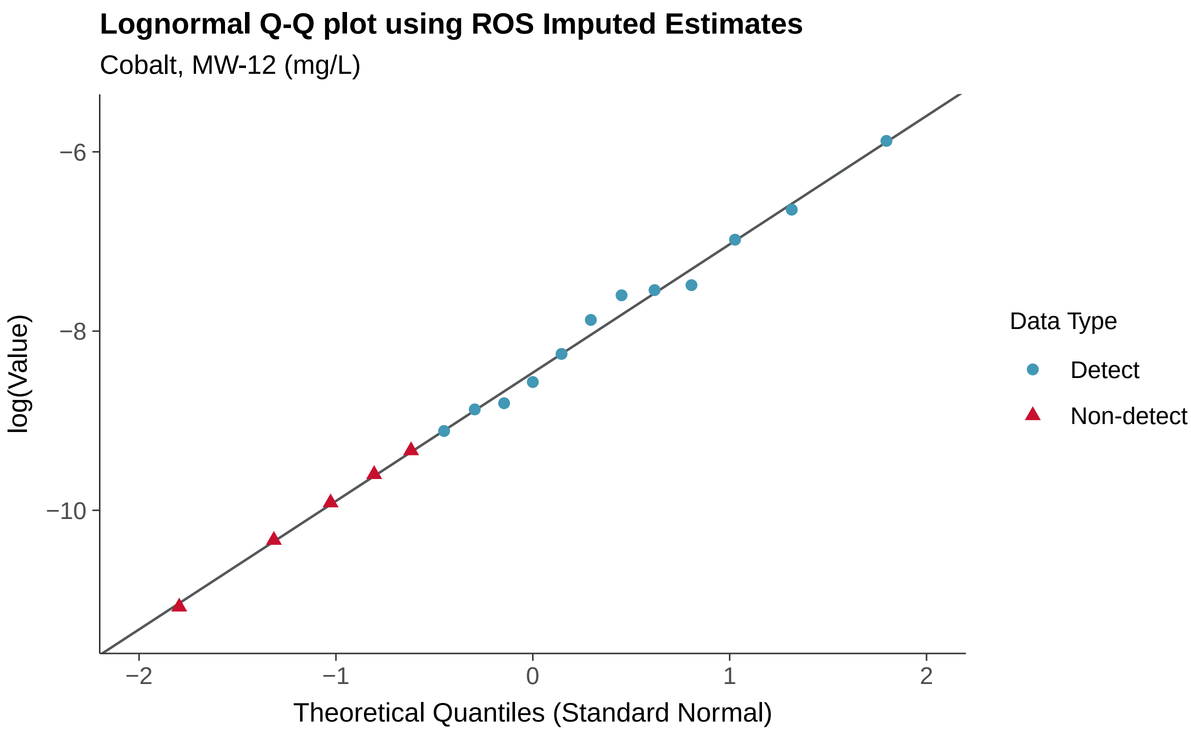
Cobalt, MW-12 (mg/L)

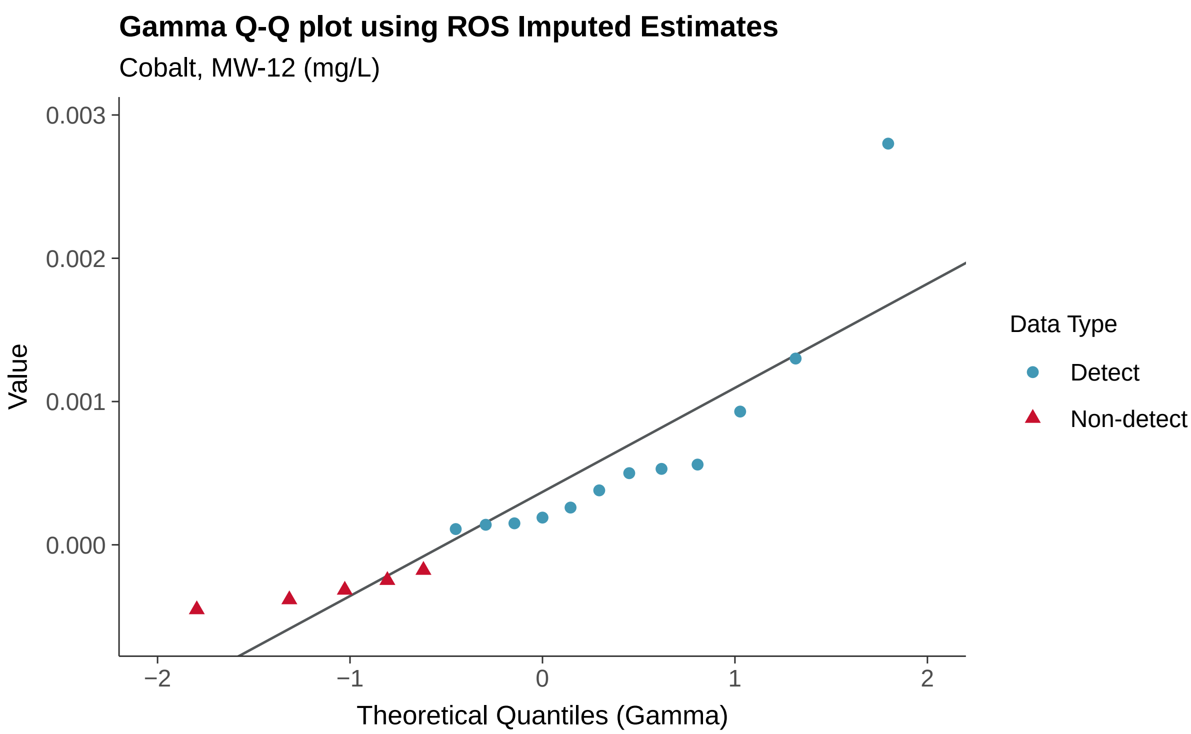


Boxplot by Season

Cobalt, MW-12 (mg/L)

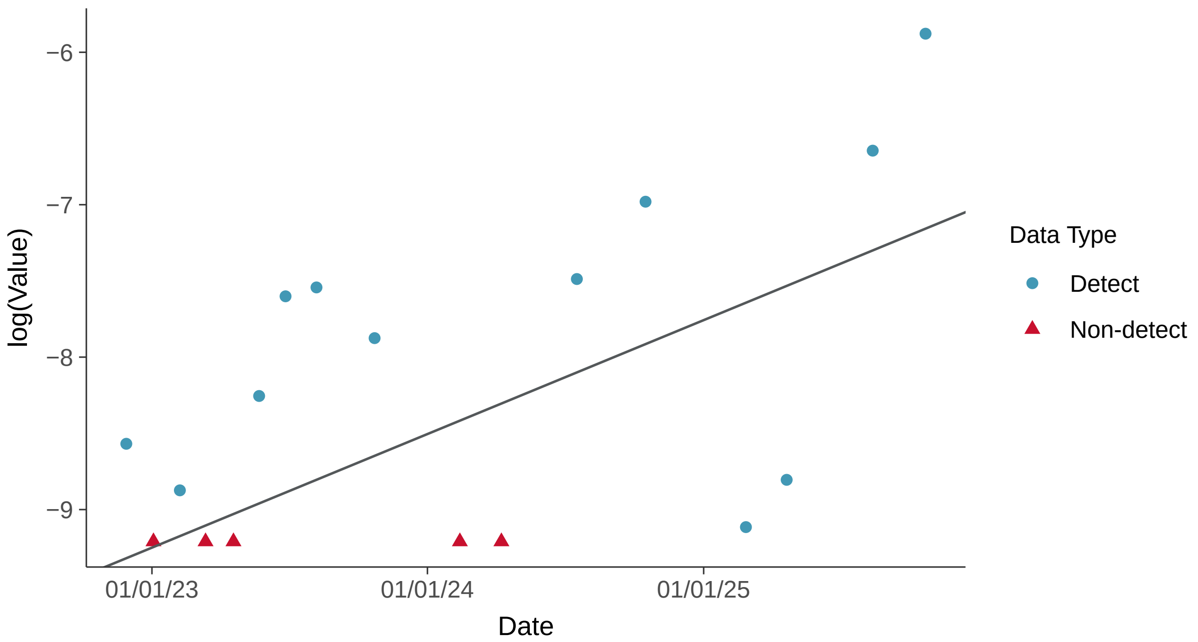



Lognormal Q-Q plot using ROS Imputed Estimates
Cobalt, MW-12 (mg/L)
log(Value)
−6
−8
−10
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Gamma Q-Q plot using ROS Imputed Estimates
Cobalt, MW-12 (mg/L)
Value
0.003
0.002
0.001
0.000
−2
−1
0
1
2
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect

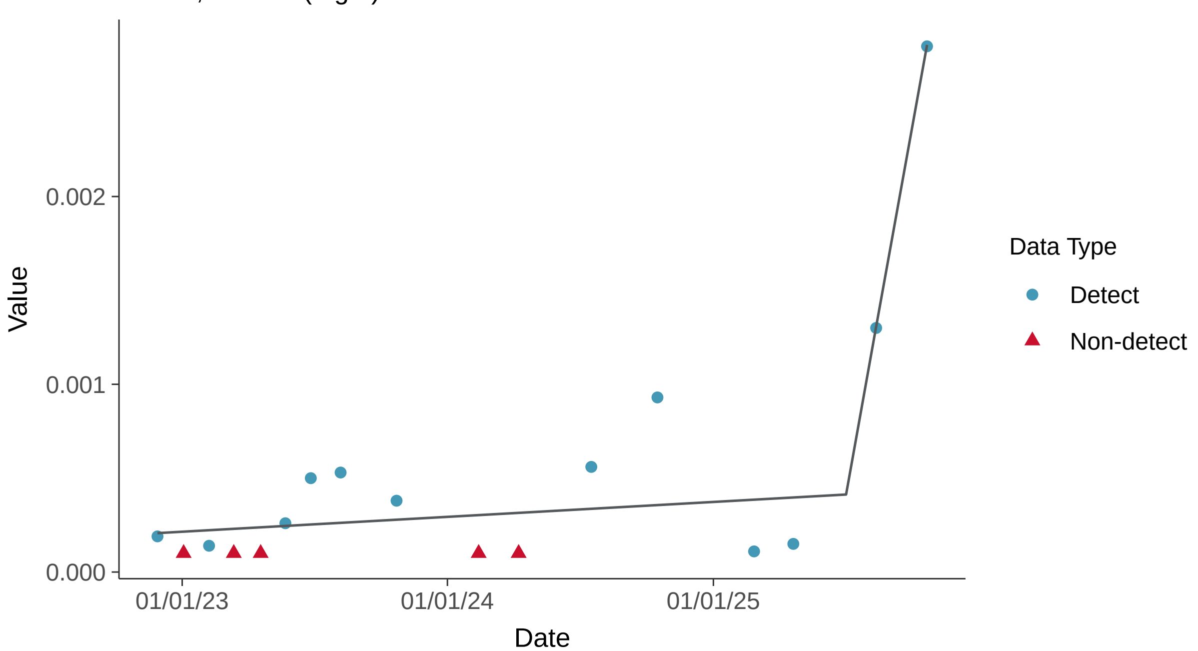
Trend Regression: Lognormal MLE

Cobalt, MW-12 (mg/L)



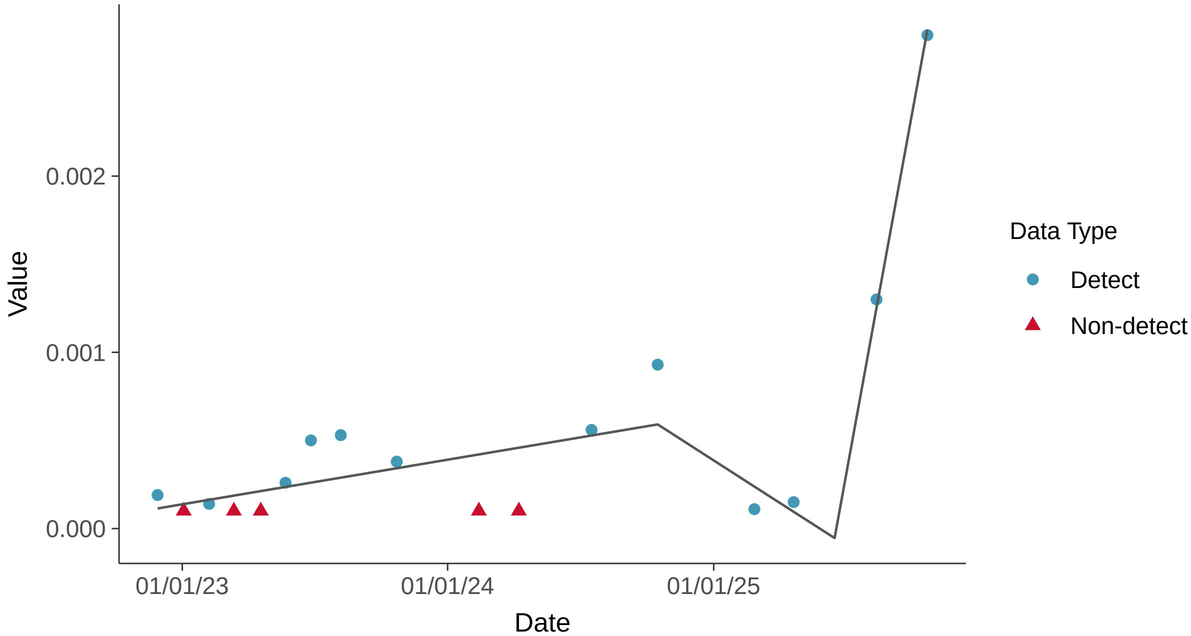
Trend Regression: Piecewise Linear-Linear

Cobalt, MW-12 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Cobalt, MW-12 (mg/L)

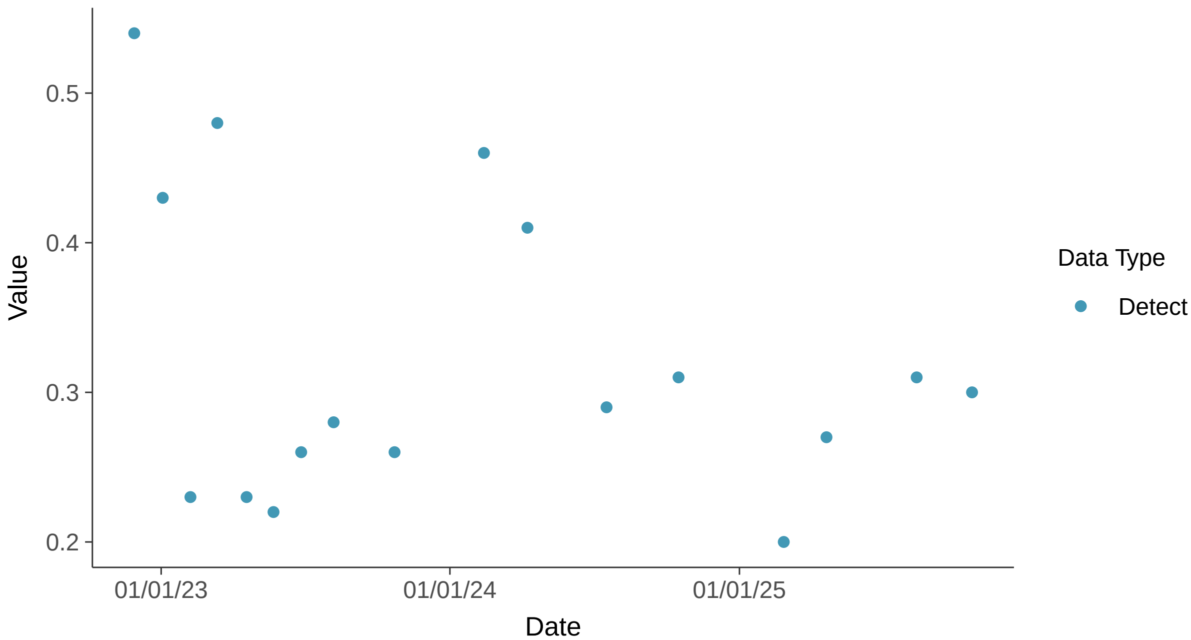


Appendix IV: Fluoride (App IV), MW-12

ID: 22_2_4_113

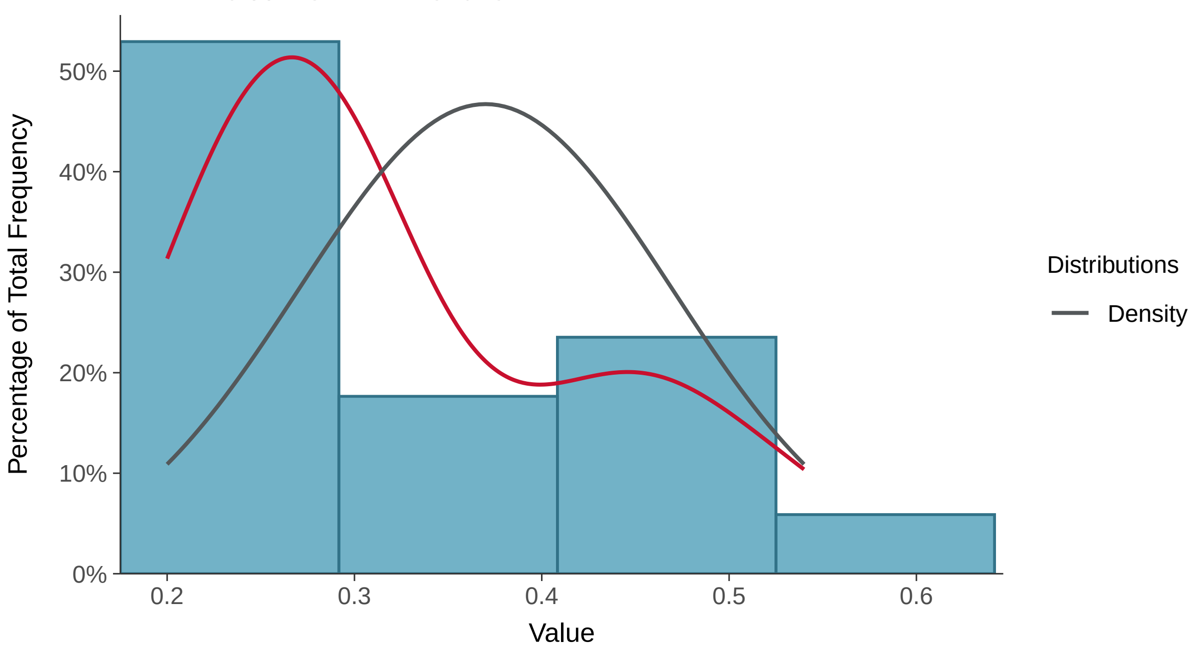
Scatter Plot

Fluoride (App IV), MW-12 (mg/L)



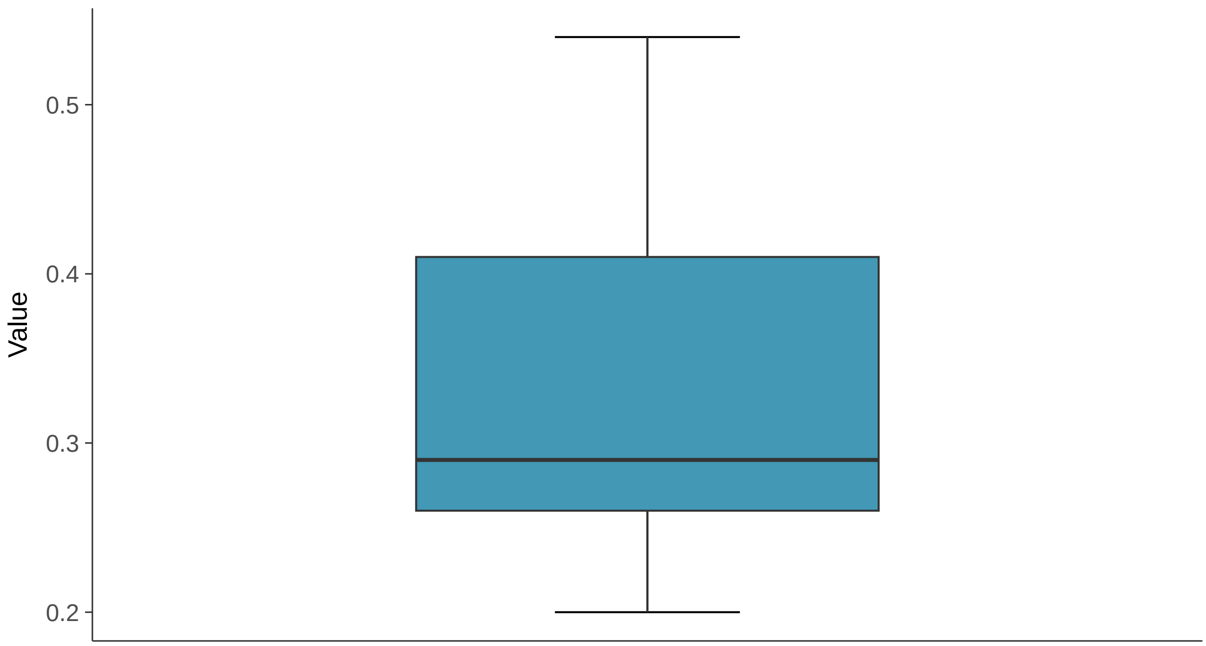
Histogram

Fluoride (App IV), MW-12 (mg/L)



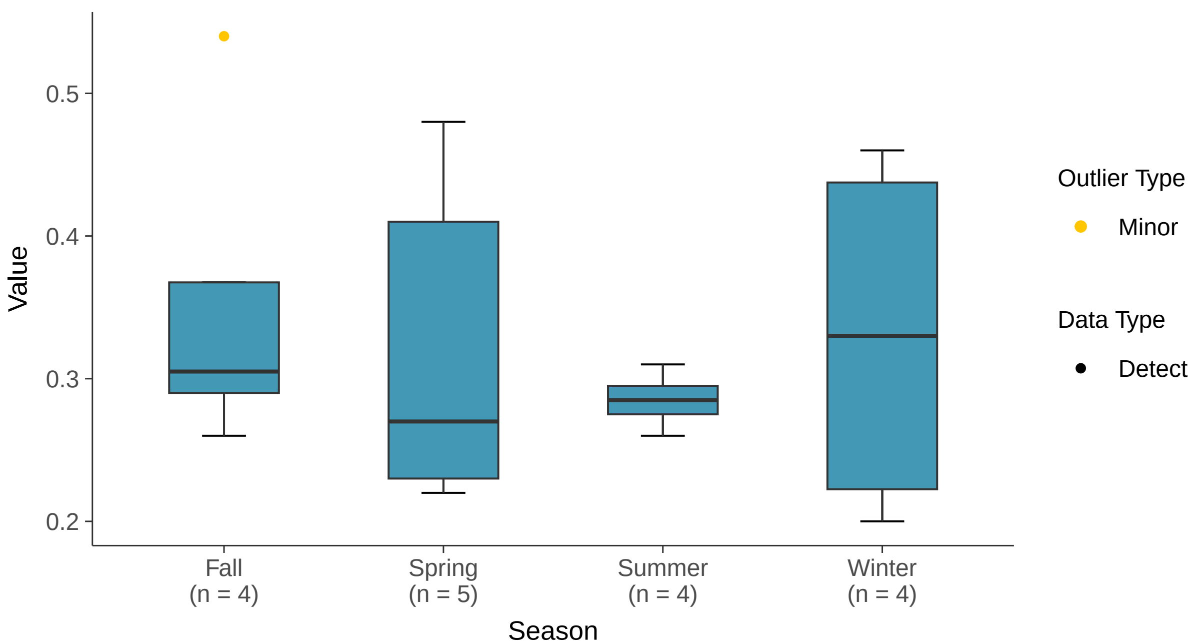
Boxplot

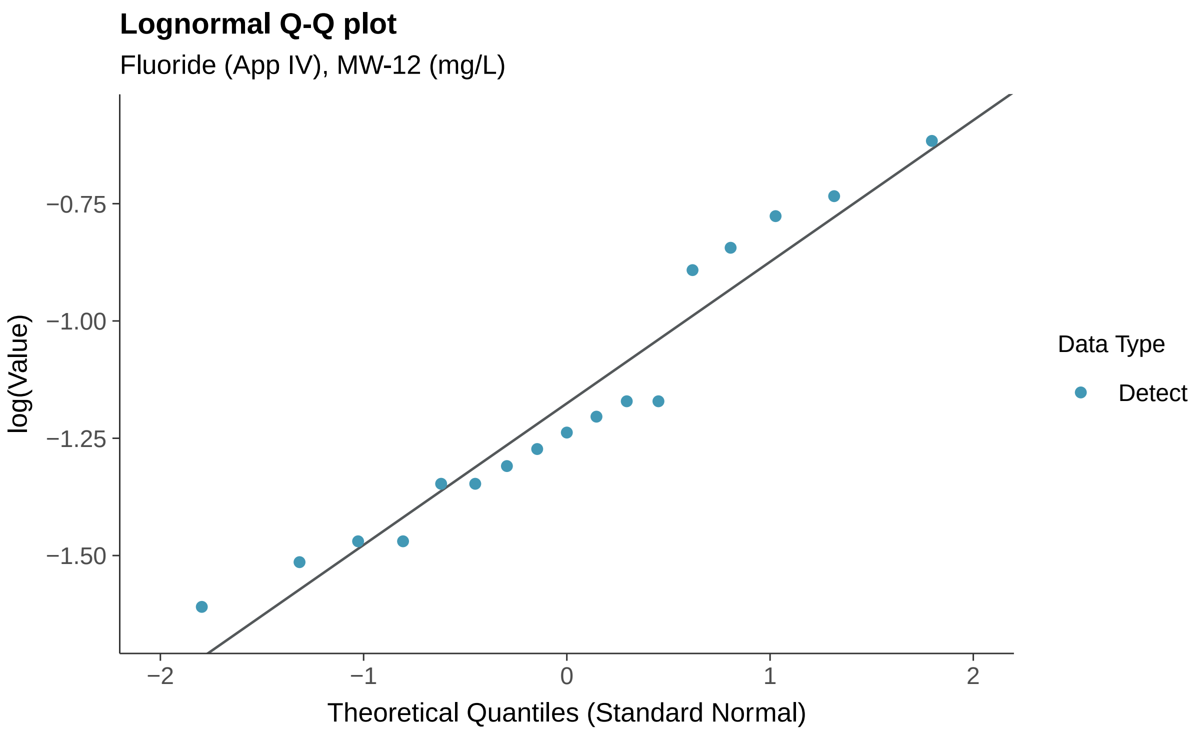
Fluoride (App IV), MW-12 (mg/L)

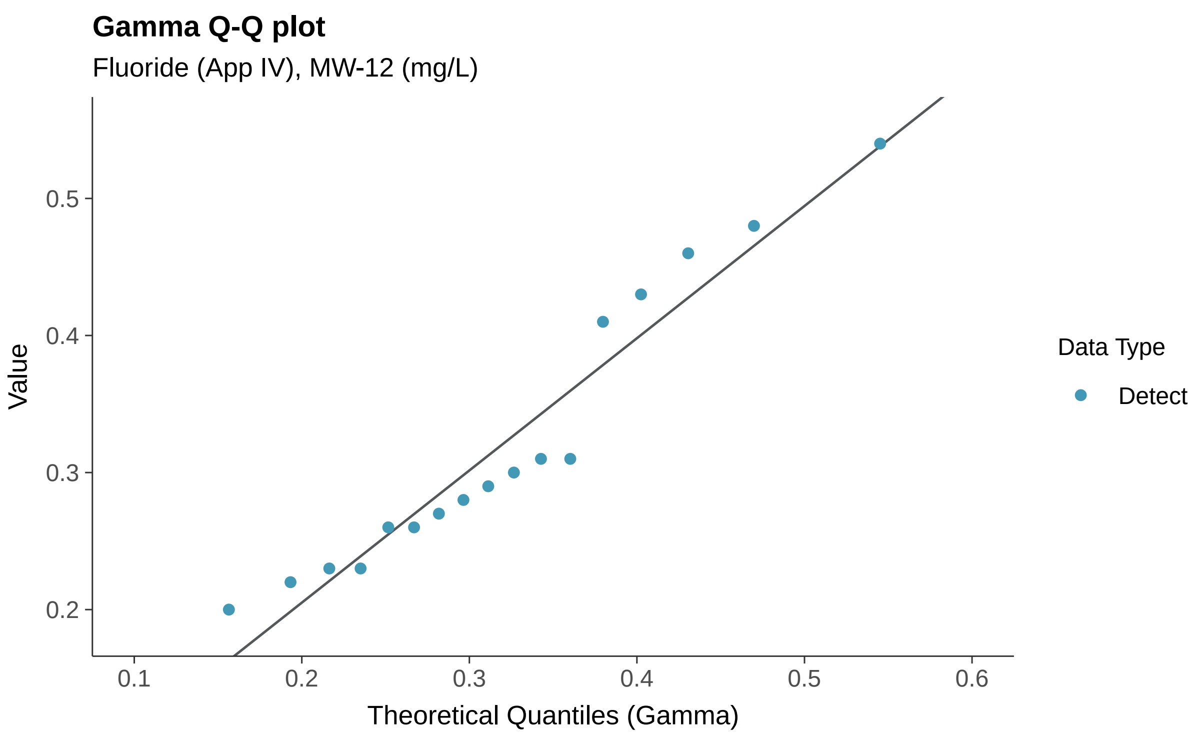


Boxplot by Season

Fluoride (App IV), MW-12 (mg/L)

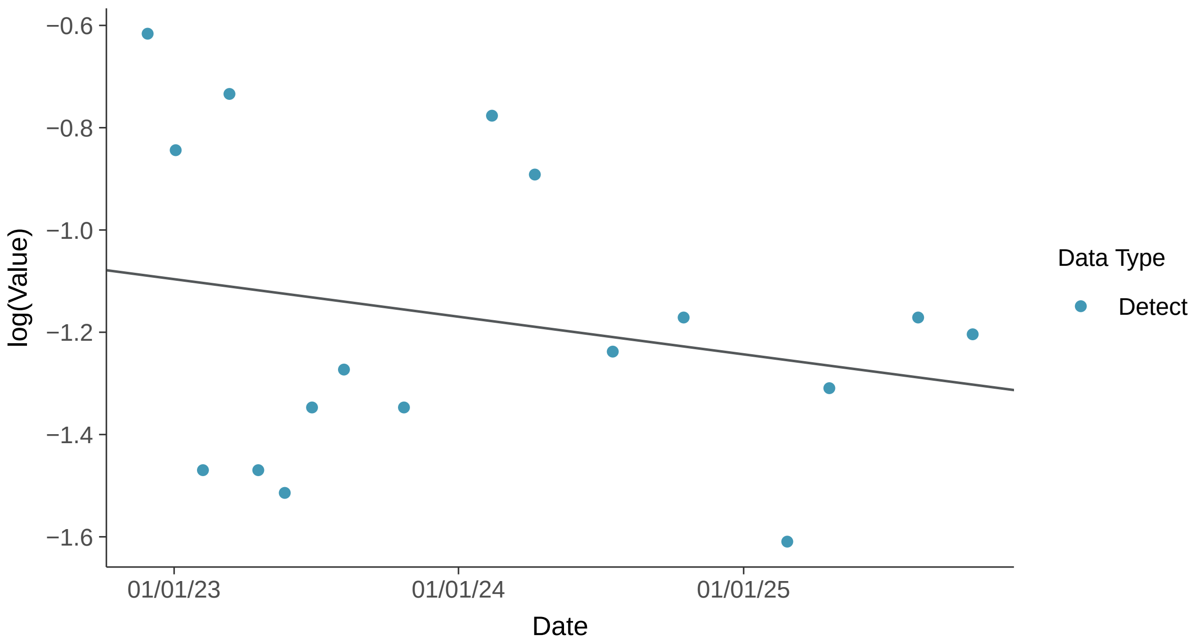



Lognormal Q-Q plot
Fluoride (App IV), MW-12 (mg/L)
log(Value)
−0.75
−1.00
−1.25
−1.50
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Fluoride (App IV), MW-12 (mg/L)
Value
0.5
0.4
0.3
0.2
0.1
0.2
0.3
0.4
0.5
0.6
Theoretical Quantiles (Gamma)
Data Type
Detect

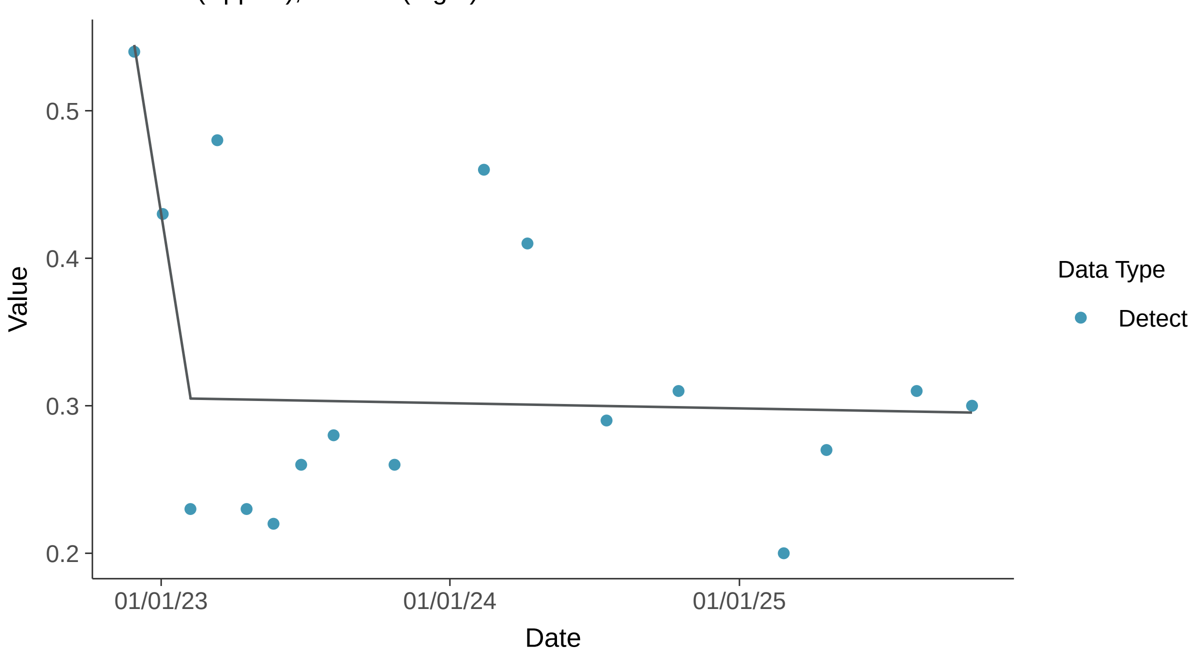
Trend Regression: Lognormal MLE

Fluoride (App IV), MW-12 (mg/L)



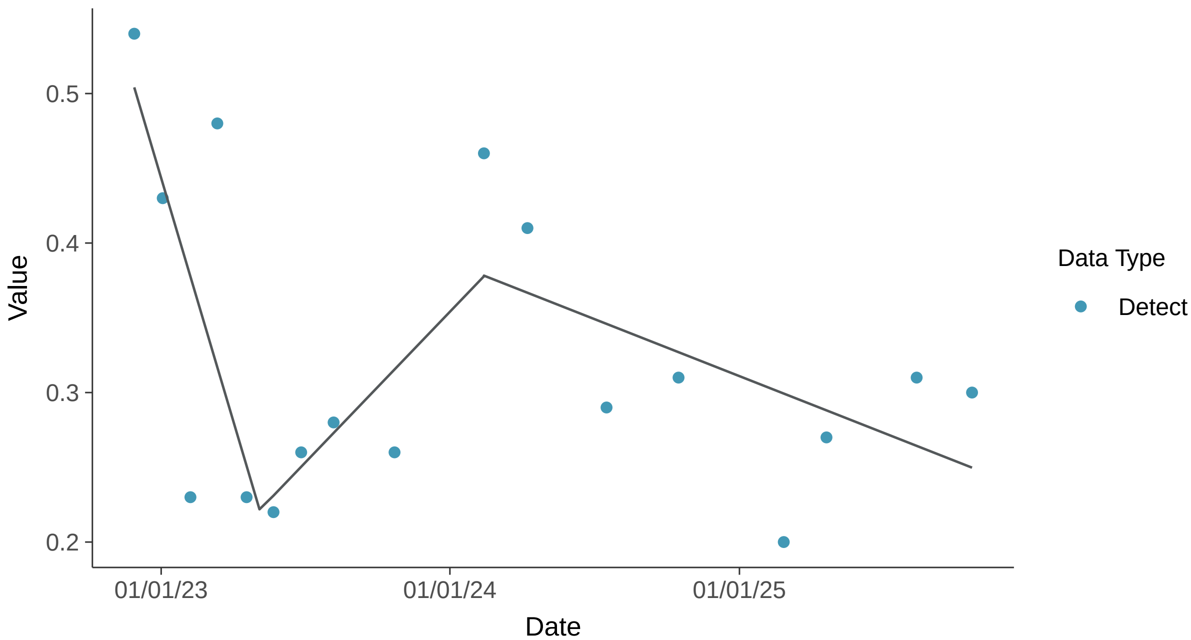
Trend Regression: Piecewise Linear-Linear

Fluoride (App IV), MW-12 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Fluoride (App IV), MW-12 (mg/L)

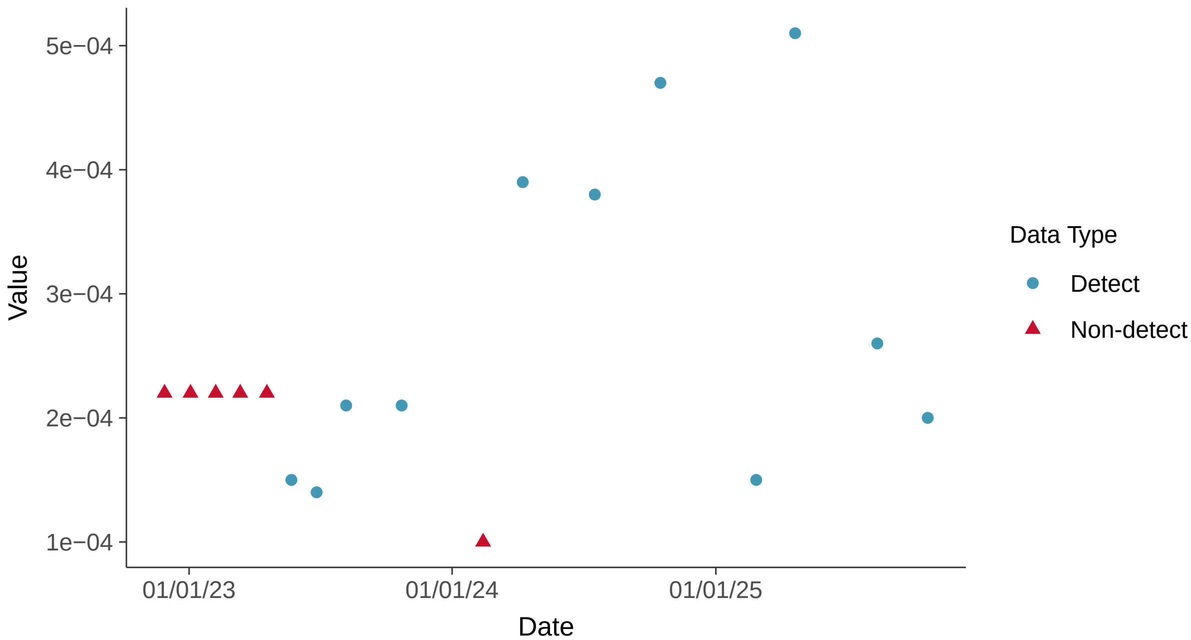


Appendix IV: Lead, MW-12

ID: 22_2_4_115

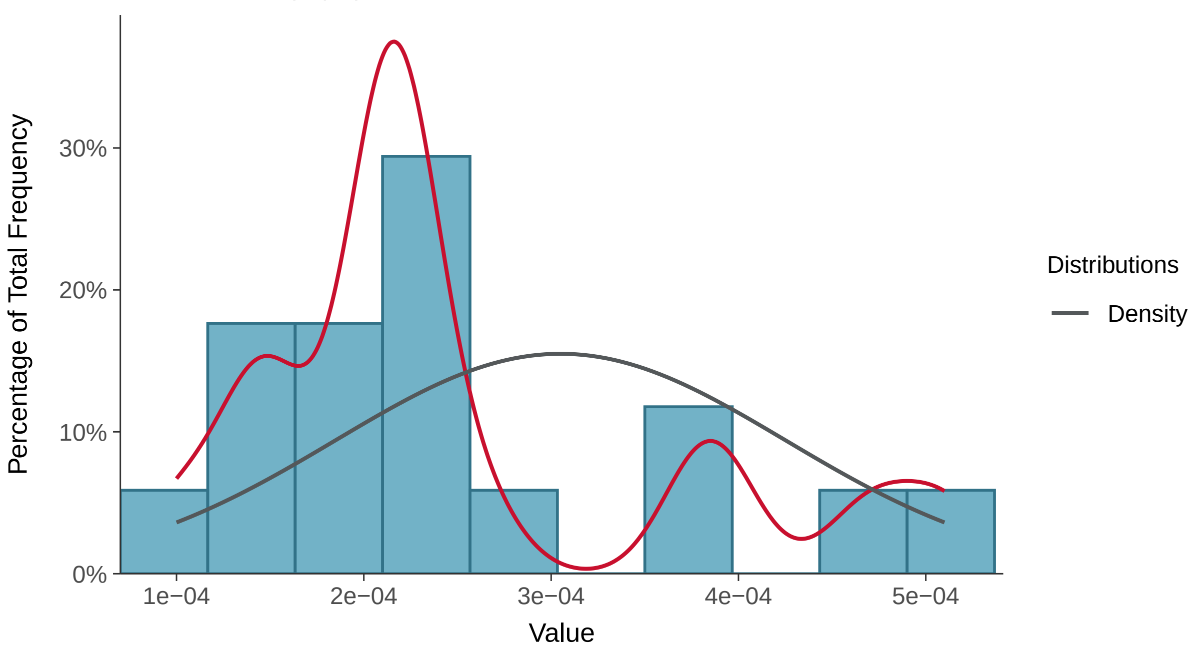
Scatter Plot

Lead, MW-12 (mg/L)



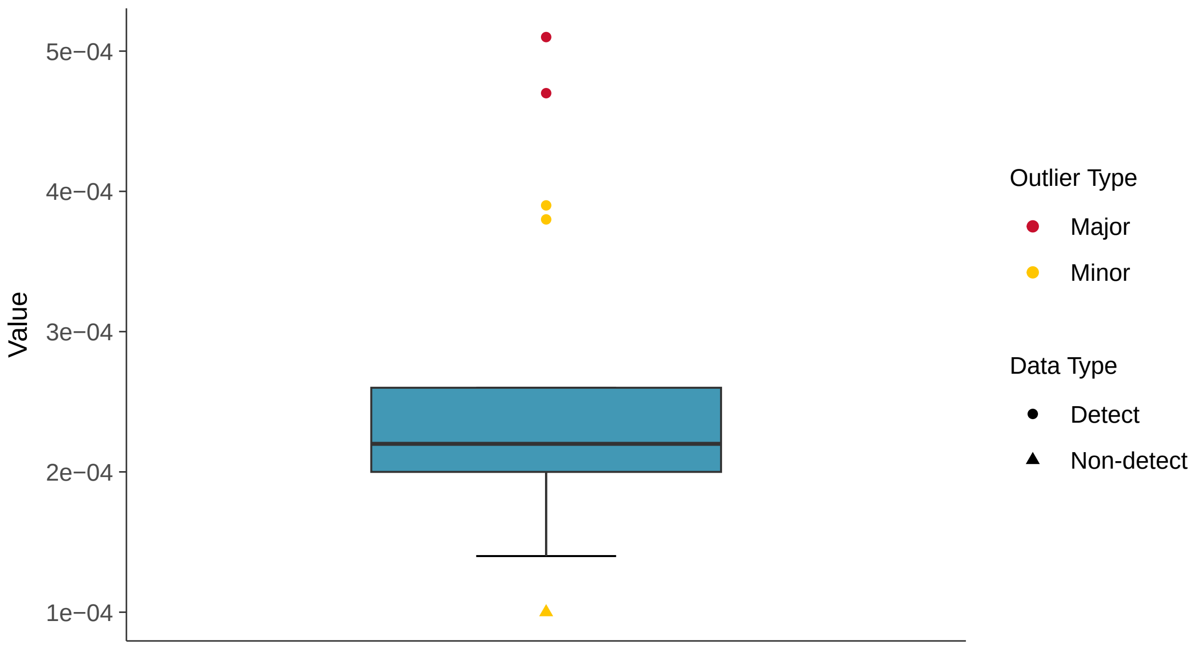
Histogram

Lead, MW-12 (mg/L)



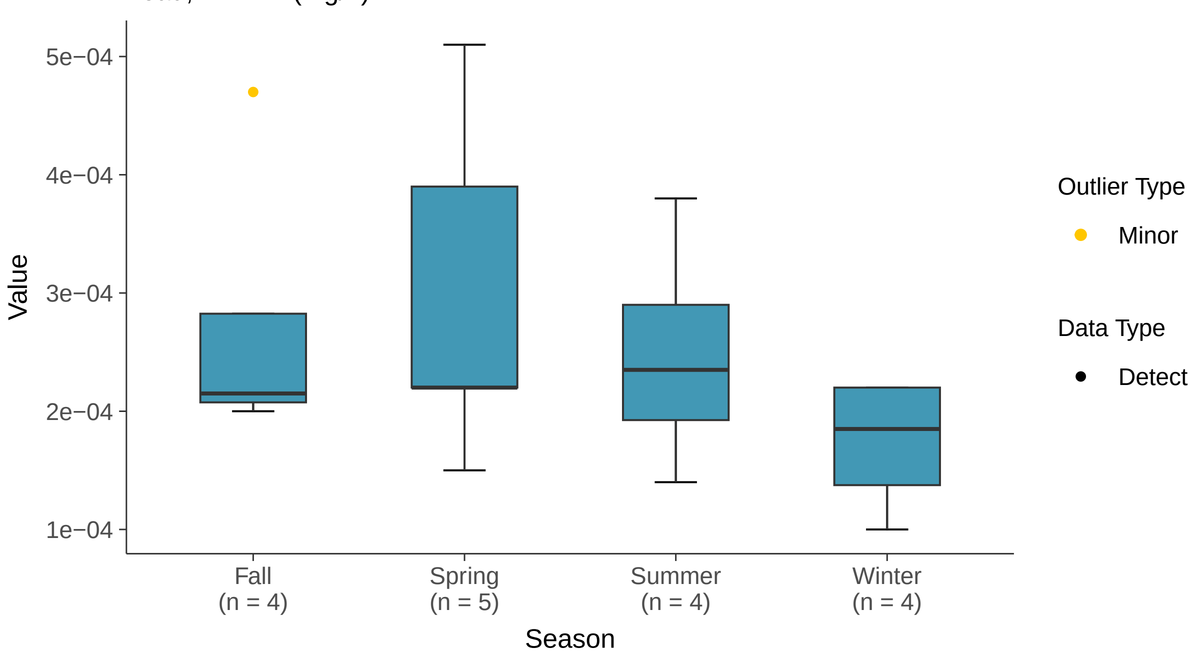
Boxplot

Lead, MW-12 (mg/L)



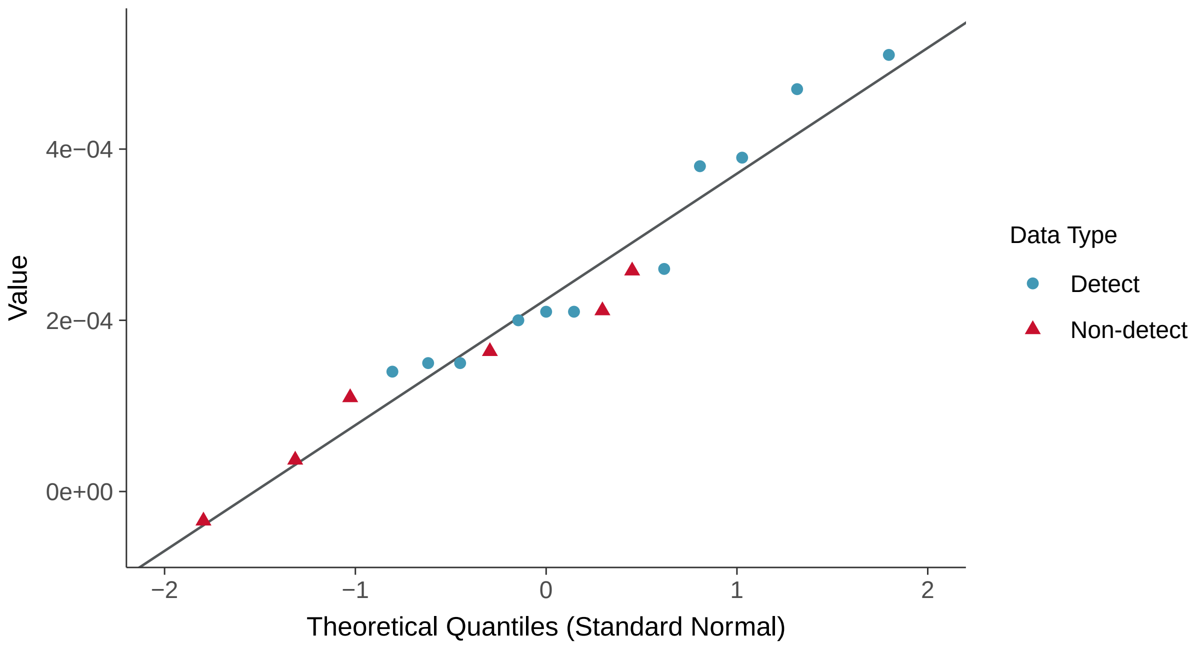
Boxplot by Season

Lead, MW-12 (mg/L)



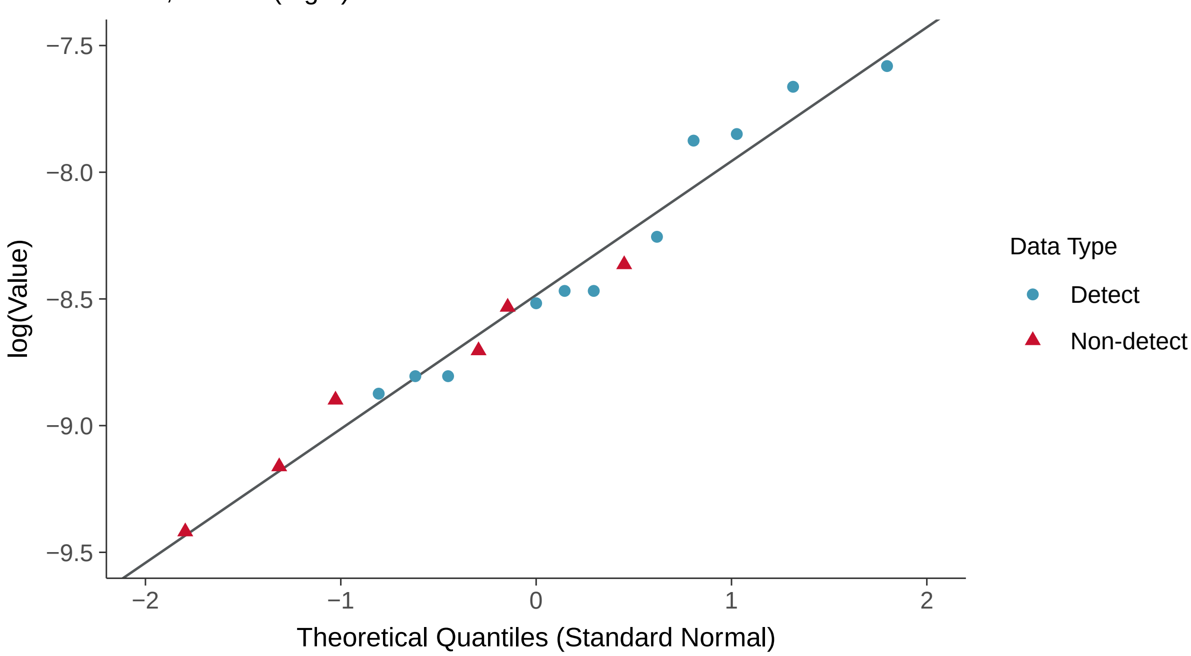
Normal Q-Q plot using ROS Imputed Estimates

Lead, MW-12 (mg/L)



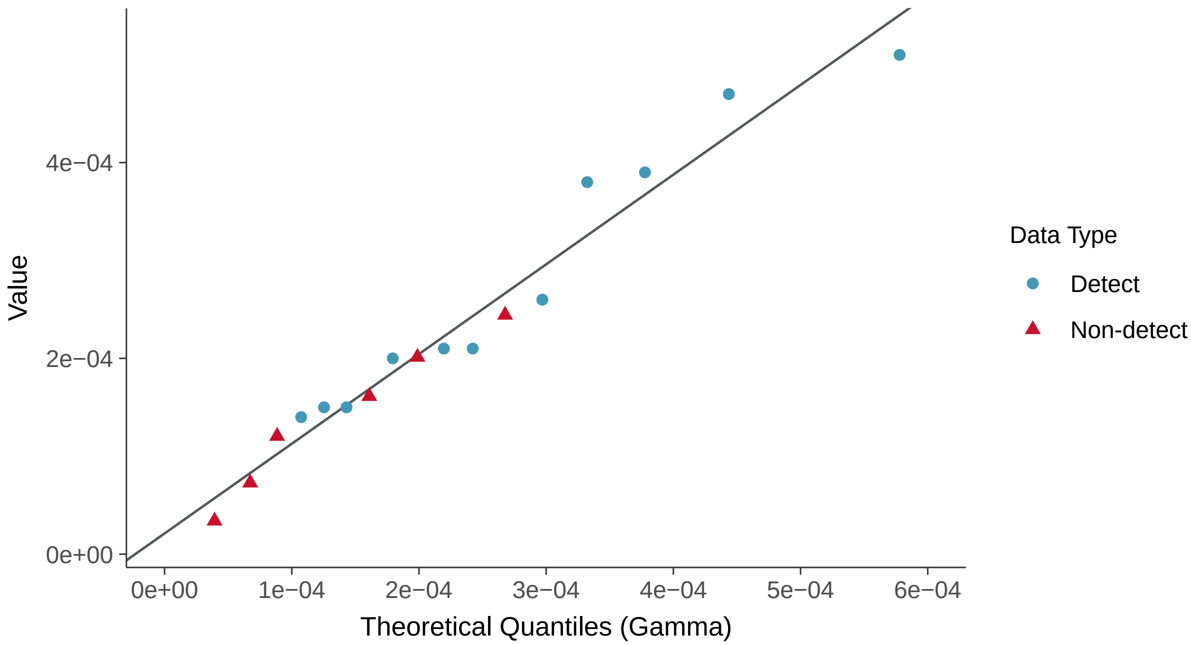
Lognormal Q-Q plot using ROS Imputed Estimates

Lead, MW-12 (mg/L)



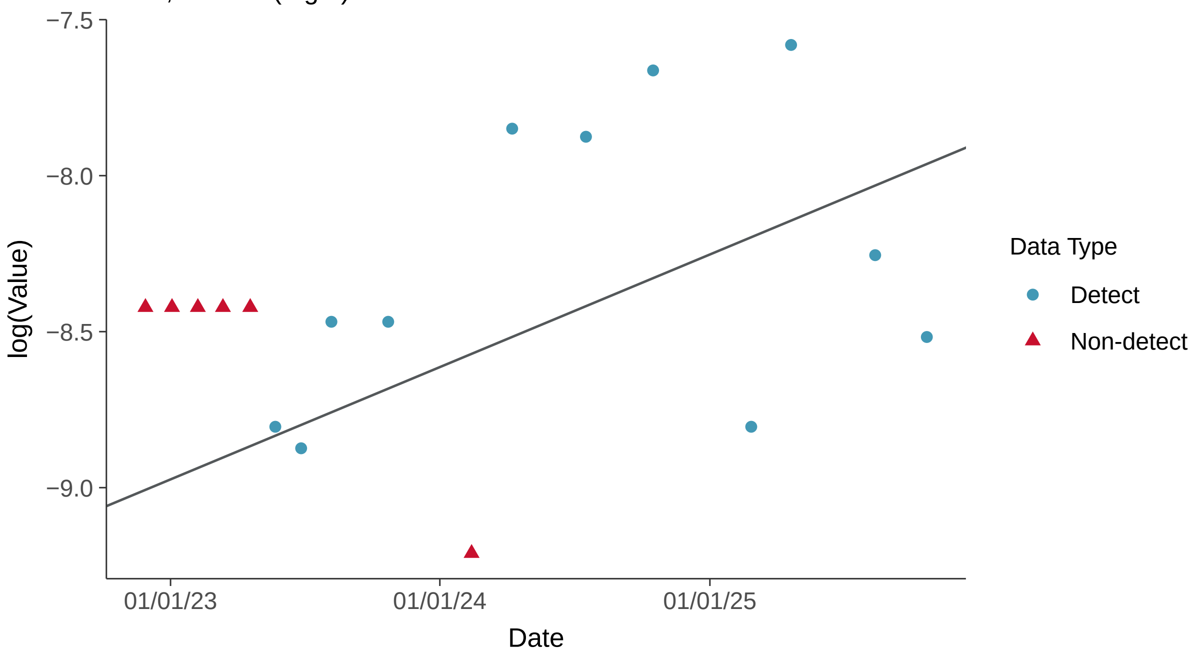
Gamma Q-Q plot using ROS Imputed Estimates

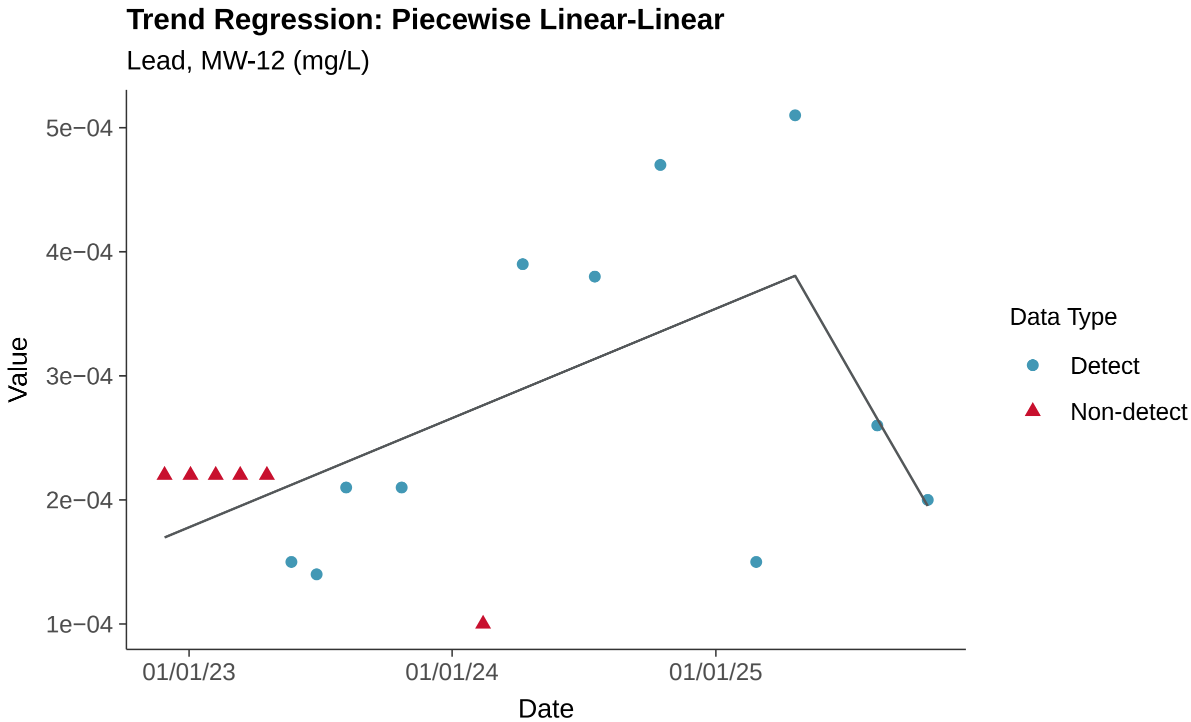
Lead, MW-12 (mg/L)

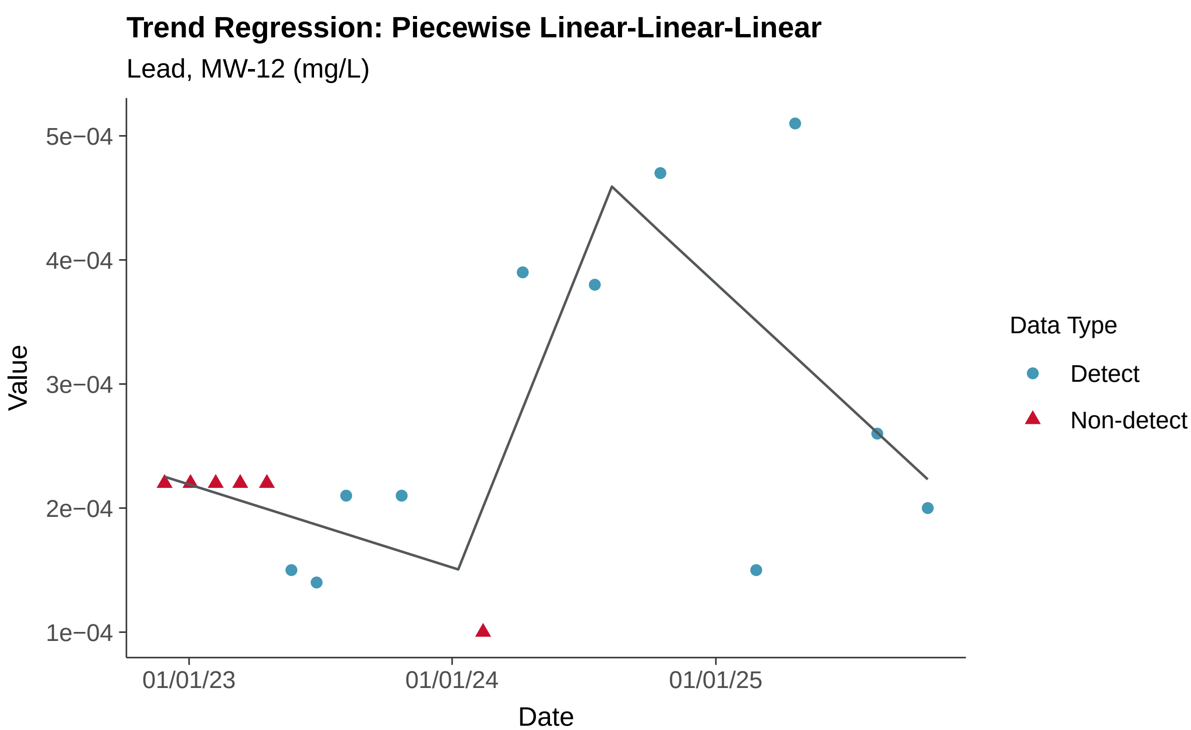


Trend Regression: Lognormal MLE

Lead, MW-12 (mg/L)

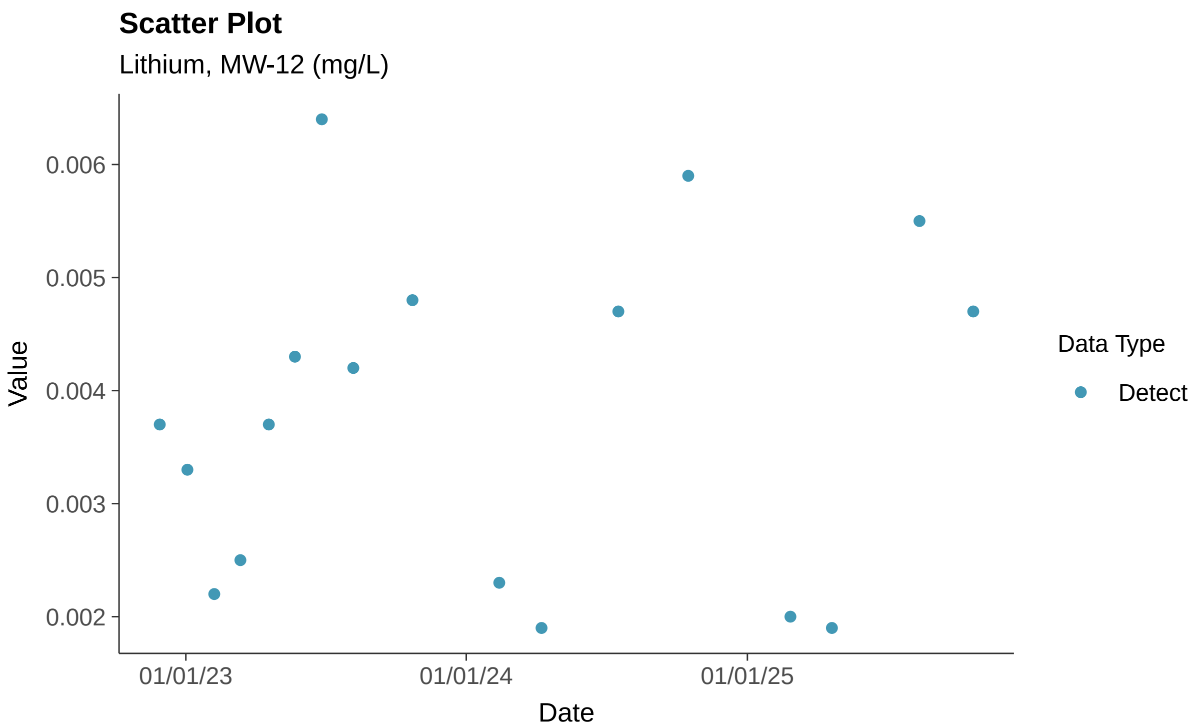


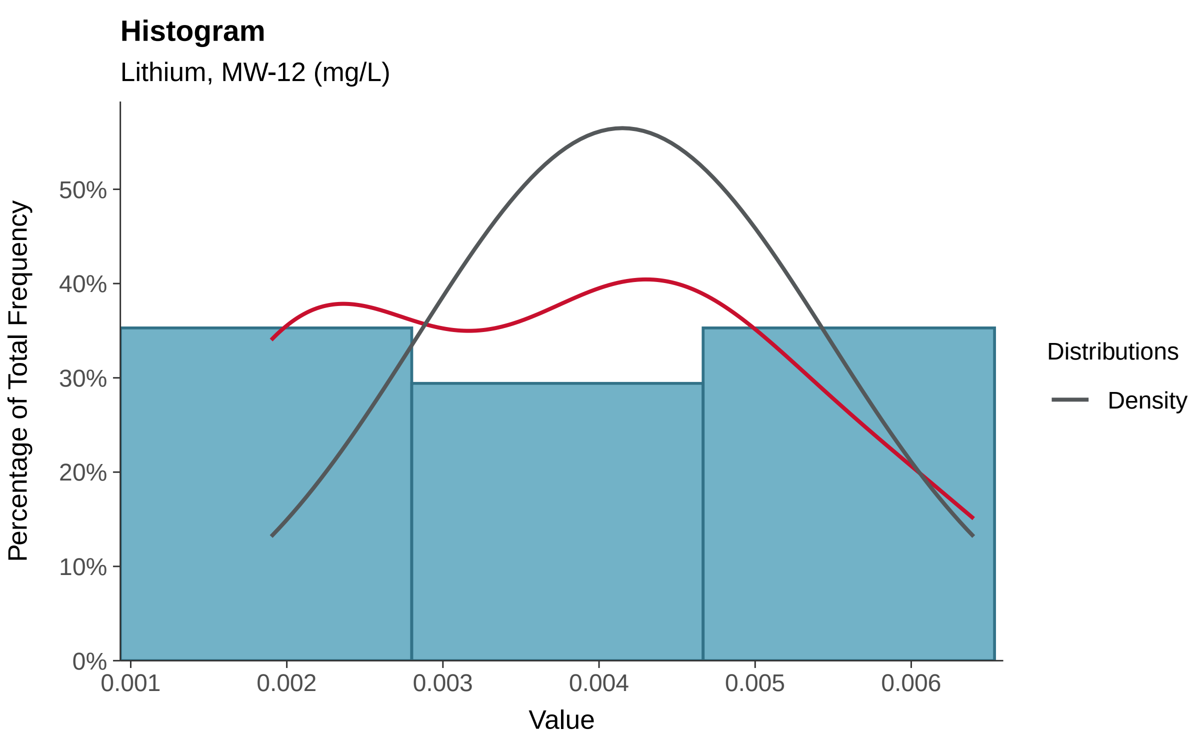

Trend Regression: Piecewise Linear-Linear
Lead, MW-12 (mg/L)
Value
5e−04
4e−04
3e−04
2e−04
1e−04
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear-Linear
Lead, MW-12 (mg/L)
Value
5e−04
4e−04
3e−04
2e−04
1e−04
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Appendix IV: Lithium, MW-12

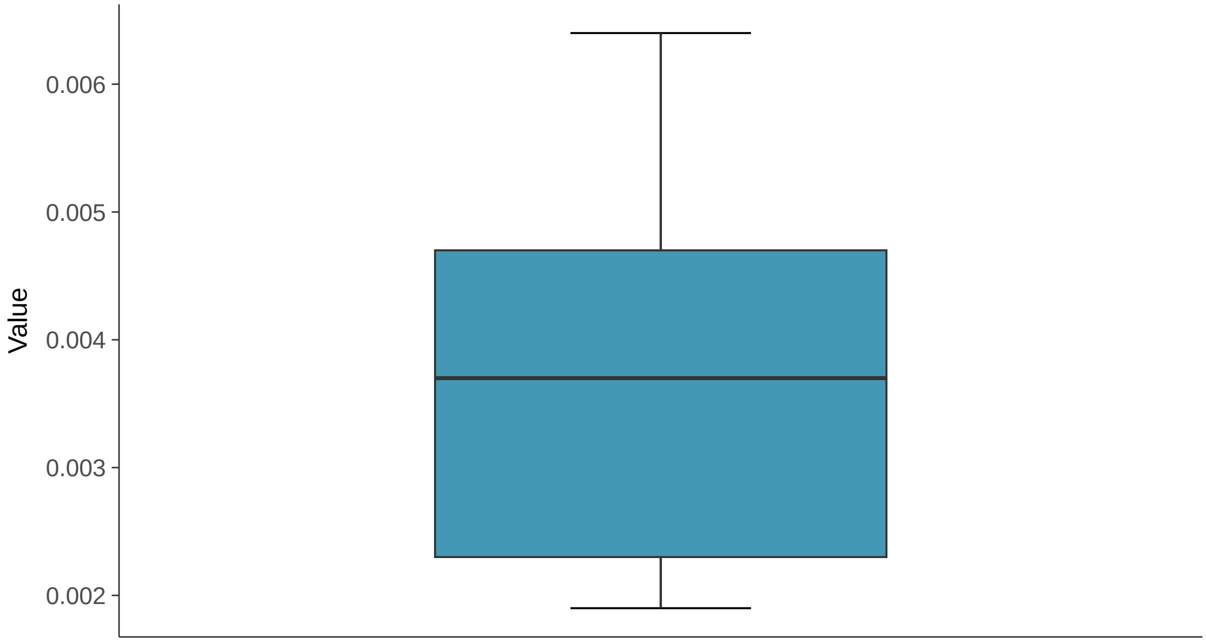
ID: 22_2_4_116





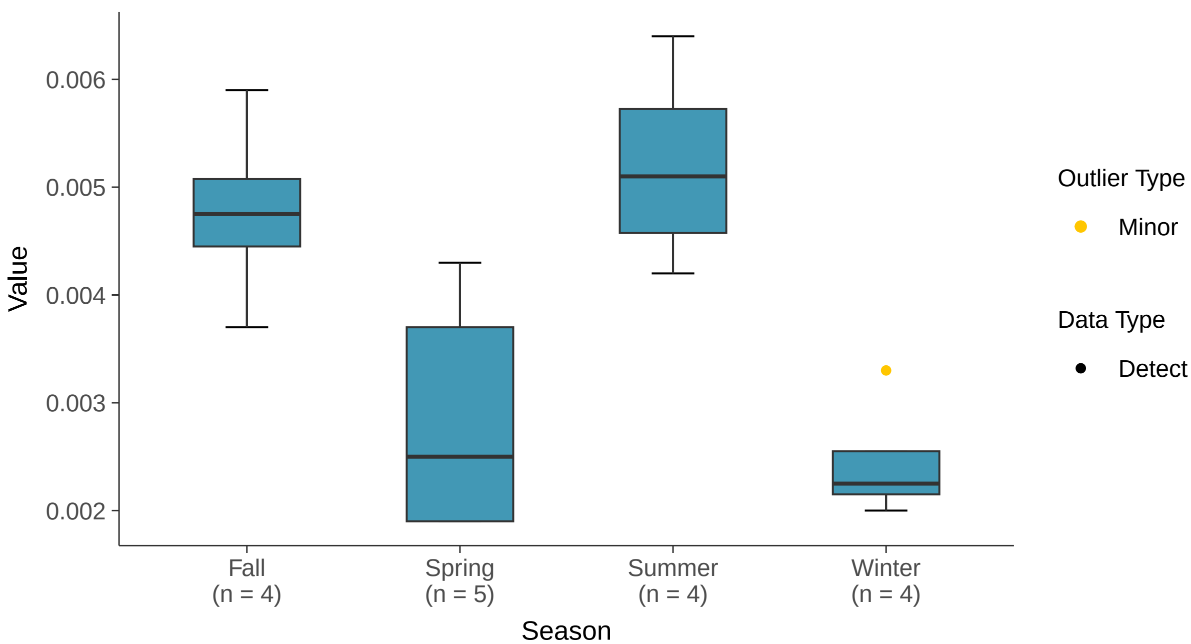
Boxplot

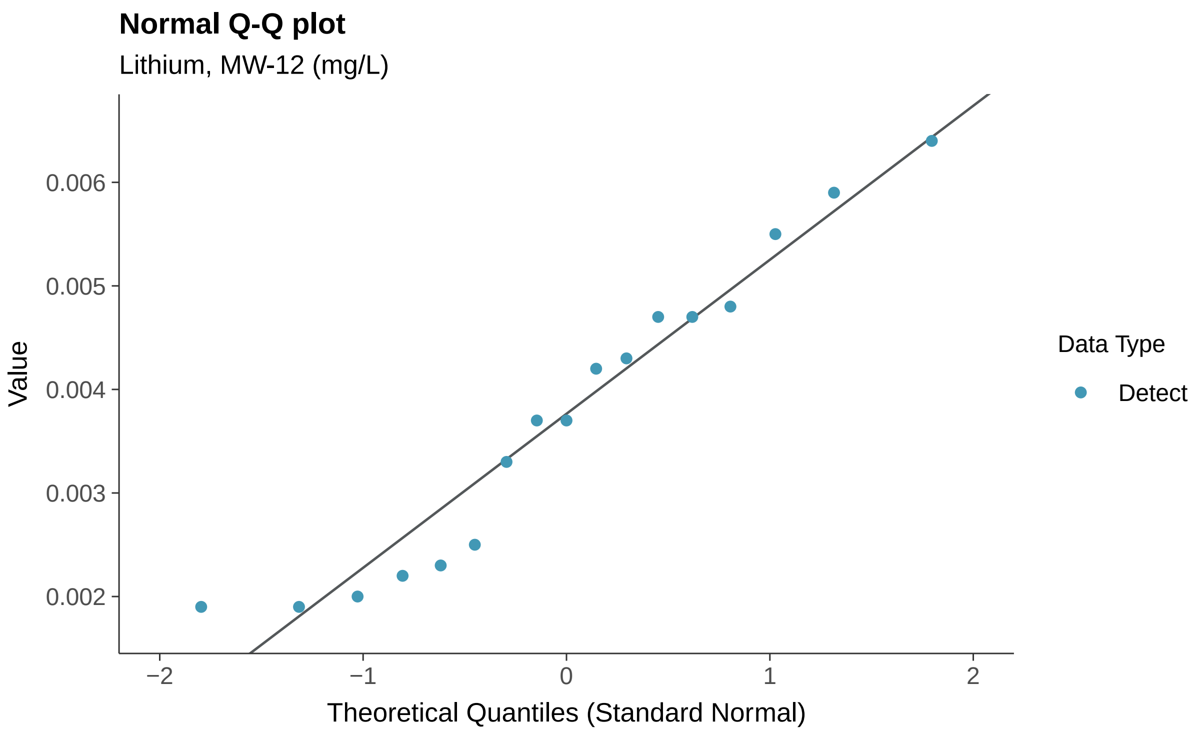
Lithium, MW-12 (mg/L)

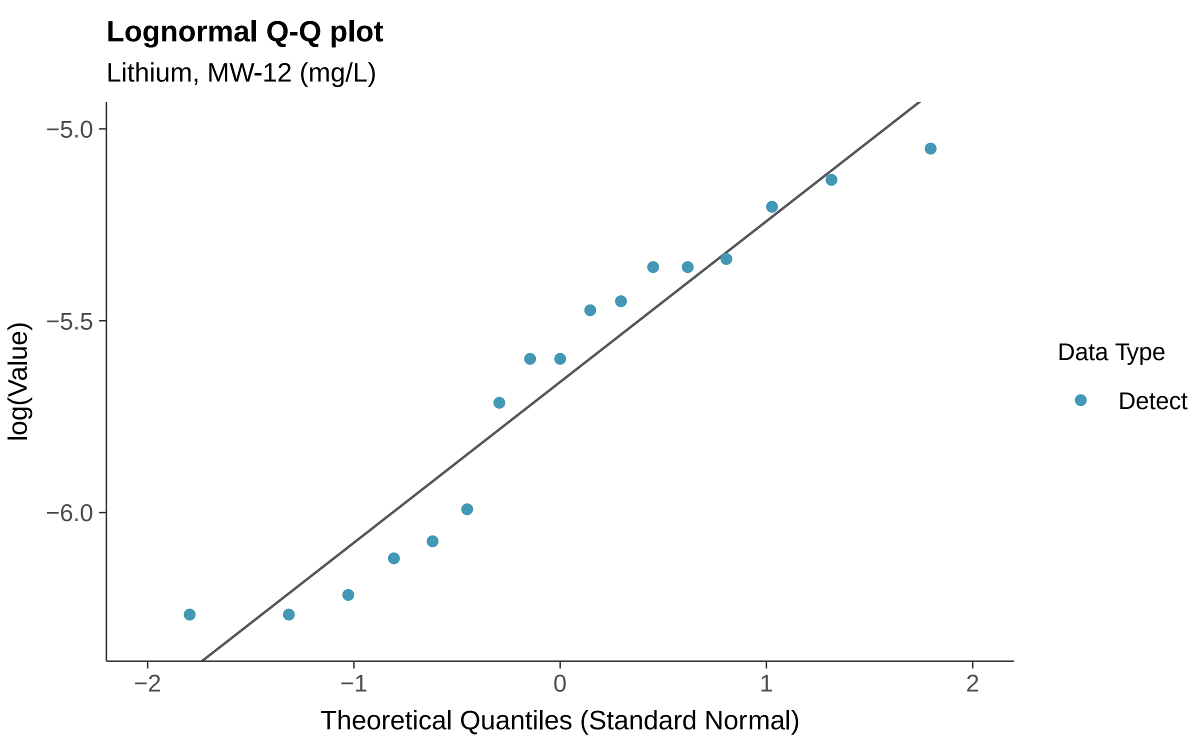


Boxplot by Season

Lithium, MW-12 (mg/L)

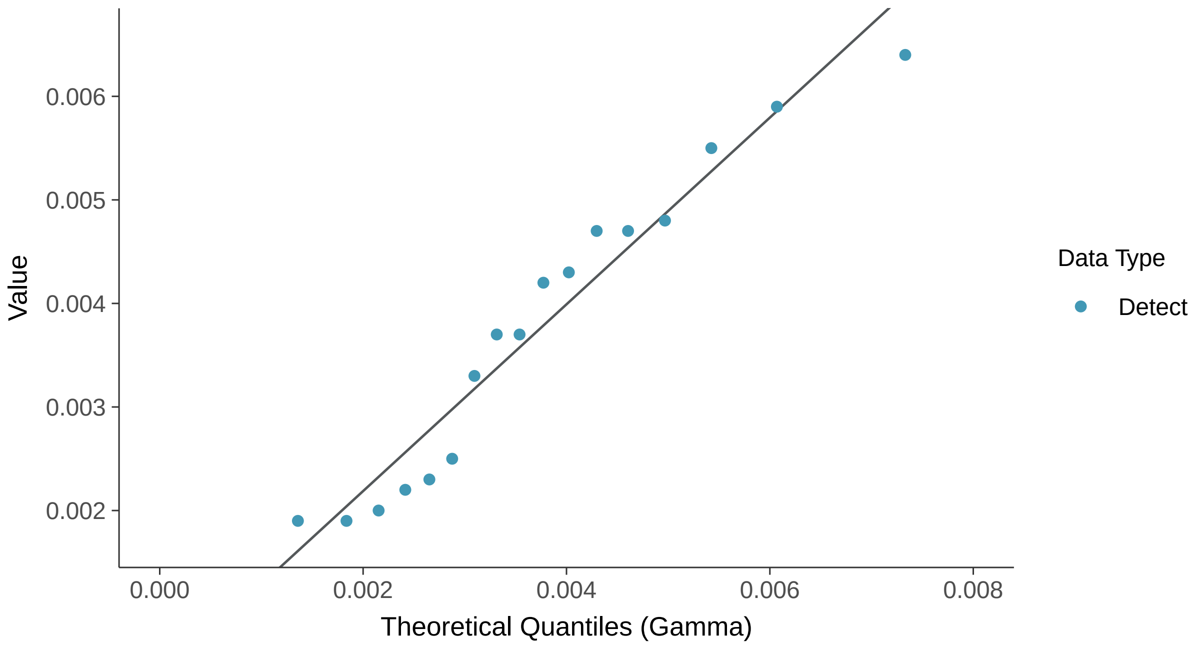



Normal Q-Q plot
Lithium, MW-12 (mg/L)
Value
0.006
0.005
0.004
0.003
0.002
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Lithium, MW-12 (mg/L)
log(Value)
−5.0
−5.5
−6.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

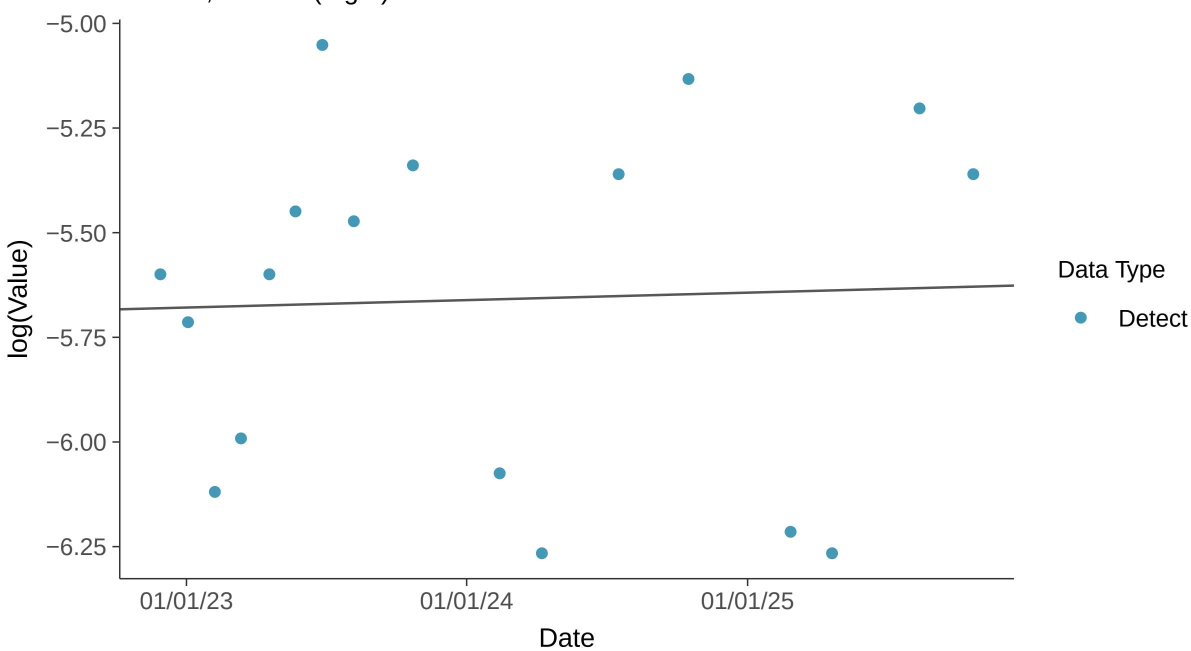
Gamma Q-Q plot

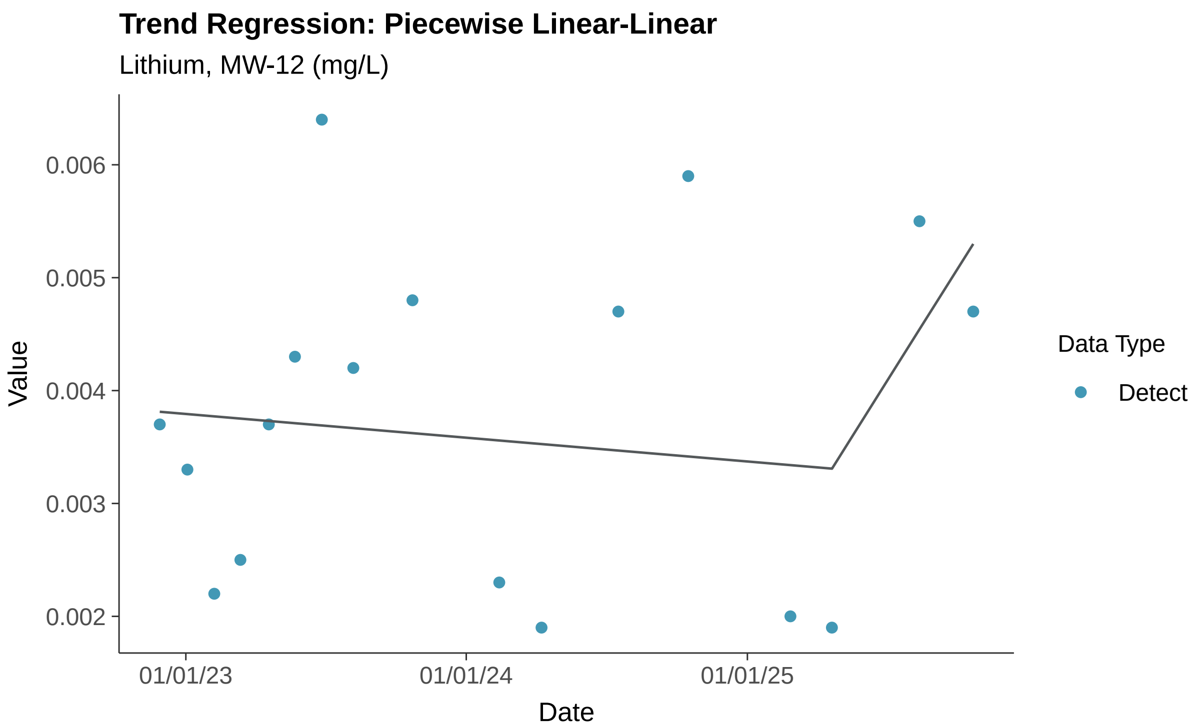
Lithium, MW-12 (mg/L)



Trend Regression: Lognormal MLE

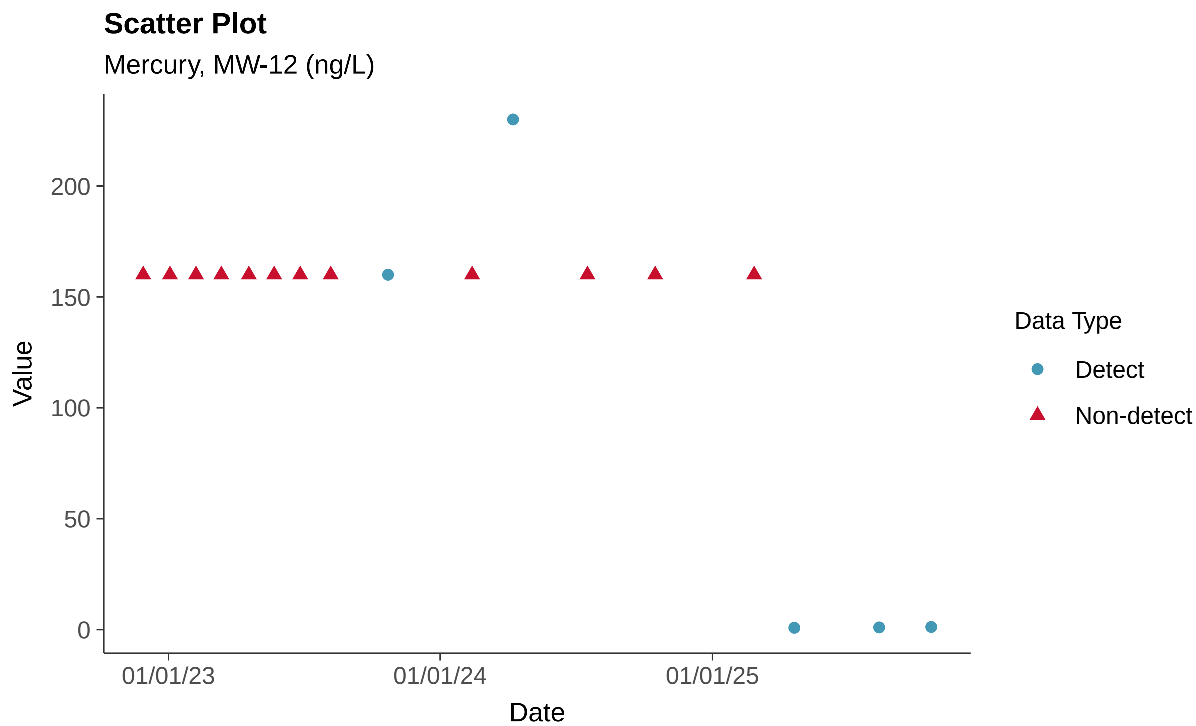
Lithium, MW-12 (mg/L)

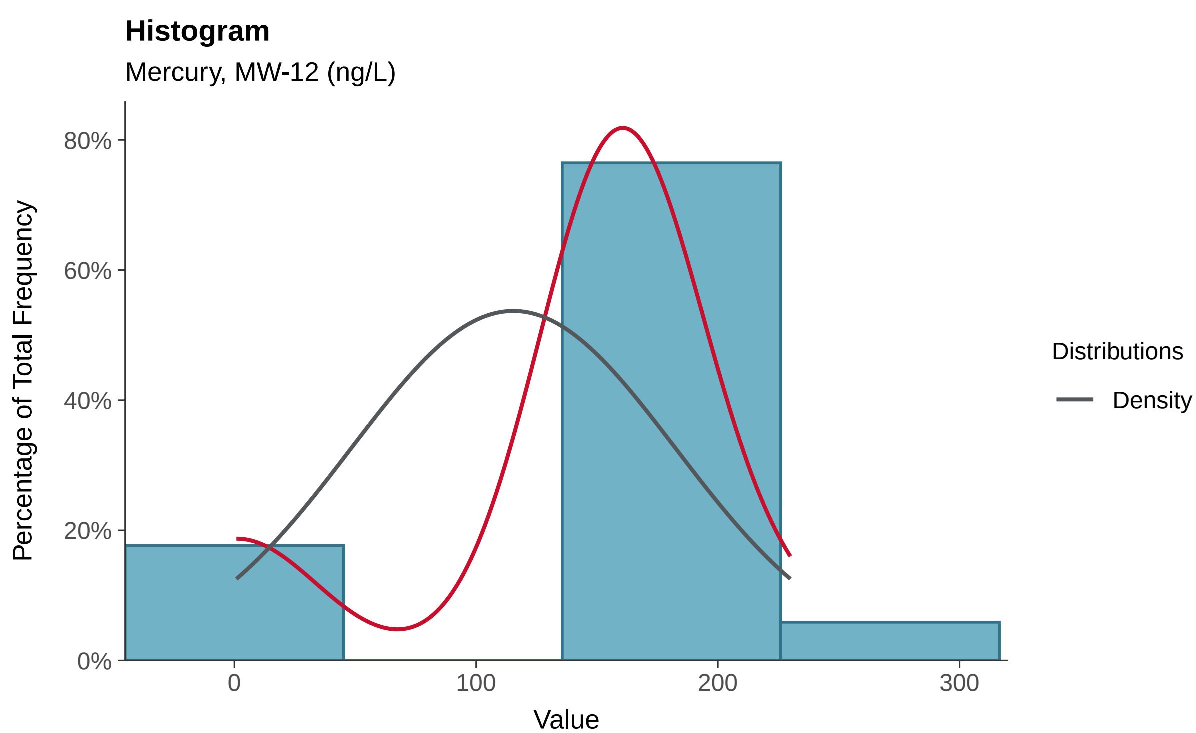


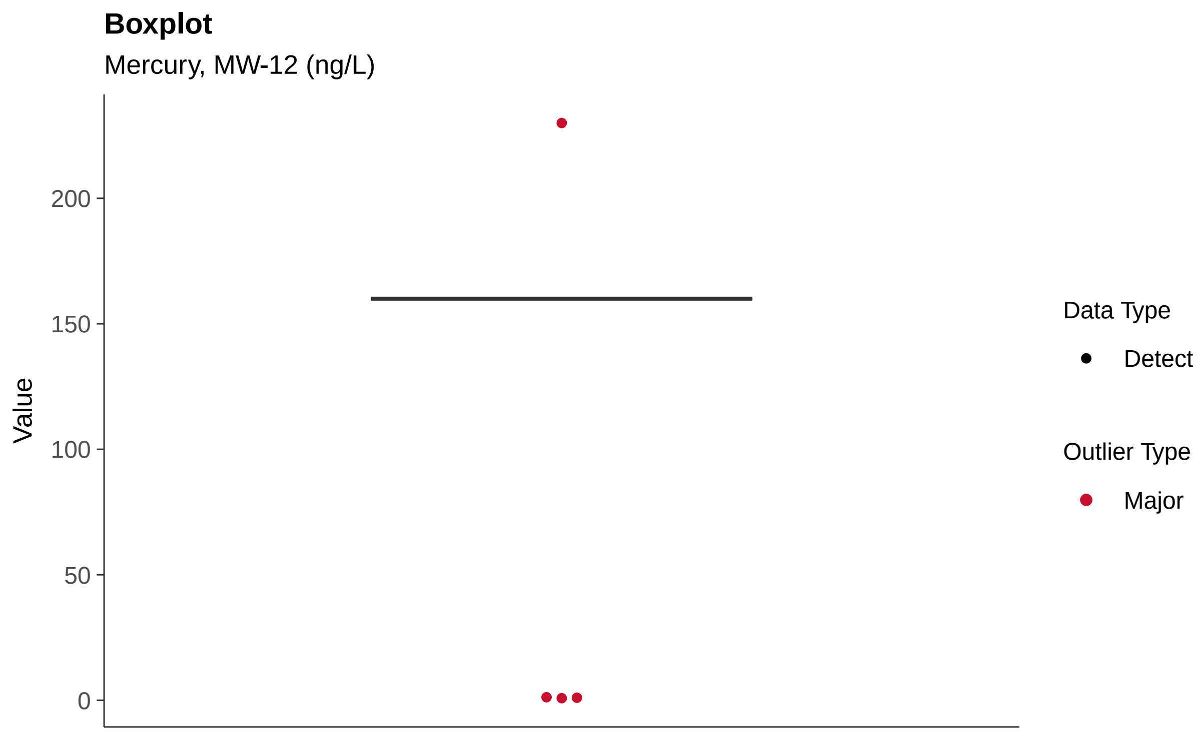

Trend Regression: Piecewise Linear-Linear
Lithium, MW-12 (mg/L)
Value
0.006
0.005
0.004
0.003
0.002
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

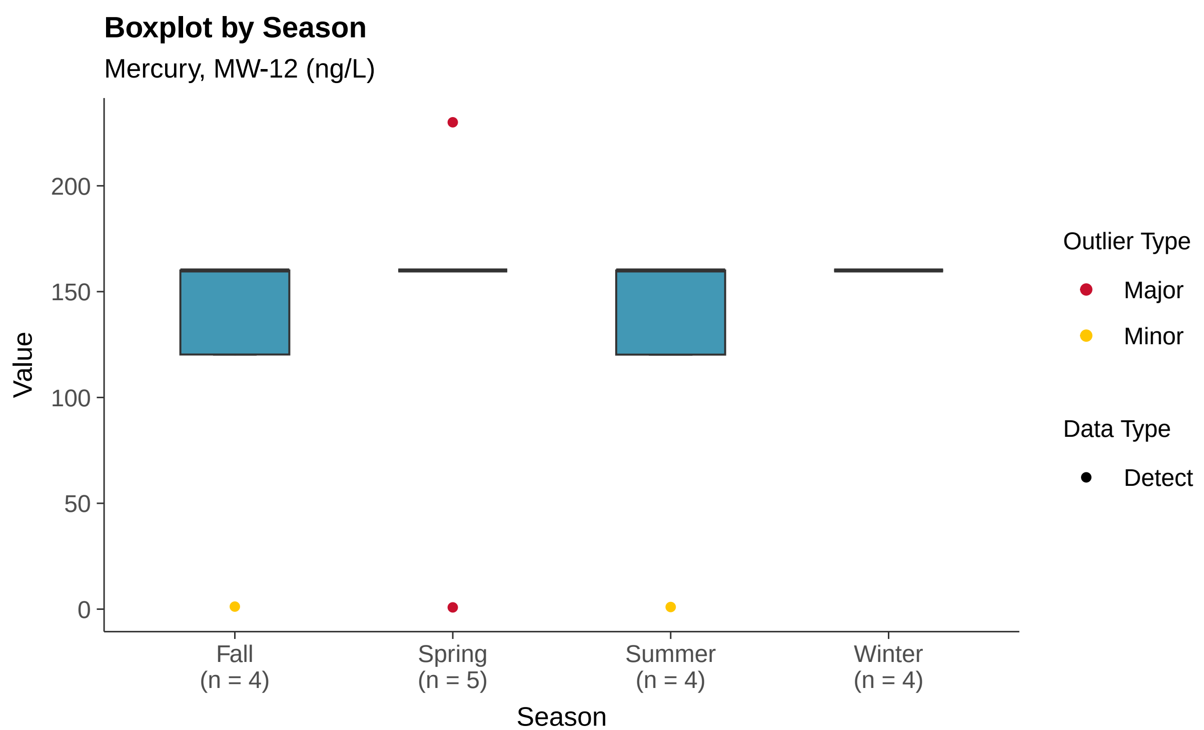
Appendix IV: Mercury, MW-12

ID: 22_2_4_117



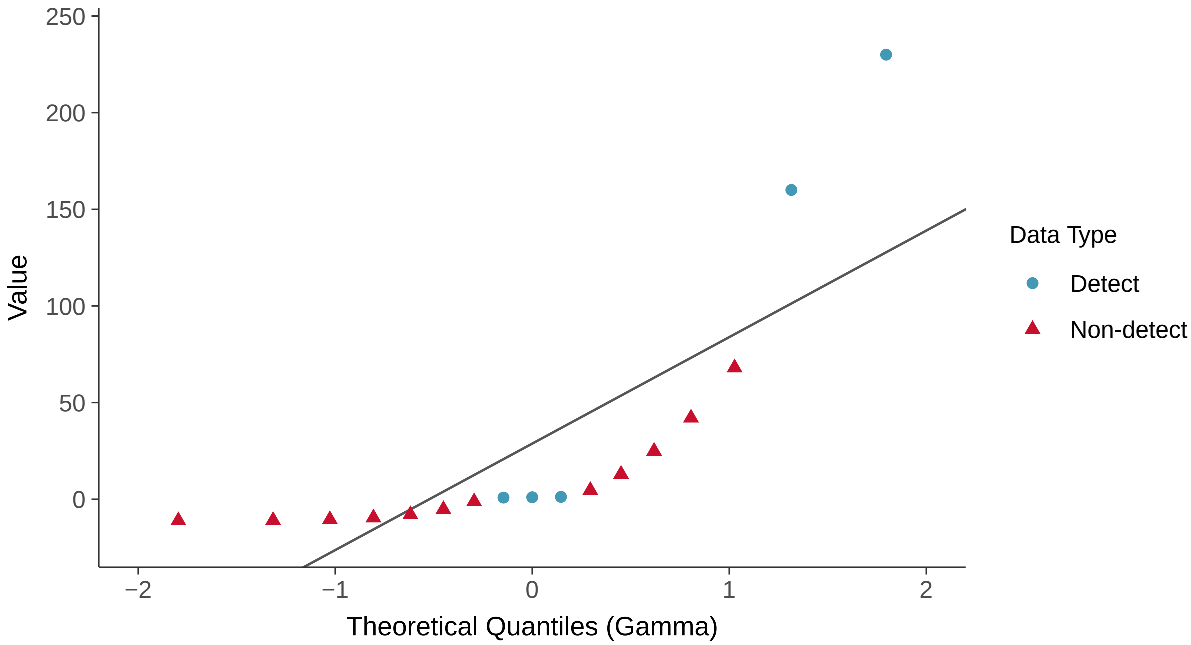



Boxplot
Mercury, MW-12 (ng/L)
Value
200
150
100
50
0
Data Type
Detect
Outlier Type
Major


Boxplot by Season
Mercury, MW-12 (ng/L)
Value
200
150
100
50
0
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Major
Minor
Data Type
Detect

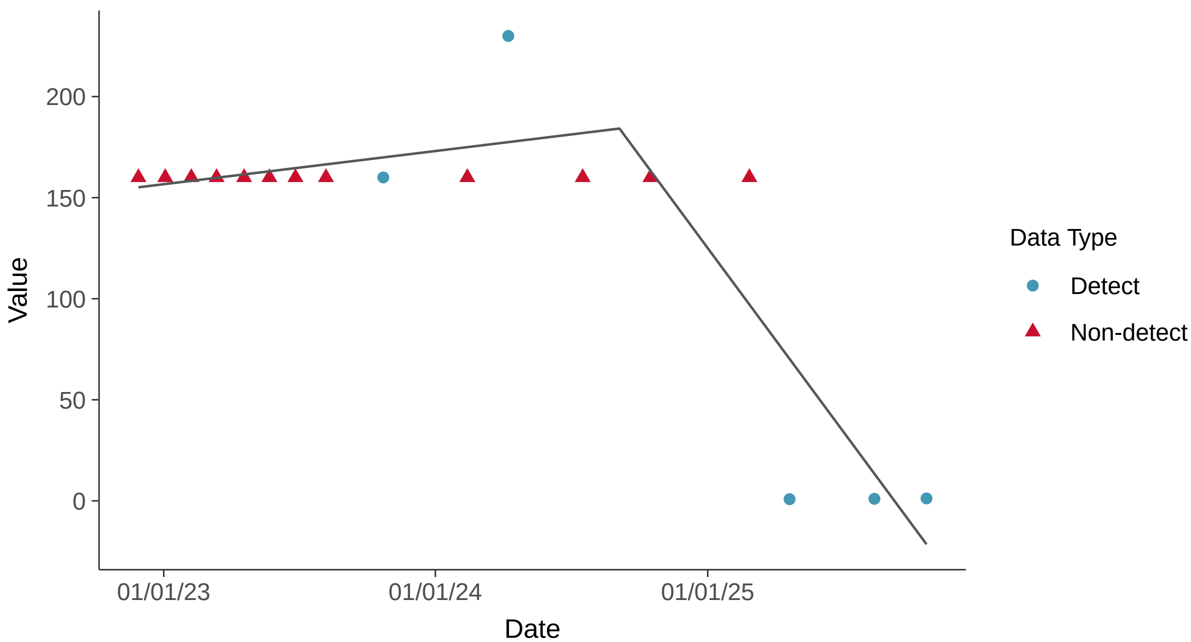
Gamma Q-Q plot using ROS Imputed Estimates

Mercury, MW-12 (ng/L)



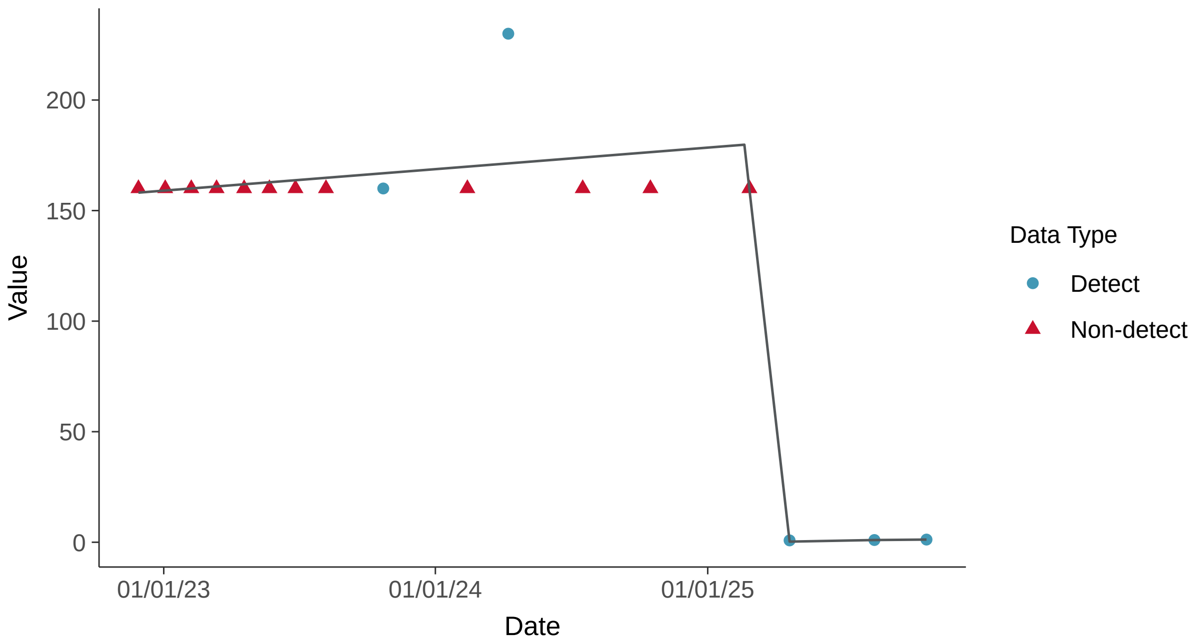
Trend Regression: Piecewise Linear-Linear

Mercury, MW-12 (ng/L)



Trend Regression: Piecewise Linear-Linear-Linear

Mercury, MW-12 (ng/L)

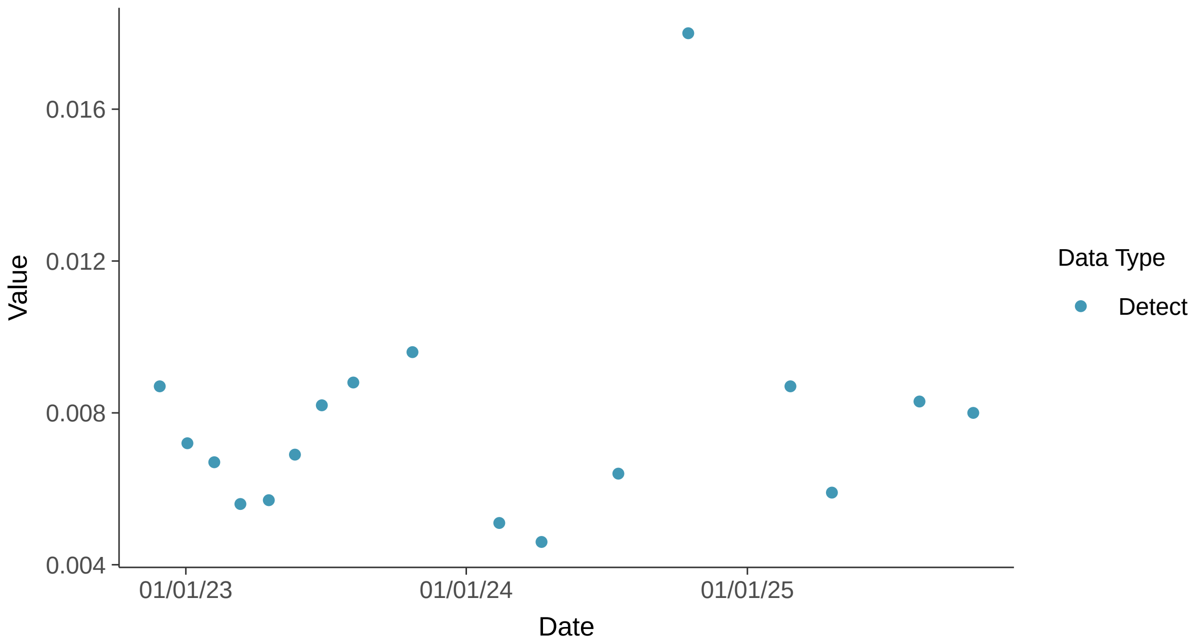


Appendix IV: Molybdenum, MW-12

ID: 22_2_4_118

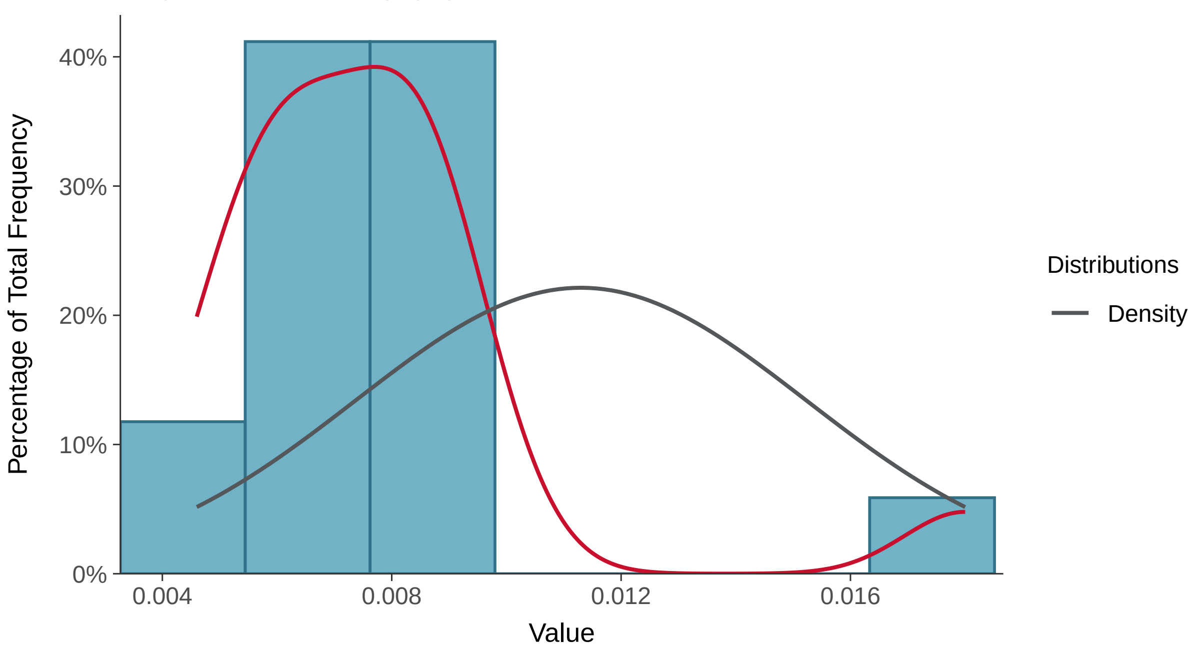
Scatter Plot

Molybdenum, MW-12 (mg/L)



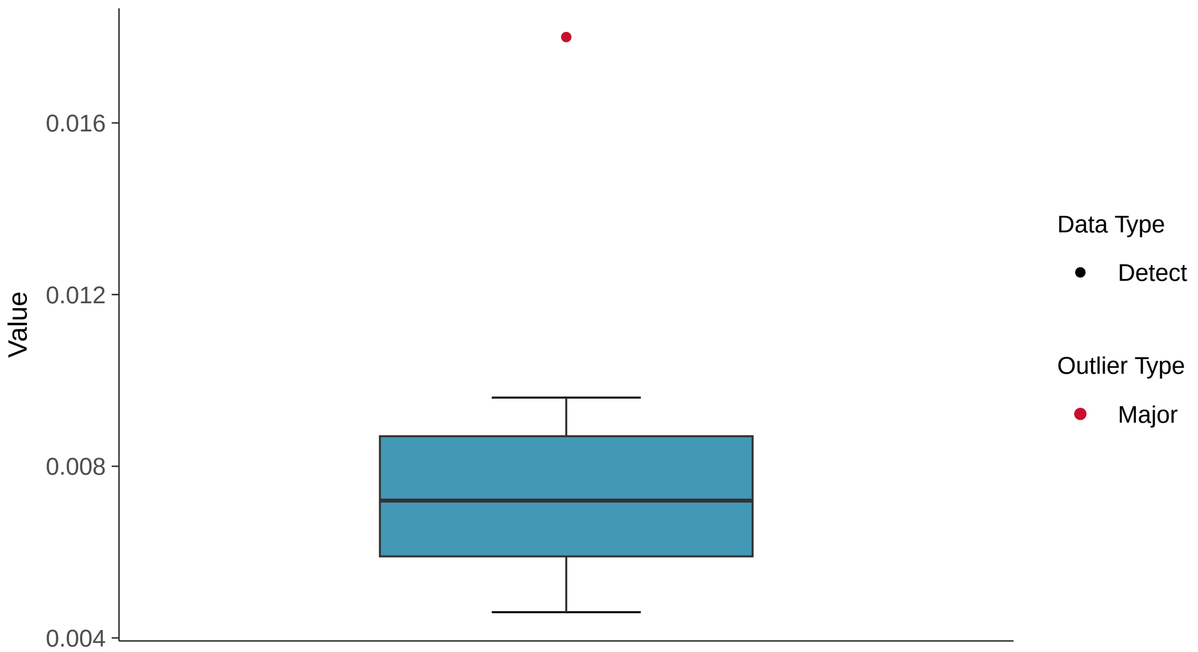
Histogram

Molybdenum, MW-12 (mg/L)



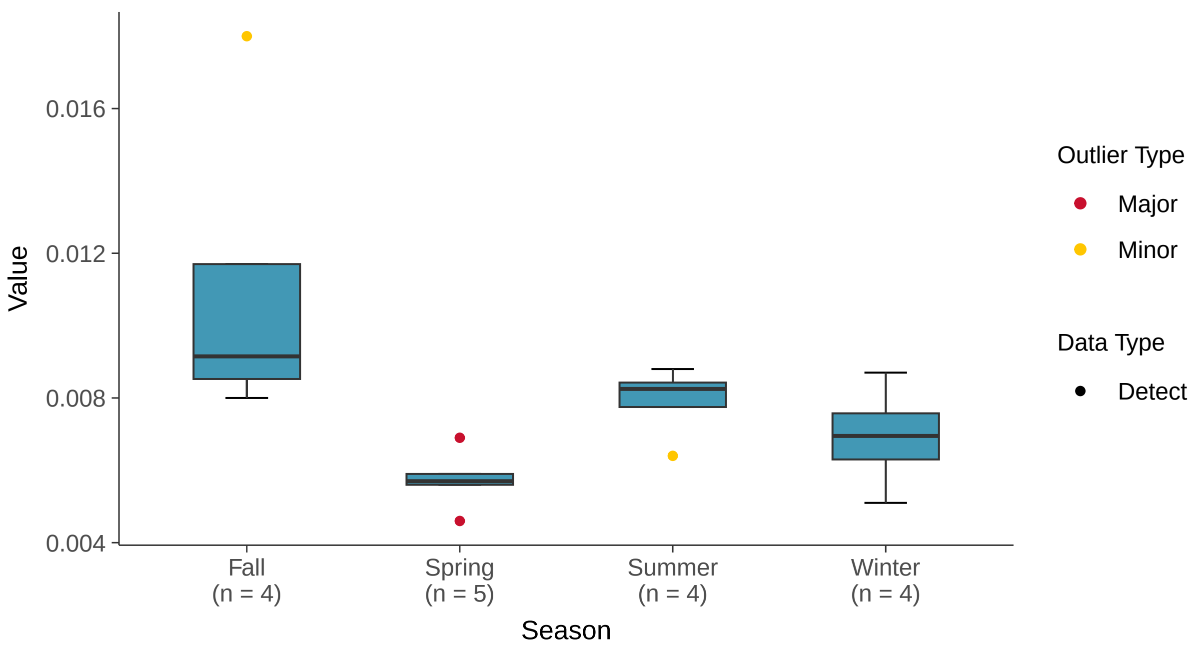
Boxplot

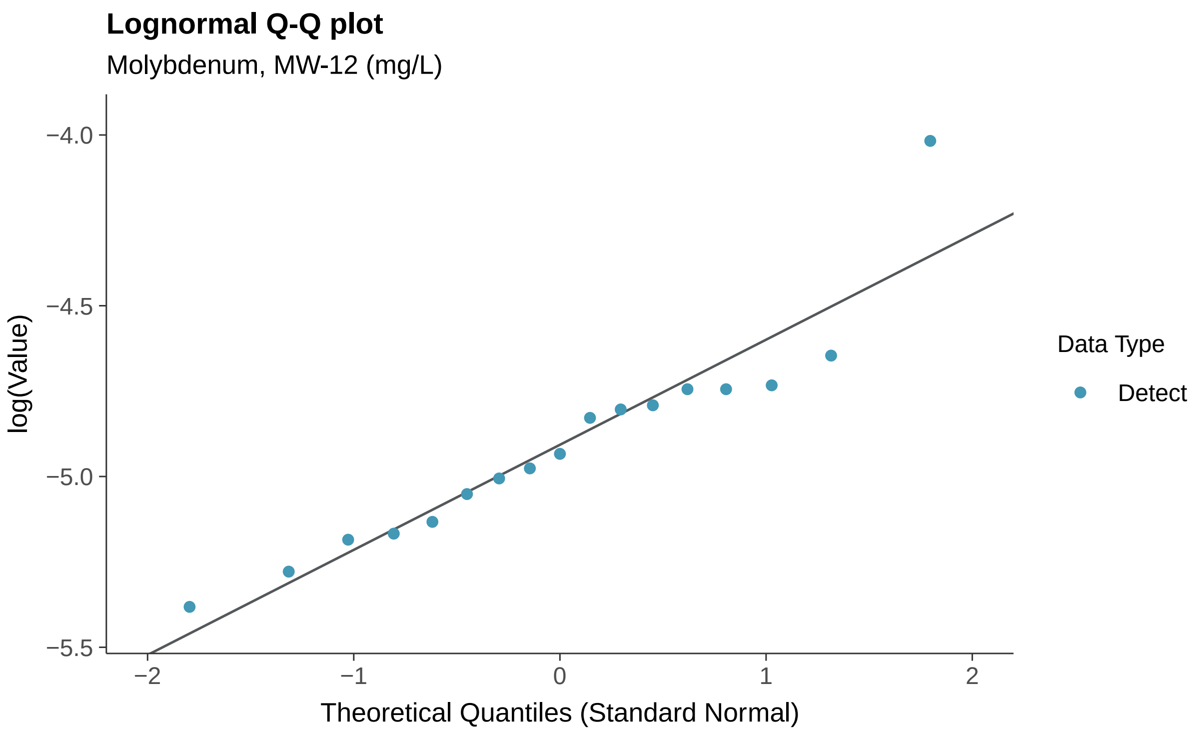
Molybdenum, MW-12 (mg/L)

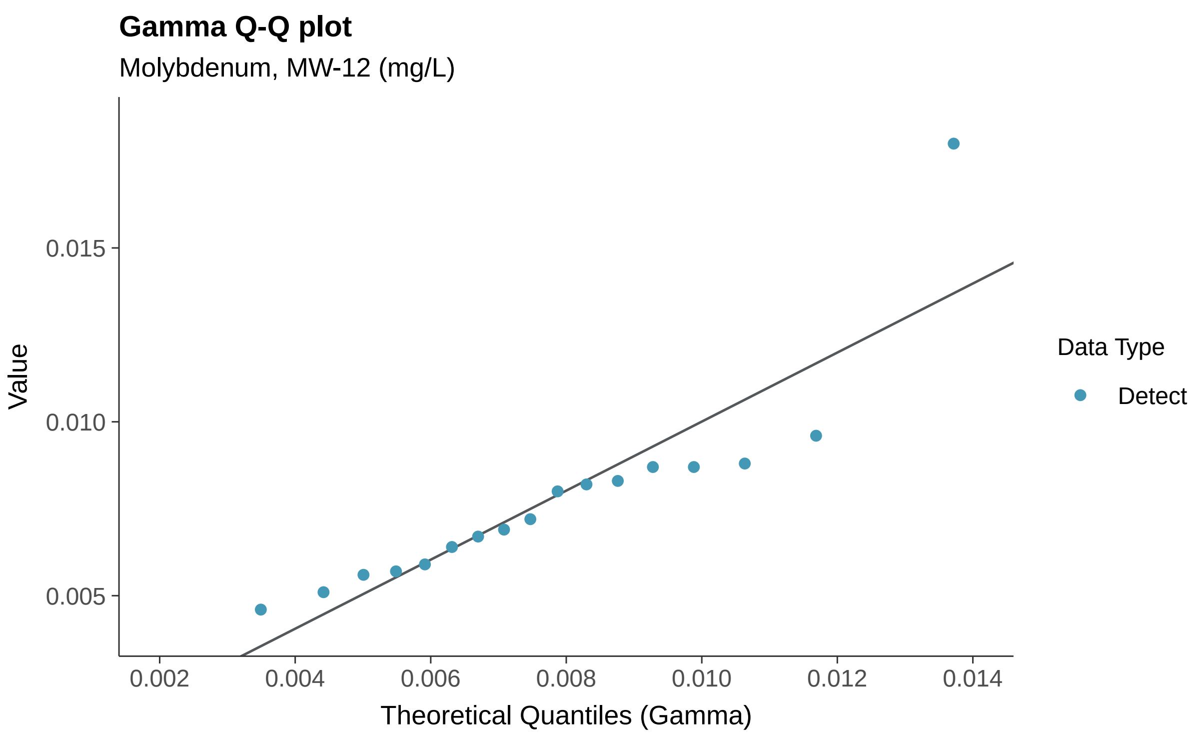


Boxplot by Season

Molybdenum, MW-12 (mg/L)

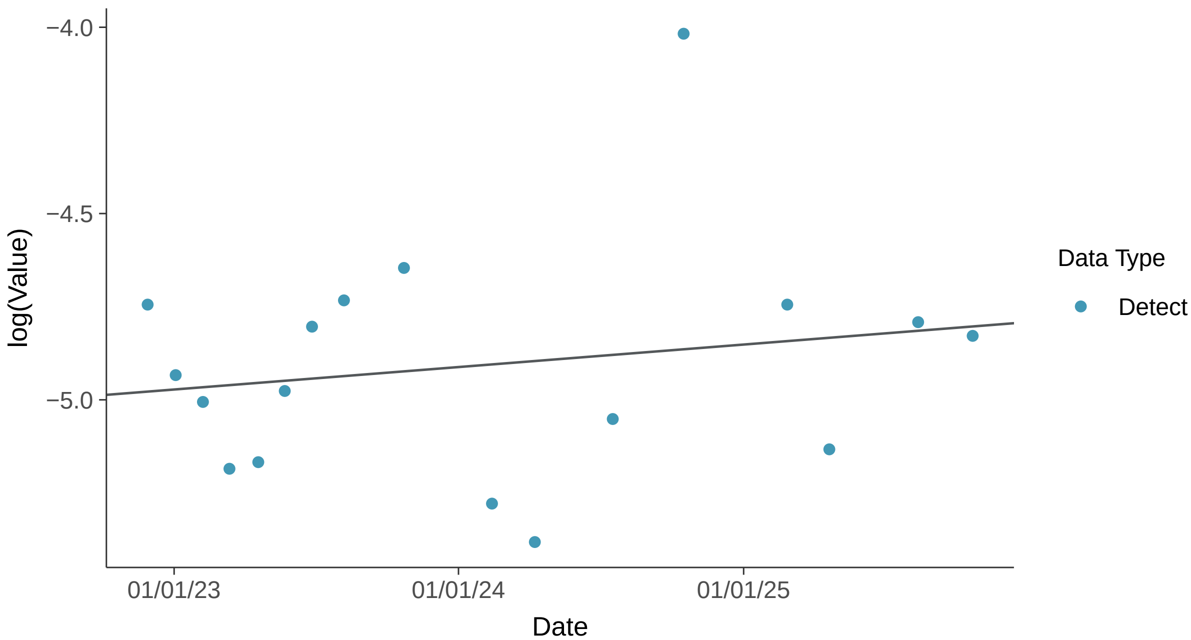



Lognormal Q-Q plot
Molybdenum, MW-12 (mg/L)
−4.0
−4.5
−5.0
−5.5
log(Value)
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Molybdenum, MW-12 (mg/L)
0.015
0.010
0.005
Value
0.002
0.004
0.006
0.008
0.010
0.012
0.014
Theoretical Quantiles (Gamma)
Data Type
Detect

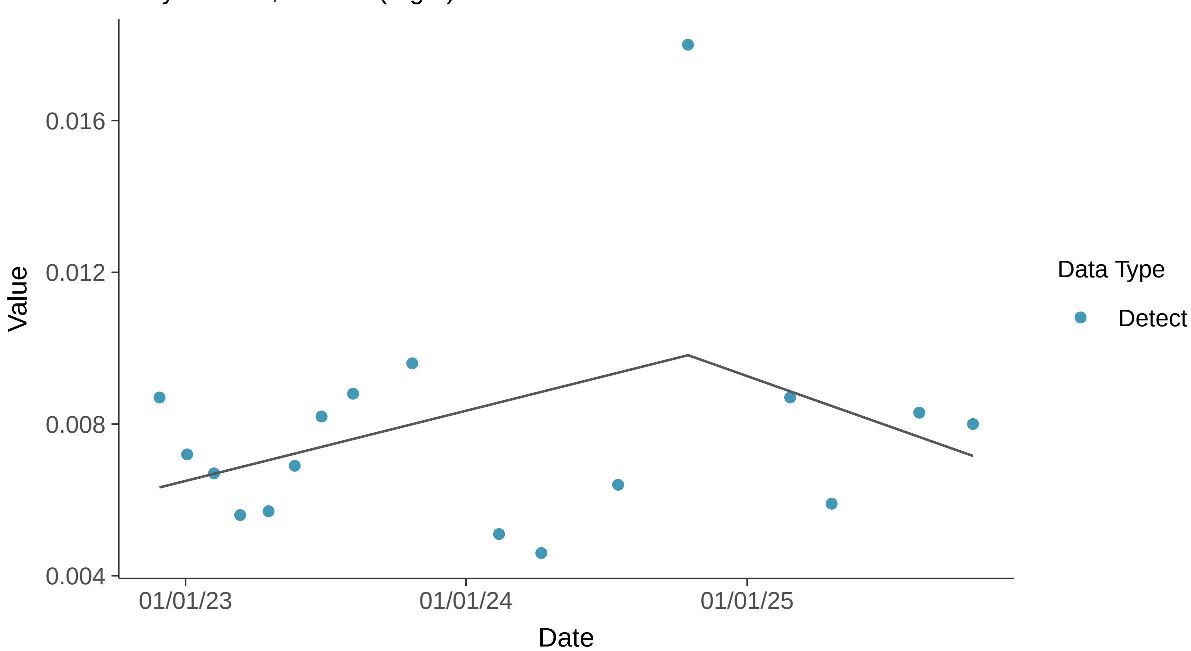
Trend Regression: Lognormal MLE

Molybdenum, MW-12 (mg/L)



Trend Regression: Piecewise Linear-Linear

Molybdenum, MW-12 (mg/L)

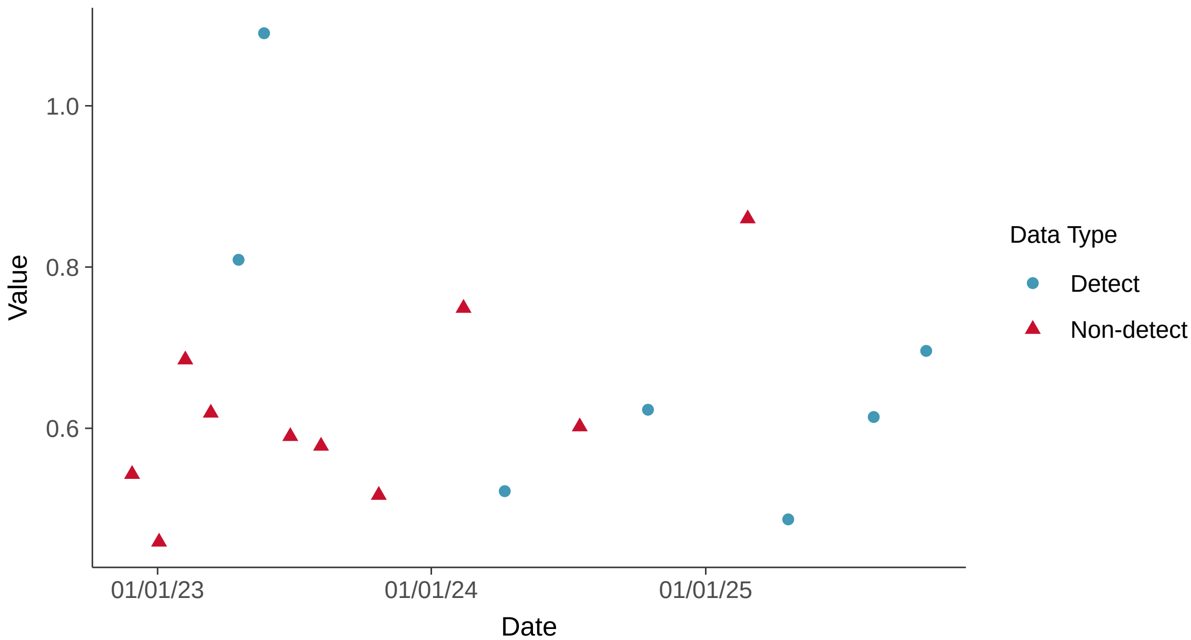


Appendix IV: Radium 226 and 228, MW-12

ID: 22_2_4_121

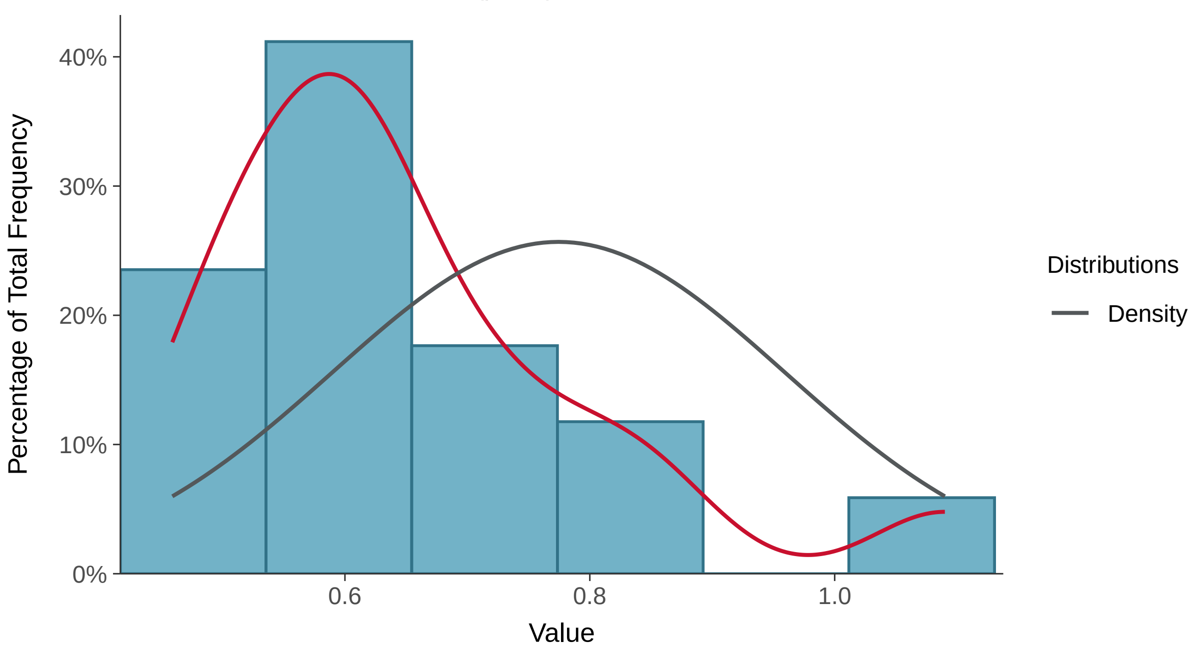
Scatter Plot

Radium 226 and 228, MW-12 (pCi/L)



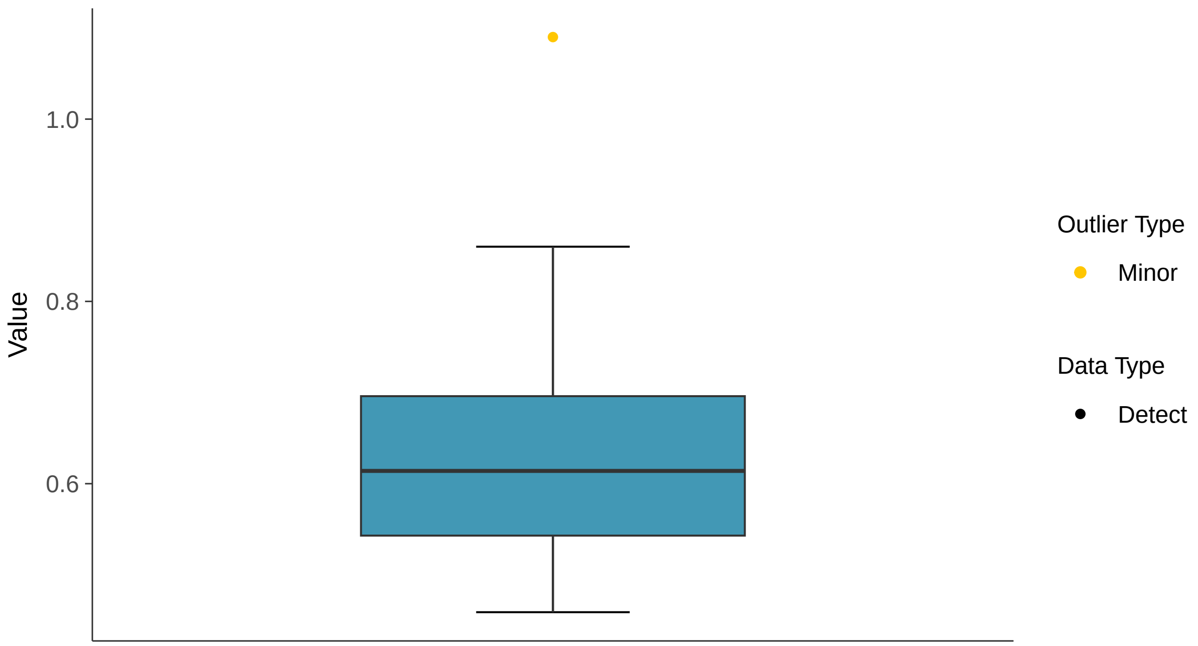
Histogram

Radium 226 and 228, MW-12 (pCi/L)



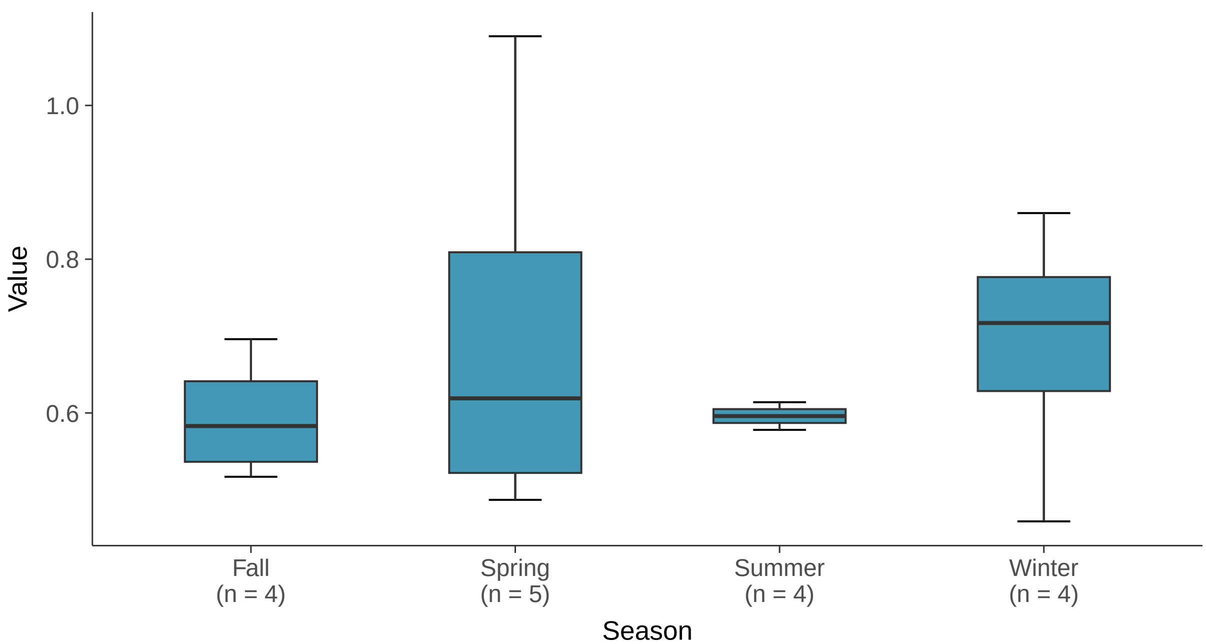
Boxplot

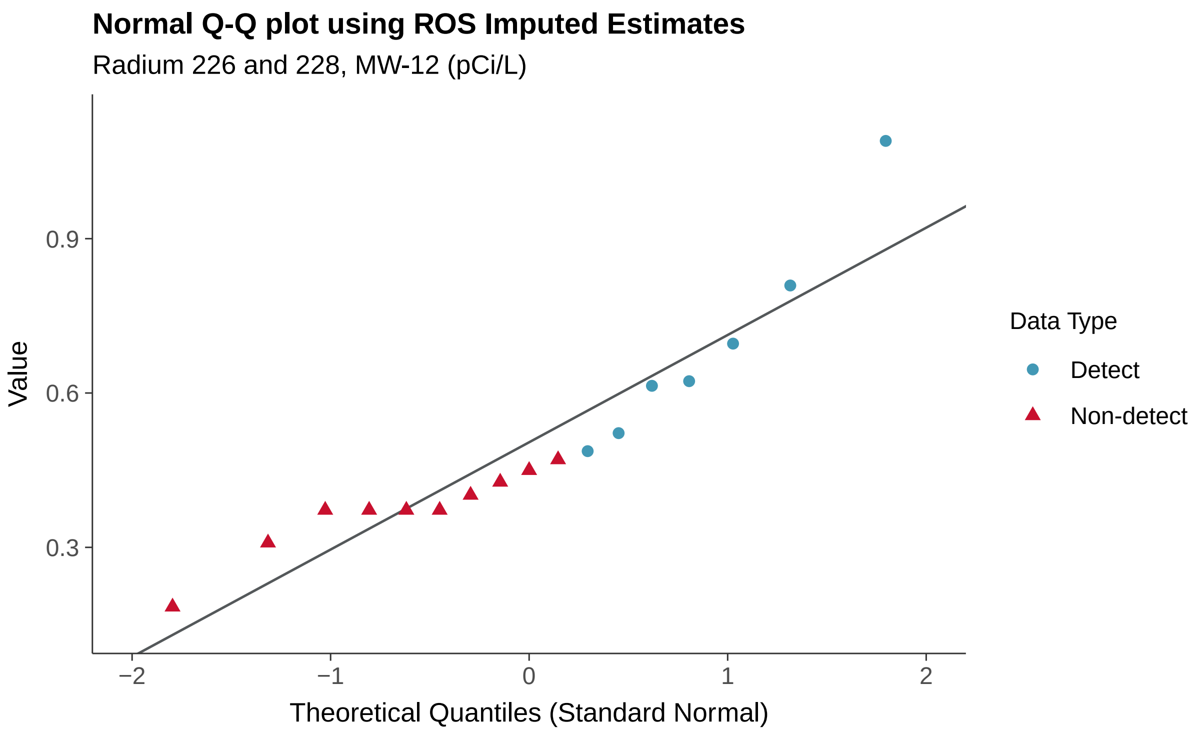
Radium 226 and 228, MW-12 (pCi/L)

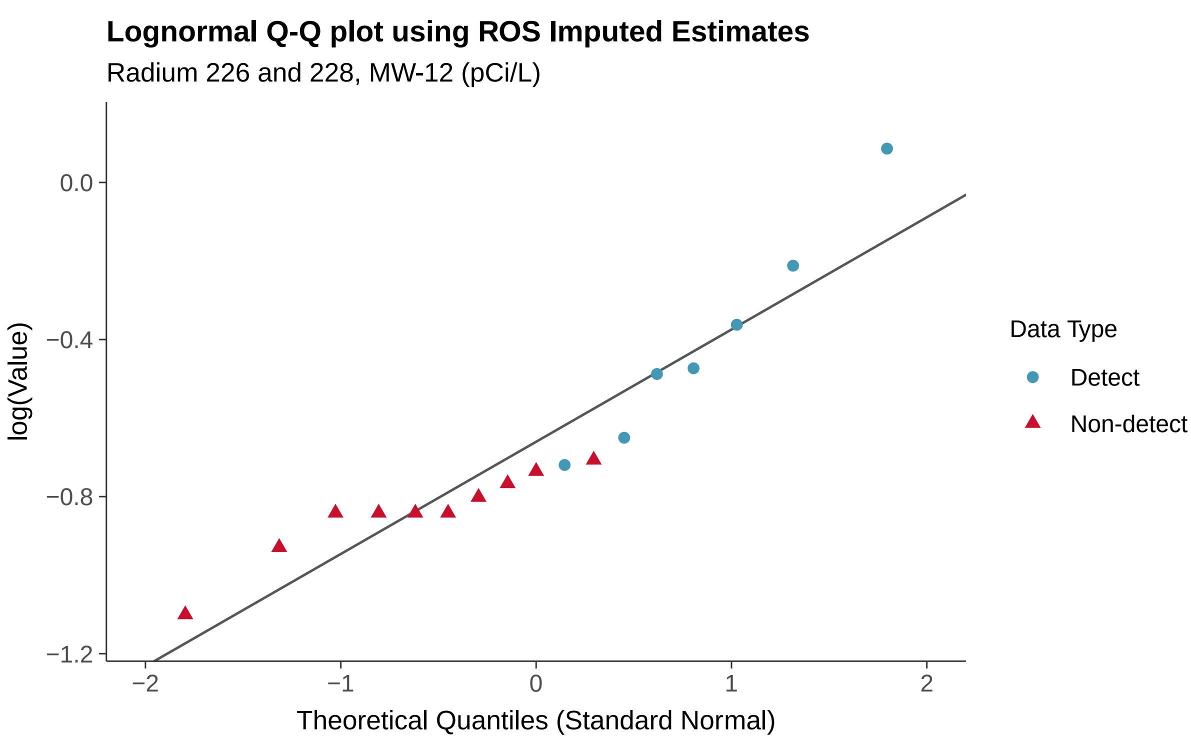


Boxplot by Season

Radium 226 and 228, MW-12 (pCi/L)

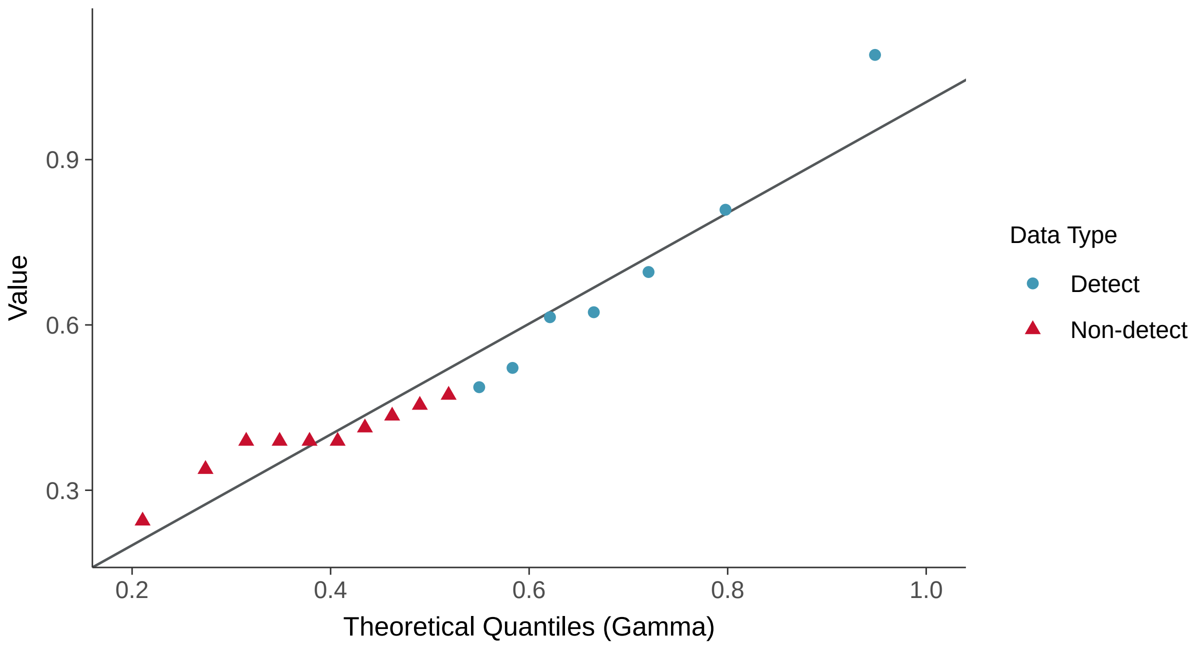



Normal Q-Q plot using ROS Imputed Estimates
Radium 226 and 228, MW-12 (pCi/L)
Value
0.9
0.6
0.3
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Lognormal Q-Q plot using ROS Imputed Estimates
Radium 226 and 228, MW-12 (pCi/L)
log(Value)
0.0
−0.4
−0.8
−1.2
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

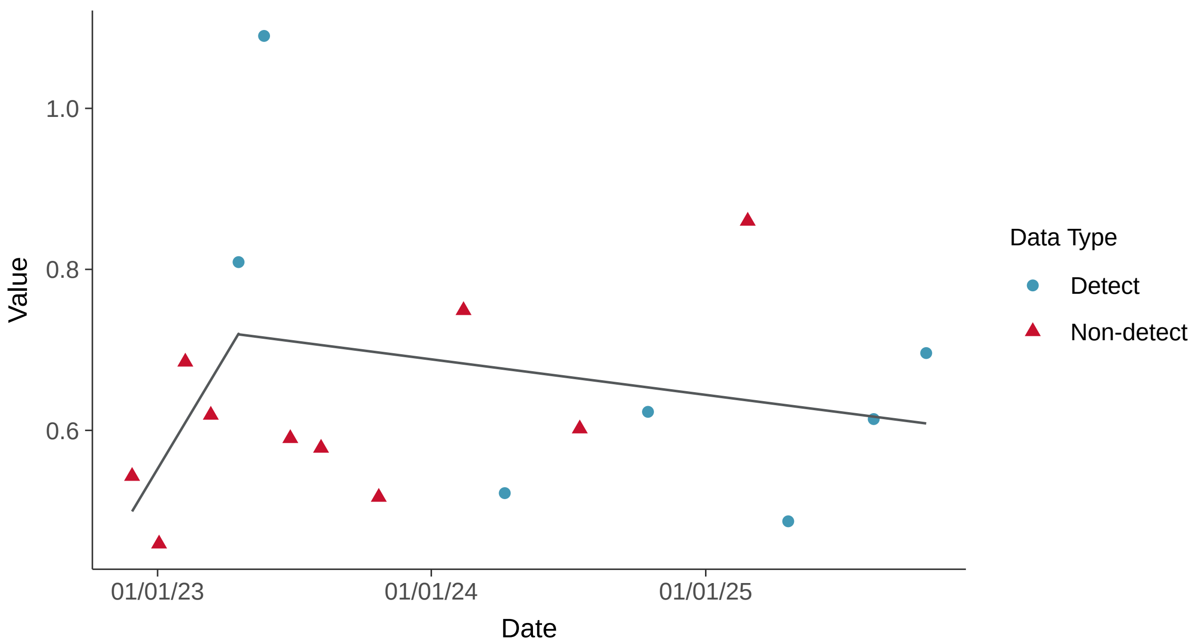
Gamma Q-Q plot using ROS Imputed Estimates

Radium 226 and 228, MW-12 (pCi/L)



Trend Regression: Piecewise Linear-Linear

Radium 226 and 228, MW-12 (pCi/L)

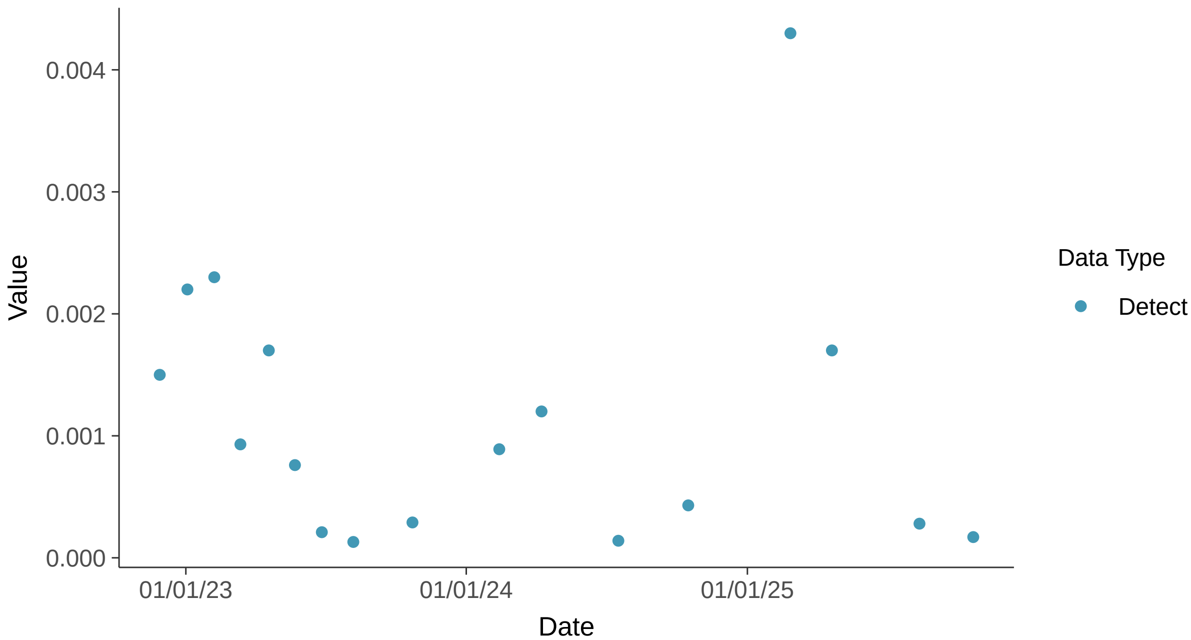


Appendix IV: Selenium, MW-12

ID: 22_2_4_122

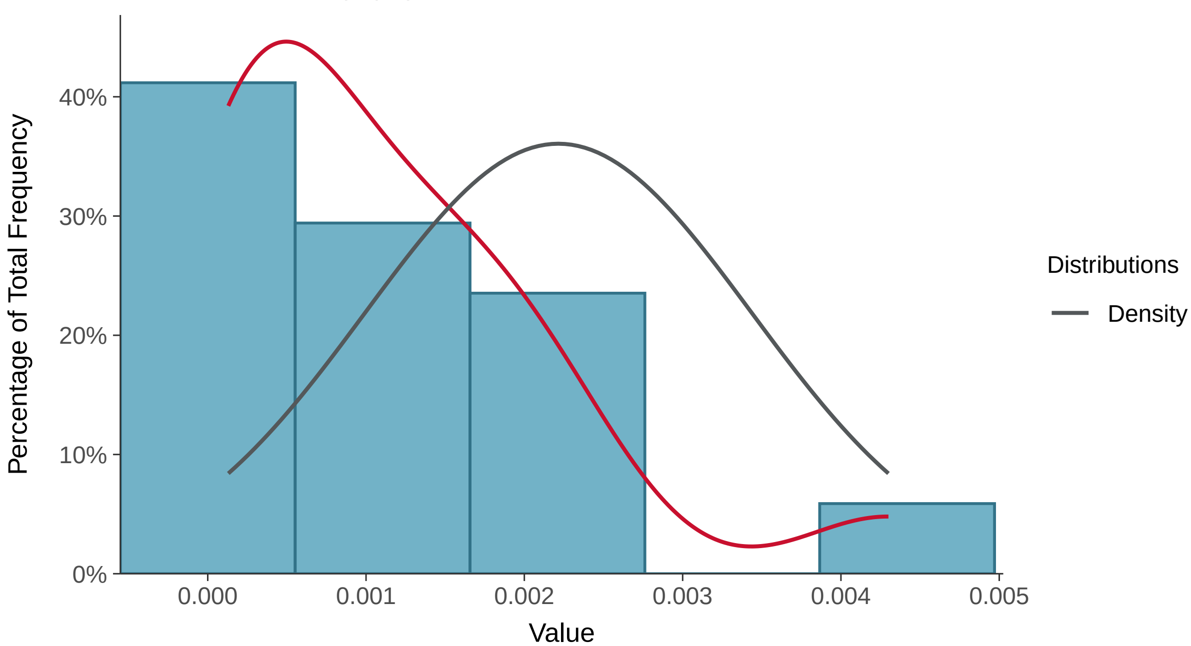
Scatter Plot

Selenium, MW-12 (mg/L)



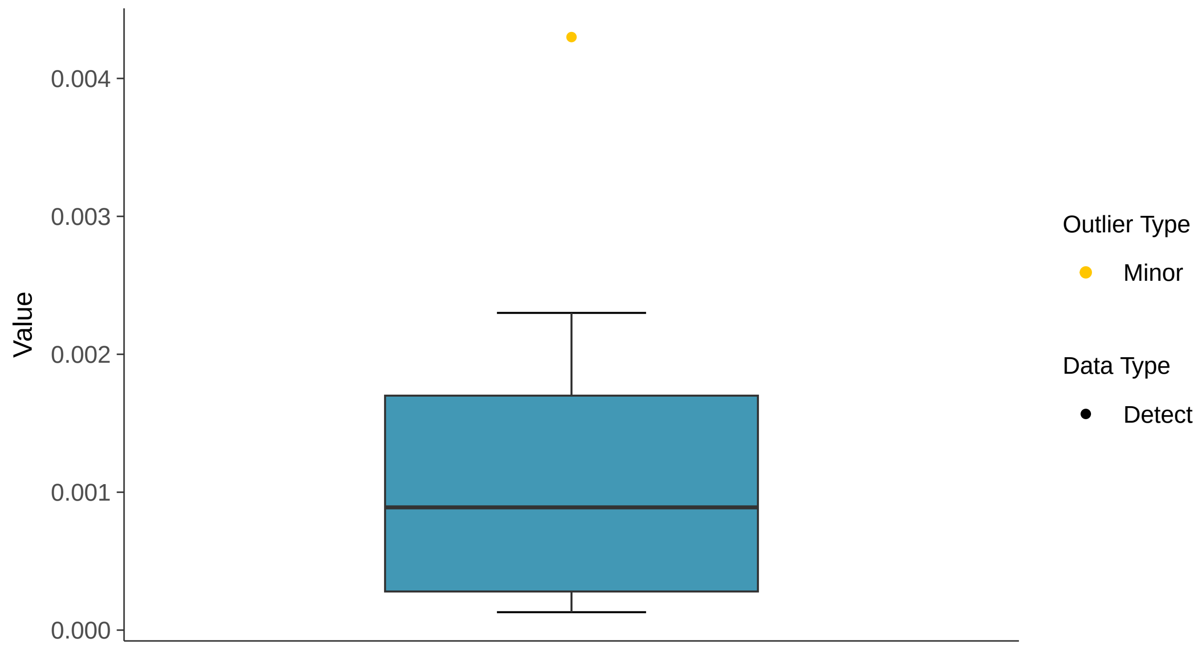
Histogram

Selenium, MW-12 (mg/L)



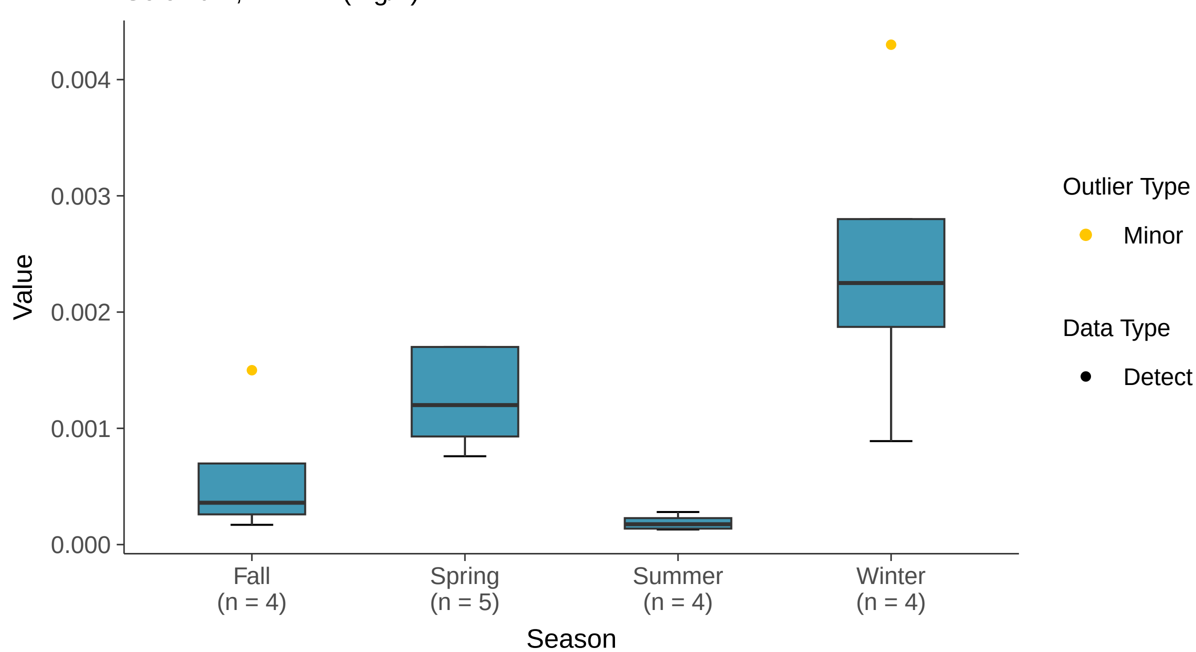
Boxplot

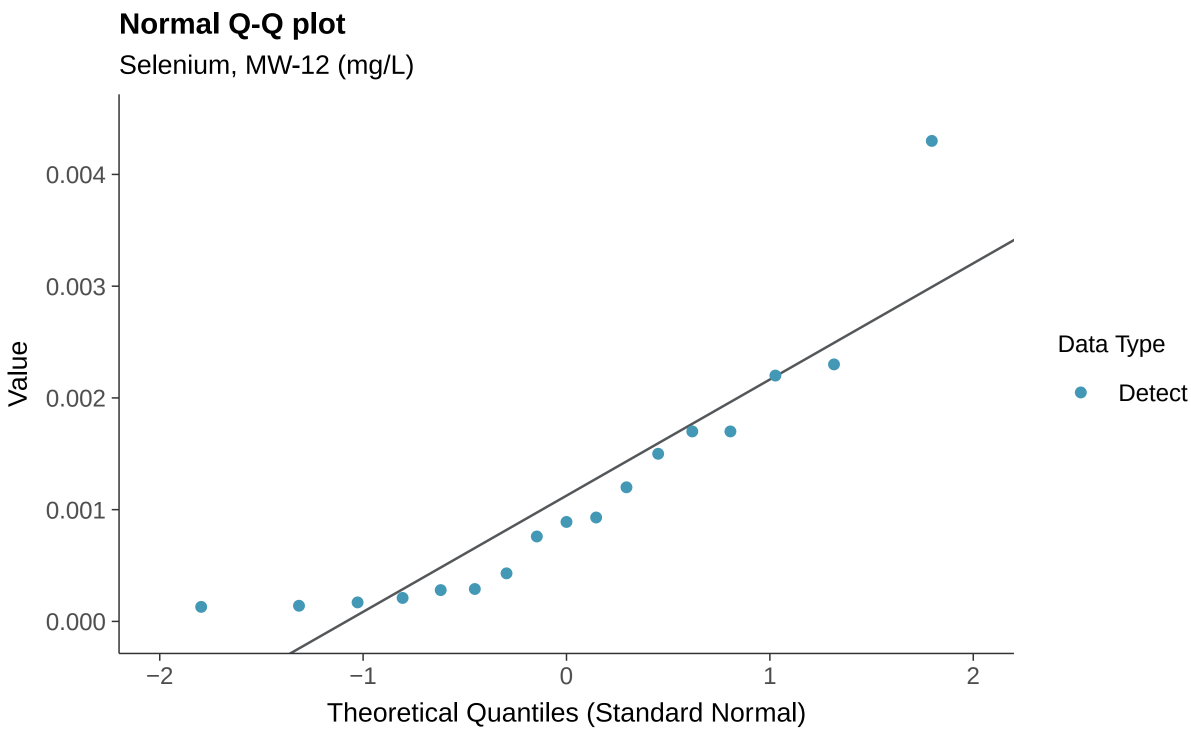
Selenium, MW-12 (mg/L)

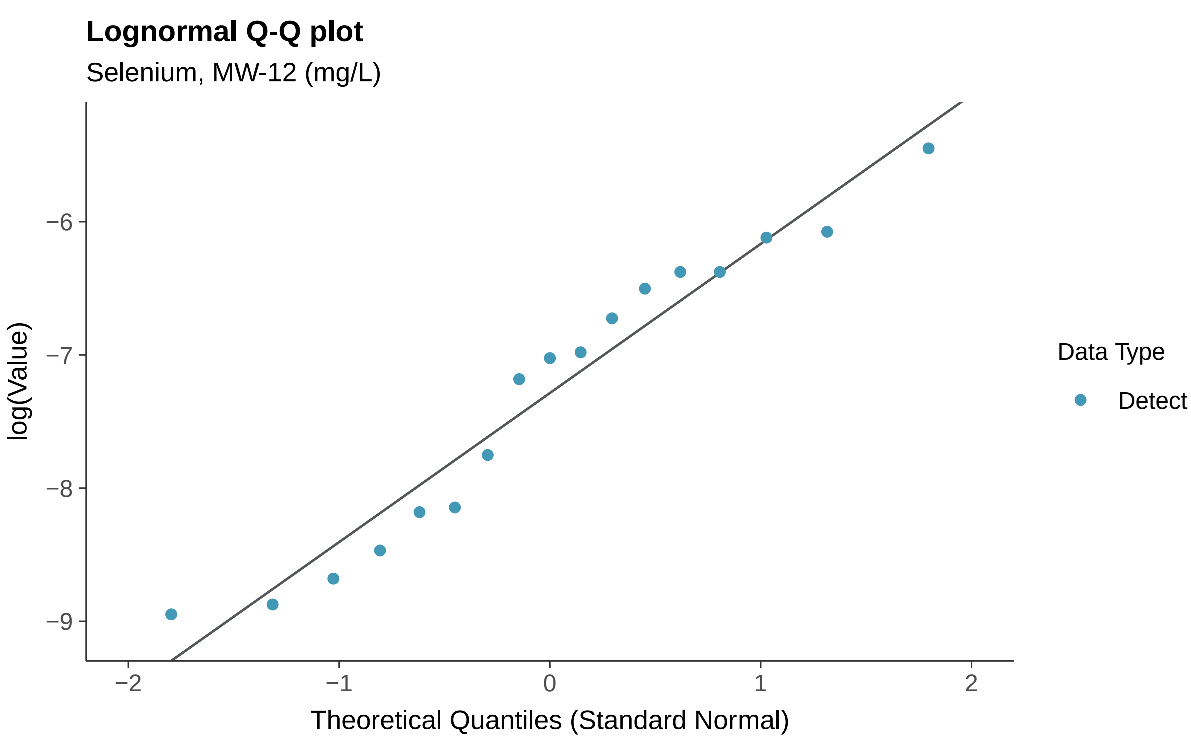


Boxplot by Season

Selenium, MW-12 (mg/L)

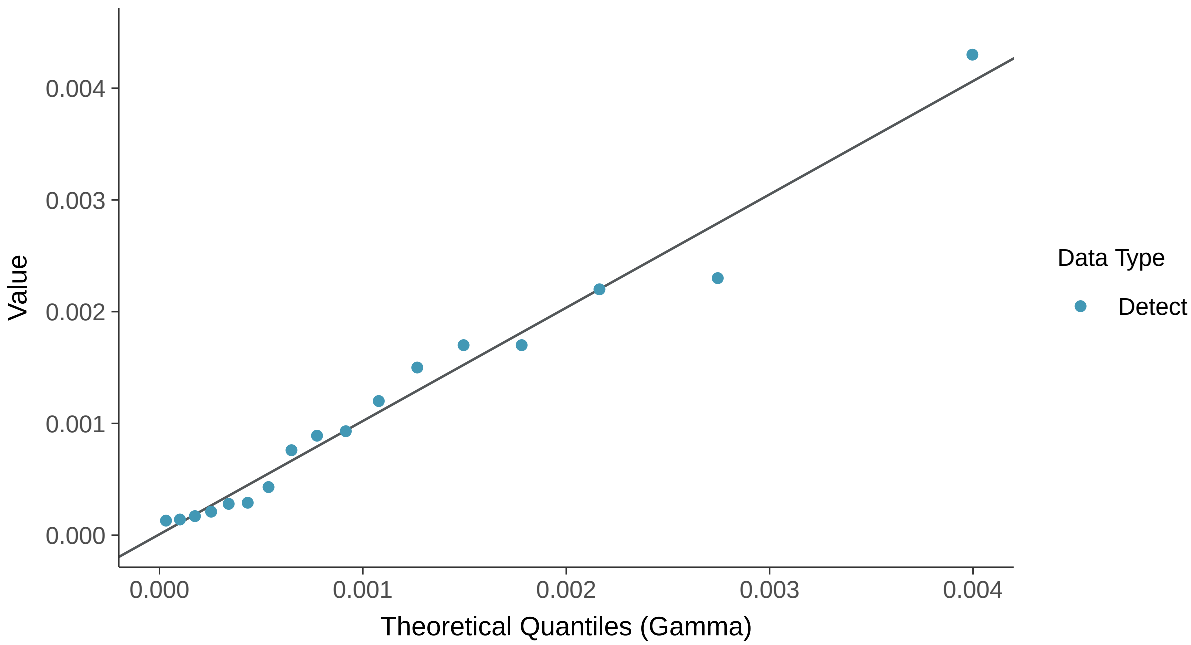



Normal Q-Q plot
Selenium, MW-12 (mg/L)
Value
0.004
0.003
0.002
0.001
0.000
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Selenium, MW-12 (mg/L)
log(Value)
−6
−7
−8
−9
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

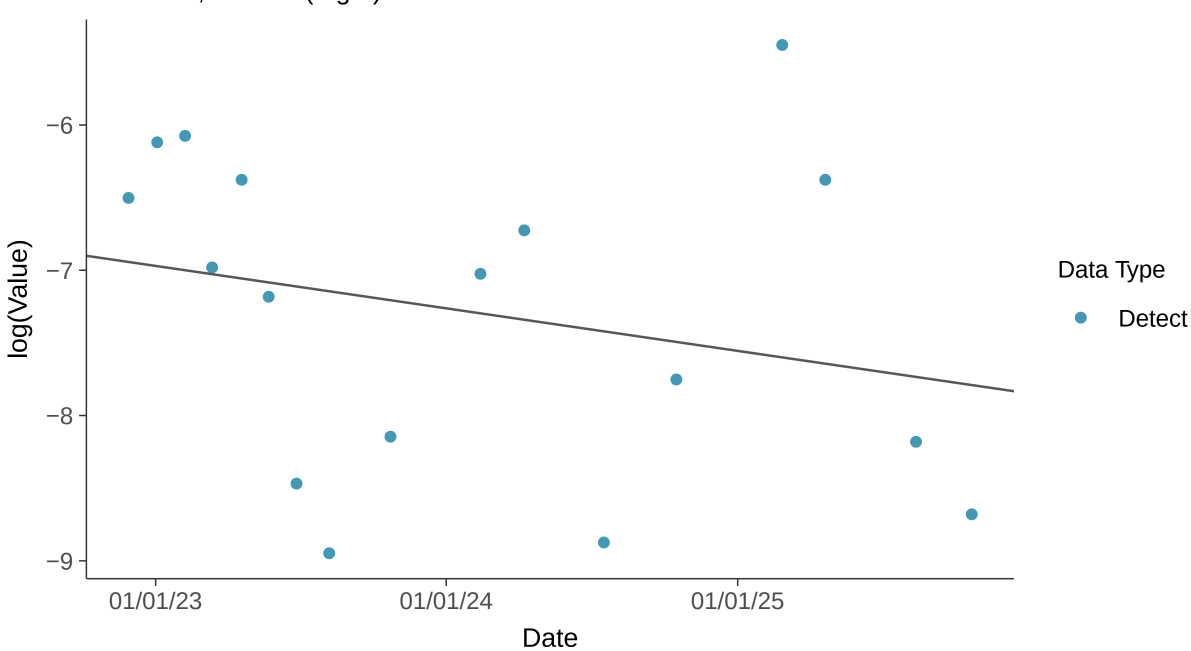
Gamma Q-Q plot

Selenium, MW-12 (mg/L)



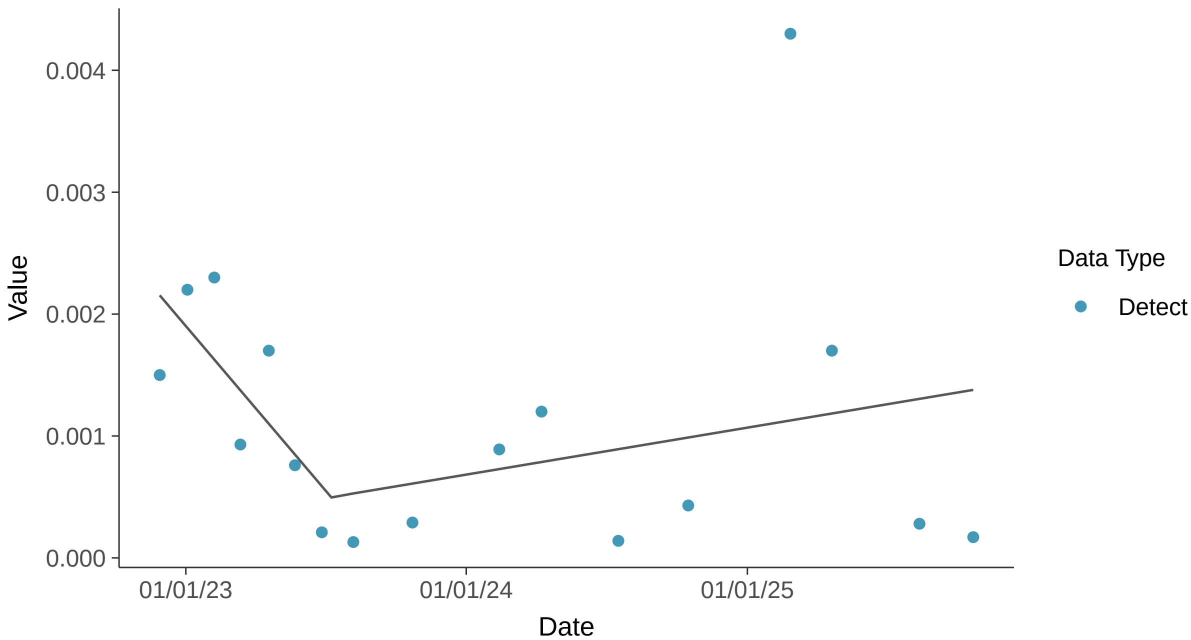
Trend Regression: Lognormal MLE

Selenium, MW-12 (mg/L)



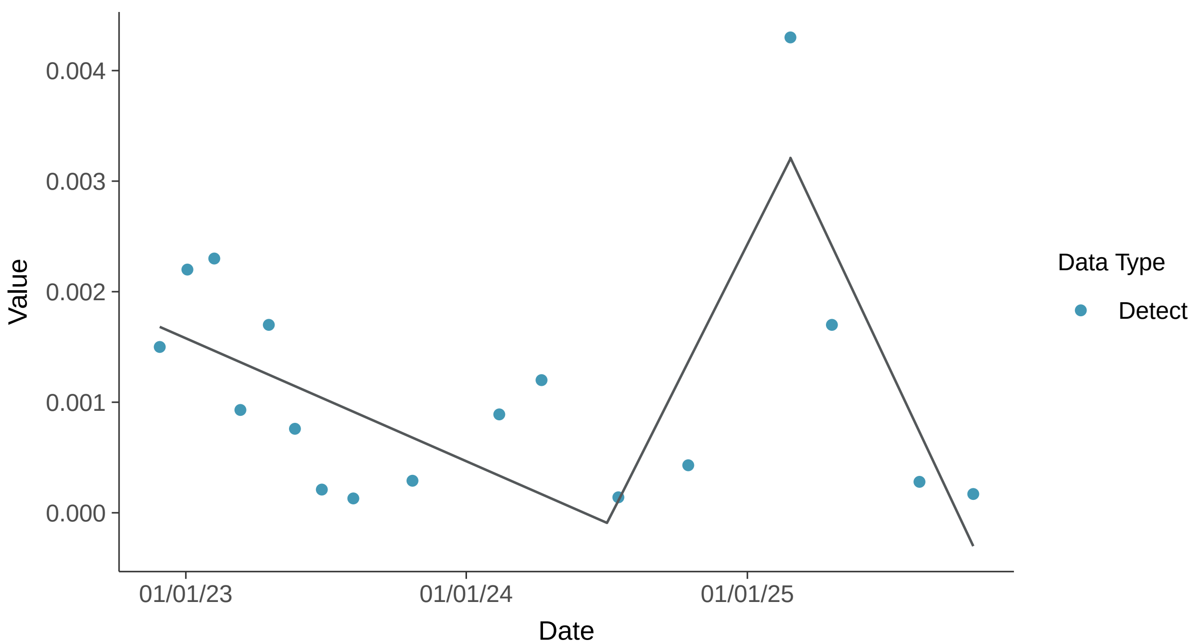
Trend Regression: Piecewise Linear-Linear

Selenium, MW-12 (mg/L)



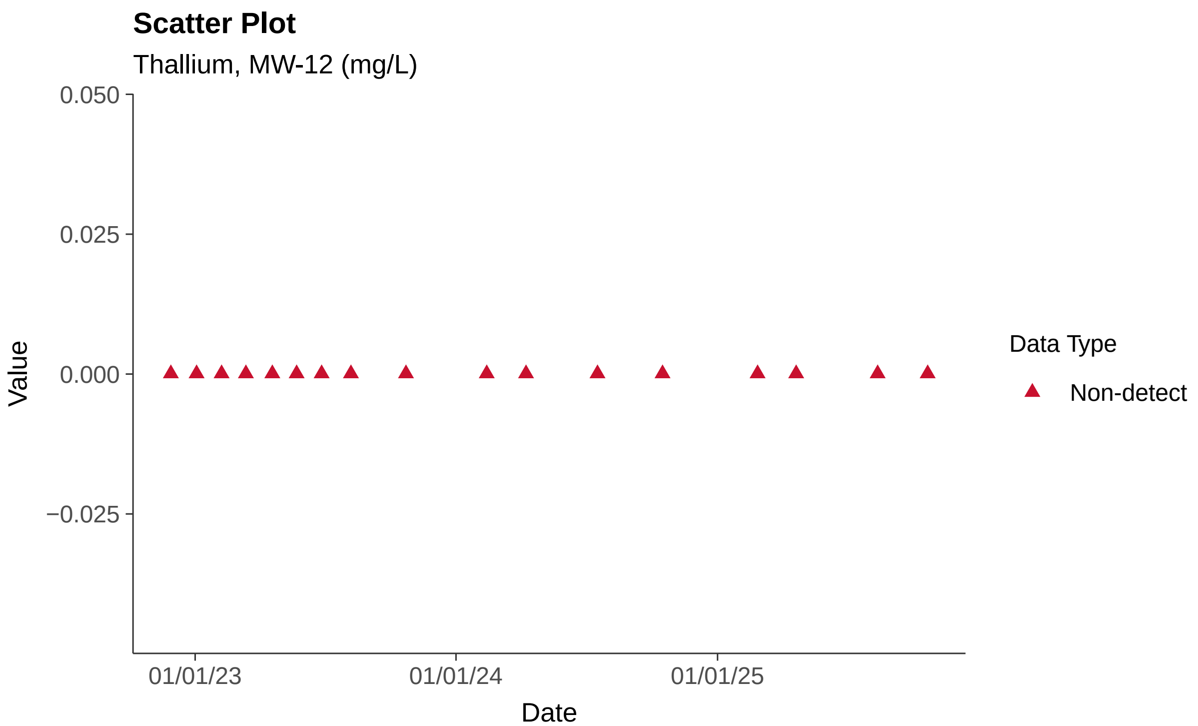
Trend Regression: Piecewise Linear-Linear-Linear

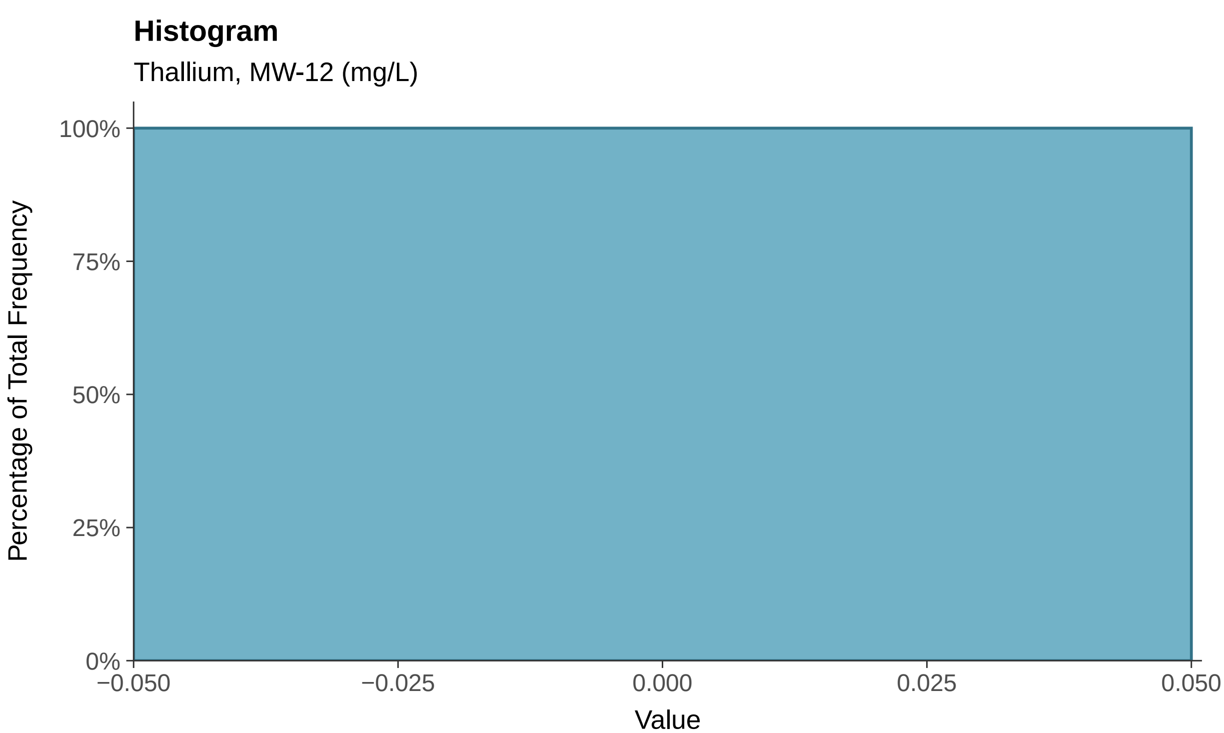
Selenium, MW-12 (mg/L)



Appendix IV: Thallium, MW-12

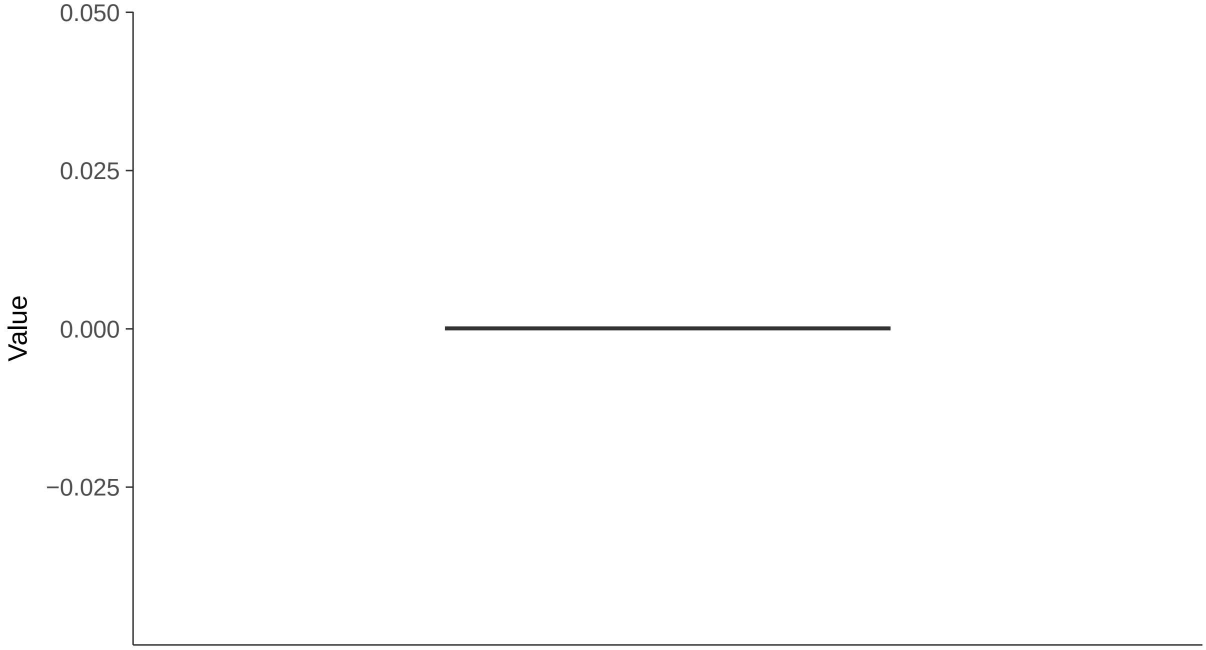
ID: 22_2_4_125





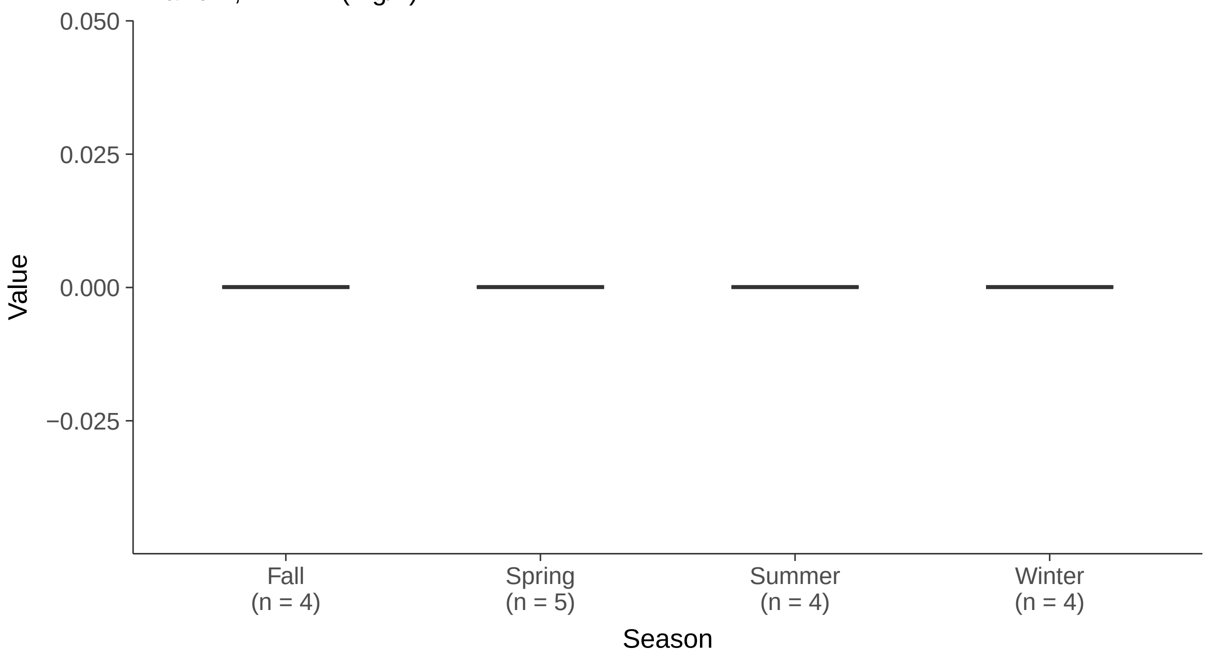
Boxplot

Thallium, MW-12 (mg/L)



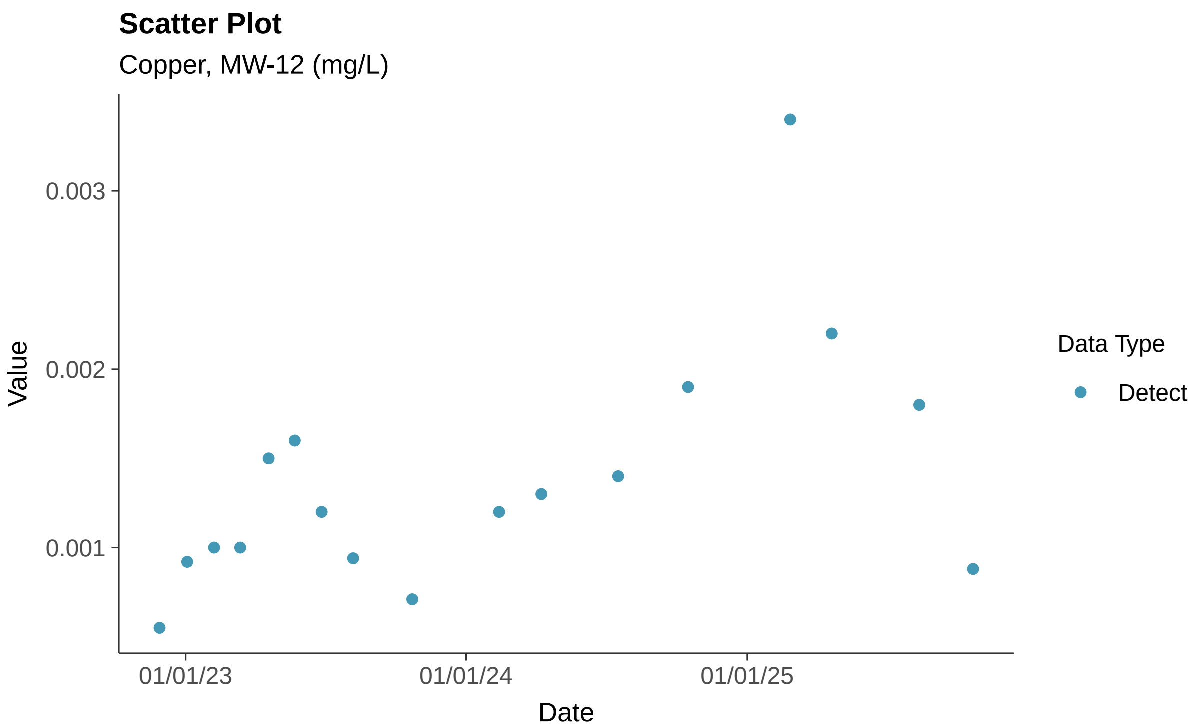
Boxplot by Season

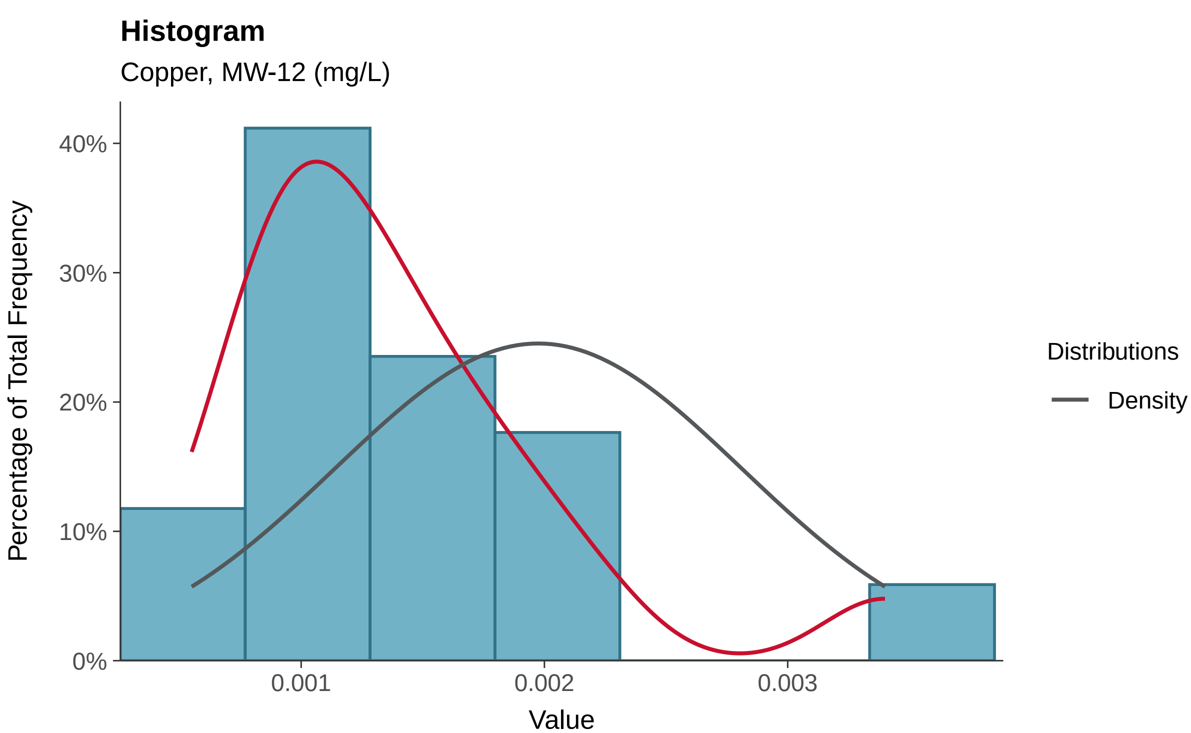
Thallium, MW-12 (mg/L)



Part 115: Copper, MW-12

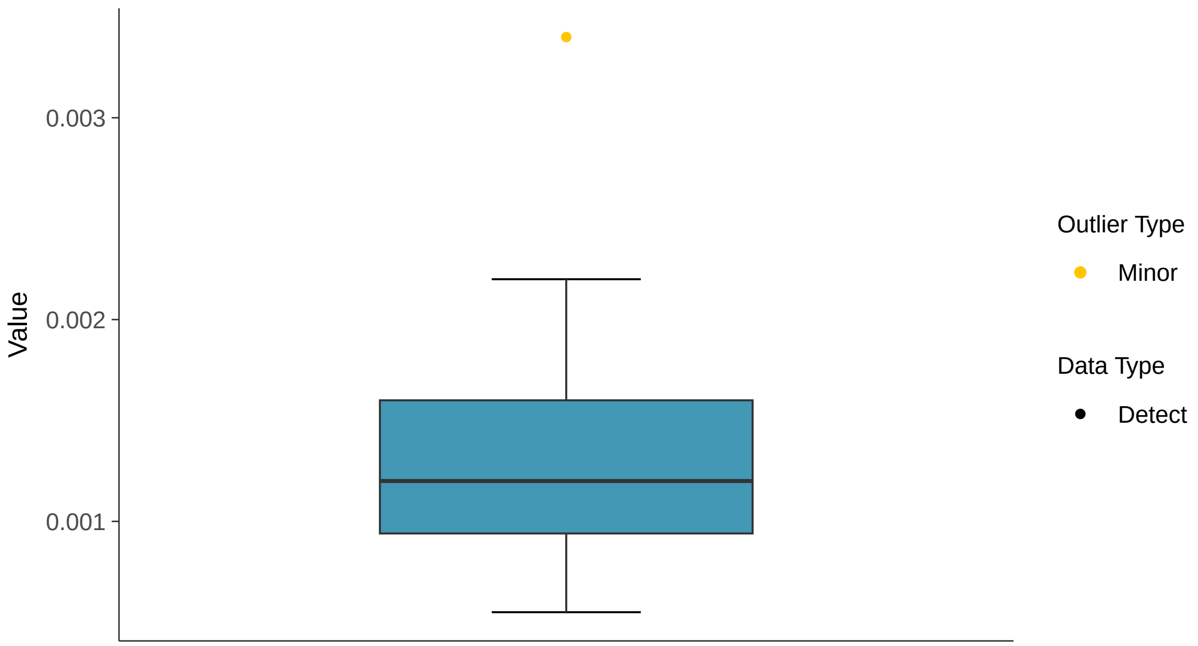
ID: 22_2_5_111





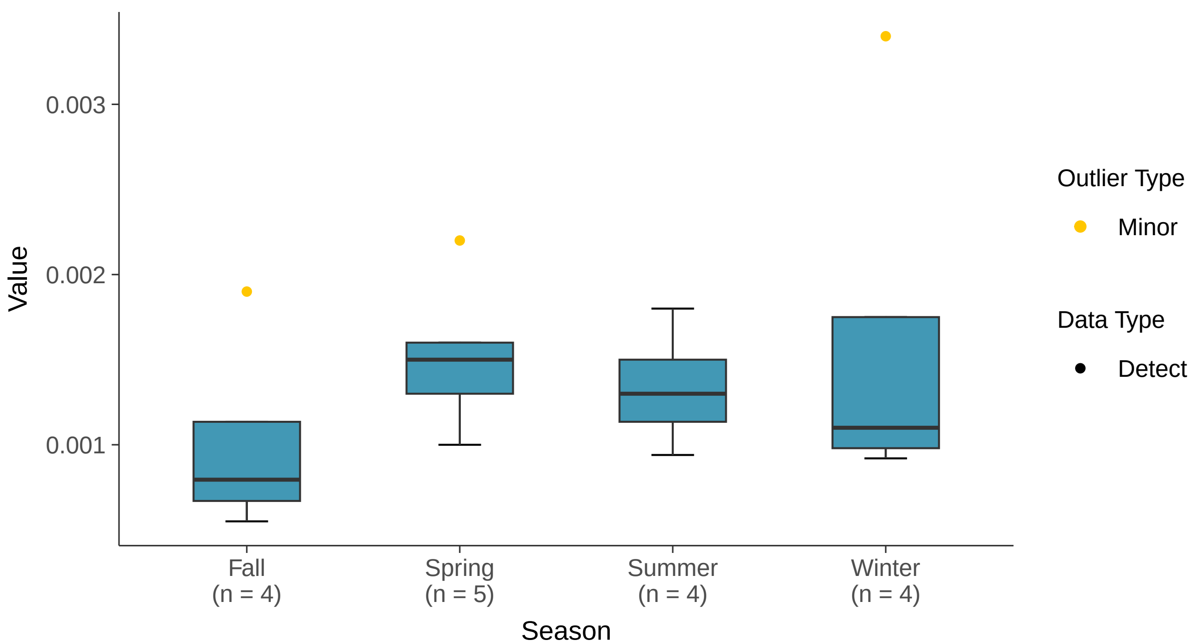
Boxplot

Copper, MW-12 (mg/L)



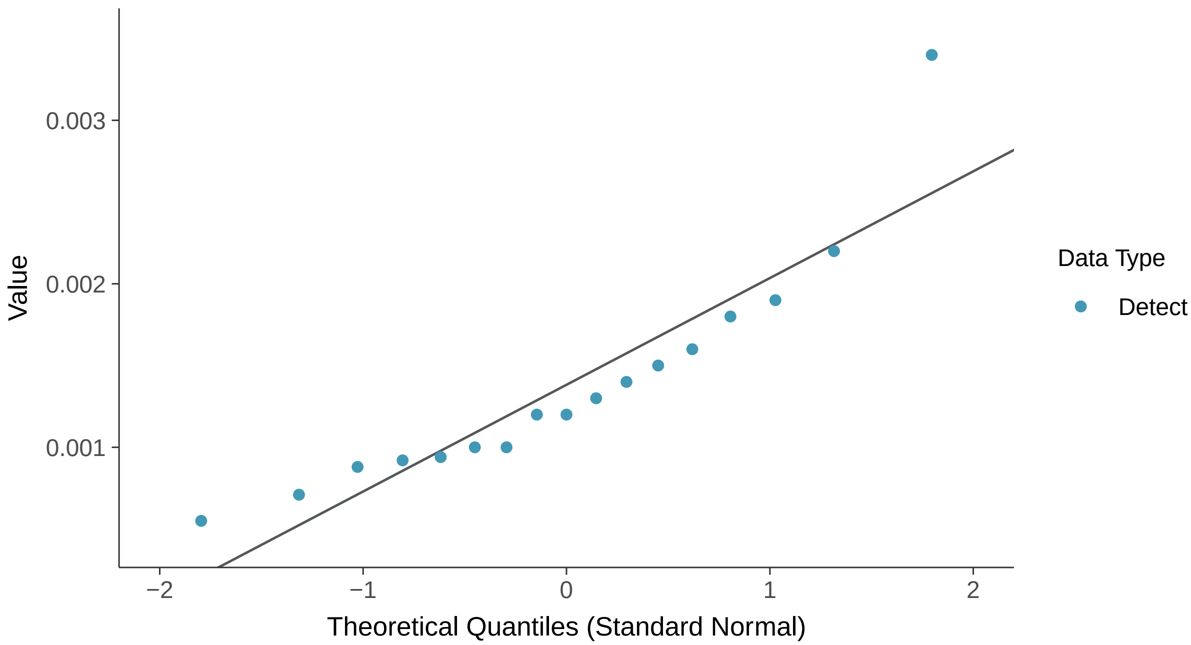
Boxplot by Season

Copper, MW-12 (mg/L)



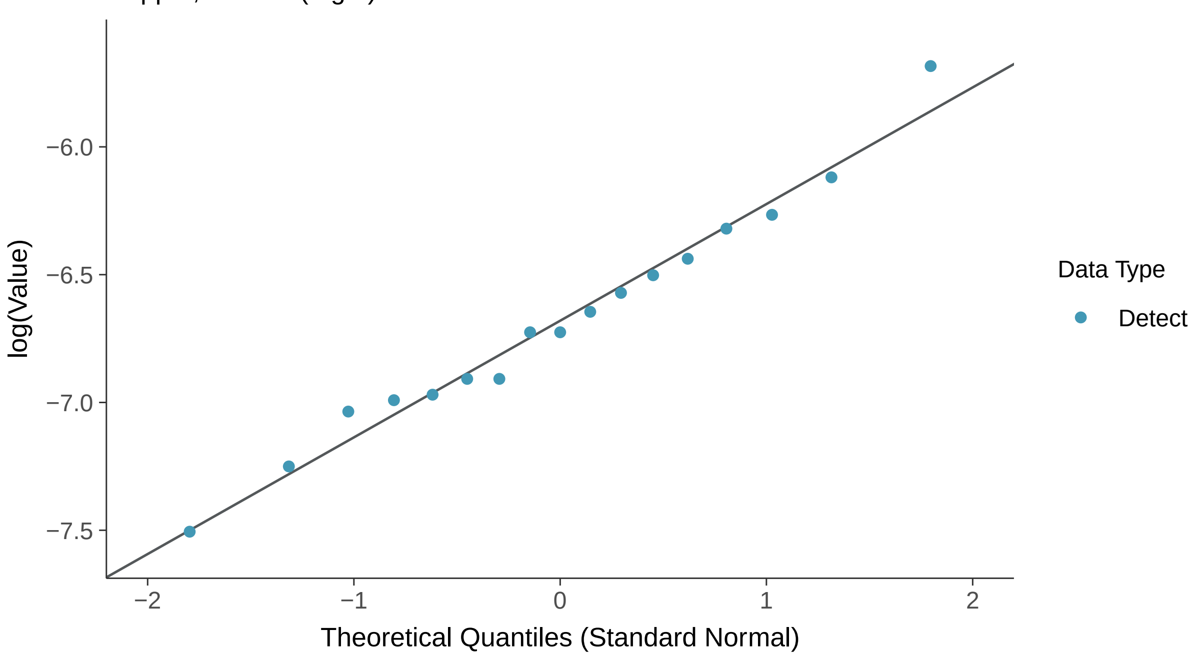
Normal Q-Q plot

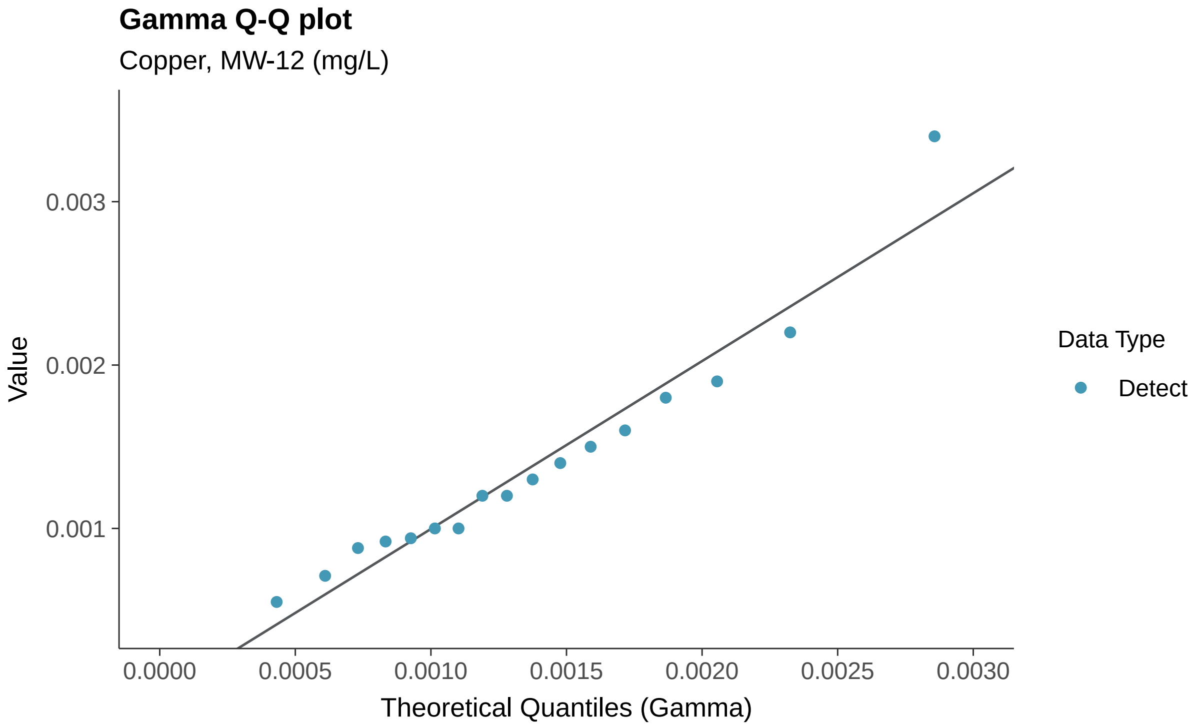
Copper, MW-12 (mg/L)

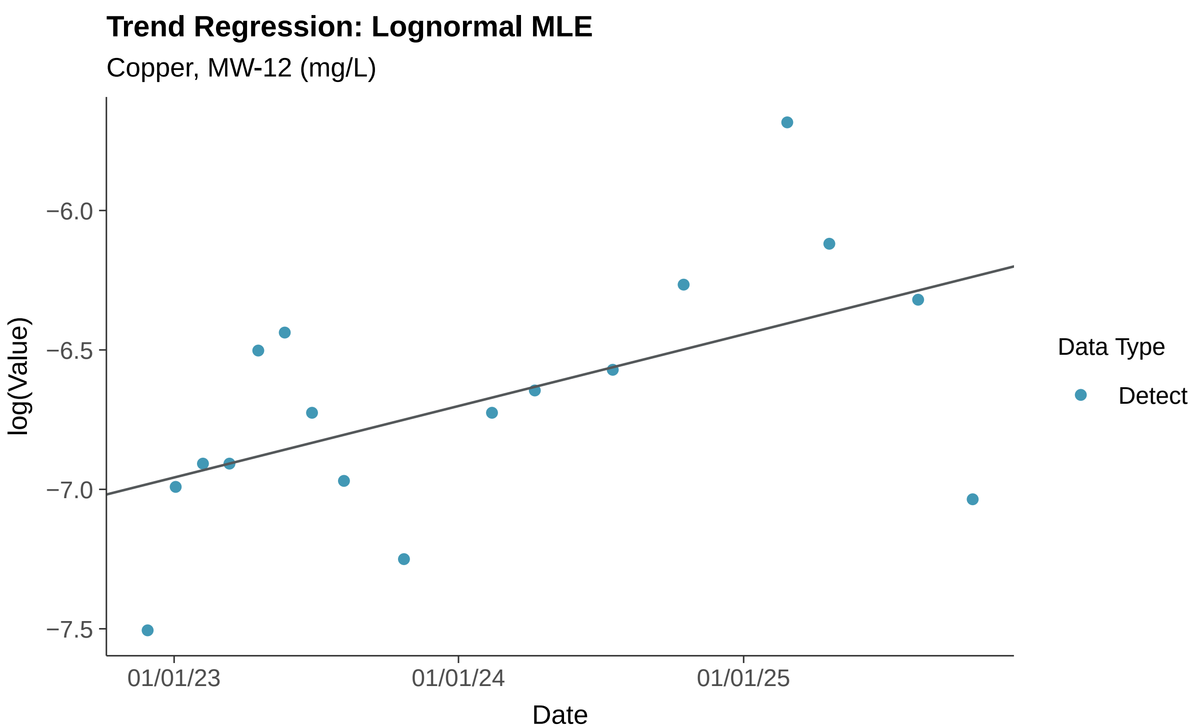


Lognormal Q-Q plot

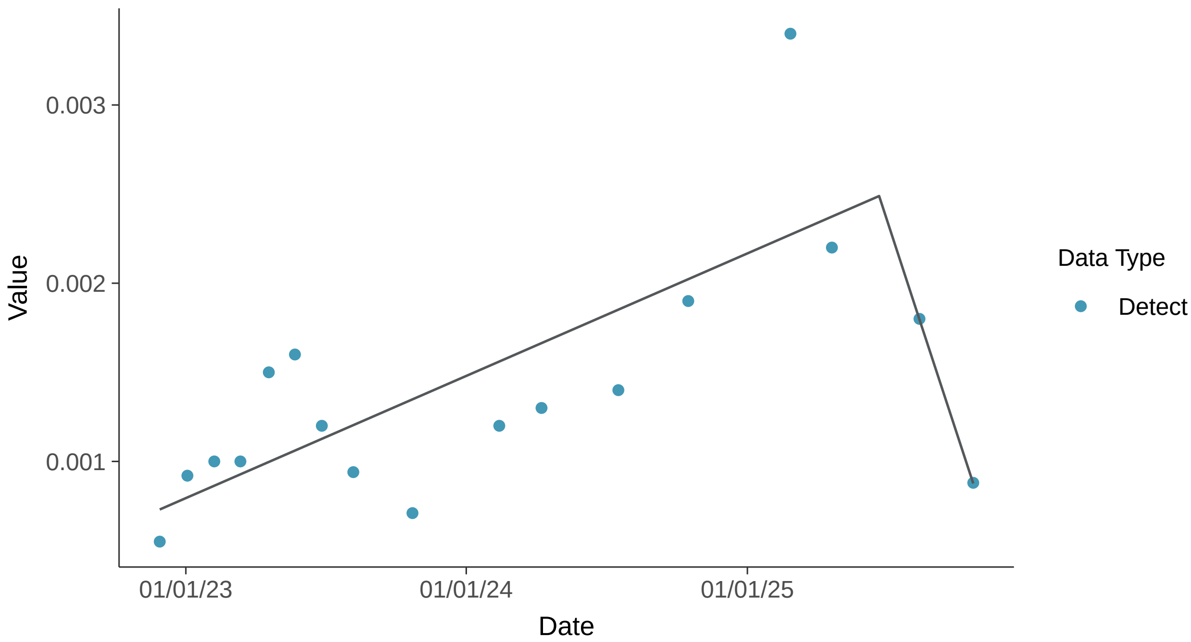
Copper, MW-12 (mg/L)



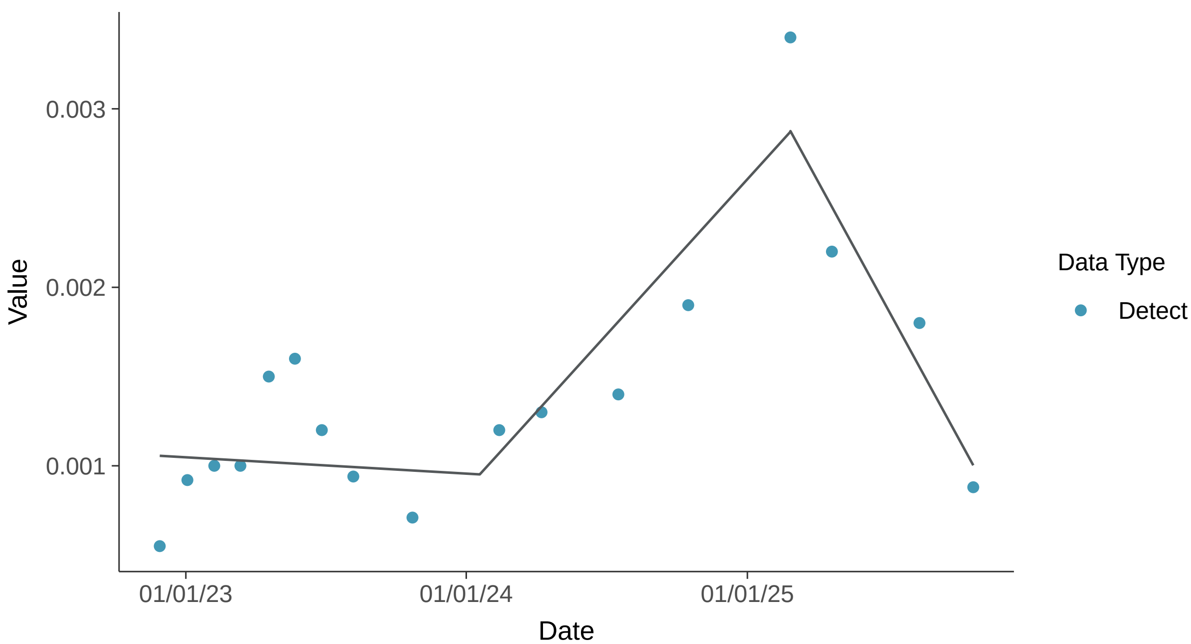

Gamma Q-Q plot
Copper, MW-12 (mg/L)
Value
0.003
0.002
0.001
0.0000
0.0005
0.0010
0.0015
0.0020
0.0025
0.0030
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Copper, MW-12 (mg/L)
log(Value)
−6.0
−6.5
−7.0
−7.5
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear
Copper, MW-12 (mg/L)

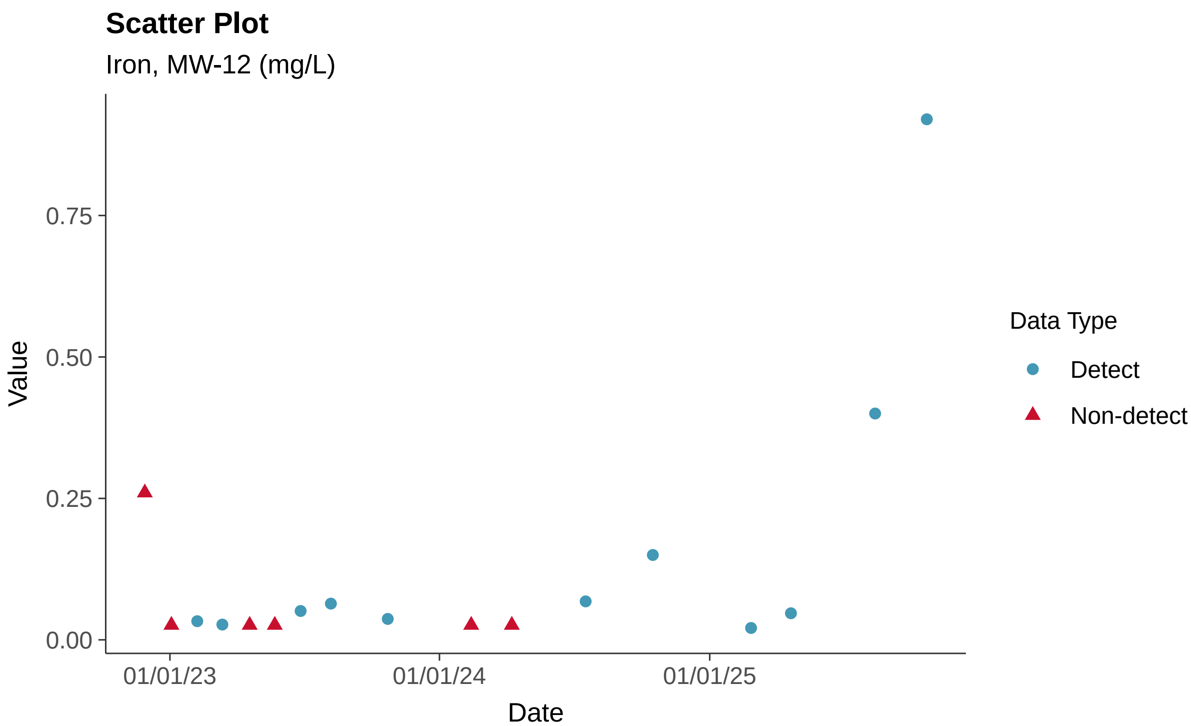


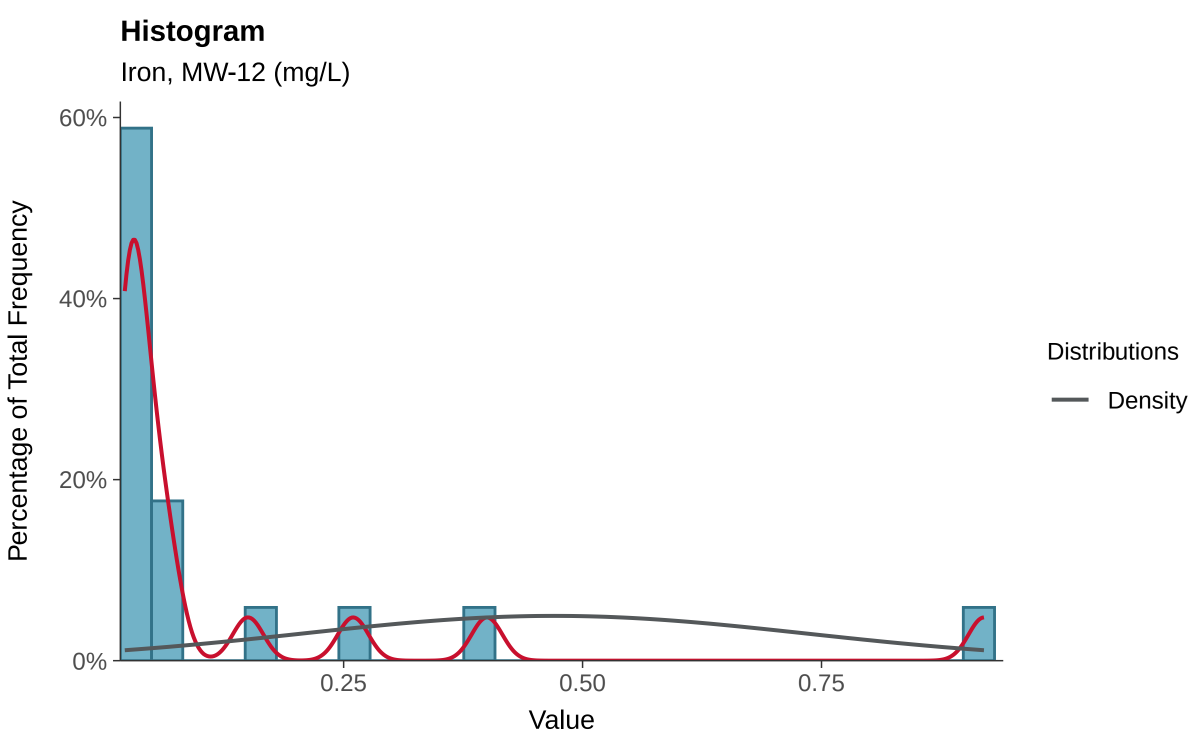
Trend Regression: Piecewise Linear-Linear-Linear
Copper, MW-12 (mg/L)



Part 115: Iron, MW-12

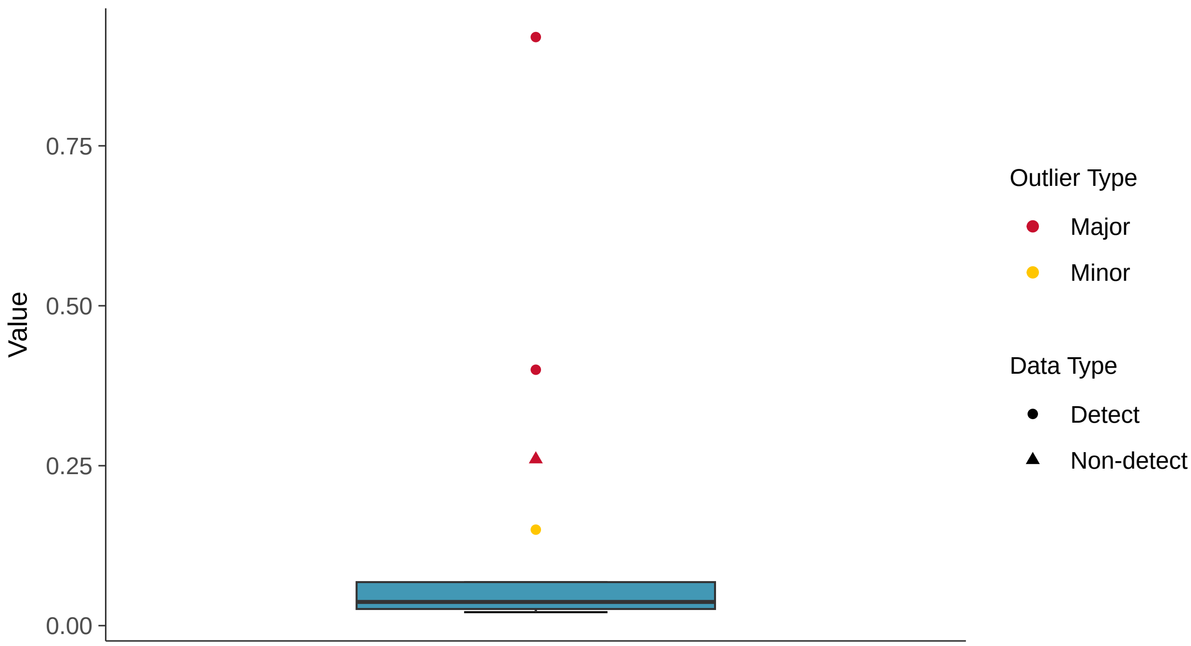
ID: 22_2_5_114





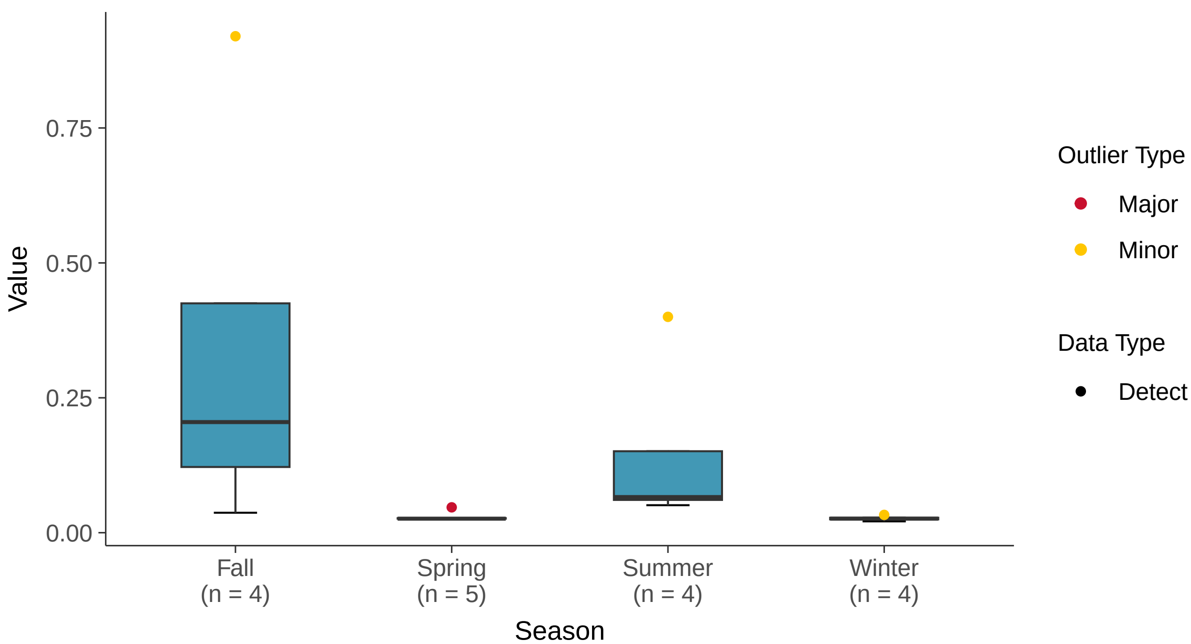
Boxplot

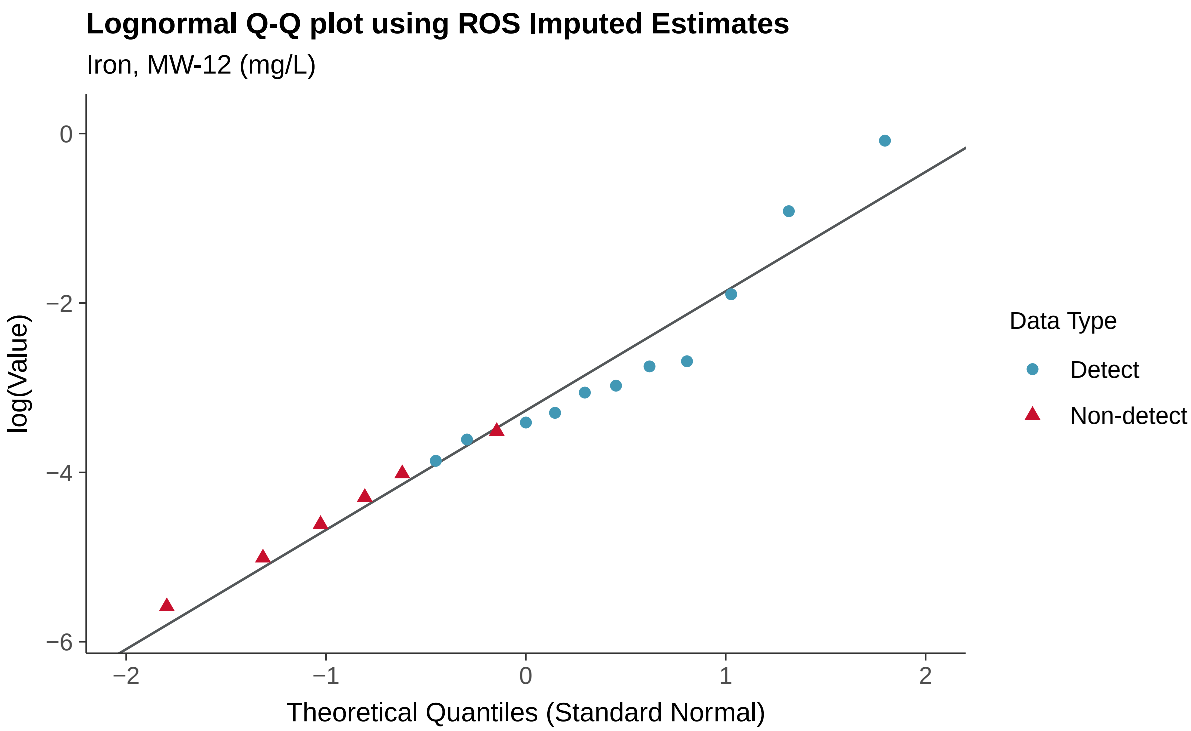
Iron, MW-12 (mg/L)

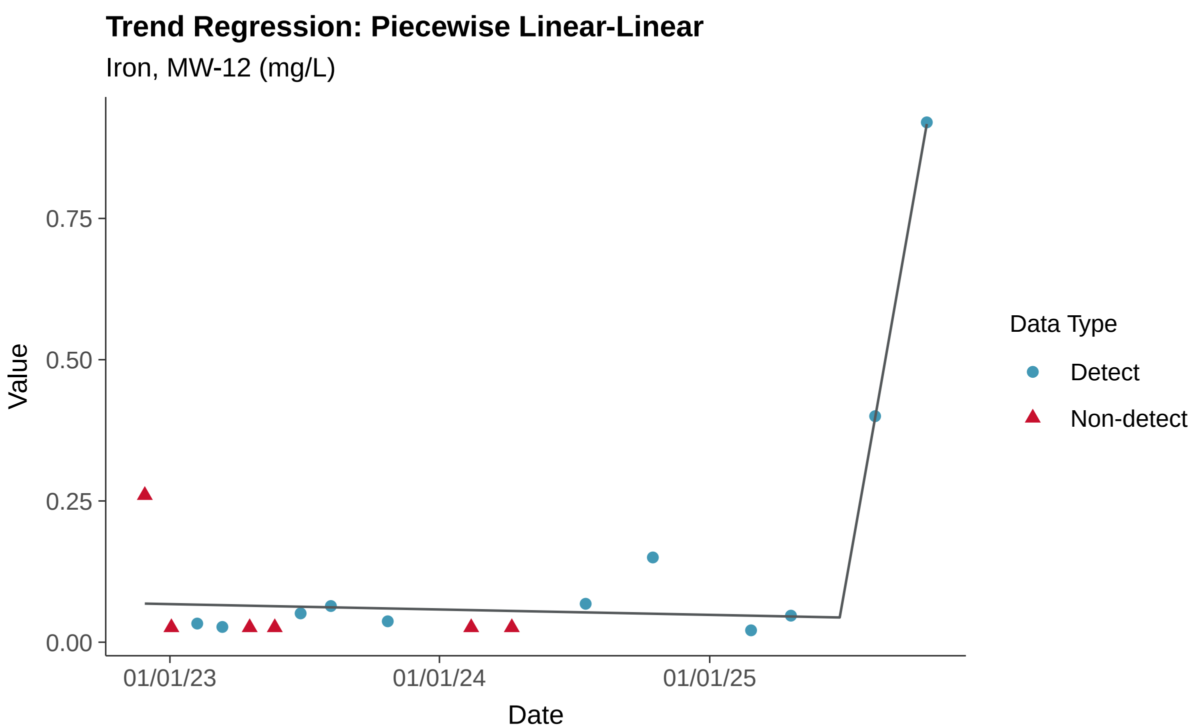


Boxplot by Season

Iron, MW-12 (mg/L)

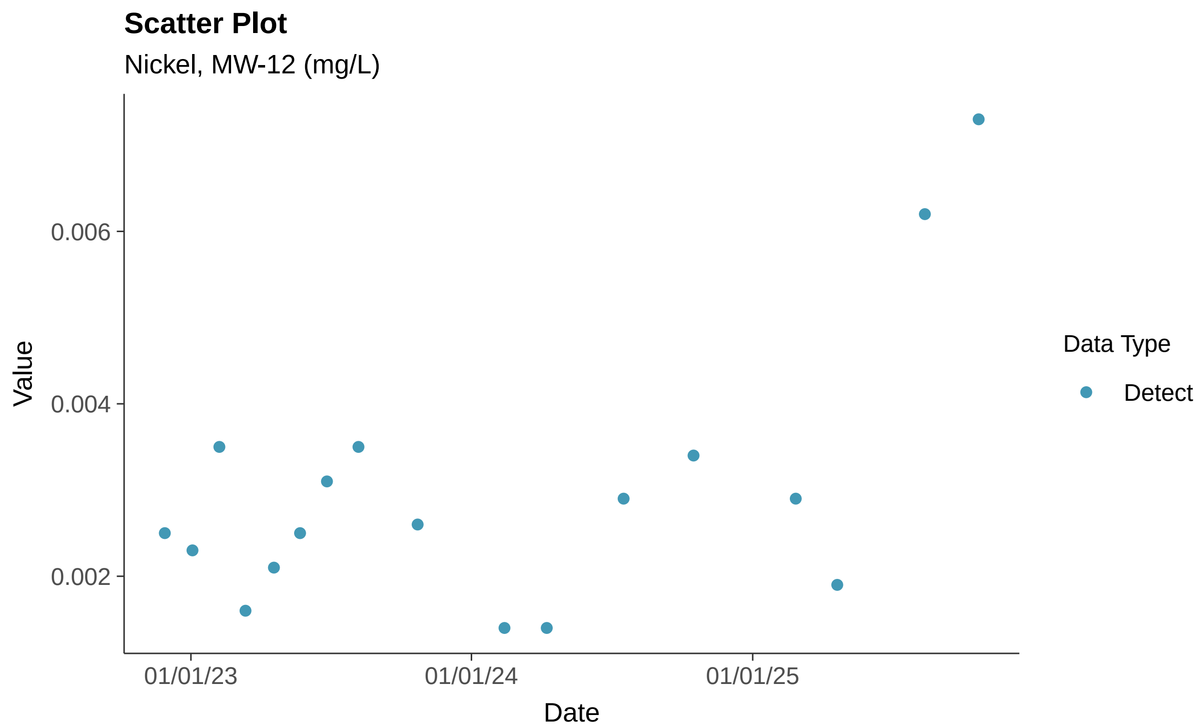


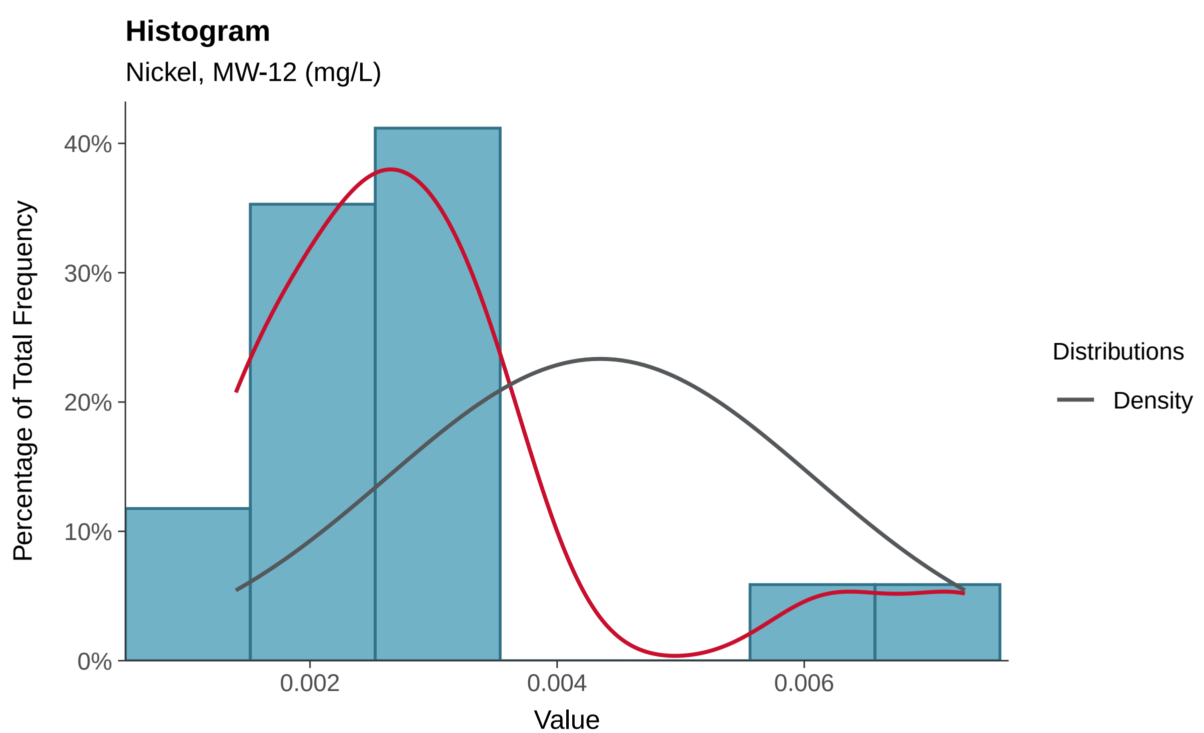

Lognormal Q-Q plot using ROS Imputed Estimates
Iron, MW-12 (mg/L)
log(Value)
0
−2
−4
−6
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Iron, MW-12 (mg/L)
Value
0.75
0.50
0.25
0.00
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Part 115: Nickel, MW-12

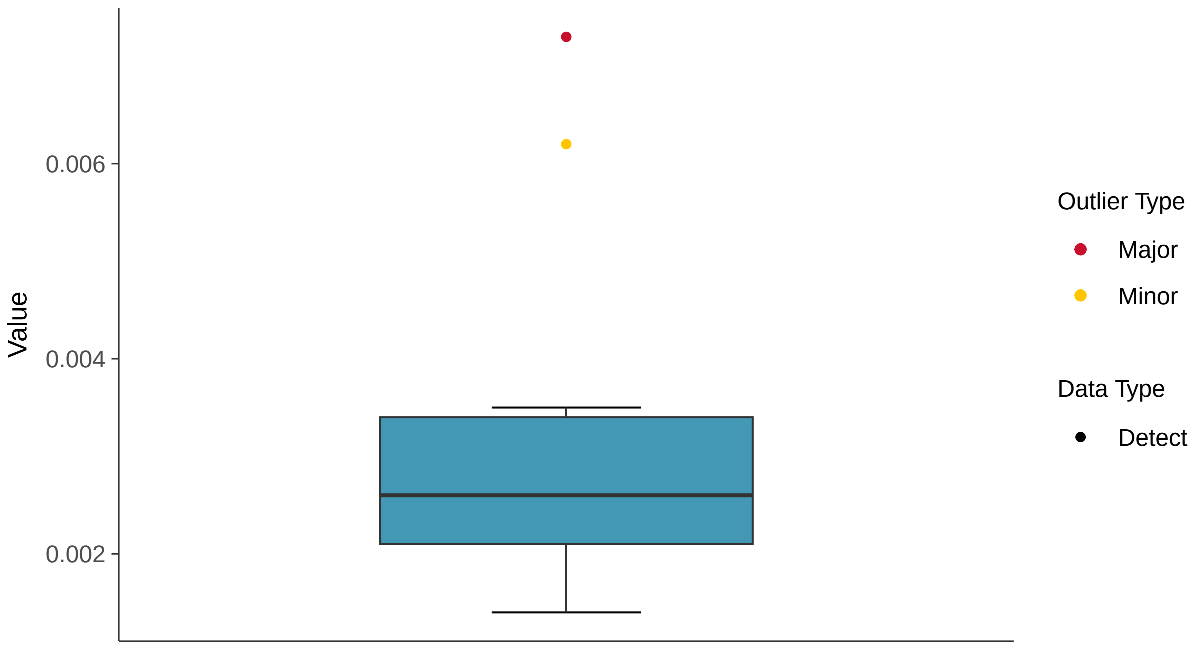
ID: 22_2_5_119





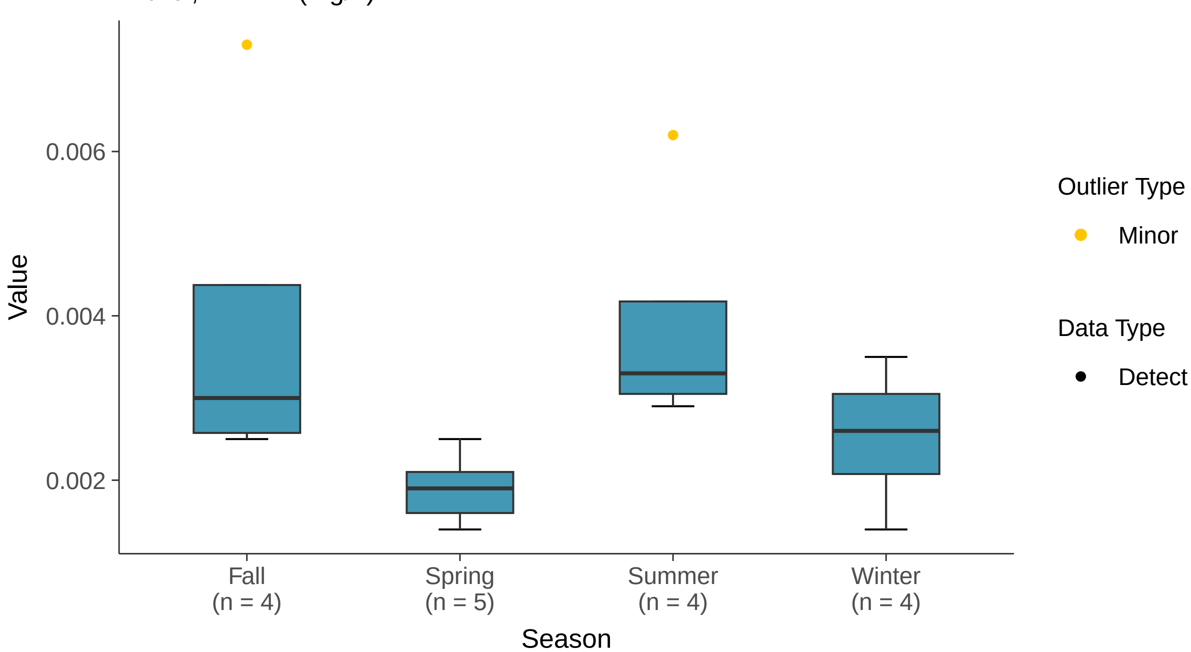
Boxplot

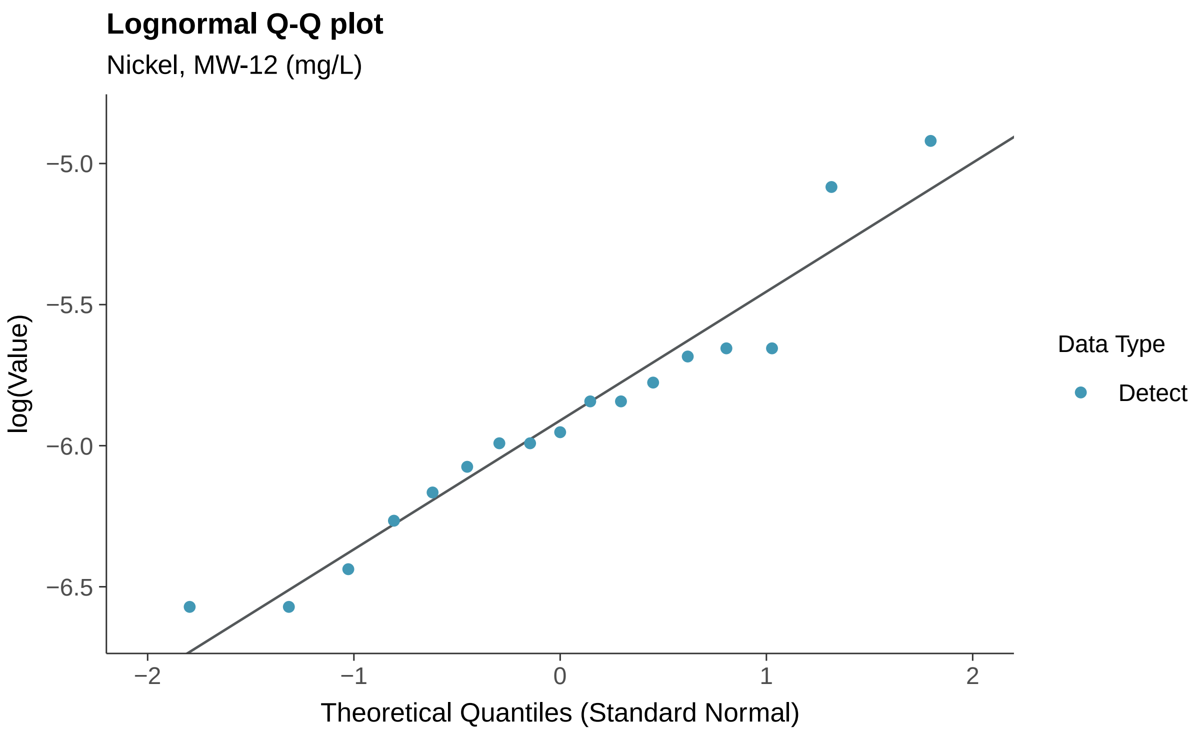
Nickel, MW-12 (mg/L)

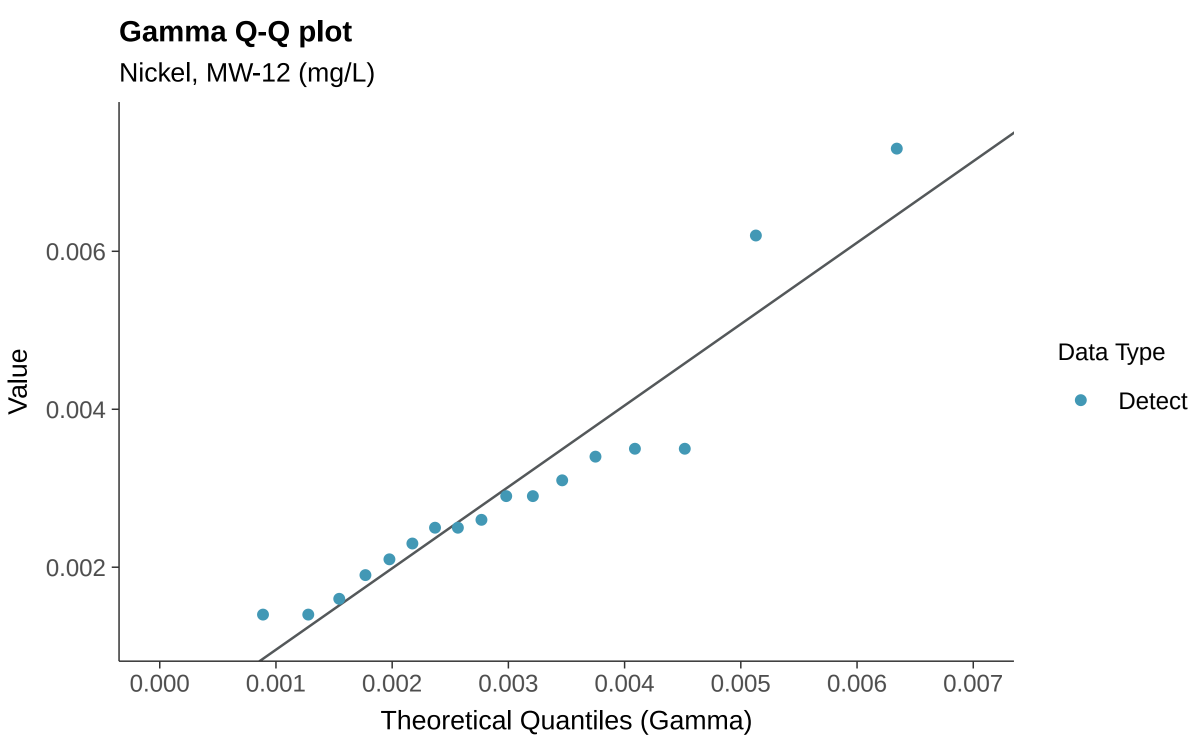


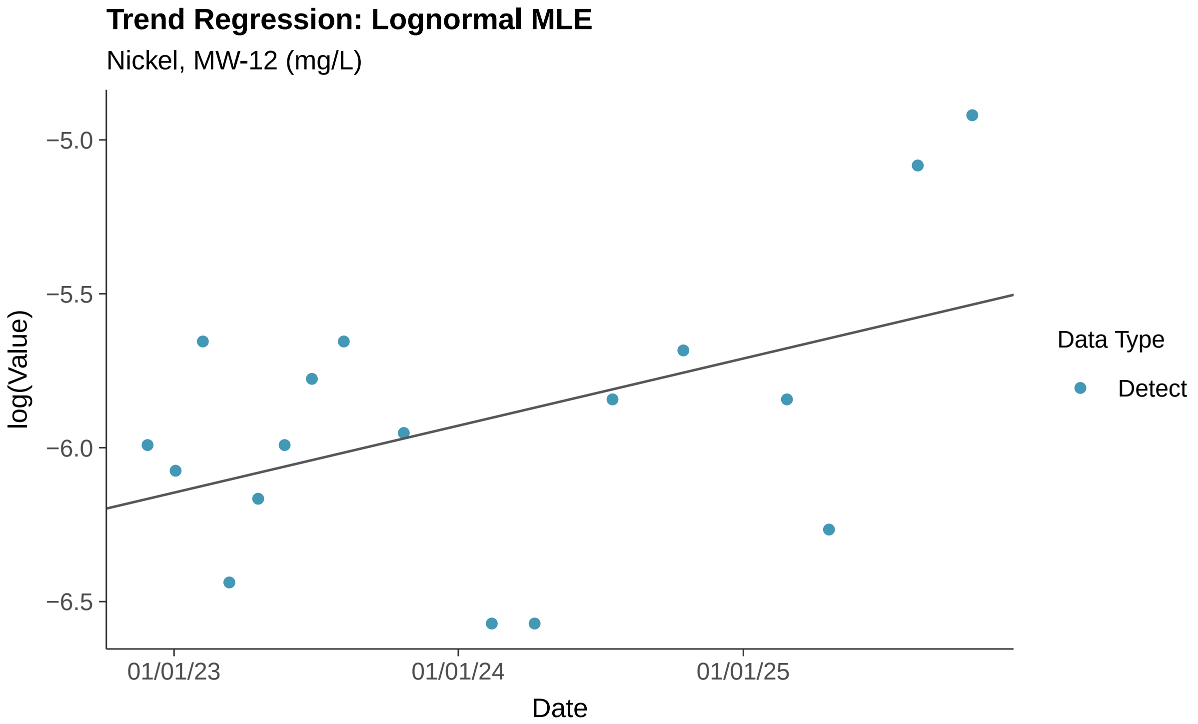
Boxplot by Season

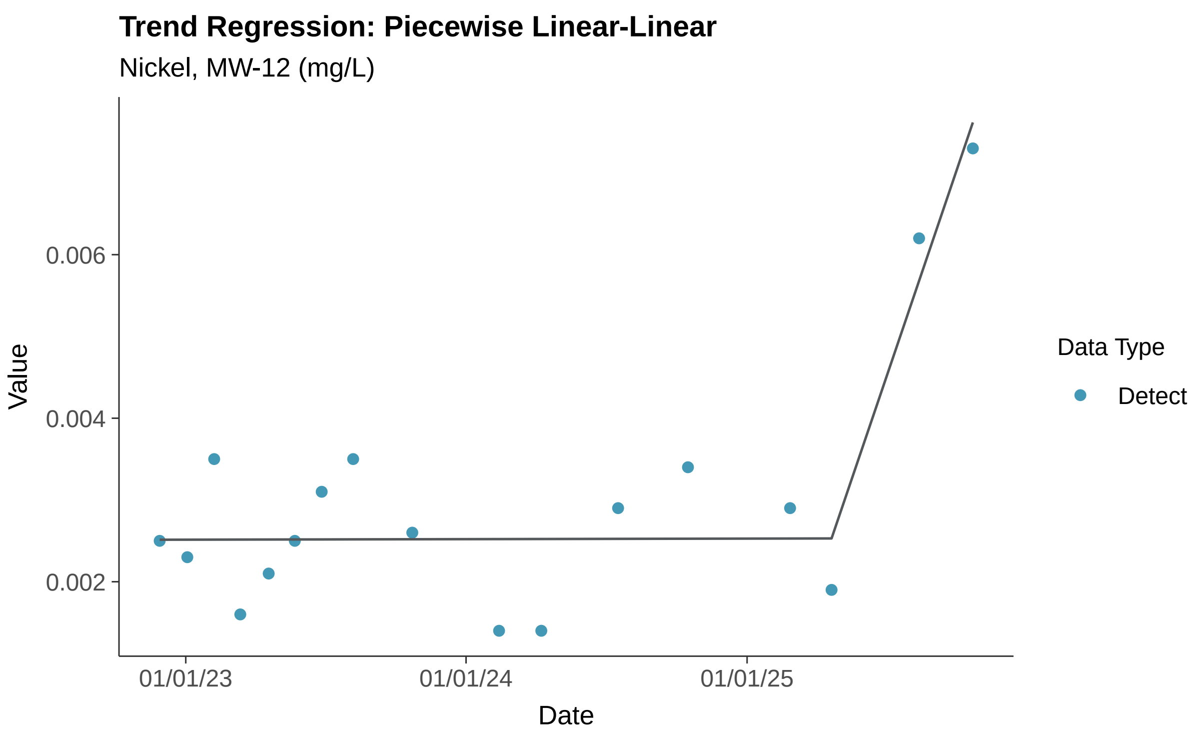
Nickel, MW-12 (mg/L)

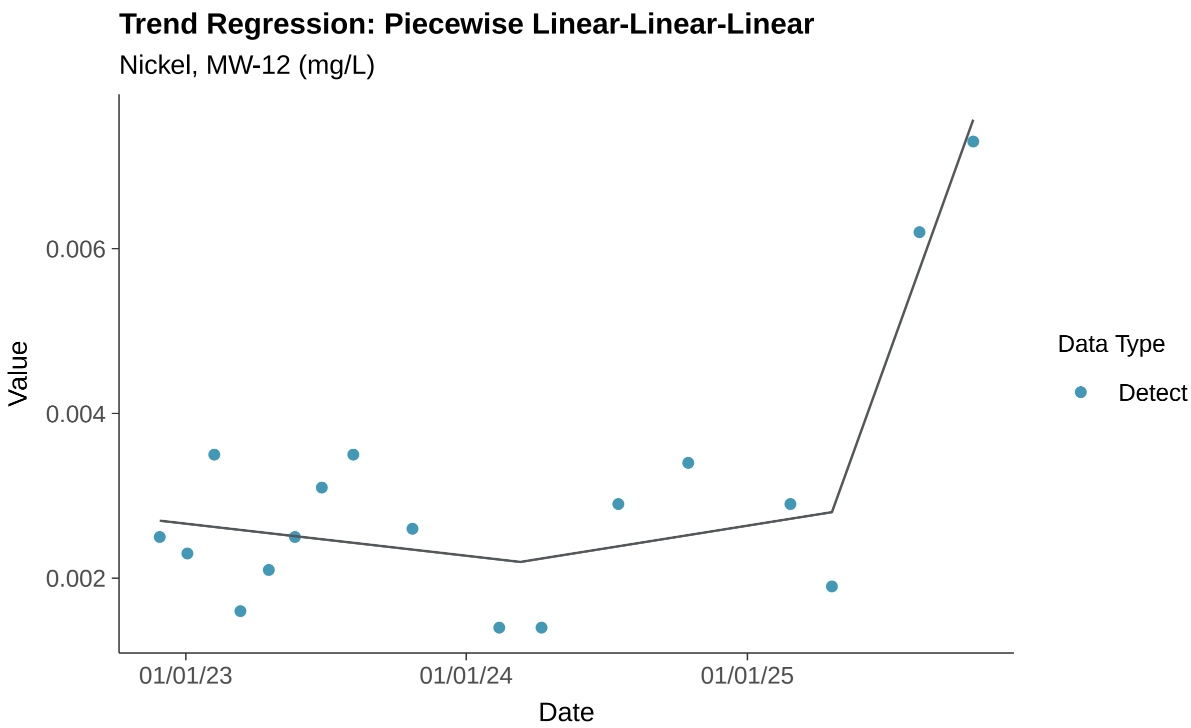



Lognormal Q-Q plot
Nickel, MW-12 (mg/L)
log(Value)
−5.0
−5.5
−6.0
−6.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Nickel, MW-12 (mg/L)
Value
0.006
0.004
0.002
0.000
0.001
0.002
0.003
0.004
0.005
0.006
0.007
Theoretical Quantiles (Gamma)
Data Type
Detect

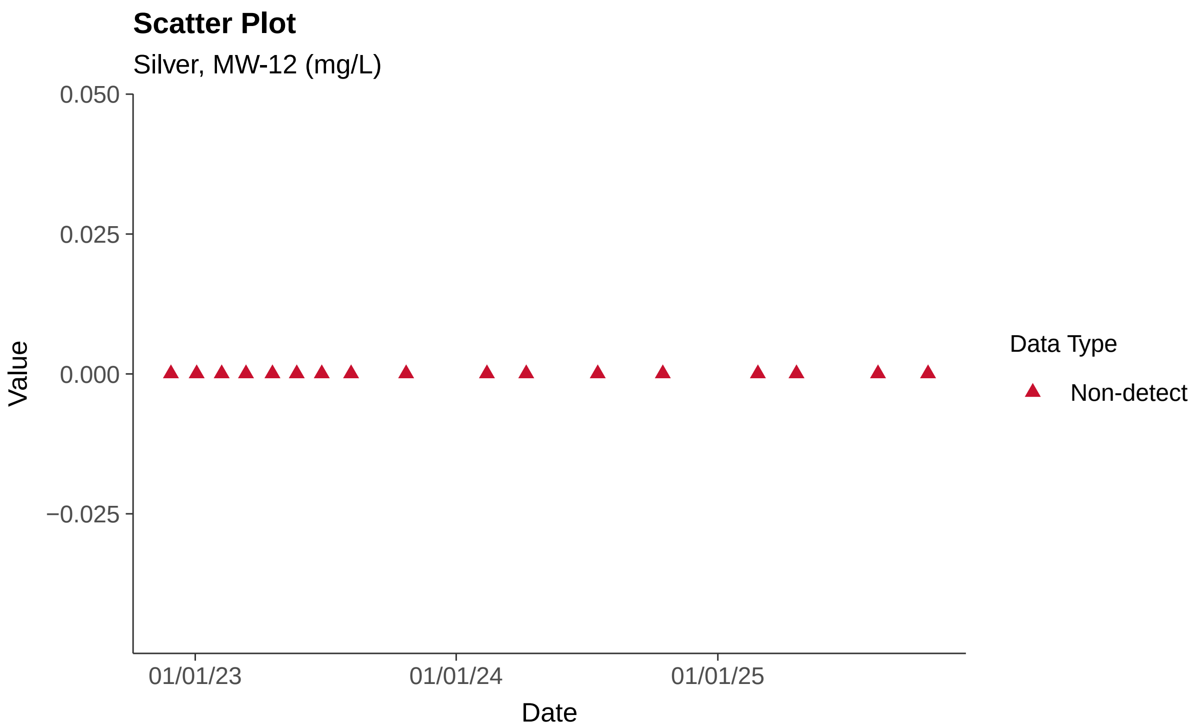

Trend Regression: Lognormal MLE
Nickel, MW-12 (mg/L)
log(Value)
−5.0
−5.5
−6.0
−6.5
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

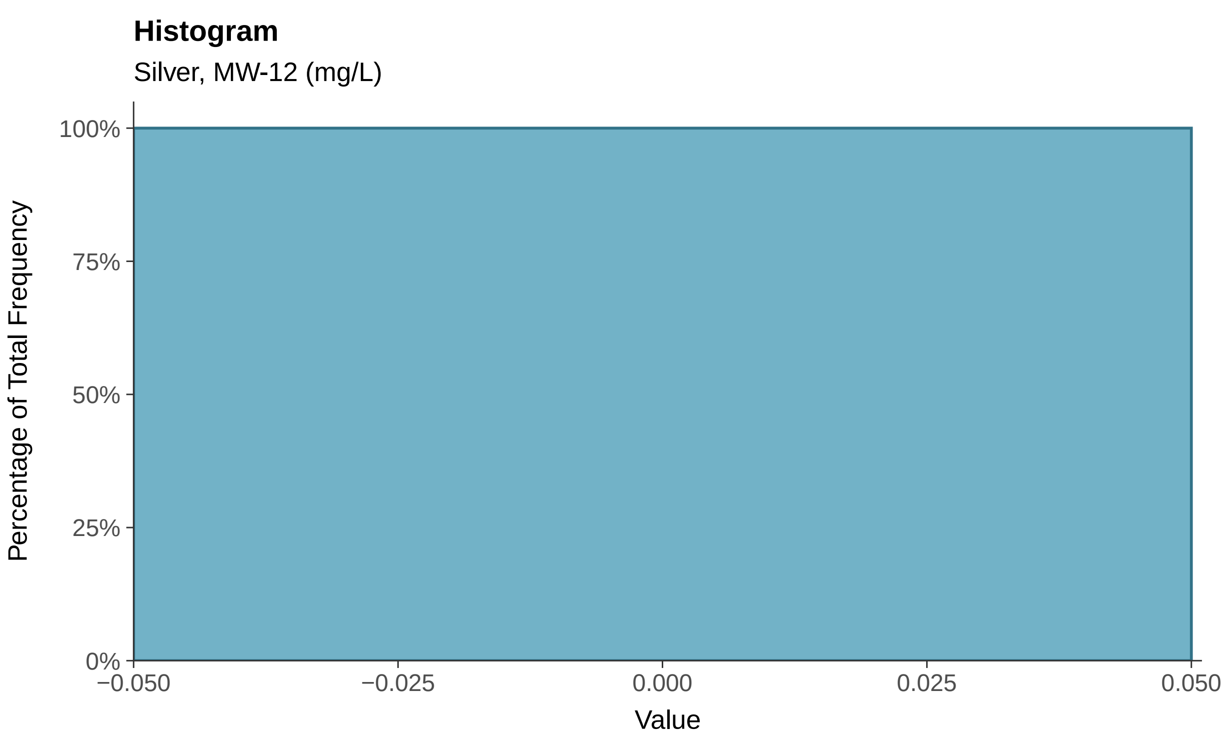

Trend Regression: Piecewise Linear-Linear
Nickel, MW-12 (mg/L)
Value
0.006
0.004
0.002
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
Nickel, MW-12 (mg/L)
Value
0.006
0.004
0.002
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Part 115: Silver, MW-12

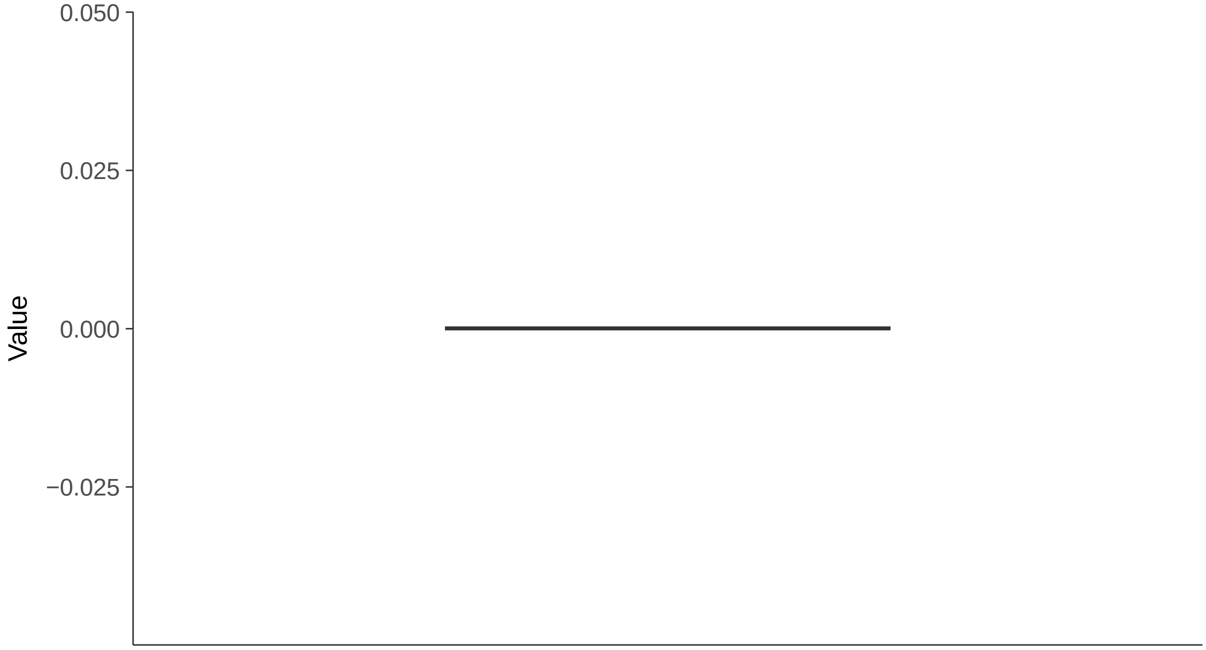
ID: 22_2_5_123





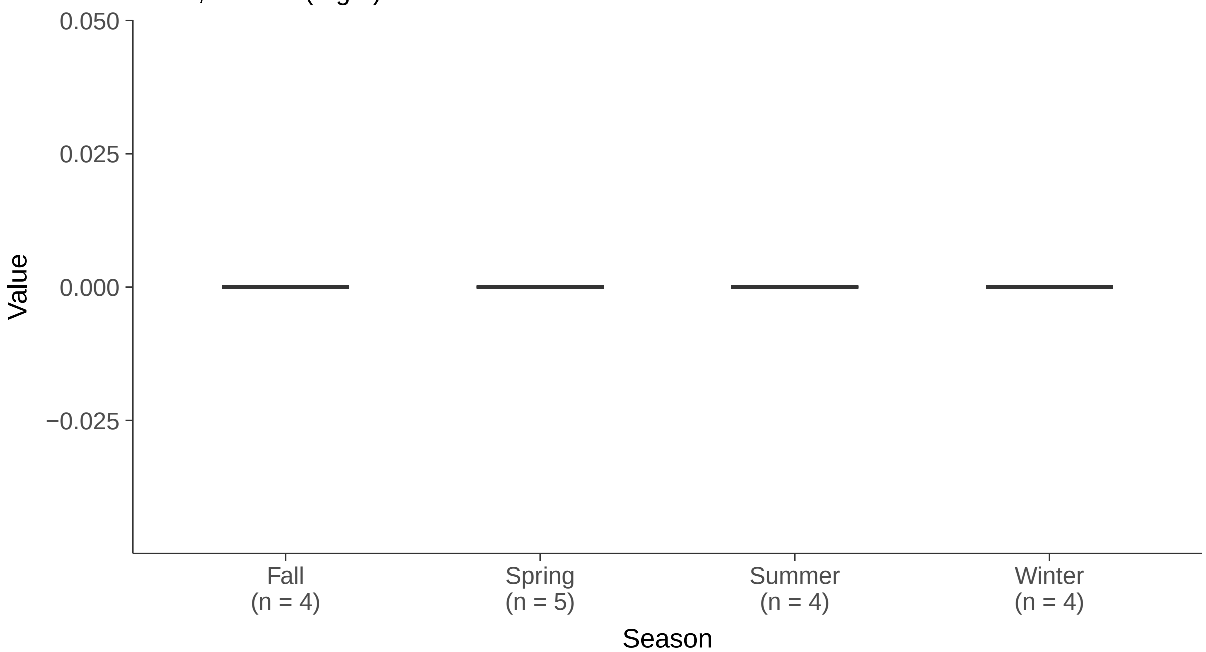
Boxplot

Silver, MW-12 (mg/L)



Boxplot by Season

Silver, MW-12 (mg/L)

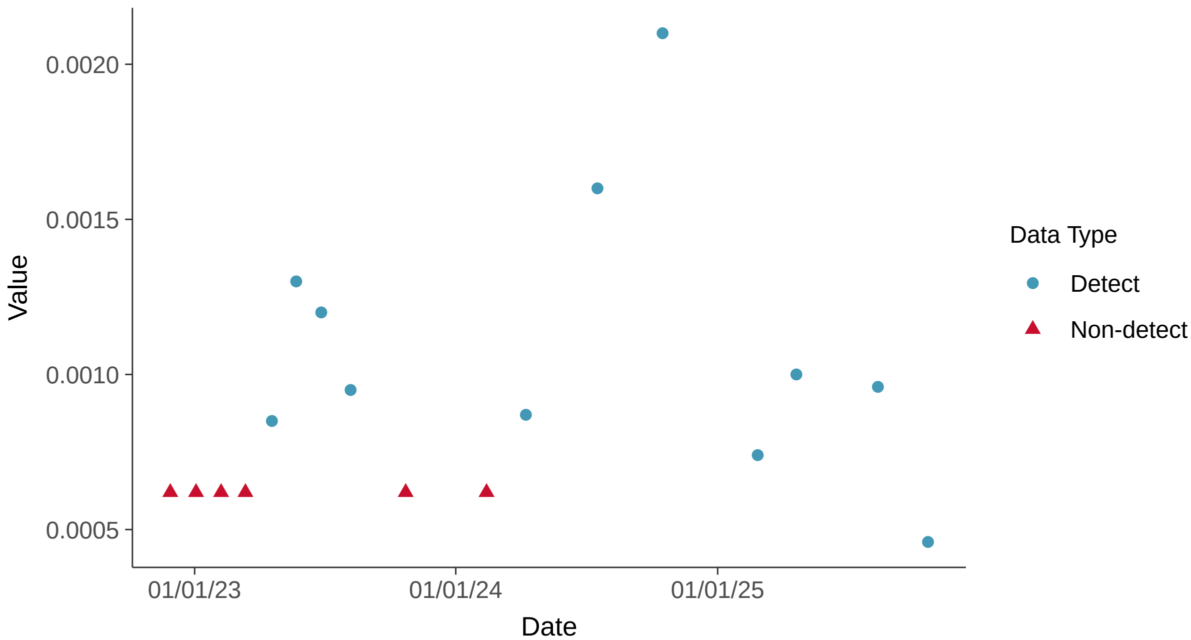


Part 115: Vanadium, MW-12

ID: 22_2_5_128

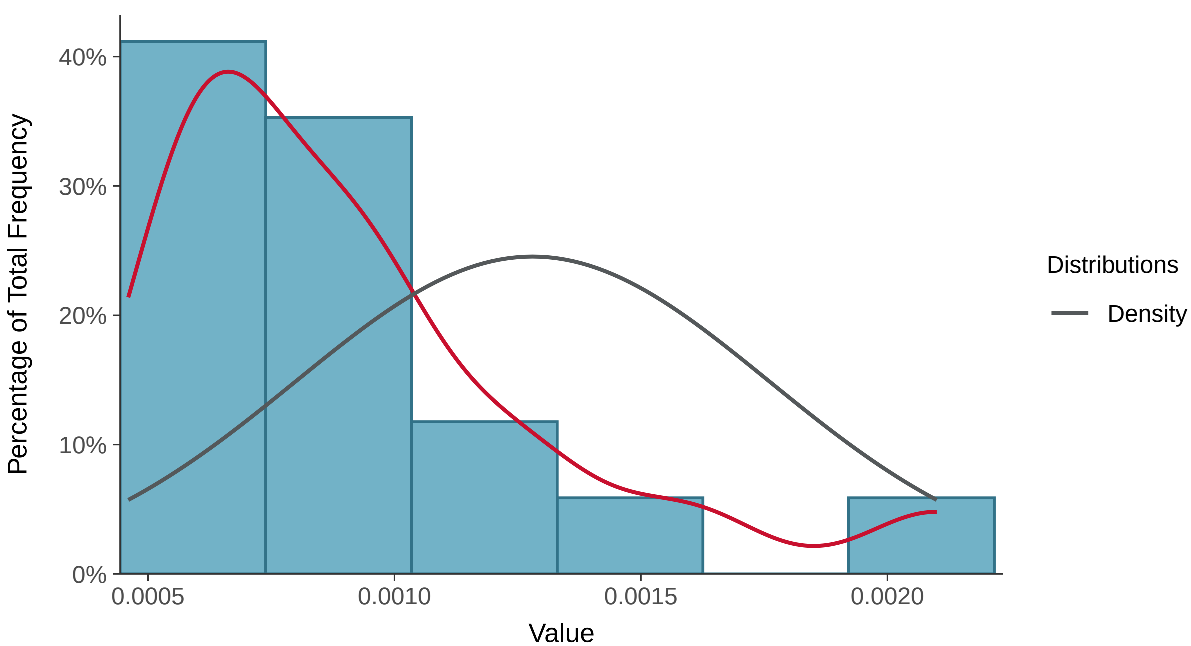
Scatter Plot

Vanadium, MW-12 (mg/L)



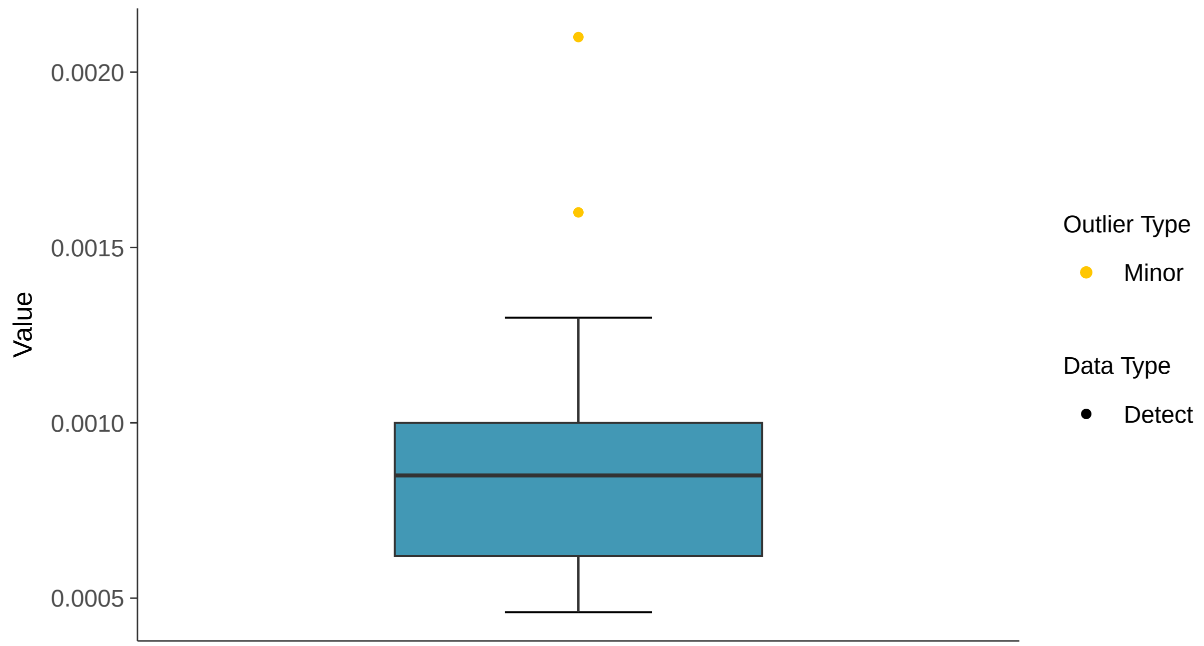
Histogram

Vanadium, MW-12 (mg/L)



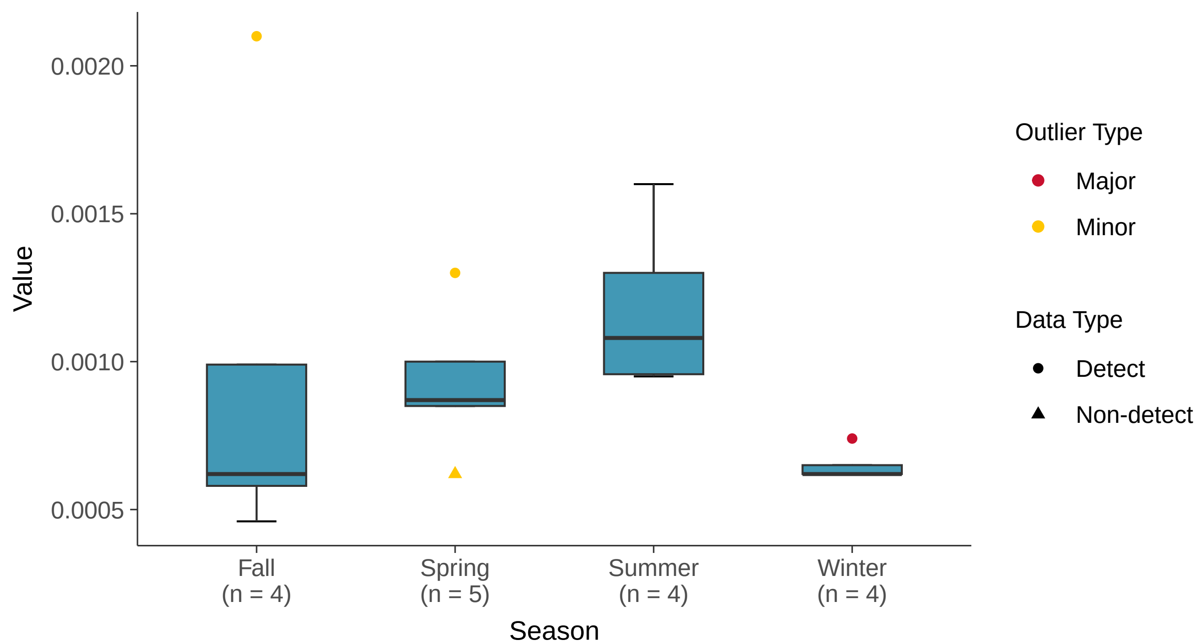
Boxplot

Vanadium, MW-12 (mg/L)



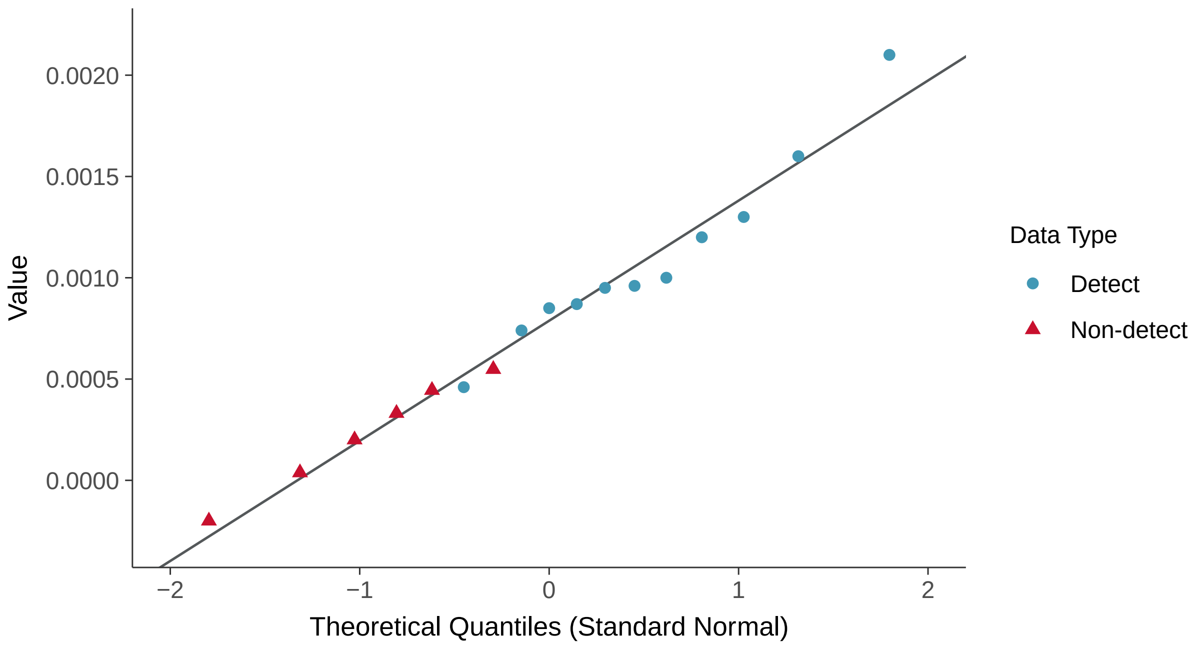
Boxplot by Season

Vanadium, MW-12 (mg/L)



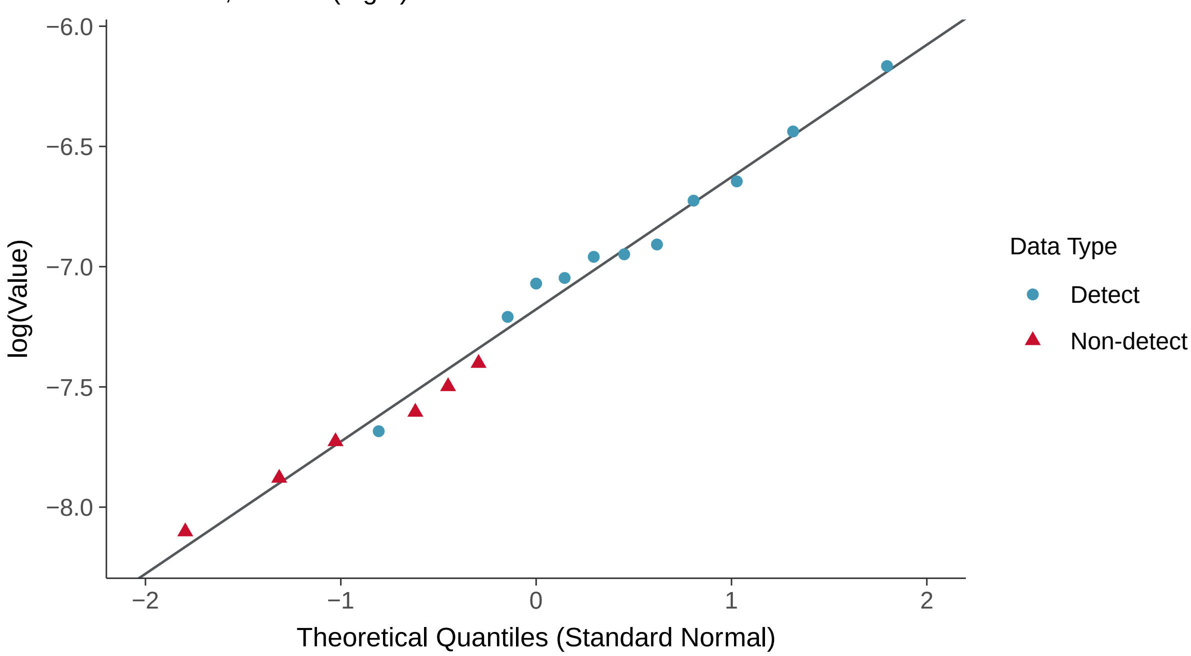
Normal Q-Q plot using ROS Imputed Estimates

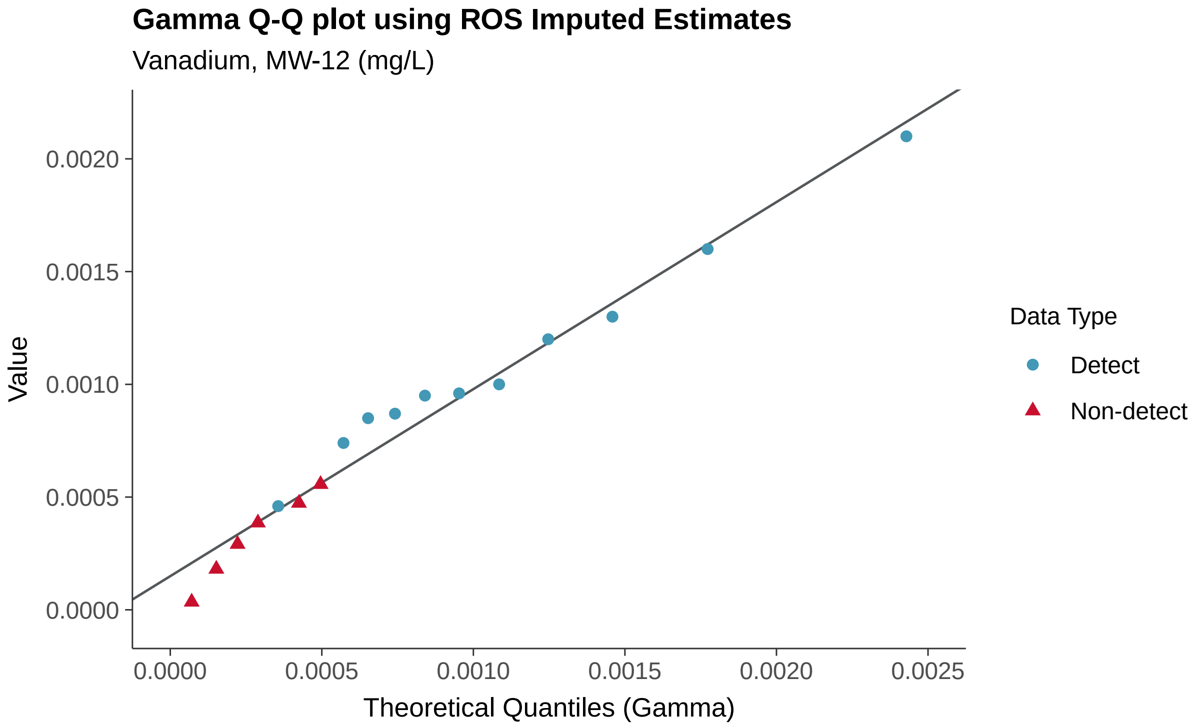
Vanadium, MW-12 (mg/L)

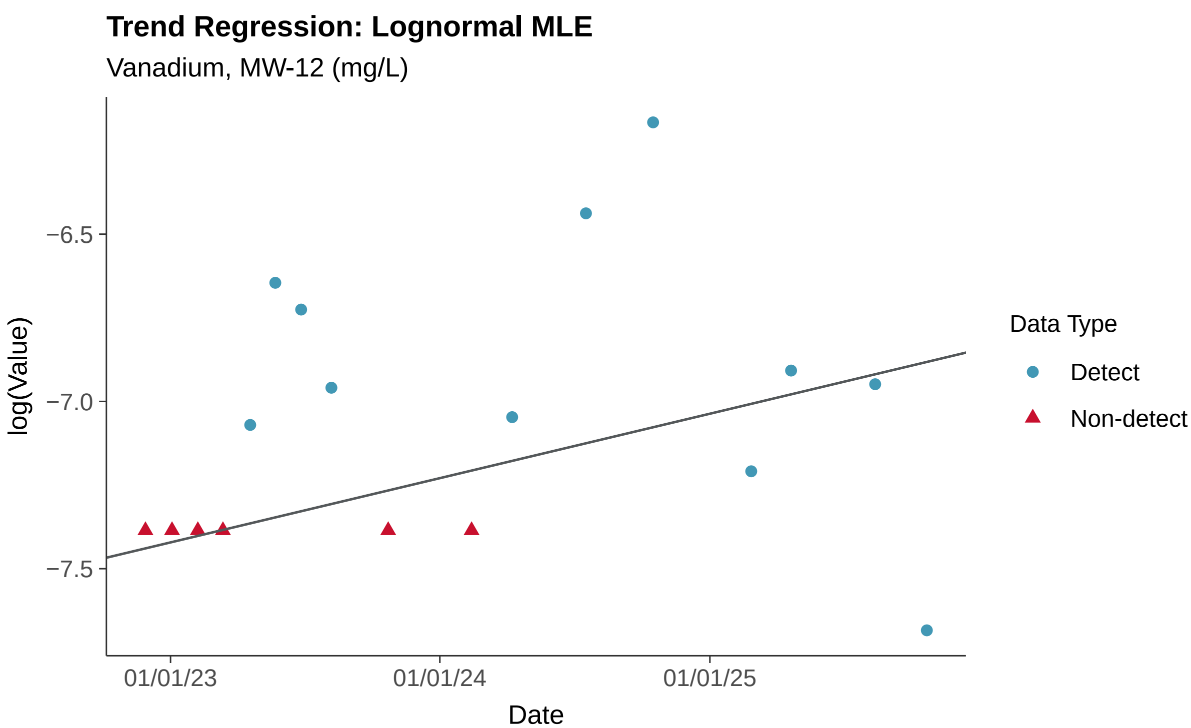


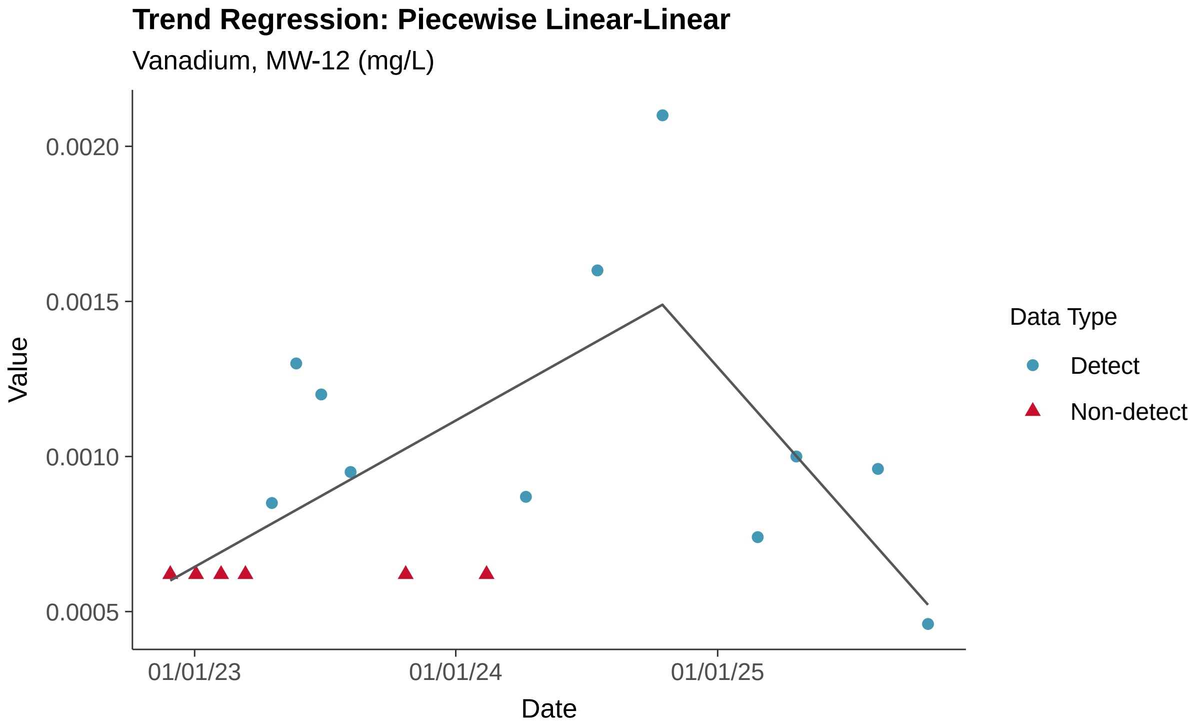
Lognormal Q-Q plot using ROS Imputed Estimates

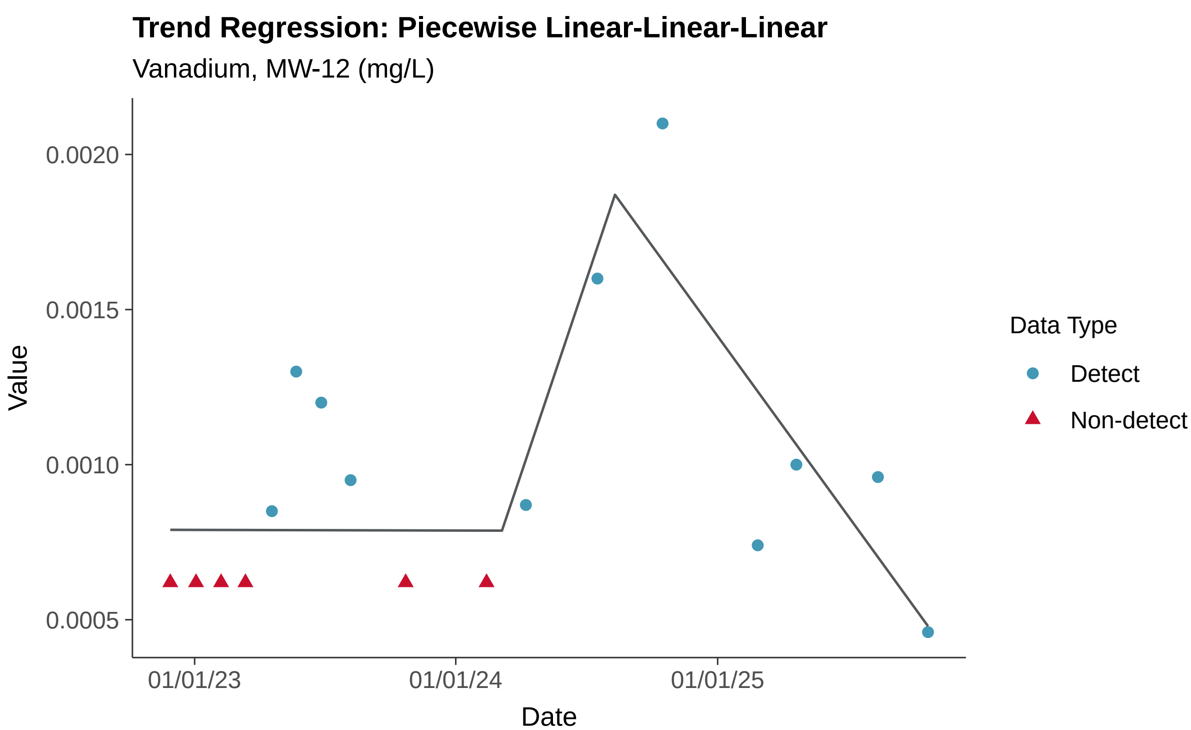
Vanadium, MW-12 (mg/L)




Gamma Q-Q plot using ROS Imputed Estimates
Vanadium, MW-12 (mg/L)
Value
0.0020
0.0015
0.0010
0.0005
0.0000
0.0000
0.0005
0.0010
0.0015
0.0020
0.0025
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect


Trend Regression: Lognormal MLE
Vanadium, MW-12 (mg/L)
log(Value)
−6.5
−7.0
−7.5
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Vanadium, MW-12 (mg/L)
Value
0.0020
0.0015
0.0010
0.0005
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

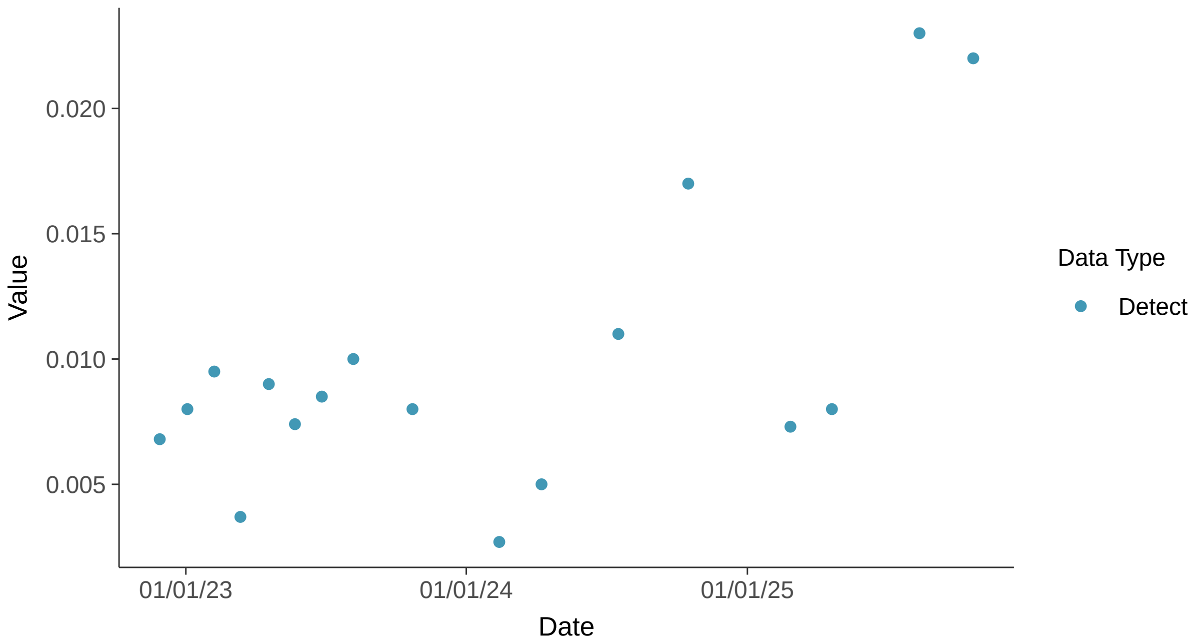

Trend Regression: Piecewise Linear-Linear-Linear
Vanadium, MW-12 (mg/L)
Value
0.0020
0.0015
0.0010
0.0005
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Part 115: Zinc, MW-12

ID: 22_2_5_129

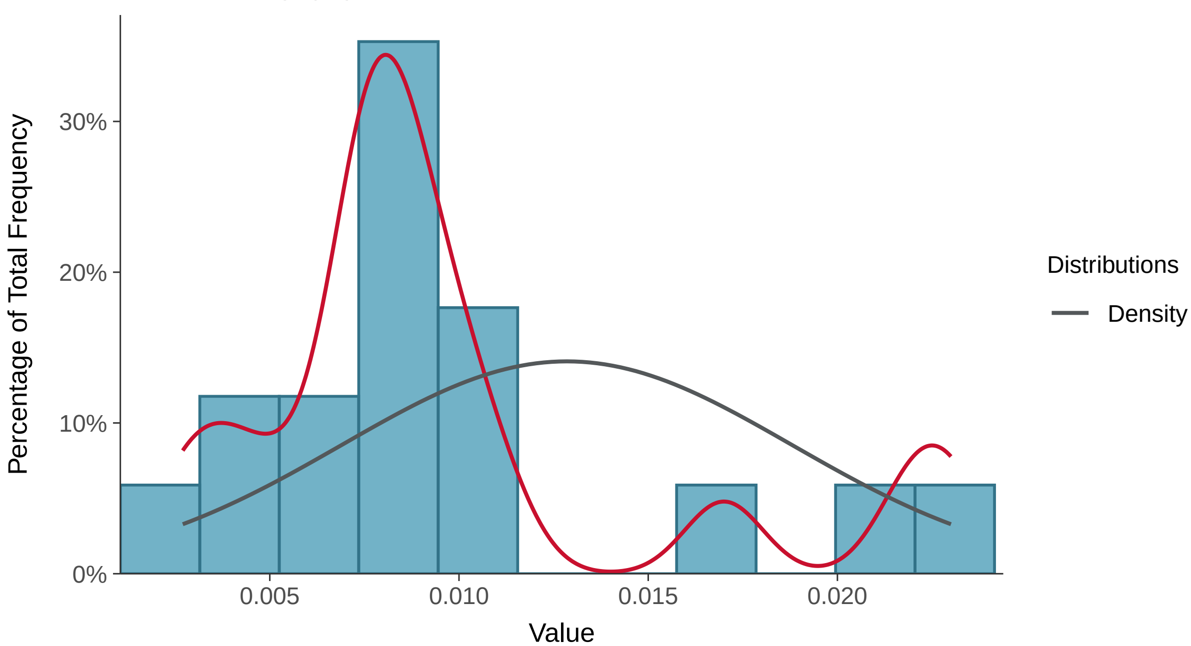
Scatter Plot

Zinc, MW-12 (mg/L)



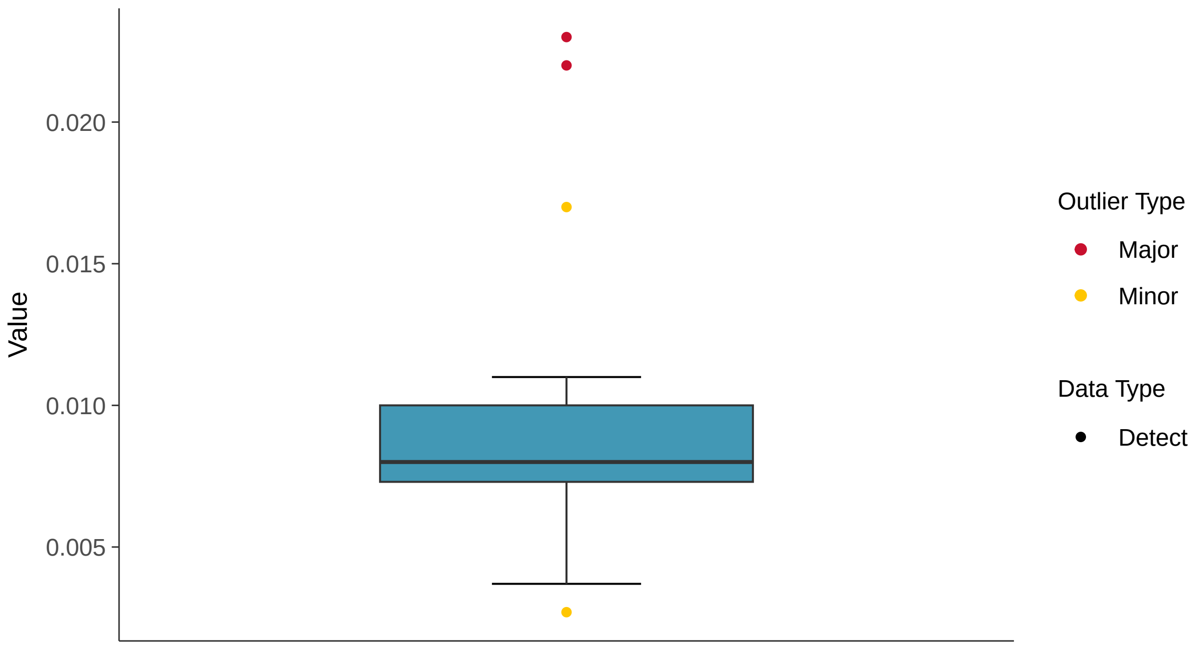
Histogram

Zinc, MW-12 (mg/L)



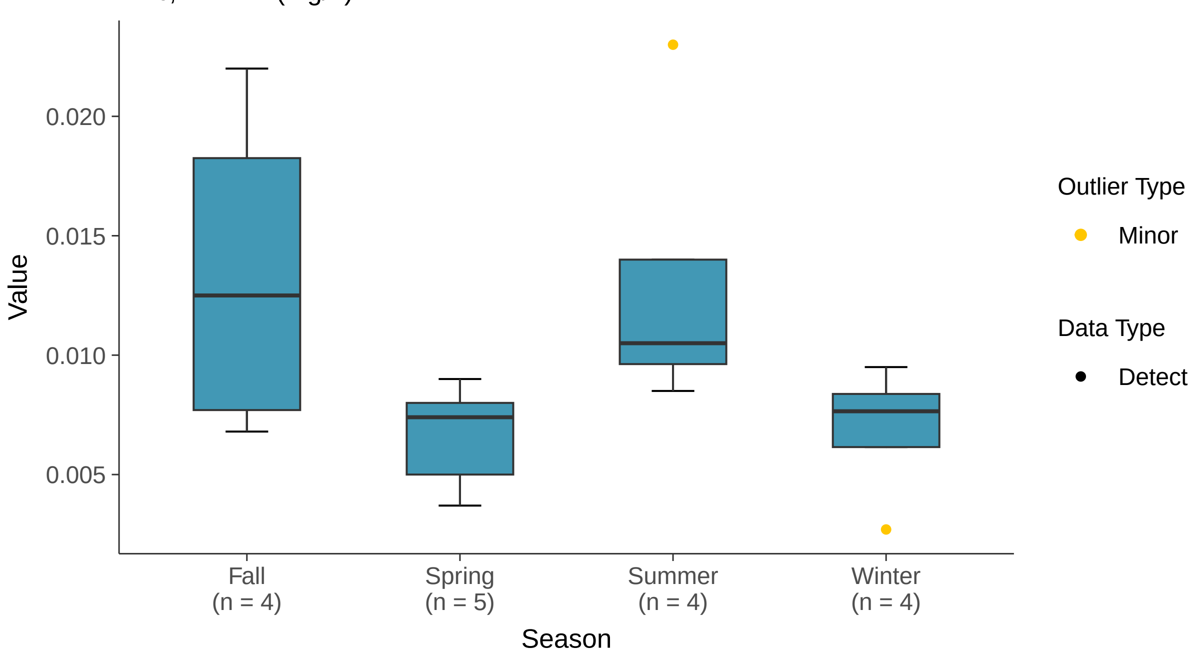
Boxplot

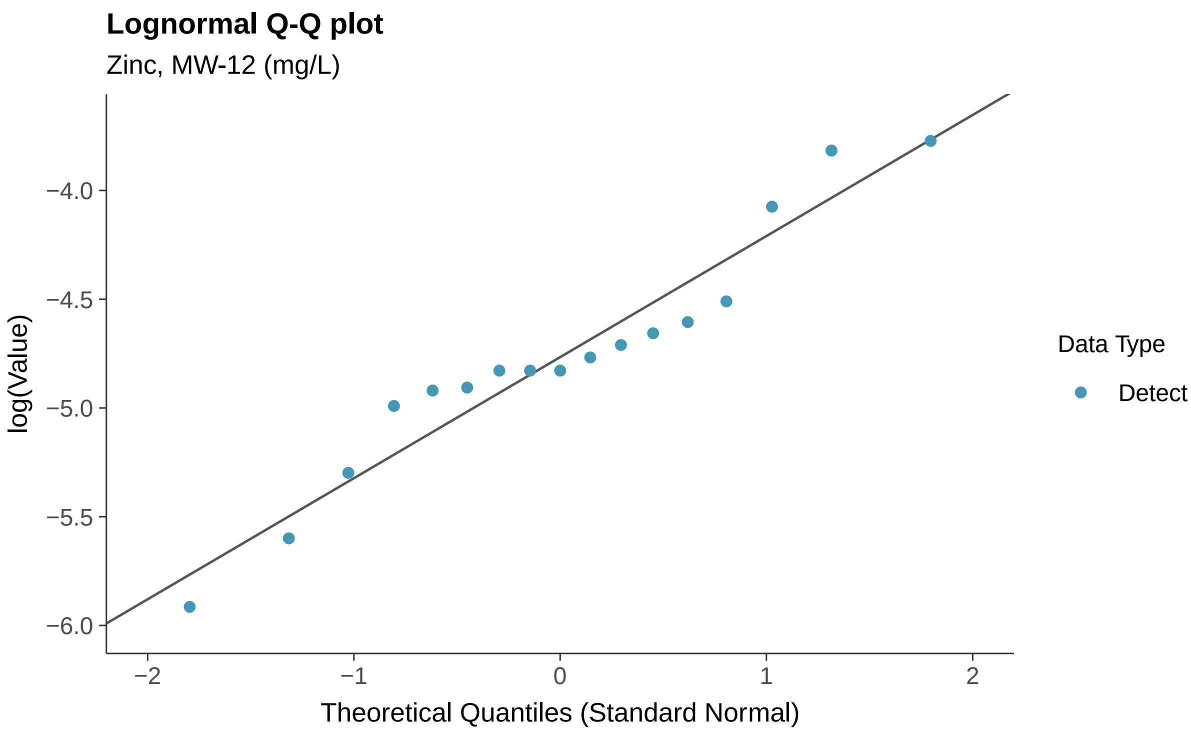
Zinc, MW-12 (mg/L)

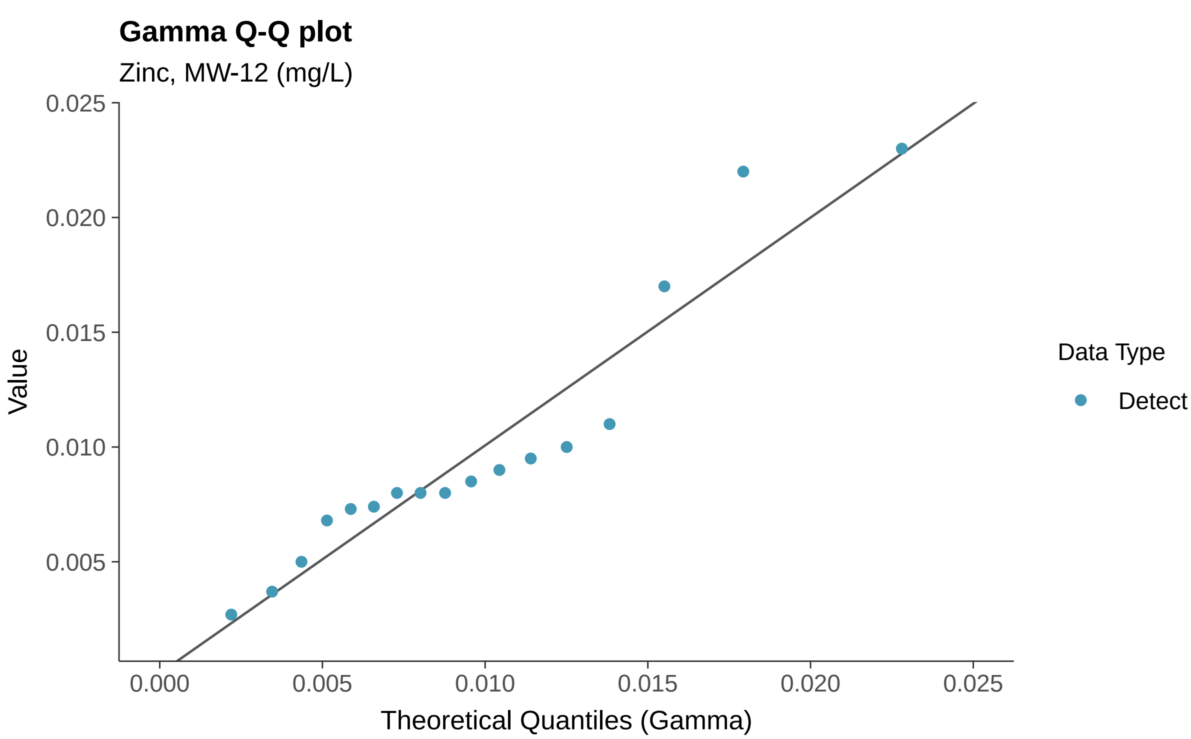


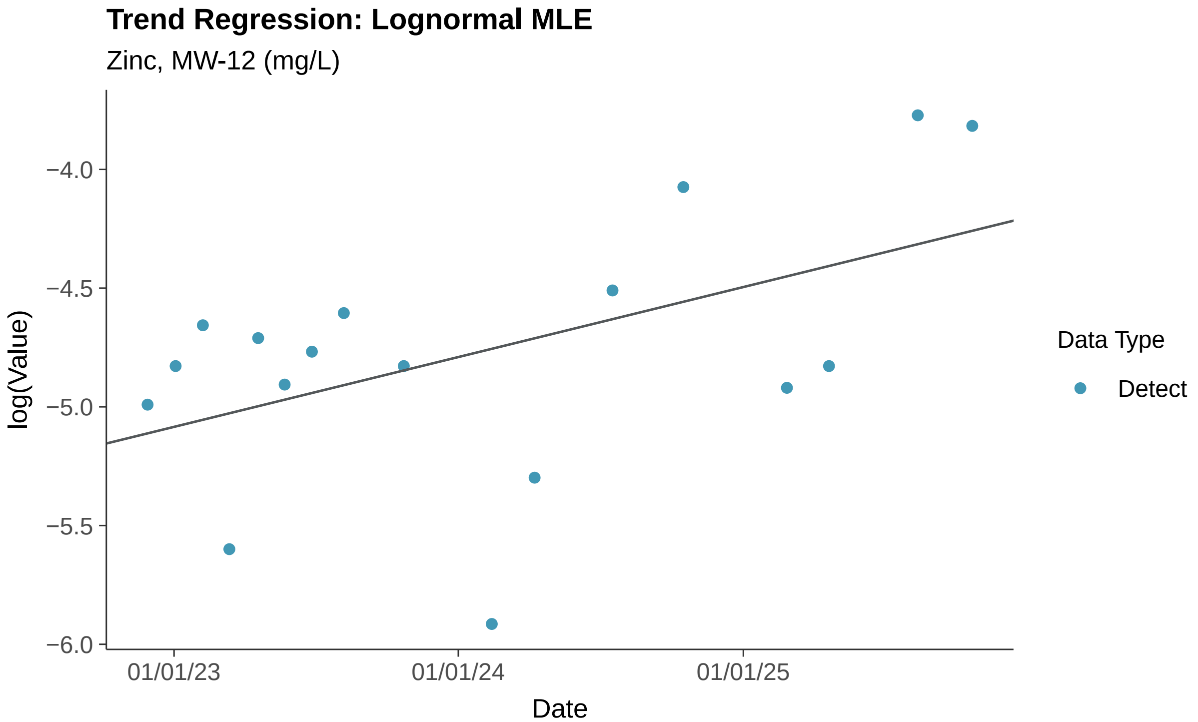
Boxplot by Season

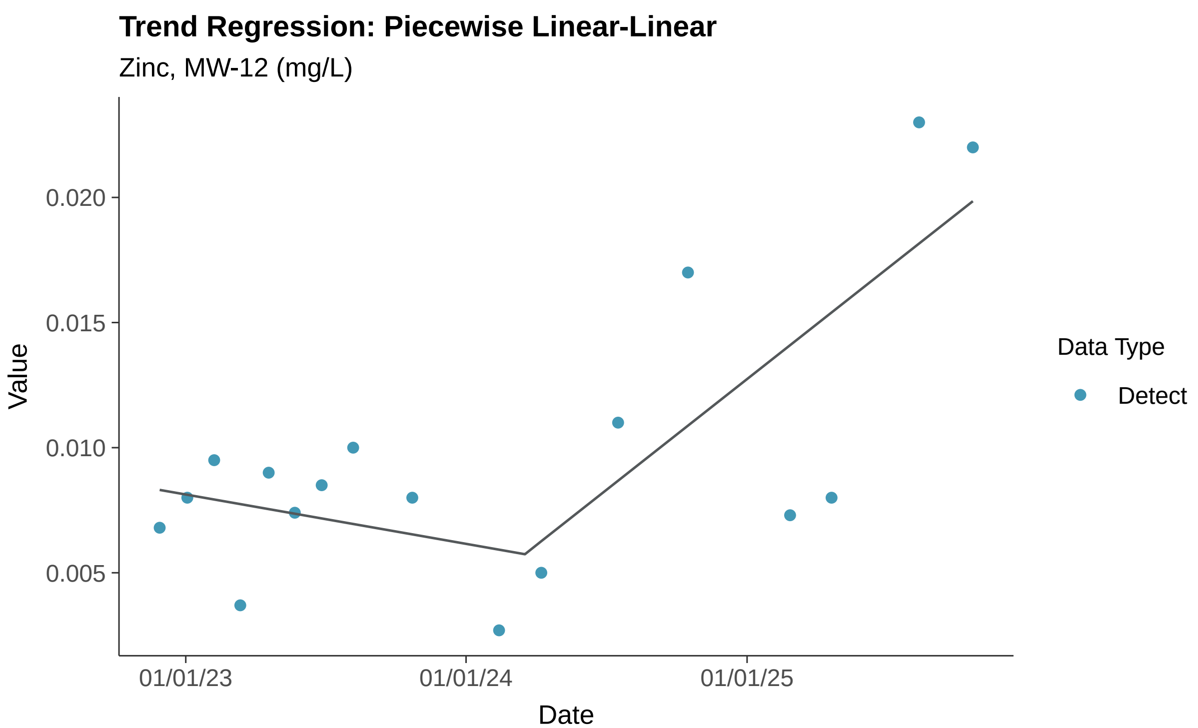
Zinc, MW-12 (mg/L)




Lognormal Q-Q plot
Zinc, MW-12 (mg/L)
log(Value)
−4.0
−4.5
−5.0
−5.5
−6.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

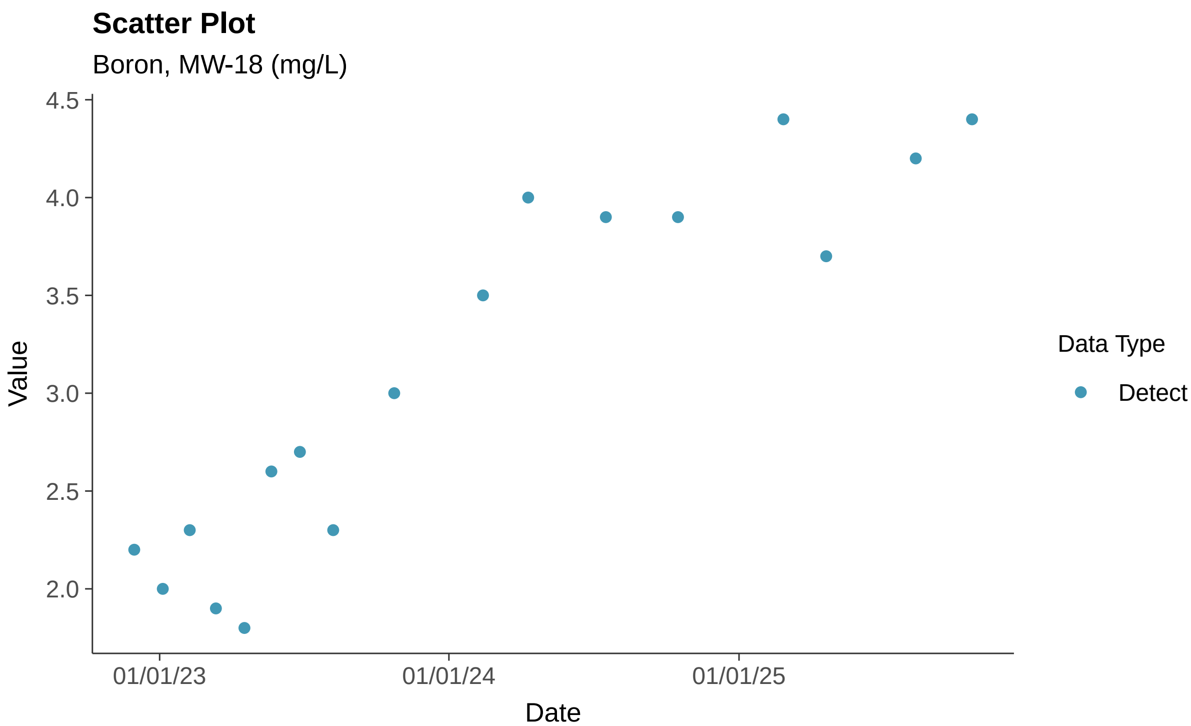

Gamma Q-Q plot
Zinc, MW-12 (mg/L)
Value
0.025
0.020
0.015
0.010
0.005
0.000
0.005
0.010
0.015
0.020
0.025
Theoretical Quantiles (Gamma)
Data Type
Detect

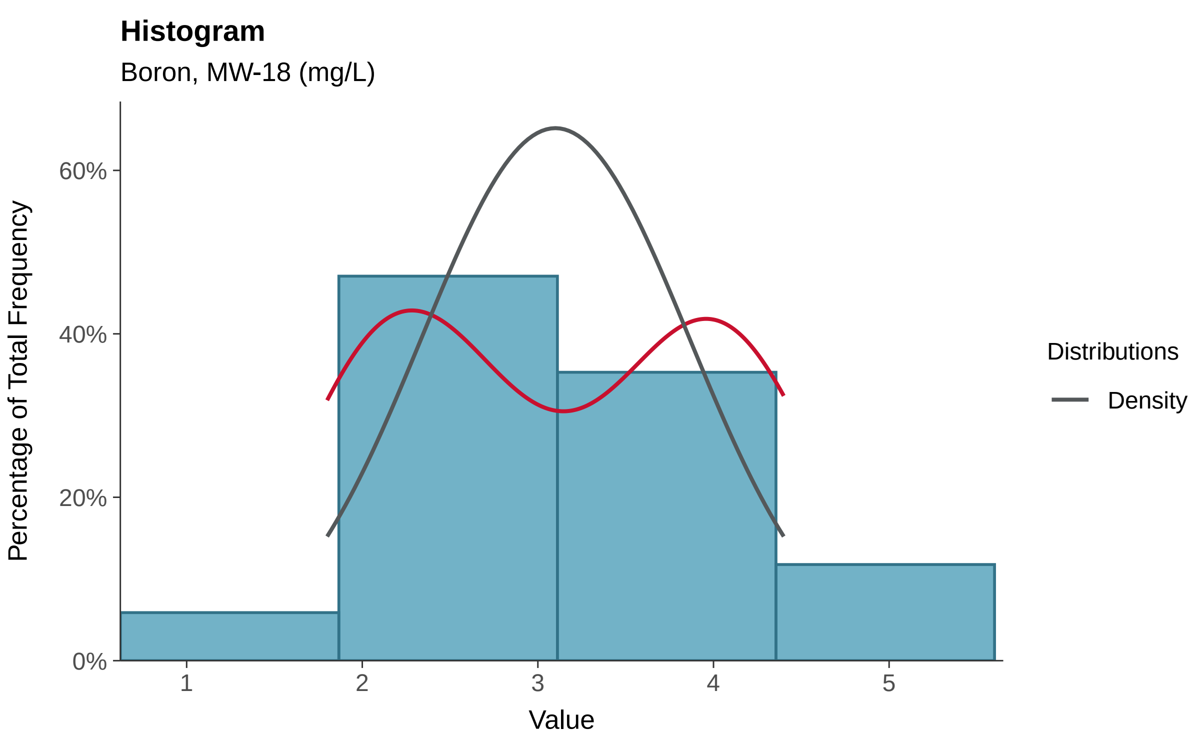

Trend Regression: Lognormal MLE
Zinc, MW-12 (mg/L)
log(Value)
−4.0
−4.5
−5.0
−5.5
−6.0
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear
Zinc, MW-12 (mg/L)
Value
0.020
0.015
0.010
0.005
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Appendix III: Boron, MW-18

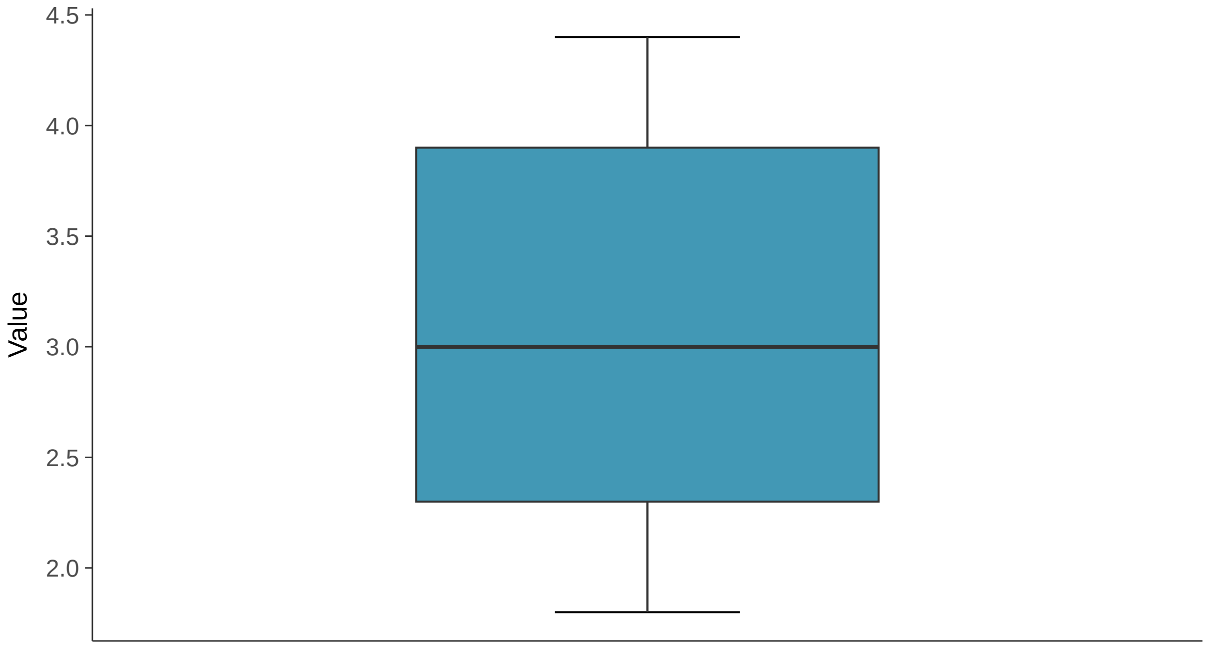
ID: 28_1_3_105





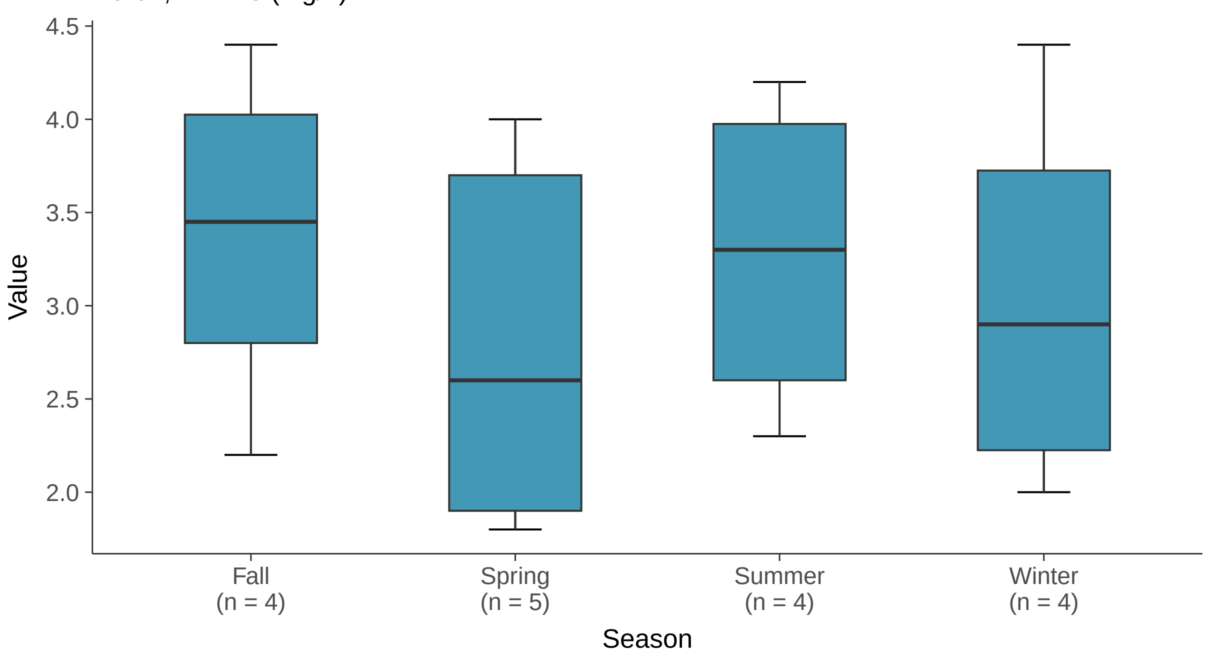
Boxplot

Boron, MW-18 (mg/L)



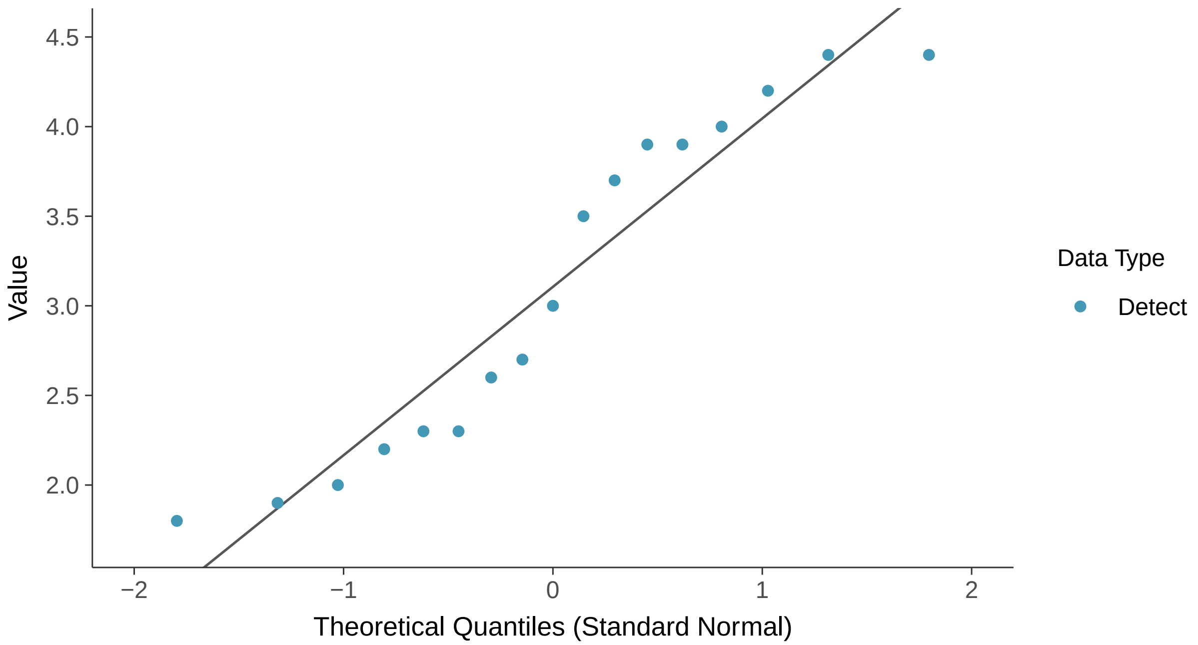
Boxplot by Season

Boron, MW-18 (mg/L)



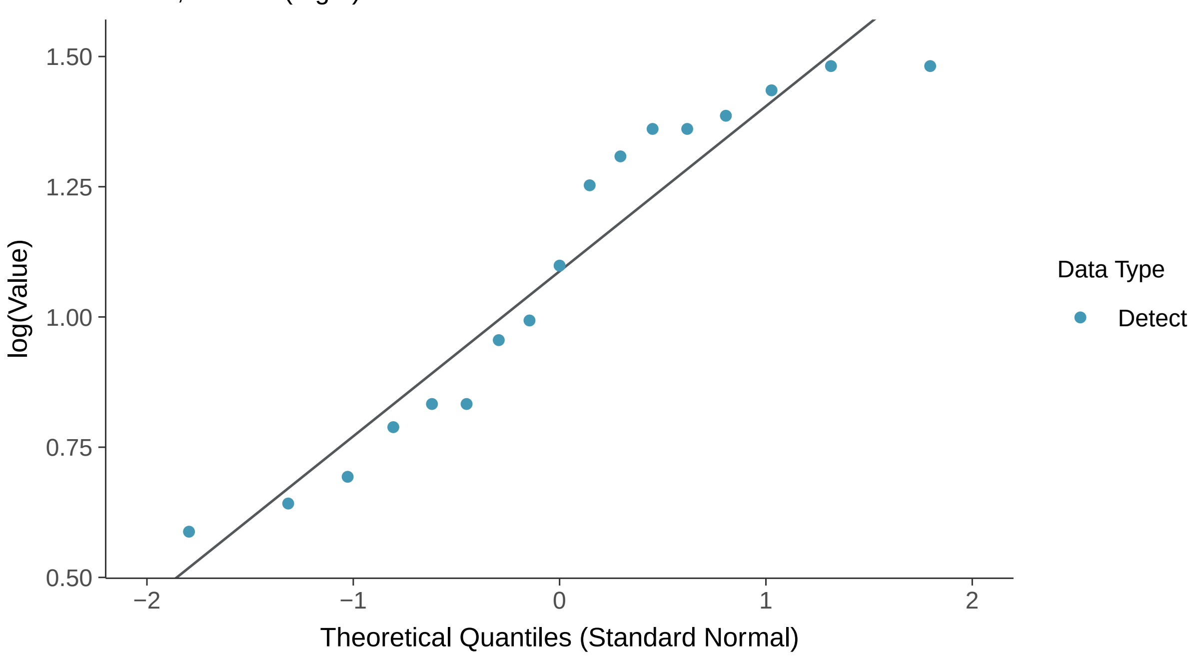
Normal Q-Q plot

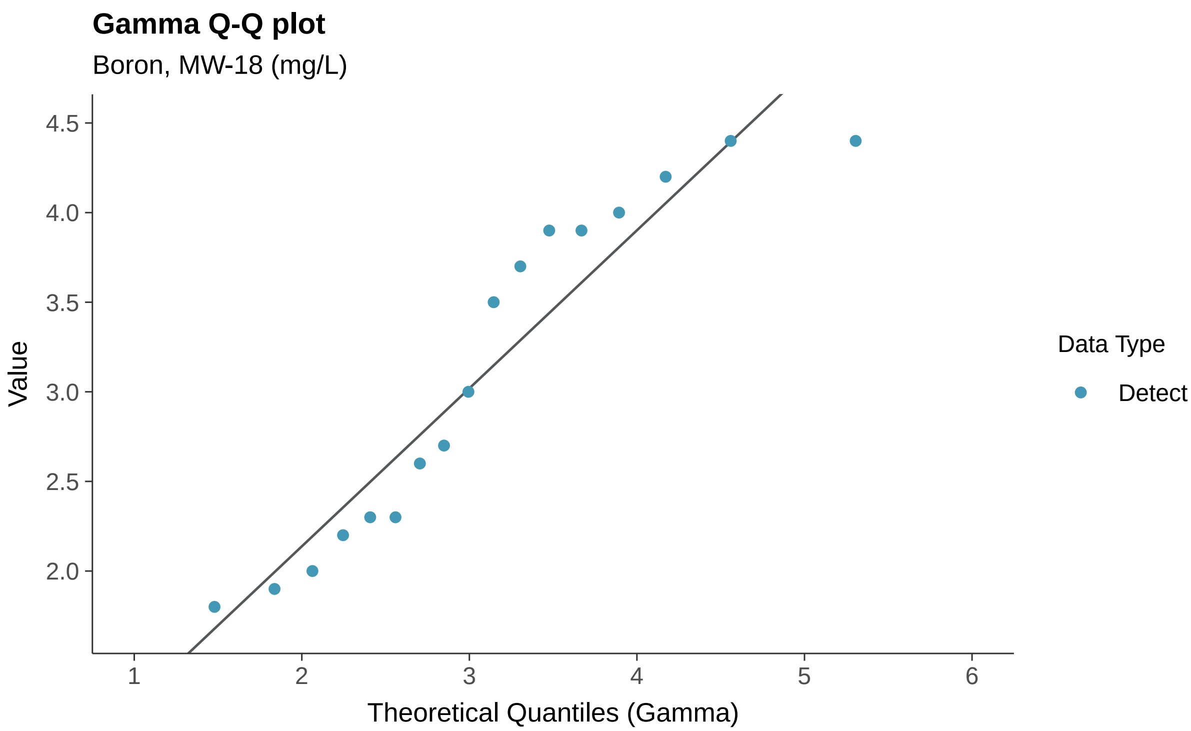
Boron, MW-18 (mg/L)

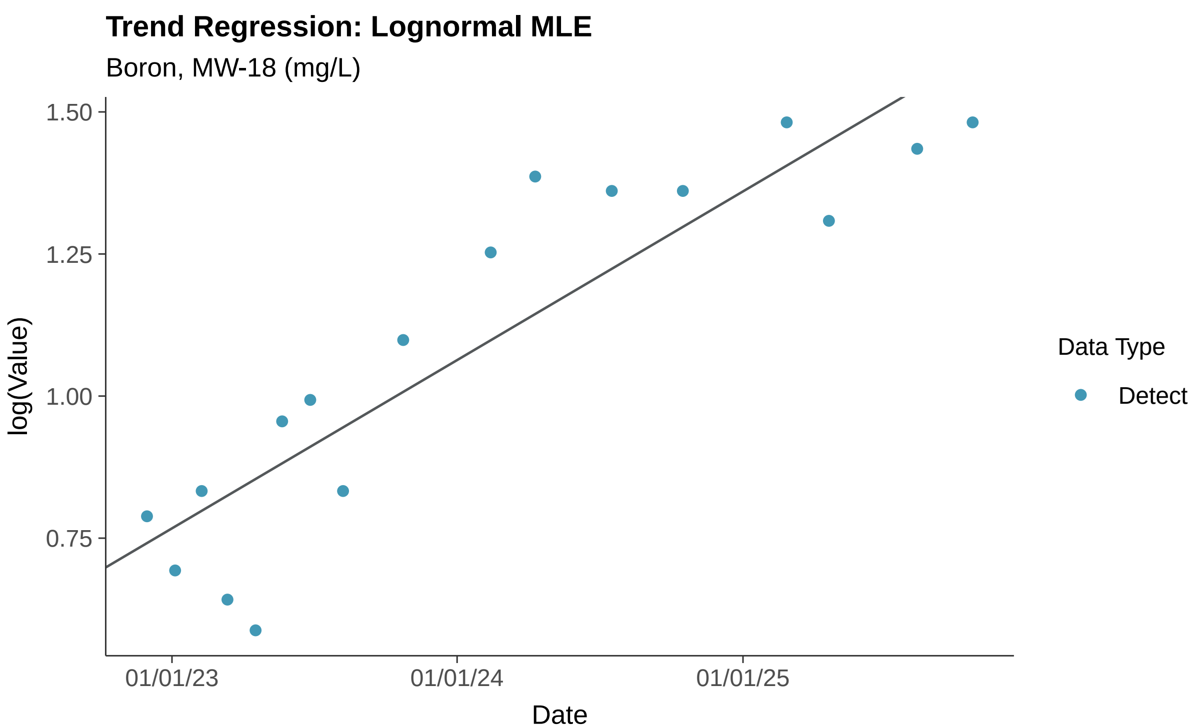


Lognormal Q-Q plot

Boron, MW-18 (mg/L)

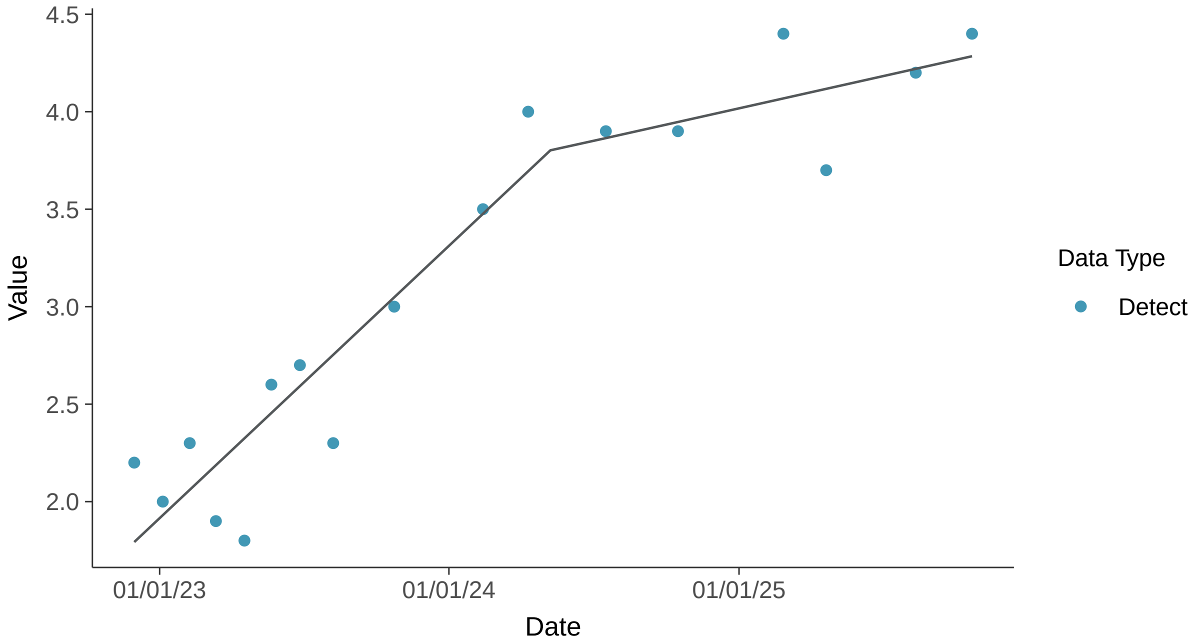



Gamma Q-Q plot
Boron, MW-18 (mg/L)
Value
Theoretical Quantiles (Gamma)
4.5
4.0
3.5
3.0
2.5
2.0
1
2
3
4
5
6
Data Type
Detect


Trend Regression: Lognormal MLE
Boron, MW-18 (mg/L)
log(Value)
Date
1.50
1.25
1.00
0.75
01/01/23
01/01/24
01/01/25
Data Type
Detect

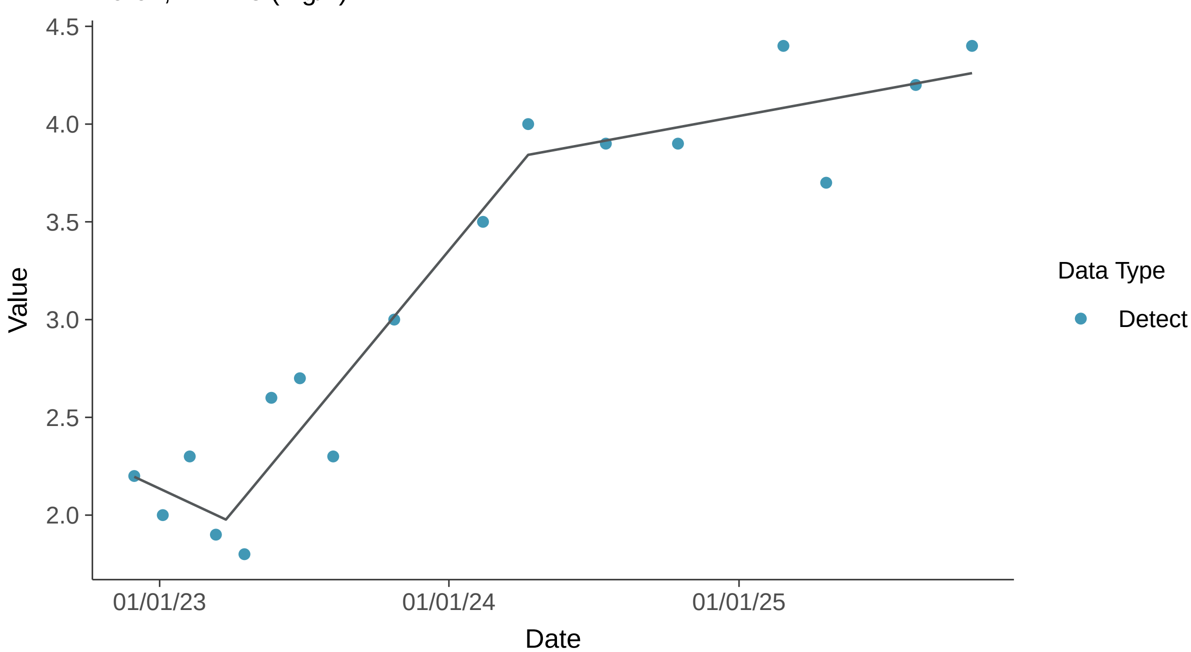
Trend Regression: Piecewise Linear-Linear

Boron, MW-18 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Boron, MW-18 (mg/L)

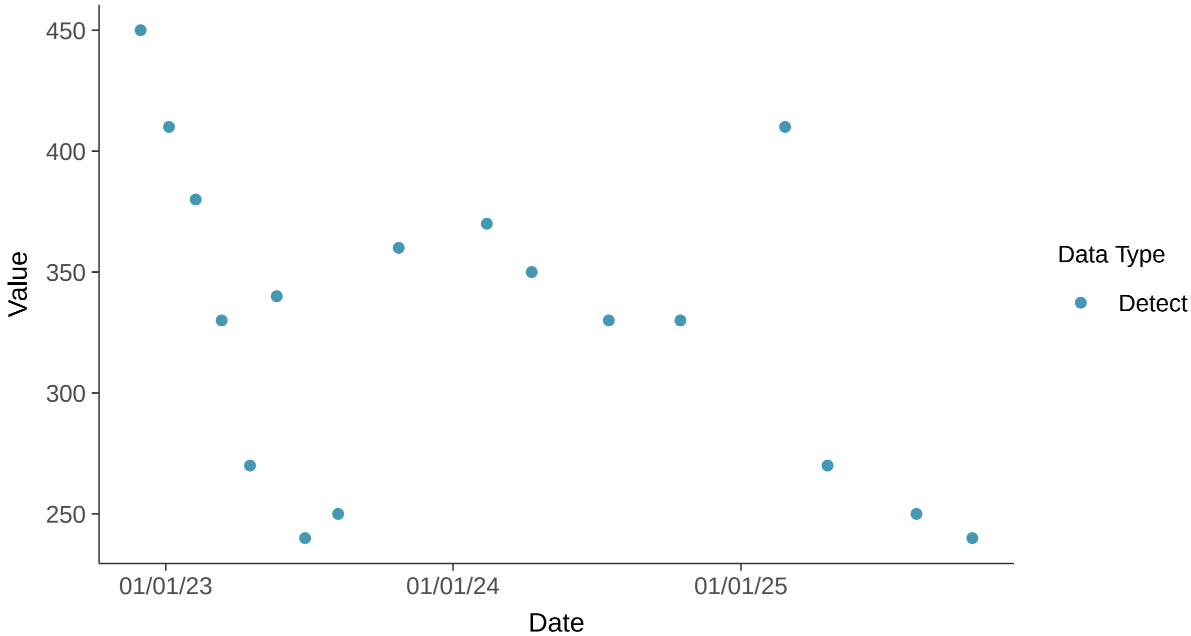


Appendix III: Calcium, MW-18

ID: 28_1_3_107

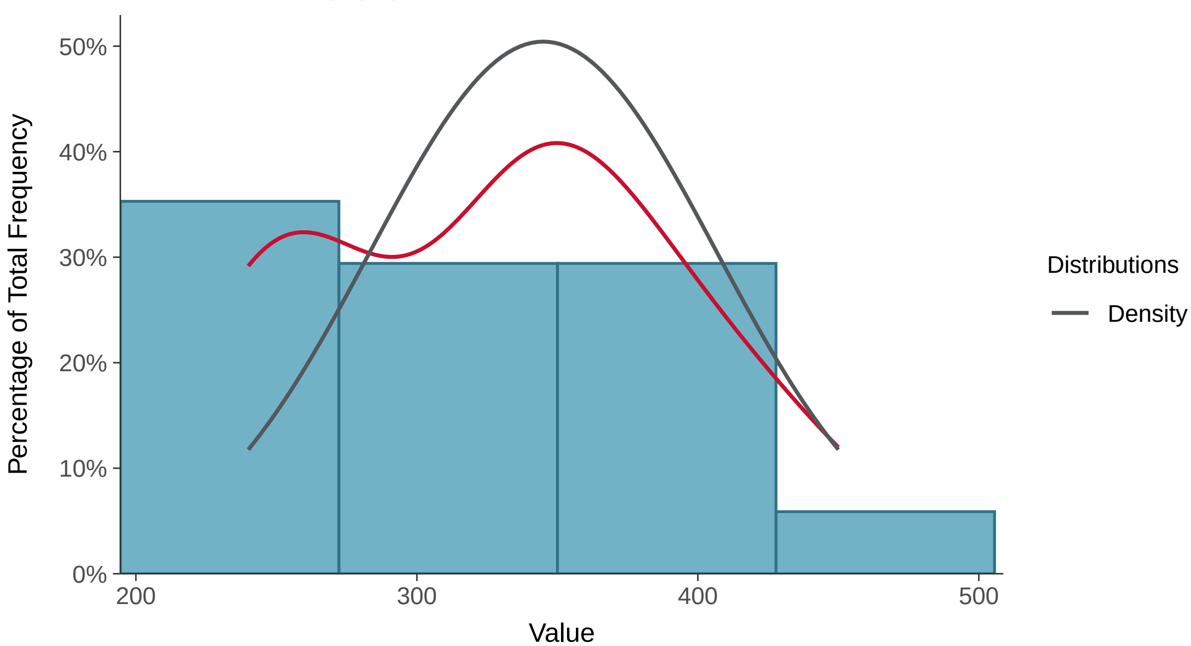
Scatter Plot

Calcium, MW-18 (mg/L)



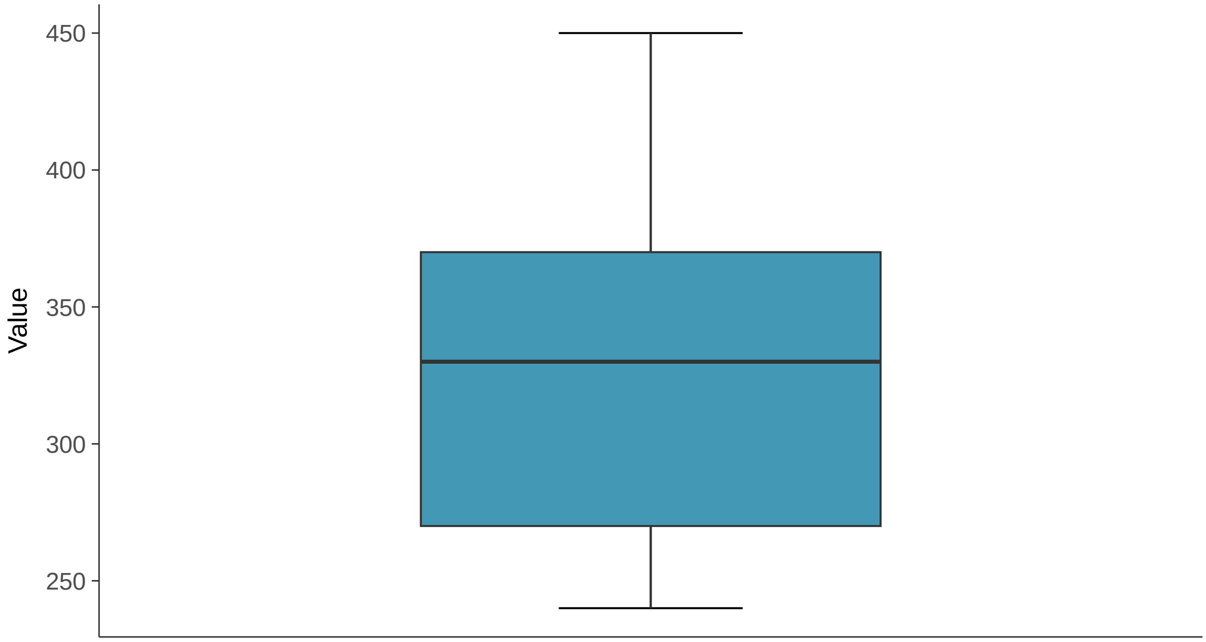
Histogram

Calcium, MW-18 (mg/L)



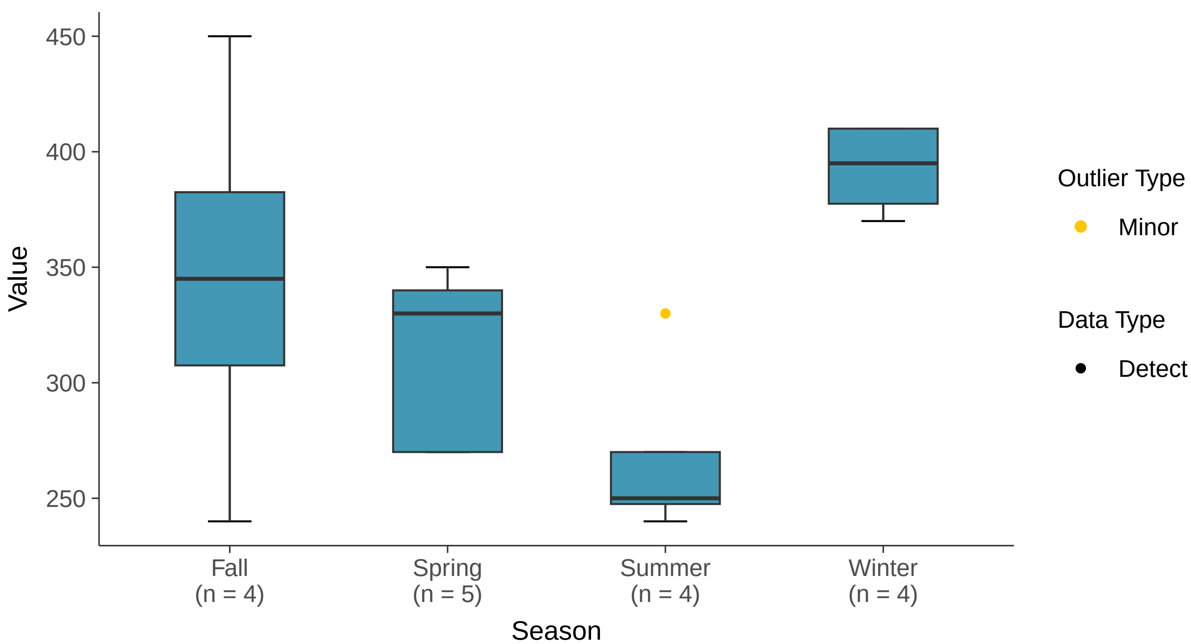
Boxplot

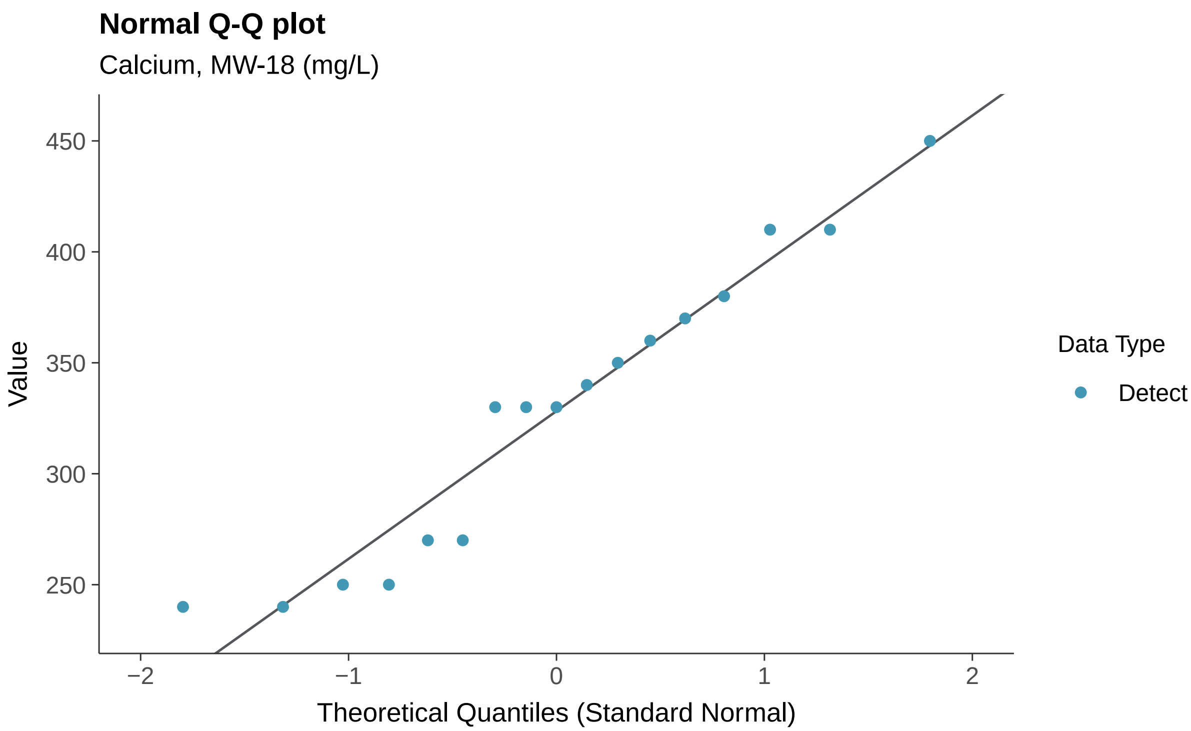
Calcium, MW-18 (mg/L)

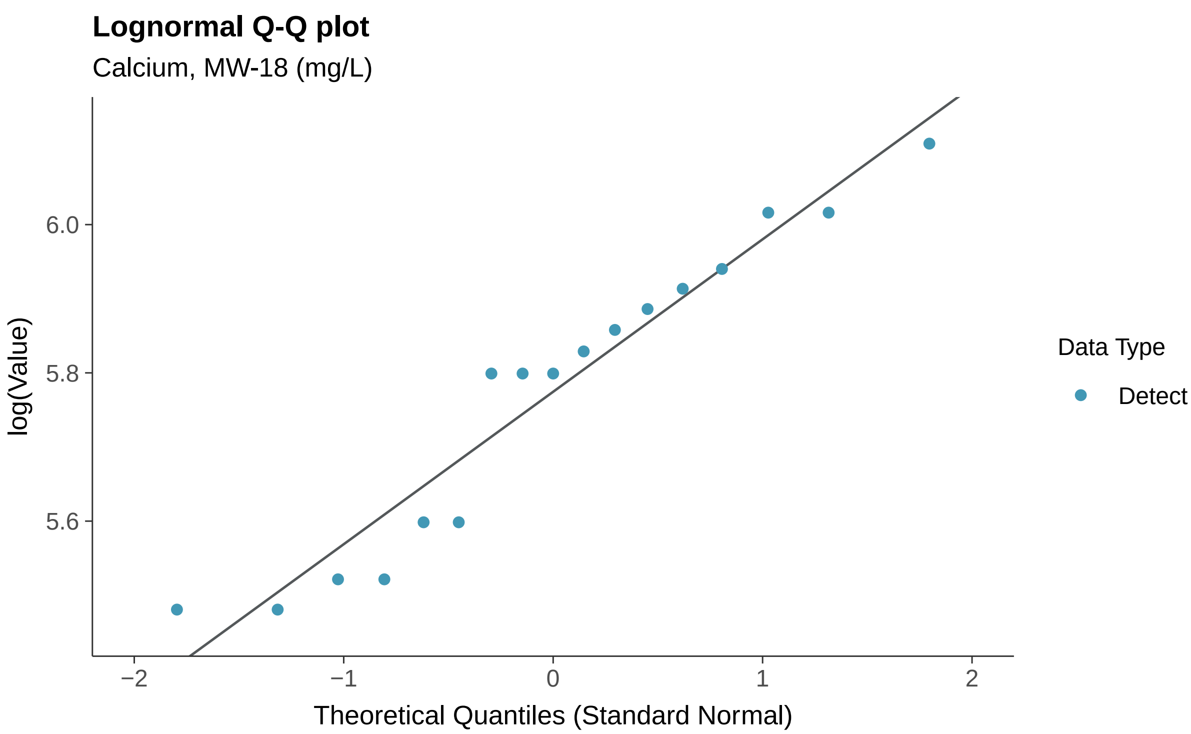


Boxplot by Season

Calcium, MW-18 (mg/L)

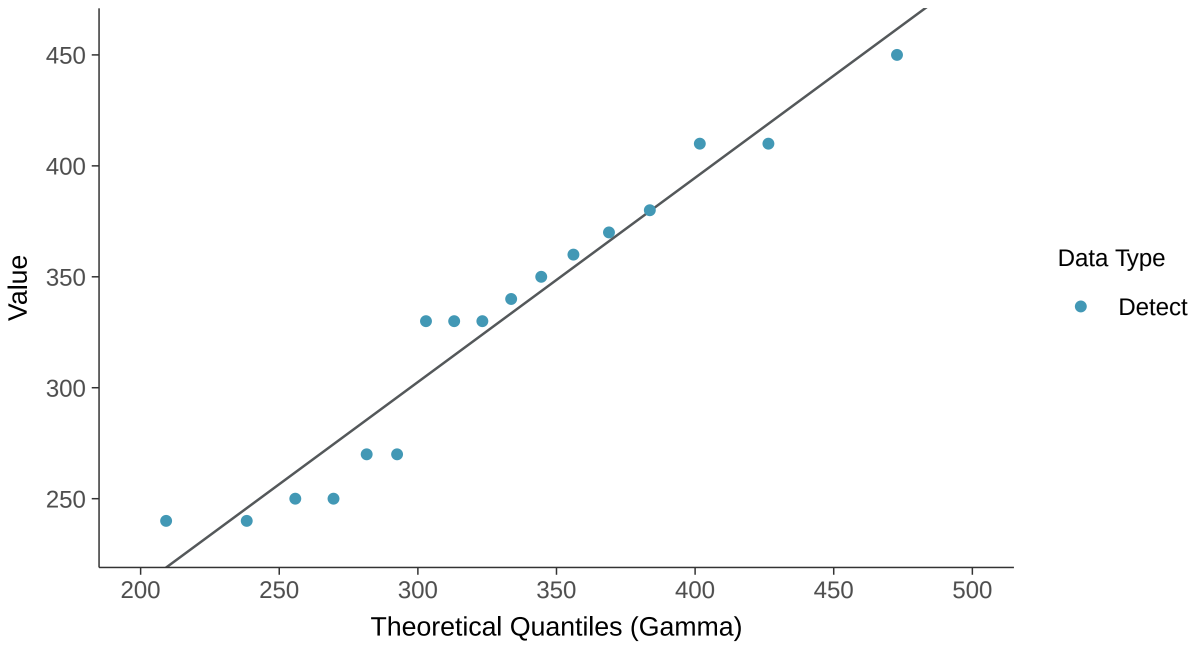



Normal Q-Q plot
Calcium, MW-18 (mg/L)
Value
450
400
350
300
250
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Calcium, MW-18 (mg/L)
log(Value)
6.0
5.8
5.6
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

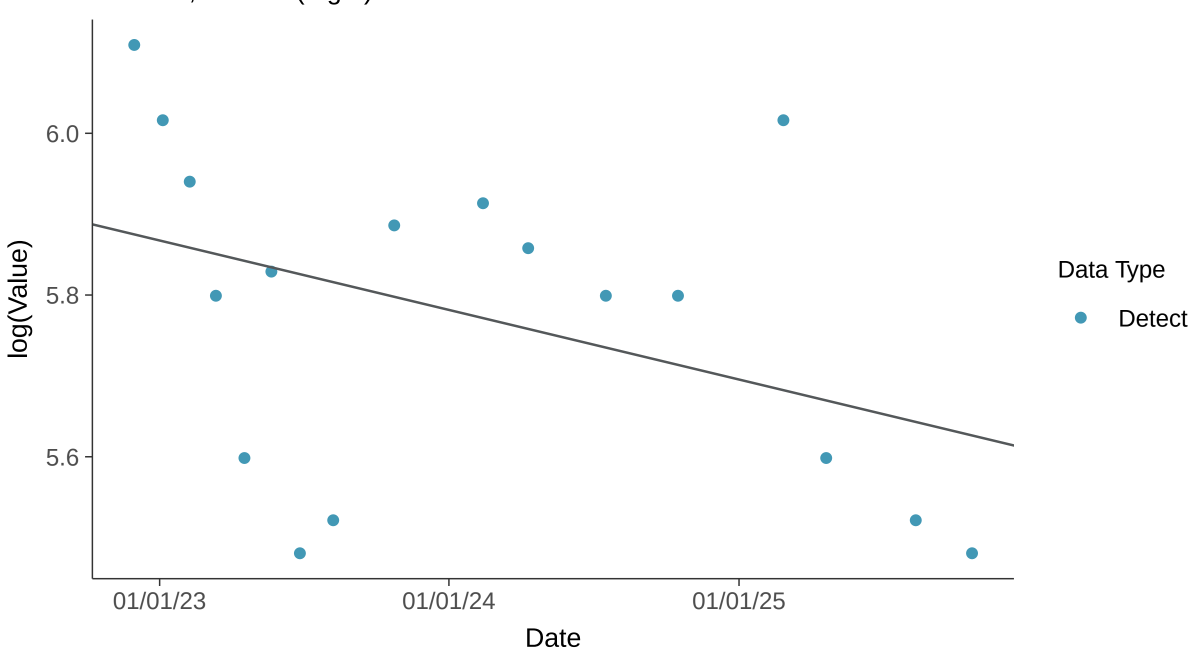
Gamma Q-Q plot

Calcium, MW-18 (mg/L)



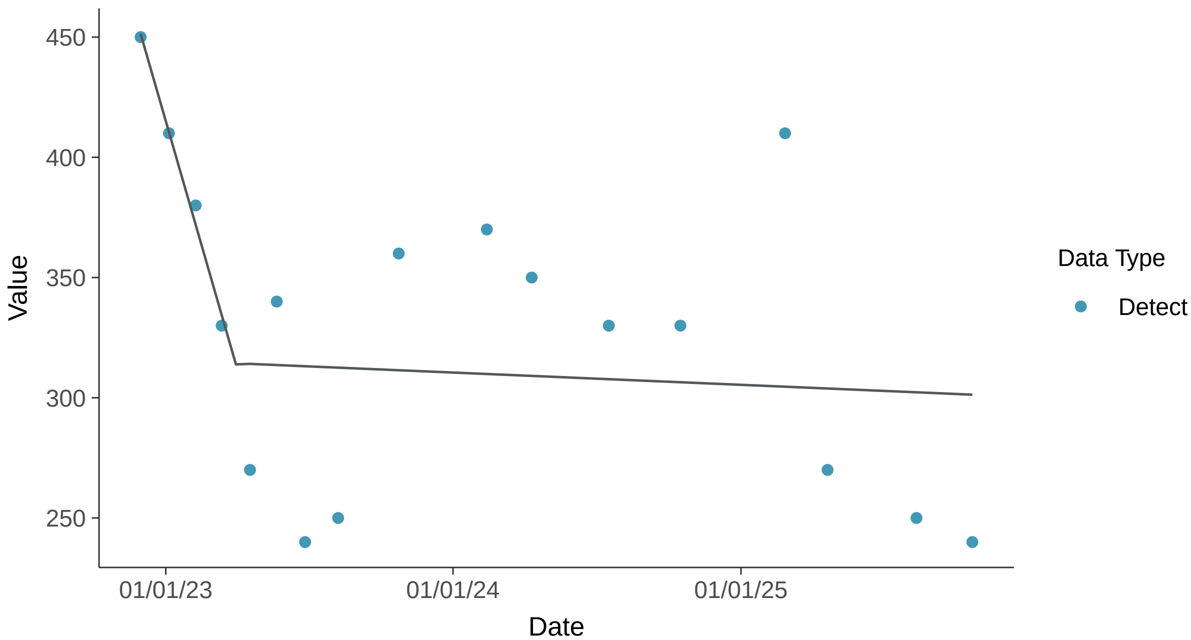
Trend Regression: Lognormal MLE

Calcium, MW-18 (mg/L)



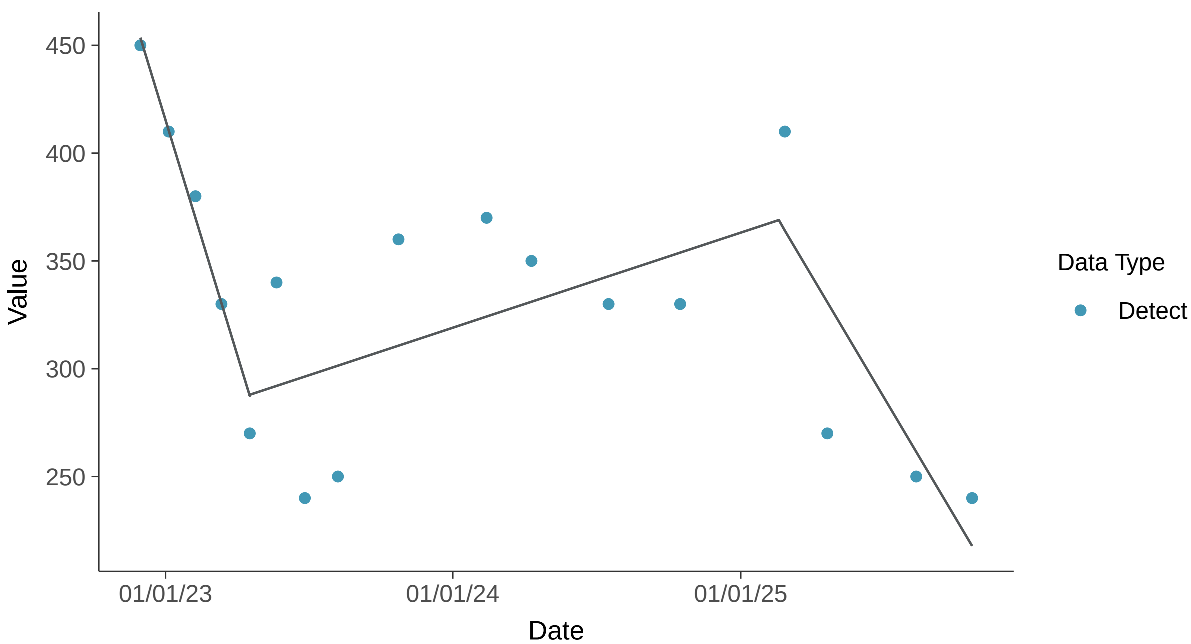
Trend Regression: Piecewise Linear-Linear

Calcium, MW-18 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Calcium, MW-18 (mg/L)

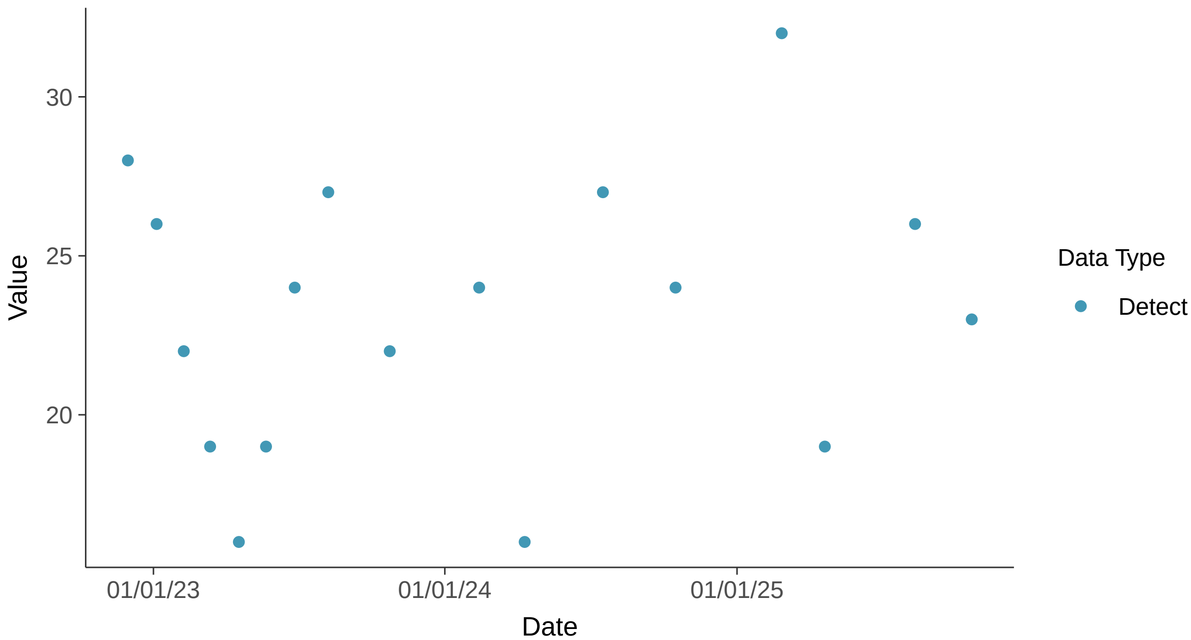


Appendix III: Chloride (as Cl), MW-18

ID: 28_1_3_108

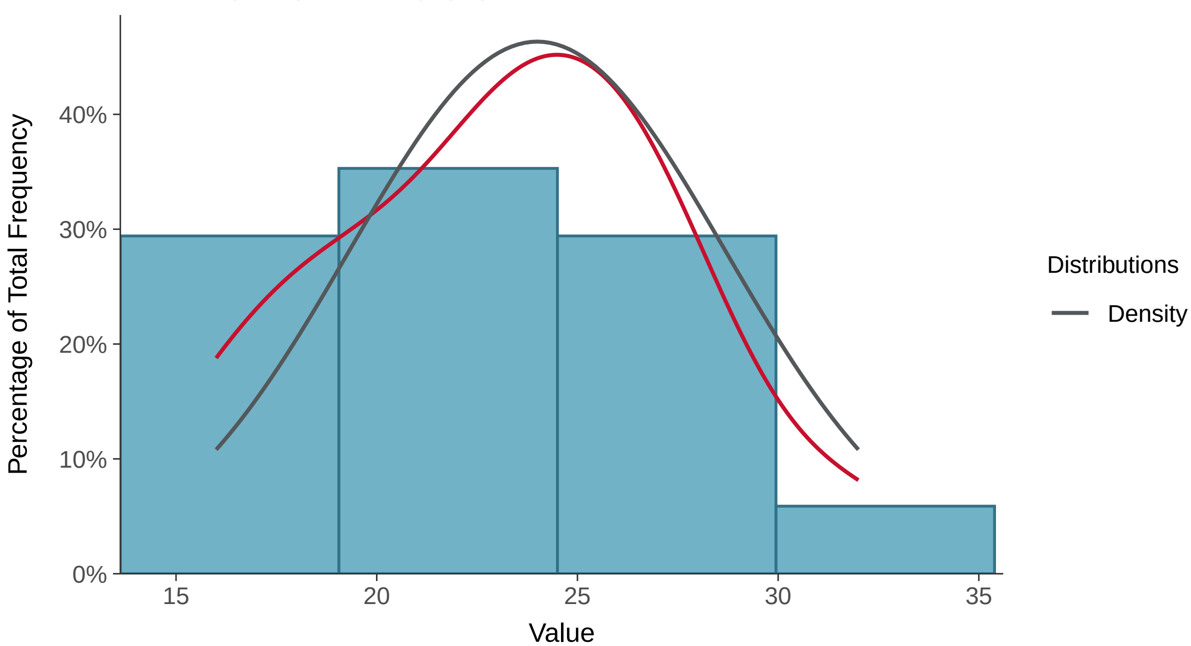
Scatter Plot

Chloride (as Cl), MW-18 (mg/L)



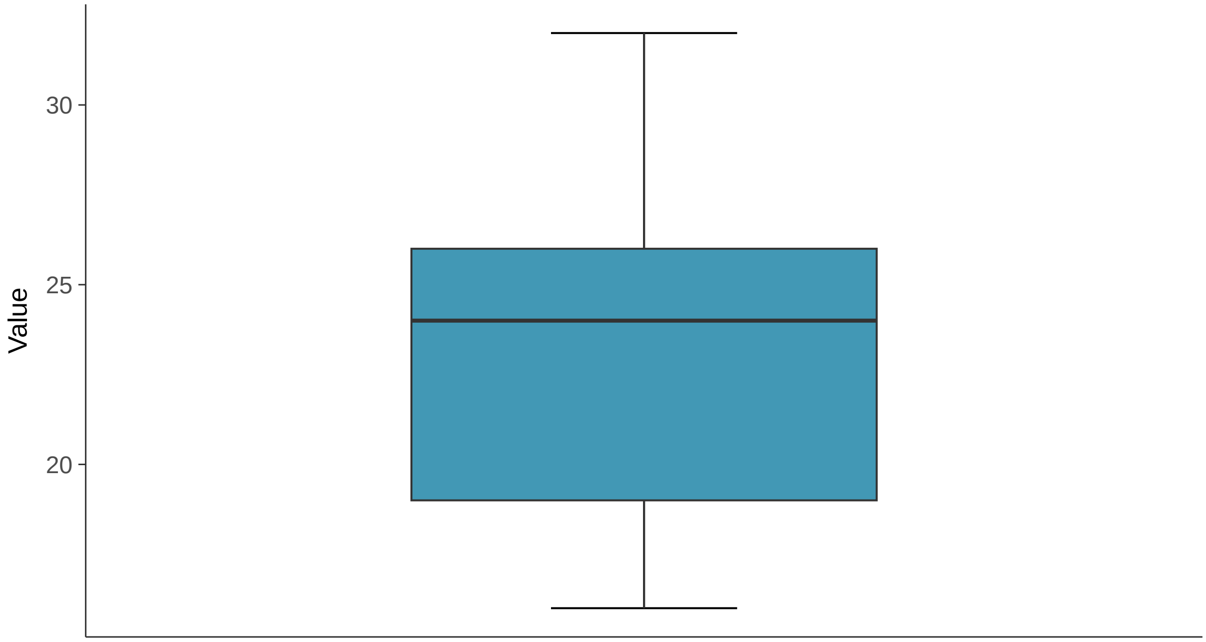
Histogram

Chloride (as Cl), MW-18 (mg/L)



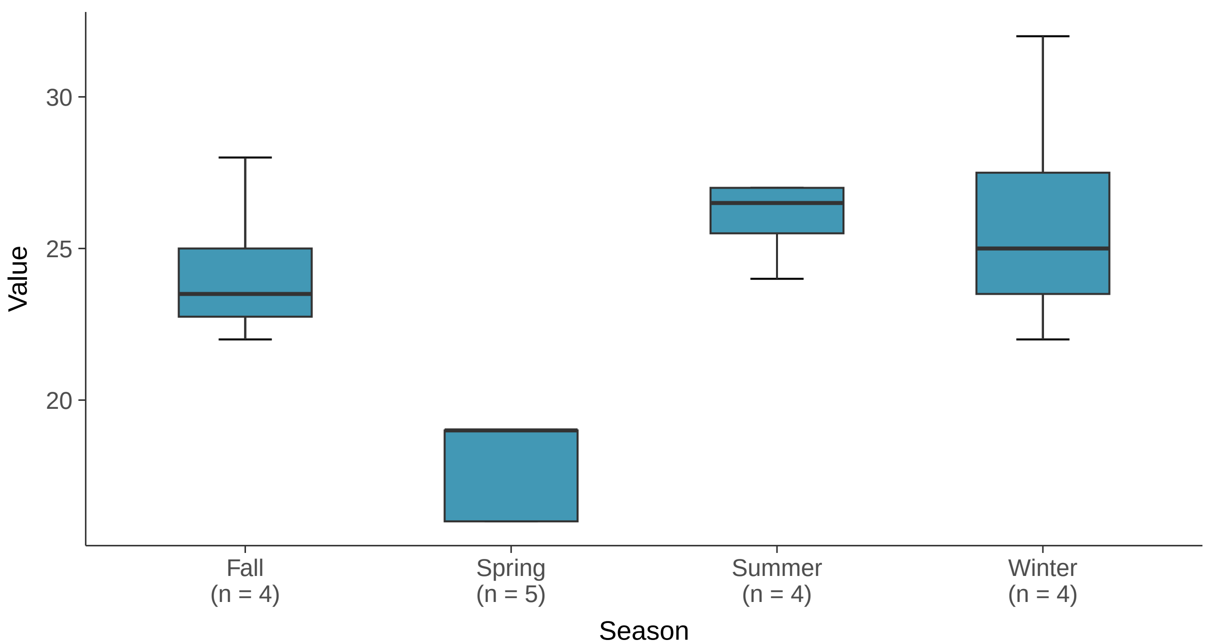
Boxplot

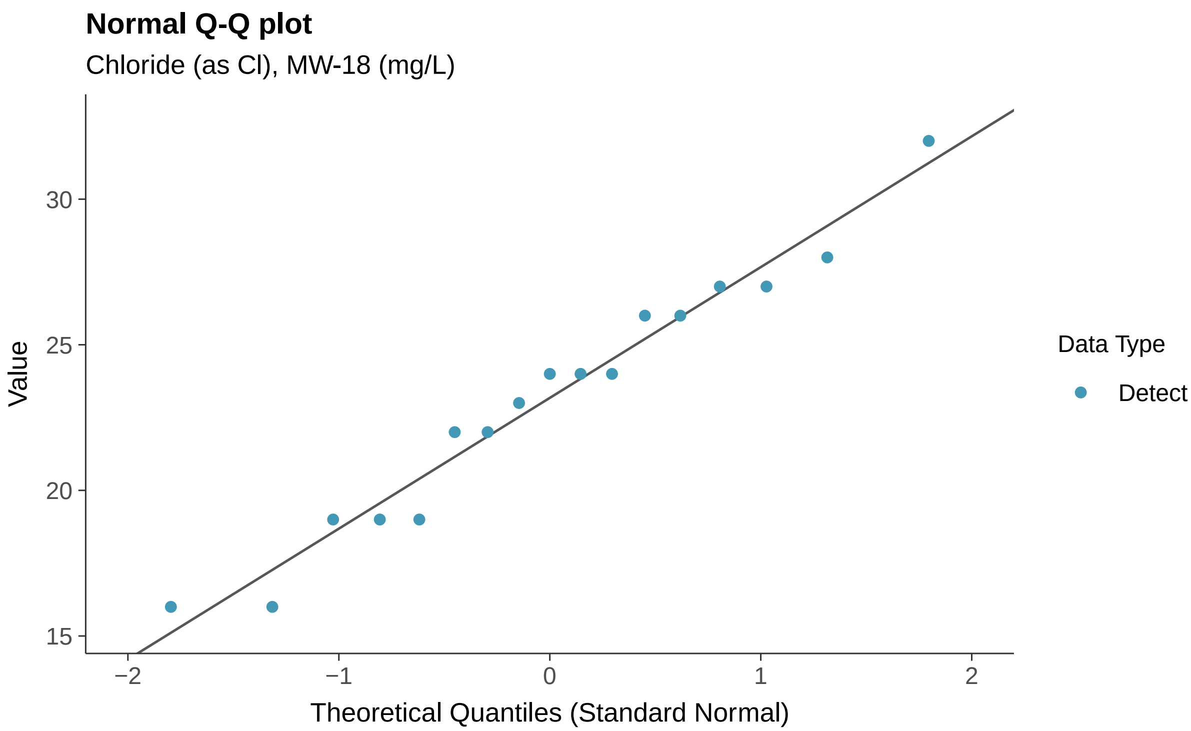
Chloride (as Cl), MW-18 (mg/L)

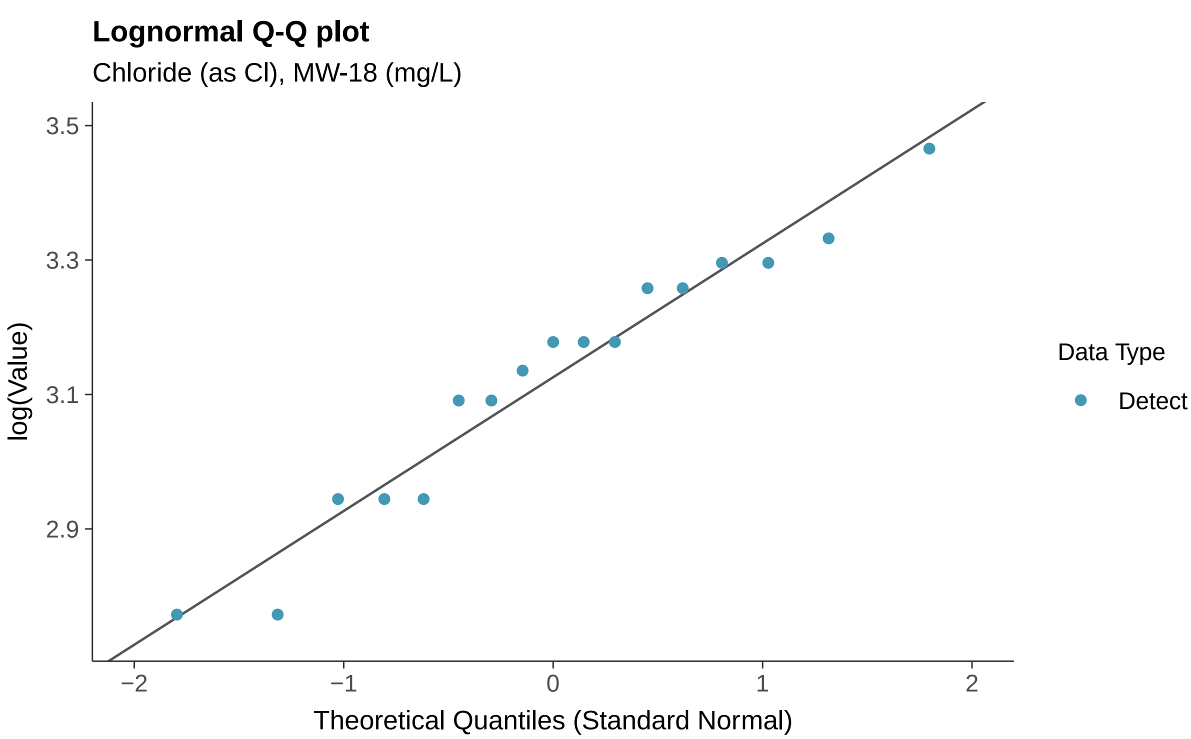


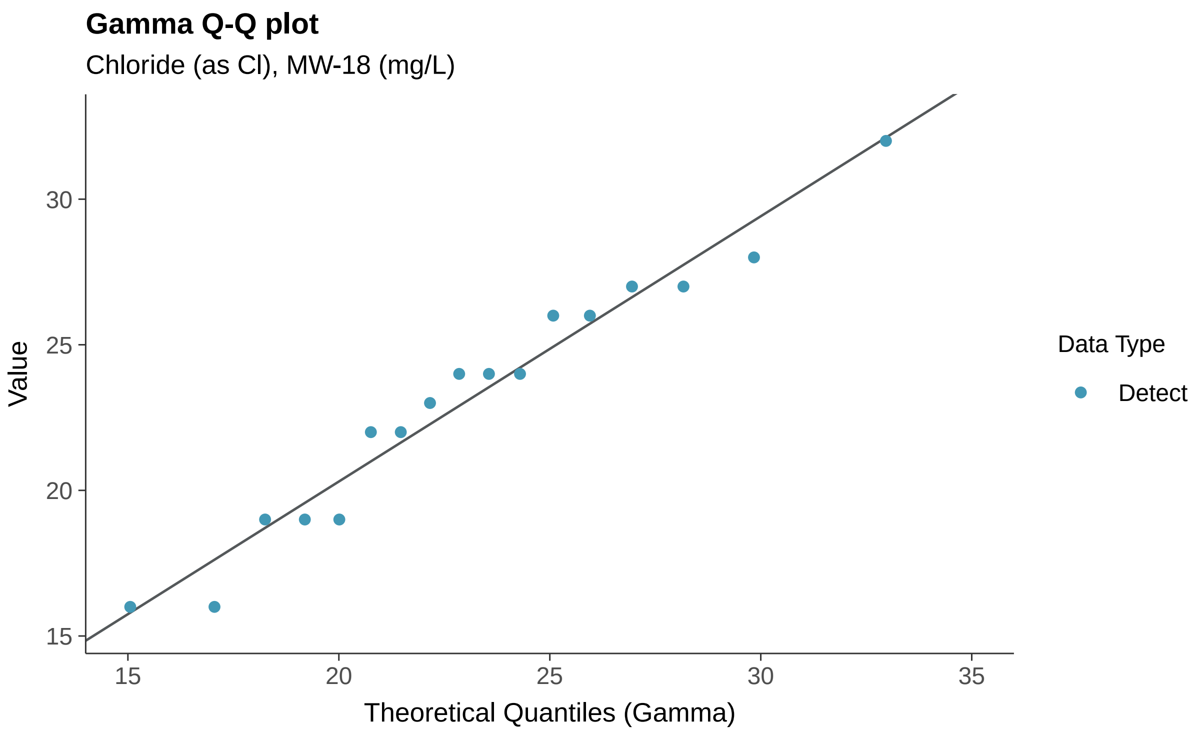
Boxplot by Season

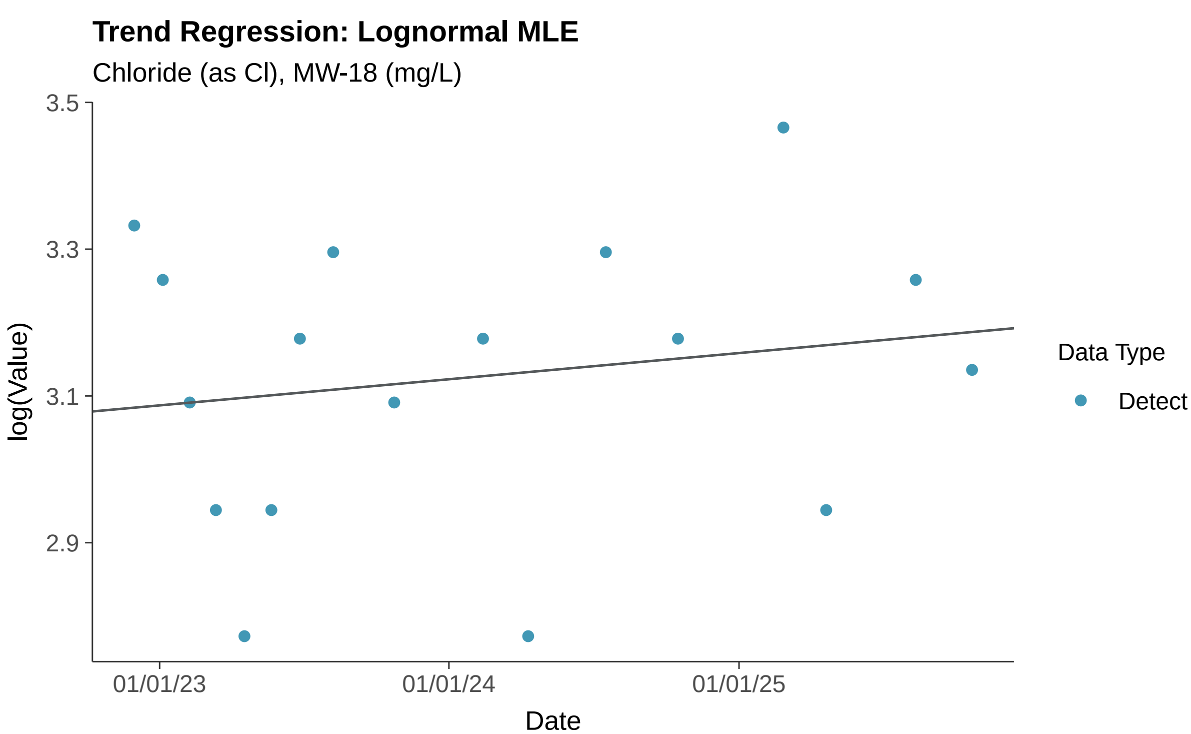
Chloride (as Cl), MW-18 (mg/L)




Normal Q-Q plot
Chloride (as Cl), MW-18 (mg/L)
Value
30
25
20
15
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

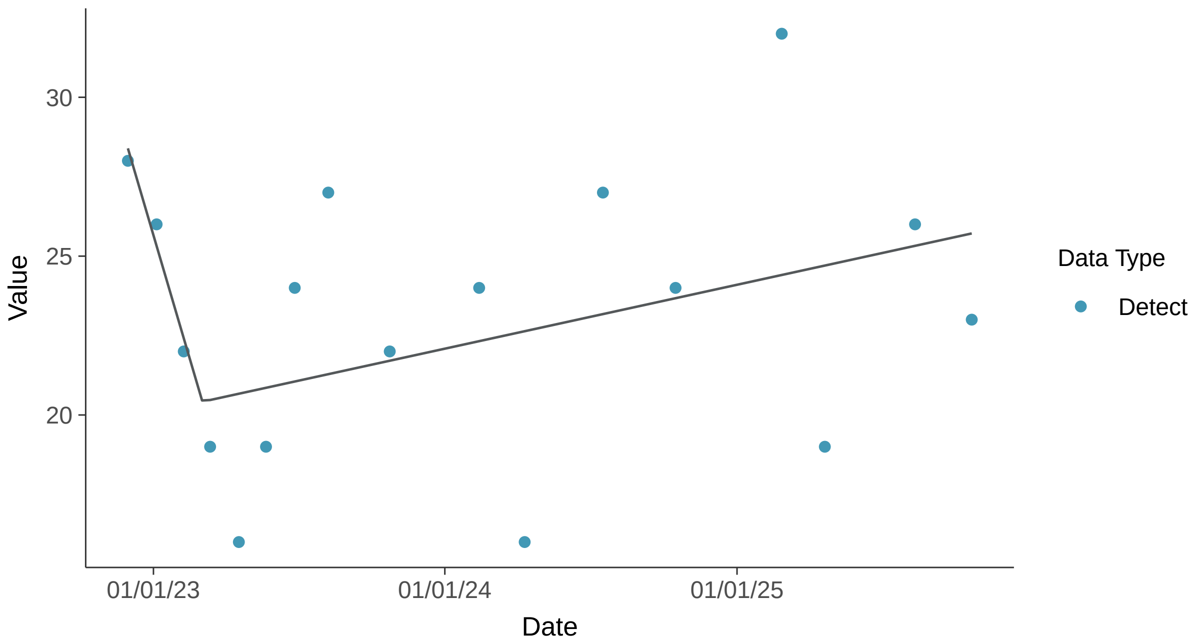

Lognormal Q-Q plot
Chloride (as Cl), MW-18 (mg/L)
log(Value)
3.5
3.3
3.1
2.9
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Chloride (as Cl), MW-18 (mg/L)
Value
30
25
20
15
15
20
25
30
35
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Chloride (as Cl), MW-18 (mg/L)
log(Value)
3.5
3.3
3.1
2.9
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

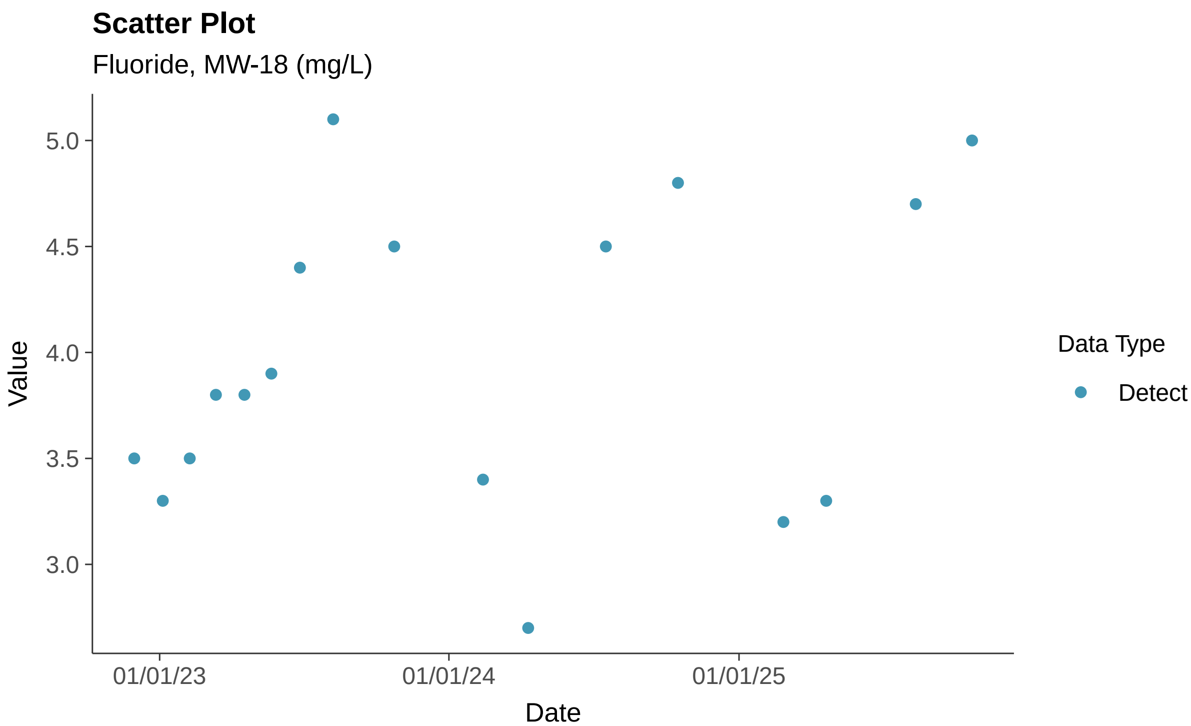
Trend Regression: Piecewise Linear-Linear

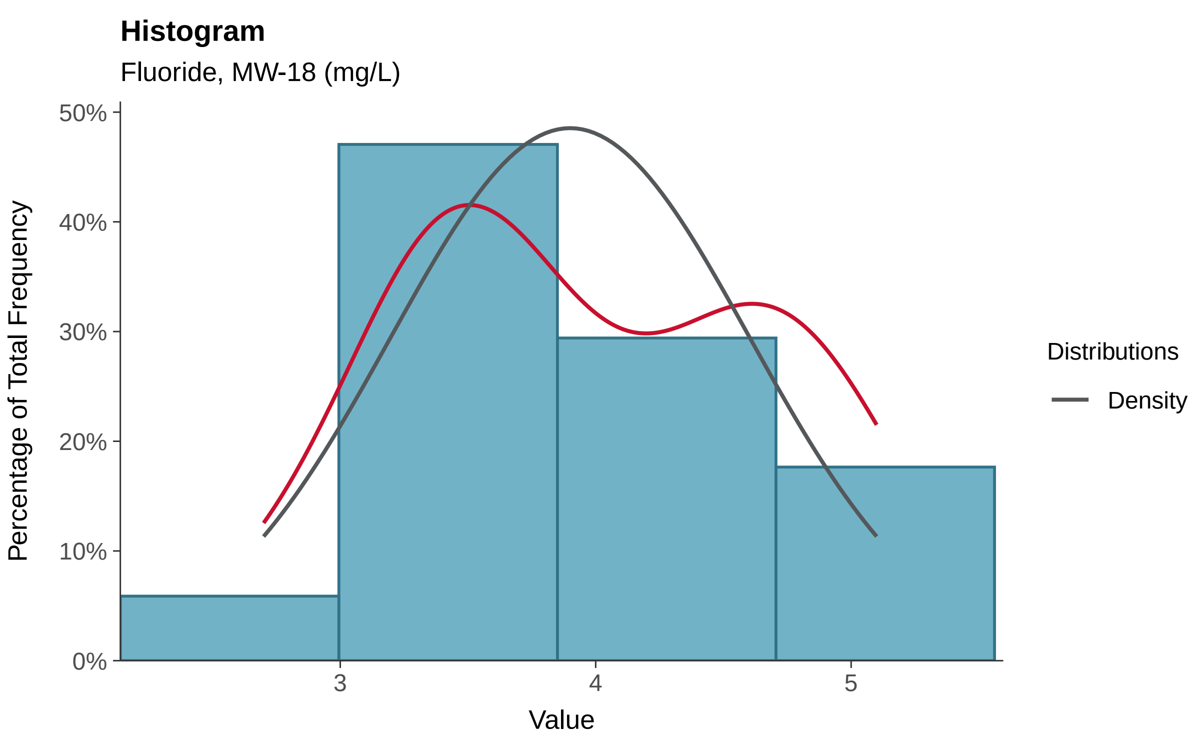
Chloride (as Cl), MW-18 (mg/L)



Appendix III: Fluoride, MW-18

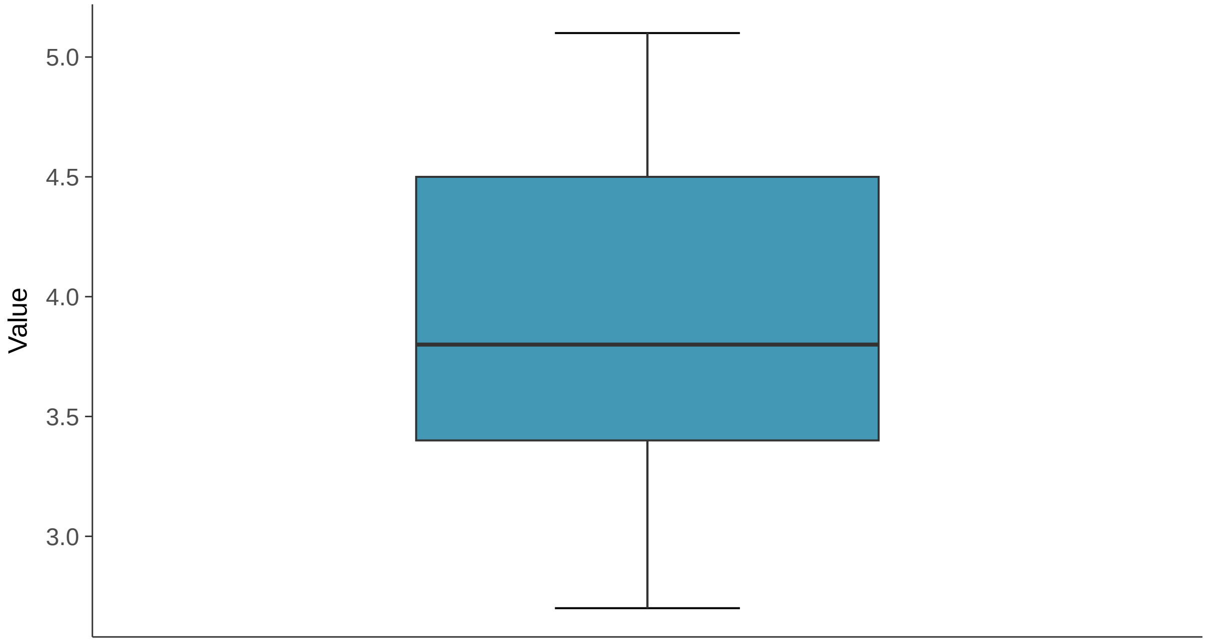
ID: 28_1_3_112





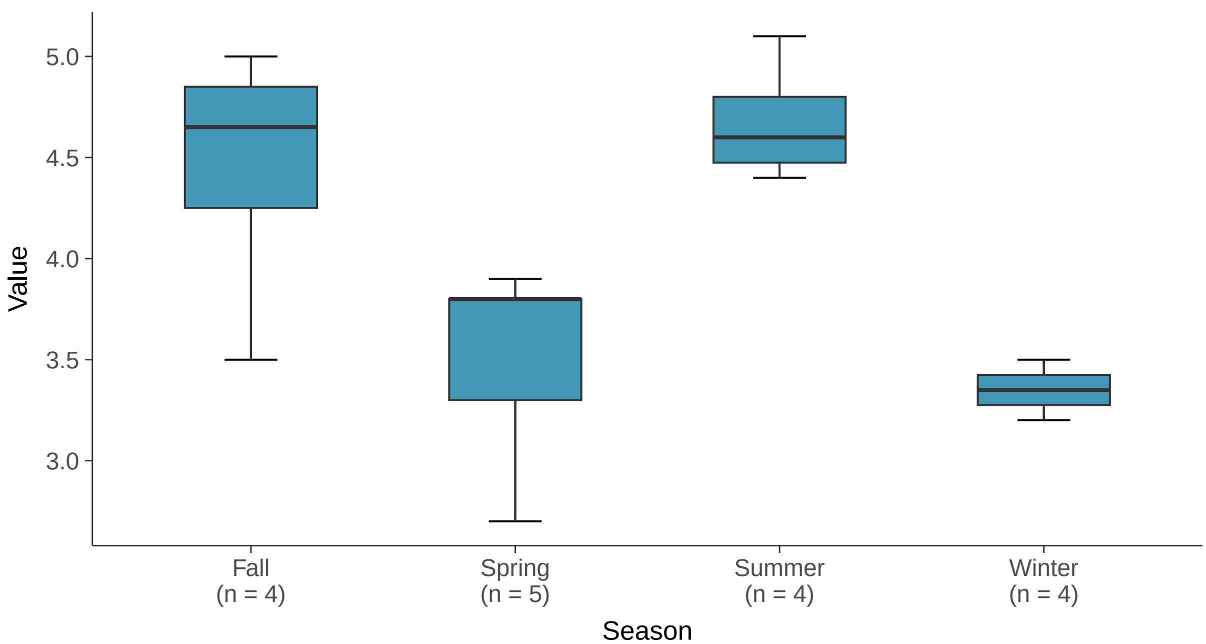
Boxplot

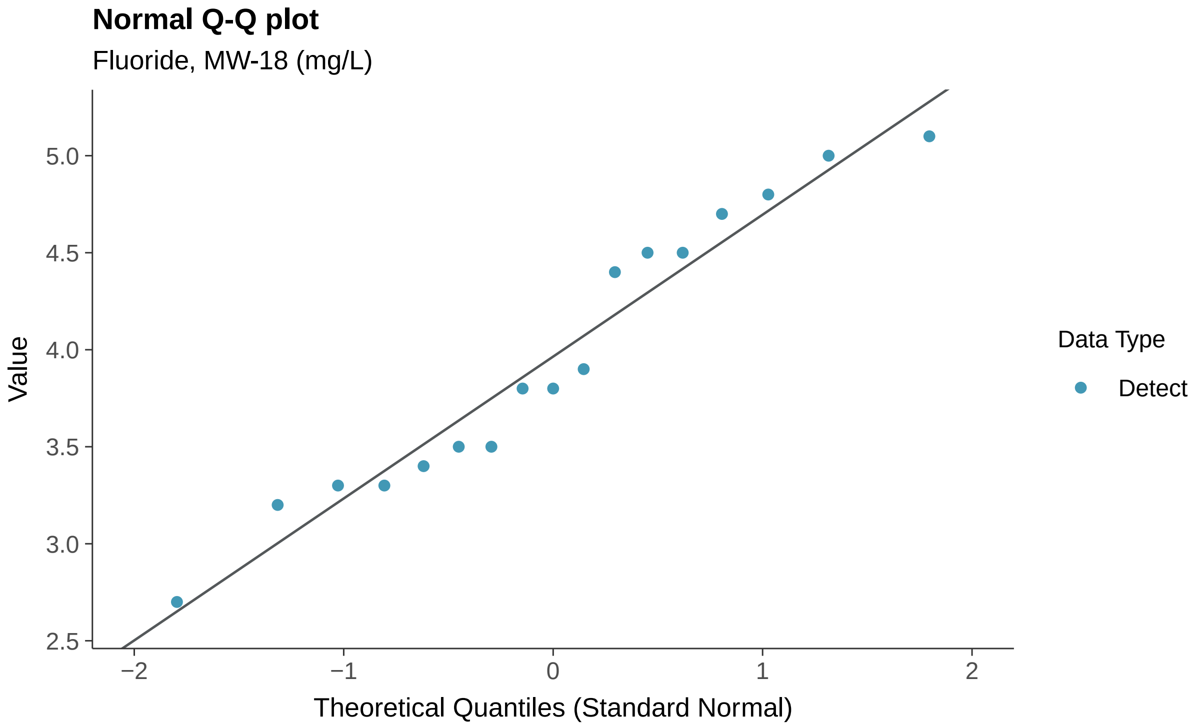
Fluoride, MW-18 (mg/L)

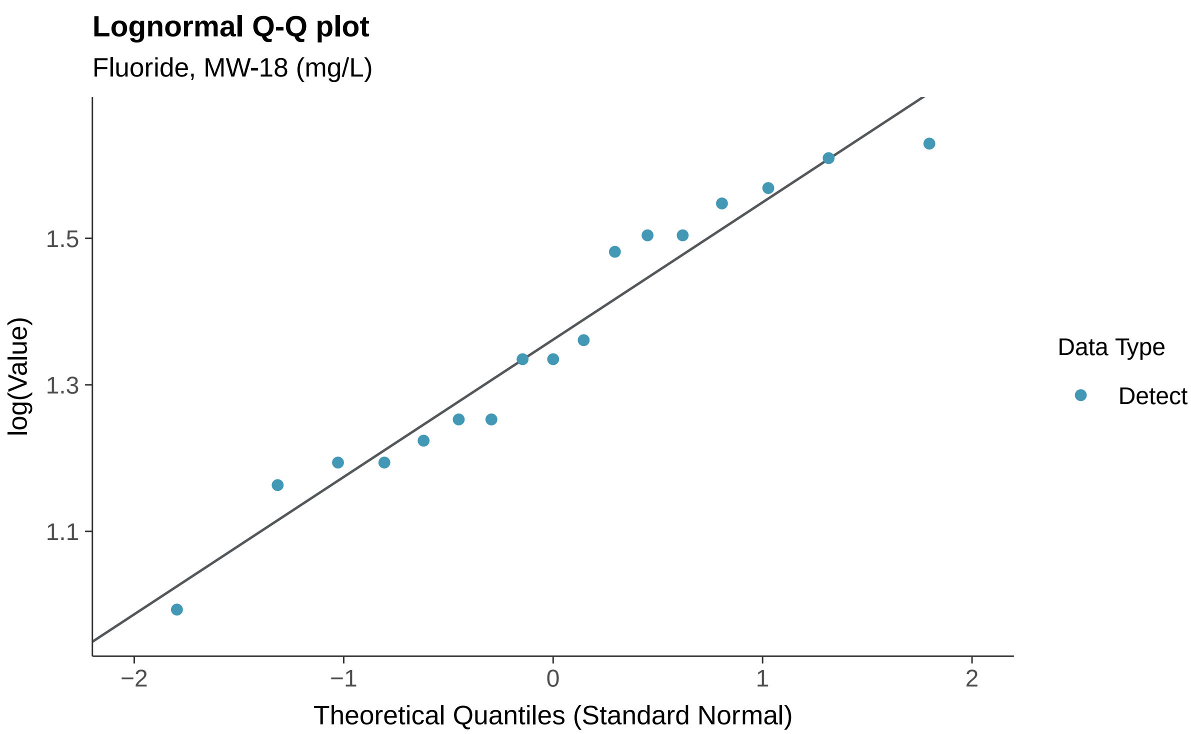


Boxplot by Season

Fluoride, MW-18 (mg/L)

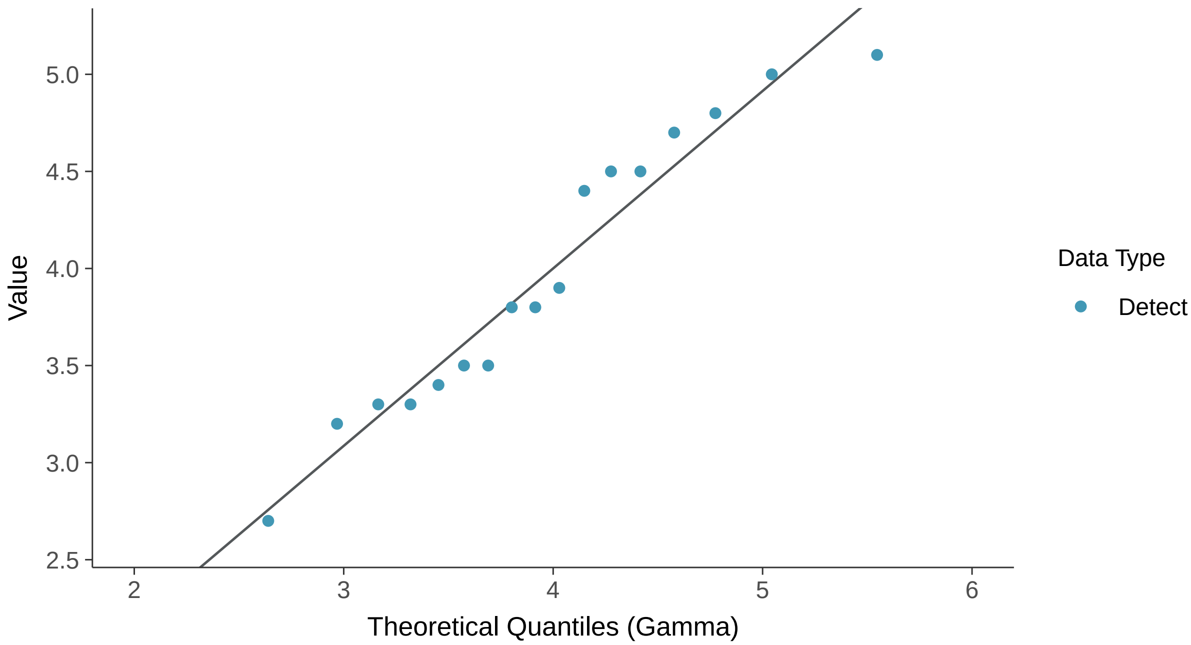



Normal Q-Q plot
Fluoride, MW-18 (mg/L)
Value
5.0
4.5
4.0
3.5
3.0
2.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Fluoride, MW-18 (mg/L)
log(Value)
1.5
1.3
1.1
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

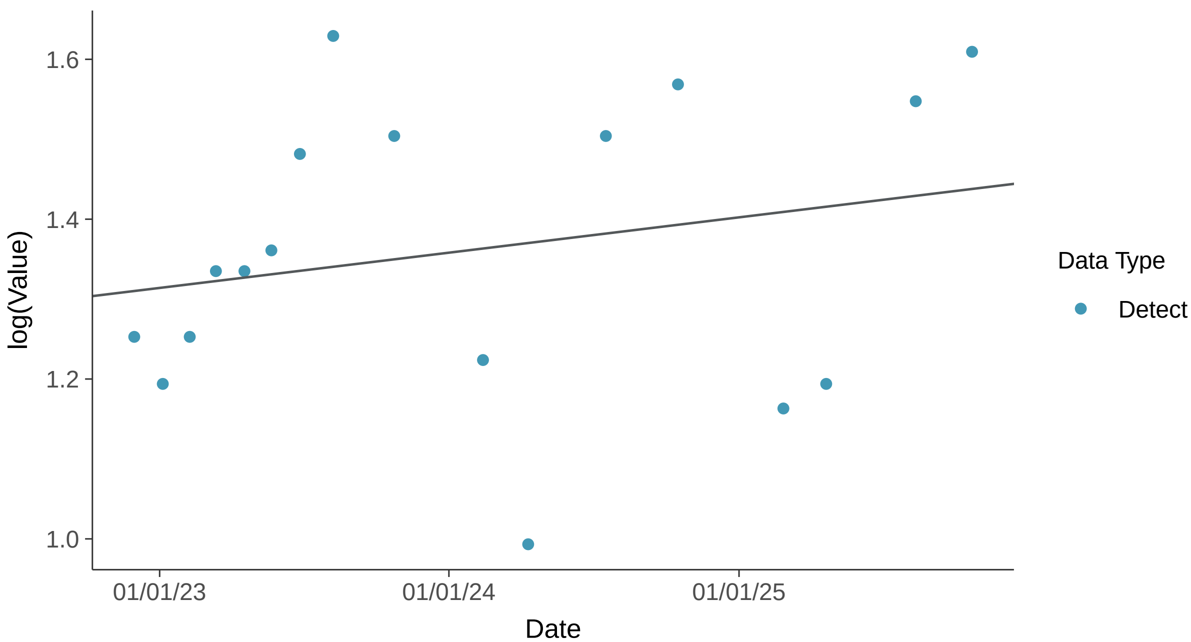
Gamma Q-Q plot

Fluoride, MW-18 (mg/L)



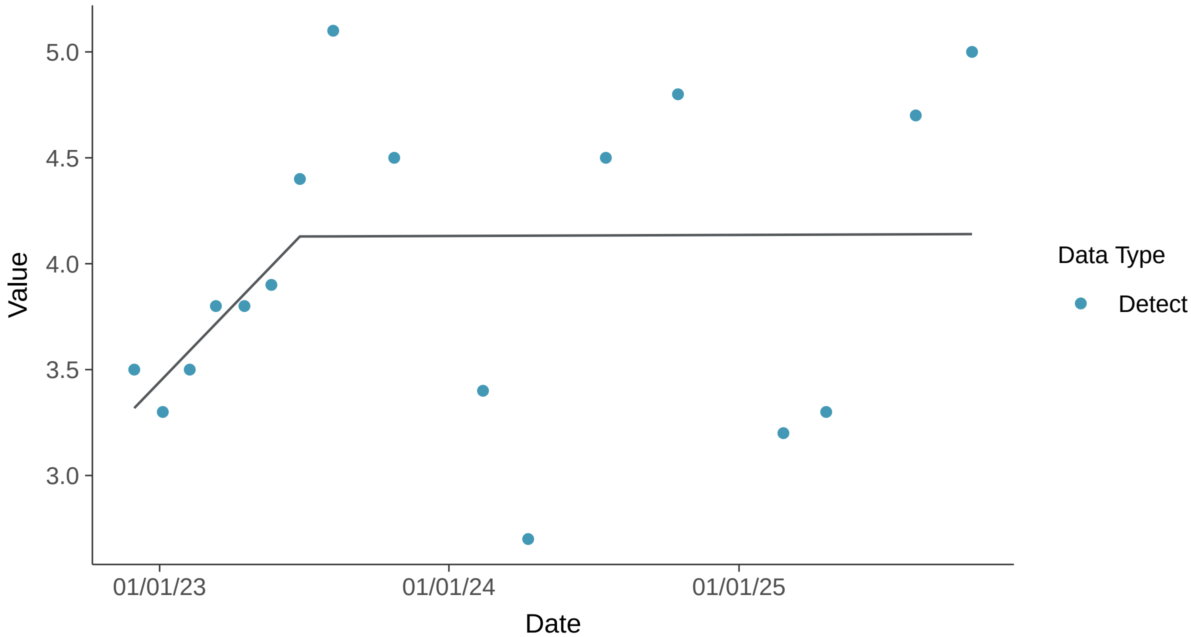
Trend Regression: Lognormal MLE

Fluoride, MW-18 (mg/L)



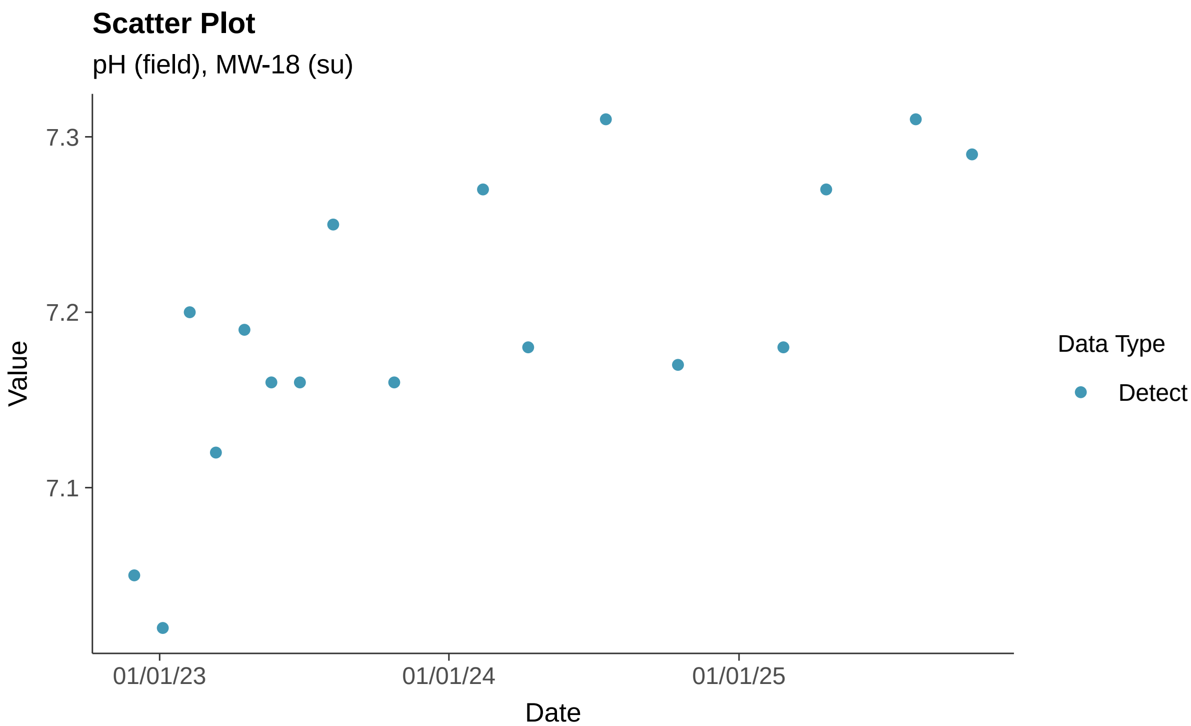
Trend Regression: Piecewise Linear-Linear

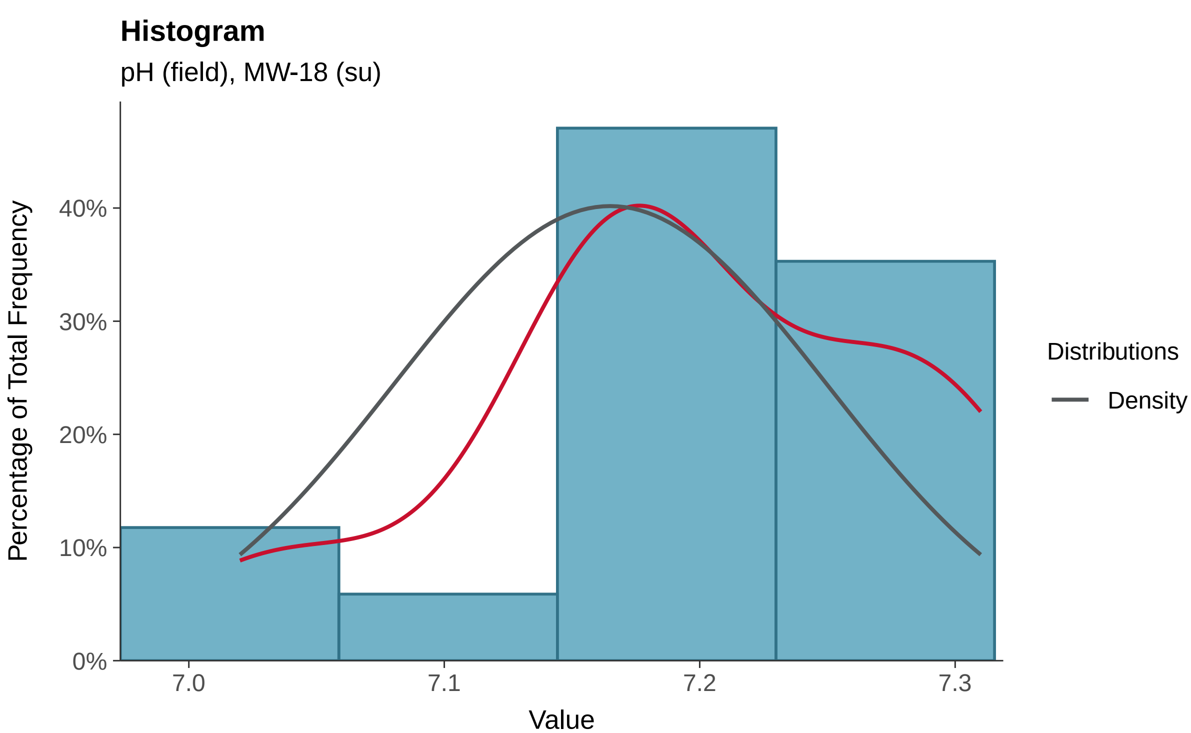
Fluoride, MW-18 (mg/L)



Appendix III: pH (field), MW-18

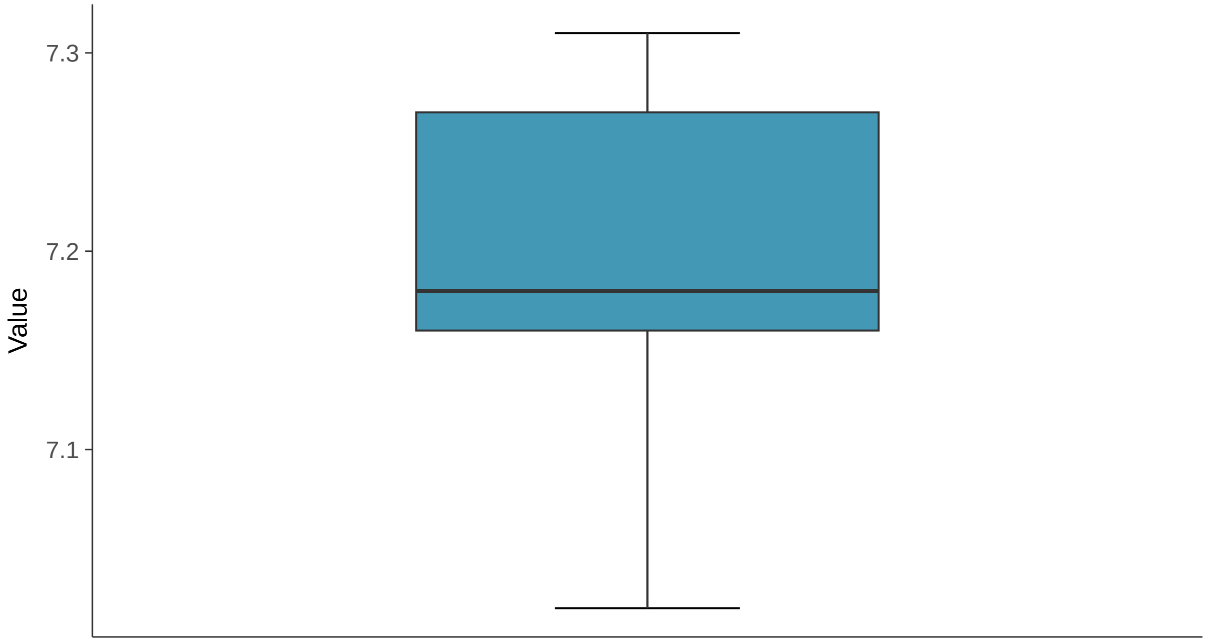
ID: 28_1_3_120





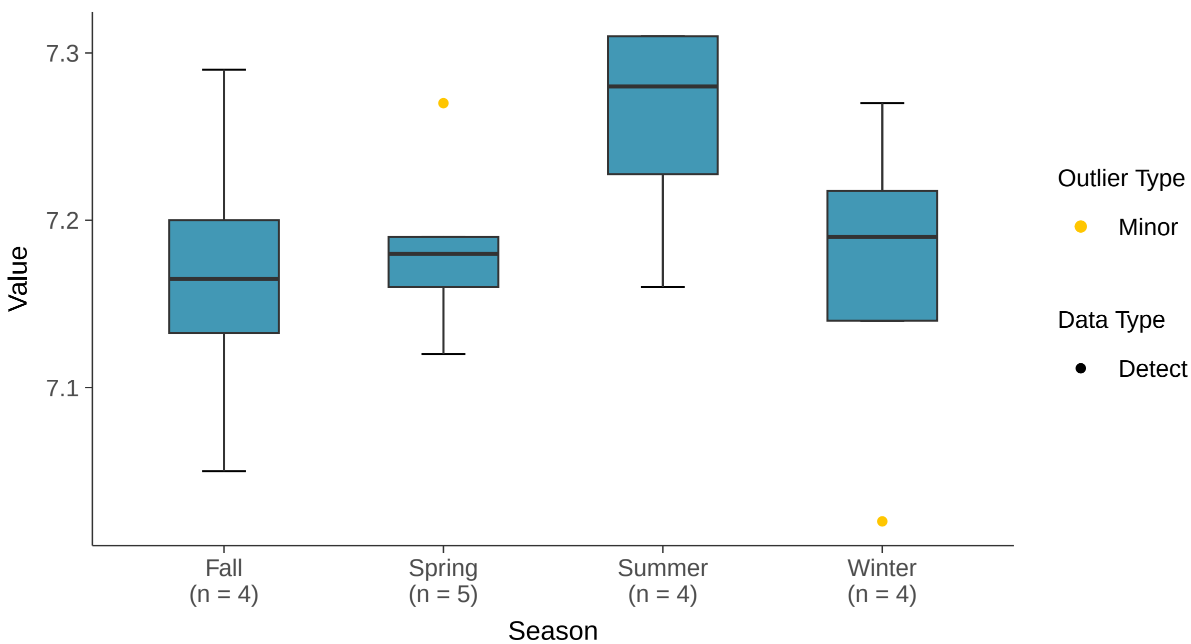
Boxplot

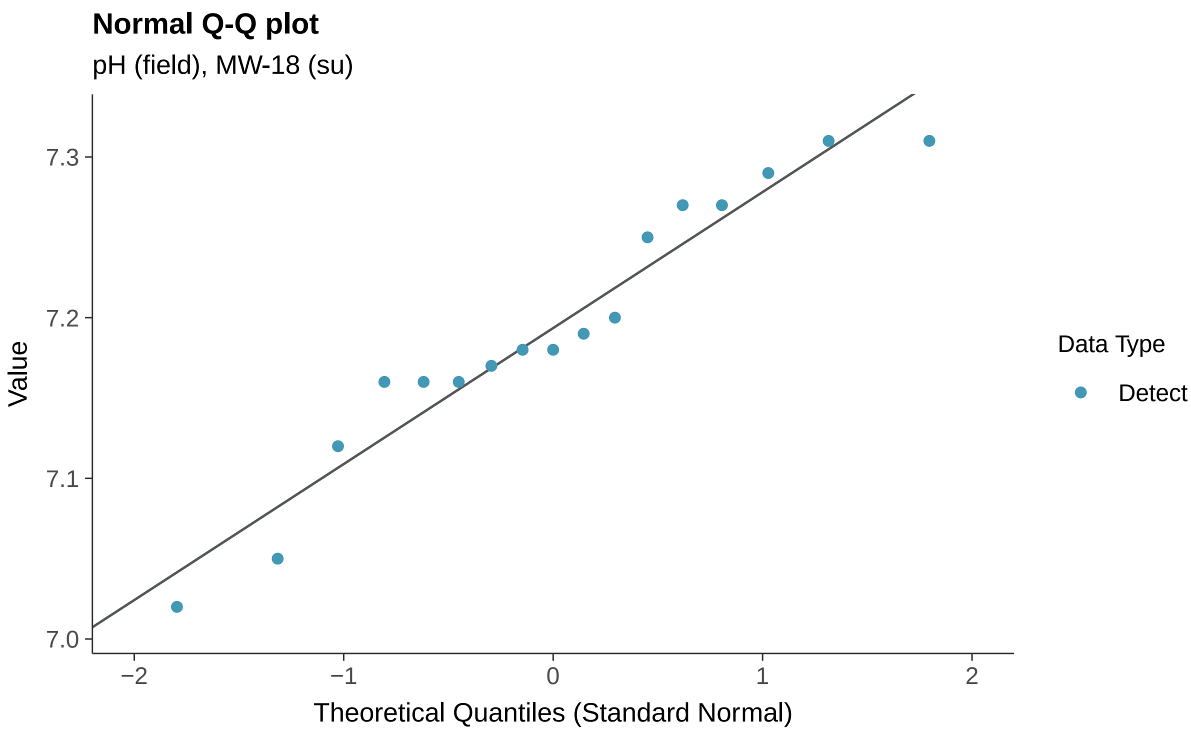
pH (field), MW-18 (su)

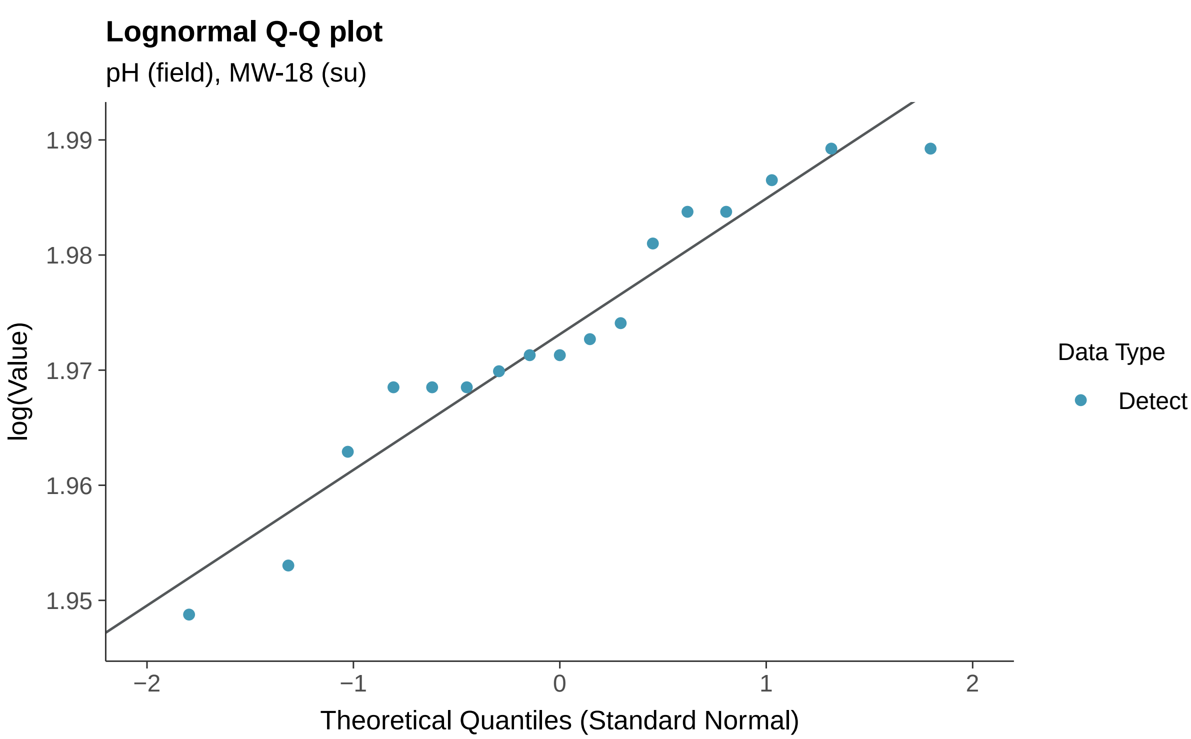


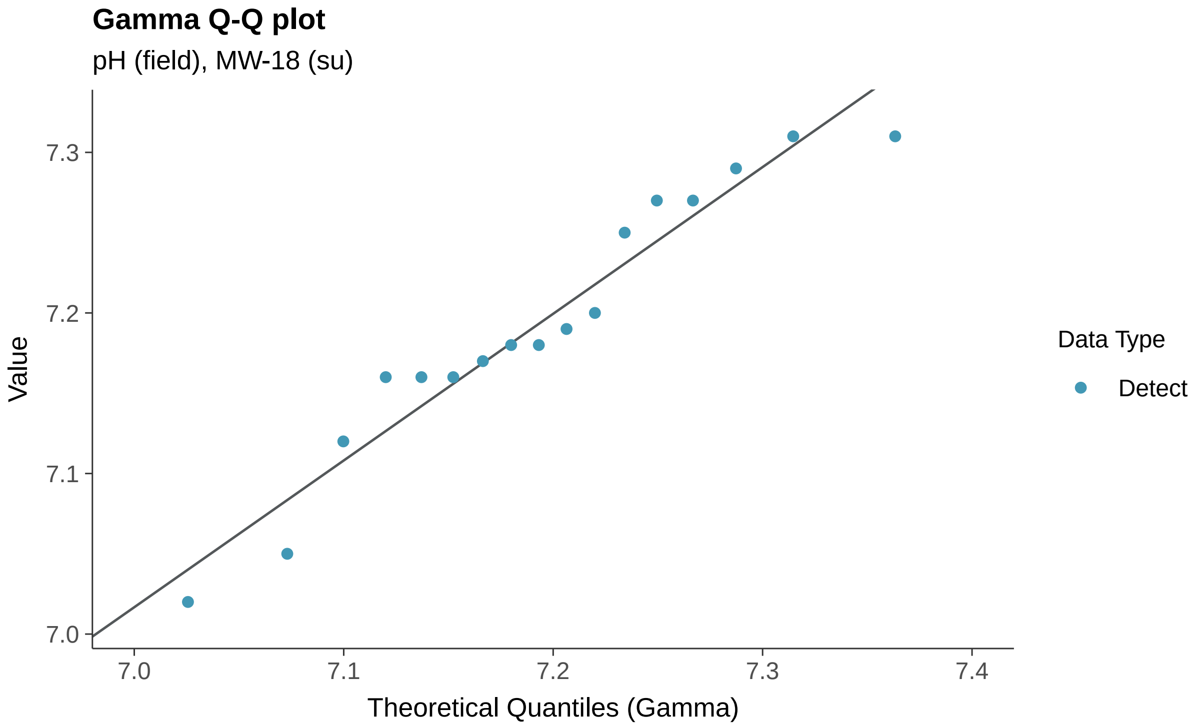
Boxplot by Season

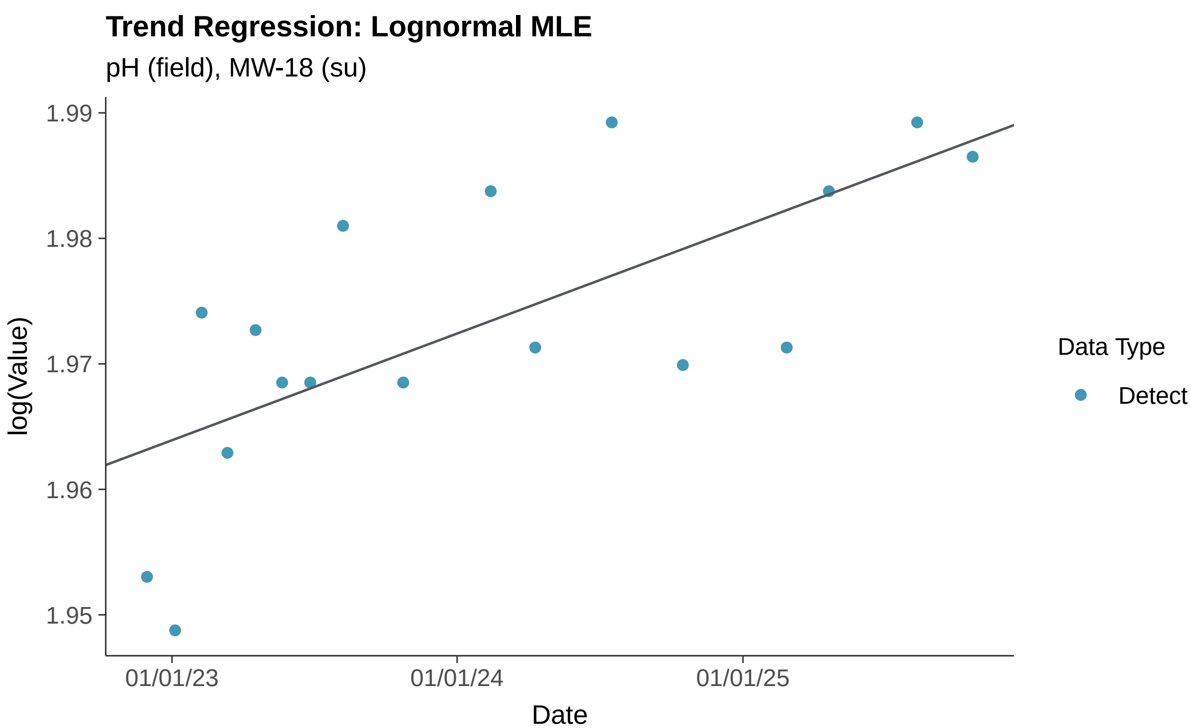
pH (field), MW-18 (su)




Normal Q-Q plot
pH (field), MW-18 (su)
Value
7.3
7.2
7.1
7.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

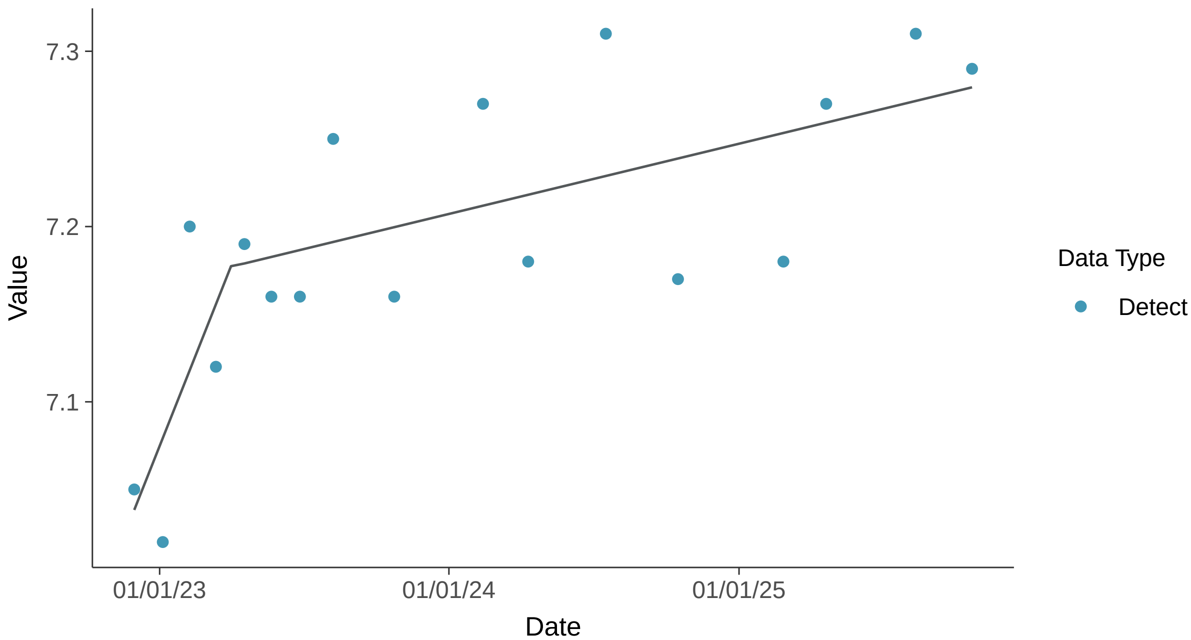

Lognormal Q-Q plot
pH (field), MW-18 (su)
log(Value)
1.99
1.98
1.97
1.96
1.95
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
pH (field), MW-18 (su)
Value
7.3
7.2
7.1
7.0
7.0
7.1
7.2
7.3
7.4
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
pH (field), MW-18 (su)
log(Value)
1.99
1.98
1.97
1.96
1.95
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

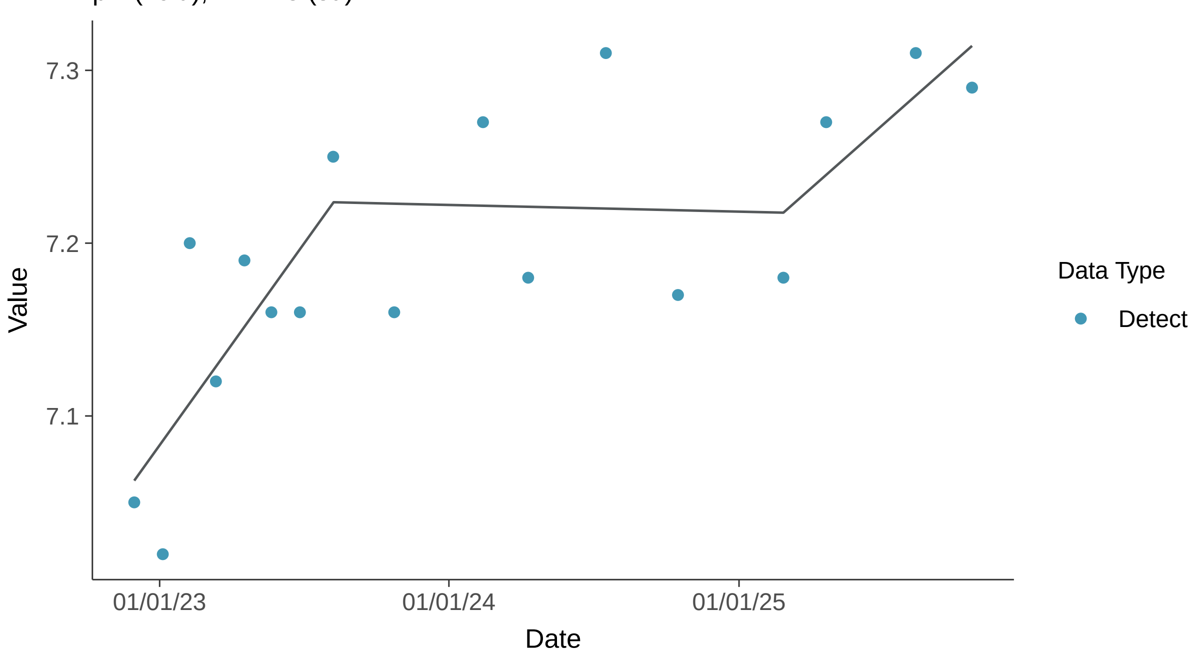
Trend Regression: Piecewise Linear-Linear

pH (field), MW-18 (su)



Trend Regression: Piecewise Linear-Linear-Linear

pH (field), MW-18 (su)

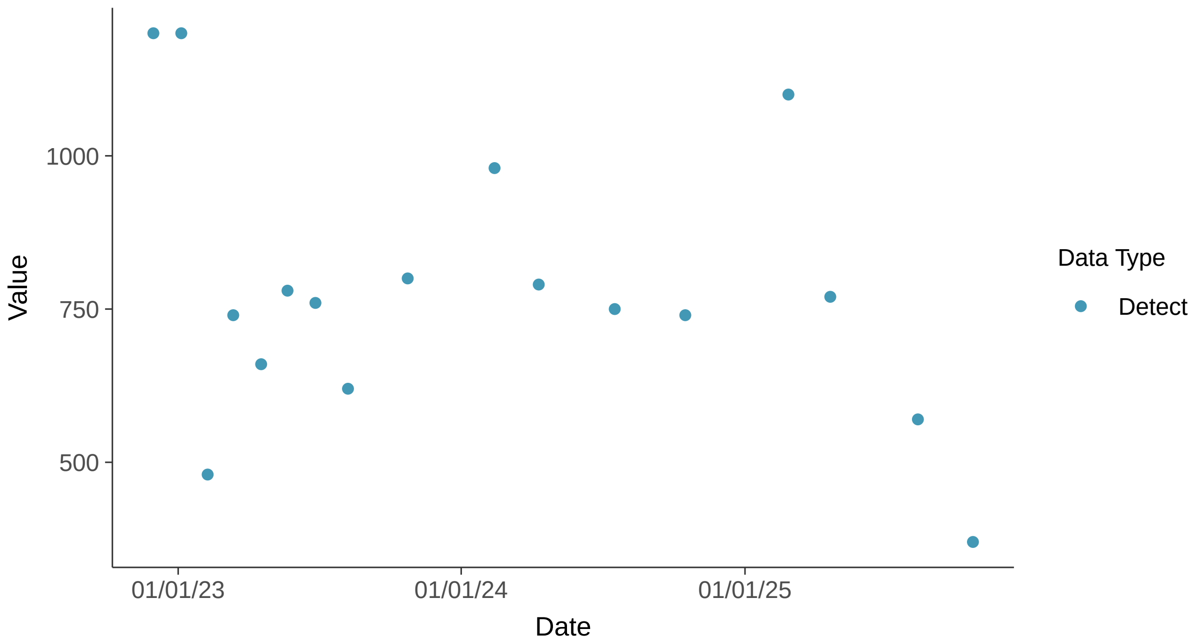


Appendix III: Sulfate (as SO4), MW-18

ID: 28_1_3_124

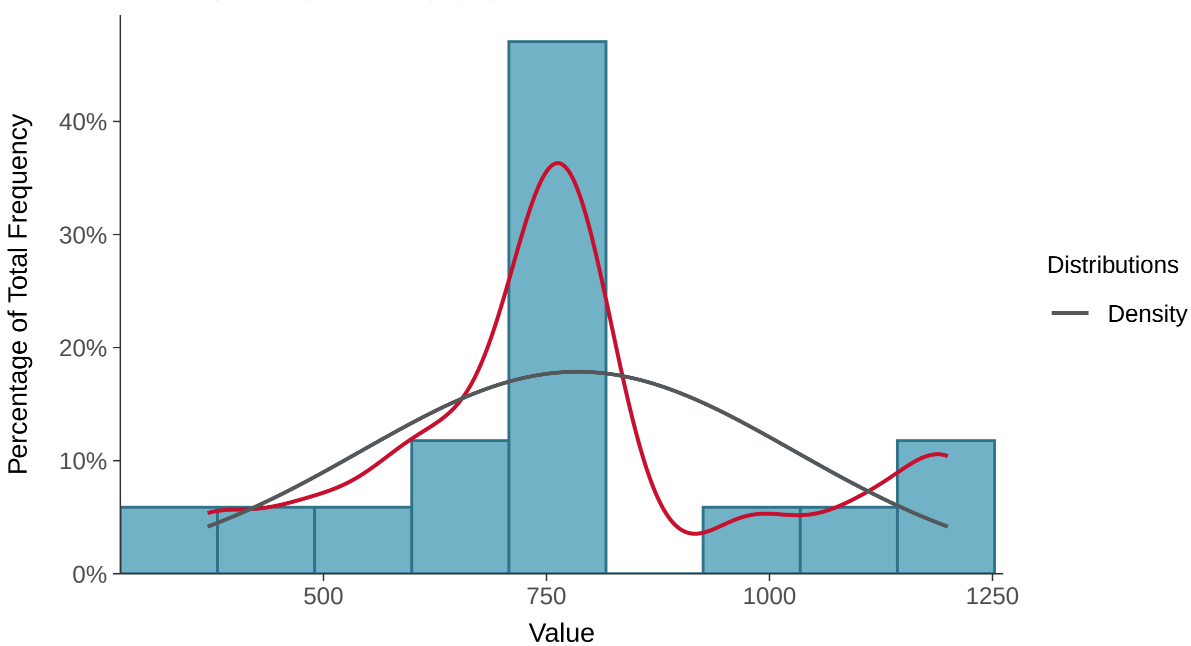
Scatter Plot

Sulfate (as SO4), MW-18 (mg/L)



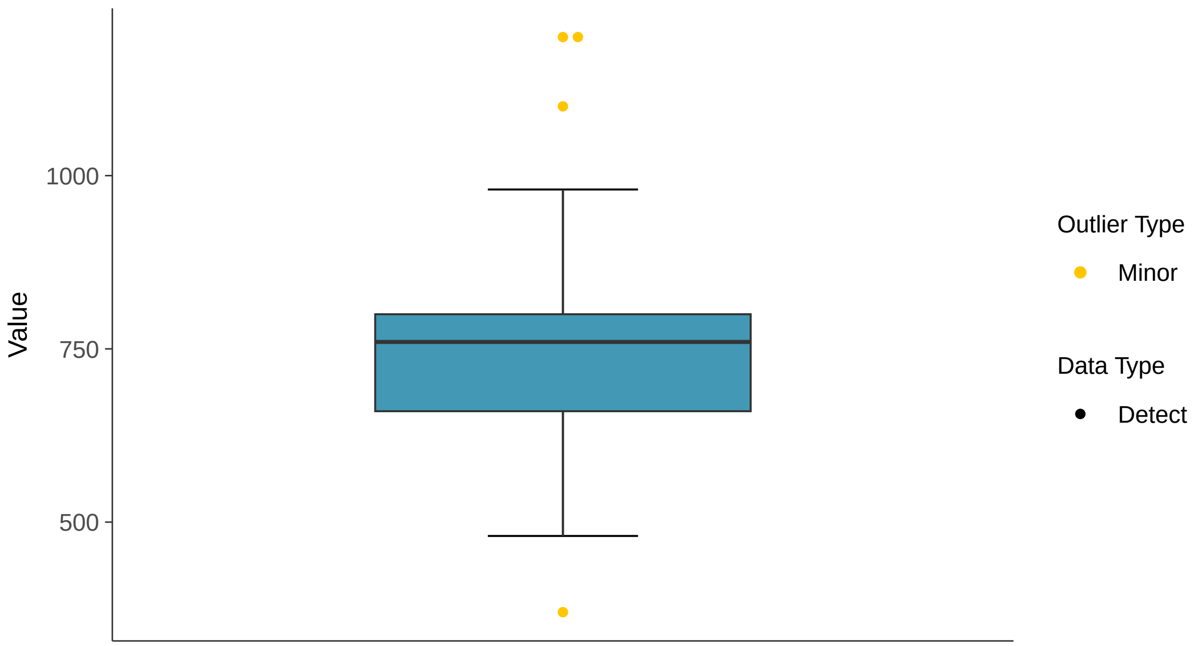
Histogram

Sulfate (as SO4), MW-18 (mg/L)



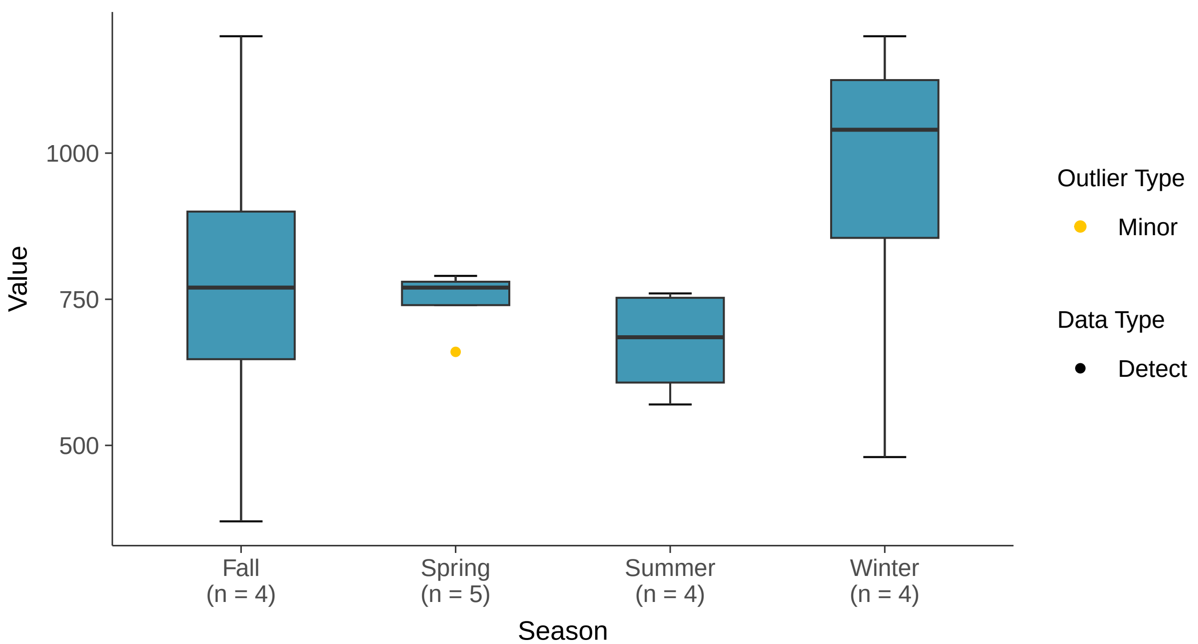
Boxplot

Sulfate (as SO4), MW-18 (mg/L)



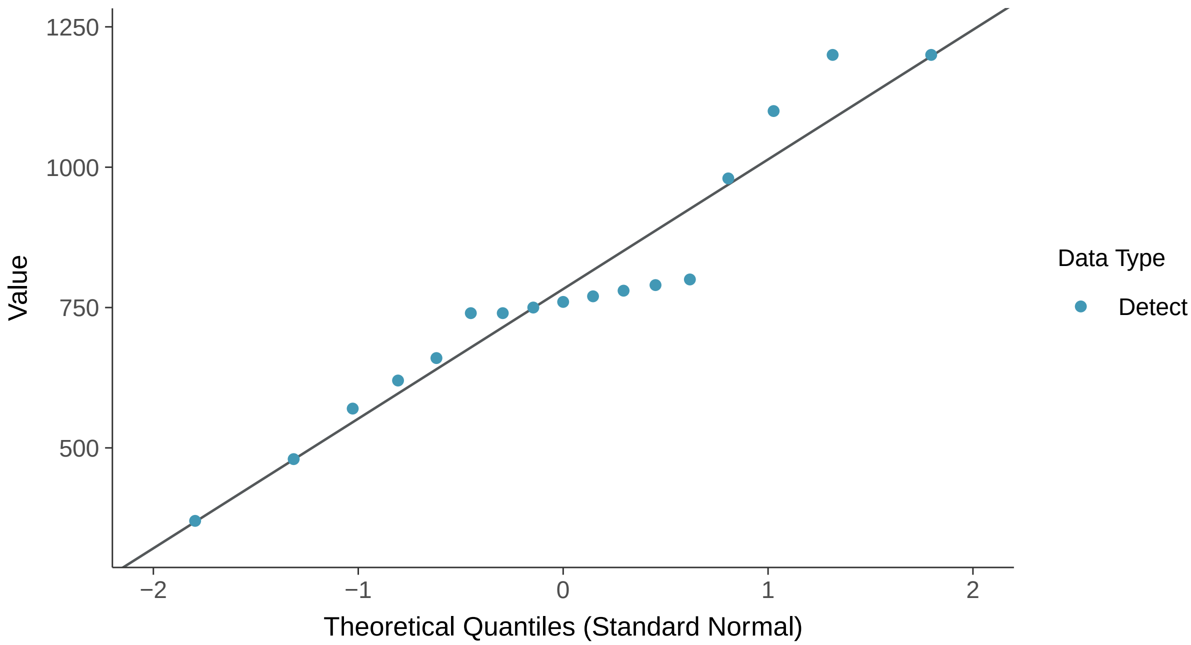
Boxplot by Season

Sulfate (as SO4), MW-18 (mg/L)



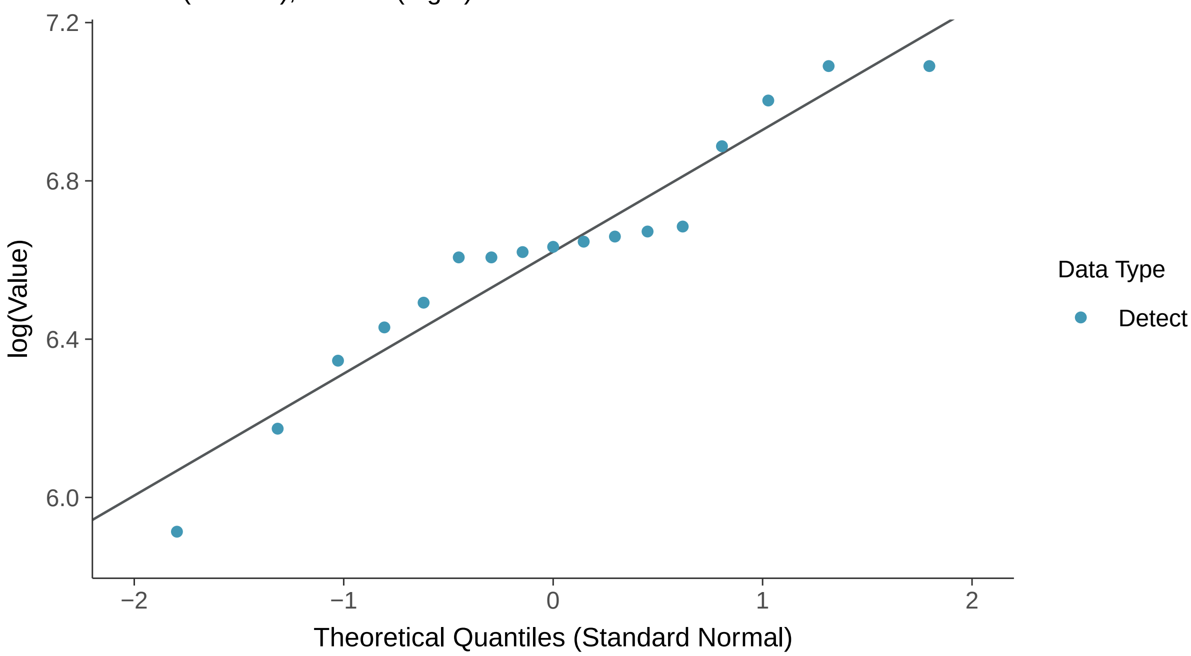
Normal Q-Q plot

Sulfate (as SO4), MW-18 (mg/L)



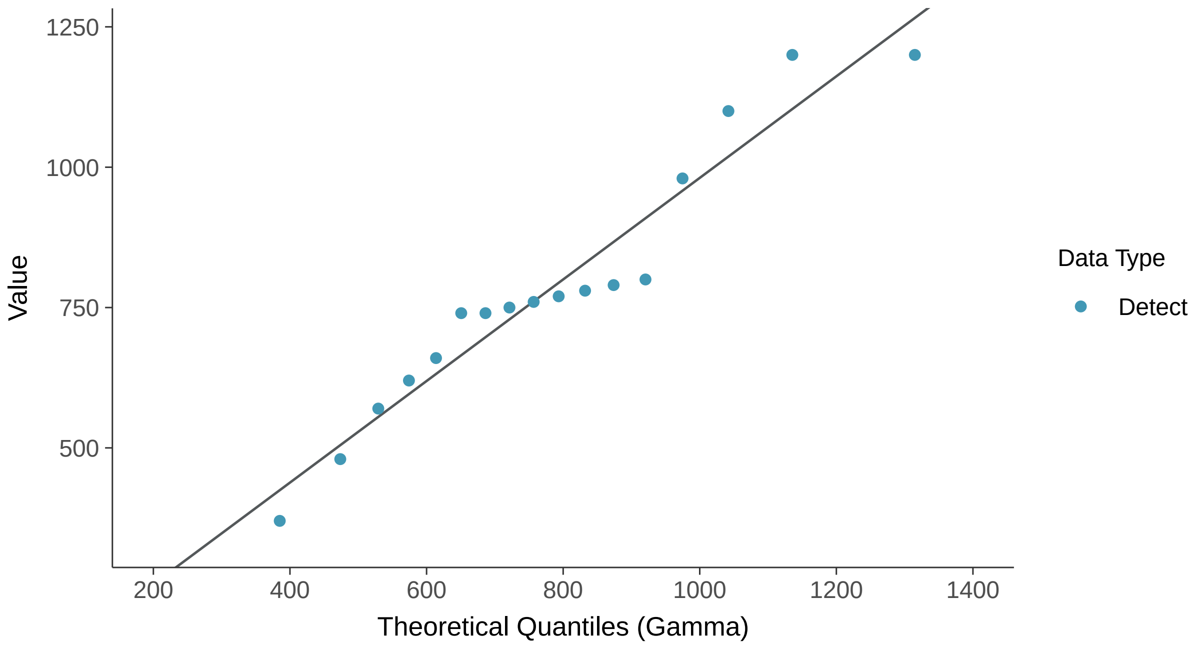
Lognormal Q-Q plot

Sulfate (as SO4), MW-18 (mg/L)



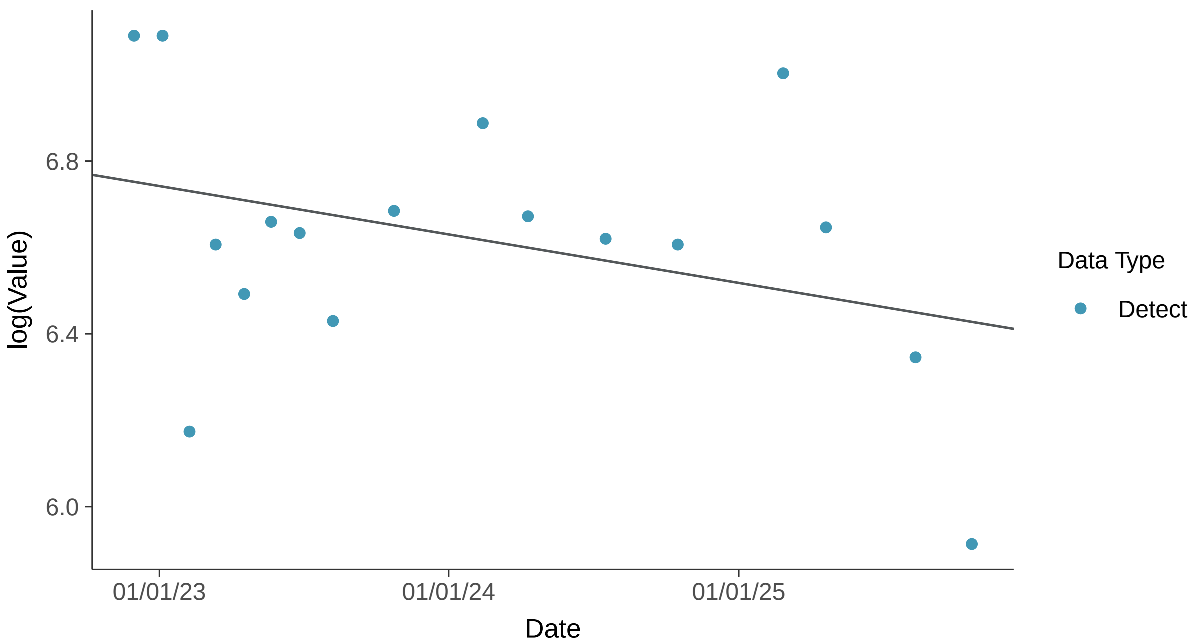
Gamma Q-Q plot

Sulfate (as SO4), MW-18 (mg/L)

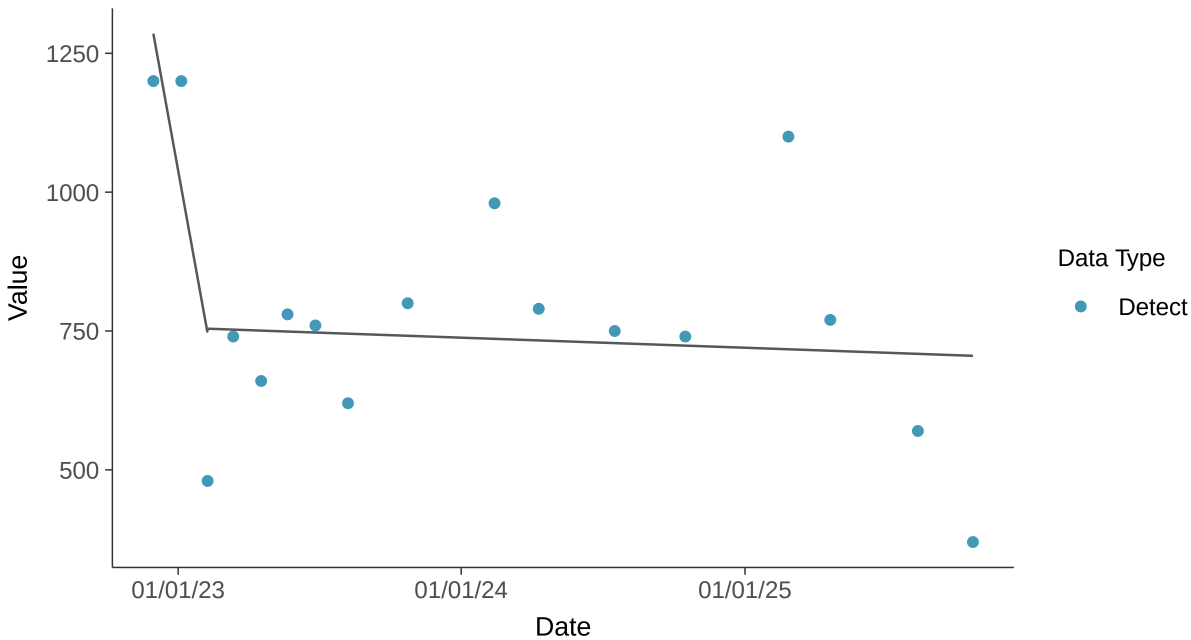


Trend Regression: Lognormal MLE

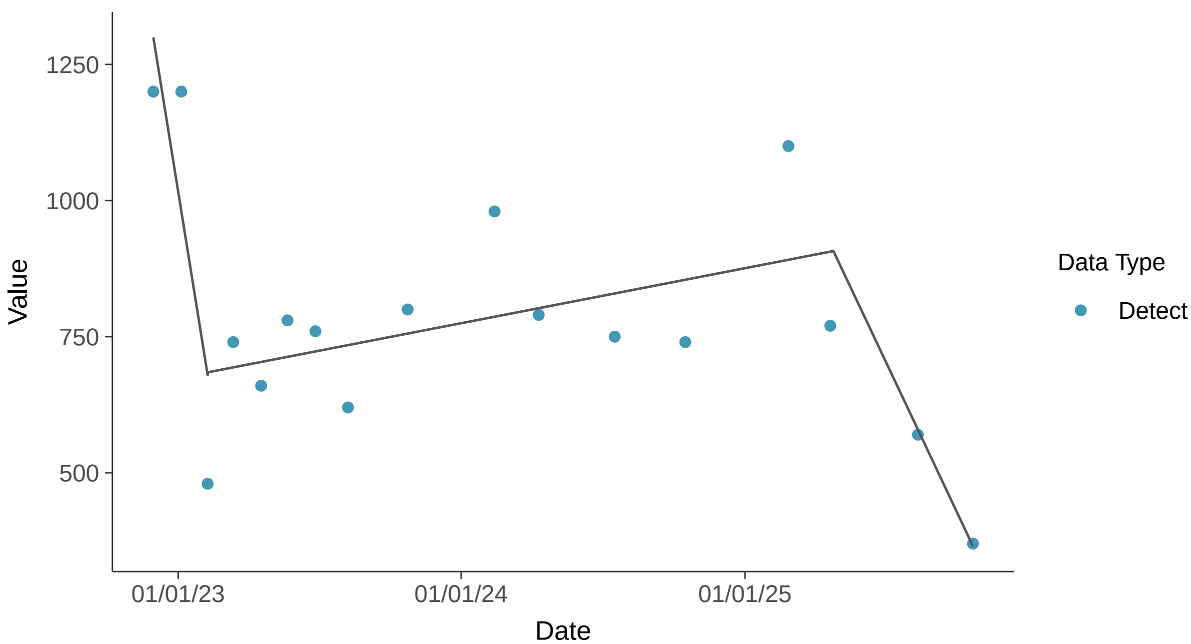
Sulfate (as SO4), MW-18 (mg/L)



Trend Regression: Piecewise Linear-Linear
Sulfate (as SO4), MW-18 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear
Sulfate (as SO4), MW-18 (mg/L)

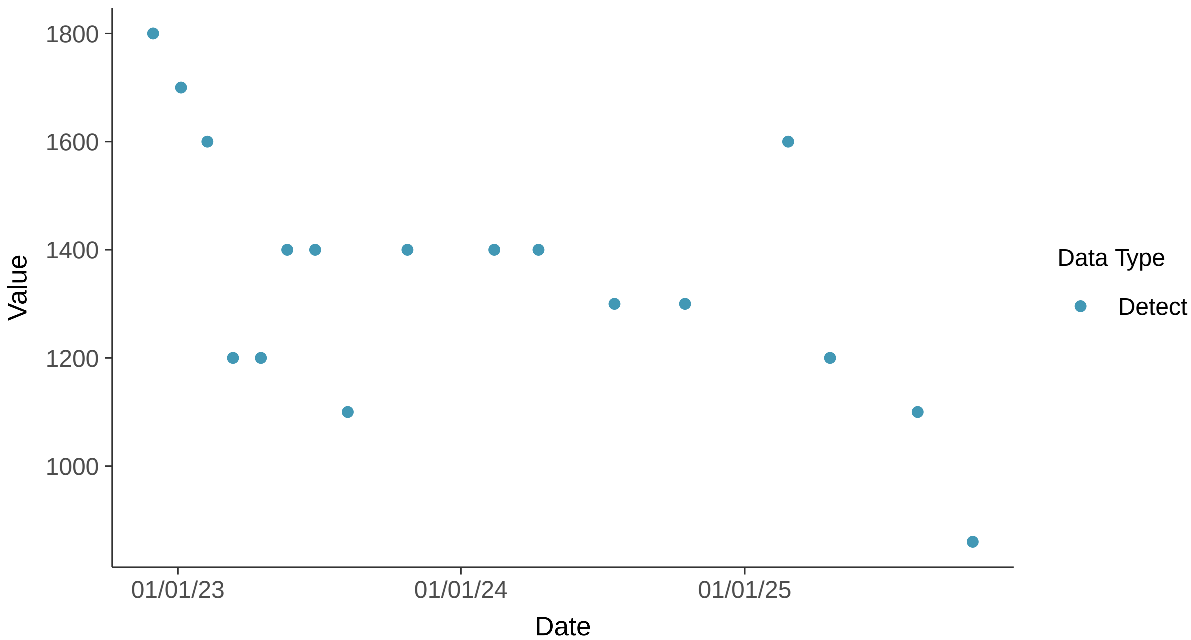


Appendix III: Total Dissolved Solids, MW-18

ID: 28_1_3_126

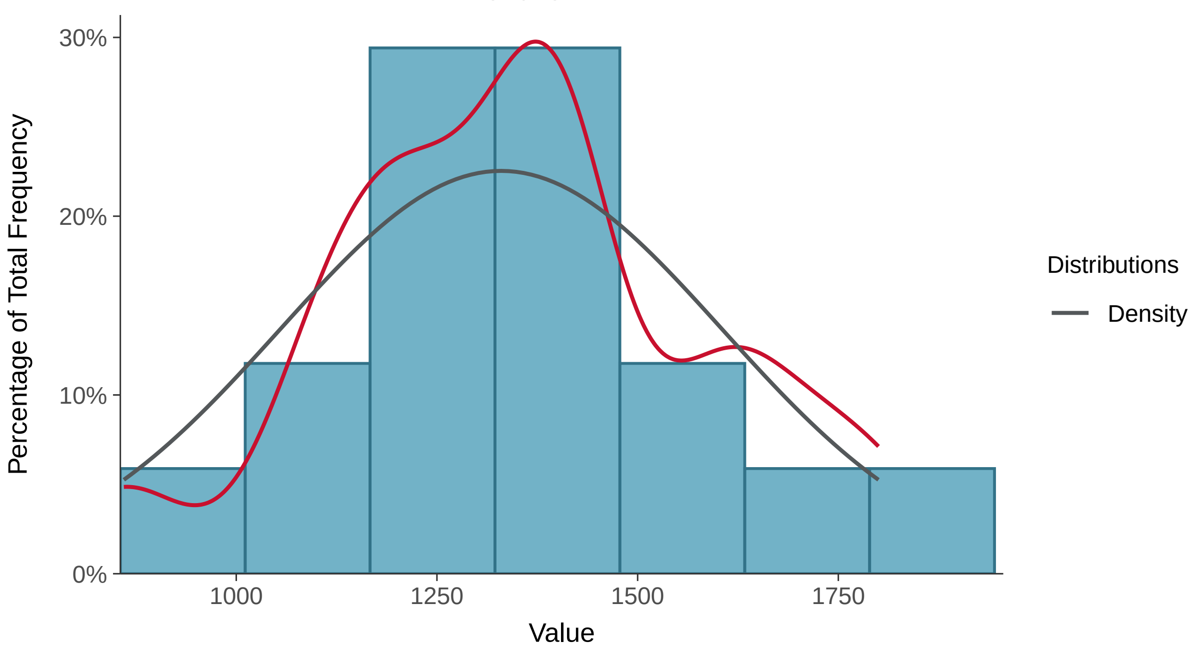
Scatter Plot

Total Dissolved Solids, MW-18 (mg/L)



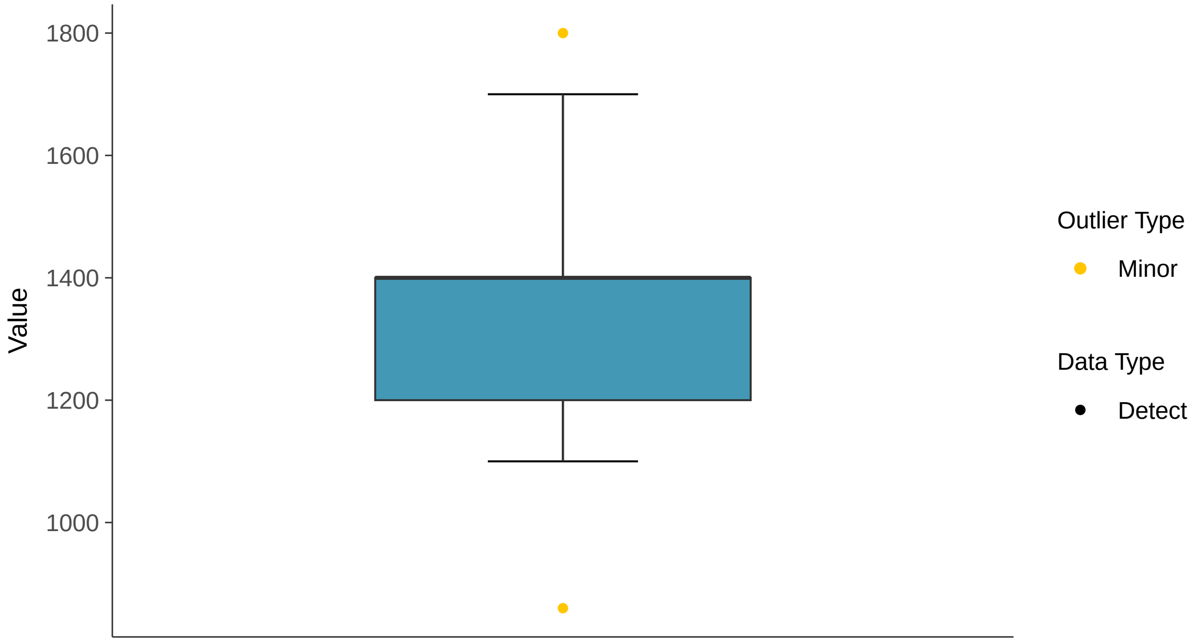
Histogram

Total Dissolved Solids, MW-18 (mg/L)



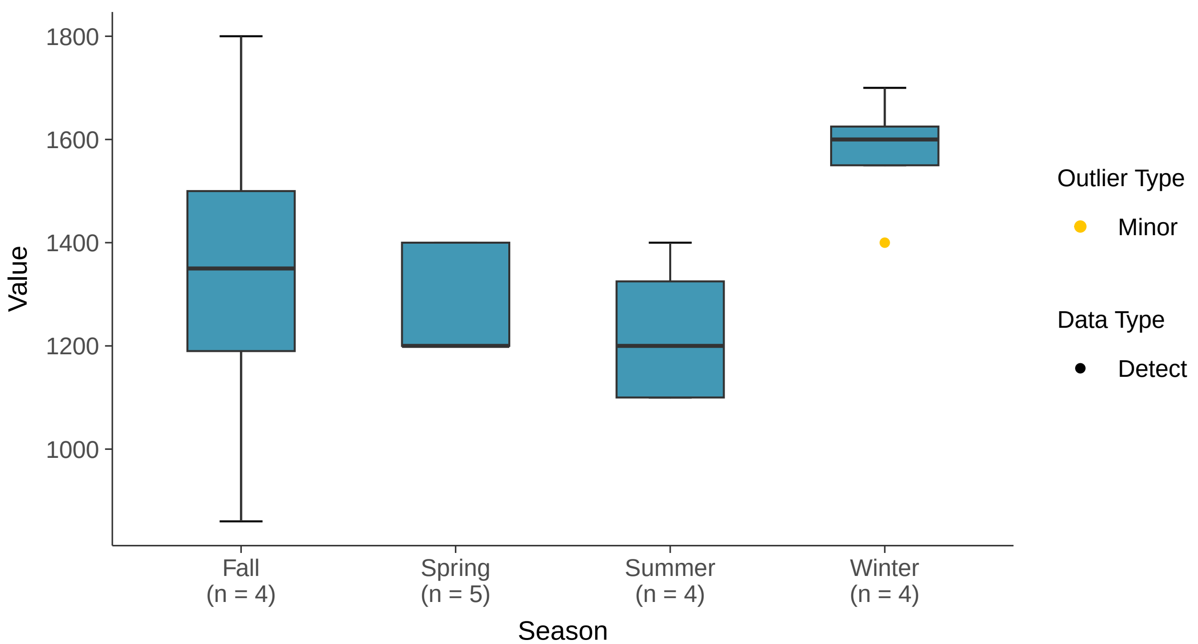
Boxplot

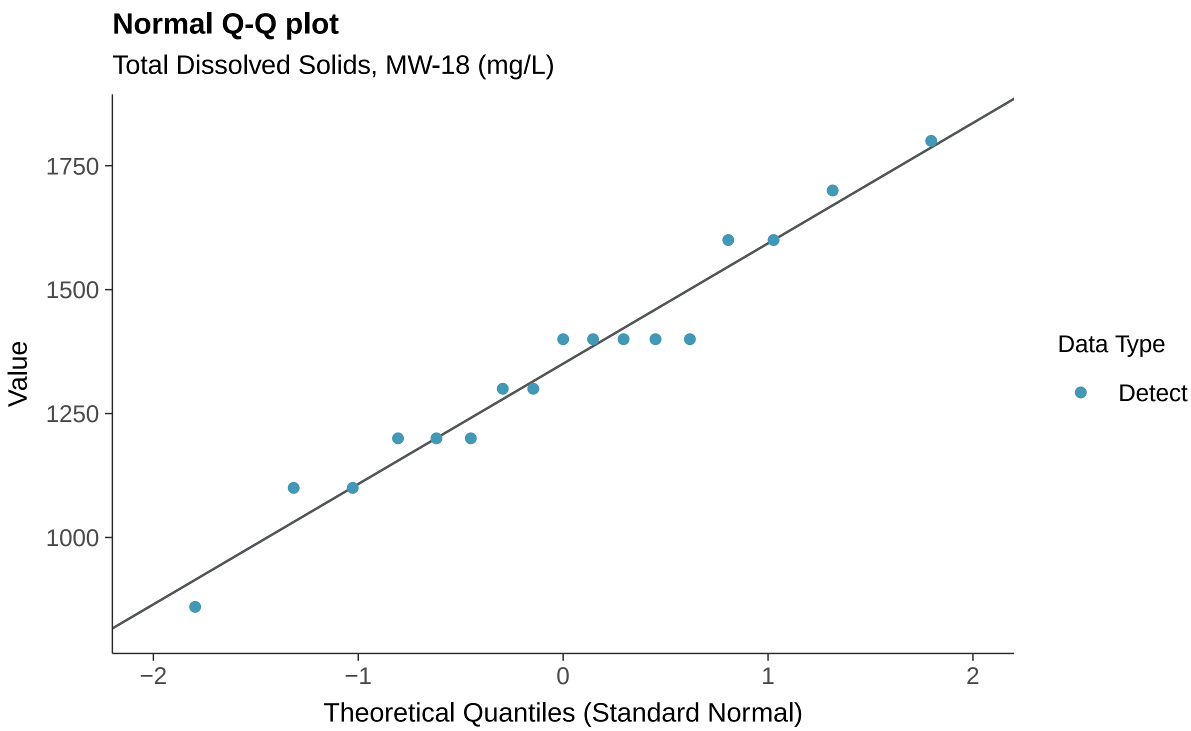
Total Dissolved Solids, MW-18 (mg/L)

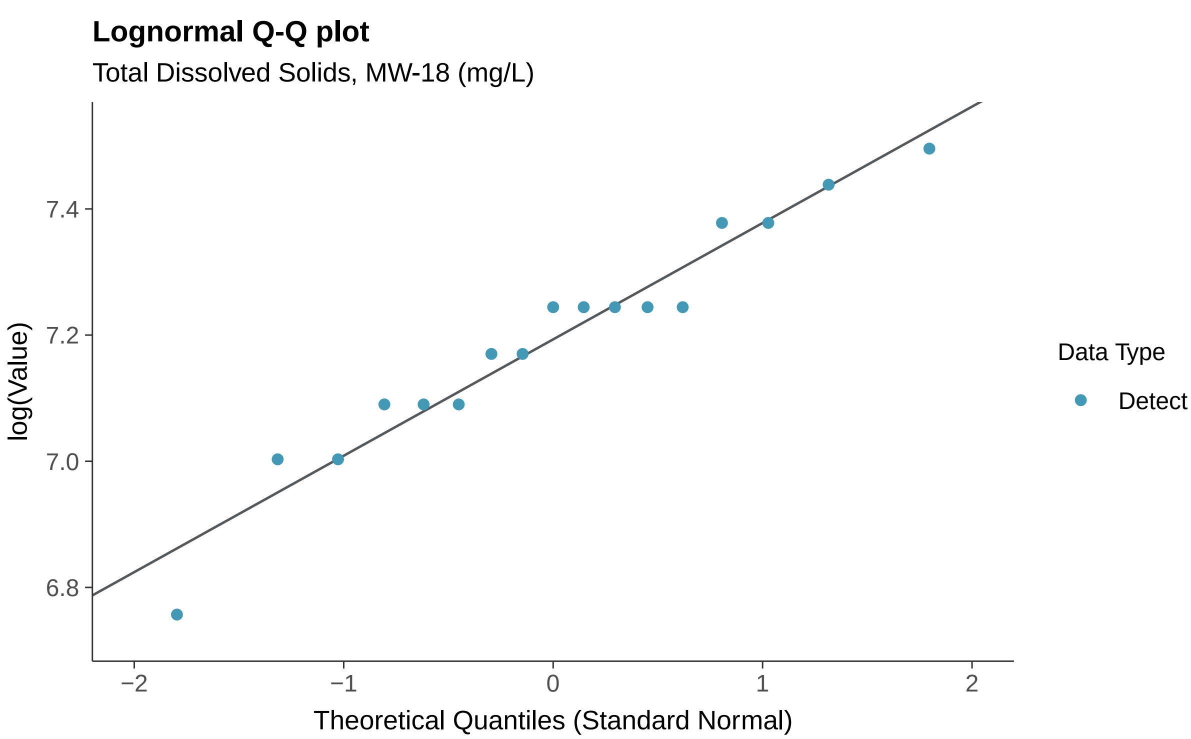


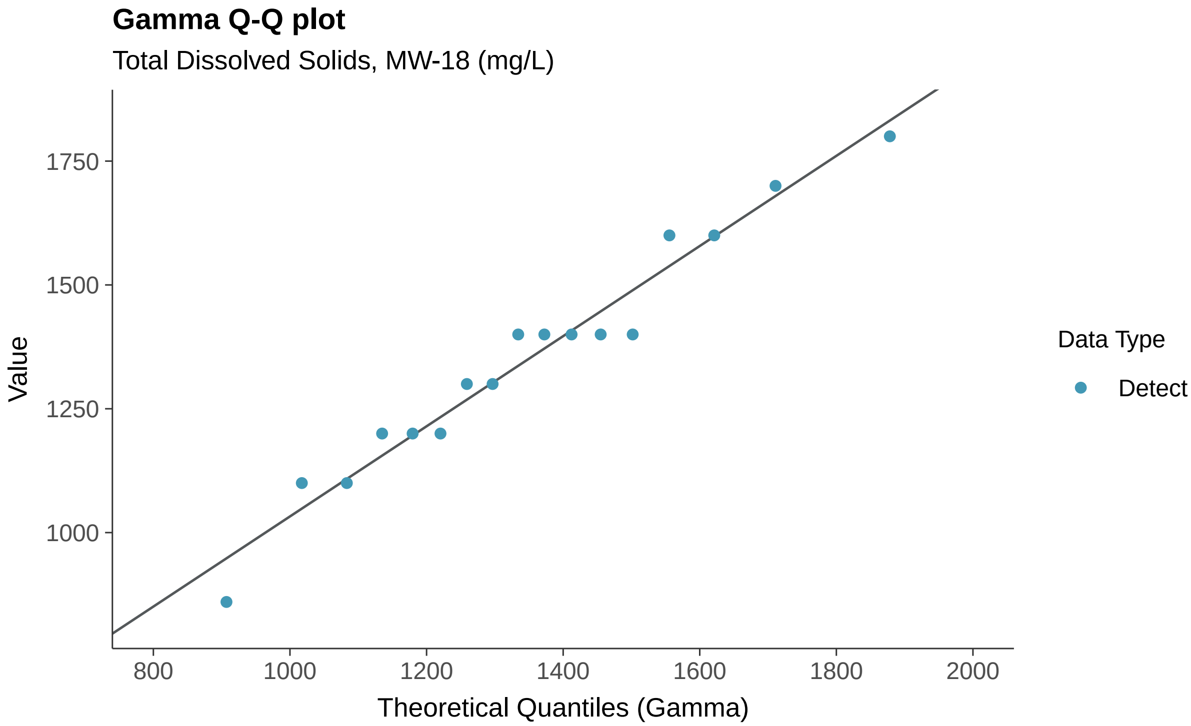
Boxplot by Season

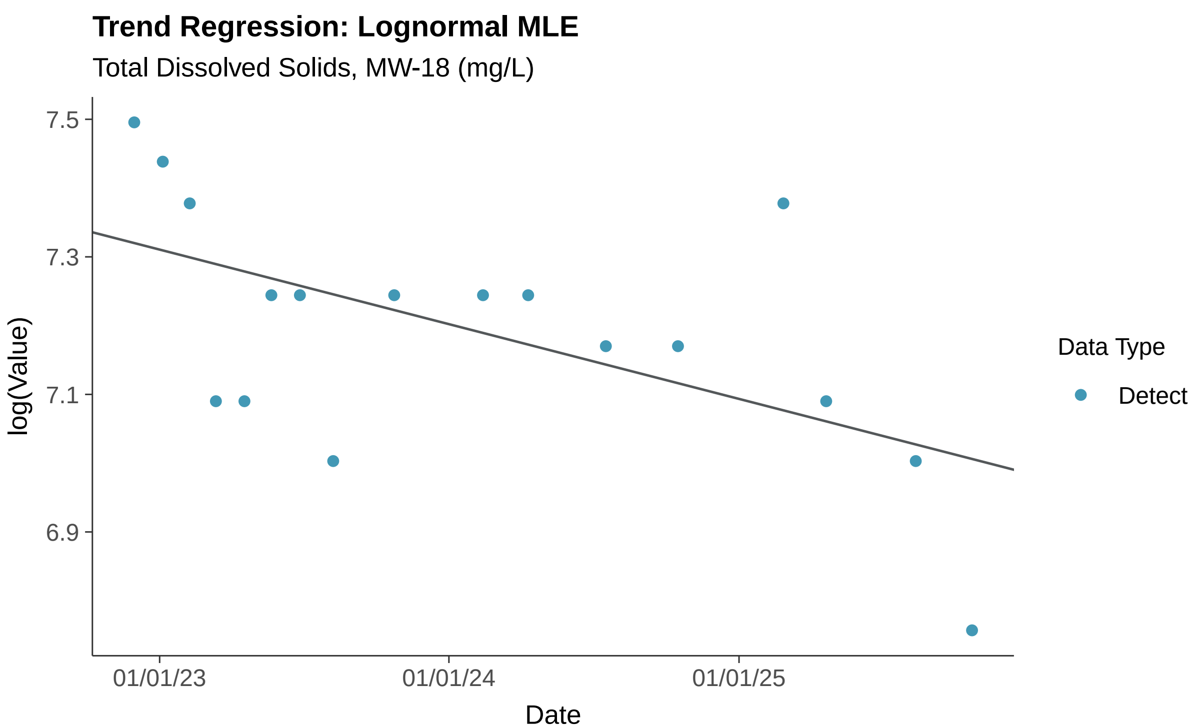
Total Dissolved Solids, MW-18 (mg/L)




Normal Q-Q plot
Total Dissolved Solids, MW-18 (mg/L)
Value
1750
1500
1250
1000
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

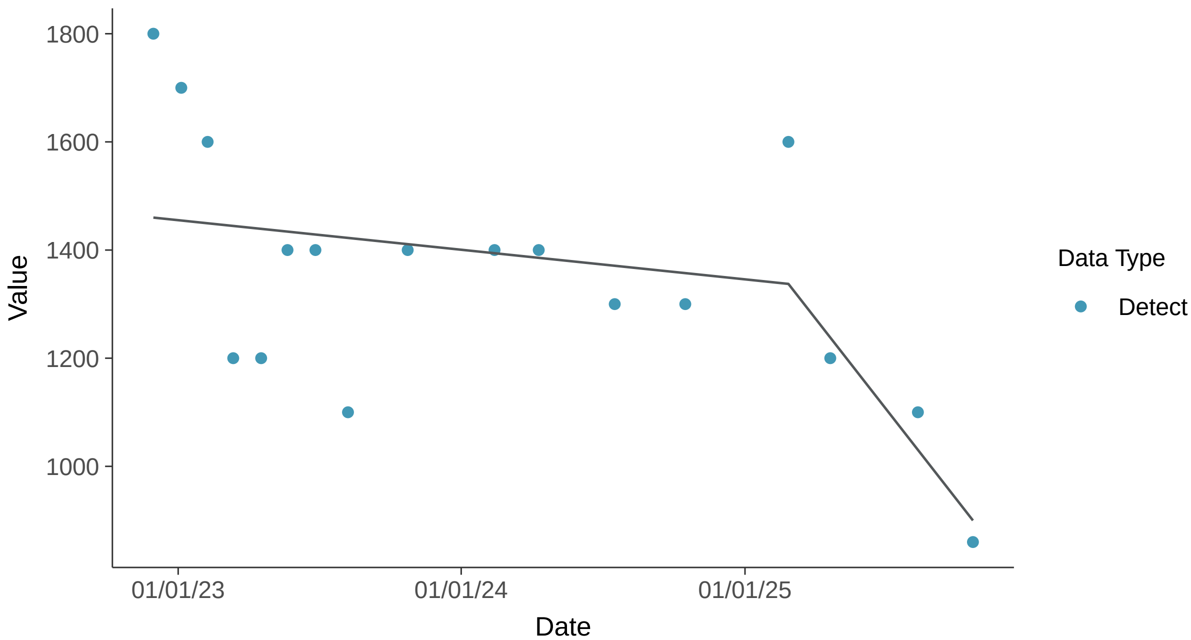

Lognormal Q-Q plot
Total Dissolved Solids, MW-18 (mg/L)
log(Value)
7.4
7.2
7.0
6.8
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Total Dissolved Solids, MW-18 (mg/L)
Value
1750
1500
1250
1000
800
1000
1200
1400
1600
1800
2000
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Total Dissolved Solids, MW-18 (mg/L)
log(Value)
7.5
7.3
7.1
6.9
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

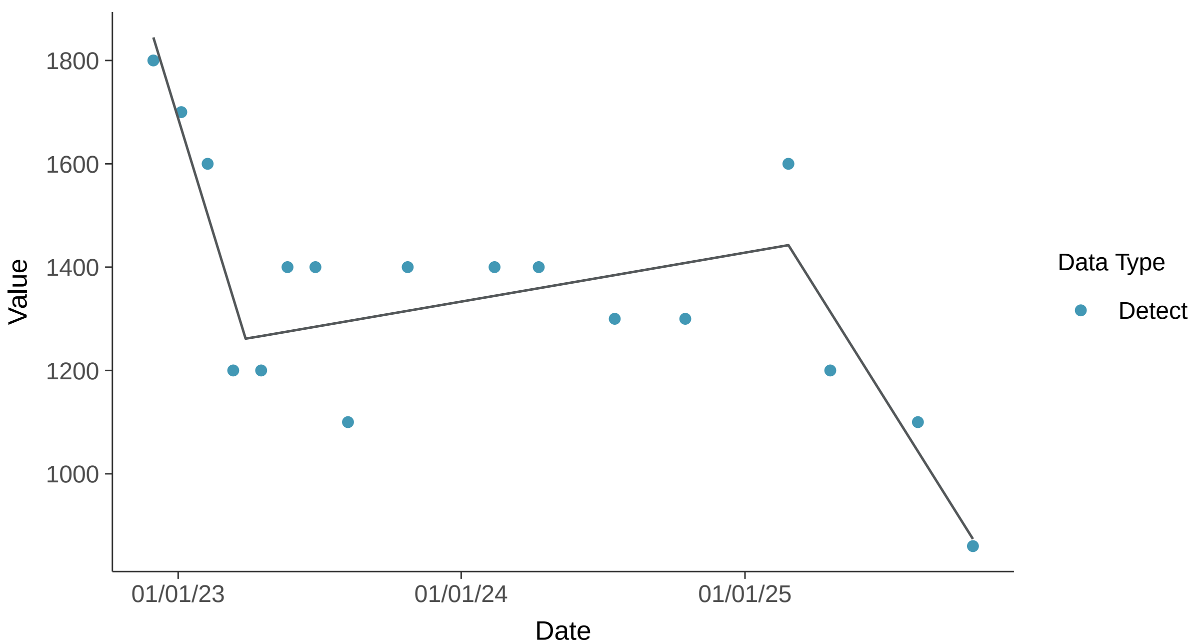
Trend Regression: Piecewise Linear-Linear

Total Dissolved Solids, MW-18 (mg/L)



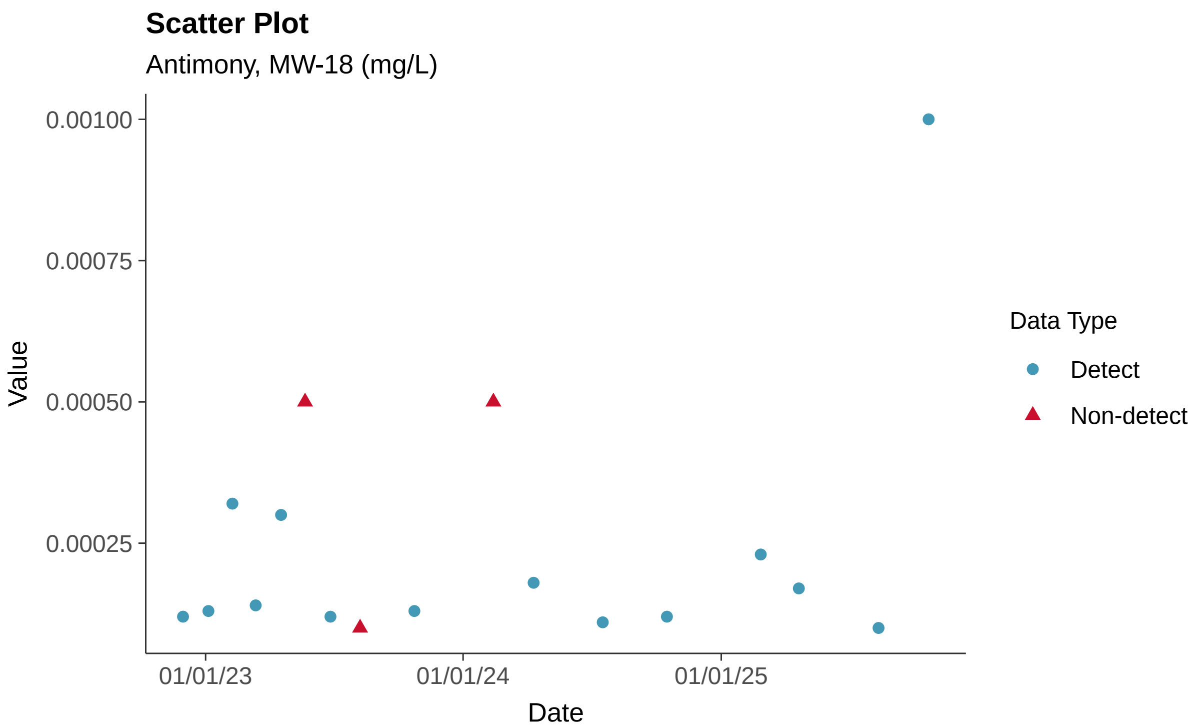
Trend Regression: Piecewise Linear-Linear-Linear

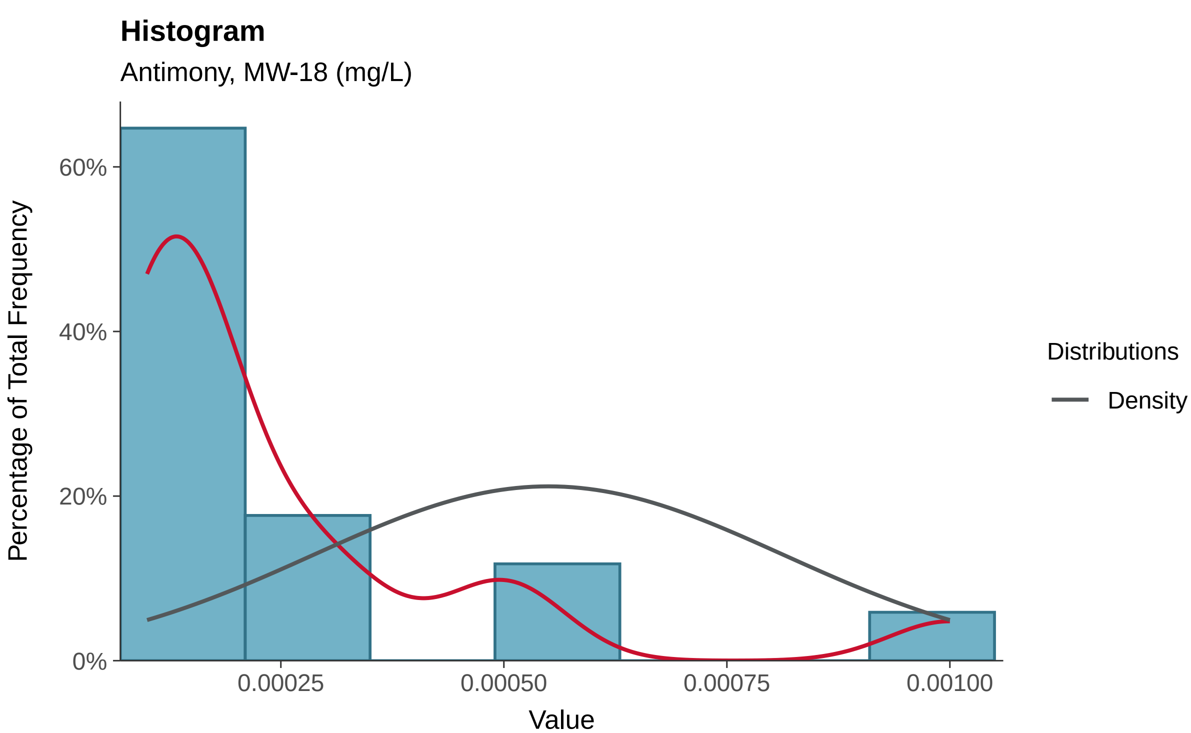
Total Dissolved Solids, MW-18 (mg/L)



Appendix IV: Antimony, MW-18

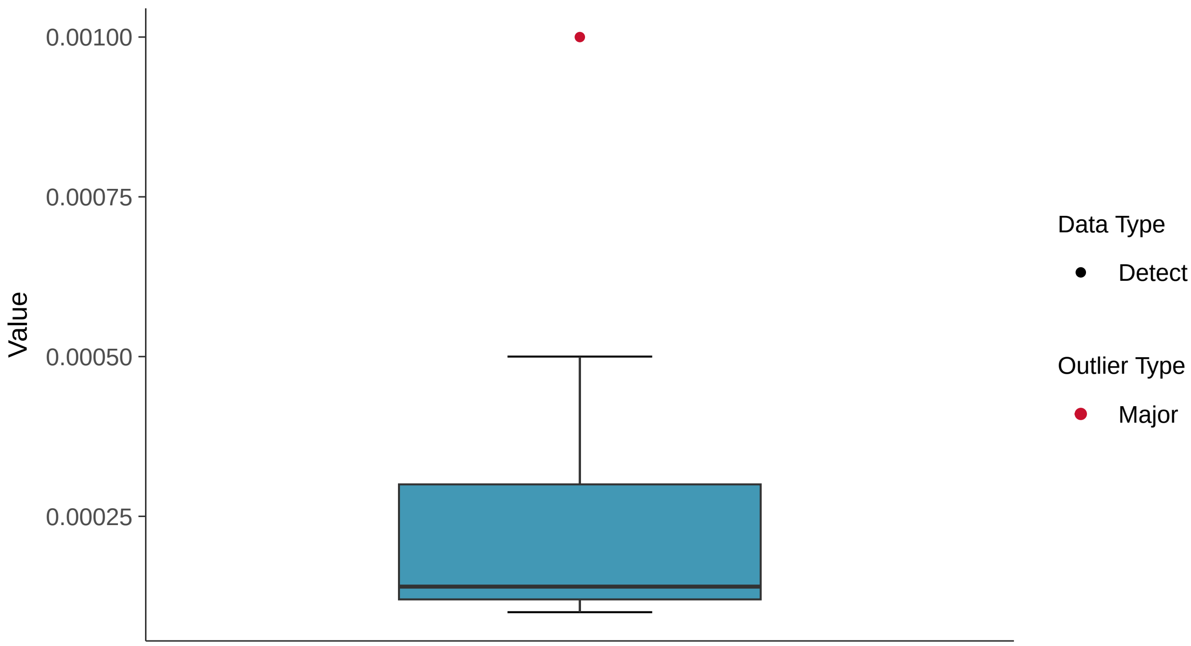
ID: 28_1_4_101





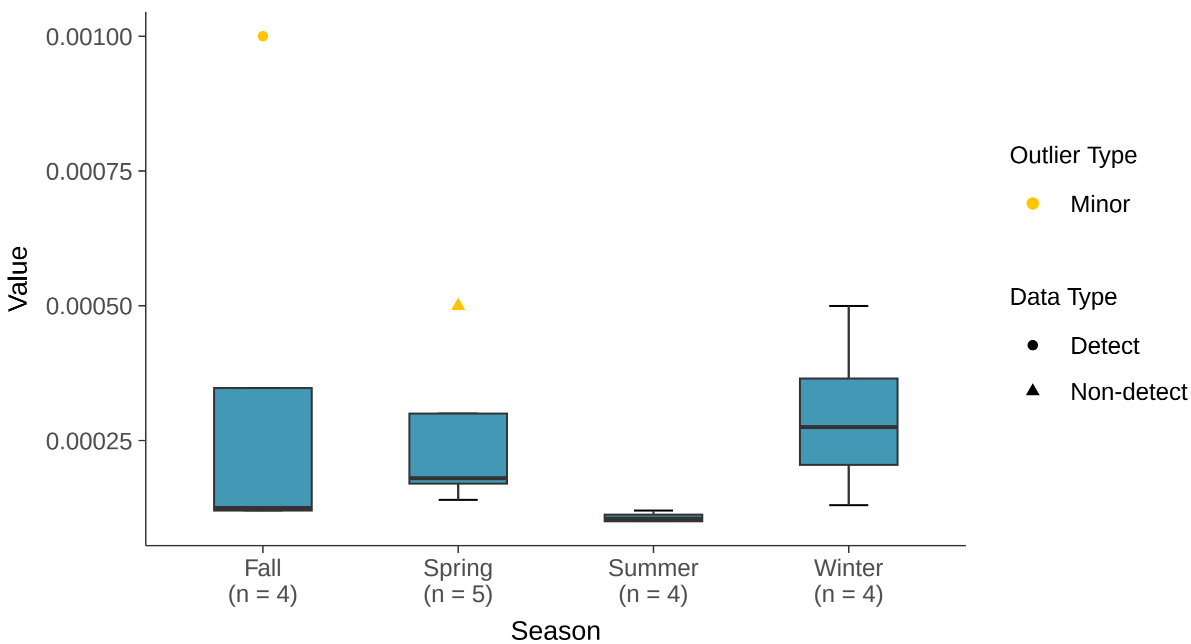
Boxplot

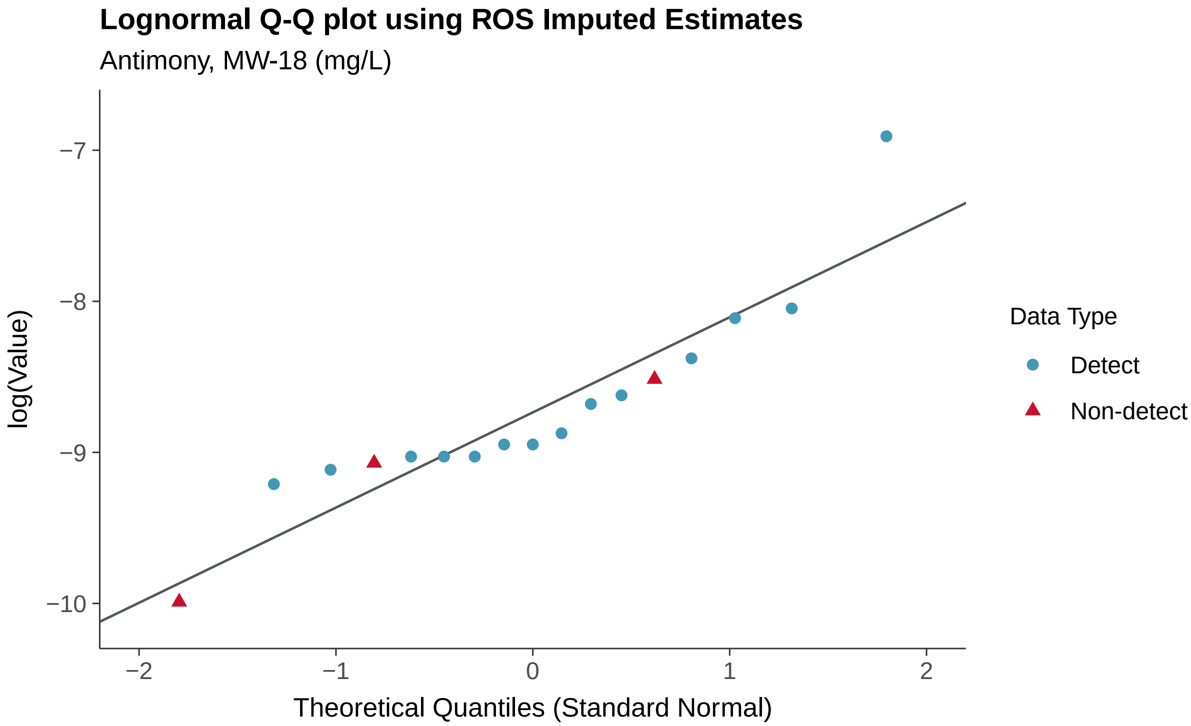
Antimony, MW-18 (mg/L)

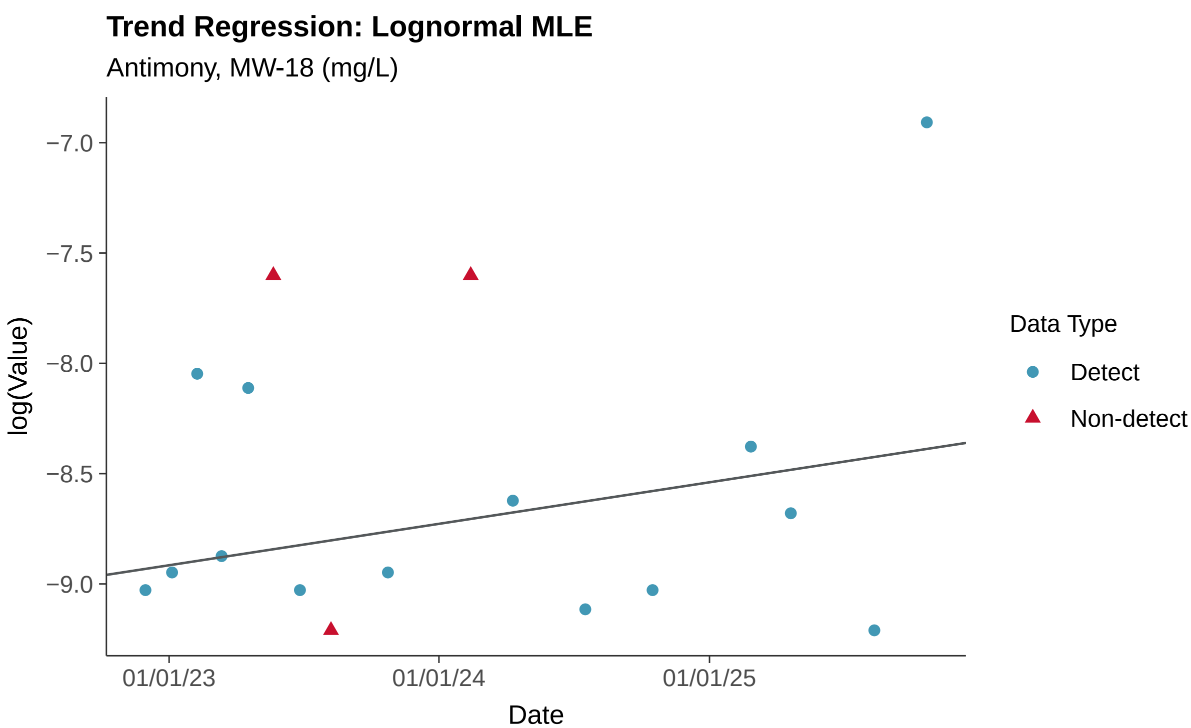


Boxplot by Season

Antimony, MW-18 (mg/L)




Lognormal Q-Q plot using ROS Imputed Estimates
Antimony, MW-18 (mg/L)
log(Value)
−7
−8
−9
−10
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

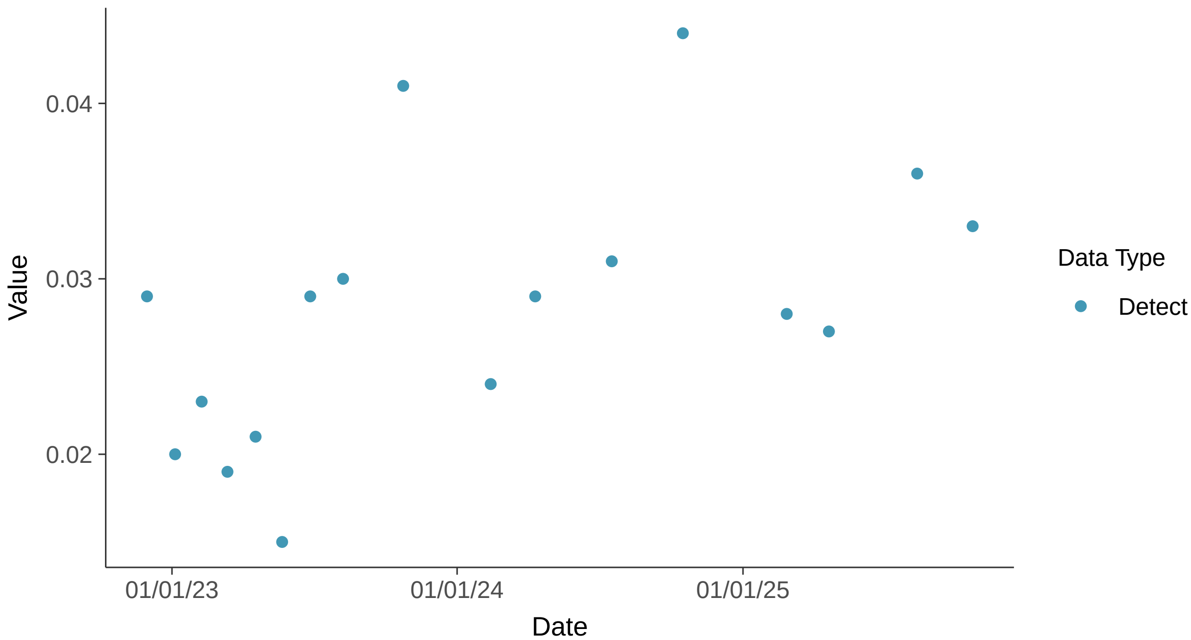

Trend Regression: Lognormal MLE
Antimony, MW-18 (mg/L)
log(Value)
−7.0
−7.5
−8.0
−8.5
−9.0
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Appendix IV: Arsenic, MW-18

ID: 28_1_4_102

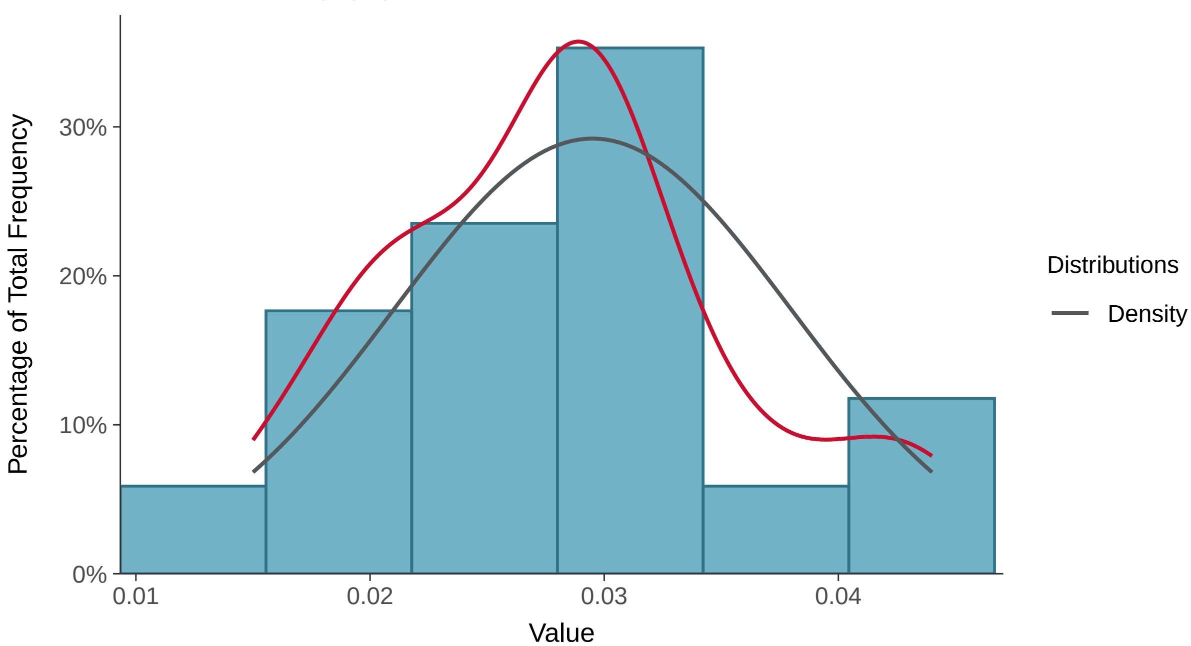
Scatter Plot

Arsenic, MW-18 (mg/L)



Histogram

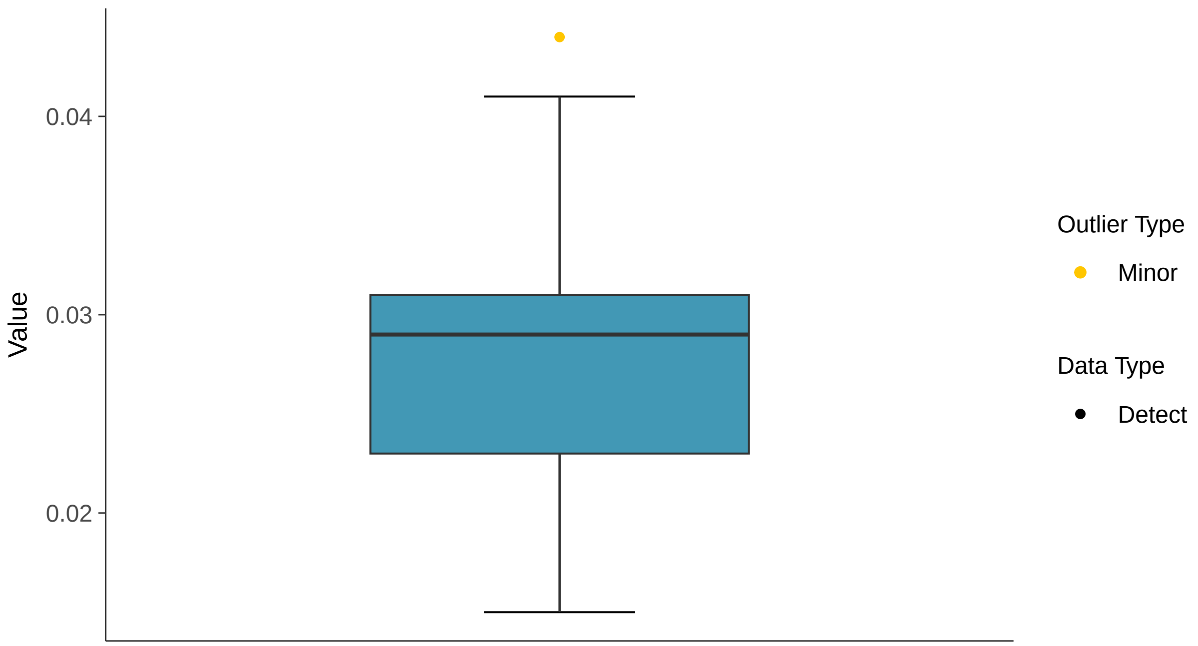
Arsenic, MW-18 (mg/L)



Grand Haven
Downgradient Wells as of October 2025

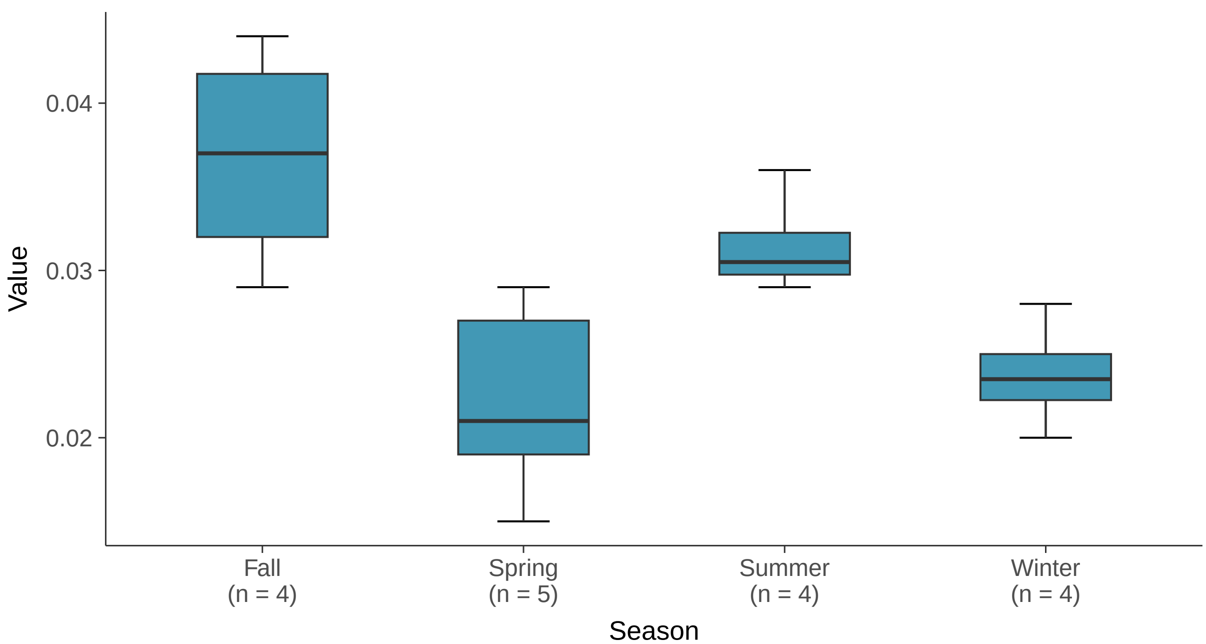
Boxplot

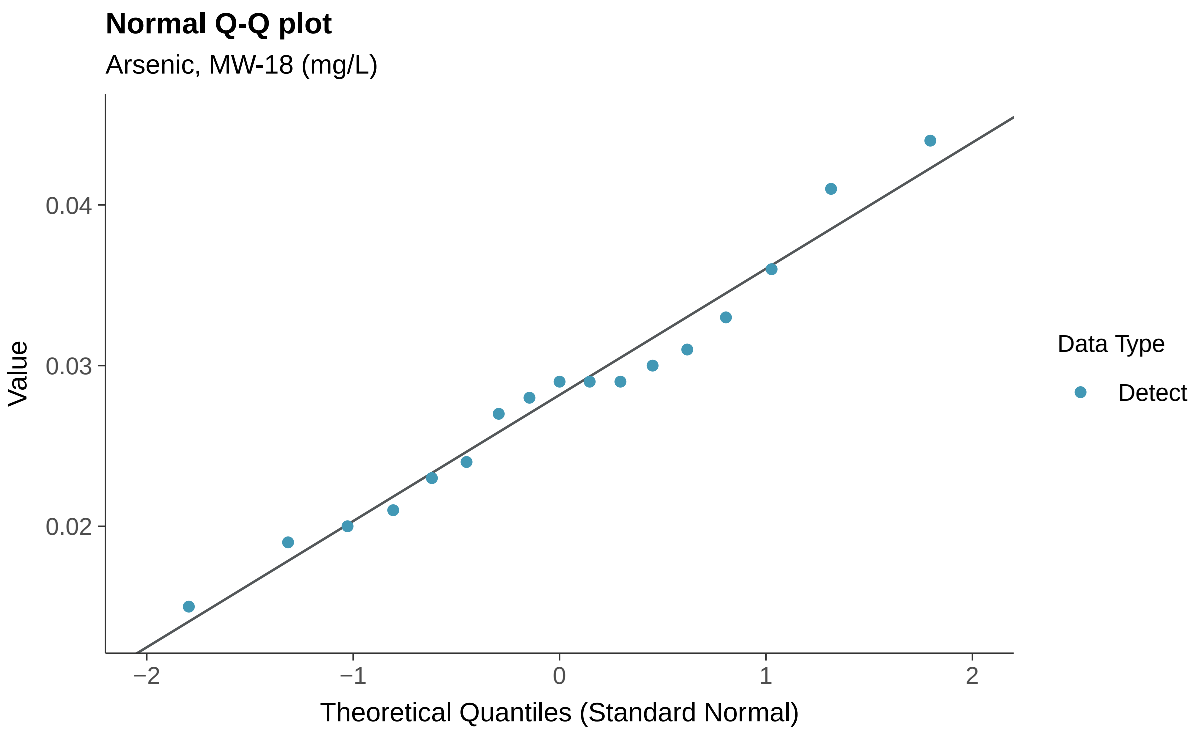
Arsenic, MW-18 (mg/L)

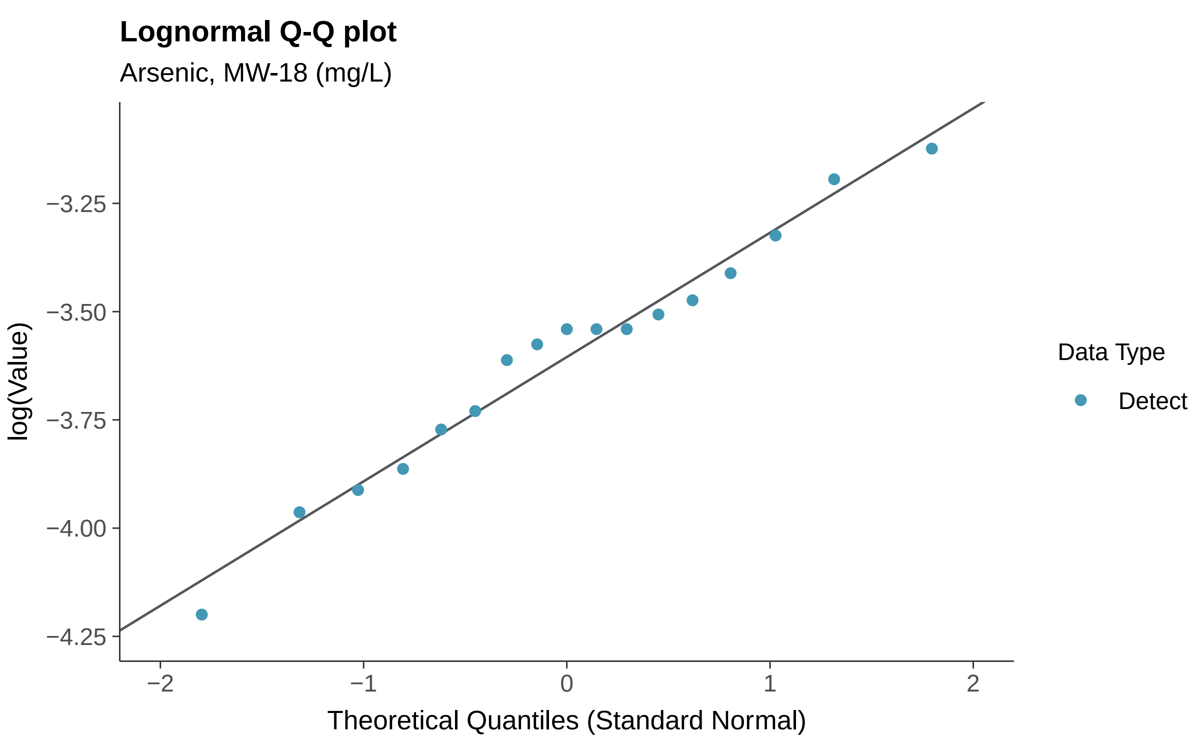


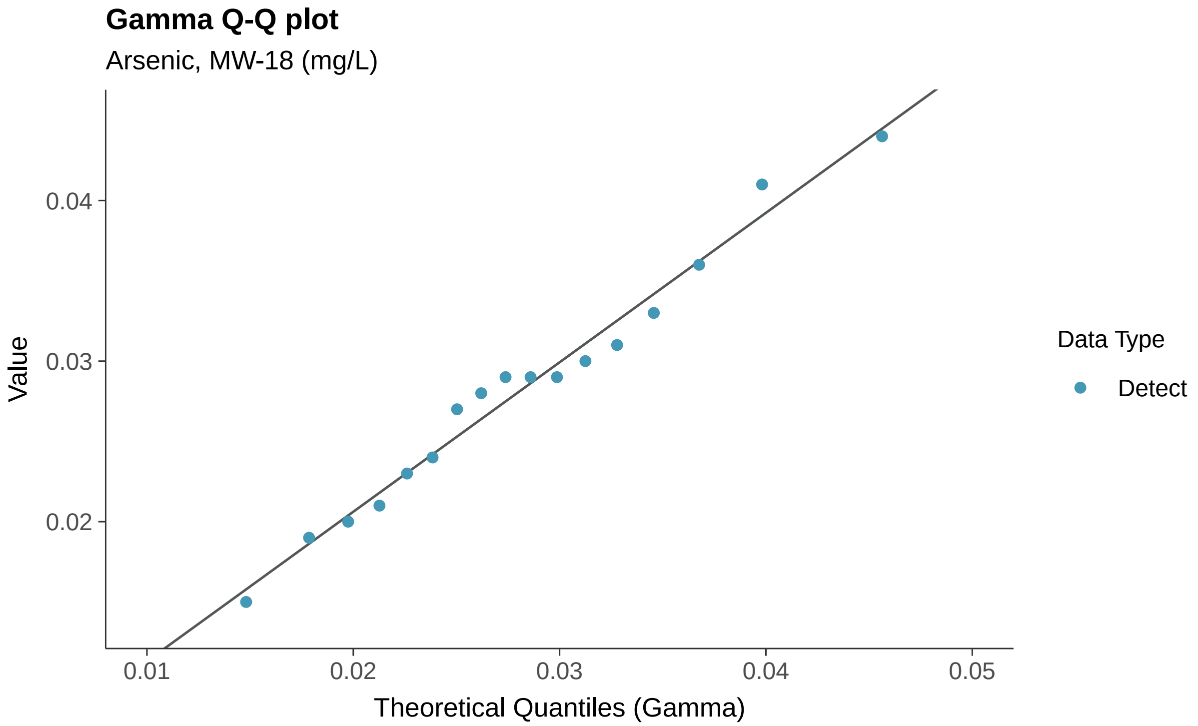
Boxplot by Season

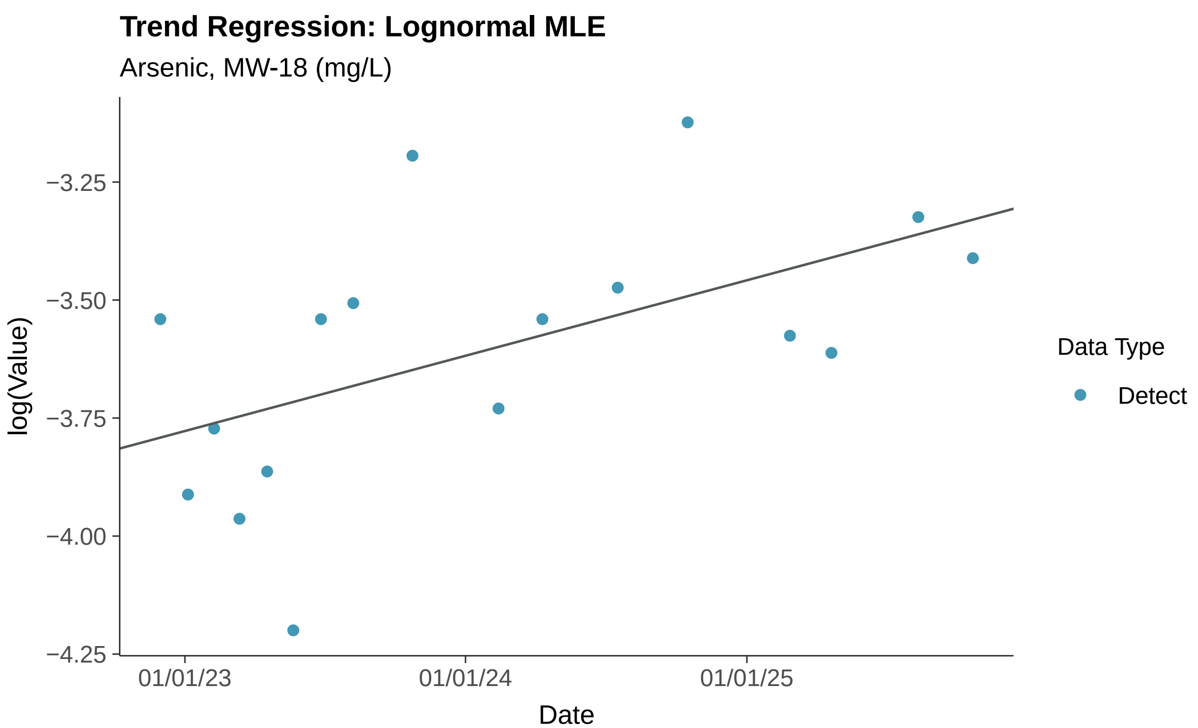
Arsenic, MW-18 (mg/L)

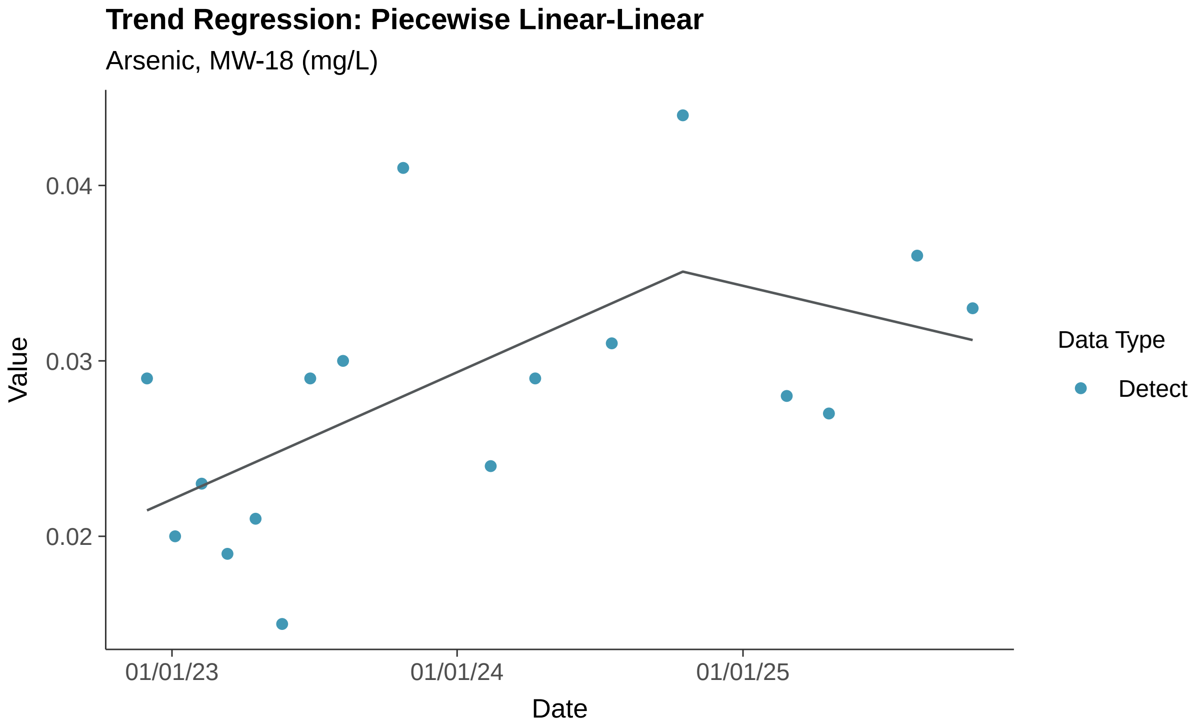


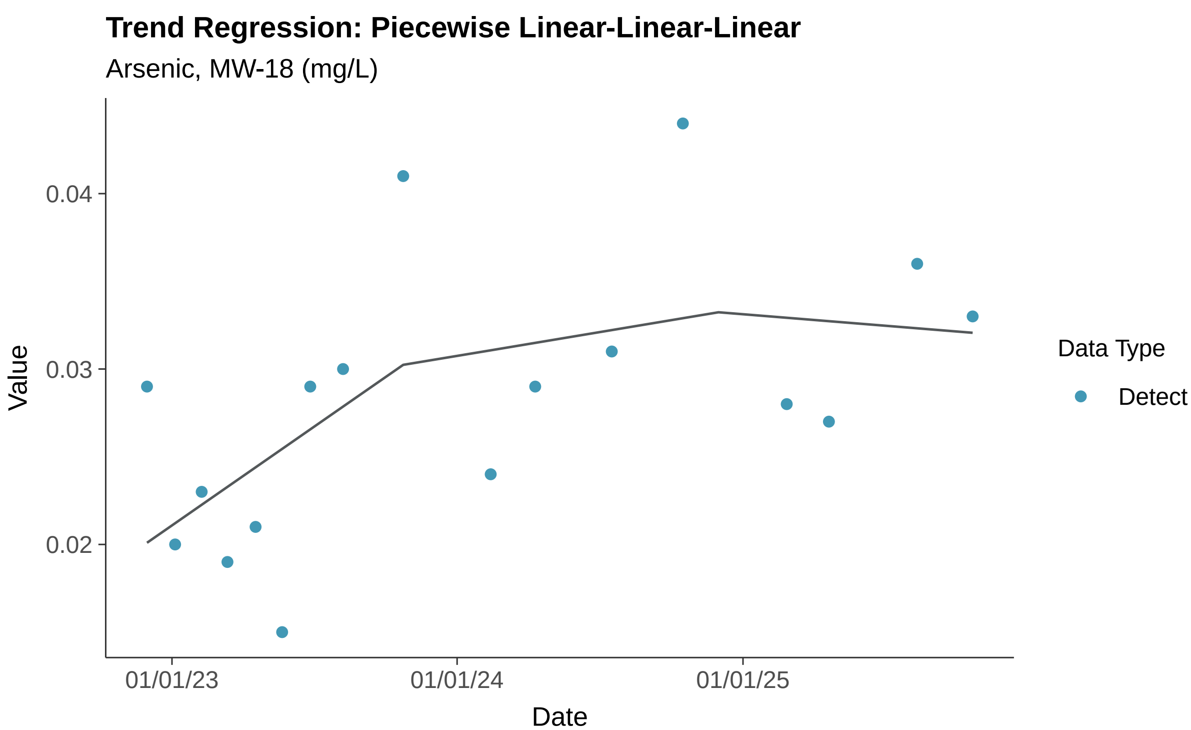

Normal Q-Q plot
Arsenic, MW-18 (mg/L)
Value
0.04
0.03
0.02
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Arsenic, MW-18 (mg/L)
log(Value)
−3.25
−3.50
−3.75
−4.00
−4.25
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Arsenic, MW-18 (mg/L)
Value
0.04
0.03
0.02
0.01
0.02
0.03
0.04
0.05
Theoretical Quantiles (Gamma)
Data Type
Detect

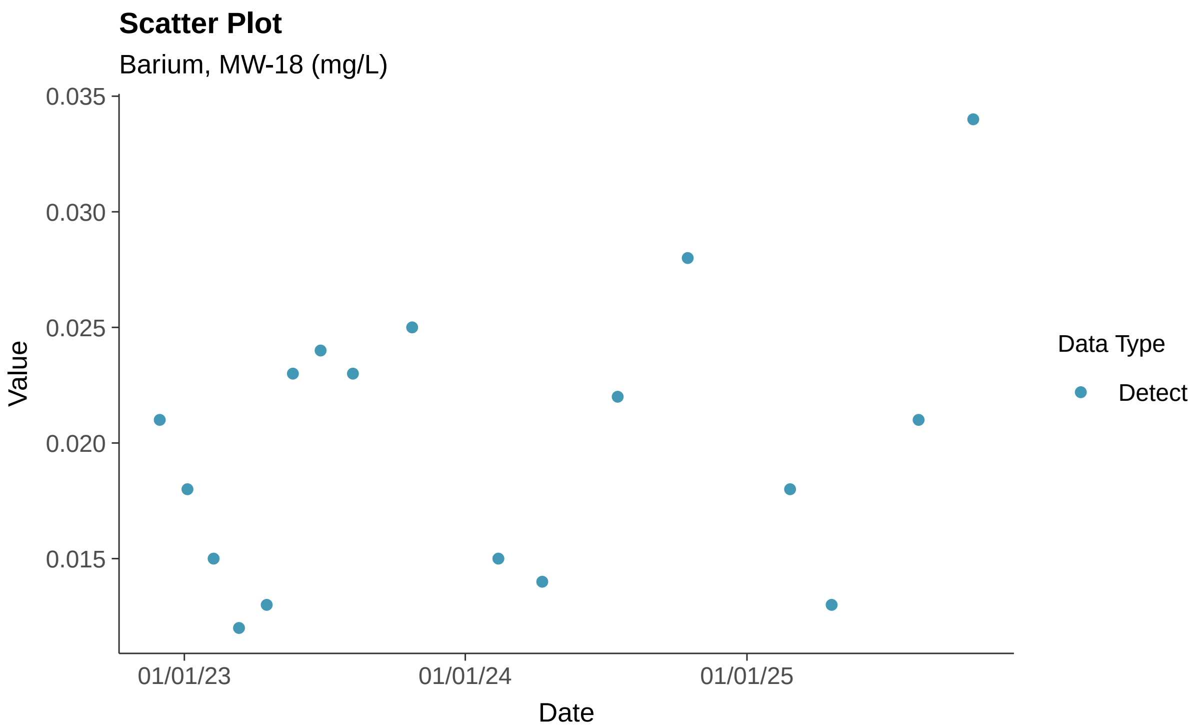

Trend Regression: Lognormal MLE
Arsenic, MW-18 (mg/L)
log(Value)
−3.25
−3.50
−3.75
−4.00
−4.25
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

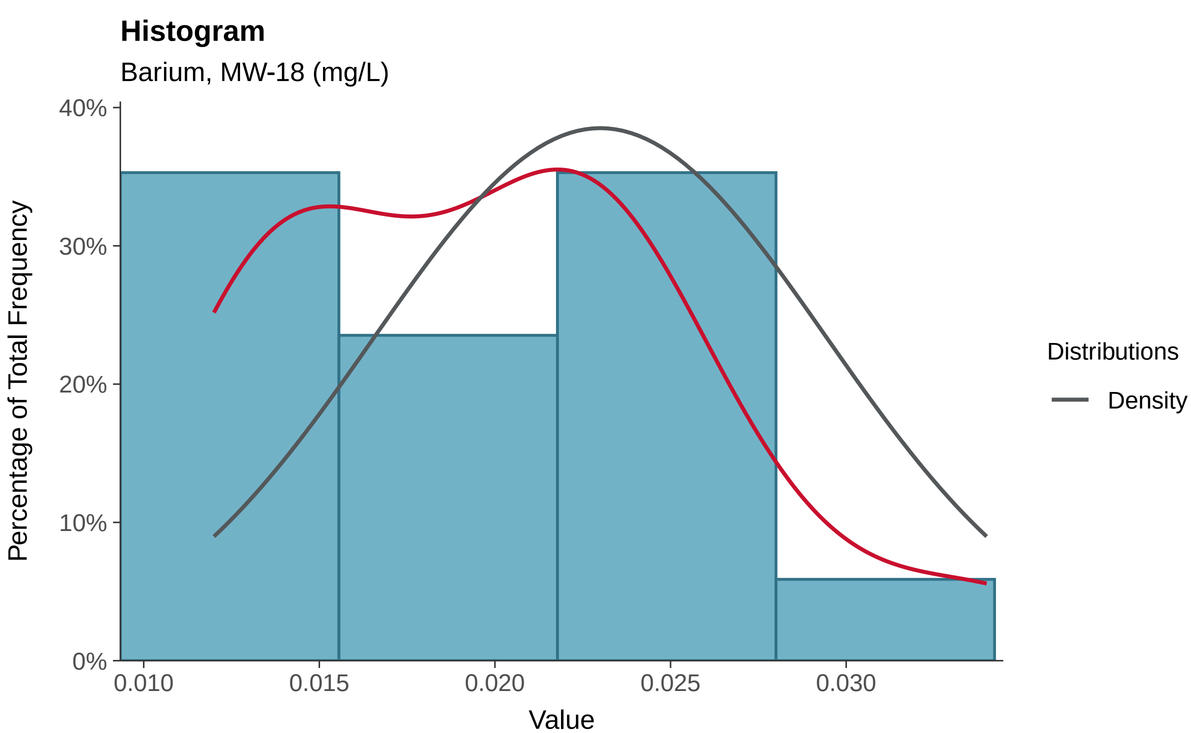

Trend Regression: Piecewise Linear-Linear
Arsenic, MW-18 (mg/L)
Value
0.04
0.03
0.02
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
Arsenic, MW-18 (mg/L)
Value
0.04
0.03
0.02
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Appendix IV: Barium, MW-18

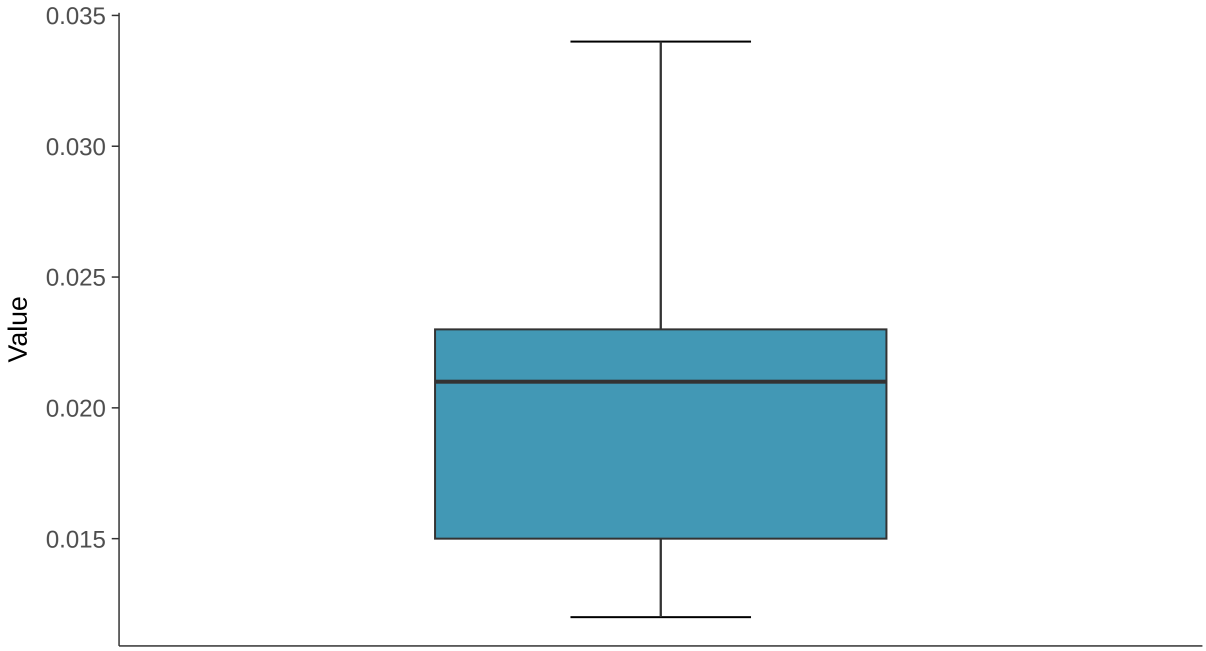
ID: 28_1_4_103





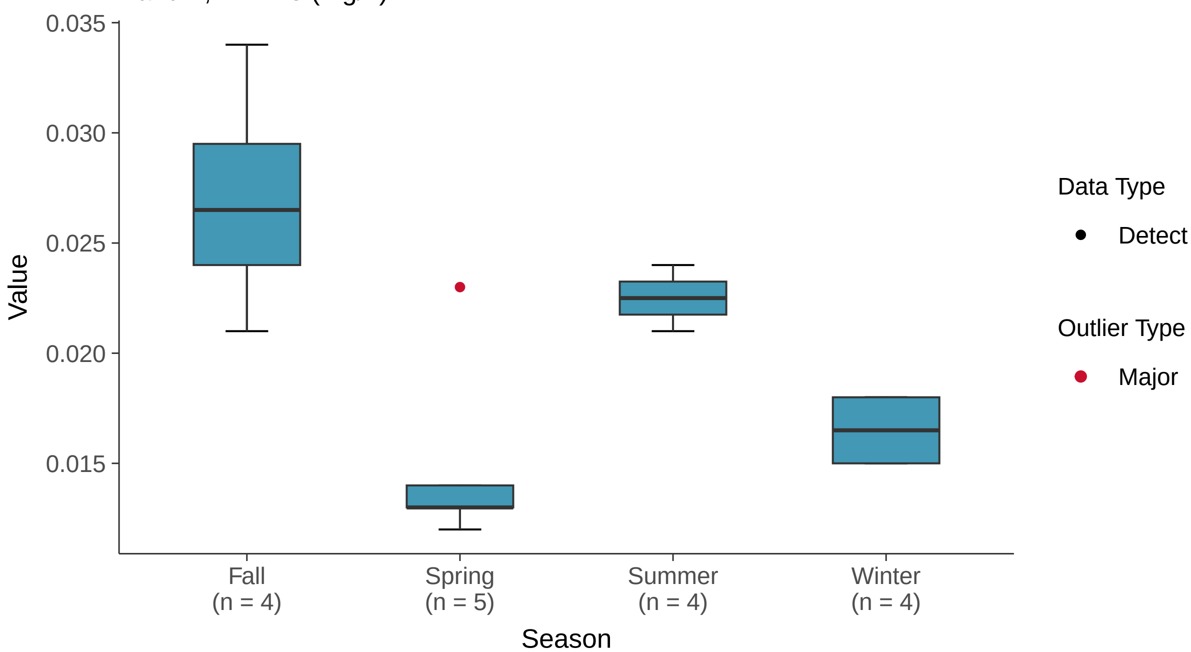
Boxplot

Barium, MW-18 (mg/L)



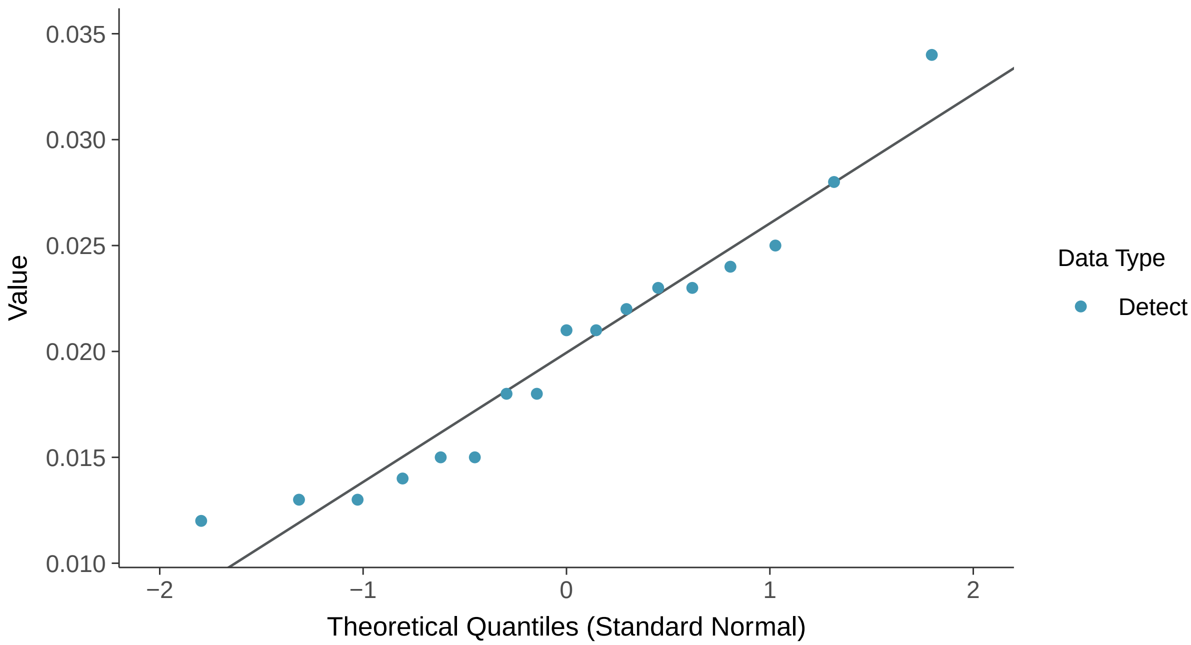
Boxplot by Season

Barium, MW-18 (mg/L)



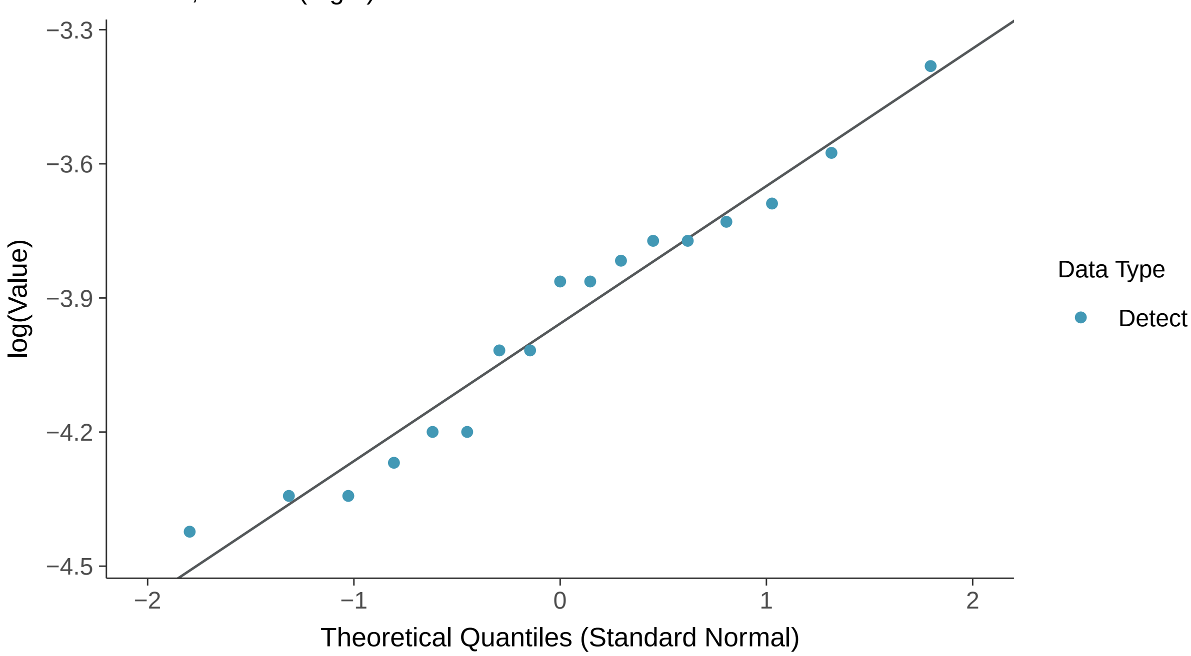
Normal Q-Q plot

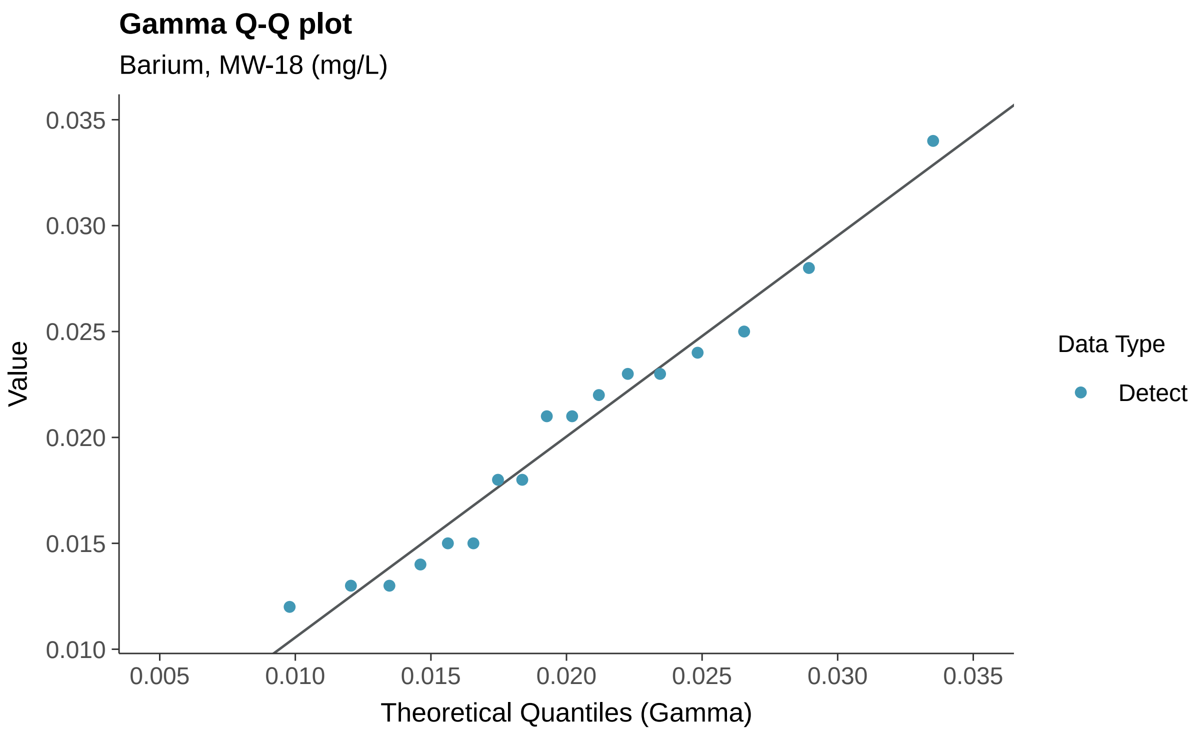
Barium, MW-18 (mg/L)

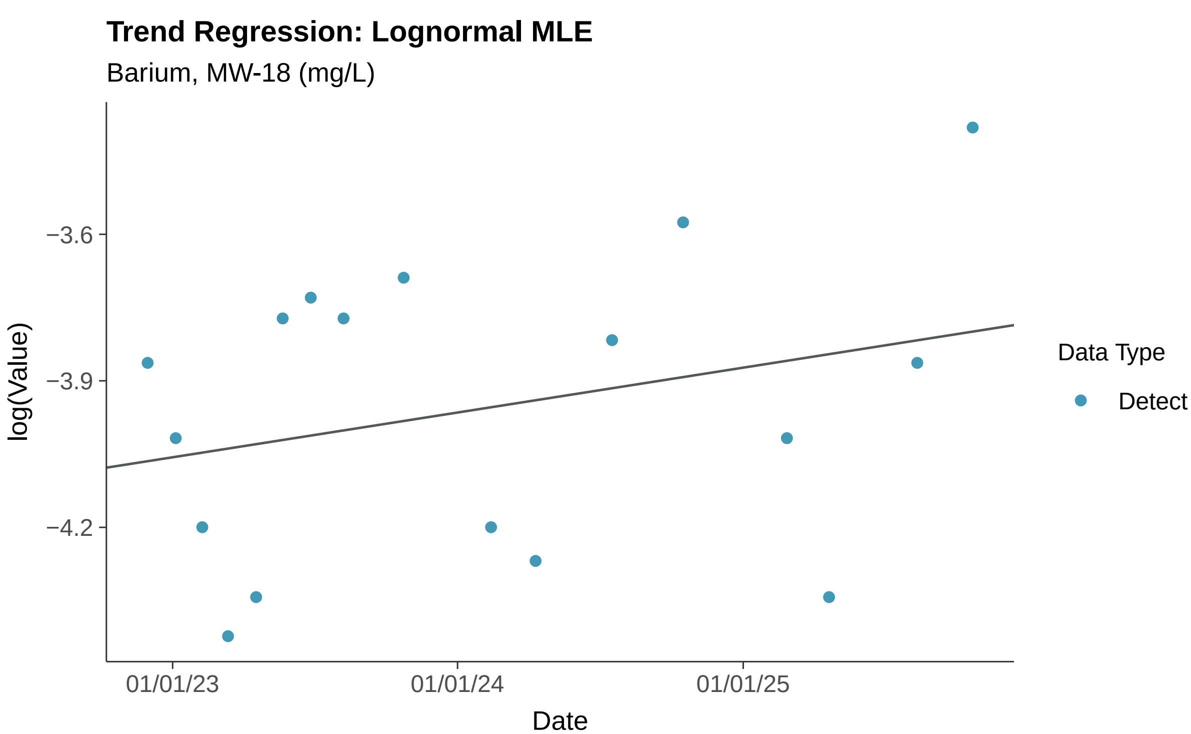


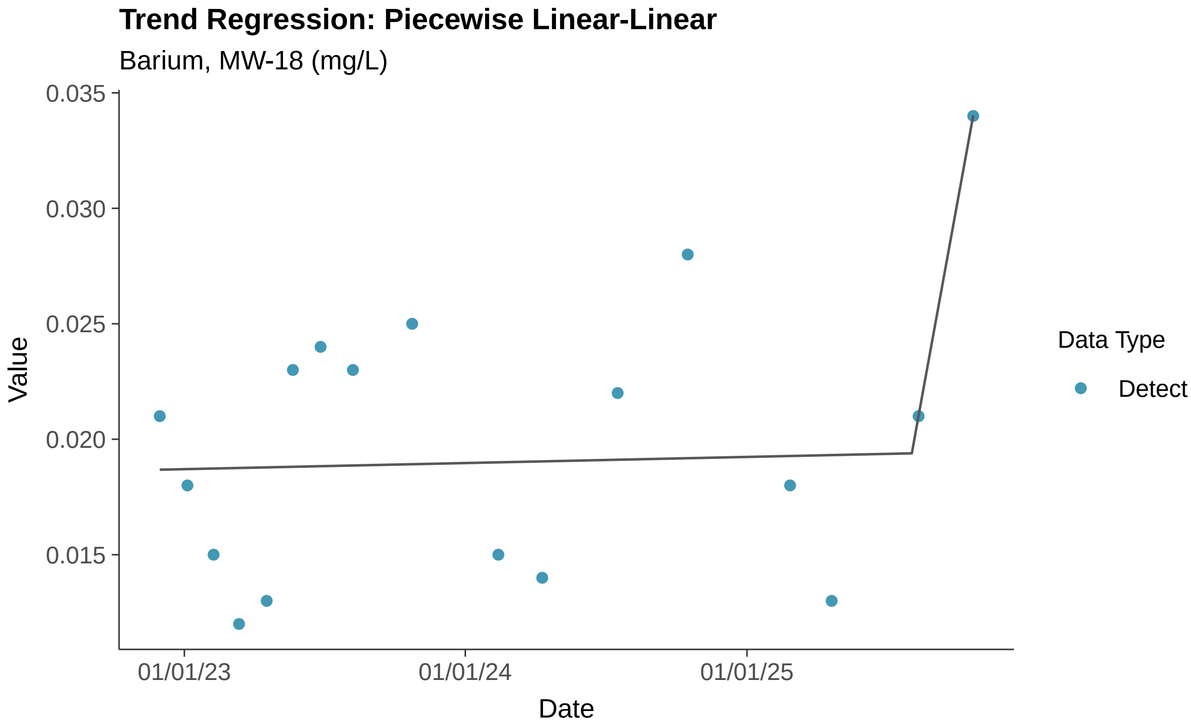
Lognormal Q-Q plot

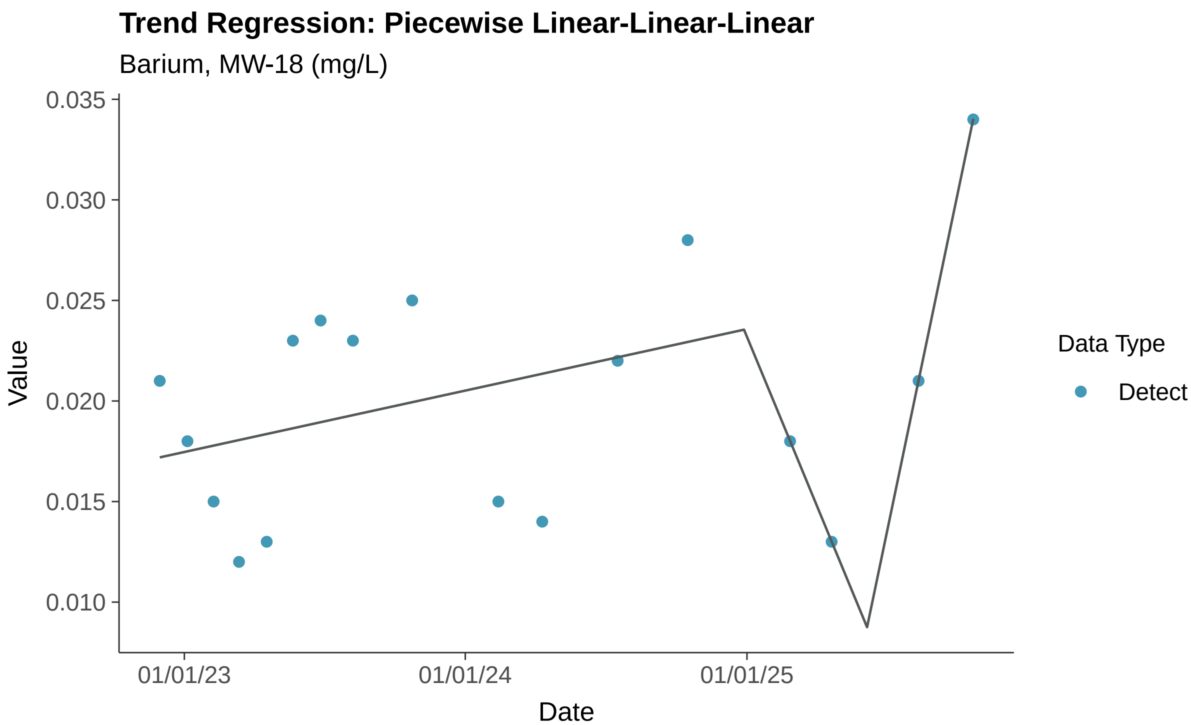
Barium, MW-18 (mg/L)




Gamma Q-Q plot
Barium, MW-18 (mg/L)
Value
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.010
0.015
0.020
0.025
0.030
0.035
Theoretical Quantiles (Gamma)
Data Type
Detect

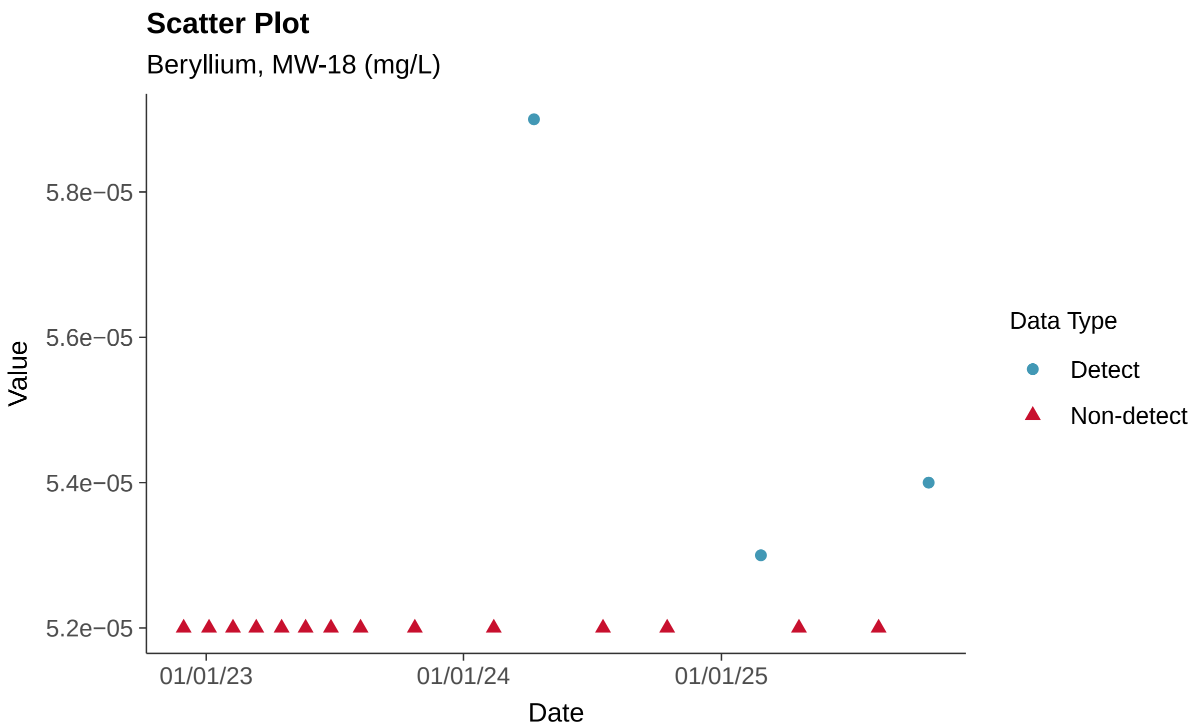

Trend Regression: Lognormal MLE
Barium, MW-18 (mg/L)
log(Value)
−3.6
−3.9
−4.2
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

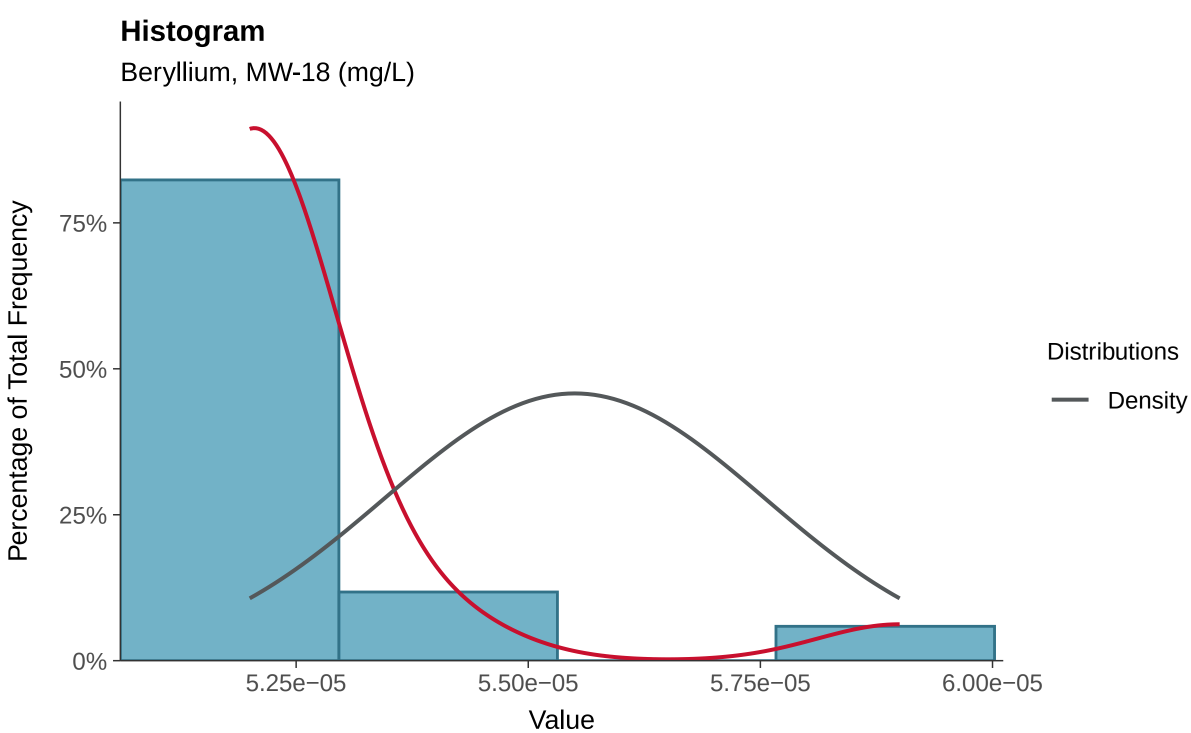

Trend Regression: Piecewise Linear-Linear
Barium, MW-18 (mg/L)
0.035
0.030
0.025
0.020
0.015
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
Barium, MW-18 (mg/L)
0.035
0.030
0.025
0.020
0.015
0.010
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Appendix IV: Beryllium, MW-18

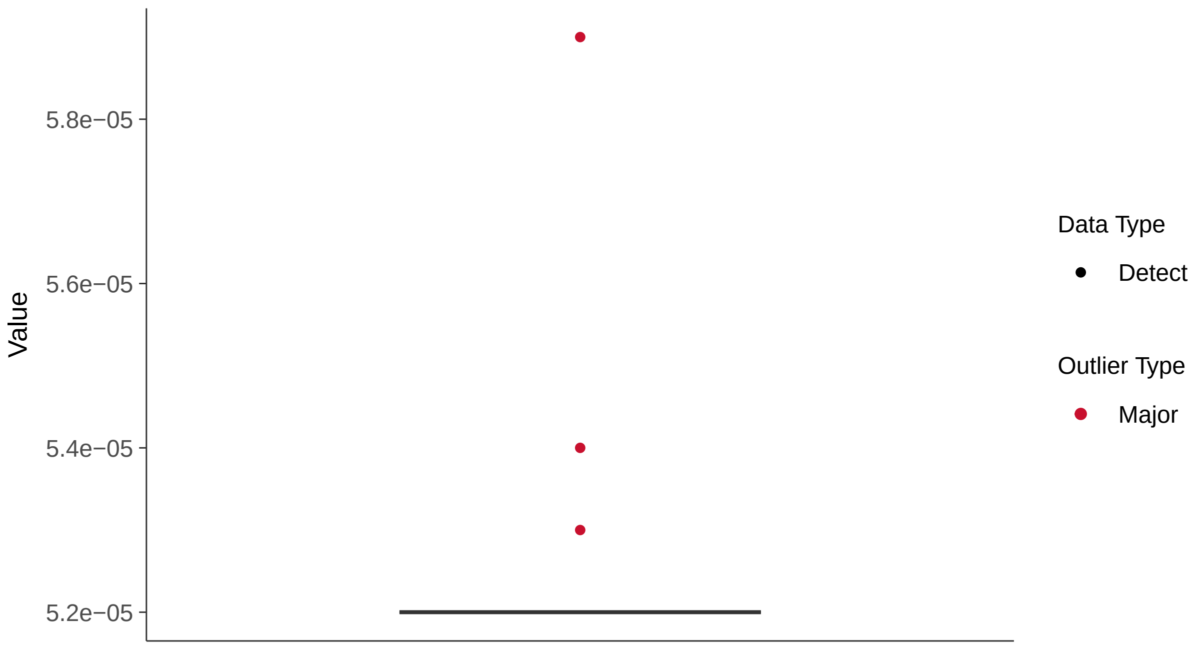
ID: 28_1_4_104





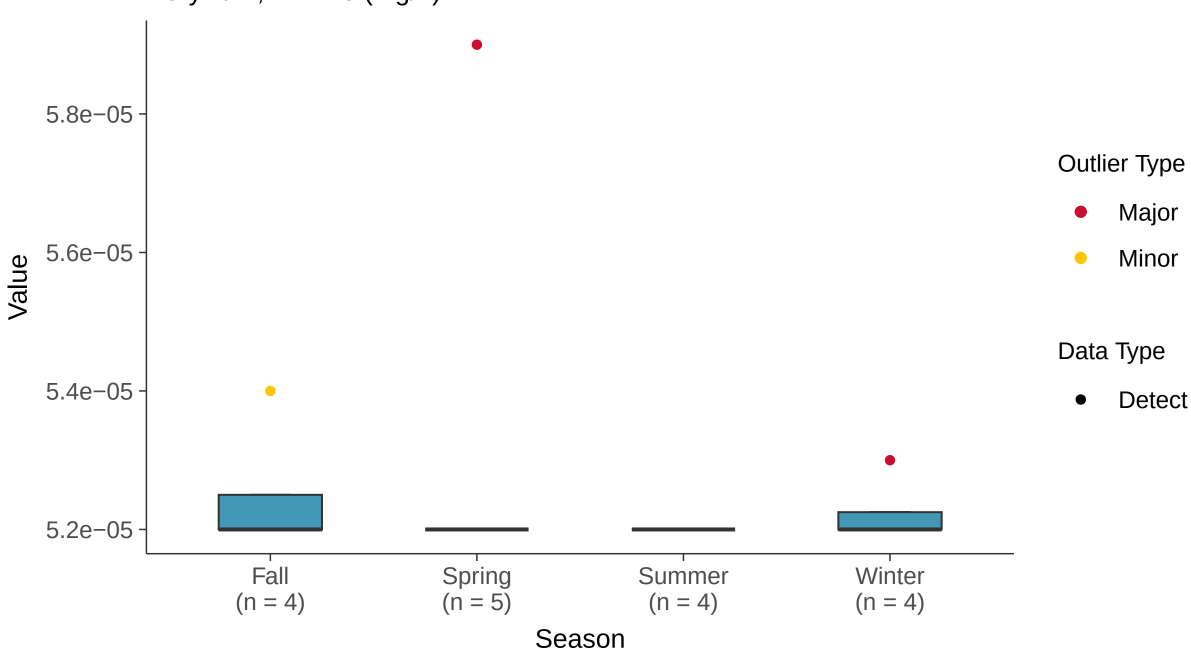
Boxplot

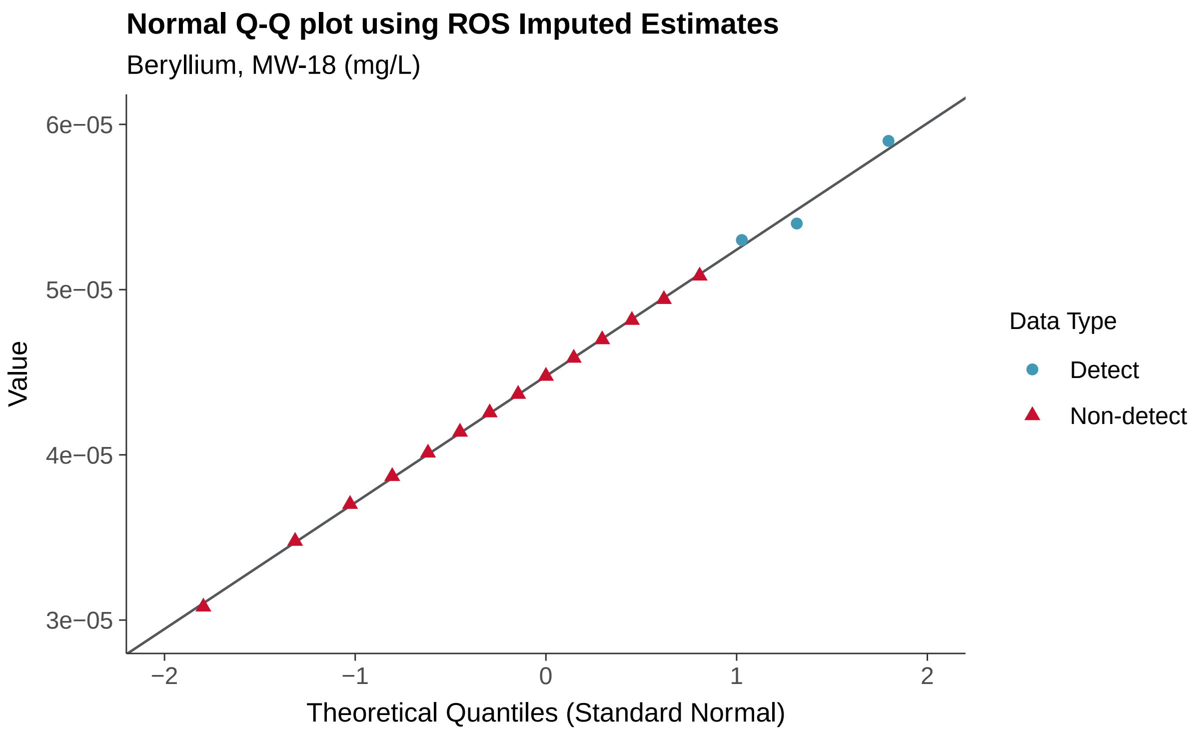
Beryllium, MW-18 (mg/L)

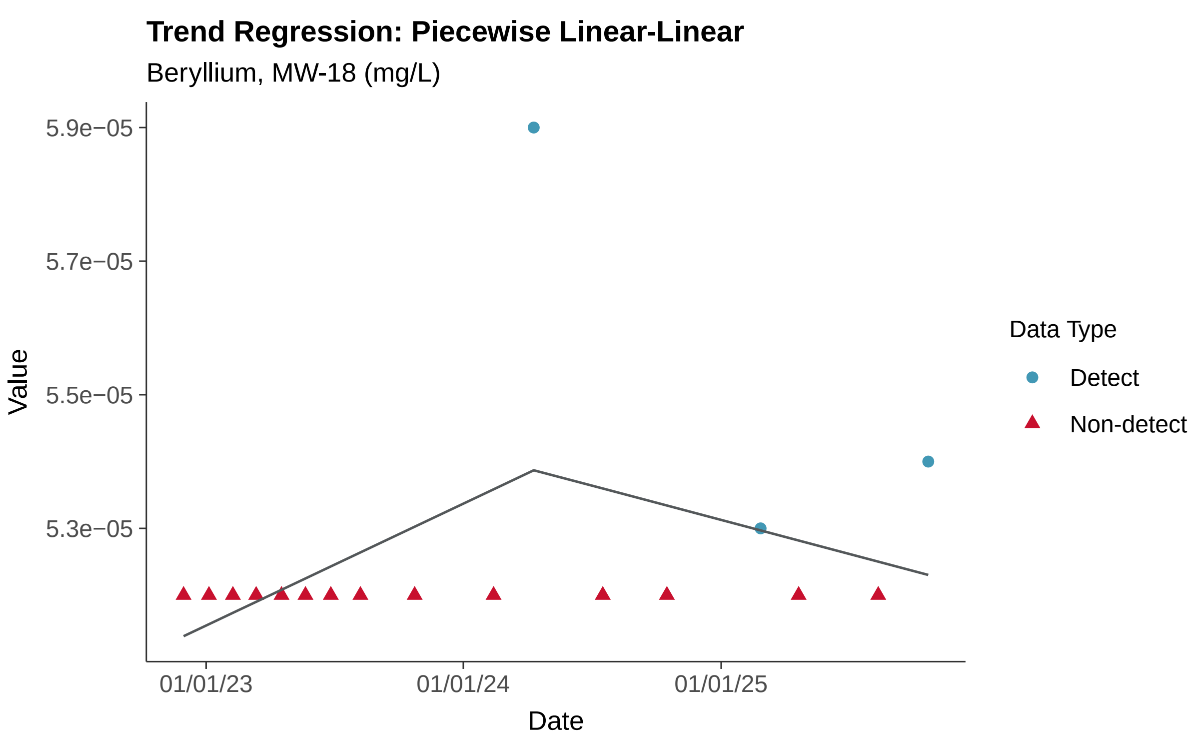


Boxplot by Season

Beryllium, MW-18 (mg/L)

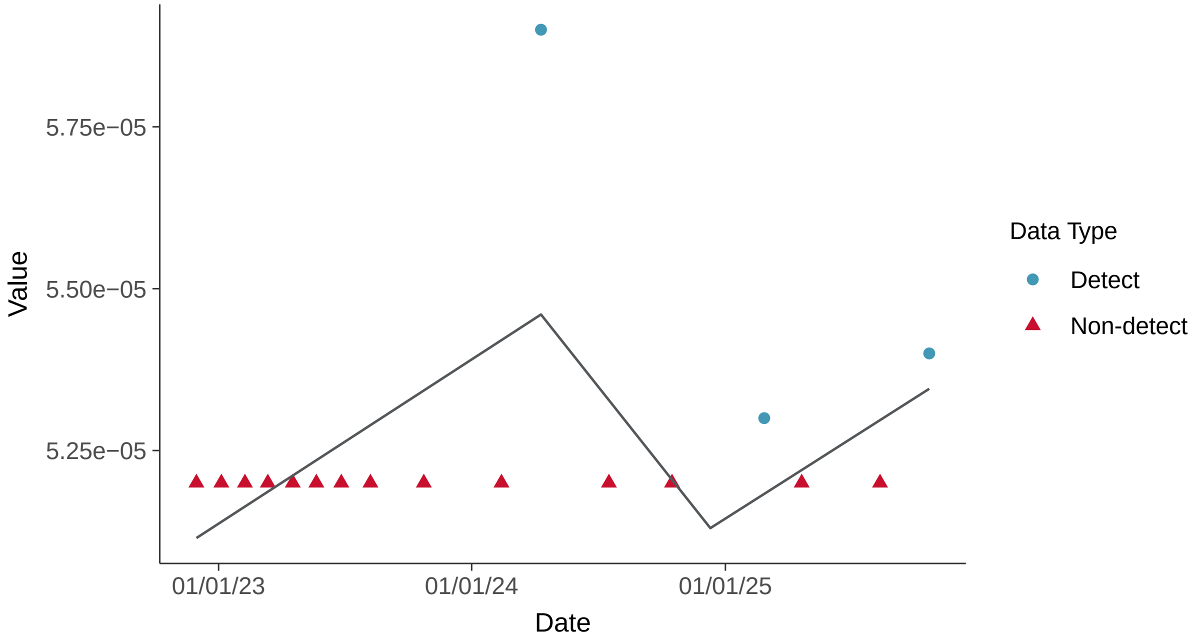



Normal Q-Q plot using ROS Imputed Estimates
Beryllium, MW-18 (mg/L)
Value
6e−05
5e−05
4e−05
3e−05
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Beryllium, MW-18 (mg/L)
Value
5.9e−05
5.7e−05
5.5e−05
5.3e−05
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Trend Regression: Piecewise Linear-Linear-Linear

Beryllium, MW-18 (mg/L)

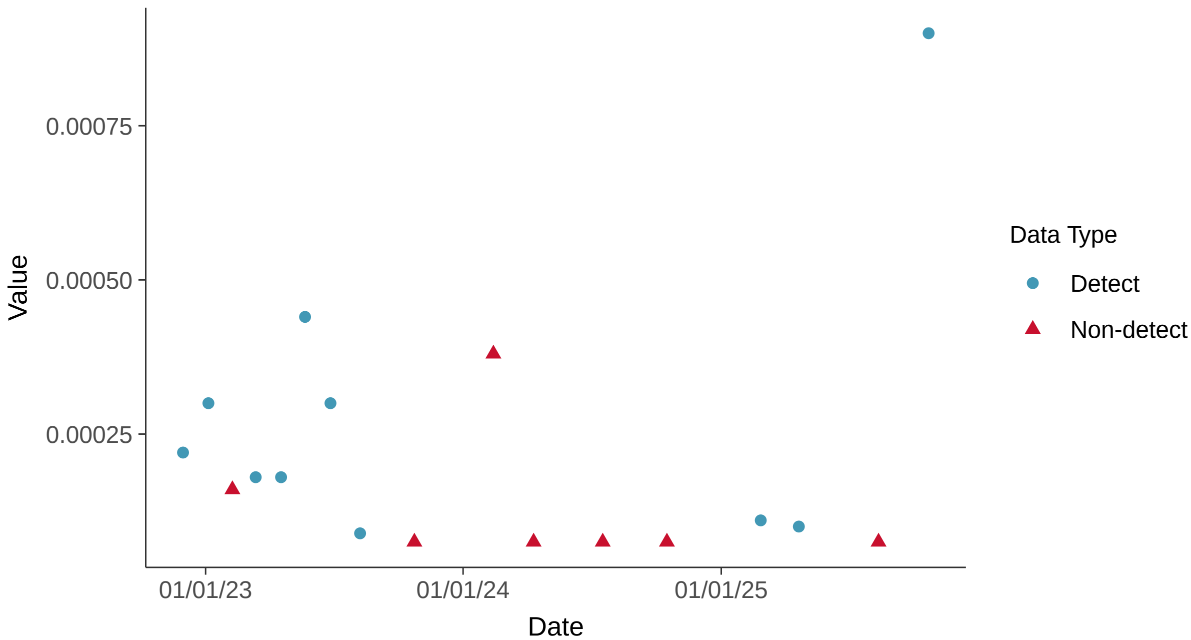


Appendix IV: Cadmium, MW-18

ID: 28_1_4_106

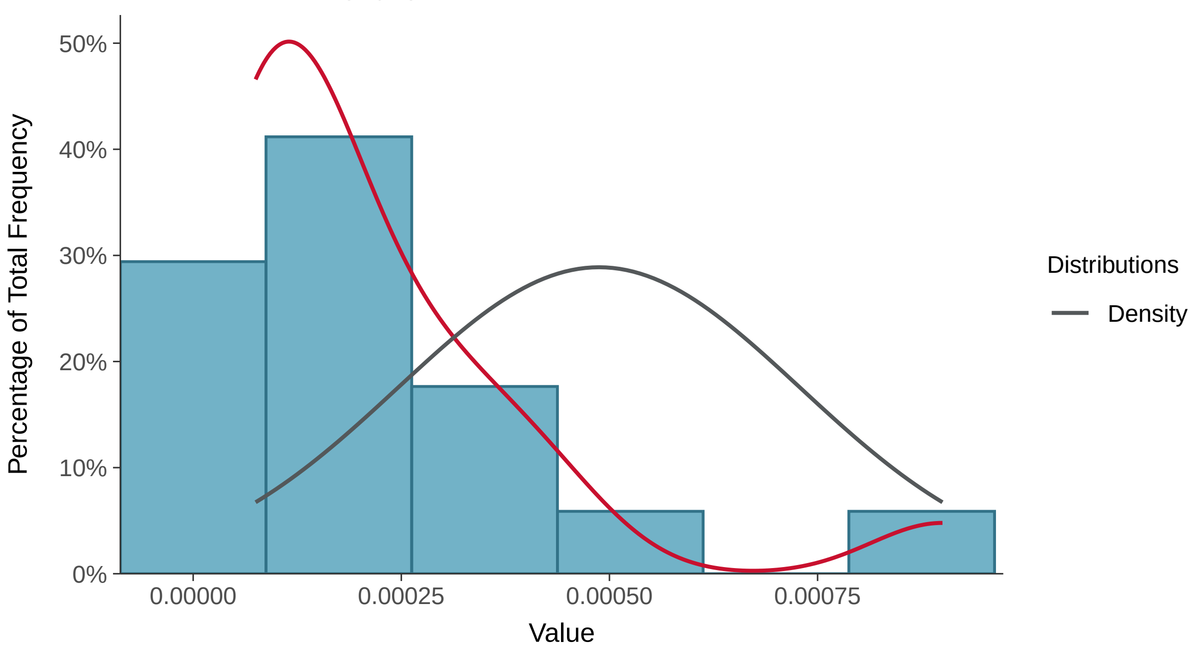
Scatter Plot

Cadmium, MW-18 (mg/L)



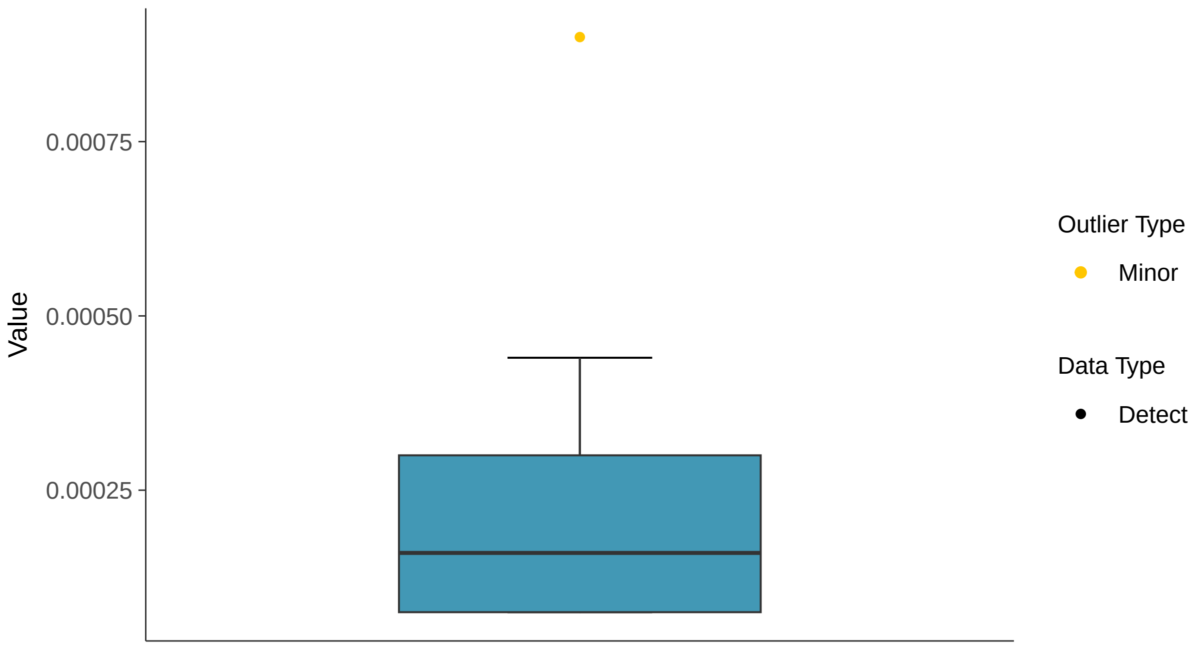
Histogram

Cadmium, MW-18 (mg/L)



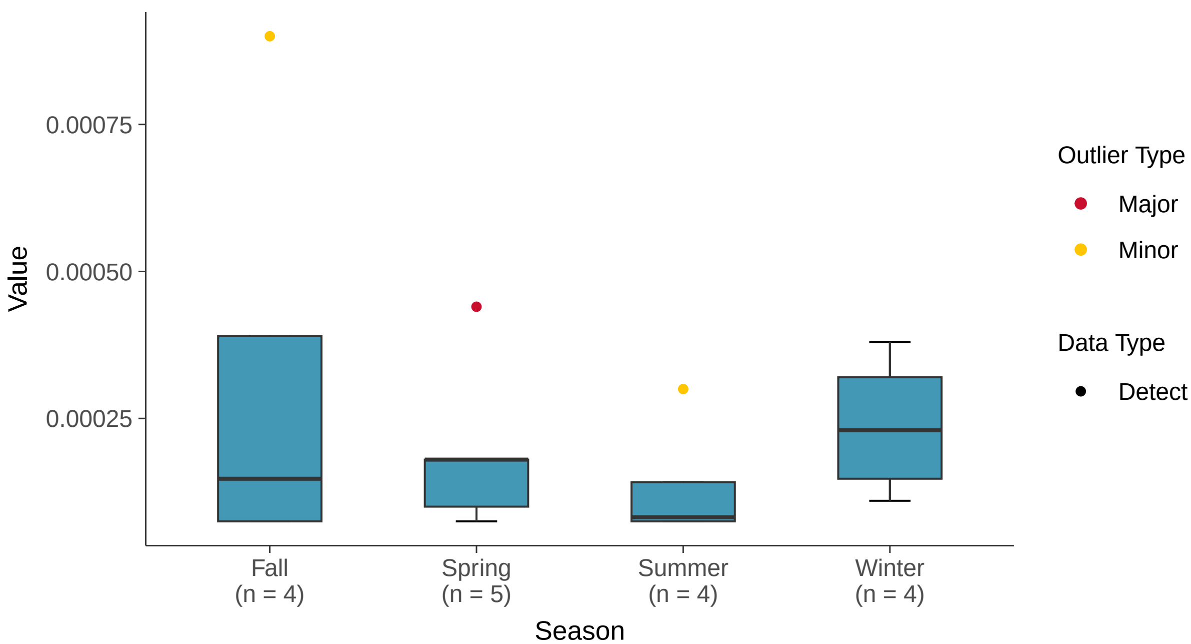
Boxplot

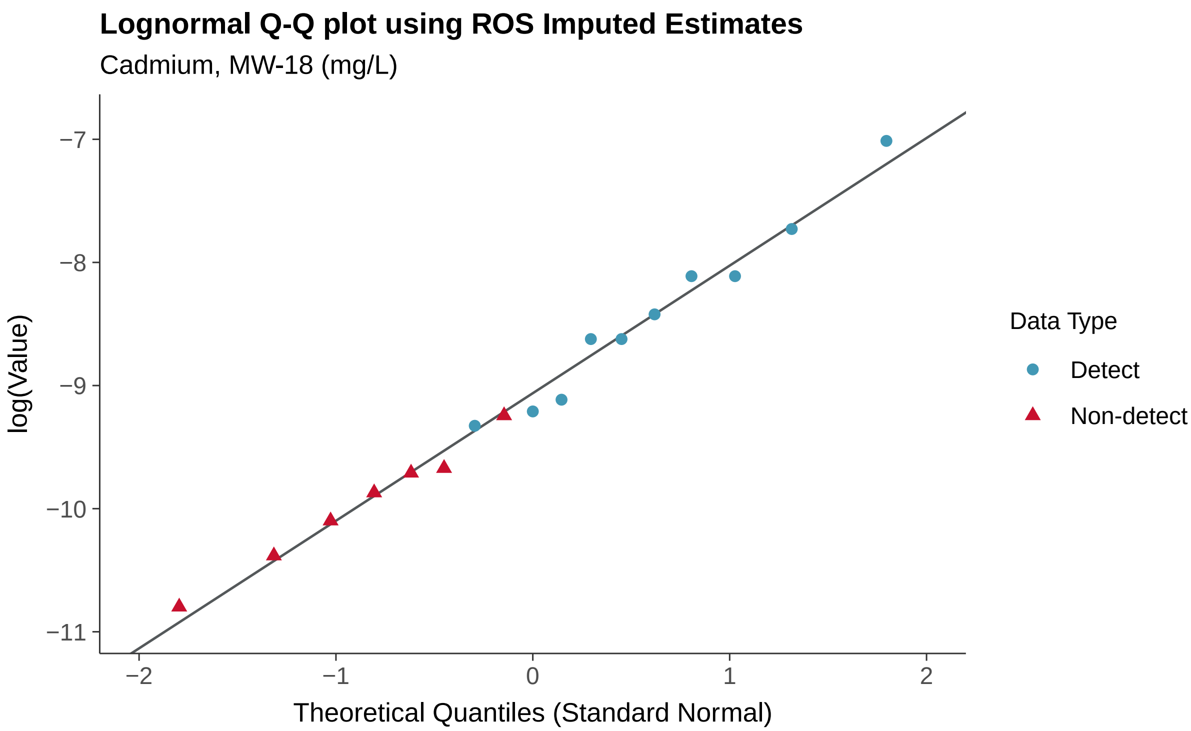
Cadmium, MW-18 (mg/L)

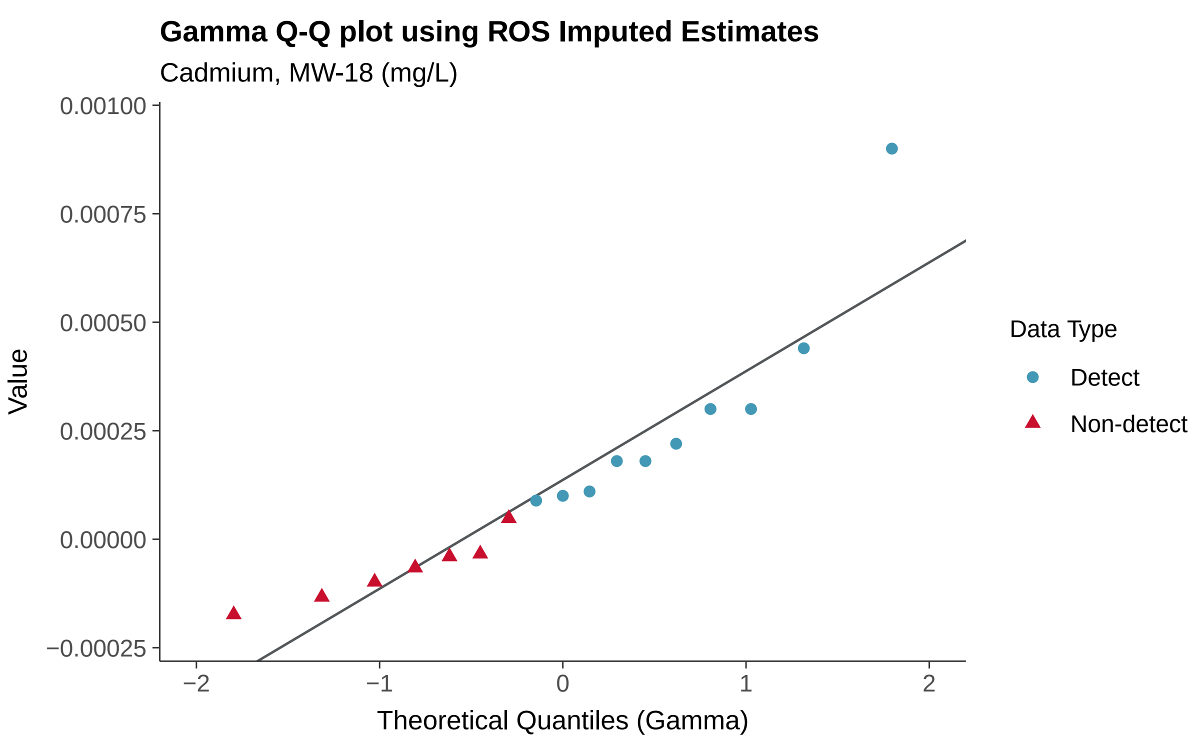


Boxplot by Season

Cadmium, MW-18 (mg/L)

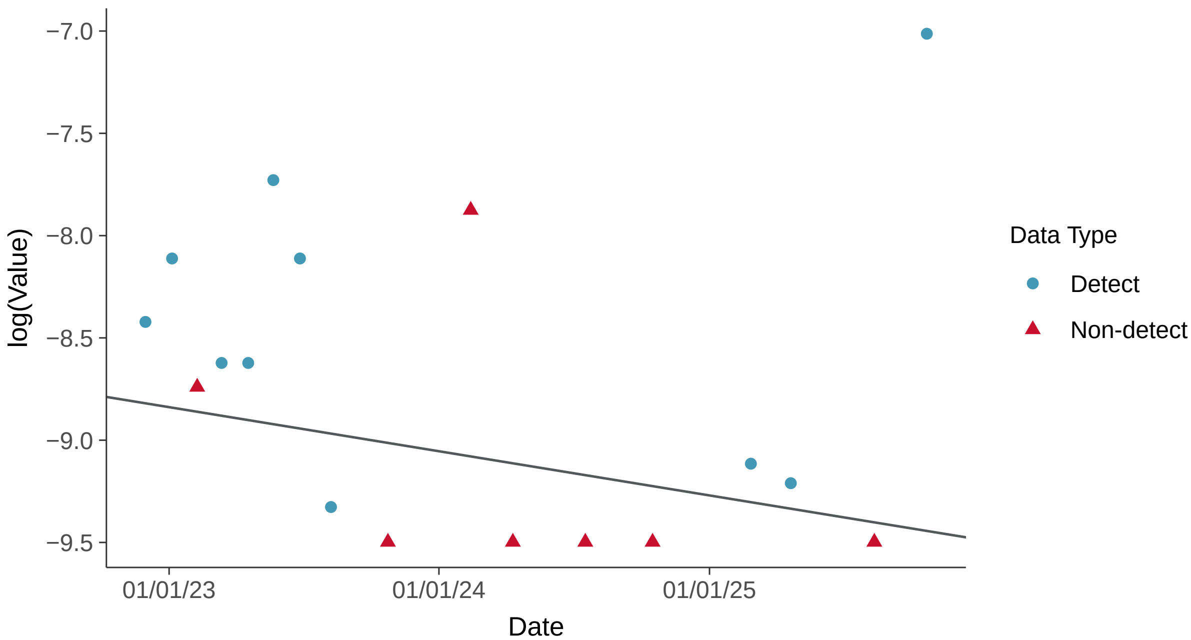



Lognormal Q-Q plot using ROS Imputed Estimates
Cadmium, MW-18 (mg/L)
log(Value)
−7
−8
−9
−10
−11
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Gamma Q-Q plot using ROS Imputed Estimates
Cadmium, MW-18 (mg/L)
Value
0.00100
0.00075
0.00050
0.00025
0.00000
−0.00025
−2
−1
0
1
2
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect

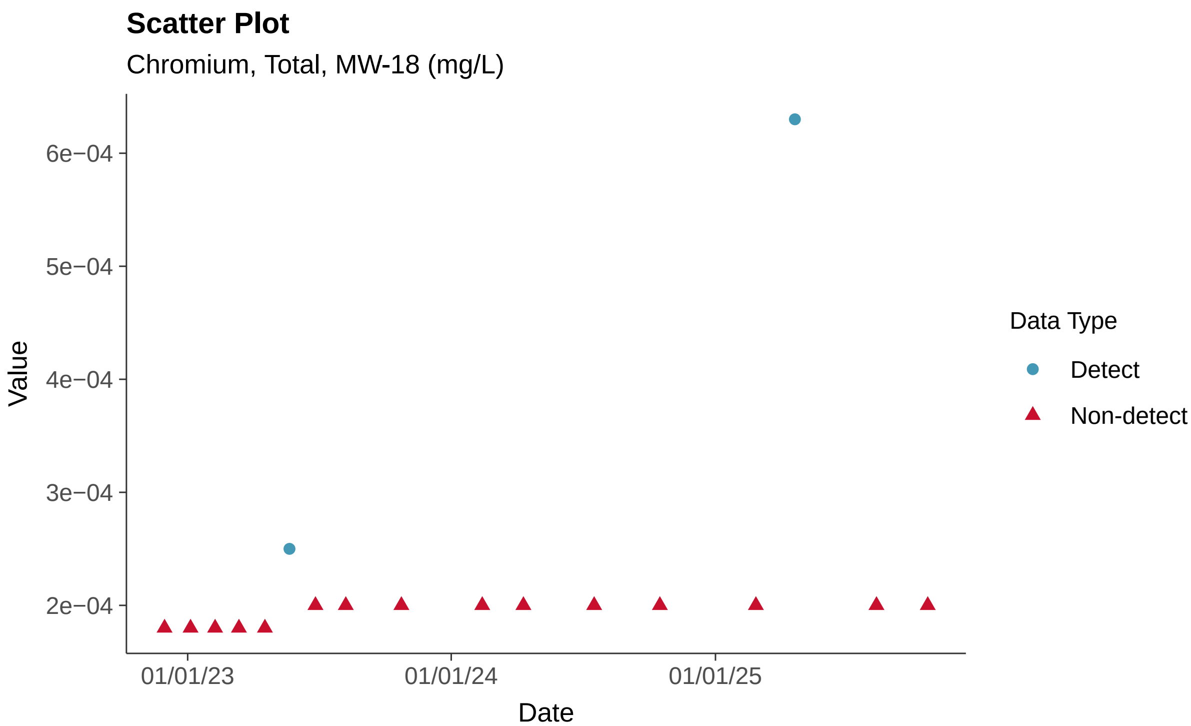
Trend Regression: Lognormal MLE

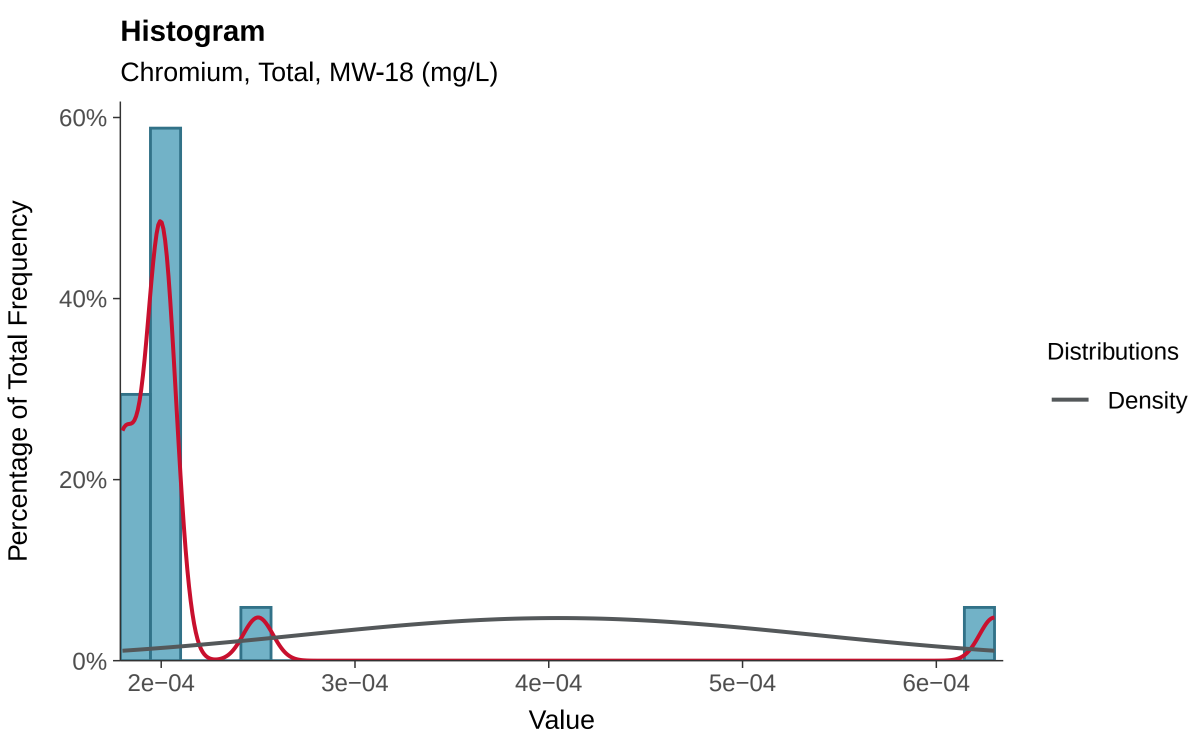
Cadmium, MW-18 (mg/L)



Appendix IV: Chromium, Total, MW-18

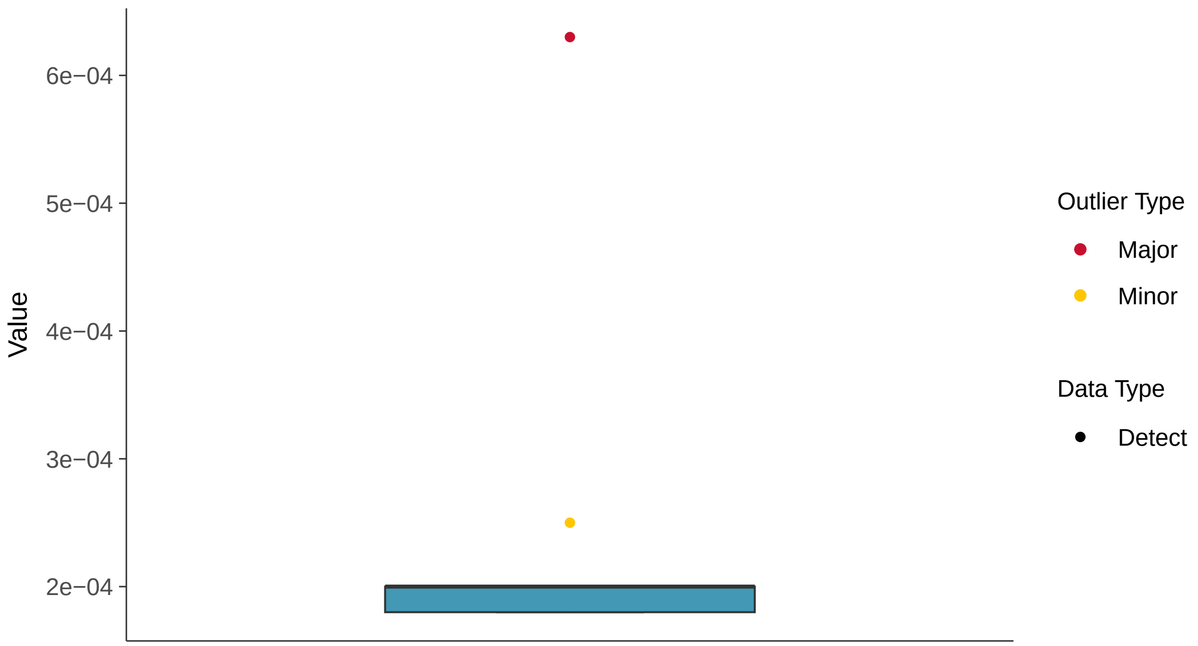
ID: 28_1_4_109





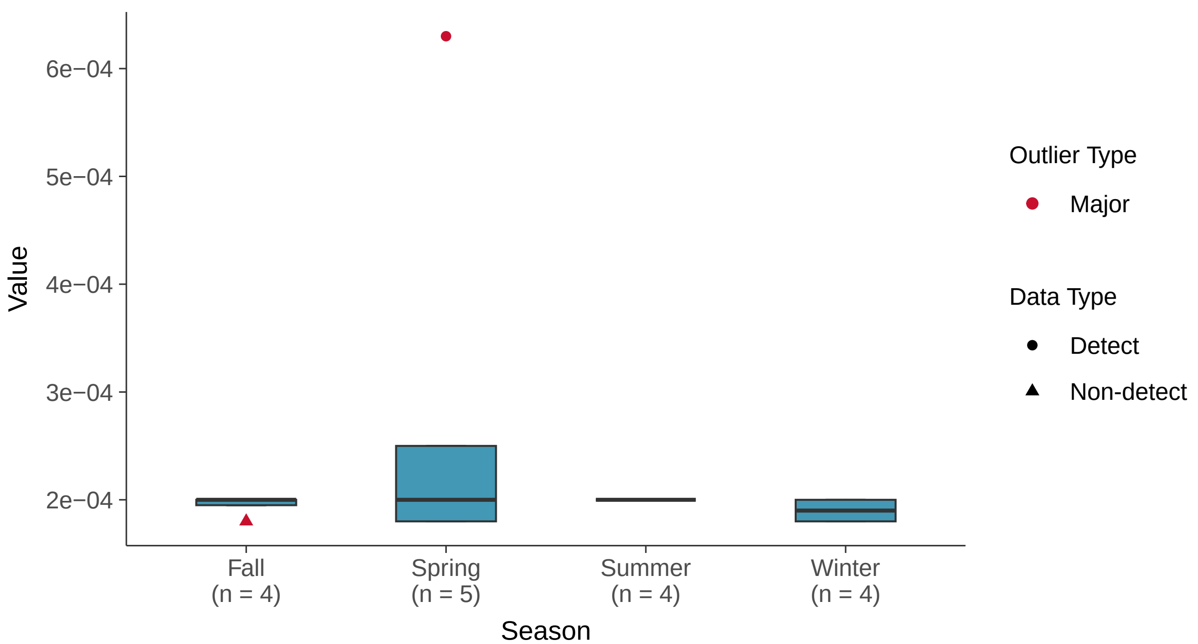
Boxplot

Chromium, Total, MW-18 (mg/L)



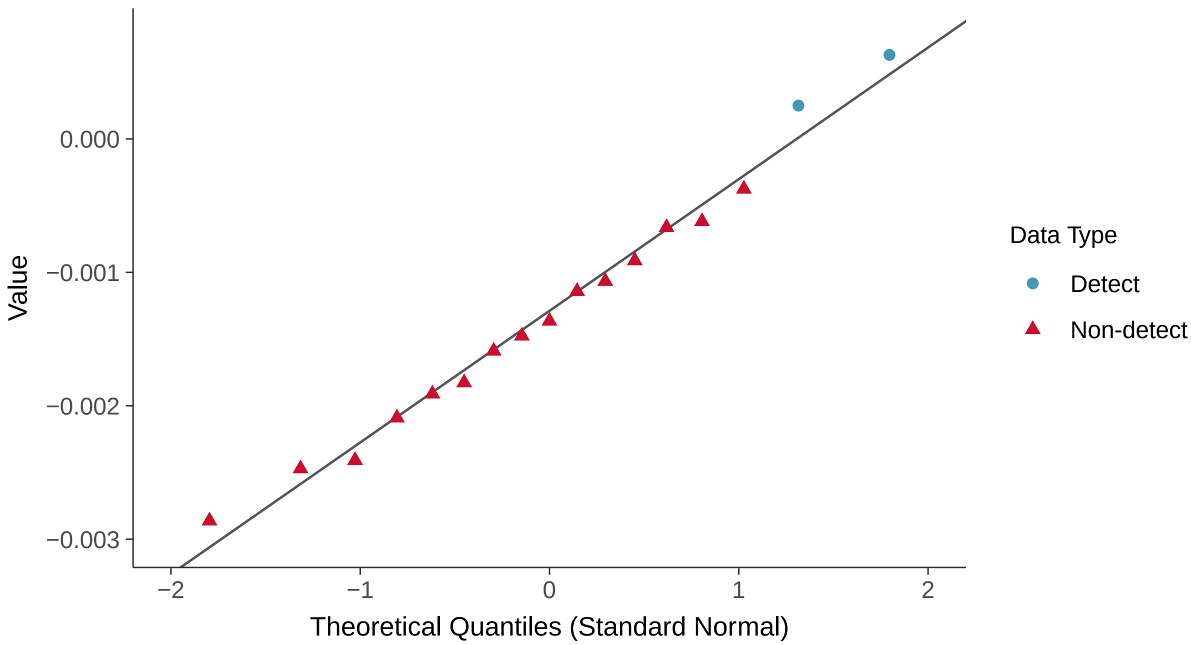
Boxplot by Season

Chromium, Total, MW-18 (mg/L)



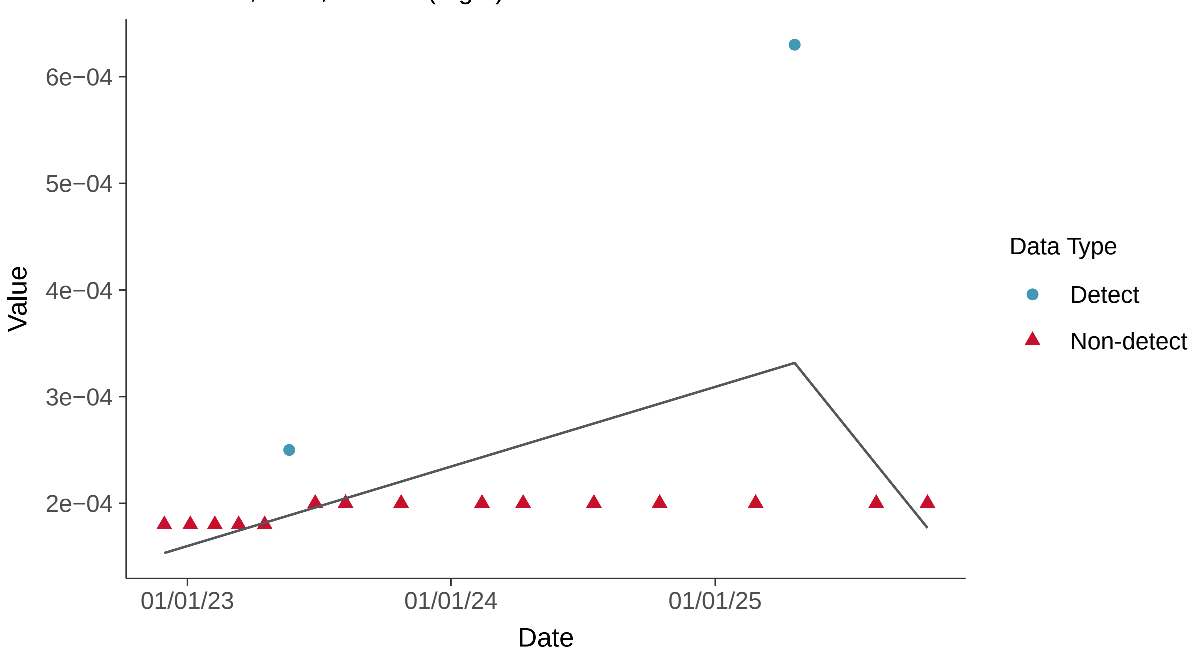
Normal Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-18 (mg/L)



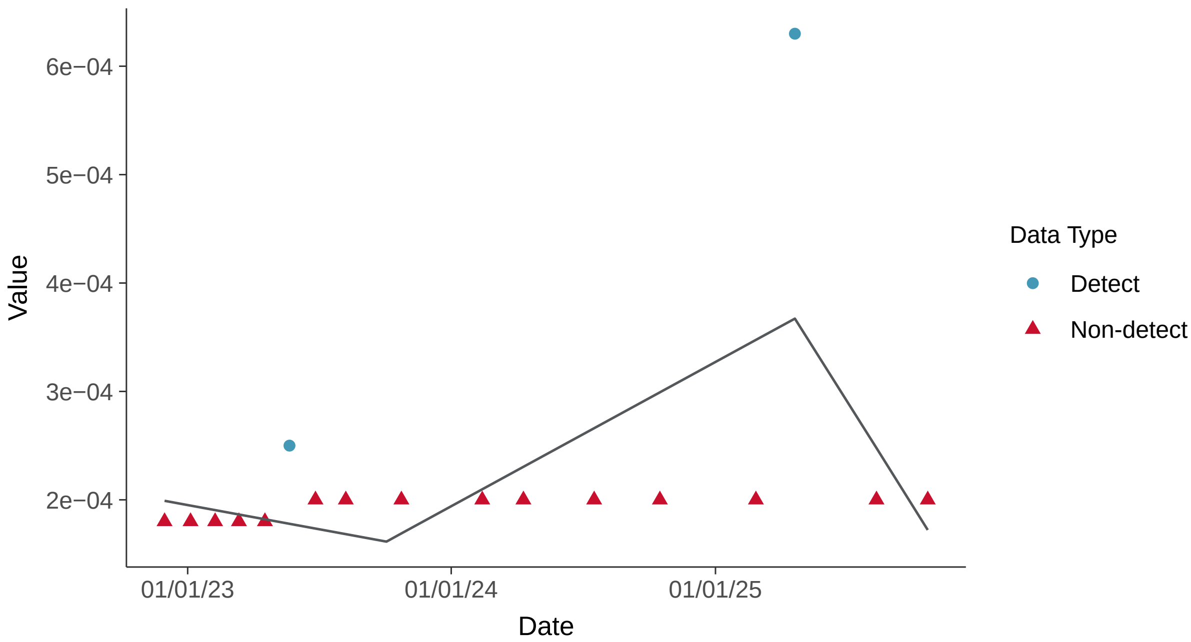
Trend Regression: Piecewise Linear-Linear

Chromium, Total, MW-18 (mg/L)



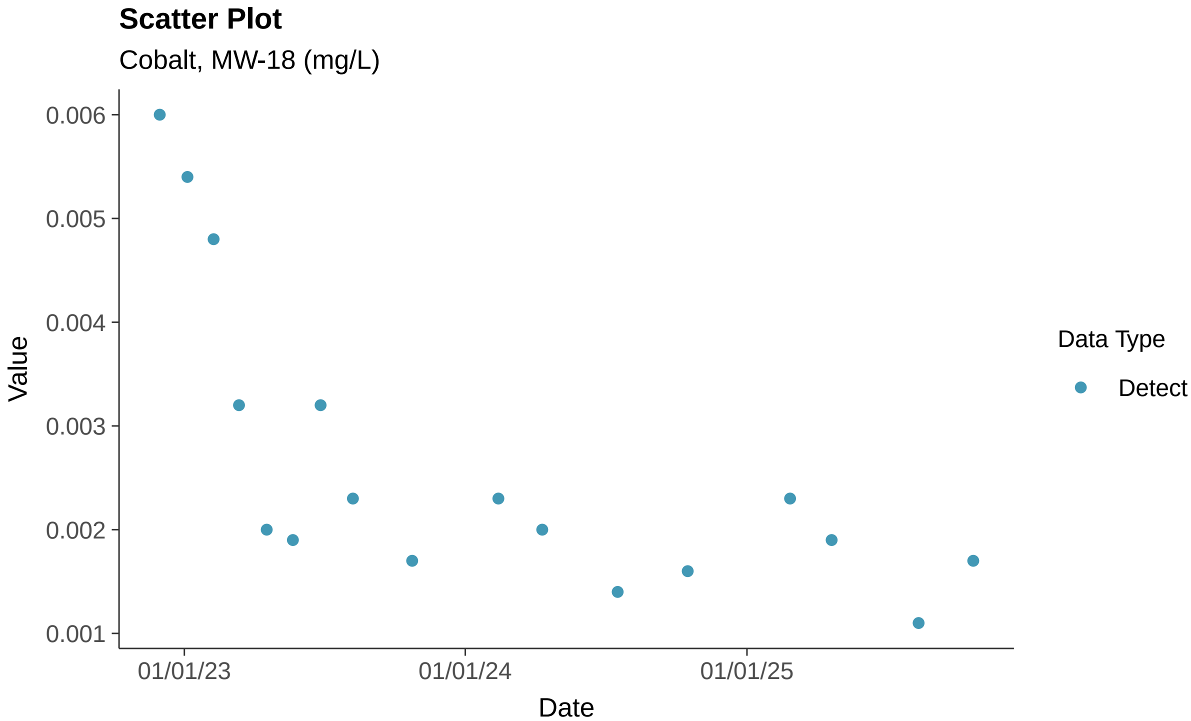
Trend Regression: Piecewise Linear-Linear-Linear

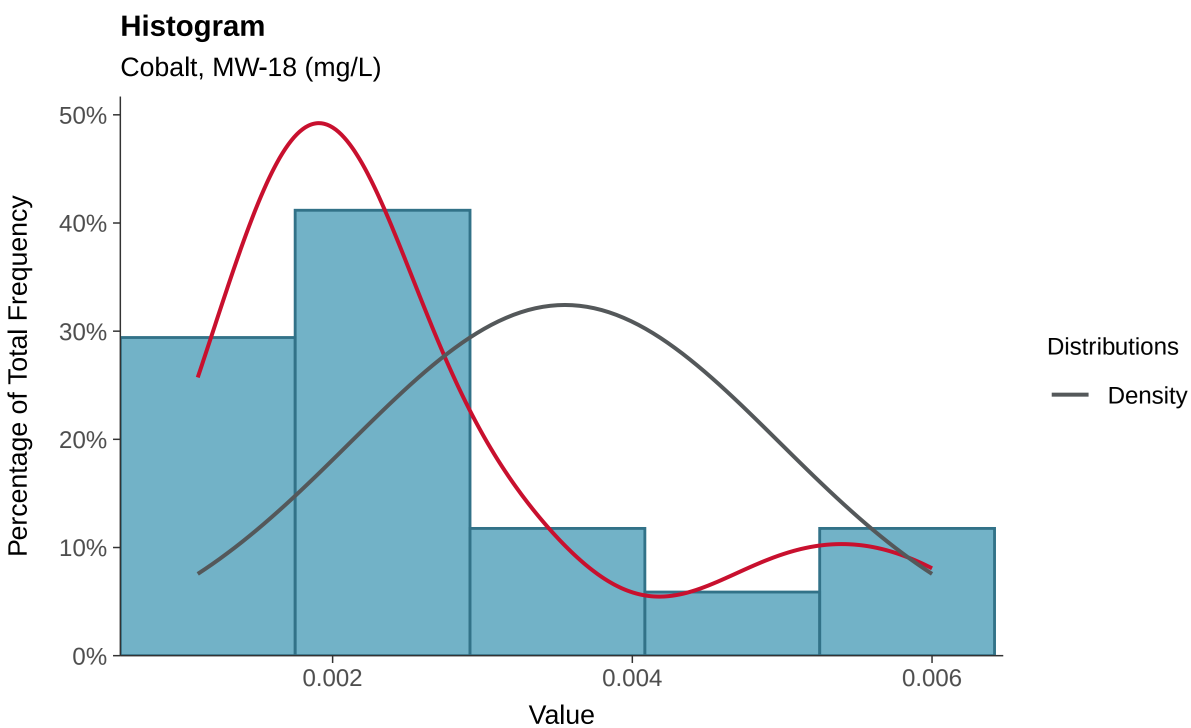
Chromium, Total, MW-18 (mg/L)



Appendix IV: Cobalt, MW-18

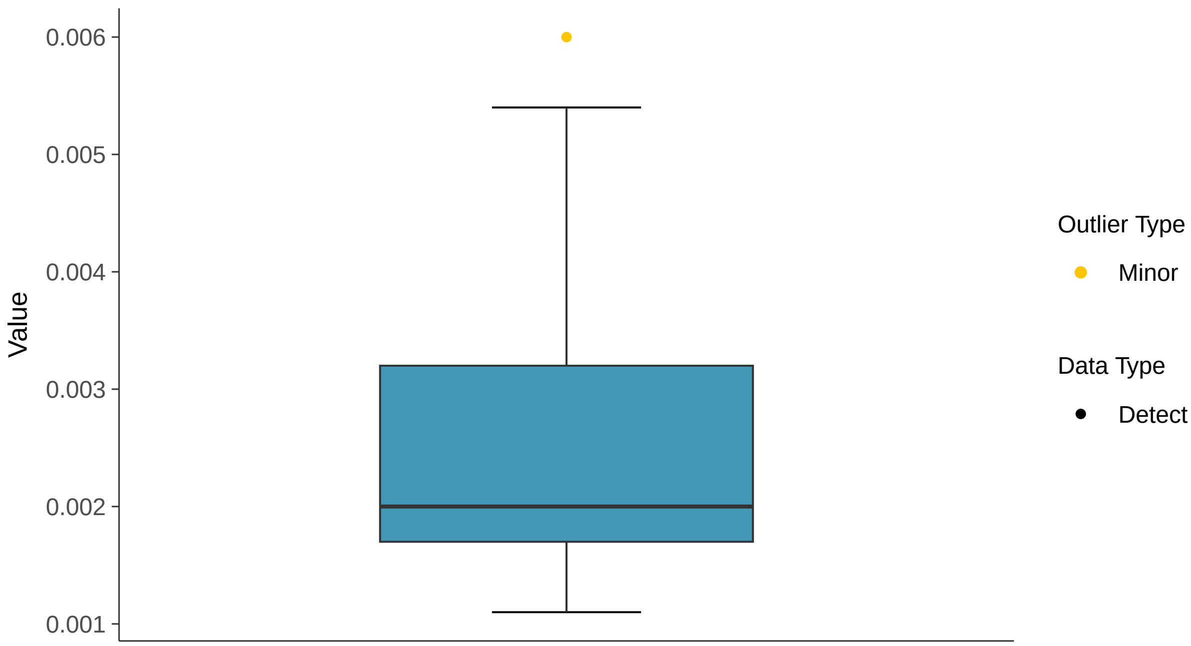
ID: 28_1_4_110





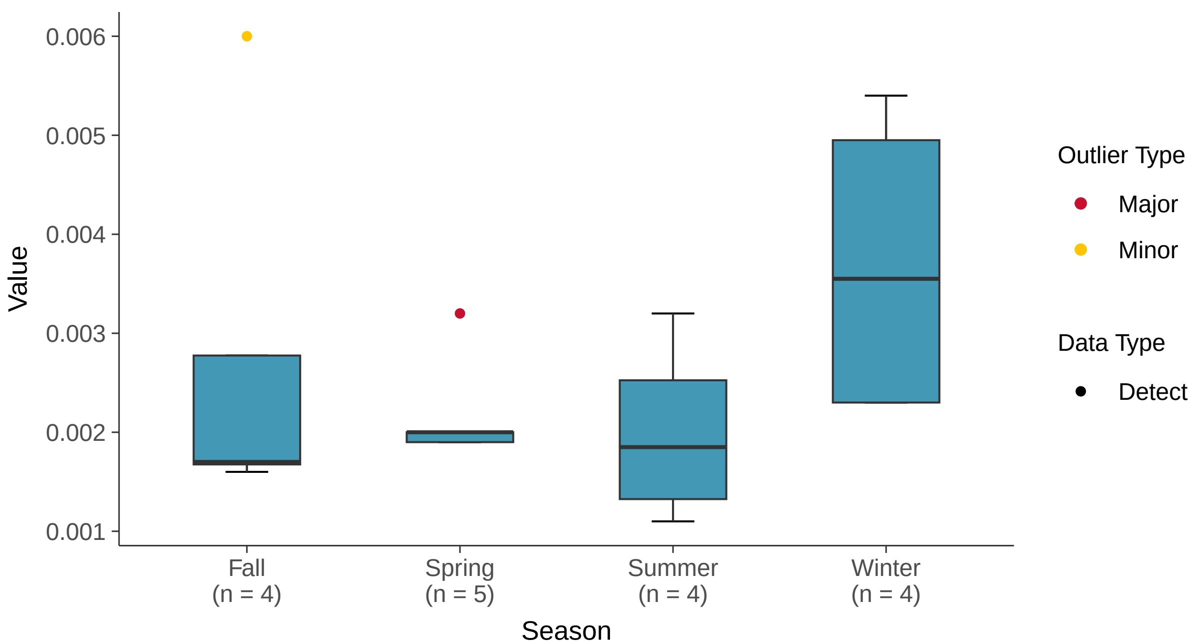
Boxplot

Cobalt, MW-18 (mg/L)



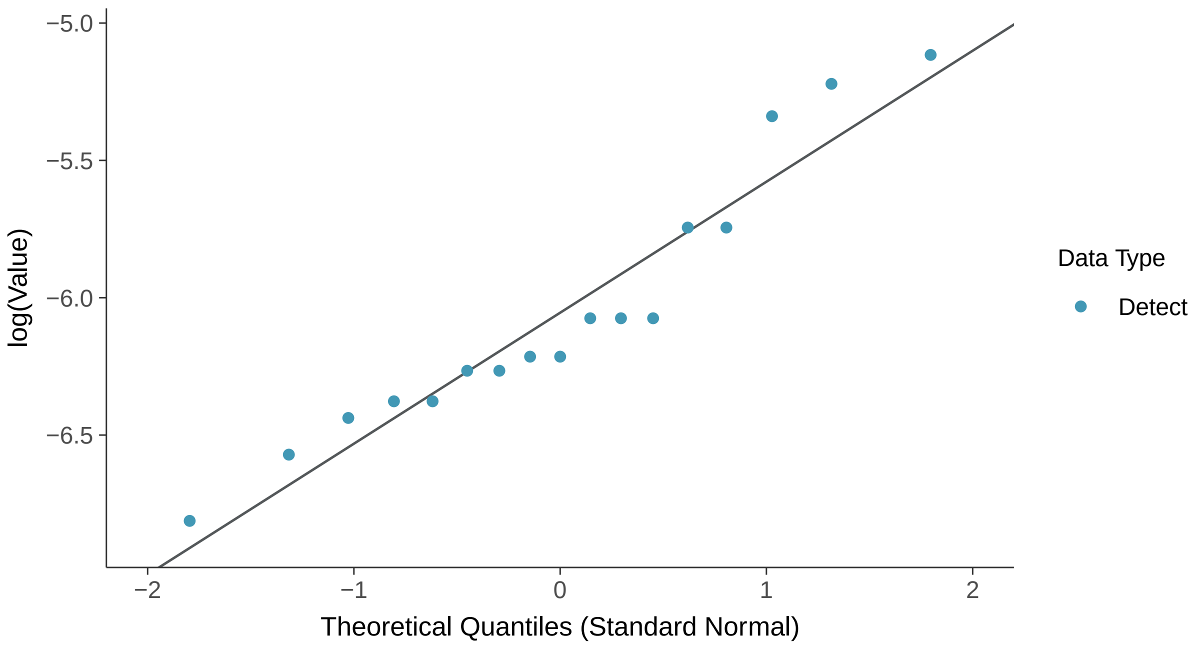
Boxplot by Season

Cobalt, MW-18 (mg/L)



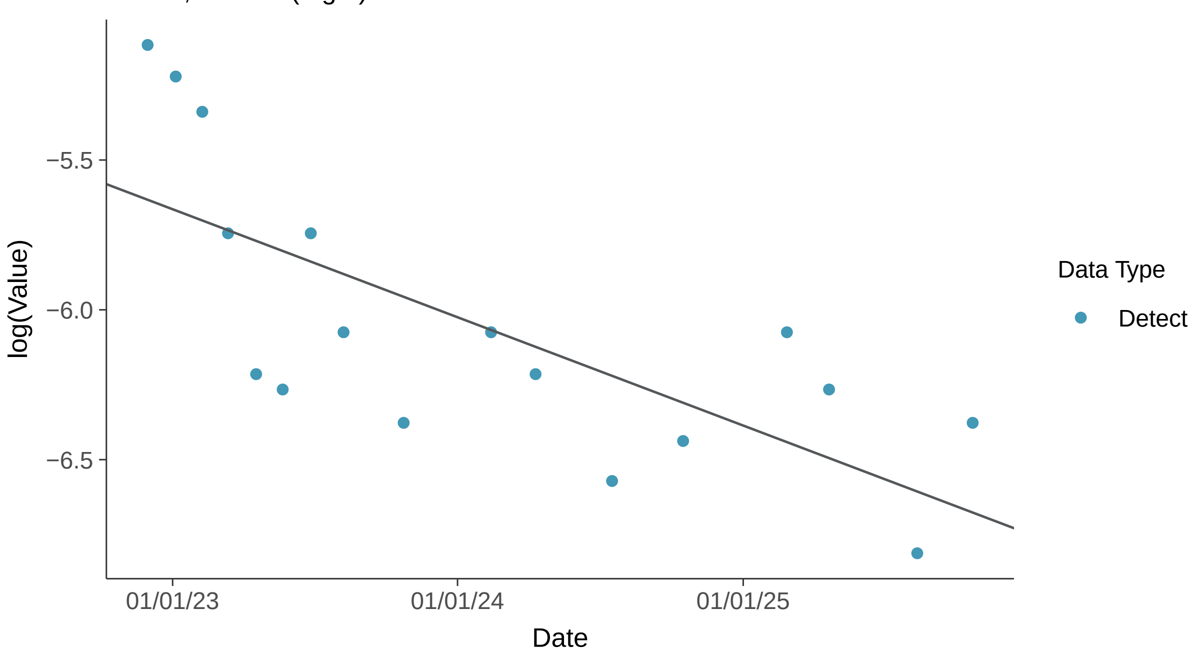
Lognormal Q-Q plot

Cobalt, MW-18 (mg/L)



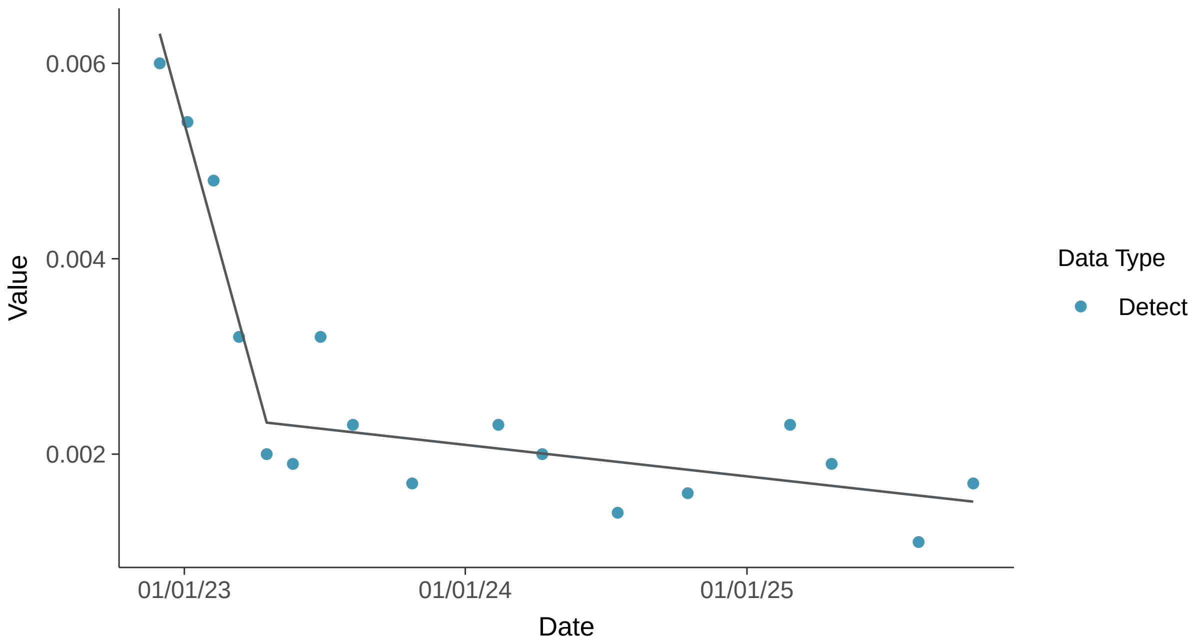
Trend Regression: Lognormal MLE

Cobalt, MW-18 (mg/L)



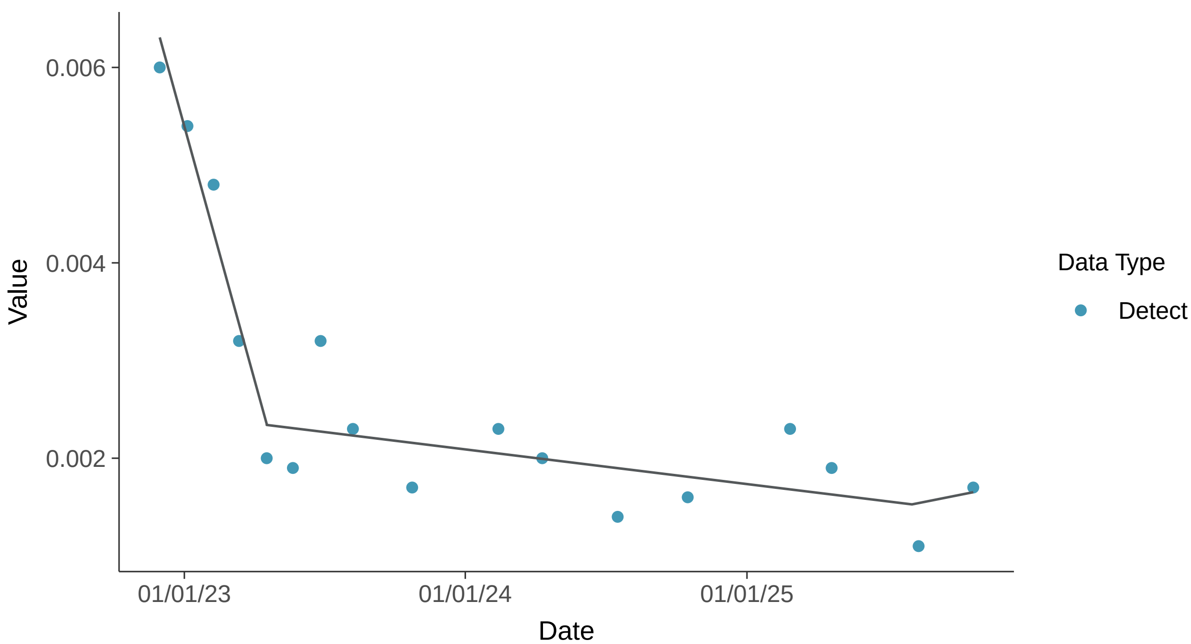
Trend Regression: Piecewise Linear-Linear

Cobalt, MW-18 (mg/L)



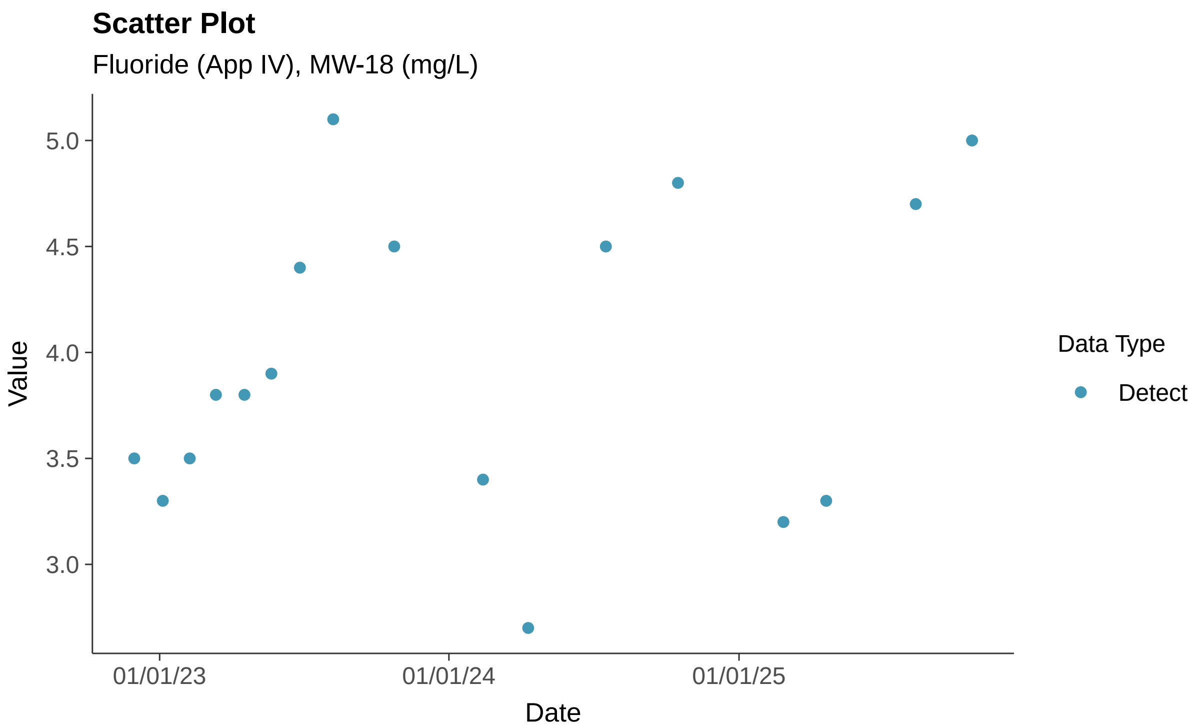
Trend Regression: Piecewise Linear-Linear-Linear

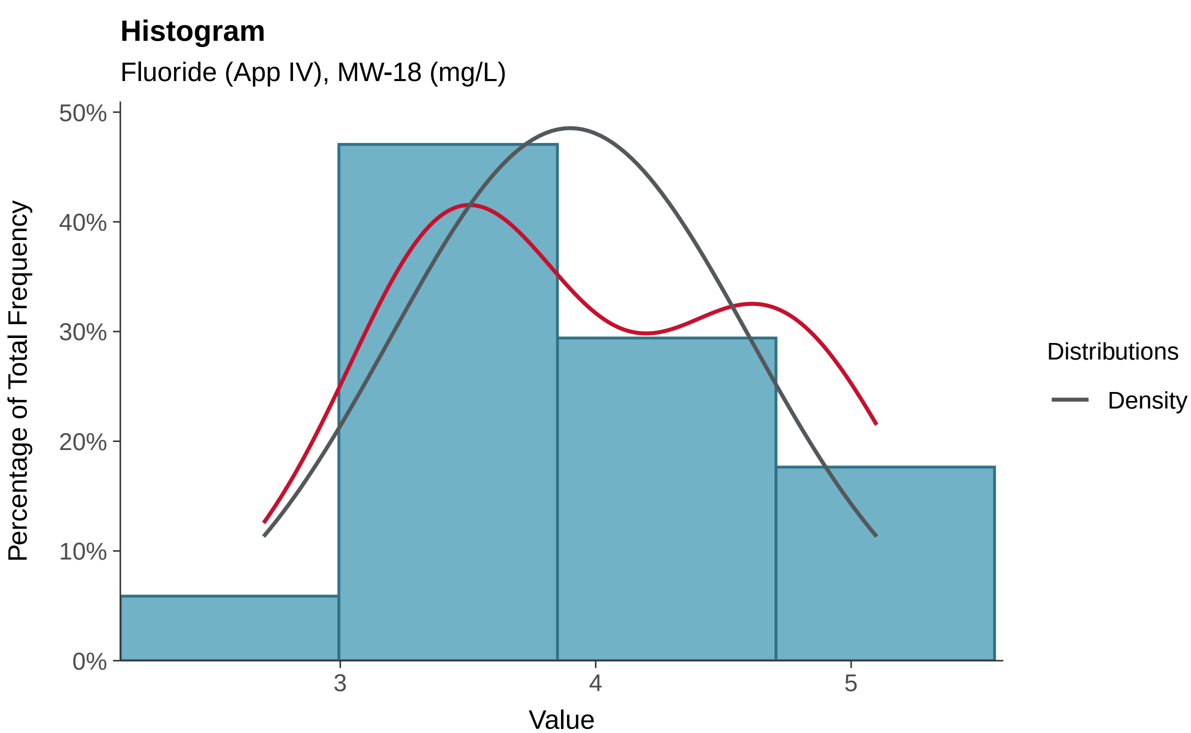
Cobalt, MW-18 (mg/L)



Appendix IV: Fluoride (App IV), MW-18

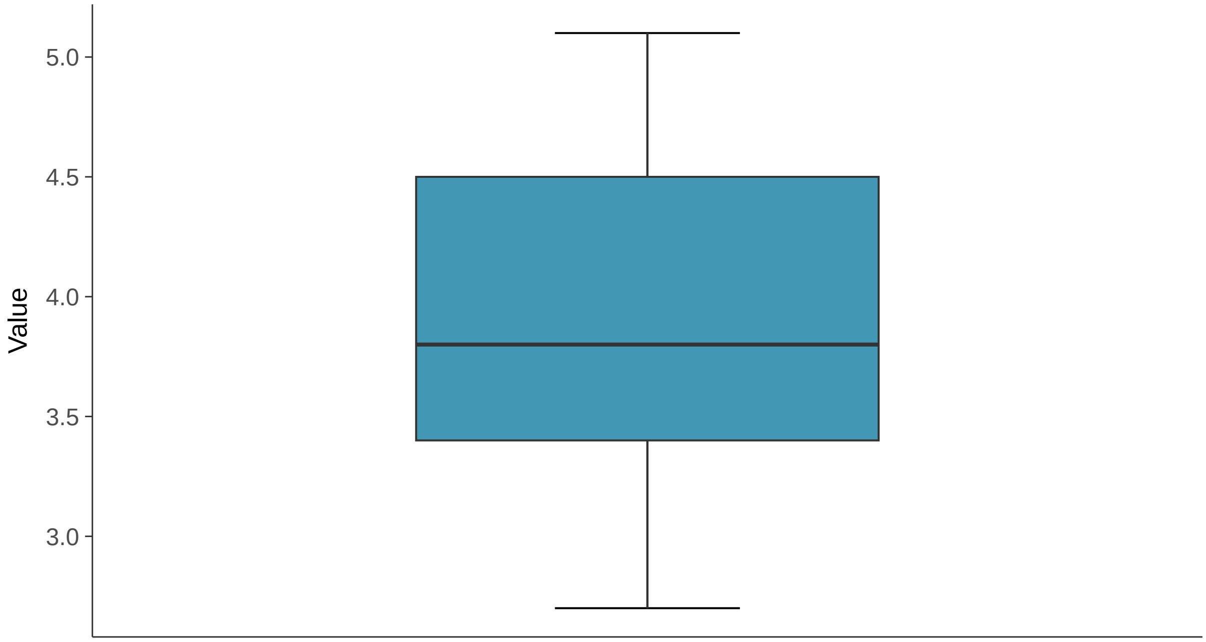
ID: 28_1_4_113





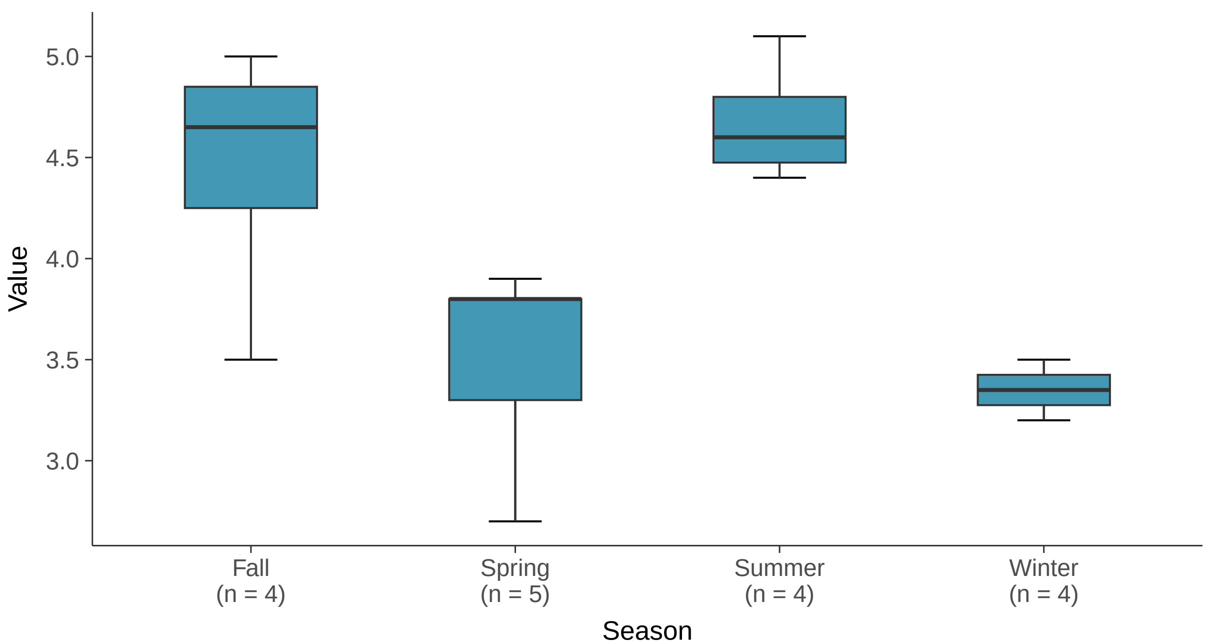
Boxplot

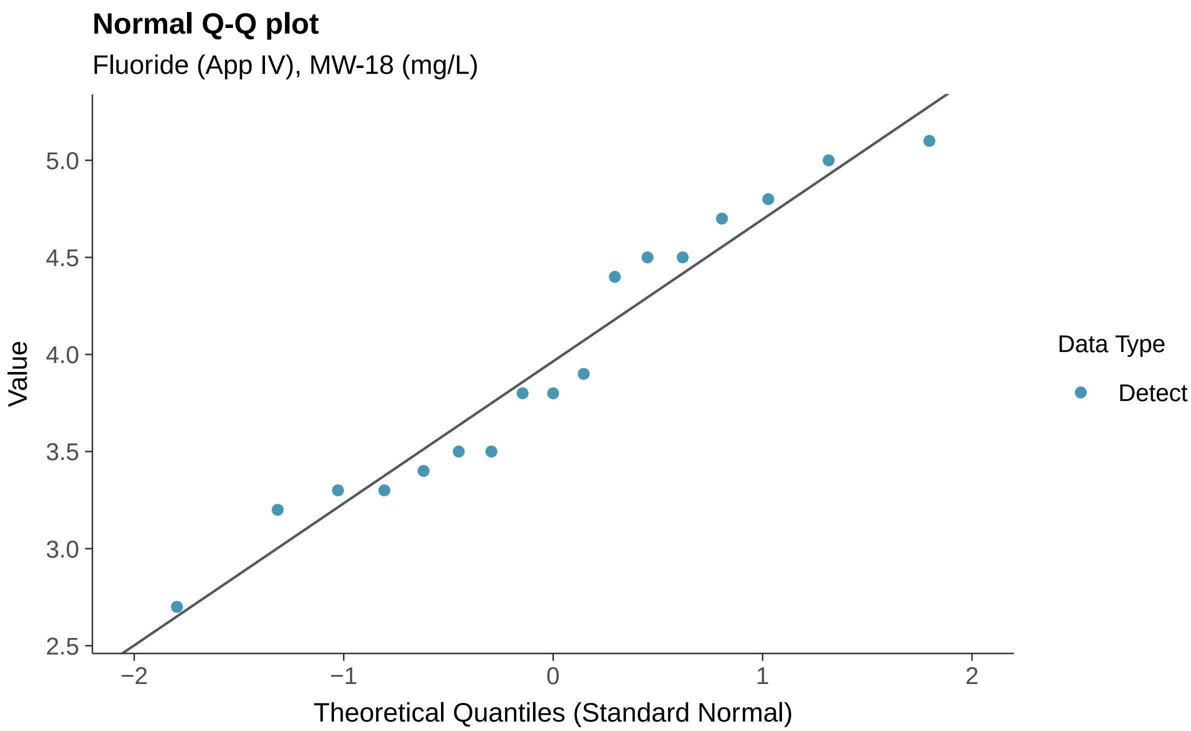
Fluoride (App IV), MW-18 (mg/L)

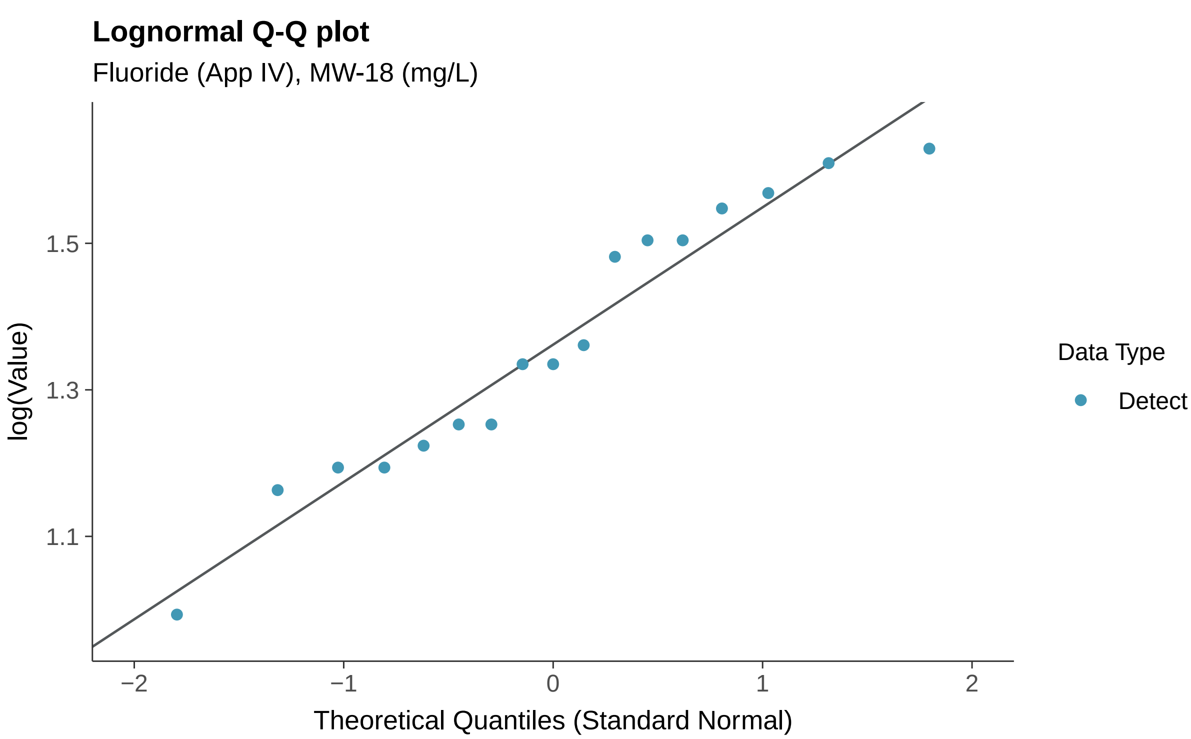


Boxplot by Season

Fluoride (App IV), MW-18 (mg/L)

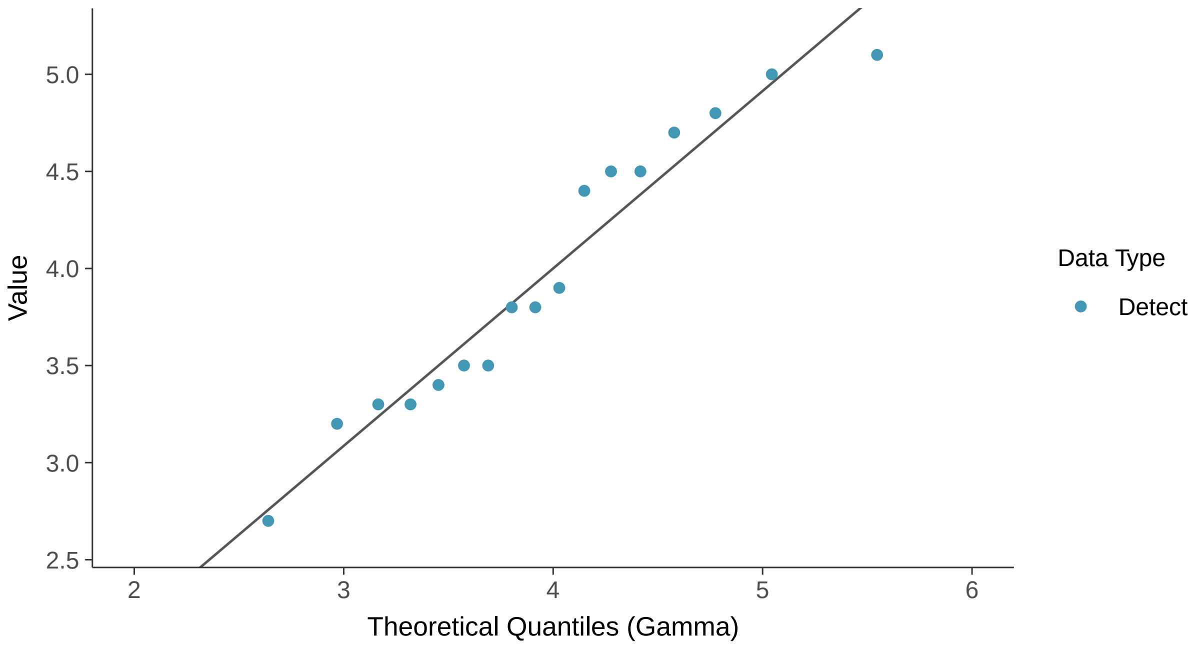



Normal Q-Q plot
Fluoride (App IV), MW-18 (mg/L)
Value
5.0
4.5
4.0
3.5
3.0
2.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Fluoride (App IV), MW-18 (mg/L)
log(Value)
1.5
1.3
1.1
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

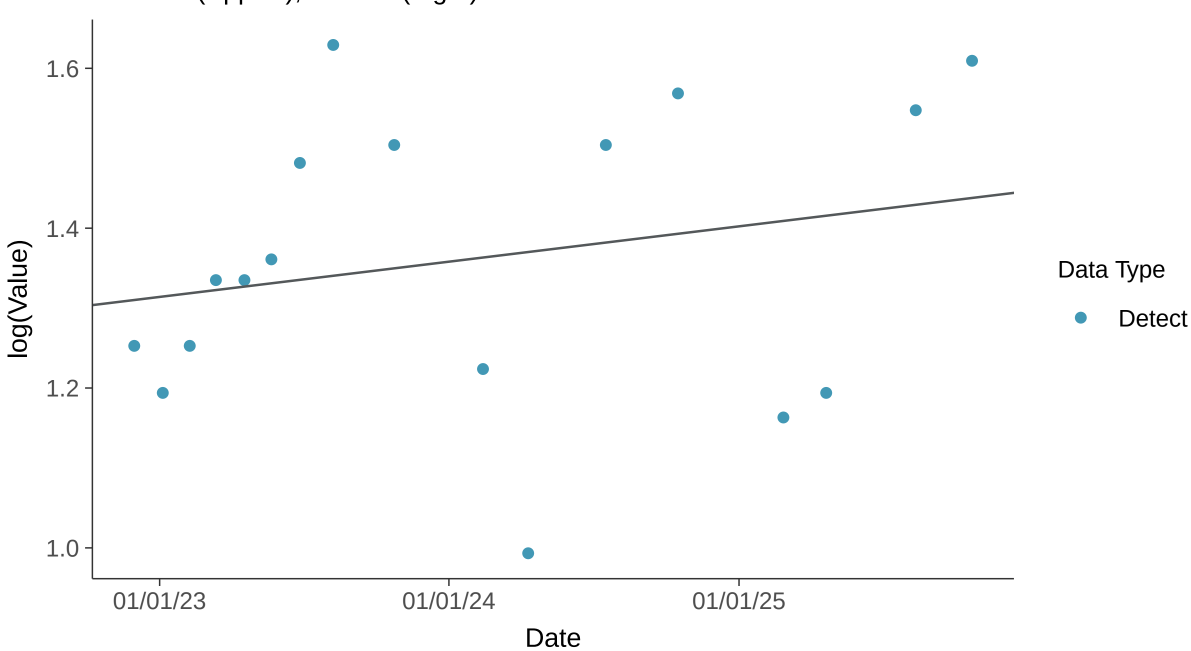
Gamma Q-Q plot

Fluoride (App IV), MW-18 (mg/L)



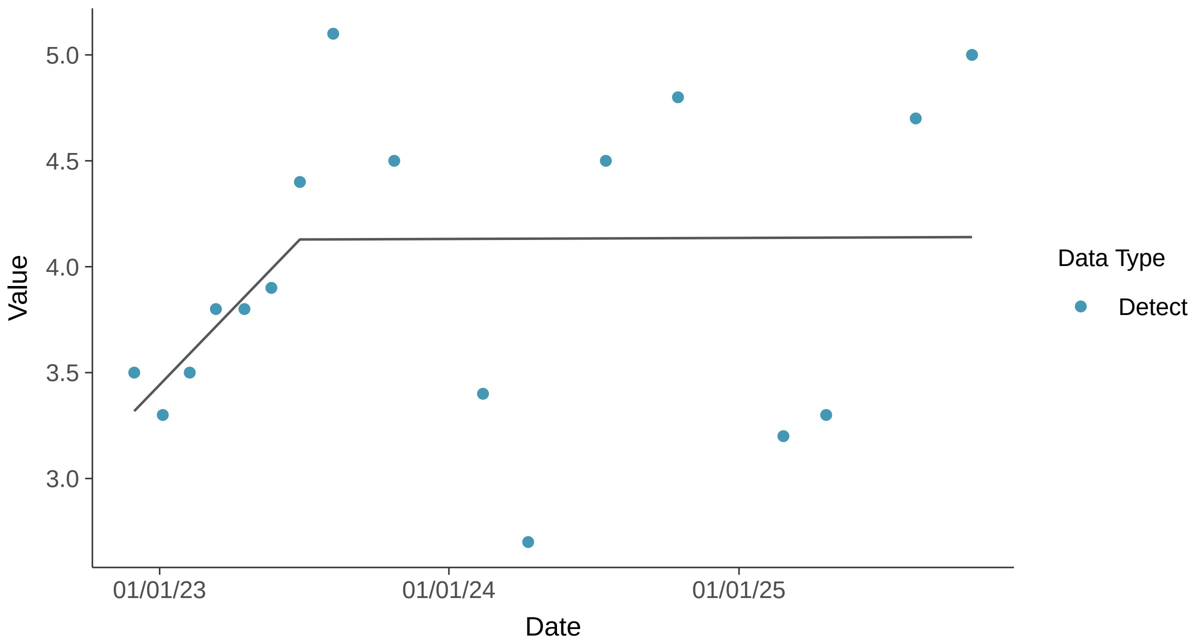
Trend Regression: Lognormal MLE

Fluoride (App IV), MW-18 (mg/L)



Trend Regression: Piecewise Linear-Linear

Fluoride (App IV), MW-18 (mg/L)

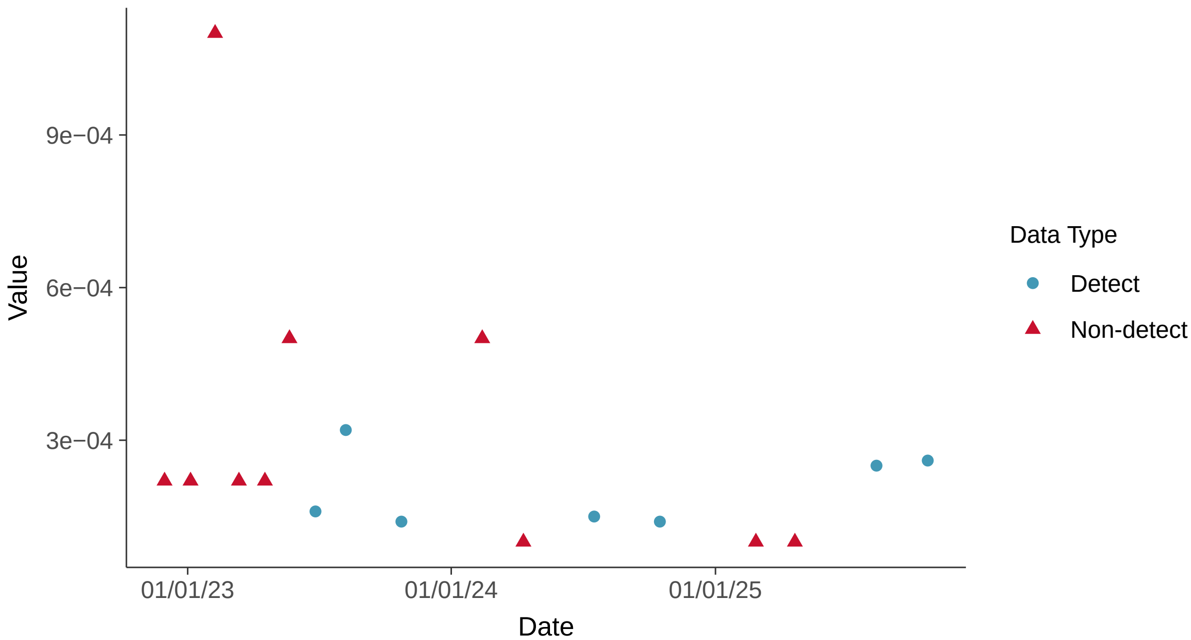


Appendix IV: Lead, MW-18

ID: 28_1_4_115

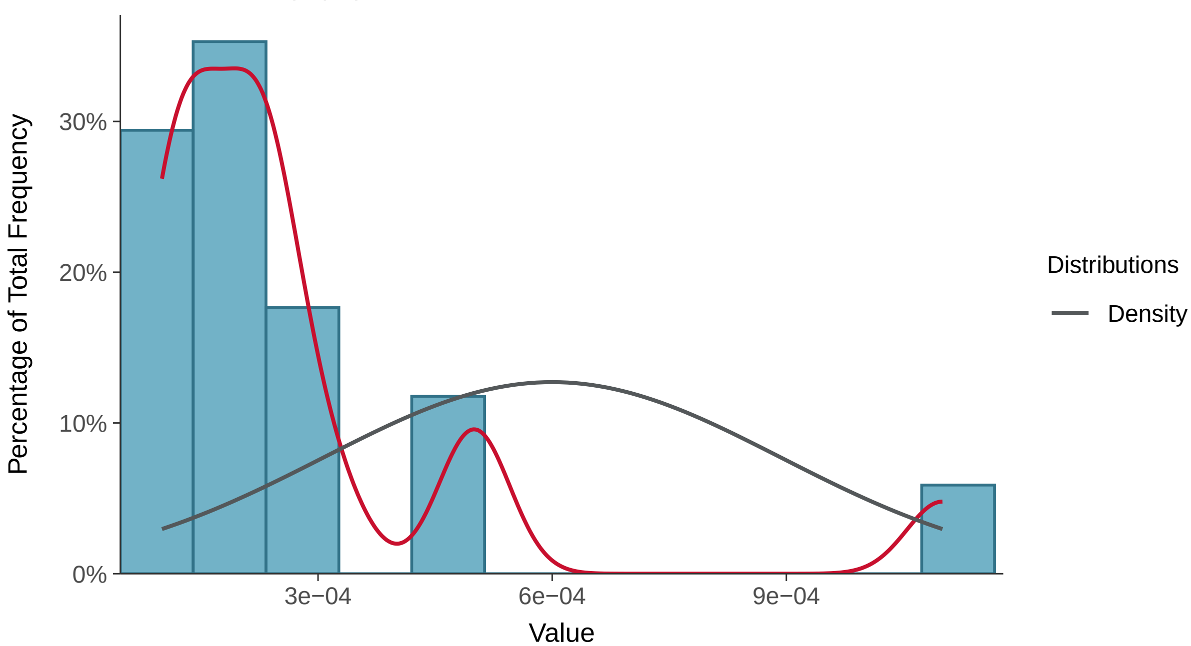
Scatter Plot

Lead, MW-18 (mg/L)



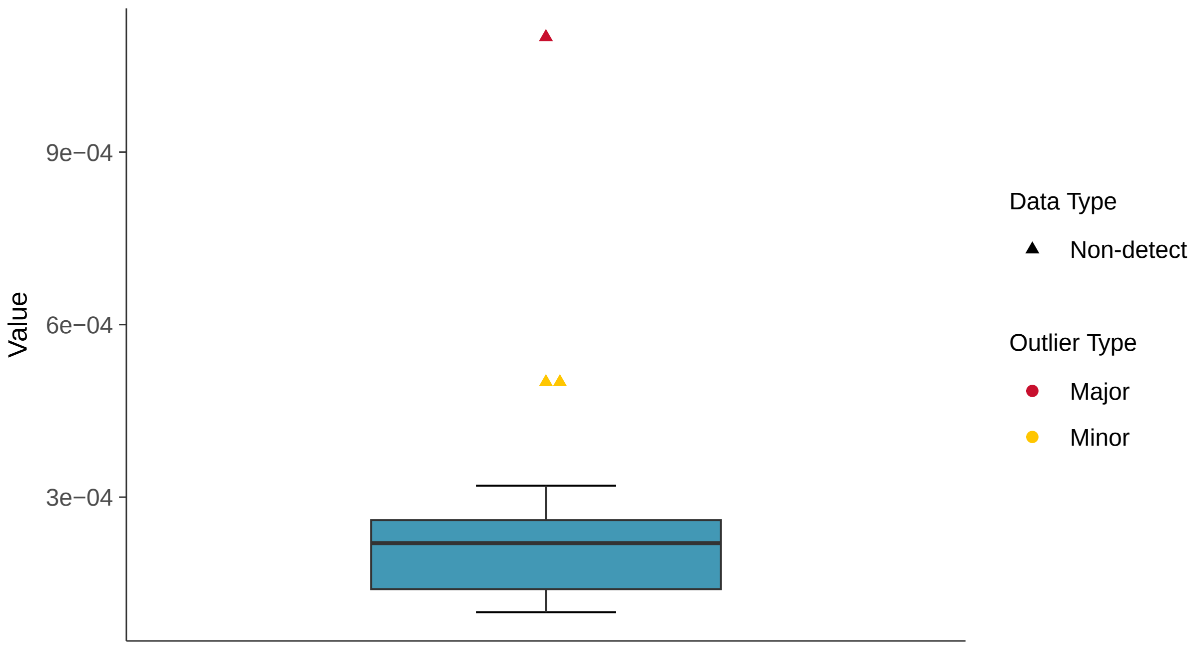
Histogram

Lead, MW-18 (mg/L)



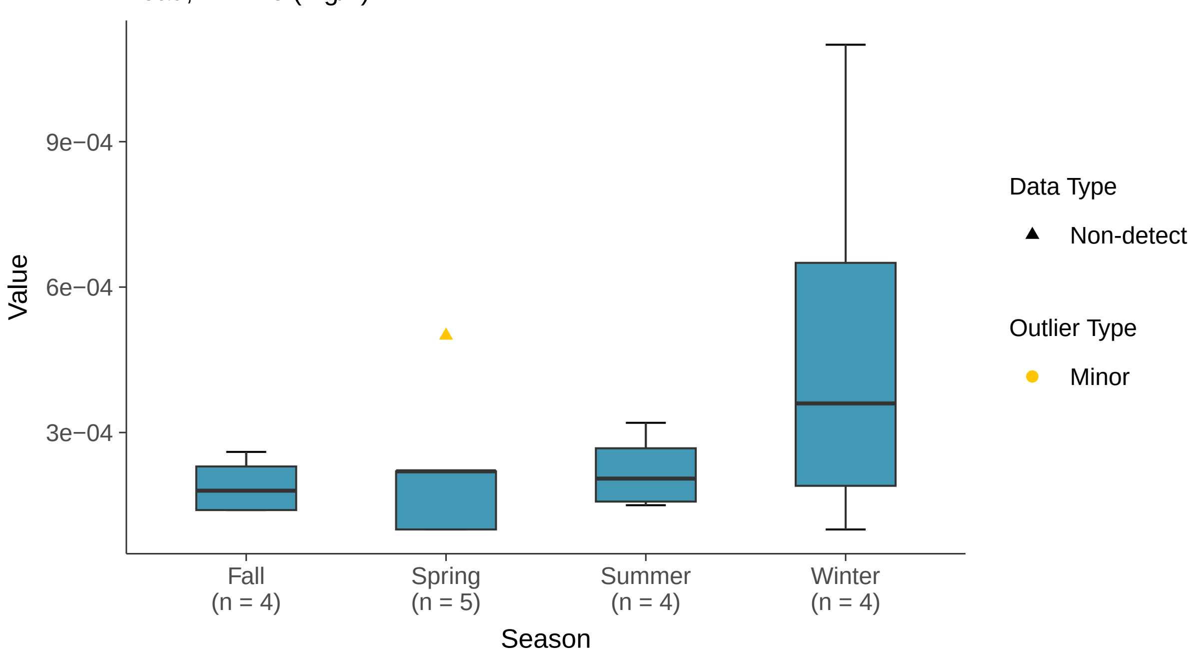
Boxplot

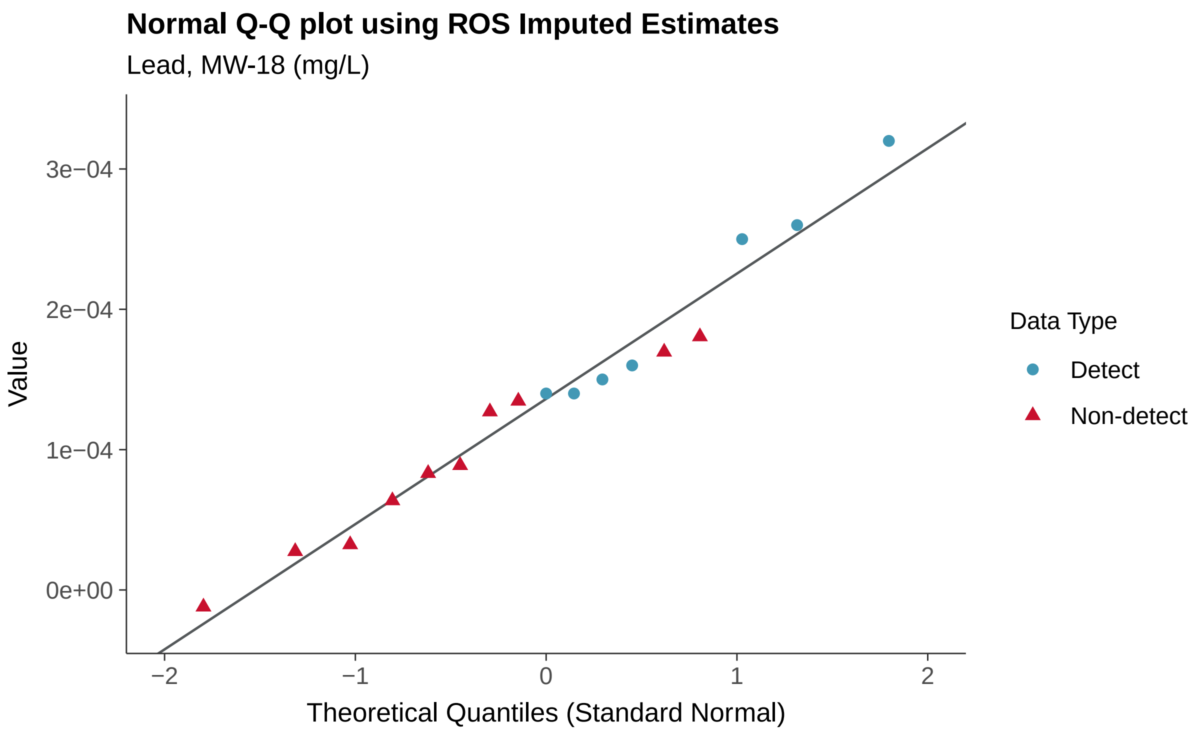
Lead, MW-18 (mg/L)

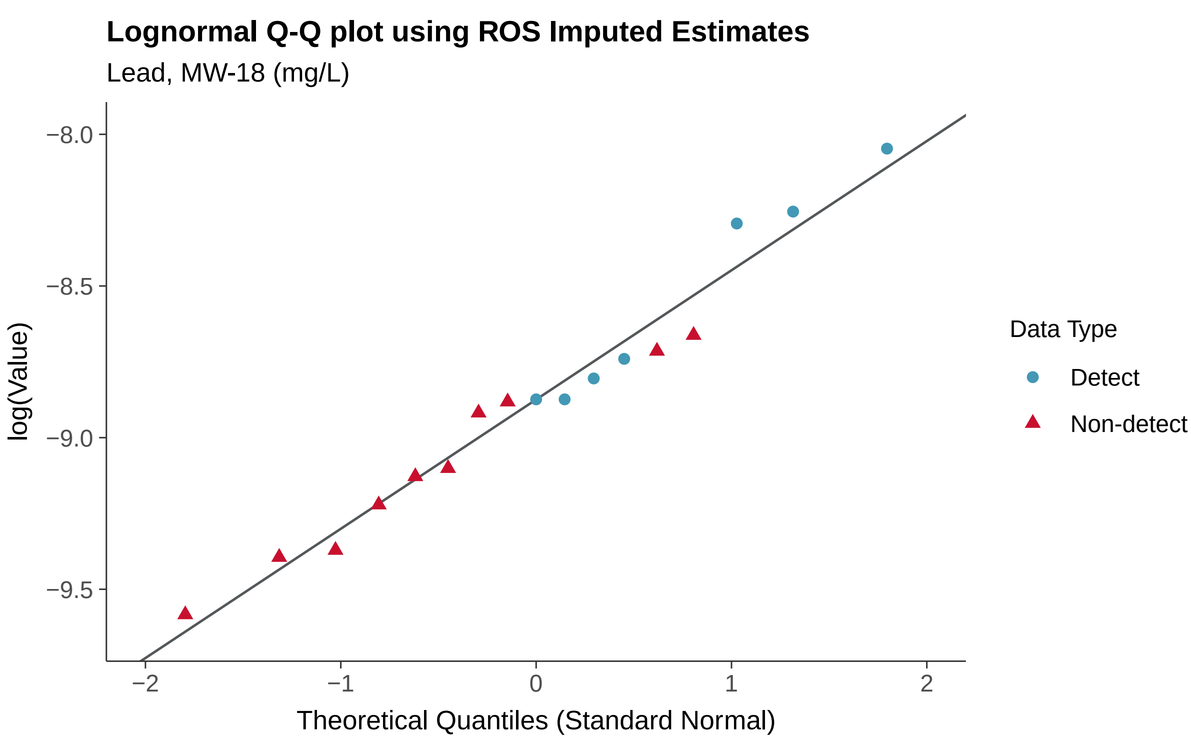


Boxplot by Season

Lead, MW-18 (mg/L)

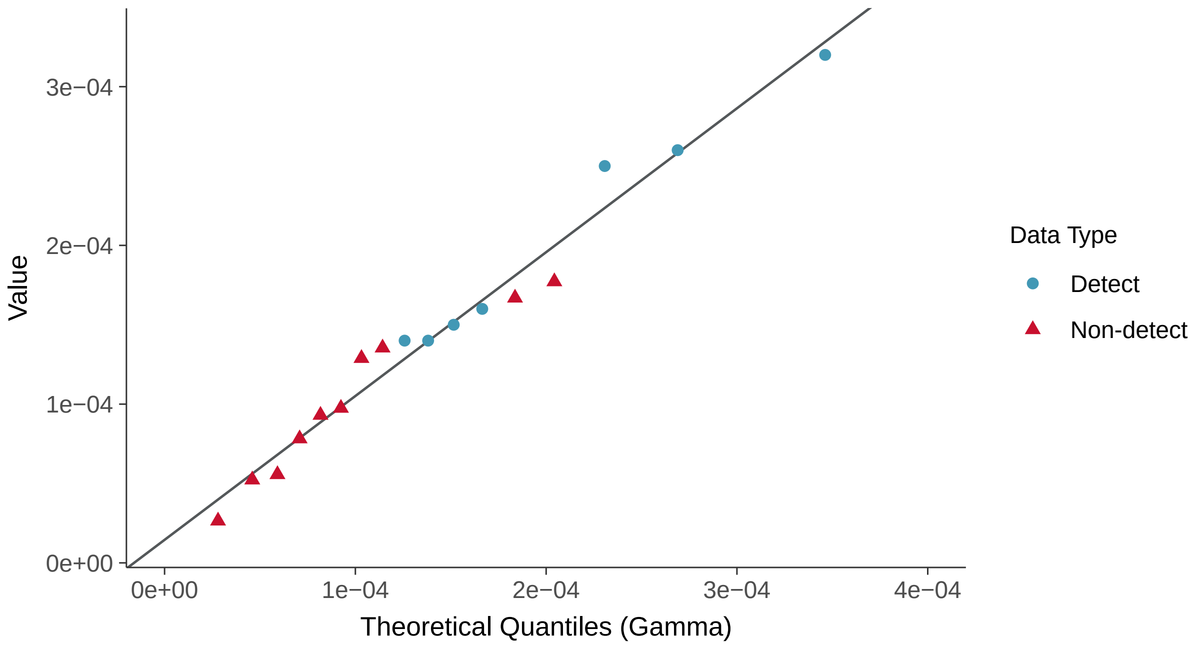



Normal Q-Q plot using ROS Imputed Estimates
Lead, MW-18 (mg/L)
Value
3e−04
2e−04
1e−04
0e+00
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Lognormal Q-Q plot using ROS Imputed Estimates
Lead, MW-18 (mg/L)
log(Value)
−8.0
−8.5
−9.0
−9.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

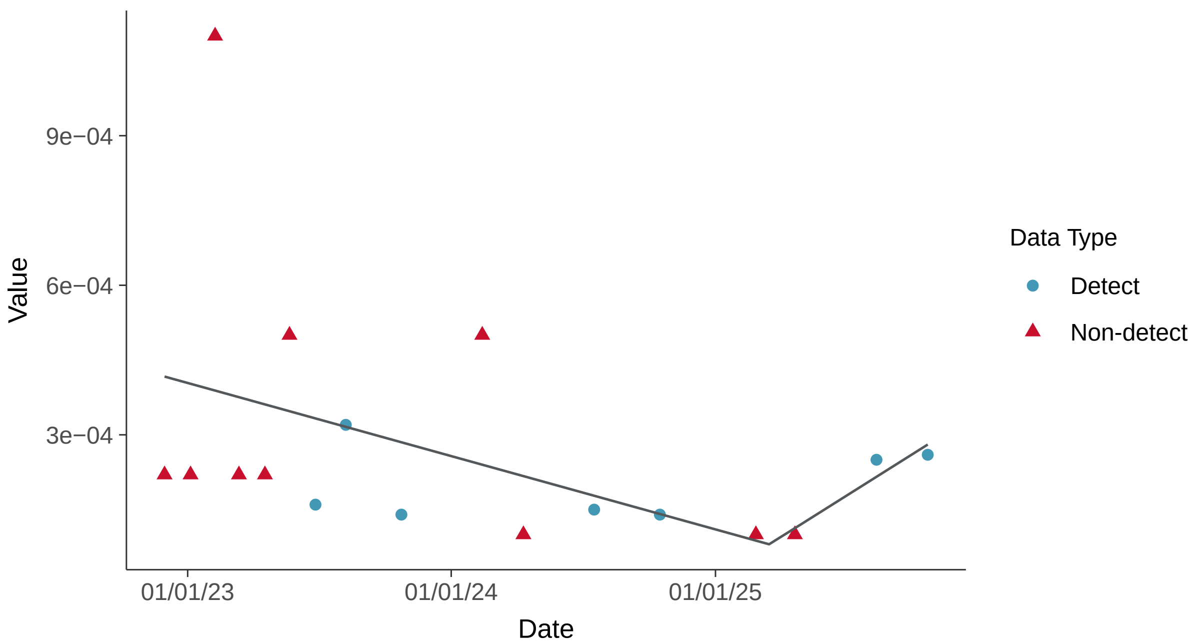
Gamma Q-Q plot using ROS Imputed Estimates

Lead, MW-18 (mg/L)



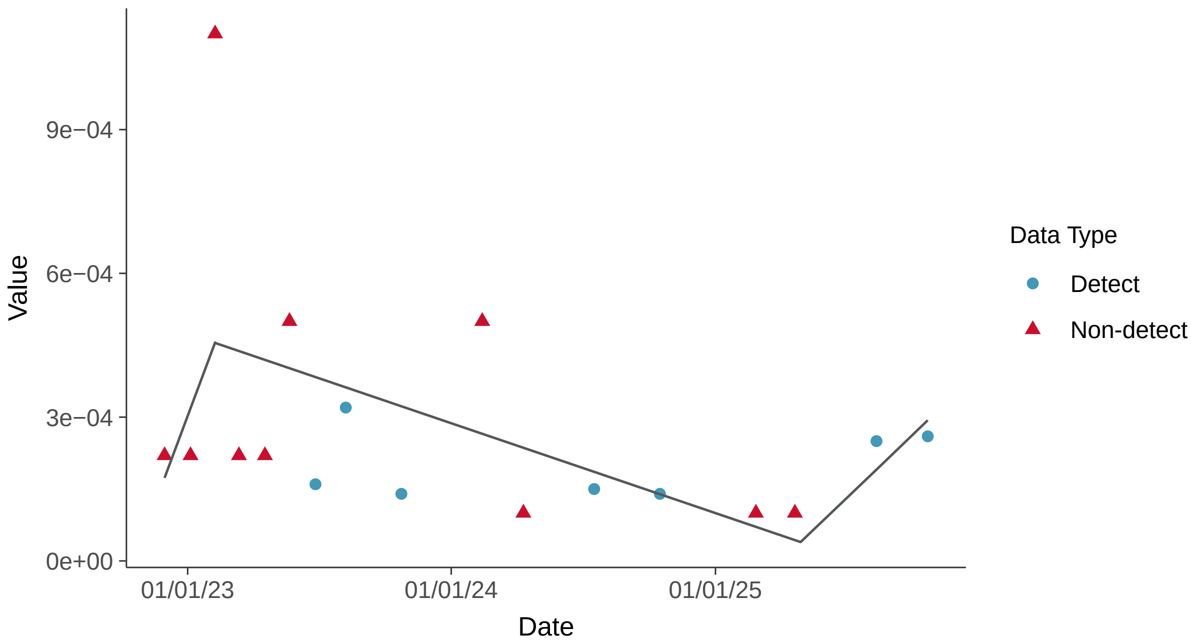
Trend Regression: Piecewise Linear-Linear

Lead, MW-18 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

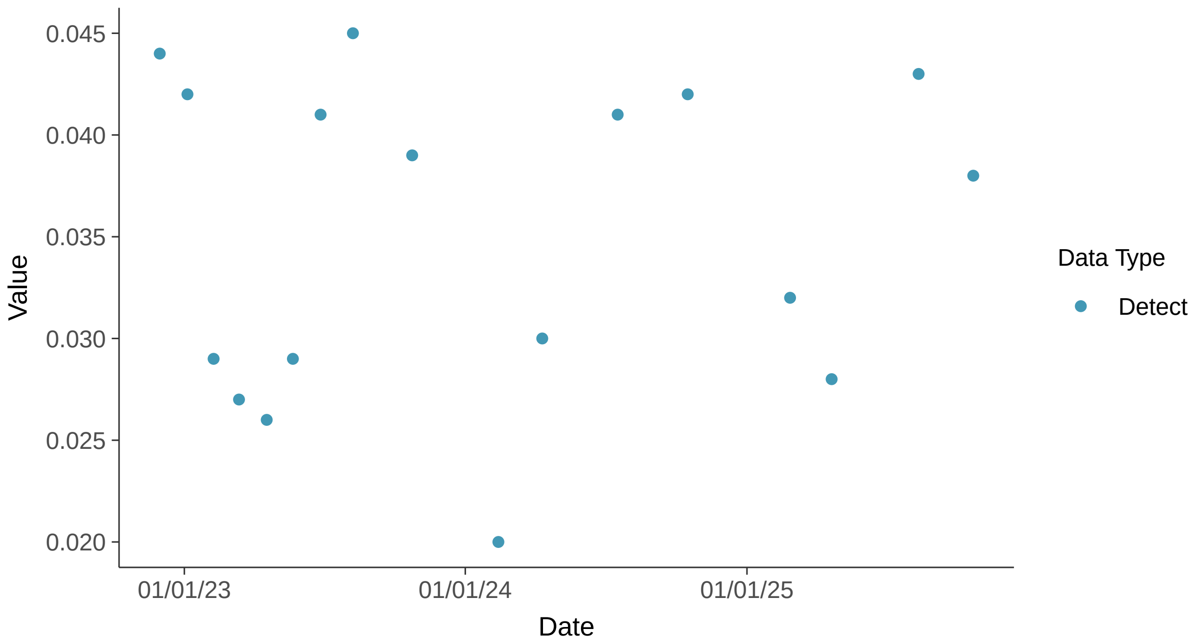
Lead, MW-18 (mg/L)



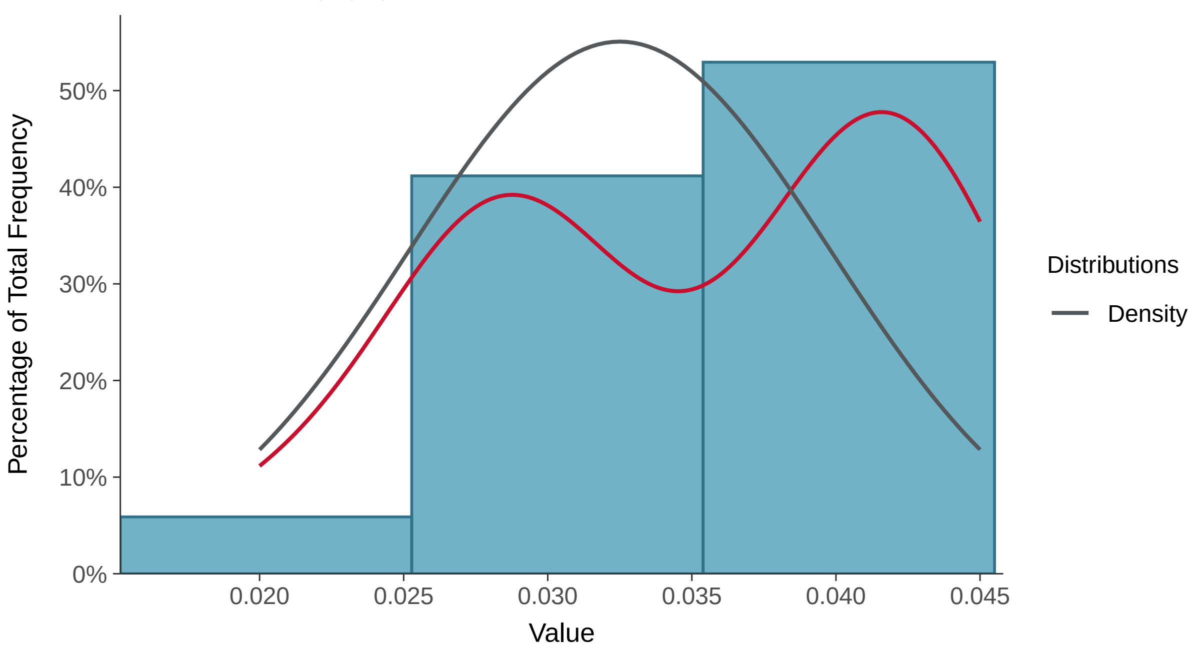
Appendix IV: Lithium, MW-18

ID: 28_1_4_116

Scatter Plot
Lithium, MW-18 (mg/L)

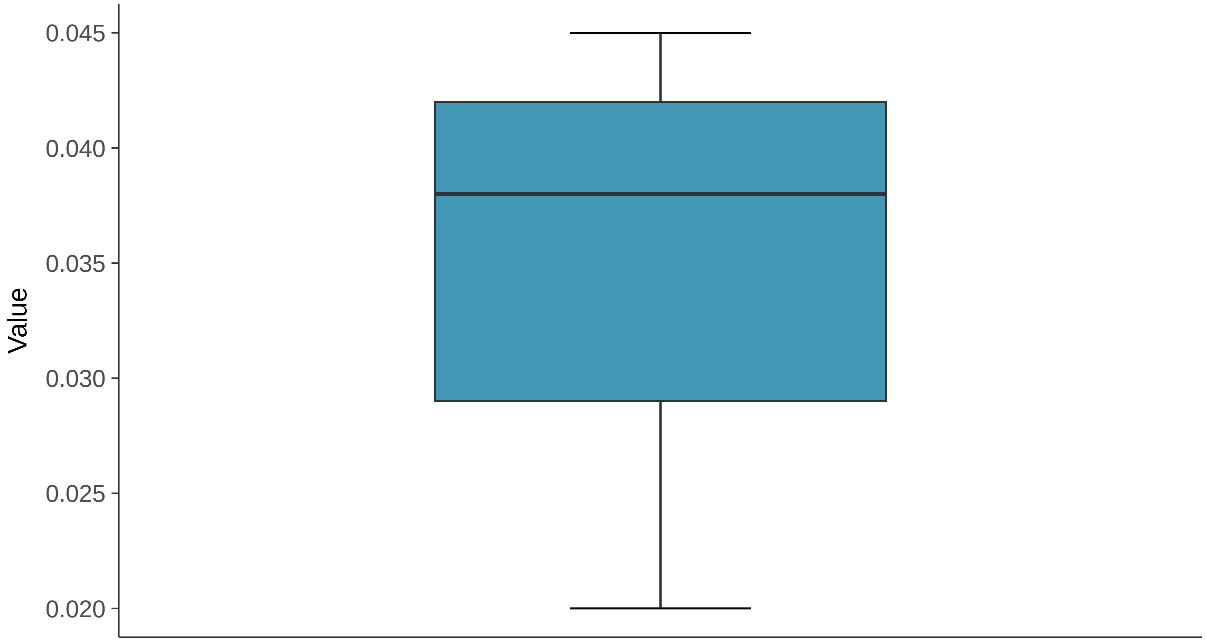


Histogram
Lithium, MW-18 (mg/L)



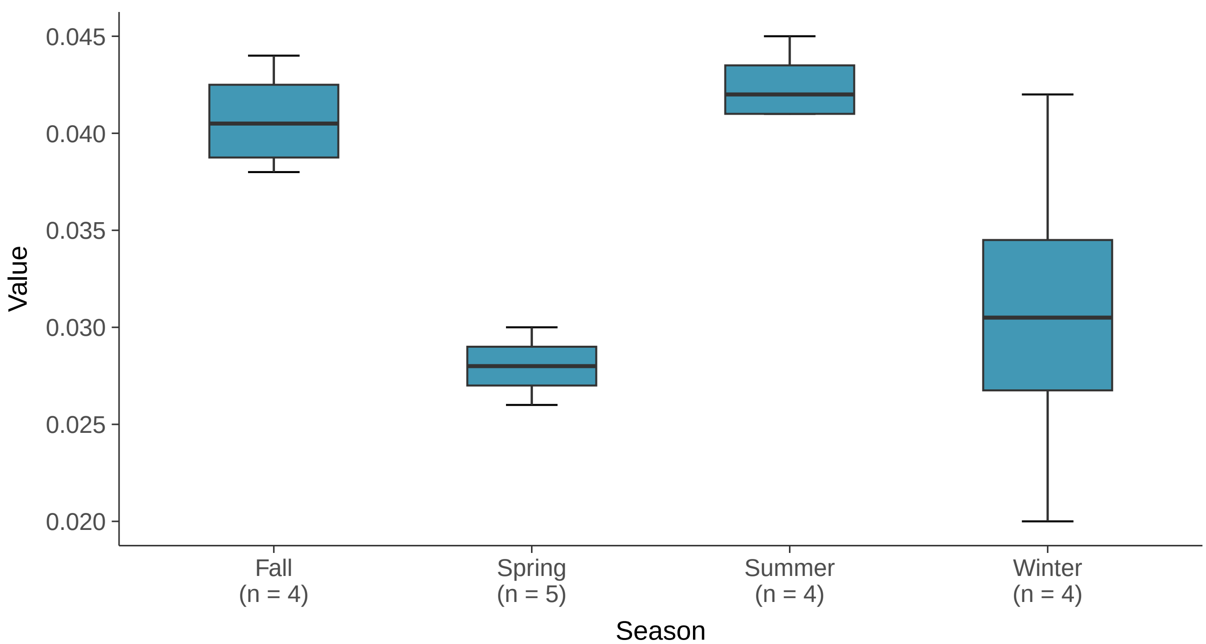
Boxplot

Lithium, MW-18 (mg/L)

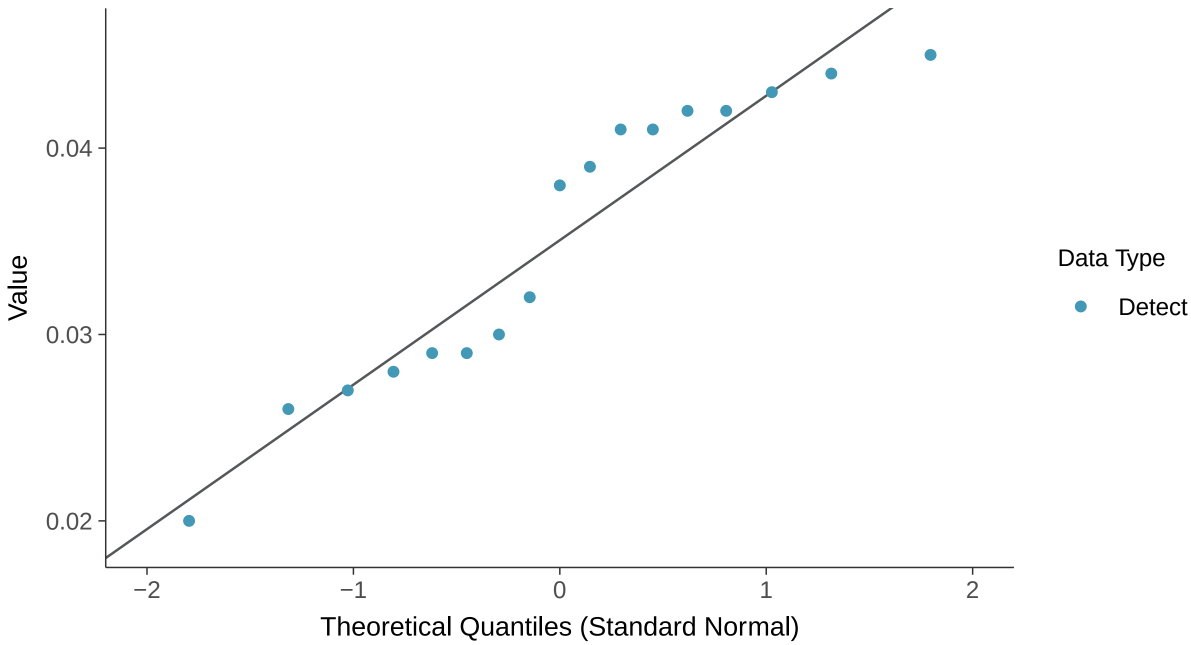


Boxplot by Season

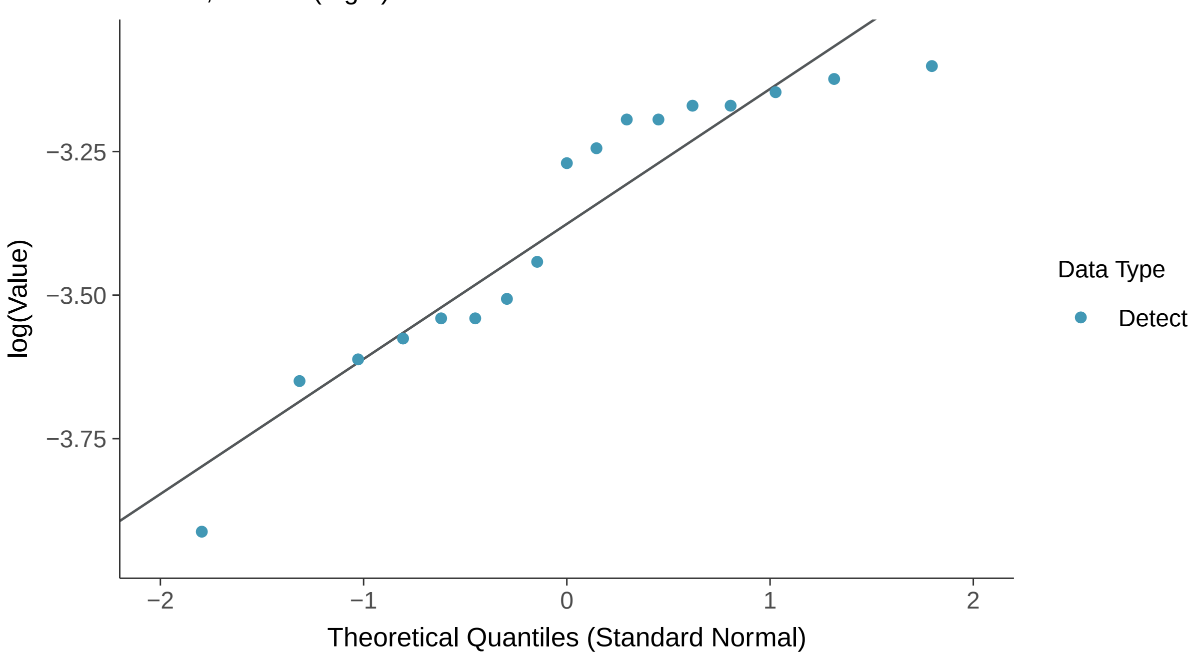
Lithium, MW-18 (mg/L)

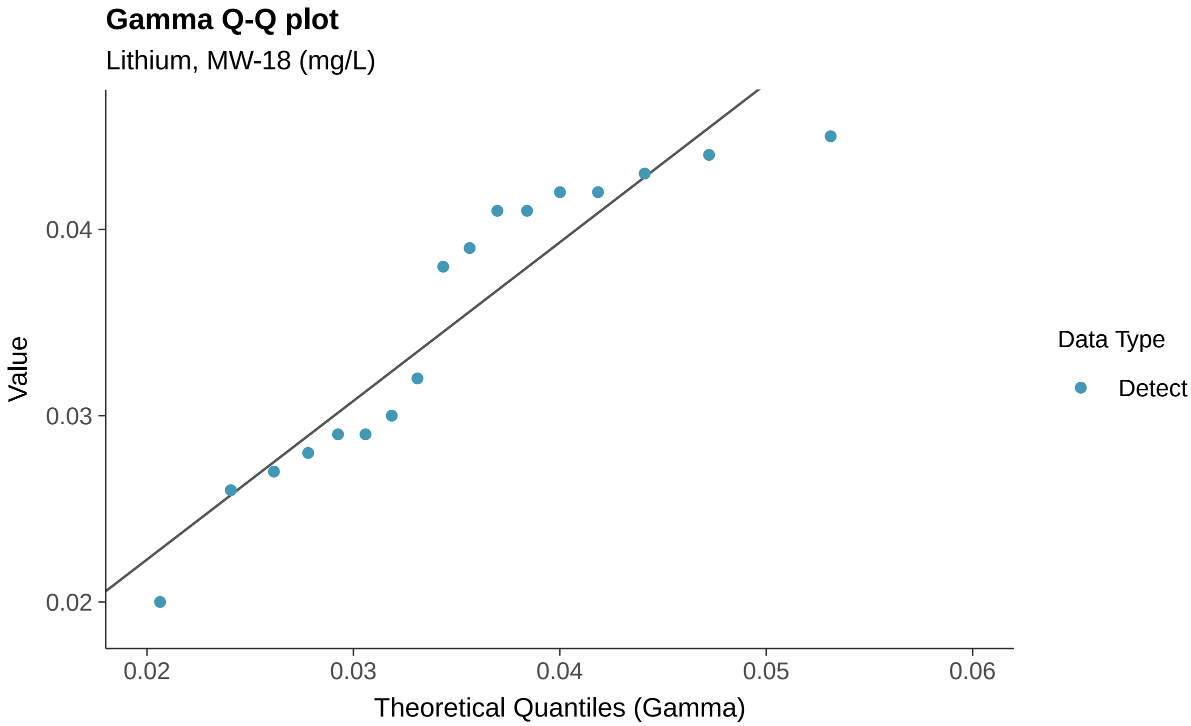


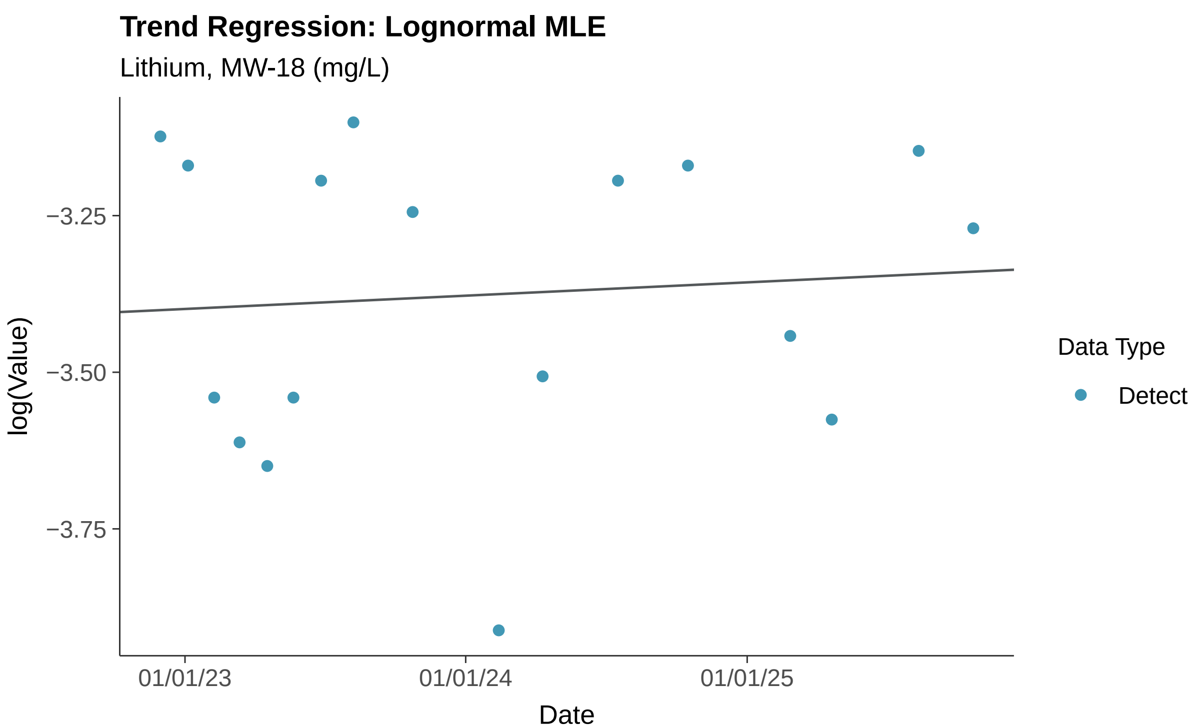
Normal Q-Q plot
Lithium, MW-18 (mg/L)

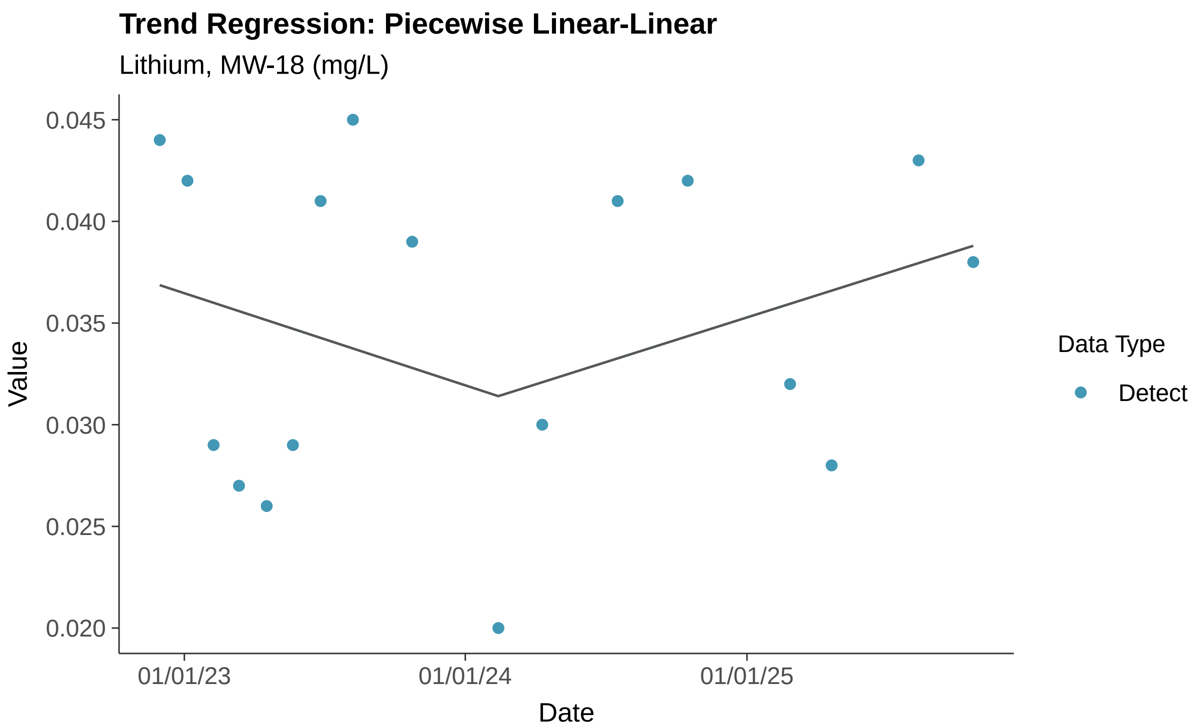


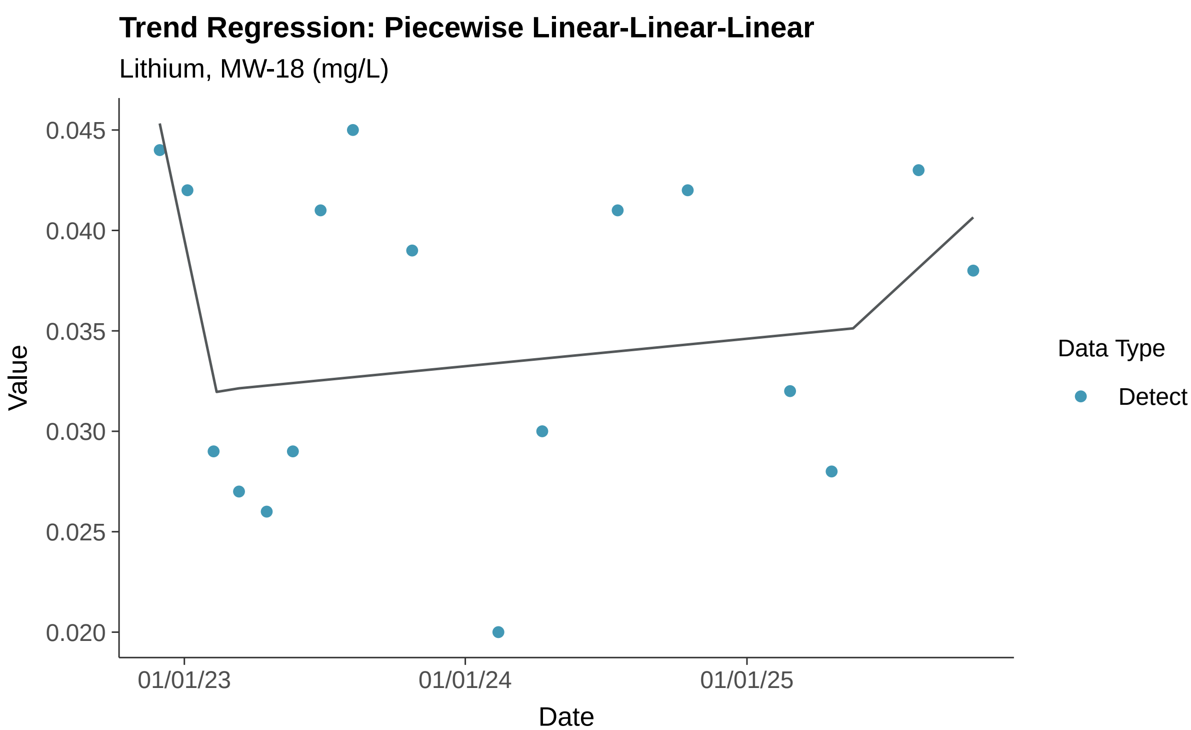
Lognormal Q-Q plot
Lithium, MW-18 (mg/L)




Gamma Q-Q plot
Lithium, MW-18 (mg/L)
Value
0.04
0.03
0.02
0.02
0.03
0.04
0.05
0.06
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Lithium, MW-18 (mg/L)
log(Value)
−3.25
−3.50
−3.75
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear
Lithium, MW-18 (mg/L)
Value
0.045
0.040
0.035
0.030
0.025
0.020
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

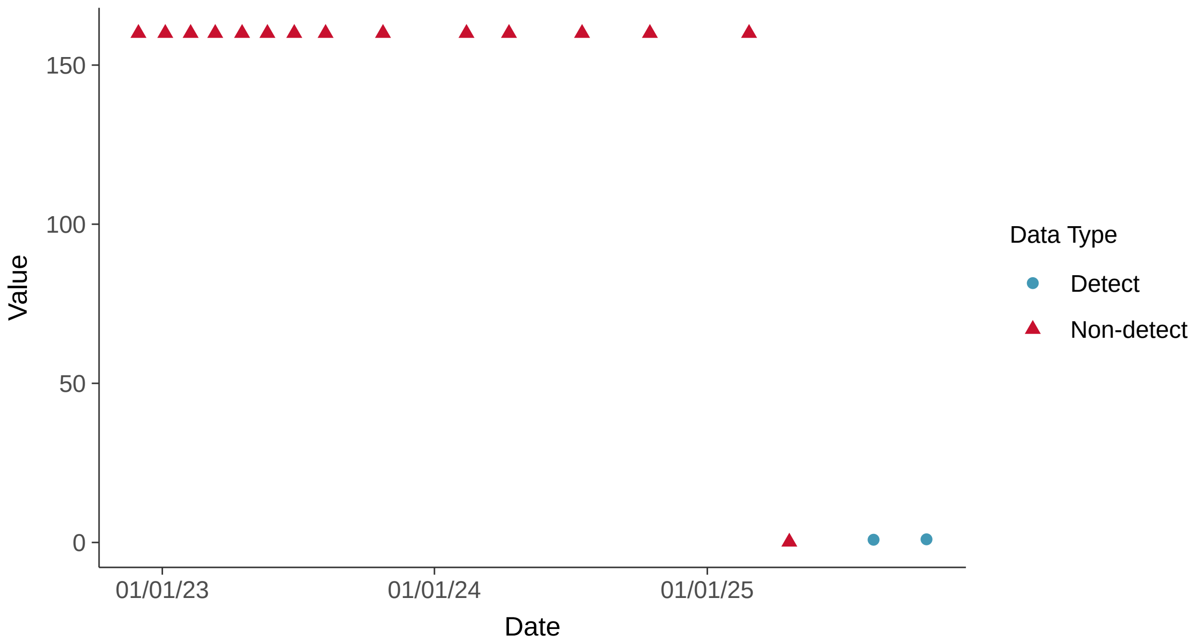

Trend Regression: Piecewise Linear-Linear-Linear
Lithium, MW-18 (mg/L)
Value
0.045
0.040
0.035
0.030
0.025
0.020
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Appendix IV: Mercury, MW-18

ID: 28_1_4_117

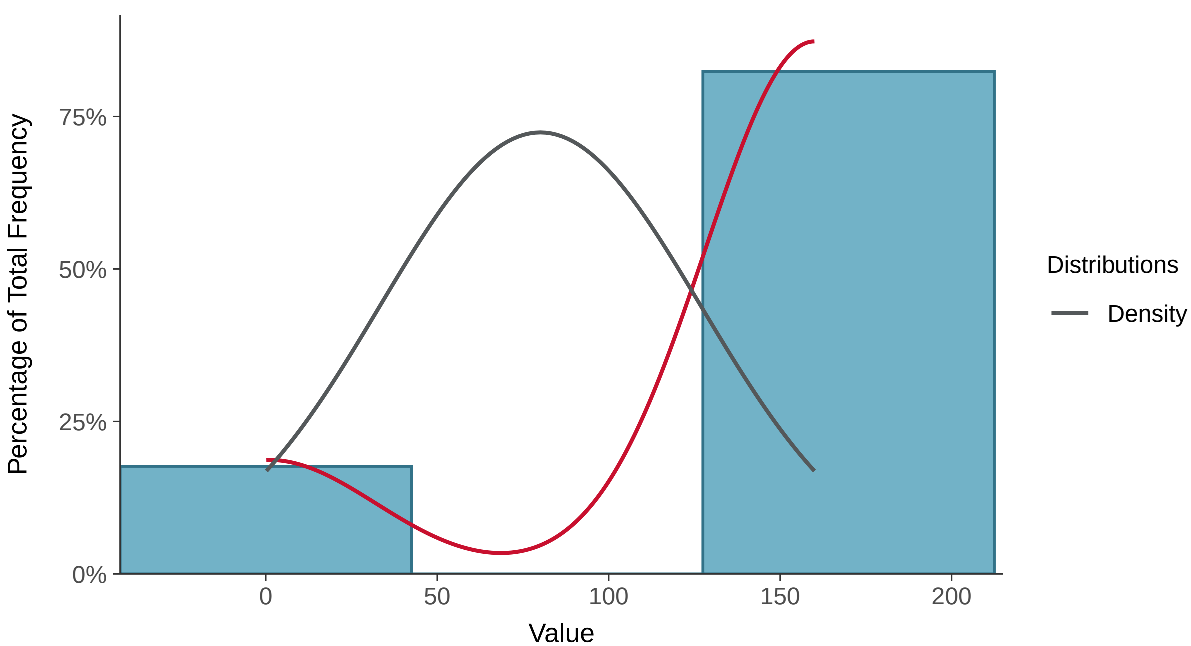
Scatter Plot

Mercury, MW-18 (ng/L)



Histogram

Mercury, MW-18 (ng/L)

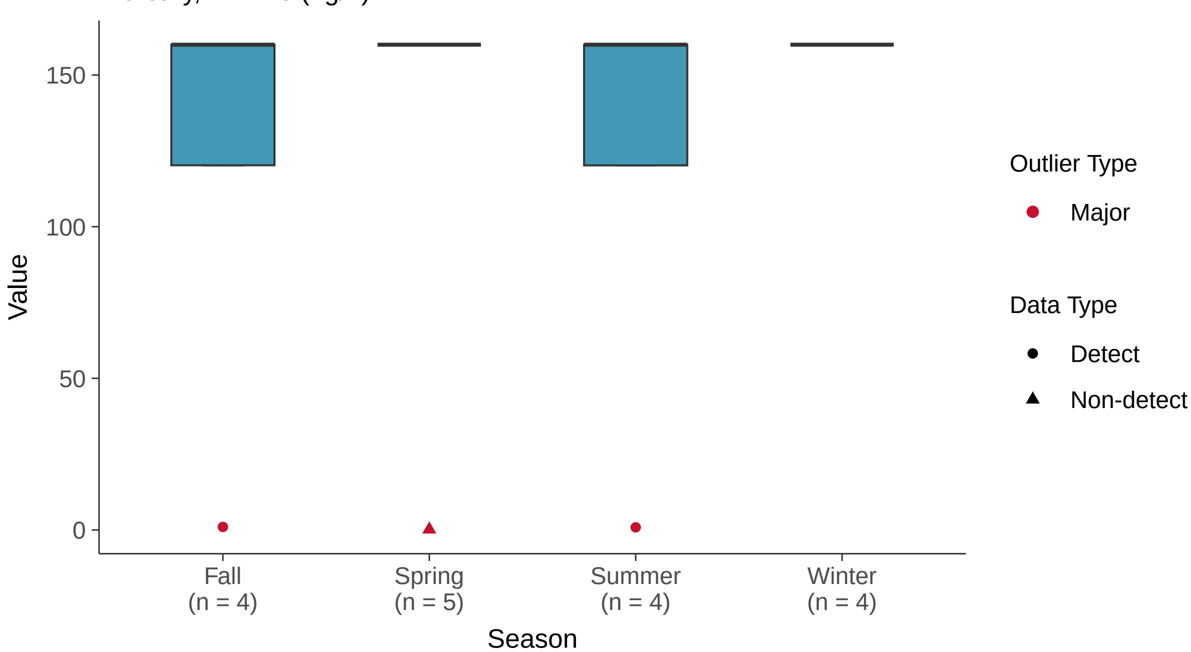


Boxplot

Mercury, MW-18 (ng/L)

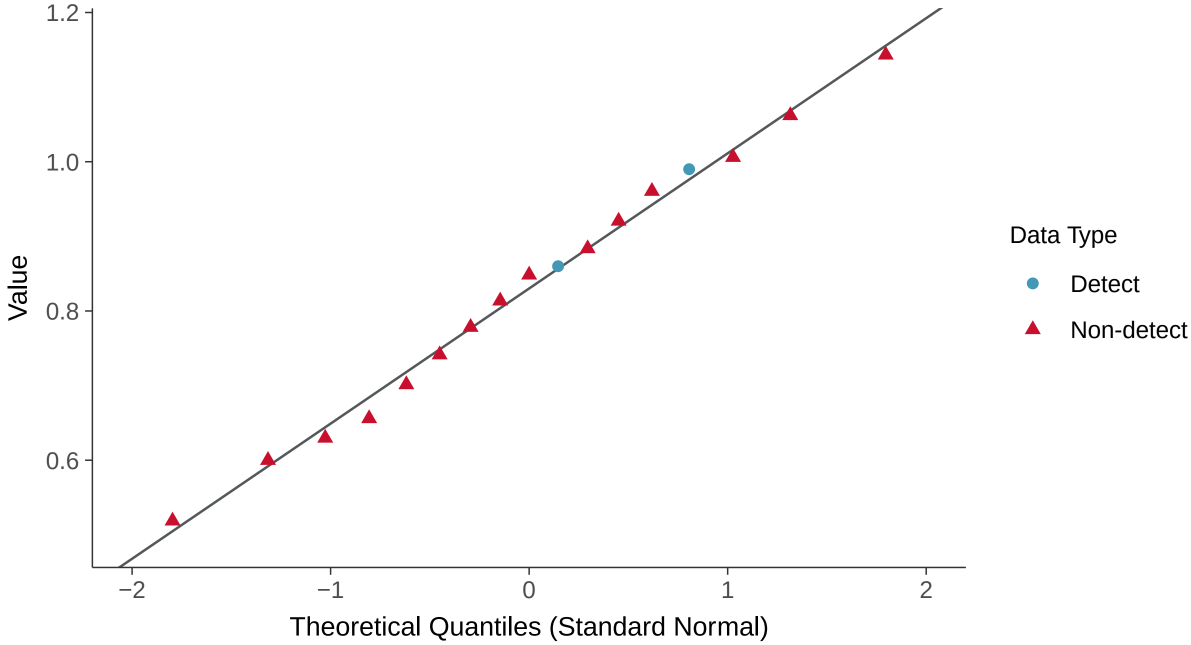
Boxplot by Season

Mercury, MW-18 (ng/L)



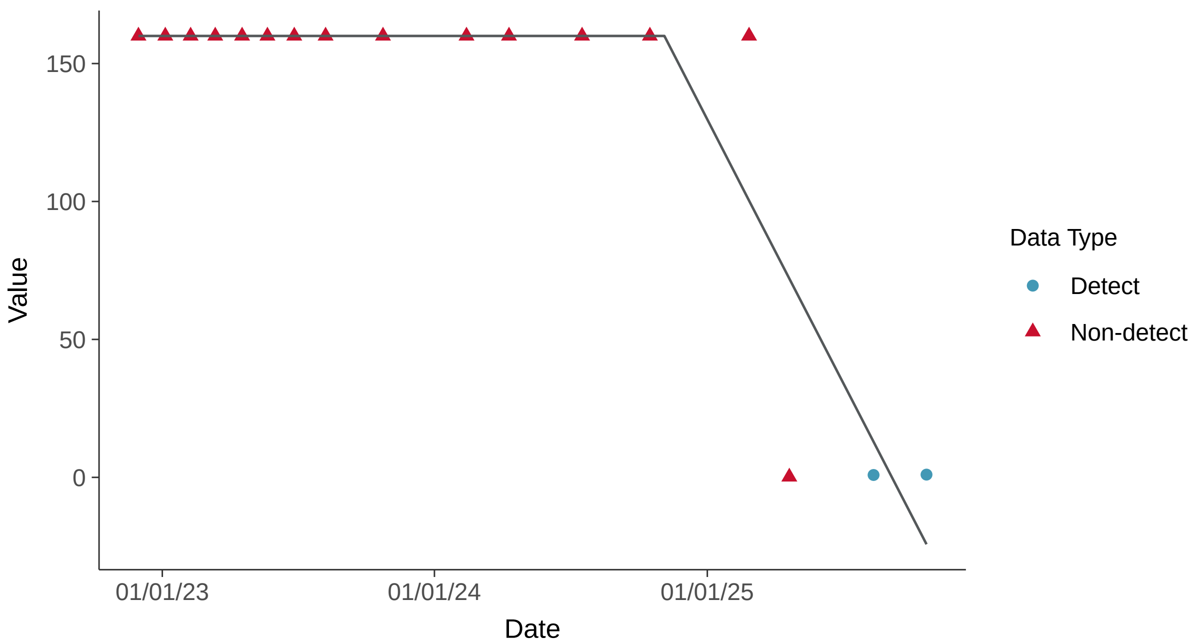
Normal Q-Q plot using ROS Imputed Estimates

Mercury, MW-18 (ng/L)



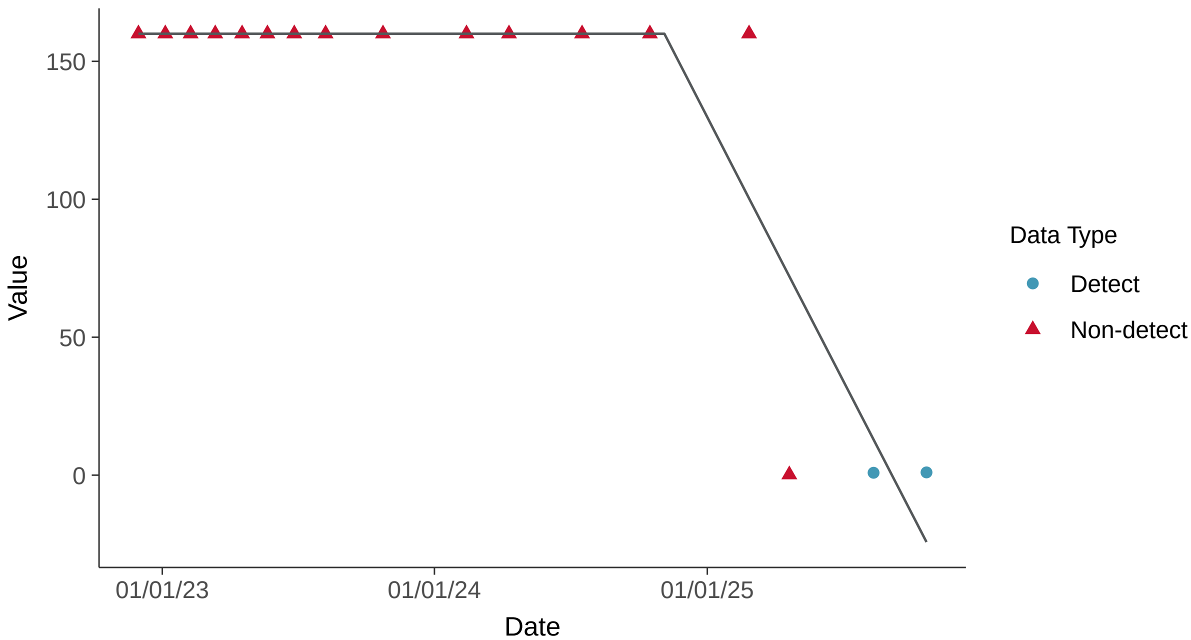
Trend Regression: Piecewise Linear-Linear

Mercury, MW-18 (ng/L)



Trend Regression: Piecewise Linear-Linear-Linear

Mercury, MW-18 (ng/L)

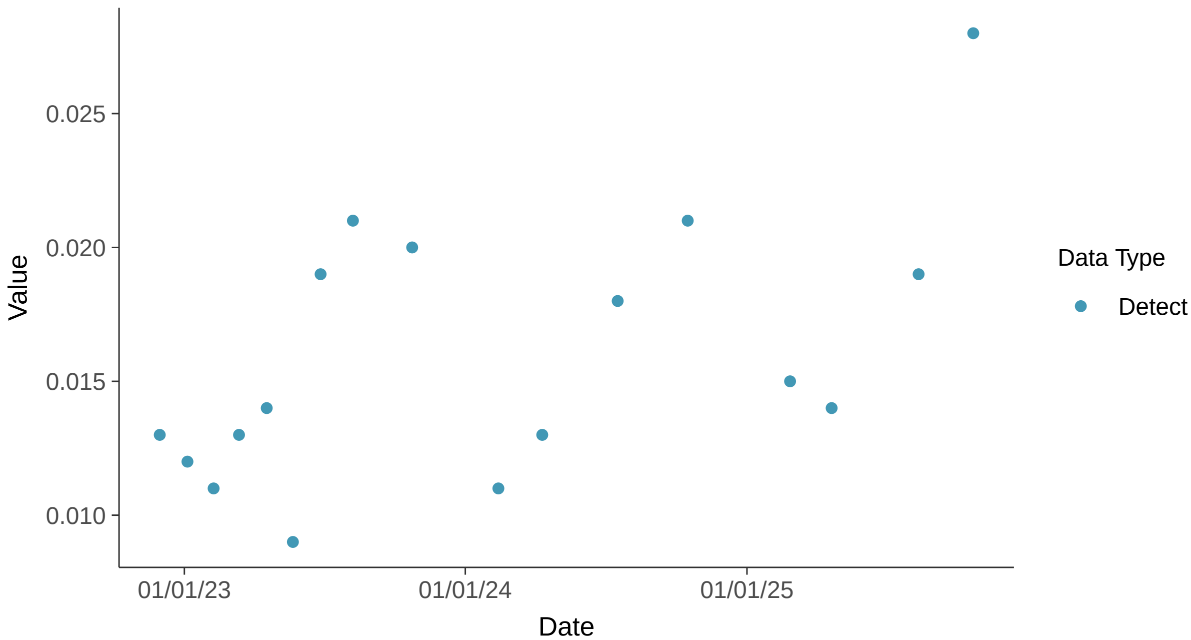


Appendix IV: Molybdenum, MW-18

ID: 28_1_4_118

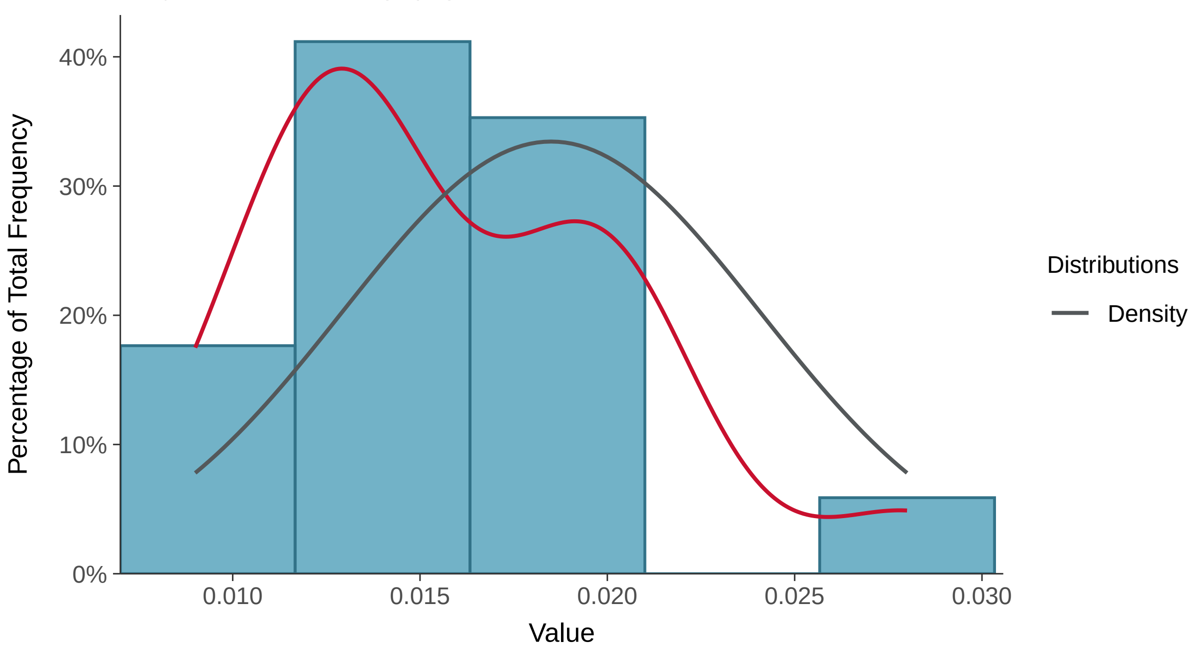
Scatter Plot

Molybdenum, MW-18 (mg/L)



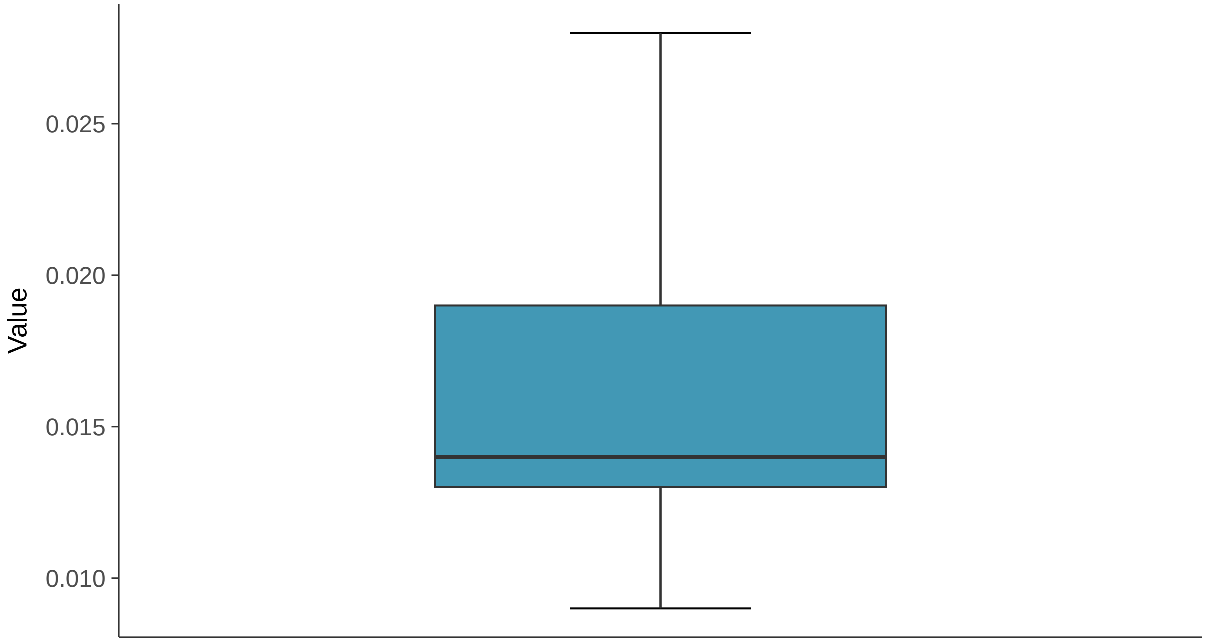
Histogram

Molybdenum, MW-18 (mg/L)



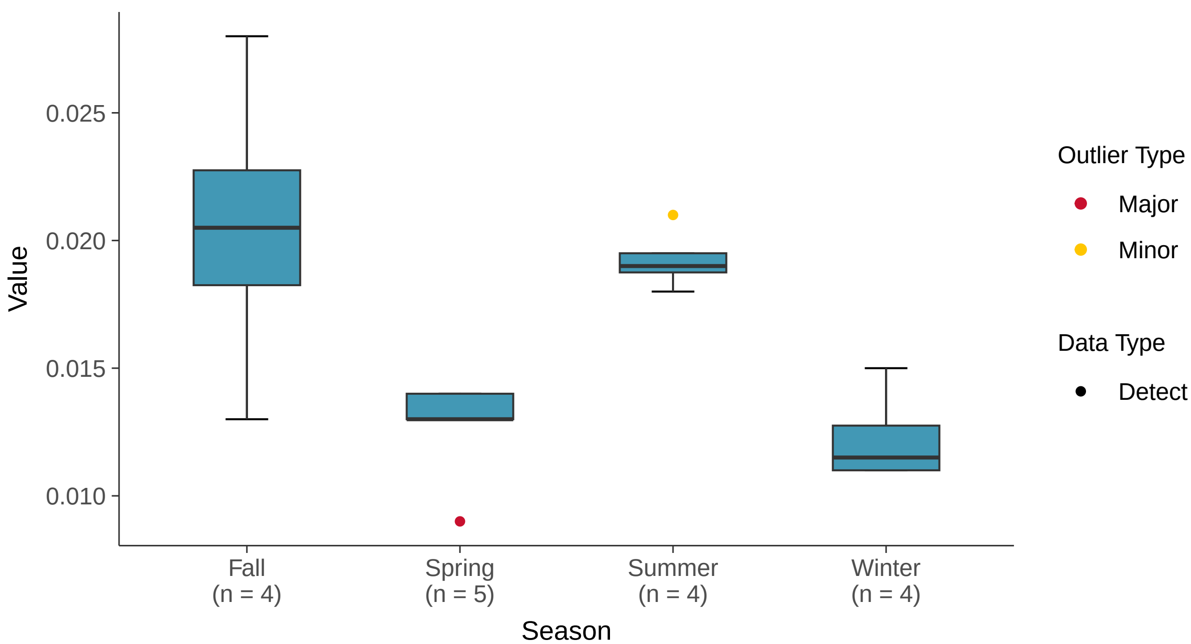
Boxplot

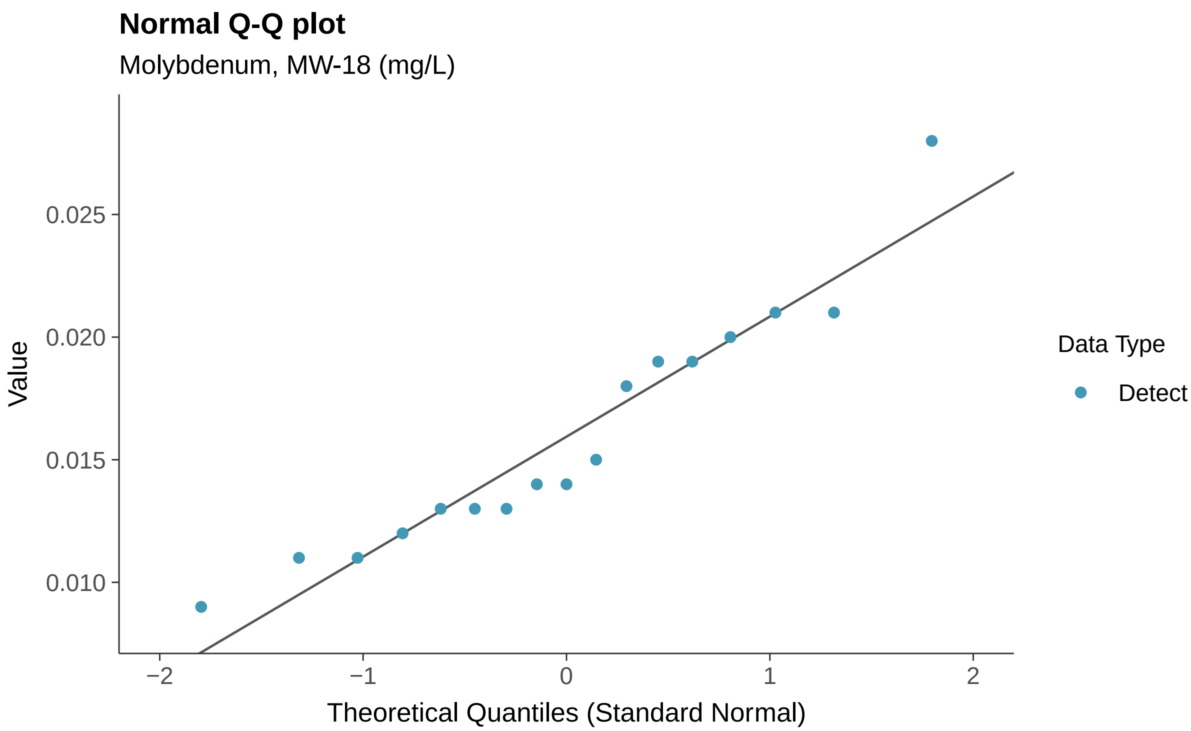
Molybdenum, MW-18 (mg/L)

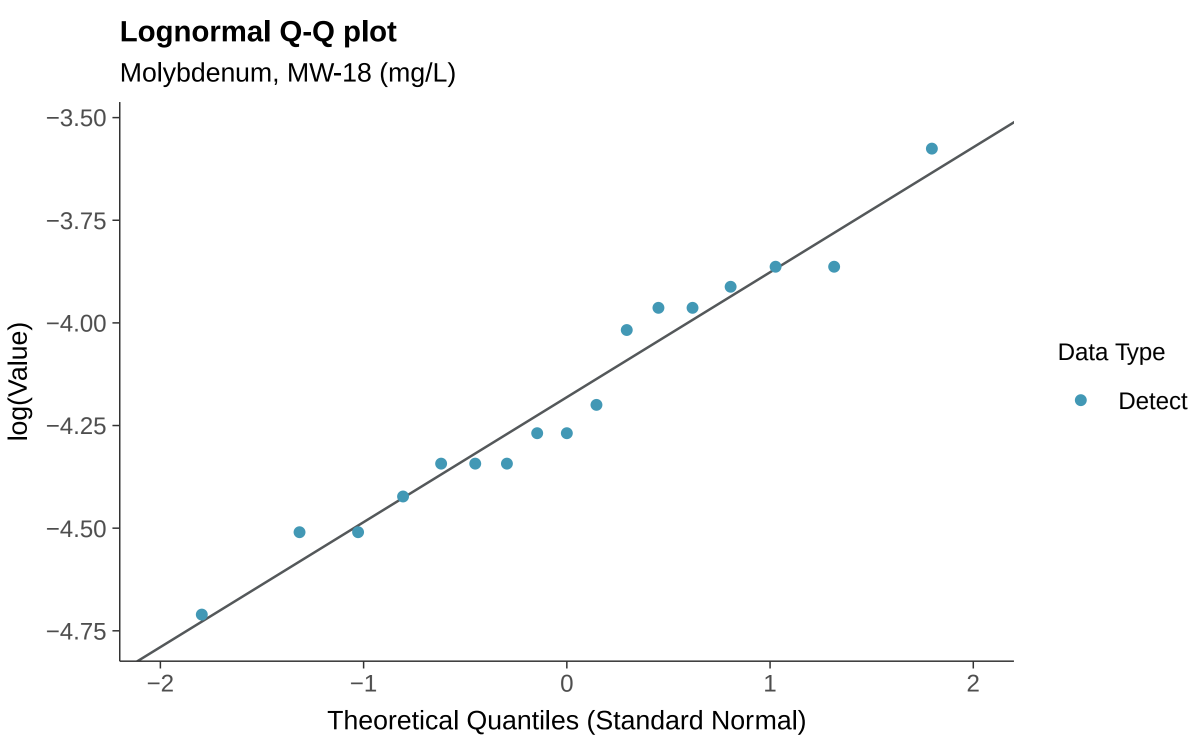


Boxplot by Season

Molybdenum, MW-18 (mg/L)

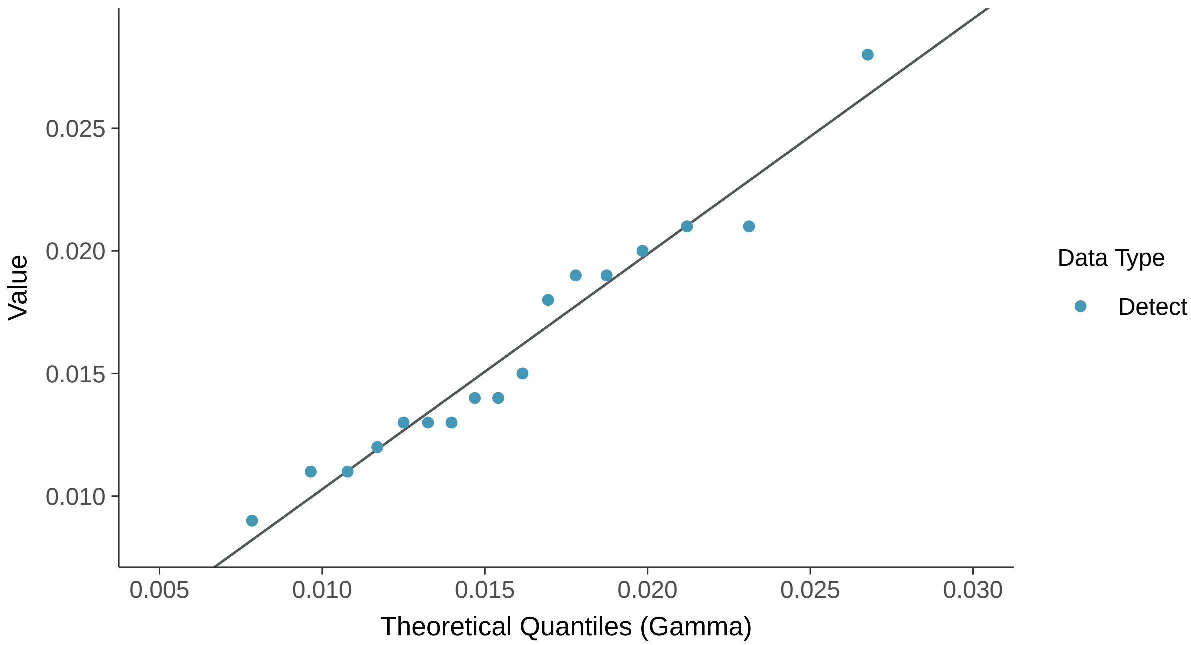



Normal Q-Q plot
Molybdenum, MW-18 (mg/L)
Value
0.025
0.020
0.015
0.010
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Molybdenum, MW-18 (mg/L)
log(Value)
−3.50
−3.75
−4.00
−4.25
−4.50
−4.75
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

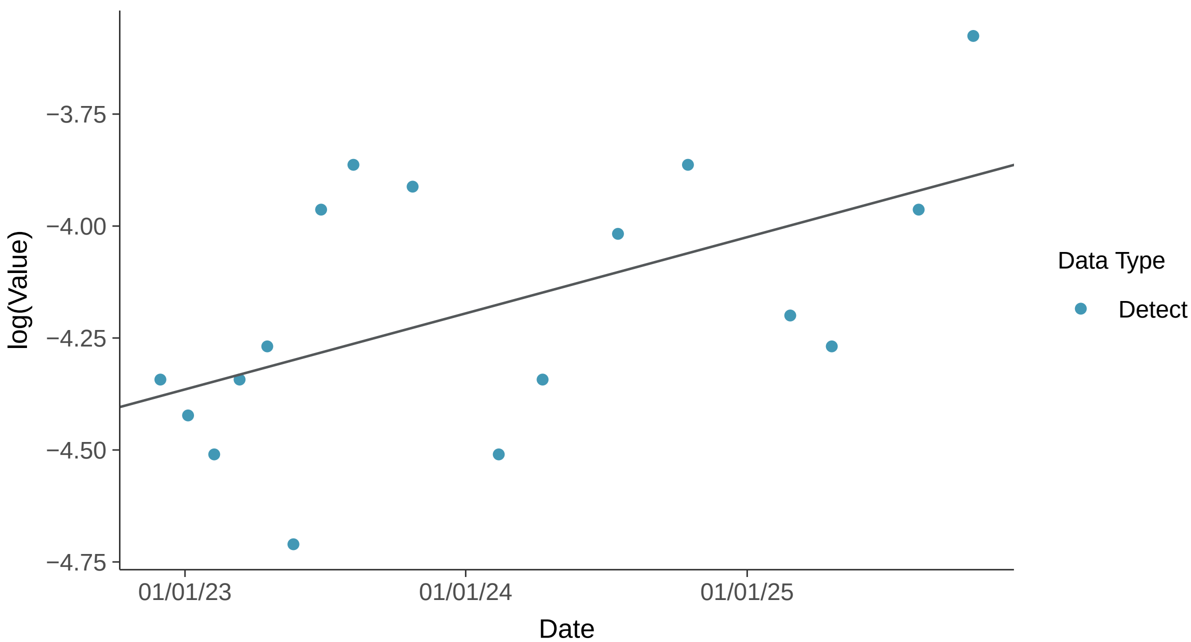
Gamma Q-Q plot

Molybdenum, MW-18 (mg/L)



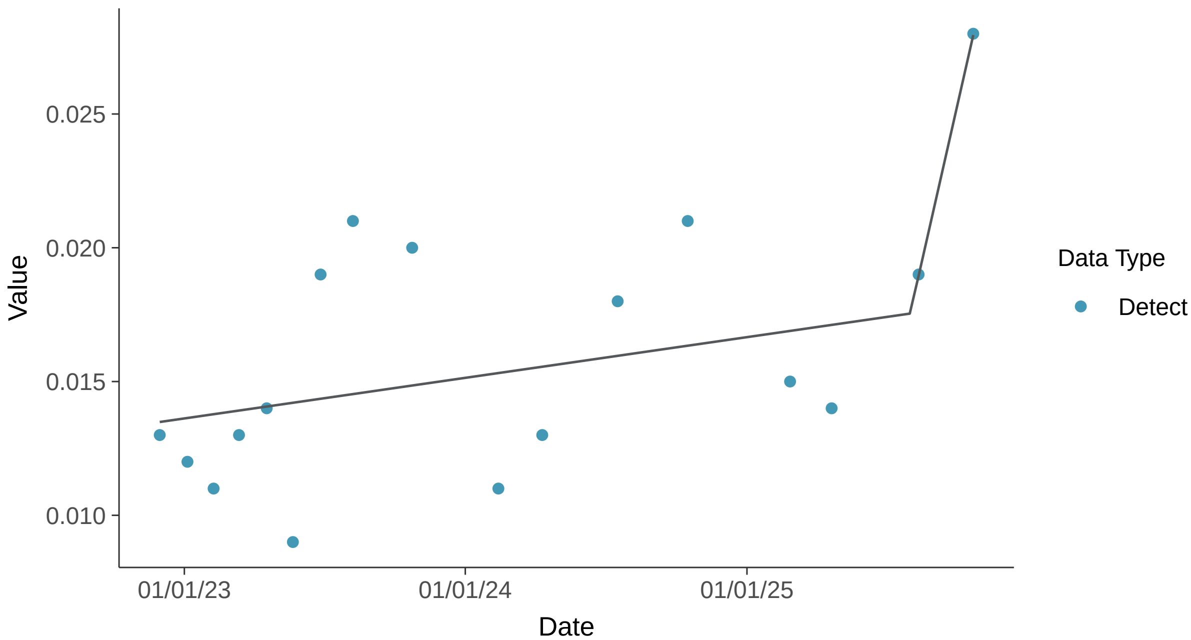
Trend Regression: Lognormal MLE

Molybdenum, MW-18 (mg/L)



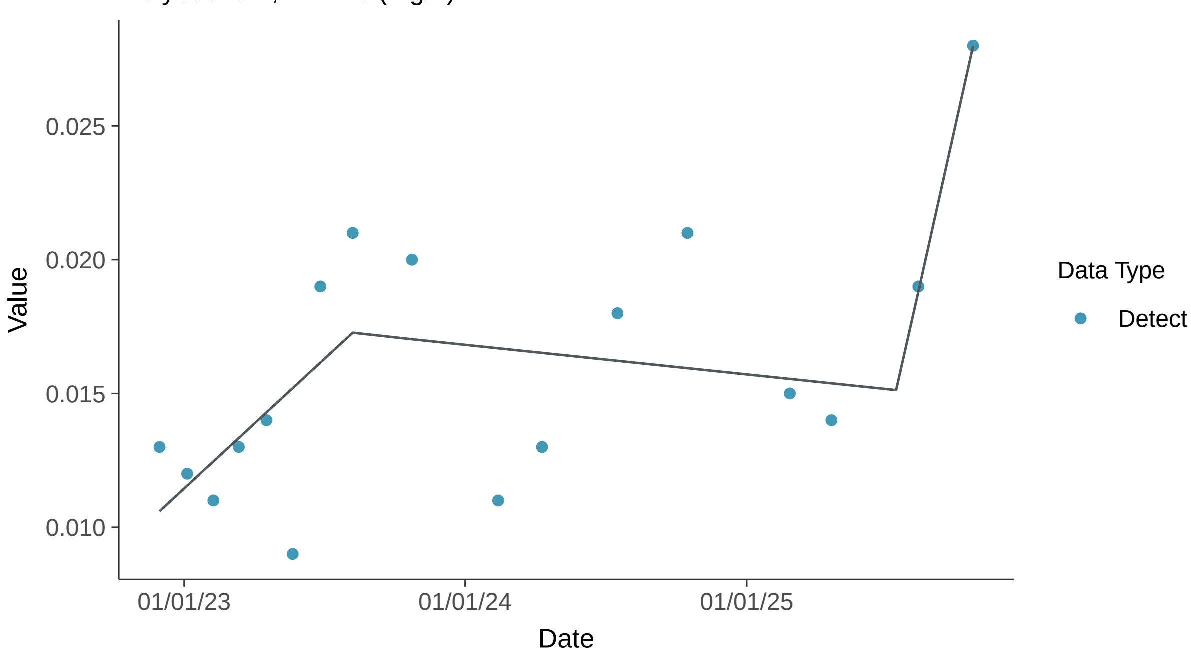
Trend Regression: Piecewise Linear-Linear

Molybdenum, MW-18 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Molybdenum, MW-18 (mg/L)

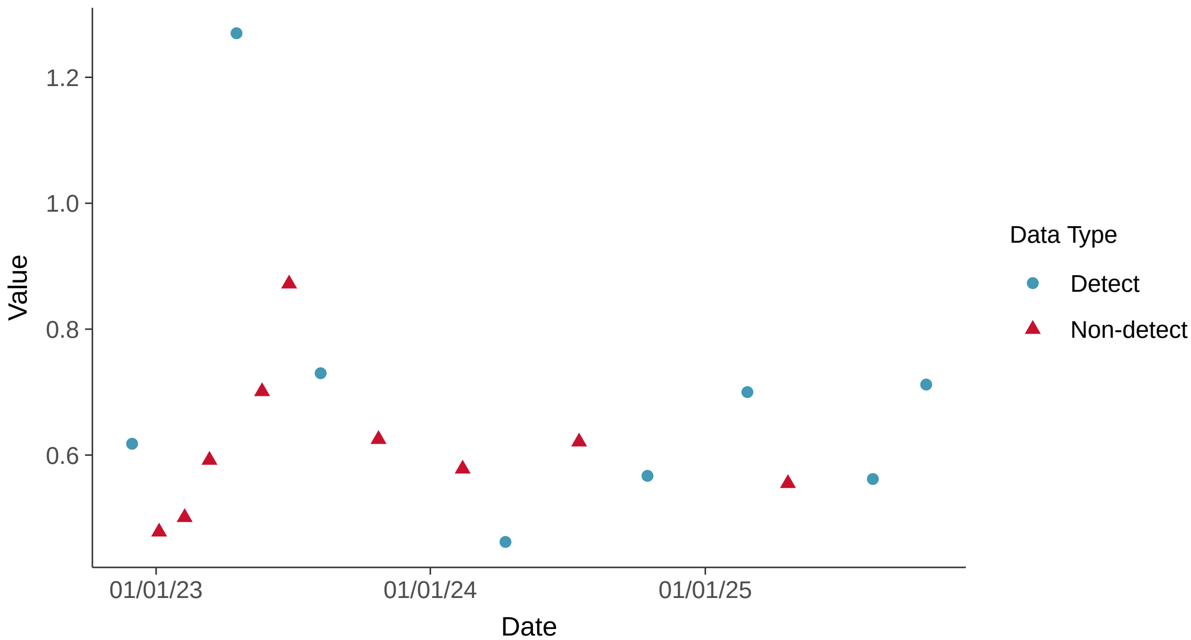


Appendix IV: Radium 226 and 228, MW-18

ID: 28_1_4_121

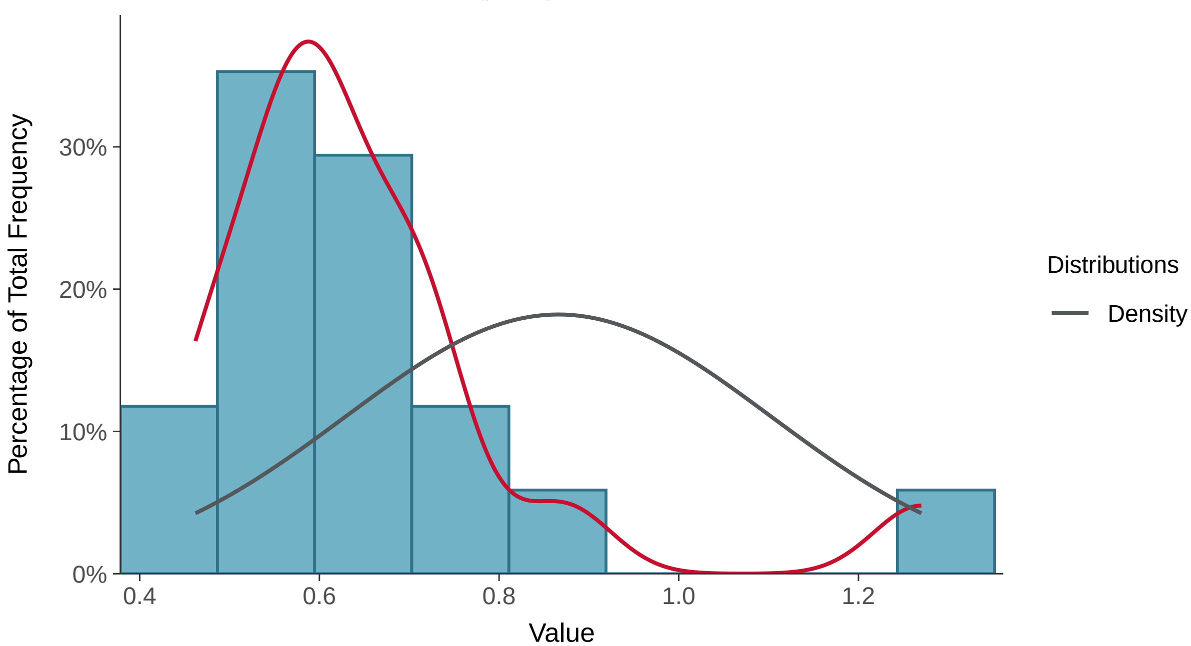
Scatter Plot

Radium 226 and 228, MW-18 (pCi/L)



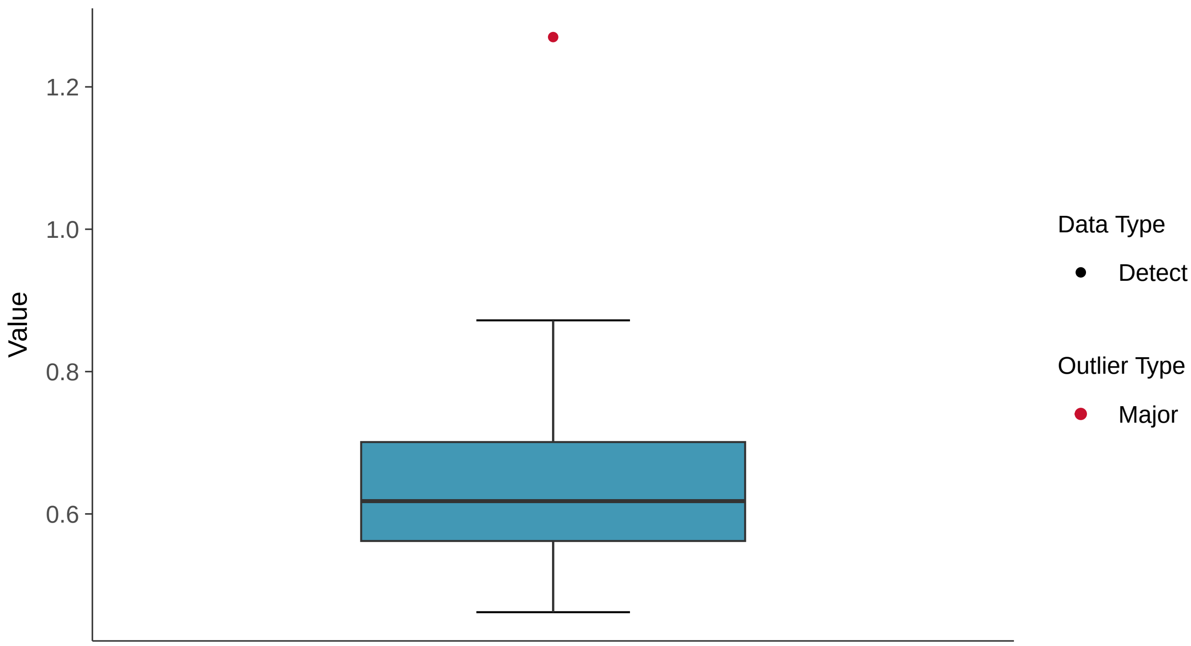
Histogram

Radium 226 and 228, MW-18 (pCi/L)



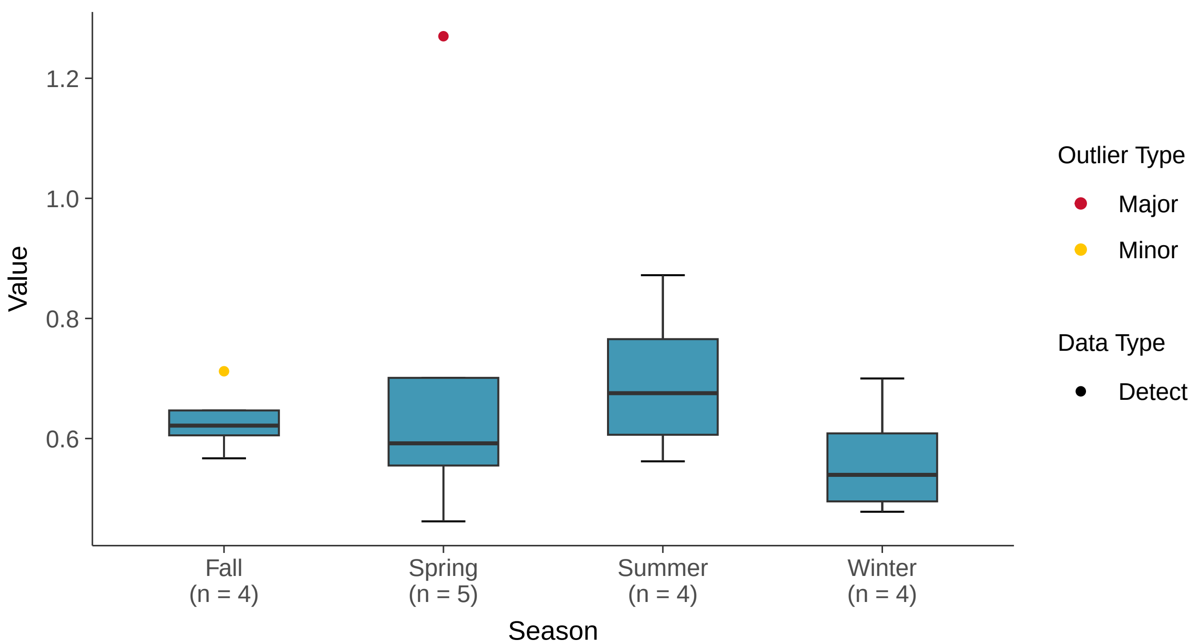
Boxplot

Radium 226 and 228, MW-18 (pCi/L)



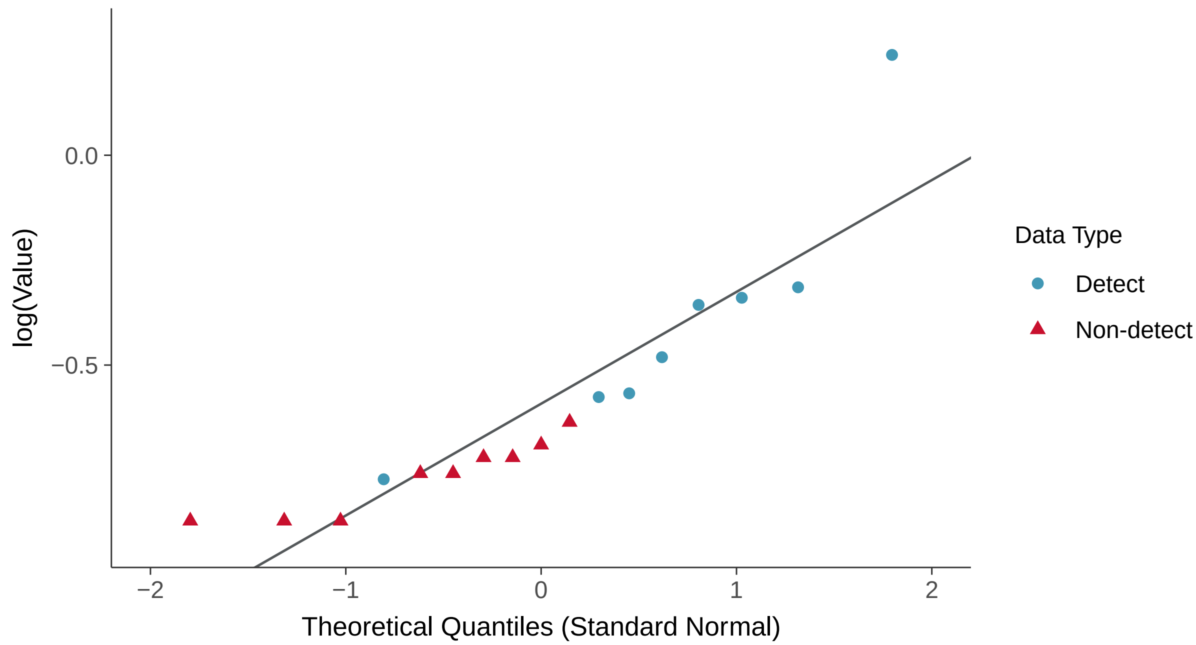
Boxplot by Season

Radium 226 and 228, MW-18 (pCi/L)



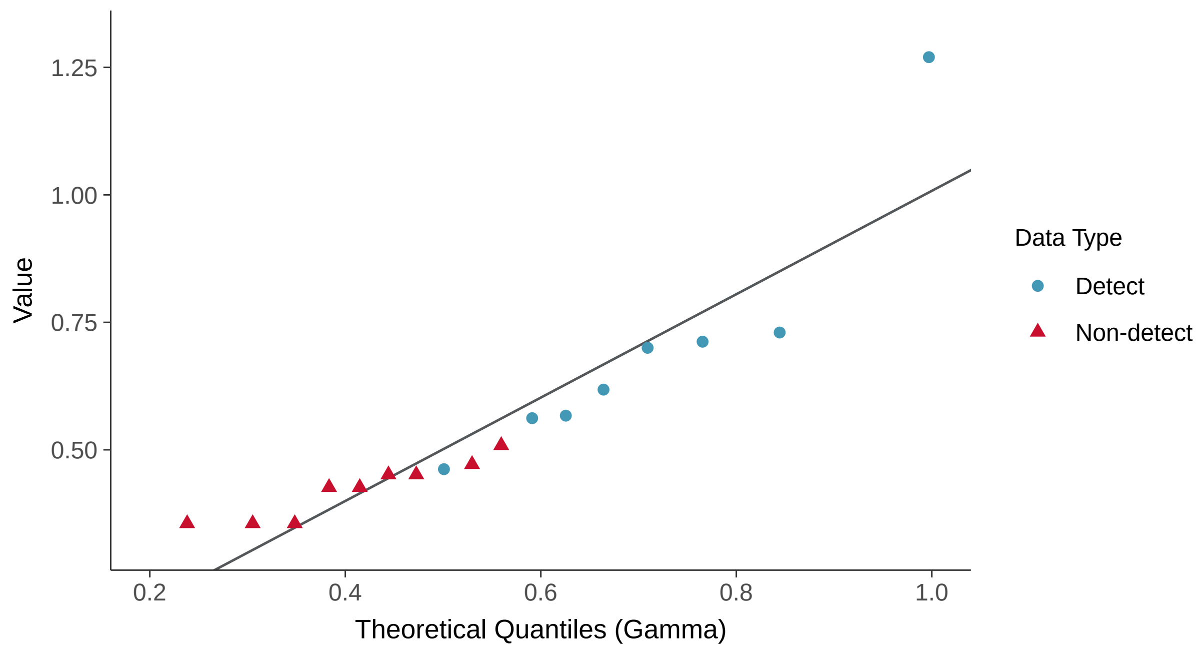
Lognormal Q-Q plot using ROS Imputed Estimates

Radium 226 and 228, MW-18 (pCi/L)



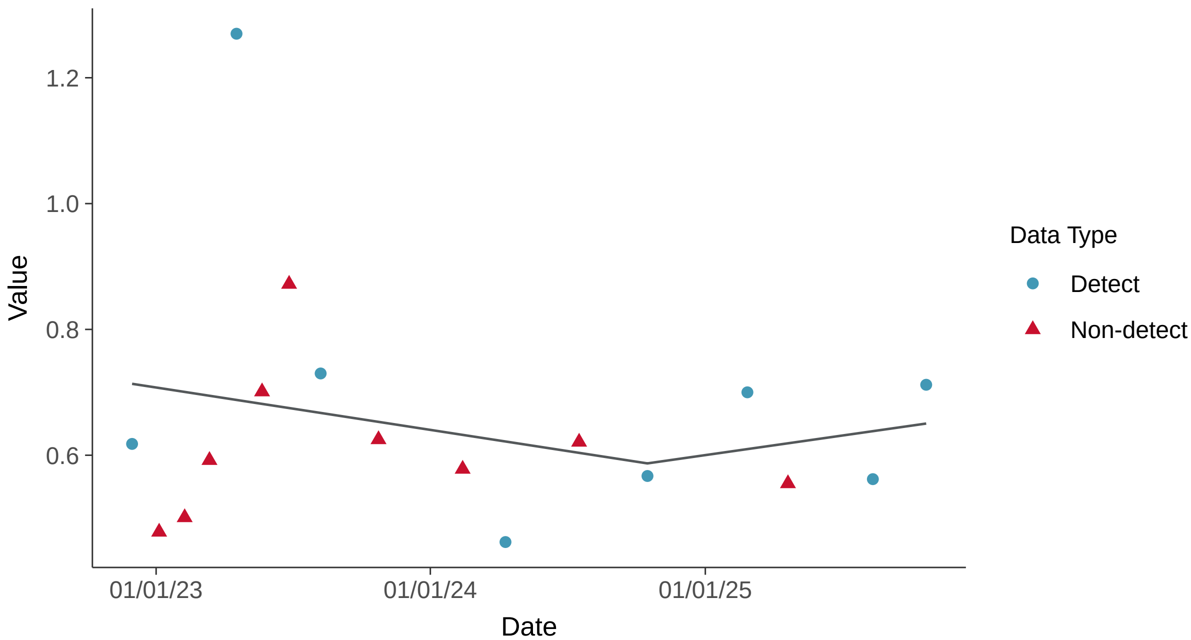
Gamma Q-Q plot using ROS Imputed Estimates

Radium 226 and 228, MW-18 (pCi/L)



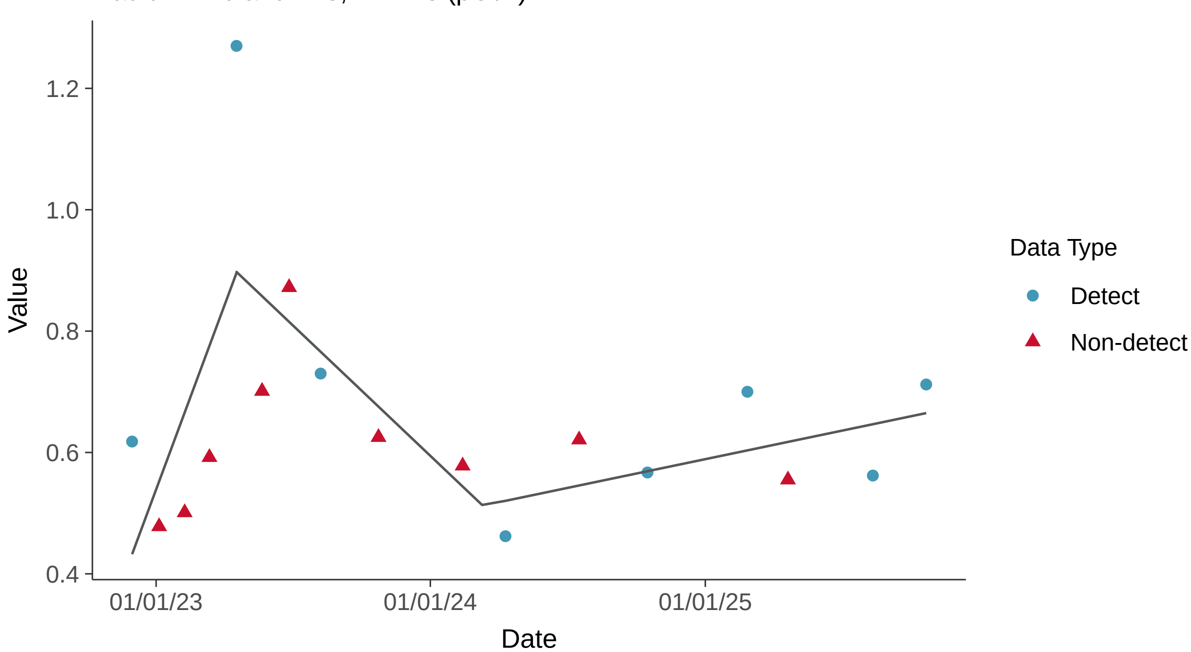
Trend Regression: Piecewise Linear-Linear

Radium 226 and 228, MW-18 (pCi/L)



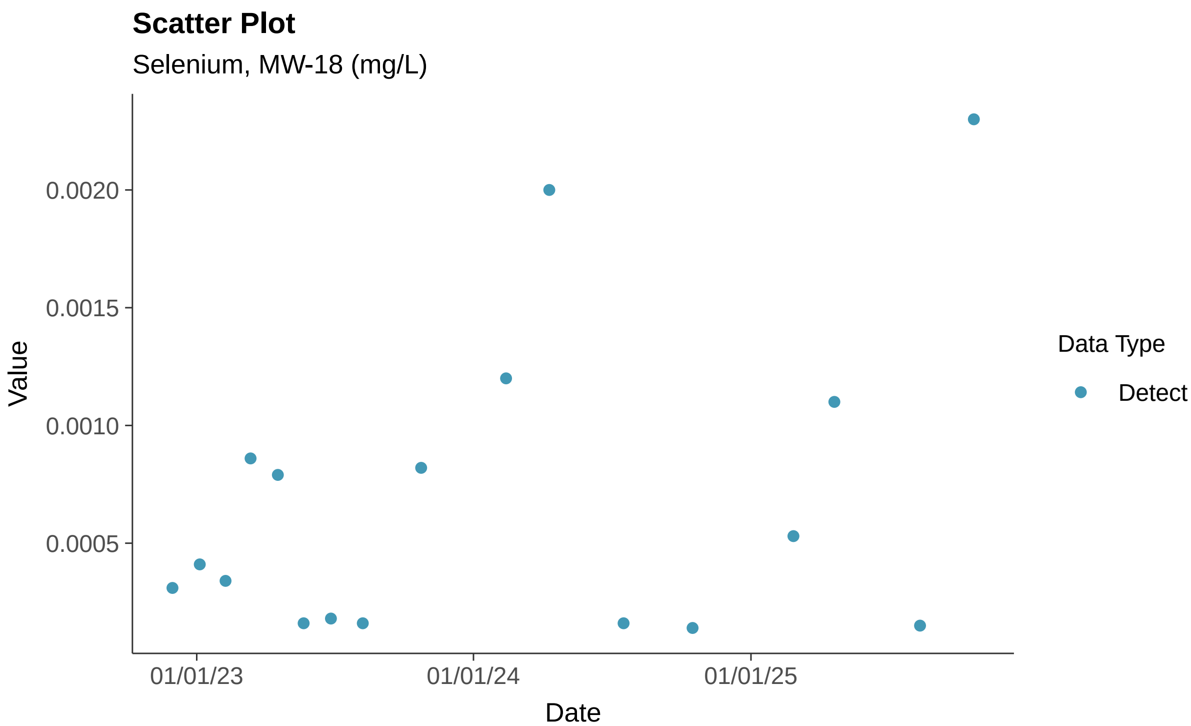
Trend Regression: Piecewise Linear-Linear-Linear

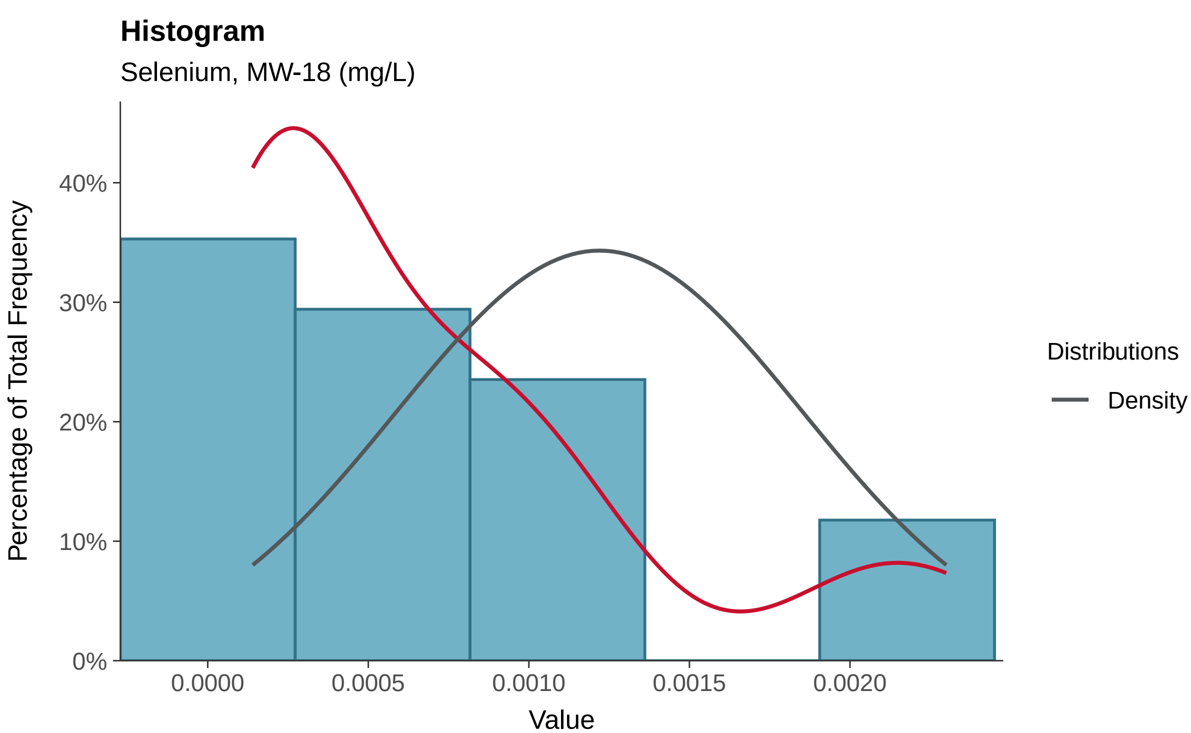
Radium 226 and 228, MW-18 (pCi/L)

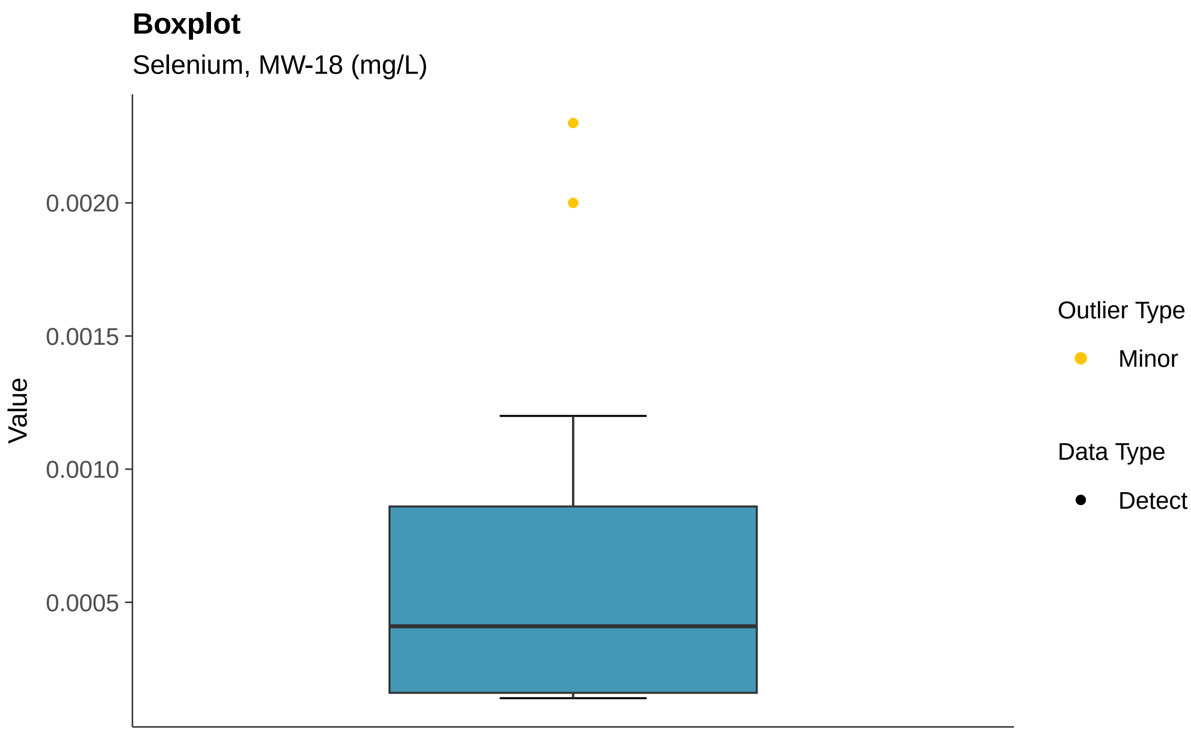


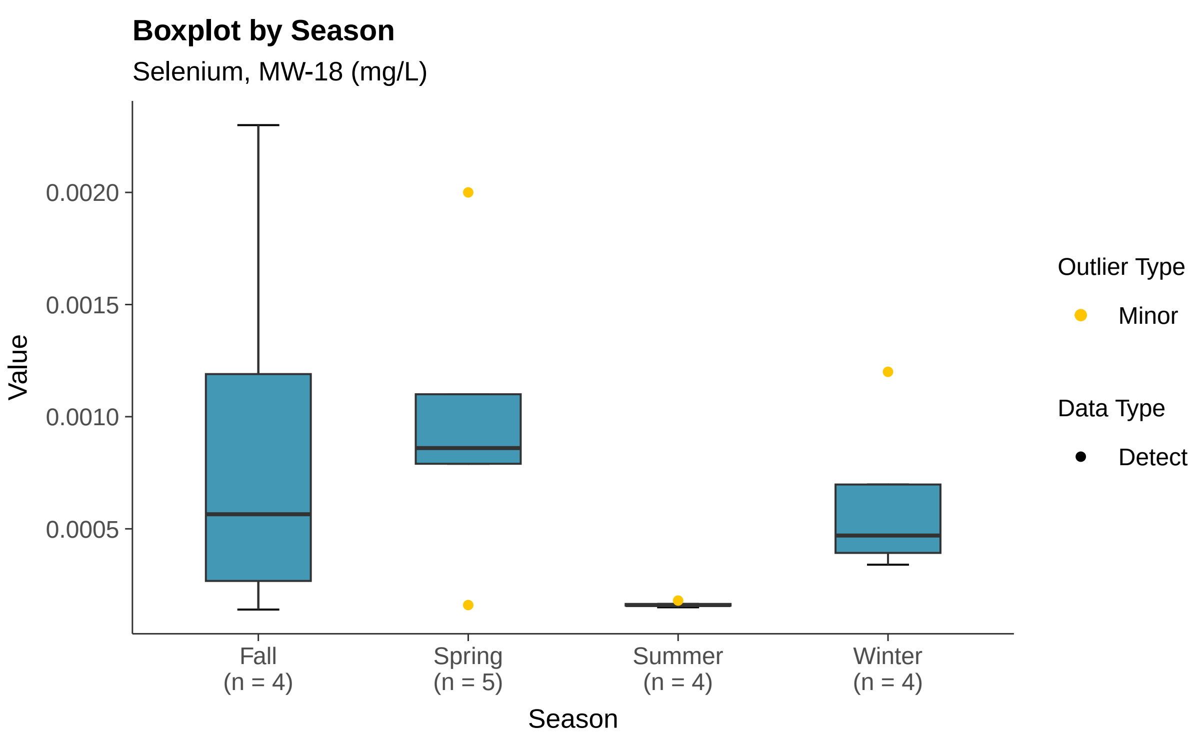
Appendix IV: Selenium, MW-18

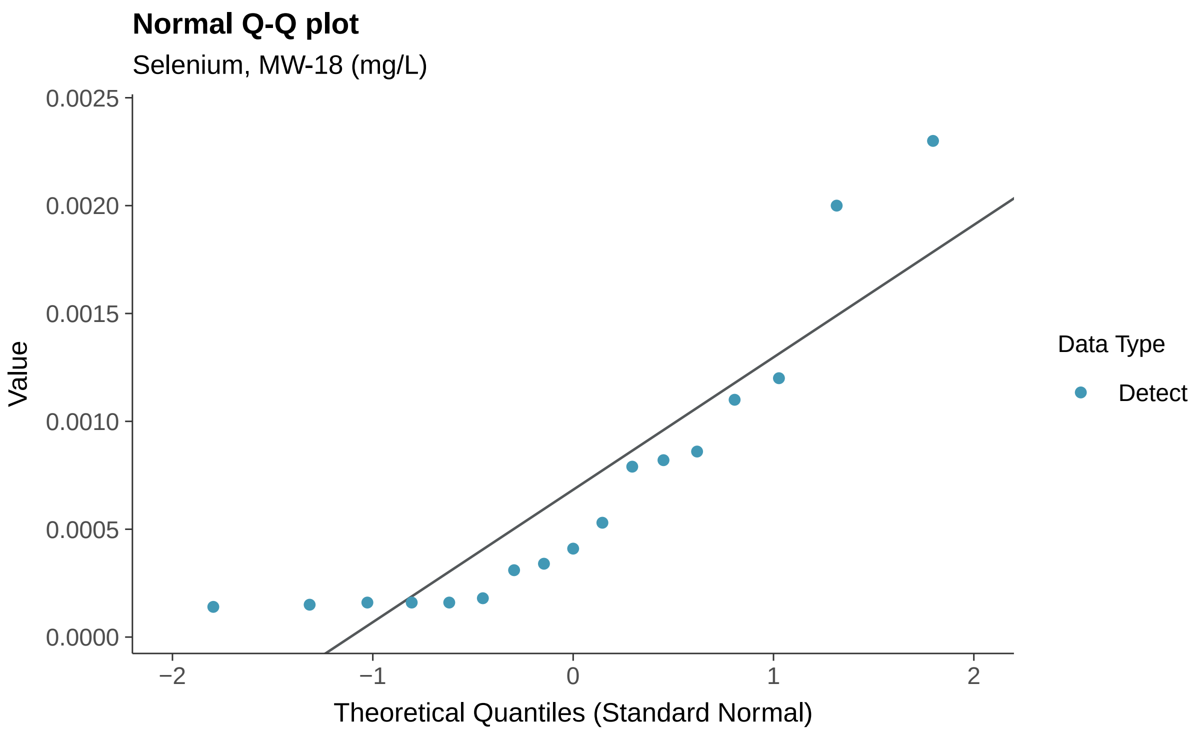
ID: 28_1_4_122

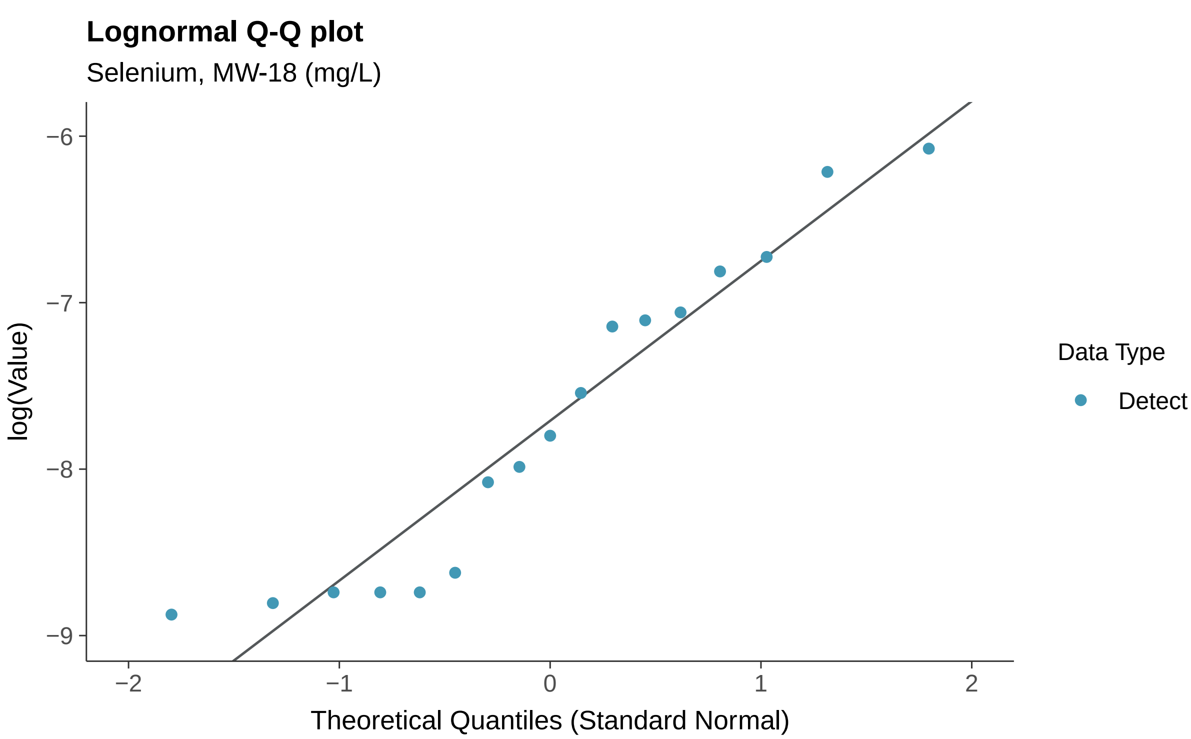


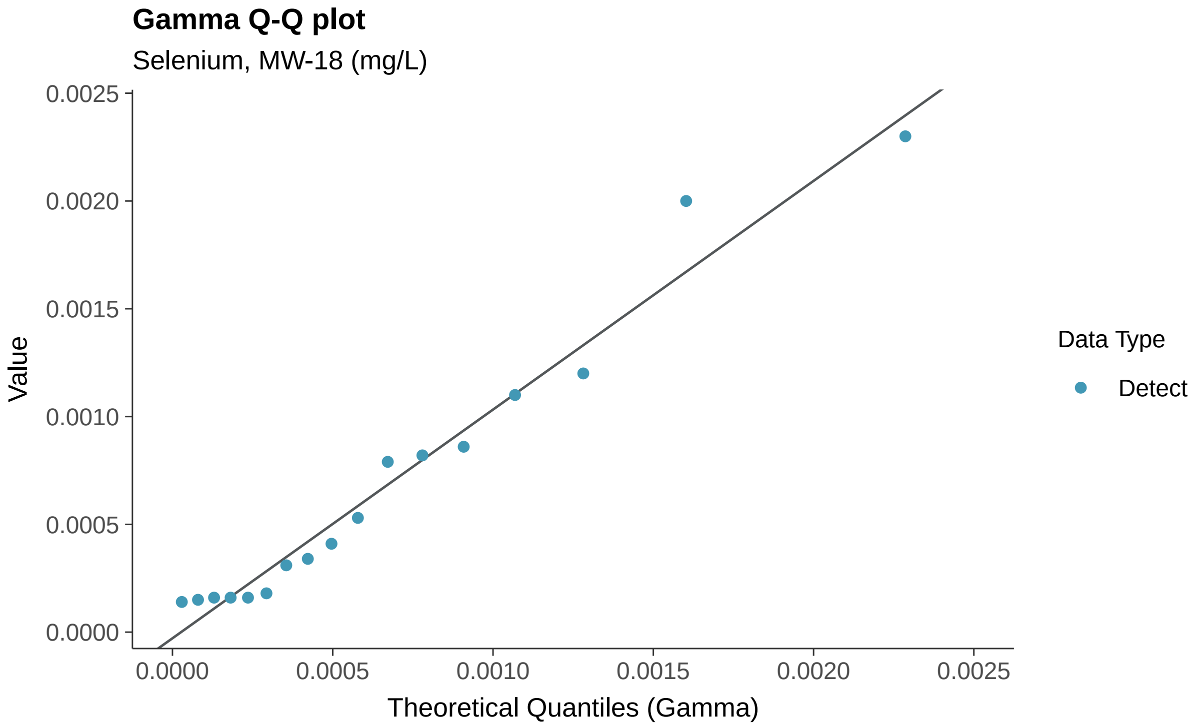


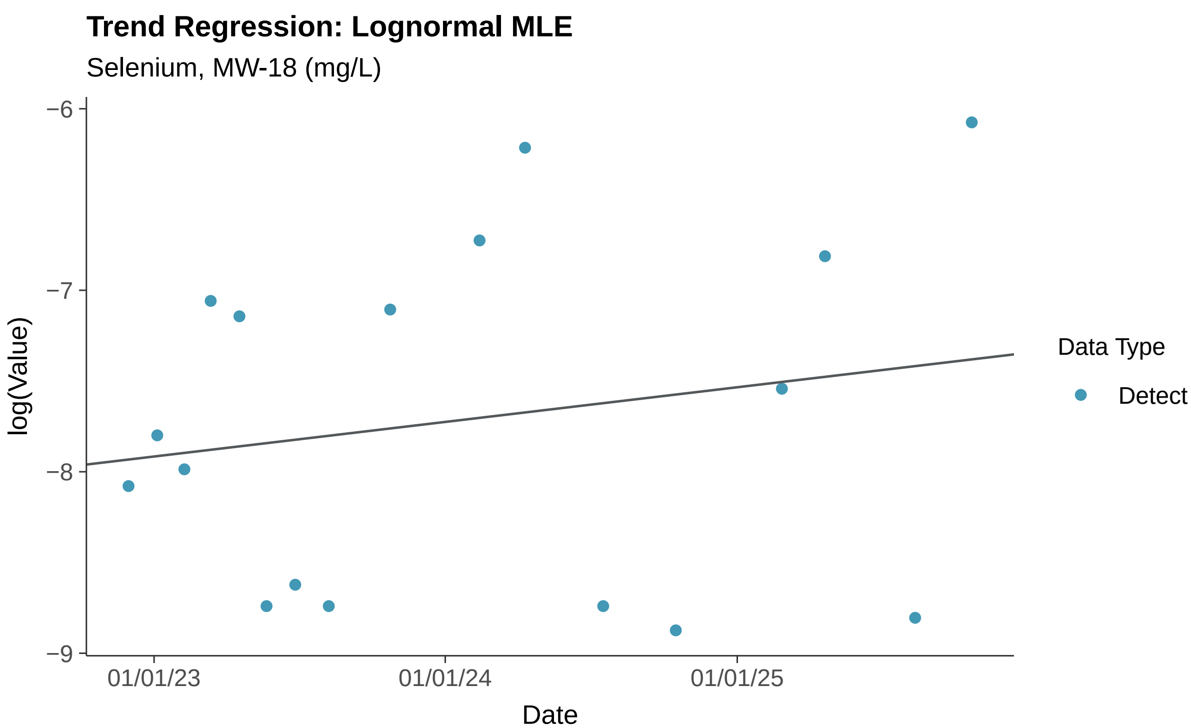

Boxplot
Selenium, MW-18 (mg/L)
Value
0.0020
0.0015
0.0010
0.0005
Outlier Type
Minor
Data Type
Detect


Boxplot by Season
Selenium, MW-18 (mg/L)
Value
0.0020
0.0015
0.0010
0.0005
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Minor
Data Type
Detect


Normal Q-Q plot
Selenium, MW-18 (mg/L)
Value
0.0025
0.0020
0.0015
0.0010
0.0005
0.0000
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

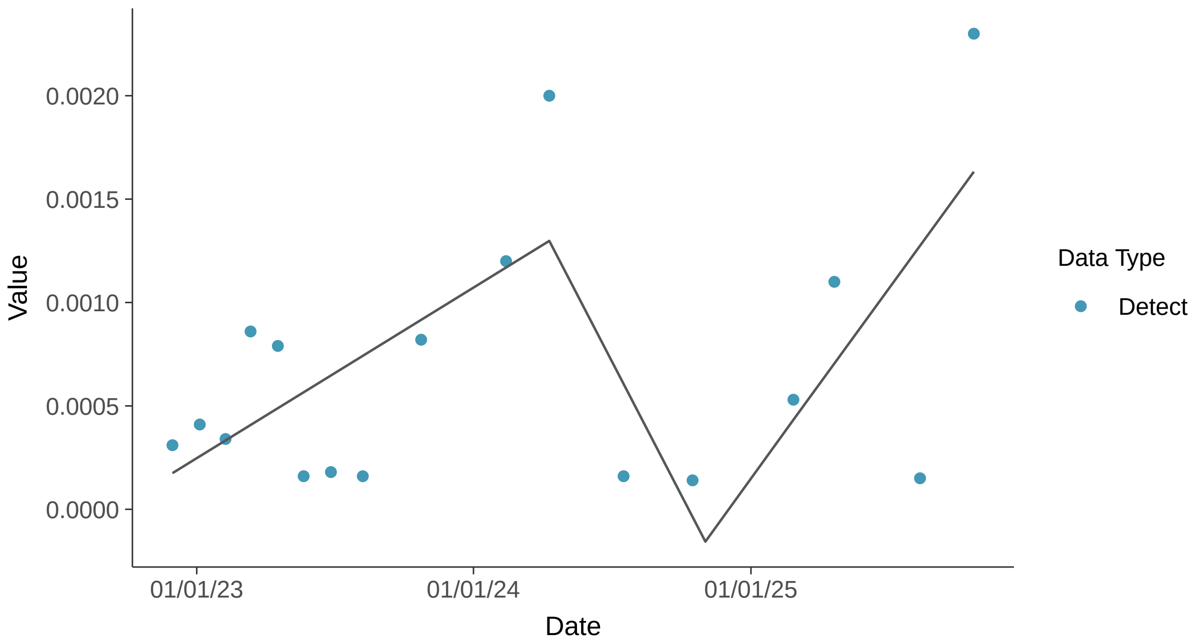

Lognormal Q-Q plot
Selenium, MW-18 (mg/L)
log(Value)
−6
−7
−8
−9
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Selenium, MW-18 (mg/L)
Value
0.0025
0.0020
0.0015
0.0010
0.0005
0.0000
0.0000
0.0005
0.0010
0.0015
0.0020
0.0025
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Selenium, MW-18 (mg/L)
log(Value)
−6
−7
−8
−9
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

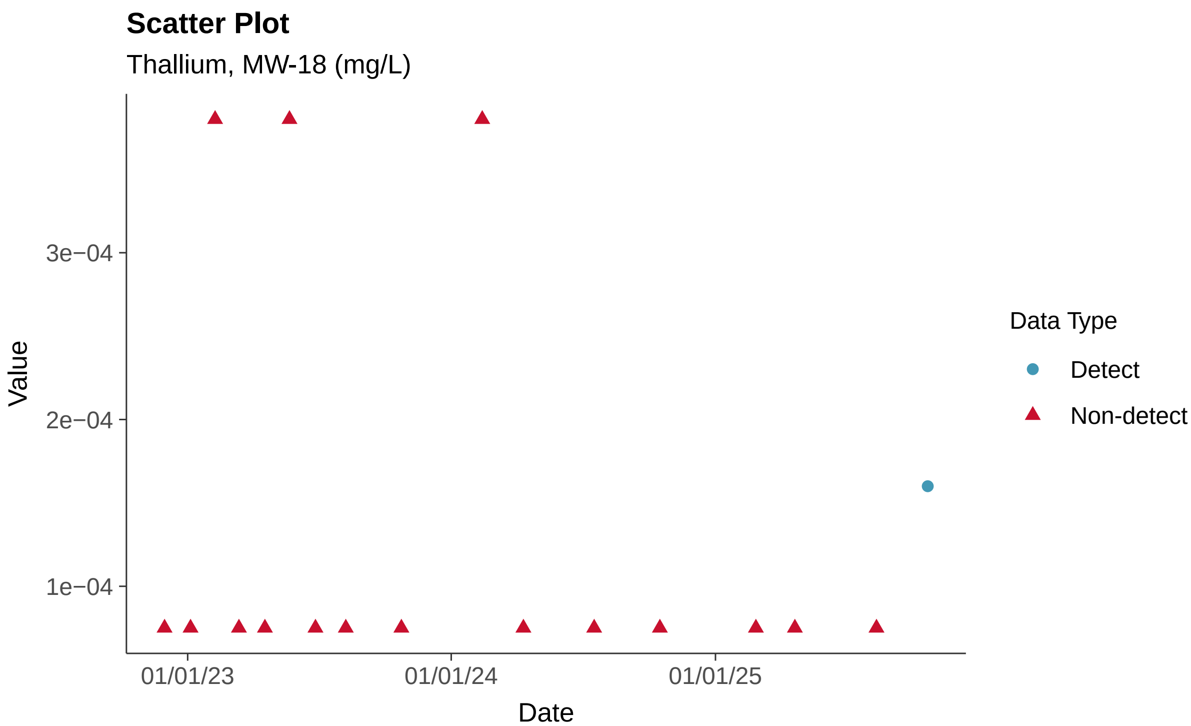
Trend Regression: Piecewise Linear-Linear-Linear

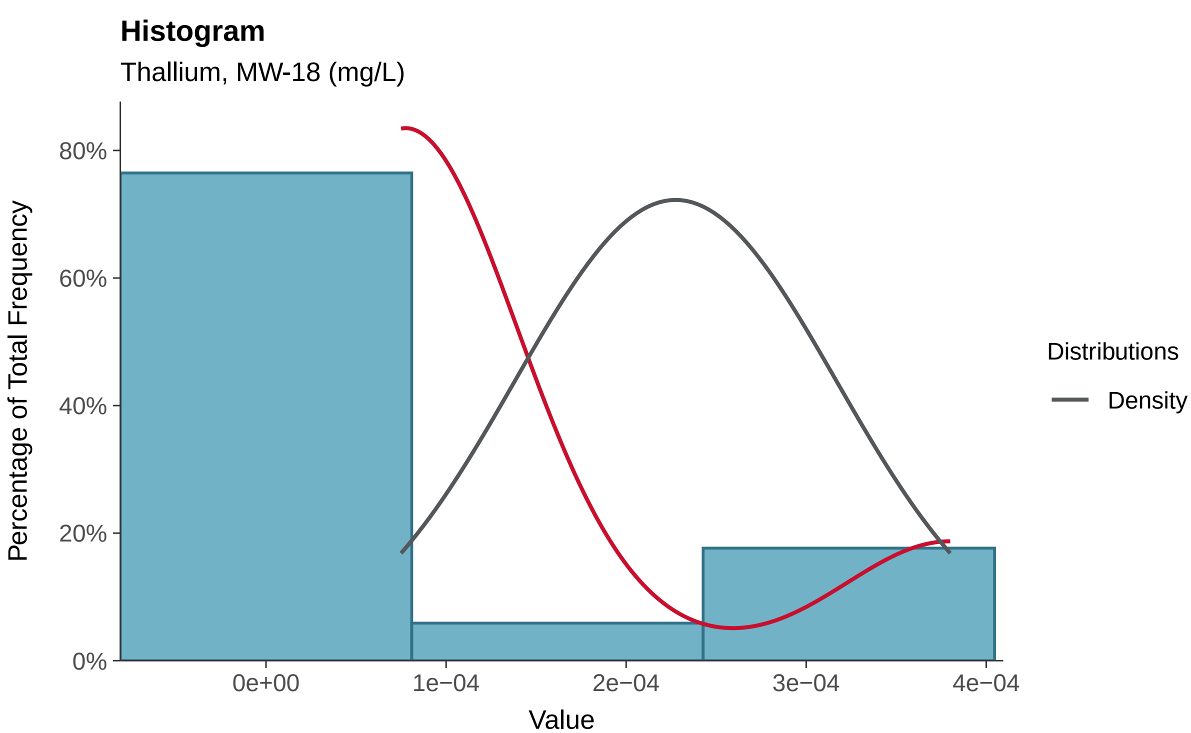
Selenium, MW-18 (mg/L)

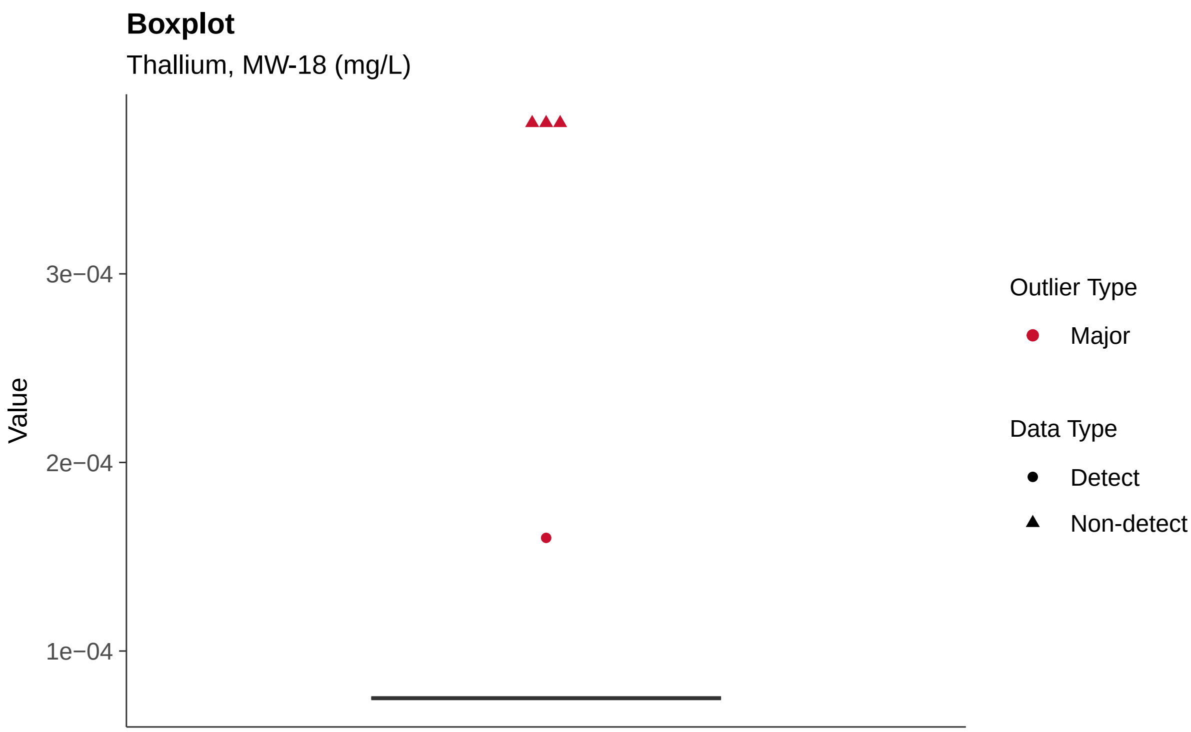


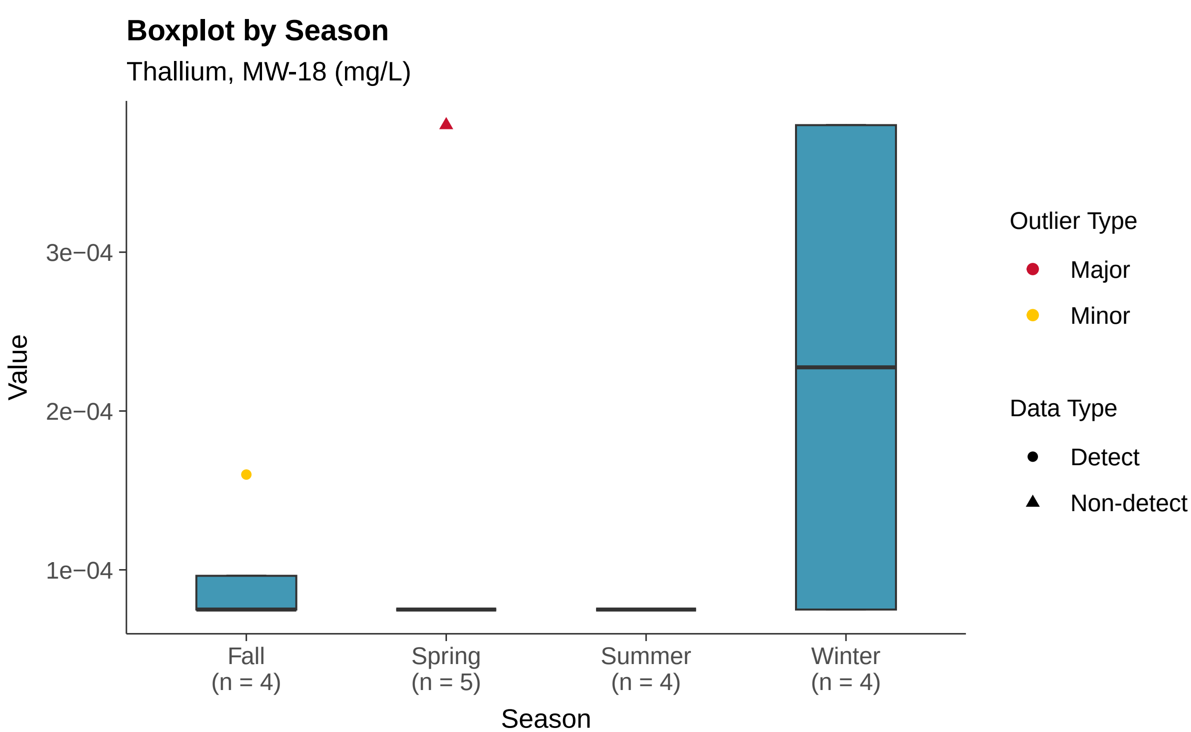
Appendix IV: Thallium, MW-18

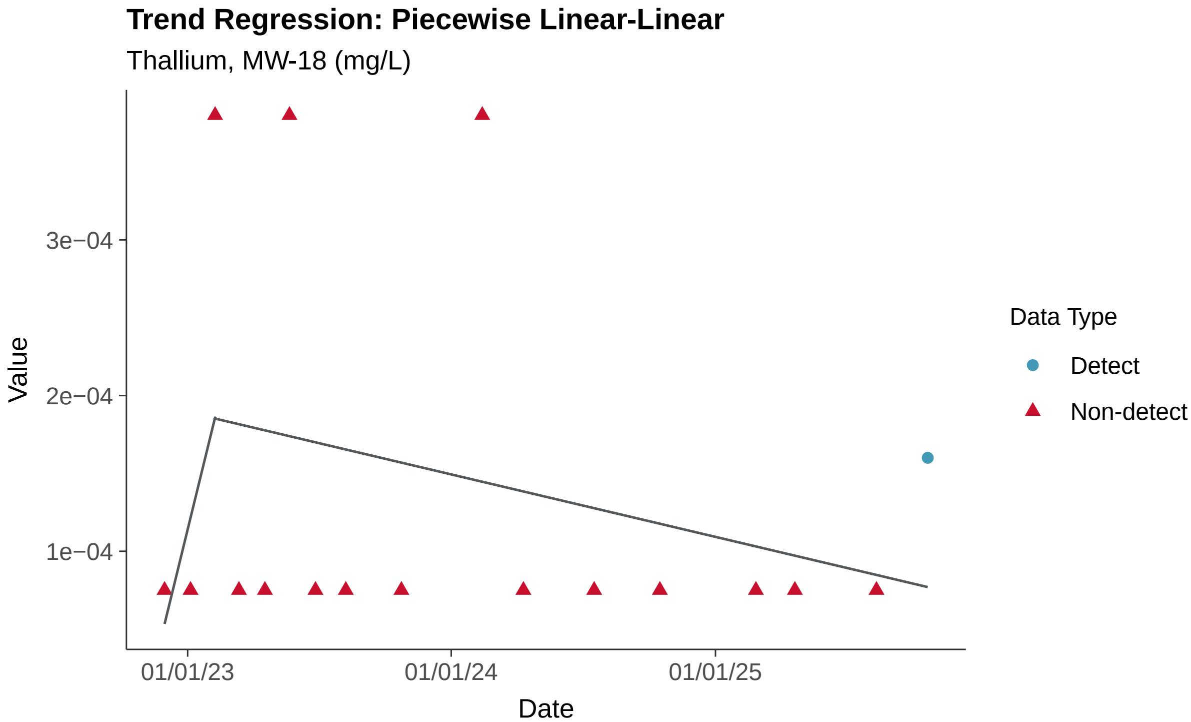
ID: 28_1_4_125

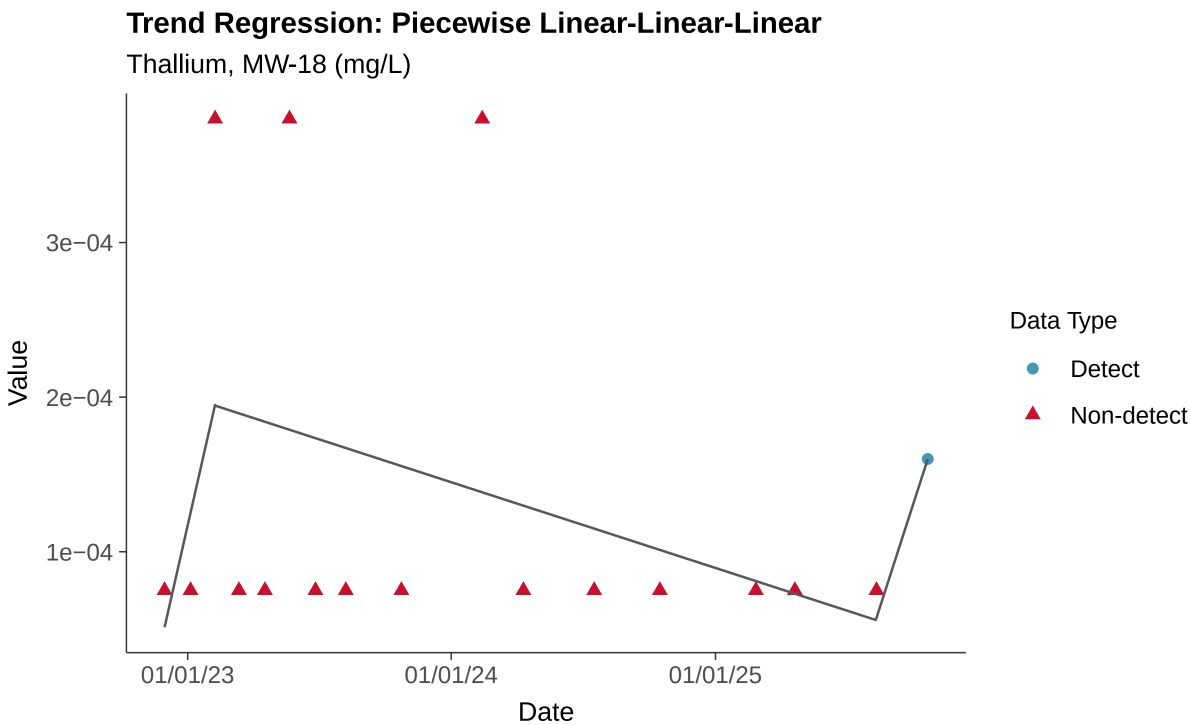





Boxplot
Thallium, MW-18 (mg/L)
Value
3e−04
2e−04
1e−04
Outlier Type
Major
Data Type
Detect
Non-detect

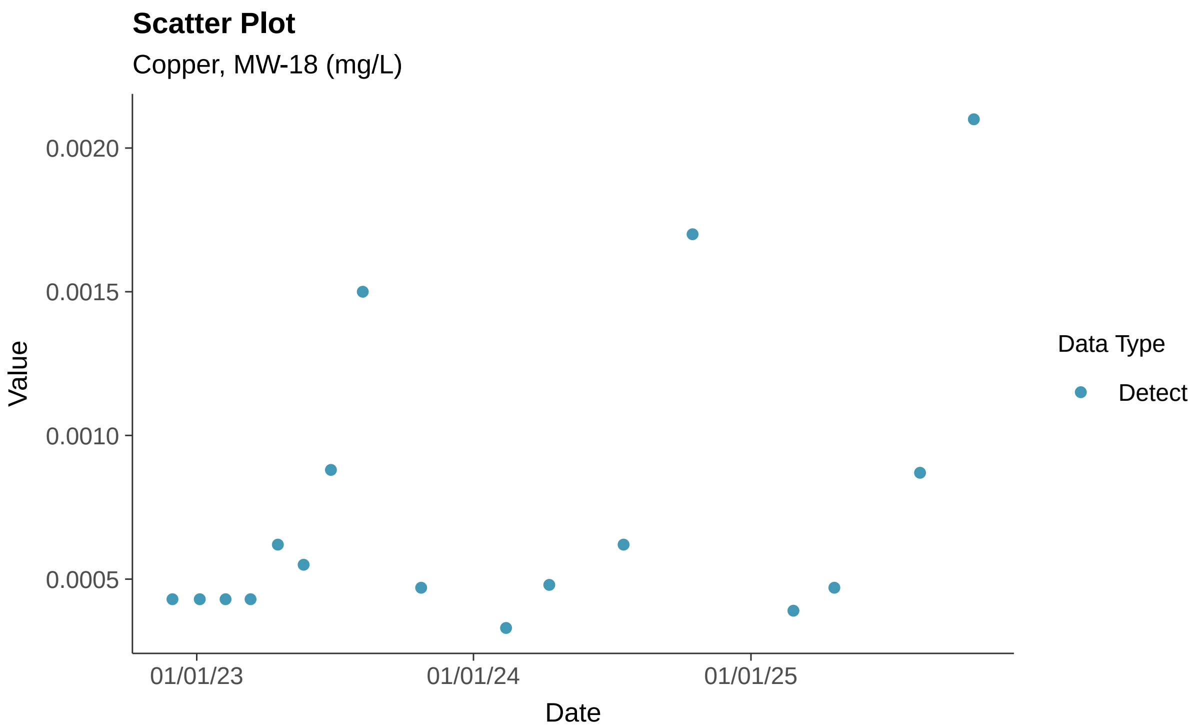

Boxplot by Season
Thallium, MW-18 (mg/L)
Value
3e−04
2e−04
1e−04
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Major
Minor
Data Type
Detect
Non-detect

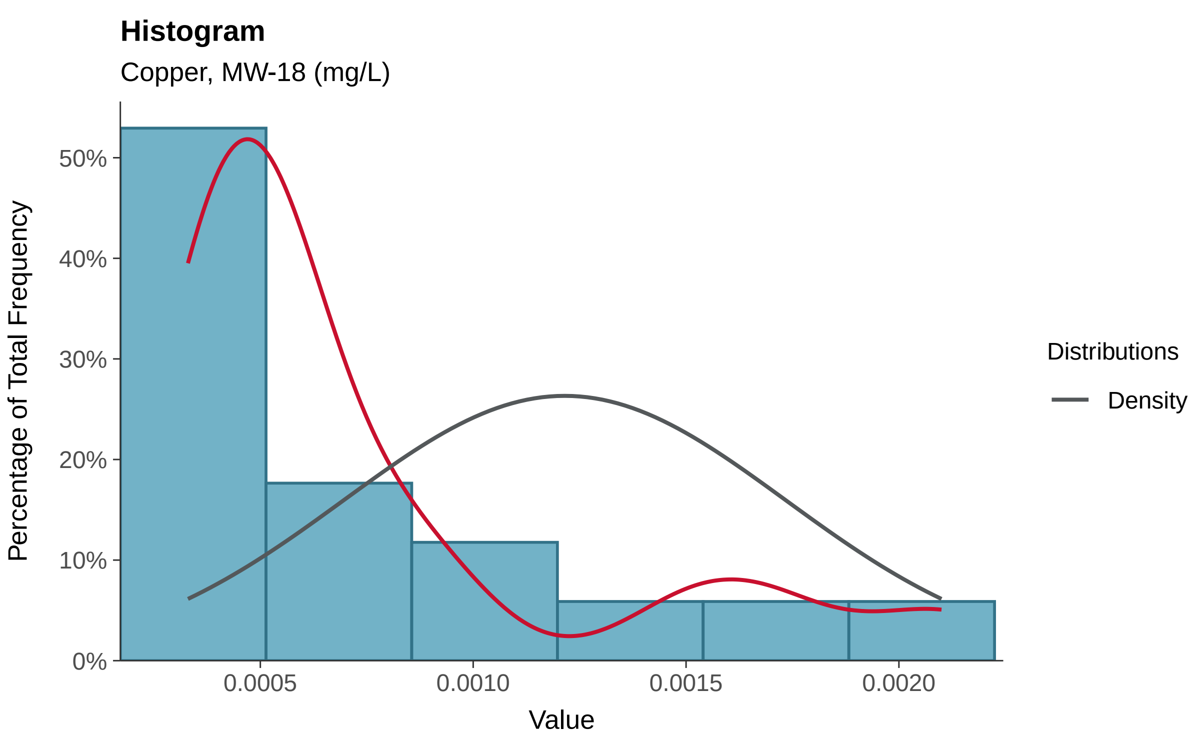

Trend Regression: Piecewise Linear-Linear
Thallium, MW-18 (mg/L)
Value
3e−04
2e−04
1e−04
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear-Linear
Thallium, MW-18 (mg/L)
Value
3e−04
2e−04
1e−04
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Part 115: Copper, MW-18

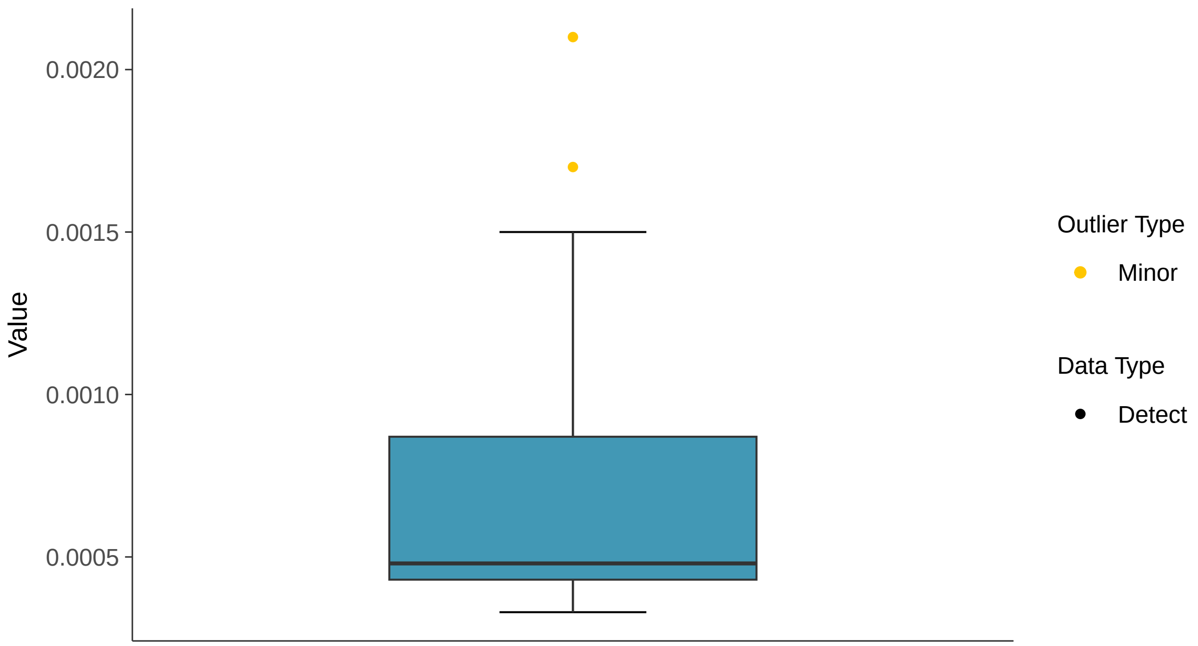
ID: 28_1_5_111





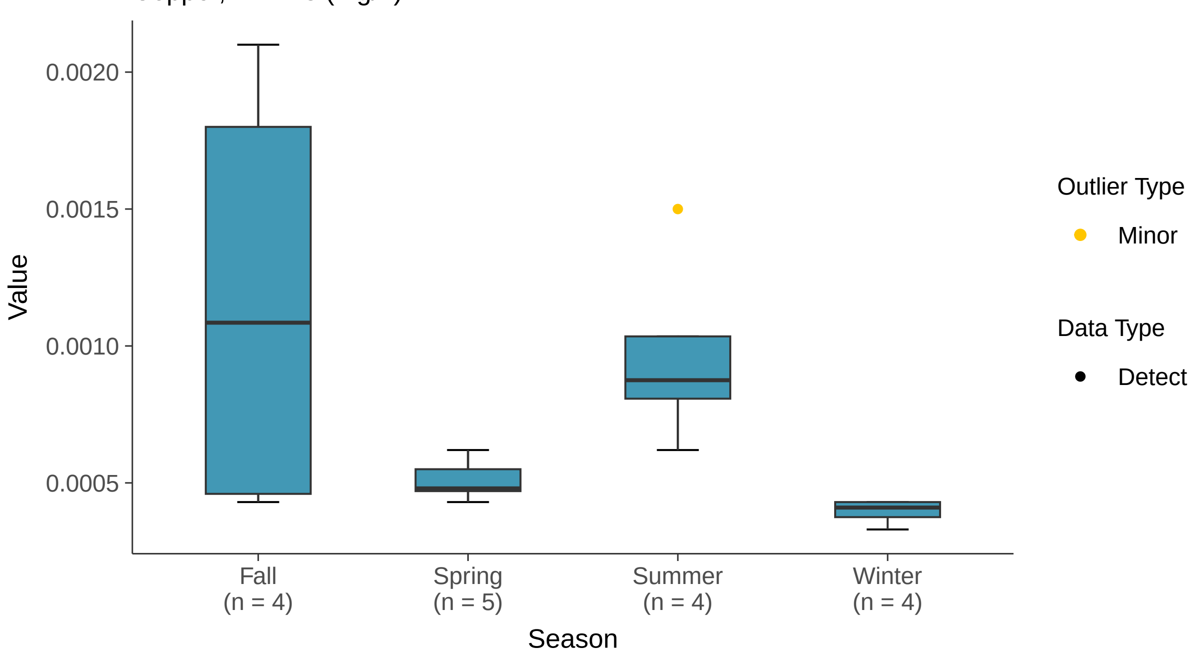
Boxplot

Copper, MW-18 (mg/L)



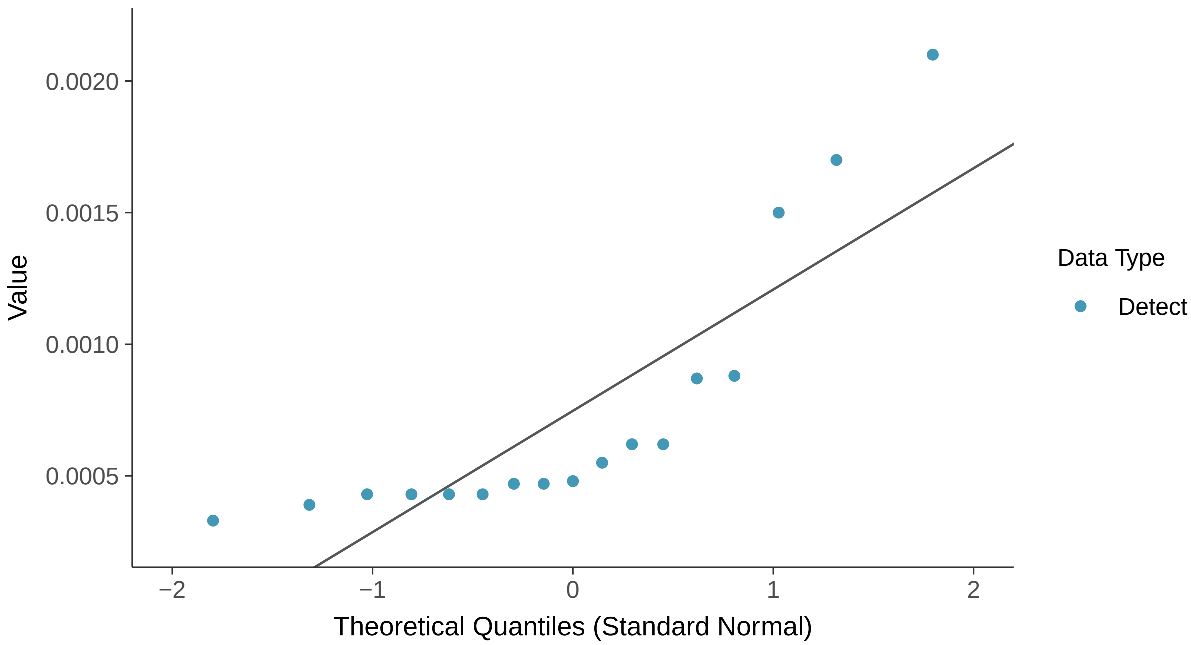
Boxplot by Season

Copper, MW-18 (mg/L)



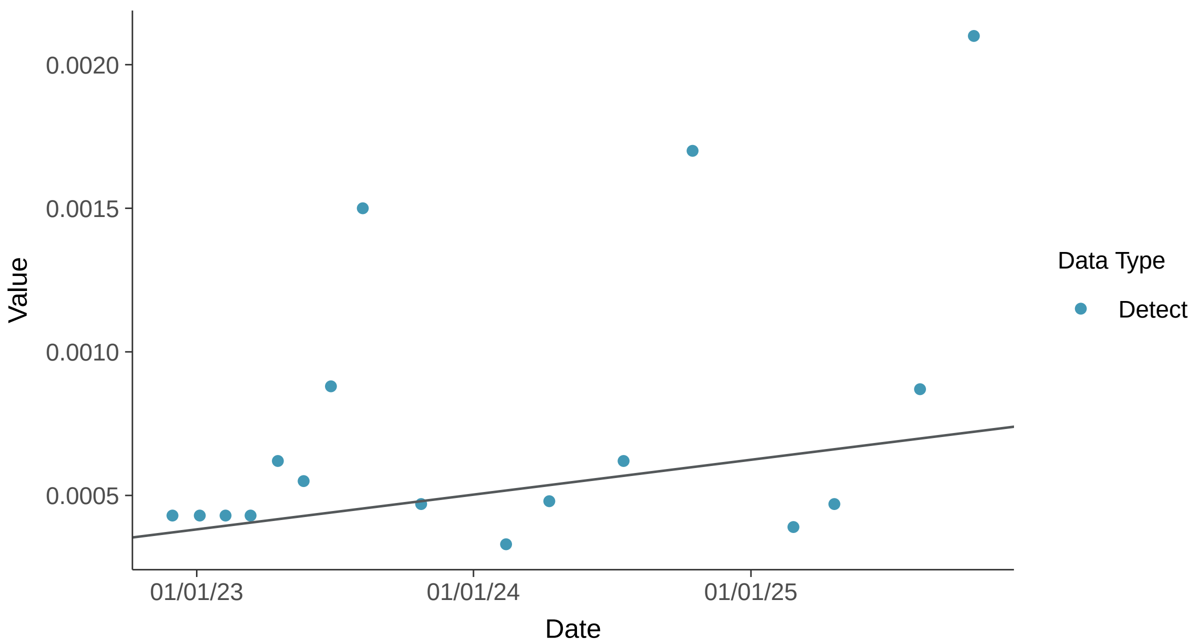
Normal Q-Q plot

Copper, MW-18 (mg/L)



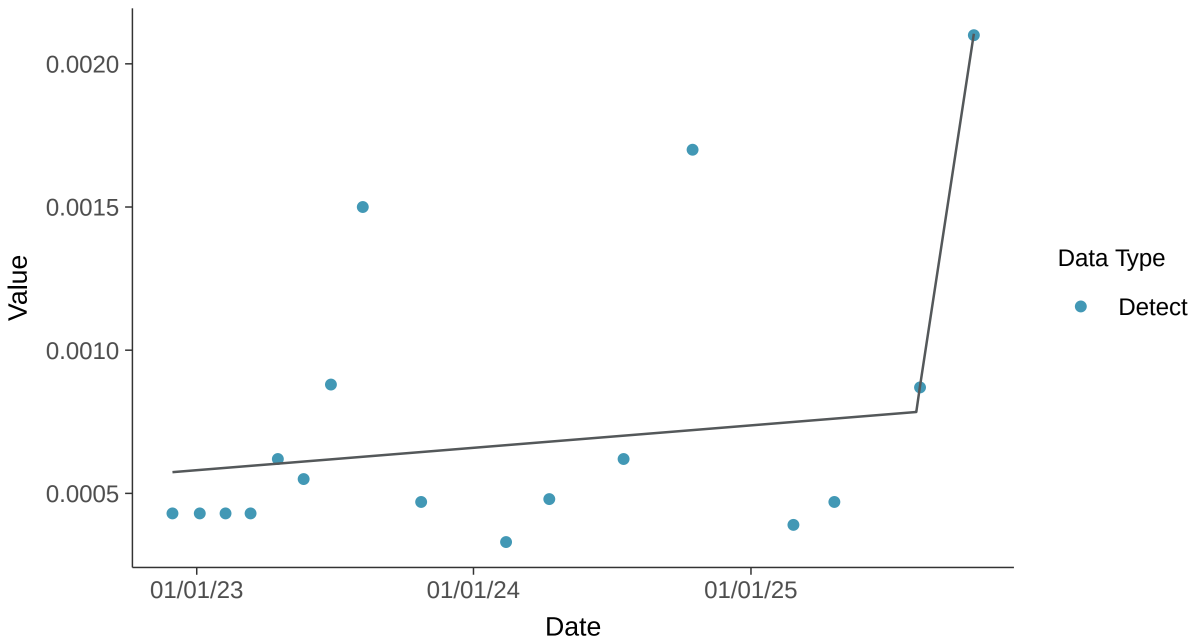
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Copper, MW-18 (mg/L)



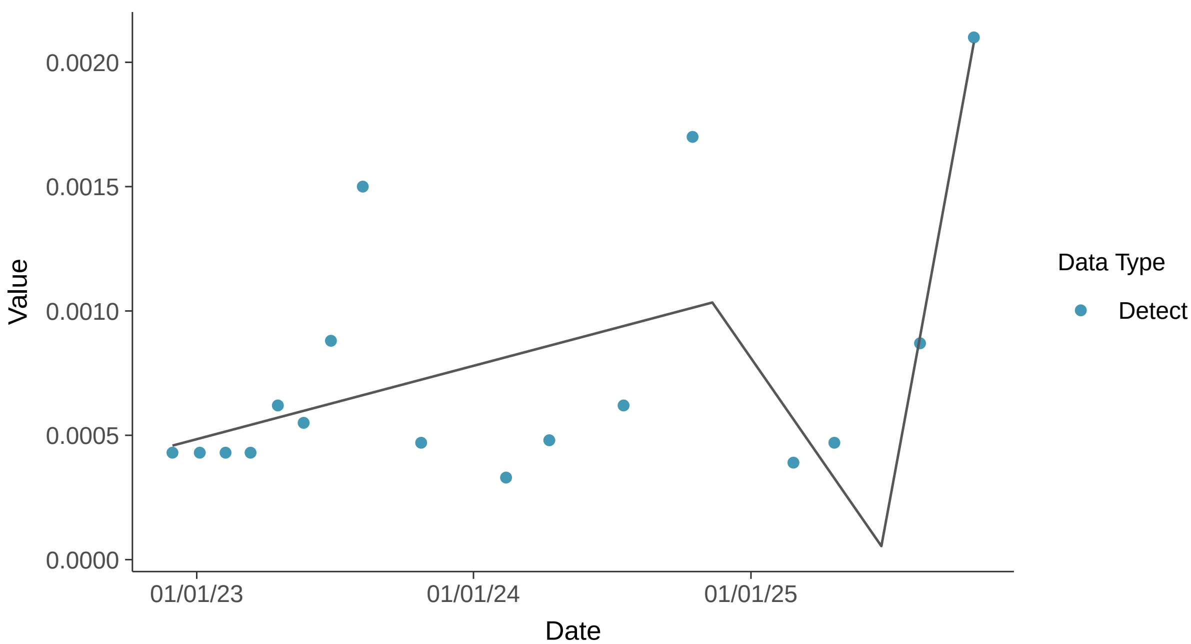
Trend Regression: Piecewise Linear-Linear

Copper, MW-18 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Copper, MW-18 (mg/L)

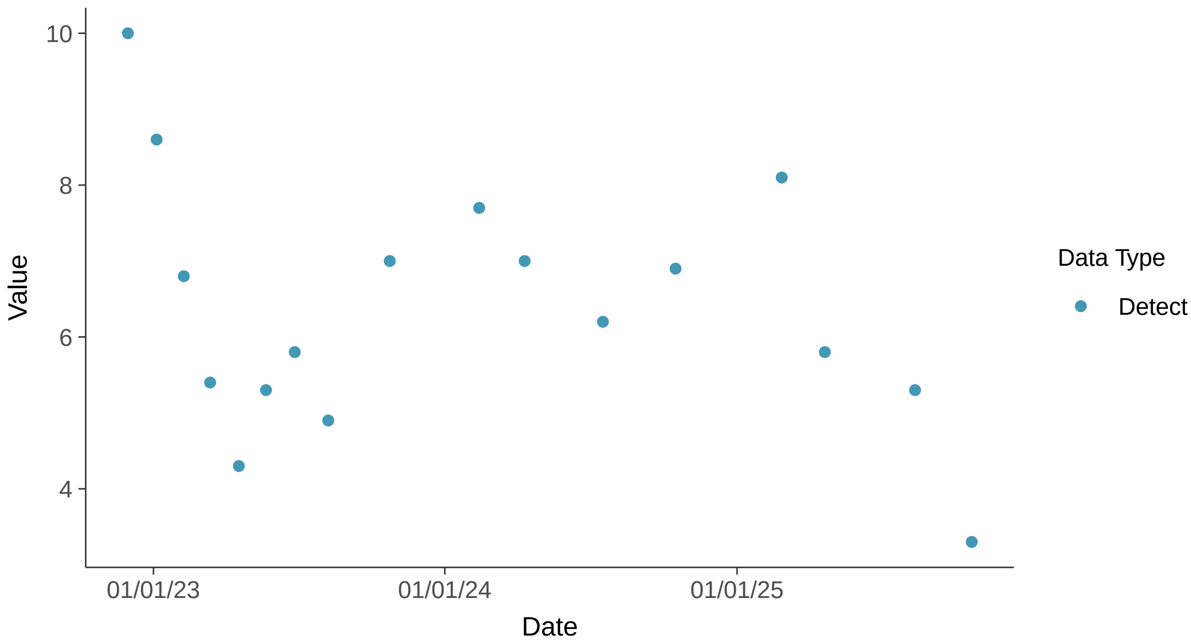


Part 115: Iron, MW-18

ID: 28_1_5_114

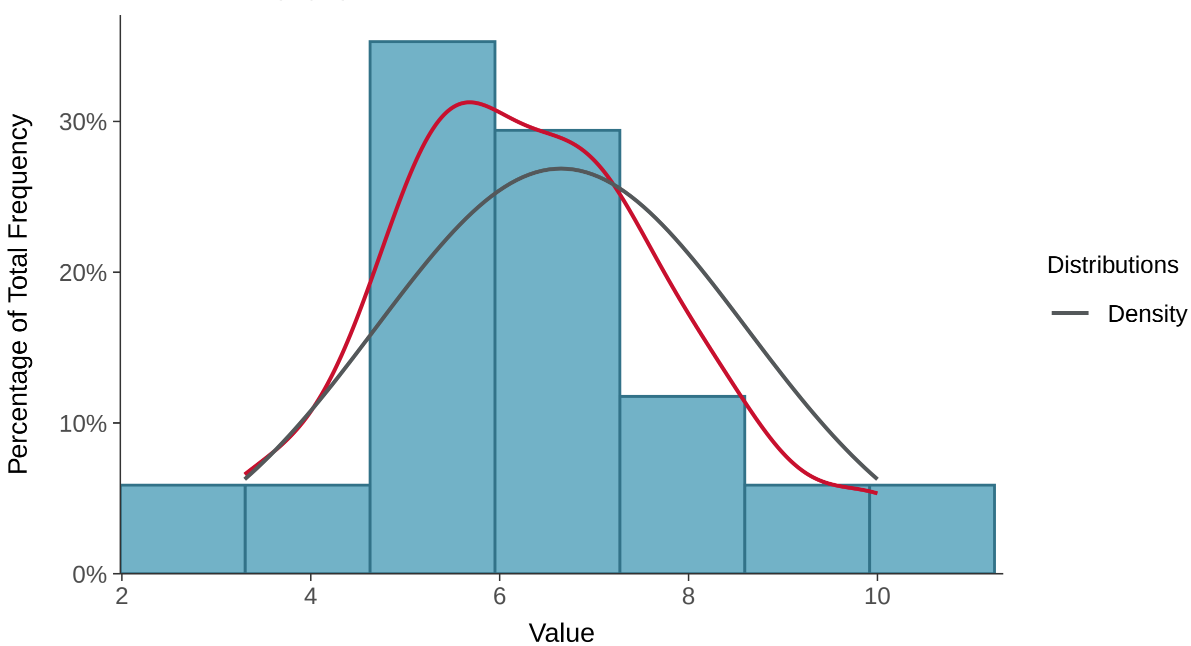
Scatter Plot

Iron, MW-18 (mg/L)



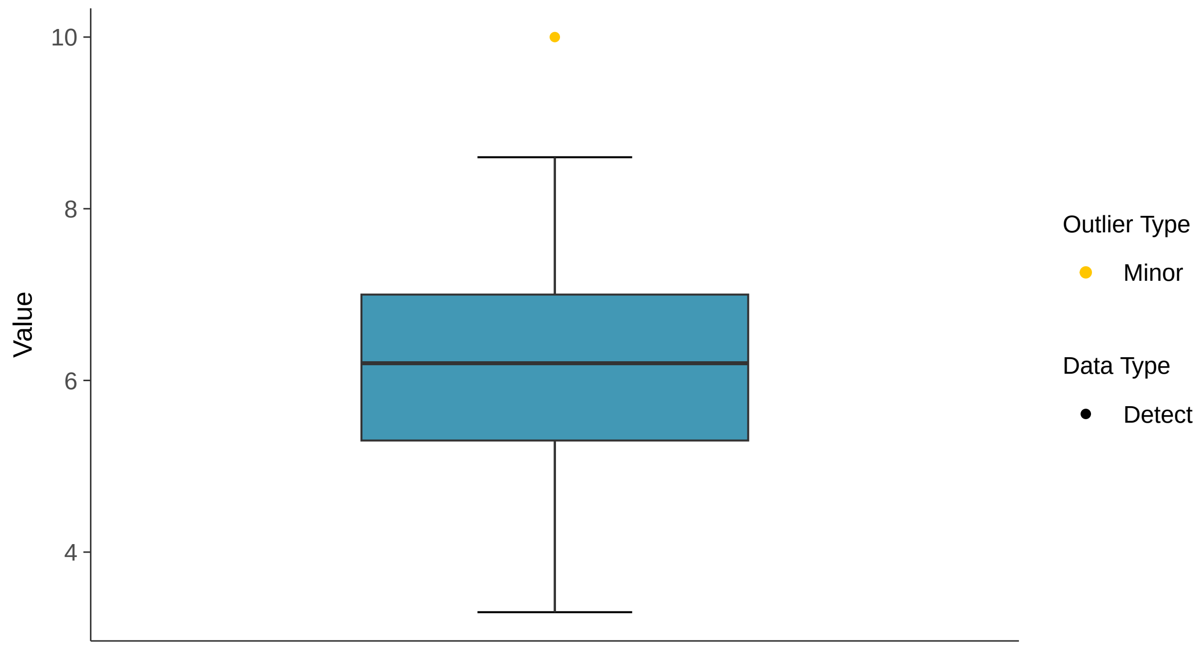
Histogram

Iron, MW-18 (mg/L)



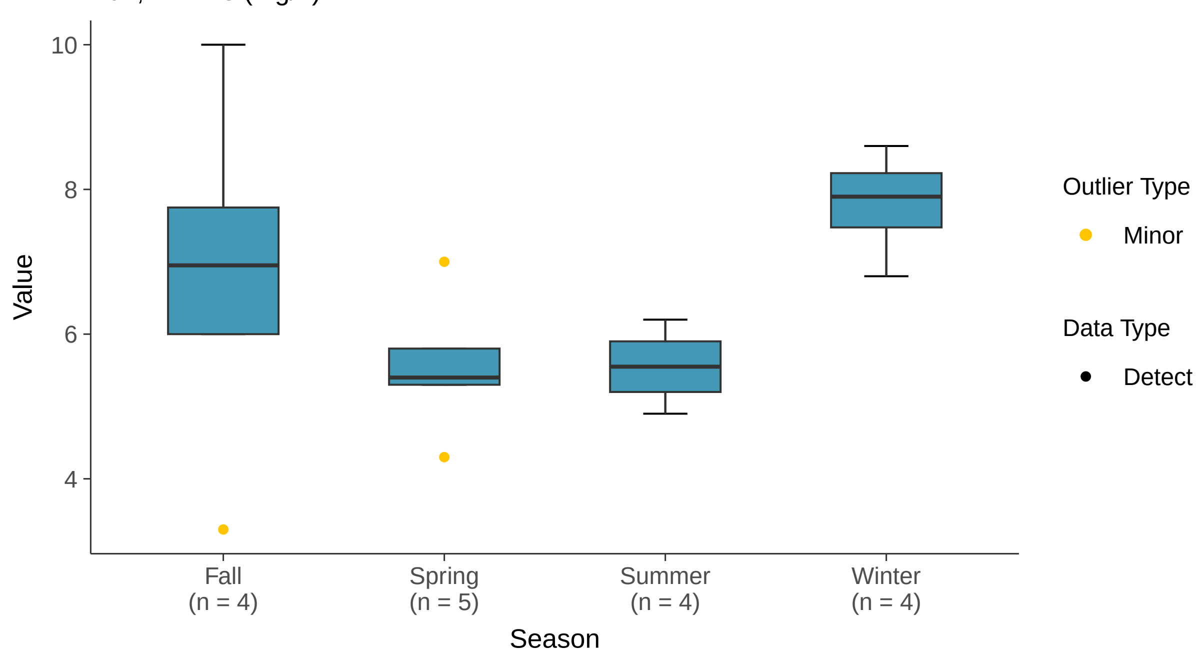
Boxplot

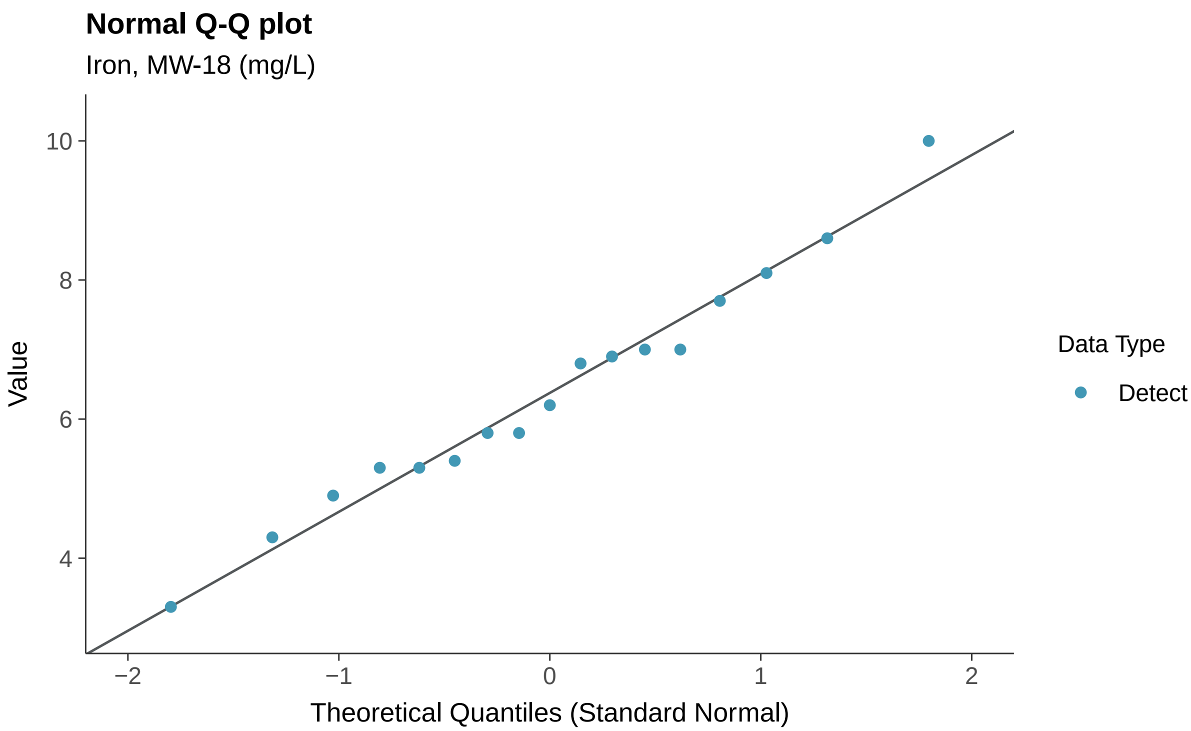
Iron, MW-18 (mg/L)

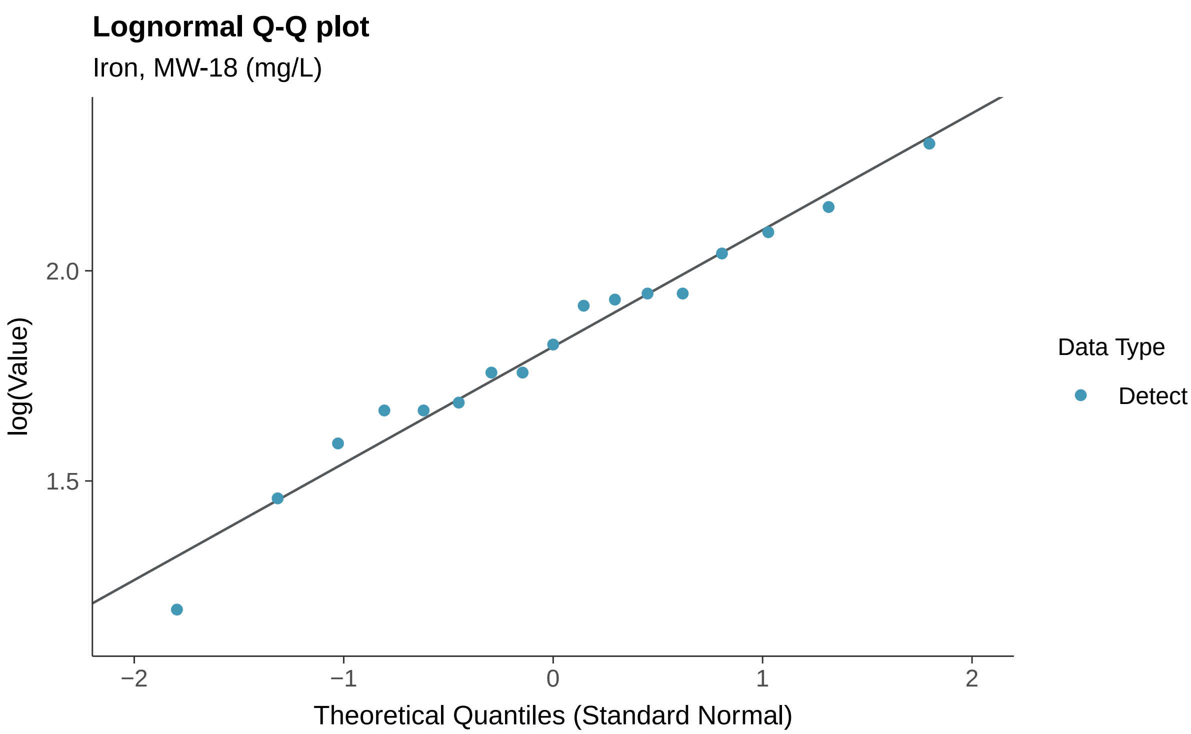


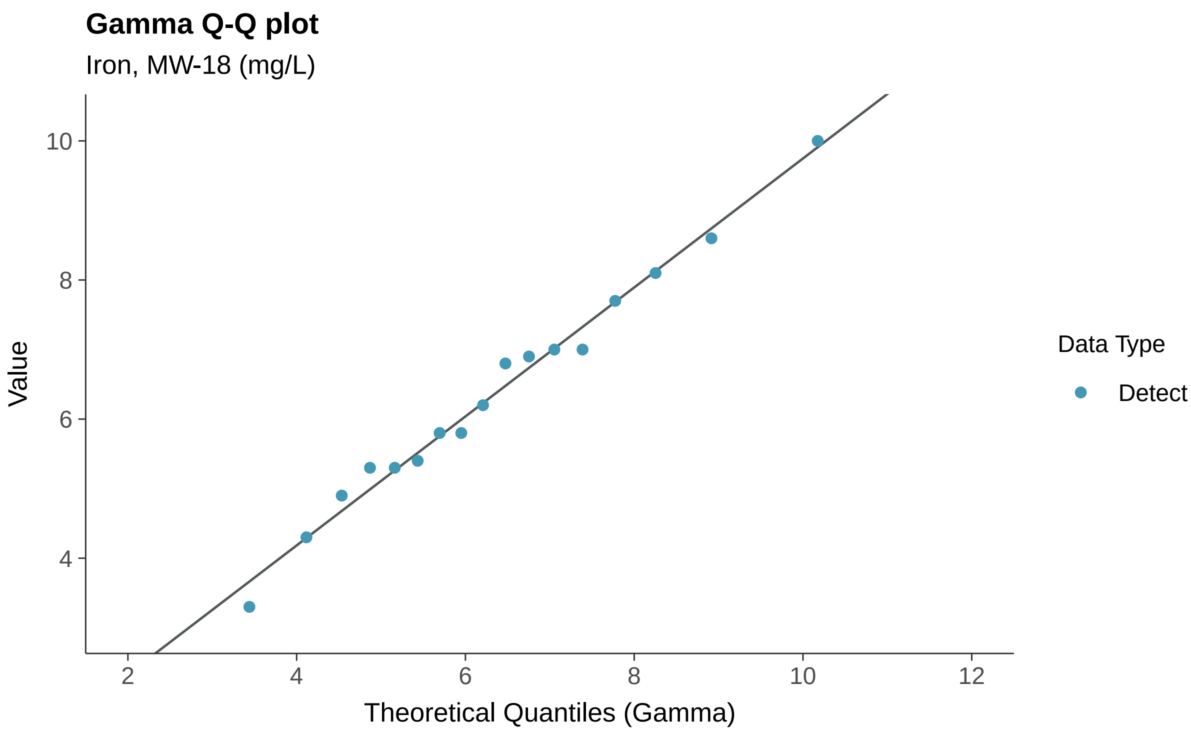
Boxplot by Season

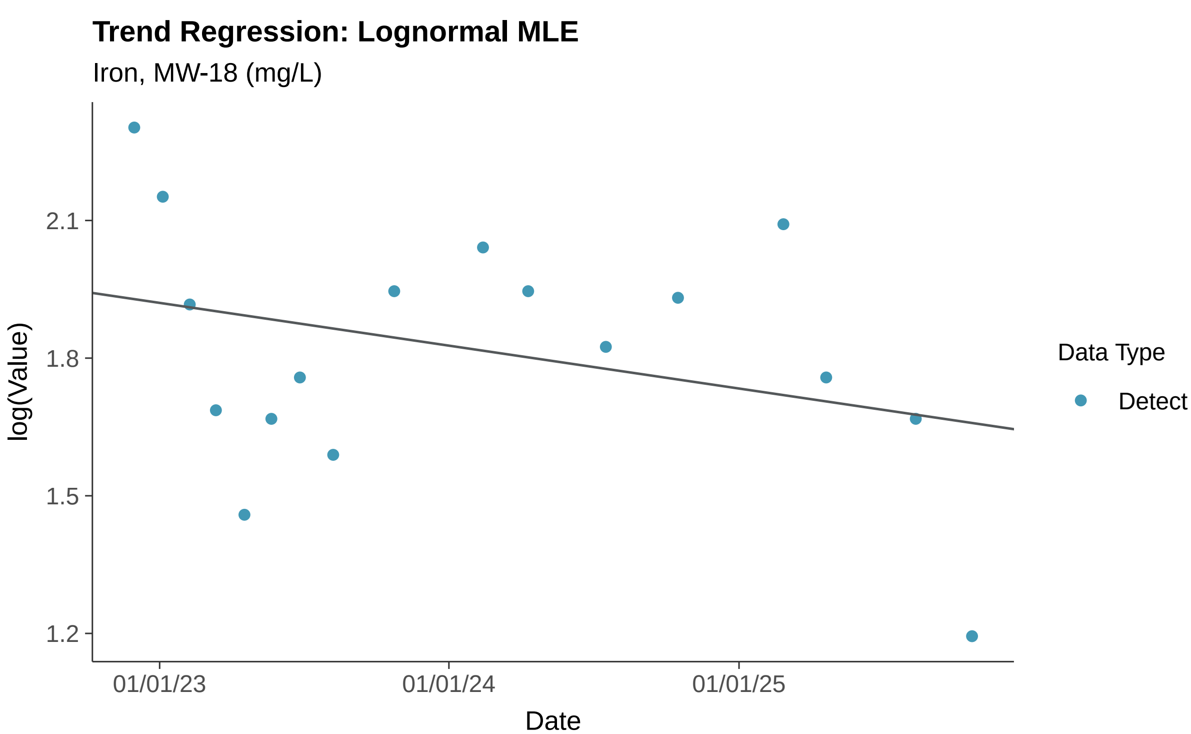
Iron, MW-18 (mg/L)

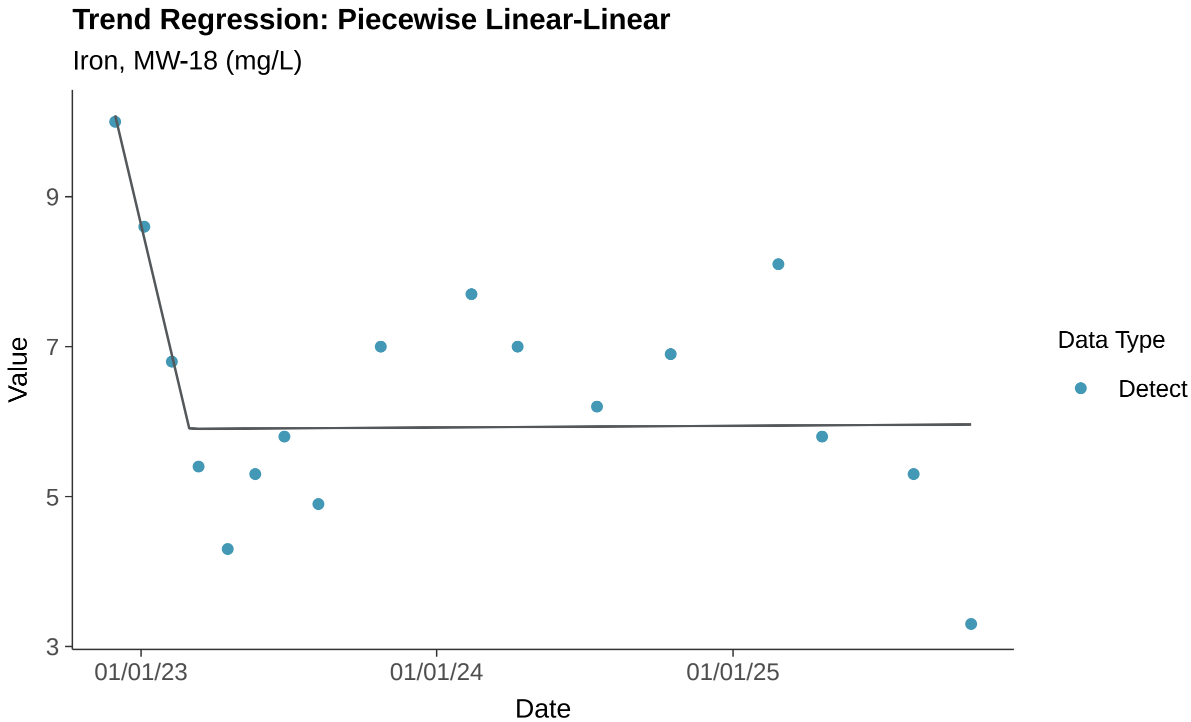


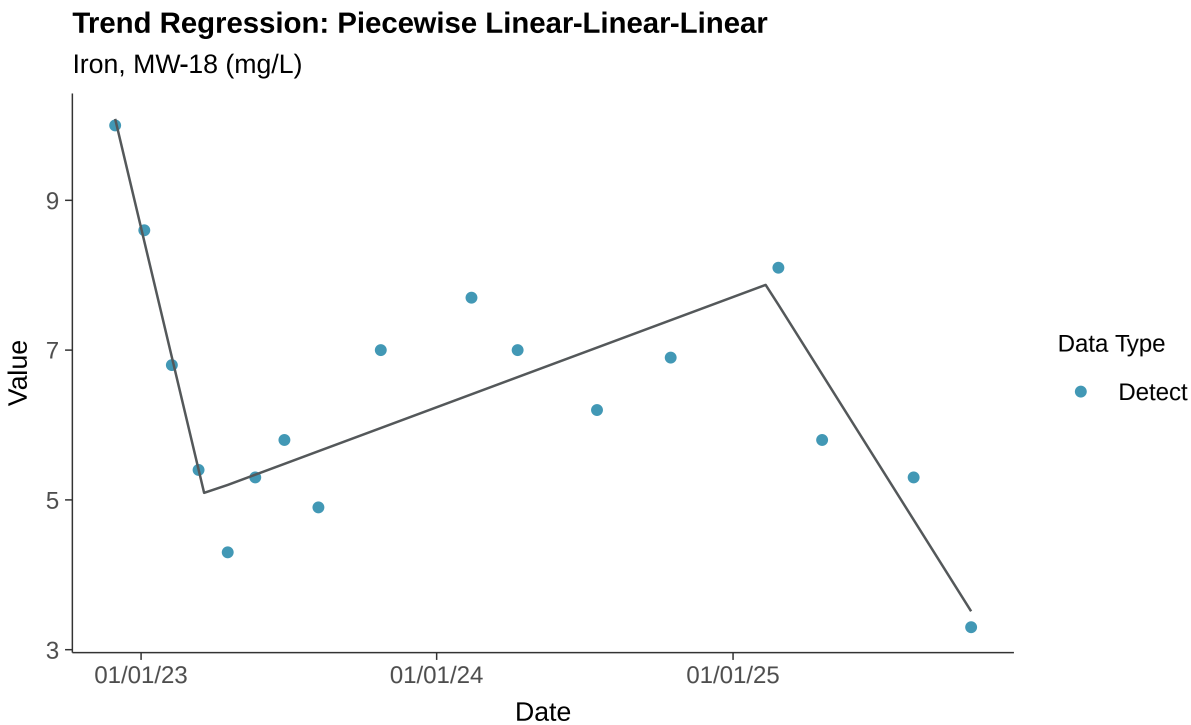

Normal Q-Q plot
Iron, MW-18 (mg/L)
Value
10
8
6
4
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Iron, MW-18 (mg/L)
log(Value)
2.0
1.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Iron, MW-18 (mg/L)
Value
10
8
6
4
2
4
6
8
10
12
Theoretical Quantiles (Gamma)
Data Type
Detect

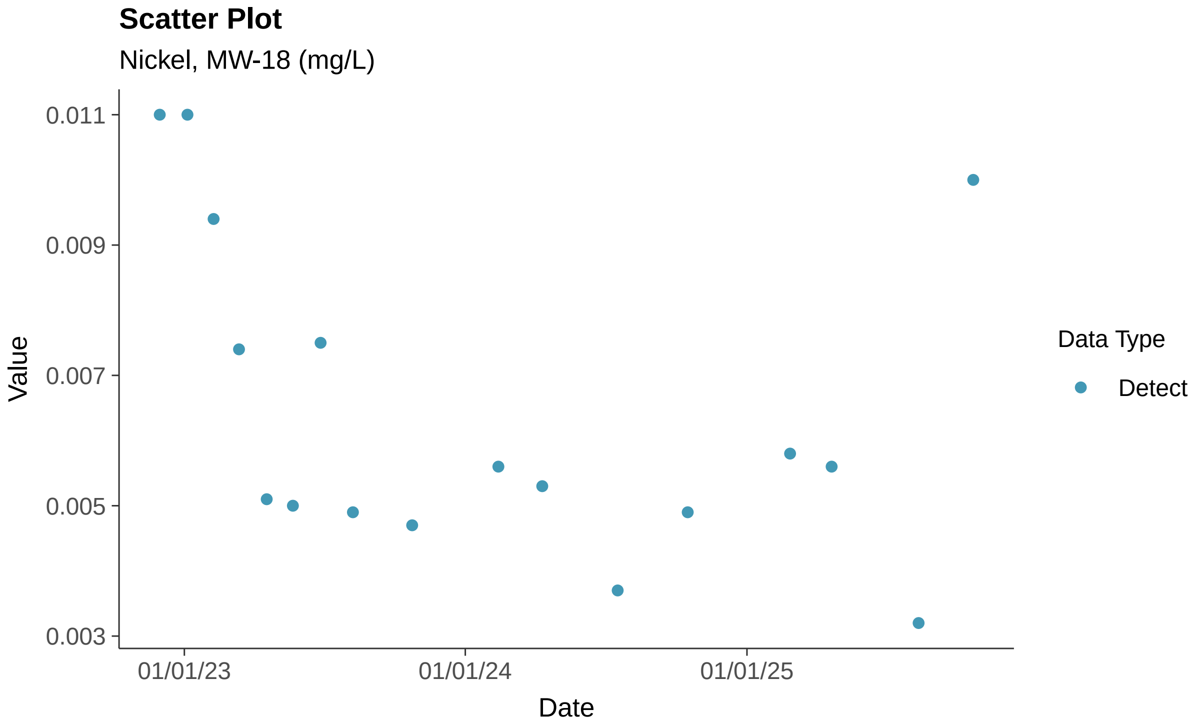

Trend Regression: Lognormal MLE
Iron, MW-18 (mg/L)
log(Value)
2.1
1.8
1.5
1.2
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

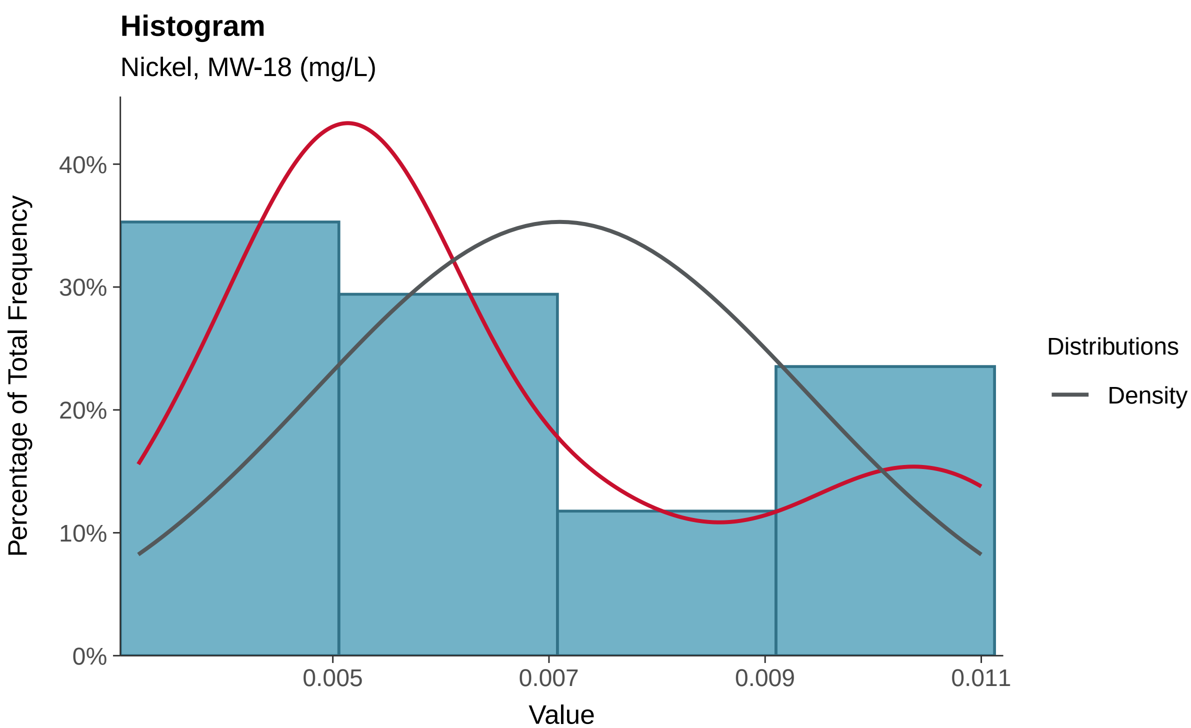

Trend Regression: Piecewise Linear-Linear
Iron, MW-18 (mg/L)
Value
9
7
5
3
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

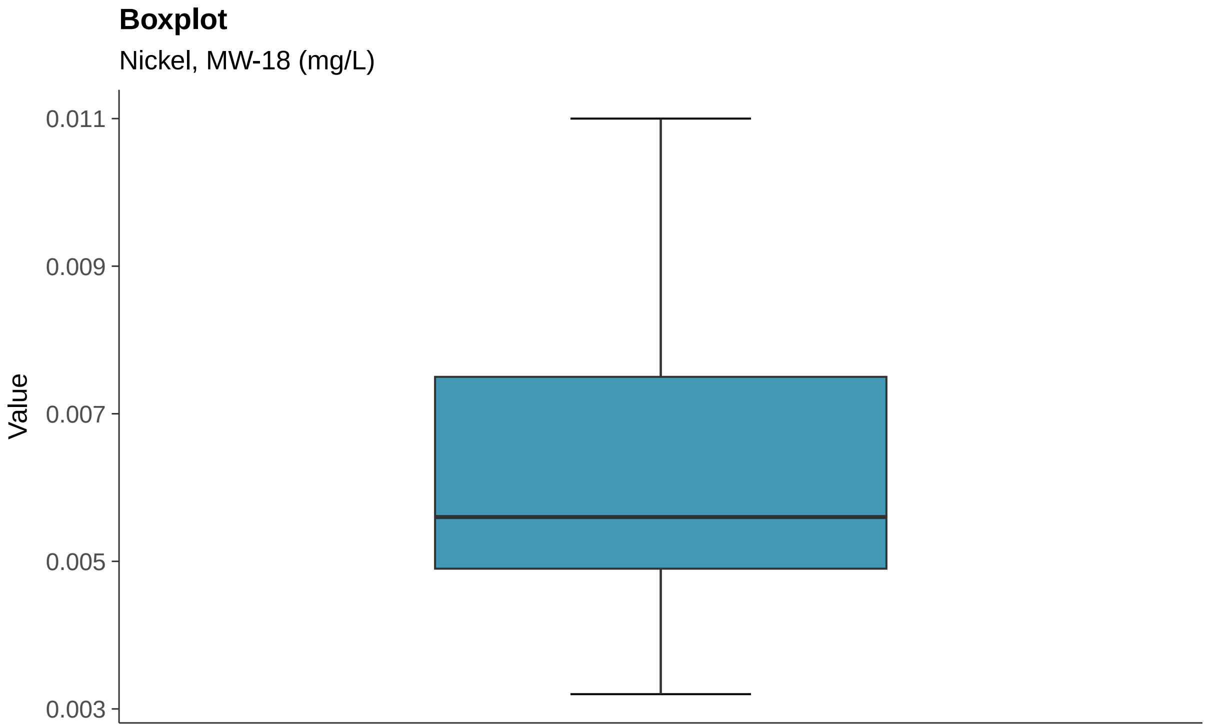

Trend Regression: Piecewise Linear-Linear-Linear
Iron, MW-18 (mg/L)
Value
9
7
5
3
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

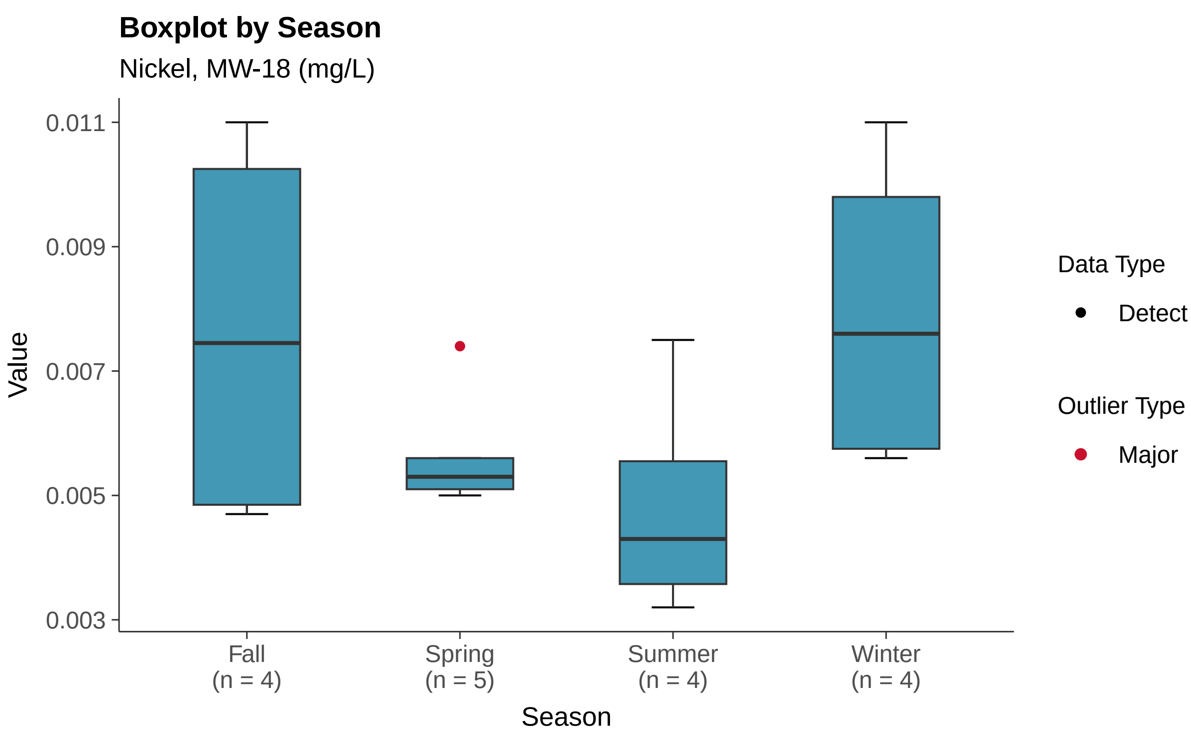
Part 115: Nickel, MW-18

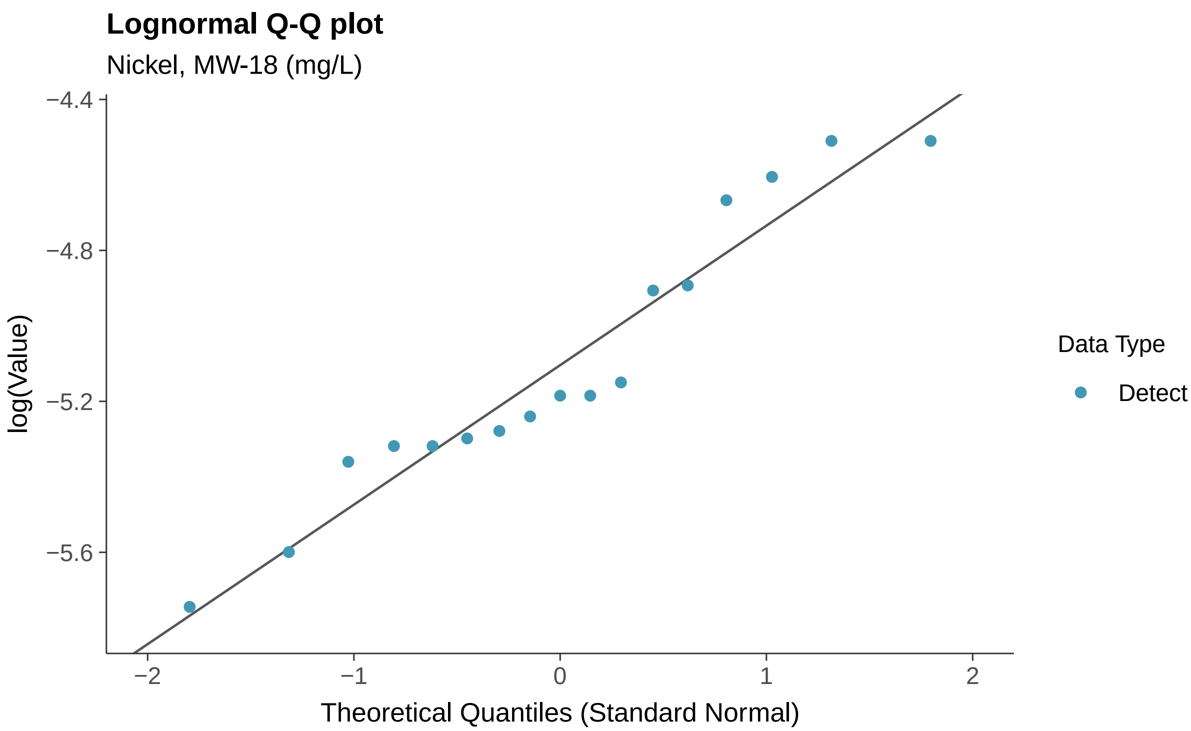
ID: 28_1_5_119

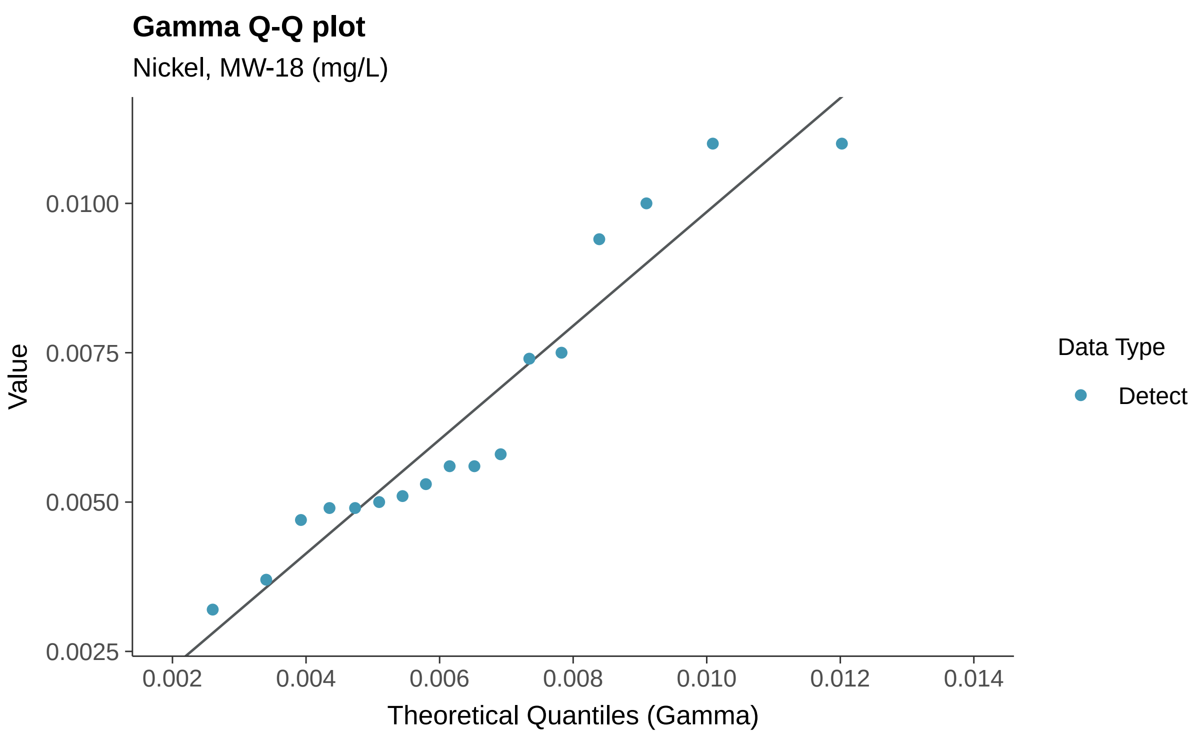


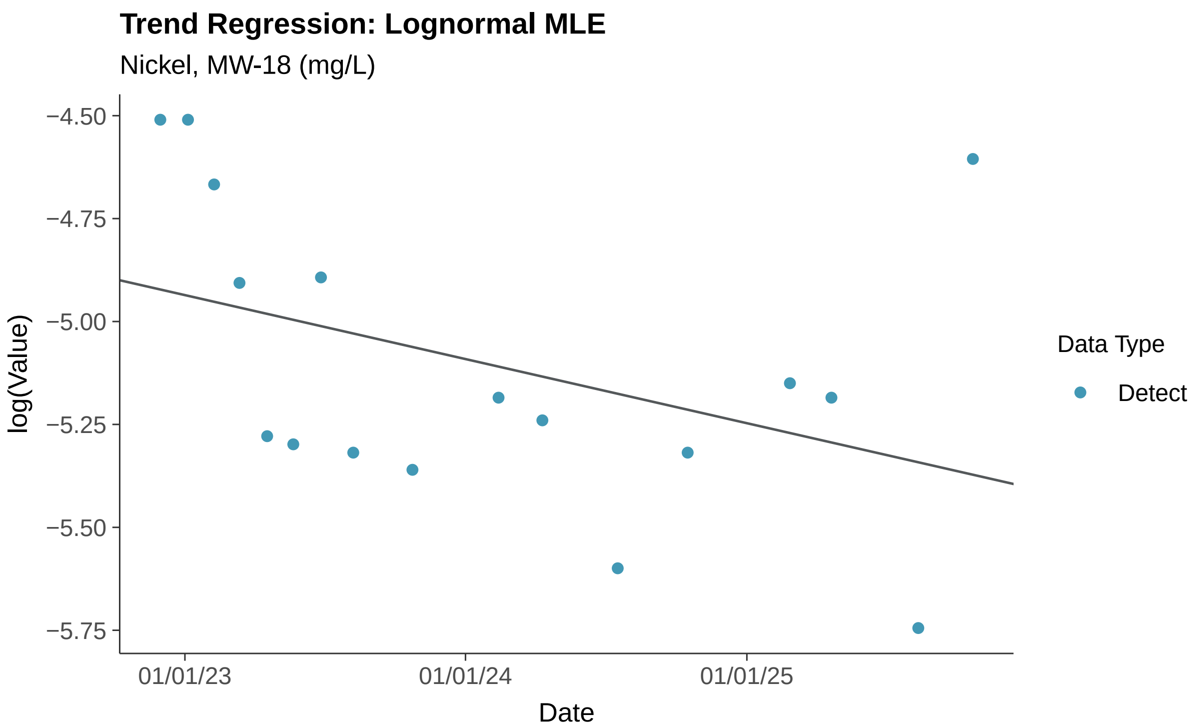


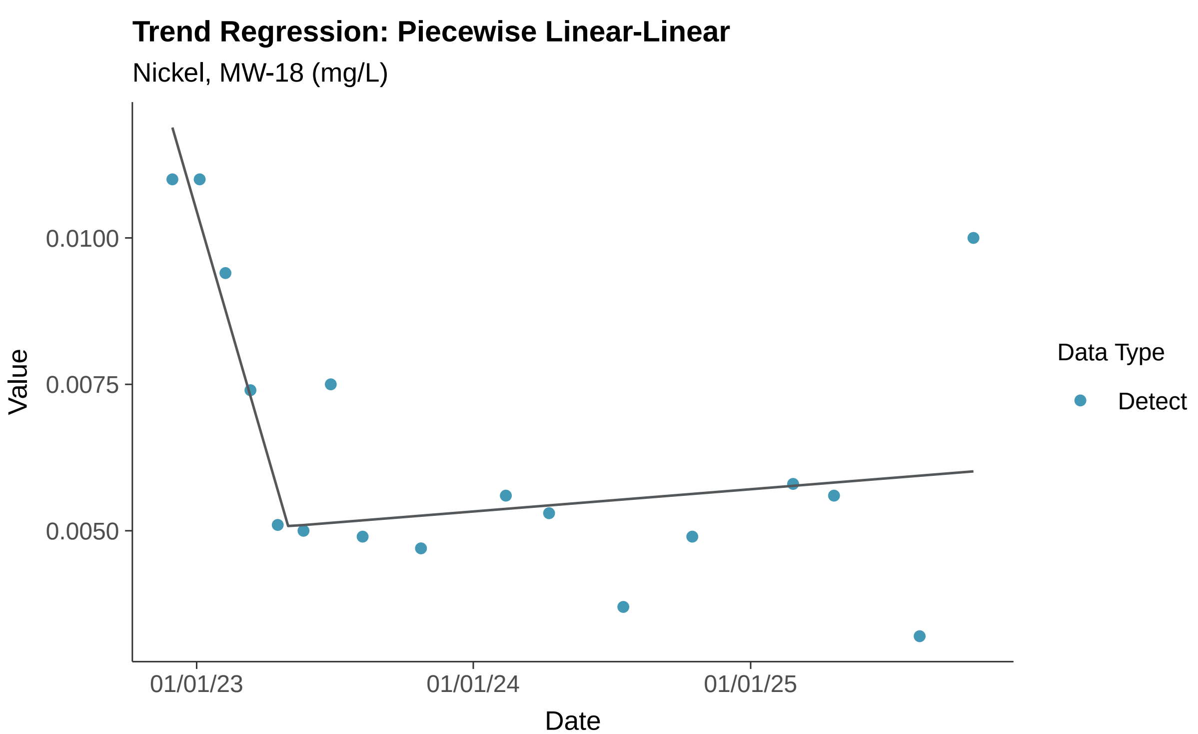

Boxplot
Nickel, MW-18 (mg/L)
Value
0.011
0.009
0.007
0.005
0.003


Boxplot by Season
Nickel, MW-18 (mg/L)
Value
0.011
0.009
0.007
0.005
0.003
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Data Type
Detect
Outlier Type
Major


Lognormal Q-Q plot
Nickel, MW-18 (mg/L)
log(Value)
−4.4
−4.8
−5.2
−5.6
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

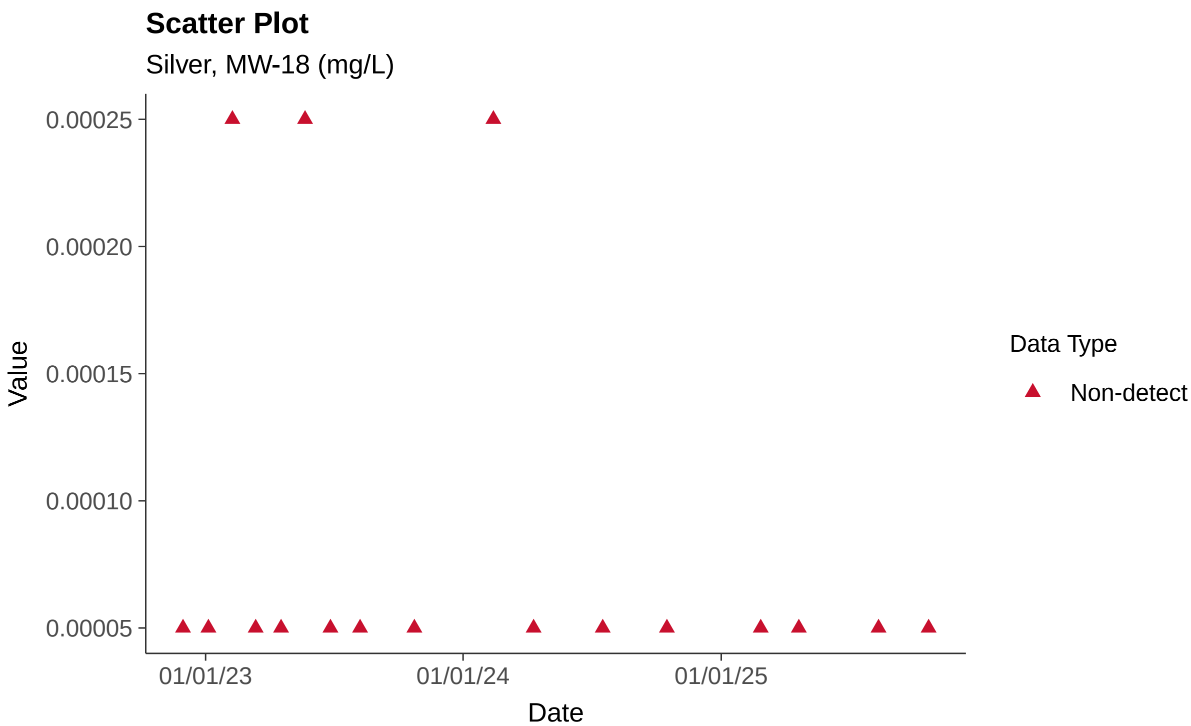

Gamma Q-Q plot
Nickel, MW-18 (mg/L)
Value
0.0100
0.0075
0.0050
0.0025
0.002
0.004
0.006
0.008
0.010
0.012
0.014
Theoretical Quantiles (Gamma)
Data Type
Detect

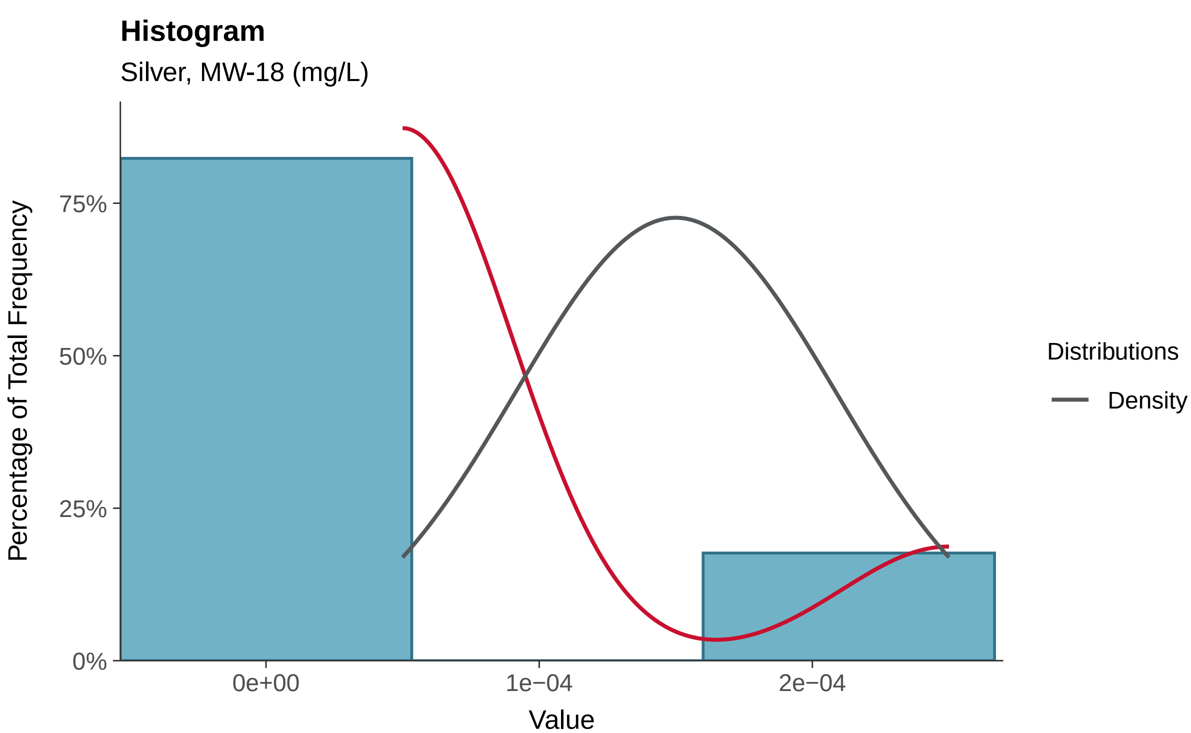

Trend Regression: Lognormal MLE
Nickel, MW-18 (mg/L)
log(Value)
−4.50
−4.75
−5.00
−5.25
−5.50
−5.75
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear
Nickel, MW-18 (mg/L)
Value
0.0100
0.0075
0.0050
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Part 115: Silver, MW-18

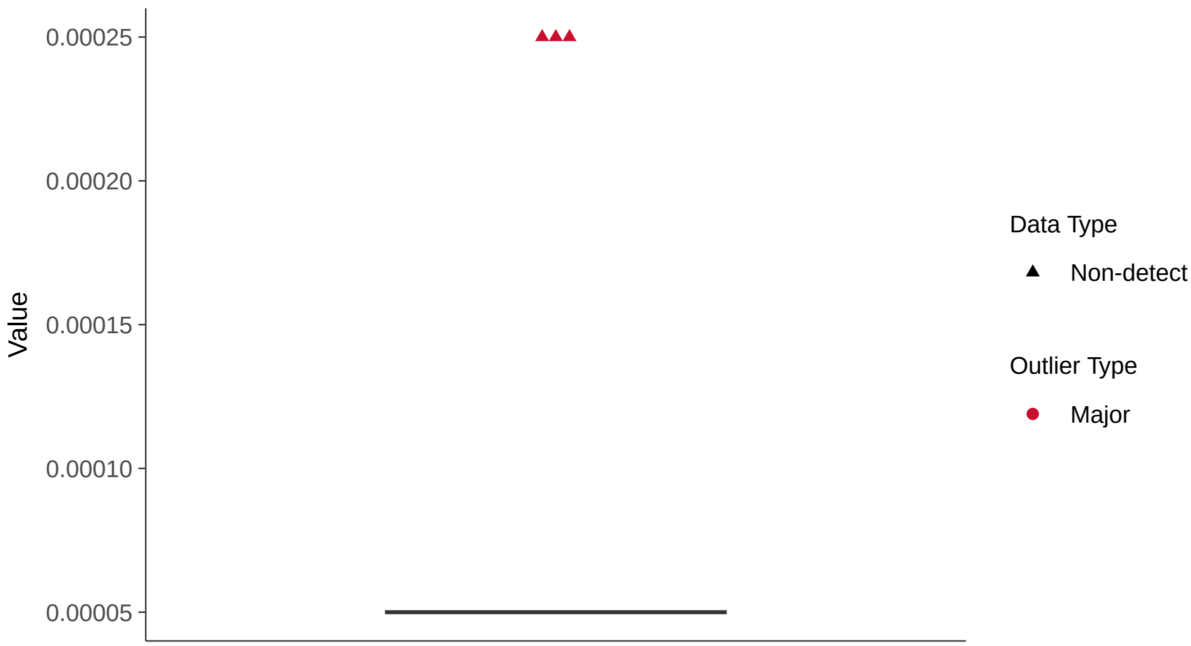
ID: 28_1_5_123





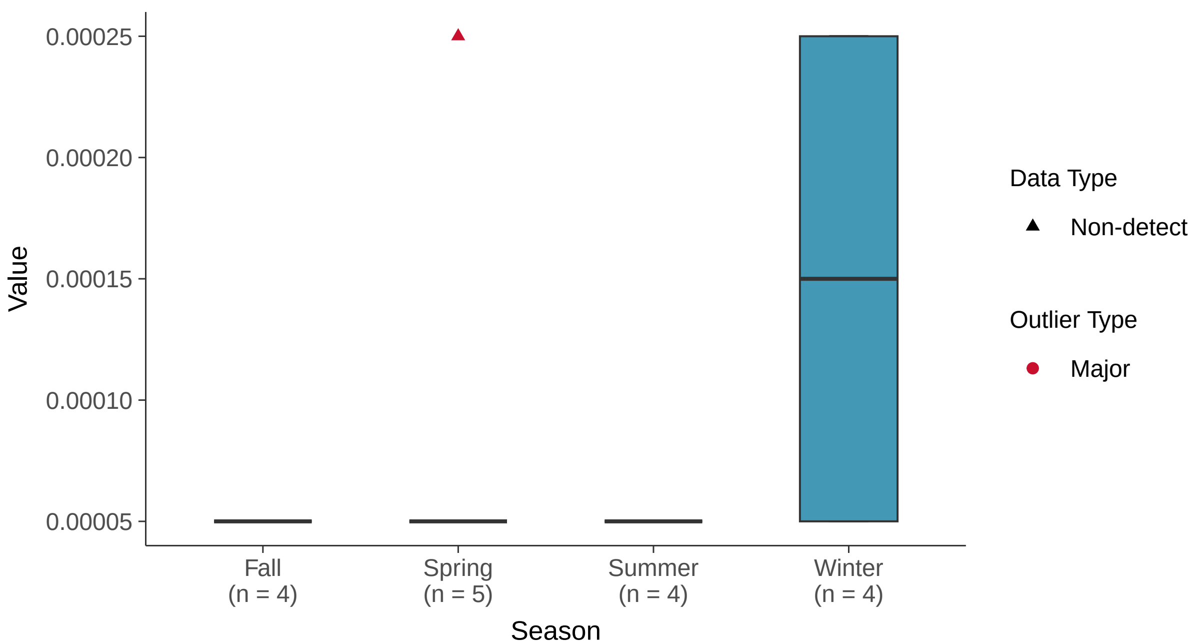
Boxplot

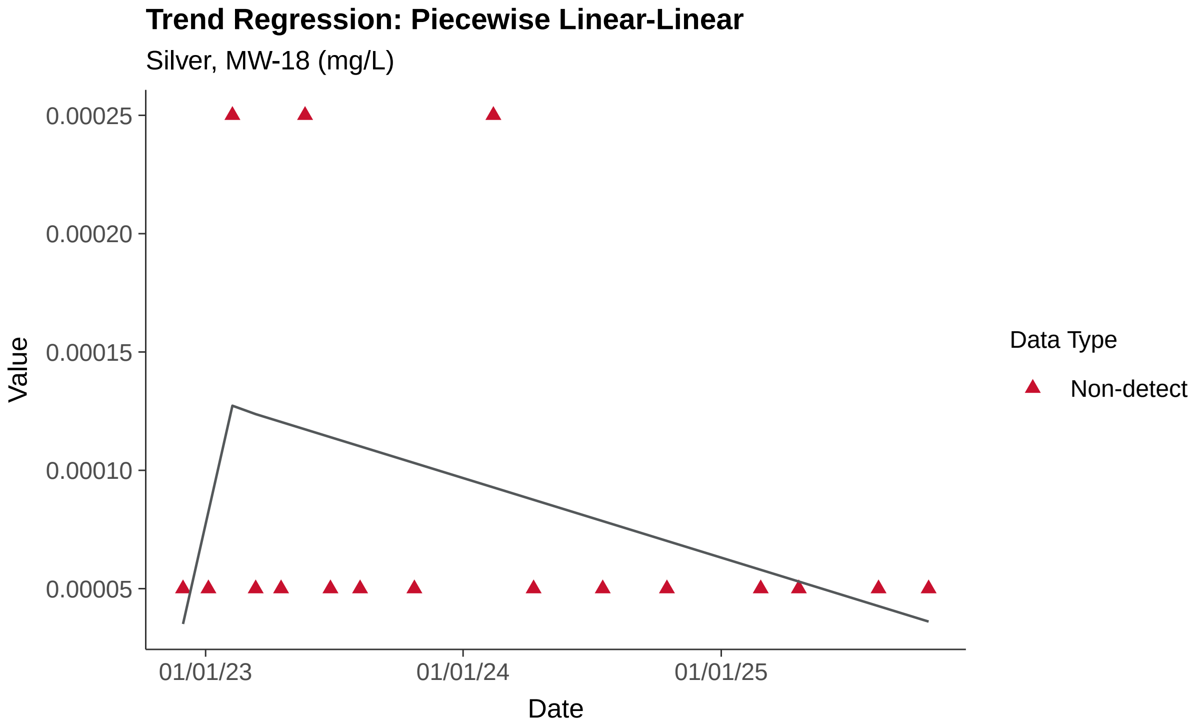
Silver, MW-18 (mg/L)

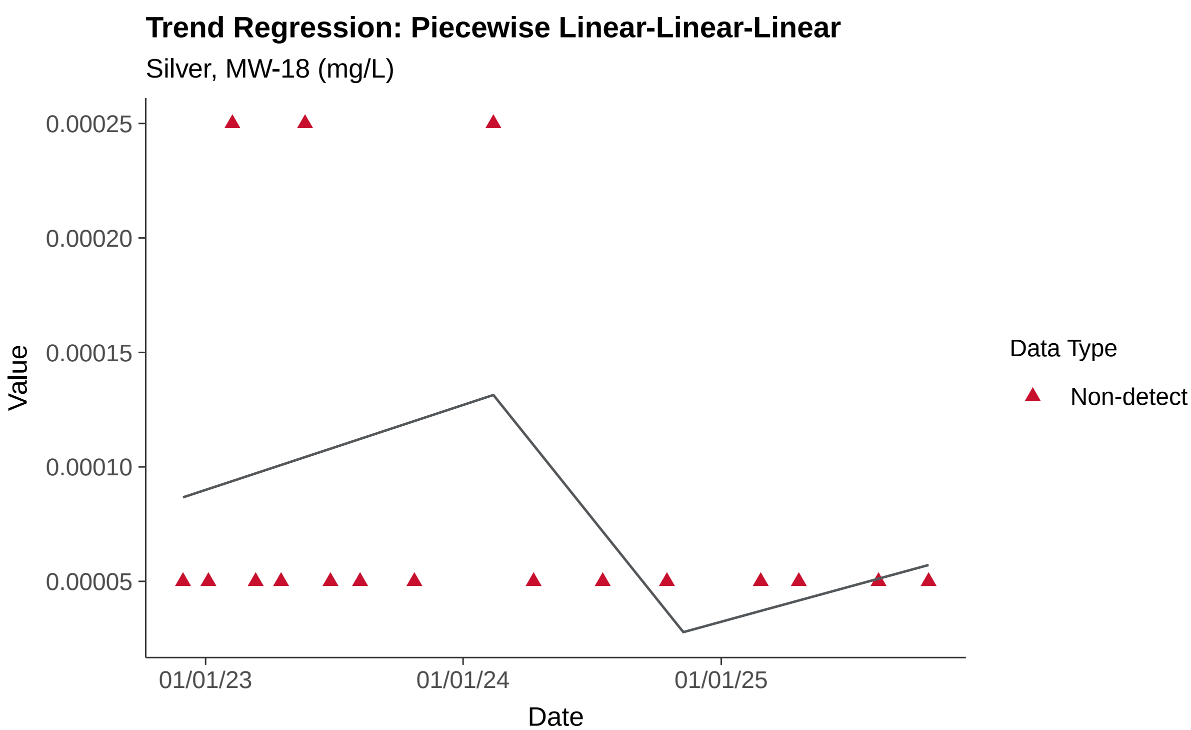


Boxplot by Season

Silver, MW-18 (mg/L)

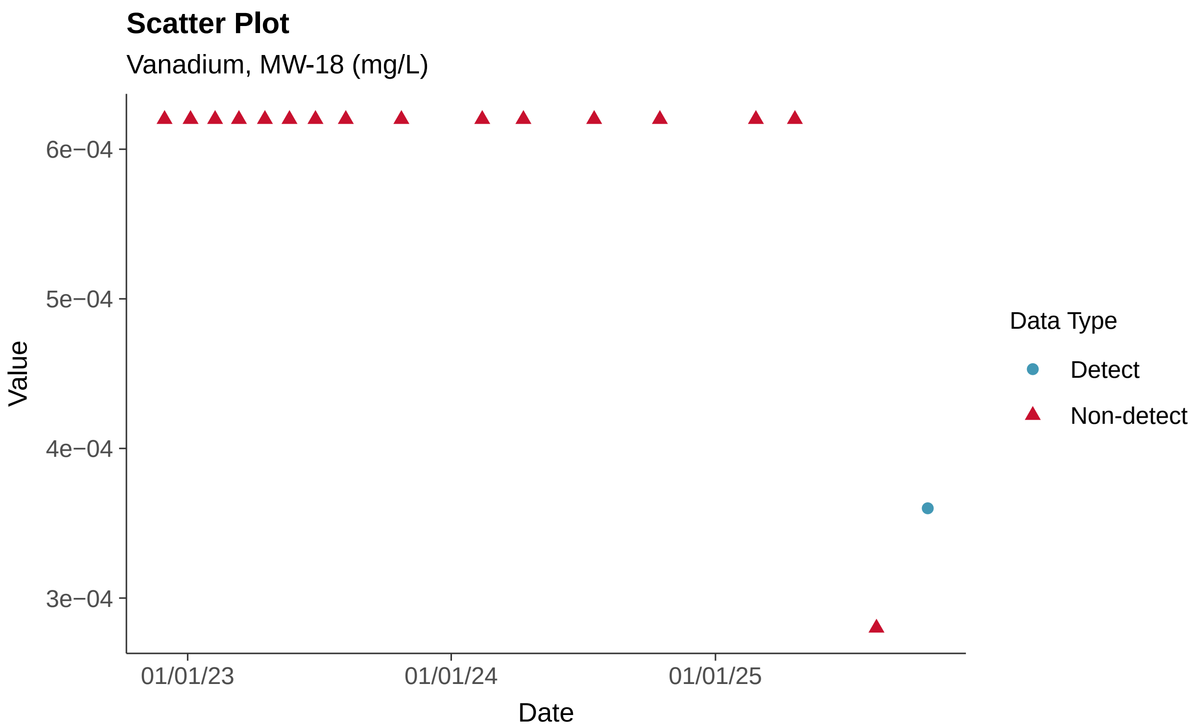


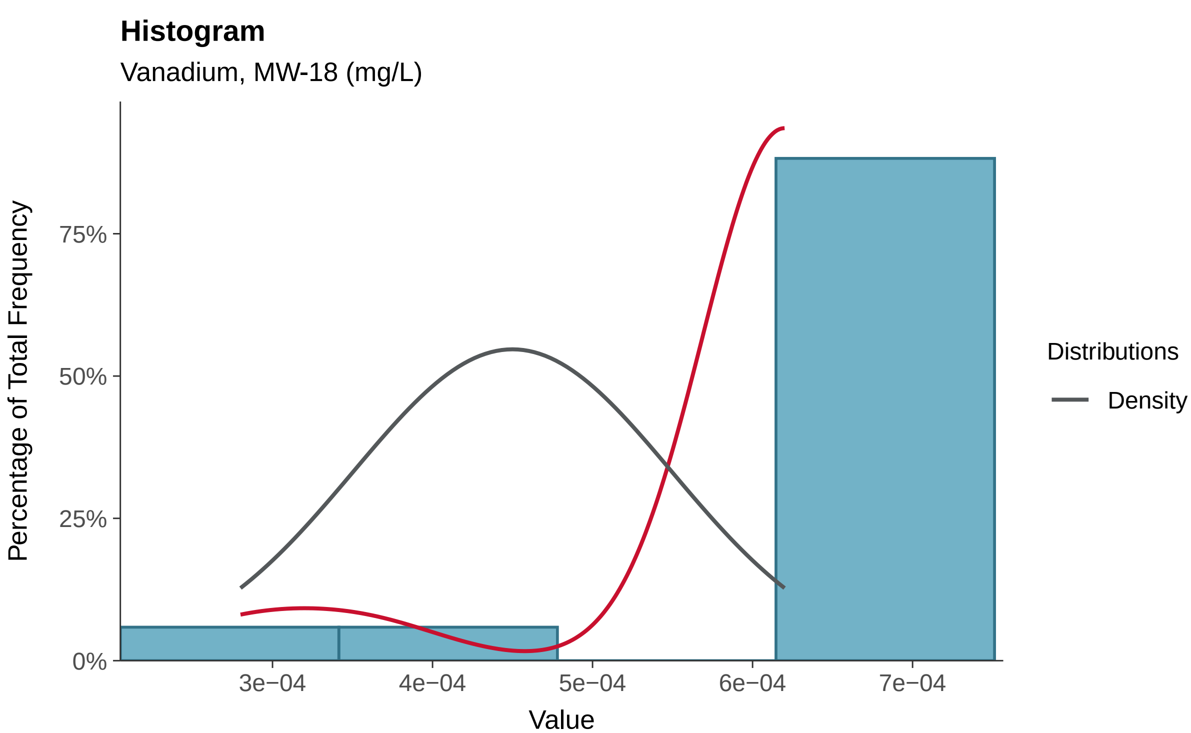

Trend Regression: Piecewise Linear-Linear
Silver, MW-18 (mg/L)
0.00025
0.00020
0.00015
0.00010
0.00005
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Non-detect

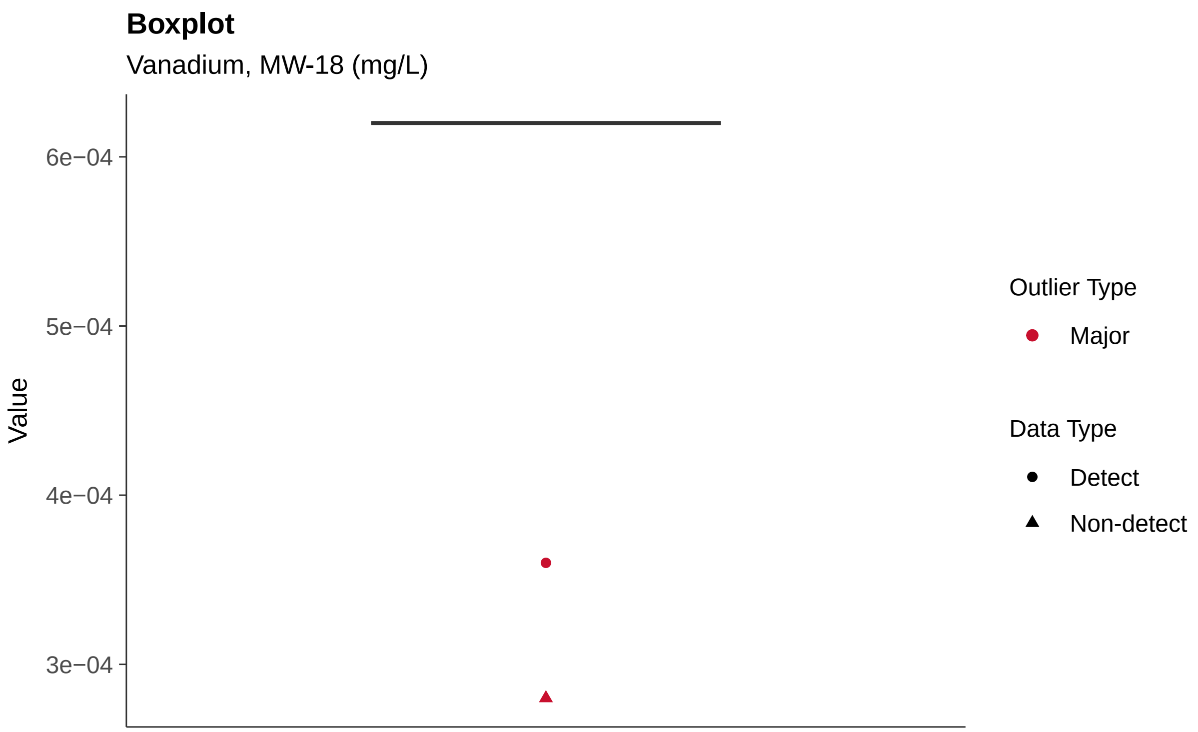

Trend Regression: Piecewise Linear-Linear-Linear
Silver, MW-18 (mg/L)
0.00025
0.00020
0.00015
0.00010
0.00005
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Non-detect

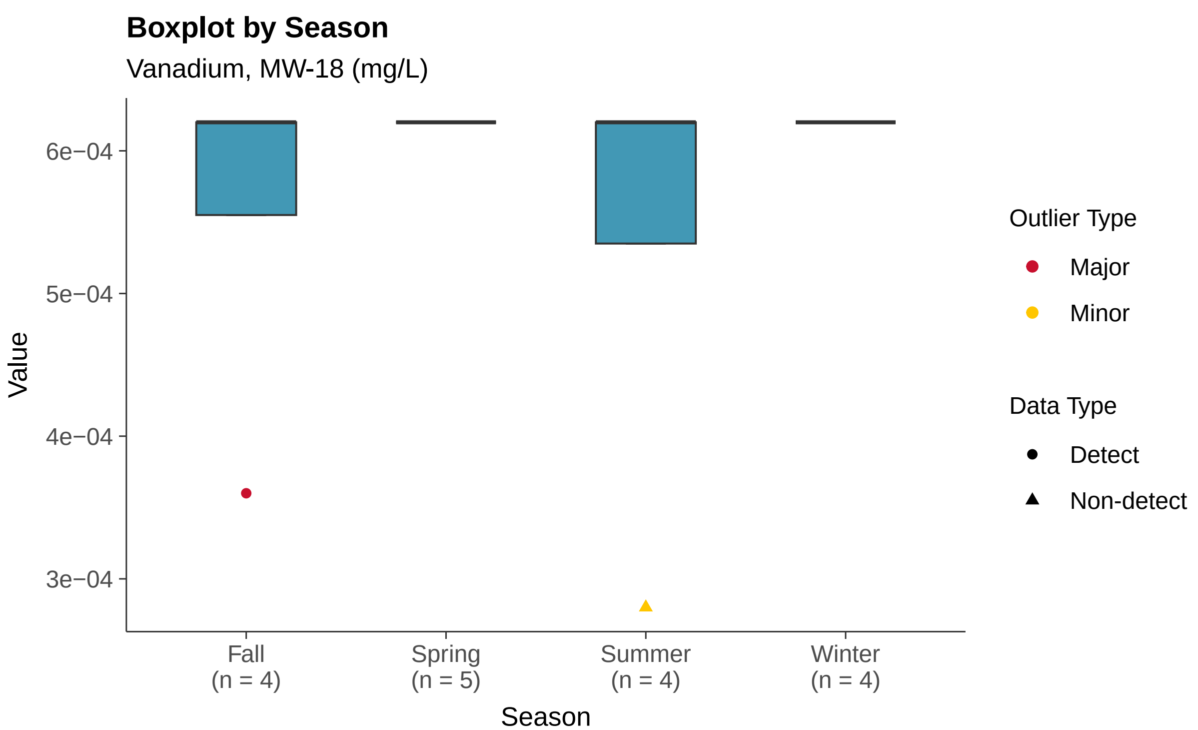
Part 115: Vanadium, MW-18

ID: 28_1_5_128



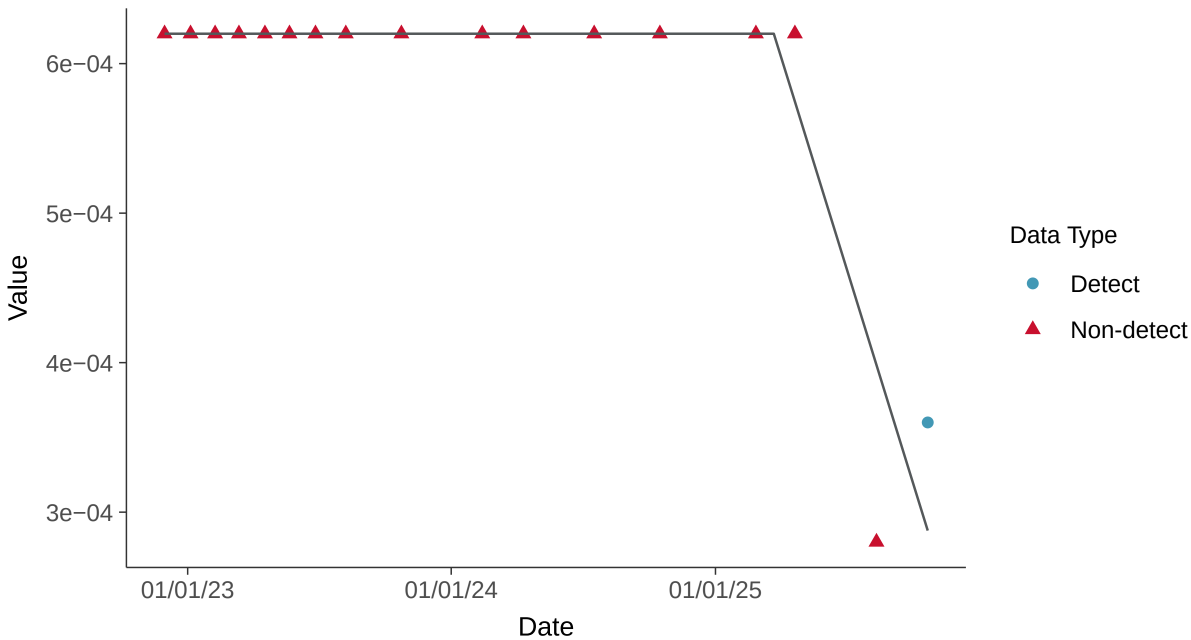



Boxplot
Vanadium, MW-18 (mg/L)
Value
6e−04
5e−04
4e−04
3e−04
Outlier Type
Major
Data Type
Detect
Non-detect


Boxplot by Season
Vanadium, MW-18 (mg/L)
Value
6e−04
5e−04
4e−04
3e−04
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Major
Minor
Data Type
Detect
Non-detect

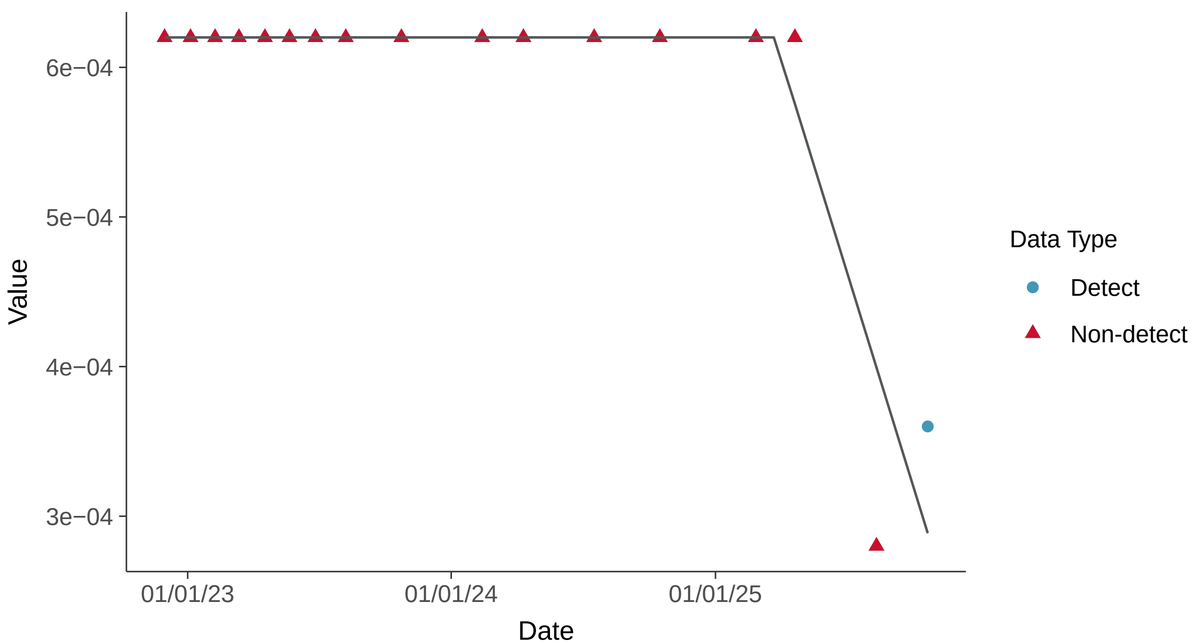
Trend Regression: Piecewise Linear-Linear

Vanadium, MW-18 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Vanadium, MW-18 (mg/L)

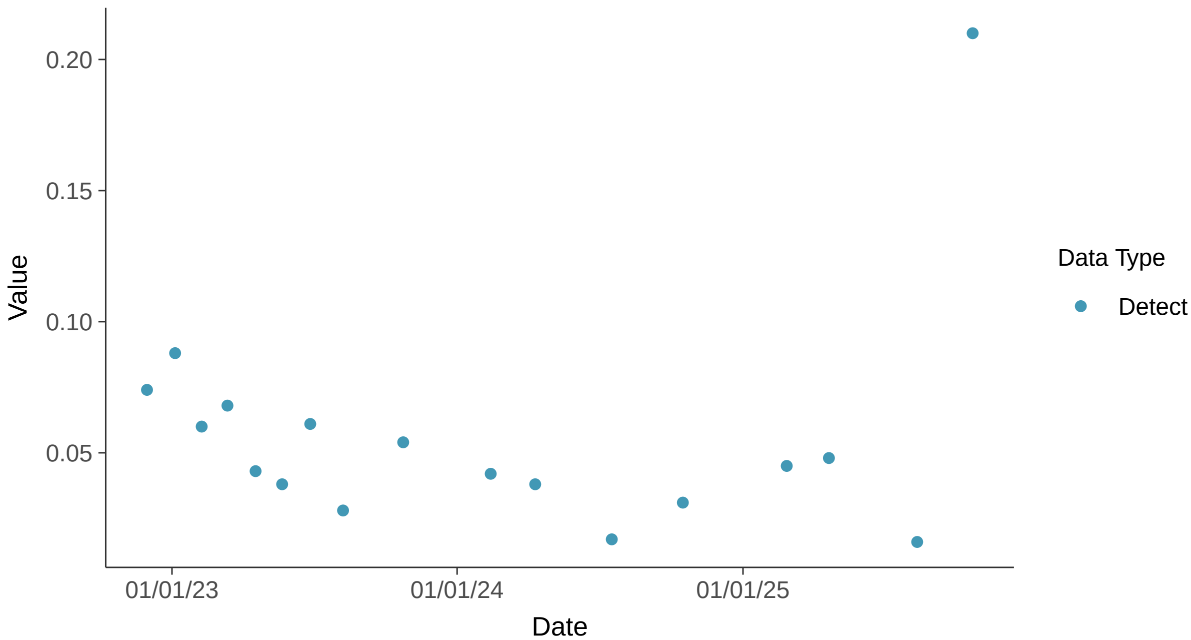


Part 115: Zinc, MW-18

ID: 28_1_5_129

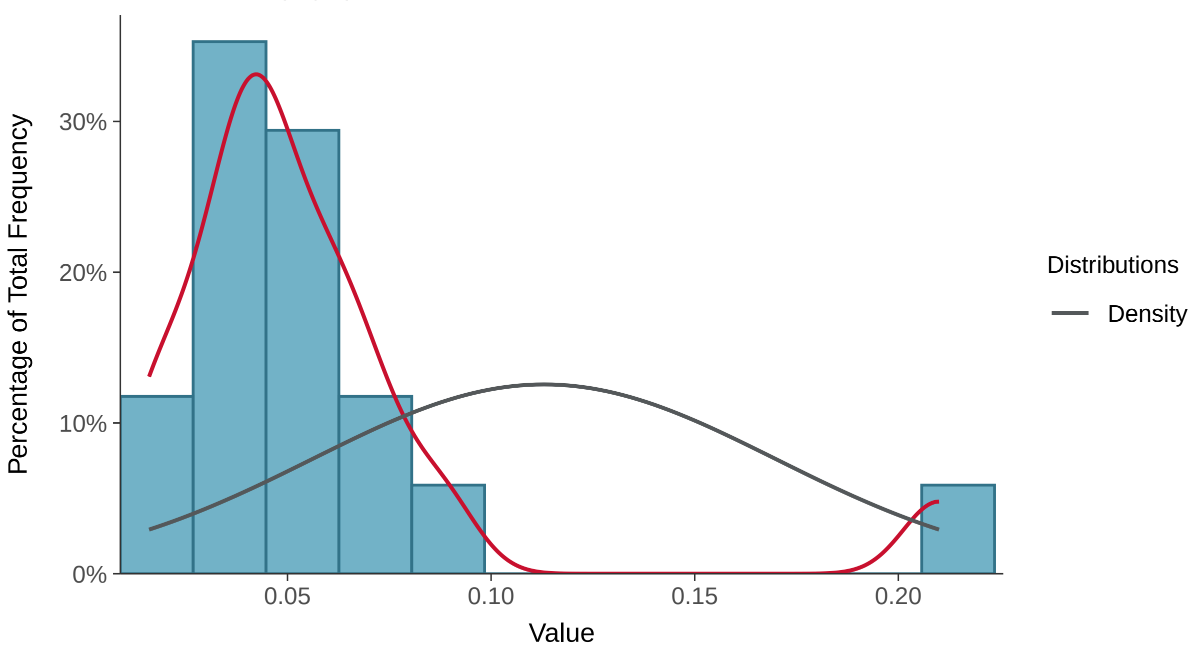
Scatter Plot

Zinc, MW-18 (mg/L)



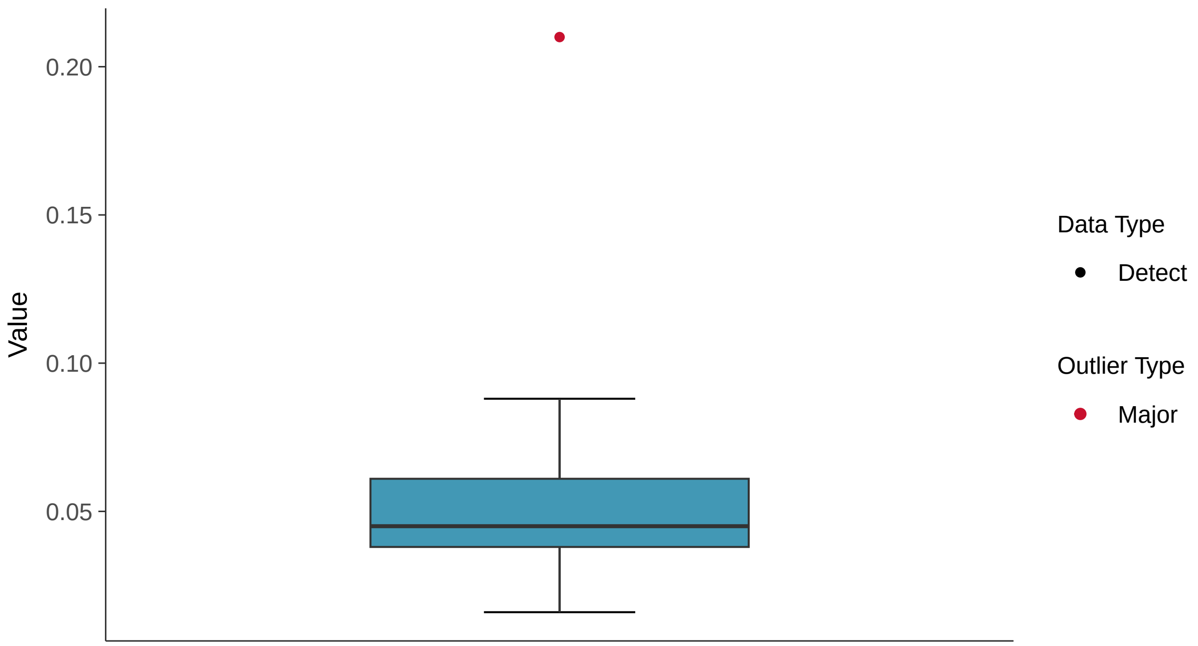
Histogram

Zinc, MW-18 (mg/L)



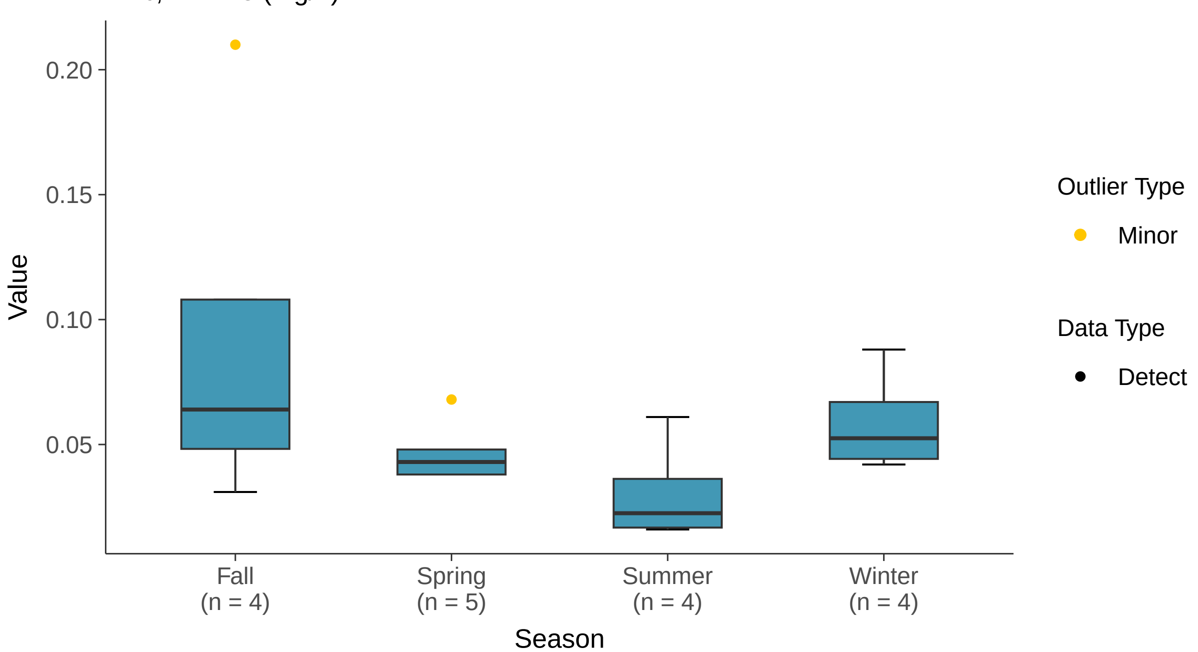
Boxplot

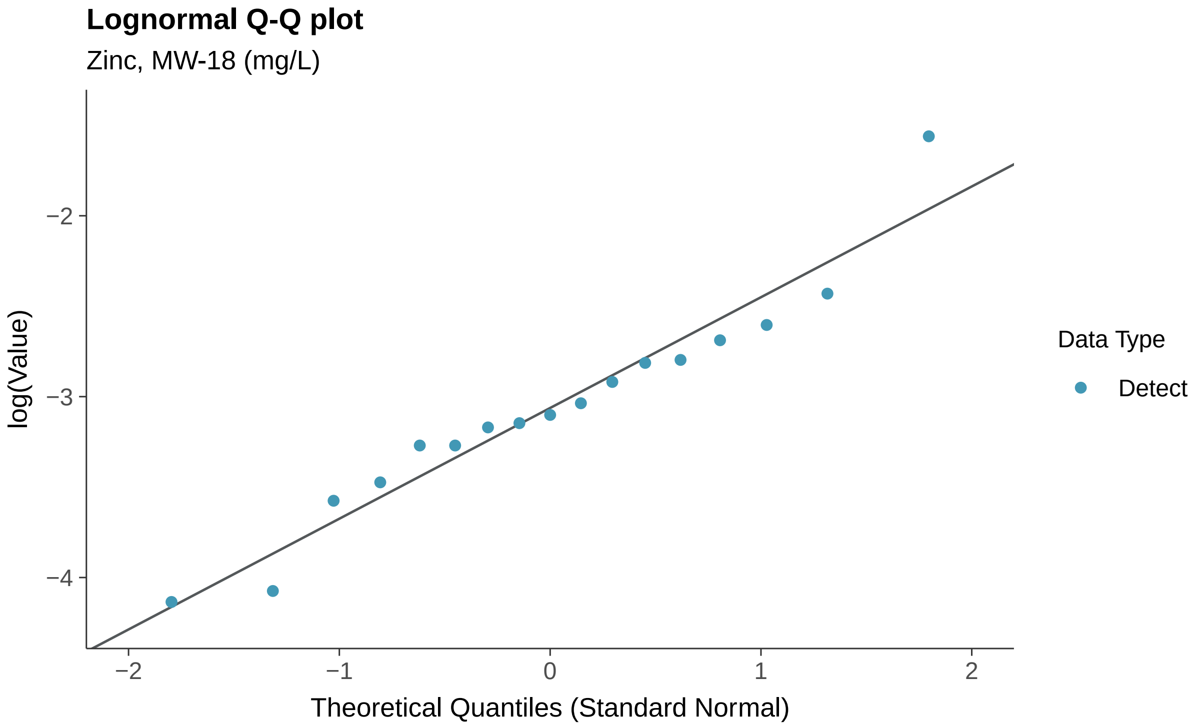
Zinc, MW-18 (mg/L)

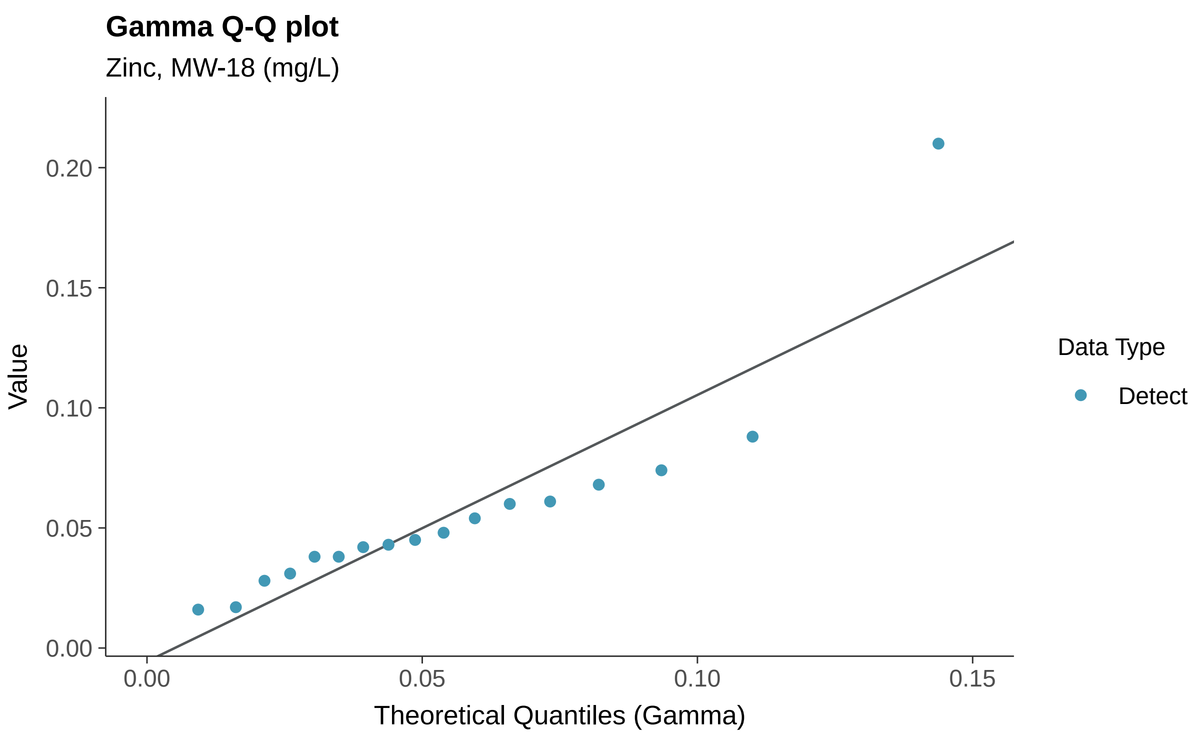


Boxplot by Season

Zinc, MW-18 (mg/L)

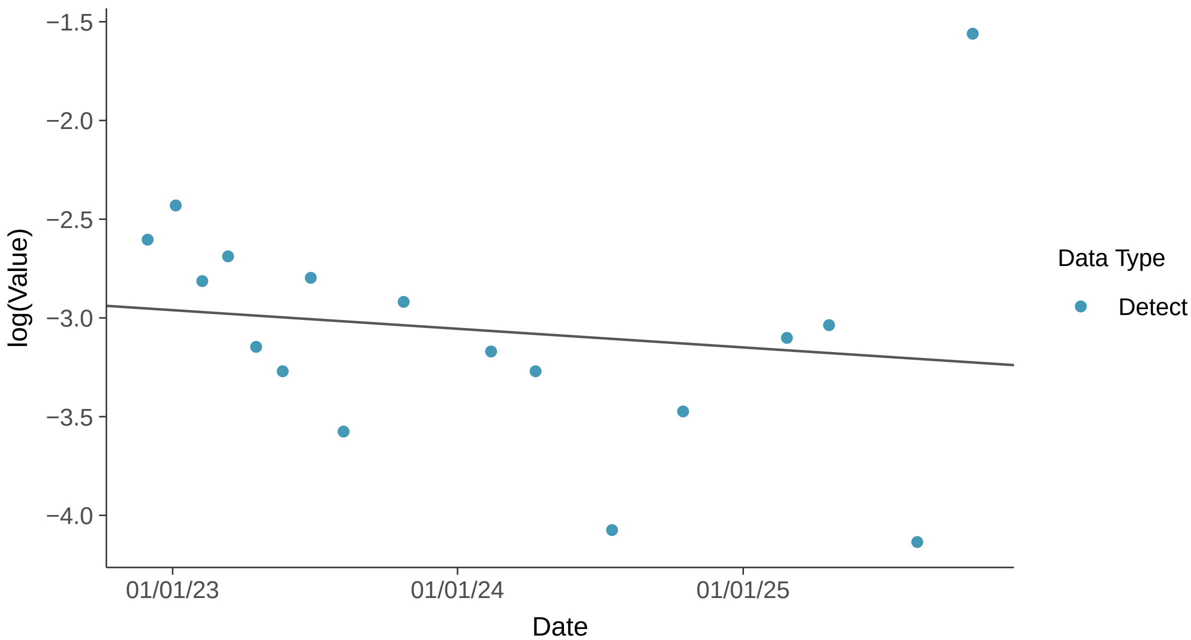



Lognormal Q-Q plot
Zinc, MW-18 (mg/L)
log(Value)
−2
−3
−4
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Zinc, MW-18 (mg/L)
Value
0.20
0.15
0.10
0.05
0.00
0.00
0.05
0.10
0.15
Theoretical Quantiles (Gamma)
Data Type
Detect

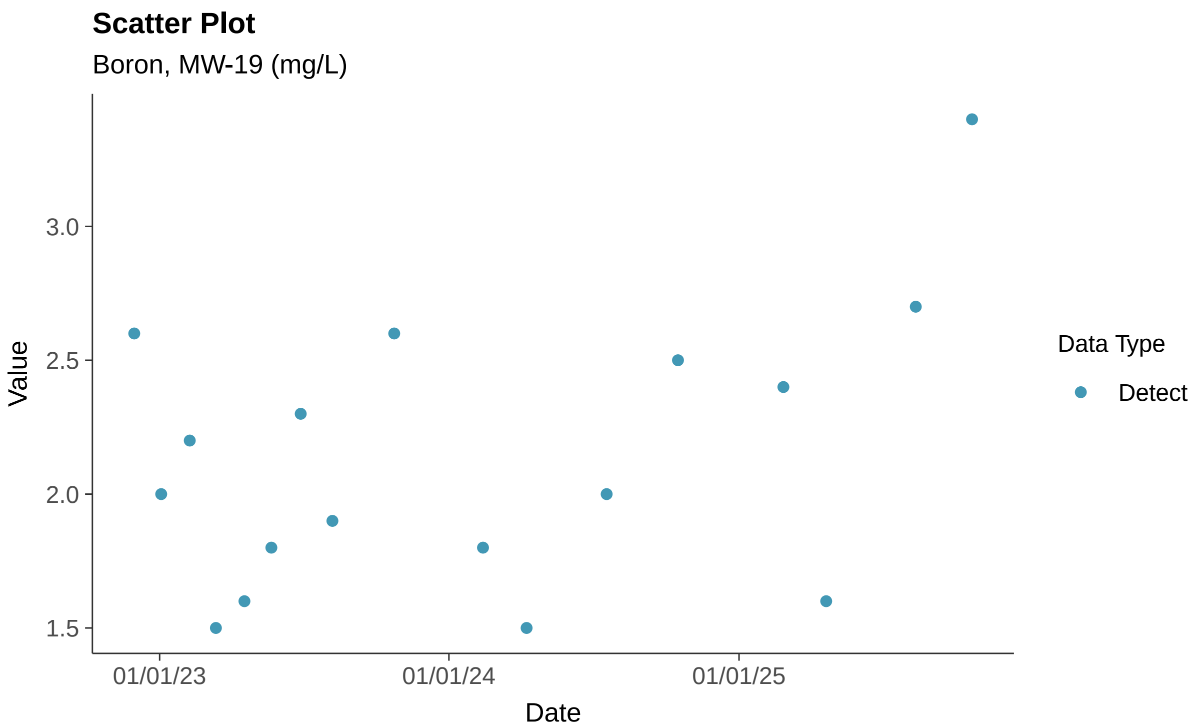
Trend Regression: Lognormal MLE

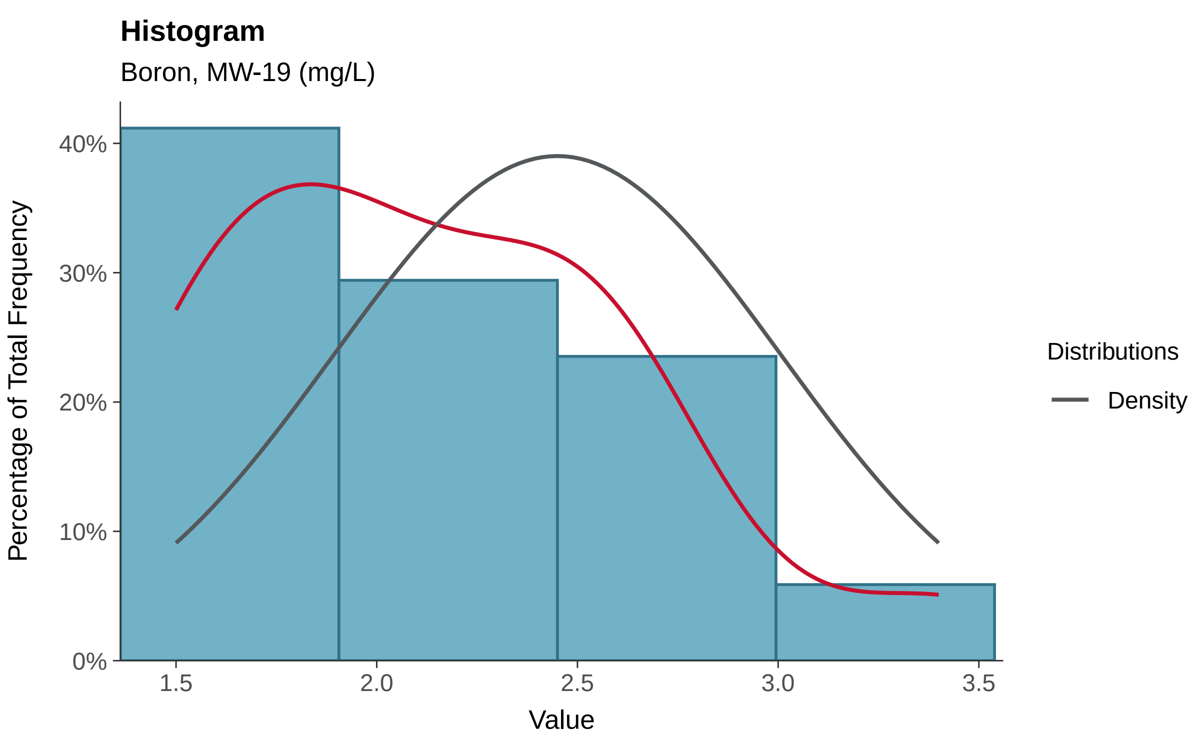
Zinc, MW-18 (mg/L)



Appendix III: Boron, MW-19

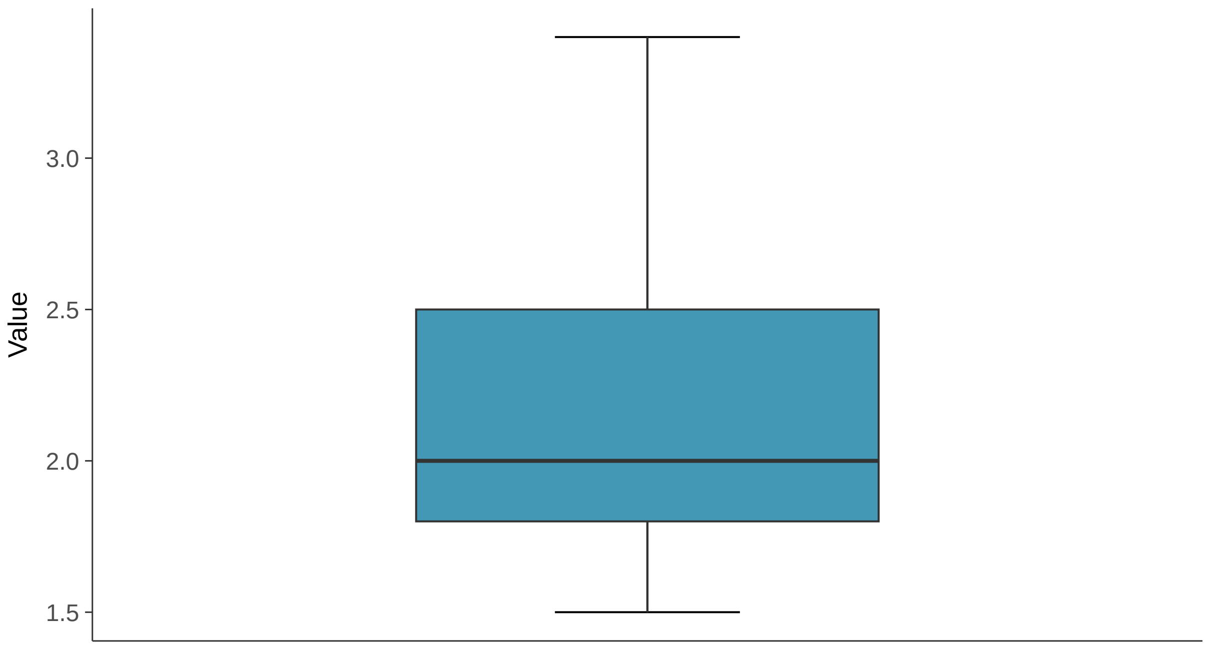
ID: 29_1_3_105





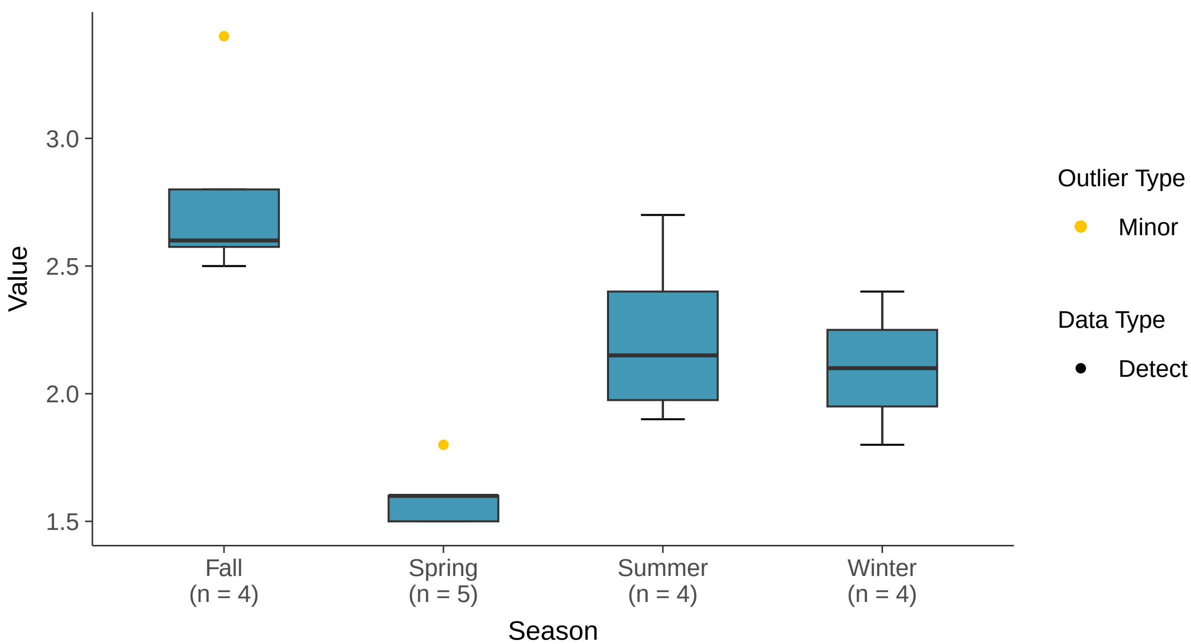
Boxplot

Boron, MW-19 (mg/L)



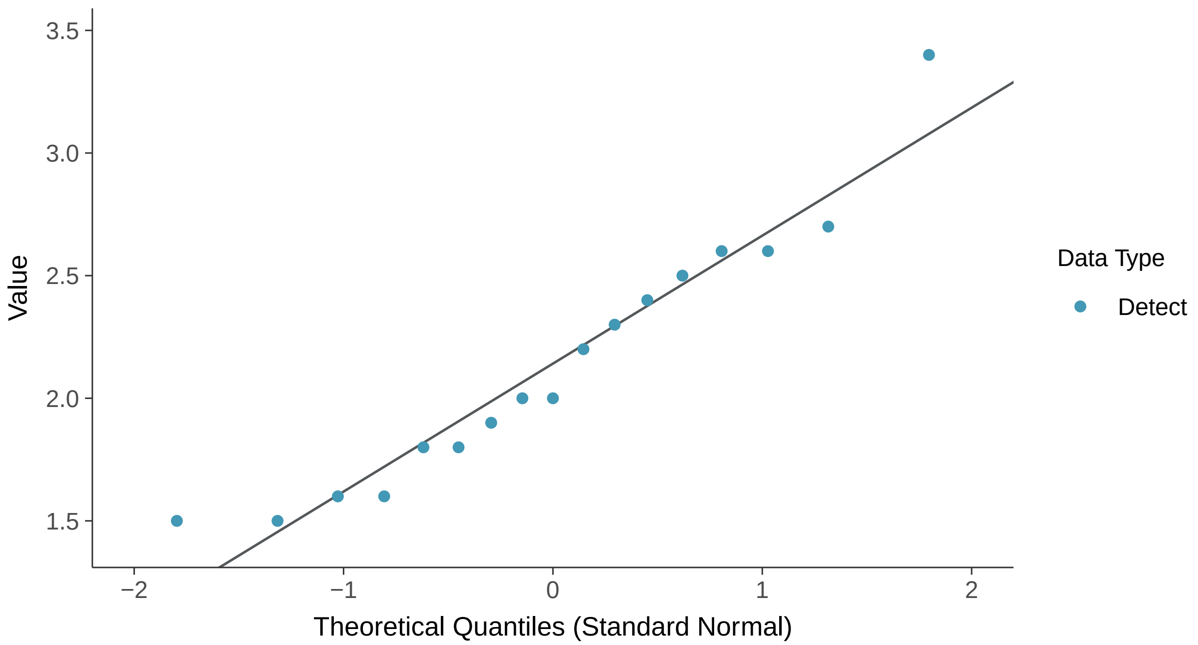
Boxplot by Season

Boron, MW-19 (mg/L)



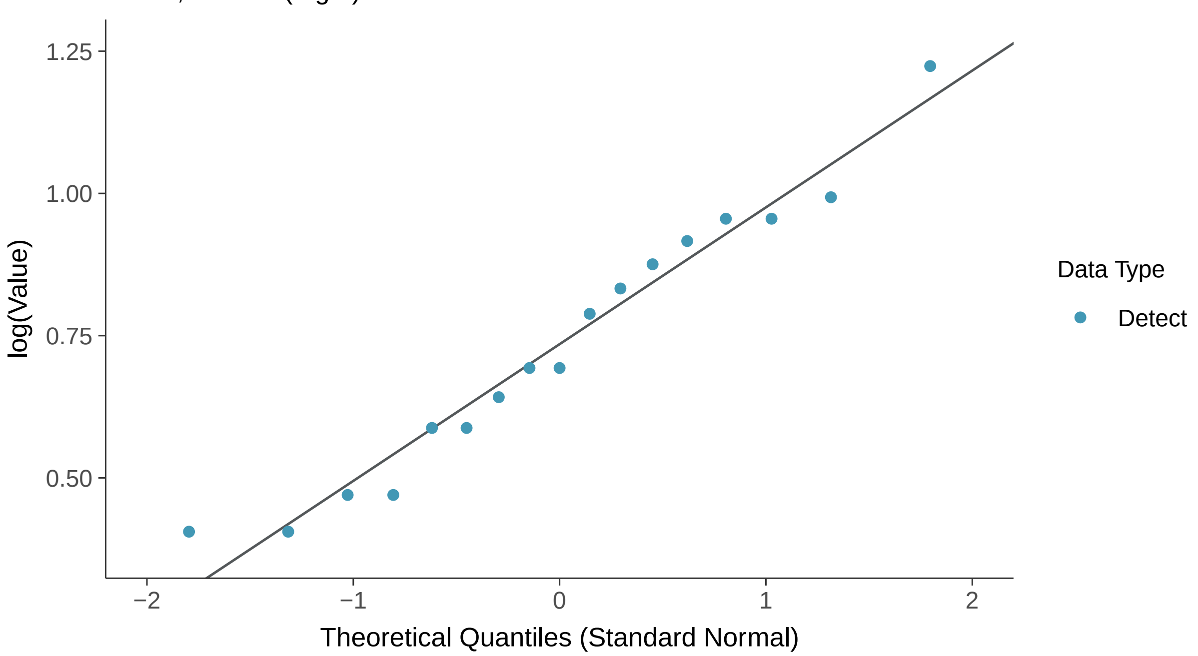
Normal Q-Q plot

Boron, MW-19 (mg/L)



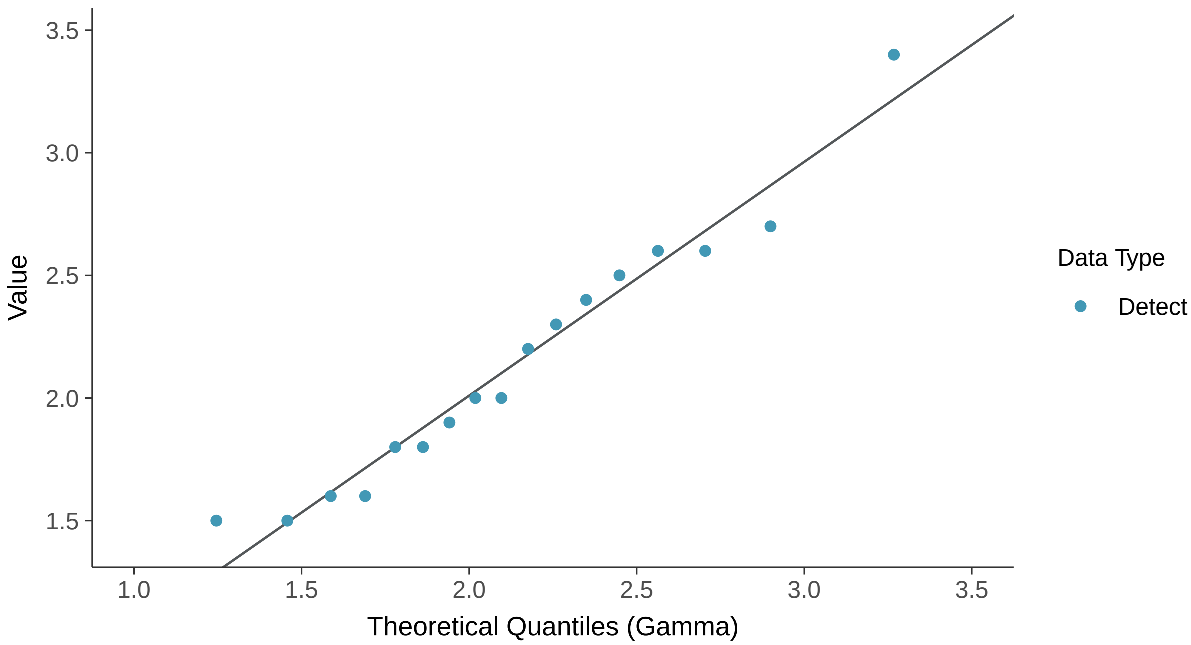
Lognormal Q-Q plot

Boron, MW-19 (mg/L)



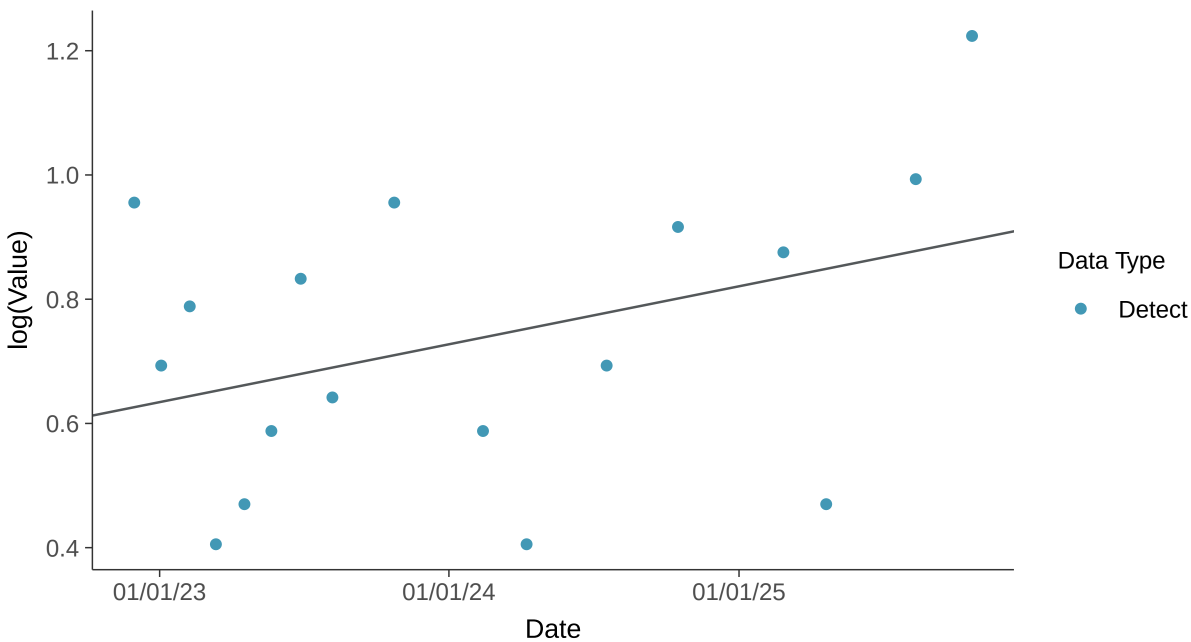
Gamma Q-Q plot

Boron, MW-19 (mg/L)



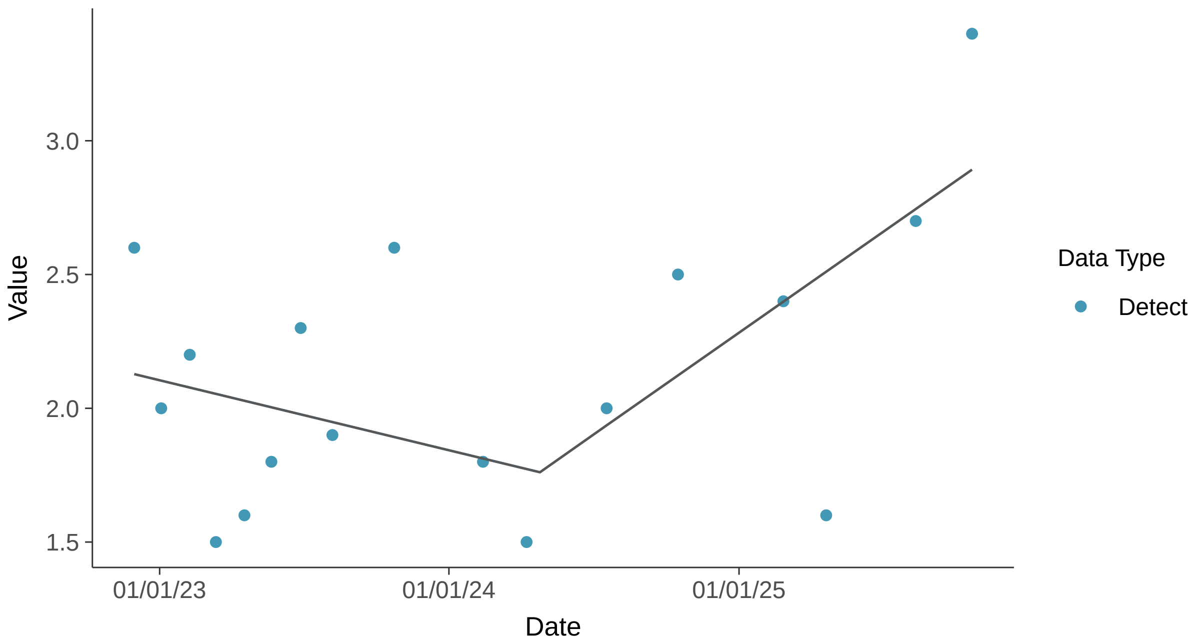
Trend Regression: Lognormal MLE

Boron, MW-19 (mg/L)



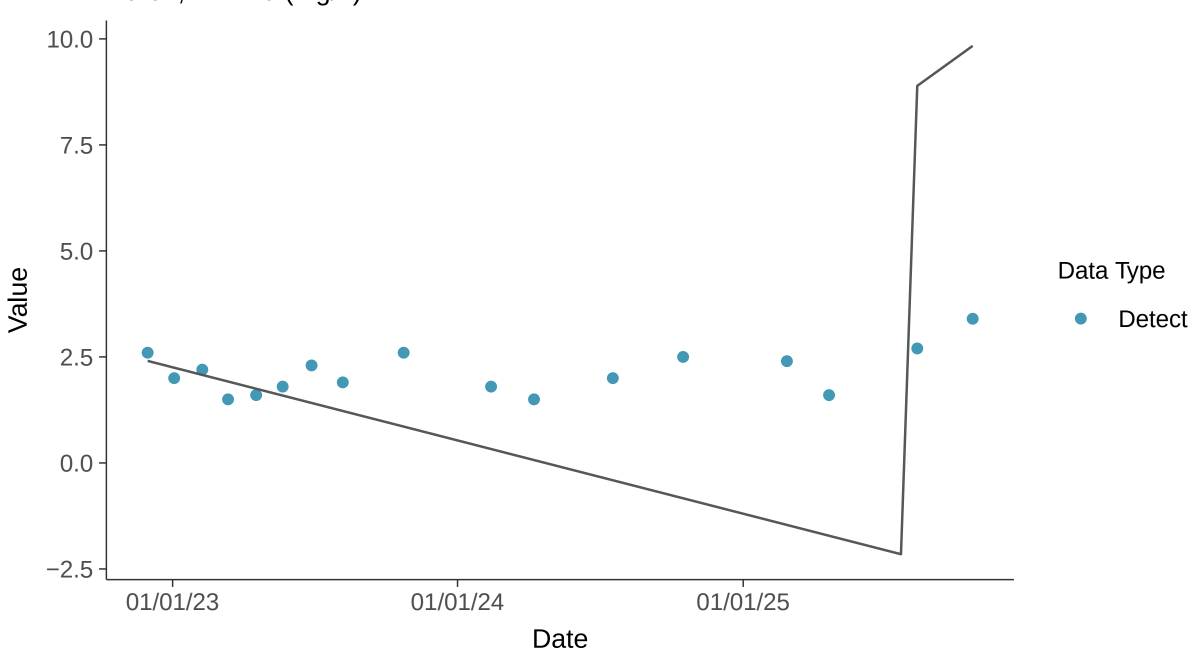
Trend Regression: Piecewise Linear-Linear

Boron, MW-19 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Boron, MW-19 (mg/L)

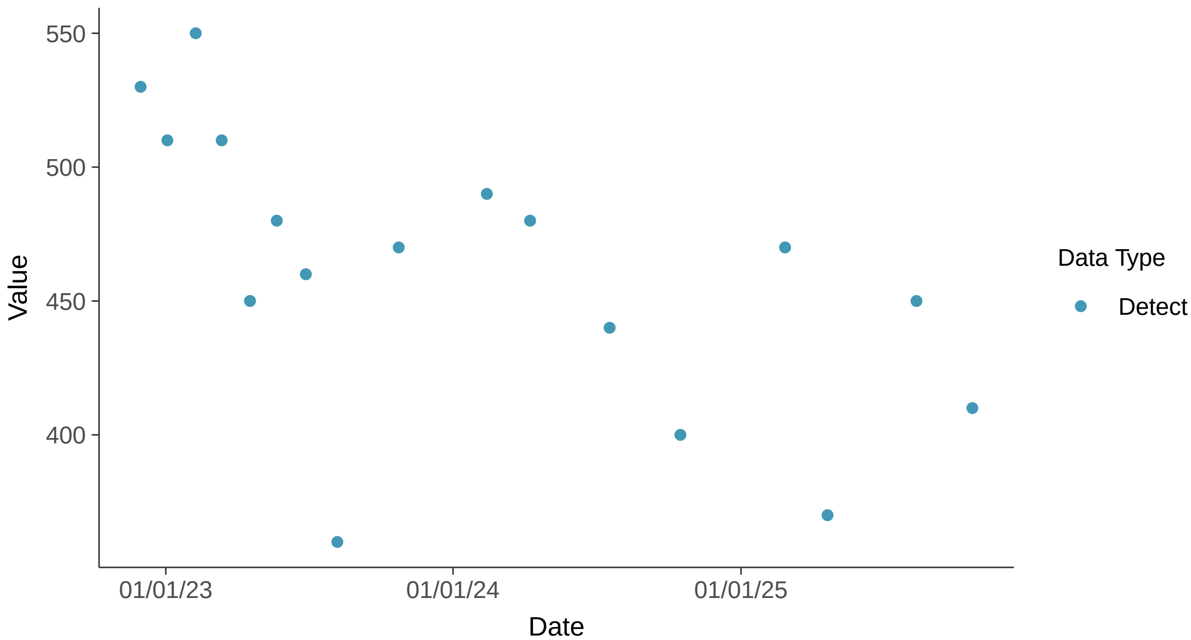


Appendix III: Calcium, MW-19

ID: 29_1_3_107

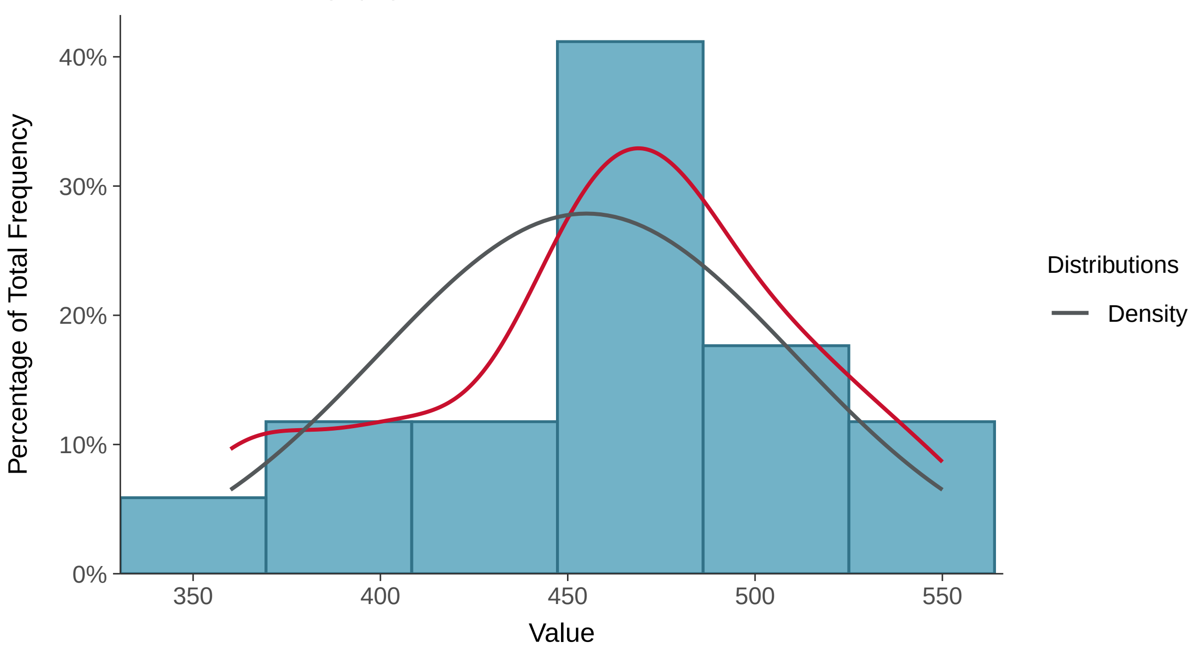
Scatter Plot

Calcium, MW-19 (mg/L)



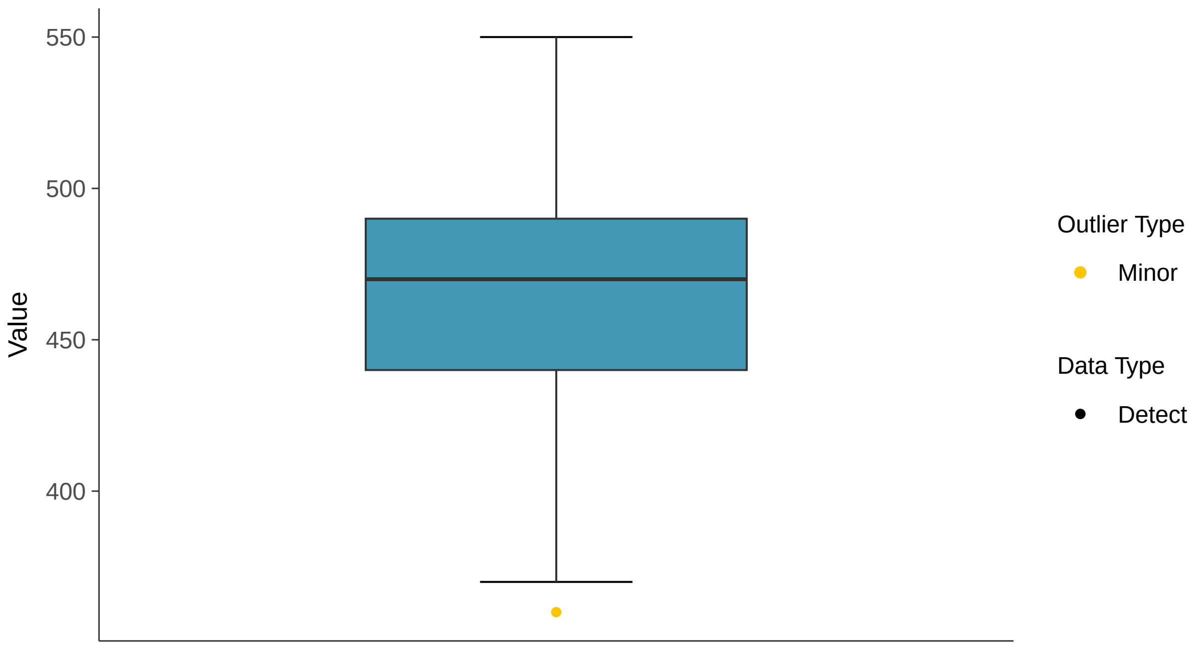
Histogram

Calcium, MW-19 (mg/L)



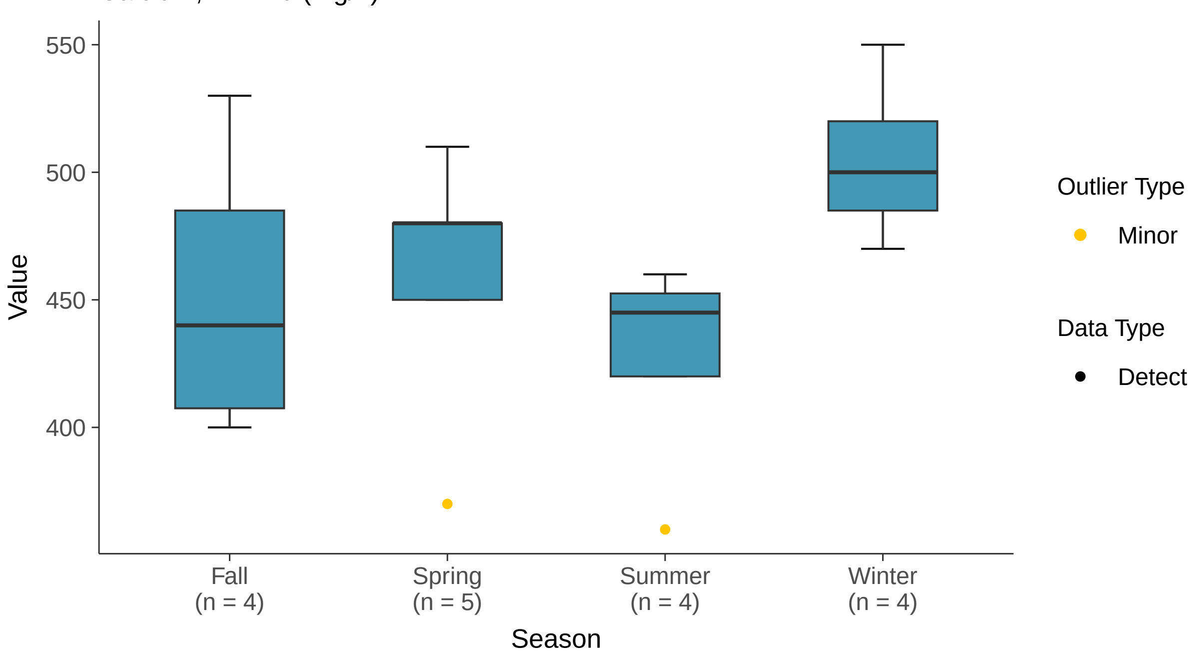
Boxplot

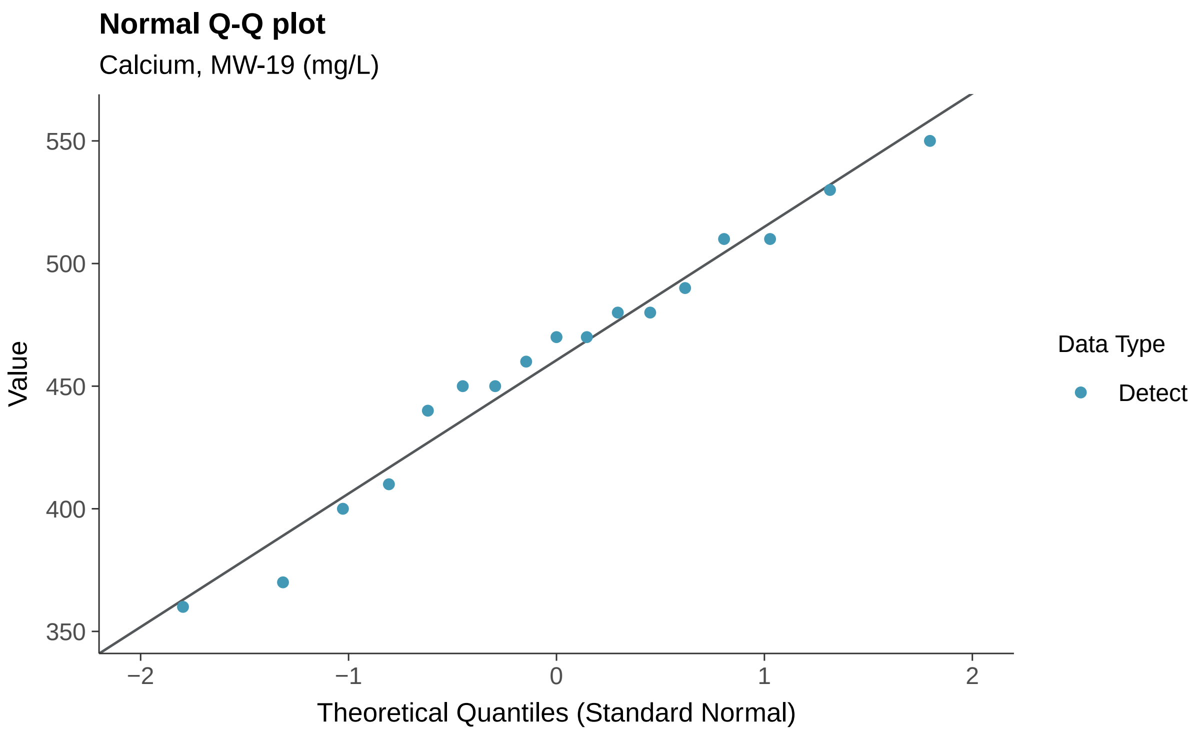
Calcium, MW-19 (mg/L)

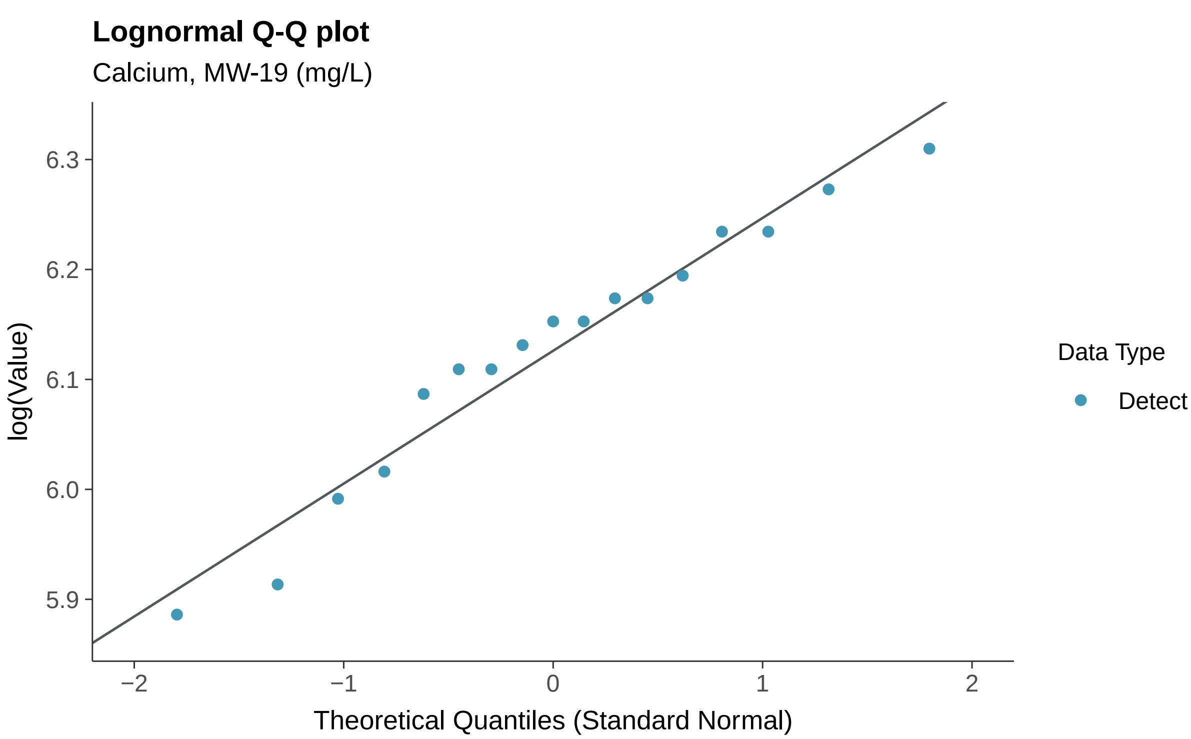


Boxplot by Season

Calcium, MW-19 (mg/L)

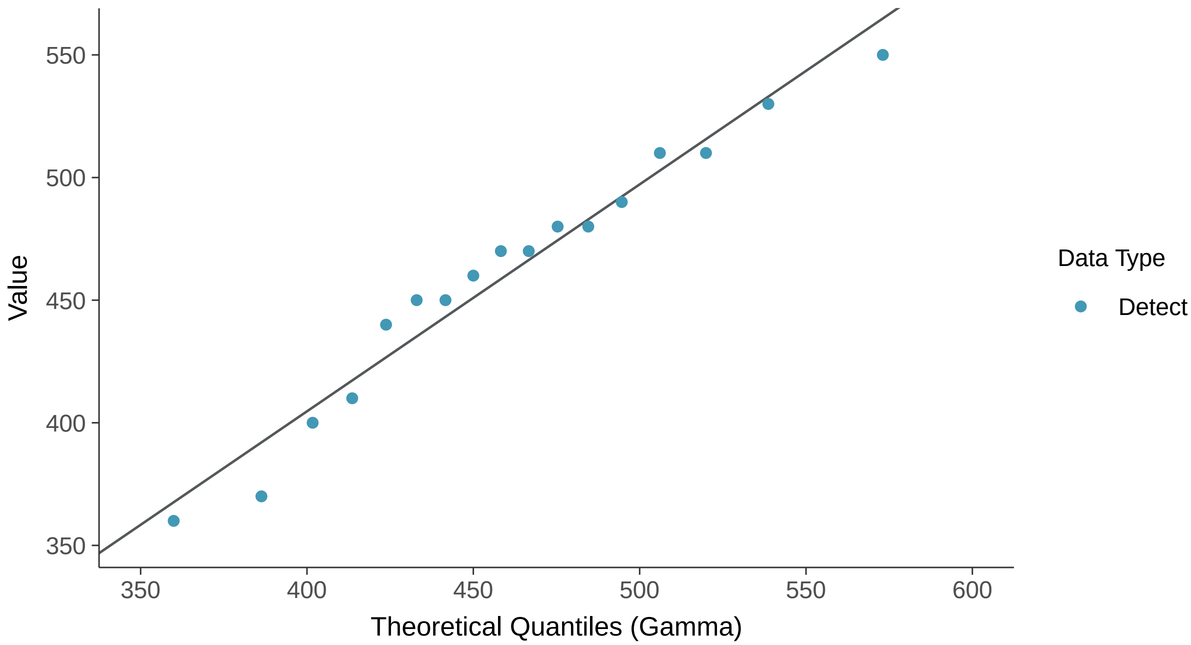



Normal Q-Q plot
Calcium, MW-19 (mg/L)
Value
550
500
450
400
350
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Calcium, MW-19 (mg/L)
log(Value)
6.3
6.2
6.1
6.0
5.9
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

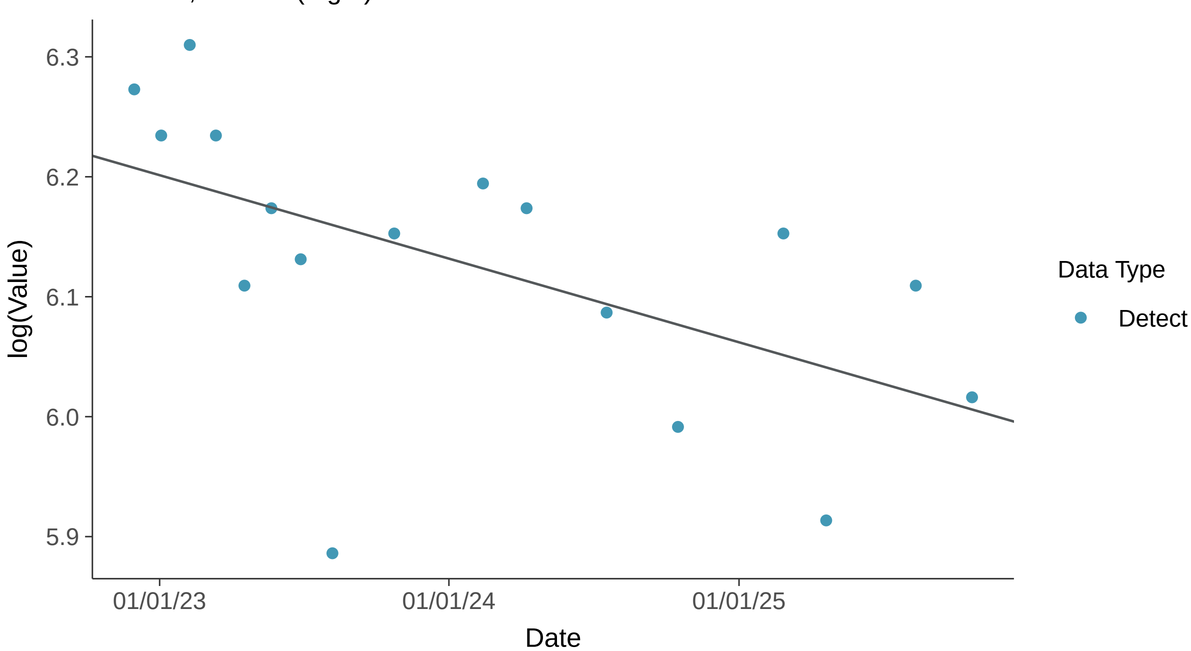
Gamma Q-Q plot

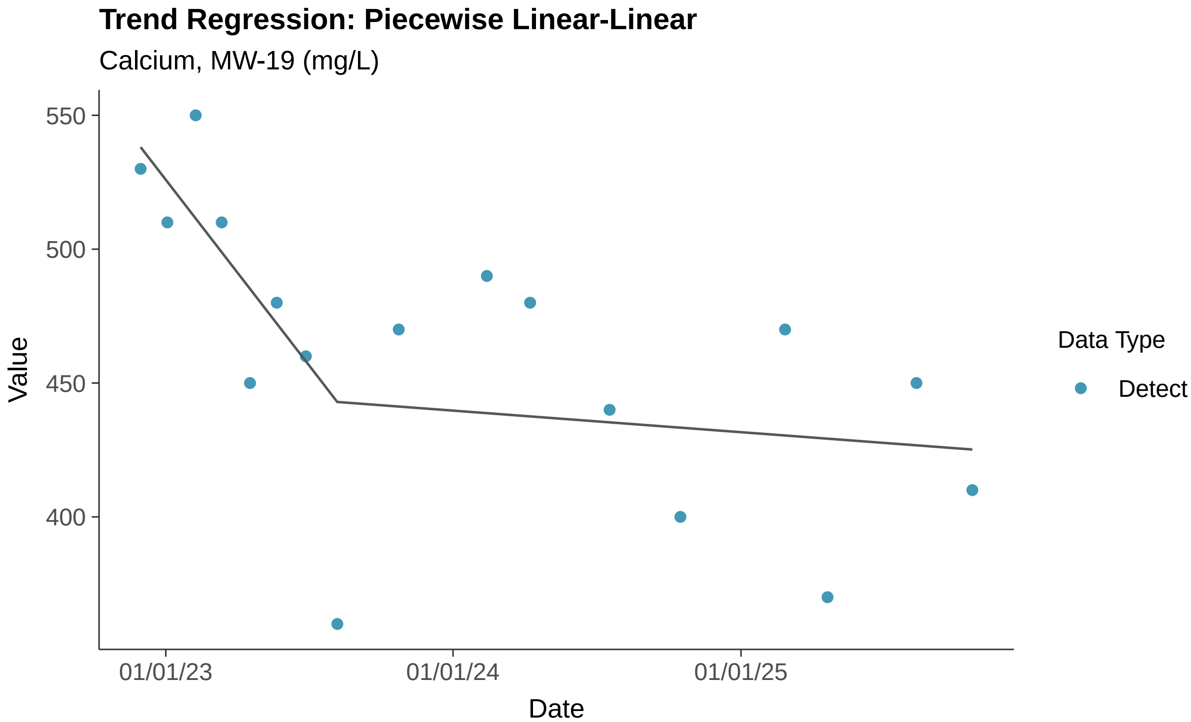
Calcium, MW-19 (mg/L)

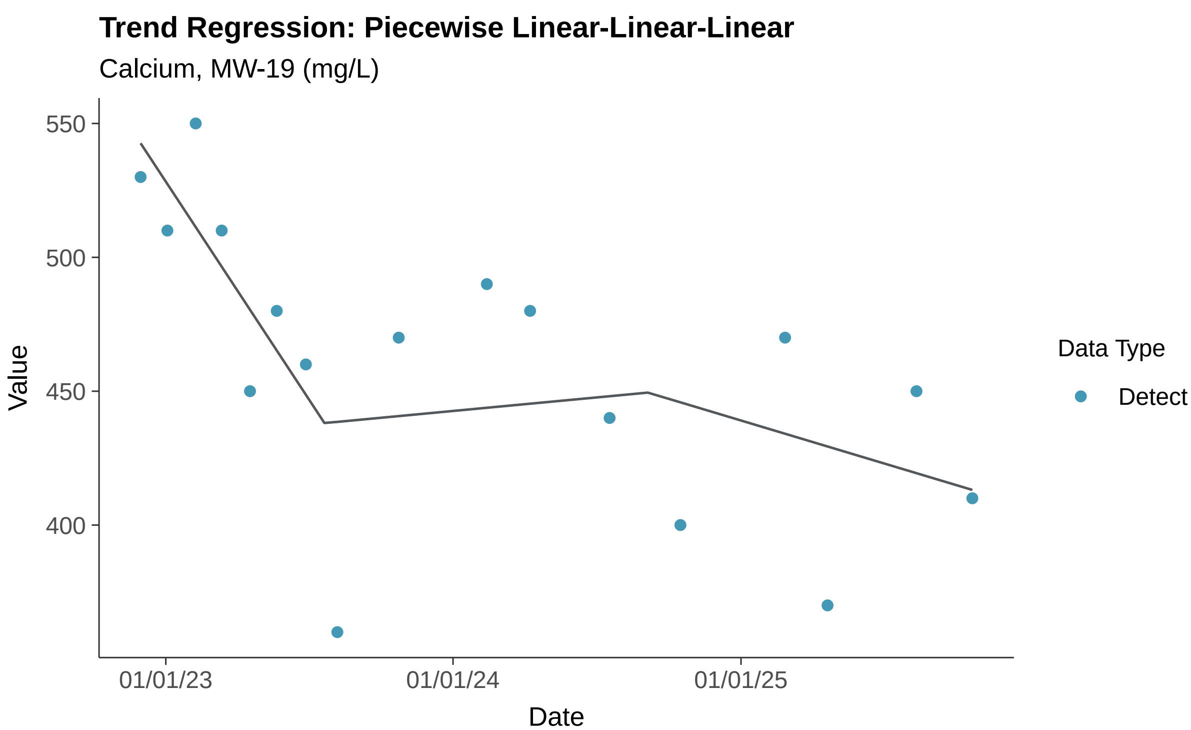


Trend Regression: Lognormal MLE

Calcium, MW-19 (mg/L)

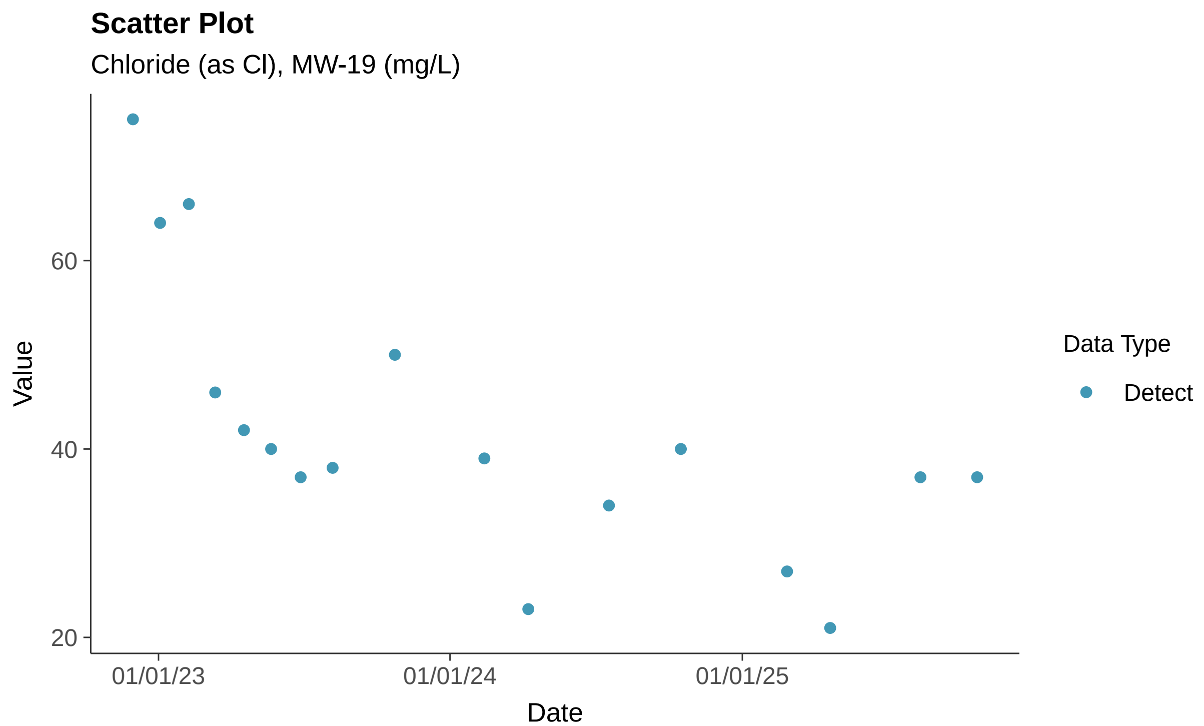


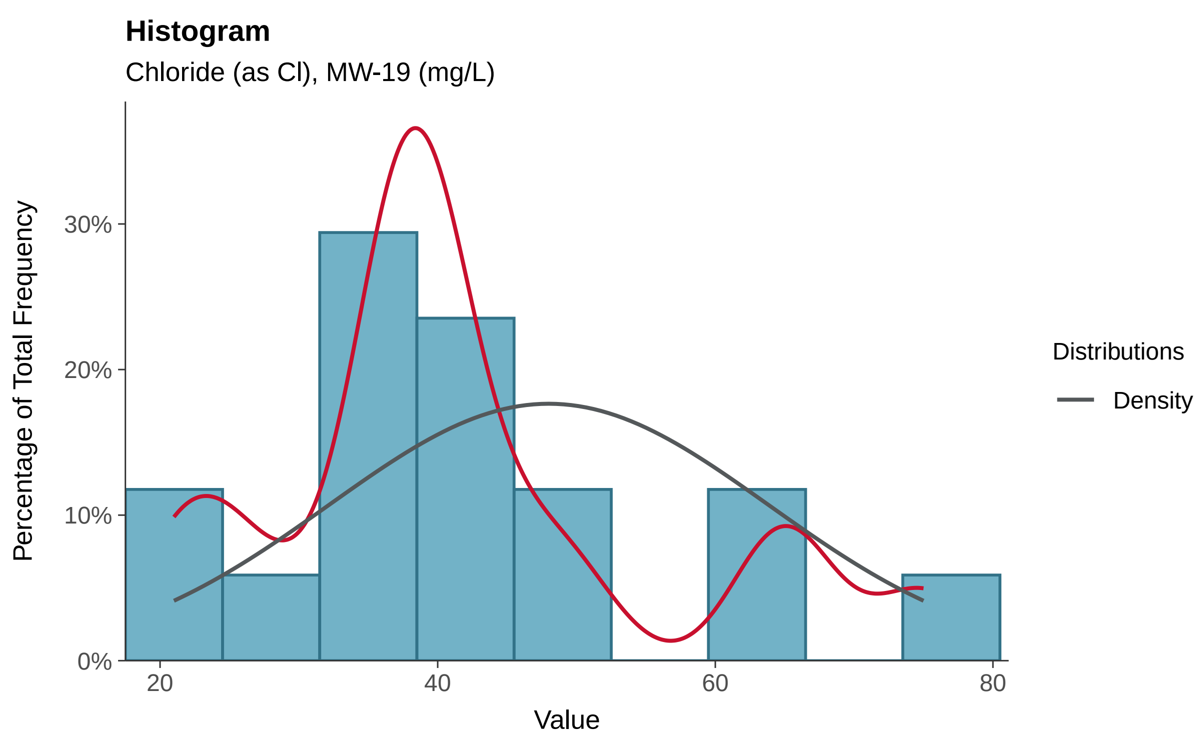

Trend Regression: Piecewise Linear-Linear
Calcium, MW-19 (mg/L)
550
500
450
400
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
Calcium, MW-19 (mg/L)
550
500
450
400
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Appendix III: Chloride (as Cl), MW-19

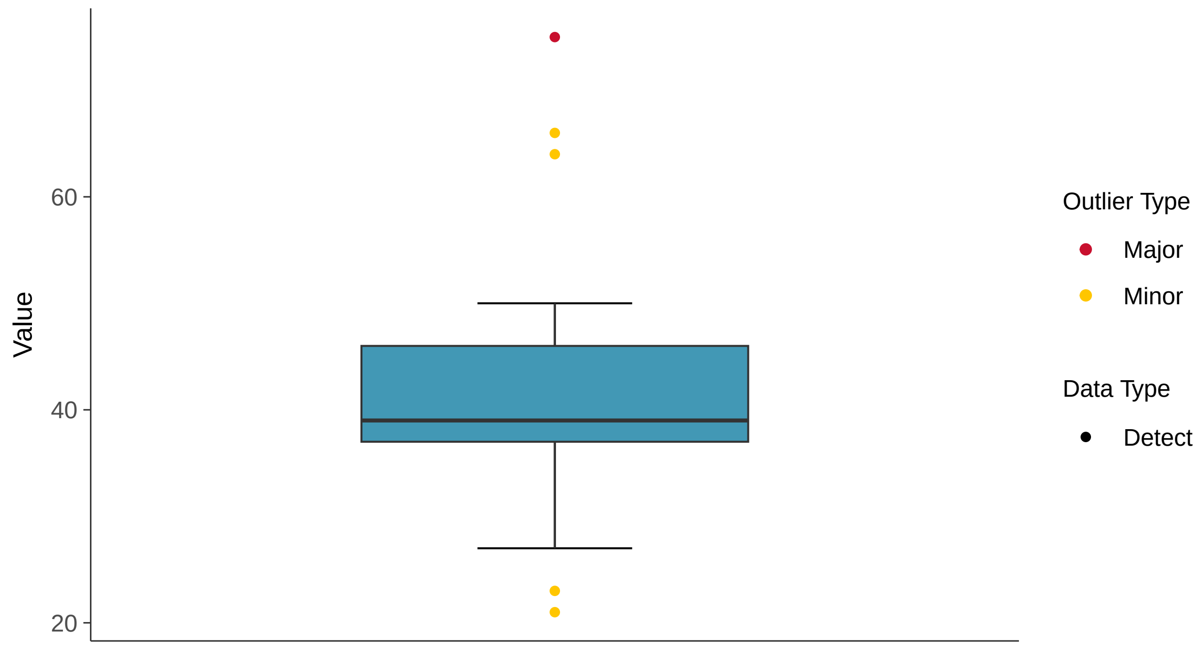
ID: 29_1_3_108





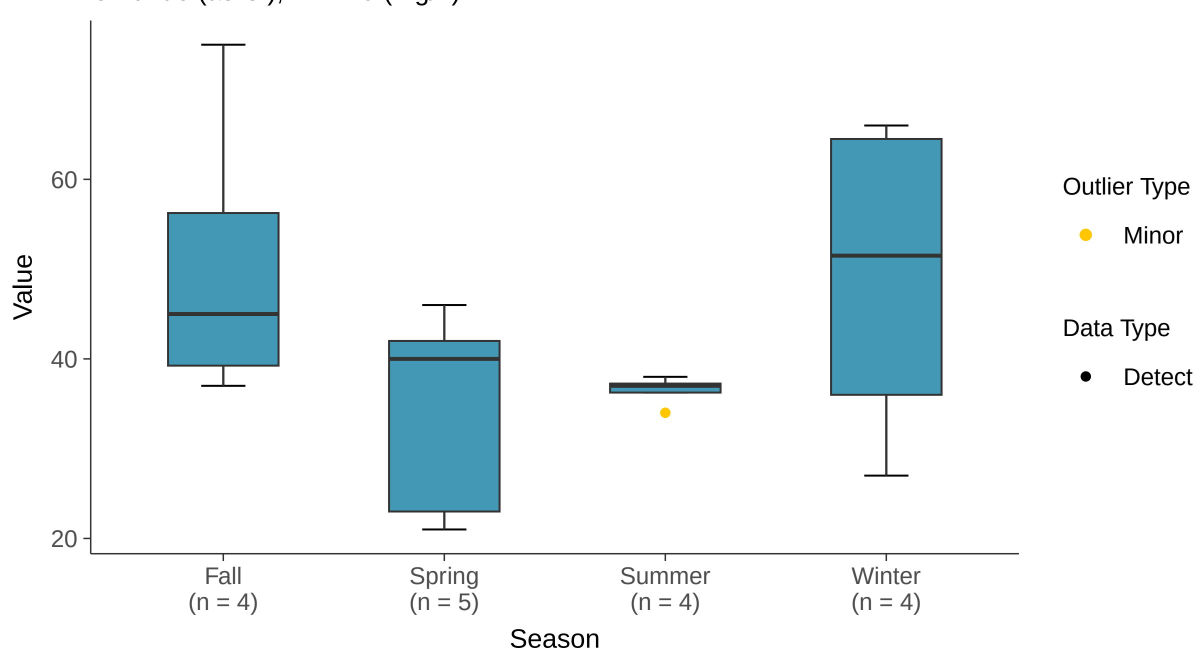
Boxplot

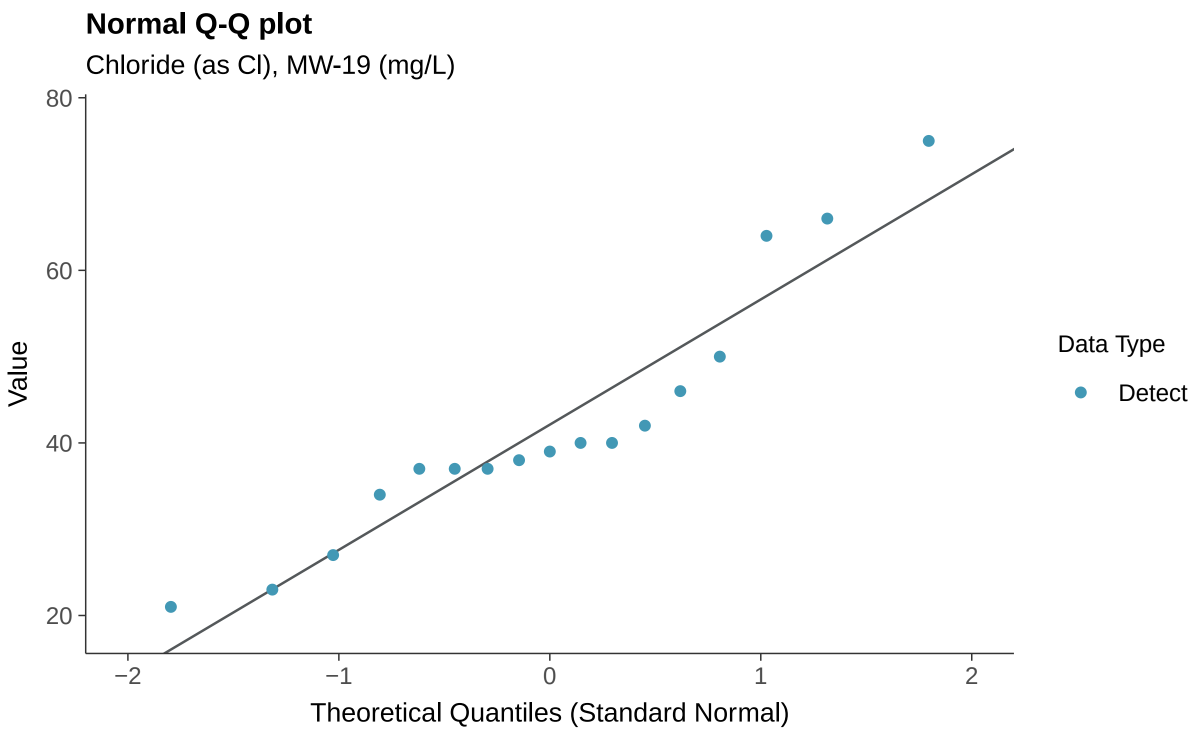
Chloride (as Cl), MW-19 (mg/L)

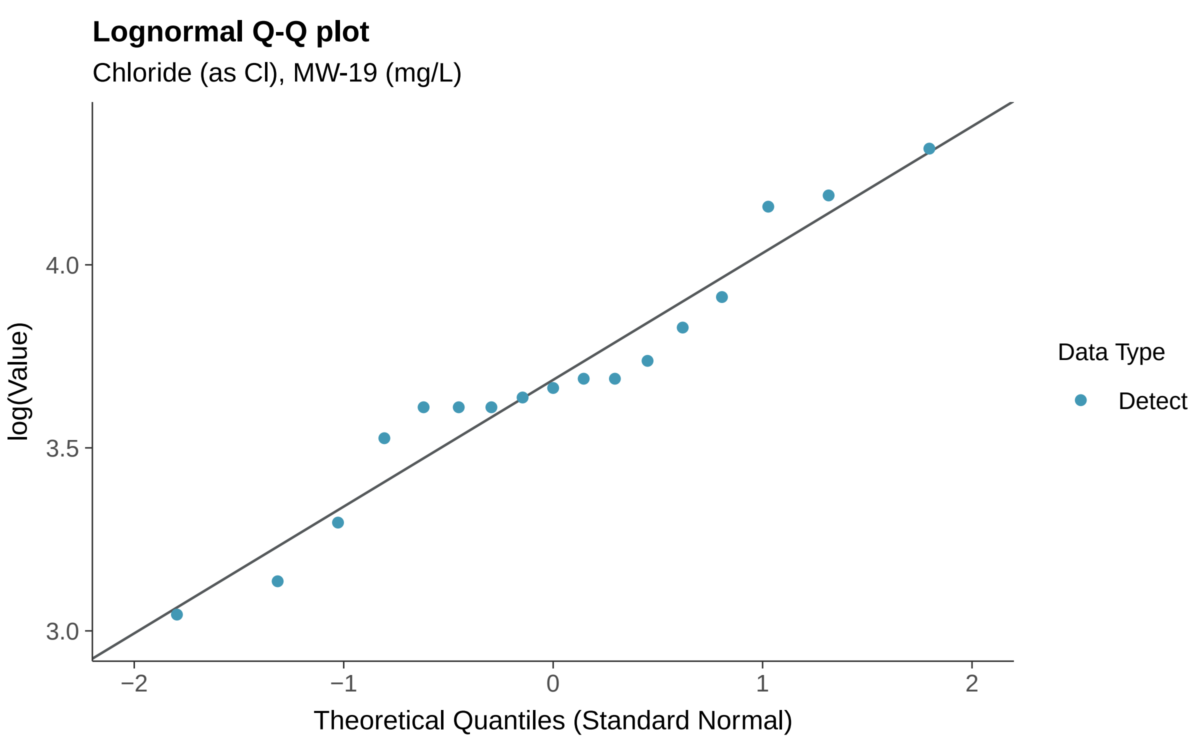


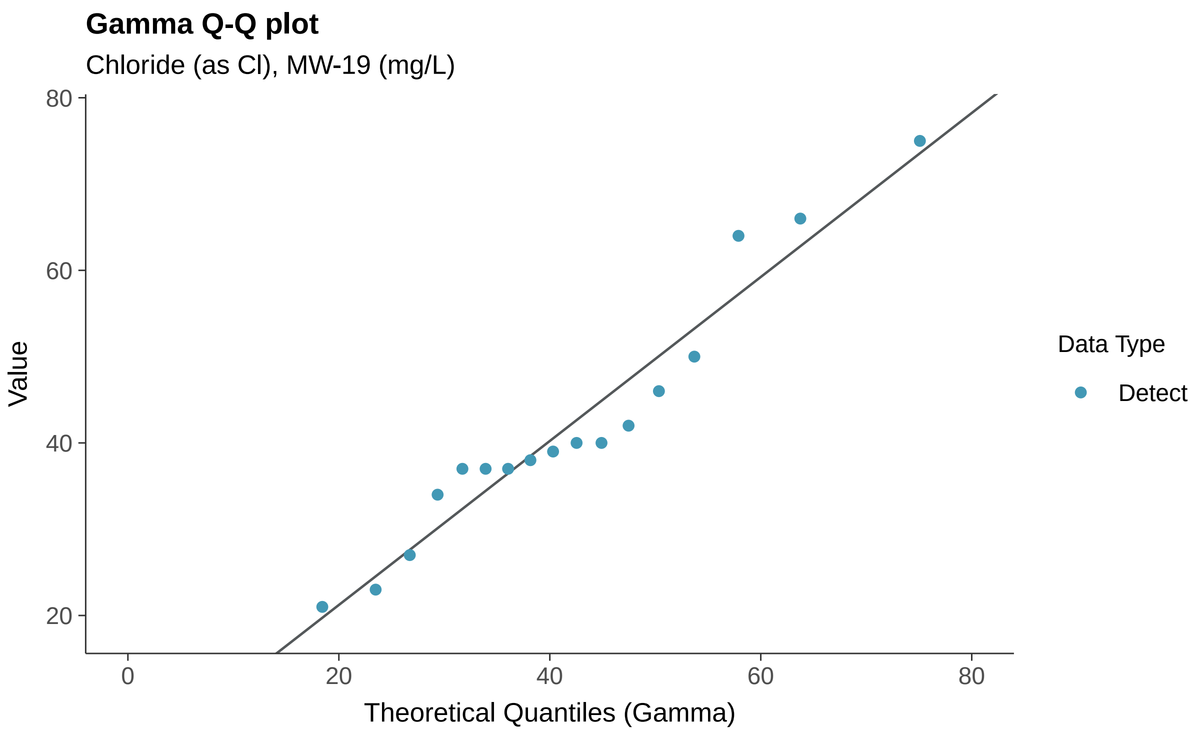
Boxplot by Season

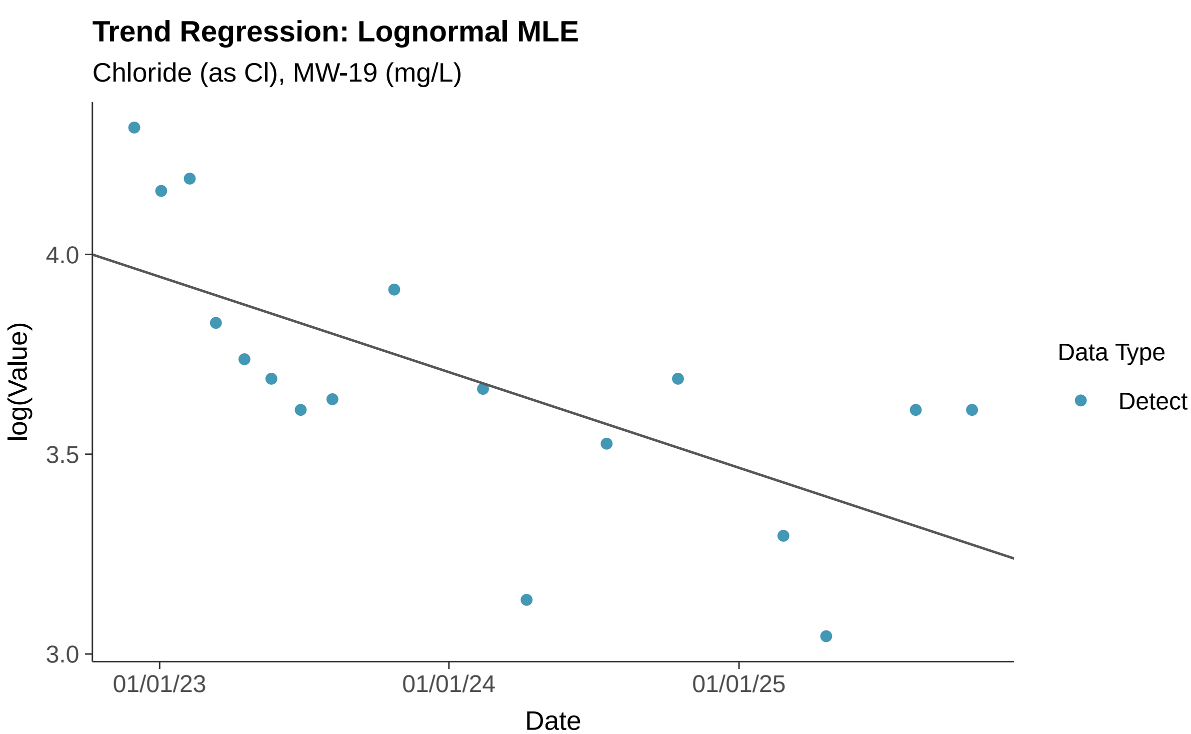
Chloride (as Cl), MW-19 (mg/L)



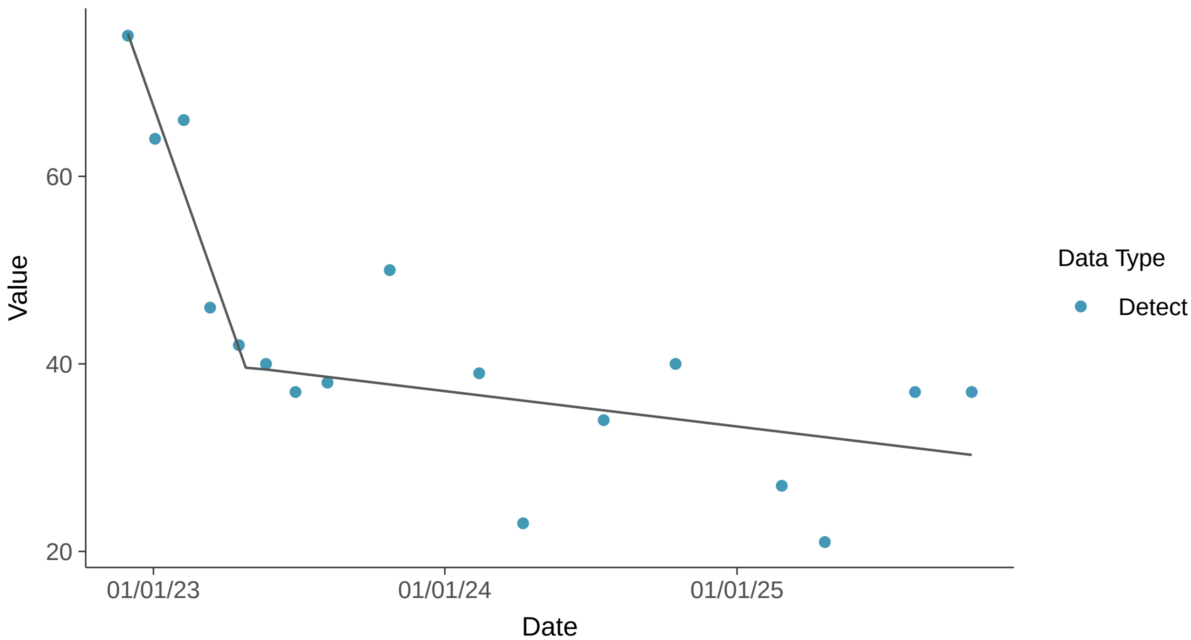

Normal Q-Q plot
Chloride (as Cl), MW-19 (mg/L)
Value
80
60
40
20
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Chloride (as Cl), MW-19 (mg/L)
log(Value)
4.0
3.5
3.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

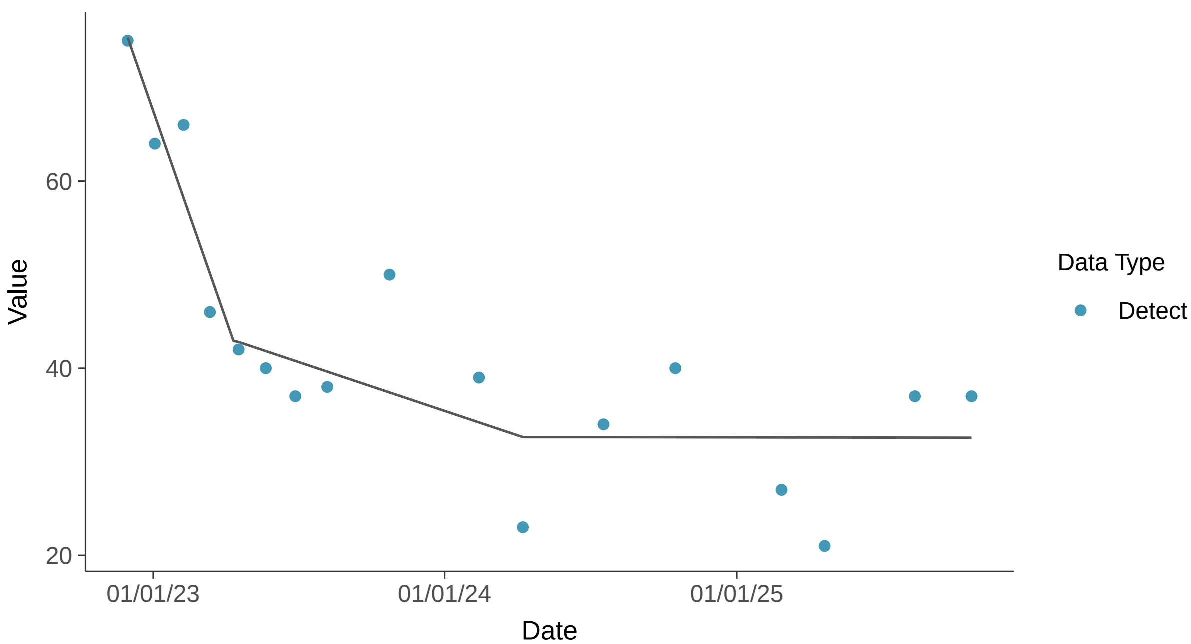

Gamma Q-Q plot
Chloride (as Cl), MW-19 (mg/L)
Value
80
60
40
20
0
20
40
60
80
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Chloride (as Cl), MW-19 (mg/L)
log(Value)
4.0
3.5
3.0
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear
Chloride (as Cl), MW-19 (mg/L)

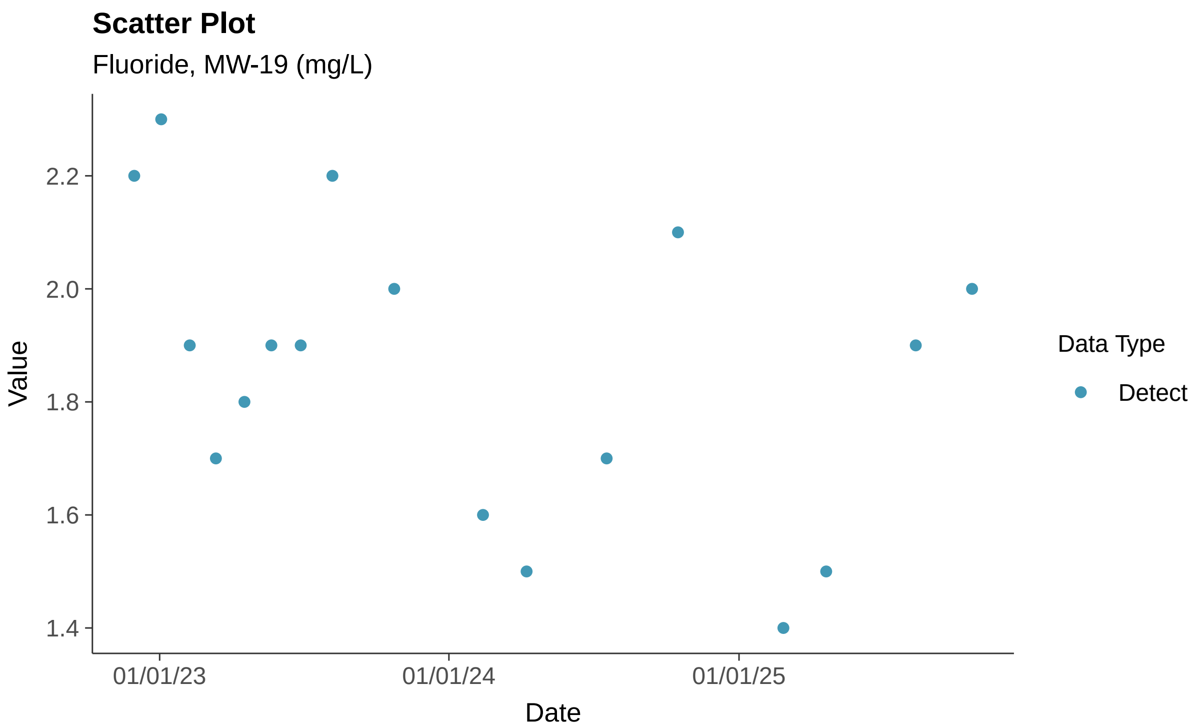


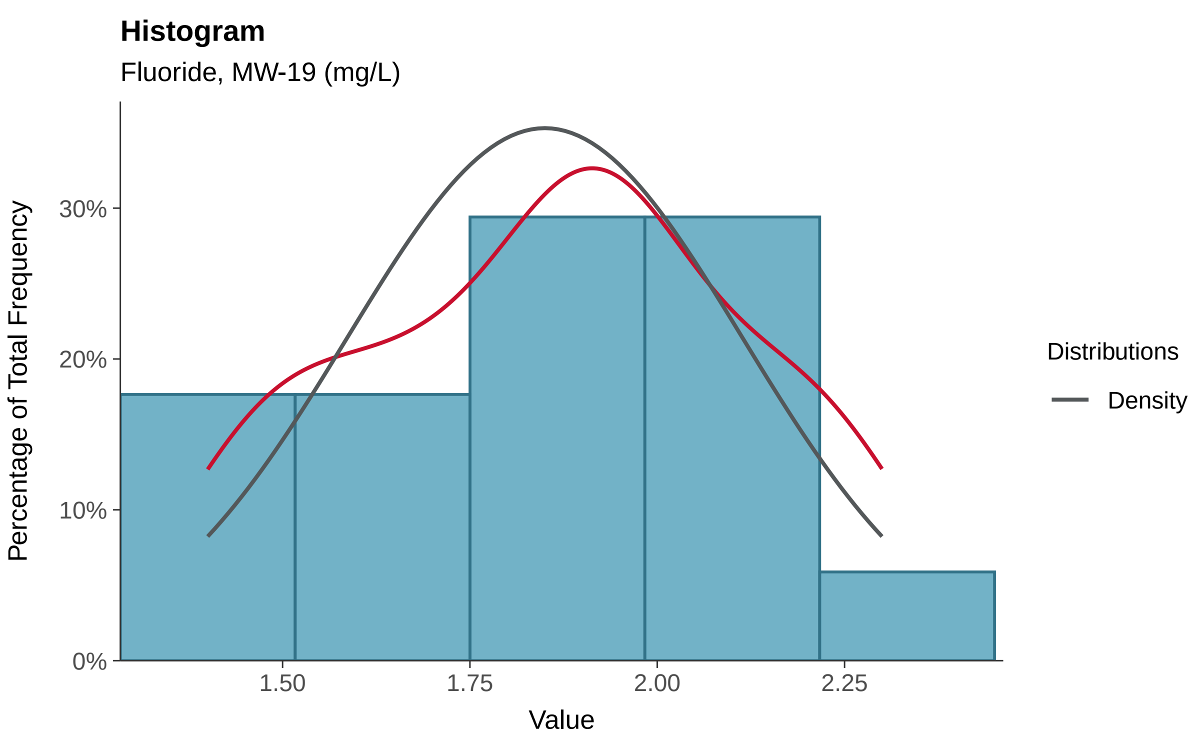
Trend Regression: Piecewise Linear-Linear-Linear
Chloride (as Cl), MW-19 (mg/L)



Appendix III: Fluoride, MW-19

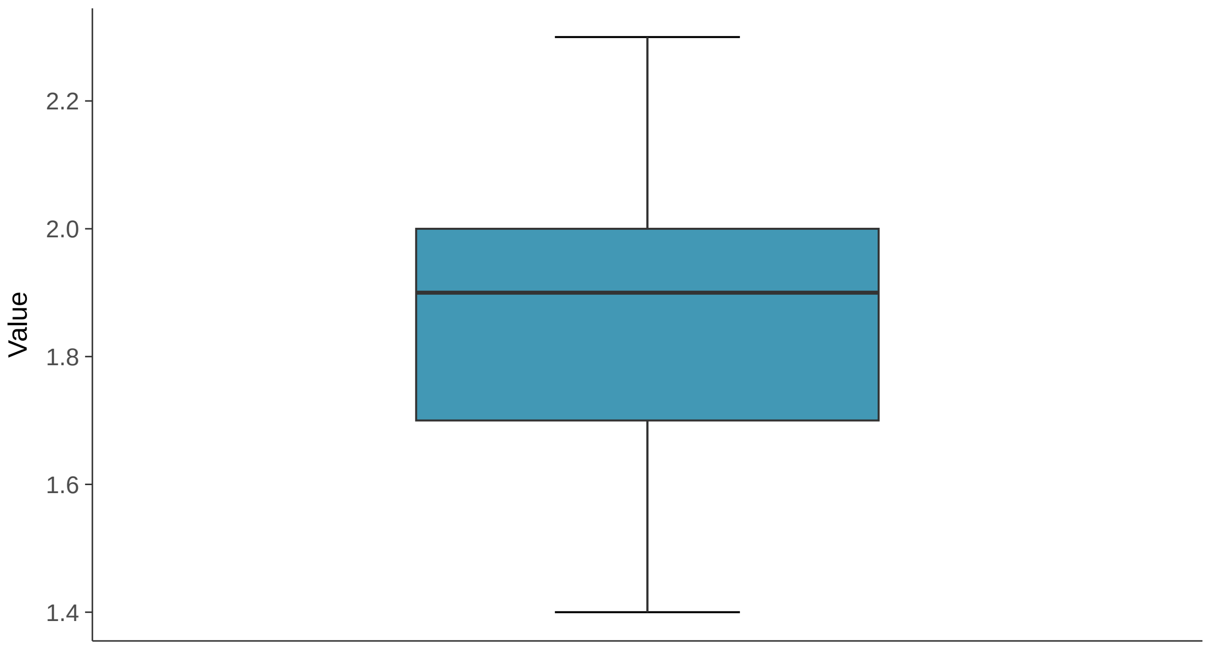
ID: 29_1_3_112





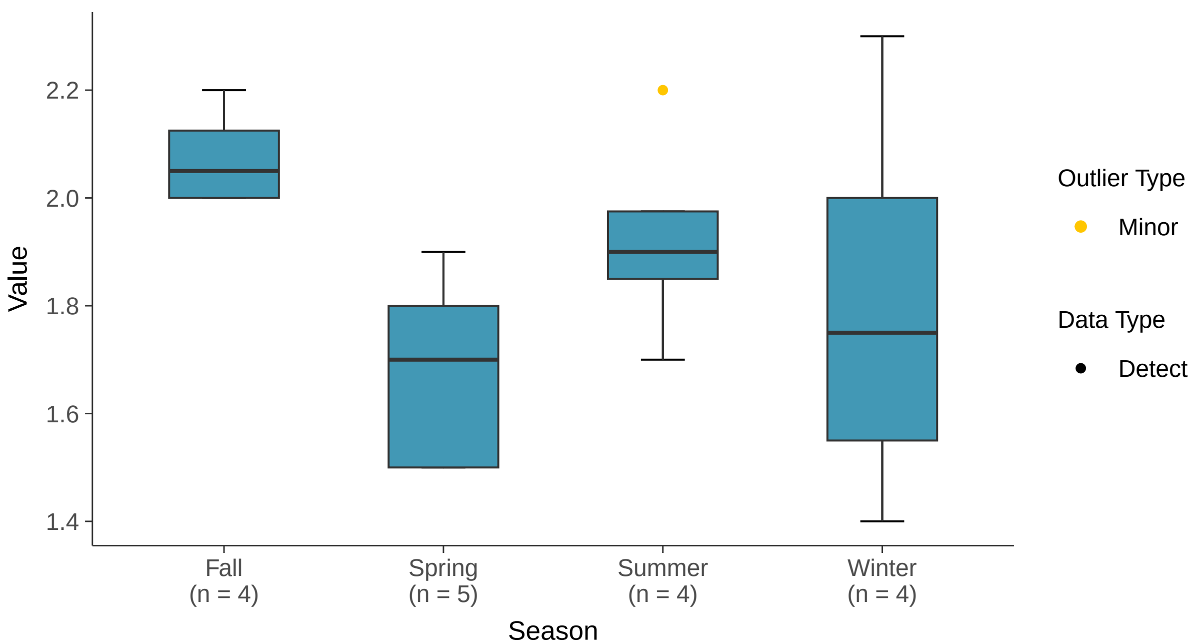
Boxplot

Fluoride, MW-19 (mg/L)



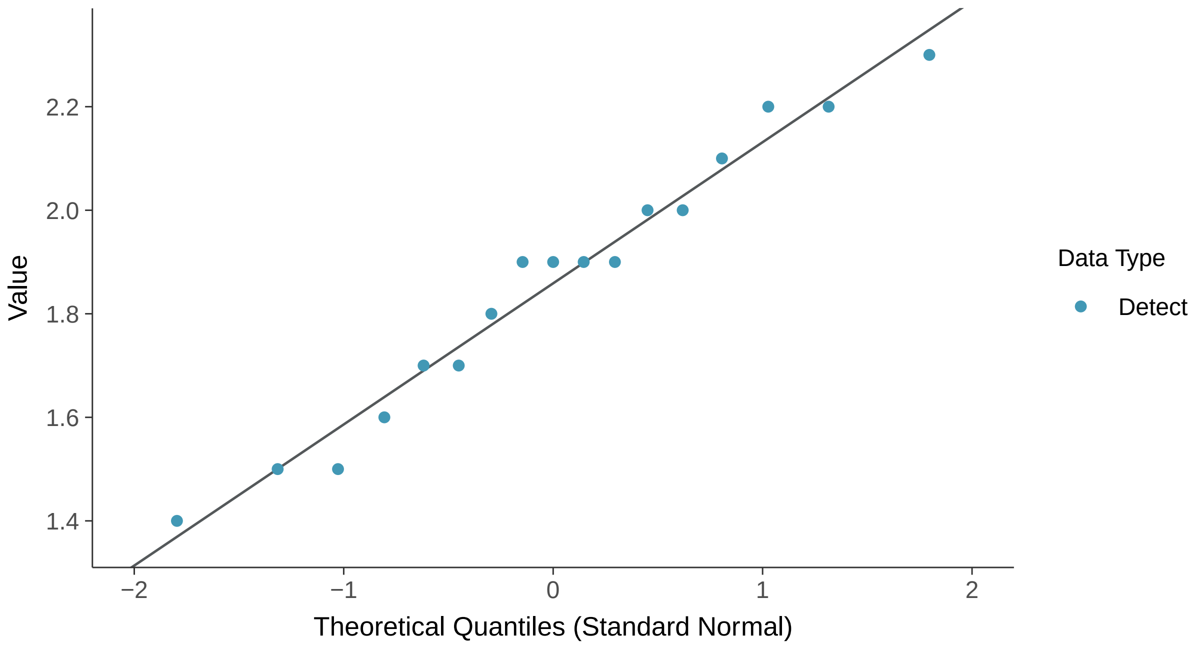
Boxplot by Season

Fluoride, MW-19 (mg/L)



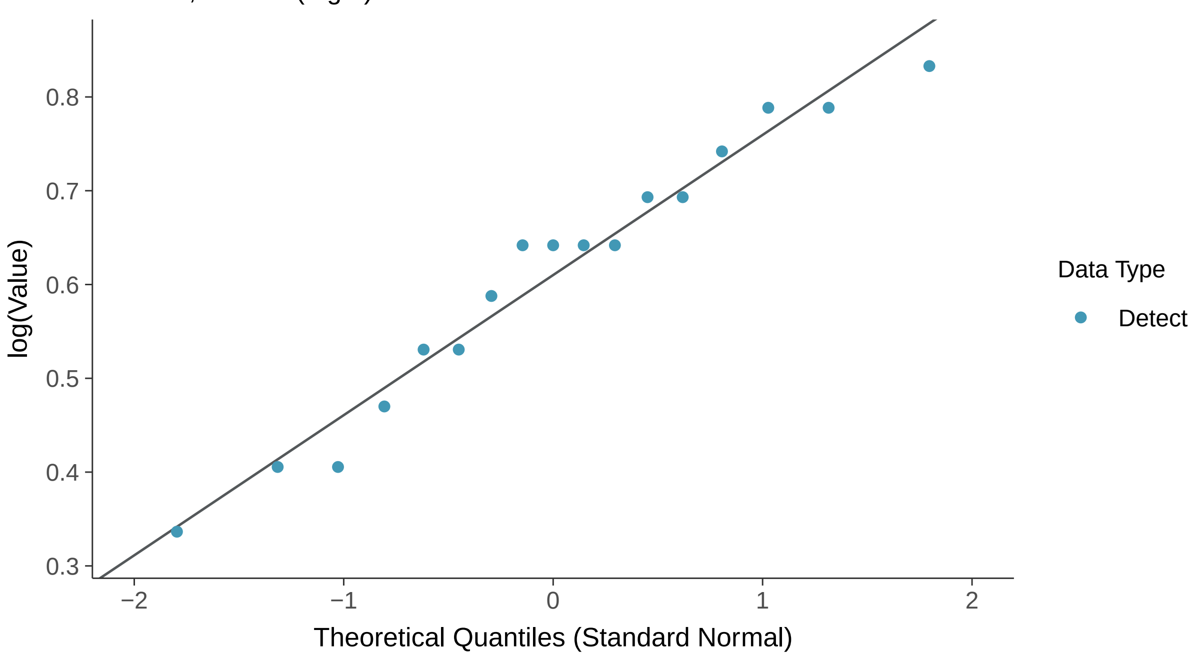
Normal Q-Q plot

Fluoride, MW-19 (mg/L)



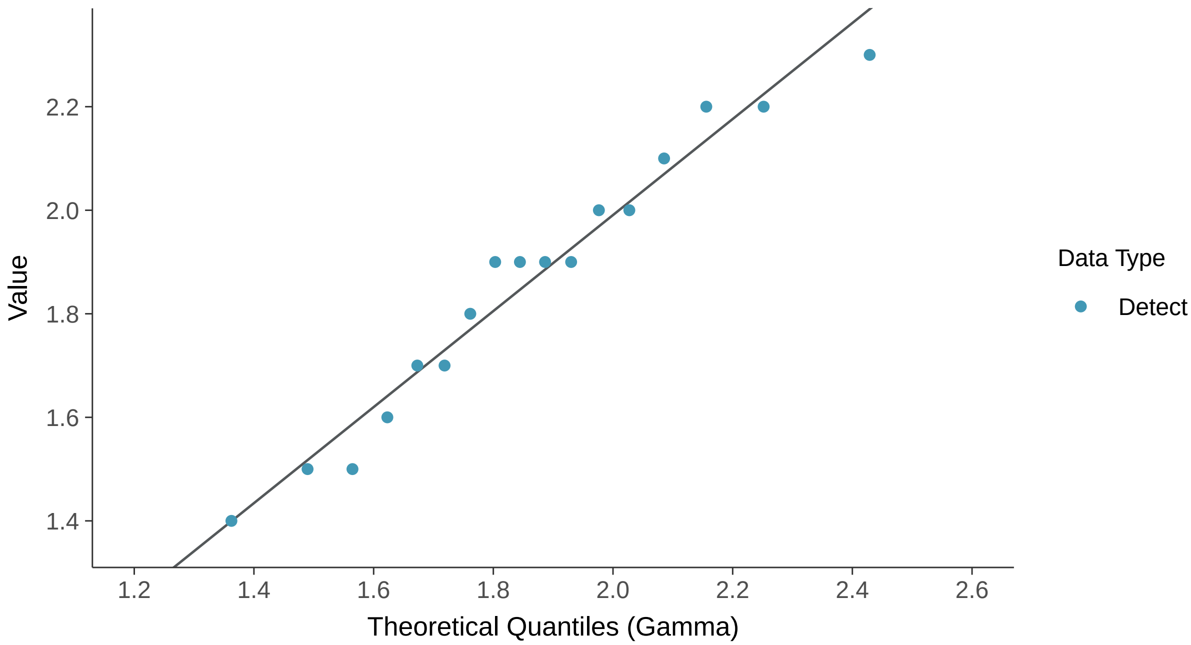
Lognormal Q-Q plot

Fluoride, MW-19 (mg/L)



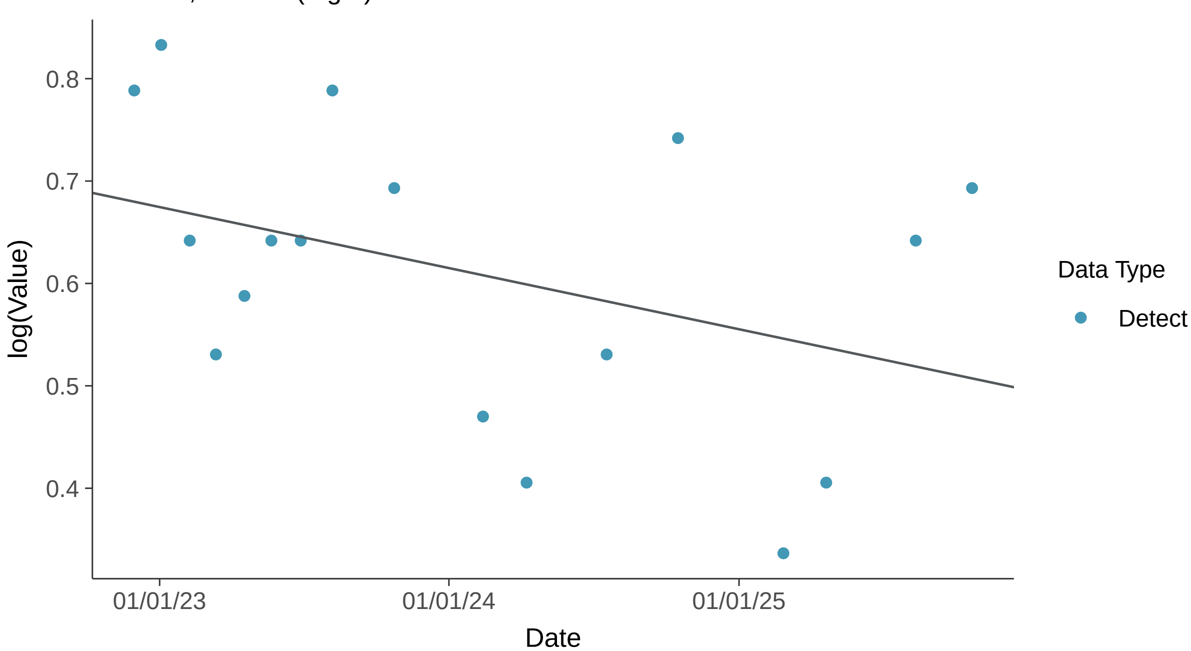
Gamma Q-Q plot

Fluoride, MW-19 (mg/L)



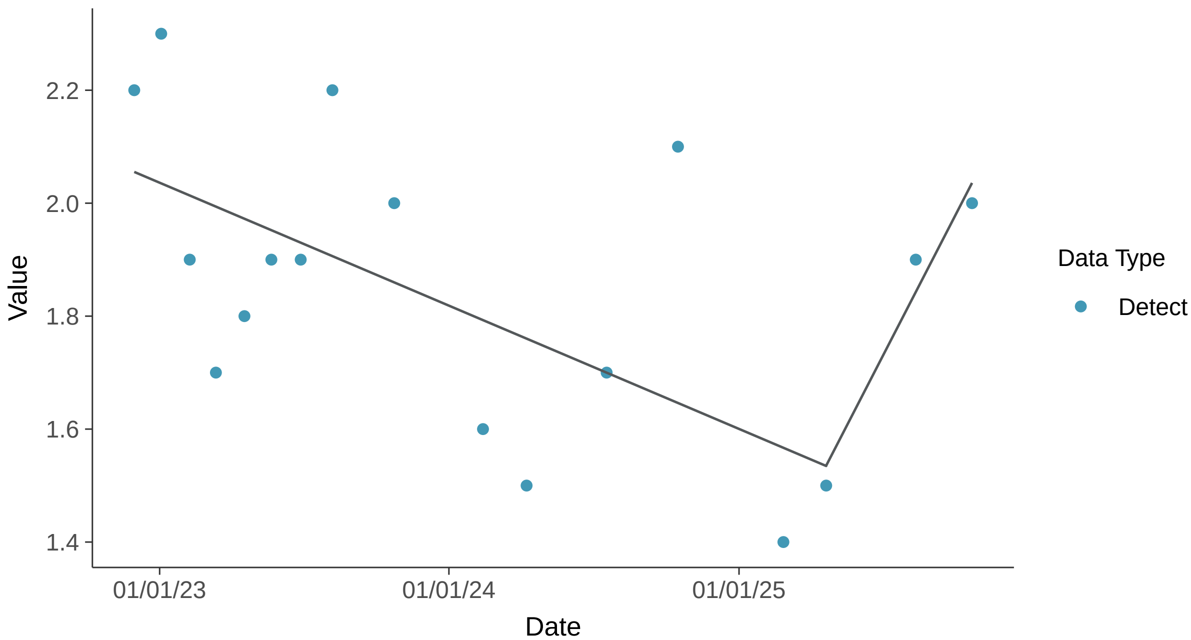
Trend Regression: Lognormal MLE

Fluoride, MW-19 (mg/L)



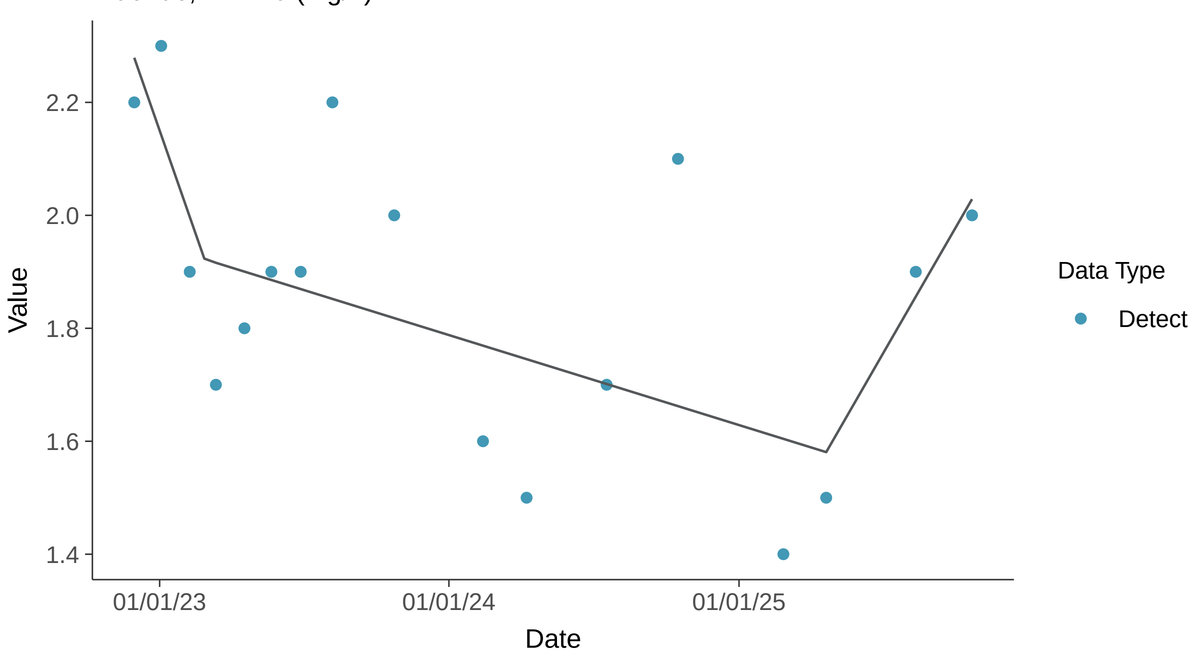
Trend Regression: Piecewise Linear-Linear

Fluoride, MW-19 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Fluoride, MW-19 (mg/L)

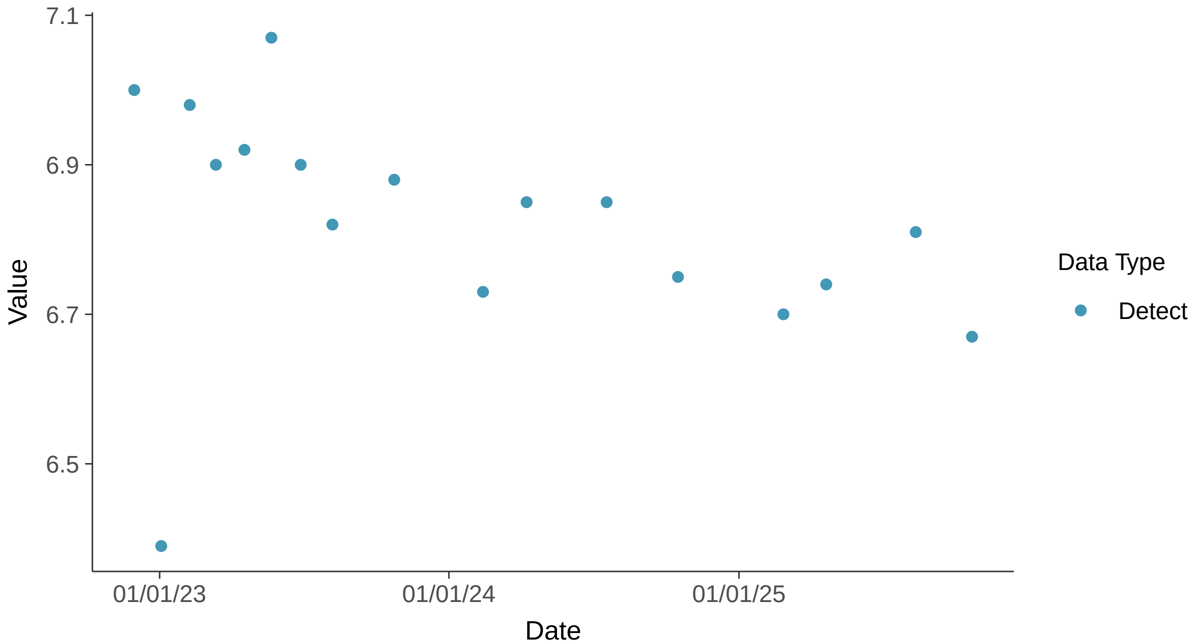


Appendix III: pH (field), MW-19

ID: 29_1_3_120

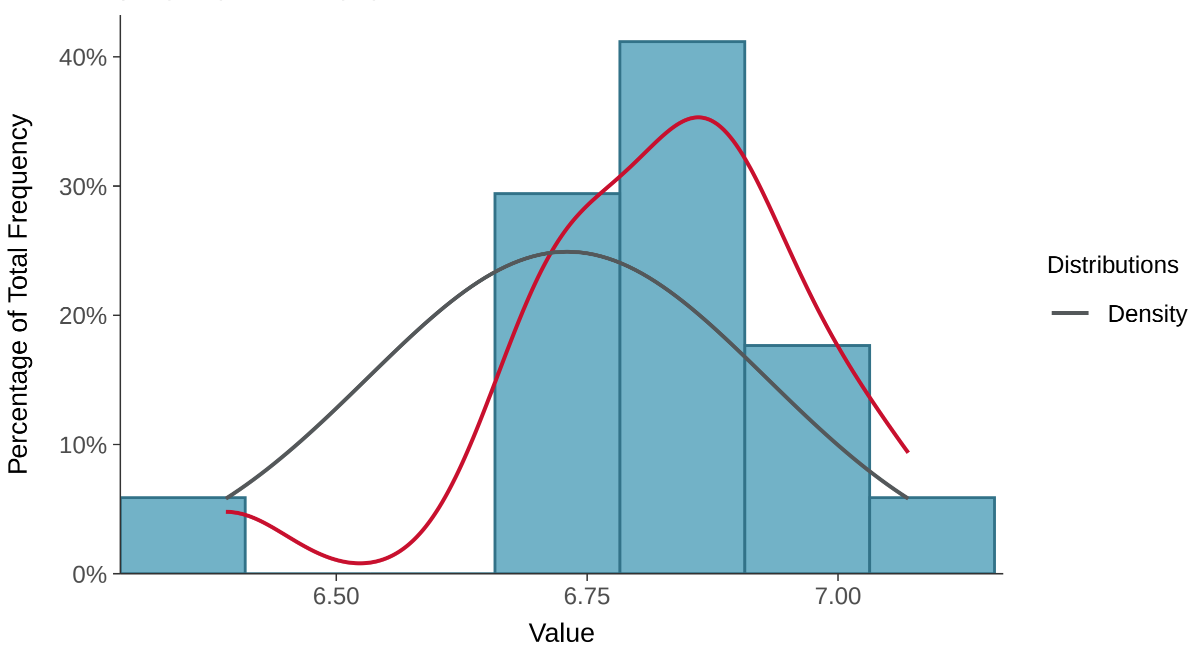
Scatter Plot

pH (field), MW-19 (su)

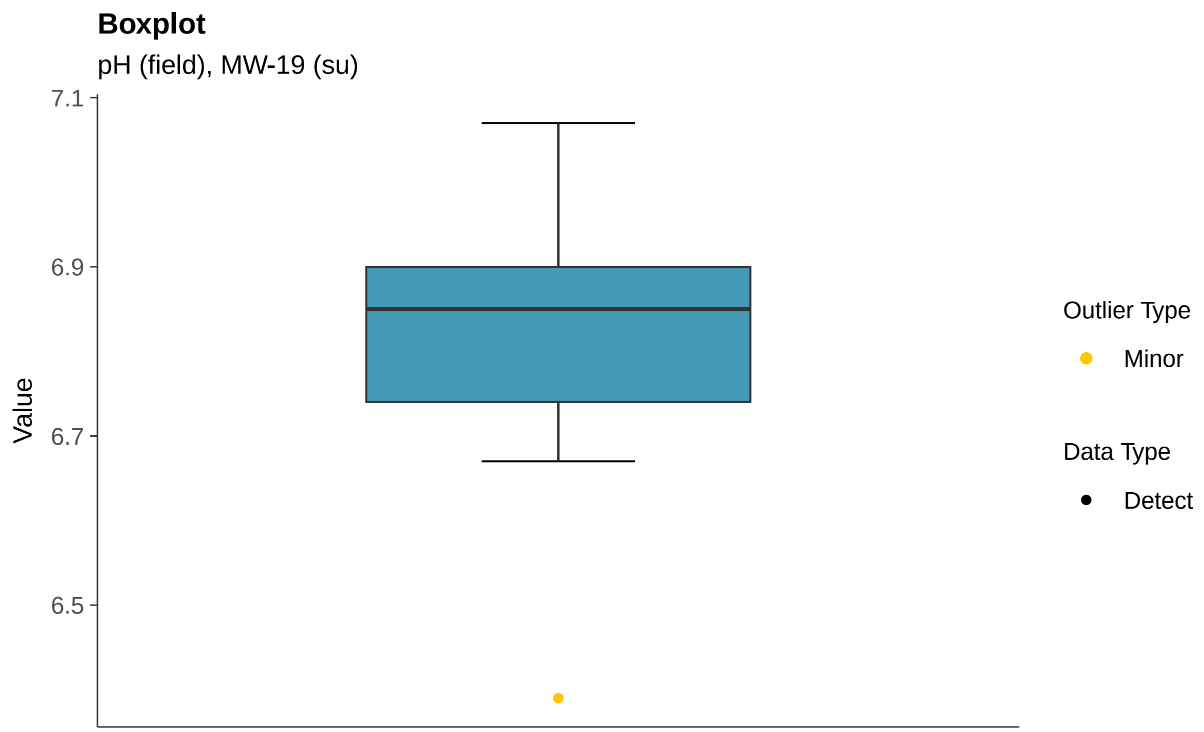


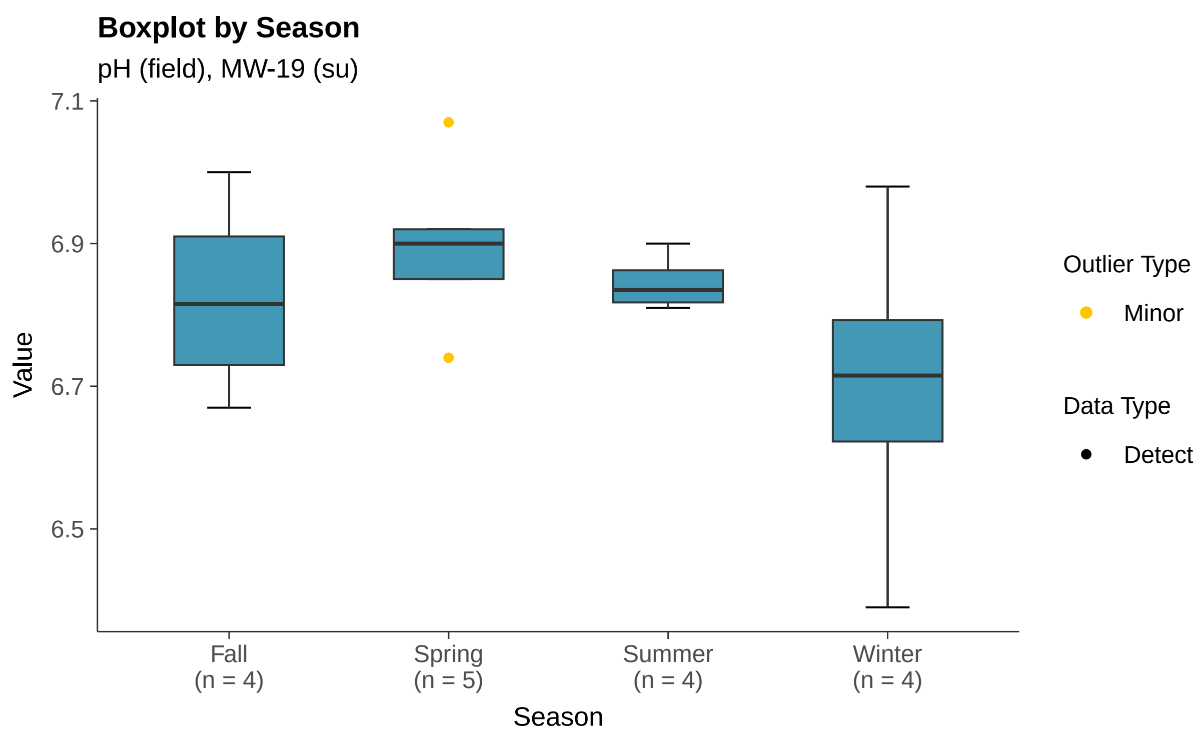
Histogram

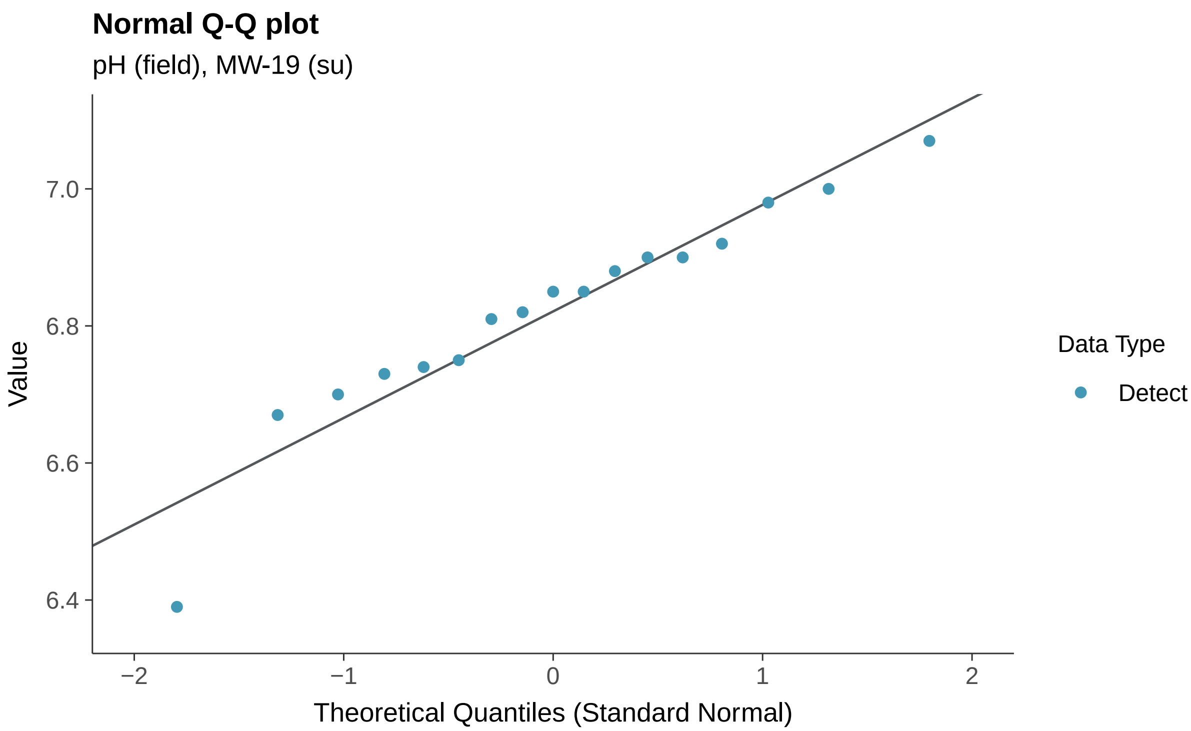
pH (field), MW-19 (su)

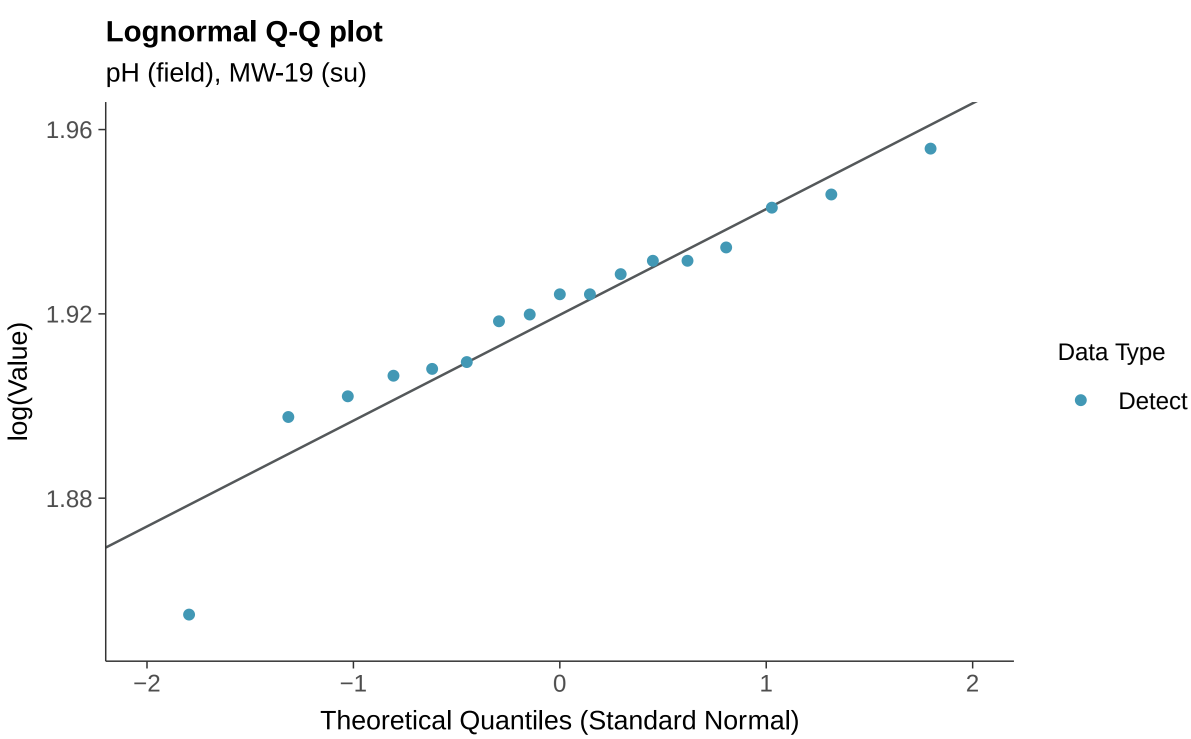


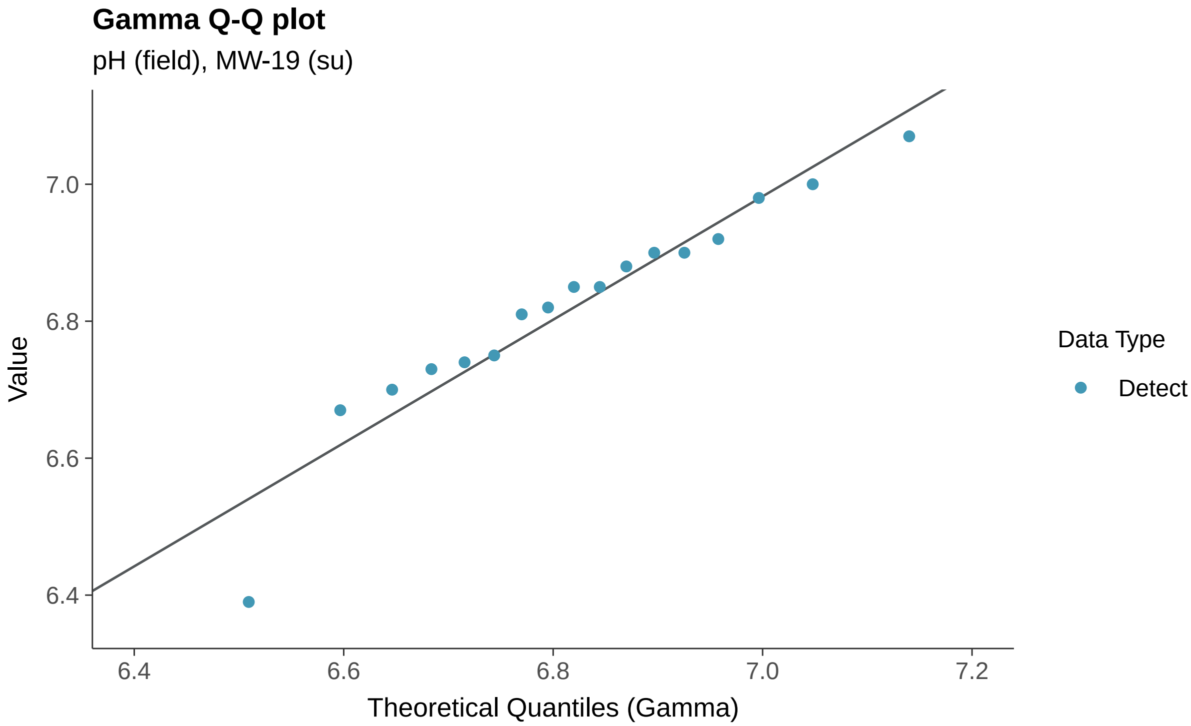
Grand Haven
Downgradient Wells as of October 2025

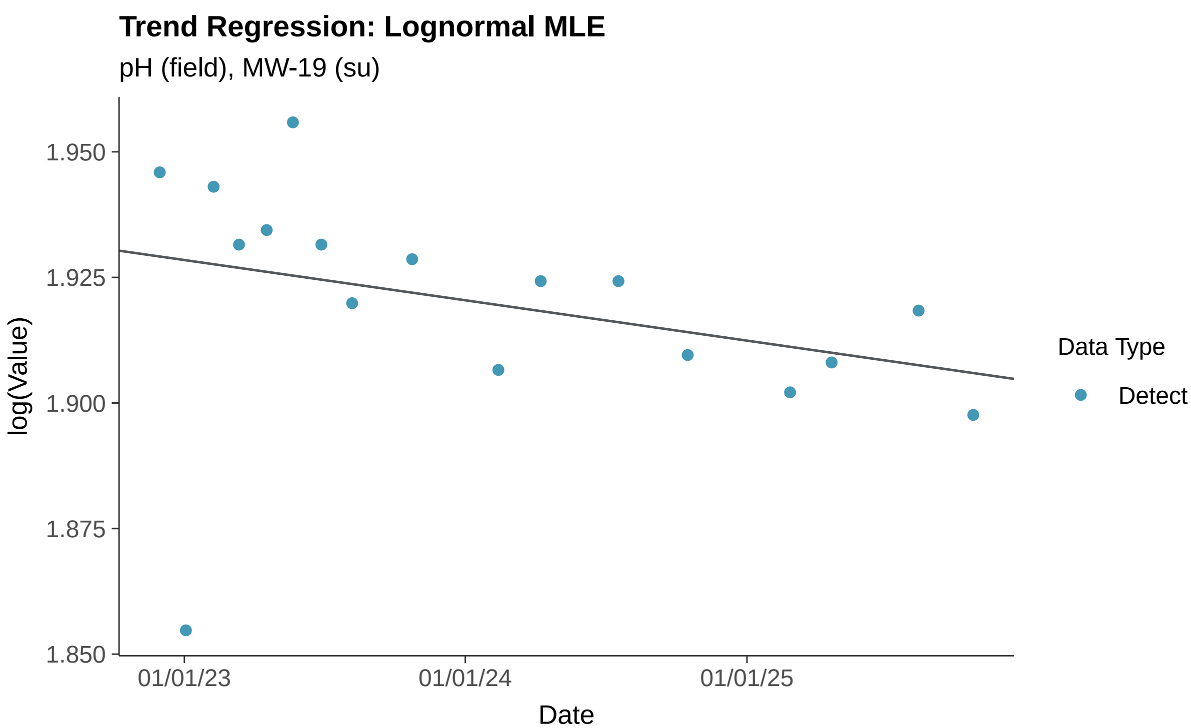





Normal Q-Q plot
pH (field), MW-19 (su)
Value
7.0
6.8
6.6
6.4
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

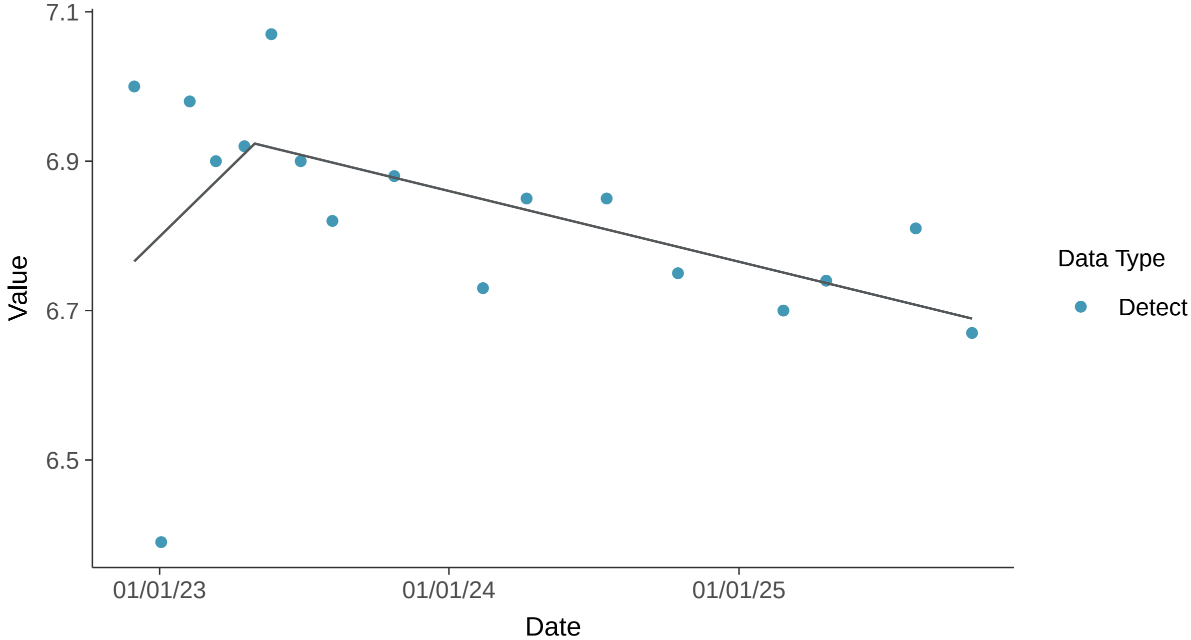

Lognormal Q-Q plot
pH (field), MW-19 (su)
log(Value)
1.96
1.92
1.88
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
pH (field), MW-19 (su)
Value
7.0
6.8
6.6
6.4
6.4
6.6
6.8
7.0
7.2
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
pH (field), MW-19 (su)
log(Value)
1.950
1.925
1.900
1.875
1.850
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

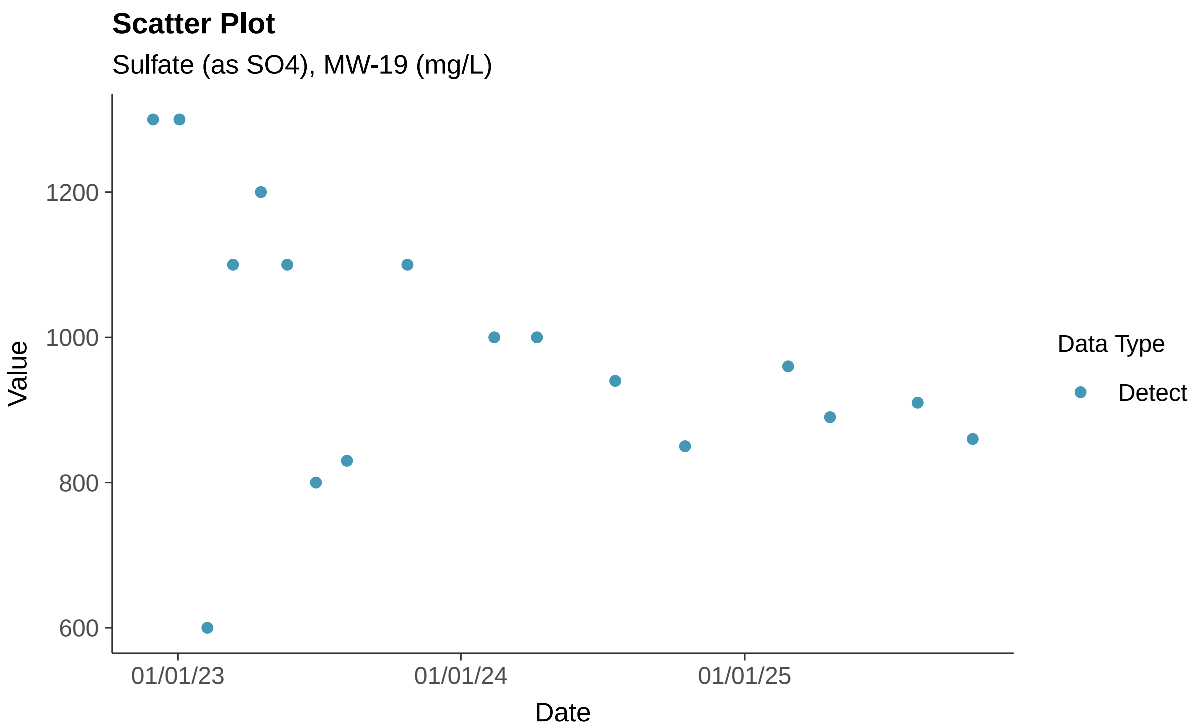
Trend Regression: Piecewise Linear-Linear

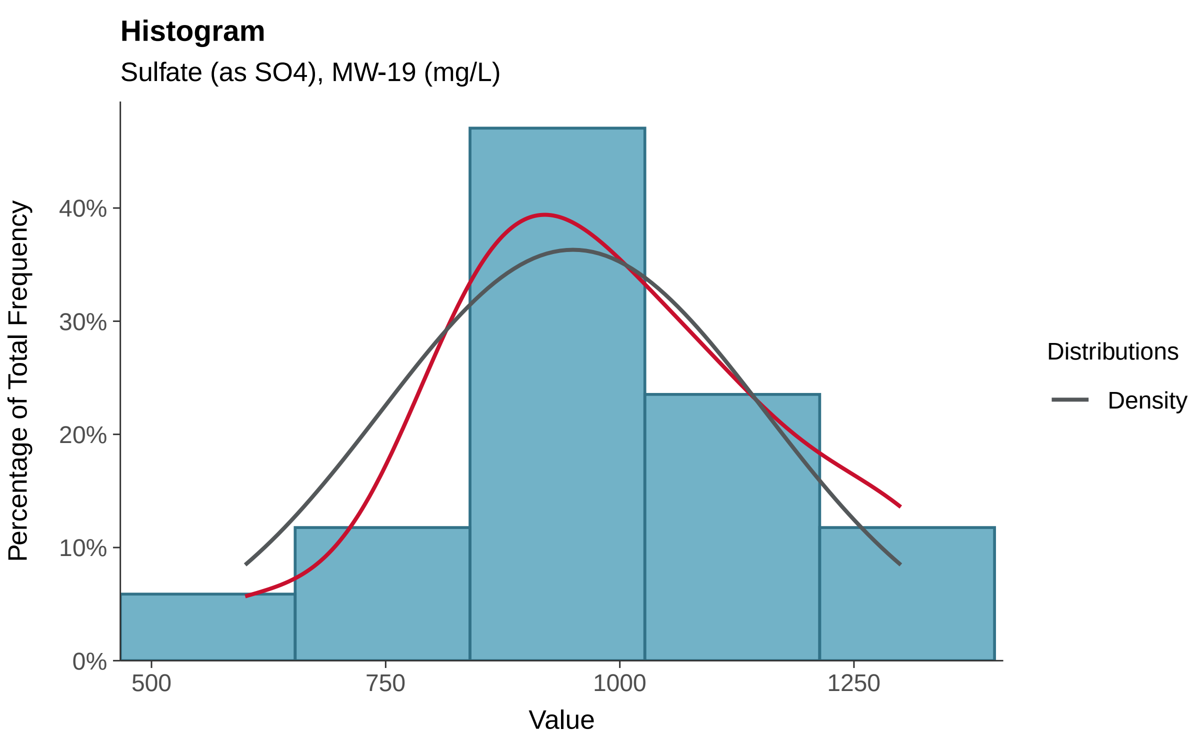
pH (field), MW-19 (su)



Appendix III: Sulfate (as SO4), MW-19

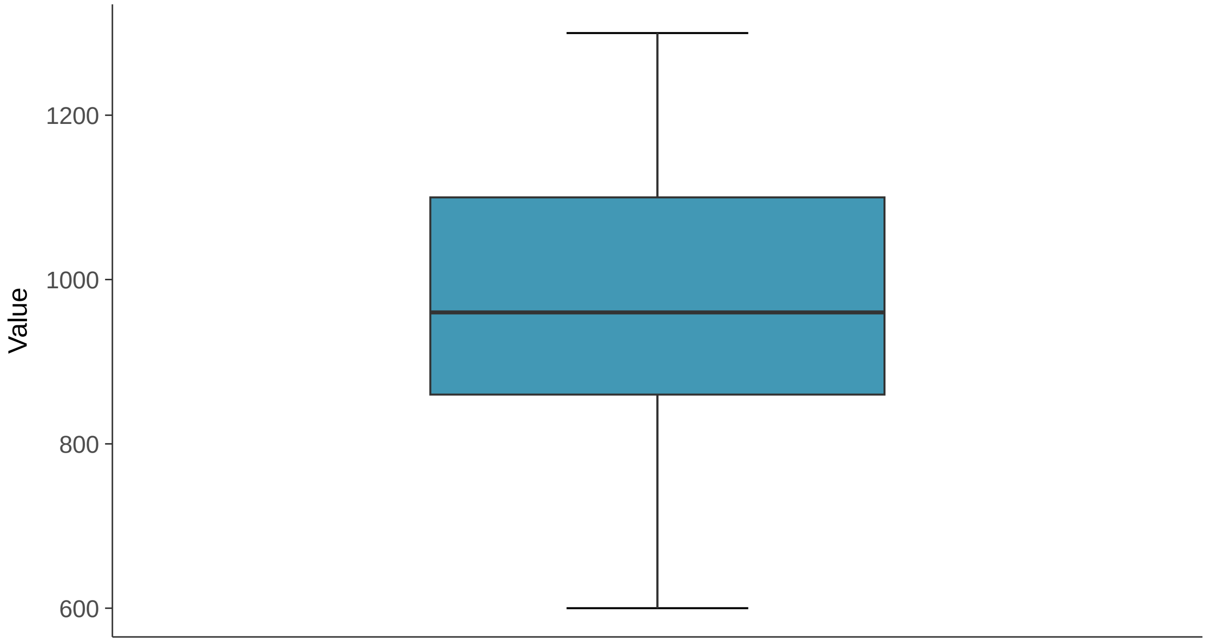
ID: 29_1_3_124





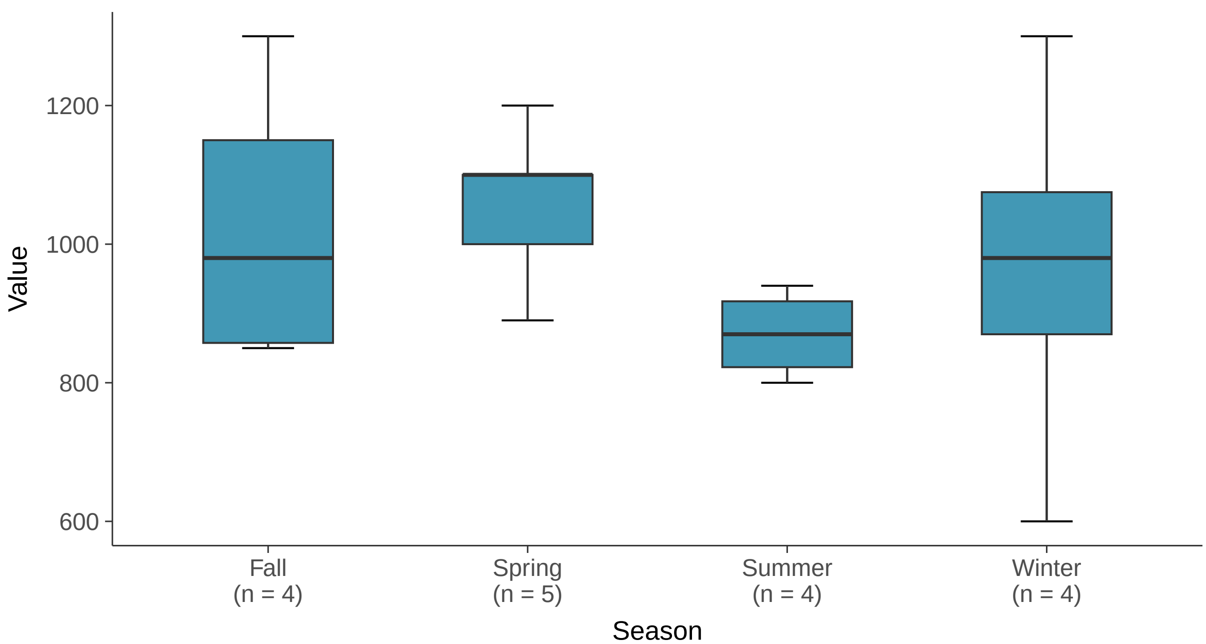
Boxplot

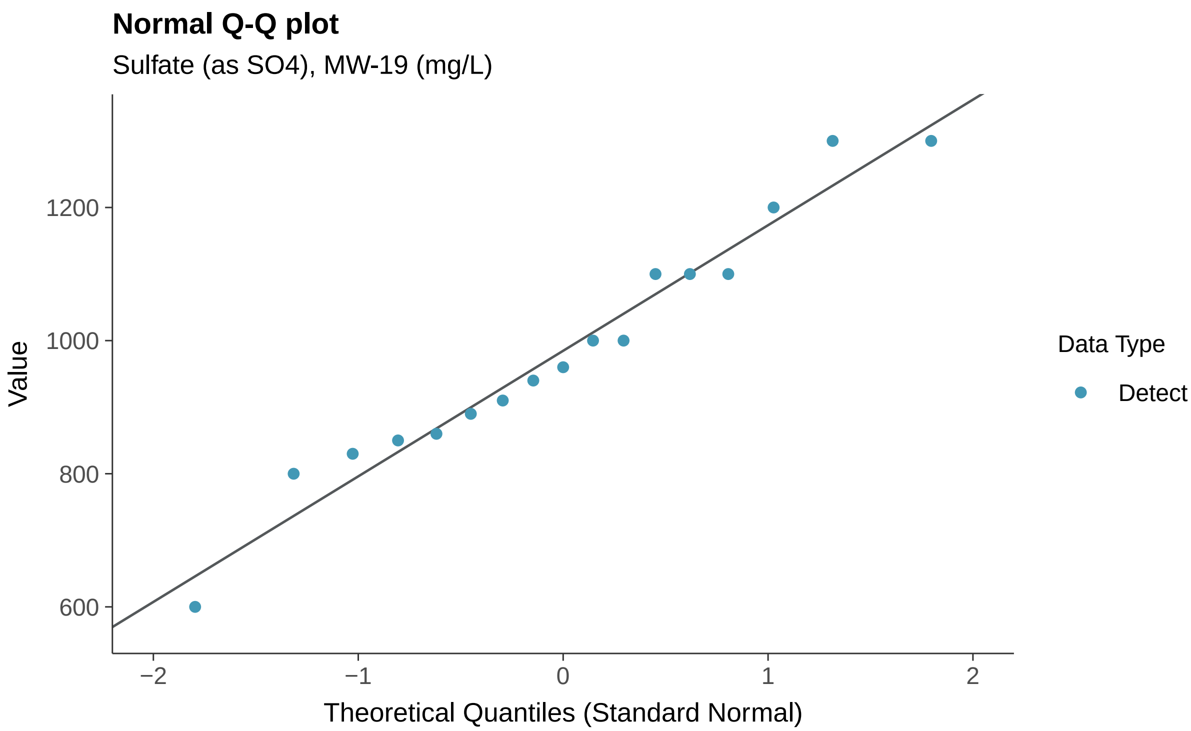
Sulfate (as SO4), MW-19 (mg/L)

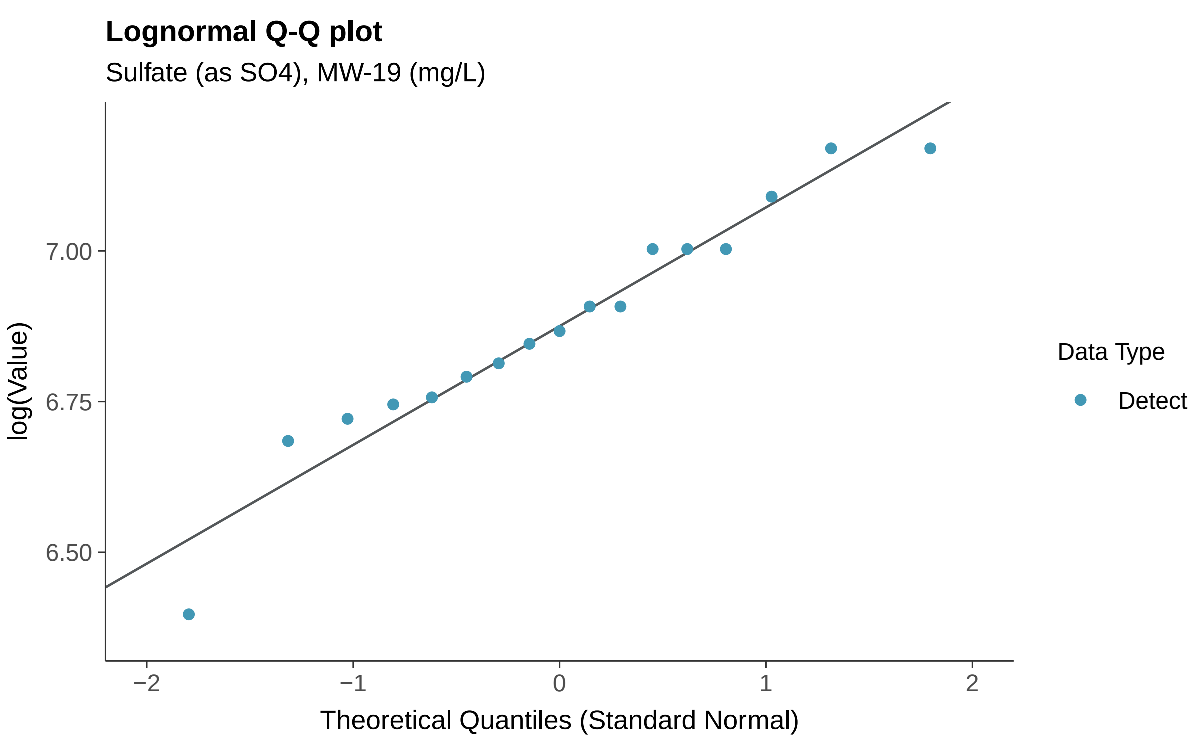


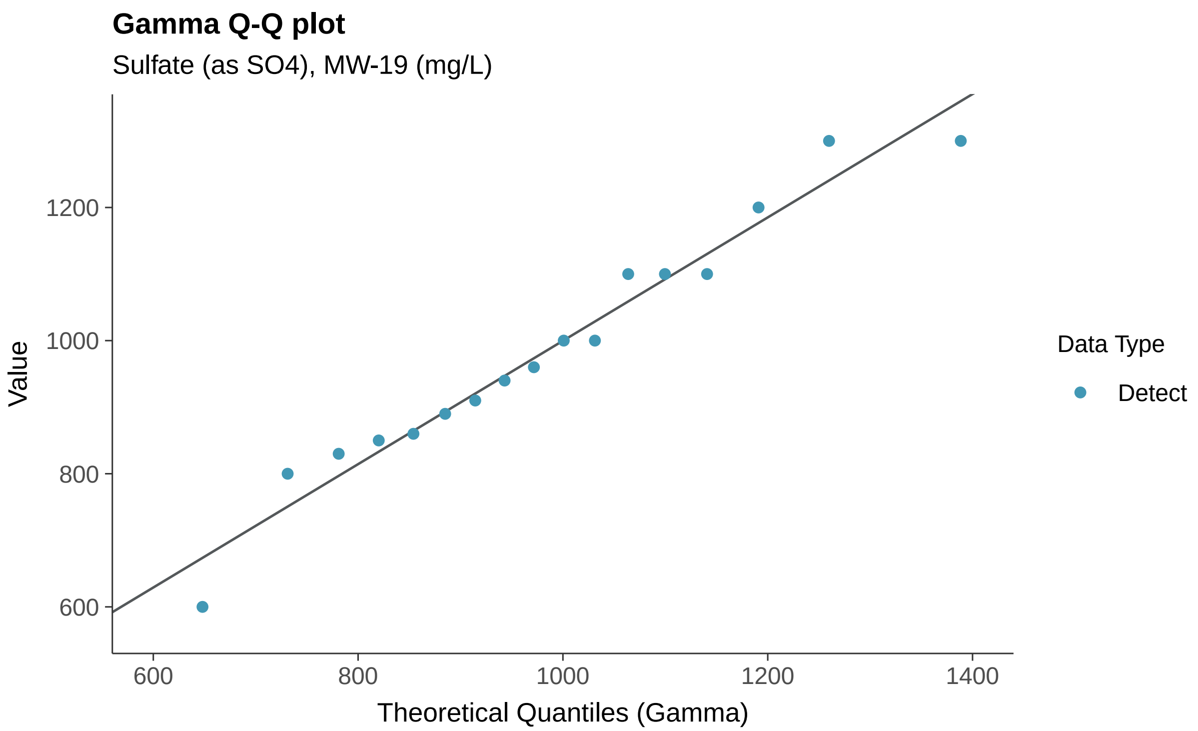
Boxplot by Season

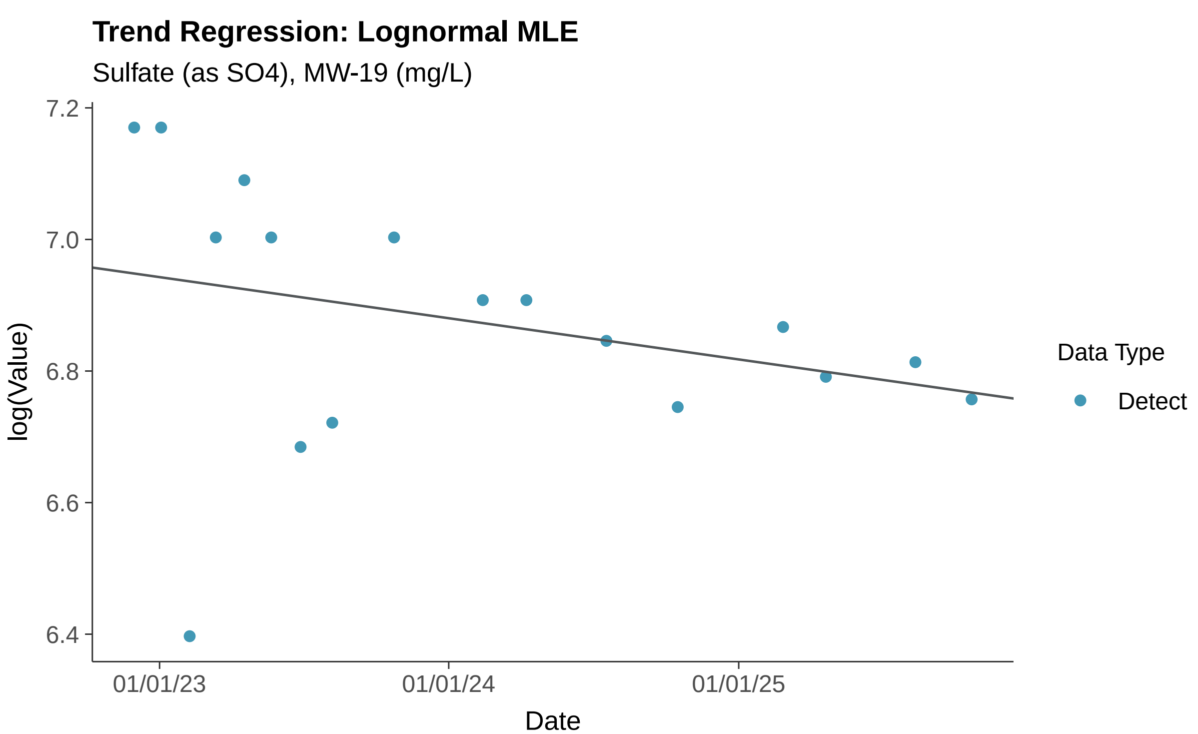
Sulfate (as SO4), MW-19 (mg/L)




Normal Q-Q plot
Sulfate (as SO4), MW-19 (mg/L)
Value
1200
1000
800
600
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

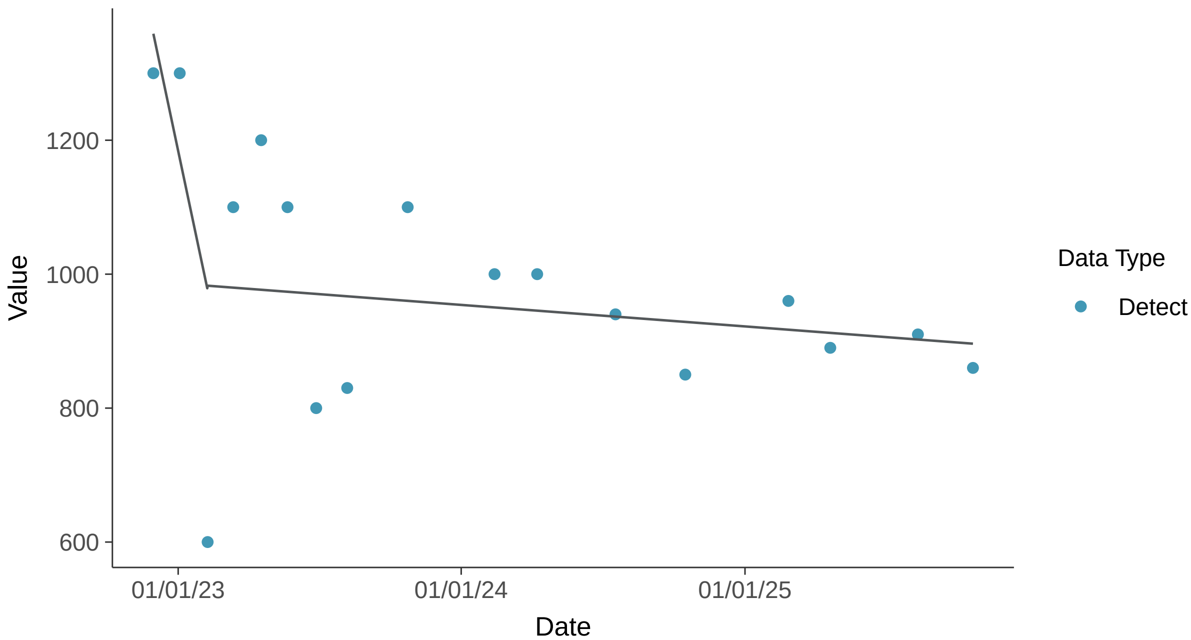

Lognormal Q-Q plot
Sulfate (as SO4), MW-19 (mg/L)
log(Value)
7.00
6.75
6.50
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Sulfate (as SO4), MW-19 (mg/L)
Value
1200
1000
800
600
600
800
1000
1200
1400
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Sulfate (as SO4), MW-19 (mg/L)
log(Value)
7.2
7.0
6.8
6.6
6.4
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear

Sulfate (as SO4), MW-19 (mg/L)

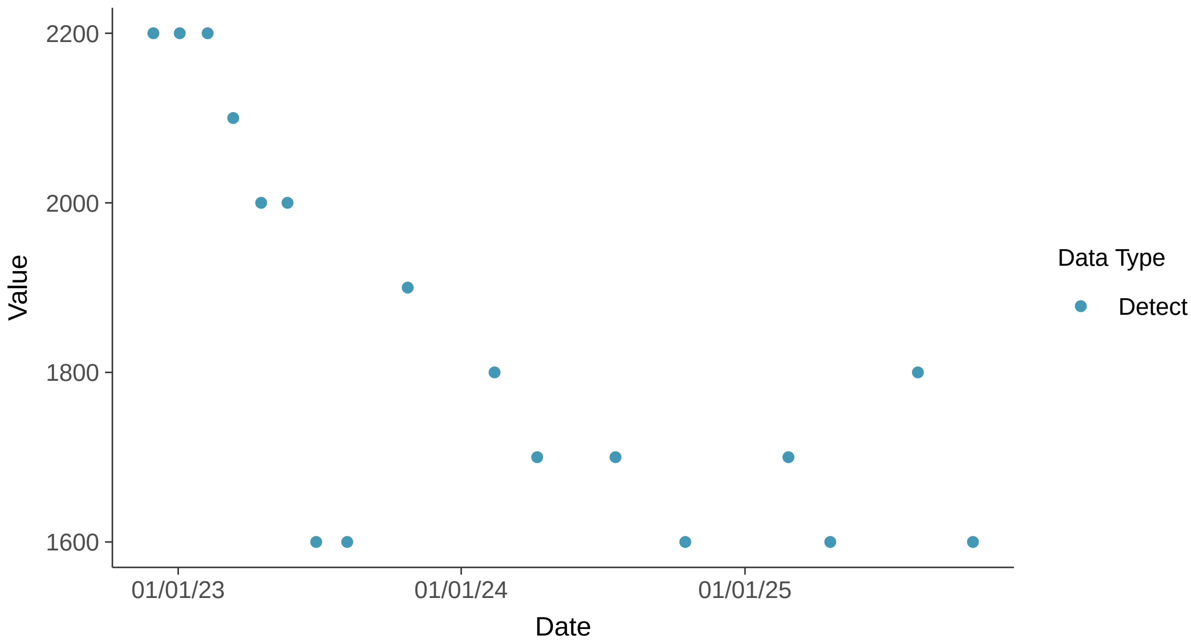


Appendix III: Total Dissolved Solids, MW-19

ID: 29_1_3_126

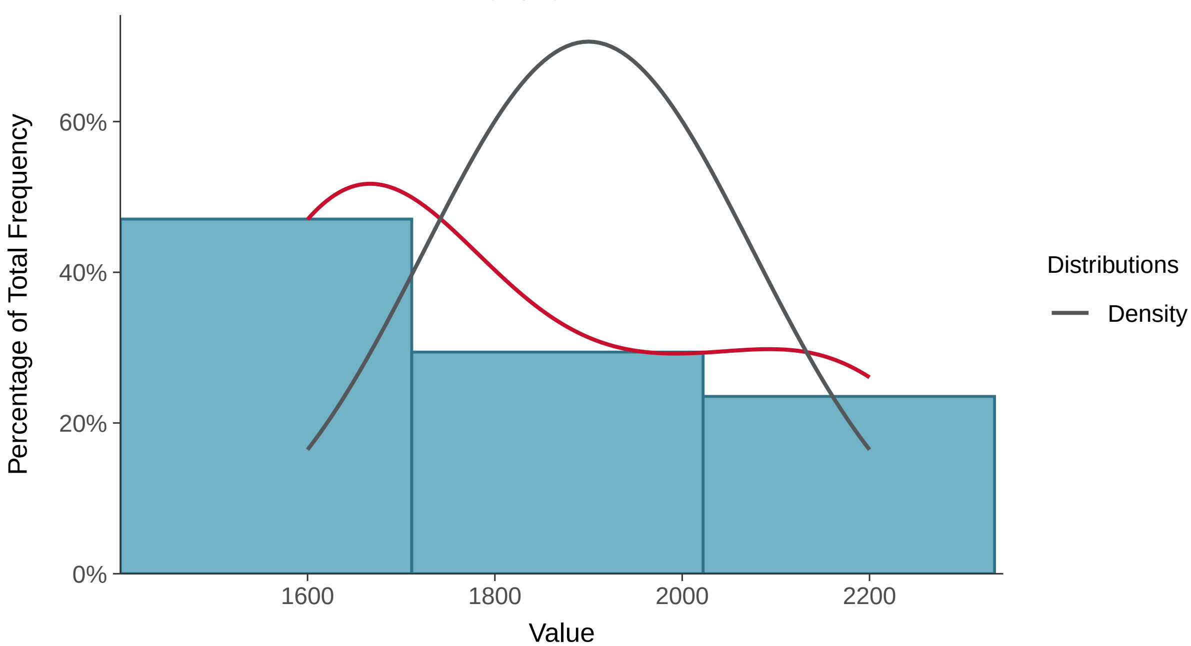
Scatter Plot

Total Dissolved Solids, MW-19 (mg/L)



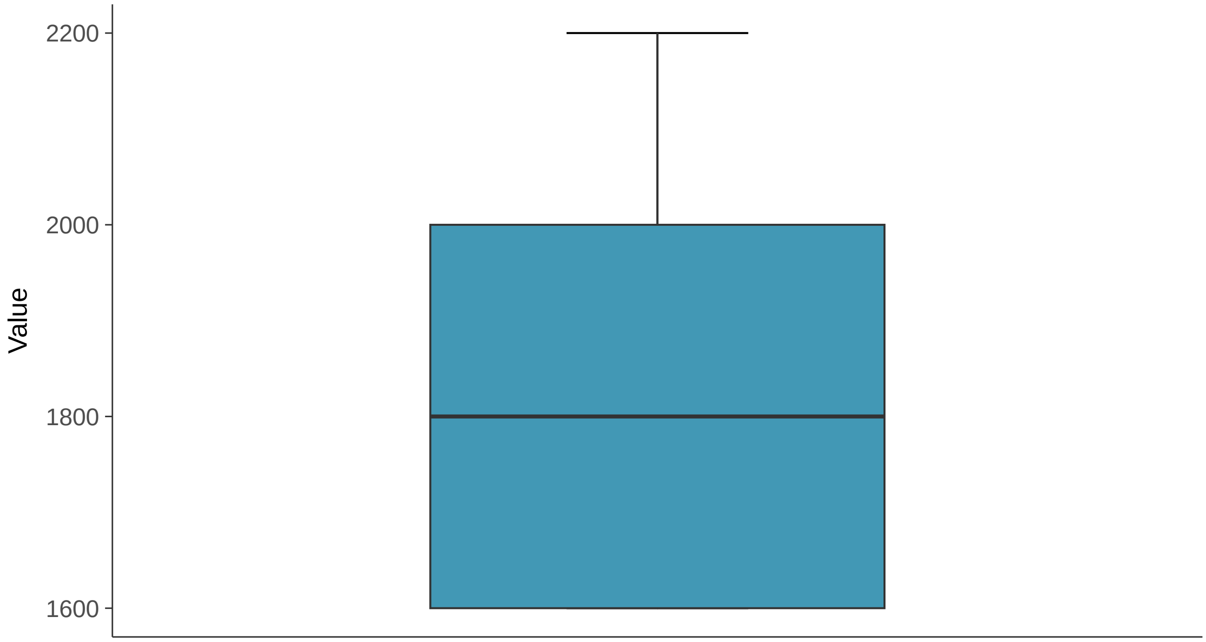
Histogram

Total Dissolved Solids, MW-19 (mg/L)



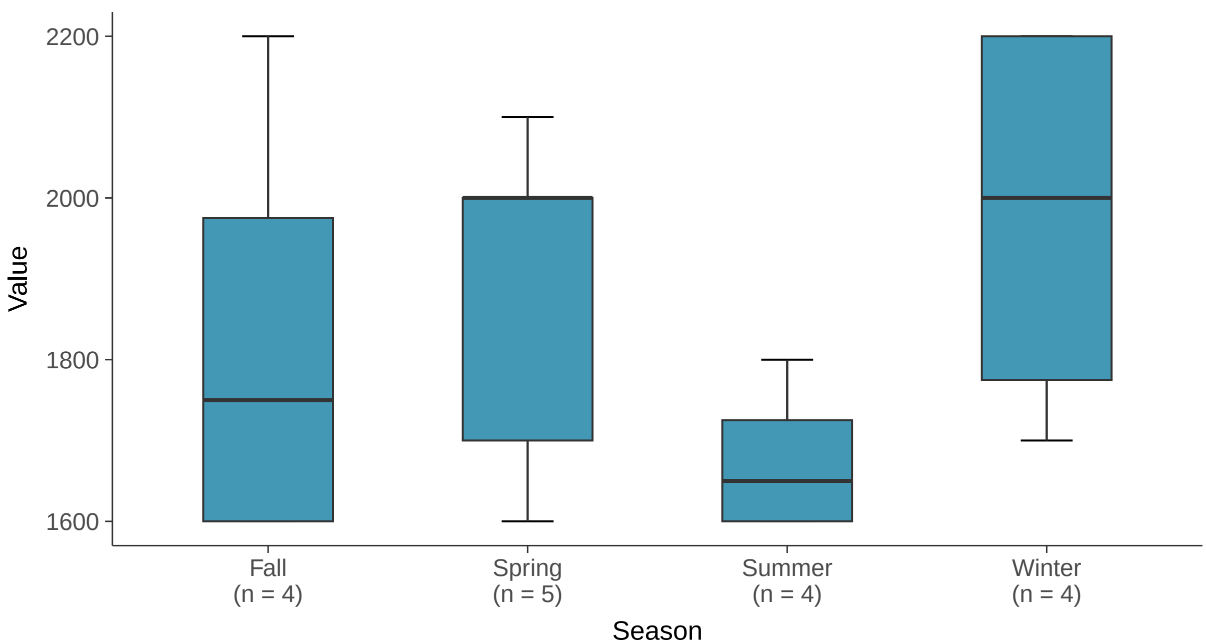
Boxplot

Total Dissolved Solids, MW-19 (mg/L)



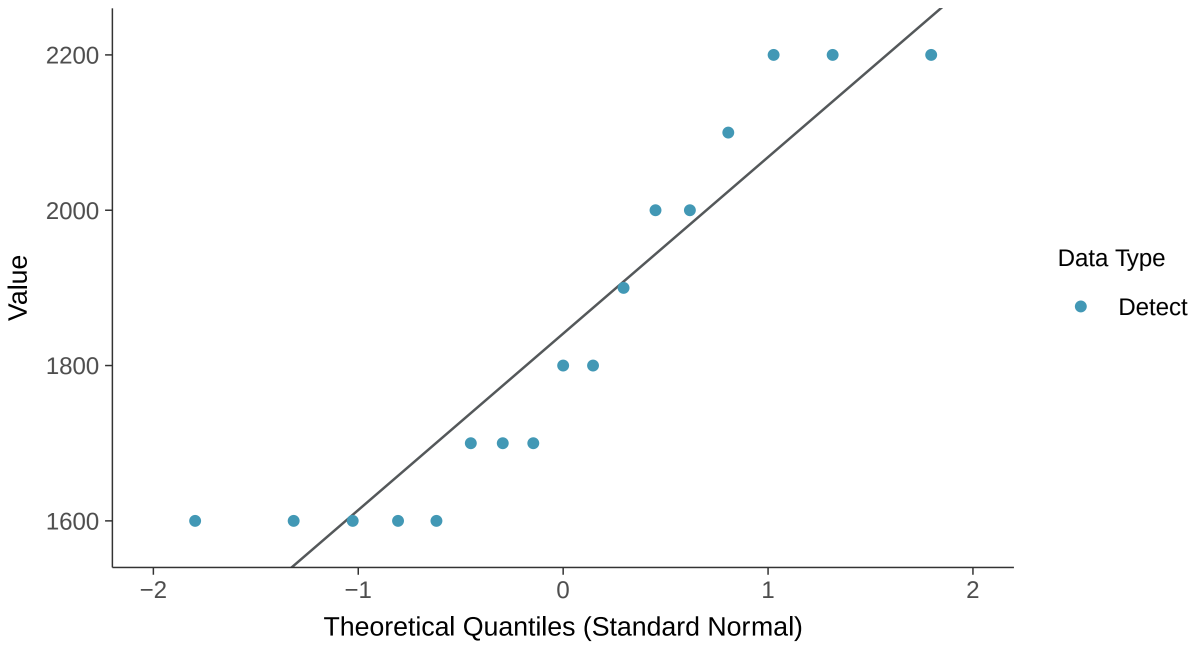
Boxplot by Season

Total Dissolved Solids, MW-19 (mg/L)



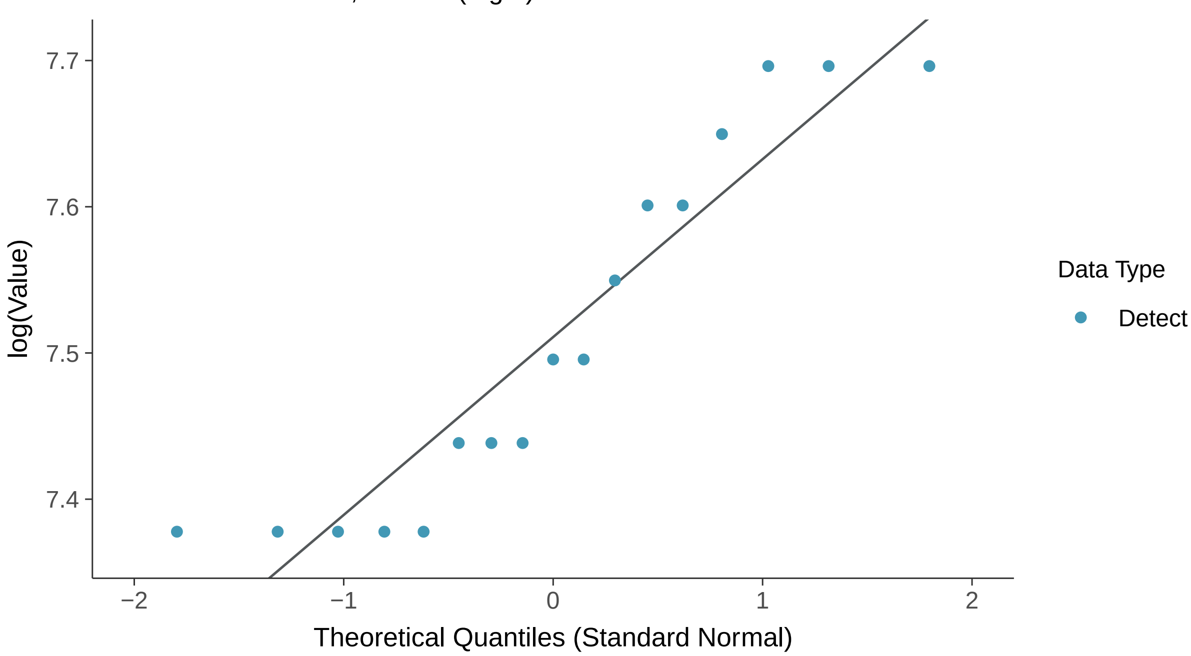
Normal Q-Q plot

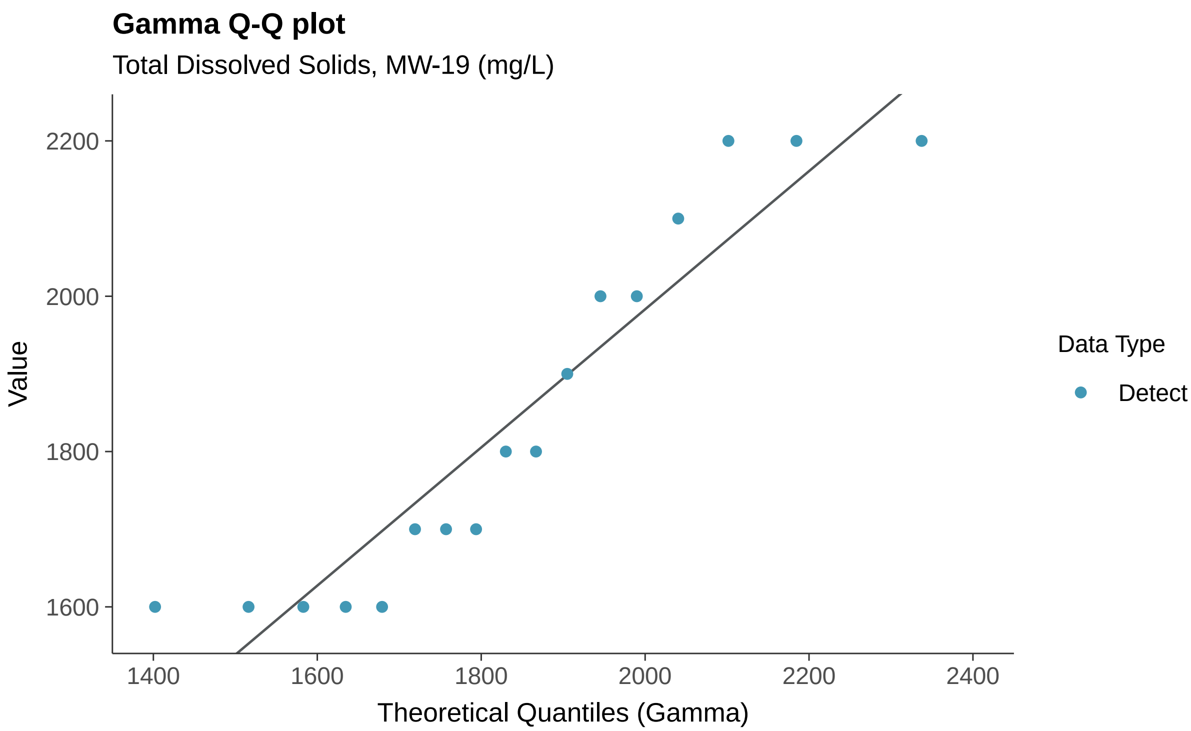
Total Dissolved Solids, MW-19 (mg/L)

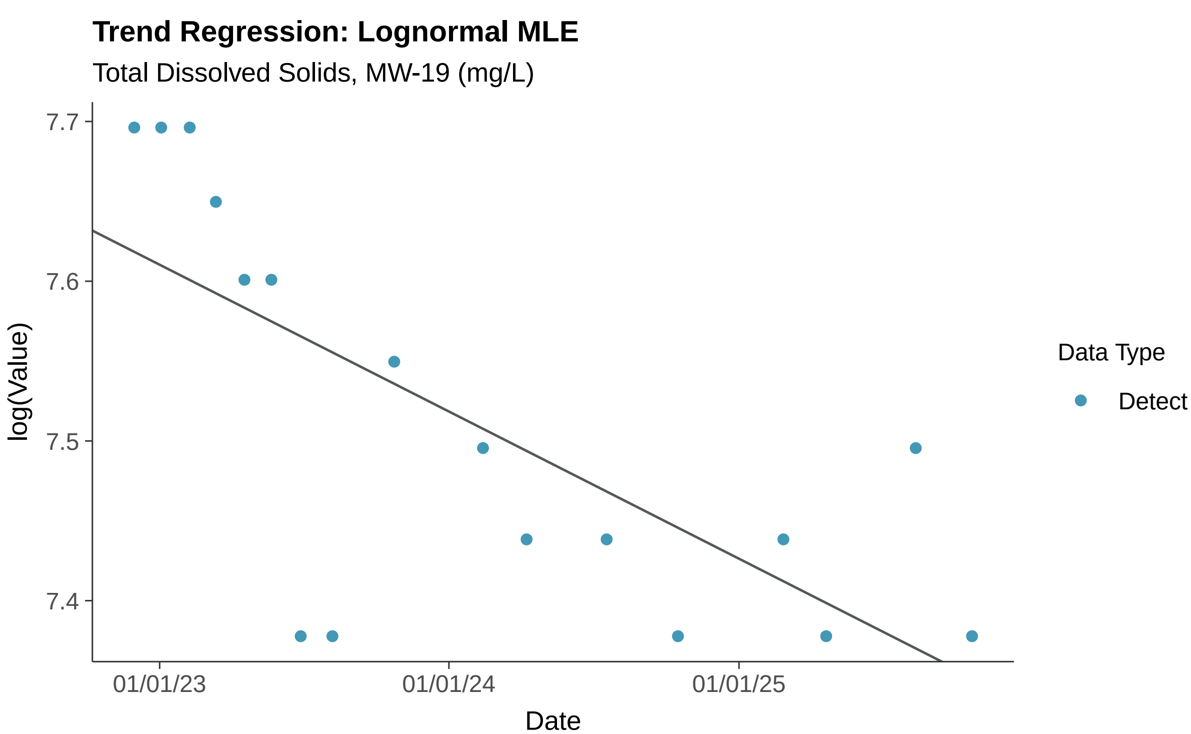


Lognormal Q-Q plot

Total Dissolved Solids, MW-19 (mg/L)

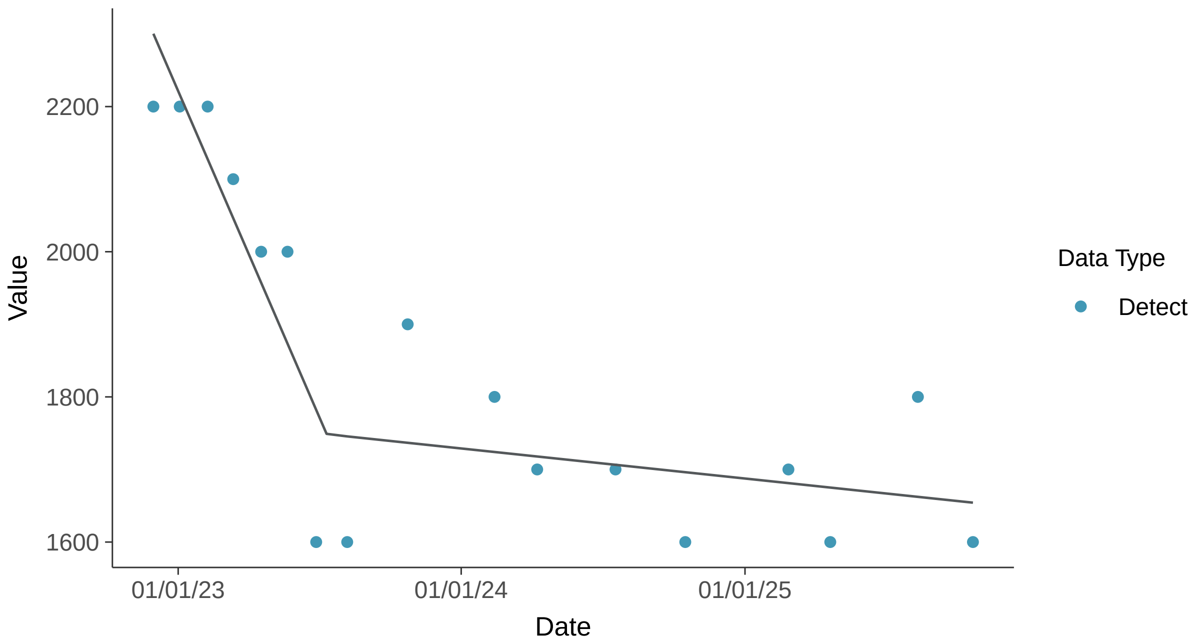



Gamma Q-Q plot
Total Dissolved Solids, MW-19 (mg/L)
Value
2200
2000
1800
1600
1400
1600
1800
2000
2200
2400
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Total Dissolved Solids, MW-19 (mg/L)
log(Value)
7.7
7.6
7.5
7.4
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

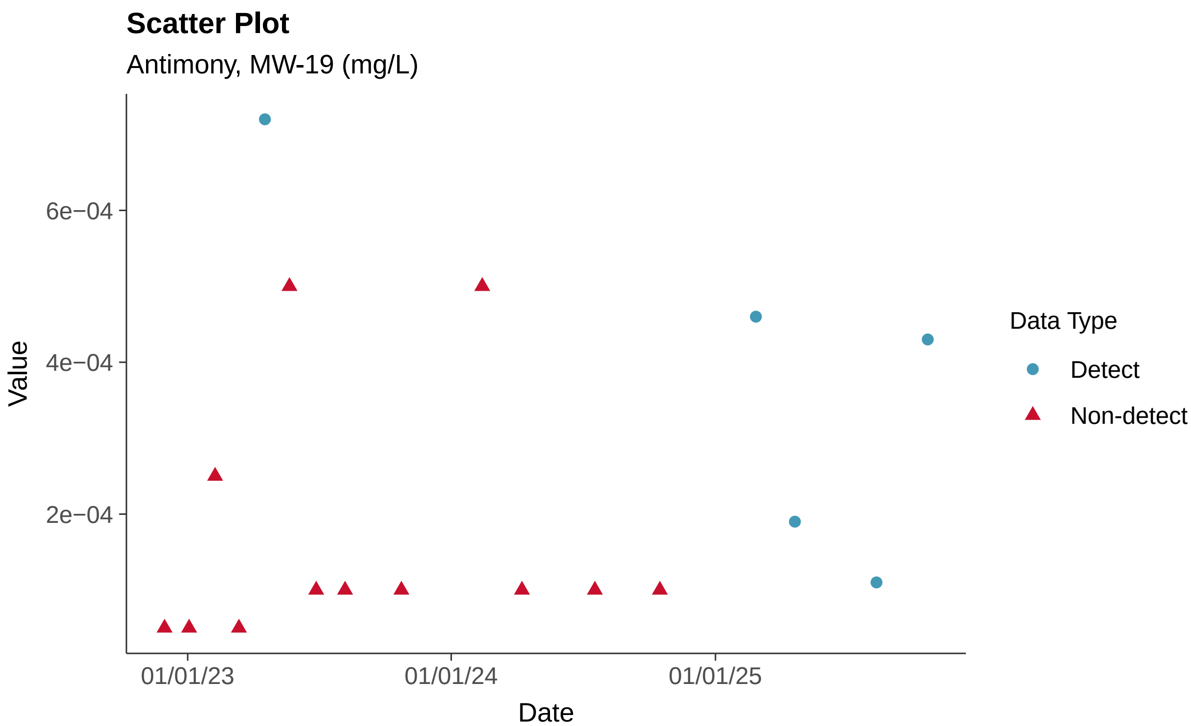
Trend Regression: Piecewise Linear-Linear

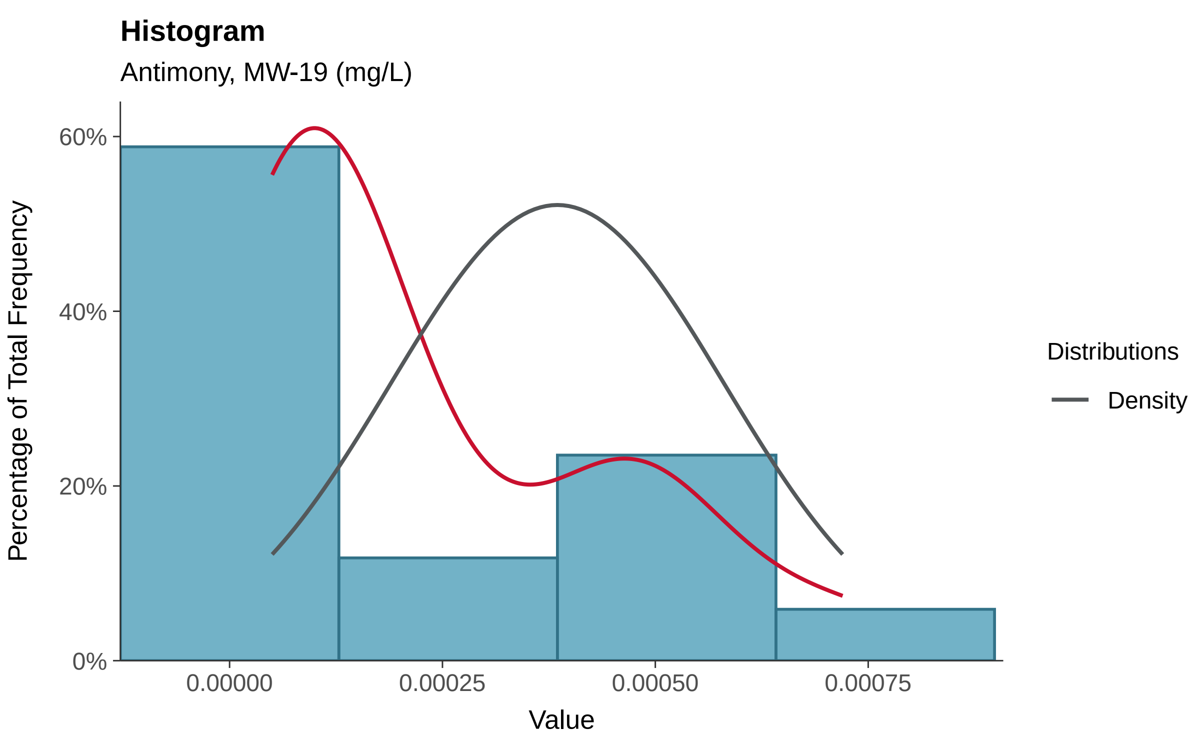
Total Dissolved Solids, MW-19 (mg/L)



Appendix IV: Antimony, MW-19

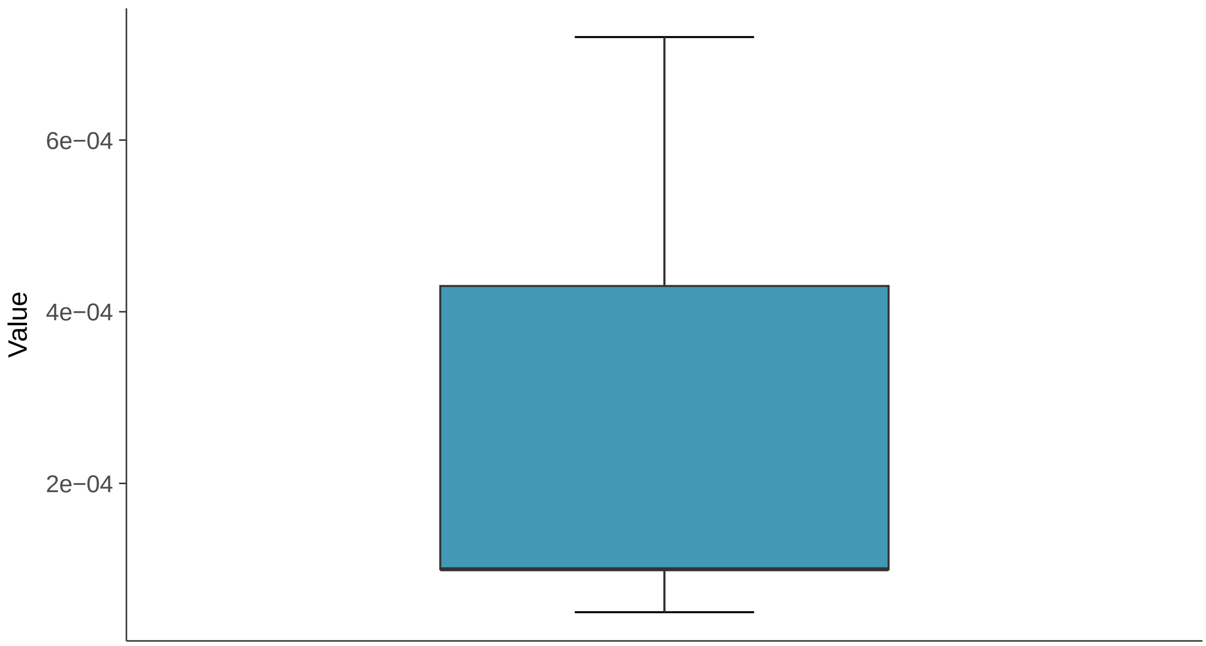
ID: 29_1_4_101





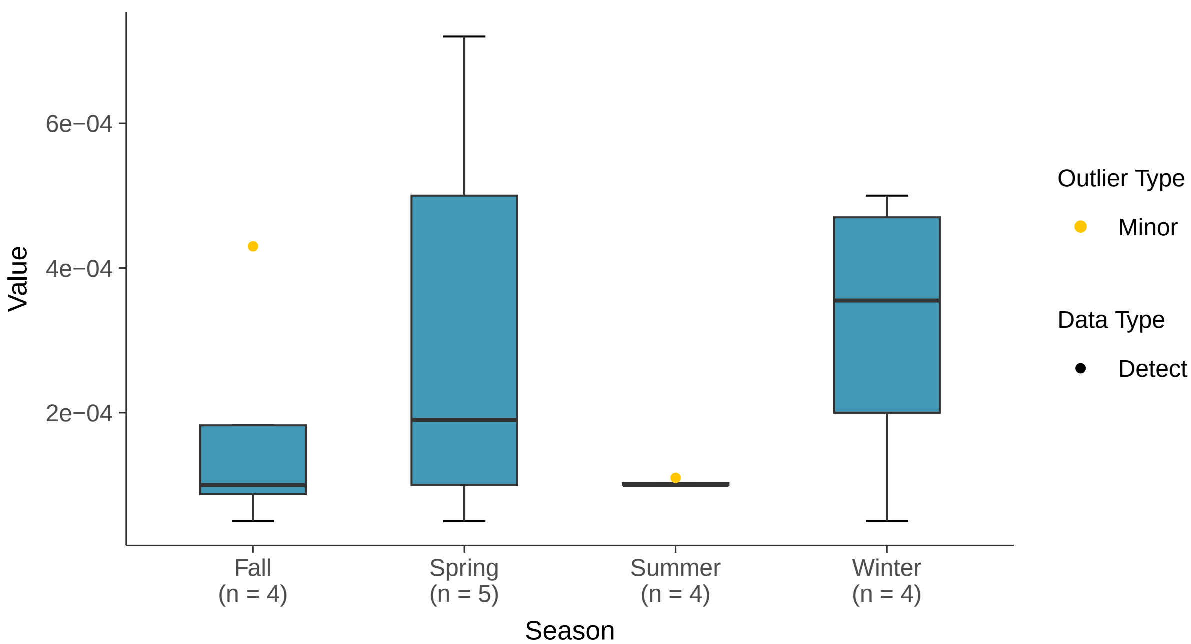
Boxplot

Antimony, MW-19 (mg/L)



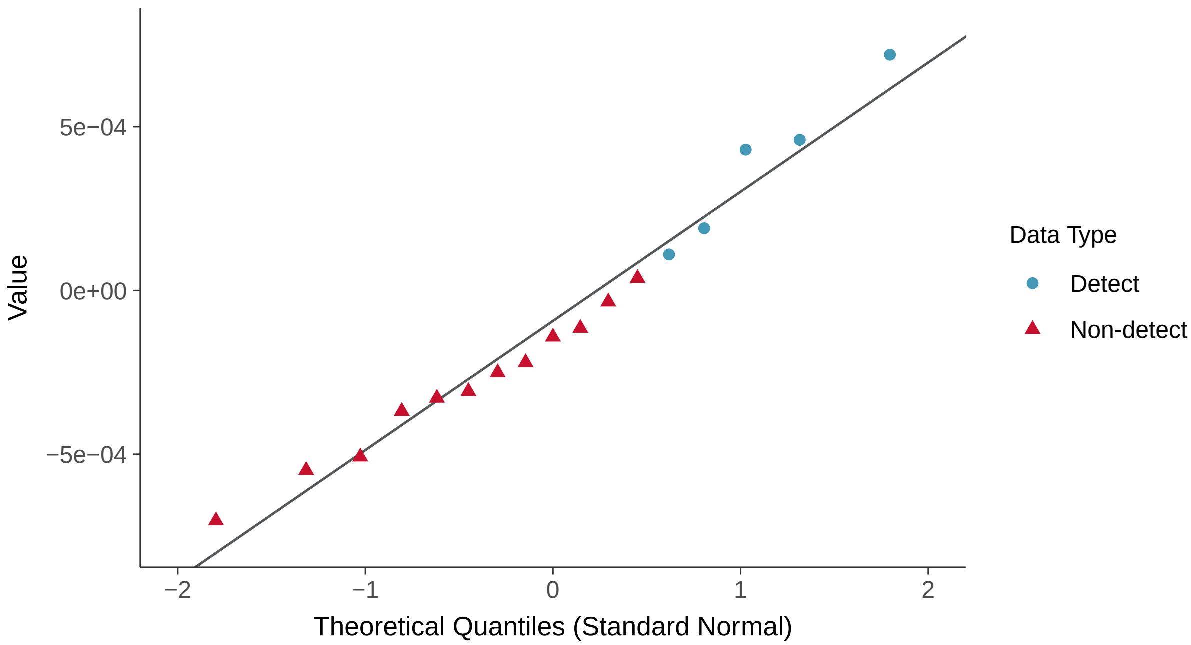
Boxplot by Season

Antimony, MW-19 (mg/L)



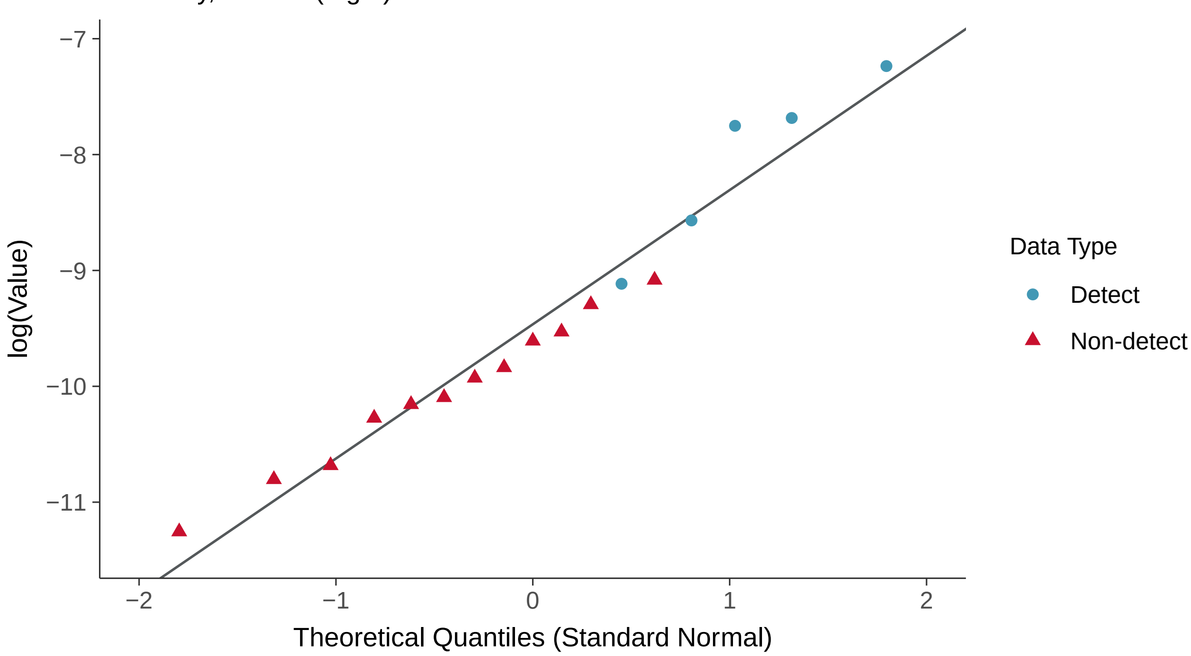
Normal Q-Q plot using ROS Imputed Estimates

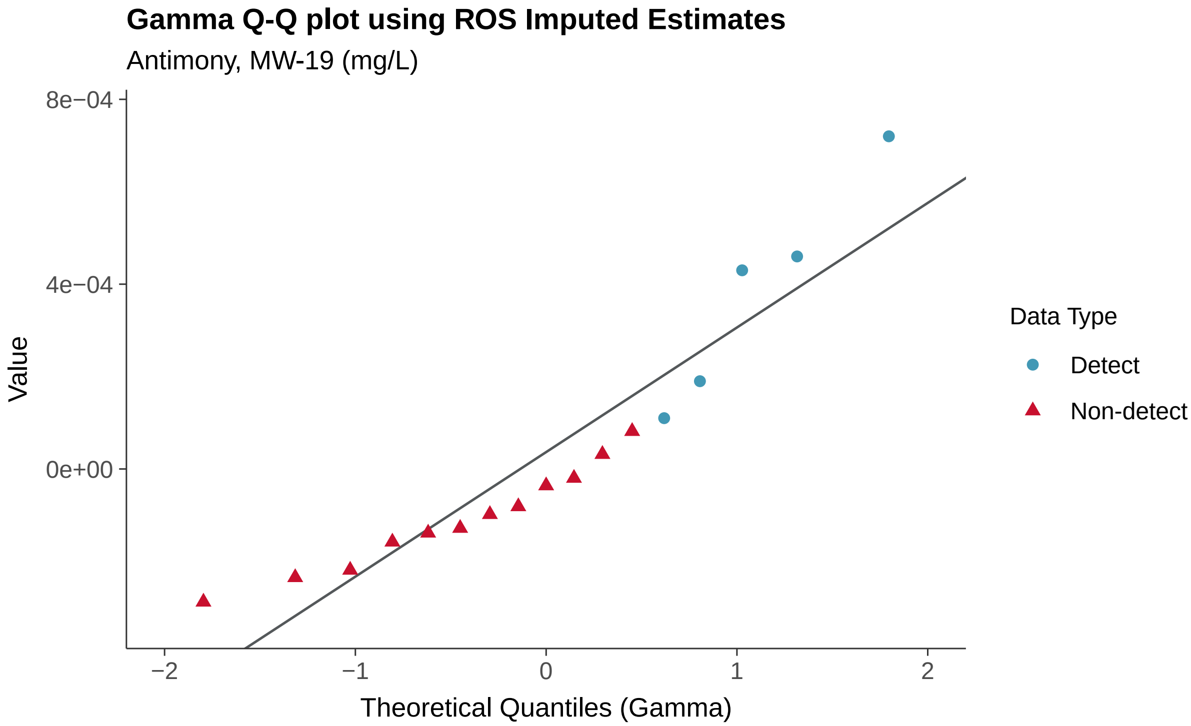
Antimony, MW-19 (mg/L)

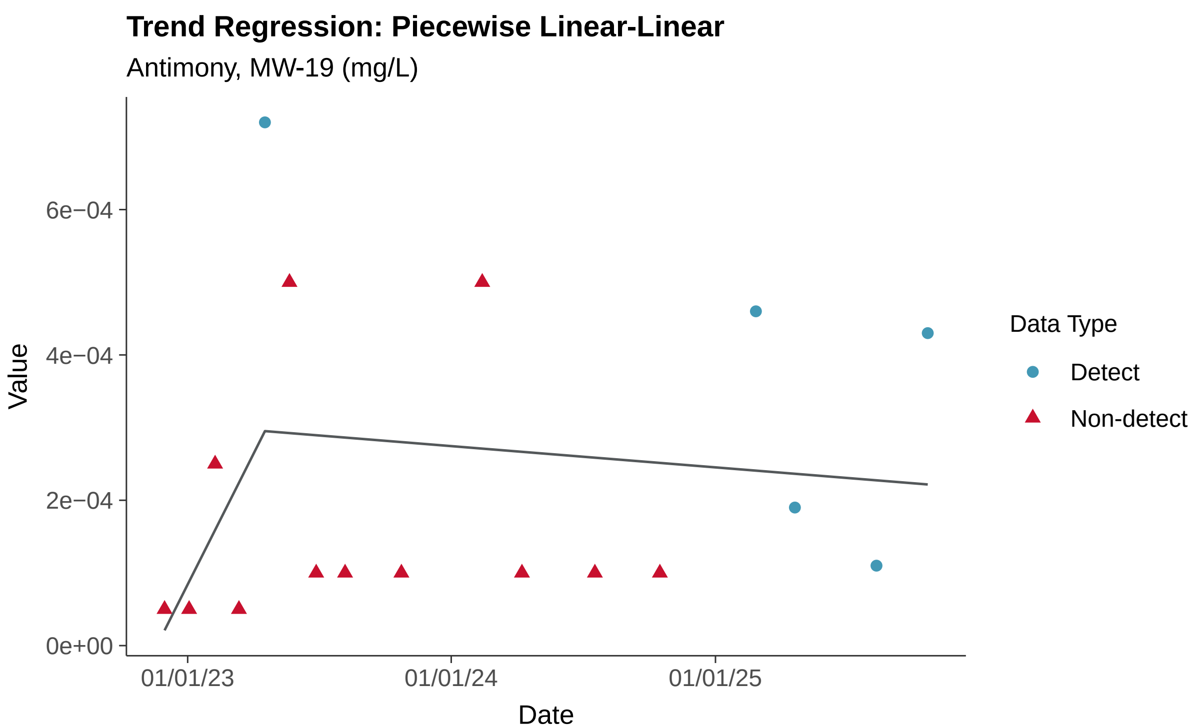


Lognormal Q-Q plot using ROS Imputed Estimates

Antimony, MW-19 (mg/L)

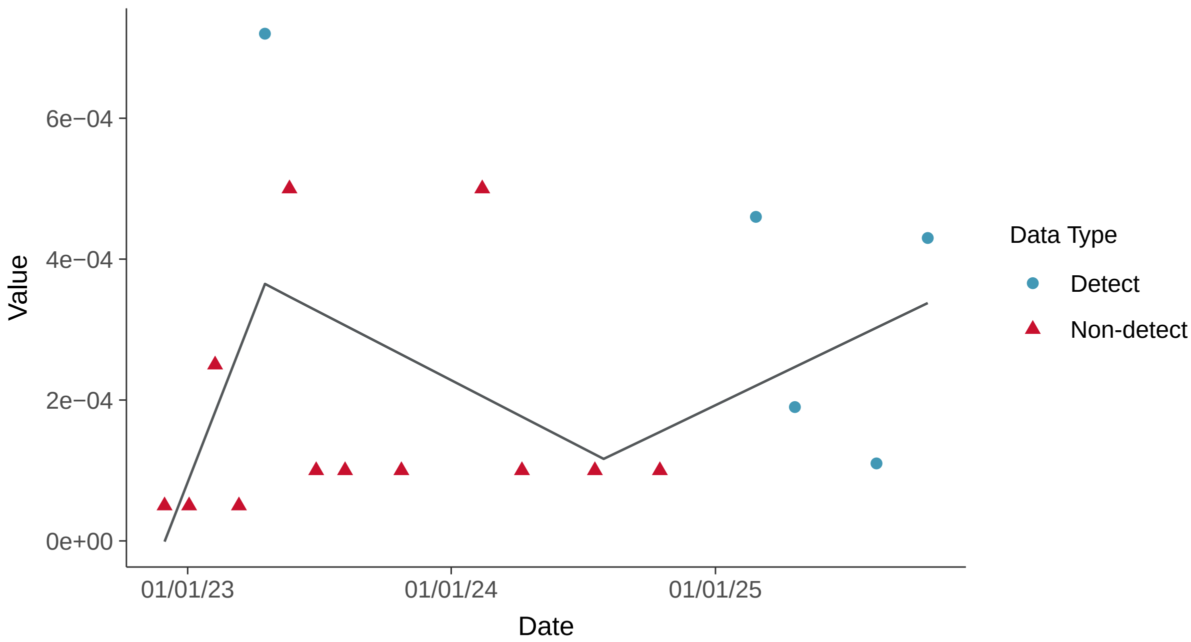



Gamma Q-Q plot using ROS Imputed Estimates
Antimony, MW-19 (mg/L)
8e−04
4e−04
0e+00
Value
−2
−1
0
1
2
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Antimony, MW-19 (mg/L)
6e−04
4e−04
2e−04
0e+00
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

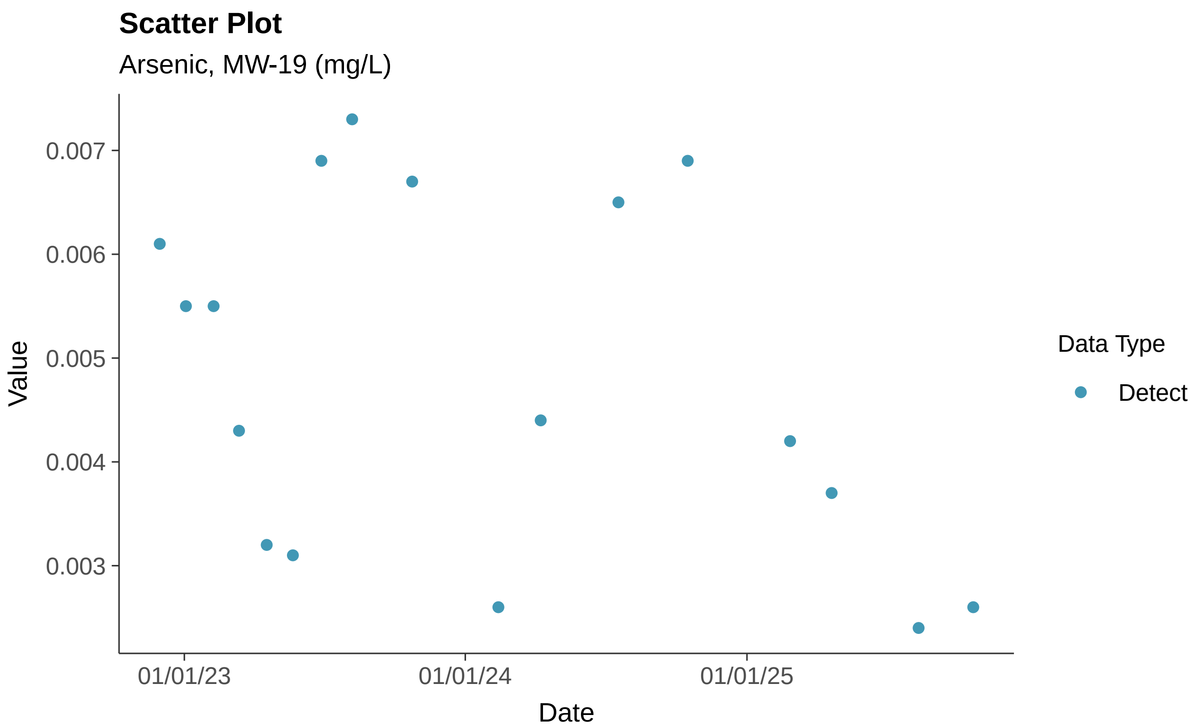
Trend Regression: Piecewise Linear-Linear-Linear

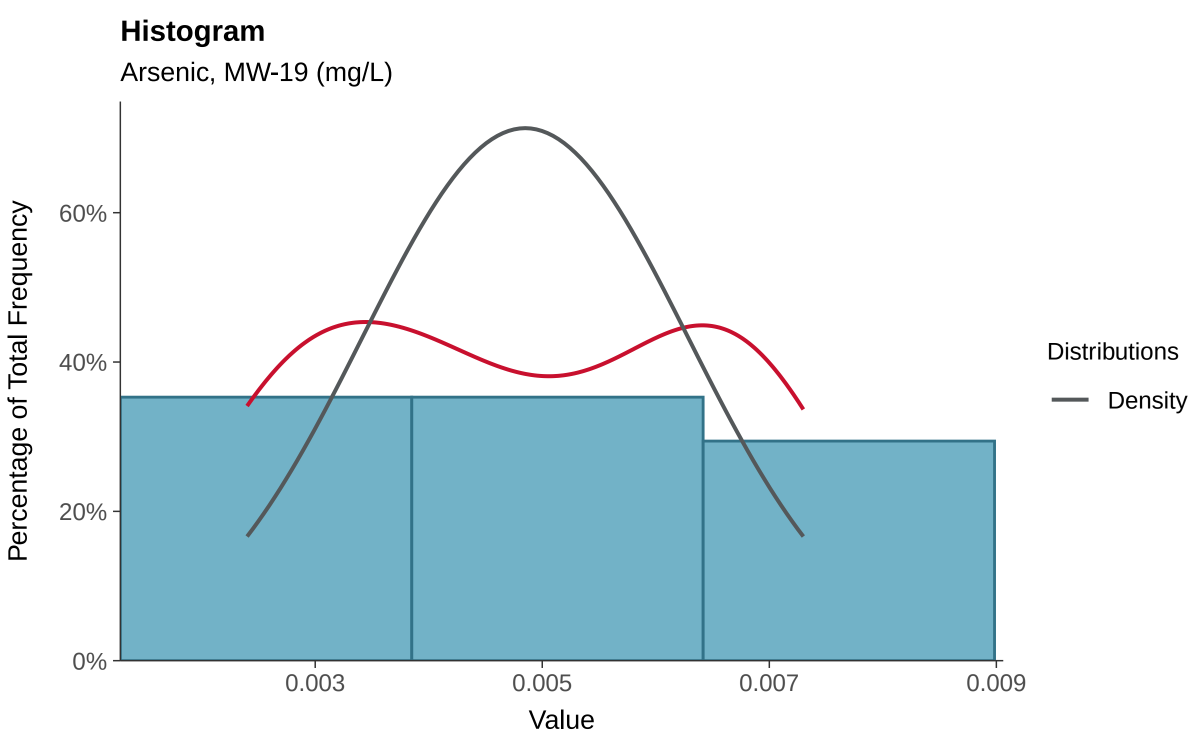
Antimony, MW-19 (mg/L)



Appendix IV: Arsenic, MW-19

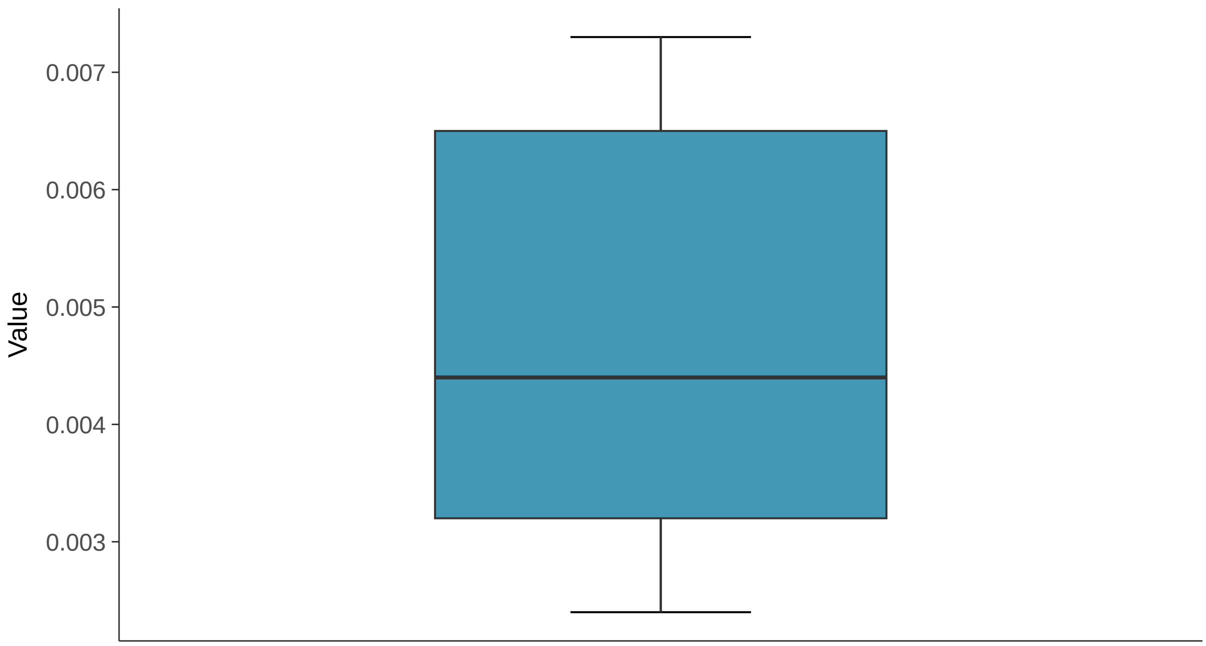
ID: 29_1_4_102





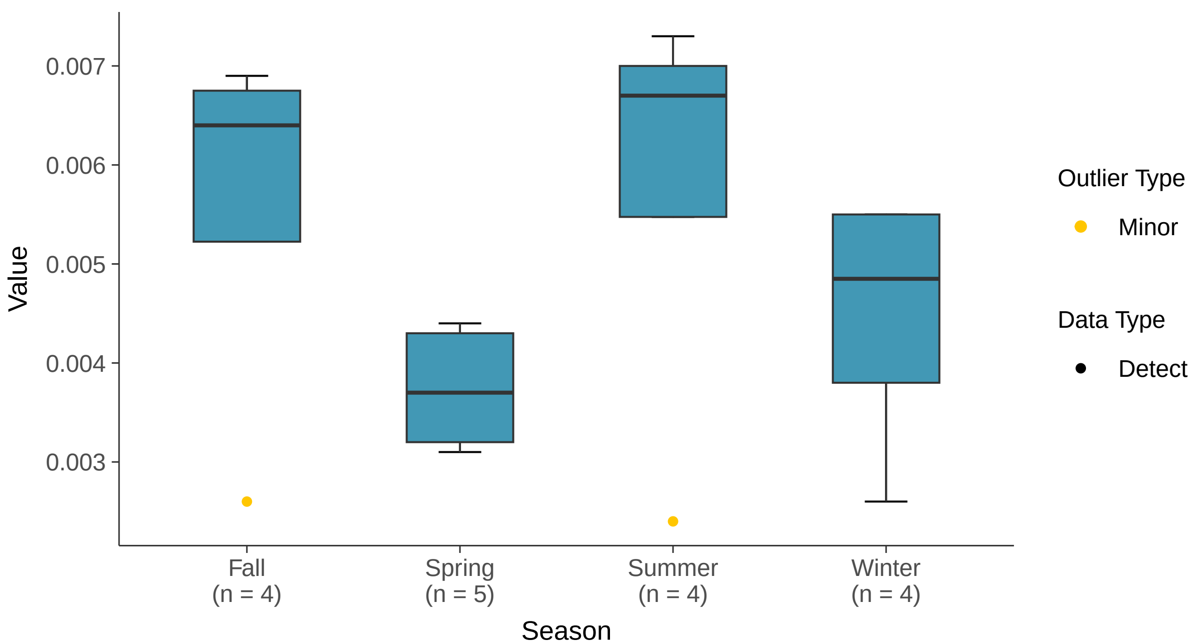
Boxplot

Arsenic, MW-19 (mg/L)



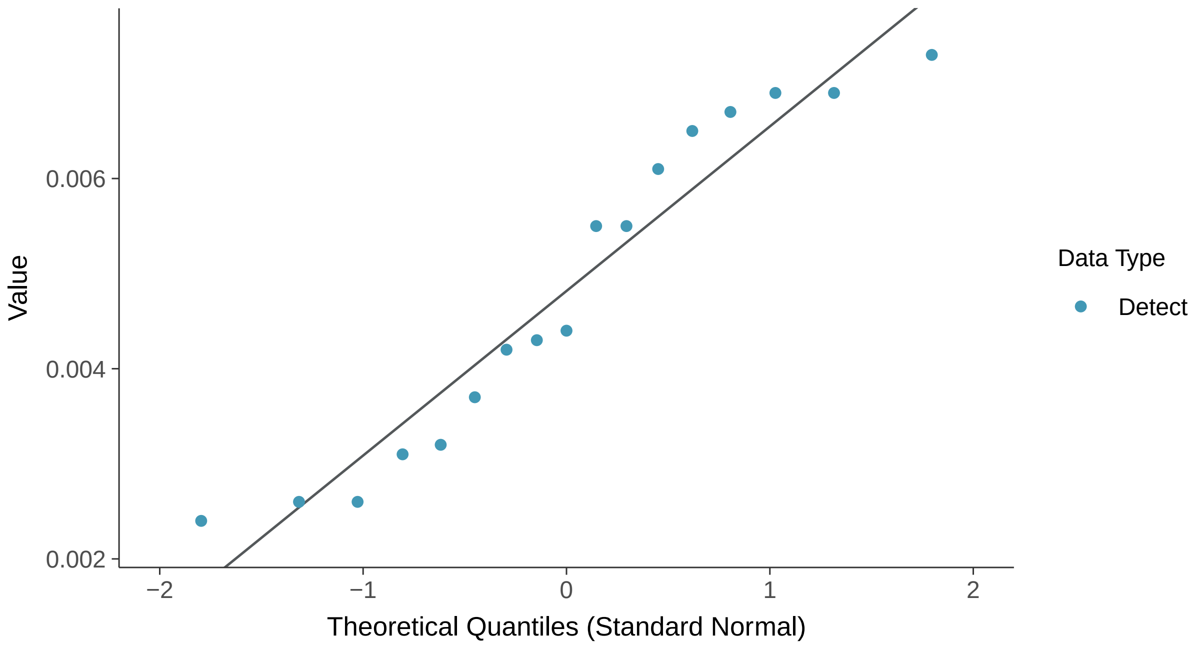
Boxplot by Season

Arsenic, MW-19 (mg/L)



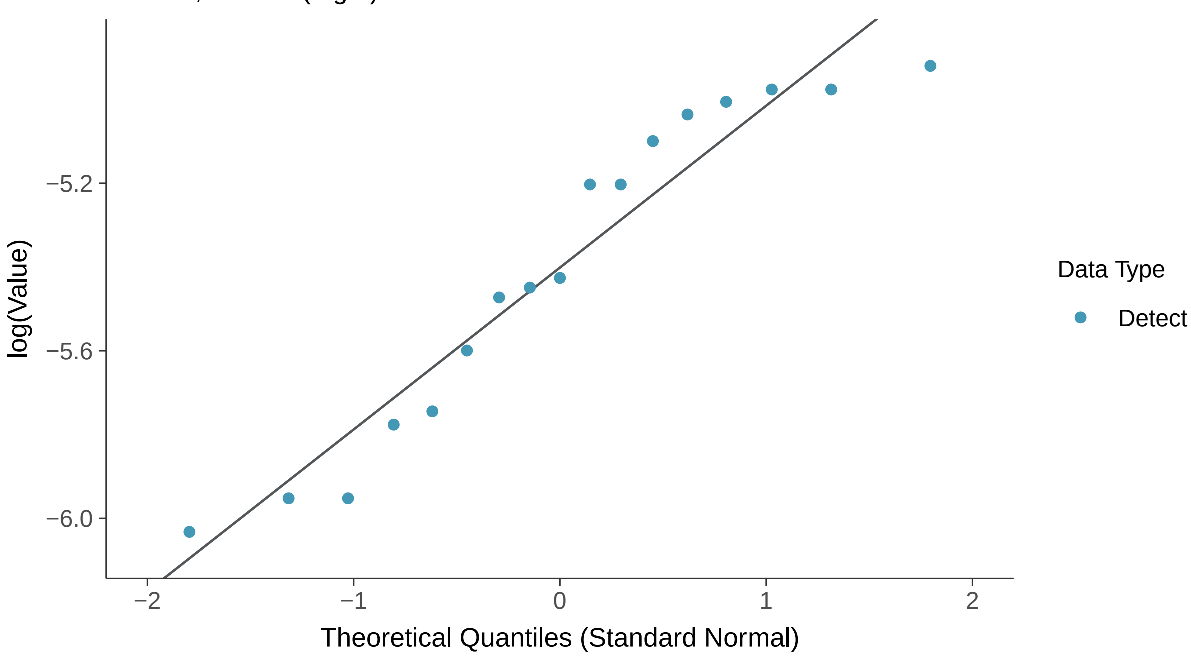
Normal Q-Q plot

Arsenic, MW-19 (mg/L)



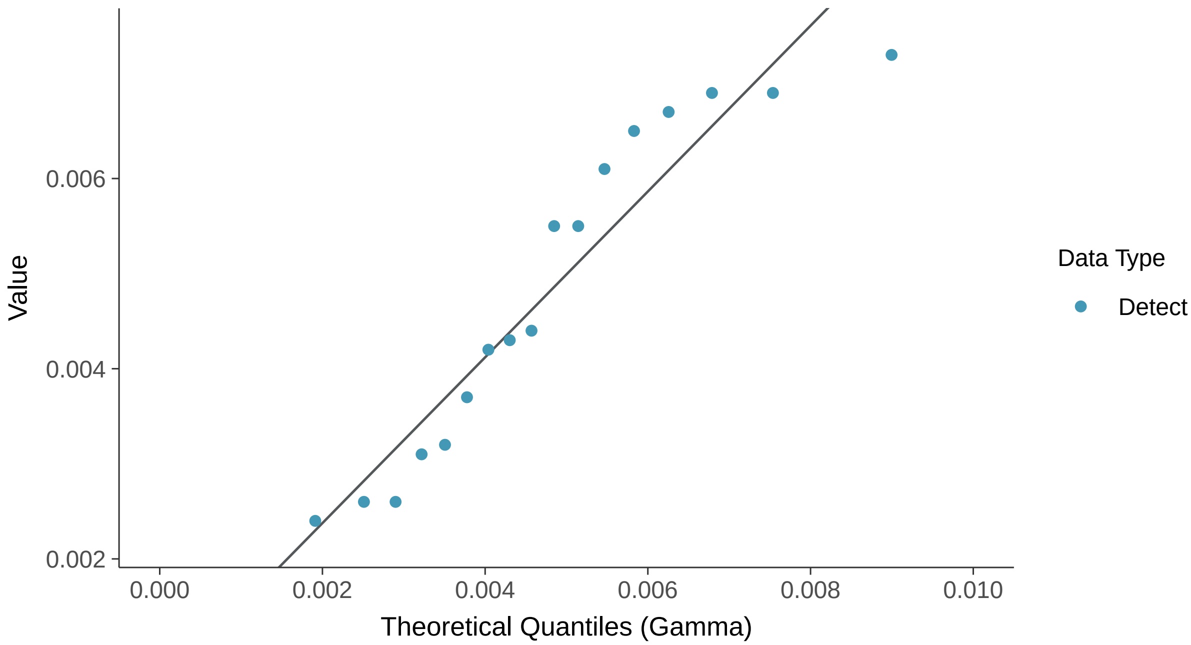
Lognormal Q-Q plot

Arsenic, MW-19 (mg/L)



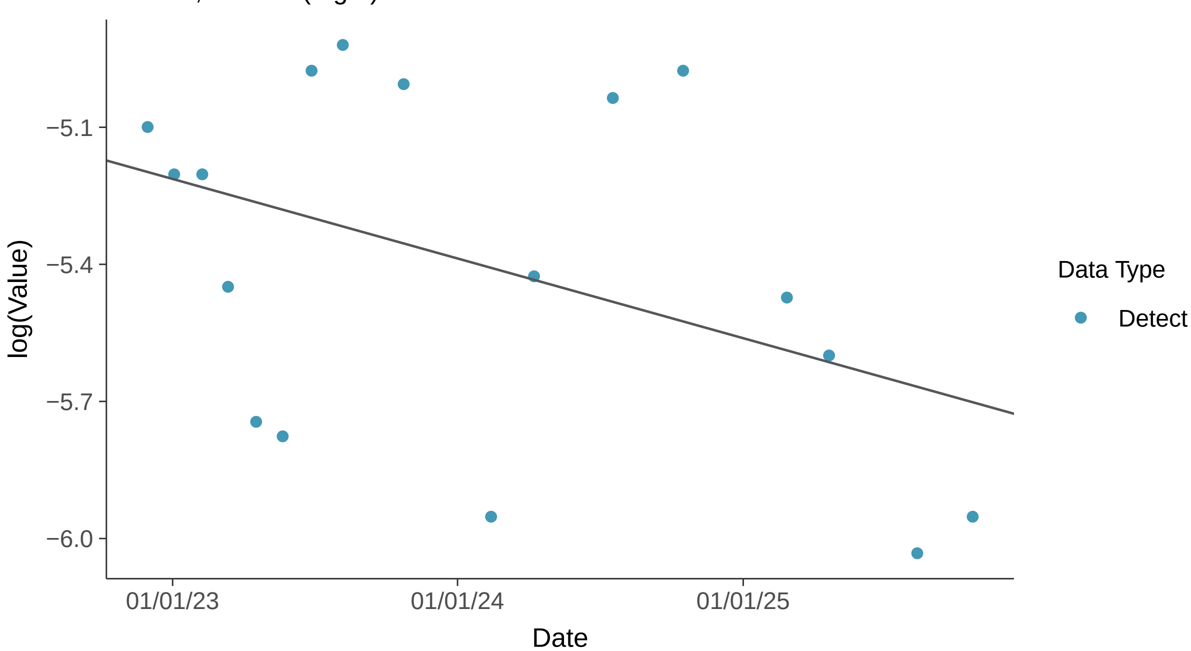
Gamma Q-Q plot

Arsenic, MW-19 (mg/L)



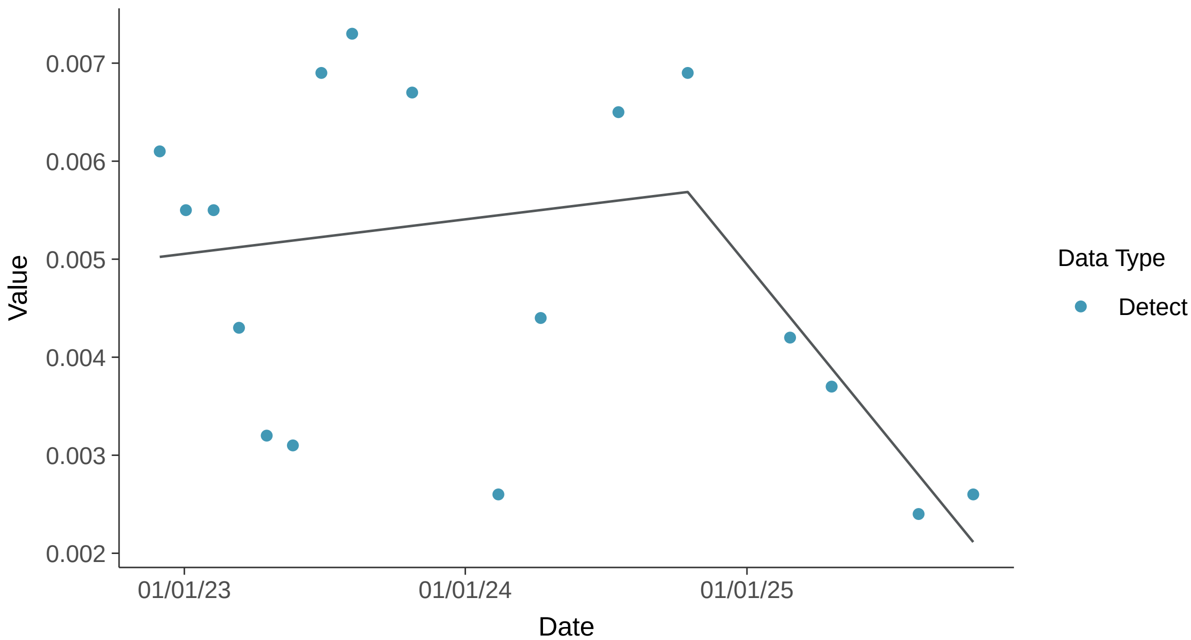
Trend Regression: Lognormal MLE

Arsenic, MW-19 (mg/L)



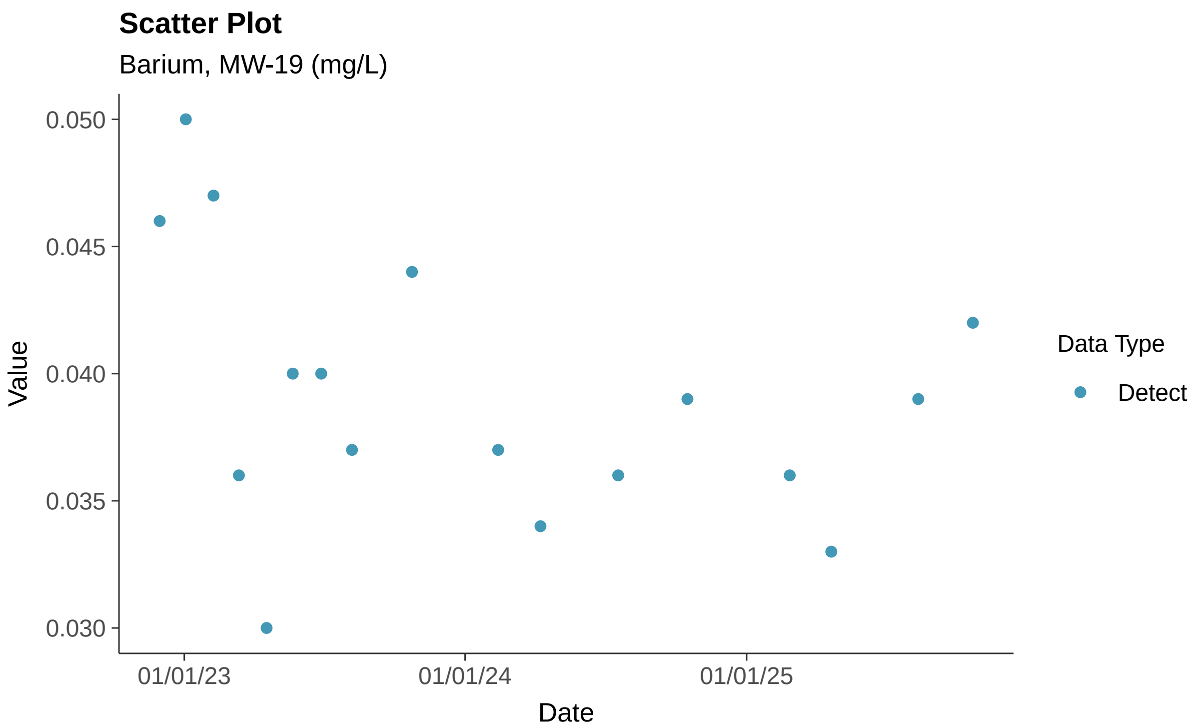
Trend Regression: Piecewise Linear-Linear

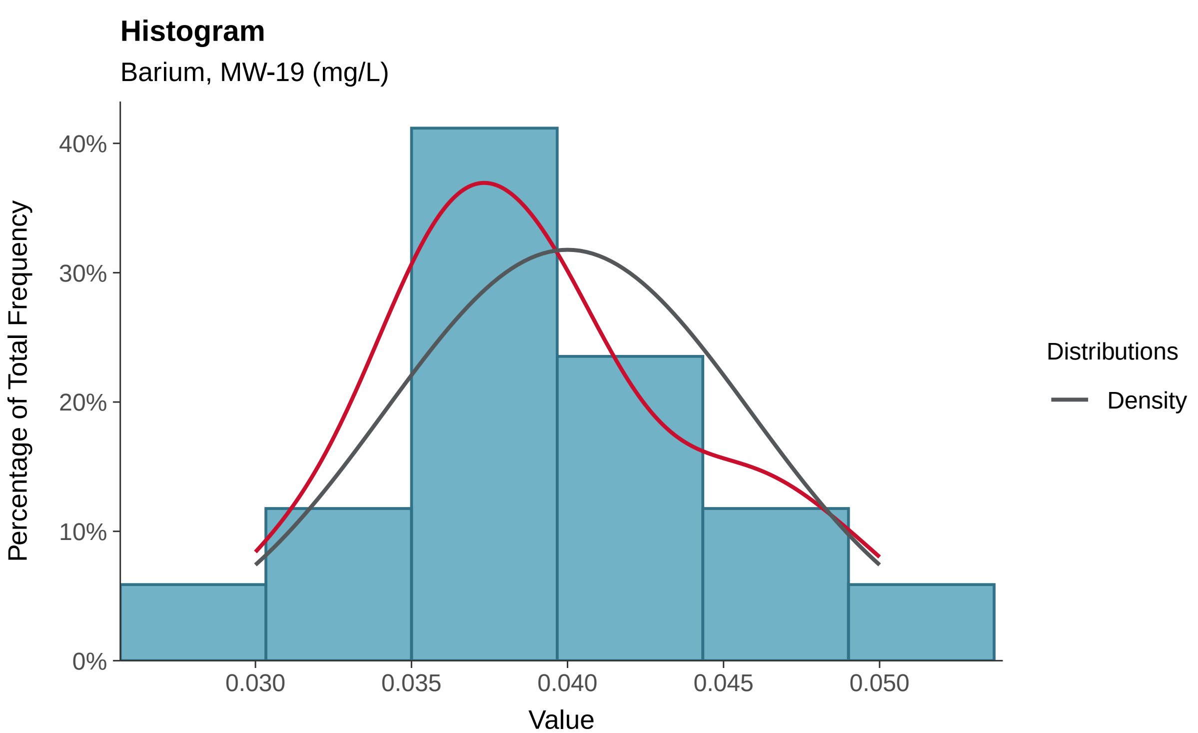
Arsenic, MW-19 (mg/L)



Appendix IV: Barium, MW-19

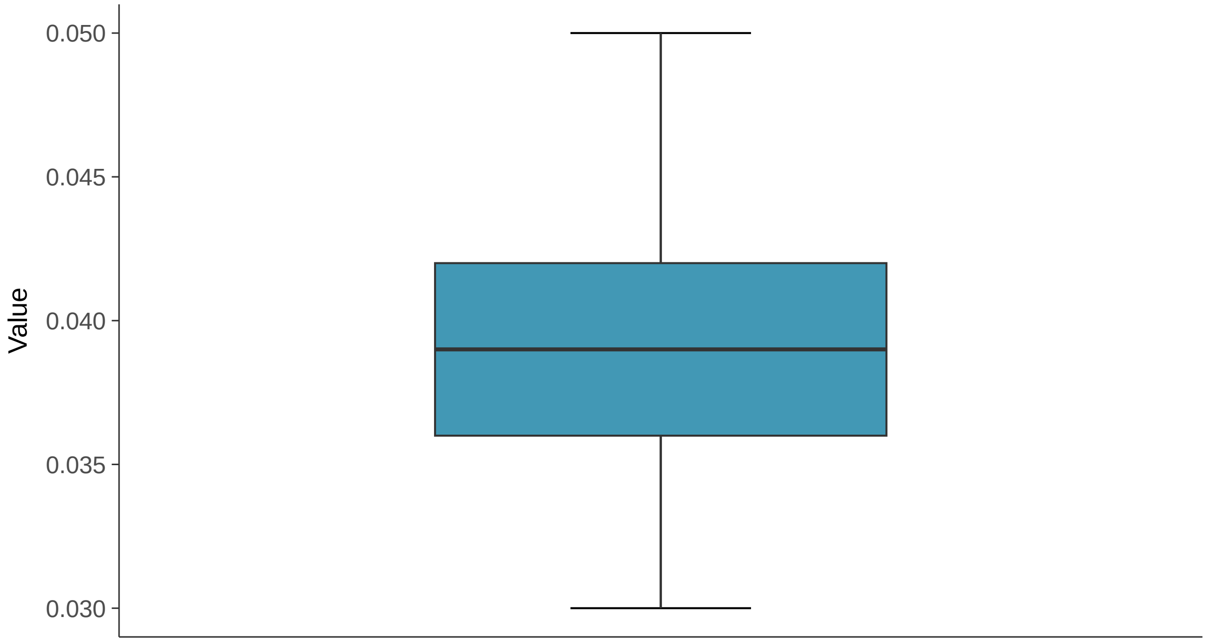
ID: 29_1_4_103





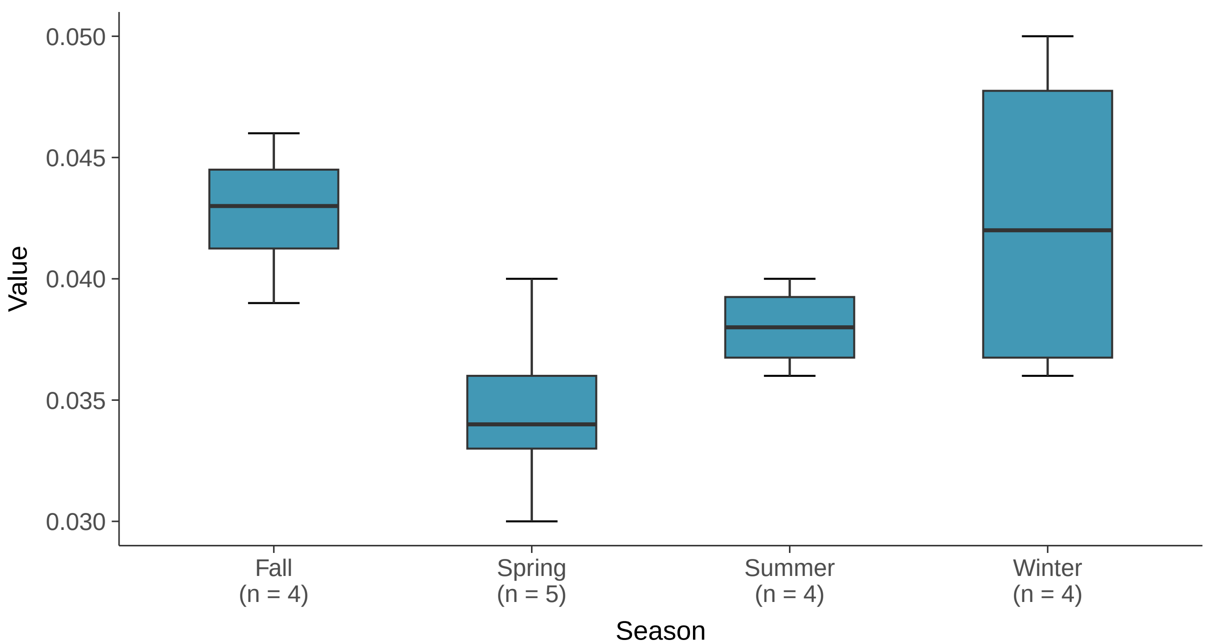
Boxplot

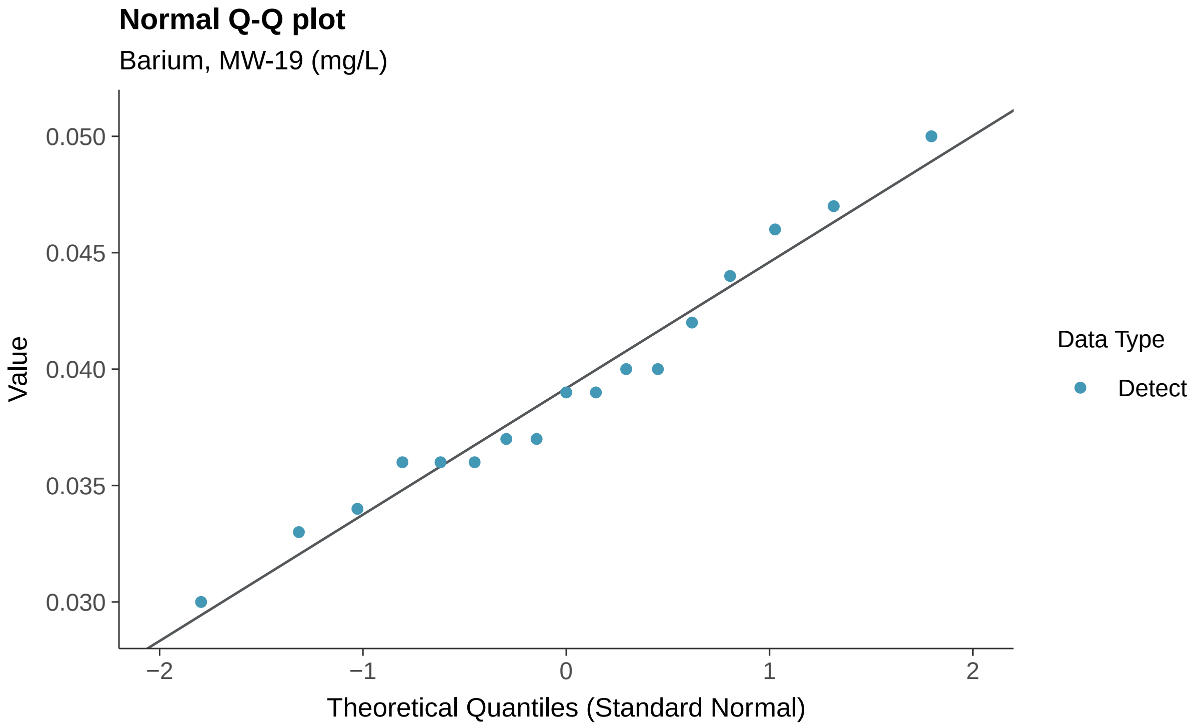
Barium, MW-19 (mg/L)

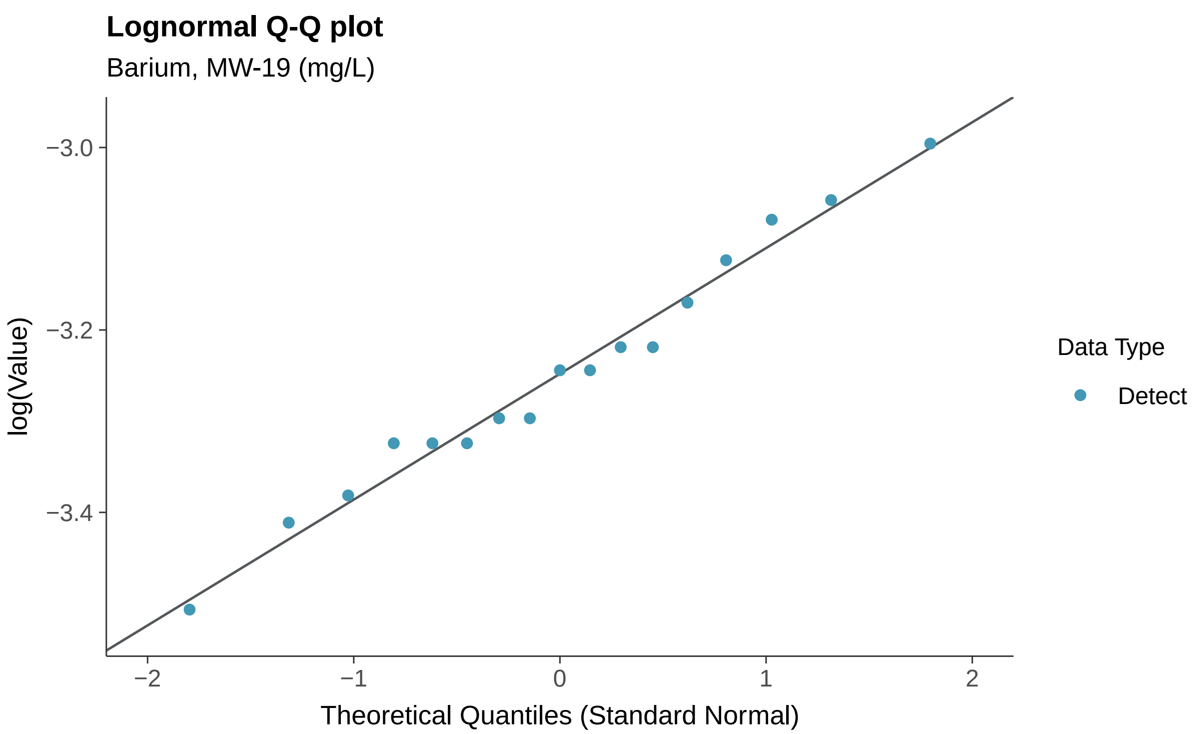


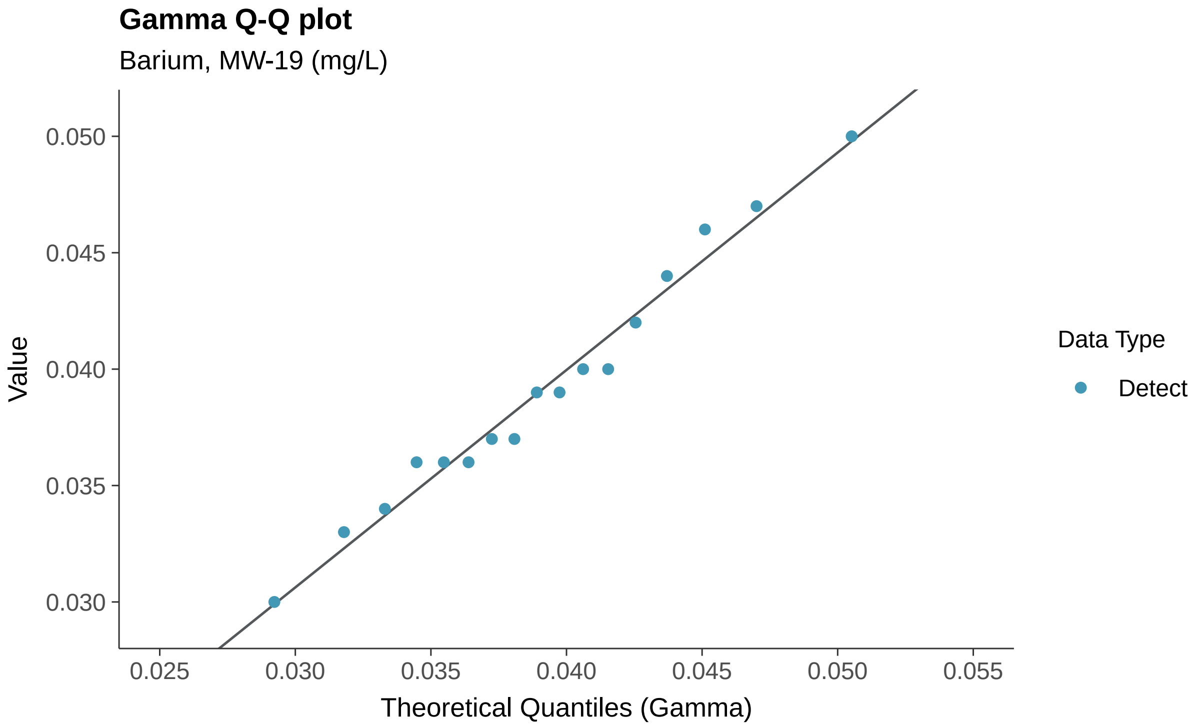
Boxplot by Season

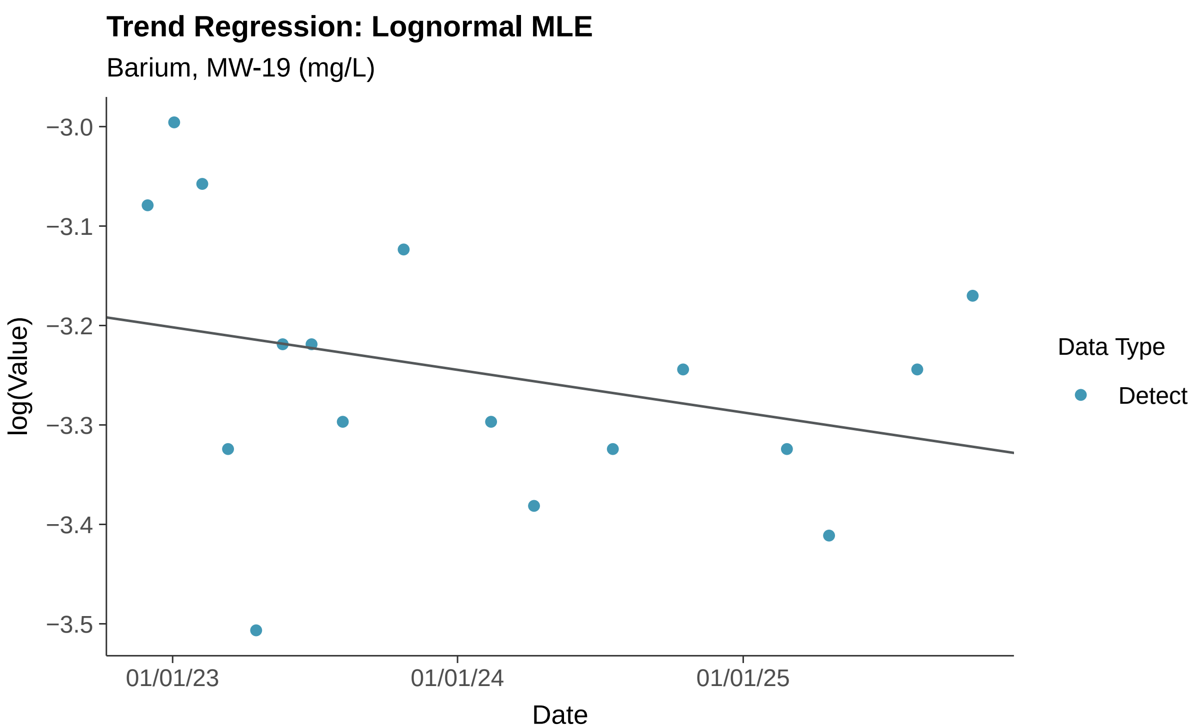
Barium, MW-19 (mg/L)

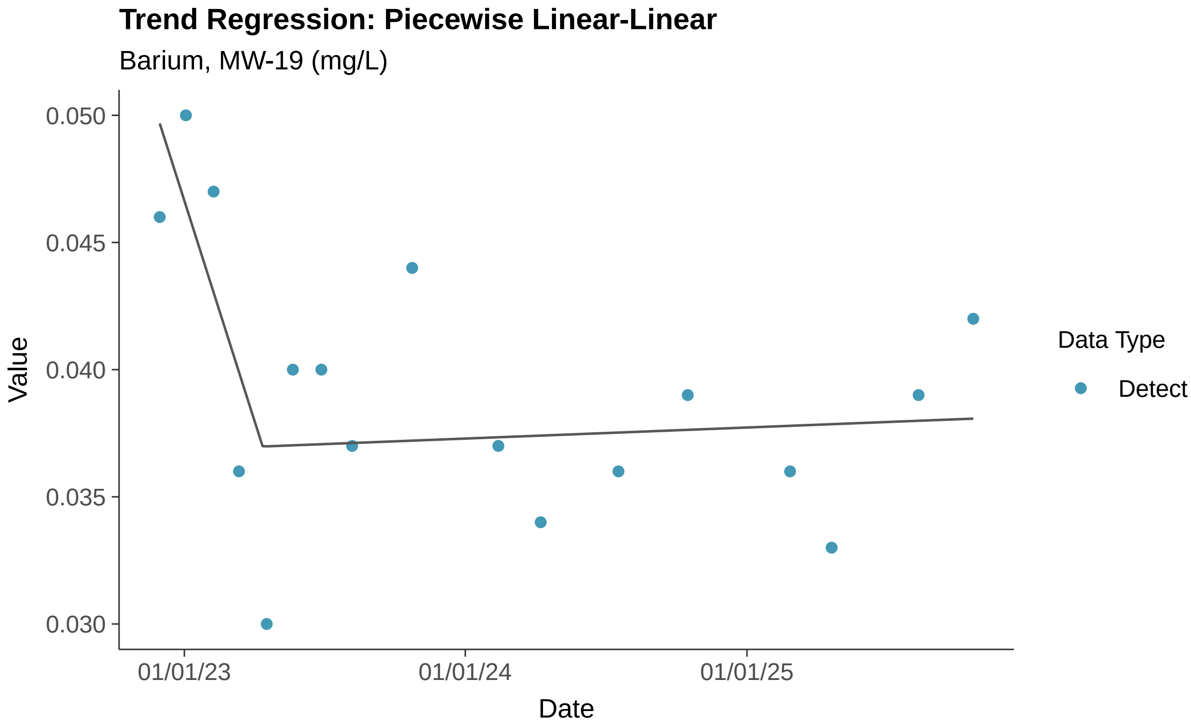


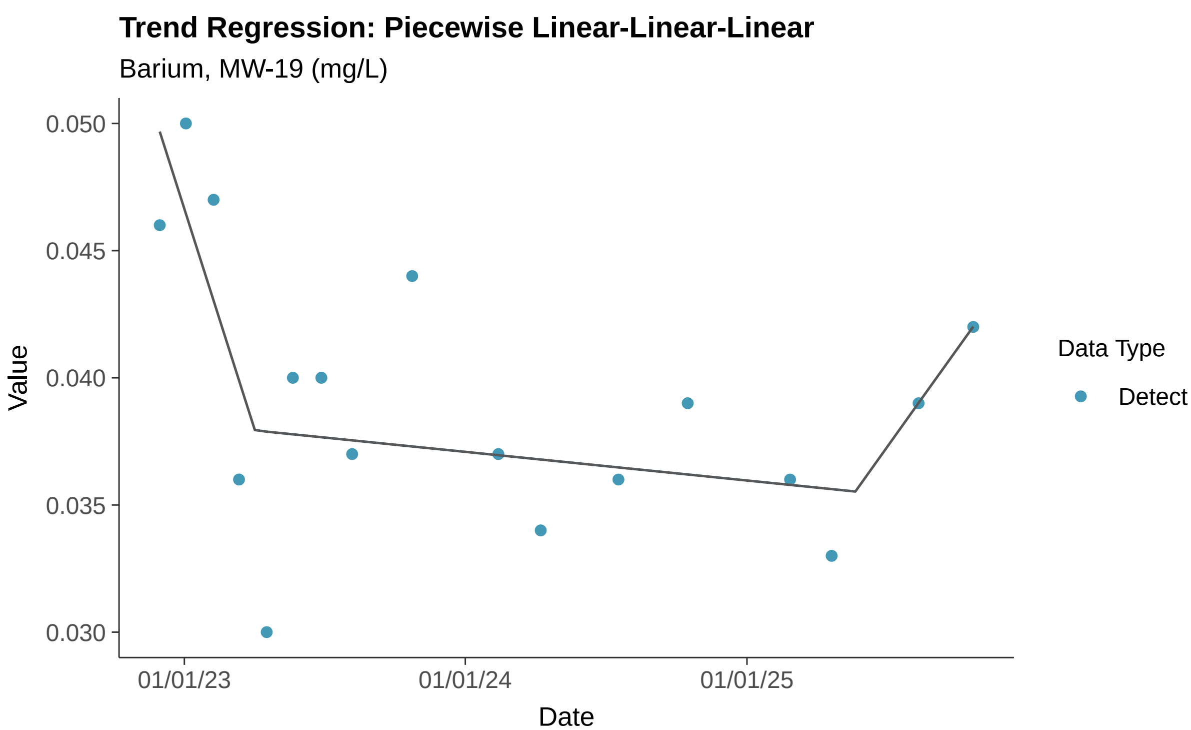

Normal Q-Q plot
Barium, MW-19 (mg/L)
Value
0.050
0.045
0.040
0.035
0.030
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Barium, MW-19 (mg/L)
log(Value)
−3.0
−3.2
−3.4
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Barium, MW-19 (mg/L)
Value
0.050
0.045
0.040
0.035
0.030
0.025
0.030
0.035
0.040
0.045
0.050
0.055
Theoretical Quantiles (Gamma)
Data Type
Detect

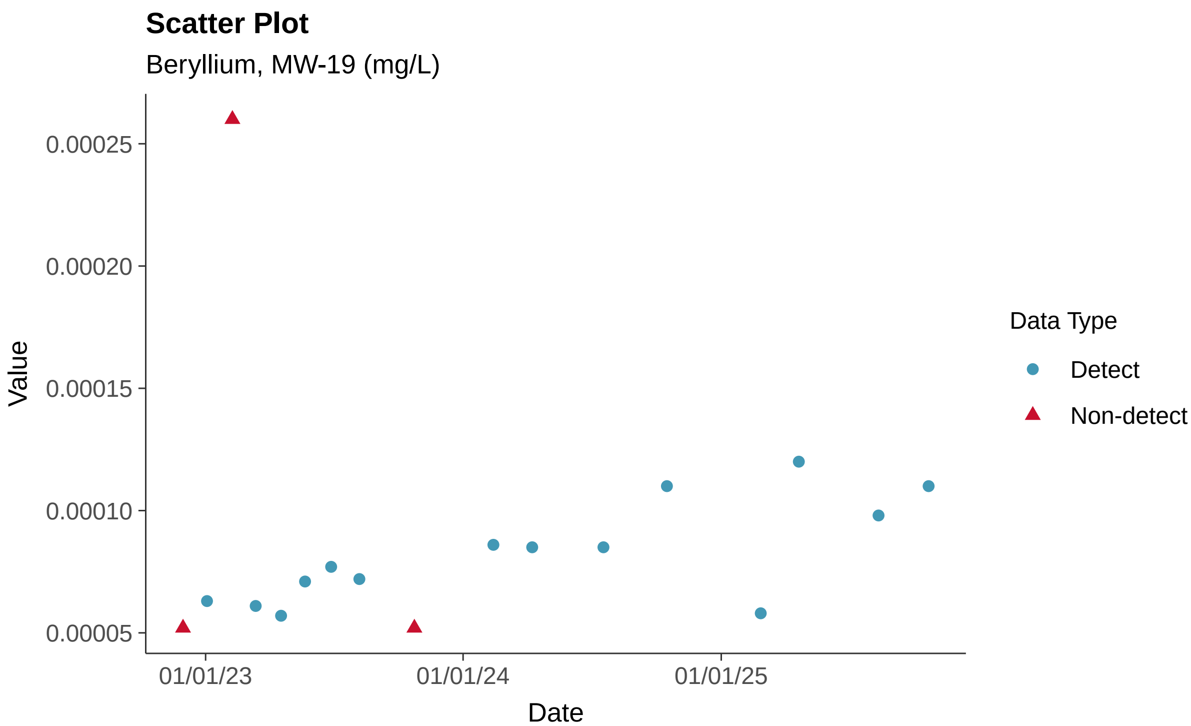

Trend Regression: Lognormal MLE
Barium, MW-19 (mg/L)
log(Value)
−3.0
−3.1
−3.2
−3.3
−3.4
−3.5
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

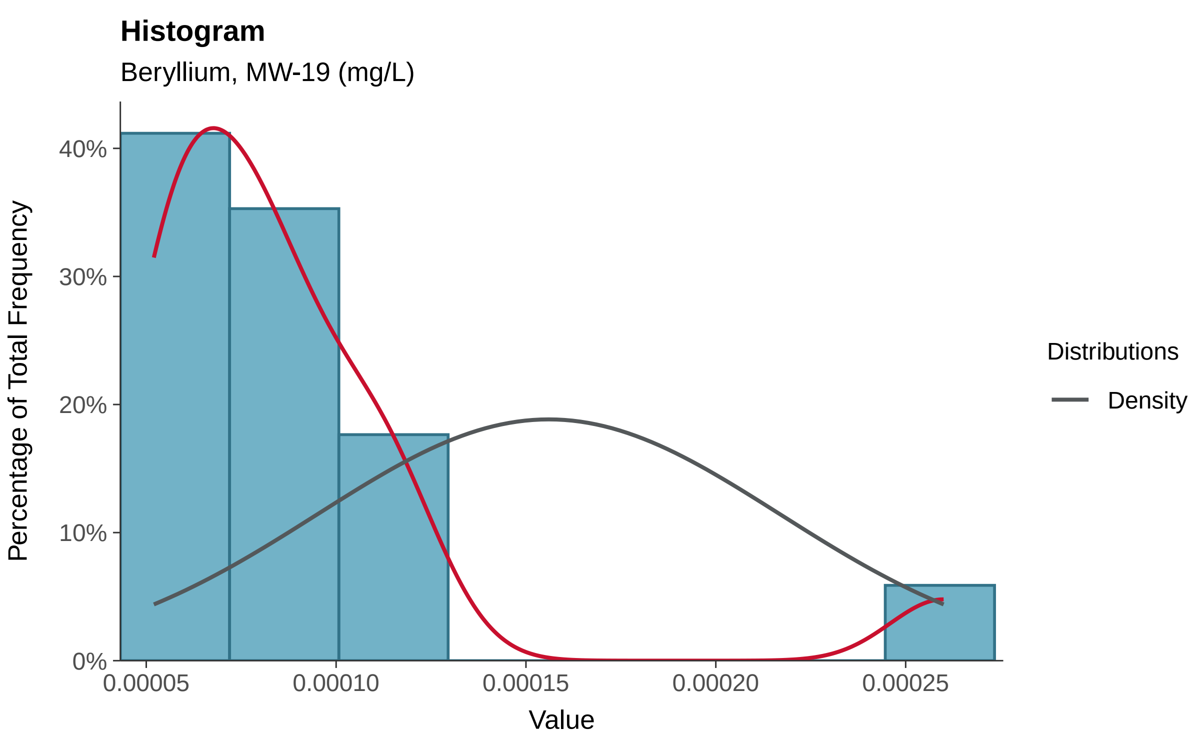

Trend Regression: Piecewise Linear-Linear
Barium, MW-19 (mg/L)
Value
0.050
0.045
0.040
0.035
0.030
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

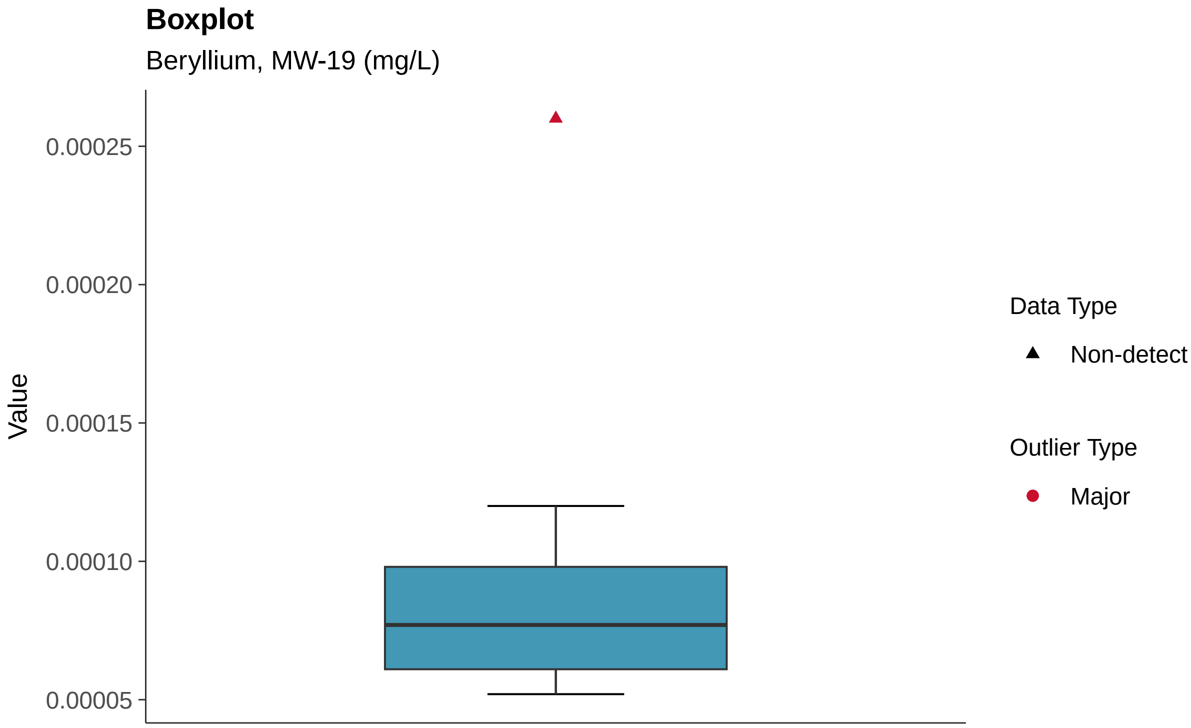

Trend Regression: Piecewise Linear-Linear-Linear
Barium, MW-19 (mg/L)
Value
0.050
0.045
0.040
0.035
0.030
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

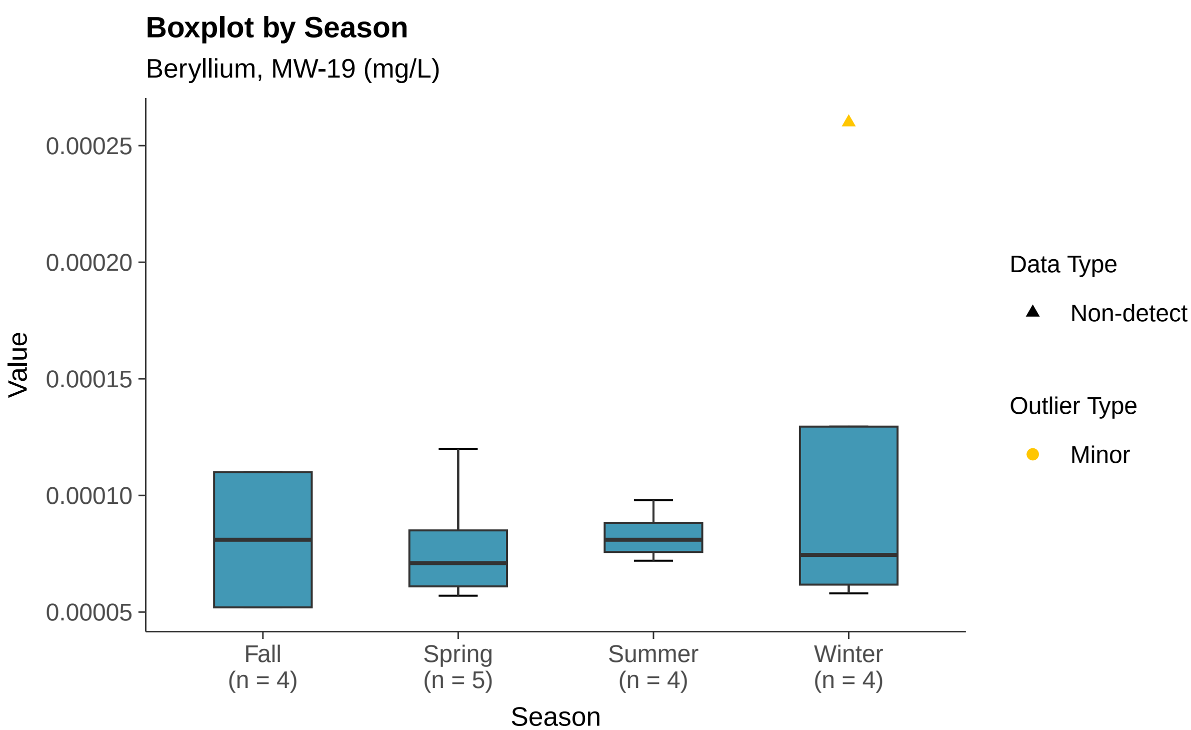
Appendix IV: Beryllium, MW-19

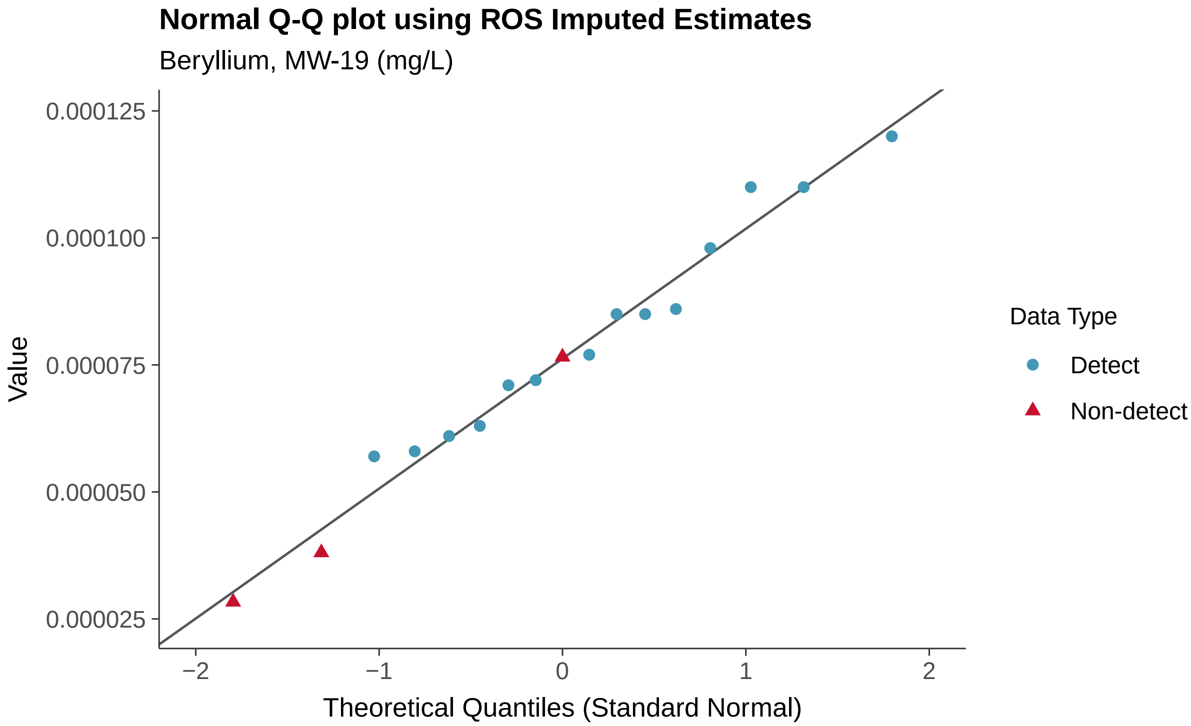
ID: 29_1_4_104

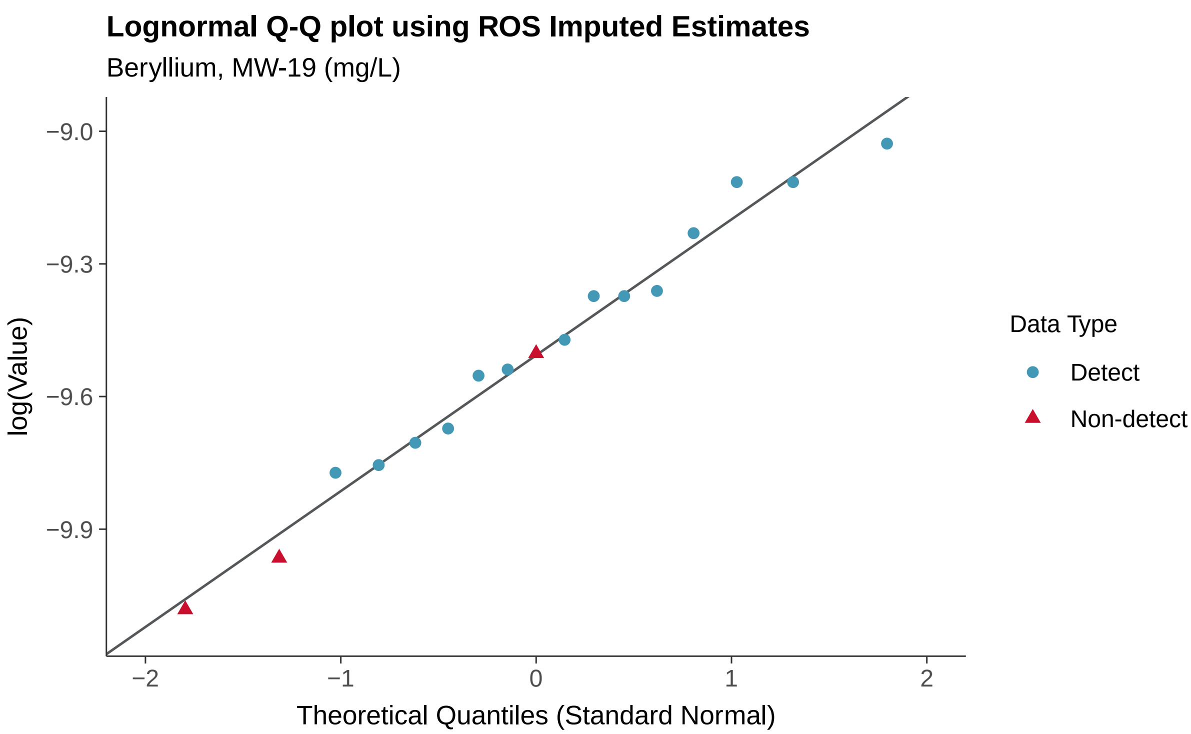


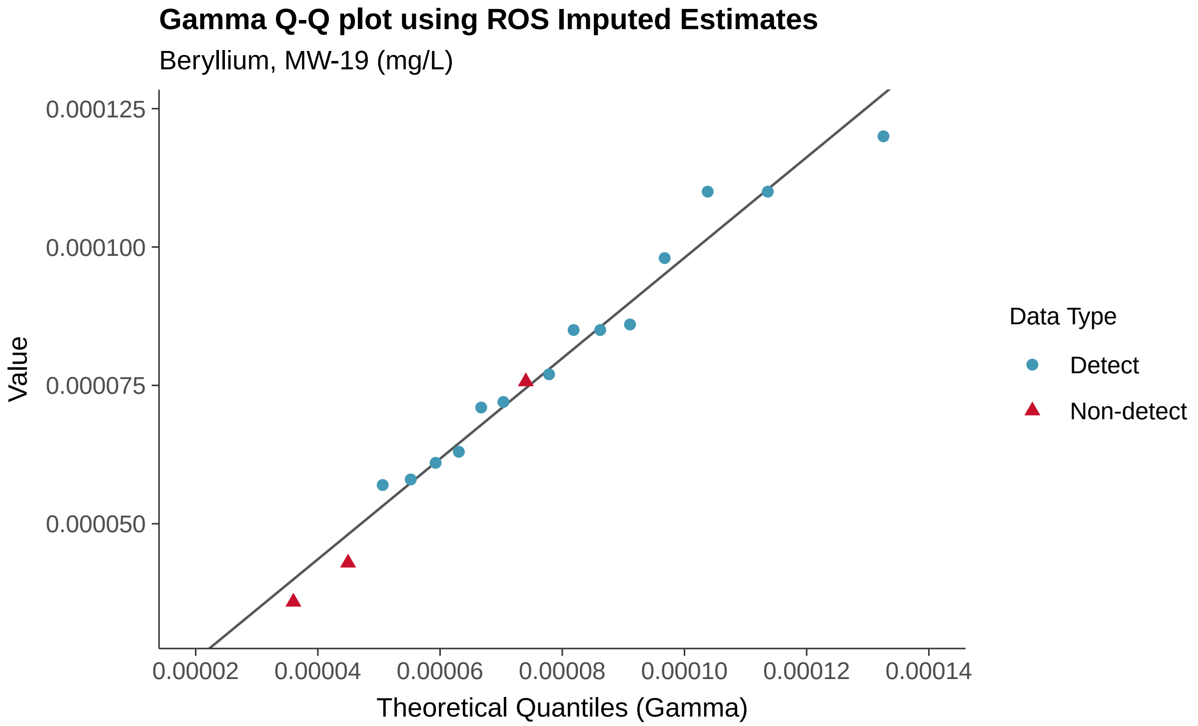


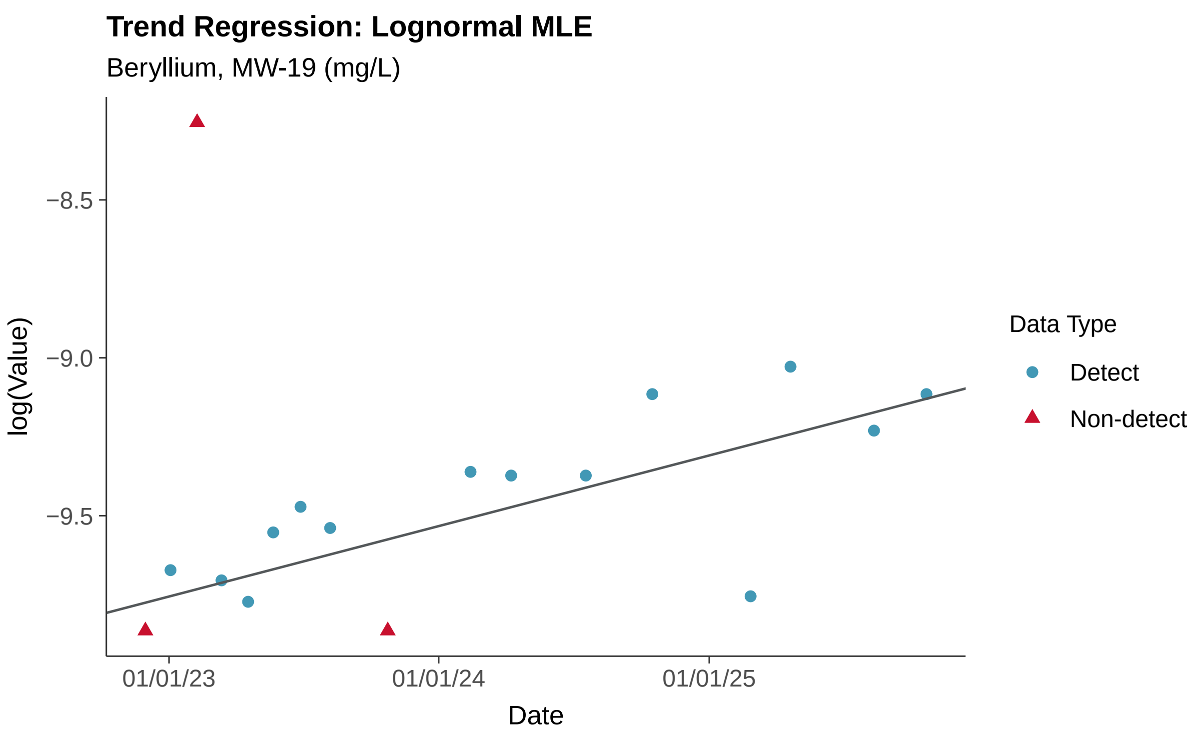

Boxplot
Beryllium, MW-19 (mg/L)
Value
0.00025
0.00020
0.00015
0.00010
0.00005
Data Type
Non-detect
Outlier Type
Major


Boxplot by Season
Beryllium, MW-19 (mg/L)
Value
0.00025
0.00020
0.00015
0.00010
0.00005
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Data Type
Non-detect
Outlier Type
Minor


Normal Q-Q plot using ROS Imputed Estimates
Beryllium, MW-19 (mg/L)
Value
0.000125
0.000100
0.000075
0.000050
0.000025
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

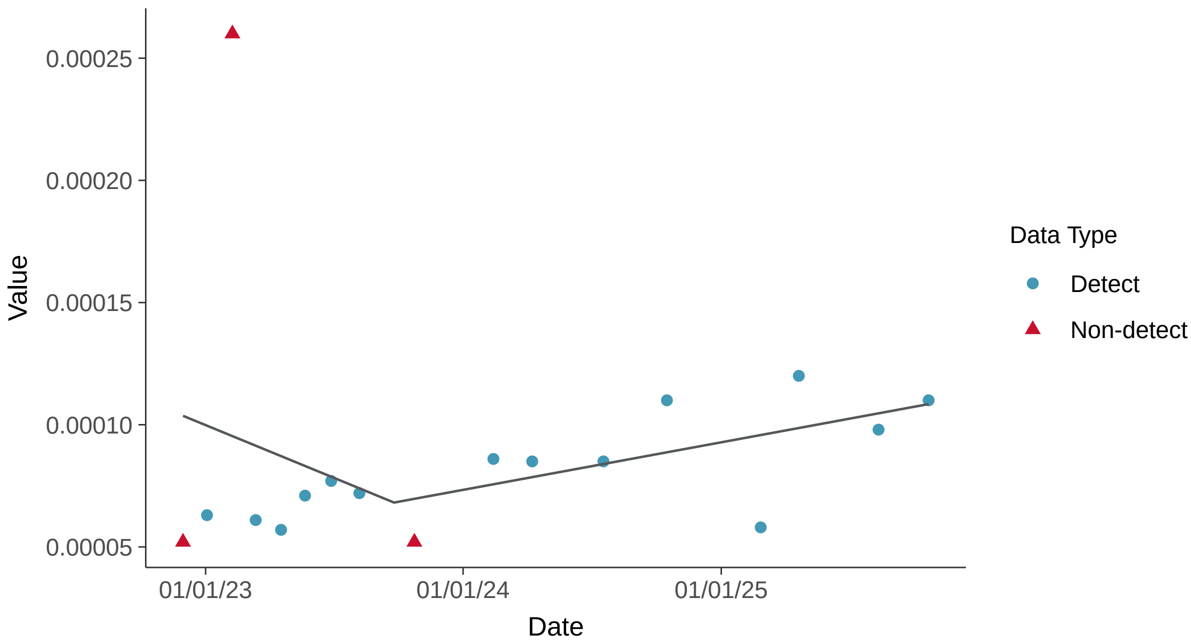

Lognormal Q-Q plot using ROS Imputed Estimates
Beryllium, MW-19 (mg/L)
log(Value)
−9.0
−9.3
−9.6
−9.9
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Gamma Q-Q plot using ROS Imputed Estimates
Beryllium, MW-19 (mg/L)
Value
0.000125
0.000100
0.000075
0.000050
0.00002
0.00004
0.00006
0.00008
0.00010
0.00012
0.00014
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect


Trend Regression: Lognormal MLE
Beryllium, MW-19 (mg/L)
log(Value)
−8.5
−9.0
−9.5
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

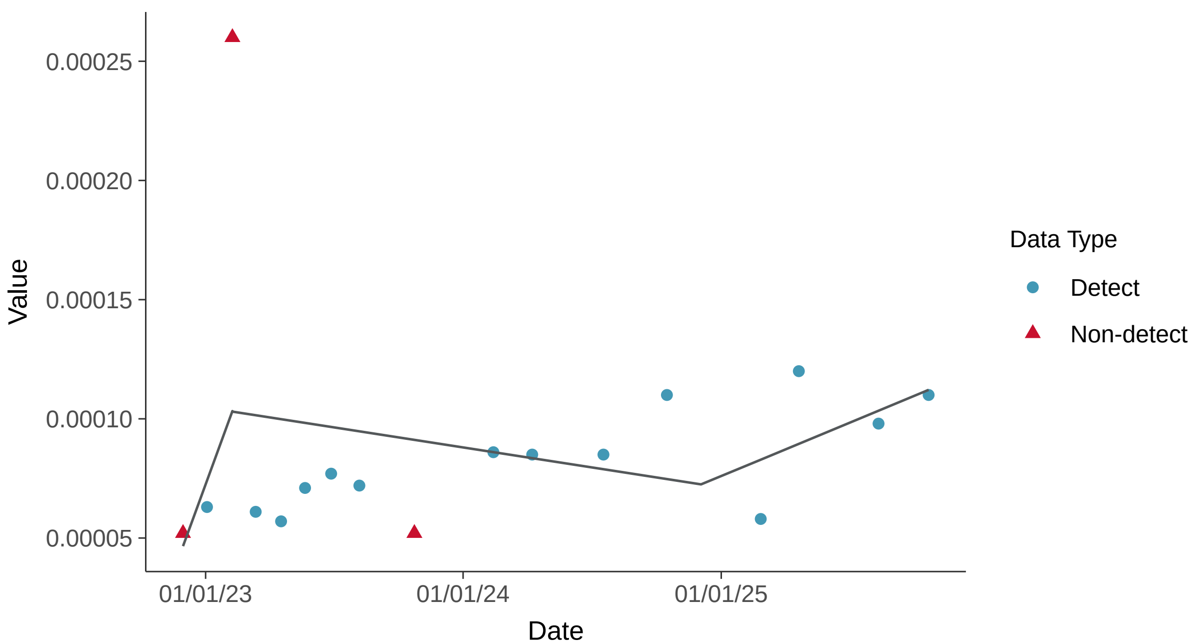
Trend Regression: Piecewise Linear-Linear

Beryllium, MW-19 (mg/L)



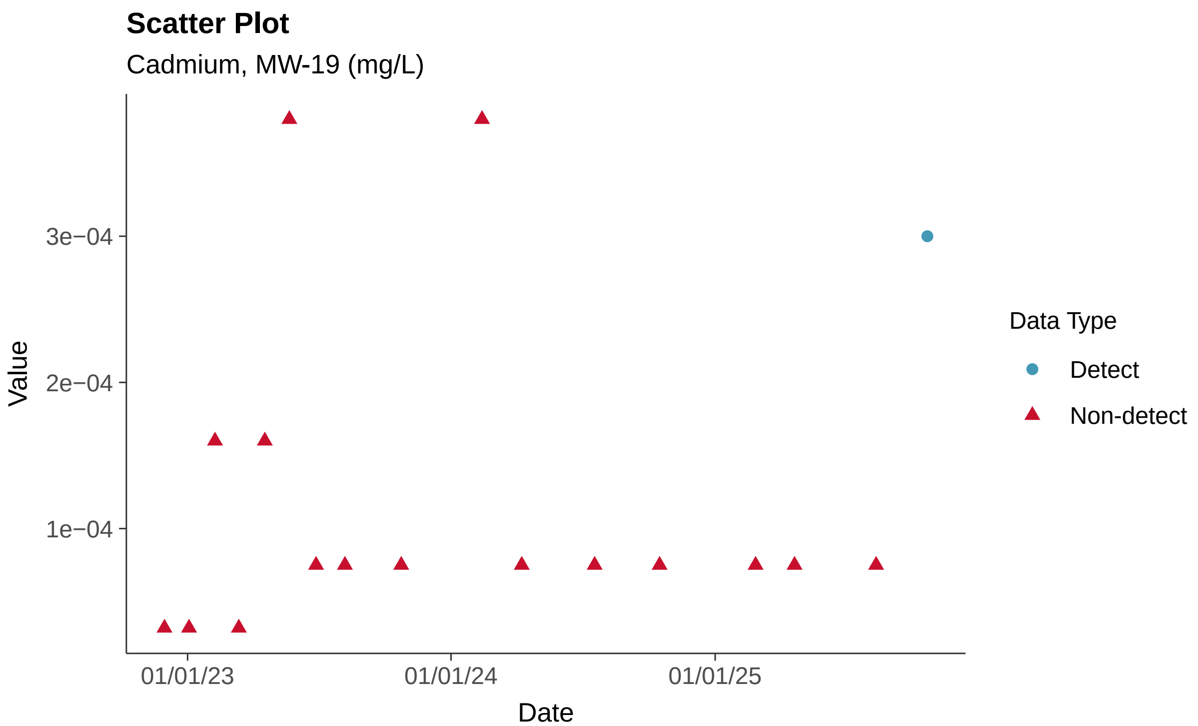
Trend Regression: Piecewise Linear-Linear-Linear

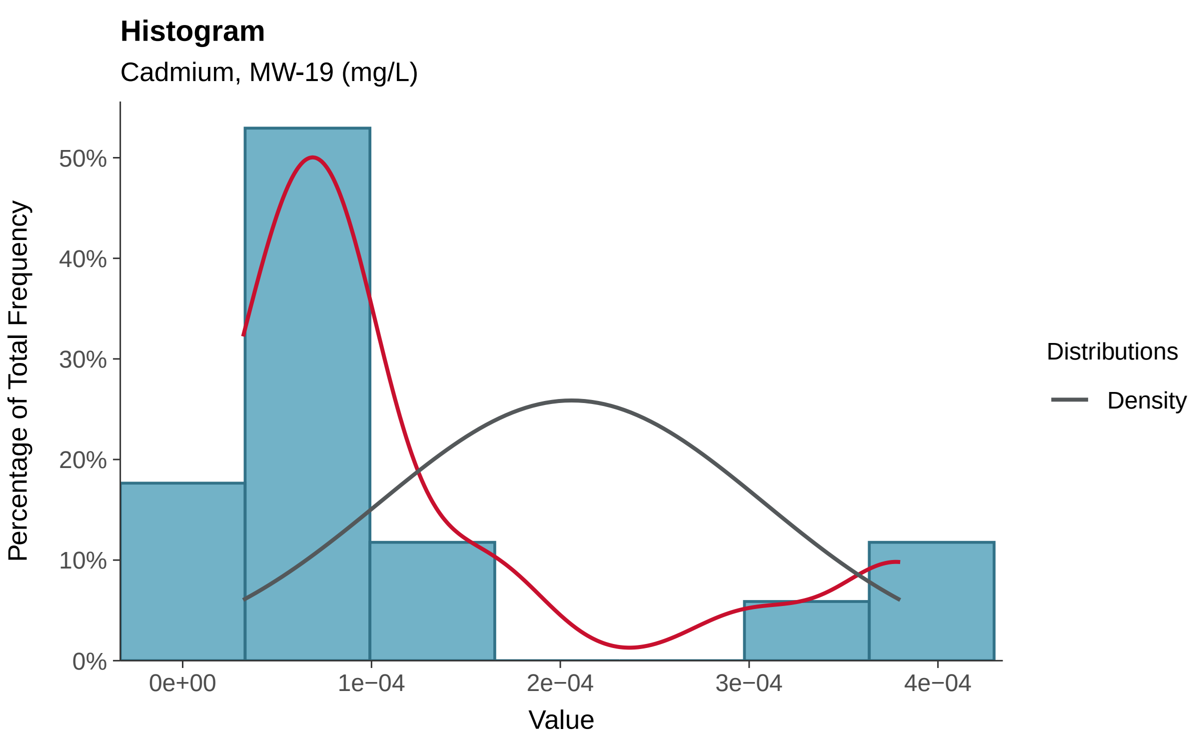
Beryllium, MW-19 (mg/L)



Appendix IV: Cadmium, MW-19

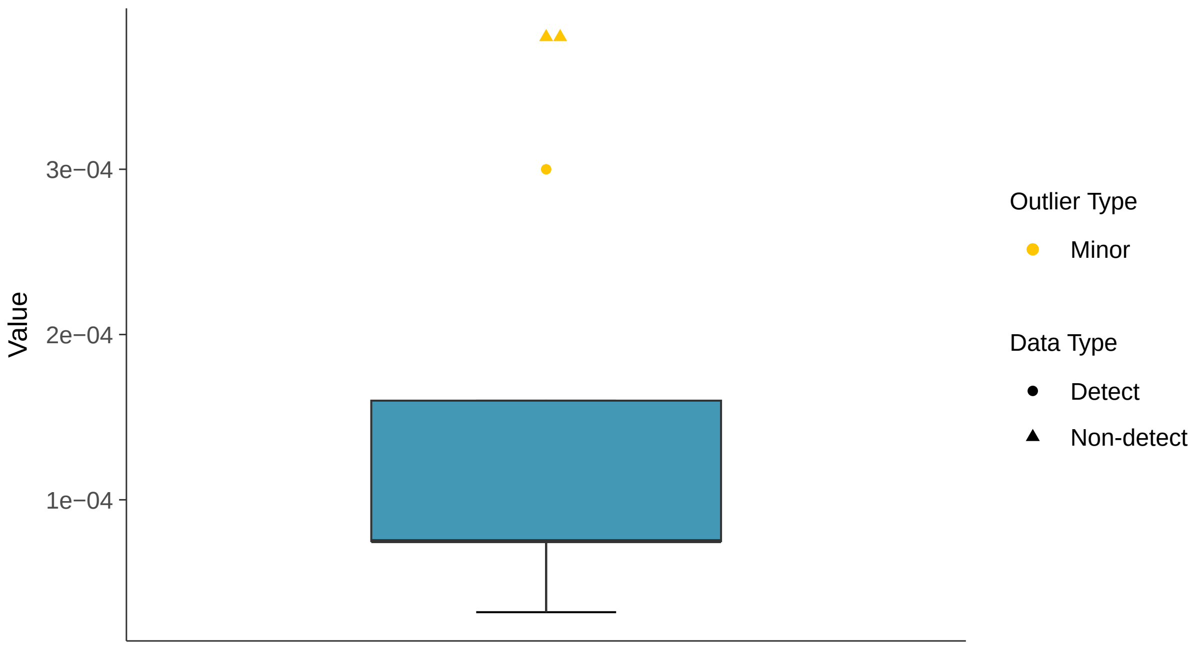
ID: 29_1_4_106





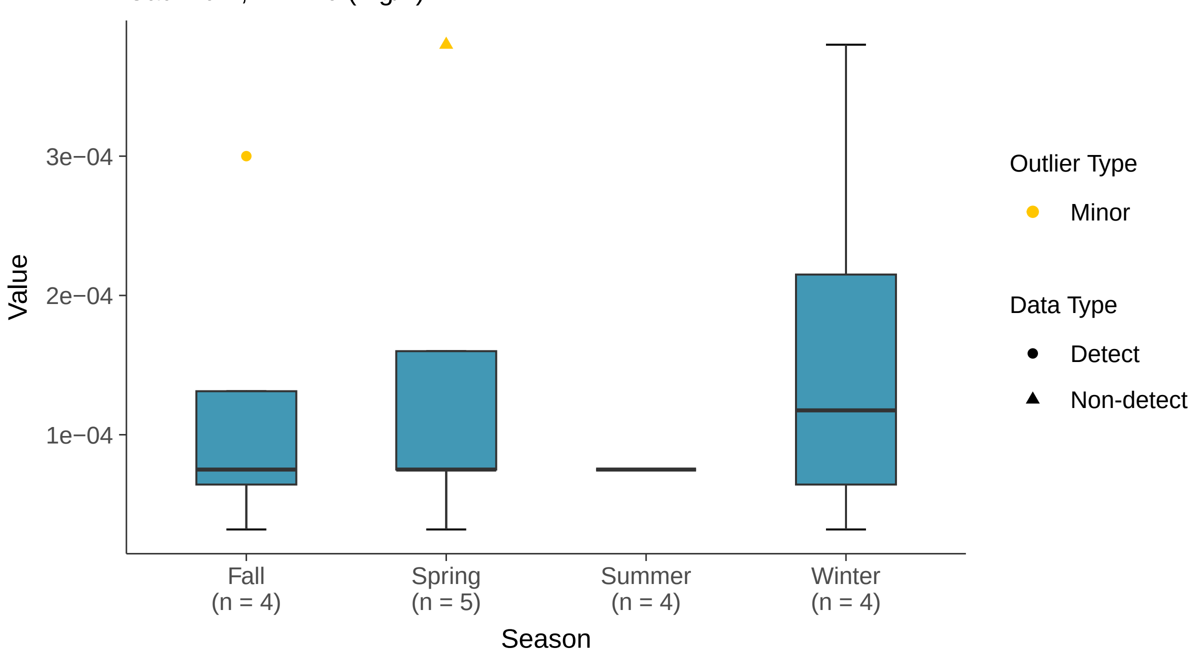
Boxplot

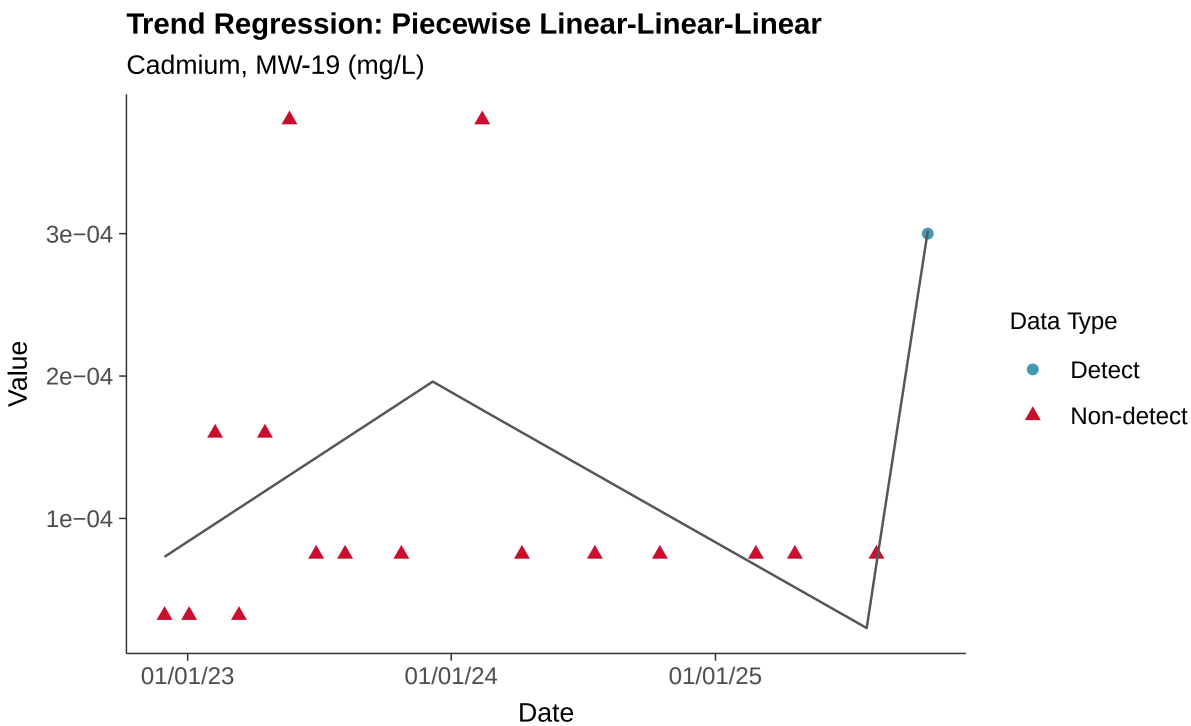
Cadmium, MW-19 (mg/L)



Boxplot by Season

Cadmium, MW-19 (mg/L)



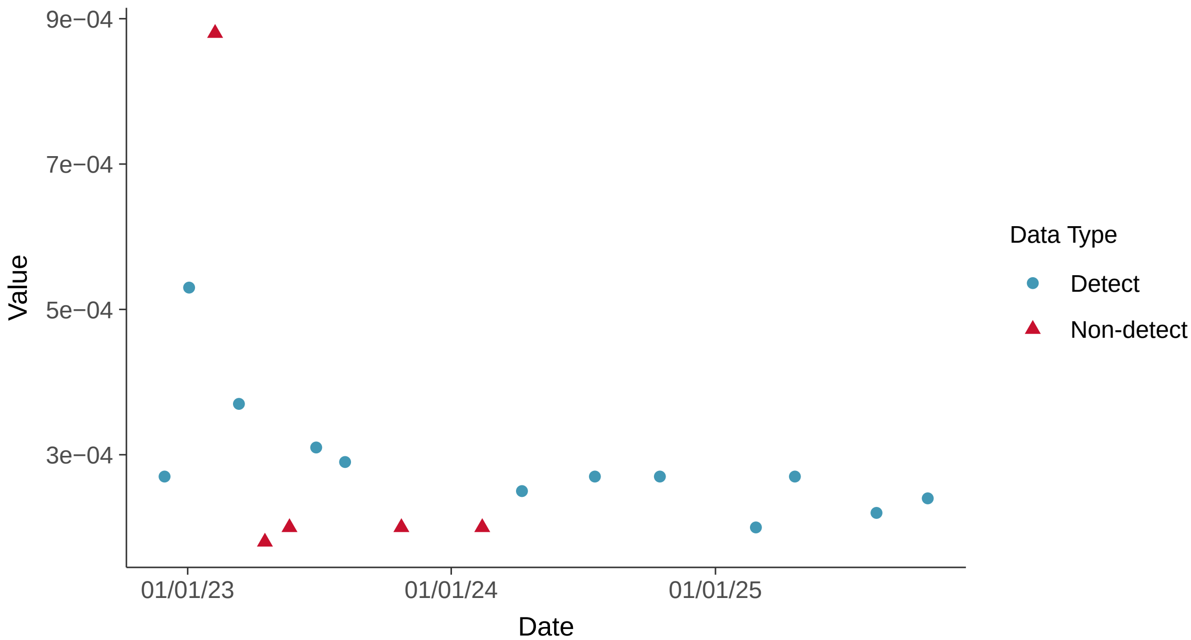

Trend Regression: Piecewise Linear-Linear-Linear
Cadmium, MW-19 (mg/L)
Value
3e−04
2e−04
1e−04
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Appendix IV: Chromium, Total, MW-19

ID: 29_1_4_109

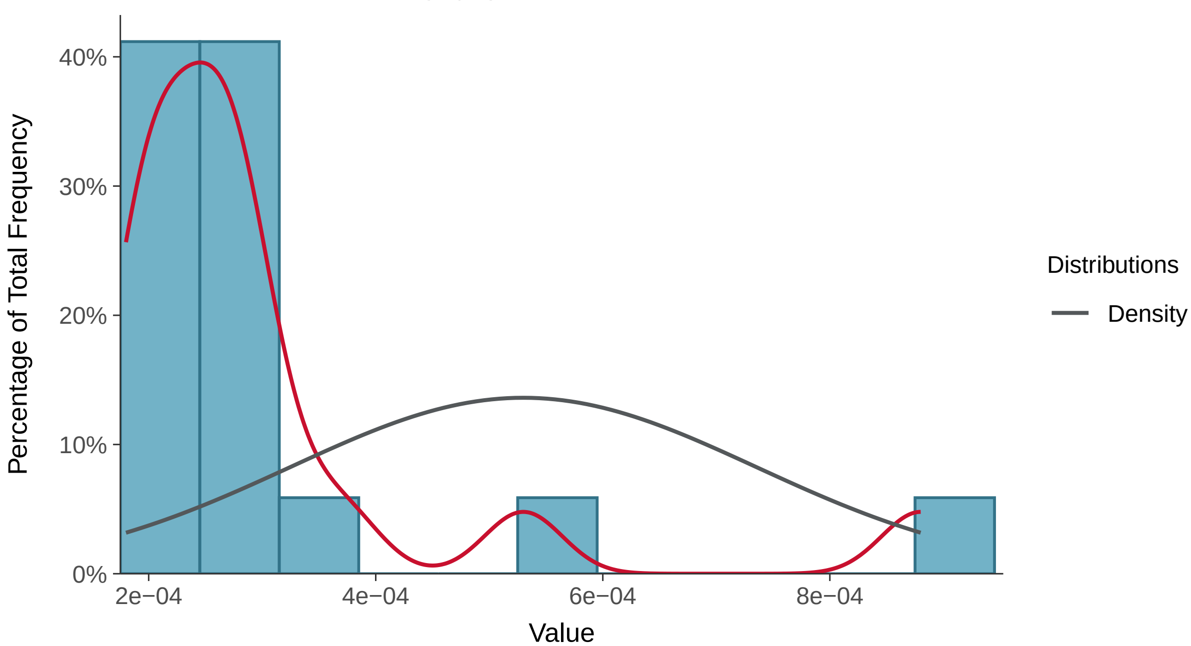
Scatter Plot

Chromium, Total, MW-19 (mg/L)



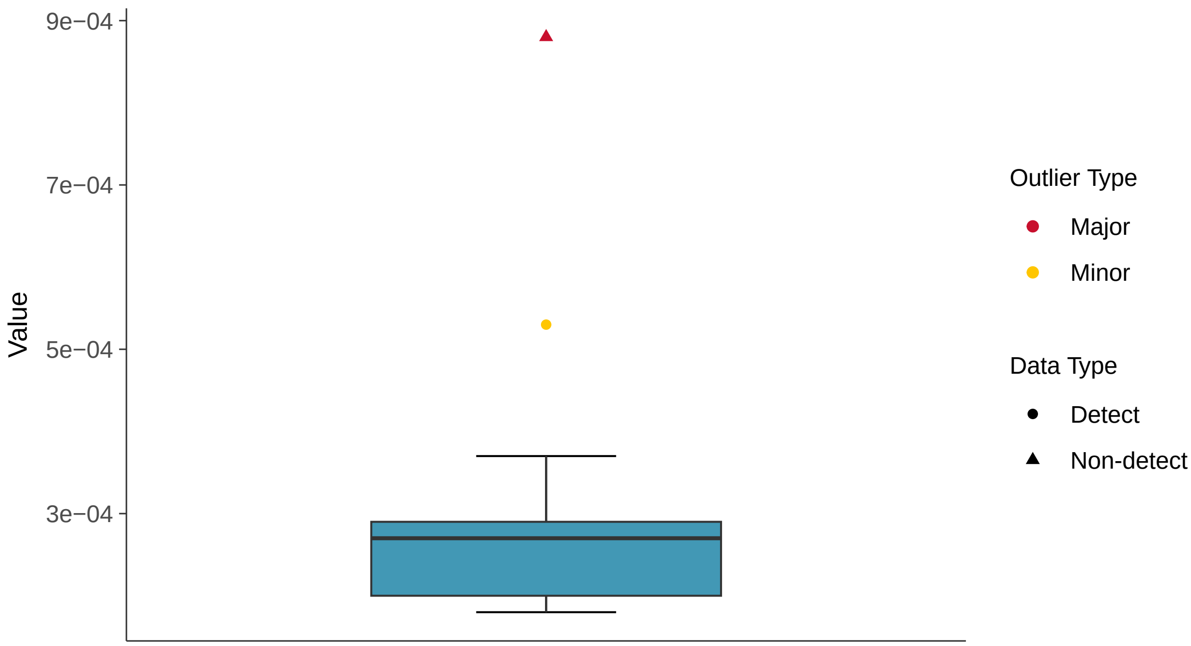
Histogram

Chromium, Total, MW-19 (mg/L)



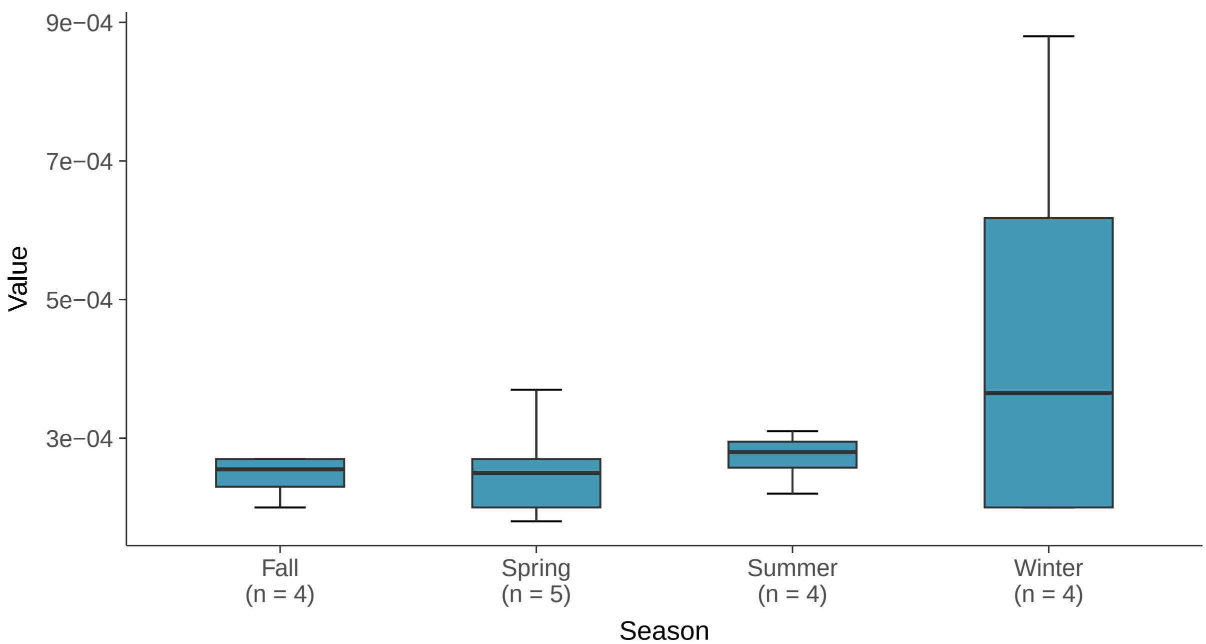
Boxplot

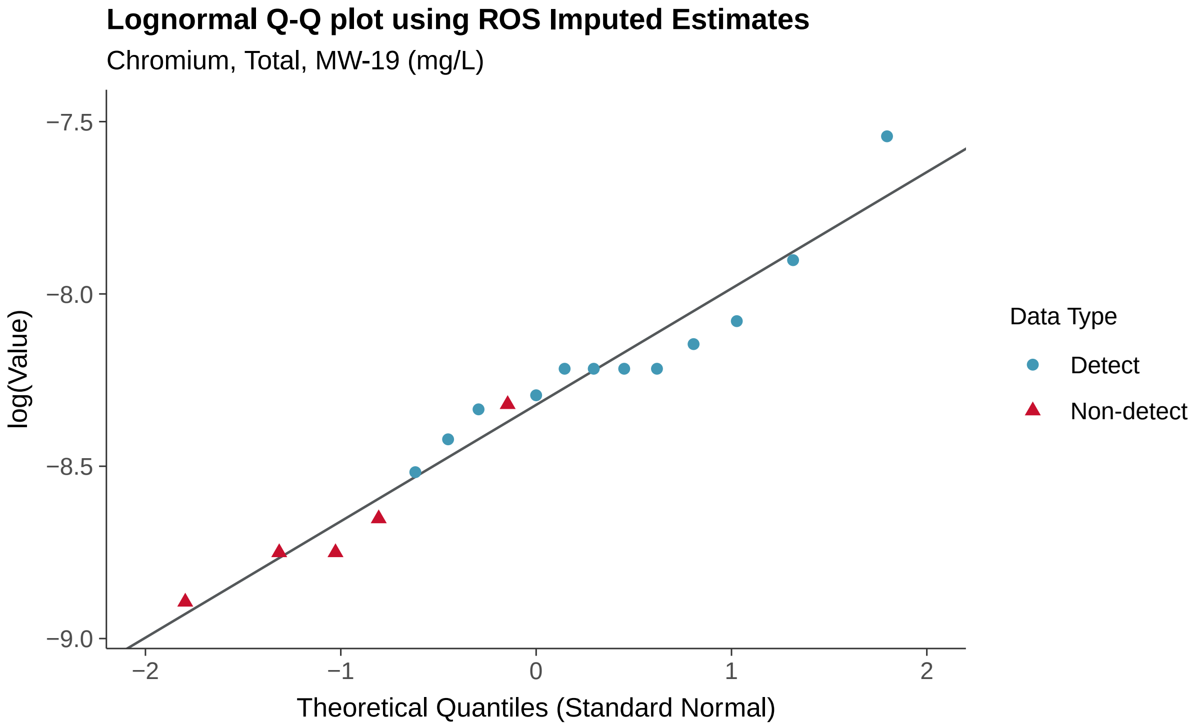
Chromium, Total, MW-19 (mg/L)

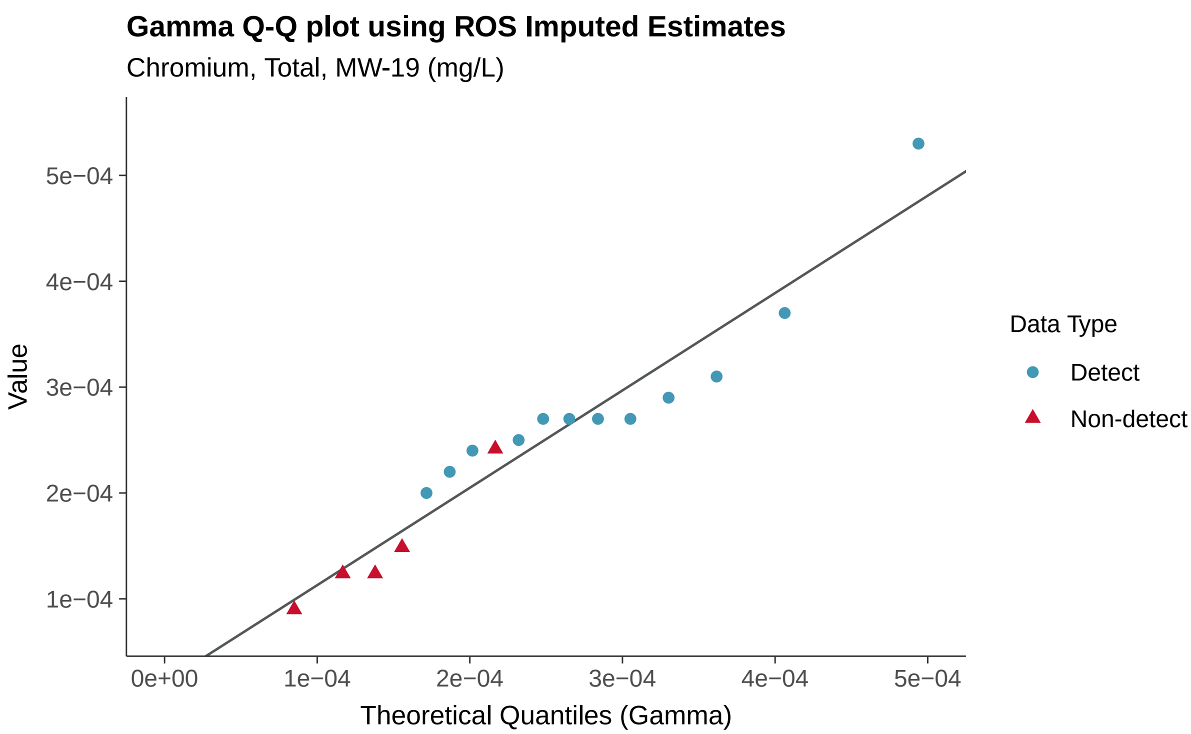


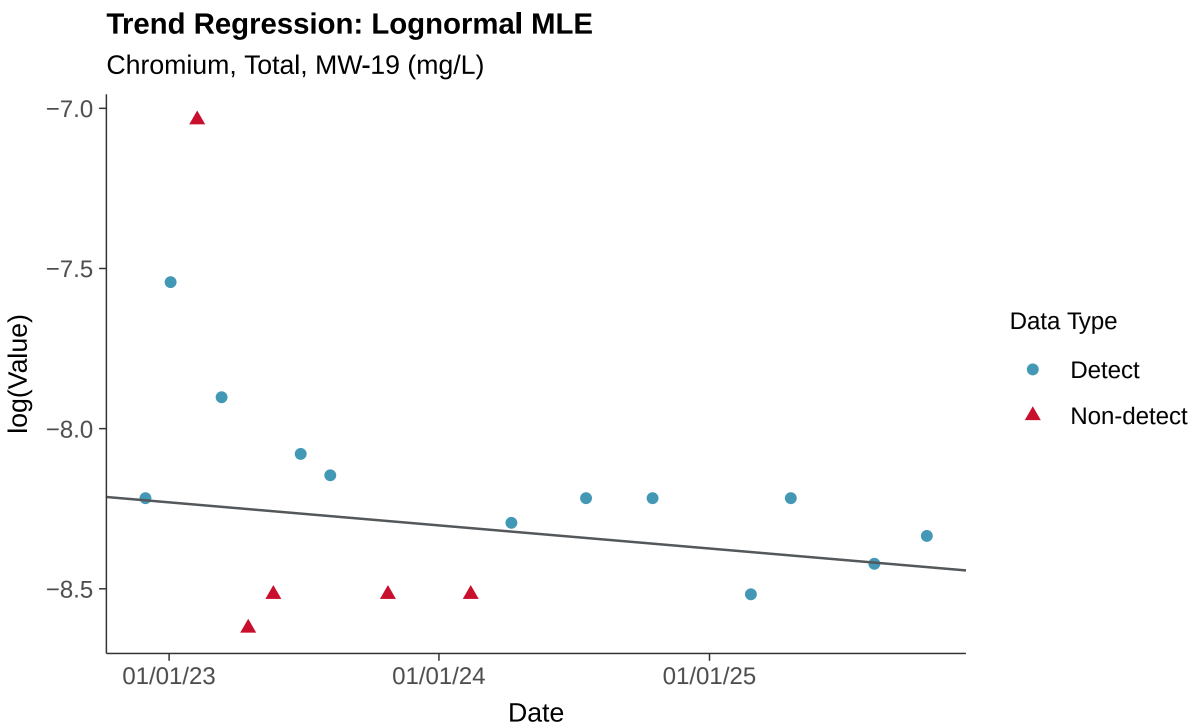
Boxplot by Season

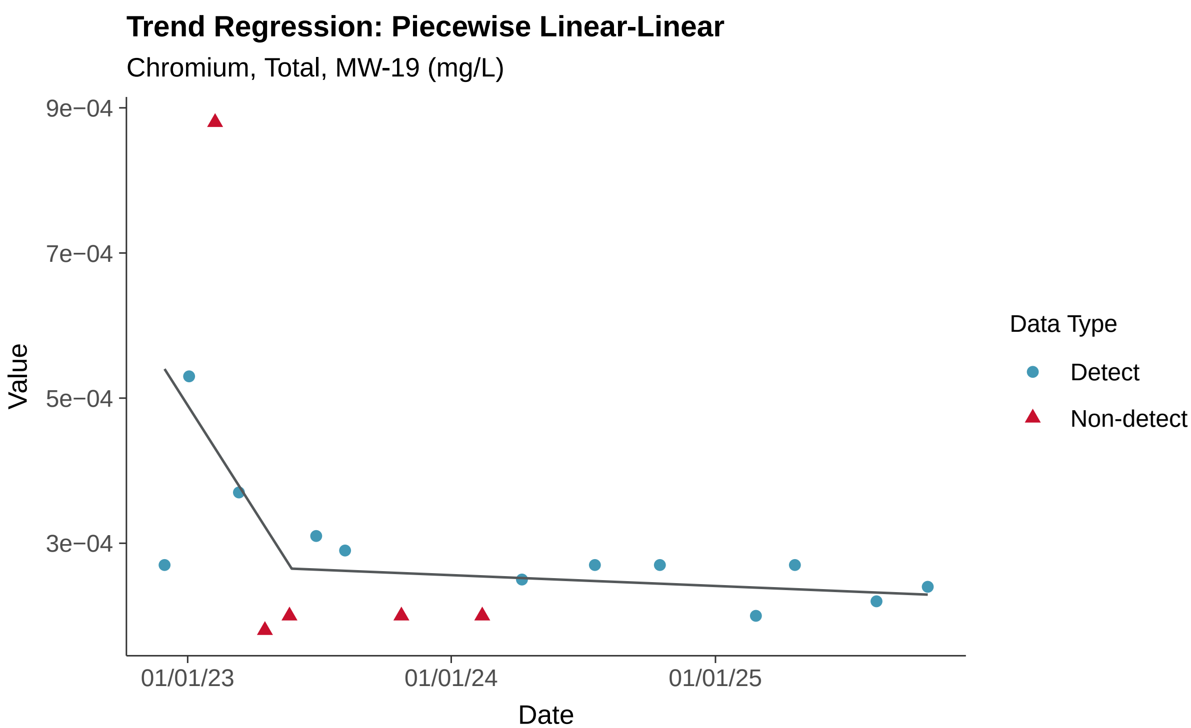
Chromium, Total, MW-19 (mg/L)




Lognormal Q-Q plot using ROS Imputed Estimates
Chromium, Total, MW-19 (mg/L)
log(Value)
−7.5
−8.0
−8.5
−9.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

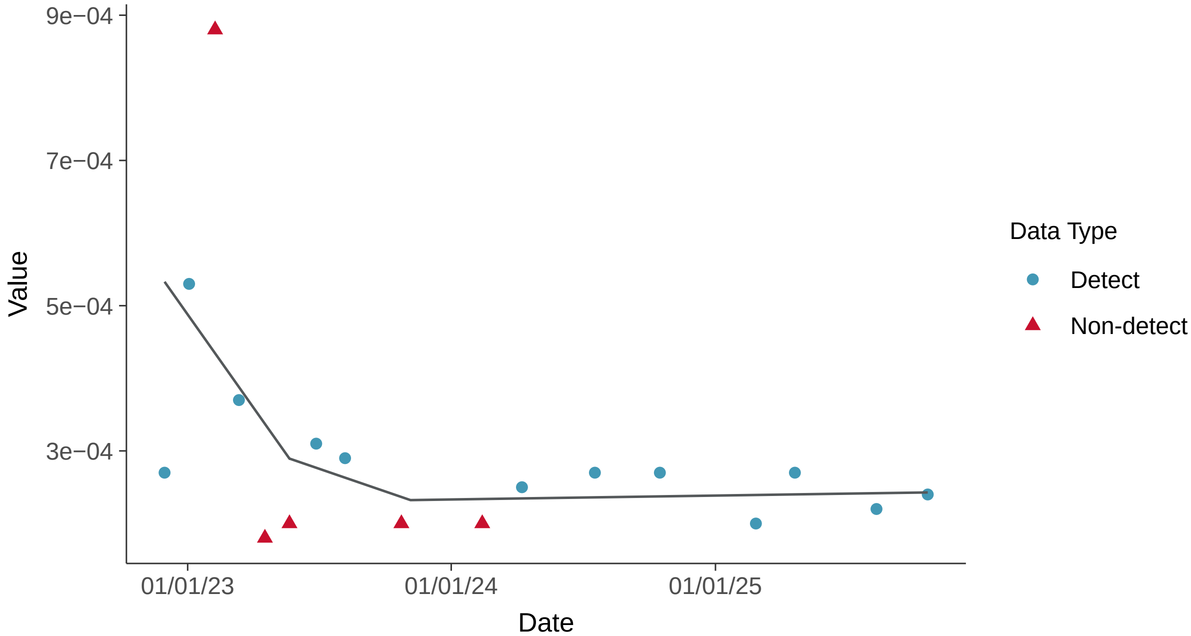

Gamma Q-Q plot using ROS Imputed Estimates
Chromium, Total, MW-19 (mg/L)
Value
5e−04
4e−04
3e−04
2e−04
1e−04
0e+00
1e−04
2e−04
3e−04
4e−04
5e−04
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect


Trend Regression: Lognormal MLE
Chromium, Total, MW-19 (mg/L)
−7.0
−7.5
−8.0
−8.5
log(Value)
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Chromium, Total, MW-19 (mg/L)
9e−04
7e−04
5e−04
3e−04
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

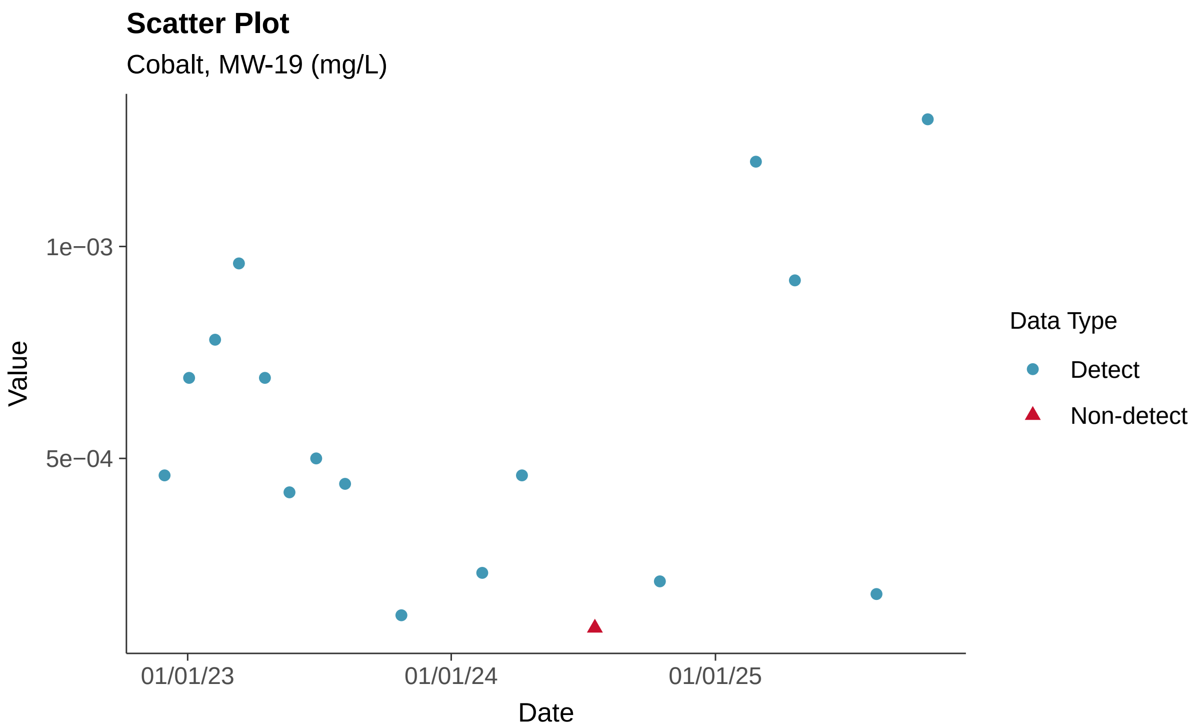
Trend Regression: Piecewise Linear-Linear-Linear

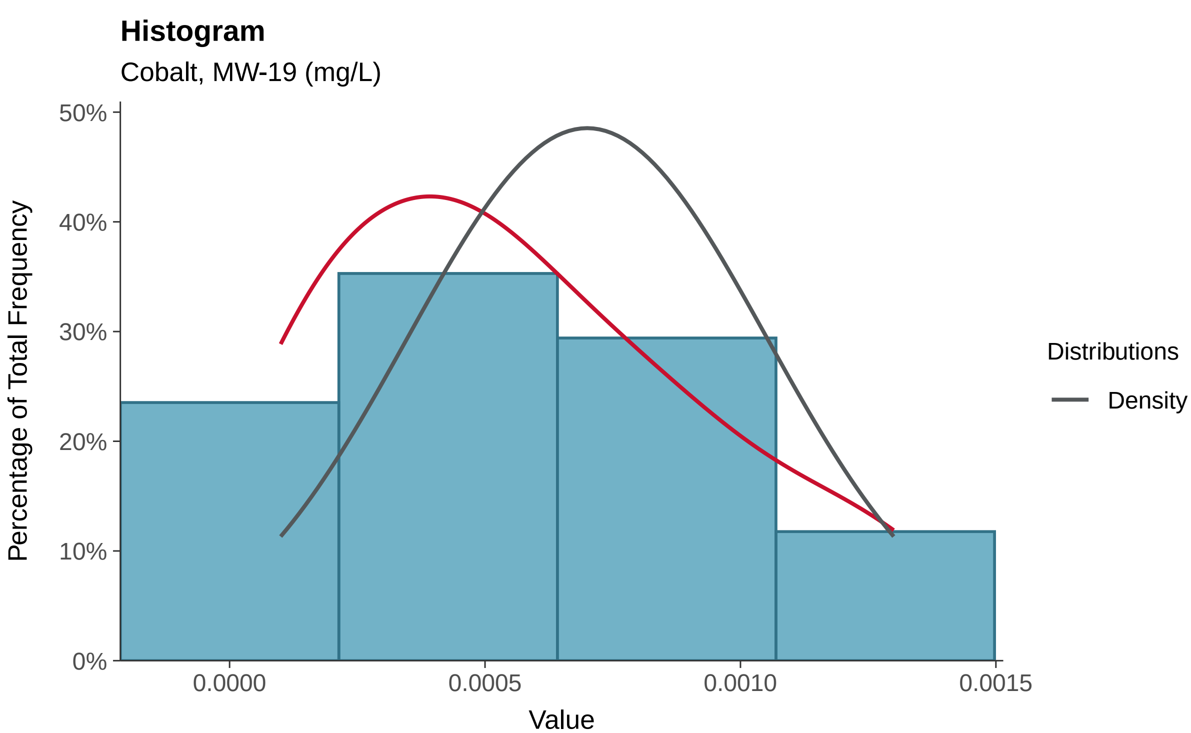
Chromium, Total, MW-19 (mg/L)



Appendix IV: Cobalt, MW-19

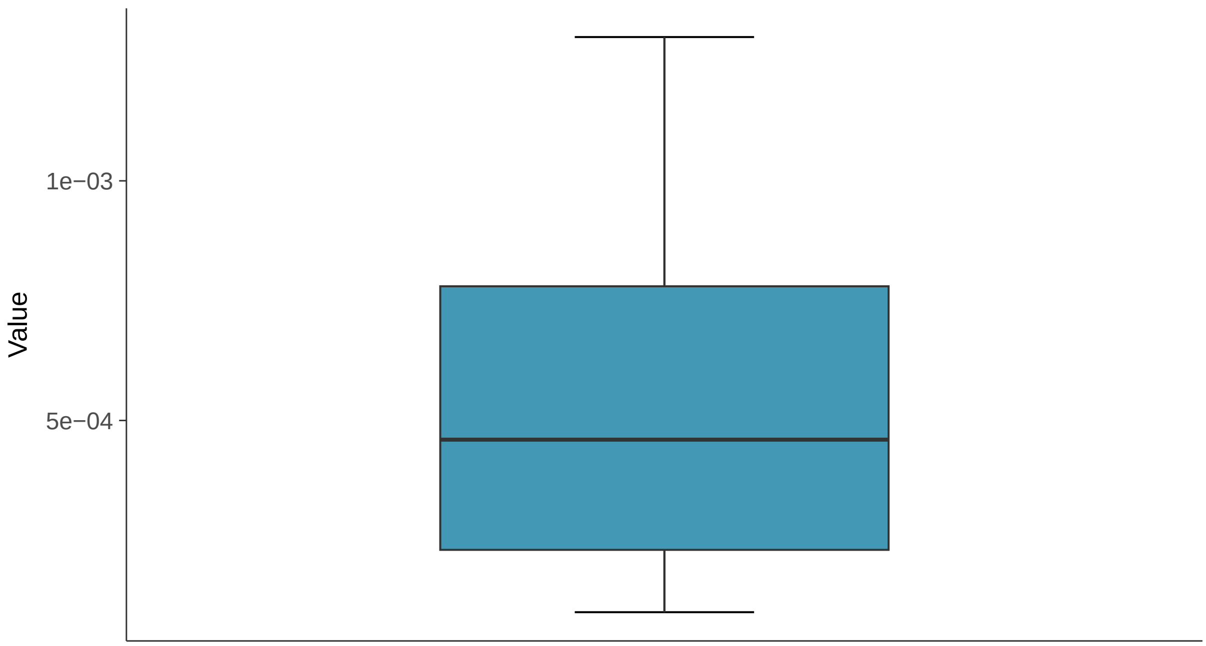
ID: 29_1_4_110





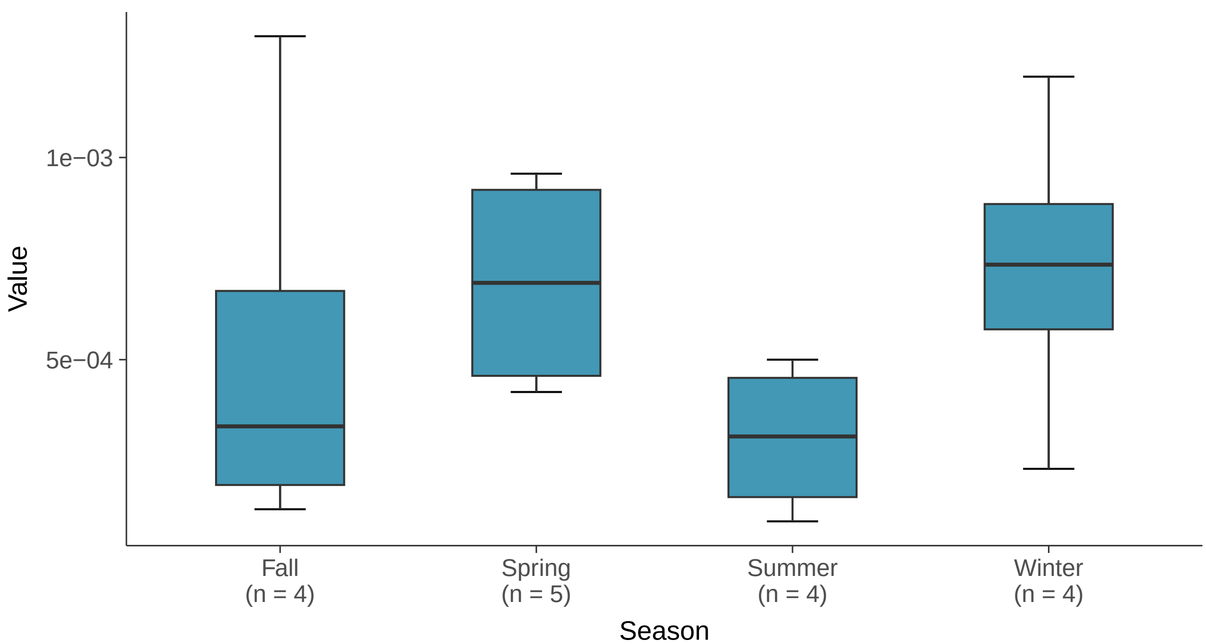
Boxplot

Cobalt, MW-19 (mg/L)



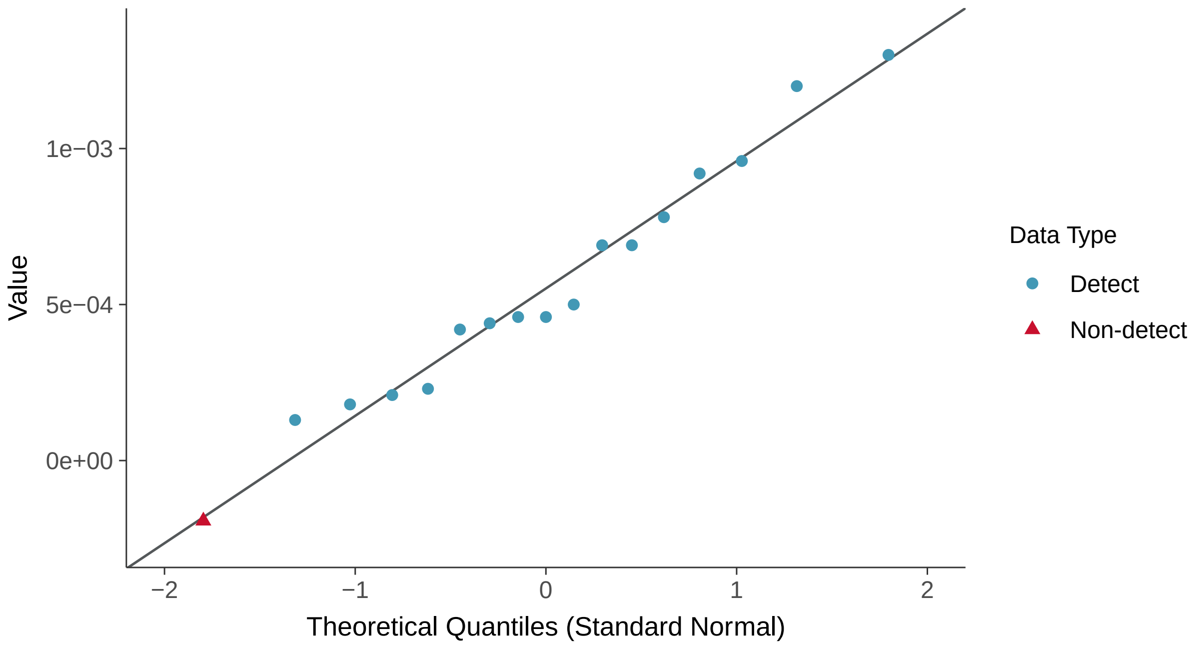
Boxplot by Season

Cobalt, MW-19 (mg/L)



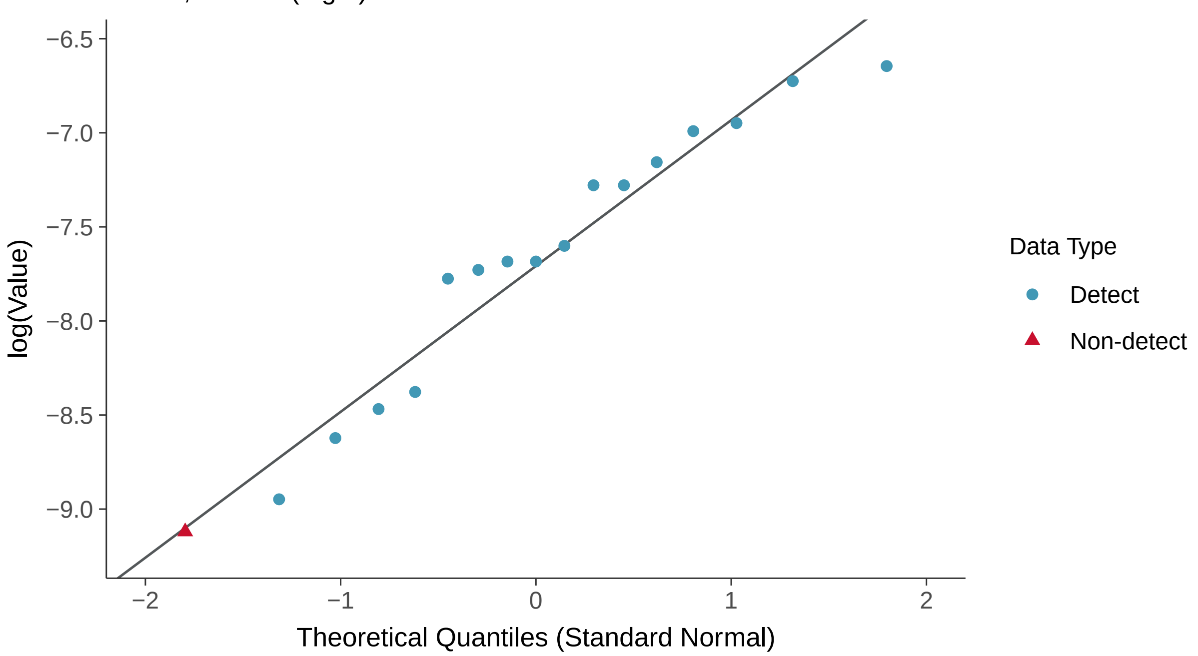
Normal Q-Q plot using ROS Imputed Estimates

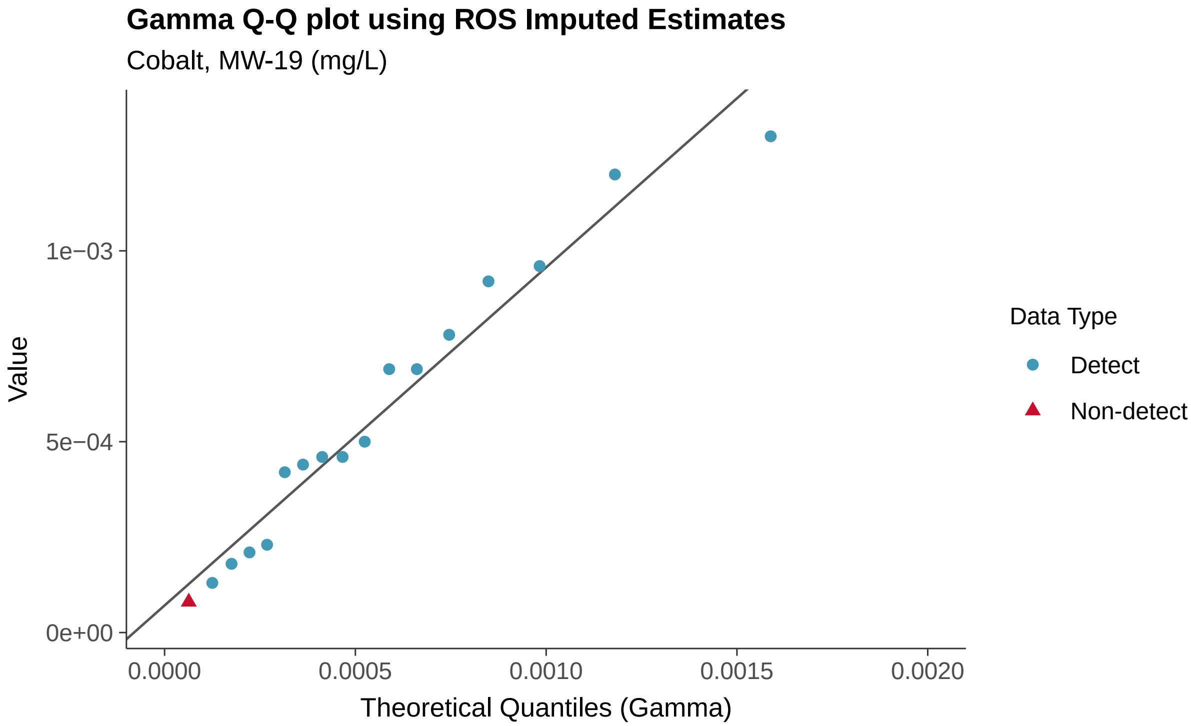
Cobalt, MW-19 (mg/L)

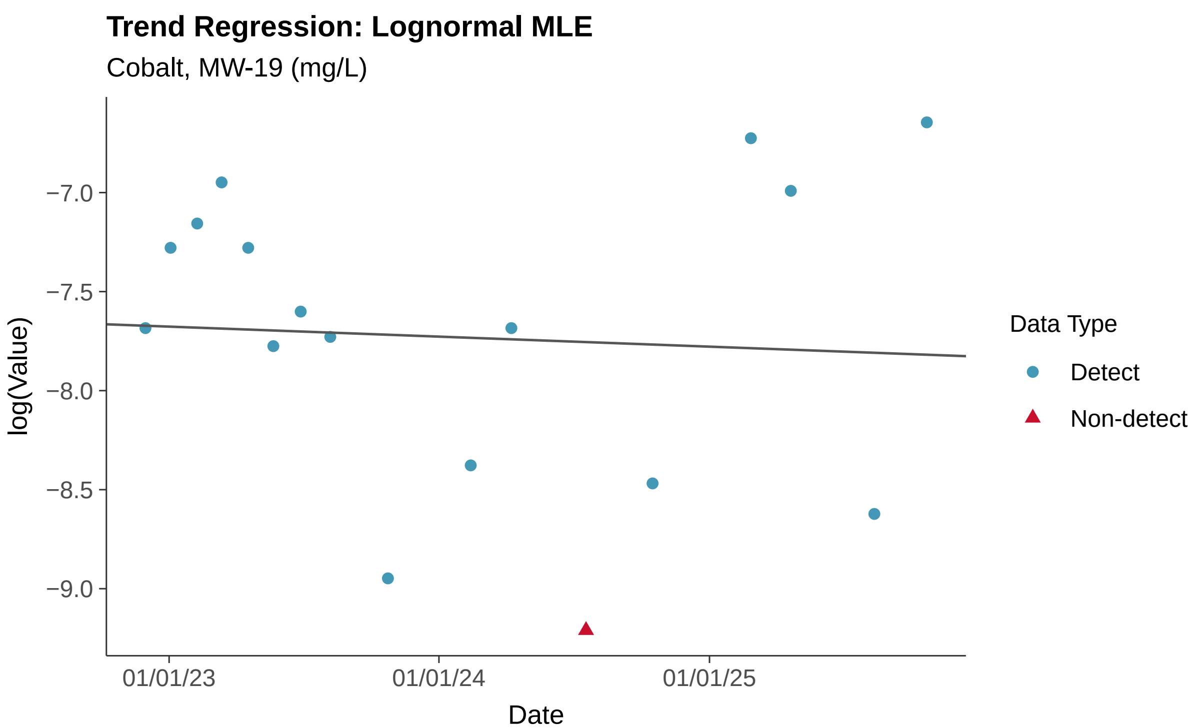


Lognormal Q-Q plot using ROS Imputed Estimates

Cobalt, MW-19 (mg/L)

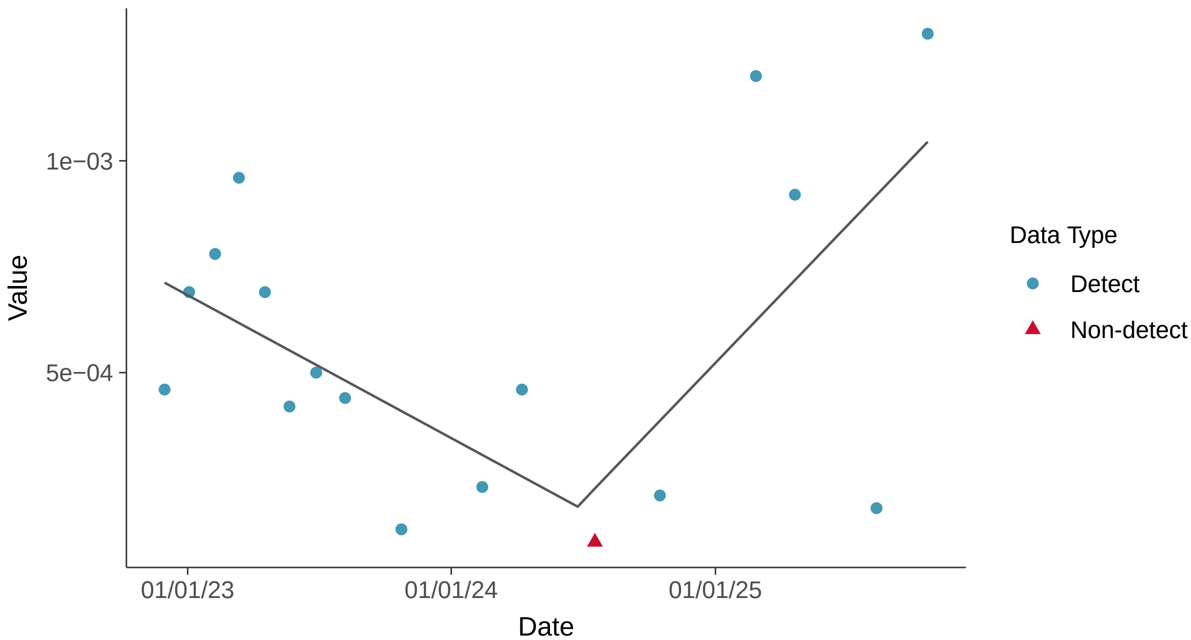



Gamma Q-Q plot using ROS Imputed Estimates
Cobalt, MW-19 (mg/L)
Value
1e−03
5e−04
0e+00
0.0000
0.0005
0.0010
0.0015
0.0020
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect


Trend Regression: Lognormal MLE
Cobalt, MW-19 (mg/L)
log(Value)
−7.0
−7.5
−8.0
−8.5
−9.0
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Trend Regression: Piecewise Linear-Linear

Cobalt, MW-19 (mg/L)

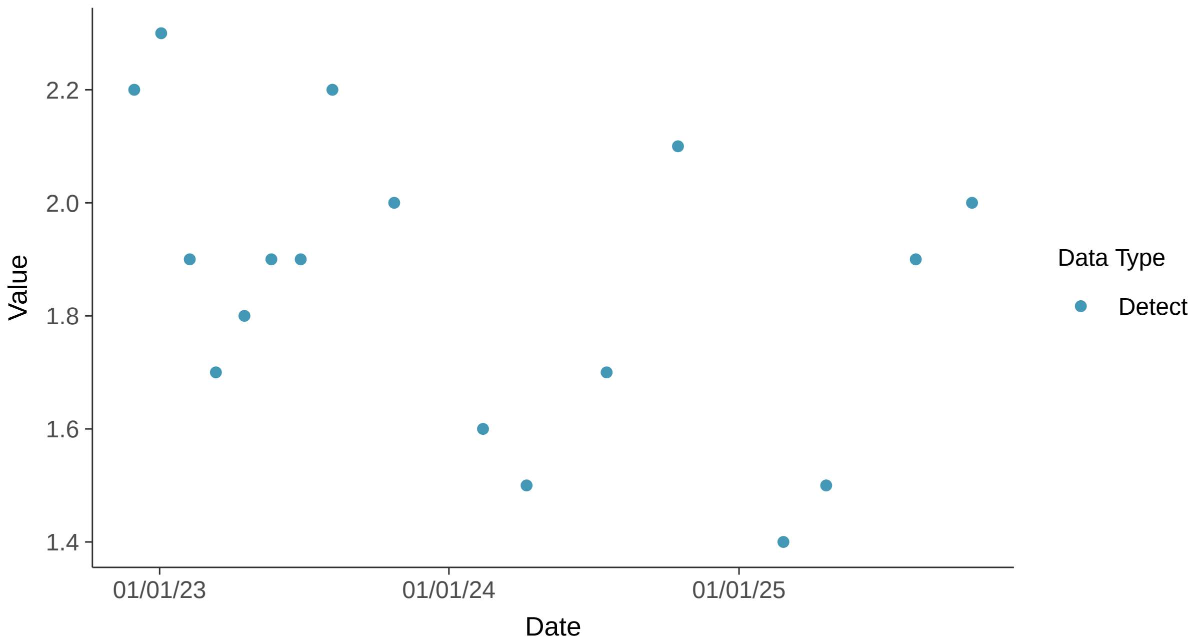


Appendix IV: Fluoride (App IV), MW-19

ID: 29_1_4_113

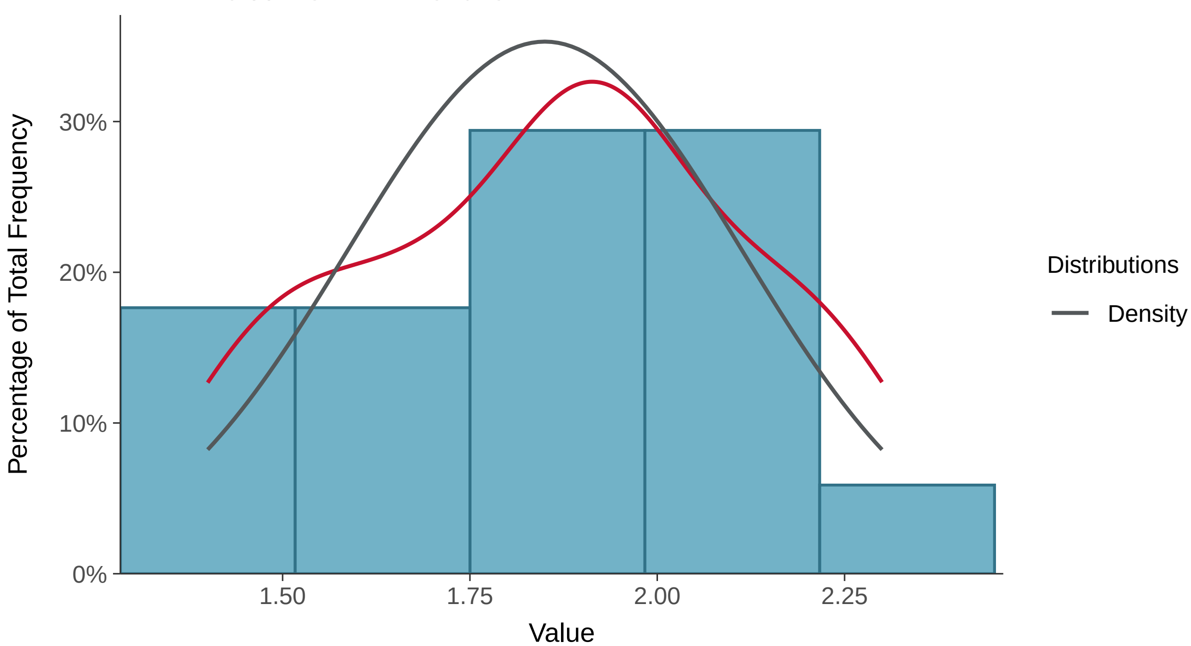
Scatter Plot

Fluoride (App IV), MW-19 (mg/L)



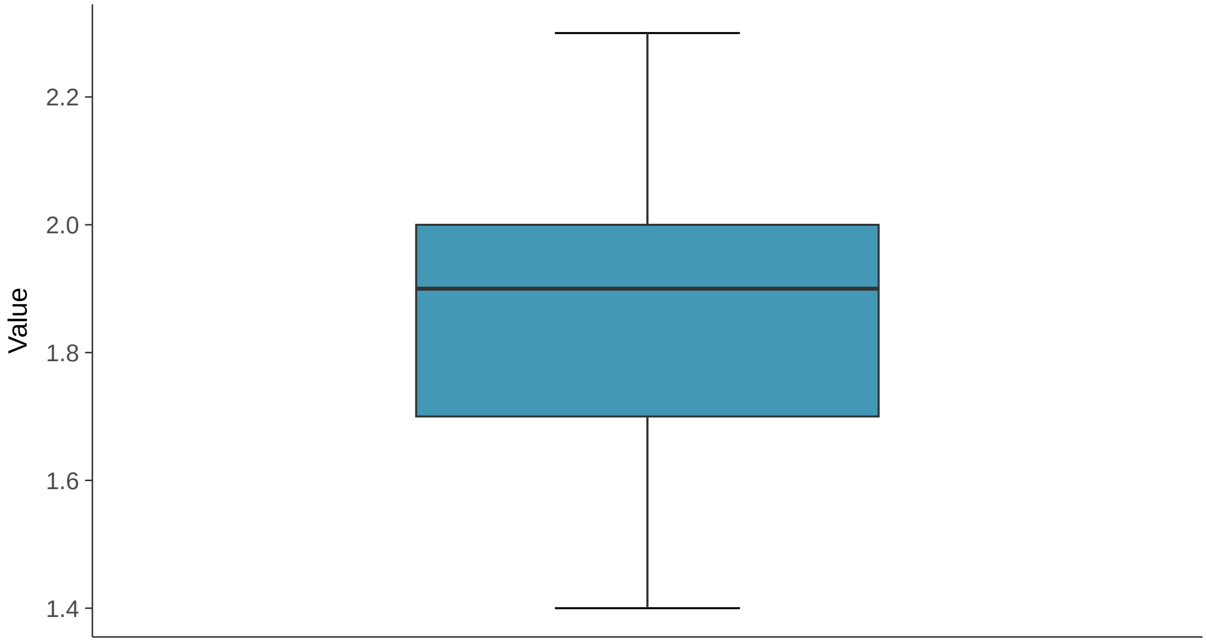
Histogram

Fluoride (App IV), MW-19 (mg/L)



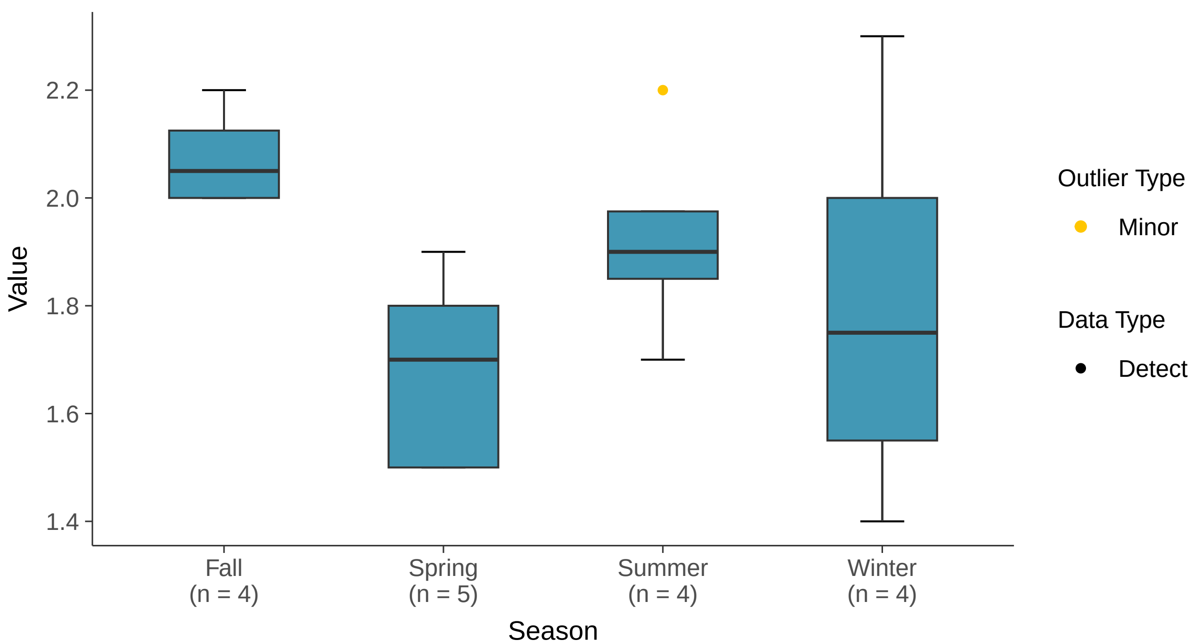
Boxplot

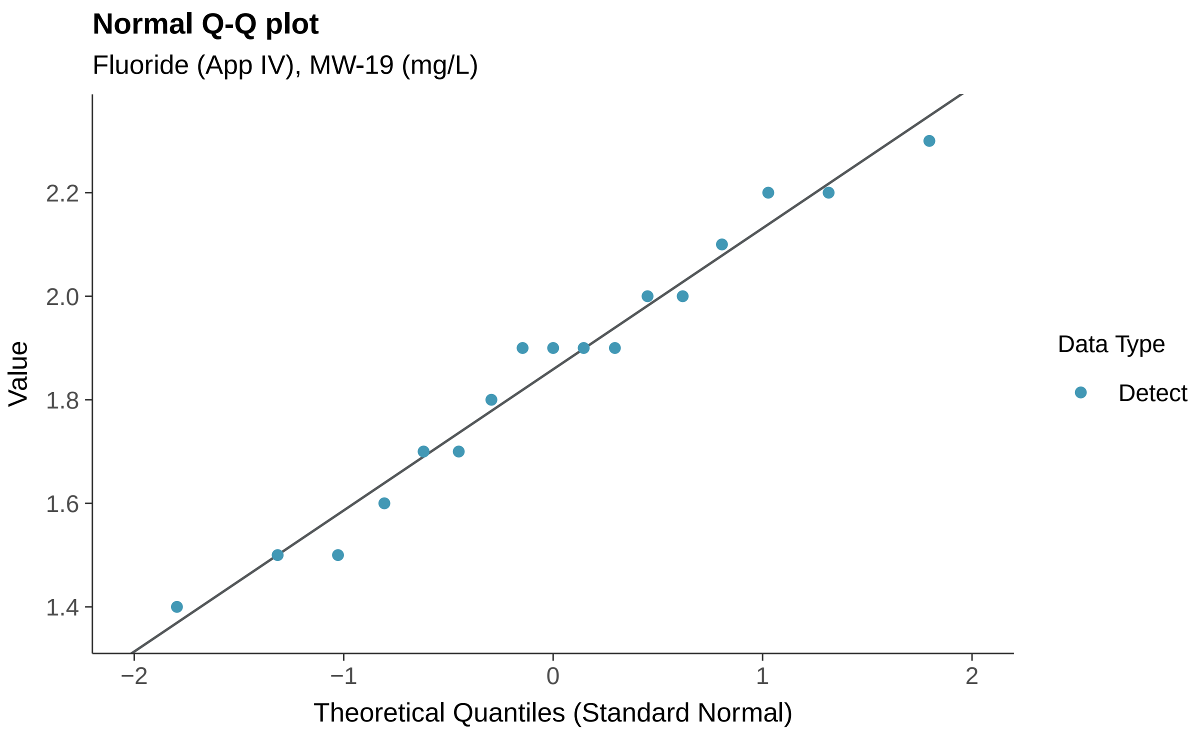
Fluoride (App IV), MW-19 (mg/L)

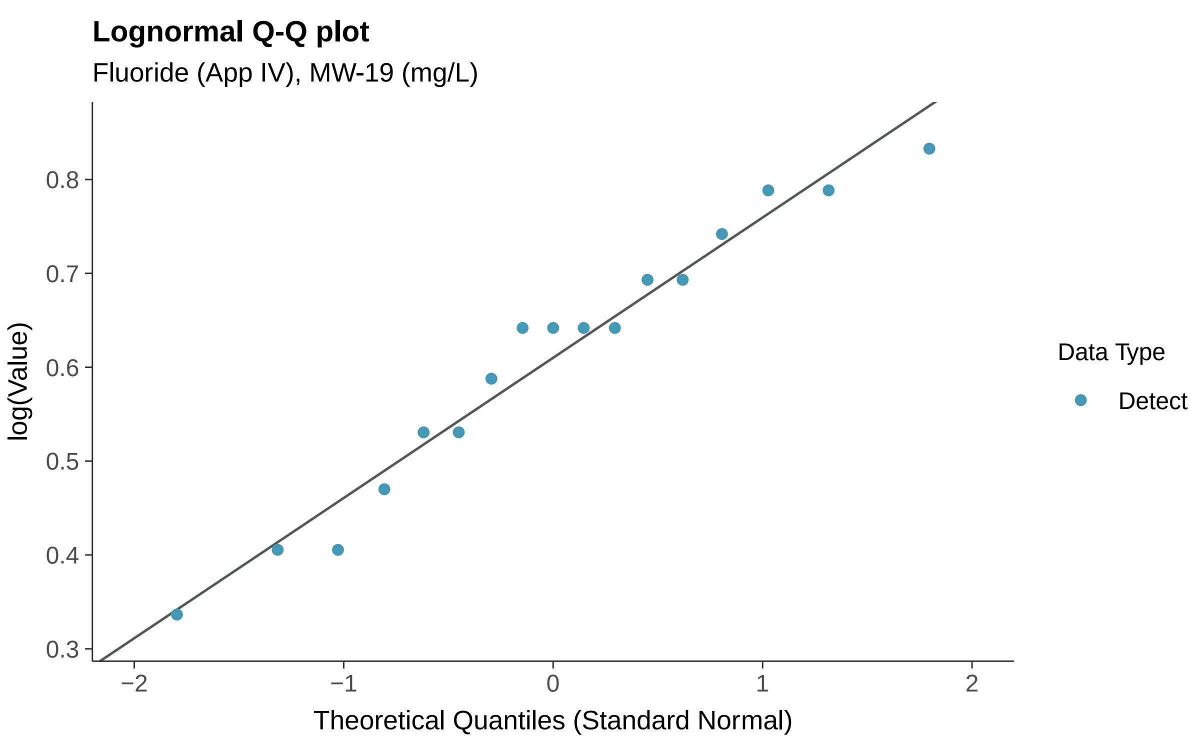


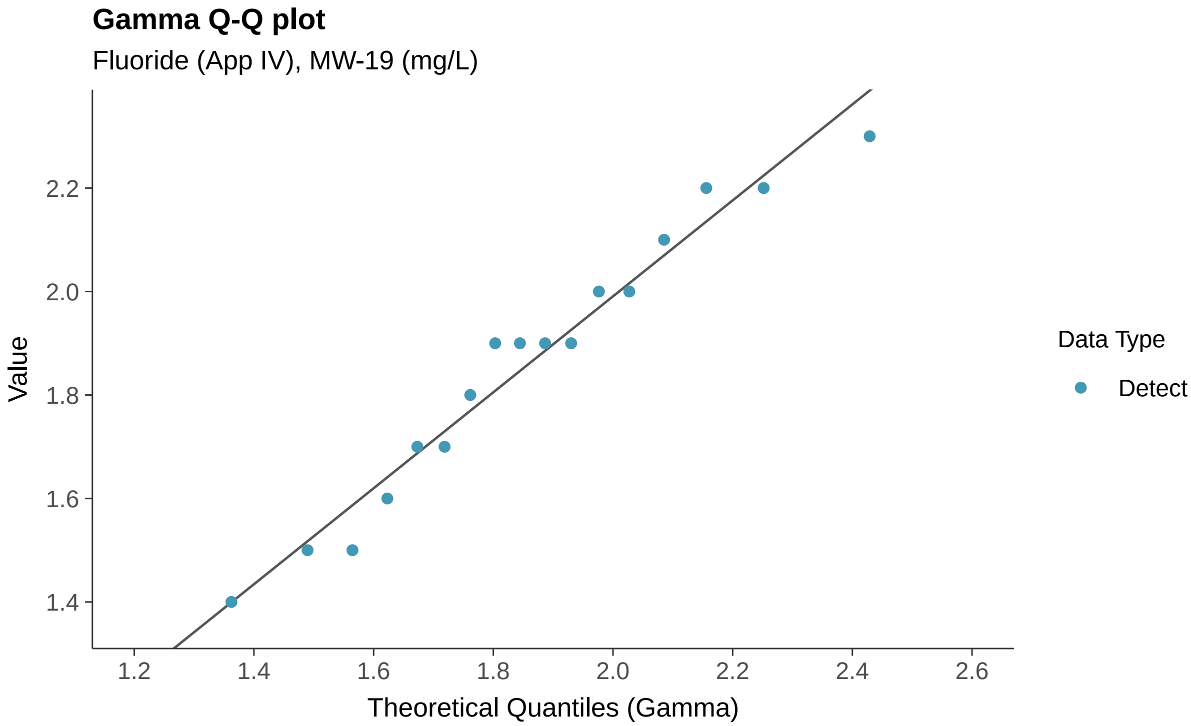
Boxplot by Season

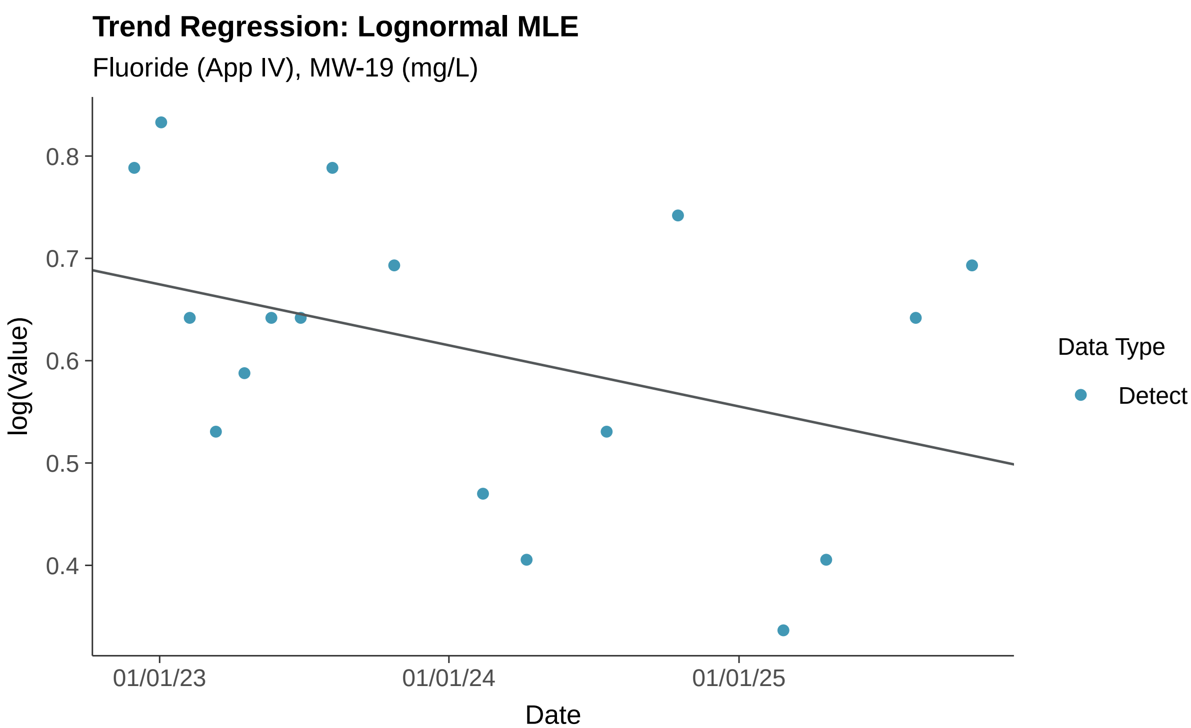
Fluoride (App IV), MW-19 (mg/L)




Normal Q-Q plot
Fluoride (App IV), MW-19 (mg/L)
Value
2.2
2.0
1.8
1.6
1.4
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

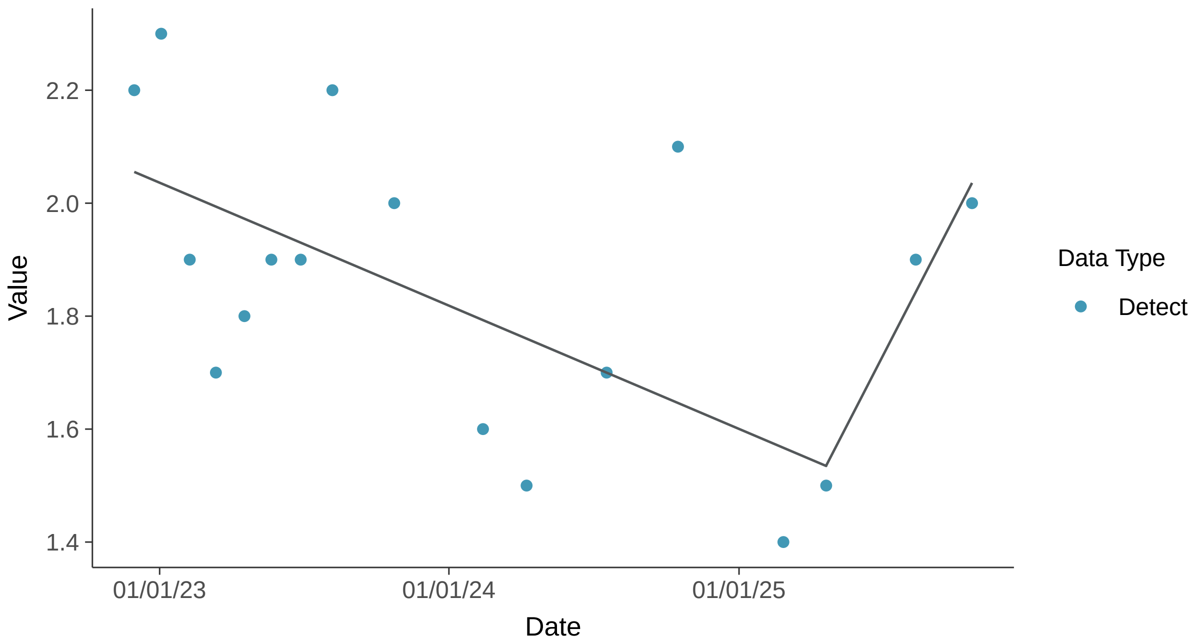

Lognormal Q-Q plot
Fluoride (App IV), MW-19 (mg/L)
log(Value)
0.8
0.7
0.6
0.5
0.4
0.3
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Fluoride (App IV), MW-19 (mg/L)
Value
2.2
2.0
1.8
1.6
1.4
1.2
1.4
1.6
1.8
2.0
2.2
2.4
2.6
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Fluoride (App IV), MW-19 (mg/L)
log(Value)
0.8
0.7
0.6
0.5
0.4
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

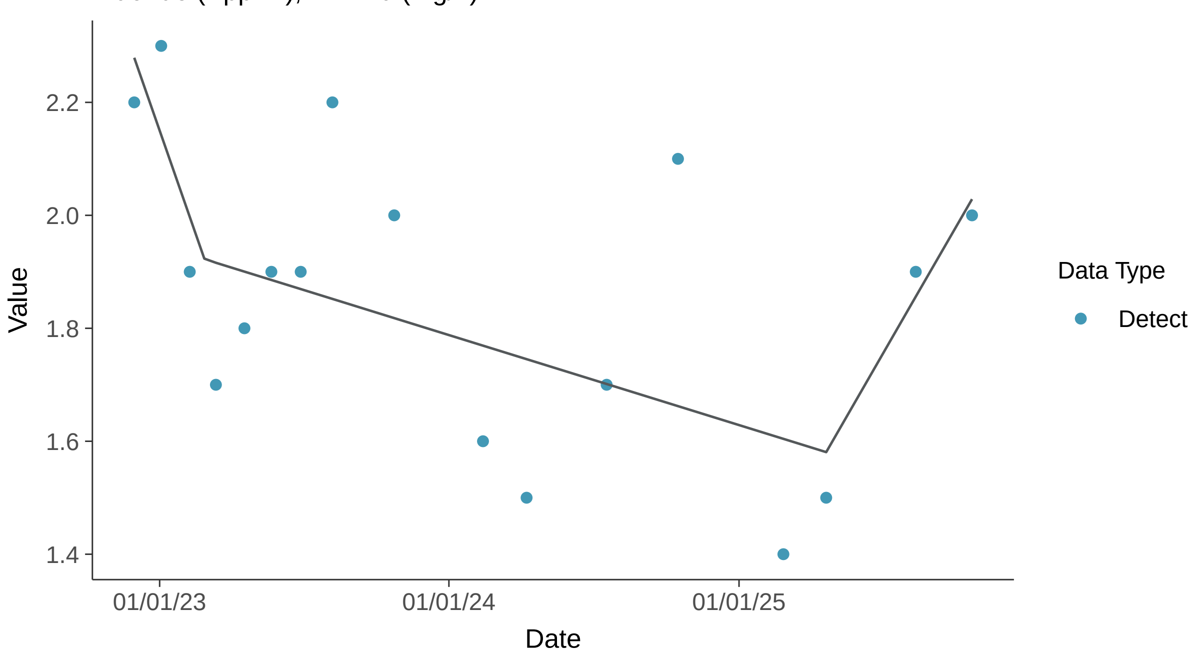
Trend Regression: Piecewise Linear-Linear

Fluoride (App IV), MW-19 (mg/L)



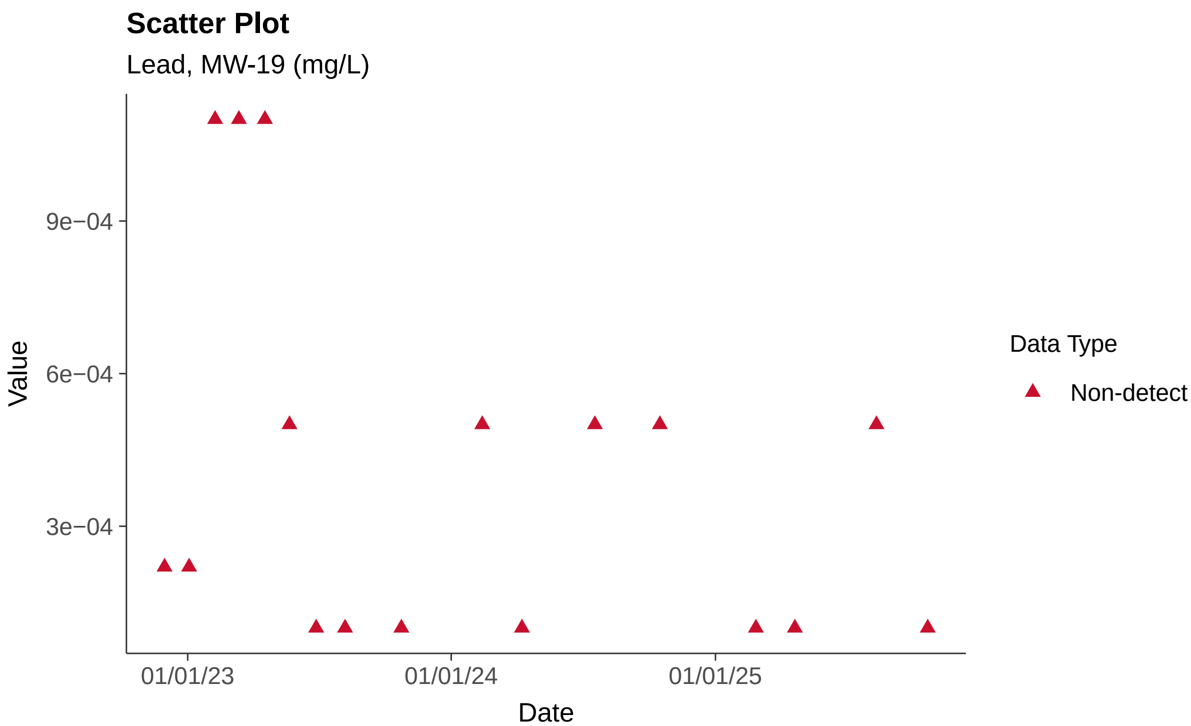
Trend Regression: Piecewise Linear-Linear-Linear

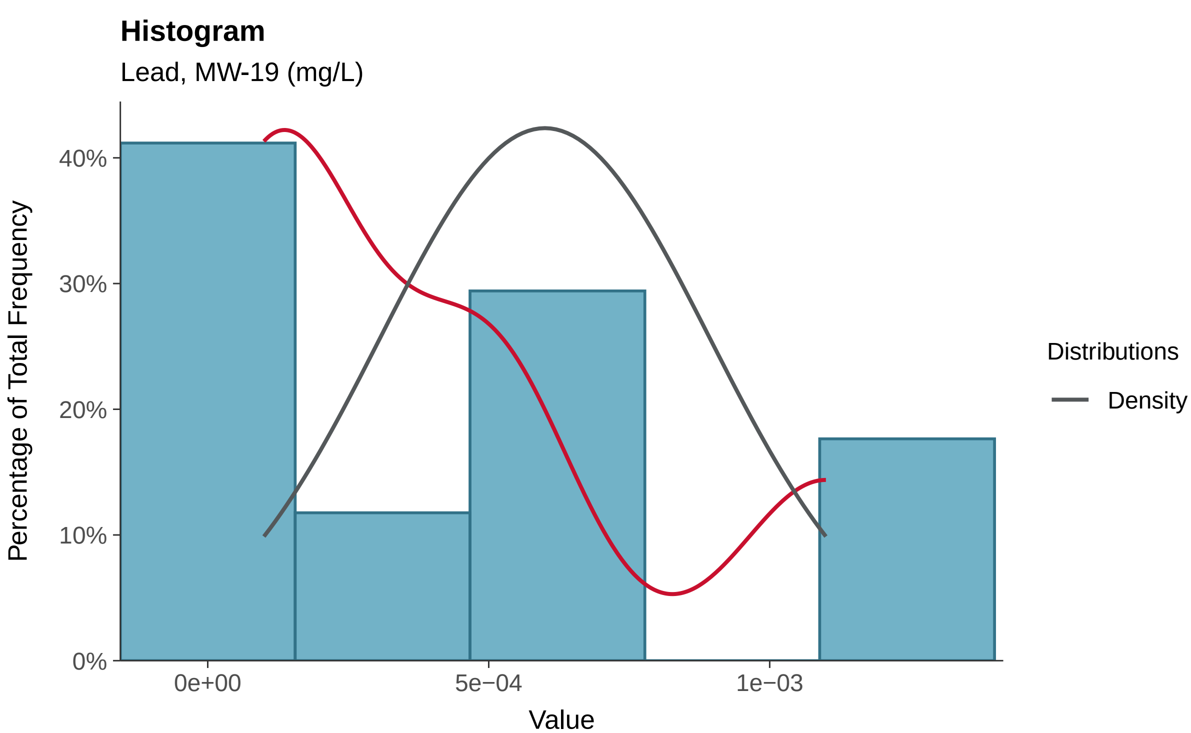
Fluoride (App IV), MW-19 (mg/L)



Appendix IV: Lead, MW-19

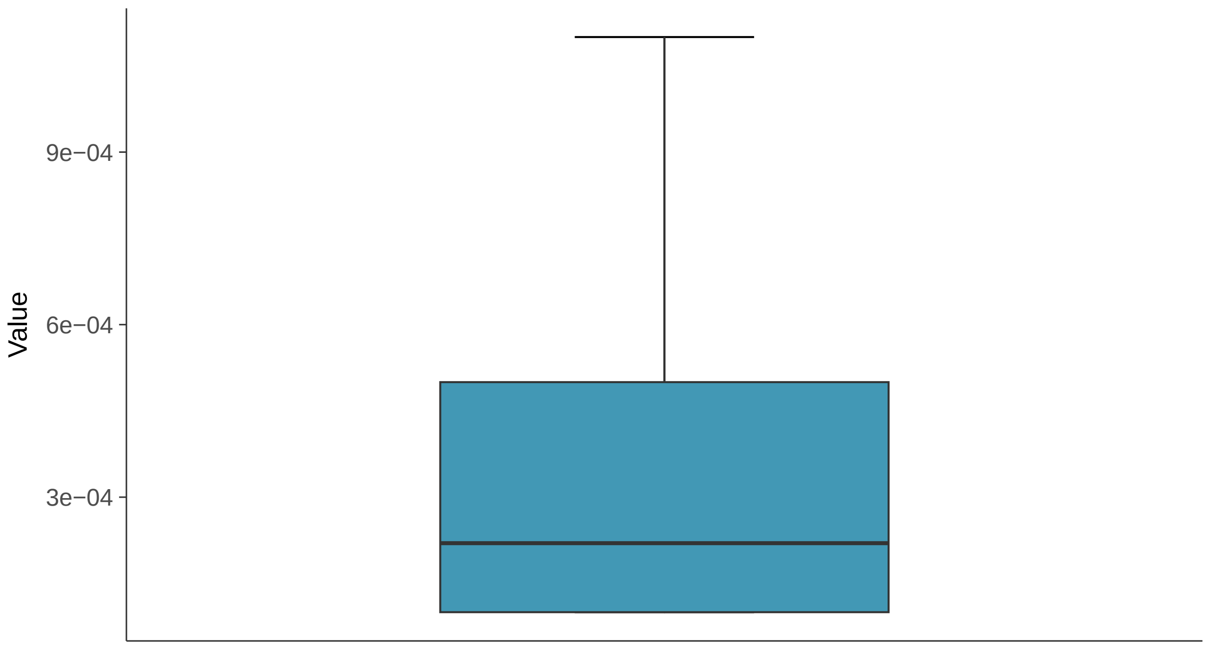
ID: 29_1_4_115





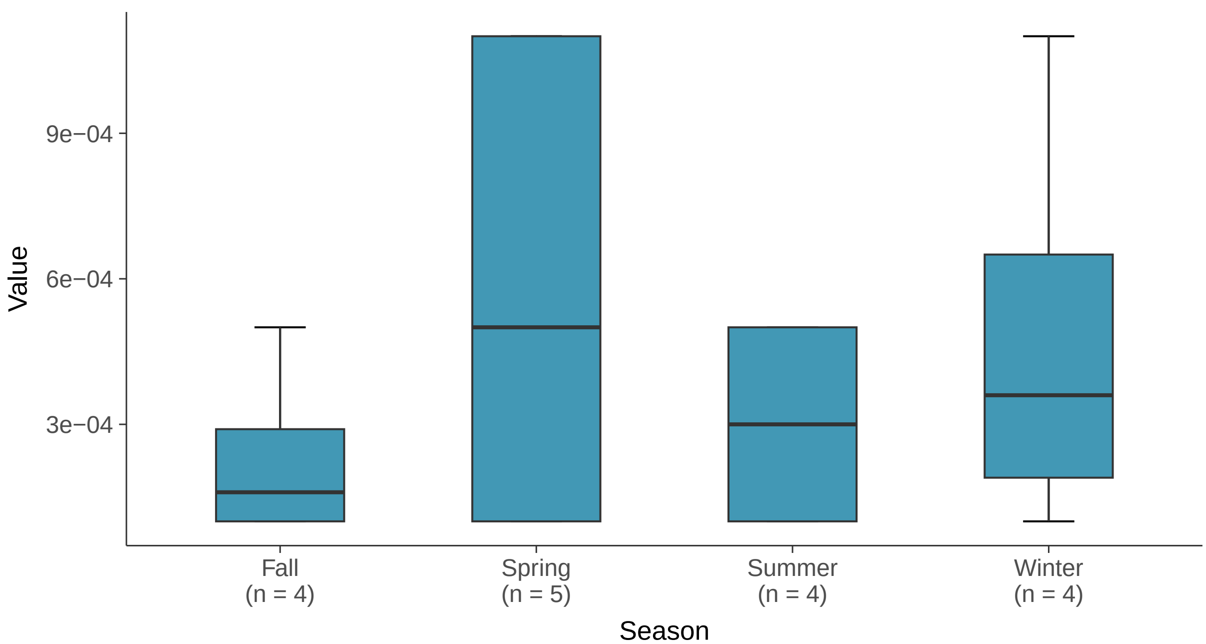
Boxplot

Lead, MW-19 (mg/L)



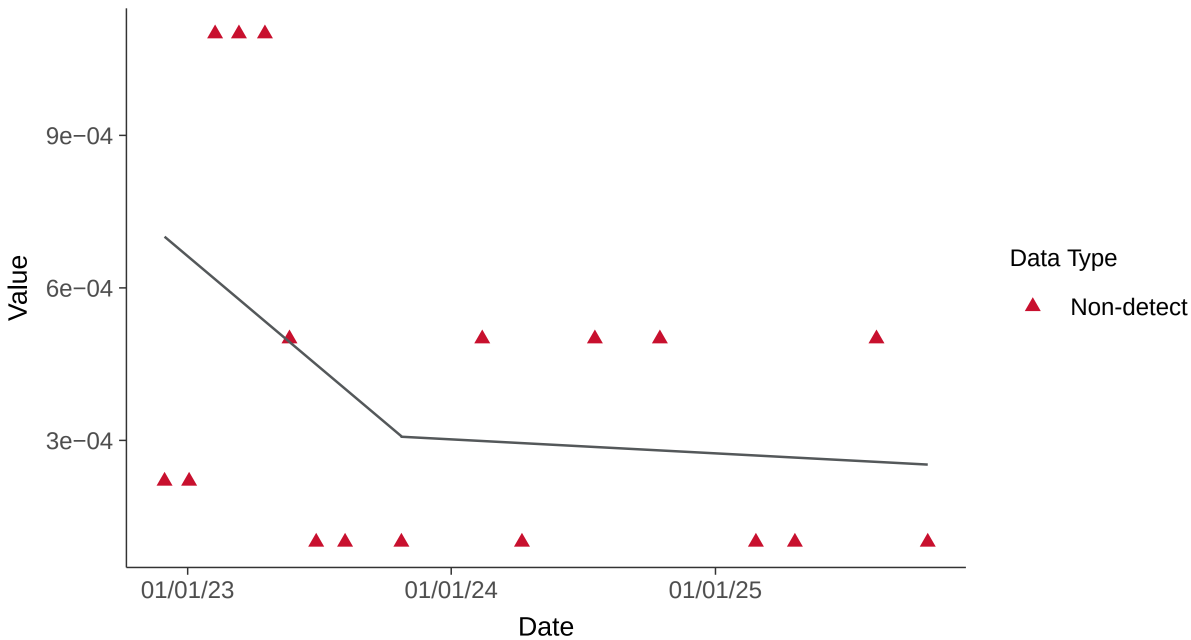
Boxplot by Season

Lead, MW-19 (mg/L)



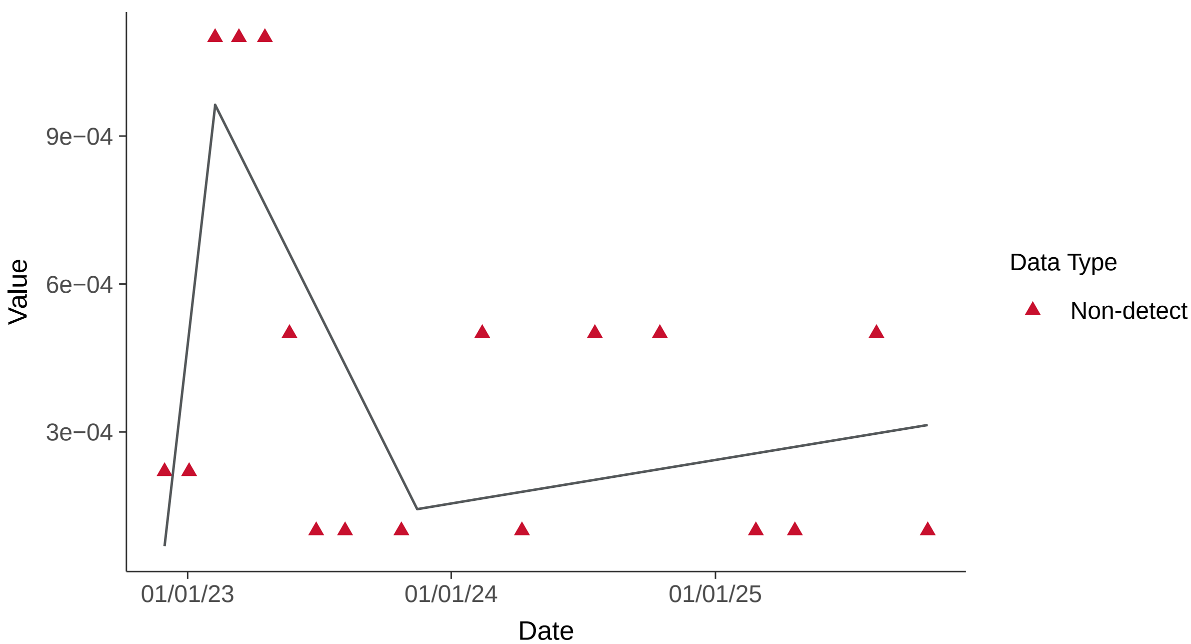
Trend Regression: Piecewise Linear-Linear

Lead, MW-19 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Lead, MW-19 (mg/L)

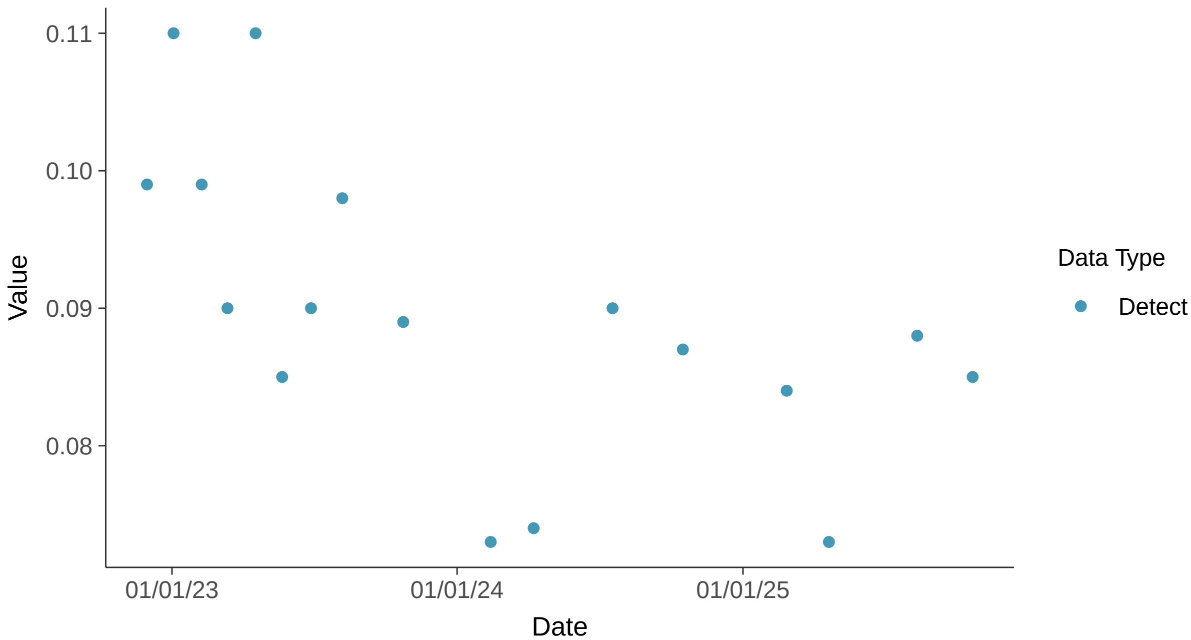


Appendix IV: Lithium, MW-19

ID: 29_1_4_116

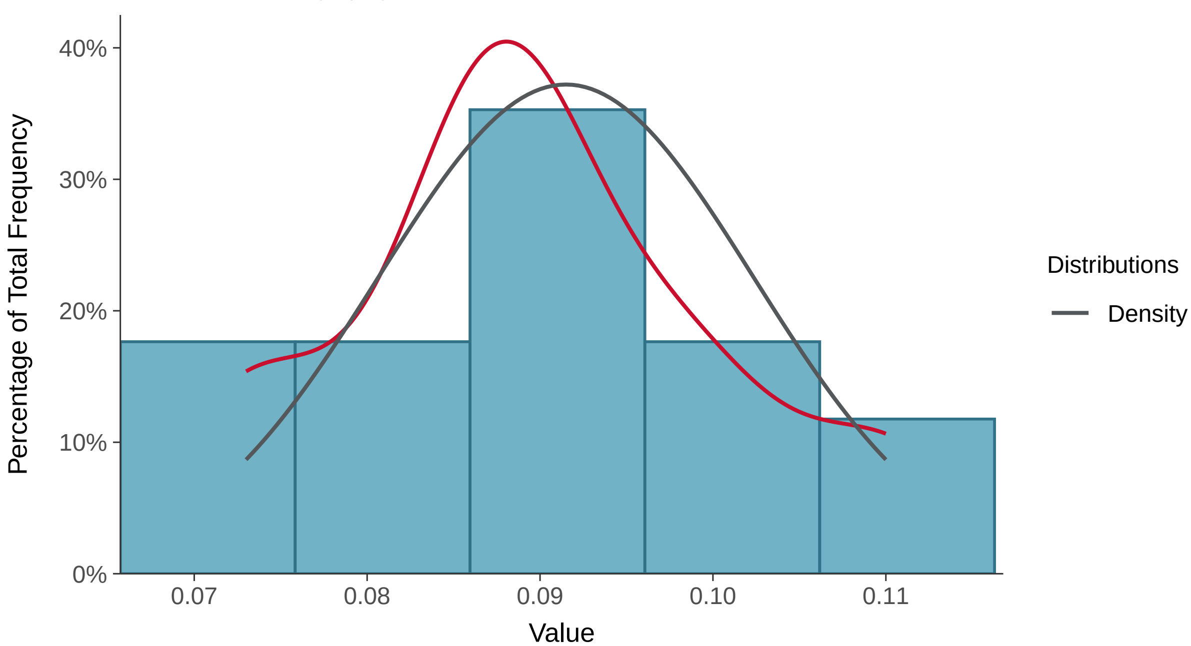
Scatter Plot

Lithium, MW-19 (mg/L)



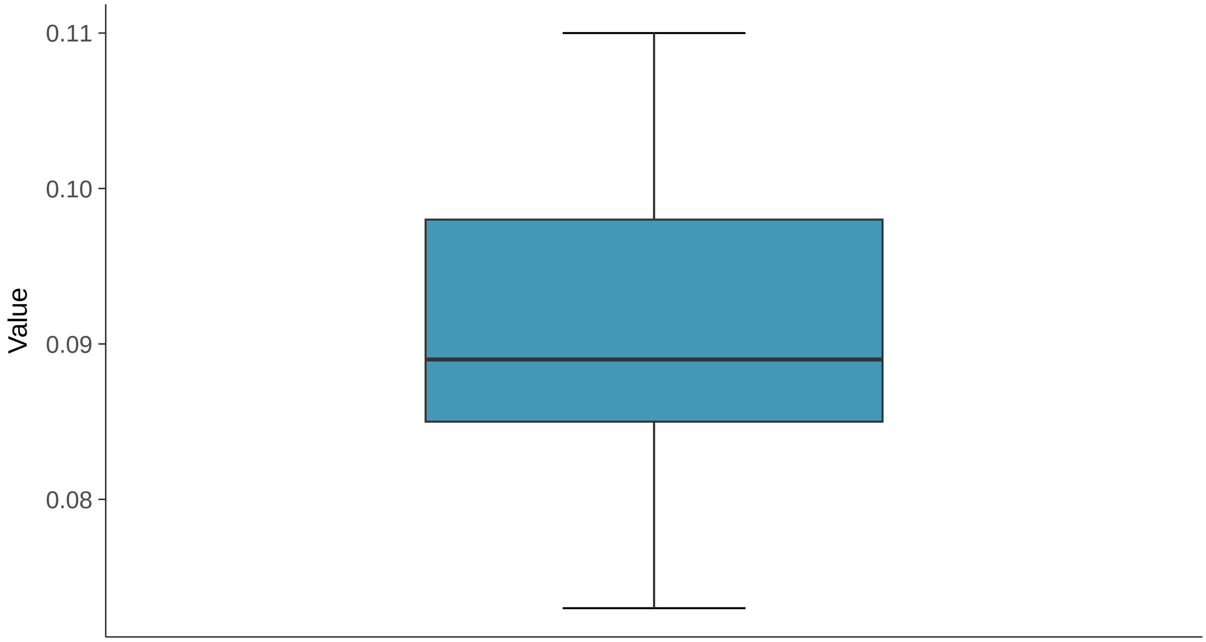
Histogram

Lithium, MW-19 (mg/L)



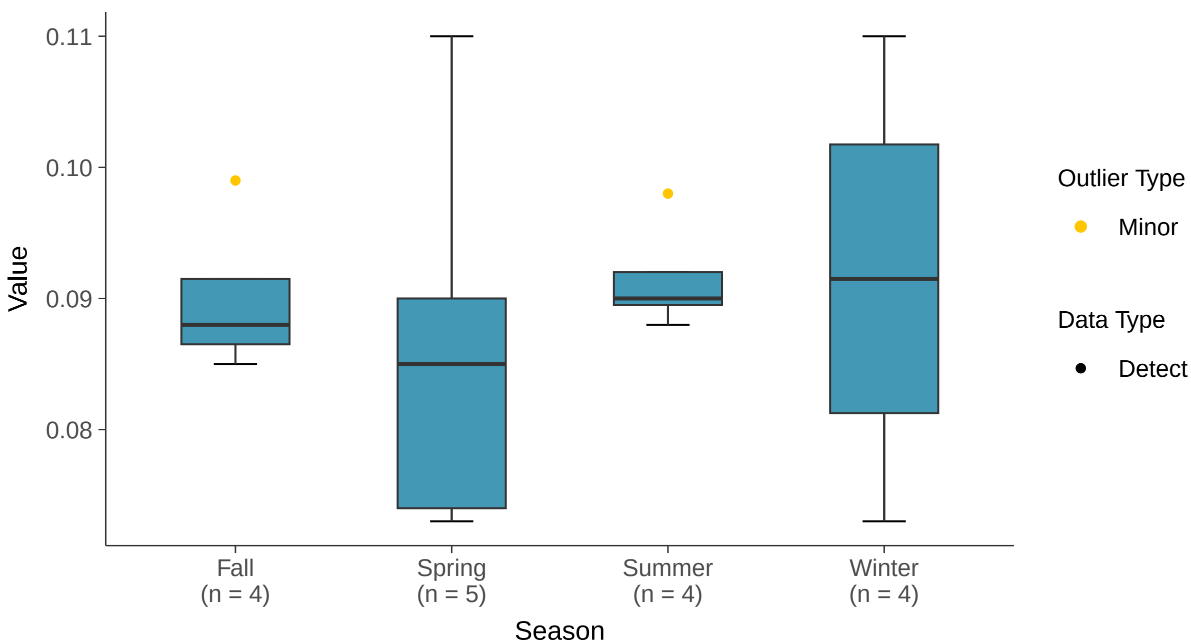
Boxplot

Lithium, MW-19 (mg/L)



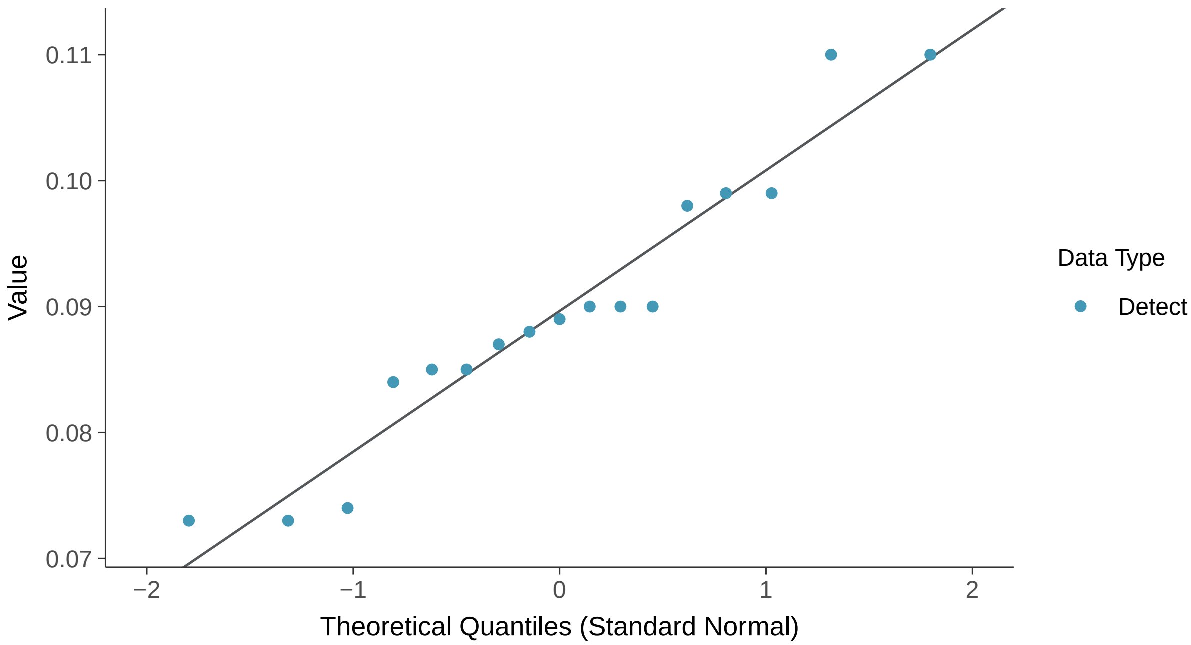
Boxplot by Season

Lithium, MW-19 (mg/L)



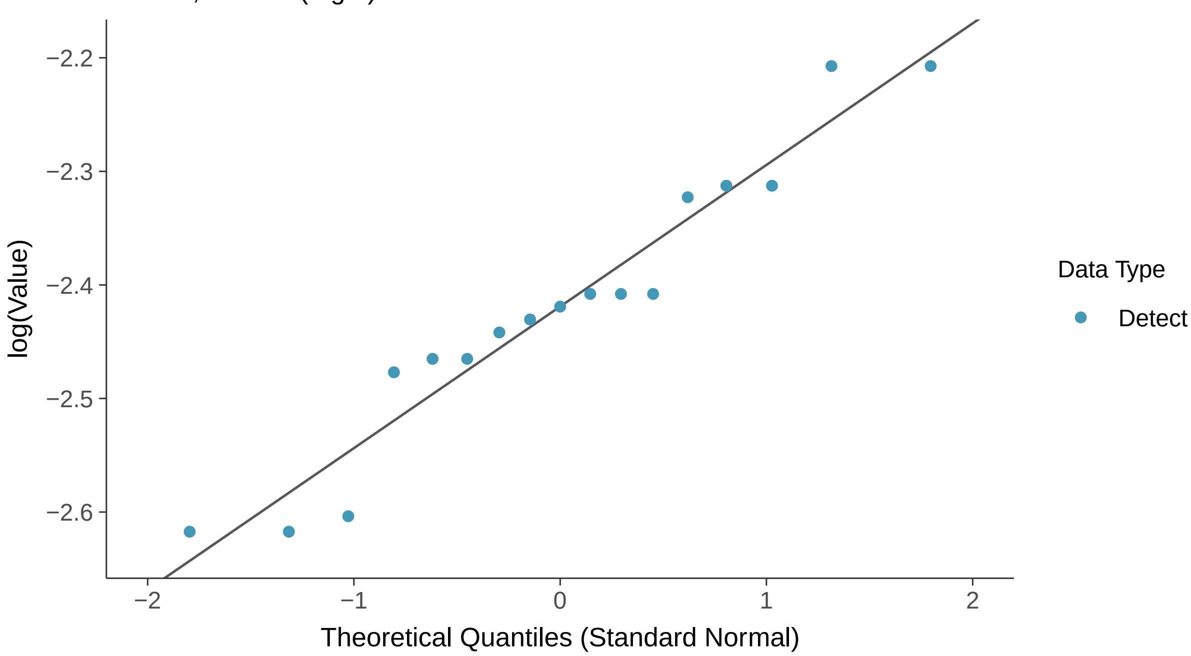
Normal Q-Q plot

Lithium, MW-19 (mg/L)



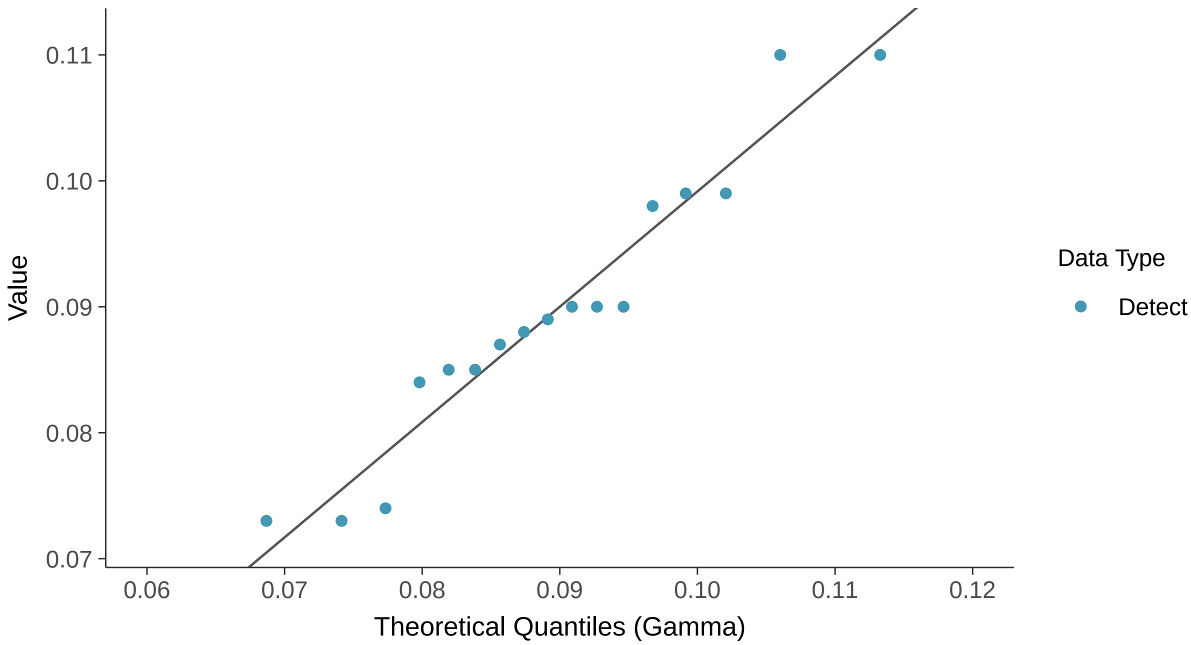
Lognormal Q-Q plot

Lithium, MW-19 (mg/L)



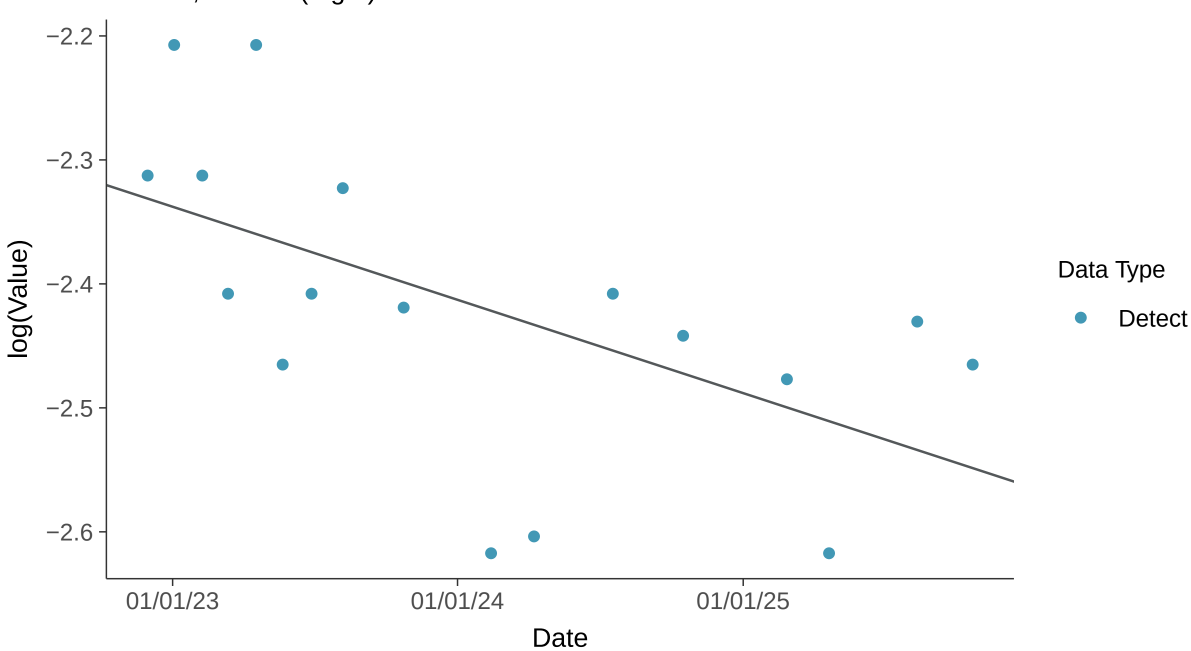
Gamma Q-Q plot

Lithium, MW-19 (mg/L)



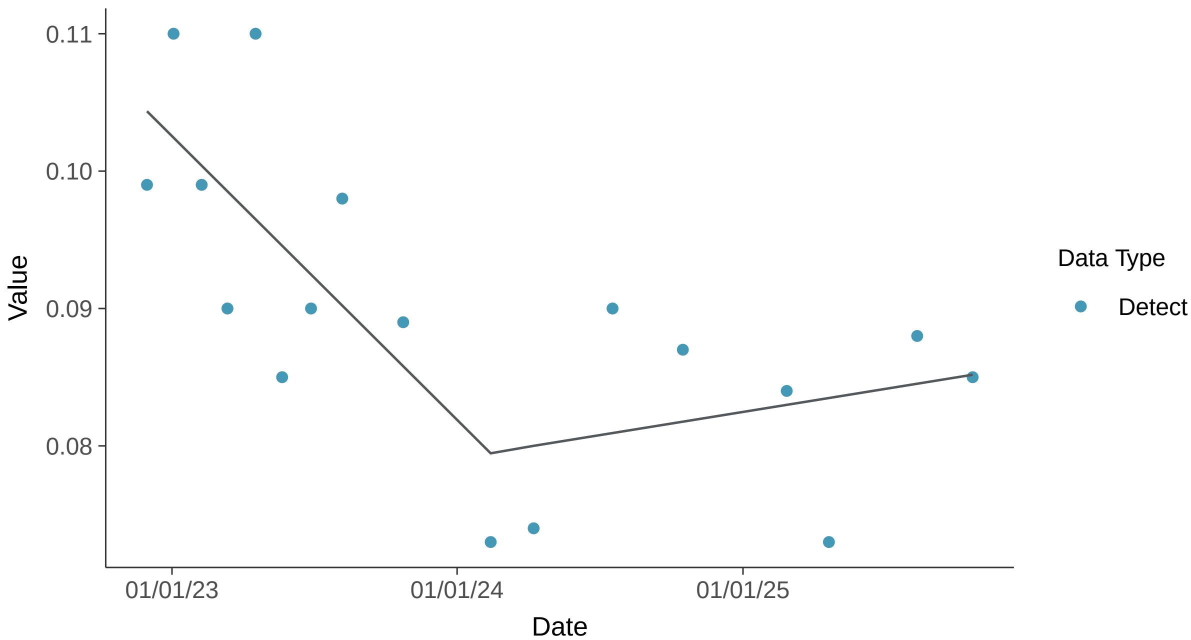
Trend Regression: Lognormal MLE

Lithium, MW-19 (mg/L)



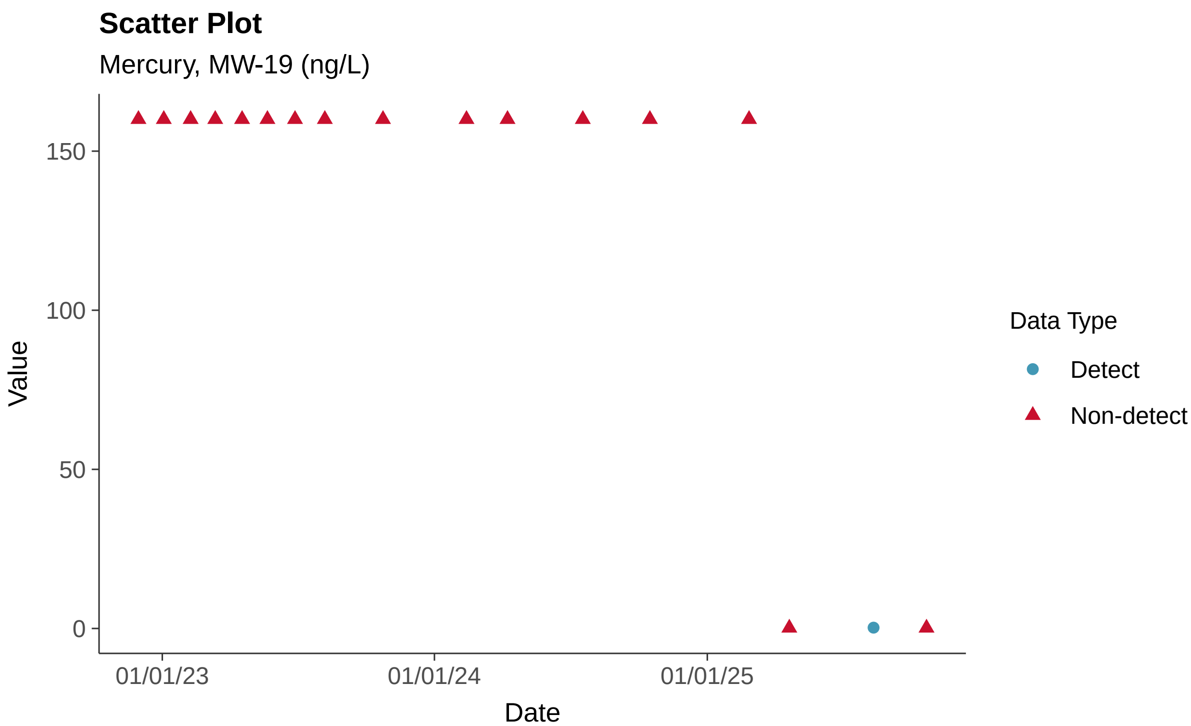
Trend Regression: Piecewise Linear-Linear

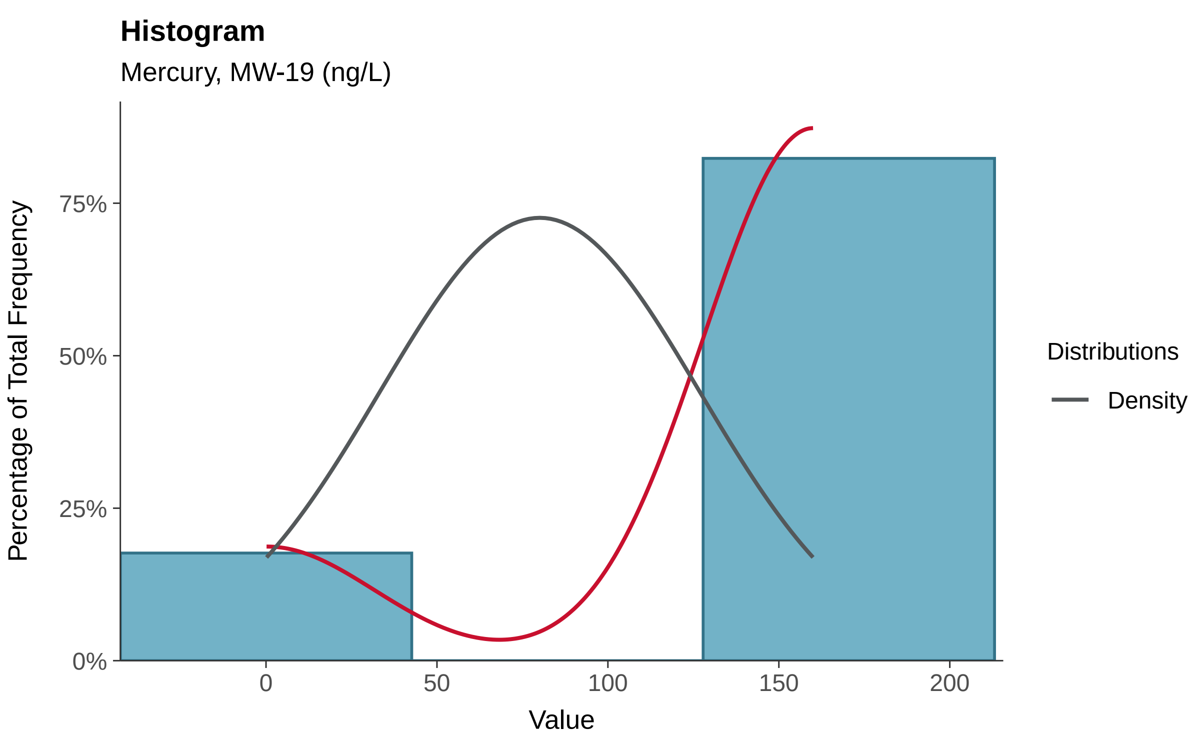
Lithium, MW-19 (mg/L)

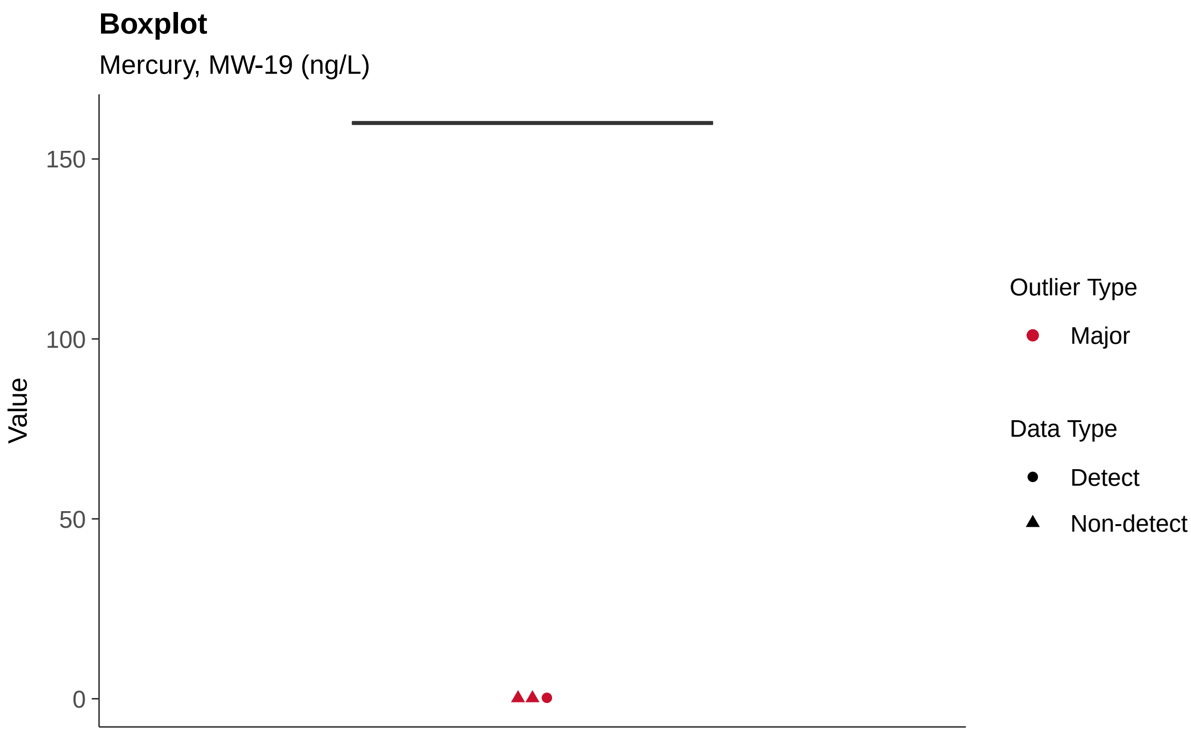


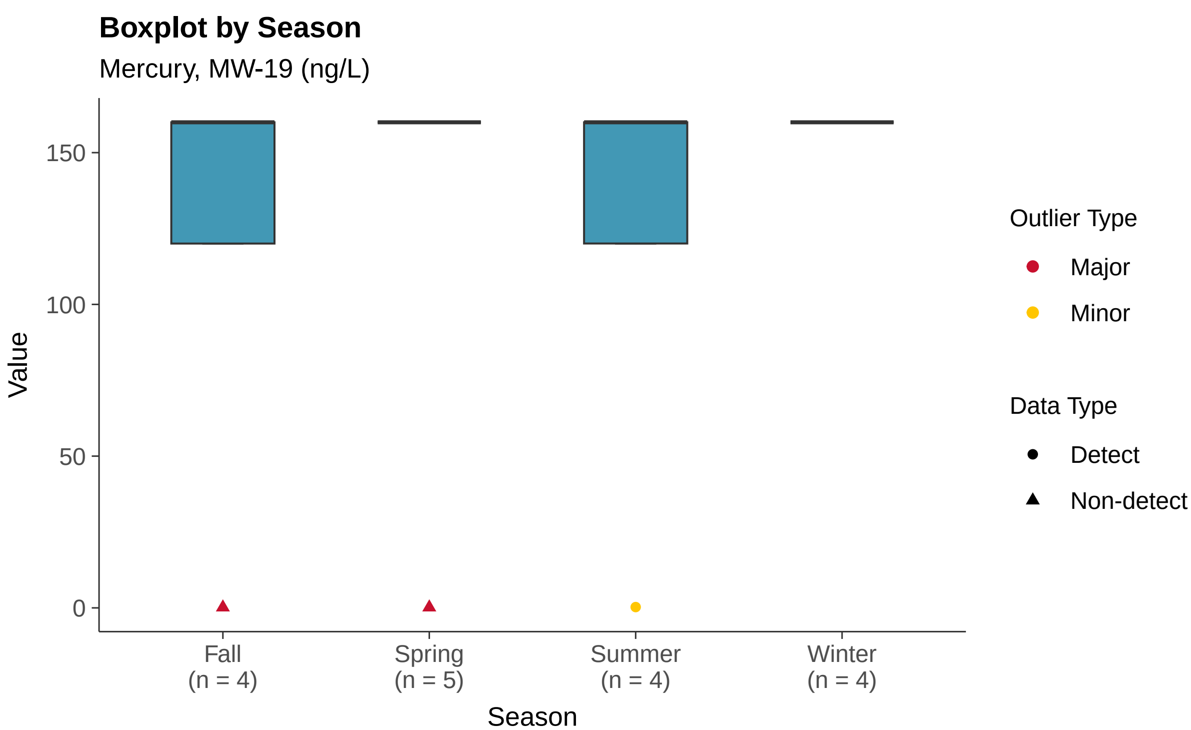
Appendix IV: Mercury, MW-19

ID: 29_1_4_117



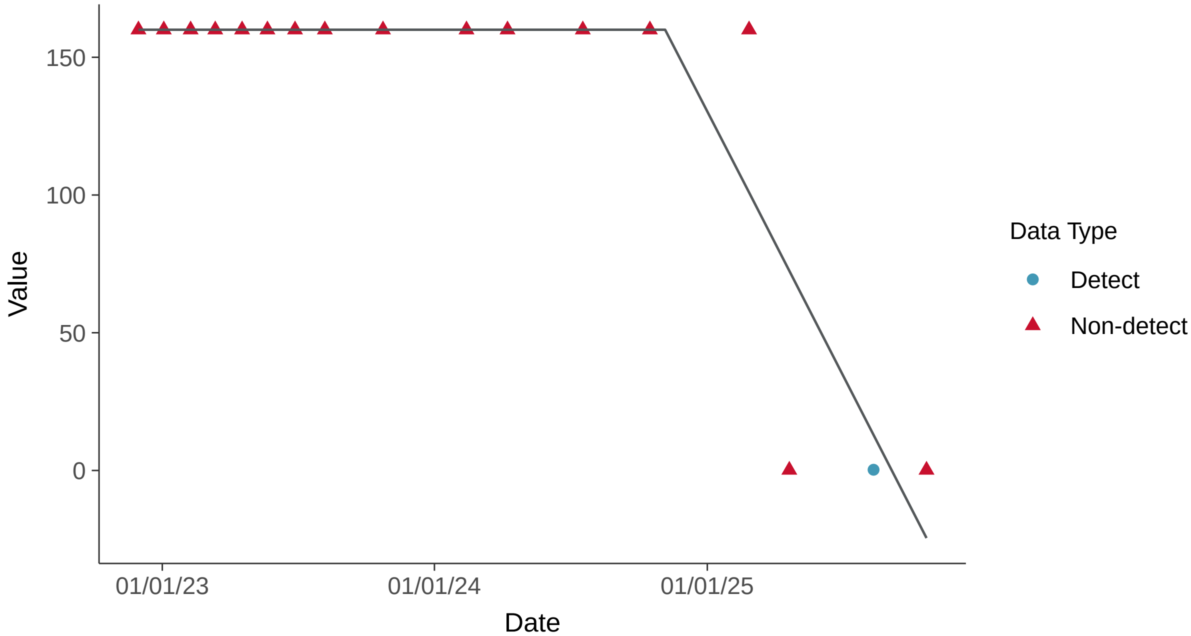



Boxplot
Mercury, MW-19 (ng/L)
Value
150
100
50
0
Outlier Type
Major
Data Type
Detect
Non-detect


Boxplot by Season
Mercury, MW-19 (ng/L)
Value
150
100
50
0
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Major
Minor
Data Type
Detect
Non-detect

Trend Regression: Piecewise Linear-Linear

Mercury, MW-19 (ng/L)

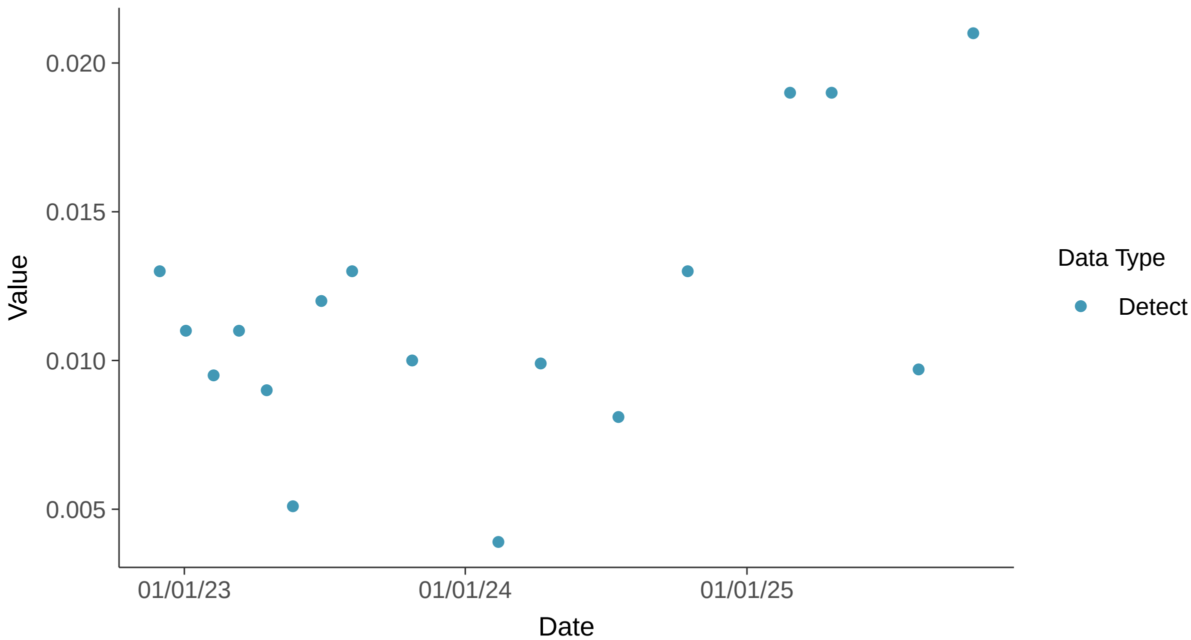


Appendix IV: Molybdenum, MW-19

ID: 29_1_4_118

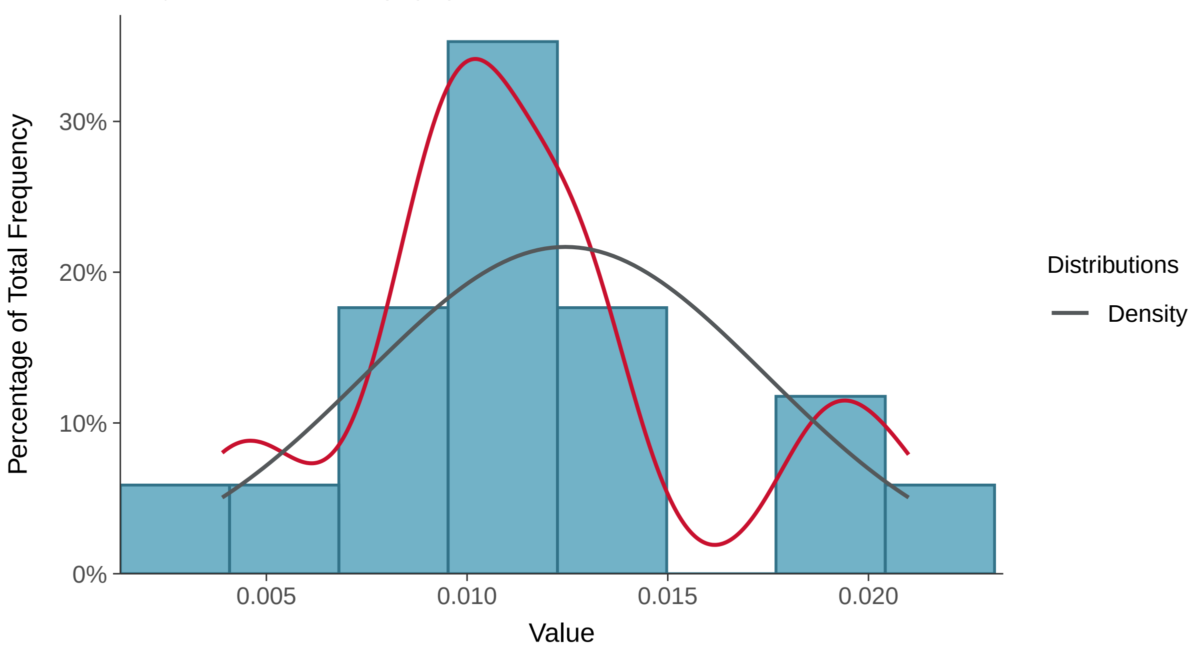
Scatter Plot

Molybdenum, MW-19 (mg/L)



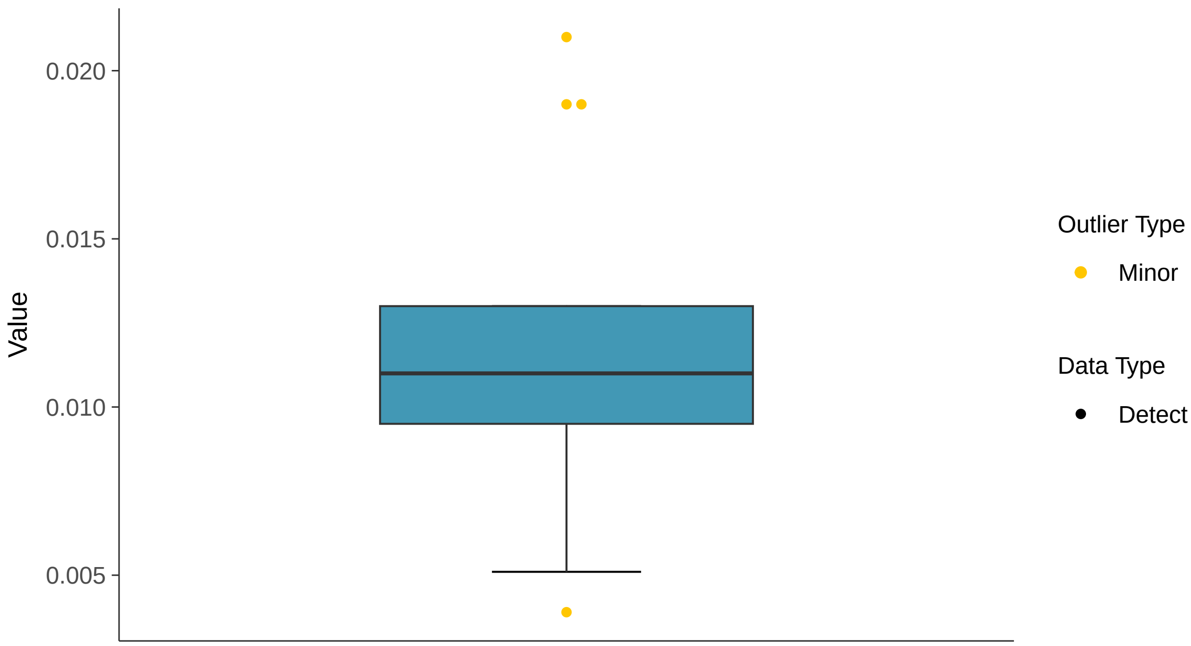
Histogram

Molybdenum, MW-19 (mg/L)



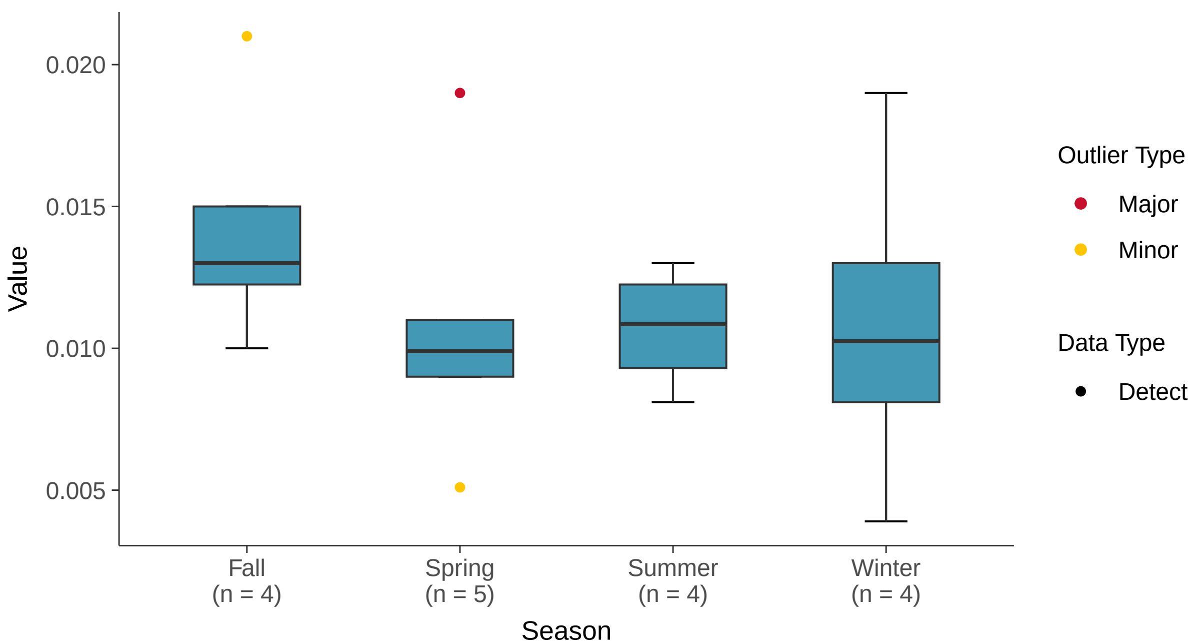
Boxplot

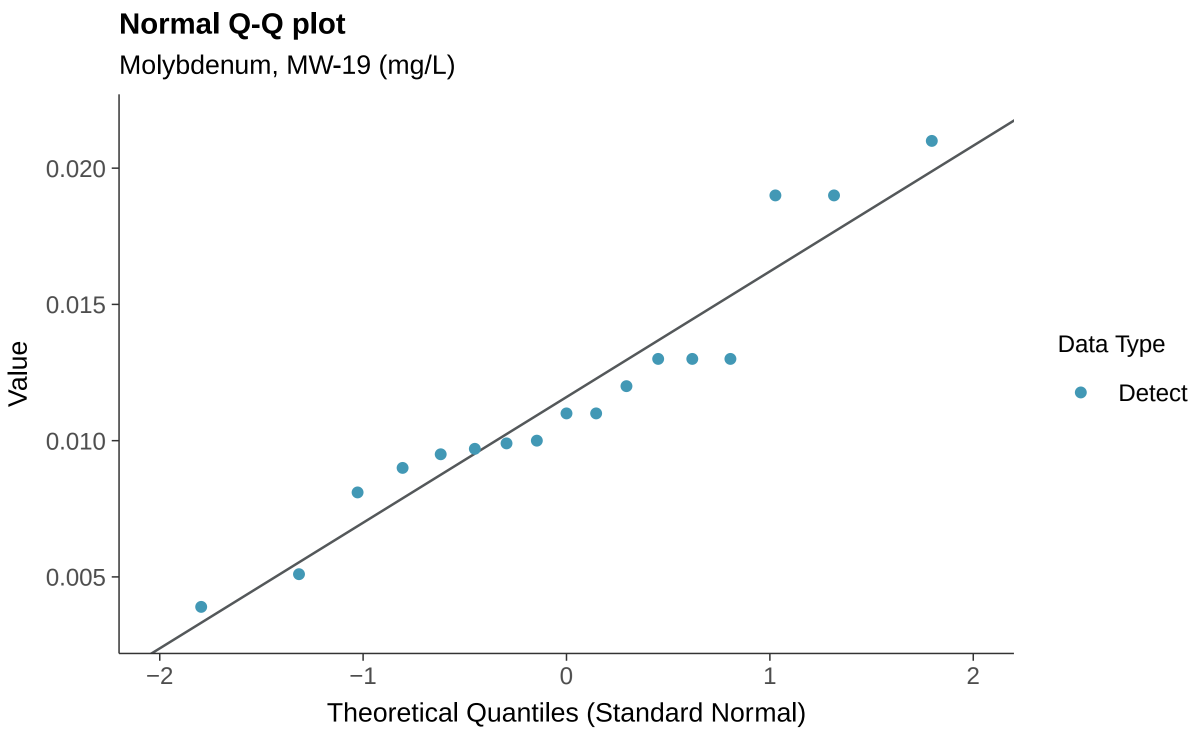
Molybdenum, MW-19 (mg/L)

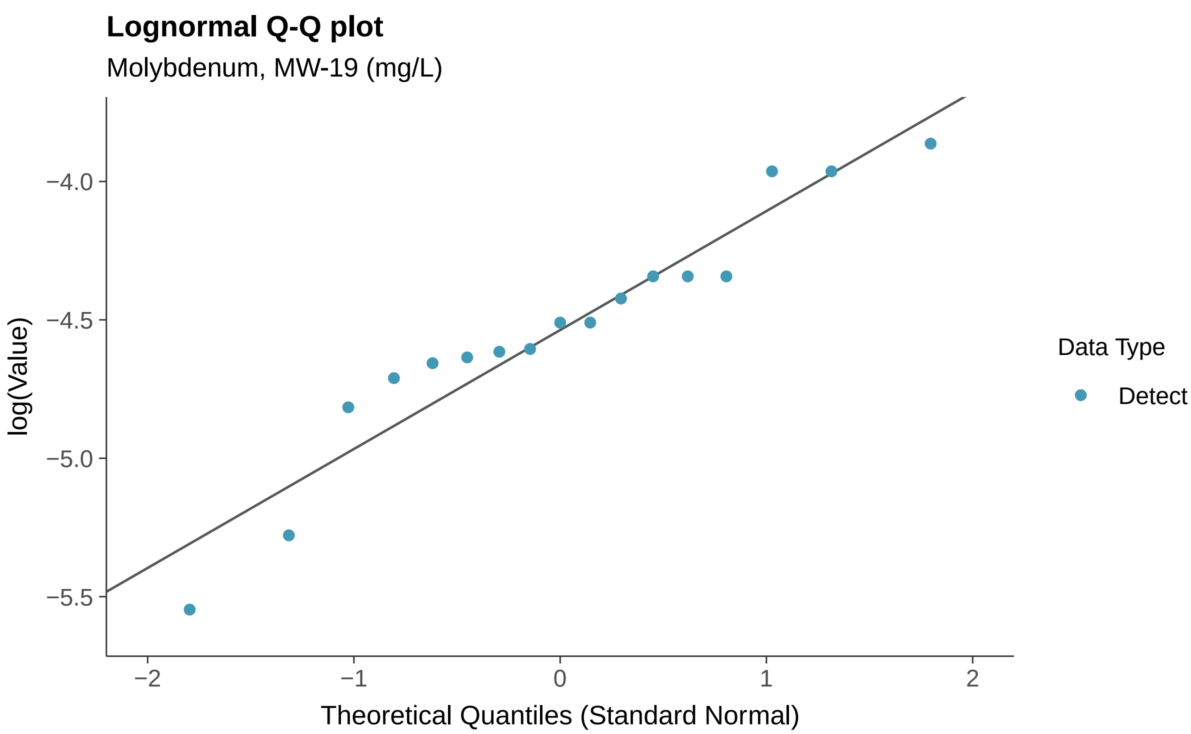


Boxplot by Season

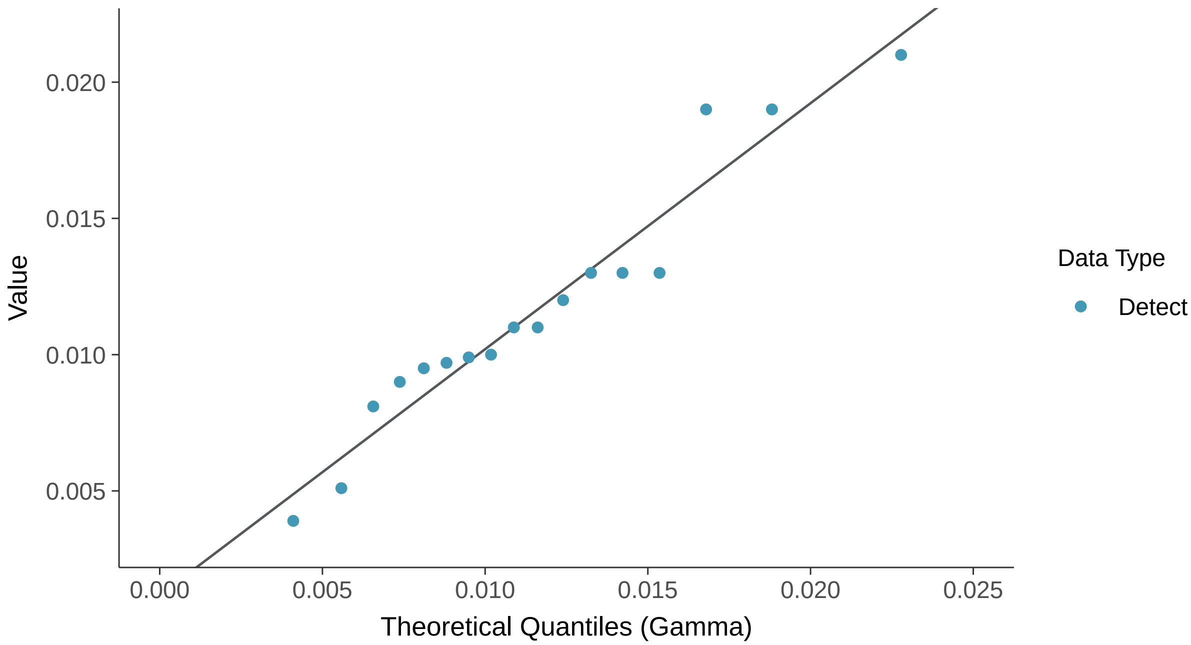
Molybdenum, MW-19 (mg/L)



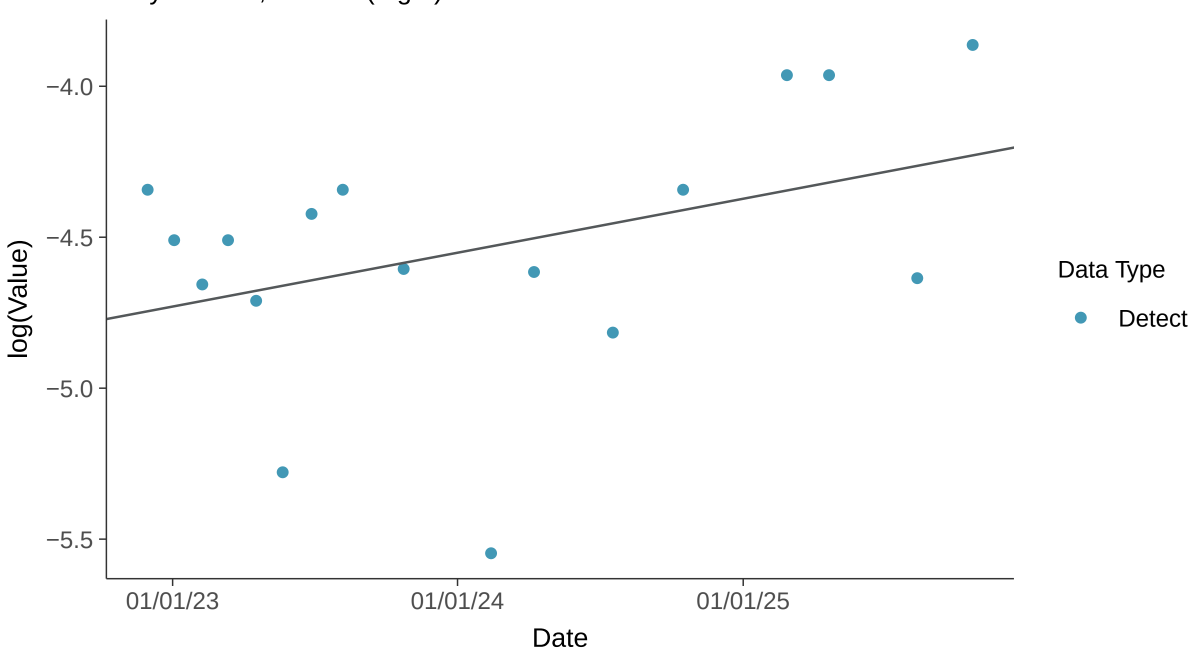

Normal Q-Q plot
Molybdenum, MW-19 (mg/L)
Value
0.020
0.015
0.010
0.005
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Molybdenum, MW-19 (mg/L)
log(Value)
−4.0
−4.5
−5.0
−5.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Gamma Q-Q plot
Molybdenum, MW-19 (mg/L)

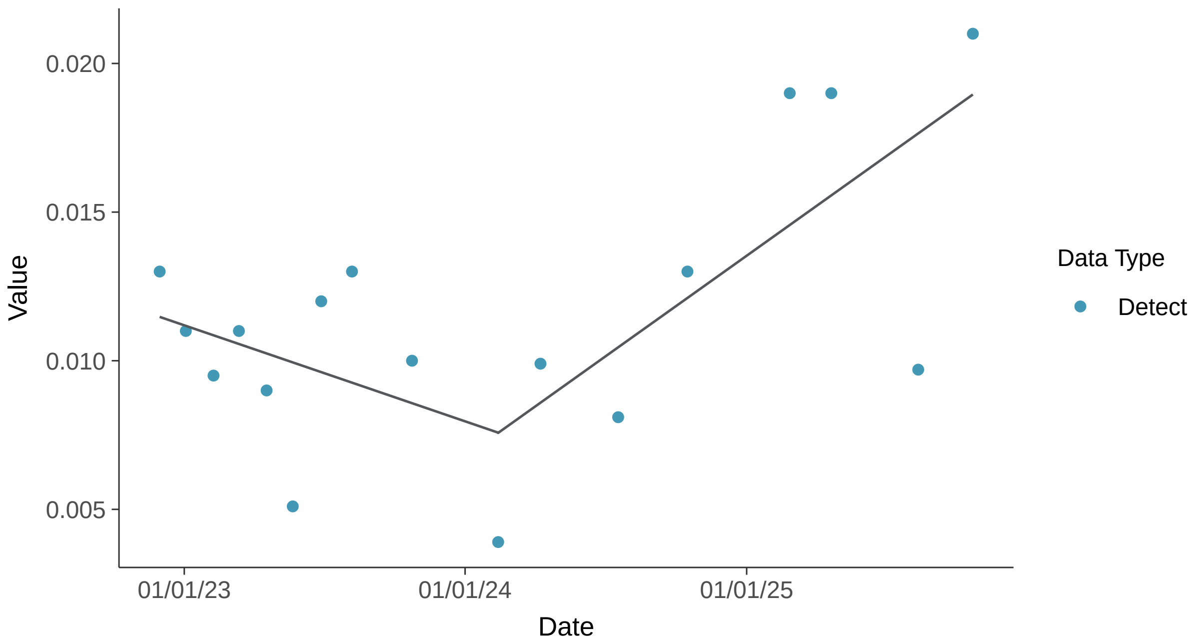


Trend Regression: Lognormal MLE
Molybdenum, MW-19 (mg/L)



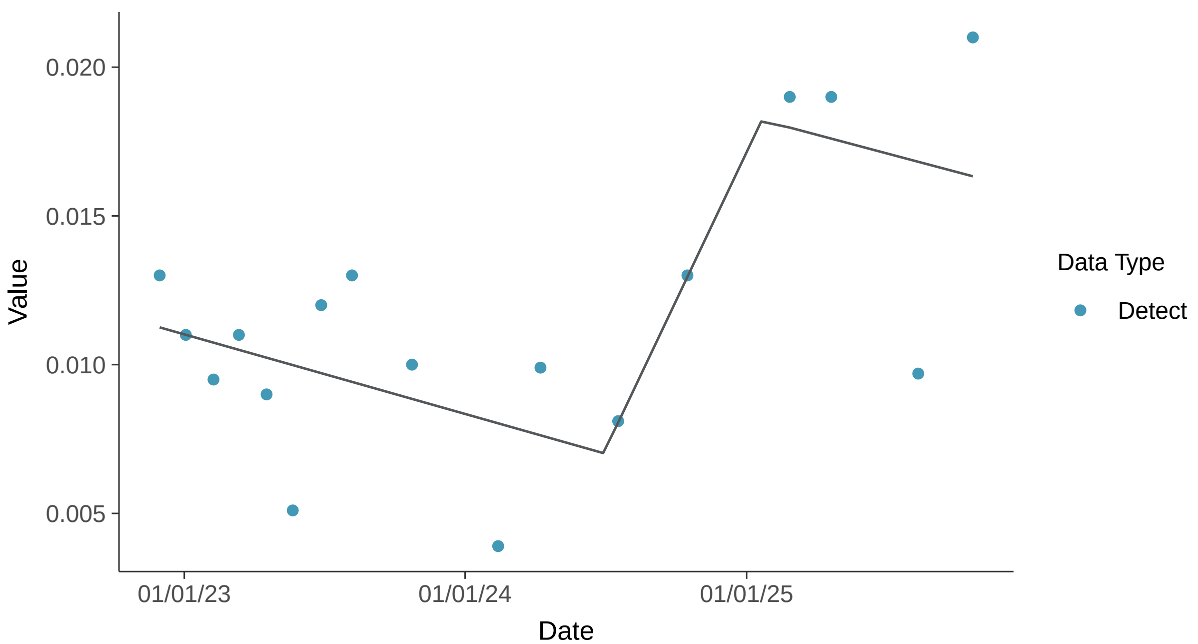
Trend Regression: Piecewise Linear-Linear

Molybdenum, MW-19 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Molybdenum, MW-19 (mg/L)

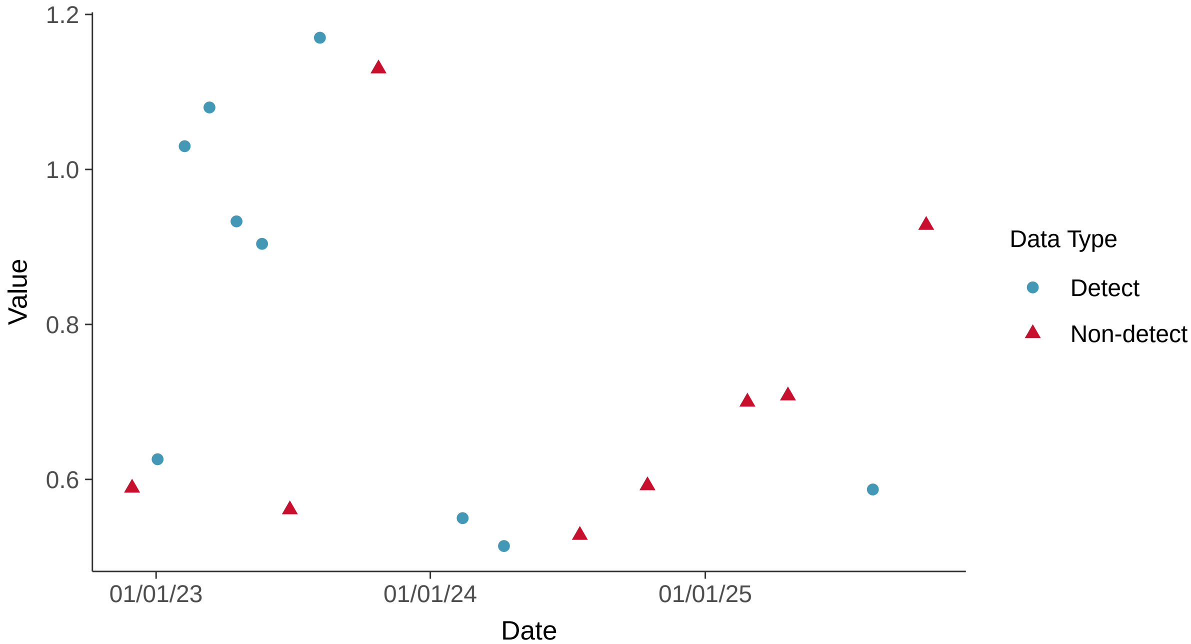


Appendix IV: Radium 226 and 228, MW-19

ID: 29_1_4_121

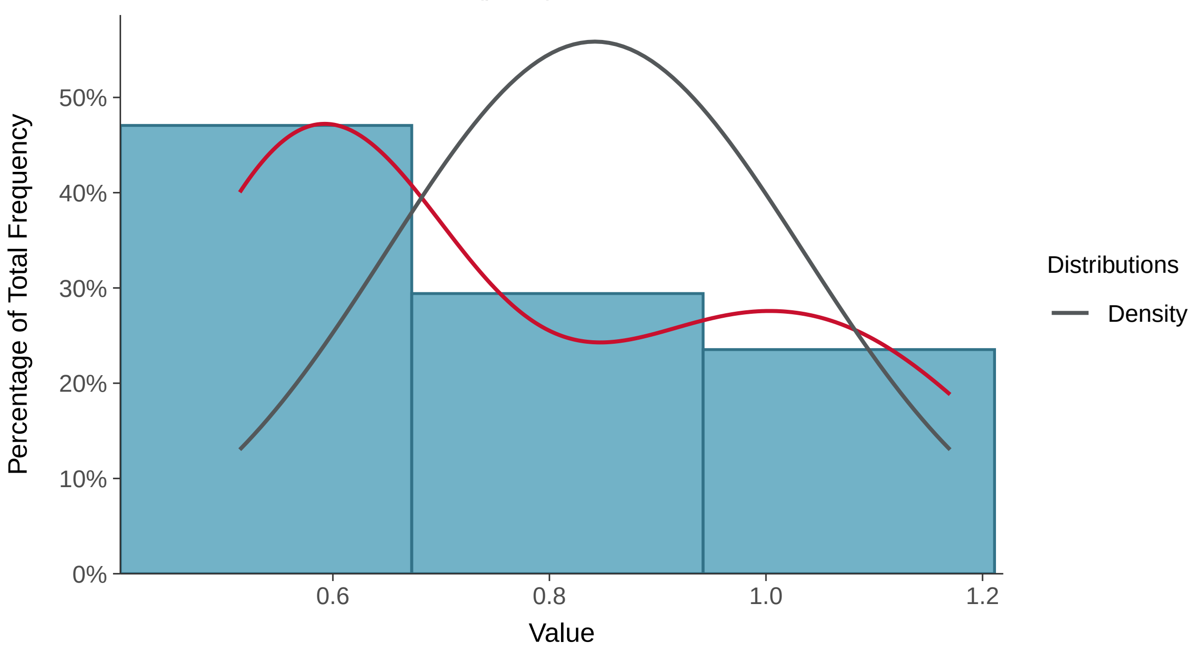
Scatter Plot

Radium 226 and 228, MW-19 (pCi/L)



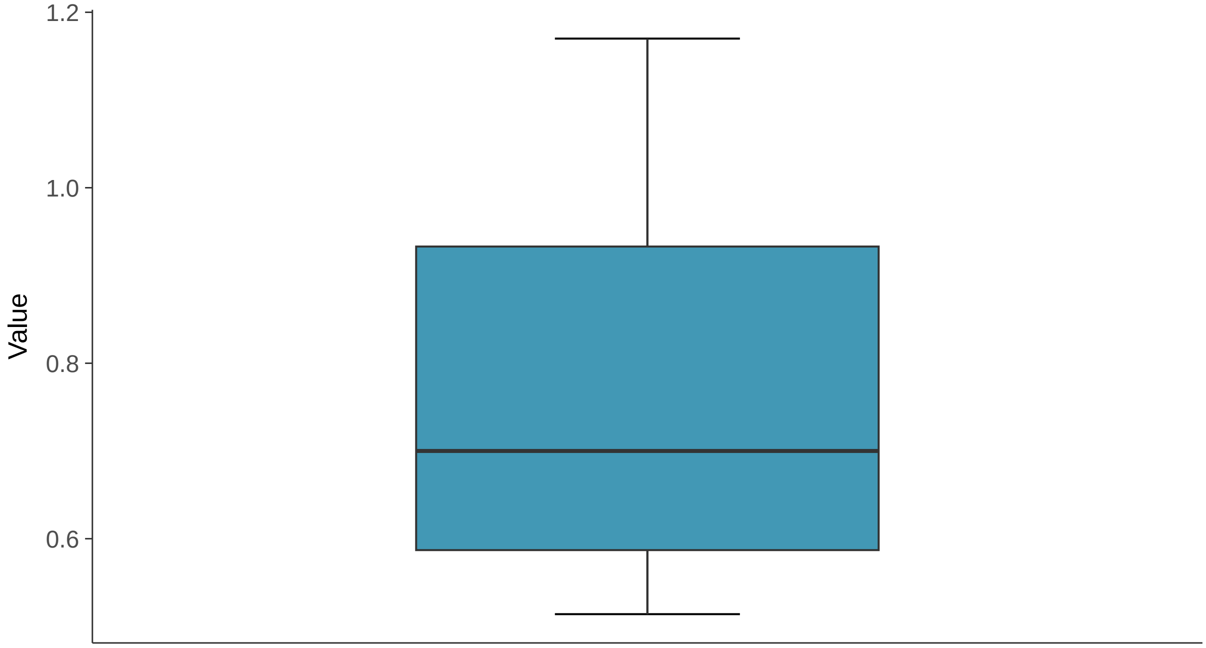
Histogram

Radium 226 and 228, MW-19 (pCi/L)



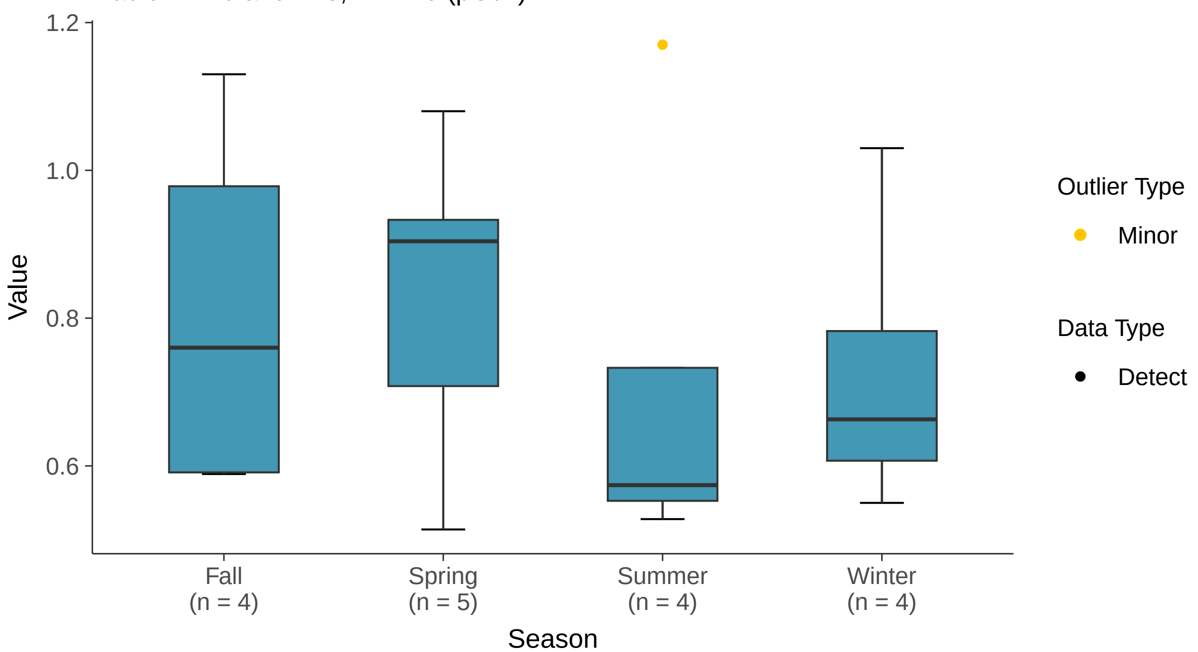
Boxplot

Radium 226 and 228, MW-19 (pCi/L)



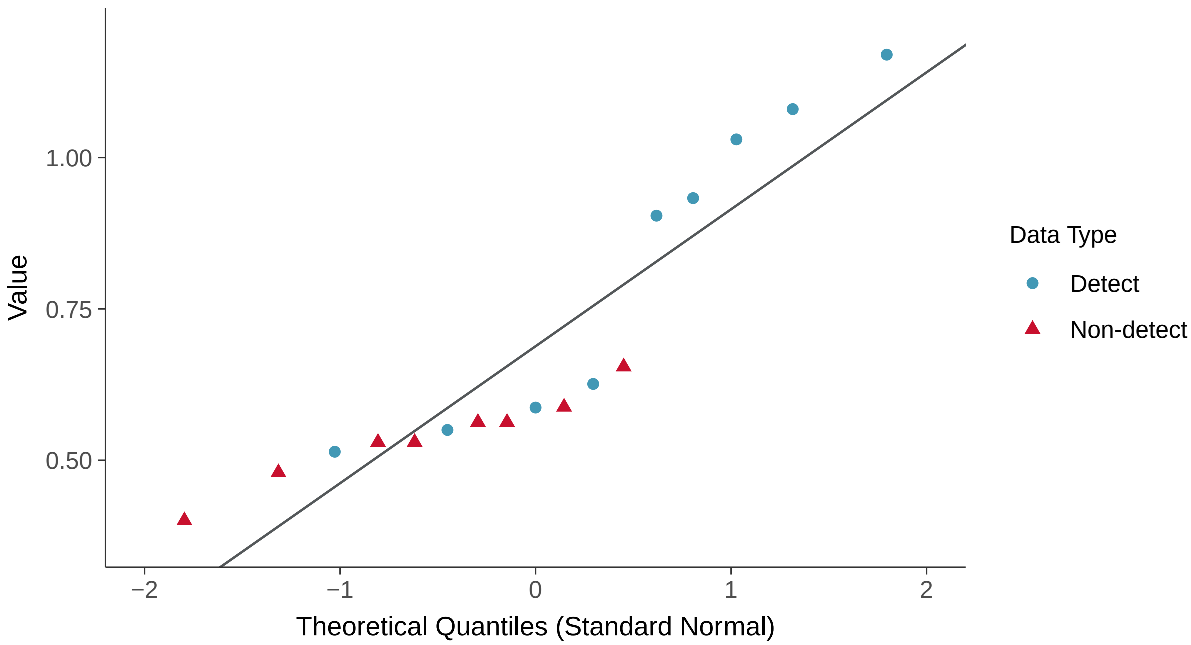
Boxplot by Season

Radium 226 and 228, MW-19 (pCi/L)



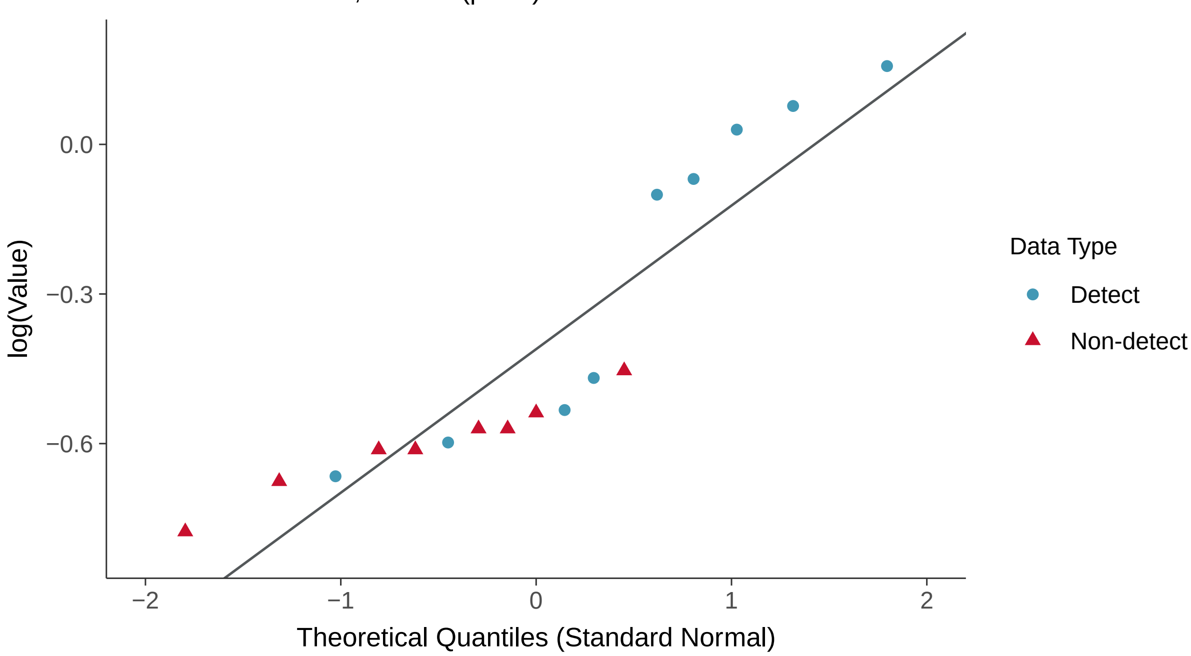
Normal Q-Q plot using ROS Imputed Estimates

Radium 226 and 228, MW-19 (pCi/L)



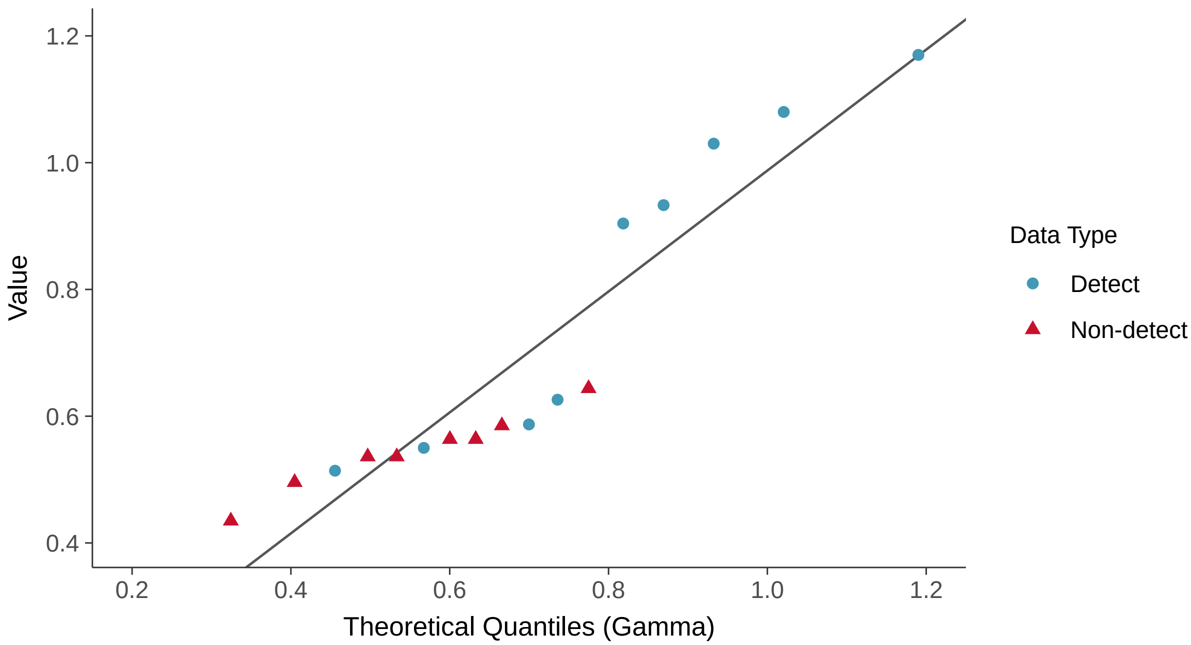
Lognormal Q-Q plot using ROS Imputed Estimates

Radium 226 and 228, MW-19 (pCi/L)



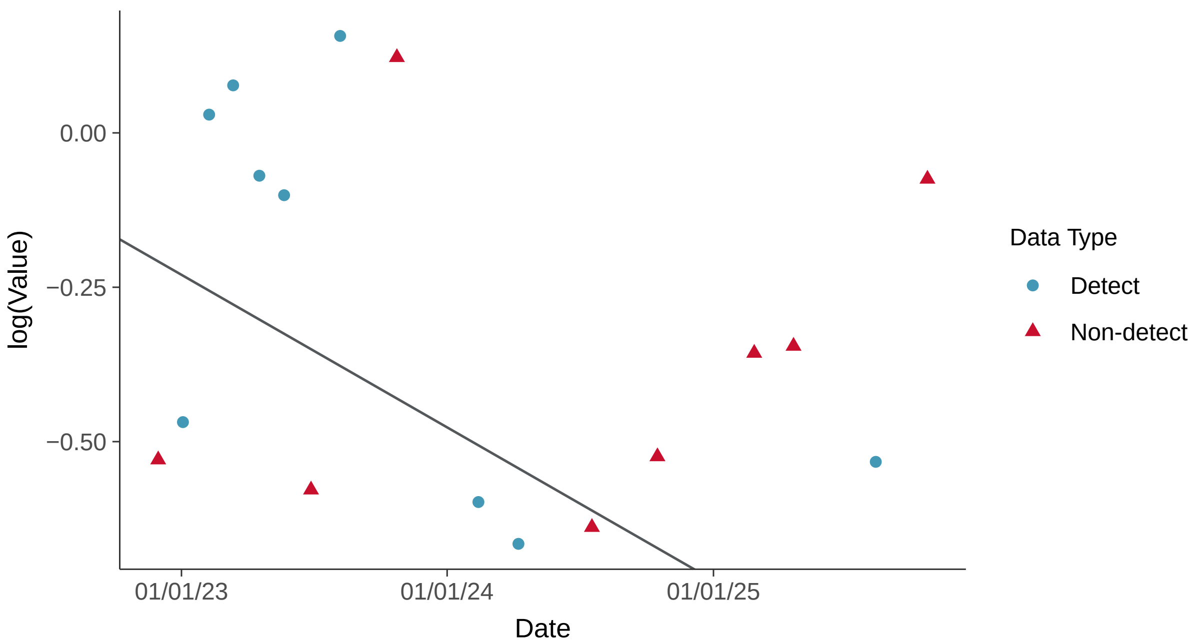
Gamma Q-Q plot using ROS Imputed Estimates

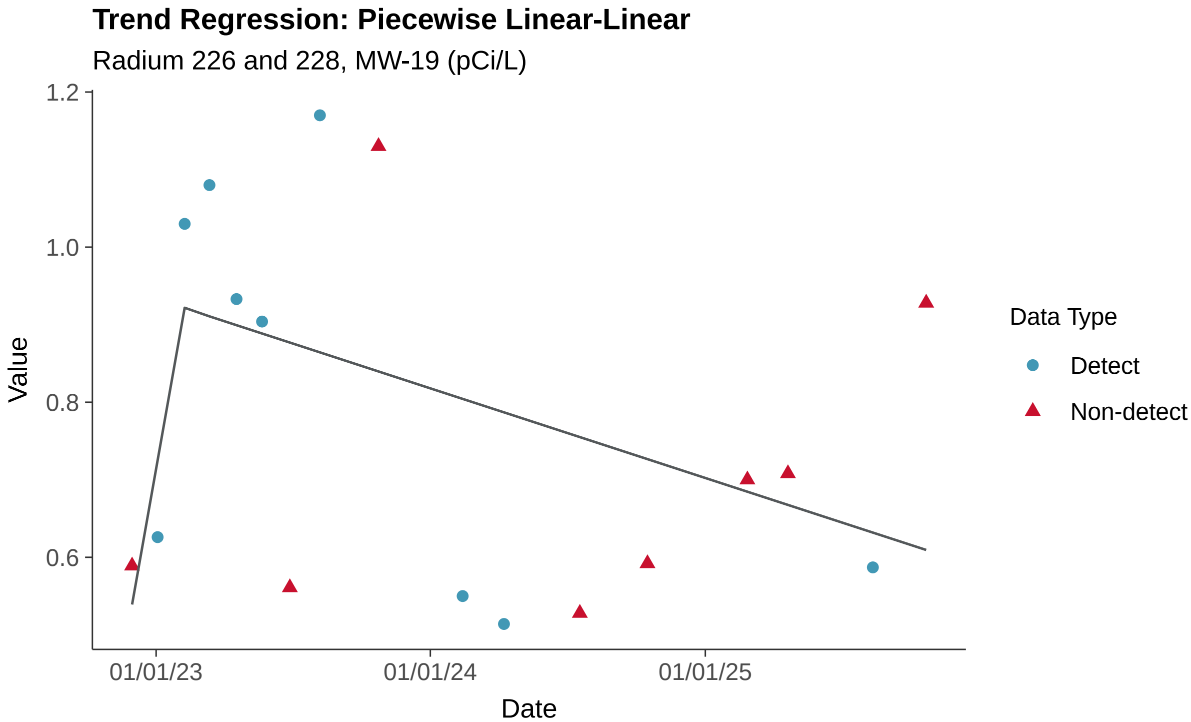
Radium 226 and 228, MW-19 (pCi/L)



Trend Regression: Lognormal MLE

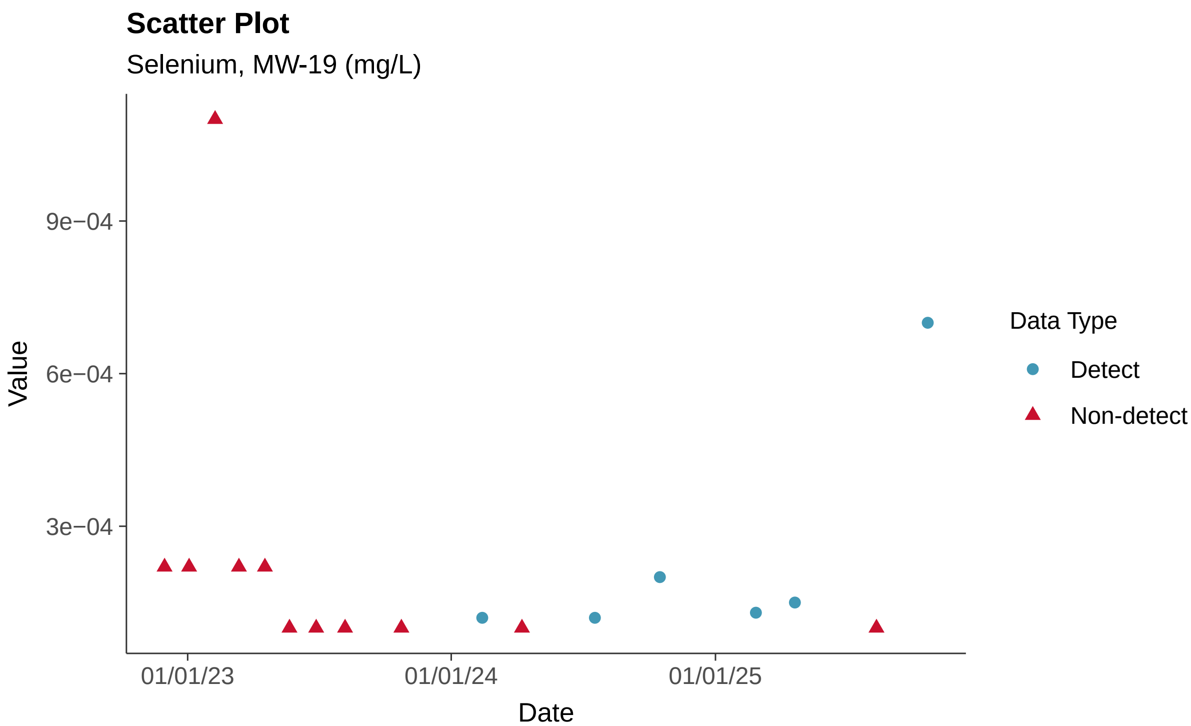
Radium 226 and 228, MW-19 (pCi/L)

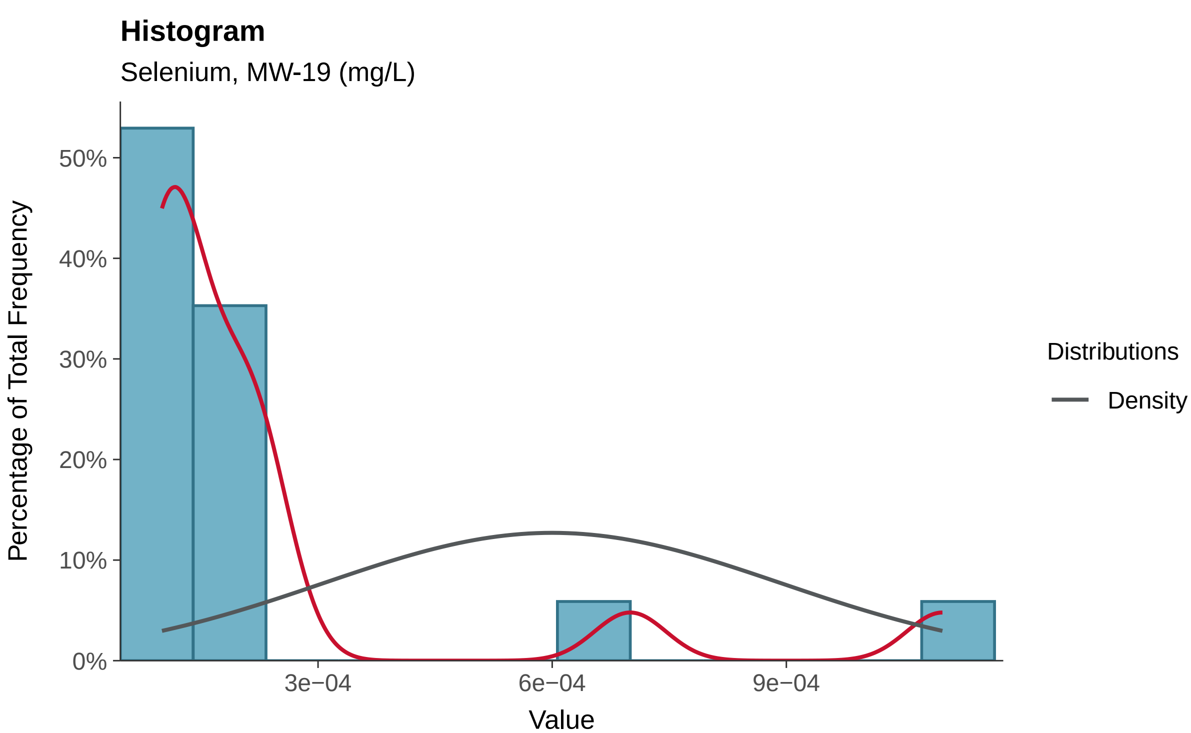



Trend Regression: Piecewise Linear-Linear
Radium 226 and 228, MW-19 (pCi/L)
Value
1.2
1.0
0.8
0.6
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Appendix IV: Selenium, MW-19

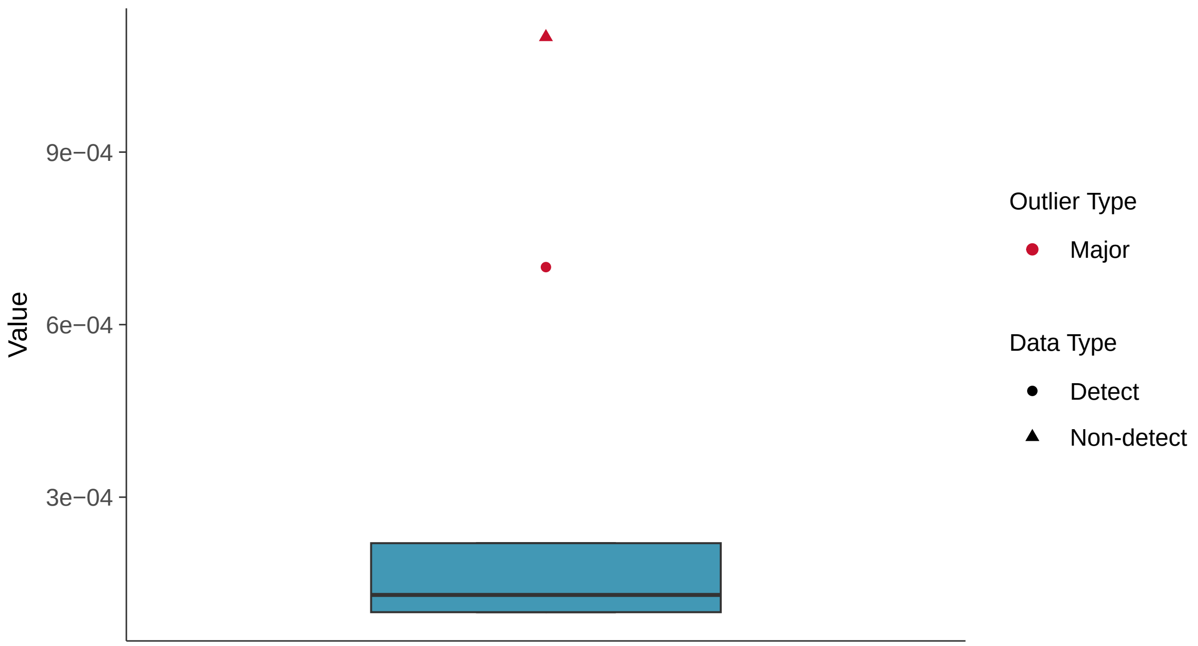
ID: 29_1_4_122





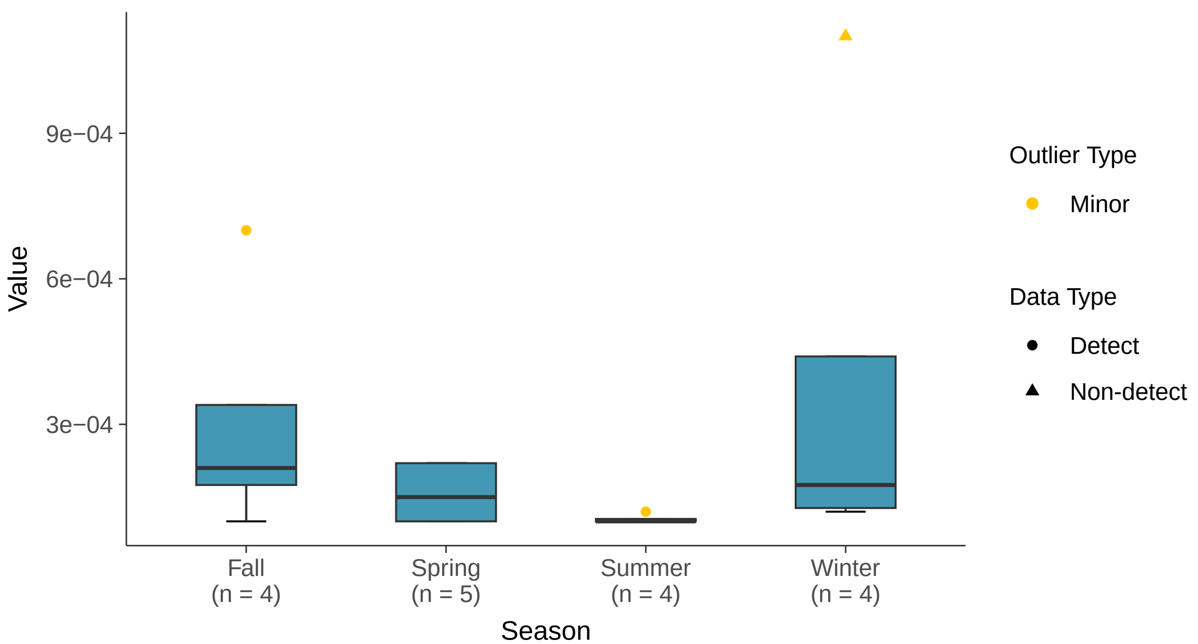
Boxplot

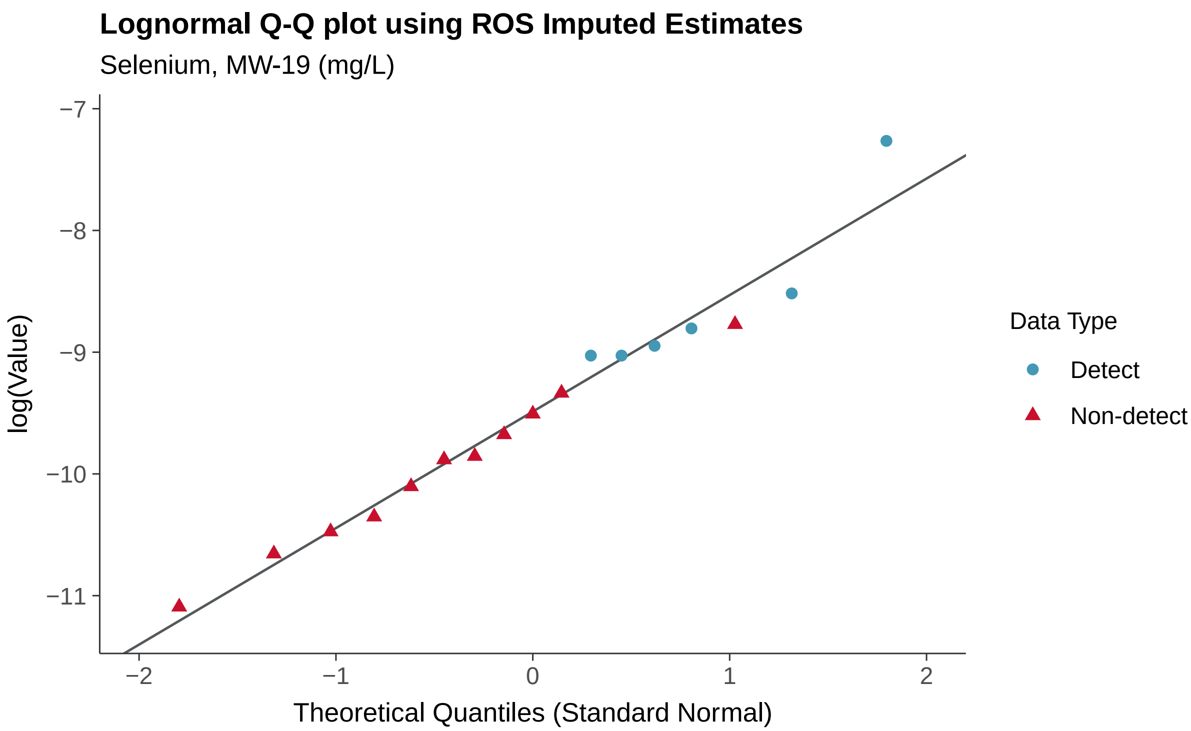
Selenium, MW-19 (mg/L)

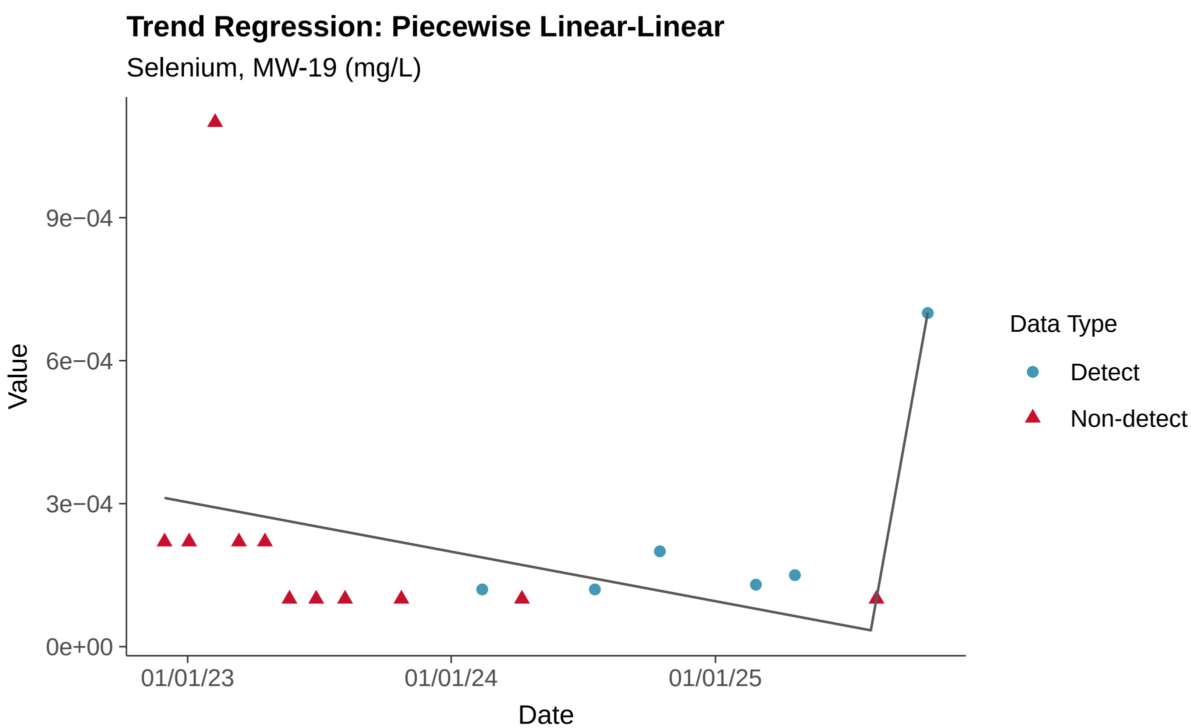


Boxplot by Season

Selenium, MW-19 (mg/L)

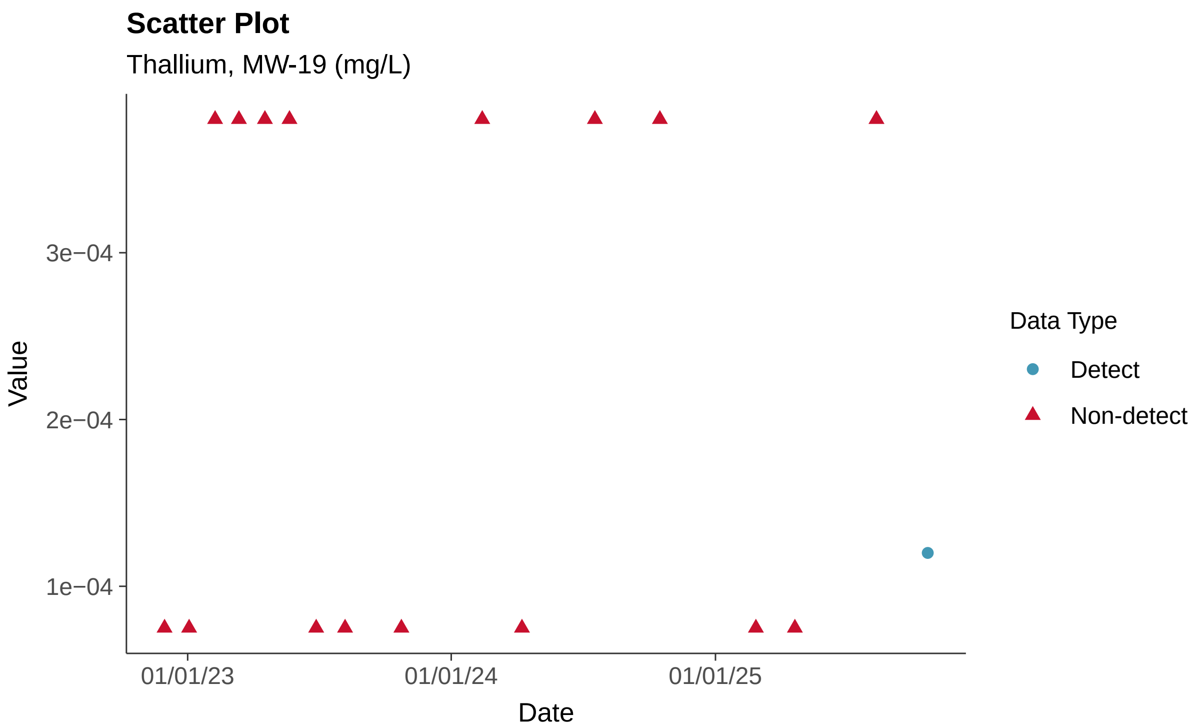


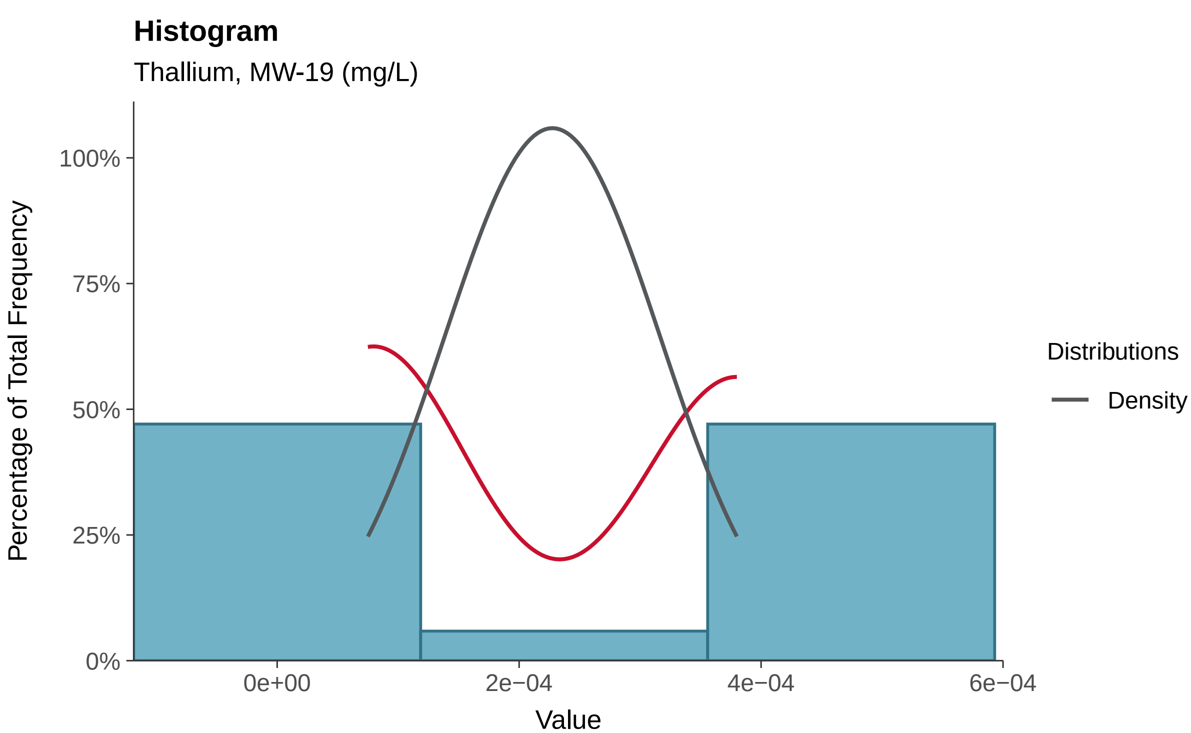

Lognormal Q-Q plot using ROS Imputed Estimates
Selenium, MW-19 (mg/L)
log(Value)
−7
−8
−9
−10
−11
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Selenium, MW-19 (mg/L)
Value
9e−04
6e−04
3e−04
0e+00
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Appendix IV: Thallium, MW-19

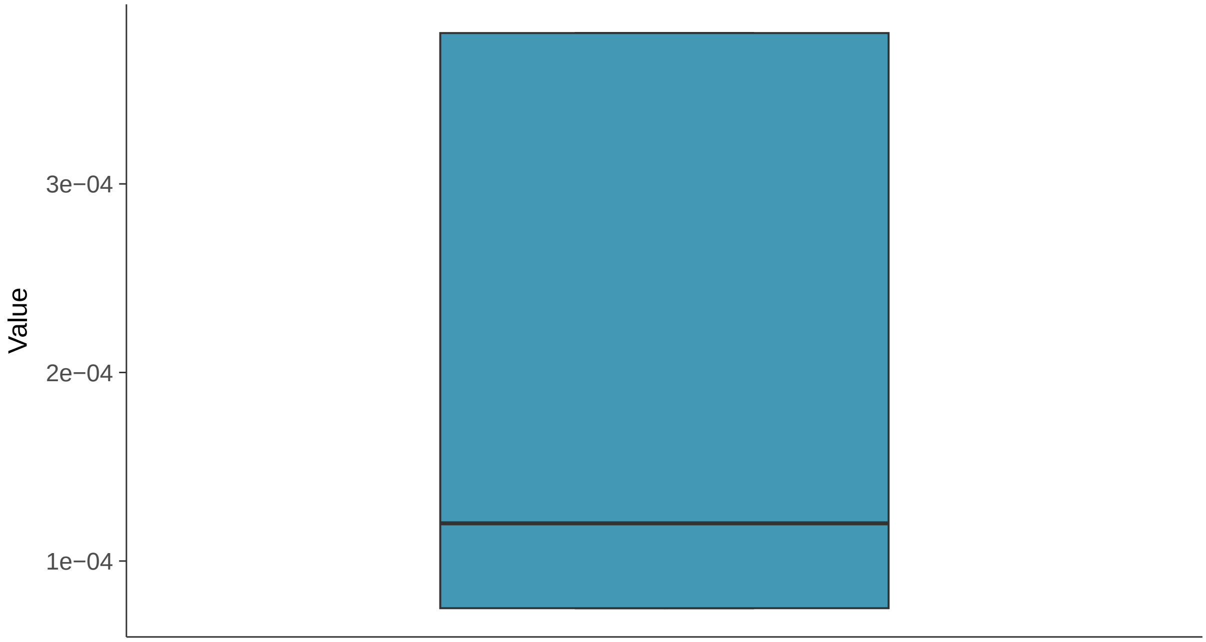
ID: 29_1_4_125





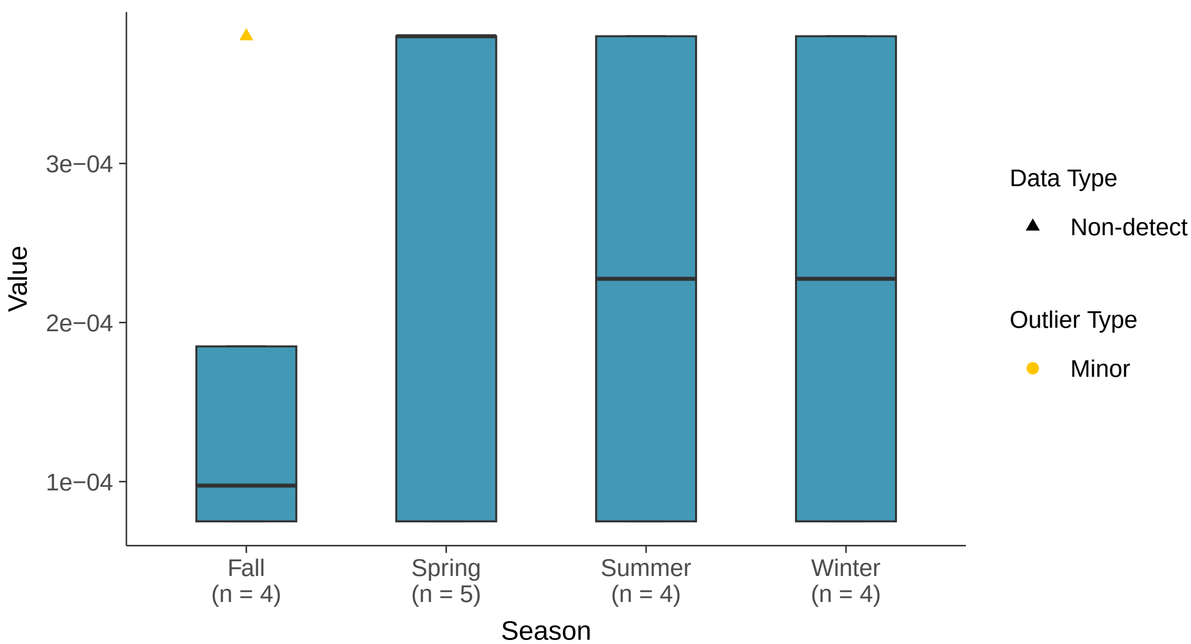
Boxplot

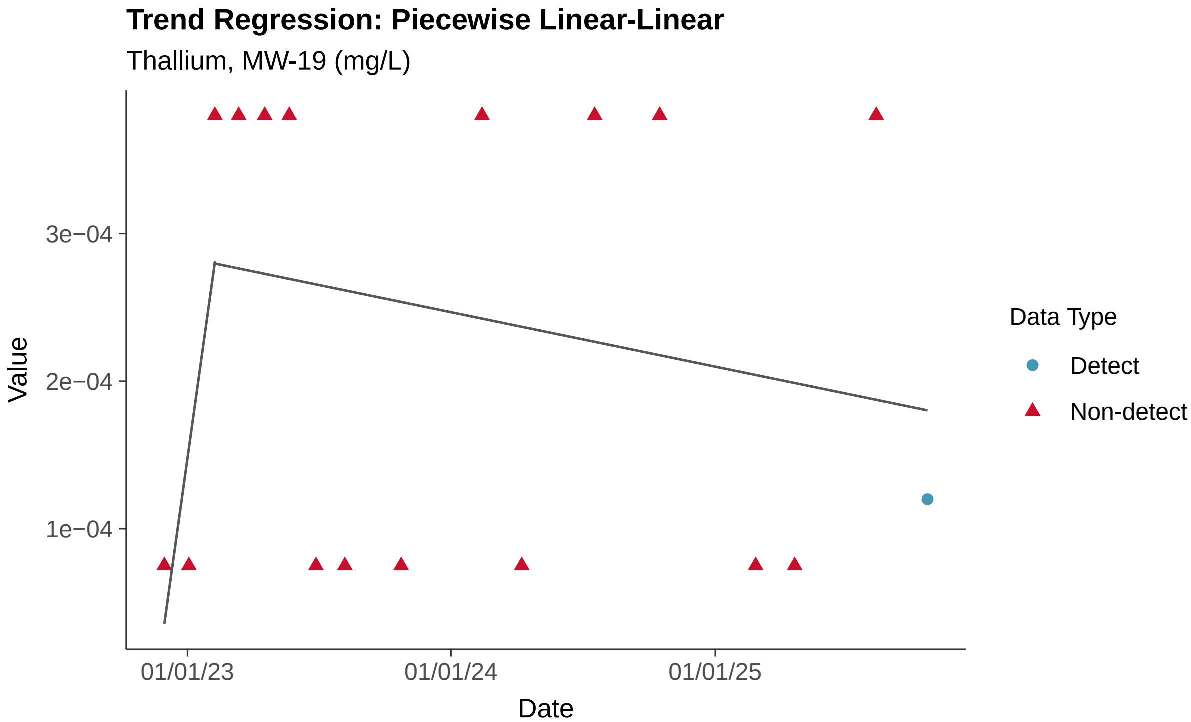
Thallium, MW-19 (mg/L)

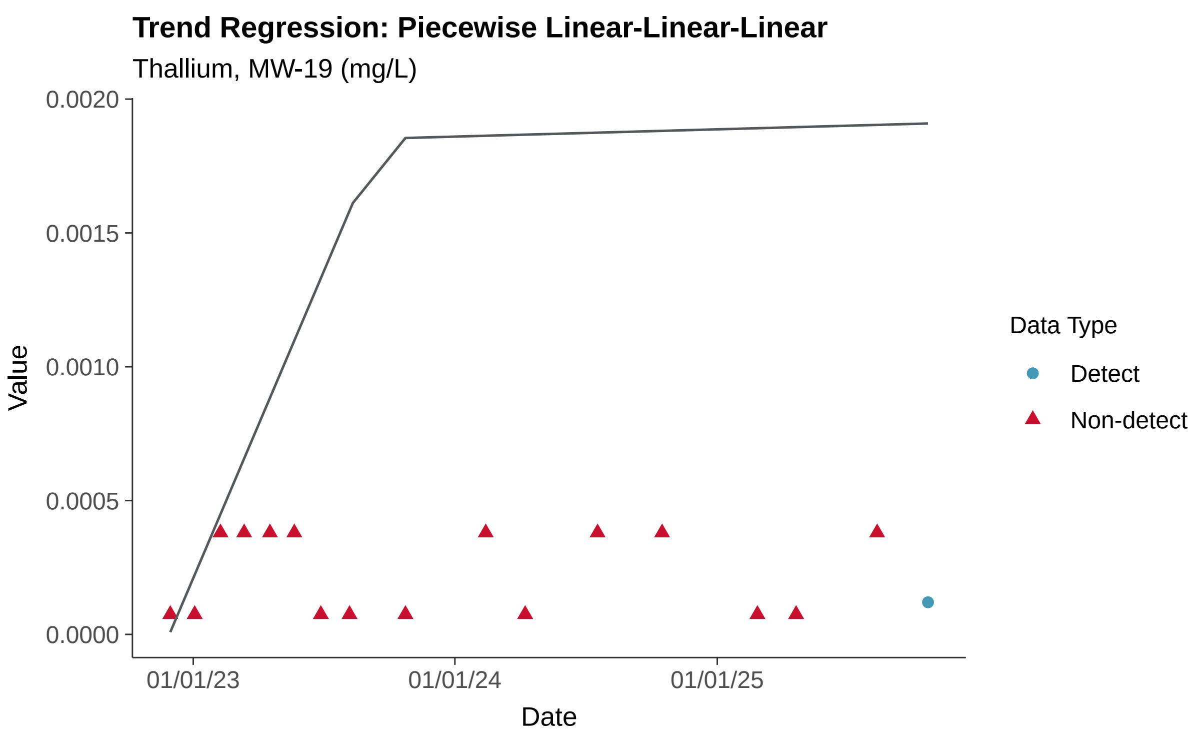


Boxplot by Season

Thallium, MW-19 (mg/L)




Trend Regression: Piecewise Linear-Linear
Thallium, MW-19 (mg/L)
Value
3e−04
2e−04
1e−04
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

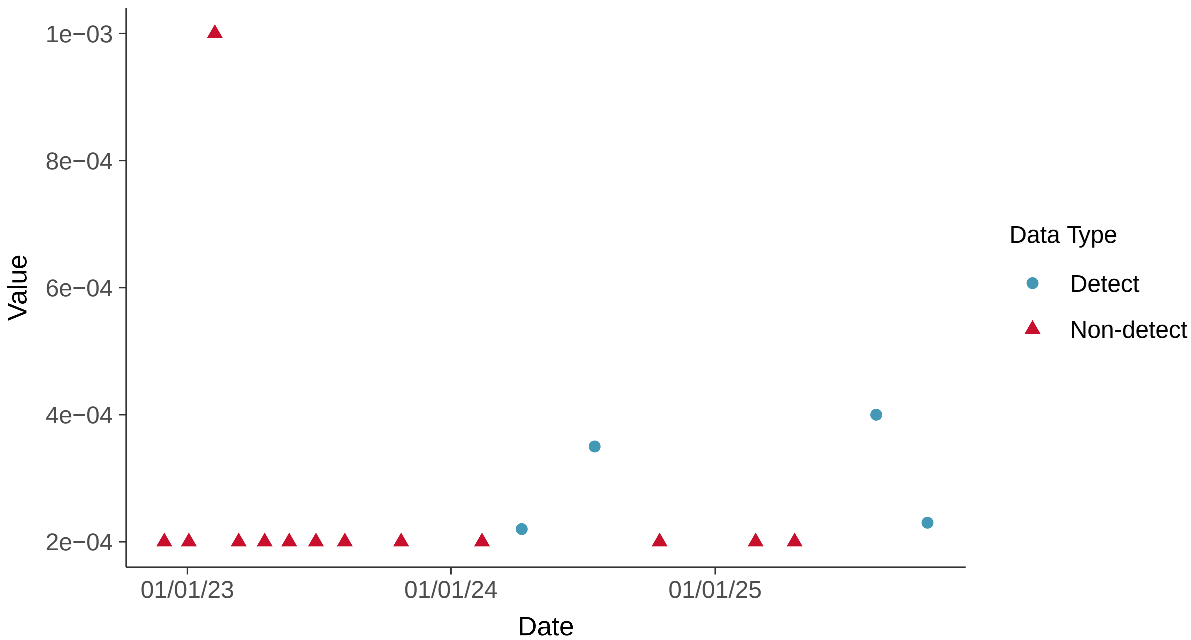

Trend Regression: Piecewise Linear-Linear-Linear
Thallium, MW-19 (mg/L)
Value
0.0020
0.0015
0.0010
0.0005
0.0000
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Part 115: Copper, MW-19

ID: 29_1_5_111

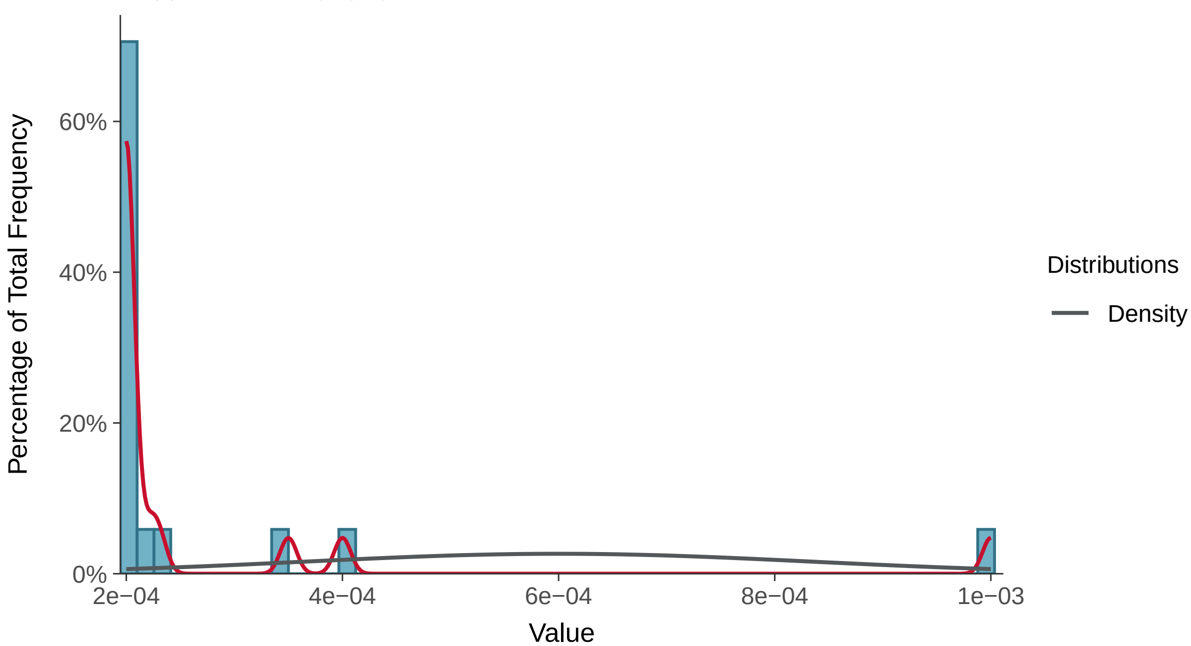
Scatter Plot

Copper, MW-19 (mg/L)



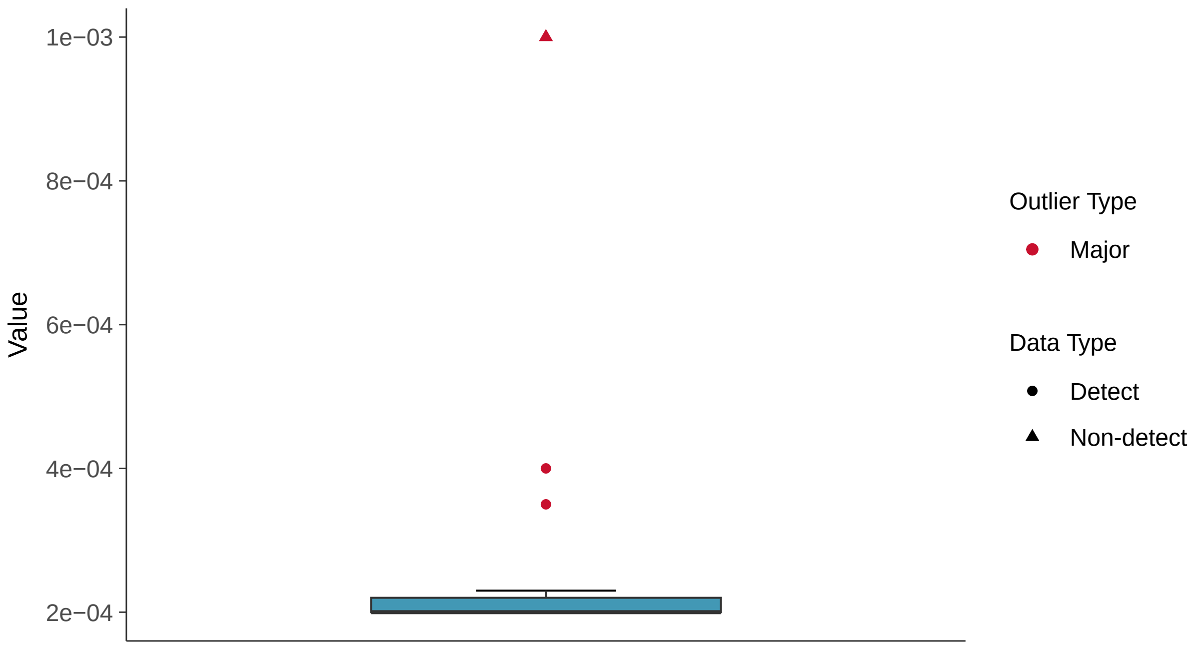
Histogram

Copper, MW-19 (mg/L)



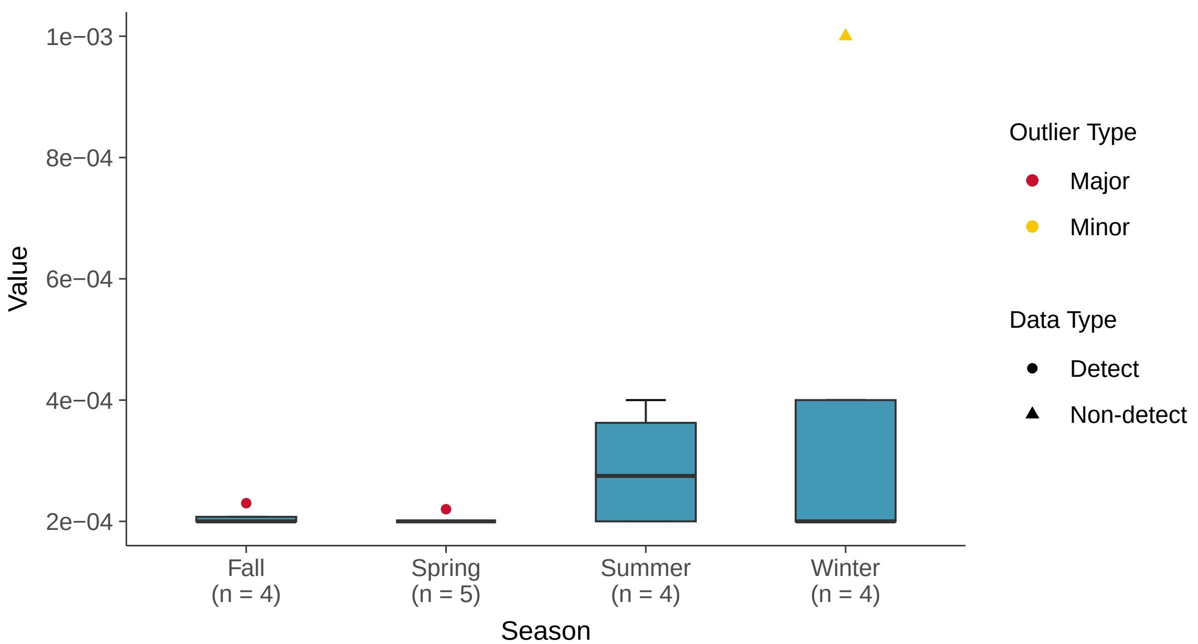
Boxplot

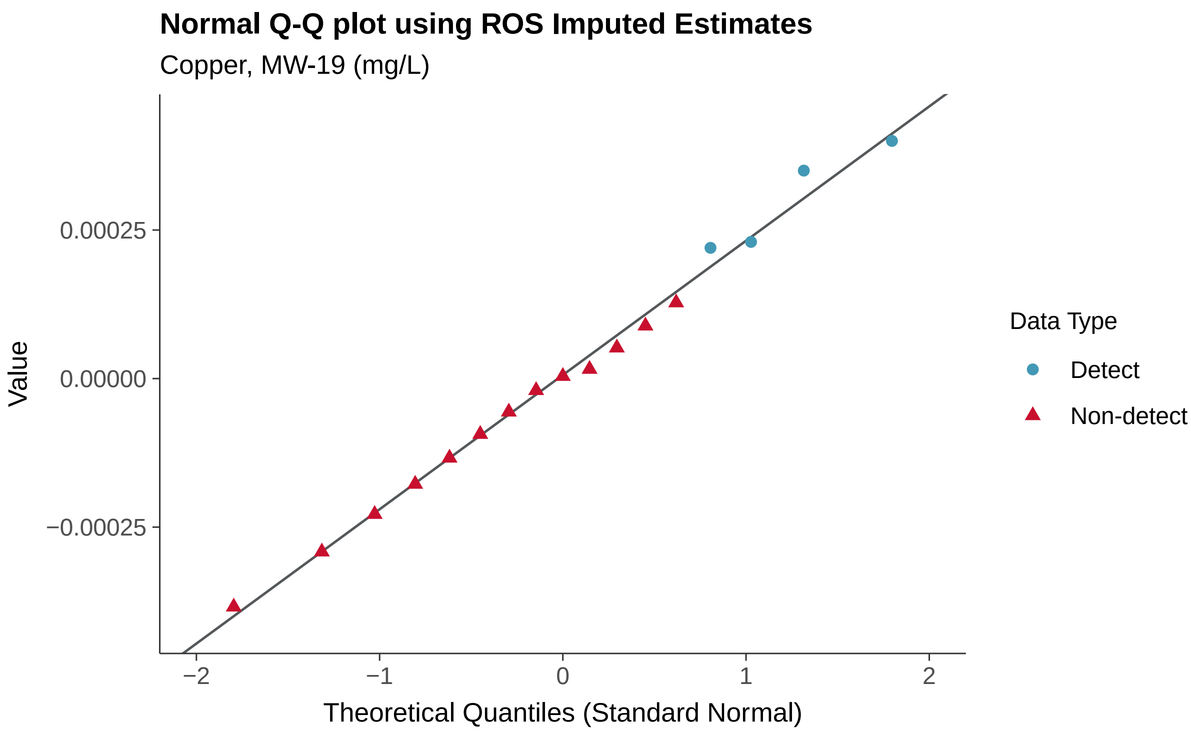
Copper, MW-19 (mg/L)

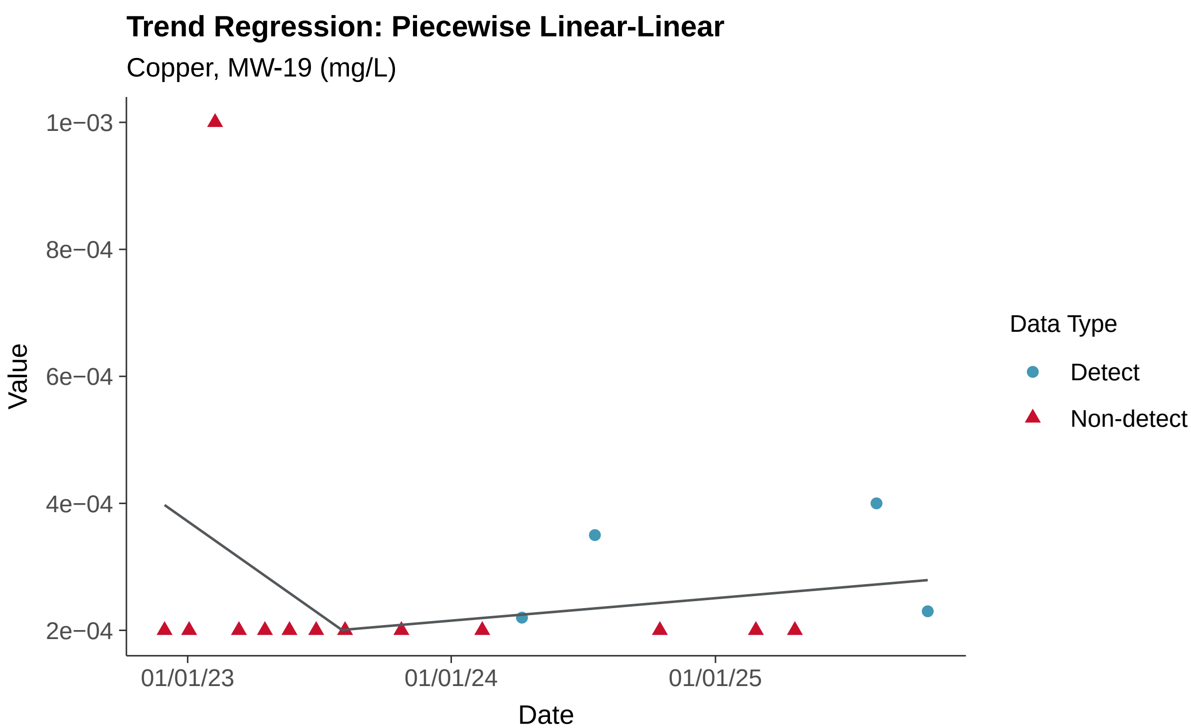


Boxplot by Season

Copper, MW-19 (mg/L)

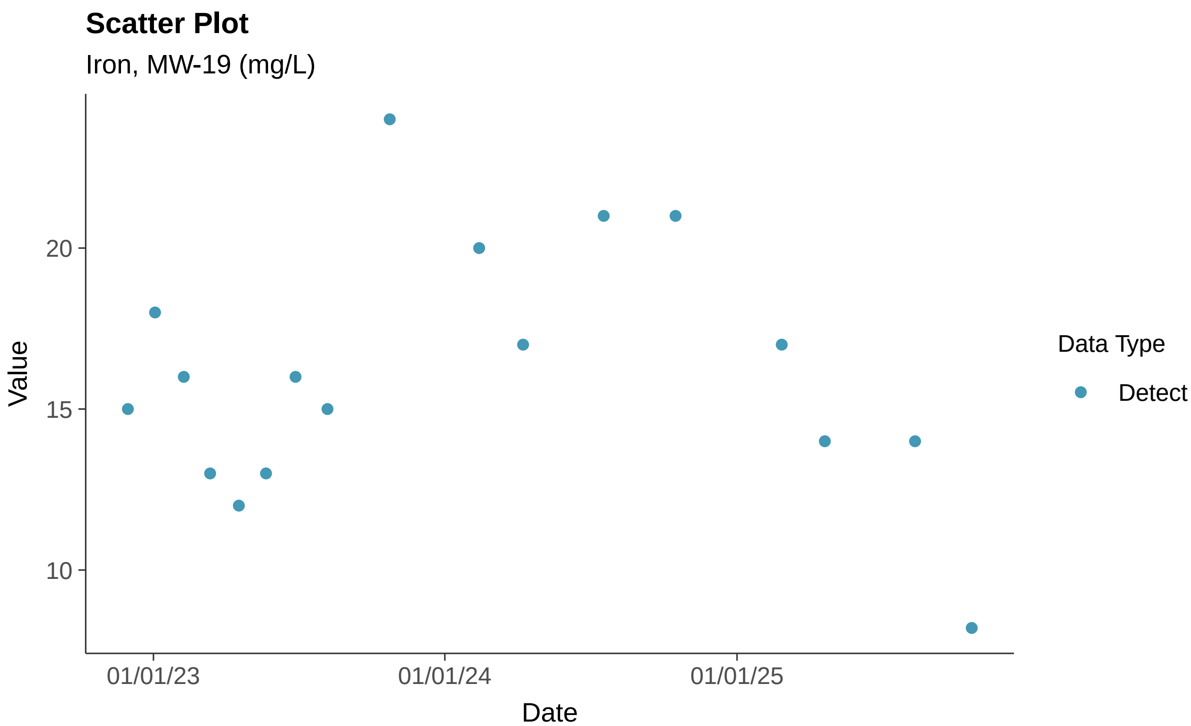


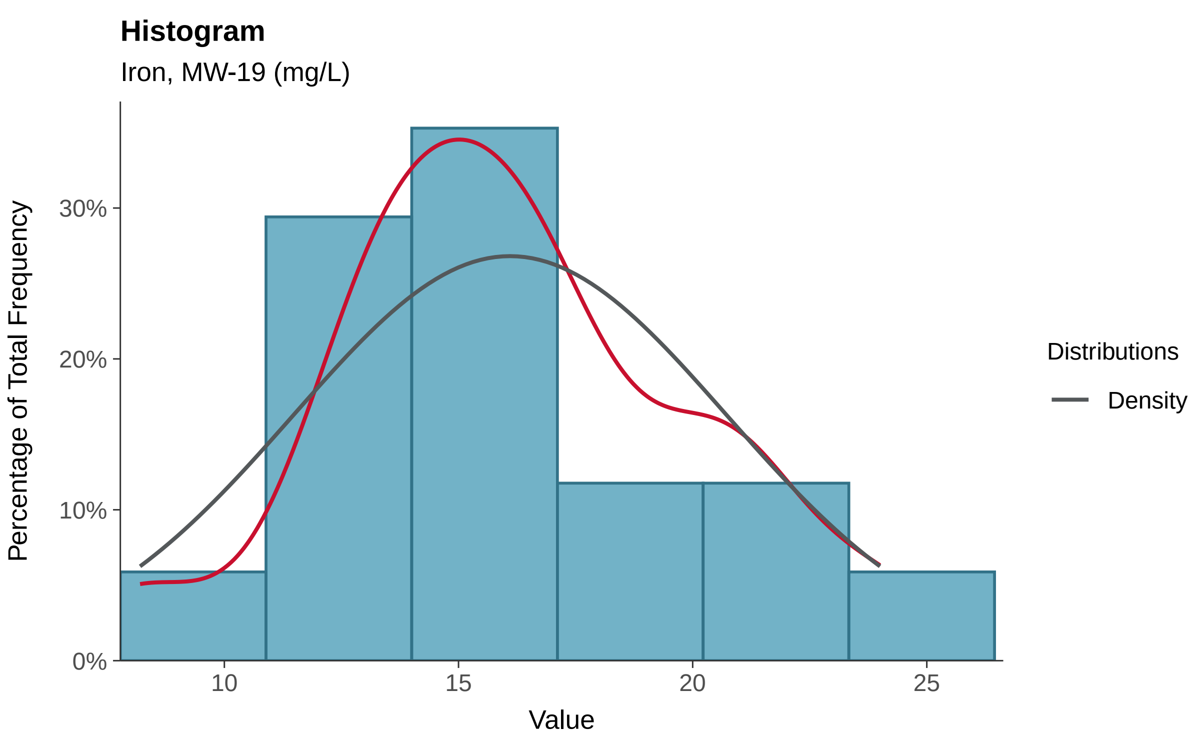

Normal Q-Q plot using ROS Imputed Estimates
Copper, MW-19 (mg/L)
Value
0.00025
0.00000
−0.00025
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Copper, MW-19 (mg/L)
Value
1e−03
8e−04
6e−04
4e−04
2e−04
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Part 115: Iron, MW-19

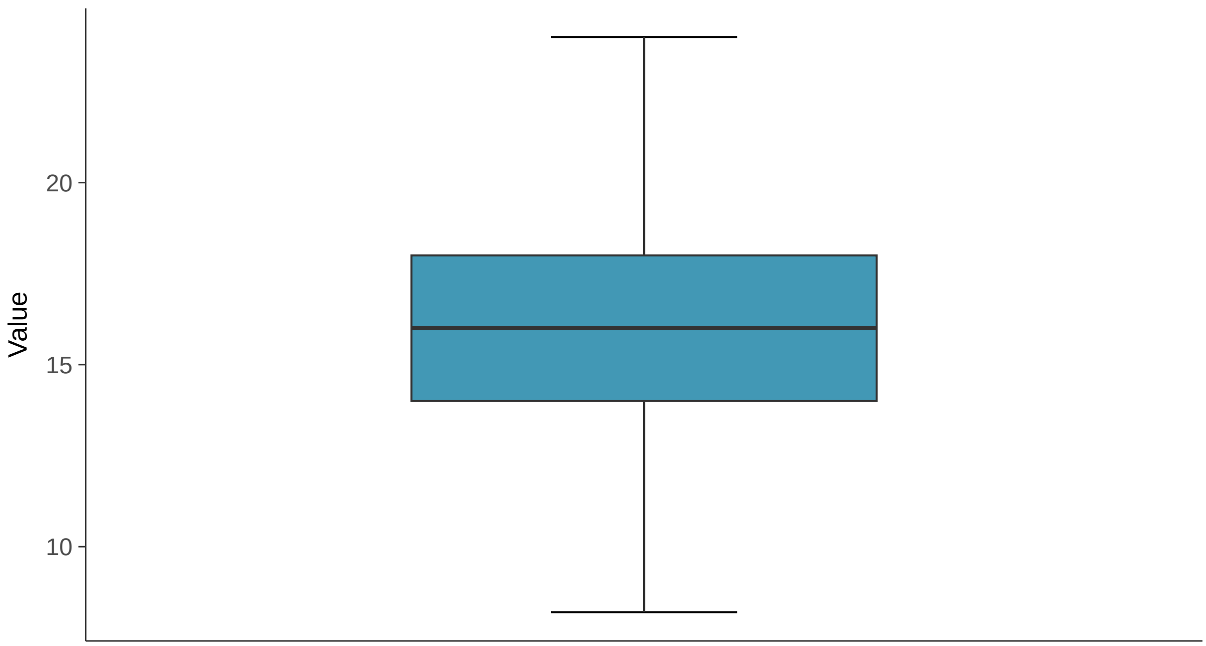
ID: 29_1_5_114





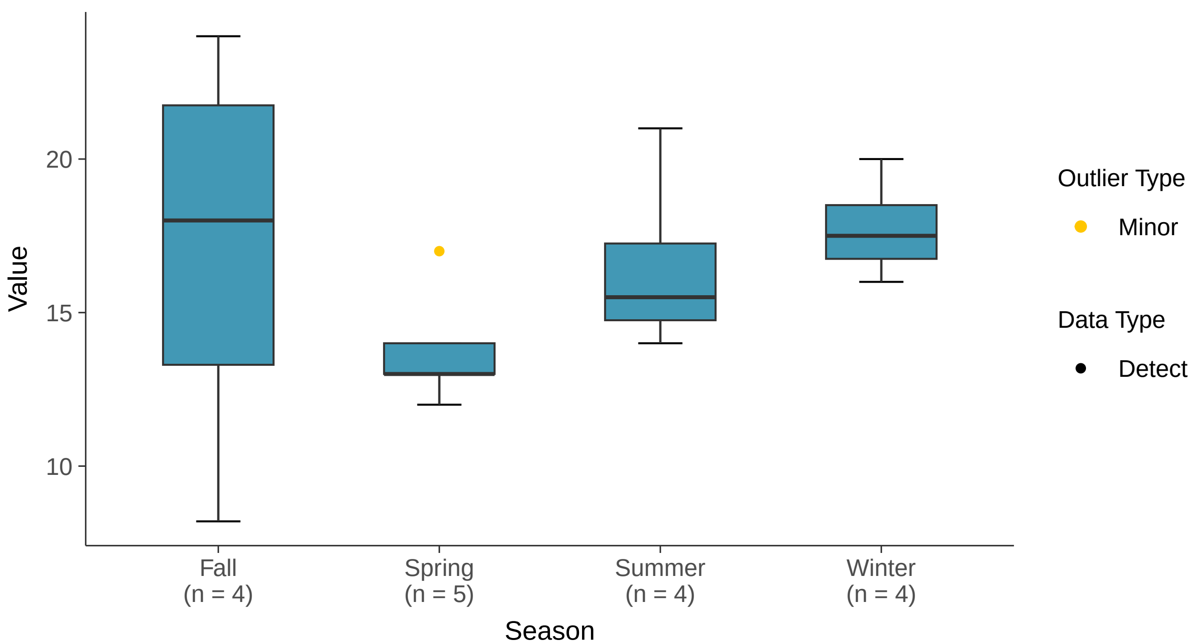
Boxplot

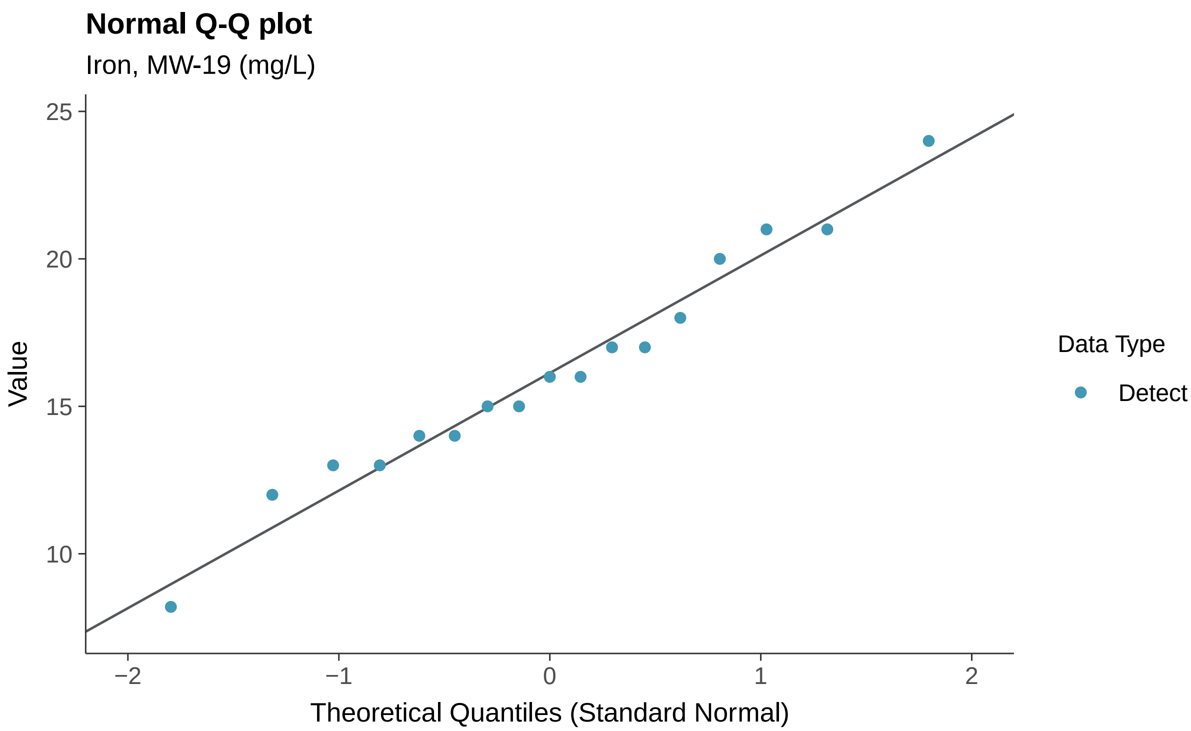
Iron, MW-19 (mg/L)

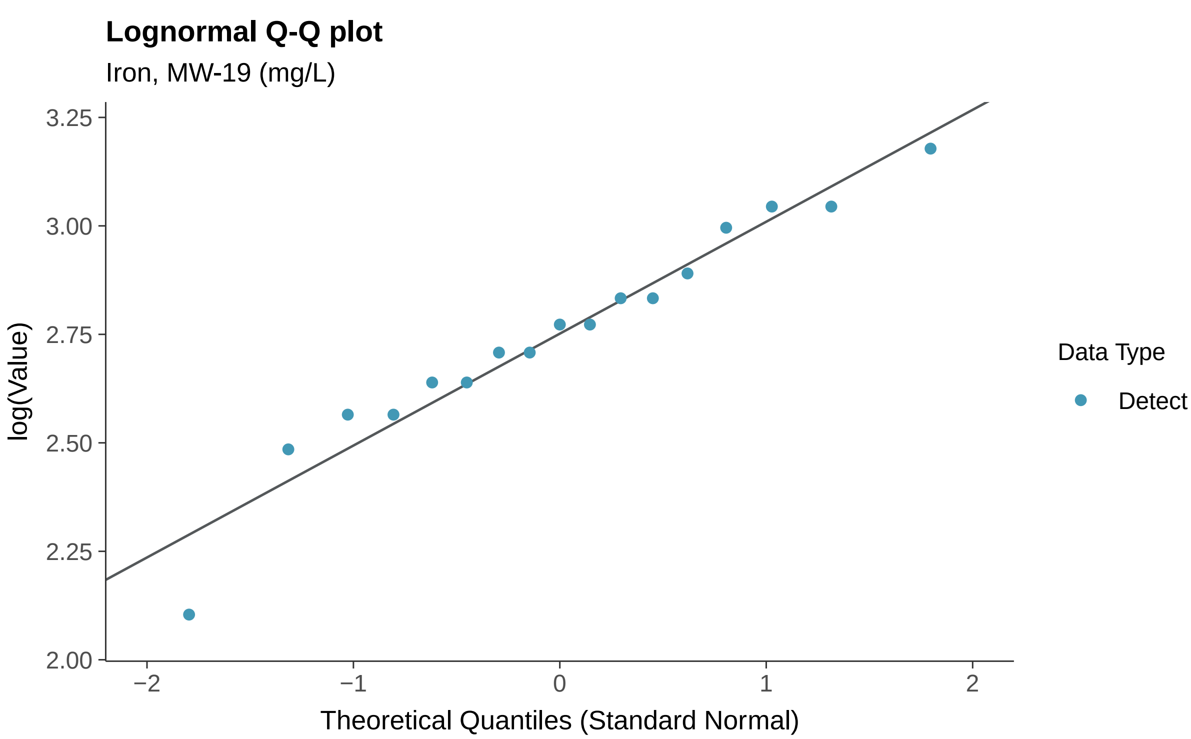


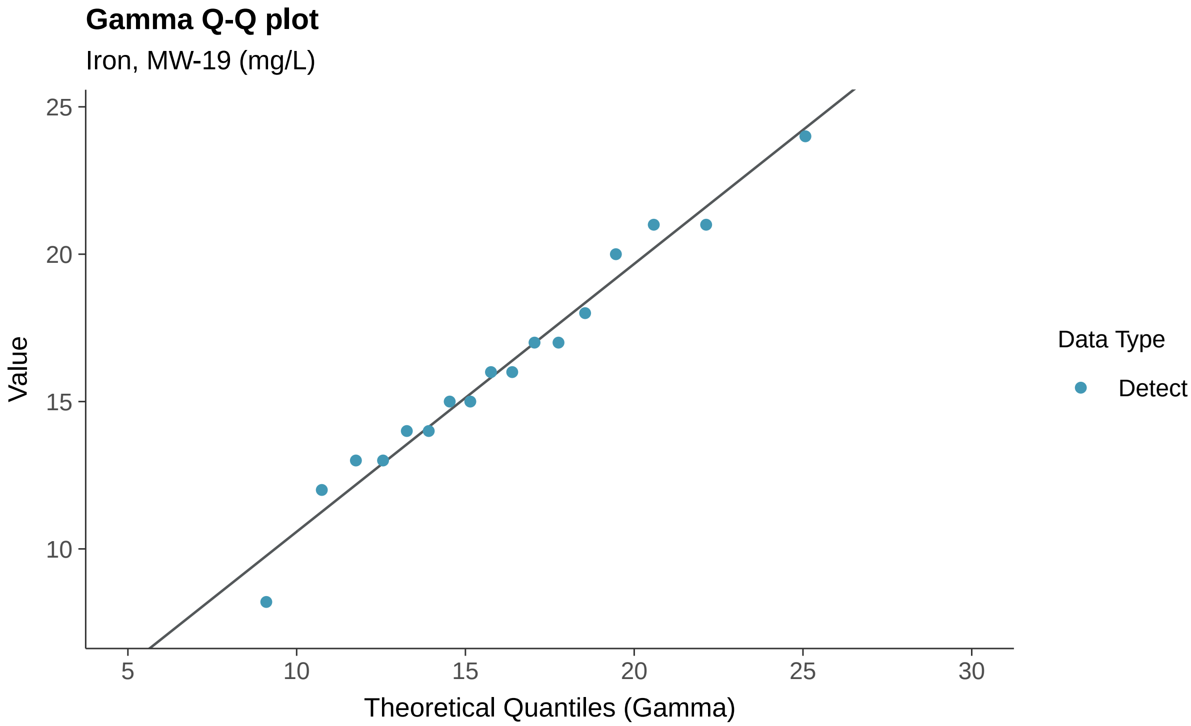
Boxplot by Season

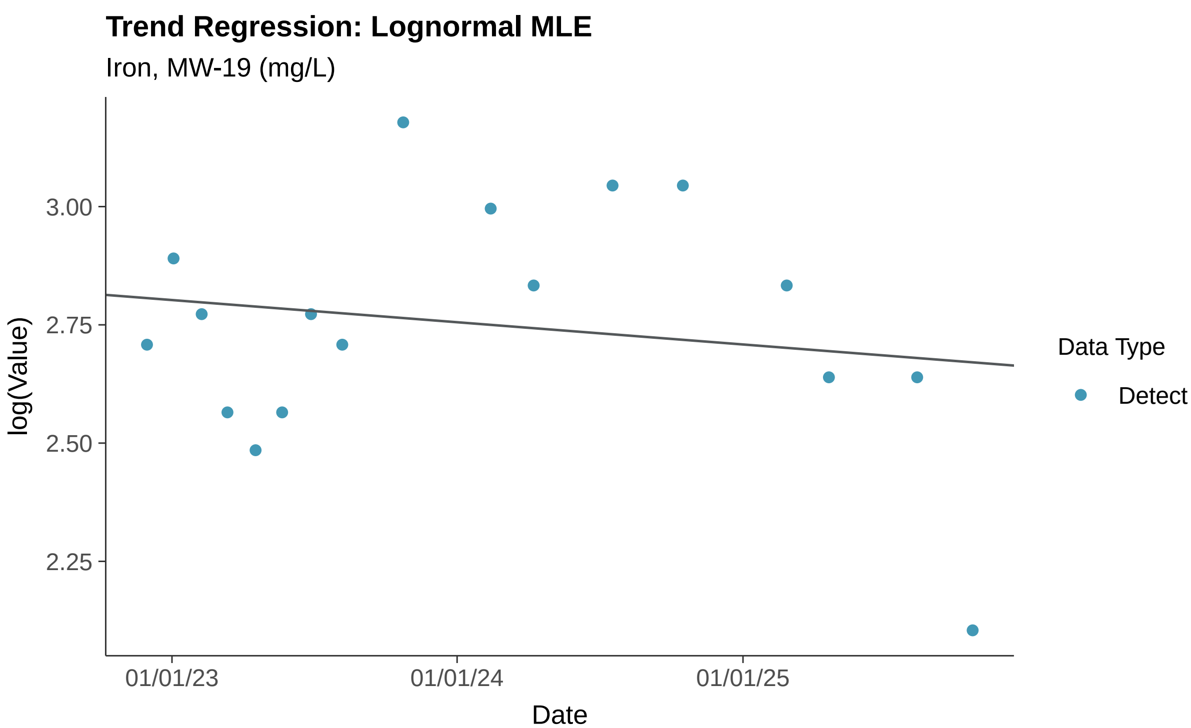
Iron, MW-19 (mg/L)




Normal Q-Q plot
Iron, MW-19 (mg/L)
Value
25
20
15
10
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

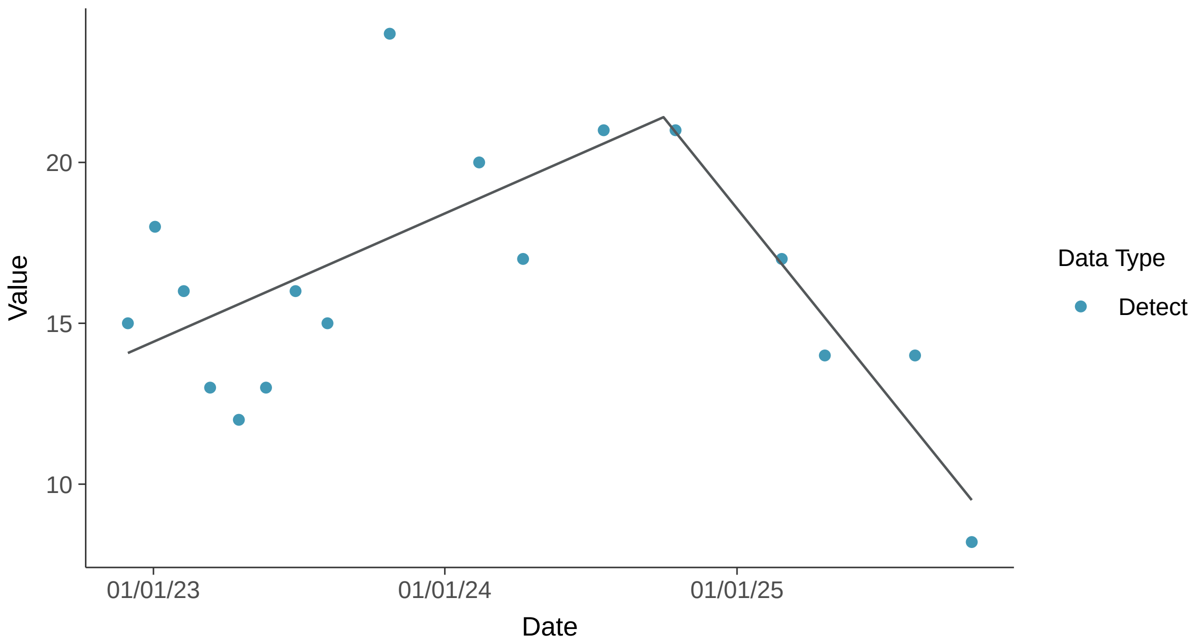

Lognormal Q-Q plot
Iron, MW-19 (mg/L)
log(Value)
3.25
3.00
2.75
2.50
2.25
2.00
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Iron, MW-19 (mg/L)
Value
25
20
15
10
5
10
15
20
25
30
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Iron, MW-19 (mg/L)
log(Value)
3.00
2.75
2.50
2.25
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

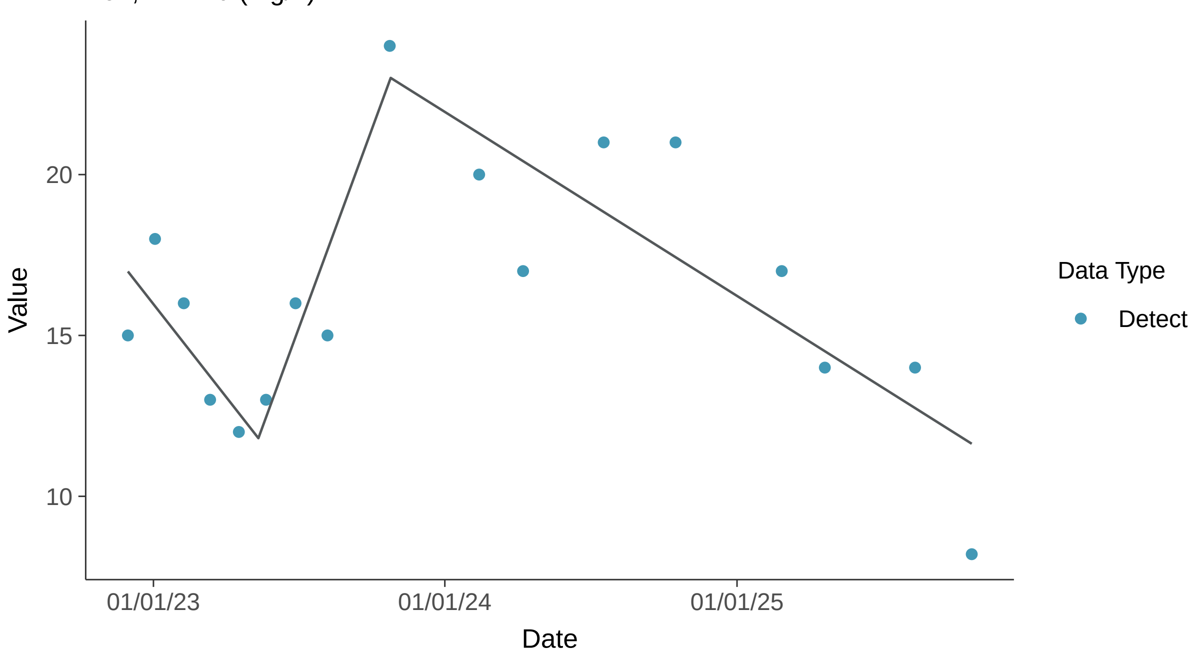
Trend Regression: Piecewise Linear-Linear

Iron, MW-19 (mg/L)



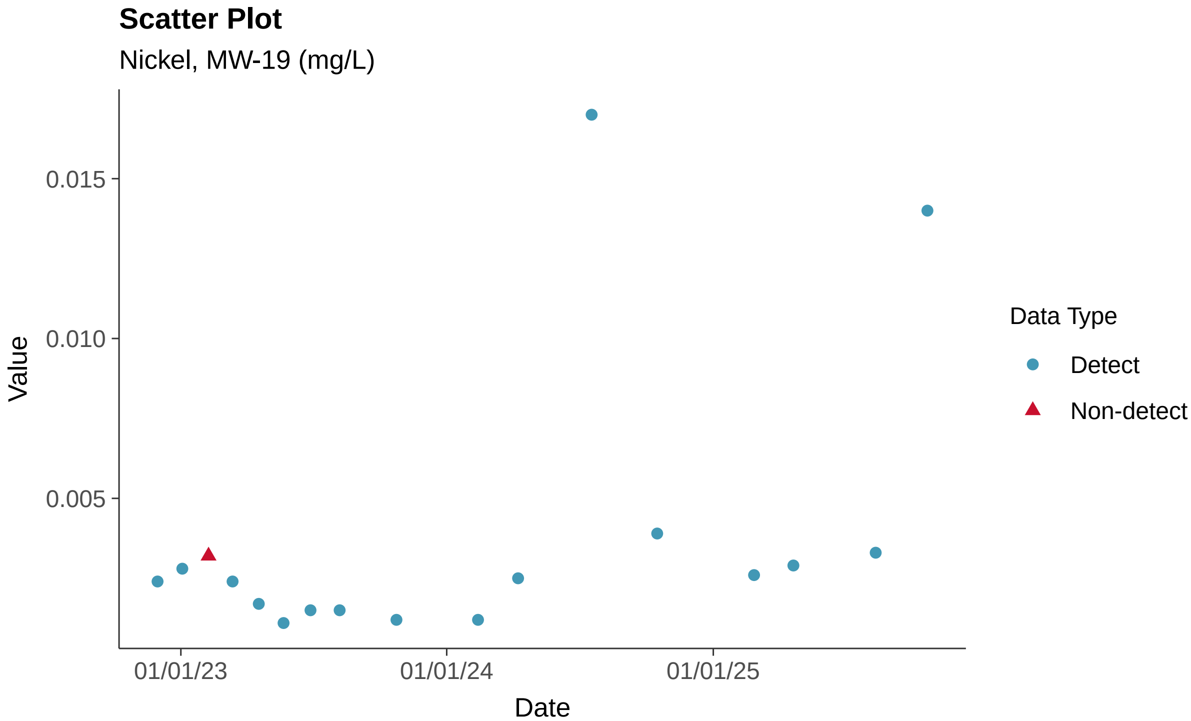
Trend Regression: Piecewise Linear-Linear-Linear

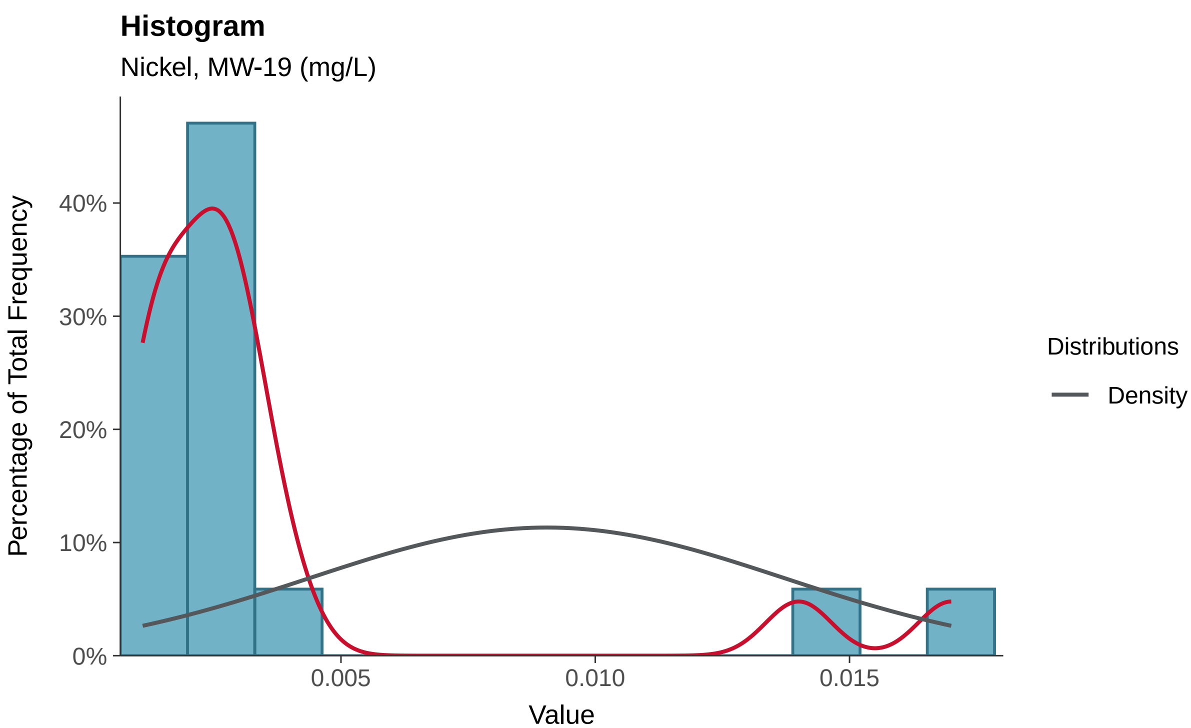
Iron, MW-19 (mg/L)



Part 115: Nickel, MW-19

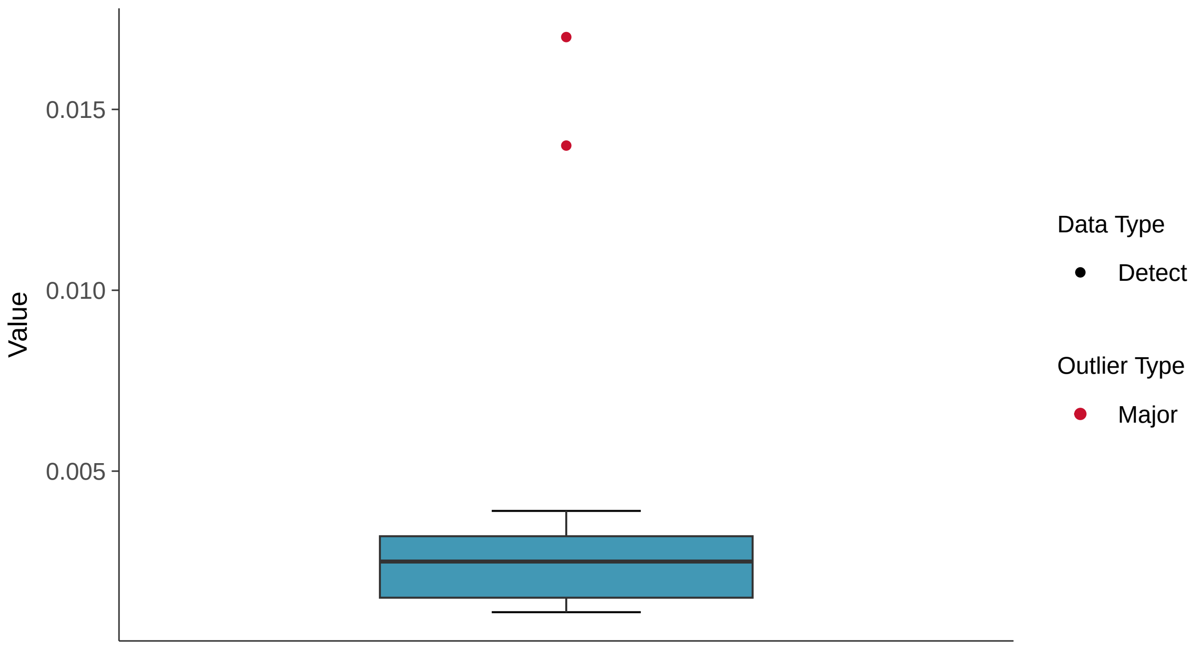
ID: 29_1_5_119





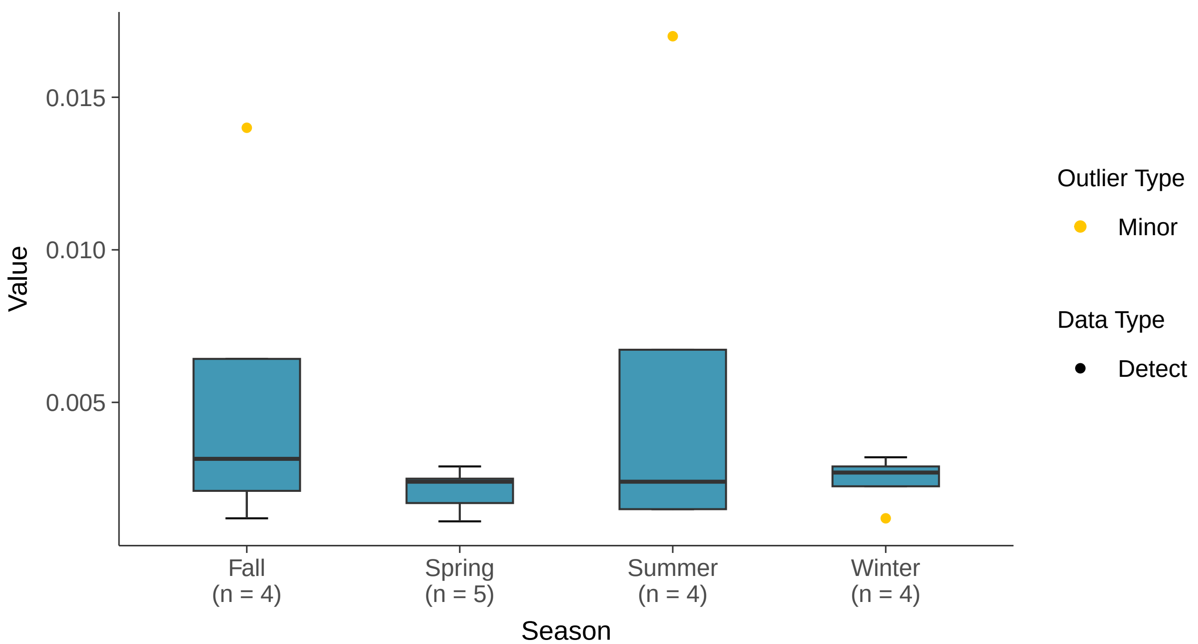
Boxplot

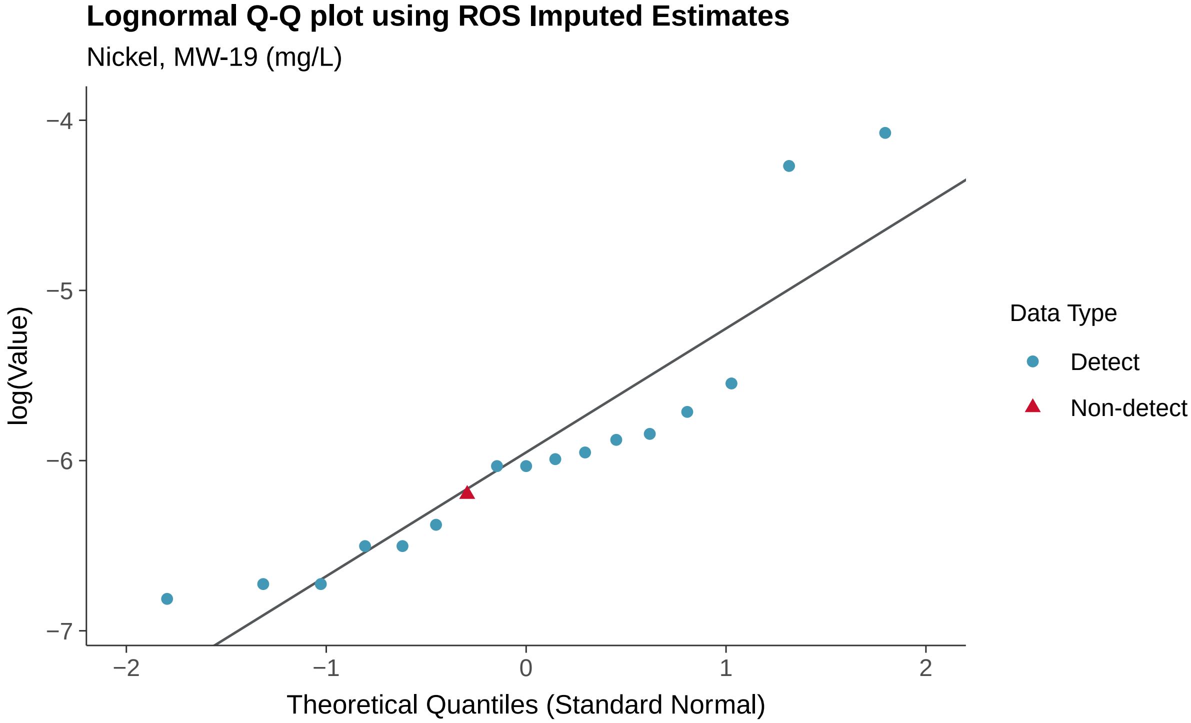
Nickel, MW-19 (mg/L)

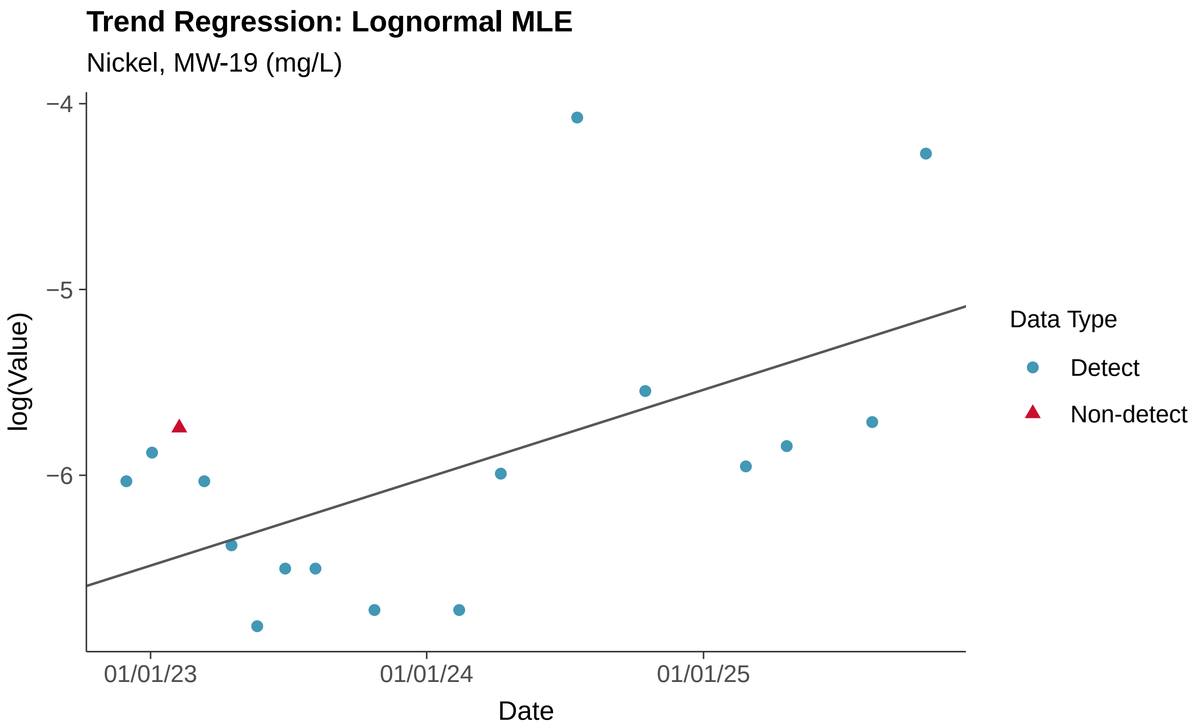


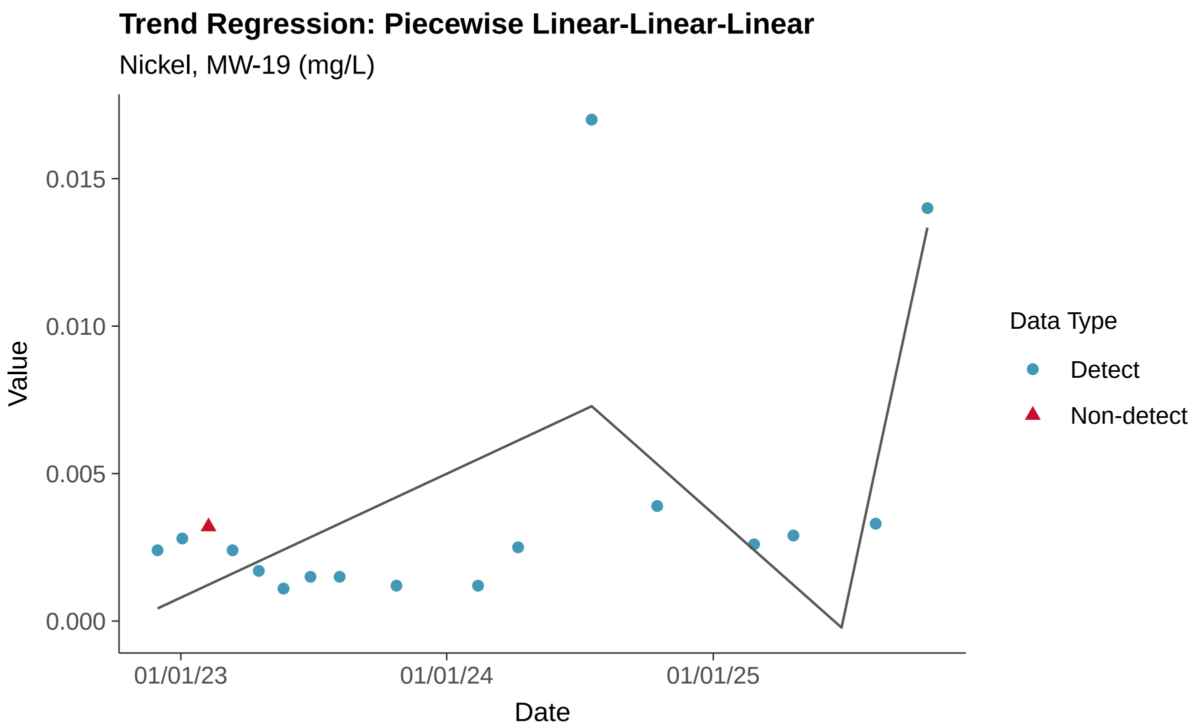
Boxplot by Season

Nickel, MW-19 (mg/L)



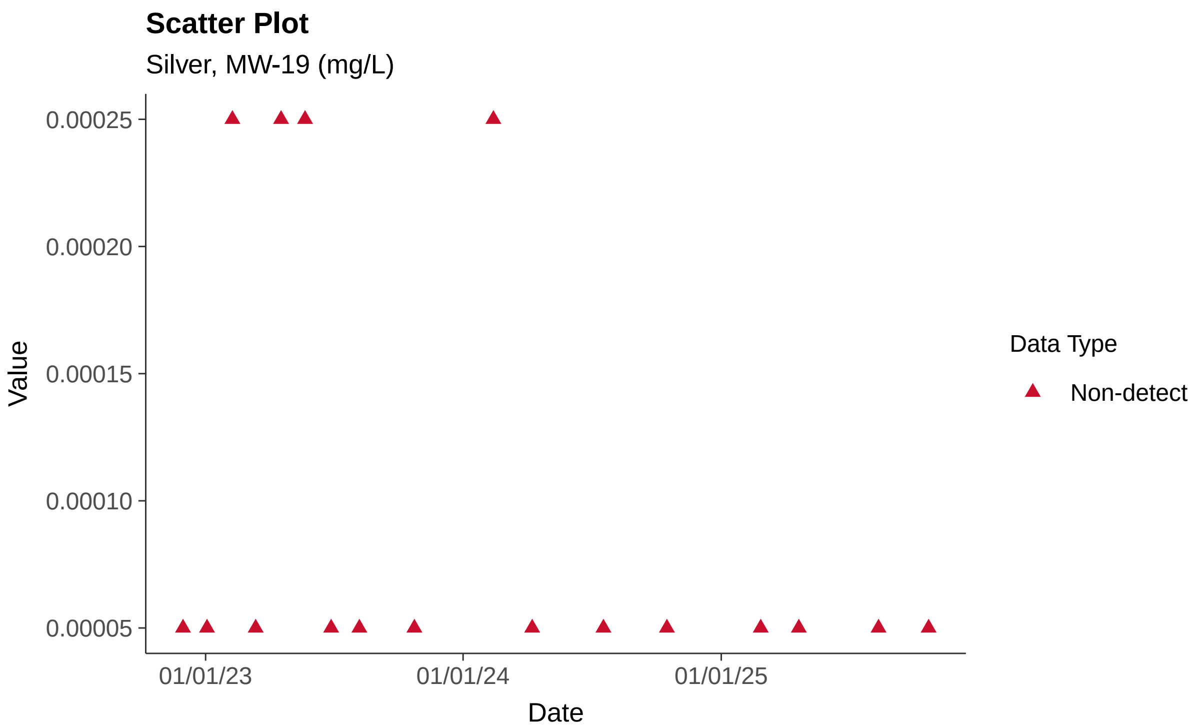

Lognormal Q-Q plot using ROS Imputed Estimates
Nickel, MW-19 (mg/L)
log(Value)
−4
−5
−6
−7
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

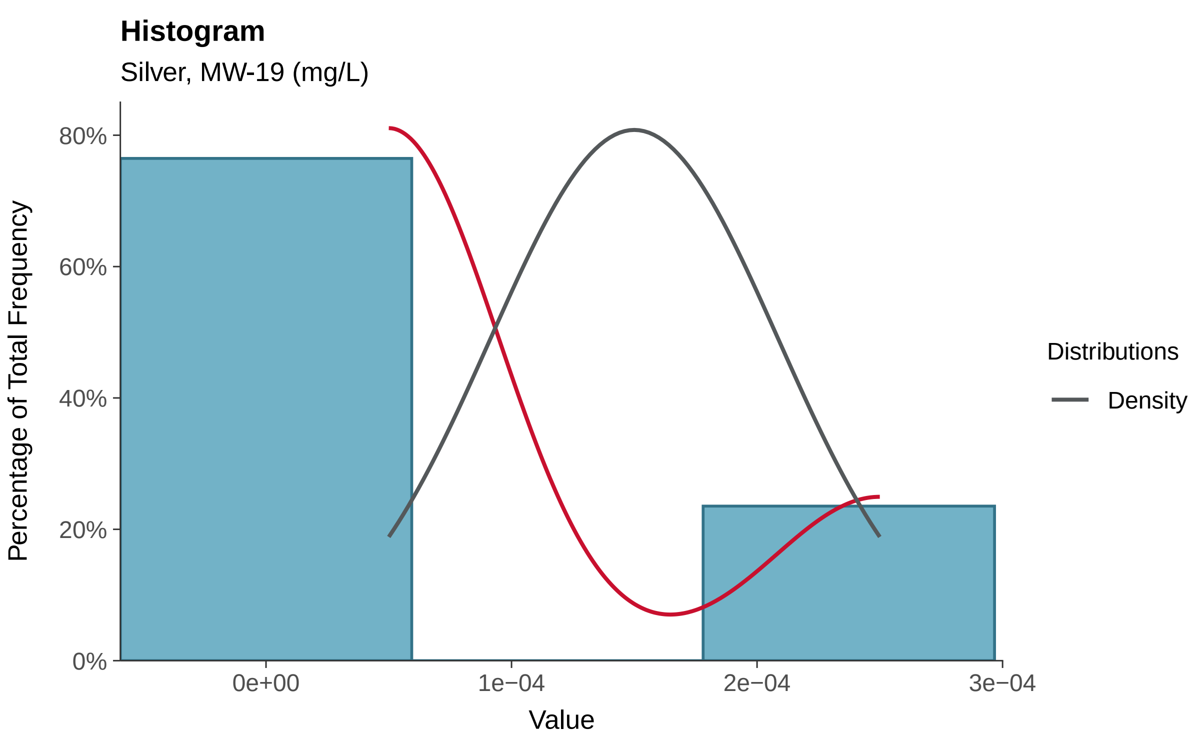

Trend Regression: Lognormal MLE
Nickel, MW-19 (mg/L)
log(Value)
−4
−5
−6
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear-Linear
Nickel, MW-19 (mg/L)
Value
0.015
0.010
0.005
0.000
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Part 115: Silver, MW-19

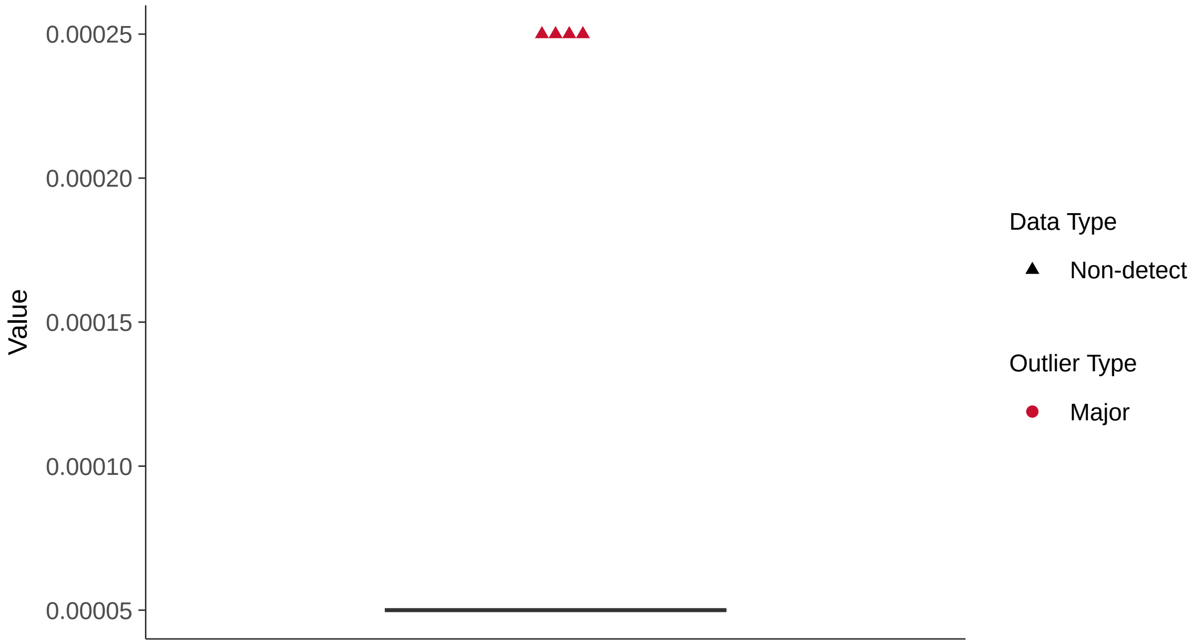
ID: 29_1_5_123





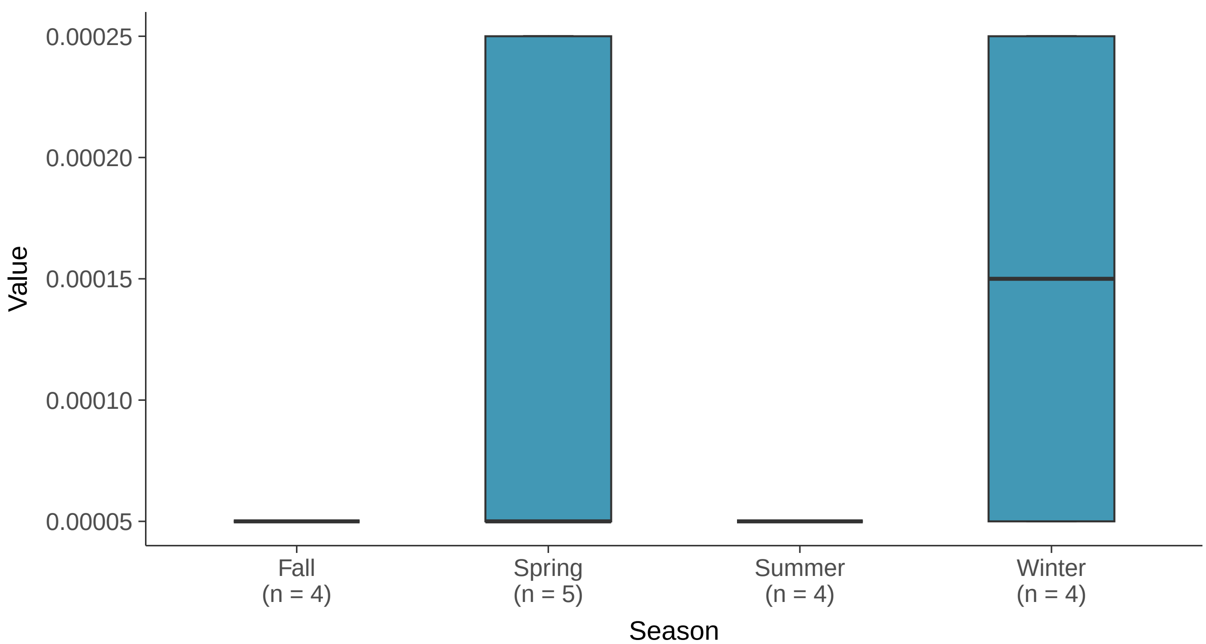
Boxplot

Silver, MW-19 (mg/L)



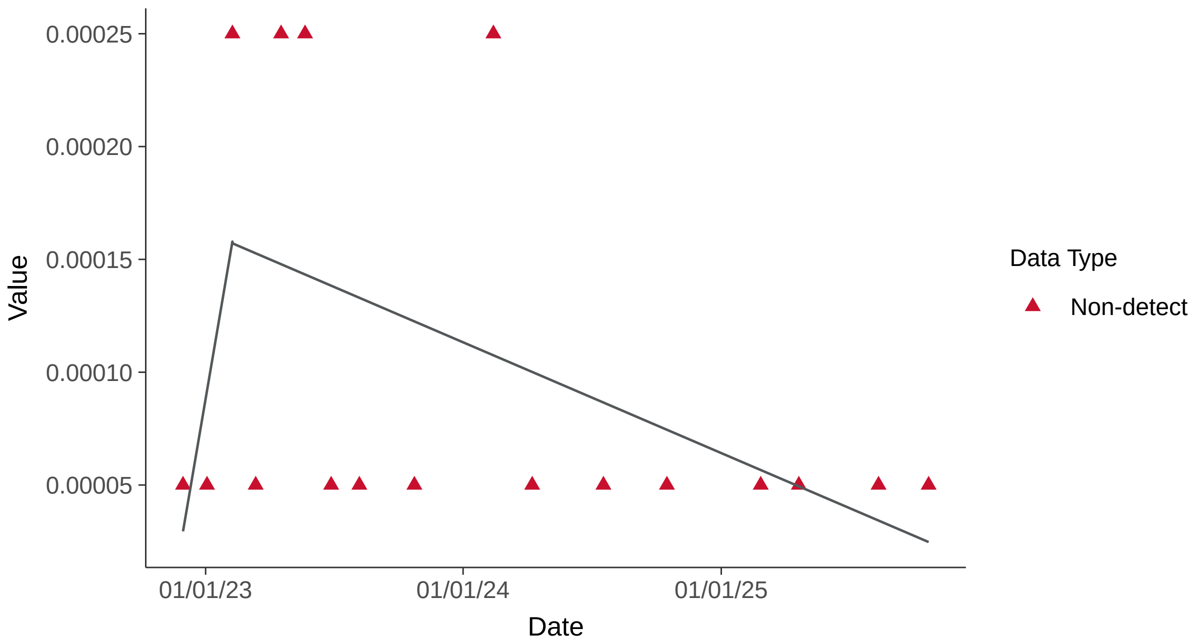
Boxplot by Season

Silver, MW-19 (mg/L)



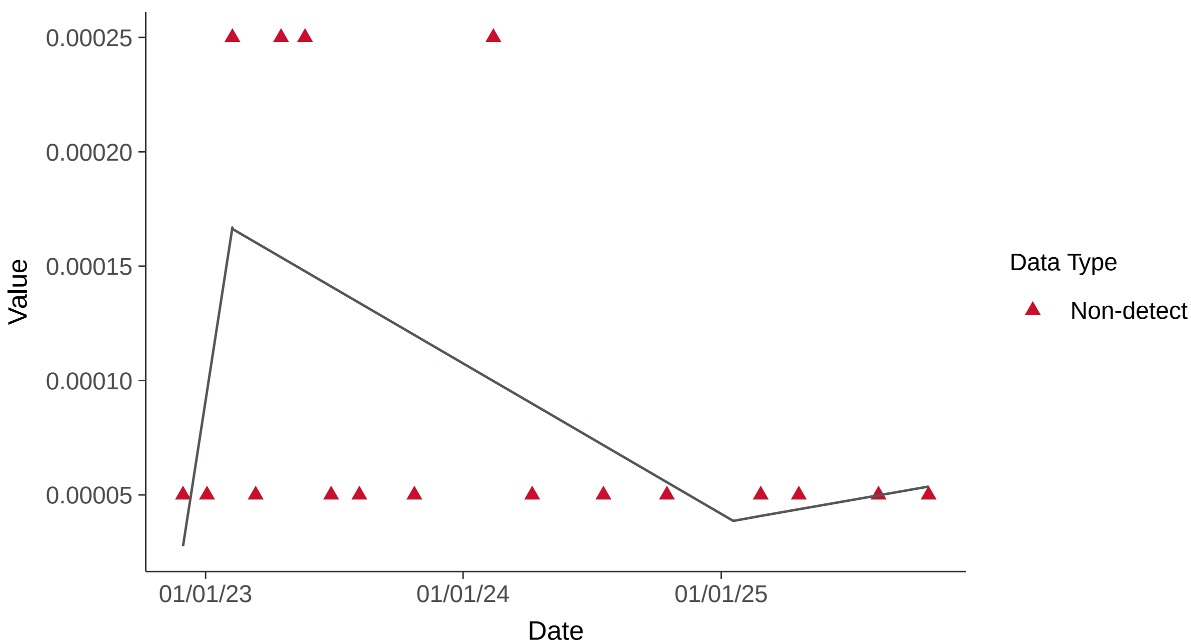
Trend Regression: Piecewise Linear-Linear

Silver, MW-19 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Silver, MW-19 (mg/L)

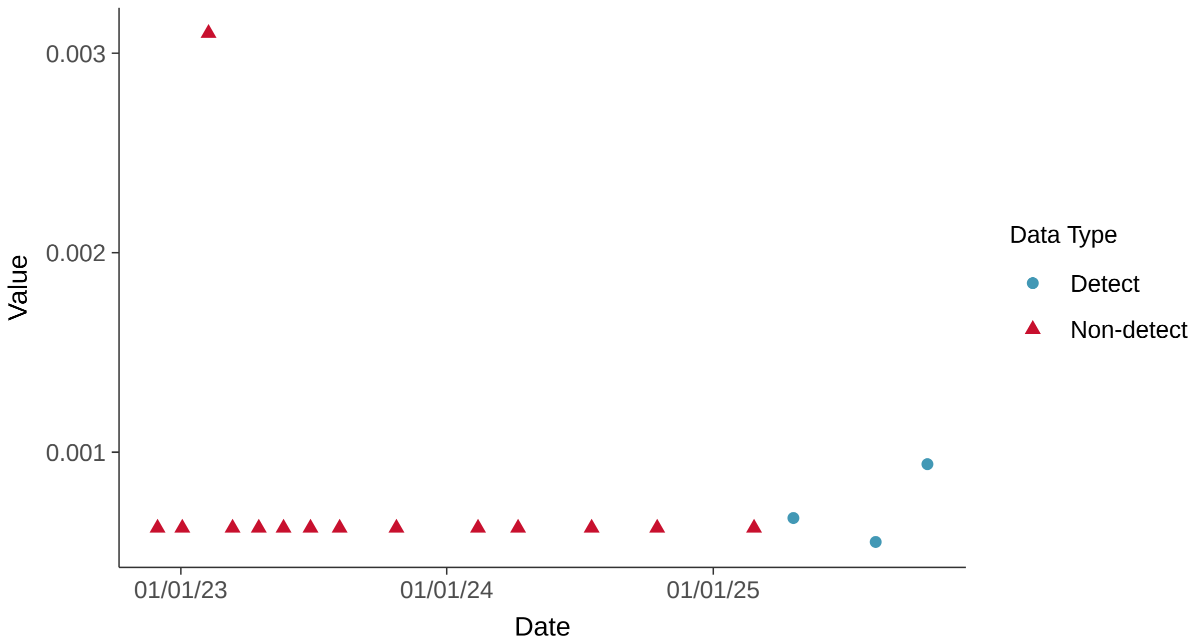


Part 115: Vanadium, MW-19

ID: 29_1_5_128

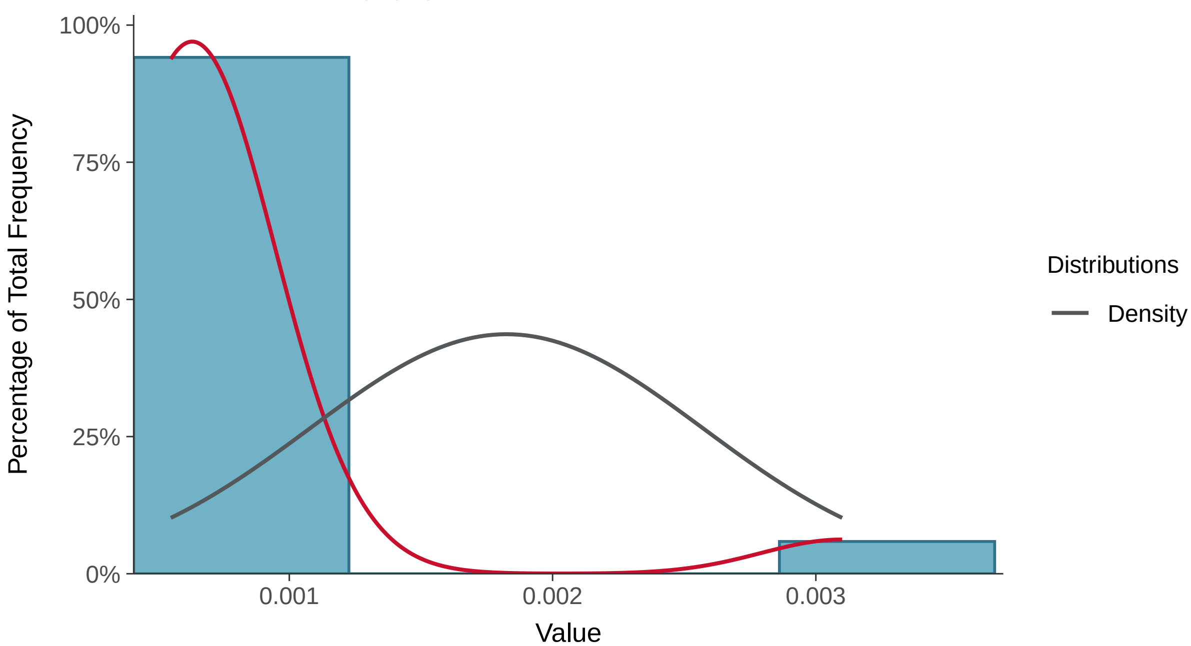
Scatter Plot

Vanadium, MW-19 (mg/L)



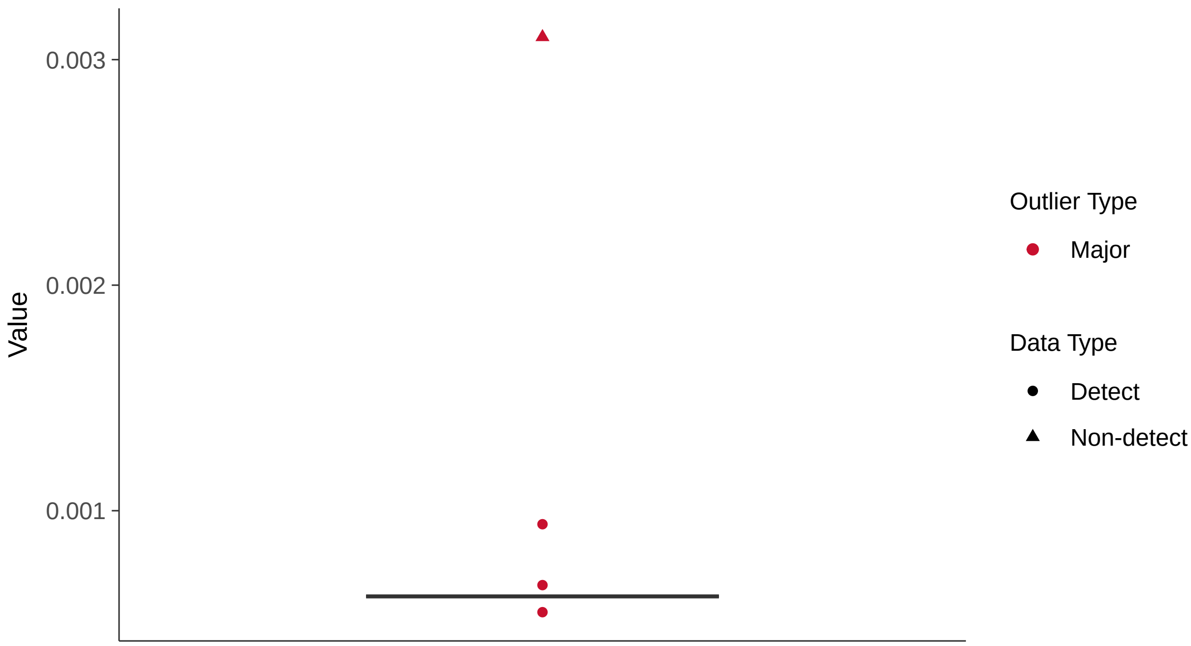
Histogram

Vanadium, MW-19 (mg/L)



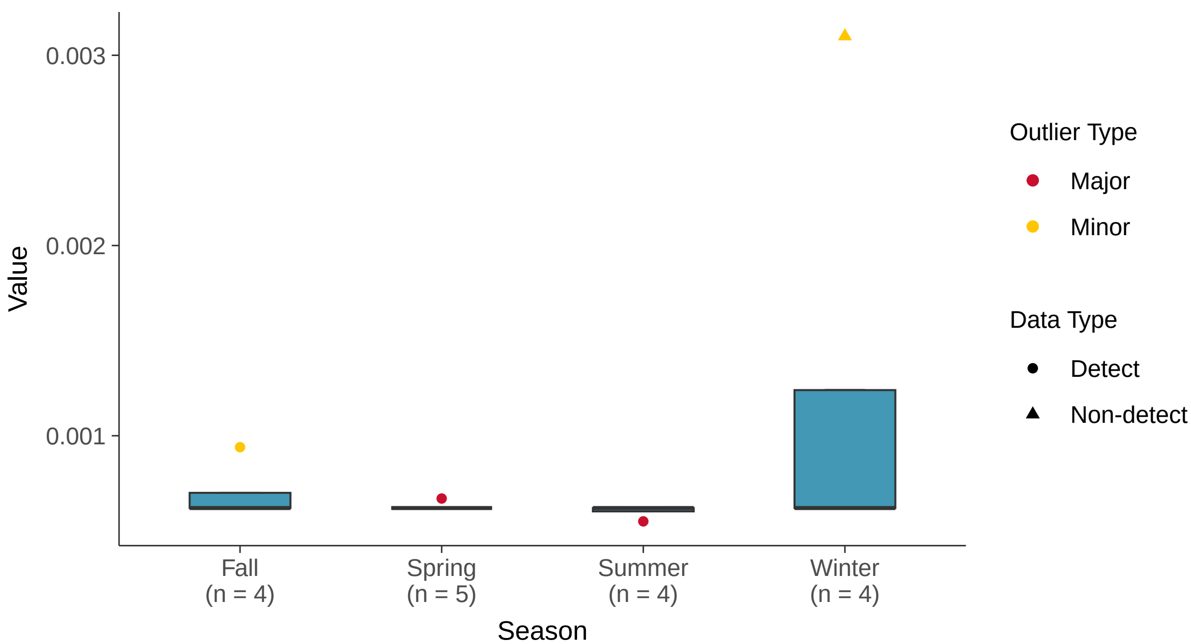
Boxplot

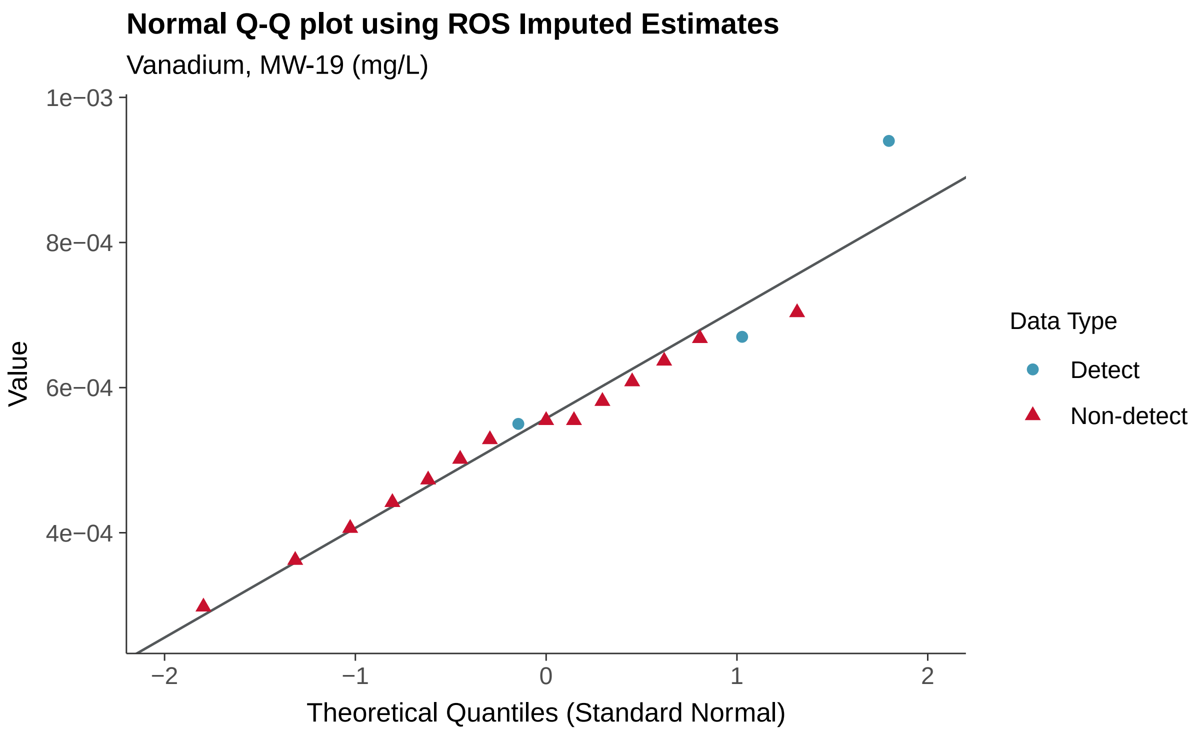
Vanadium, MW-19 (mg/L)

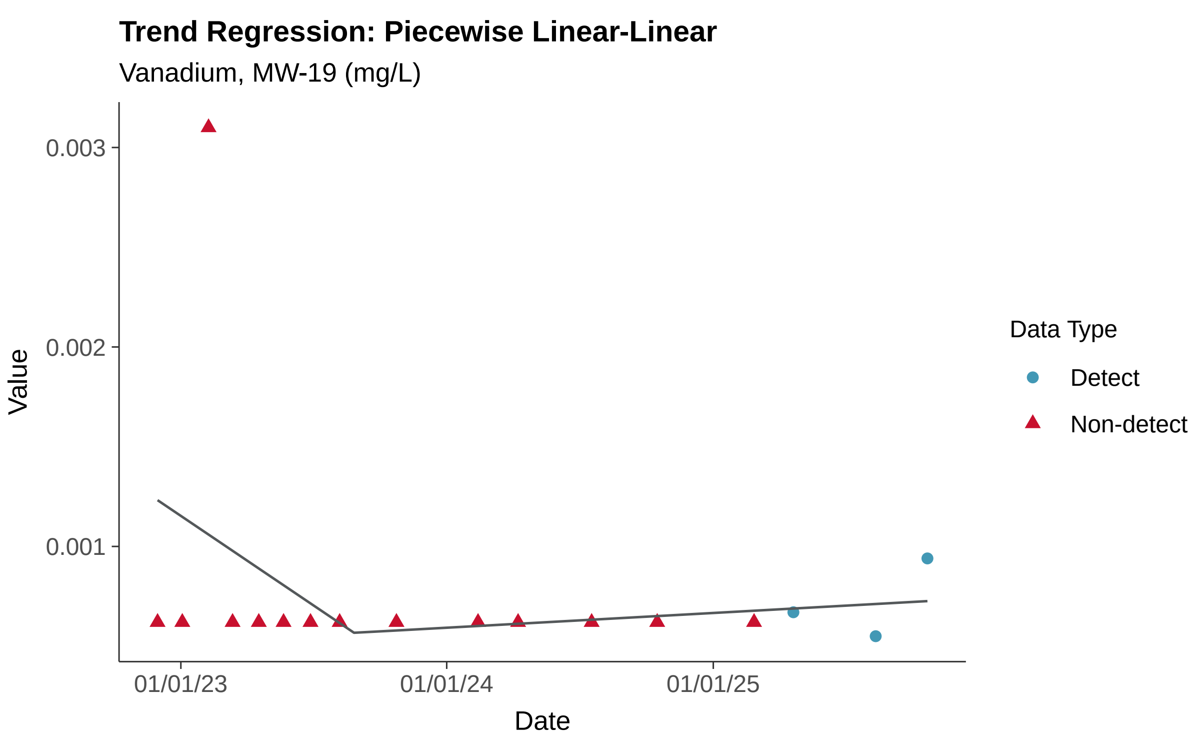


Boxplot by Season

Vanadium, MW-19 (mg/L)



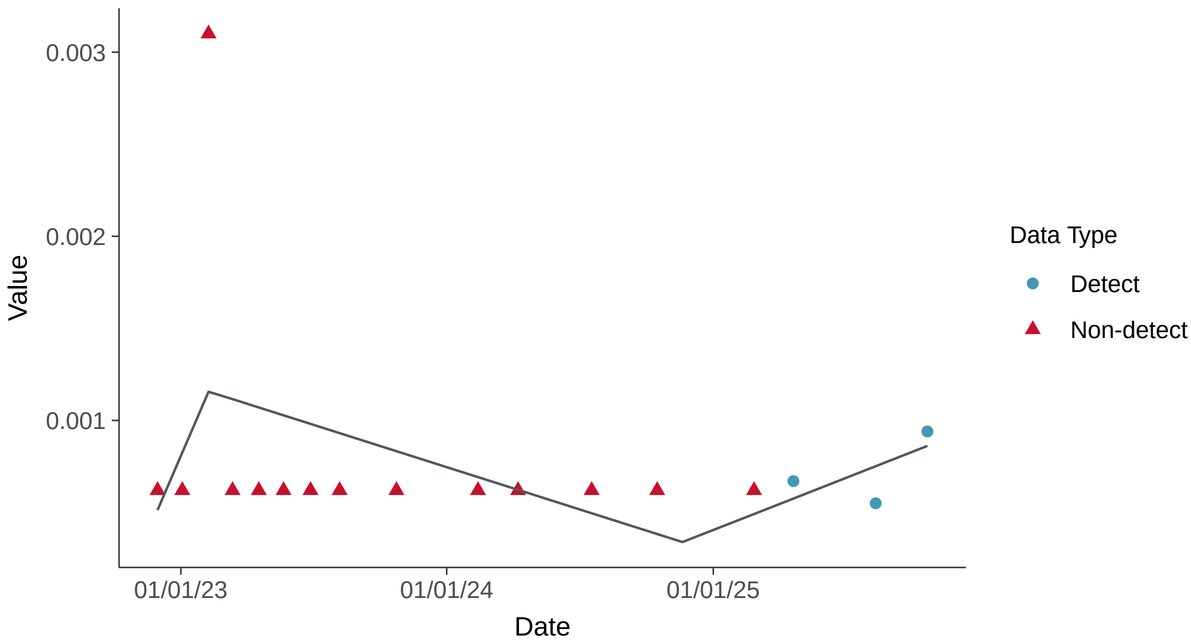

Normal Q-Q plot using ROS Imputed Estimates
Vanadium, MW-19 (mg/L)
Value
1e−03
8e−04
6e−04
4e−04
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Vanadium, MW-19 (mg/L)
Value
0.003
0.002
0.001
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Grand Haven
Downgradient Wells as of October 2025

Trend Regression: Piecewise Linear-Linear-Linear

Vanadium, MW-19 (mg/L)

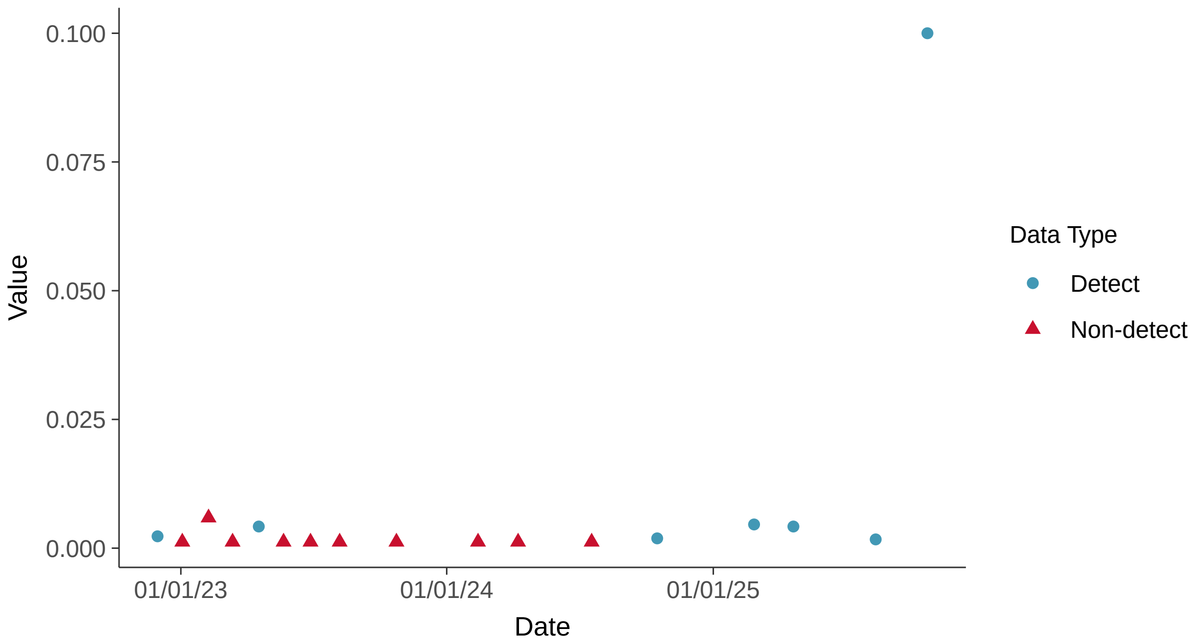


Part 115: Zinc, MW-19

ID: 29_1_5_129

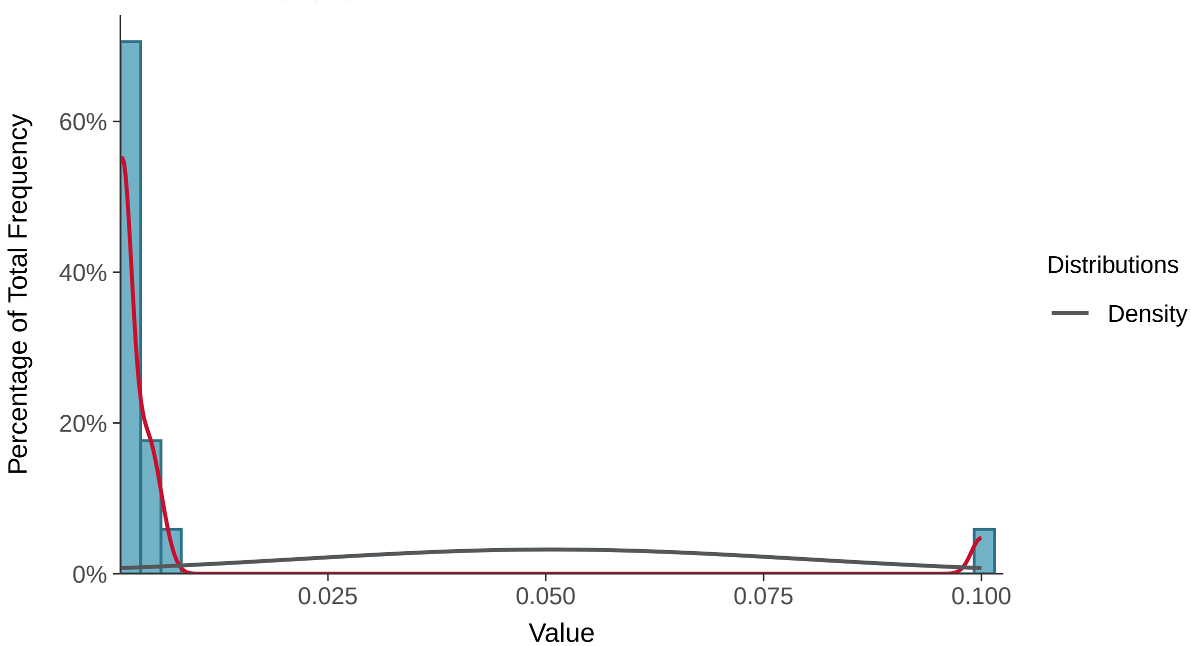
Scatter Plot

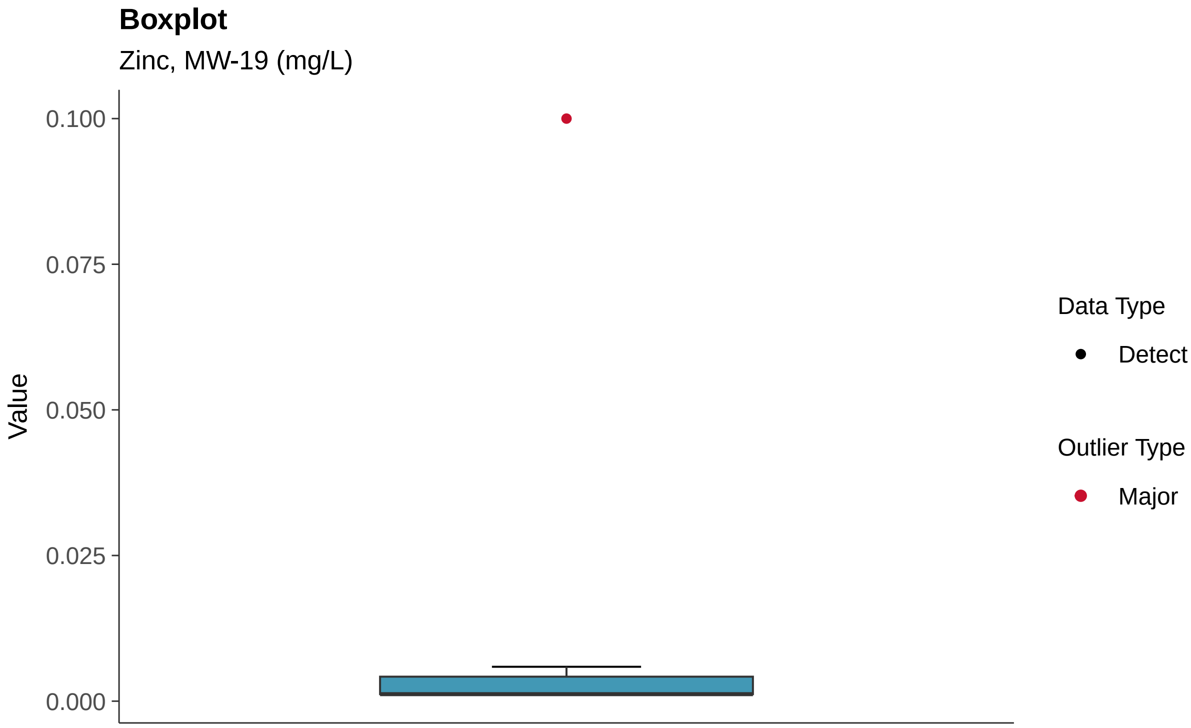
Zinc, MW-19 (mg/L)

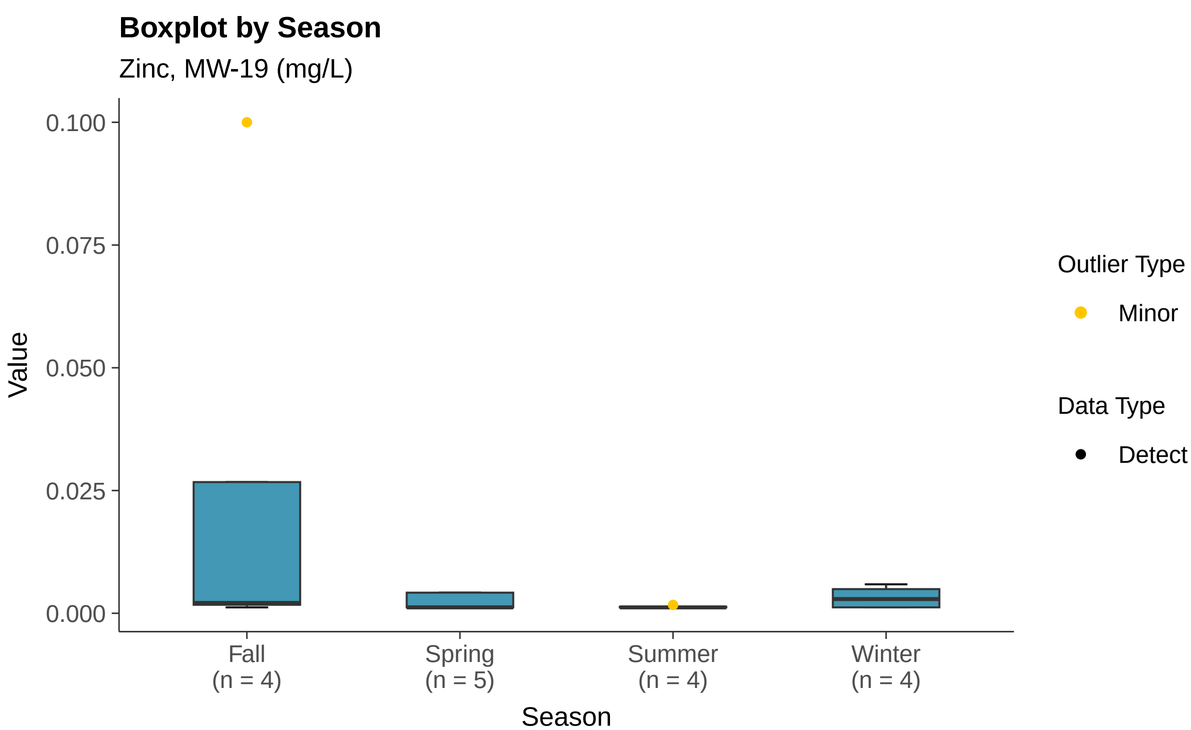


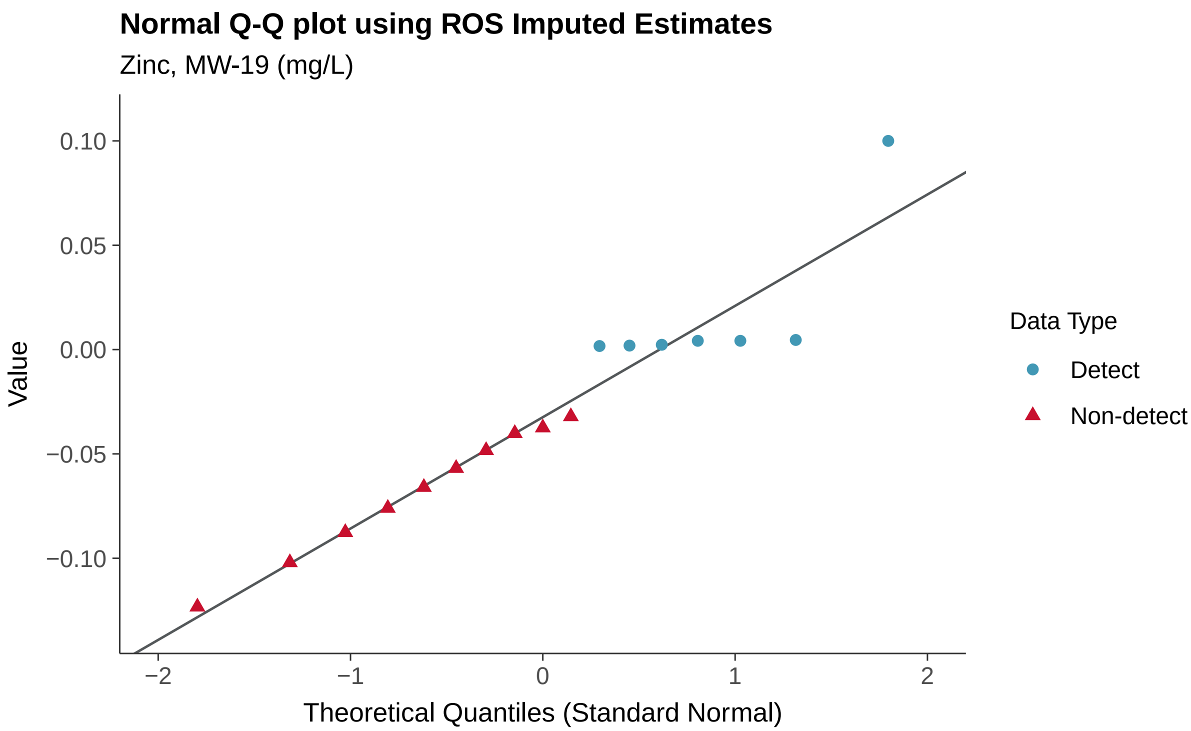
Histogram

Zinc, MW-19 (mg/L)



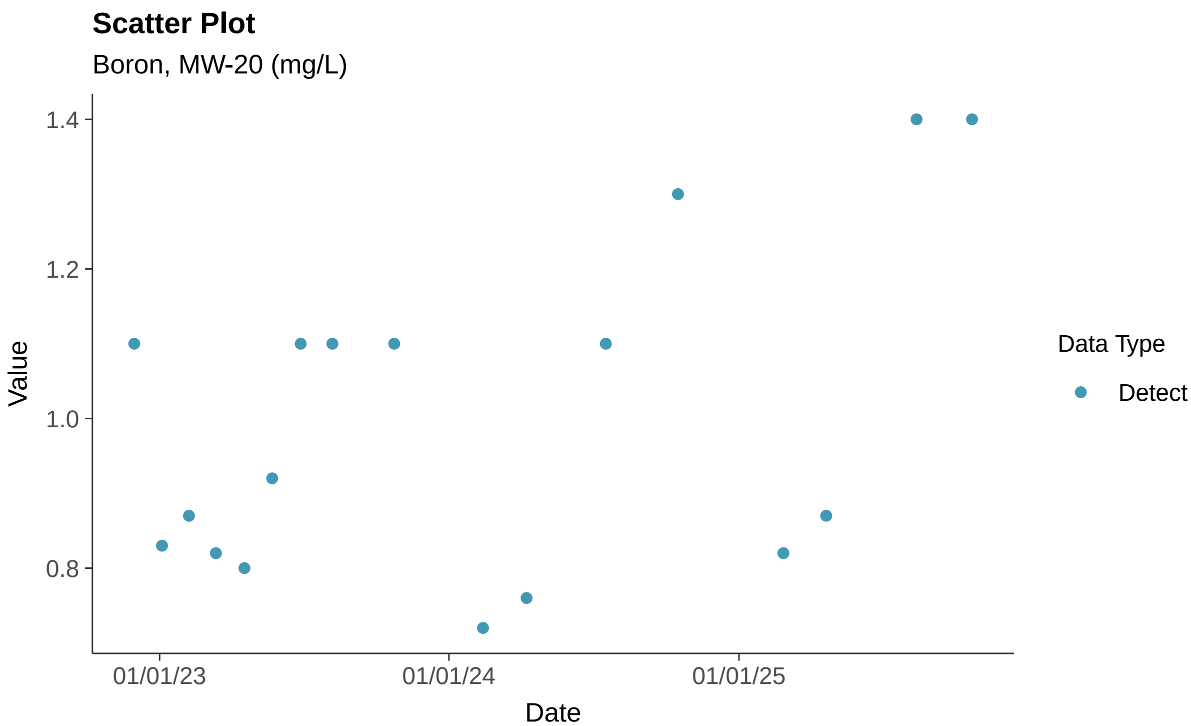

Boxplot
Zinc, MW-19 (mg/L)
0.100
0.075
0.050
0.025
0.000
Value
Data Type
Detect
Outlier Type
Major

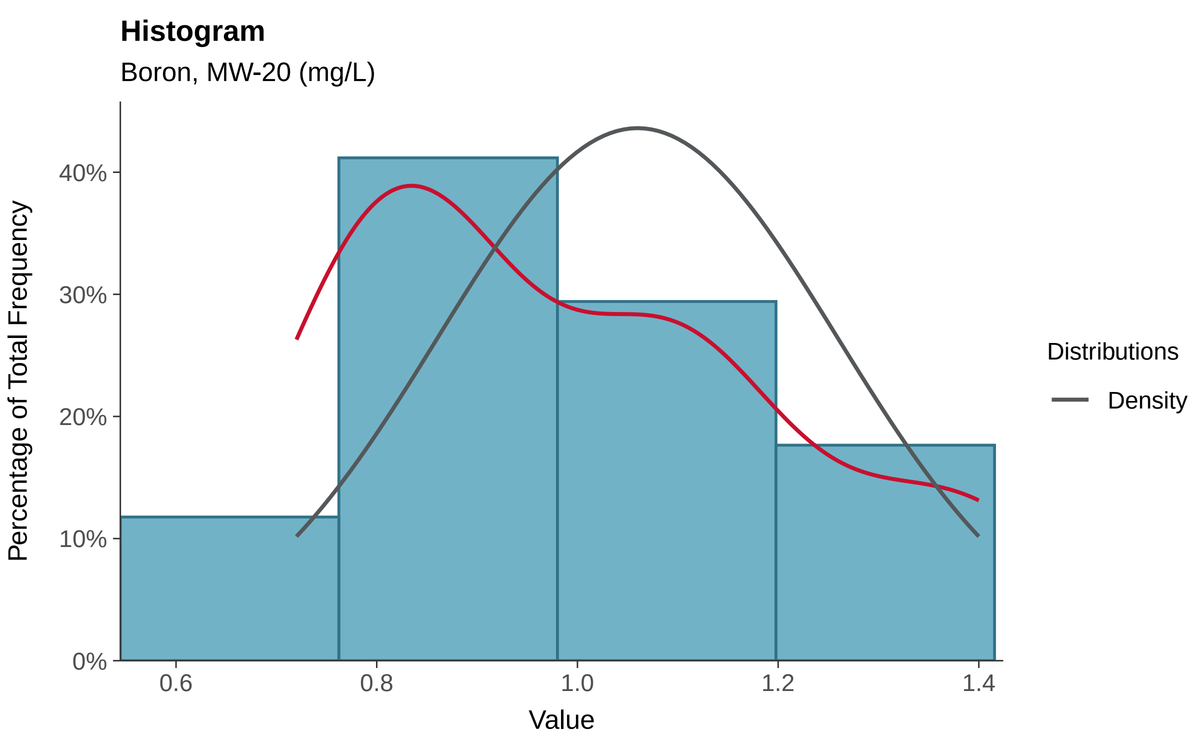

Boxplot by Season
Zinc, MW-19 (mg/L)
0.100
0.075
0.050
0.025
0.000
Value
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Minor
Data Type
Detect


Normal Q-Q plot using ROS Imputed Estimates
Zinc, MW-19 (mg/L)
Value
0.10
0.05
0.00
−0.05
−0.10
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

Appendix III: Boron, MW-20

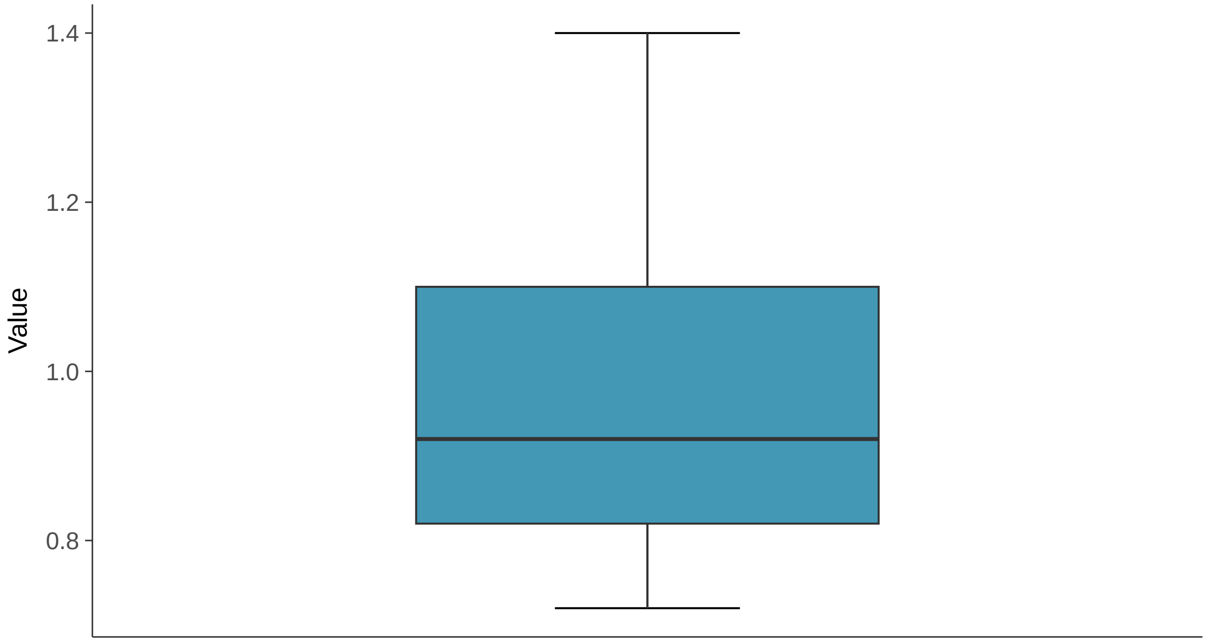
ID: 30_1_3_105





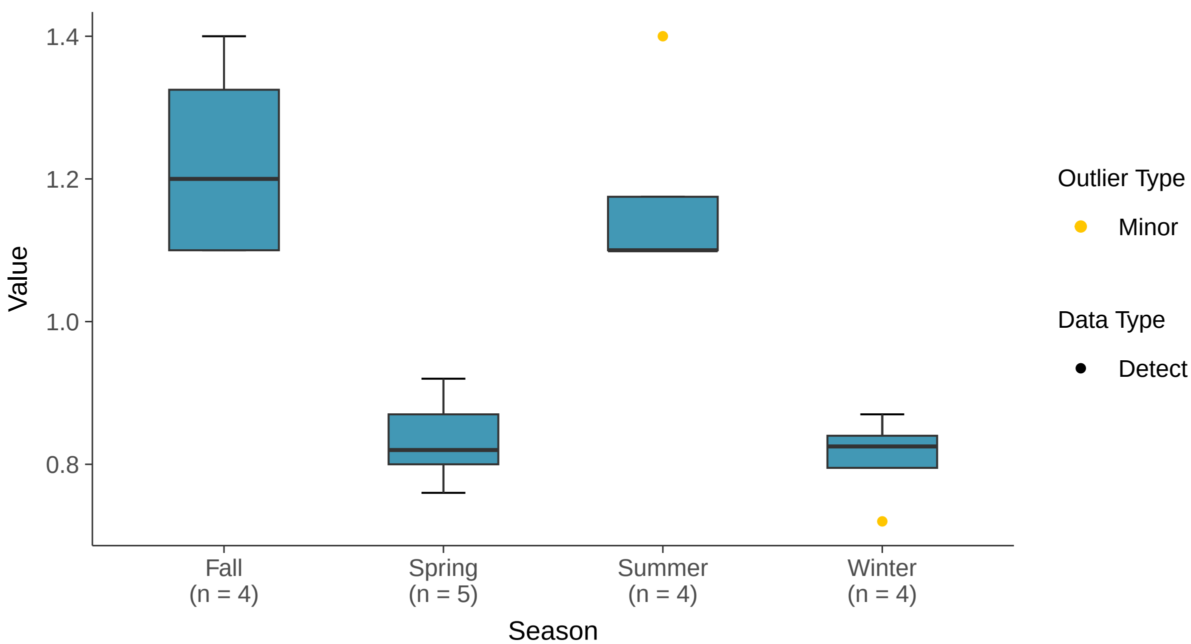
Boxplot

Boron, MW-20 (mg/L)



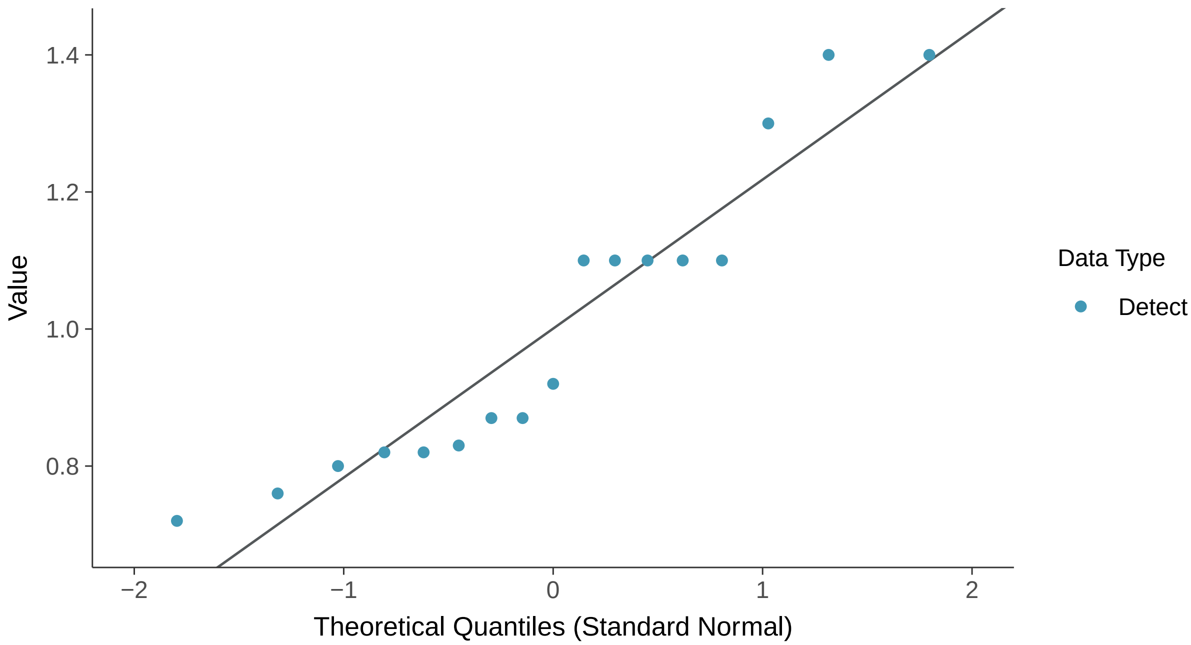
Boxplot by Season

Boron, MW-20 (mg/L)



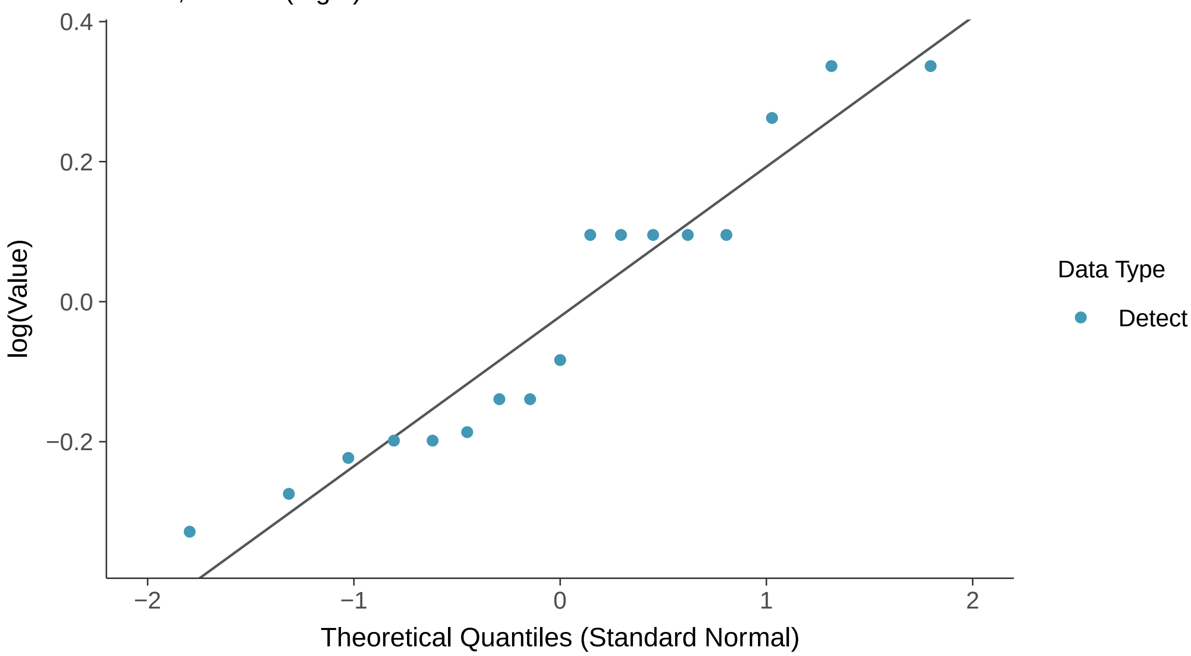
Normal Q-Q plot

Boron, MW-20 (mg/L)



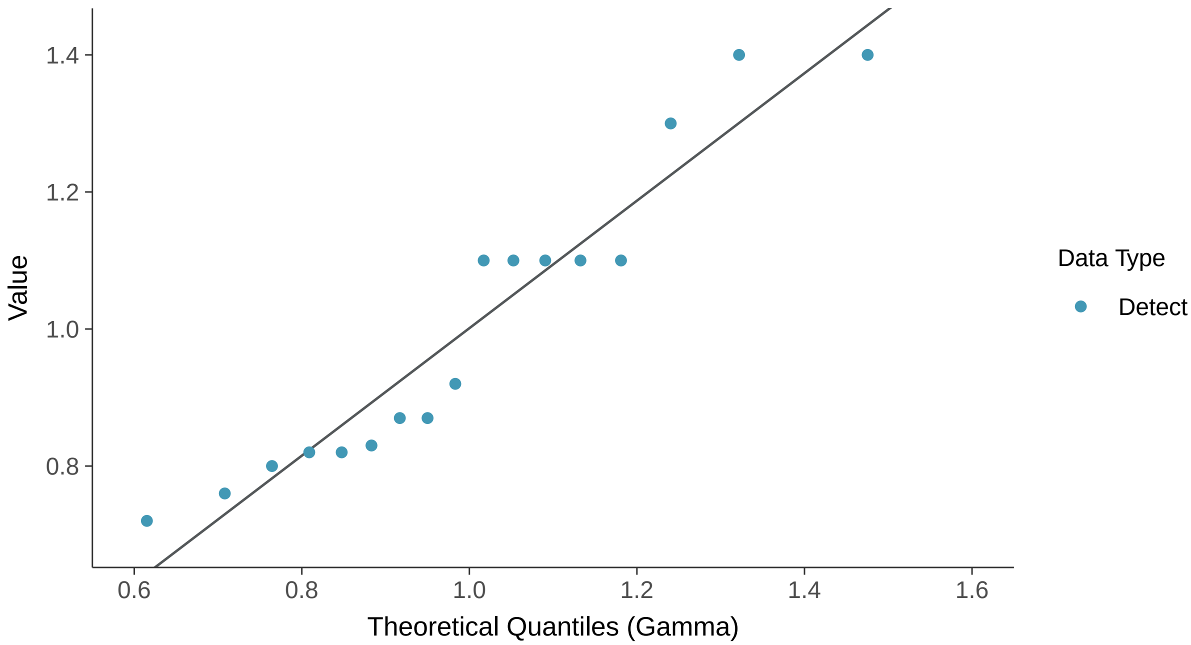
Lognormal Q-Q plot

Boron, MW-20 (mg/L)



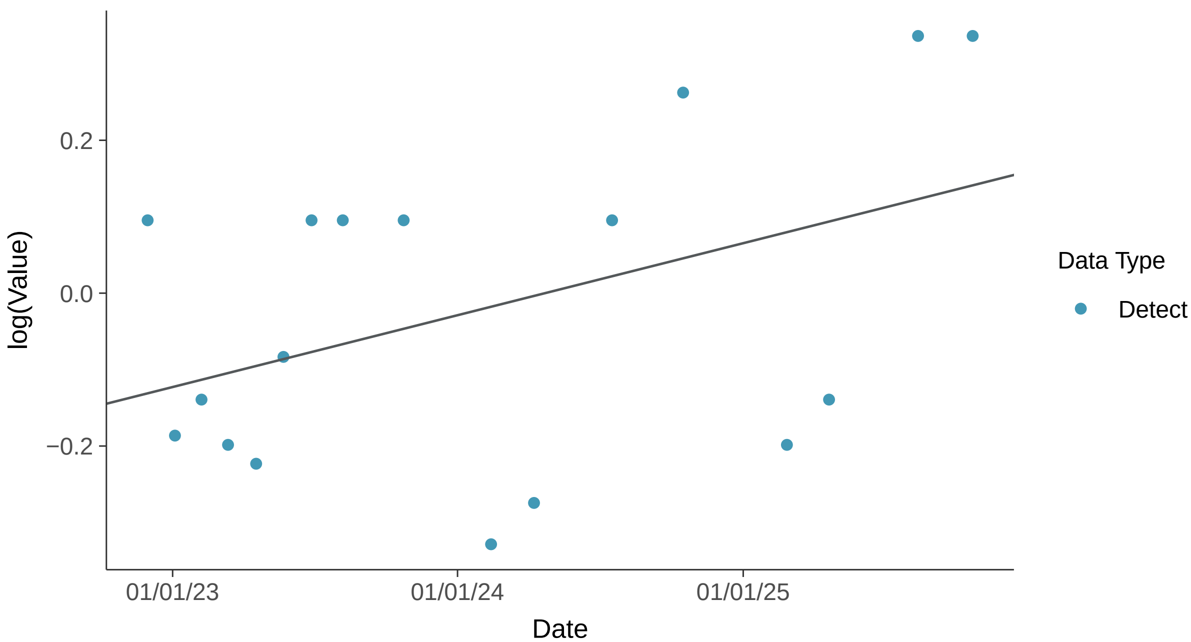
Gamma Q-Q plot

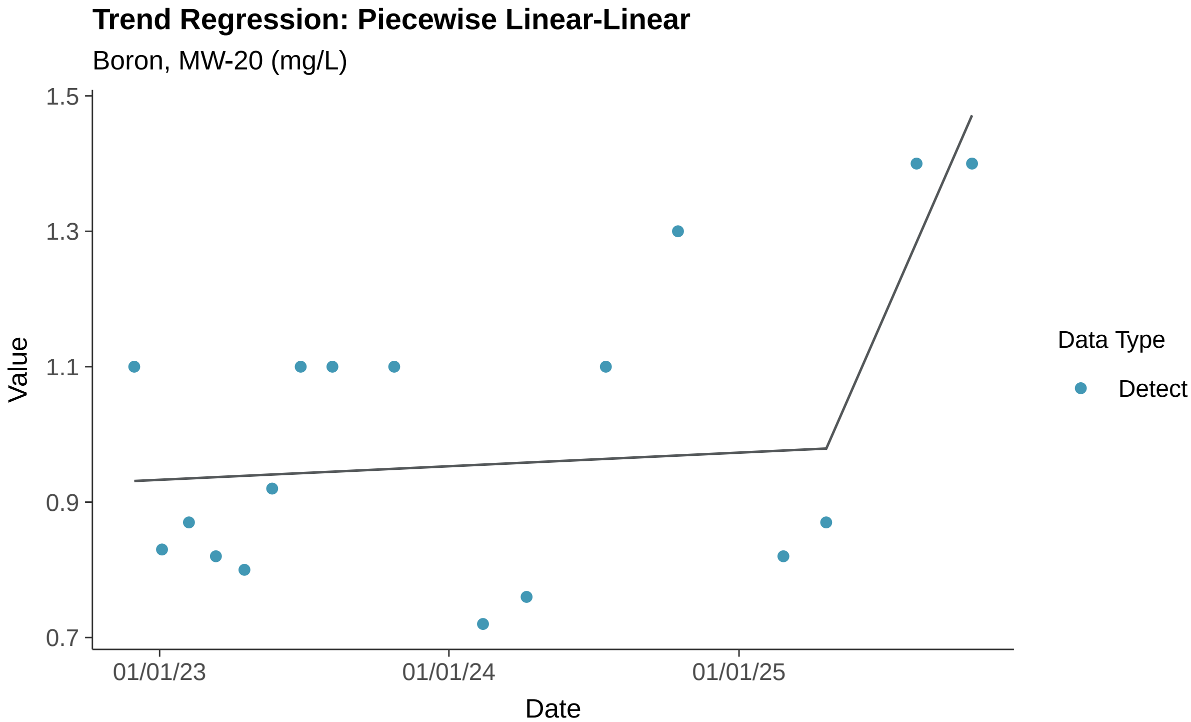
Boron, MW-20 (mg/L)



Trend Regression: Lognormal MLE

Boron, MW-20 (mg/L)



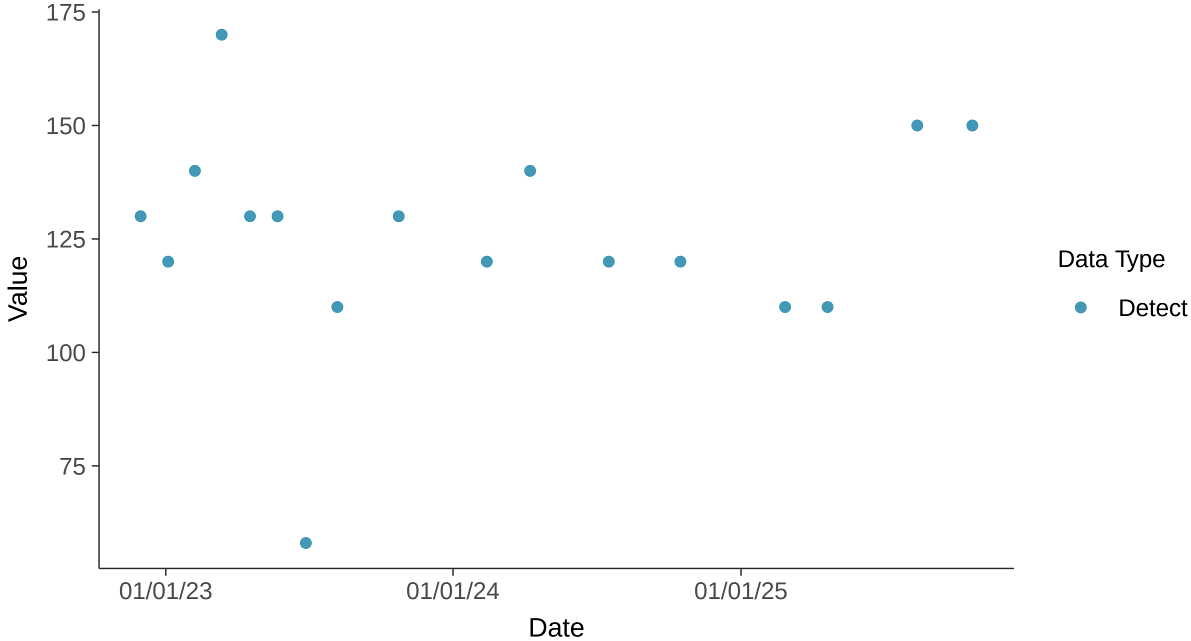

Trend Regression: Piecewise Linear-Linear
Boron, MW-20 (mg/L)
1.5
1.3
1.1
0.9
0.7
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Appendix III: Calcium, MW-20

ID: 30_1_3_107

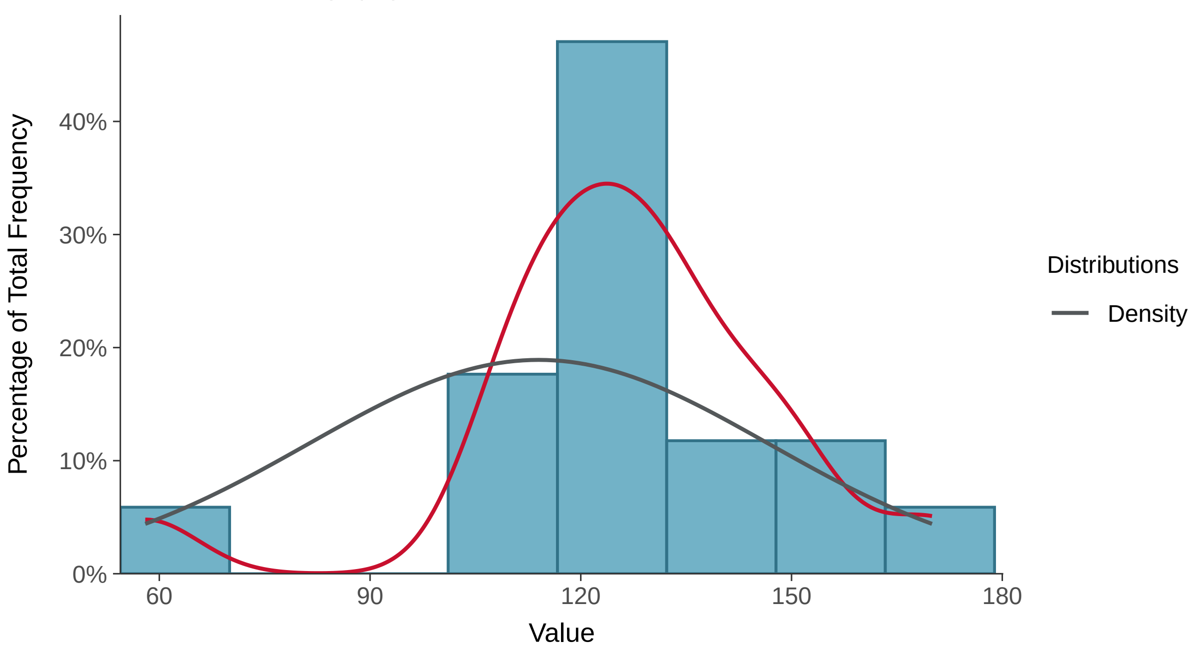
Scatter Plot

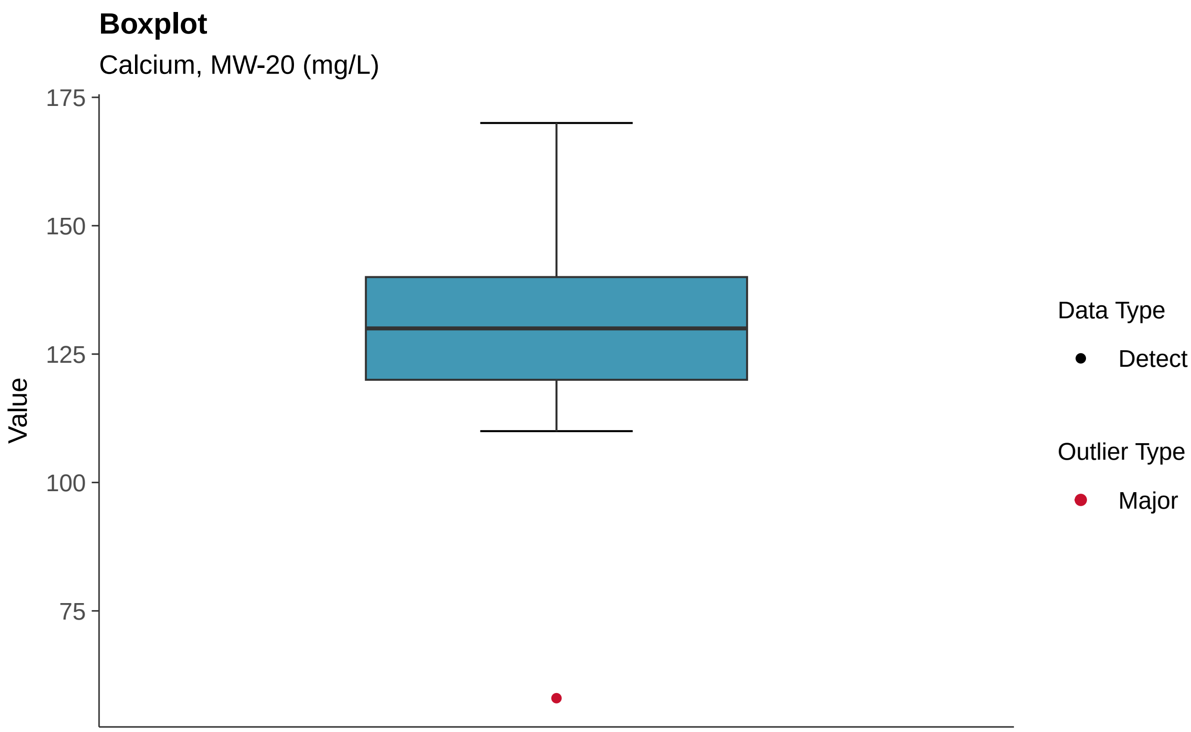
Calcium, MW-20 (mg/L)

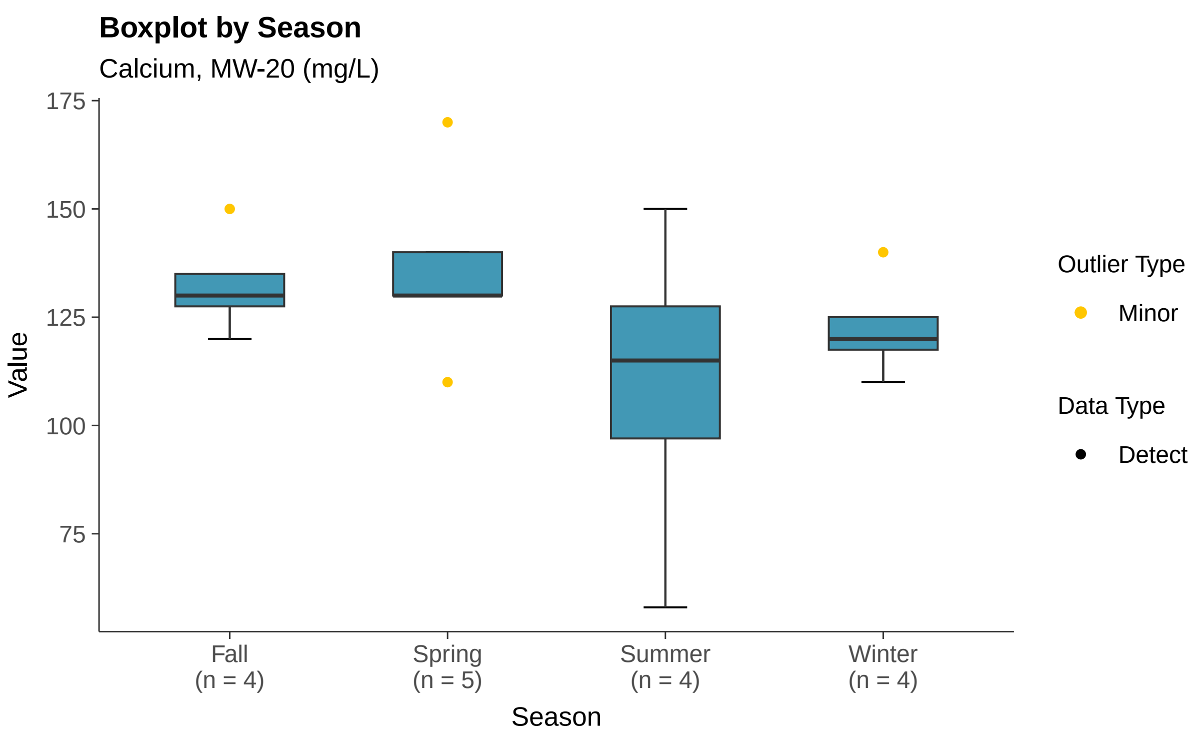


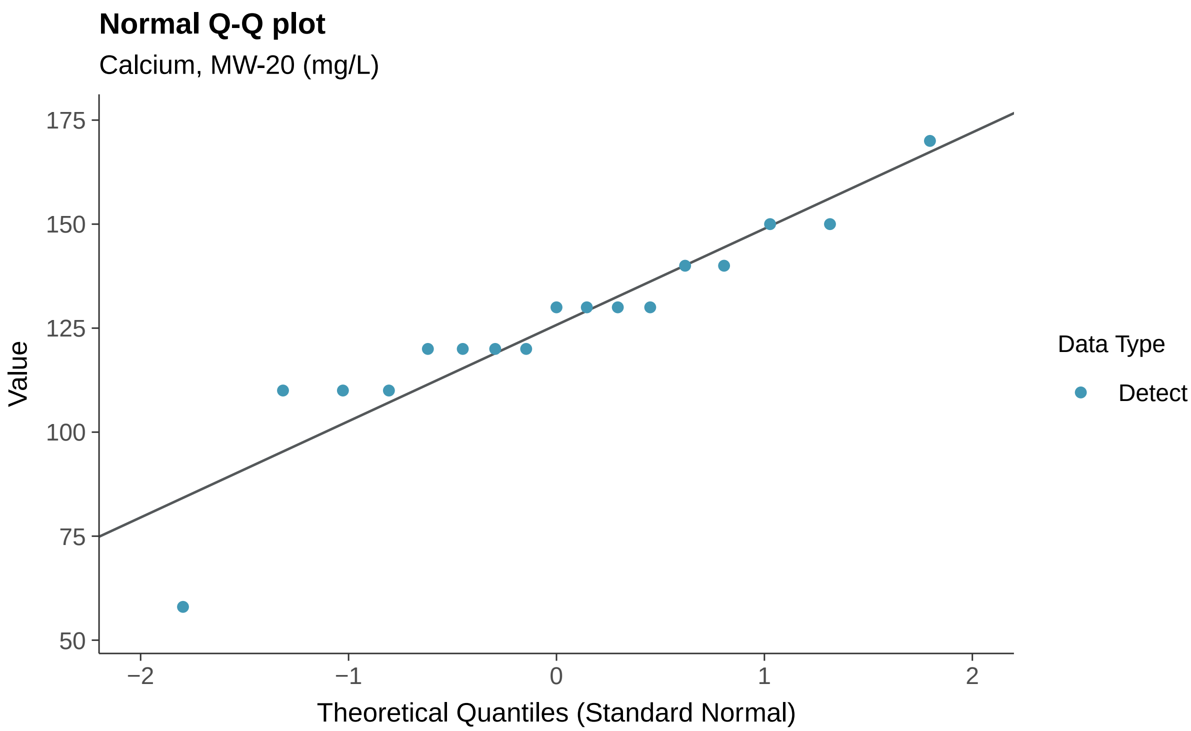
Histogram

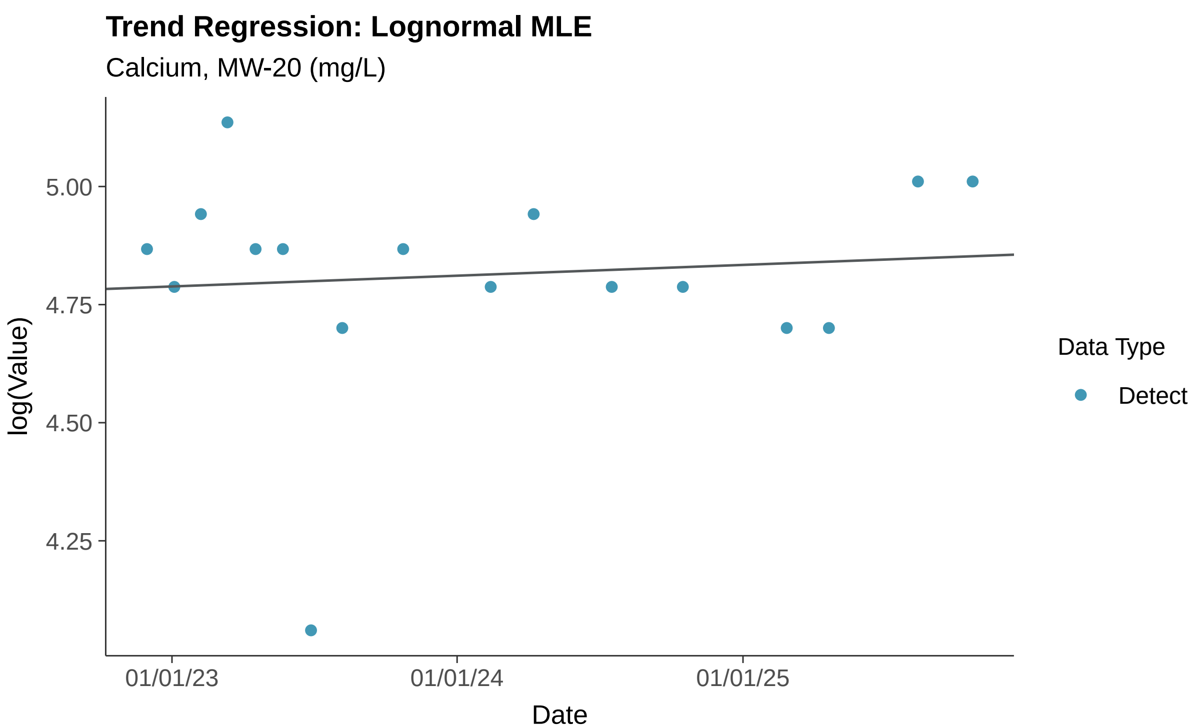
Calcium, MW-20 (mg/L)




Boxplot
Calcium, MW-20 (mg/L)
175
150
125
100
75
Value
Data Type
Detect
Outlier Type
Major

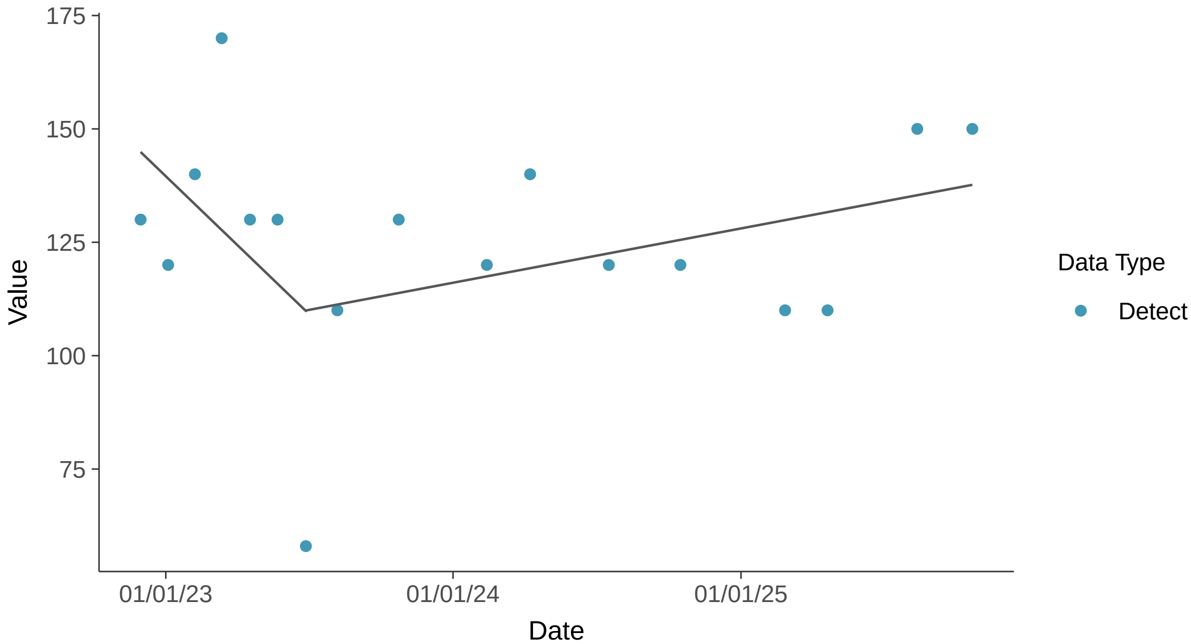

Boxplot by Season
Calcium, MW-20 (mg/L)
175
150
125
100
75
Value
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Minor
Data Type
Detect


Normal Q-Q plot
Calcium, MW-20 (mg/L)
Value
175
150
125
100
75
50
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Lognormal MLE
Calcium, MW-20 (mg/L)
log(Value)
5.00
4.75
4.50
4.25
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

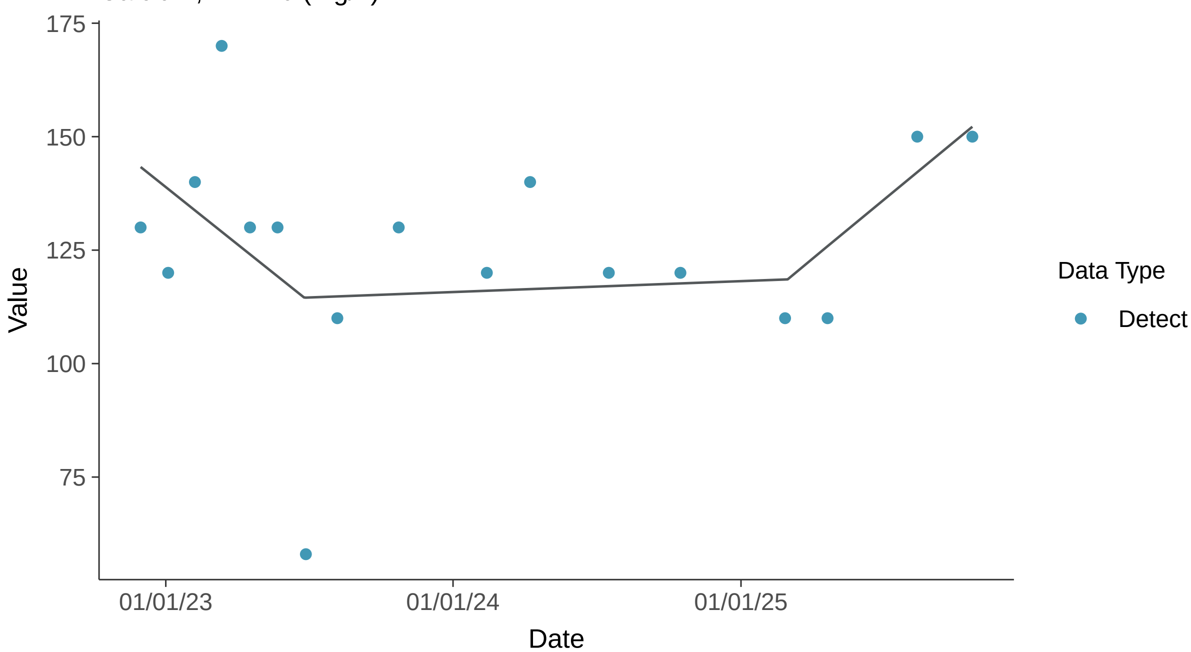
Trend Regression: Piecewise Linear-Linear

Calcium, MW-20 (mg/L)



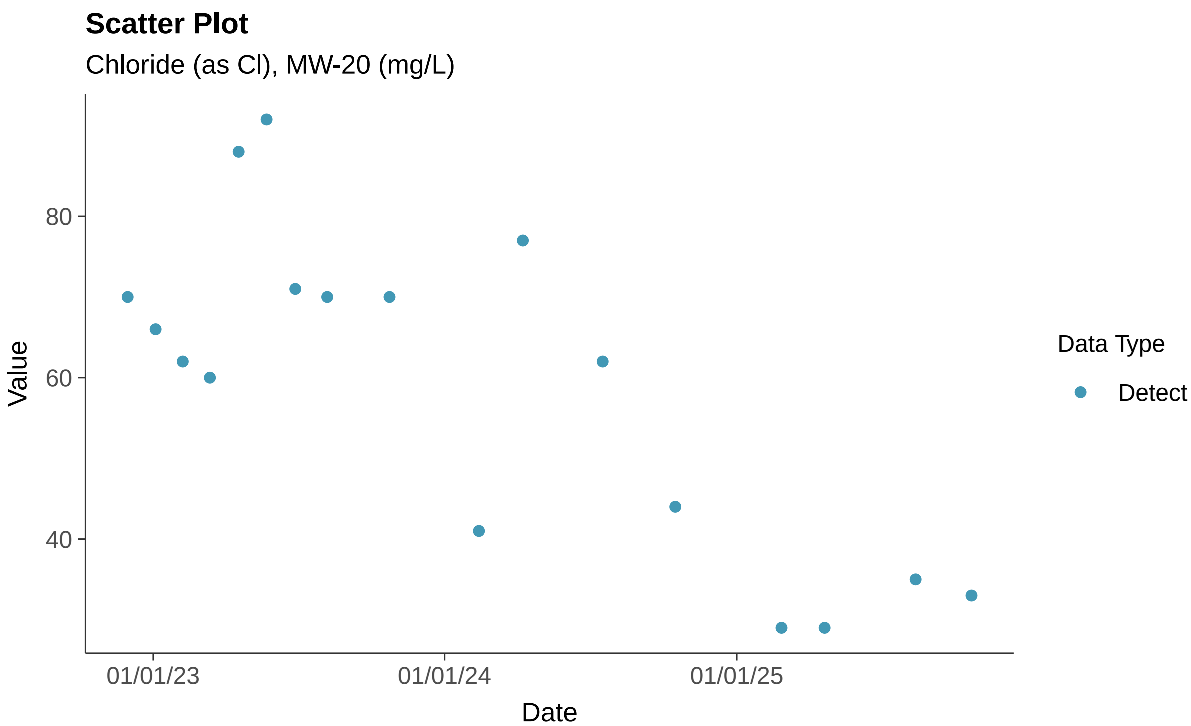
Trend Regression: Piecewise Linear-Linear-Linear

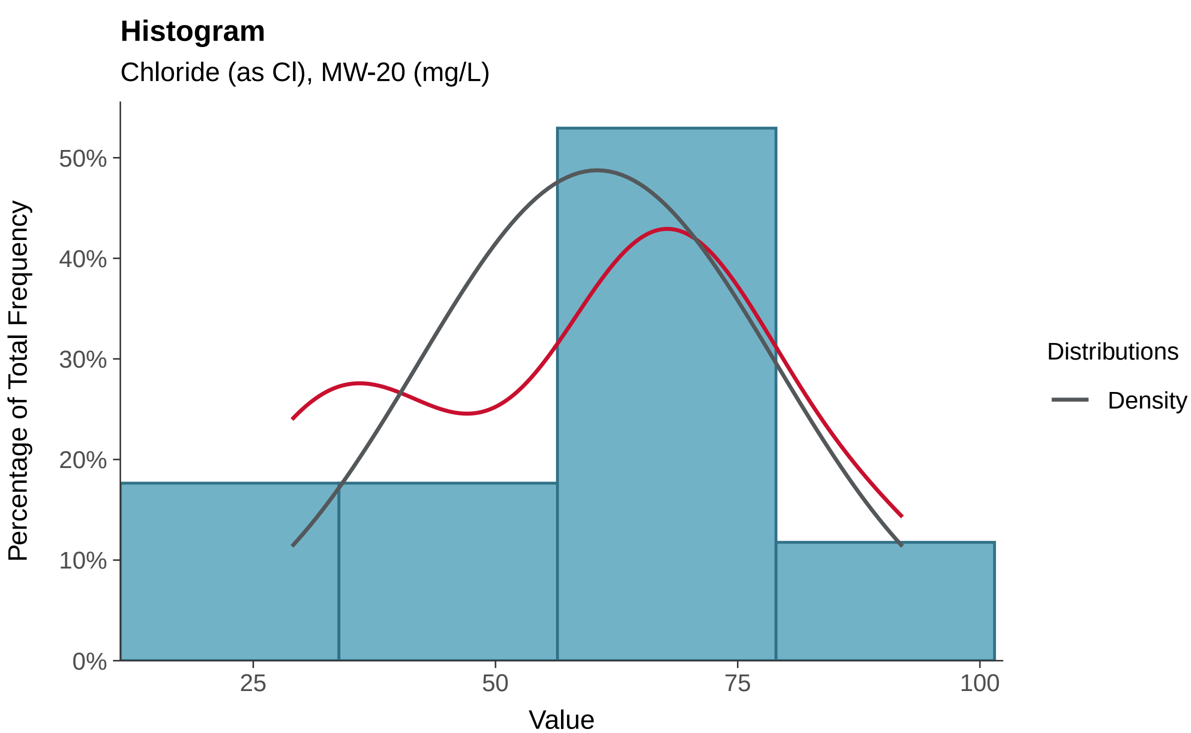
Calcium, MW-20 (mg/L)



Appendix III: Chloride (as Cl), MW-20

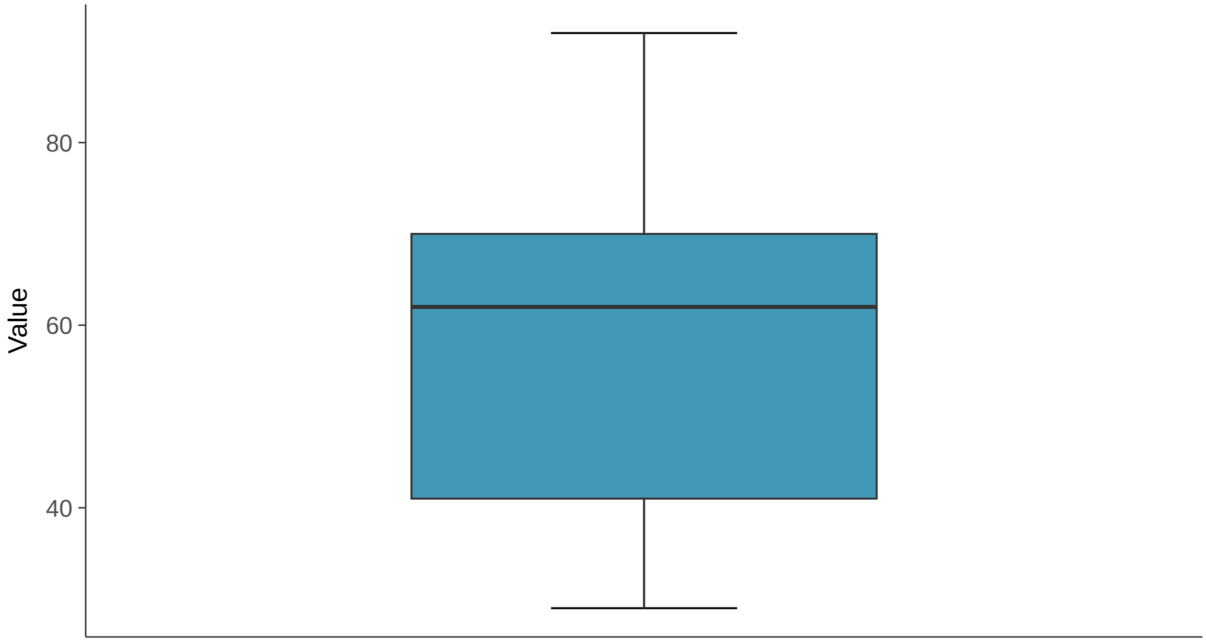
ID: 30_1_3_108





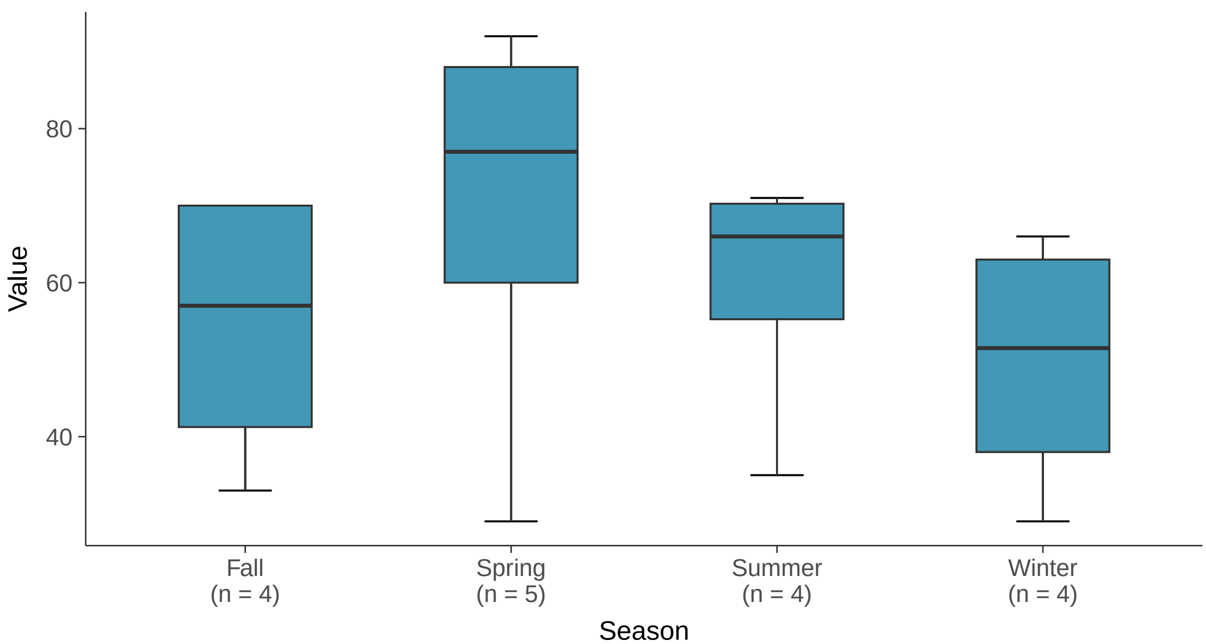
Boxplot

Chloride (as Cl), MW-20 (mg/L)



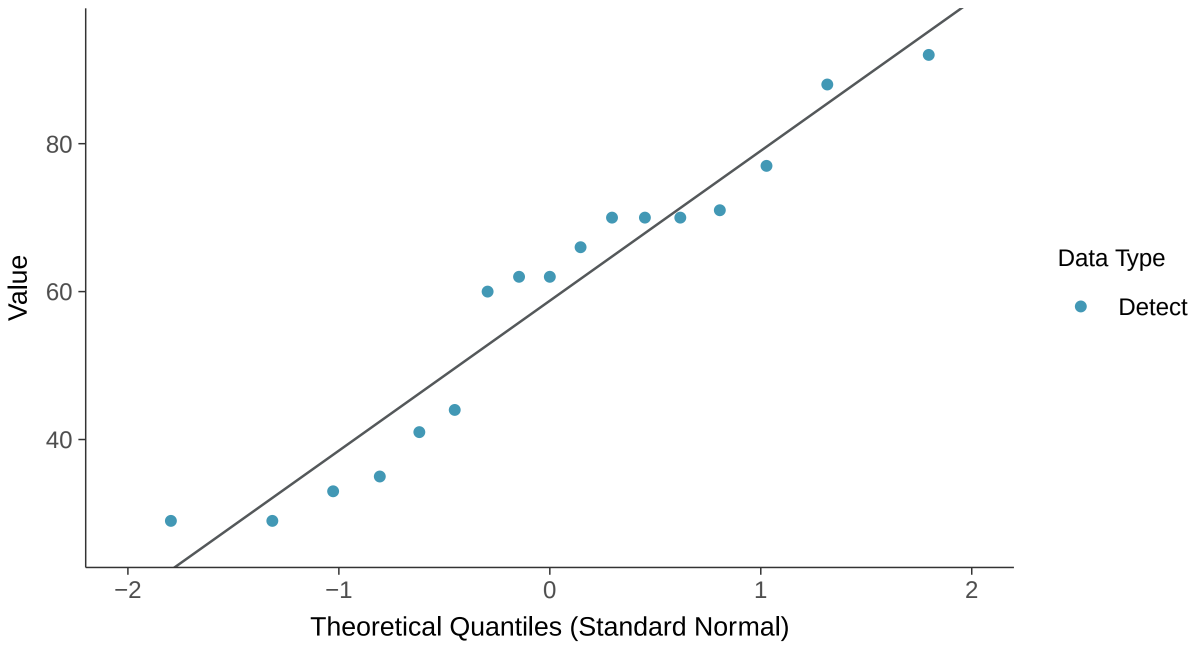
Boxplot by Season

Chloride (as Cl), MW-20 (mg/L)



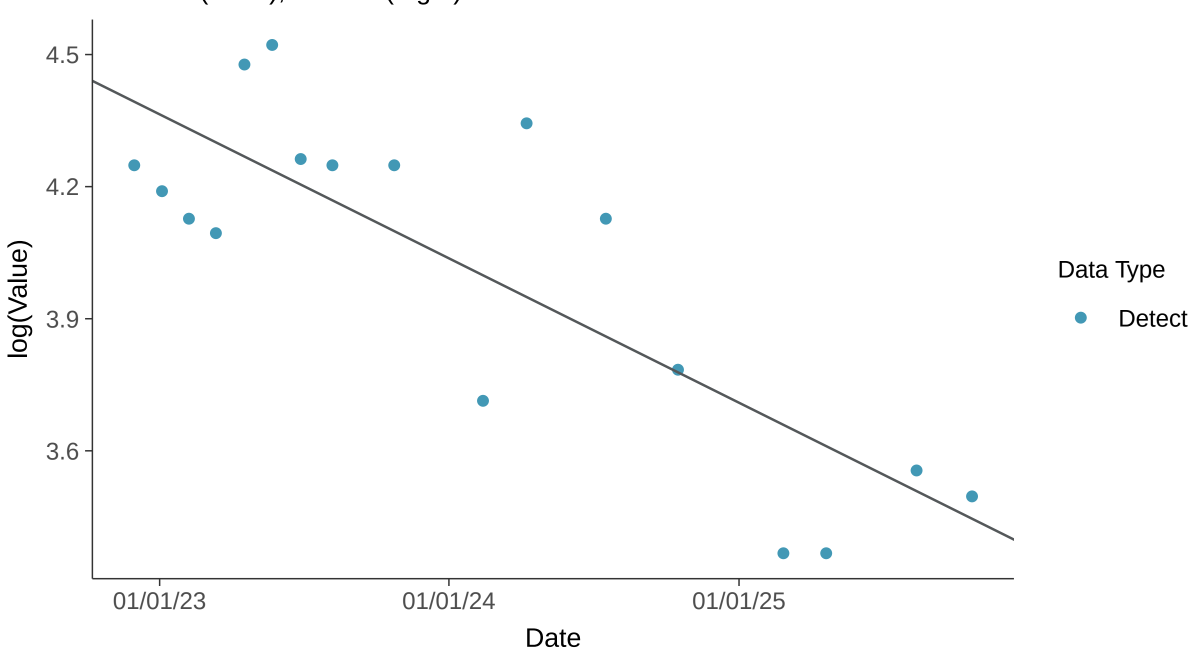
Normal Q-Q plot

Chloride (as Cl), MW-20 (mg/L)



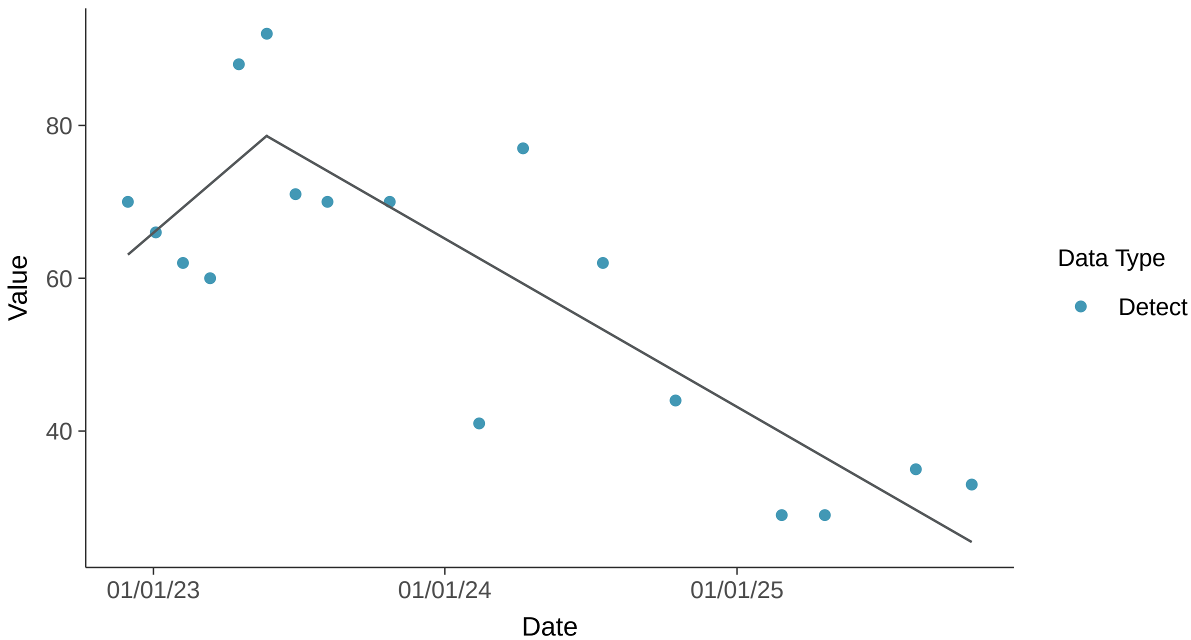
Trend Regression: Lognormal MLE

Chloride (as Cl), MW-20 (mg/L)



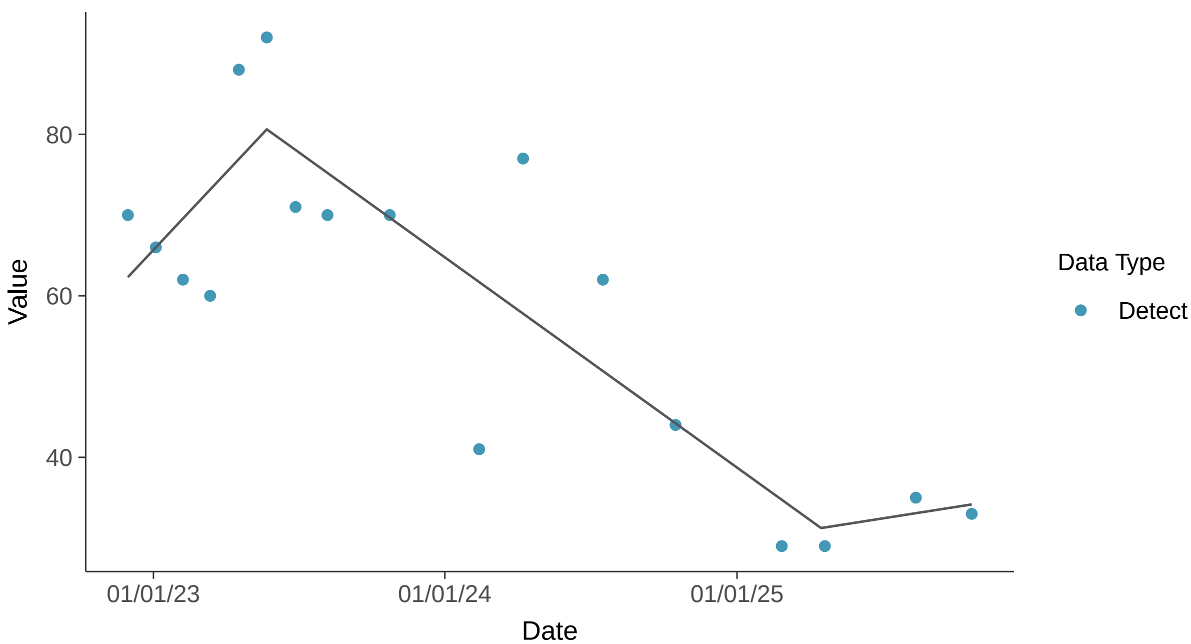
Trend Regression: Piecewise Linear-Linear

Chloride (as Cl), MW-20 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Chloride (as Cl), MW-20 (mg/L)

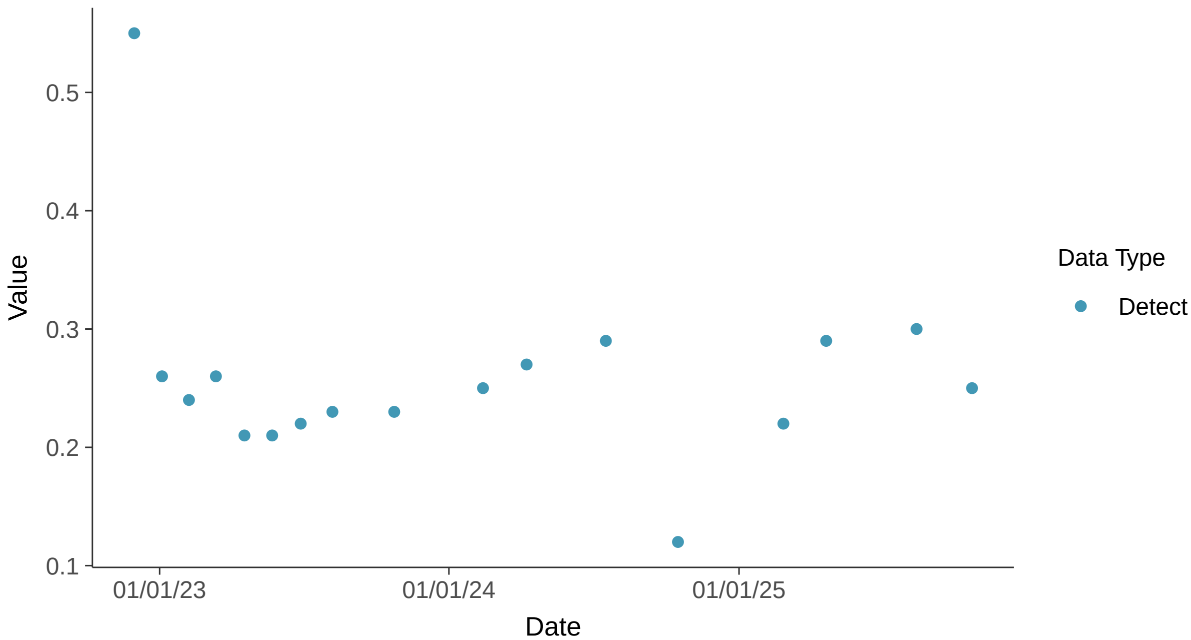


Appendix III: Fluoride, MW-20

ID: 30_1_3_112

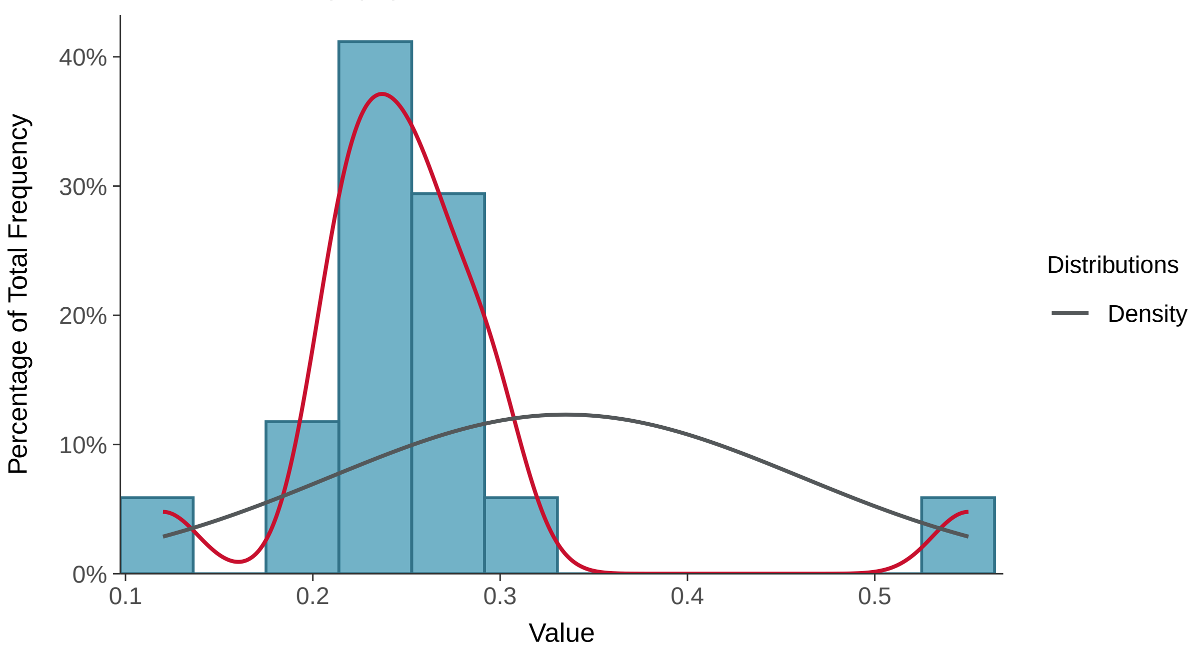
Scatter Plot

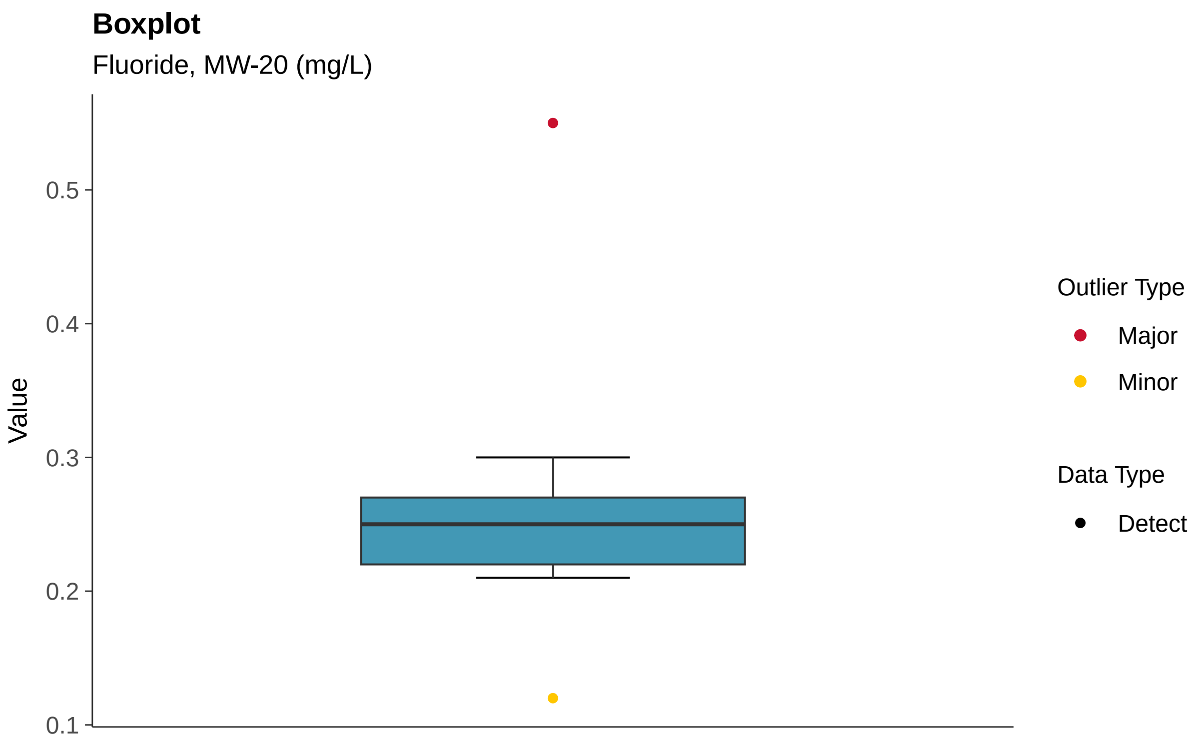
Fluoride, MW-20 (mg/L)

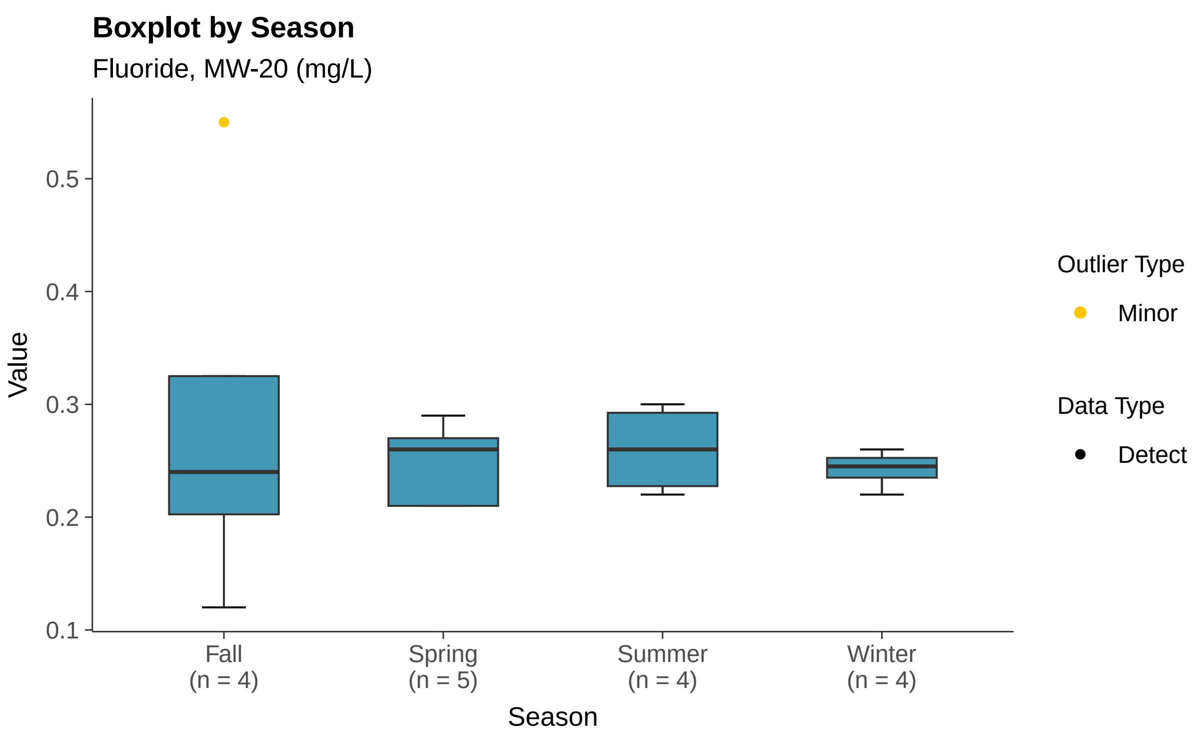


Histogram

Fluoride, MW-20 (mg/L)

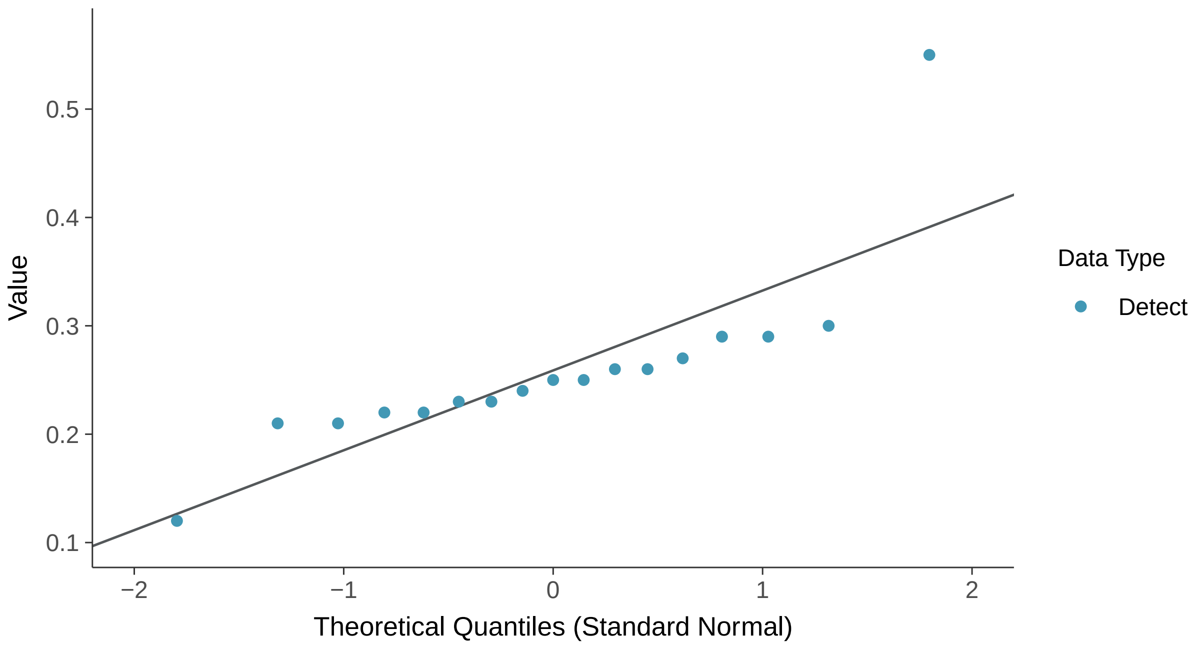



Boxplot
Fluoride, MW-20 (mg/L)
Value
0.1
0.2
0.3
0.4
0.5
Outlier Type
Major
Minor
Data Type
Detect


Boxplot by Season
Fluoride, MW-20 (mg/L)
Value
0.1
0.2
0.3
0.4
0.5
Fall (n = 4)
Spring (n = 5)
Summer (n = 4)
Winter (n = 4)
Season
Outlier Type
Minor
Data Type
Detect

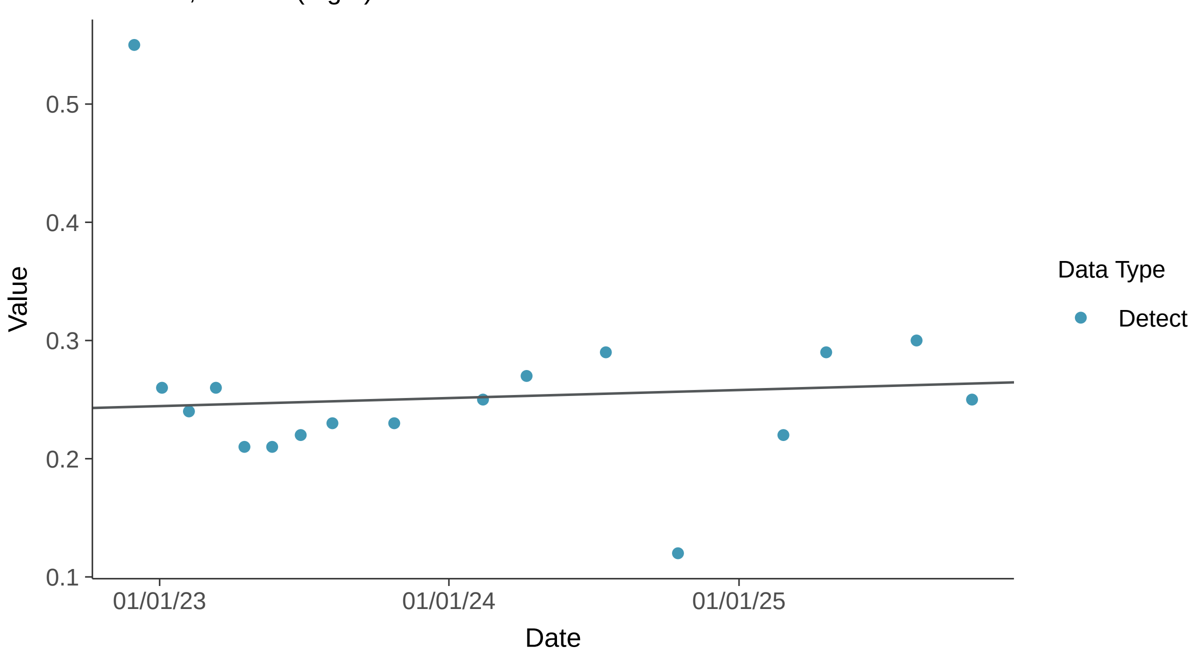
Normal Q-Q plot

Fluoride, MW-20 (mg/L)



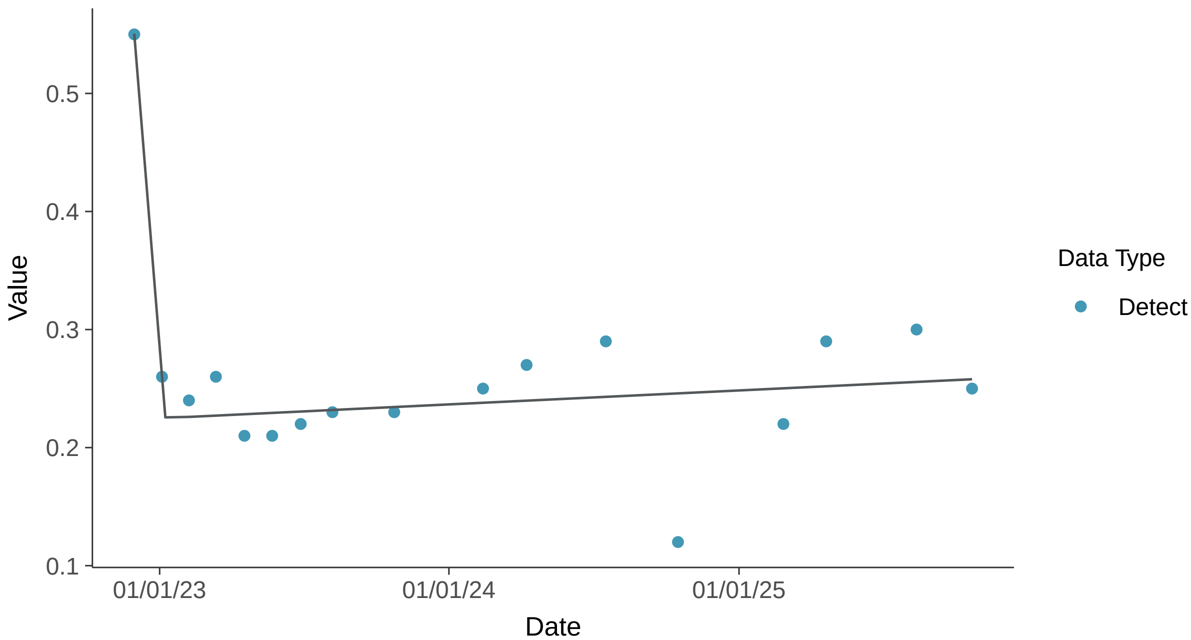
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Fluoride, MW-20 (mg/L)



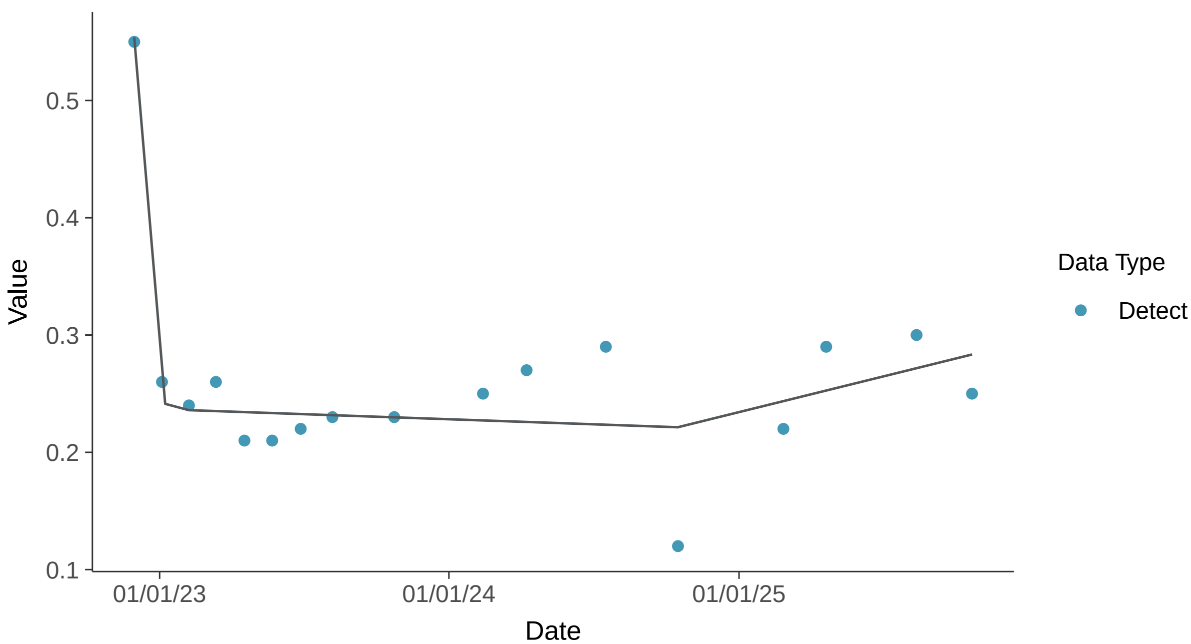
Trend Regression: Piecewise Linear-Linear

Fluoride, MW-20 (mg/L)



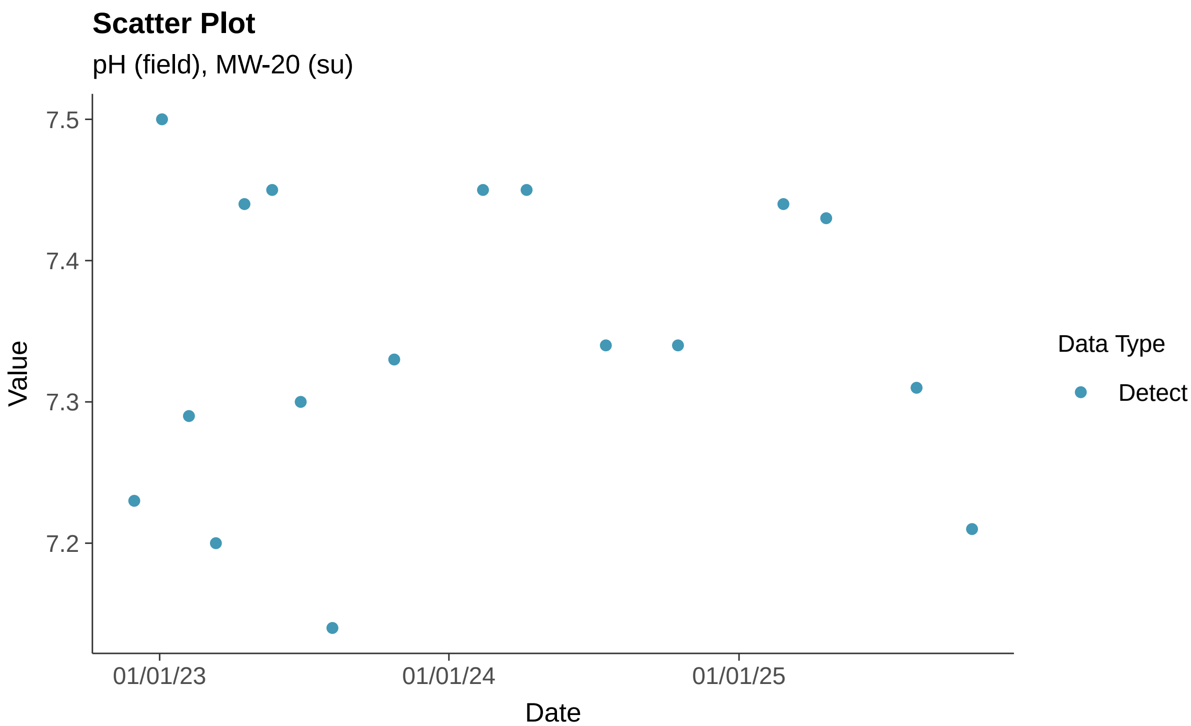
Trend Regression: Piecewise Linear-Linear-Linear

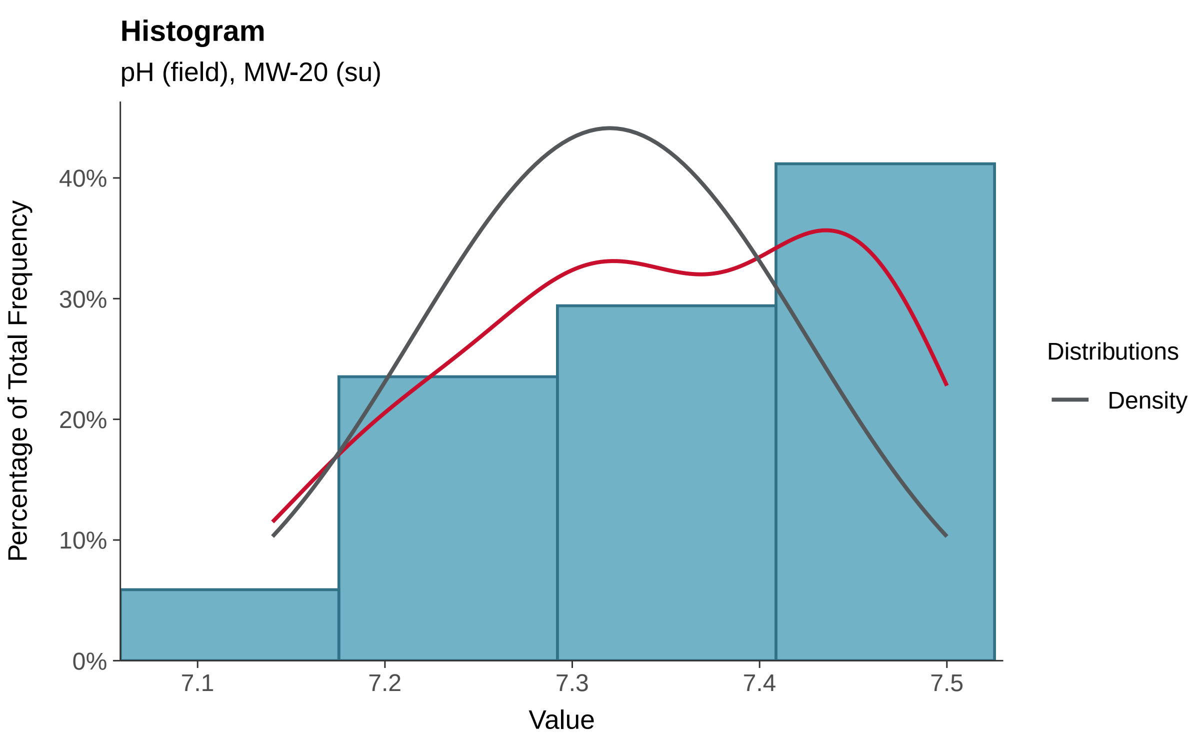
Fluoride, MW-20 (mg/L)



Appendix III: pH (field), MW-20

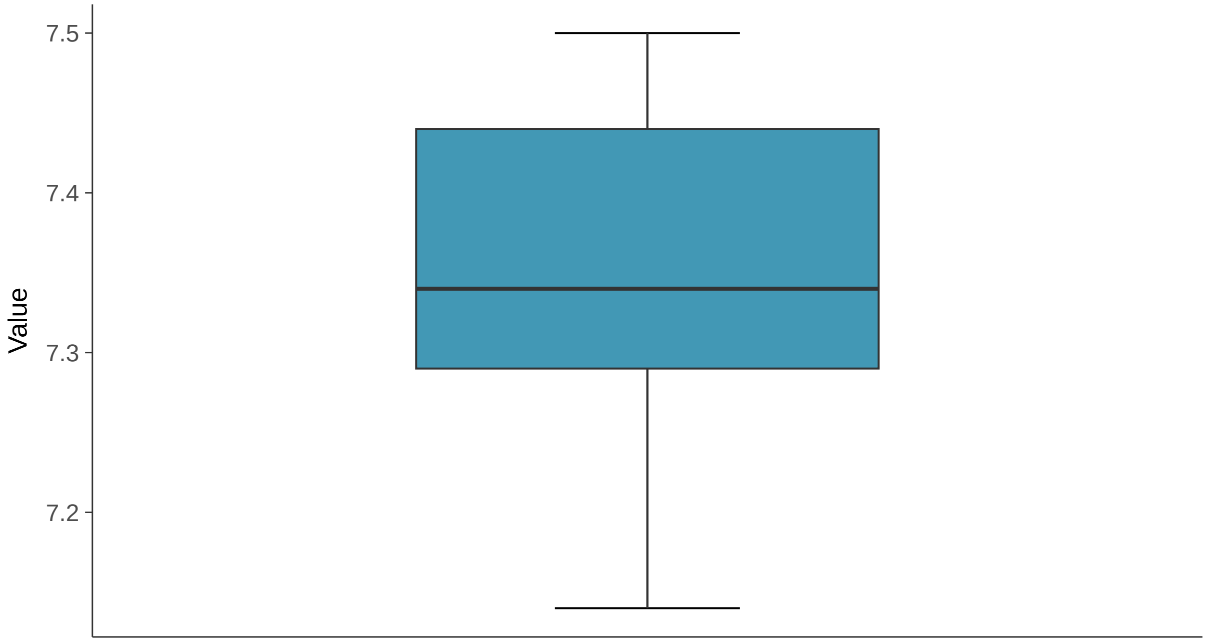
ID: 30_1_3_120





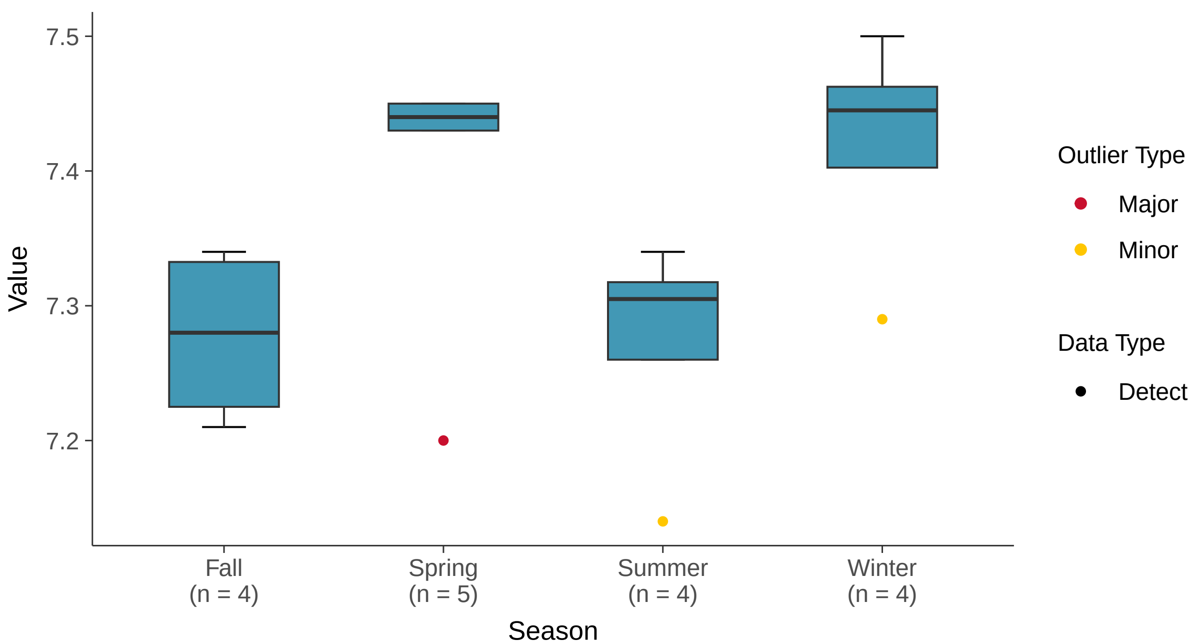
Boxplot

pH (field), MW-20 (su)



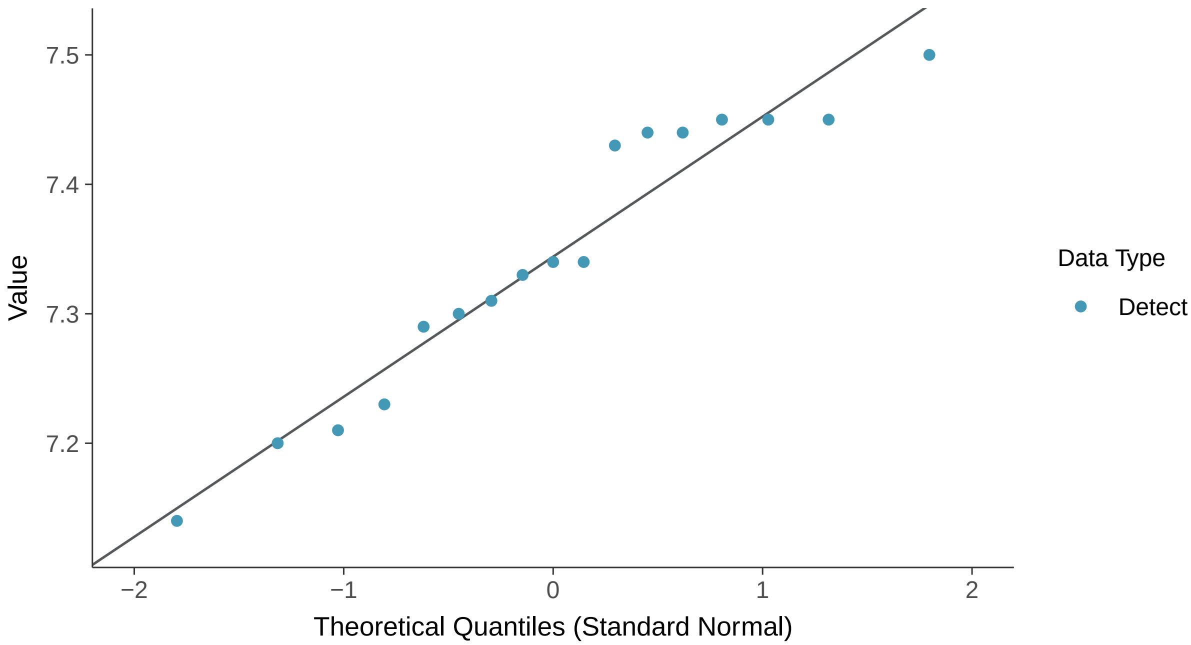
Boxplot by Season

pH (field), MW-20 (su)



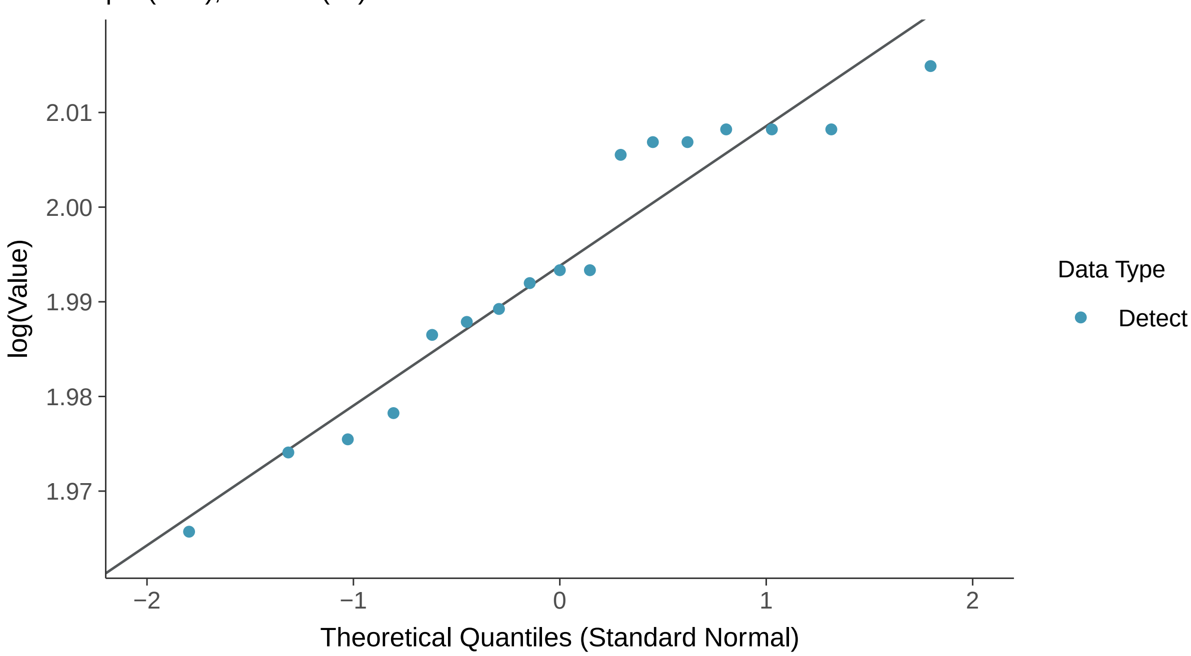
Normal Q-Q plot

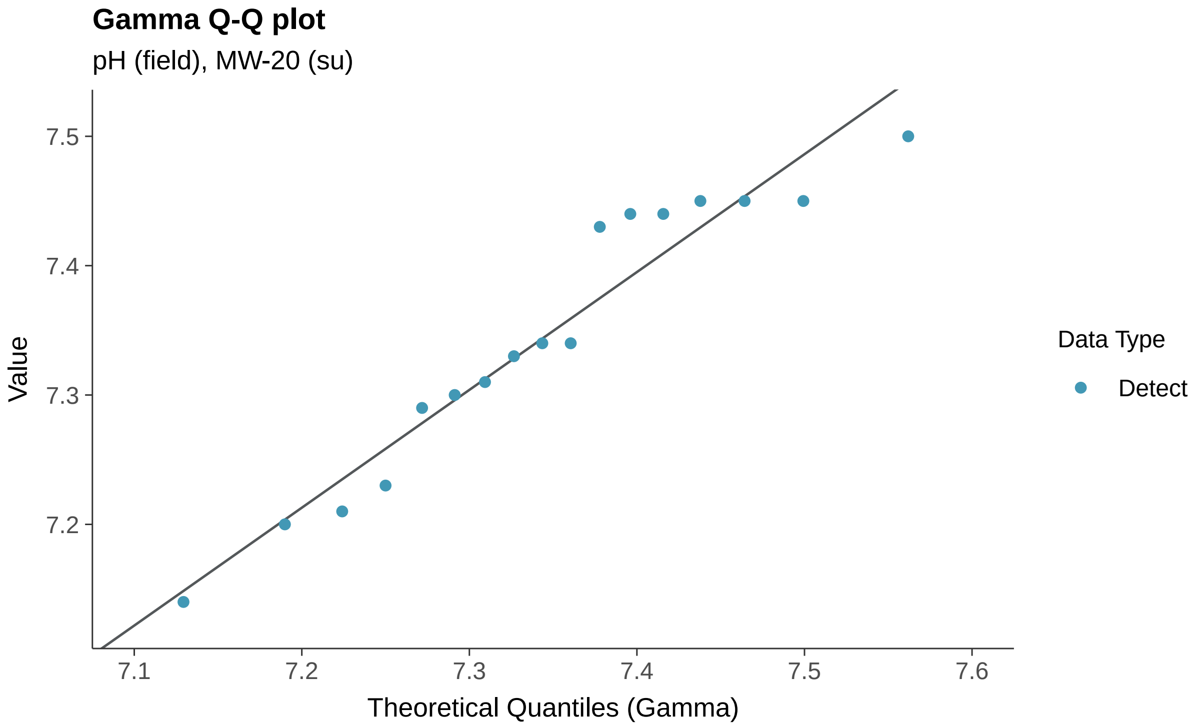
pH (field), MW-20 (su)

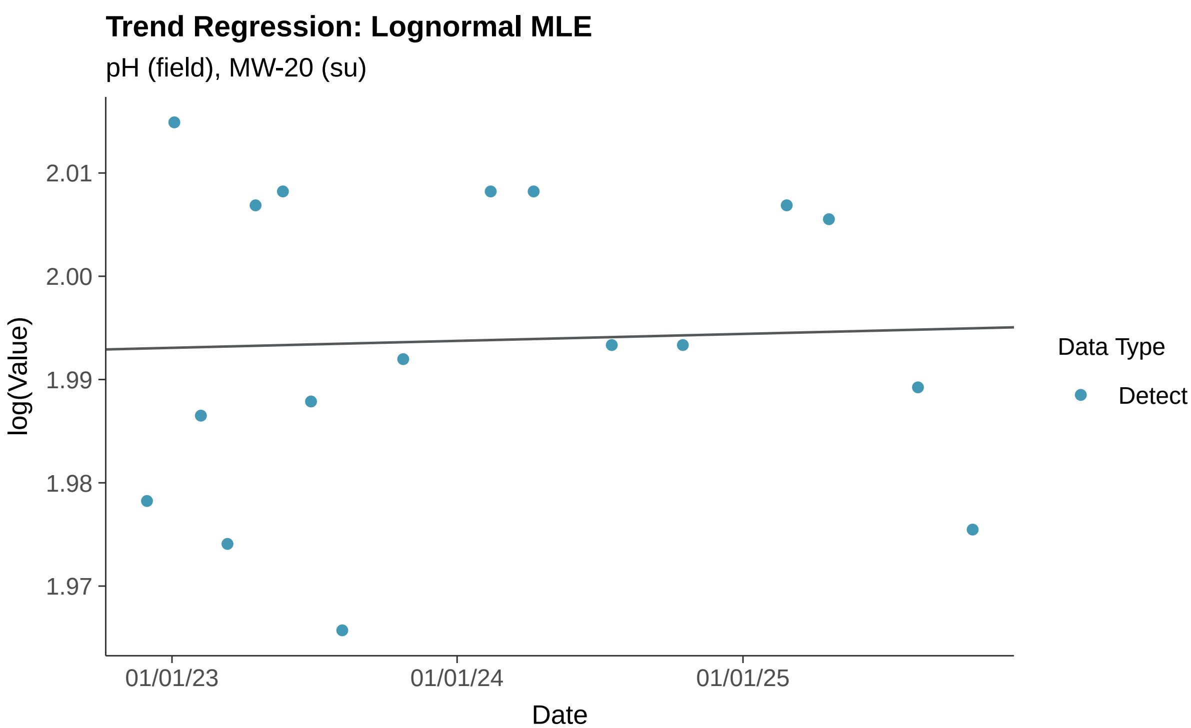


Lognormal Q-Q plot

pH (field), MW-20 (su)

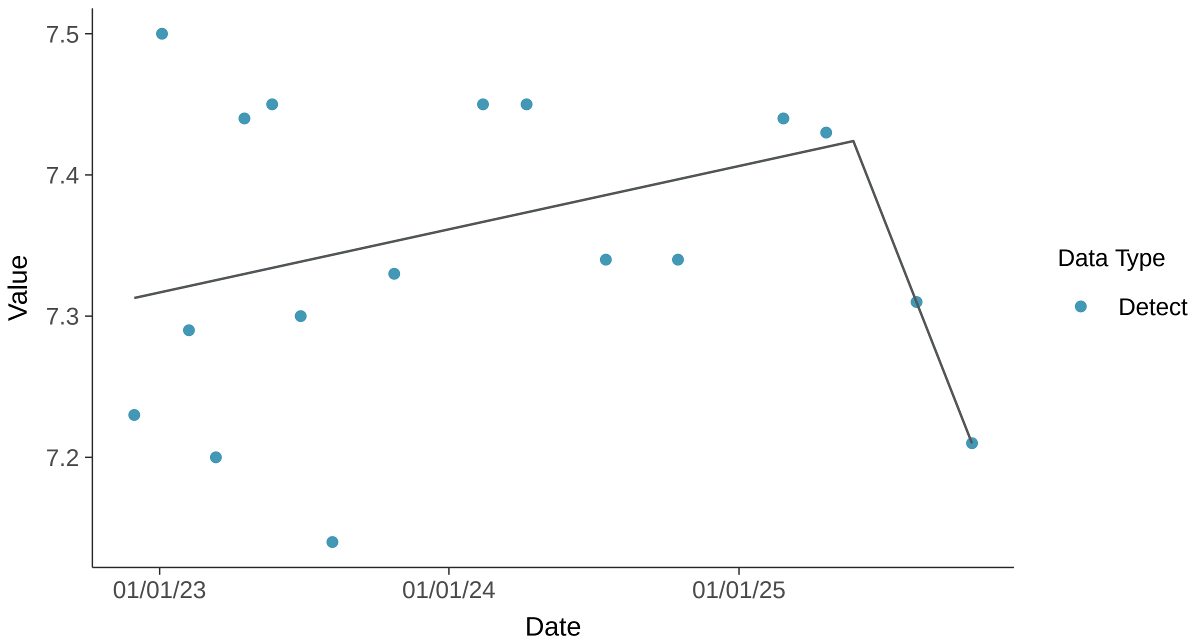



Gamma Q-Q plot
pH (field), MW-20 (su)
Value
7.5
7.4
7.3
7.2
7.1
7.2
7.3
7.4
7.5
7.6
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
pH (field), MW-20 (su)
log(Value)
2.01
2.00
1.99
1.98
1.97
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

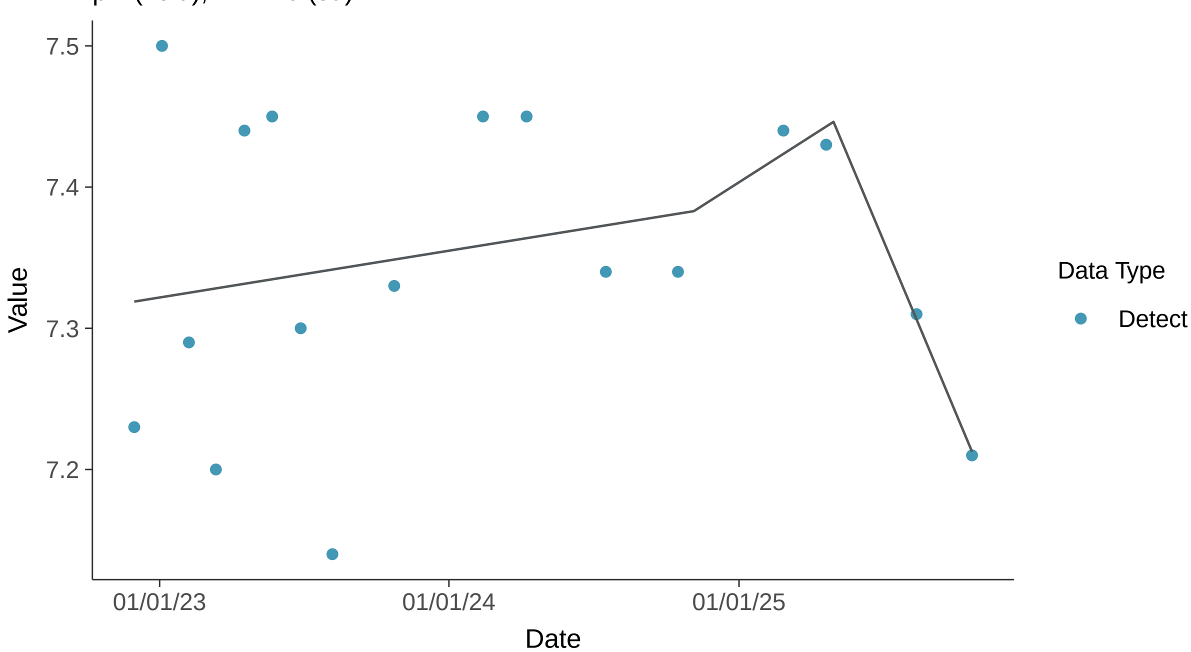
Trend Regression: Piecewise Linear-Linear

pH (field), MW-20 (su)



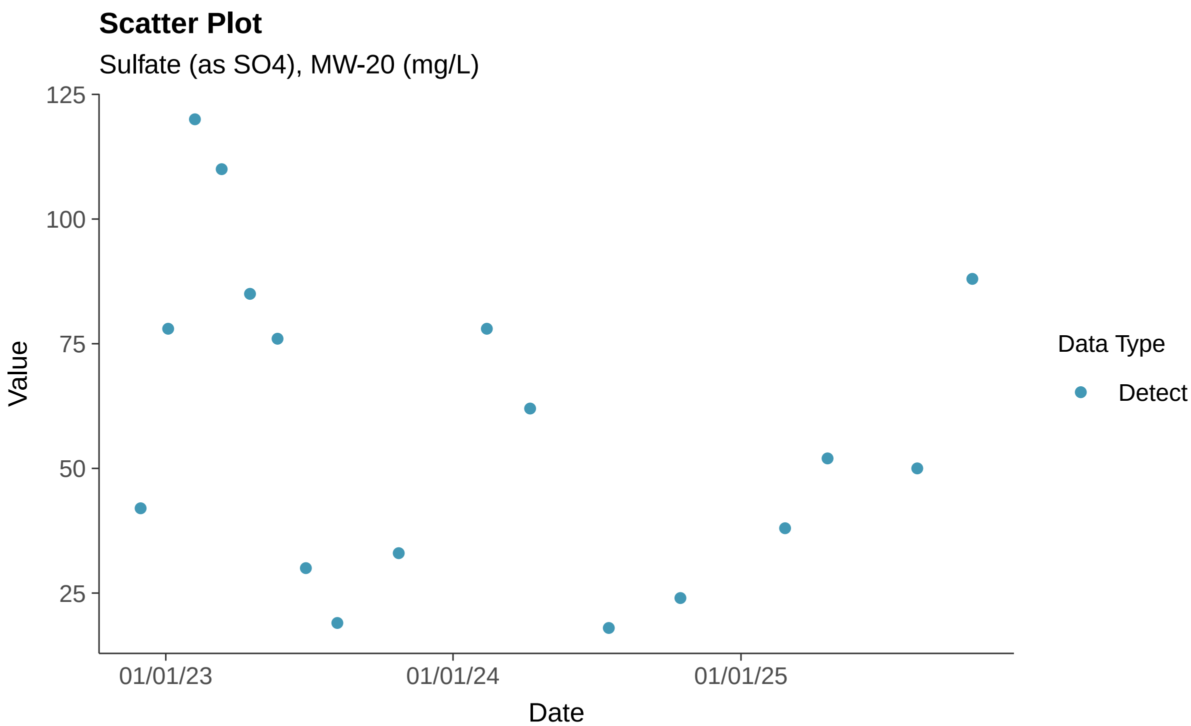
Trend Regression: Piecewise Linear-Linear-Linear

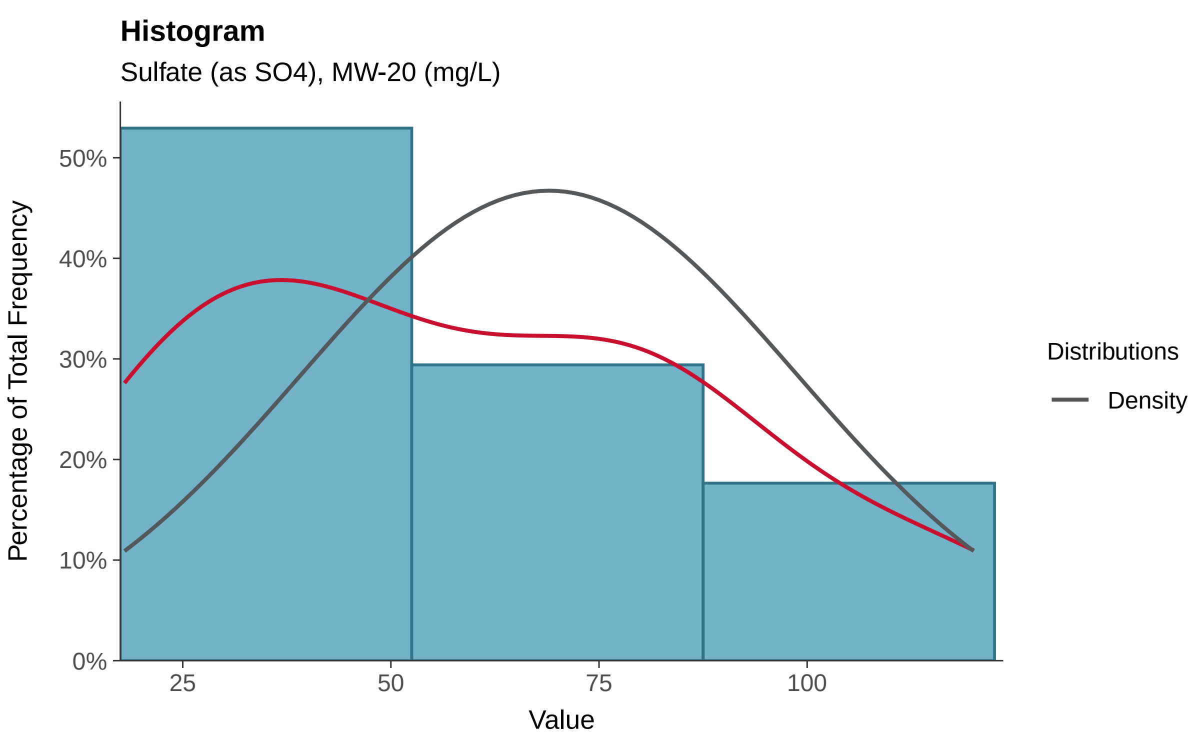
pH (field), MW-20 (su)



Appendix III: Sulfate (as SO4), MW-20

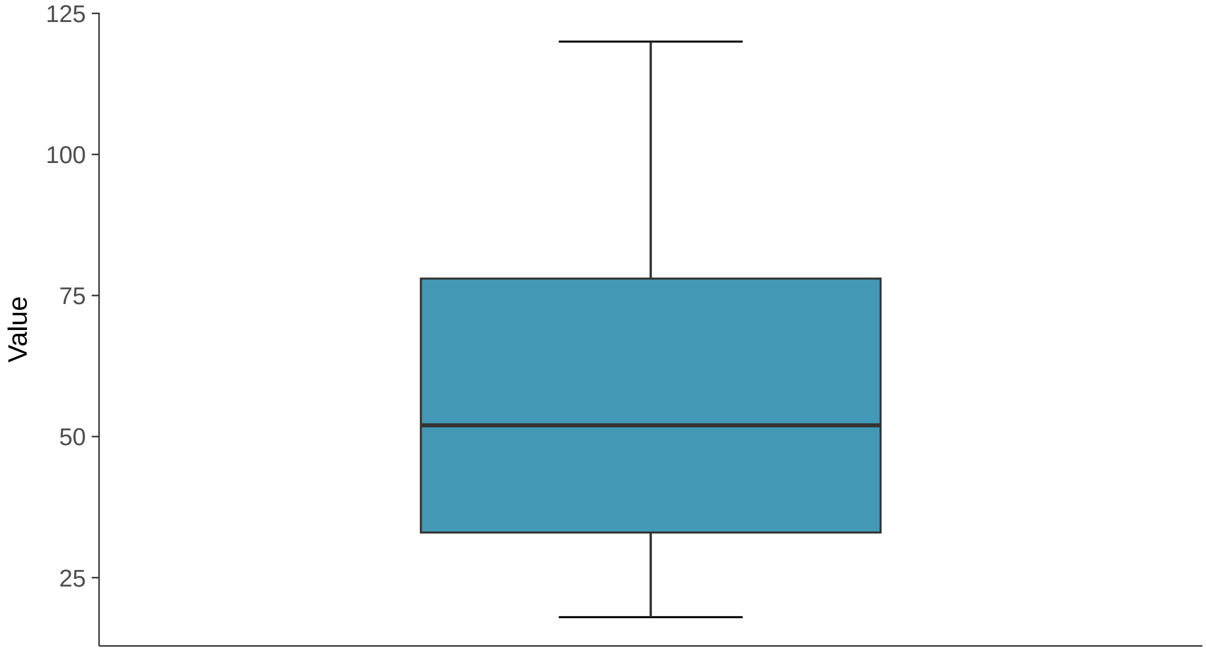
ID: 30_1_3_124





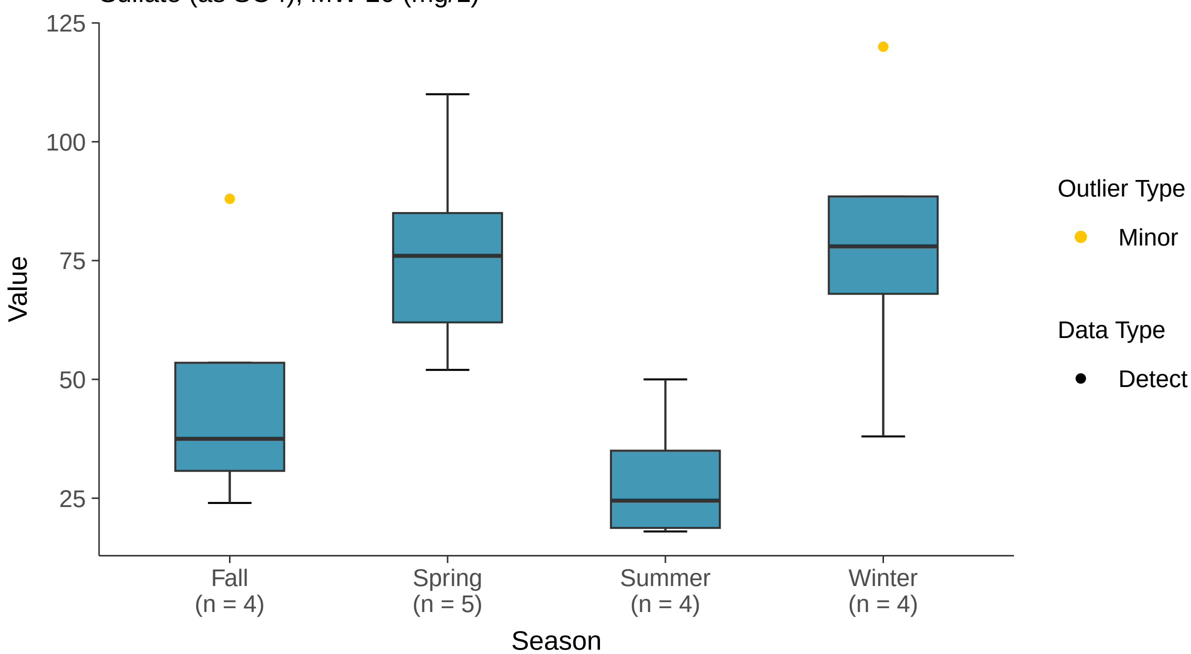
Boxplot

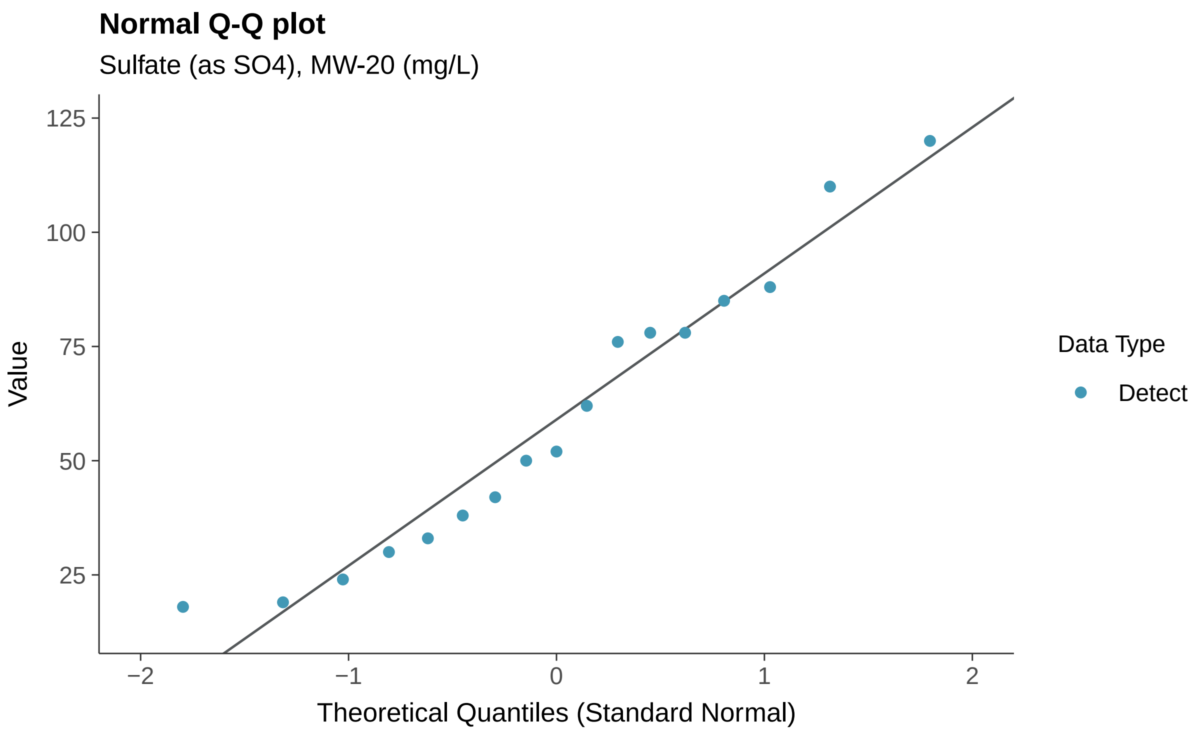
Sulfate (as SO4), MW-20 (mg/L)

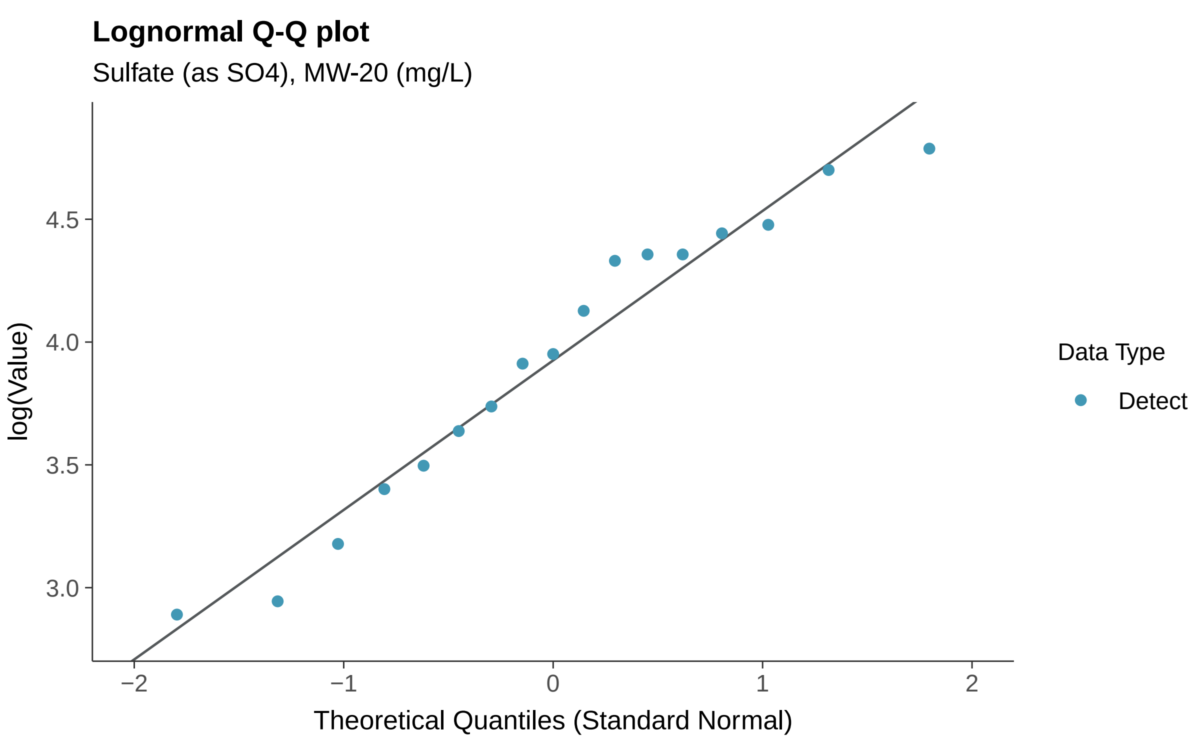


Boxplot by Season

Sulfate (as SO4), MW-20 (mg/L)

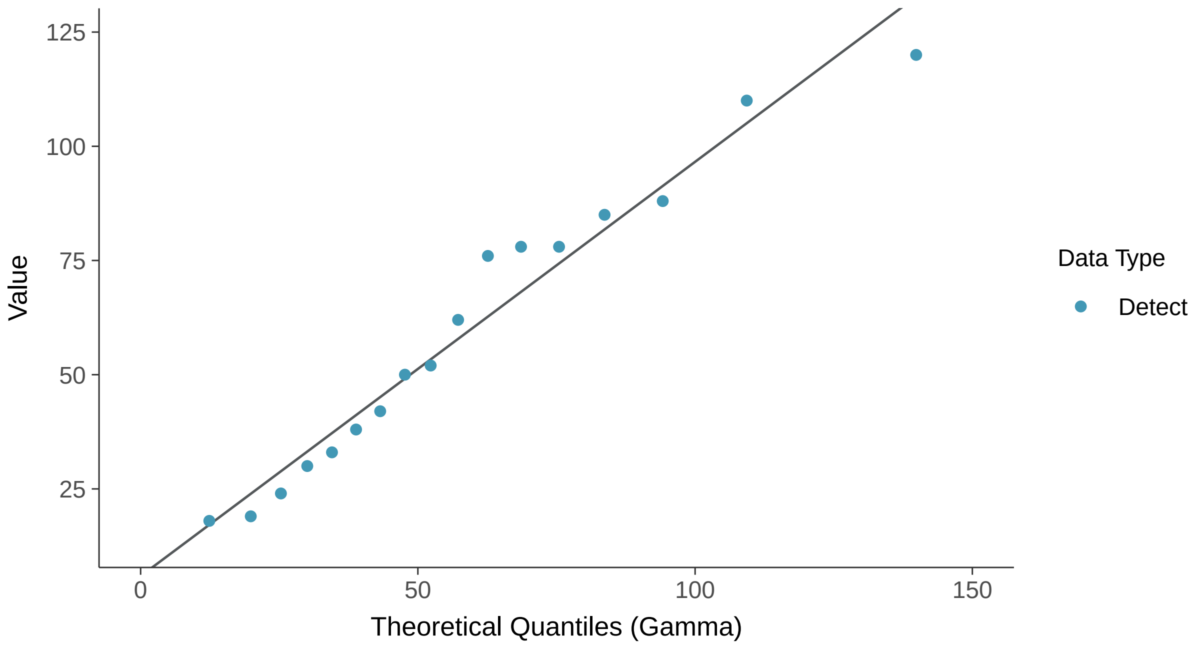



Normal Q-Q plot
Sulfate (as SO4), MW-20 (mg/L)
Value
125
100
75
50
25
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Sulfate (as SO4), MW-20 (mg/L)
log(Value)
4.5
4.0
3.5
3.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

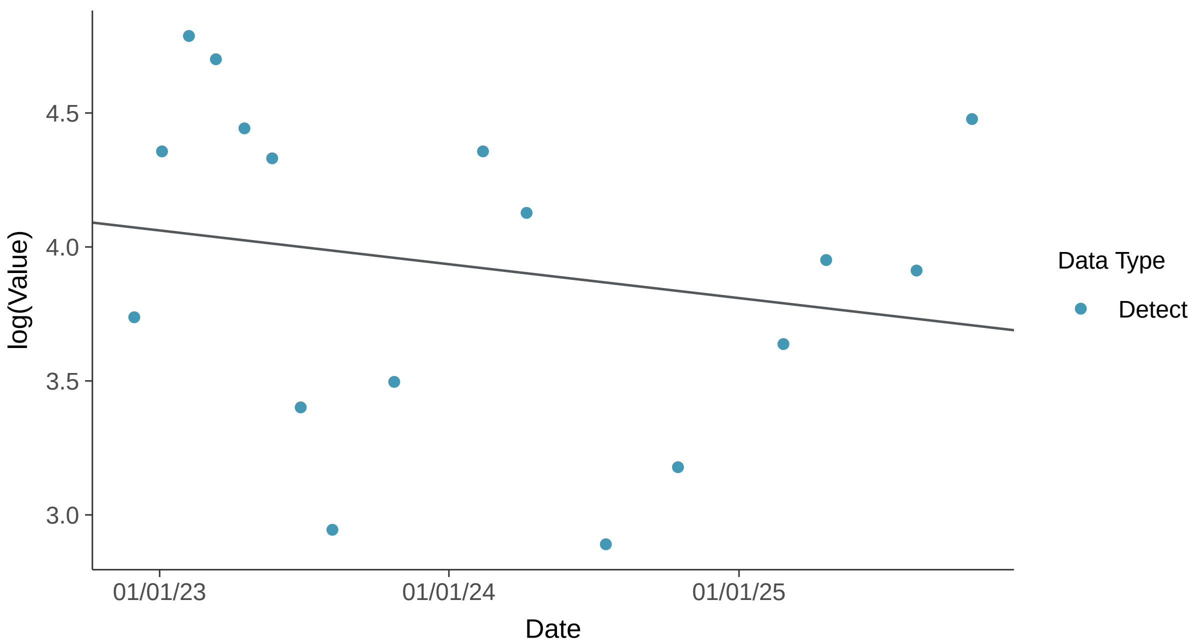
Gamma Q-Q plot

Sulfate (as SO4), MW-20 (mg/L)



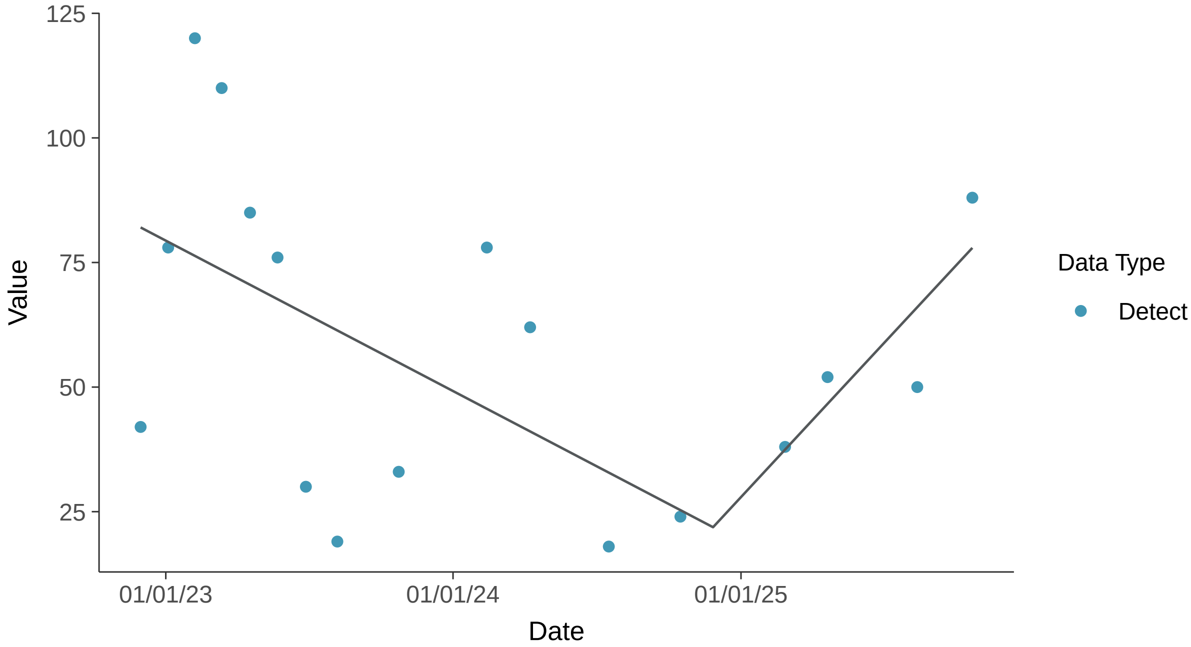
Trend Regression: Lognormal MLE

Sulfate (as SO4), MW-20 (mg/L)



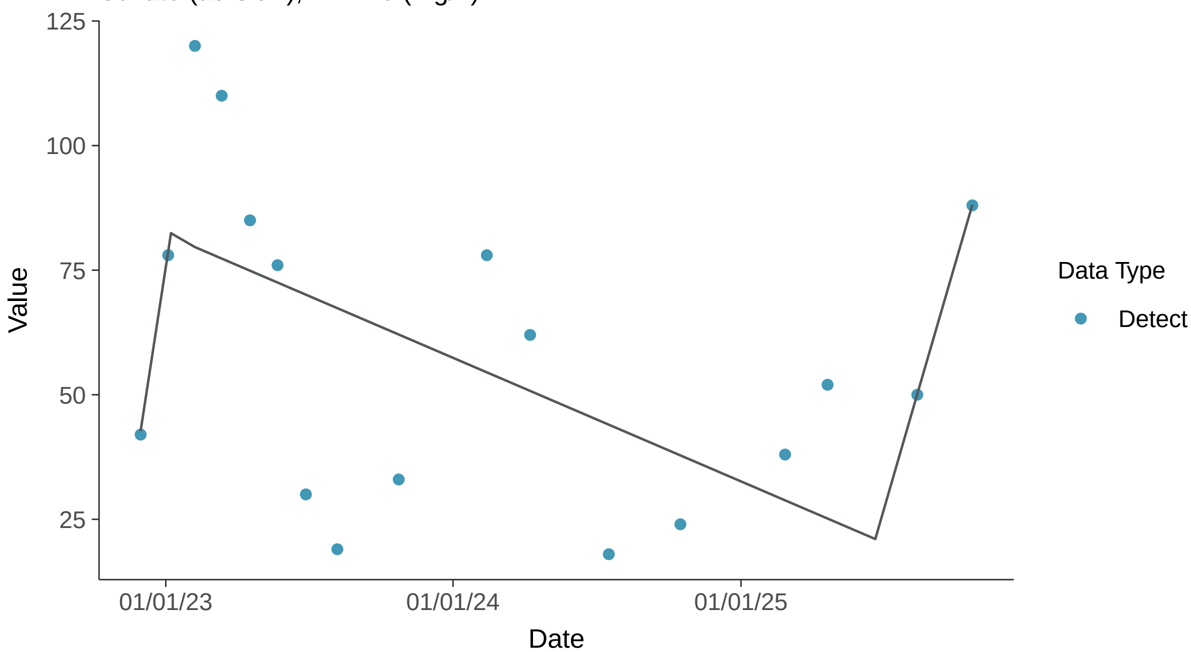
Trend Regression: Piecewise Linear-Linear

Sulfate (as SO4), MW-20 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Sulfate (as SO4), MW-20 (mg/L)

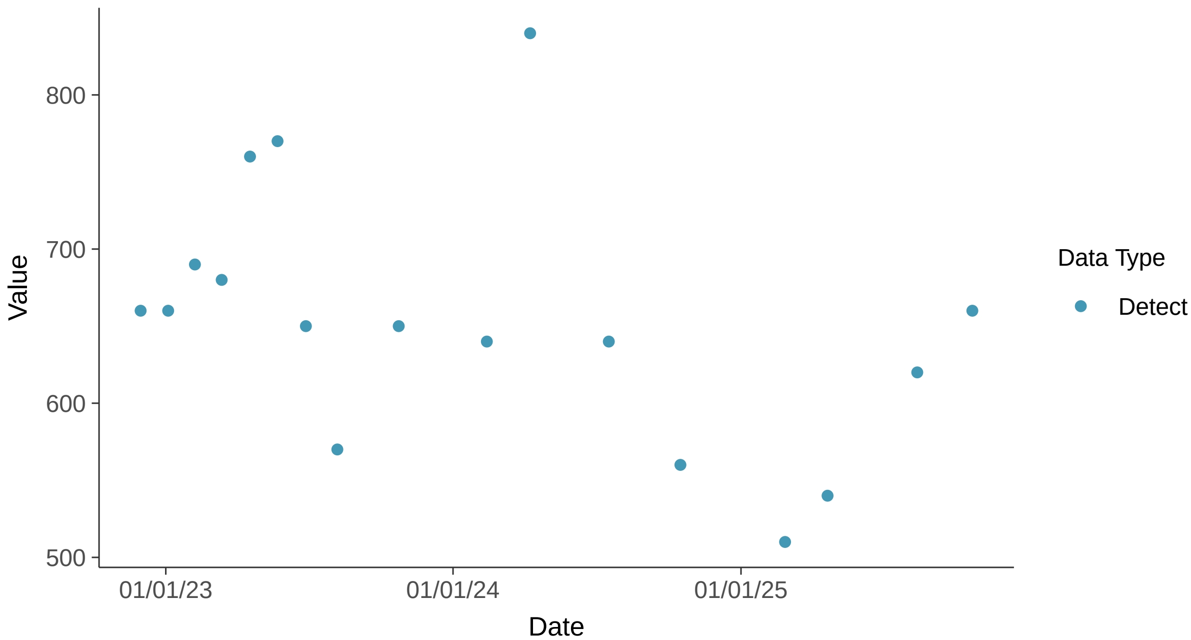


Appendix III: Total Dissolved Solids, MW-20

ID: 30_1_3_126

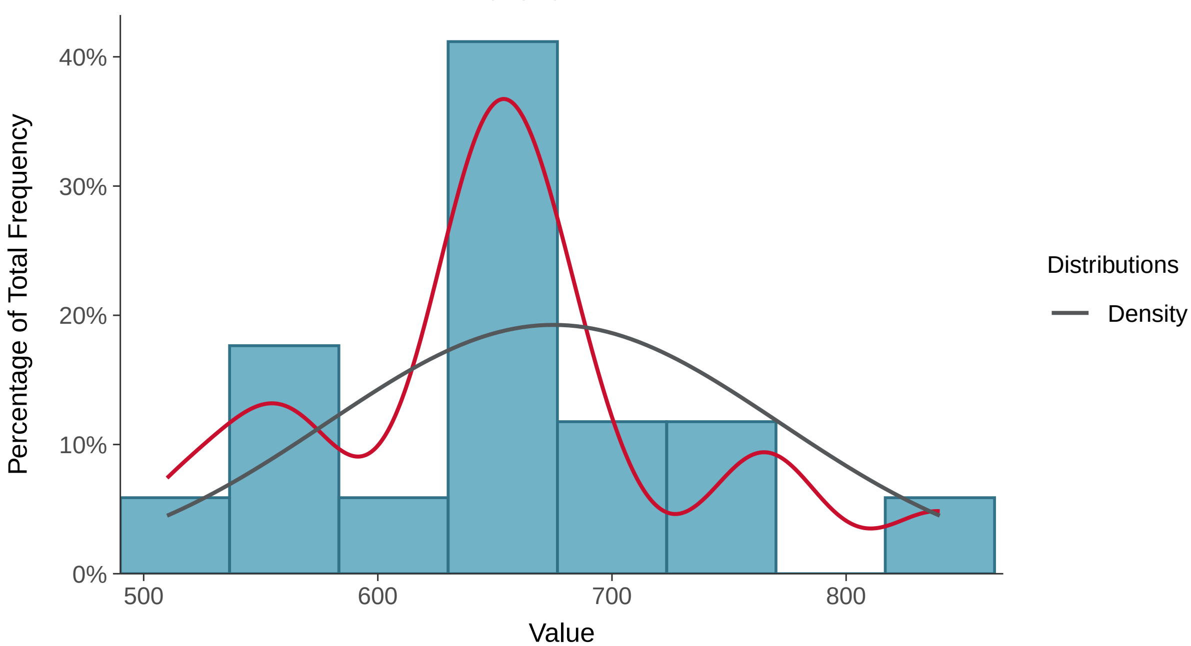
Scatter Plot

Total Dissolved Solids, MW-20 (mg/L)



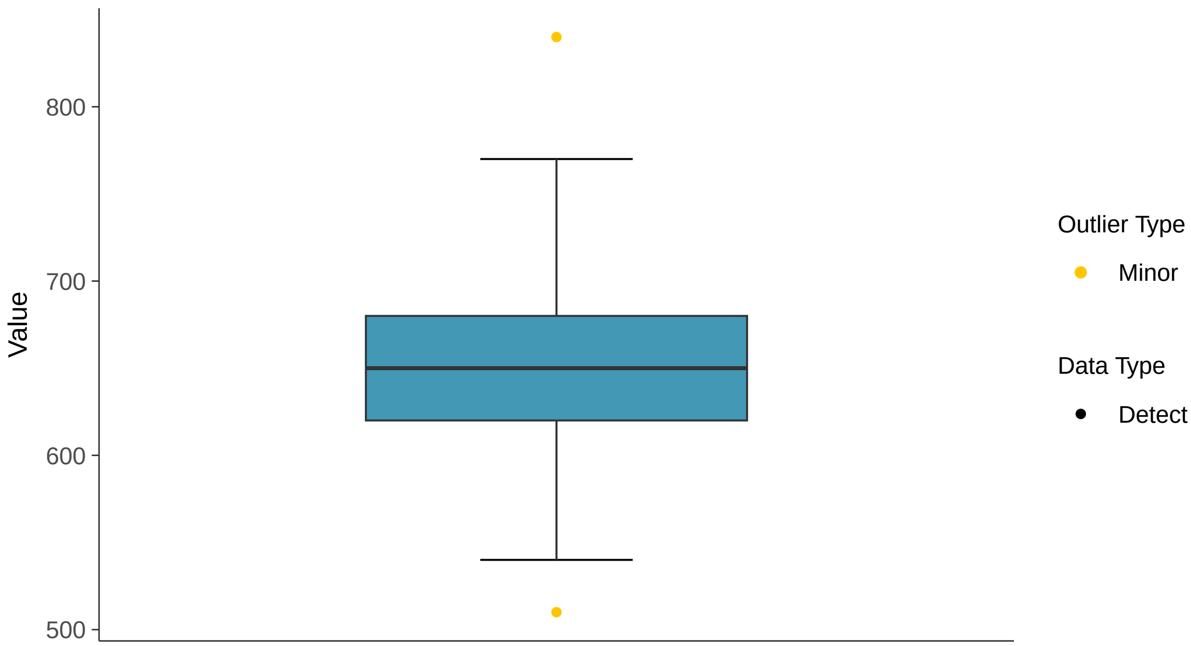
Histogram

Total Dissolved Solids, MW-20 (mg/L)



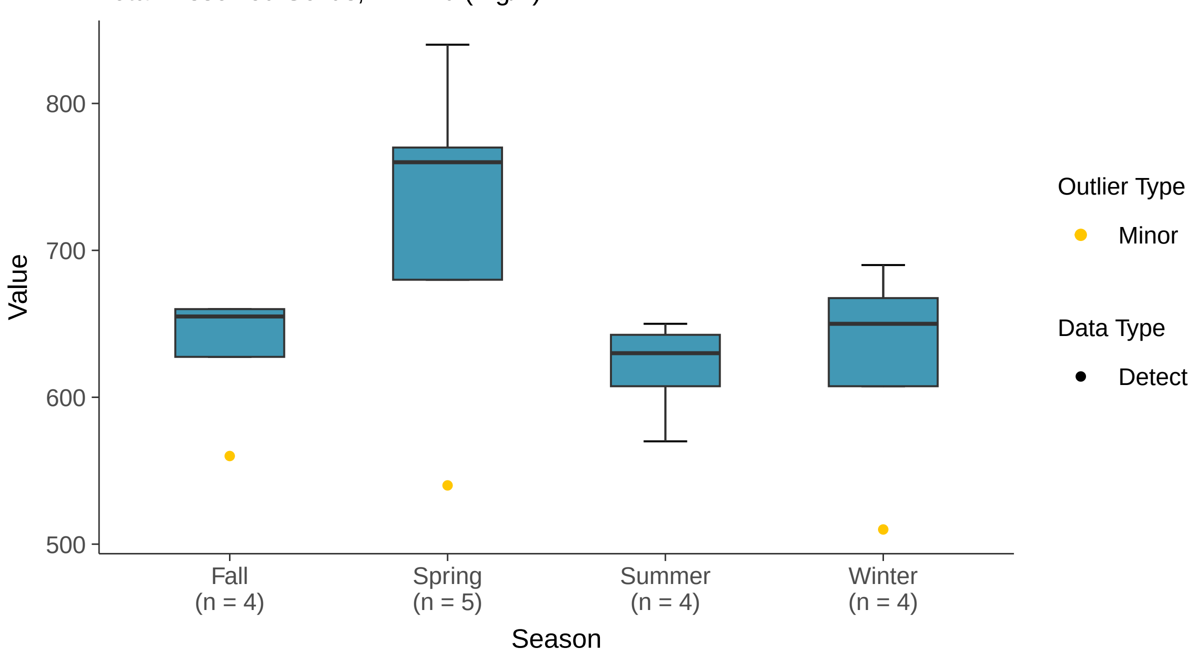
Boxplot

Total Dissolved Solids, MW-20 (mg/L)



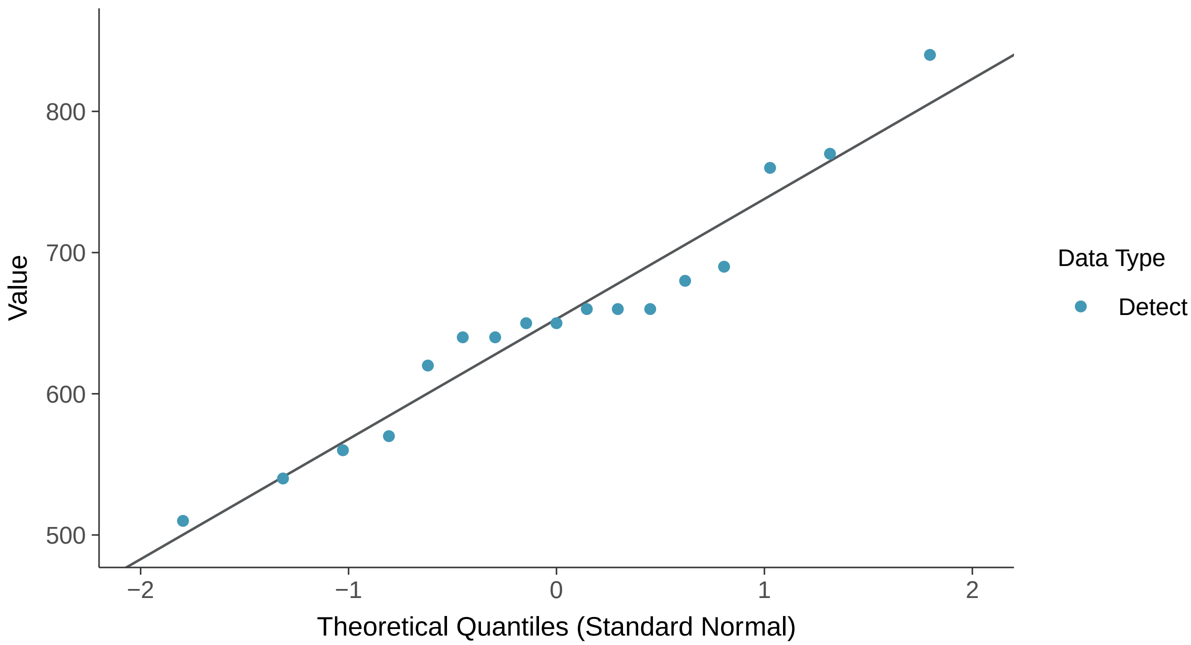
Boxplot by Season

Total Dissolved Solids, MW-20 (mg/L)



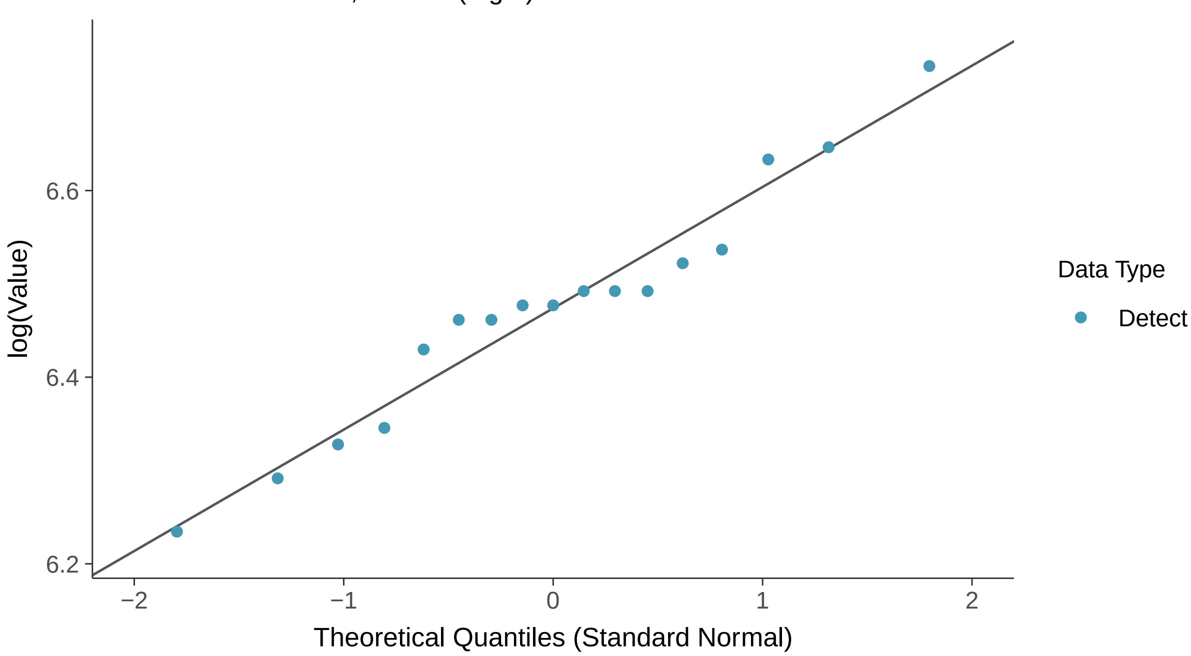
Normal Q-Q plot

Total Dissolved Solids, MW-20 (mg/L)



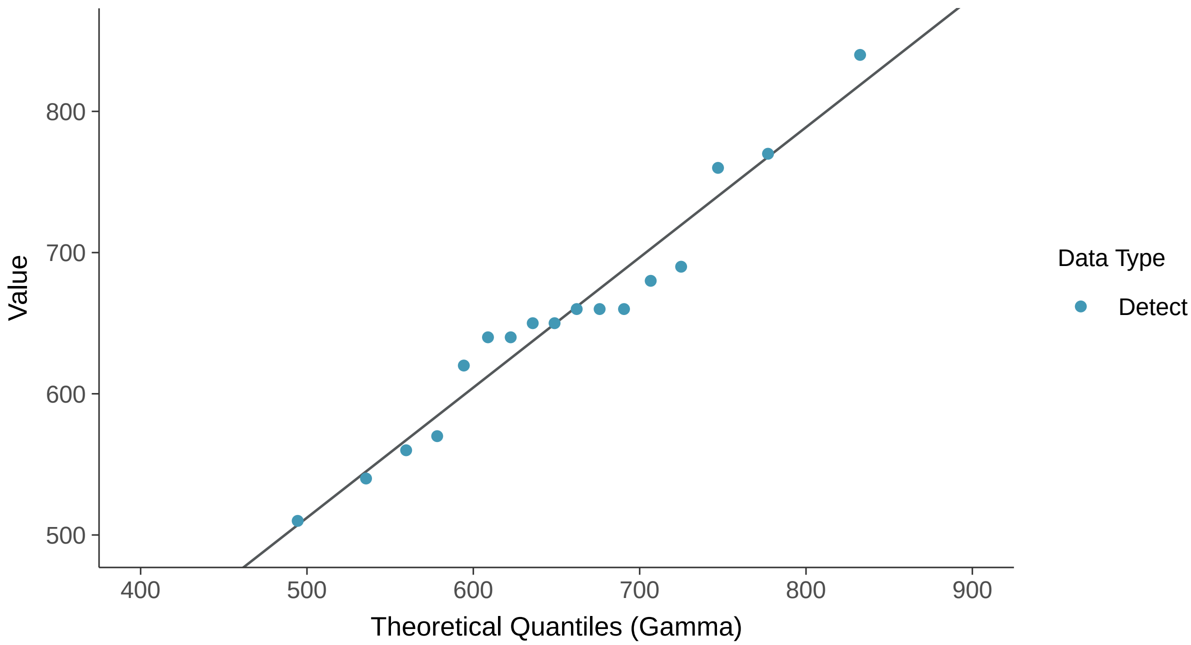
Lognormal Q-Q plot

Total Dissolved Solids, MW-20 (mg/L)



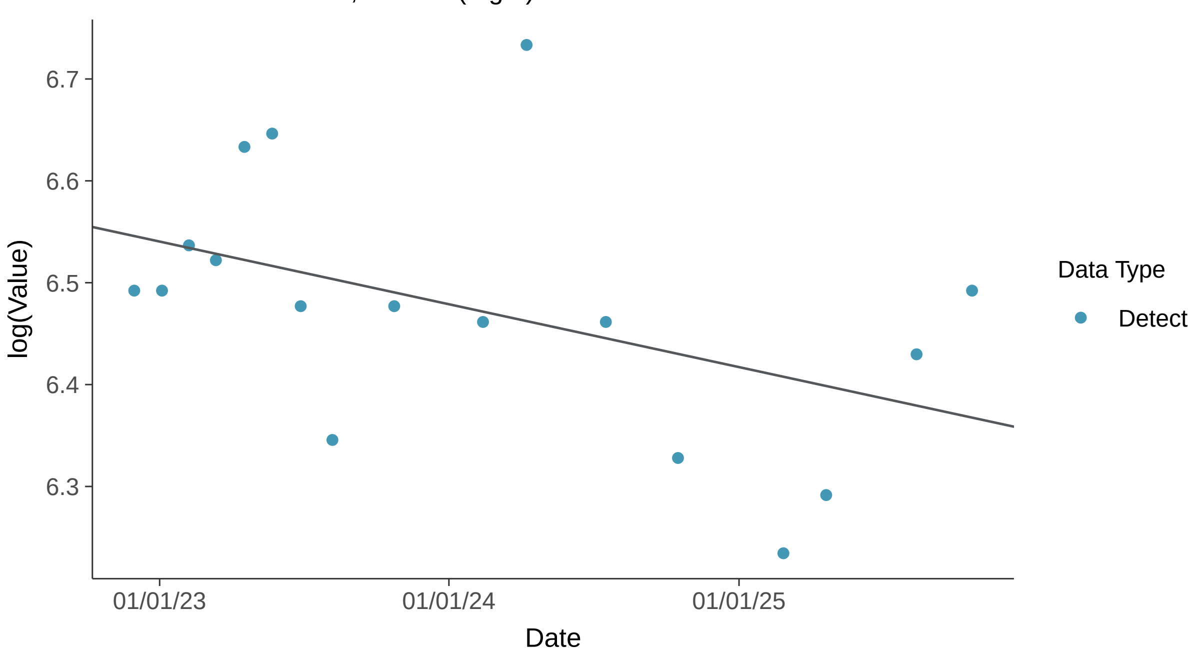
Gamma Q-Q plot

Total Dissolved Solids, MW-20 (mg/L)



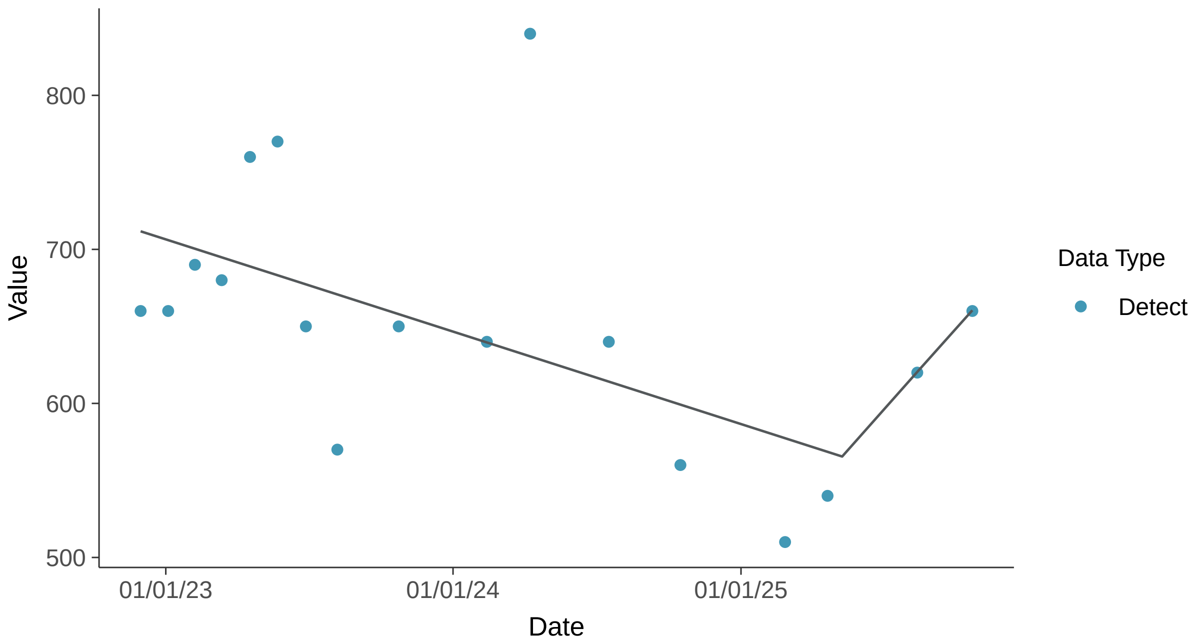
Trend Regression: Lognormal MLE

Total Dissolved Solids, MW-20 (mg/L)



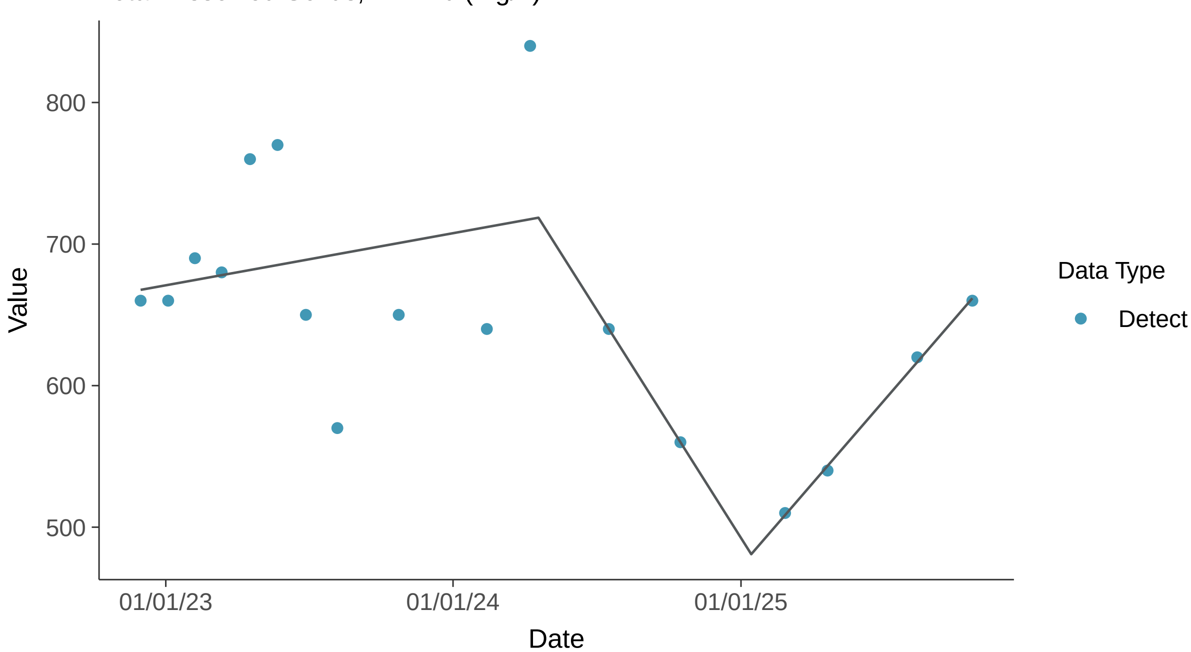
Trend Regression: Piecewise Linear-Linear

Total Dissolved Solids, MW-20 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Total Dissolved Solids, MW-20 (mg/L)

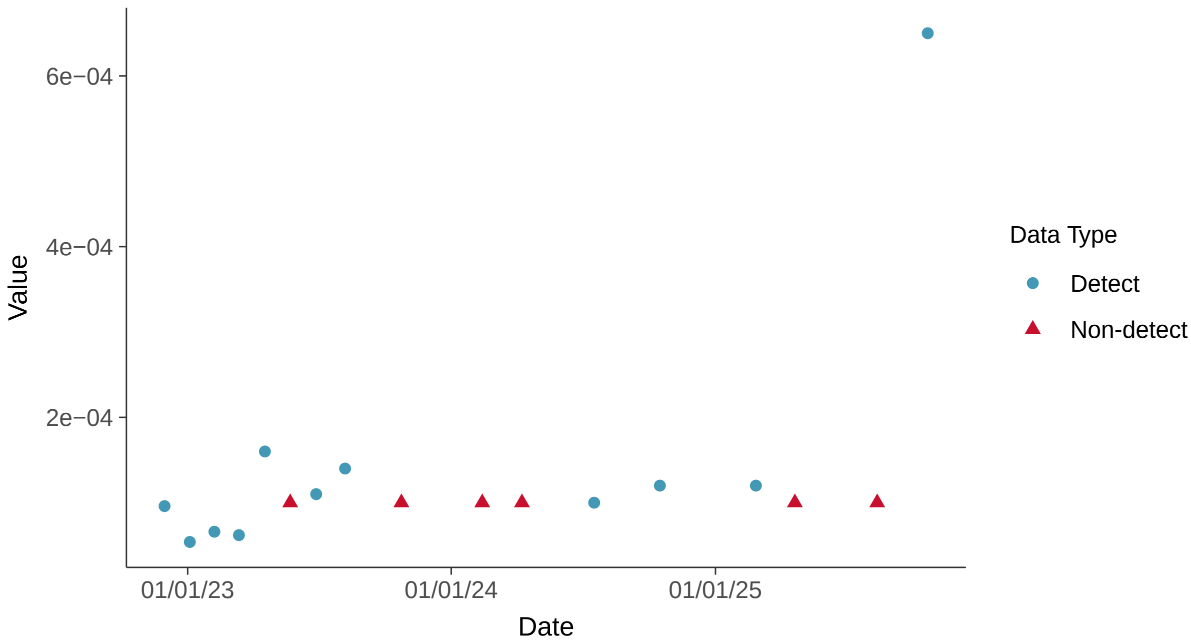


Appendix IV: Antimony, MW-20

ID: 30_1_4_101

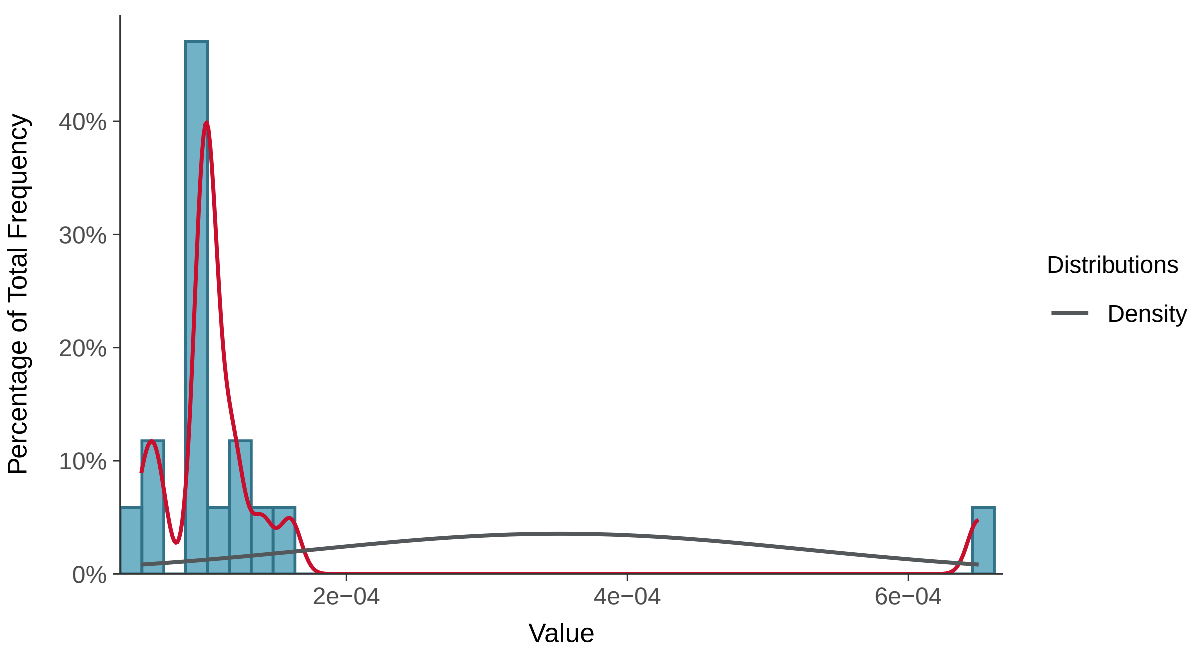
Scatter Plot

Antimony, MW-20 (mg/L)

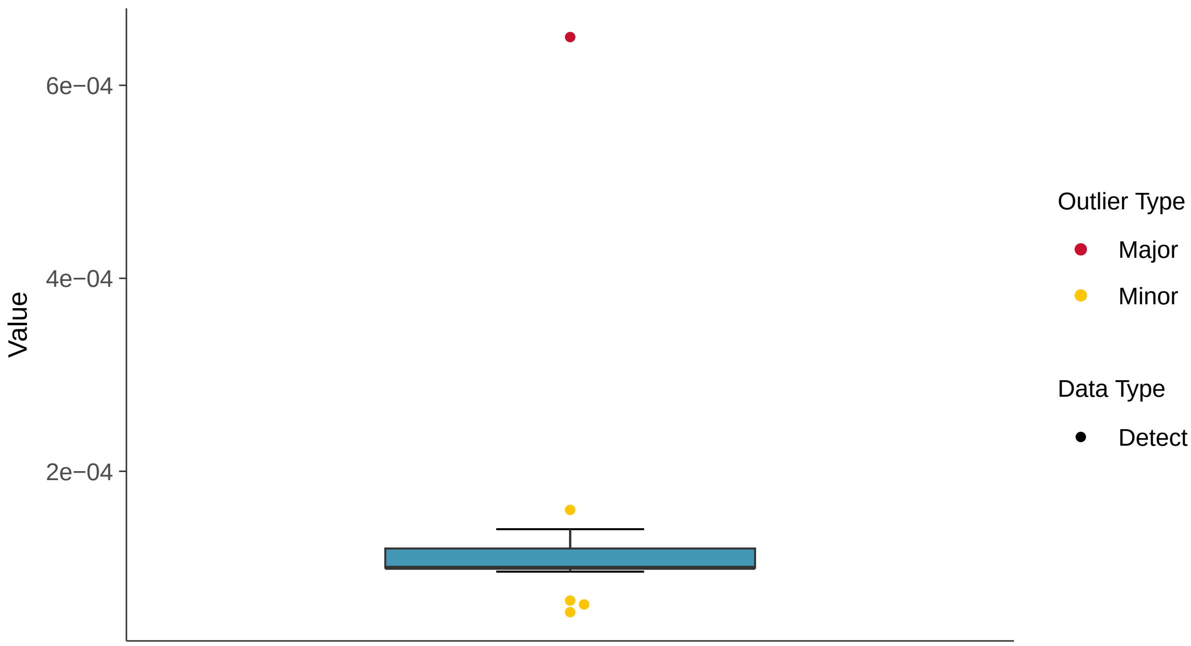


Histogram

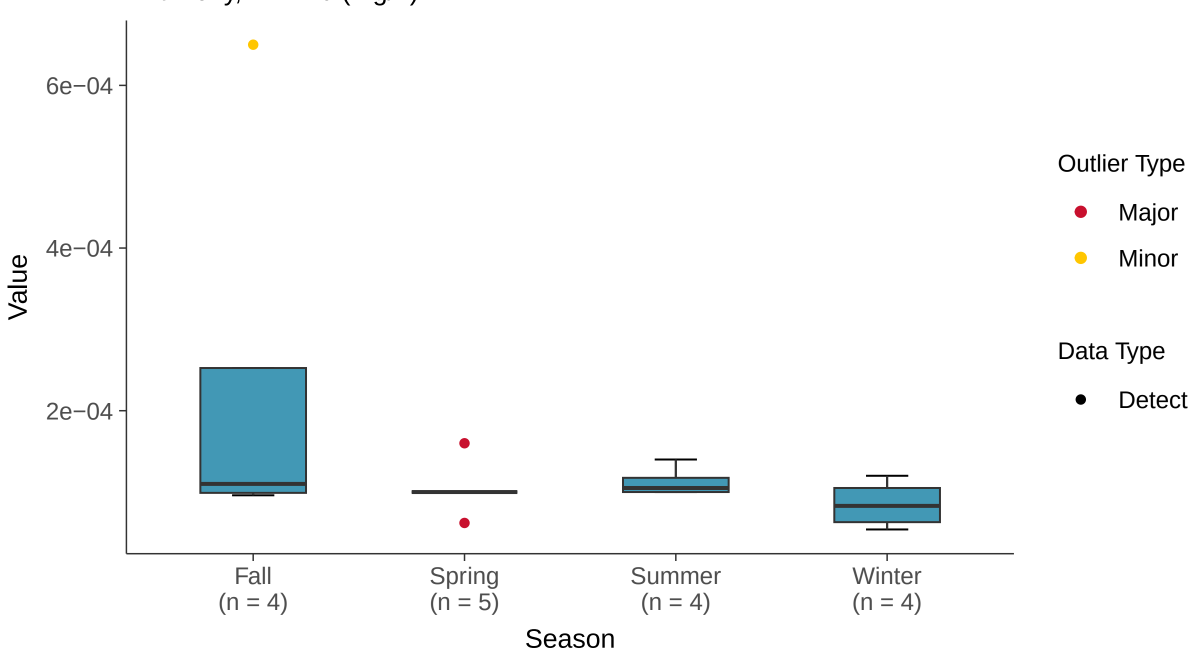
Antimony, MW-20 (mg/L)



Boxplot
Antimony, MW-20 (mg/L)

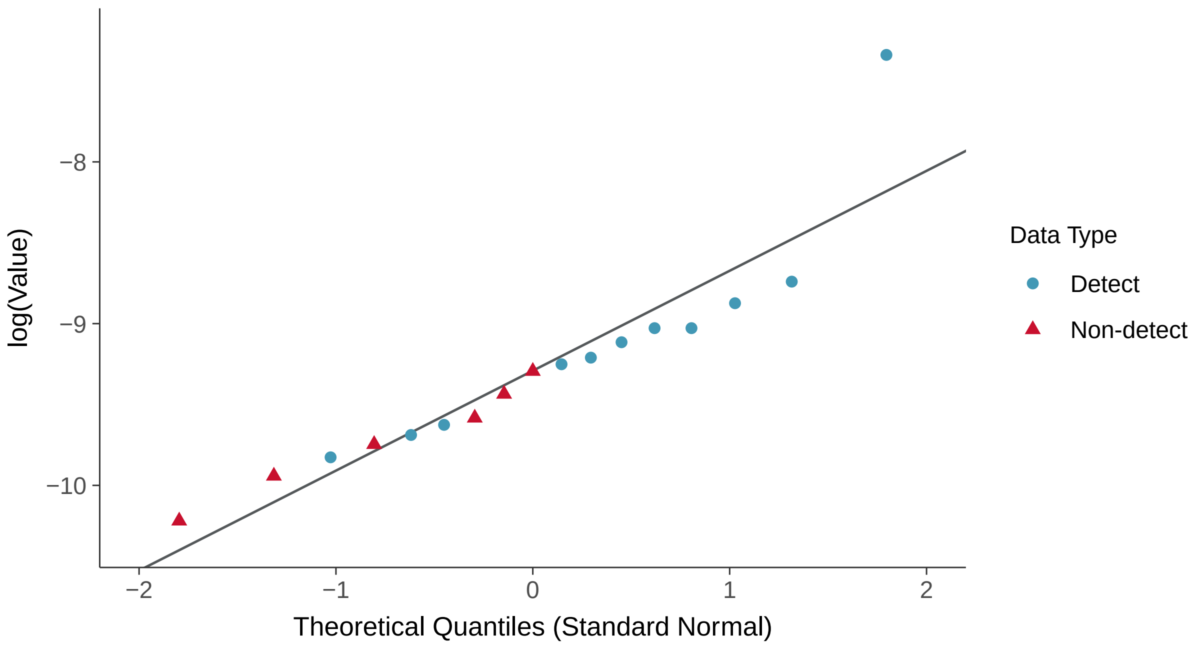


Boxplot by Season
Antimony, MW-20 (mg/L)



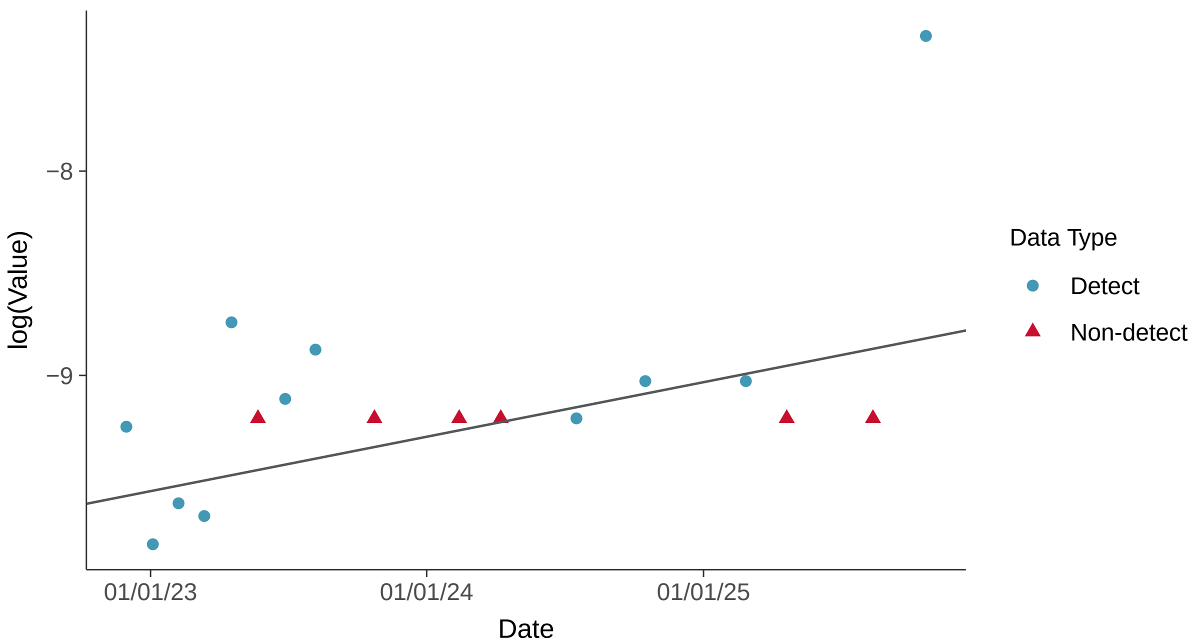
Lognormal Q-Q plot using ROS Imputed Estimates

Antimony, MW-20 (mg/L)



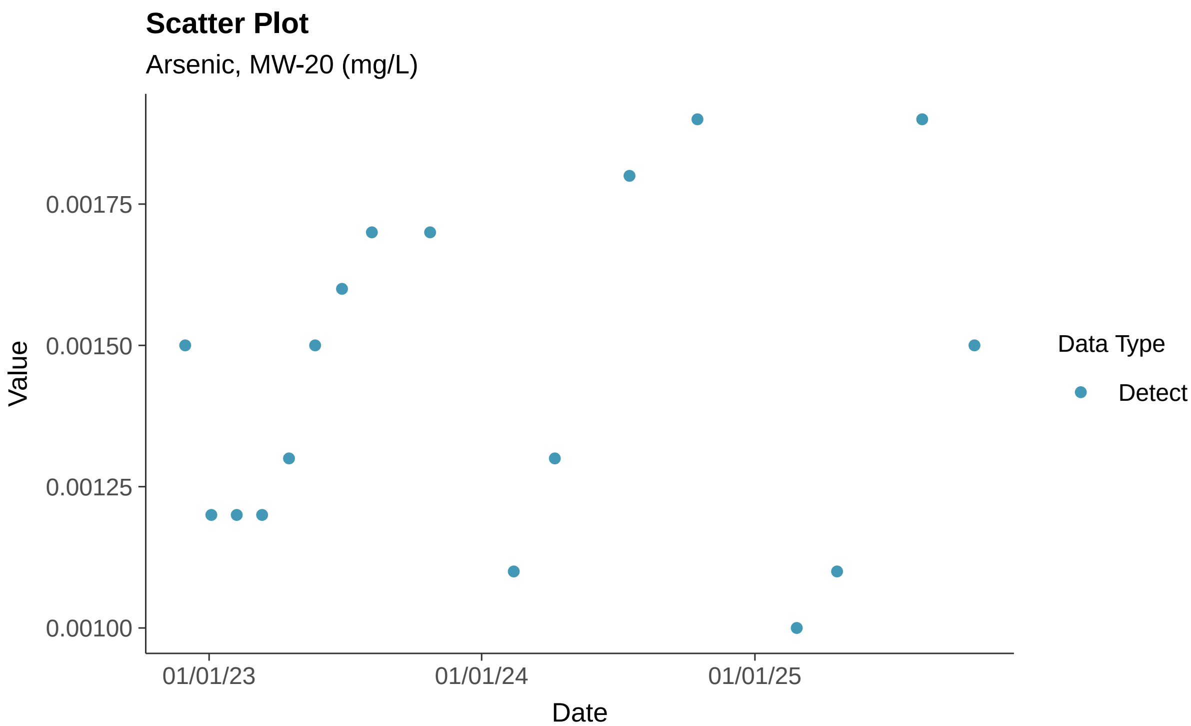
Trend Regression: Lognormal MLE

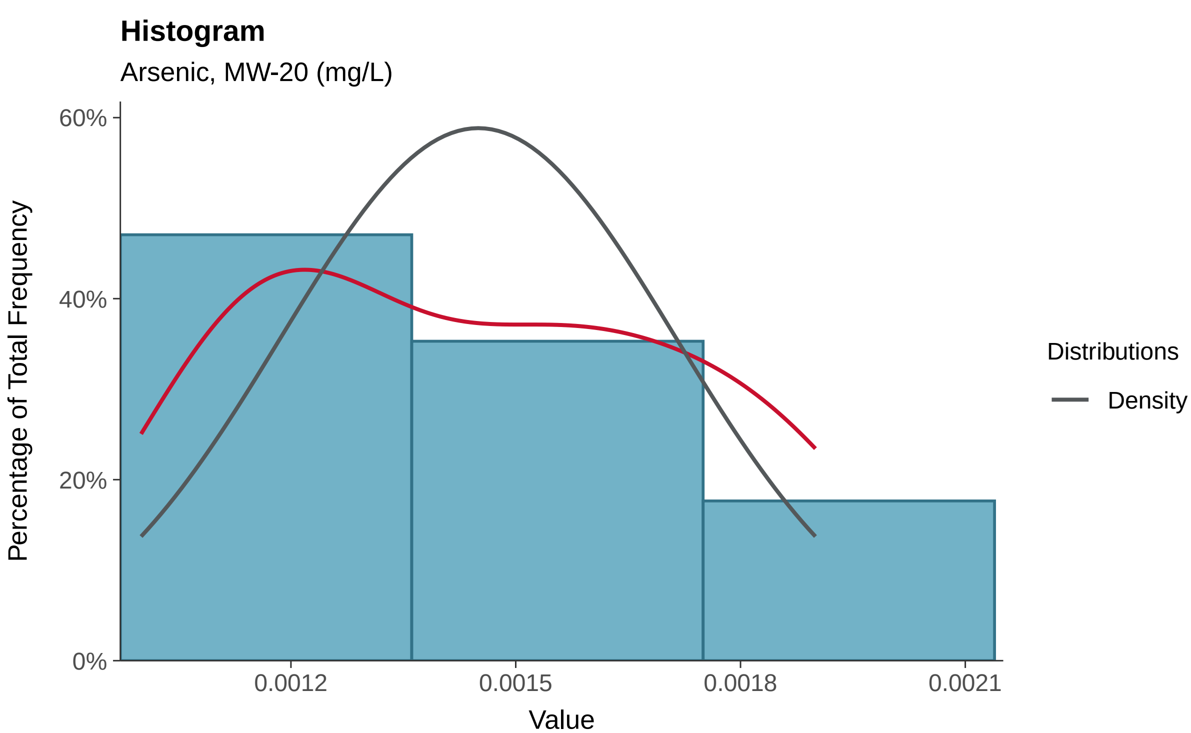
Antimony, MW-20 (mg/L)



Appendix IV: Arsenic, MW-20

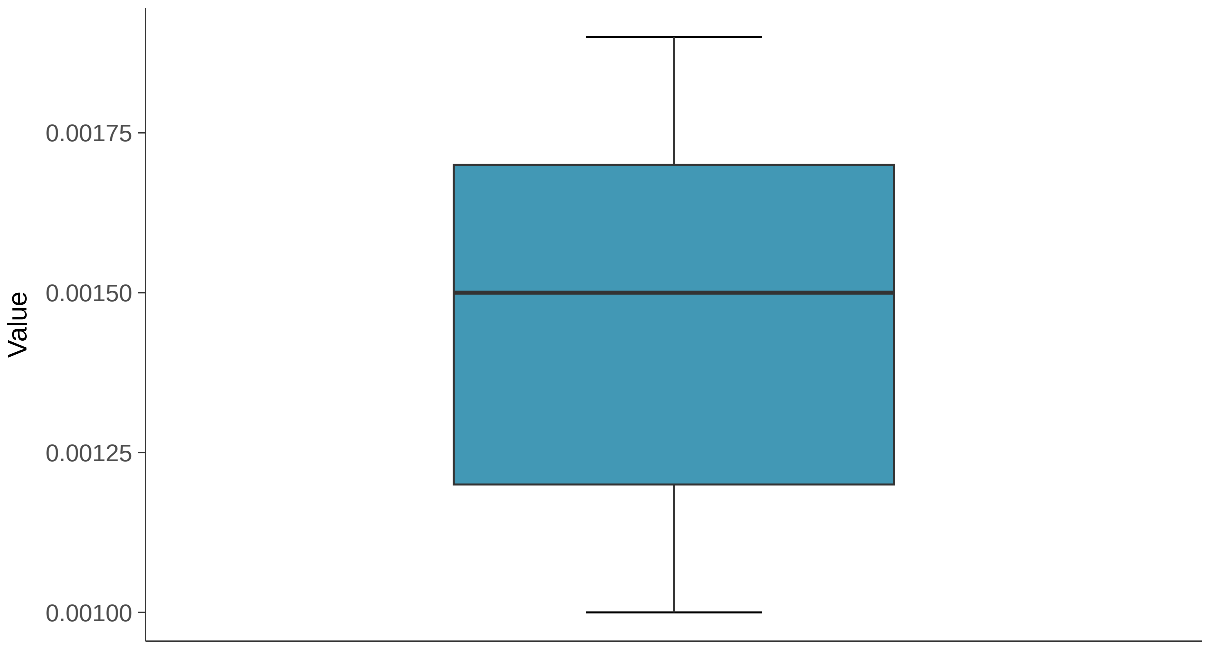
ID: 30_1_4_102





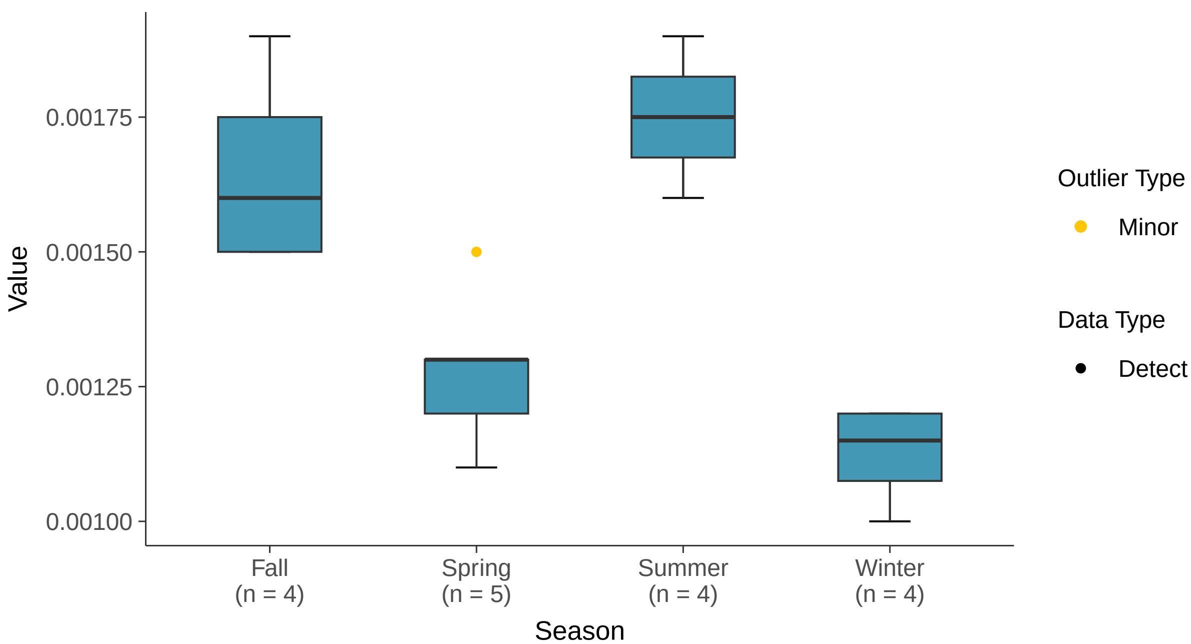
Boxplot

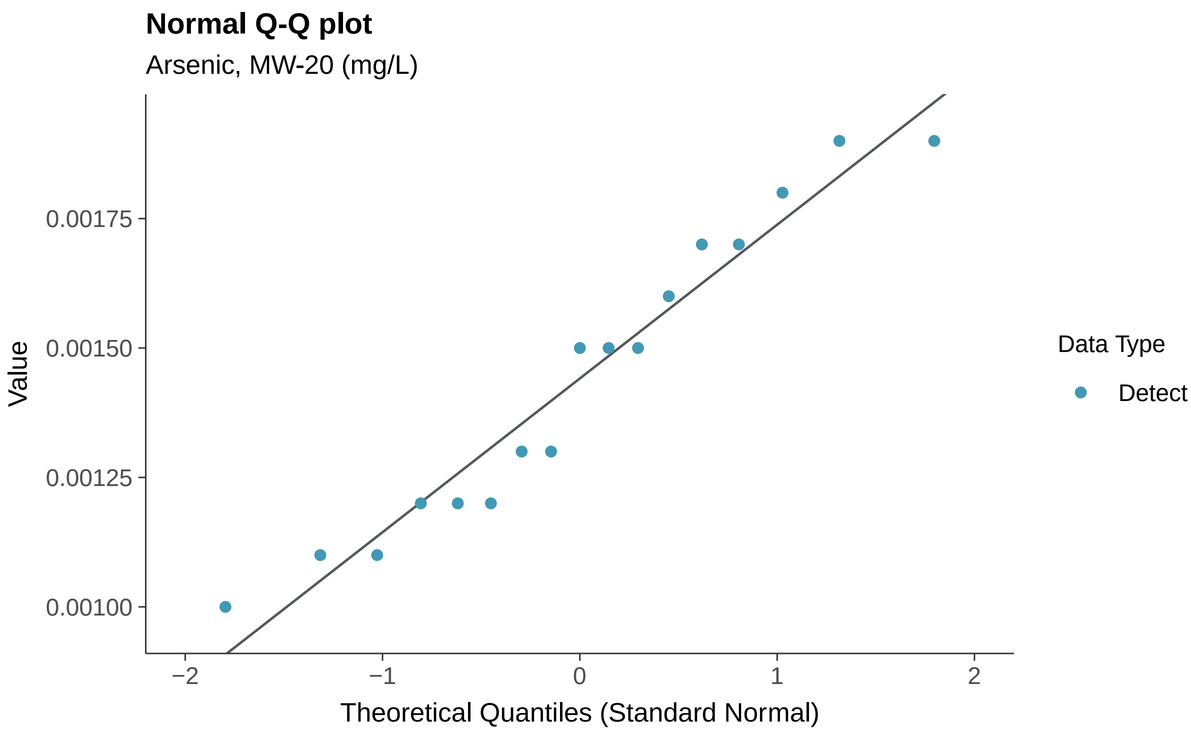
Arsenic, MW-20 (mg/L)

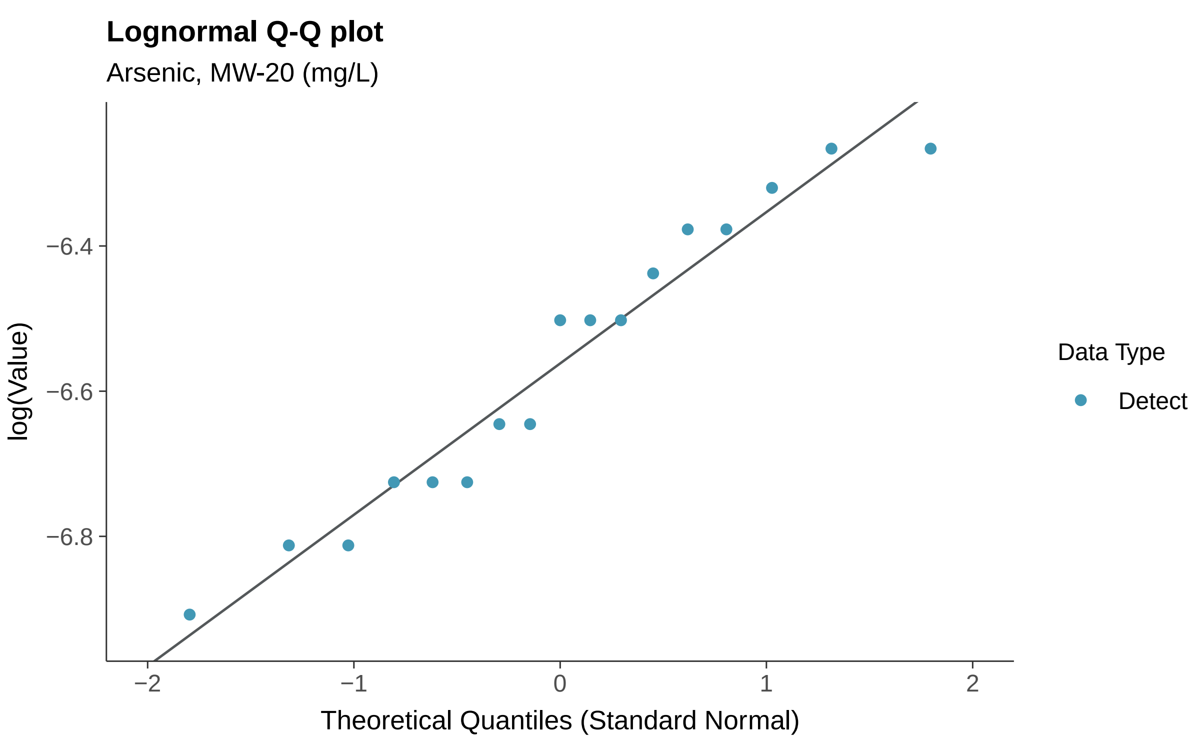


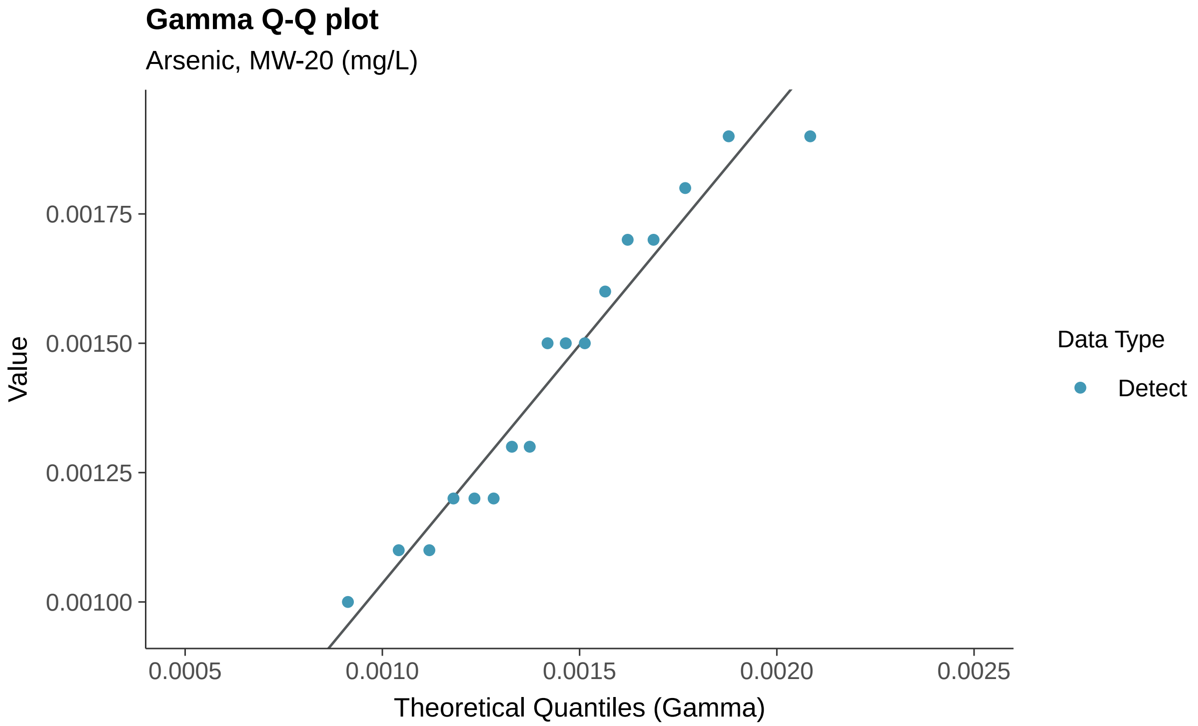
Boxplot by Season

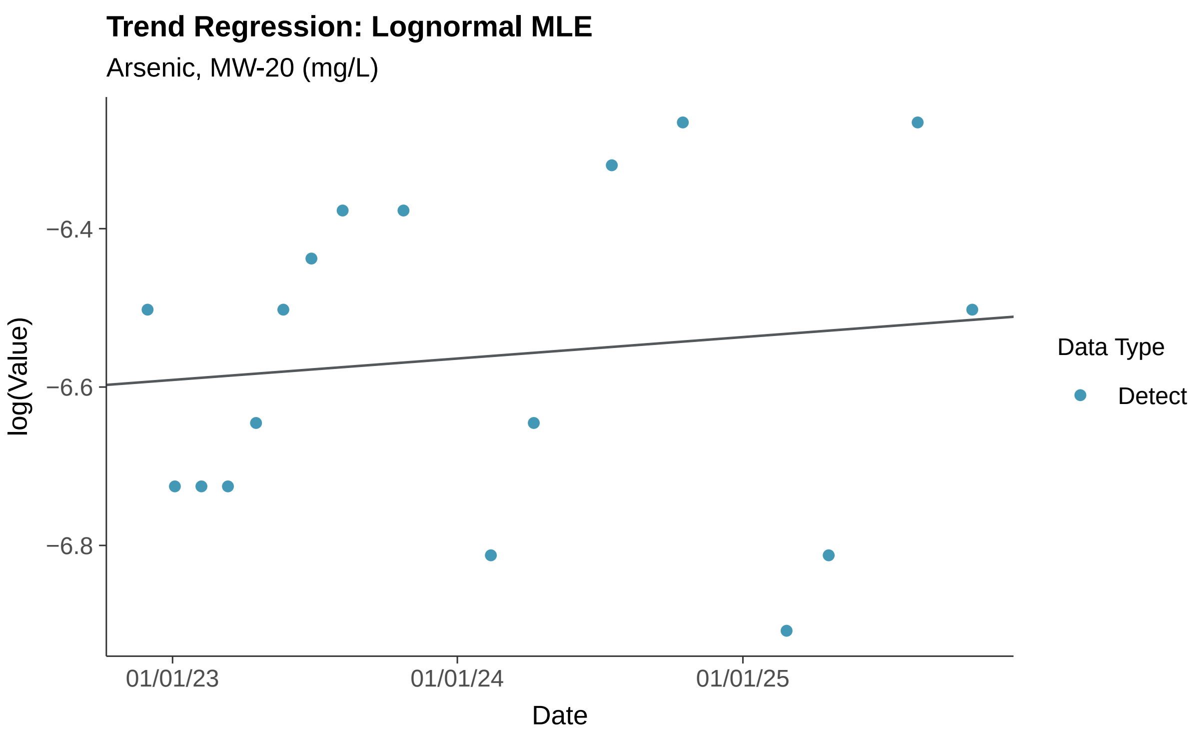
Arsenic, MW-20 (mg/L)




Normal Q-Q plot
Arsenic, MW-20 (mg/L)
Value
0.00175
0.00150
0.00125
0.00100
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

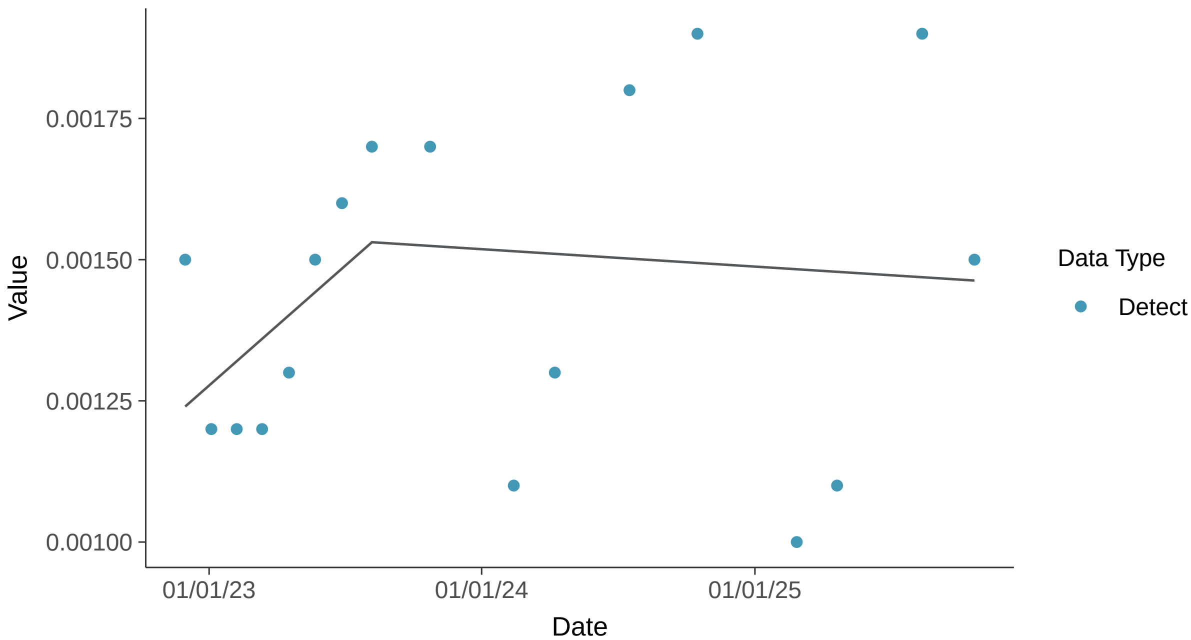

Lognormal Q-Q plot
Arsenic, MW-20 (mg/L)
log(Value)
−6.4
−6.6
−6.8
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Arsenic, MW-20 (mg/L)
Value
0.00175
0.00150
0.00125
0.00100
0.0005
0.0010
0.0015
0.0020
0.0025
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Arsenic, MW-20 (mg/L)
log(Value)
−6.4
−6.6
−6.8
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

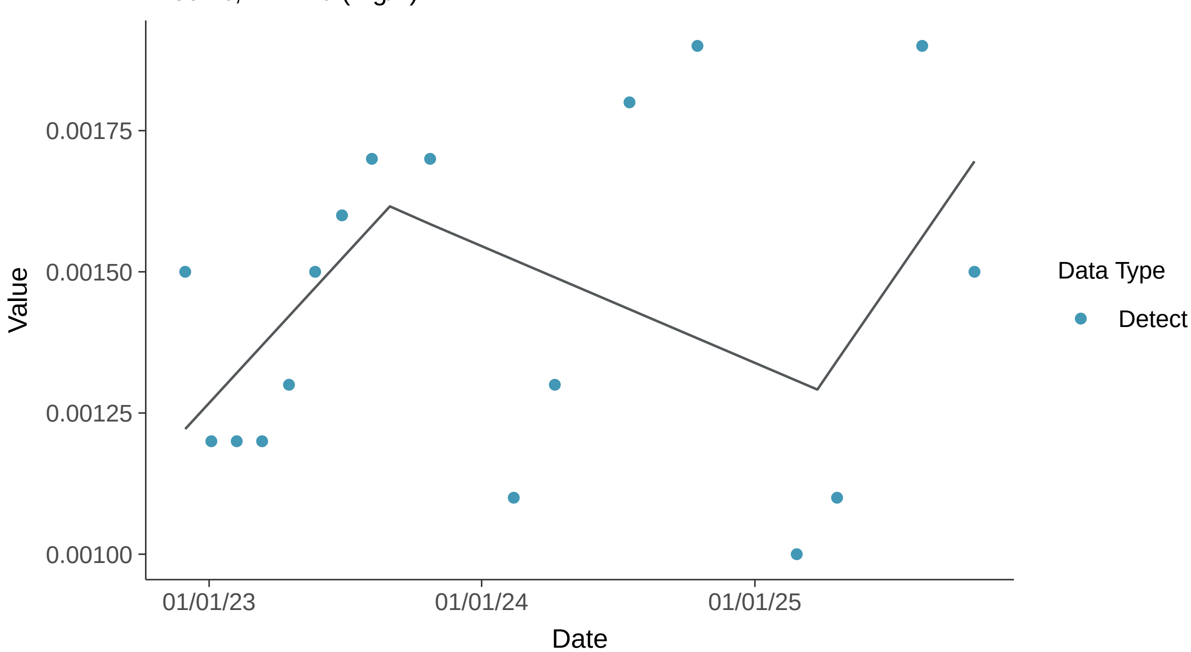
Trend Regression: Piecewise Linear-Linear

Arsenic, MW-20 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Arsenic, MW-20 (mg/L)

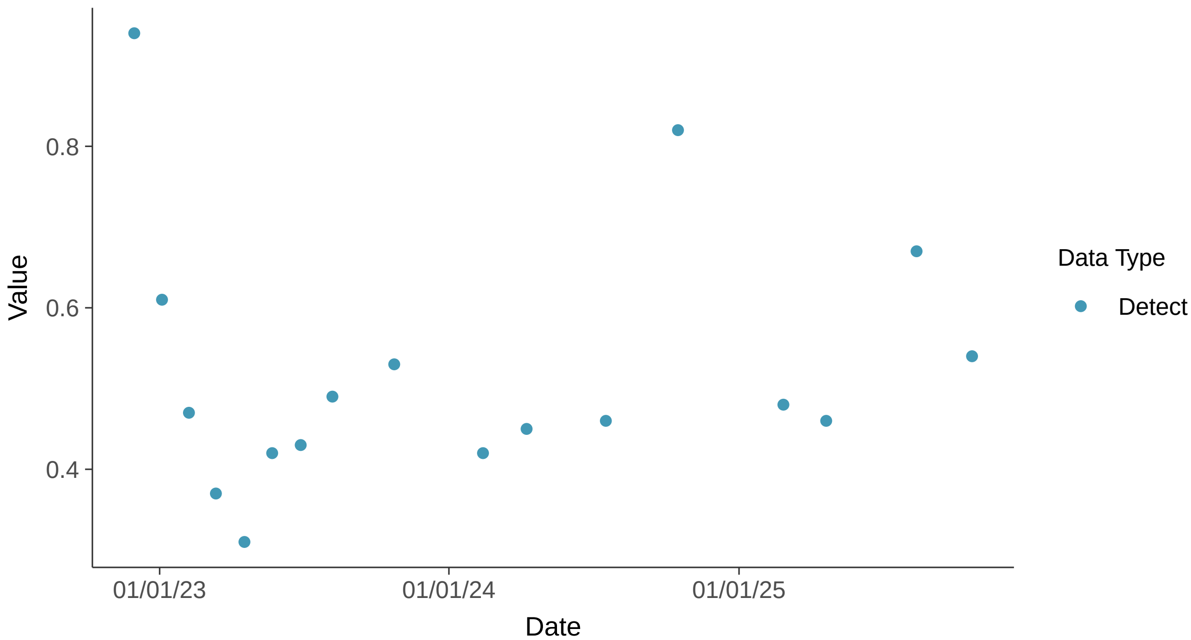


Appendix IV: Barium, MW-20

ID: 30_1_4_103

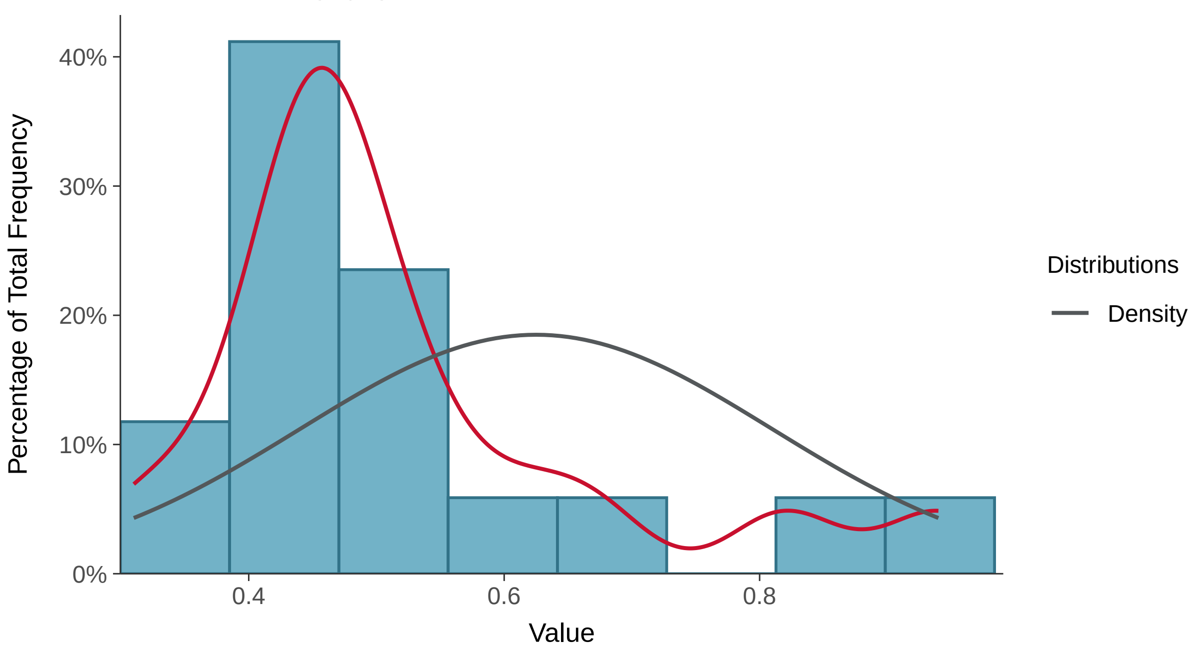
Scatter Plot

Barium, MW-20 (mg/L)



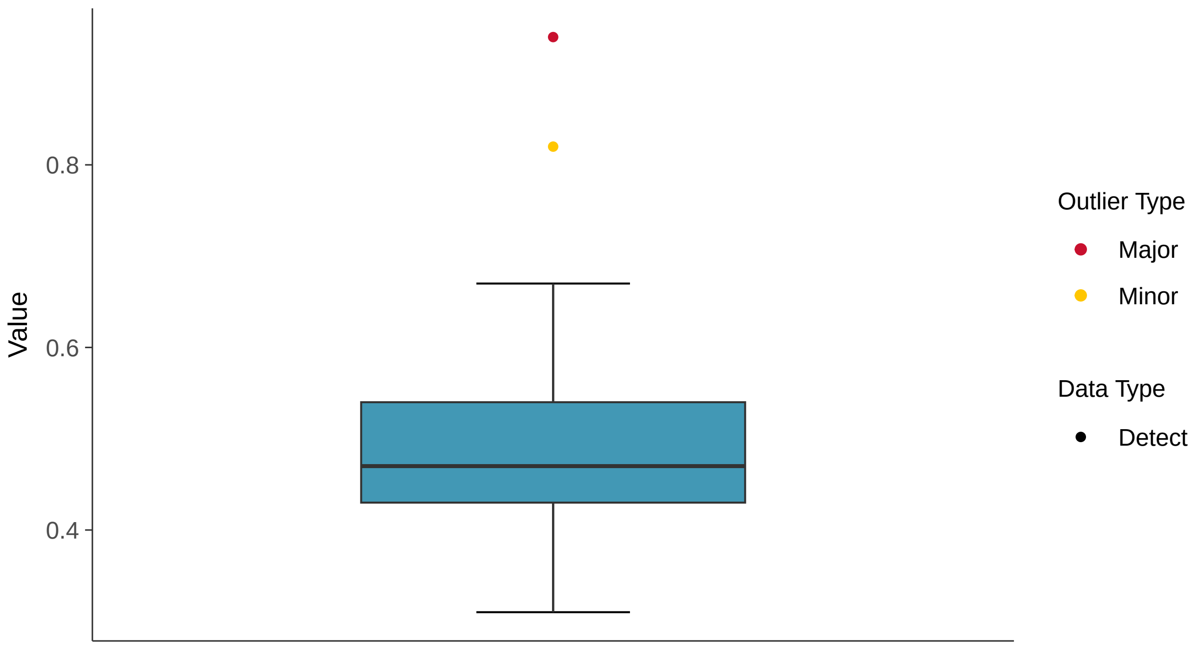
Histogram

Barium, MW-20 (mg/L)



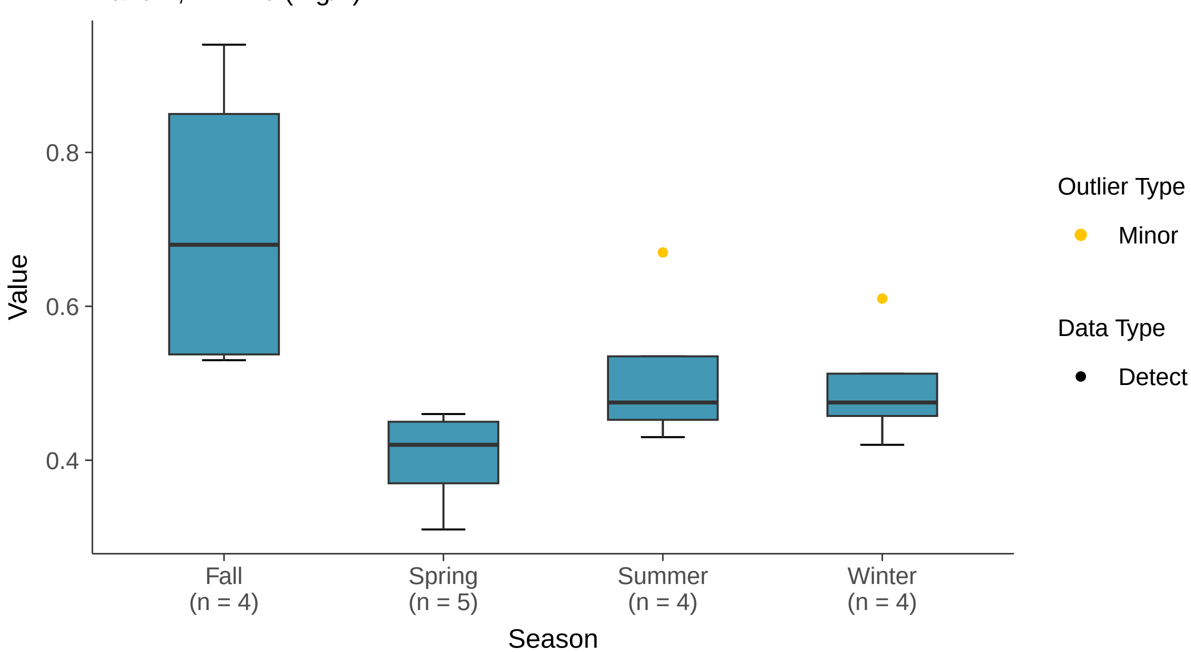
Boxplot

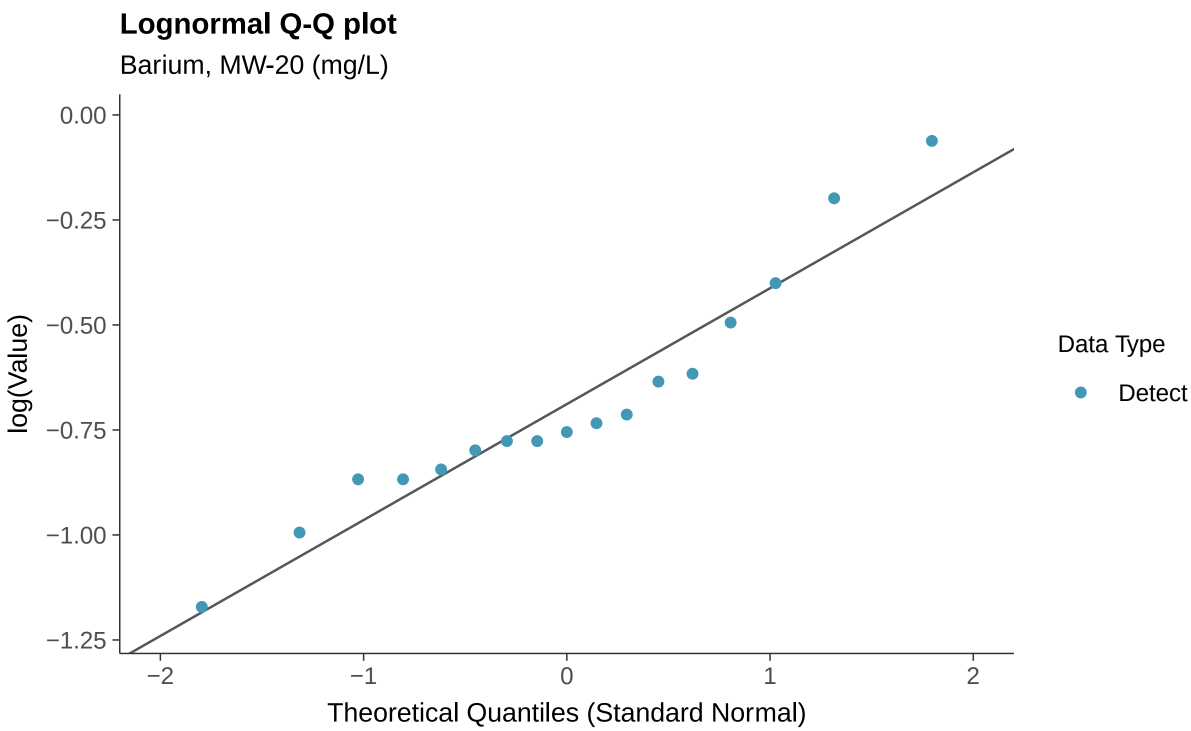
Barium, MW-20 (mg/L)

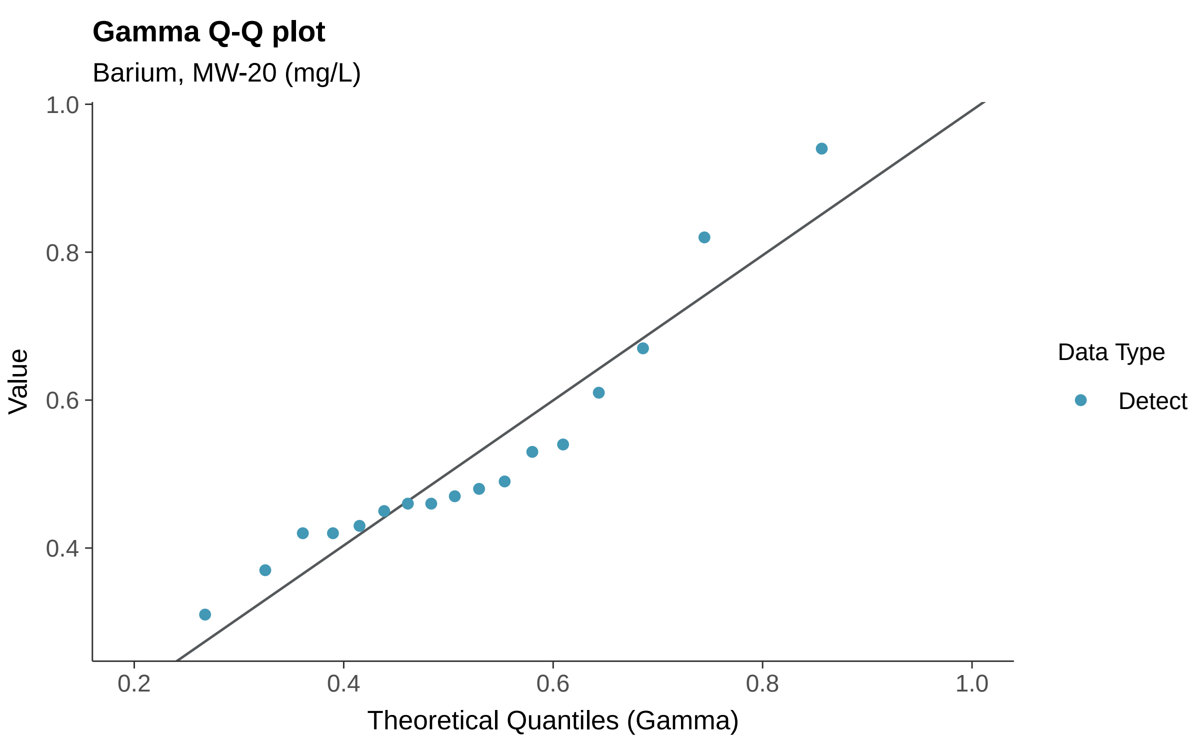


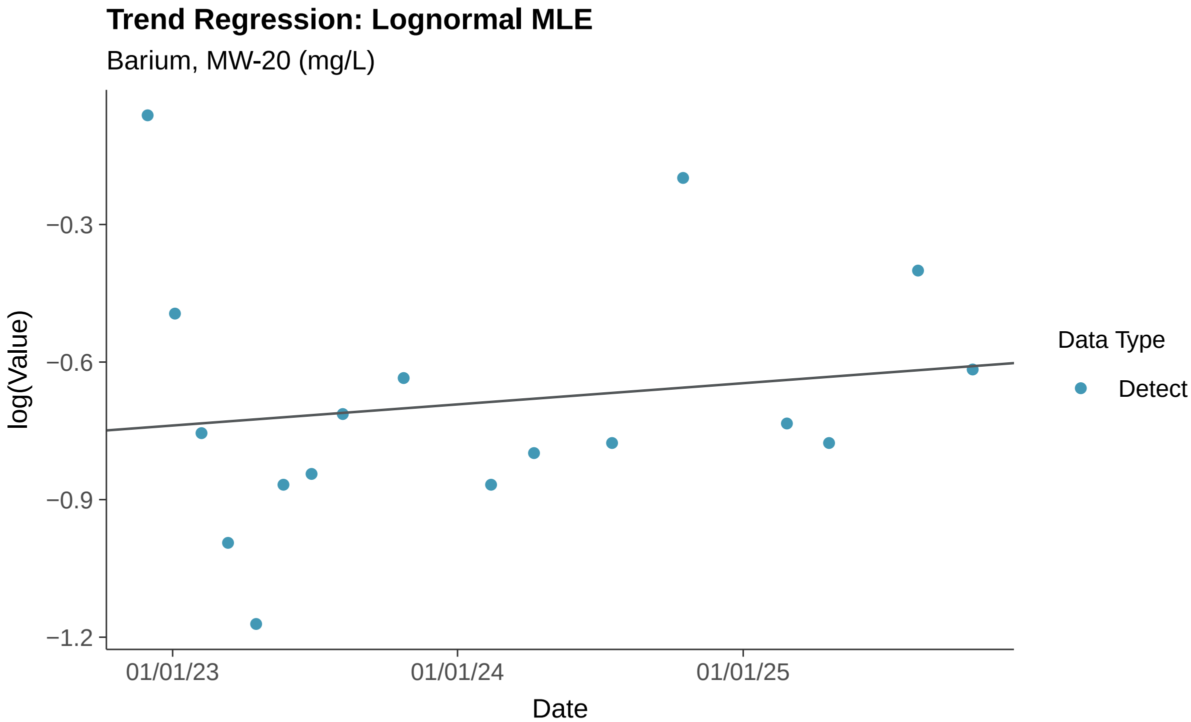
Boxplot by Season

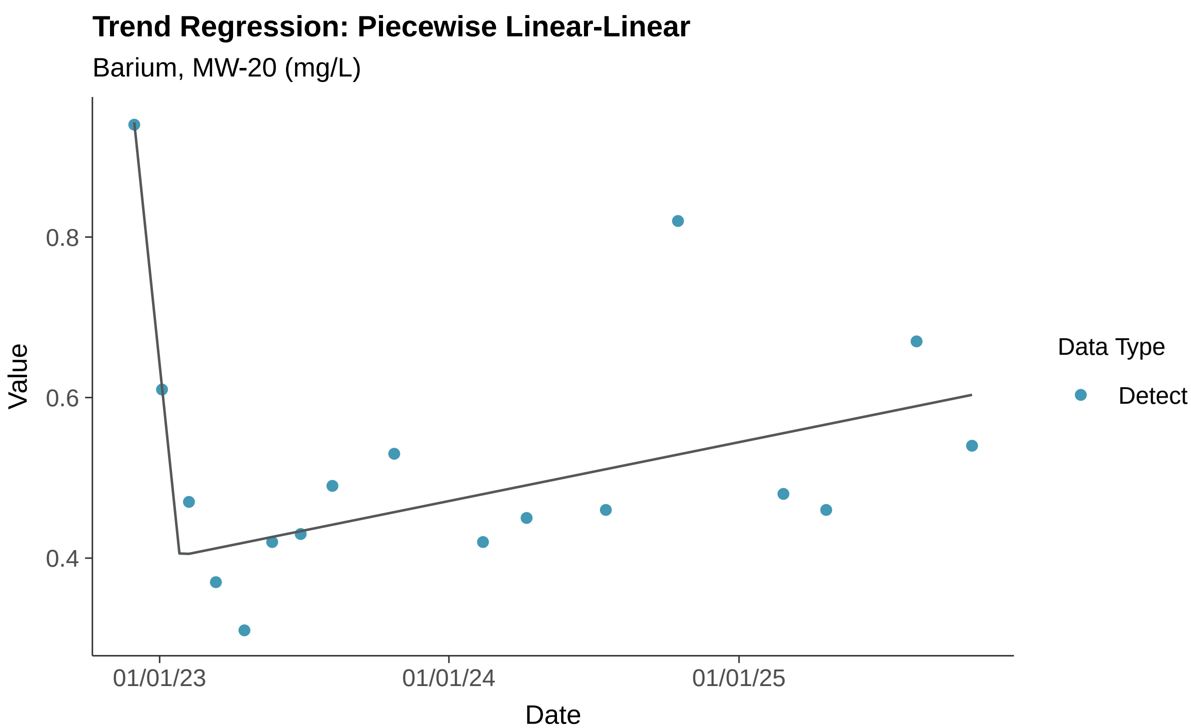
Barium, MW-20 (mg/L)




Lognormal Q-Q plot
Barium, MW-20 (mg/L)
0.00
−0.25
−0.50
−0.75
−1.00
−1.25
log(Value)
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

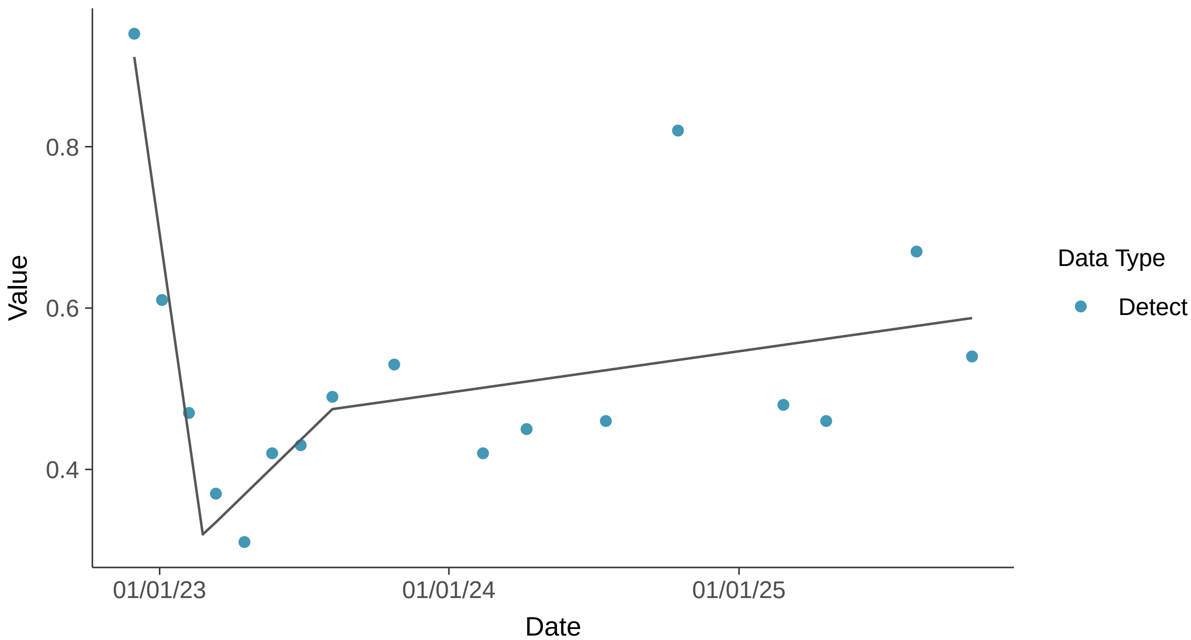

Gamma Q-Q plot
Barium, MW-20 (mg/L)
1.0
0.8
0.6
0.4
Value
0.2
0.4
0.6
0.8
1.0
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Barium, MW-20 (mg/L)
log(Value)
−0.3
−0.6
−0.9
−1.2
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear
Barium, MW-20 (mg/L)
Value
0.8
0.6
0.4
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear-Linear

Barium, MW-20 (mg/L)

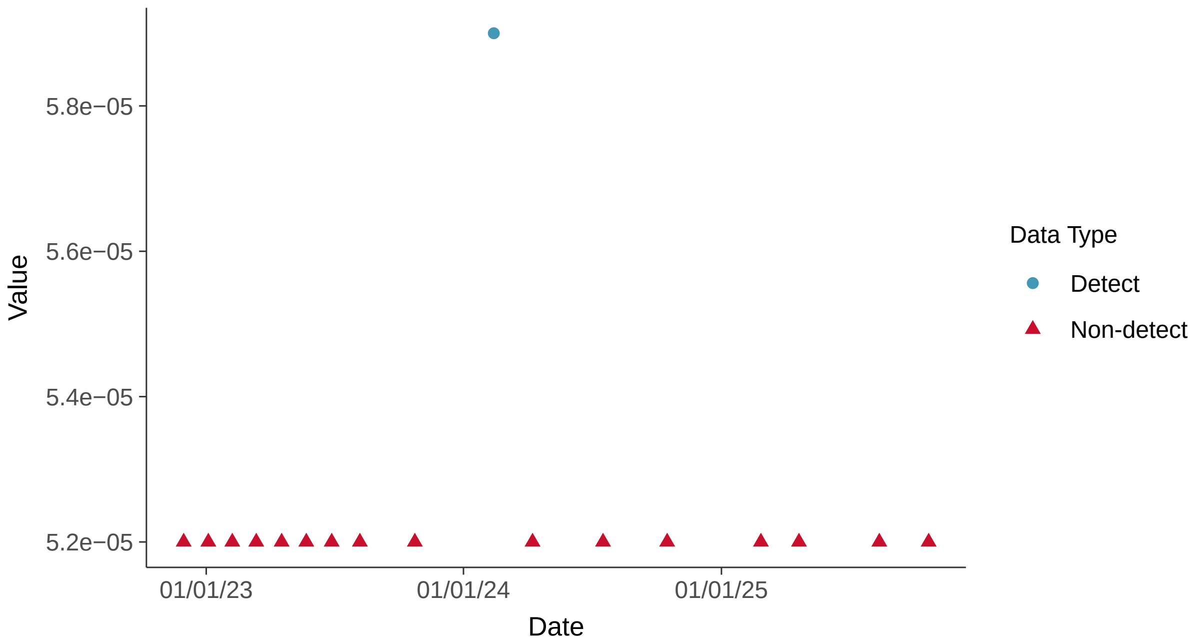


Appendix IV: Beryllium, MW-20

ID: 30_1_4_104

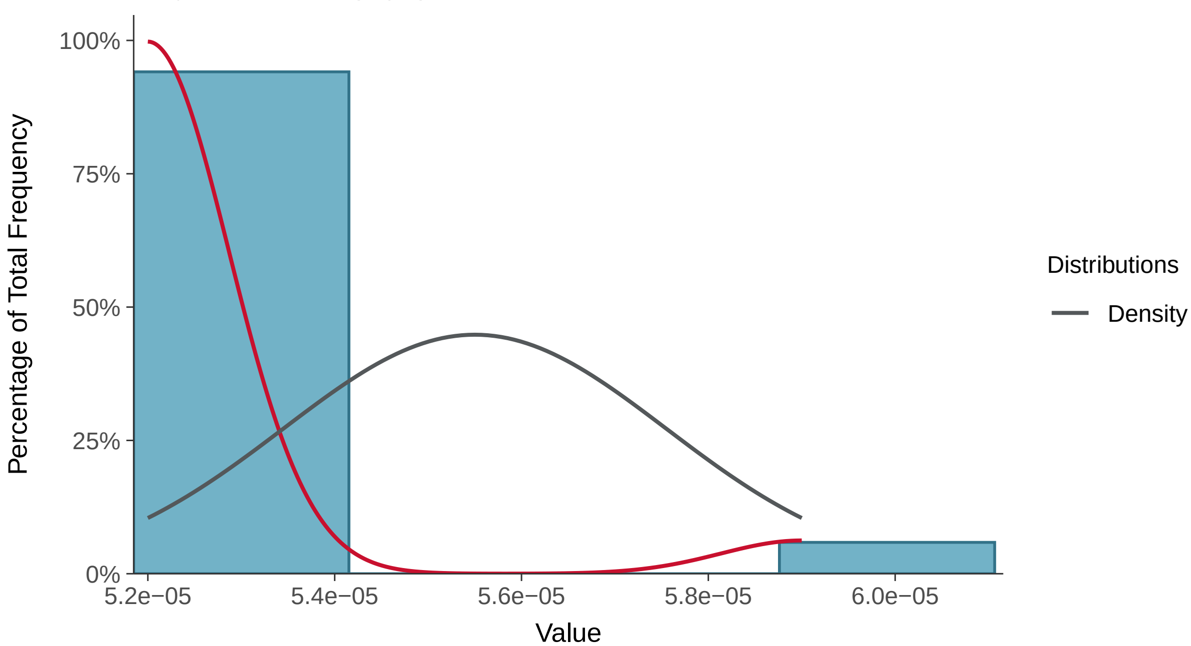
Scatter Plot

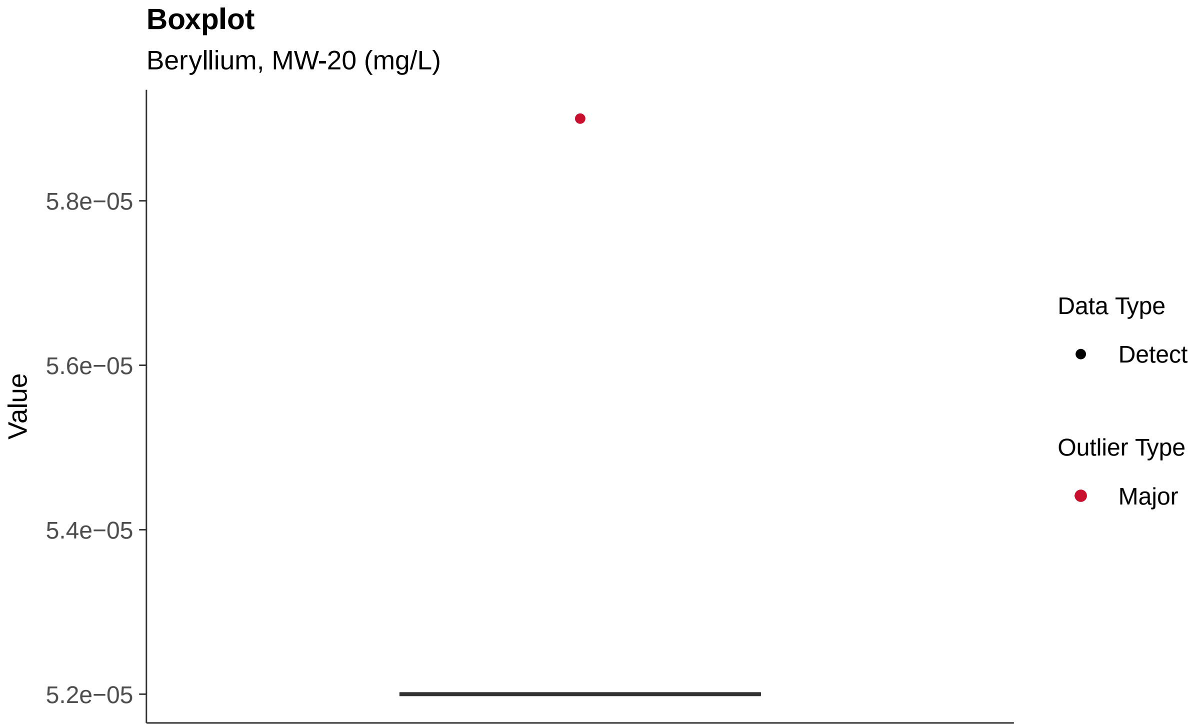
Beryllium, MW-20 (mg/L)

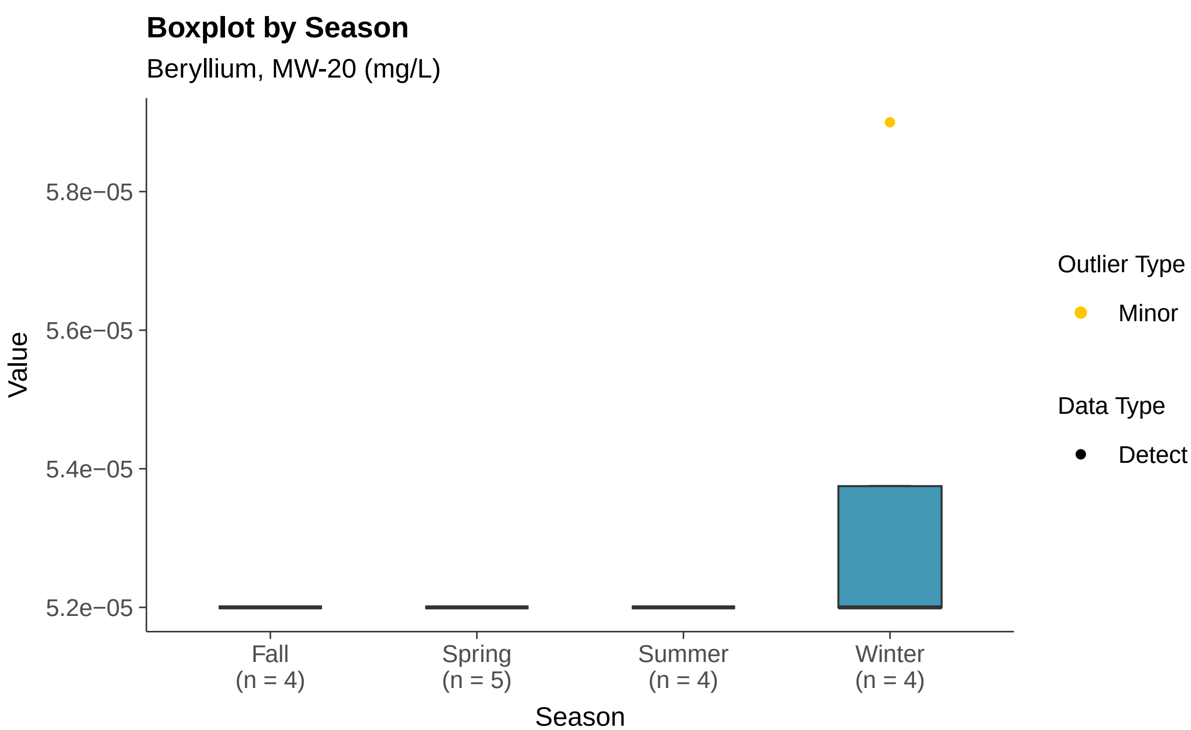


Histogram

Beryllium, MW-20 (mg/L)

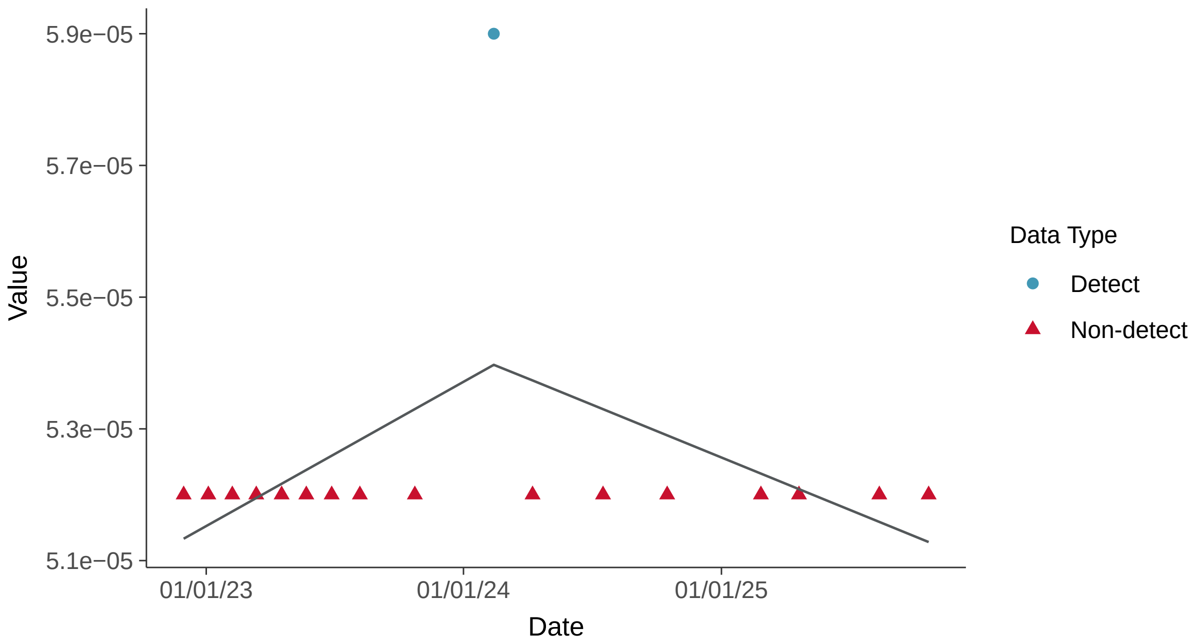



Boxplot
Beryllium, MW-20 (mg/L)
Value
5.8e−05
5.6e−05
5.4e−05
5.2e−05
Data Type
Detect
Outlier Type
Major


Boxplot by Season
Beryllium, MW-20 (mg/L)
Value
5.8e−05
5.6e−05
5.4e−05
5.2e−05
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Minor
Data Type
Detect

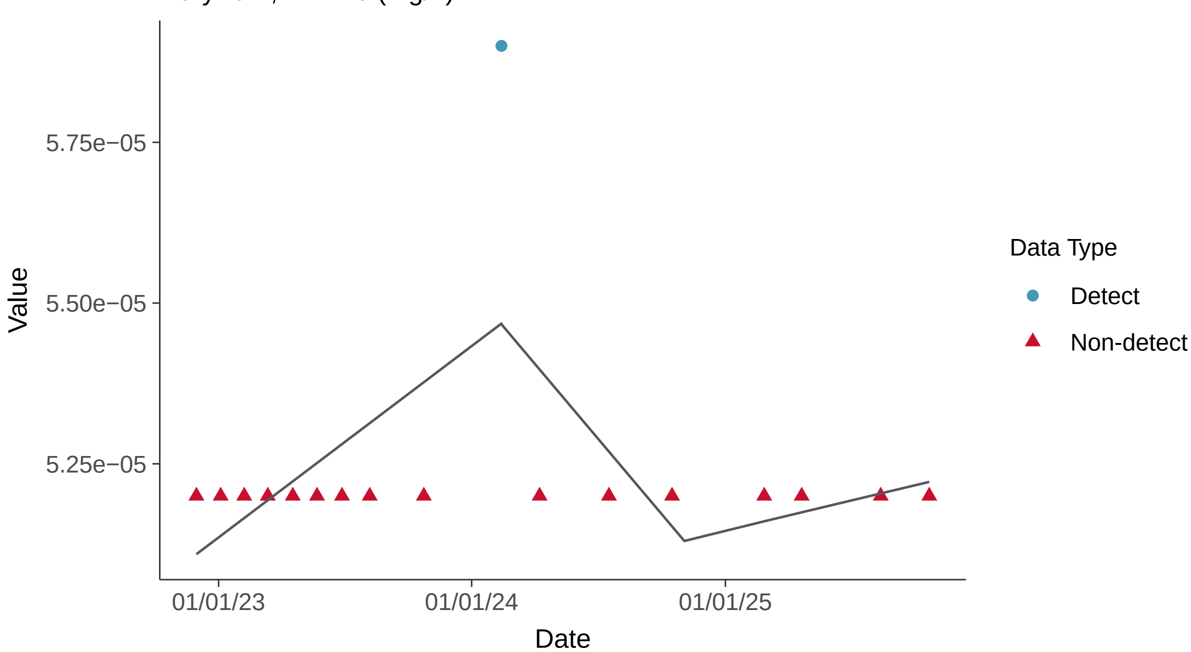
Trend Regression: Piecewise Linear-Linear

Beryllium, MW-20 (mg/L)



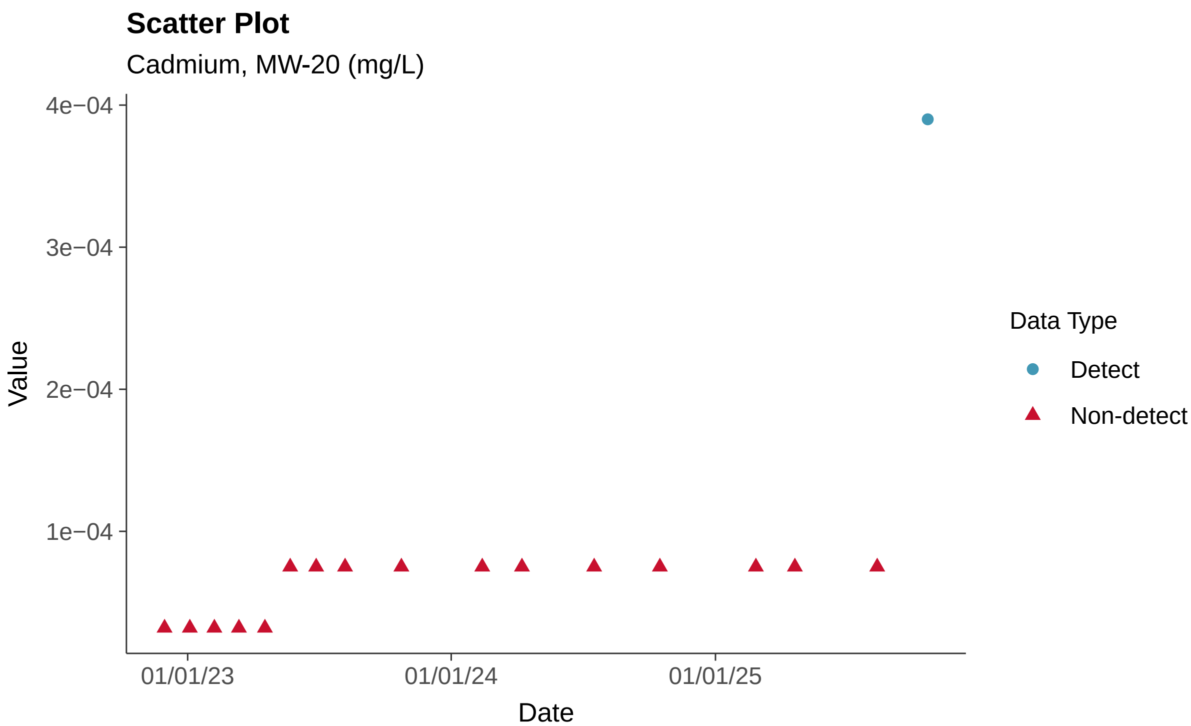
Trend Regression: Piecewise Linear-Linear-Linear

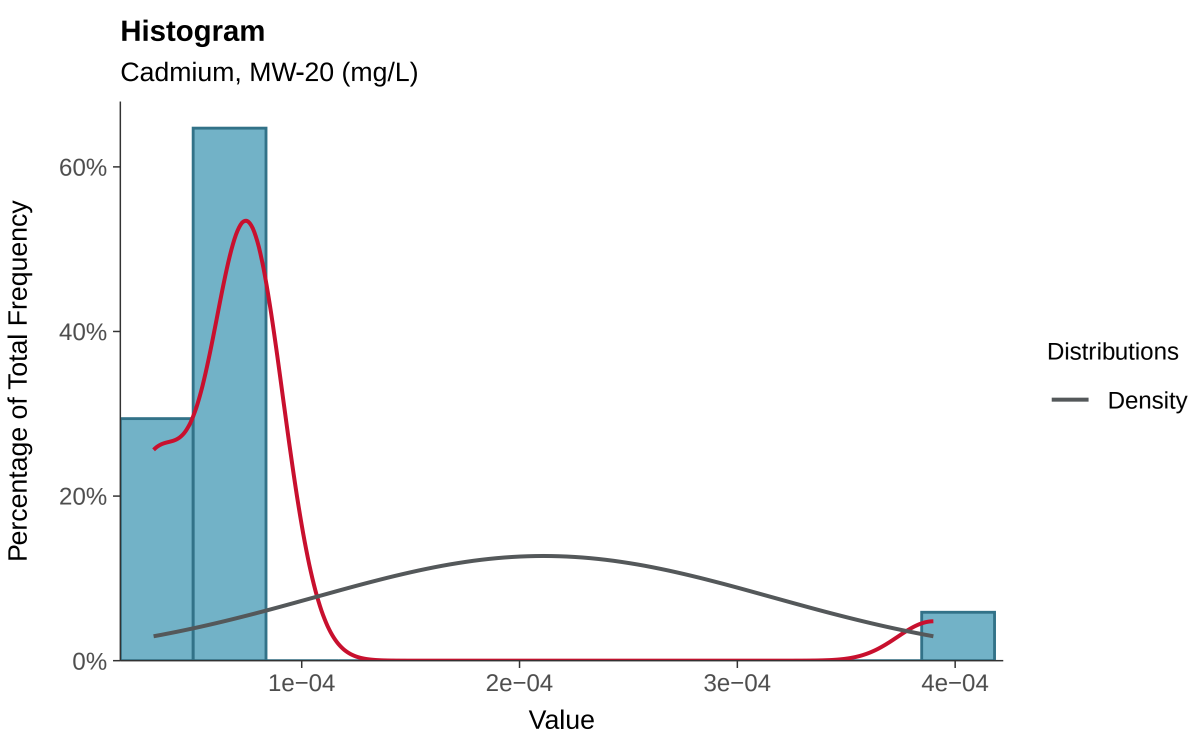
Beryllium, MW-20 (mg/L)



Appendix IV: Cadmium, MW-20

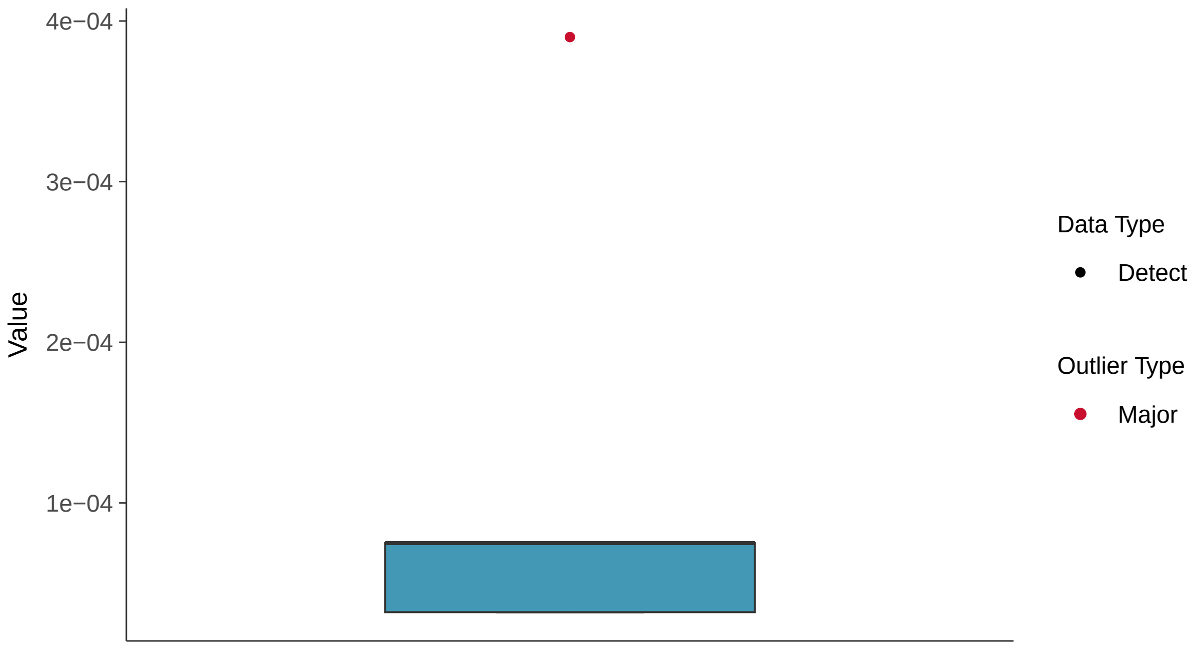
ID: 30_1_4_106





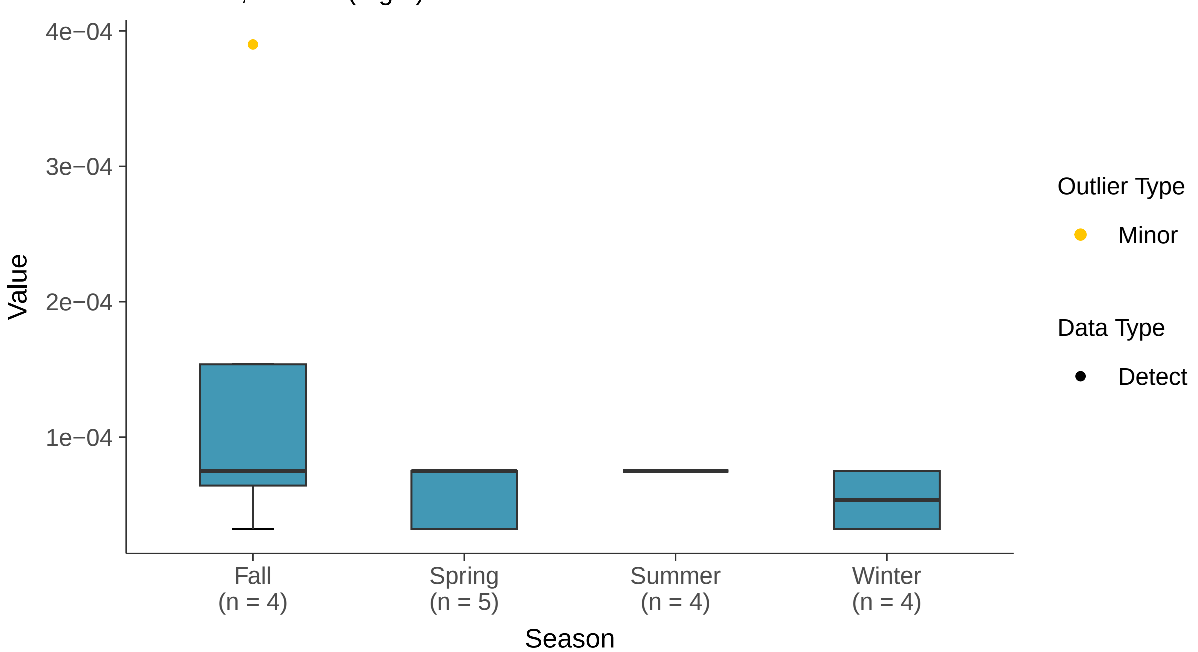
Boxplot

Cadmium, MW-20 (mg/L)



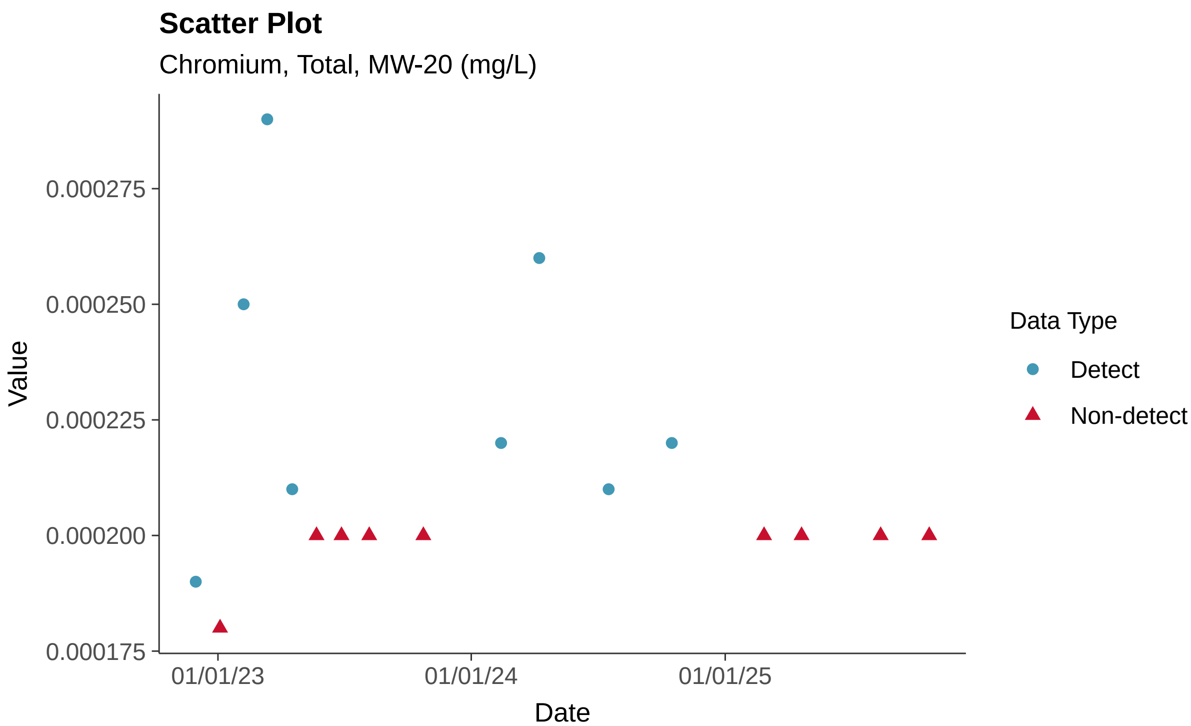
Boxplot by Season

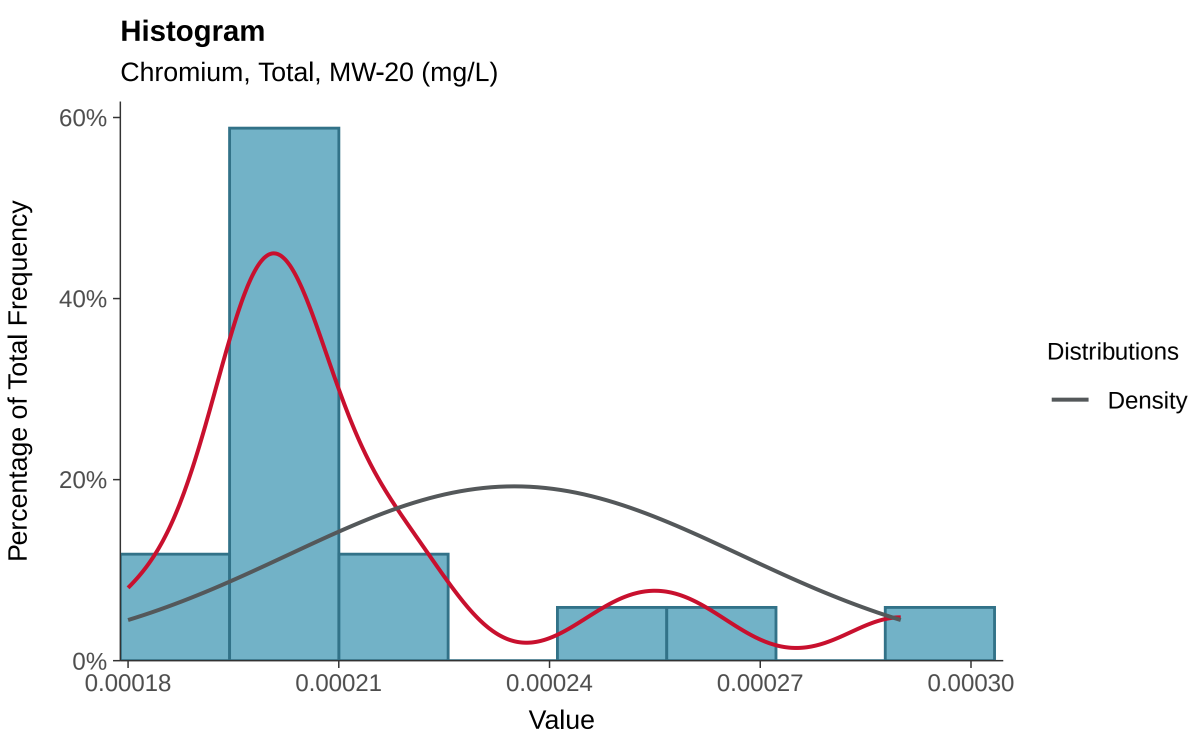
Cadmium, MW-20 (mg/L)



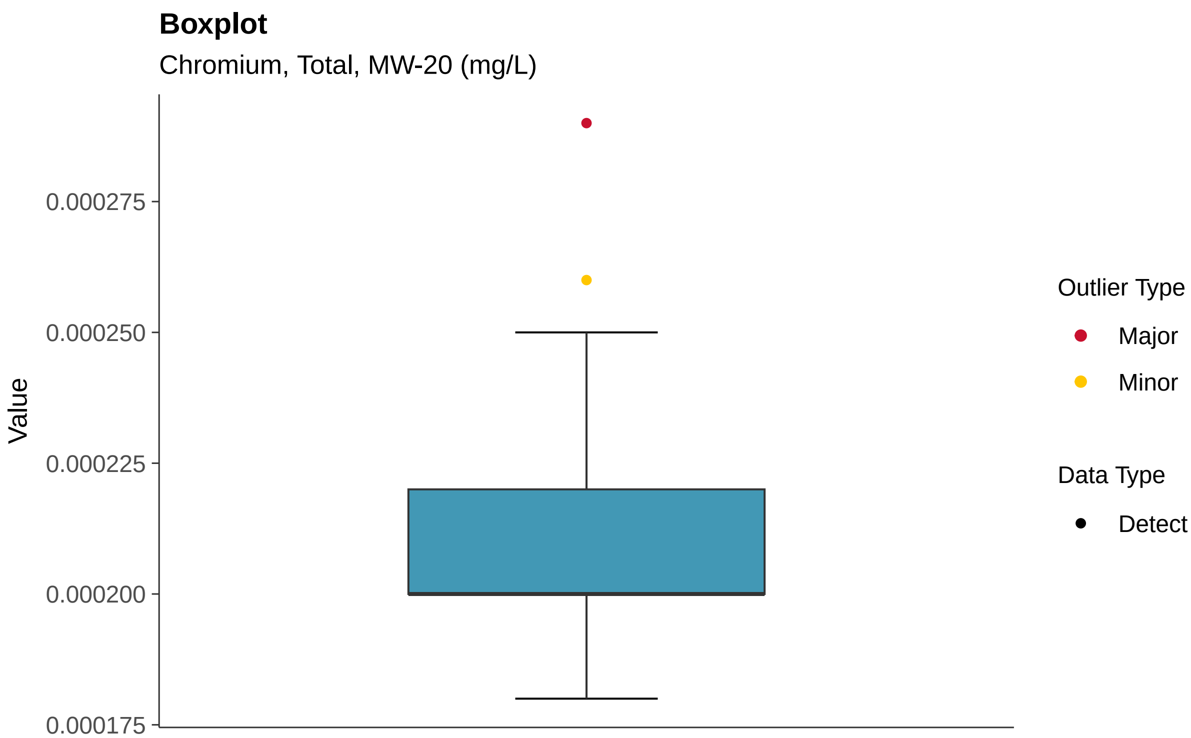
Appendix IV: Chromium, Total, MW-20

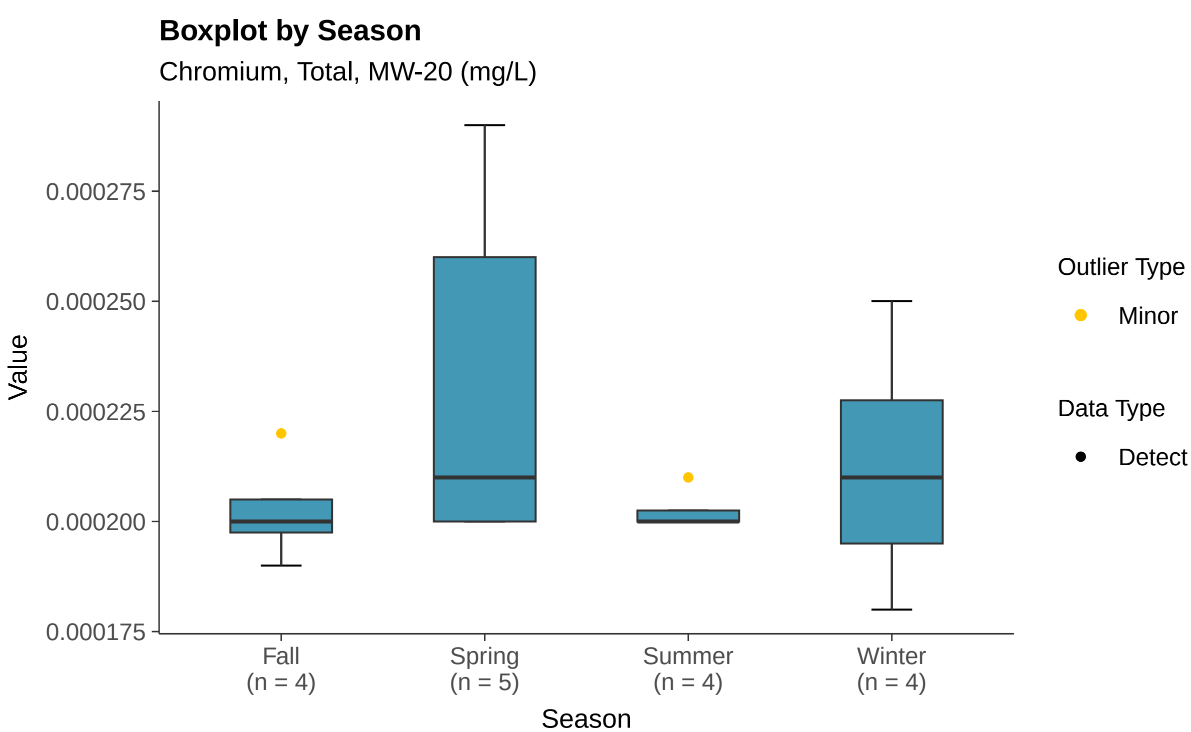
ID: 30_1_4_109

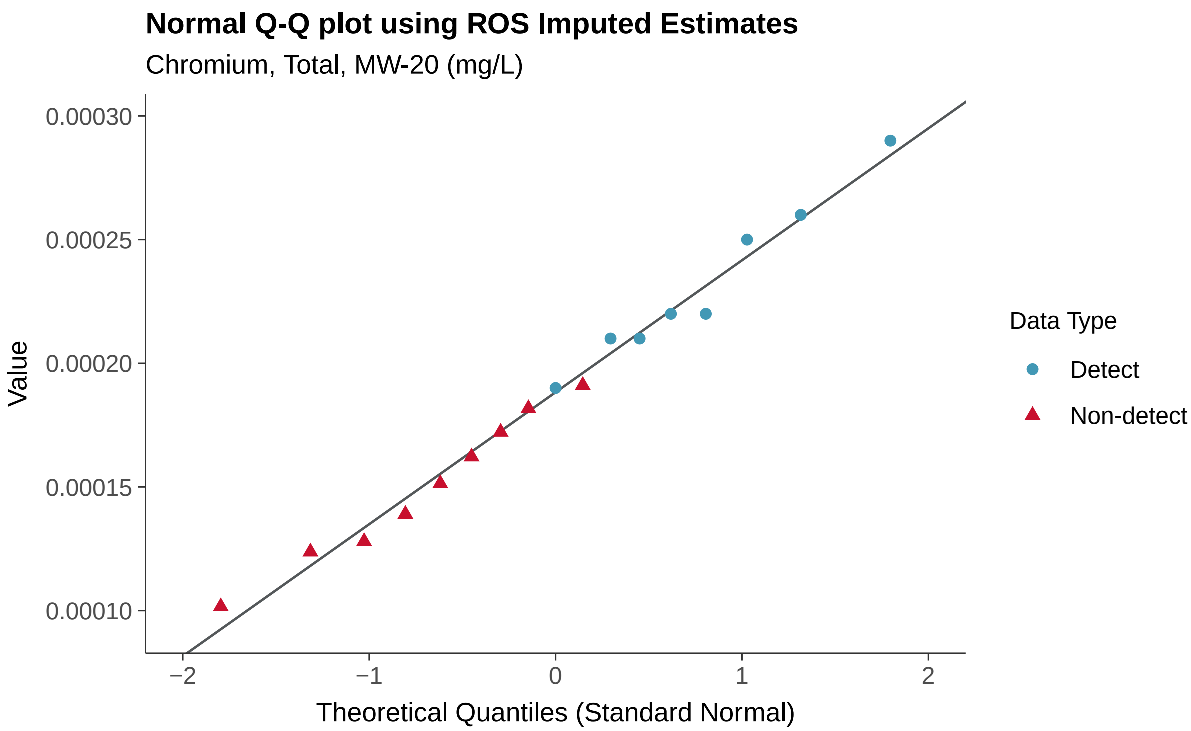


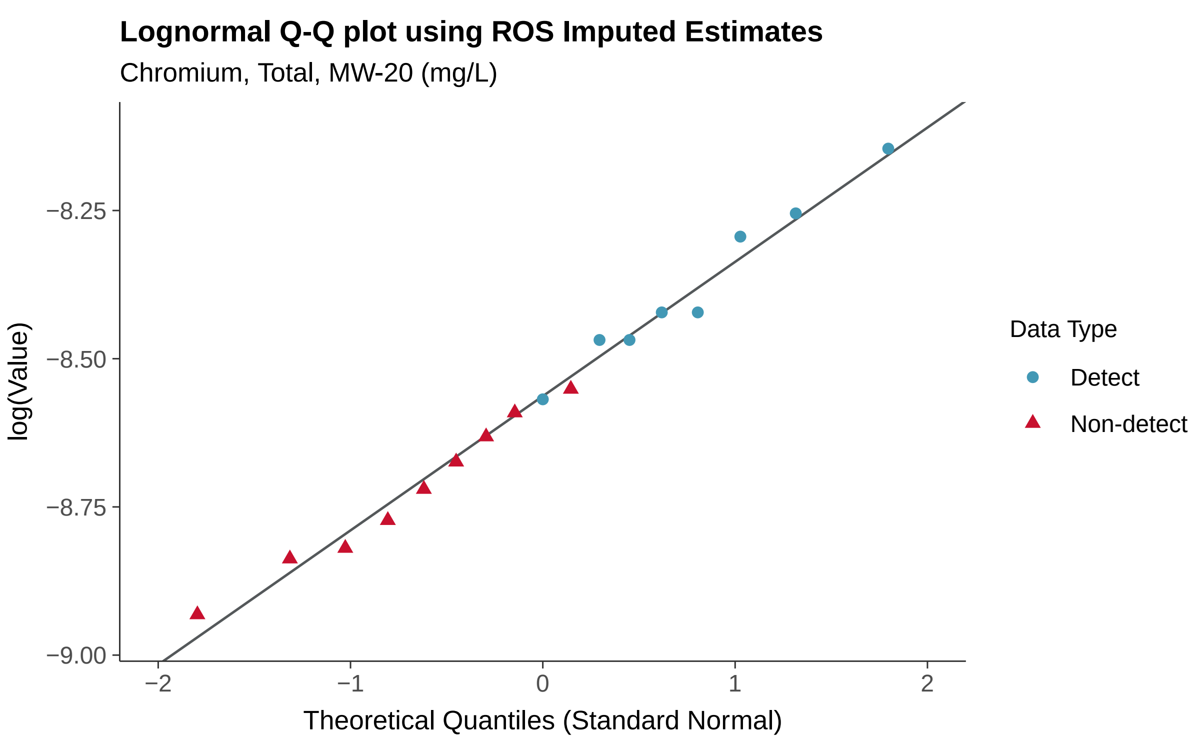


Grand Haven
Downgradient Wells as of October 2025



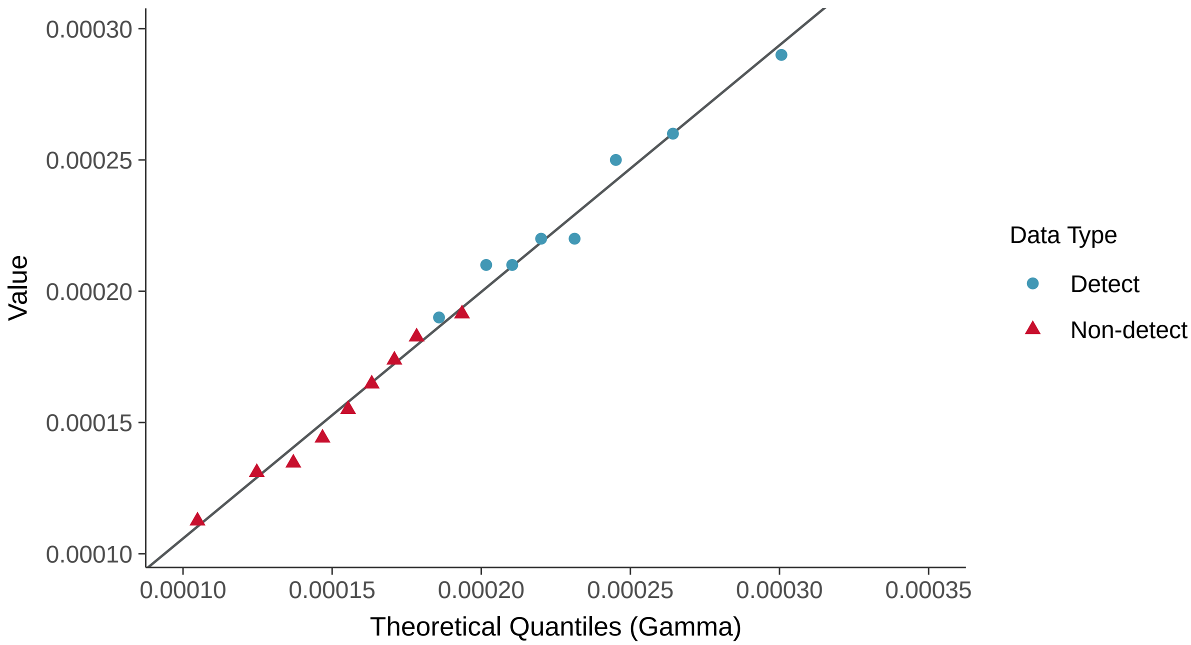



Normal Q-Q plot using ROS Imputed Estimates
Chromium, Total, MW-20 (mg/L)
Value
0.00030
0.00025
0.00020
0.00015
0.00010
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Lognormal Q-Q plot using ROS Imputed Estimates
Chromium, Total, MW-20 (mg/L)
log(Value)
−8.25
−8.50
−8.75
−9.00
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

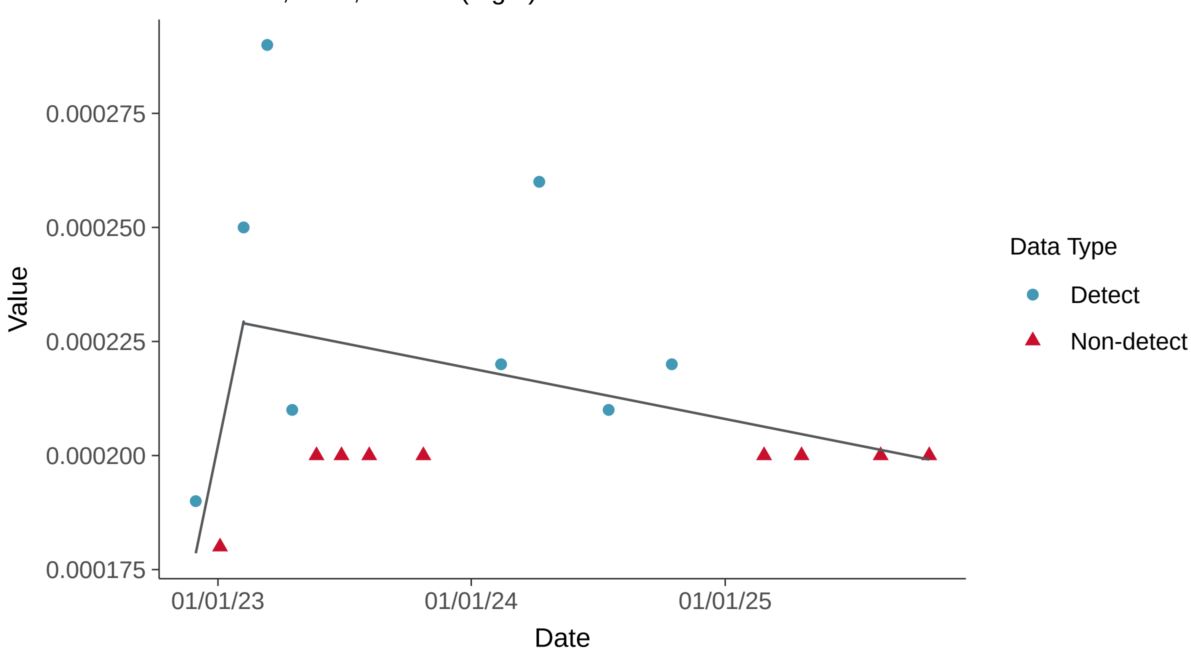
Gamma Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-20 (mg/L)



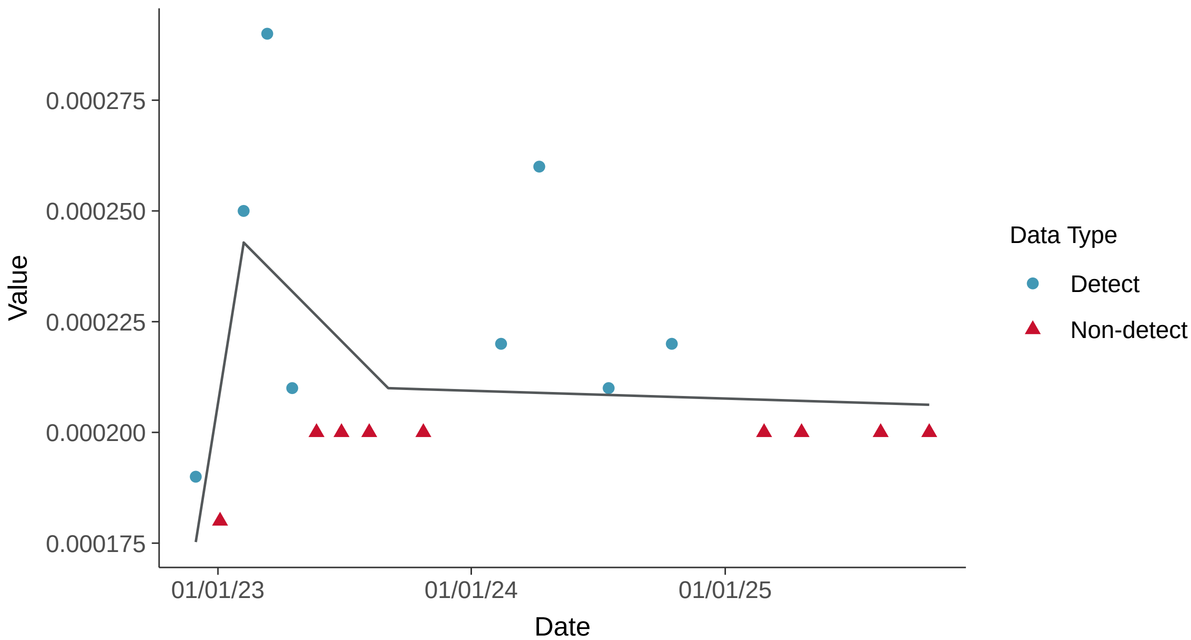
Trend Regression: Piecewise Linear-Linear

Chromium, Total, MW-20 (mg/L)



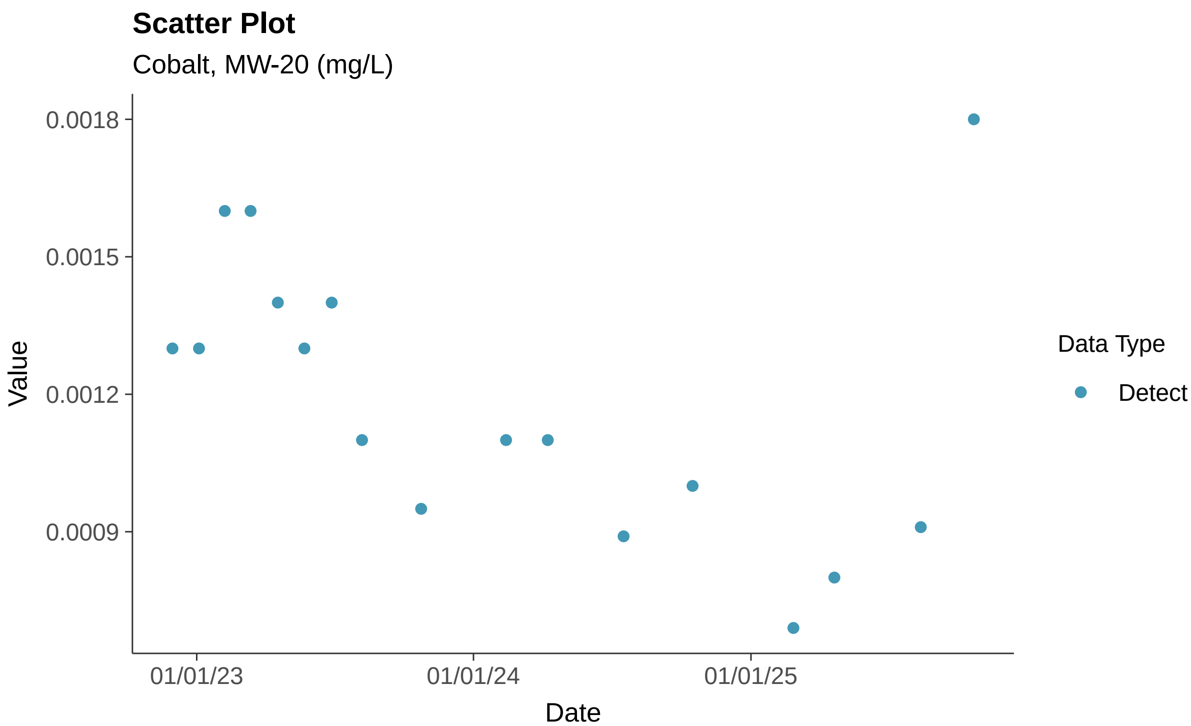
Trend Regression: Piecewise Linear-Linear-Linear

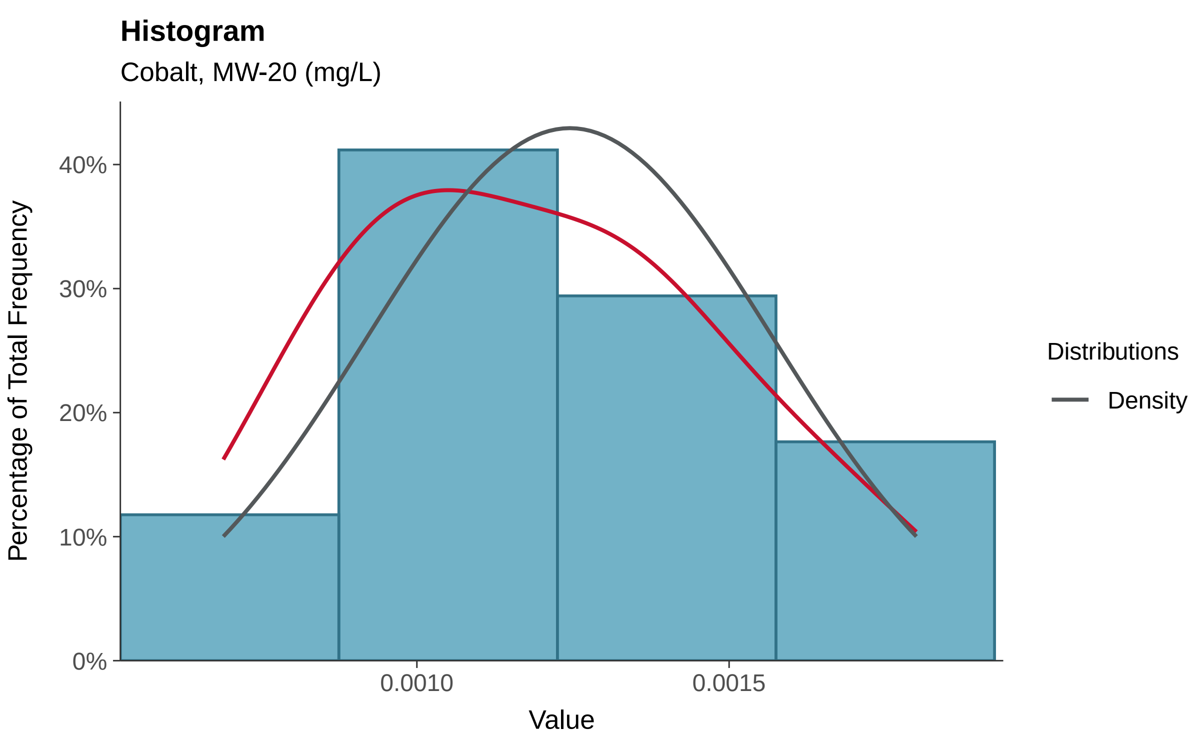
Chromium, Total, MW-20 (mg/L)



Appendix IV: Cobalt, MW-20

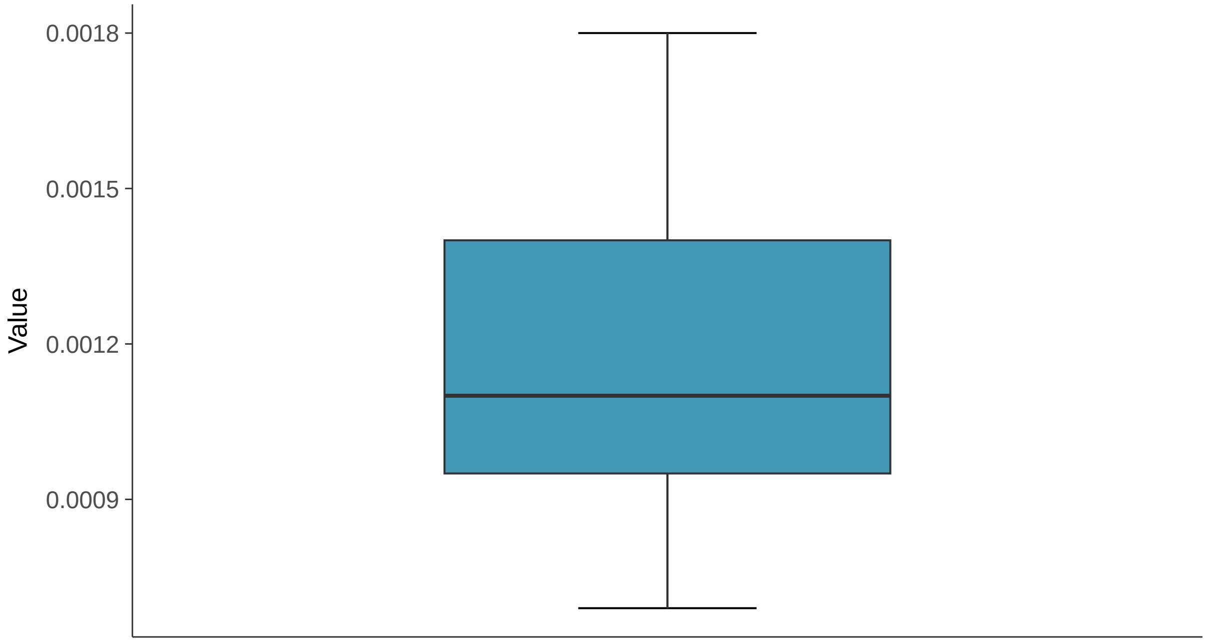
ID: 30_1_4_110





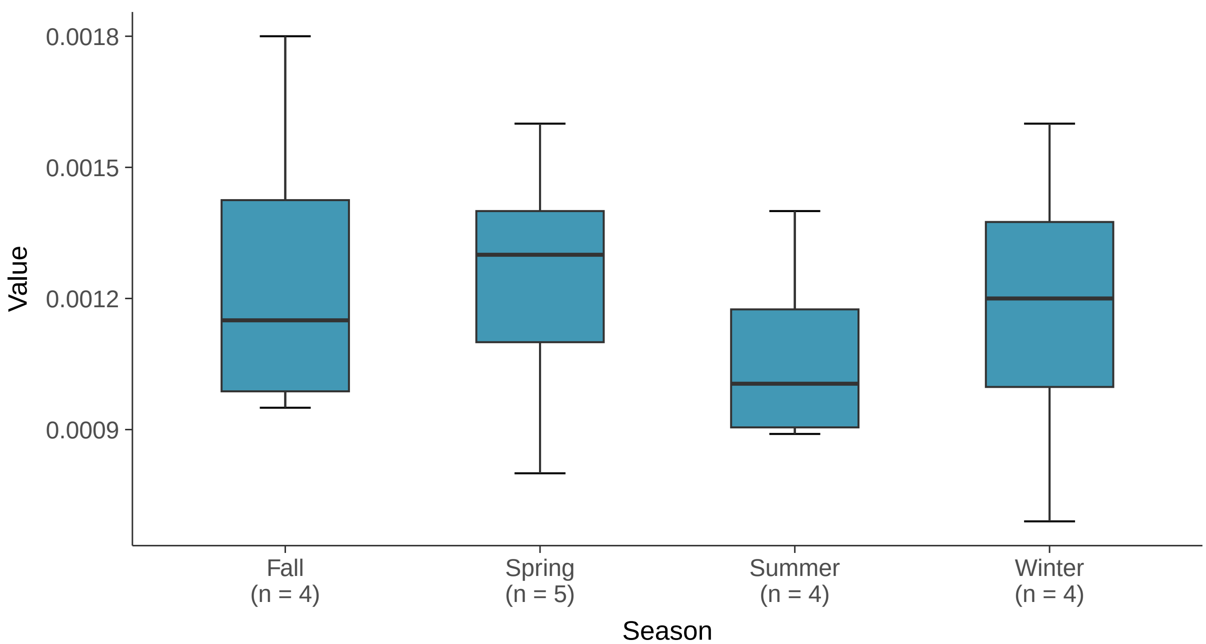
Boxplot

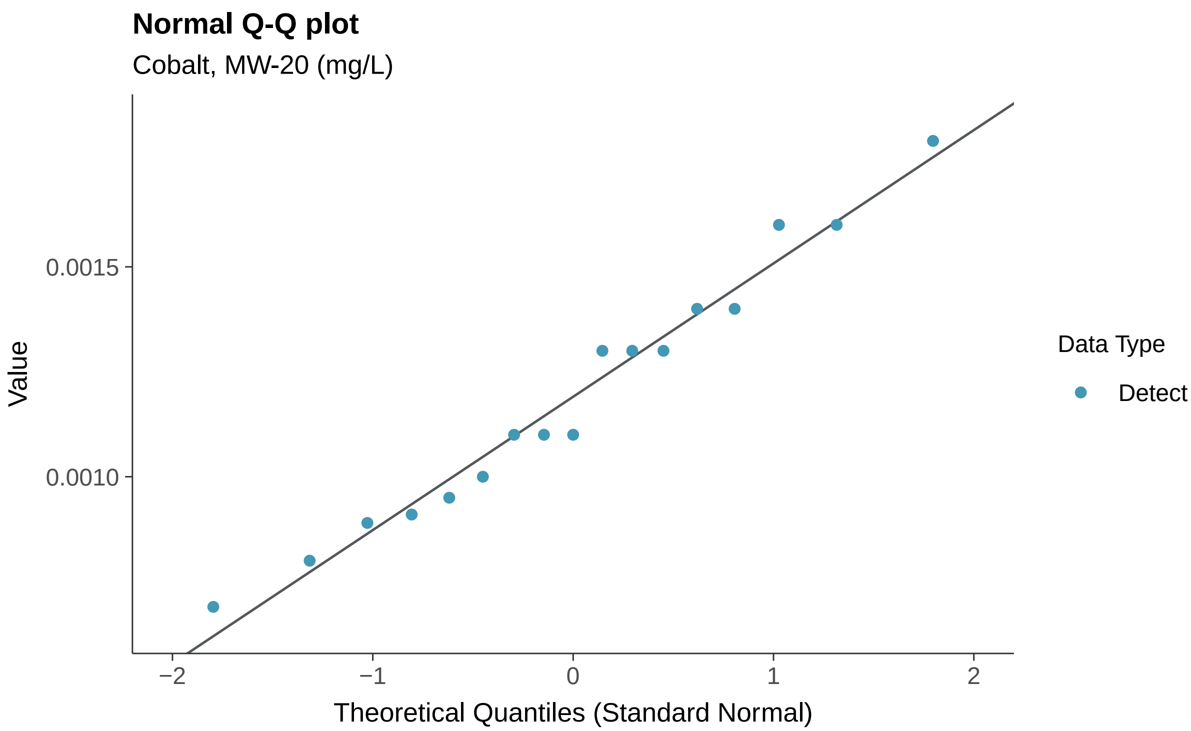
Cobalt, MW-20 (mg/L)

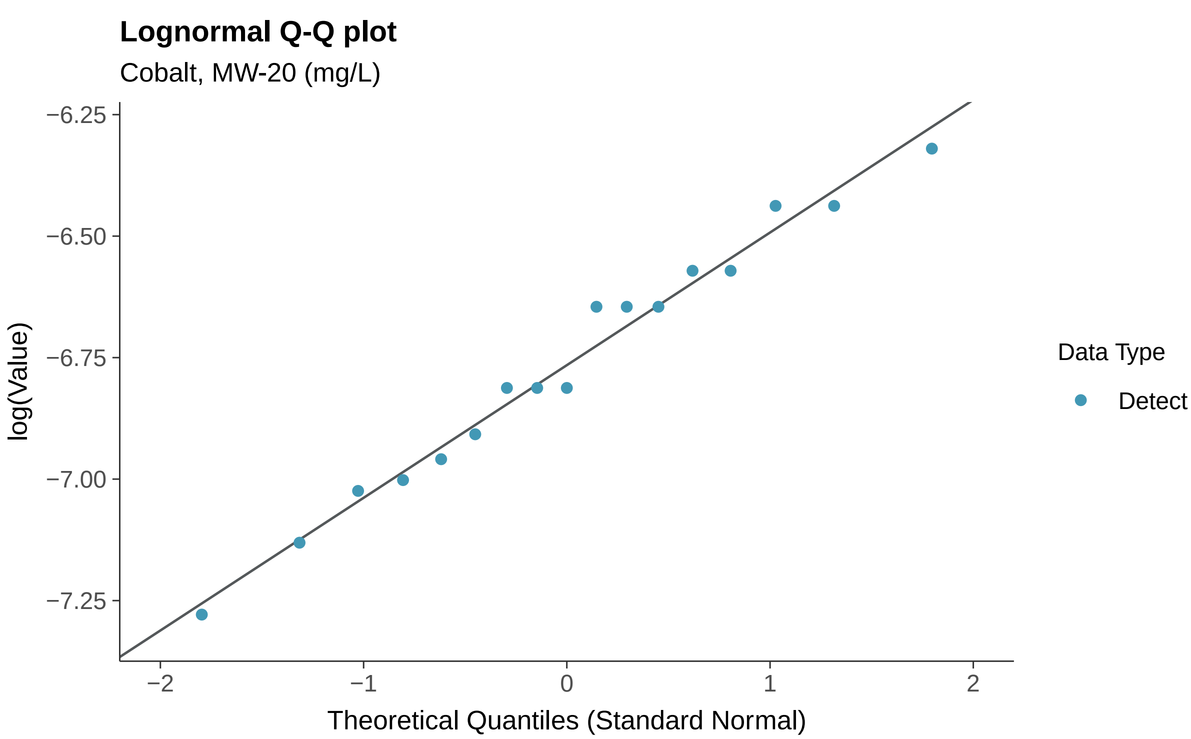


Boxplot by Season

Cobalt, MW-20 (mg/L)

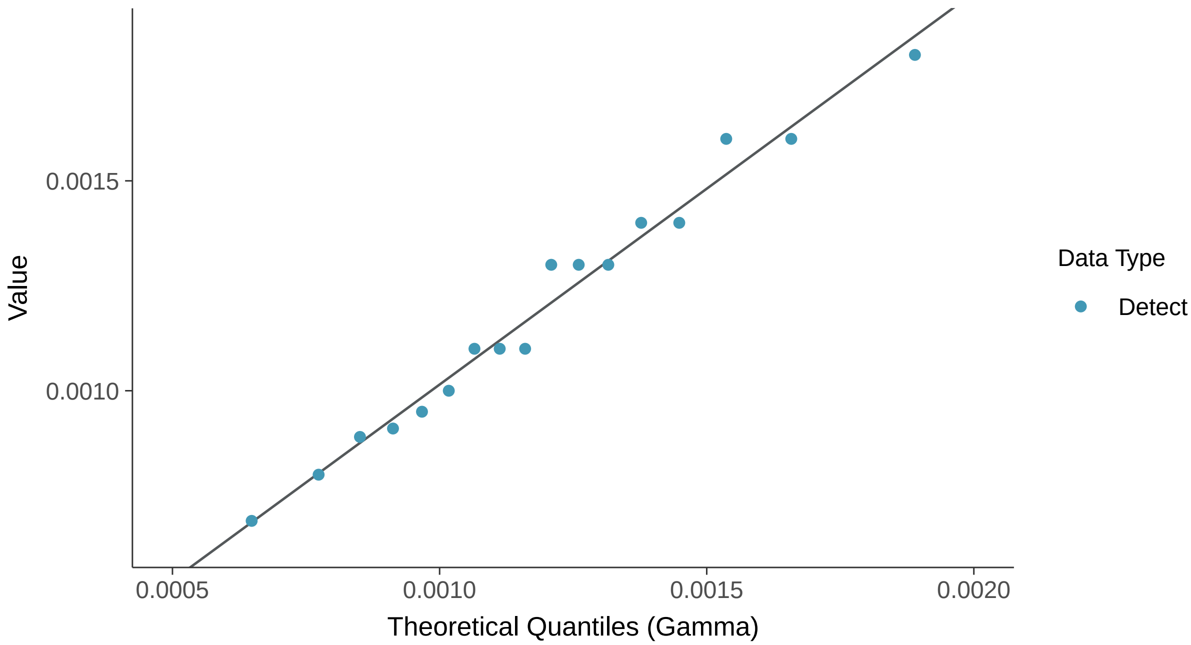



Normal Q-Q plot
Cobalt, MW-20 (mg/L)
Value
0.0015
0.0010
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Cobalt, MW-20 (mg/L)
log(Value)
−6.25
−6.50
−6.75
−7.00
−7.25
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

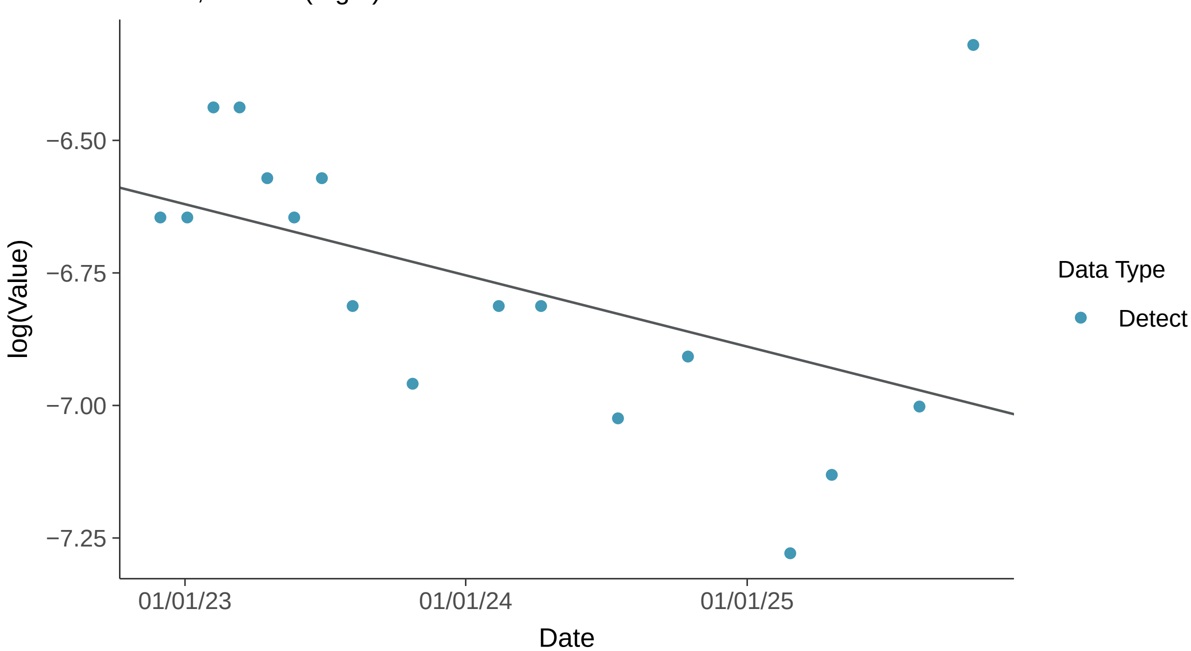
Gamma Q-Q plot

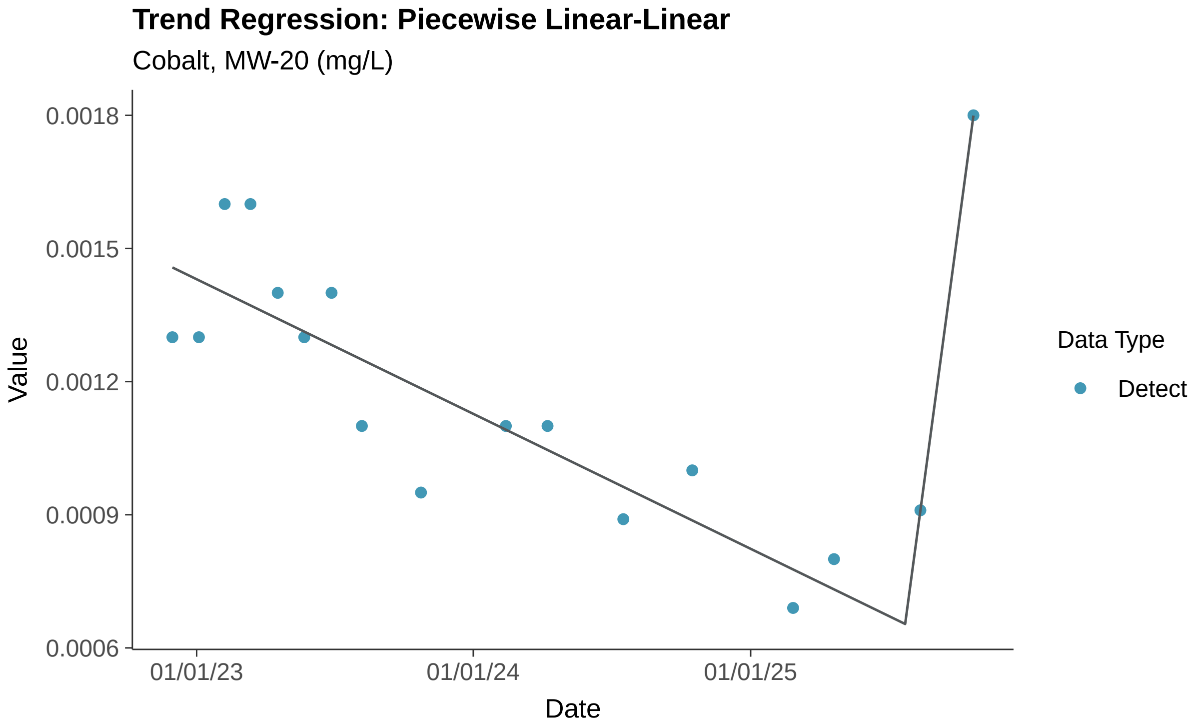
Cobalt, MW-20 (mg/L)

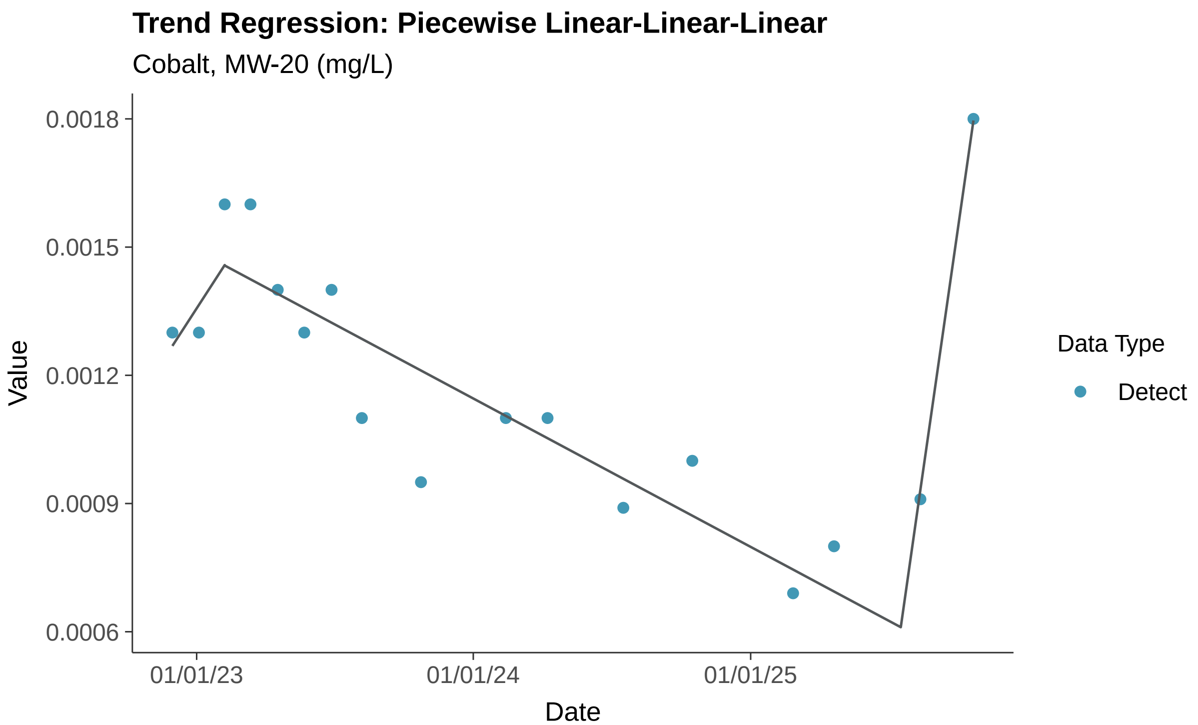


Trend Regression: Lognormal MLE

Cobalt, MW-20 (mg/L)

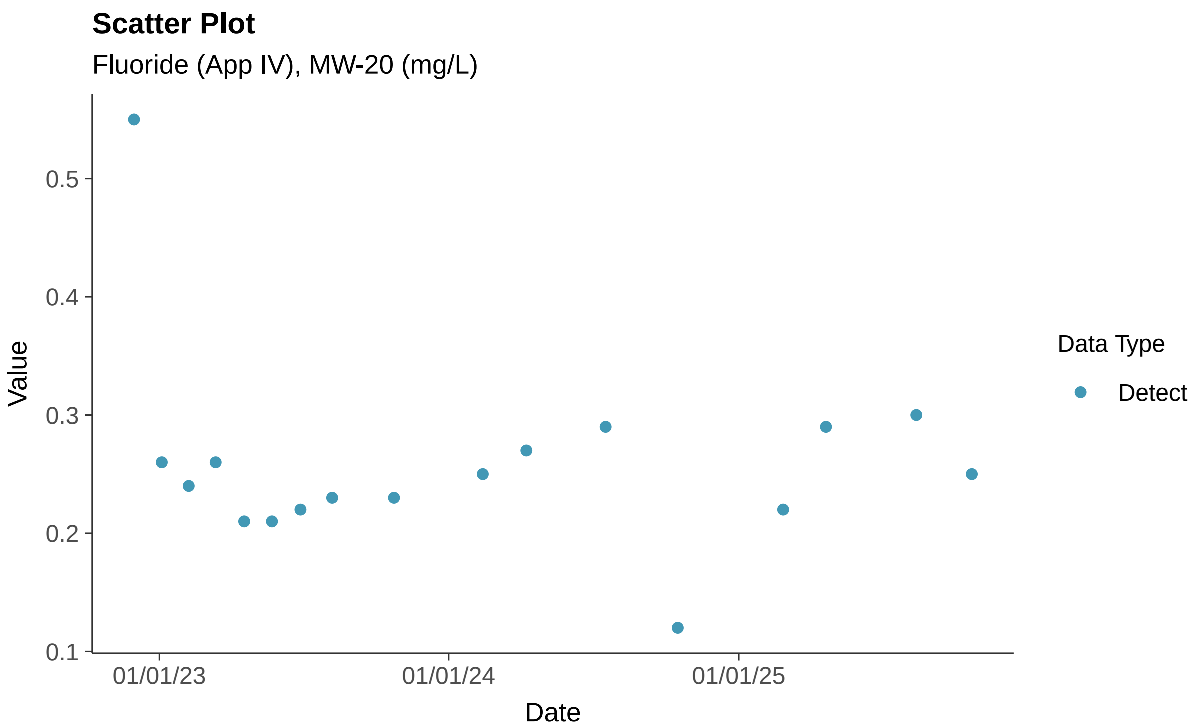


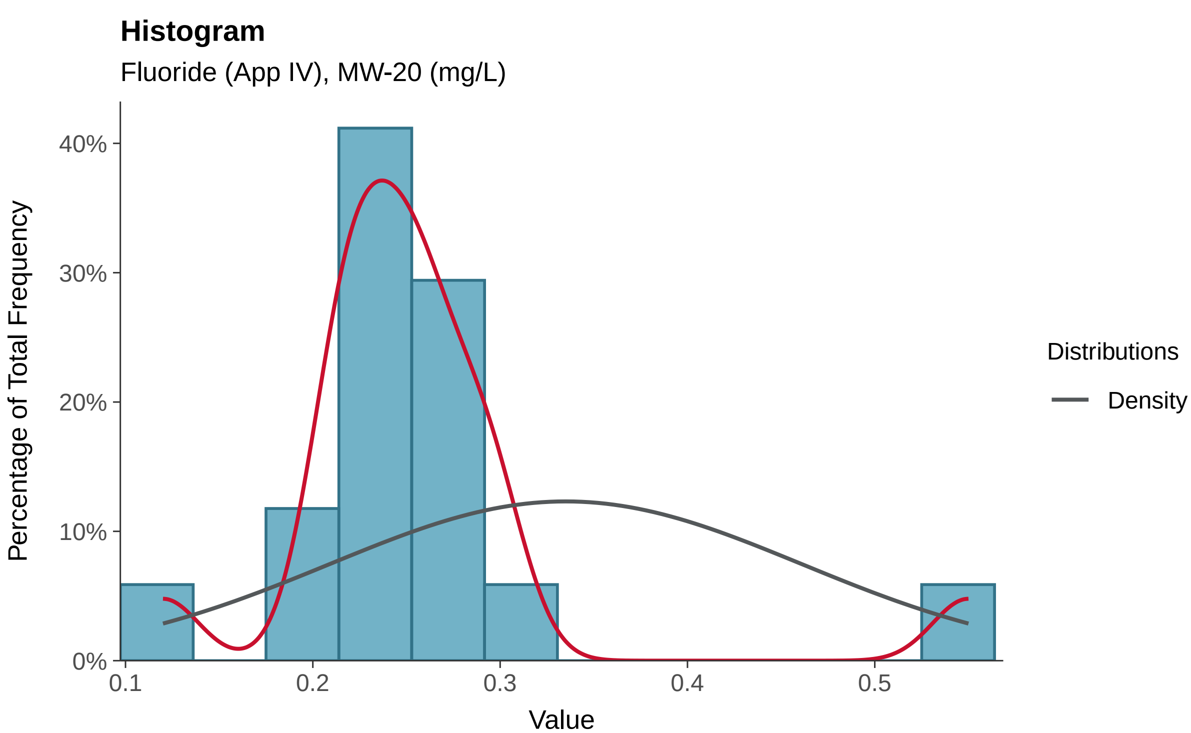

Trend Regression: Piecewise Linear-Linear
Cobalt, MW-20 (mg/L)
0.0018
0.0015
0.0012
0.0009
0.0006
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

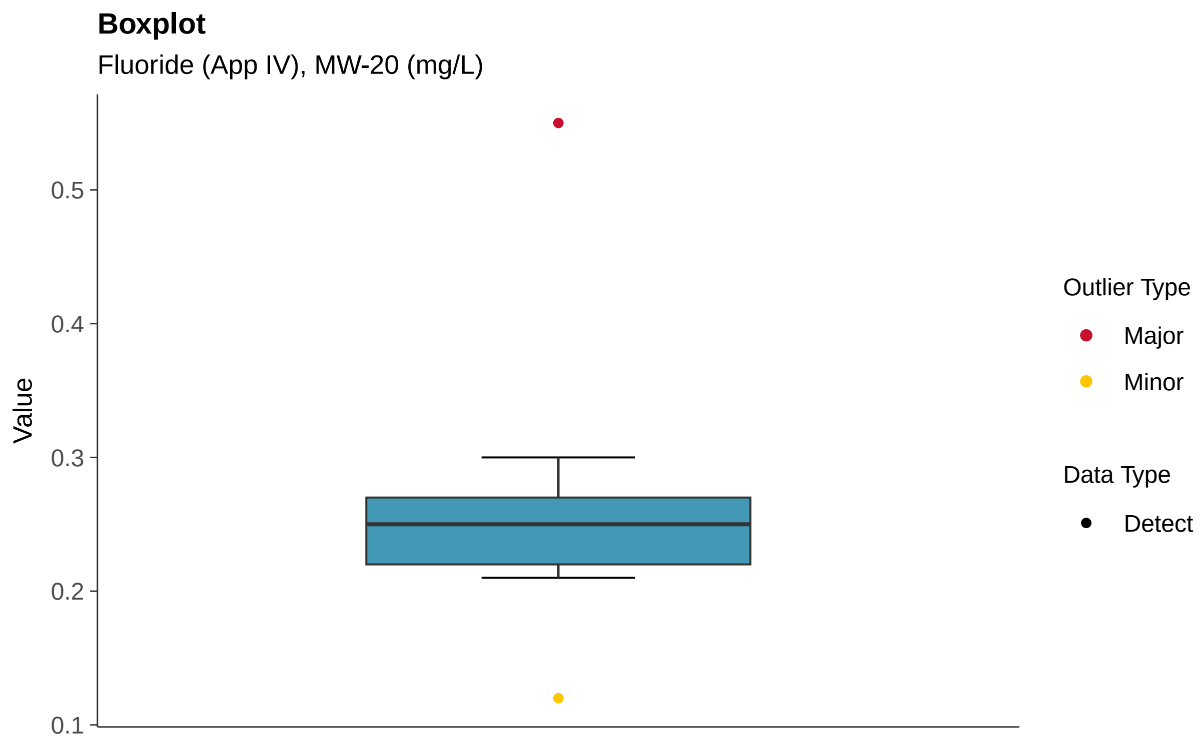

Trend Regression: Piecewise Linear-Linear-Linear
Cobalt, MW-20 (mg/L)
0.0018
0.0015
0.0012
0.0009
0.0006
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

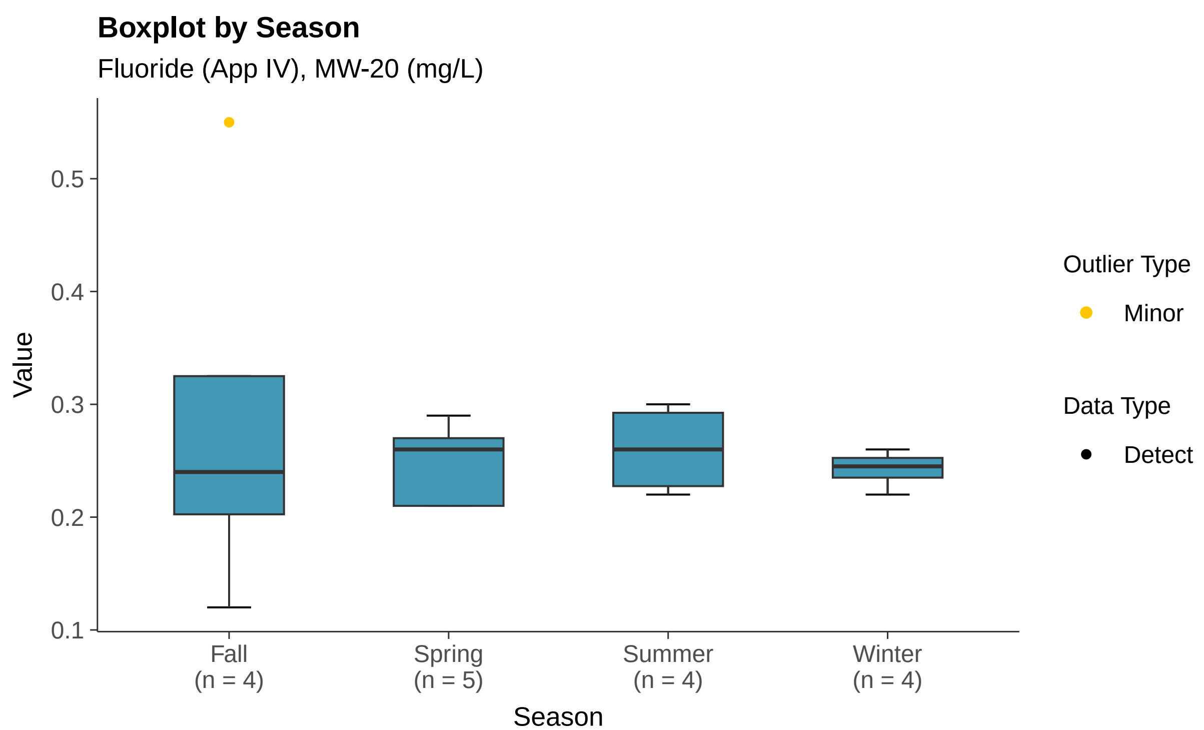
Appendix IV: Fluoride (App IV), MW-20

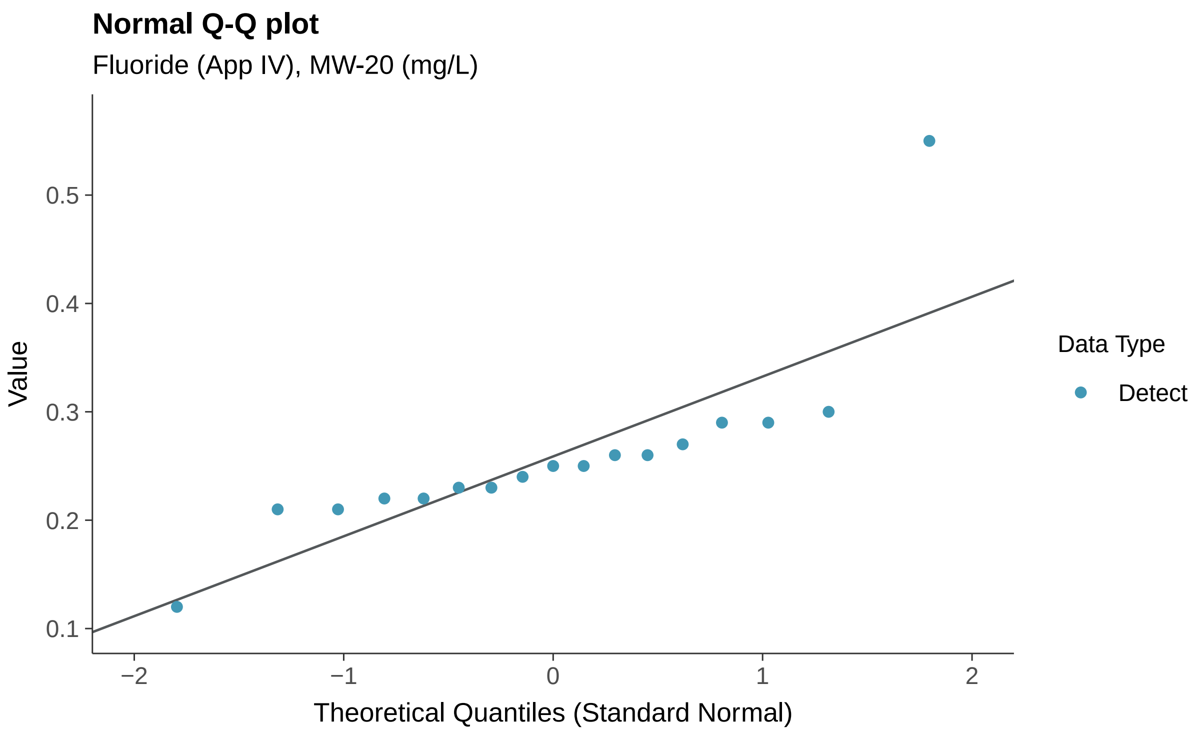
ID: 30_1_4_113

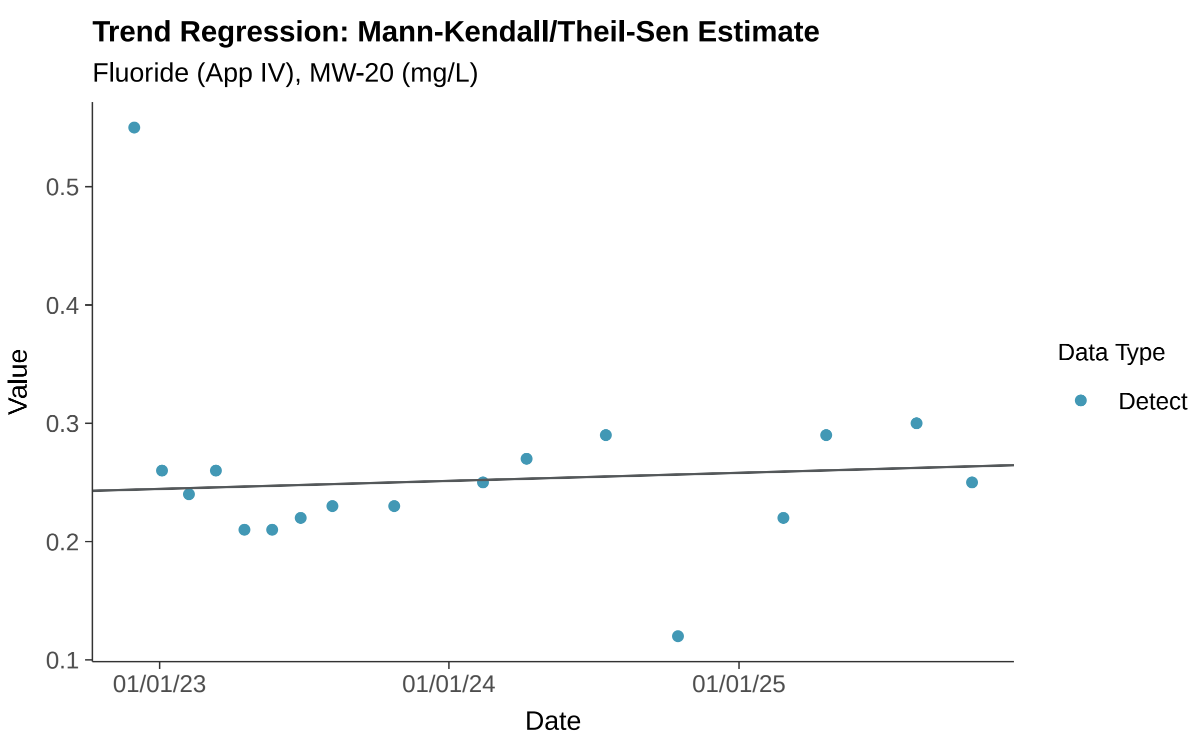





Boxplot
Fluoride (App IV), MW-20 (mg/L)
Value
0.5
0.4
0.3
0.2
0.1
Outlier Type
Major
Minor
Data Type
Detect

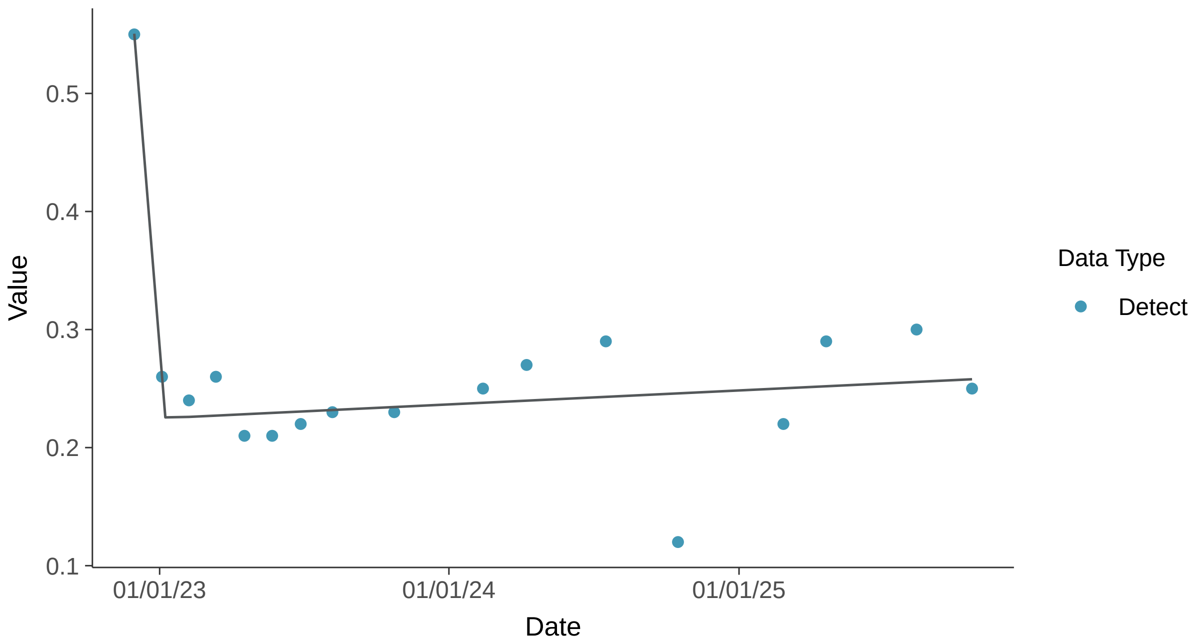

Boxplot by Season
Fluoride (App IV), MW-20 (mg/L)
Value
0.5
0.4
0.3
0.2
0.1
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Minor
Data Type
Detect


Normal Q-Q plot
Fluoride (App IV), MW-20 (mg/L)
Value
0.5
0.4
0.3
0.2
0.1
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Mann-Kendall/Theil-Sen Estimate
Fluoride (App IV), MW-20 (mg/L)
Value
0.5
0.4
0.3
0.2
0.1
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

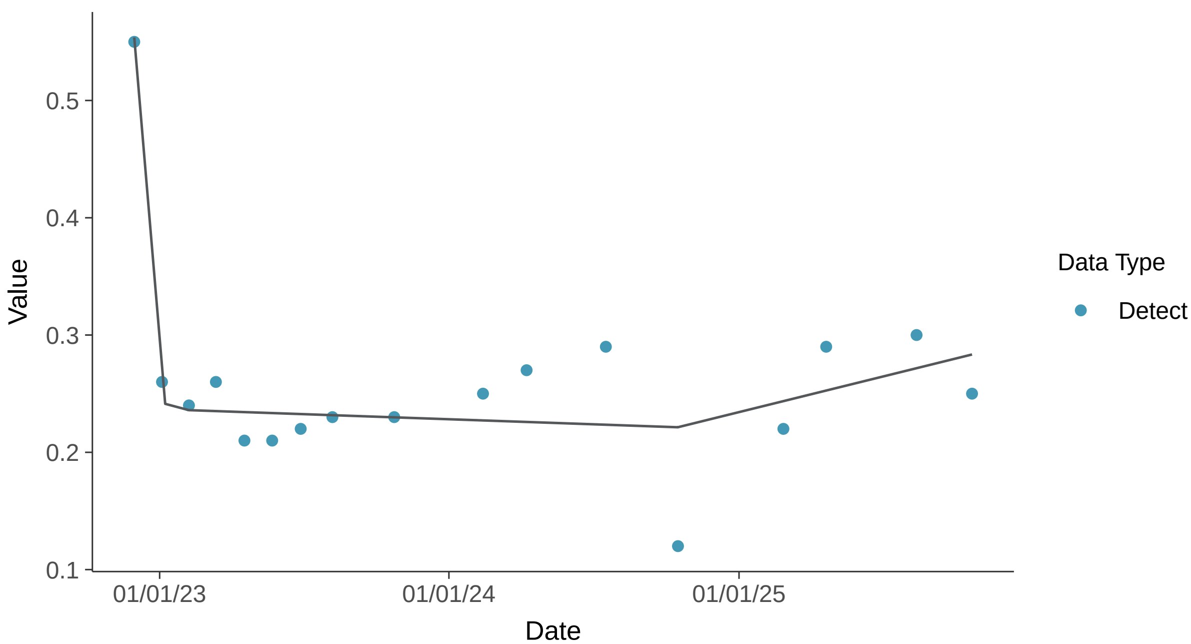
Trend Regression: Piecewise Linear-Linear

Fluoride (App IV), MW-20 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Fluoride (App IV), MW-20 (mg/L)

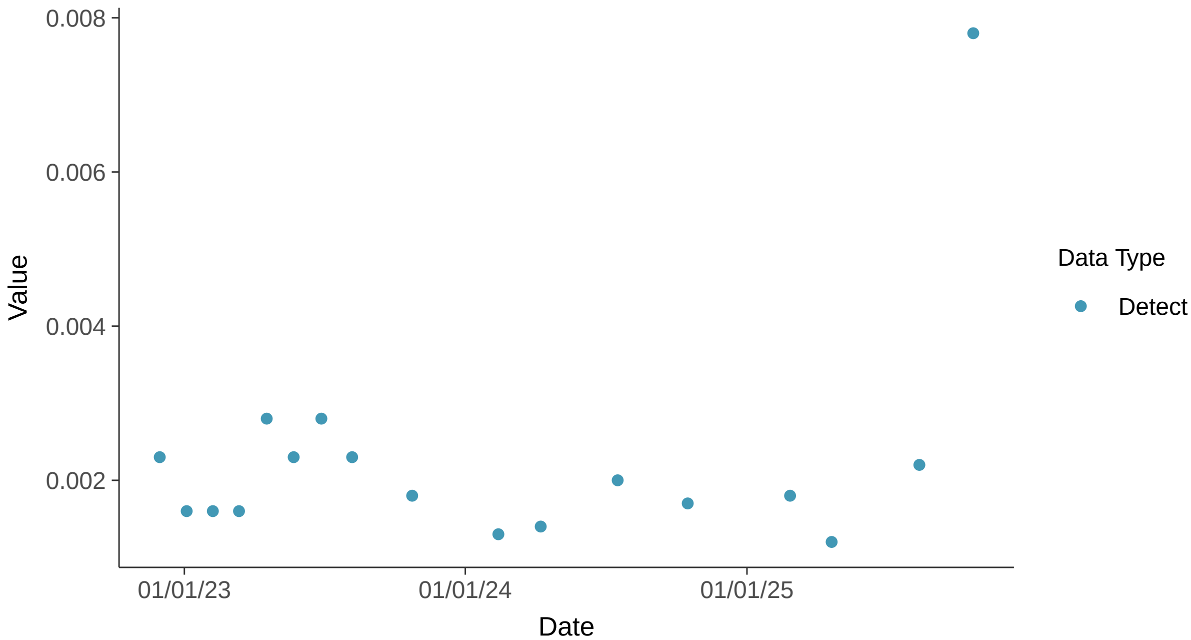


Appendix IV: Lead, MW-20

ID: 30_1_4_115

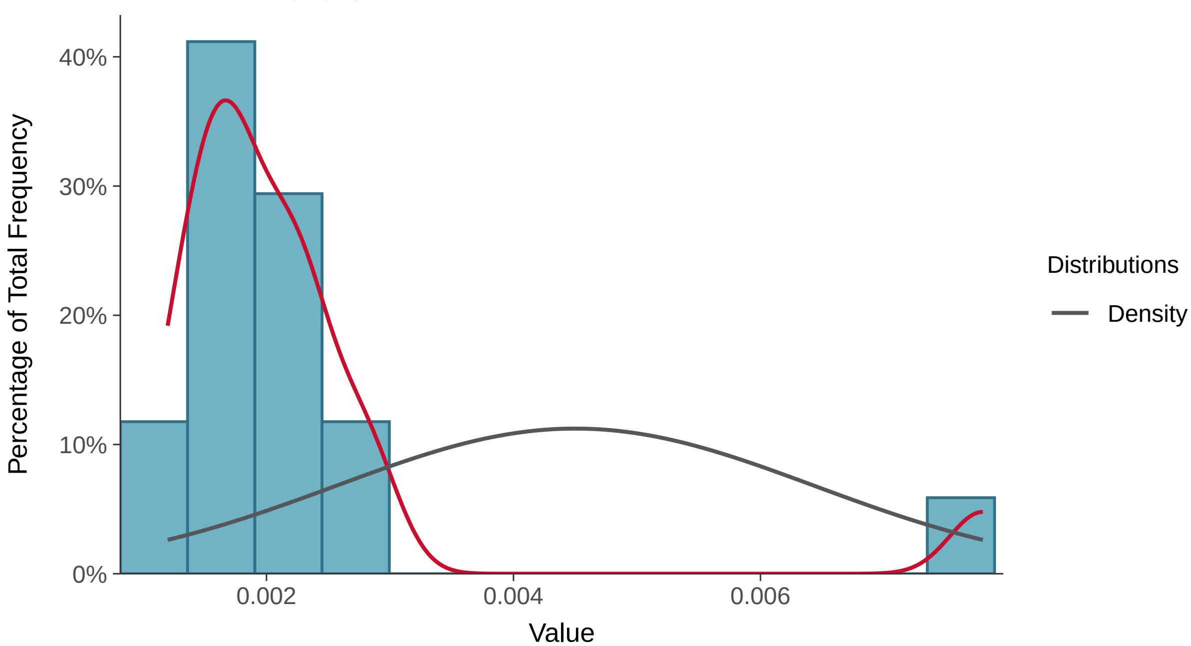
Scatter Plot

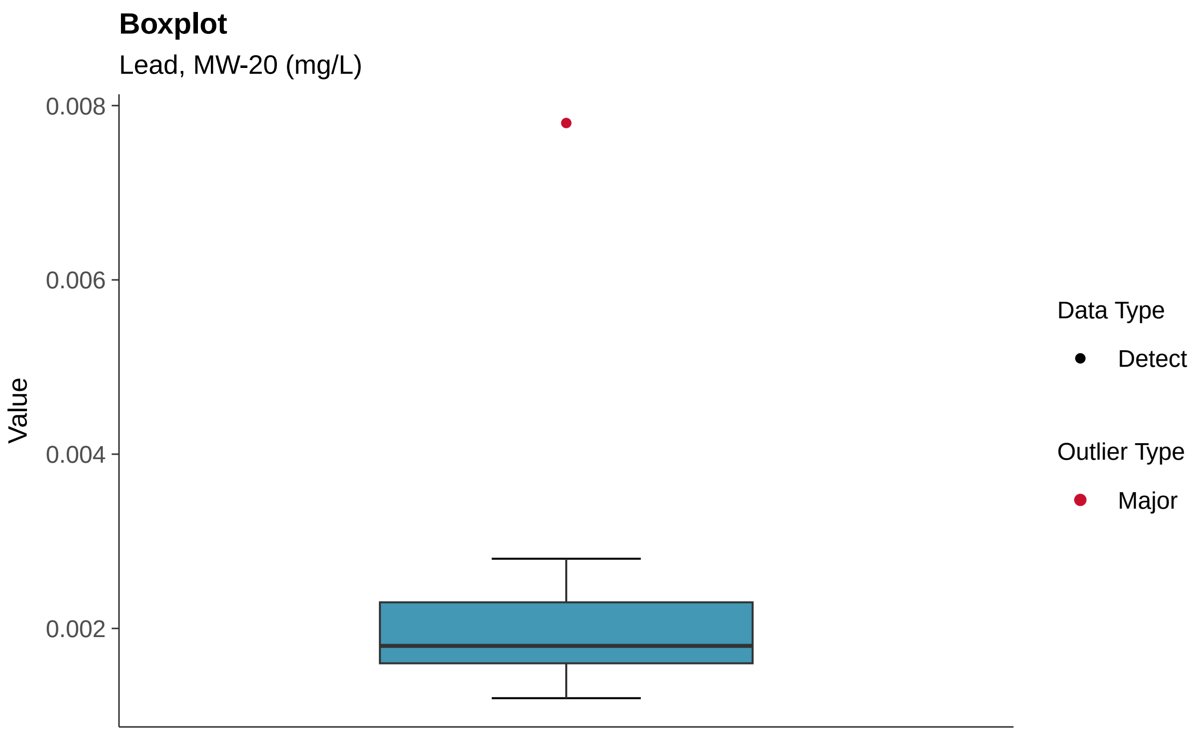
Lead, MW-20 (mg/L)

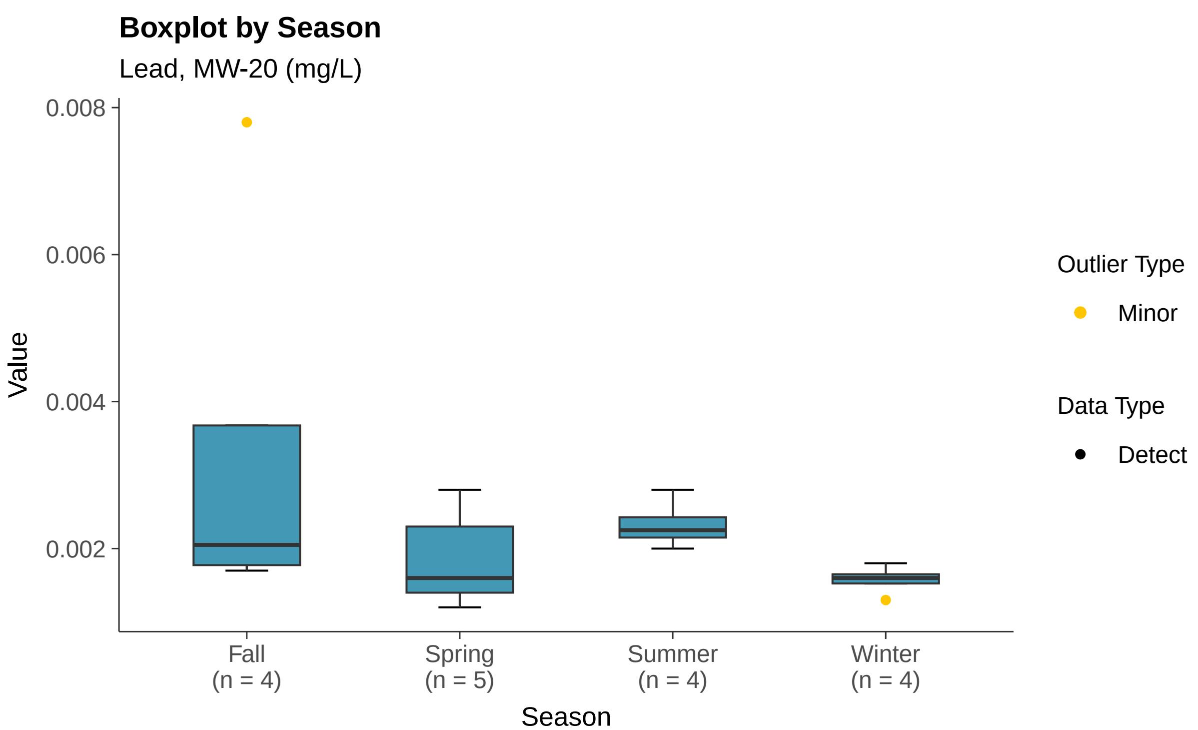


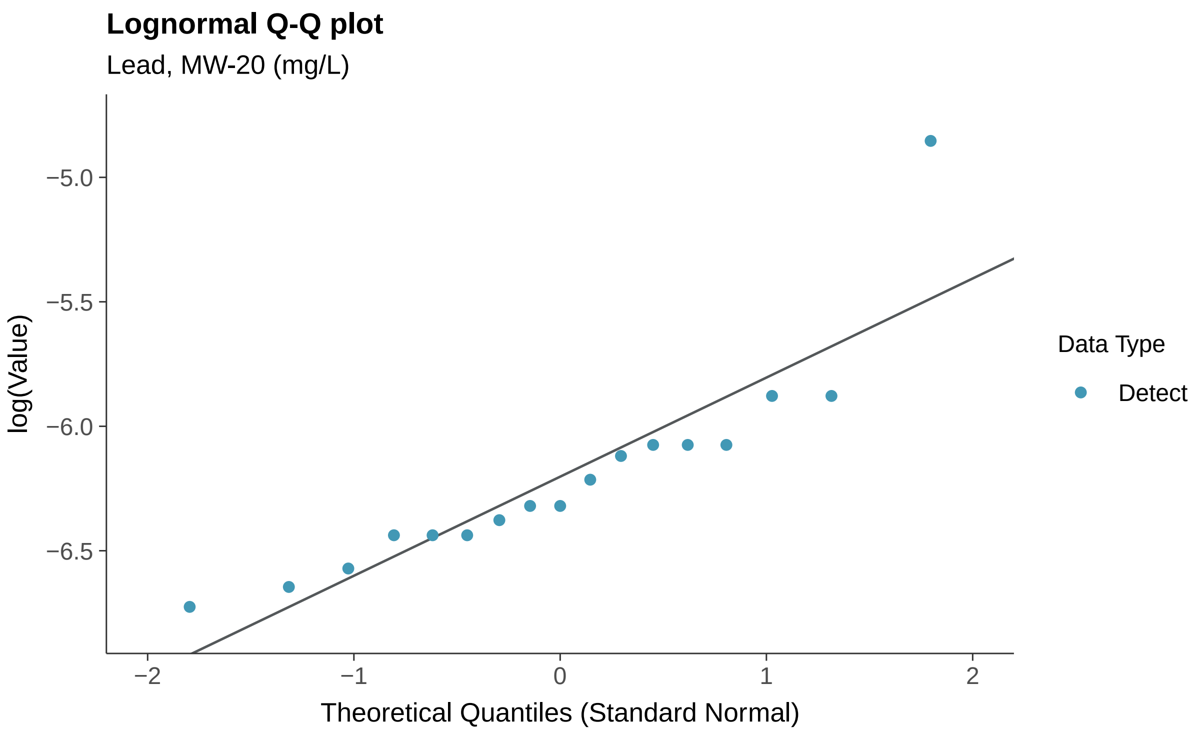
Histogram

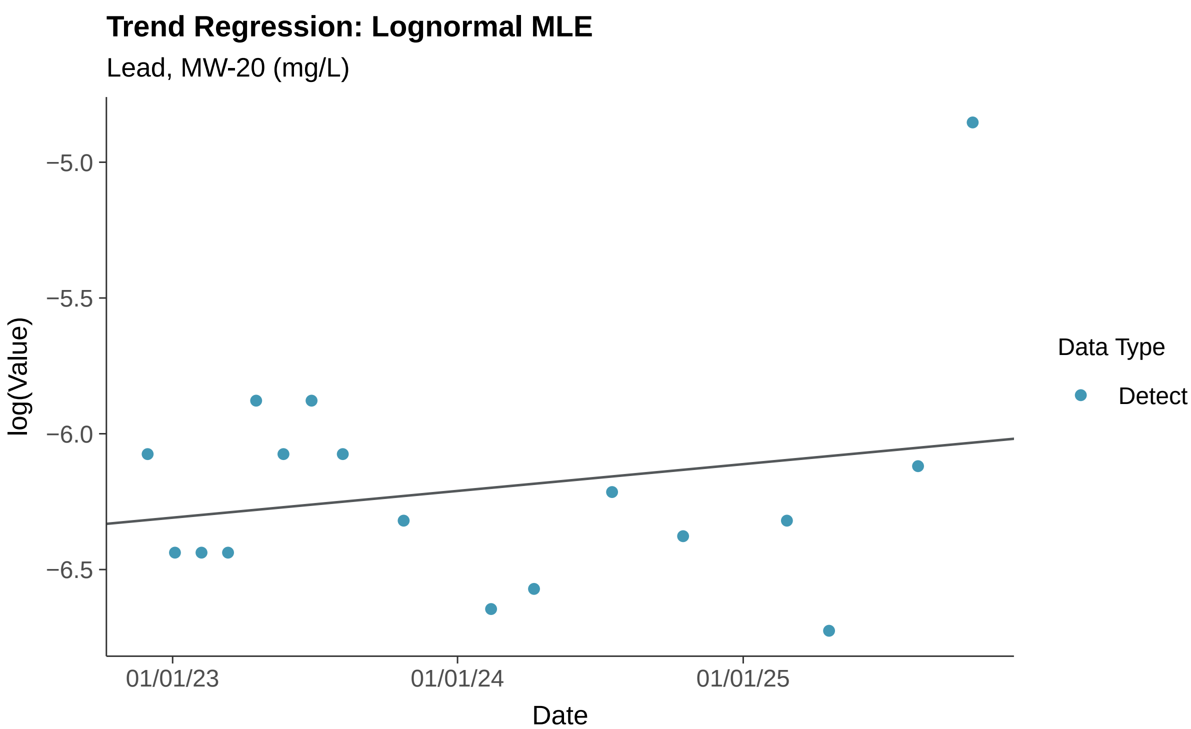
Lead, MW-20 (mg/L)

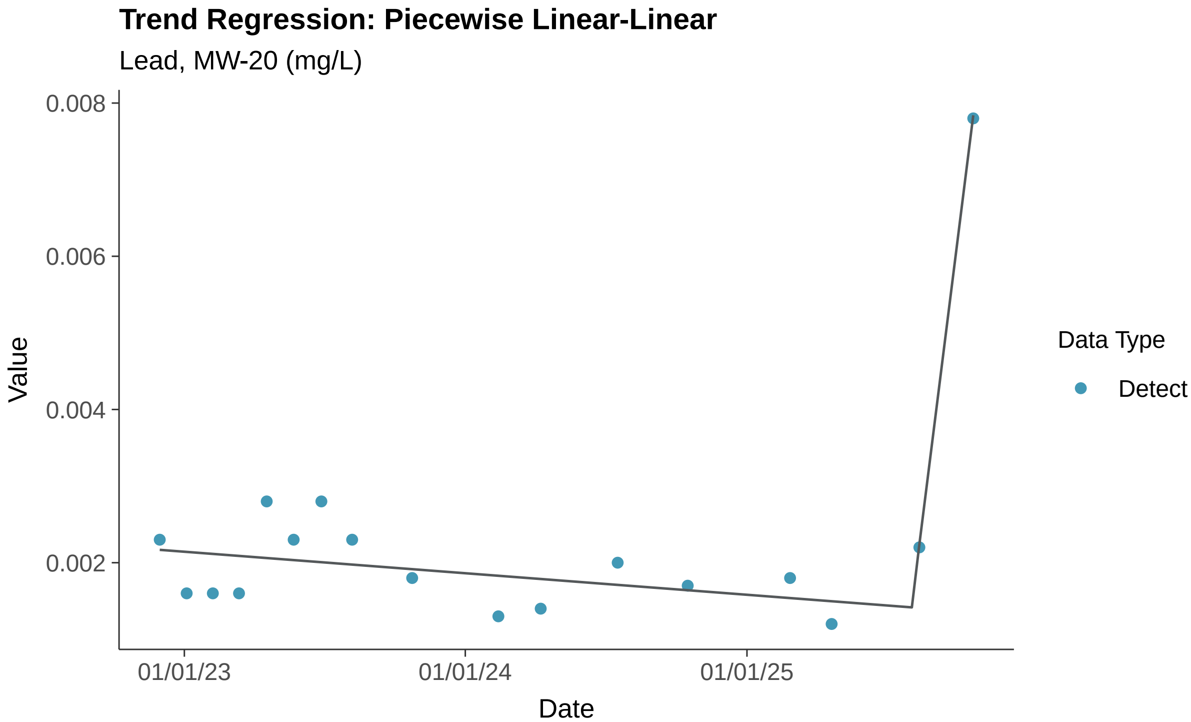



Boxplot
Lead, MW-20 (mg/L)
0.008
0.006
0.004
0.002
Value
Data Type
Detect
Outlier Type
Major


Boxplot by Season
Lead, MW-20 (mg/L)
0.008
0.006
0.004
0.002
Value
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Minor
Data Type
Detect

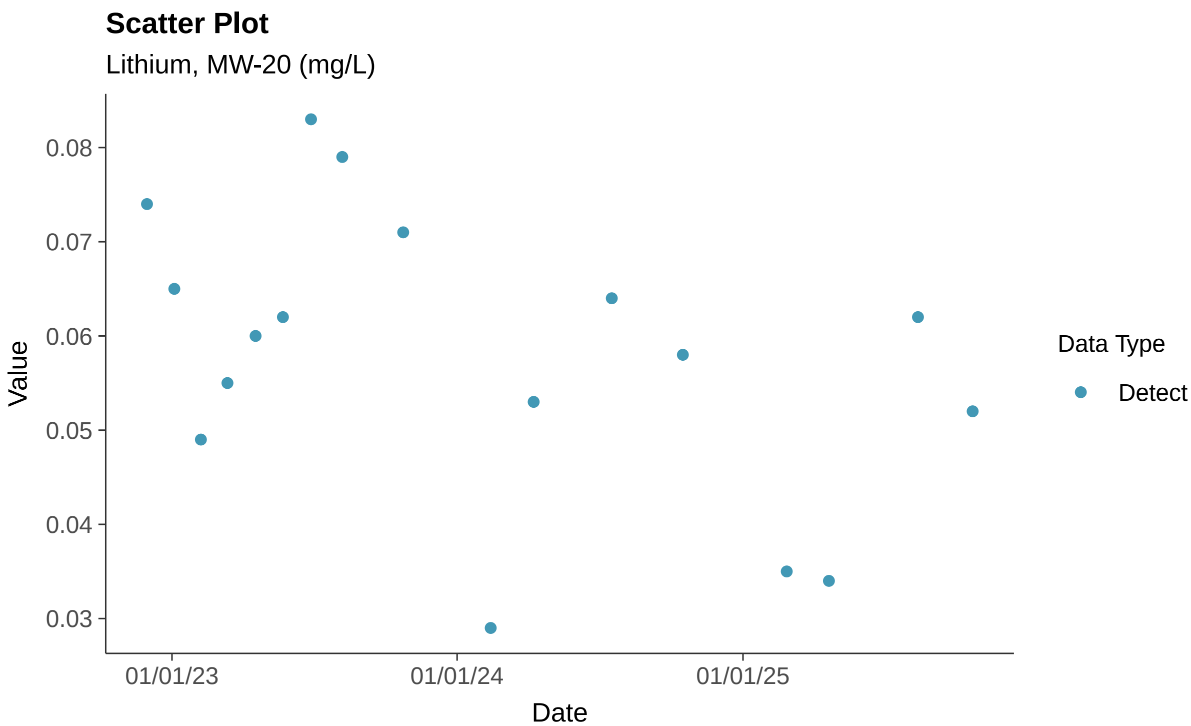

Lognormal Q-Q plot
Lead, MW-20 (mg/L)
log(Value)
−5.0
−5.5
−6.0
−6.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

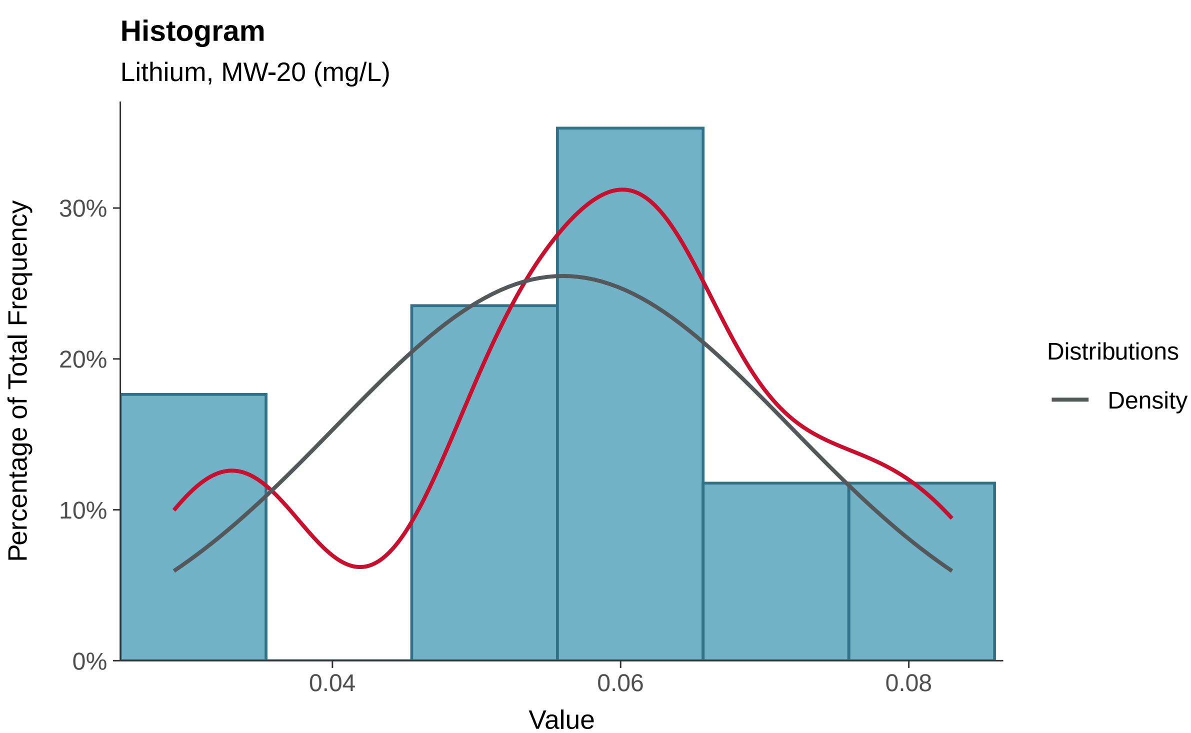

Trend Regression: Lognormal MLE
Lead, MW-20 (mg/L)
log(Value)
−5.0
−5.5
−6.0
−6.5
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear
Lead, MW-20 (mg/L)
0.008
0.006
0.004
0.002
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Appendix IV: Lithium, MW-20

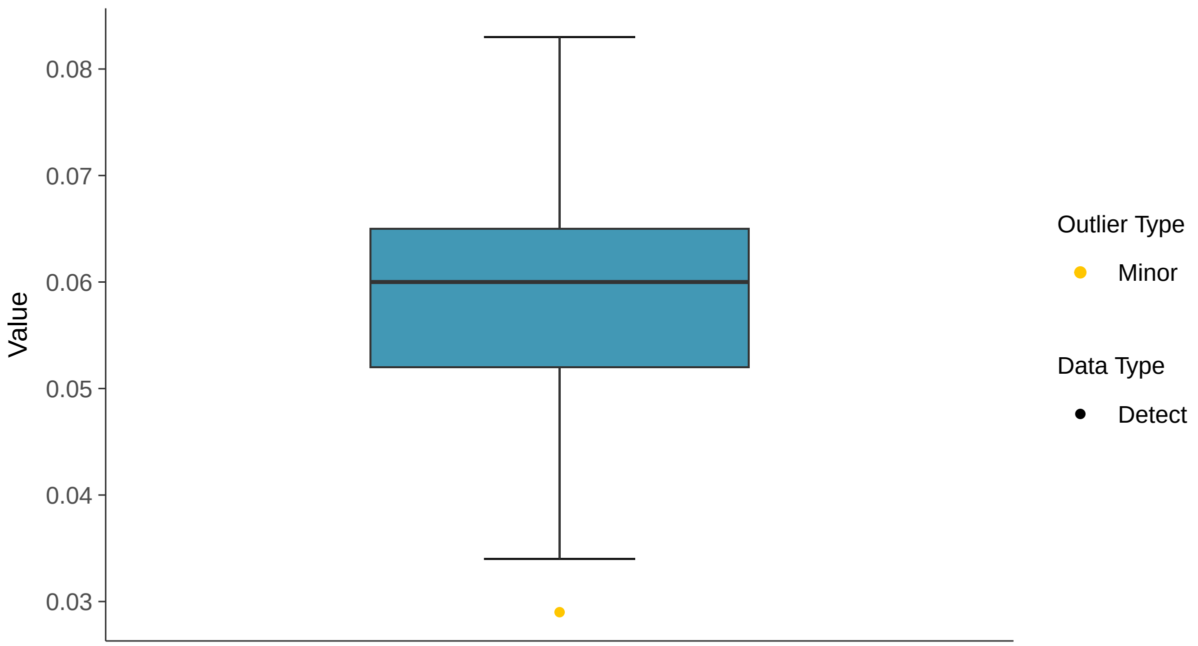
ID: 30_1_4_116





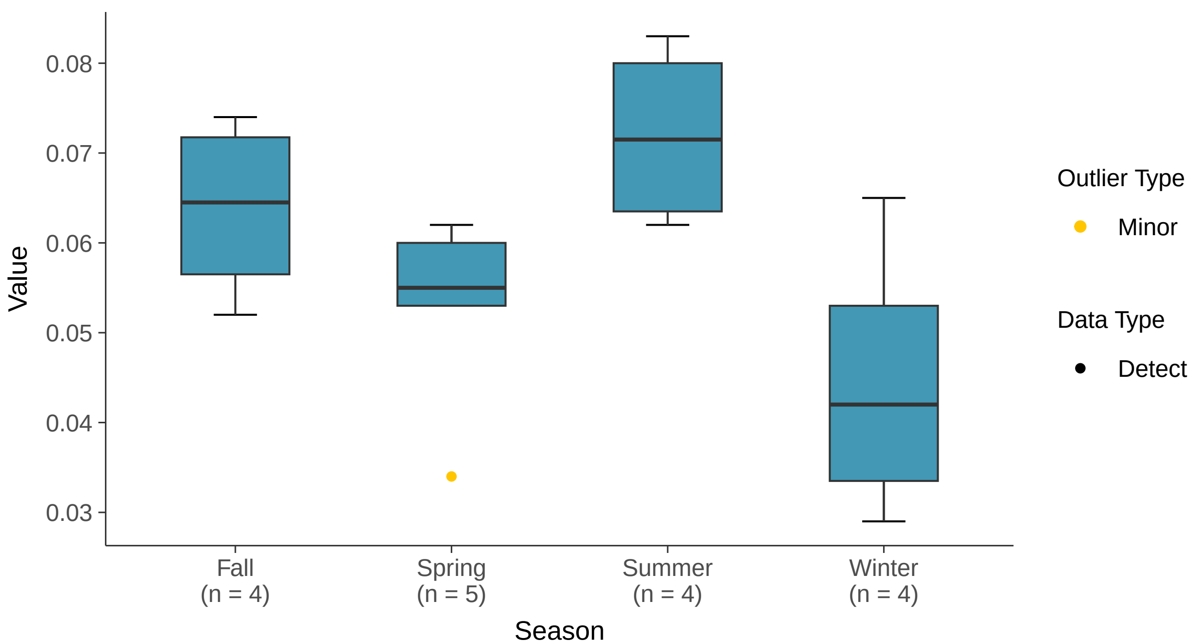
Boxplot

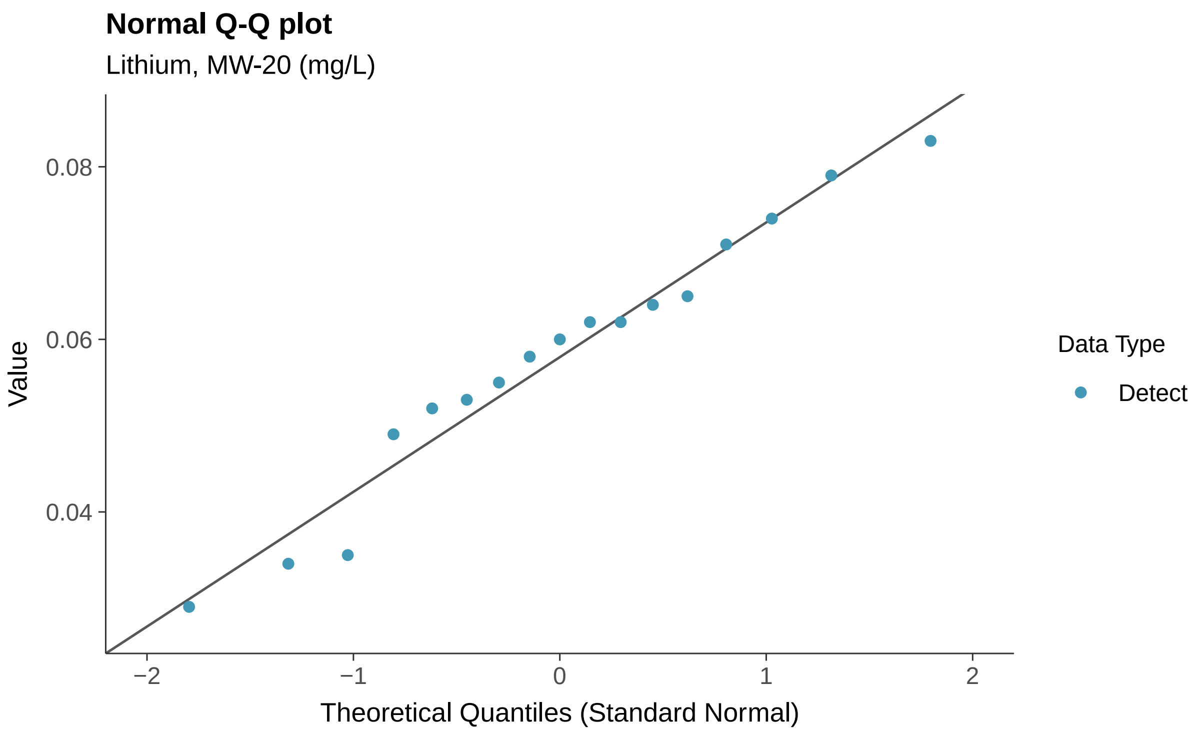
Lithium, MW-20 (mg/L)

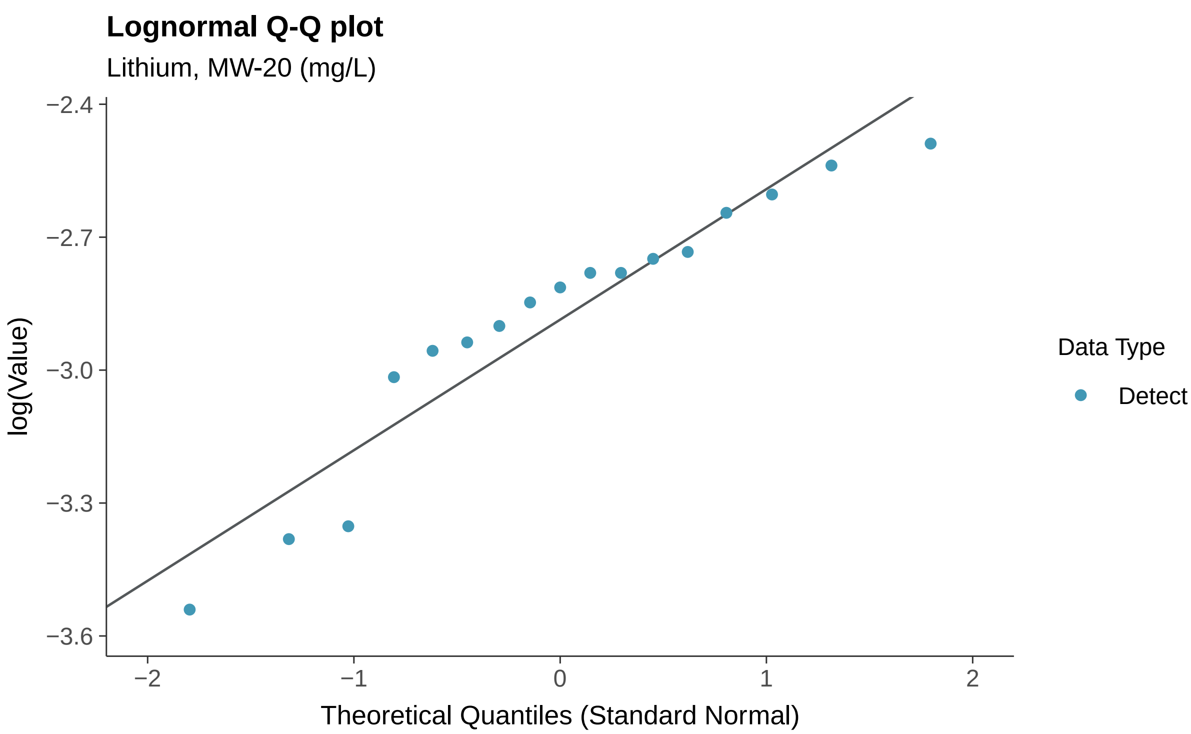


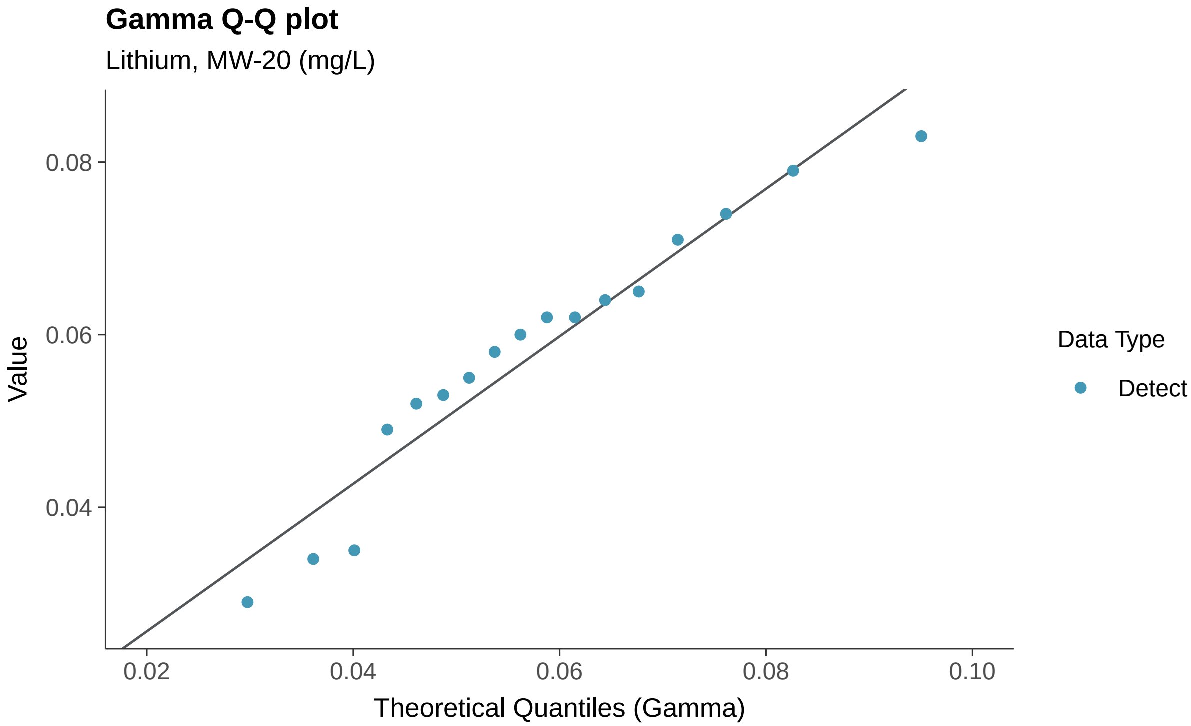
Boxplot by Season

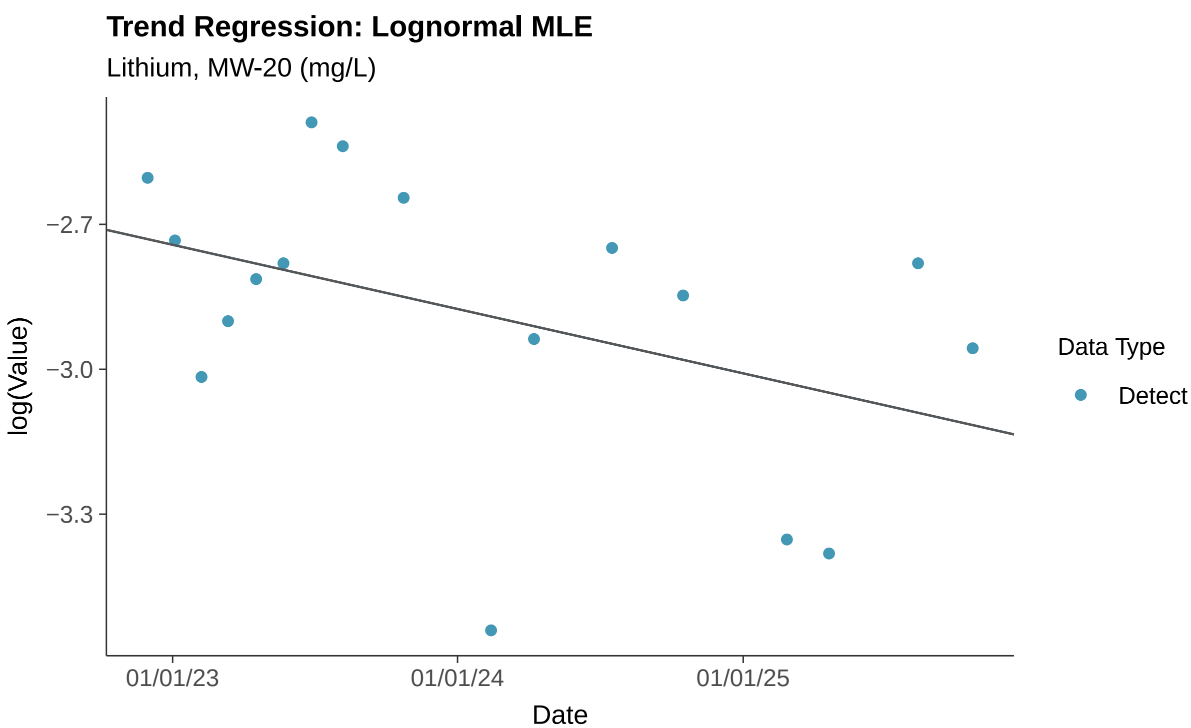
Lithium, MW-20 (mg/L)




Normal Q-Q plot
Lithium, MW-20 (mg/L)
0.08
0.06
0.04
Value
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

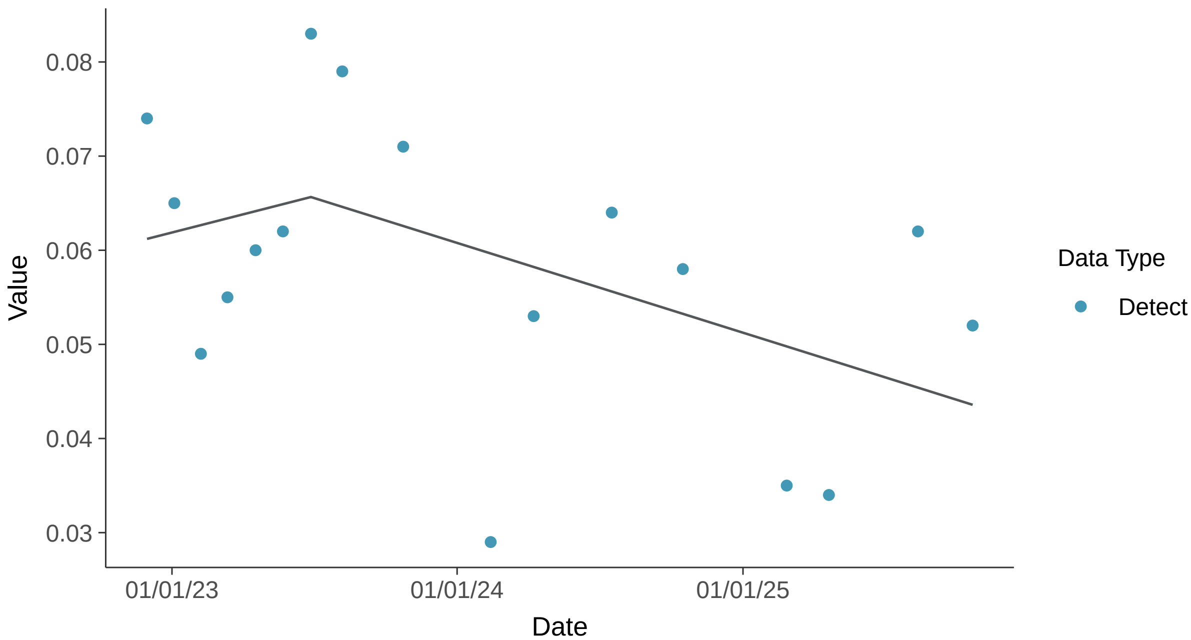

Lognormal Q-Q plot
Lithium, MW-20 (mg/L)
−2.4
−2.7
−3.0
−3.3
−3.6
log(Value)
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Lithium, MW-20 (mg/L)
Value
0.08
0.06
0.04
0.02
0.04
0.06
0.08
0.10
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Lithium, MW-20 (mg/L)
log(Value)
−2.7
−3.0
−3.3
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

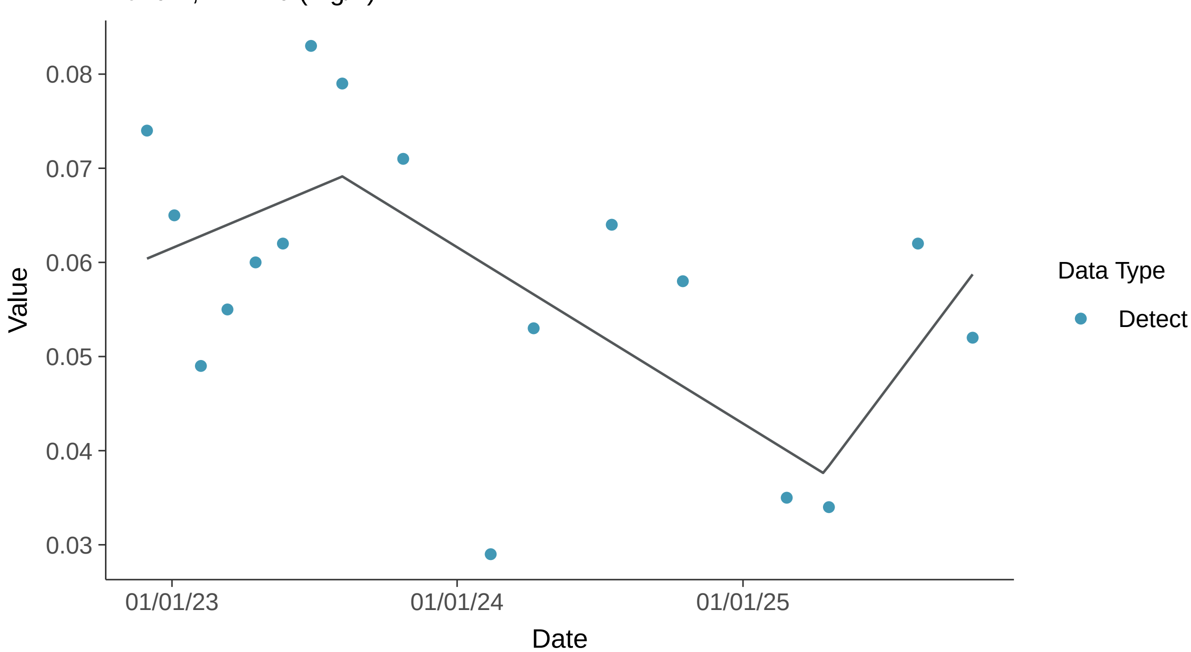
Trend Regression: Piecewise Linear-Linear

Lithium, MW-20 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Lithium, MW-20 (mg/L)

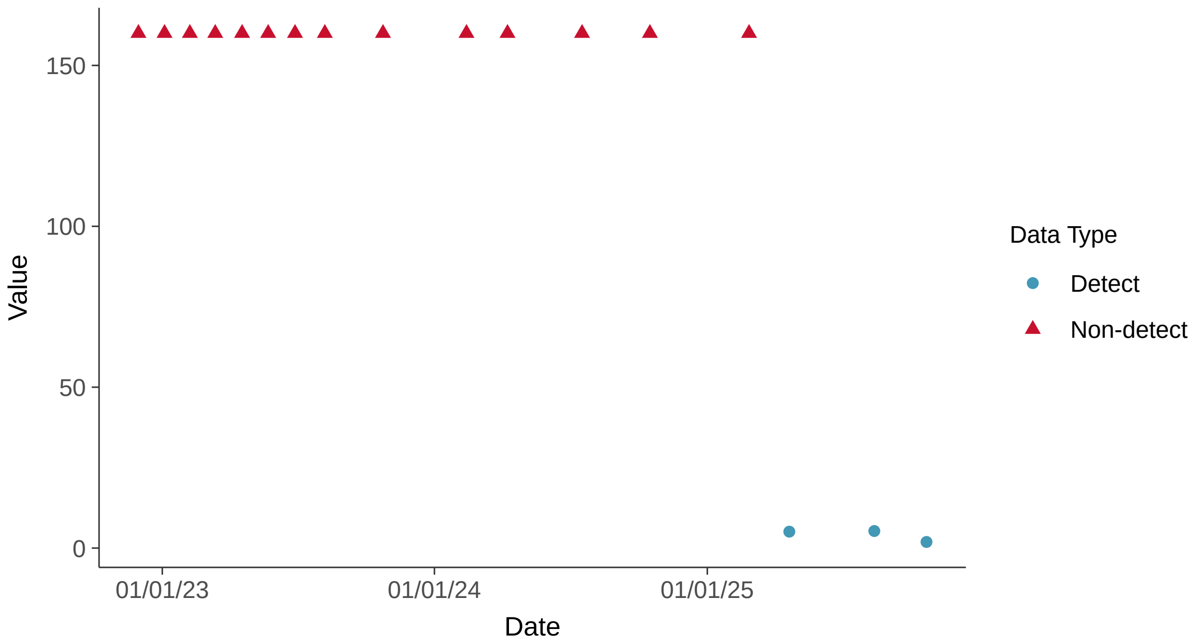


Appendix IV: Mercury, MW-20

ID: 30_1_4_117

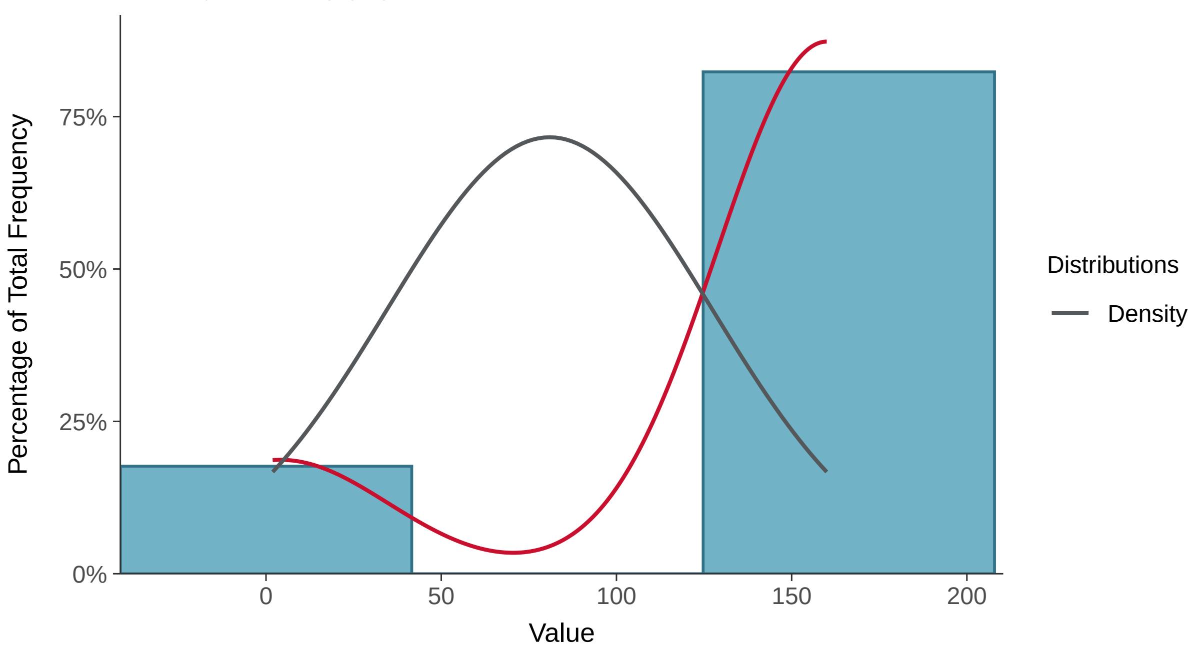
Scatter Plot

Mercury, MW-20 (ng/L)



Histogram

Mercury, MW-20 (ng/L)

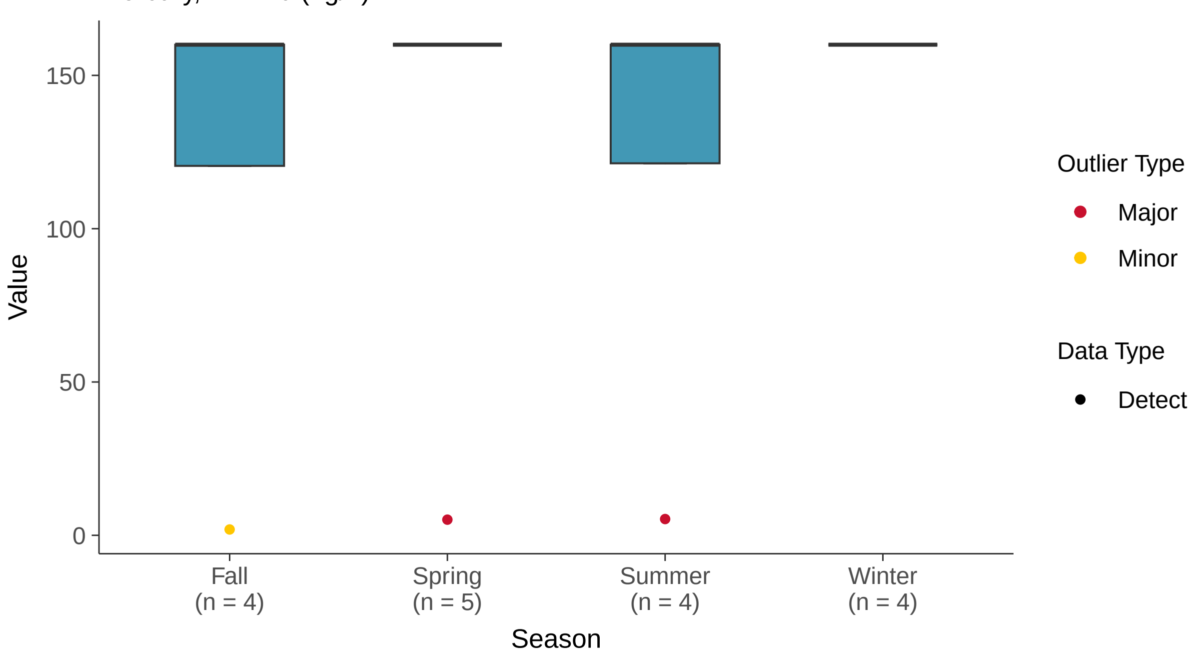


Boxplot

Mercury, MW-20 (ng/L)

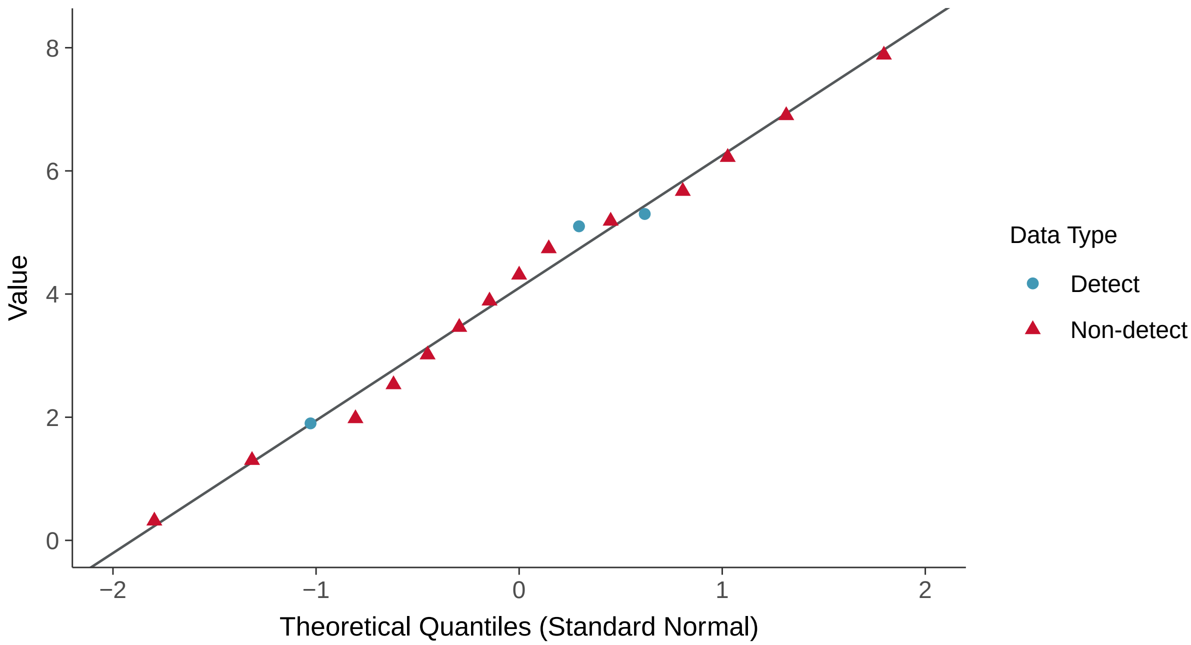
Boxplot by Season

Mercury, MW-20 (ng/L)



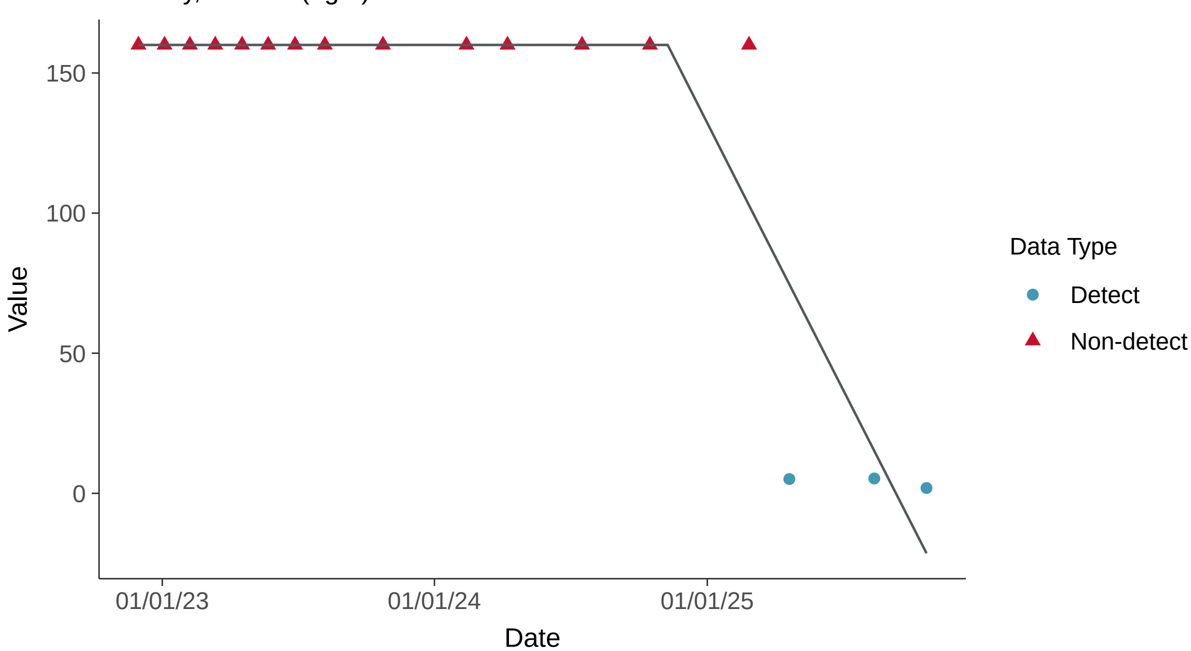
Normal Q-Q plot using ROS Imputed Estimates

Mercury, MW-20 (ng/L)



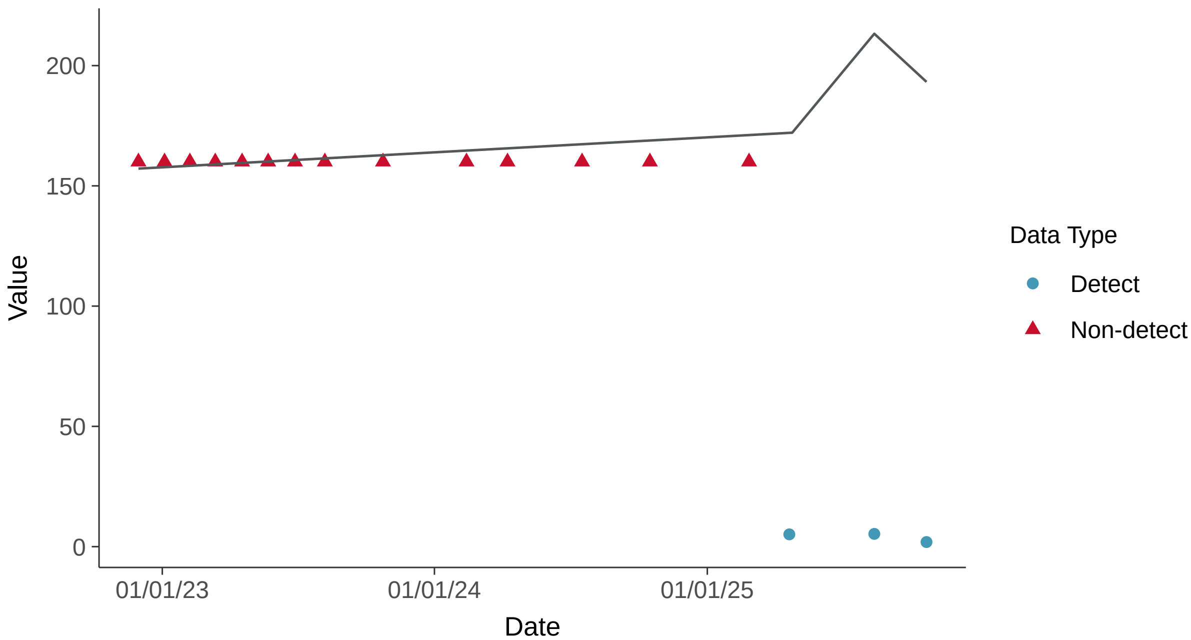
Trend Regression: Piecewise Linear-Linear

Mercury, MW-20 (ng/L)



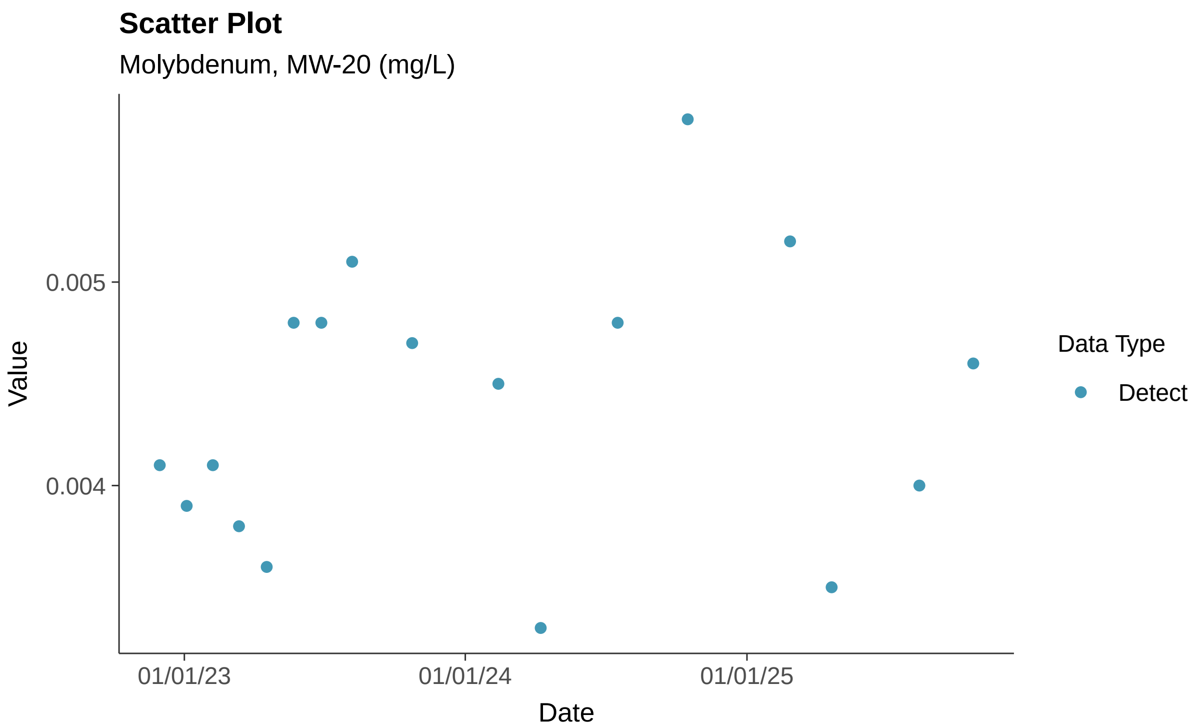
Trend Regression: Piecewise Linear-Linear-Linear

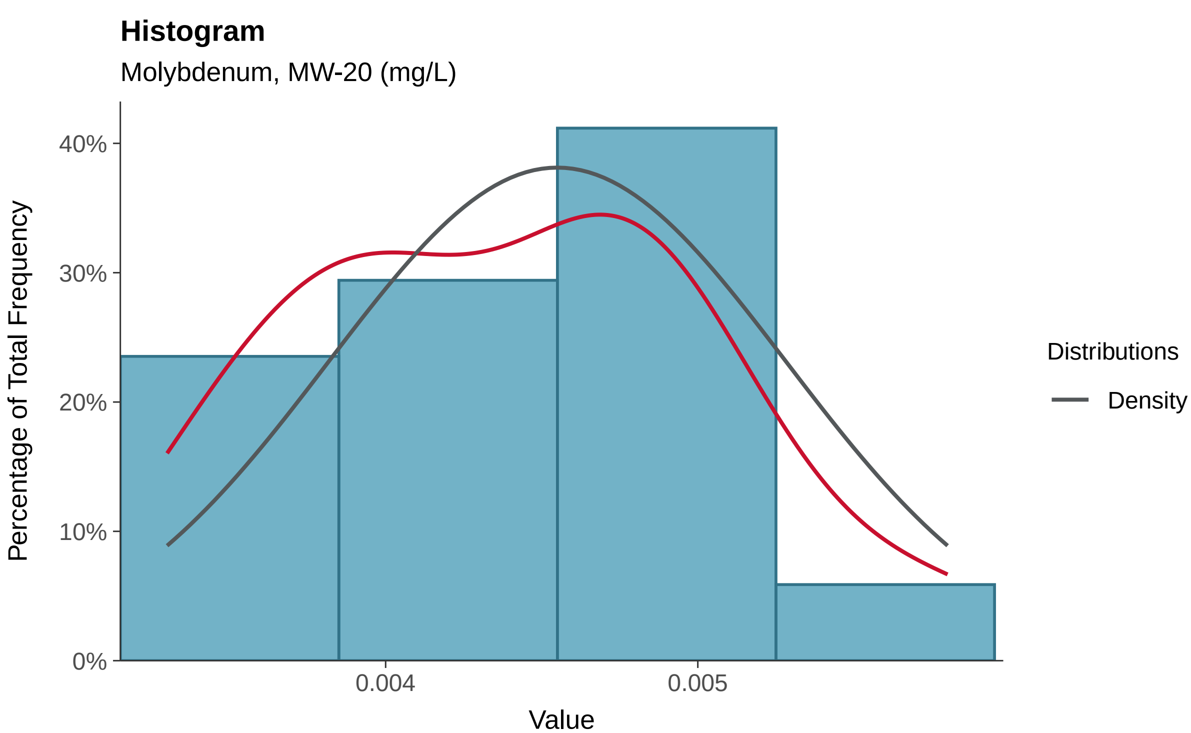
Mercury, MW-20 (ng/L)



Appendix IV: Molybdenum, MW-20

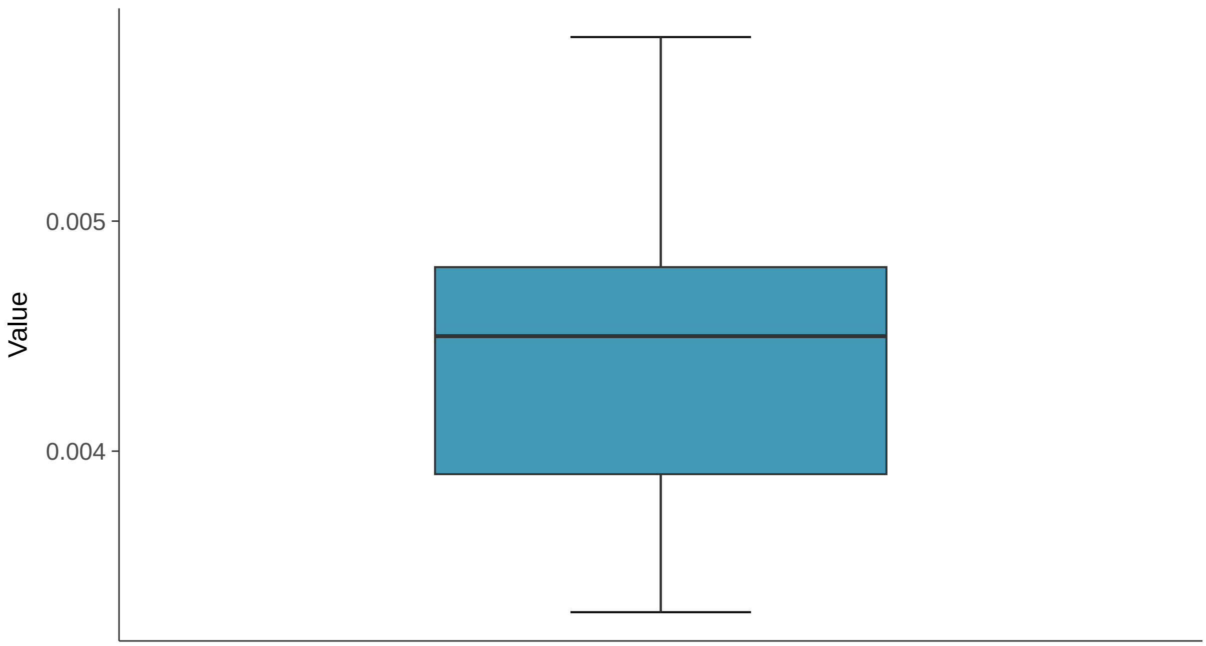
ID: 30_1_4_118





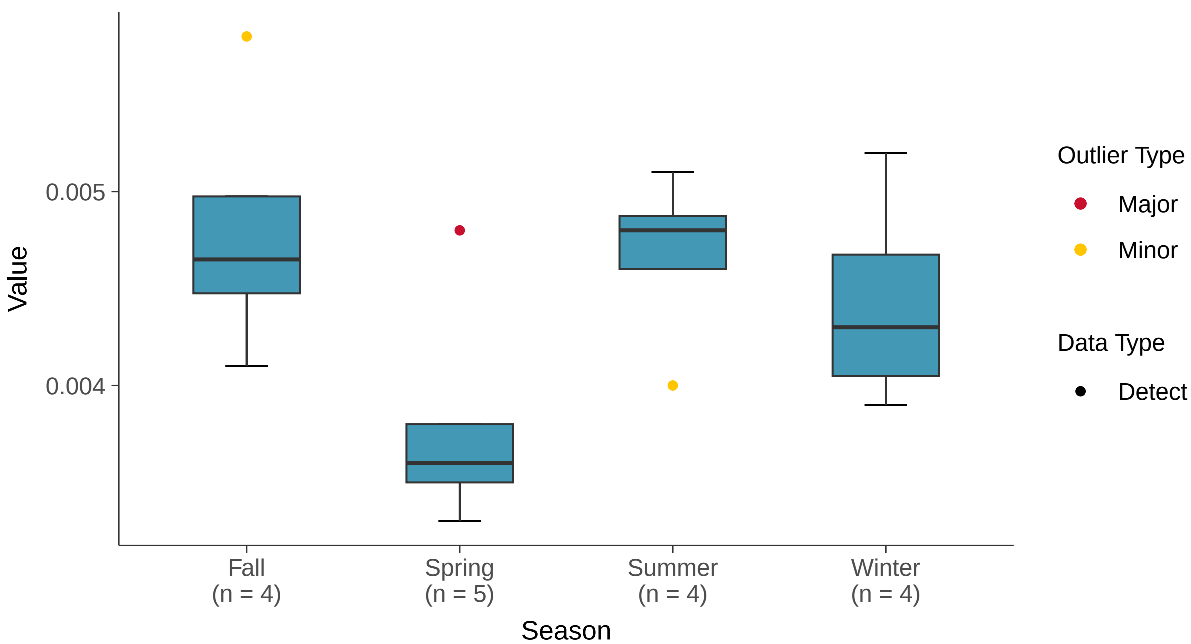
Boxplot

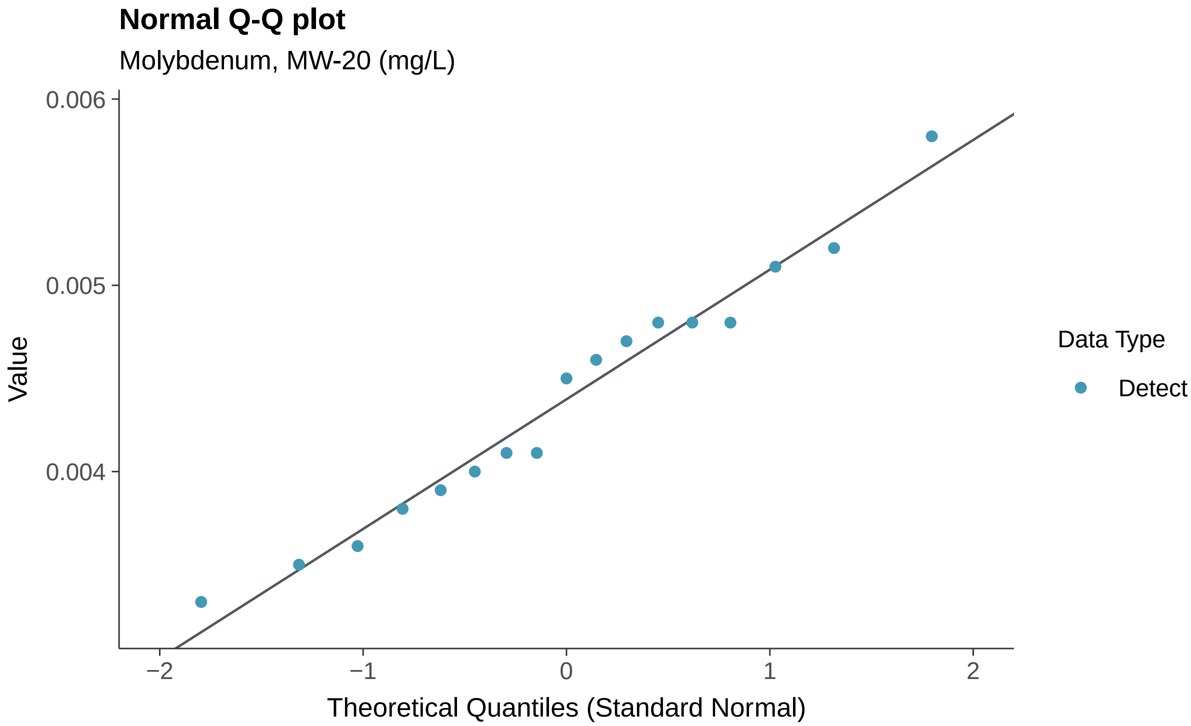
Molybdenum, MW-20 (mg/L)

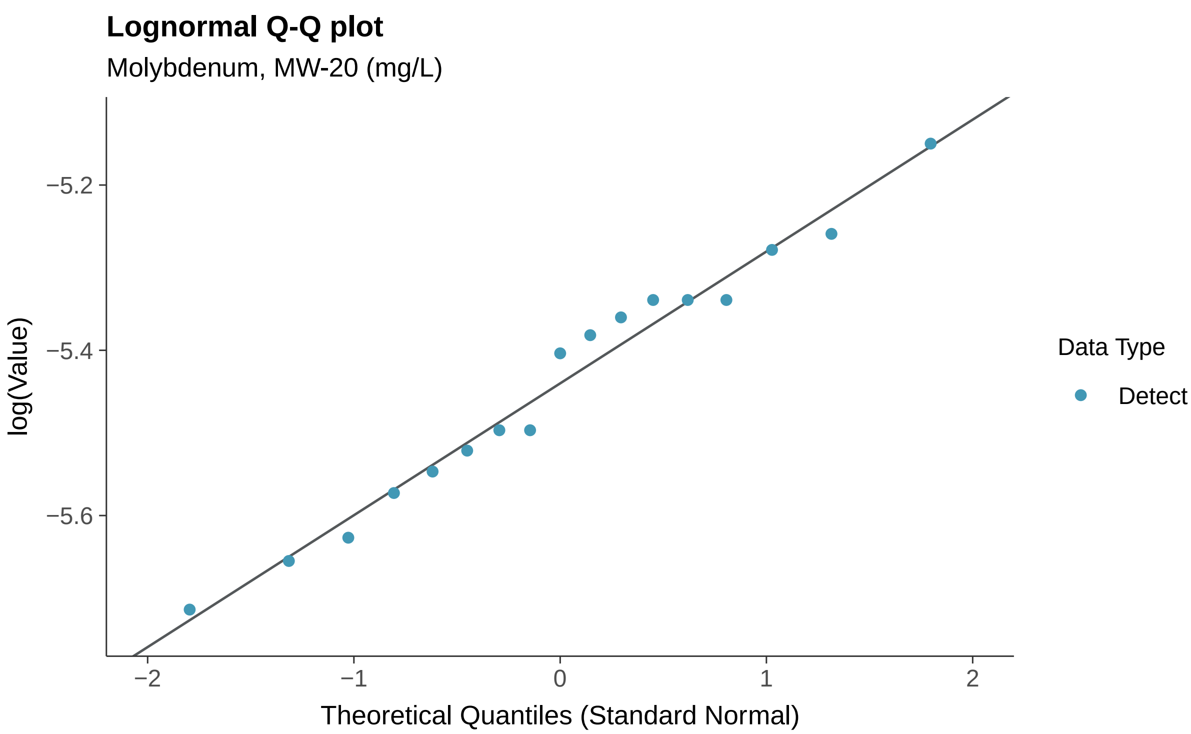


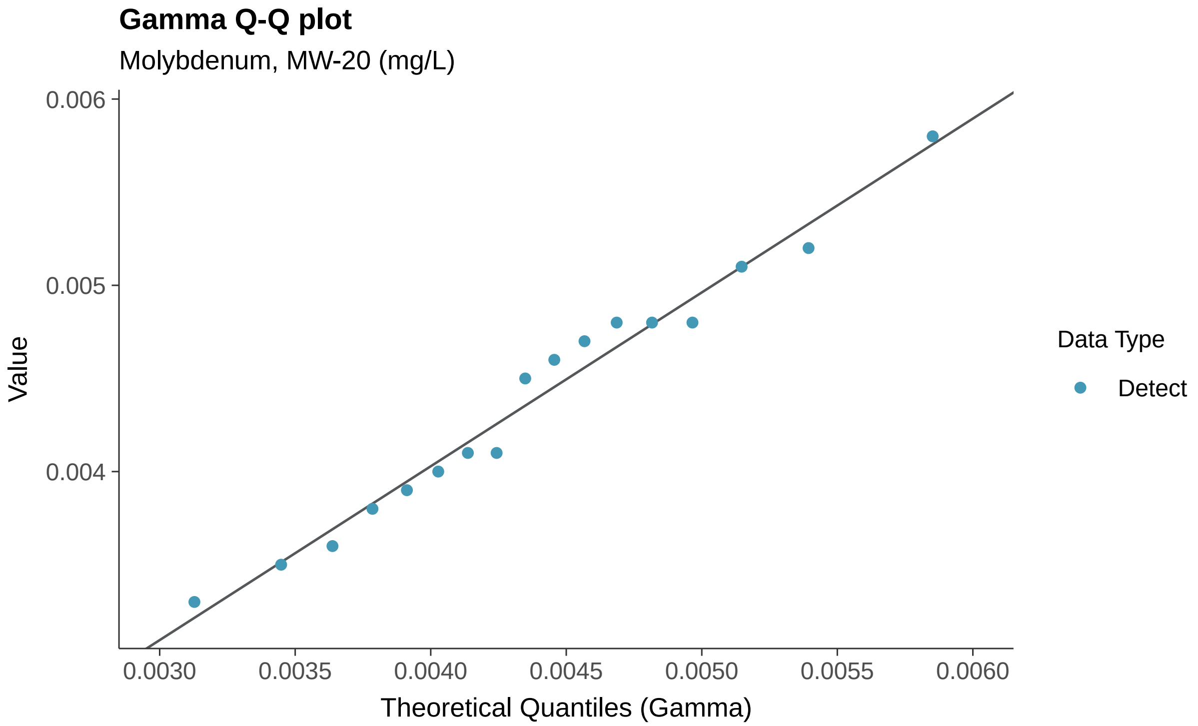
Boxplot by Season

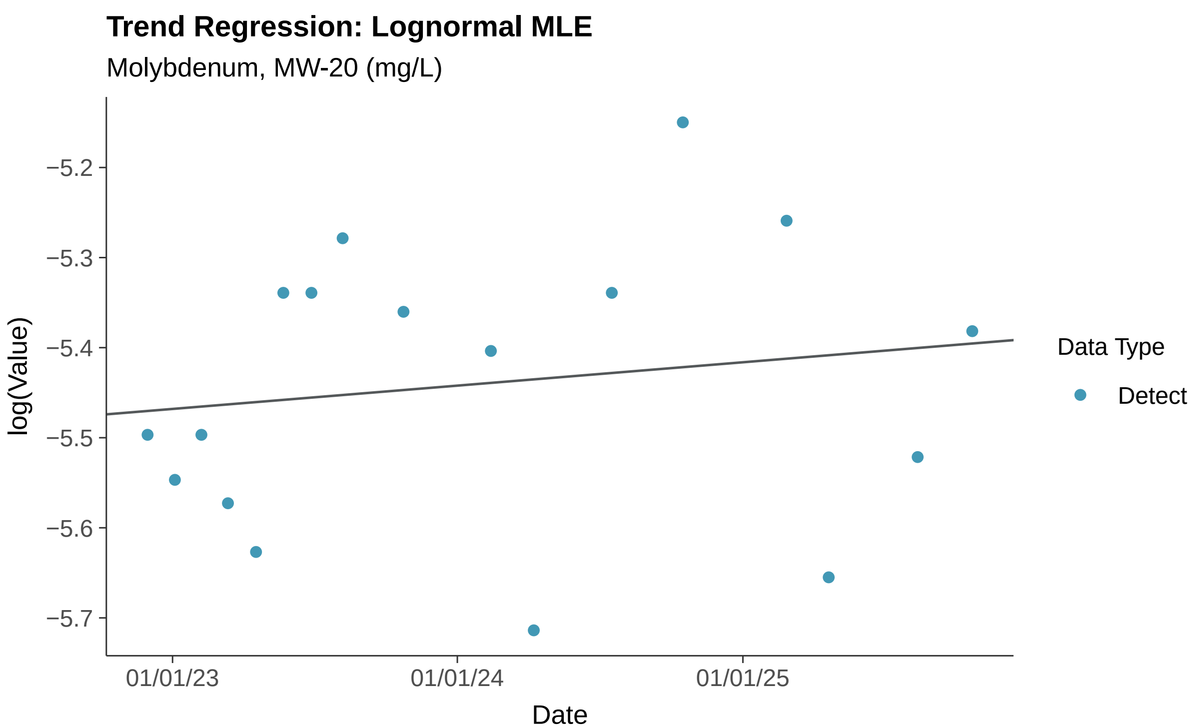
Molybdenum, MW-20 (mg/L)




Normal Q-Q plot
Molybdenum, MW-20 (mg/L)
Value
0.006
0.005
0.004
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

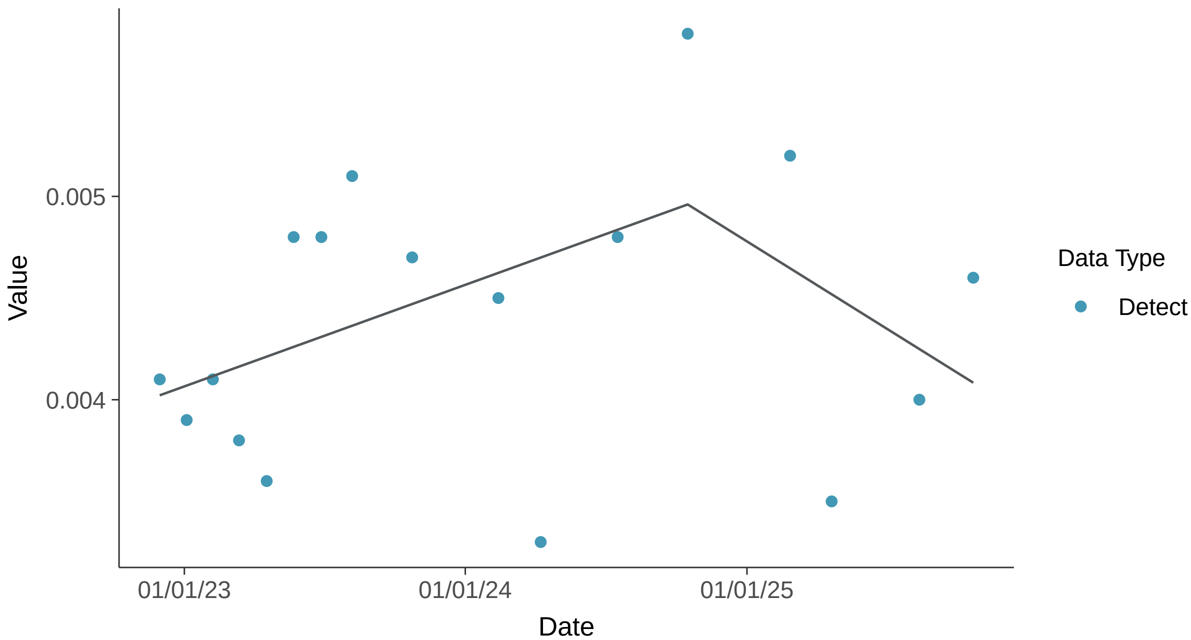

Lognormal Q-Q plot
Molybdenum, MW-20 (mg/L)
log(Value)
−5.2
−5.4
−5.6
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Molybdenum, MW-20 (mg/L)
Value
0.006
0.005
0.004
0.0030
0.0035
0.0040
0.0045
0.0050
0.0055
0.0060
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Molybdenum, MW-20 (mg/L)
log(Value)
−5.2
−5.3
−5.4
−5.5
−5.6
−5.7
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

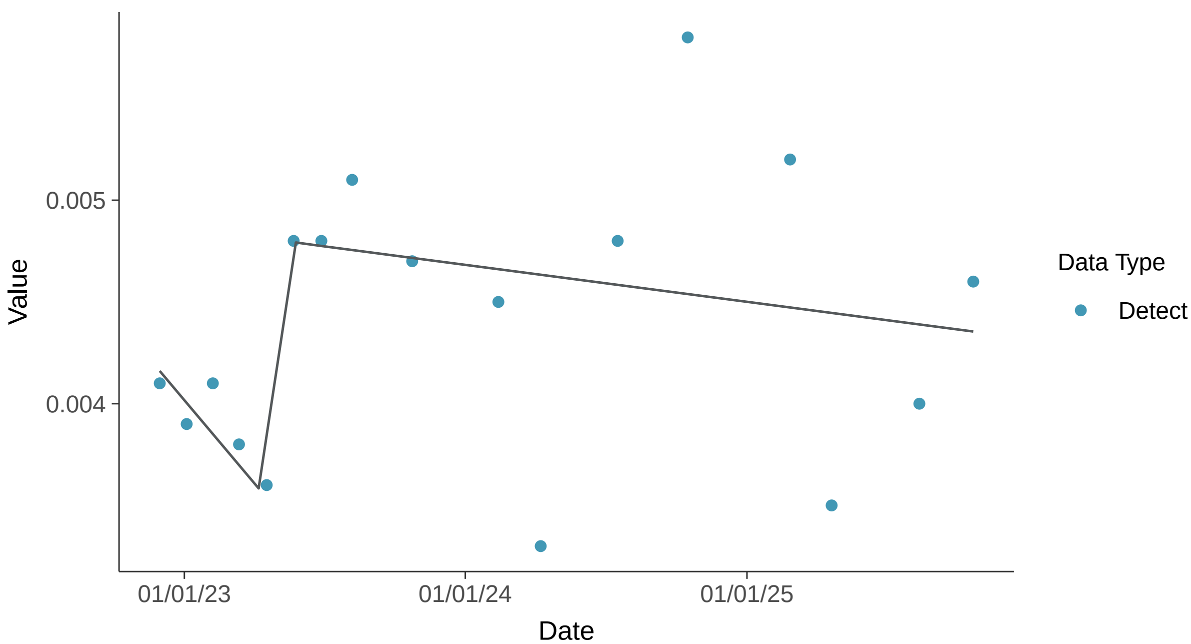
Trend Regression: Piecewise Linear-Linear

Molybdenum, MW-20 (mg/L)



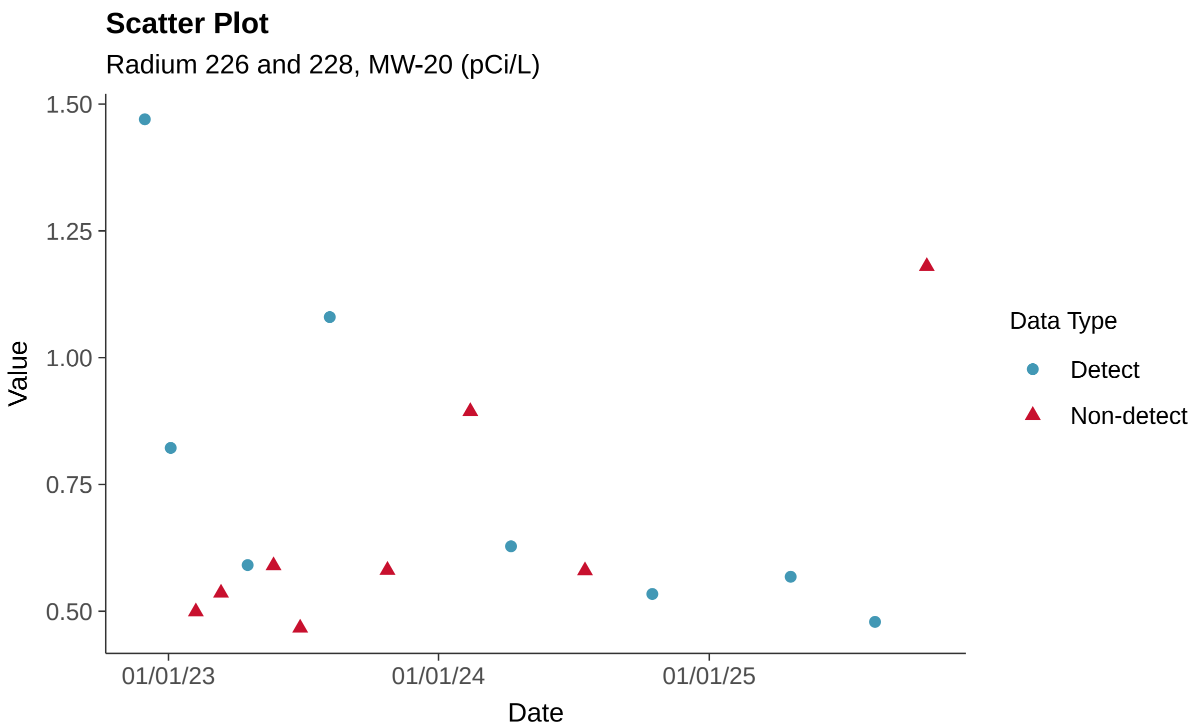
Trend Regression: Piecewise Linear-Linear-Linear

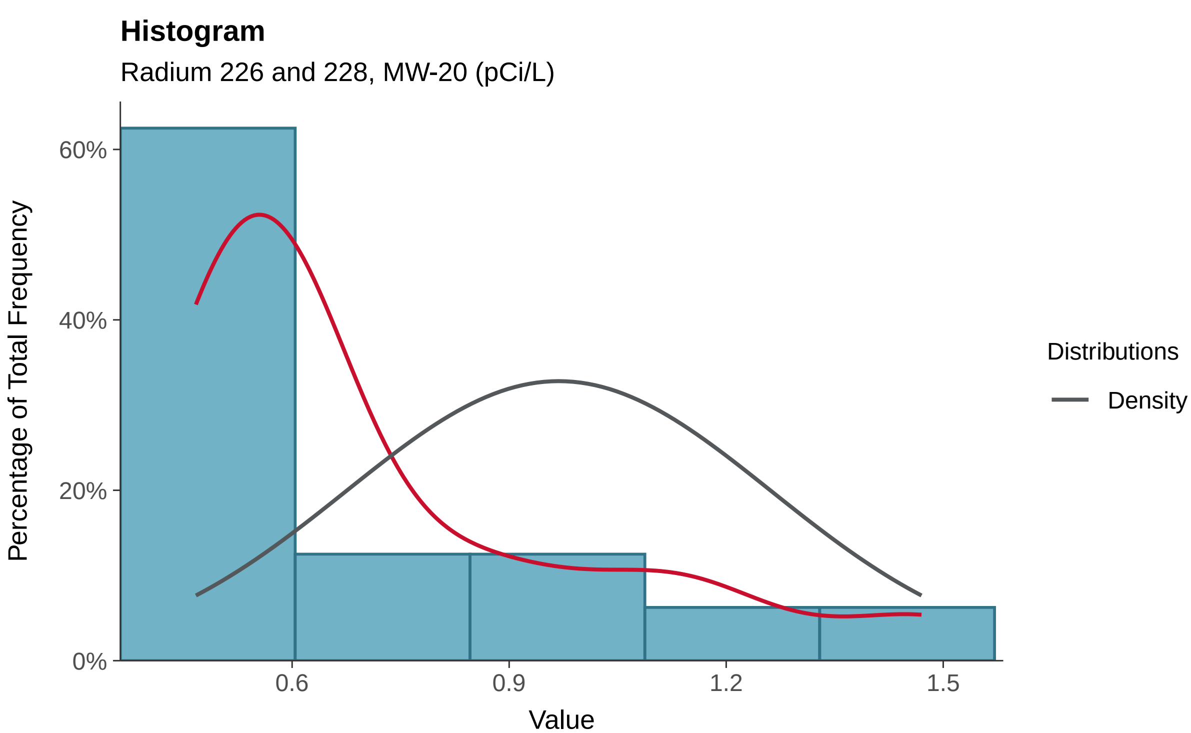
Molybdenum, MW-20 (mg/L)



Appendix IV: Radium 226 and 228, MW-20

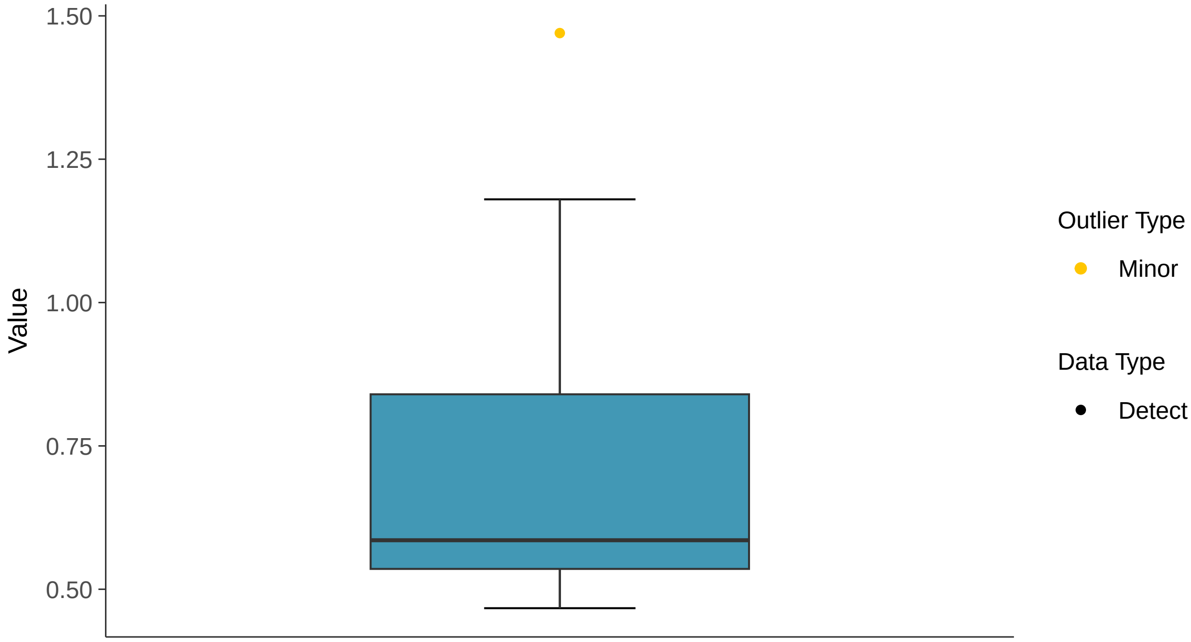
ID: 30_1_4_121





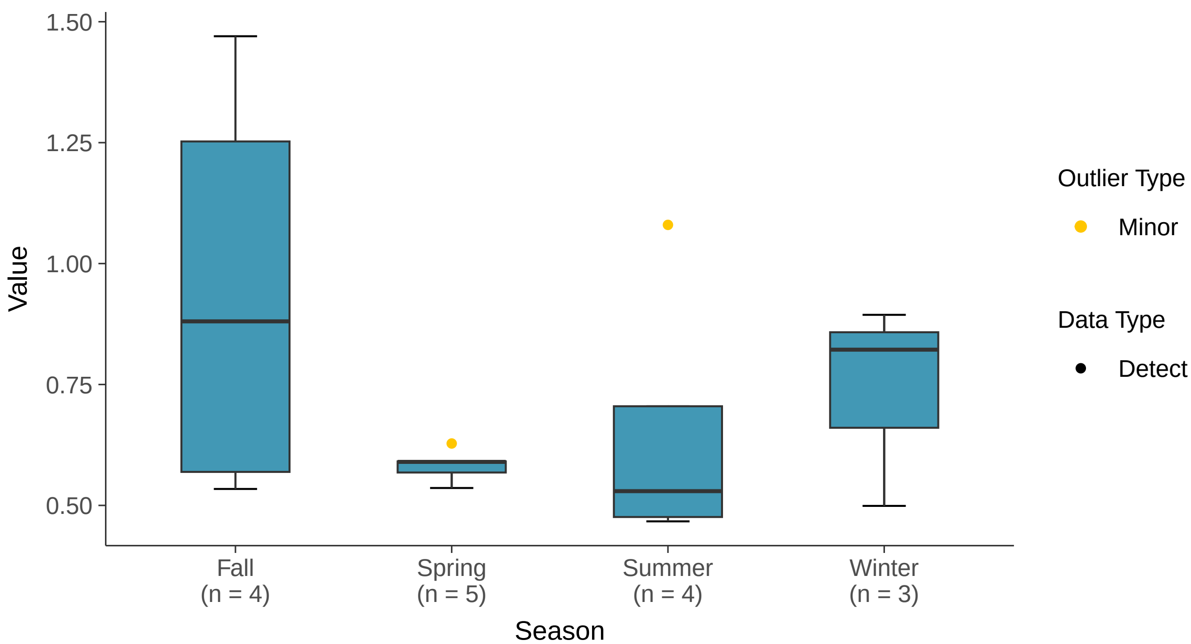
Boxplot

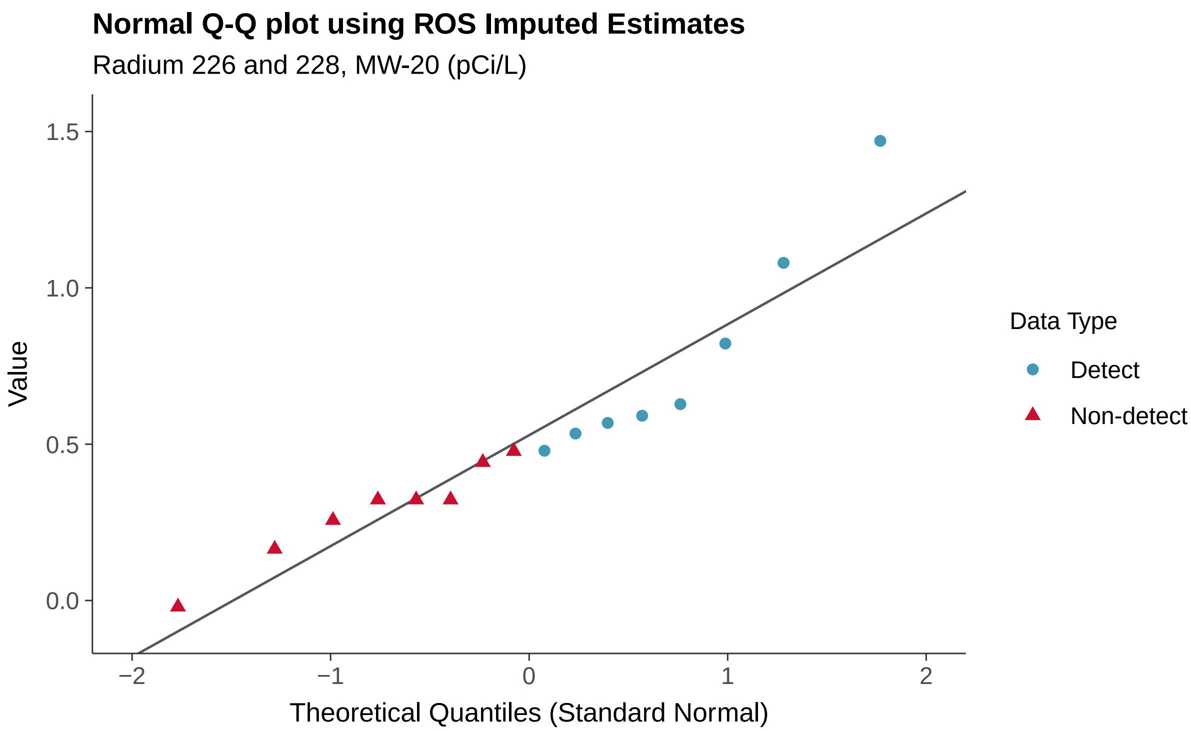
Radium 226 and 228, MW-20 (pCi/L)

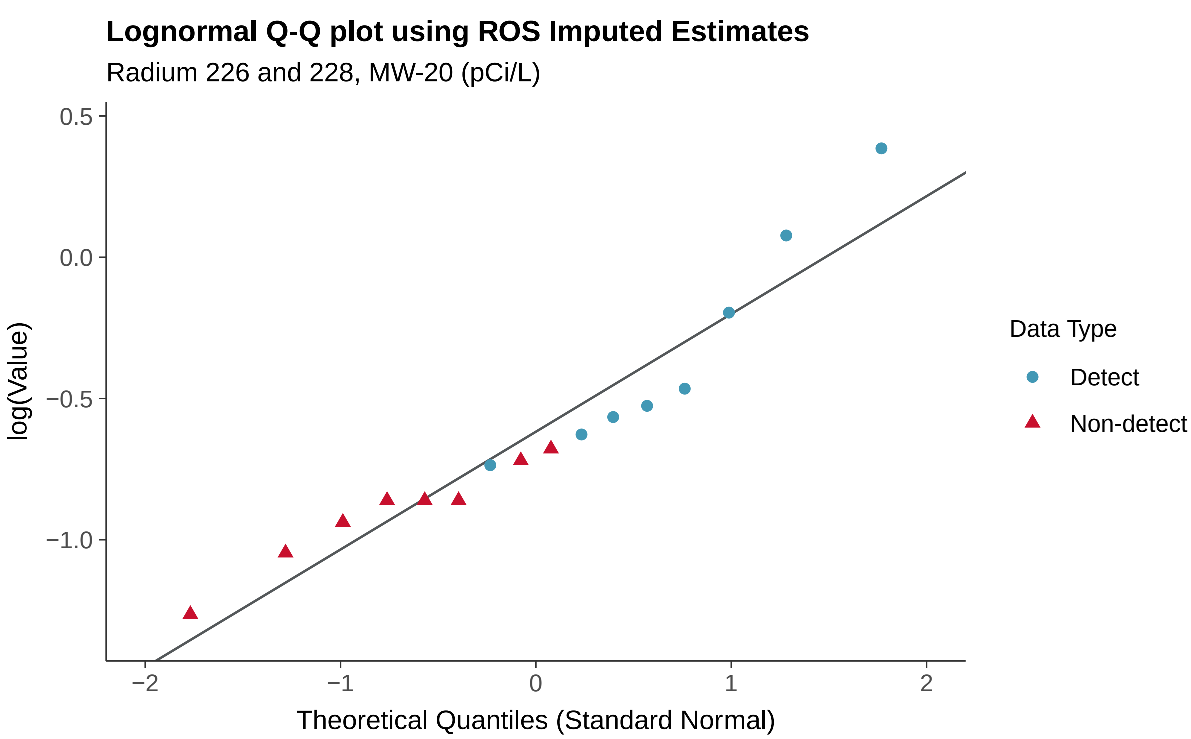


Boxplot by Season

Radium 226 and 228, MW-20 (pCi/L)

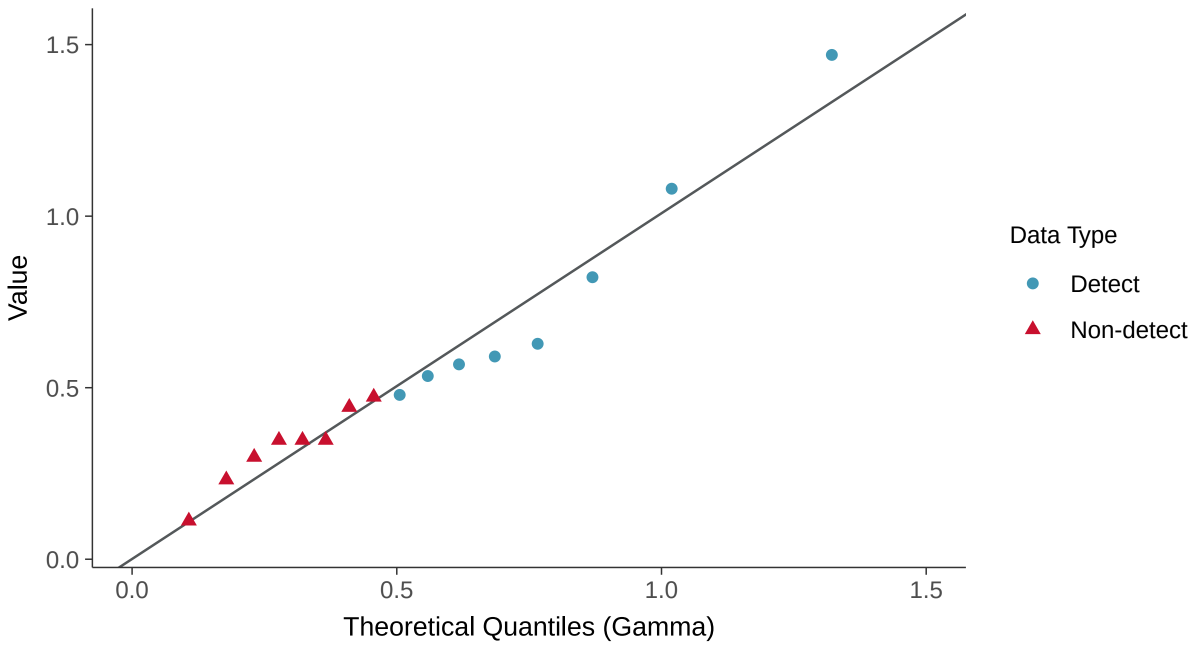



Normal Q-Q plot using ROS Imputed Estimates
Radium 226 and 228, MW-20 (pCi/L)
Value
1.5
1.0
0.5
0.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Lognormal Q-Q plot using ROS Imputed Estimates
Radium 226 and 228, MW-20 (pCi/L)
log(Value)
0.5
0.0
−0.5
−1.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

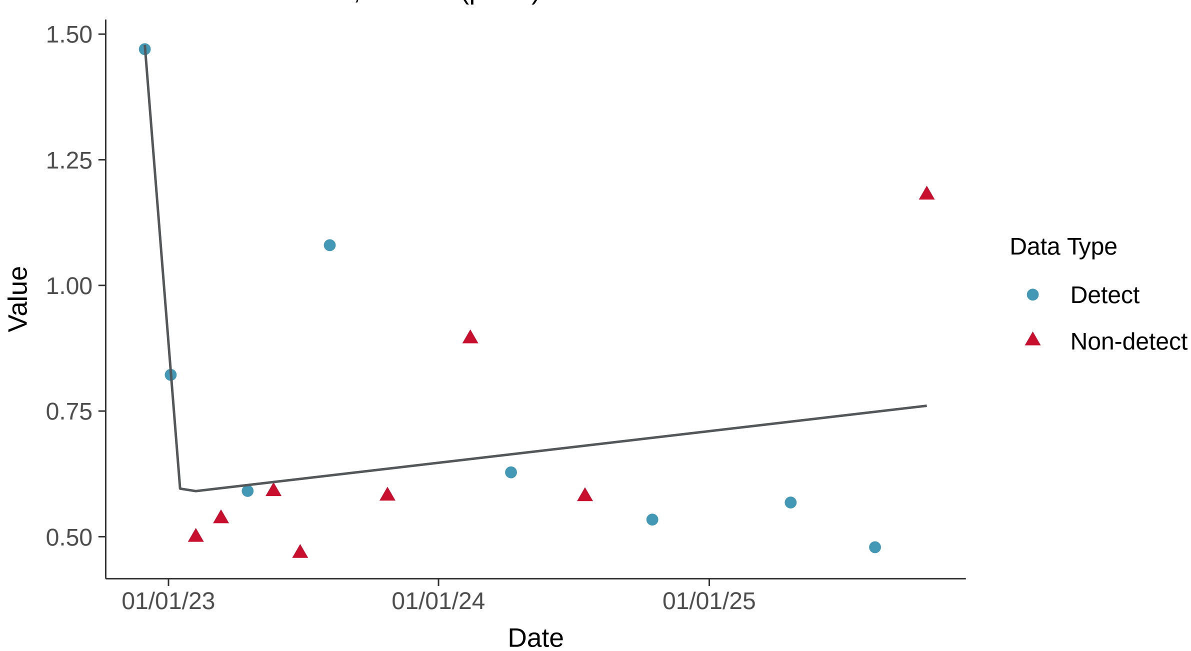
Gamma Q-Q plot using ROS Imputed Estimates

Radium 226 and 228, MW-20 (pCi/L)



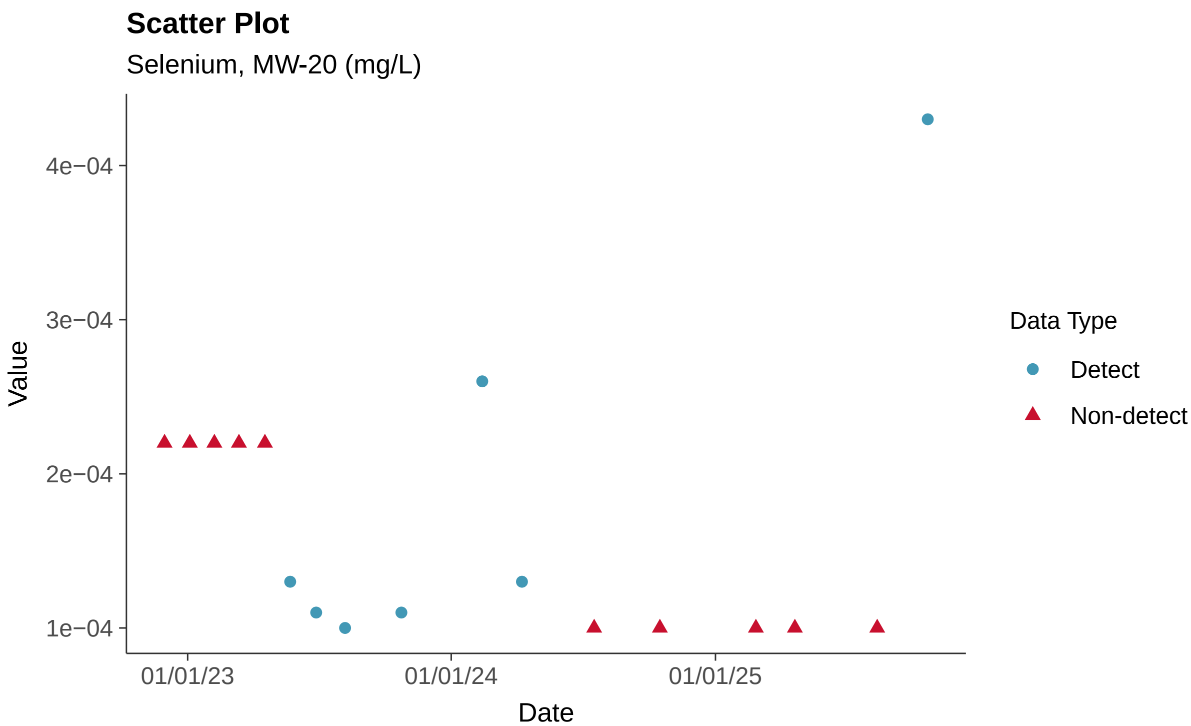
Trend Regression: Piecewise Linear-Linear

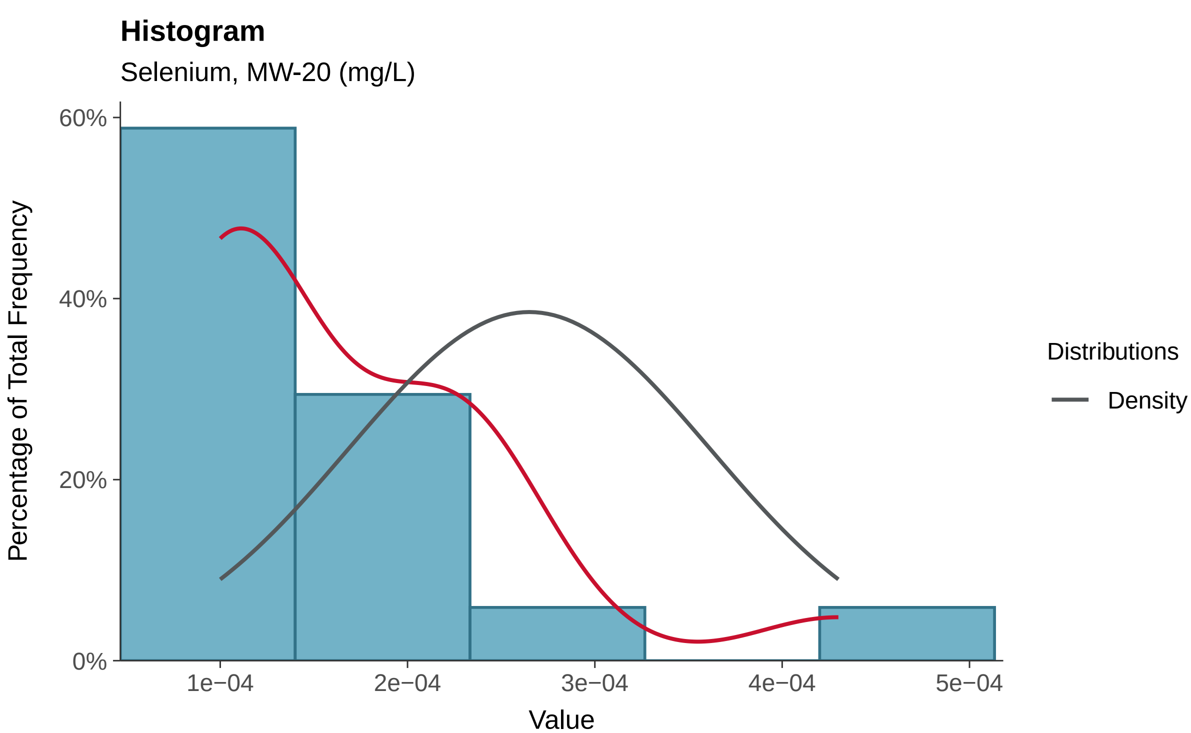
Radium 226 and 228, MW-20 (pCi/L)



Appendix IV: Selenium, MW-20

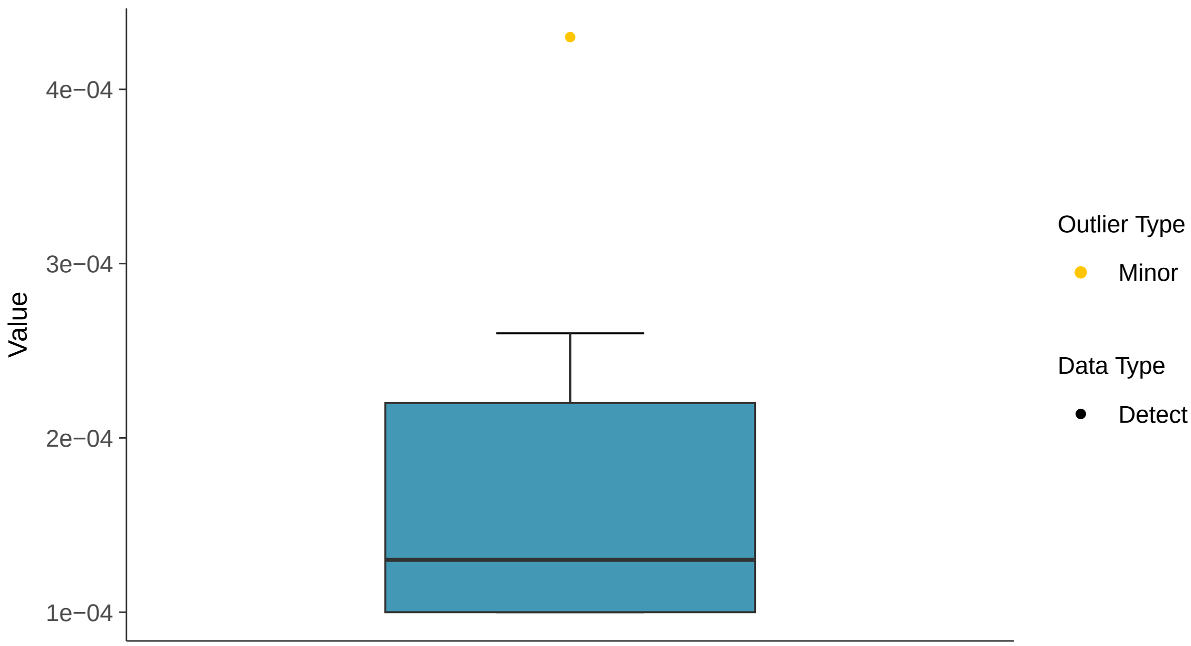
ID: 30_1_4_122





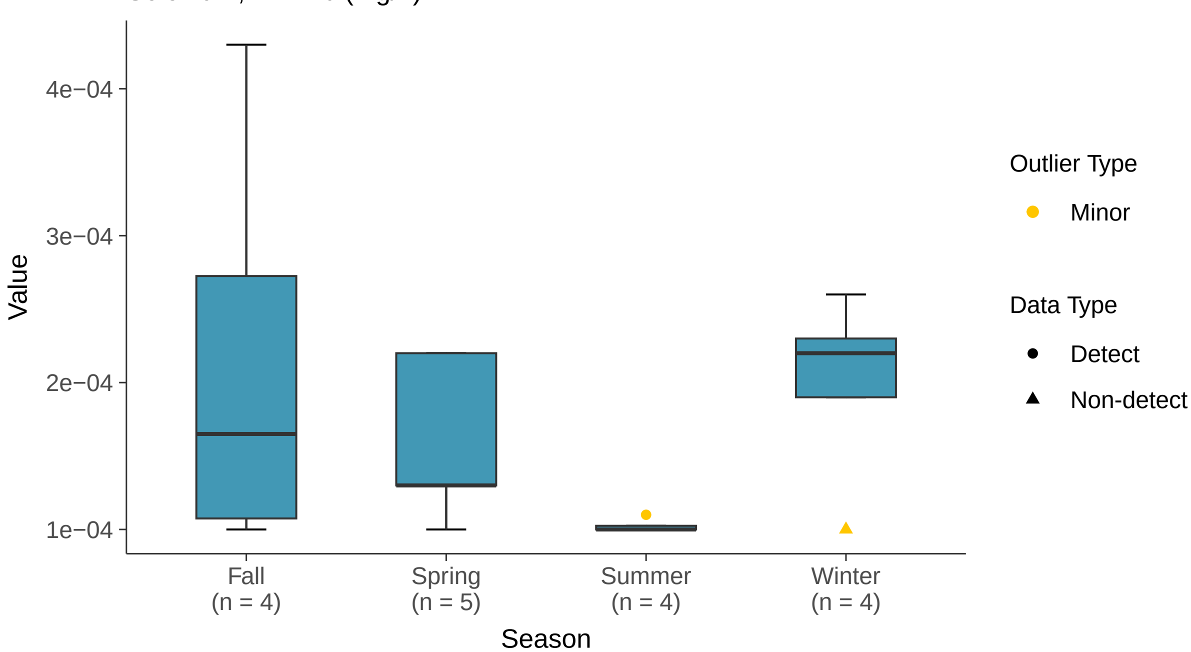
Boxplot

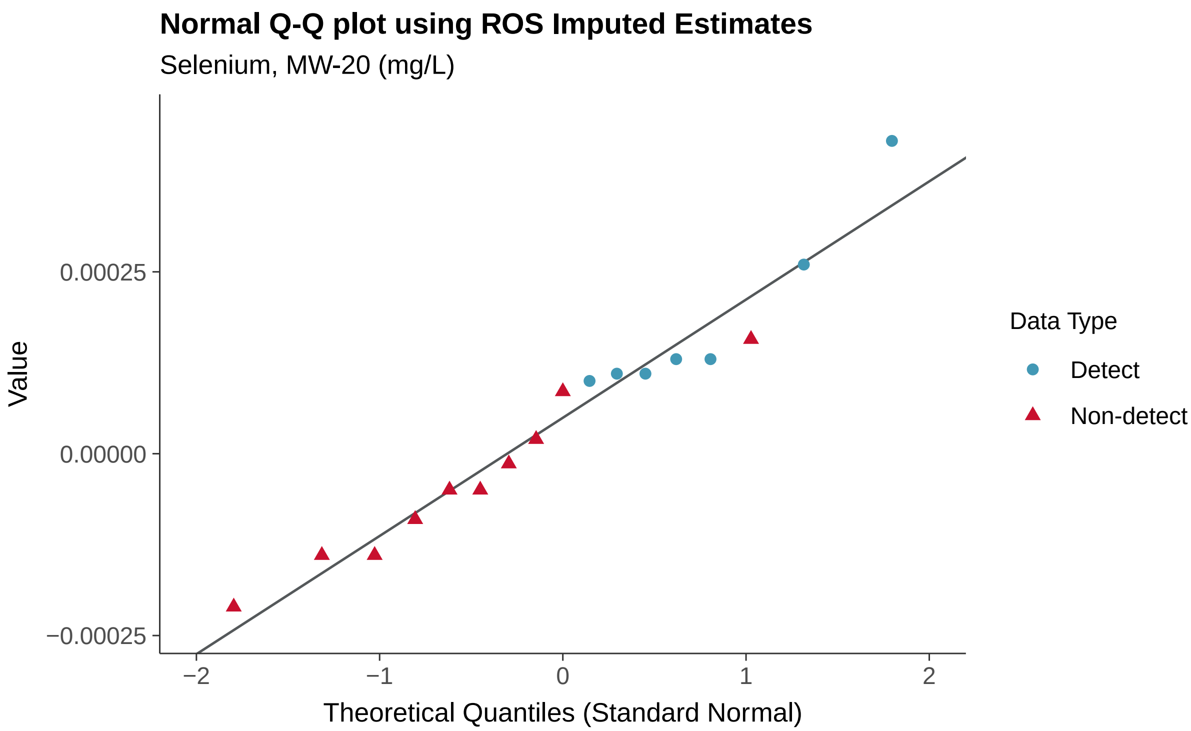
Selenium, MW-20 (mg/L)

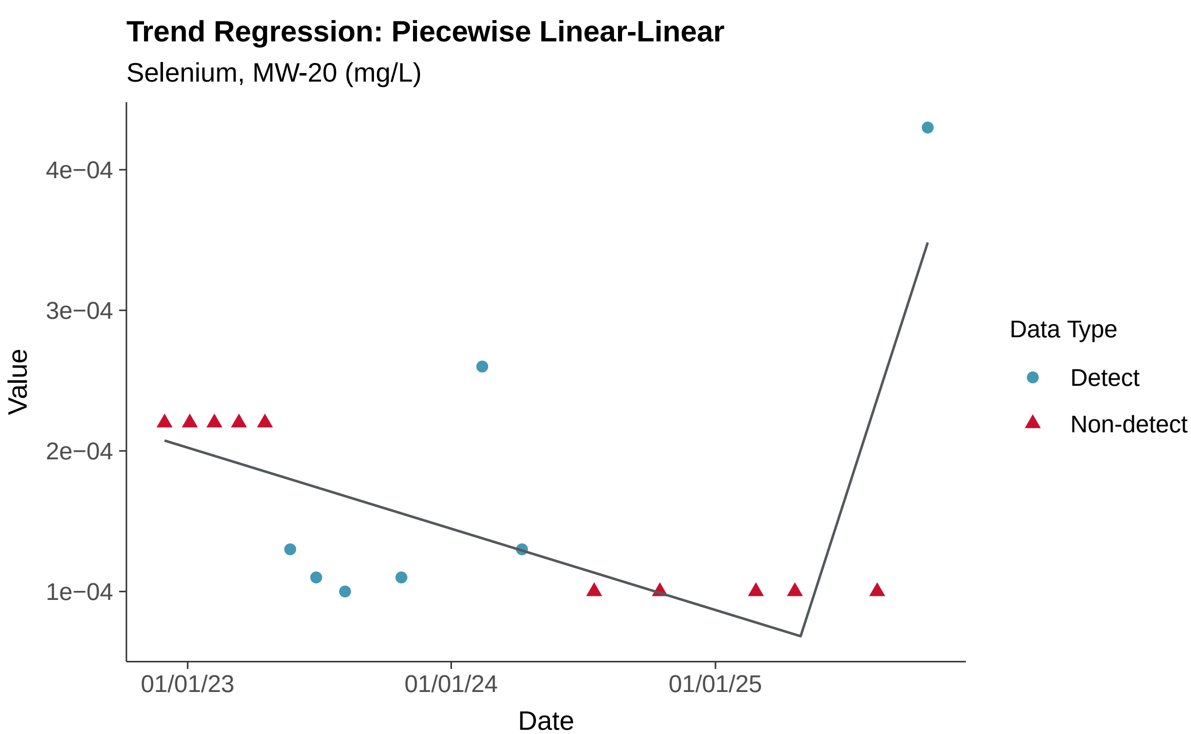


Boxplot by Season

Selenium, MW-20 (mg/L)




Normal Q-Q plot using ROS Imputed Estimates
Selenium, MW-20 (mg/L)
Value
0.00025
0.00000
−0.00025
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

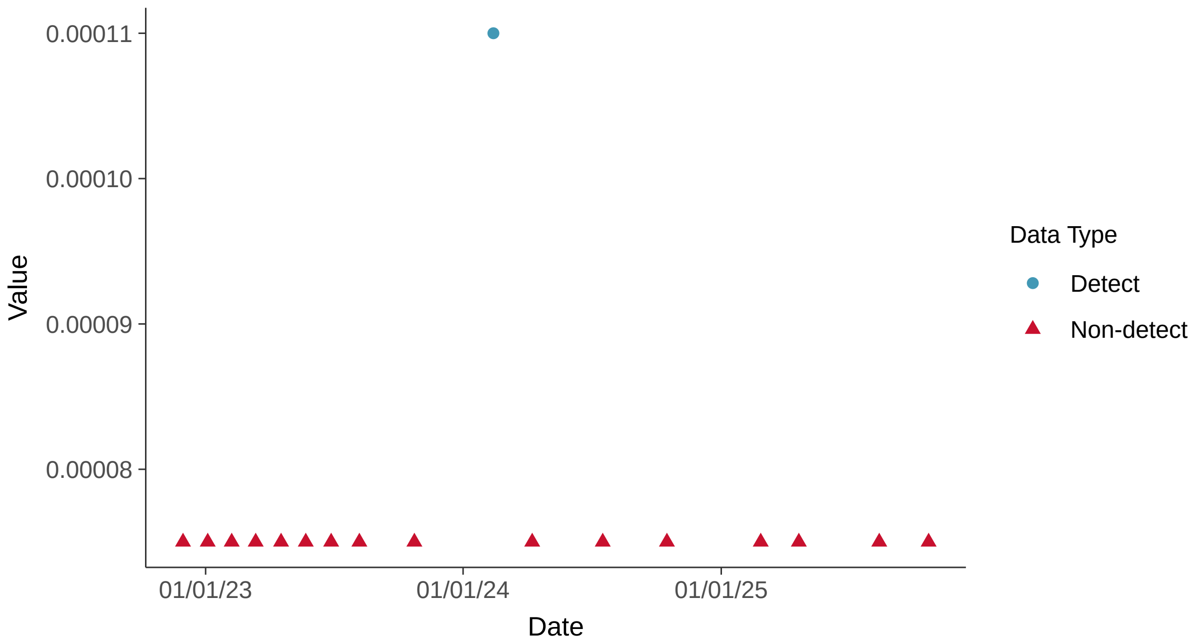

Trend Regression: Piecewise Linear-Linear
Selenium, MW-20 (mg/L)
Value
4e−04
3e−04
2e−04
1e−04
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Appendix IV: Thallium, MW-20

ID: 30_1_4_125

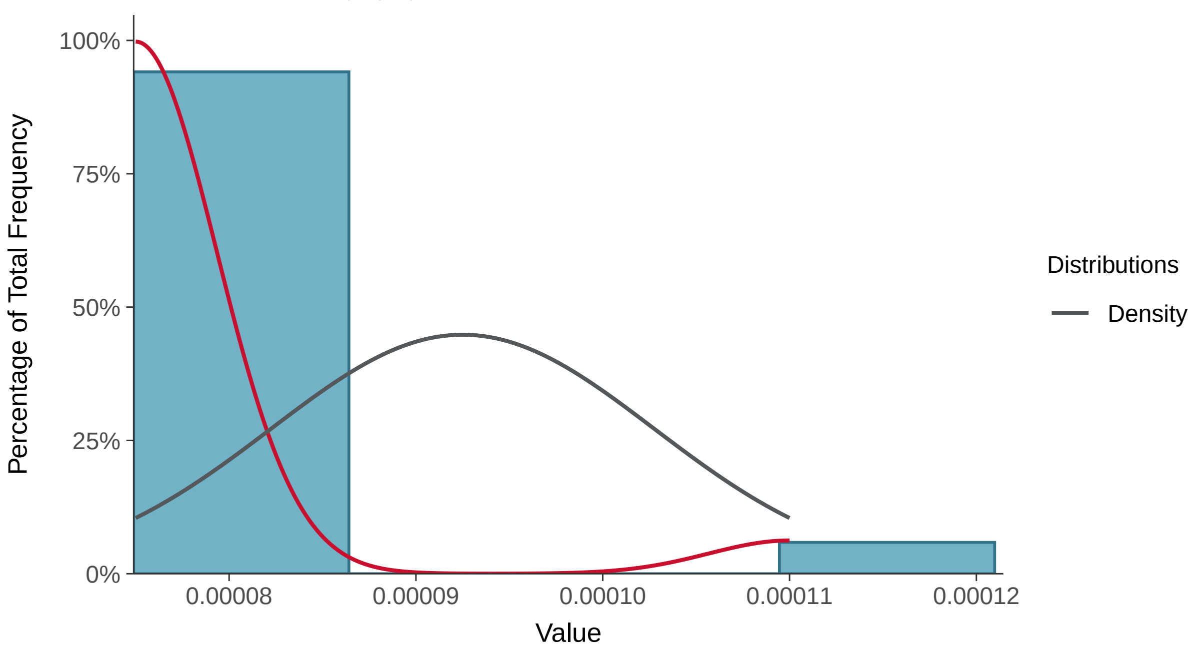
Scatter Plot

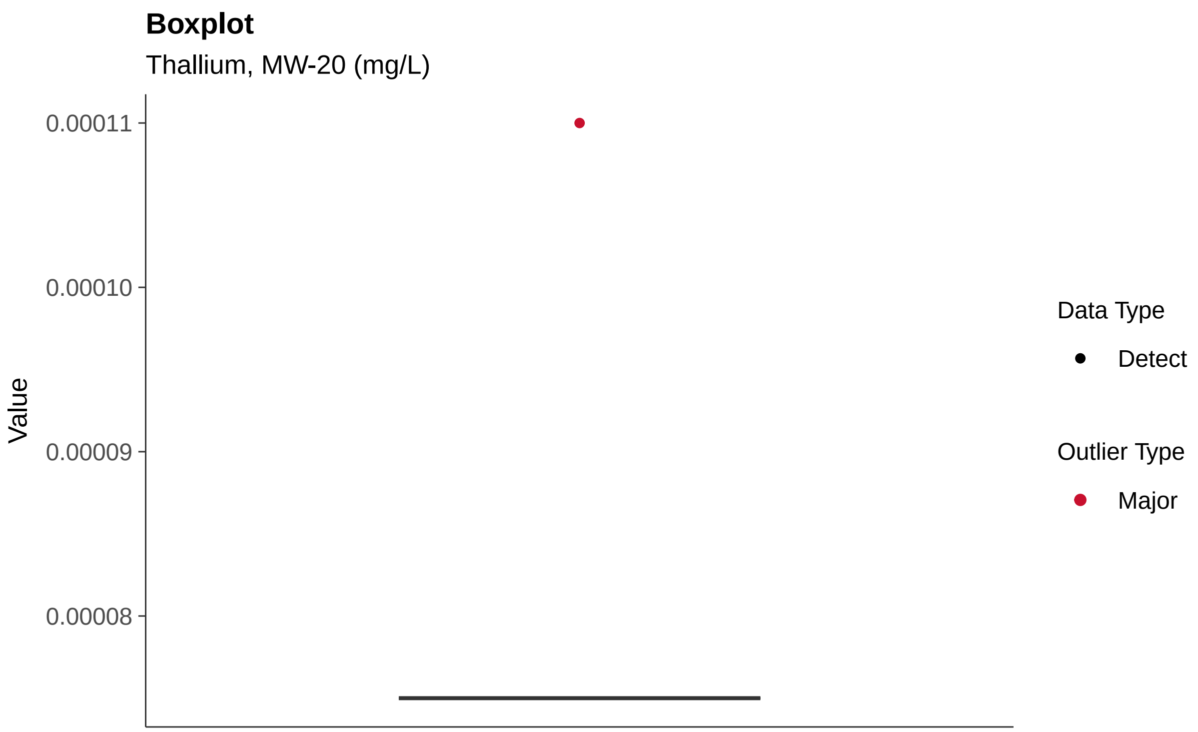
Thallium, MW-20 (mg/L)

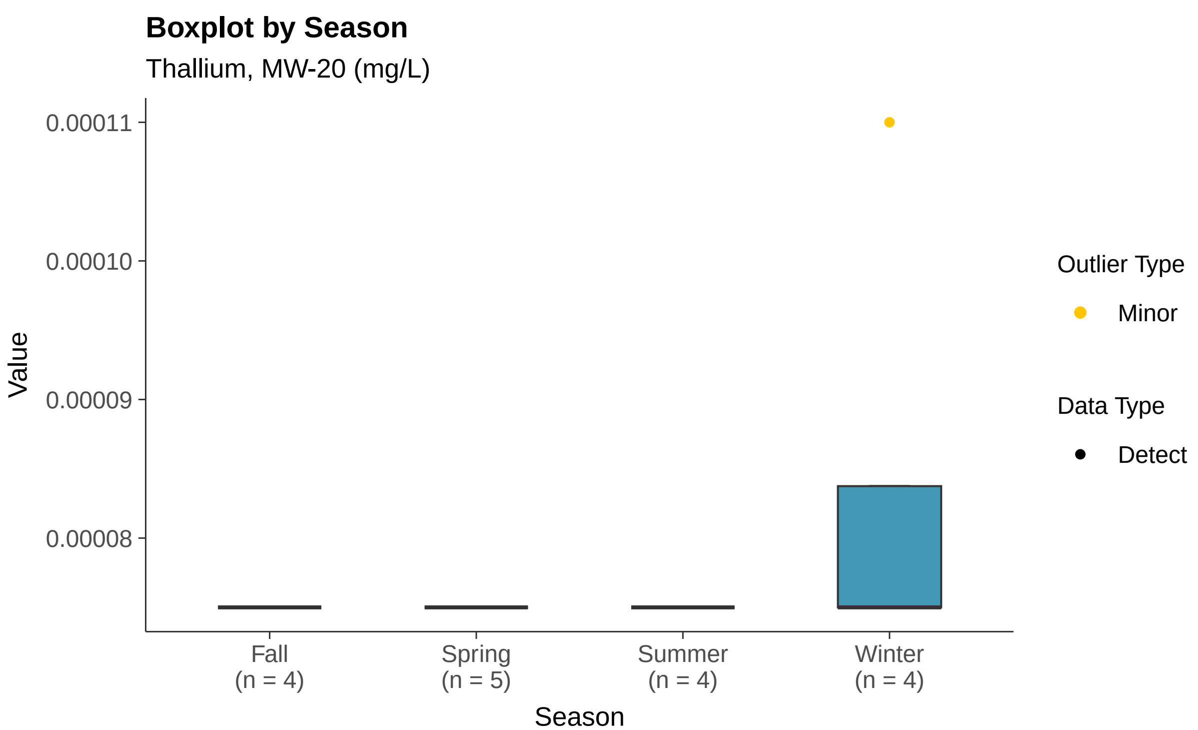


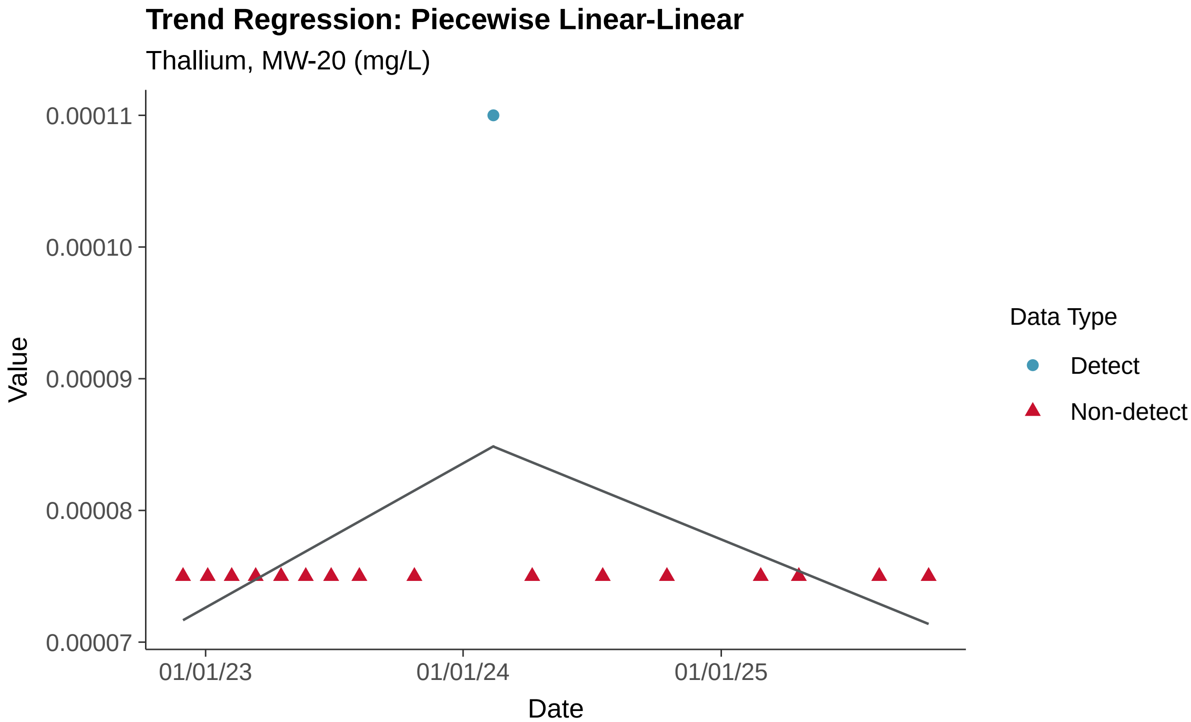
Histogram

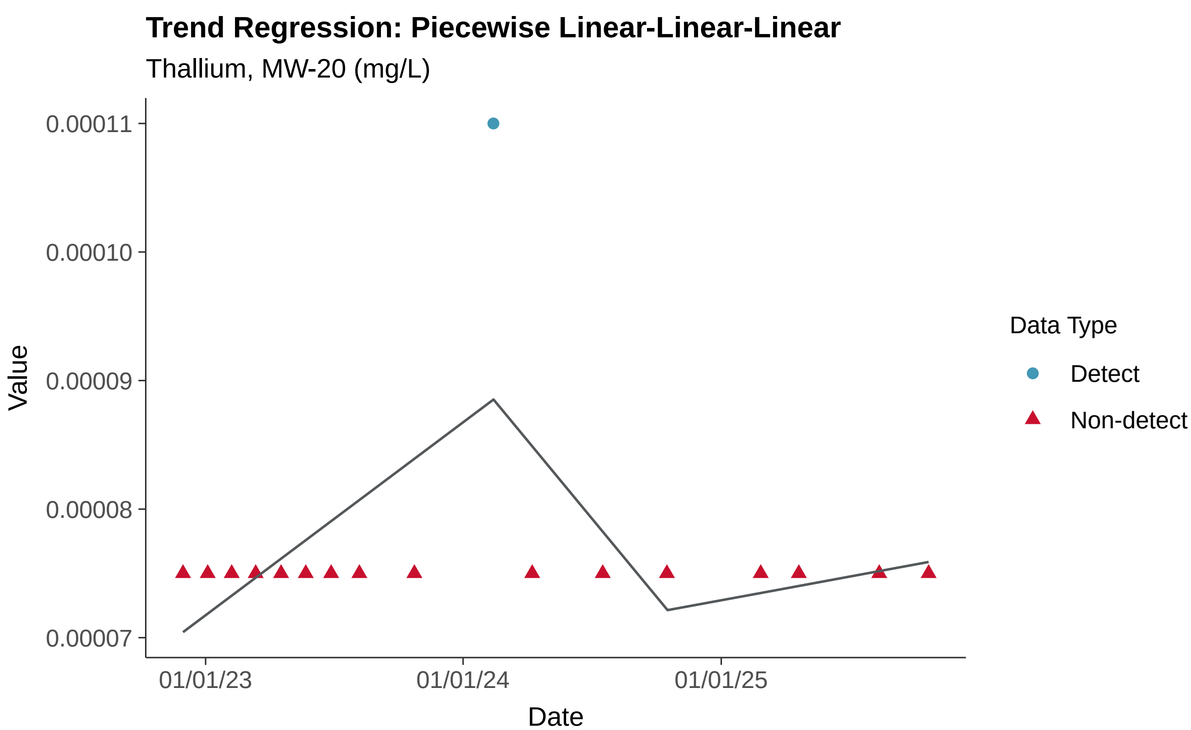
Thallium, MW-20 (mg/L)




Boxplot
Thallium, MW-20 (mg/L)
Value
0.00011
0.00010
0.00009
0.00008
Data Type
Detect
Outlier Type
Major

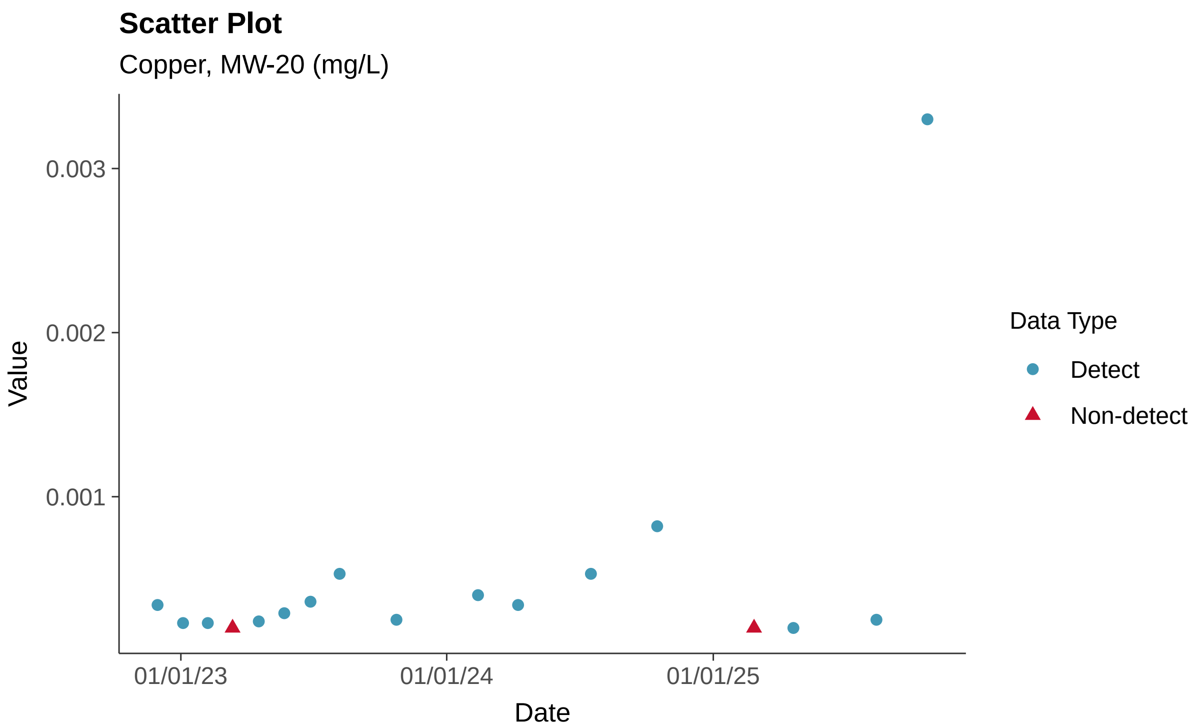

Boxplot by Season
Thallium, MW-20 (mg/L)
Value
0.00011
0.00010
0.00009
0.00008
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Minor
Data Type
Detect

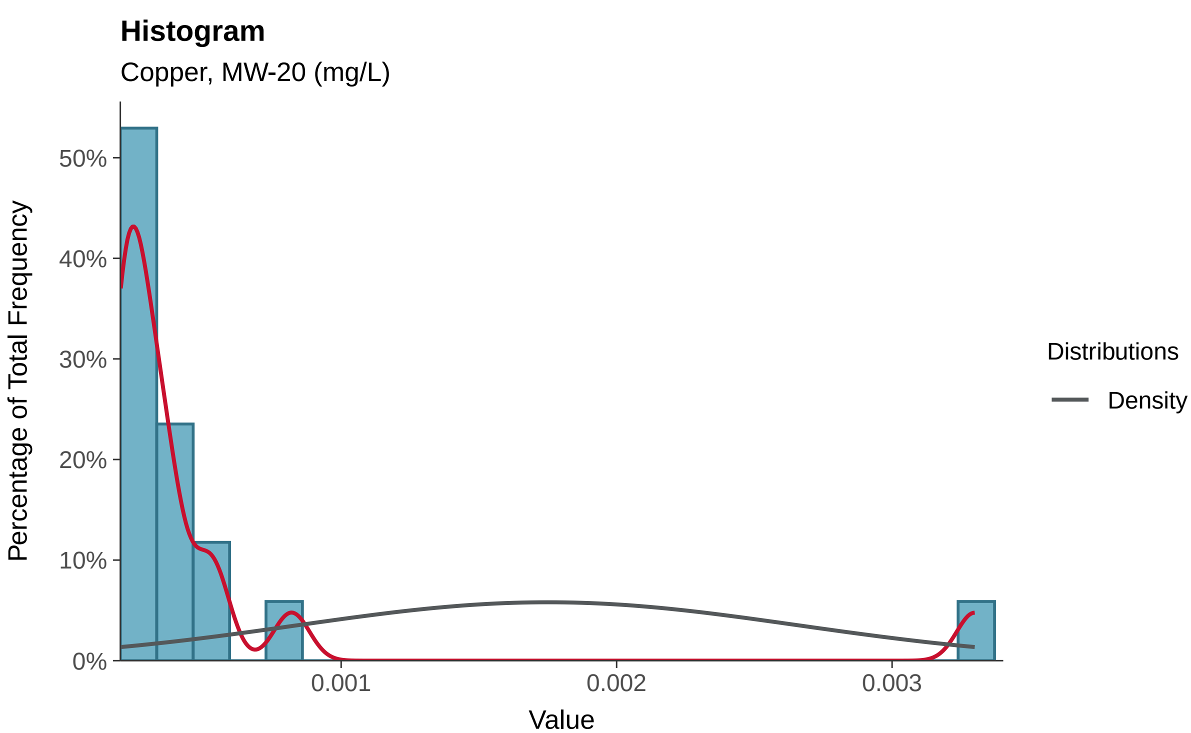

Trend Regression: Piecewise Linear-Linear
Thallium, MW-20 (mg/L)
0.00011
0.00010
0.00009
0.00008
0.00007
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear-Linear
Thallium, MW-20 (mg/L)
0.00011
0.00010
0.00009
0.00008
0.00007
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Part 115: Copper, MW-20

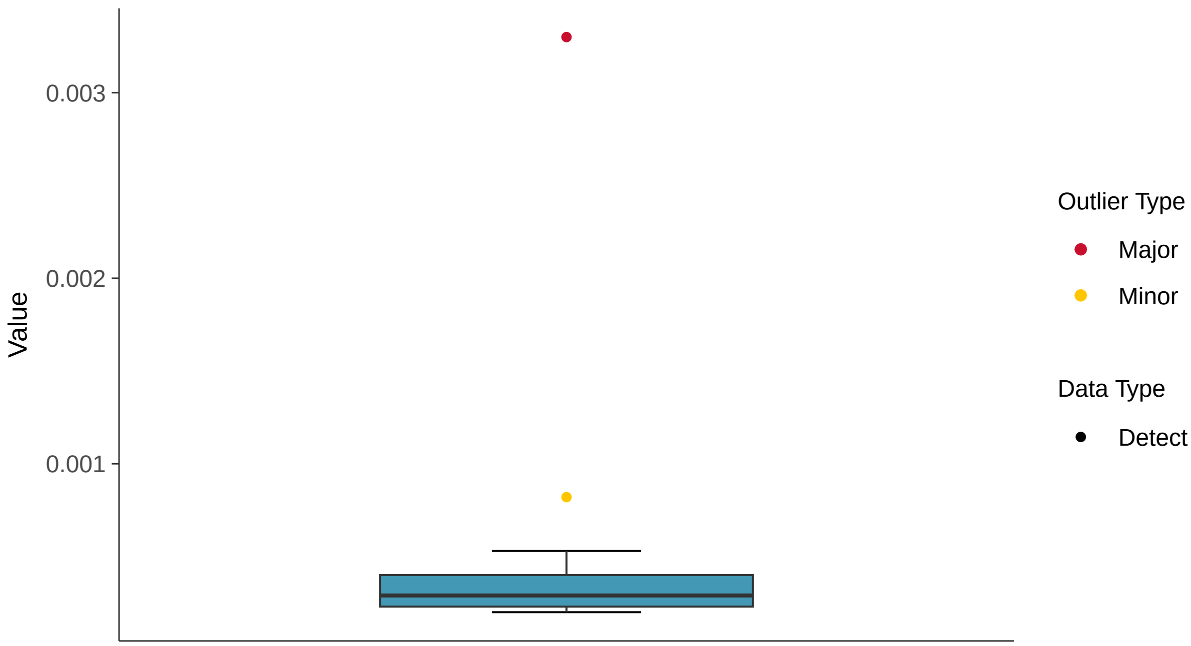
ID: 30_1_5_111





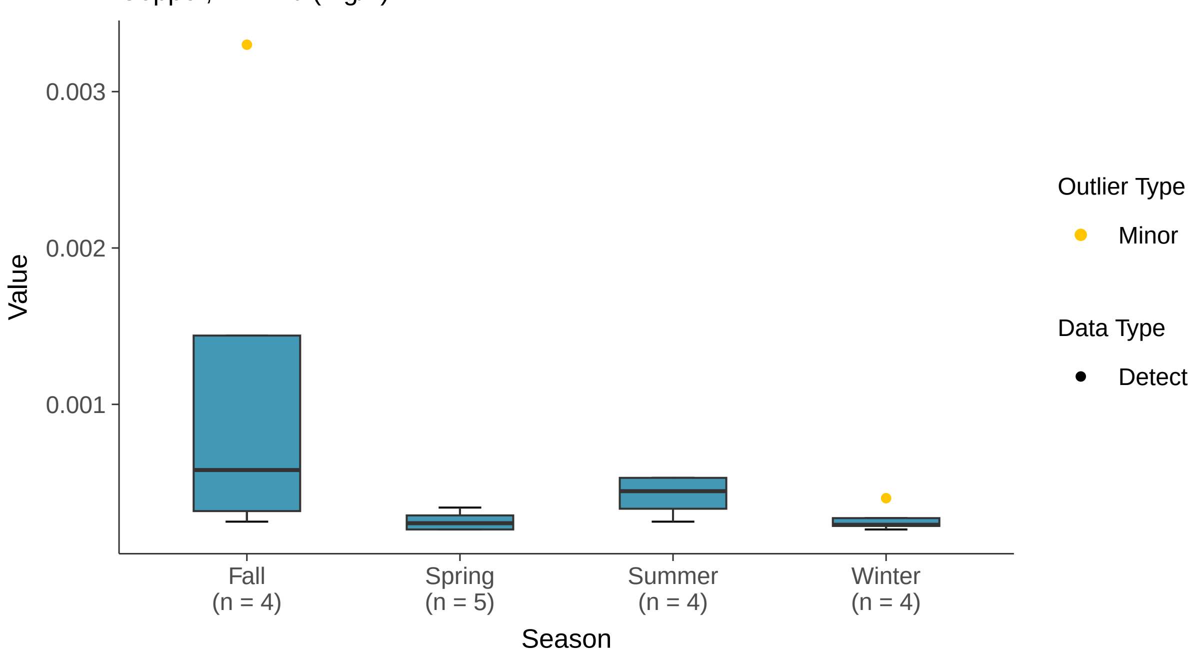
Boxplot

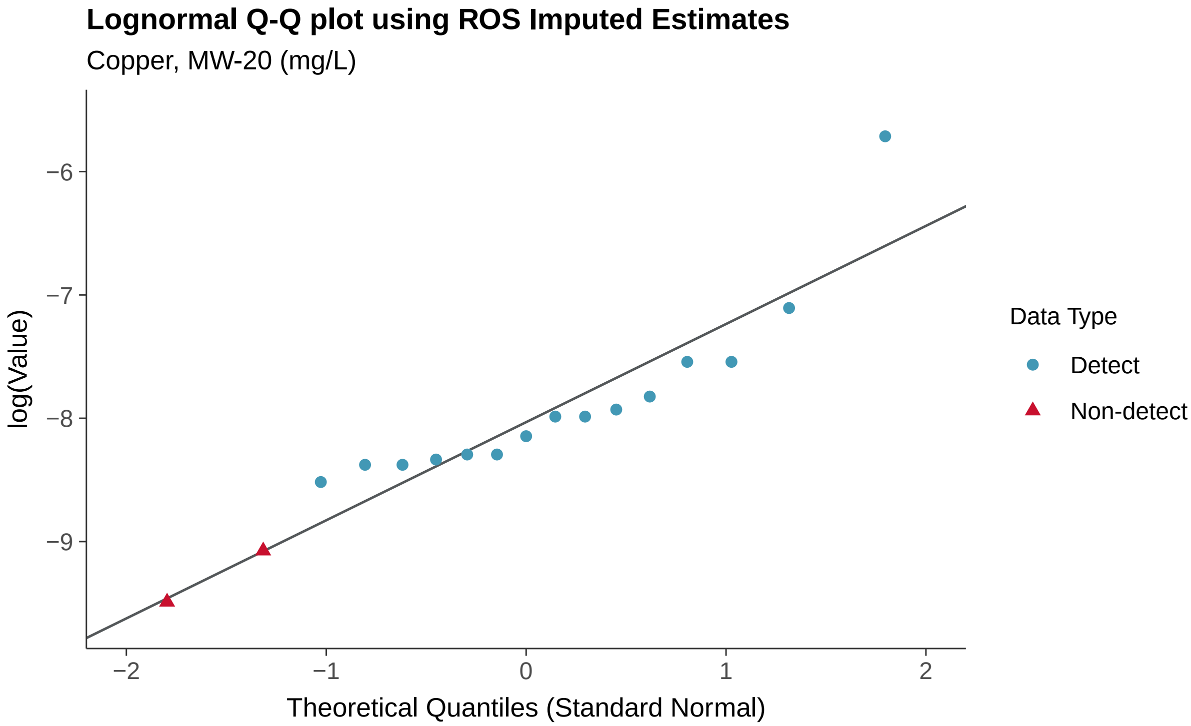
Copper, MW-20 (mg/L)

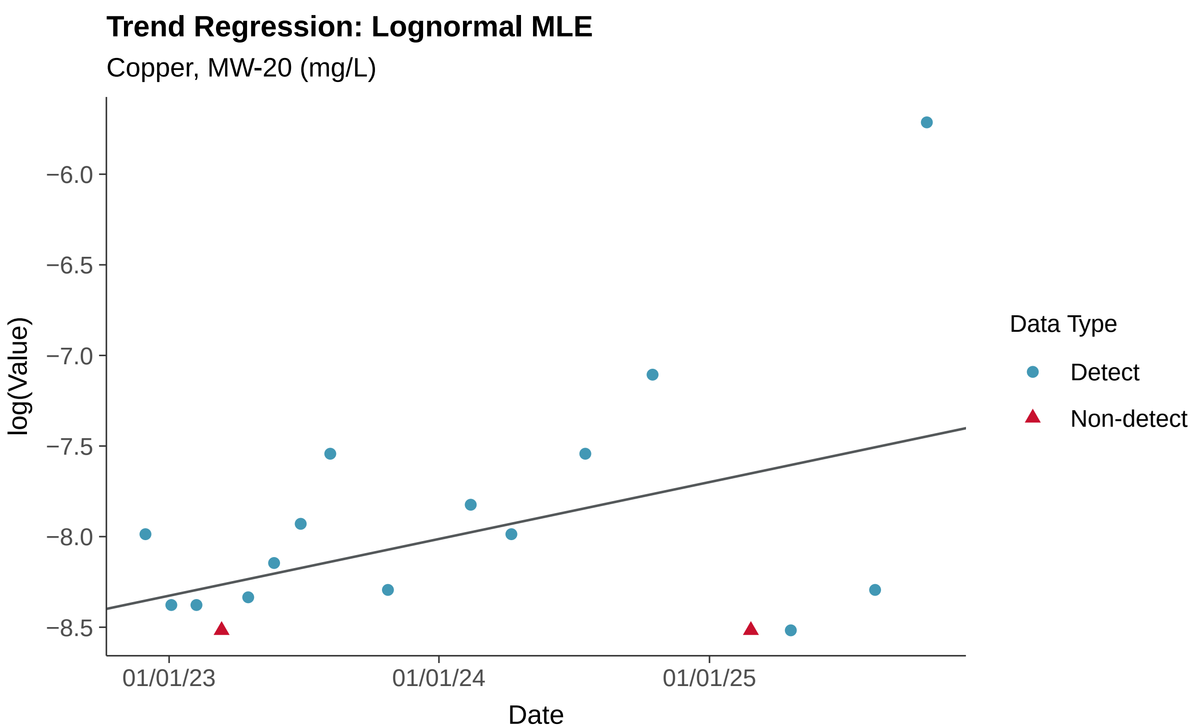


Boxplot by Season

Copper, MW-20 (mg/L)



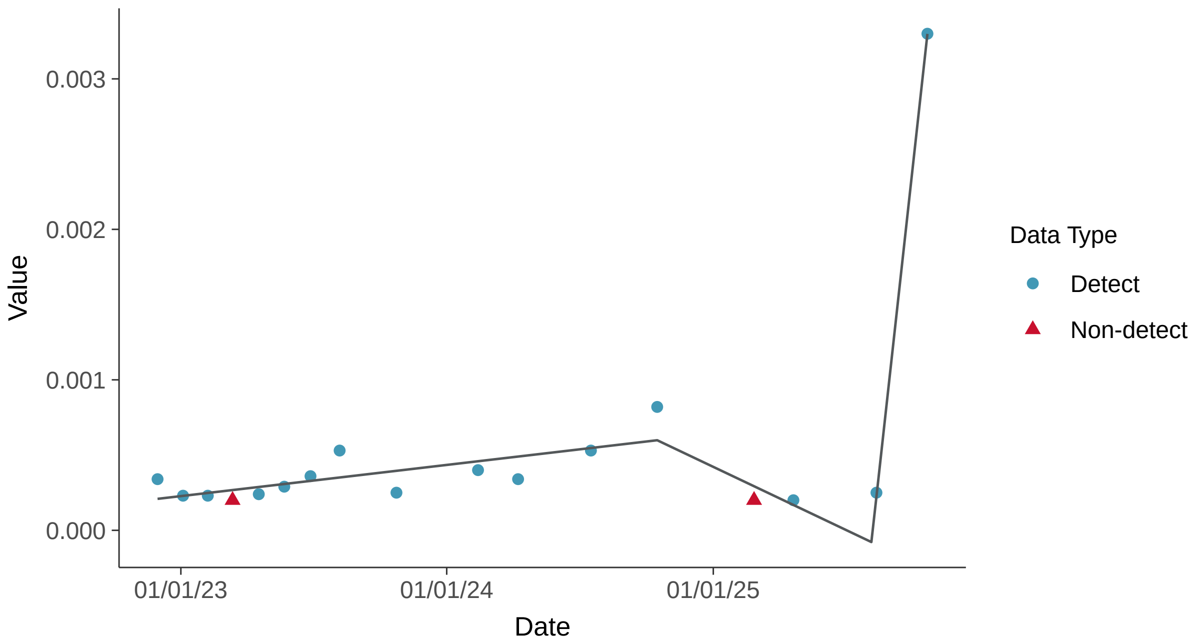

Lognormal Q-Q plot using ROS Imputed Estimates
Copper, MW-20 (mg/L)
log(Value)
−6
−7
−8
−9
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Trend Regression: Lognormal MLE
Copper, MW-20 (mg/L)
log(Value)
−6.0
−6.5
−7.0
−7.5
−8.0
−8.5
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Grand Haven
Downgradient Wells as of October 2025

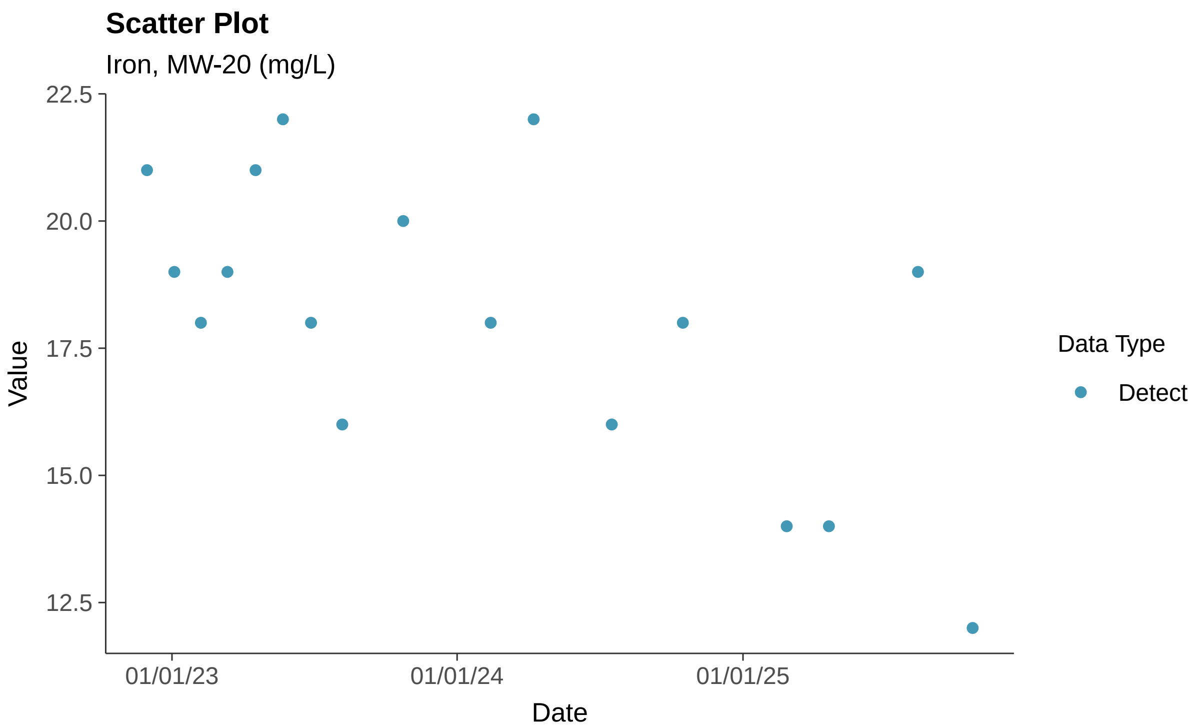
Trend Regression: Piecewise Linear-Linear-Linear

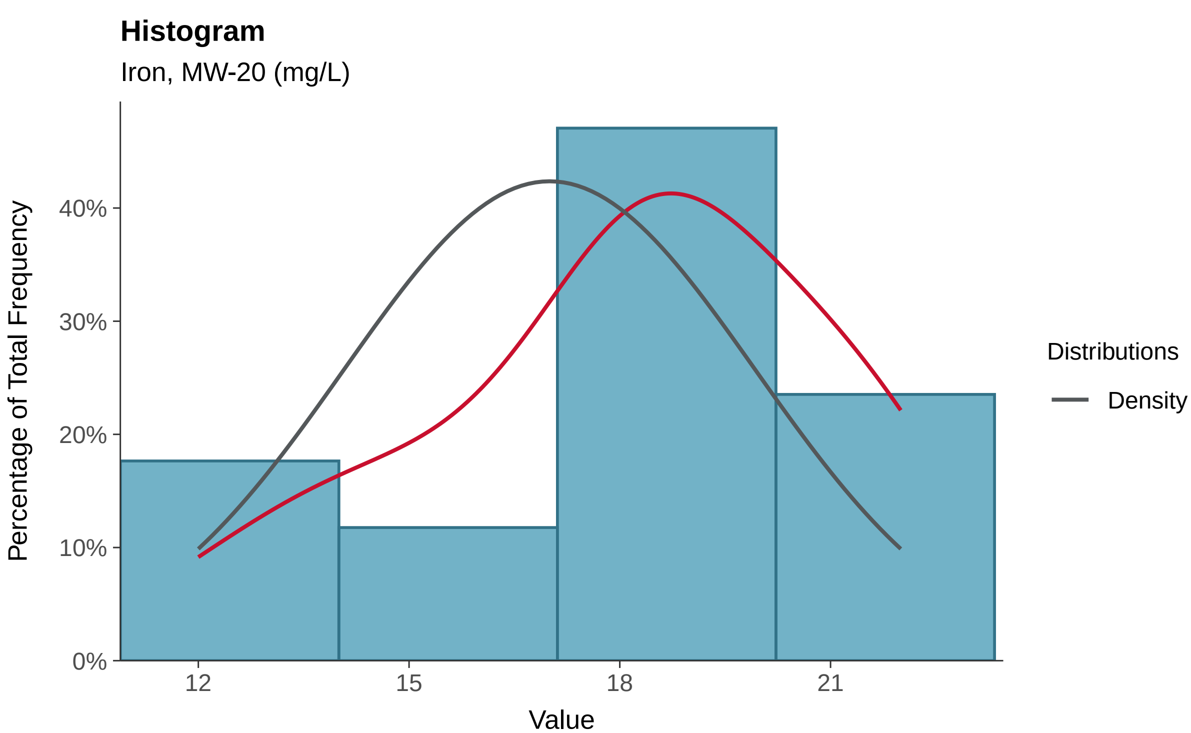
Copper, MW-20 (mg/L)



Part 115: Iron, MW-20

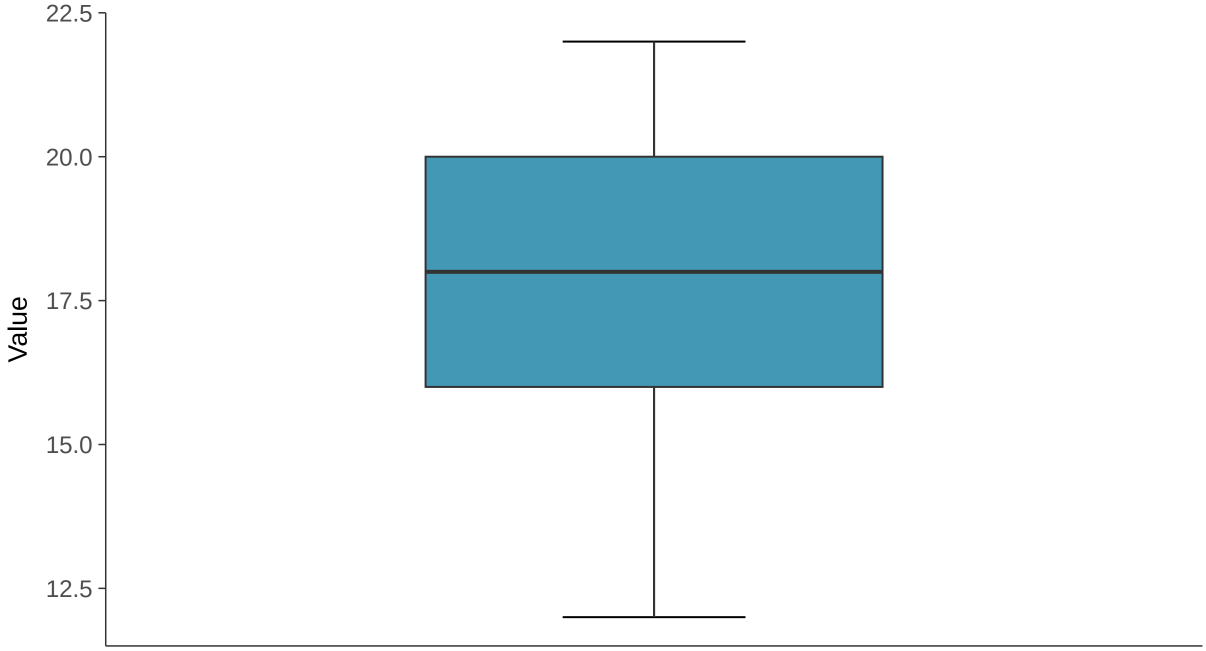
ID: 30_1_5_114





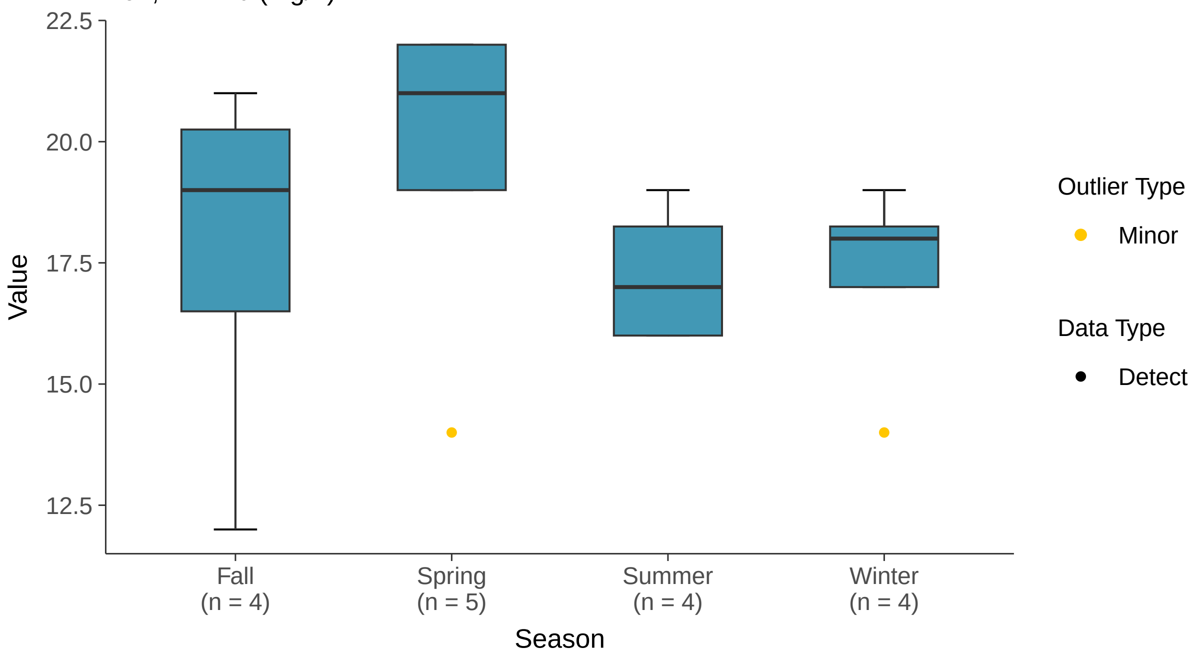
Boxplot

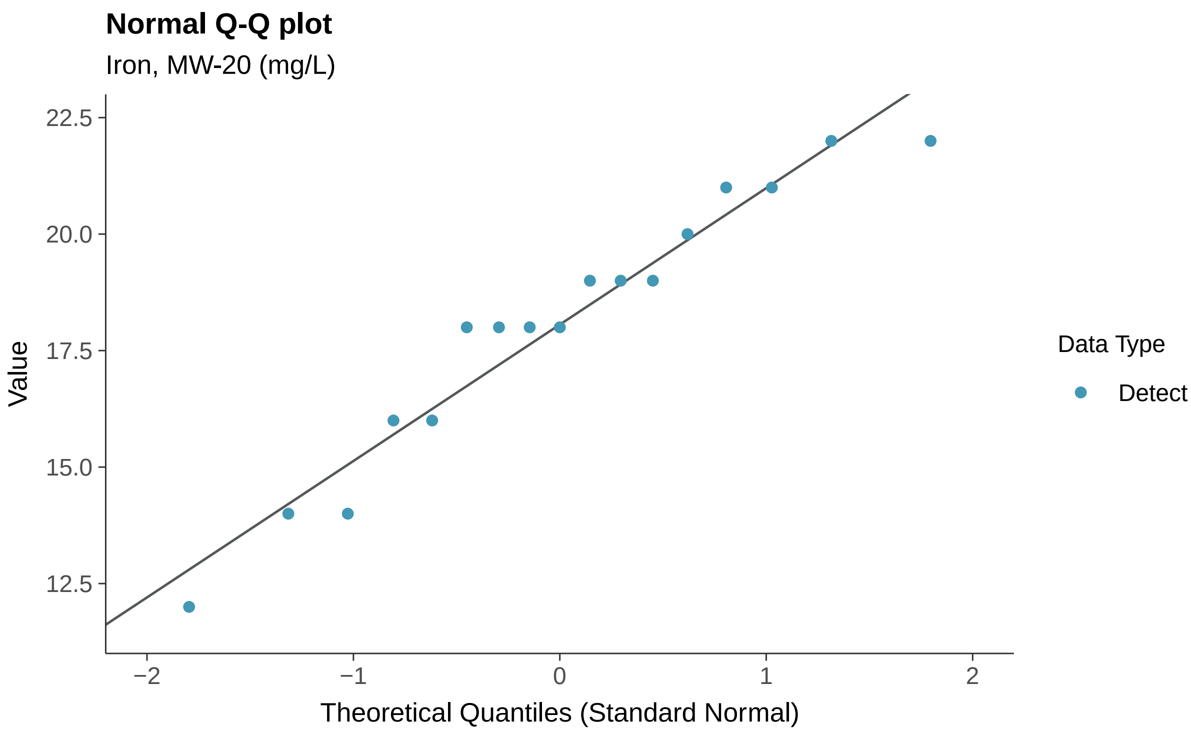
Iron, MW-20 (mg/L)

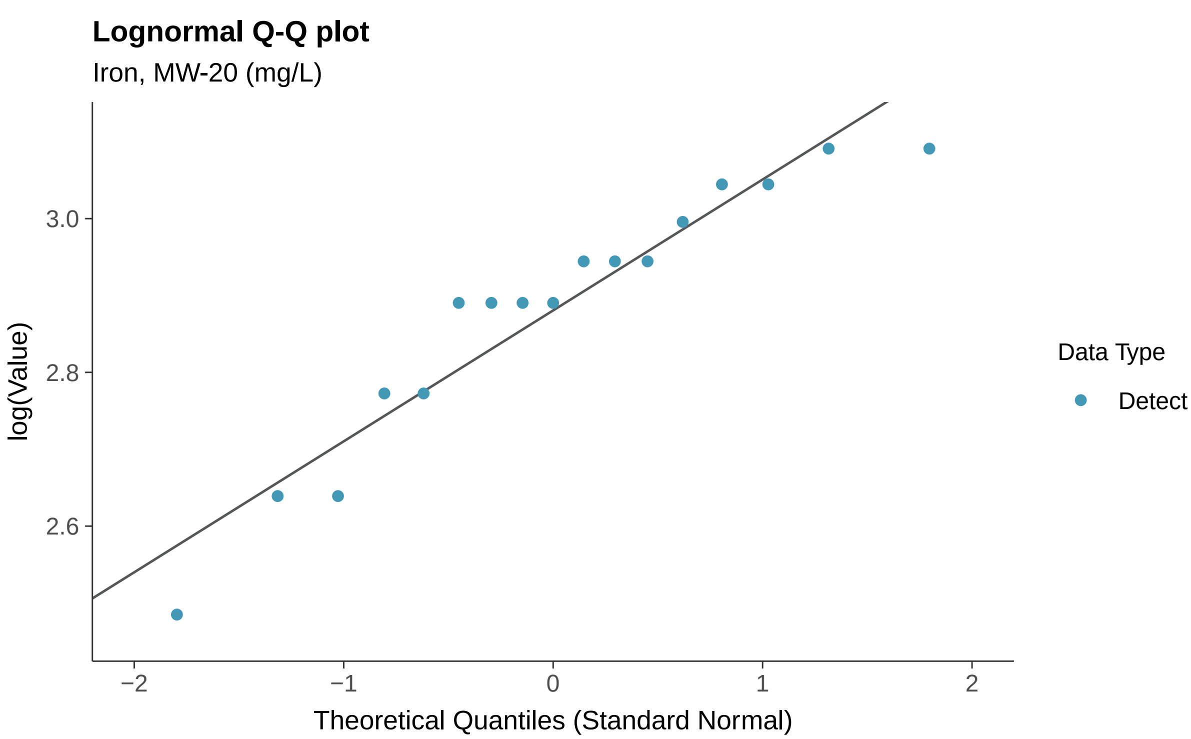


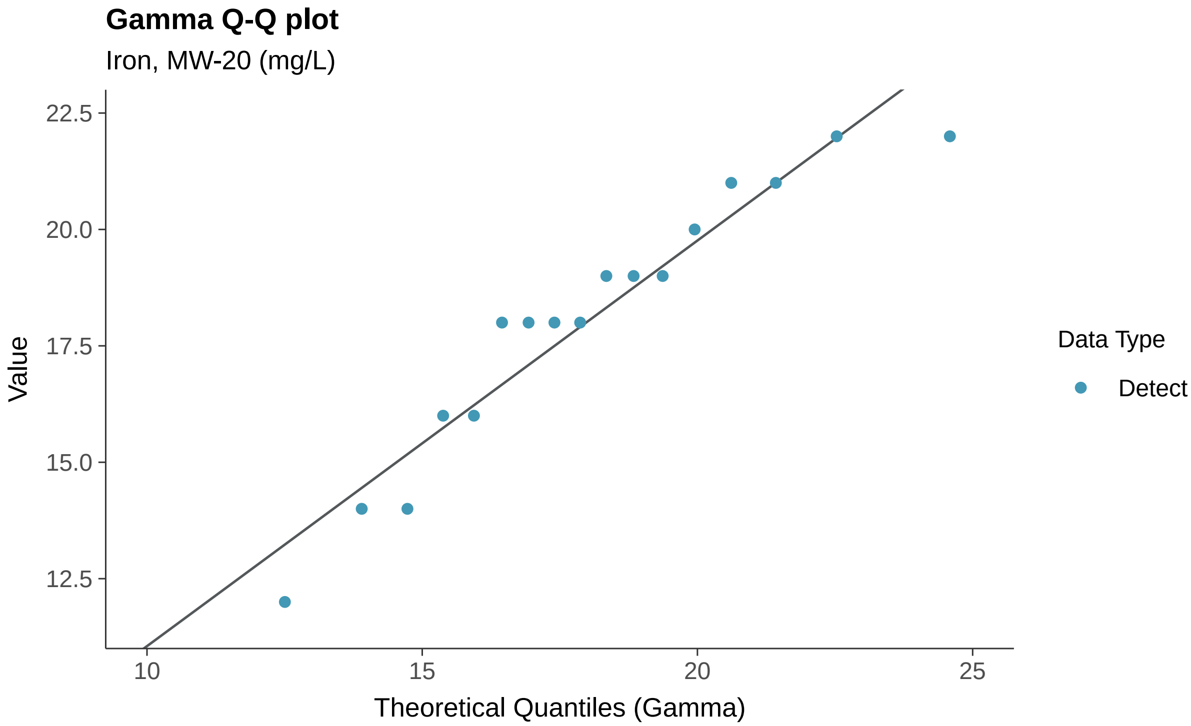
Boxplot by Season

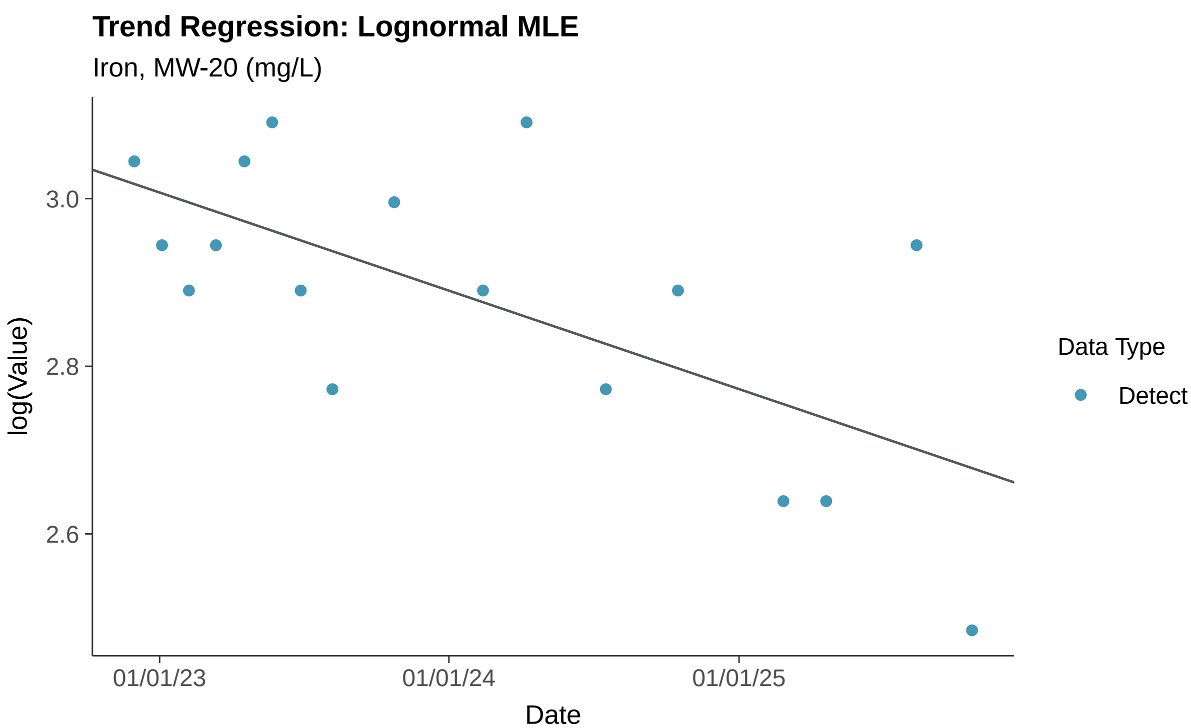
Iron, MW-20 (mg/L)

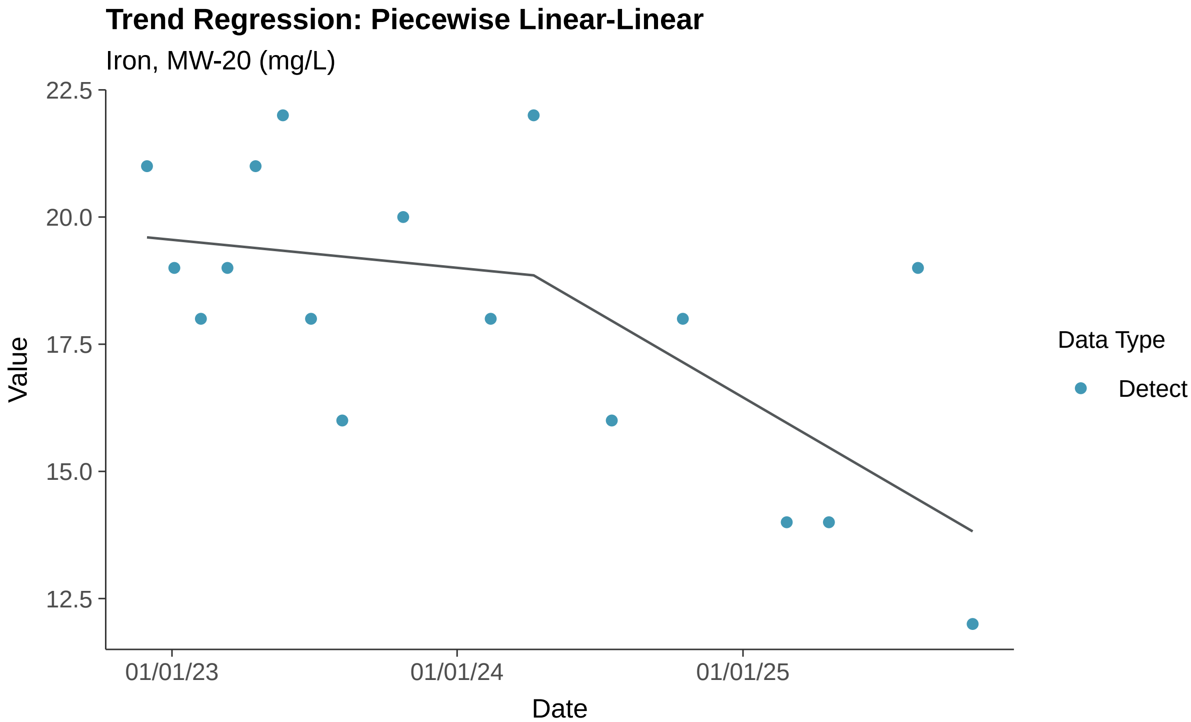



Normal Q-Q plot
Iron, MW-20 (mg/L)
Value
22.5
20.0
17.5
15.0
12.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Iron, MW-20 (mg/L)
log(Value)
3.0
2.8
2.6
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

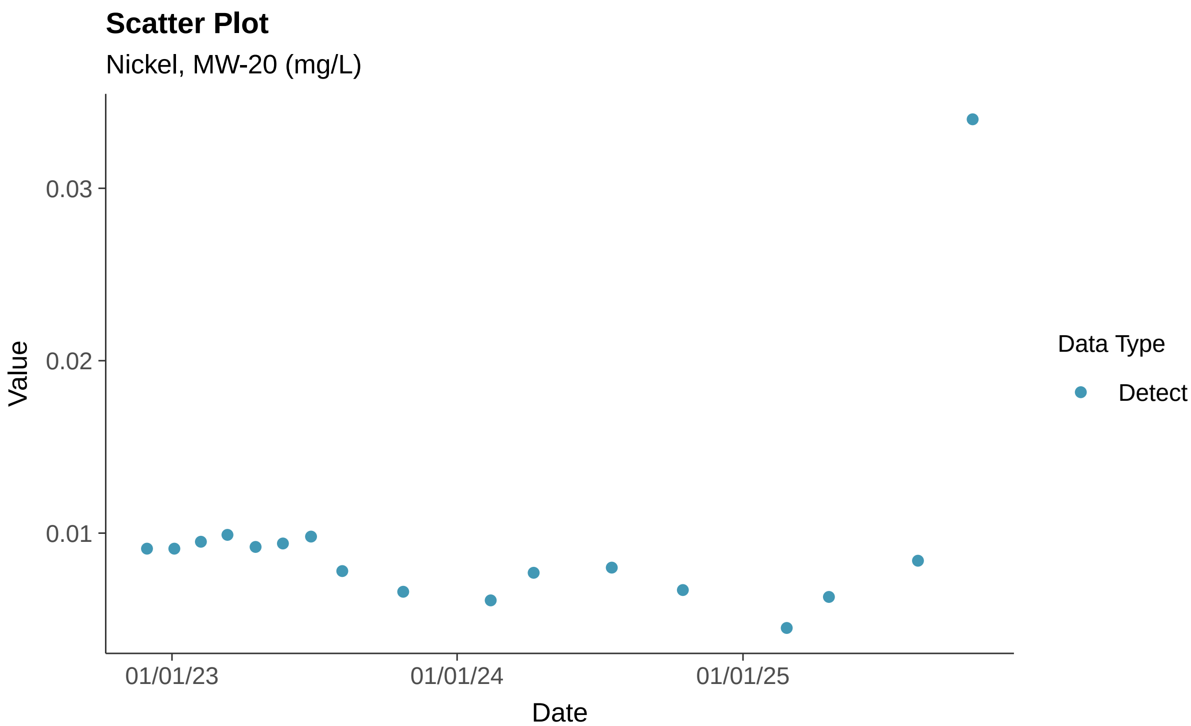

Gamma Q-Q plot
Iron, MW-20 (mg/L)
Value
22.5
20.0
17.5
15.0
12.5
10
15
20
25
Theoretical Quantiles (Gamma)
Data Type
Detect

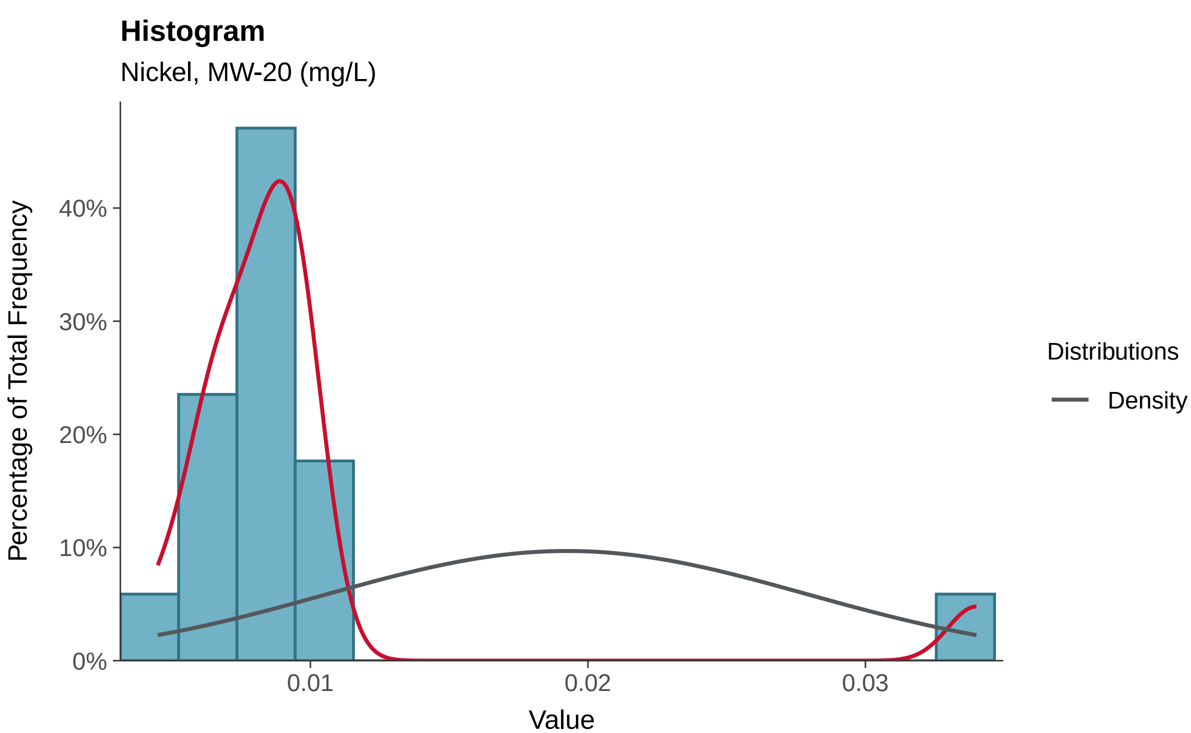

Trend Regression: Lognormal MLE
Iron, MW-20 (mg/L)
log(Value)
3.0
2.8
2.6
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

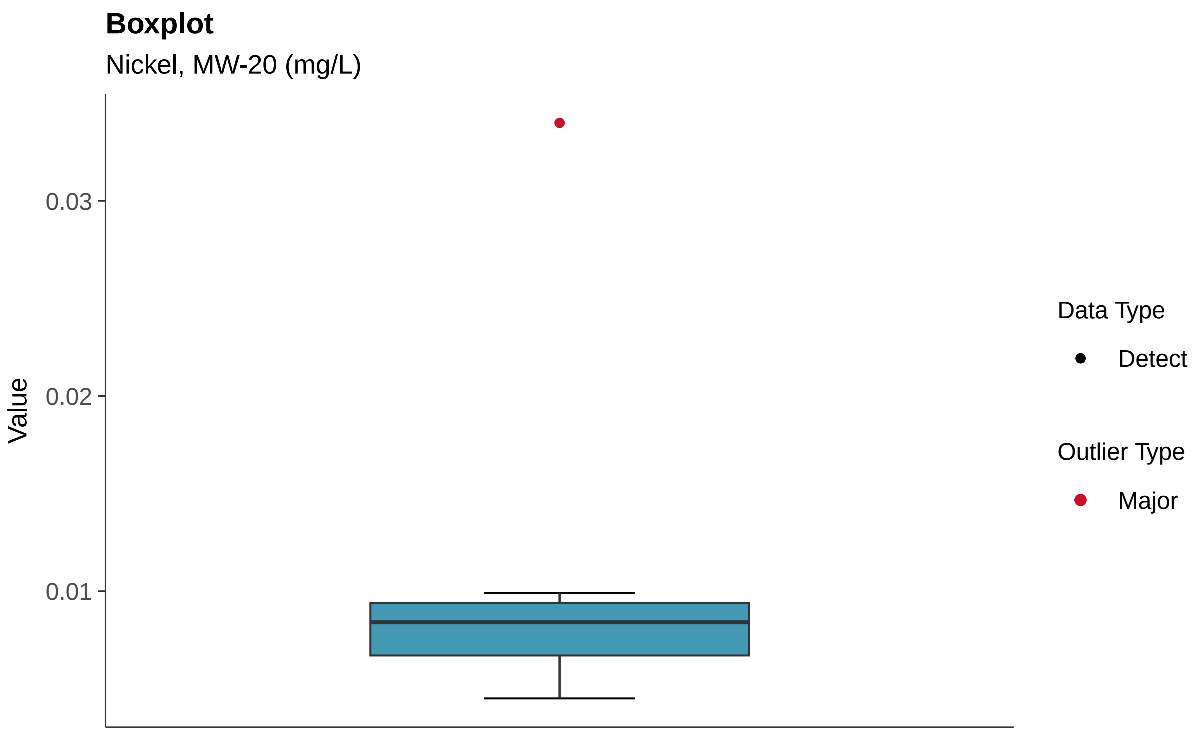

Trend Regression: Piecewise Linear-Linear
Iron, MW-20 (mg/L)
22.5
20.0
17.5
15.0
12.5
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

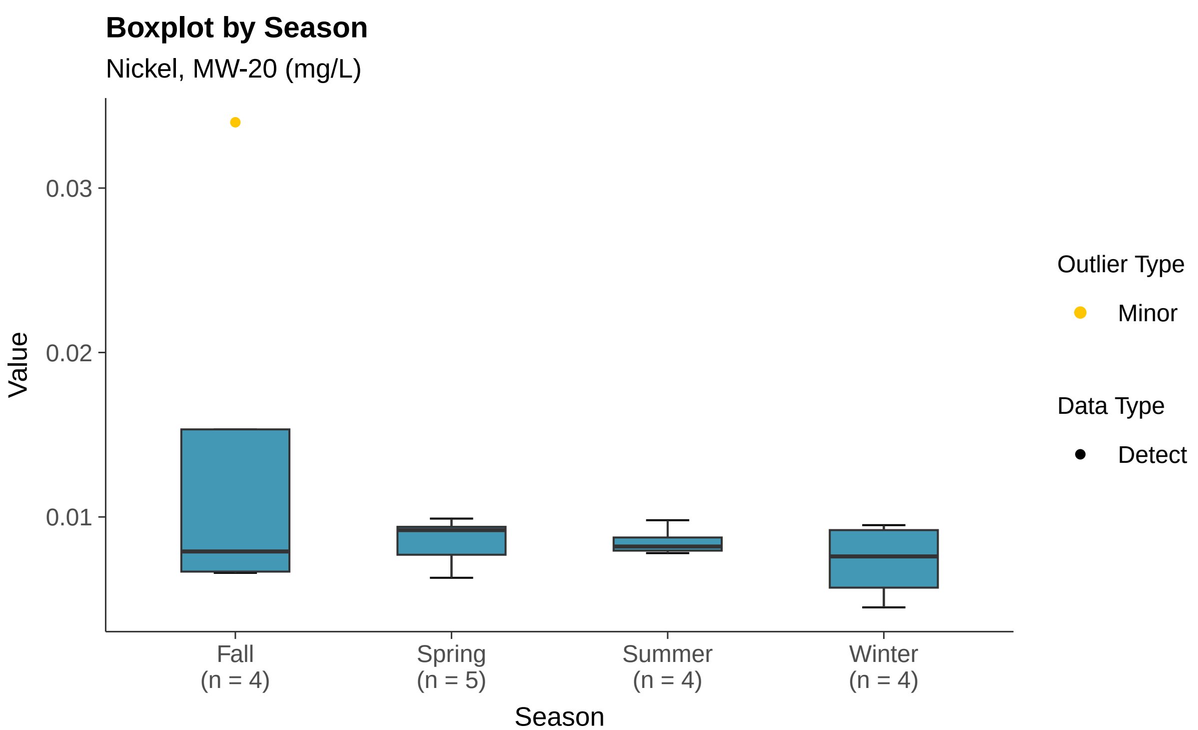
Part 115: Nickel, MW-20

ID: 30_1_5_119

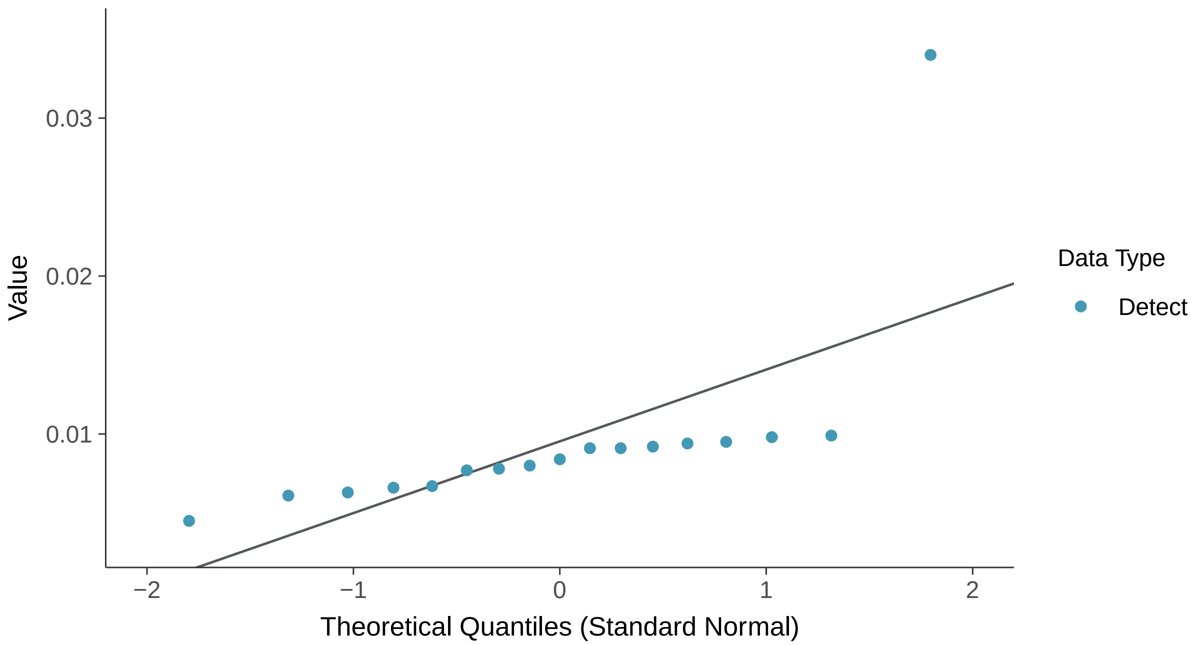




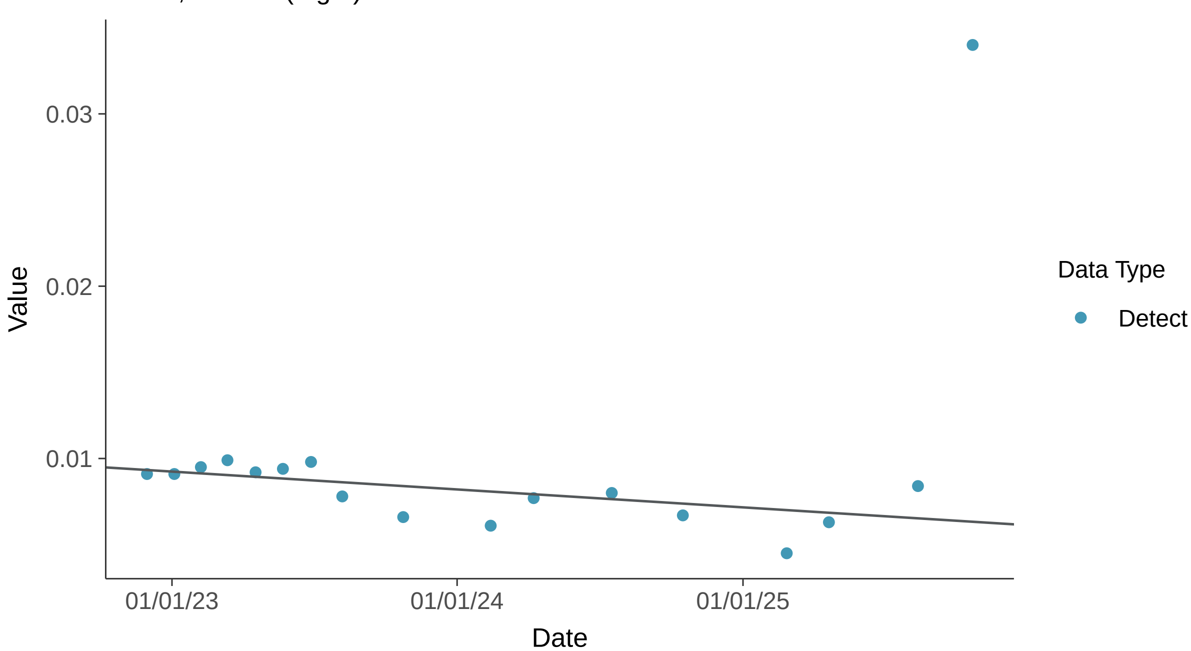

Boxplot
Nickel, MW-20 (mg/L)
Value
0.03
0.02
0.01
Data Type
Detect
Outlier Type
Major

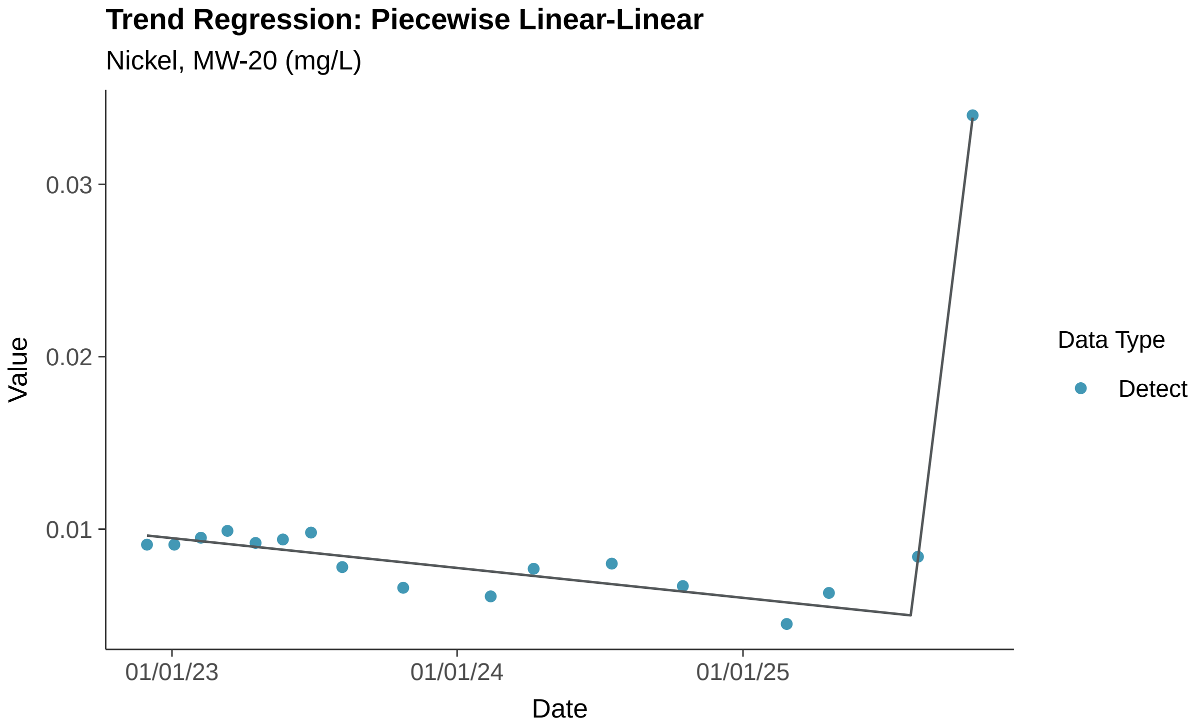

Boxplot by Season
Nickel, MW-20 (mg/L)
Value
0.03
0.02
0.01
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Minor
Data Type
Detect

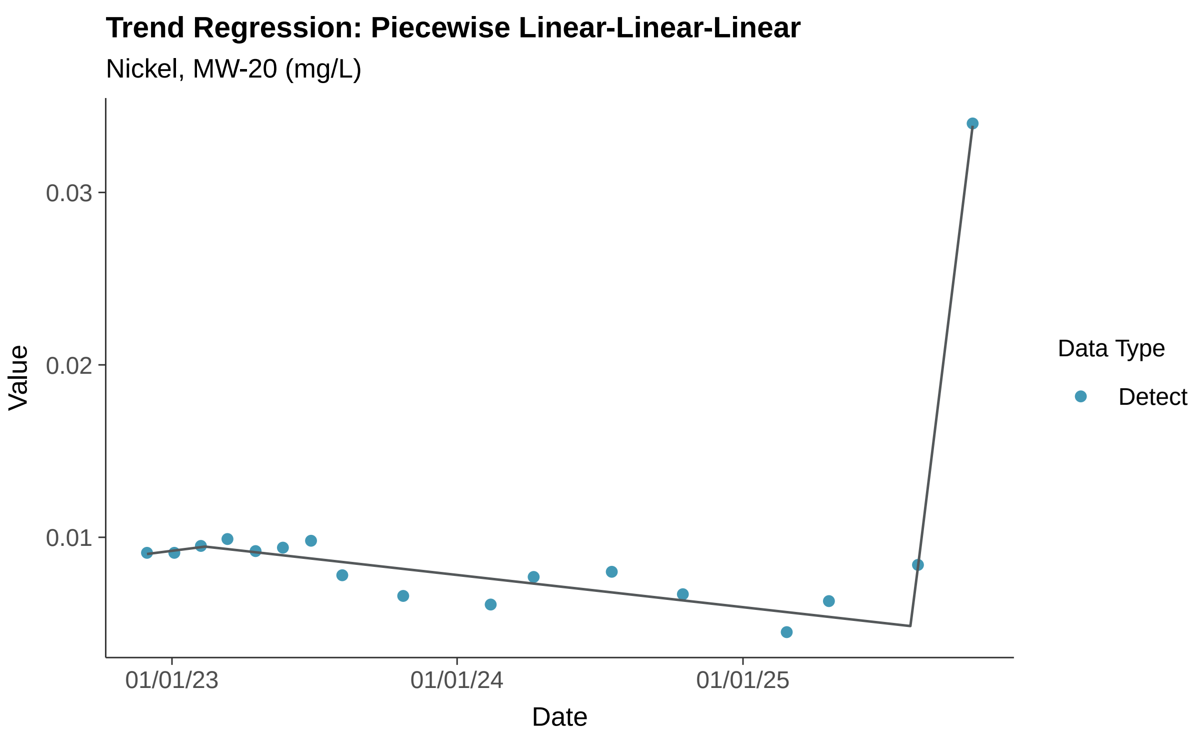
Normal Q-Q plot
Nickel, MW-20 (mg/L)



Trend Regression: Mann-Kendall/Theil-Sen Estimate
Nickel, MW-20 (mg/L)




Trend Regression: Piecewise Linear-Linear
Nickel, MW-20 (mg/L)
Value
0.03
0.02
0.01
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

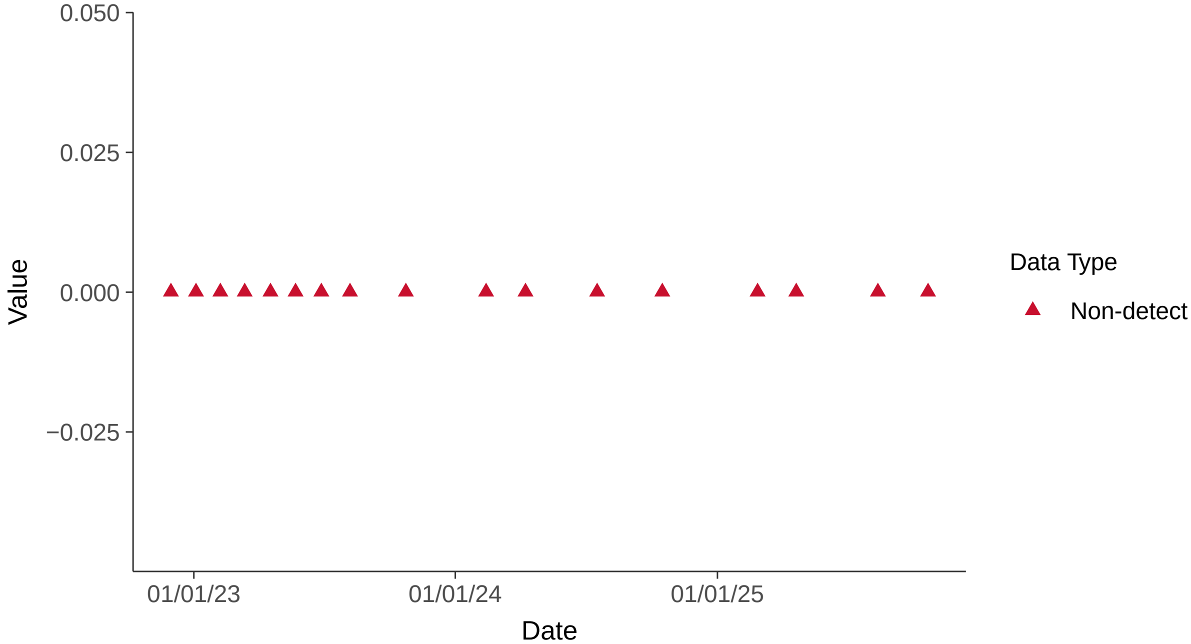

Trend Regression: Piecewise Linear-Linear-Linear
Nickel, MW-20 (mg/L)
Value
0.03
0.02
0.01
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Part 115: Silver, MW-20

ID: 30_1_5_123

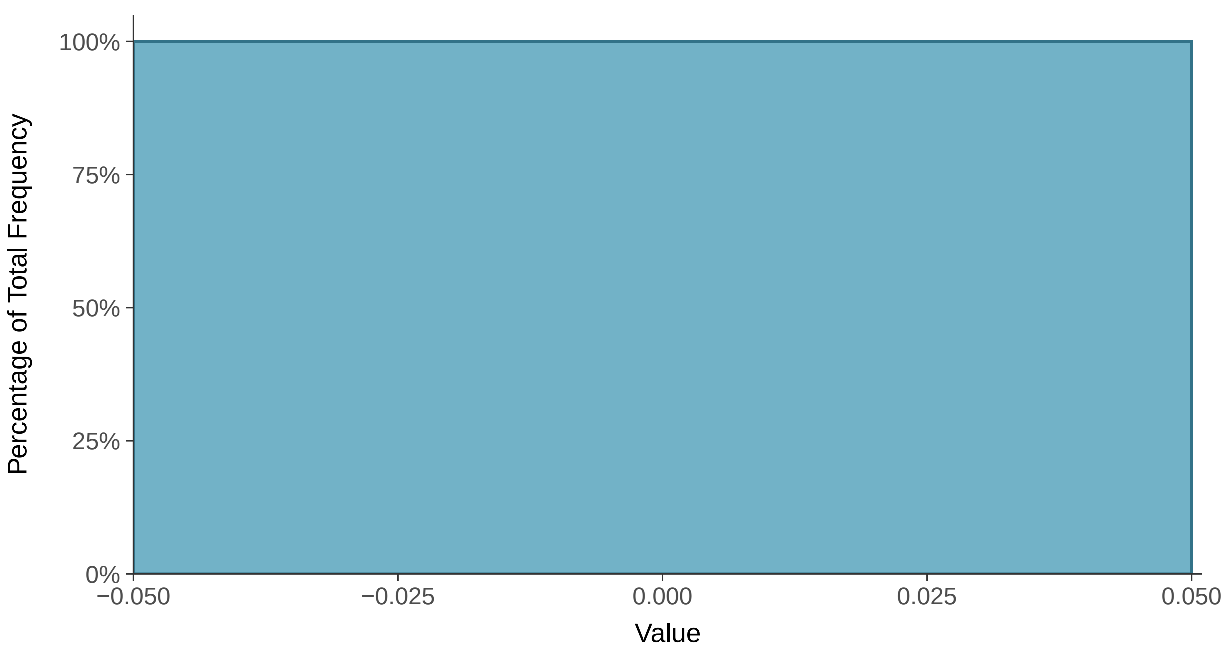
Scatter Plot

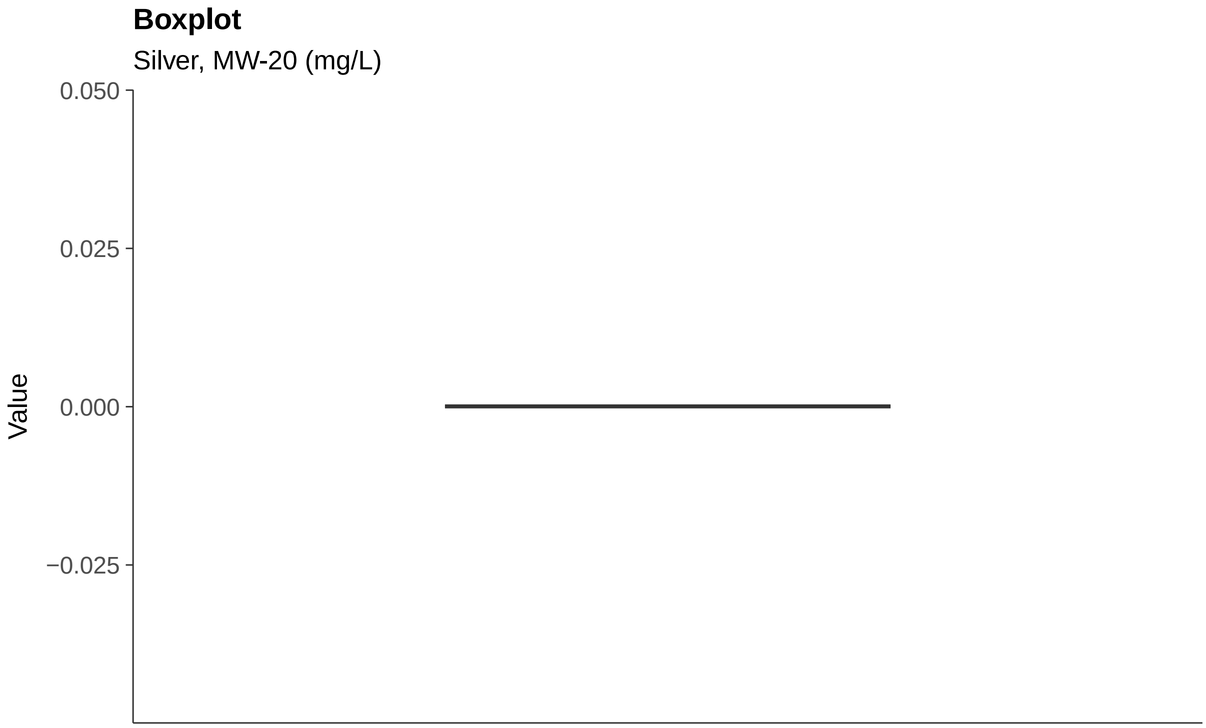
Silver, MW-20 (mg/L)

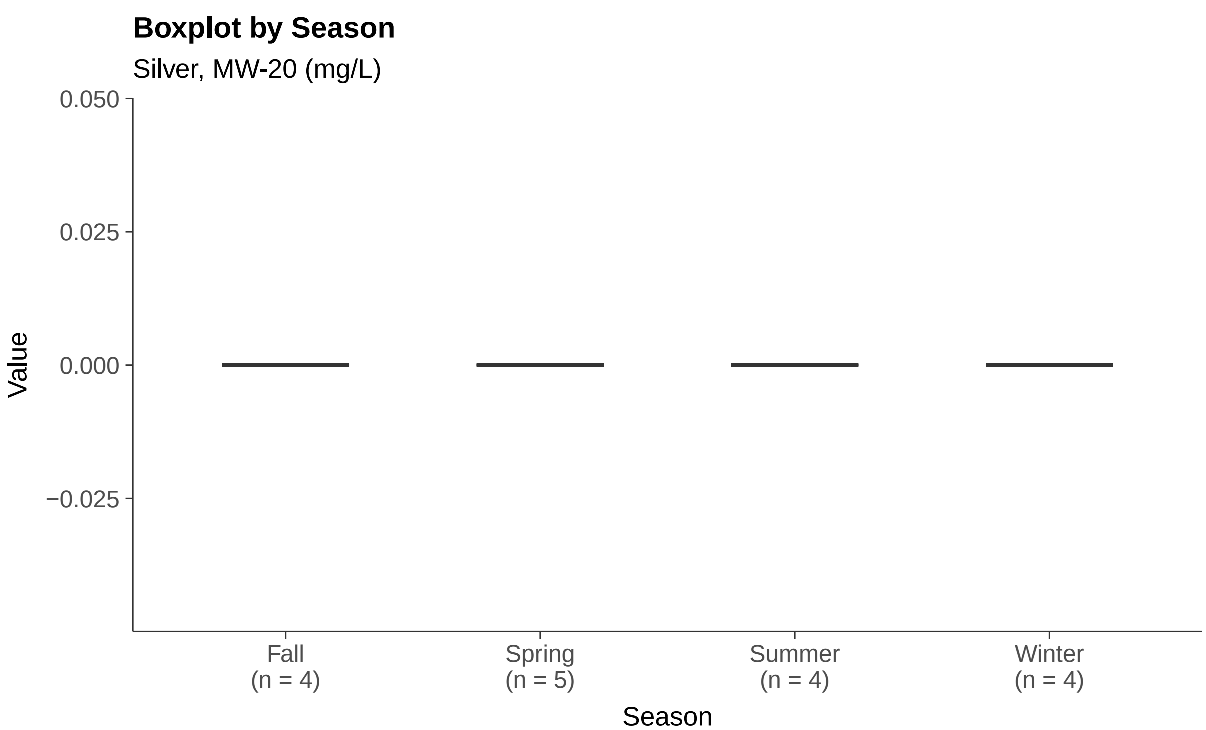


Histogram

Silver, MW-20 (mg/L)




Boxplot
Silver, MW-20 (mg/L)
0.050
0.025
0.000
−0.025
Value

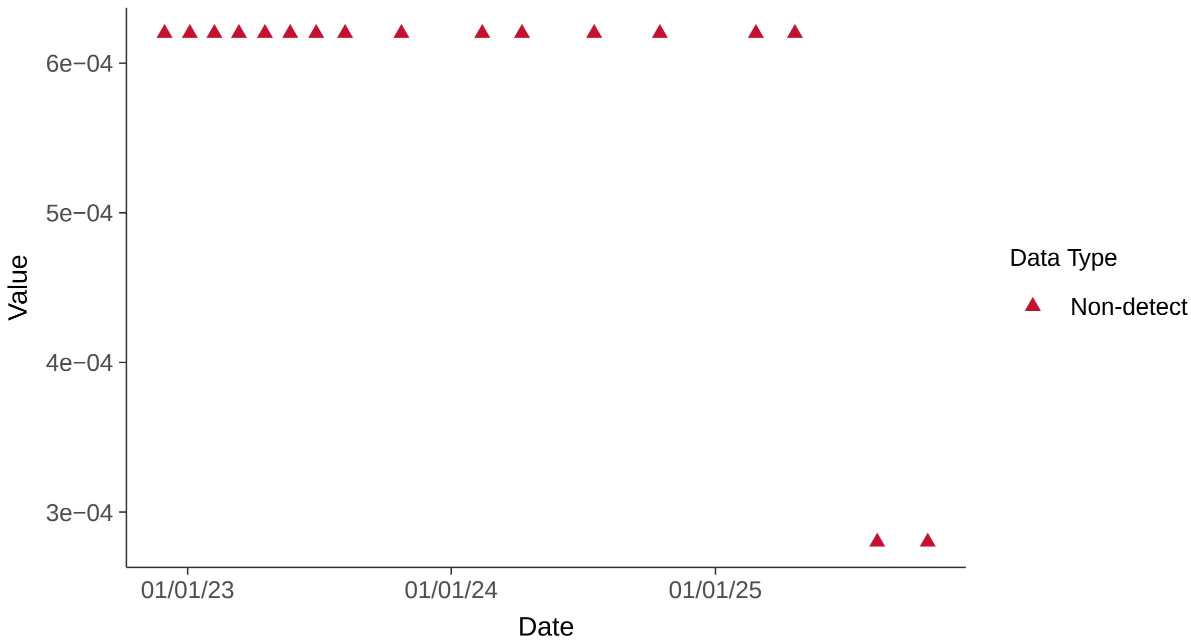

Boxplot by Season
Silver, MW-20 (mg/L)
0.050
0.025
0.000
−0.025
Value
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season

Part 115: Vanadium, MW-20

ID: 30_1_5_128

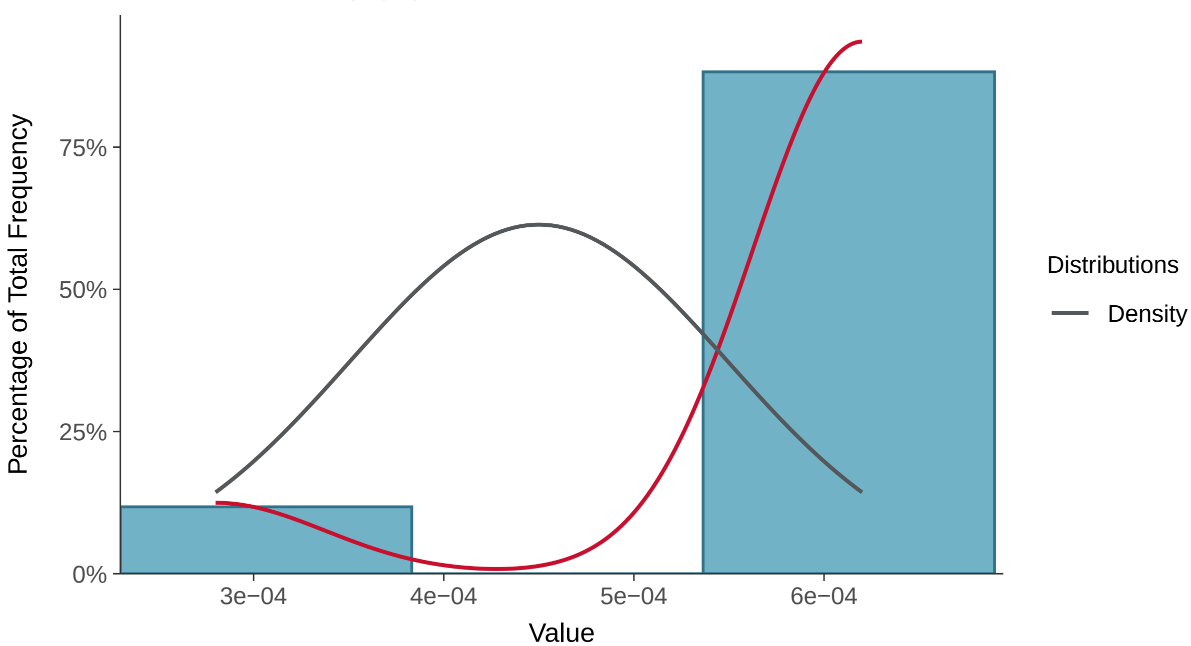
Scatter Plot

Vanadium, MW-20 (mg/L)



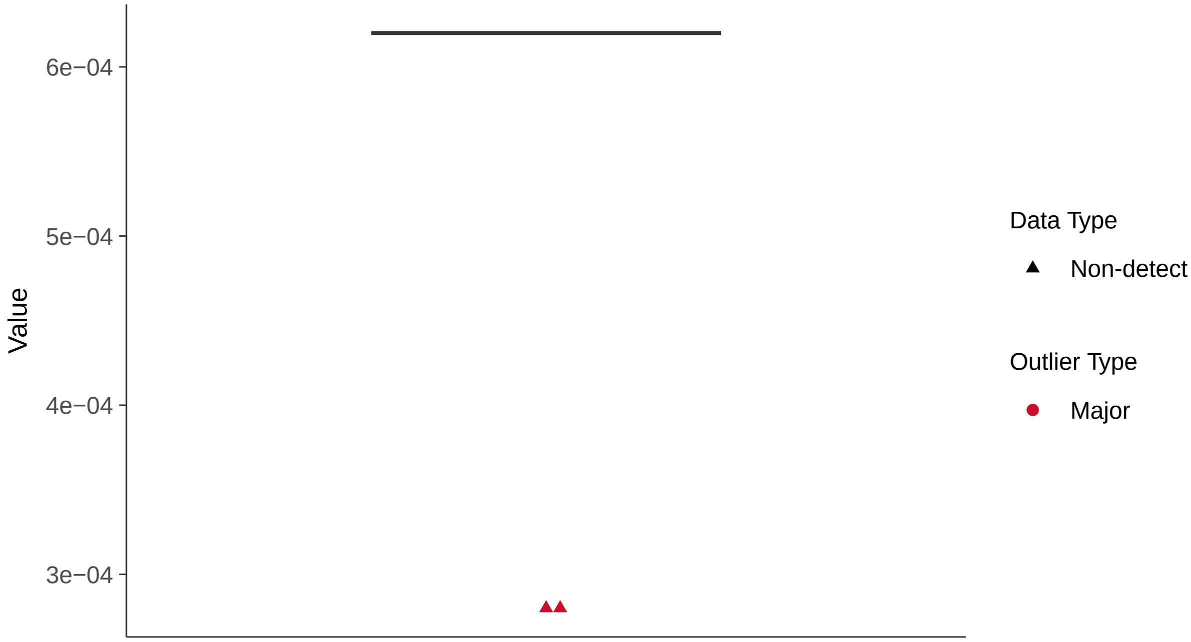
Histogram

Vanadium, MW-20 (mg/L)



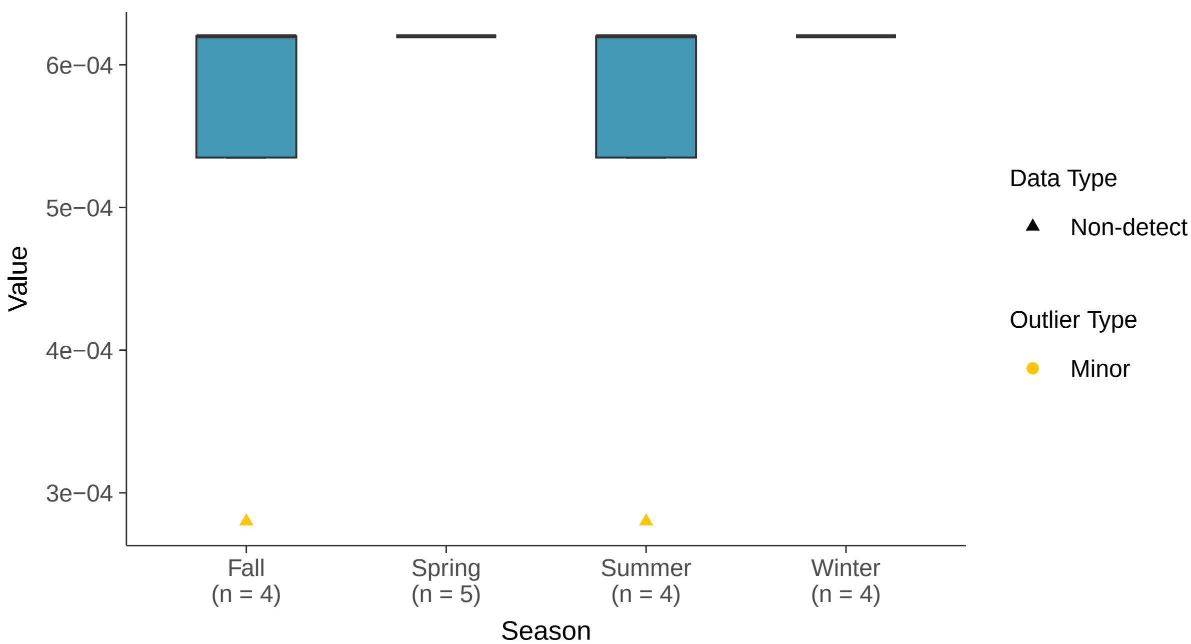
Boxplot

Vanadium, MW-20 (mg/L)



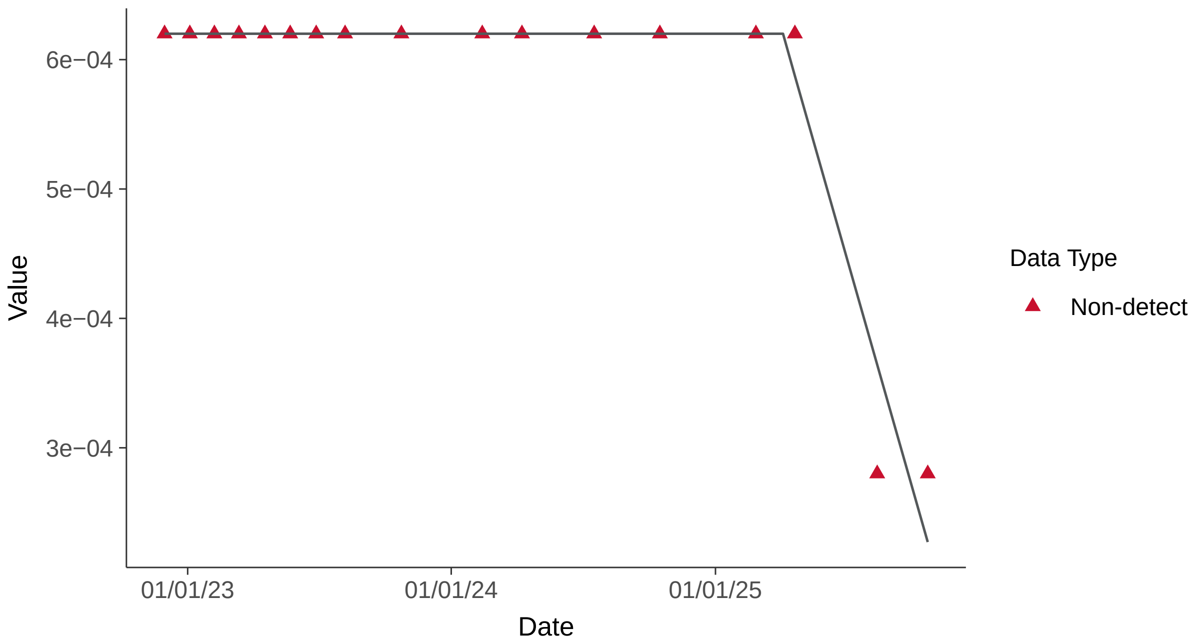
Boxplot by Season

Vanadium, MW-20 (mg/L)



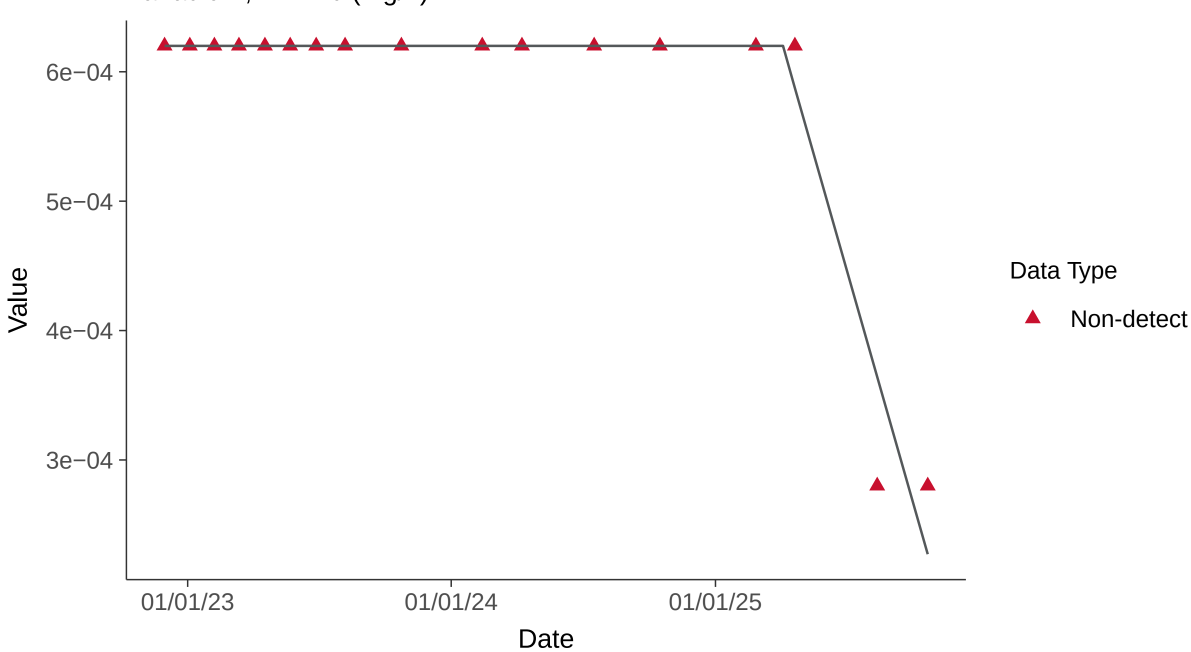
Trend Regression: Piecewise Linear-Linear

Vanadium, MW-20 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Vanadium, MW-20 (mg/L)

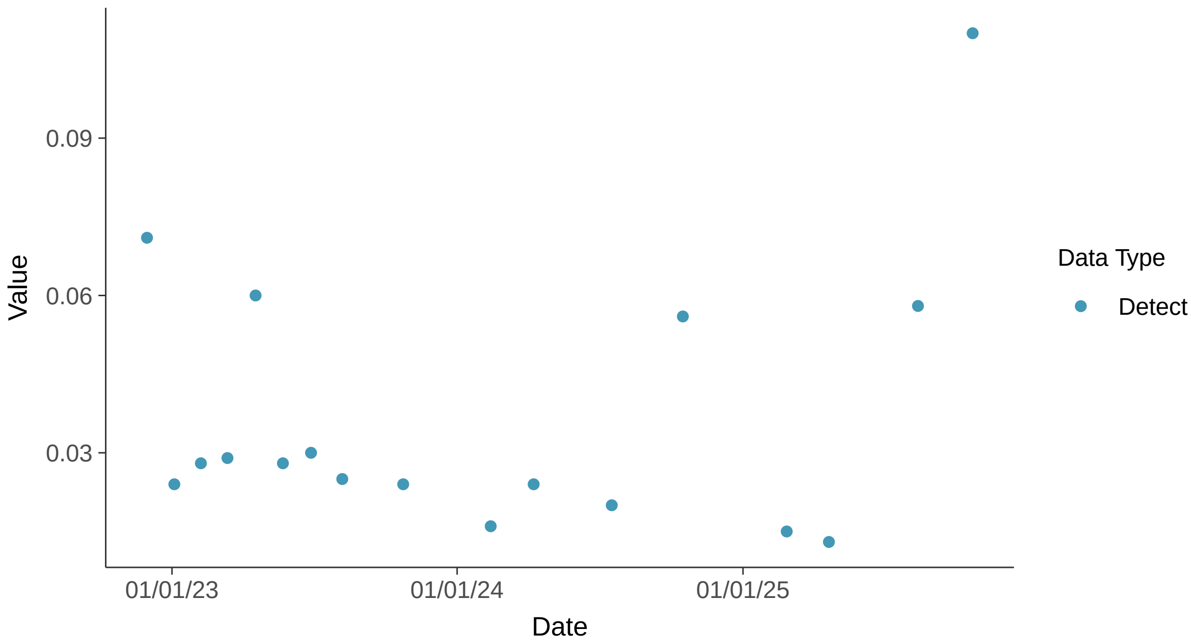


Part 115: Zinc, MW-20

ID: 30_1_5_129

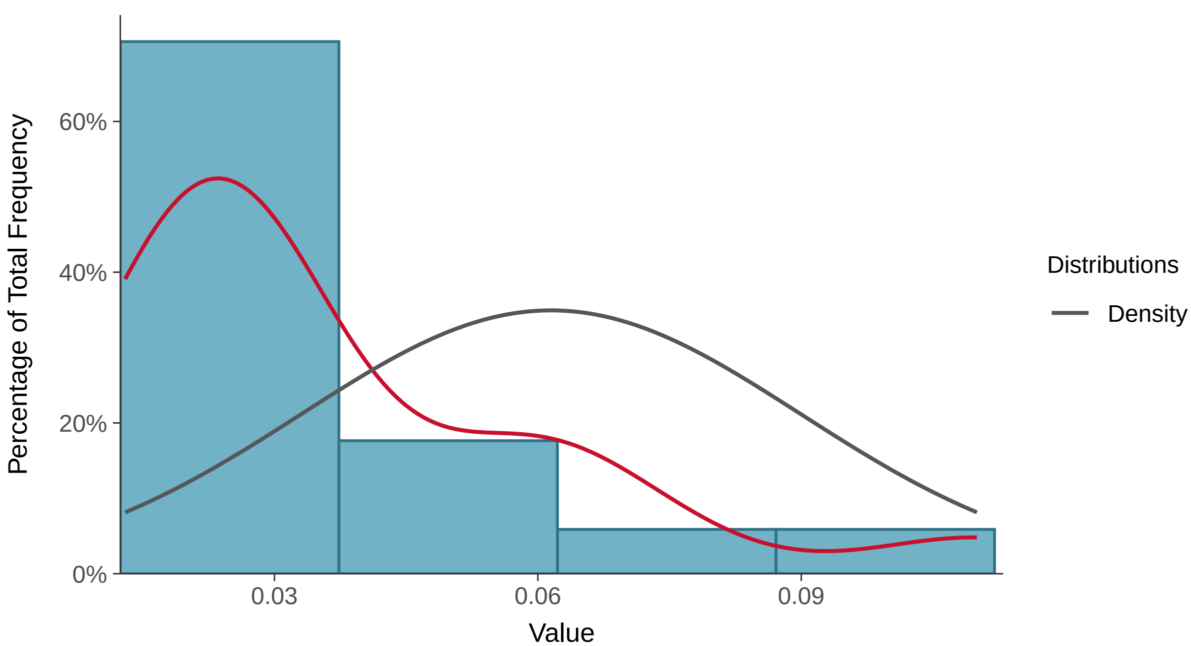
Scatter Plot

Zinc, MW-20 (mg/L)



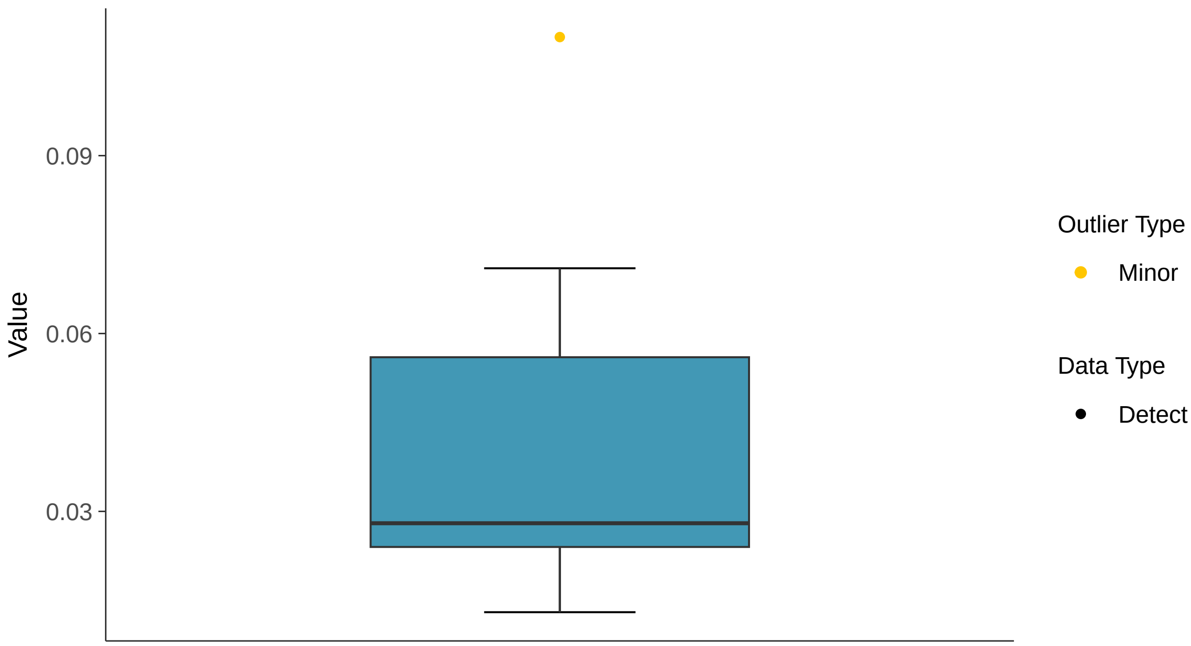
Histogram

Zinc, MW-20 (mg/L)



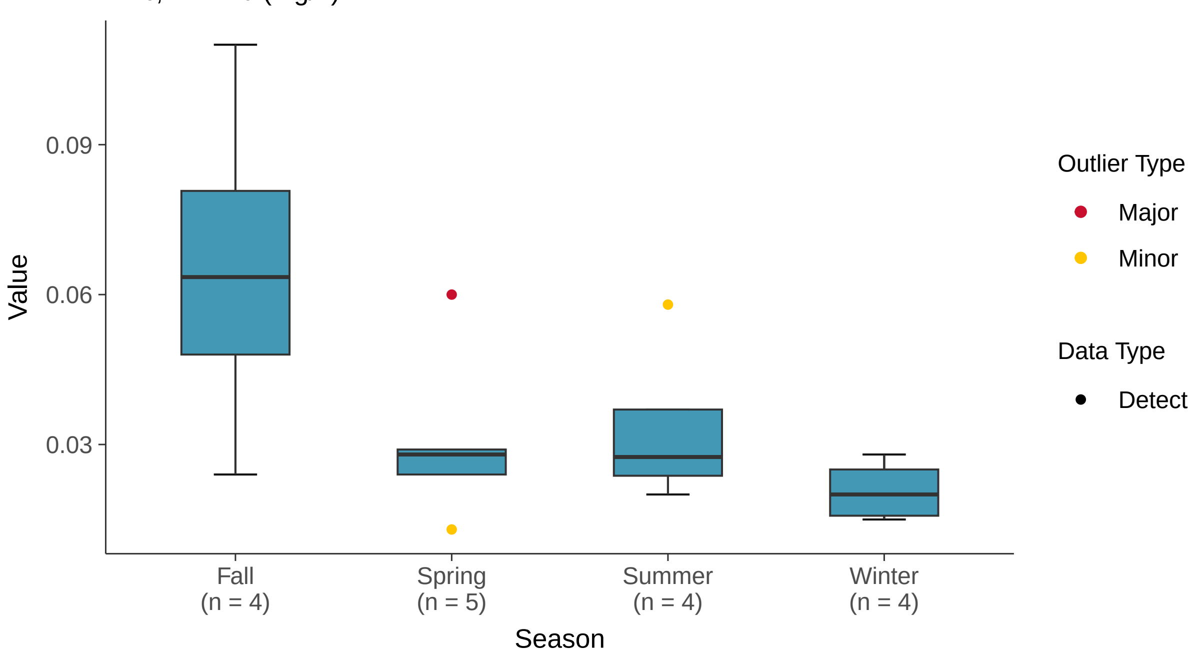
Boxplot

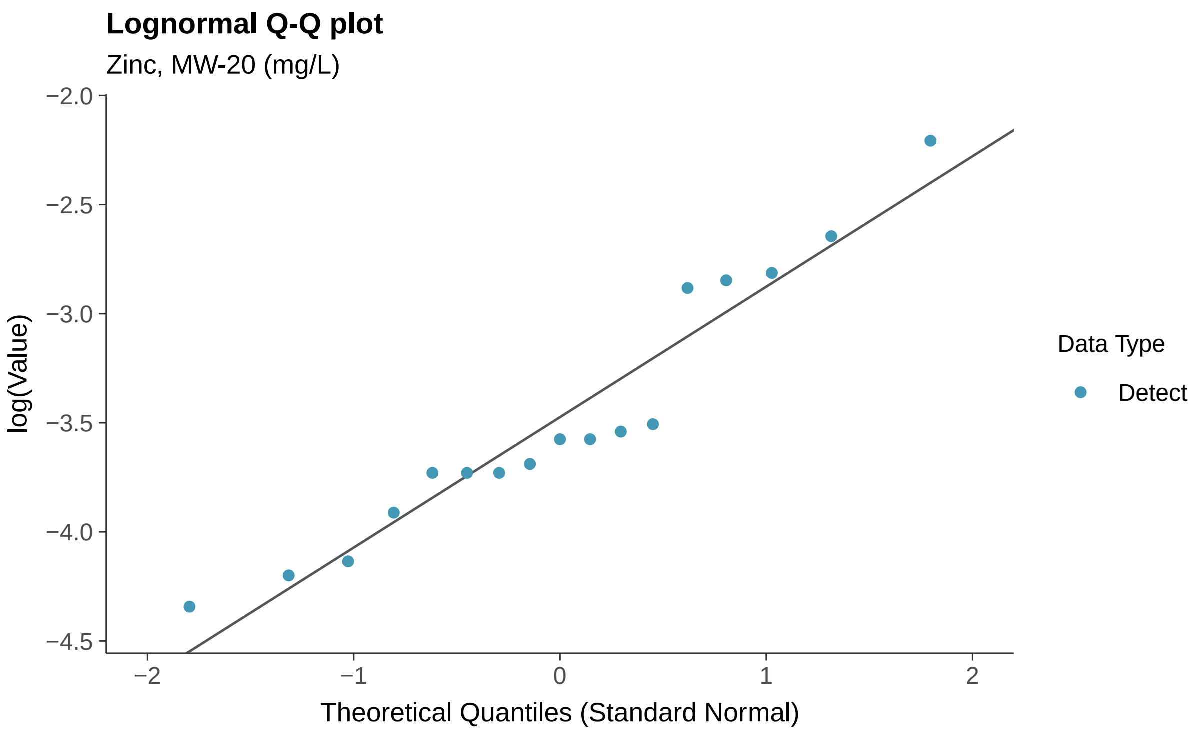
Zinc, MW-20 (mg/L)

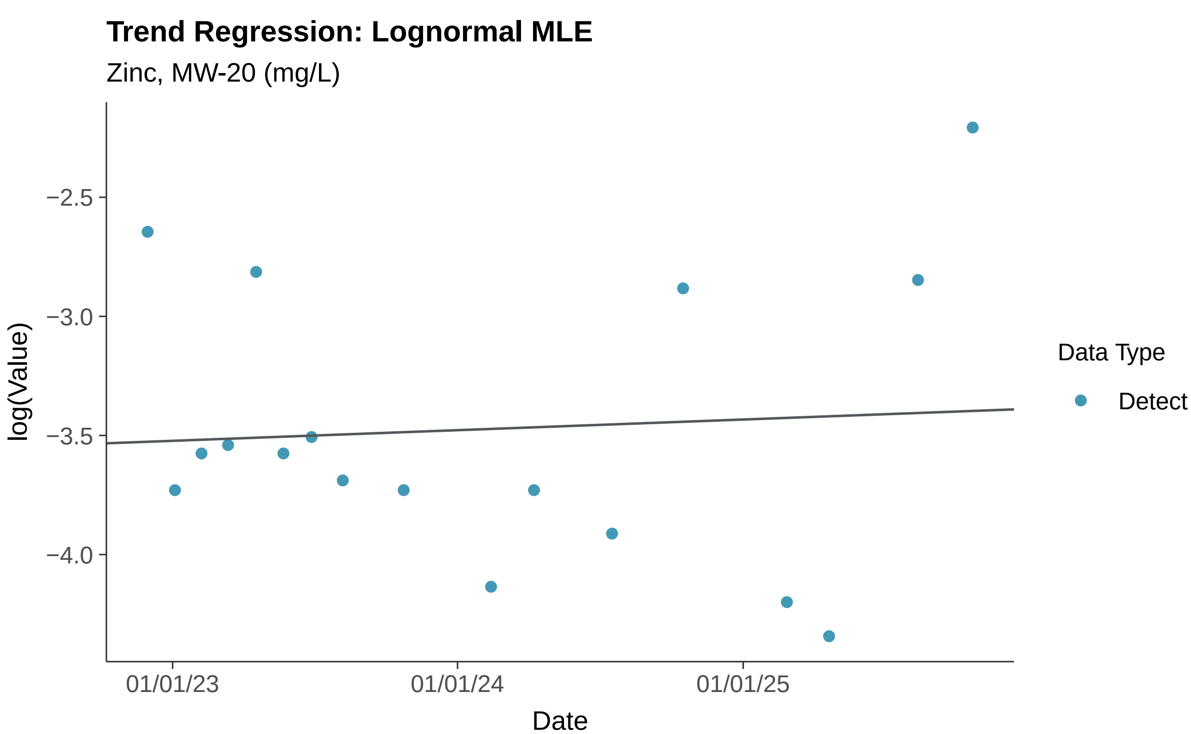


Boxplot by Season

Zinc, MW-20 (mg/L)

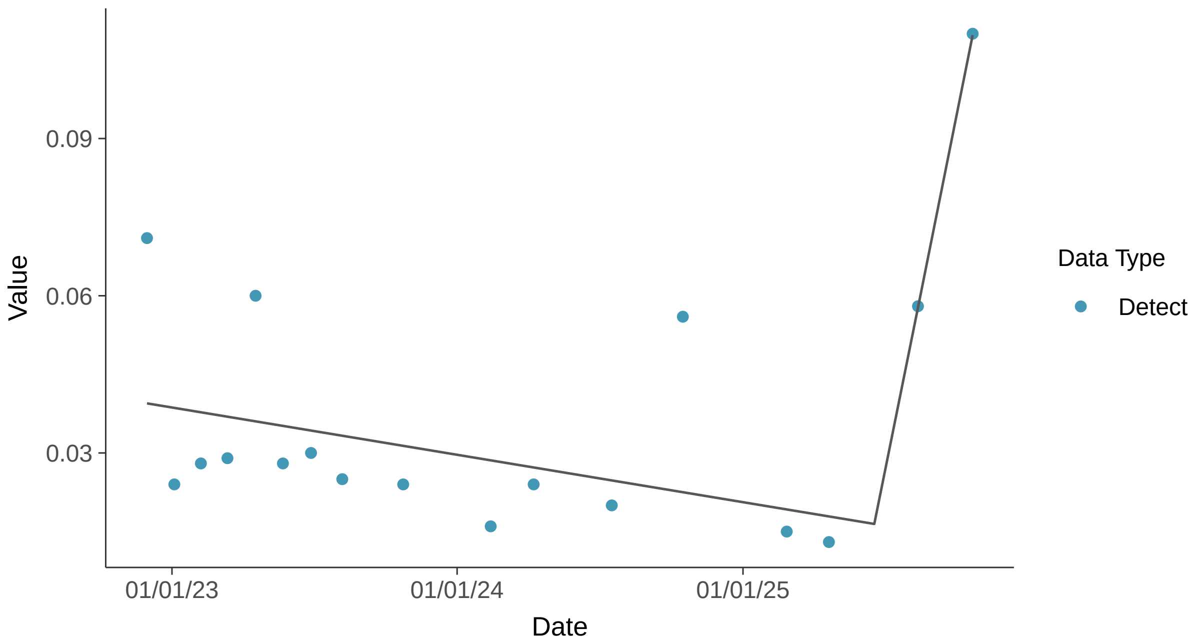



Lognormal Q-Q plot
Zinc, MW-20 (mg/L)
−2.0
−2.5
−3.0
−3.5
−4.0
−4.5
log(Value)
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Lognormal MLE
Zinc, MW-20 (mg/L)
−2.5
−3.0
−3.5
−4.0
log(Value)
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

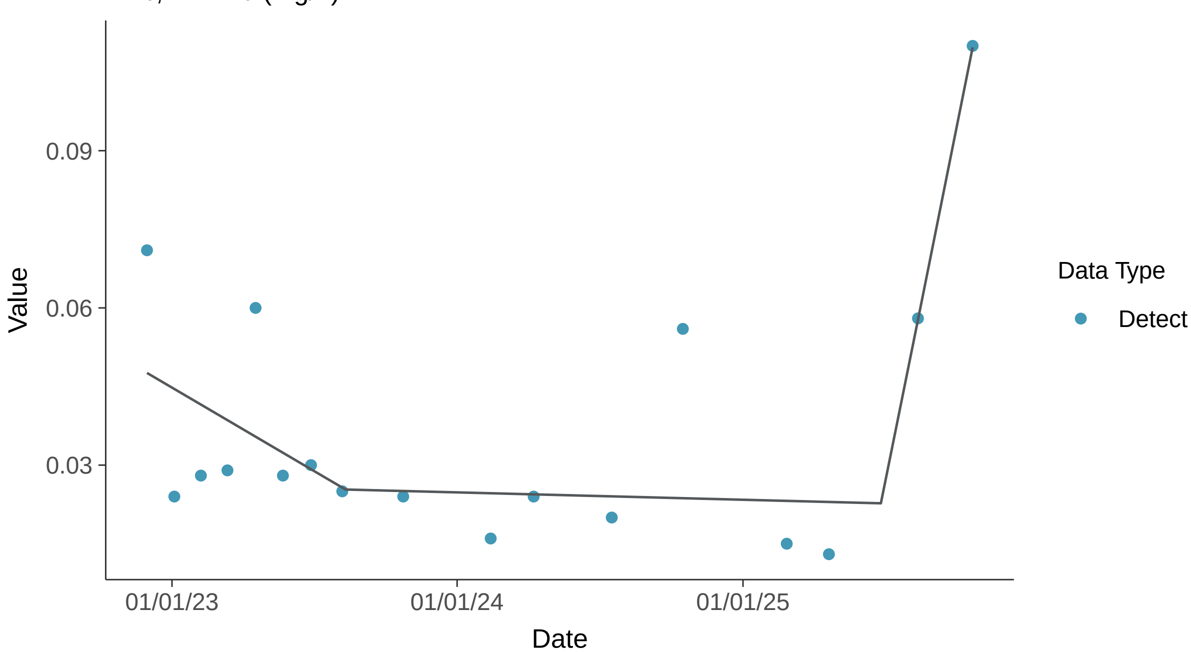
Trend Regression: Piecewise Linear-Linear

Zinc, MW-20 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Zinc, MW-20 (mg/L)

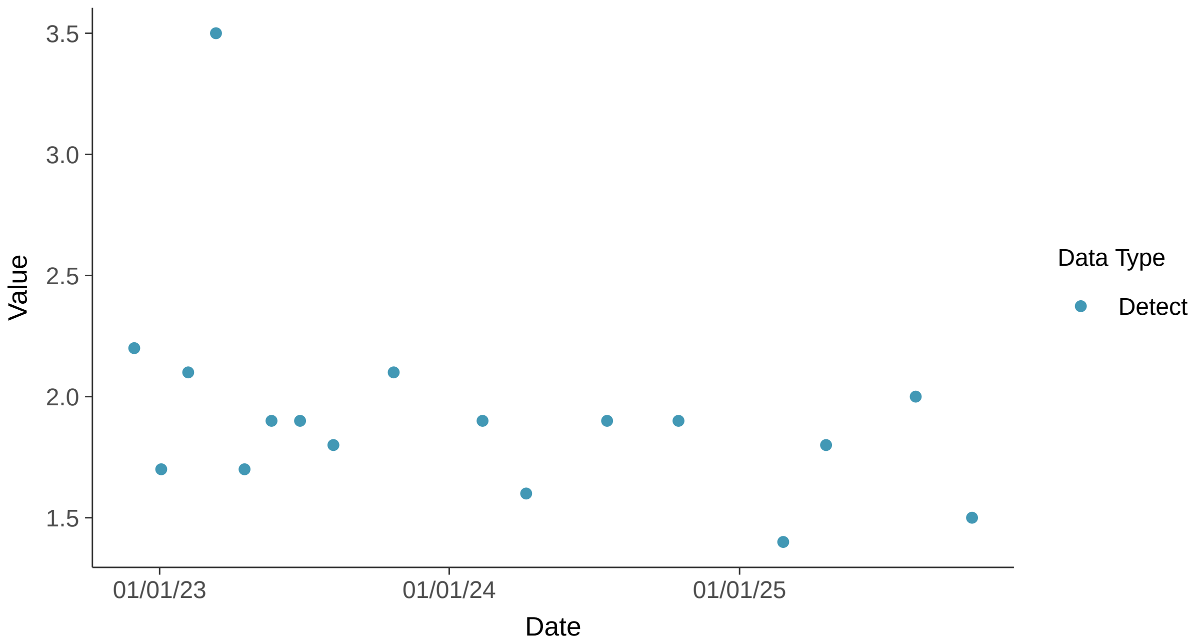


Appendix III: Boron, MW-30

ID: 40_1_3_105

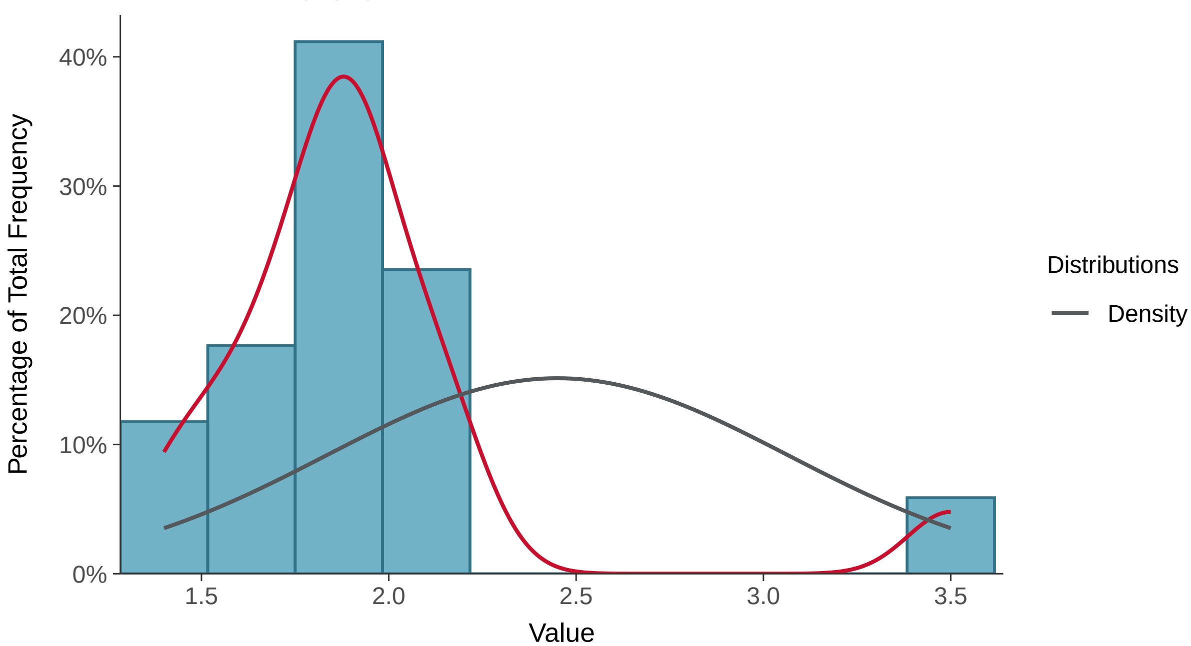
Scatter Plot

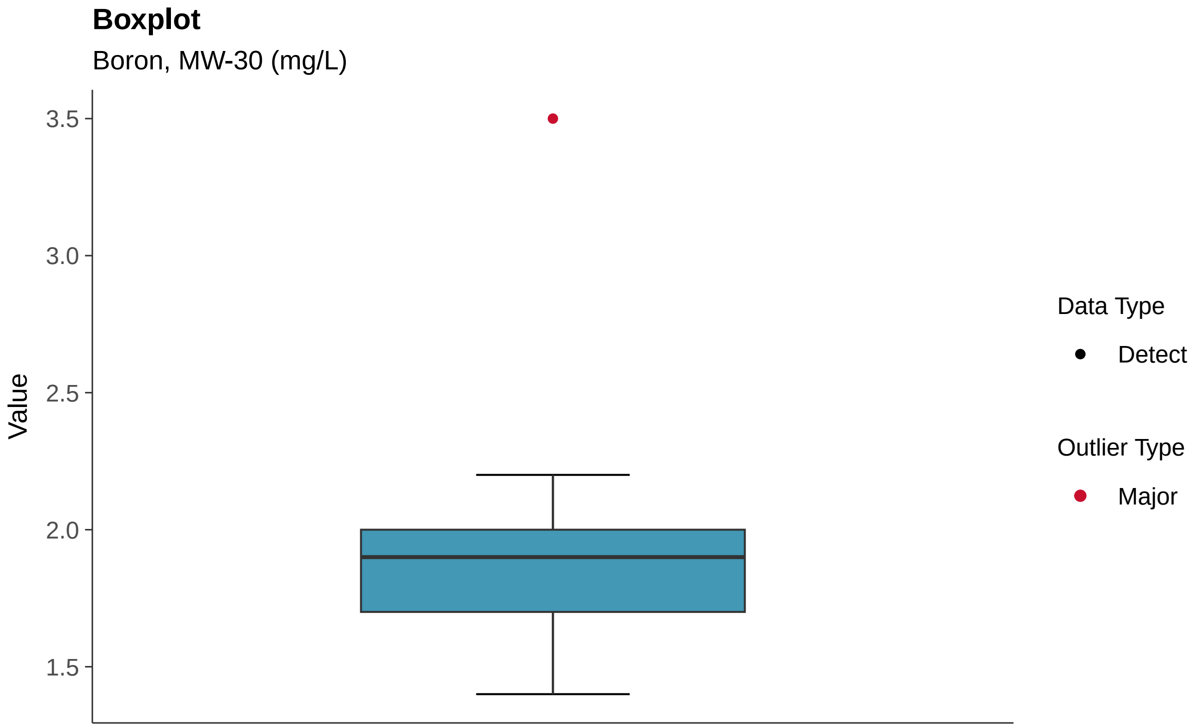
Boron, MW-30 (mg/L)

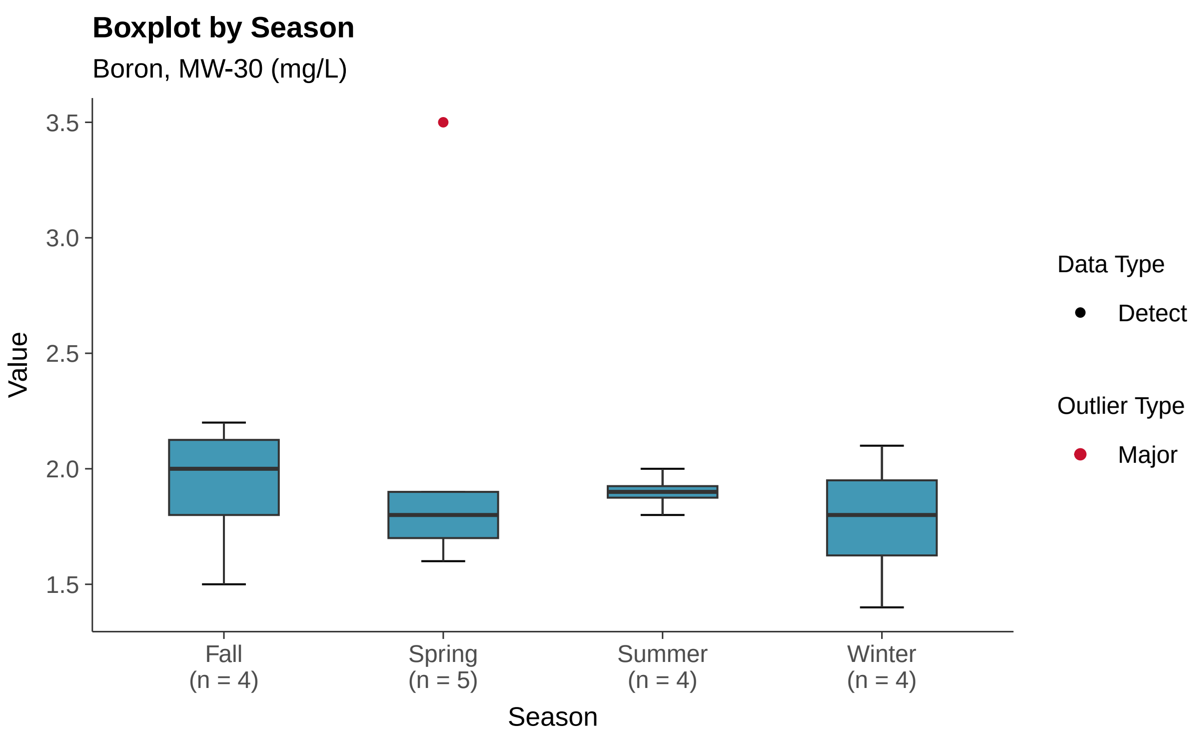


Histogram

Boron, MW-30 (mg/L)

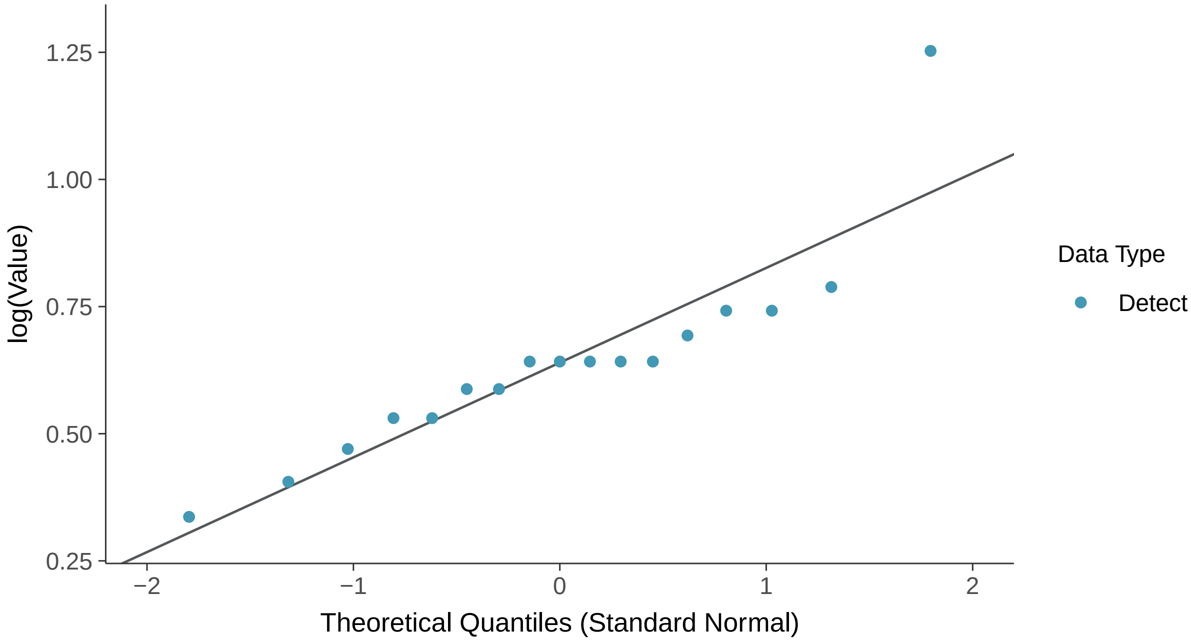



Boxplot
Boron, MW-30 (mg/L)
Value
3.5
3.0
2.5
2.0
1.5
Data Type
Detect
Outlier Type
Major


Boxplot by Season
Boron, MW-30 (mg/L)
Value
3.5
3.0
2.5
2.0
1.5
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Data Type
Detect
Outlier Type
Major

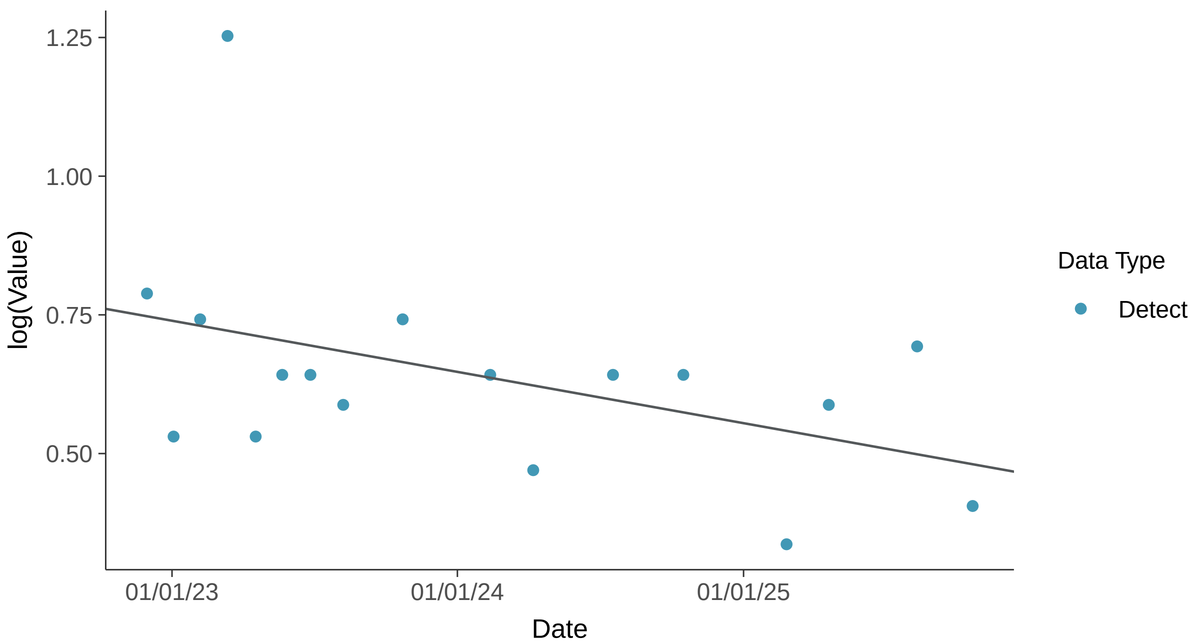
Lognormal Q-Q plot

Boron, MW-30 (mg/L)



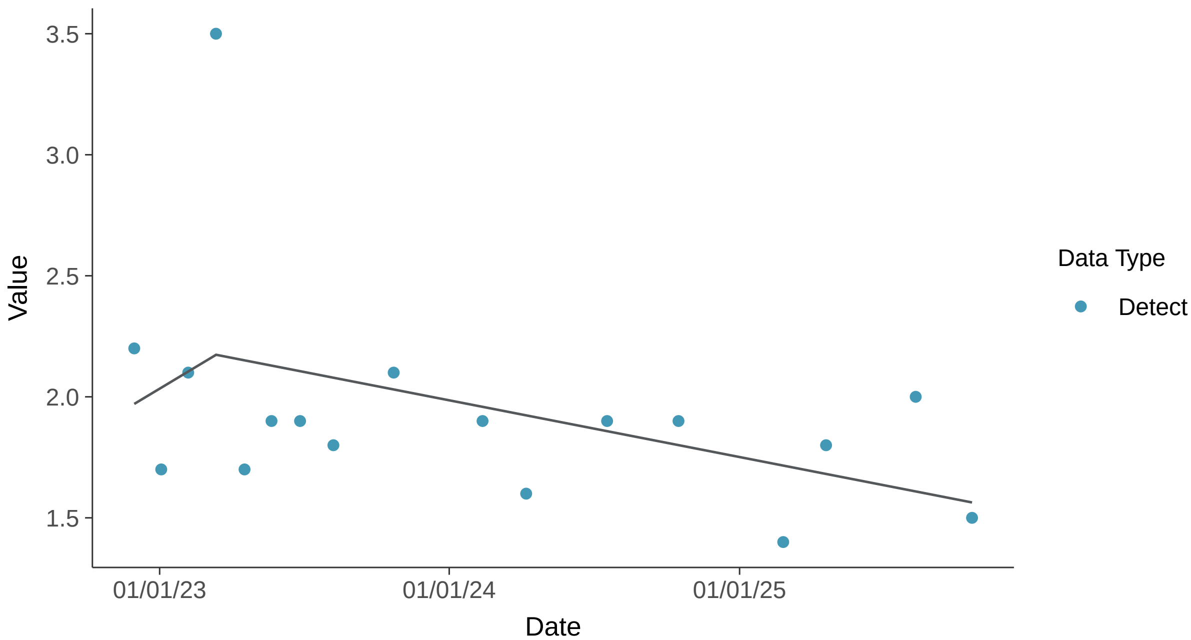
Trend Regression: Lognormal MLE

Boron, MW-30 (mg/L)



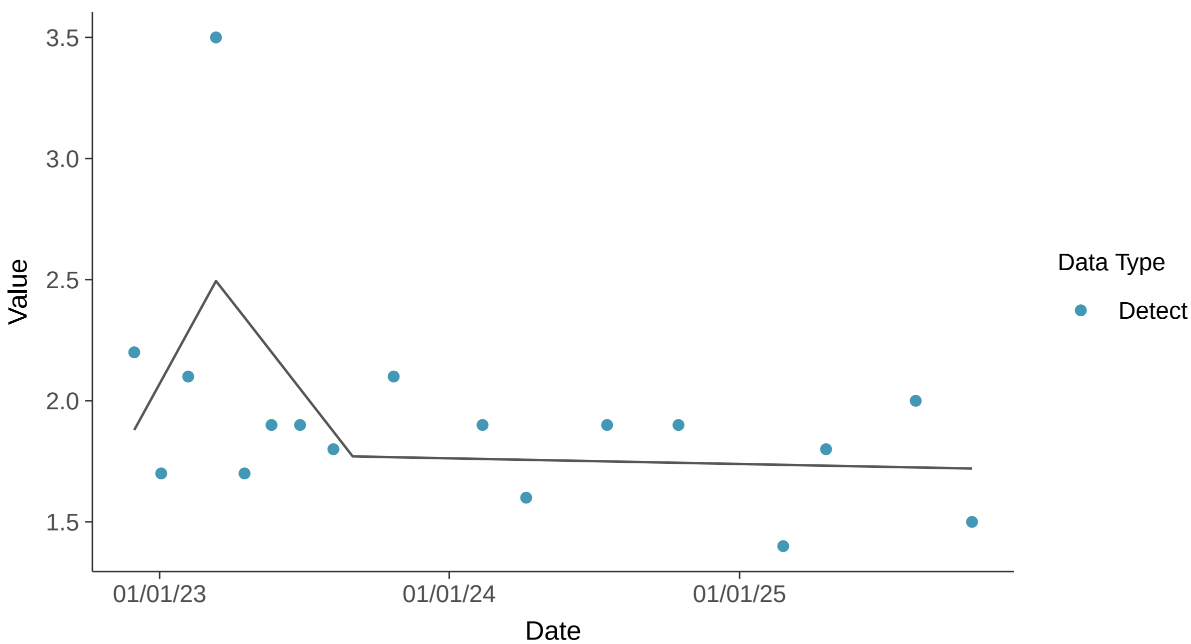
Trend Regression: Piecewise Linear-Linear

Boron, MW-30 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Boron, MW-30 (mg/L)

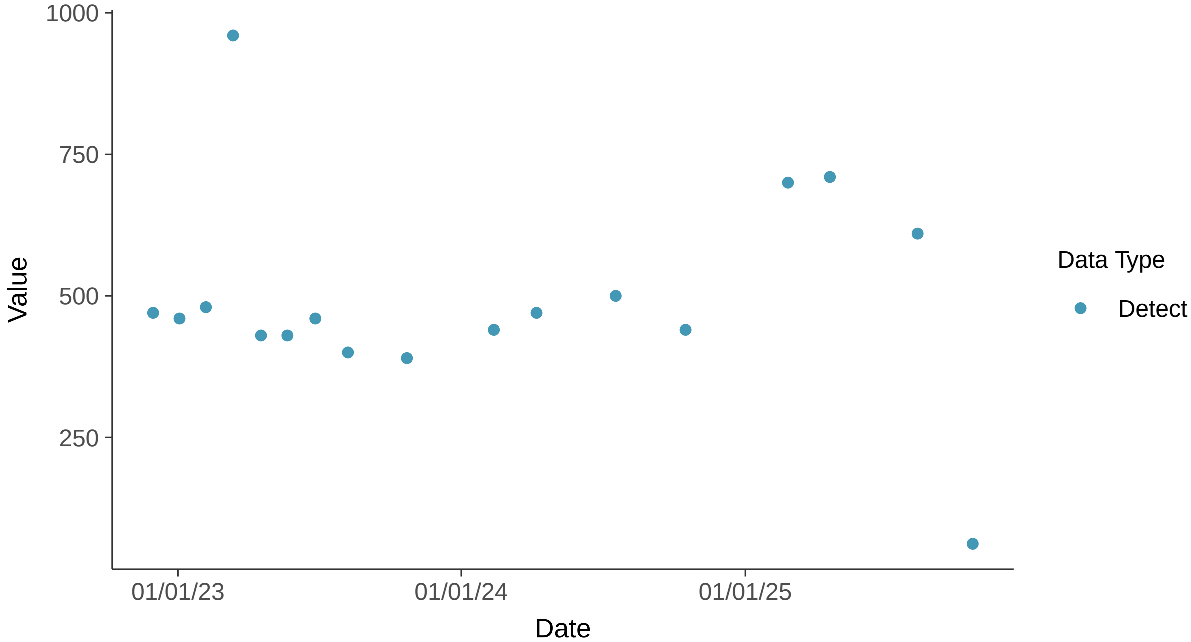


Appendix III: Calcium, MW-30

ID: 40_1_3_107

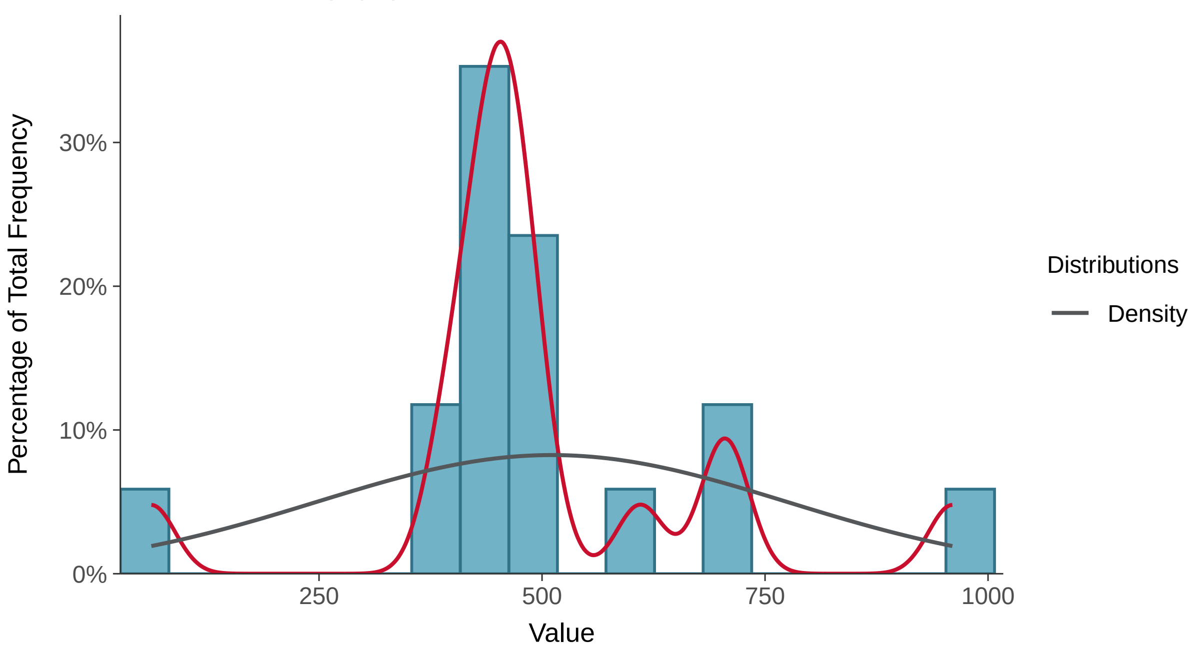
Scatter Plot

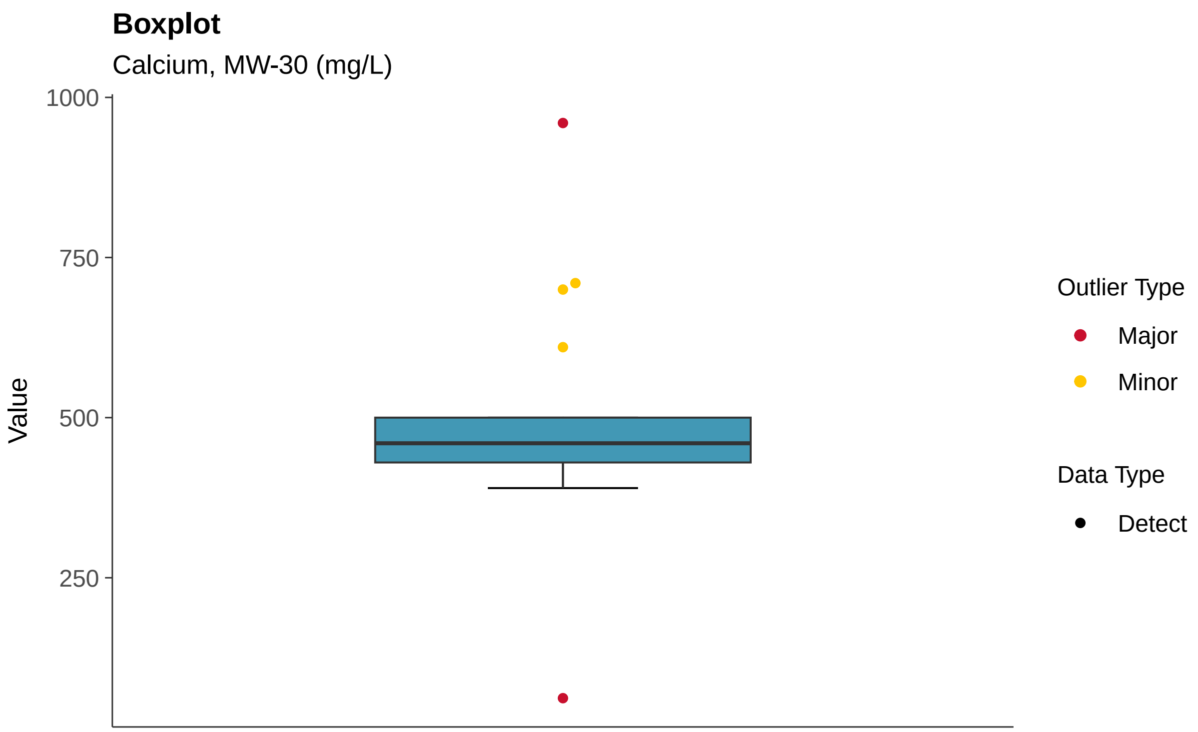
Calcium, MW-30 (mg/L)

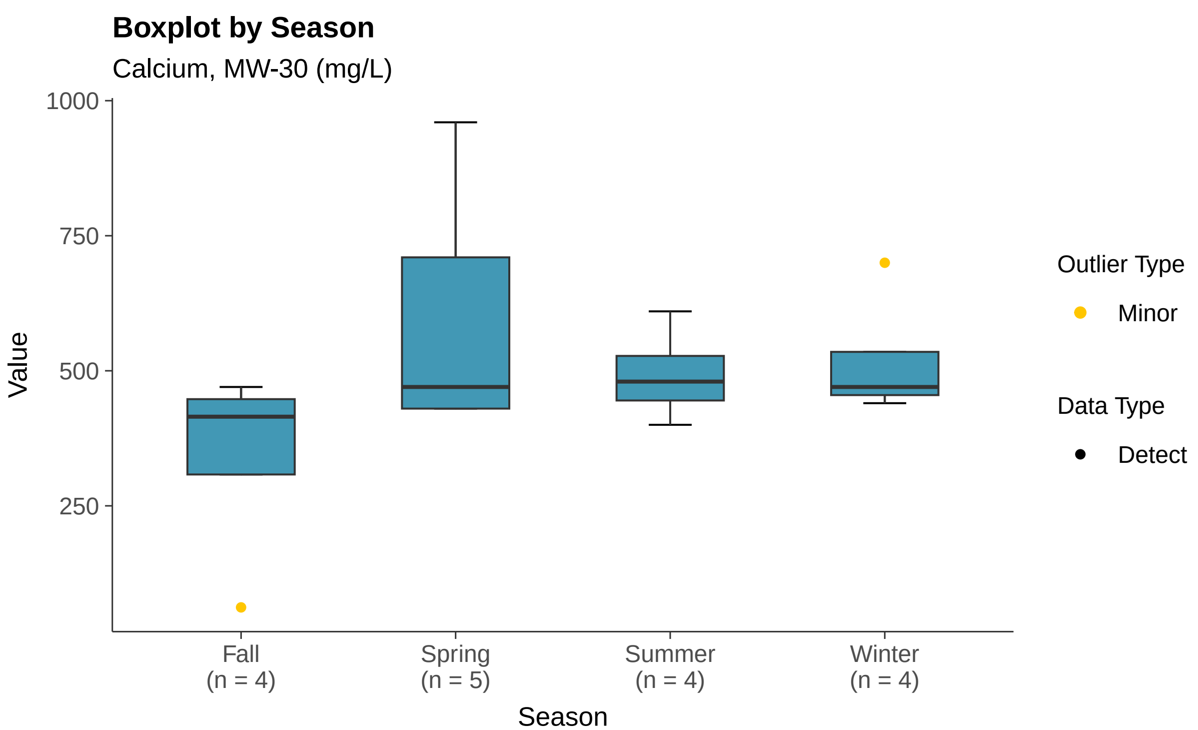


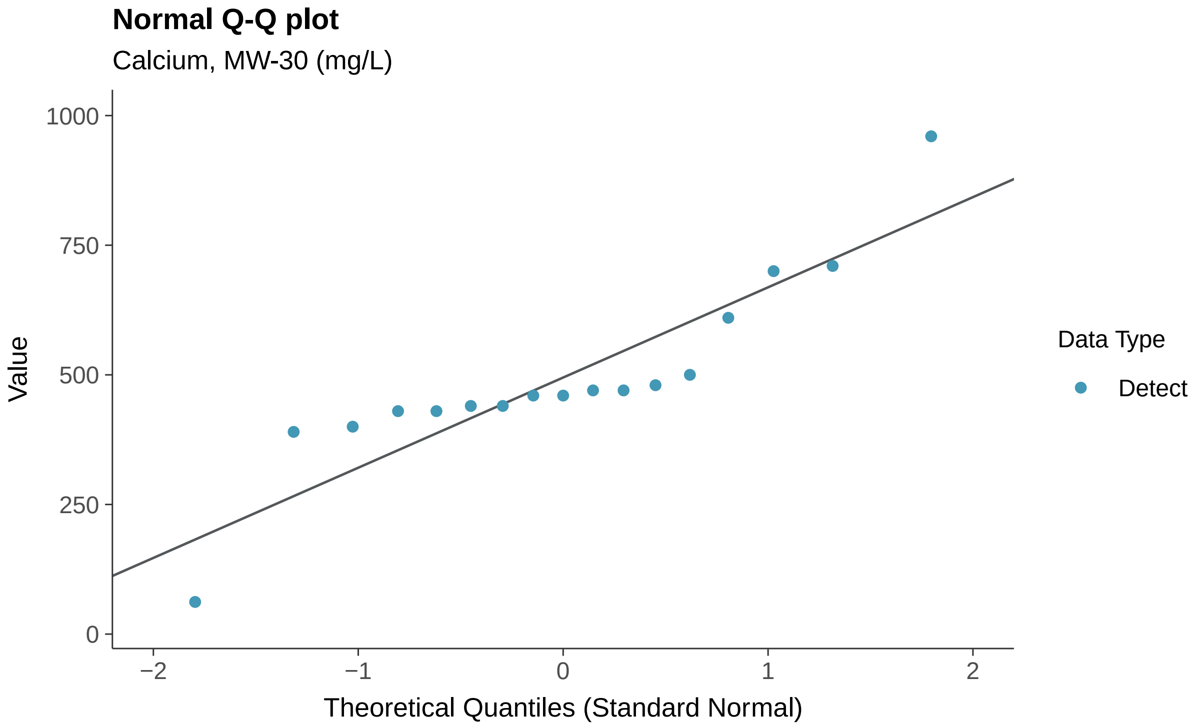
Histogram

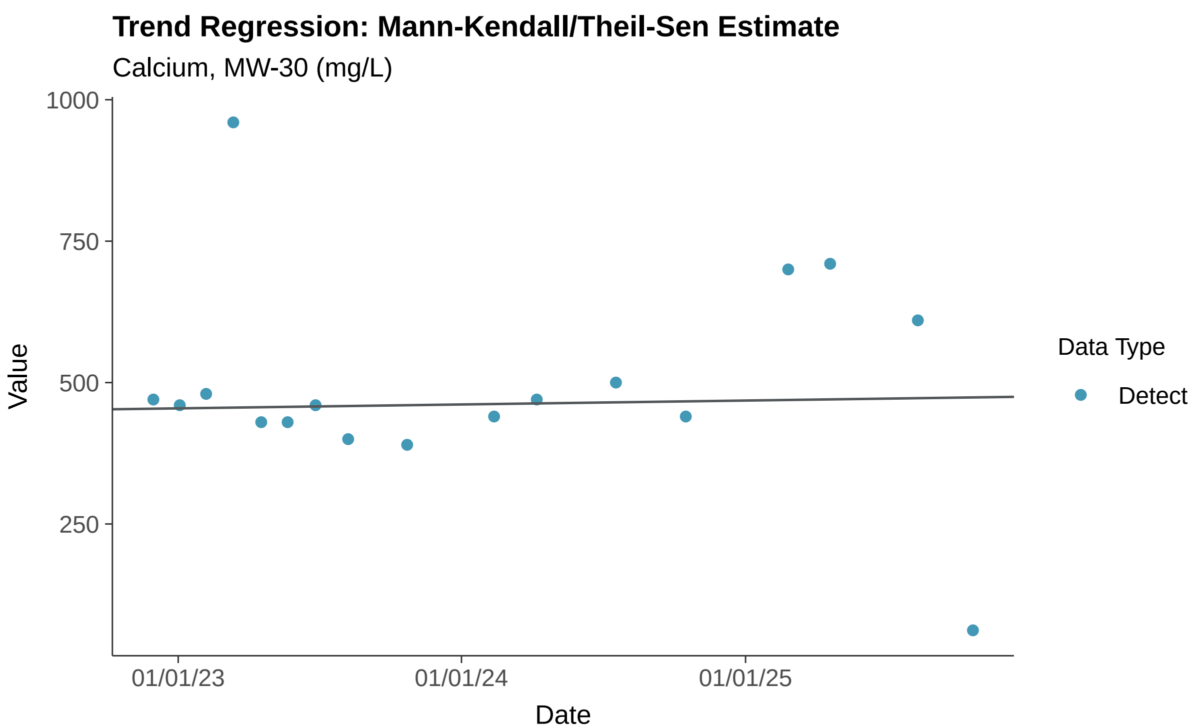
Calcium, MW-30 (mg/L)




Boxplot
Calcium, MW-30 (mg/L)
1000
750
500
250
Value
Outlier Type
Major
Minor
Data Type
Detect

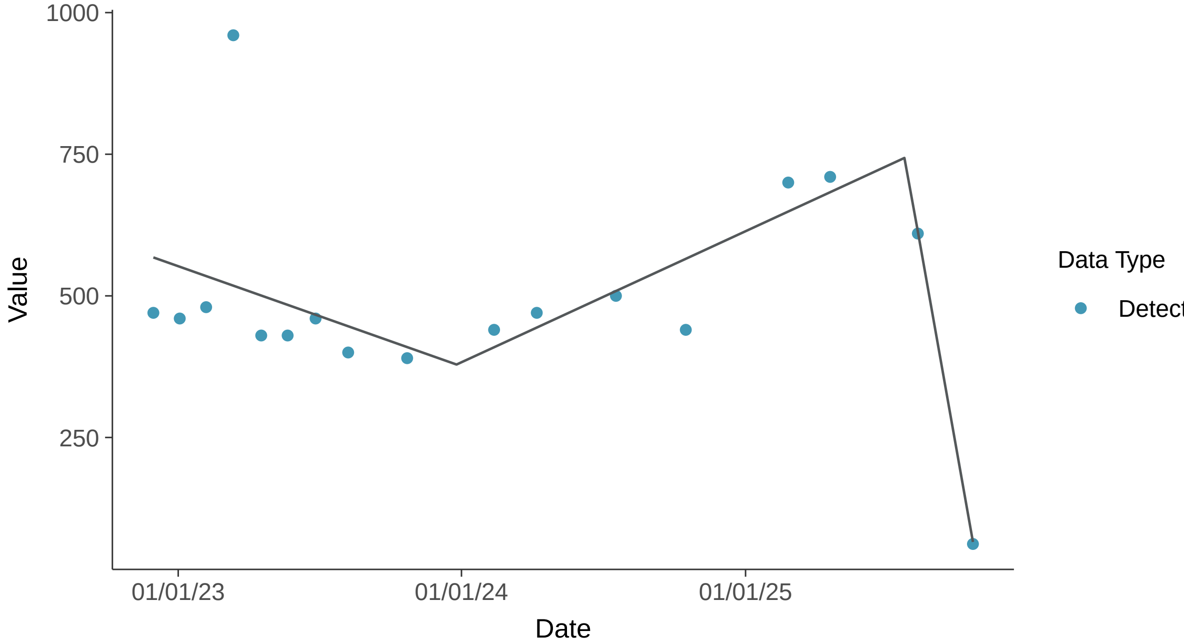

Boxplot by Season
Calcium, MW-30 (mg/L)
1000
750
500
250
Value
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Minor
Data Type
Detect


Normal Q-Q plot
Calcium, MW-30 (mg/L)
Value
1000
750
500
250
0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Mann-Kendall/Theil-Sen Estimate
Calcium, MW-30 (mg/L)
Value
1000
750
500
250
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

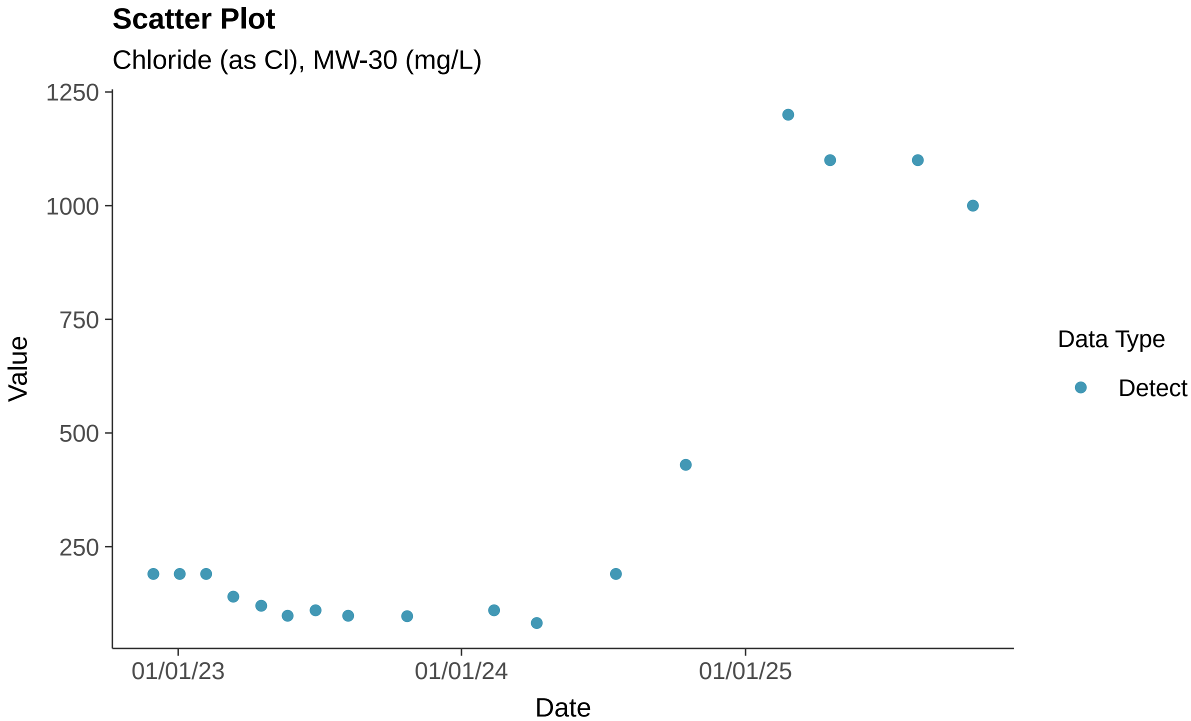
Trend Regression: Piecewise Linear-Linear-Linear

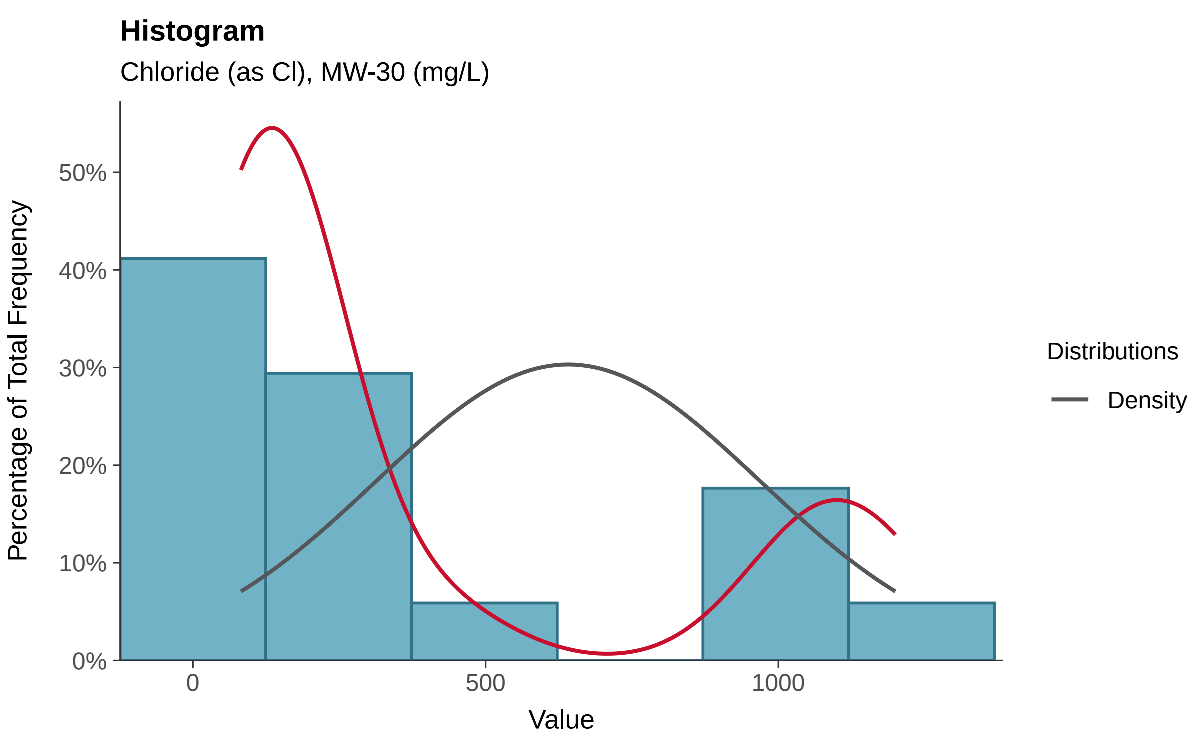
Calcium, MW-30 (mg/L)



Appendix III: Chloride (as Cl), MW-30

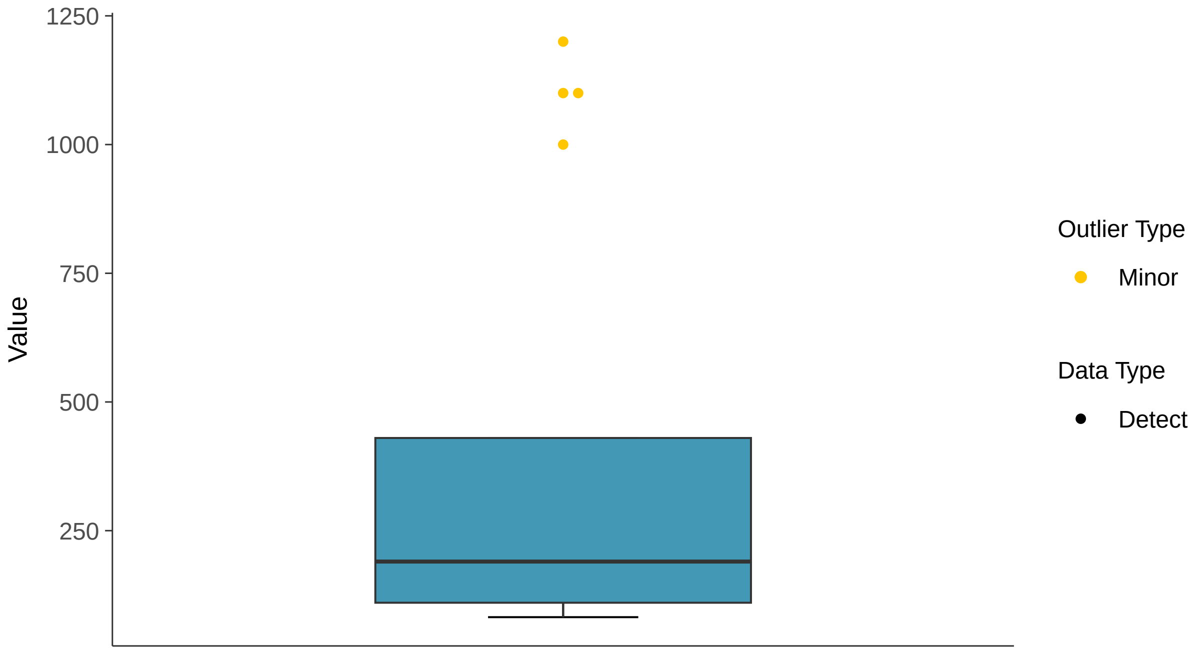
ID: 40_1_3_108





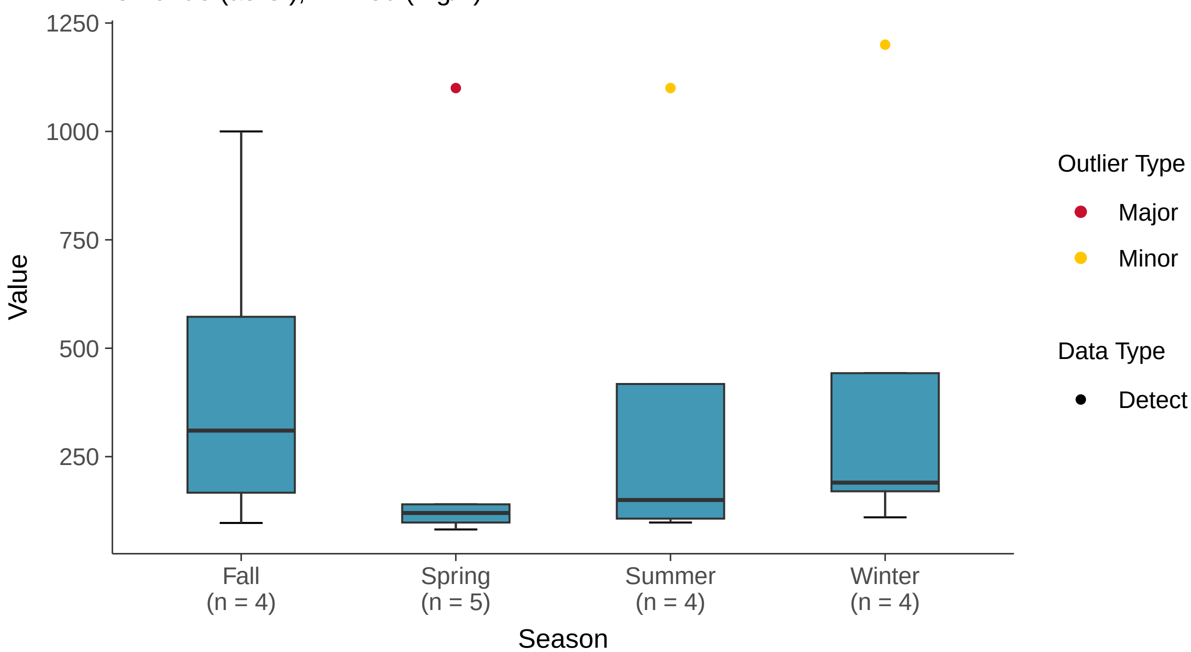
Boxplot

Chloride (as Cl), MW-30 (mg/L)



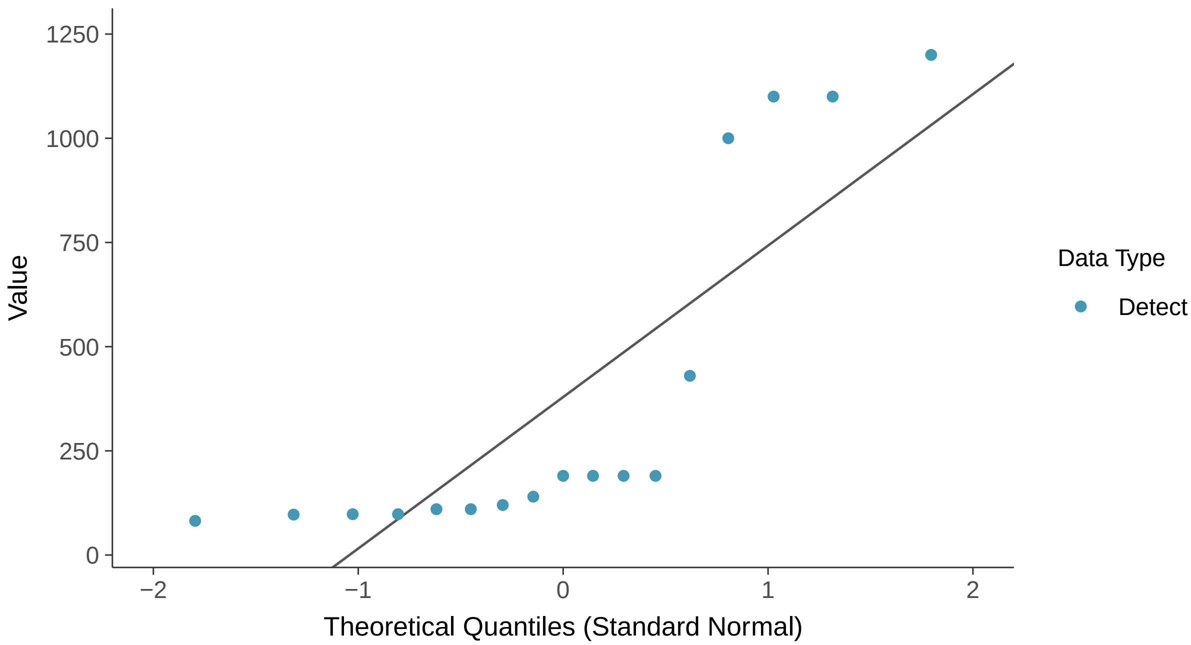
Boxplot by Season

Chloride (as Cl), MW-30 (mg/L)



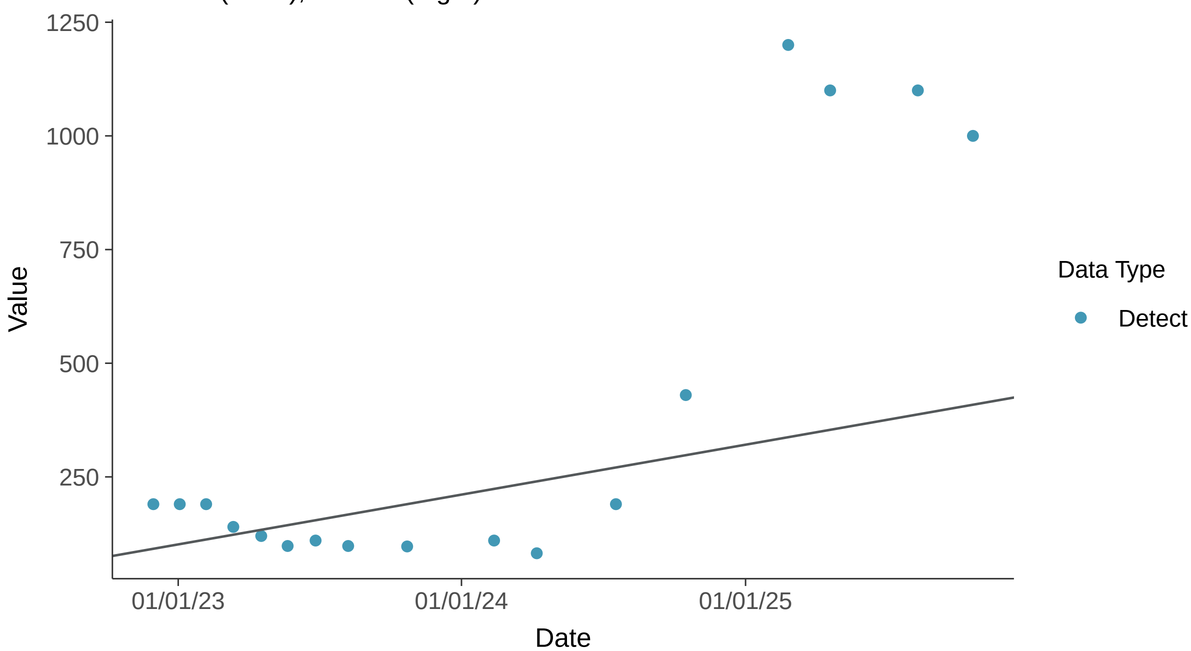
Normal Q-Q plot

Chloride (as Cl), MW-30 (mg/L)



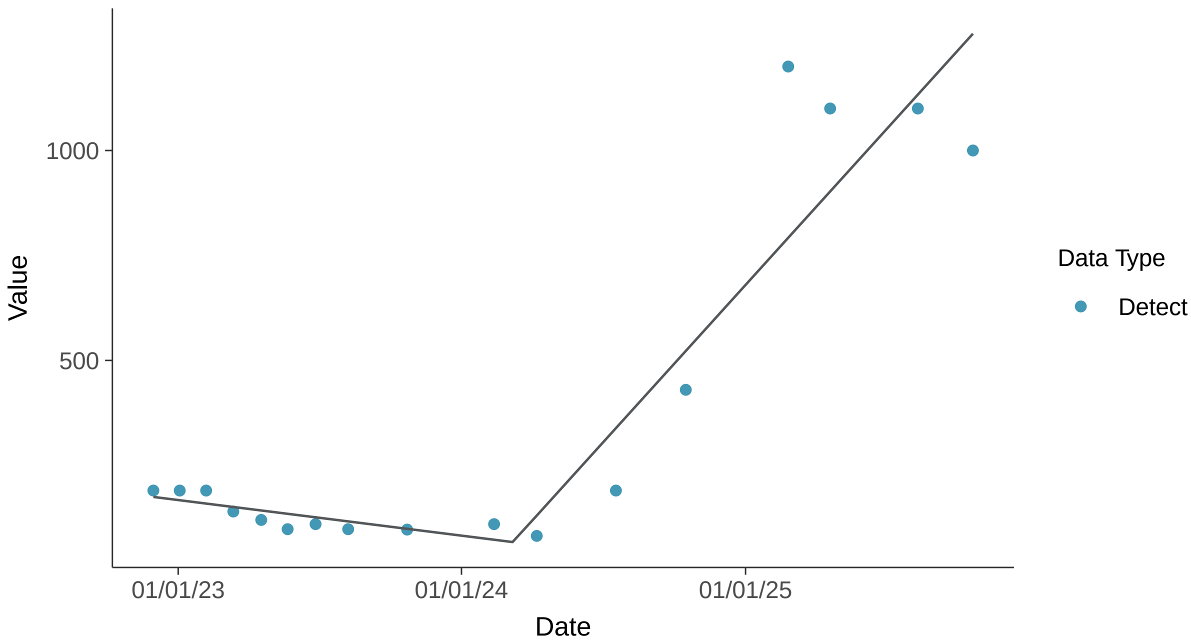
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Chloride (as Cl), MW-30 (mg/L)



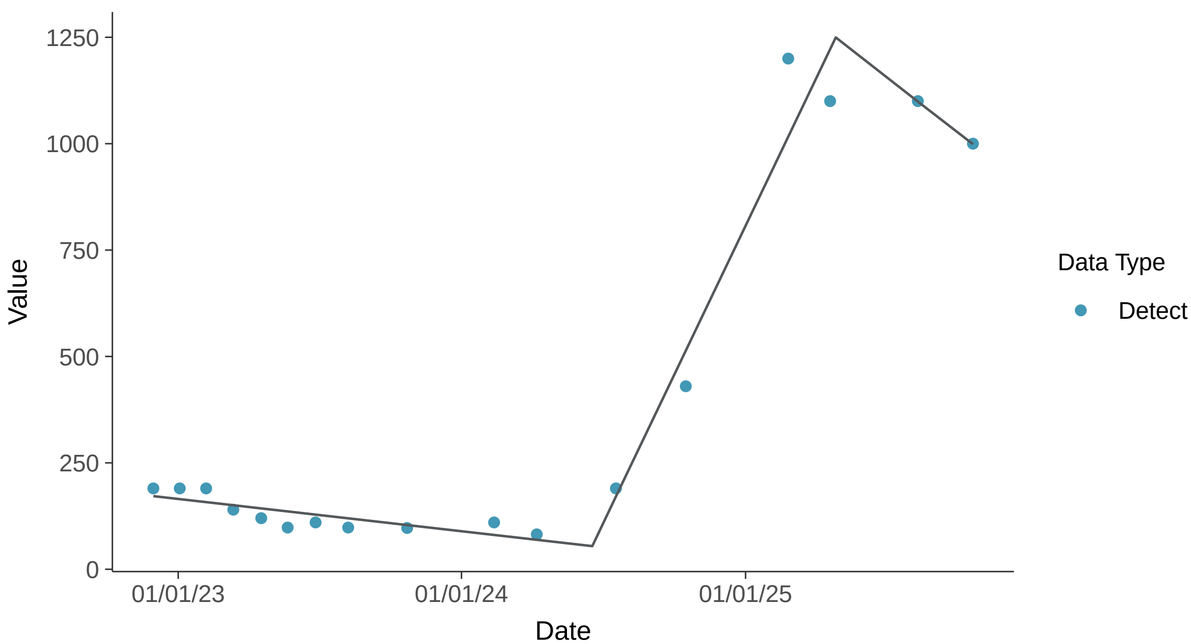
Trend Regression: Piecewise Linear-Linear

Chloride (as Cl), MW-30 (mg/L)



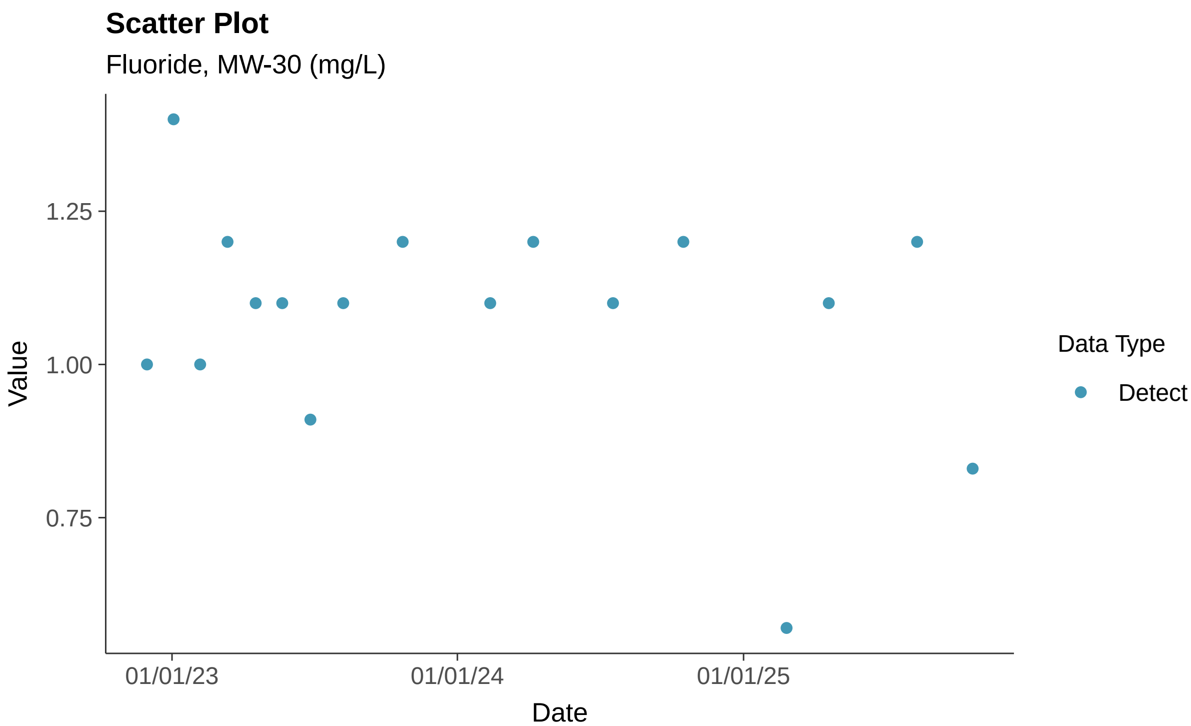
Trend Regression: Piecewise Linear-Linear-Linear

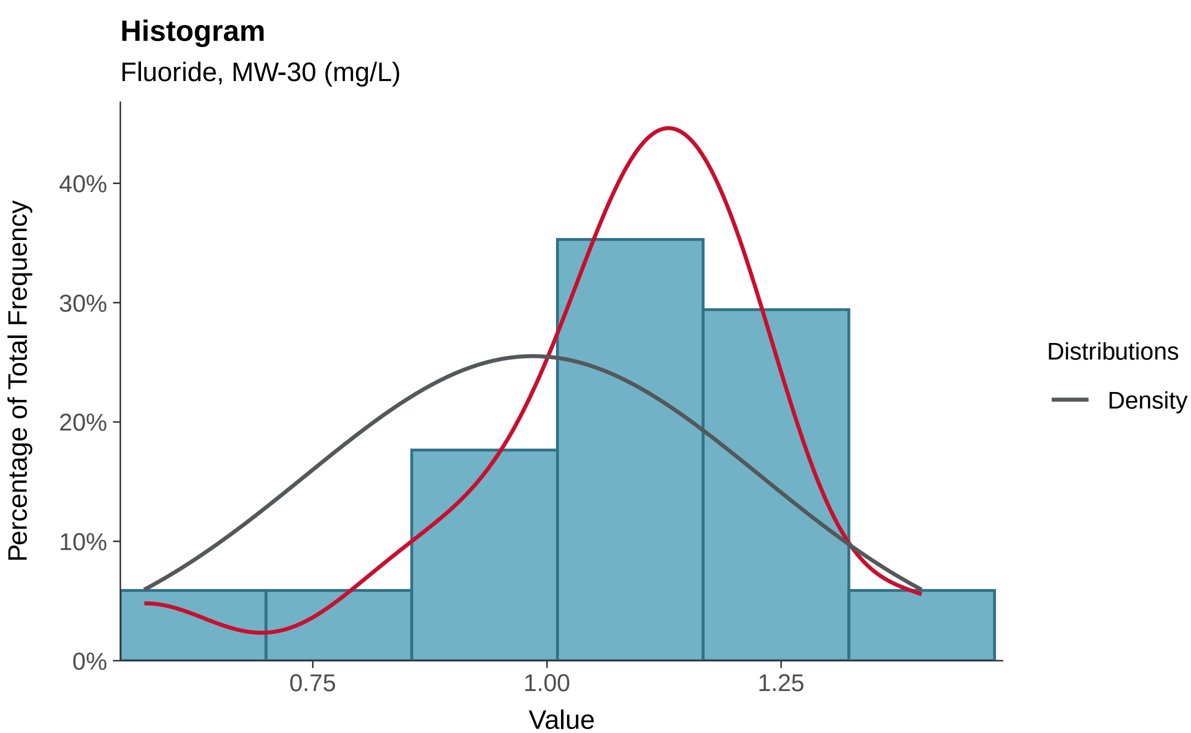
Chloride (as Cl), MW-30 (mg/L)



Appendix III: Fluoride, MW-30

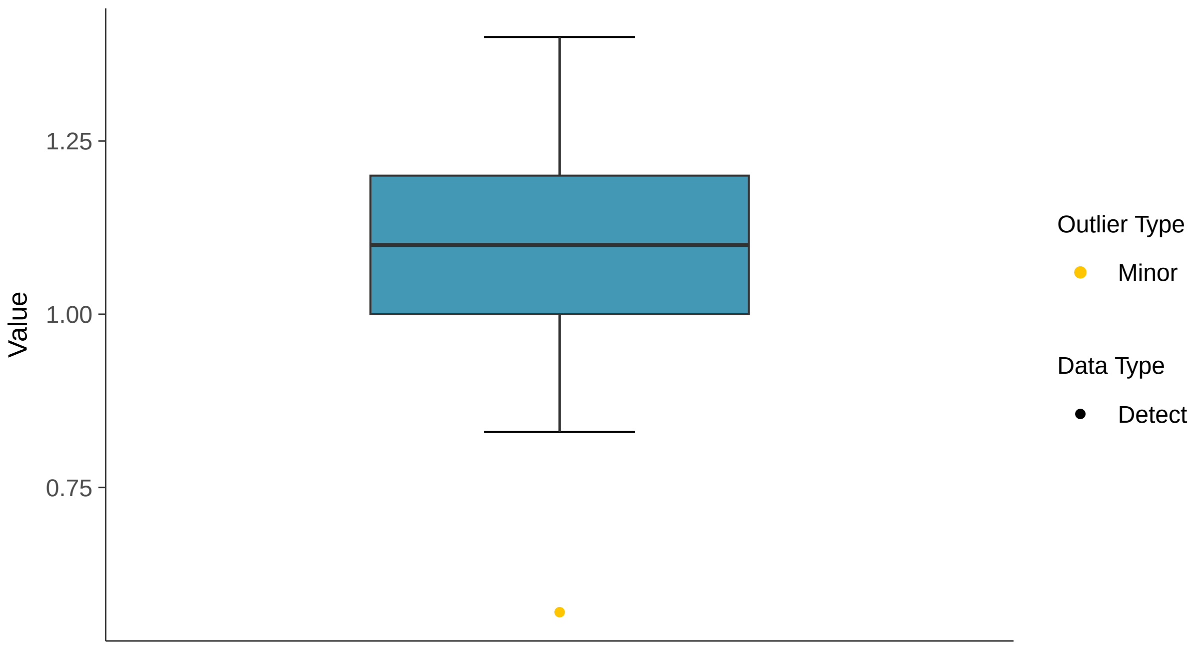
ID: 40_1_3_112





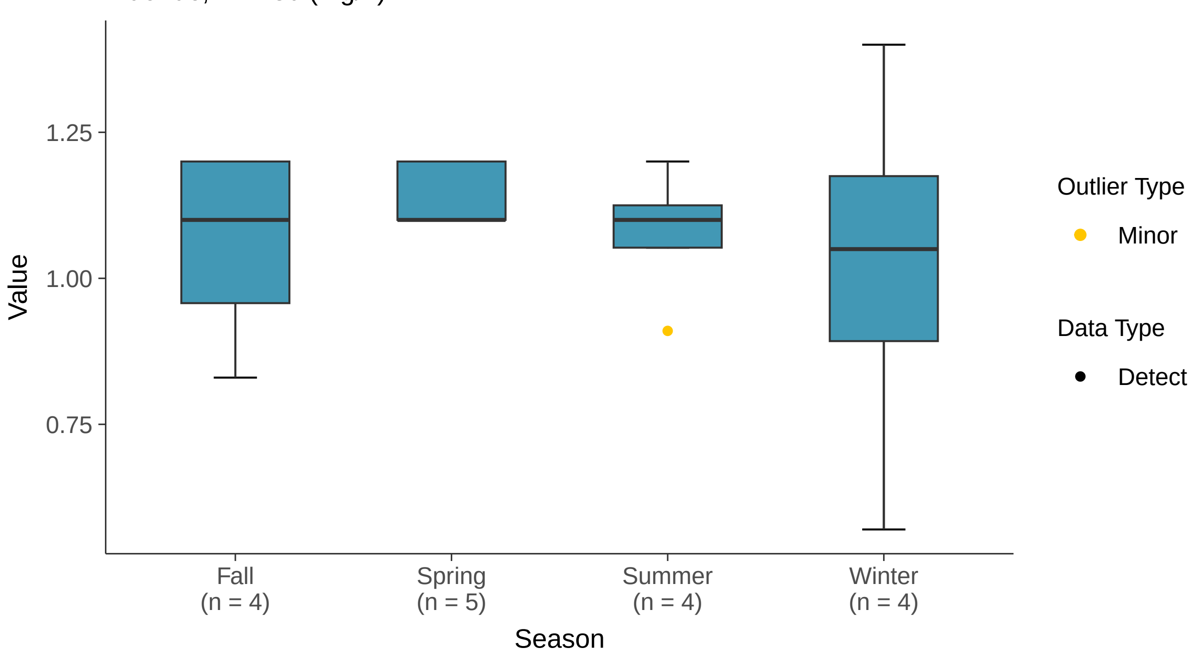
Boxplot

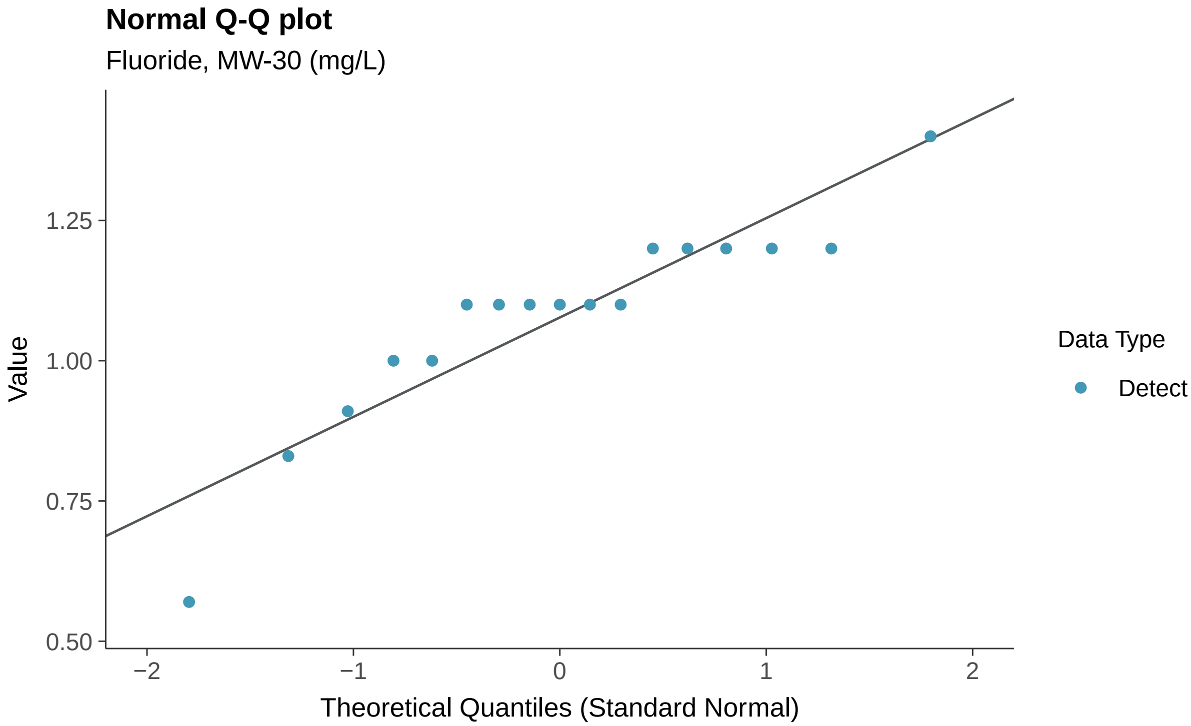
Fluoride, MW-30 (mg/L)

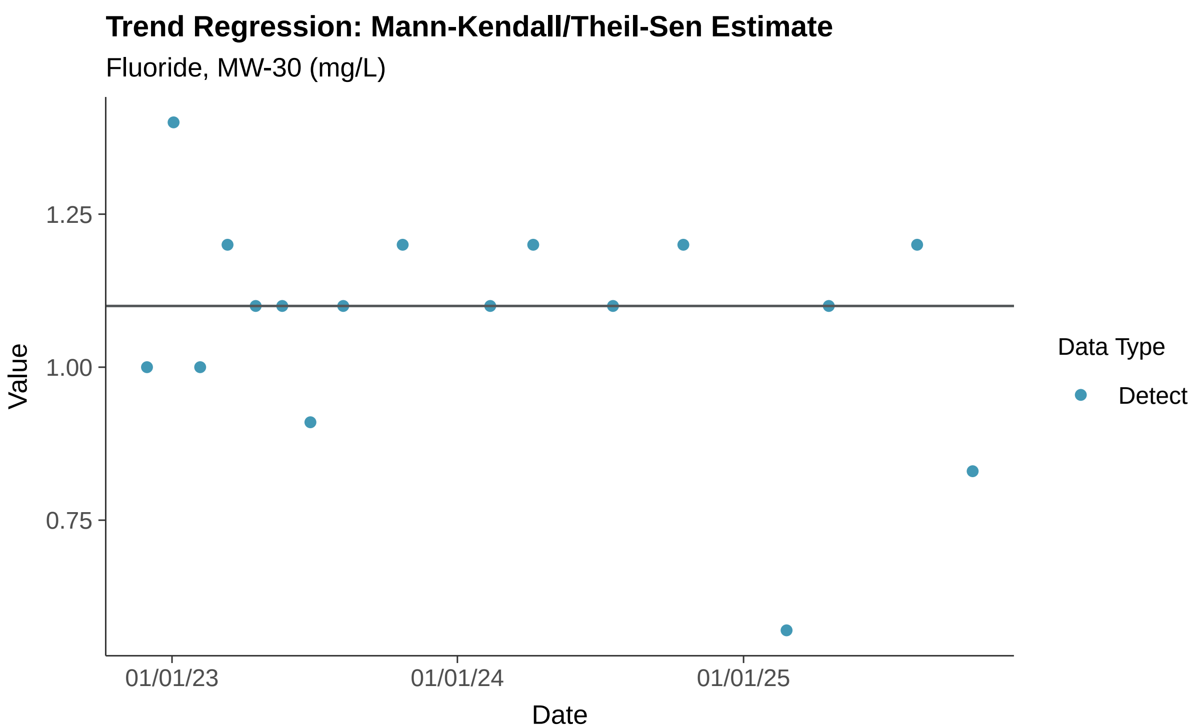


Boxplot by Season

Fluoride, MW-30 (mg/L)

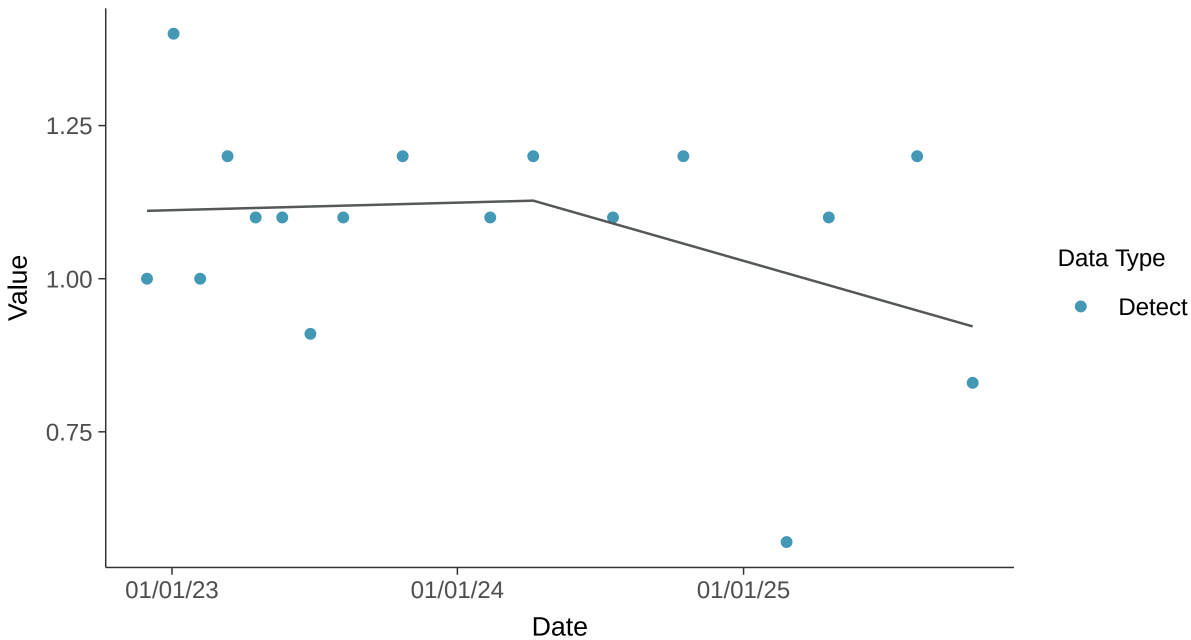



Normal Q-Q plot
Fluoride, MW-30 (mg/L)
Value
1.25
1.00
0.75
0.50
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Mann-Kendall/Theil-Sen Estimate
Fluoride, MW-30 (mg/L)
Value
1.25
1.00
0.75
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear

Fluoride, MW-30 (mg/L)

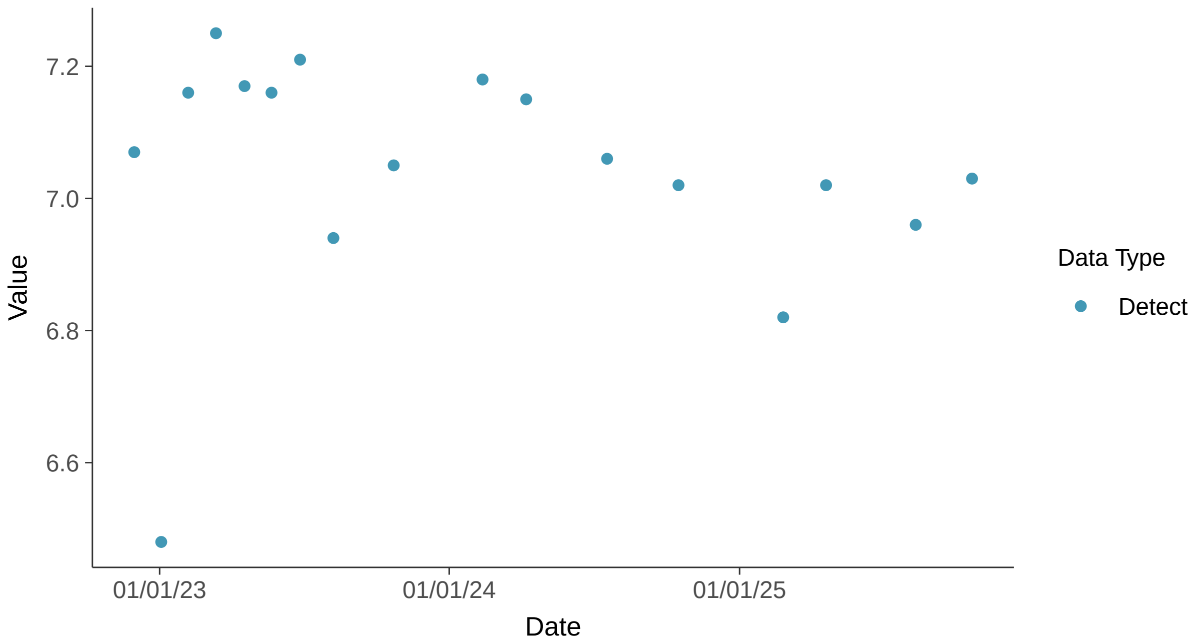


Appendix III: pH (field), MW-30

ID: 40_1_3_120

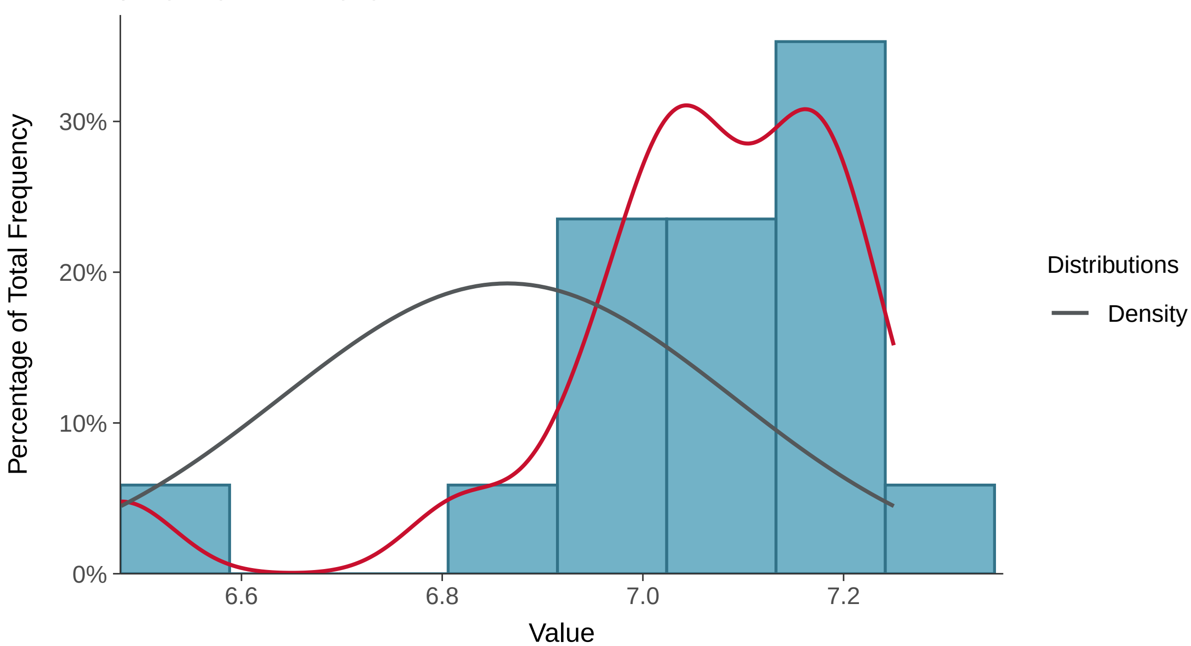
Scatter Plot

pH (field), MW-30 (su)



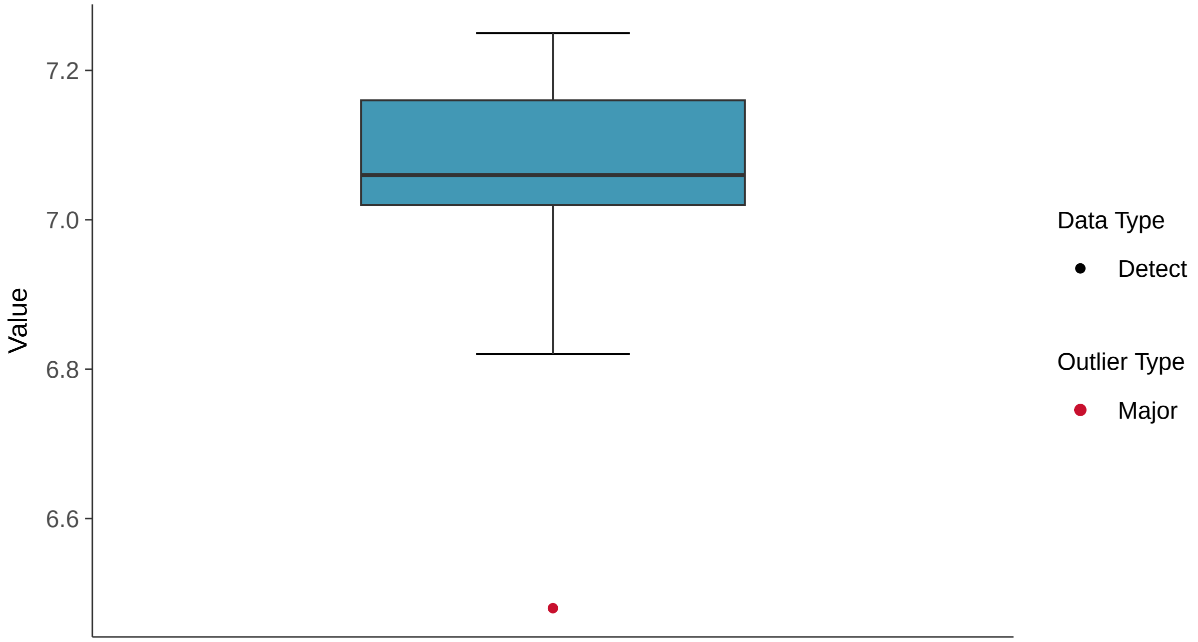
Histogram

pH (field), MW-30 (su)



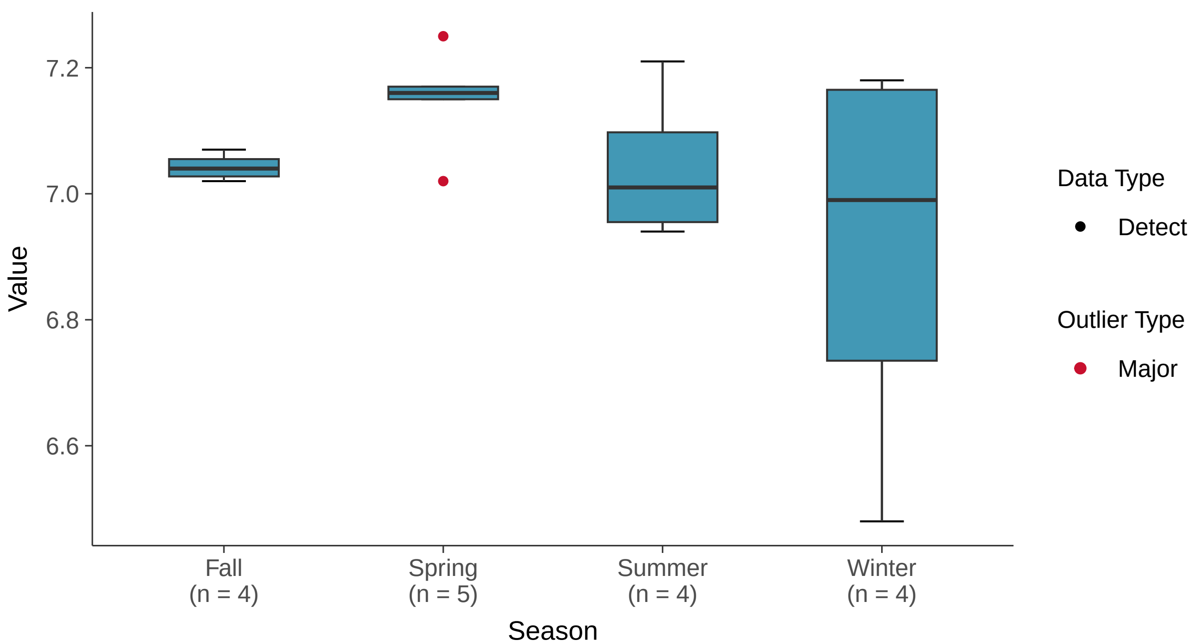
Boxplot

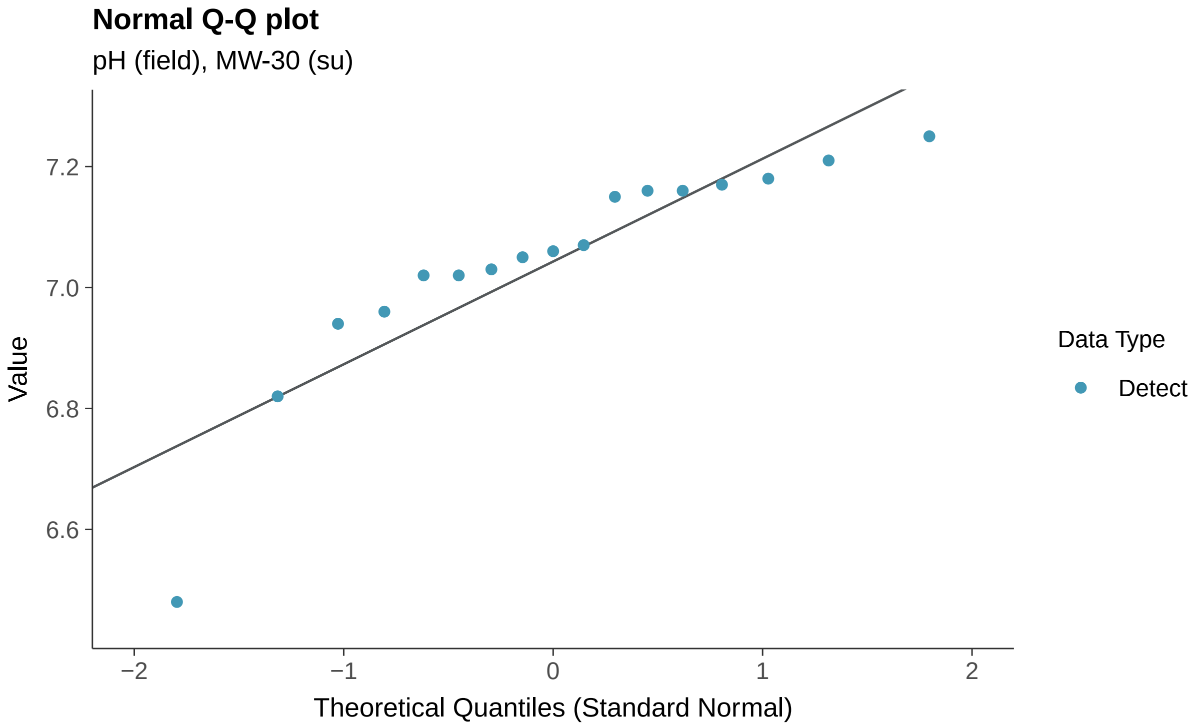
pH (field), MW-30 (su)

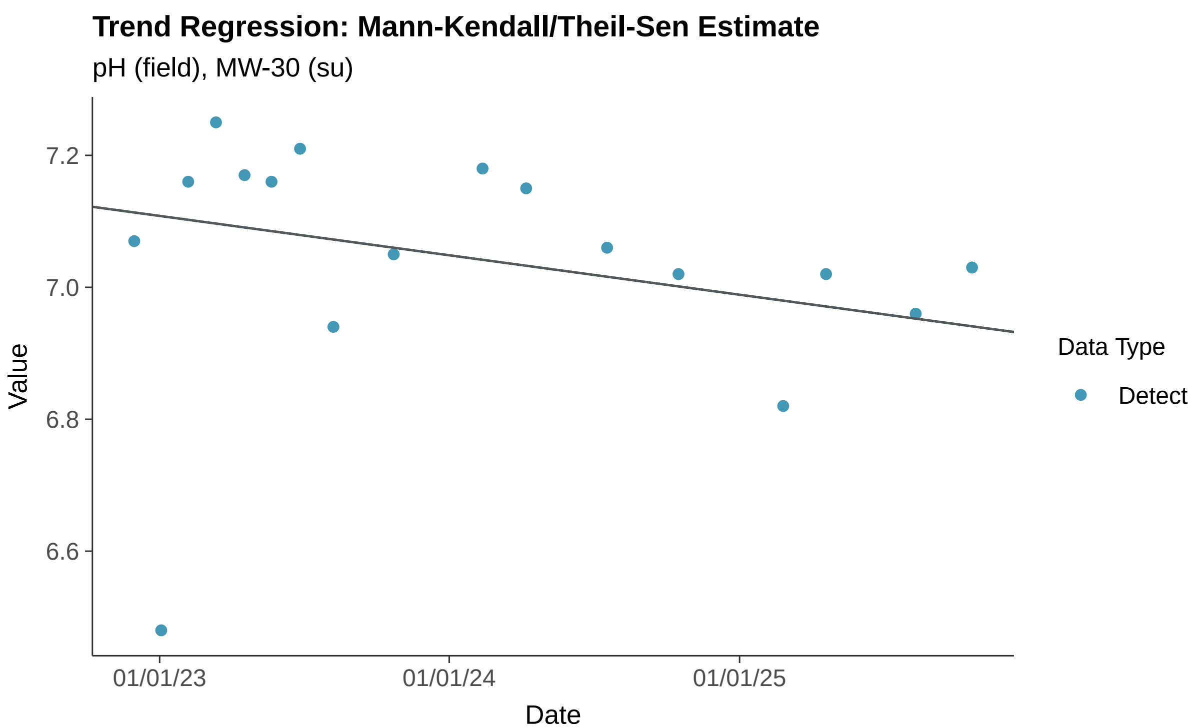


Boxplot by Season

pH (field), MW-30 (su)

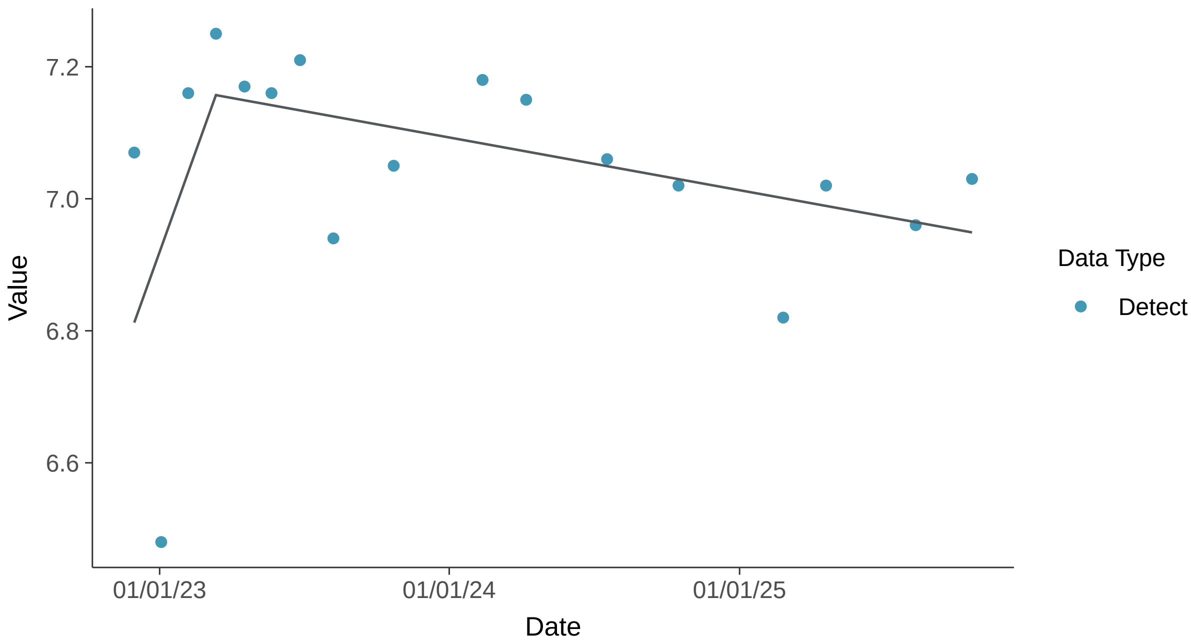



Normal Q-Q plot
pH (field), MW-30 (su)
Value
7.2
7.0
6.8
6.6
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Mann-Kendall/Theil-Sen Estimate
pH (field), MW-30 (su)
Value
7.2
7.0
6.8
6.6
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

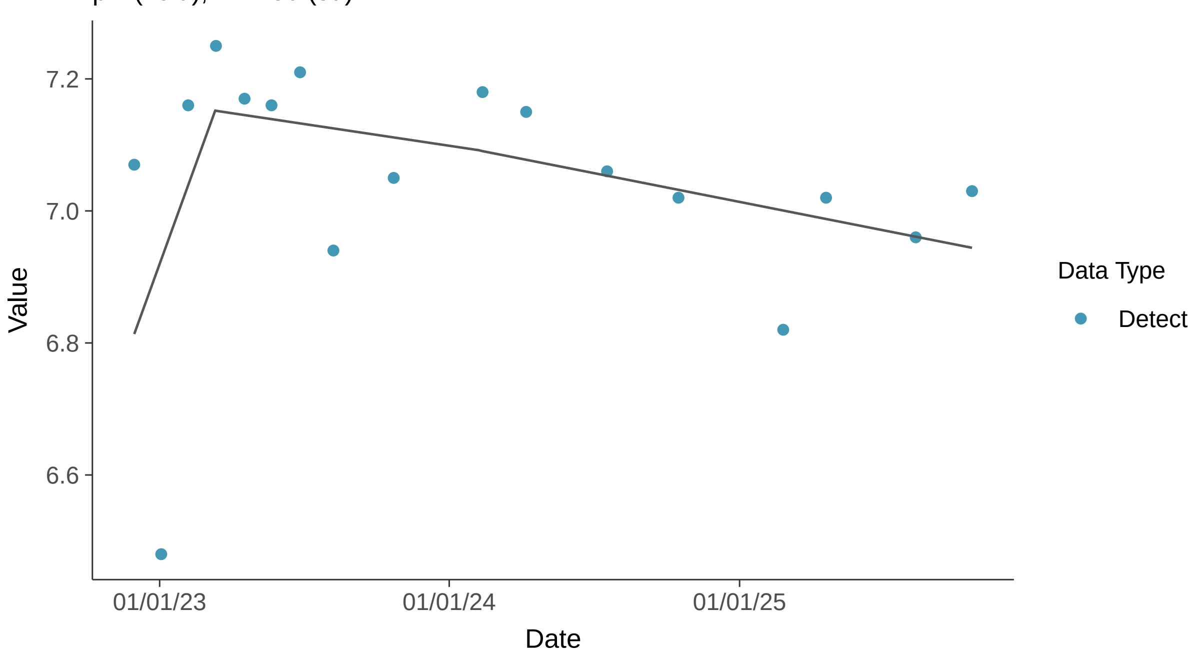
Trend Regression: Piecewise Linear-Linear

pH (field), MW-30 (su)



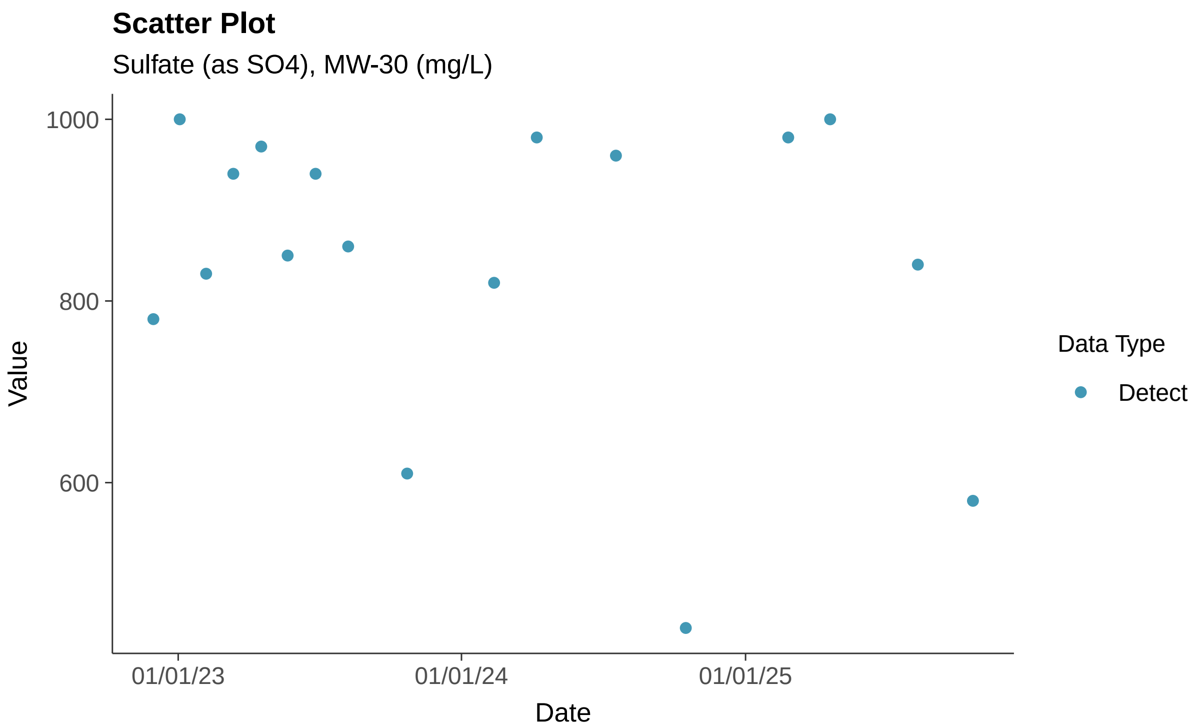
Trend Regression: Piecewise Linear-Linear-Linear

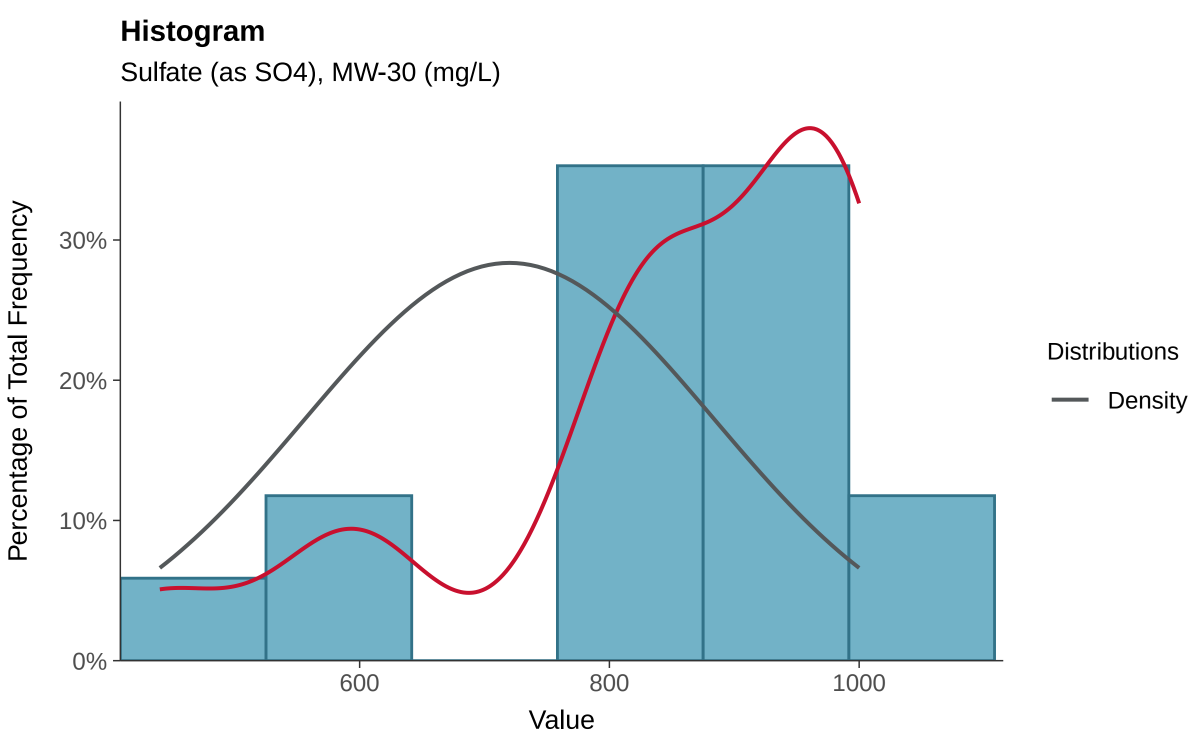
pH (field), MW-30 (su)



Appendix III: Sulfate (as SO4), MW-30

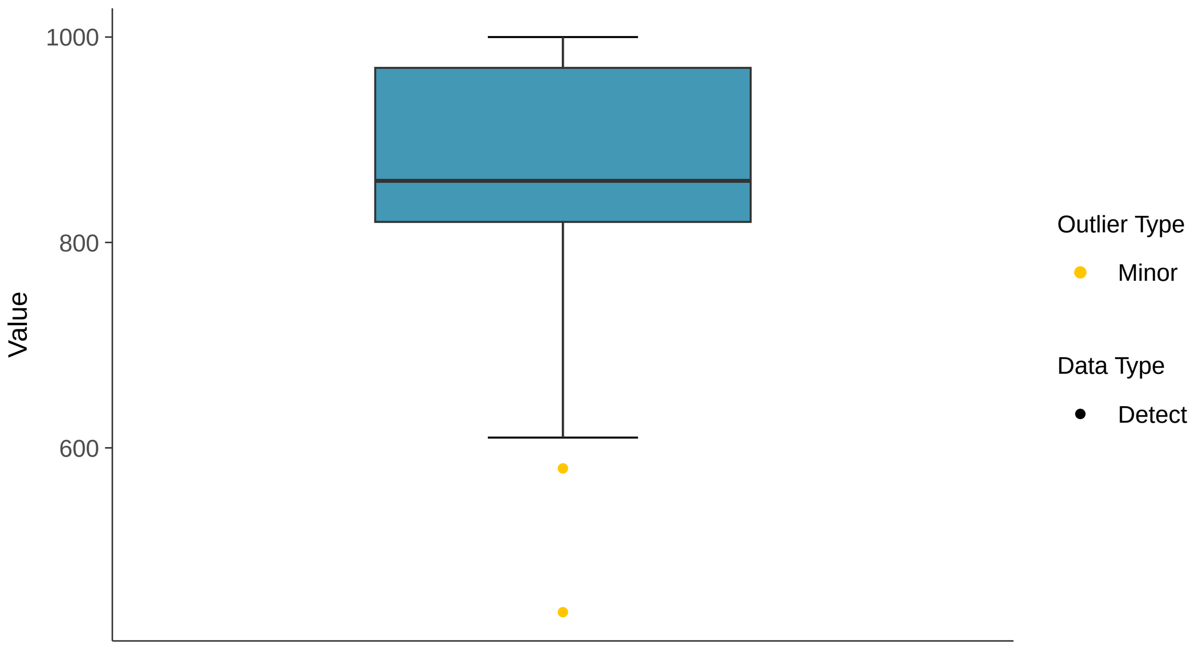
ID: 40_1_3_124





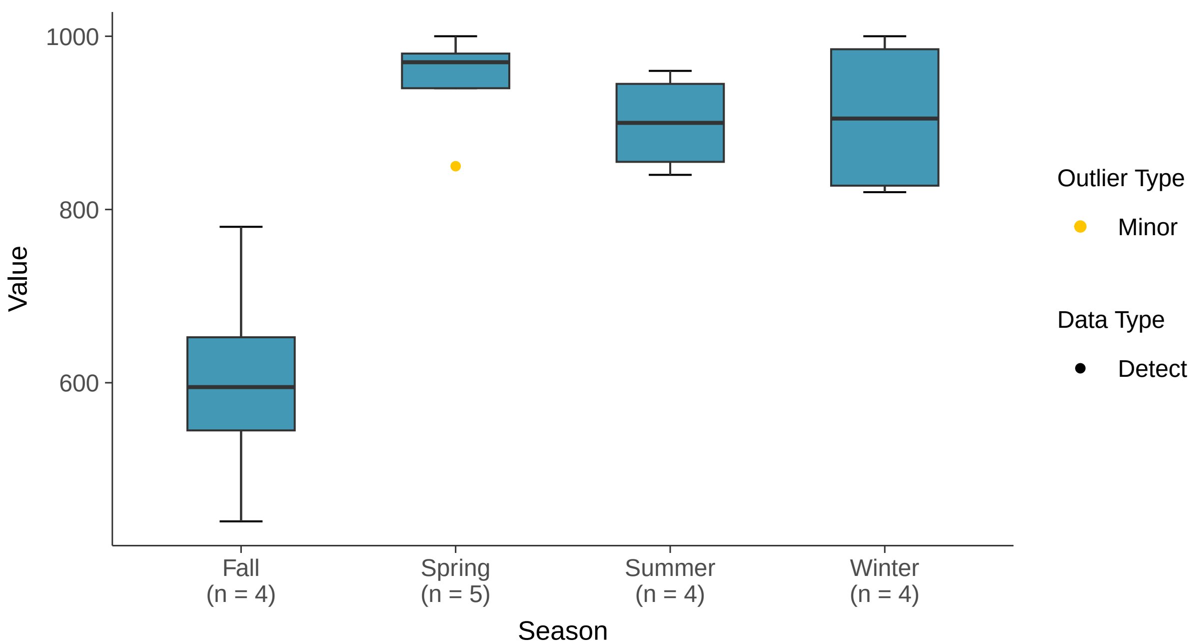
Boxplot

Sulfate (as SO4), MW-30 (mg/L)



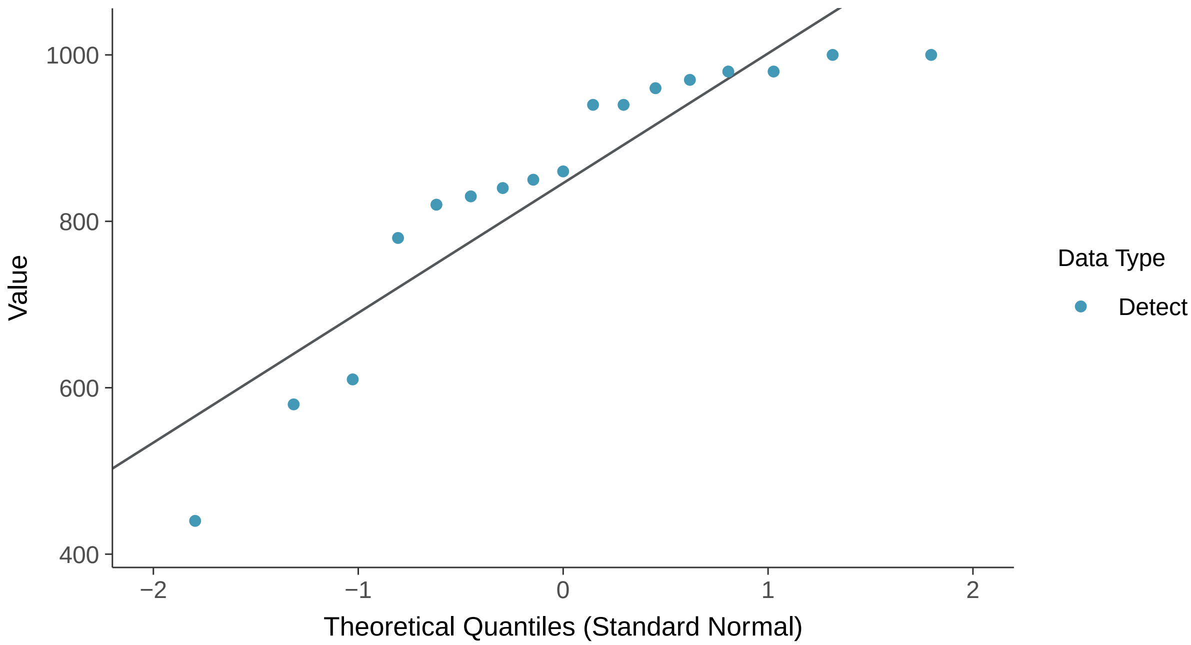
Boxplot by Season

Sulfate (as SO4), MW-30 (mg/L)



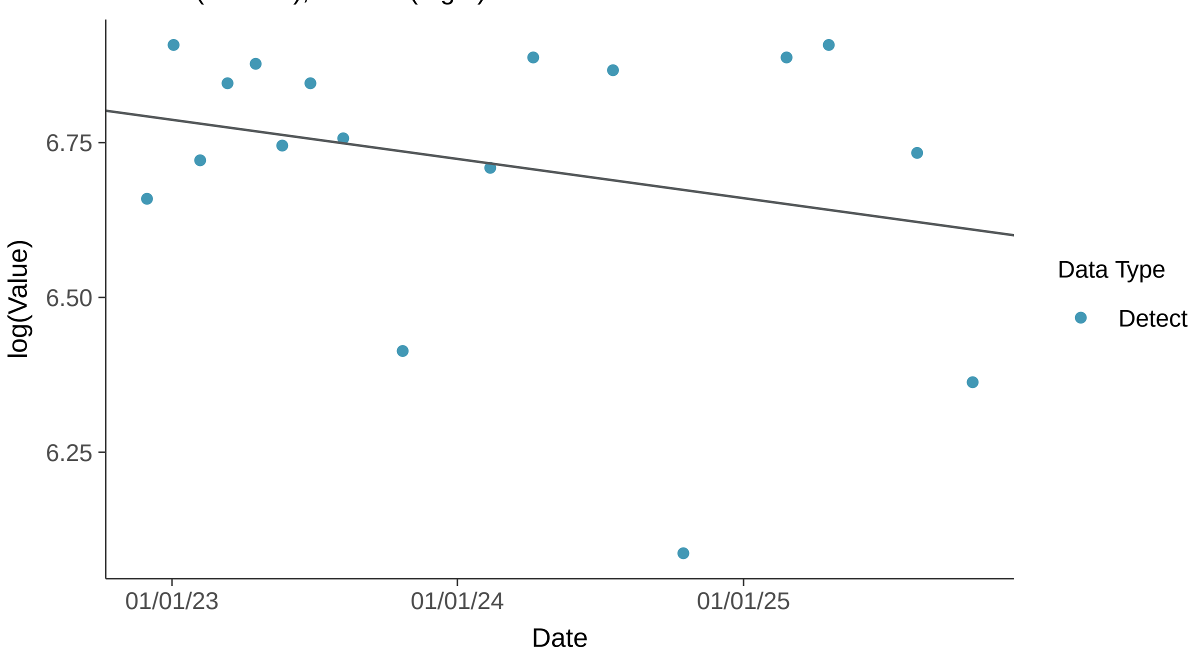
Normal Q-Q plot

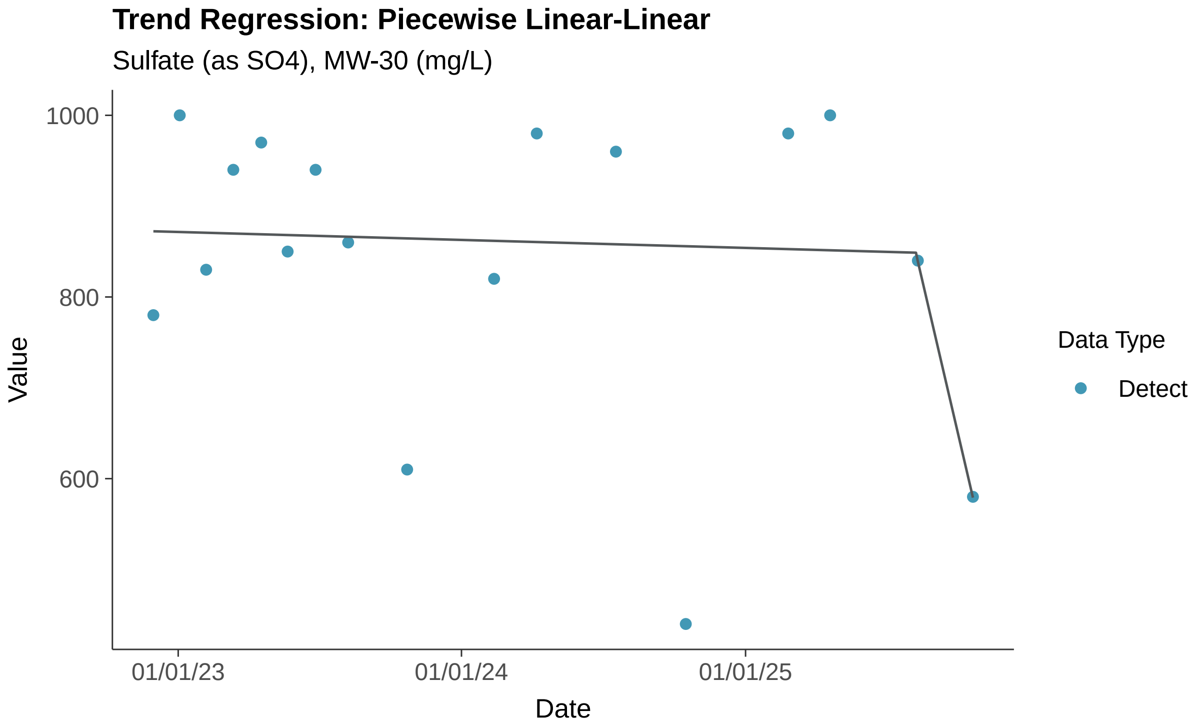
Sulfate (as SO4), MW-30 (mg/L)

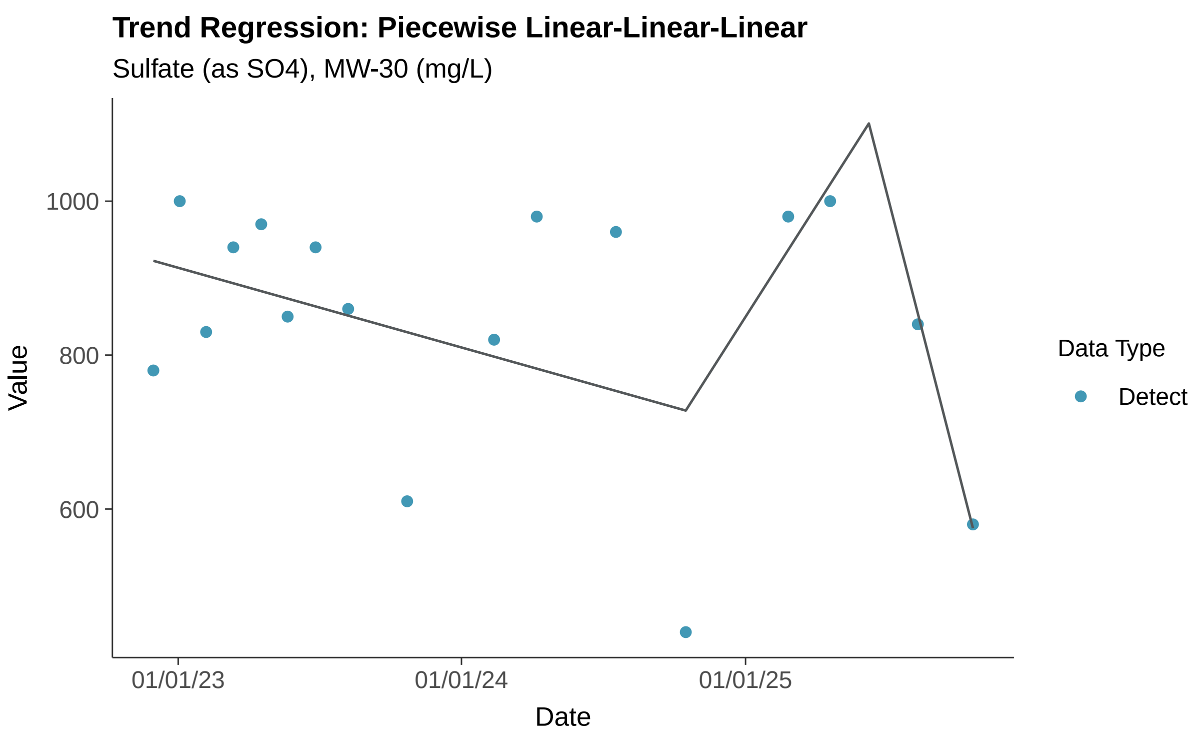


Trend Regression: Lognormal MLE

Sulfate (as SO4), MW-30 (mg/L)

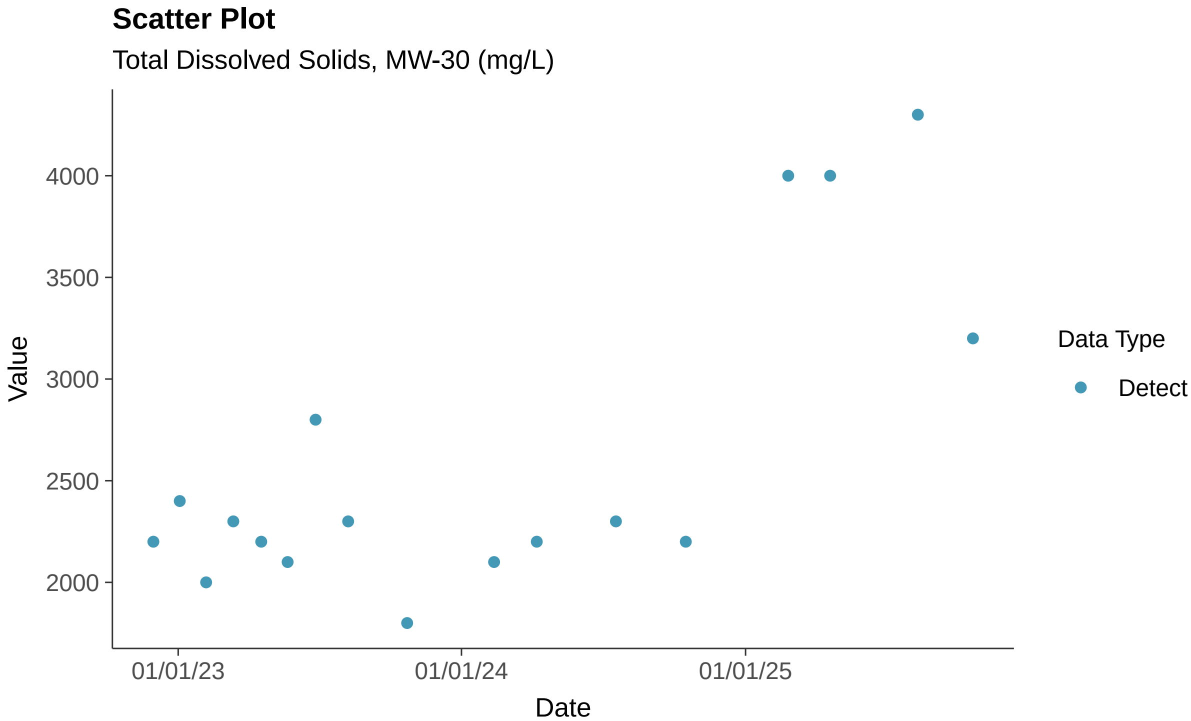


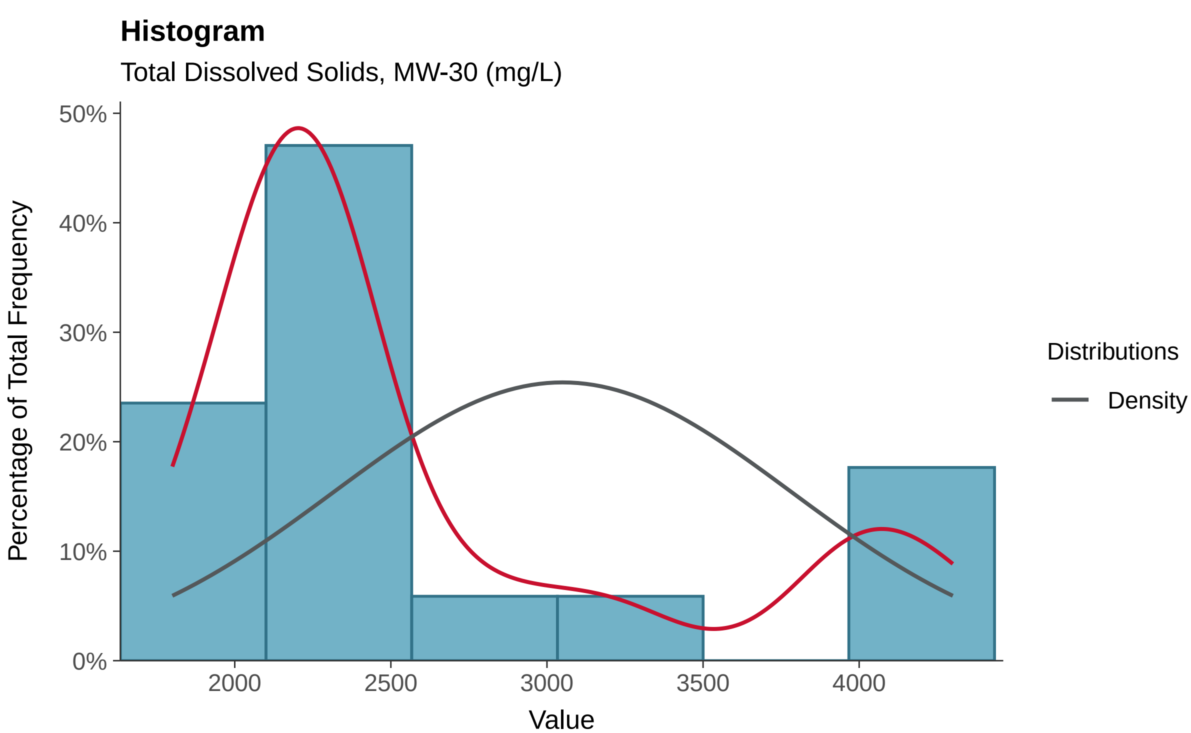

Trend Regression: Piecewise Linear-Linear
Sulfate (as SO4), MW-30 (mg/L)
1000
800
600
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
Sulfate (as SO4), MW-30 (mg/L)
1000
800
600
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Appendix III: Total Dissolved Solids, MW-30

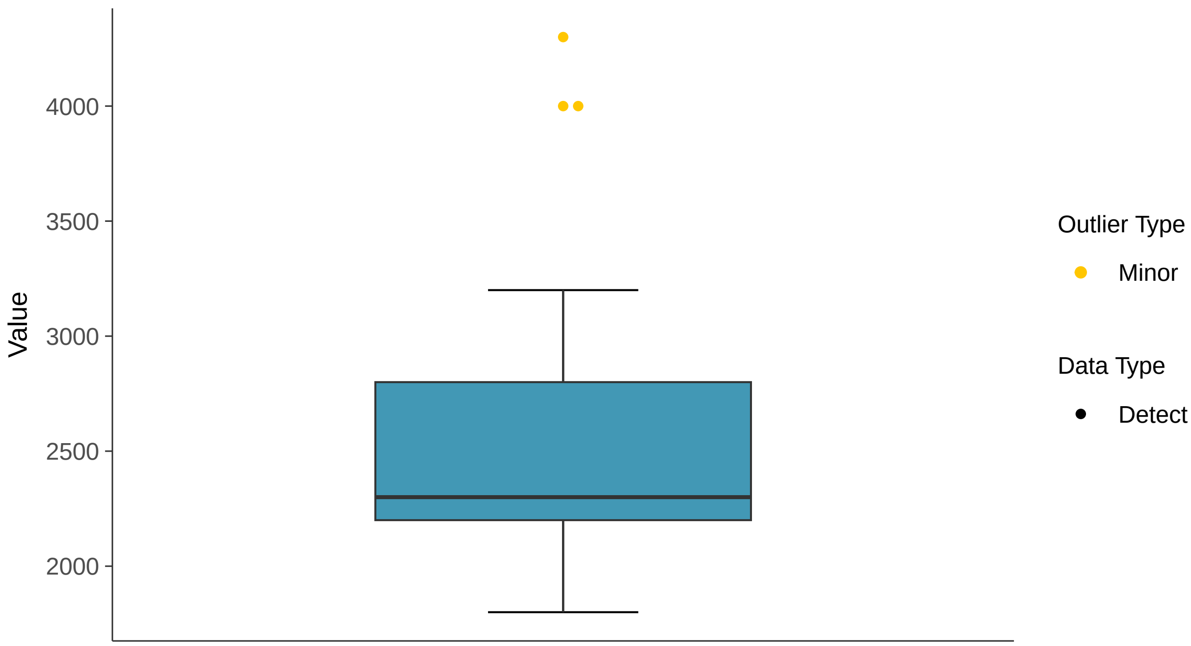
ID: 40_1_3_126





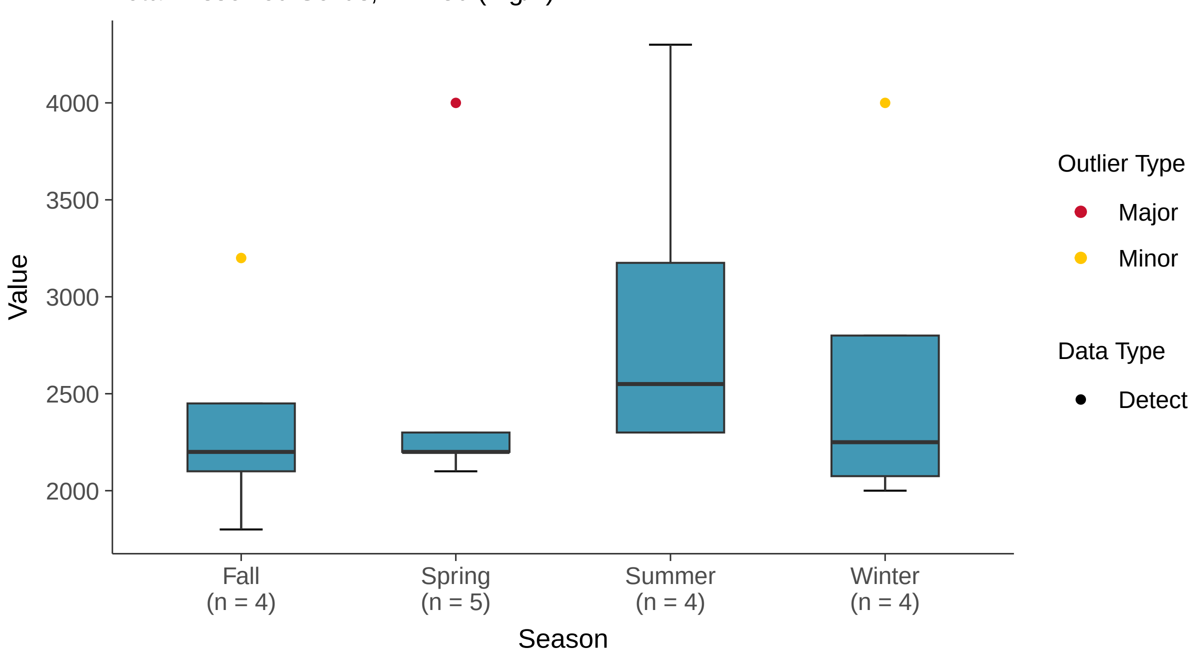
Boxplot

Total Dissolved Solids, MW-30 (mg/L)



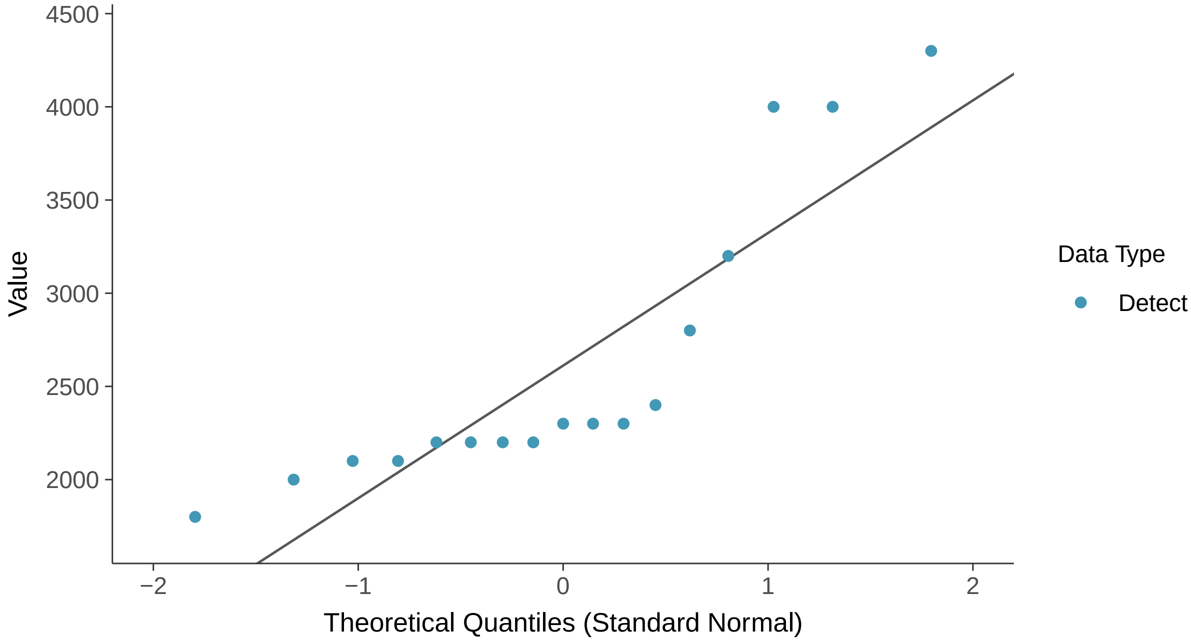
Boxplot by Season

Total Dissolved Solids, MW-30 (mg/L)



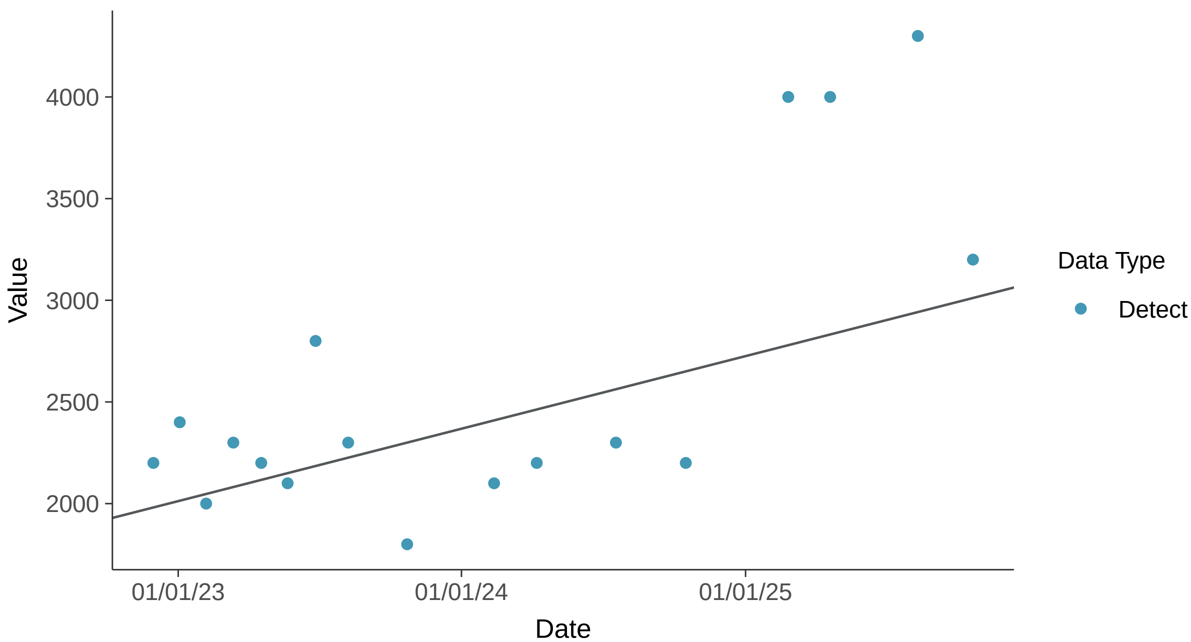
Normal Q-Q plot

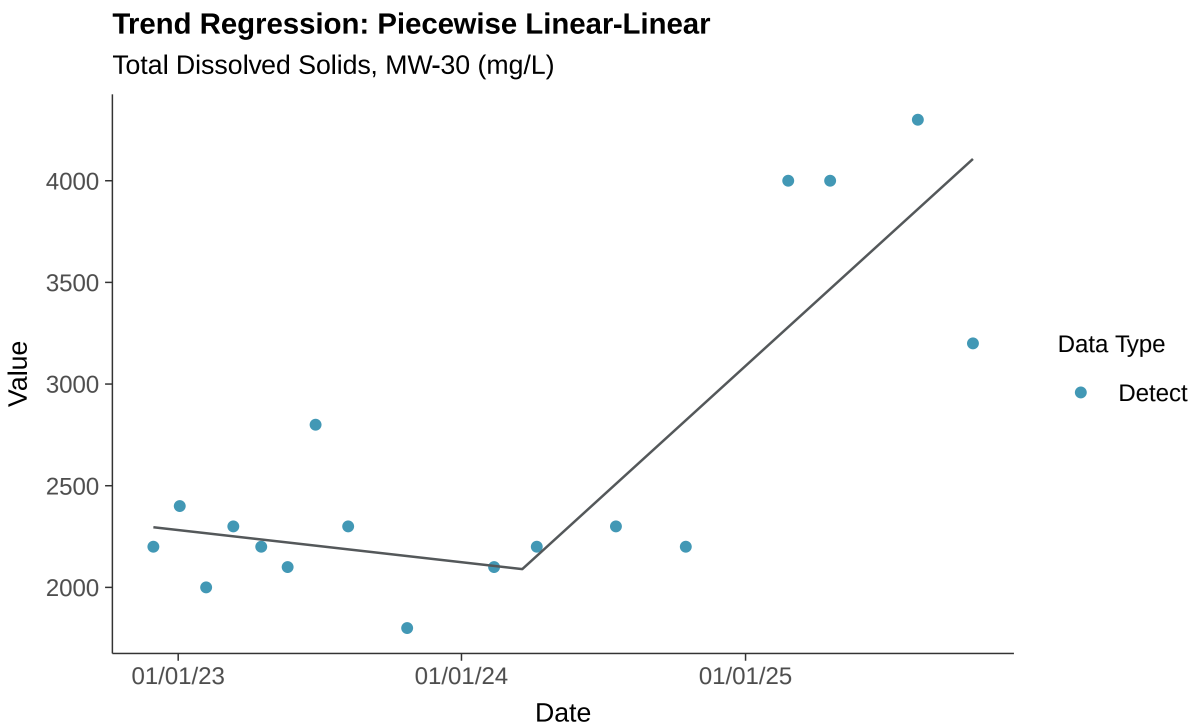
Total Dissolved Solids, MW-30 (mg/L)



Trend Regression: Mann-Kendall/Theil-Sen Estimate

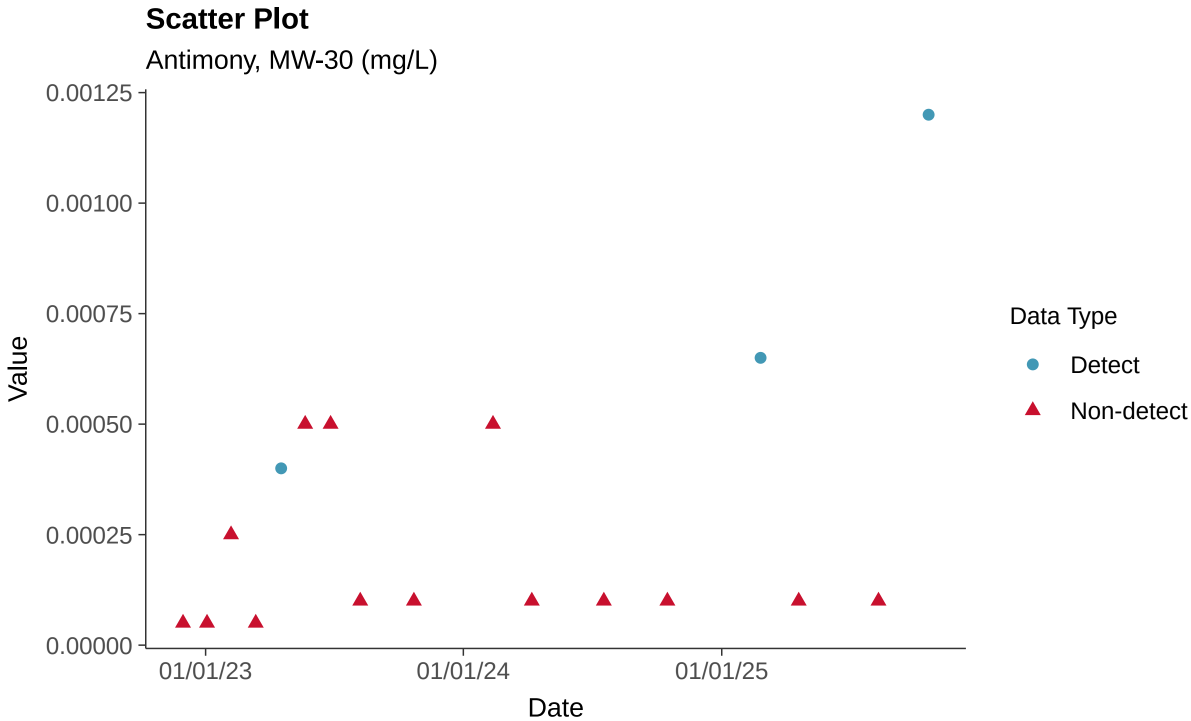
Total Dissolved Solids, MW-30 (mg/L)

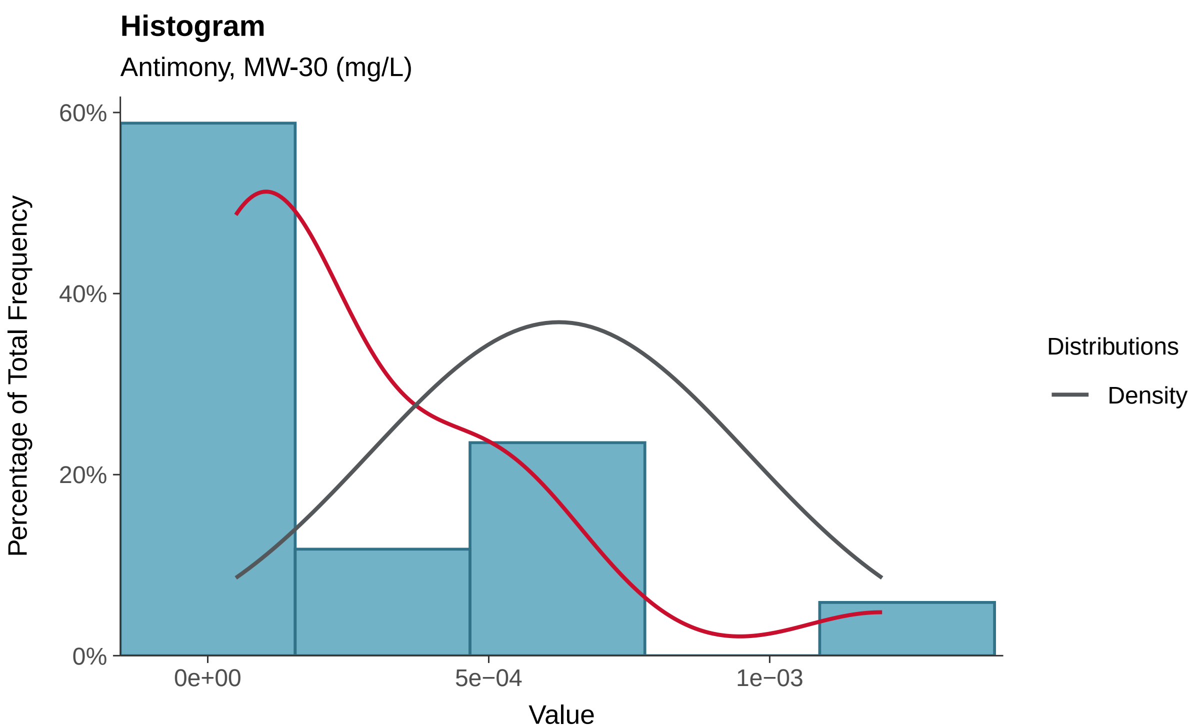


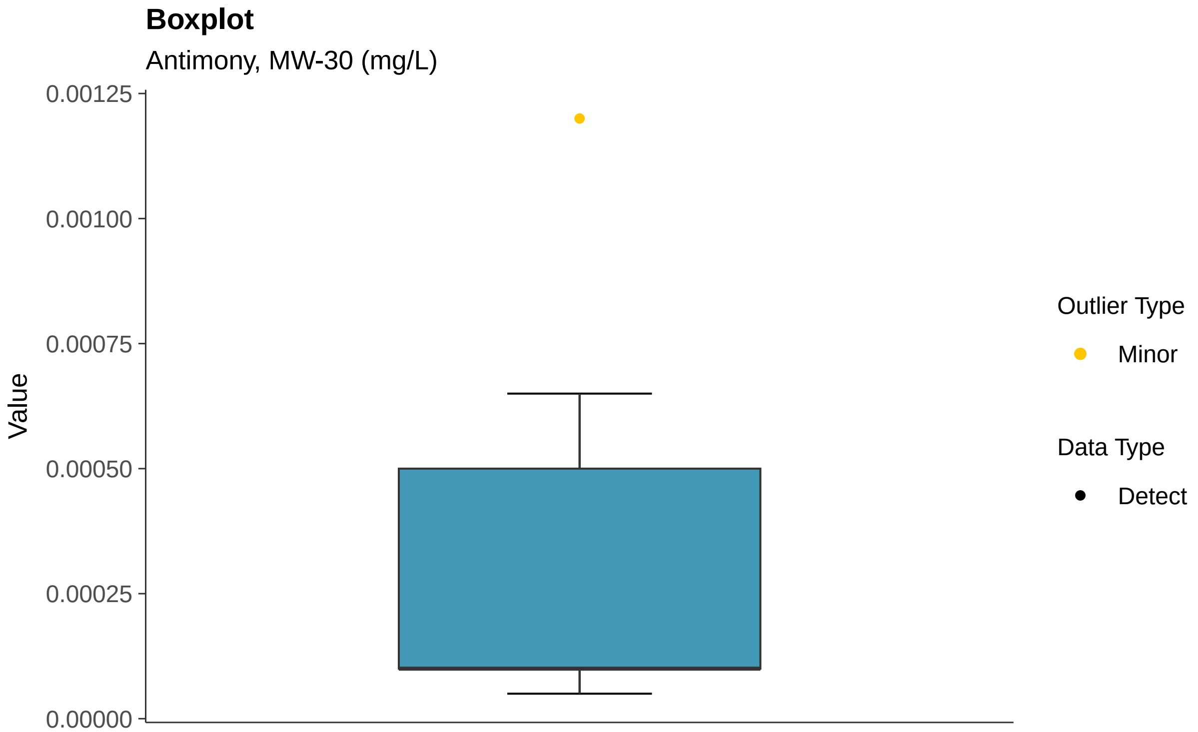

Trend Regression: Piecewise Linear-Linear
Total Dissolved Solids, MW-30 (mg/L)
Value
4000
3500
3000
2500
2000
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

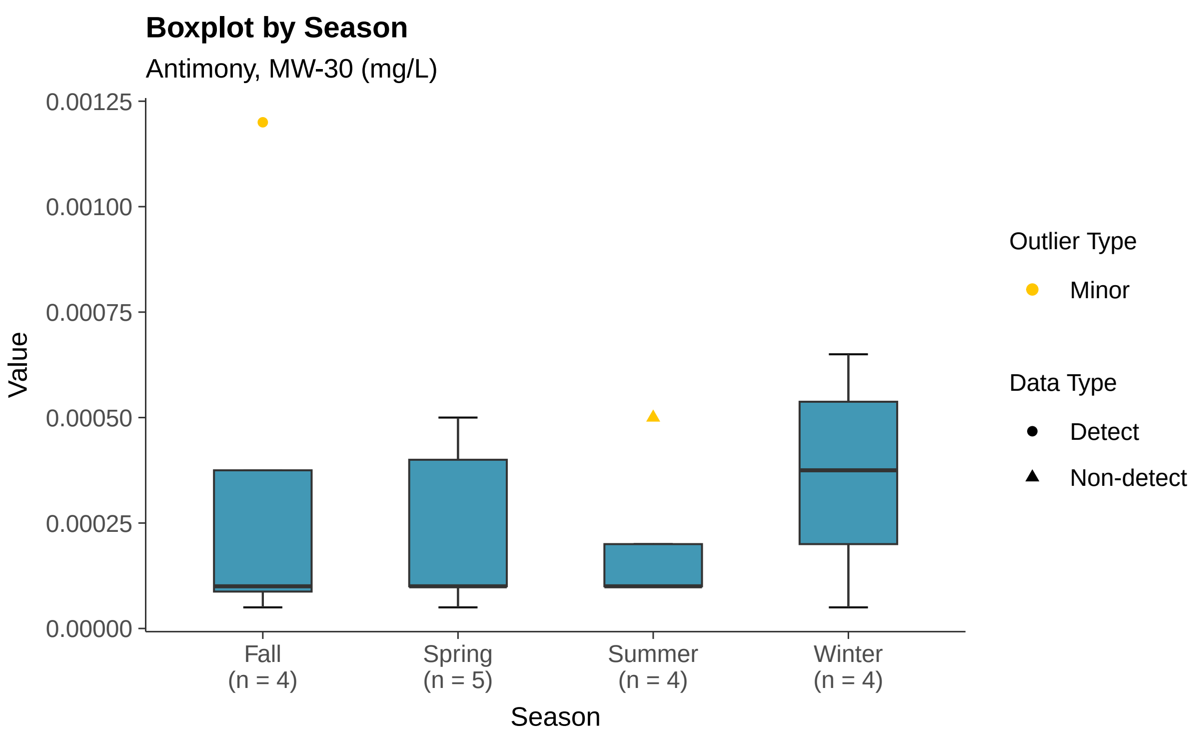
Appendix IV: Antimony, MW-30

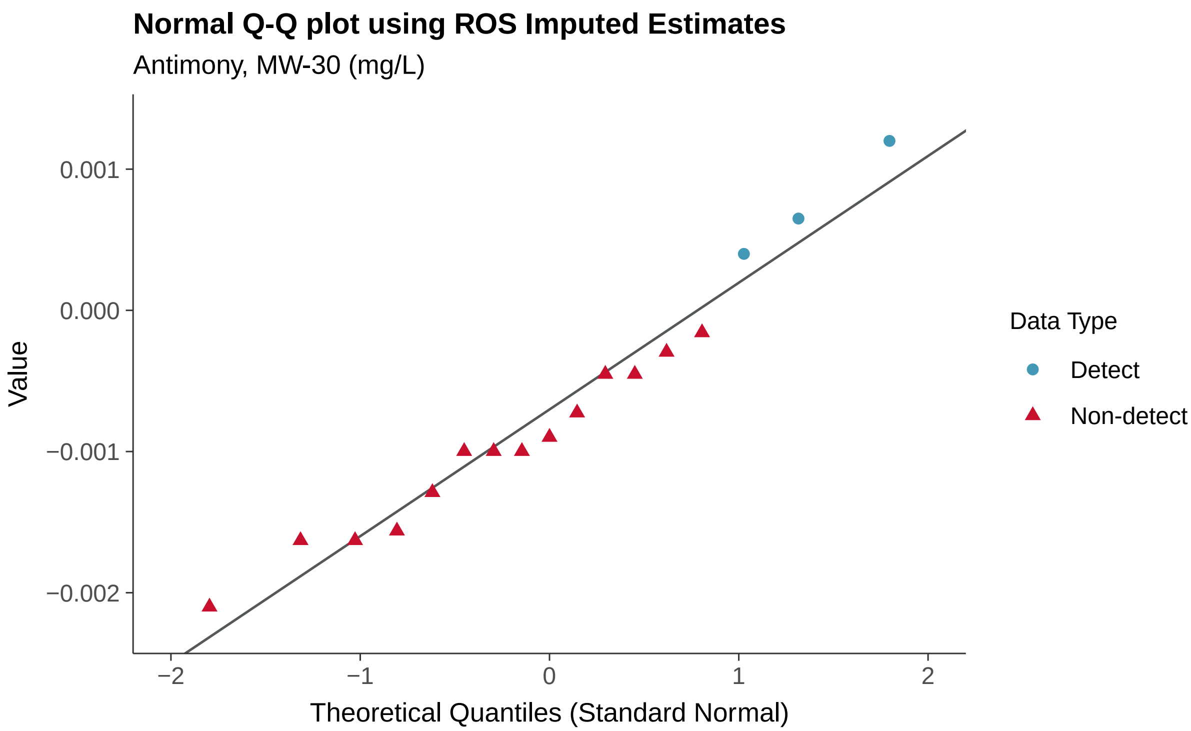
ID: 40_1_4_101






Boxplot
Antimony, MW-30 (mg/L)
0.00125
0.00100
0.00075
0.00050
0.00025
0.00000
Value
Outlier Type
Minor
Data Type
Detect


Boxplot by Season
Antimony, MW-30 (mg/L)
0.00125
0.00100
0.00075
0.00050
0.00025
0.00000
Value
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Minor
Data Type
Detect
Non-detect

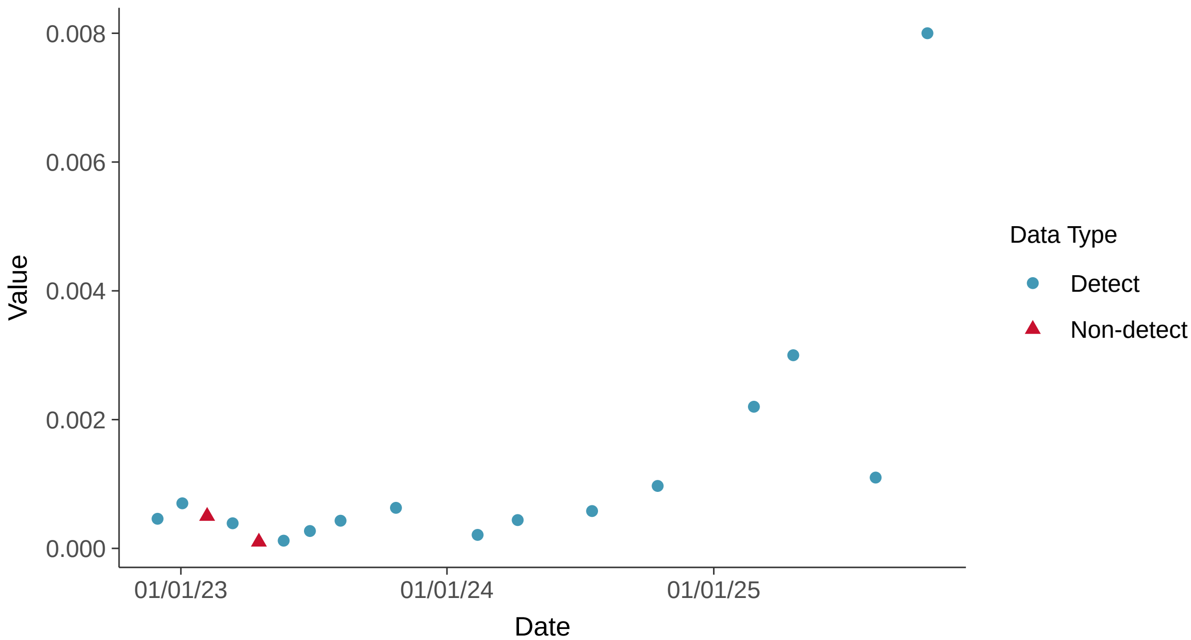

Normal Q-Q plot using ROS Imputed Estimates
Antimony, MW-30 (mg/L)
Value
0.001
0.000
−0.001
−0.002
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

Appendix IV: Arsenic, MW-30

ID: 40_1_4_102

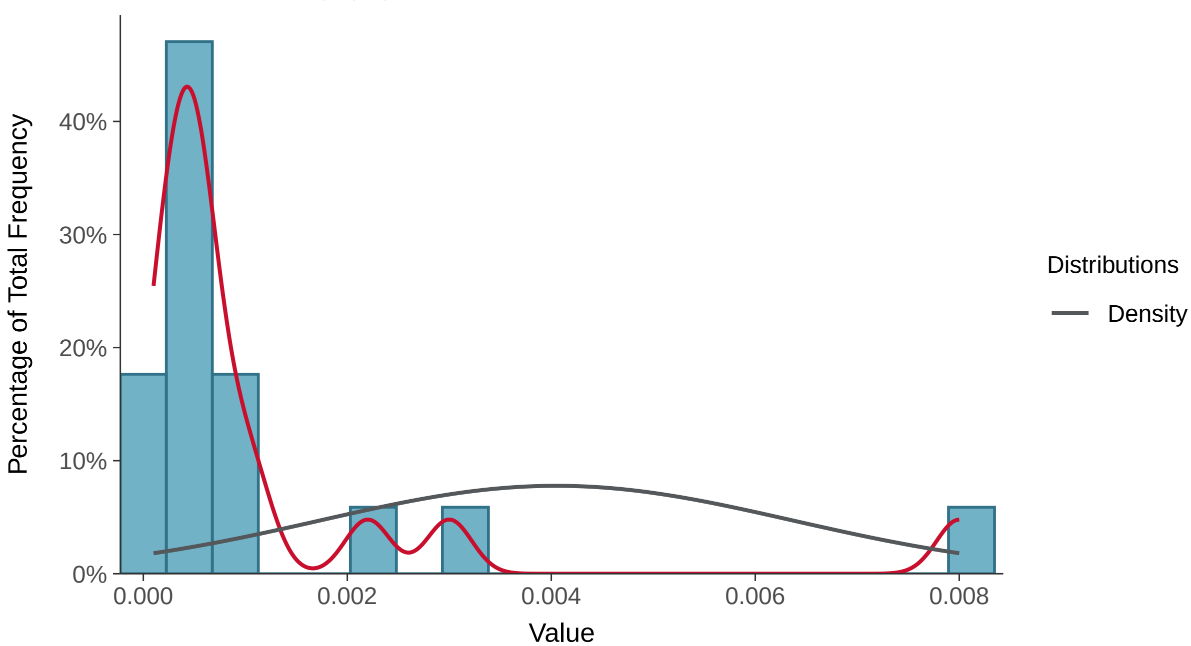
Scatter Plot

Arsenic, MW-30 (mg/L)



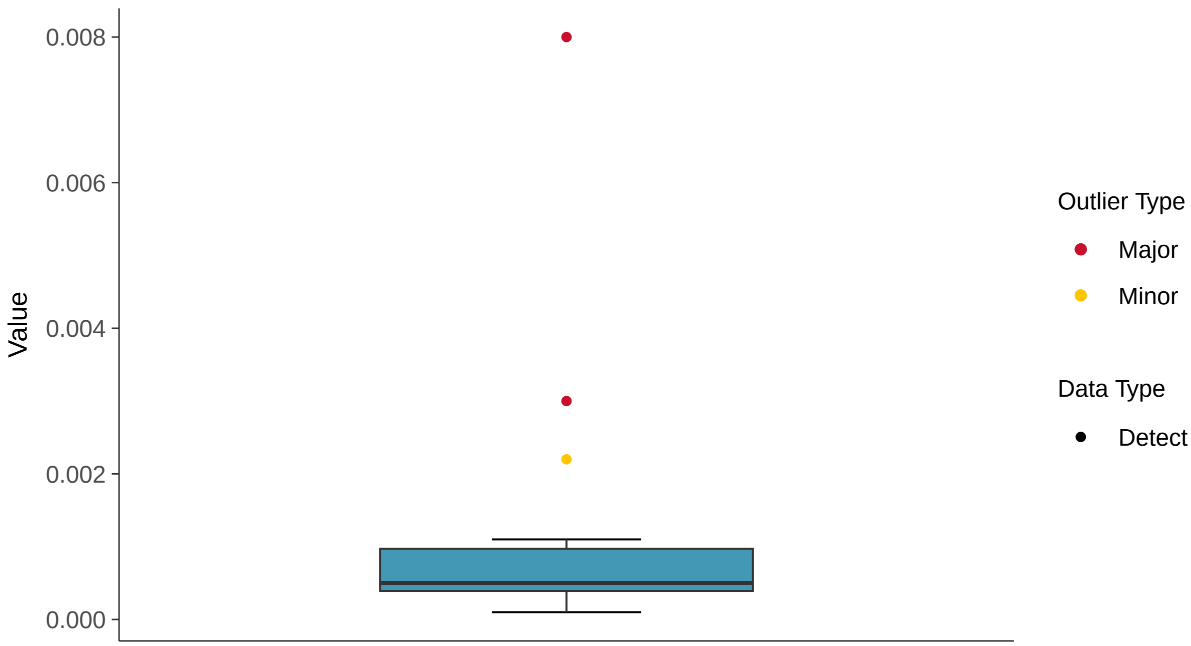
Histogram

Arsenic, MW-30 (mg/L)



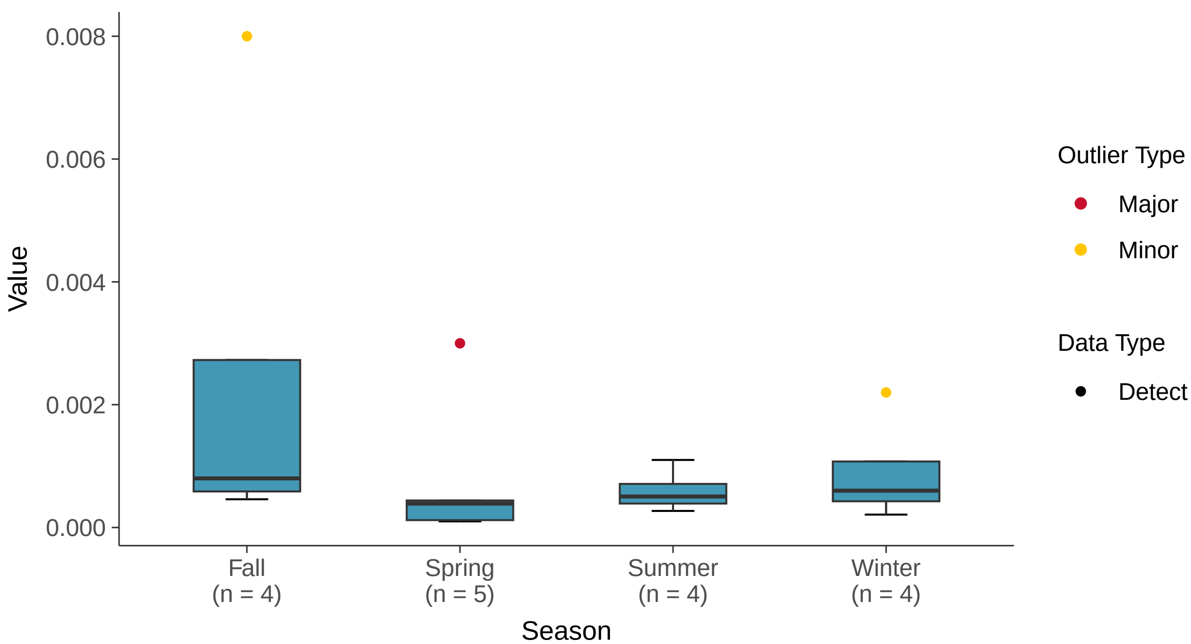
Boxplot

Arsenic, MW-30 (mg/L)



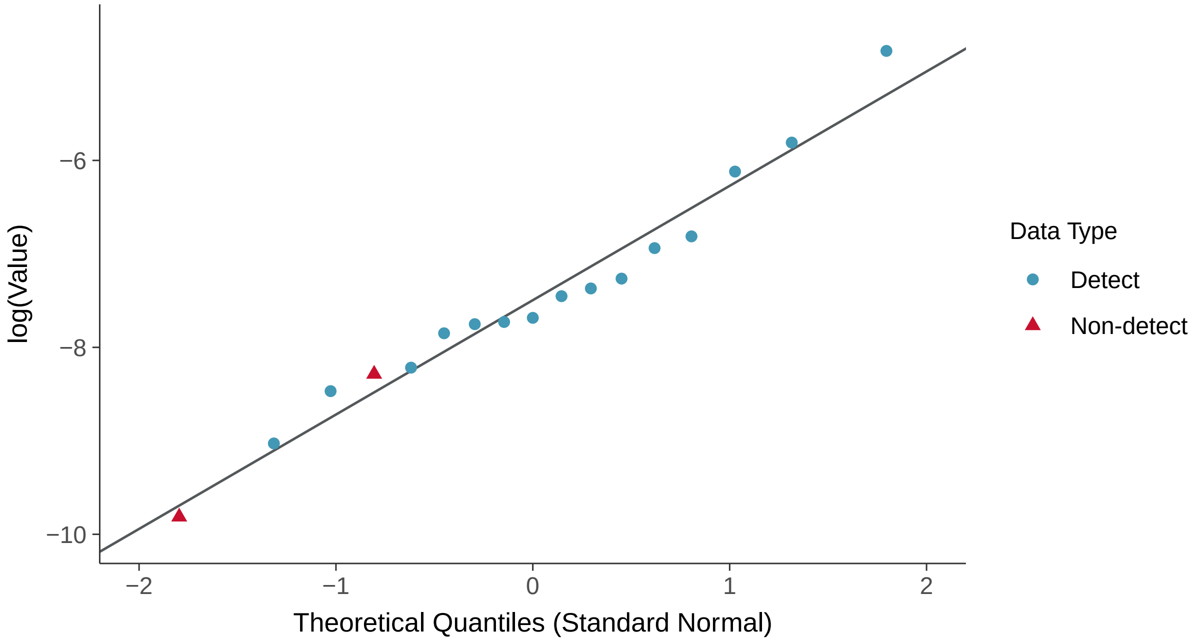
Boxplot by Season

Arsenic, MW-30 (mg/L)



Lognormal Q-Q plot using ROS Imputed Estimates

Arsenic, MW-30 (mg/L)

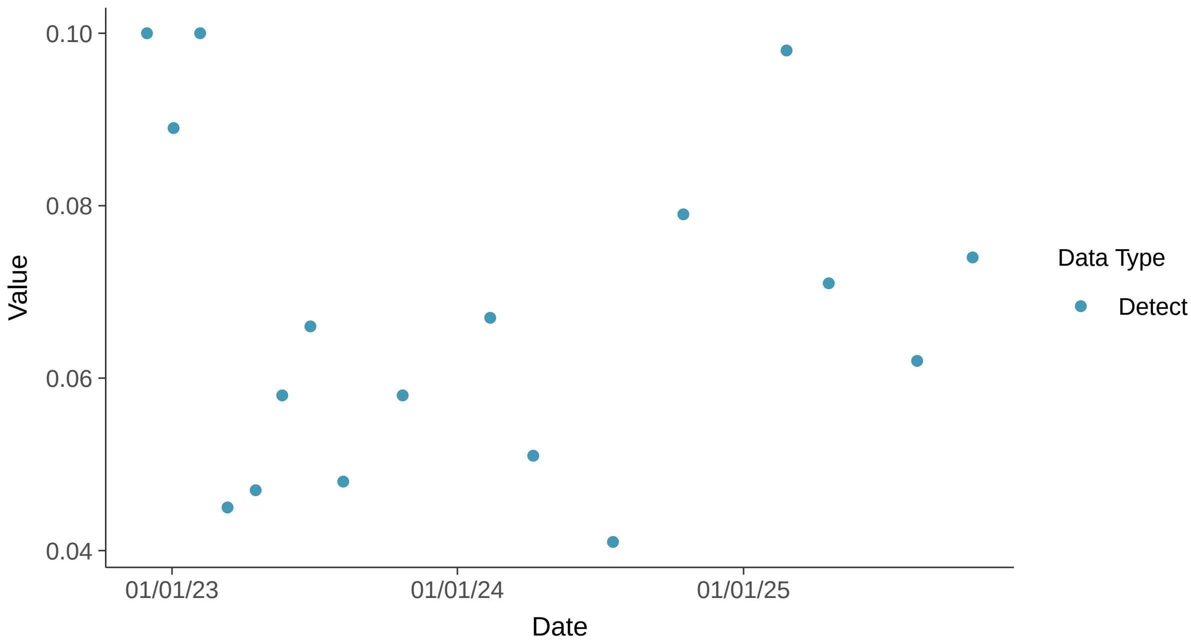


Appendix IV: Barium, MW-30

ID: 40_1_4_103

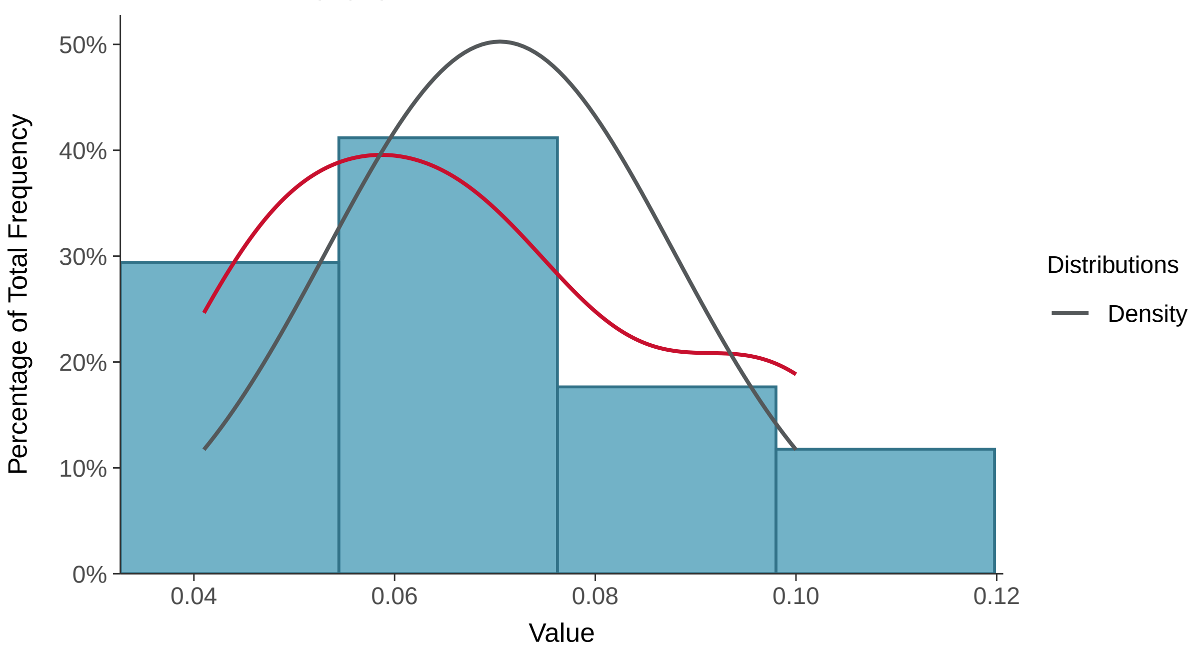
Scatter Plot

Barium, MW-30 (mg/L)



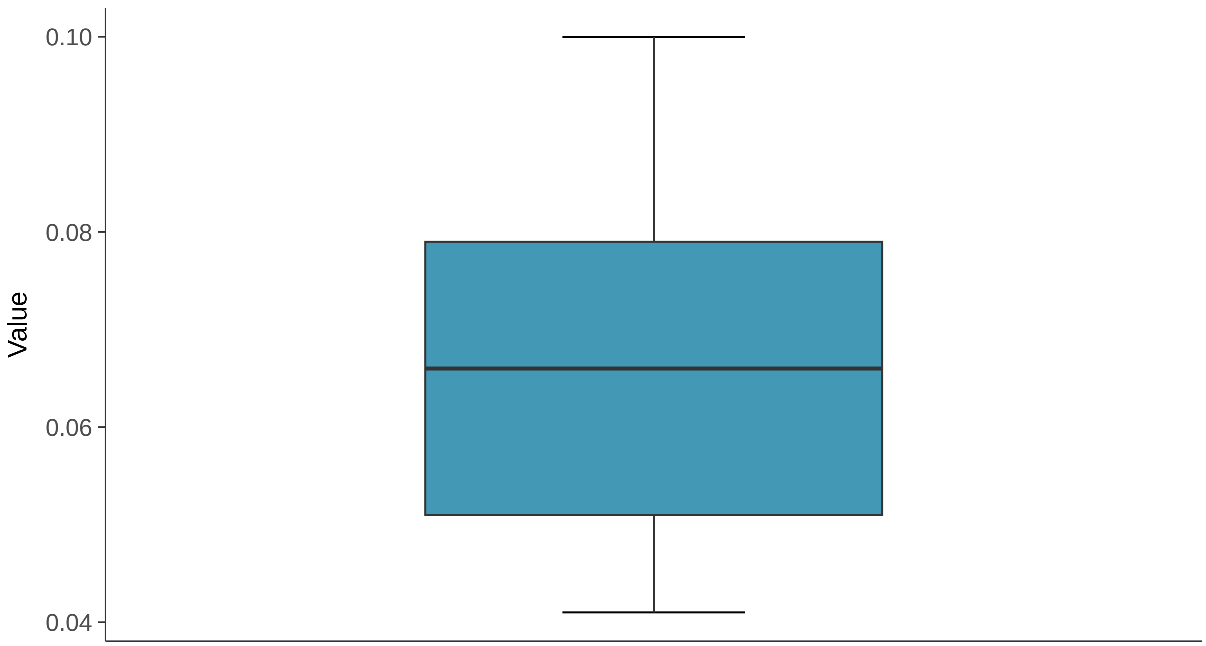
Histogram

Barium, MW-30 (mg/L)



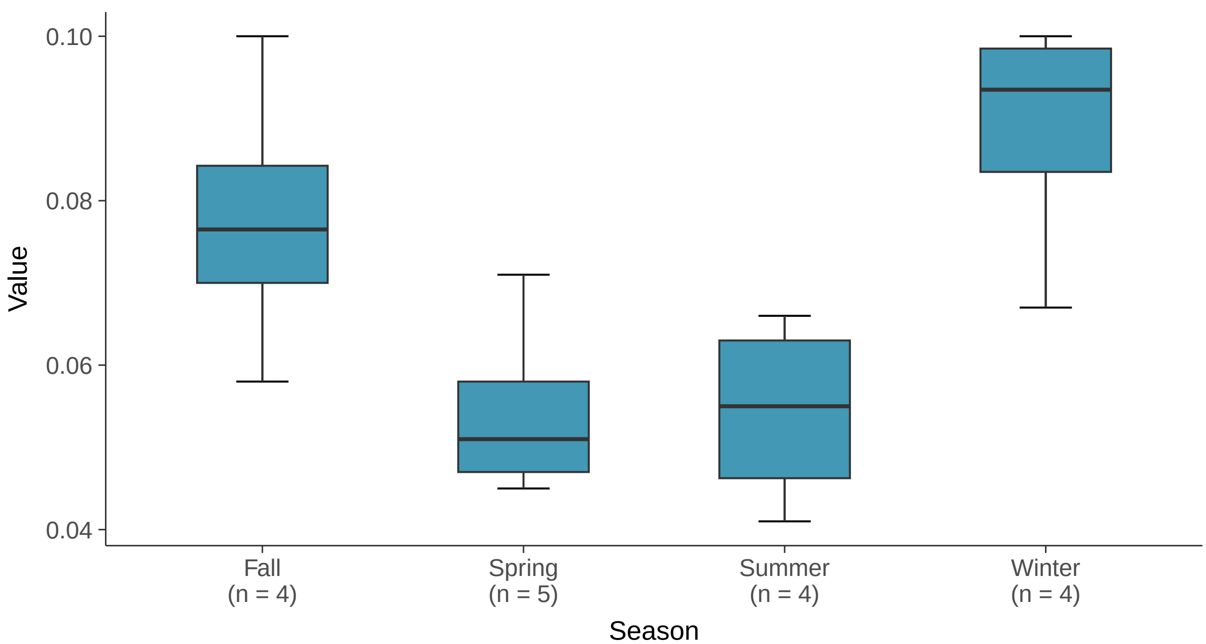
Boxplot

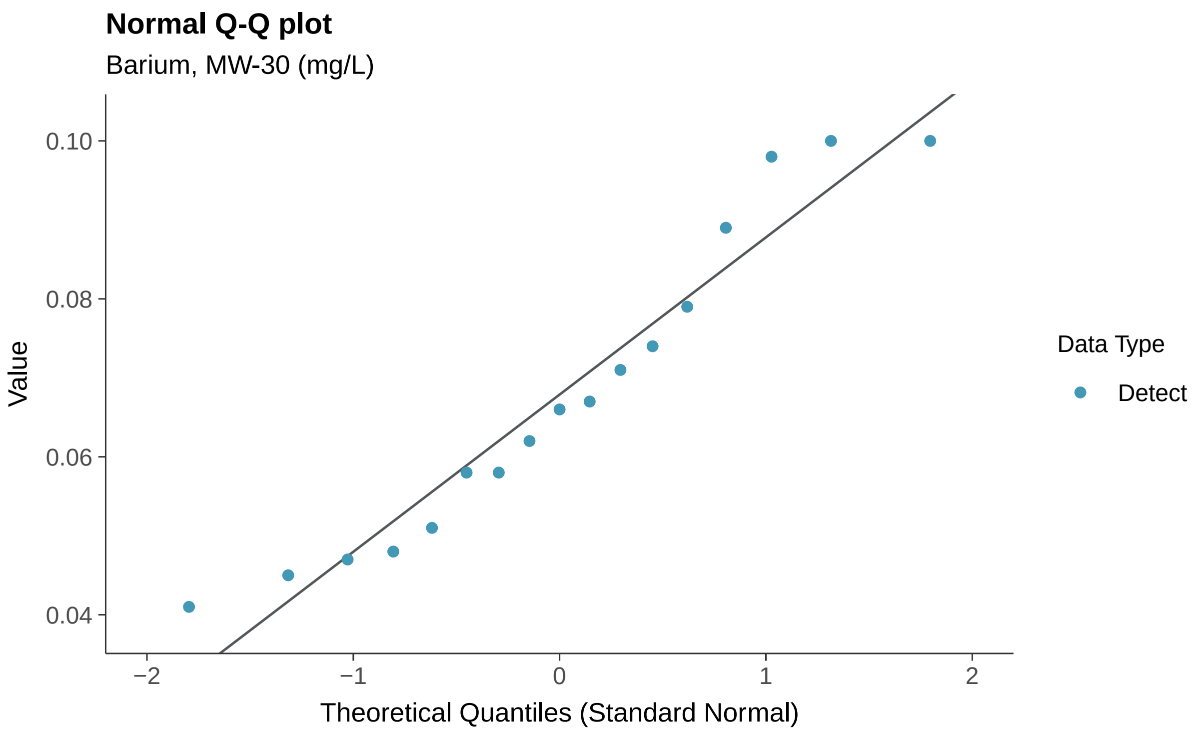
Barium, MW-30 (mg/L)

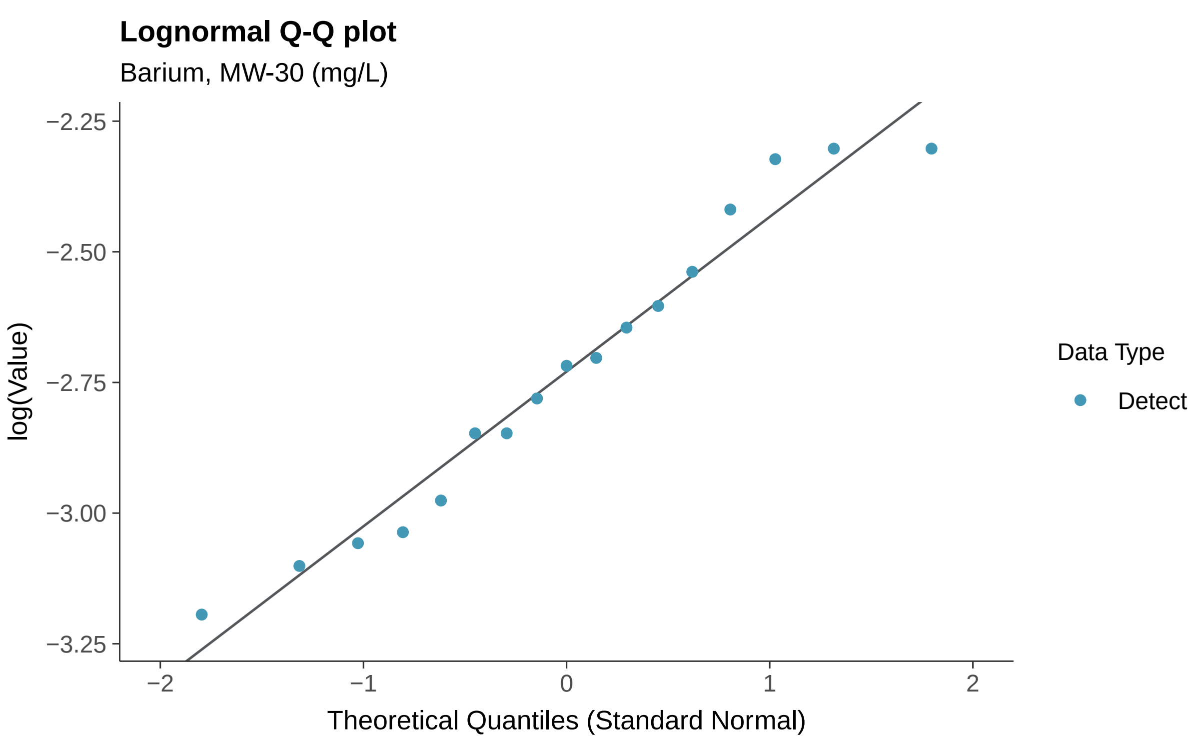


Boxplot by Season

Barium, MW-30 (mg/L)

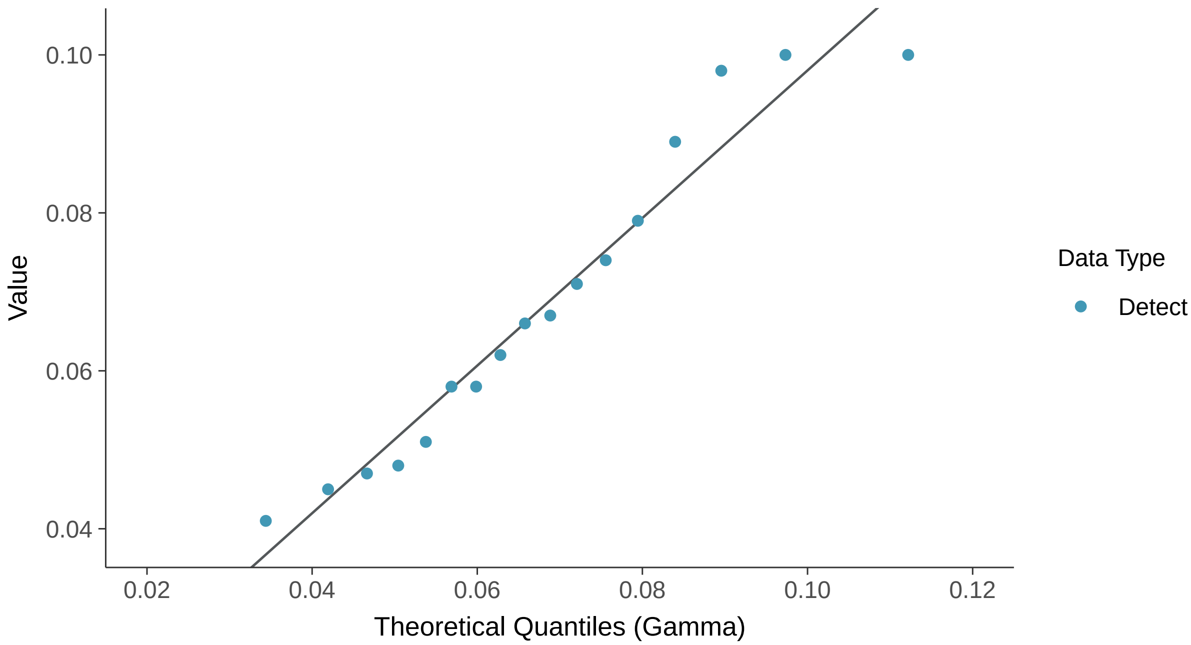



Normal Q-Q plot
Barium, MW-30 (mg/L)
Value
0.10
0.08
0.06
0.04
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Barium, MW-30 (mg/L)
log(Value)
−2.25
−2.50
−2.75
−3.00
−3.25
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

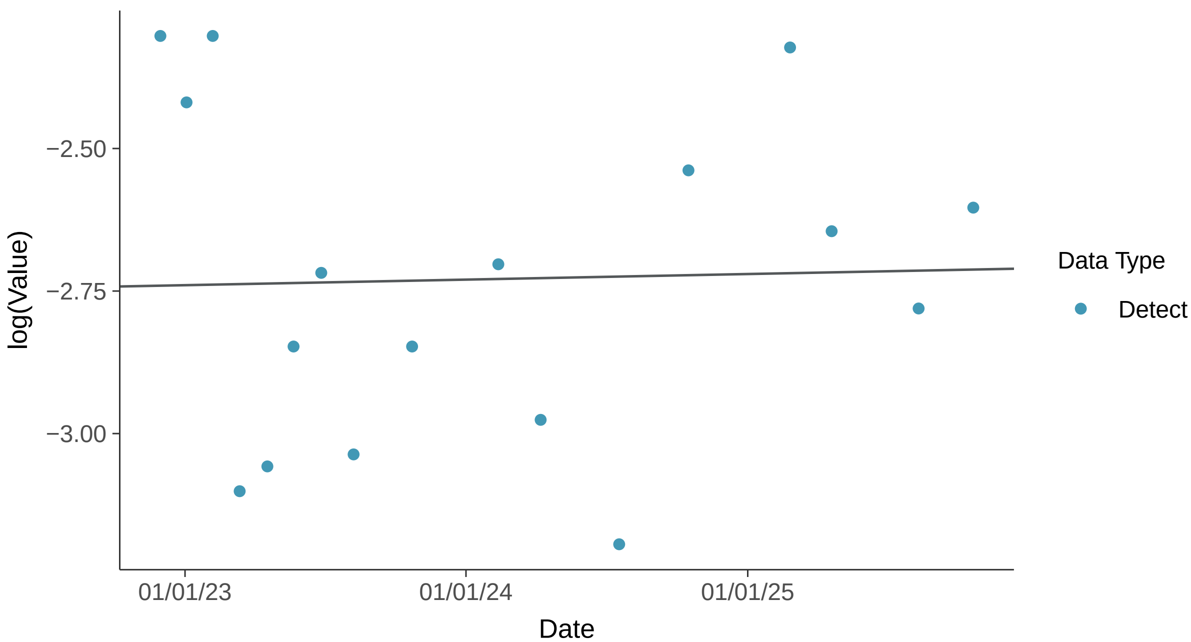
Gamma Q-Q plot

Barium, MW-30 (mg/L)



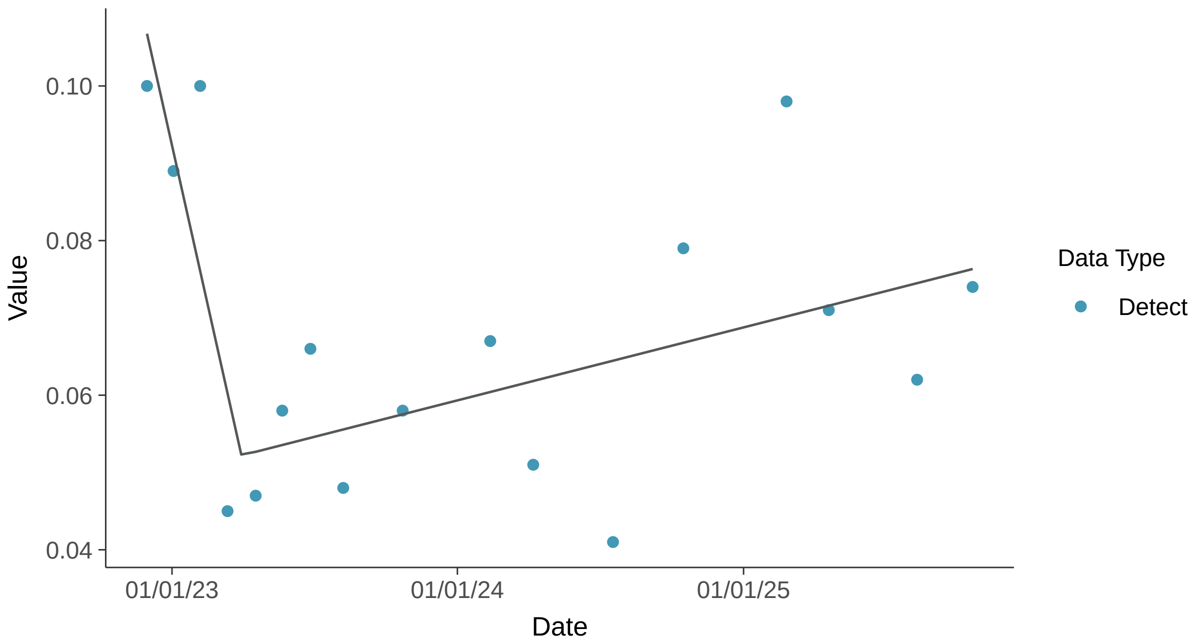
Trend Regression: Lognormal MLE

Barium, MW-30 (mg/L)



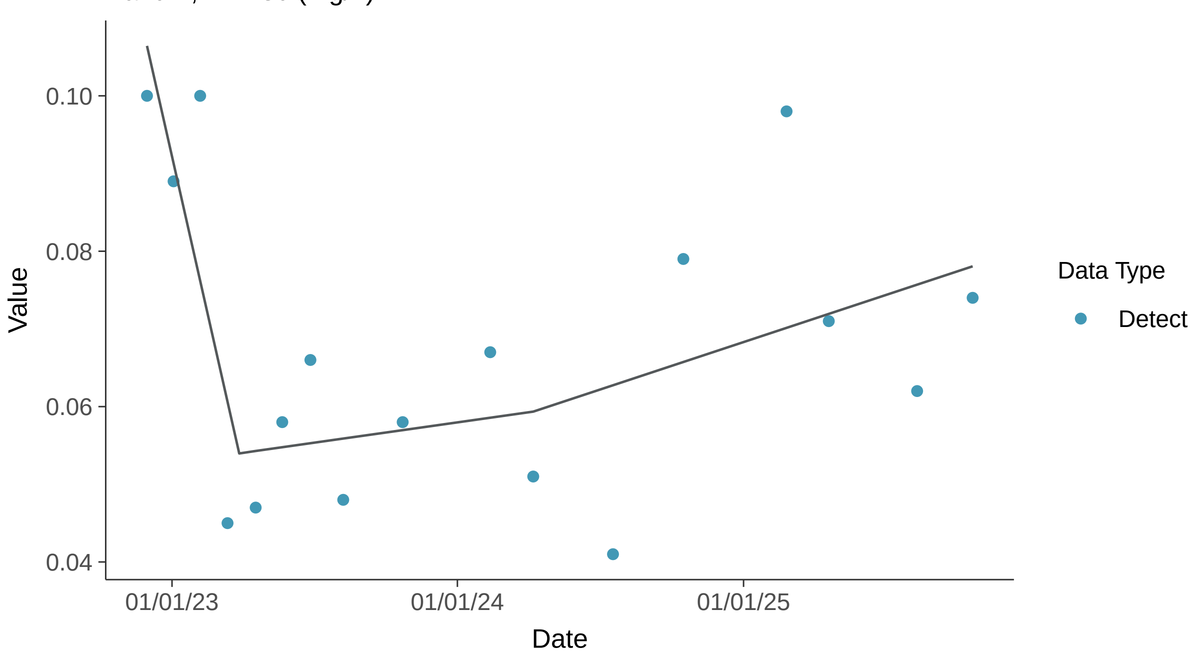
Trend Regression: Piecewise Linear-Linear

Barium, MW-30 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Barium, MW-30 (mg/L)

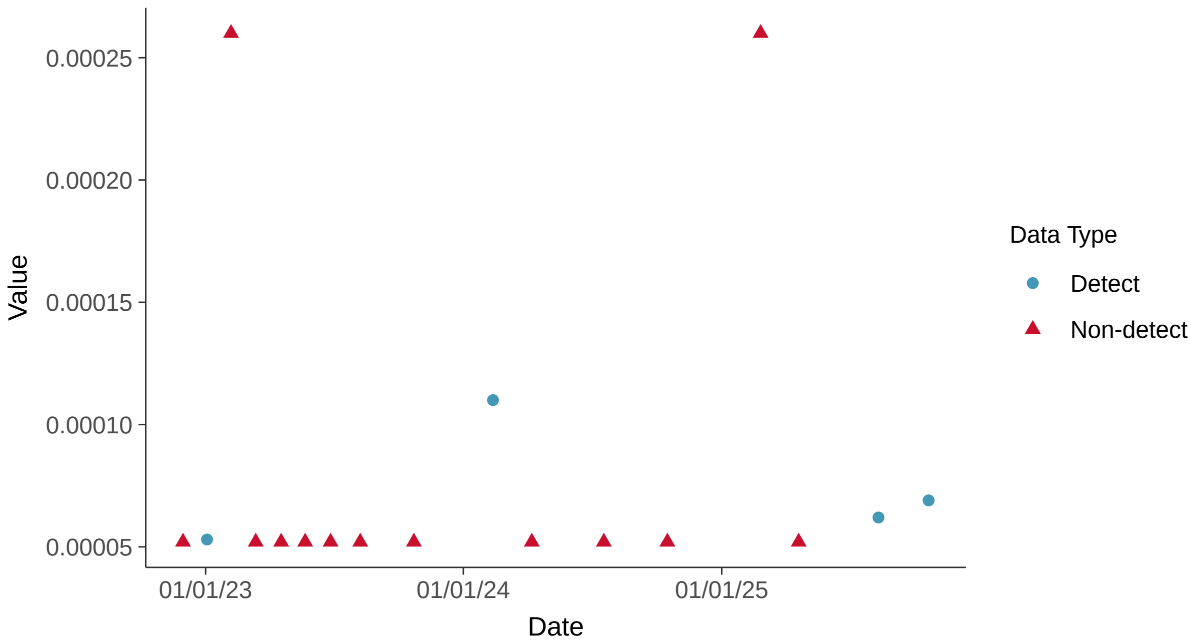


Appendix IV: Beryllium, MW-30

ID: 40_1_4_104

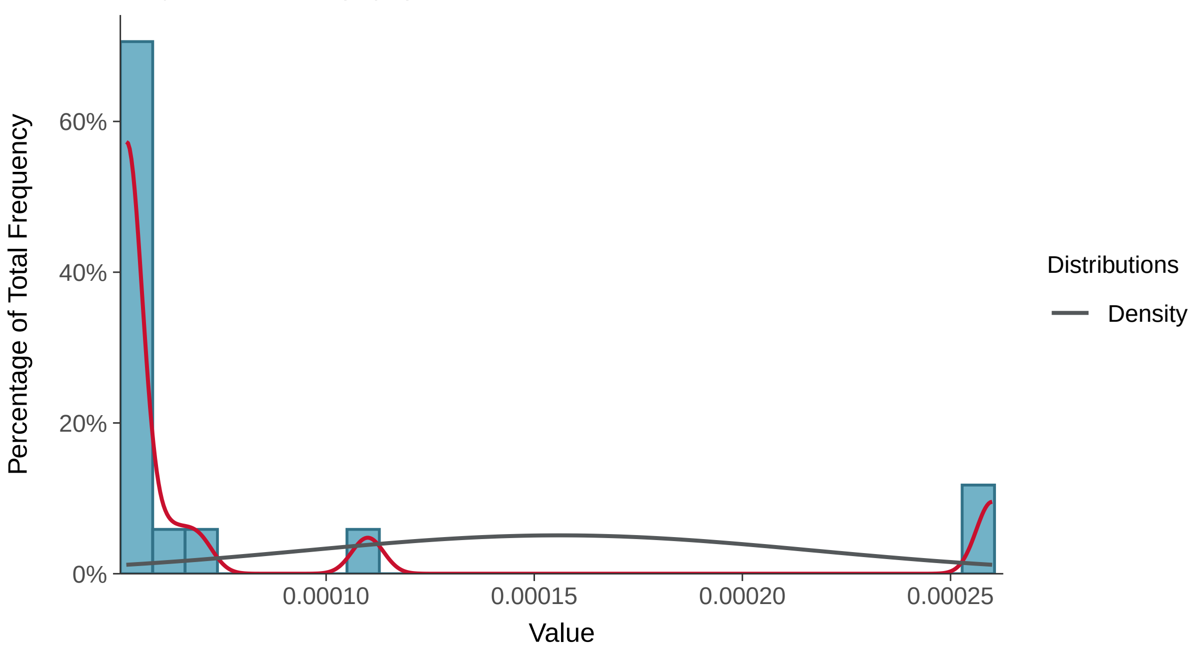
Scatter Plot

Beryllium, MW-30 (mg/L)



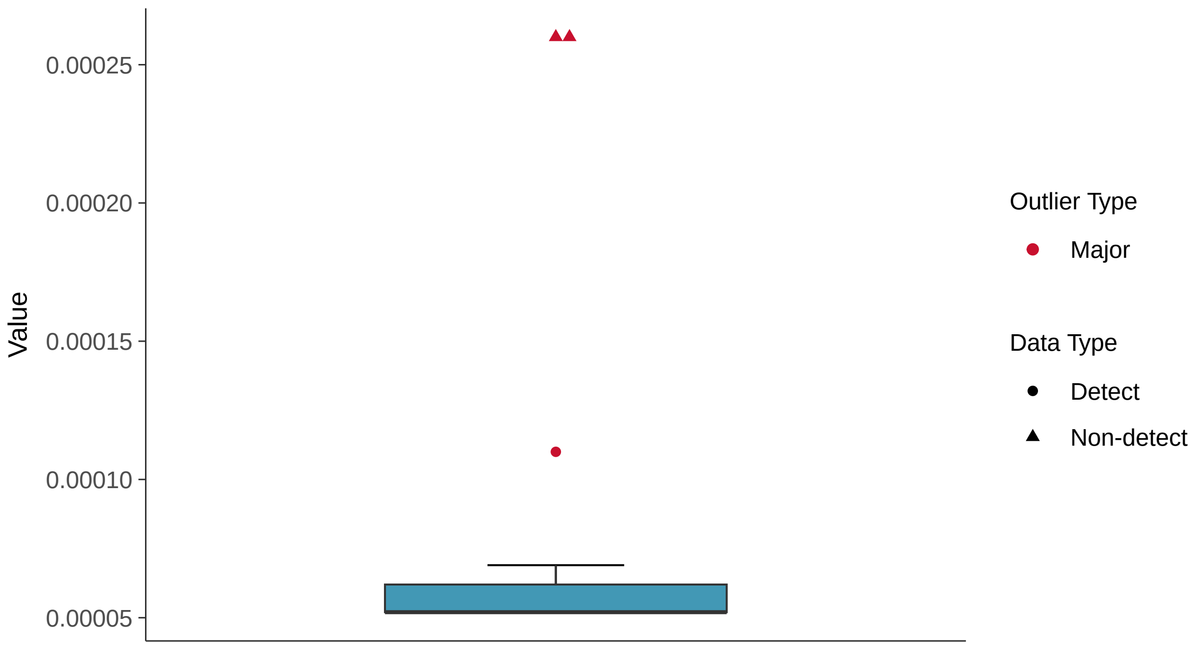
Histogram

Beryllium, MW-30 (mg/L)



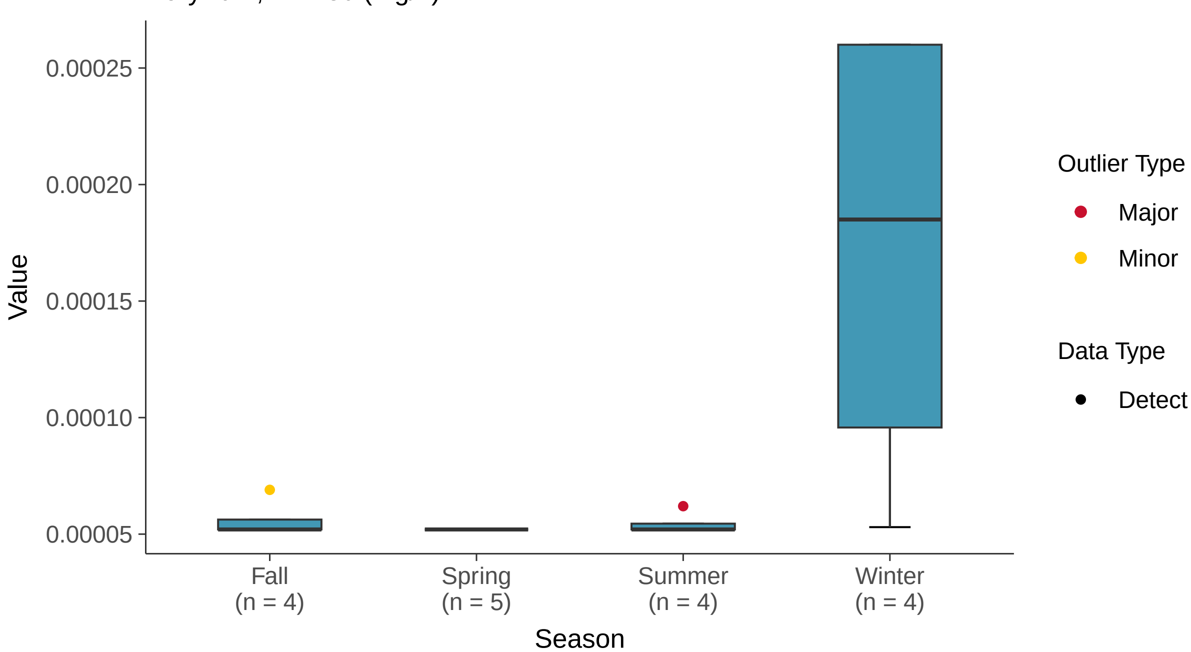
Boxplot

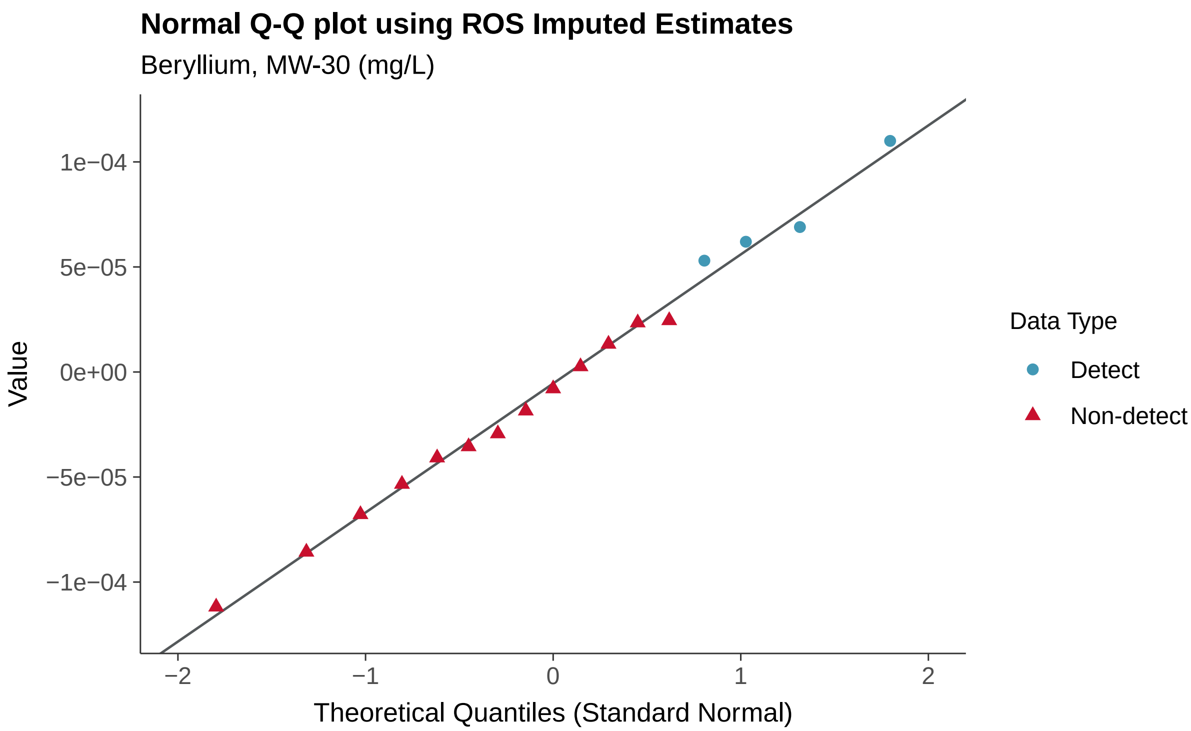
Beryllium, MW-30 (mg/L)

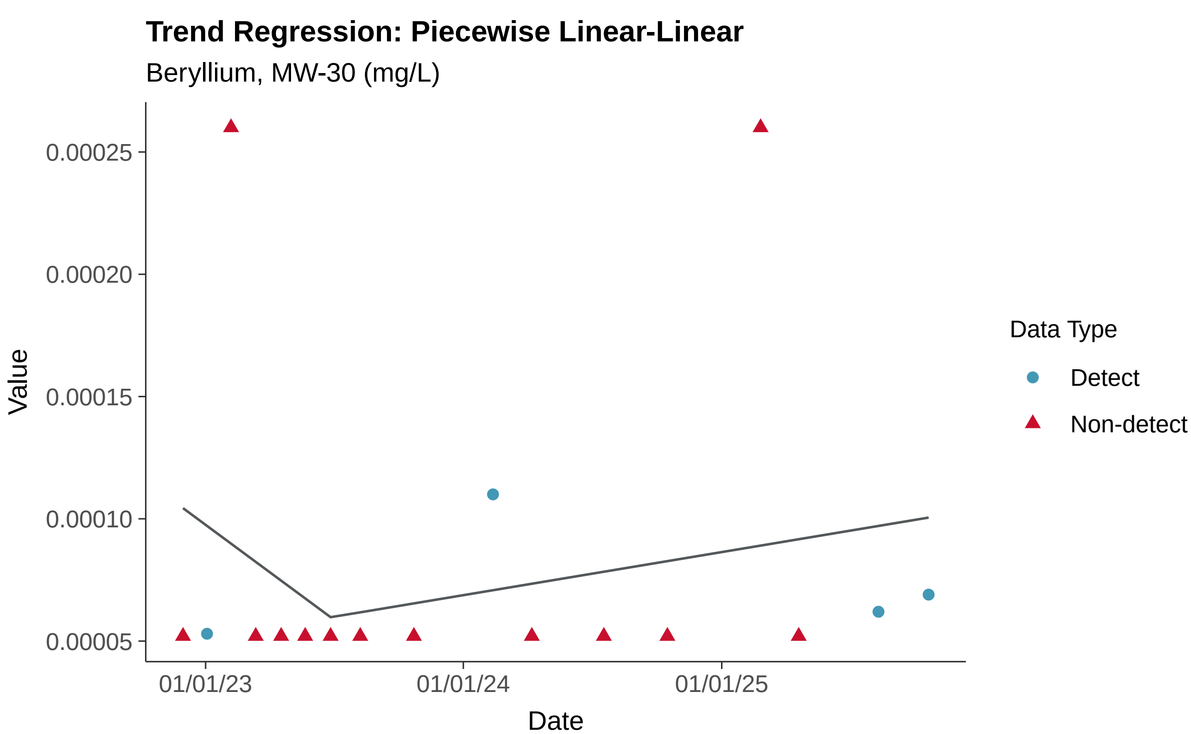


Boxplot by Season

Beryllium, MW-30 (mg/L)

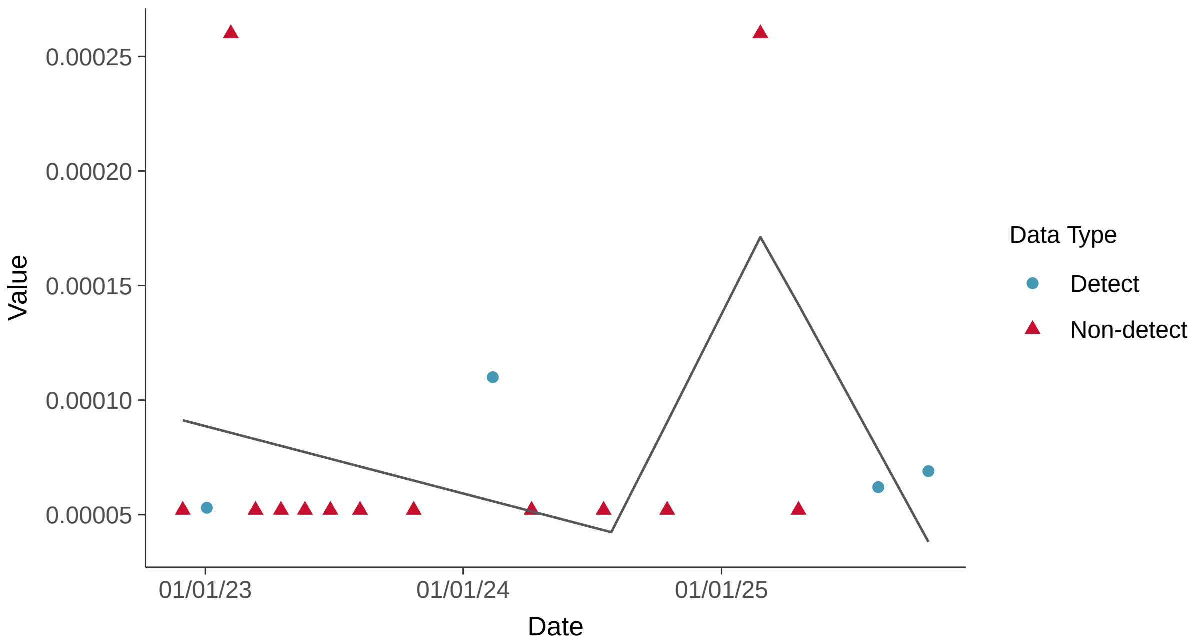



Normal Q-Q plot using ROS Imputed Estimates
Beryllium, MW-30 (mg/L)
Value
1e−04
5e−05
0e+00
−5e−05
−1e−04
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Beryllium, MW-30 (mg/L)
Value
0.00025
0.00020
0.00015
0.00010
0.00005
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

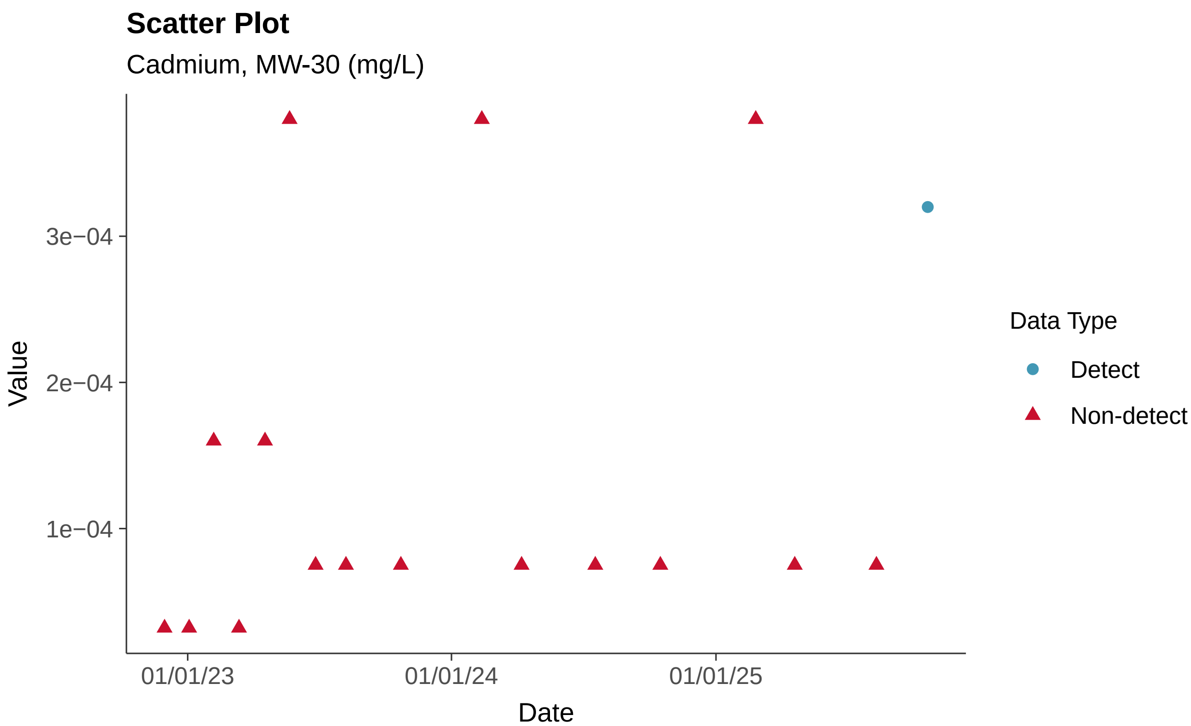
Trend Regression: Piecewise Linear-Linear-Linear

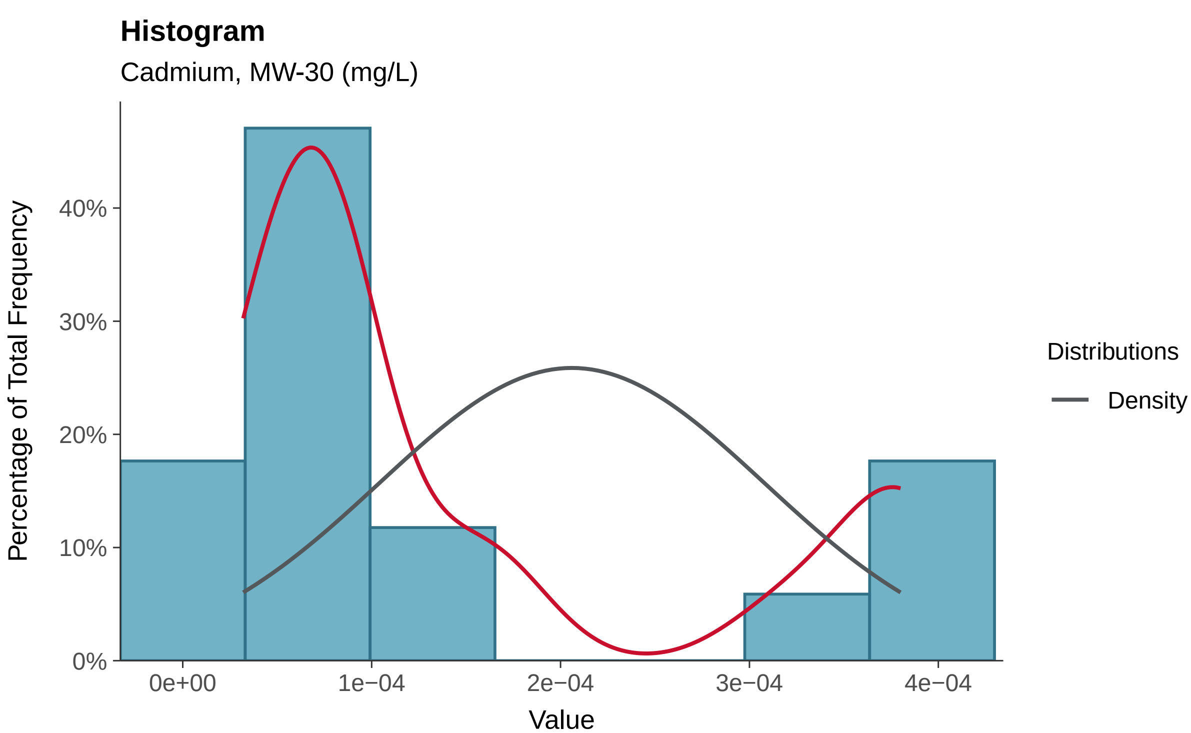
Beryllium, MW-30 (mg/L)



Appendix IV: Cadmium, MW-30

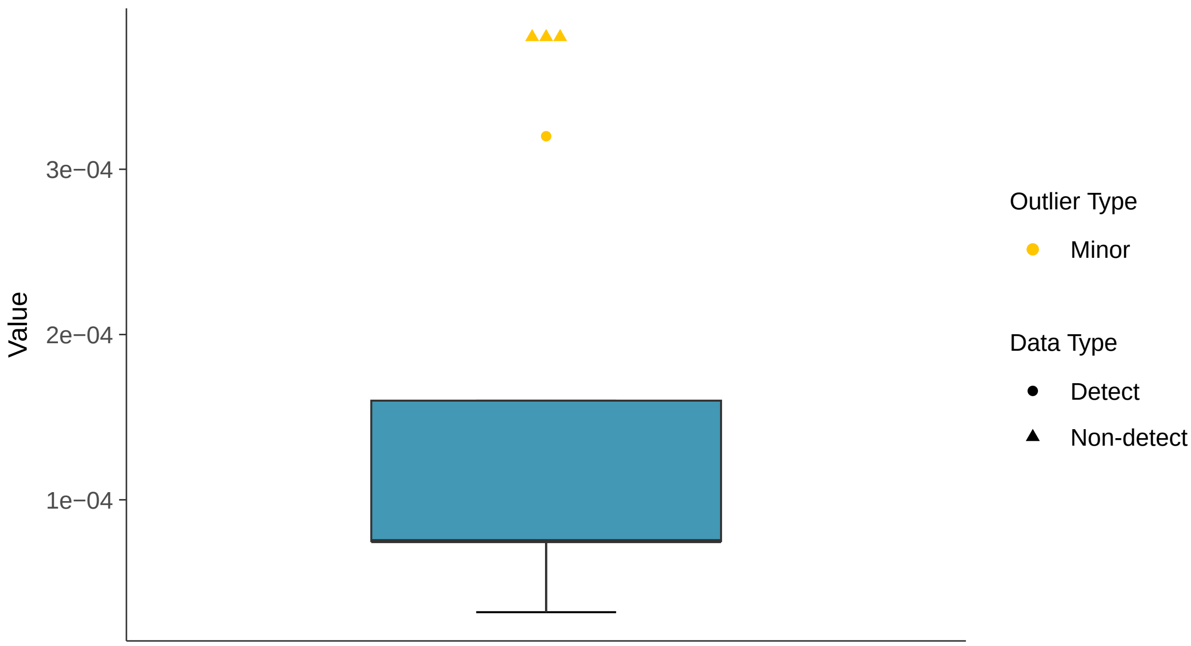
ID: 40_1_4_106





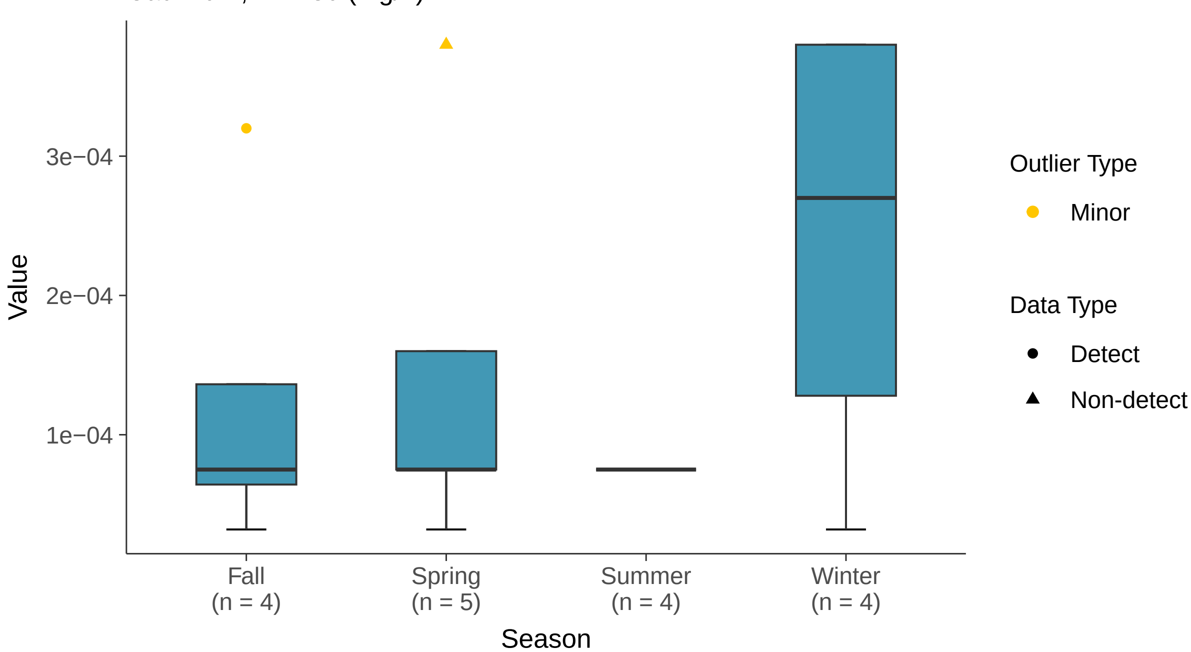
Boxplot

Cadmium, MW-30 (mg/L)

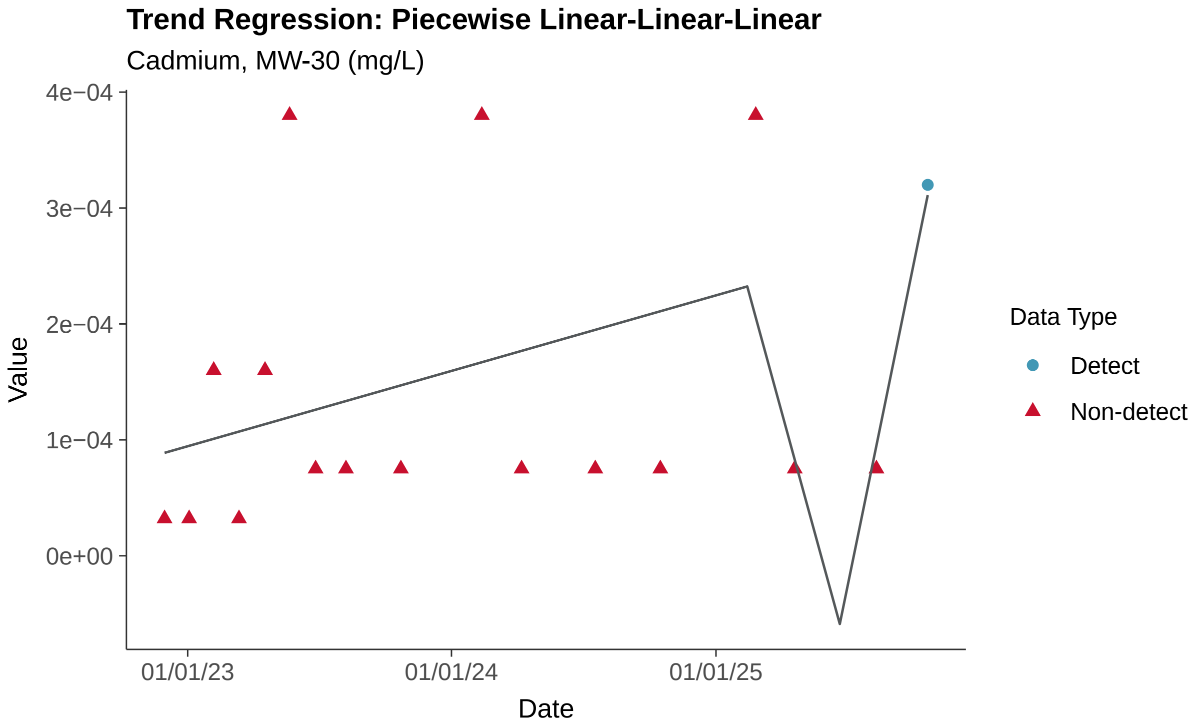


Boxplot by Season

Cadmium, MW-30 (mg/L)

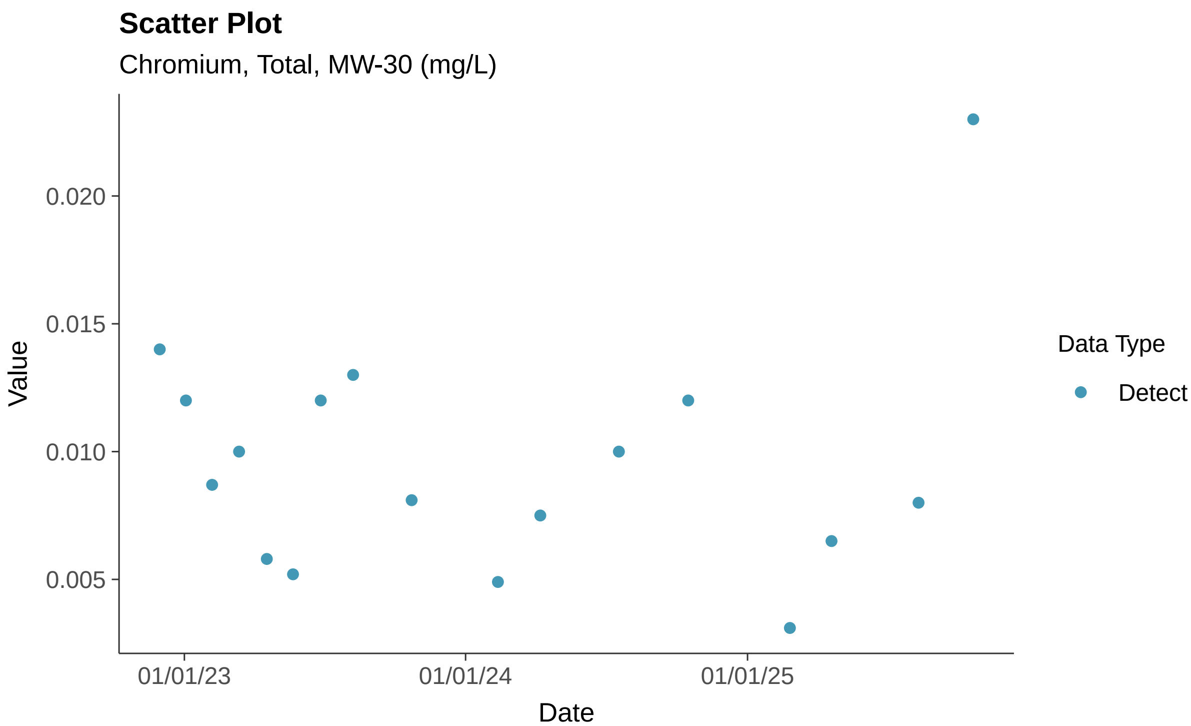


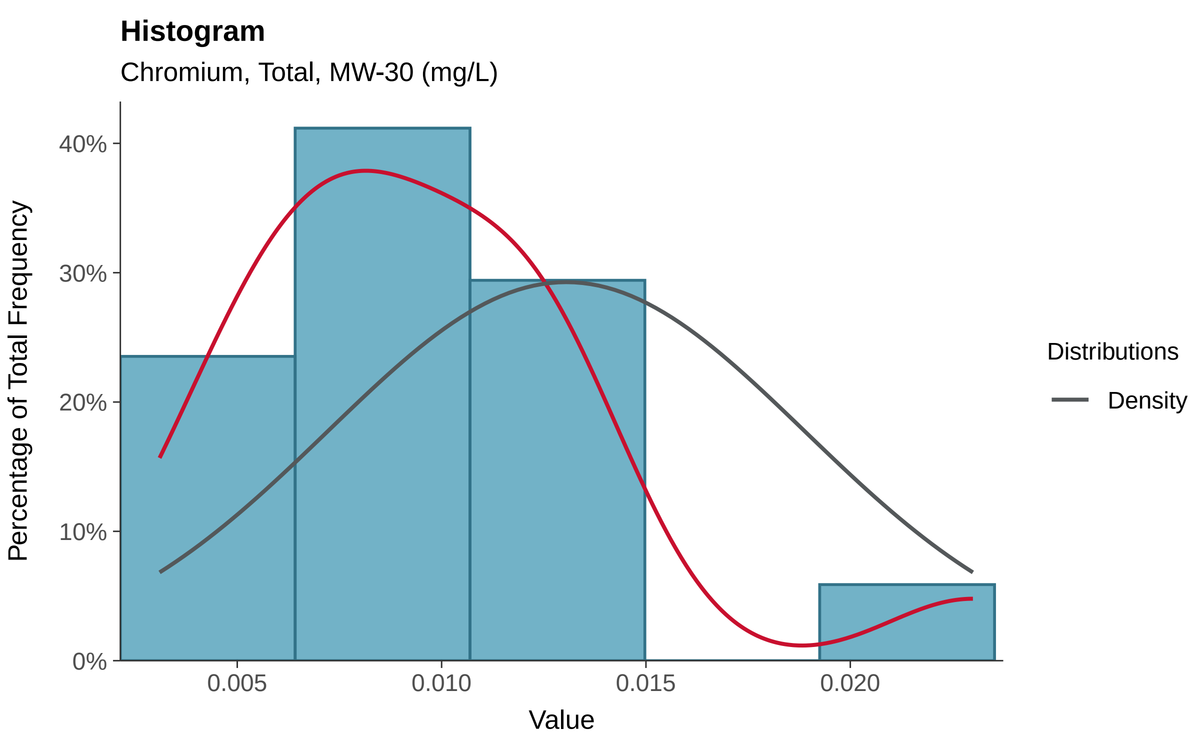
Grand Haven
Downgradient Wells as of October 2025



Appendix IV: Chromium, Total, MW-30

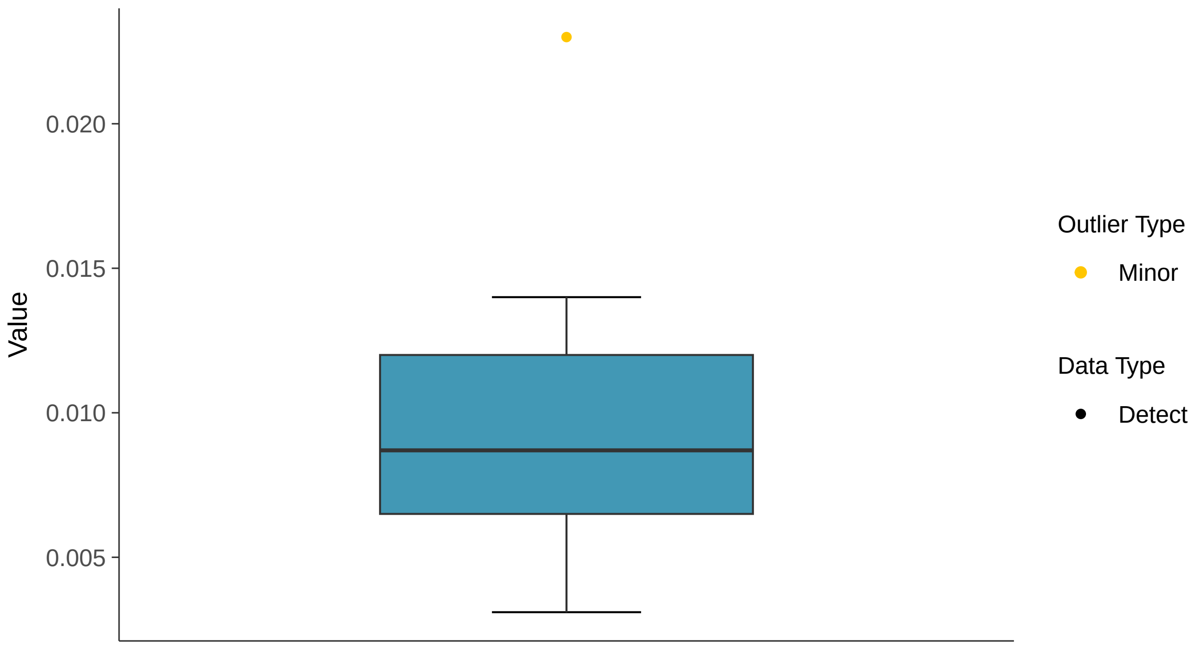
ID: 40_1_4_109





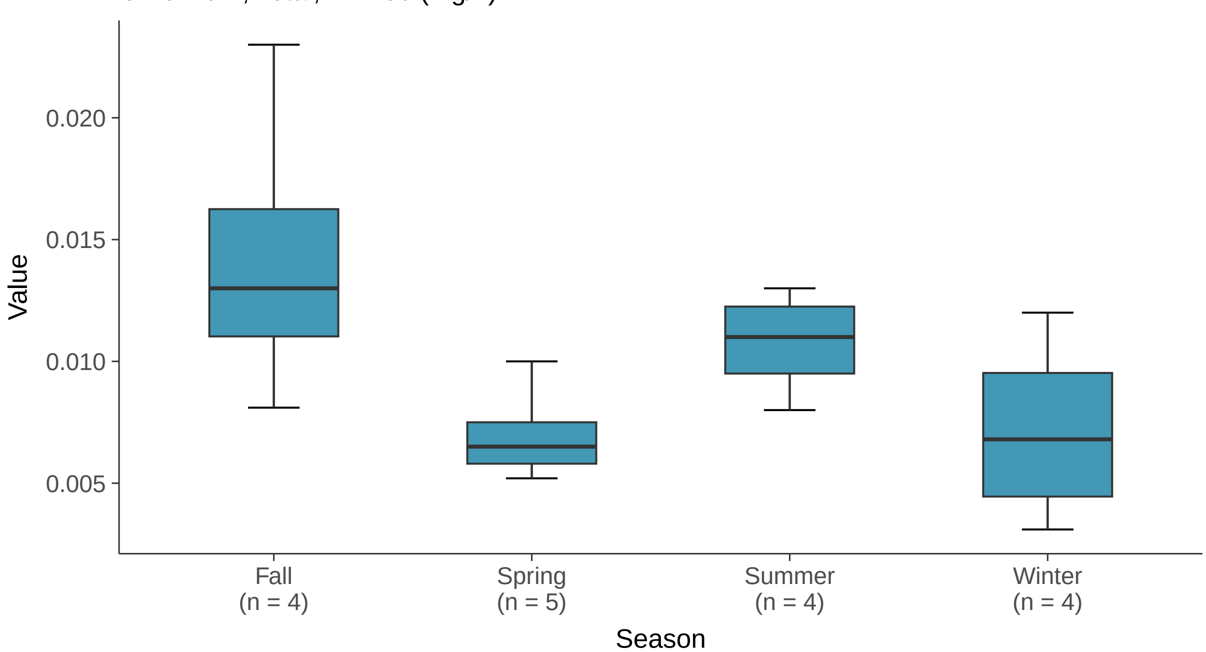
Boxplot

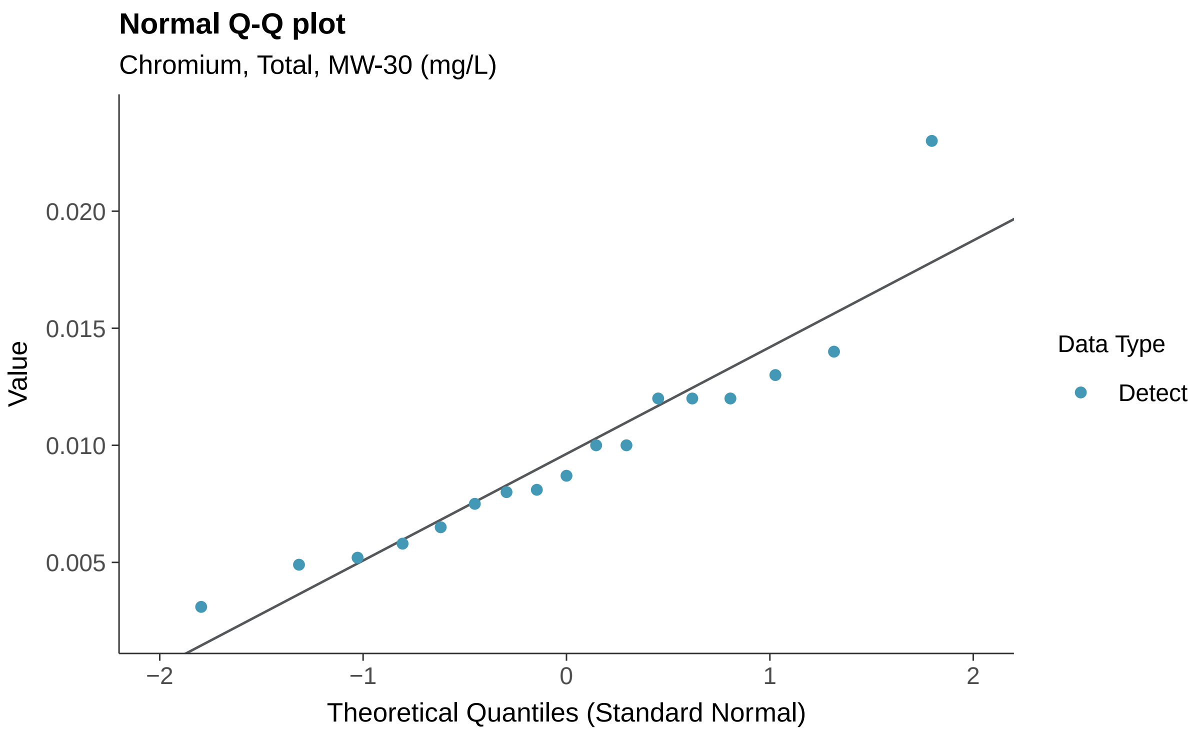
Chromium, Total, MW-30 (mg/L)

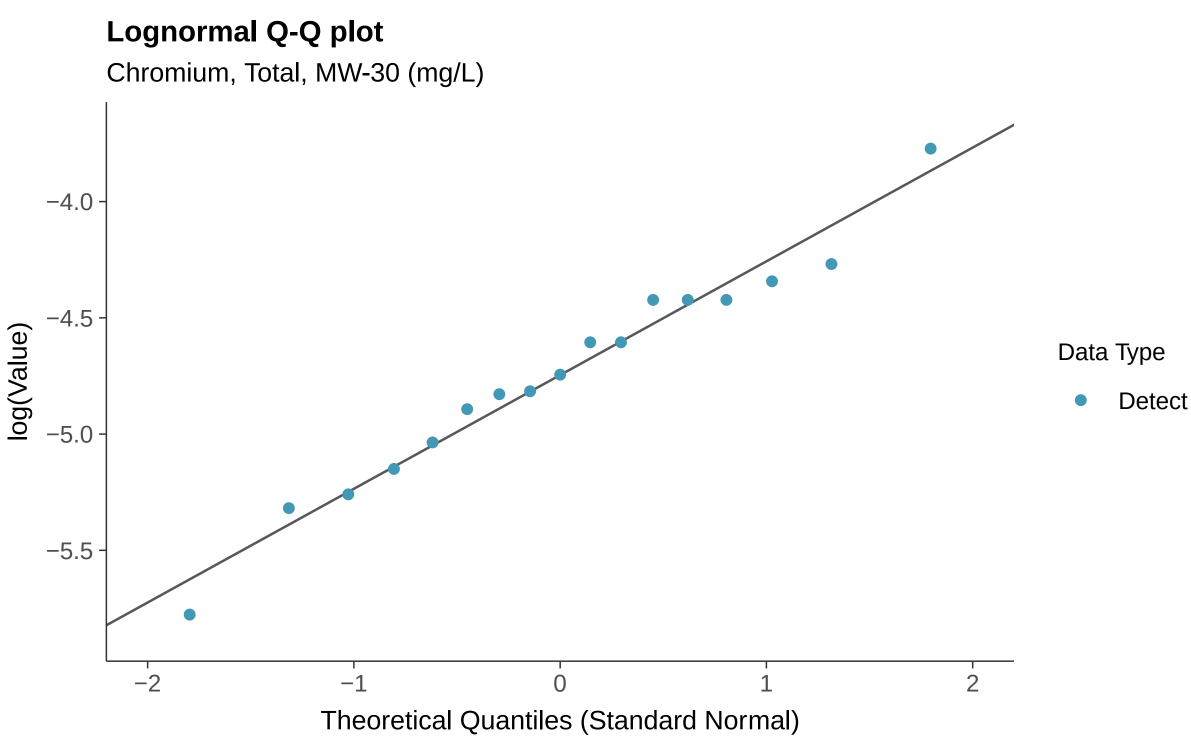


Boxplot by Season

Chromium, Total, MW-30 (mg/L)

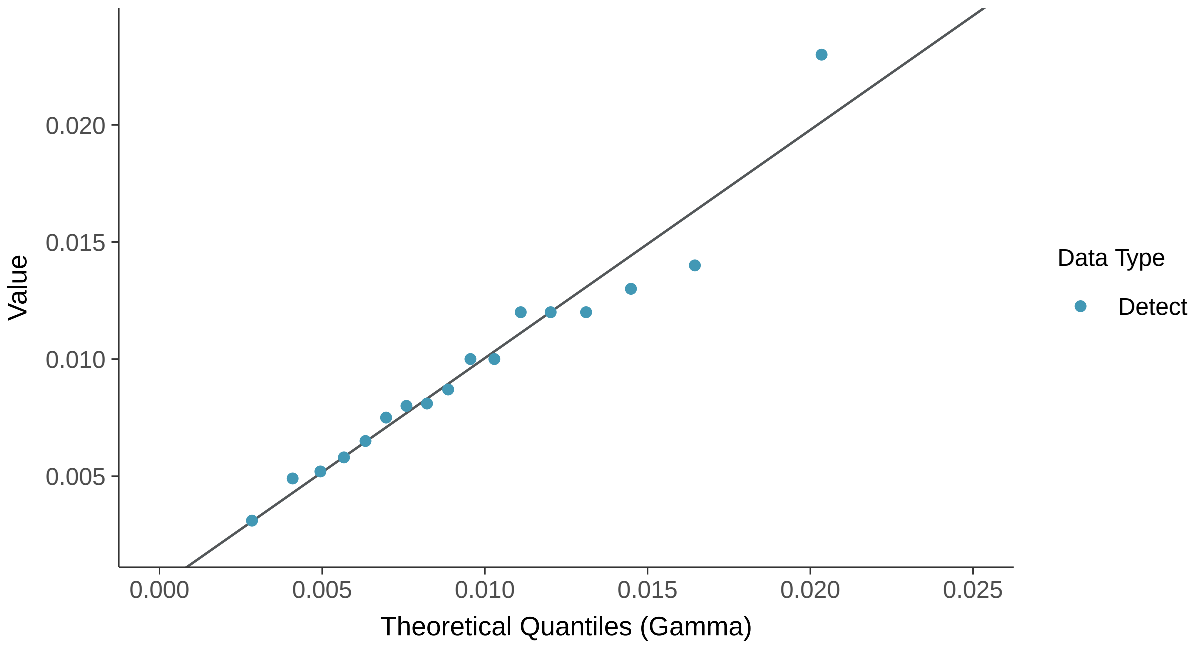



Normal Q-Q plot
Chromium, Total, MW-30 (mg/L)
Value
0.020
0.015
0.010
0.005
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Chromium, Total, MW-30 (mg/L)
log(Value)
−4.0
−4.5
−5.0
−5.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

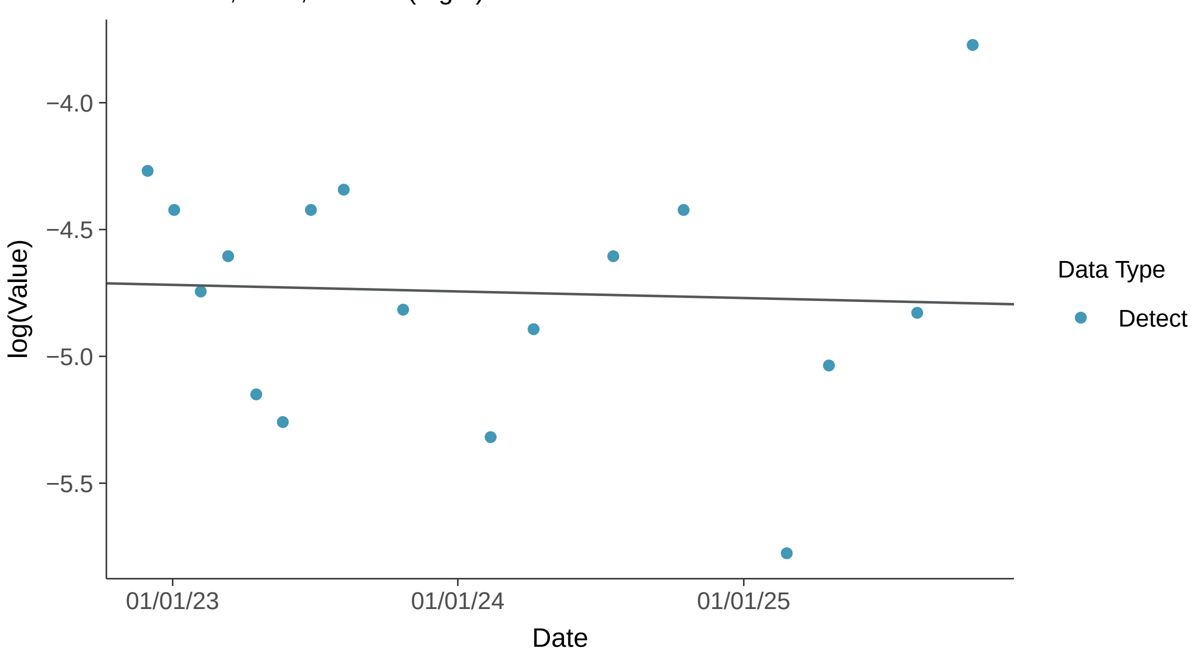
Gamma Q-Q plot

Chromium, Total, MW-30 (mg/L)



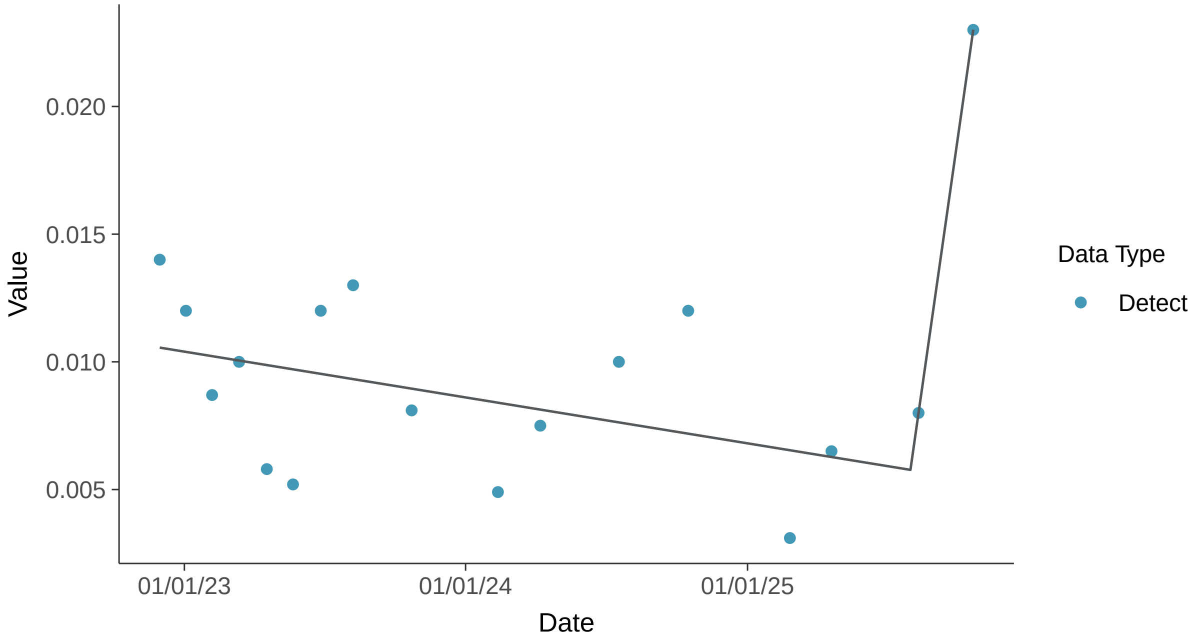
Trend Regression: Lognormal MLE

Chromium, Total, MW-30 (mg/L)



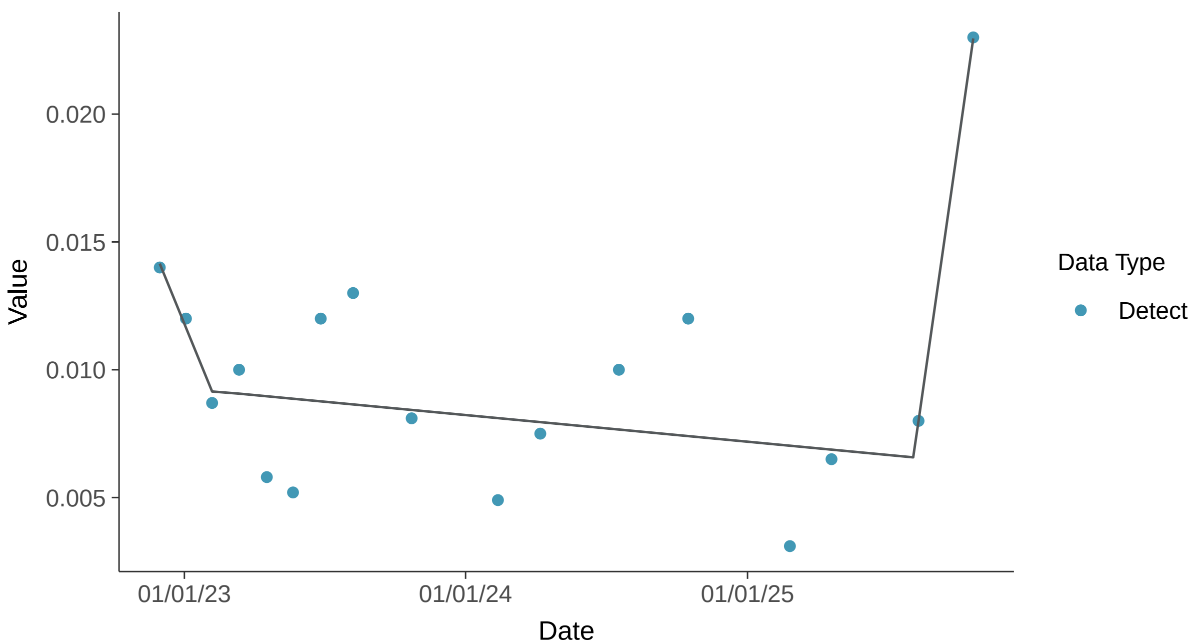
Trend Regression: Piecewise Linear-Linear

Chromium, Total, MW-30 (mg/L)



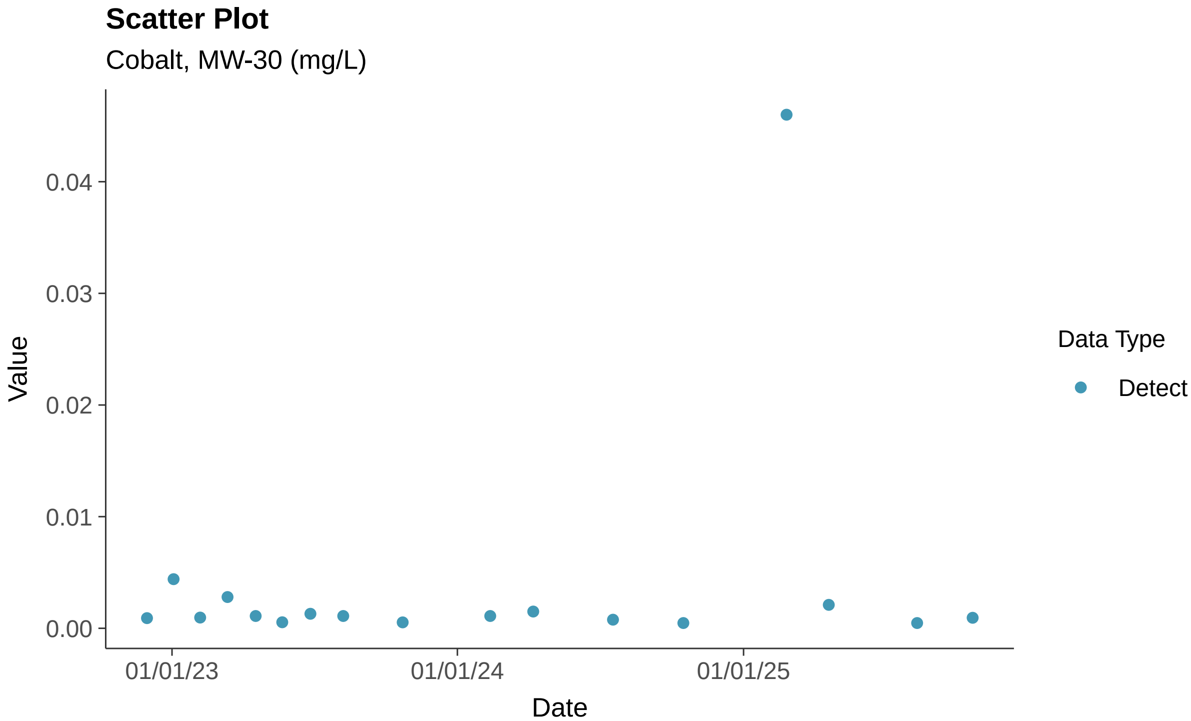
Trend Regression: Piecewise Linear-Linear-Linear

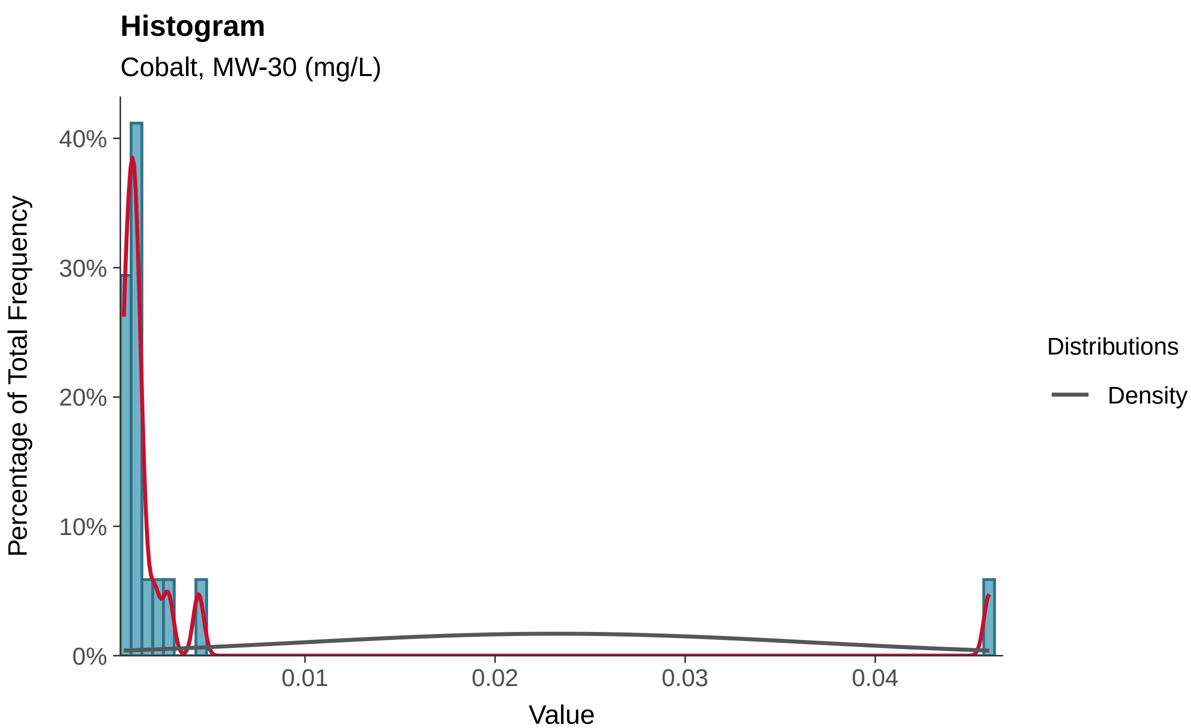
Chromium, Total, MW-30 (mg/L)



Appendix IV: Cobalt, MW-30

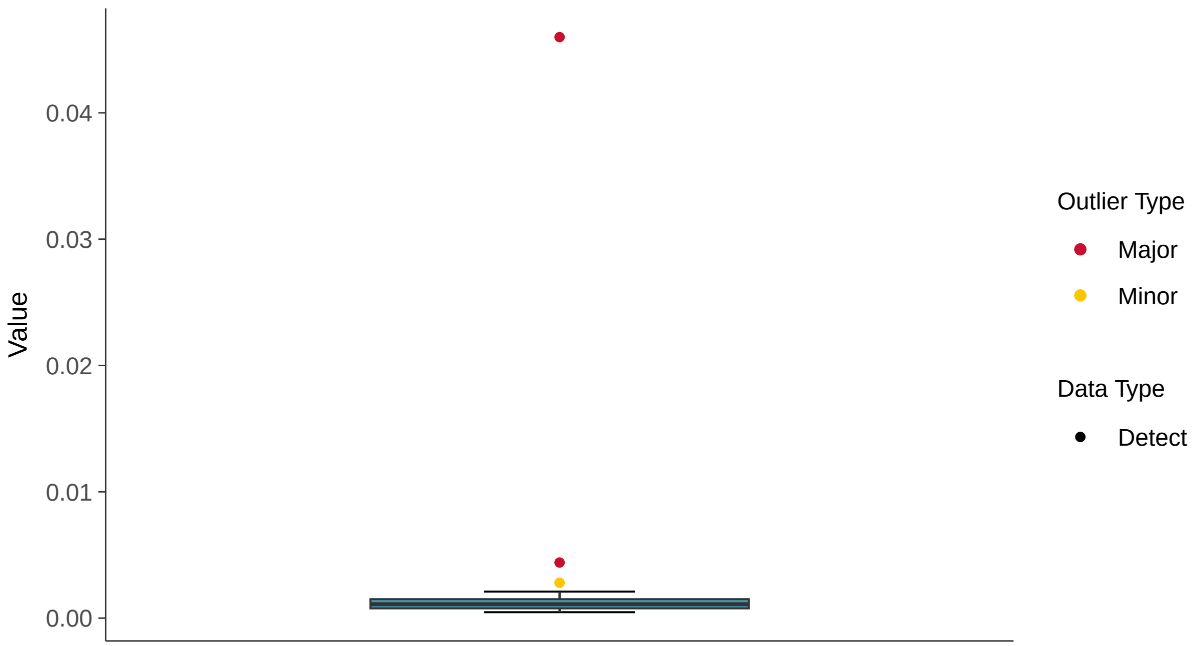
ID: 40_1_4_110





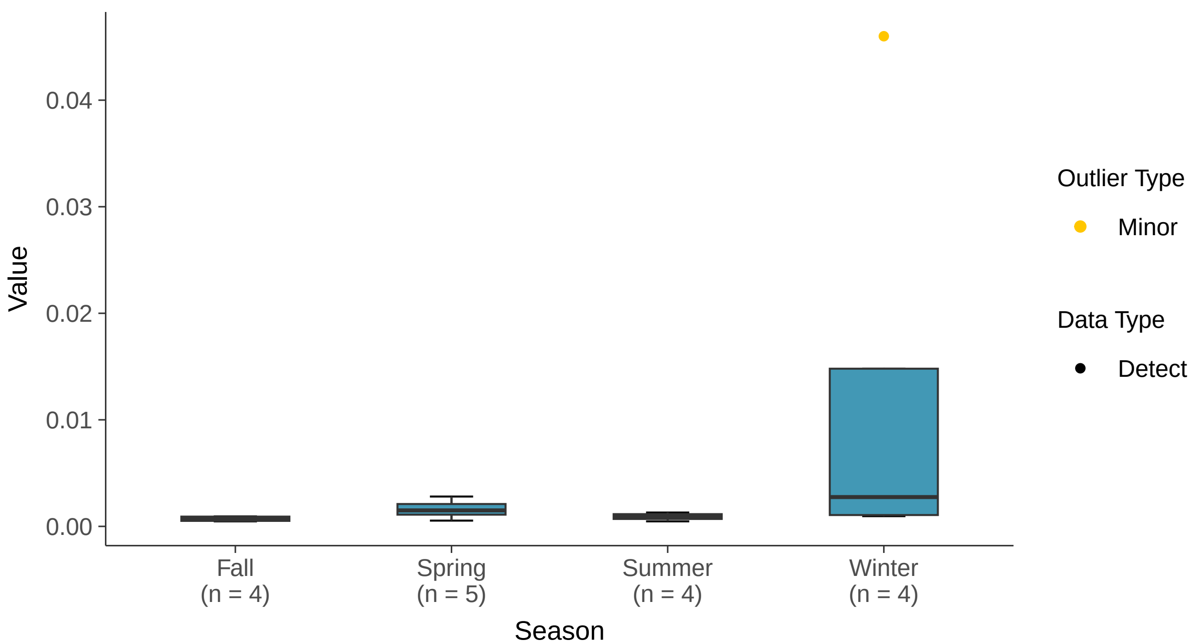
Boxplot

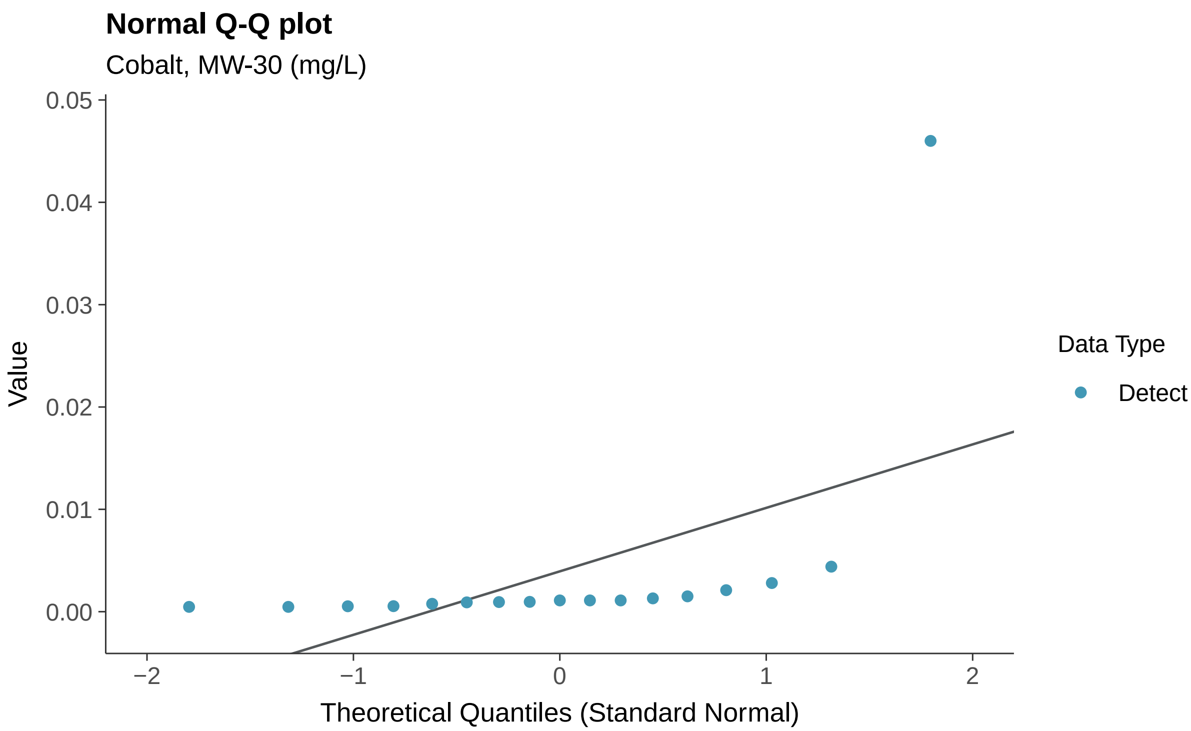
Cobalt, MW-30 (mg/L)

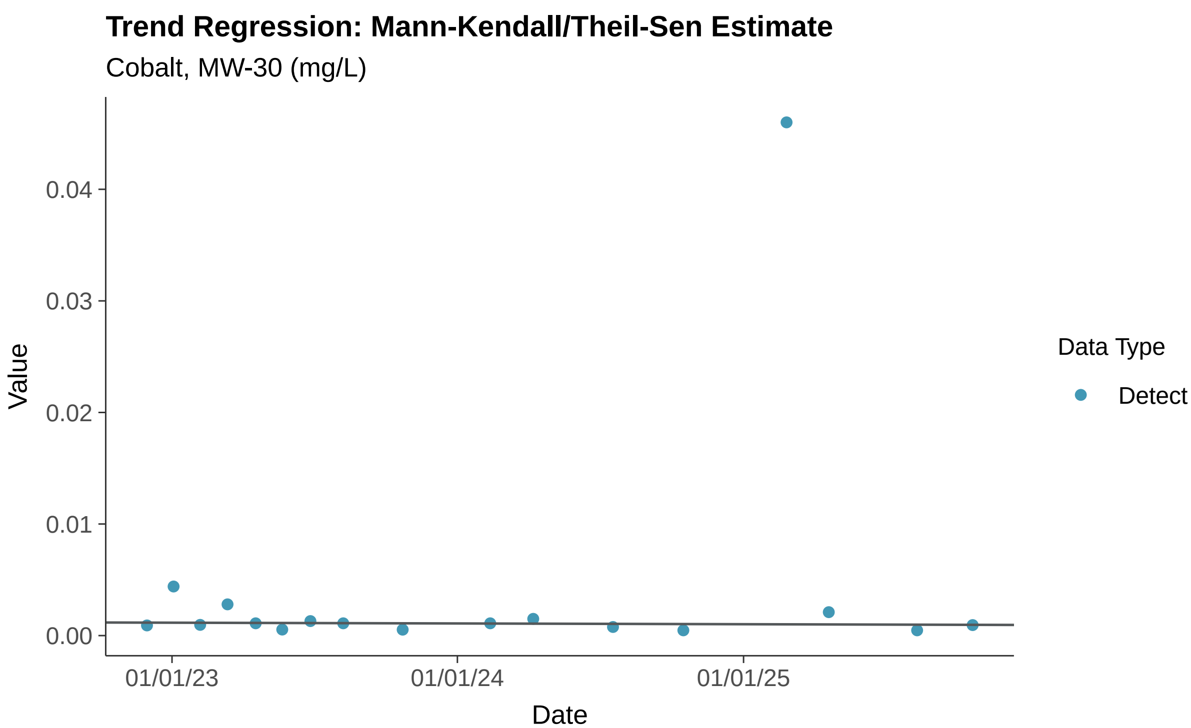


Boxplot by Season

Cobalt, MW-30 (mg/L)

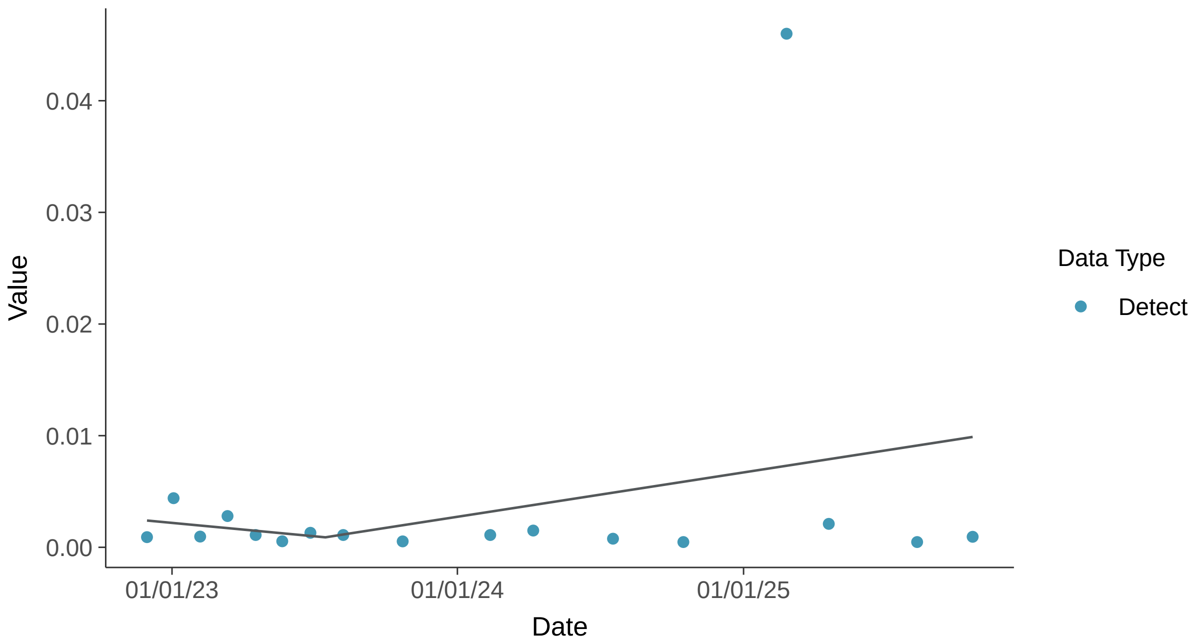



Normal Q-Q plot
Cobalt, MW-30 (mg/L)
Value
0.05
0.04
0.03
0.02
0.01
0.00
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Mann-Kendall/Theil-Sen Estimate
Cobalt, MW-30 (mg/L)
Value
0.04
0.03
0.02
0.01
0.00
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

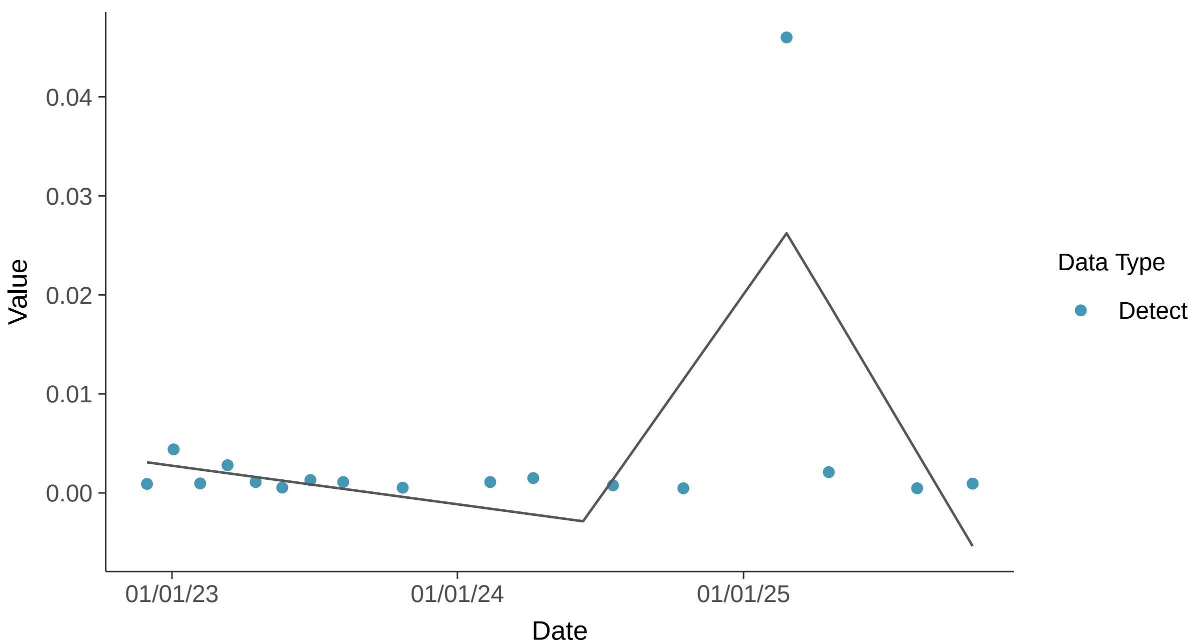
Trend Regression: Piecewise Linear-Linear

Cobalt, MW-30 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Cobalt, MW-30 (mg/L)

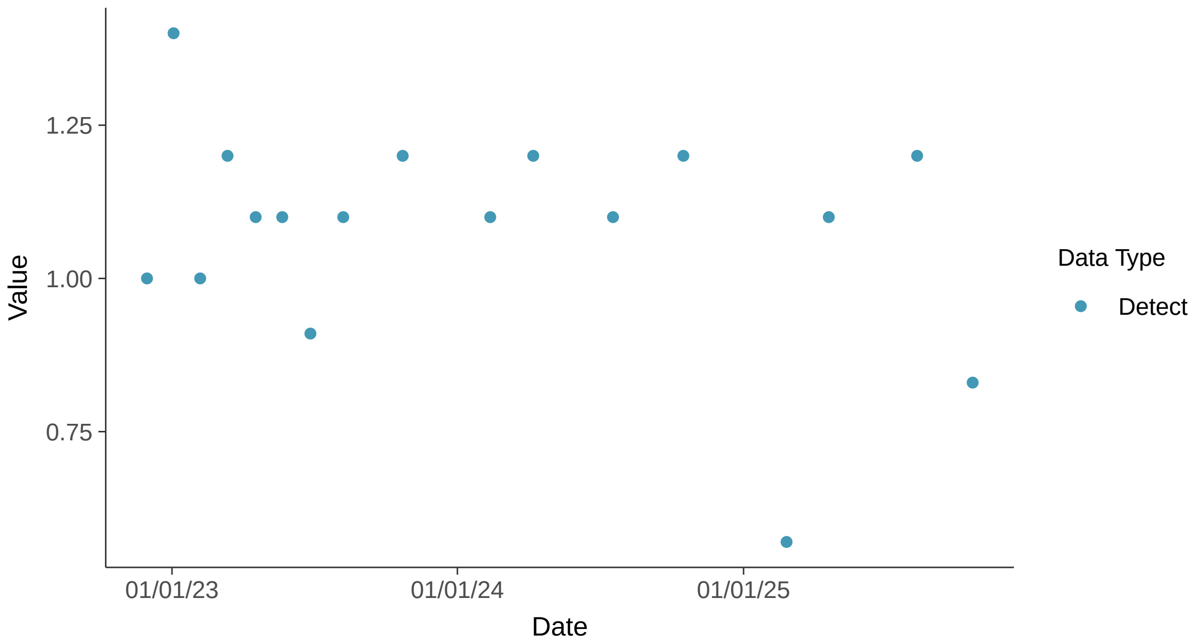


Appendix IV: Fluoride (App IV), MW-30

ID: 40_1_4_113

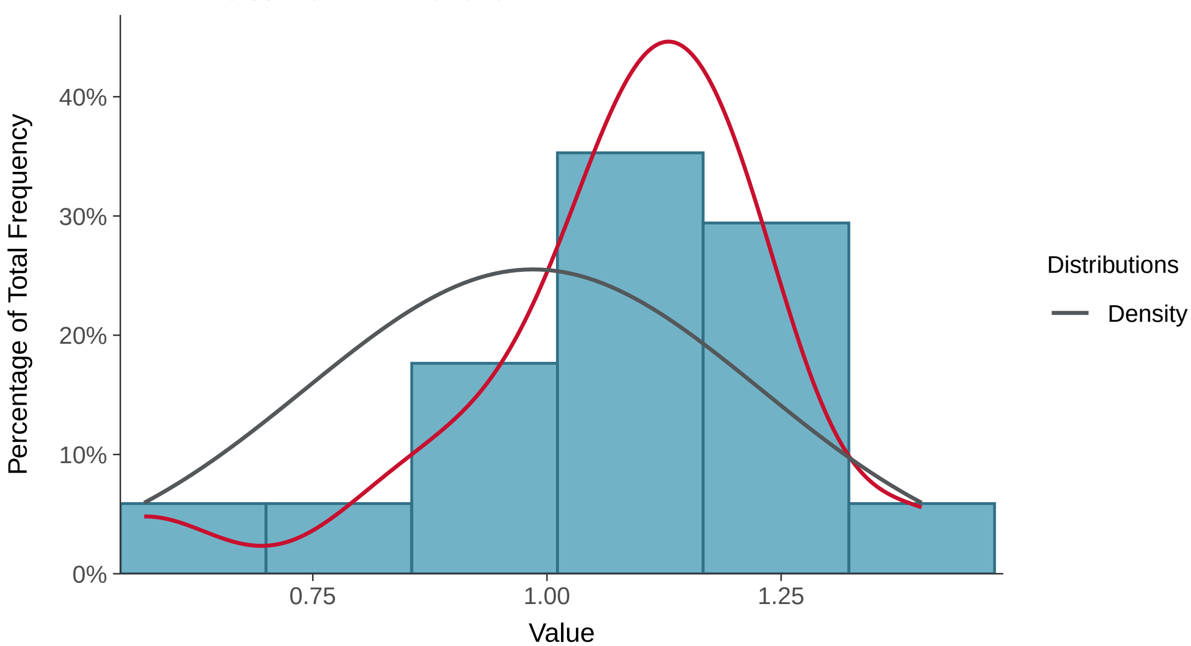
Scatter Plot

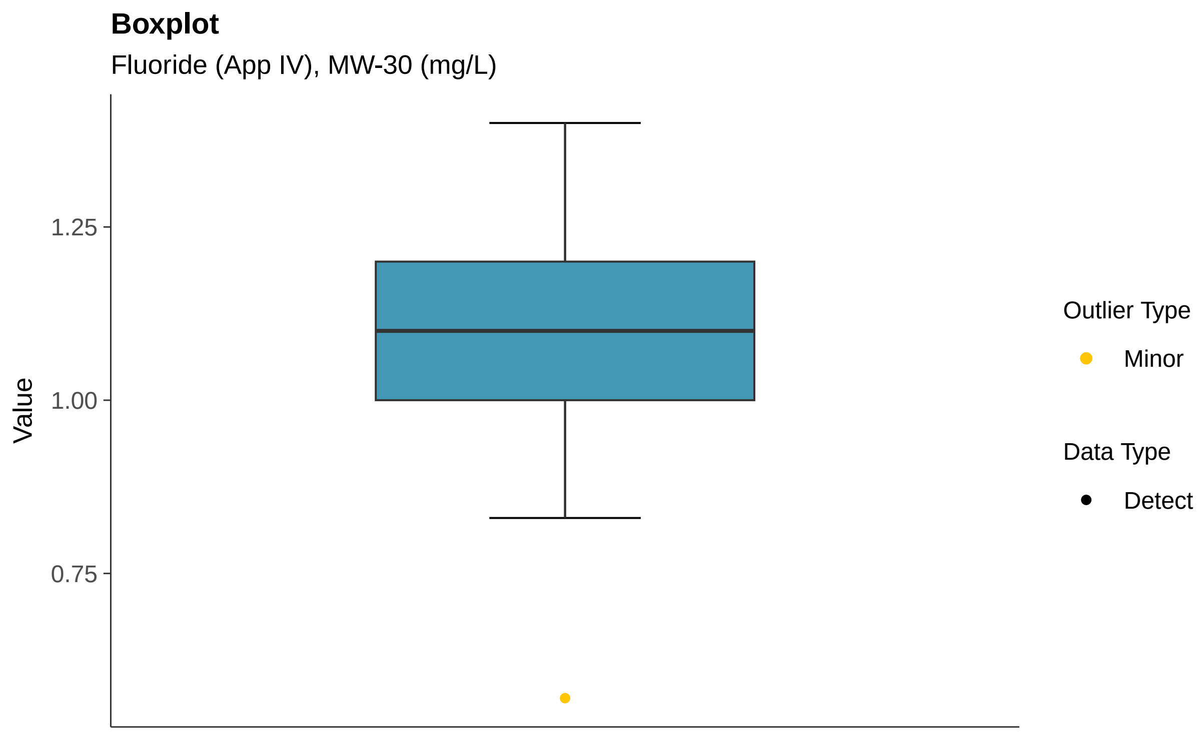
Fluoride (App IV), MW-30 (mg/L)

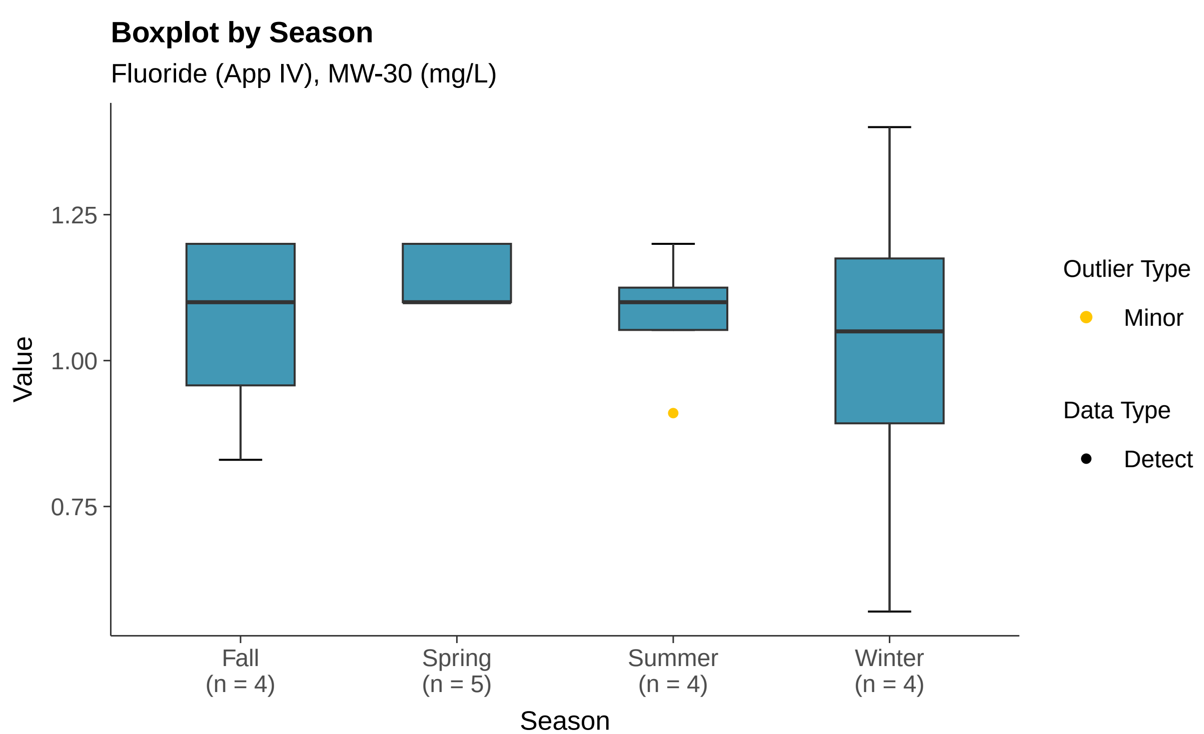


Histogram

Fluoride (App IV), MW-30 (mg/L)

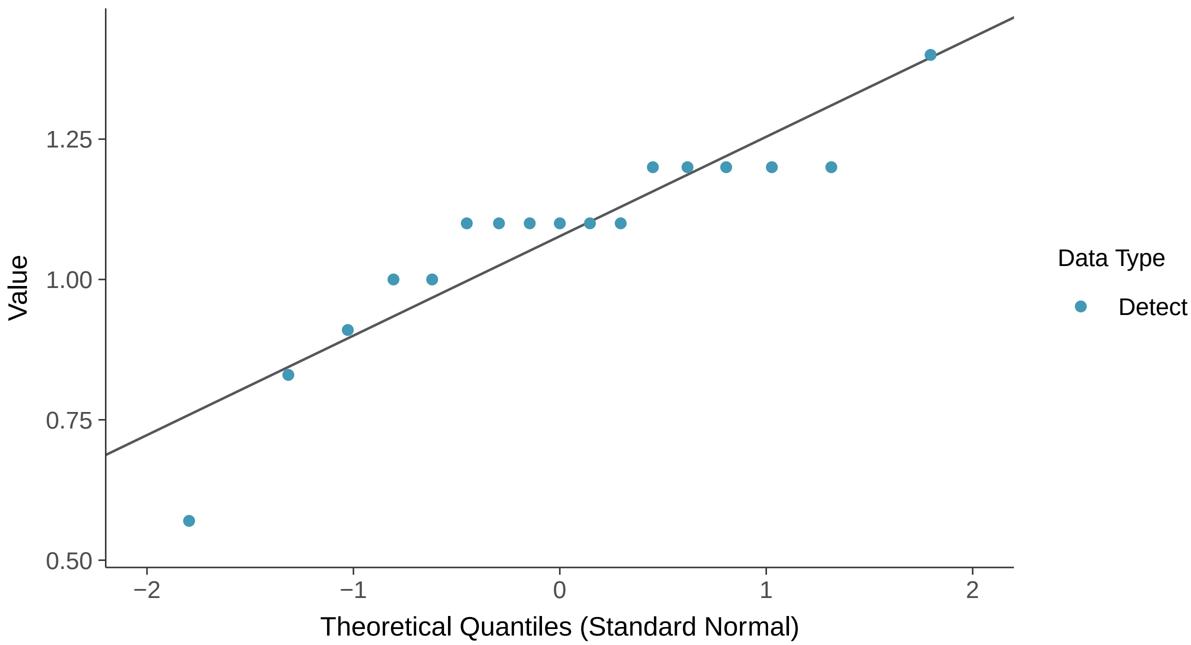



Boxplot
Fluoride (App IV), MW-30 (mg/L)
Value
1.25
1.00
0.75
Outlier Type
Minor
Data Type
Detect


Boxplot by Season
Fluoride (App IV), MW-30 (mg/L)
Value
1.25
1.00
0.75
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Minor
Data Type
Detect

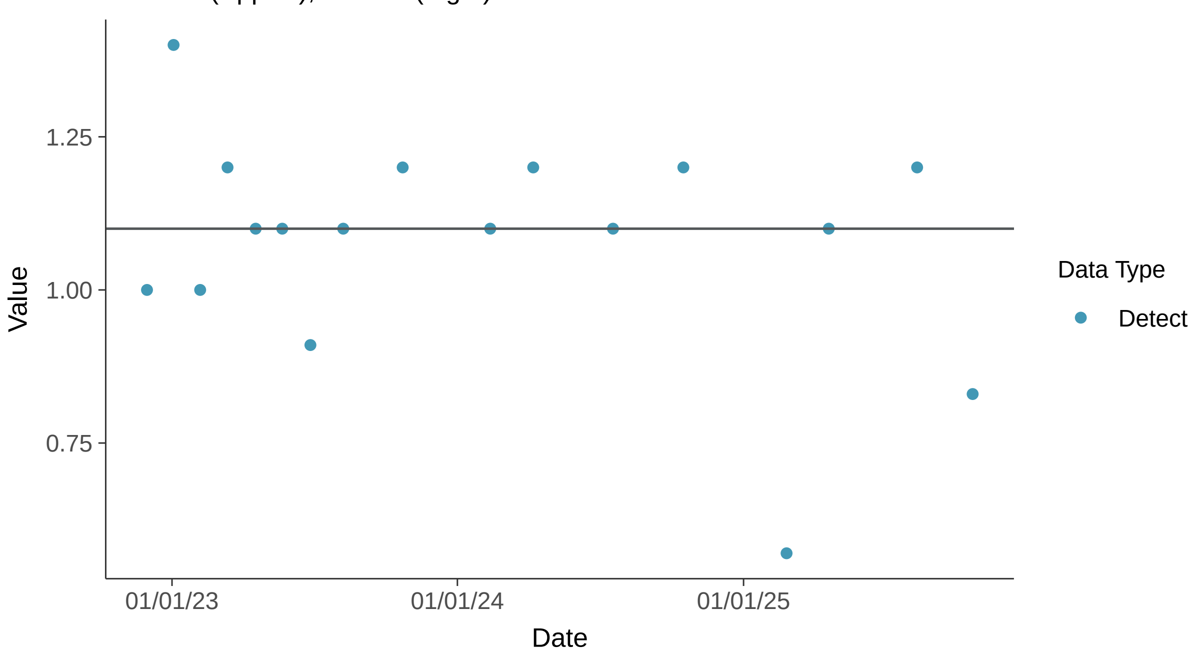
Normal Q-Q plot

Fluoride (App IV), MW-30 (mg/L)



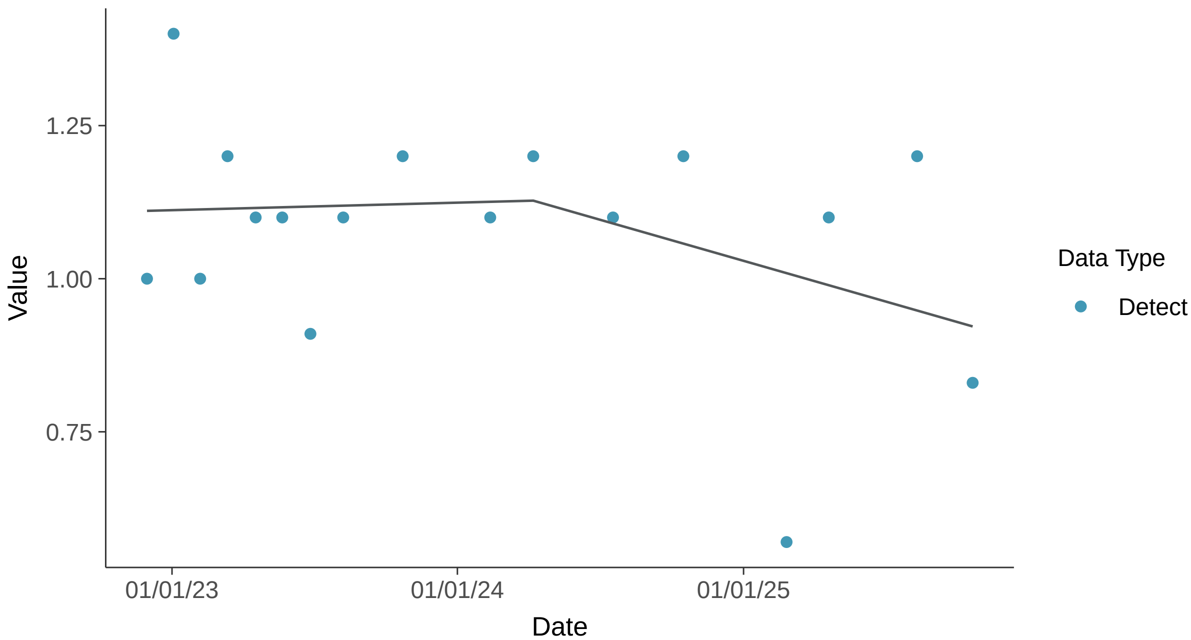
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Fluoride (App IV), MW-30 (mg/L)



Trend Regression: Piecewise Linear-Linear

Fluoride (App IV), MW-30 (mg/L)

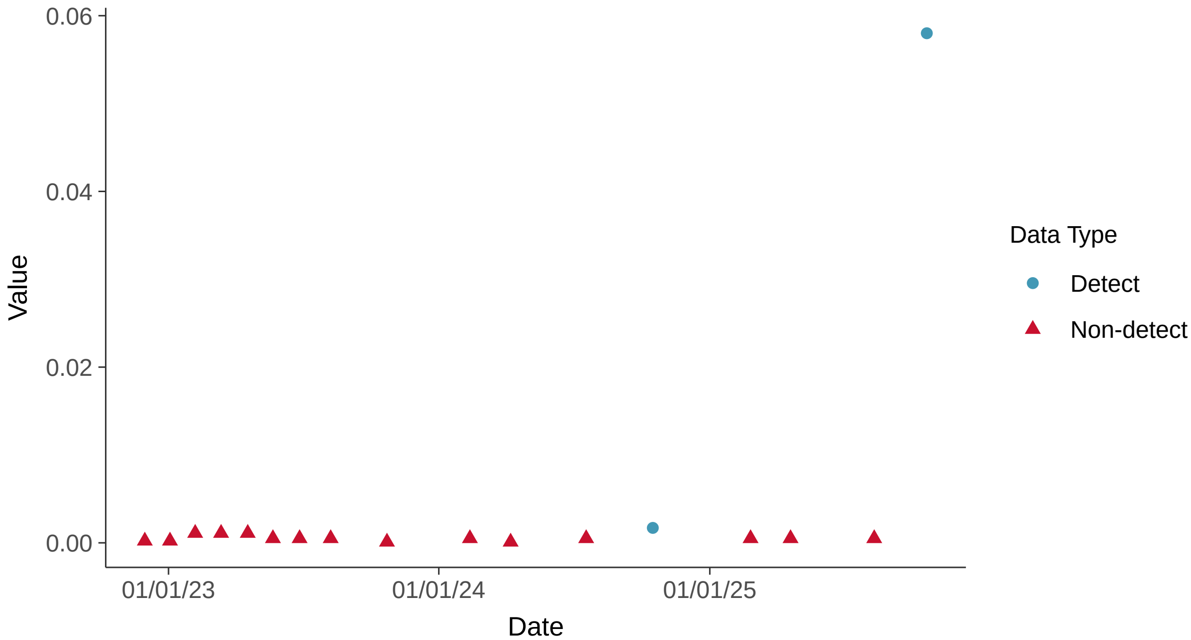


Appendix IV: Lead, MW-30

ID: 40_1_4_115

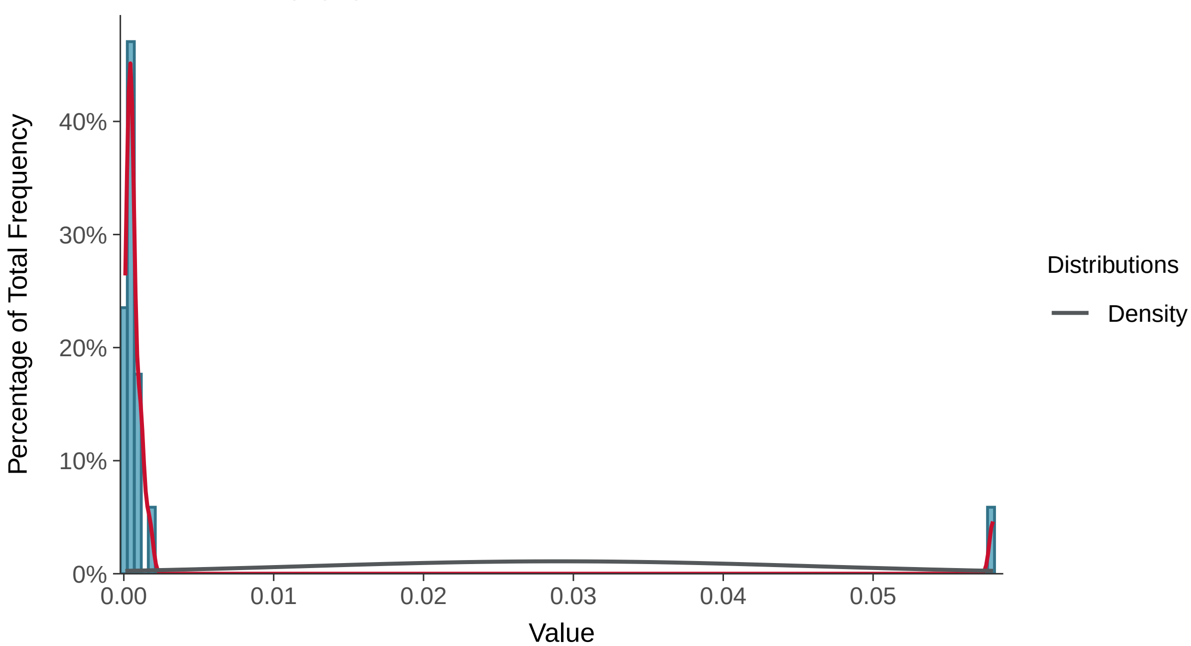
Scatter Plot

Lead, MW-30 (mg/L)



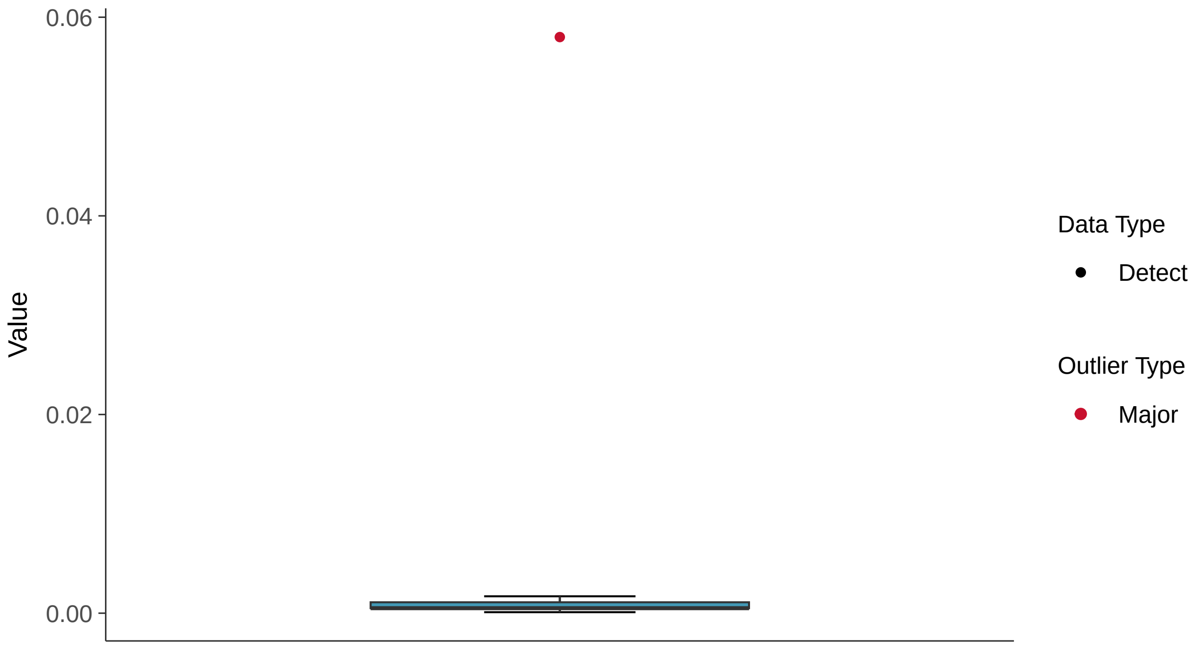
Histogram

Lead, MW-30 (mg/L)



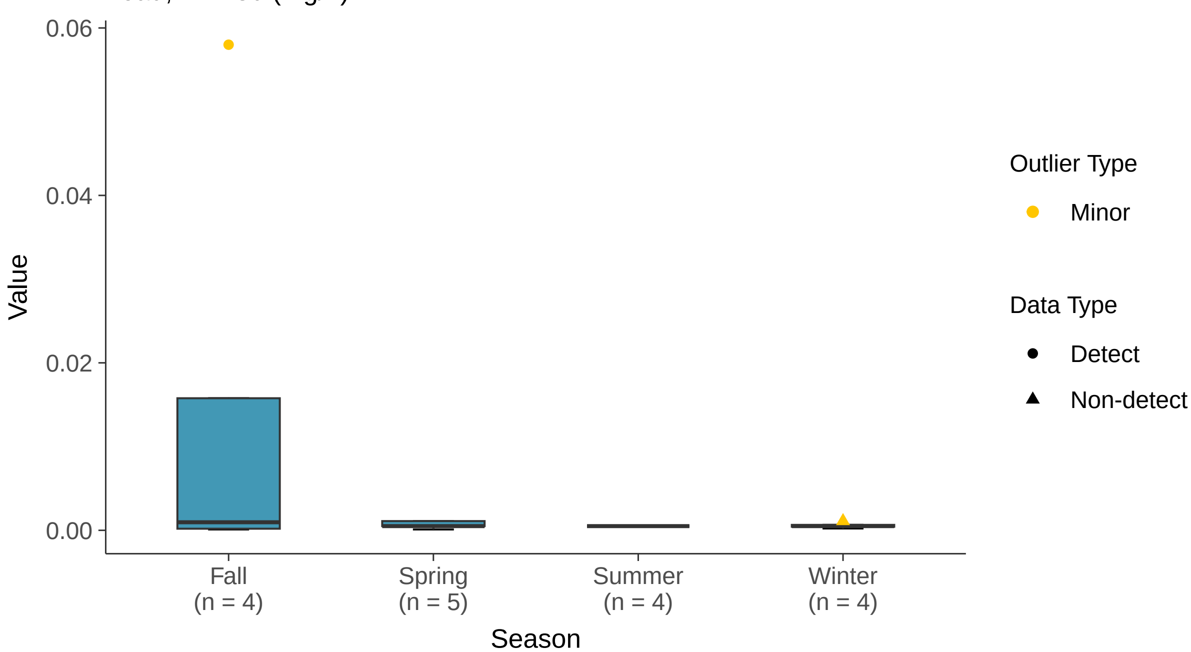
Boxplot

Lead, MW-30 (mg/L)



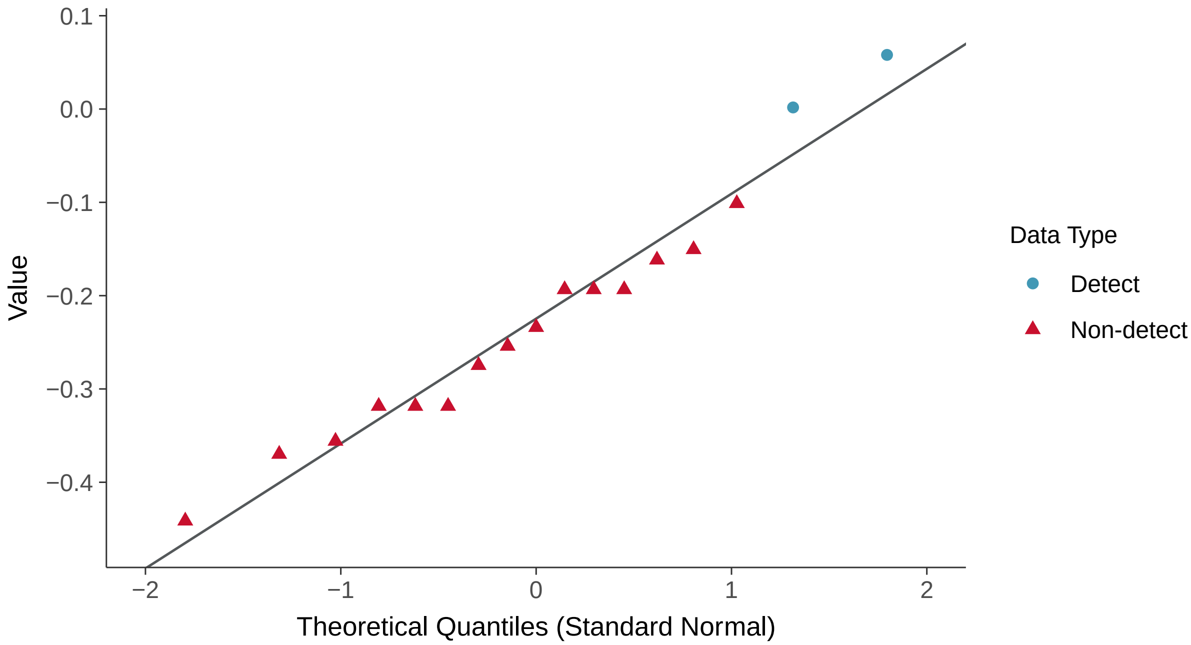
Boxplot by Season

Lead, MW-30 (mg/L)



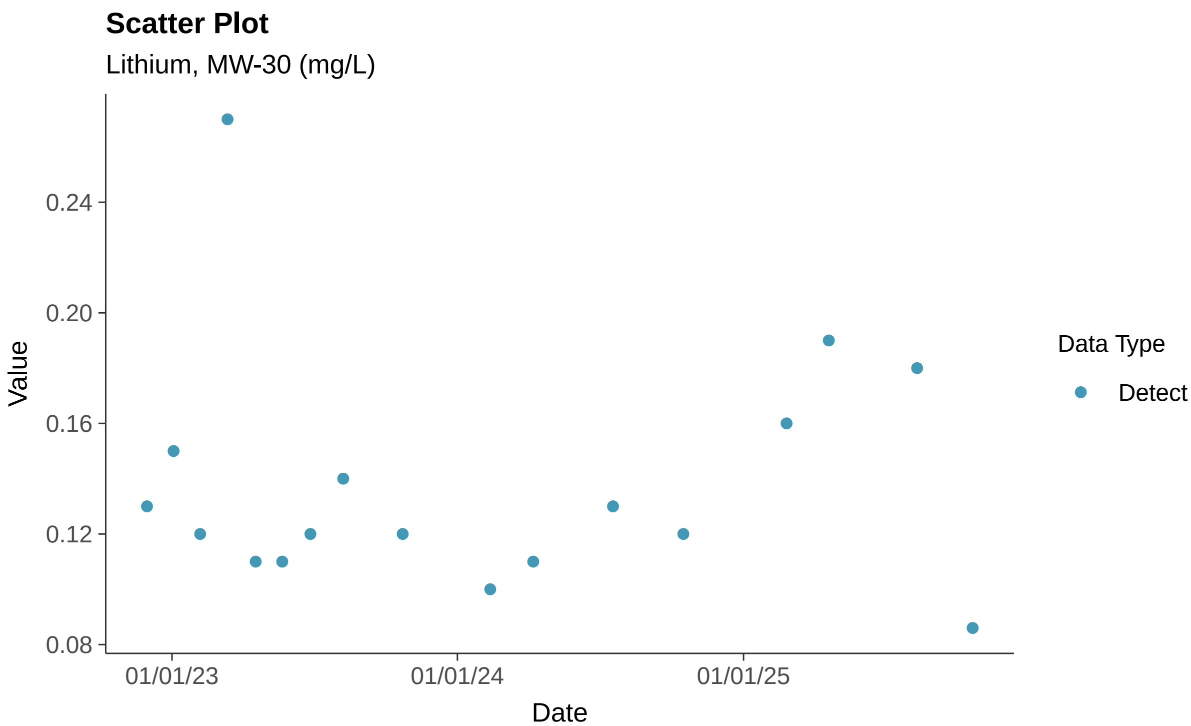
Normal Q-Q plot using ROS Imputed Estimates

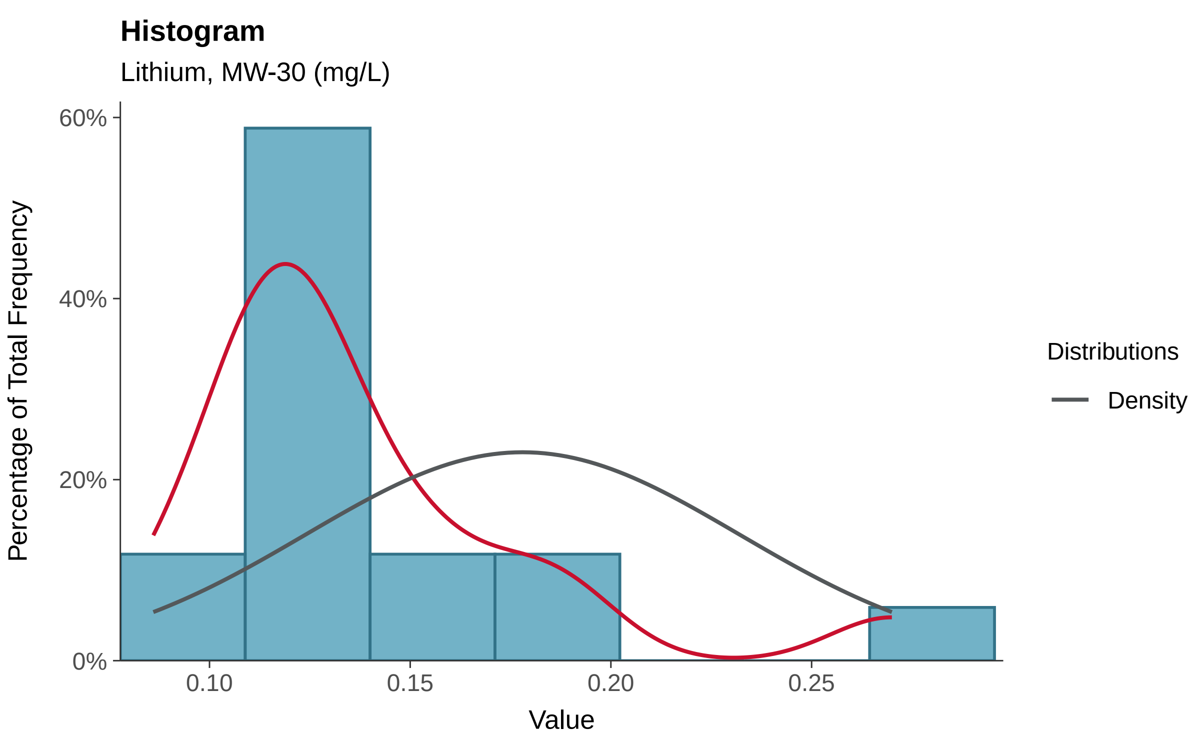
Lead, MW-30 (mg/L)



Appendix IV: Lithium, MW-30

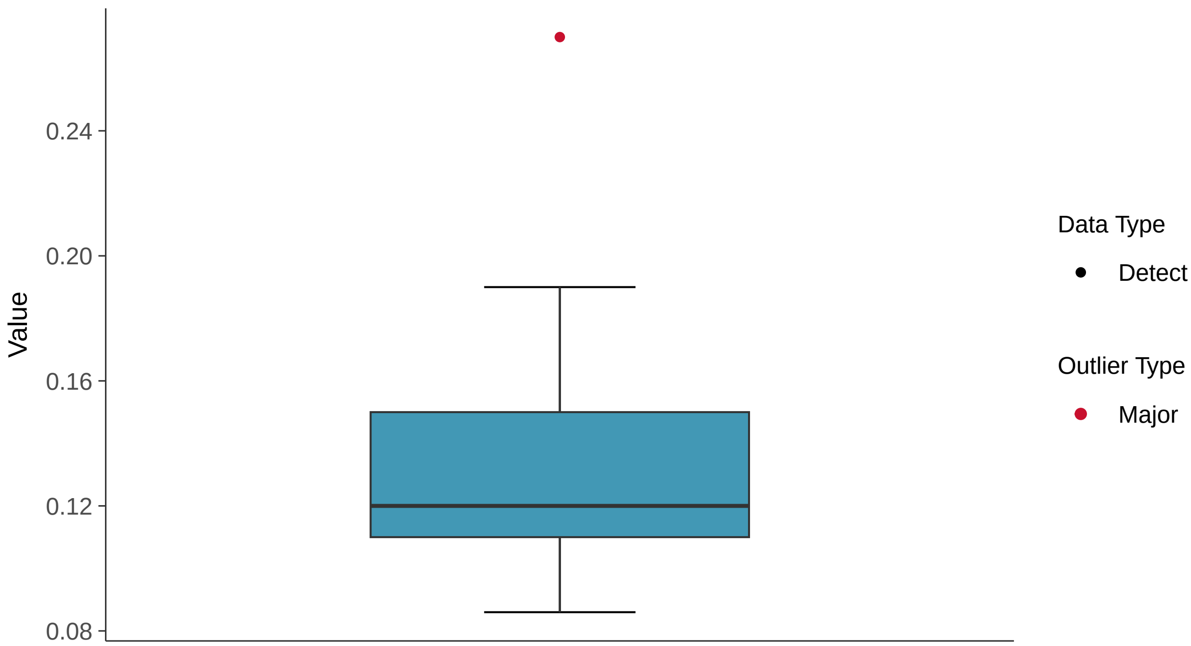
ID: 40_1_4_116





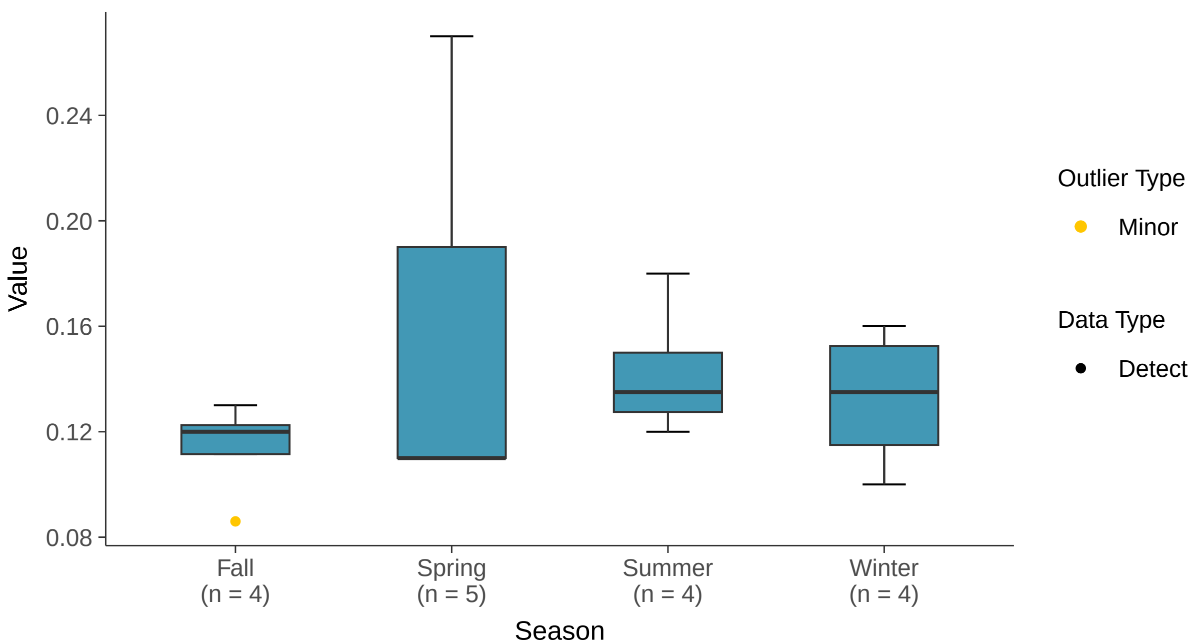
Boxplot

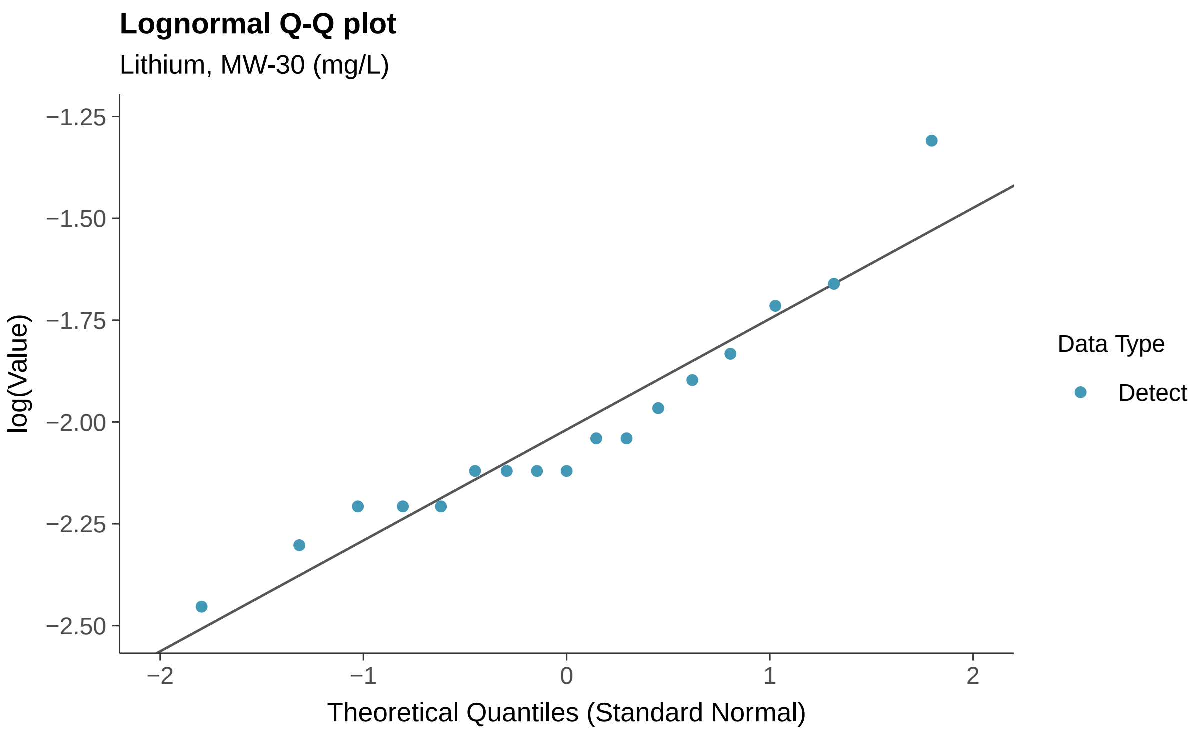
Lithium, MW-30 (mg/L)

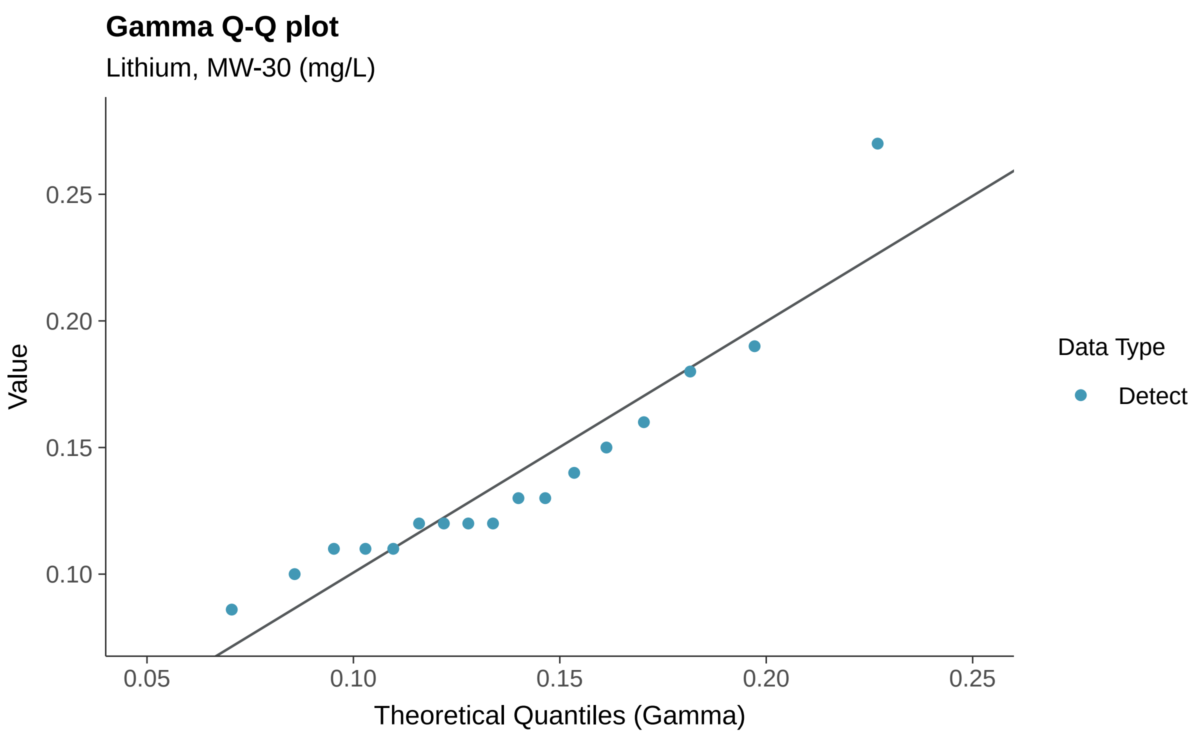


Boxplot by Season

Lithium, MW-30 (mg/L)

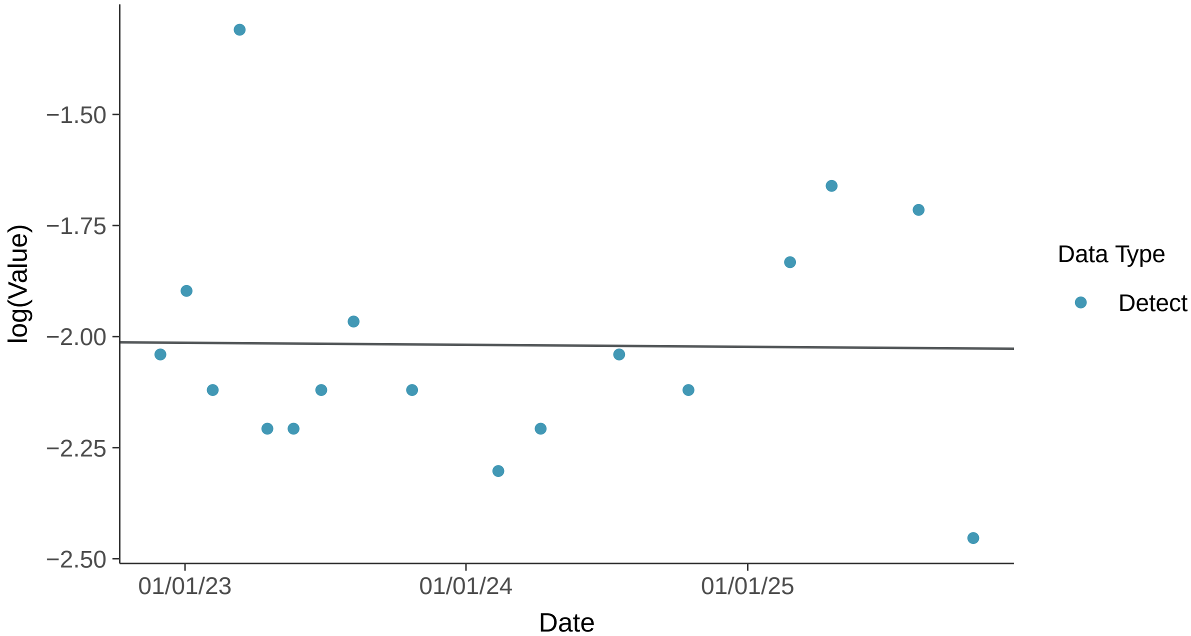



Lognormal Q-Q plot
Lithium, MW-30 (mg/L)
log(Value)
−1.25
−1.50
−1.75
−2.00
−2.25
−2.50
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Lithium, MW-30 (mg/L)
Value
0.25
0.20
0.15
0.10
0.05
0.10
0.15
0.20
0.25
Theoretical Quantiles (Gamma)
Data Type
Detect

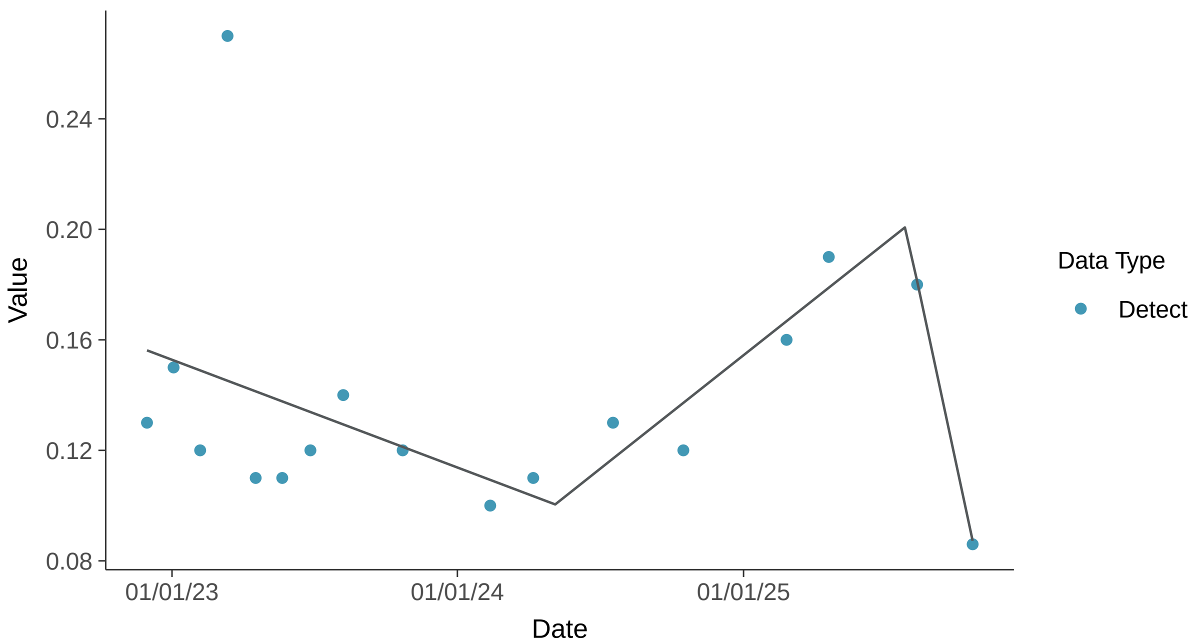
Trend Regression: Lognormal MLE

Lithium, MW-30 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Lithium, MW-30 (mg/L)

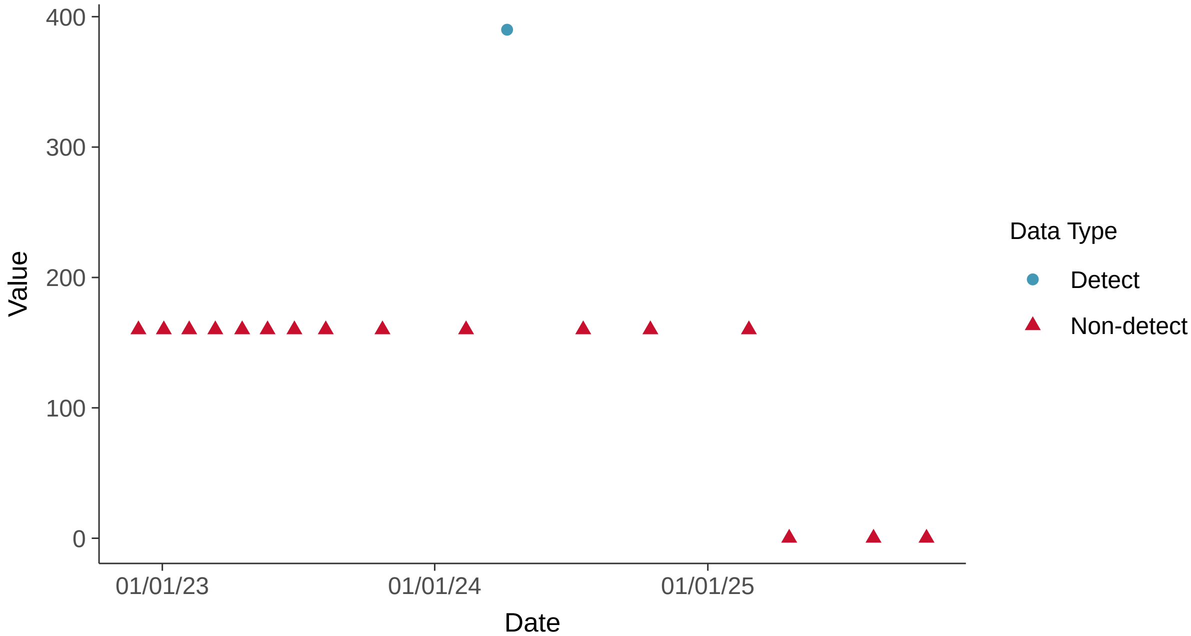


Appendix IV: Mercury, MW-30

ID: 40_1_4_117

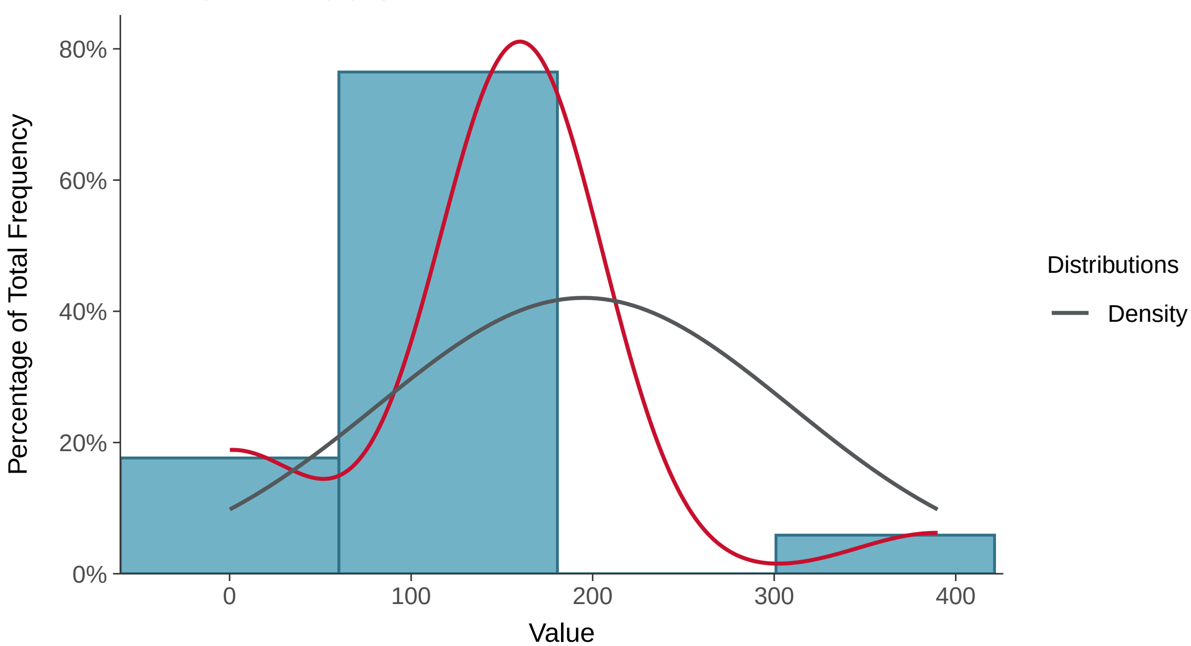
Scatter Plot

Mercury, MW-30 (ng/L)



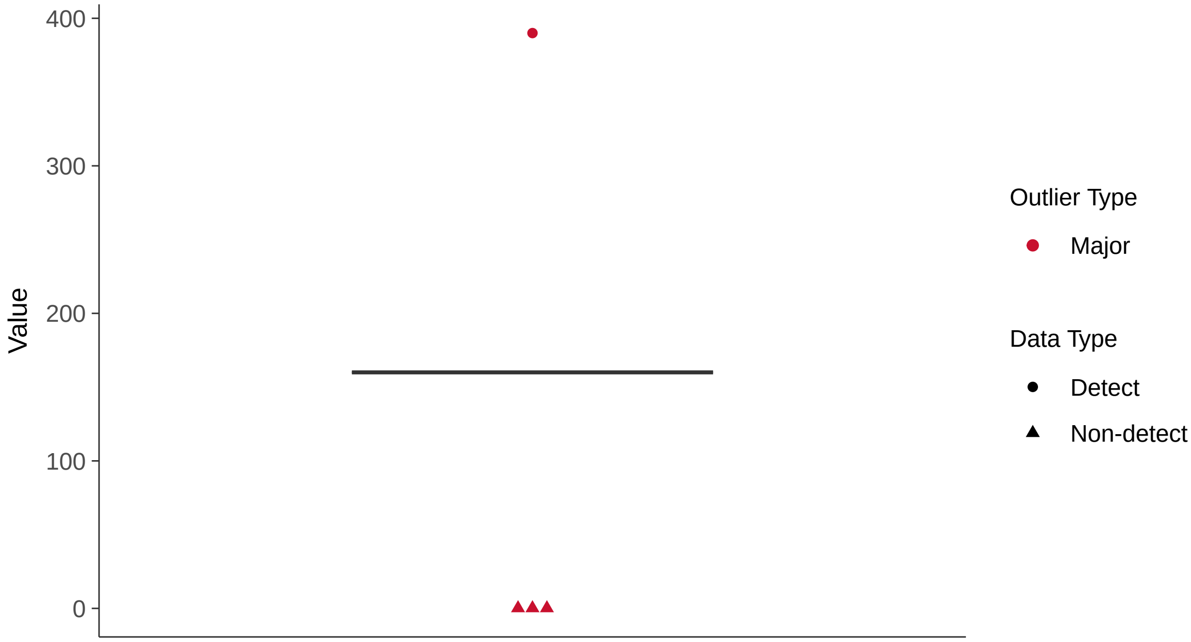
Histogram

Mercury, MW-30 (ng/L)



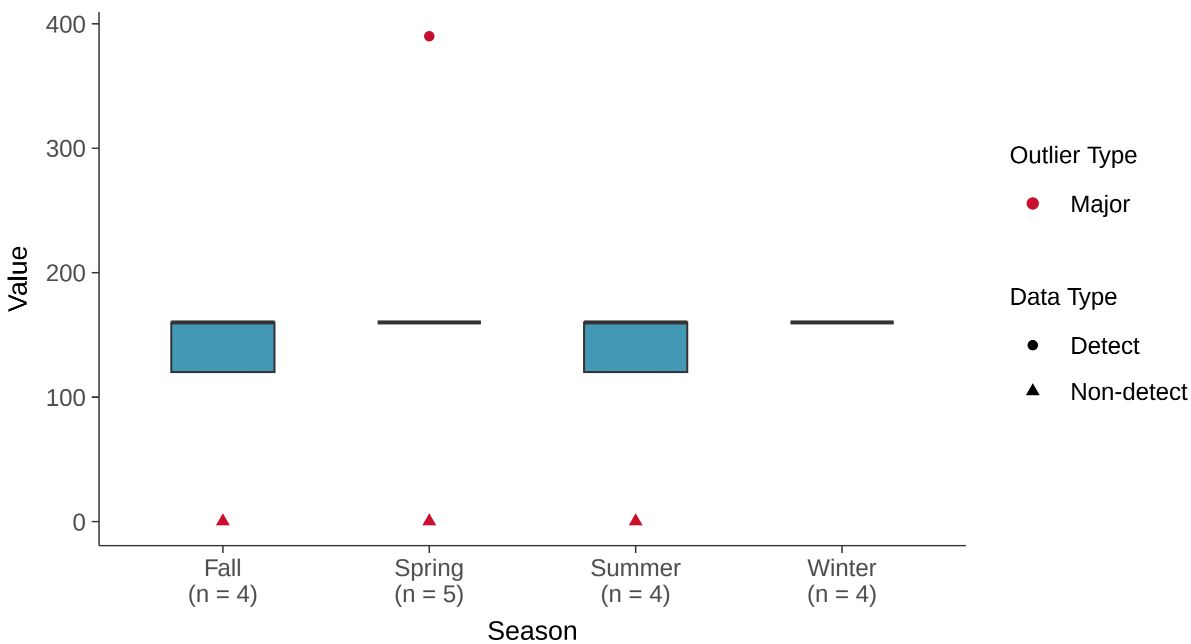
Boxplot

Mercury, MW-30 (ng/L)



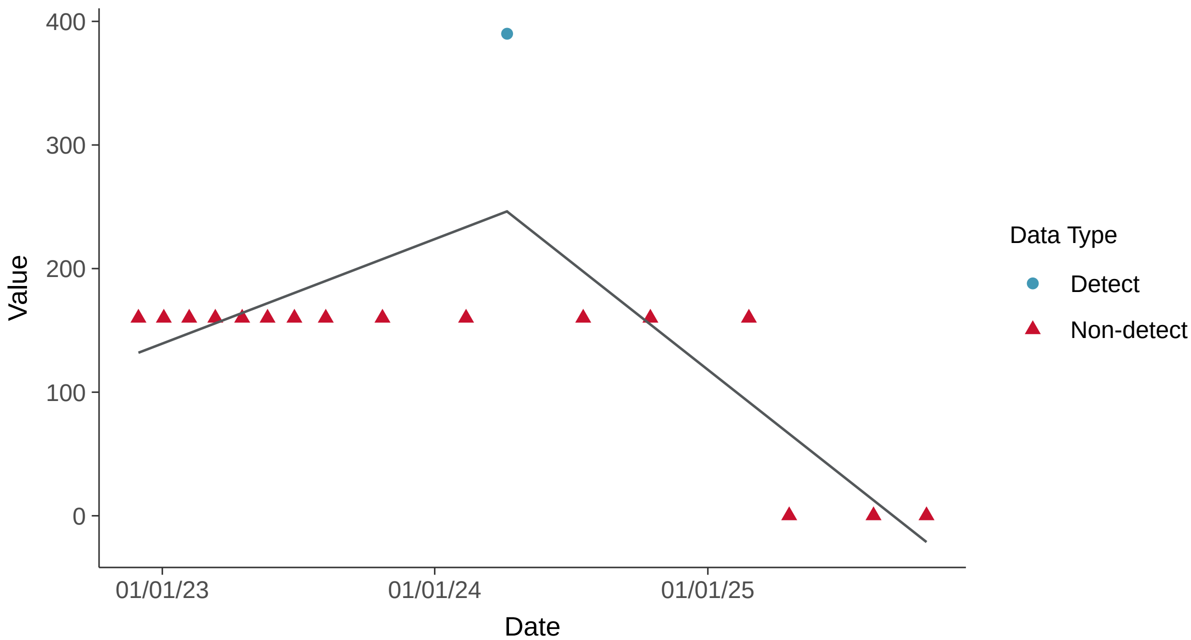
Boxplot by Season

Mercury, MW-30 (ng/L)



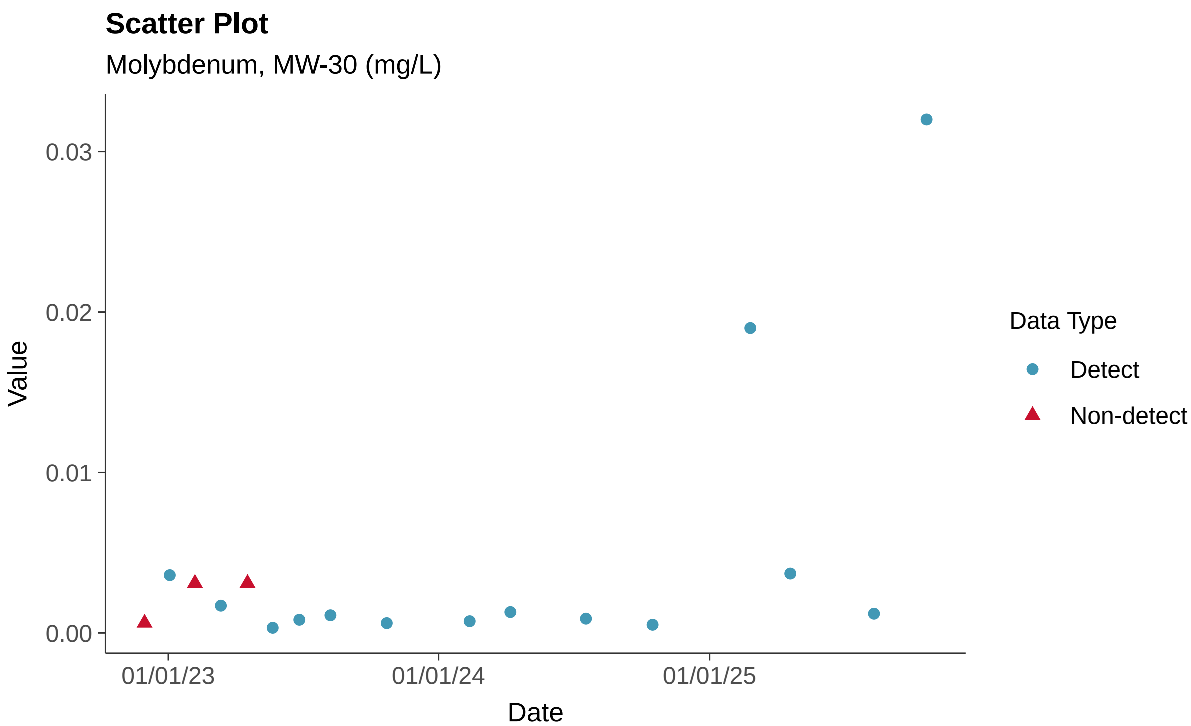
Trend Regression: Piecewise Linear-Linear

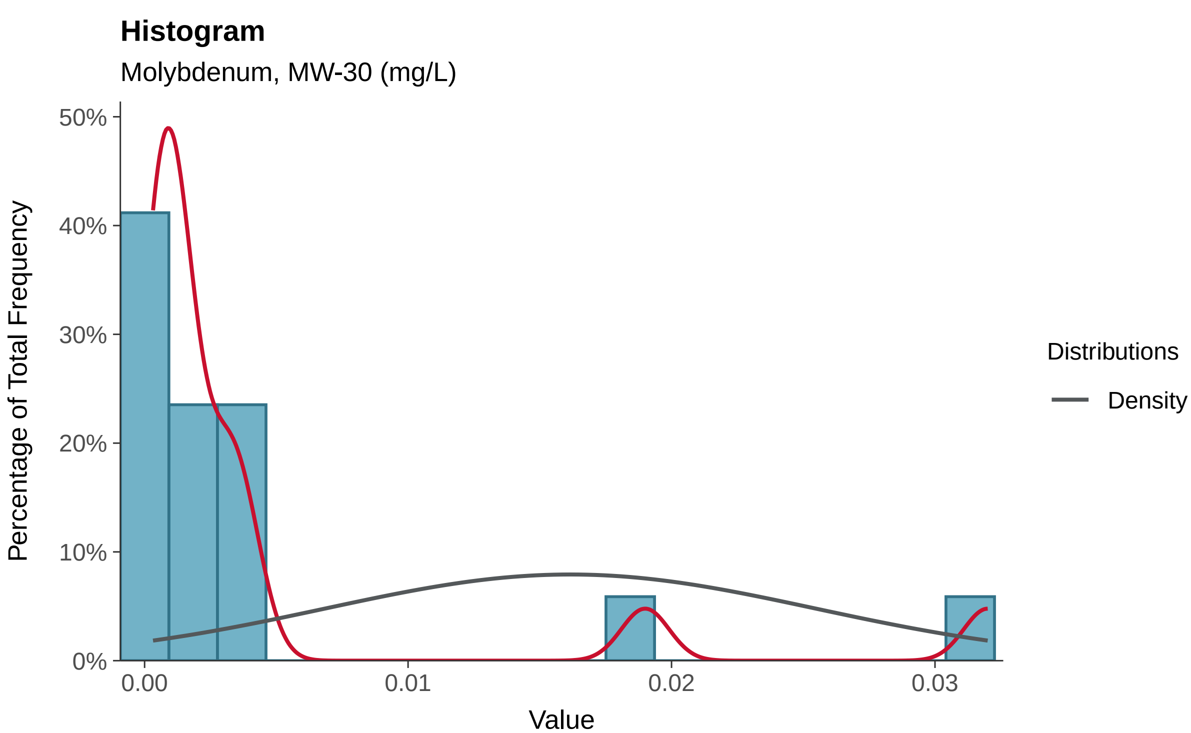
Mercury, MW-30 (ng/L)

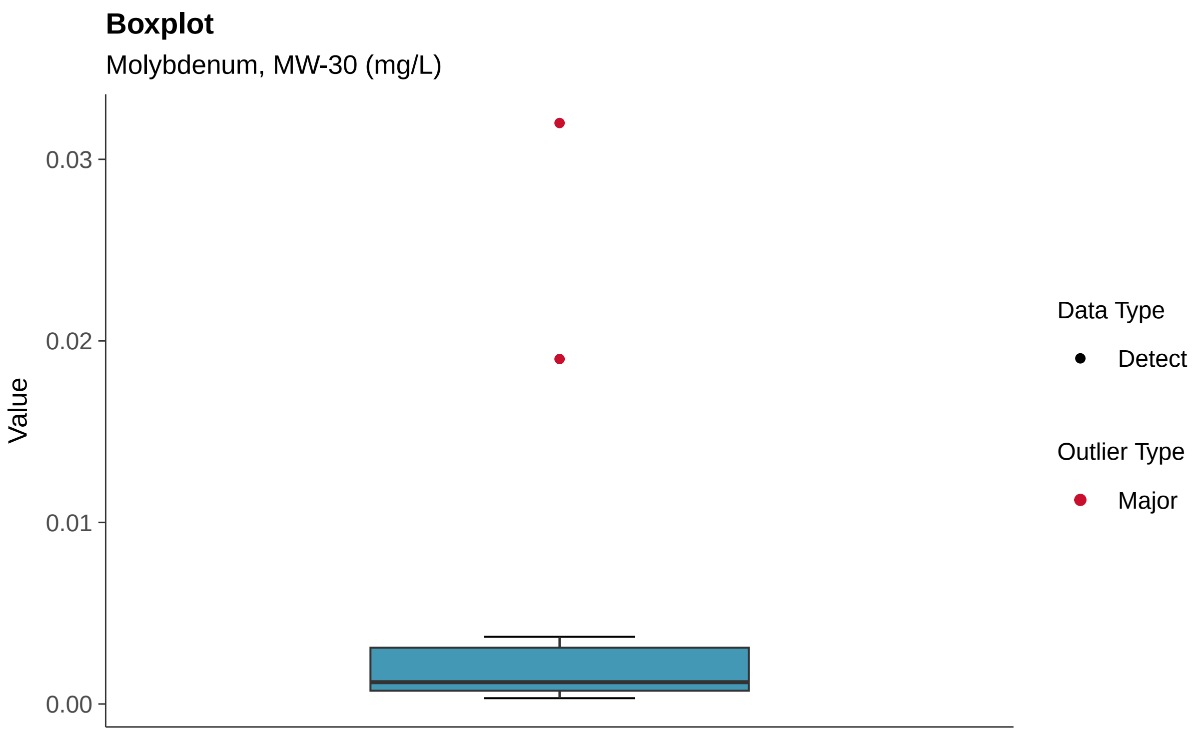


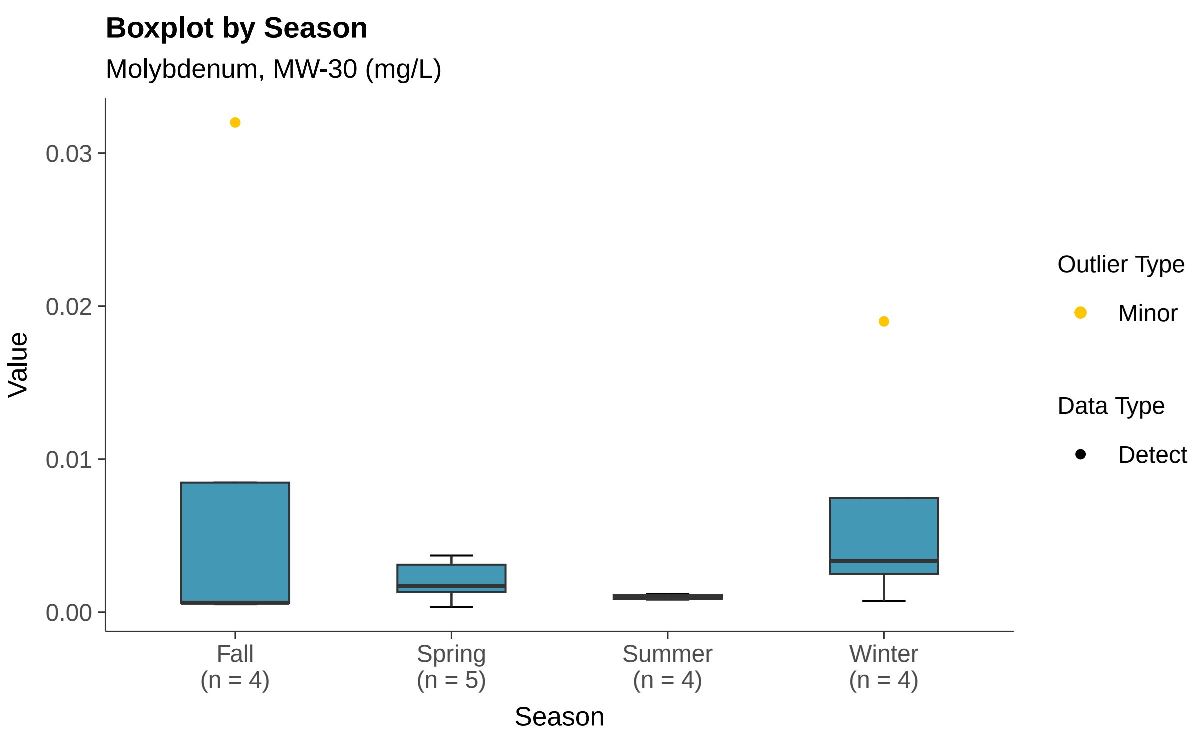
Appendix IV: Molybdenum, MW-30

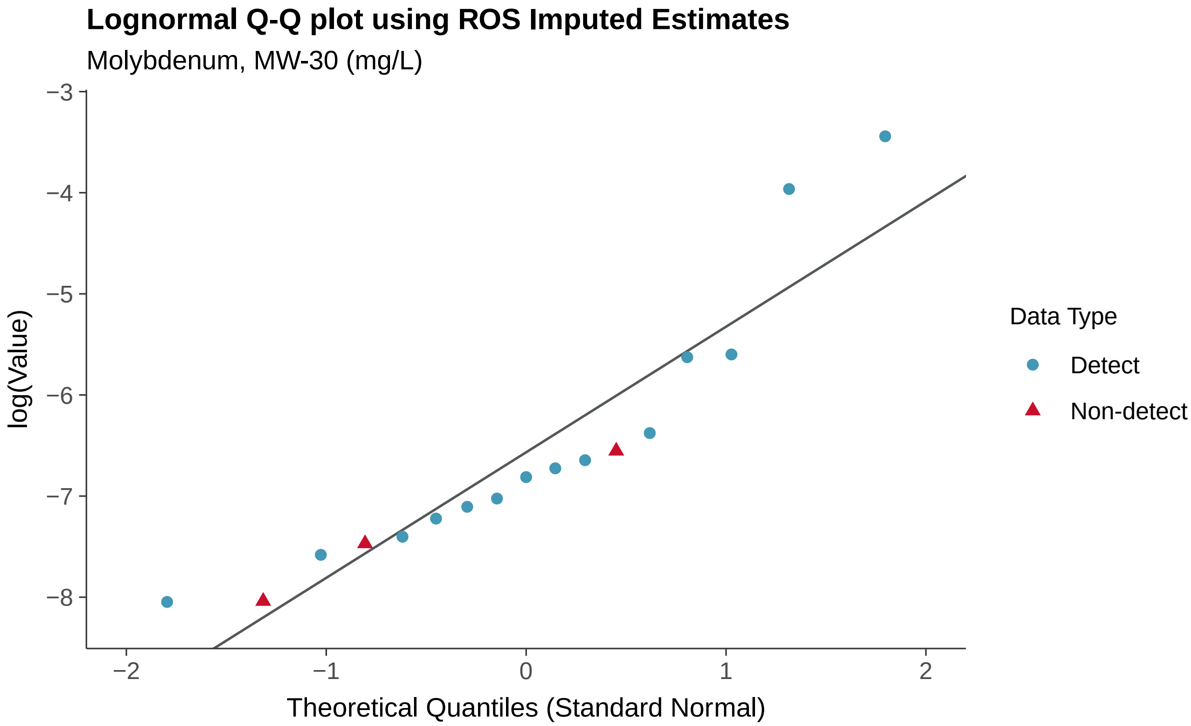
ID: 40_1_4_118





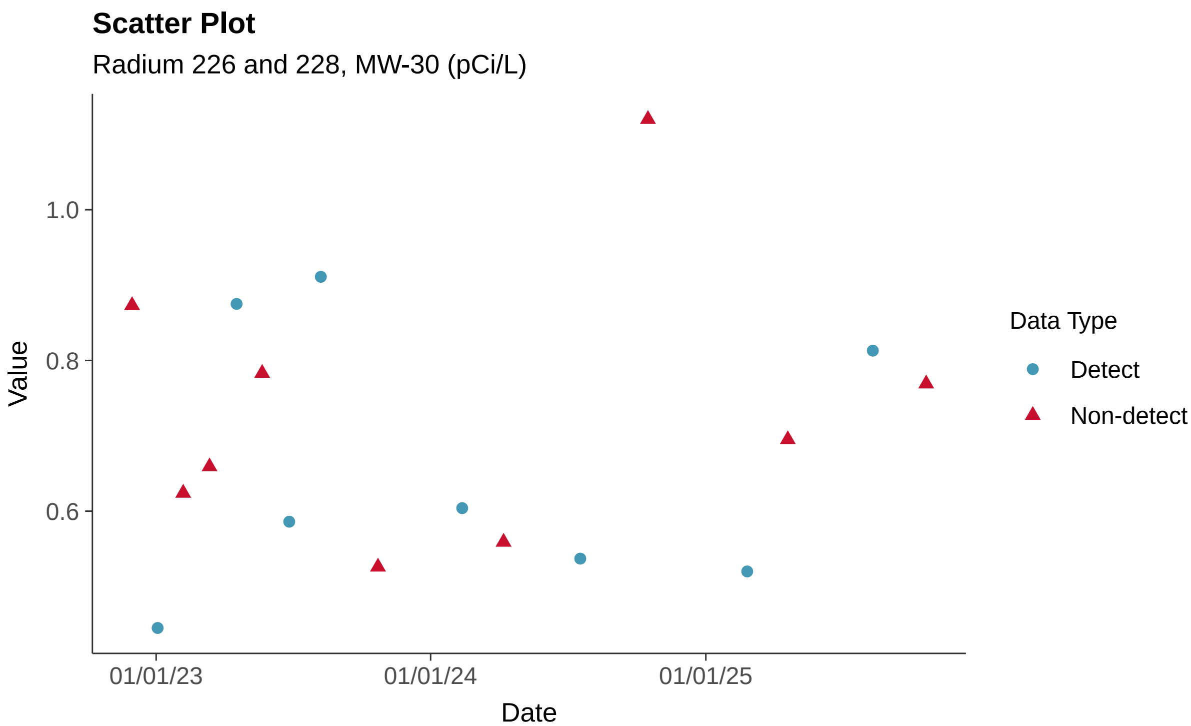

Boxplot
Molybdenum, MW-30 (mg/L)
Value
0.03
0.02
0.01
0.00
Data Type
Detect
Outlier Type
Major

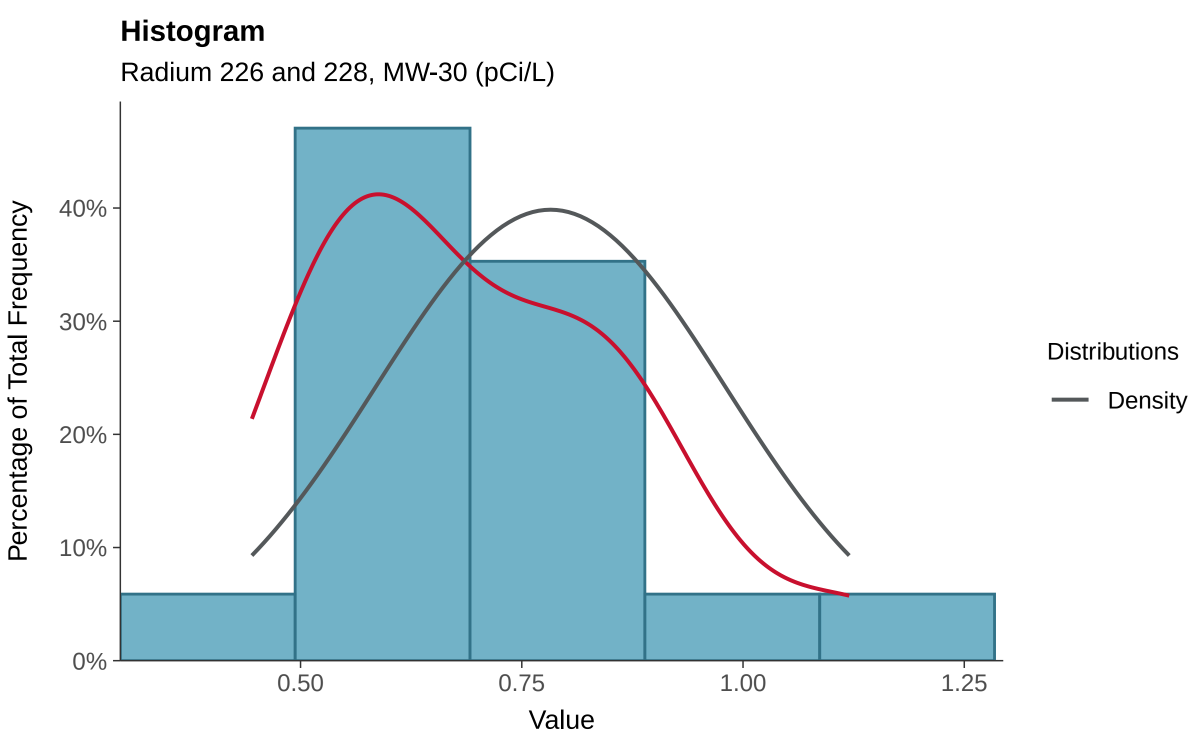

Boxplot by Season
Molybdenum, MW-30 (mg/L)
Value
0.03
0.02
0.01
0.00
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Minor
Data Type
Detect


Lognormal Q-Q plot using ROS Imputed Estimates
Molybdenum, MW-30 (mg/L)
log(Value)
−3
−4
−5
−6
−7
−8
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

Appendix IV: Radium 226 and 228, MW-30

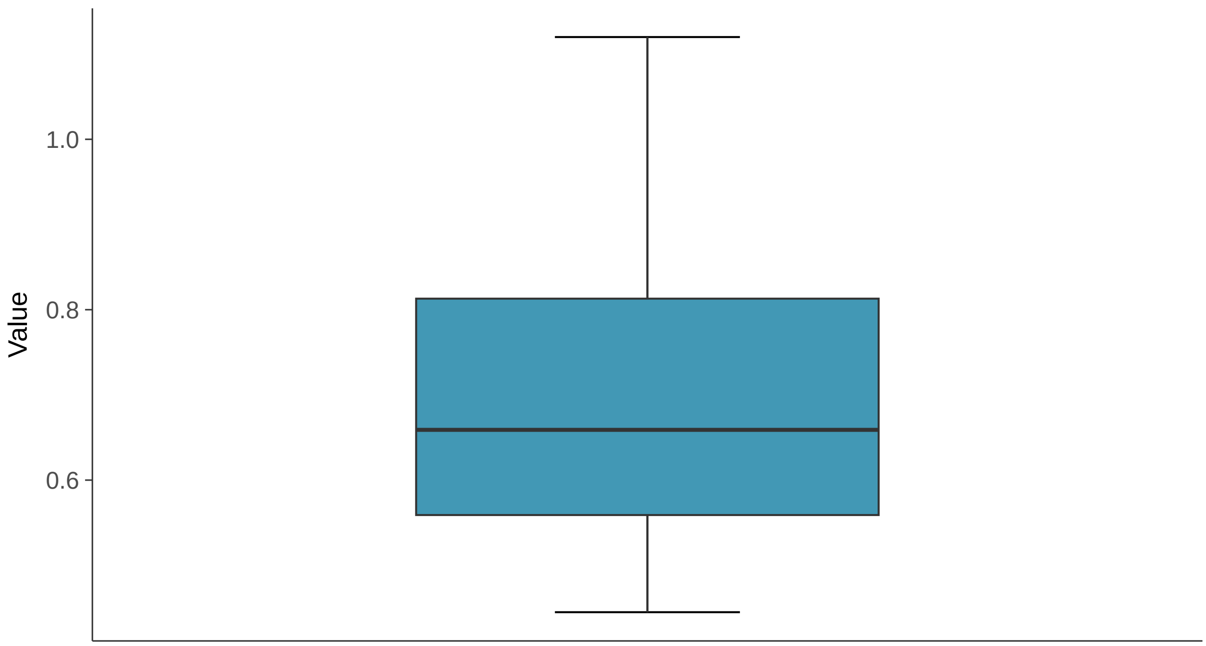
ID: 40_1_4_121





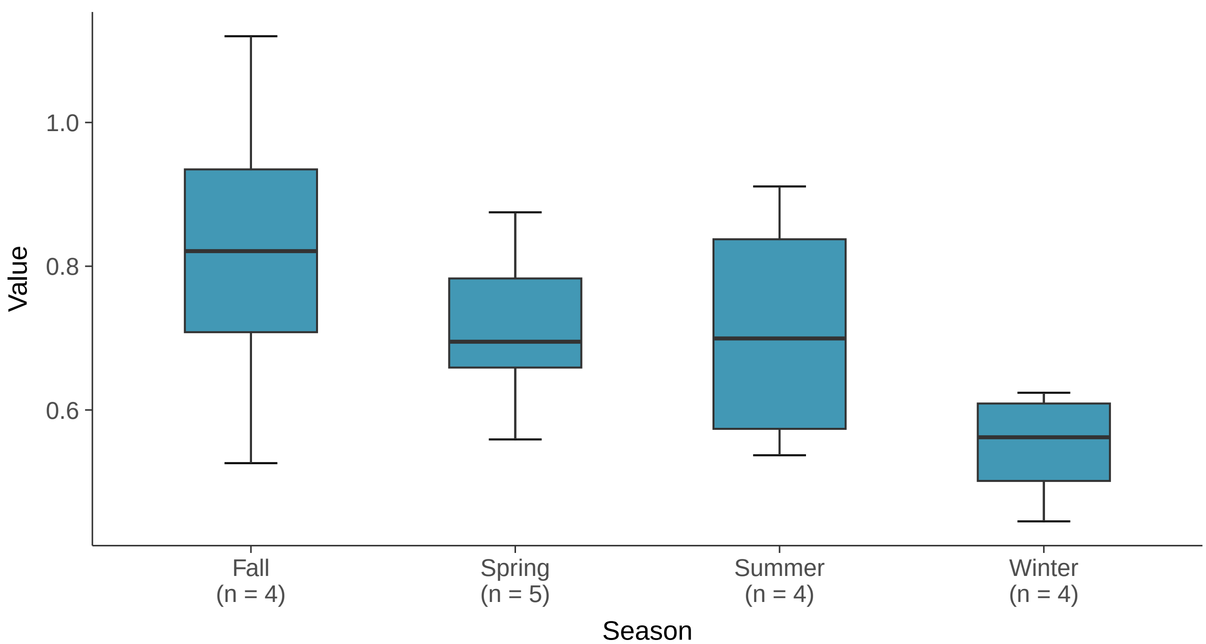
Boxplot

Radium 226 and 228, MW-30 (pCi/L)



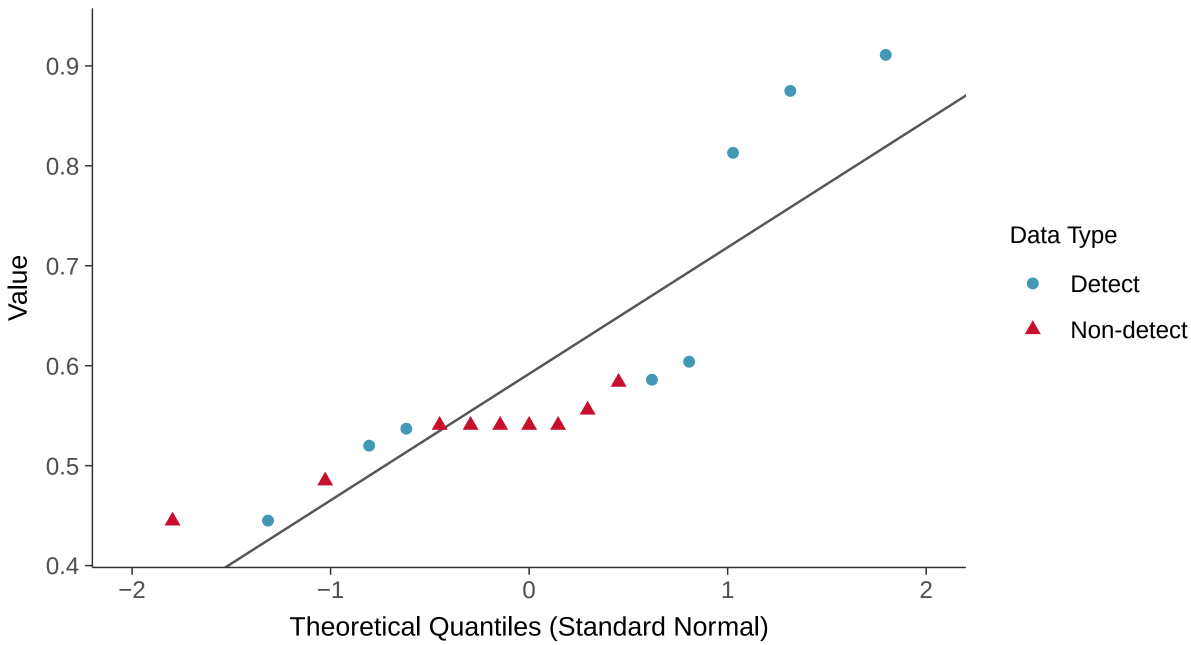
Boxplot by Season

Radium 226 and 228, MW-30 (pCi/L)



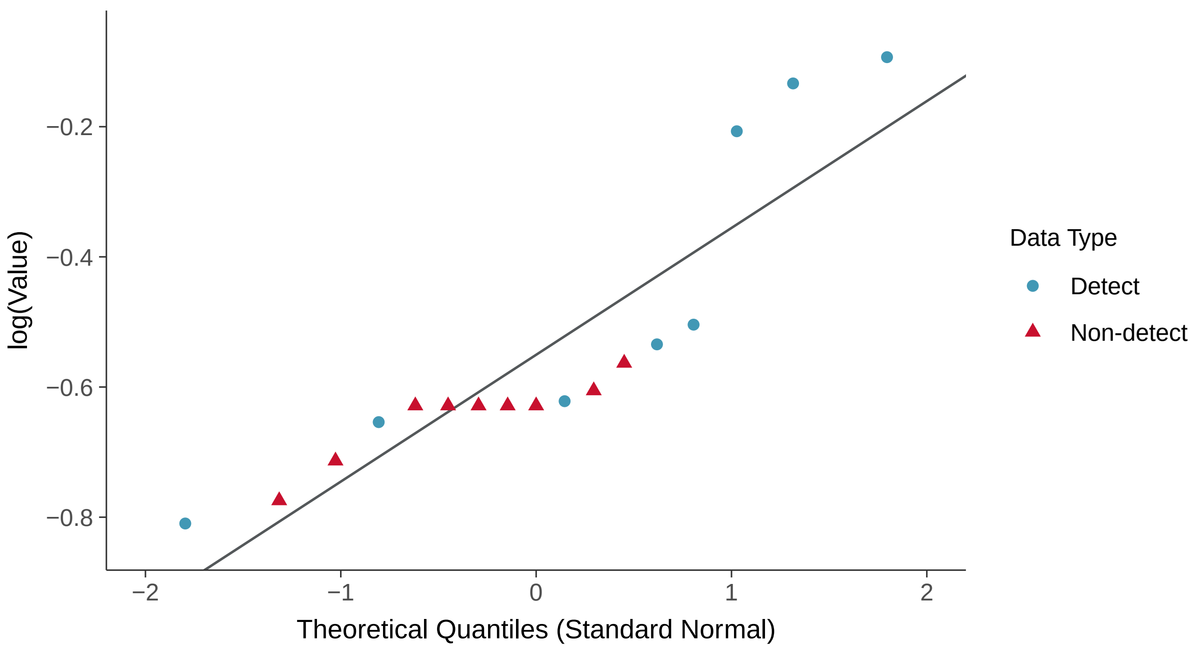
Normal Q-Q plot using ROS Imputed Estimates

Radium 226 and 228, MW-30 (pCi/L)



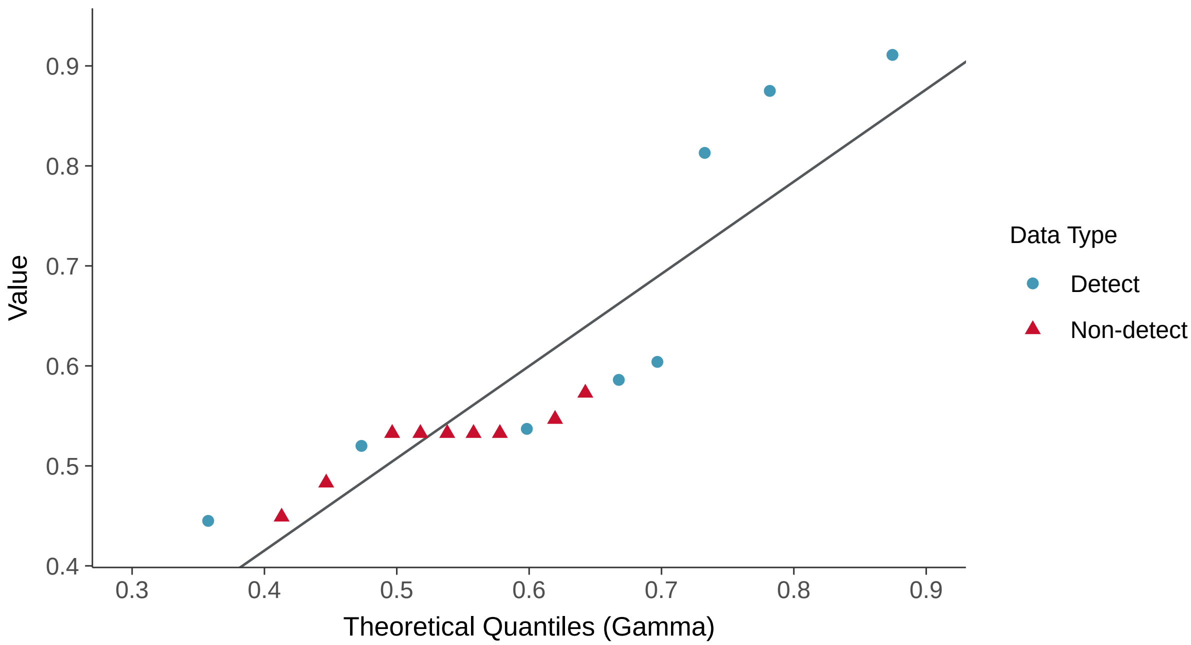
Lognormal Q-Q plot using ROS Imputed Estimates

Radium 226 and 228, MW-30 (pCi/L)



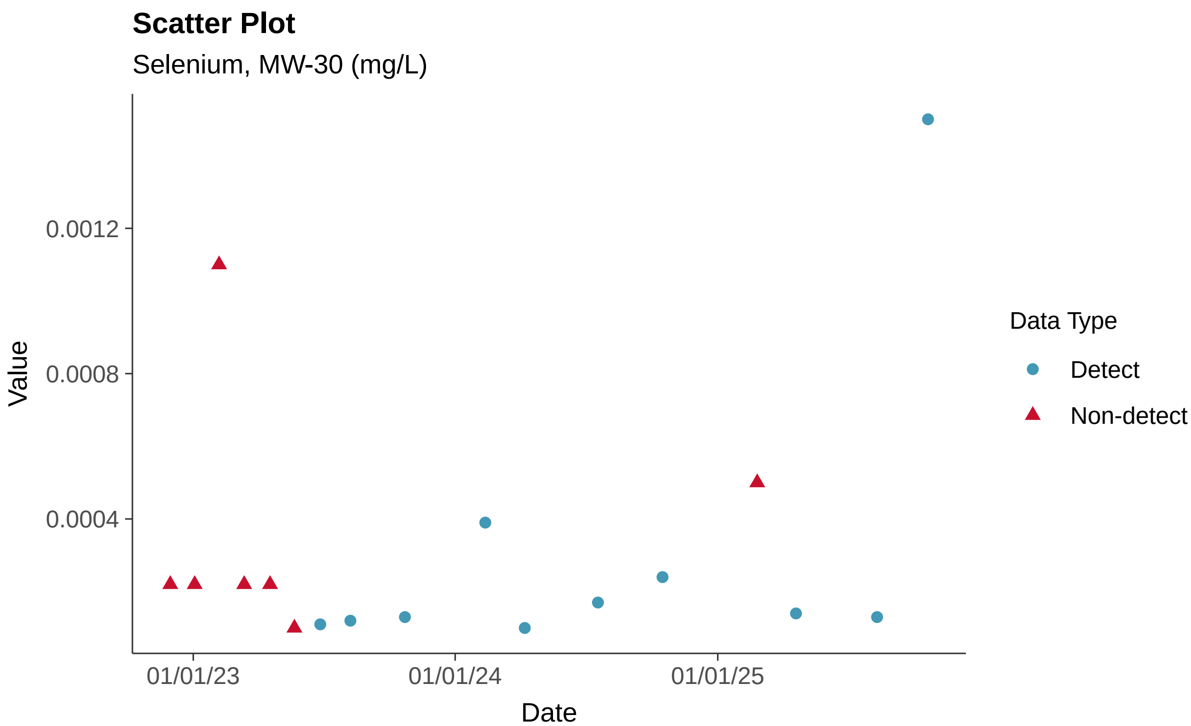
Gamma Q-Q plot using ROS Imputed Estimates

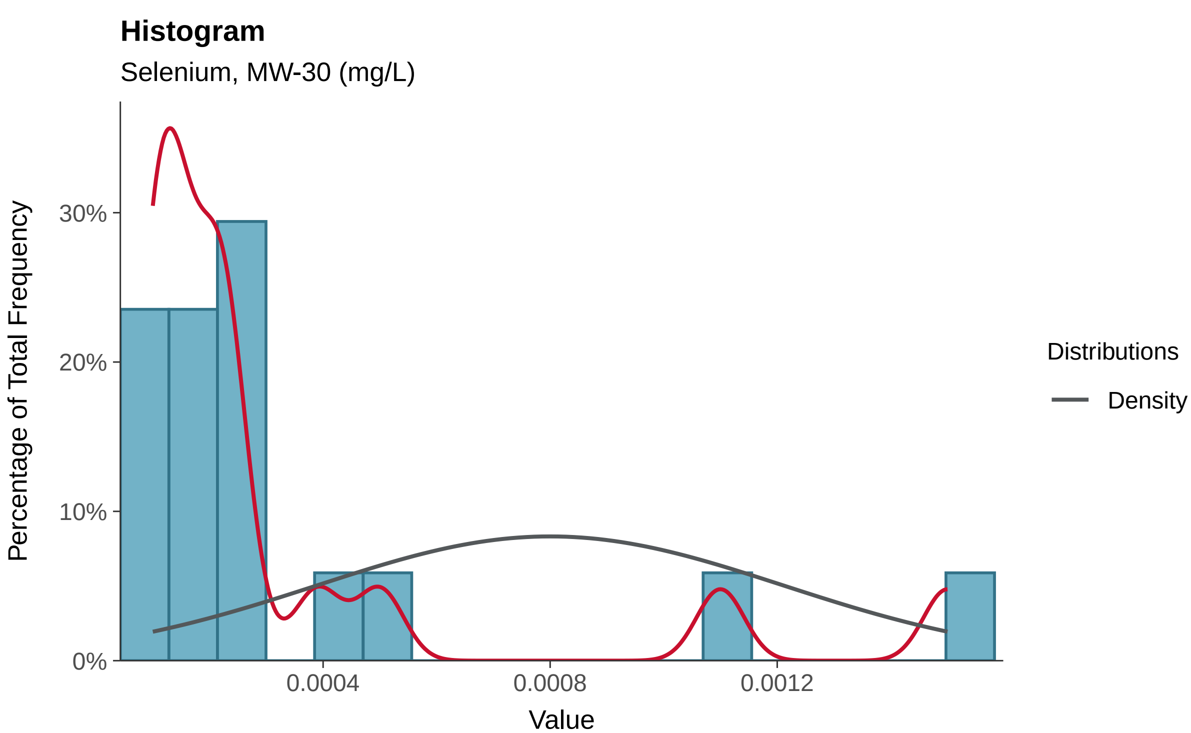
Radium 226 and 228, MW-30 (pCi/L)



Appendix IV: Selenium, MW-30

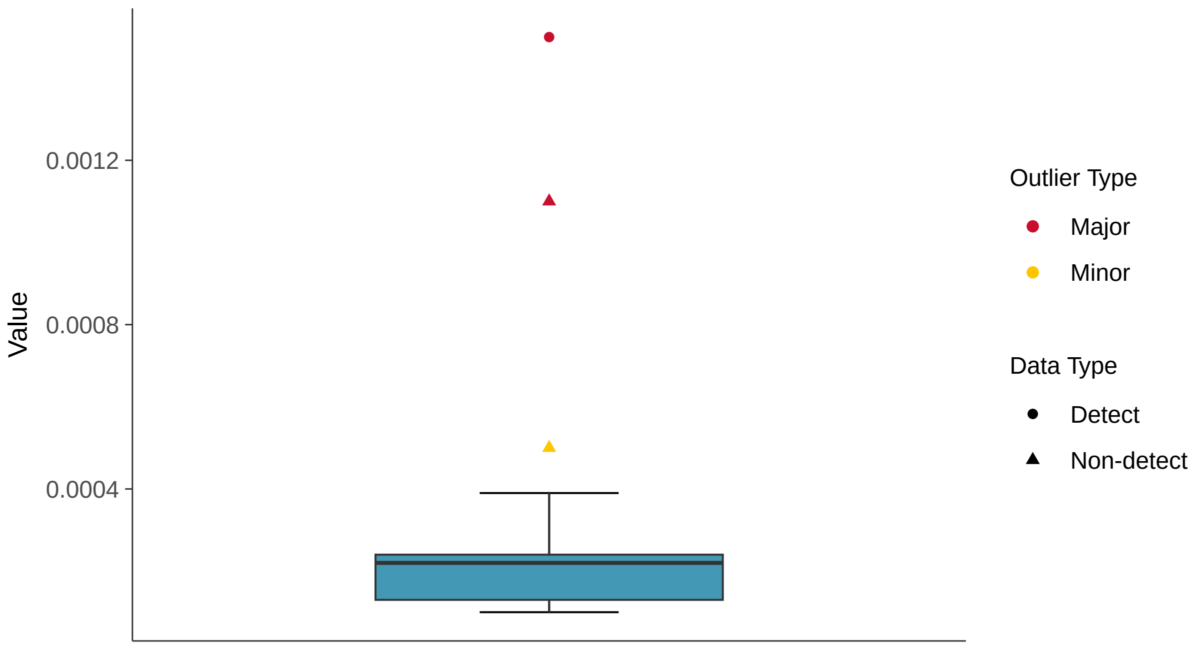
ID: 40_1_4_122





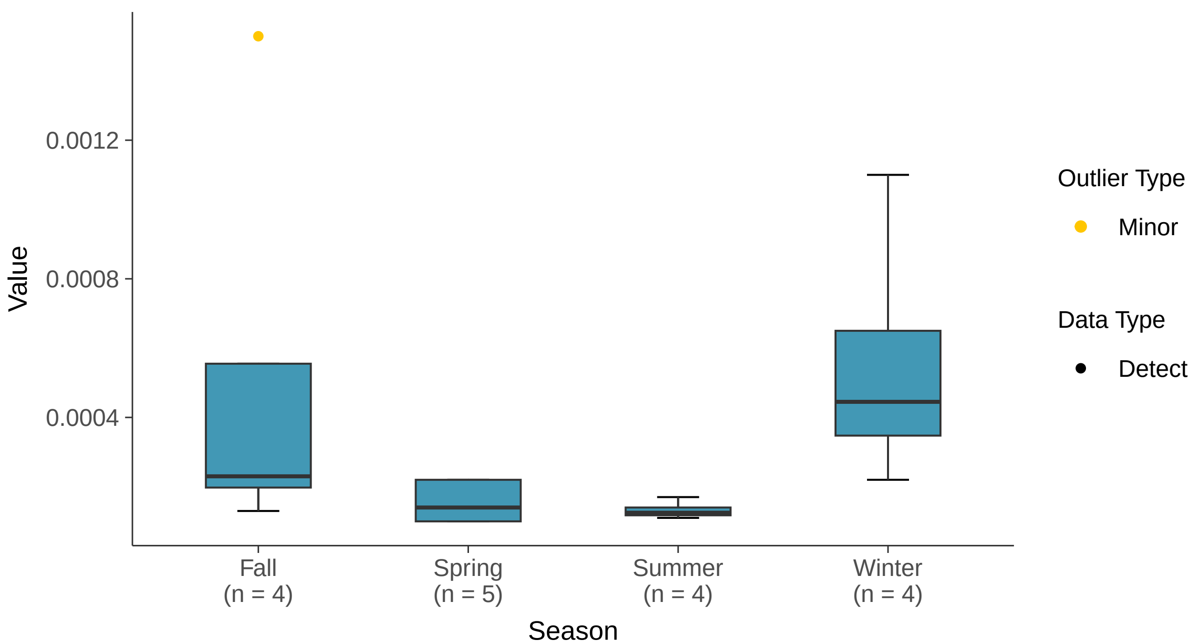
Boxplot

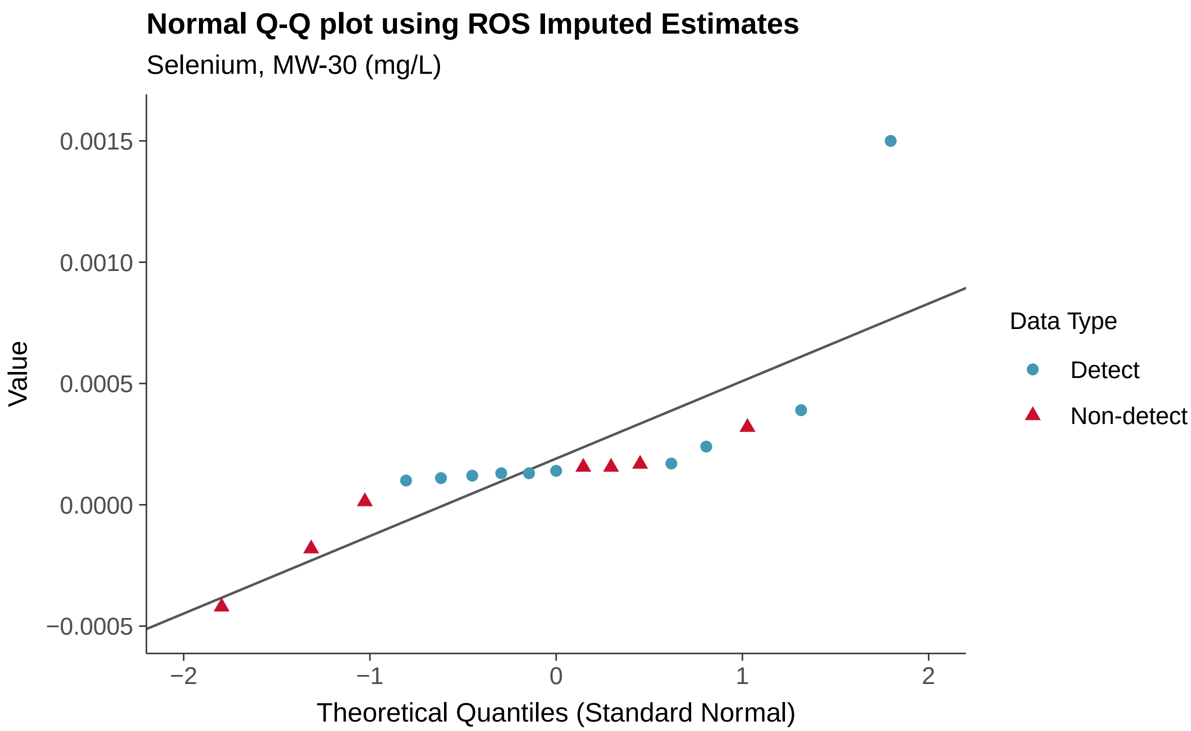
Selenium, MW-30 (mg/L)



Boxplot by Season

Selenium, MW-30 (mg/L)



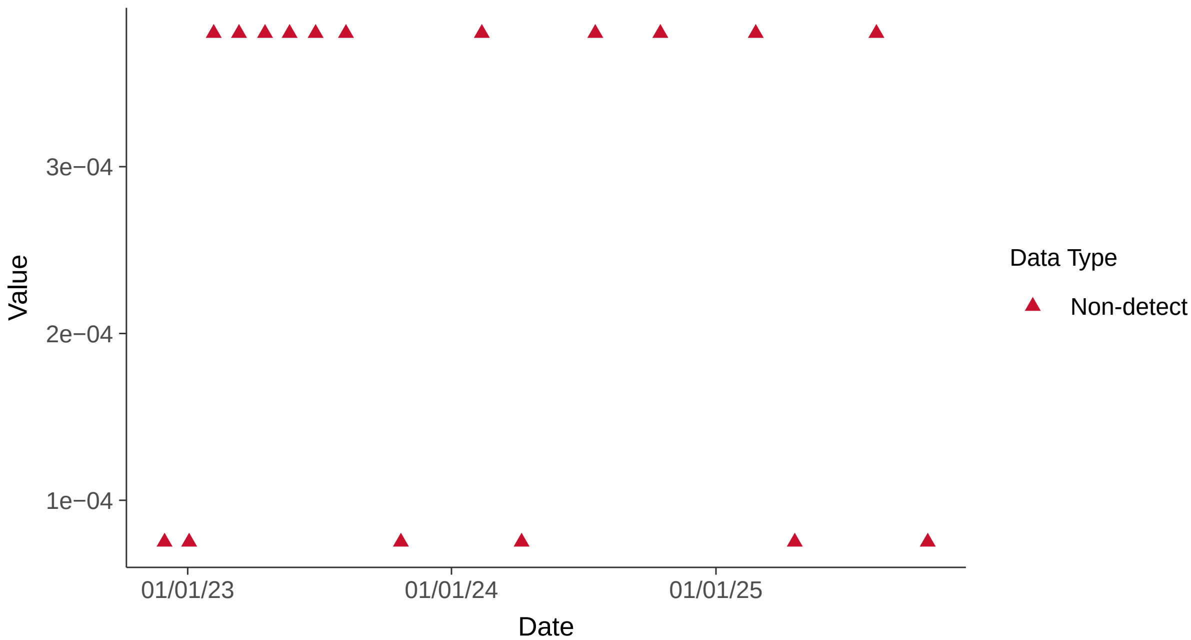

Normal Q-Q plot using ROS Imputed Estimates
Selenium, MW-30 (mg/L)
Value
0.0015
0.0010
0.0005
0.0000
−0.0005
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

Appendix IV: Thallium, MW-30

ID: 40_1_4_125

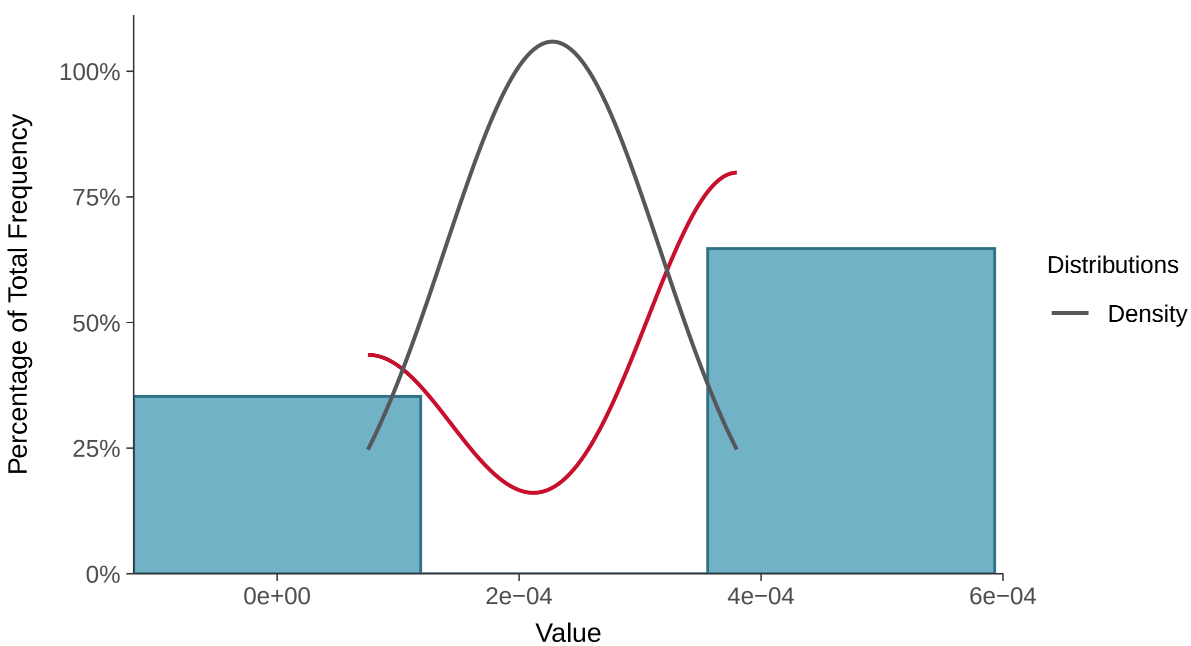
Scatter Plot

Thallium, MW-30 (mg/L)



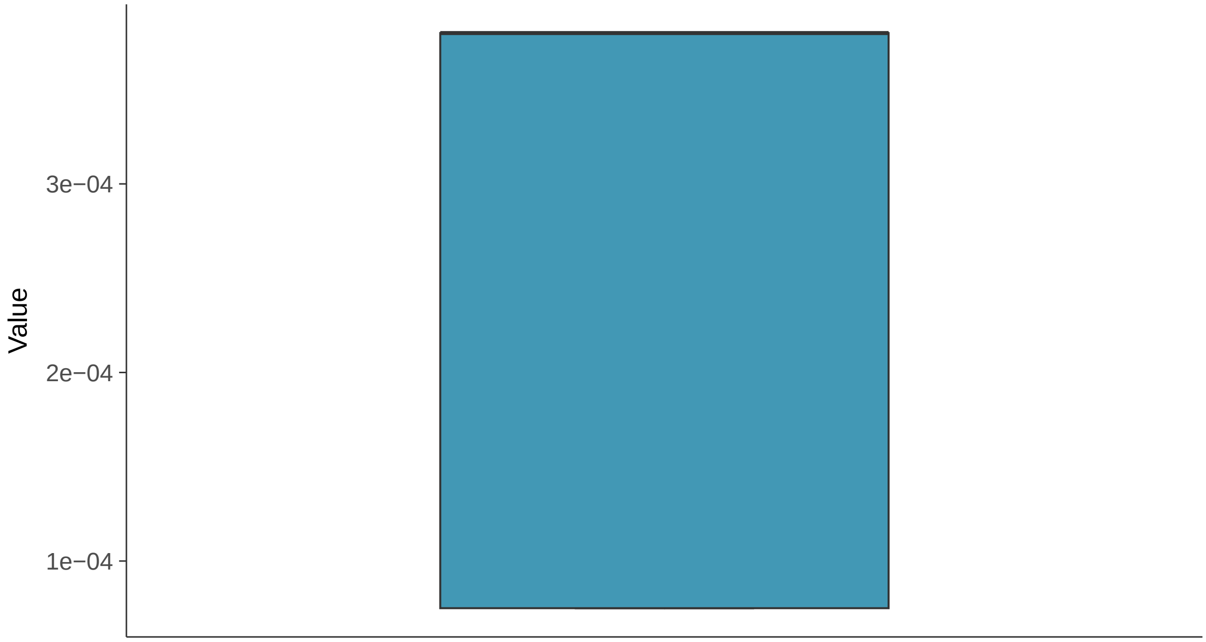
Histogram

Thallium, MW-30 (mg/L)



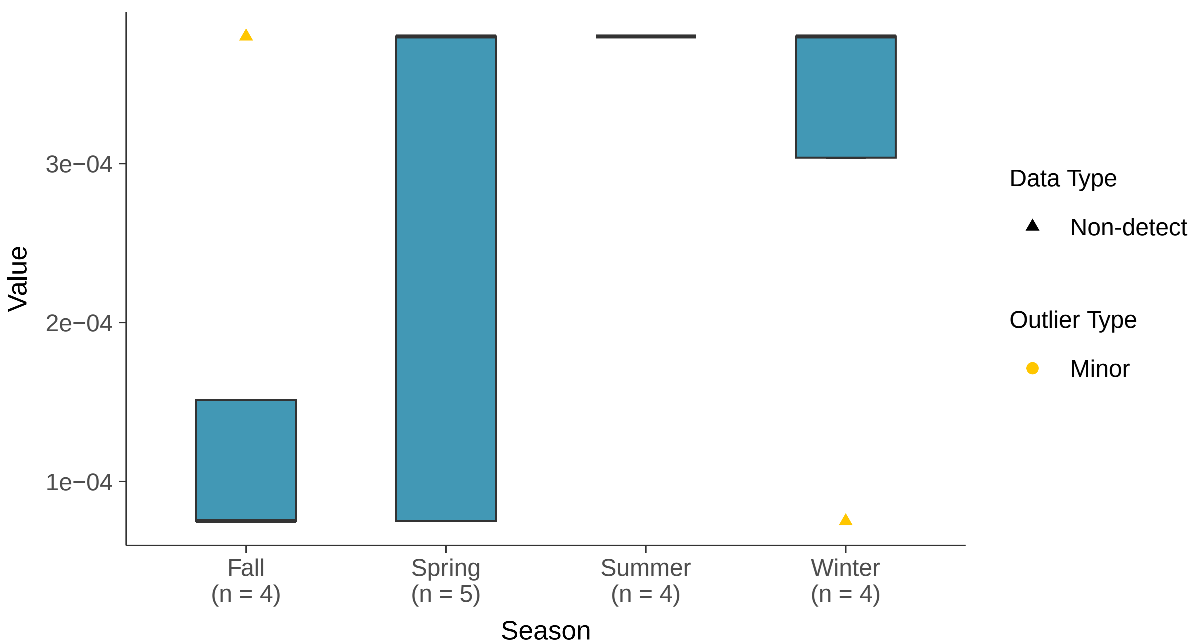
Boxplot

Thallium, MW-30 (mg/L)



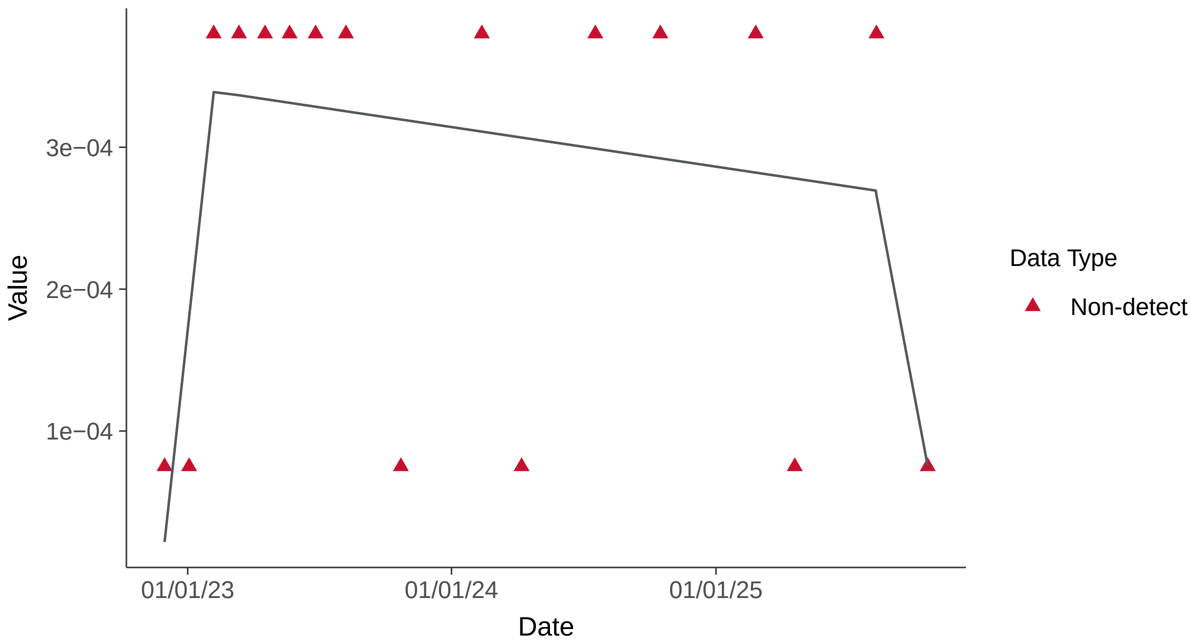
Boxplot by Season

Thallium, MW-30 (mg/L)



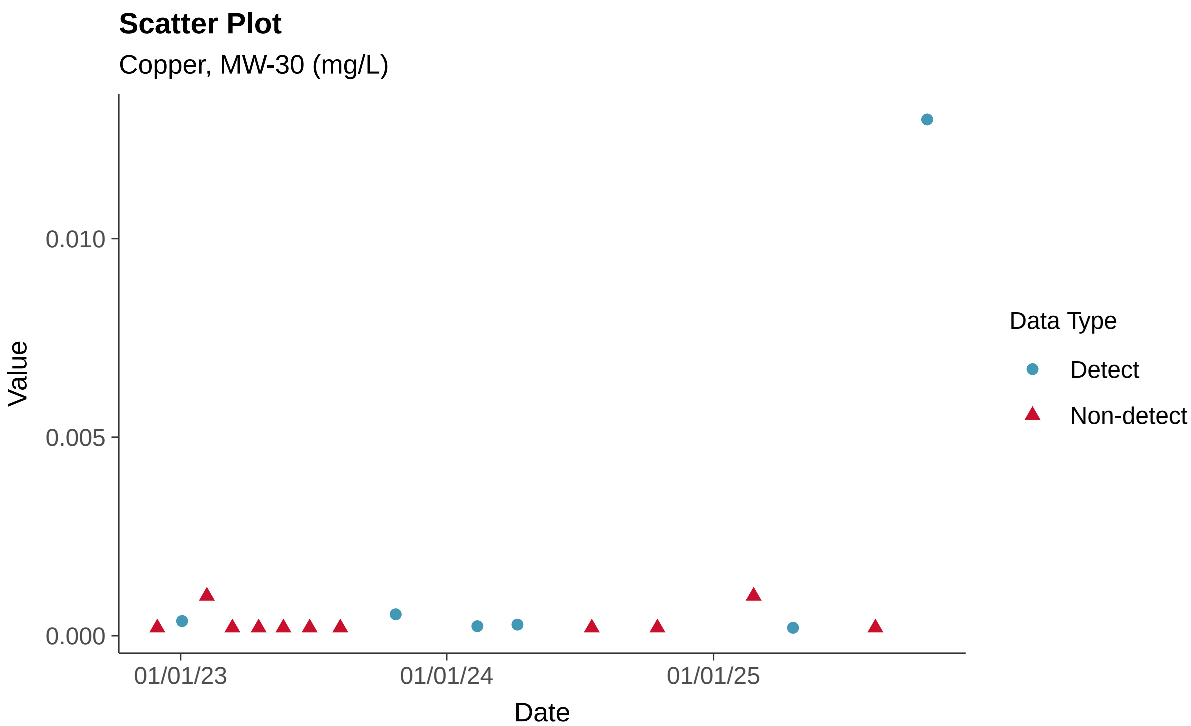
Trend Regression: Piecewise Linear-Linear-Linear

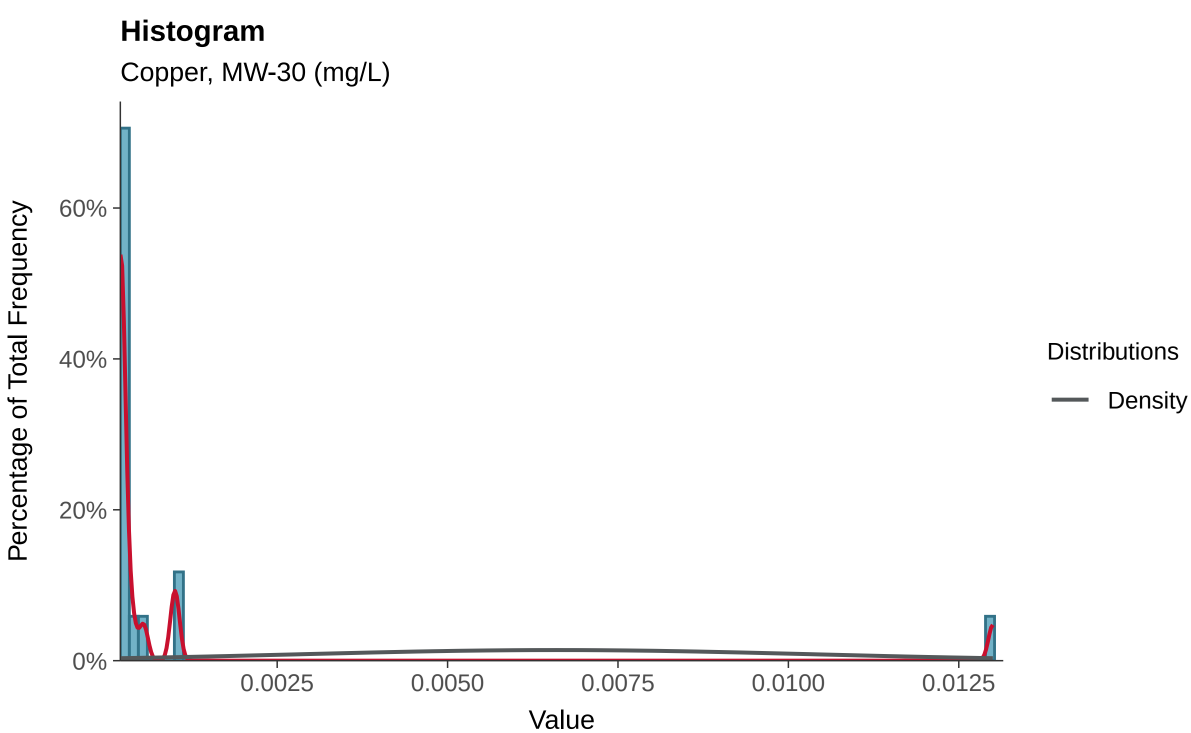
Thallium, MW-30 (mg/L)



Part 115: Copper, MW-30

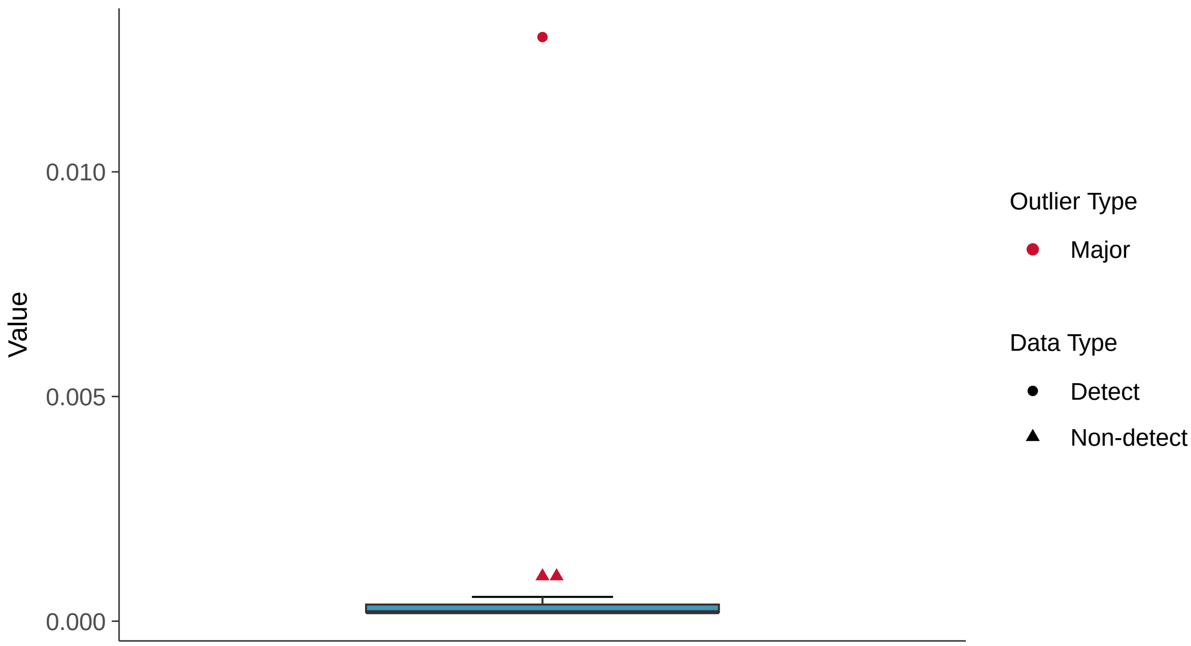
ID: 40_1_5_111





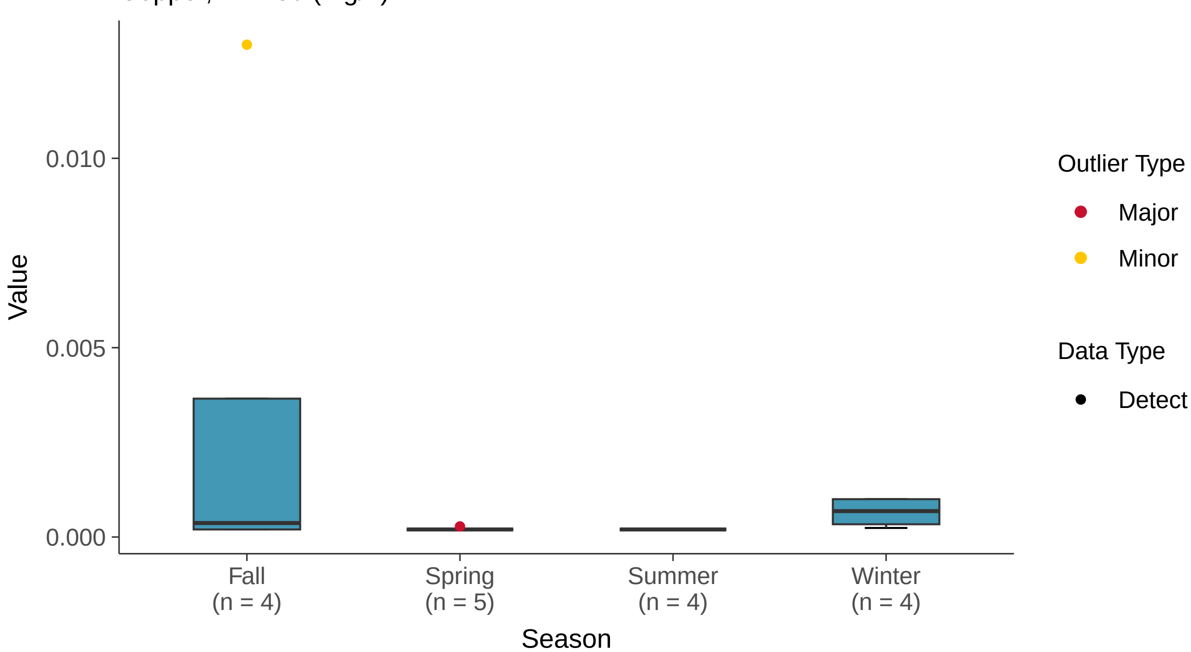
Boxplot

Copper, MW-30 (mg/L)



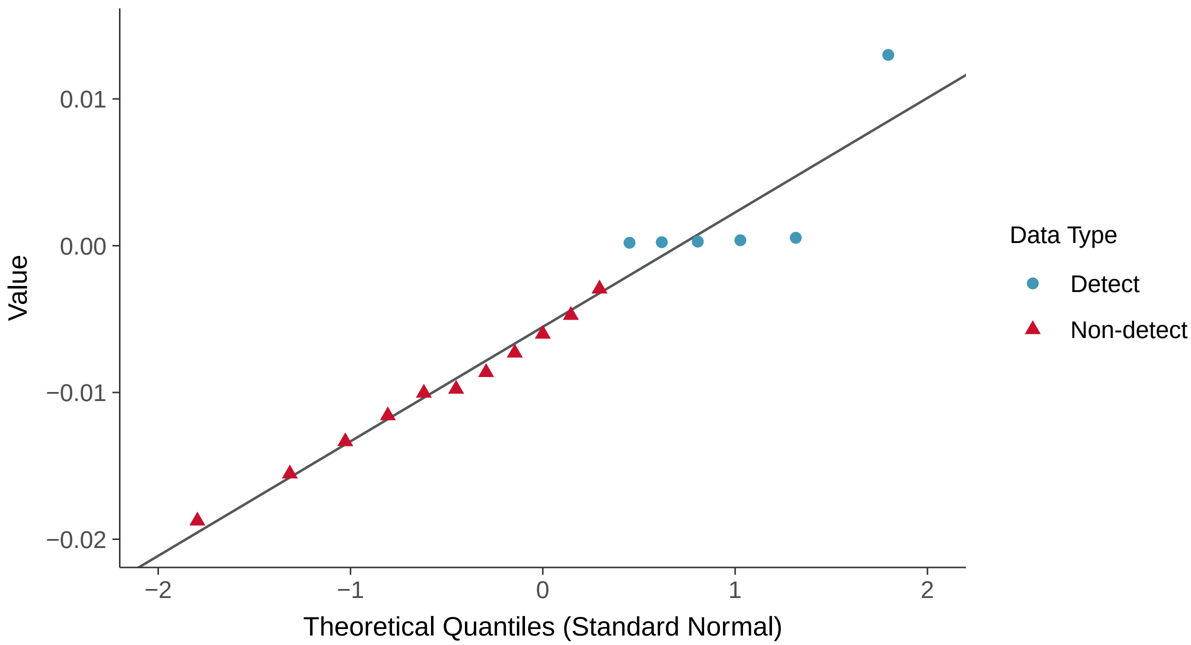
Boxplot by Season

Copper, MW-30 (mg/L)



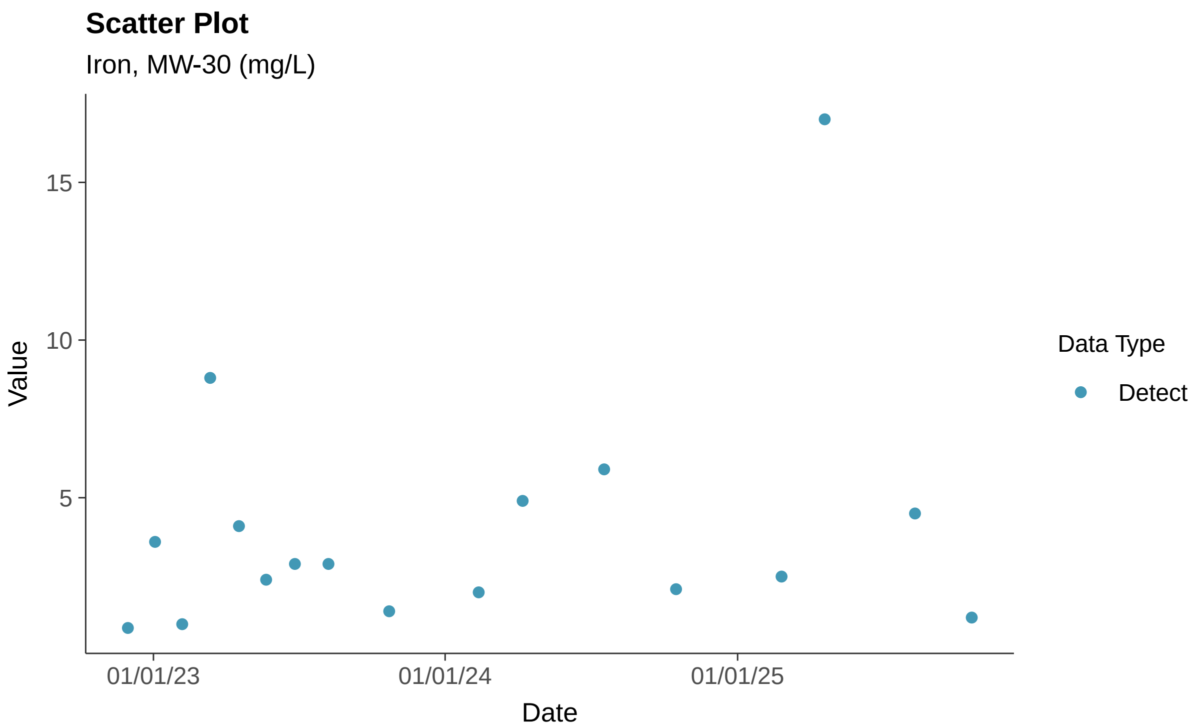
Normal Q-Q plot using ROS Imputed Estimates

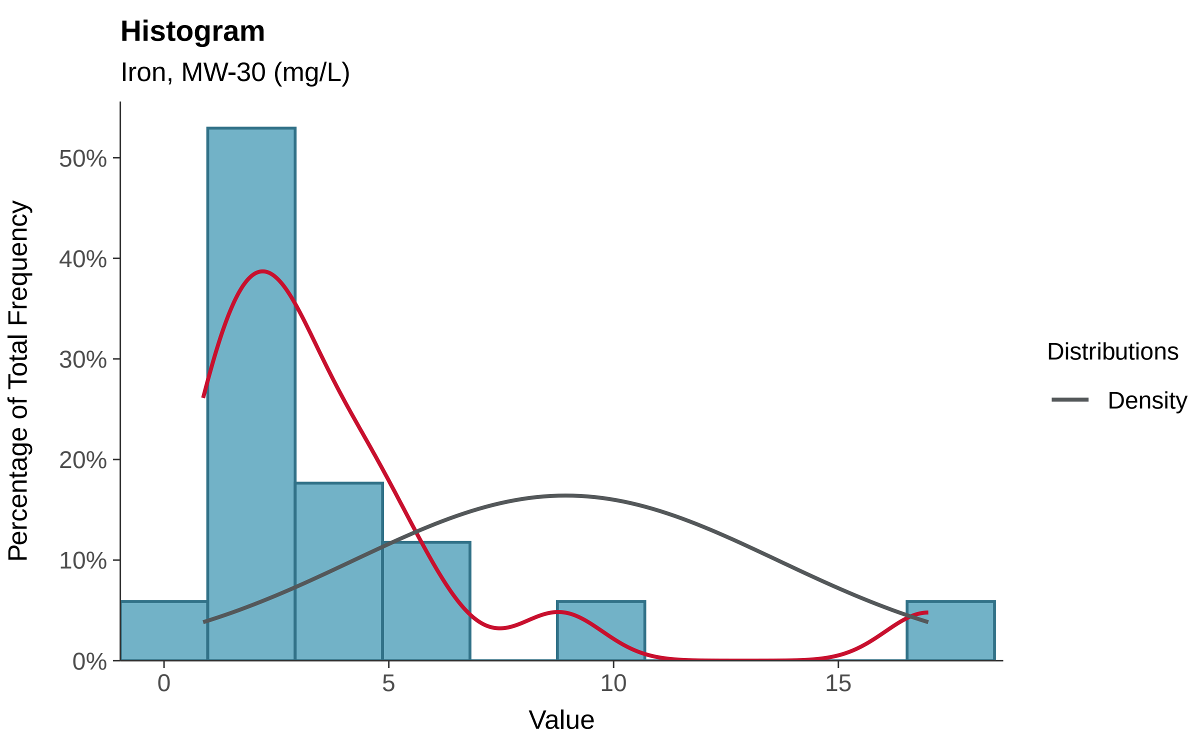
Copper, MW-30 (mg/L)



Part 115: Iron, MW-30

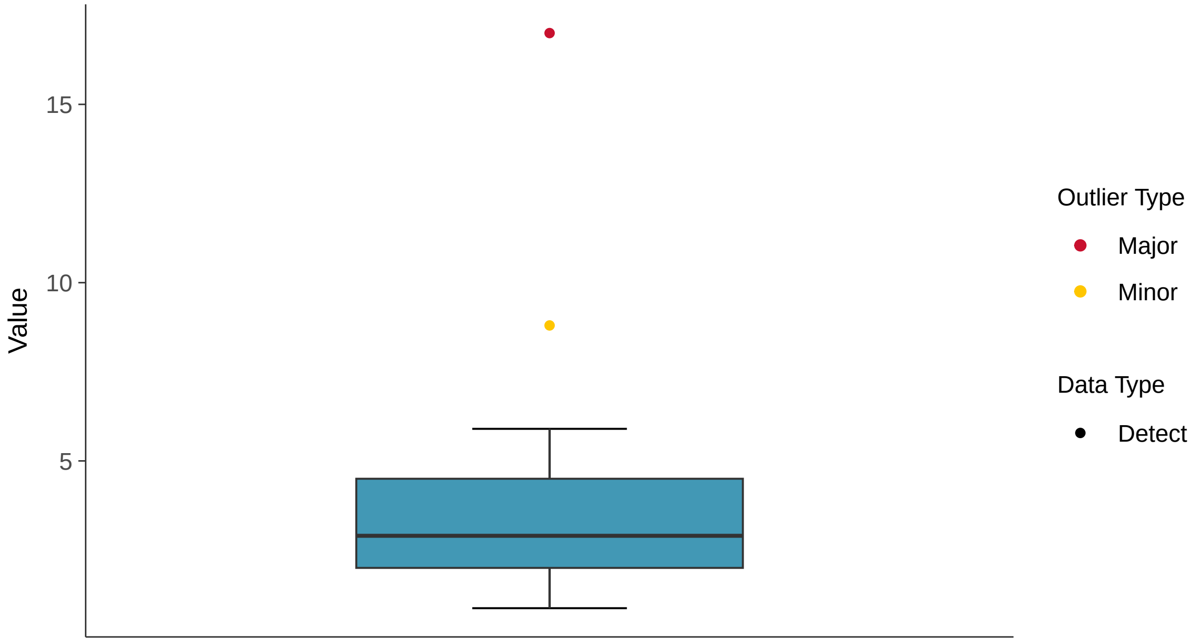
ID: 40_1_5_114





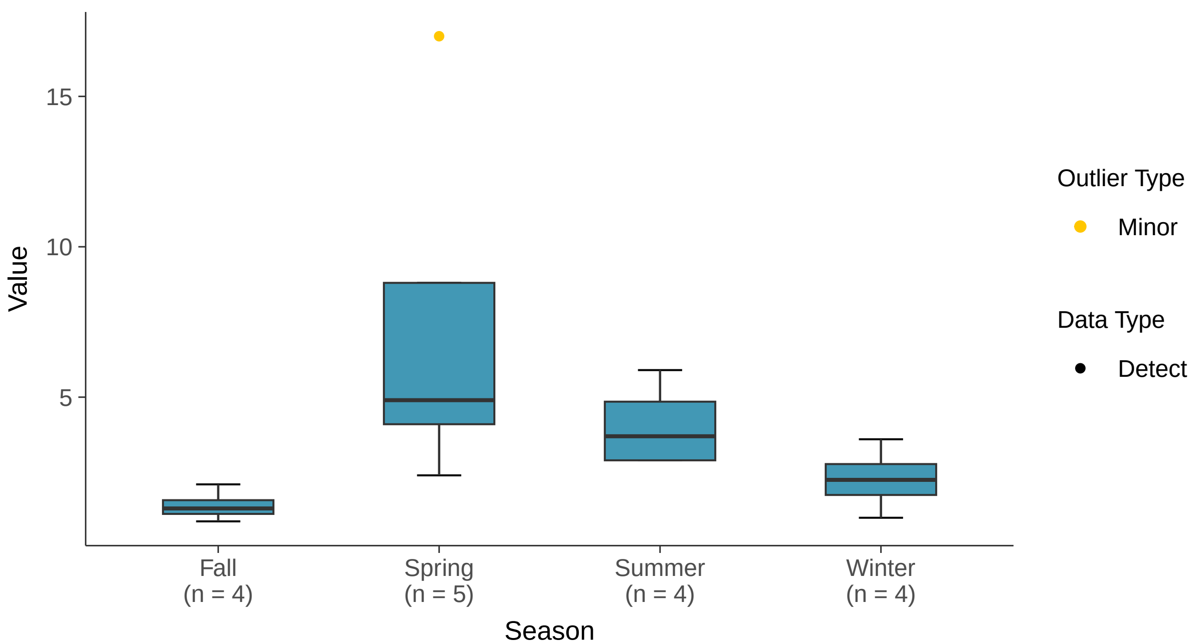
Boxplot

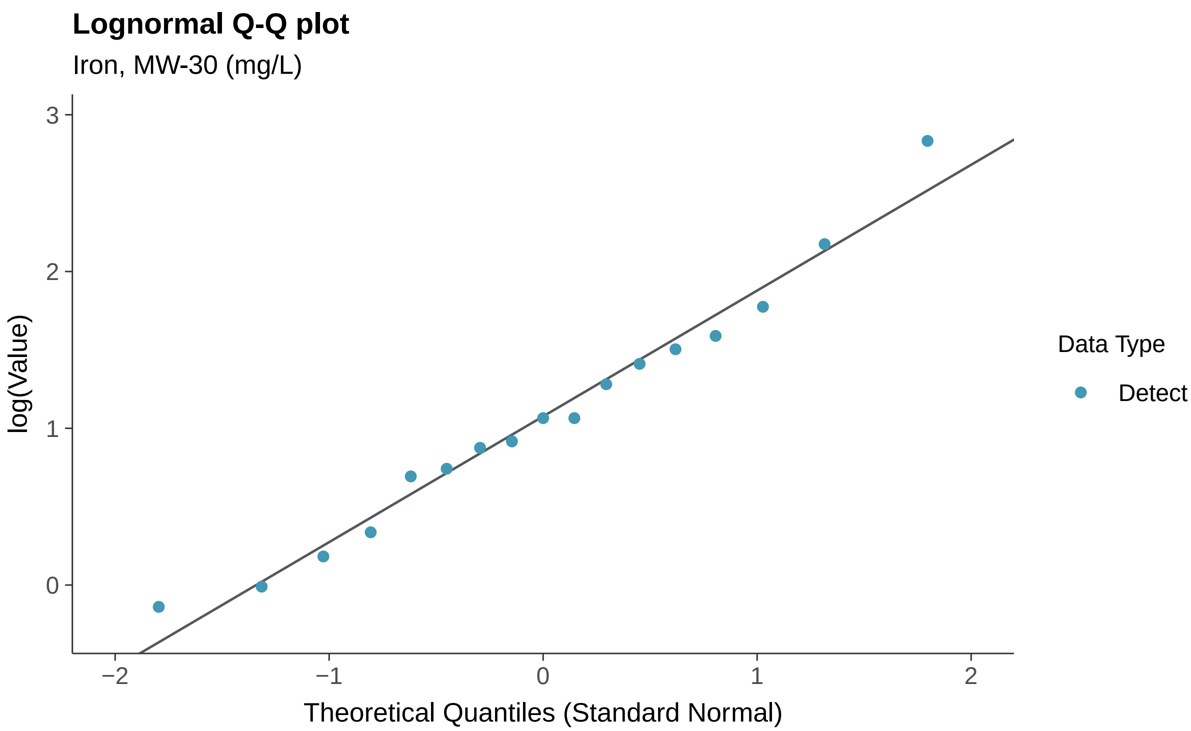
Iron, MW-30 (mg/L)

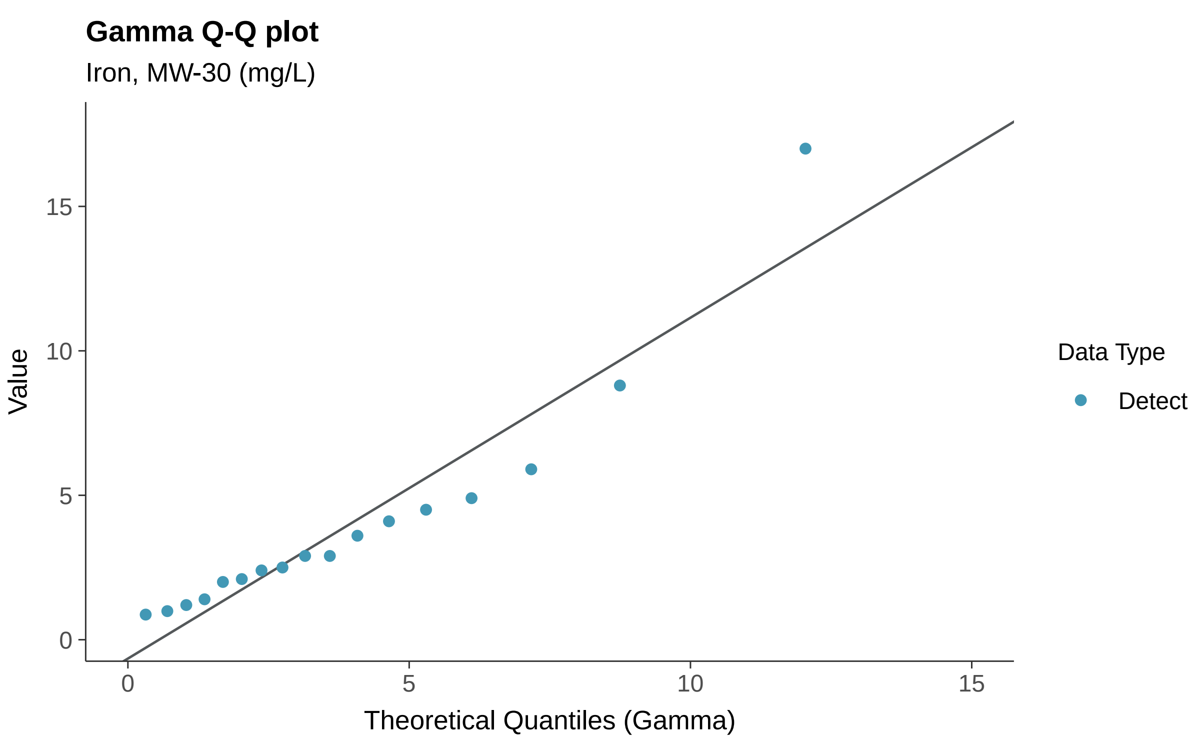


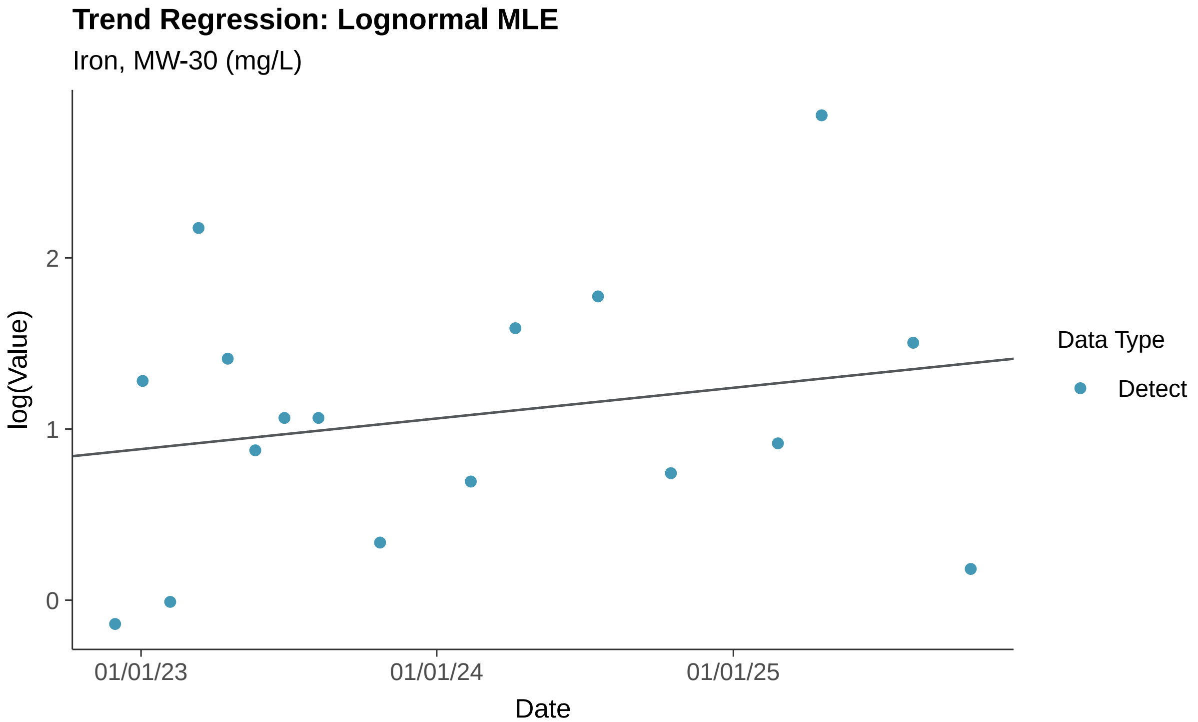
Boxplot by Season

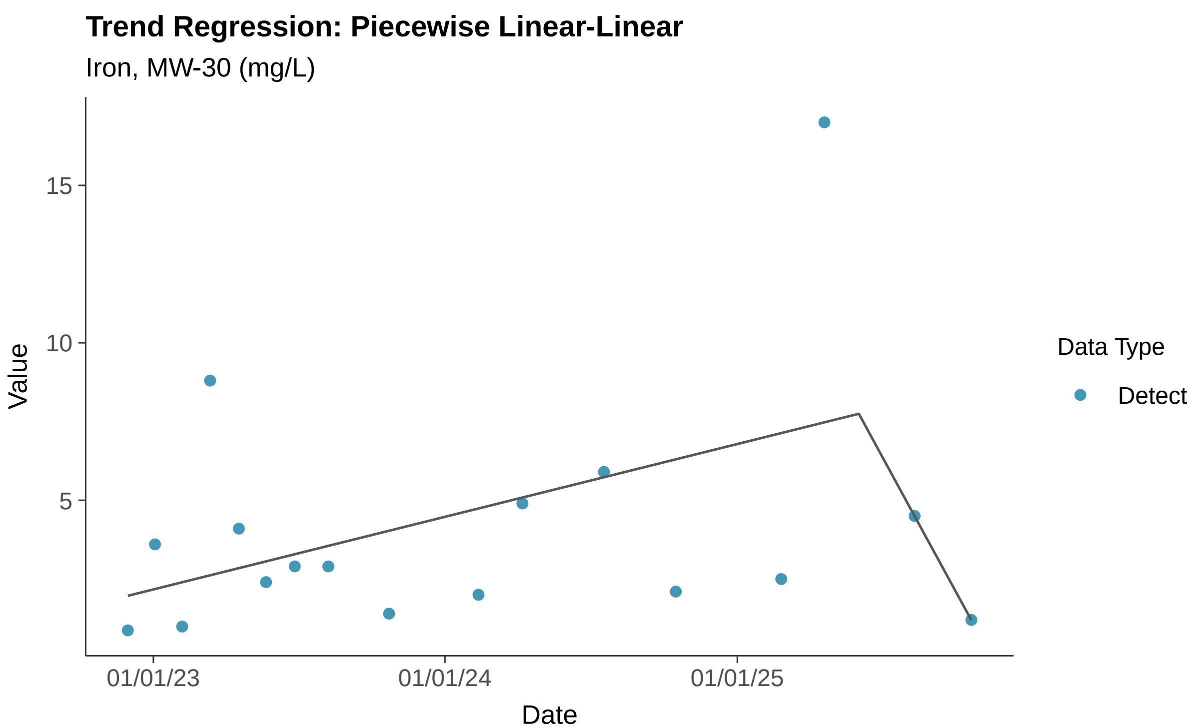
Iron, MW-30 (mg/L)




Lognormal Q-Q plot
Iron, MW-30 (mg/L)
log(Value)
3
2
1
0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

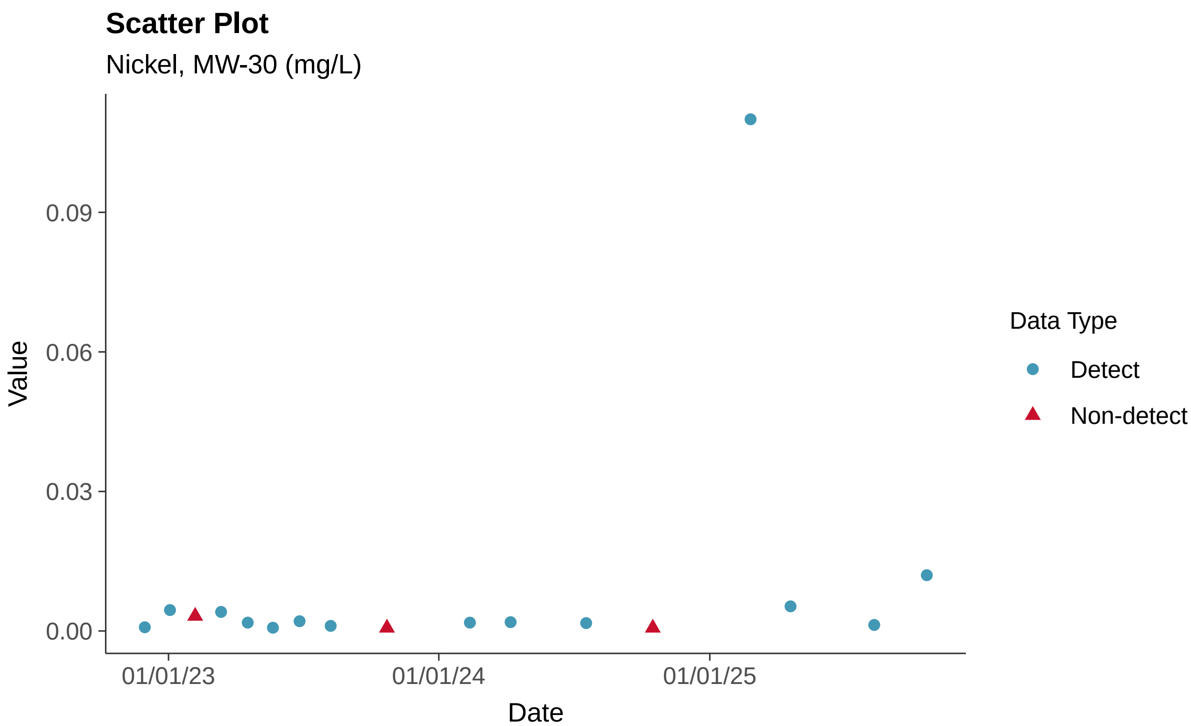

Gamma Q-Q plot
Iron, MW-30 (mg/L)
Value
15
10
5
0
0
5
10
15
Theoretical Quantiles (Gamma)
Data Type
Detect

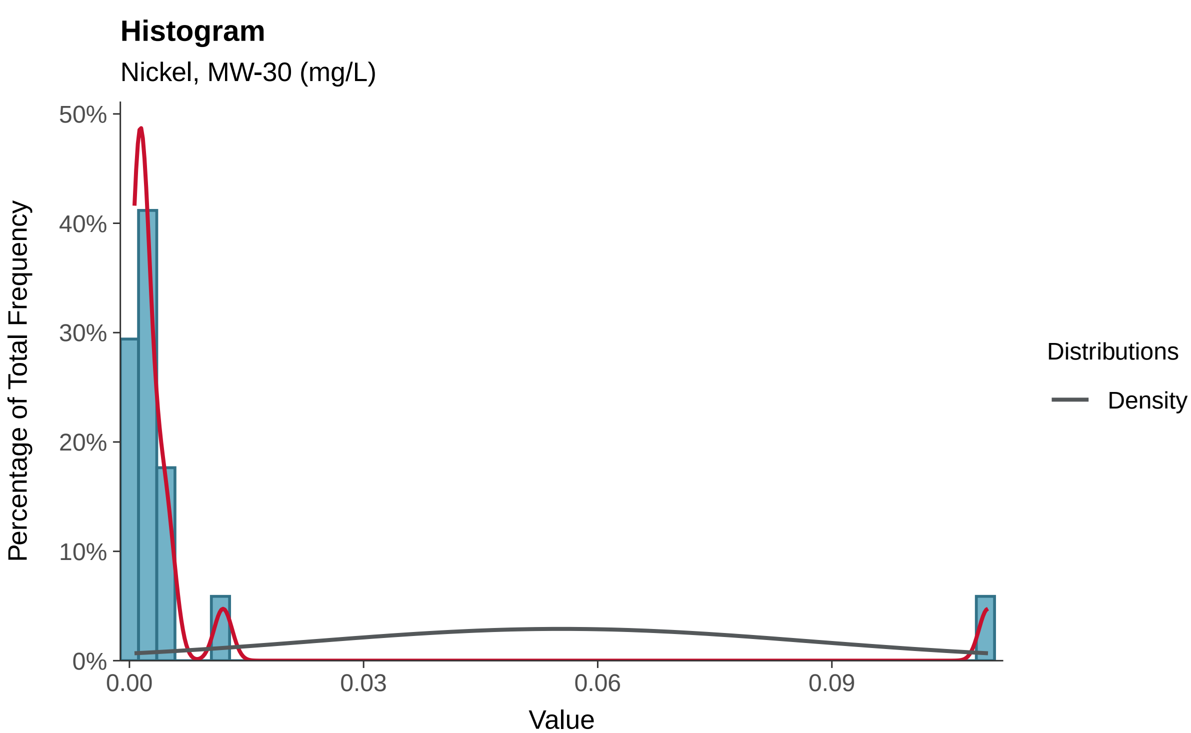

Trend Regression: Lognormal MLE
Iron, MW-30 (mg/L)
log(Value)
0
1
2
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

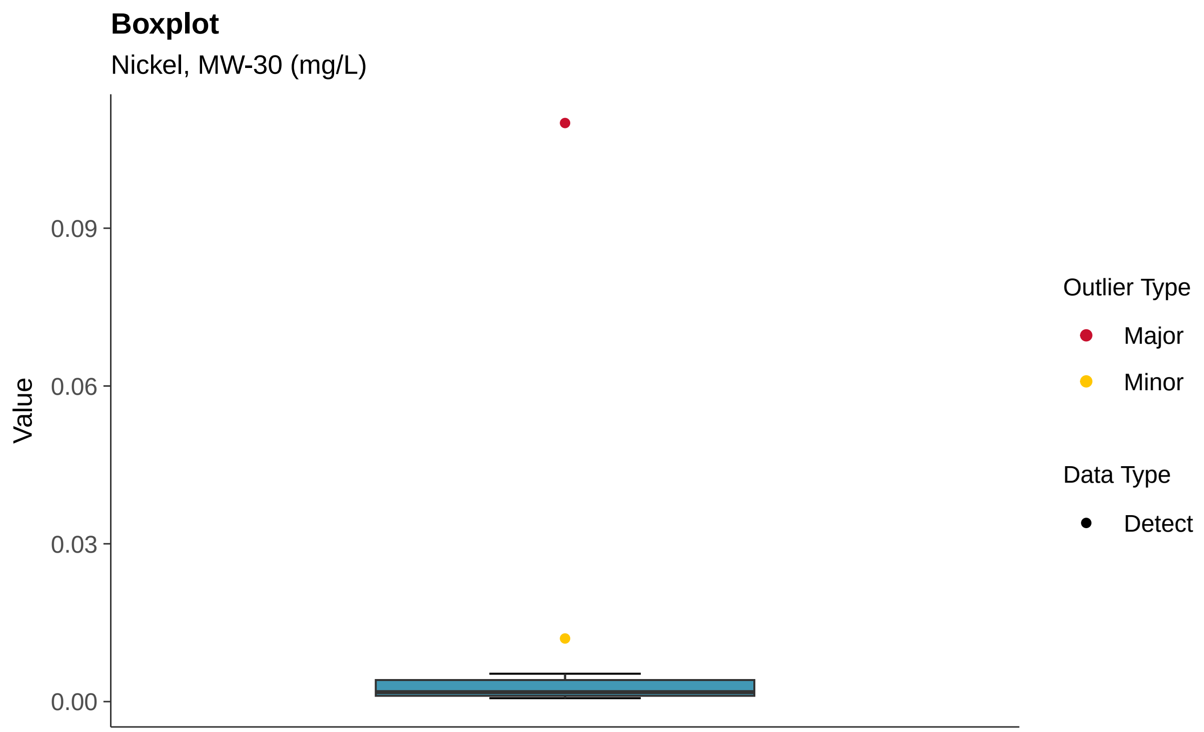

Trend Regression: Piecewise Linear-Linear
Iron, MW-30 (mg/L)
Value
5
10
15
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

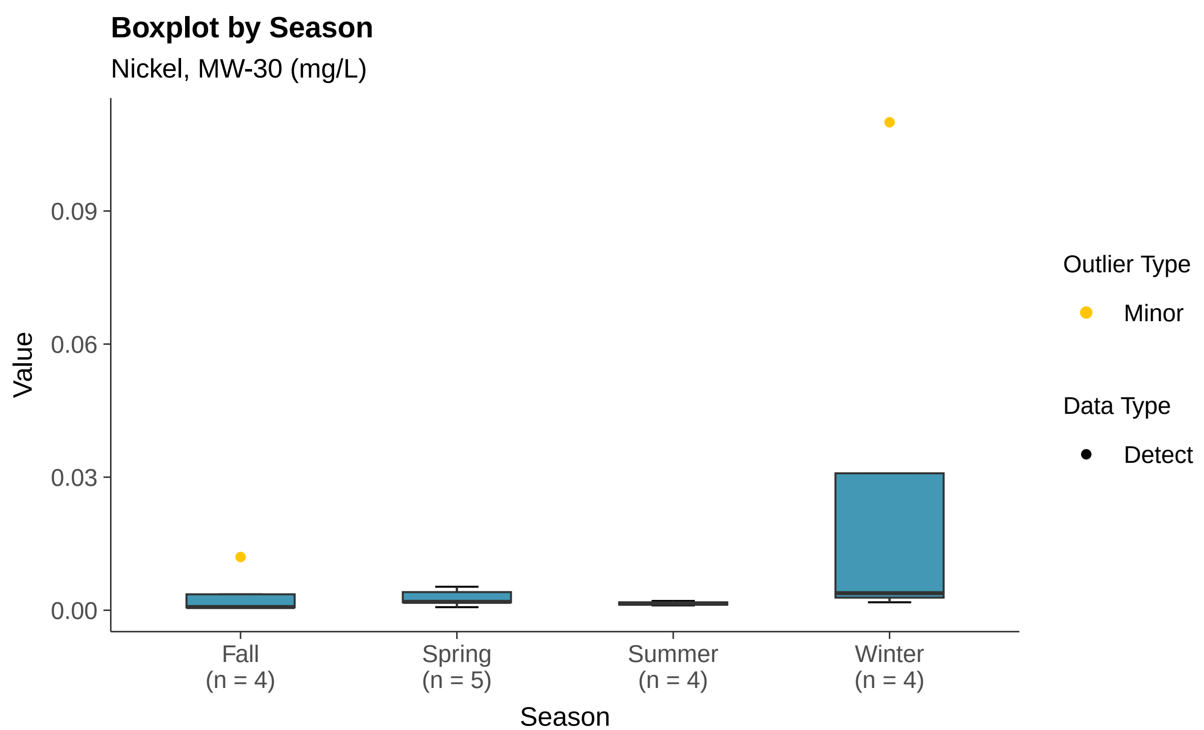
Part 115: Nickel, MW-30

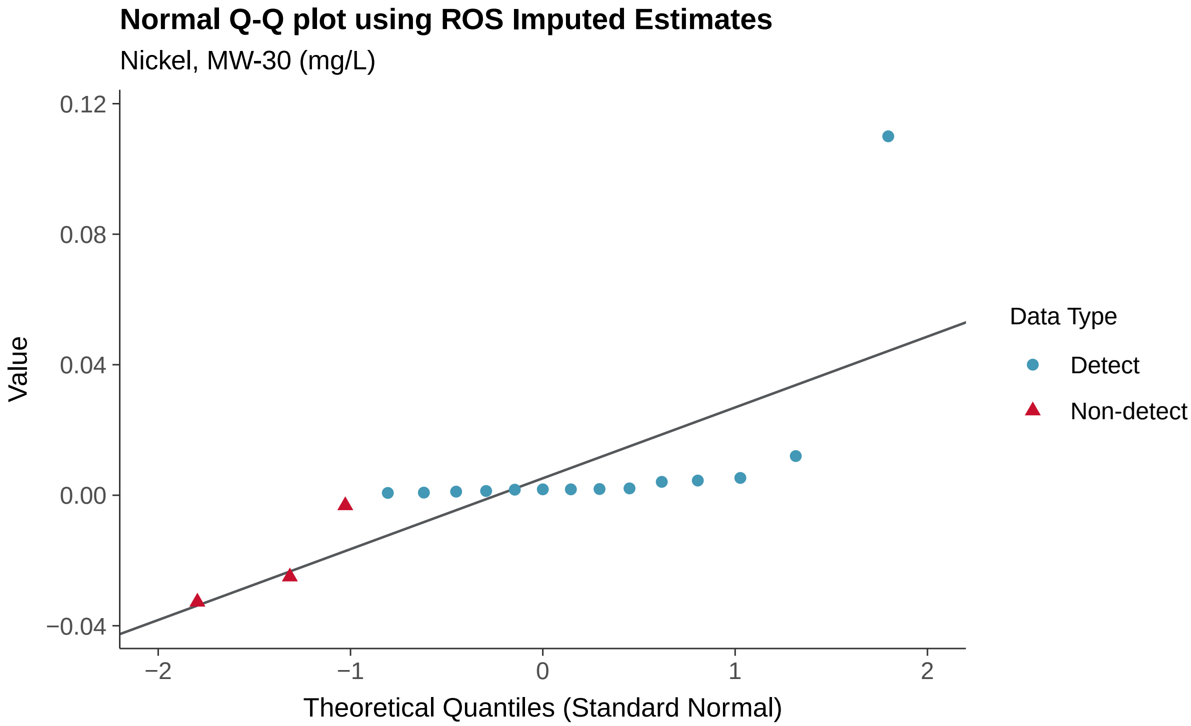
ID: 40_1_5_119

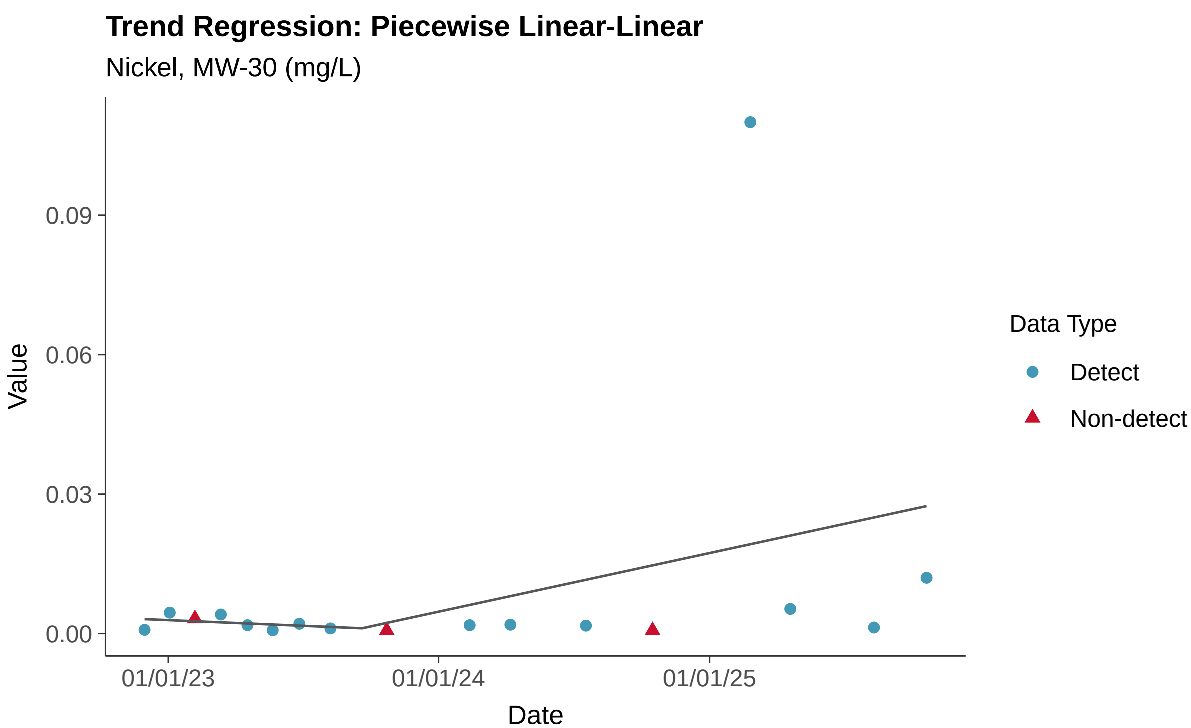


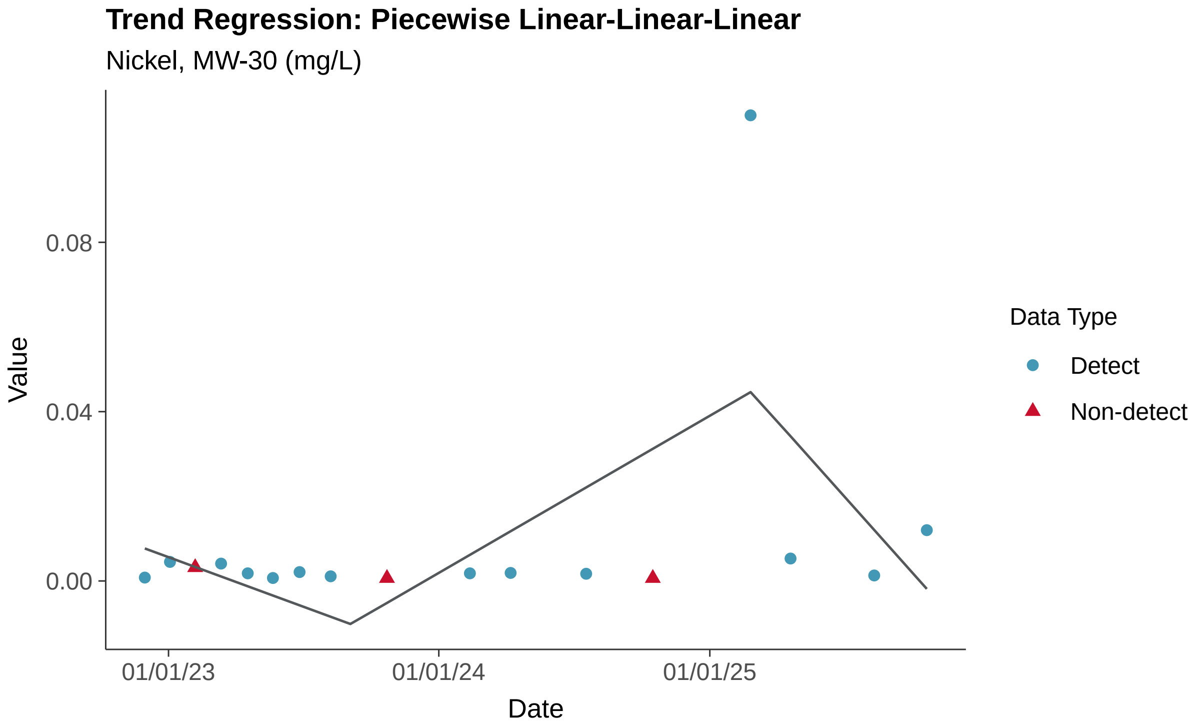



Boxplot
Nickel, MW-30 (mg/L)
Value
0.09
0.06
0.03
0.00
Outlier Type
Major
Minor
Data Type
Detect


Boxplot by Season
Nickel, MW-30 (mg/L)
Value
0.09
0.06
0.03
0.00
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Minor
Data Type
Detect

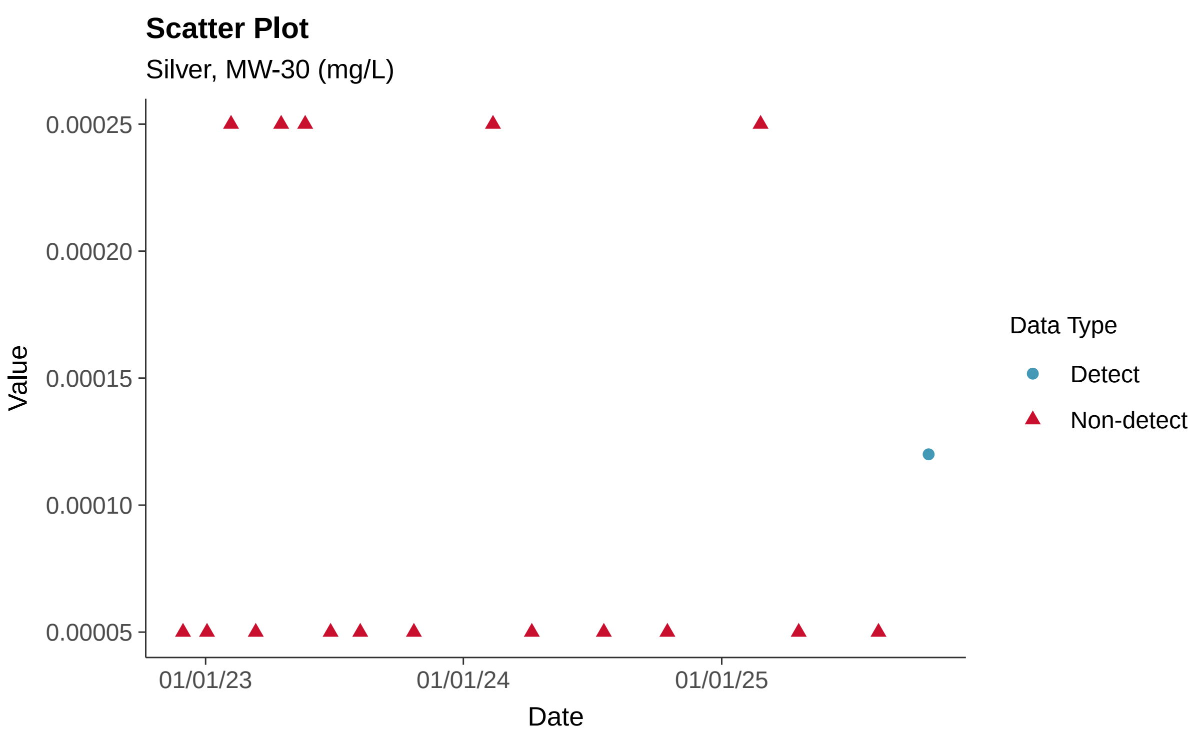

Normal Q-Q plot using ROS Imputed Estimates
Nickel, MW-30 (mg/L)
Value
0.12
0.08
0.04
0.00
−0.04
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

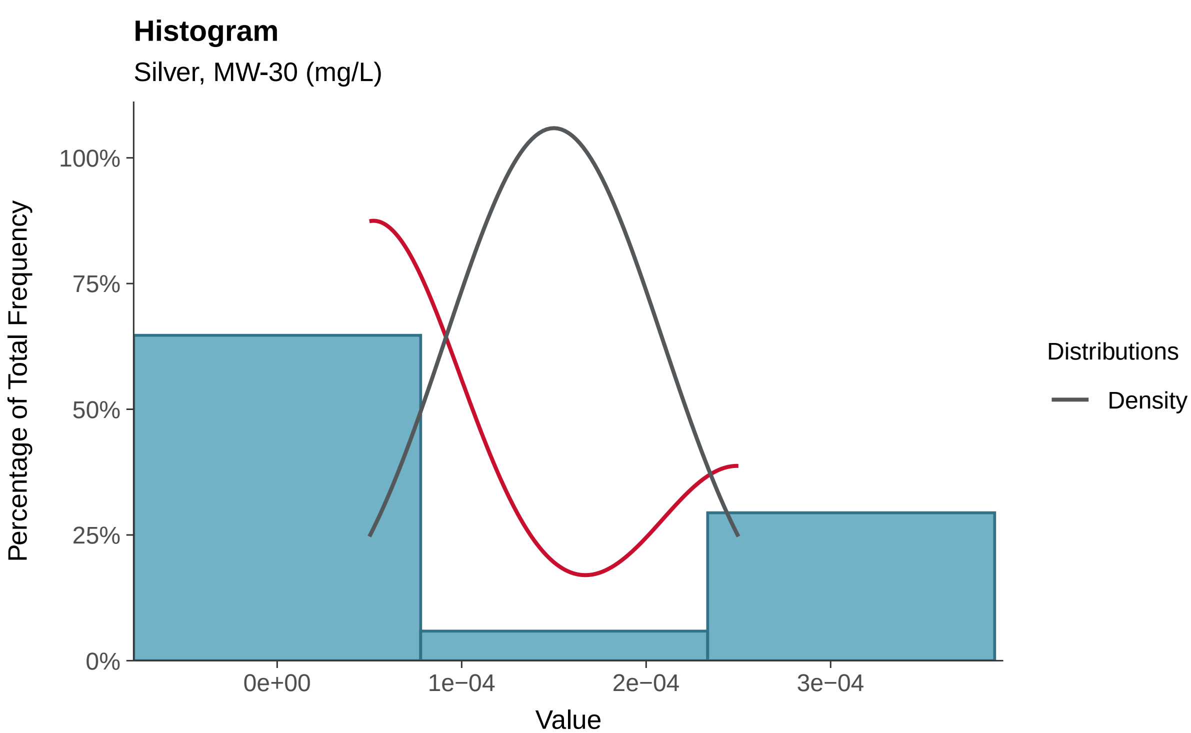

Trend Regression: Piecewise Linear-Linear
Nickel, MW-30 (mg/L)
Value
0.09
0.06
0.03
0.00
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

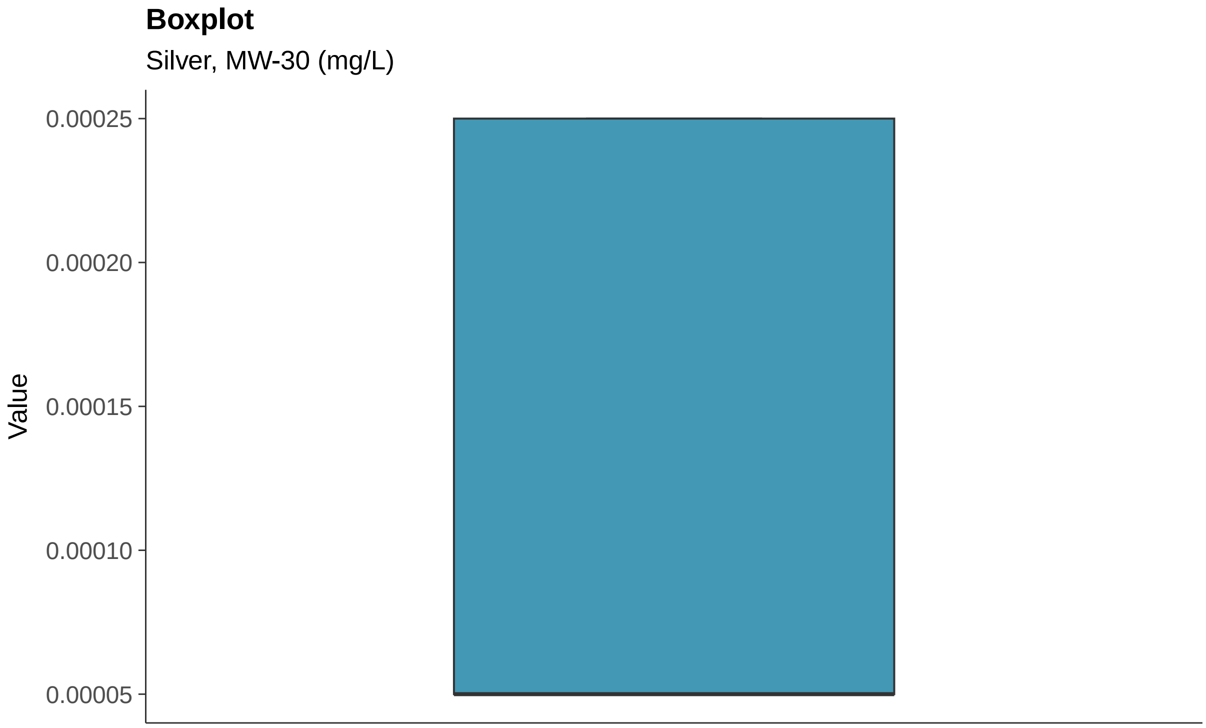

Trend Regression: Piecewise Linear-Linear-Linear
Nickel, MW-30 (mg/L)
Value
0.08
0.04
0.00
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

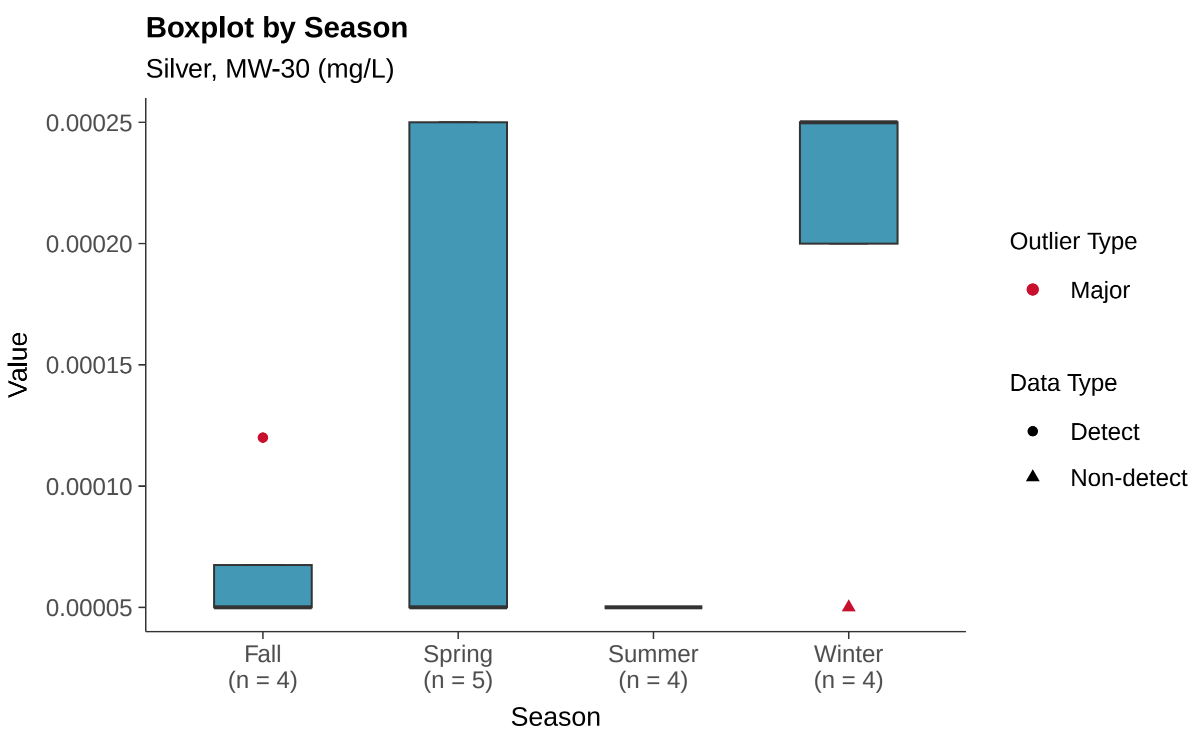
Part 115: Silver, MW-30

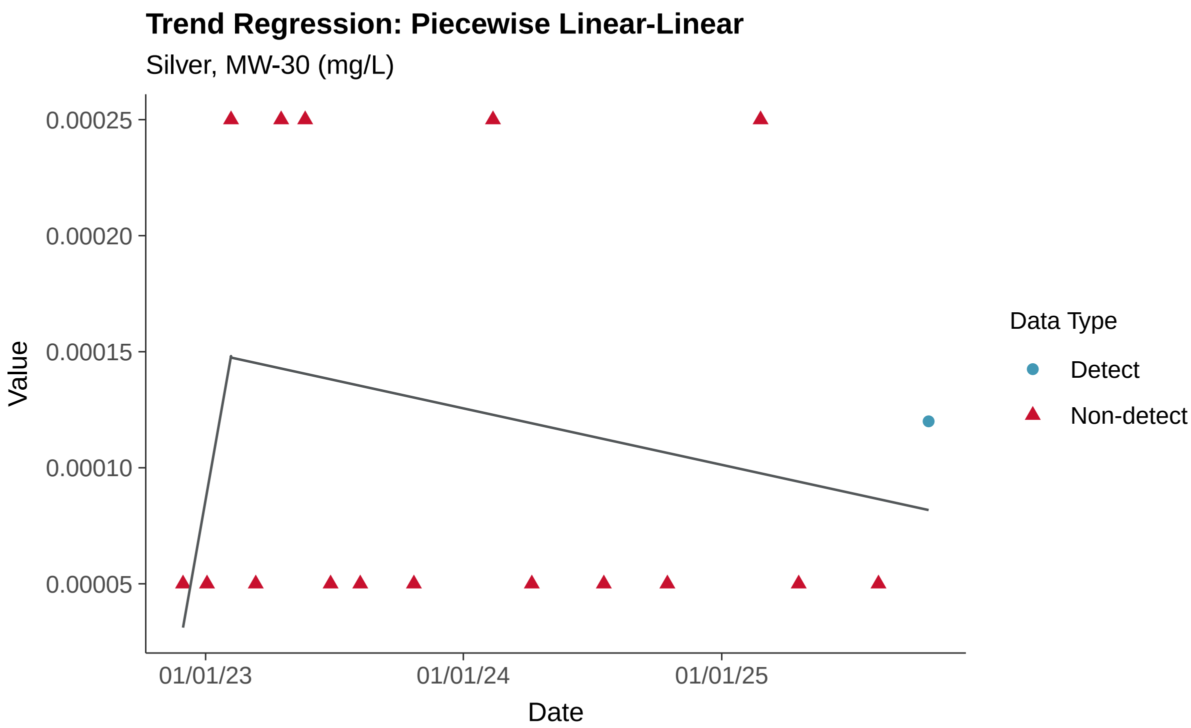
ID: 40_1_5_123

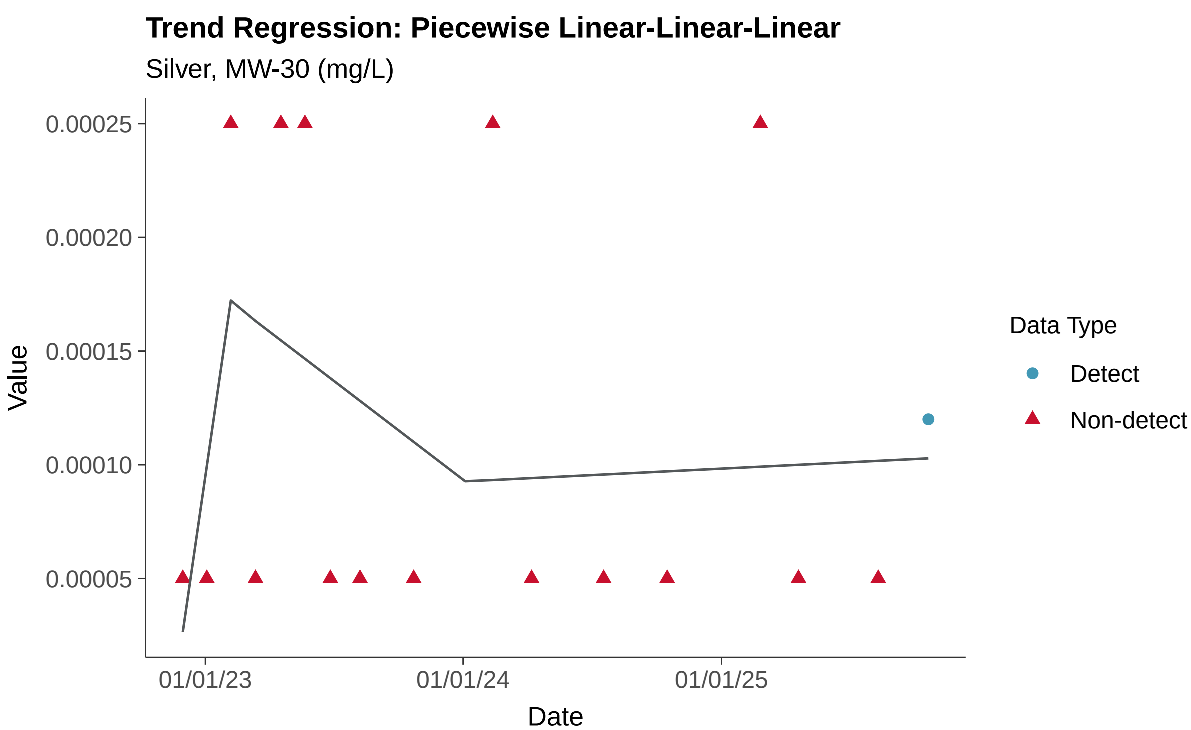





Boxplot
Silver, MW-30 (mg/L)
Value
0.00025
0.00020
0.00015
0.00010
0.00005

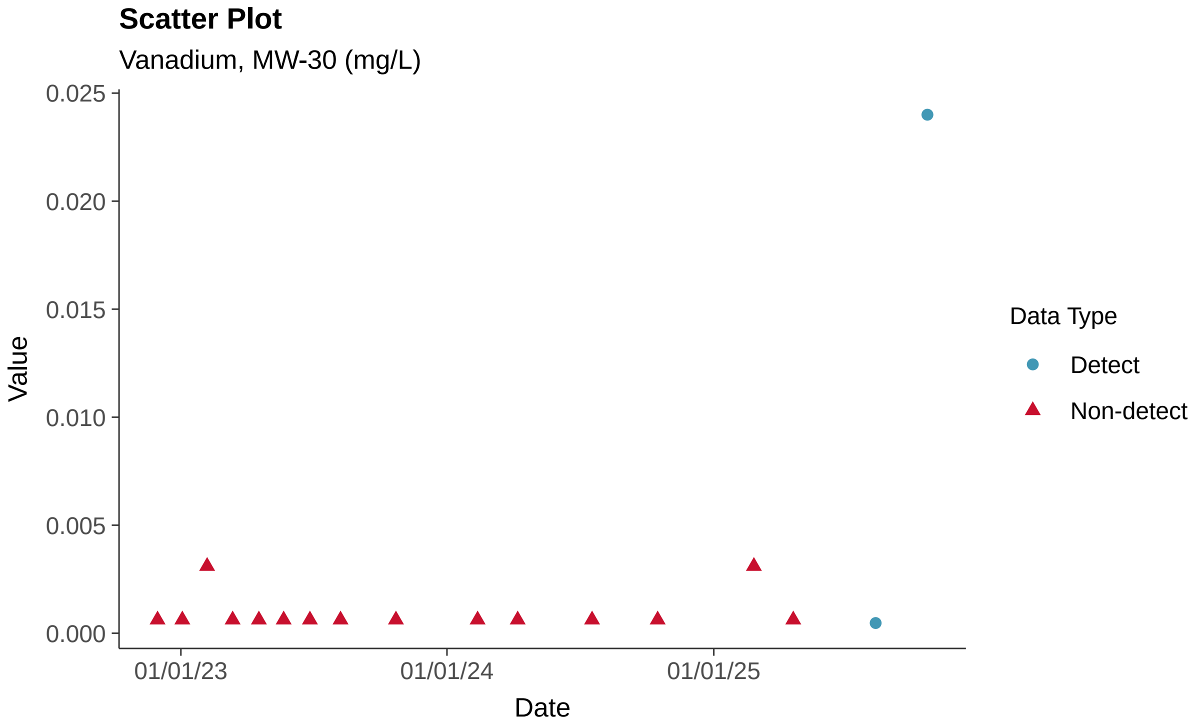

Boxplot by Season
Silver, MW-30 (mg/L)
Value
0.00025
0.00020
0.00015
0.00010
0.00005
Fall (n = 4)
Spring (n = 5)
Summer (n = 4)
Winter (n = 4)
Season
Outlier Type
Major
Data Type
Detect
Non-detect

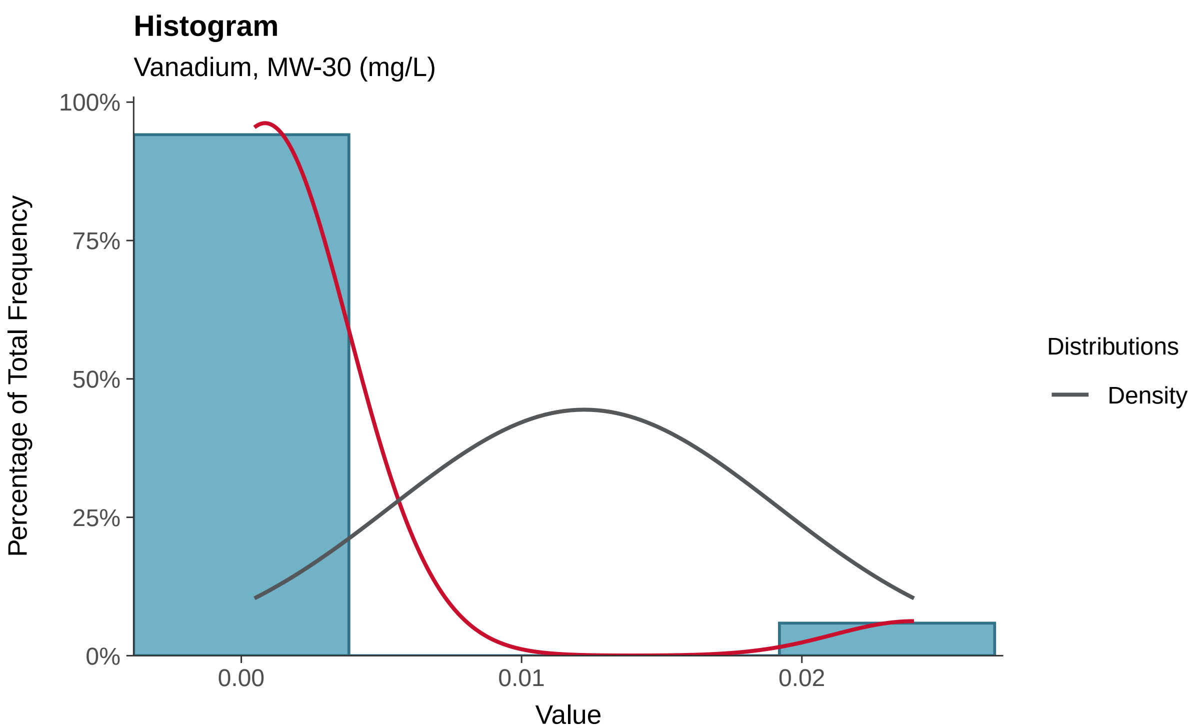

Trend Regression: Piecewise Linear-Linear
Silver, MW-30 (mg/L)
Value
0.00025
0.00020
0.00015
0.00010
0.00005
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

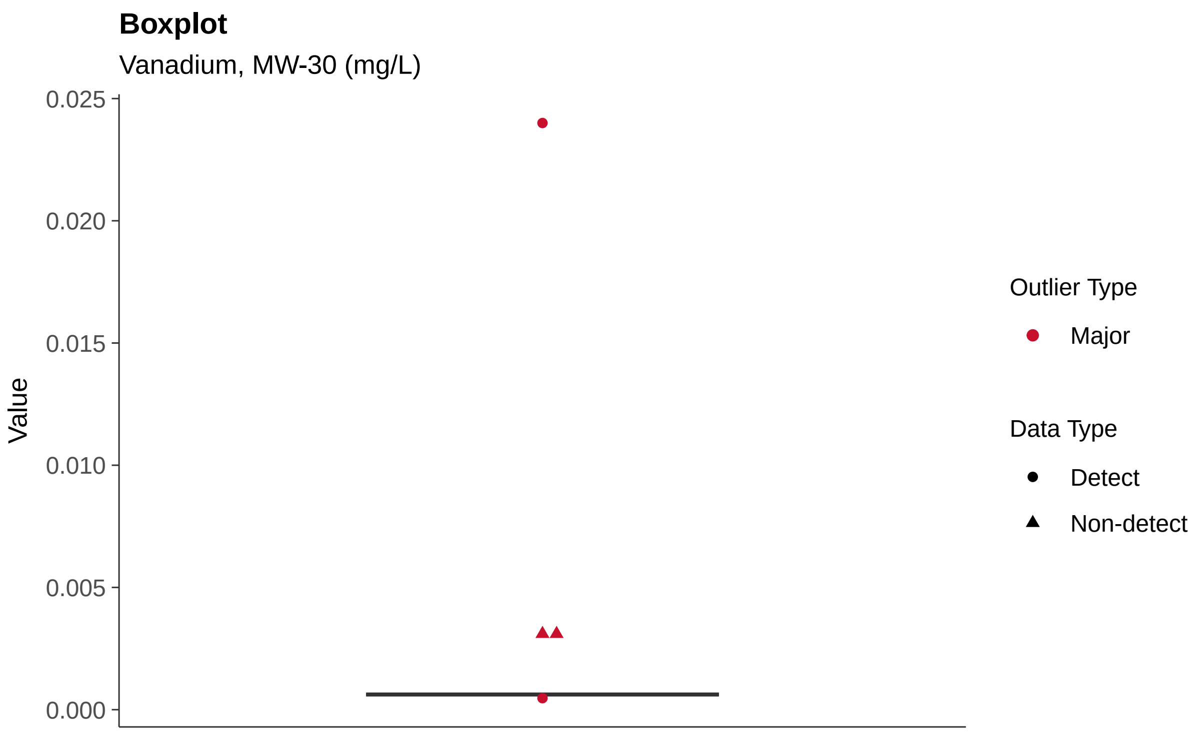

Trend Regression: Piecewise Linear-Linear-Linear
Silver, MW-30 (mg/L)
Value
0.00025
0.00020
0.00015
0.00010
0.00005
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

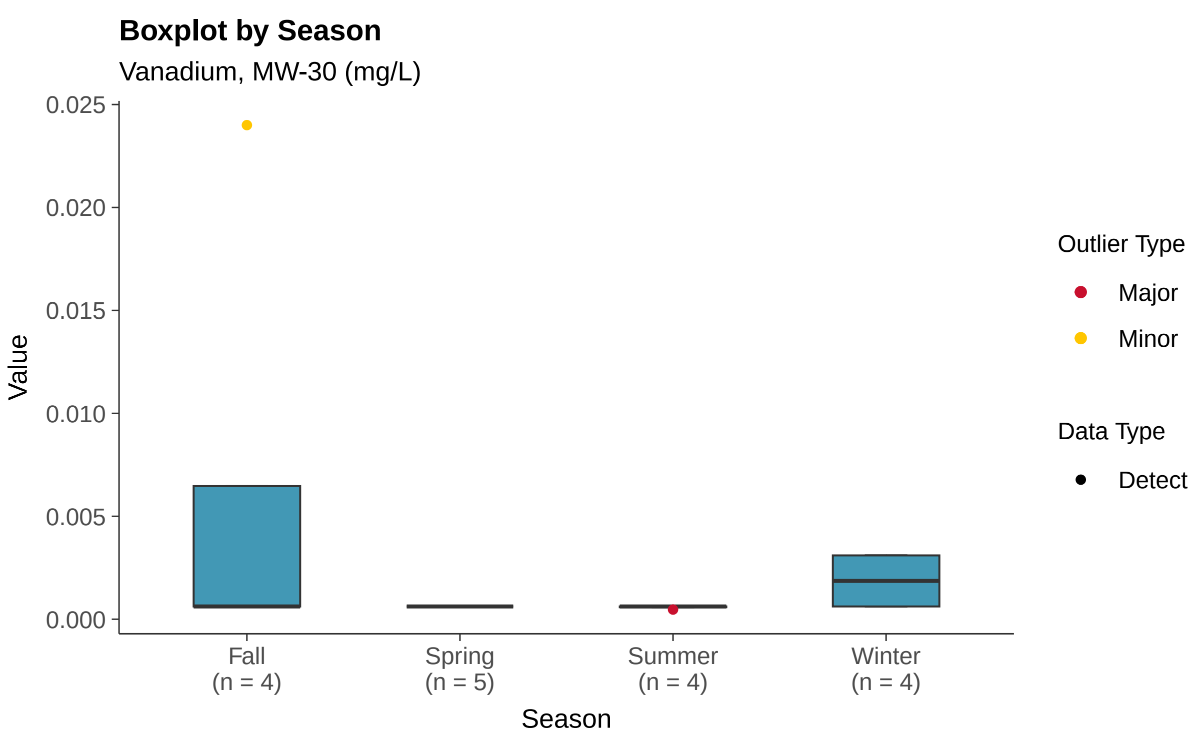
Part 115: Vanadium, MW-30

ID: 40_1_5_128



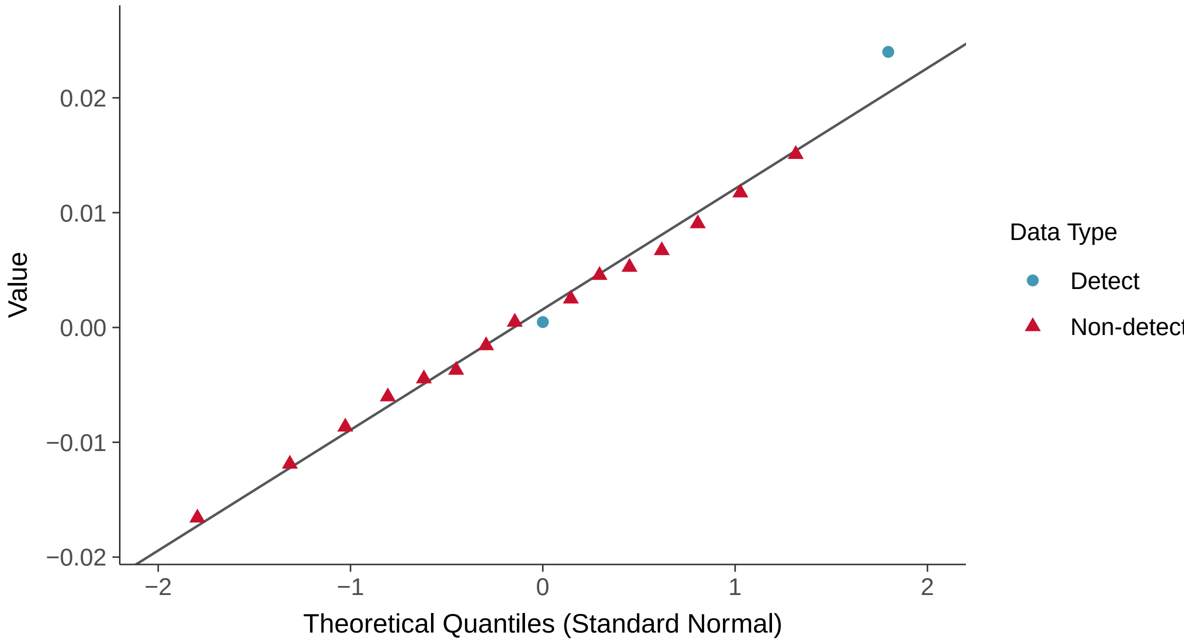



Boxplot
Vanadium, MW-30 (mg/L)
Value
0.025
0.020
0.015
0.010
0.005
0.000
Outlier Type
Major
Data Type
Detect
Non-detect


Boxplot by Season
Vanadium, MW-30 (mg/L)
Value
0.025
0.020
0.015
0.010
0.005
0.000
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Major
Minor
Data Type
Detect

Normal Q-Q plot using ROS Imputed Estimates

Vanadium, MW-30 (mg/L)

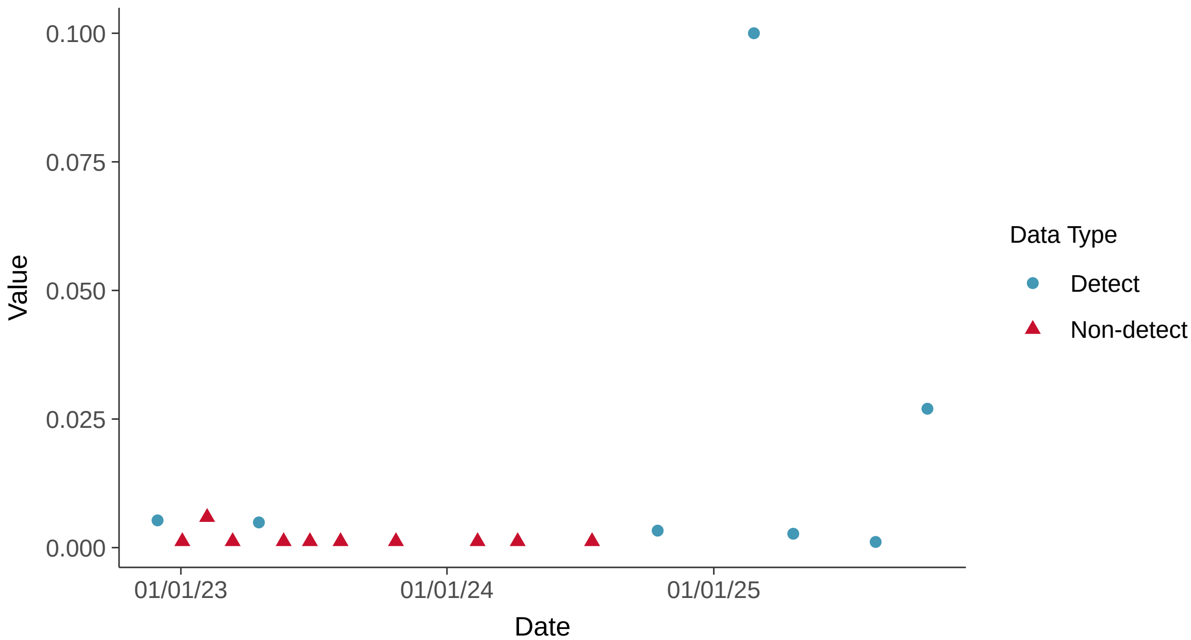


Part 115: Zinc, MW-30

ID: 40_1_5_129

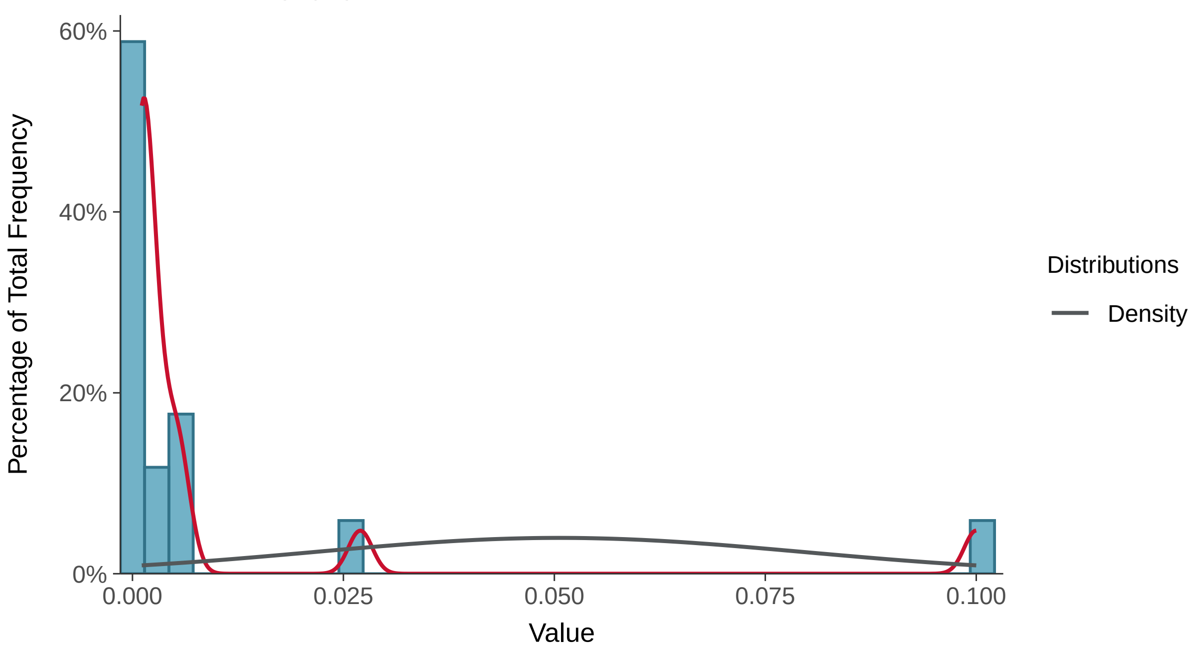
Scatter Plot

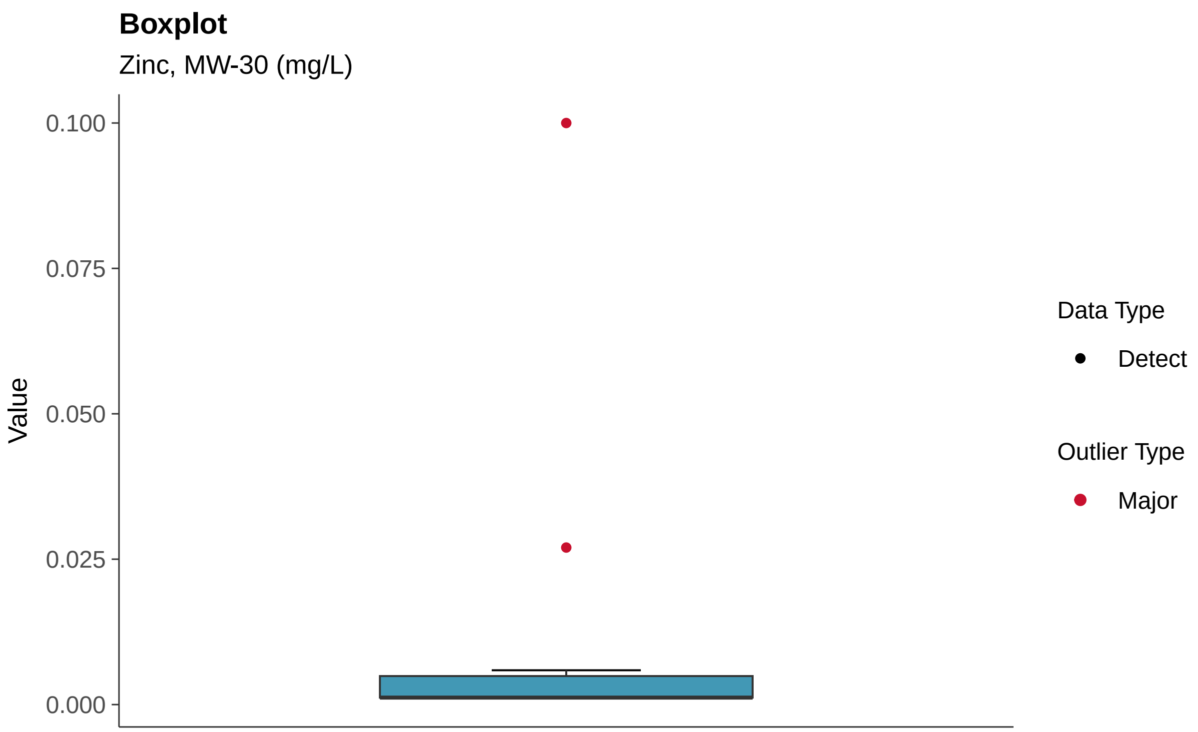
Zinc, MW-30 (mg/L)

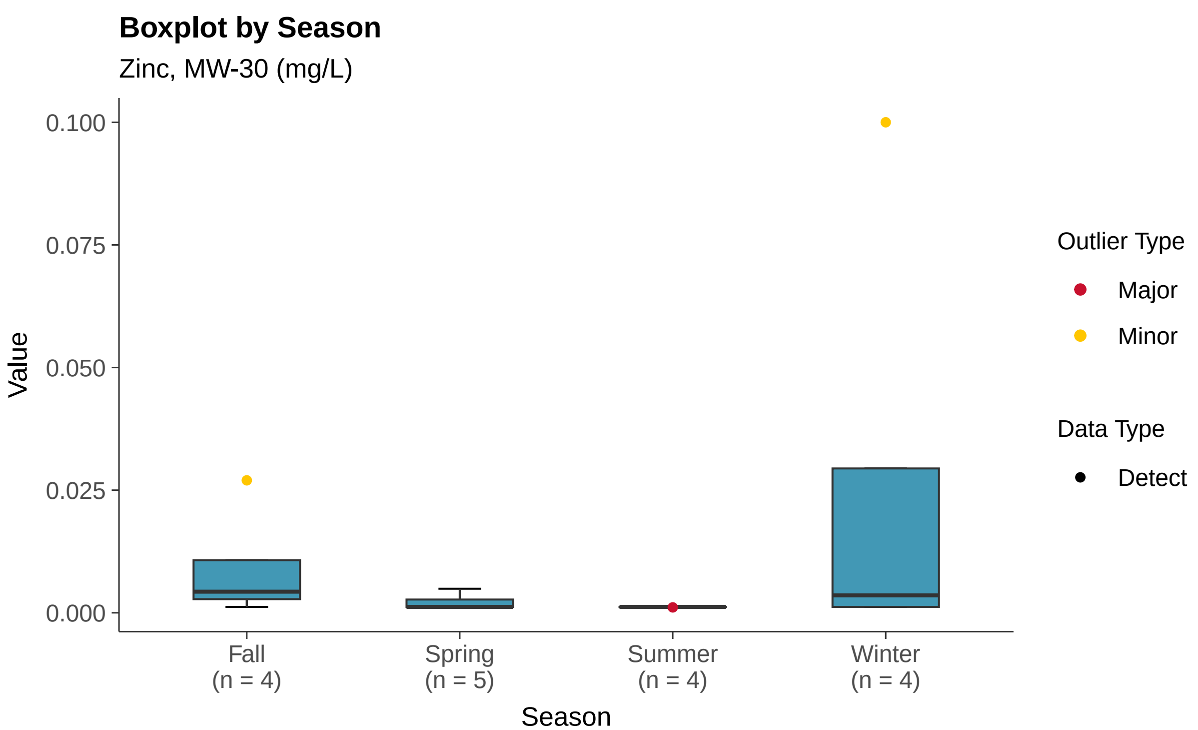


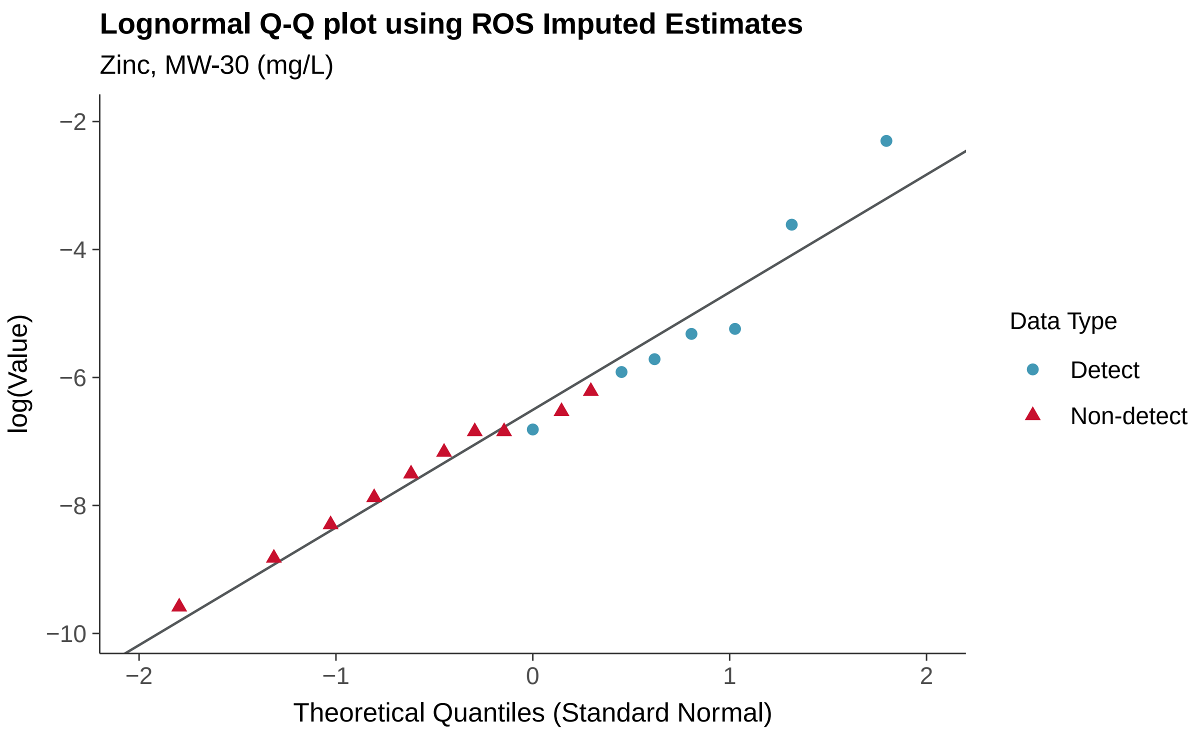
Histogram

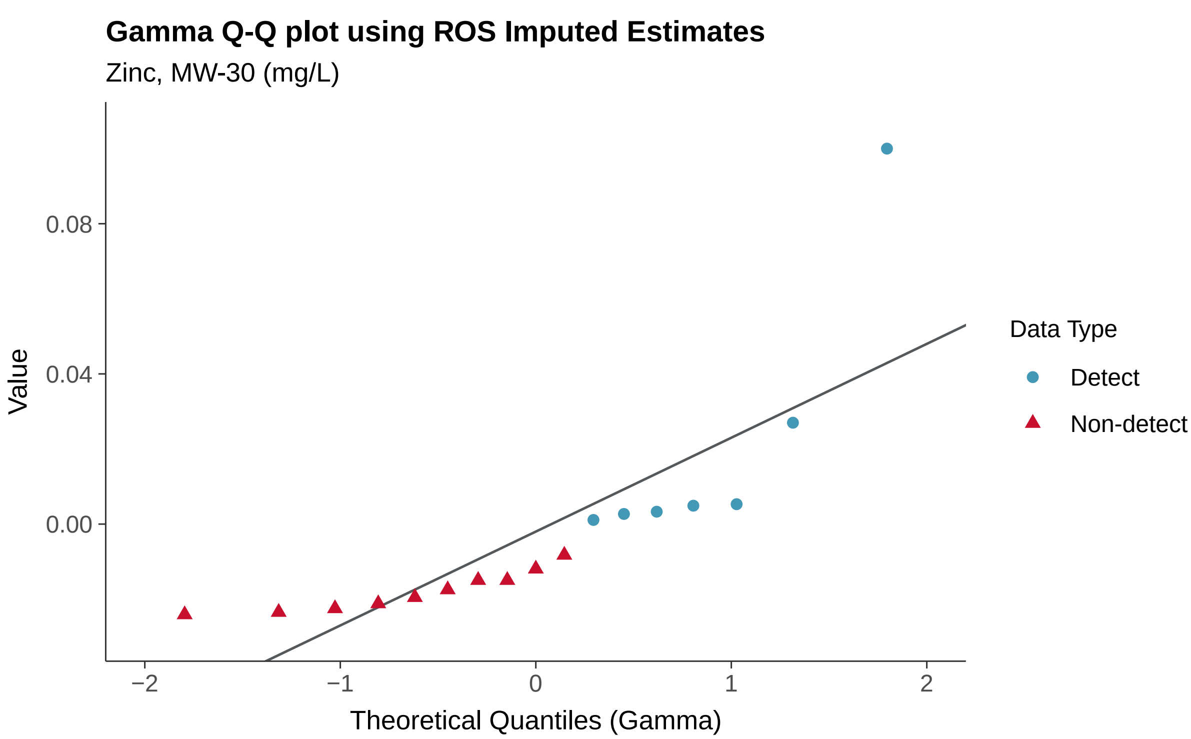
Zinc, MW-30 (mg/L)

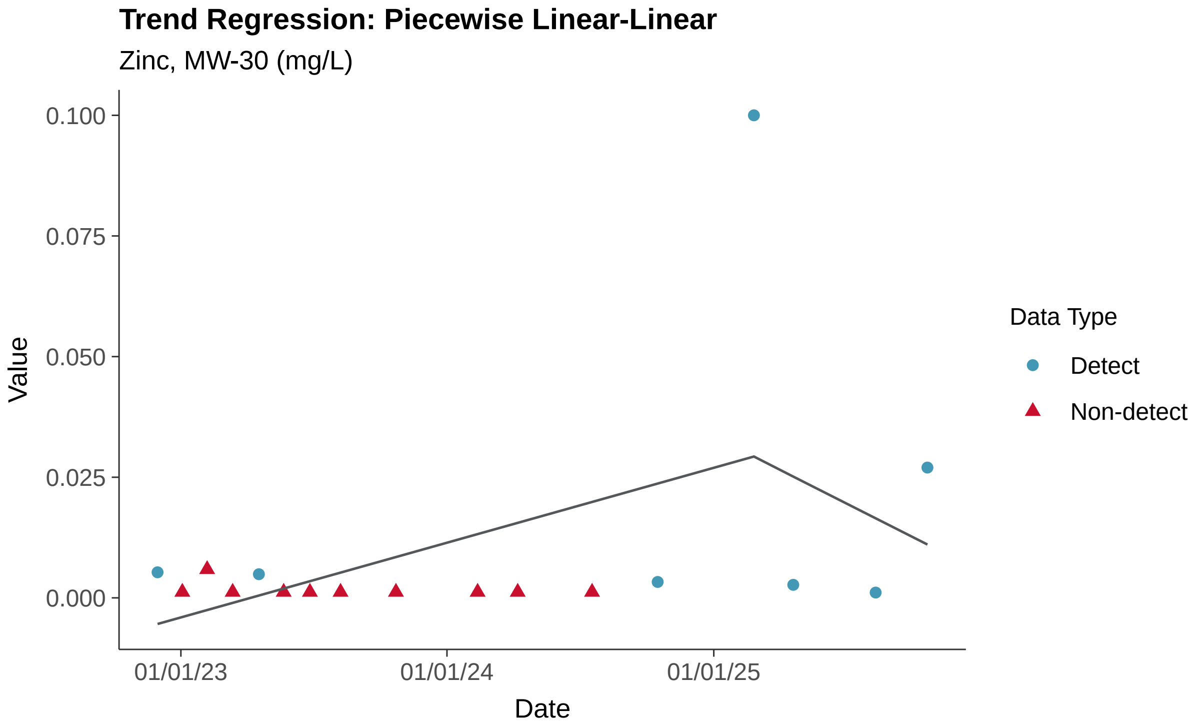


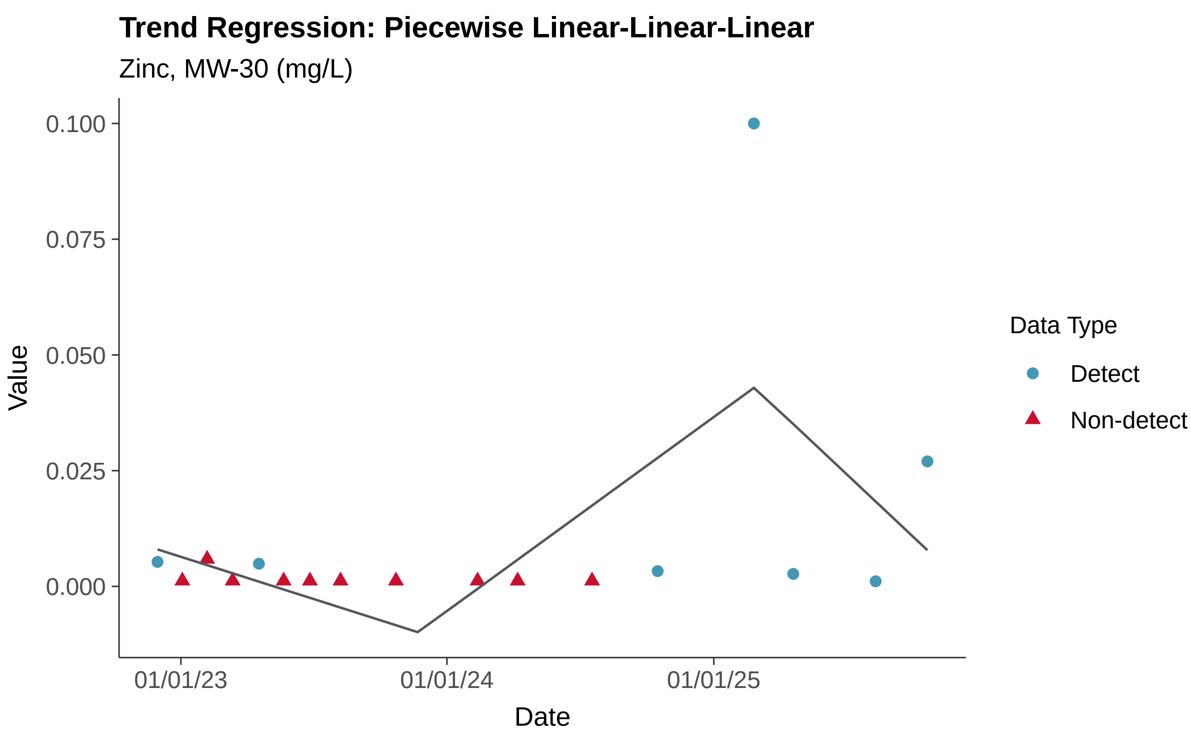

Boxplot
Zinc, MW-30 (mg/L)
0.100
0.075
0.050
0.025
0.000
Value
Data Type
Detect
Outlier Type
Major


Boxplot by Season
Zinc, MW-30 (mg/L)
0.100
0.075
0.050
0.025
0.000
Value
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Major
Minor
Data Type
Detect


Lognormal Q-Q plot using ROS Imputed Estimates
Zinc, MW-30 (mg/L)
log(Value)
−2
−4
−6
−8
−10
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

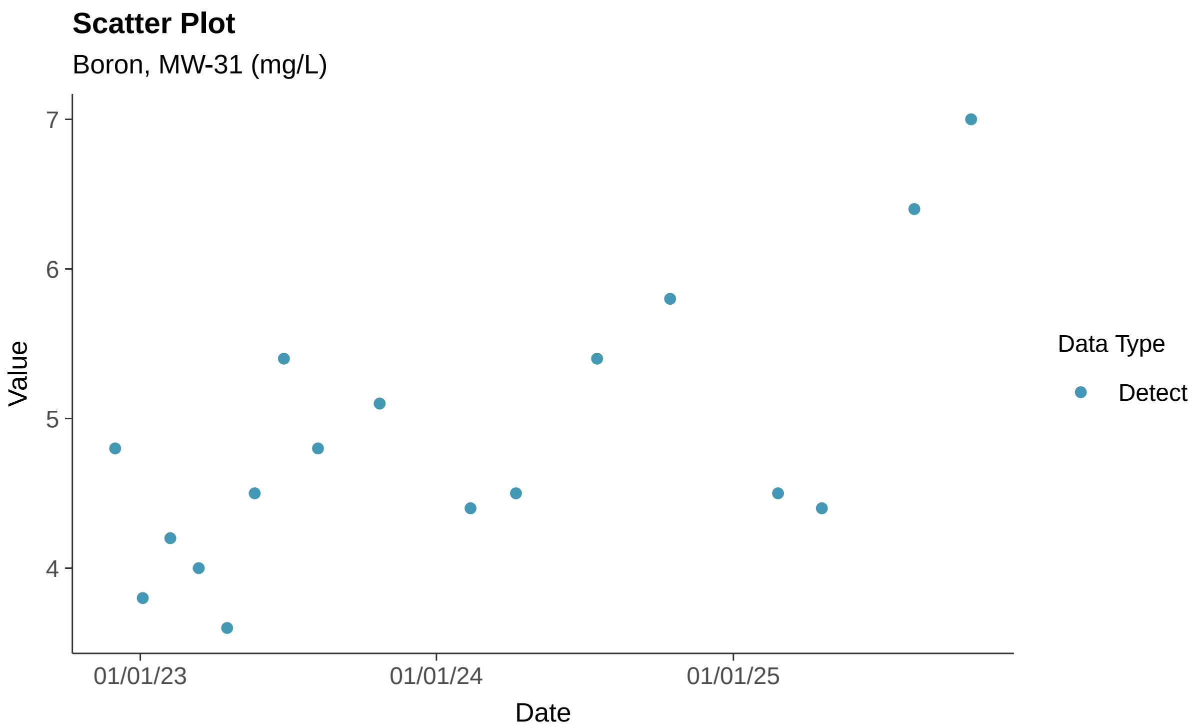

Gamma Q-Q plot using ROS Imputed Estimates
Zinc, MW-30 (mg/L)
Value
0.08
0.04
0.00
−2
−1
0
1
2
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect

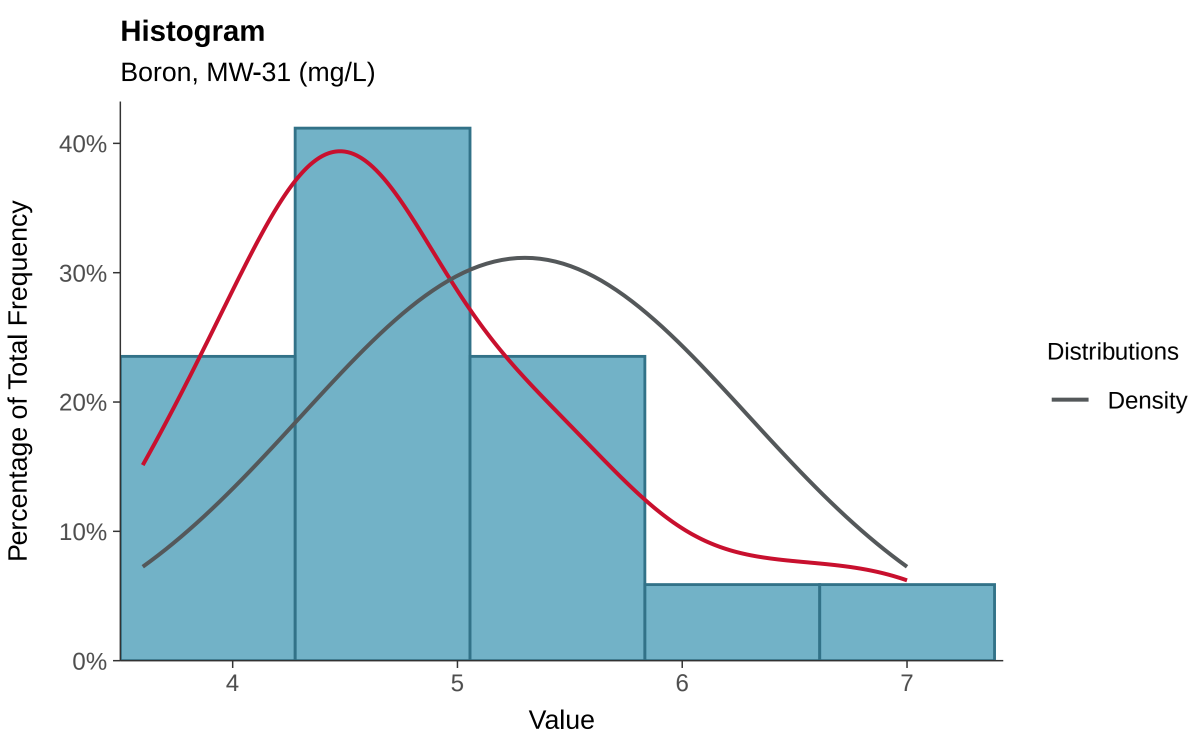

Trend Regression: Piecewise Linear-Linear
Zinc, MW-30 (mg/L)
Value
0.100
0.075
0.050
0.025
0.000
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear-Linear
Zinc, MW-30 (mg/L)
Value
0.100
0.075
0.050
0.025
0.000
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Appendix III: Boron, MW-31

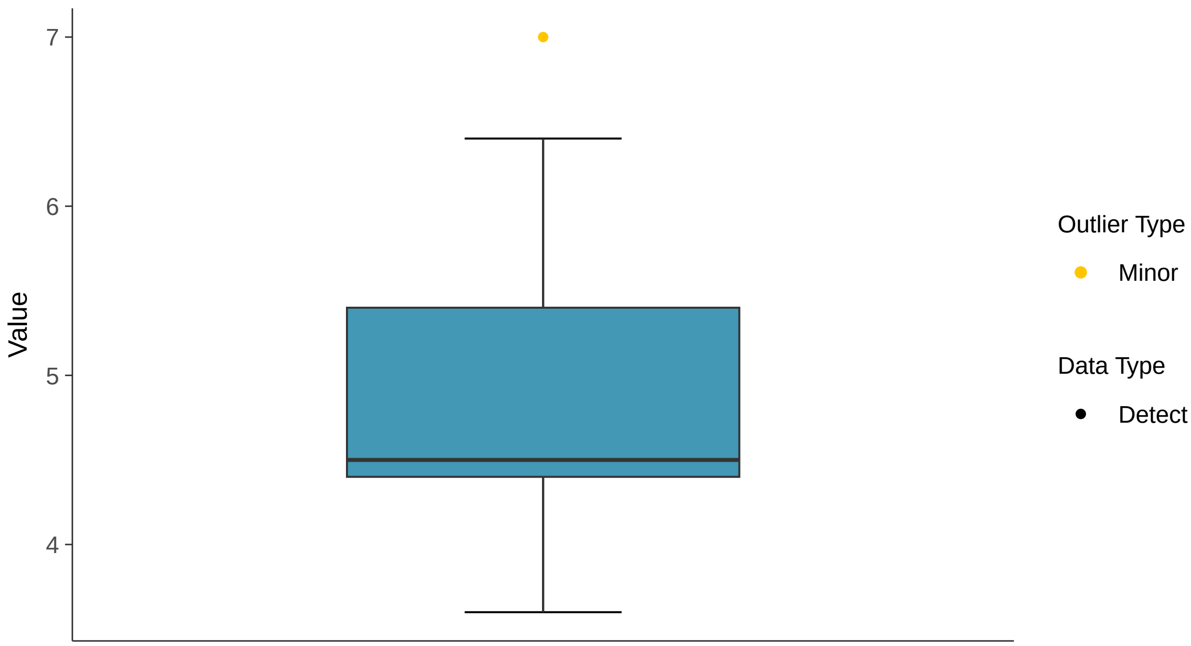
ID: 41_1_3_105





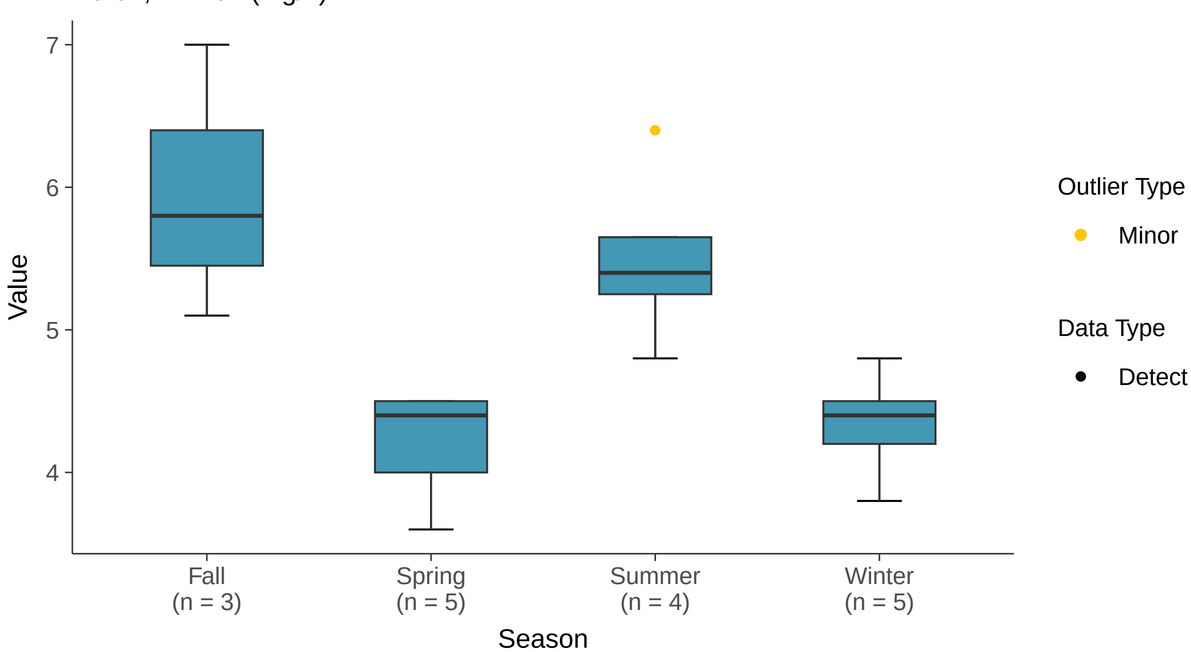
Boxplot

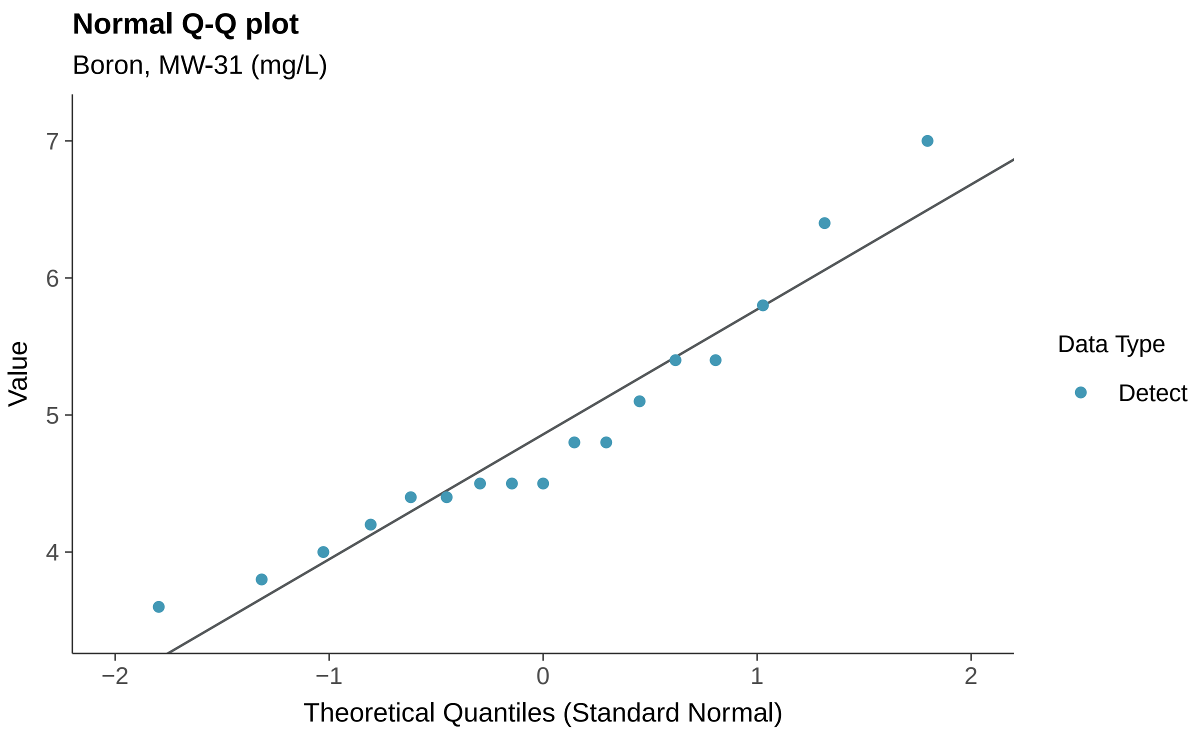
Boron, MW-31 (mg/L)

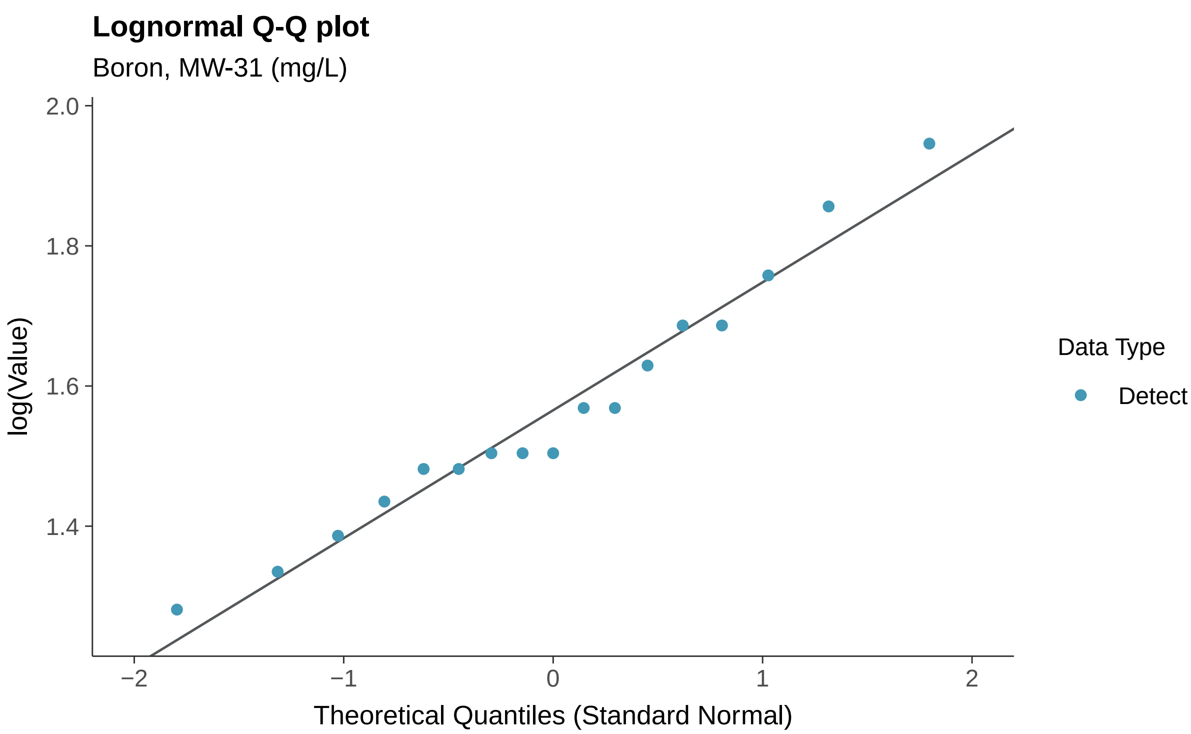


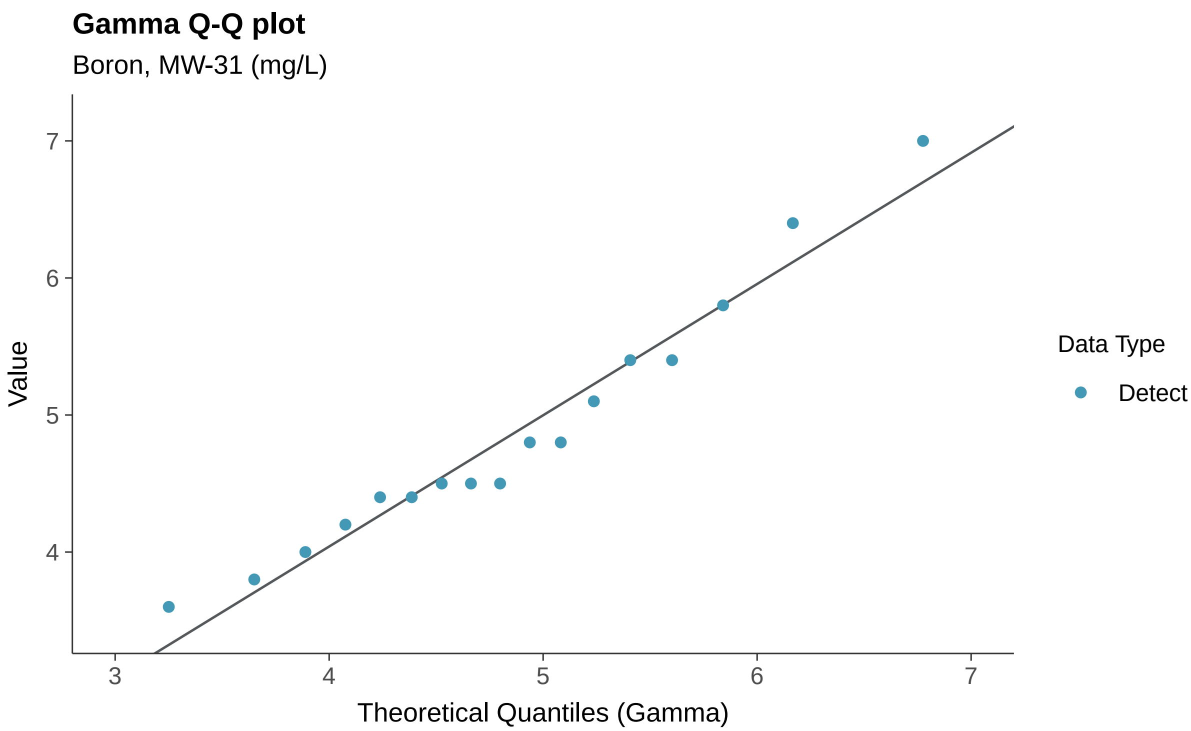
Boxplot by Season

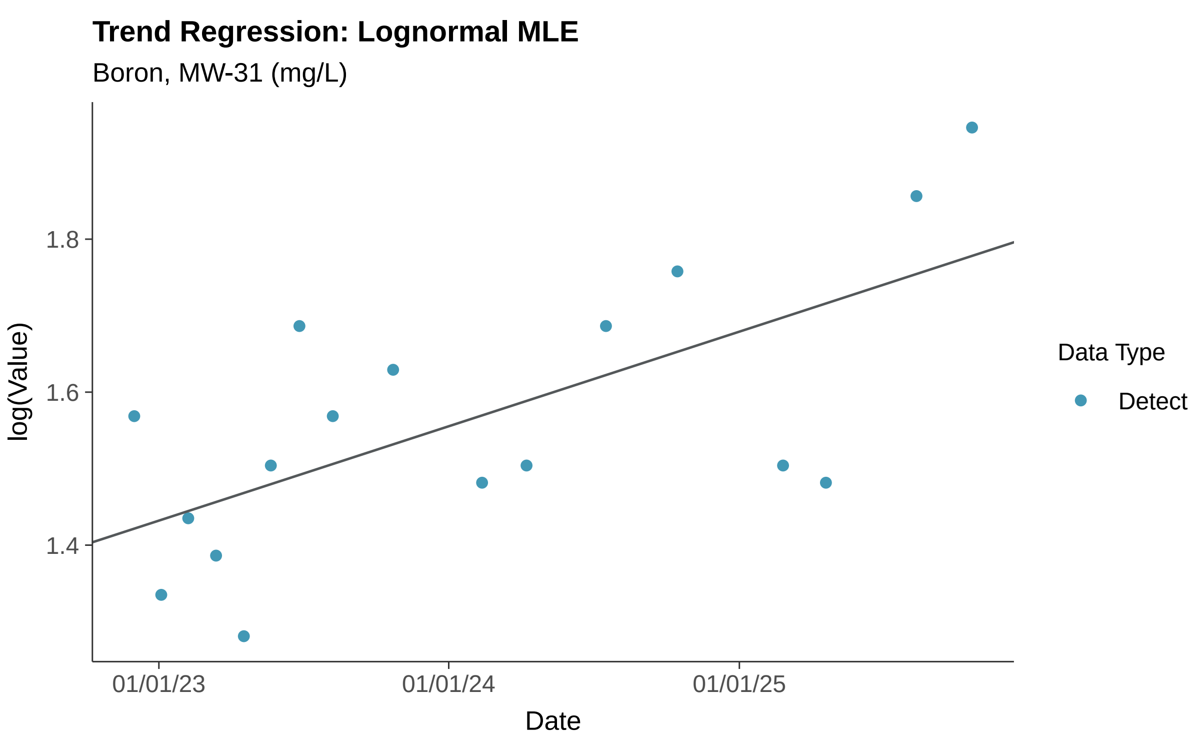
Boron, MW-31 (mg/L)

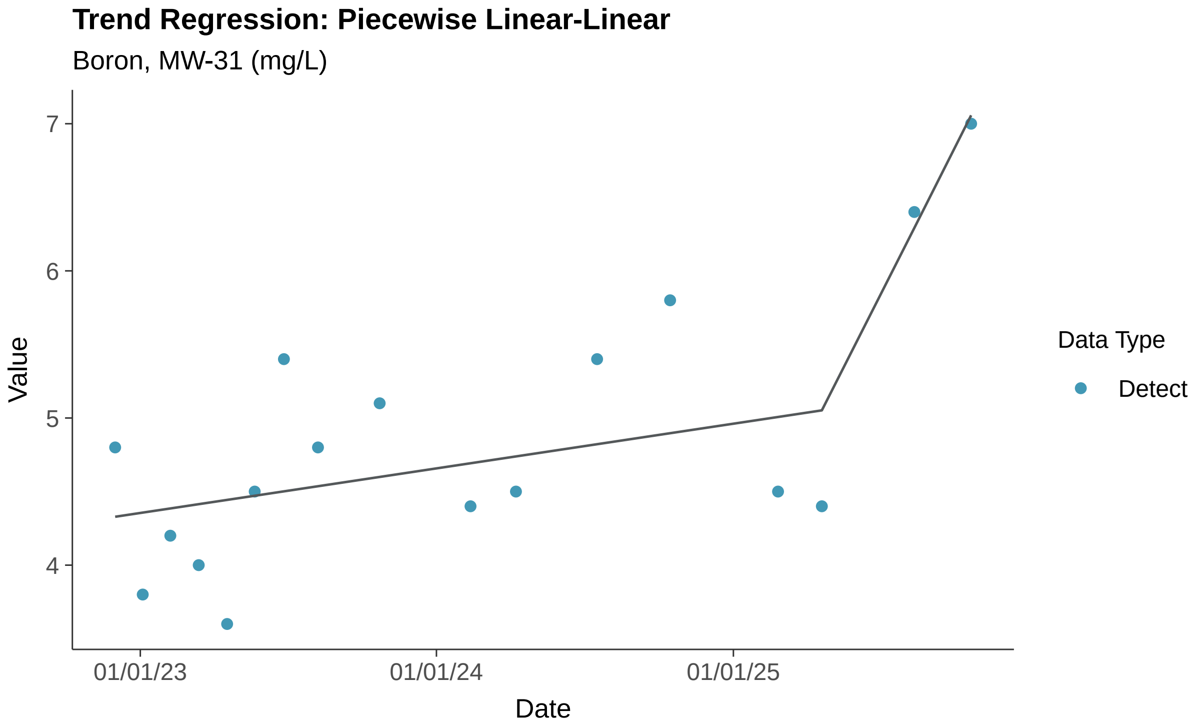



Normal Q-Q plot
Boron, MW-31 (mg/L)
Value
7
6
5
4
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Boron, MW-31 (mg/L)
log(Value)
2.0
1.8
1.6
1.4
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

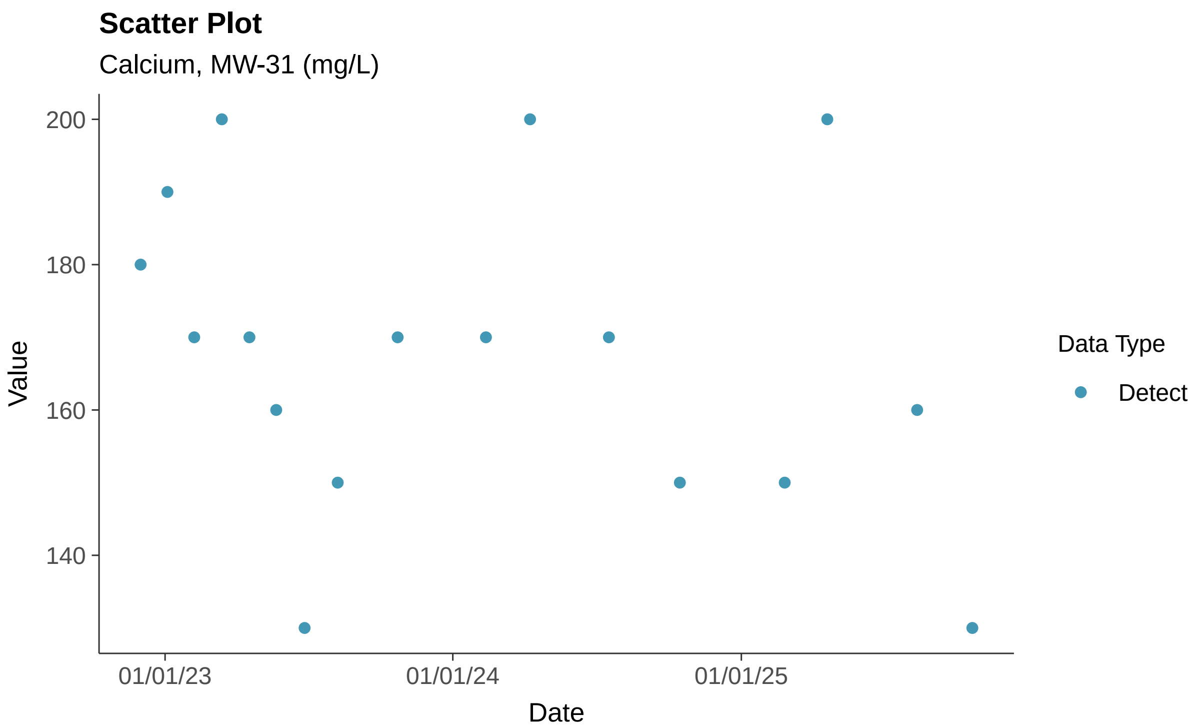

Gamma Q-Q plot
Boron, MW-31 (mg/L)
Value
7
6
5
4
3
4
5
6
7
Theoretical Quantiles (Gamma)
Data Type
Detect

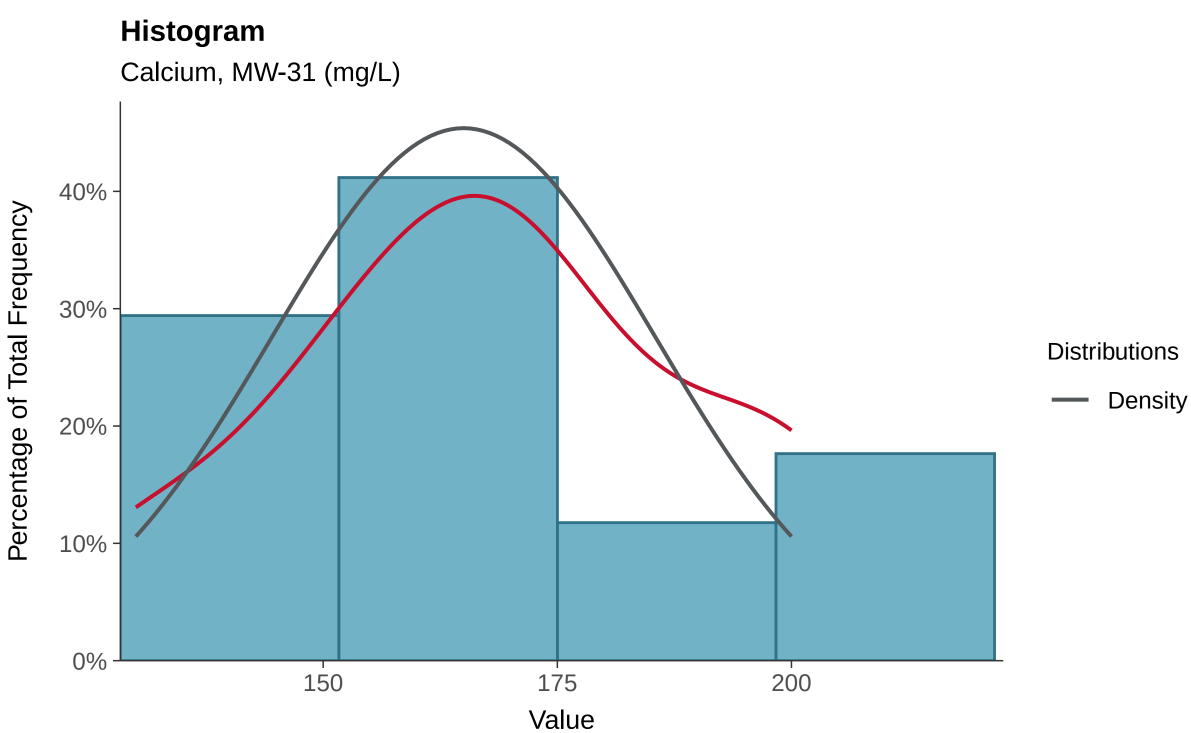

Trend Regression: Lognormal MLE
Boron, MW-31 (mg/L)
log(Value)
1.8
1.6
1.4
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear
Boron, MW-31 (mg/L)
Value
7
6
5
4
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Appendix III: Calcium, MW-31

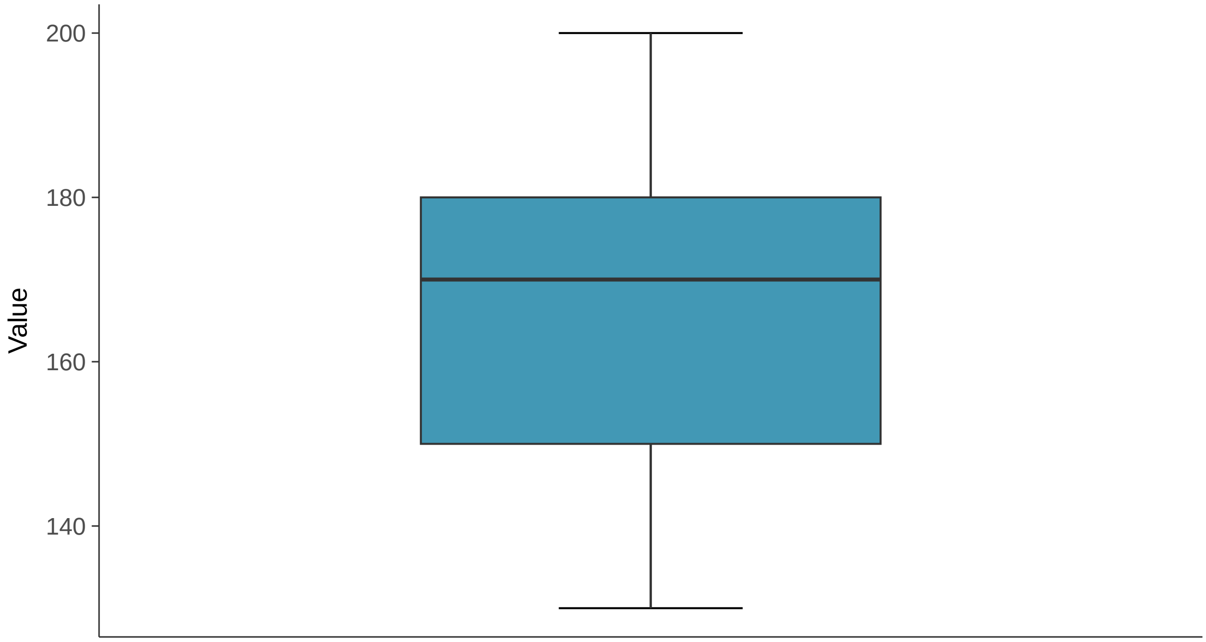
ID: 41_1_3_107





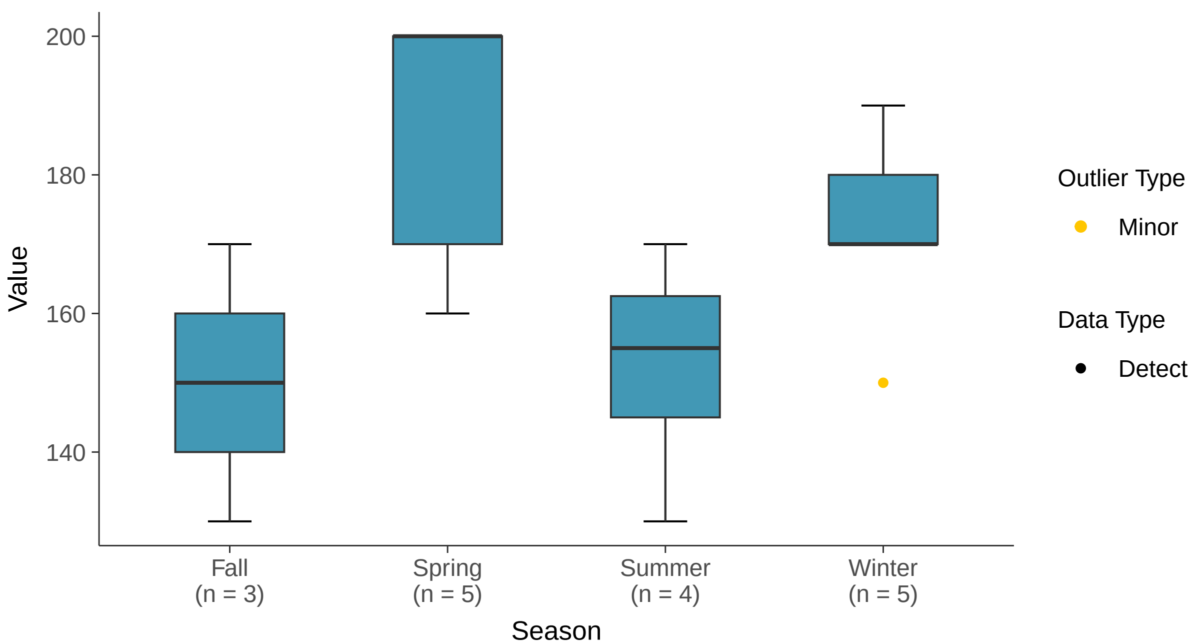
Boxplot

Calcium, MW-31 (mg/L)



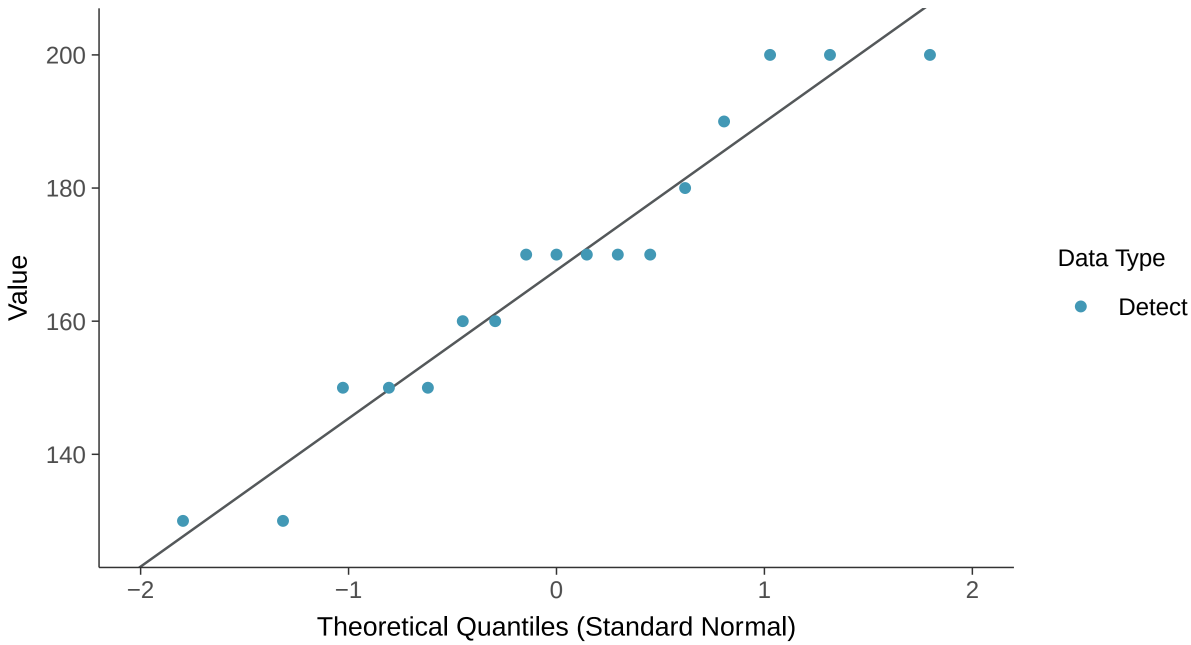
Boxplot by Season

Calcium, MW-31 (mg/L)



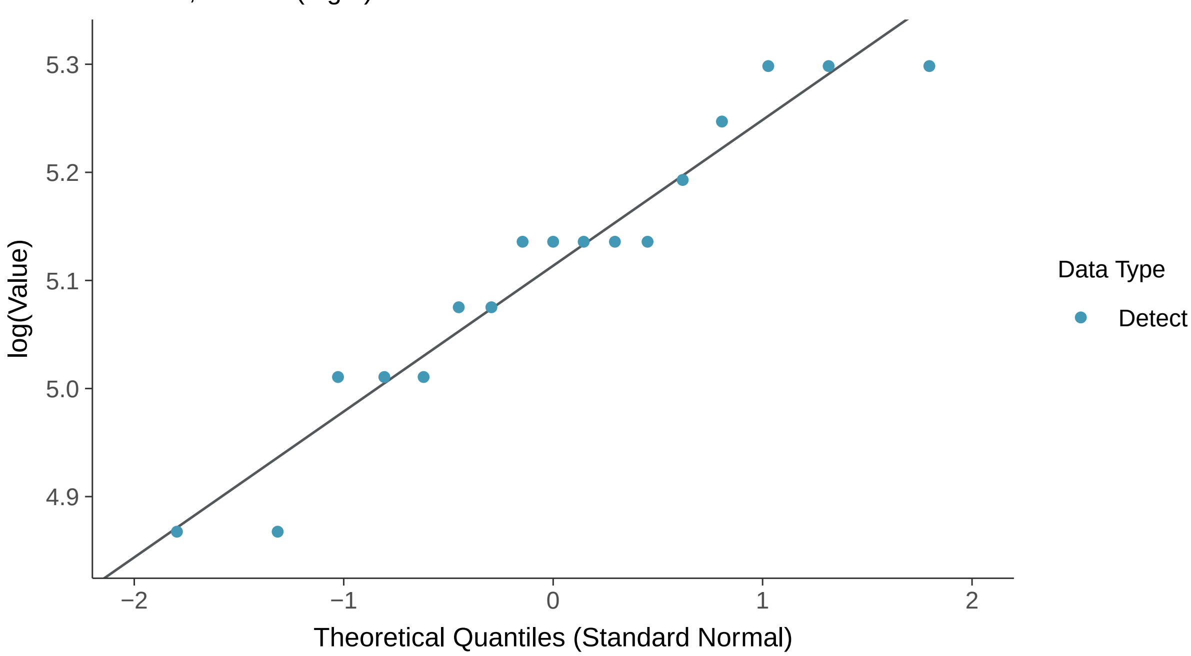
Normal Q-Q plot

Calcium, MW-31 (mg/L)



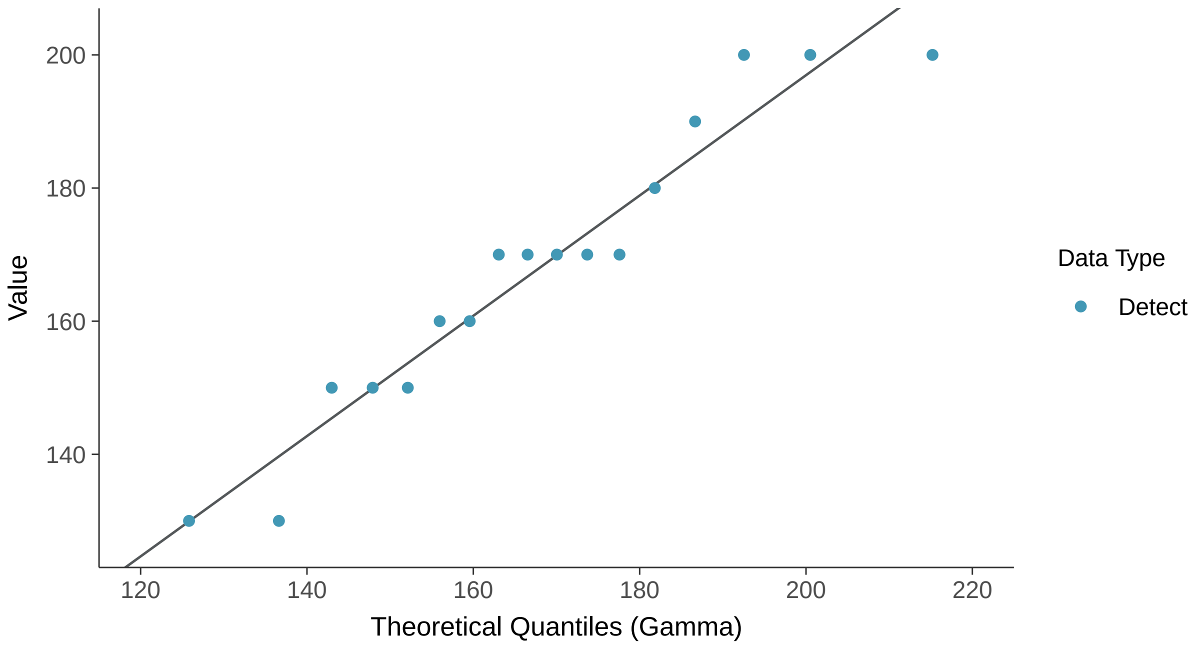
Lognormal Q-Q plot

Calcium, MW-31 (mg/L)



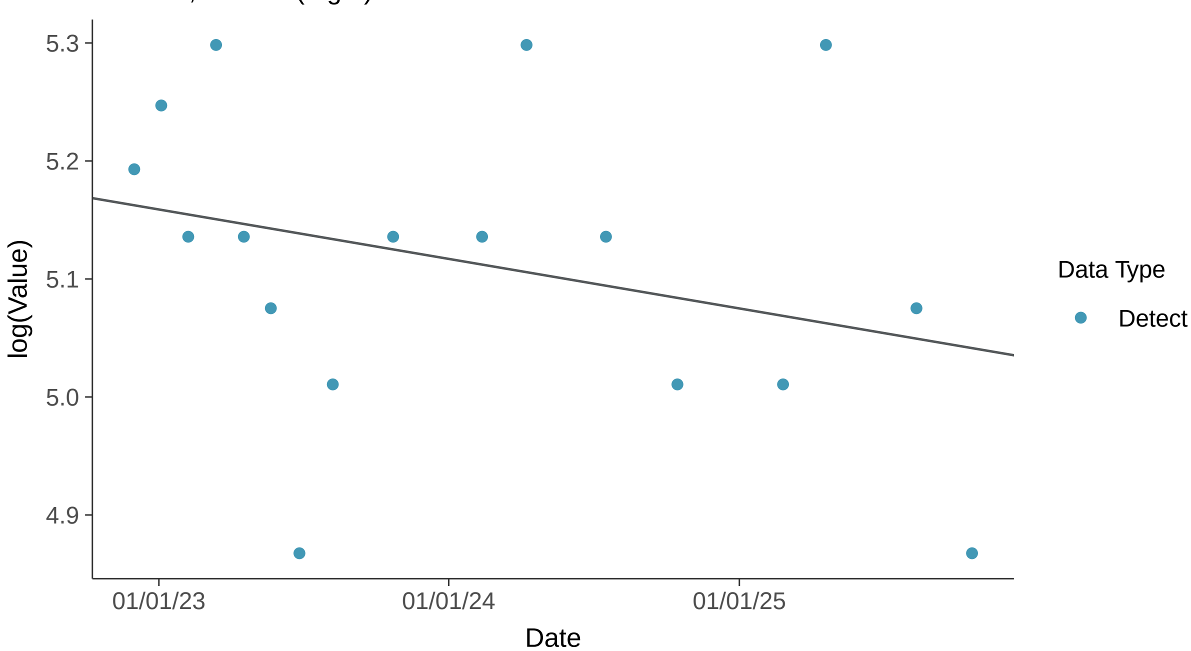
Gamma Q-Q plot

Calcium, MW-31 (mg/L)



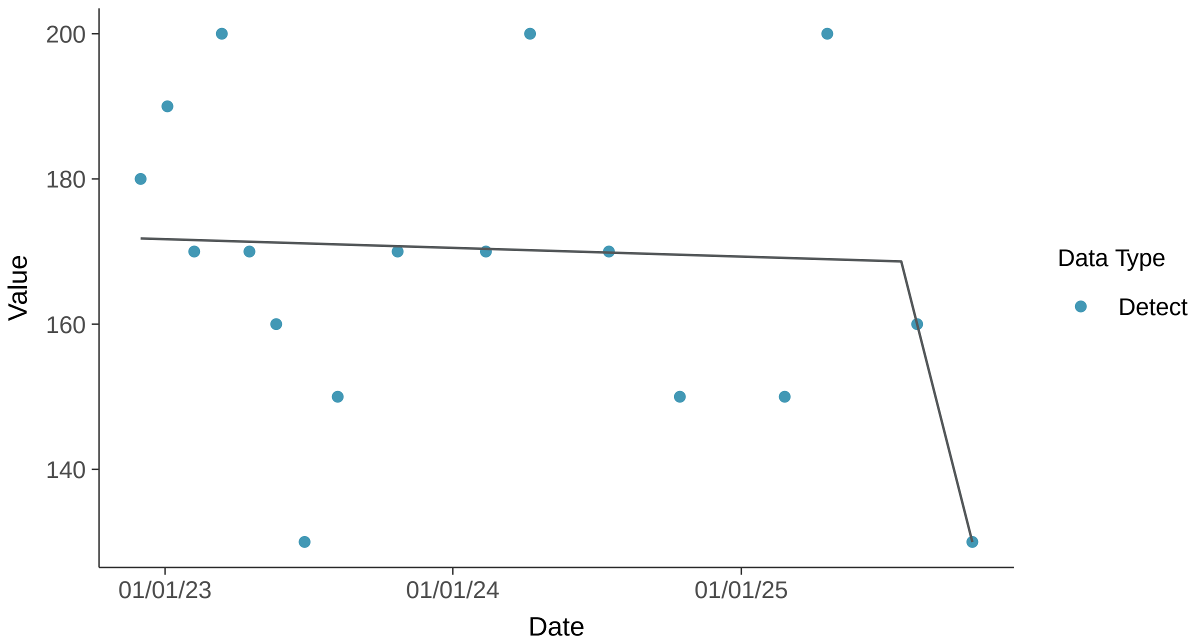
Trend Regression: Lognormal MLE

Calcium, MW-31 (mg/L)



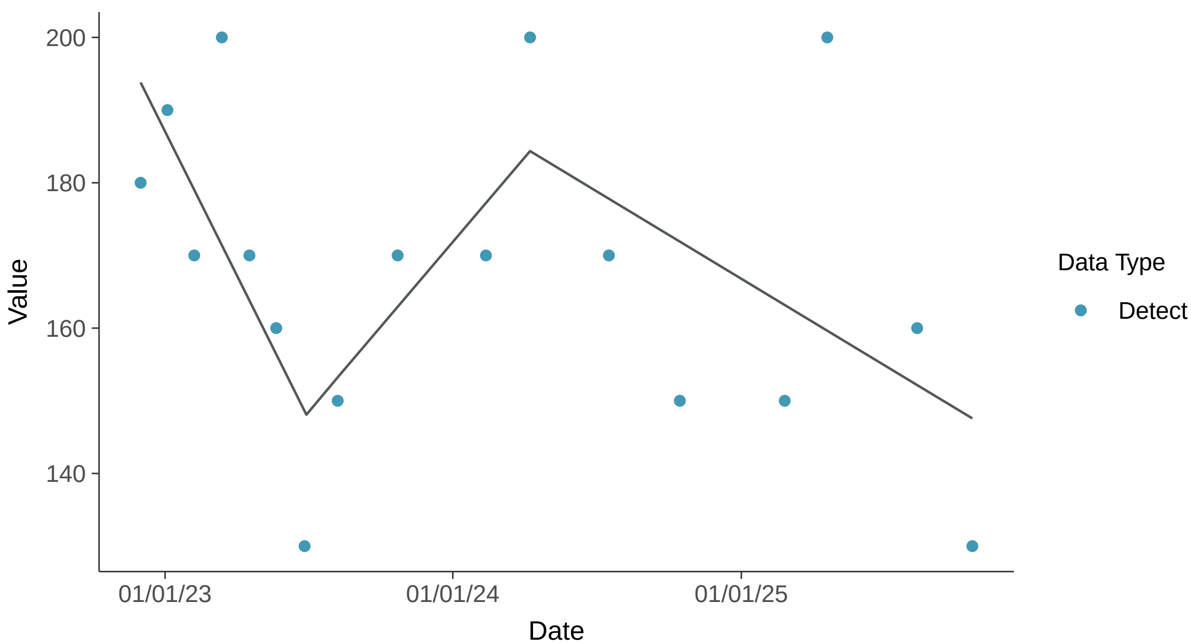
Trend Regression: Piecewise Linear-Linear

Calcium, MW-31 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Calcium, MW-31 (mg/L)

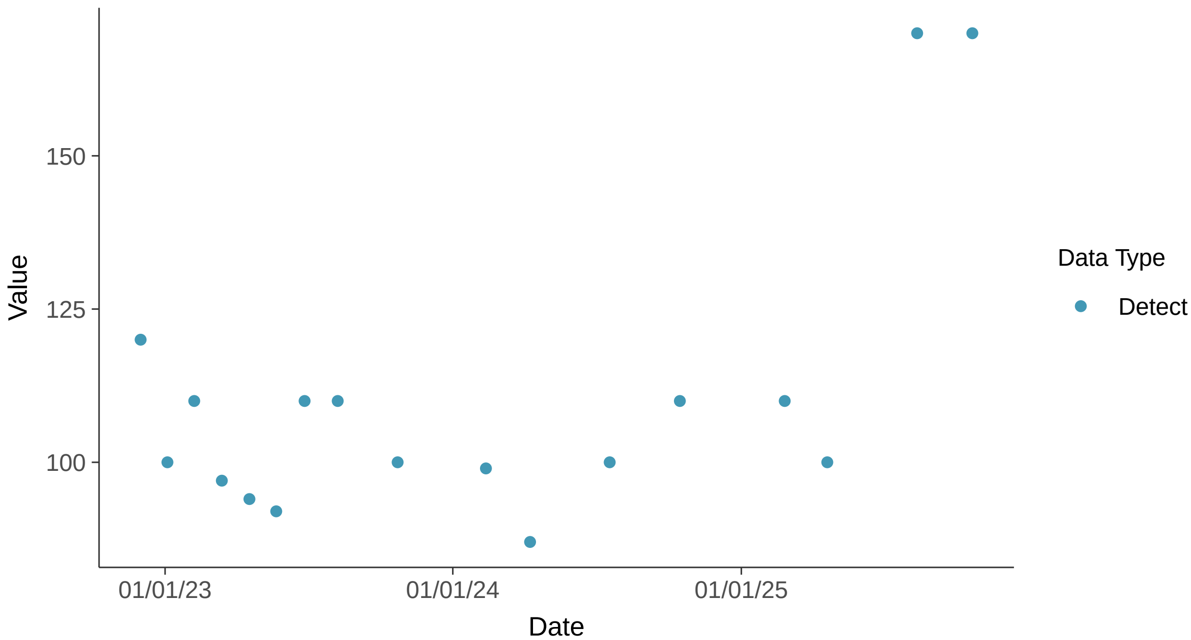


Appendix III: Chloride (as Cl), MW-31

ID: 41_1_3_108

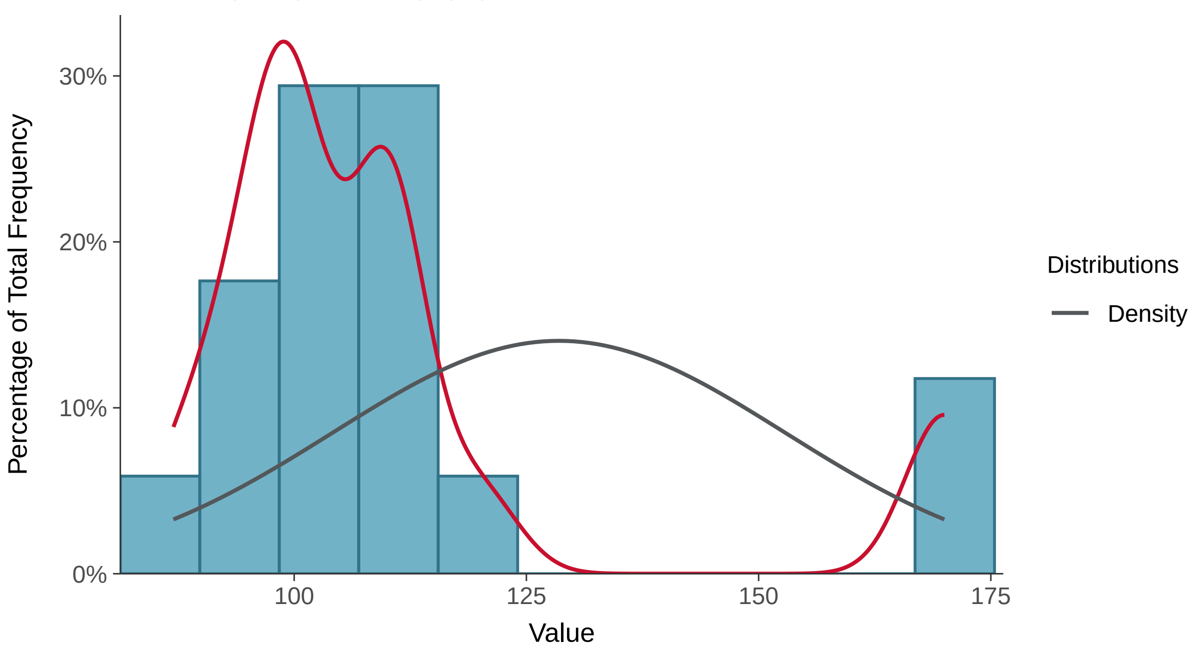
Scatter Plot

Chloride (as Cl), MW-31 (mg/L)



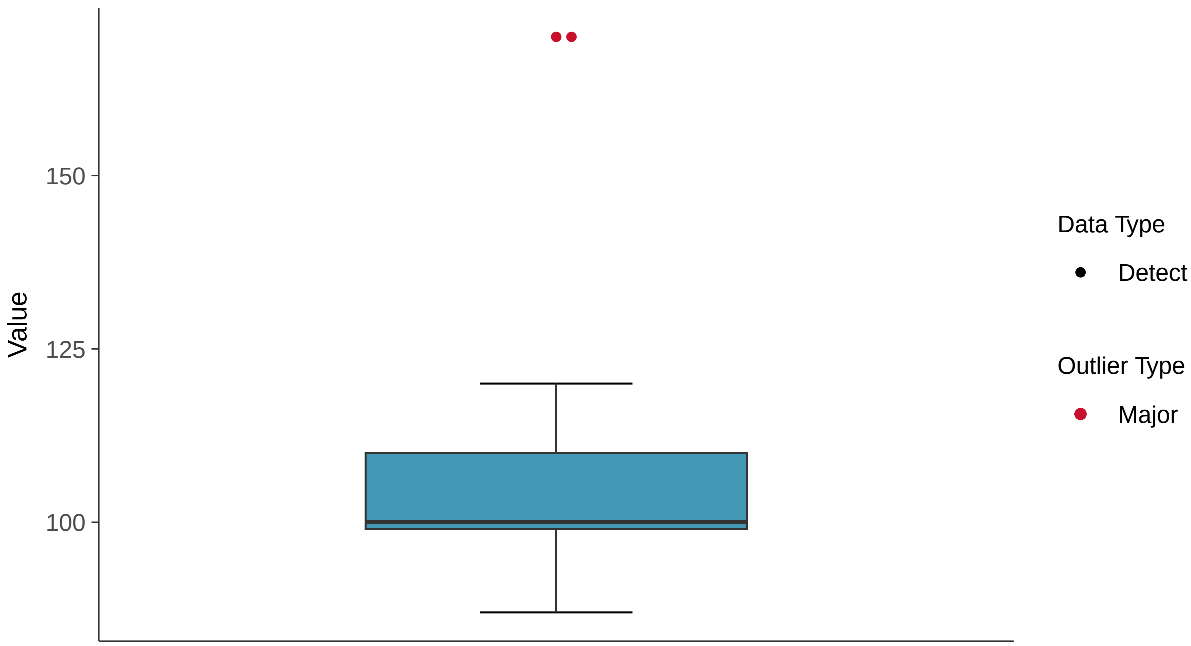
Histogram

Chloride (as Cl), MW-31 (mg/L)



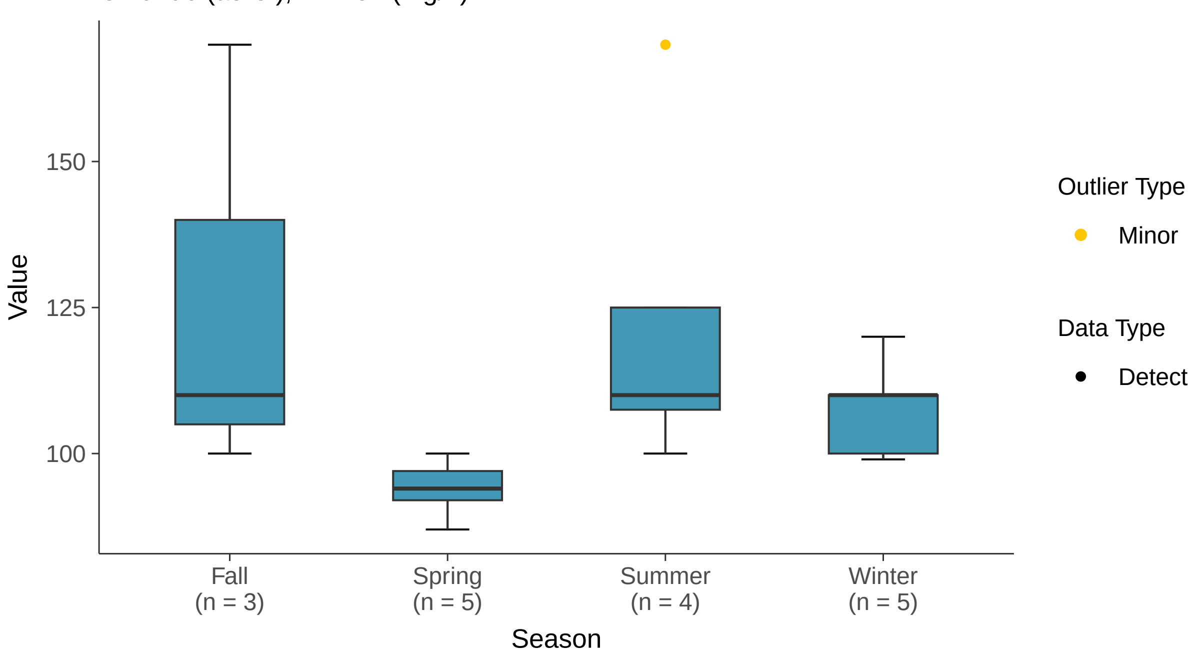
Boxplot

Chloride (as Cl), MW-31 (mg/L)



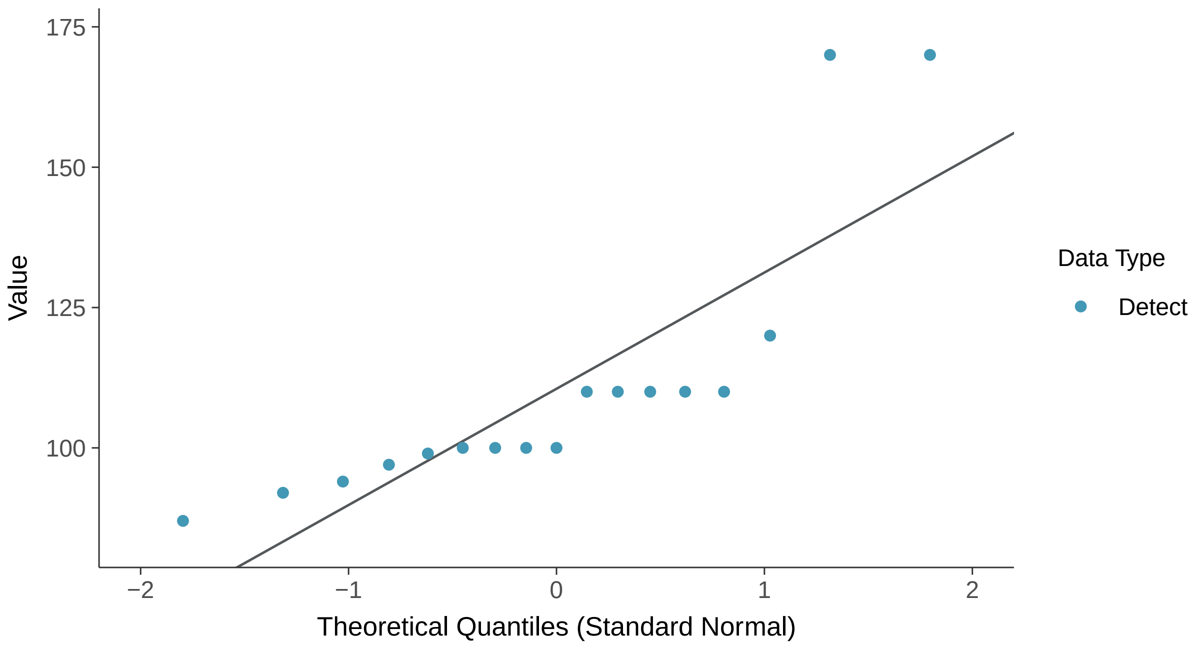
Boxplot by Season

Chloride (as Cl), MW-31 (mg/L)



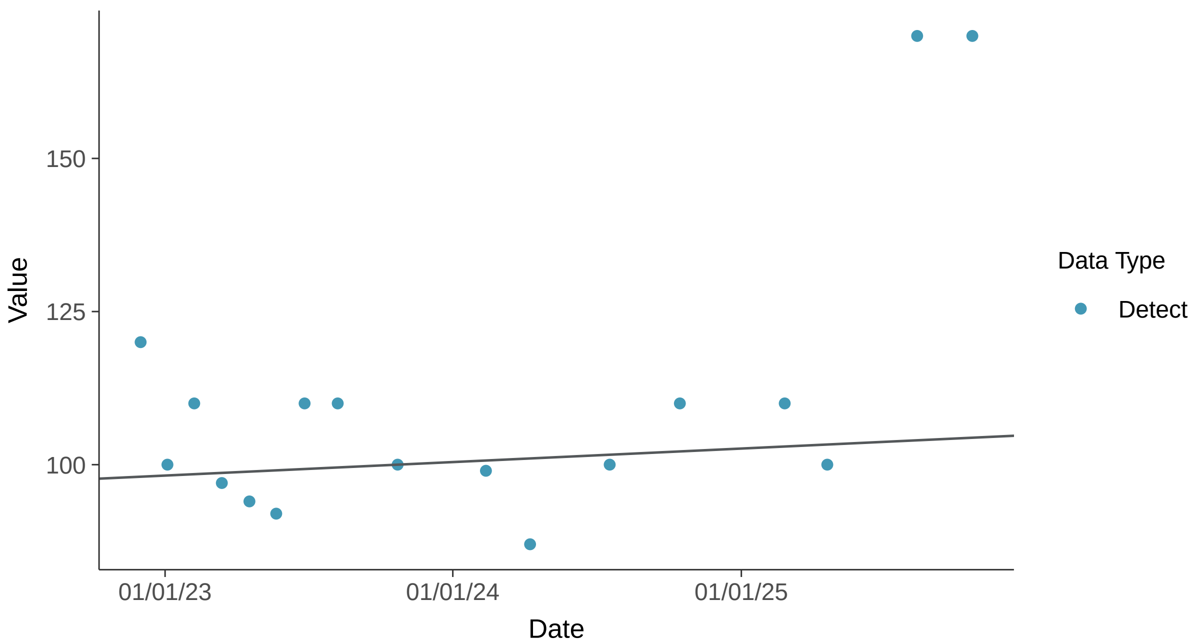
Normal Q-Q plot

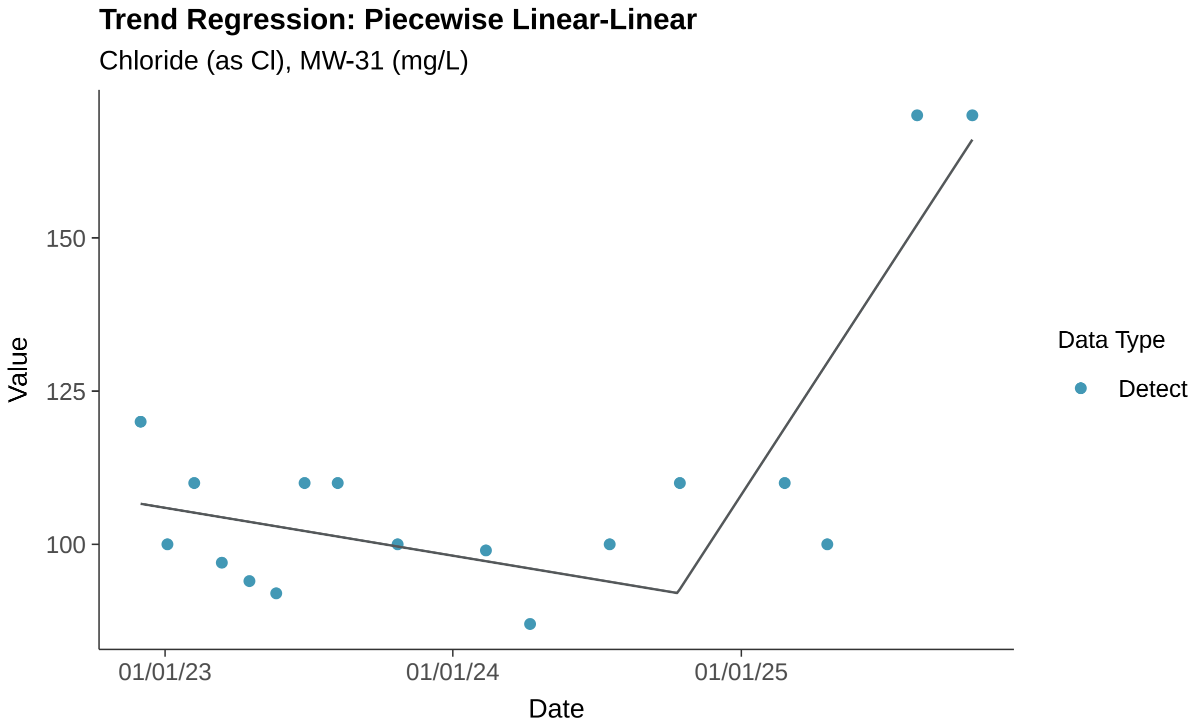
Chloride (as Cl), MW-31 (mg/L)

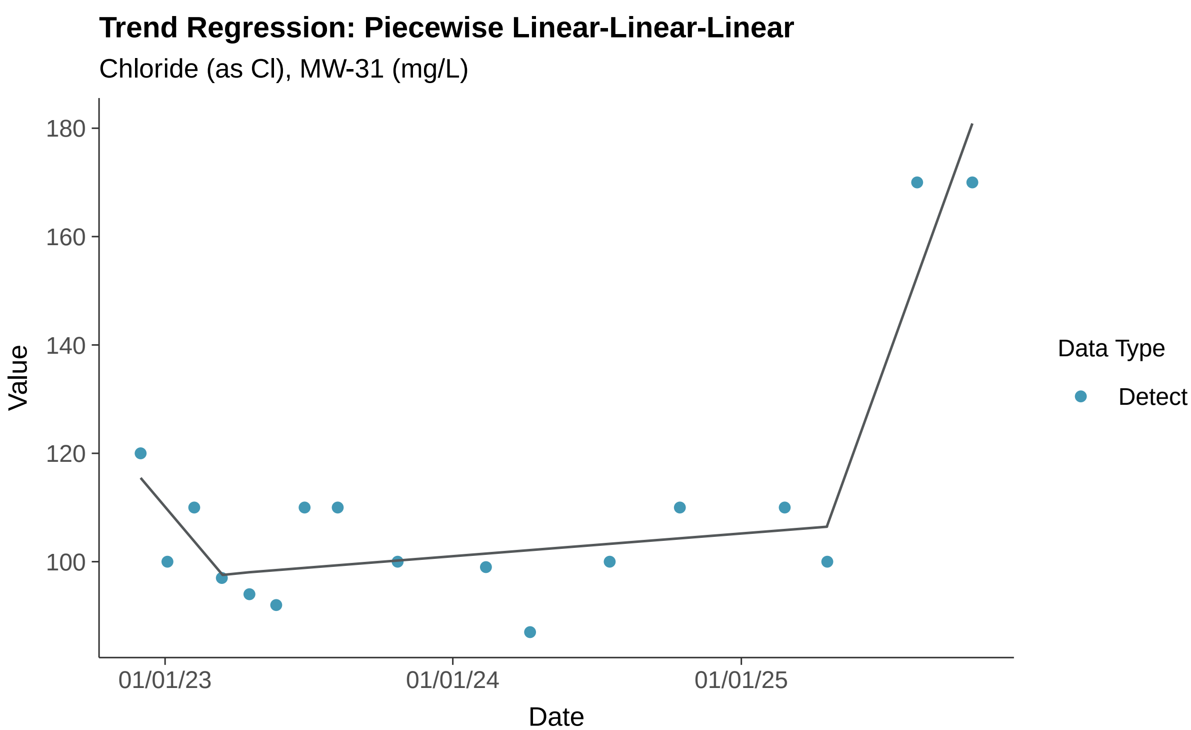


Trend Regression: Mann-Kendall/Theil-Sen Estimate

Chloride (as Cl), MW-31 (mg/L)

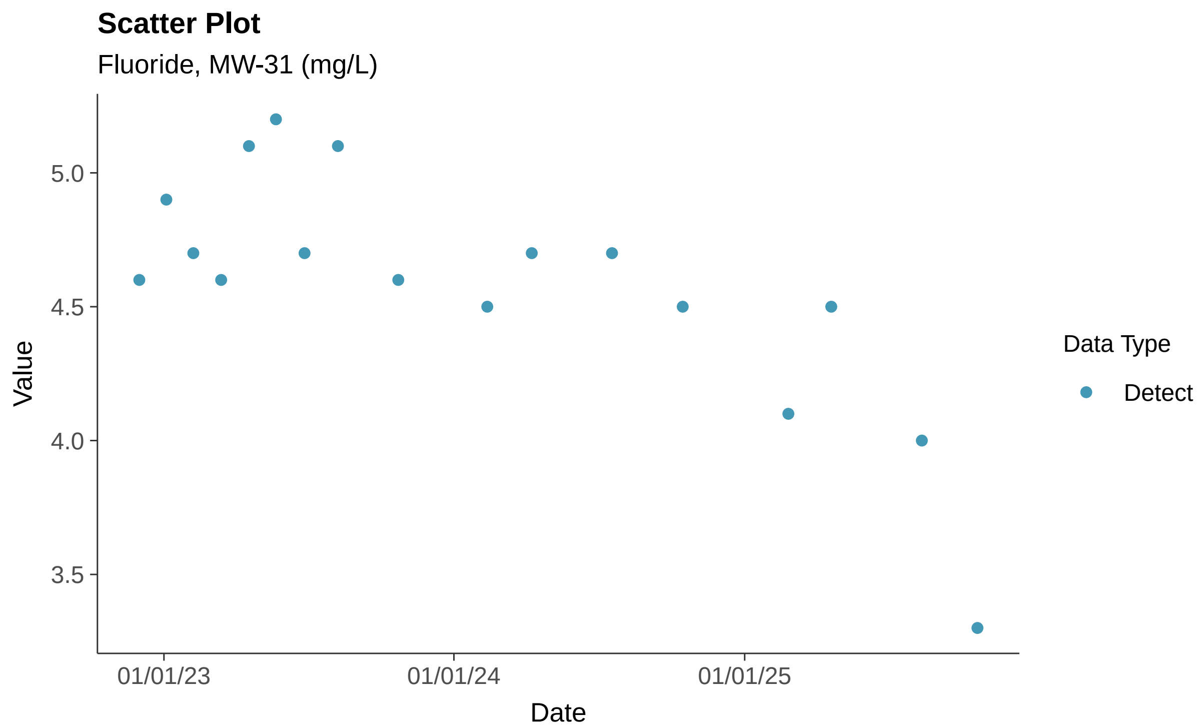


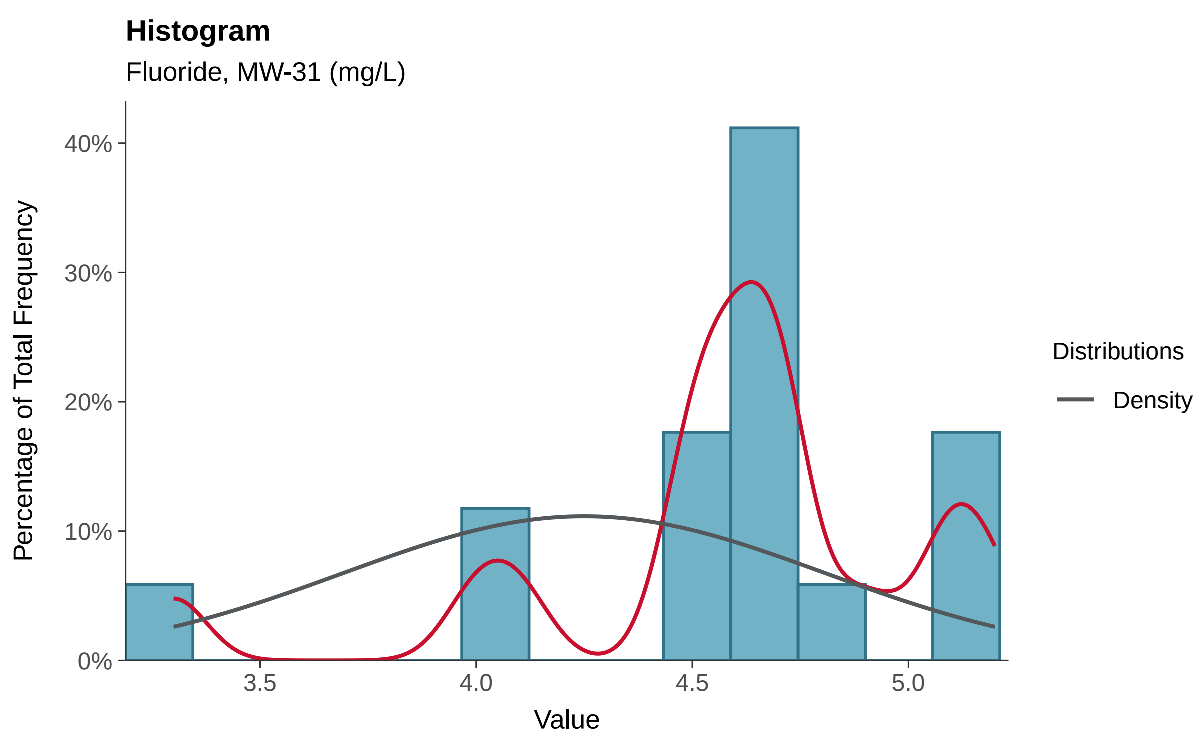

Trend Regression: Piecewise Linear-Linear
Chloride (as Cl), MW-31 (mg/L)
Value
150
125
100
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
Chloride (as Cl), MW-31 (mg/L)
Value
180
160
140
120
100
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Appendix III: Fluoride, MW-31

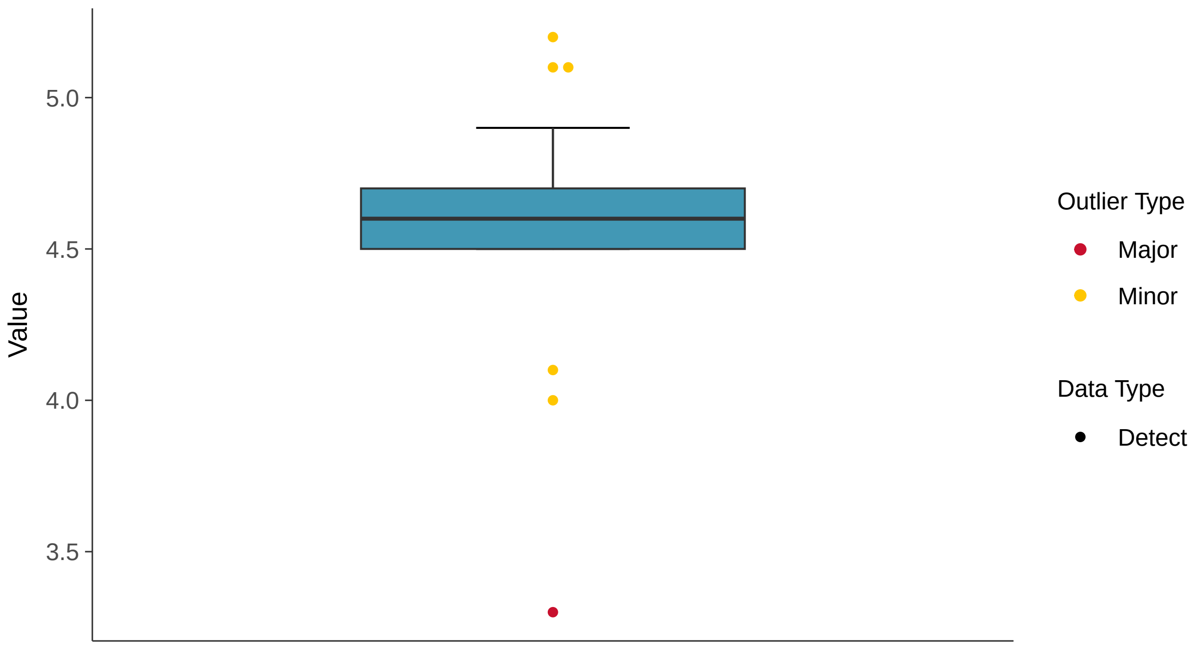
ID: 41_1_3_112





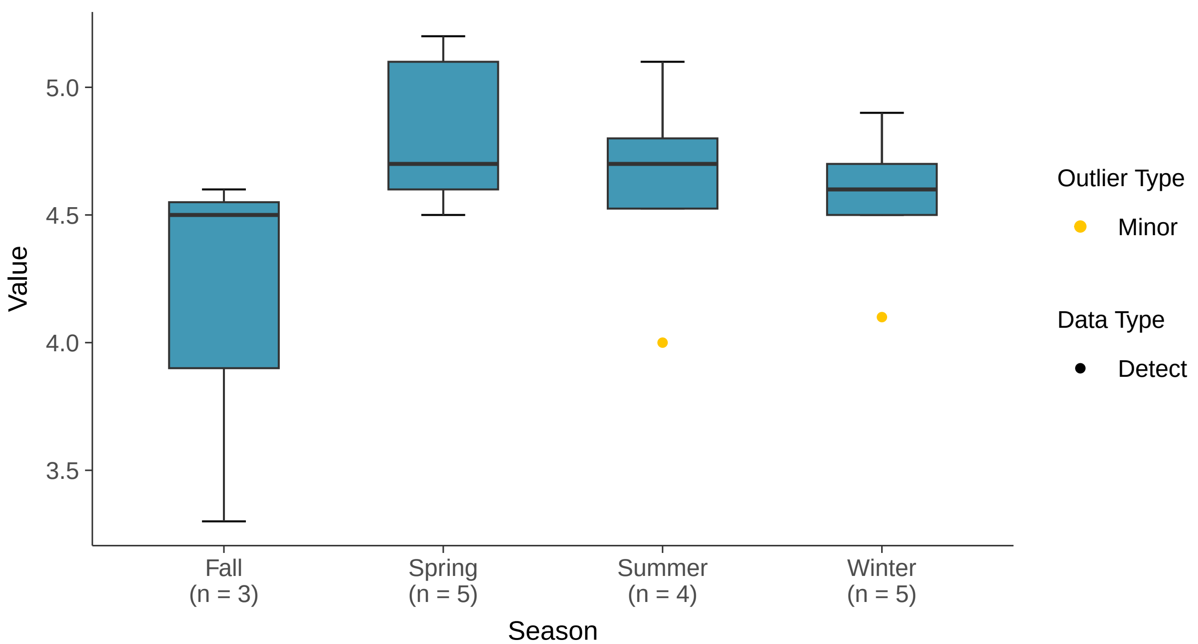
Boxplot

Fluoride, MW-31 (mg/L)



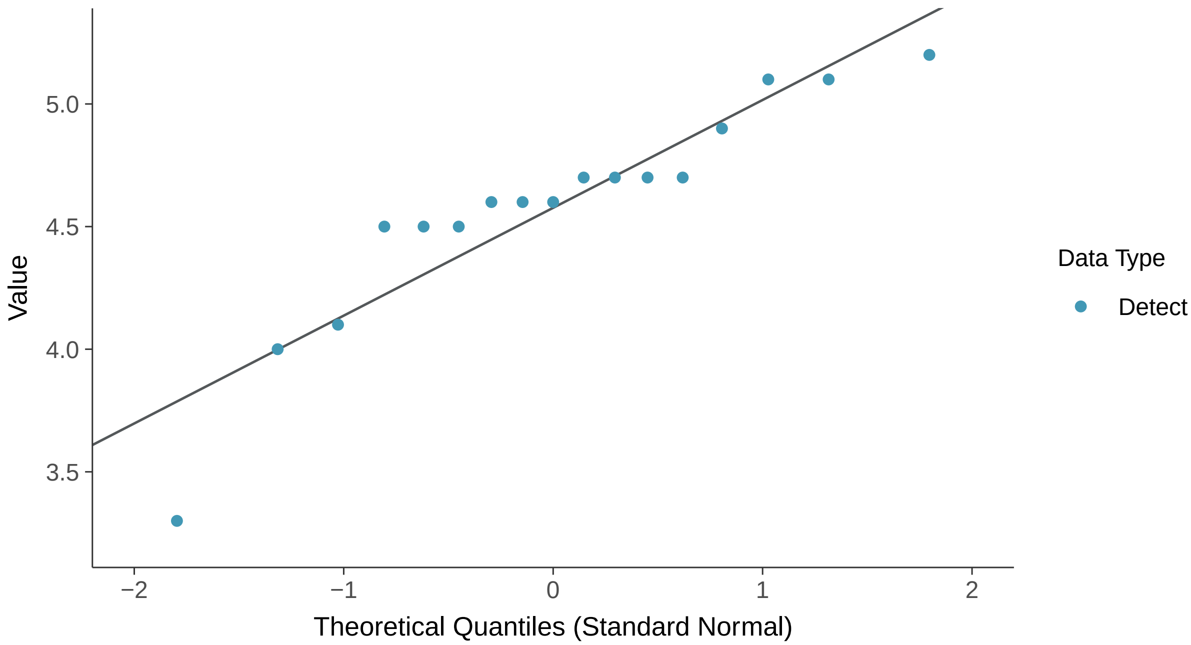
Boxplot by Season

Fluoride, MW-31 (mg/L)



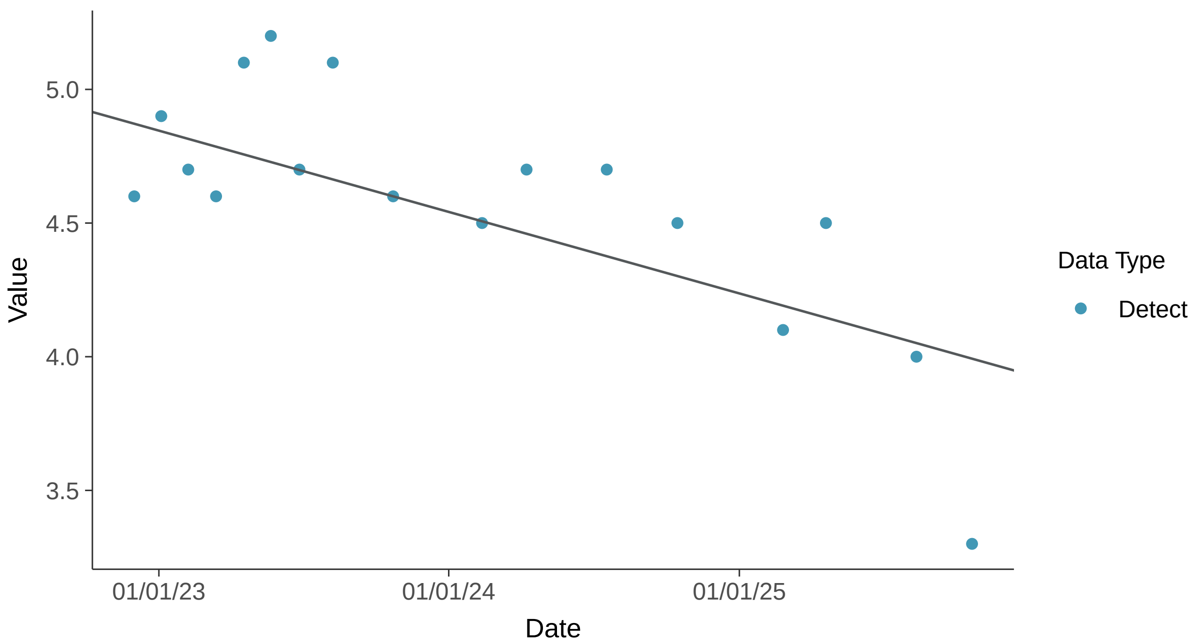
Normal Q-Q plot

Fluoride, MW-31 (mg/L)



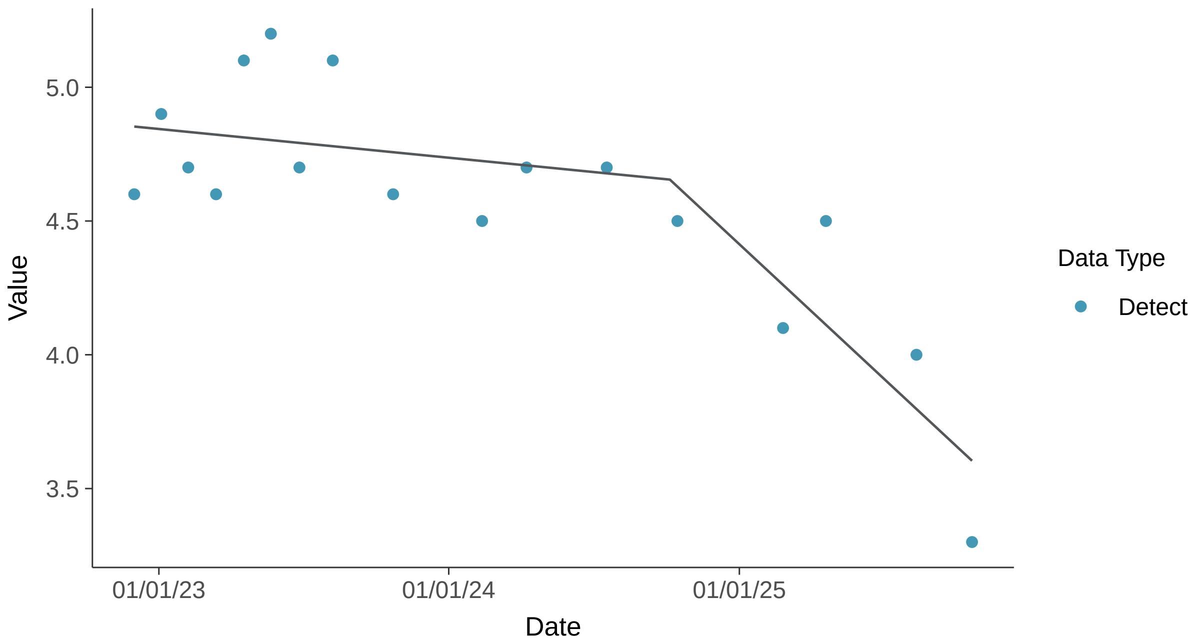
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Fluoride, MW-31 (mg/L)



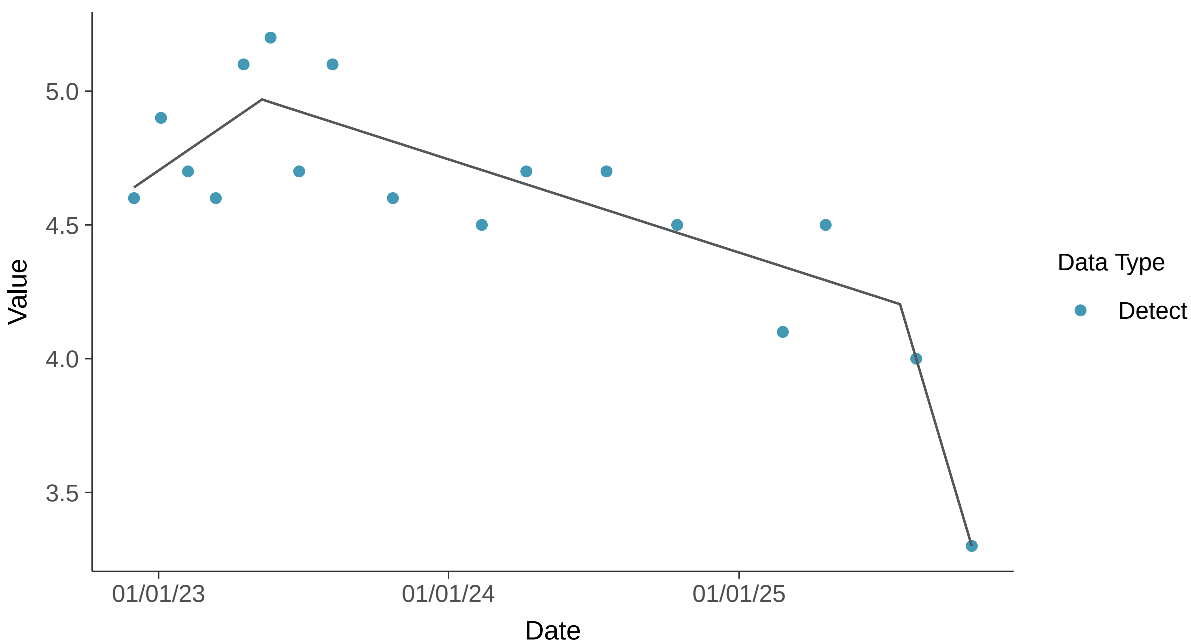
Trend Regression: Piecewise Linear-Linear

Fluoride, MW-31 (mg/L)



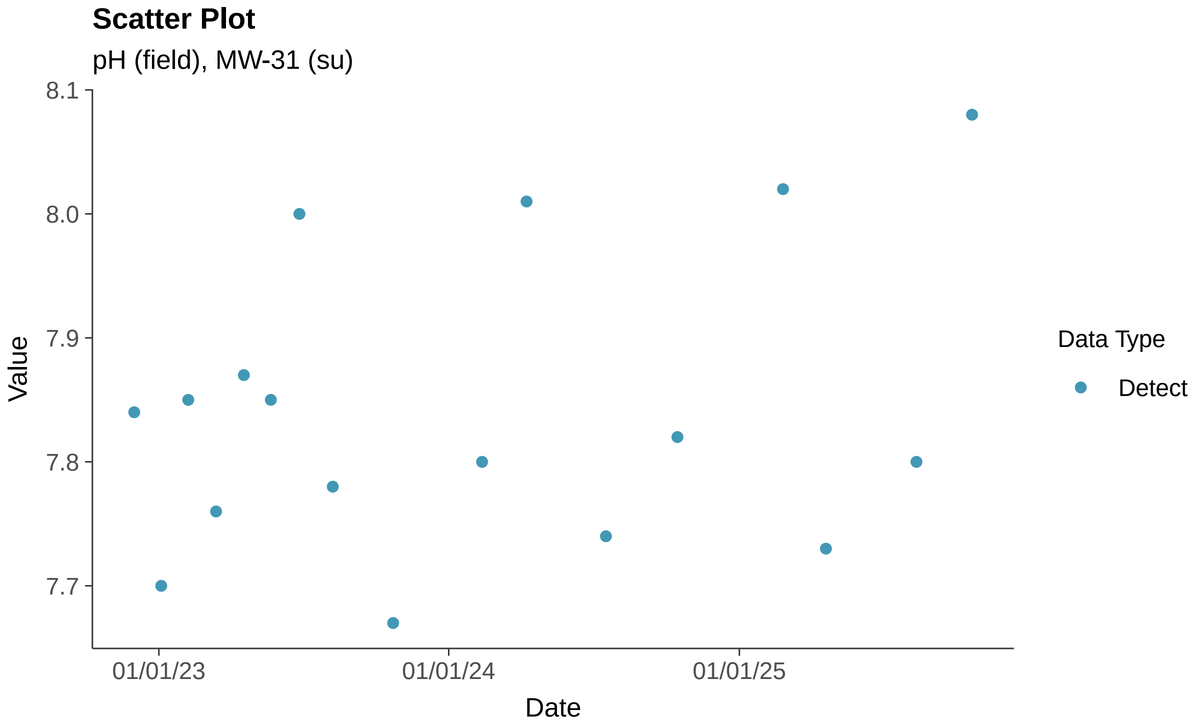
Trend Regression: Piecewise Linear-Linear-Linear

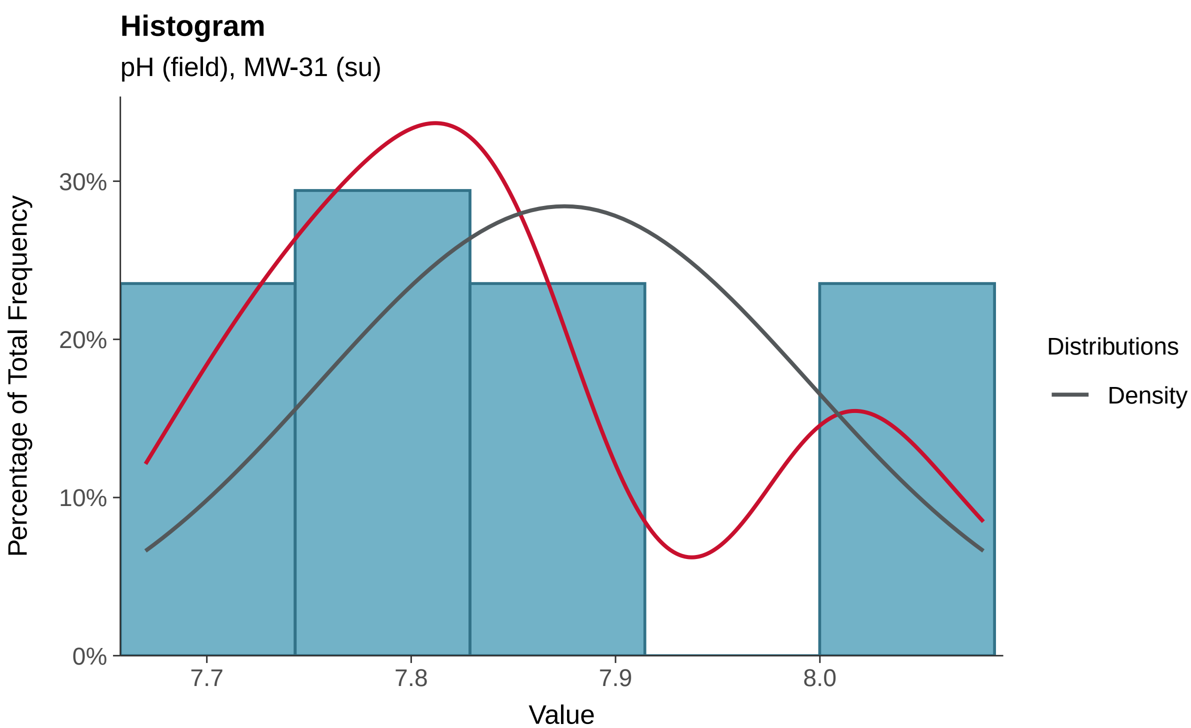
Fluoride, MW-31 (mg/L)



Appendix III: pH (field), MW-31

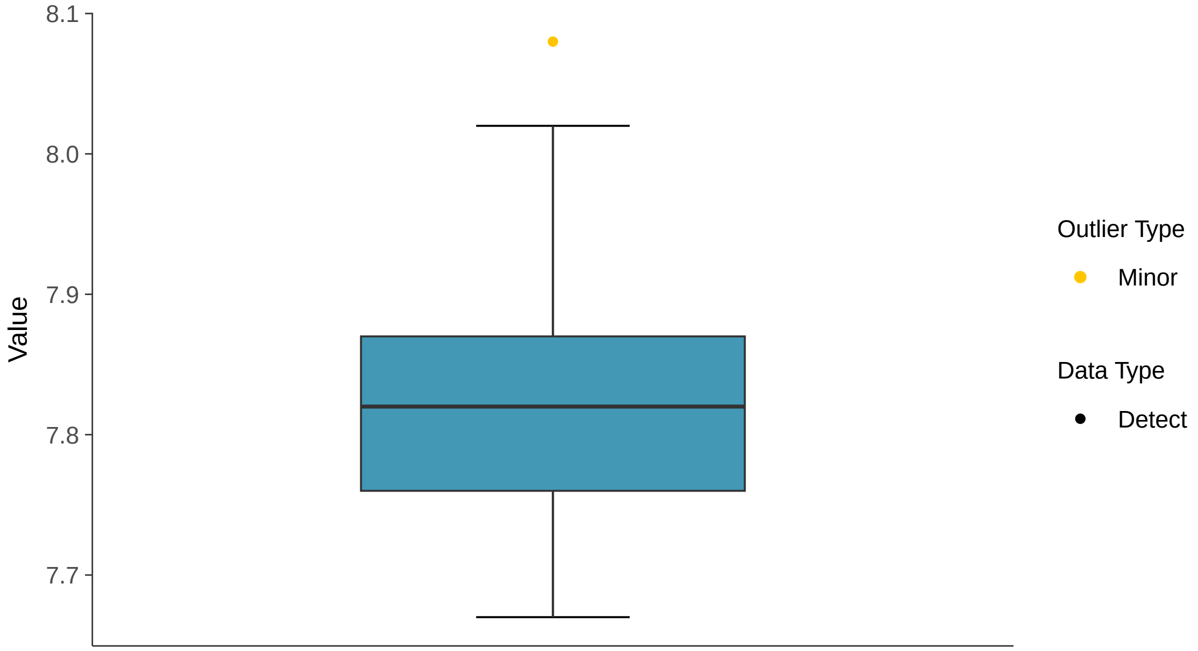
ID: 41_1_3_120





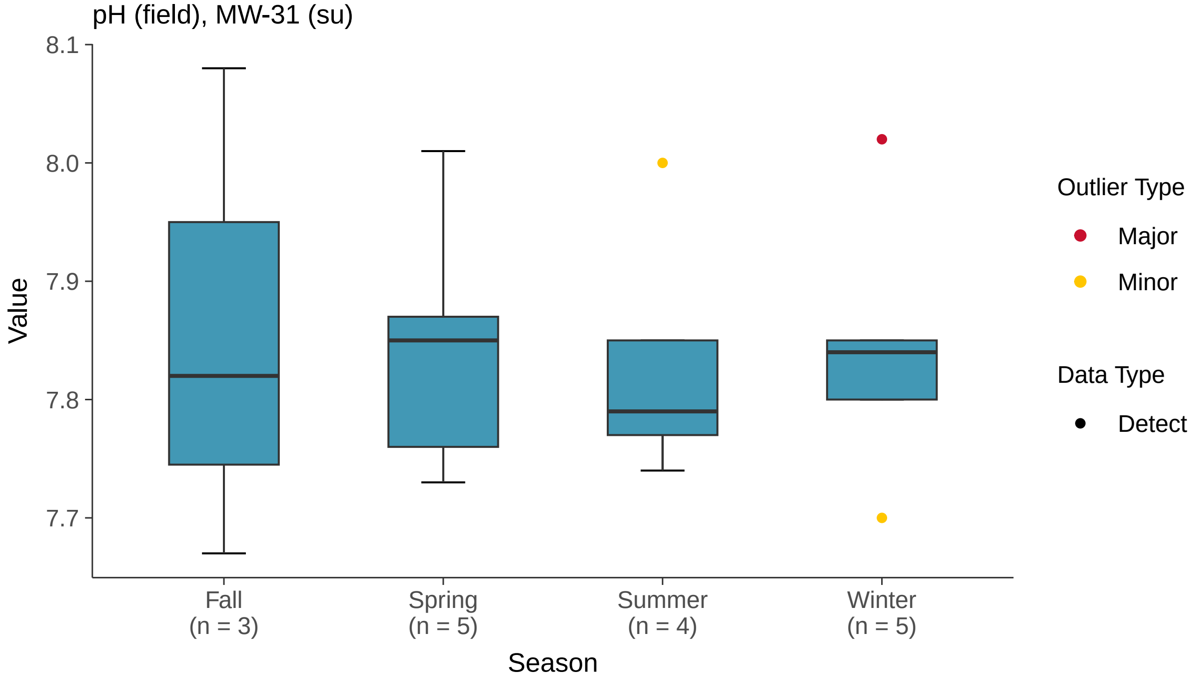
Boxplot

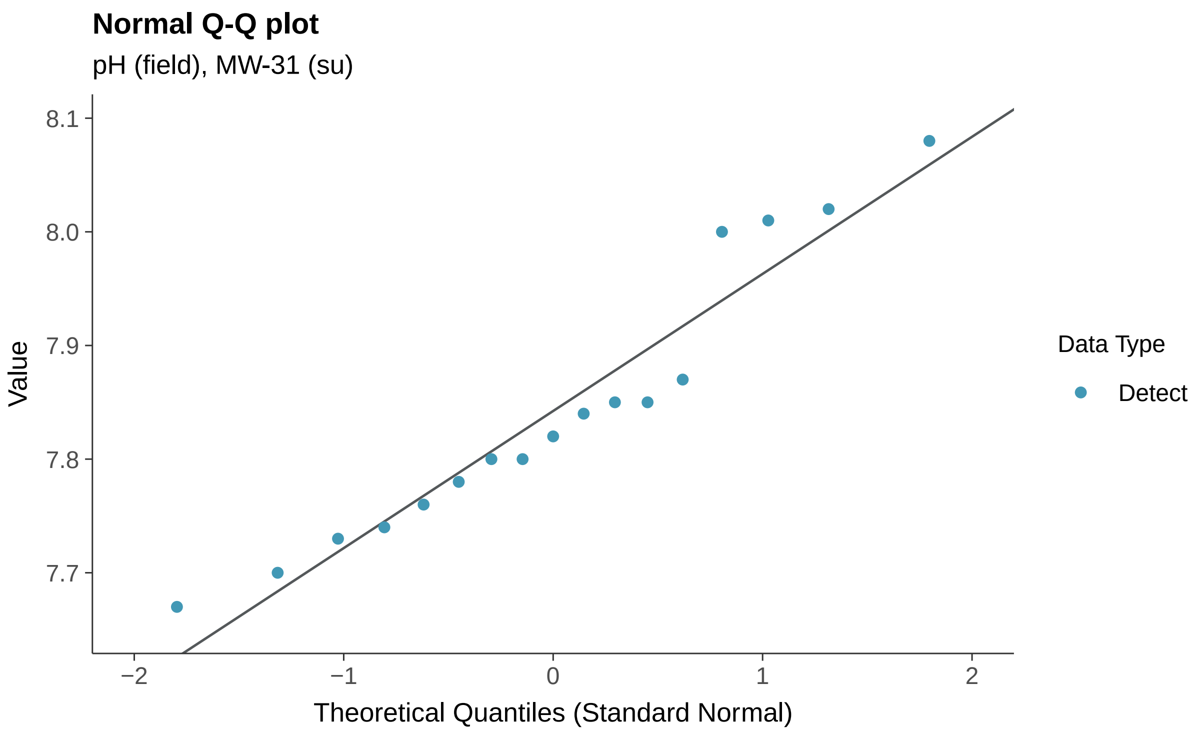
pH (field), MW-31 (su)

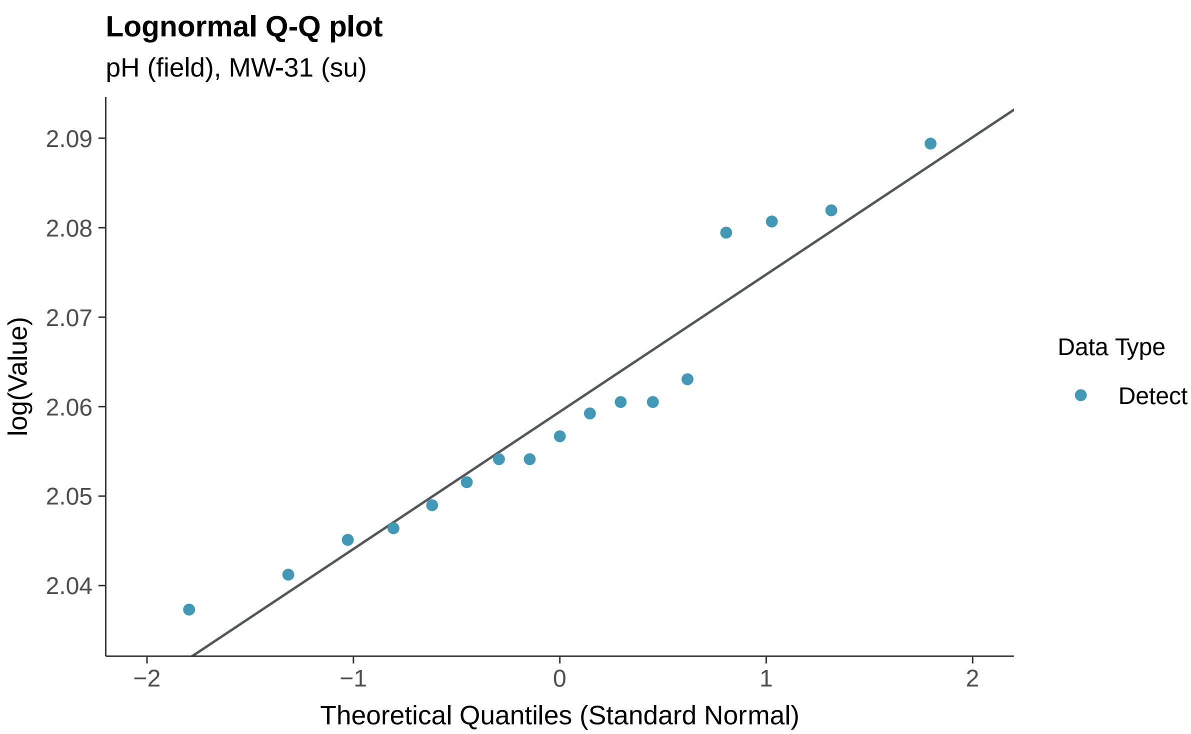


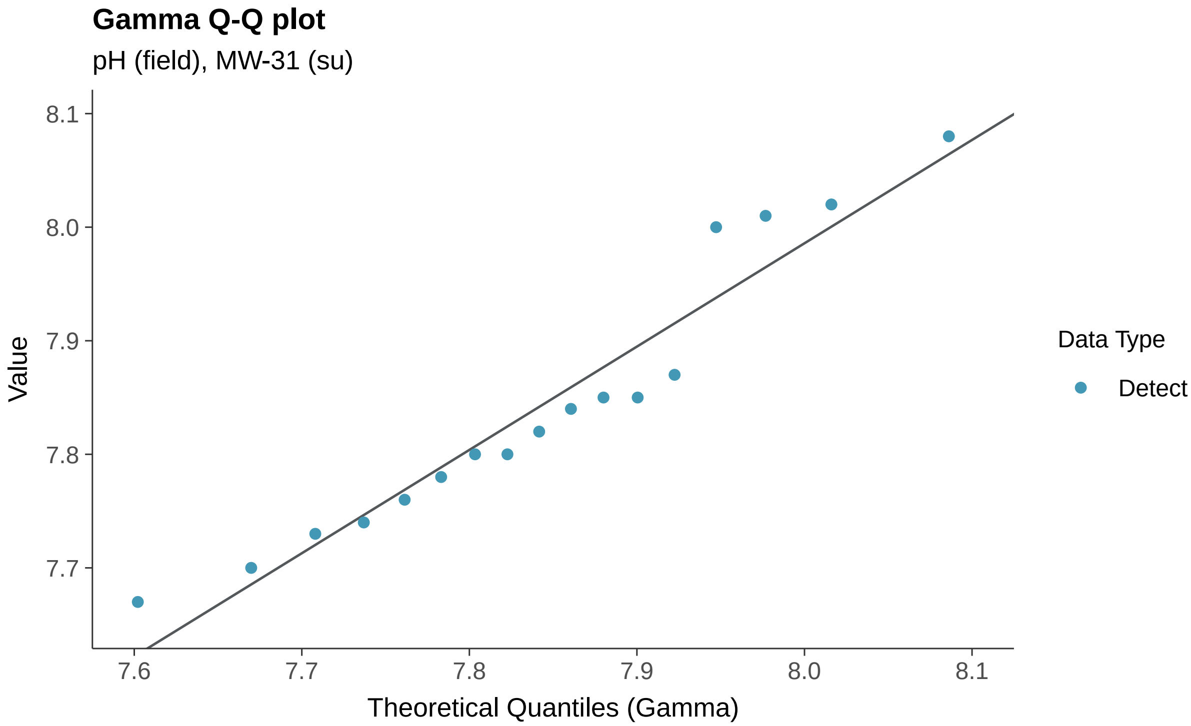
Boxplot by Season

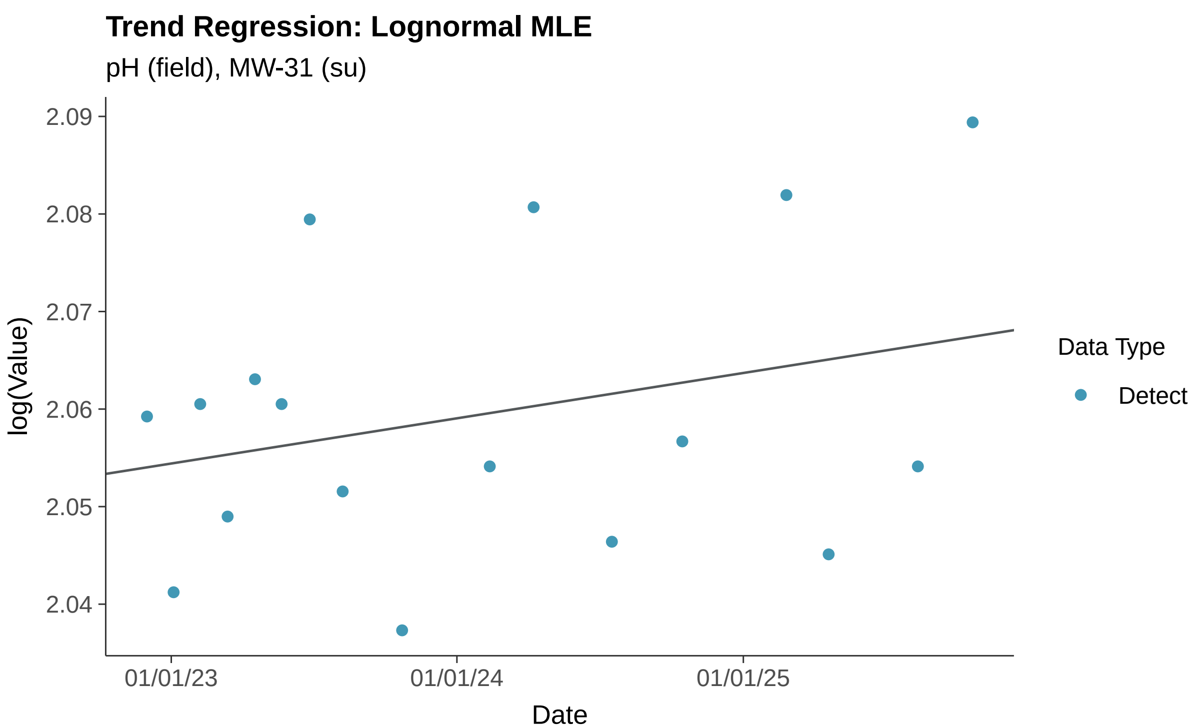
pH (field), MW-31 (su)

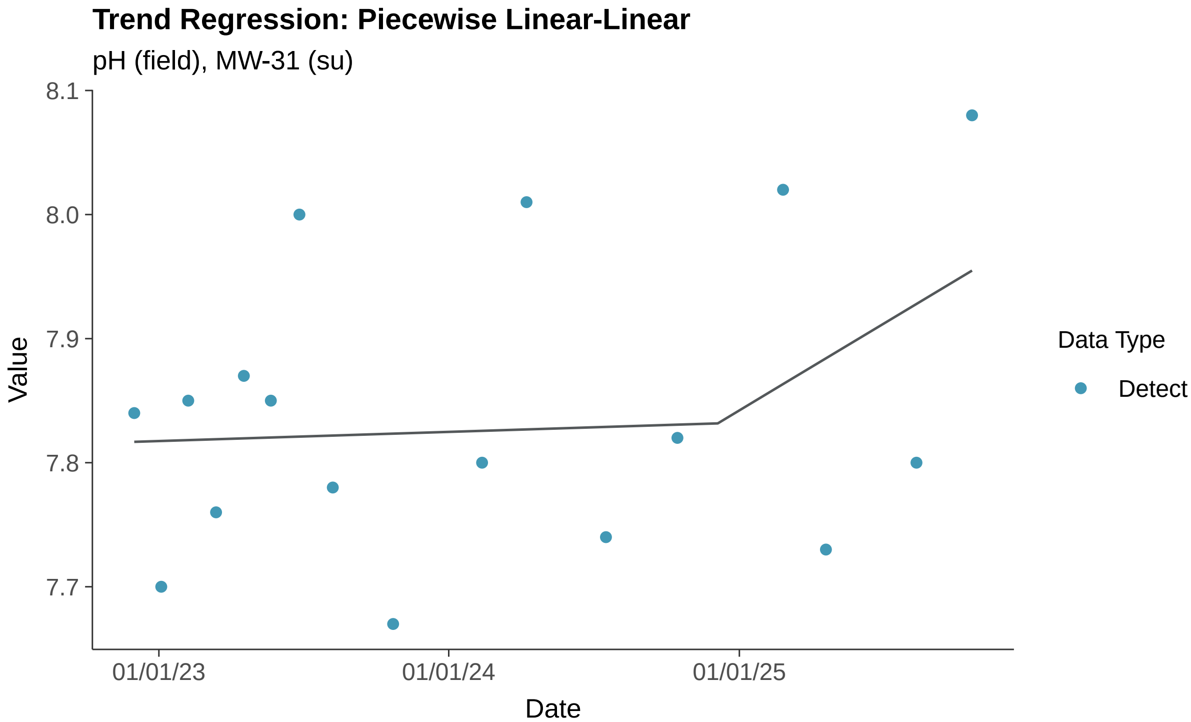



Normal Q-Q plot
pH (field), MW-31 (su)
Value
8.1
8.0
7.9
7.8
7.7
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
pH (field), MW-31 (su)
log(Value)
2.09
2.08
2.07
2.06
2.05
2.04
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
pH (field), MW-31 (su)
Value
8.1
8.0
7.9
7.8
7.7
7.6
7.7
7.8
7.9
8.0
8.1
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
pH (field), MW-31 (su)
log(Value)
2.09
2.08
2.07
2.06
2.05
2.04
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

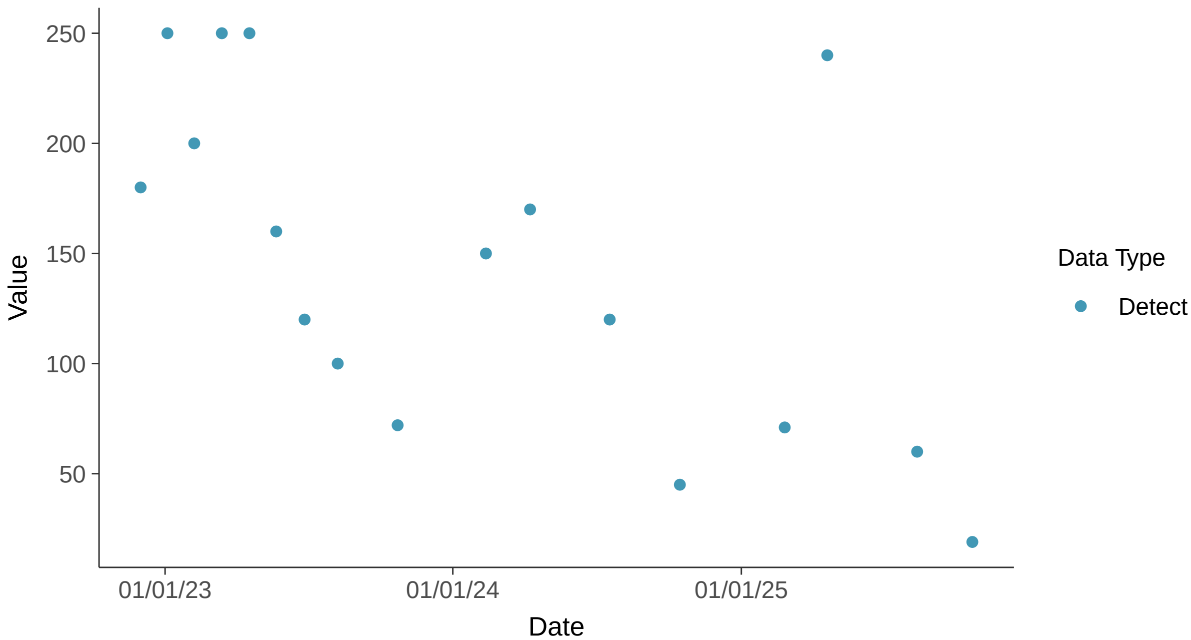

Trend Regression: Piecewise Linear-Linear
pH (field), MW-31 (su)
8.1
8.0
7.9
7.8
7.7
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Appendix III: Sulfate (as SO4), MW-31

ID: 41_1_3_124

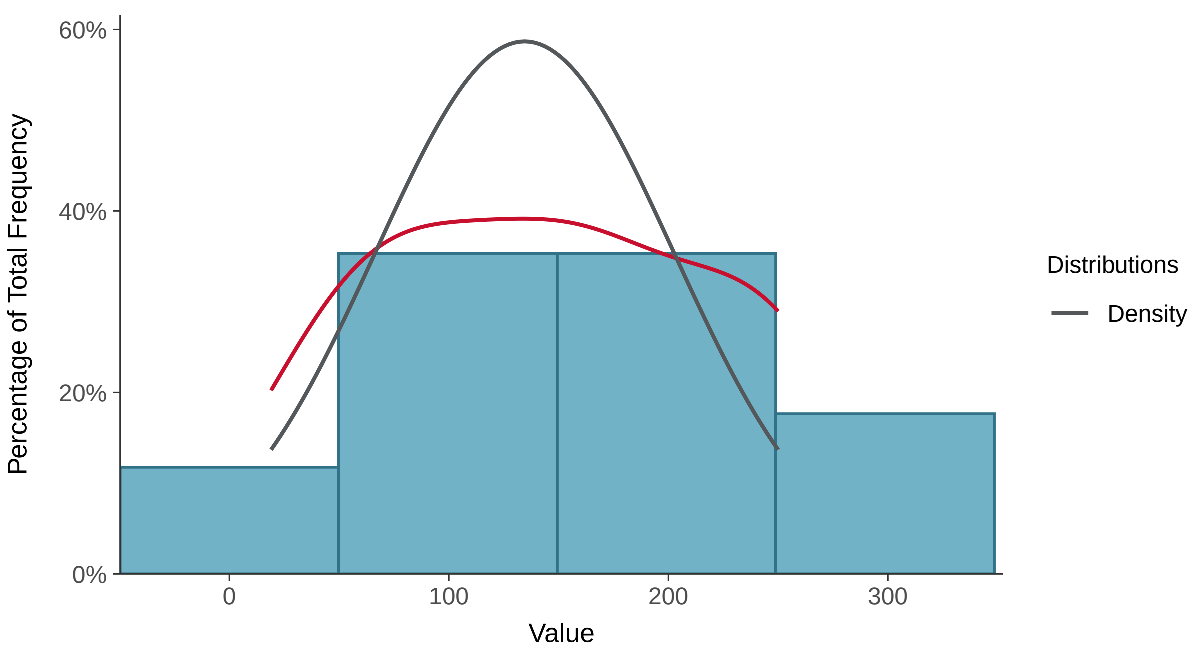
Scatter Plot

Sulfate (as SO4), MW-31 (mg/L)



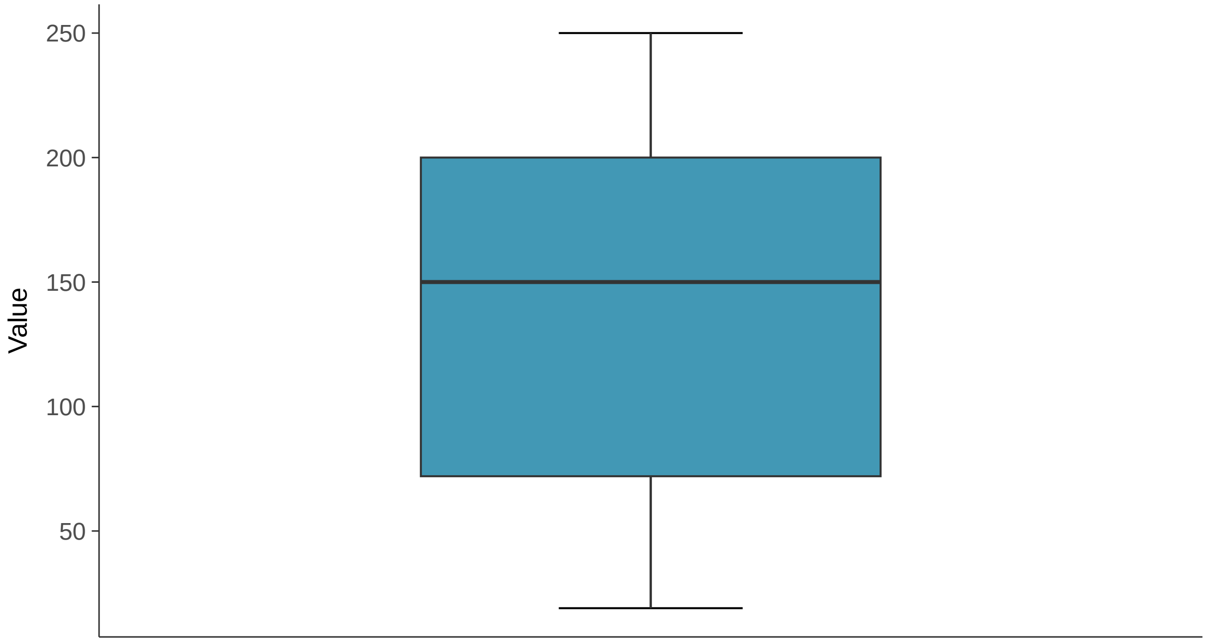
Histogram

Sulfate (as SO4), MW-31 (mg/L)



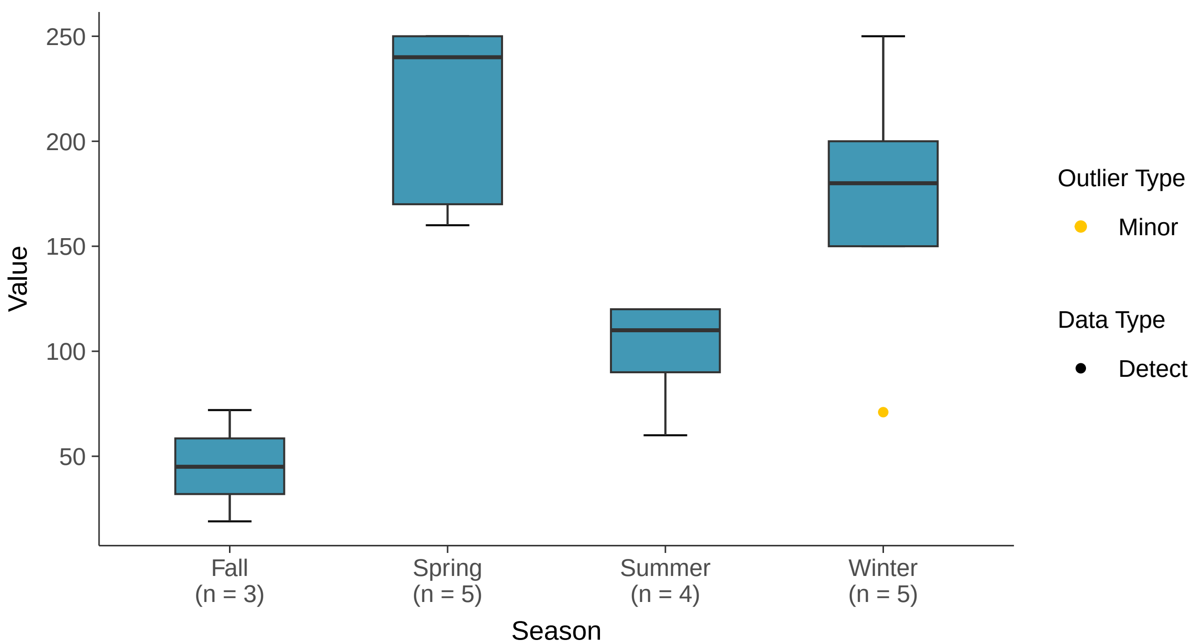
Boxplot

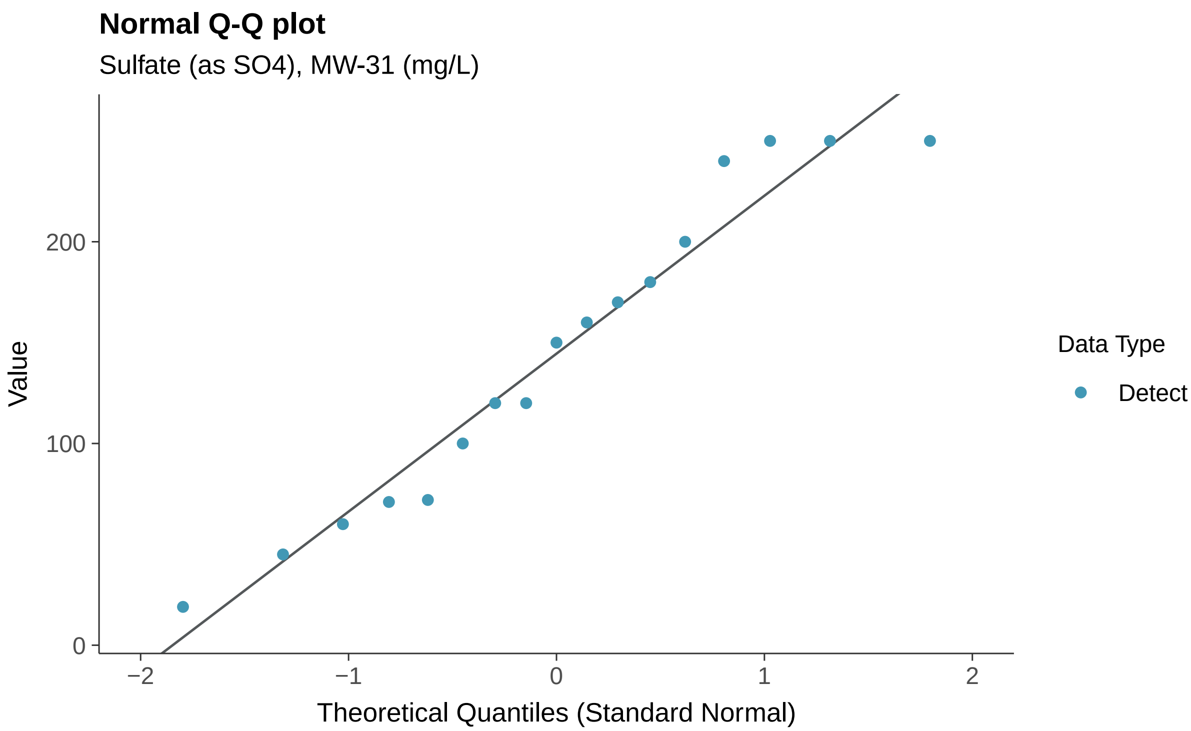
Sulfate (as SO4), MW-31 (mg/L)

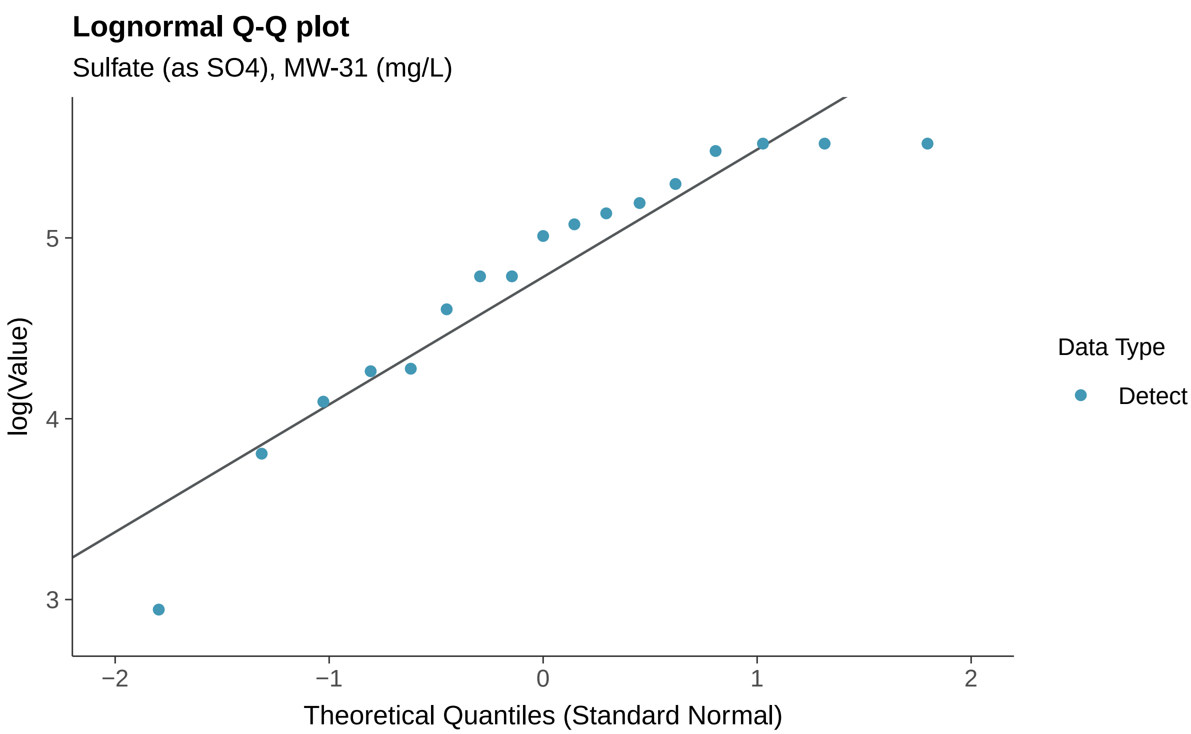


Boxplot by Season

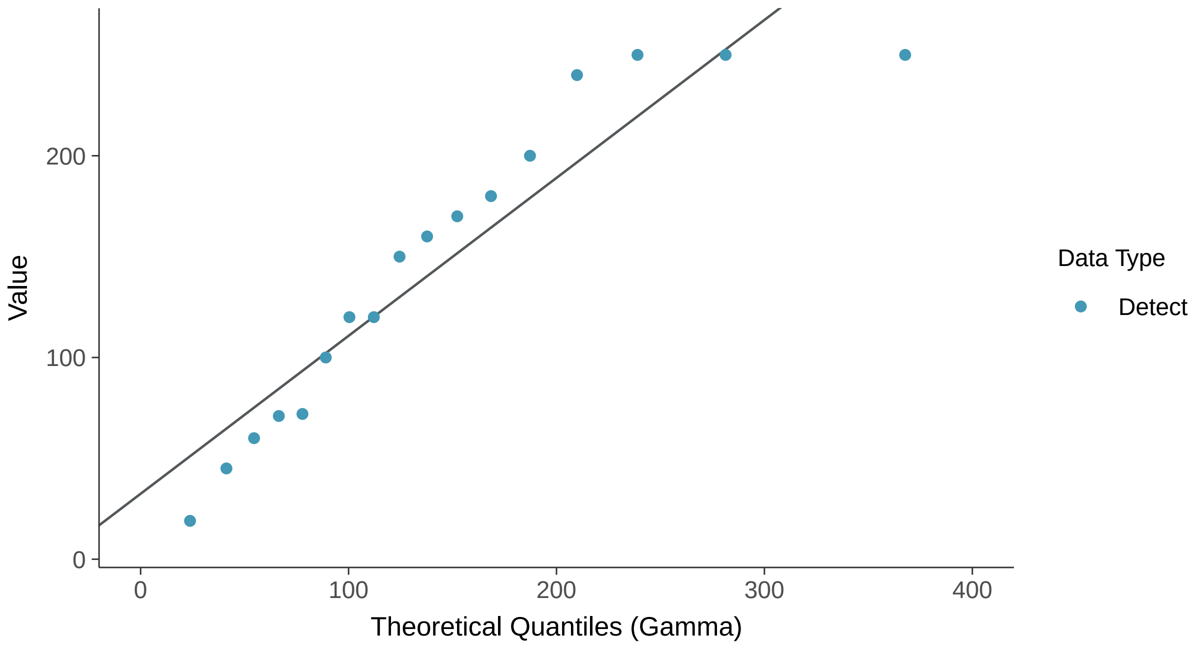
Sulfate (as SO4), MW-31 (mg/L)



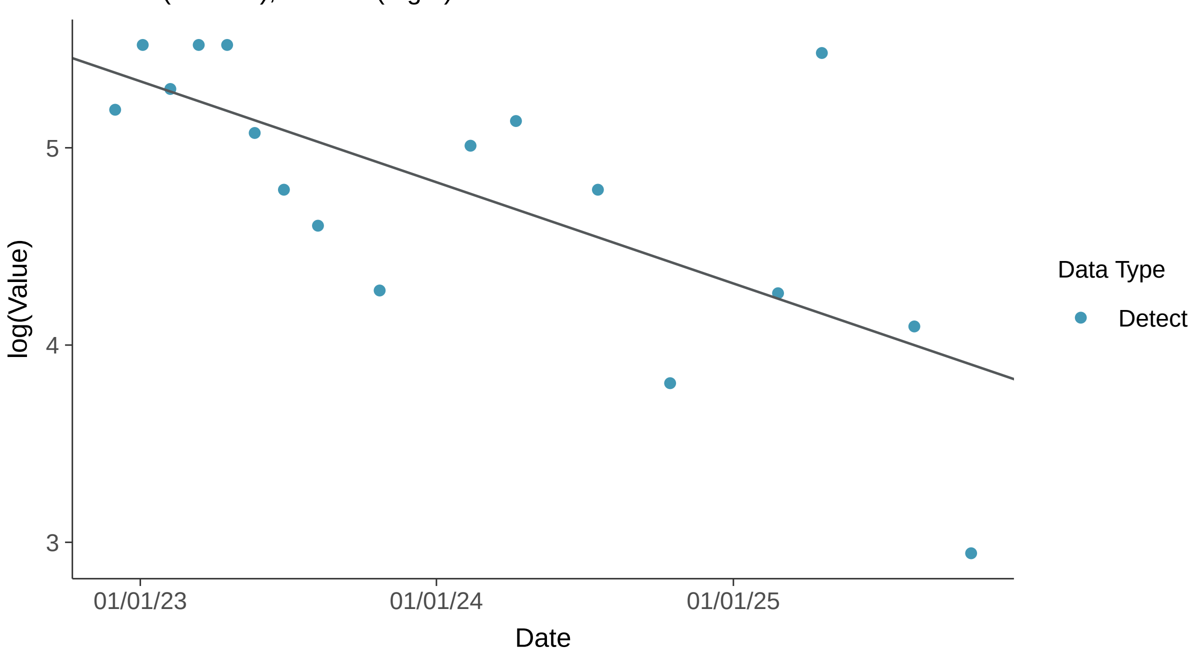

Normal Q-Q plot
Sulfate (as SO4), MW-31 (mg/L)
Value
200
100
0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Sulfate (as SO4), MW-31 (mg/L)
log(Value)
5
4
3
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Gamma Q-Q plot
Sulfate (as SO4), MW-31 (mg/L)

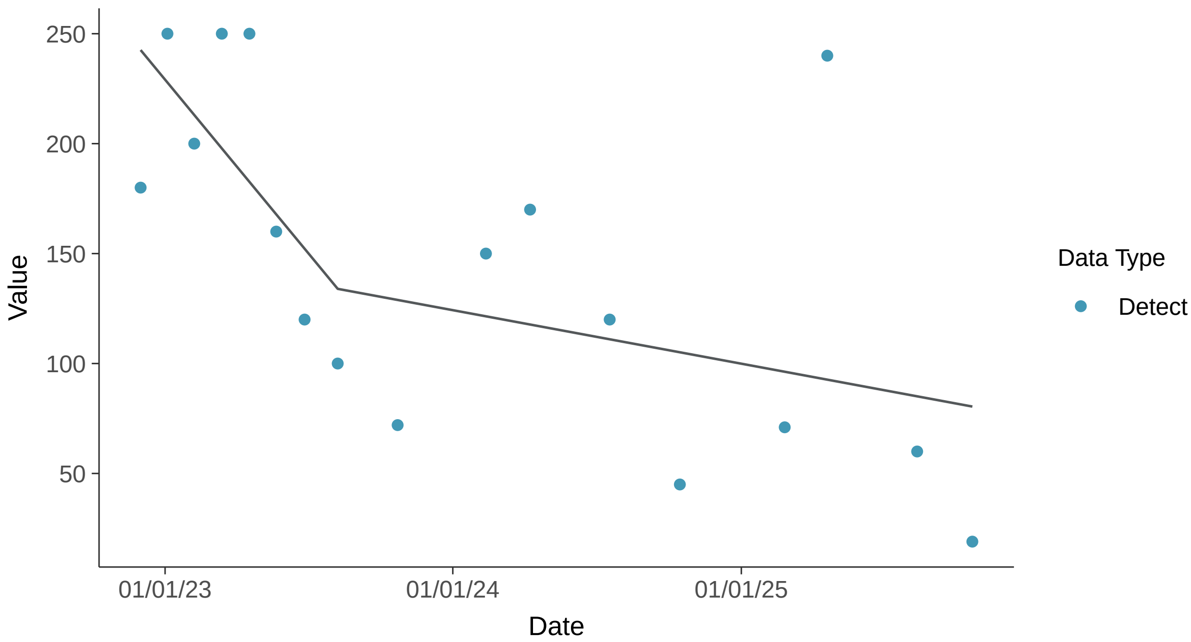


Trend Regression: Lognormal MLE
Sulfate (as SO4), MW-31 (mg/L)



Trend Regression: Piecewise Linear-Linear

Sulfate (as SO4), MW-31 (mg/L)

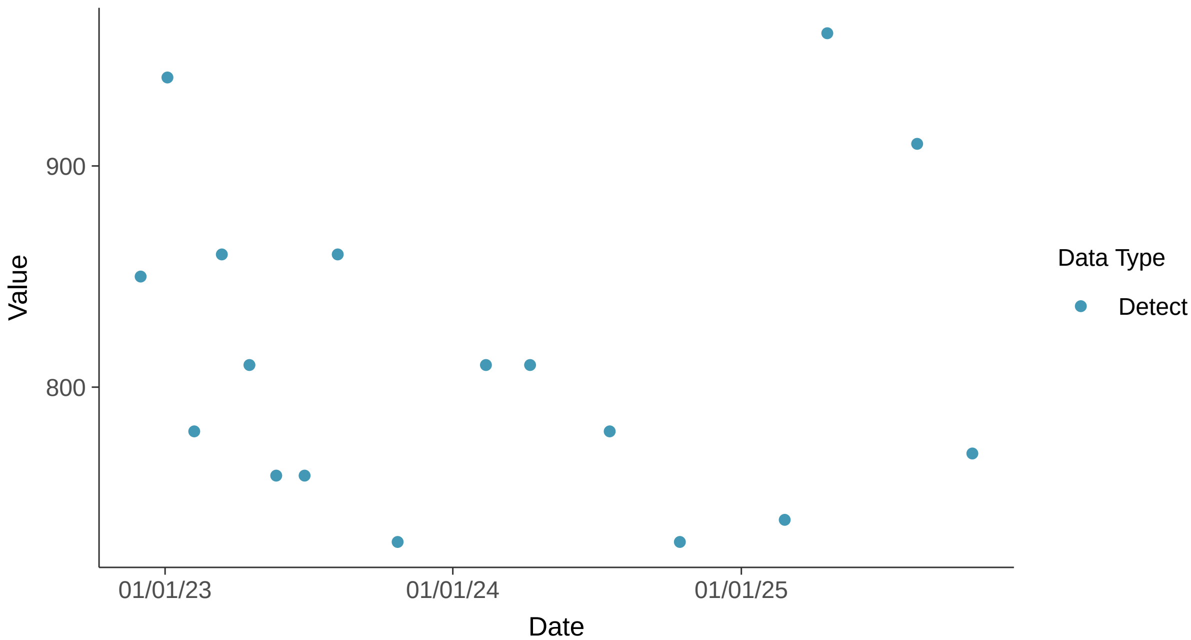


Appendix III: Total Dissolved Solids, MW-31

ID: 41_1_3_126

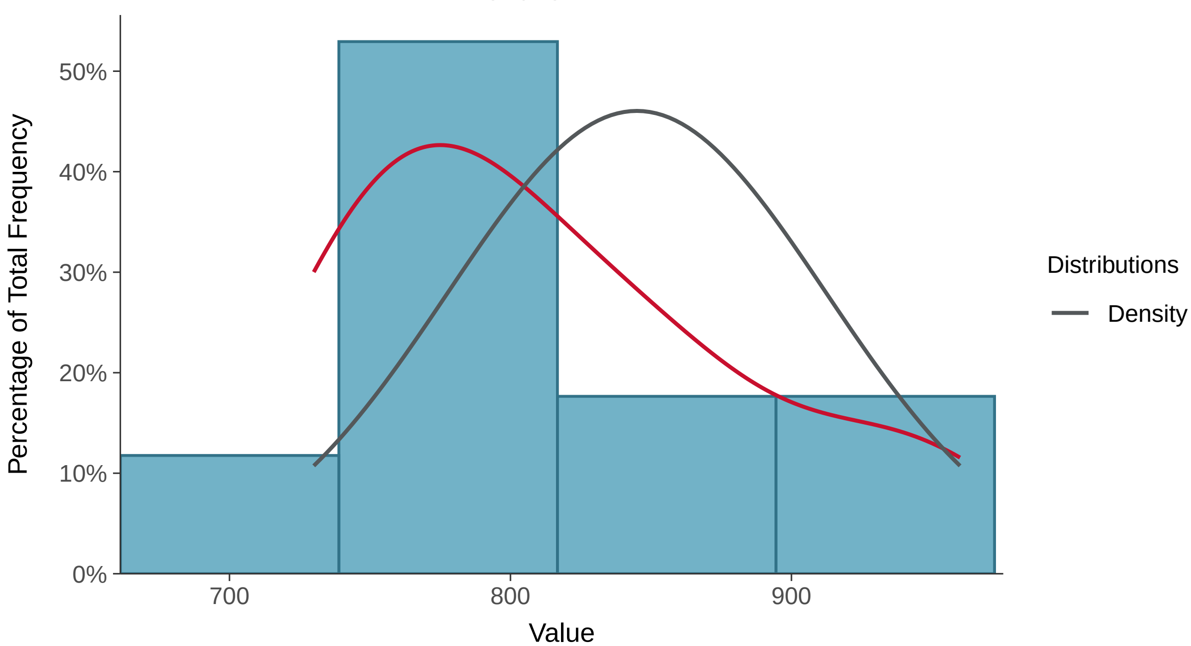
Scatter Plot

Total Dissolved Solids, MW-31 (mg/L)



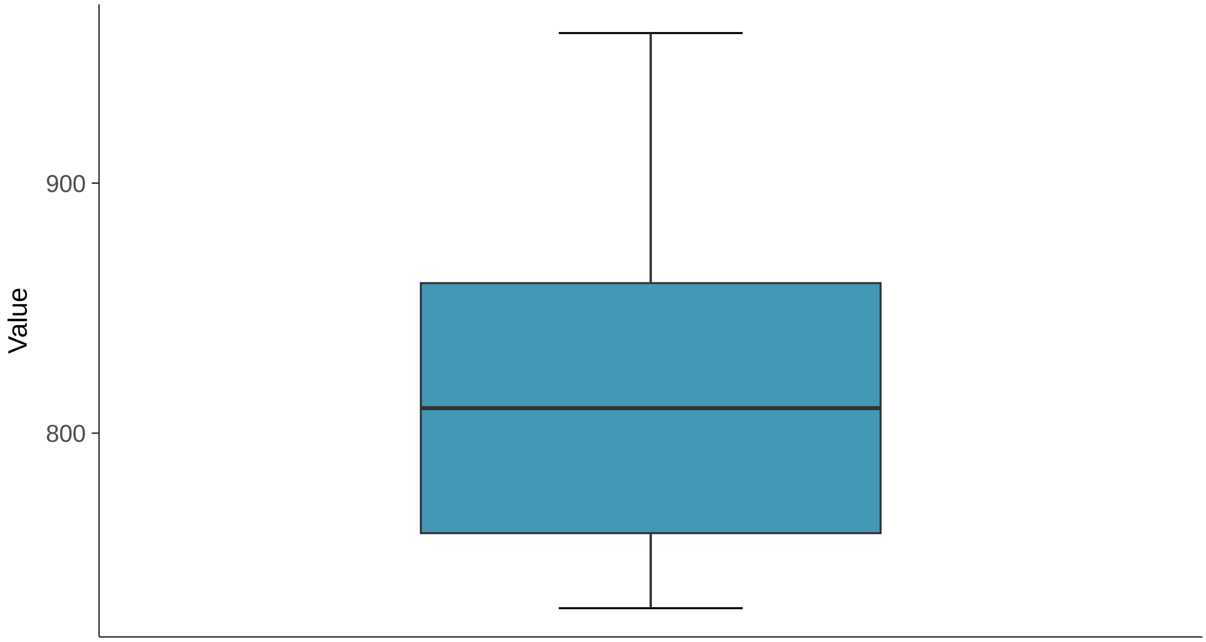
Histogram

Total Dissolved Solids, MW-31 (mg/L)



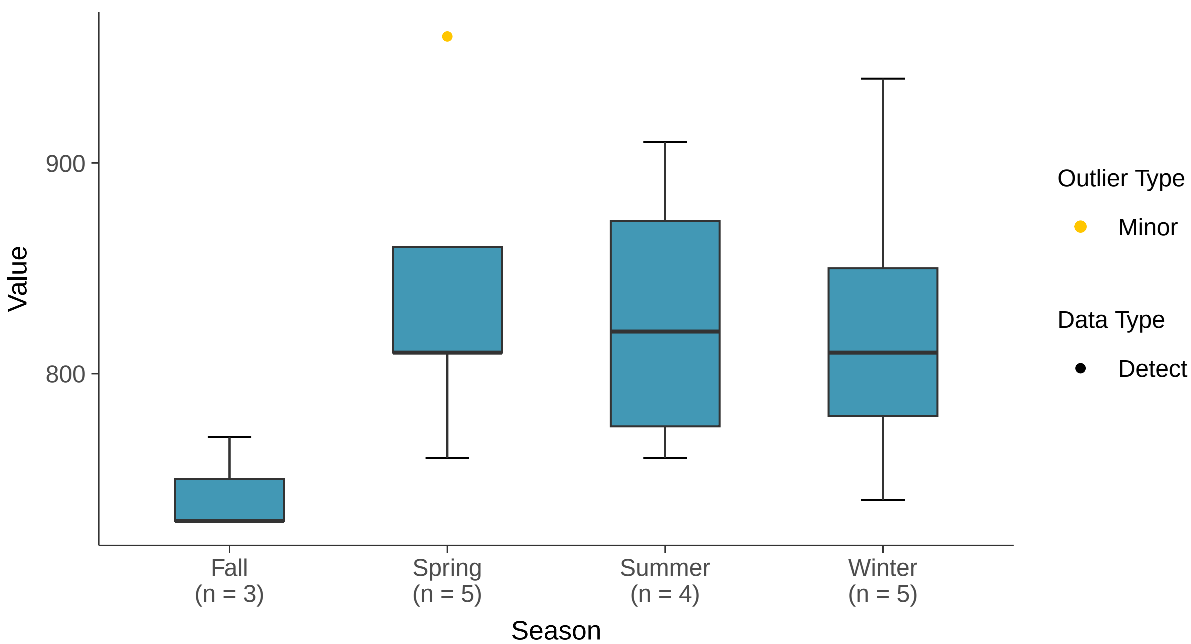
Boxplot

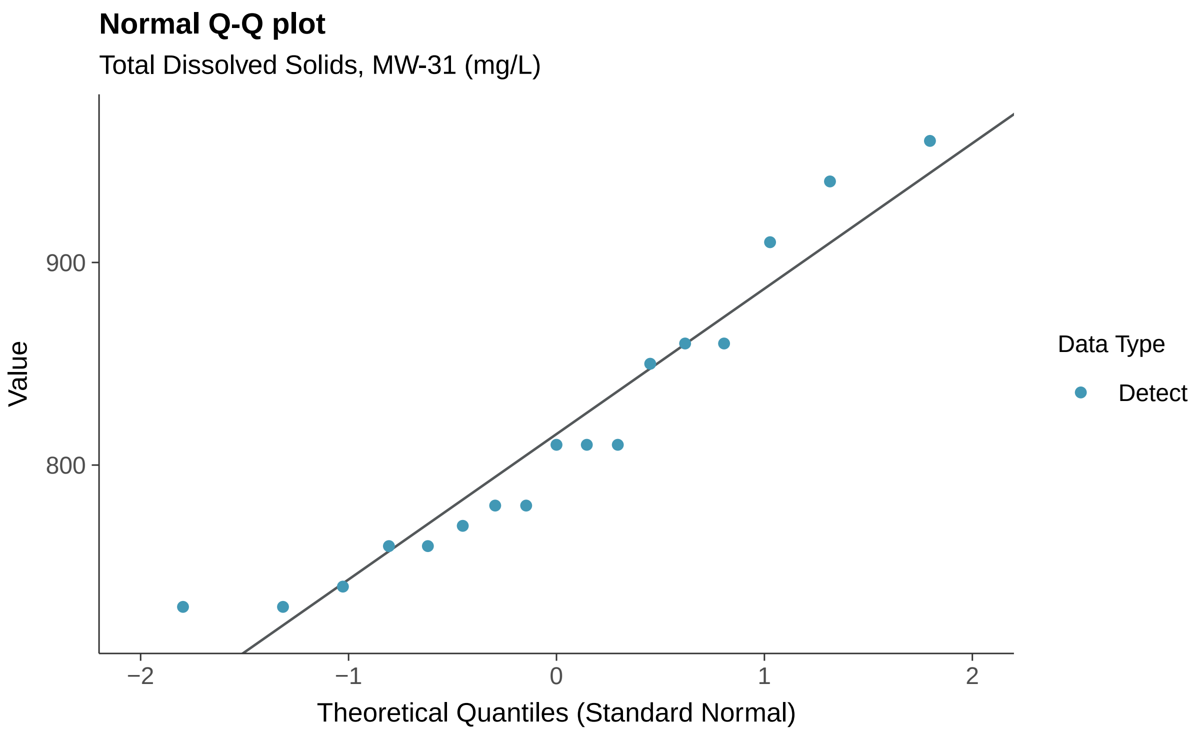
Total Dissolved Solids, MW-31 (mg/L)

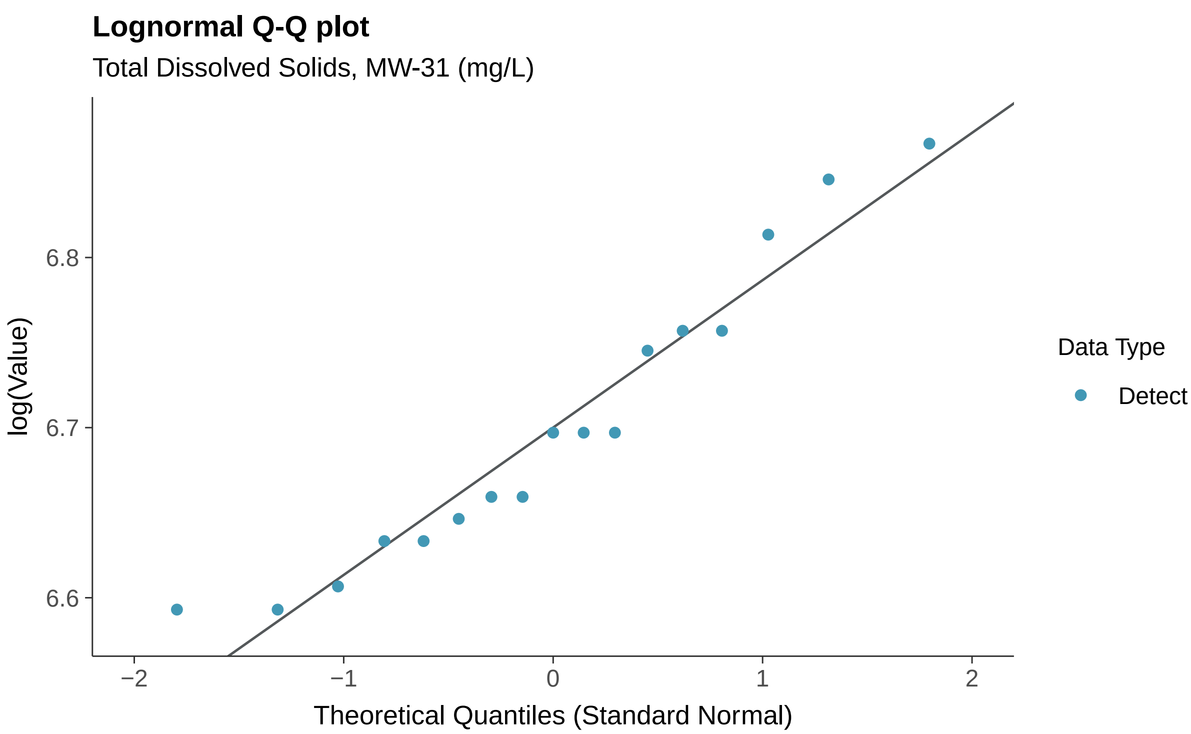


Boxplot by Season

Total Dissolved Solids, MW-31 (mg/L)

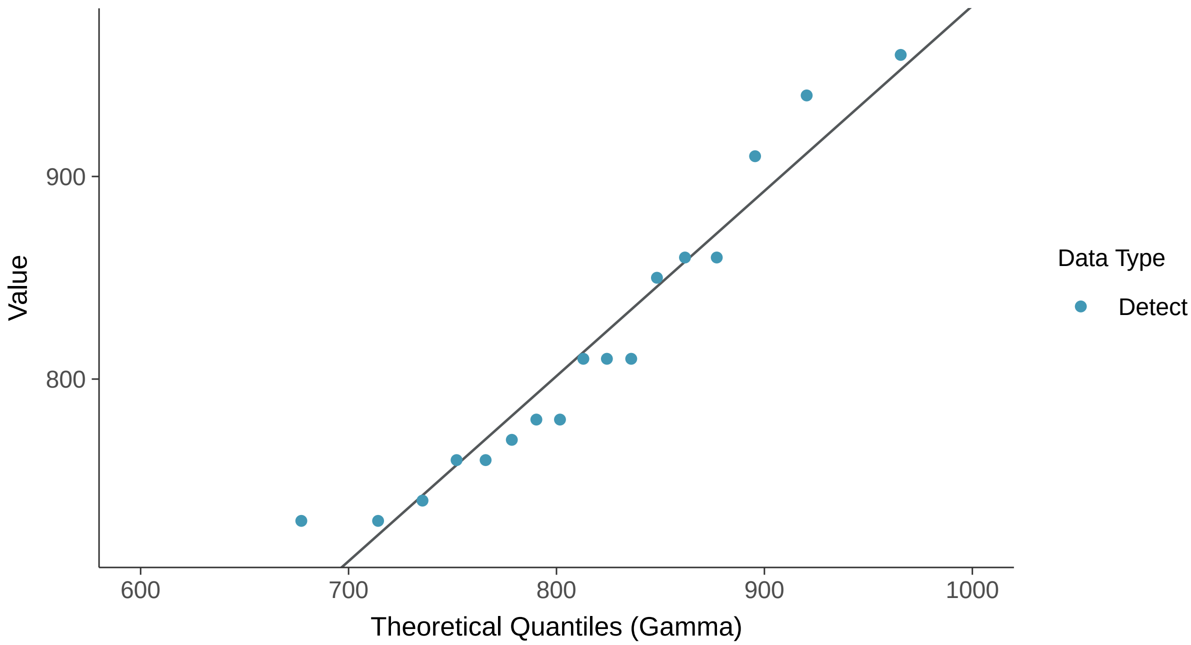



Normal Q-Q plot
Total Dissolved Solids, MW-31 (mg/L)
Value
900
800
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Total Dissolved Solids, MW-31 (mg/L)
log(Value)
6.8
6.7
6.6
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

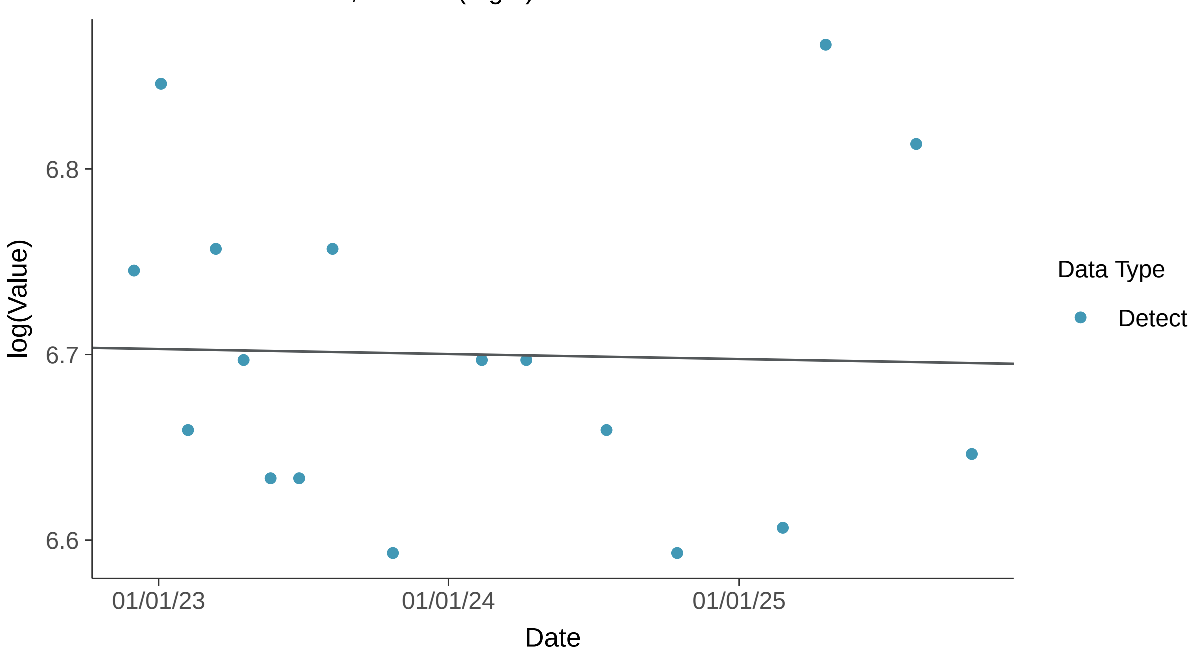
Gamma Q-Q plot

Total Dissolved Solids, MW-31 (mg/L)



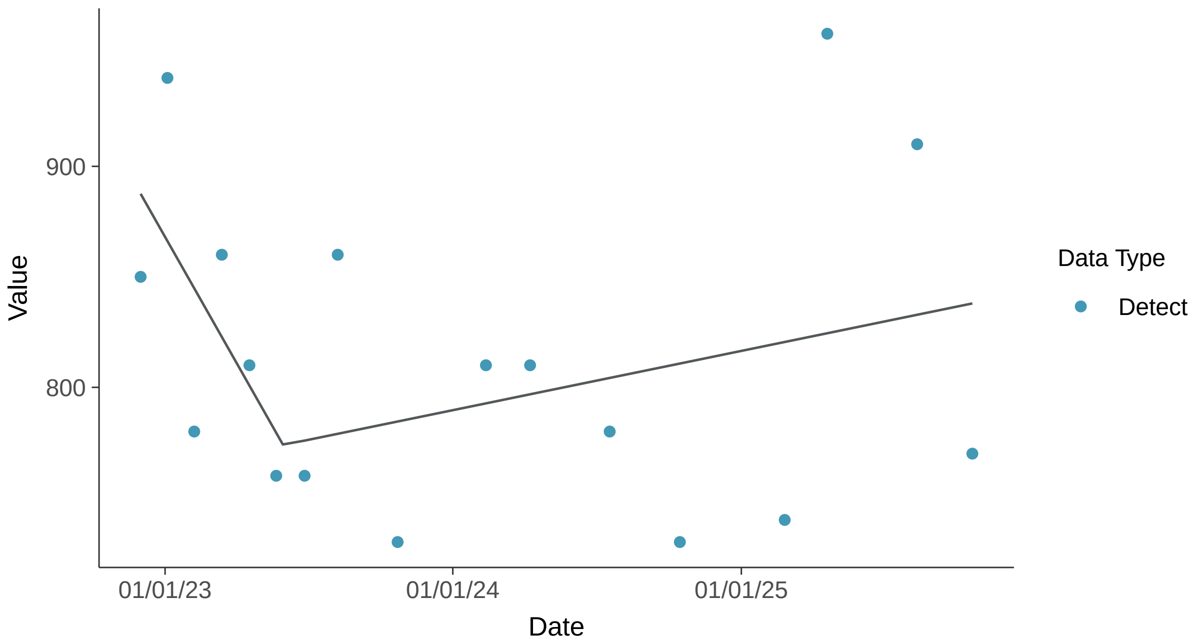
Trend Regression: Lognormal MLE

Total Dissolved Solids, MW-31 (mg/L)



Trend Regression: Piecewise Linear-Linear

Total Dissolved Solids, MW-31 (mg/L)

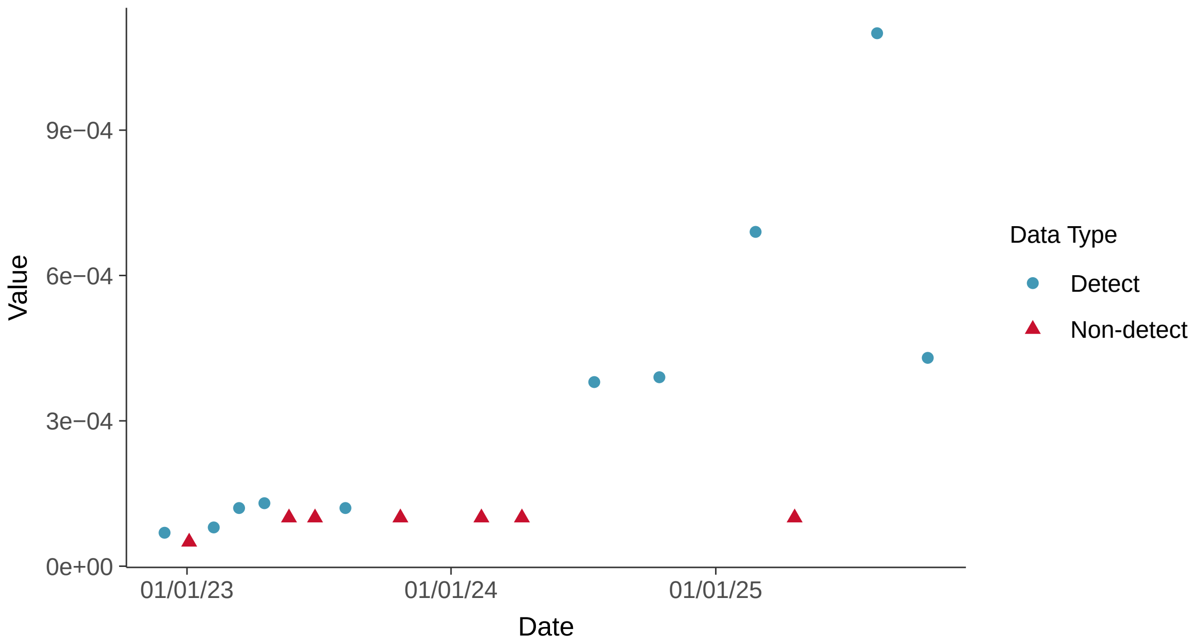


Appendix IV: Antimony, MW-31

ID: 41_1_4_101

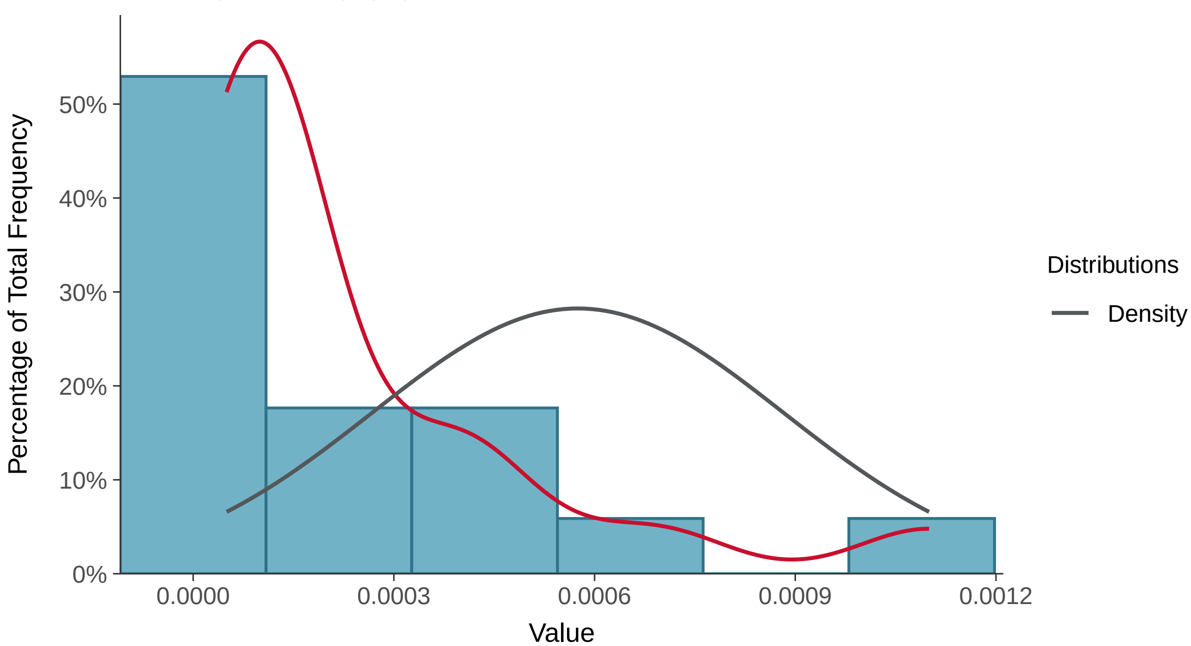
Scatter Plot

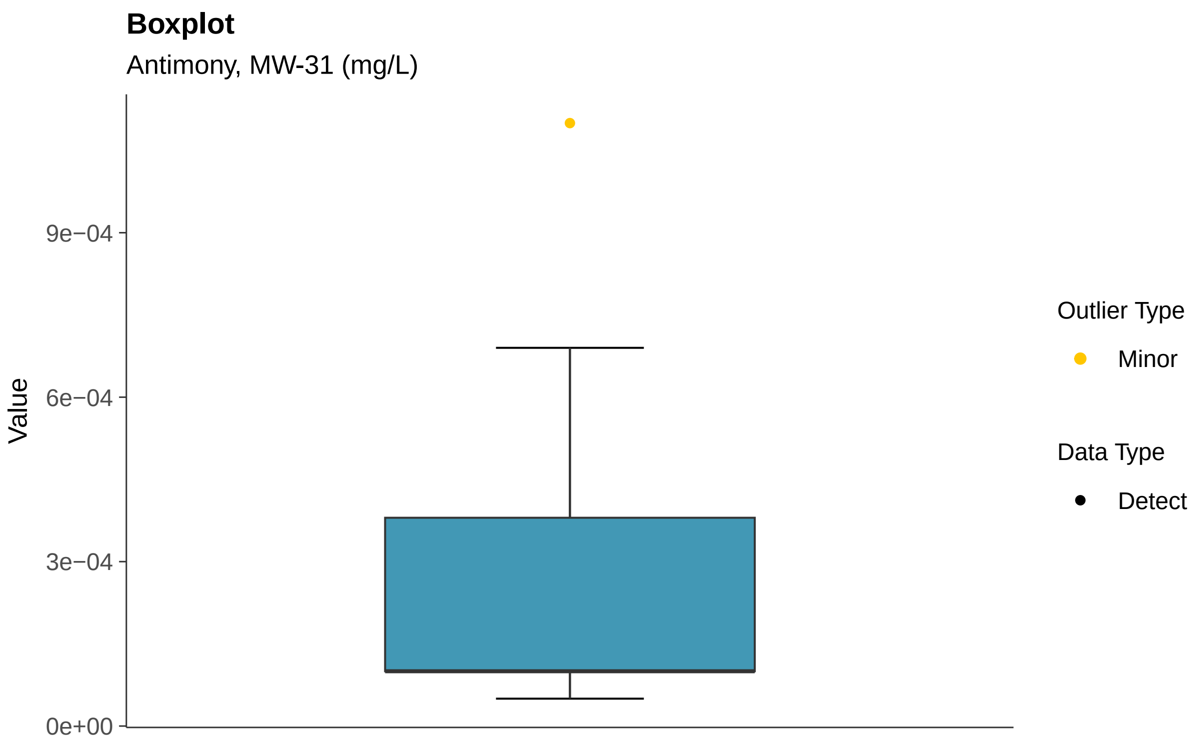
Antimony, MW-31 (mg/L)

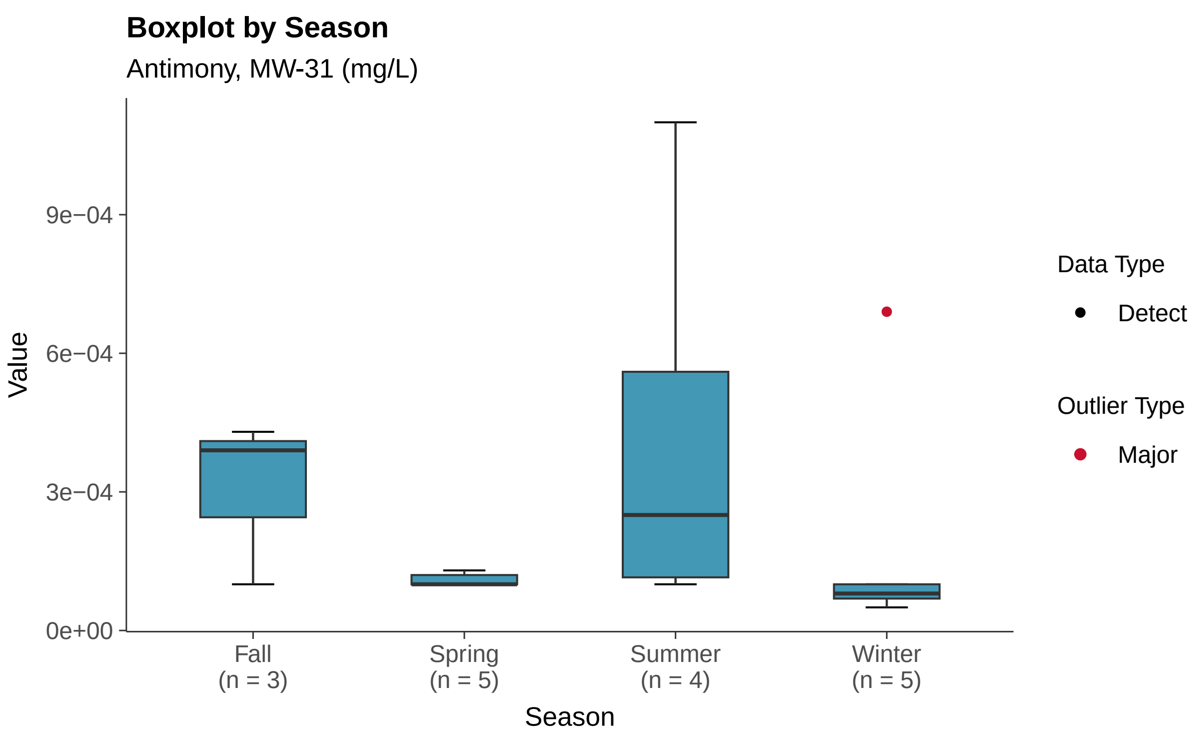


Histogram

Antimony, MW-31 (mg/L)

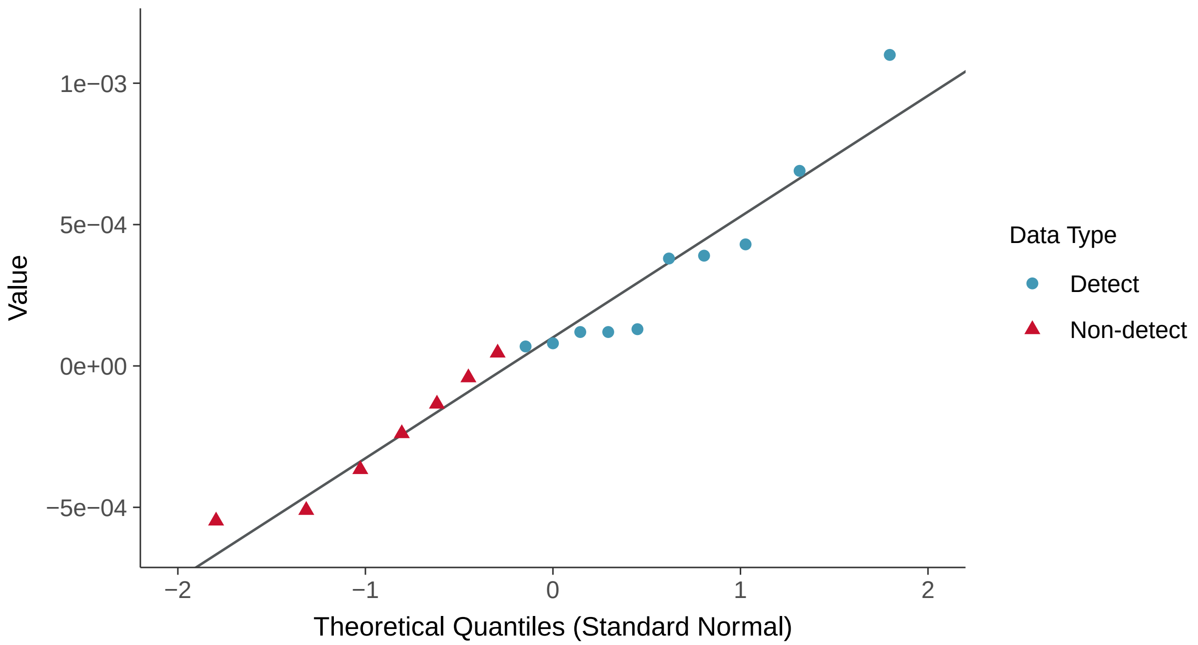



Boxplot
Antimony, MW-31 (mg/L)
Value
9e−04
6e−04
3e−04
0e+00
Outlier Type
Minor
Data Type
Detect


Boxplot by Season
Antimony, MW-31 (mg/L)
Value
9e−04
6e−04
3e−04
0e+00
Fall
(n = 3)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 5)
Season
Data Type
Detect
Outlier Type
Major

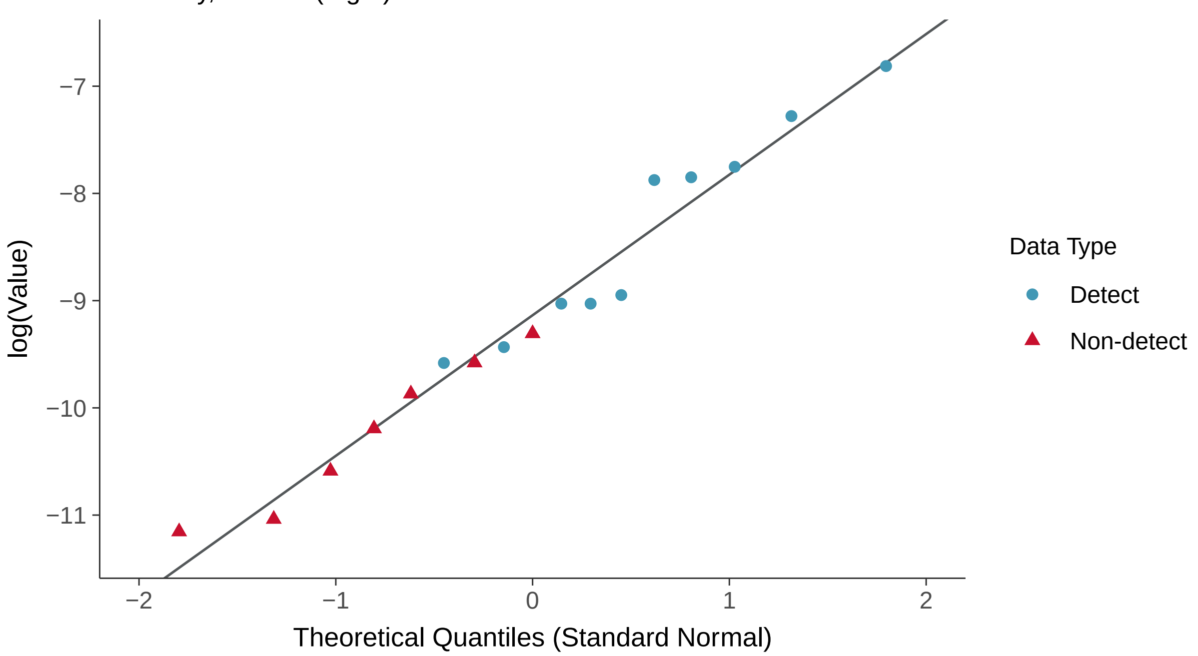
Normal Q-Q plot using ROS Imputed Estimates

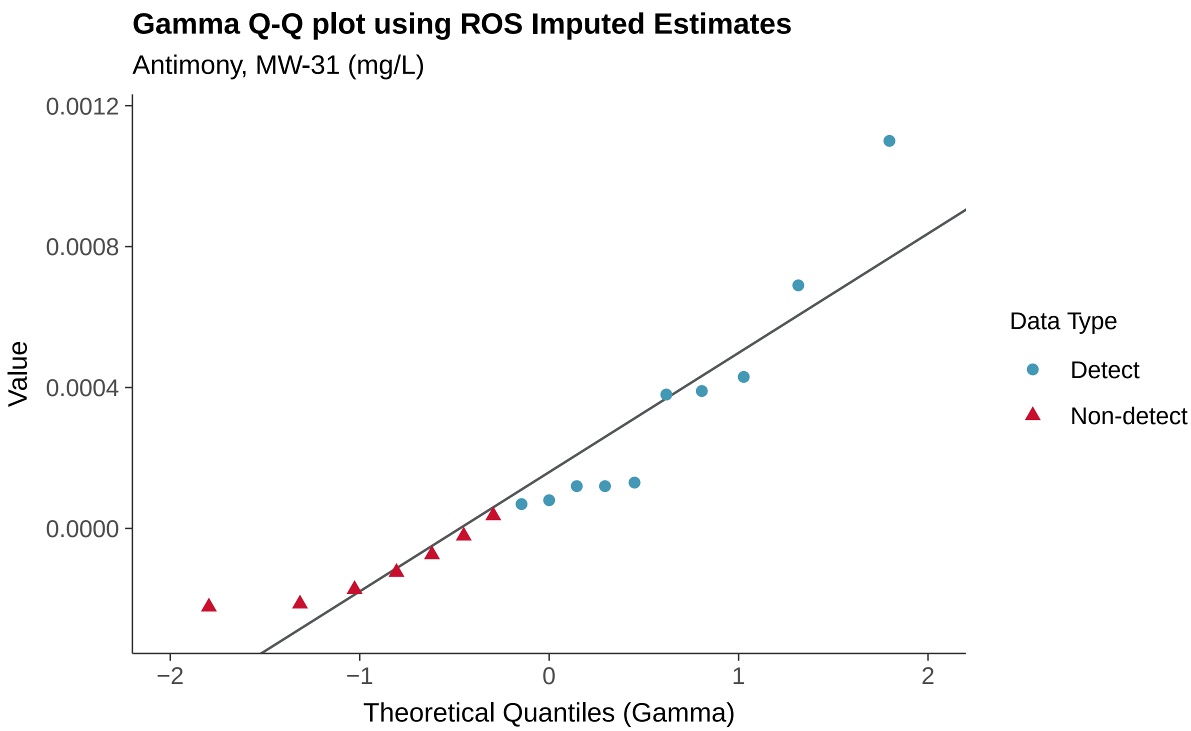
Antimony, MW-31 (mg/L)

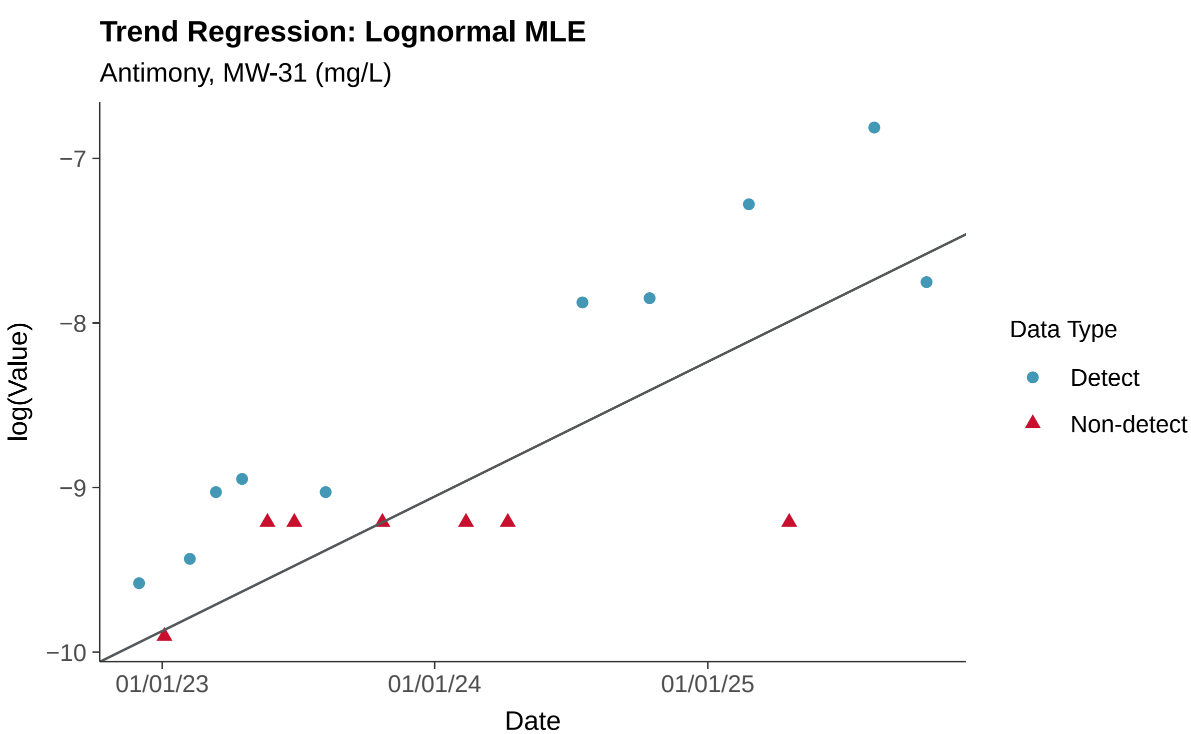


Lognormal Q-Q plot using ROS Imputed Estimates

Antimony, MW-31 (mg/L)

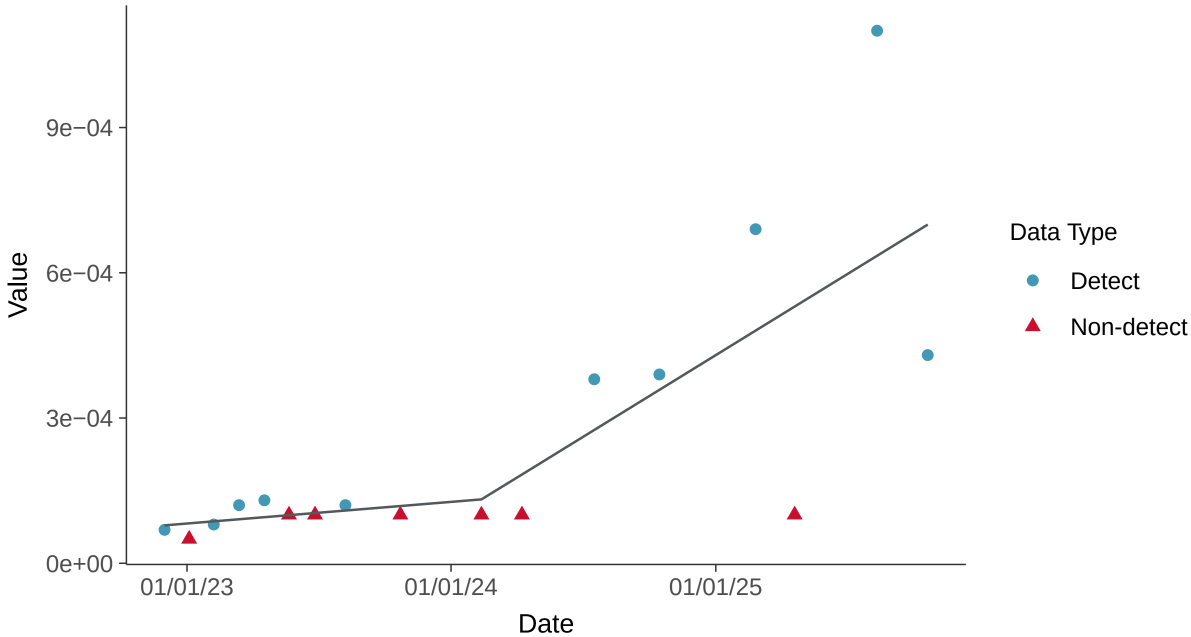



Gamma Q-Q plot using ROS Imputed Estimates
Antimony, MW-31 (mg/L)
Value
0.0012
0.0008
0.0004
0.0000
−2
−1
0
1
2
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect


Trend Regression: Lognormal MLE
Antimony, MW-31 (mg/L)
log(Value)
−7
−8
−9
−10
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Trend Regression: Piecewise Linear-Linear

Antimony, MW-31 (mg/L)

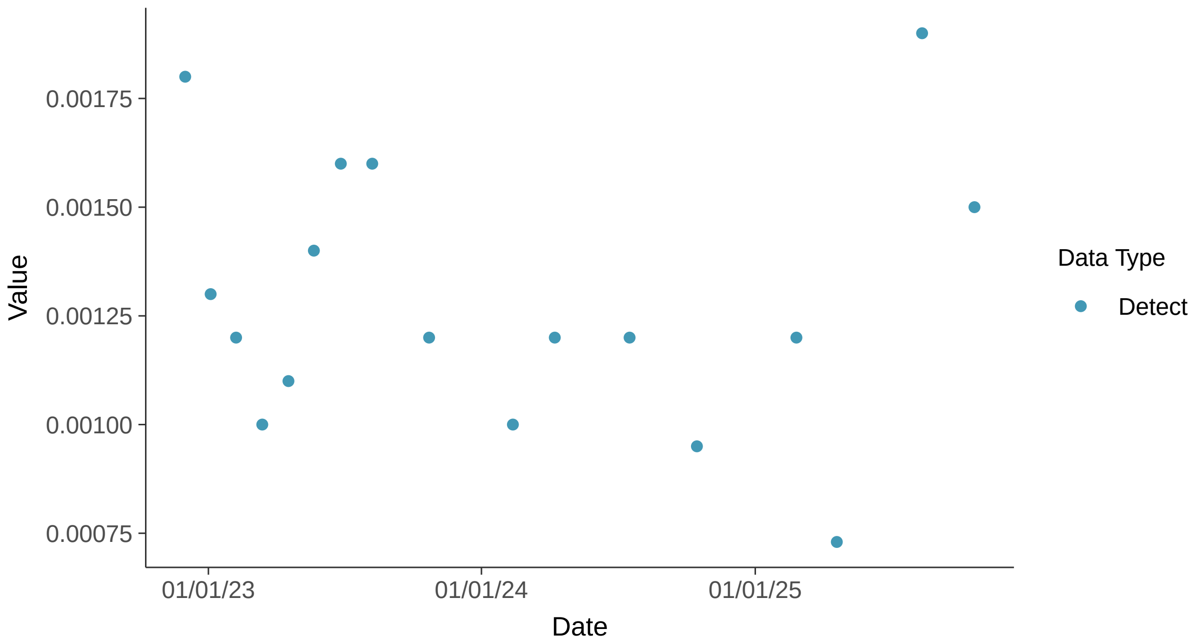


Appendix IV: Arsenic, MW-31

ID: 41_1_4_102

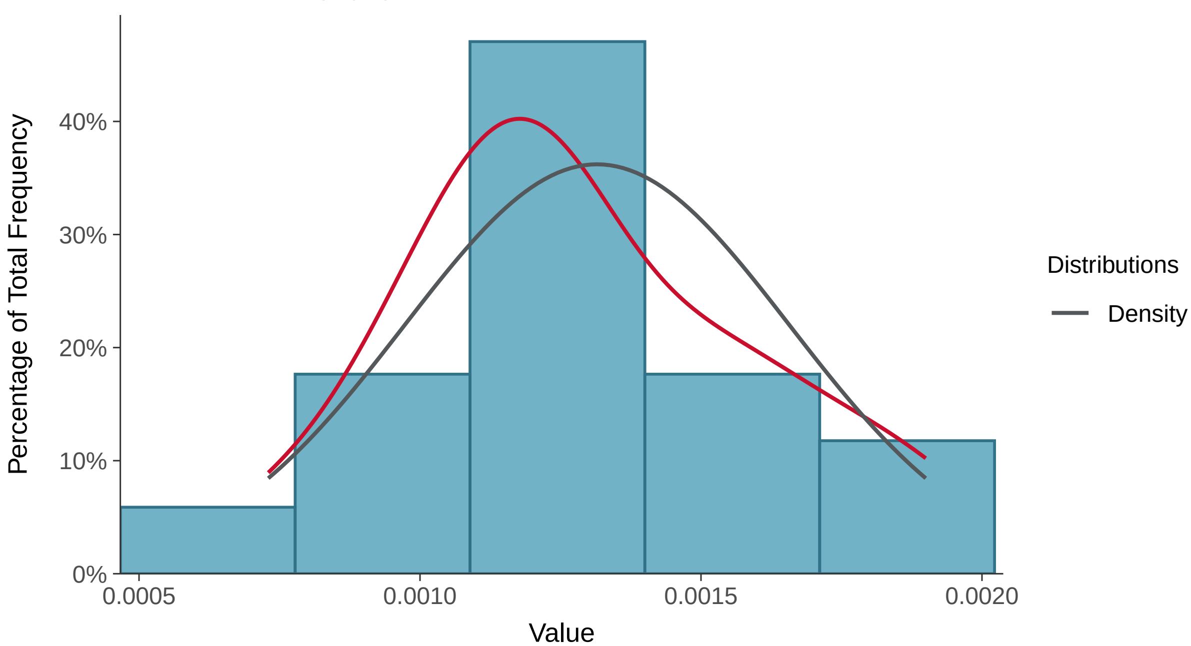
Scatter Plot

Arsenic, MW-31 (mg/L)



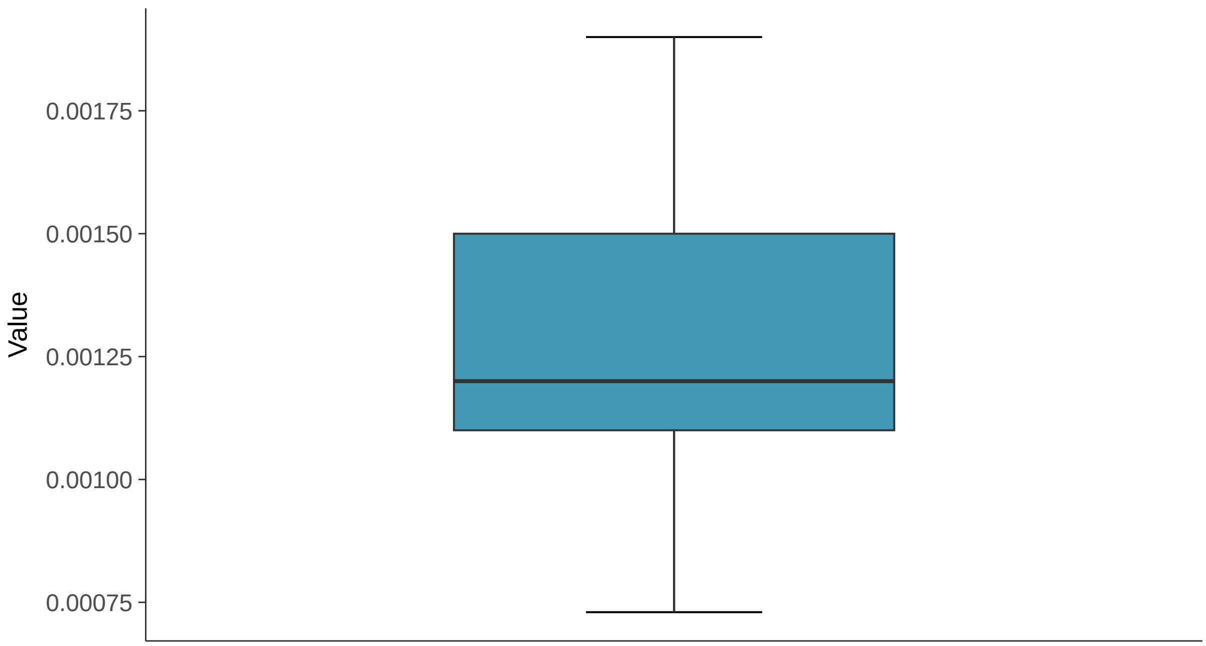
Histogram

Arsenic, MW-31 (mg/L)



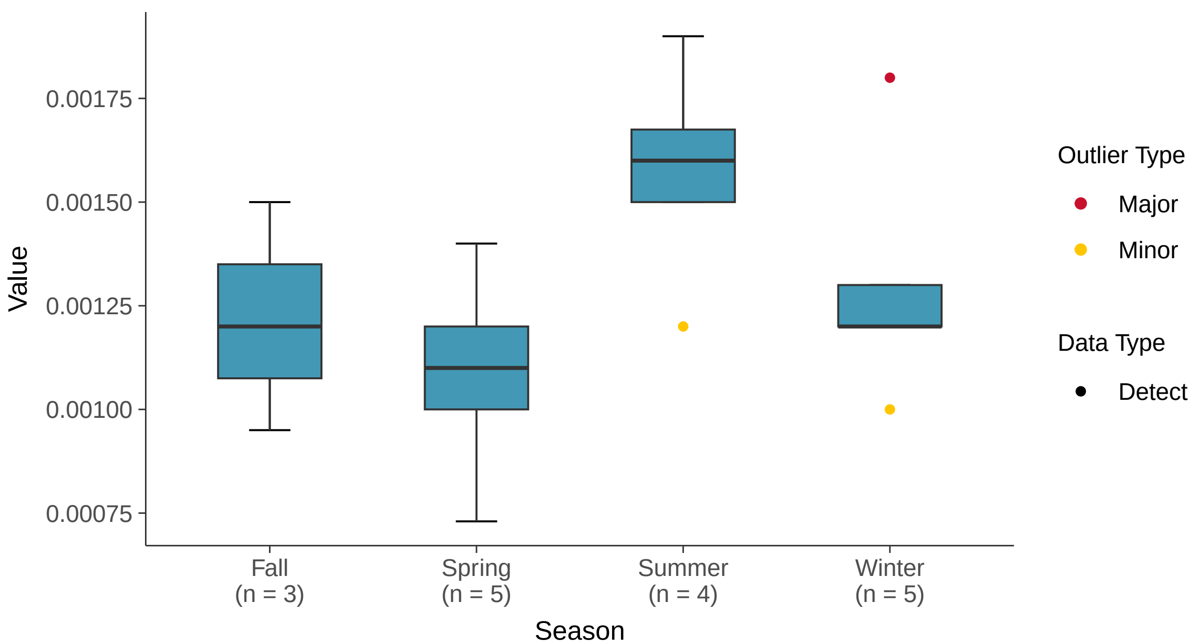
Boxplot

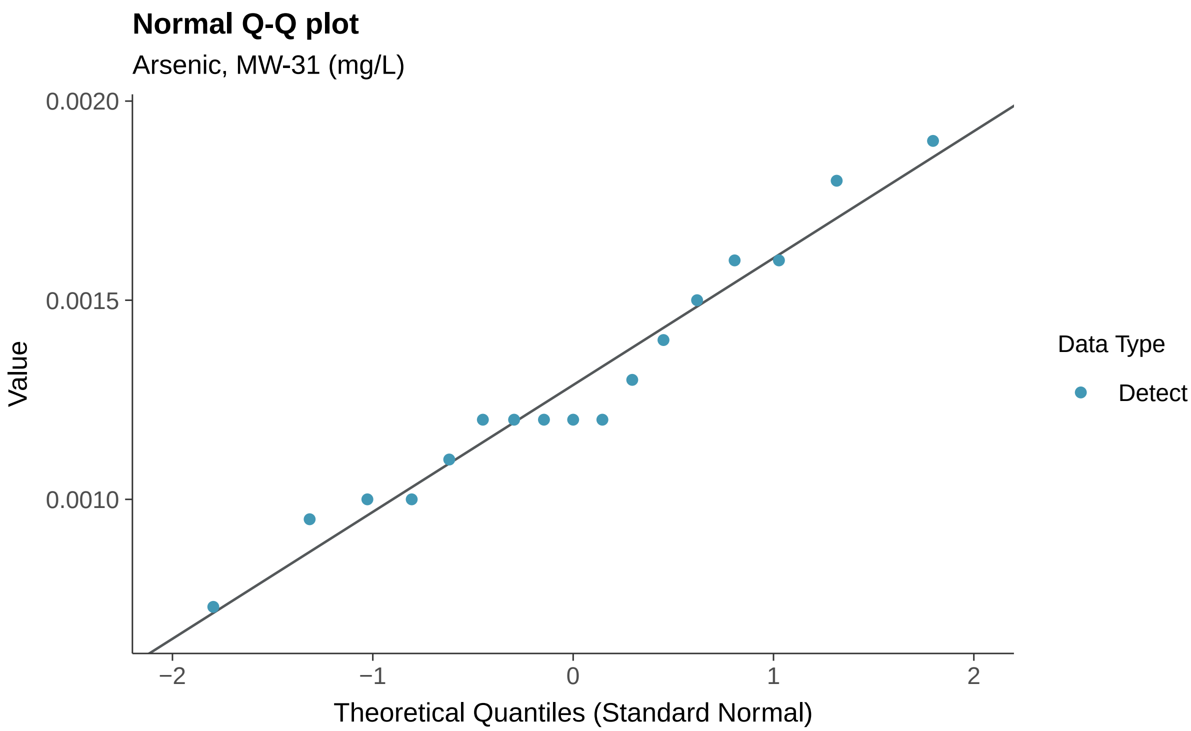
Arsenic, MW-31 (mg/L)

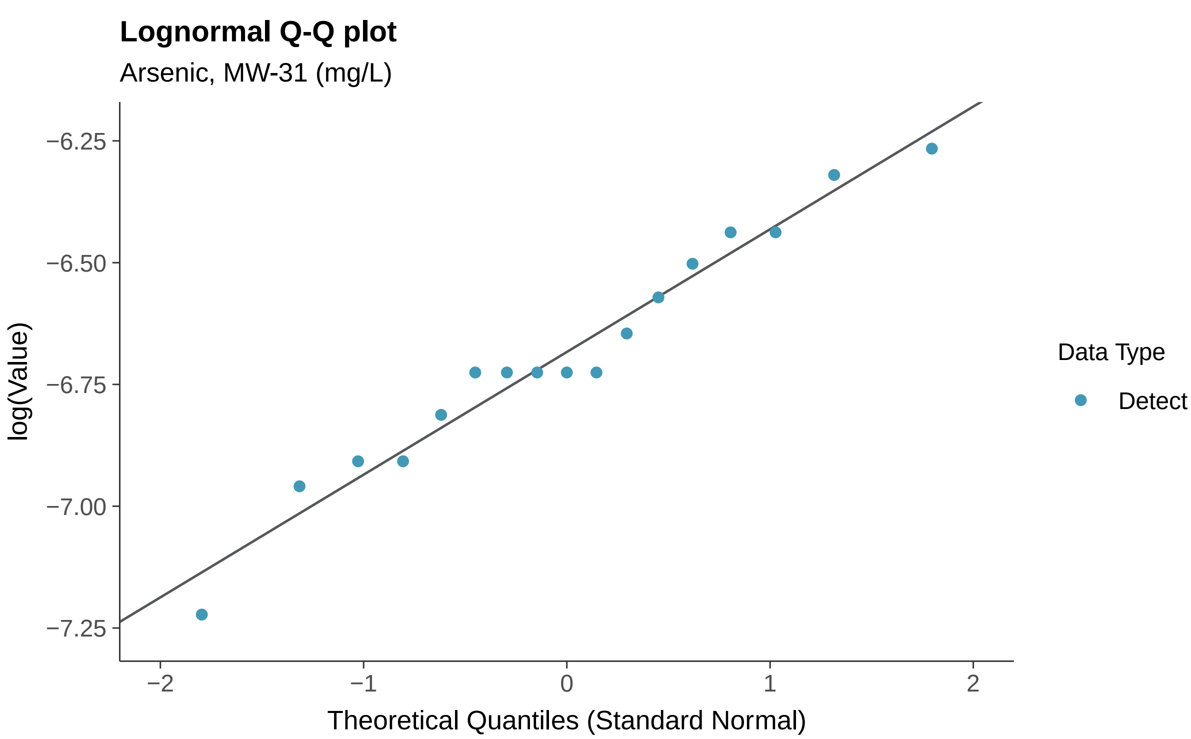


Boxplot by Season

Arsenic, MW-31 (mg/L)

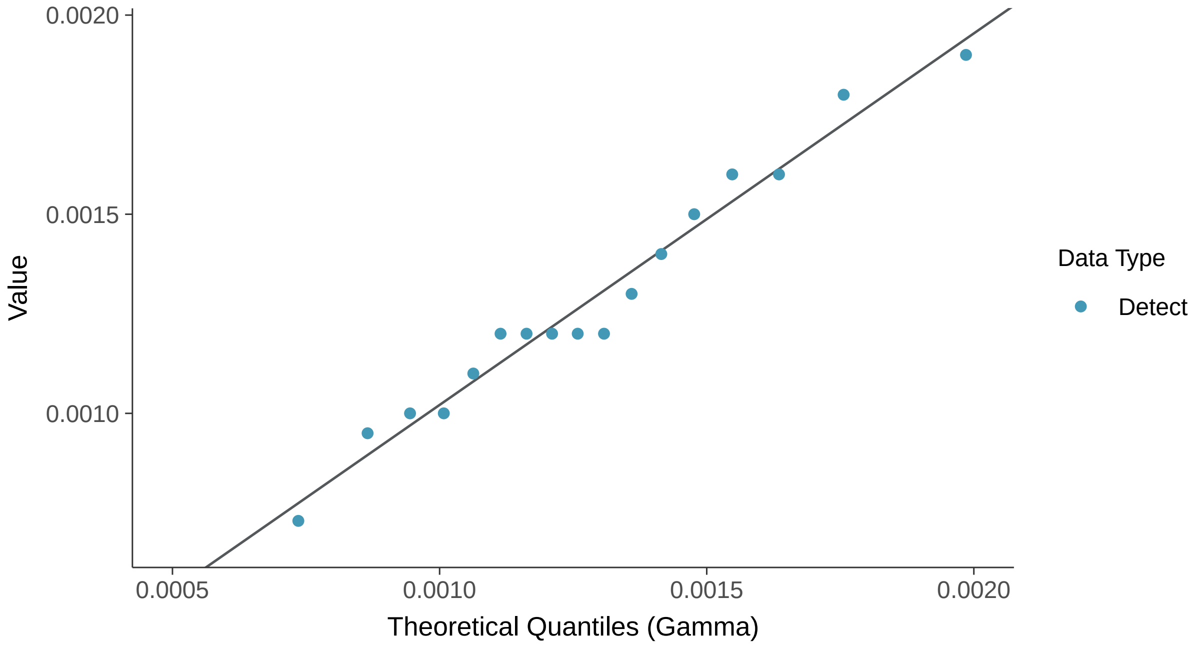



Normal Q-Q plot
Arsenic, MW-31 (mg/L)
Value
0.0020
0.0015
0.0010
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Arsenic, MW-31 (mg/L)
log(Value)
−6.25
−6.50
−6.75
−7.00
−7.25
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

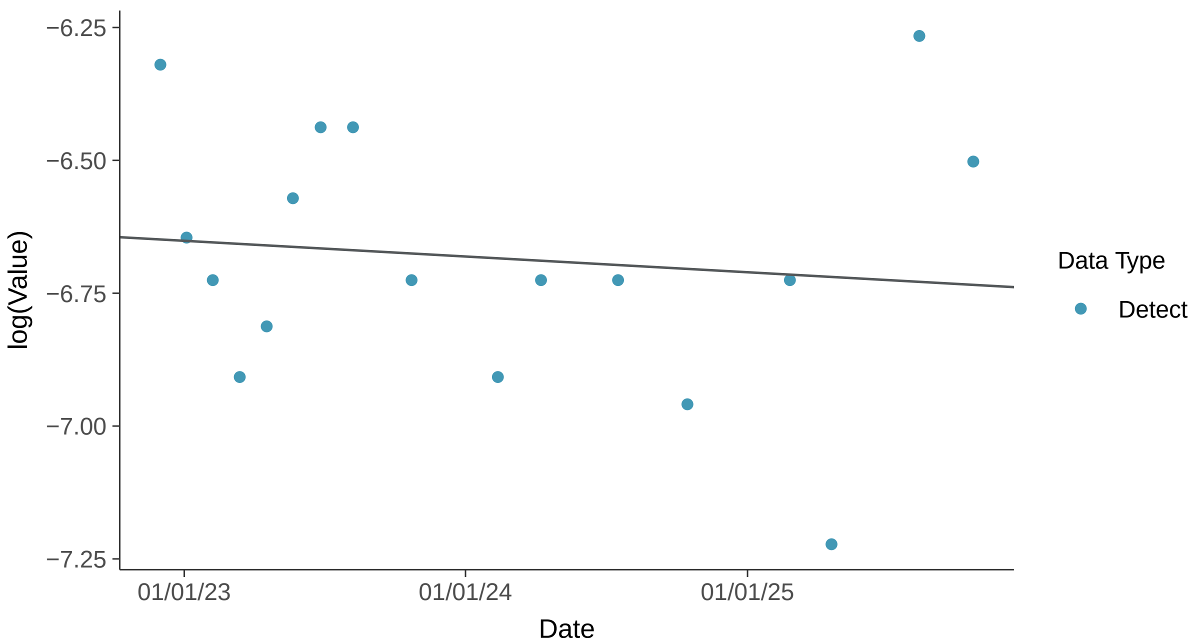
Gamma Q-Q plot

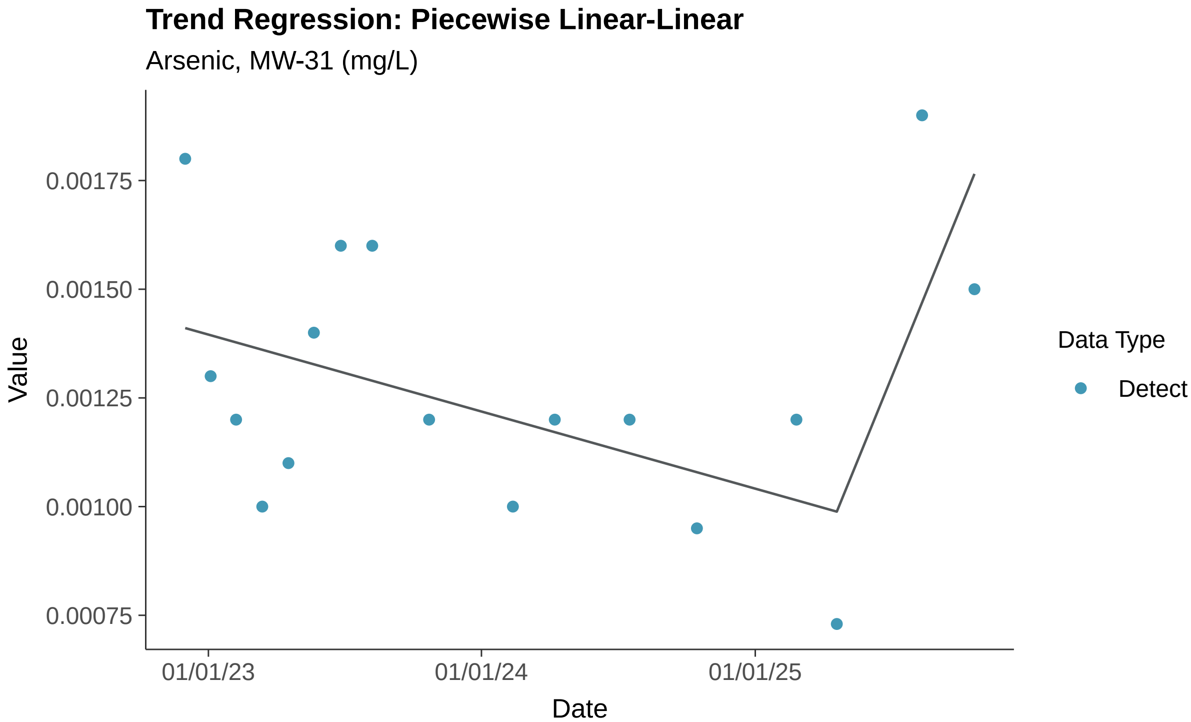
Arsenic, MW-31 (mg/L)

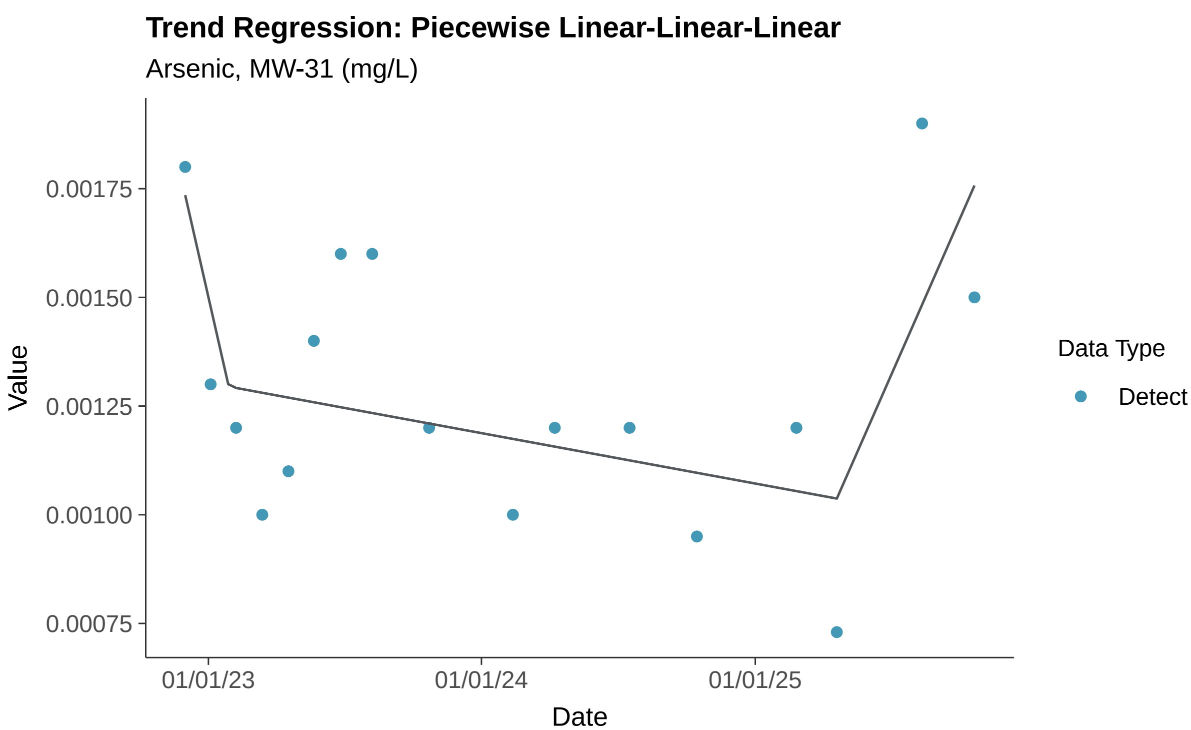


Trend Regression: Lognormal MLE

Arsenic, MW-31 (mg/L)

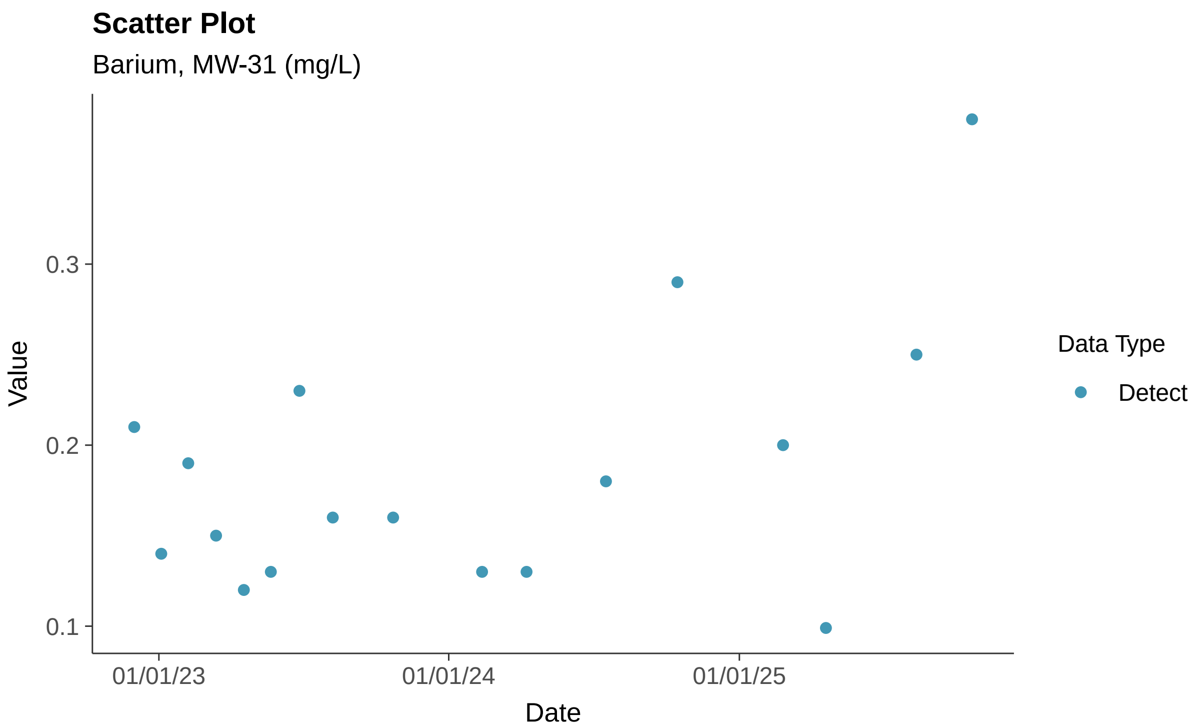


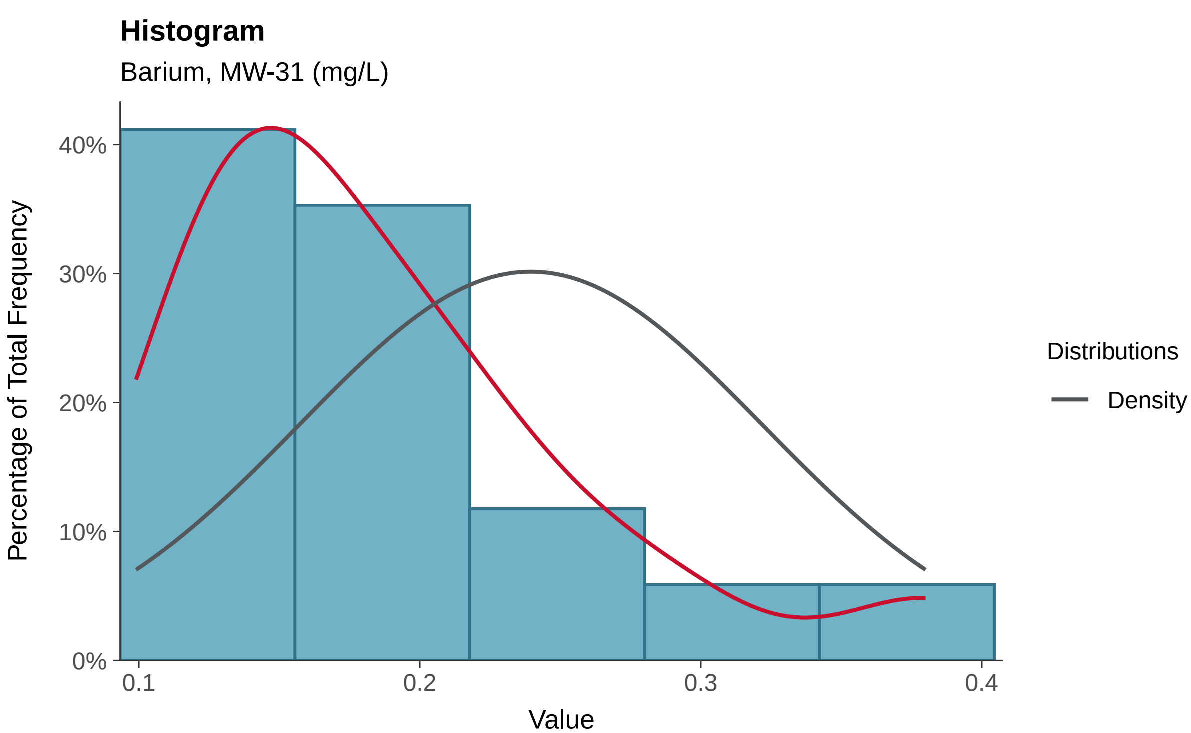

Trend Regression: Piecewise Linear-Linear
Arsenic, MW-31 (mg/L)
Value
0.00175
0.00150
0.00125
0.00100
0.00075
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
Arsenic, MW-31 (mg/L)
Value
0.00175
0.00150
0.00125
0.00100
0.00075
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Appendix IV: Barium, MW-31

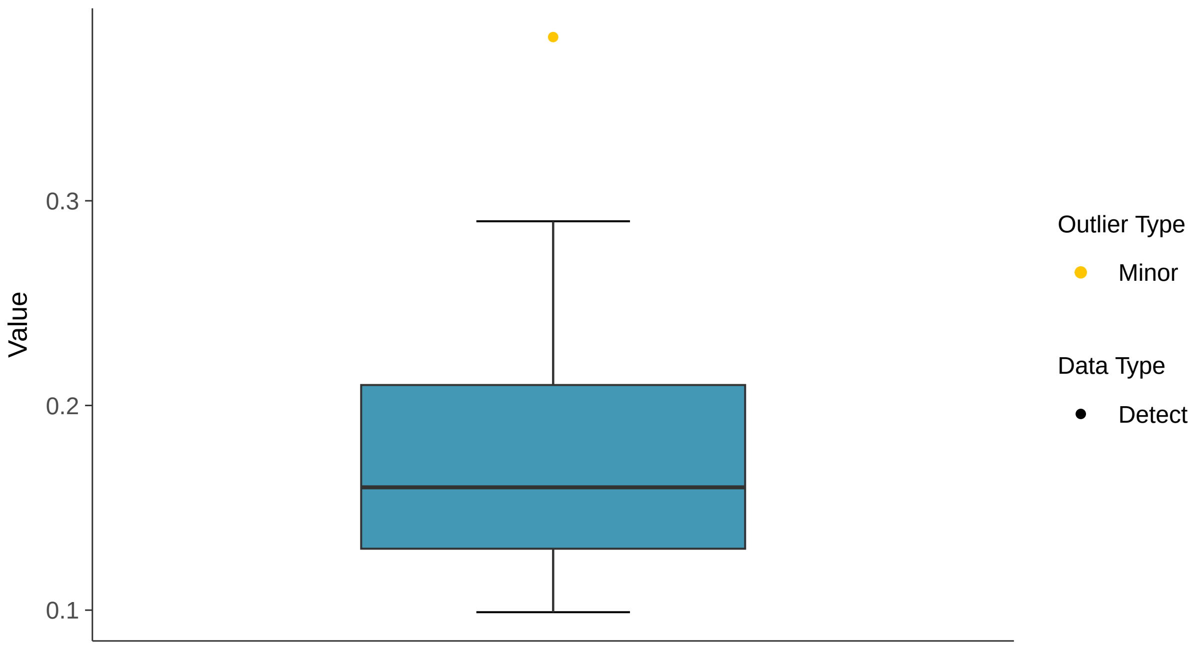
ID: 41_1_4_103





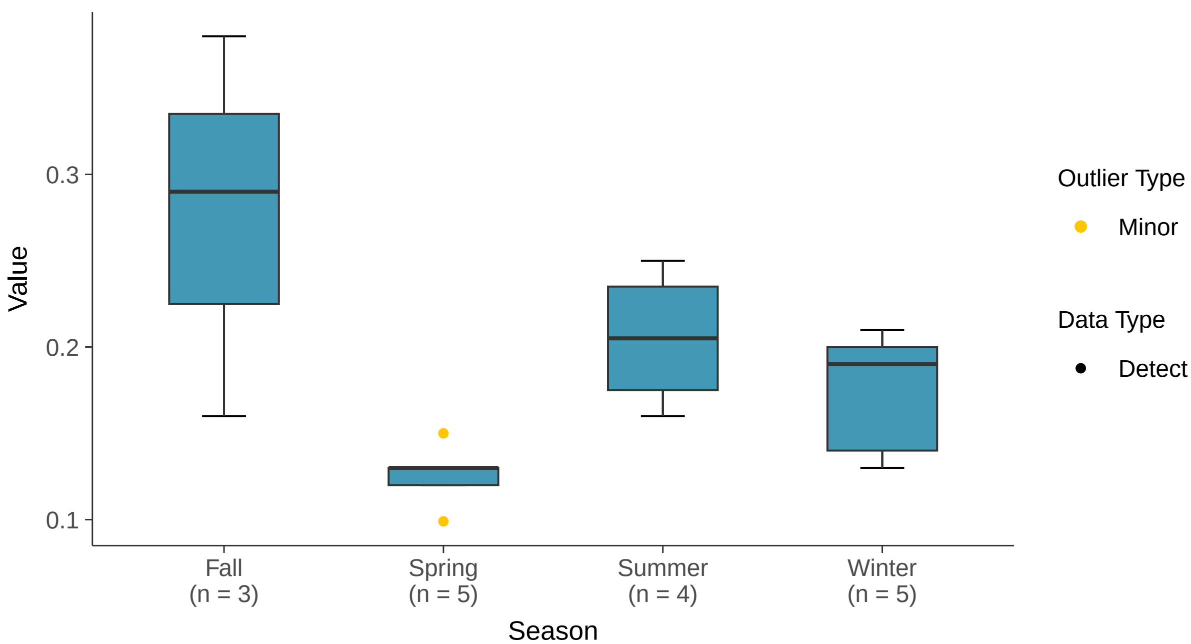
Boxplot

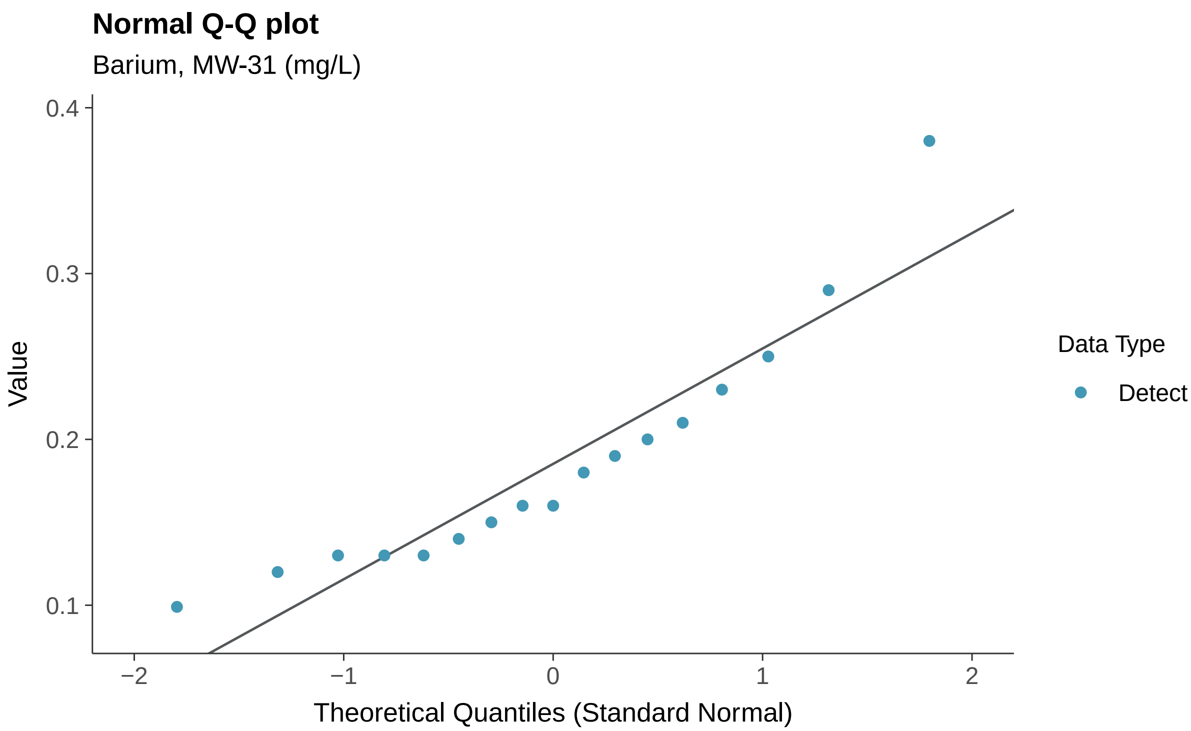
Barium, MW-31 (mg/L)

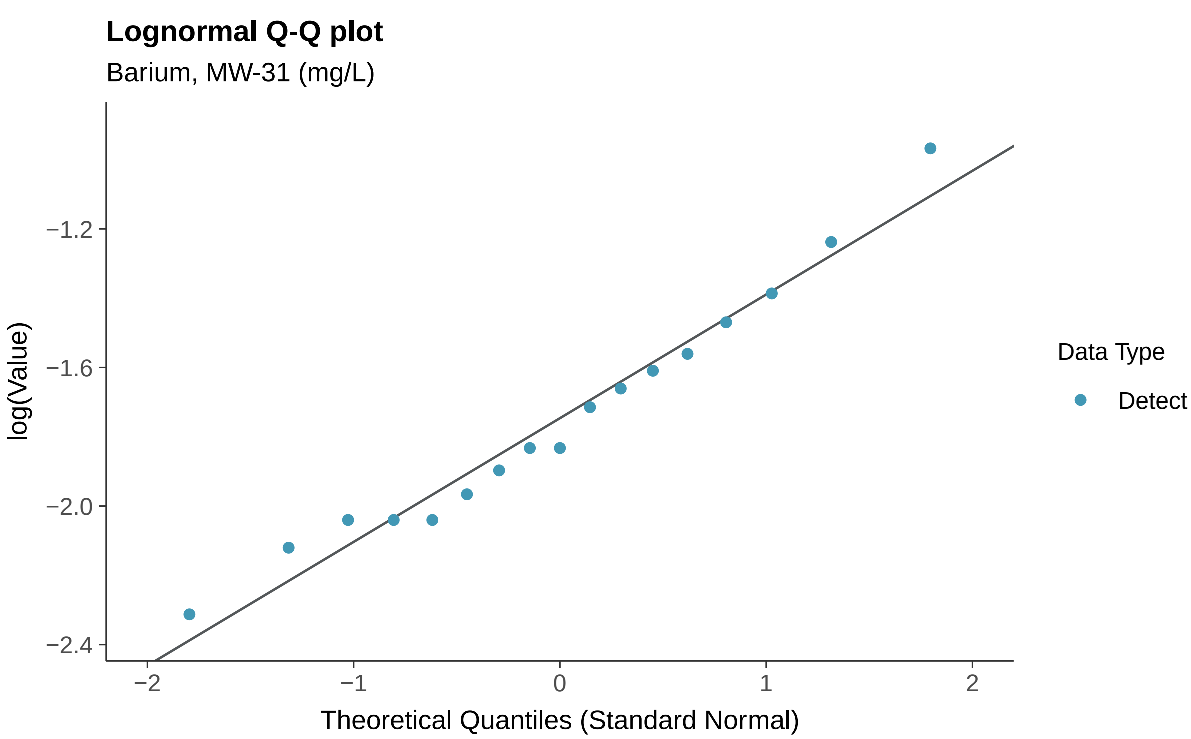


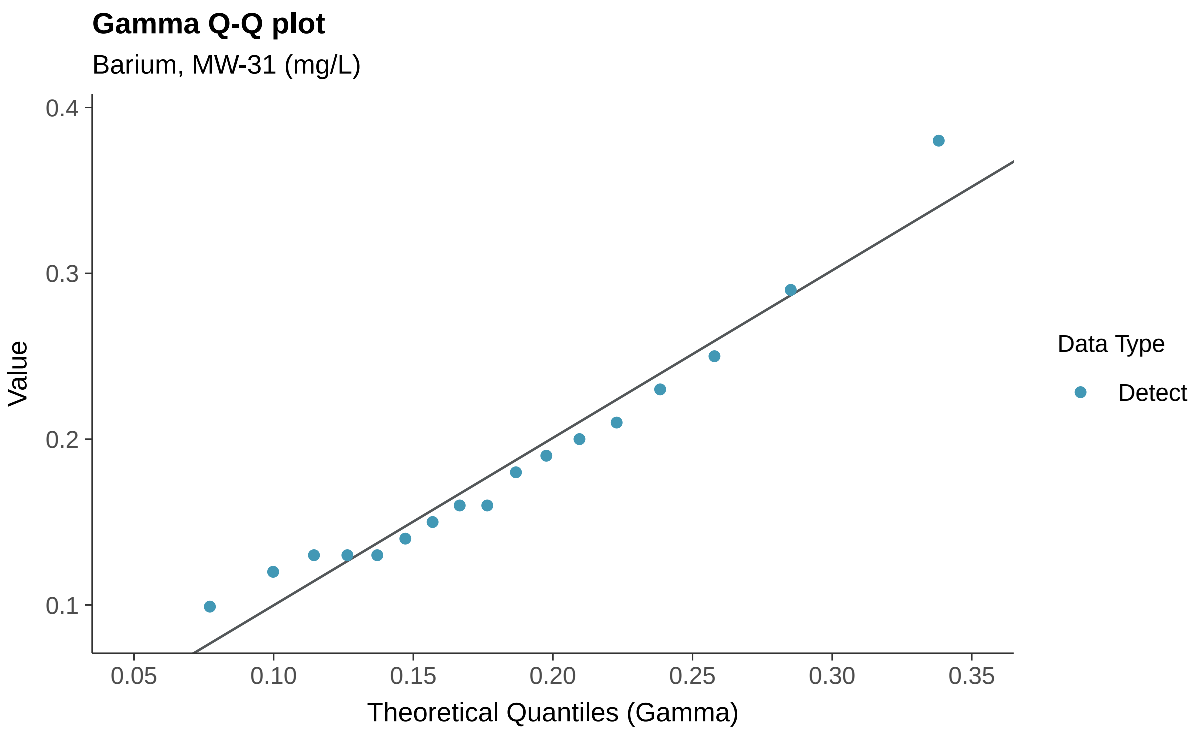
Boxplot by Season

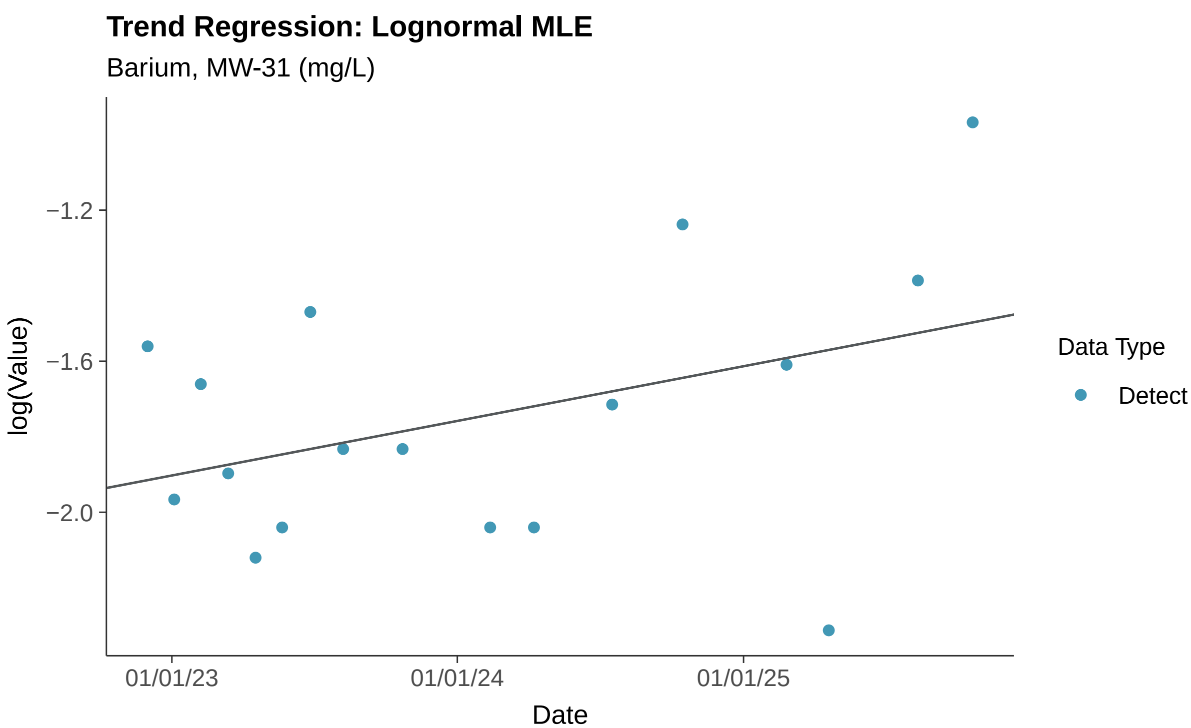
Barium, MW-31 (mg/L)




Normal Q-Q plot
Barium, MW-31 (mg/L)
Value
0.4
0.3
0.2
0.1
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

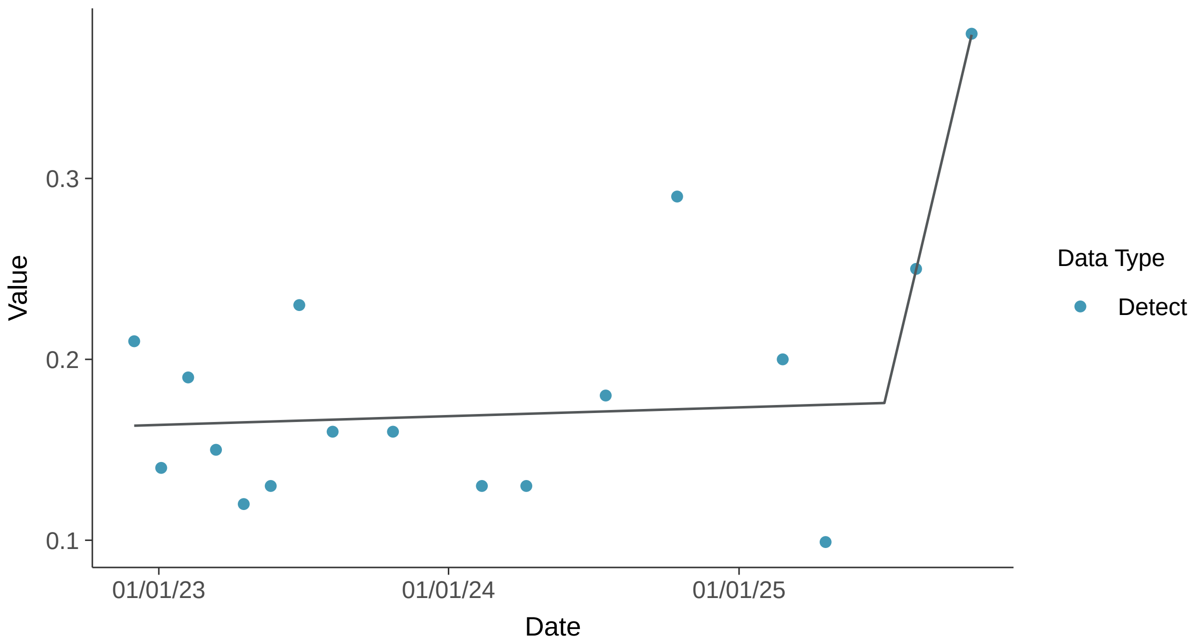

Lognormal Q-Q plot
Barium, MW-31 (mg/L)
log(Value)
−1.2
−1.6
−2.0
−2.4
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Barium, MW-31 (mg/L)
Value
0.4
0.3
0.2
0.1
0.05
0.10
0.15
0.20
0.25
0.30
0.35
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Barium, MW-31 (mg/L)
log(Value)
−1.2
−1.6
−2.0
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

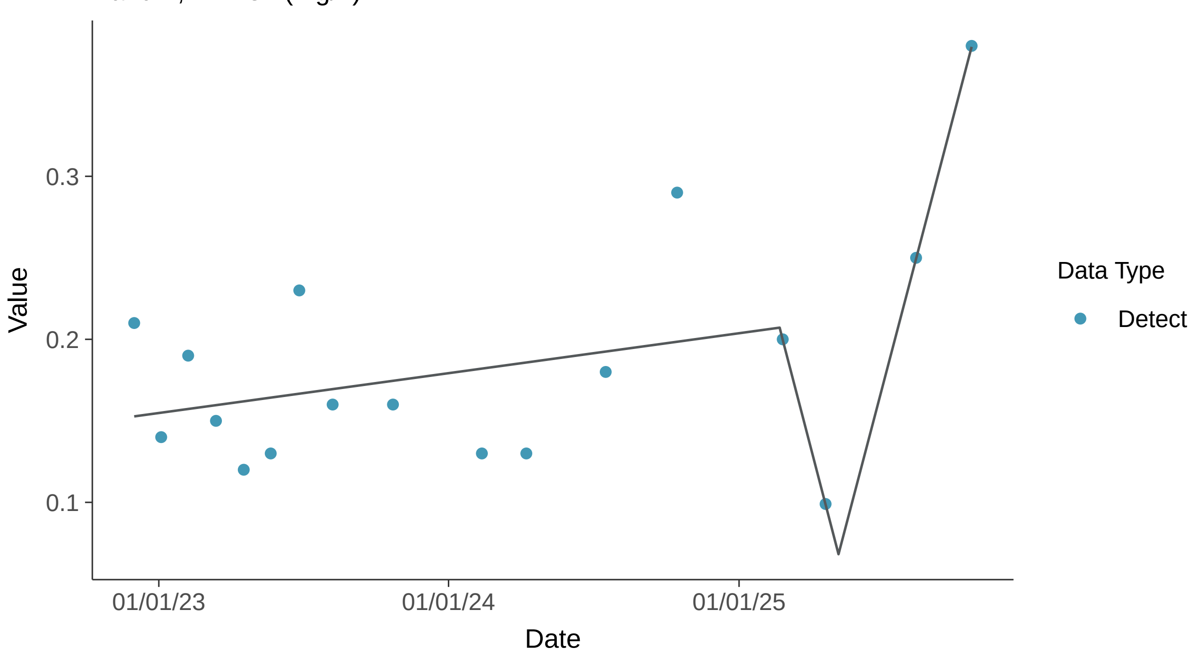
Trend Regression: Piecewise Linear-Linear

Barium, MW-31 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Barium, MW-31 (mg/L)

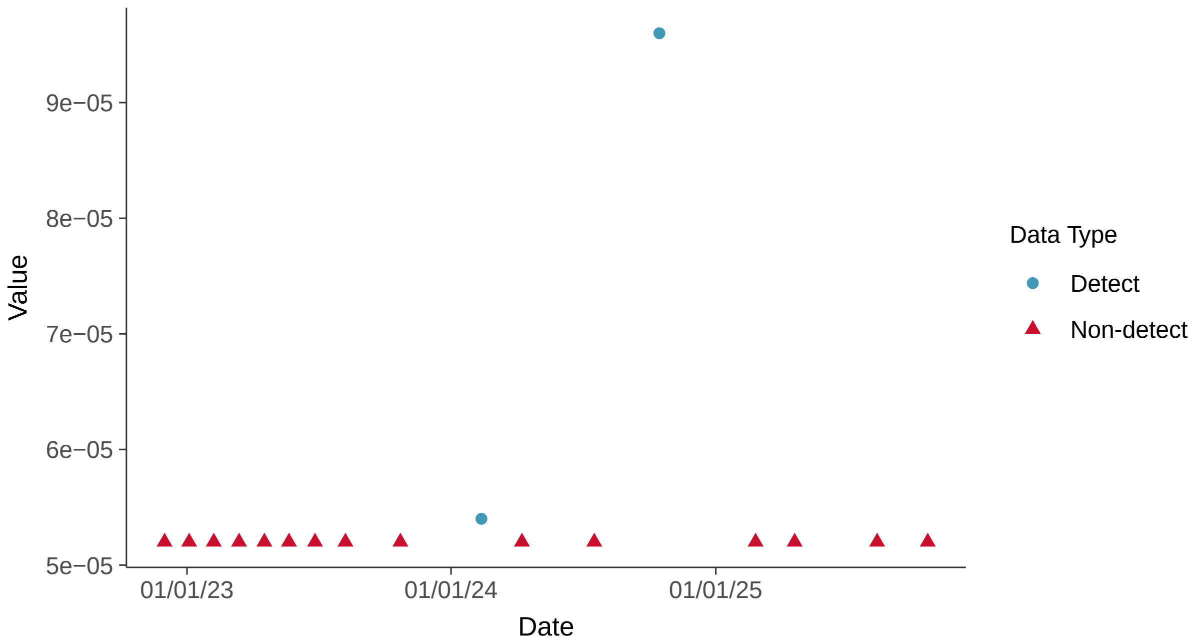


Appendix IV: Beryllium, MW-31

ID: 41_1_4_104

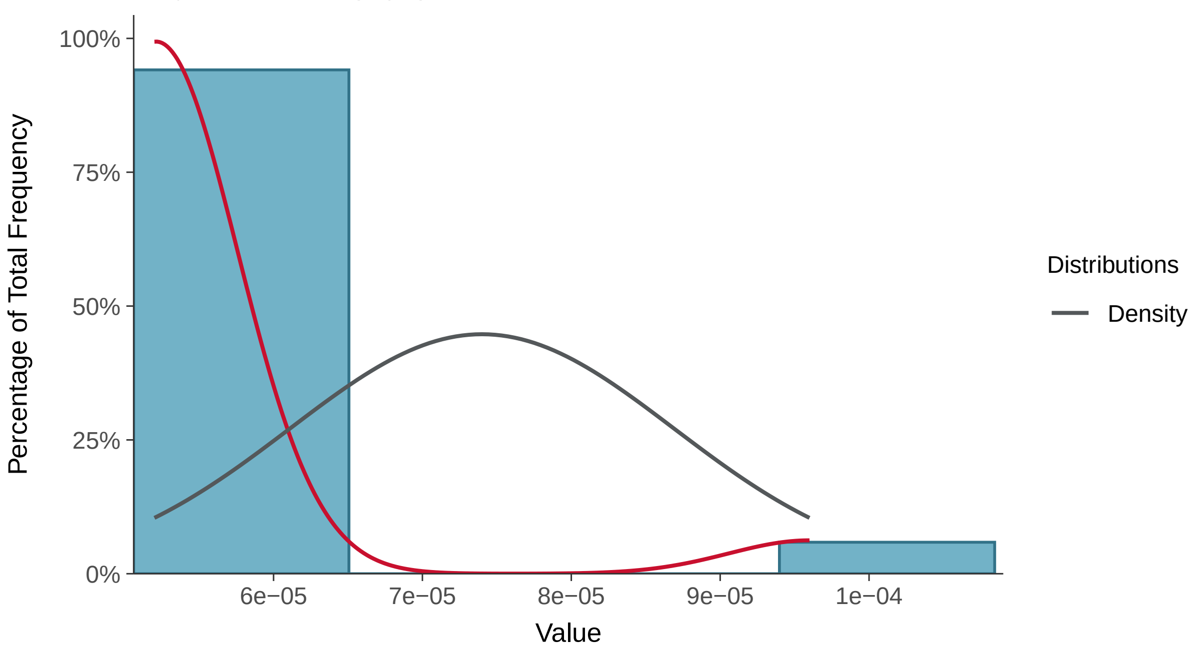
Scatter Plot

Beryllium, MW-31 (mg/L)



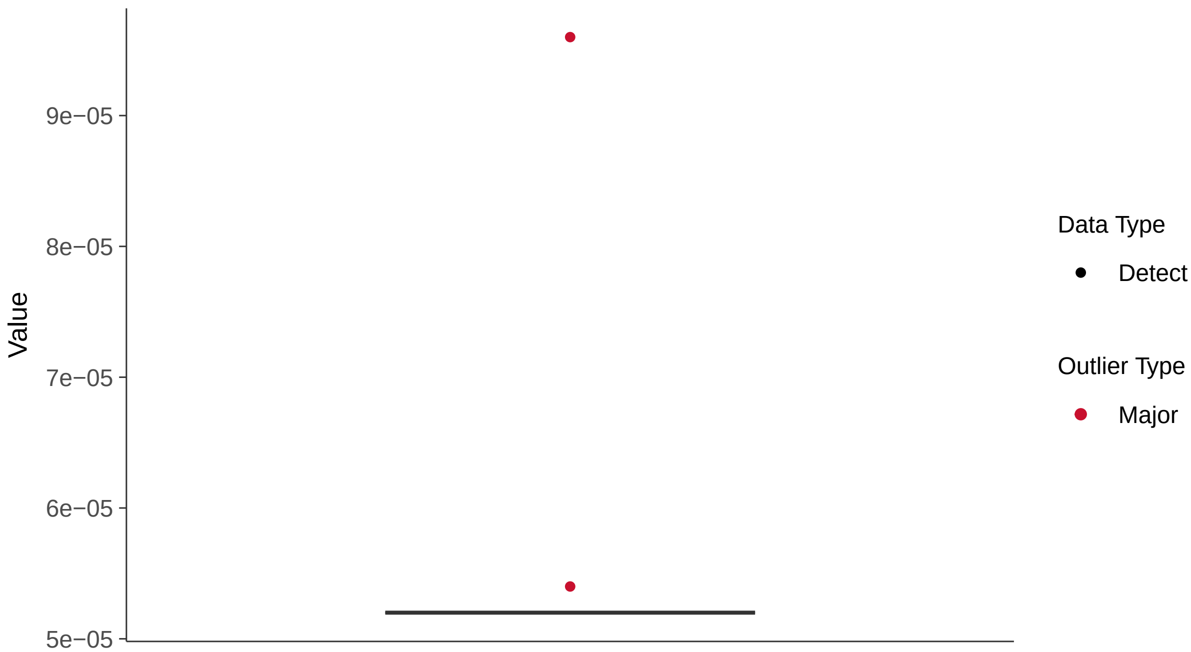
Histogram

Beryllium, MW-31 (mg/L)



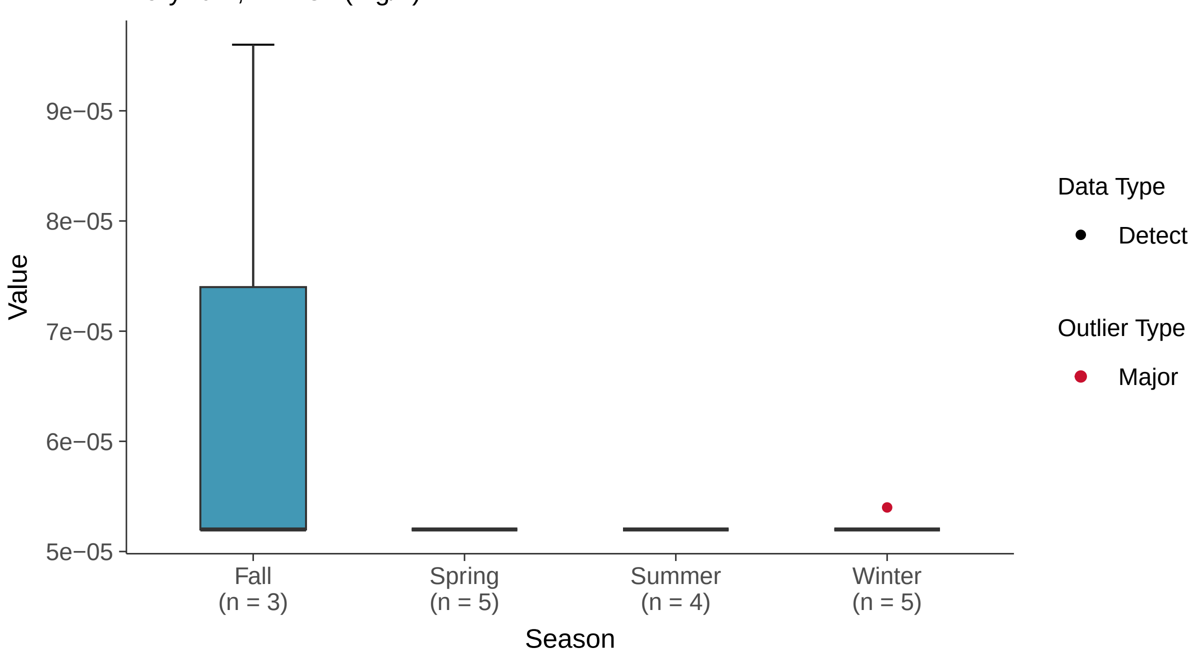
Boxplot

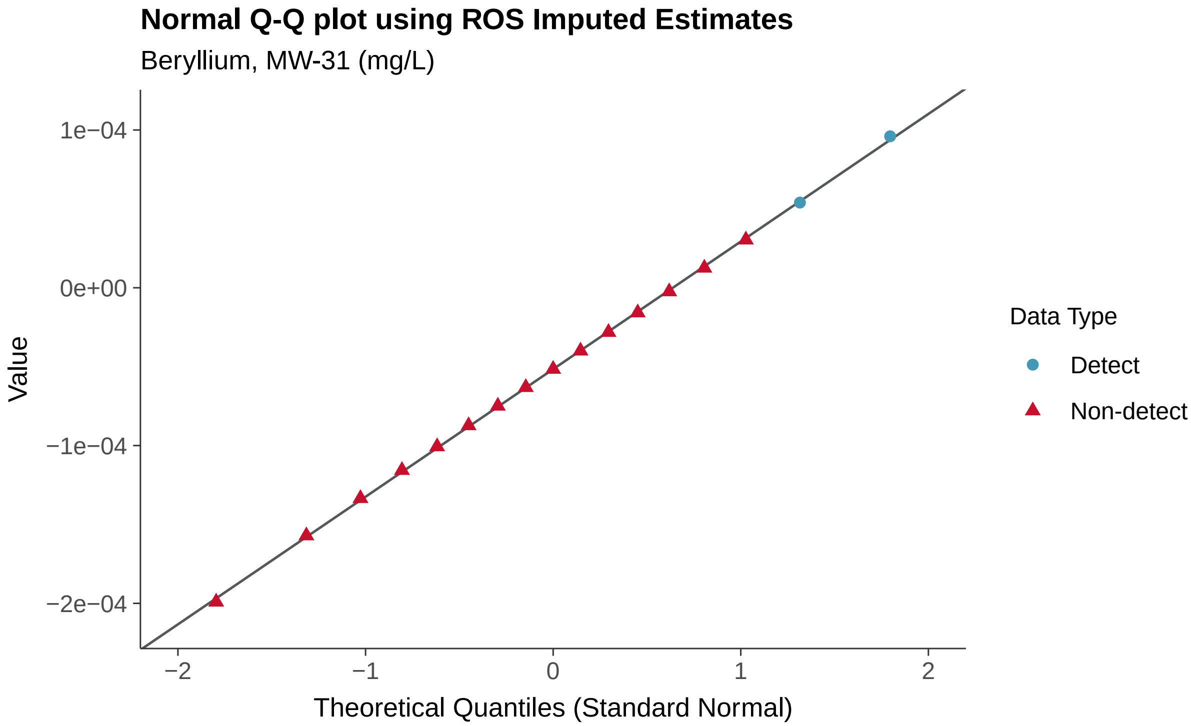
Beryllium, MW-31 (mg/L)

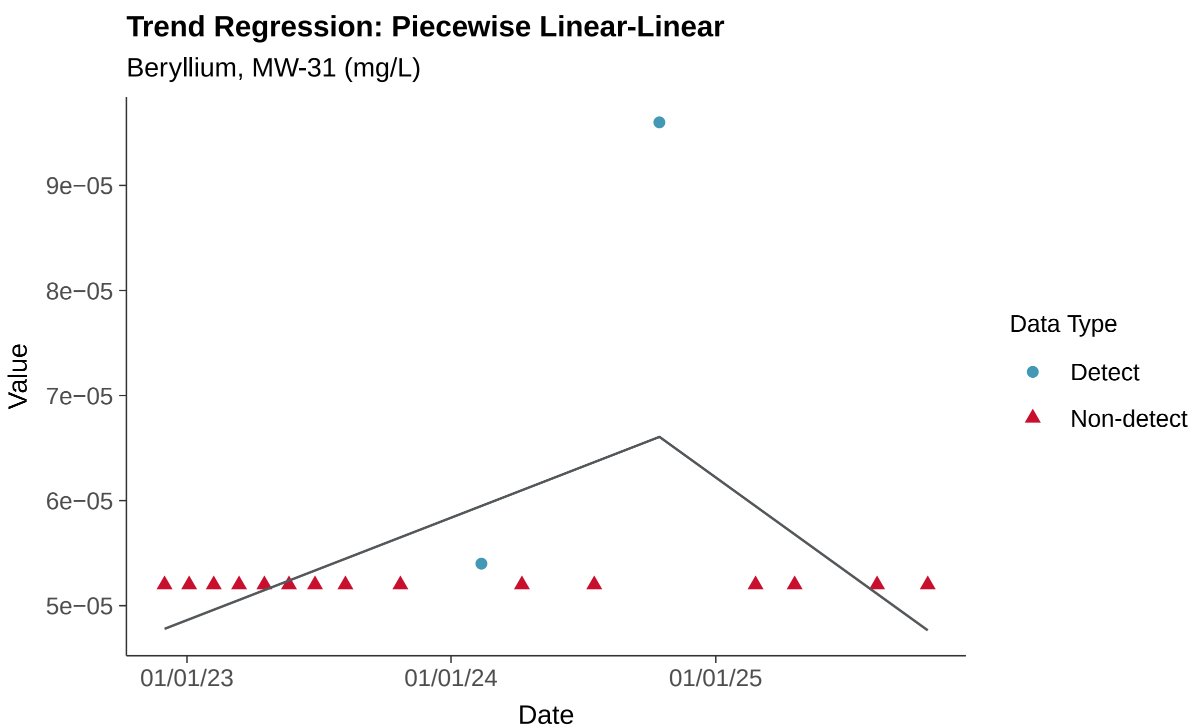


Boxplot by Season

Beryllium, MW-31 (mg/L)

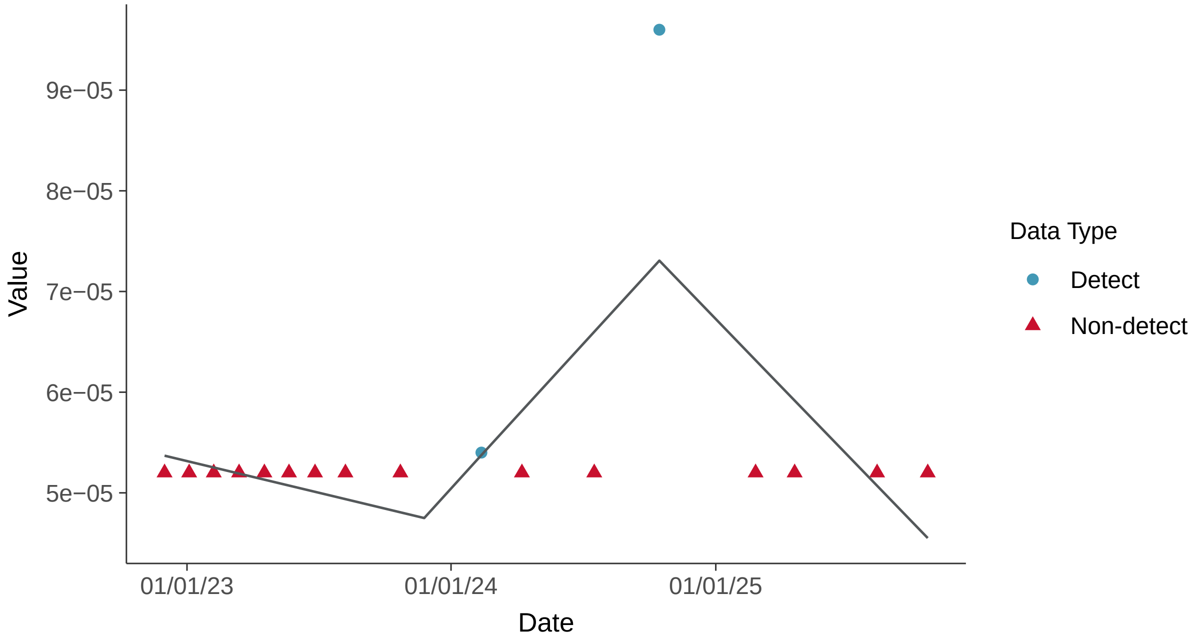



Normal Q-Q plot using ROS Imputed Estimates
Beryllium, MW-31 (mg/L)
Value
1e−04
0e+00
−1e−04
−2e−04
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Beryllium, MW-31 (mg/L)
Value
9e−05
8e−05
7e−05
6e−05
5e−05
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Trend Regression: Piecewise Linear-Linear-Linear

Beryllium, MW-31 (mg/L)

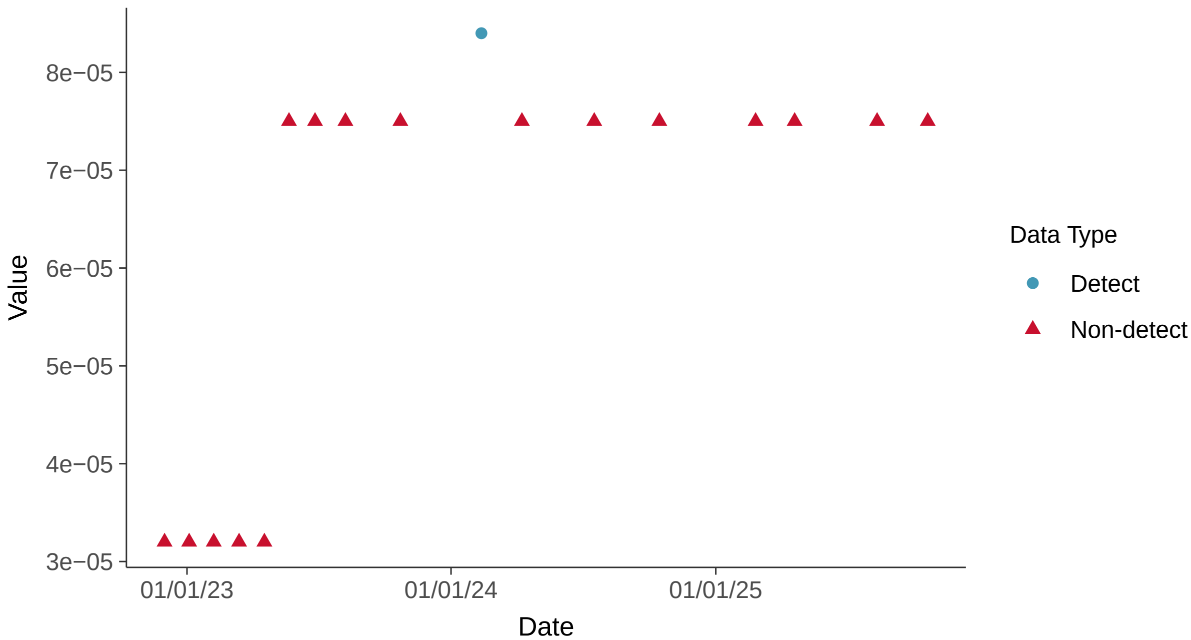


Appendix IV: Cadmium, MW-31

ID: 41_1_4_106

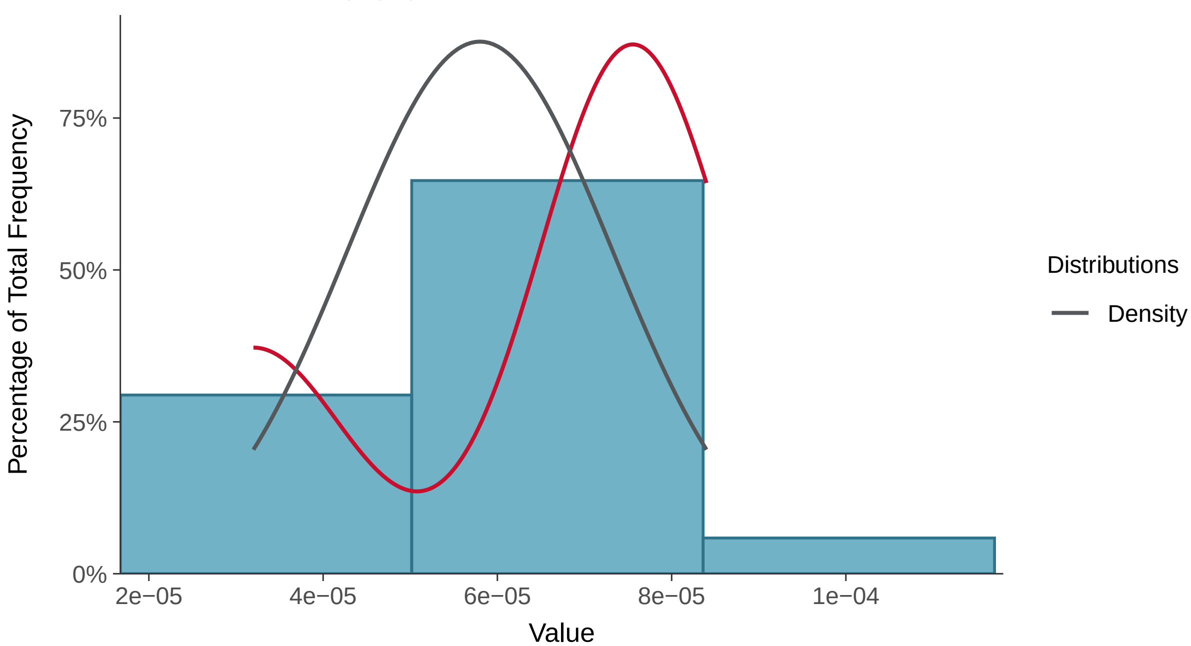
Scatter Plot

Cadmium, MW-31 (mg/L)



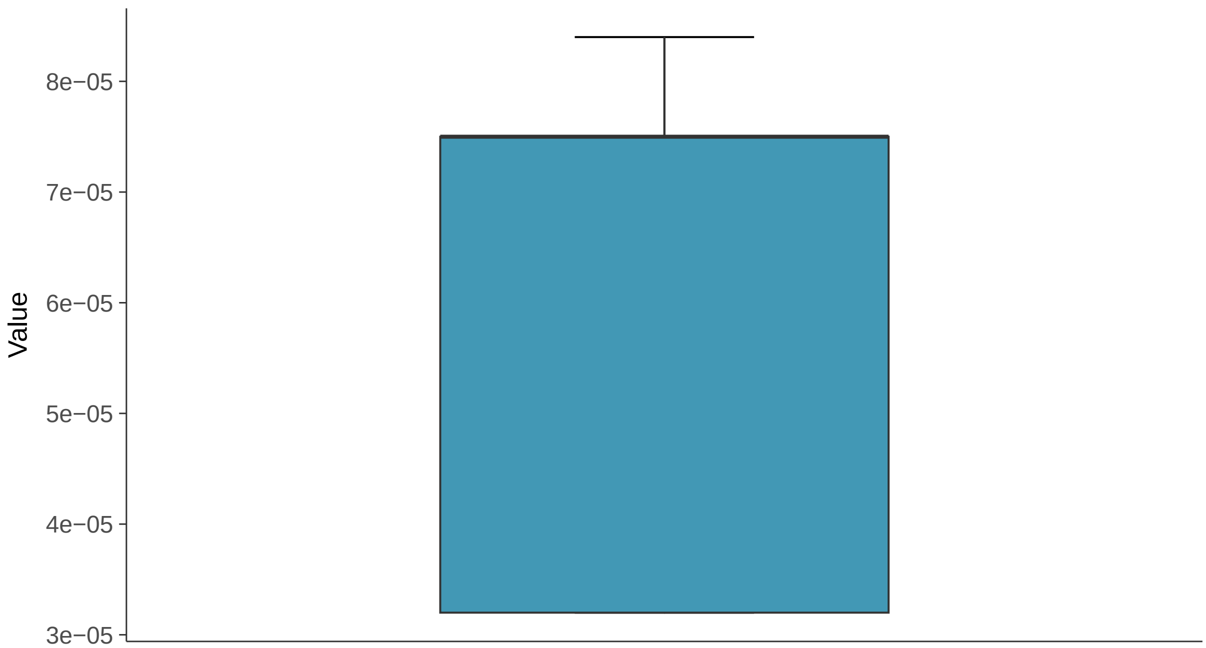
Histogram

Cadmium, MW-31 (mg/L)



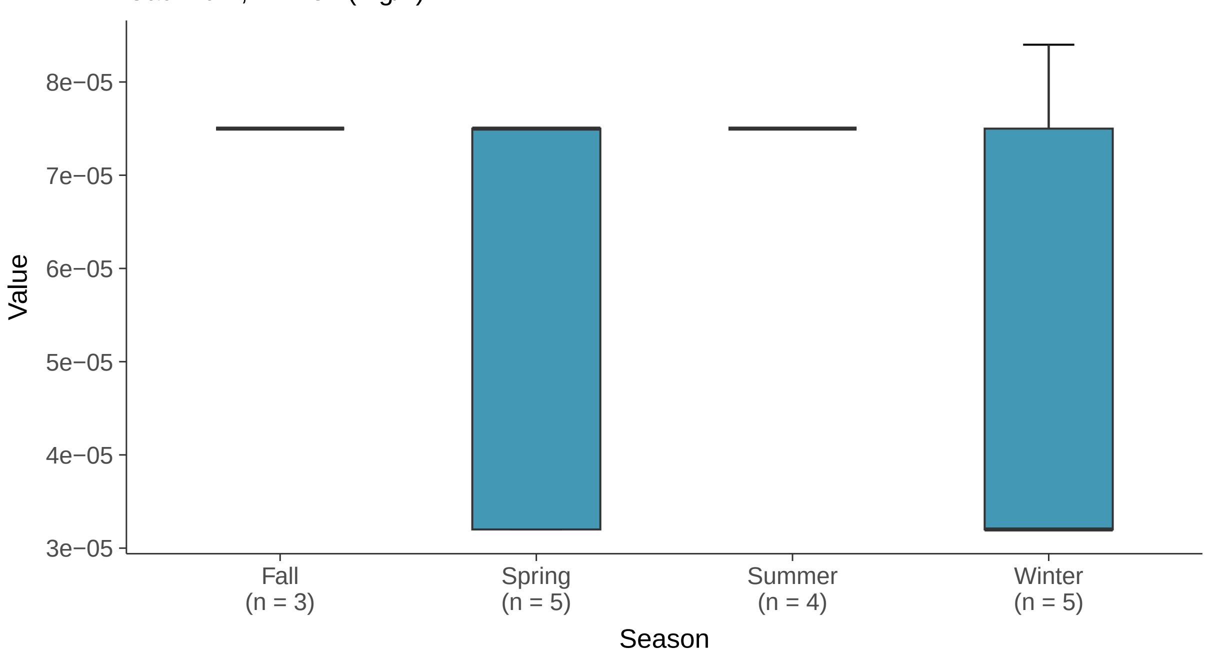
Boxplot

Cadmium, MW-31 (mg/L)



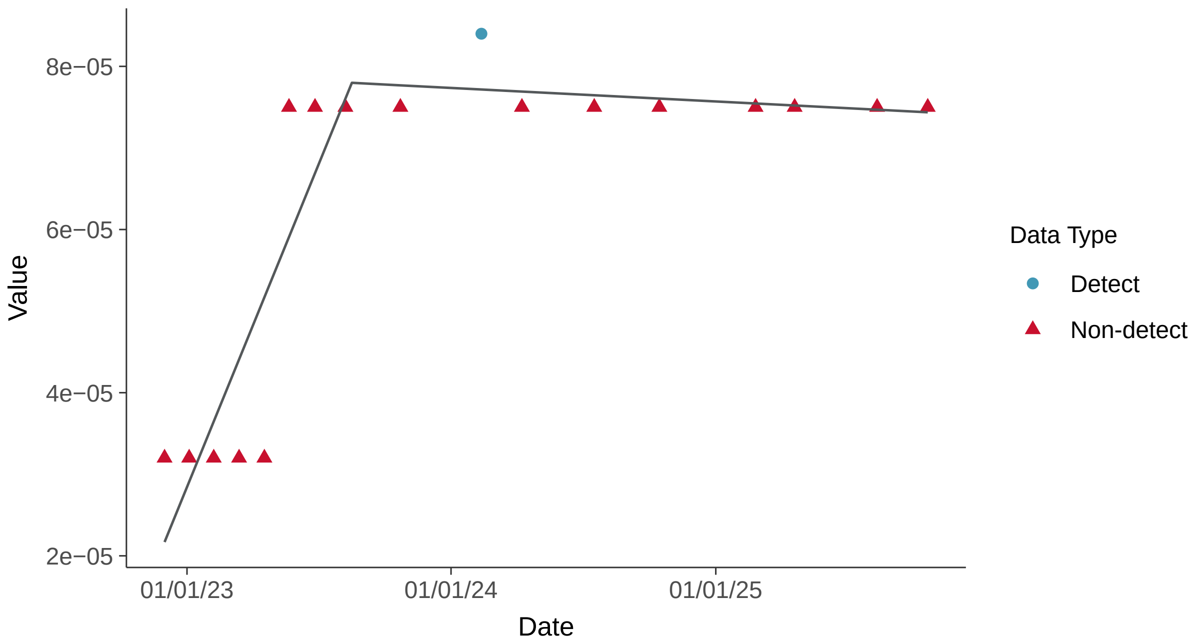
Boxplot by Season

Cadmium, MW-31 (mg/L)



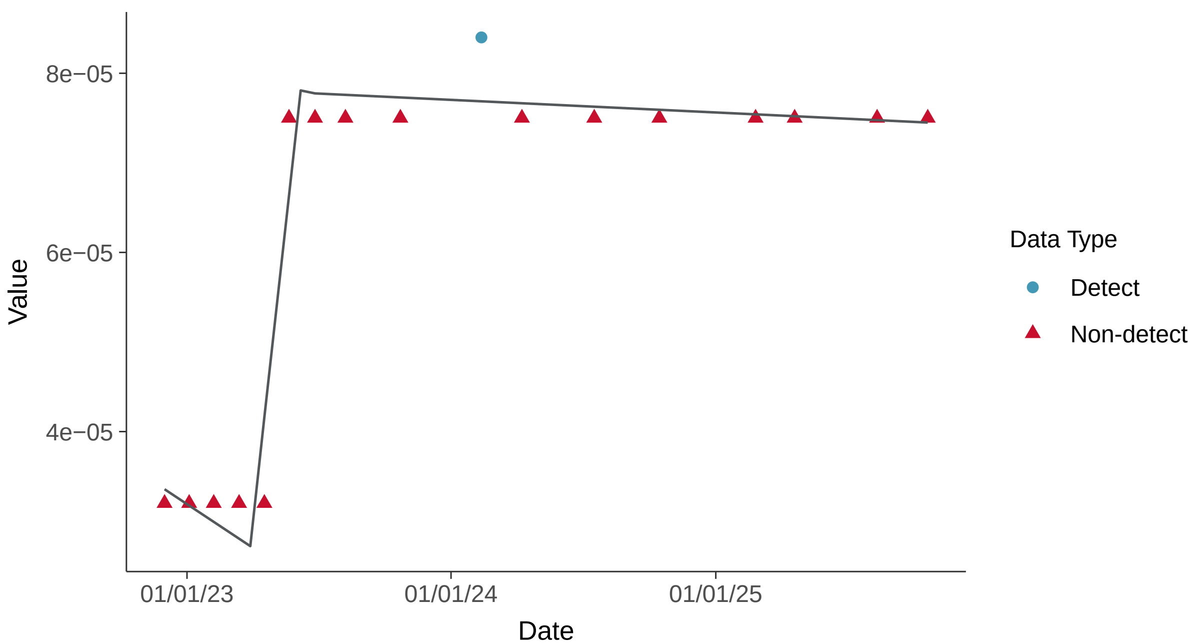
Trend Regression: Piecewise Linear-Linear

Cadmium, MW-31 (mg/L)



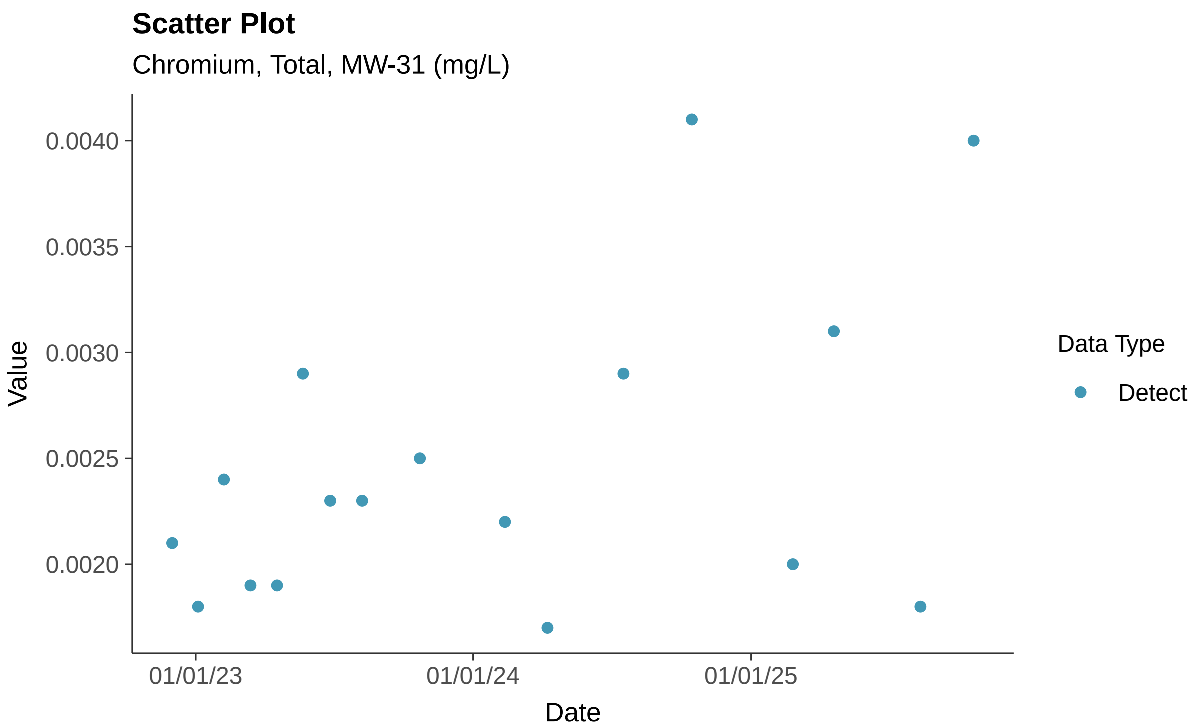
Trend Regression: Piecewise Linear-Linear-Linear

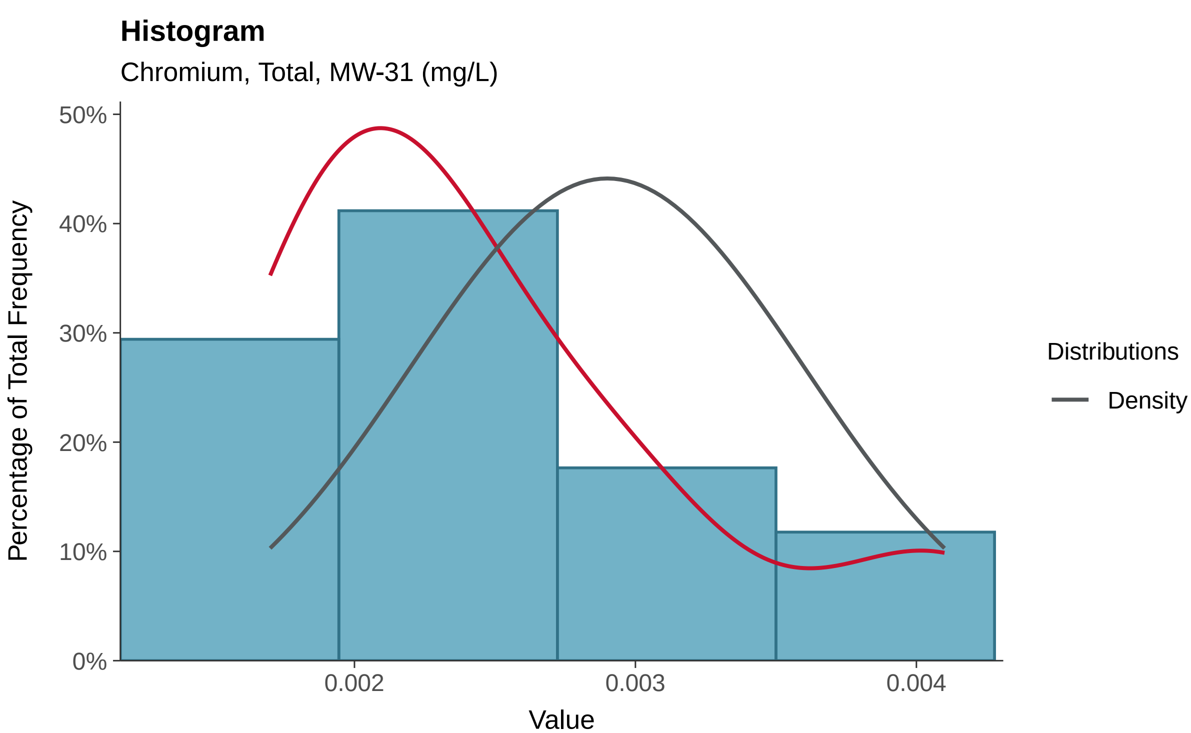
Cadmium, MW-31 (mg/L)



Appendix IV: Chromium, Total, MW-31

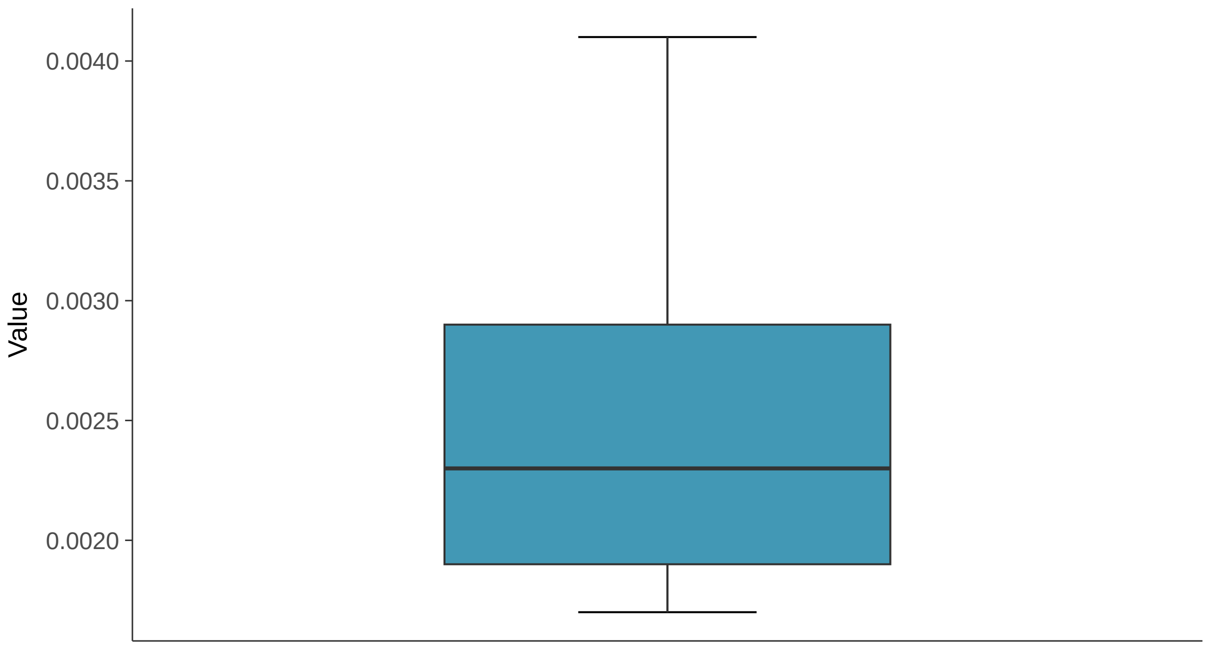
ID: 41_1_4_109





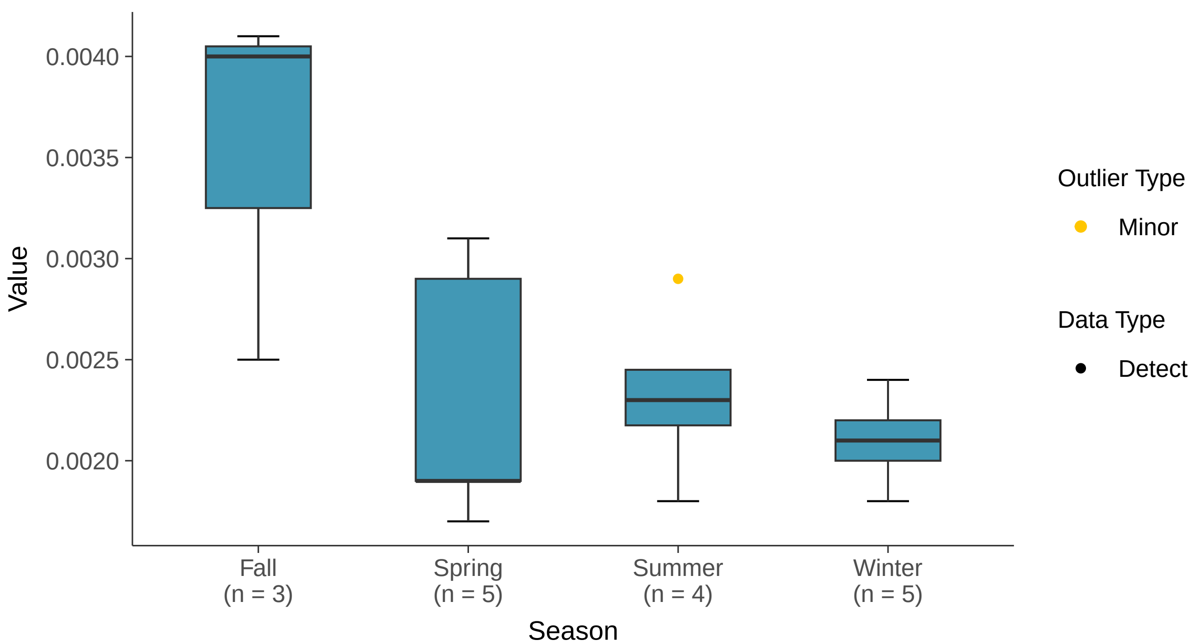
Boxplot

Chromium, Total, MW-31 (mg/L)



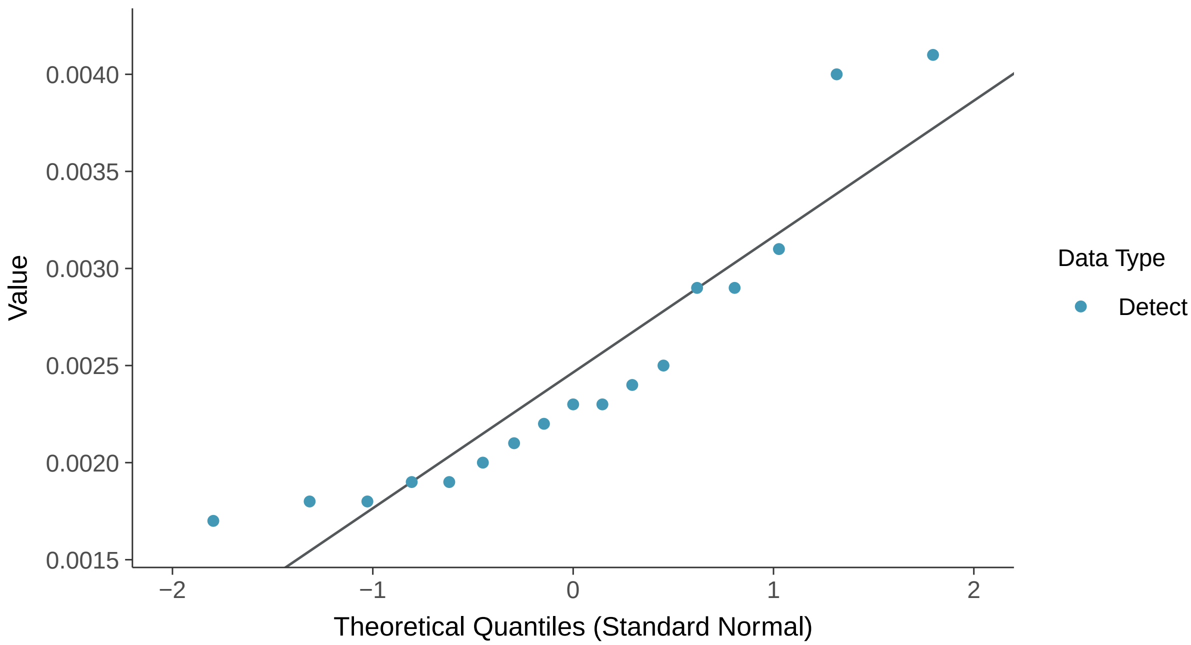
Boxplot by Season

Chromium, Total, MW-31 (mg/L)



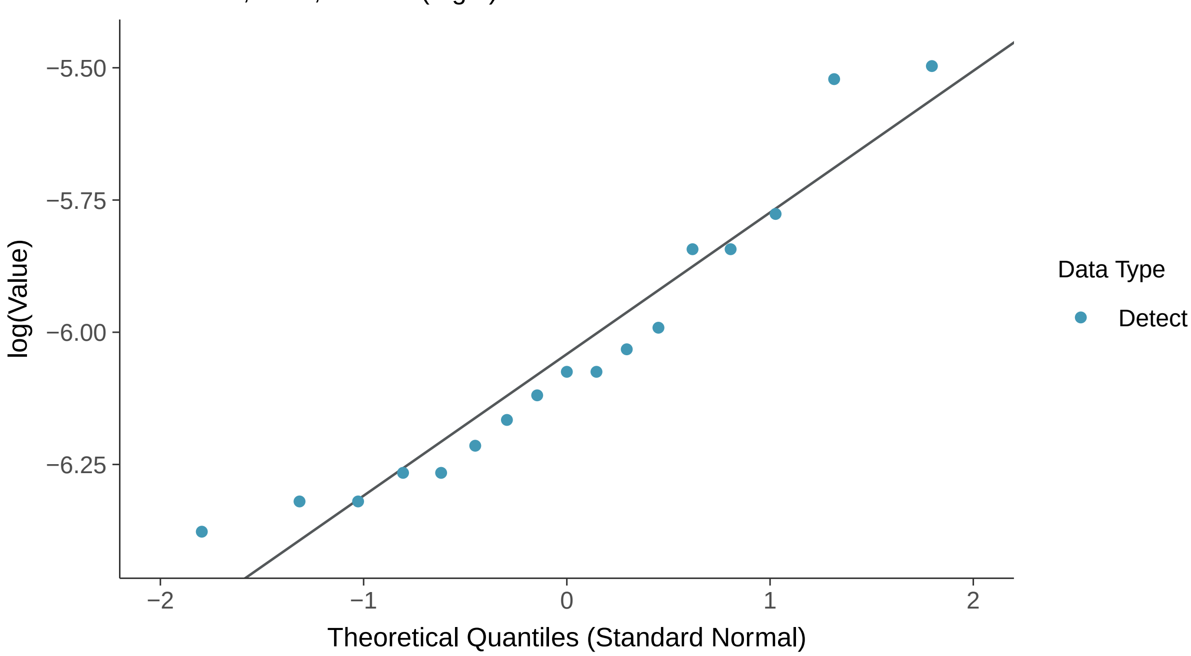
Normal Q-Q plot

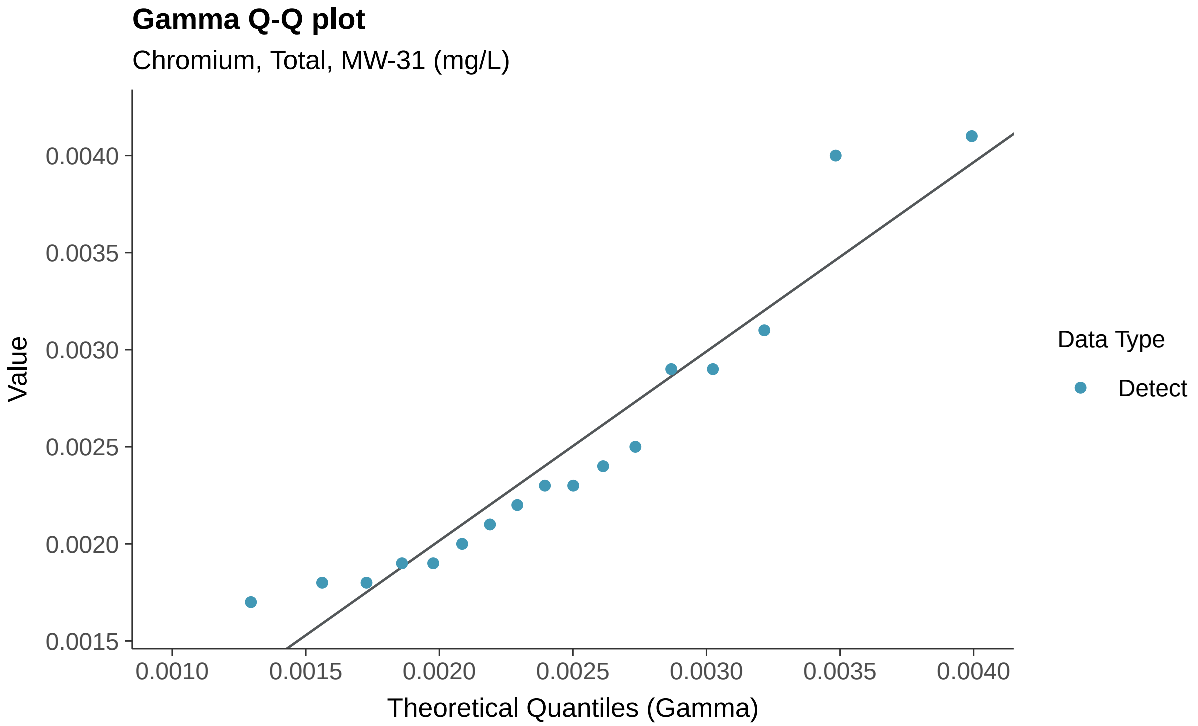
Chromium, Total, MW-31 (mg/L)

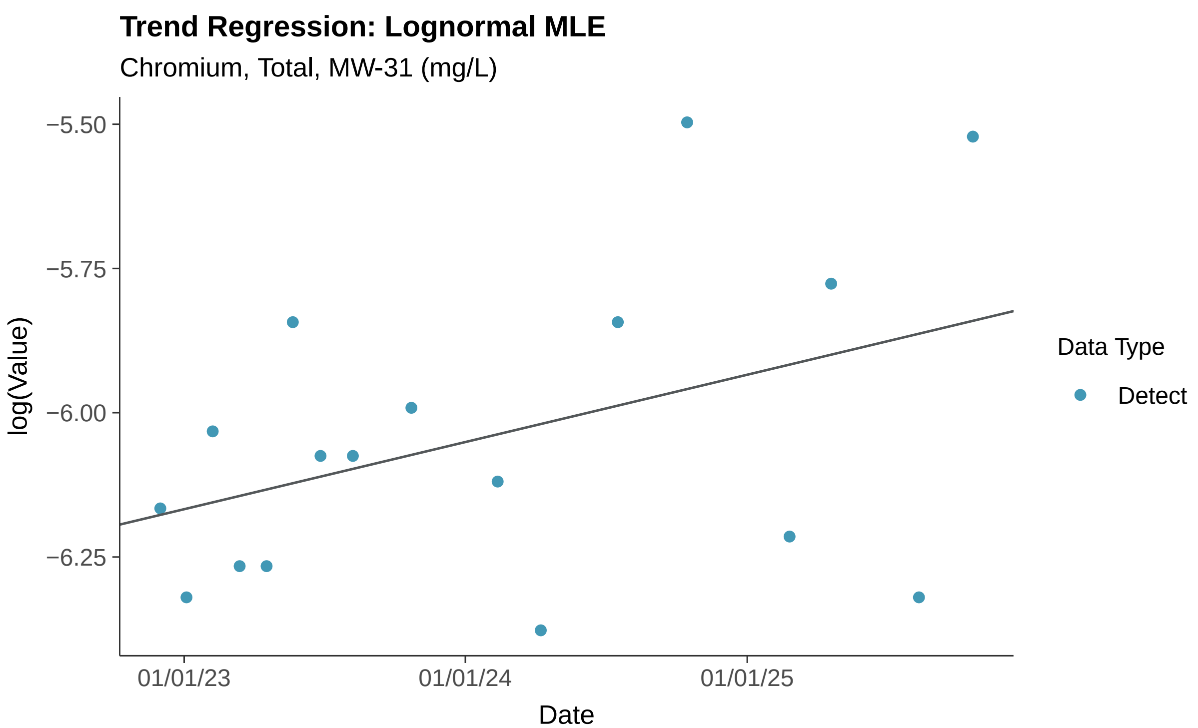


Lognormal Q-Q plot

Chromium, Total, MW-31 (mg/L)




Gamma Q-Q plot
Chromium, Total, MW-31 (mg/L)
Value
0.0040
0.0035
0.0030
0.0025
0.0020
0.0015
0.0010
0.0015
0.0020
0.0025
0.0030
0.0035
0.0040
Theoretical Quantiles (Gamma)
Data Type
Detect

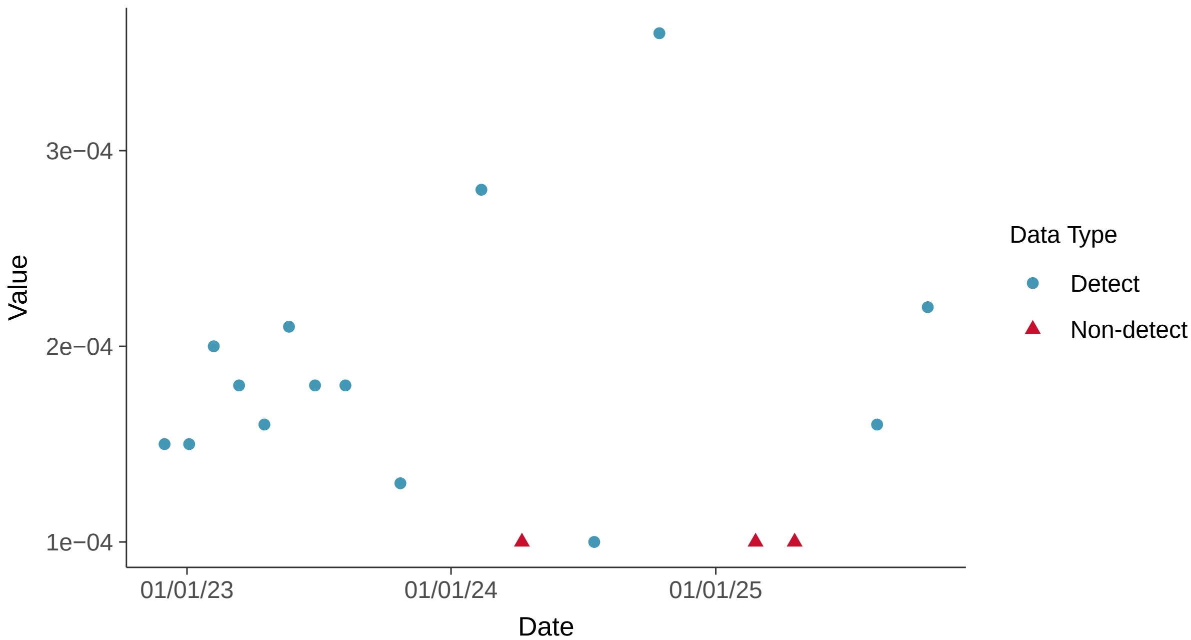

Trend Regression: Lognormal MLE
Chromium, Total, MW-31 (mg/L)
log(Value)
−5.50
−5.75
−6.00
−6.25
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Appendix IV: Cobalt, MW-31

ID: 41_1_4_110

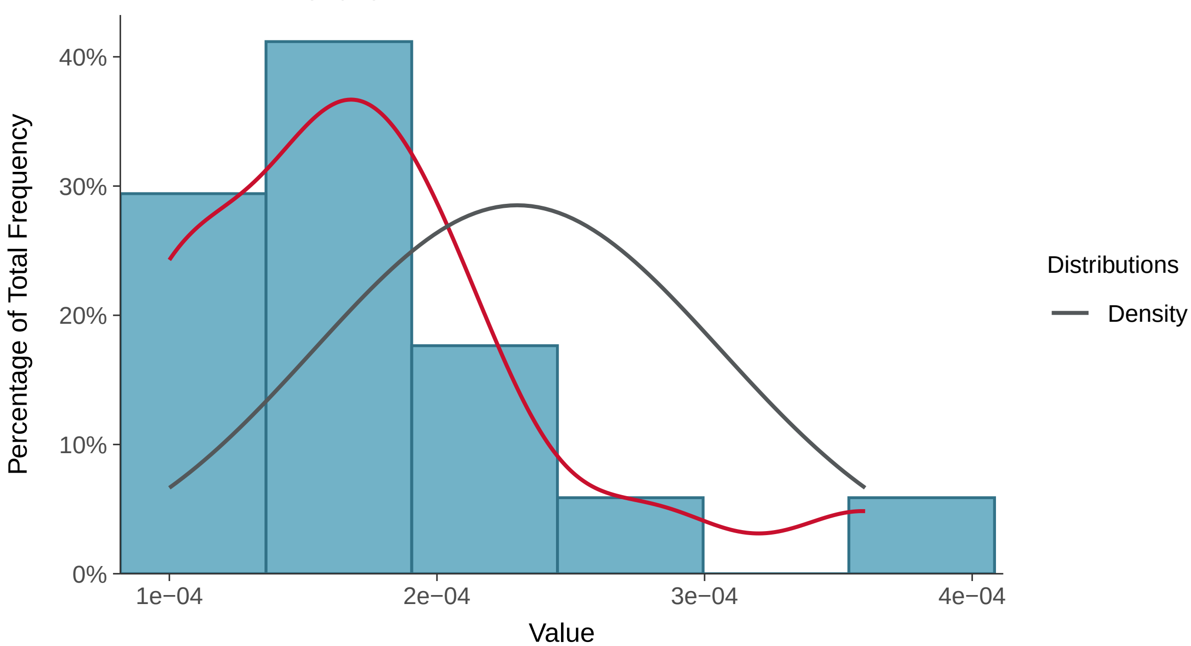
Scatter Plot

Cobalt, MW-31 (mg/L)



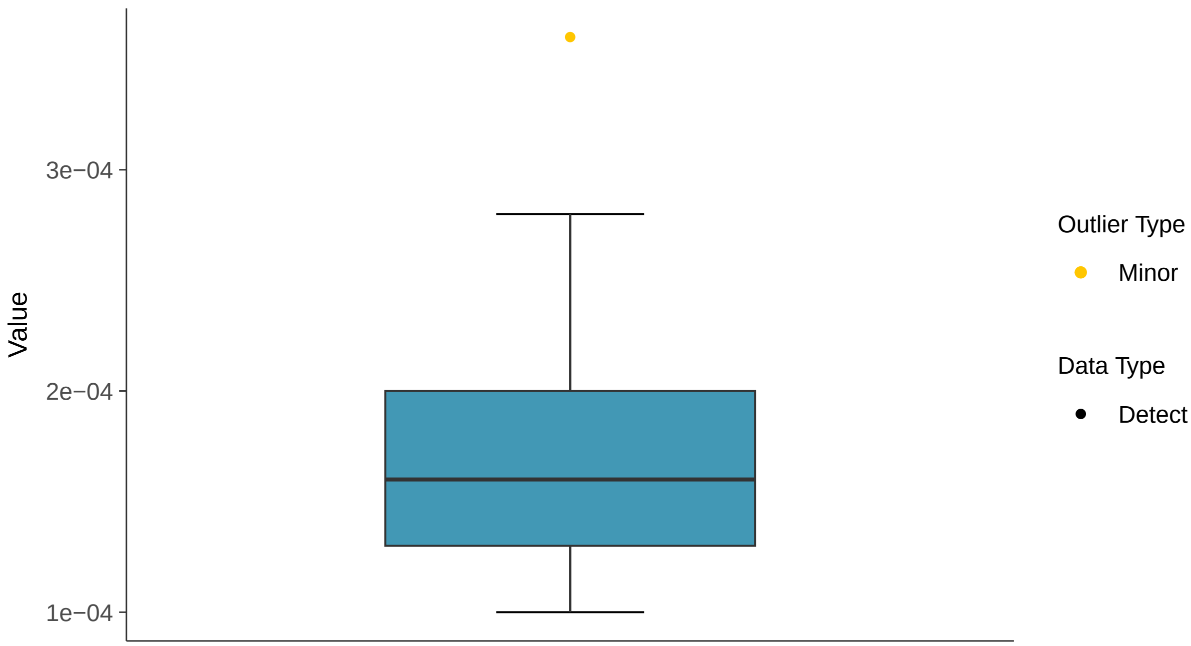
Histogram

Cobalt, MW-31 (mg/L)



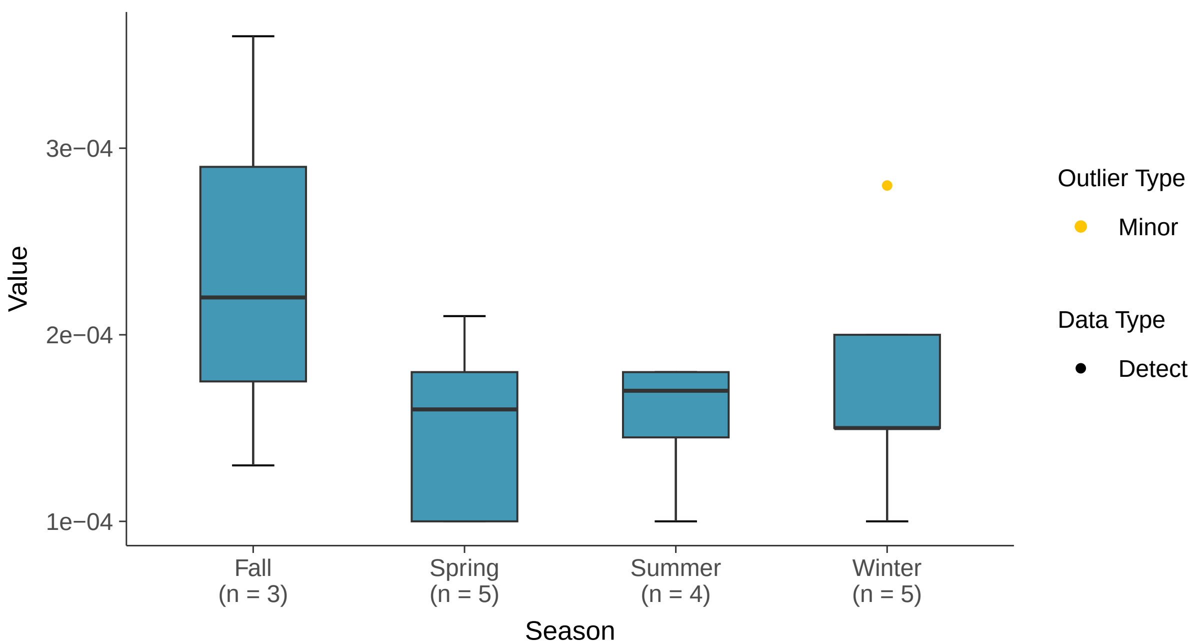
Boxplot

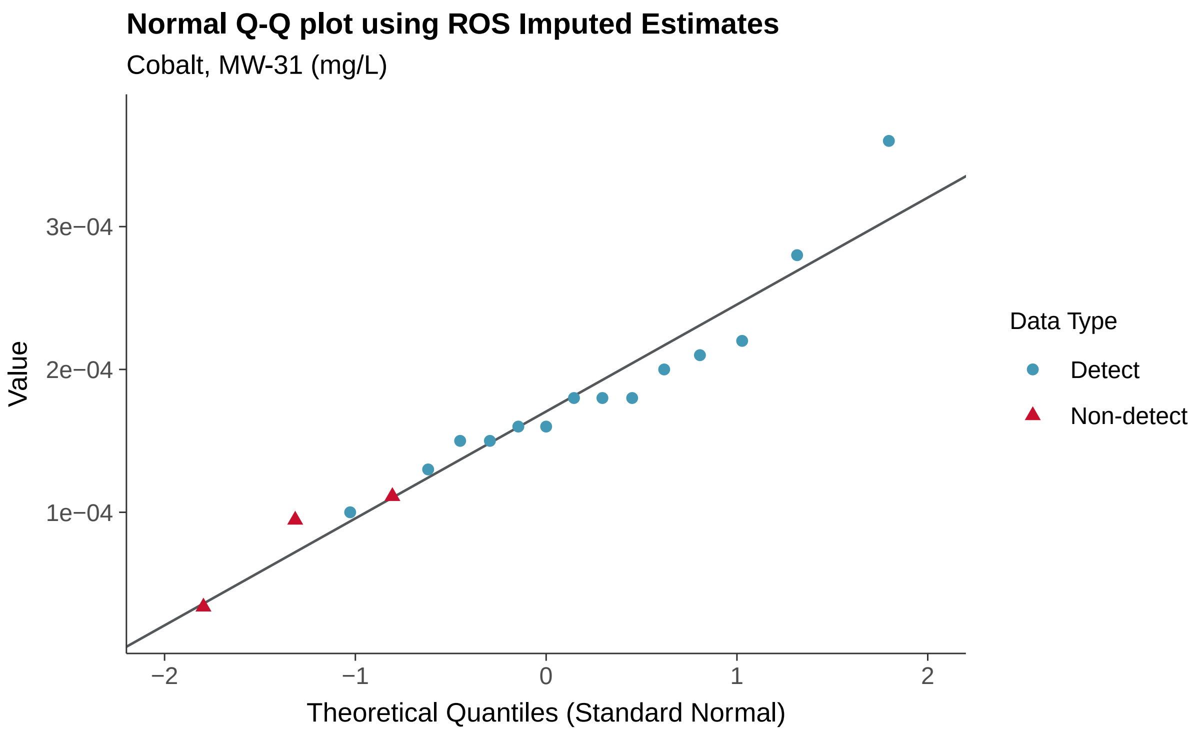
Cobalt, MW-31 (mg/L)

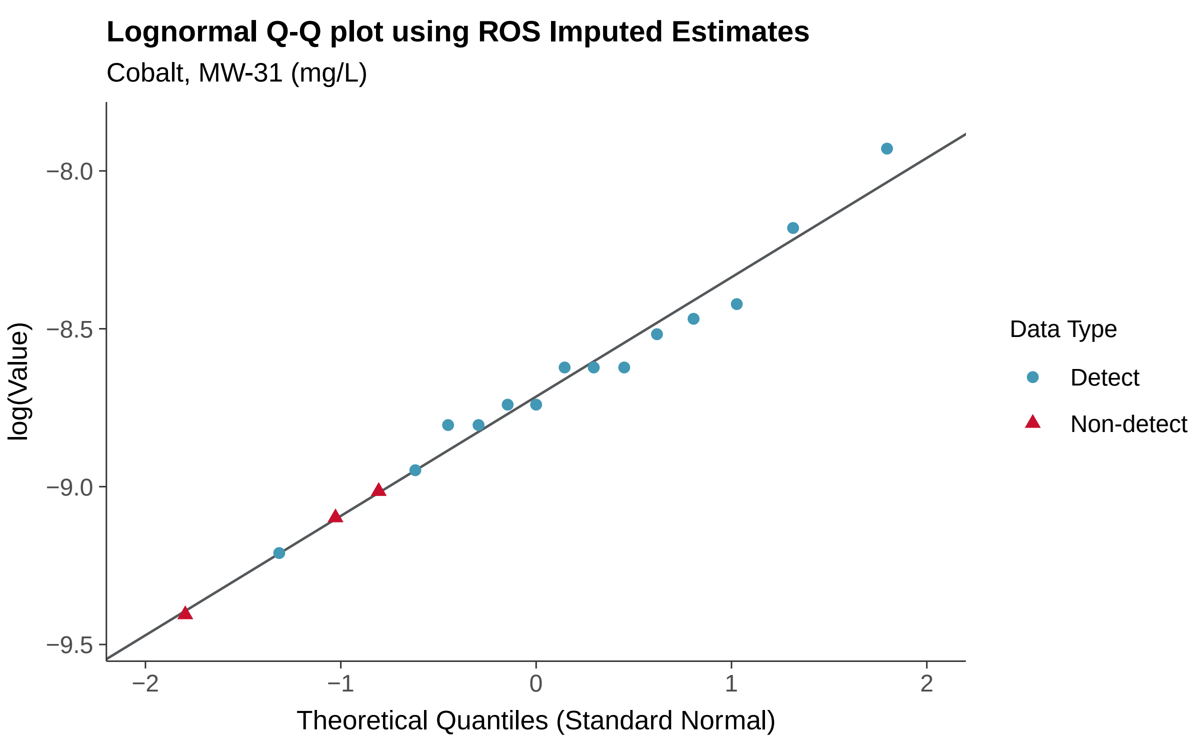


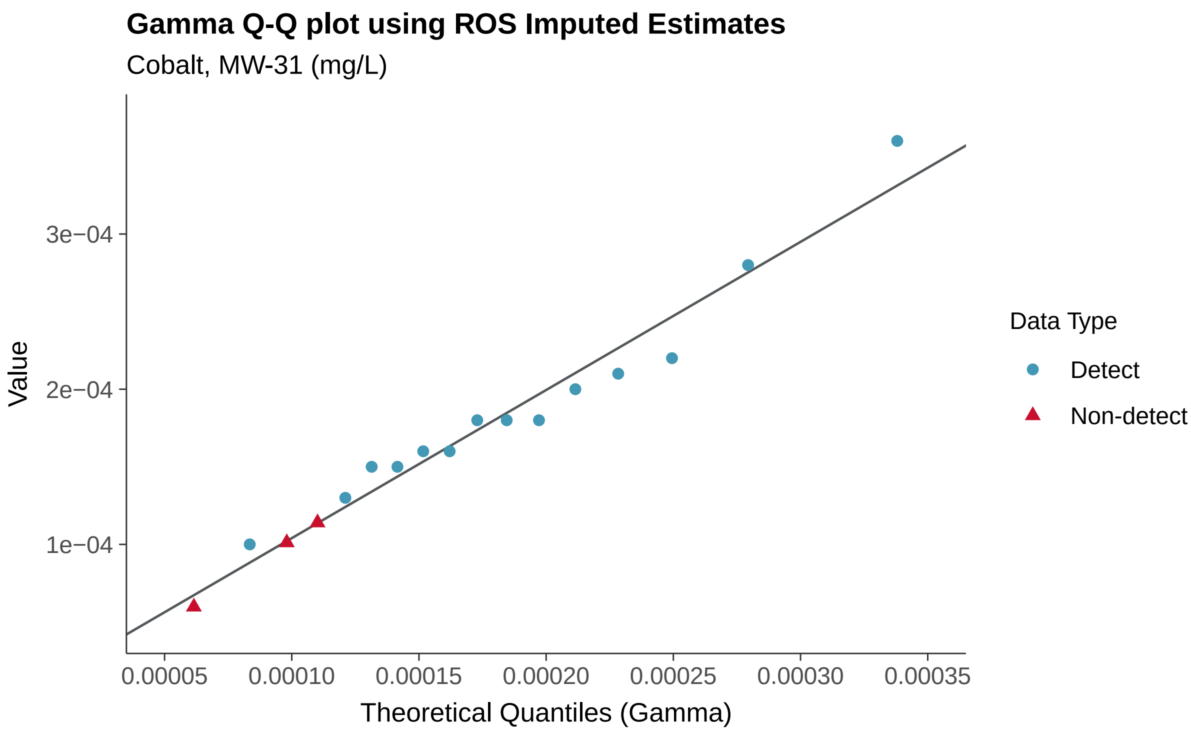
Boxplot by Season

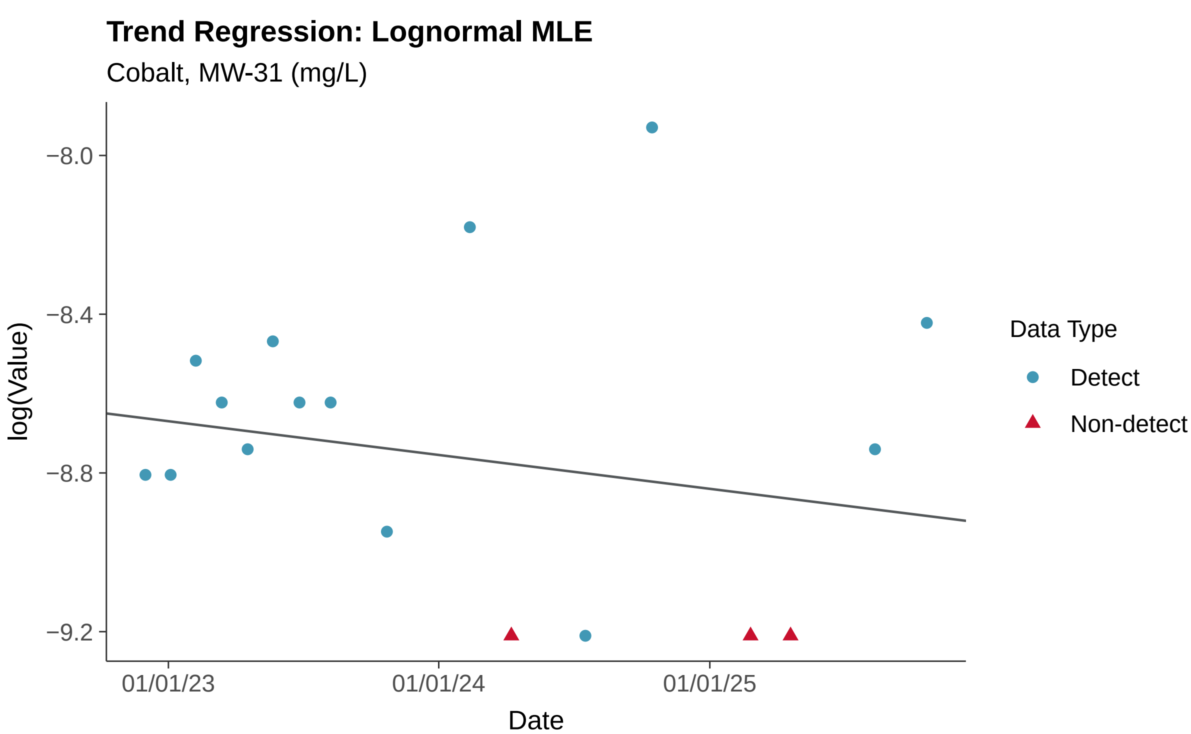
Cobalt, MW-31 (mg/L)




Normal Q-Q plot using ROS Imputed Estimates
Cobalt, MW-31 (mg/L)
Value
3e−04
2e−04
1e−04
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

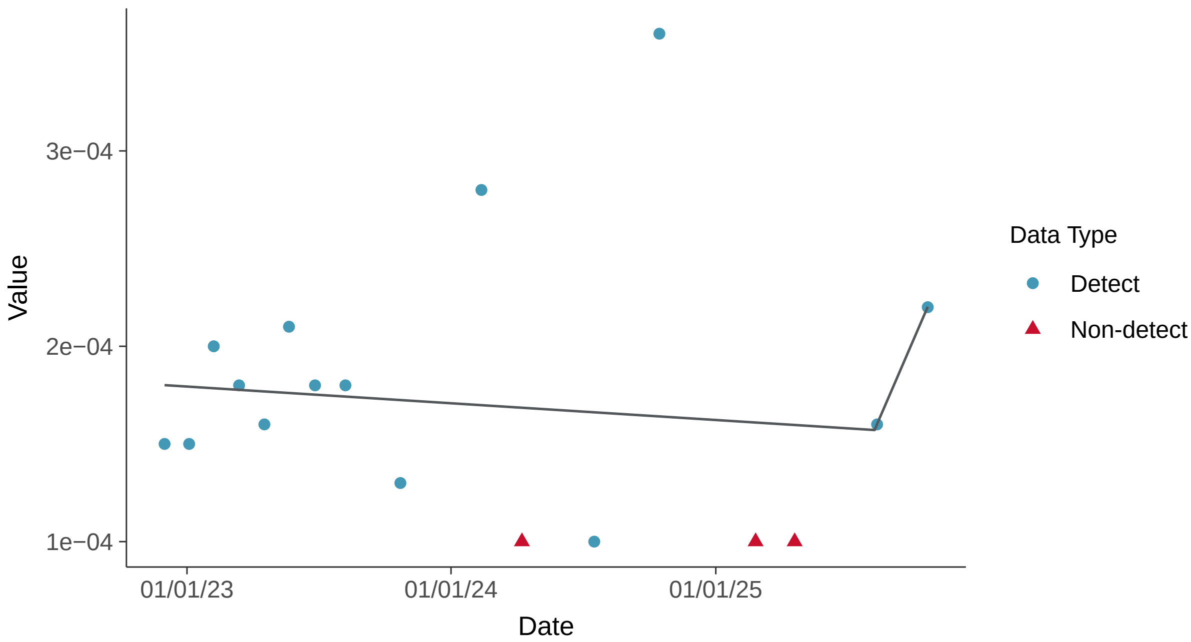

Lognormal Q-Q plot using ROS Imputed Estimates
Cobalt, MW-31 (mg/L)
log(Value)
−8.0
−8.5
−9.0
−9.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Gamma Q-Q plot using ROS Imputed Estimates
Cobalt, MW-31 (mg/L)
Value
3e−04
2e−04
1e−04
0.00005
0.00010
0.00015
0.00020
0.00025
0.00030
0.00035
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect


Trend Regression: Lognormal MLE
Cobalt, MW-31 (mg/L)
log(Value)
−8.0
−8.4
−8.8
−9.2
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

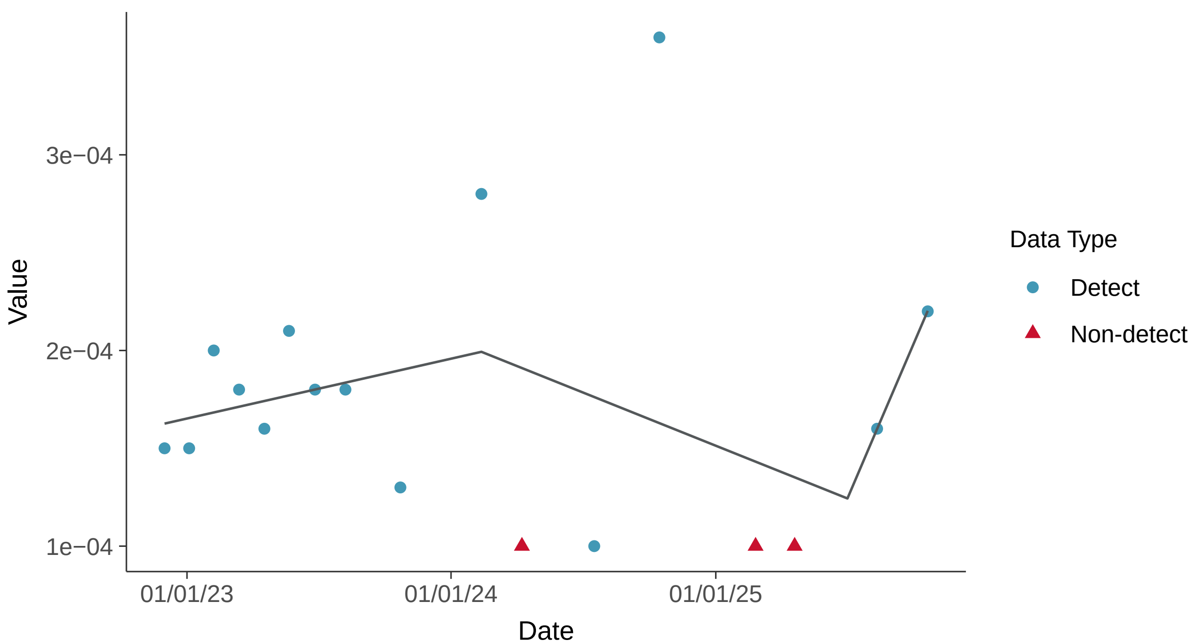
Trend Regression: Piecewise Linear-Linear

Cobalt, MW-31 (mg/L)



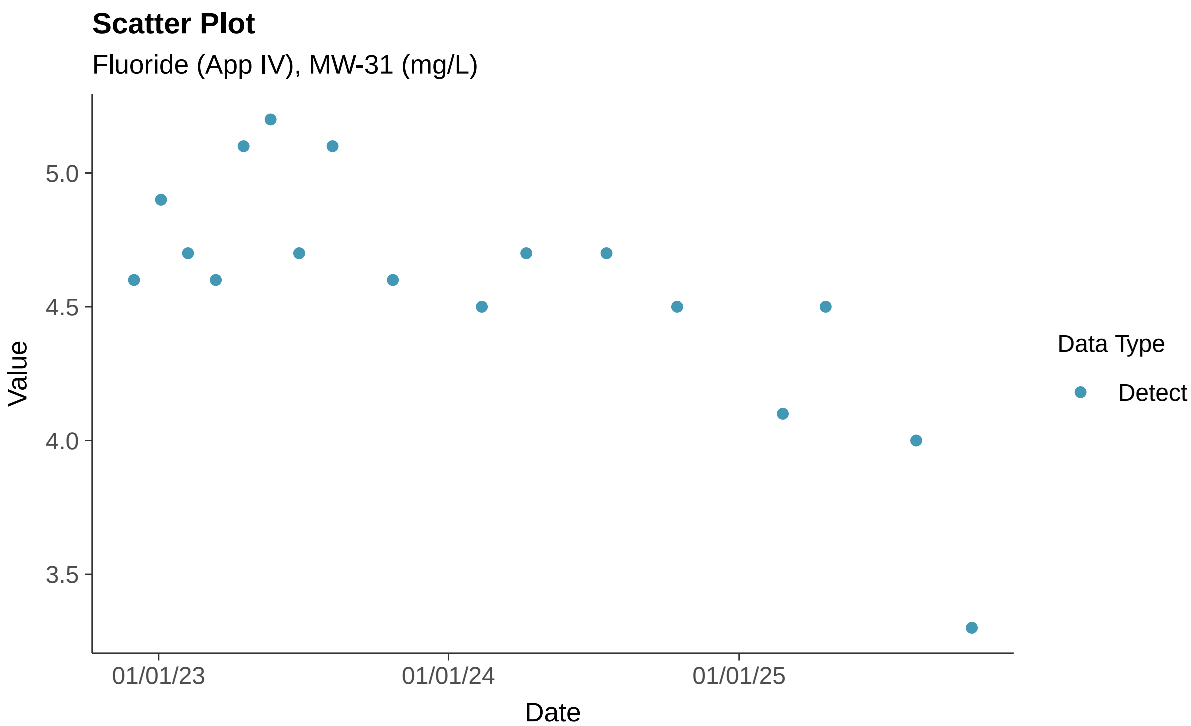
Trend Regression: Piecewise Linear-Linear-Linear

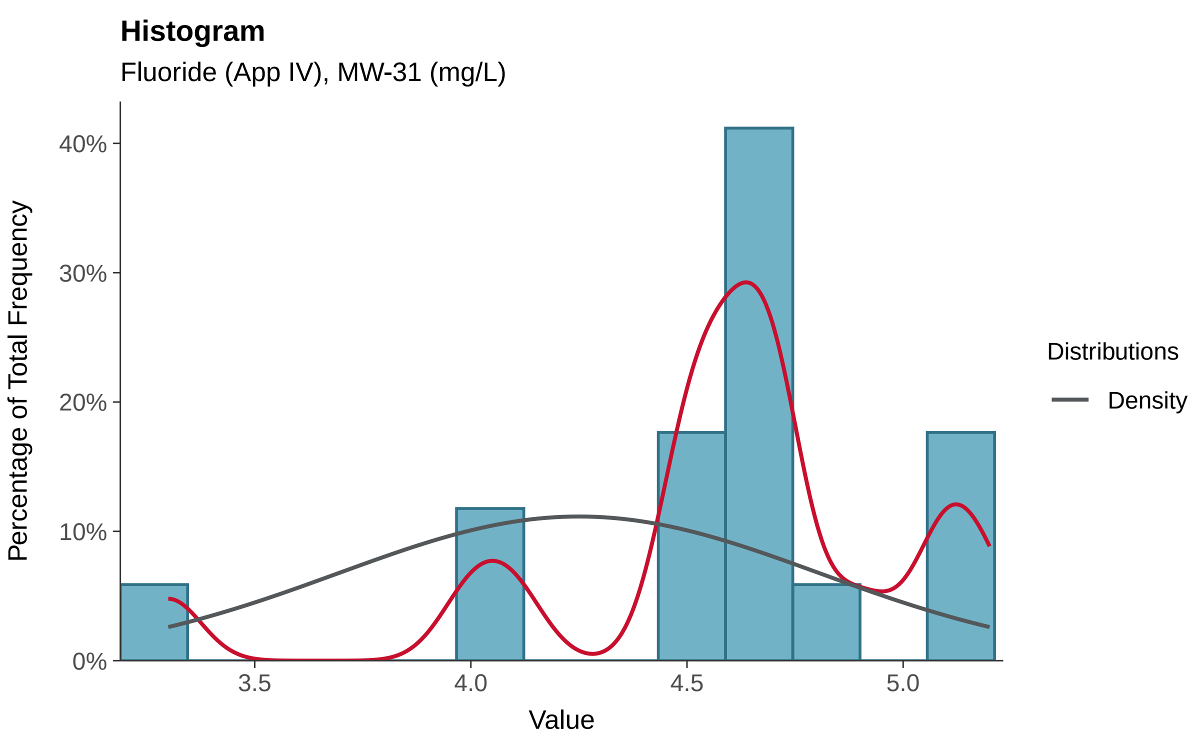
Cobalt, MW-31 (mg/L)



Appendix IV: Fluoride (App IV), MW-31

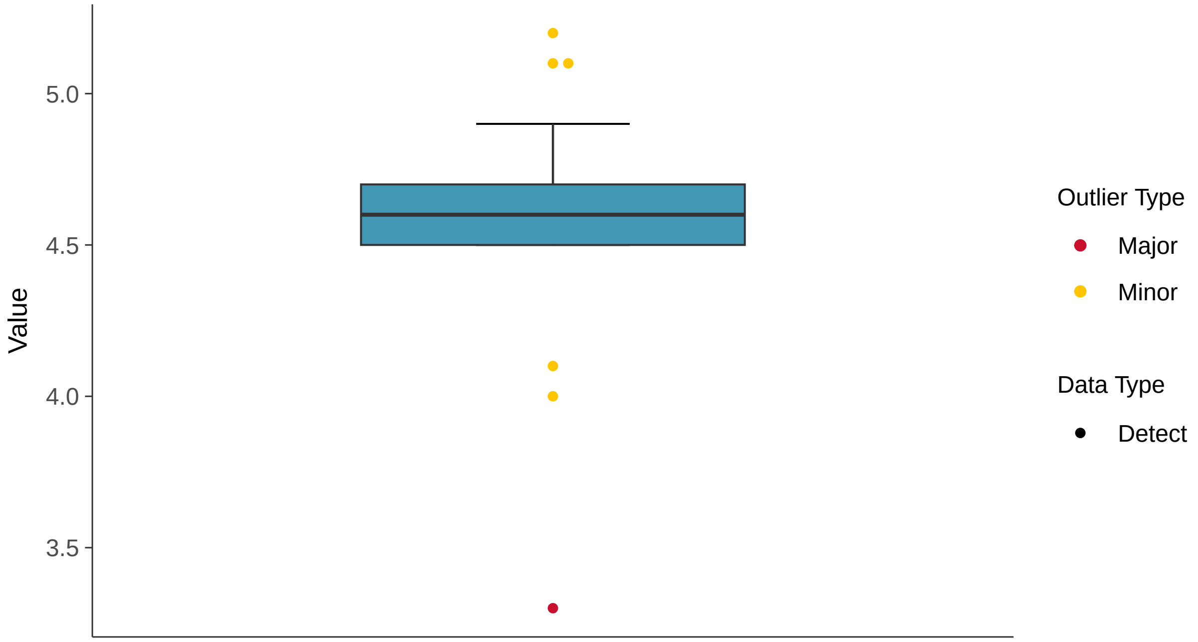
ID: 41_1_4_113





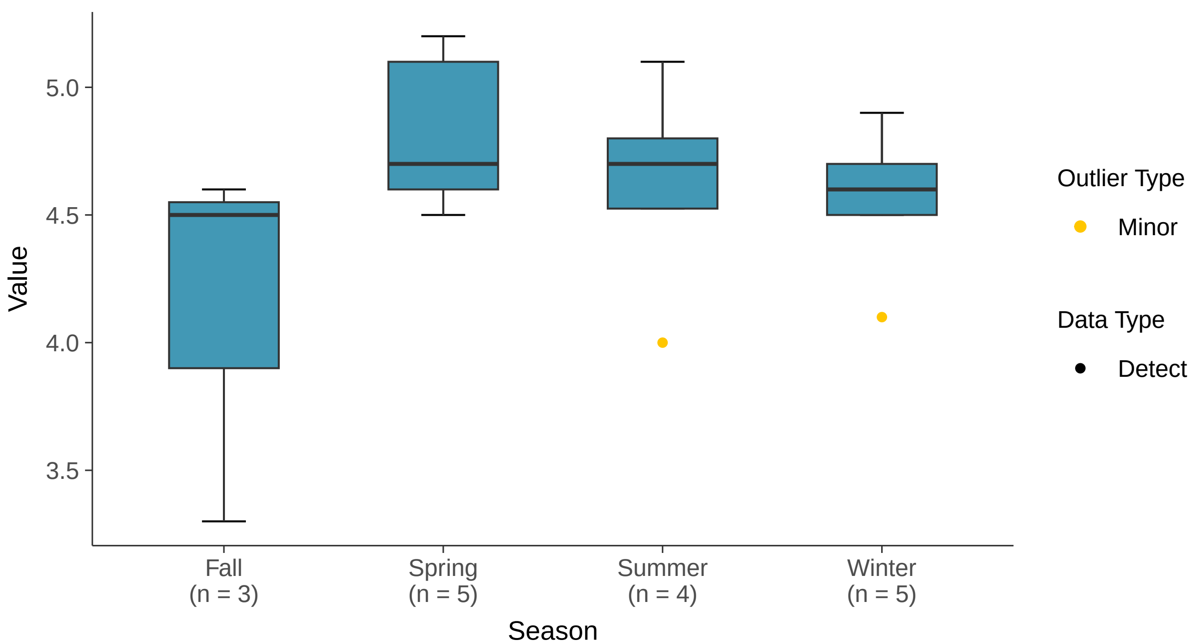
Boxplot

Fluoride (App IV), MW-31 (mg/L)



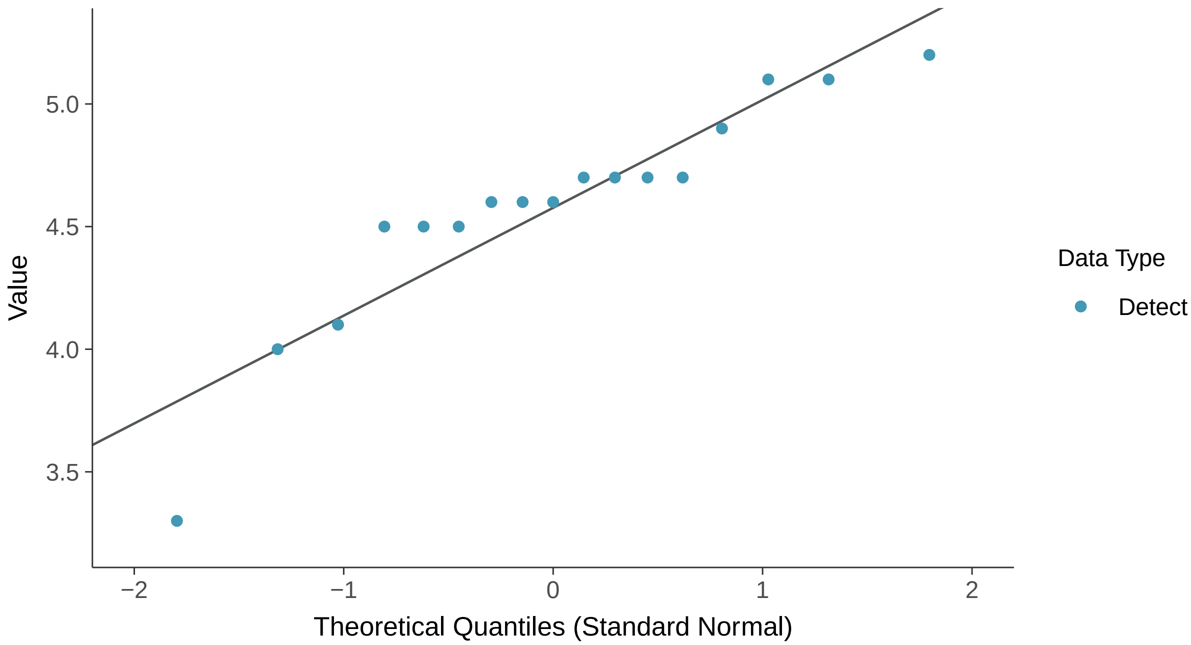
Boxplot by Season

Fluoride (App IV), MW-31 (mg/L)



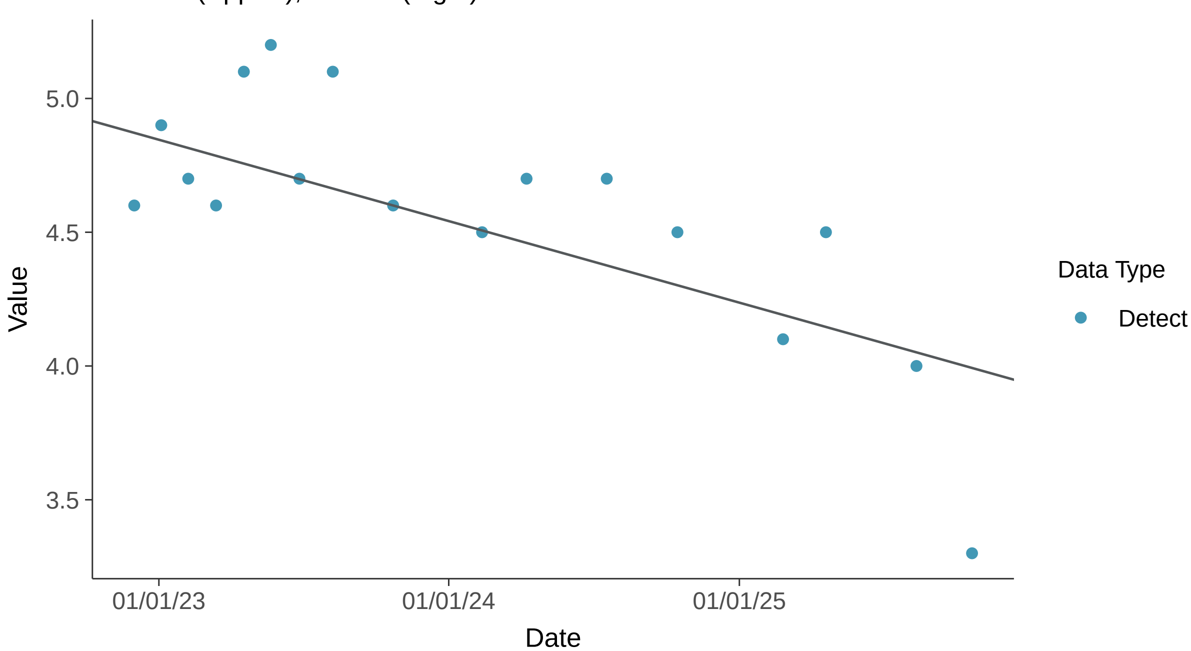
Normal Q-Q plot

Fluoride (App IV), MW-31 (mg/L)



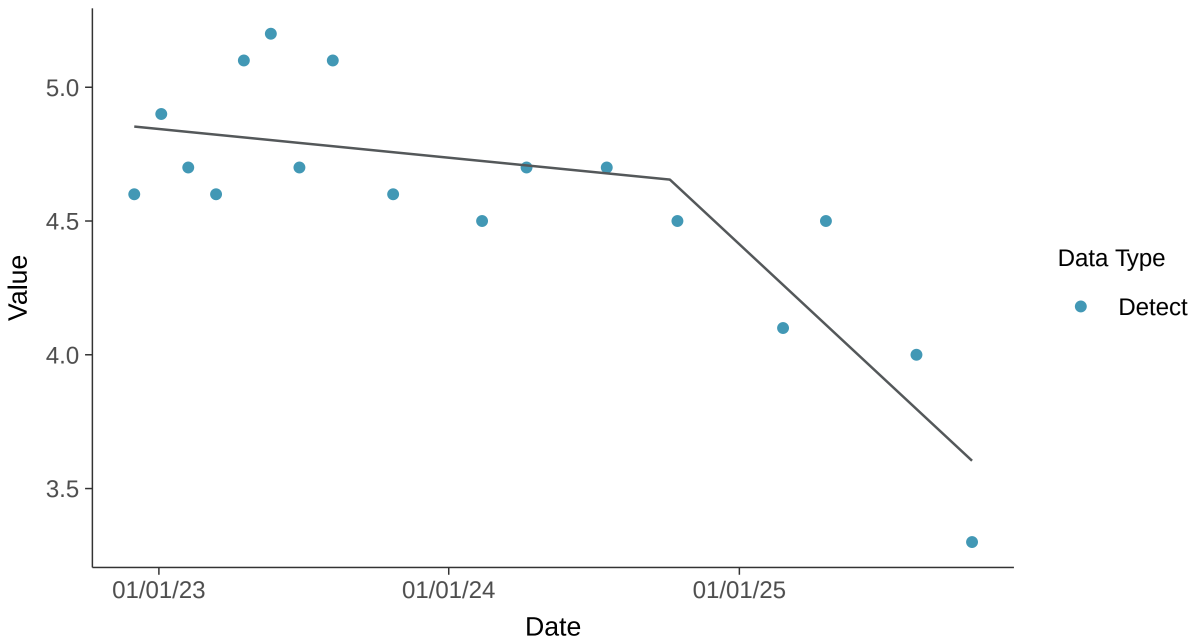
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Fluoride (App IV), MW-31 (mg/L)



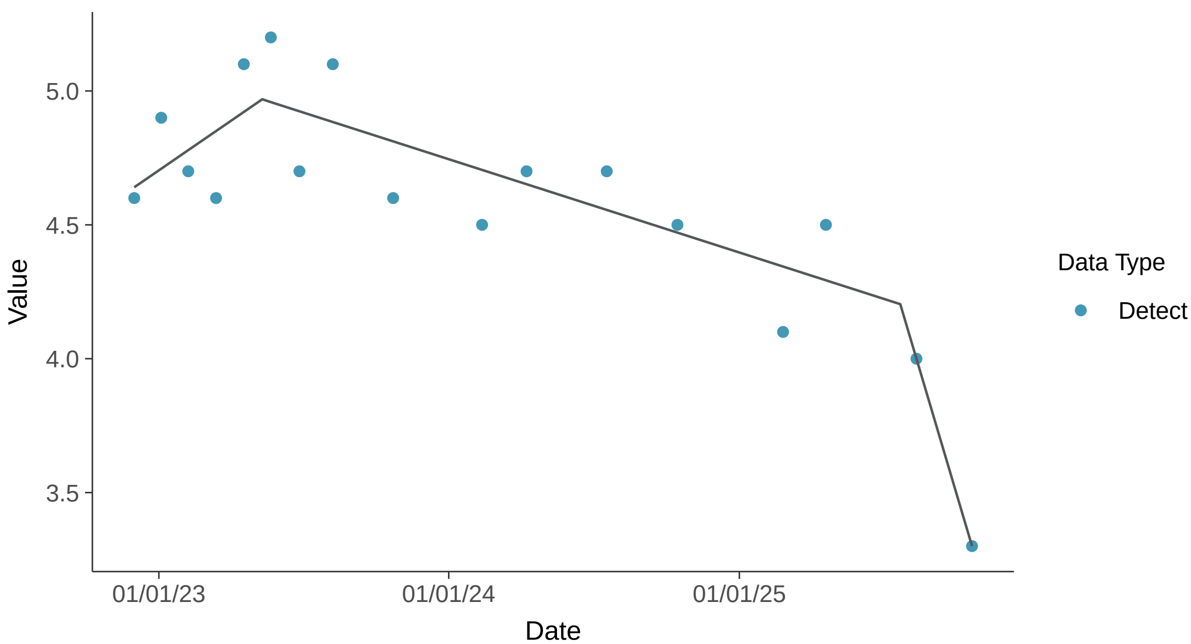
Trend Regression: Piecewise Linear-Linear

Fluoride (App IV), MW-31 (mg/L)



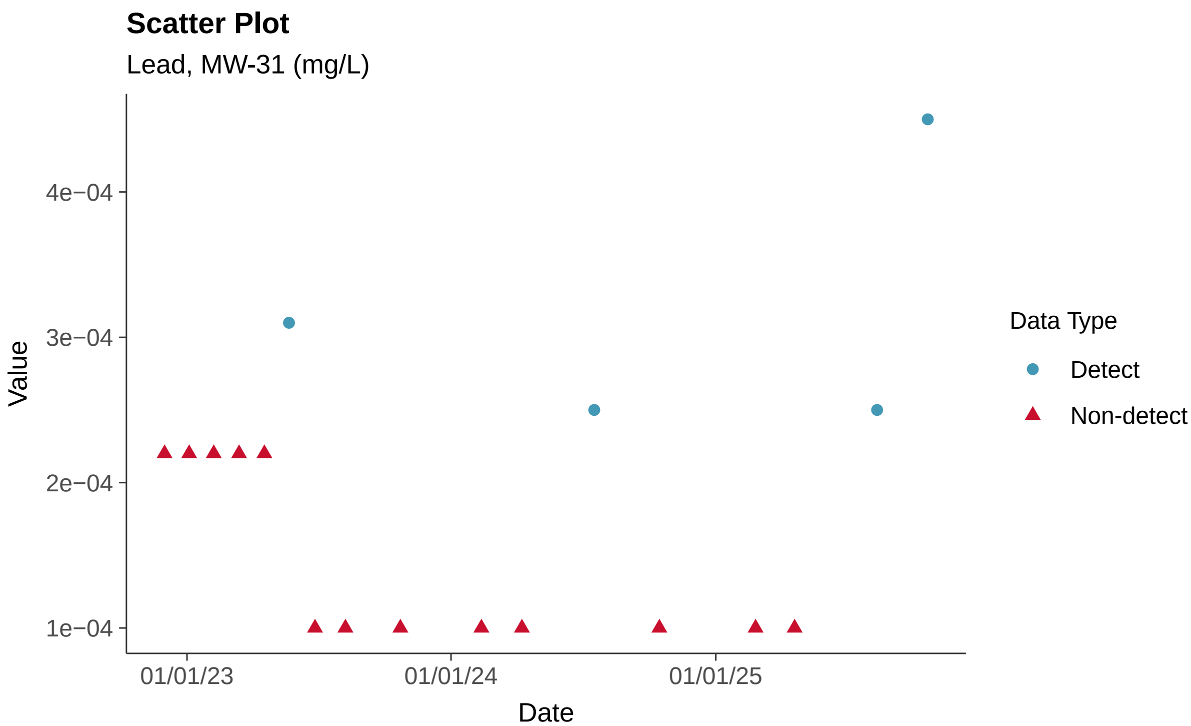
Trend Regression: Piecewise Linear-Linear-Linear

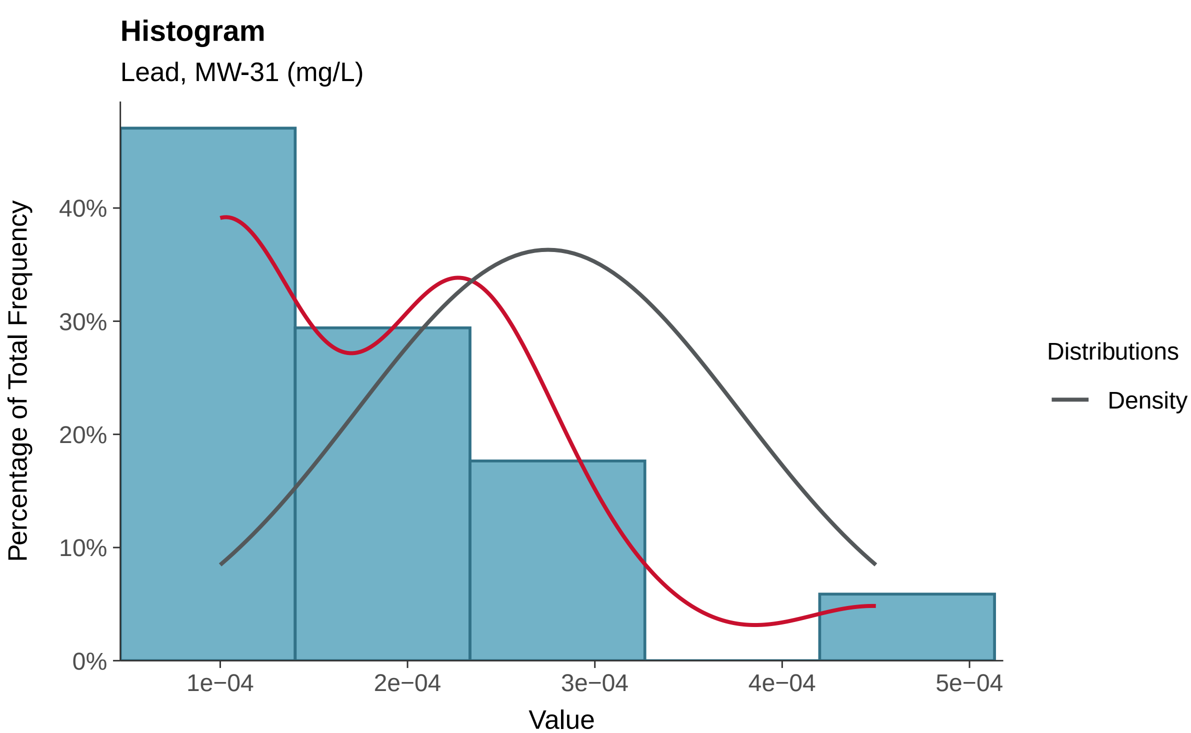
Fluoride (App IV), MW-31 (mg/L)



Appendix IV: Lead, MW-31

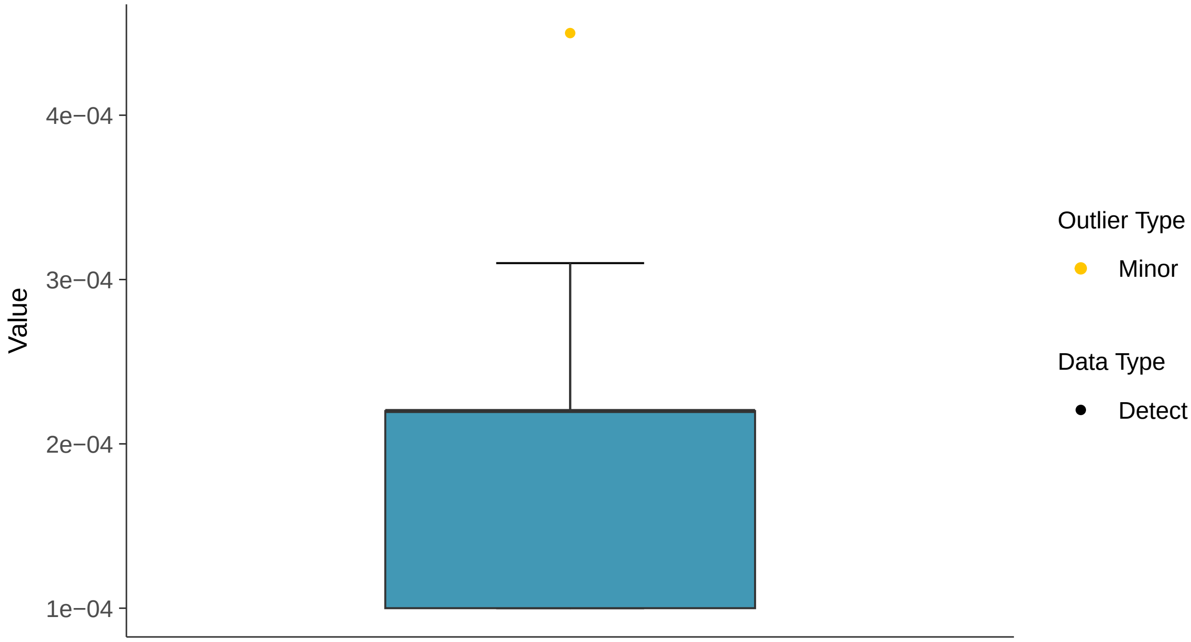
ID: 41_1_4_115





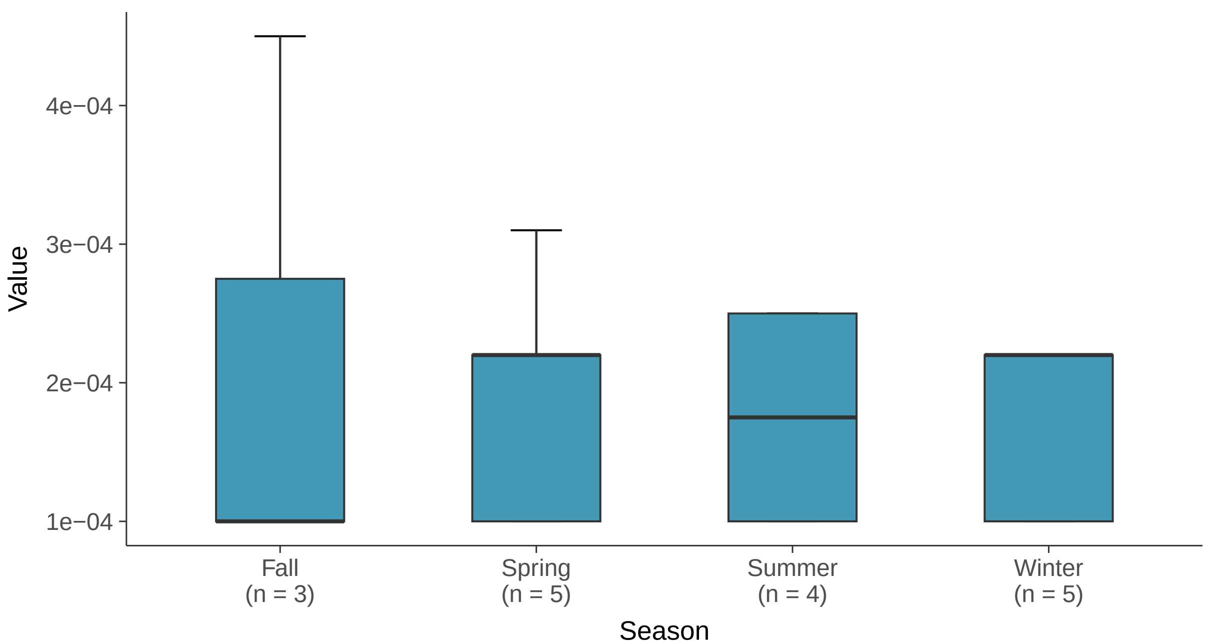
Boxplot

Lead, MW-31 (mg/L)



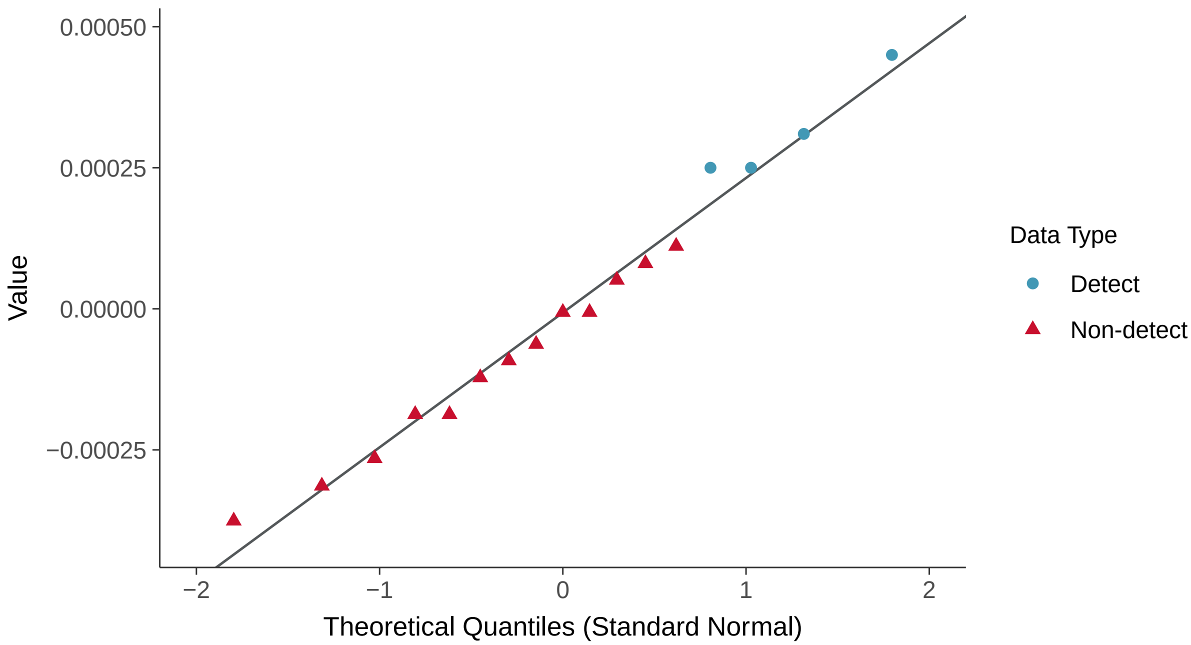
Boxplot by Season

Lead, MW-31 (mg/L)



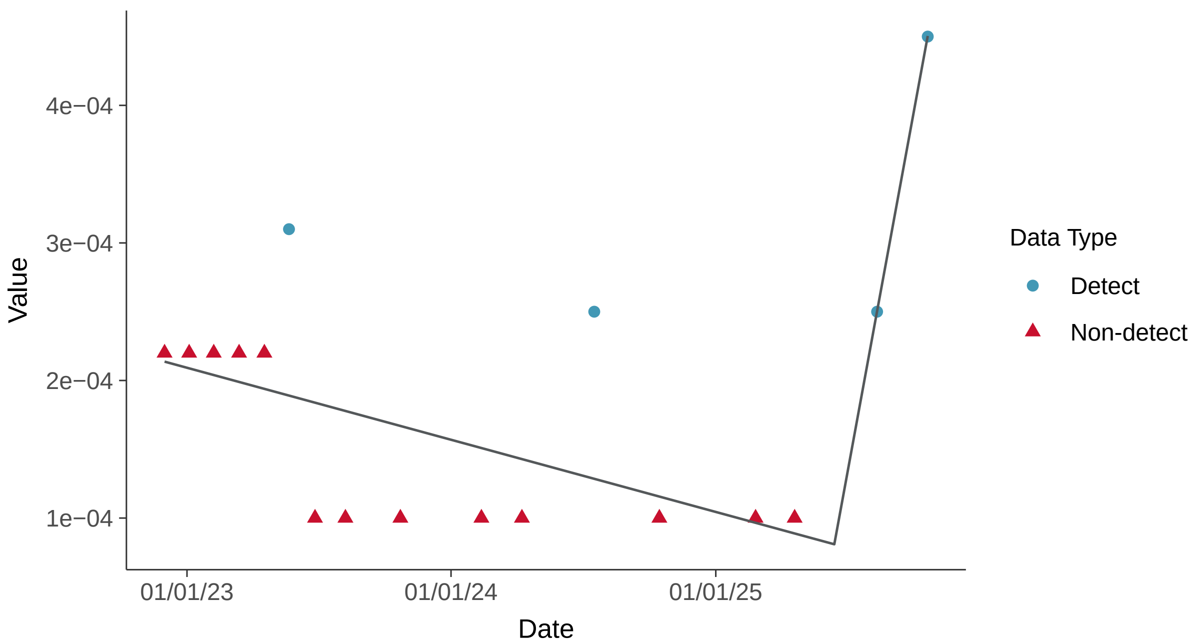
Normal Q-Q plot using ROS Imputed Estimates

Lead, MW-31 (mg/L)



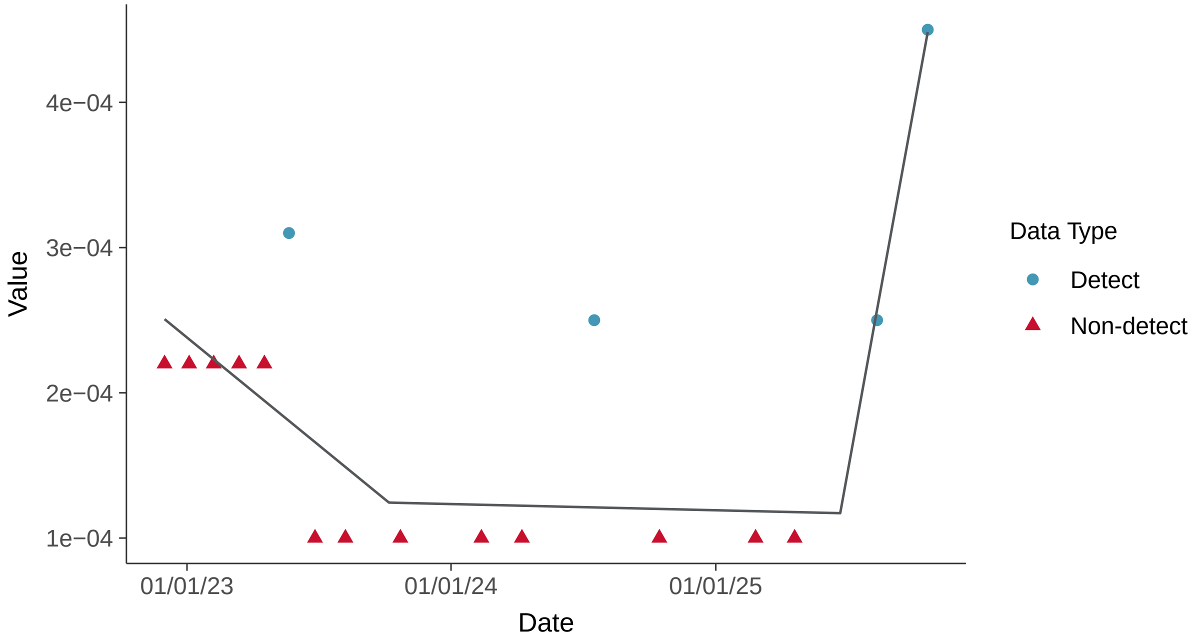
Trend Regression: Piecewise Linear-Linear

Lead, MW-31 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Lead, MW-31 (mg/L)

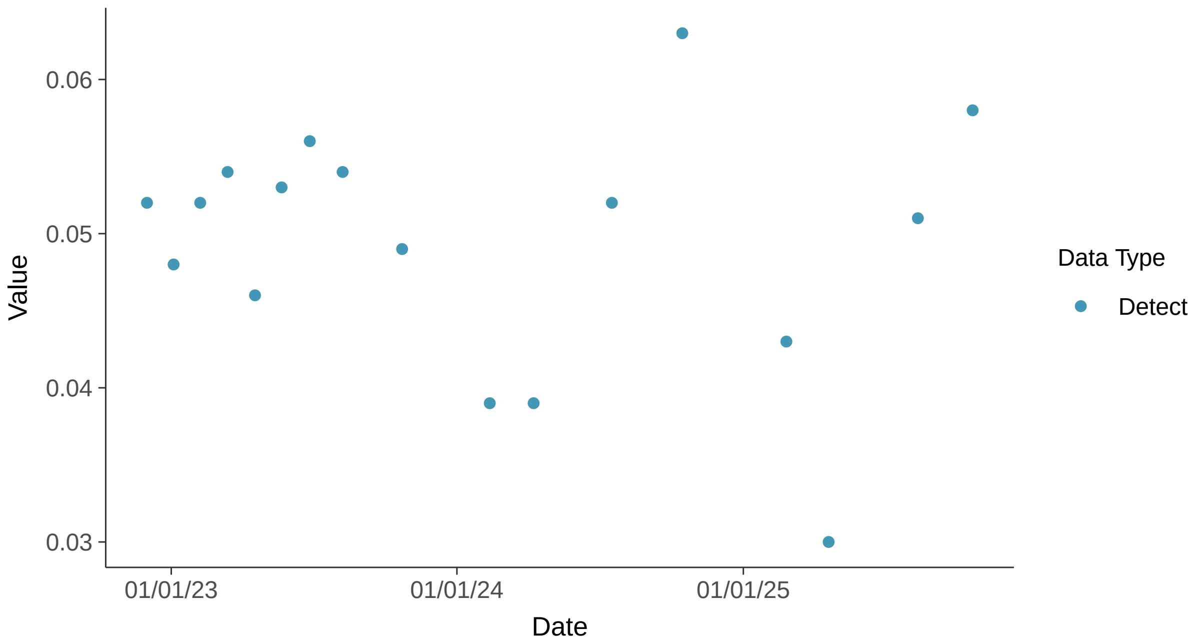


Appendix IV: Lithium, MW-31

ID: 41_1_4_116

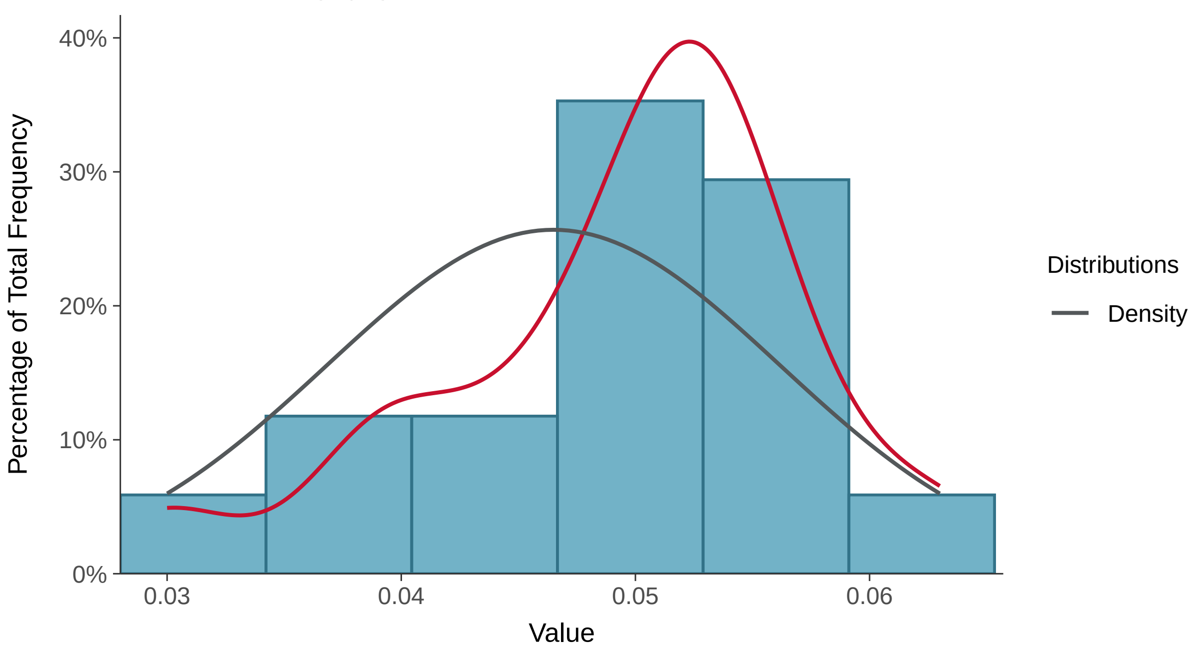
Scatter Plot

Lithium, MW-31 (mg/L)



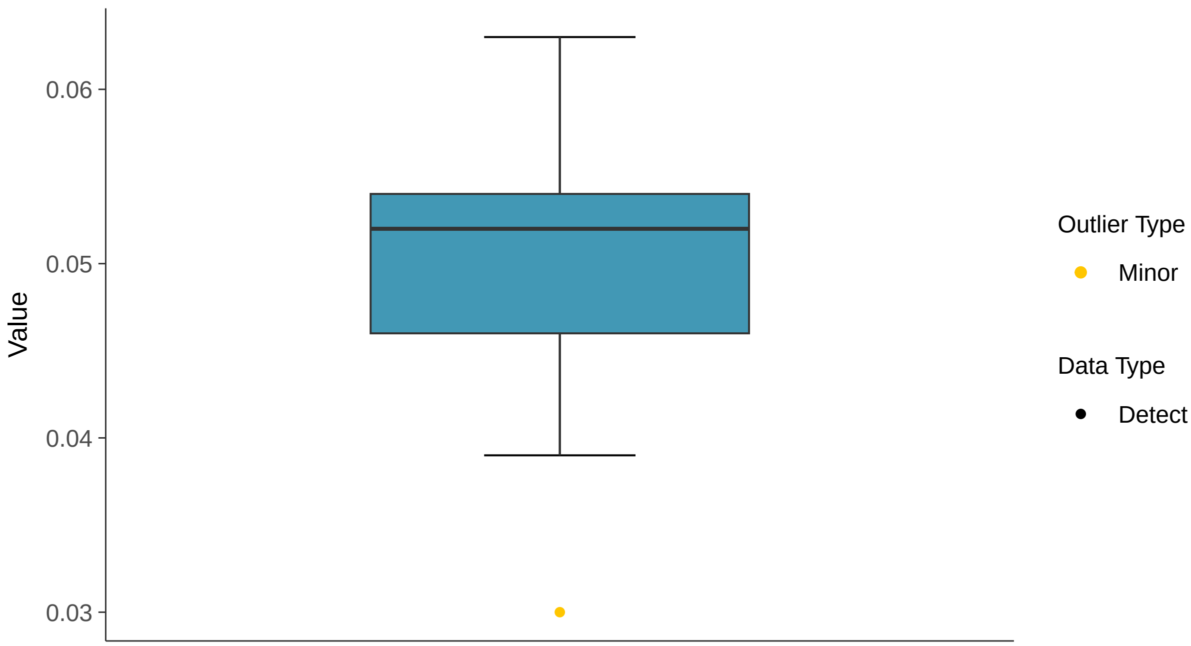
Histogram

Lithium, MW-31 (mg/L)



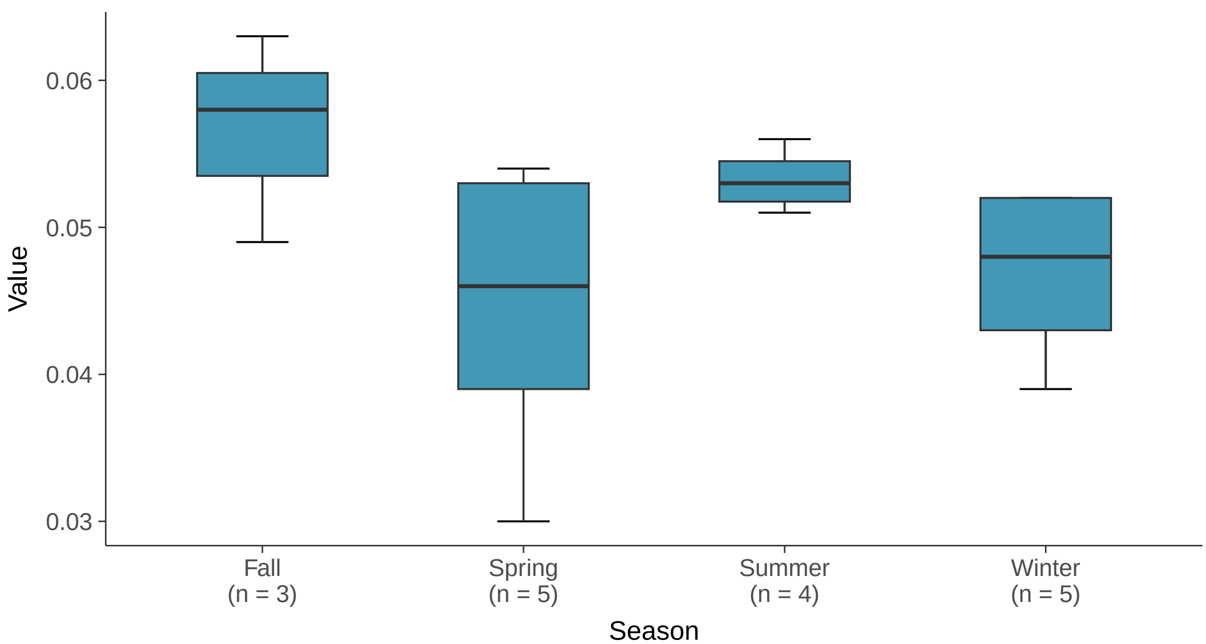
Boxplot

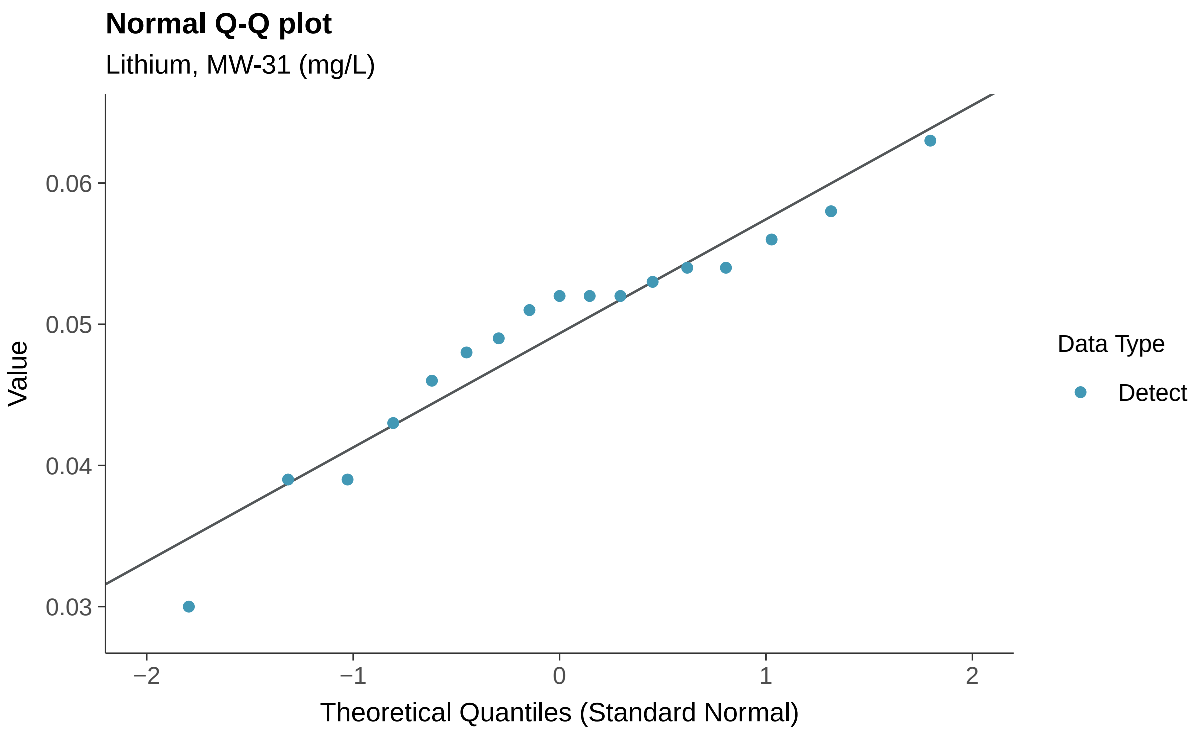
Lithium, MW-31 (mg/L)

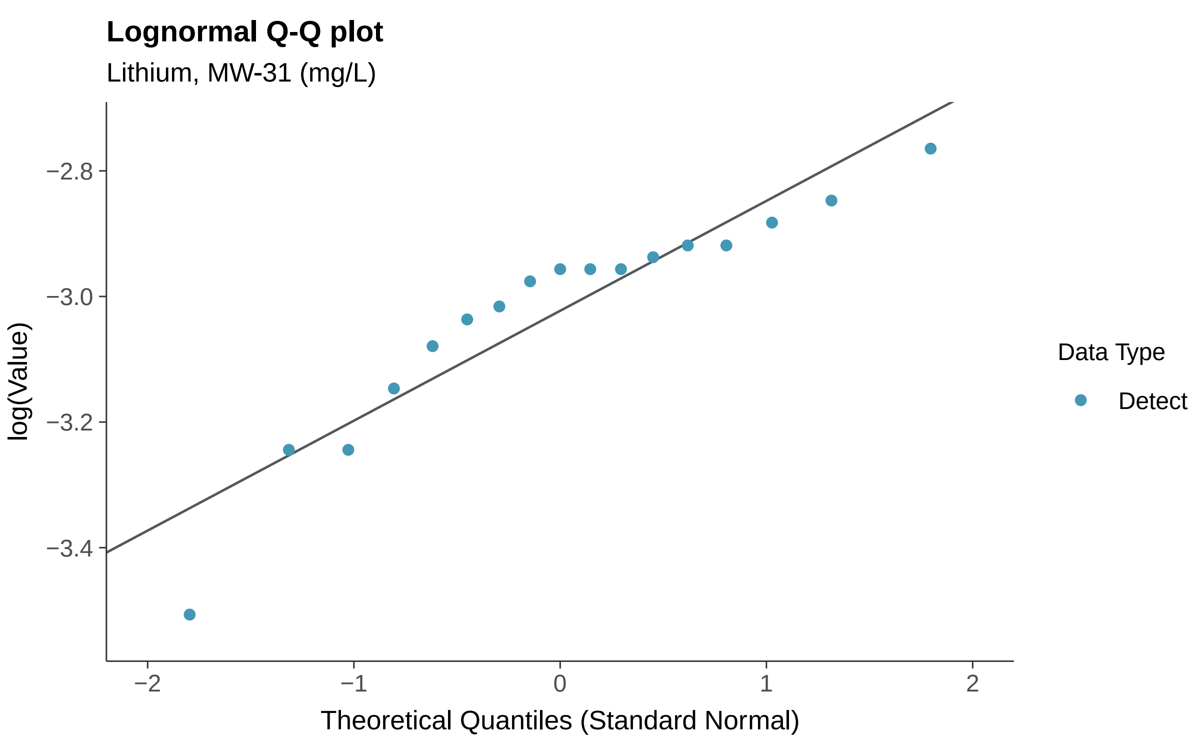


Boxplot by Season

Lithium, MW-31 (mg/L)

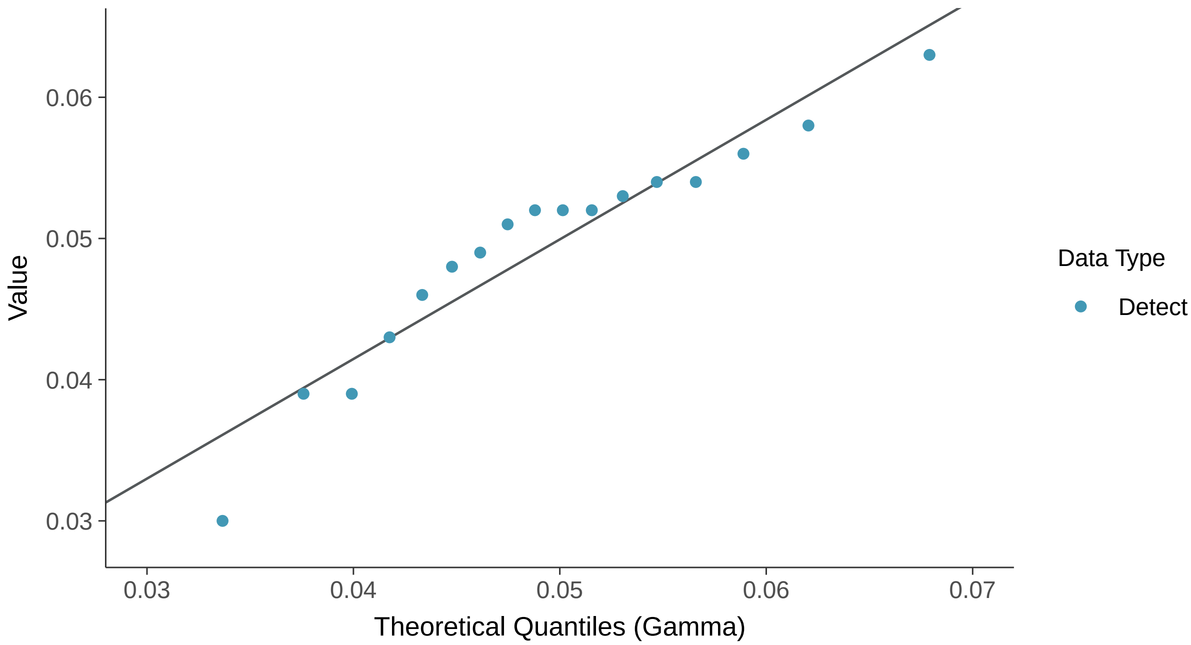



Normal Q-Q plot
Lithium, MW-31 (mg/L)
Value
0.06
0.05
0.04
0.03
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Lithium, MW-31 (mg/L)
log(Value)
−2.8
−3.0
−3.2
−3.4
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

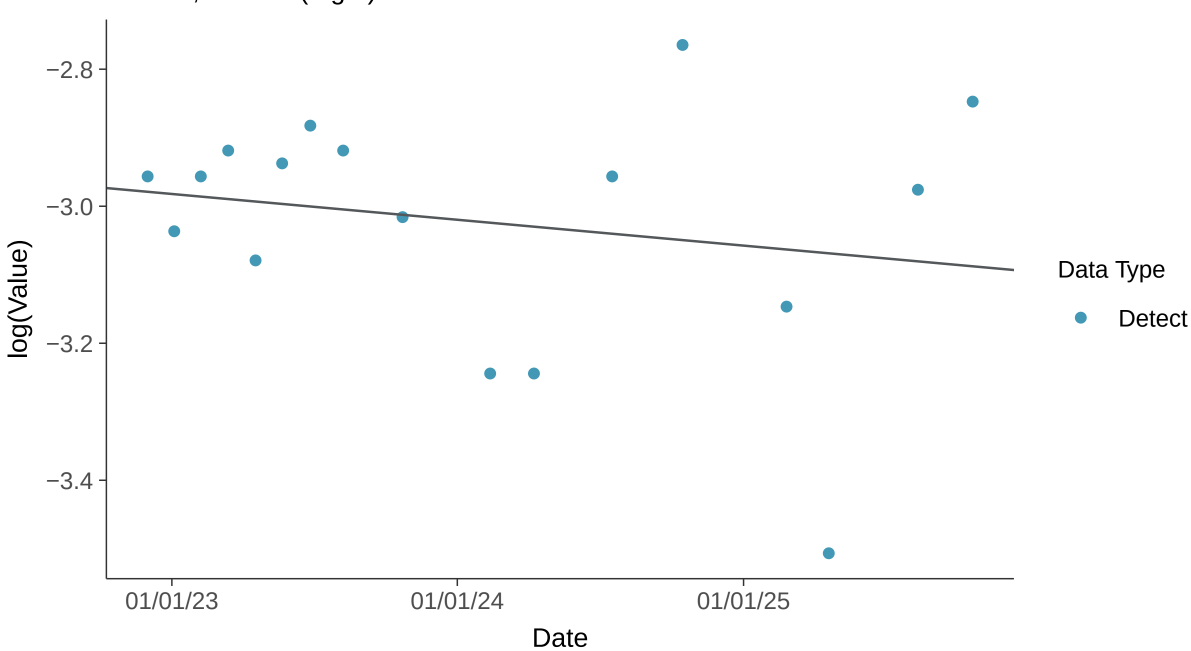
Gamma Q-Q plot

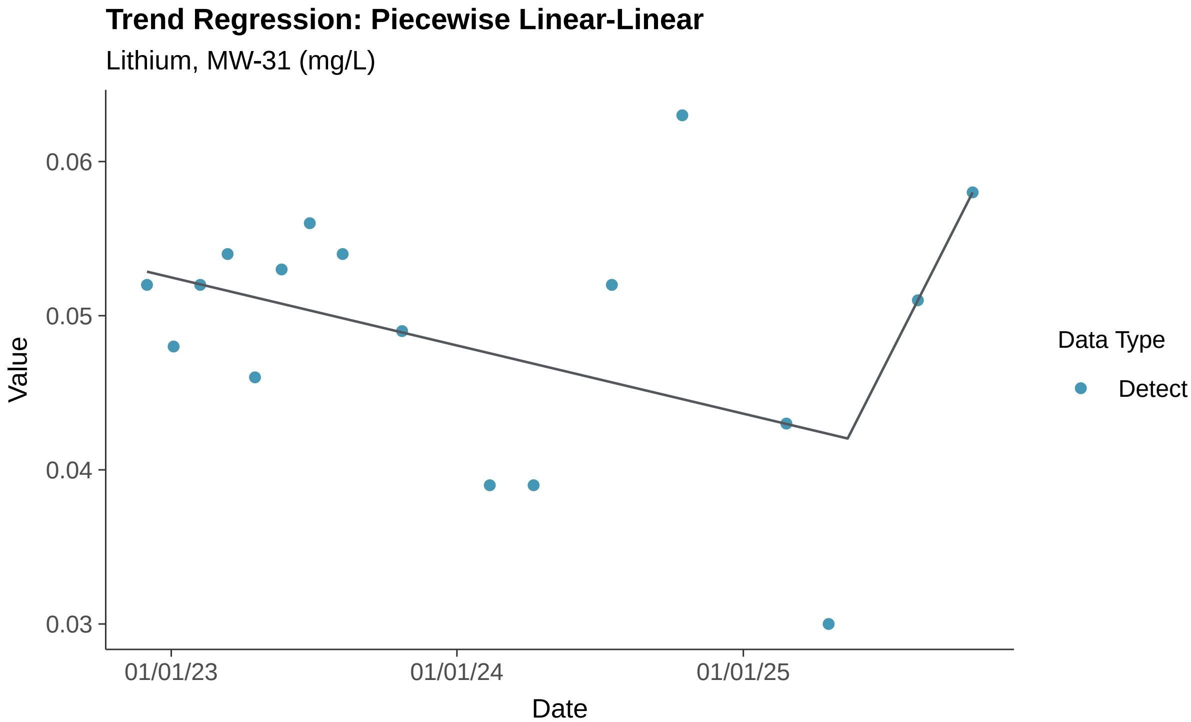
Lithium, MW-31 (mg/L)



Trend Regression: Lognormal MLE

Lithium, MW-31 (mg/L)



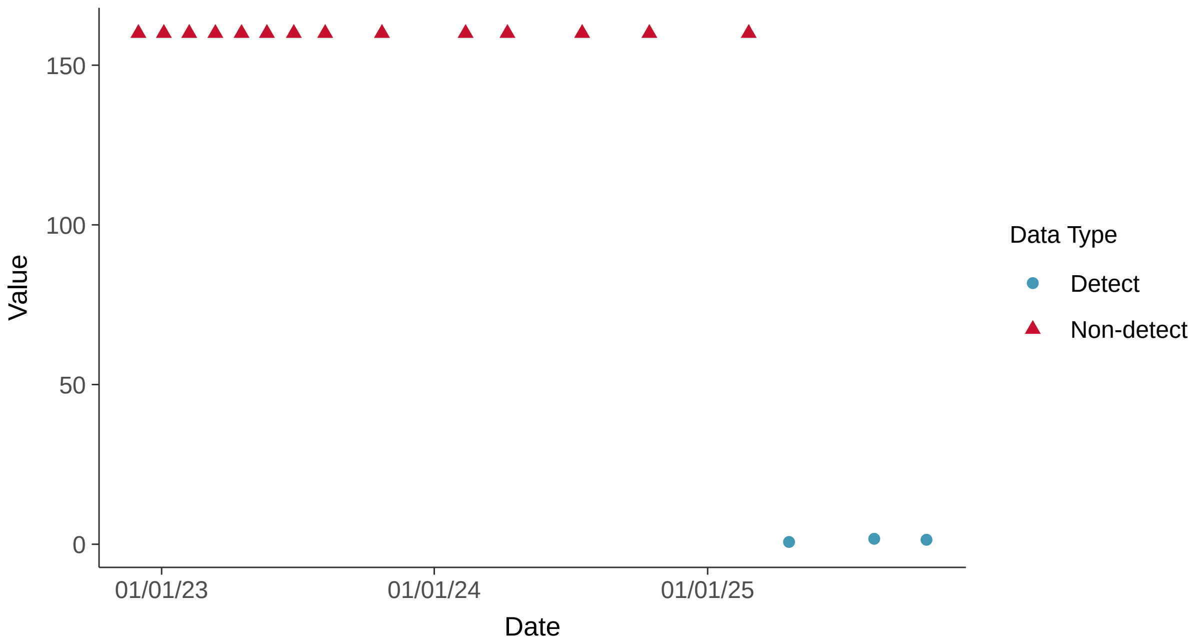

Trend Regression: Piecewise Linear-Linear
Lithium, MW-31 (mg/L)
Value
0.06
0.05
0.04
0.03
Date
01/01/23
01/01/24
01/01/25
Data Type
Detect

Appendix IV: Mercury, MW-31

ID: 41_1_4_117

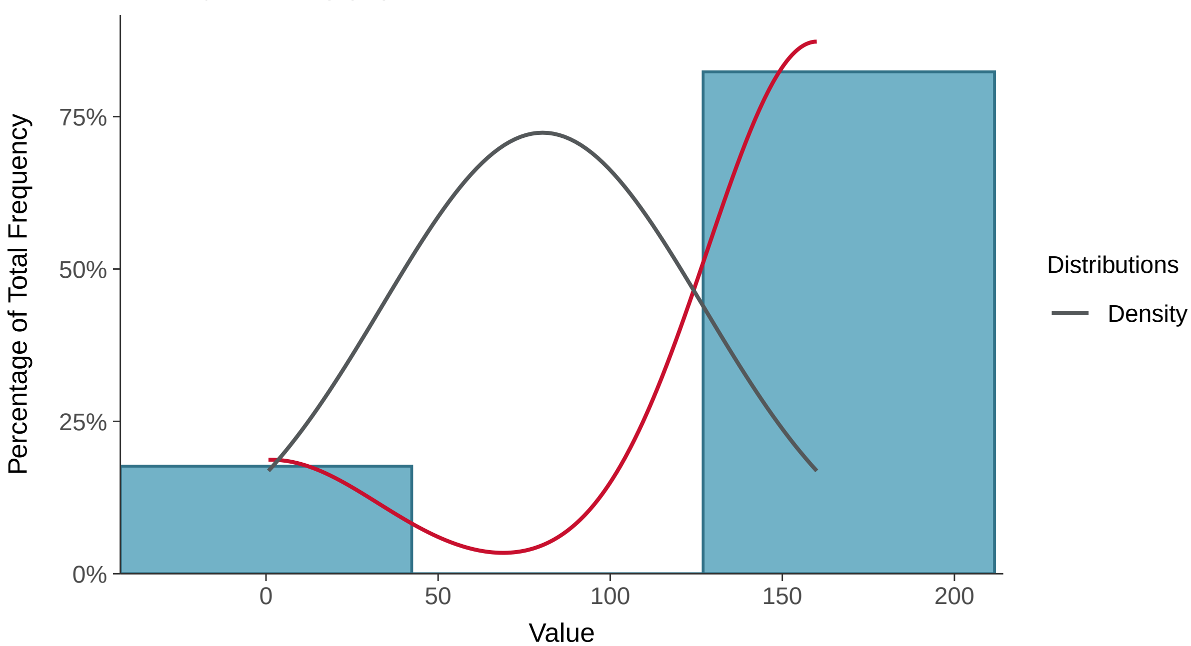
Scatter Plot

Mercury, MW-31 (ng/L)



Histogram

Mercury, MW-31 (ng/L)

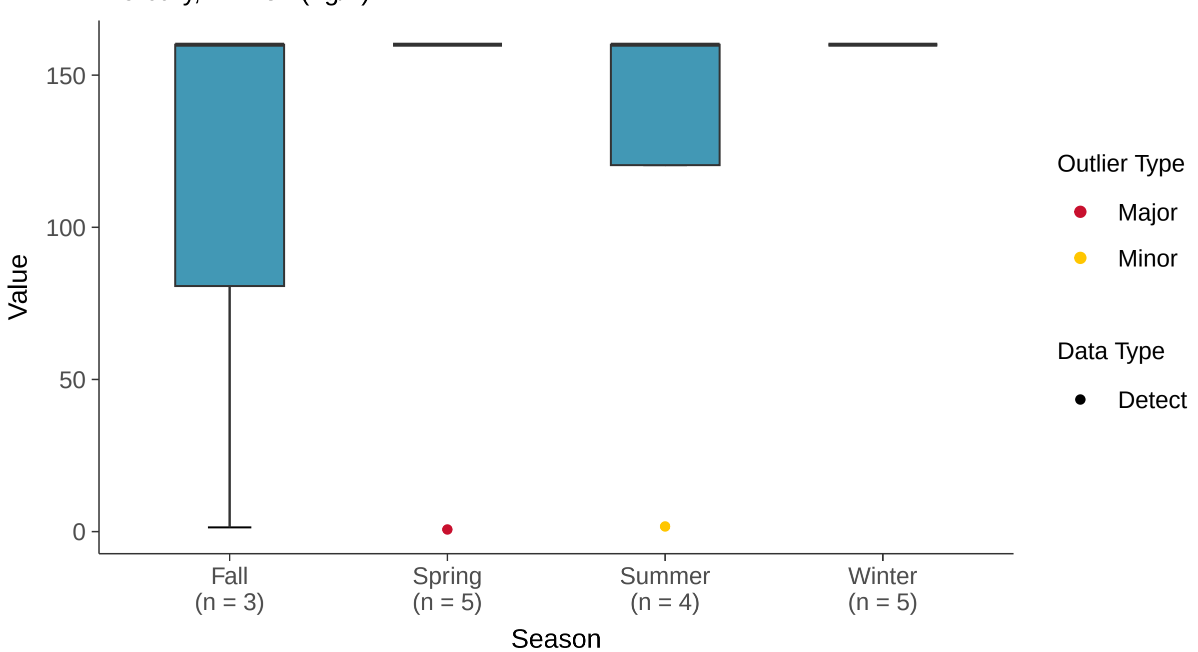


Boxplot

Mercury, MW-31 (ng/L)

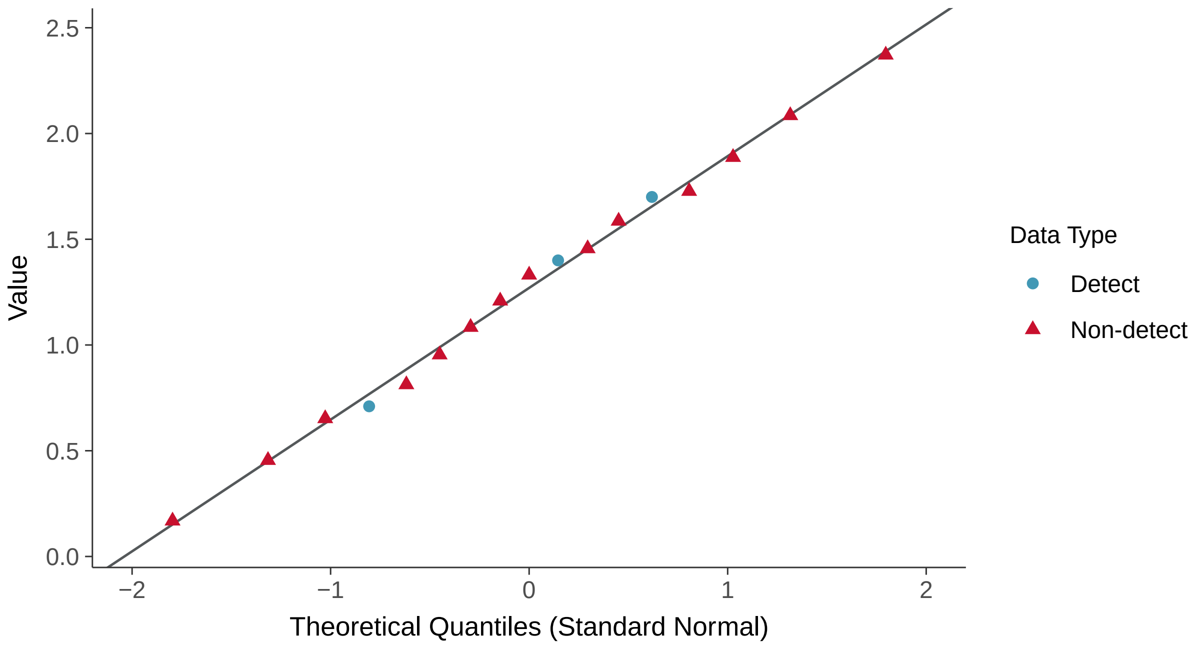
Boxplot by Season

Mercury, MW-31 (ng/L)



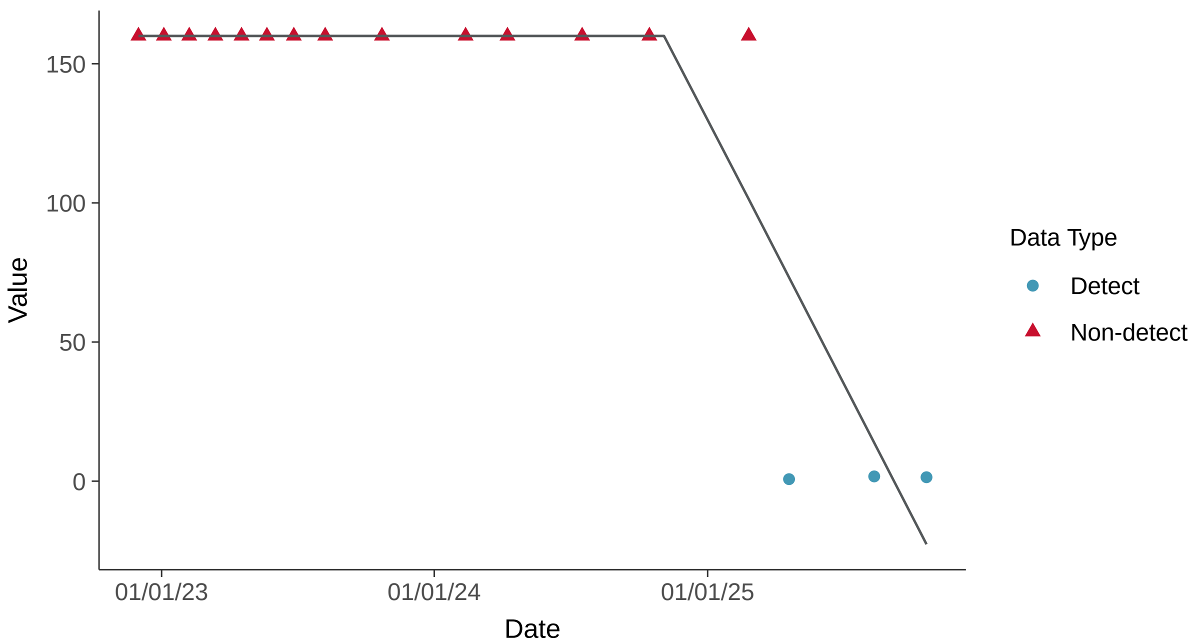
Normal Q-Q plot using ROS Imputed Estimates

Mercury, MW-31 (ng/L)



Trend Regression: Piecewise Linear-Linear

Mercury, MW-31 (ng/L)

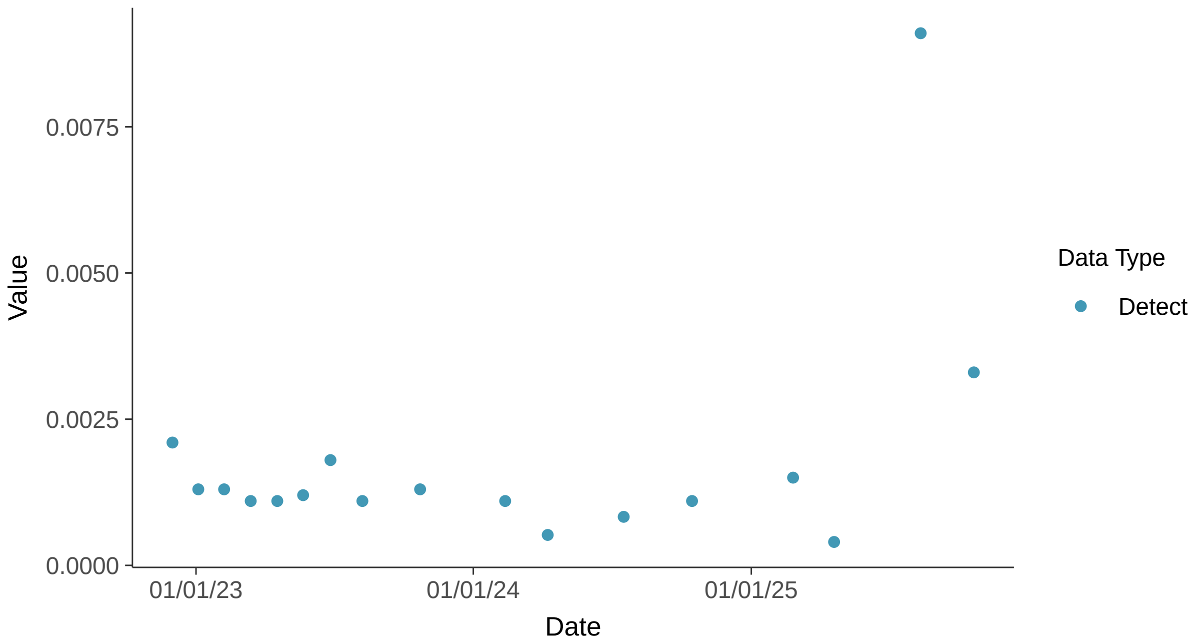


Appendix IV: Molybdenum, MW-31

ID: 41_1_4_118

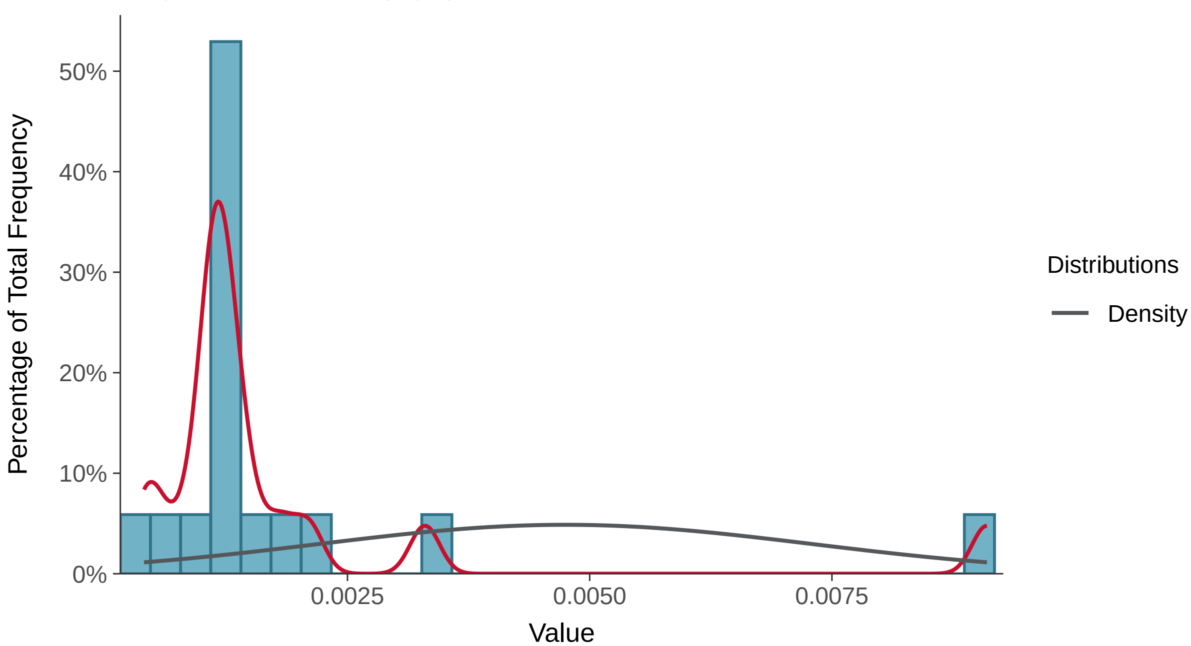
Scatter Plot

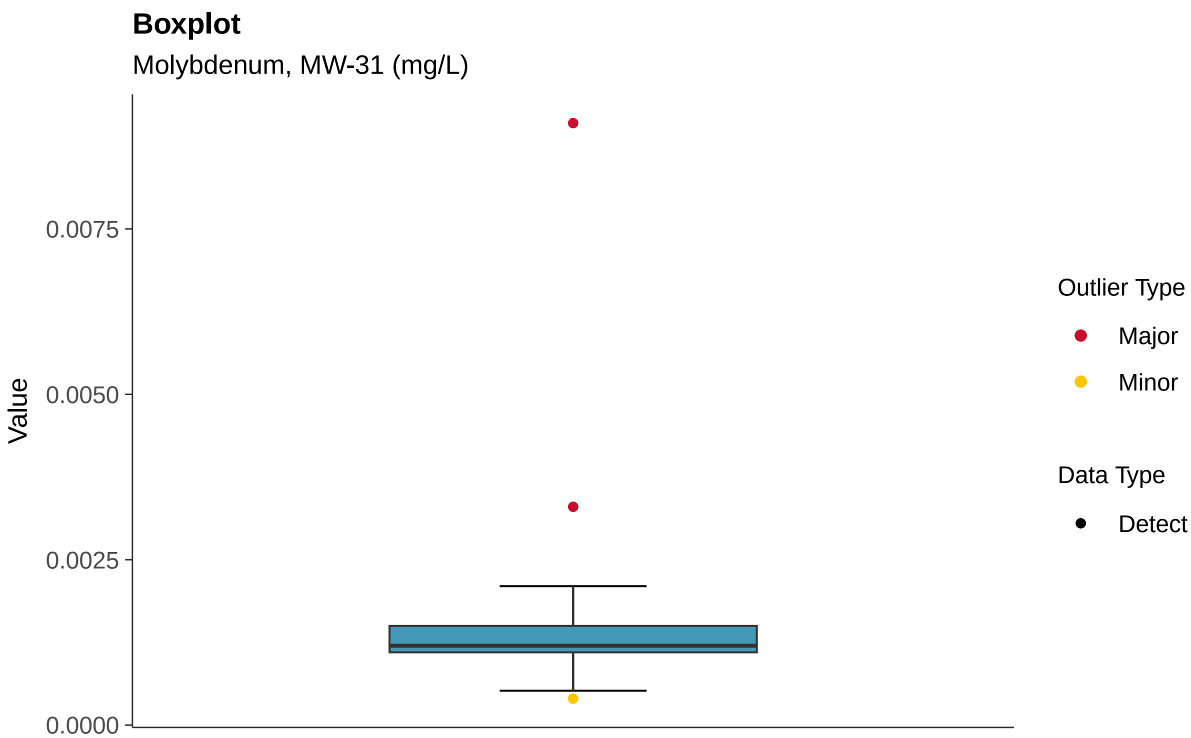
Molybdenum, MW-31 (mg/L)

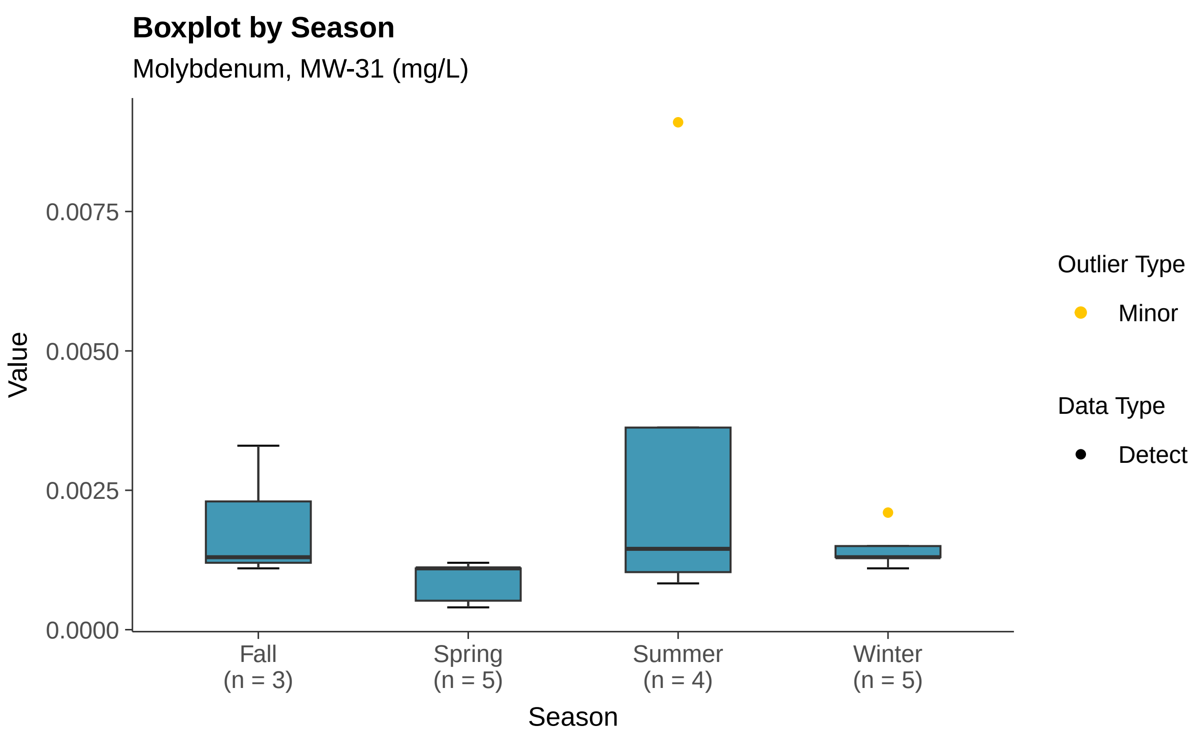


Histogram

Molybdenum, MW-31 (mg/L)

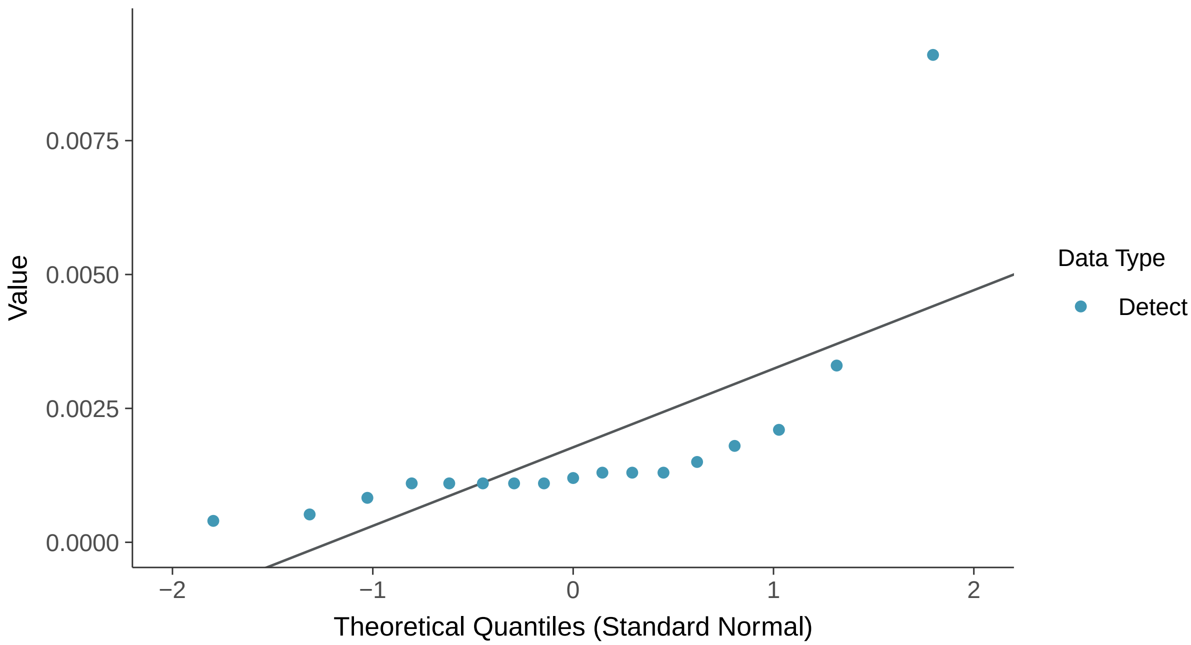



Boxplot
Molybdenum, MW-31 (mg/L)
Value
0.0075
0.0050
0.0025
0.0000
Outlier Type
Major
Minor
Data Type
Detect


Boxplot by Season
Molybdenum, MW-31 (mg/L)
Value
0.0075
0.0050
0.0025
0.0000
Fall
(n = 3)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 5)
Season
Outlier Type
Minor
Data Type
Detect

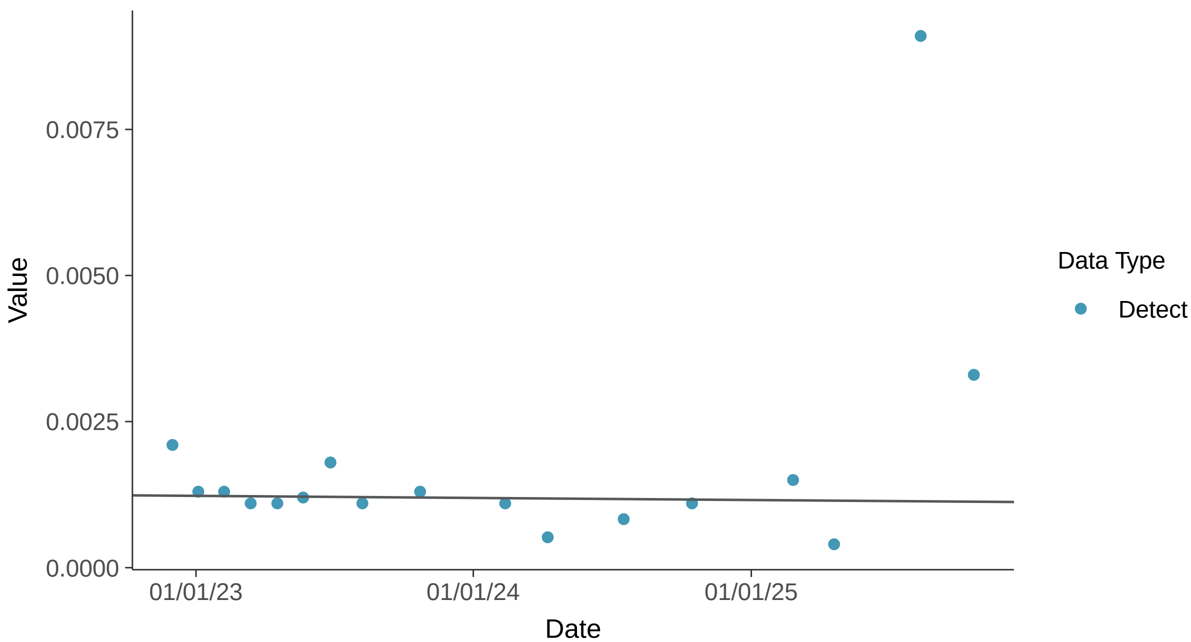
Normal Q-Q plot

Molybdenum, MW-31 (mg/L)



Trend Regression: Mann-Kendall/Theil-Sen Estimate

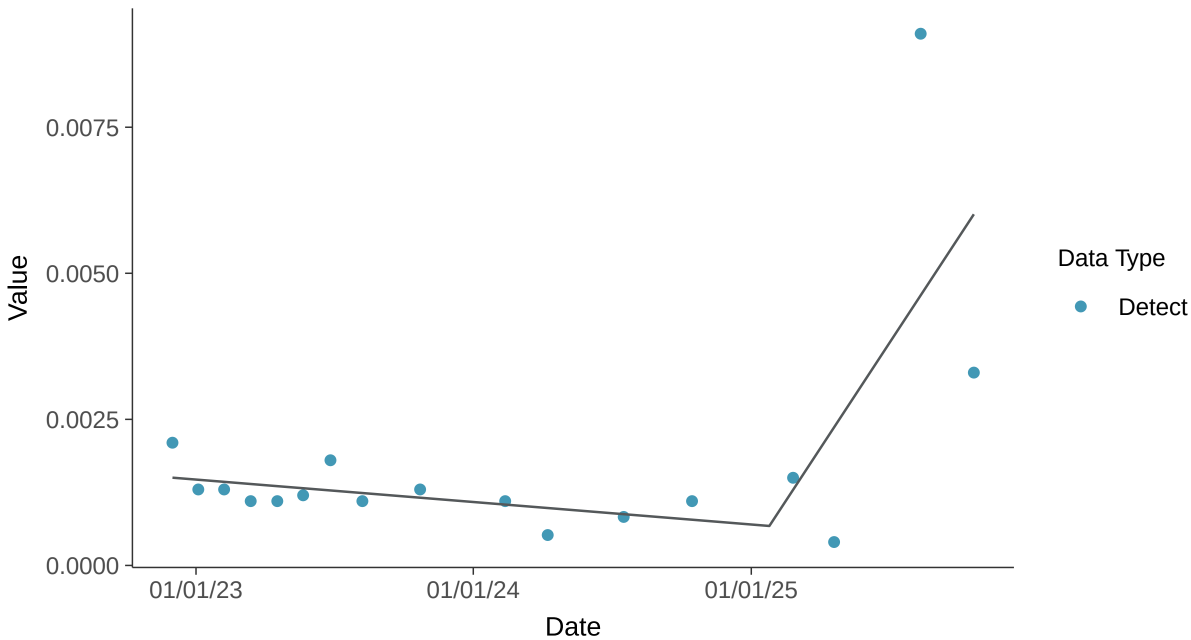
Molybdenum, MW-31 (mg/L)



Grand Haven
Downgradient Wells as of October 2025

Trend Regression: Piecewise Linear-Linear

Molybdenum, MW-31 (mg/L)

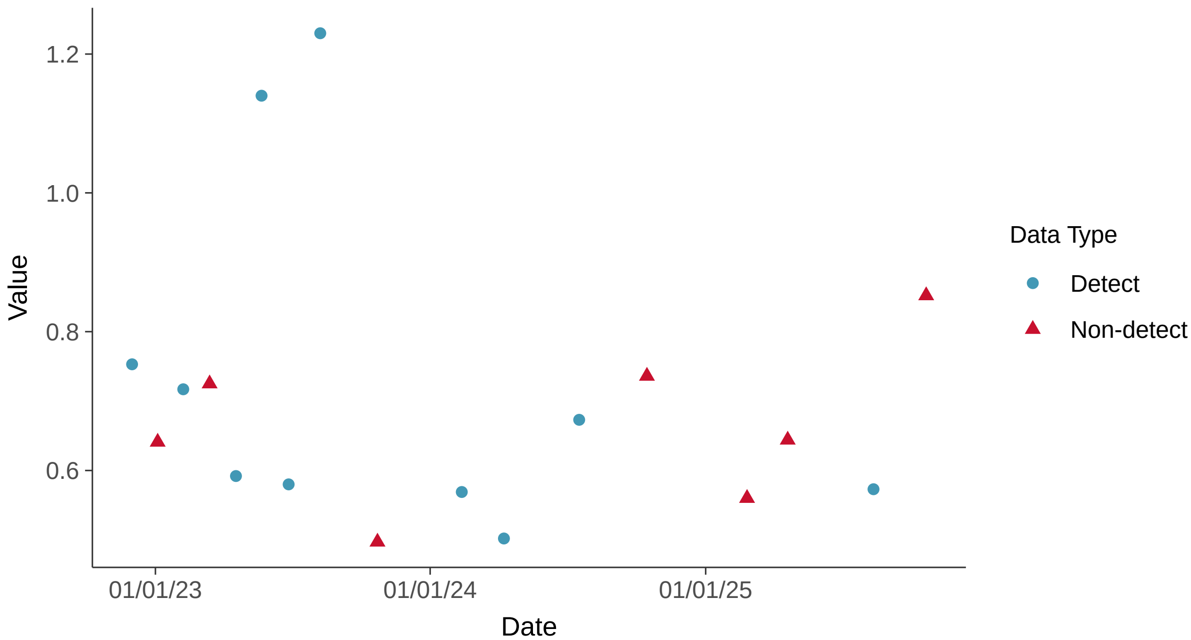


Appendix IV: Radium 226 and 228, MW-31

ID: 41_1_4_121

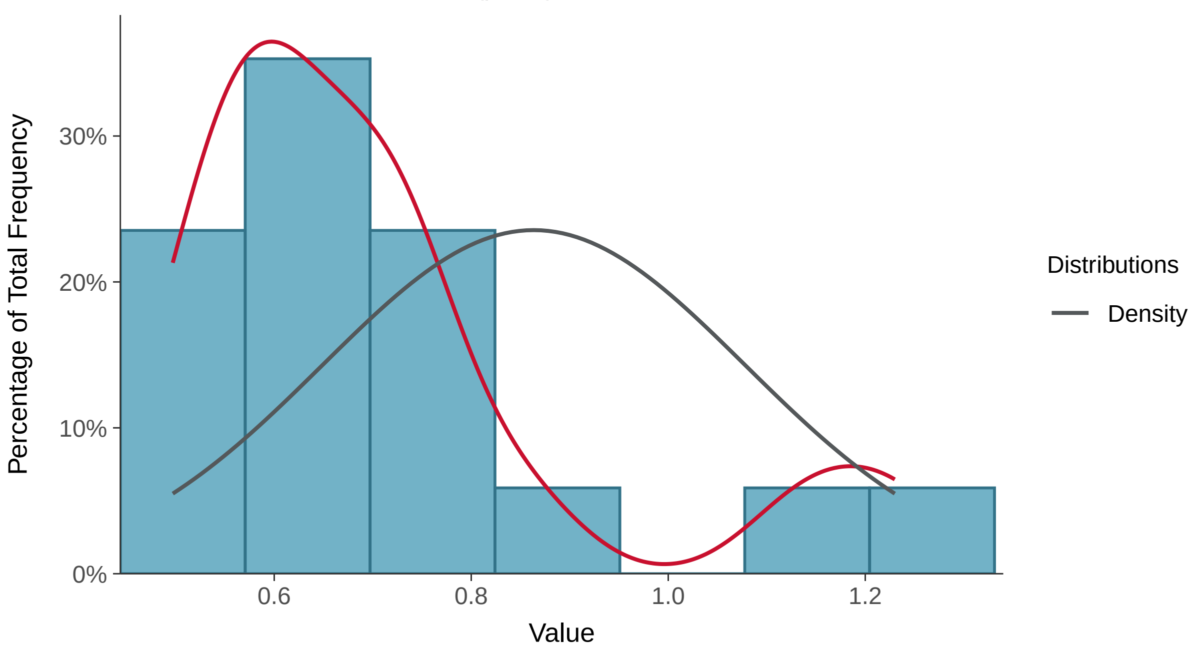
Scatter Plot

Radium 226 and 228, MW-31 (pCi/L)



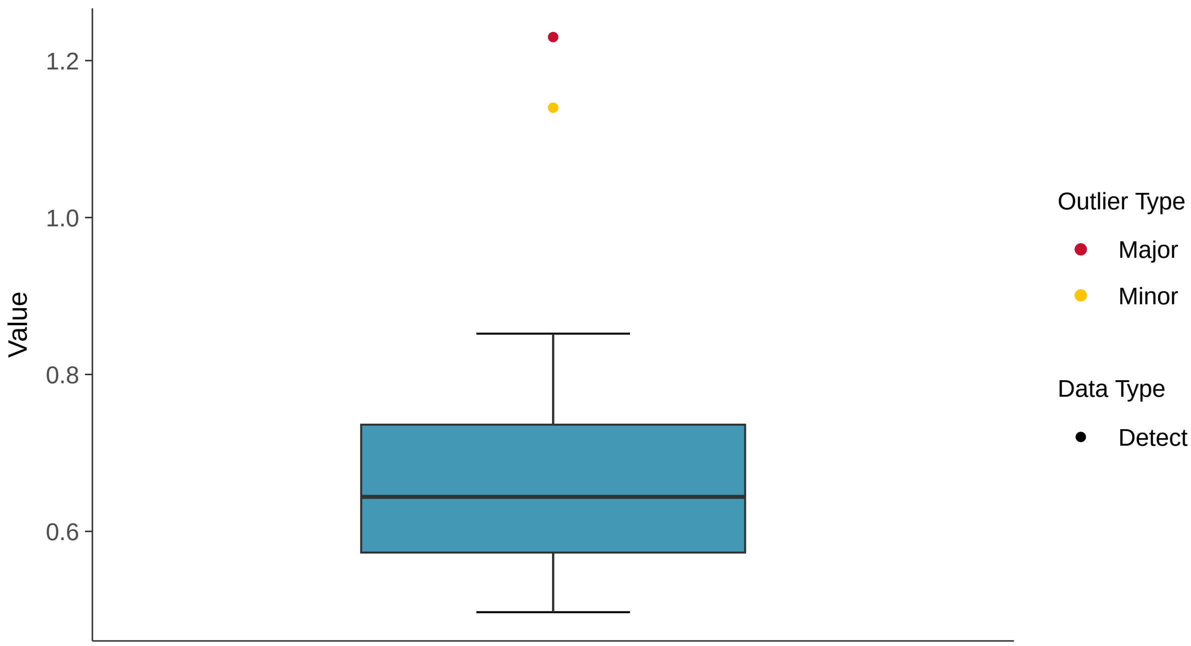
Histogram

Radium 226 and 228, MW-31 (pCi/L)



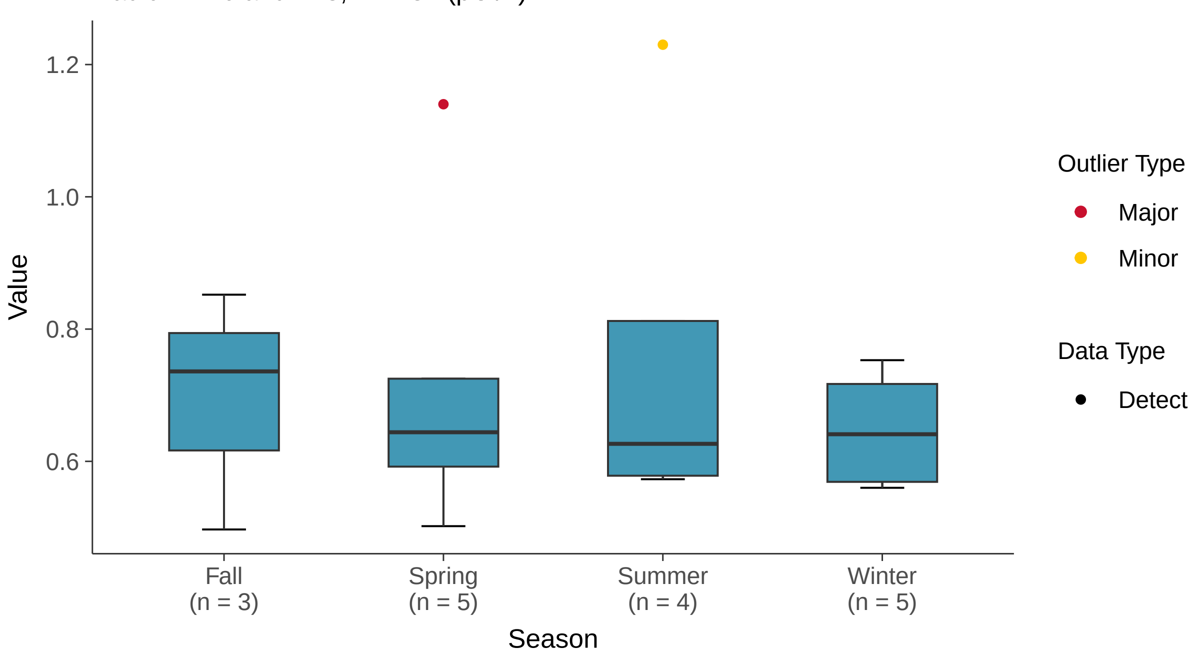
Boxplot

Radium 226 and 228, MW-31 (pCi/L)



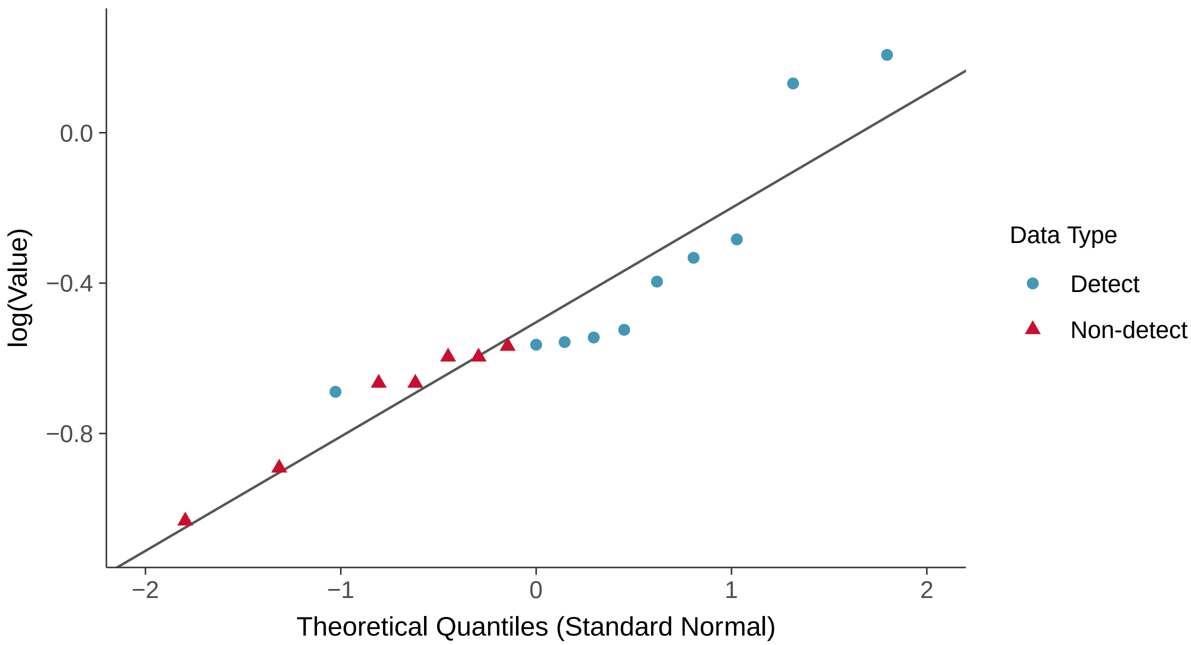
Boxplot by Season

Radium 226 and 228, MW-31 (pCi/L)



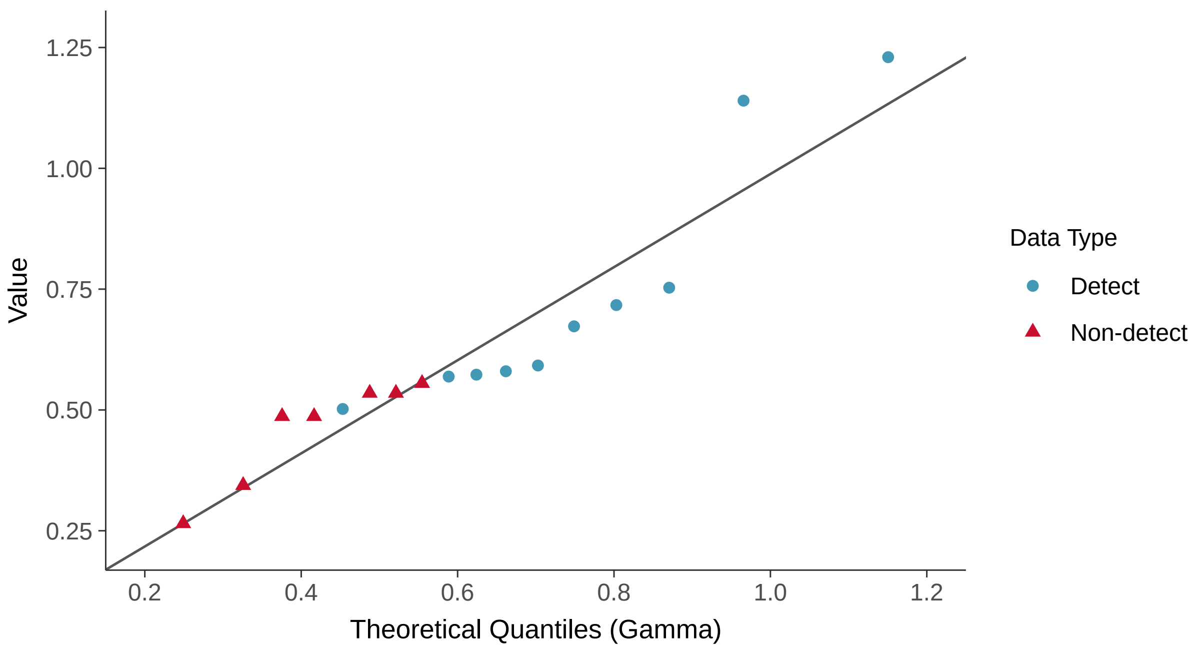
Lognormal Q-Q plot using ROS Imputed Estimates

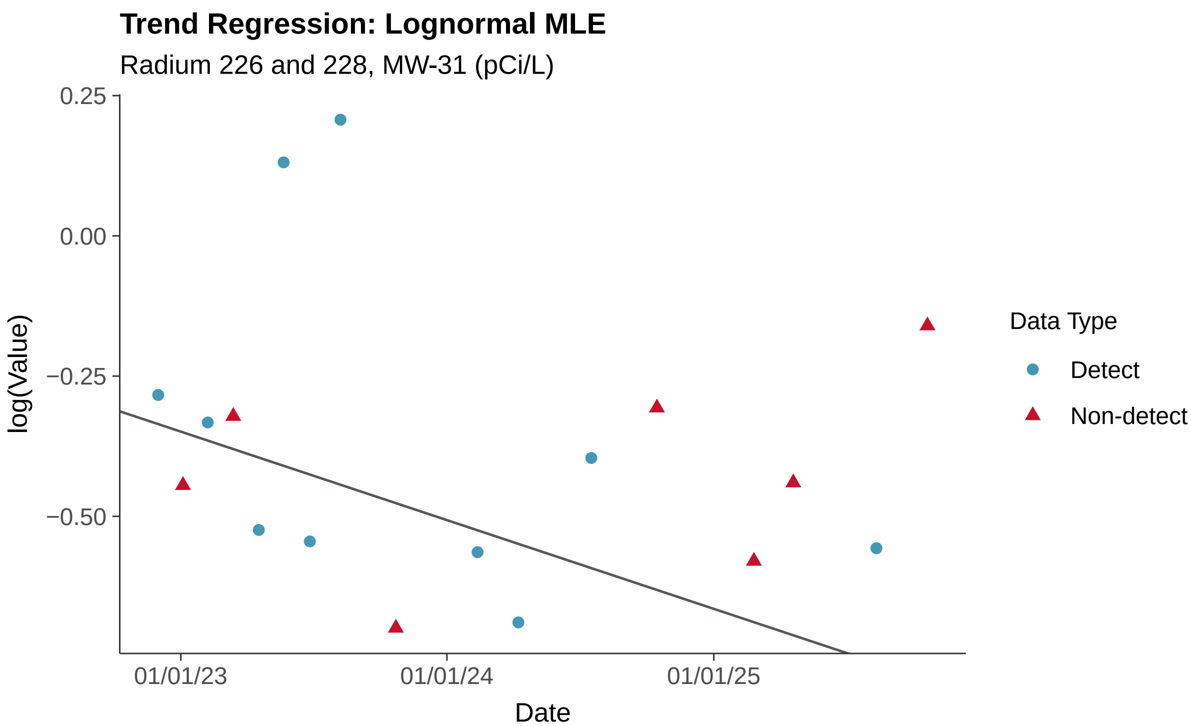
Radium 226 and 228, MW-31 (pCi/L)

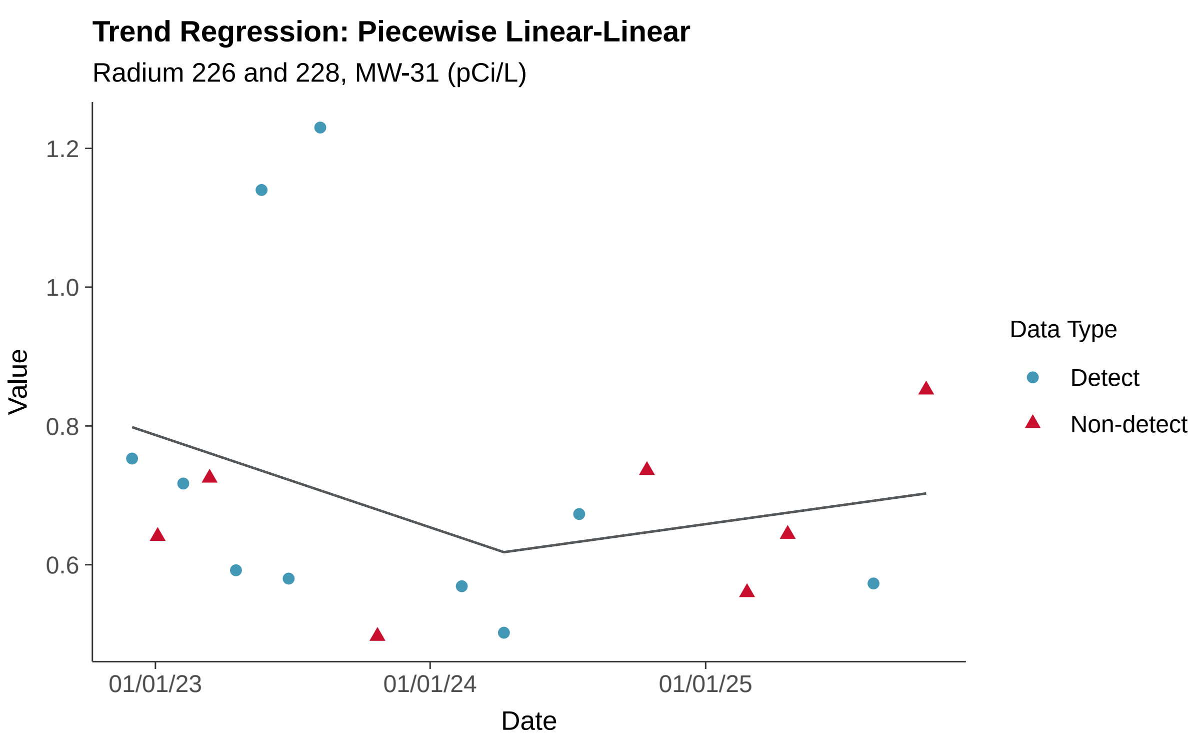


Gamma Q-Q plot using ROS Imputed Estimates

Radium 226 and 228, MW-31 (pCi/L)

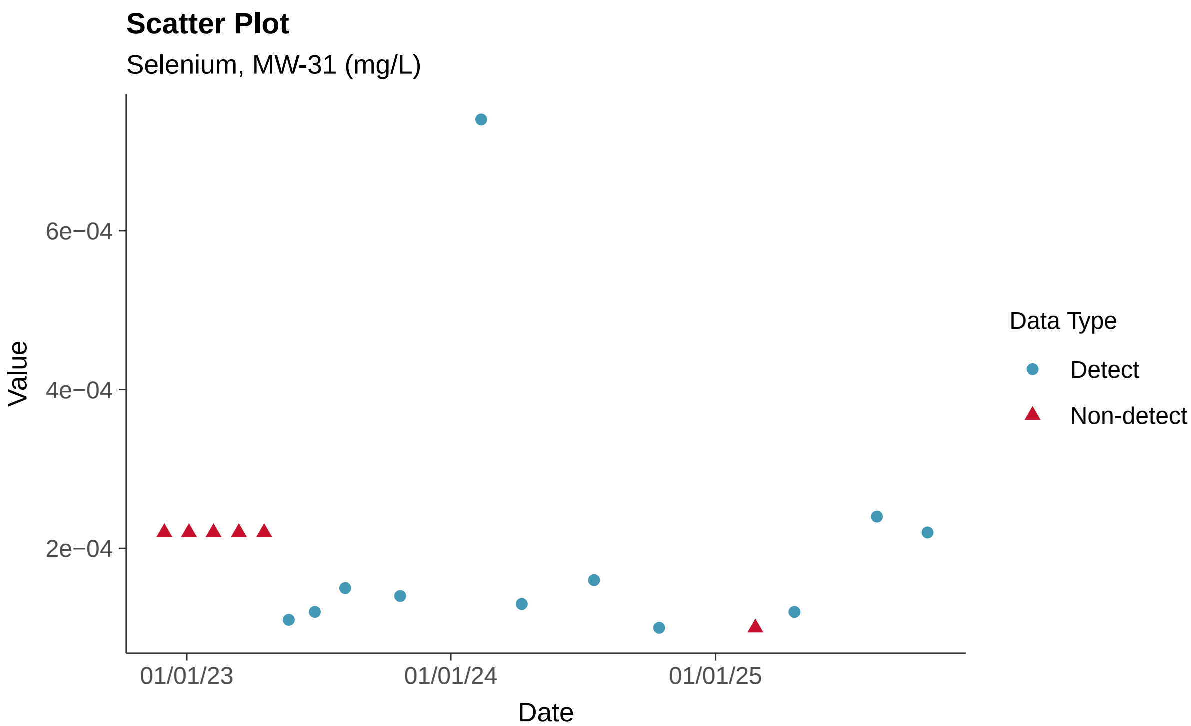


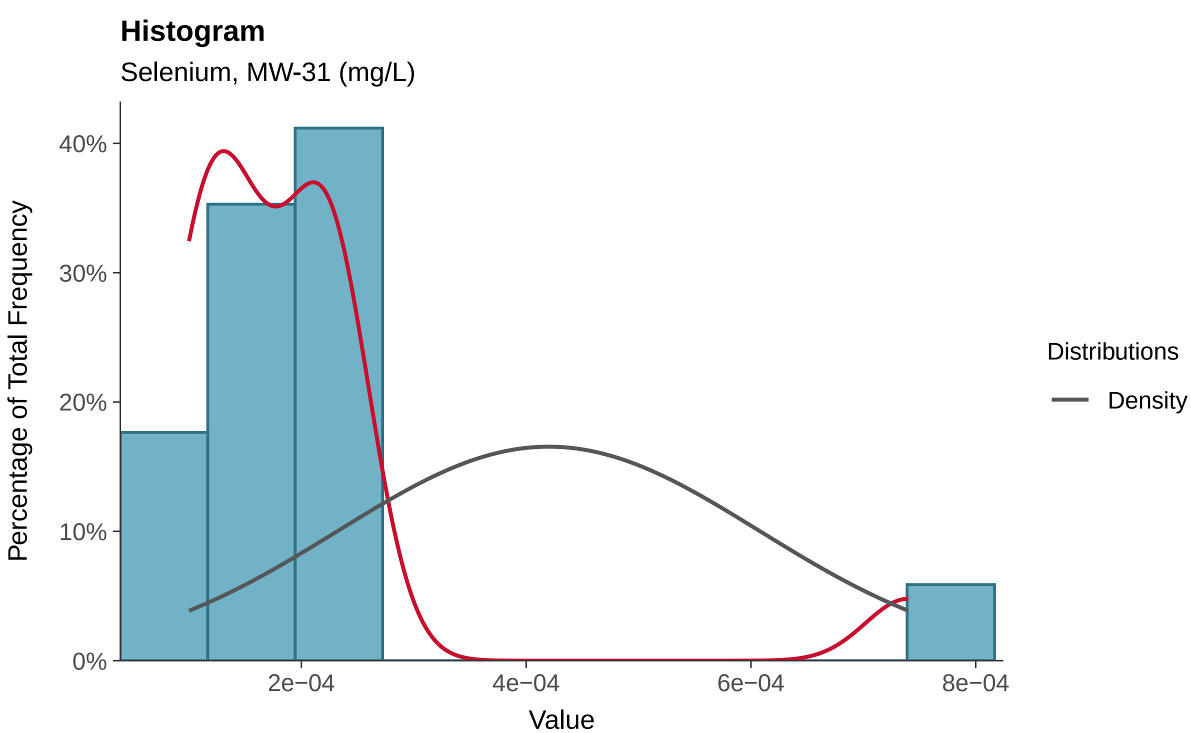

Trend Regression: Lognormal MLE
Radium 226 and 228, MW-31 (pCi/L)
0.25
0.00
−0.25
−0.50
log(Value)
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Radium 226 and 228, MW-31 (pCi/L)
1.2
1.0
0.8
0.6
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Appendix IV: Selenium, MW-31

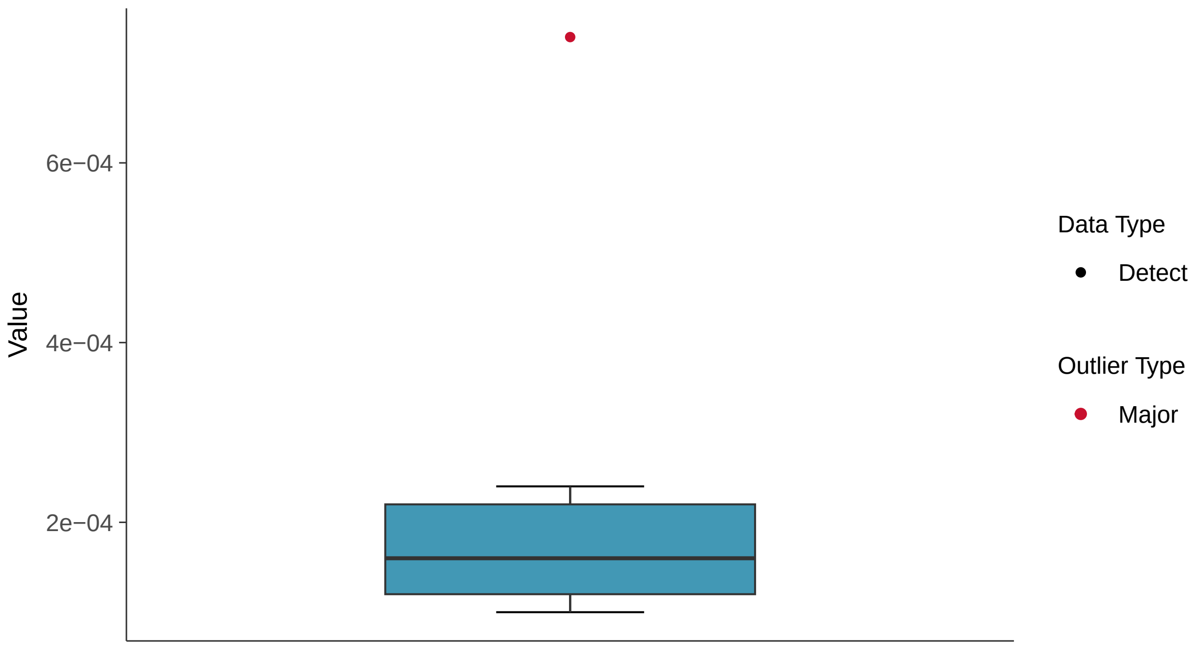
ID: 41_1_4_122





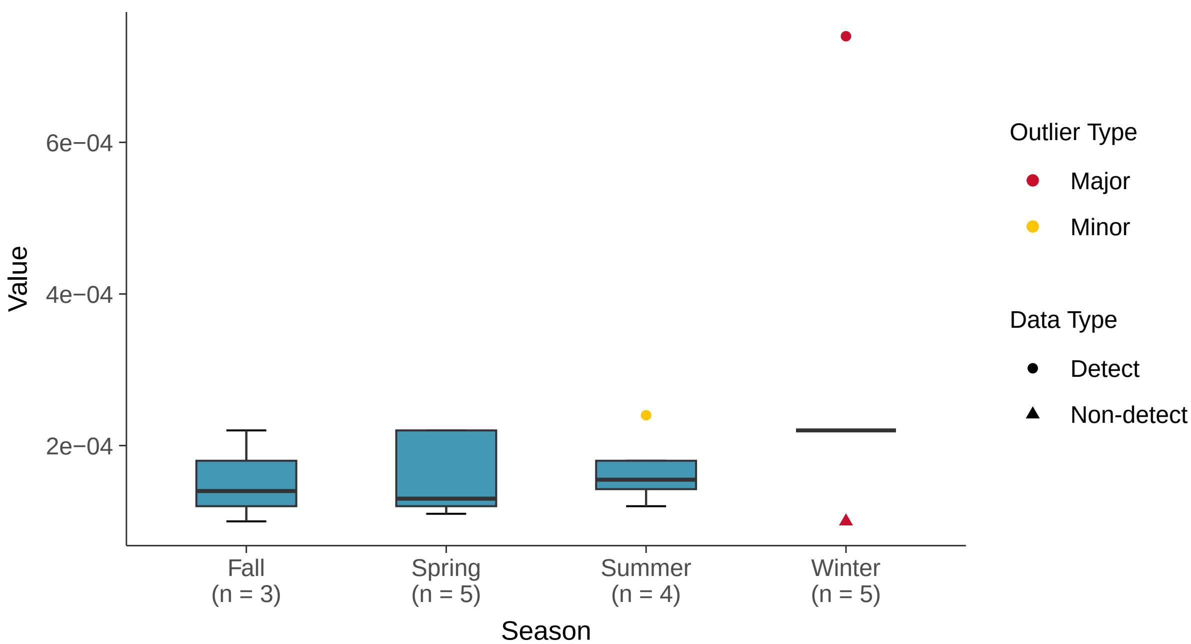
Boxplot

Selenium, MW-31 (mg/L)



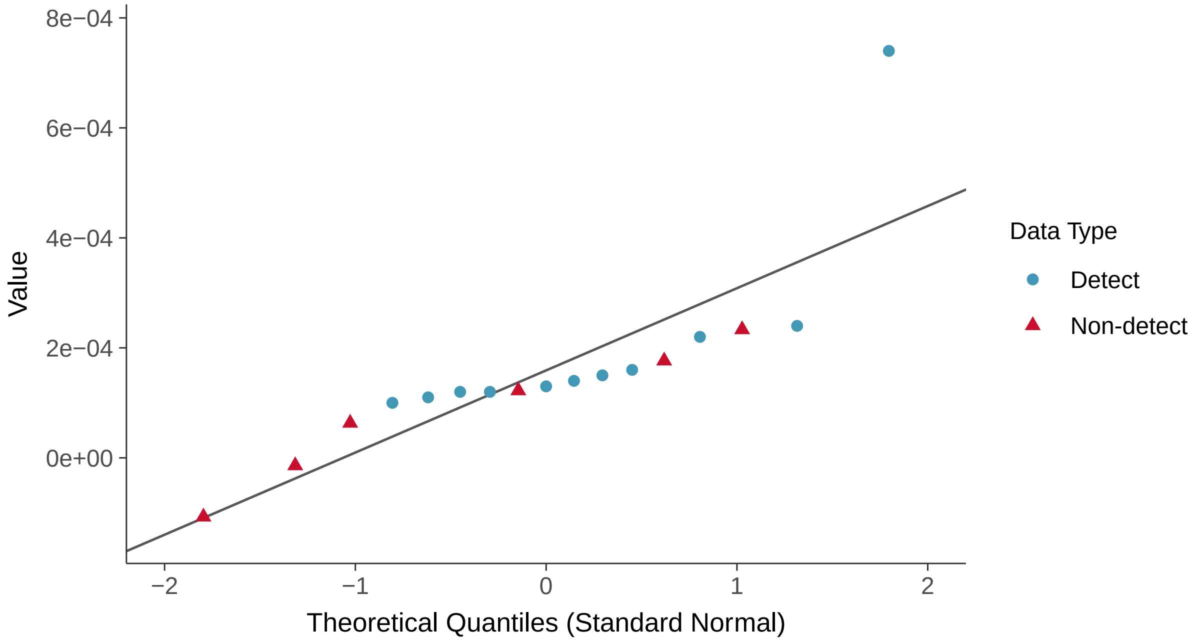
Boxplot by Season

Selenium, MW-31 (mg/L)



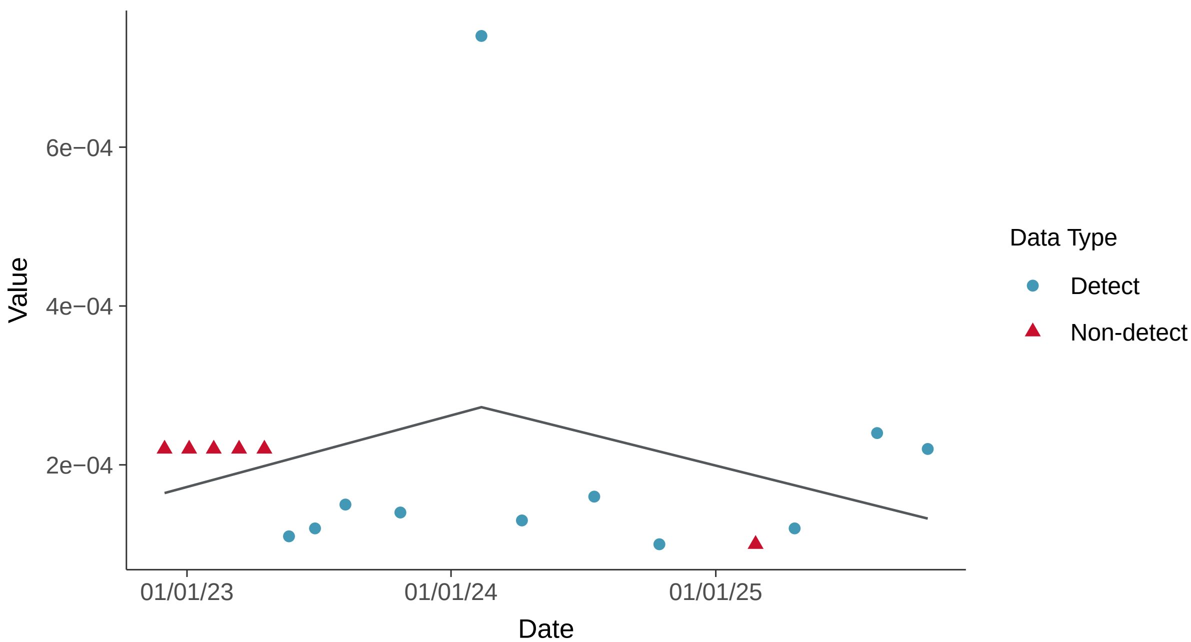
Normal Q-Q plot using ROS Imputed Estimates

Selenium, MW-31 (mg/L)



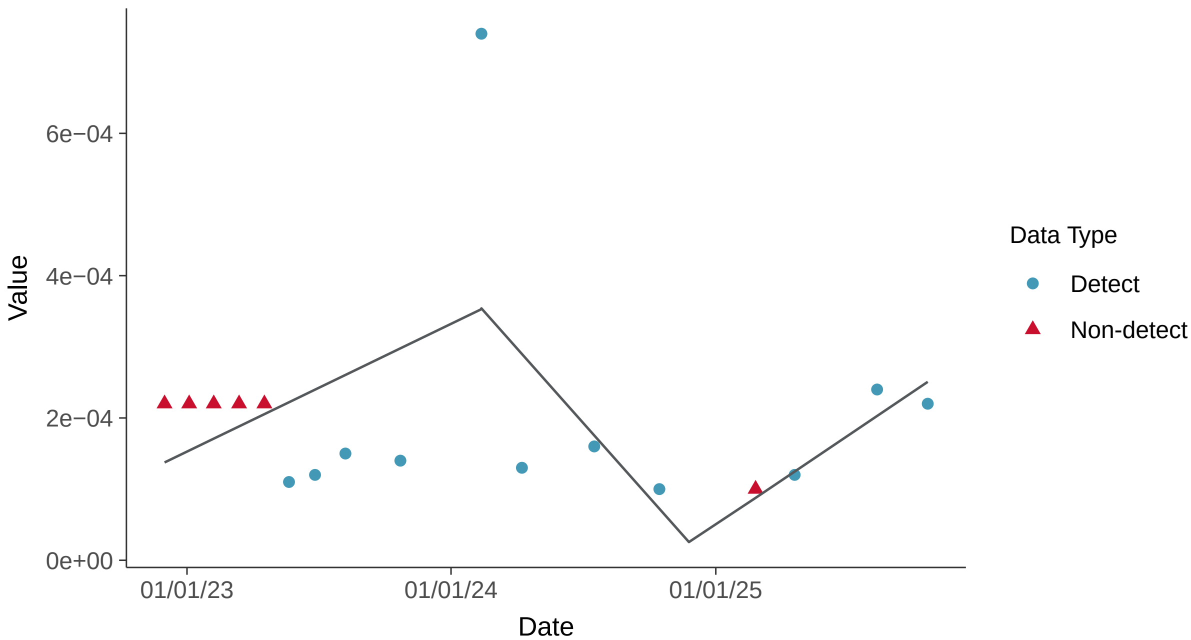
Trend Regression: Piecewise Linear-Linear

Selenium, MW-31 (mg/L)



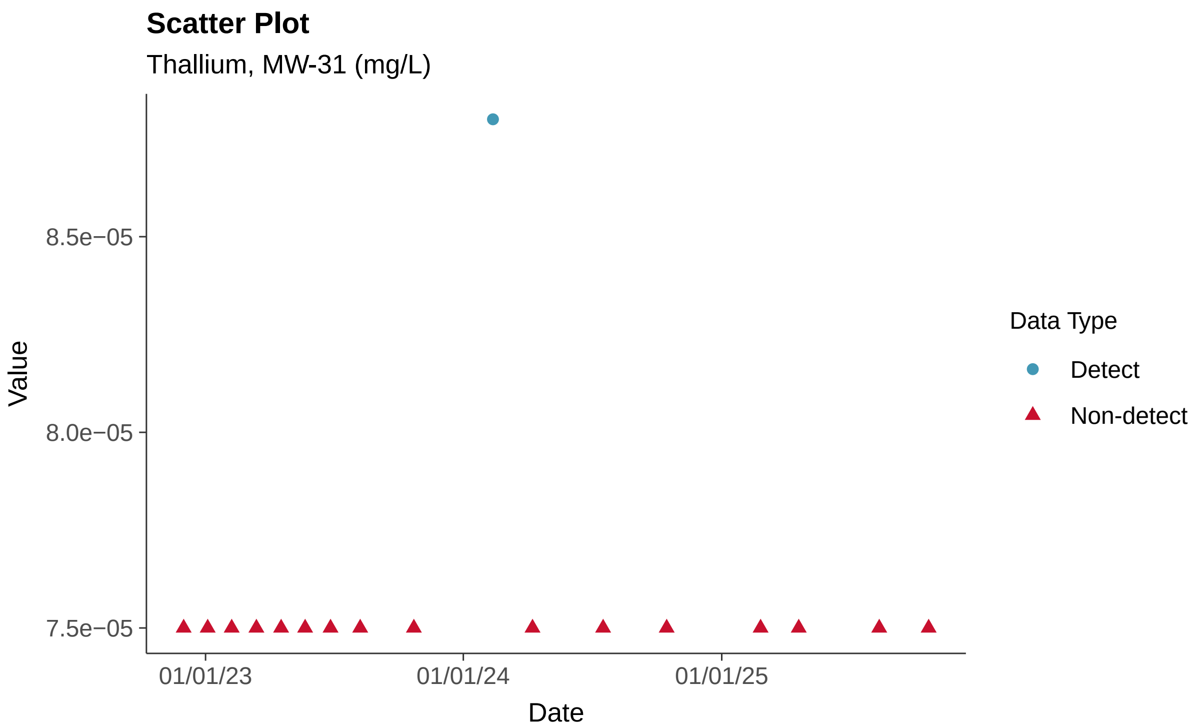
Trend Regression: Piecewise Linear-Linear-Linear

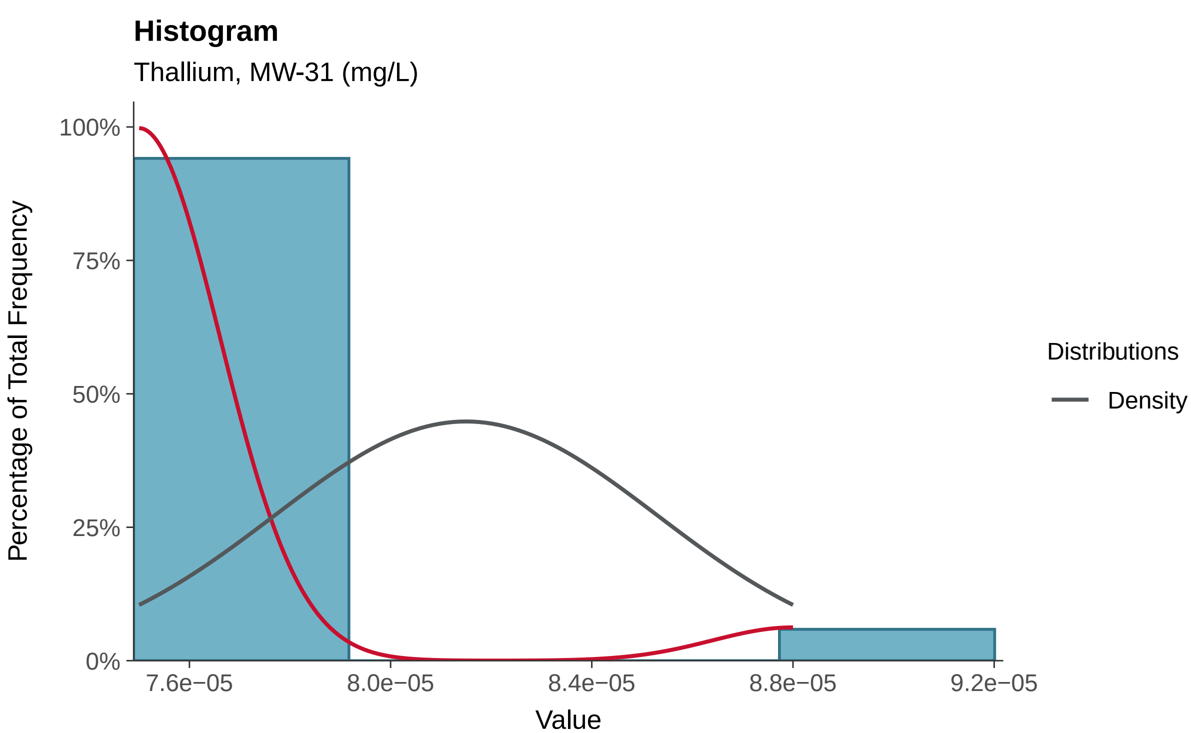
Selenium, MW-31 (mg/L)



Appendix IV: Thallium, MW-31

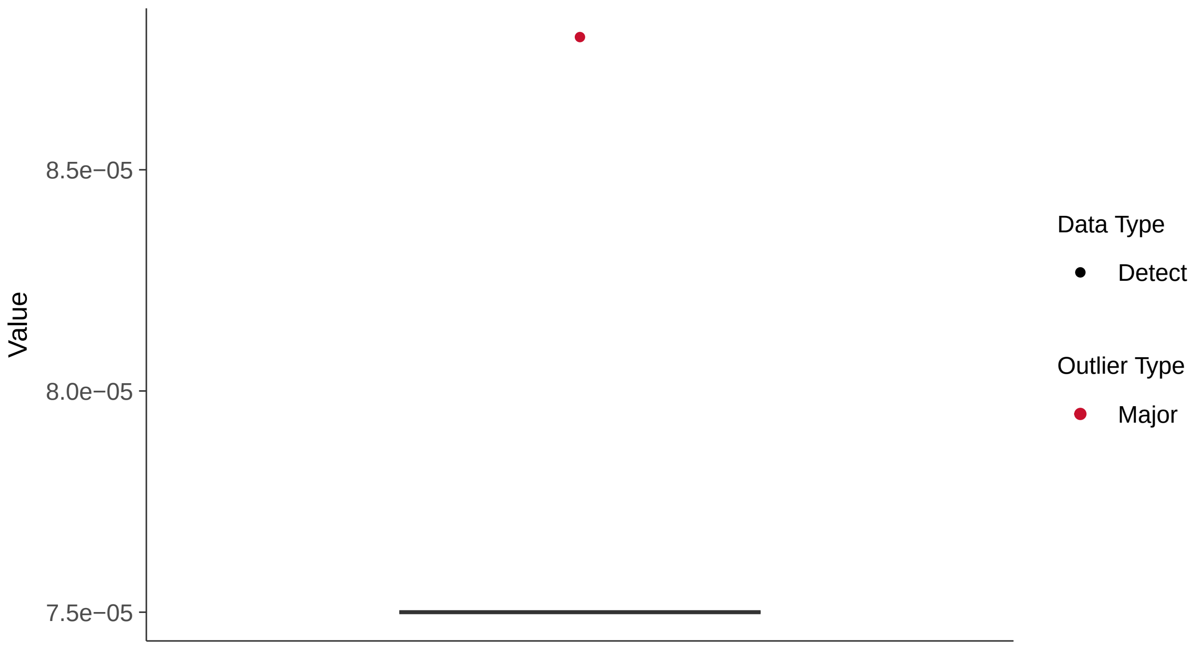
ID: 41_1_4_125





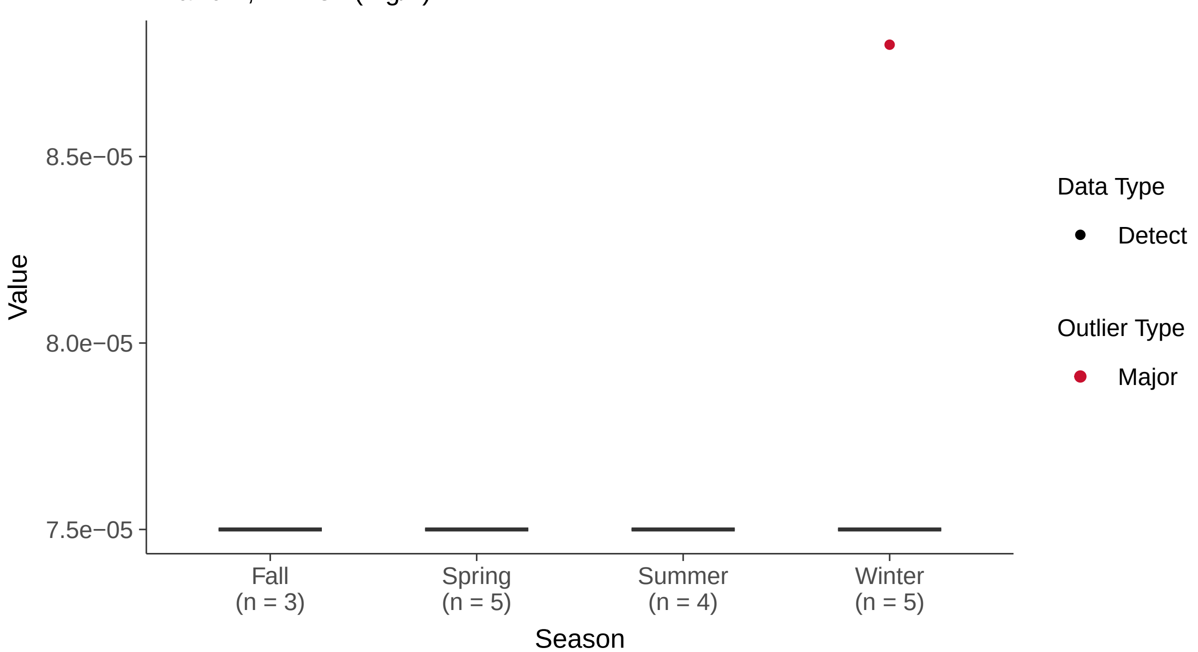
Boxplot

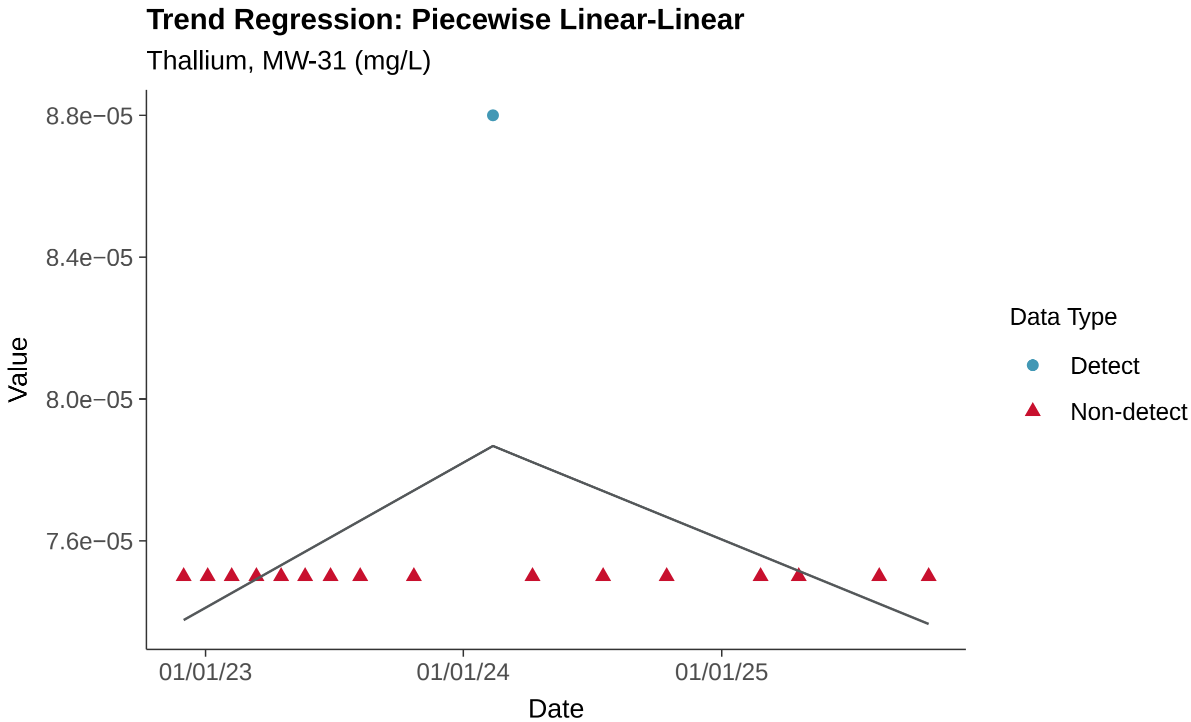
Thallium, MW-31 (mg/L)

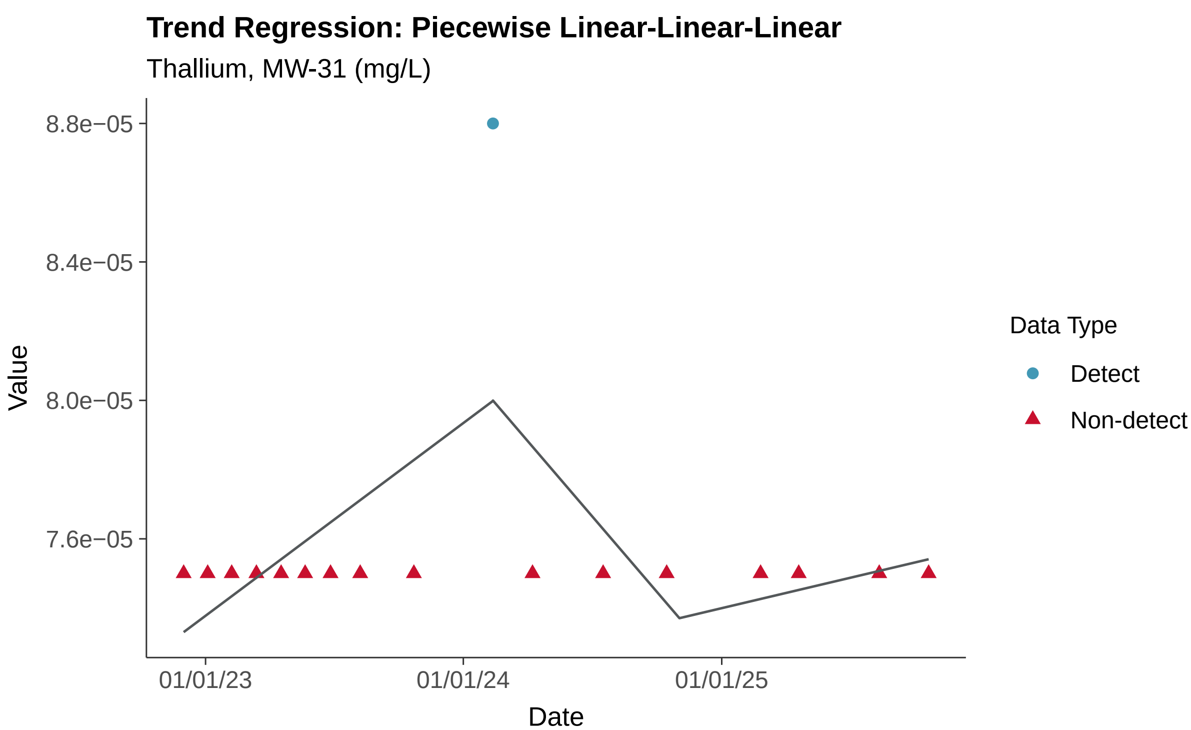


Boxplot by Season

Thallium, MW-31 (mg/L)

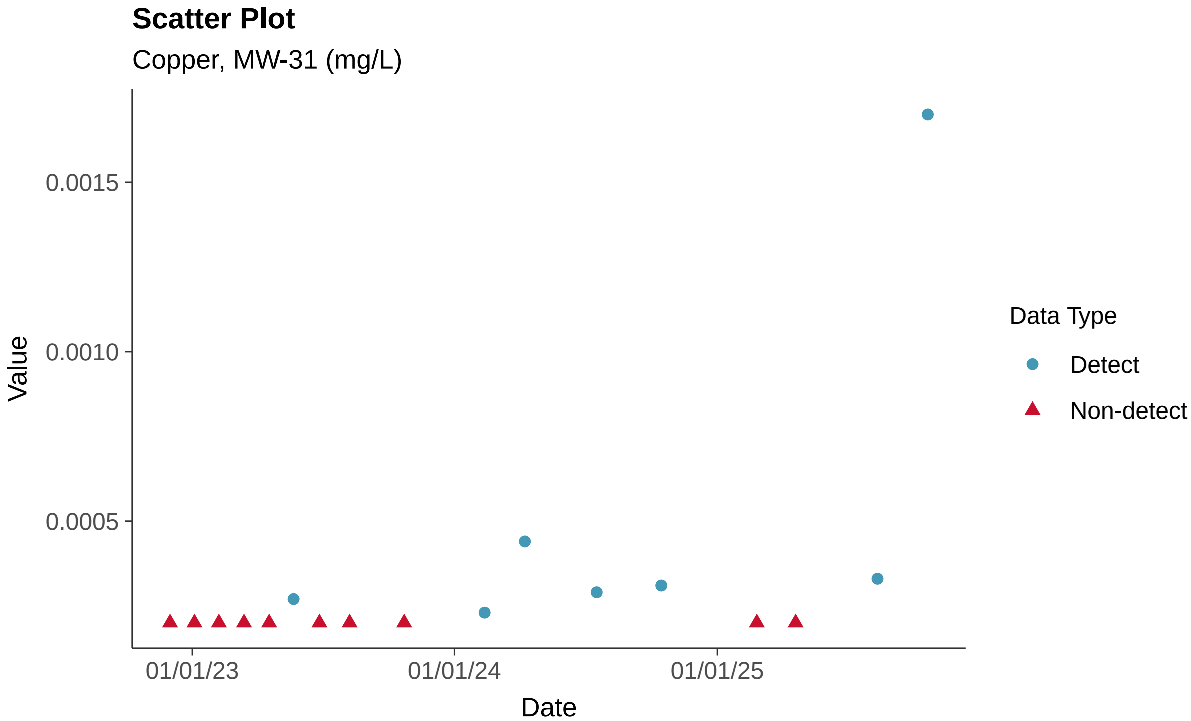


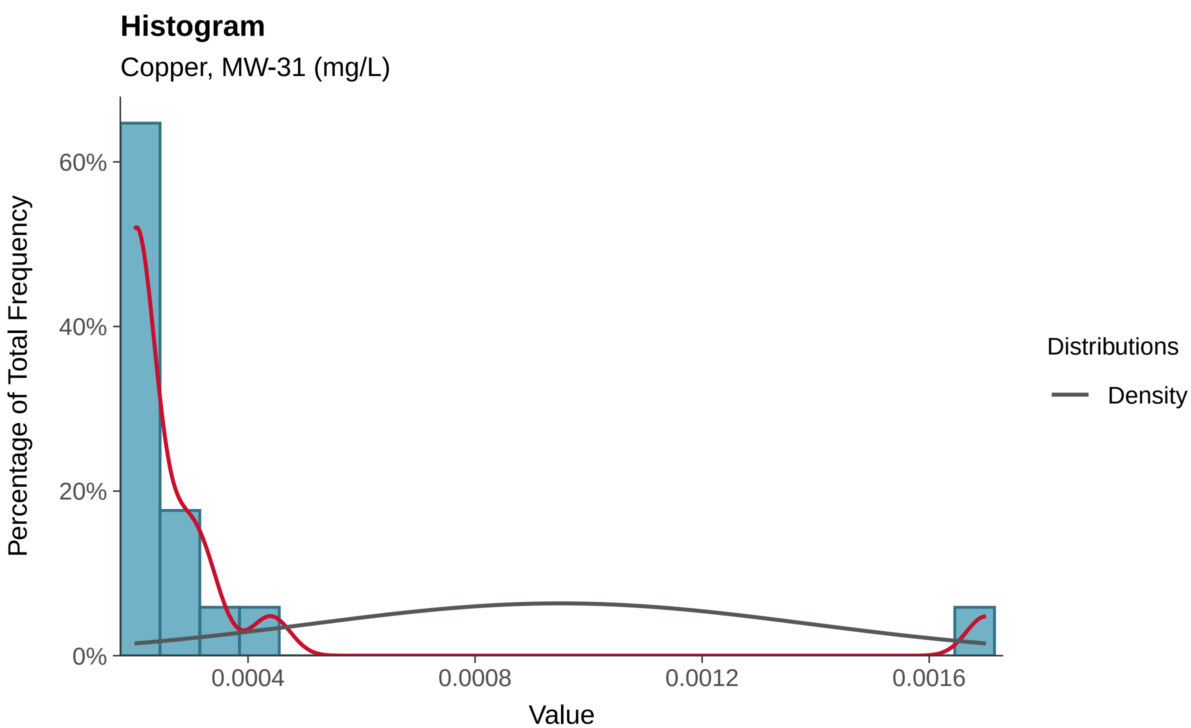

Trend Regression: Piecewise Linear-Linear
Thallium, MW-31 (mg/L)
8.8e−05
8.4e−05
8.0e−05
7.6e−05
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

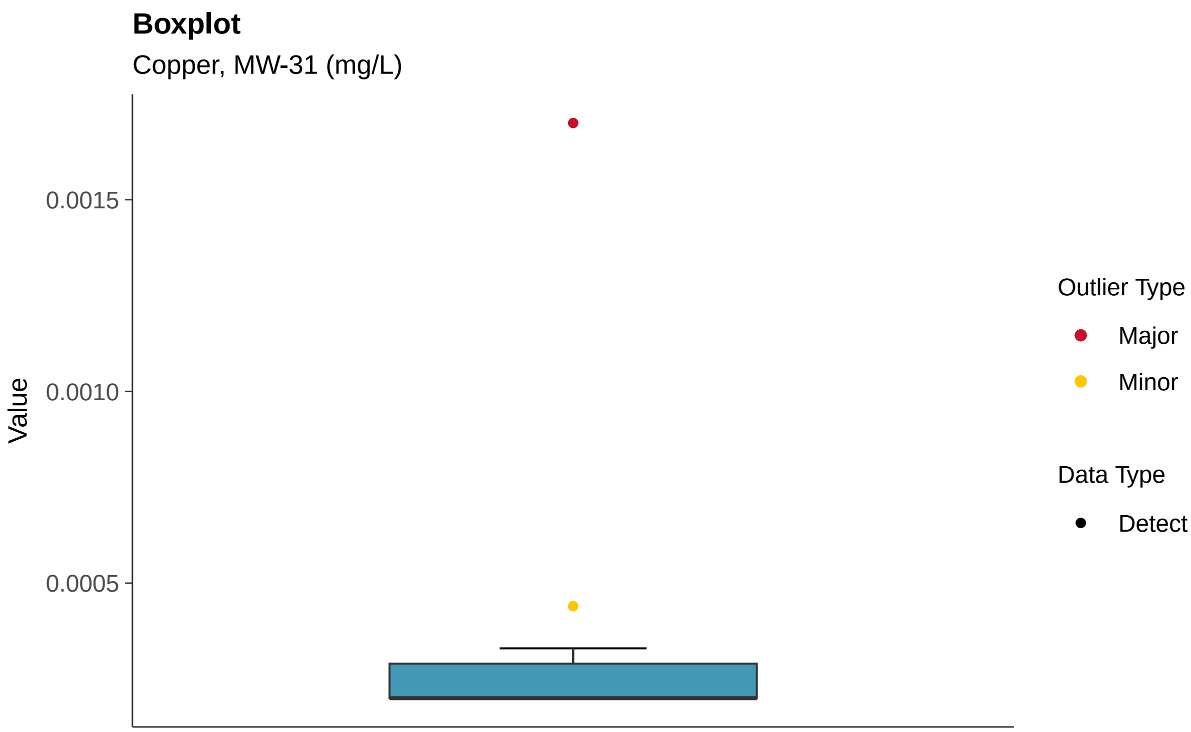

Trend Regression: Piecewise Linear-Linear-Linear
Thallium, MW-31 (mg/L)
8.8e−05
8.4e−05
8.0e−05
7.6e−05
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

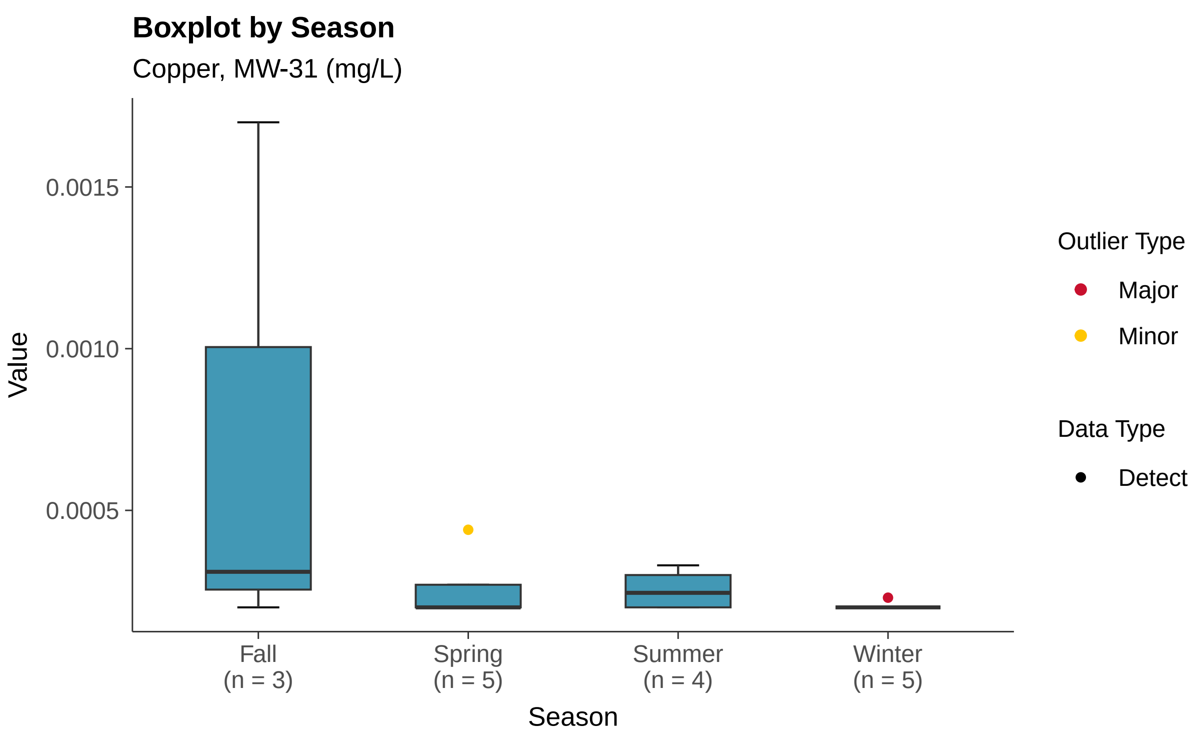
Part 115: Copper, MW-31

ID: 41_1_5_111



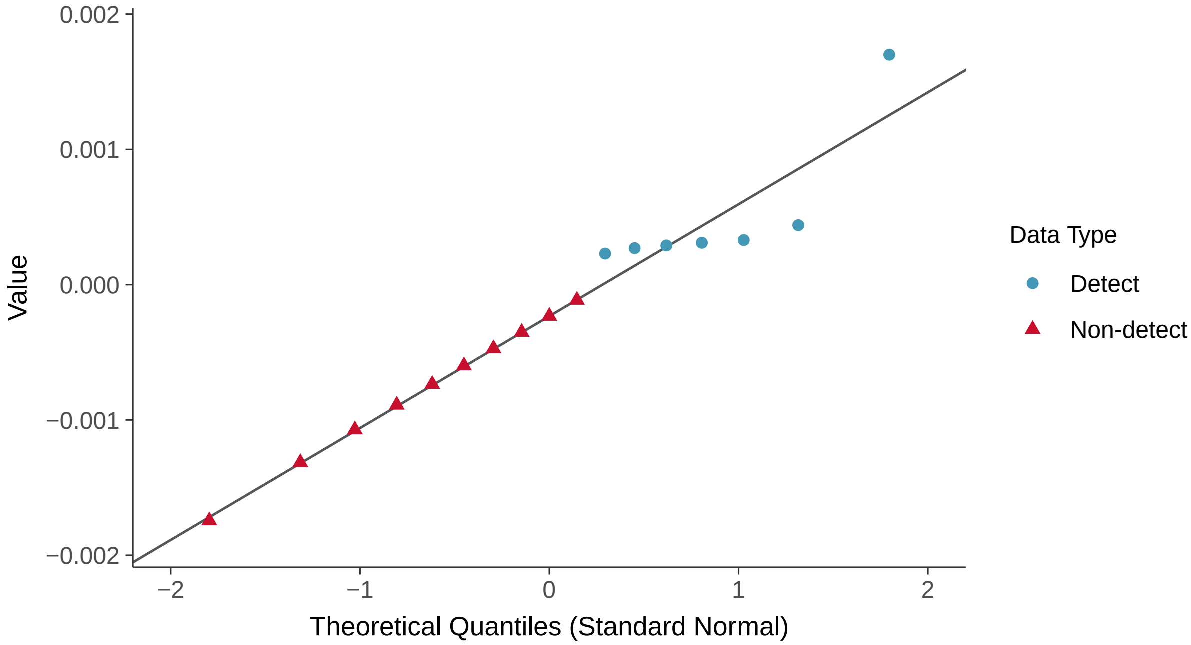



Boxplot
Copper, MW-31 (mg/L)
Value
0.0015
0.0010
0.0005
Outlier Type
Major
Minor
Data Type
Detect


Boxplot by Season
Copper, MW-31 (mg/L)
Value
0.0015
0.0010
0.0005
Fall
(n = 3)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 5)
Season
Outlier Type
Major
Minor
Data Type
Detect

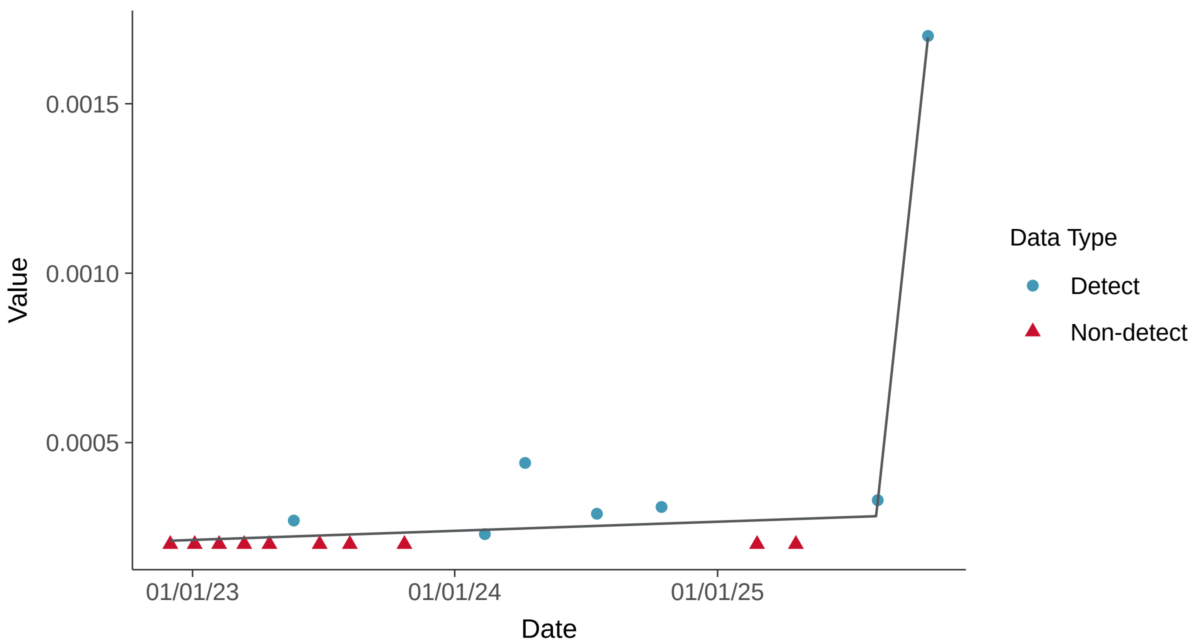
Normal Q-Q plot using ROS Imputed Estimates

Copper, MW-31 (mg/L)



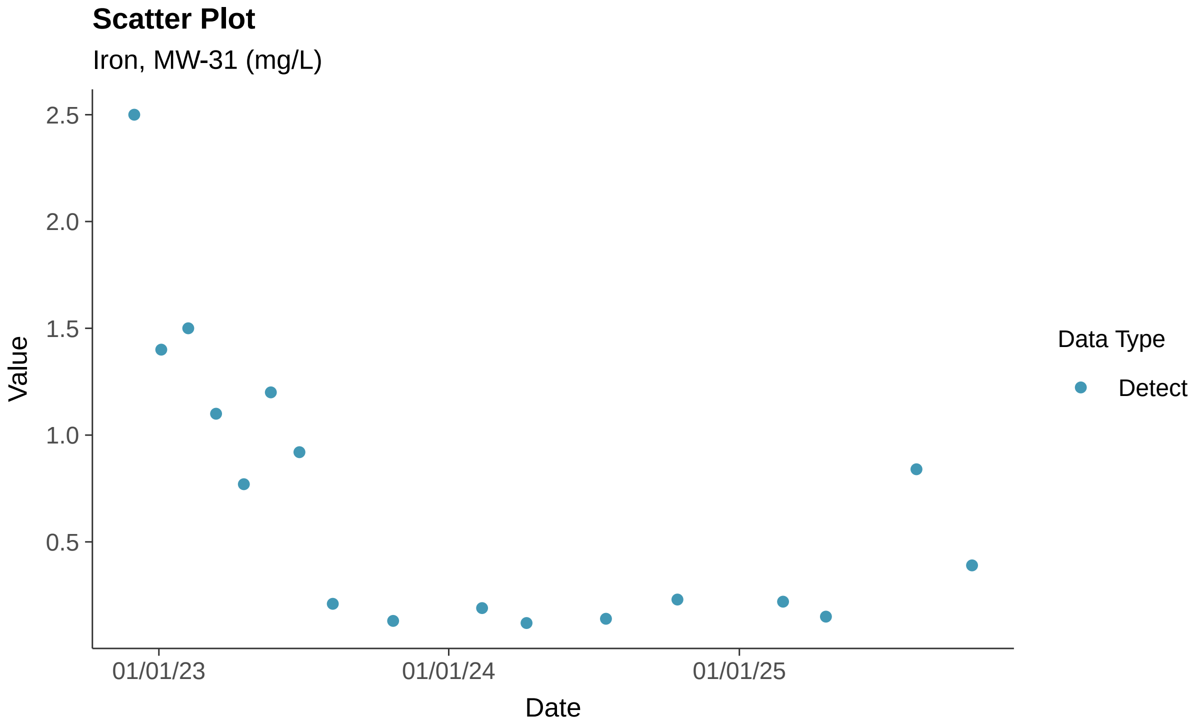
Trend Regression: Piecewise Linear-Linear

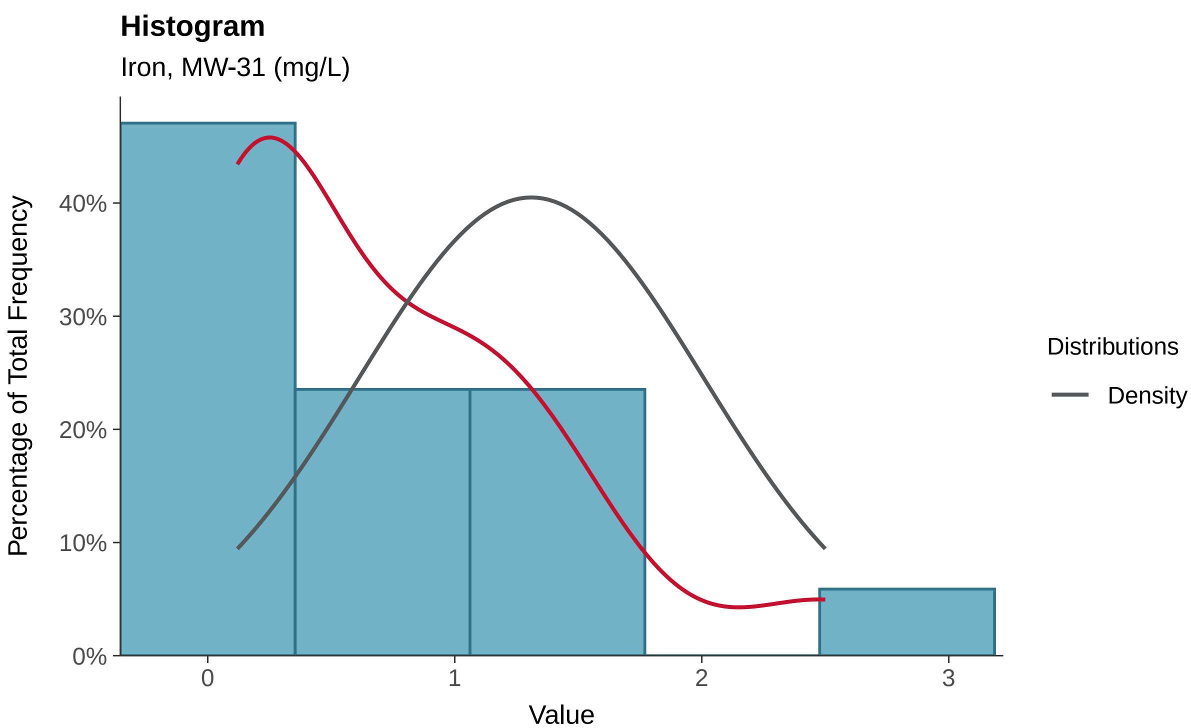
Copper, MW-31 (mg/L)



Part 115: Iron, MW-31

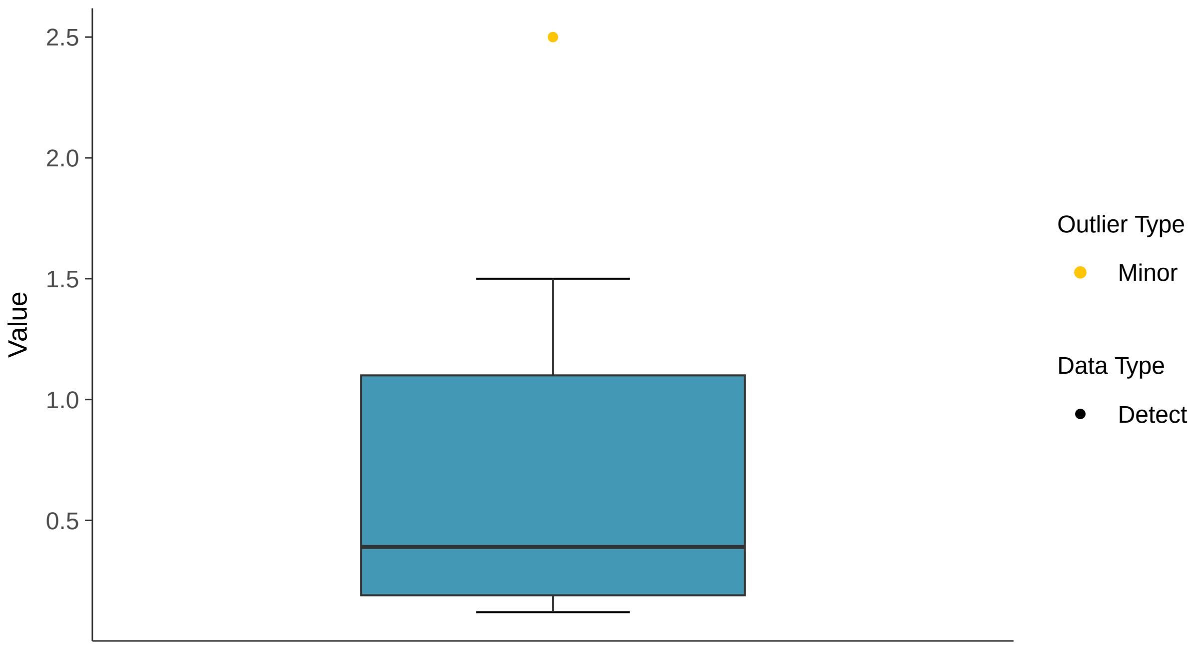
ID: 41_1_5_114





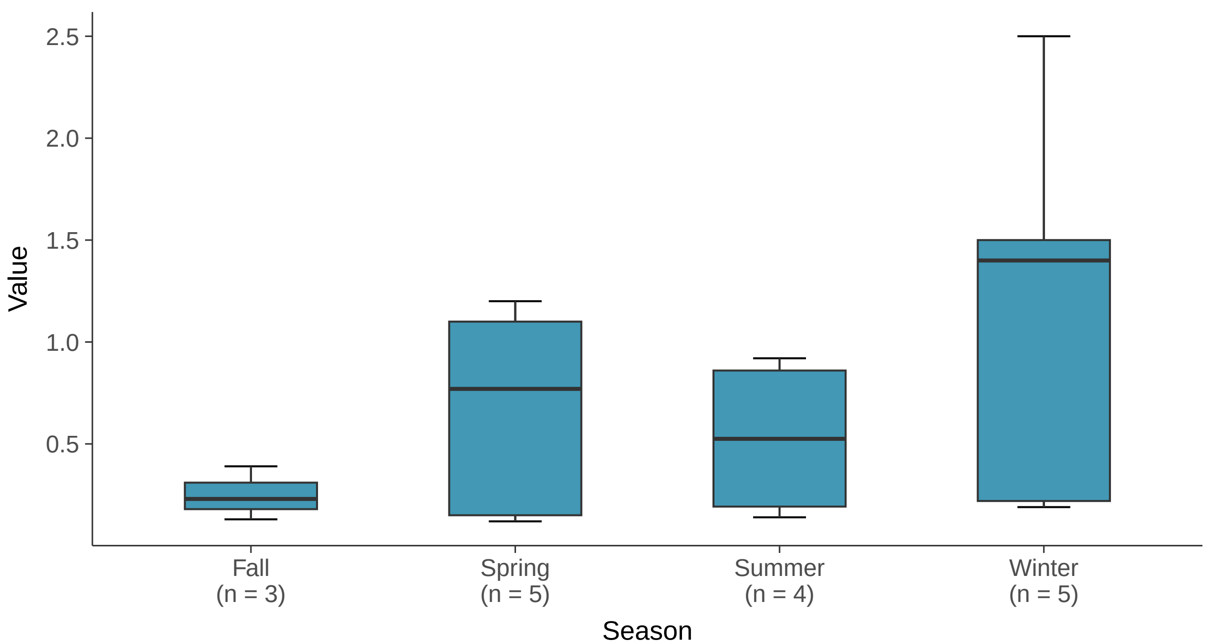
Boxplot

Iron, MW-31 (mg/L)



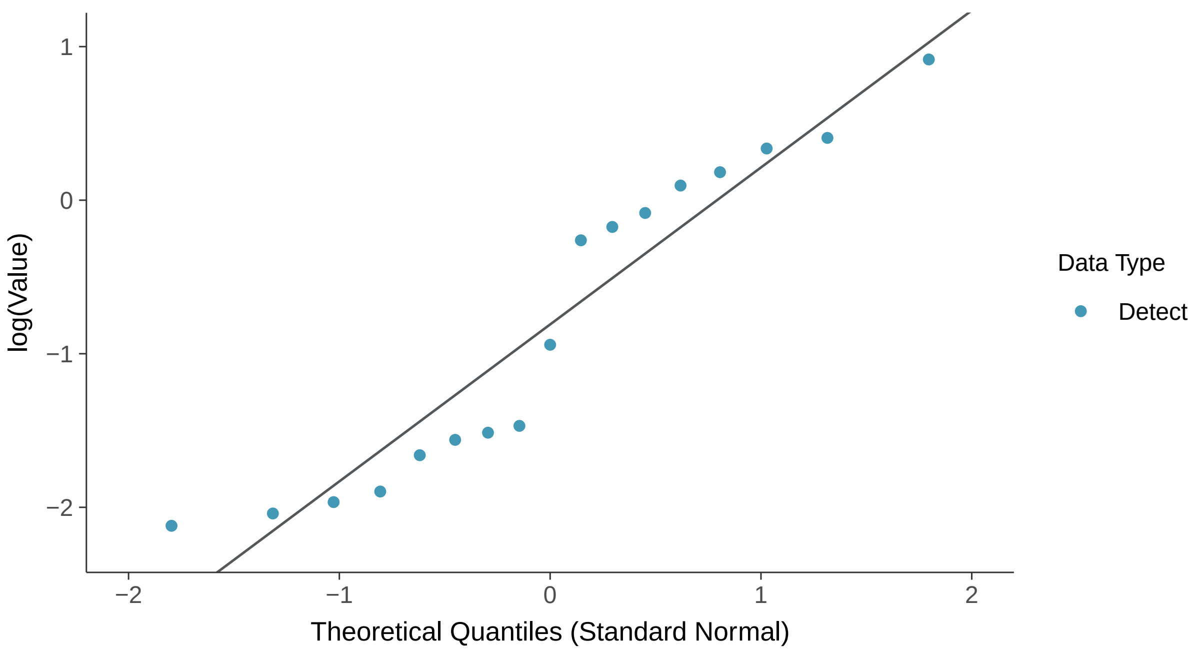
Boxplot by Season

Iron, MW-31 (mg/L)



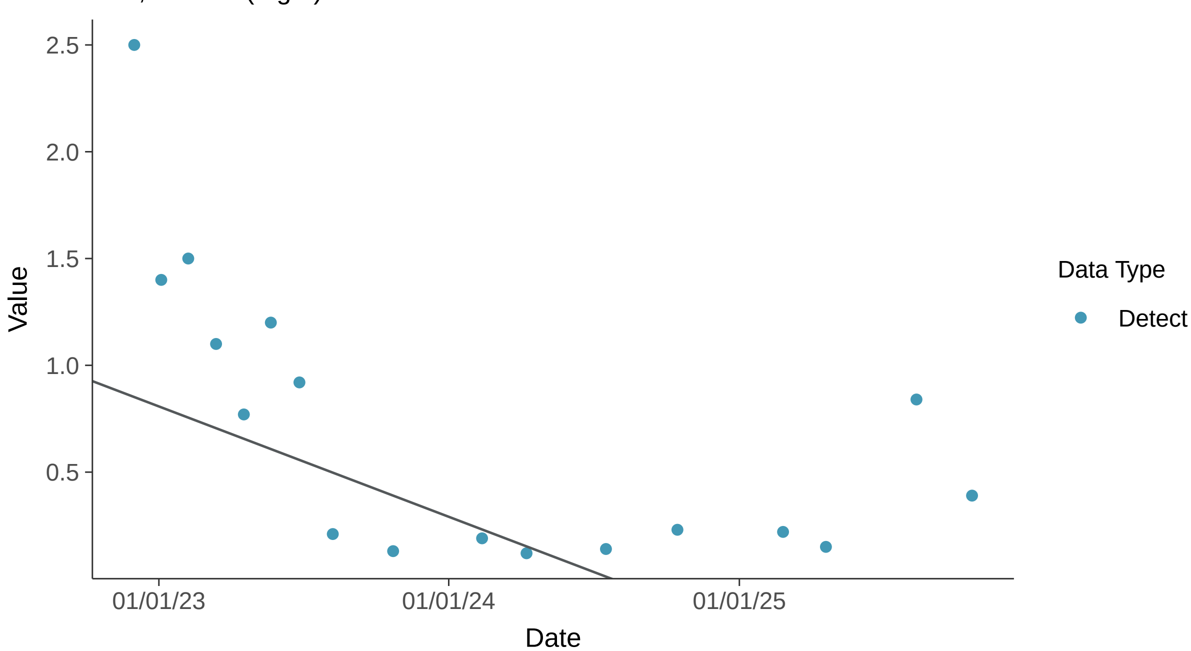
Lognormal Q-Q plot

Iron, MW-31 (mg/L)



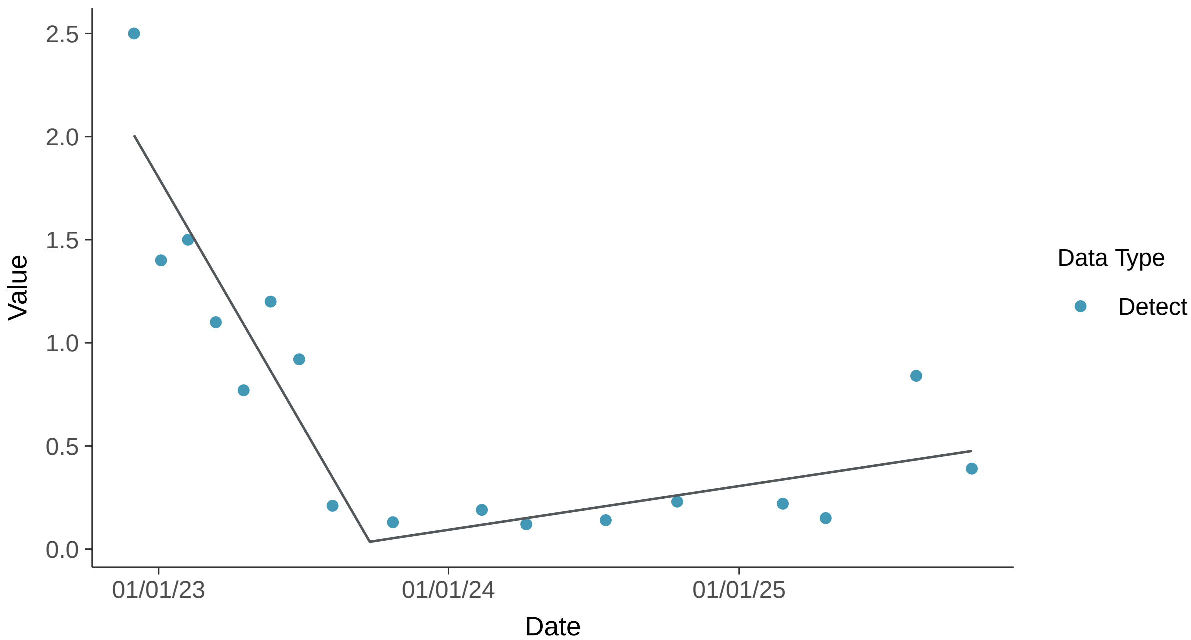
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Iron, MW-31 (mg/L)



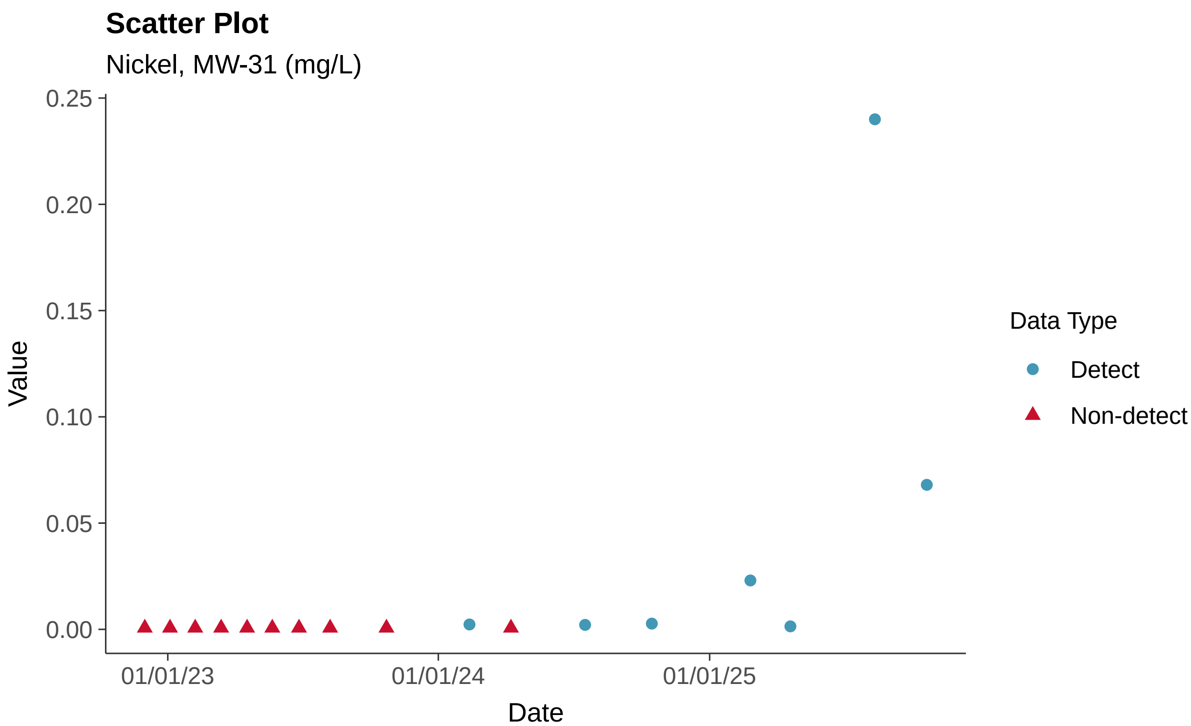
Trend Regression: Piecewise Linear-Linear

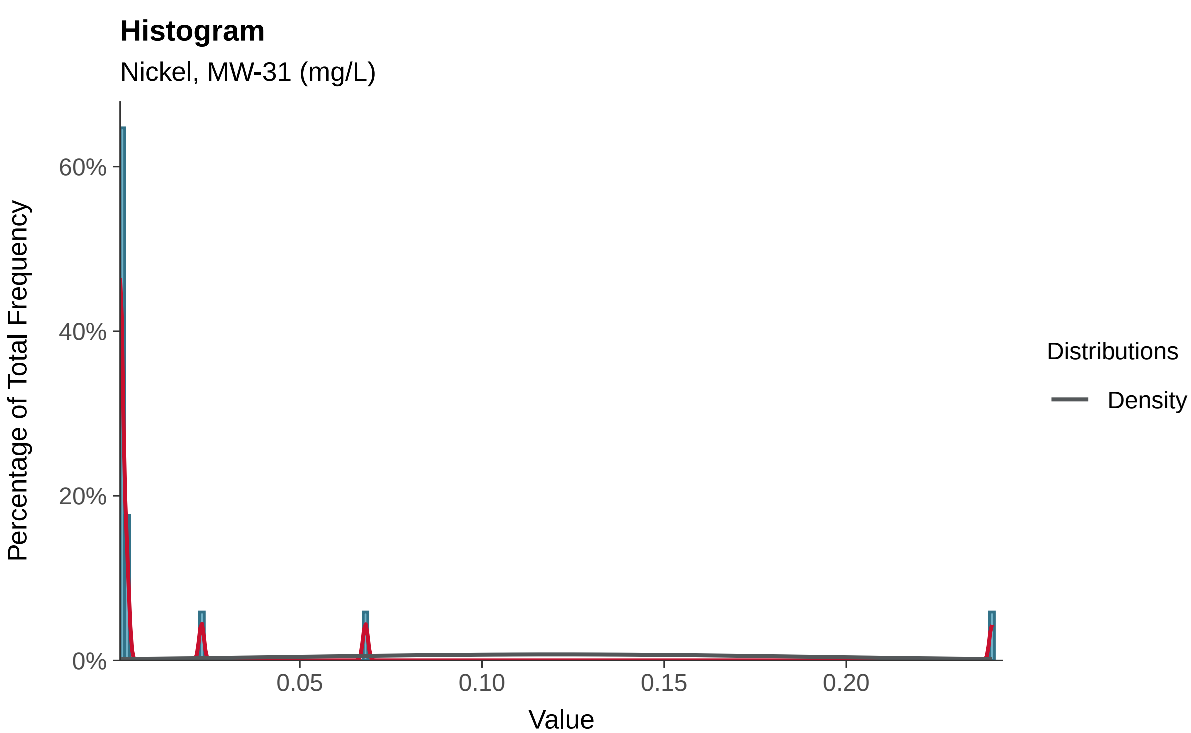
Iron, MW-31 (mg/L)



Part 115: Nickel, MW-31

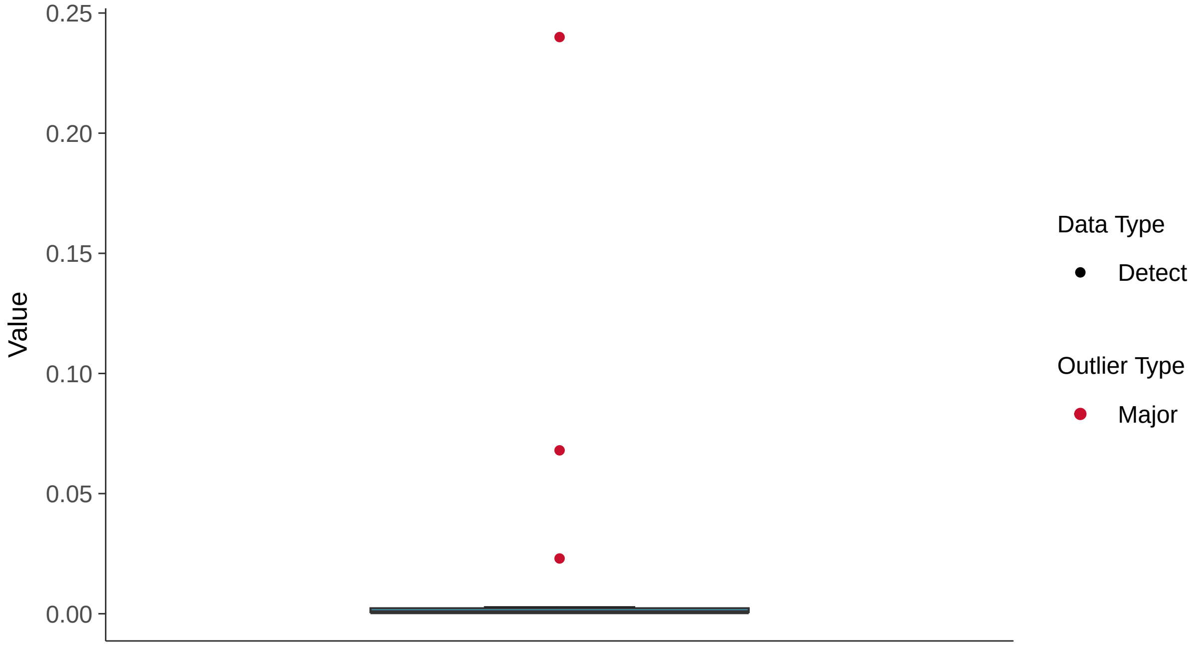
ID: 41_1_5_119





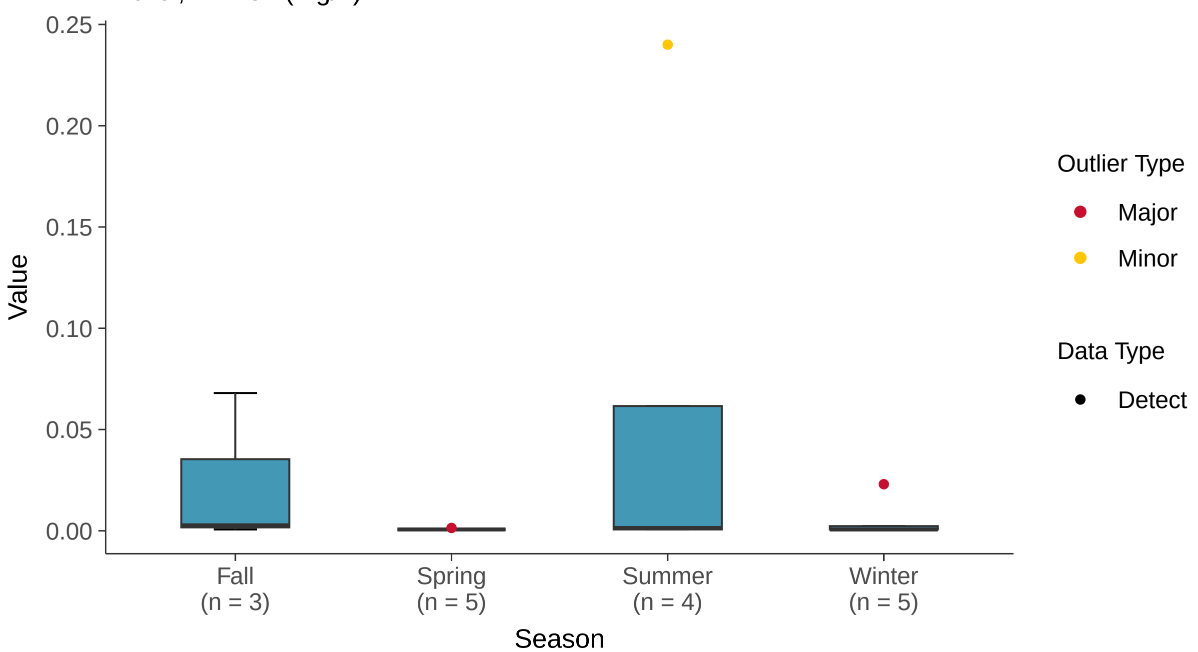
Boxplot

Nickel, MW-31 (mg/L)



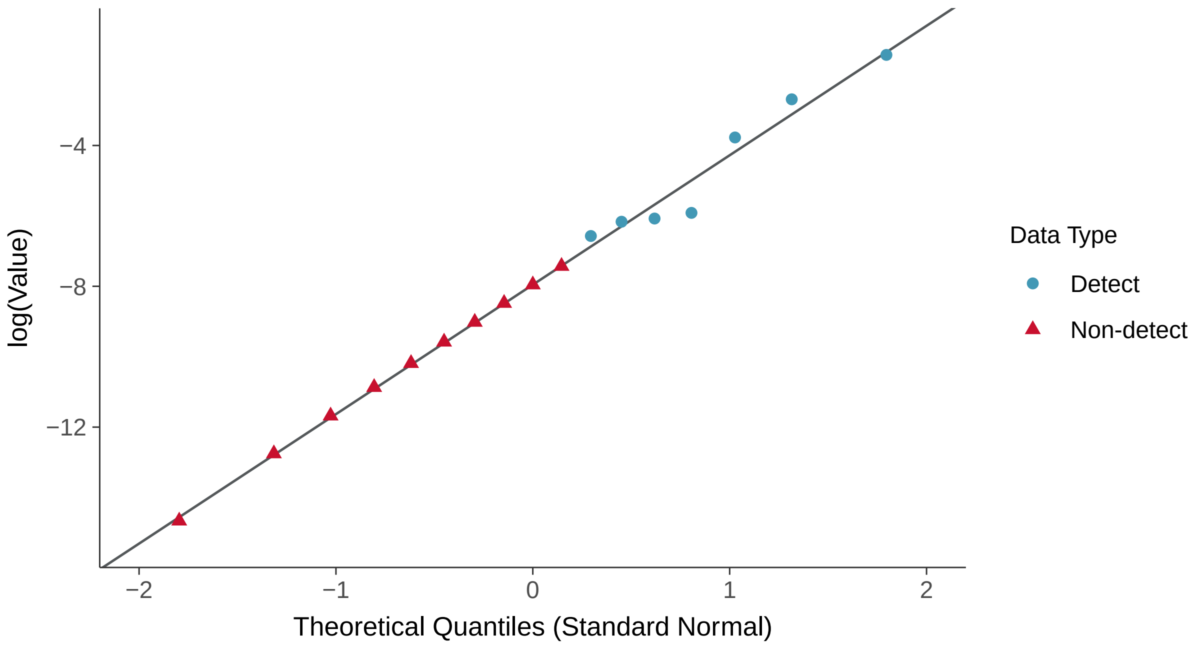
Boxplot by Season

Nickel, MW-31 (mg/L)



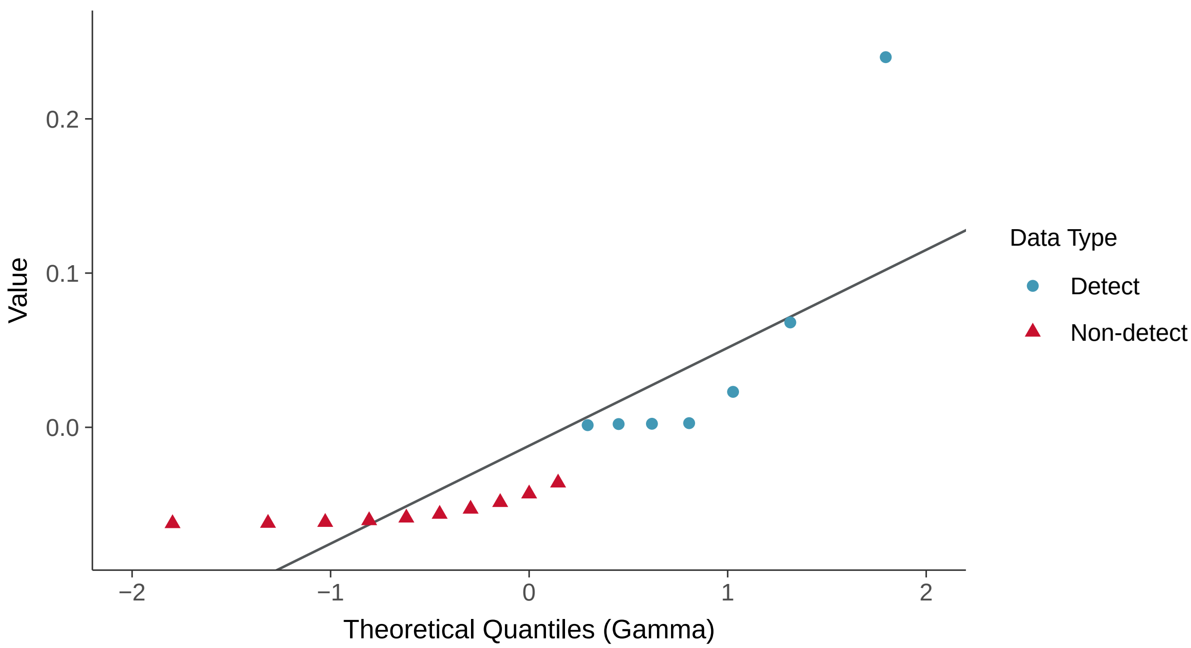
Lognormal Q-Q plot using ROS Imputed Estimates

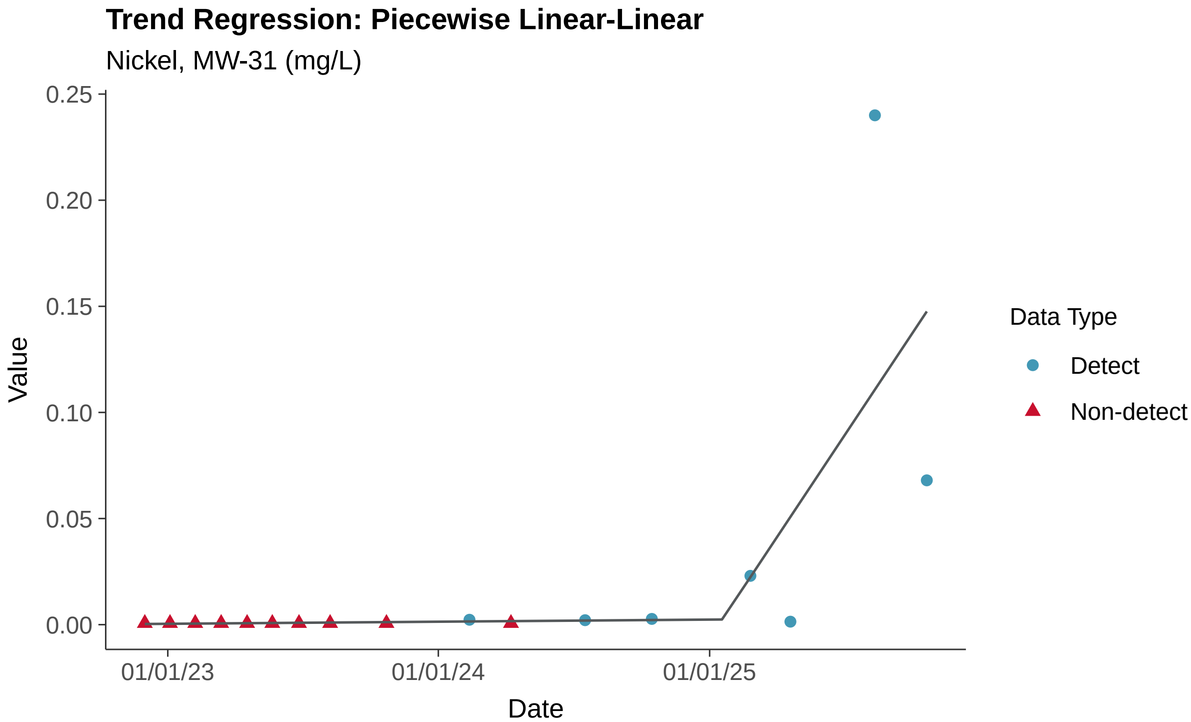
Nickel, MW-31 (mg/L)

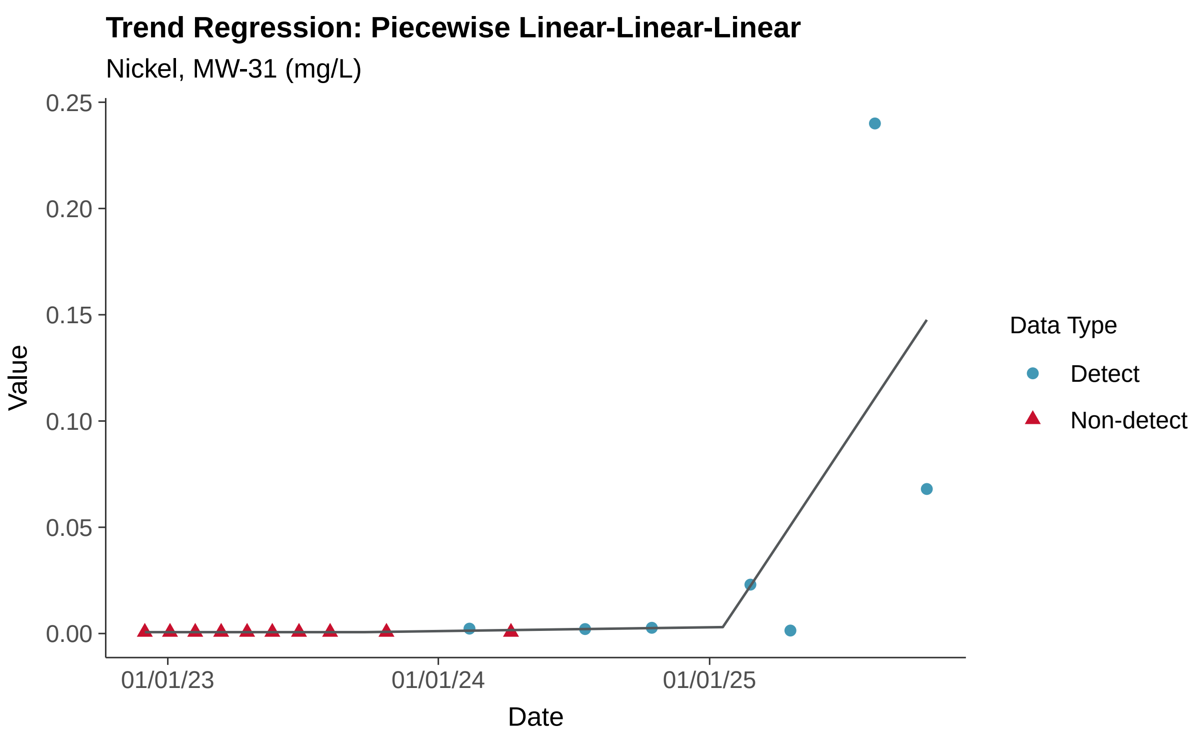


Gamma Q-Q plot using ROS Imputed Estimates

Nickel, MW-31 (mg/L)




Trend Regression: Piecewise Linear-Linear
Nickel, MW-31 (mg/L)
0.25
0.20
0.15
0.10
0.05
0.00
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

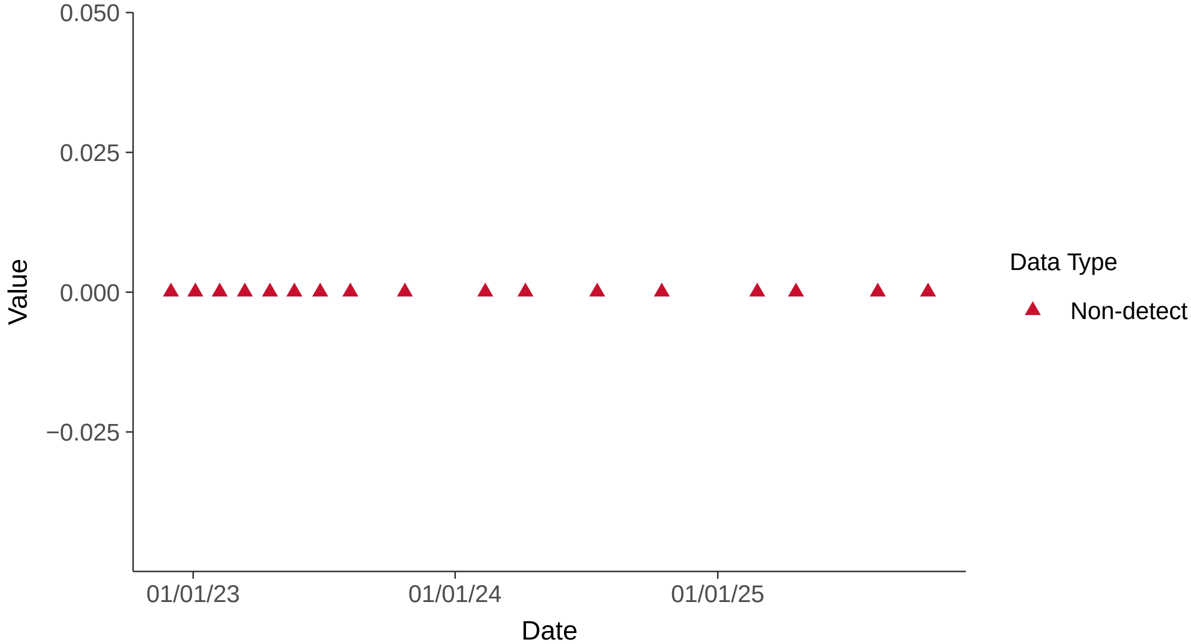

Trend Regression: Piecewise Linear-Linear-Linear
Nickel, MW-31 (mg/L)
0.25
0.20
0.15
0.10
0.05
0.00
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Part 115: Silver, MW-31

ID: 41_1_5_123

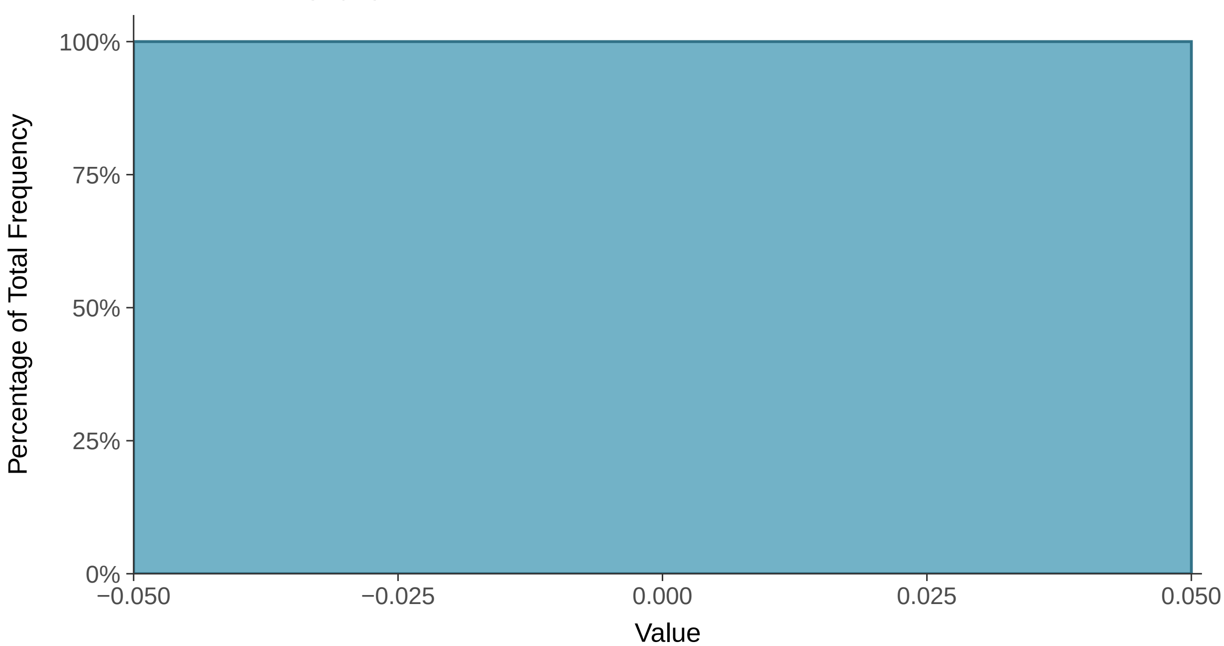
Scatter Plot

Silver, MW-31 (mg/L)



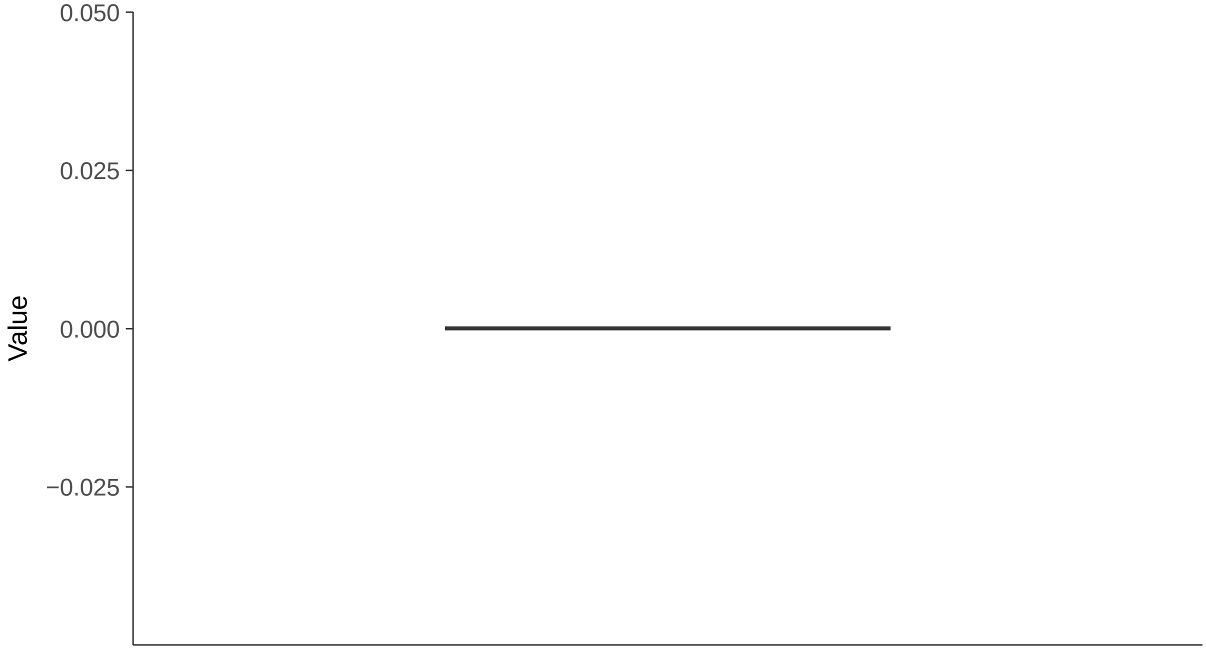
Histogram

Silver, MW-31 (mg/L)



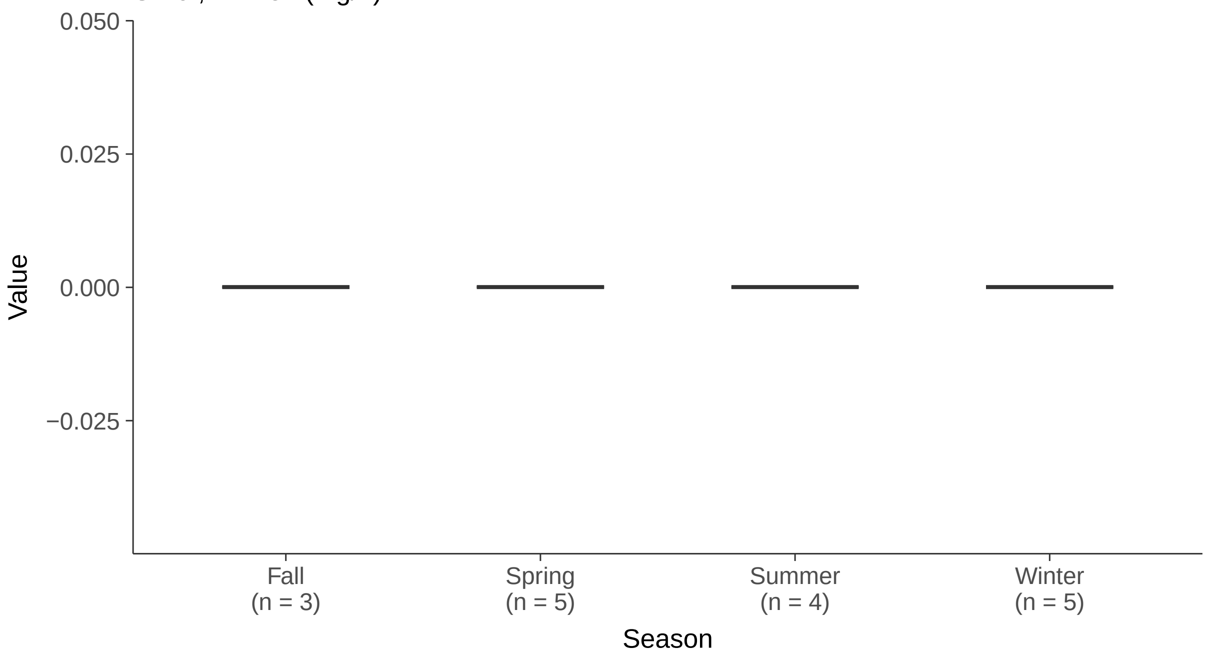
Boxplot

Silver, MW-31 (mg/L)



Boxplot by Season

Silver, MW-31 (mg/L)

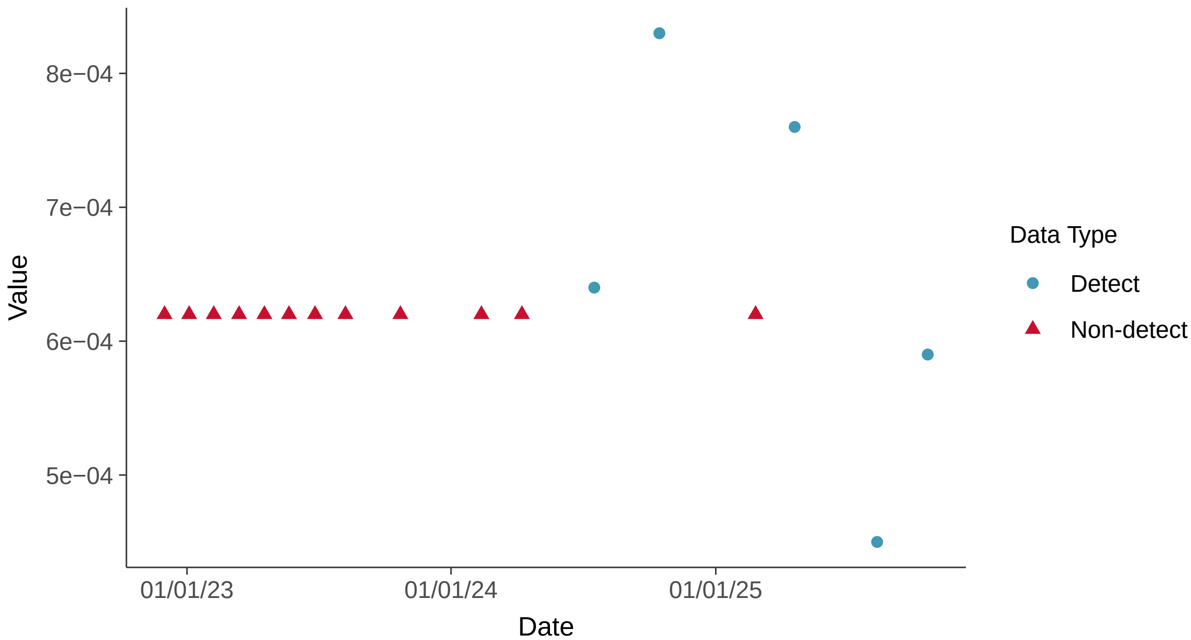


Part 115: Vanadium, MW-31

ID: 41_1_5_128

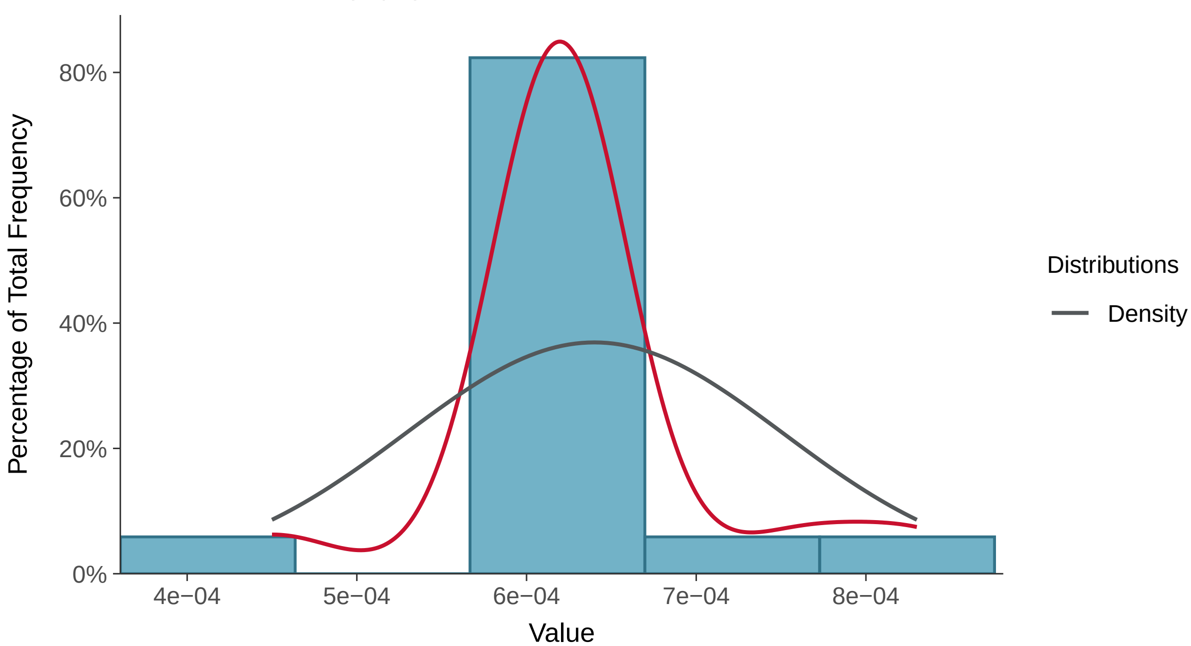
Scatter Plot

Vanadium, MW-31 (mg/L)



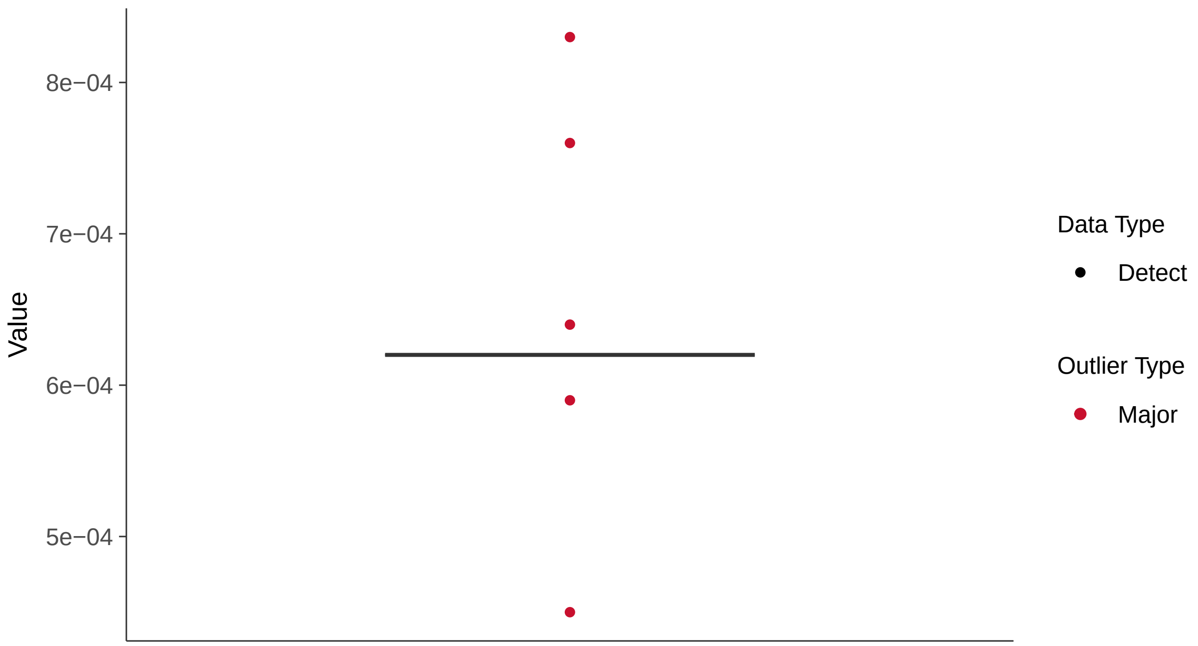
Histogram

Vanadium, MW-31 (mg/L)



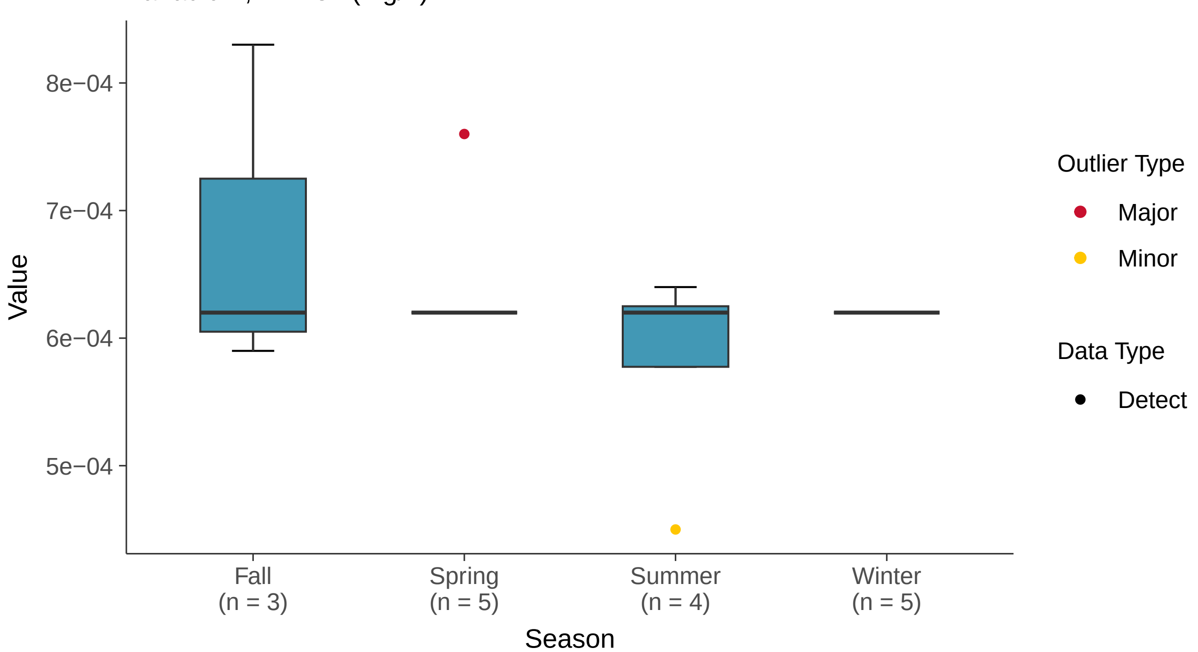
Boxplot

Vanadium, MW-31 (mg/L)



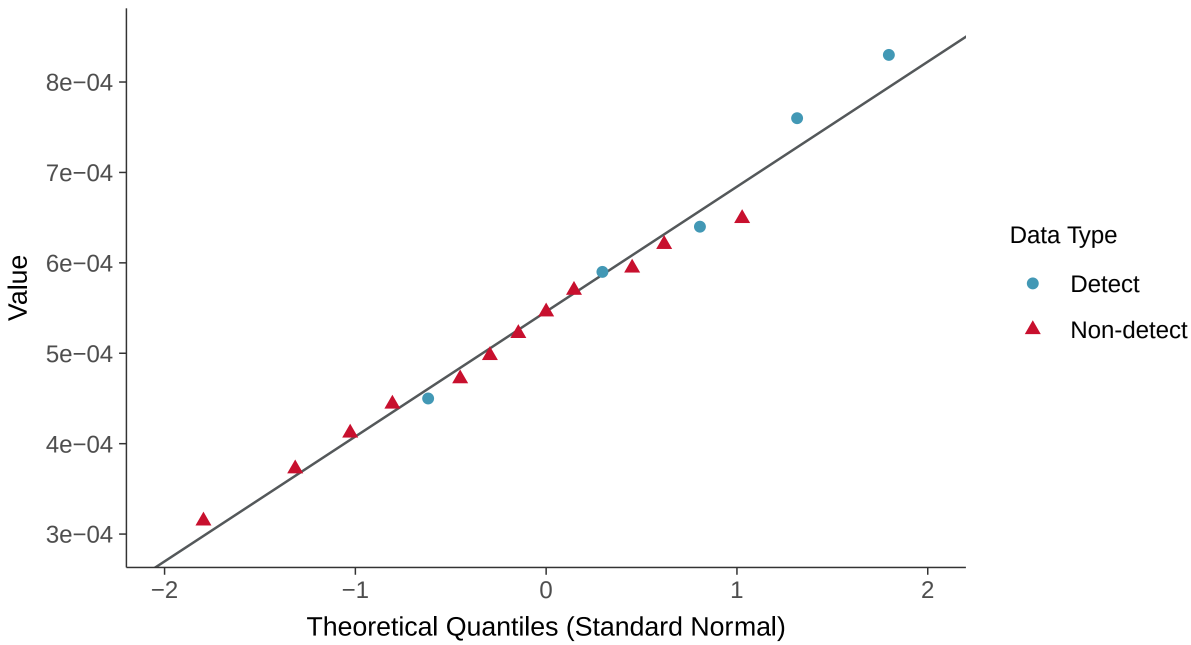
Boxplot by Season

Vanadium, MW-31 (mg/L)



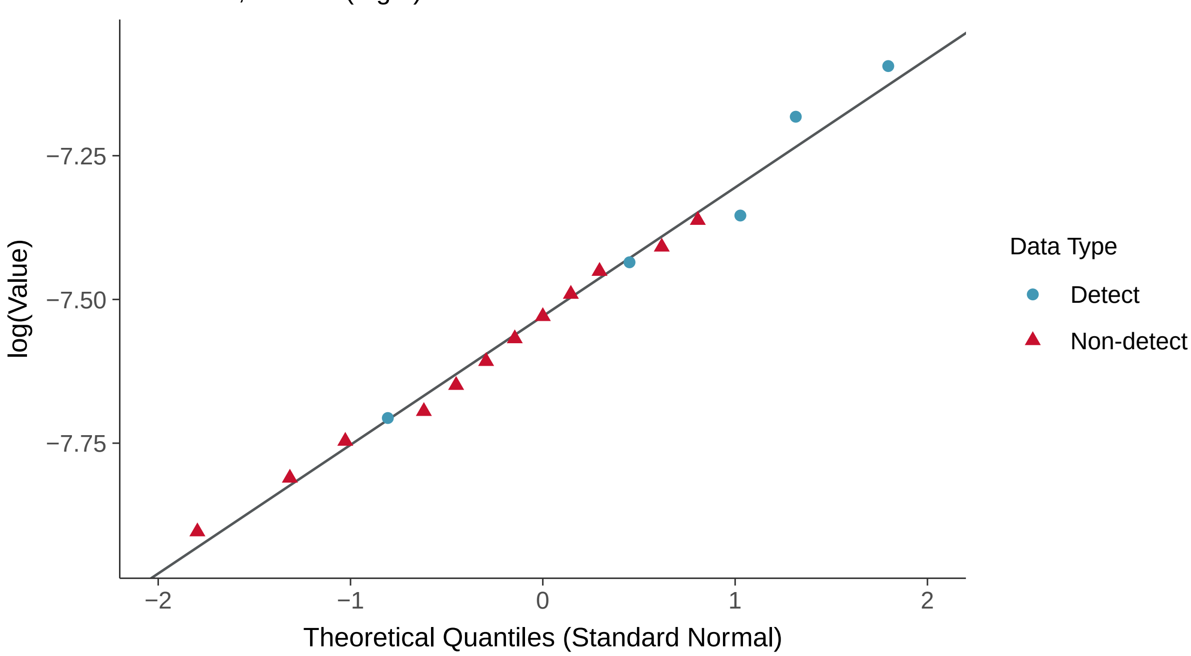
Normal Q-Q plot using ROS Imputed Estimates

Vanadium, MW-31 (mg/L)



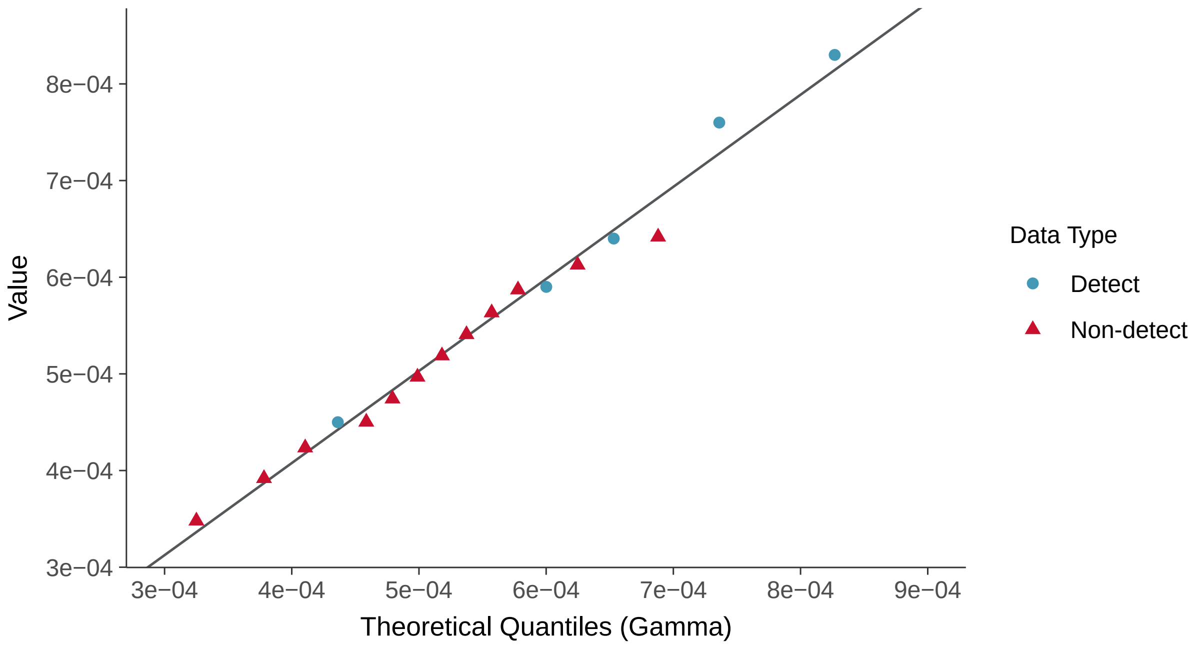
Lognormal Q-Q plot using ROS Imputed Estimates

Vanadium, MW-31 (mg/L)



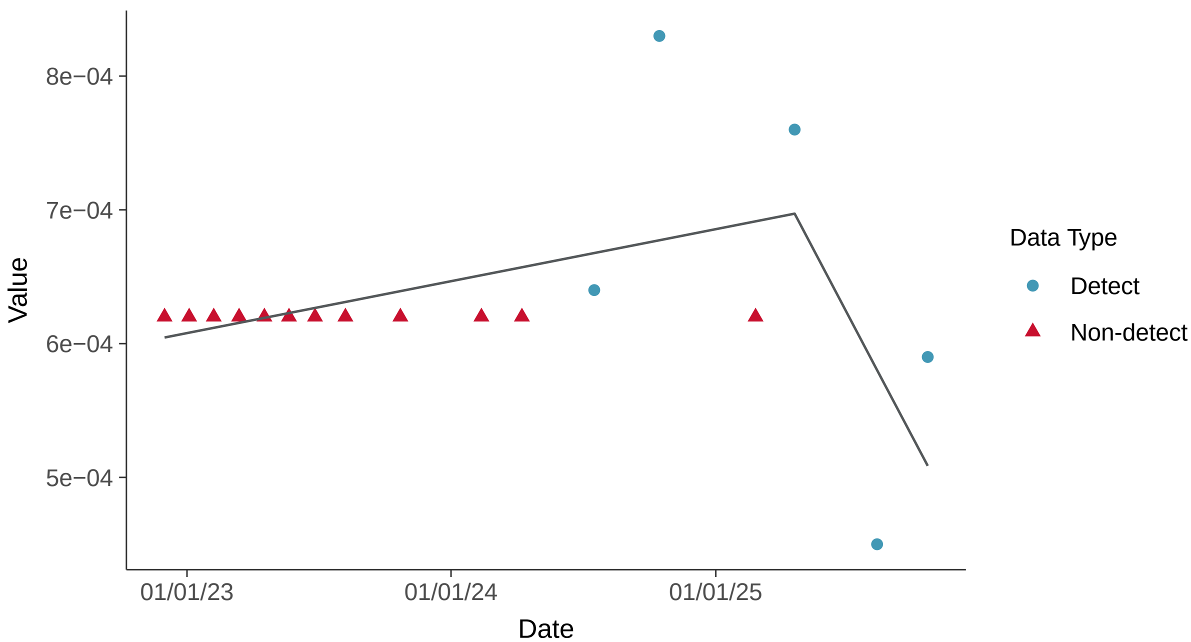
Gamma Q-Q plot using ROS Imputed Estimates

Vanadium, MW-31 (mg/L)



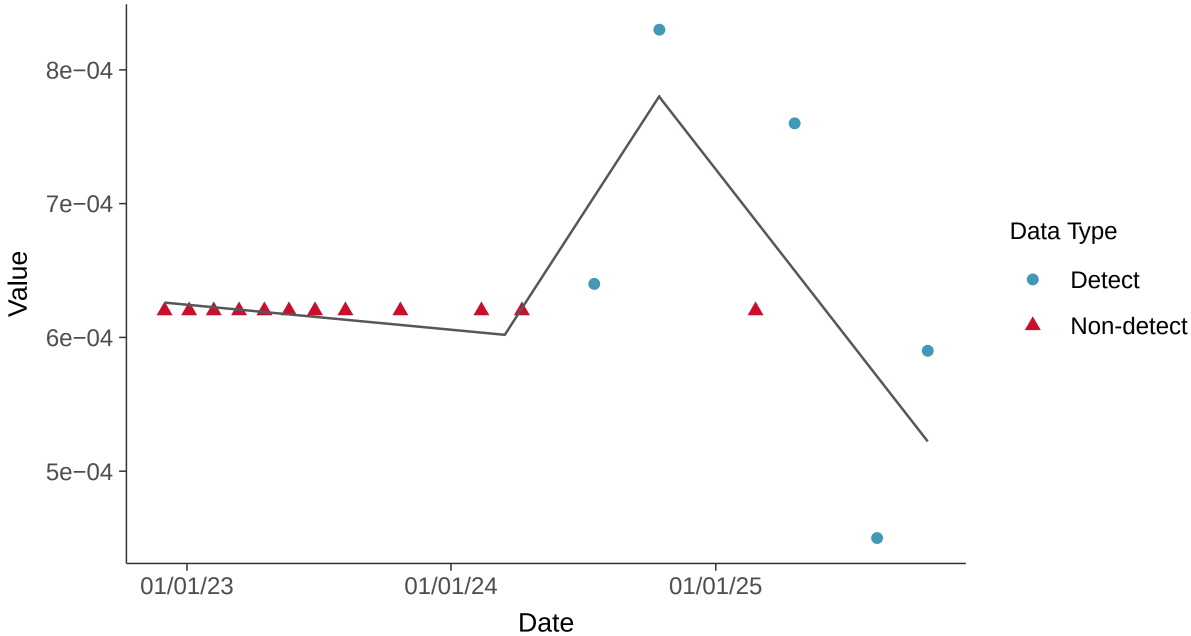
Trend Regression: Piecewise Linear-Linear

Vanadium, MW-31 (mg/L)



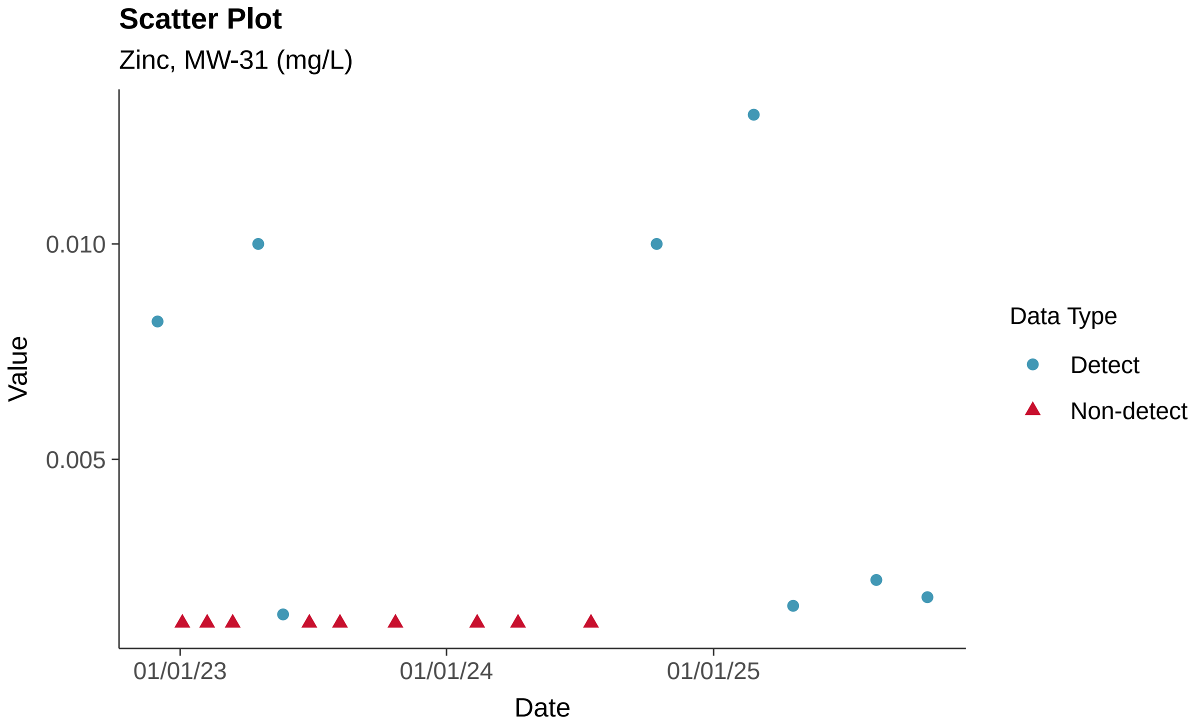
Trend Regression: Piecewise Linear-Linear-Linear

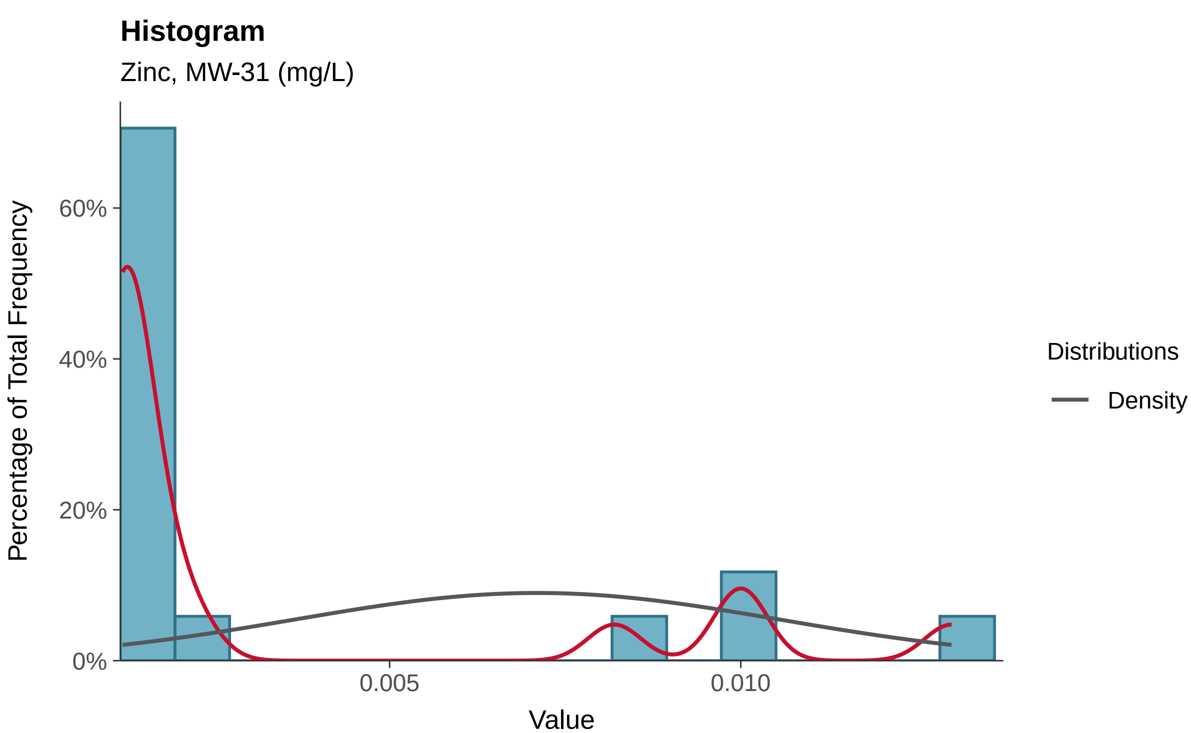
Vanadium, MW-31 (mg/L)



Part 115: Zinc, MW-31

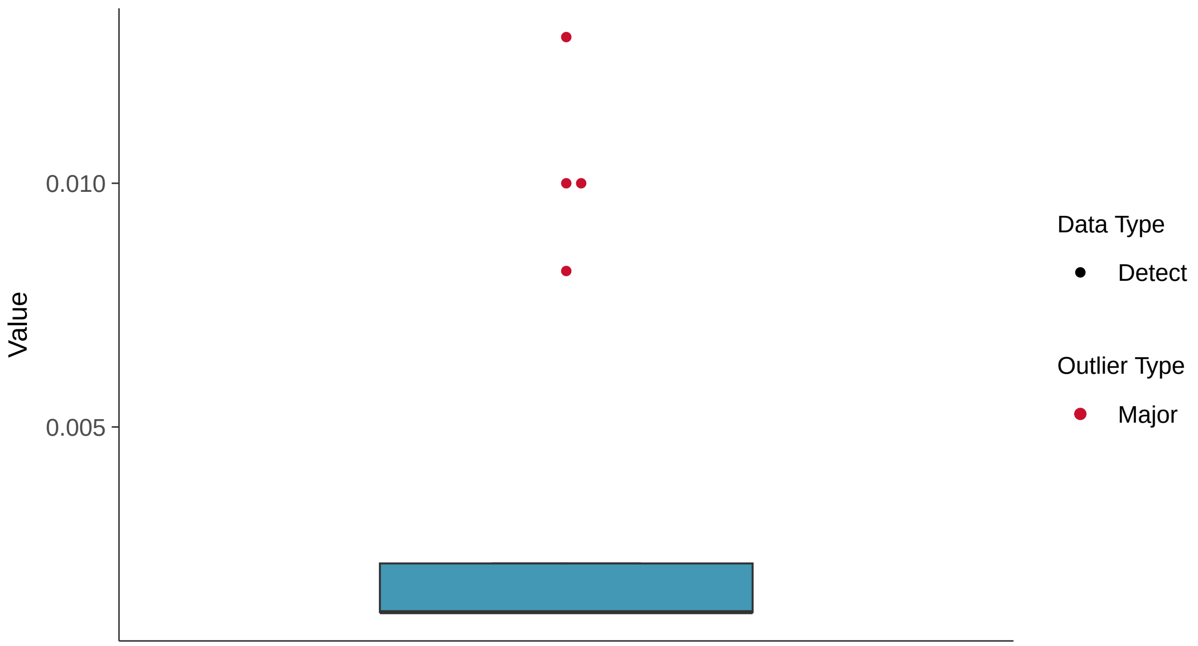
ID: 41_1_5_129





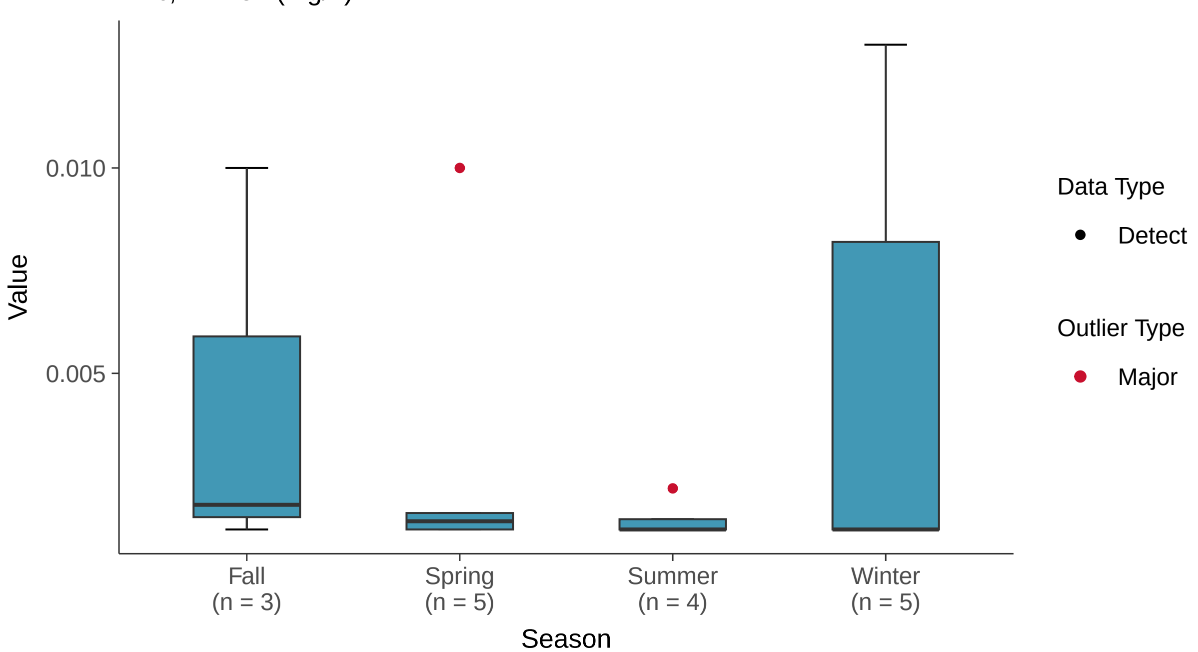
Boxplot

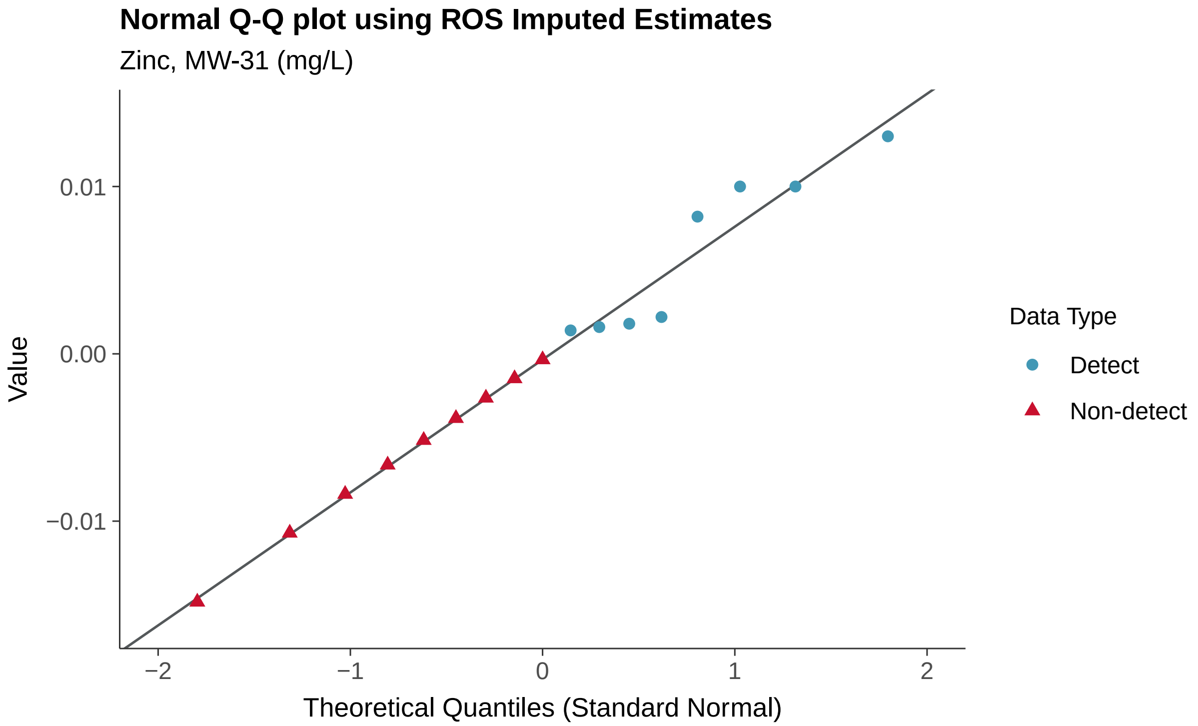
Zinc, MW-31 (mg/L)

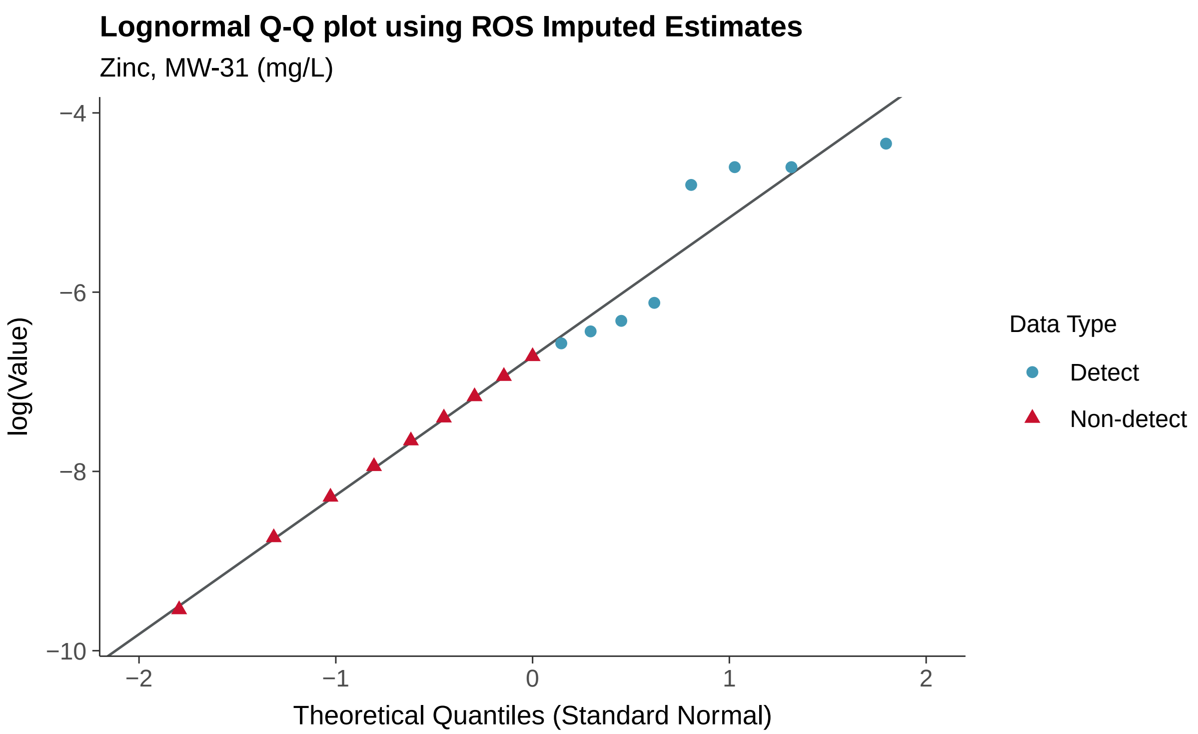


Boxplot by Season

Zinc, MW-31 (mg/L)

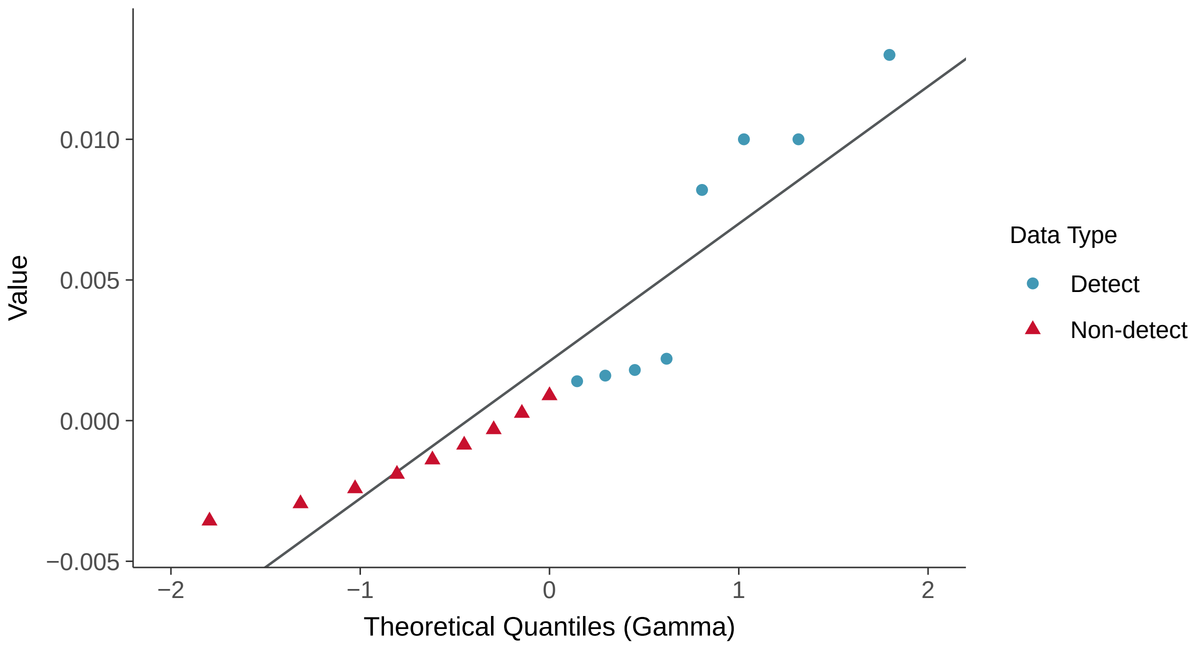



Normal Q-Q plot using ROS Imputed Estimates
Zinc, MW-31 (mg/L)
Value
0.01
0.00
−0.01
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Lognormal Q-Q plot using ROS Imputed Estimates
Zinc, MW-31 (mg/L)
log(Value)
−4
−6
−8
−10
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

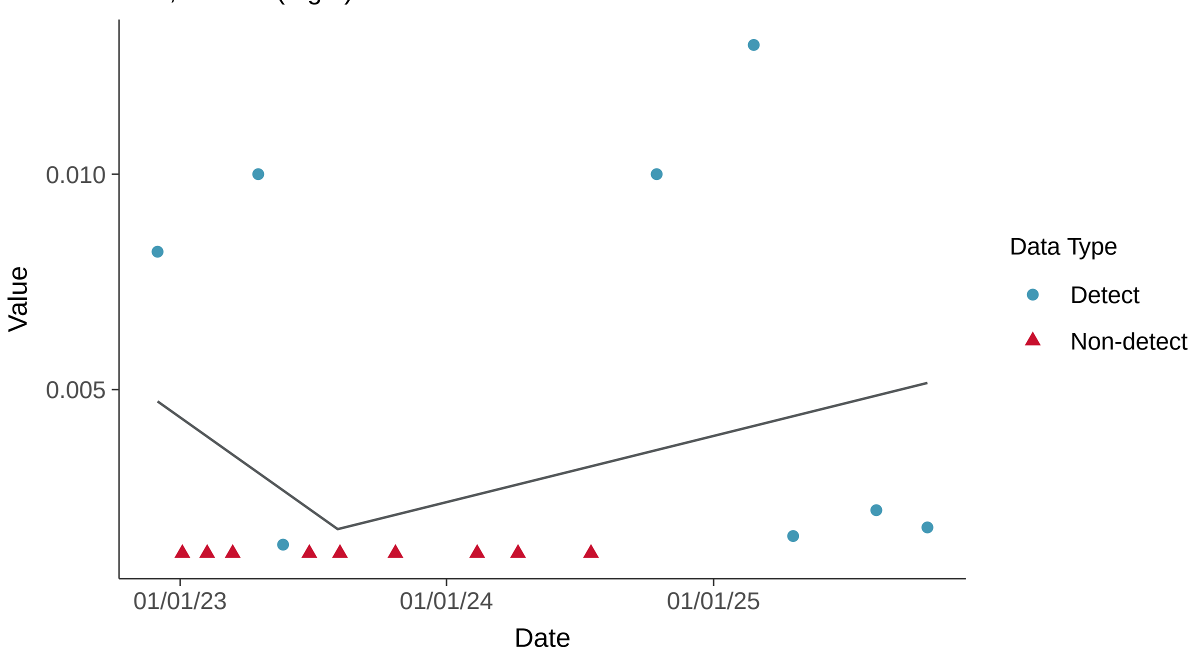
Gamma Q-Q plot using ROS Imputed Estimates

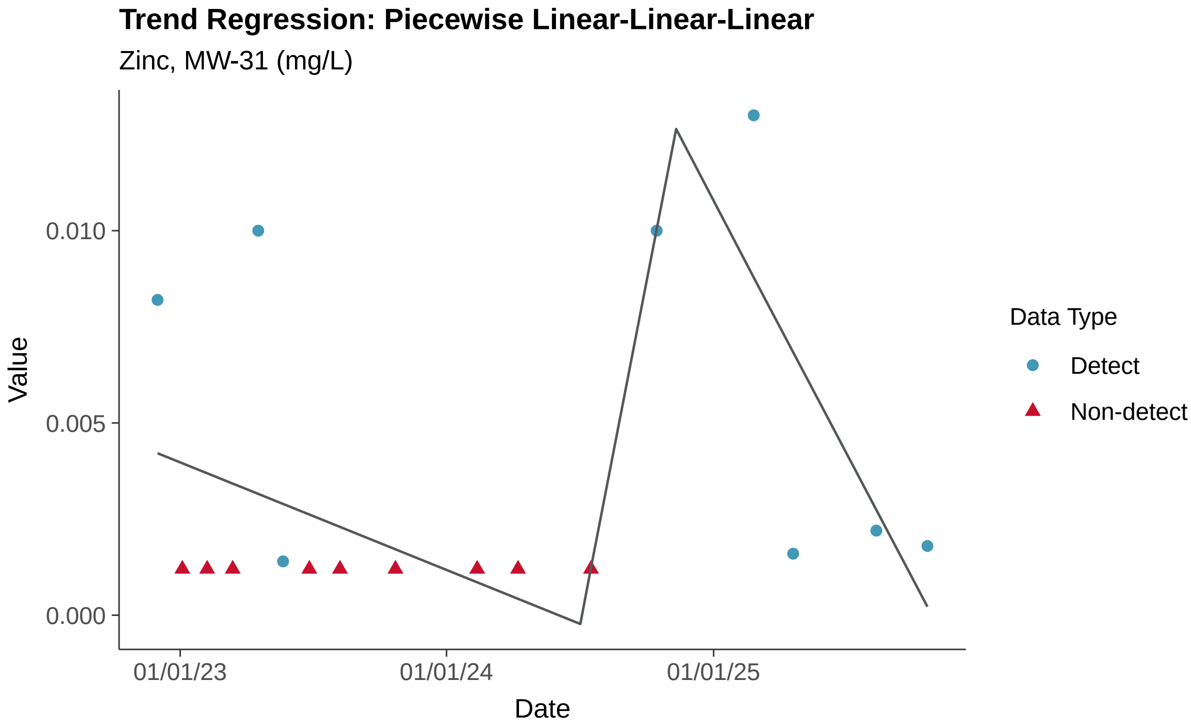
Zinc, MW-31 (mg/L)



Trend Regression: Piecewise Linear-Linear

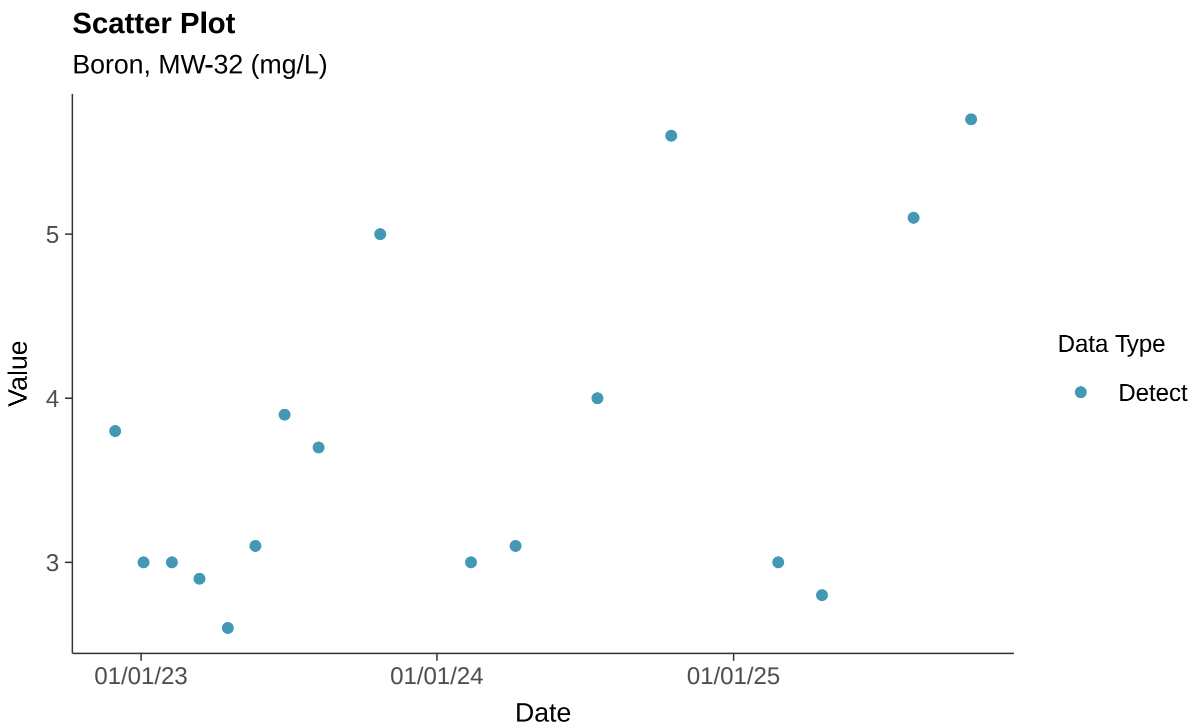
Zinc, MW-31 (mg/L)

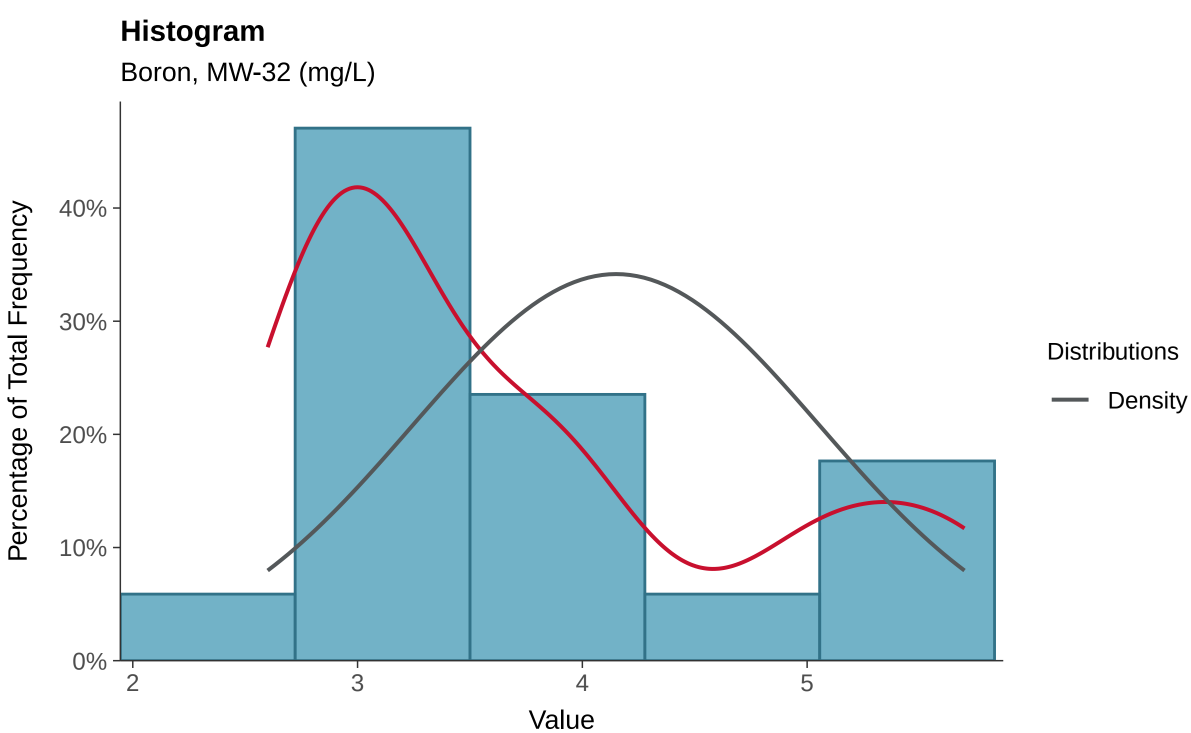



Trend Regression: Piecewise Linear-Linear-Linear
Zinc, MW-31 (mg/L)
Value
0.010
0.005
0.000
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Appendix III: Boron, MW-32

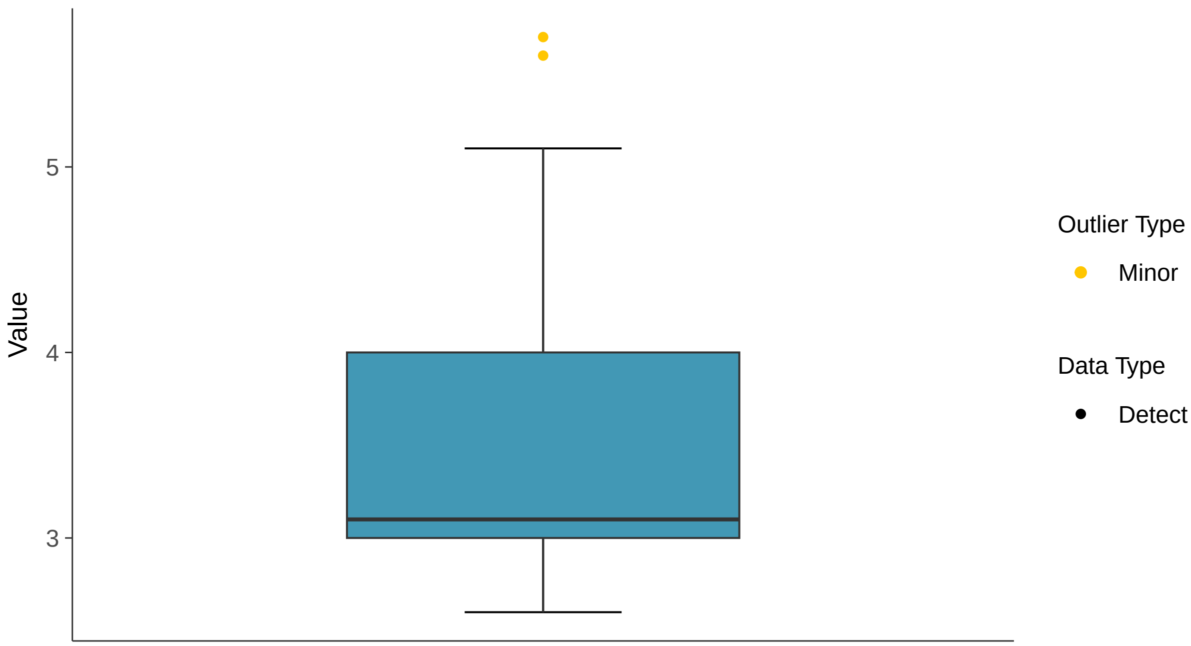
ID: 42_1_3_105





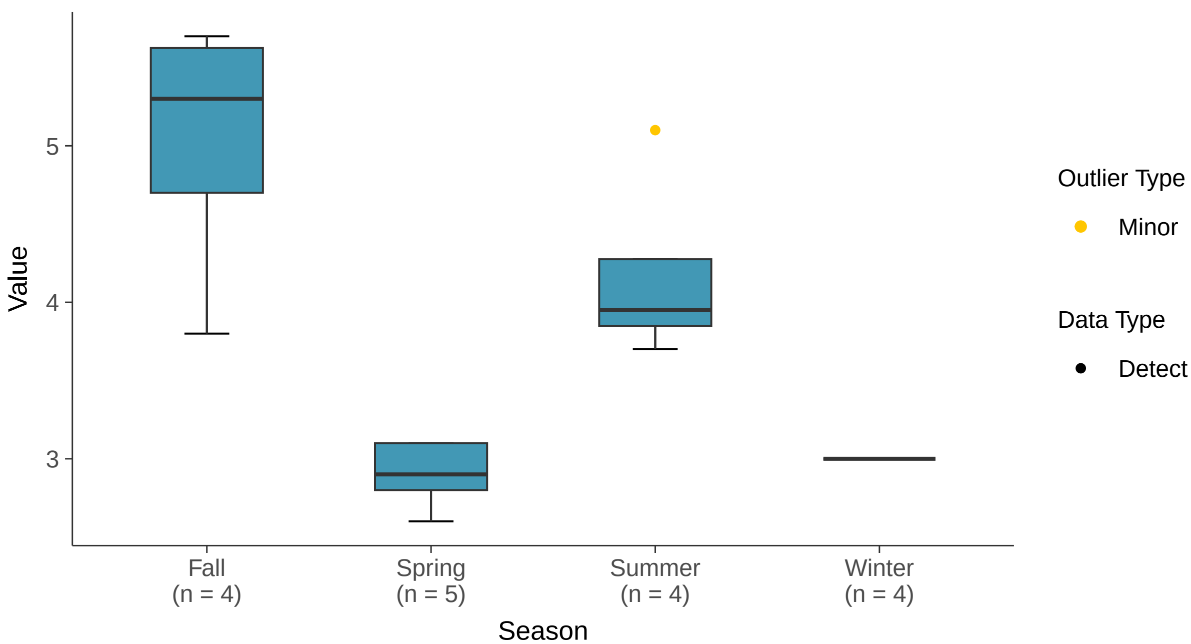
Boxplot

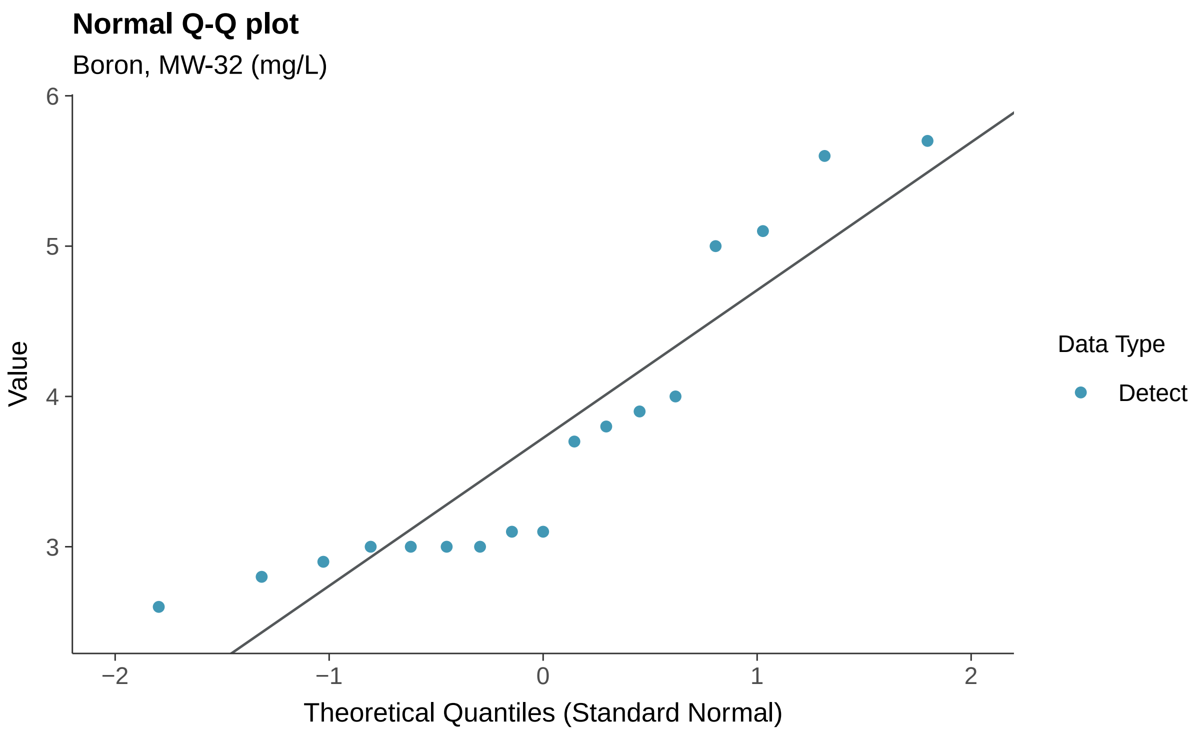
Boron, MW-32 (mg/L)

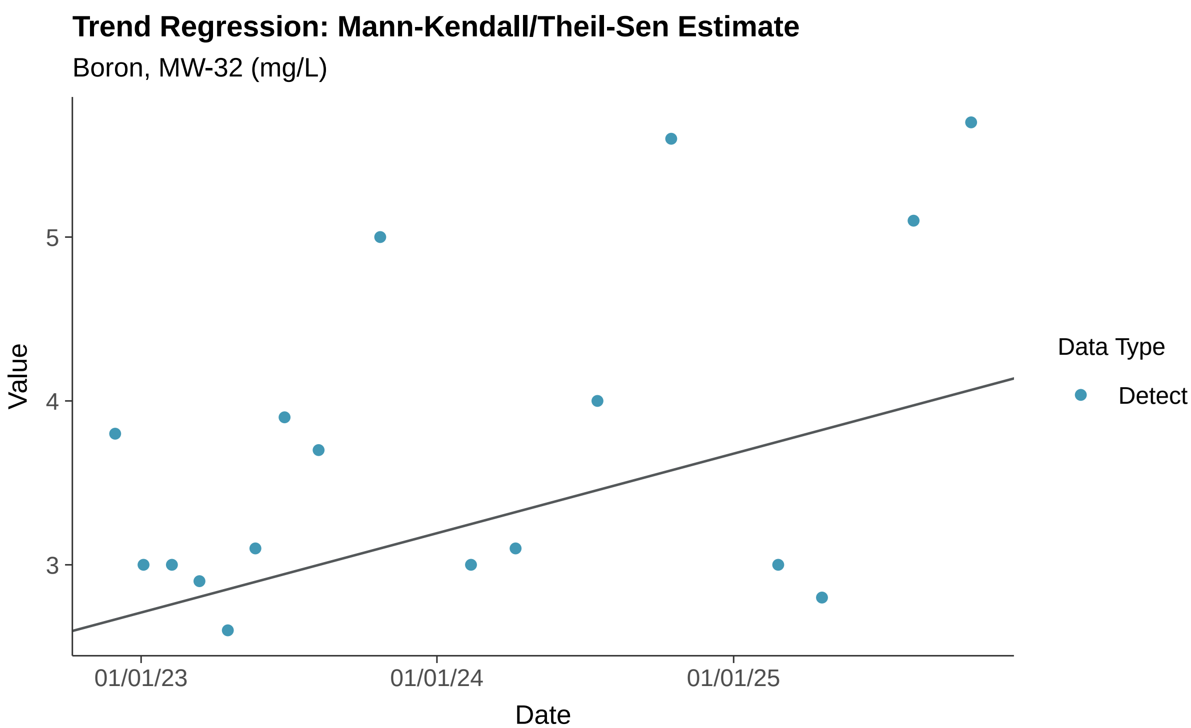


Boxplot by Season

Boron, MW-32 (mg/L)

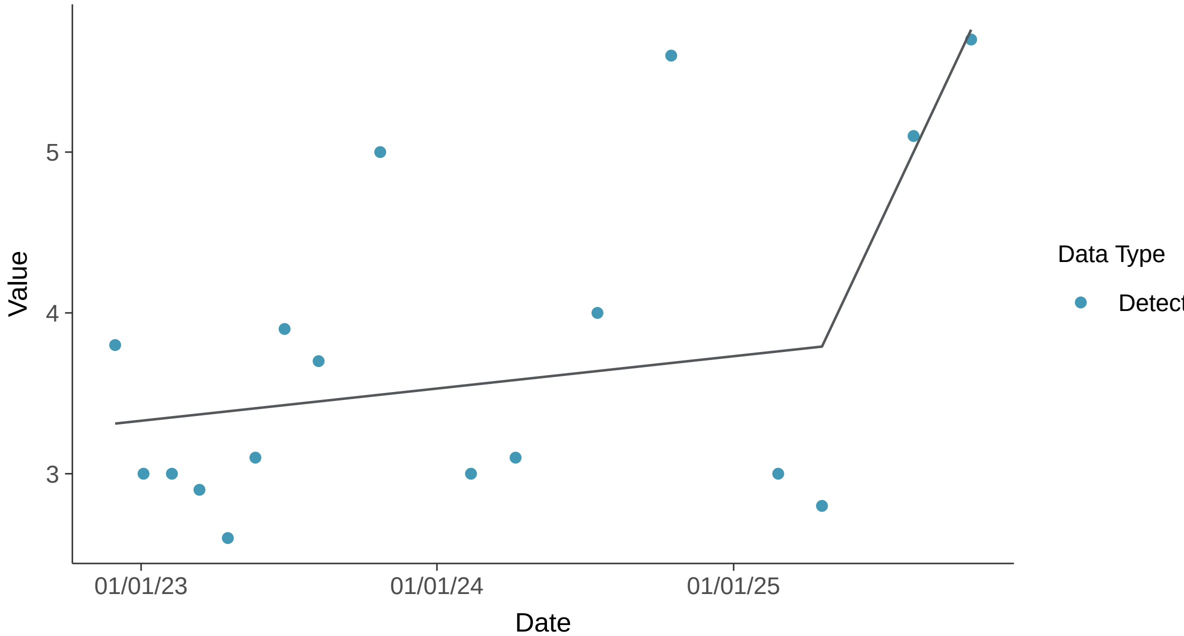



Normal Q-Q plot
Boron, MW-32 (mg/L)
Value
Theoretical Quantiles (Standard Normal)
Data Type
Detect
6
5
4
3
−2
−1
0
1
2


Trend Regression: Mann-Kendall/Theil-Sen Estimate
Boron, MW-32 (mg/L)
Value
Date
Data Type
Detect
5
4
3
01/01/23
01/01/24
01/01/25

Trend Regression: Piecewise Linear-Linear

Boron, MW-32 (mg/L)

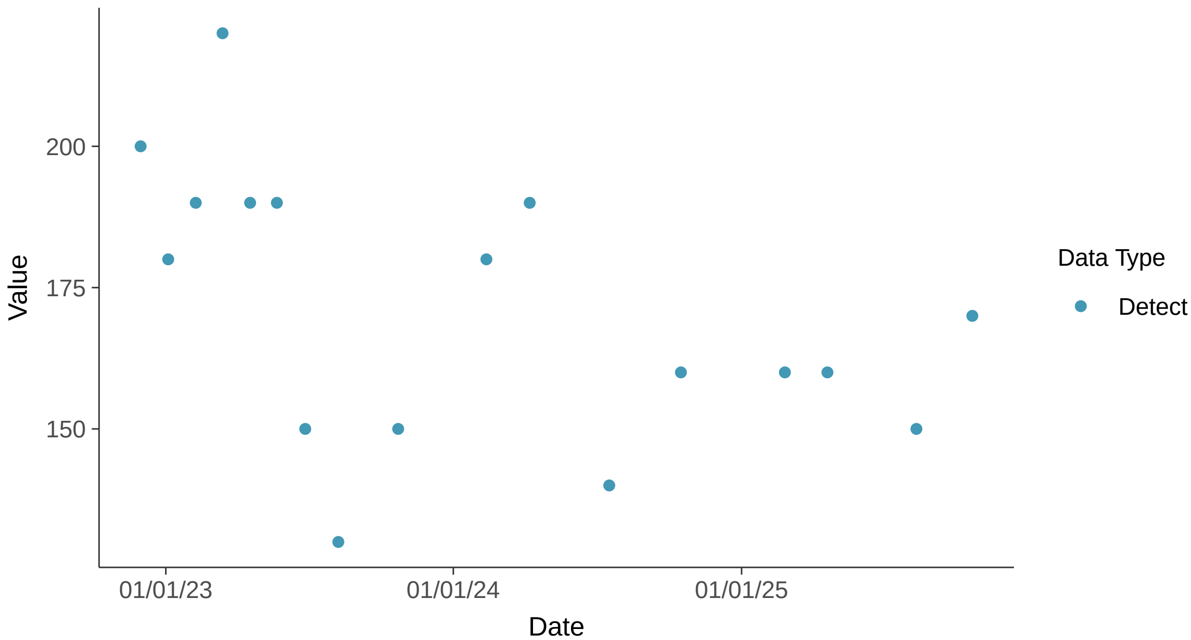


Appendix III: Calcium, MW-32

ID: 42_1_3_107

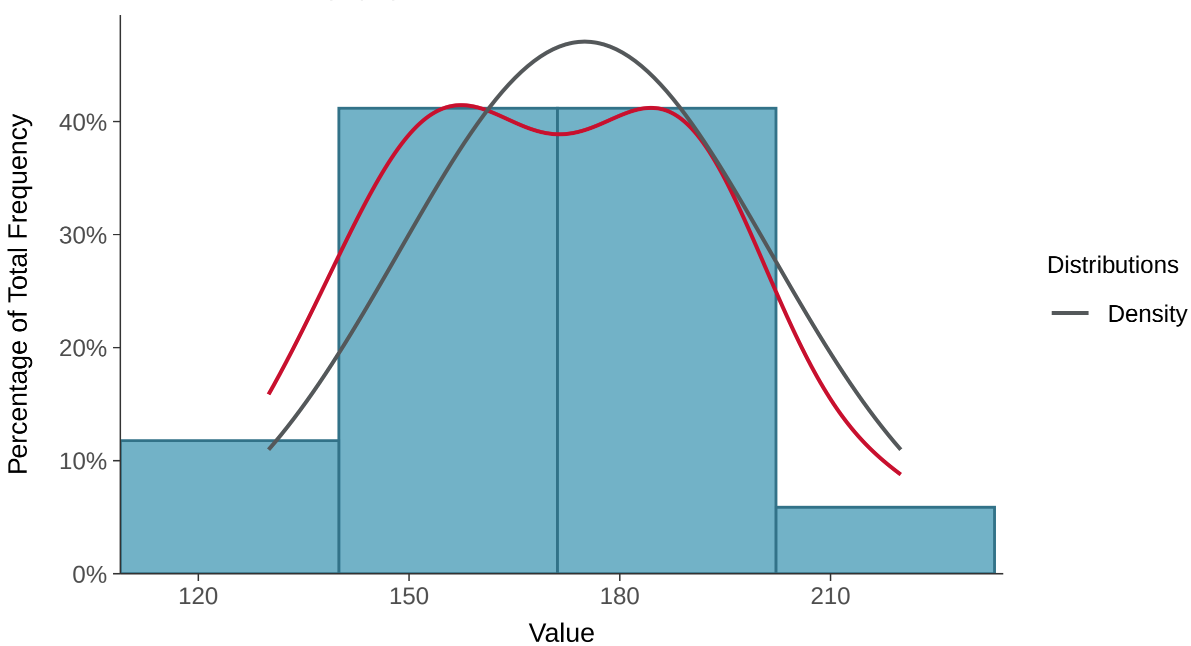
Scatter Plot

Calcium, MW-32 (mg/L)



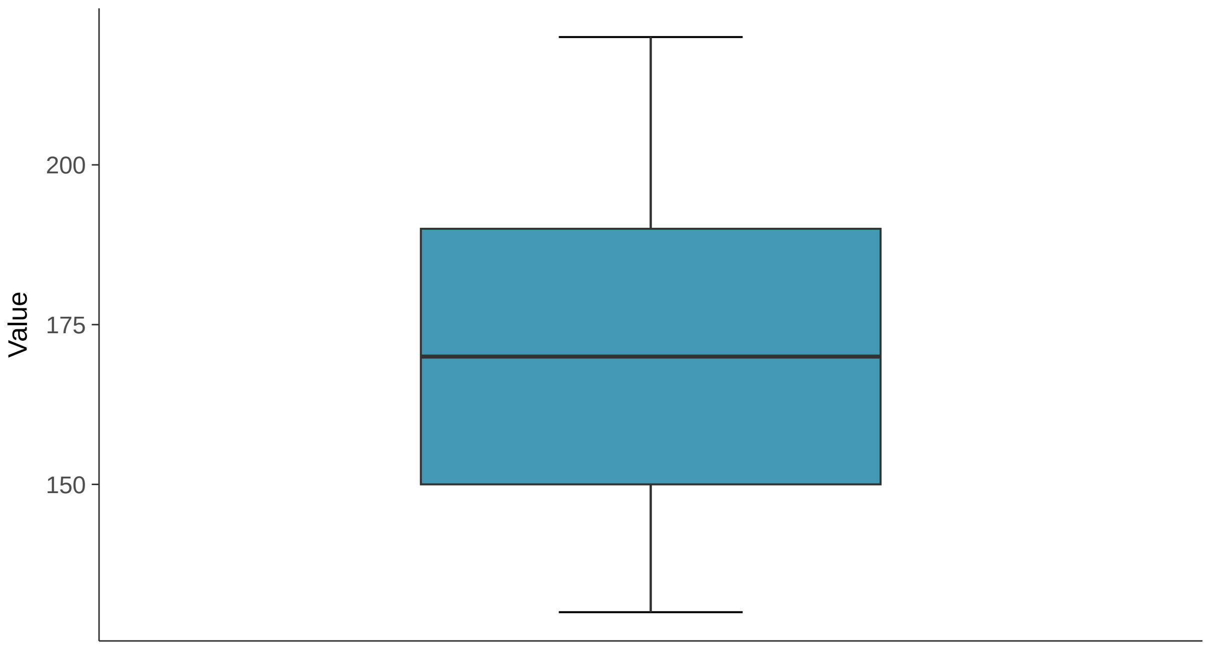
Histogram

Calcium, MW-32 (mg/L)



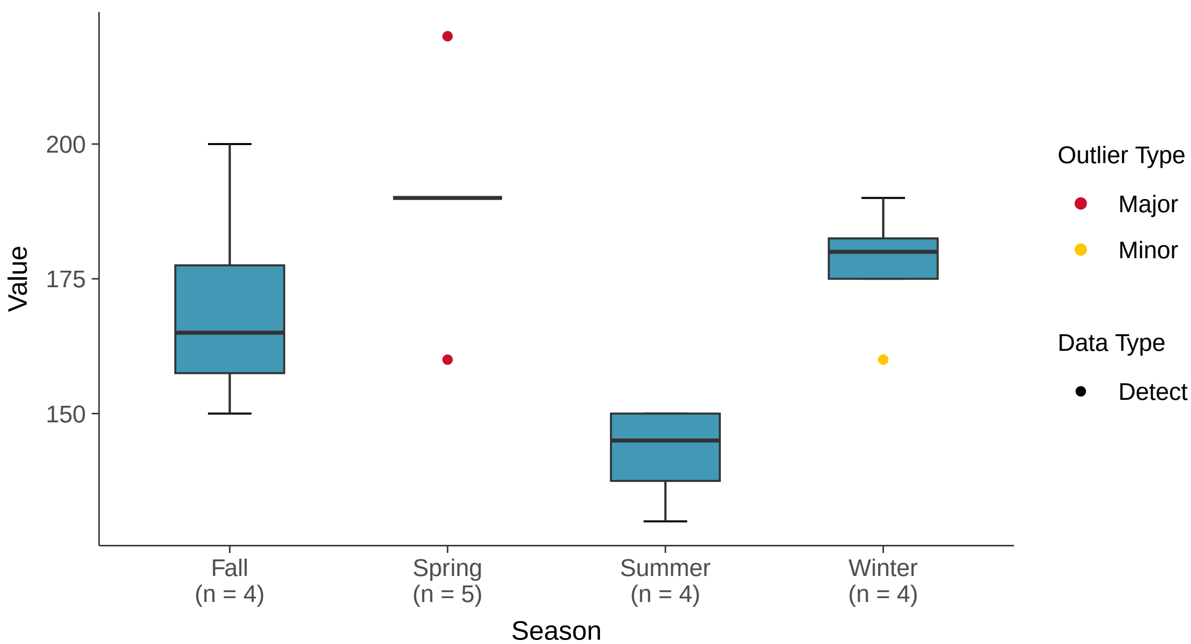
Boxplot

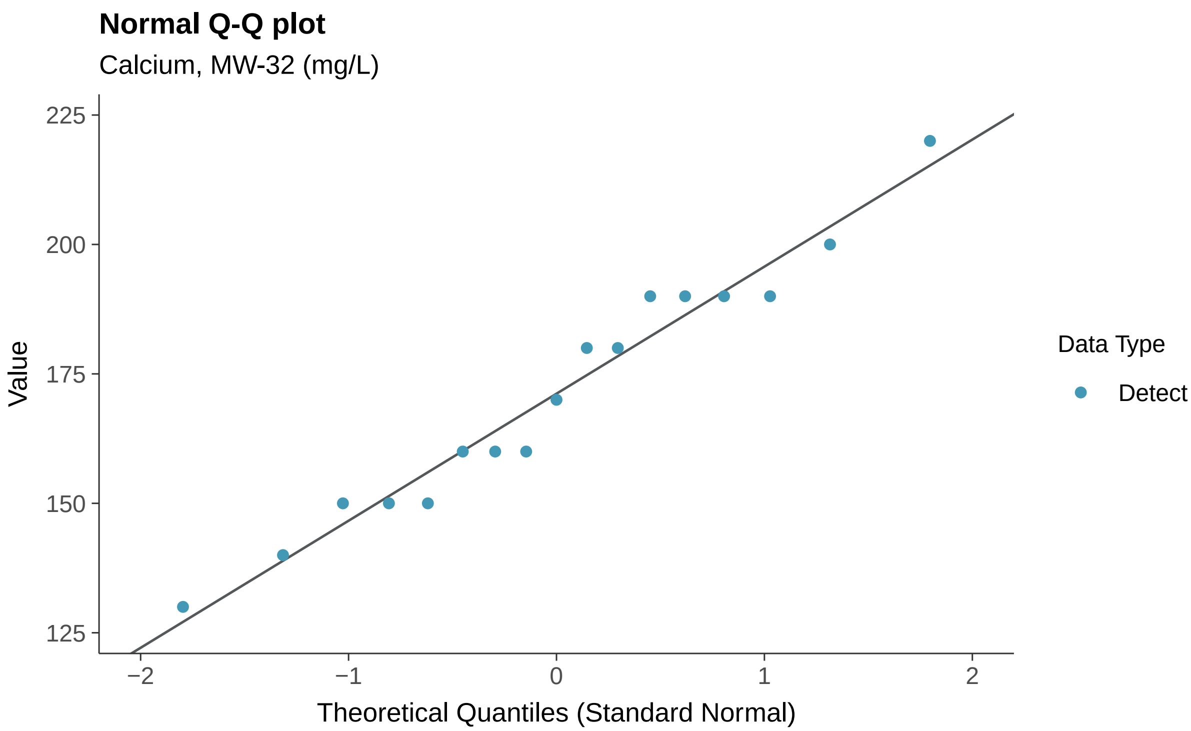
Calcium, MW-32 (mg/L)

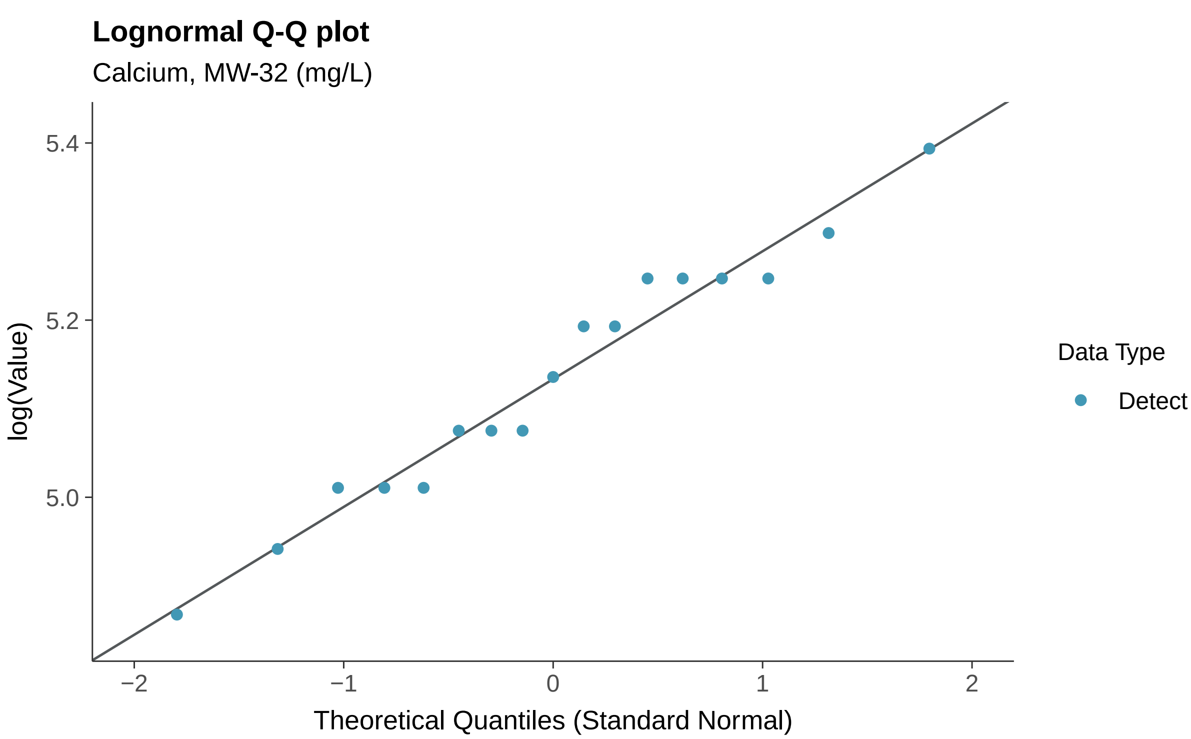


Boxplot by Season

Calcium, MW-32 (mg/L)

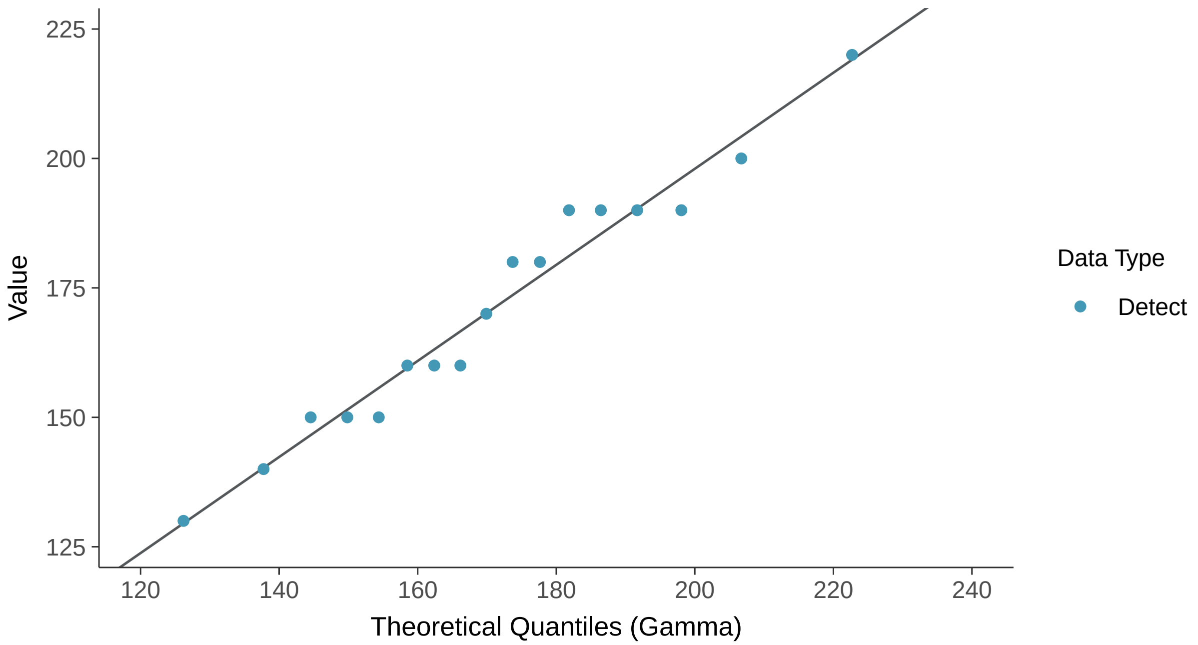



Normal Q-Q plot
Calcium, MW-32 (mg/L)
Value
225
200
175
150
125
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Calcium, MW-32 (mg/L)
log(Value)
5.4
5.2
5.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

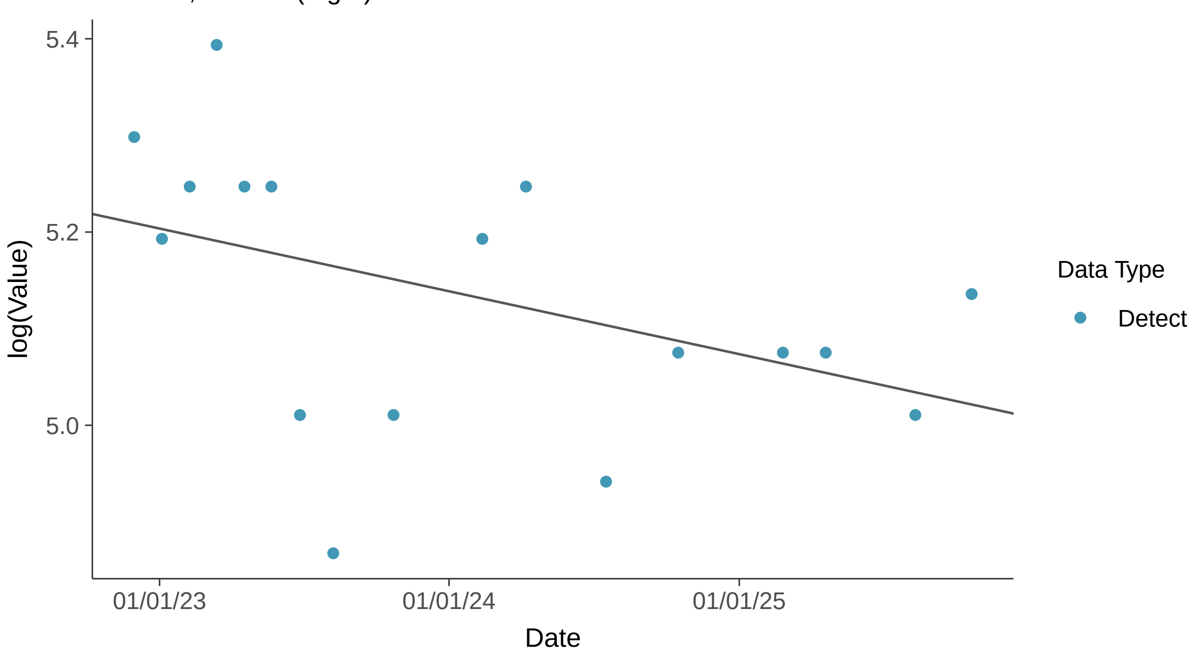
Gamma Q-Q plot

Calcium, MW-32 (mg/L)



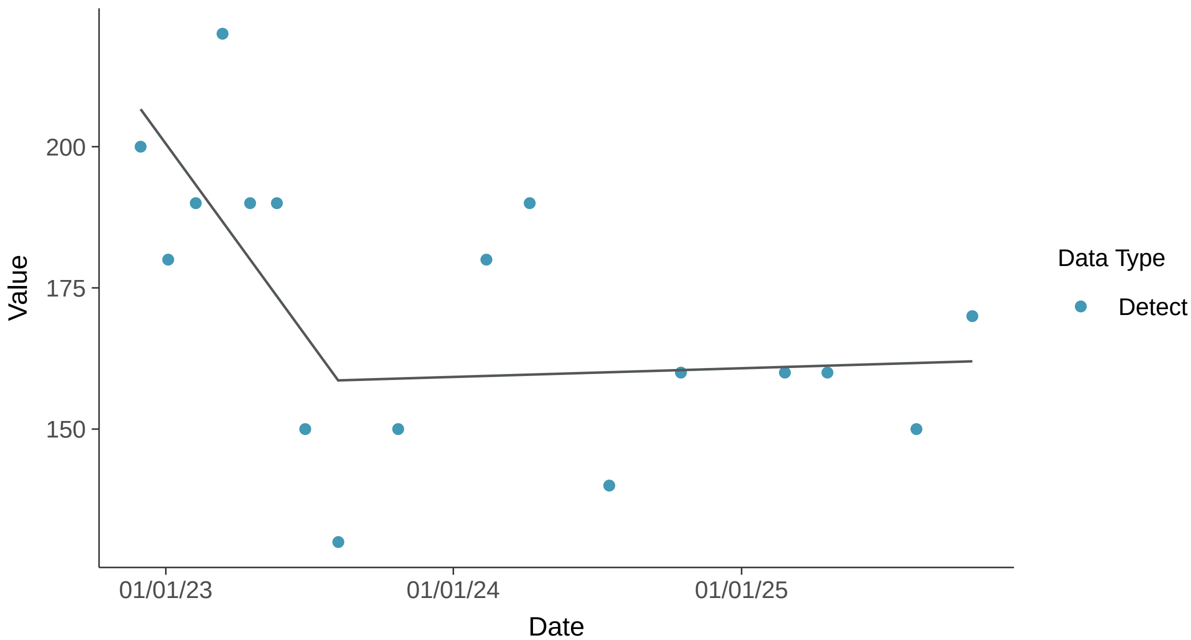
Trend Regression: Lognormal MLE

Calcium, MW-32 (mg/L)



Trend Regression: Piecewise Linear-Linear

Calcium, MW-32 (mg/L)

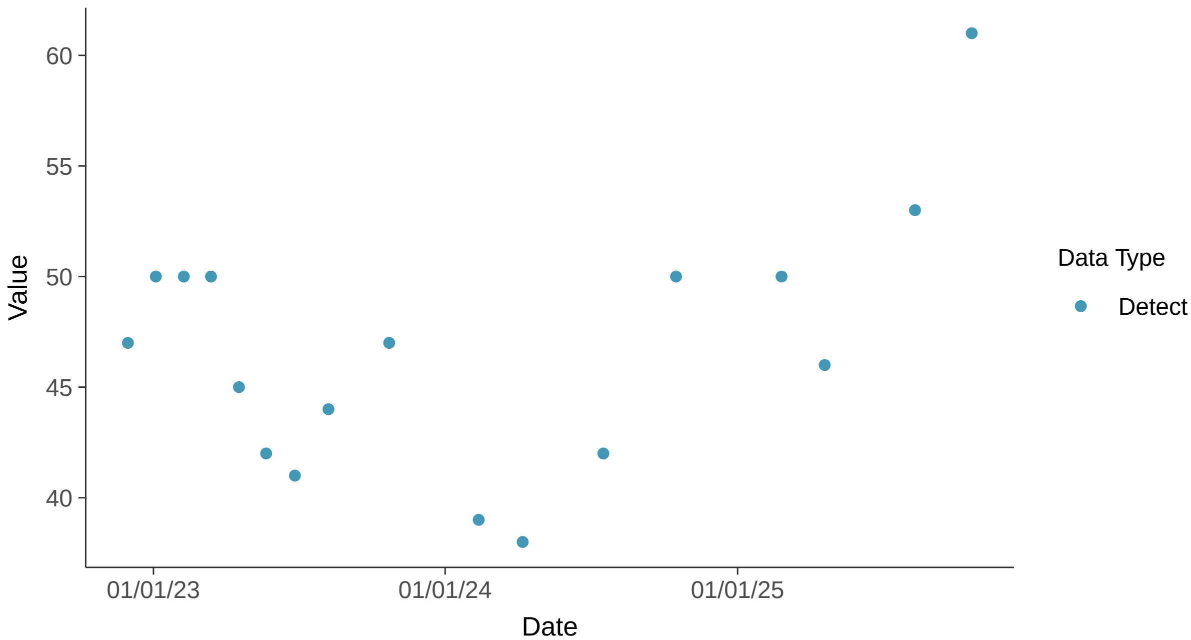


Appendix III: Chloride (as Cl), MW-32

ID: 42_1_3_108

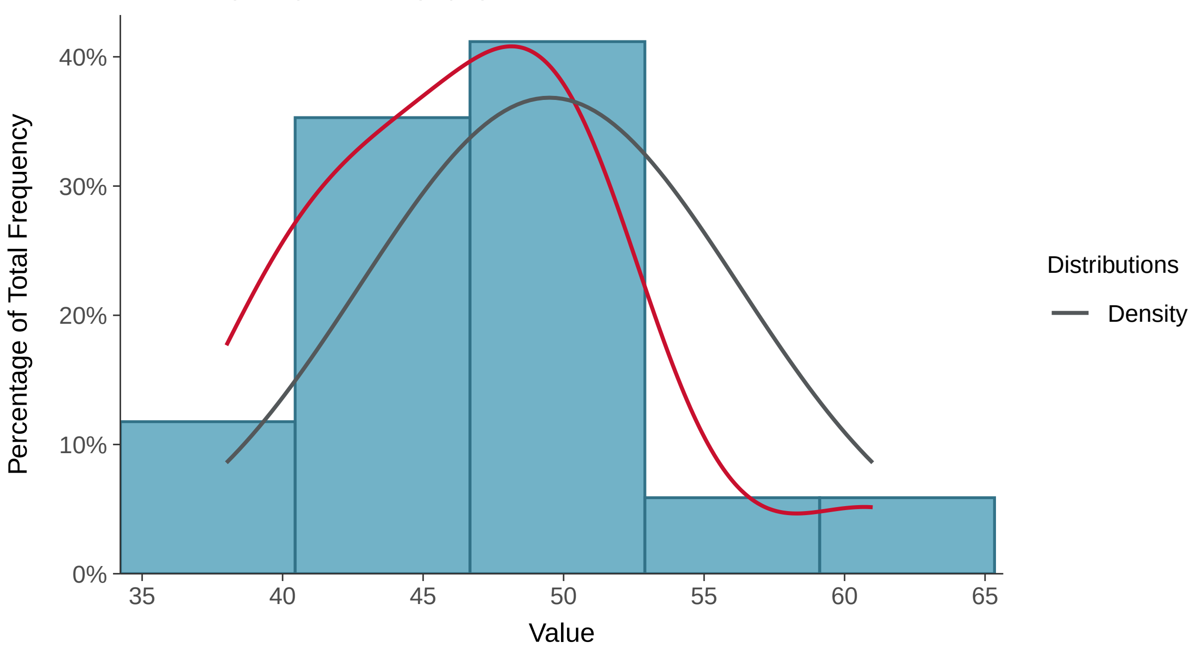
Scatter Plot

Chloride (as Cl), MW-32 (mg/L)



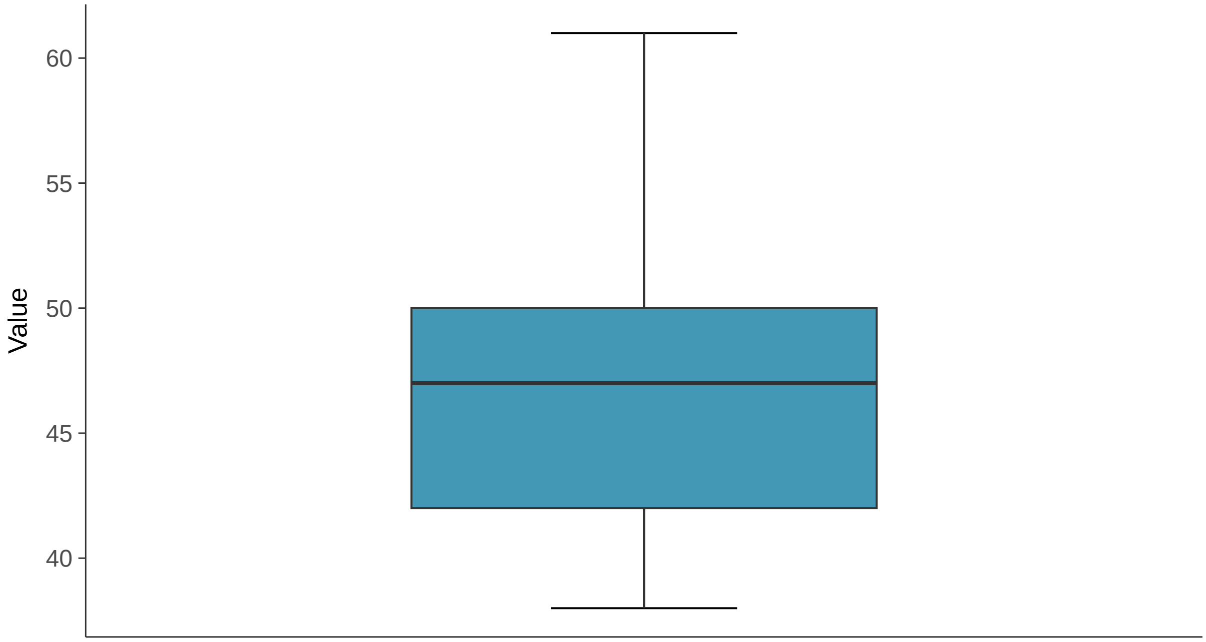
Histogram

Chloride (as Cl), MW-32 (mg/L)



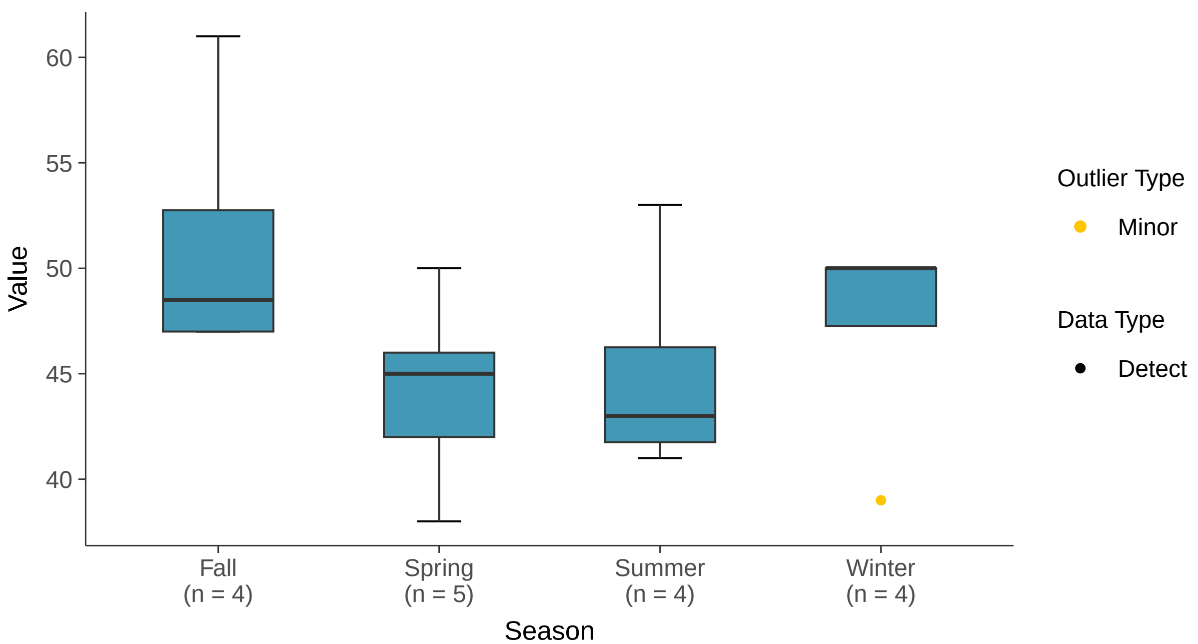
Boxplot

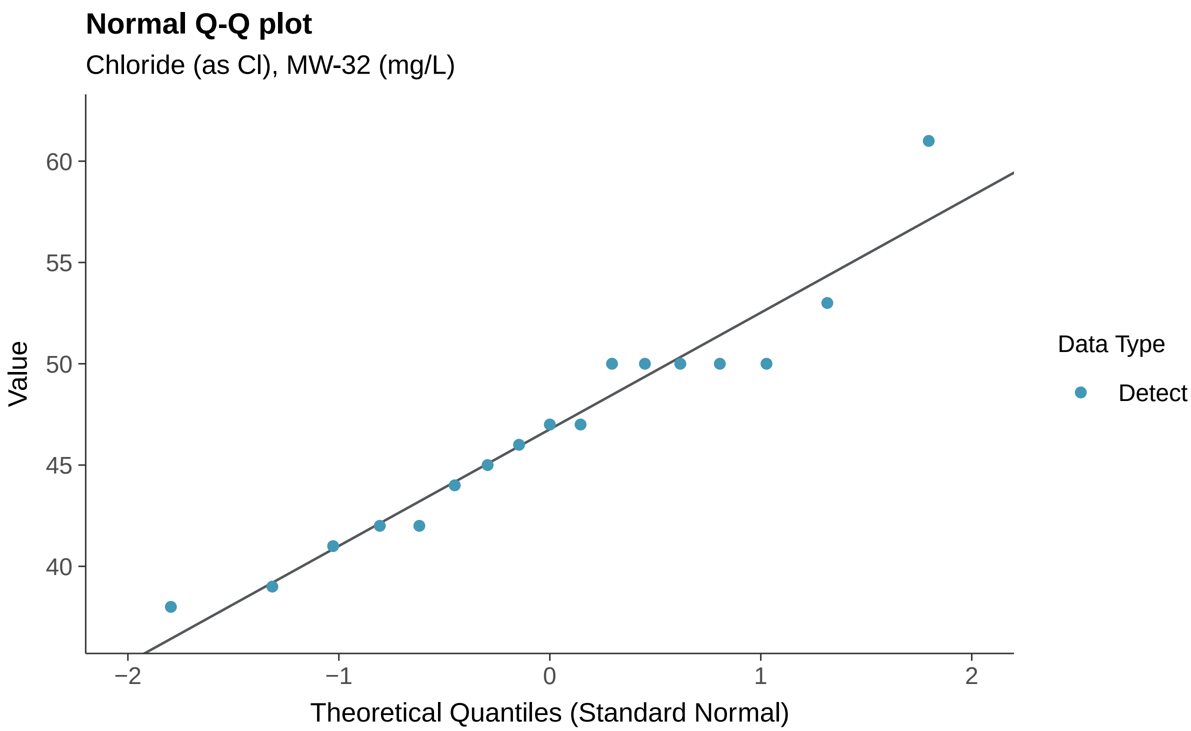
Chloride (as Cl), MW-32 (mg/L)

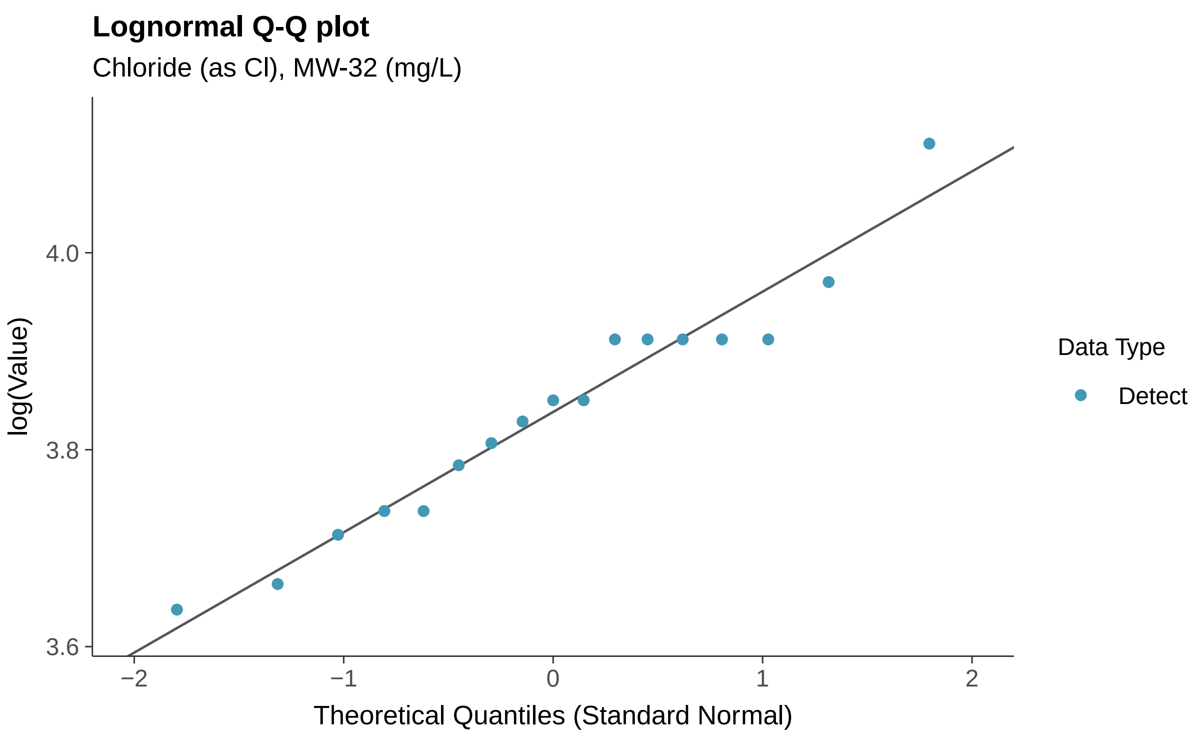


Boxplot by Season

Chloride (as Cl), MW-32 (mg/L)

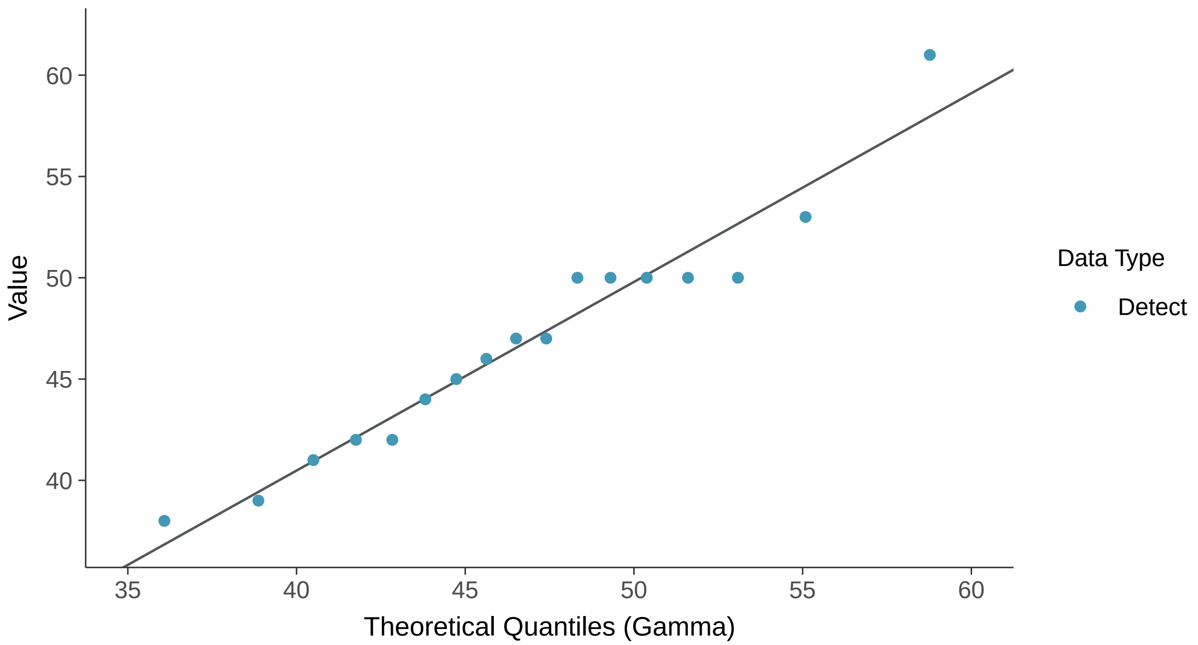



Normal Q-Q plot
Chloride (as Cl), MW-32 (mg/L)
Value
60
55
50
45
40
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Chloride (as Cl), MW-32 (mg/L)
log(Value)
4.0
3.8
3.6
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

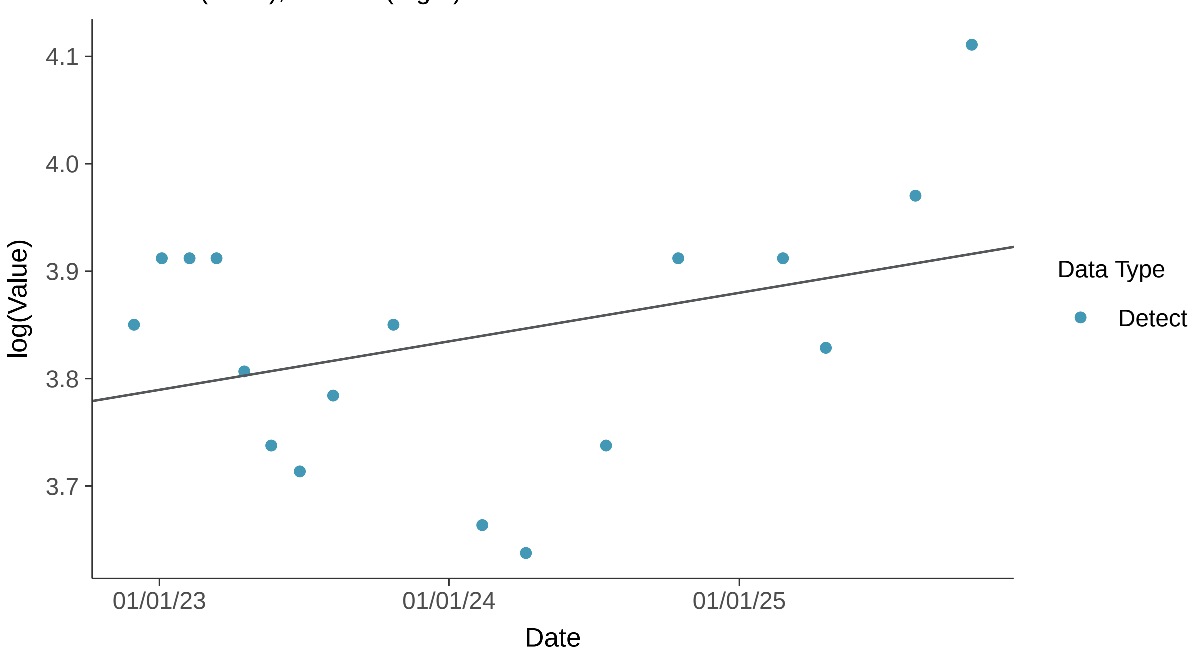
Gamma Q-Q plot

Chloride (as Cl), MW-32 (mg/L)



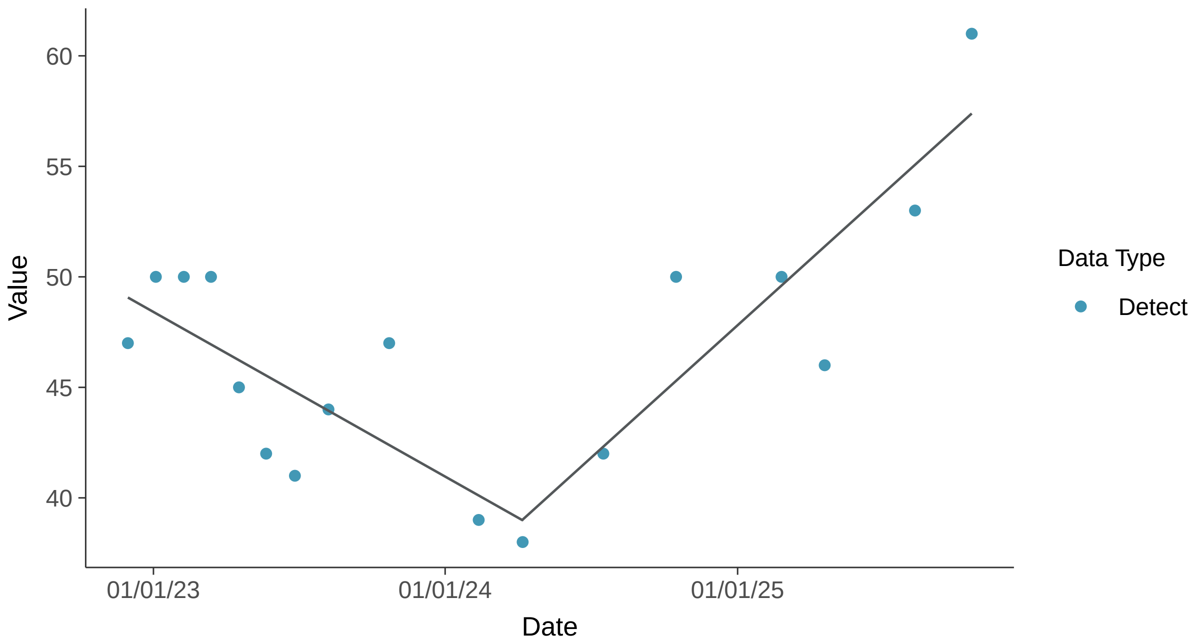
Trend Regression: Lognormal MLE

Chloride (as Cl), MW-32 (mg/L)



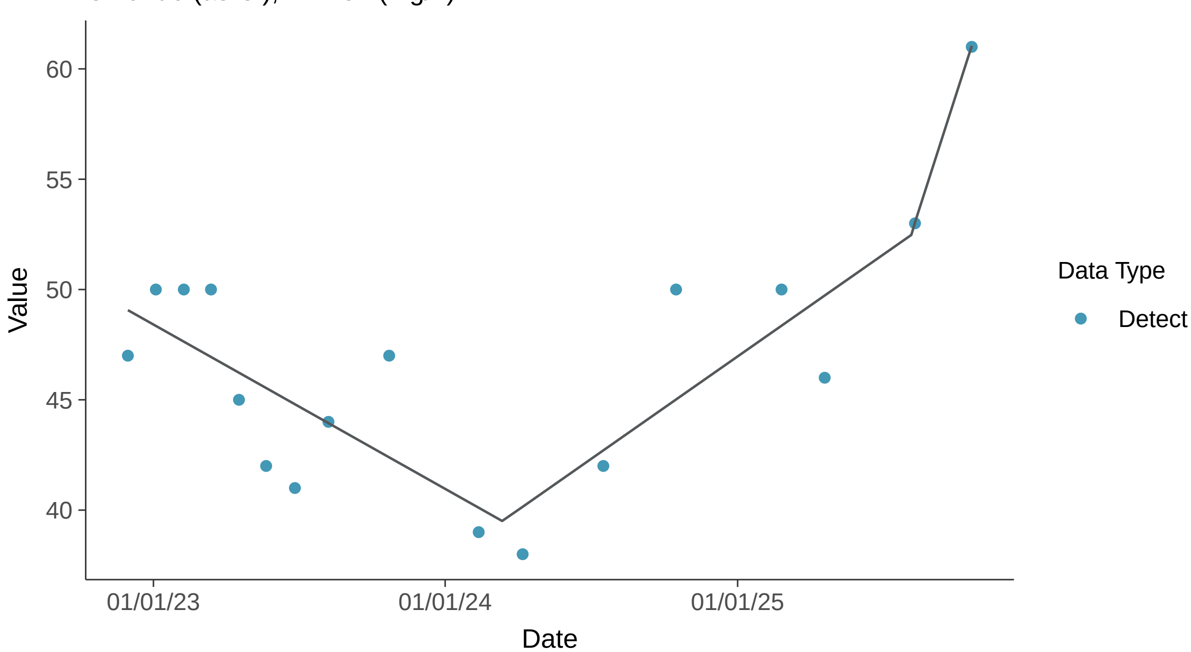
Trend Regression: Piecewise Linear-Linear

Chloride (as Cl), MW-32 (mg/L)



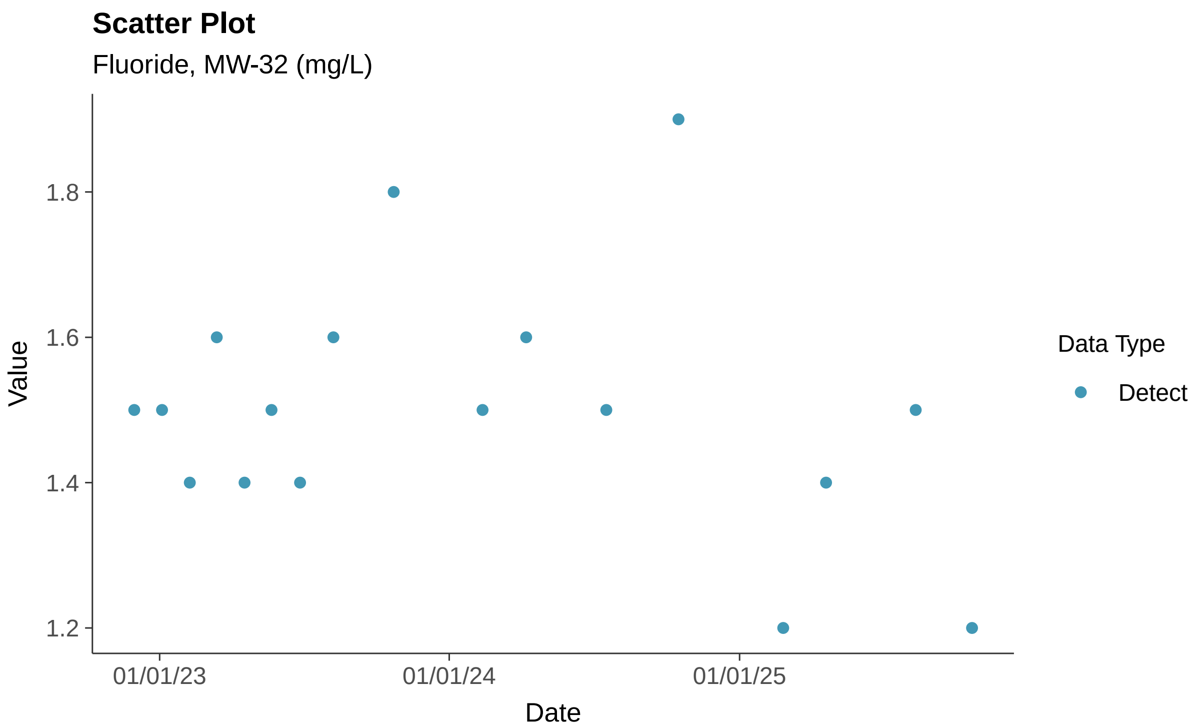
Trend Regression: Piecewise Linear-Linear-Linear

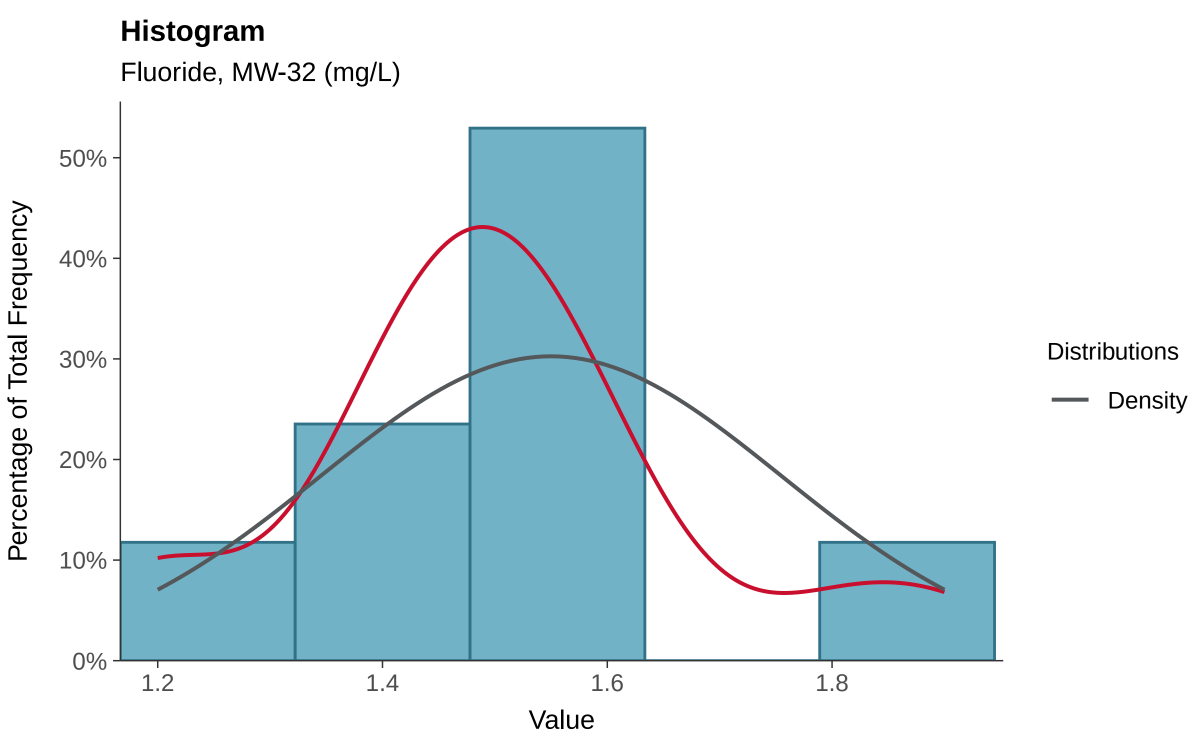
Chloride (as Cl), MW-32 (mg/L)



Appendix III: Fluoride, MW-32

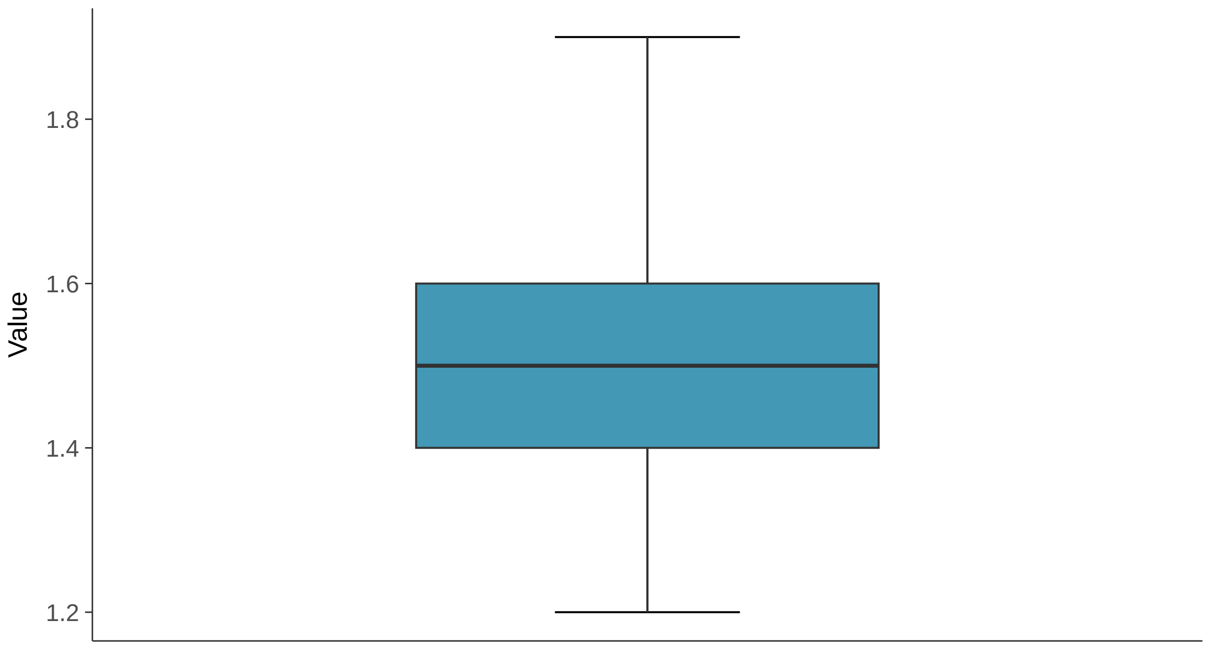
ID: 42_1_3_112





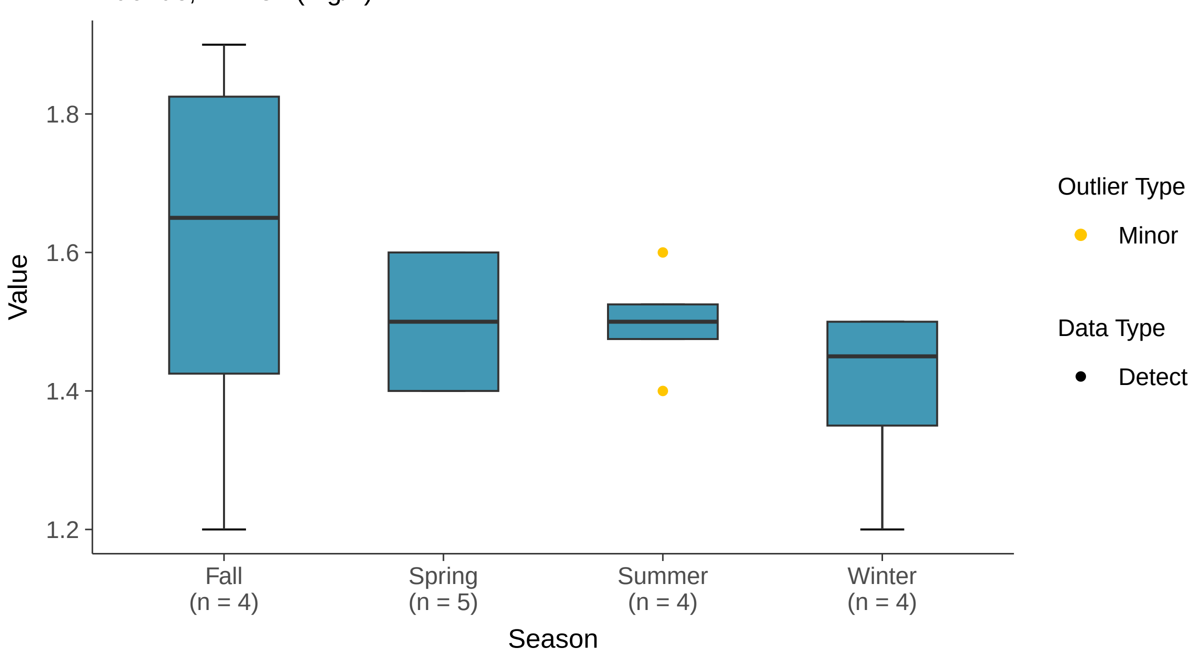
Boxplot

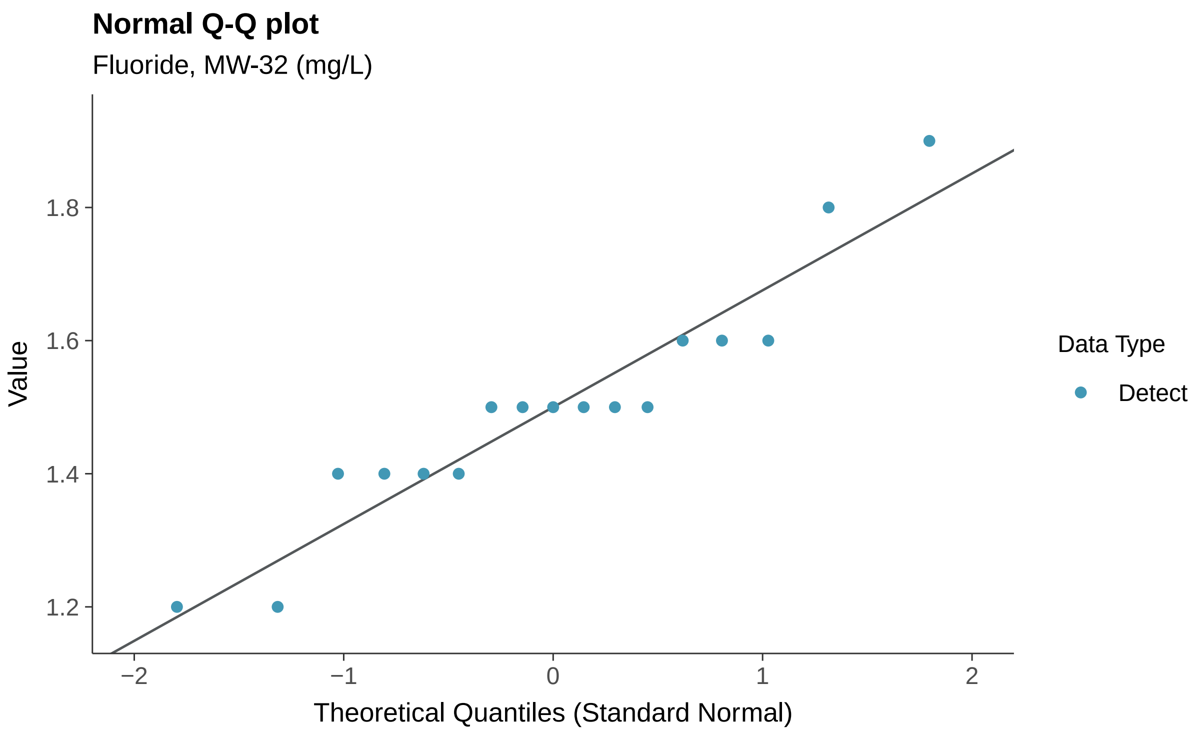
Fluoride, MW-32 (mg/L)

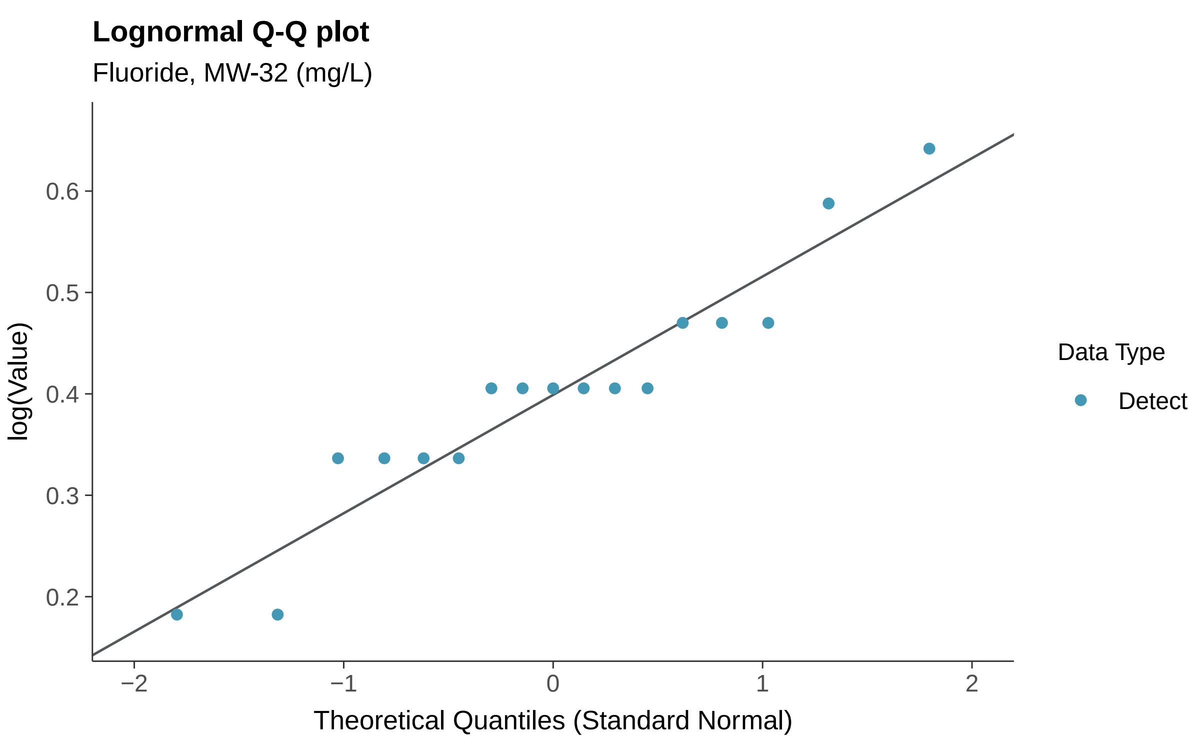


Boxplot by Season

Fluoride, MW-32 (mg/L)

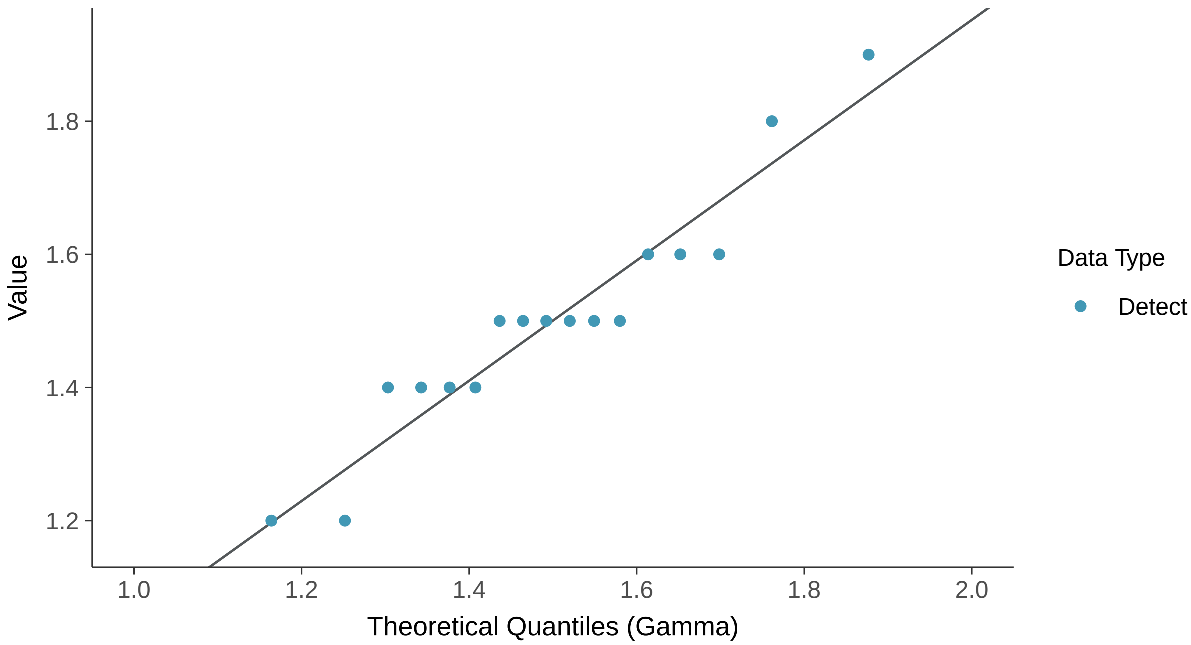



Normal Q-Q plot
Fluoride, MW-32 (mg/L)
Value
1.8
1.6
1.4
1.2
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Fluoride, MW-32 (mg/L)
log(Value)
0.6
0.5
0.4
0.3
0.2
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

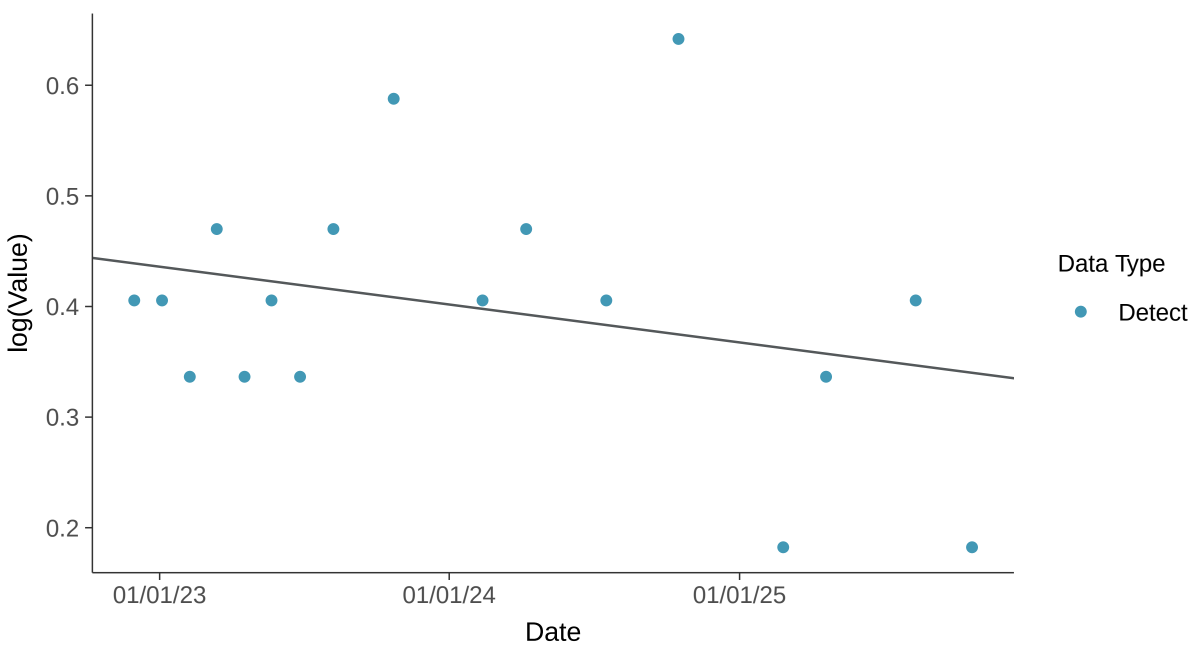
Gamma Q-Q plot

Fluoride, MW-32 (mg/L)



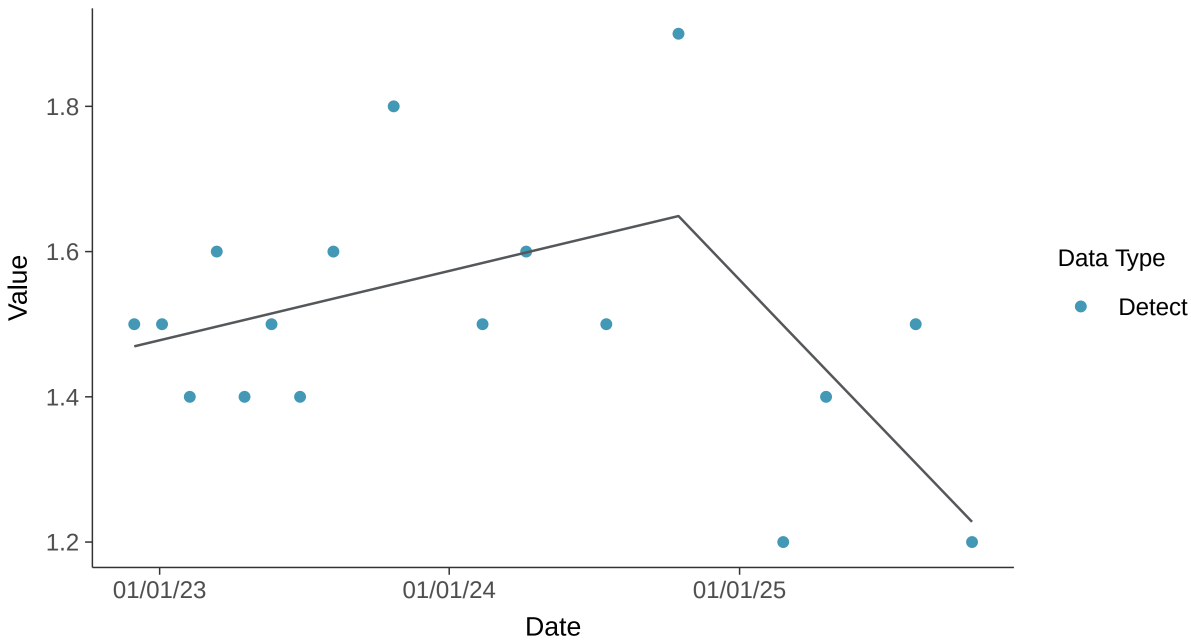
Trend Regression: Lognormal MLE

Fluoride, MW-32 (mg/L)



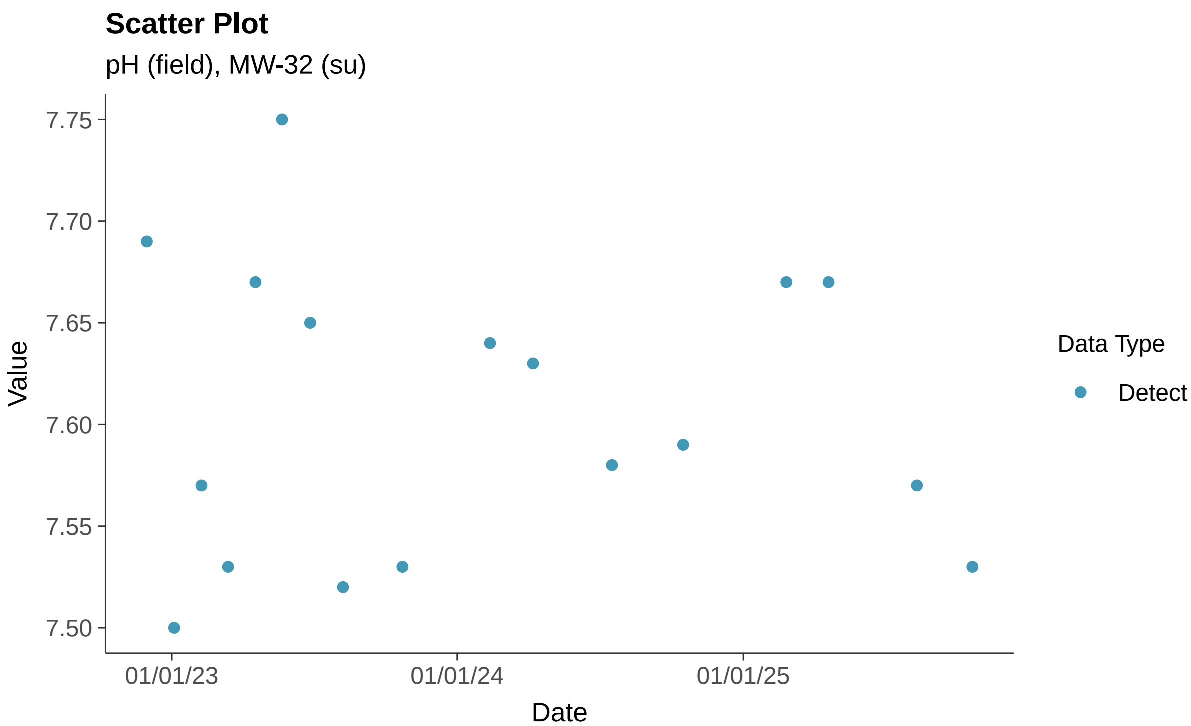
Trend Regression: Piecewise Linear-Linear

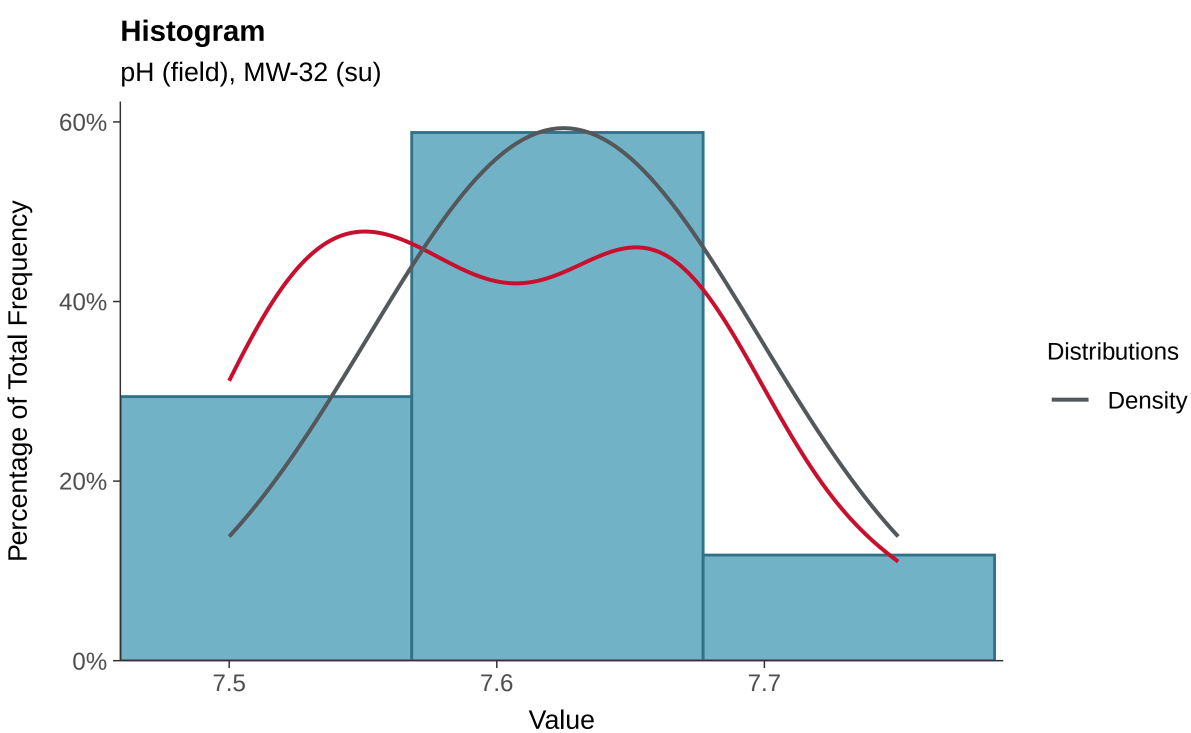
Fluoride, MW-32 (mg/L)



Appendix III: pH (field), MW-32

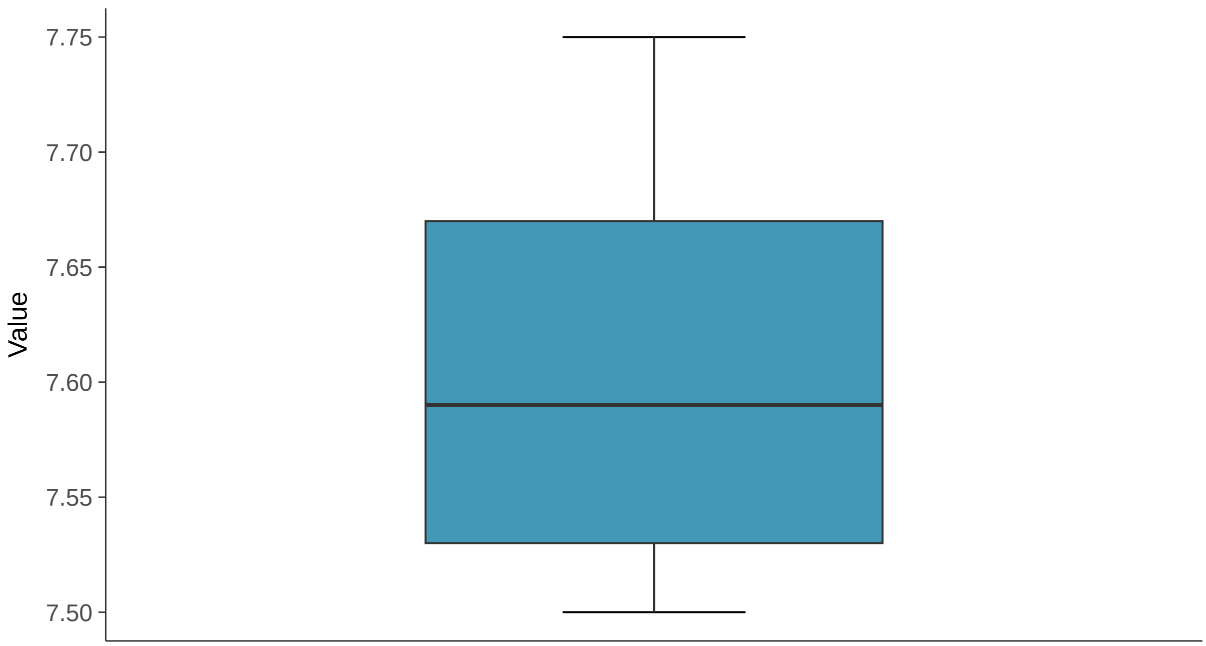
ID: 42_1_3_120





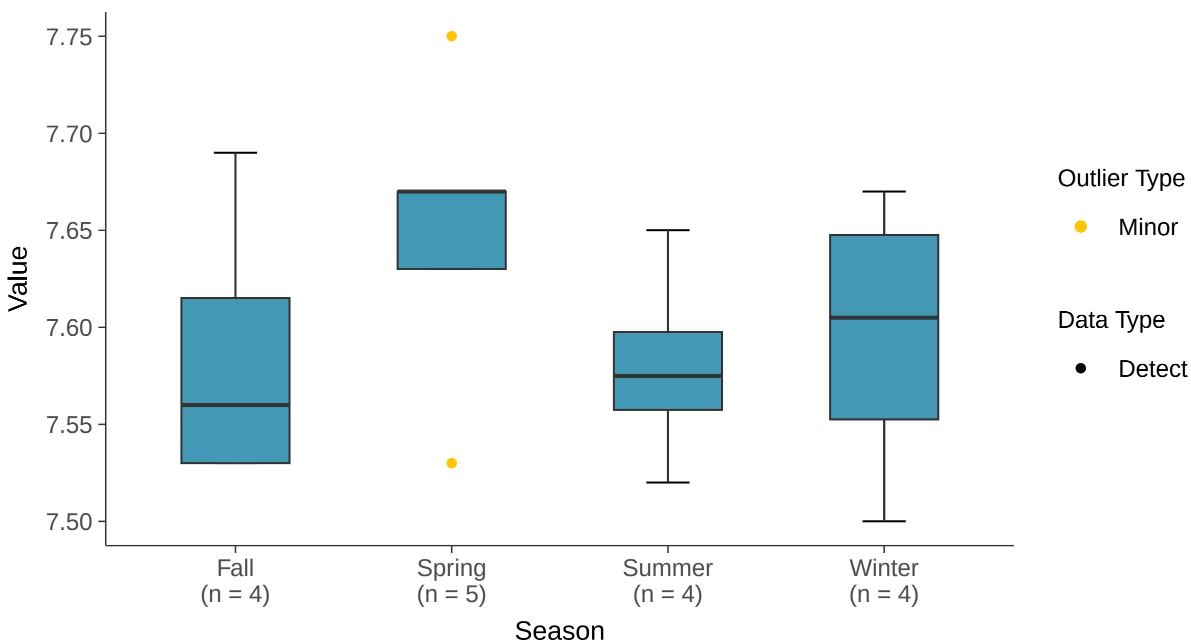
Boxplot

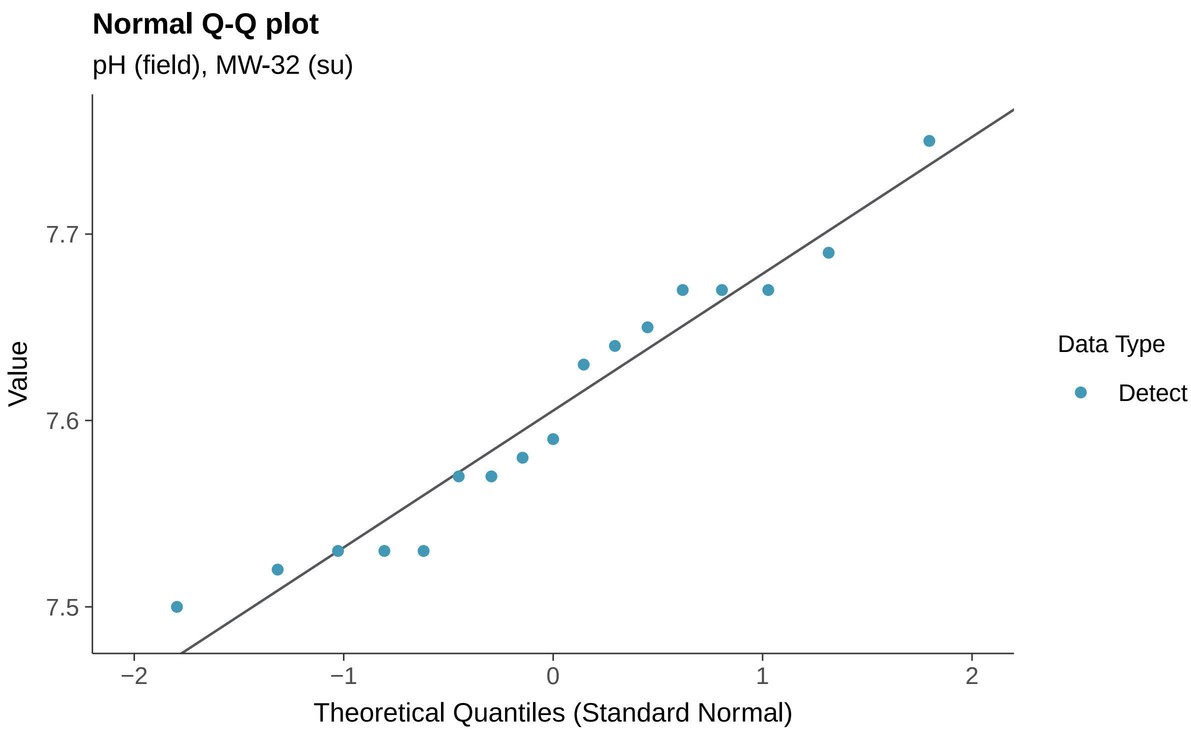
pH (field), MW-32 (su)

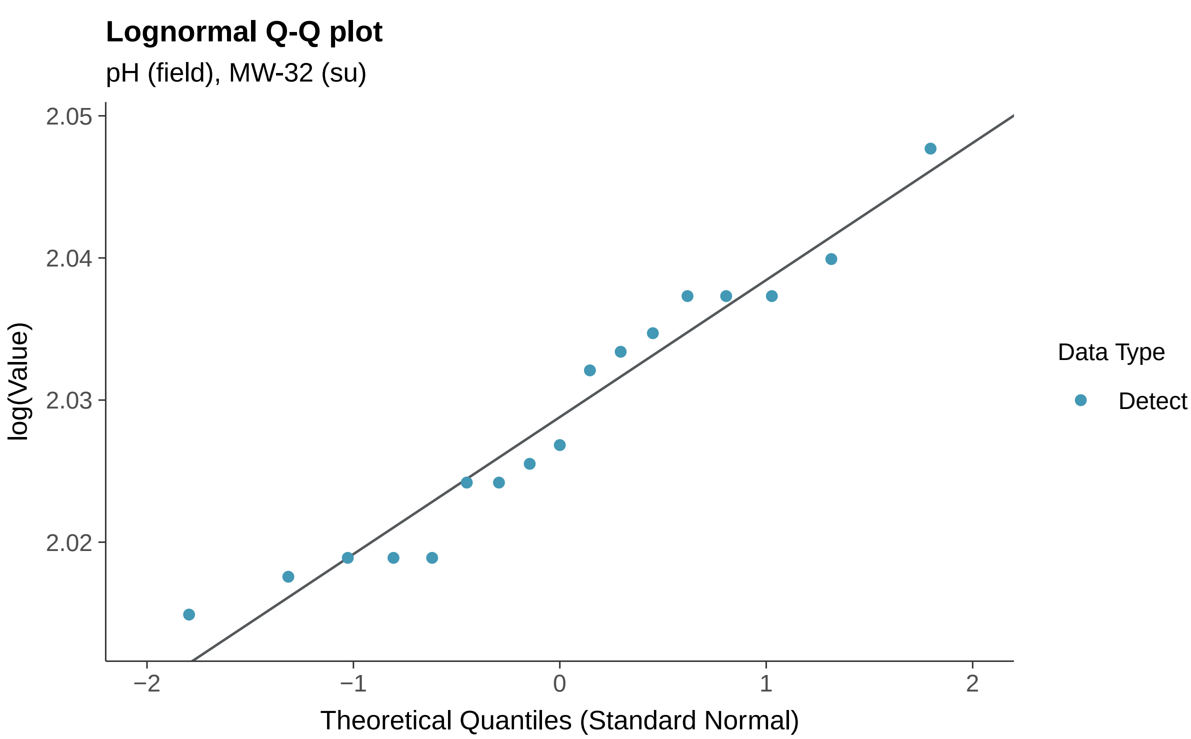


Boxplot by Season

pH (field), MW-32 (su)

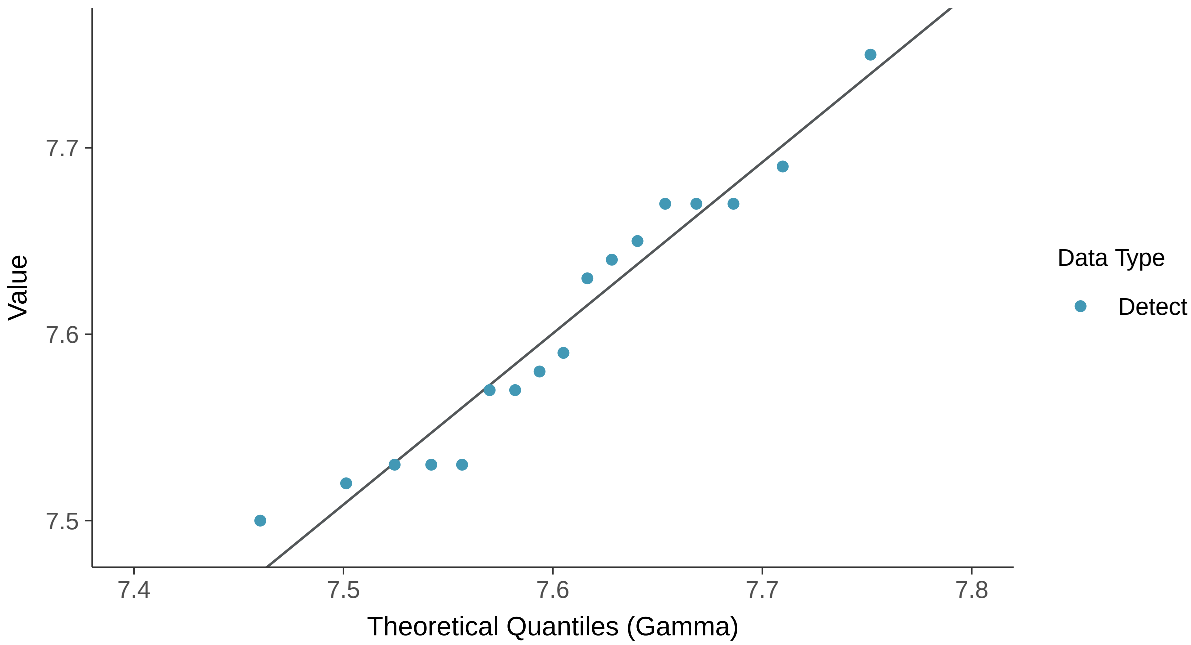



Normal Q-Q plot
pH (field), MW-32 (su)
Value
7.7
7.6
7.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
pH (field), MW-32 (su)
log(Value)
2.05
2.04
2.03
2.02
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

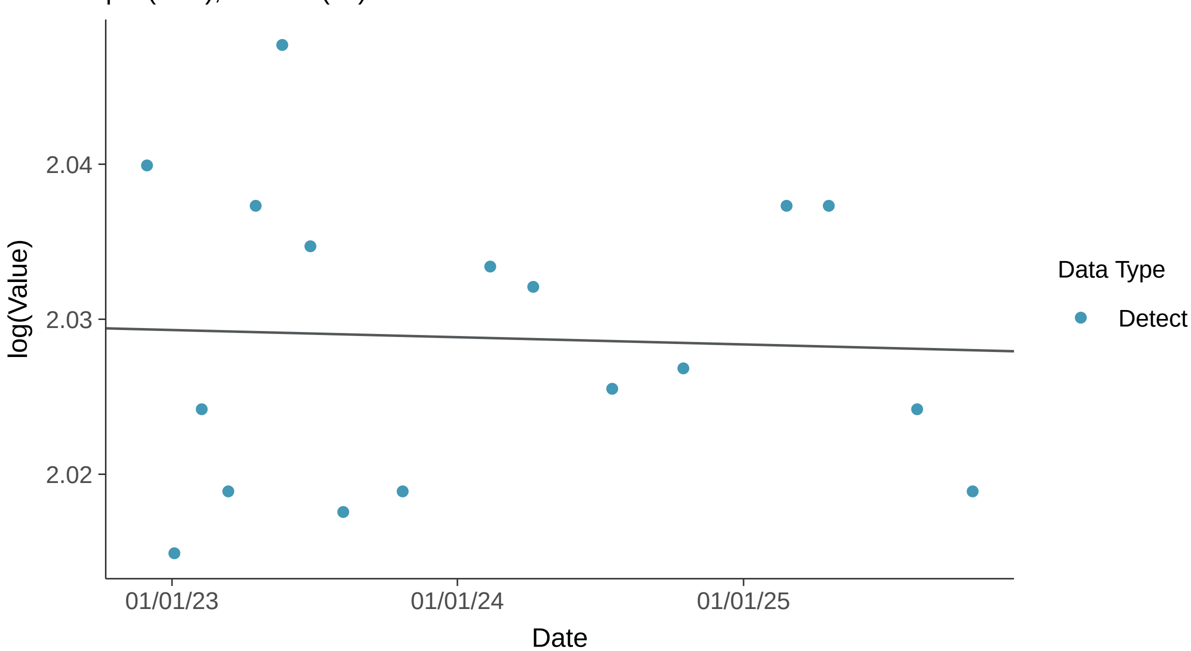
Gamma Q-Q plot

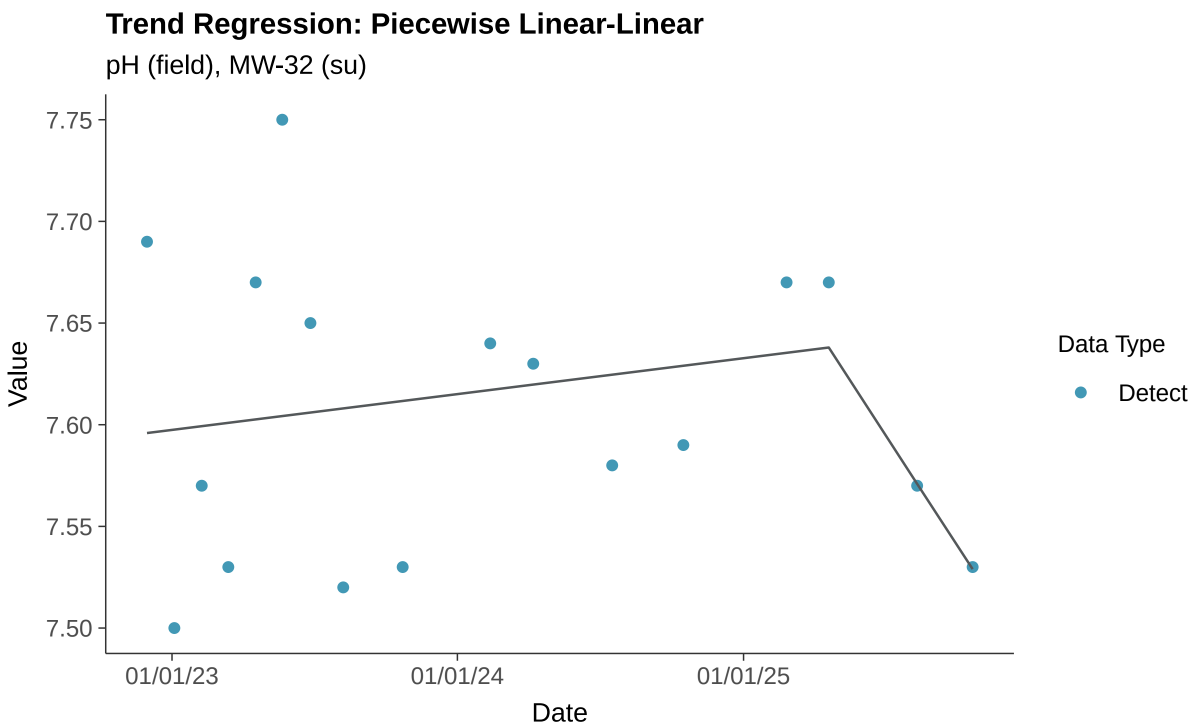
pH (field), MW-32 (su)



Trend Regression: Lognormal MLE

pH (field), MW-32 (su)



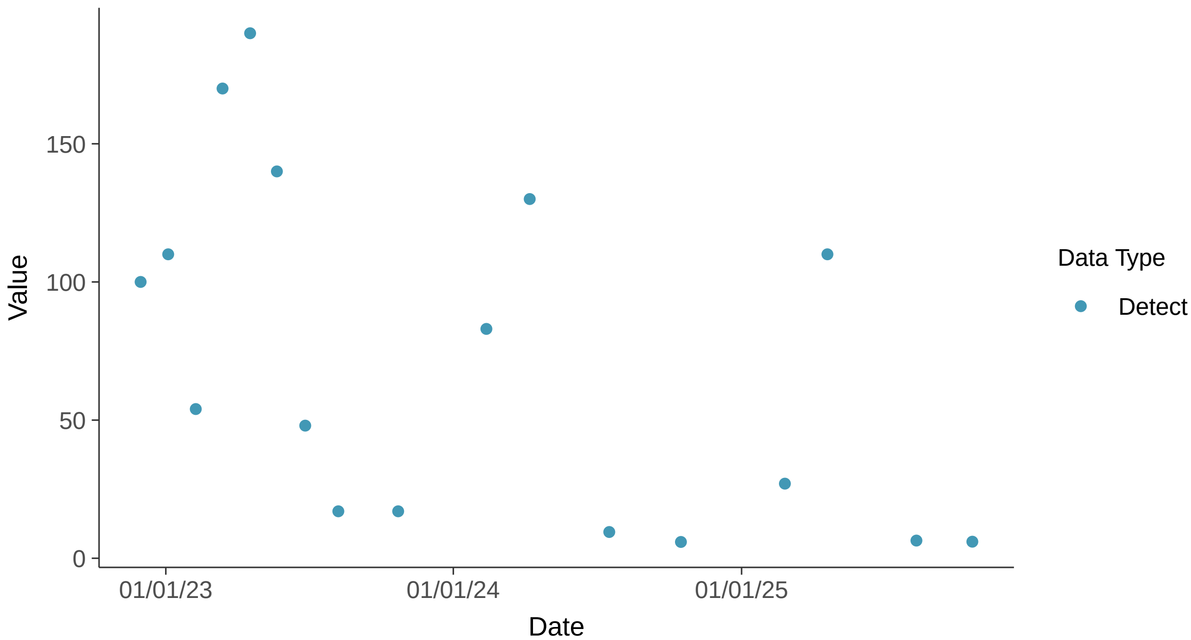

Trend Regression: Piecewise Linear-Linear
pH (field), MW-32 (su)
Value
7.75
7.70
7.65
7.60
7.55
7.50
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Appendix III: Sulfate (as SO4), MW-32

ID: 42_1_3_124

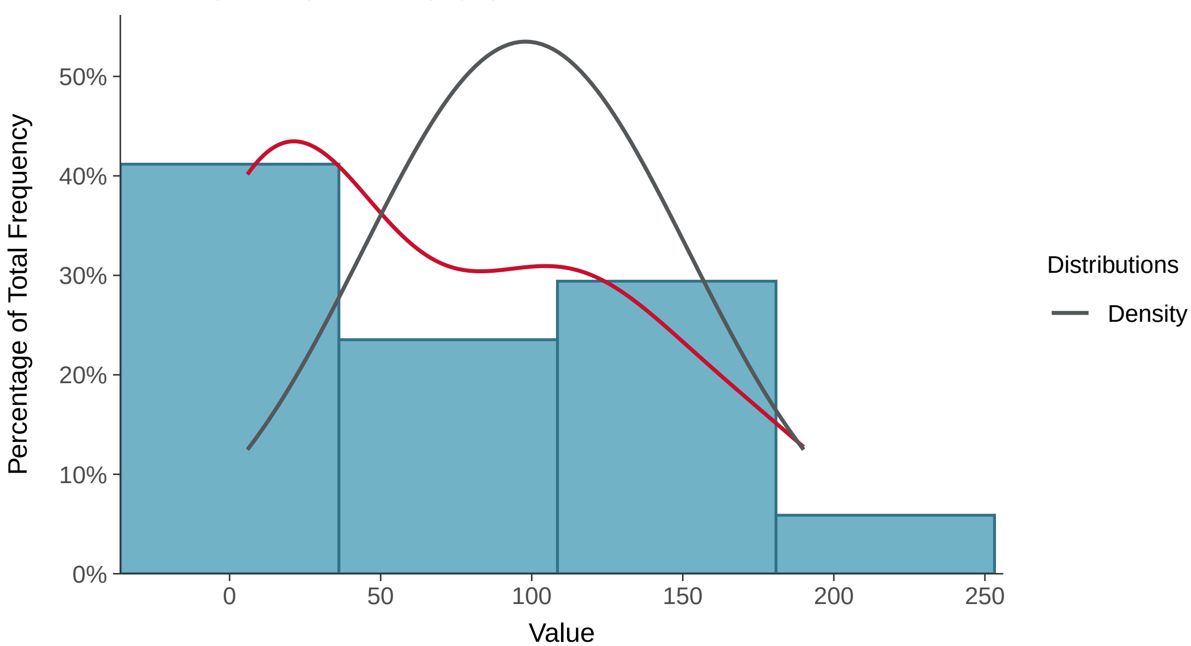
Scatter Plot

Sulfate (as SO4), MW-32 (mg/L)



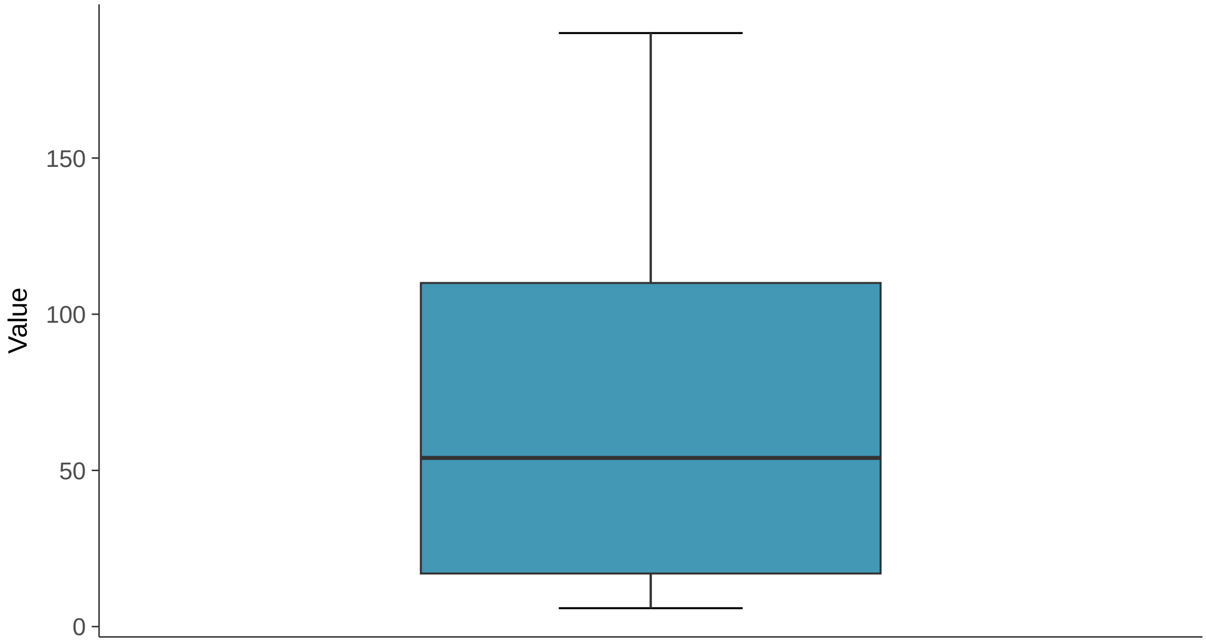
Histogram

Sulfate (as SO4), MW-32 (mg/L)



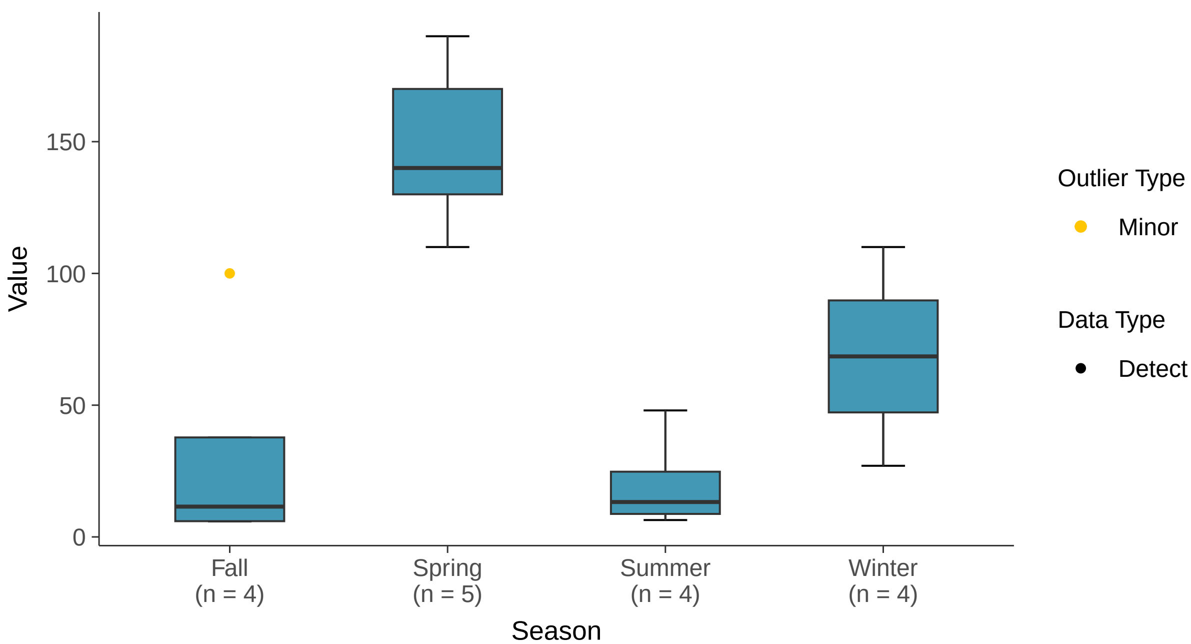
Boxplot

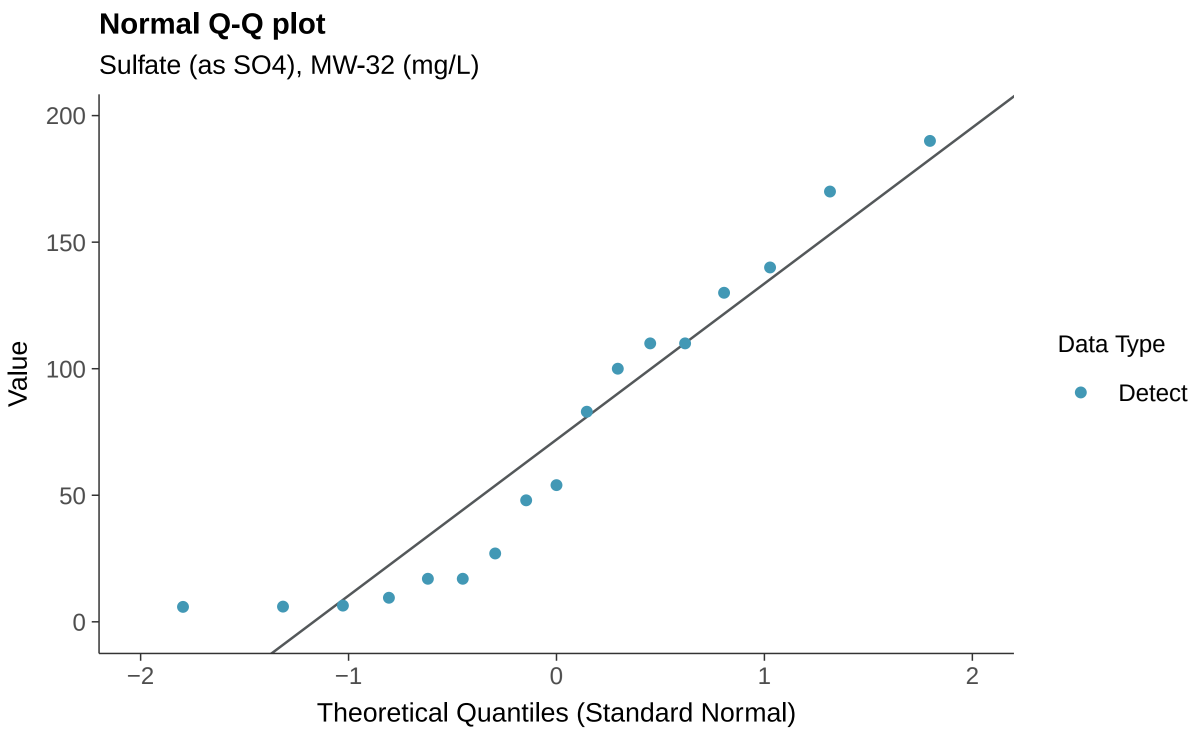
Sulfate (as SO4), MW-32 (mg/L)

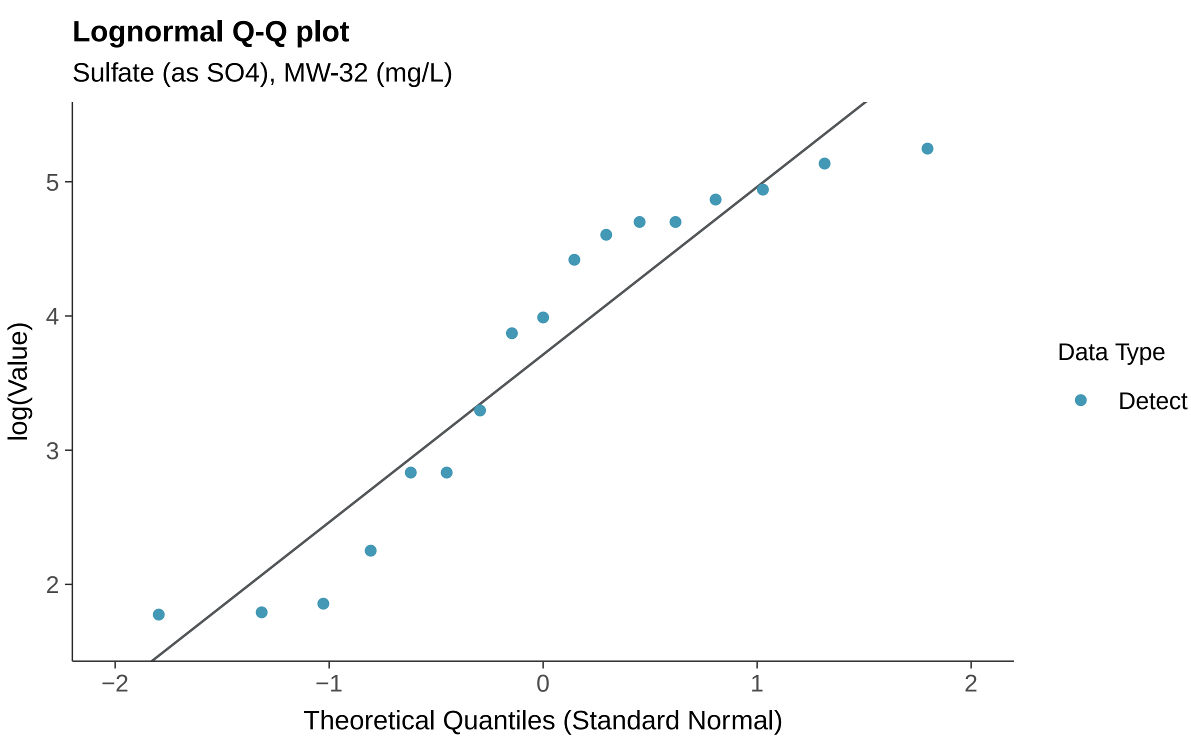


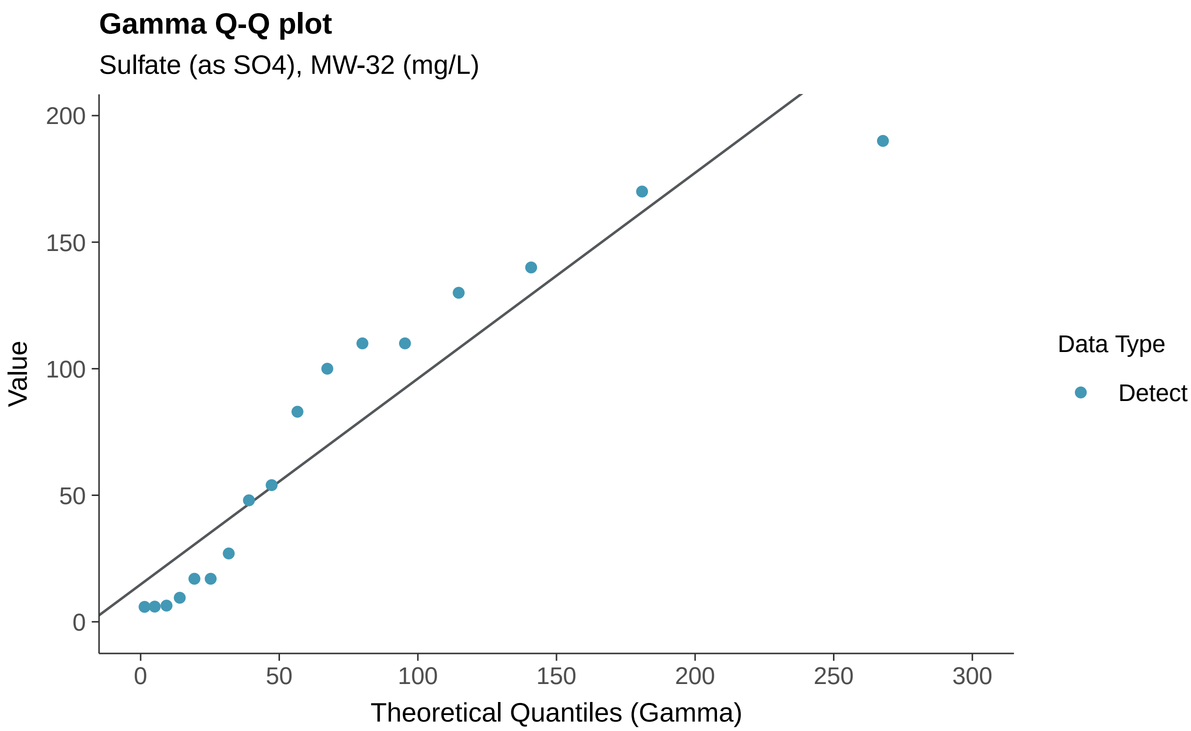
Boxplot by Season

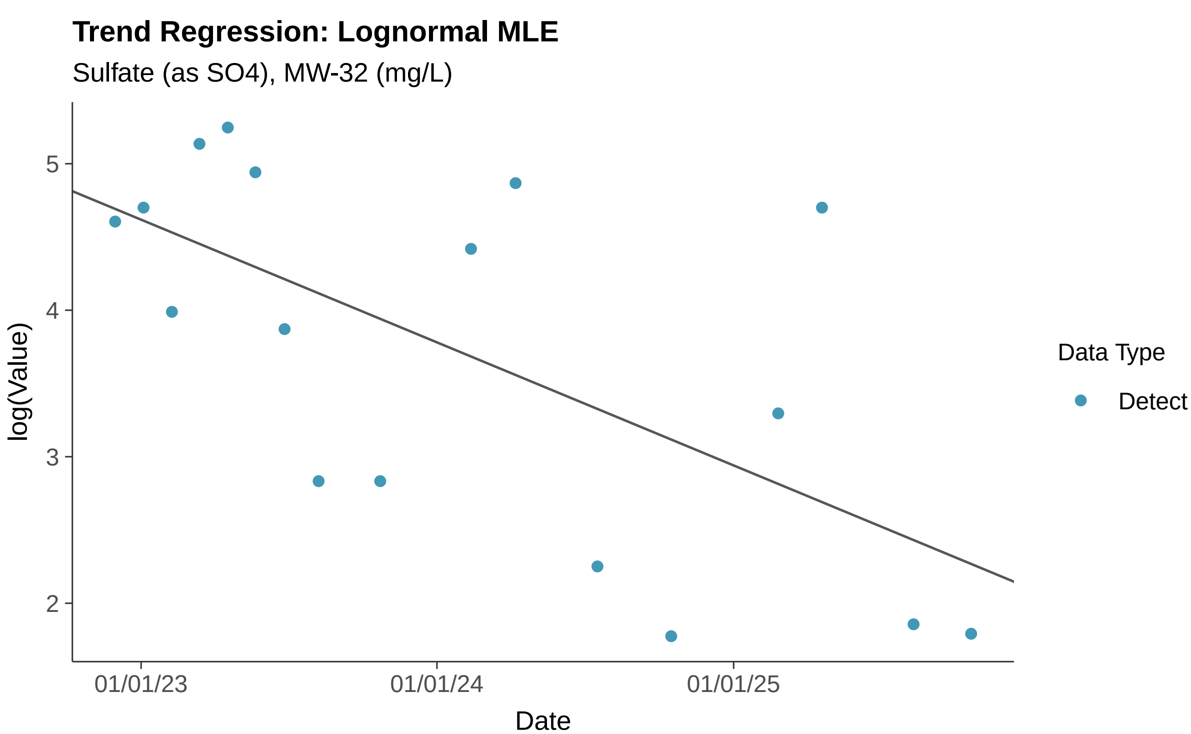
Sulfate (as SO4), MW-32 (mg/L)




Normal Q-Q plot
Sulfate (as SO4), MW-32 (mg/L)
Value
200
150
100
50
0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

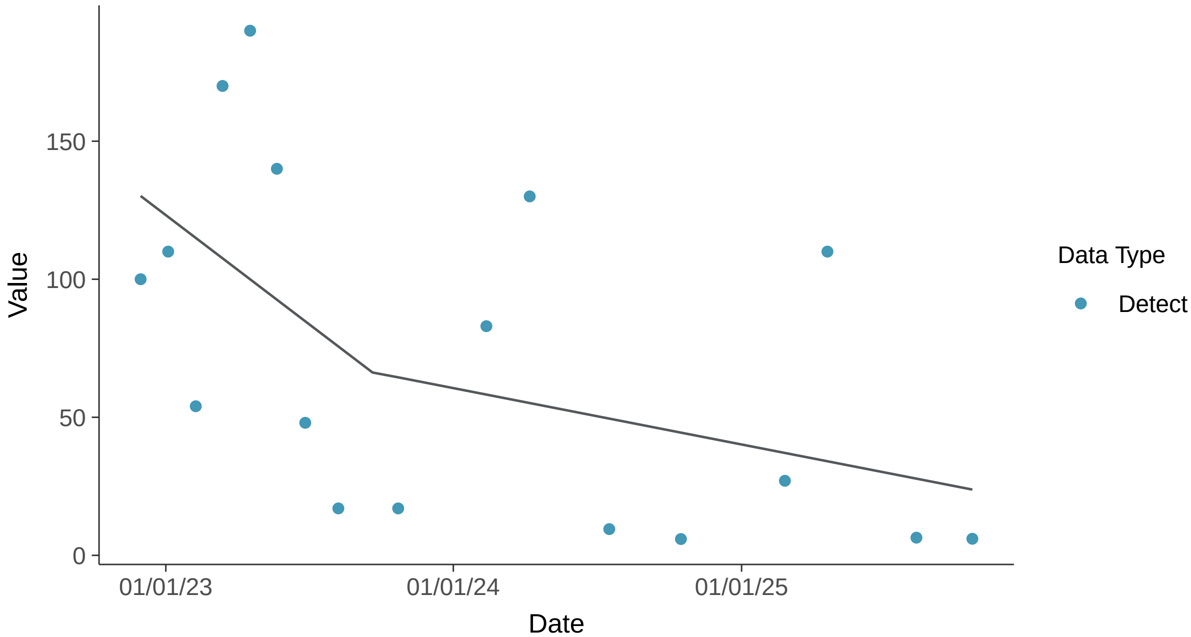

Lognormal Q-Q plot
Sulfate (as SO4), MW-32 (mg/L)
log(Value)
5
4
3
2
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Sulfate (as SO4), MW-32 (mg/L)
Value
Theoretical Quantiles (Gamma)
0
50
100
150
200
250
300
Data Type
Detect


Trend Regression: Lognormal MLE
Sulfate (as SO4), MW-32 (mg/L)
log(Value)
Date
01/01/23
01/01/24
01/01/25
2
3
4
5
Data Type
Detect

Trend Regression: Piecewise Linear-Linear

Sulfate (as SO4), MW-32 (mg/L)

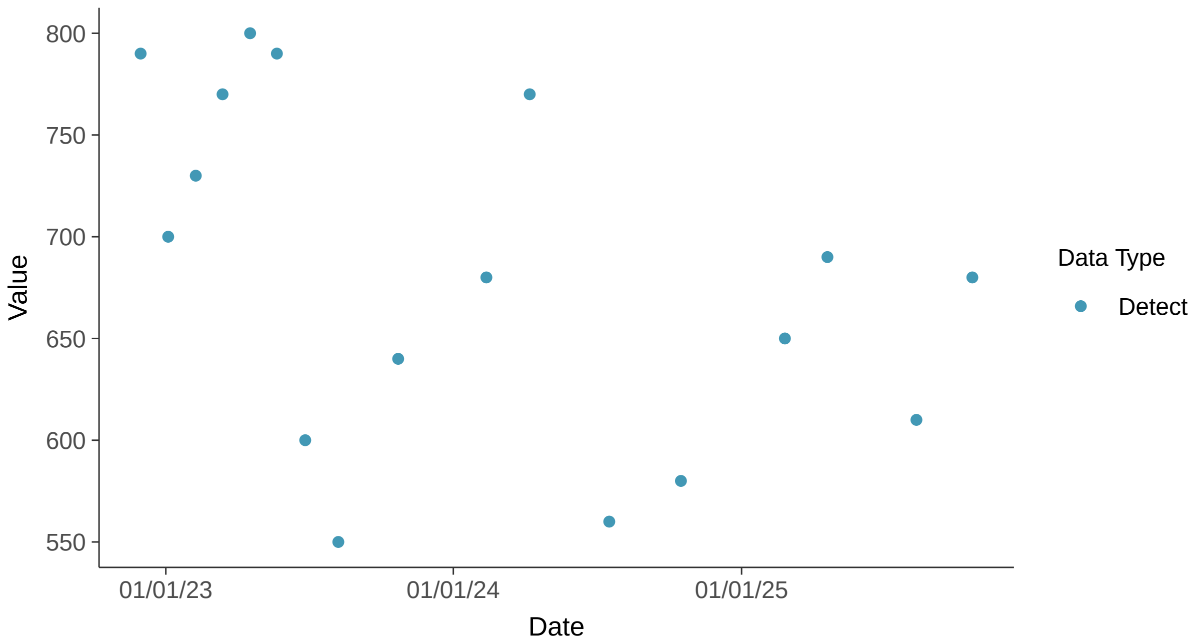


Appendix III: Total Dissolved Solids, MW-32

ID: 42_1_3_126

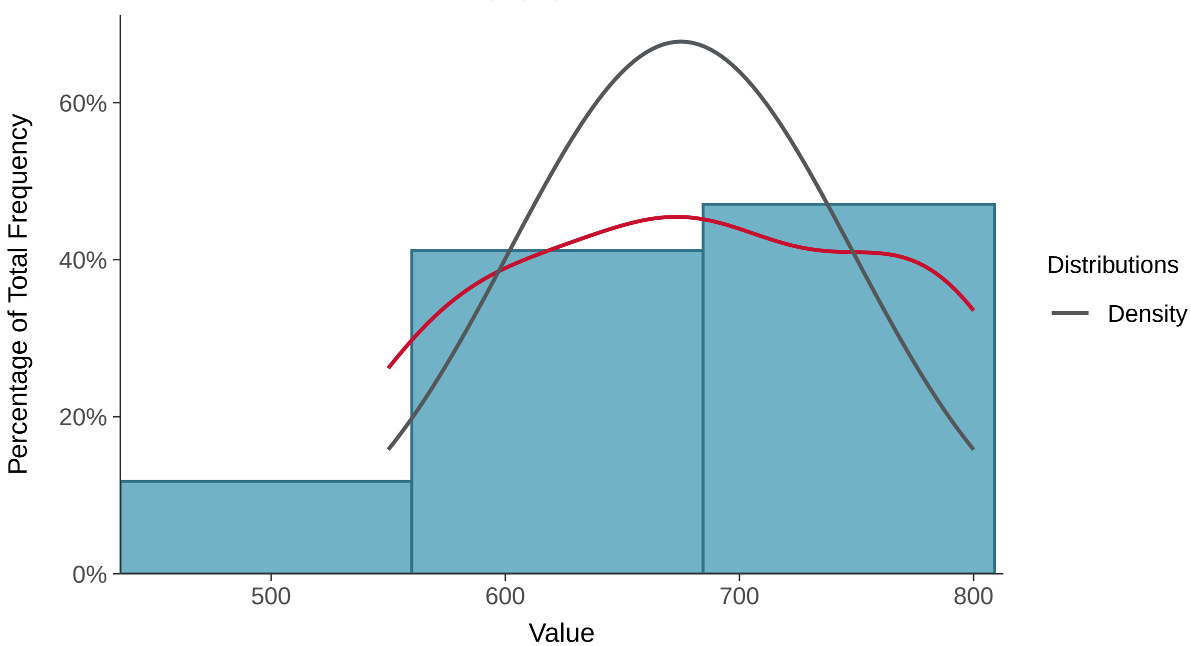
Scatter Plot

Total Dissolved Solids, MW-32 (mg/L)



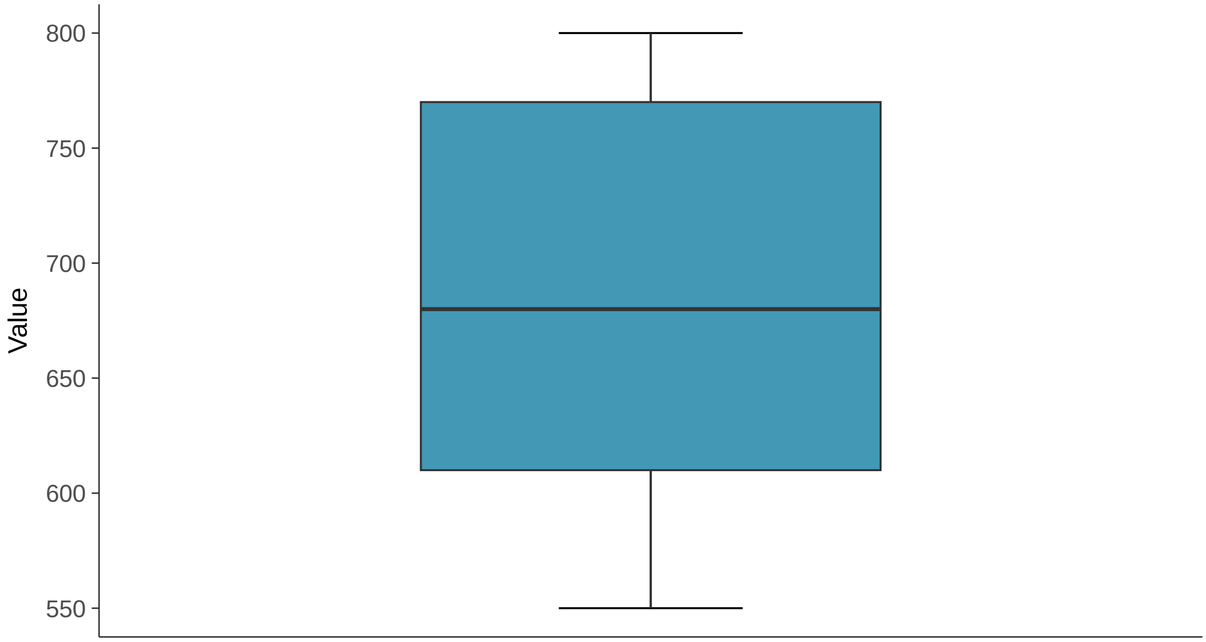
Histogram

Total Dissolved Solids, MW-32 (mg/L)



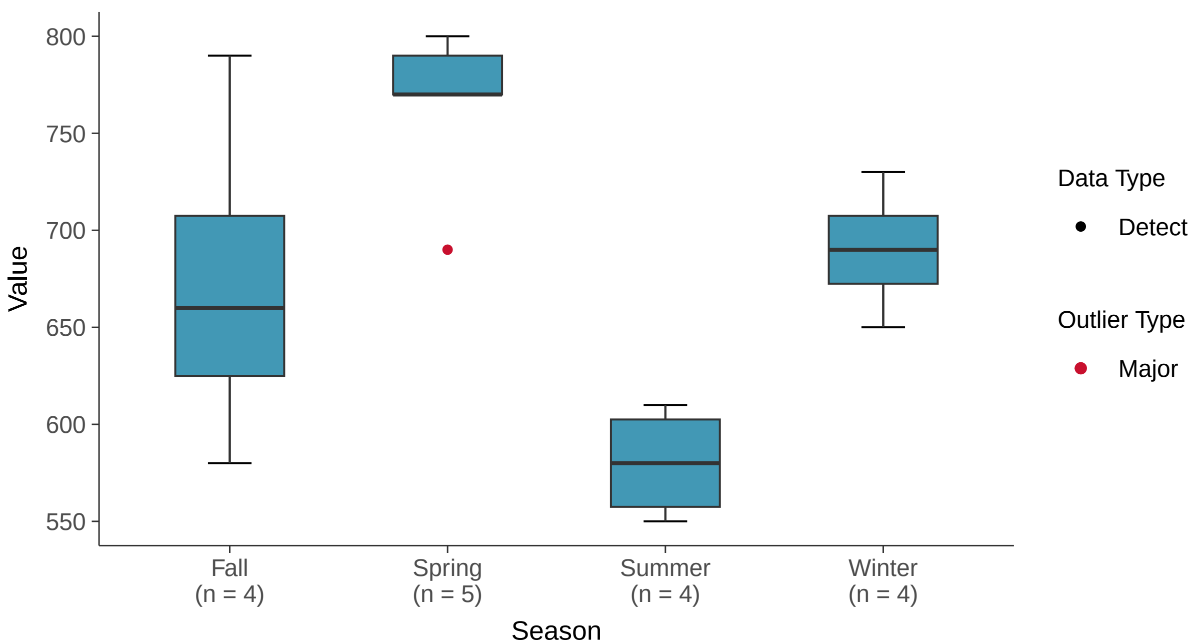
Boxplot

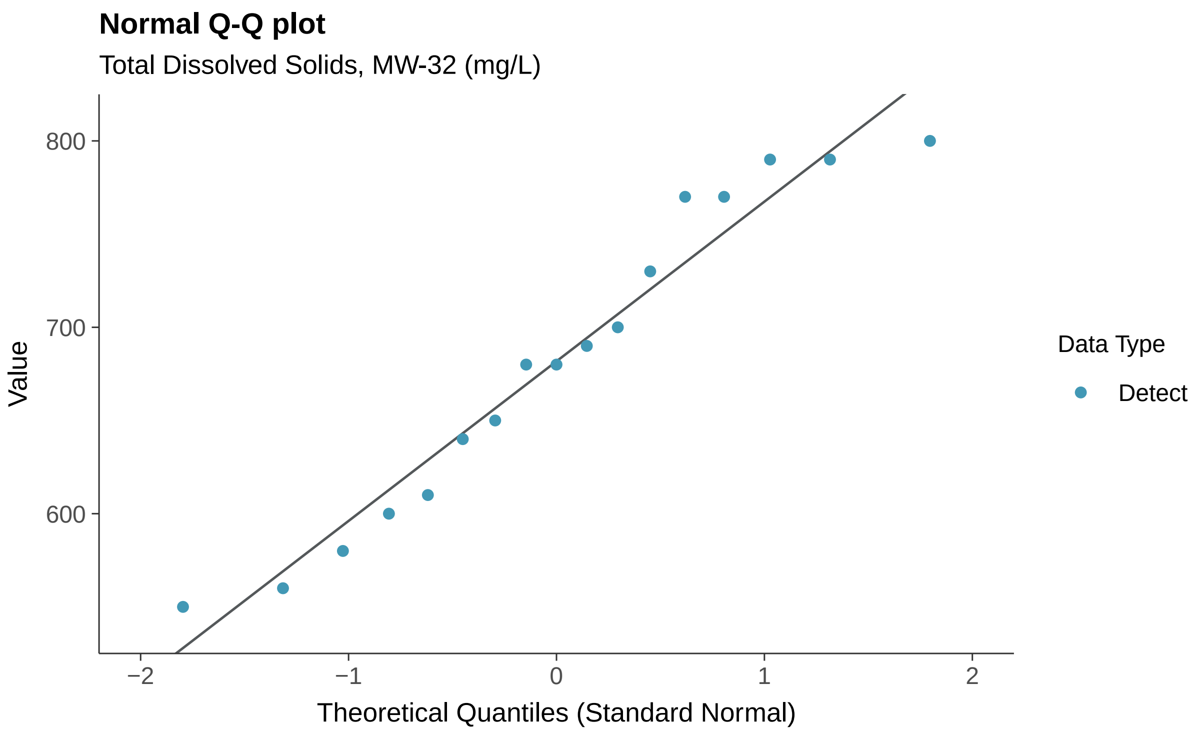
Total Dissolved Solids, MW-32 (mg/L)

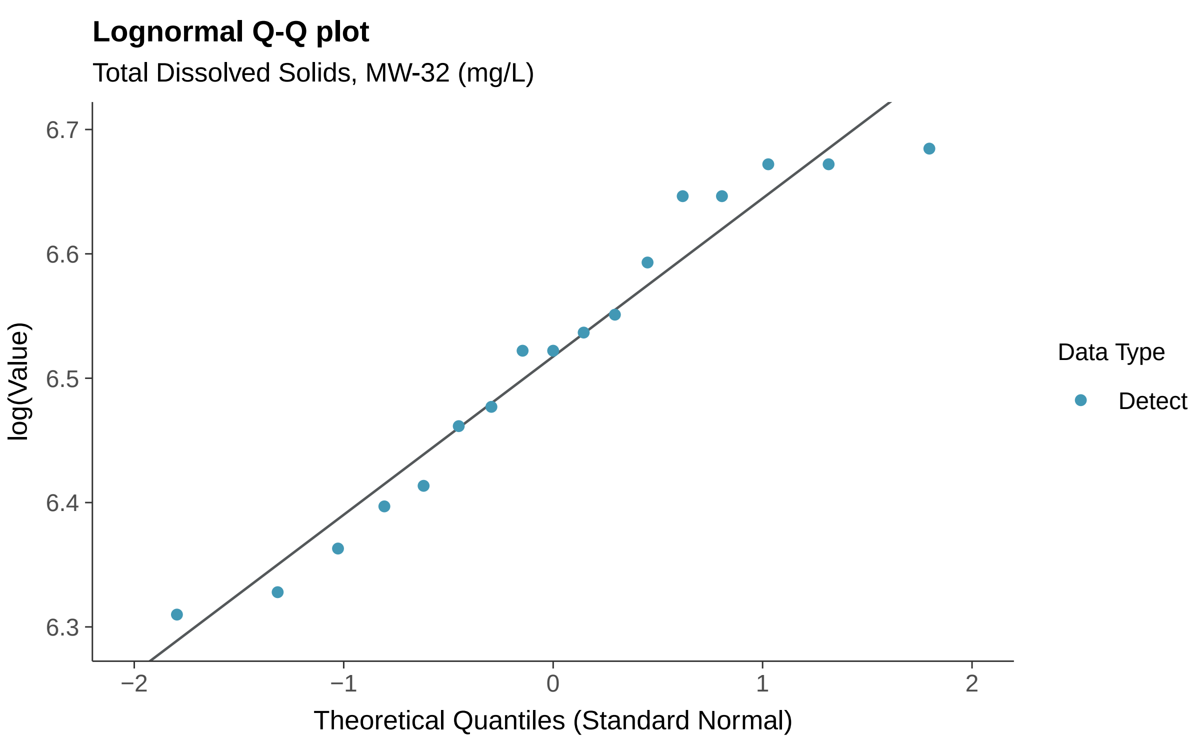


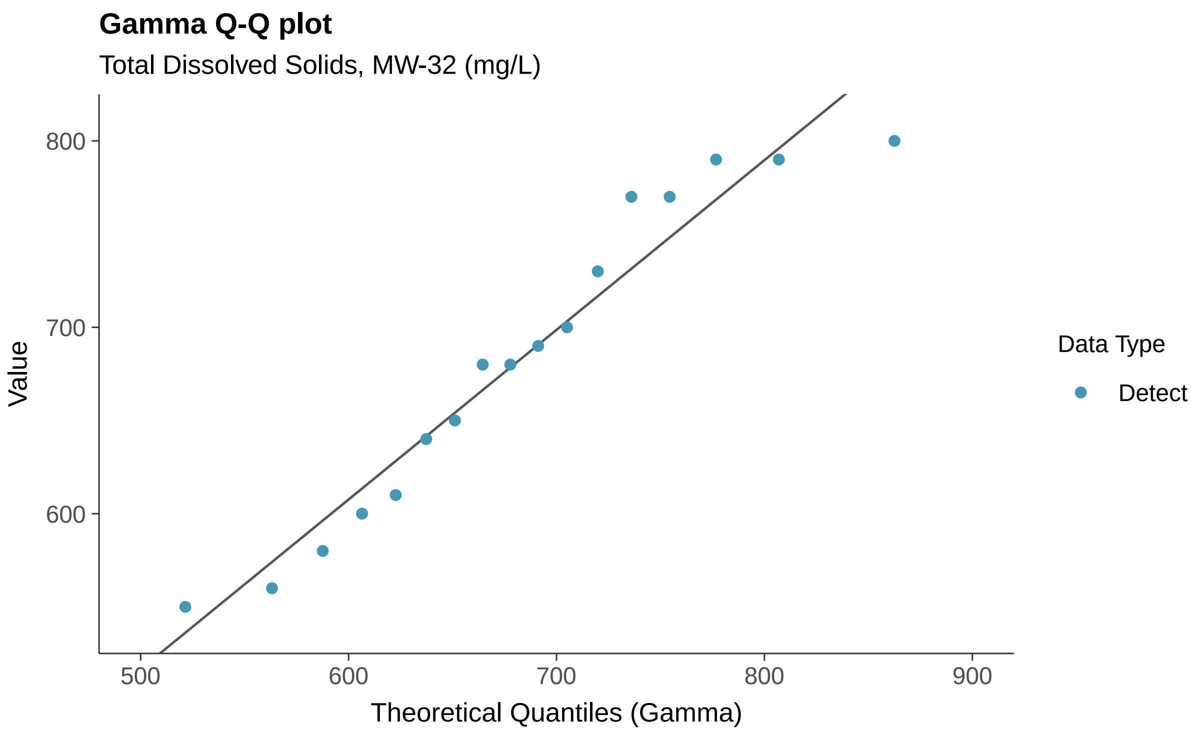
Boxplot by Season

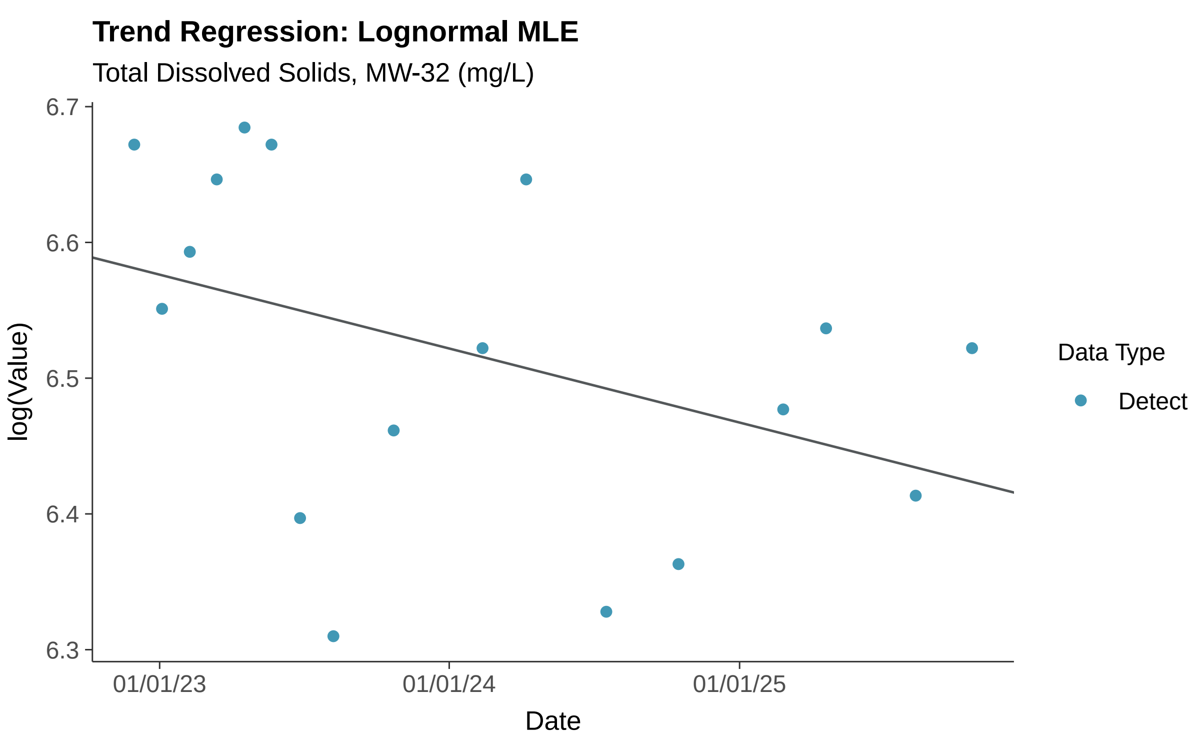
Total Dissolved Solids, MW-32 (mg/L)




Normal Q-Q plot
Total Dissolved Solids, MW-32 (mg/L)
Value
800
700
600
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

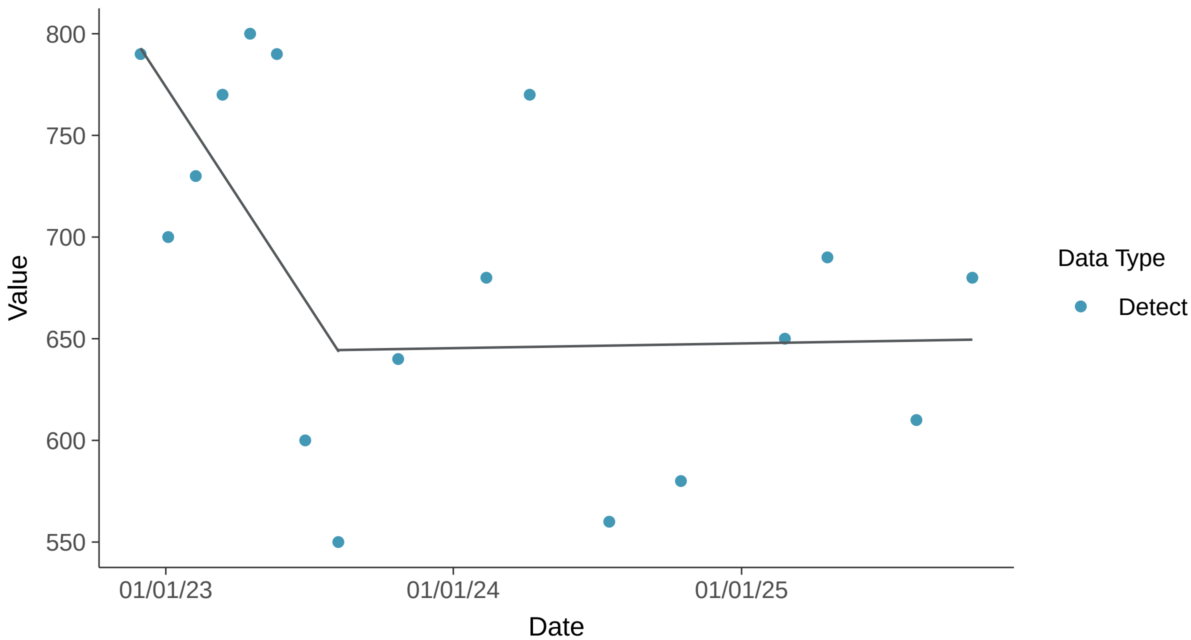

Lognormal Q-Q plot
Total Dissolved Solids, MW-32 (mg/L)
log(Value)
6.7
6.6
6.5
6.4
6.3
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Total Dissolved Solids, MW-32 (mg/L)
Value
800
700
600
500
600
700
800
900
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Total Dissolved Solids, MW-32 (mg/L)
log(Value)
6.7
6.6
6.5
6.4
6.3
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

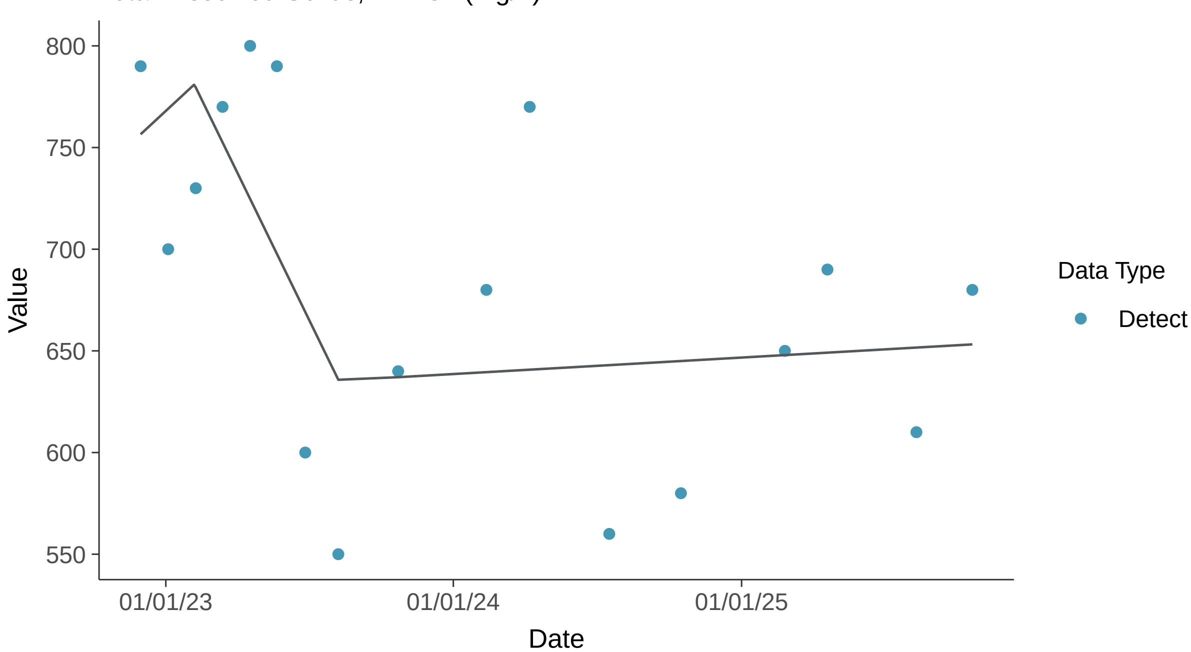
Trend Regression: Piecewise Linear-Linear

Total Dissolved Solids, MW-32 (mg/L)



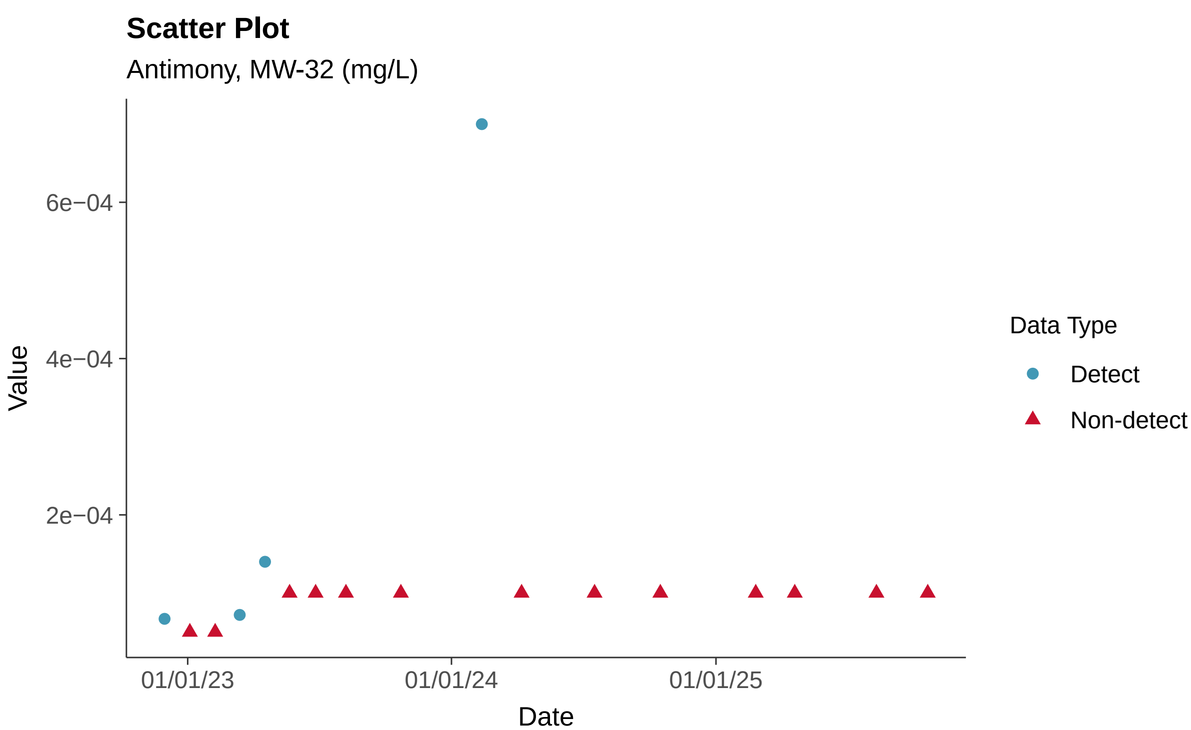
Trend Regression: Piecewise Linear-Linear-Linear

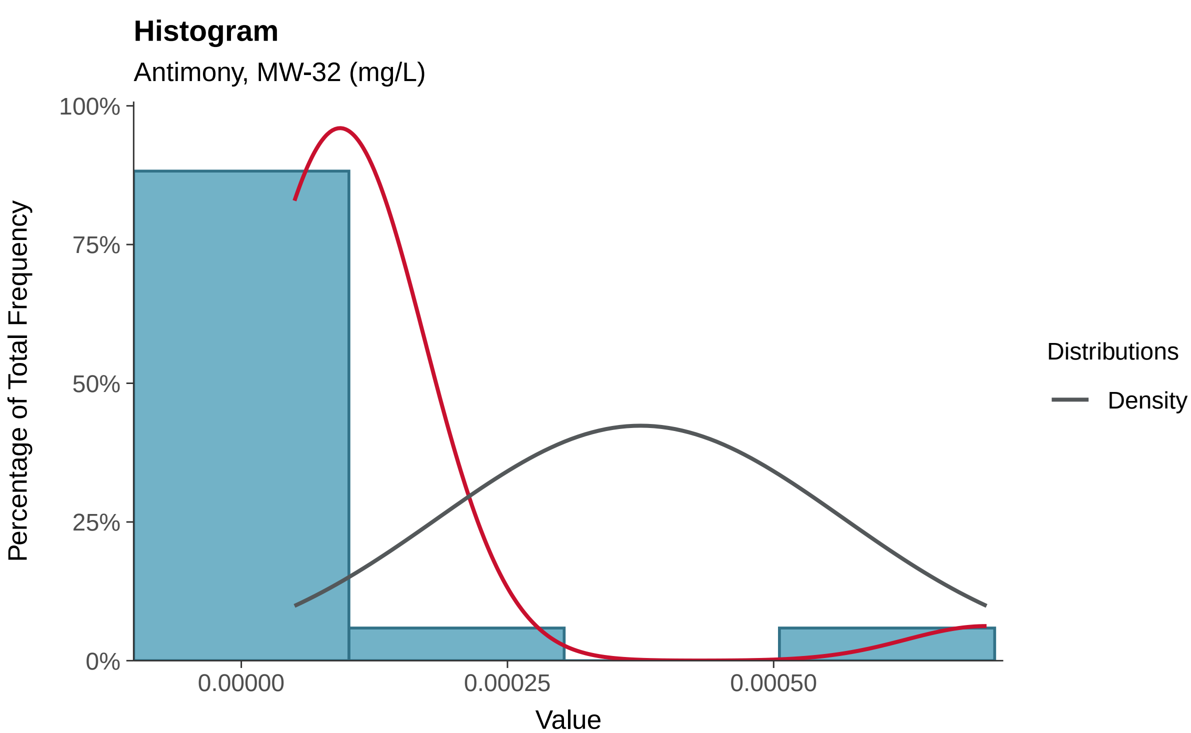
Total Dissolved Solids, MW-32 (mg/L)



Appendix IV: Antimony, MW-32

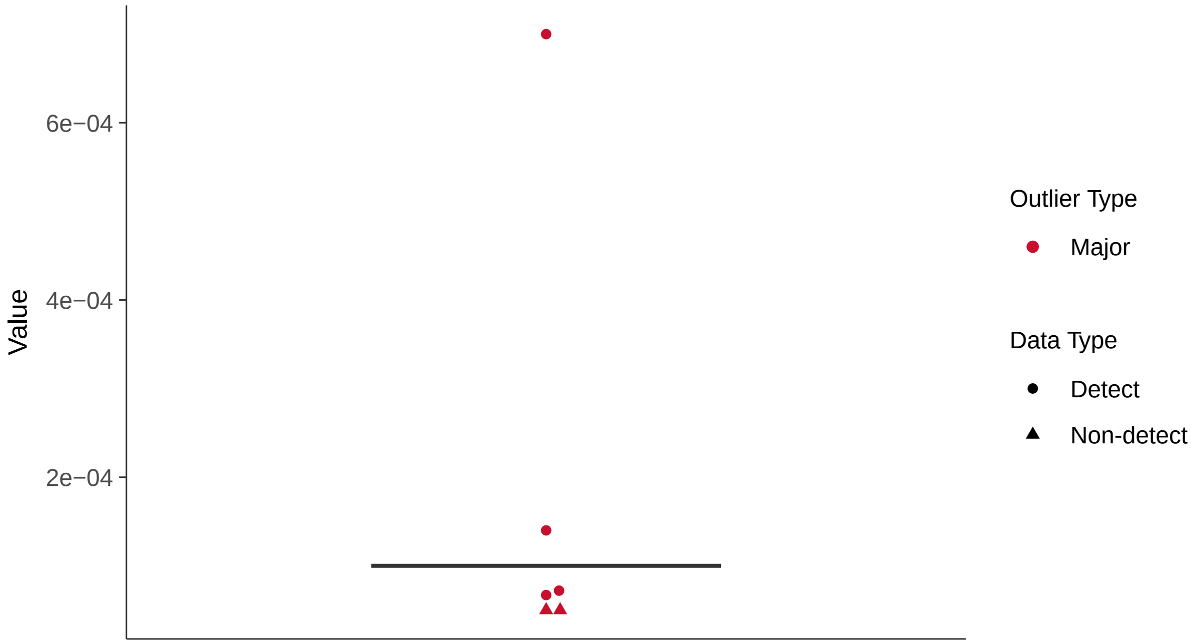
ID: 42_1_4_101





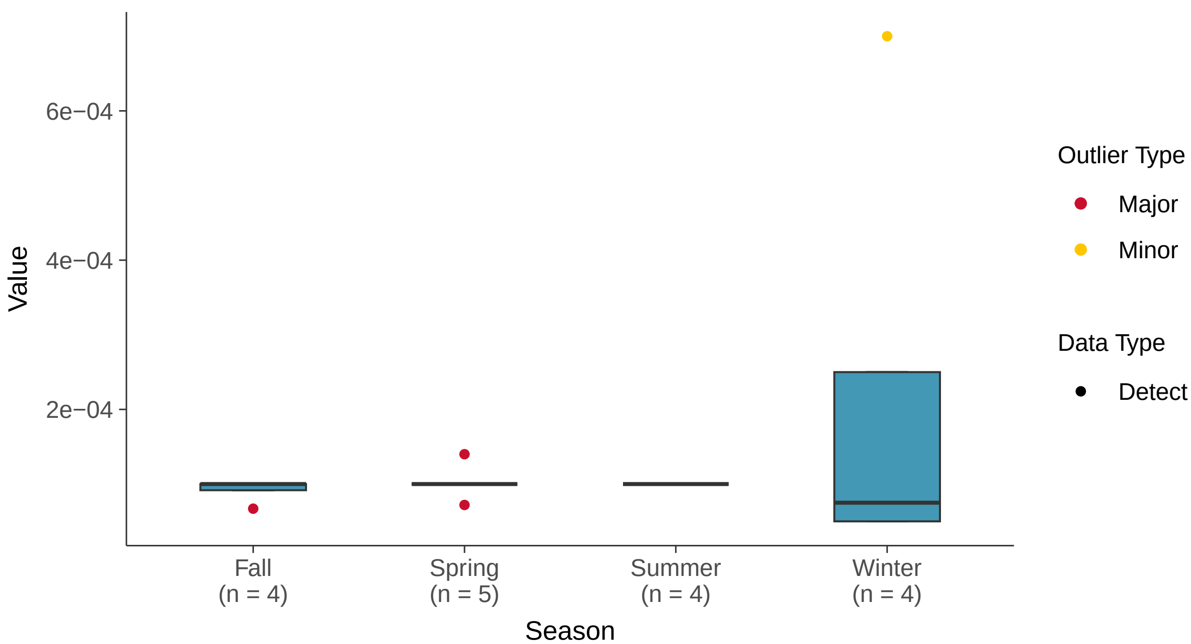
Boxplot

Antimony, MW-32 (mg/L)



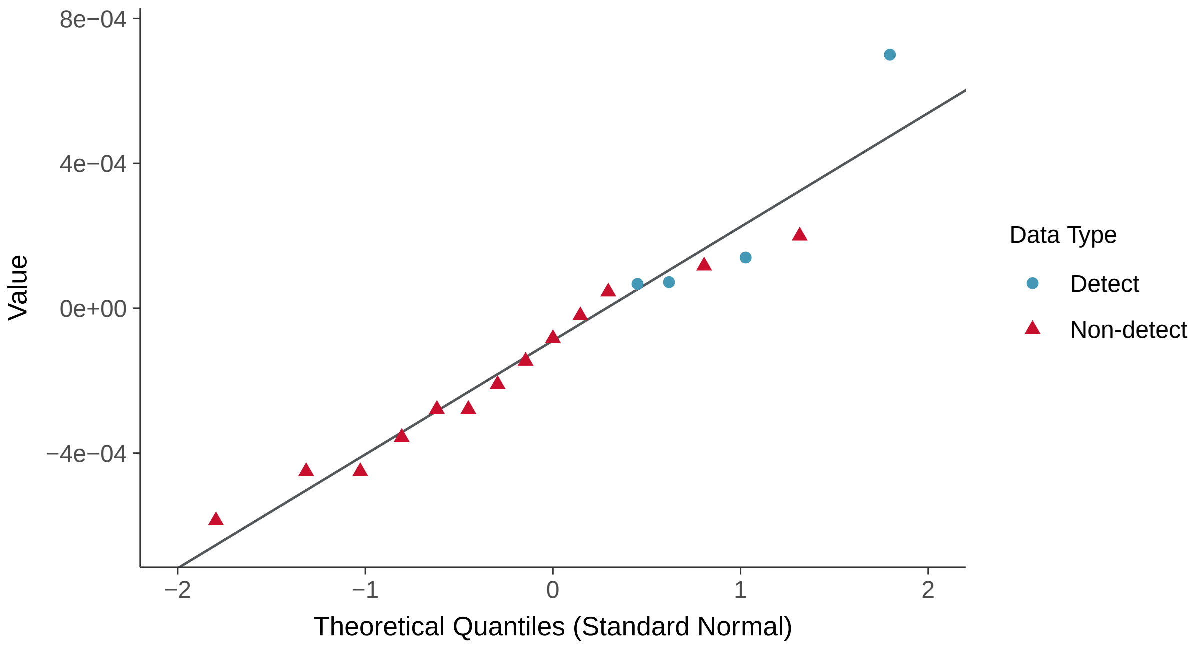
Boxplot by Season

Antimony, MW-32 (mg/L)



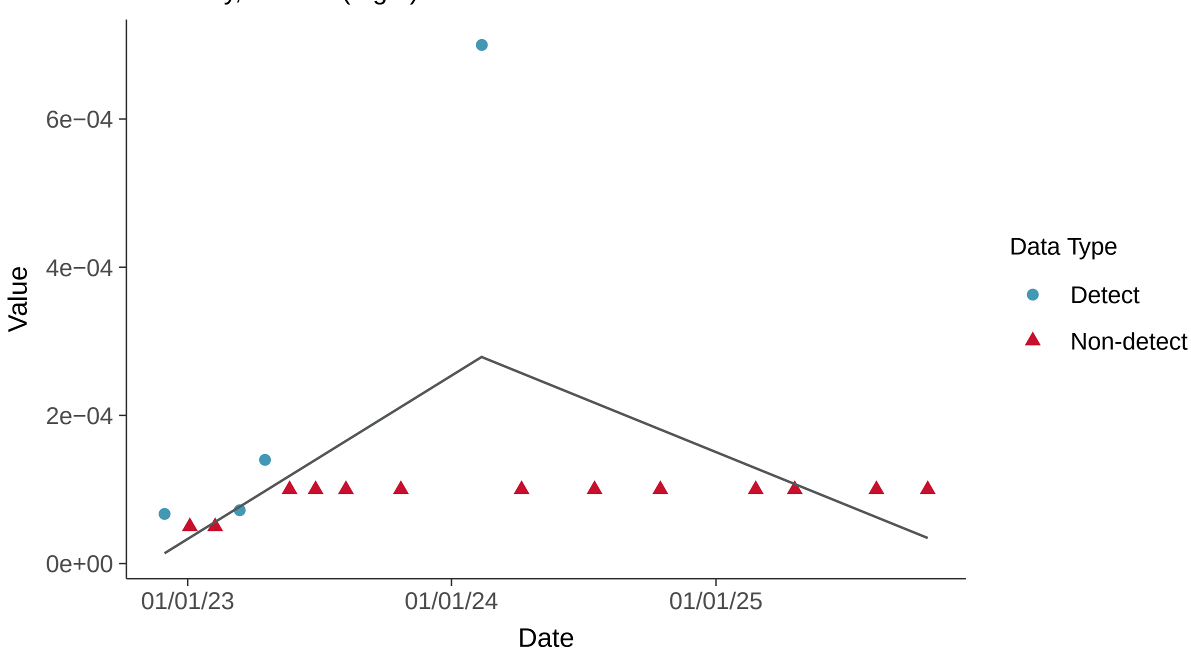
Normal Q-Q plot using ROS Imputed Estimates

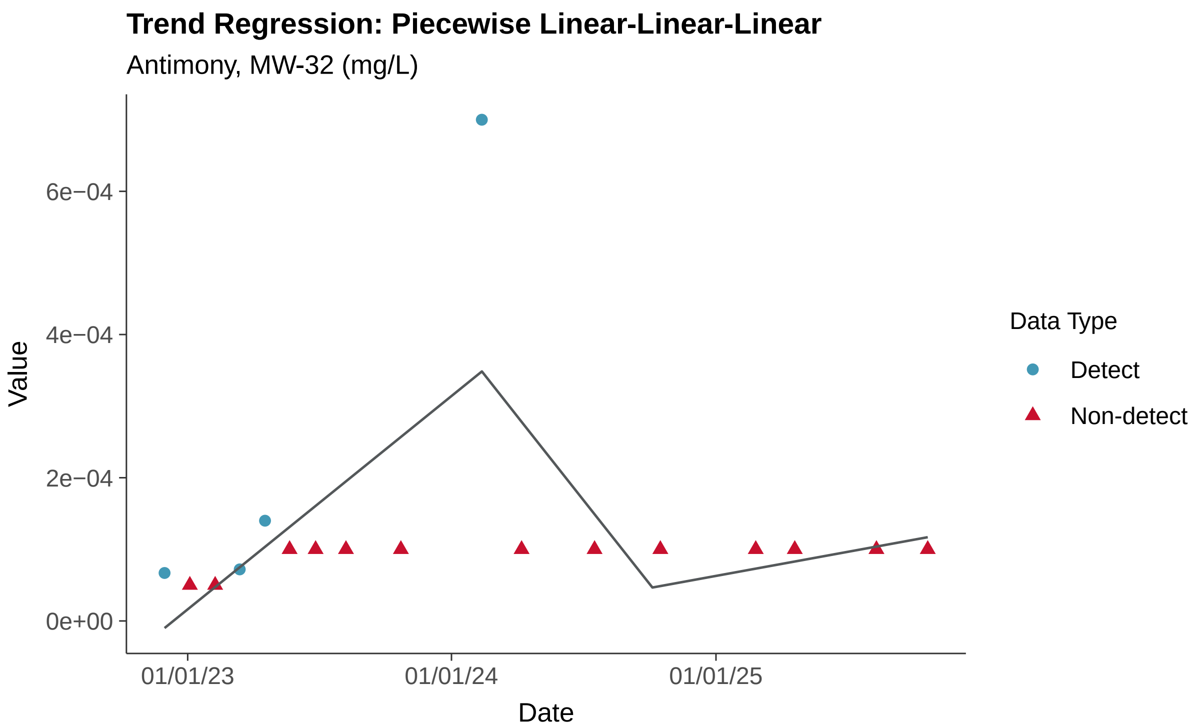
Antimony, MW-32 (mg/L)



Trend Regression: Piecewise Linear-Linear

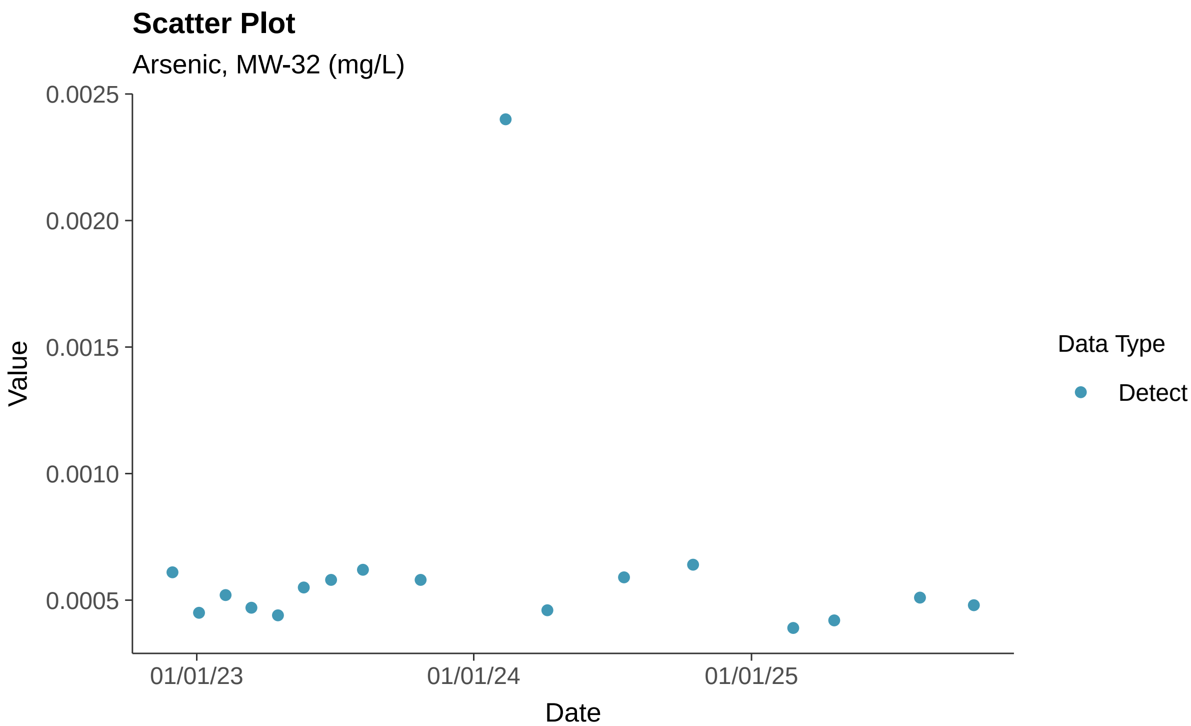
Antimony, MW-32 (mg/L)

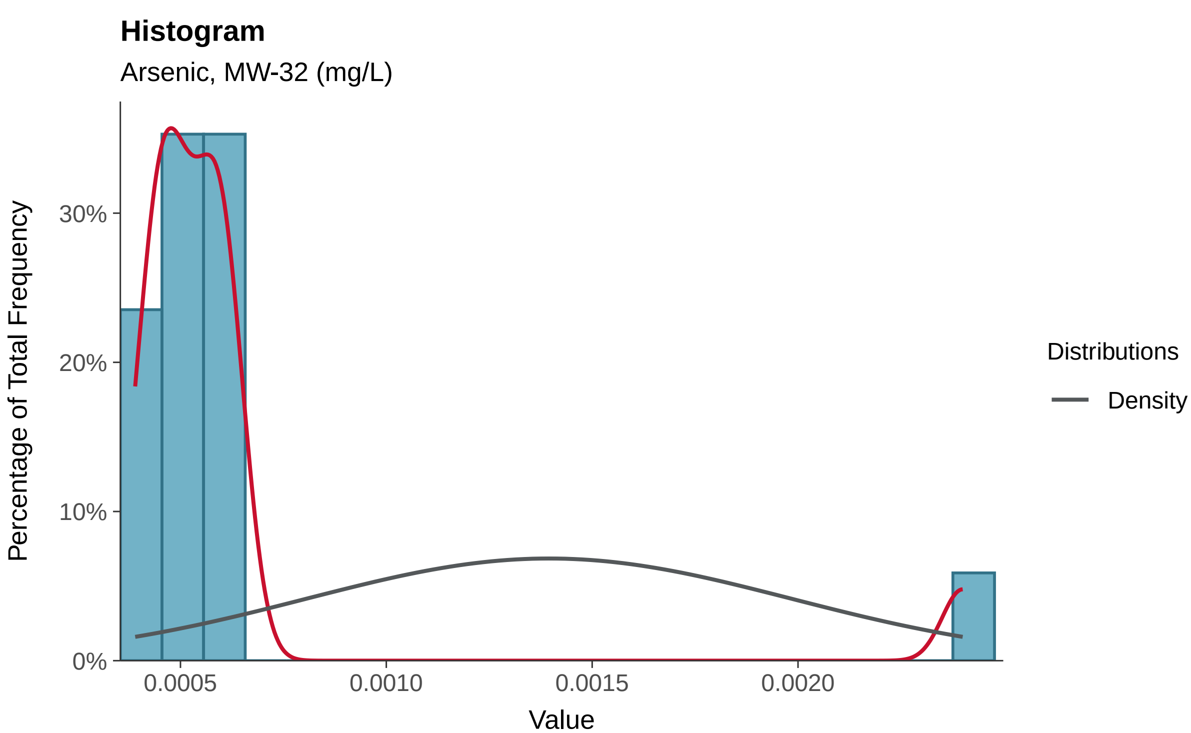


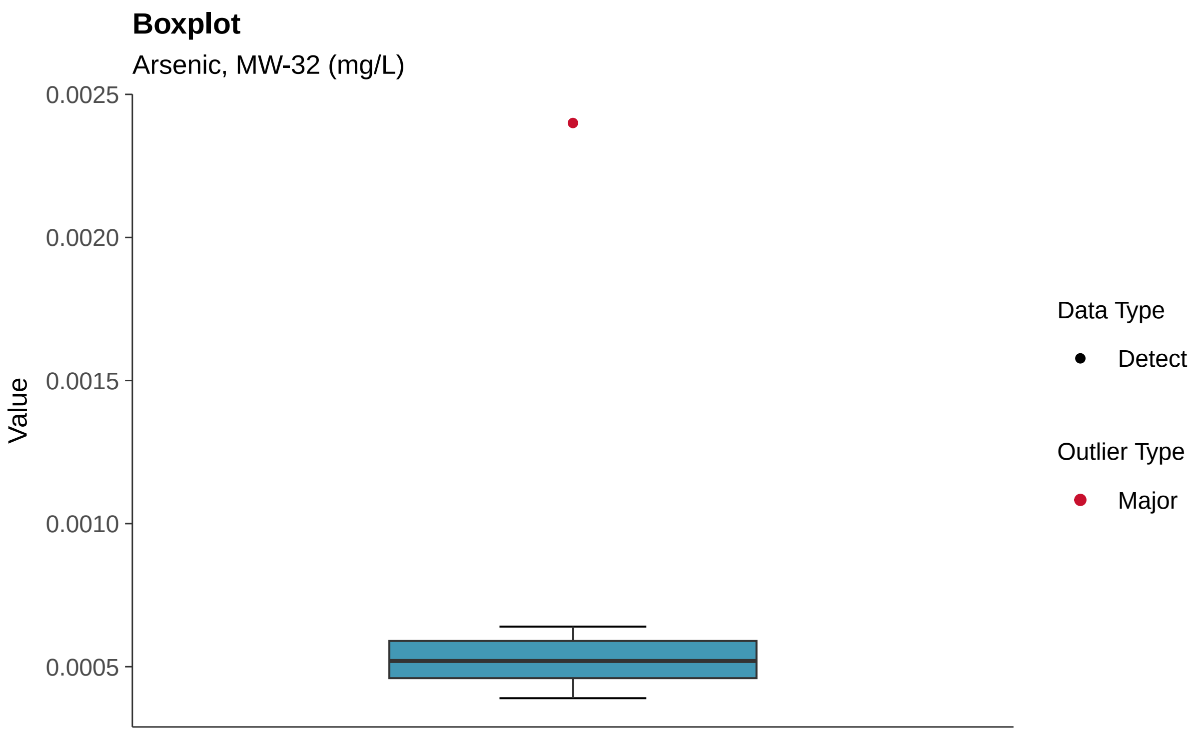

Trend Regression: Piecewise Linear-Linear-Linear
Antimony, MW-32 (mg/L)
Value
6e−04
4e−04
2e−04
0e+00
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

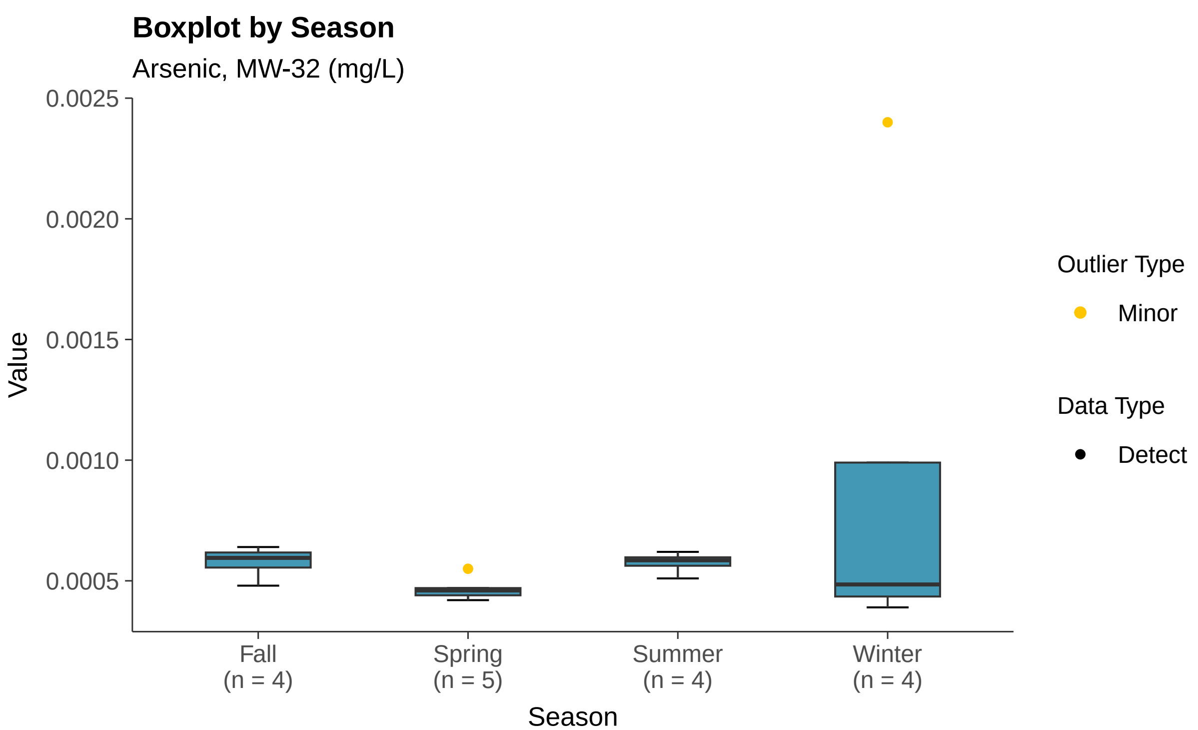
Appendix IV: Arsenic, MW-32

ID: 42_1_4_102



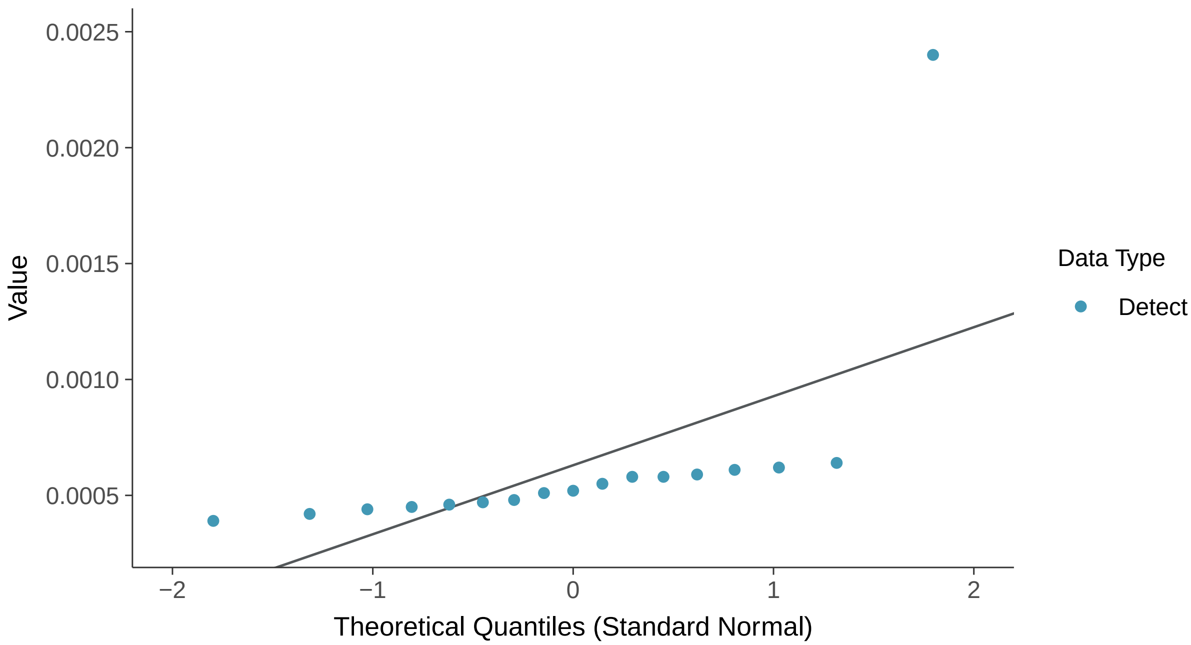



Boxplot
Arsenic, MW-32 (mg/L)
0.0025
0.0020
0.0015
0.0010
0.0005
Value
Data Type
Detect
Outlier Type
Major


Boxplot by Season
Arsenic, MW-32 (mg/L)
0.0025
0.0020
0.0015
0.0010
0.0005
Value
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Minor
Data Type
Detect

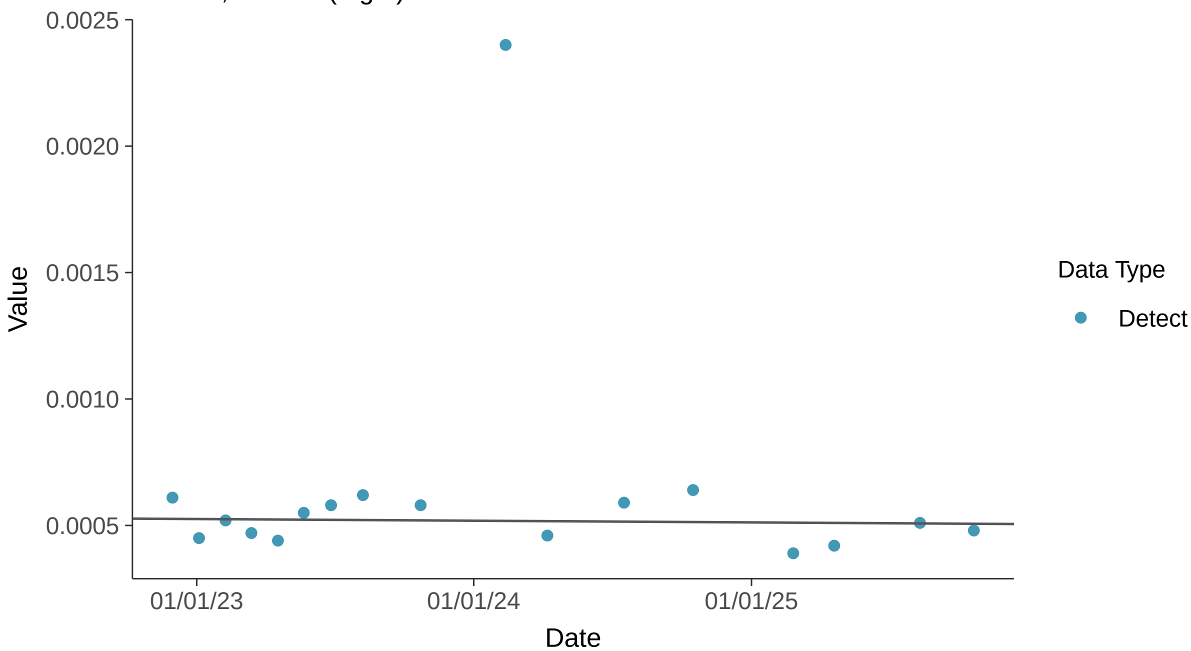
Normal Q-Q plot

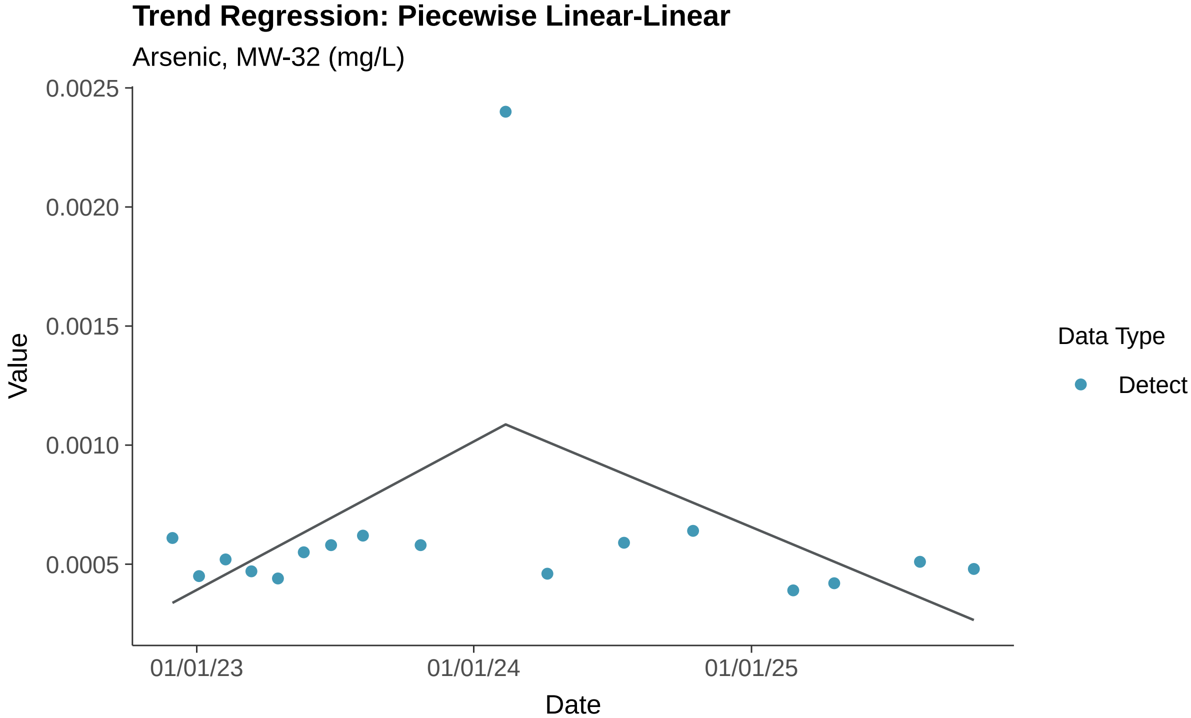
Arsenic, MW-32 (mg/L)

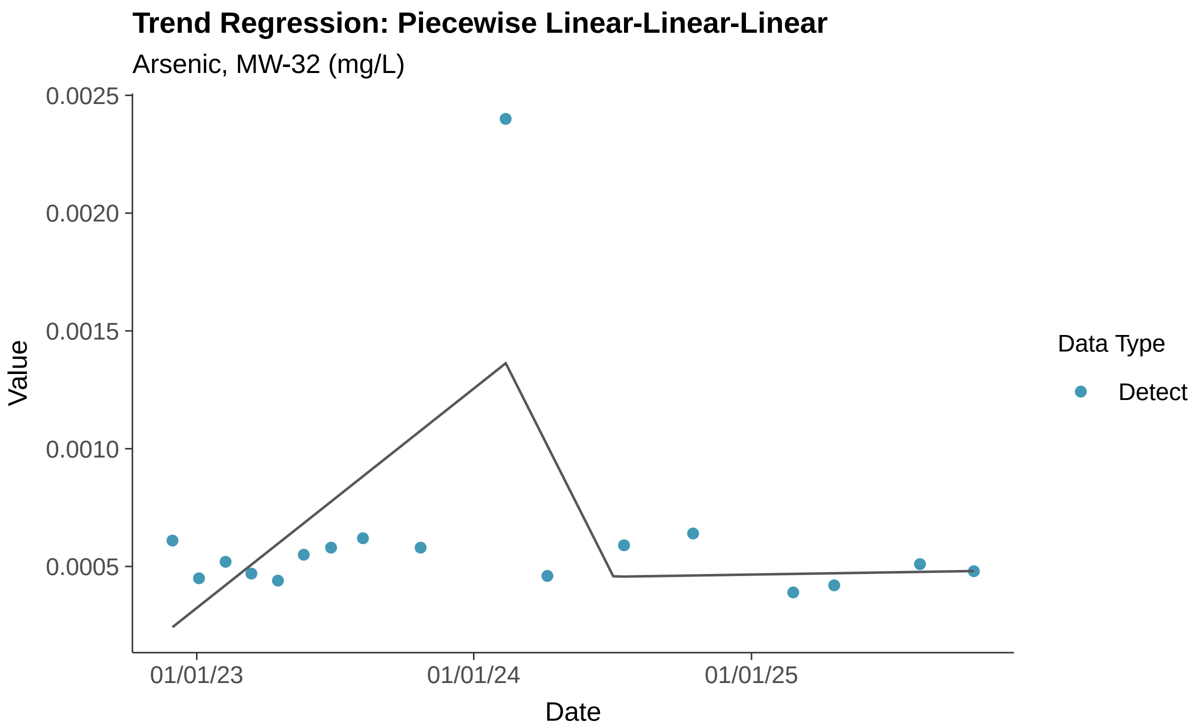


Trend Regression: Mann-Kendall/Theil-Sen Estimate

Arsenic, MW-32 (mg/L)

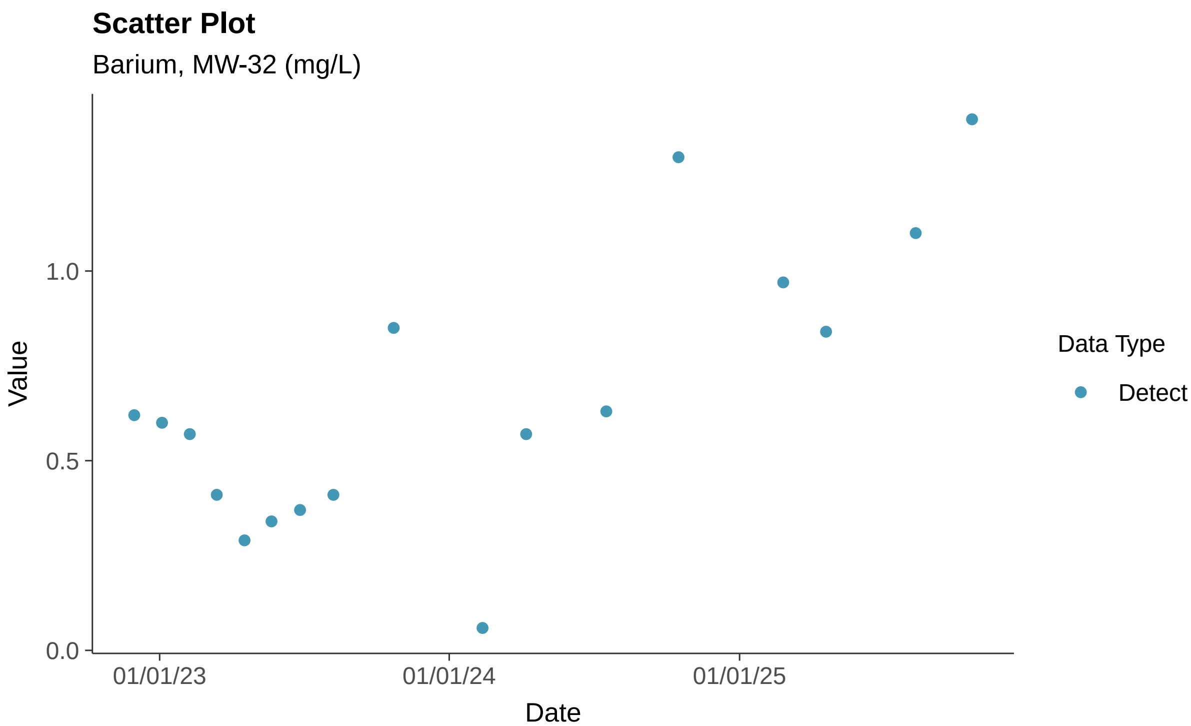


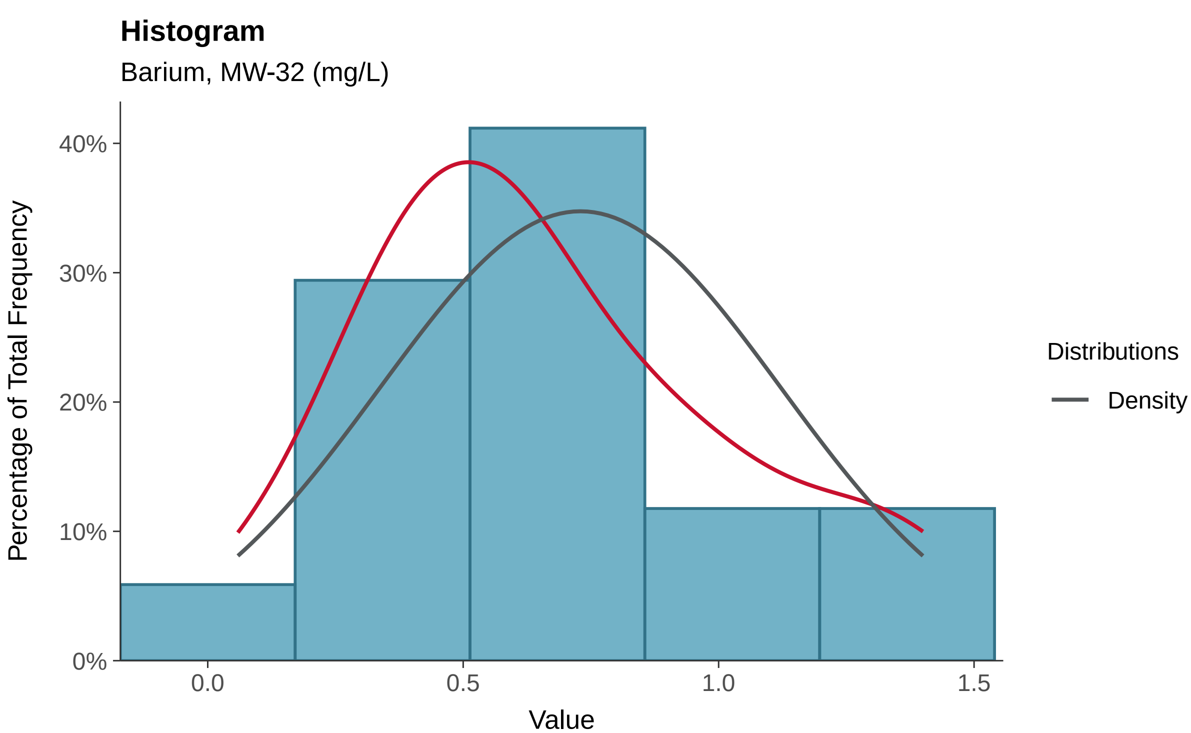

Trend Regression: Piecewise Linear-Linear
Arsenic, MW-32 (mg/L)
0.0025
0.0020
0.0015
0.0010
0.0005
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
Arsenic, MW-32 (mg/L)
0.0025
0.0020
0.0015
0.0010
0.0005
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Appendix IV: Barium, MW-32

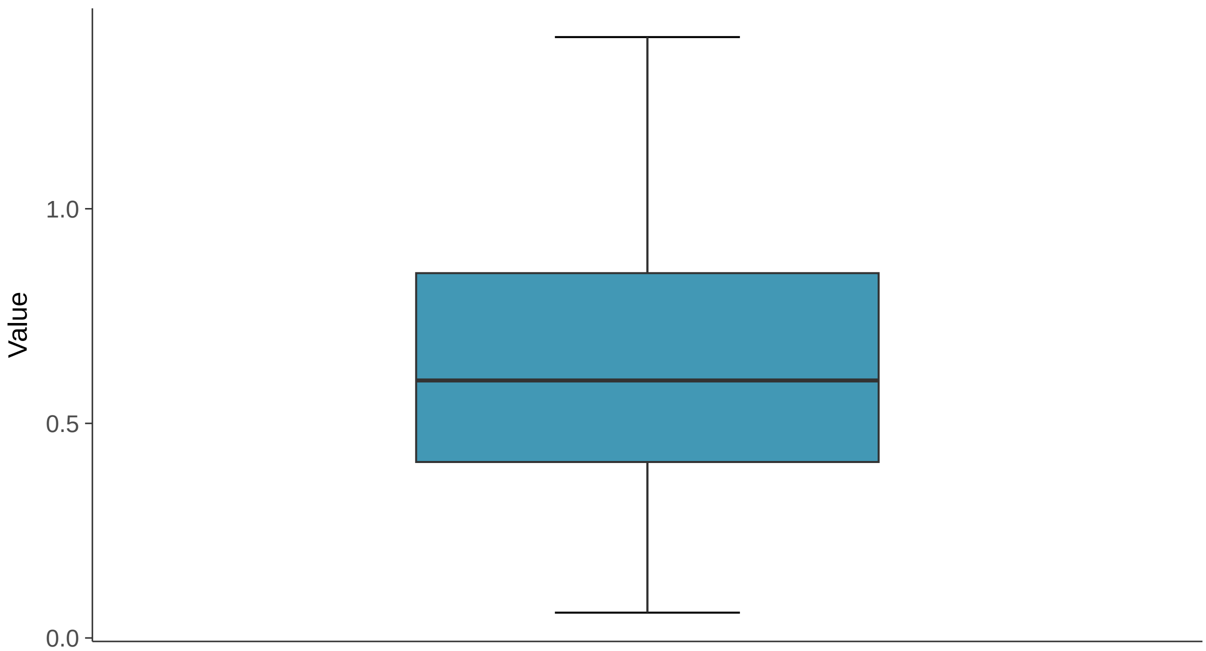
ID: 42_1_4_103





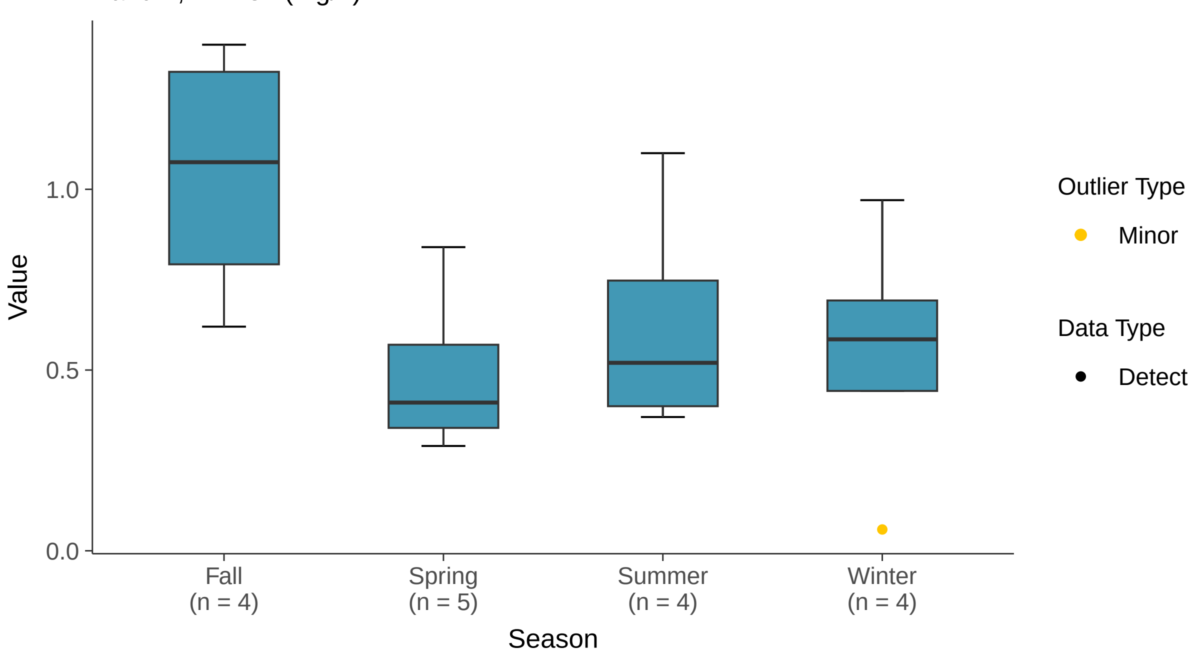
Boxplot

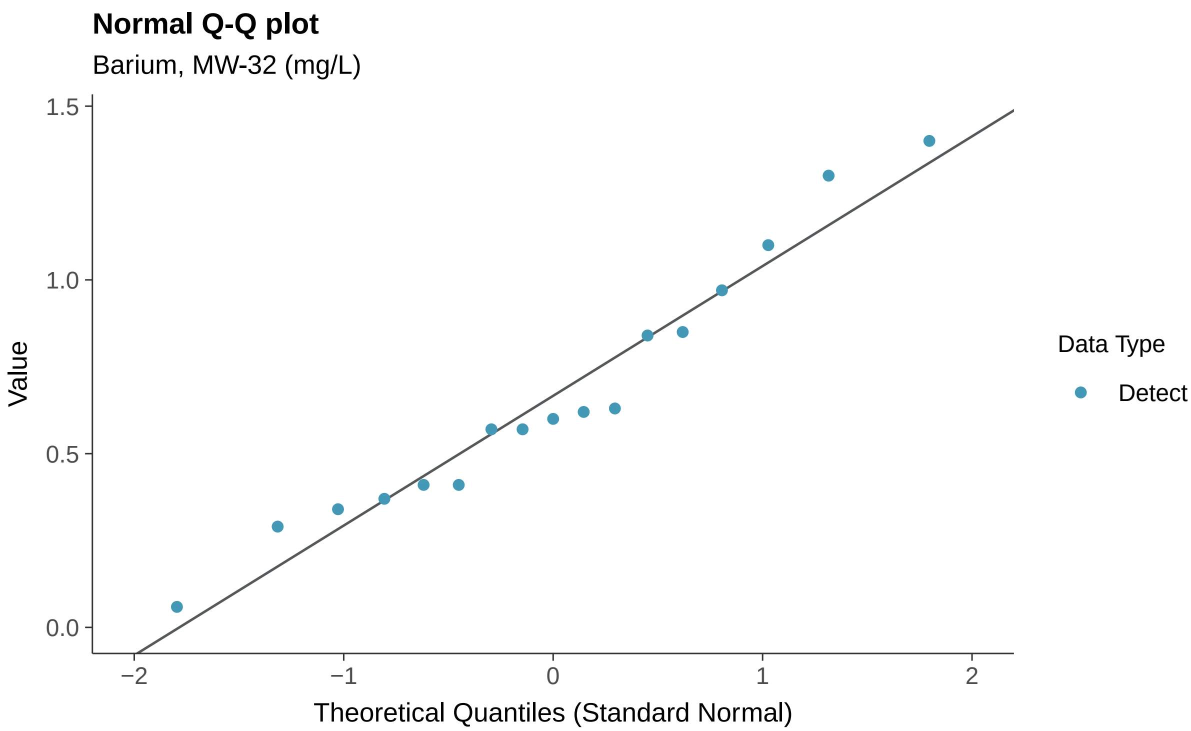
Barium, MW-32 (mg/L)

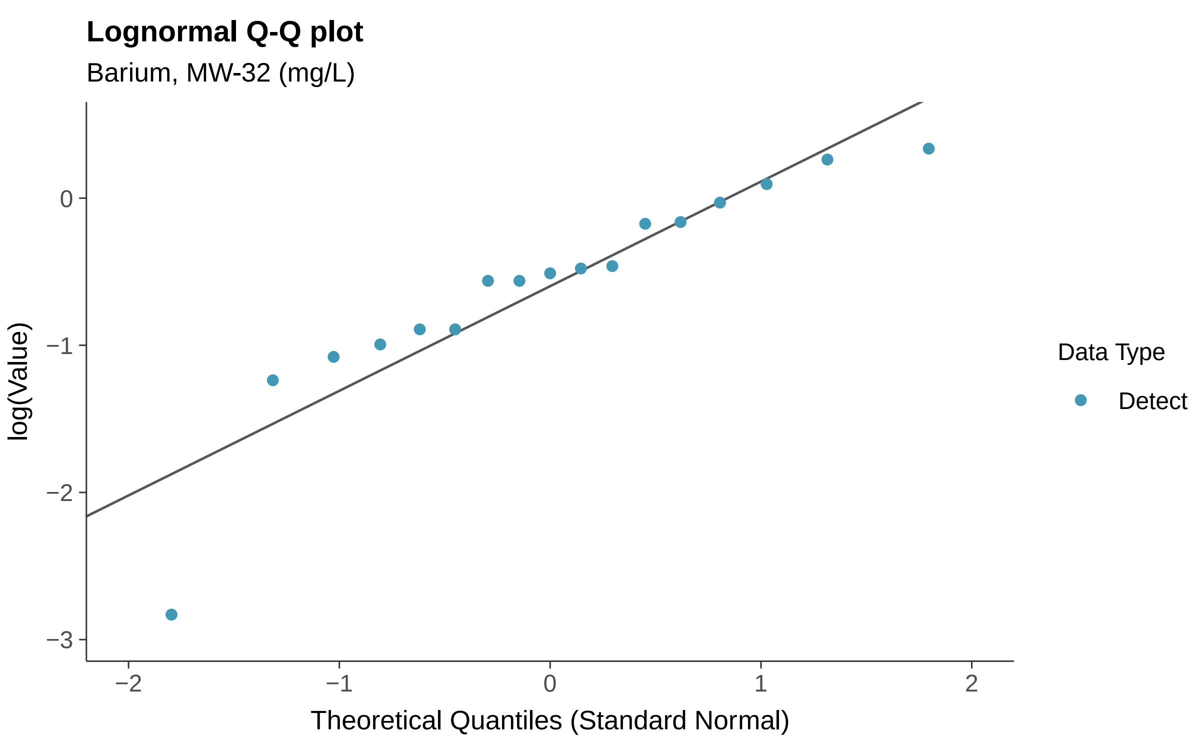


Boxplot by Season

Barium, MW-32 (mg/L)

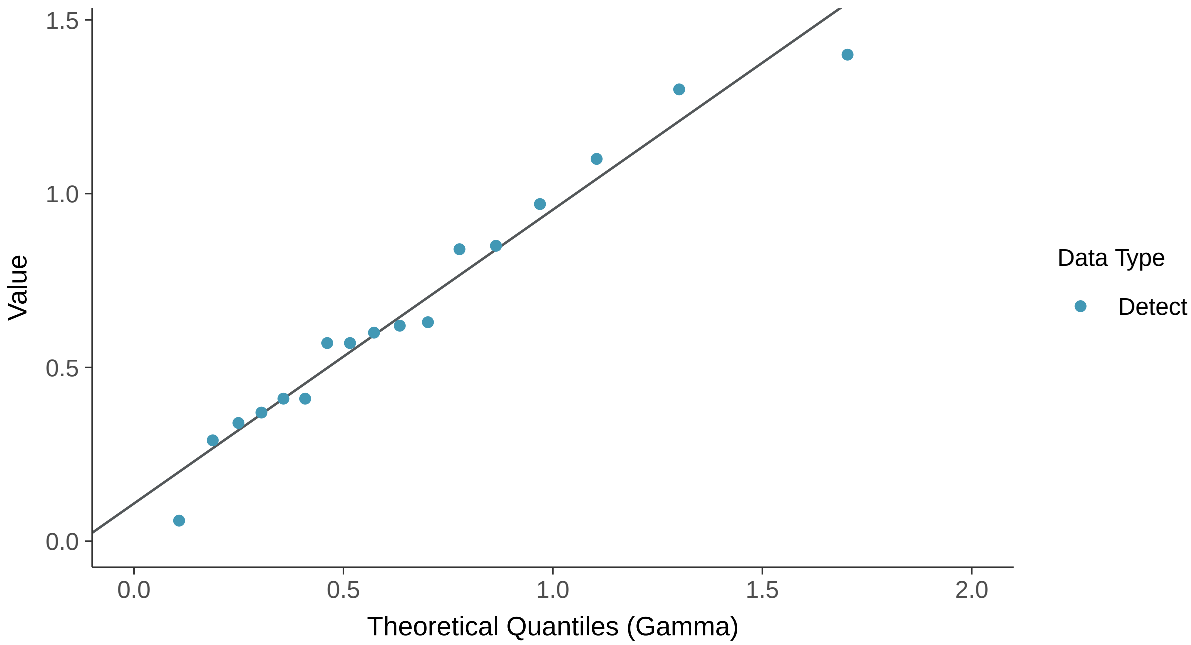



Normal Q-Q plot
Barium, MW-32 (mg/L)
Value
1.5
1.0
0.5
0.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Barium, MW-32 (mg/L)
log(Value)
0
−1
−2
−3
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

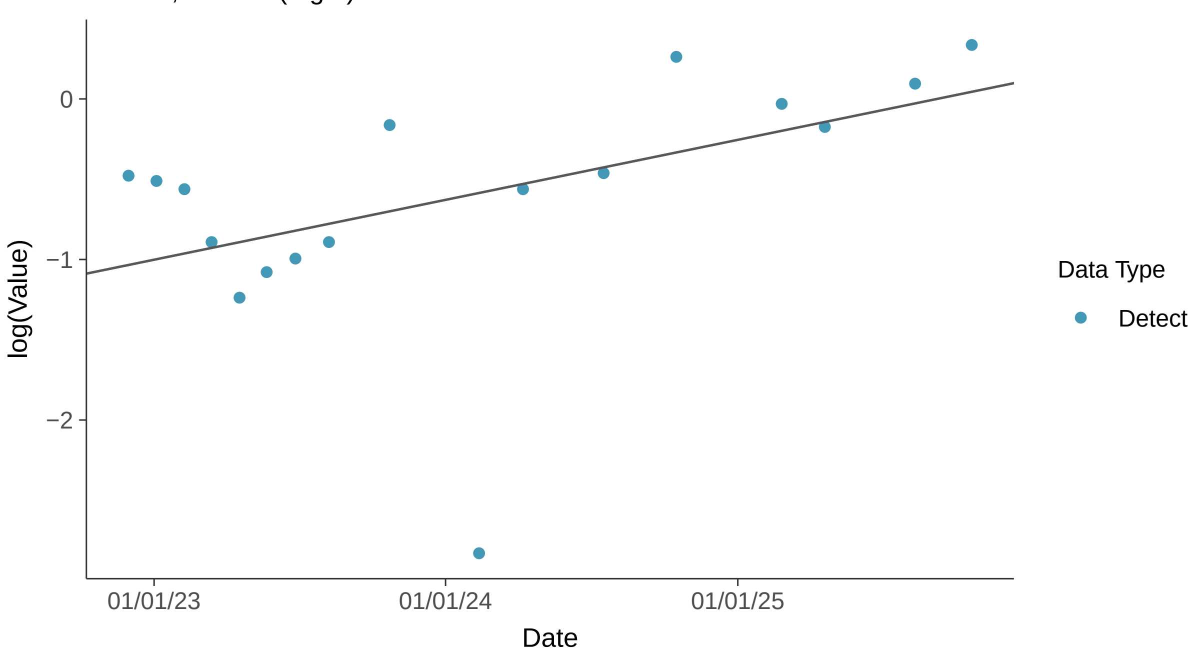
Gamma Q-Q plot

Barium, MW-32 (mg/L)



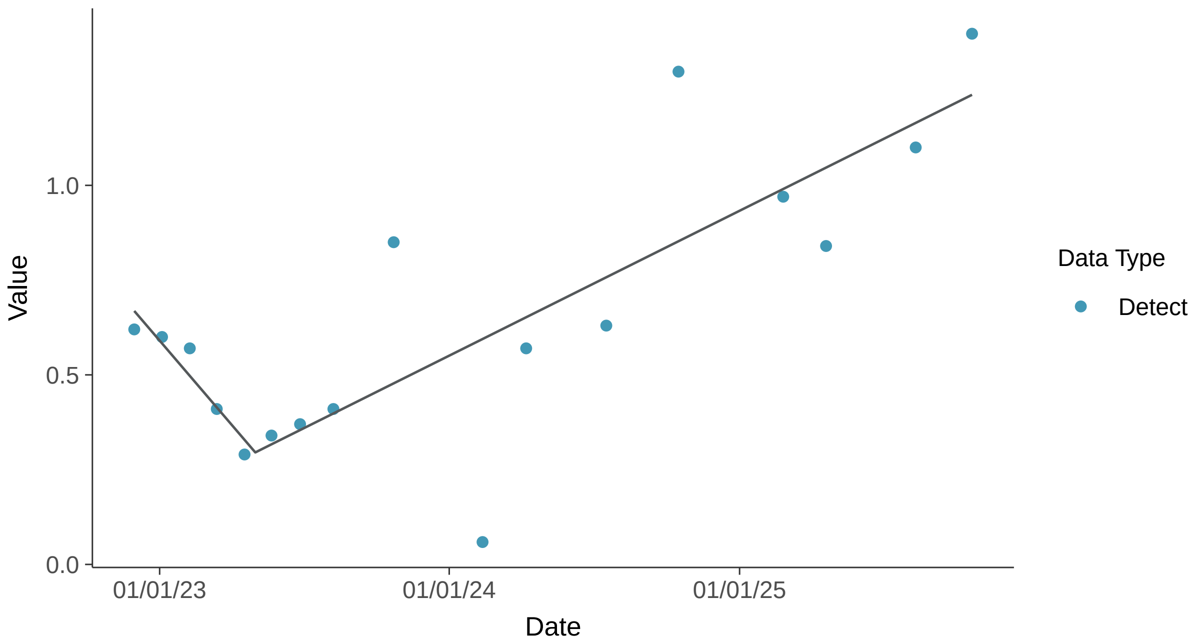
Trend Regression: Lognormal MLE

Barium, MW-32 (mg/L)



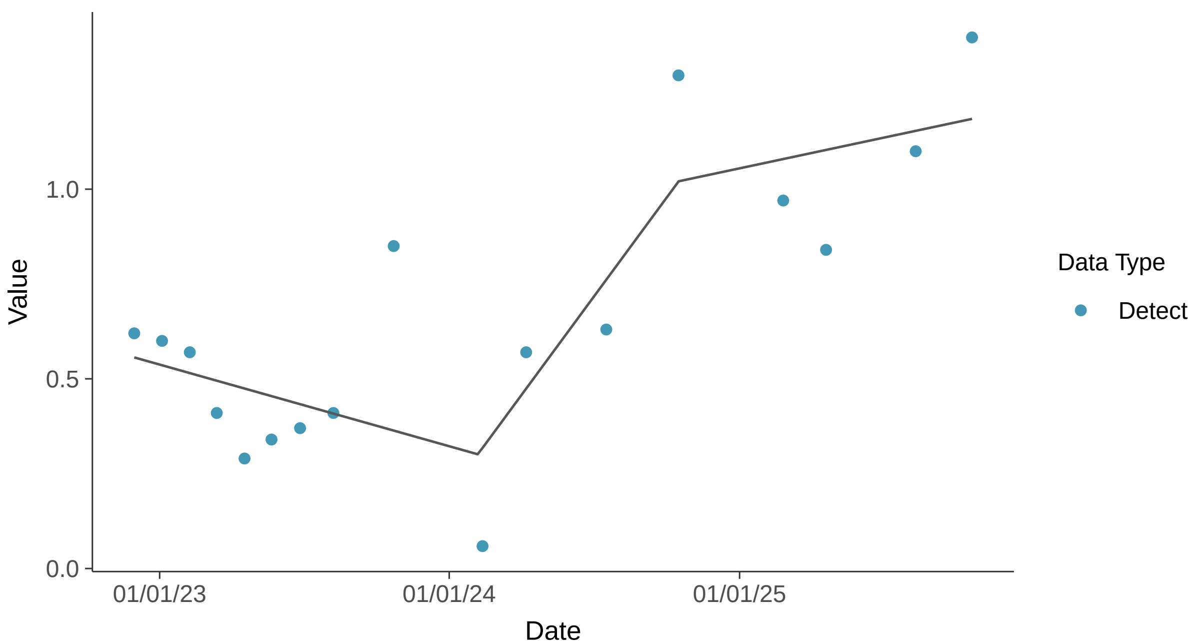
Trend Regression: Piecewise Linear-Linear

Barium, MW-32 (mg/L)



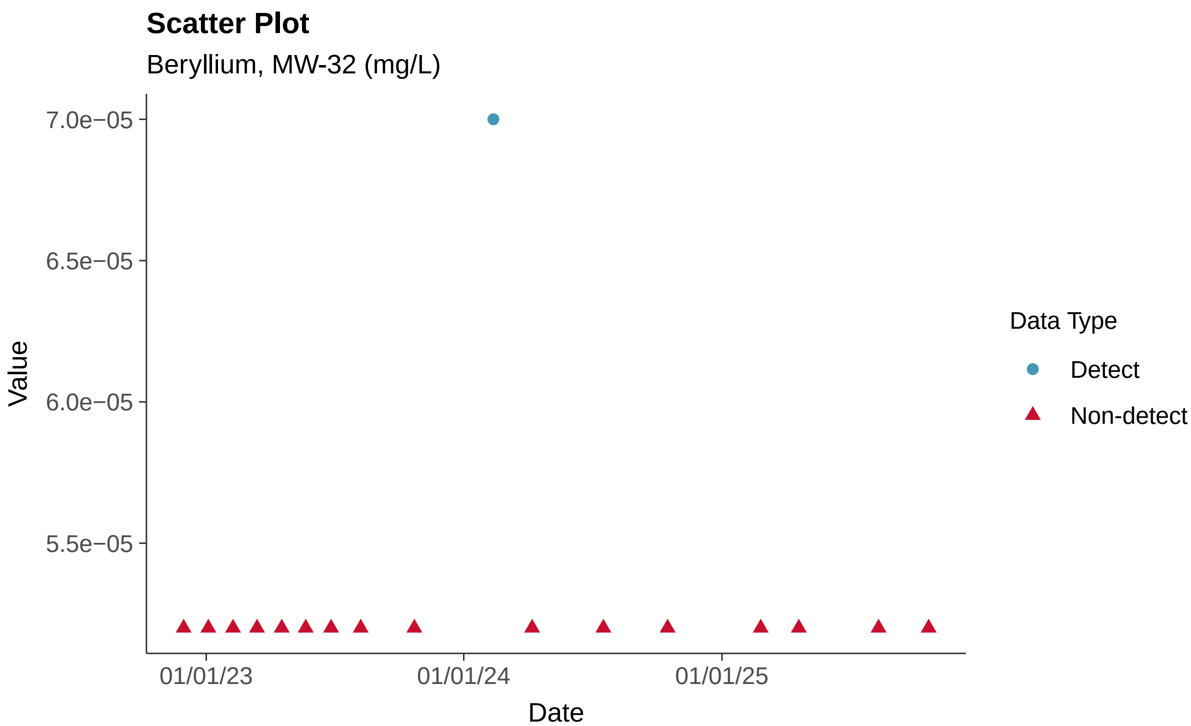
Trend Regression: Piecewise Linear-Linear-Linear

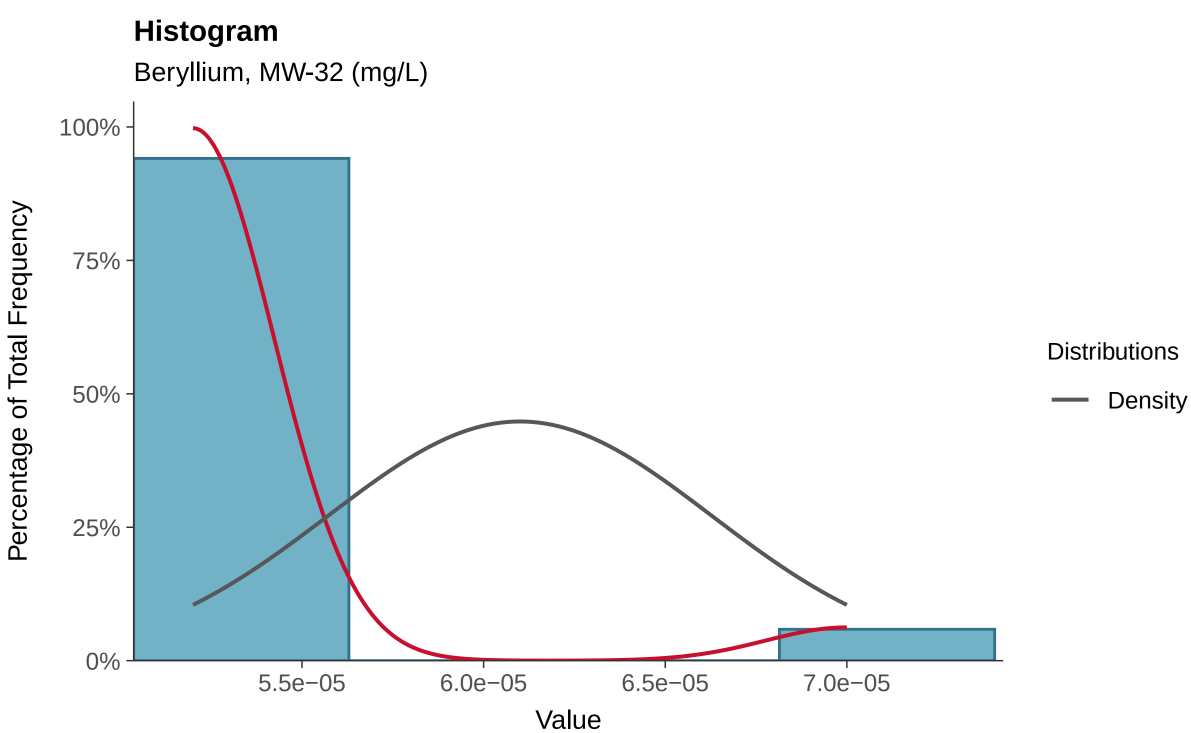
Barium, MW-32 (mg/L)



Appendix IV: Beryllium, MW-32

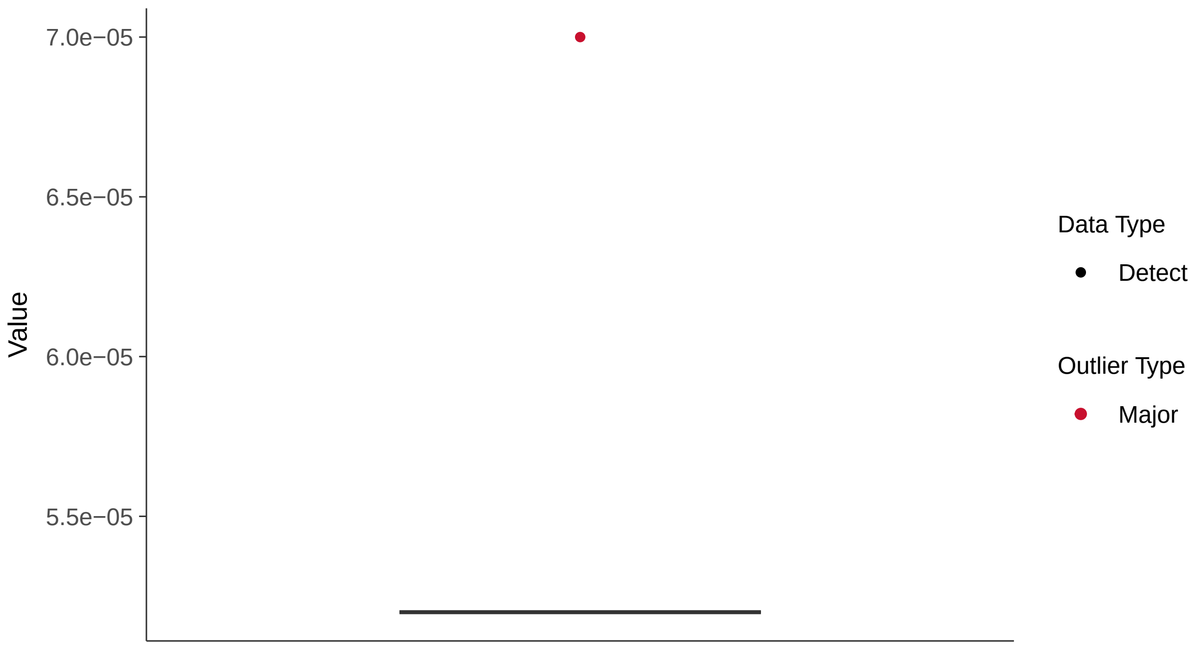
ID: 42_1_4_104





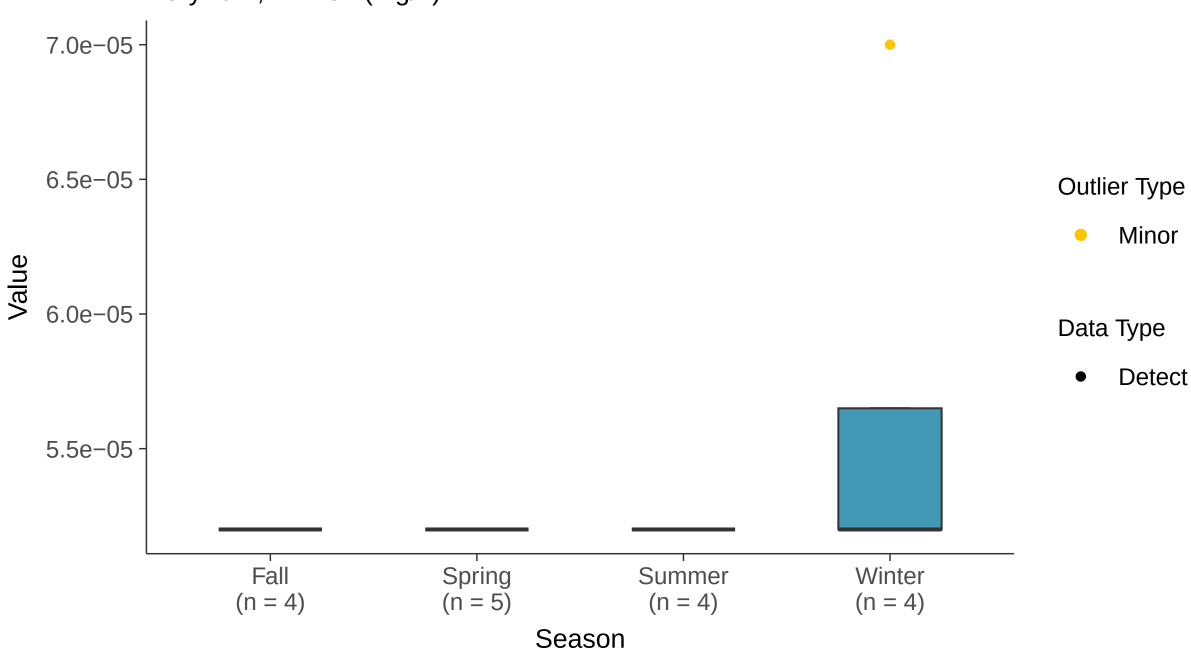
Boxplot

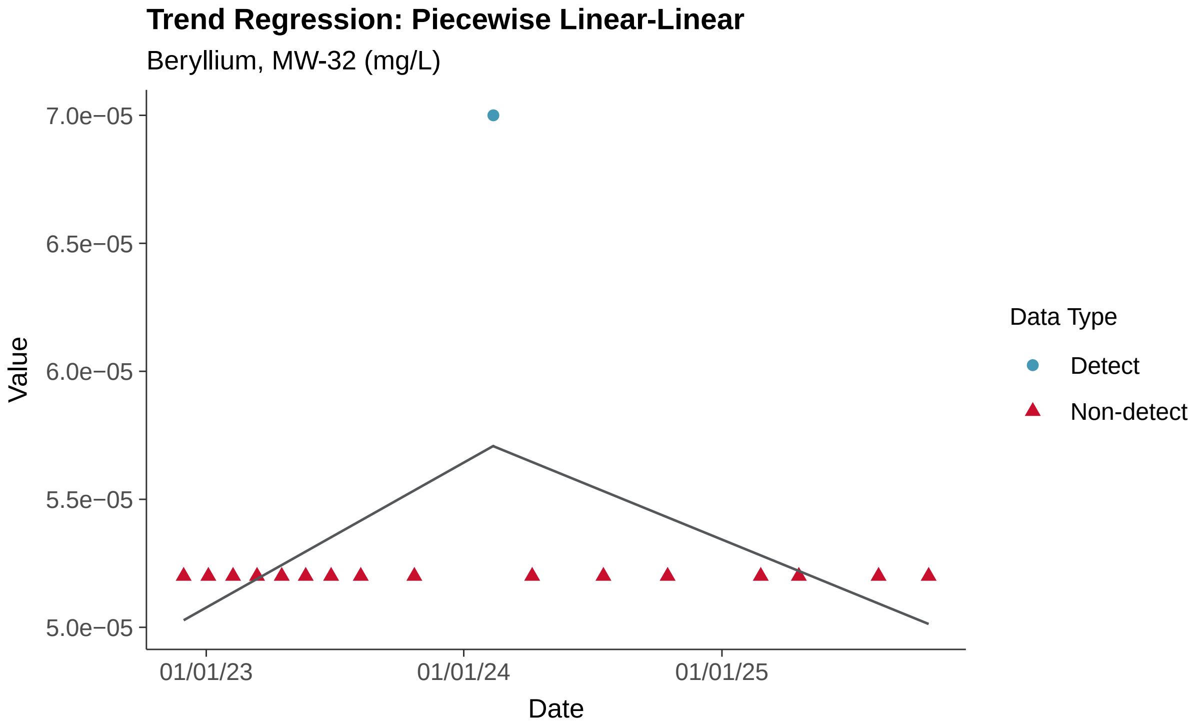
Beryllium, MW-32 (mg/L)

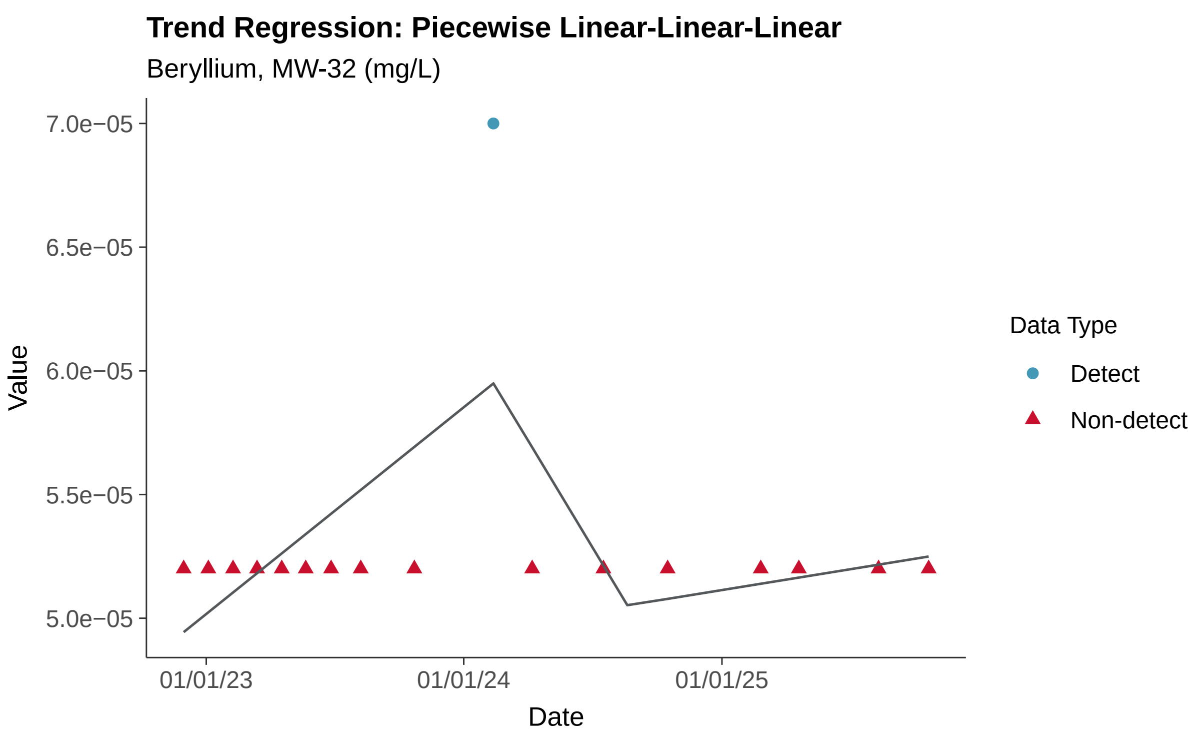


Boxplot by Season

Beryllium, MW-32 (mg/L)

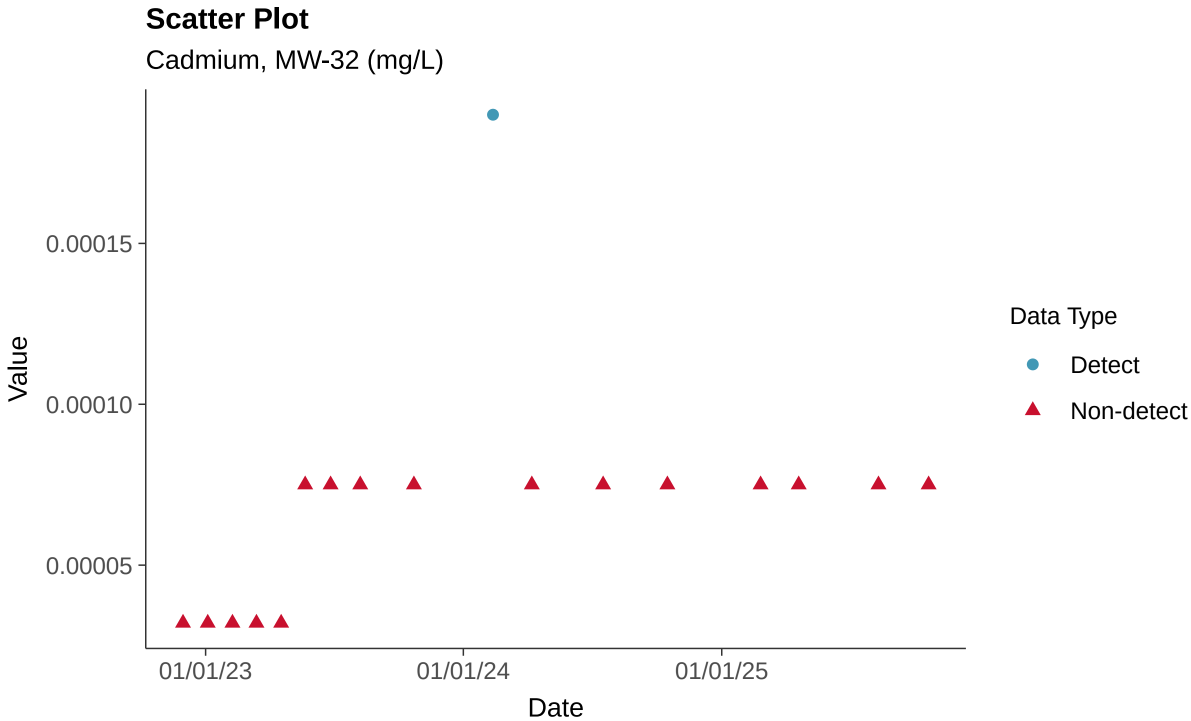


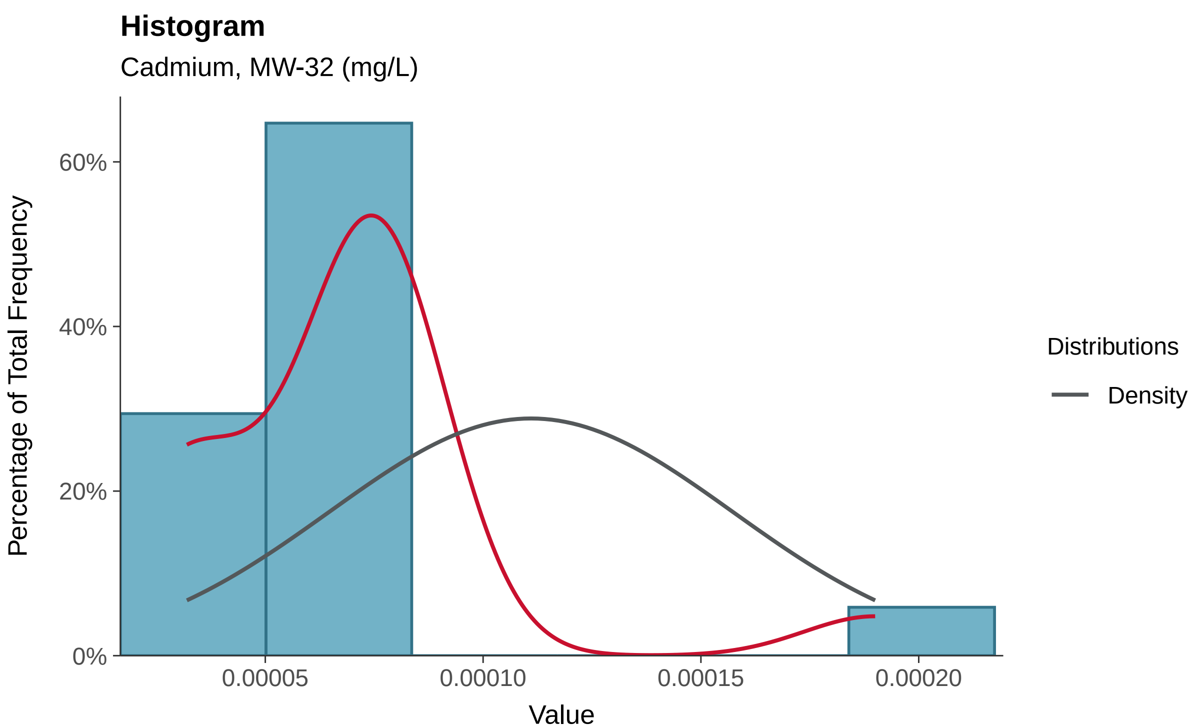

Trend Regression: Piecewise Linear-Linear
Beryllium, MW-32 (mg/L)
7.0e−05
6.5e−05
6.0e−05
5.5e−05
5.0e−05
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

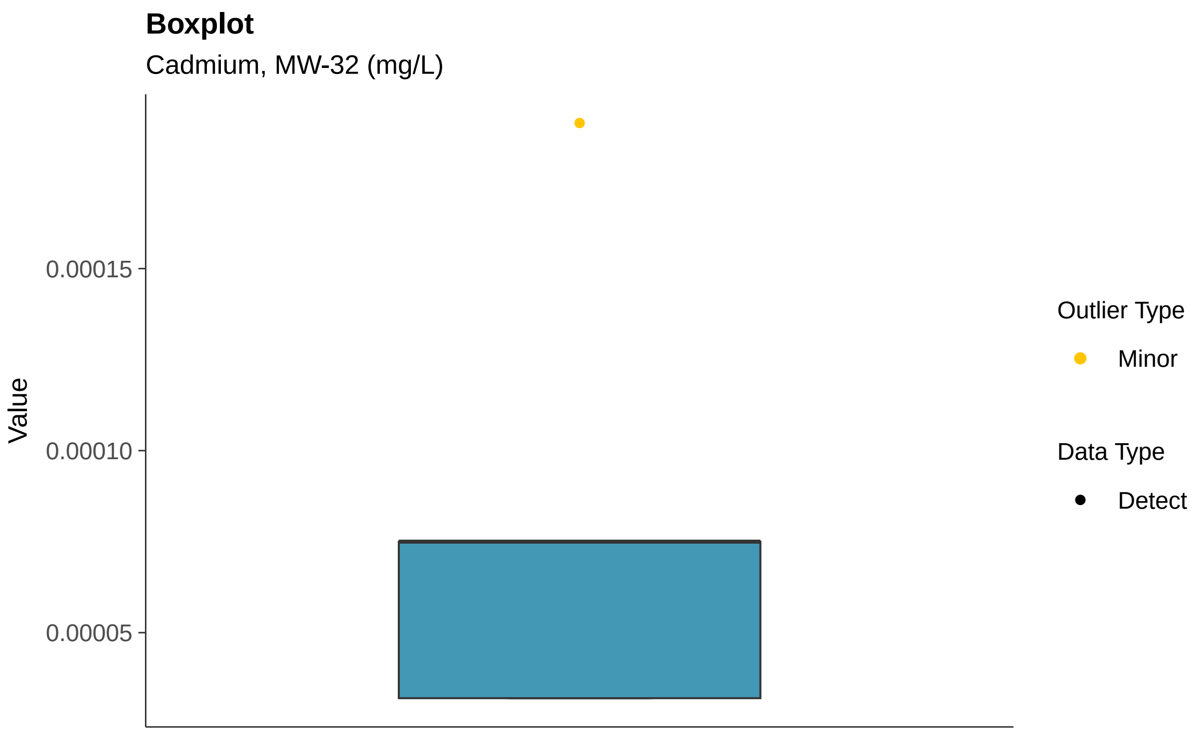

Trend Regression: Piecewise Linear-Linear-Linear
Beryllium, MW-32 (mg/L)
7.0e−05
6.5e−05
6.0e−05
5.5e−05
5.0e−05
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

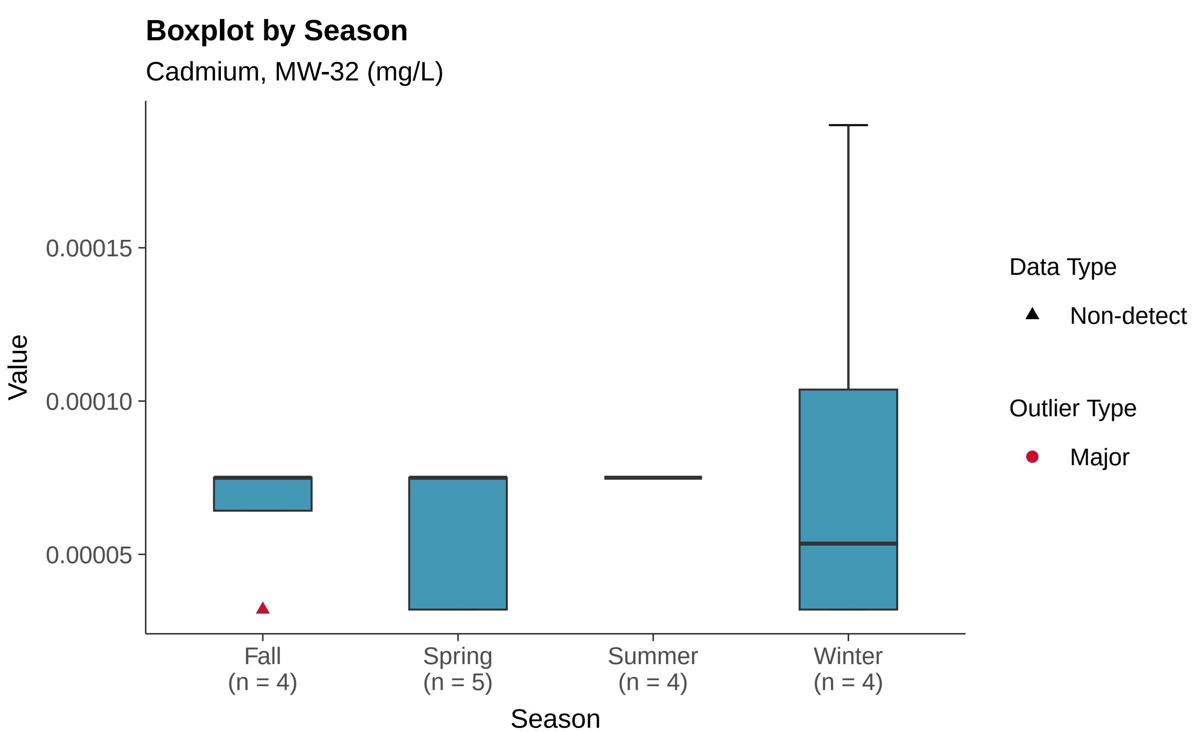
Appendix IV: Cadmium, MW-32

ID: 42_1_4_106



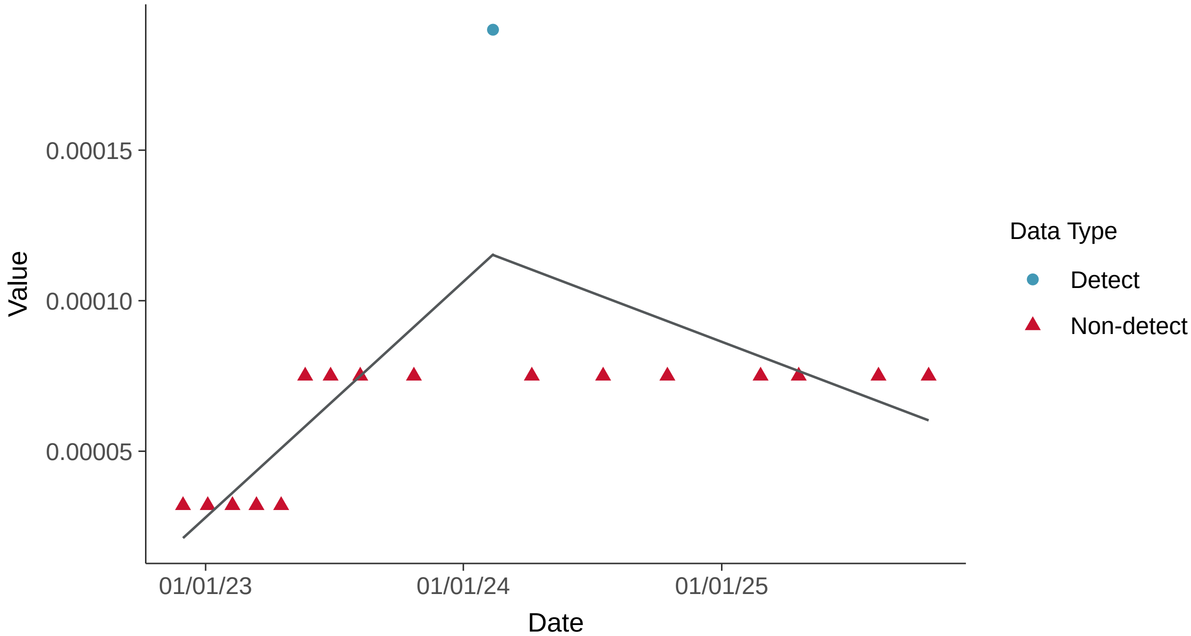



Boxplot
Cadmium, MW-32 (mg/L)
Value
0.00015
0.00010
0.00005
Outlier Type
Minor
Data Type
Detect


Boxplot by Season
Cadmium, MW-32 (mg/L)
Value
0.00015
0.00010
0.00005
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Data Type
Non-detect
Outlier Type
Major

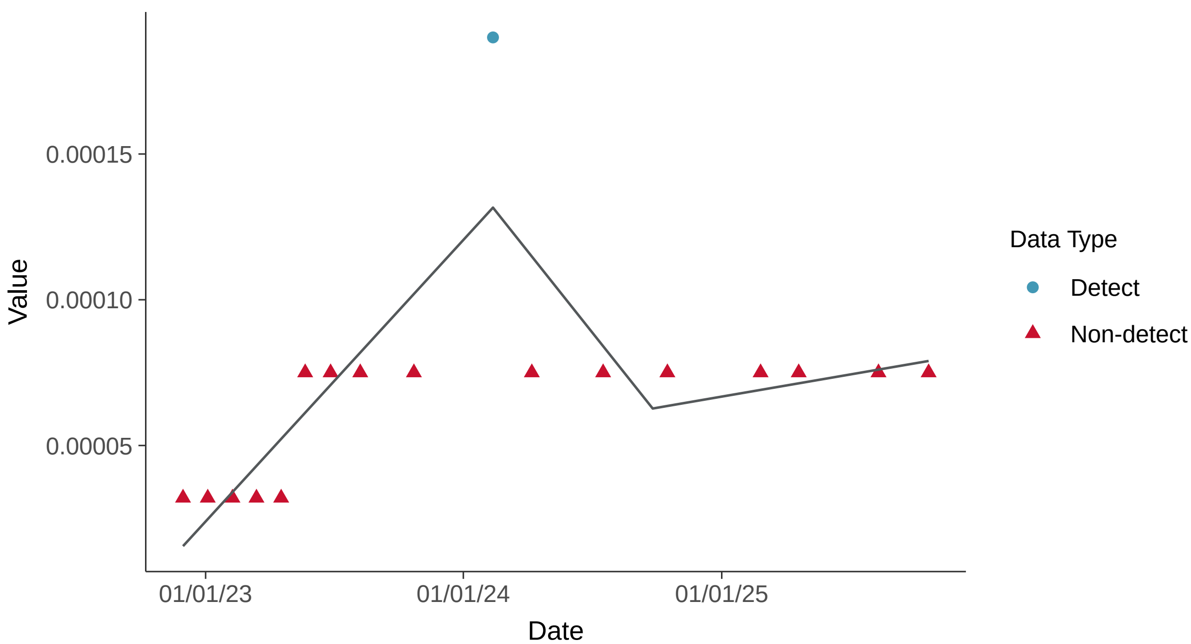
Trend Regression: Piecewise Linear-Linear

Cadmium, MW-32 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Cadmium, MW-32 (mg/L)

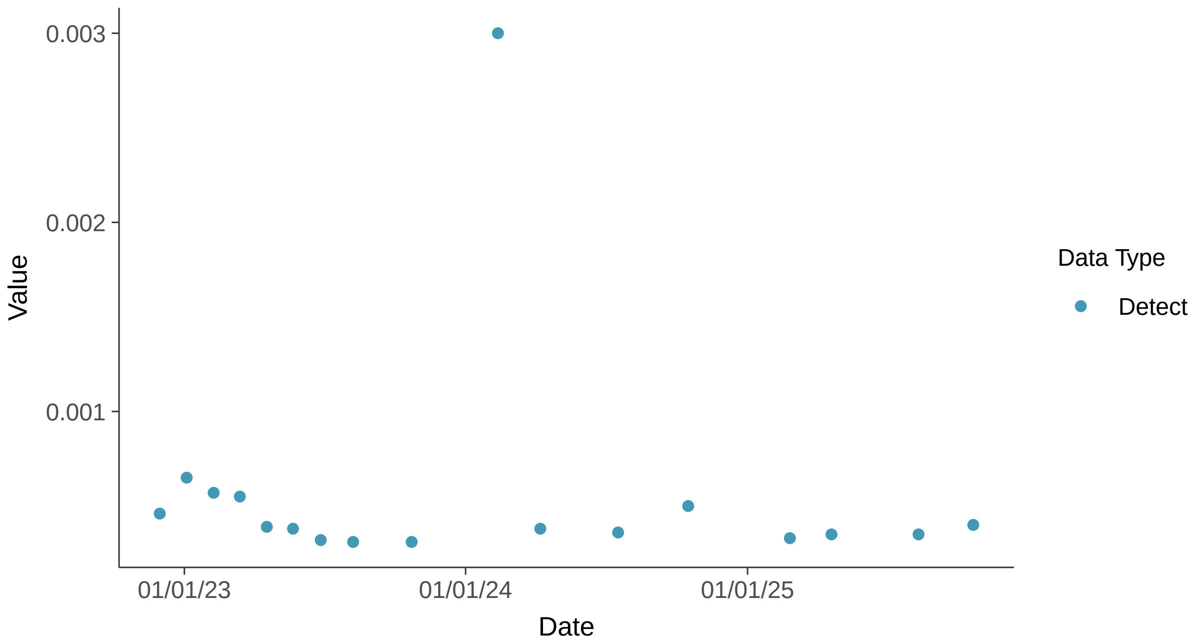


Appendix IV: Chromium, Total, MW-32

ID: 42_1_4_109

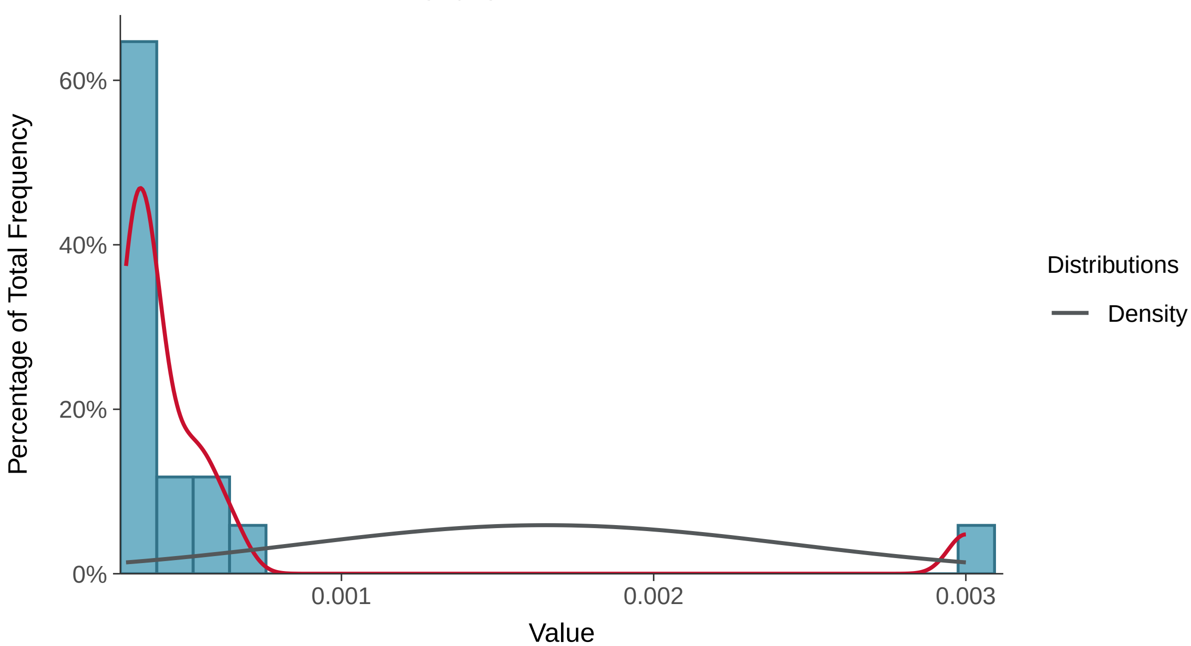
Scatter Plot

Chromium, Total, MW-32 (mg/L)



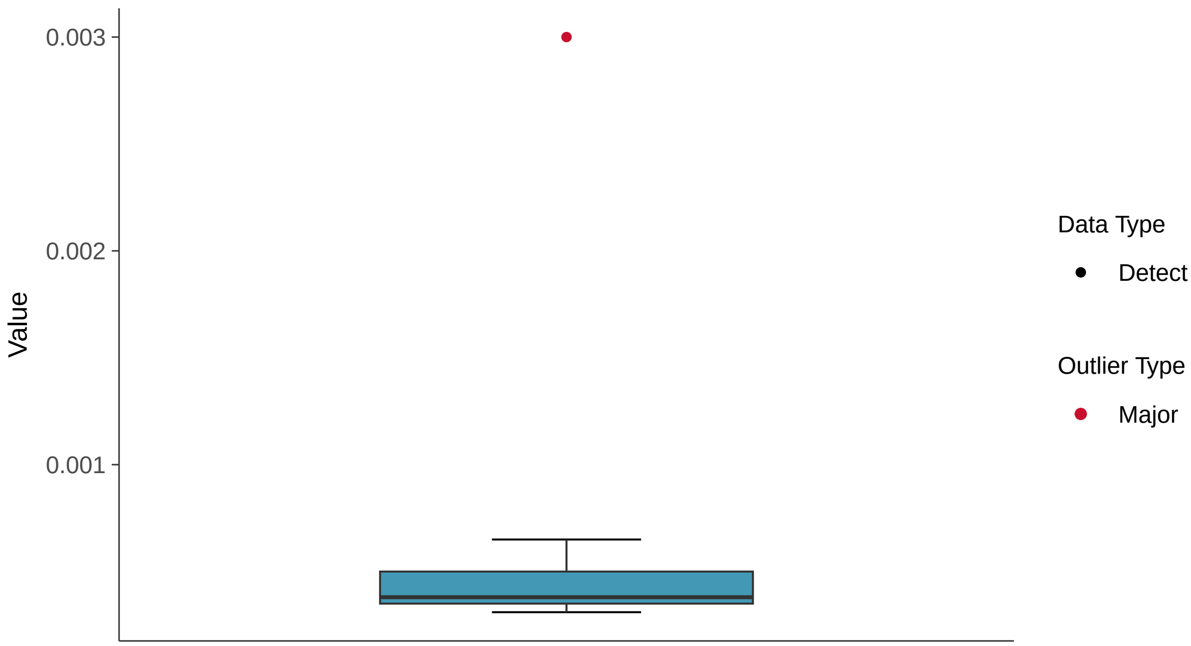
Histogram

Chromium, Total, MW-32 (mg/L)



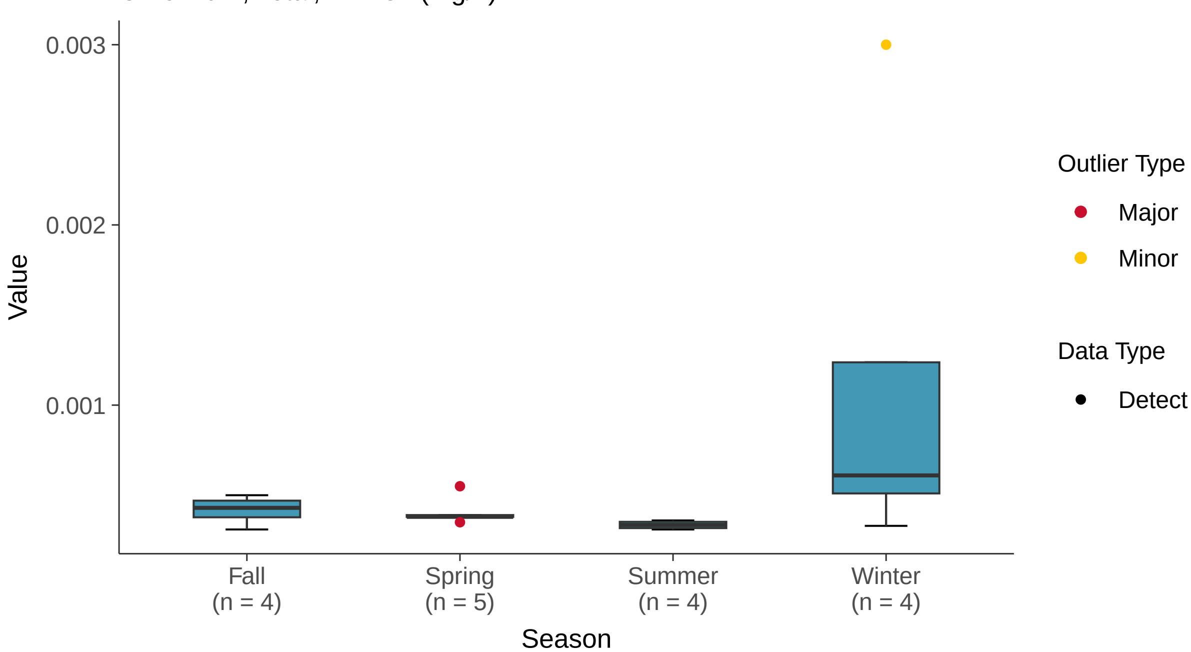
Boxplot

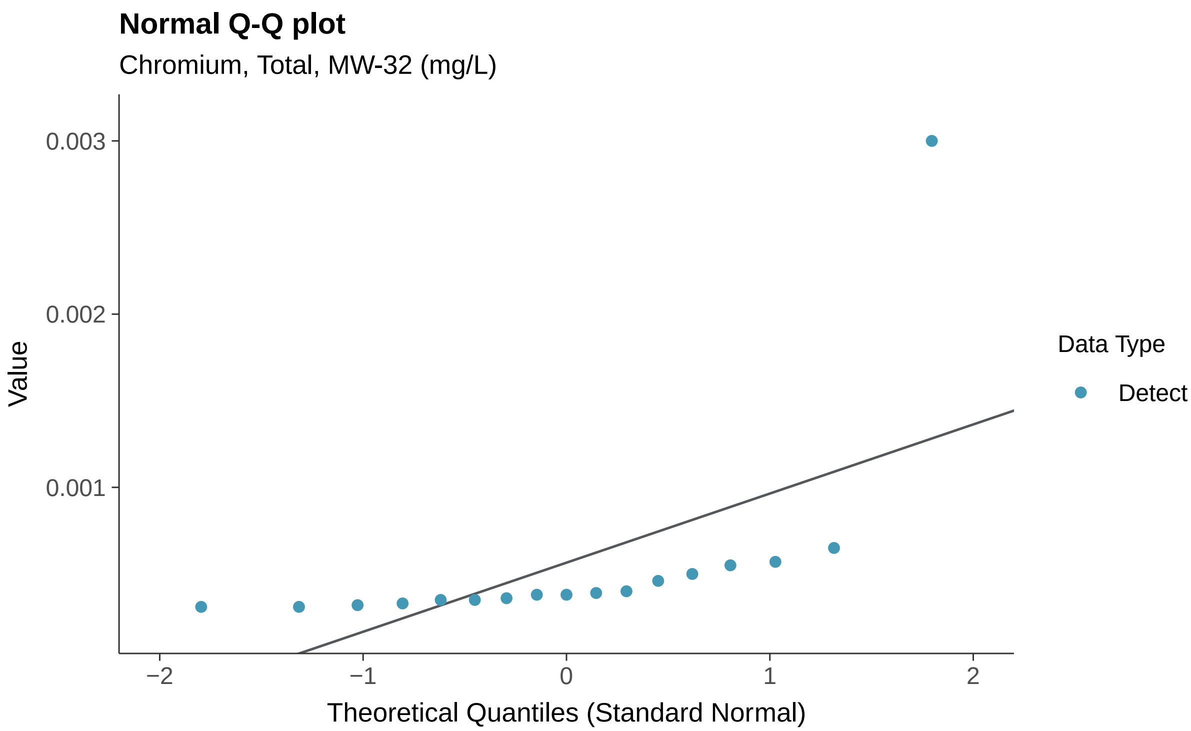
Chromium, Total, MW-32 (mg/L)

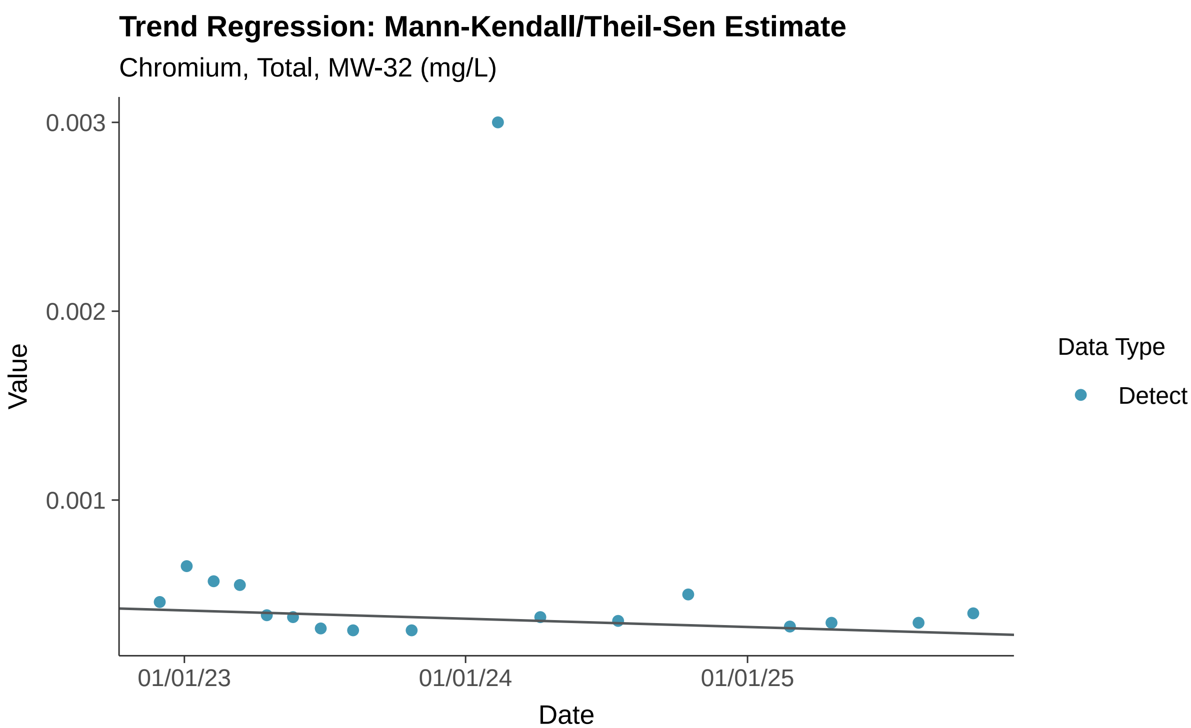


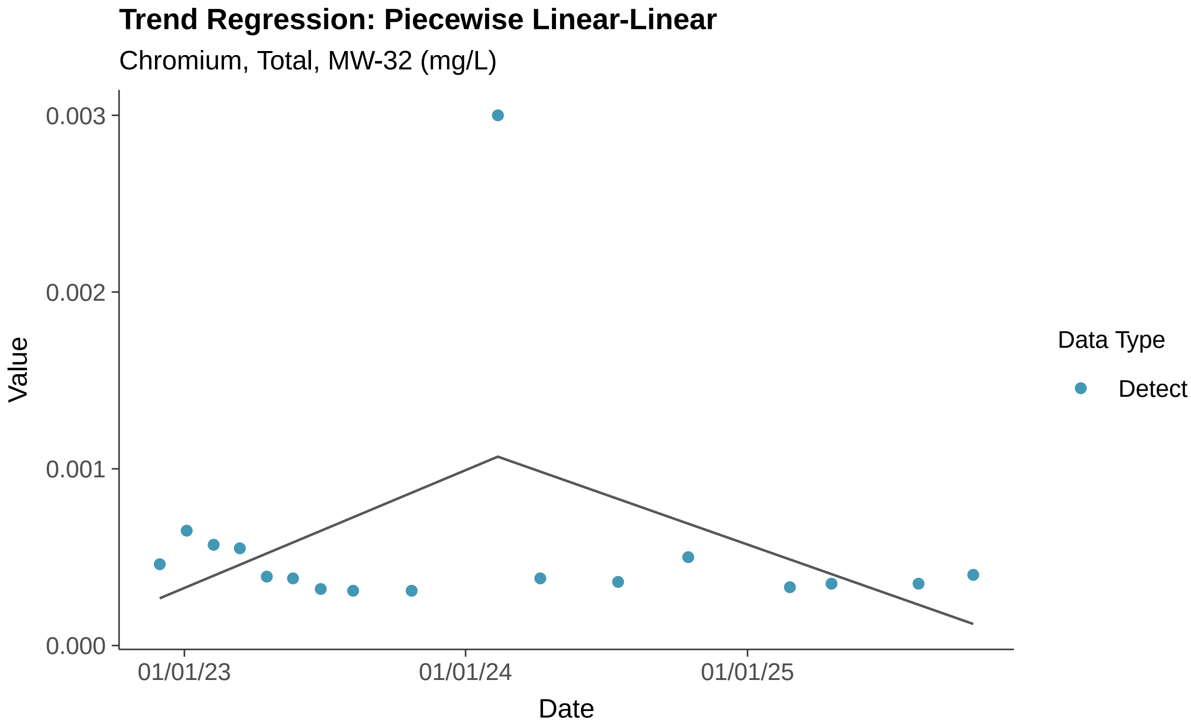
Boxplot by Season

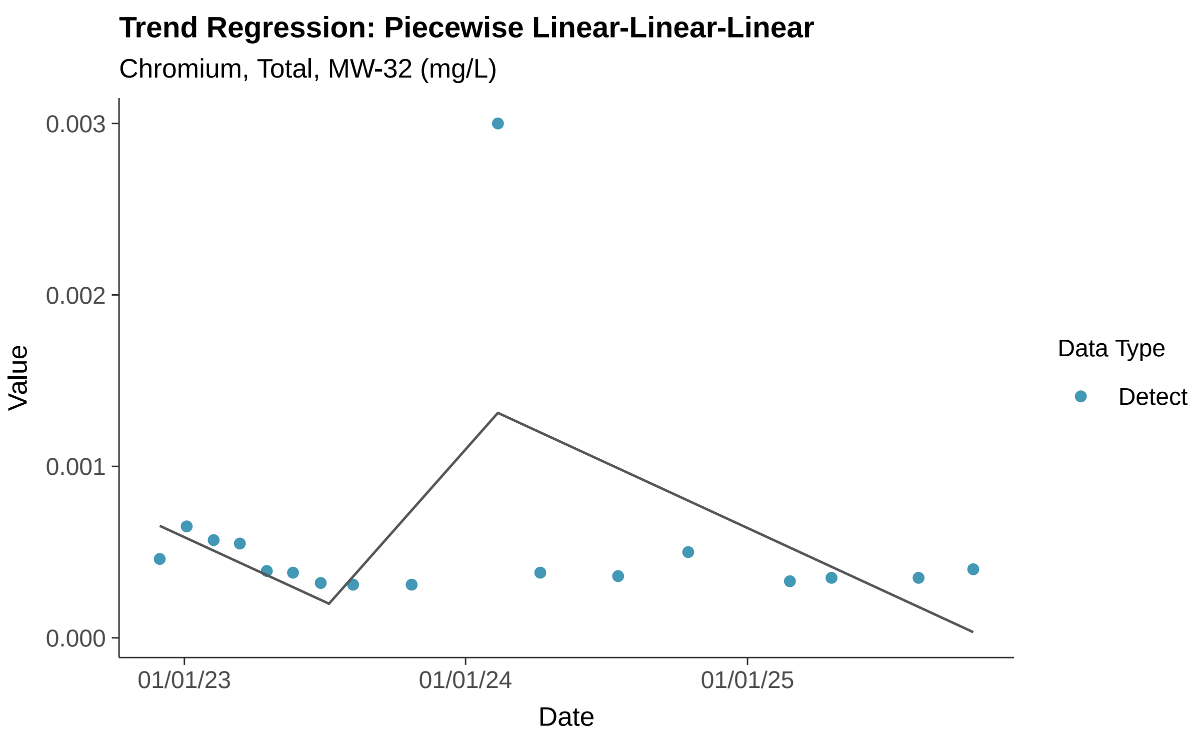
Chromium, Total, MW-32 (mg/L)




Normal Q-Q plot
Chromium, Total, MW-32 (mg/L)
Value
0.003
0.002
0.001
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Mann-Kendall/Theil-Sen Estimate
Chromium, Total, MW-32 (mg/L)
Value
0.003
0.002
0.001
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear
Chromium, Total, MW-32 (mg/L)
0.003
0.002
0.001
0.000
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

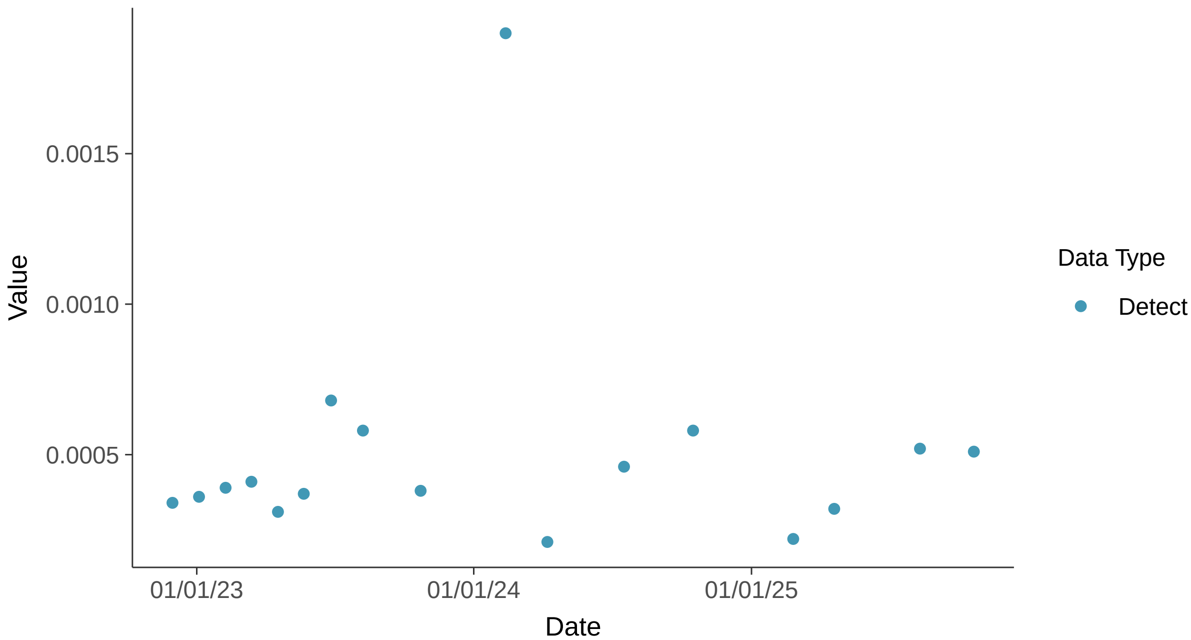

Trend Regression: Piecewise Linear-Linear-Linear
Chromium, Total, MW-32 (mg/L)
0.003
0.002
0.001
0.000
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Appendix IV: Cobalt, MW-32

ID: 42_1_4_110

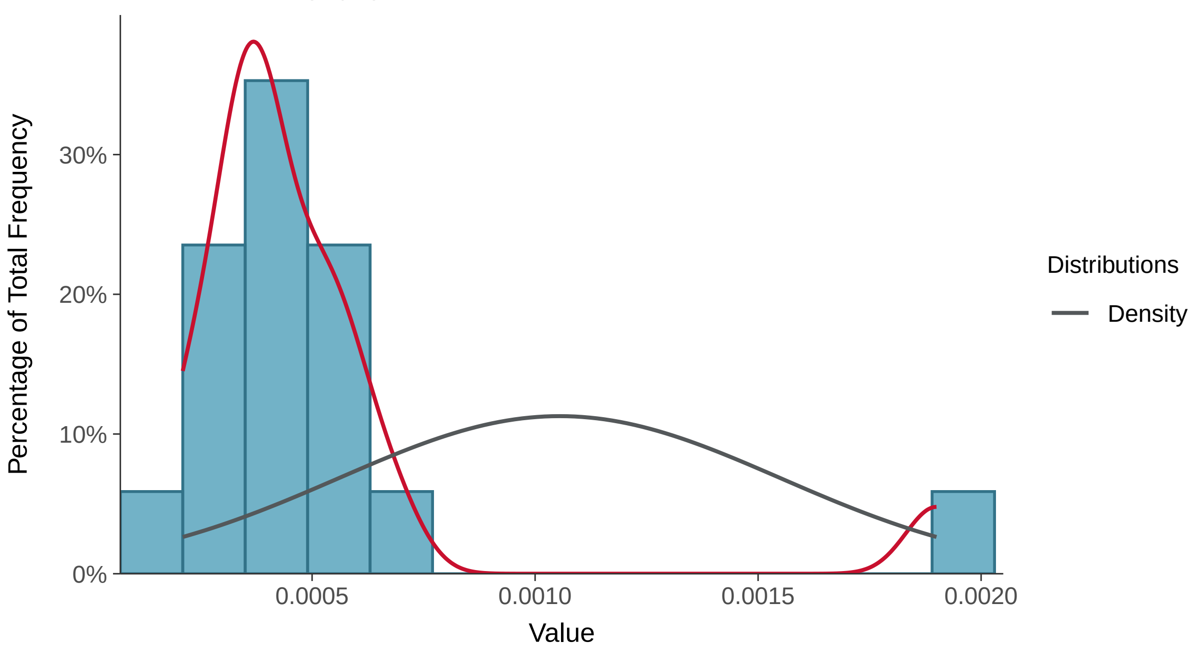
Scatter Plot

Cobalt, MW-32 (mg/L)



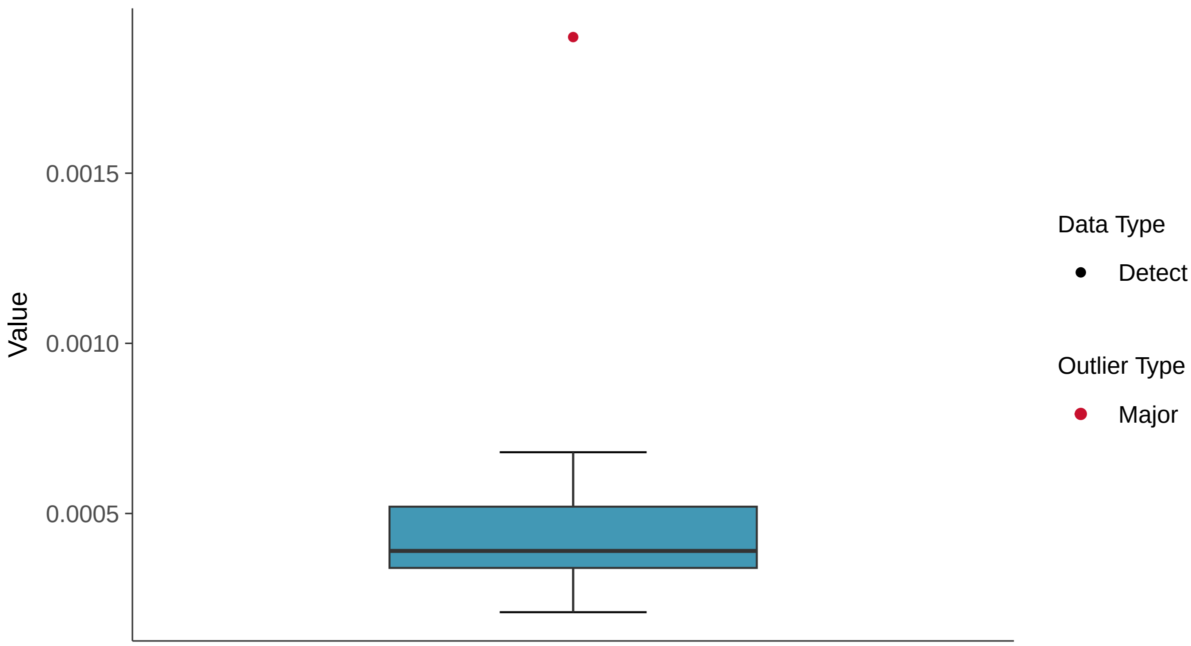
Histogram

Cobalt, MW-32 (mg/L)



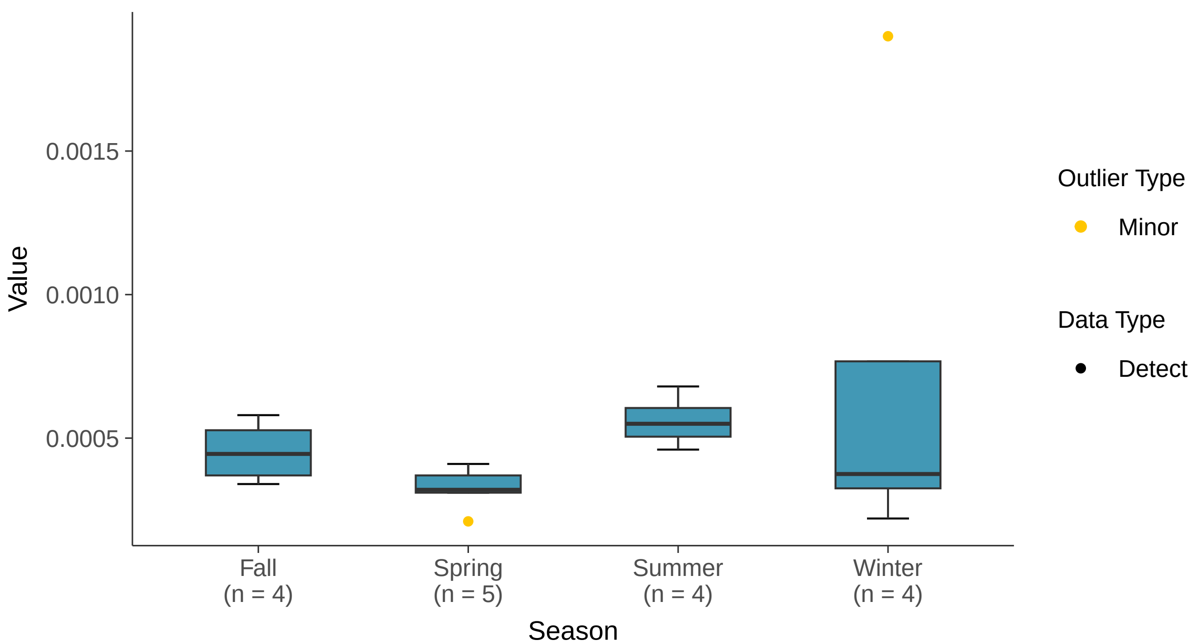
Boxplot

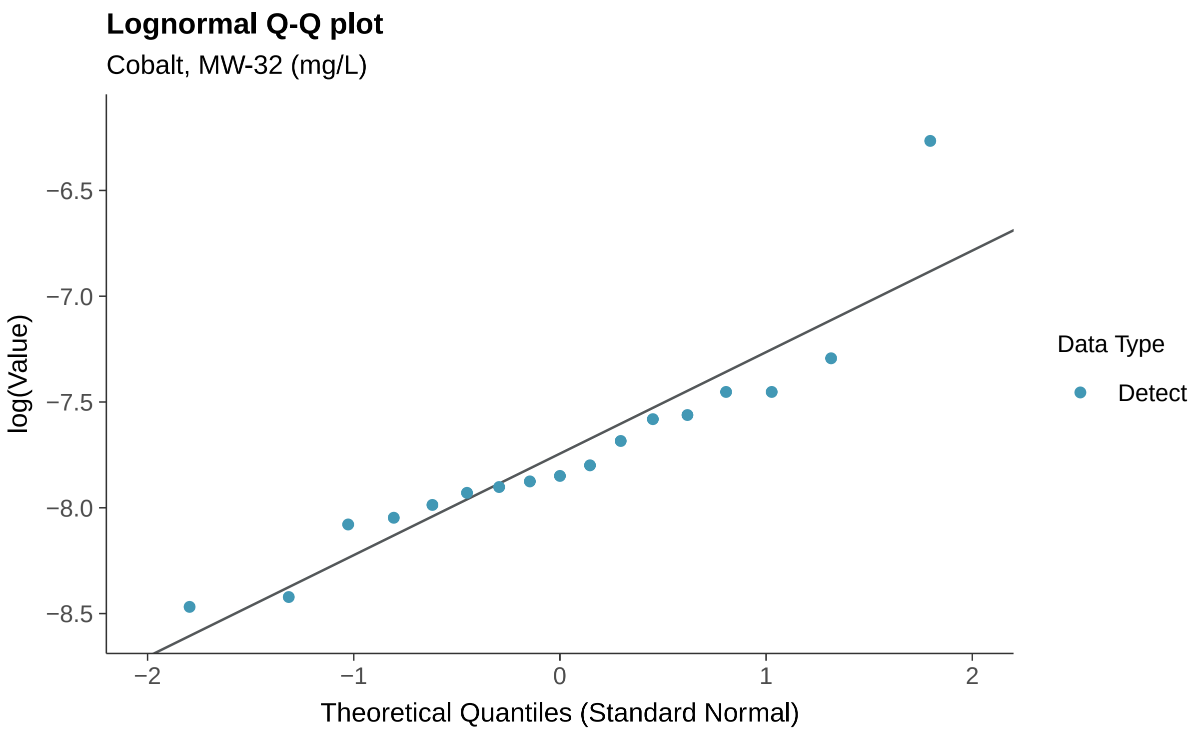
Cobalt, MW-32 (mg/L)

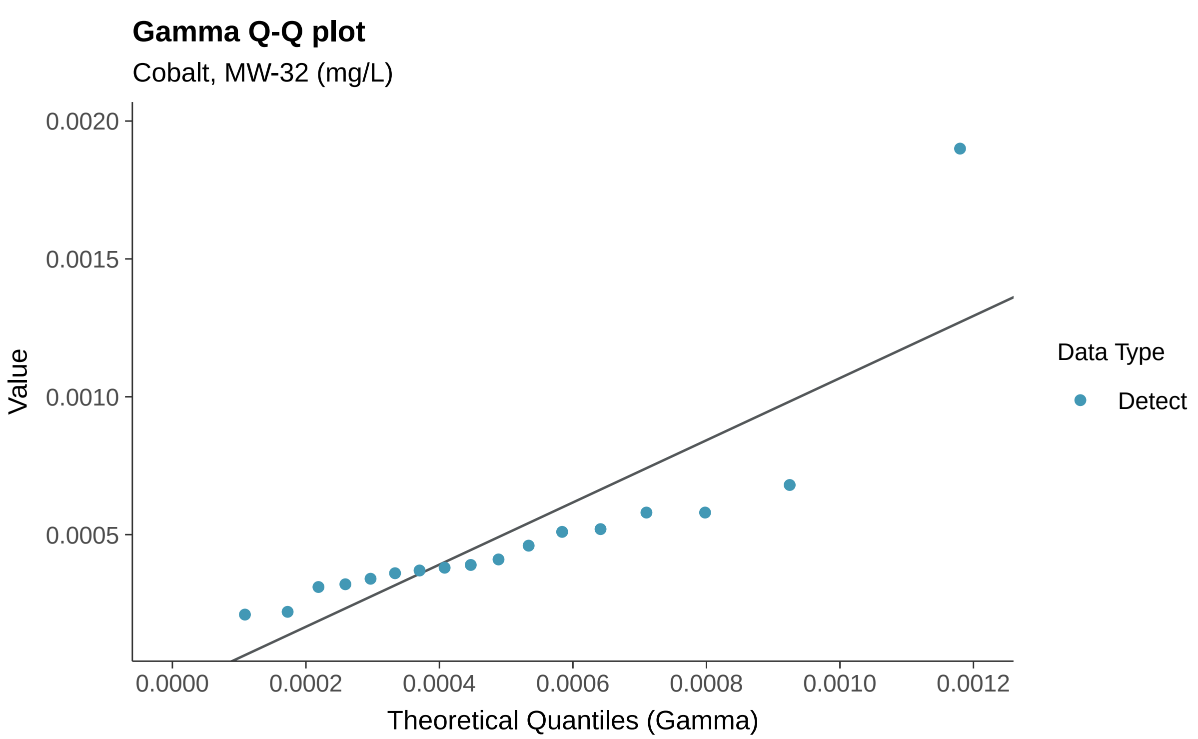


Boxplot by Season

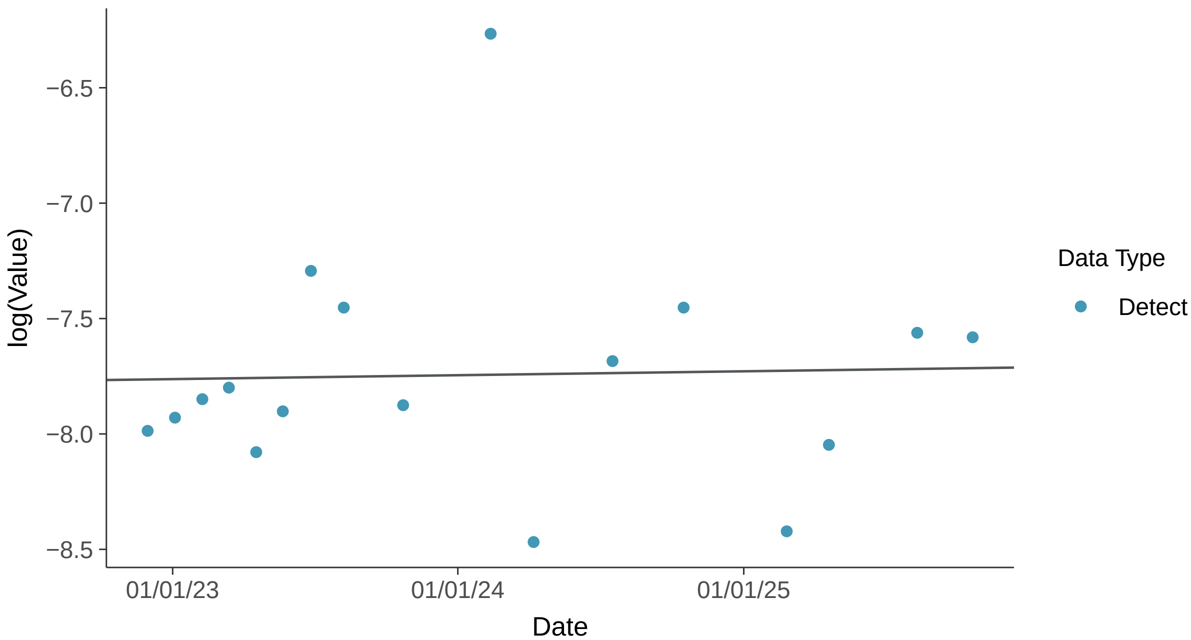
Cobalt, MW-32 (mg/L)



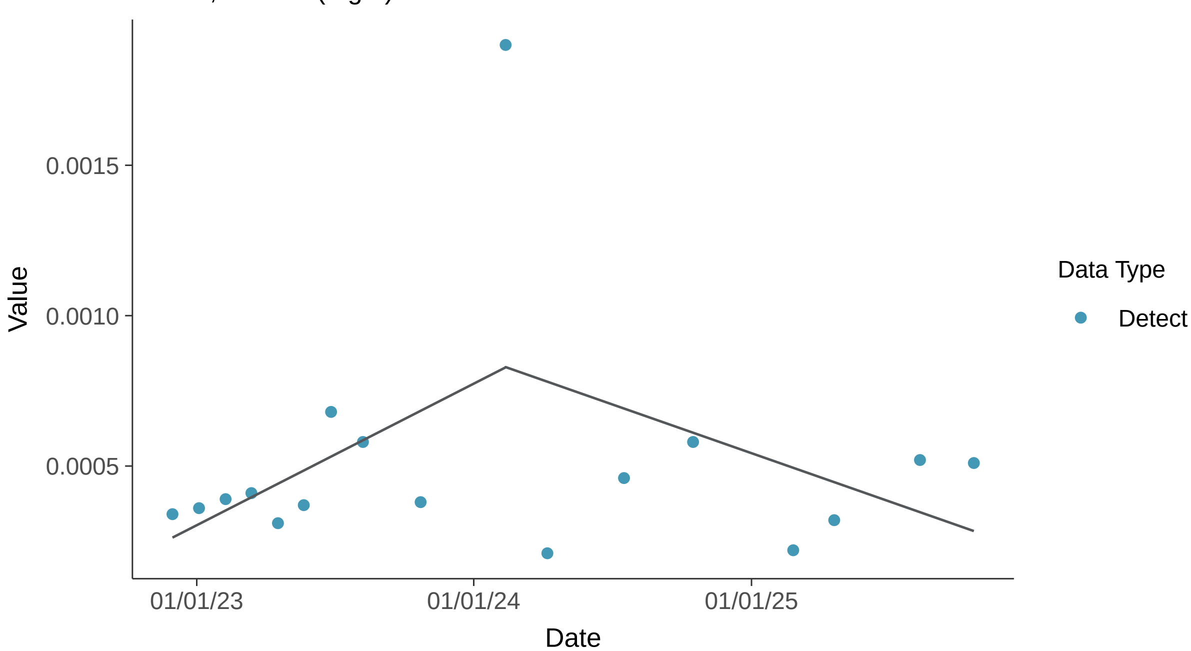

Lognormal Q-Q plot
Cobalt, MW-32 (mg/L)
log(Value)
−6.5
−7.0
−7.5
−8.0
−8.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Cobalt, MW-32 (mg/L)
Value
0.0020
0.0015
0.0010
0.0005
0.0000
0.0002
0.0004
0.0006
0.0008
0.0010
0.0012
Theoretical Quantiles (Gamma)
Data Type
Detect

Trend Regression: Lognormal MLE
Cobalt, MW-32 (mg/L)

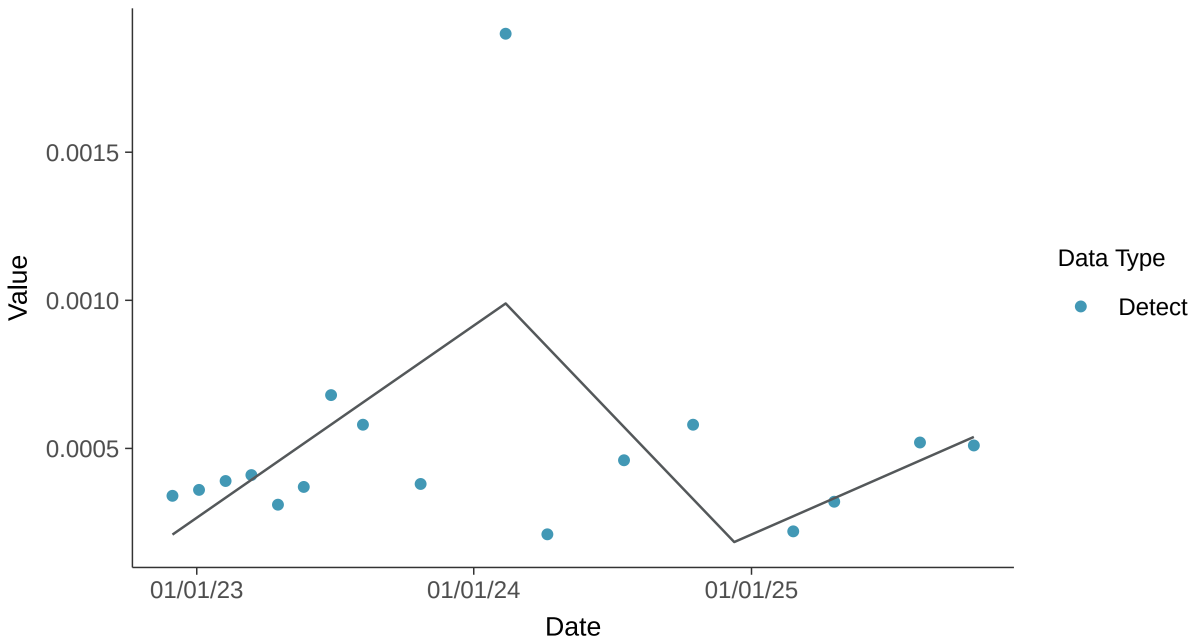


Trend Regression: Piecewise Linear-Linear
Cobalt, MW-32 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Cobalt, MW-32 (mg/L)

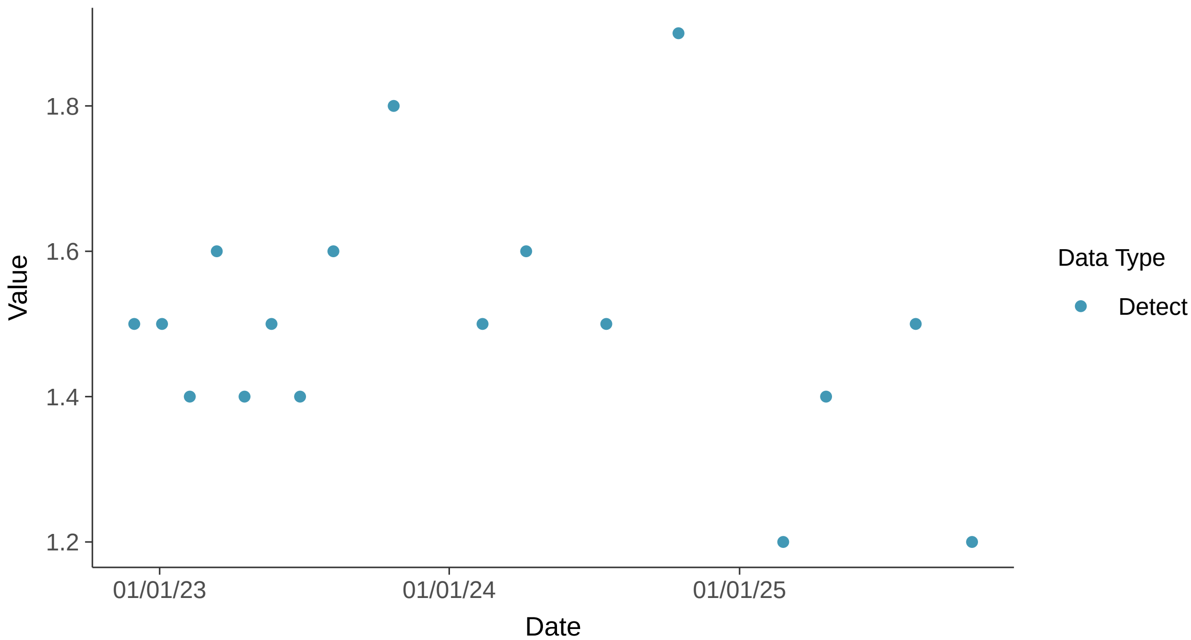


Appendix IV: Fluoride (App IV), MW-32

ID: 42_1_4_113

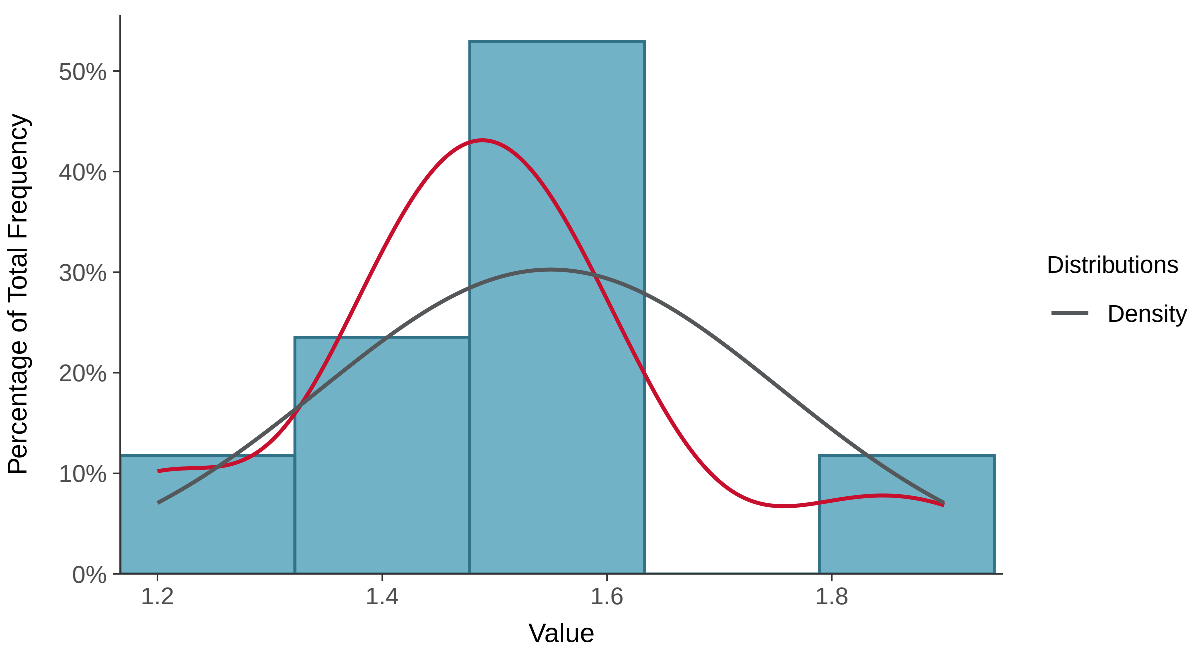
Scatter Plot

Fluoride (App IV), MW-32 (mg/L)



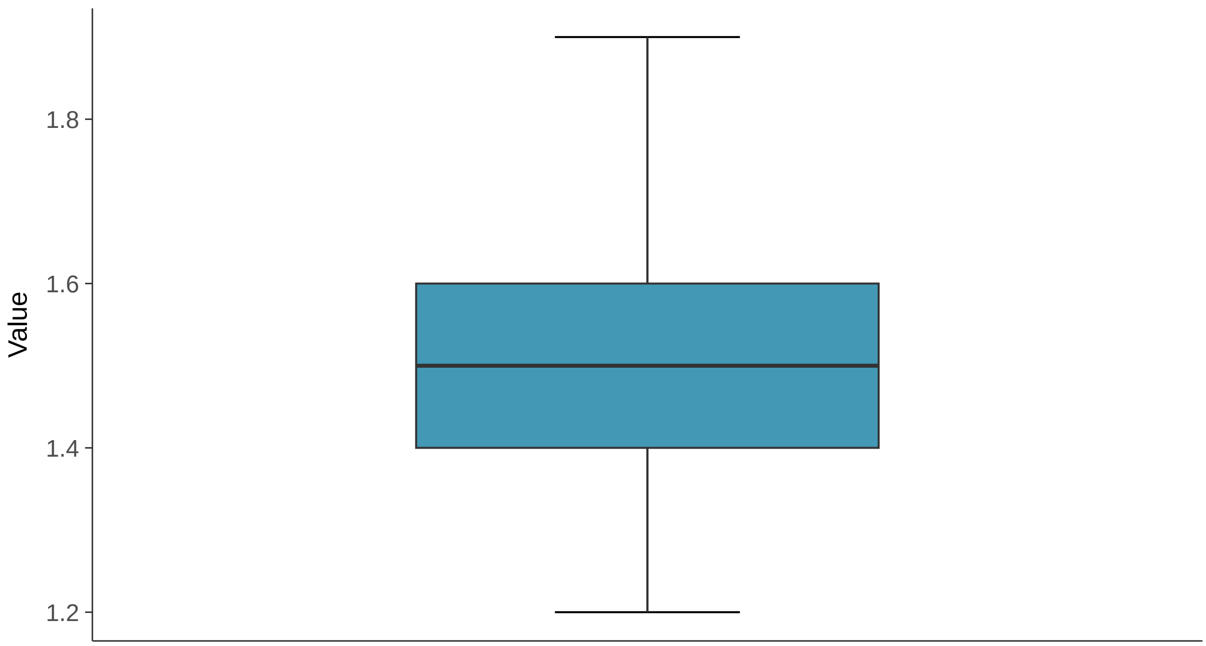
Histogram

Fluoride (App IV), MW-32 (mg/L)



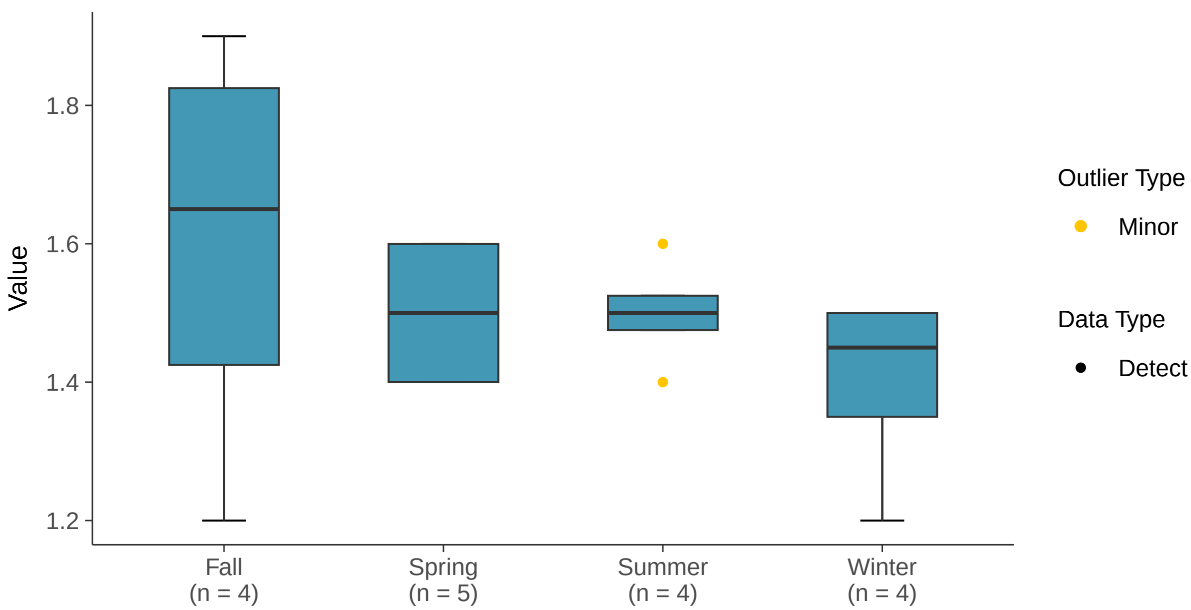
Boxplot

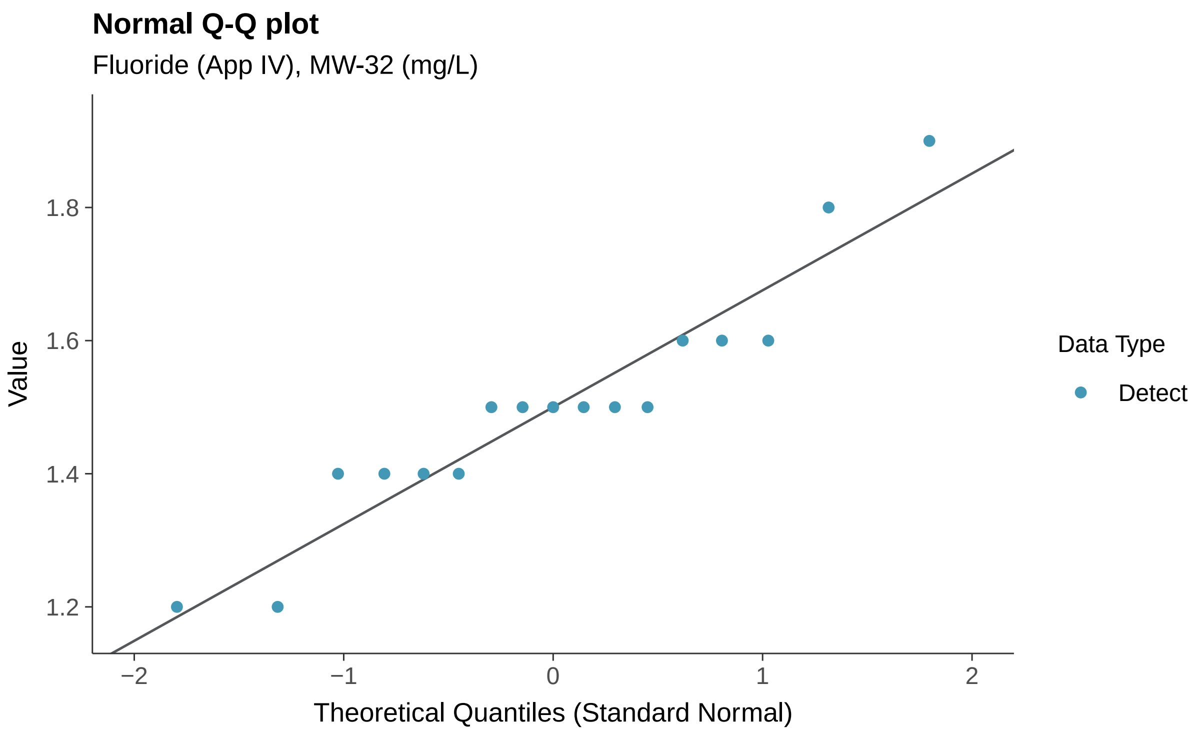
Fluoride (App IV), MW-32 (mg/L)

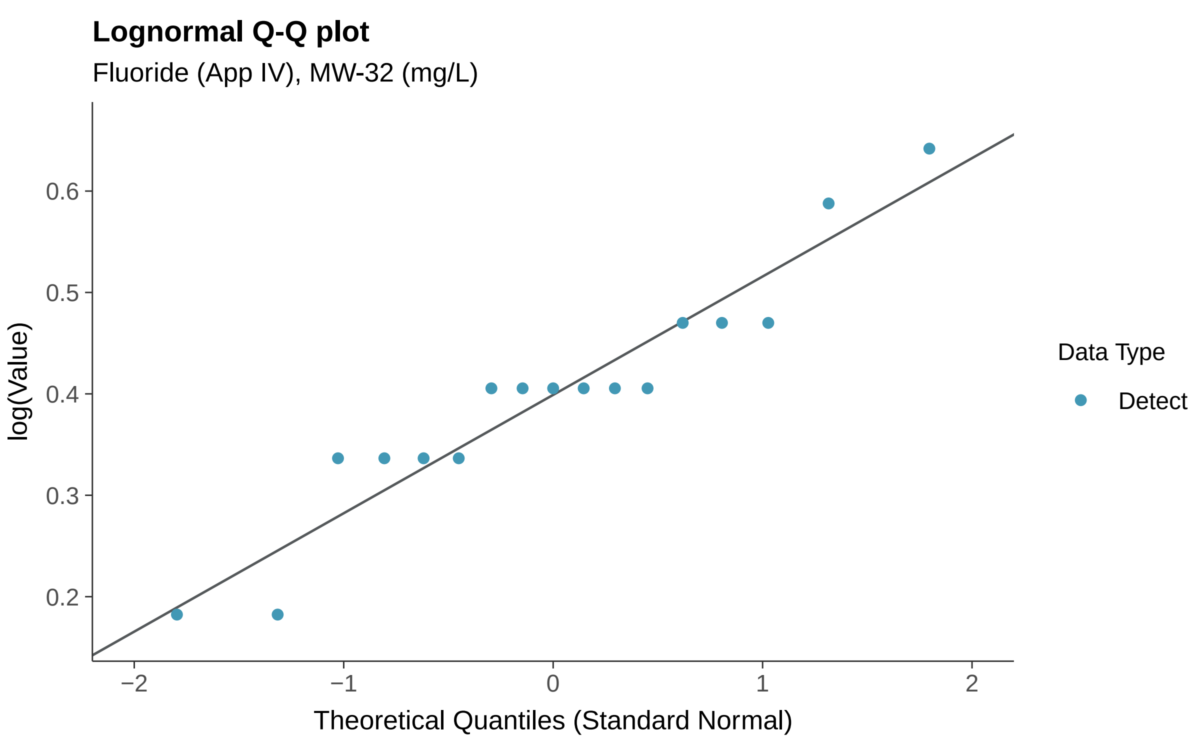


Boxplot by Season

Fluoride (App IV), MW-32 (mg/L)

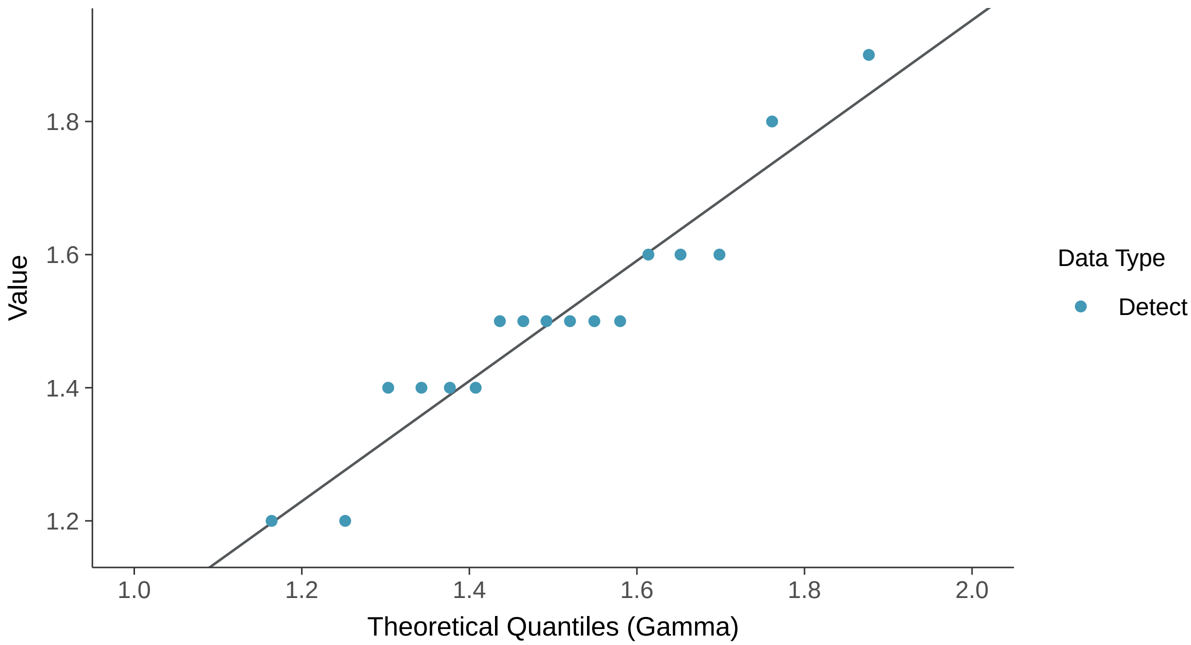



Normal Q-Q plot
Fluoride (App IV), MW-32 (mg/L)
Value
1.8
1.6
1.4
1.2
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Fluoride (App IV), MW-32 (mg/L)
log(Value)
0.6
0.5
0.4
0.3
0.2
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

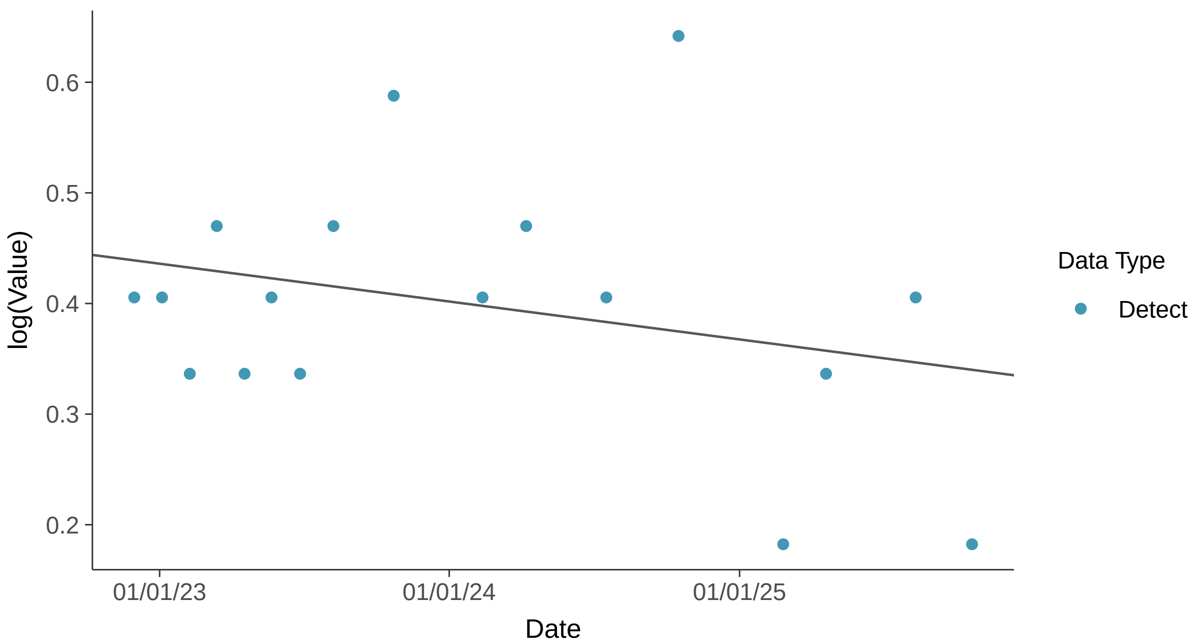
Gamma Q-Q plot

Fluoride (App IV), MW-32 (mg/L)



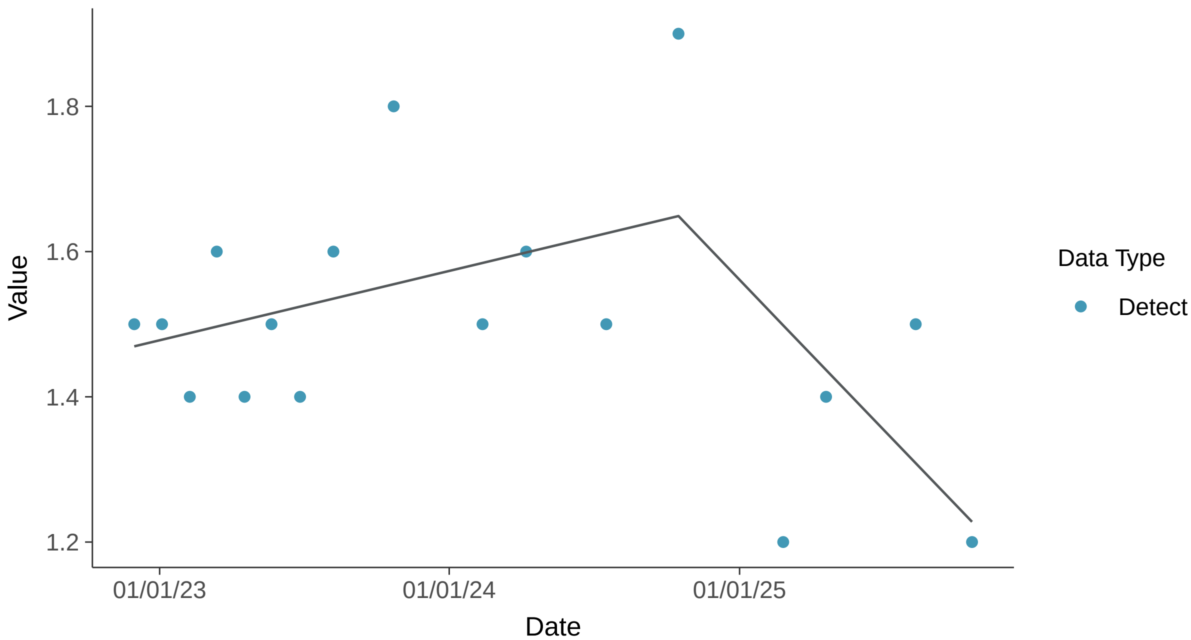
Trend Regression: Lognormal MLE

Fluoride (App IV), MW-32 (mg/L)



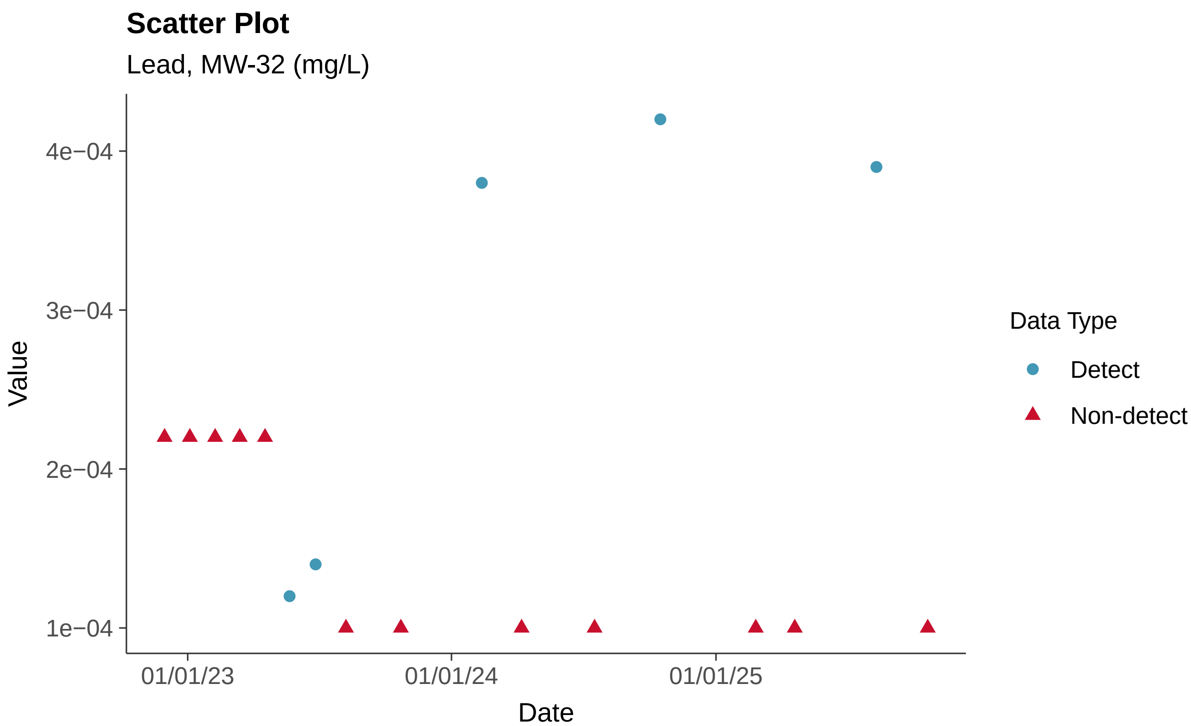
Trend Regression: Piecewise Linear-Linear

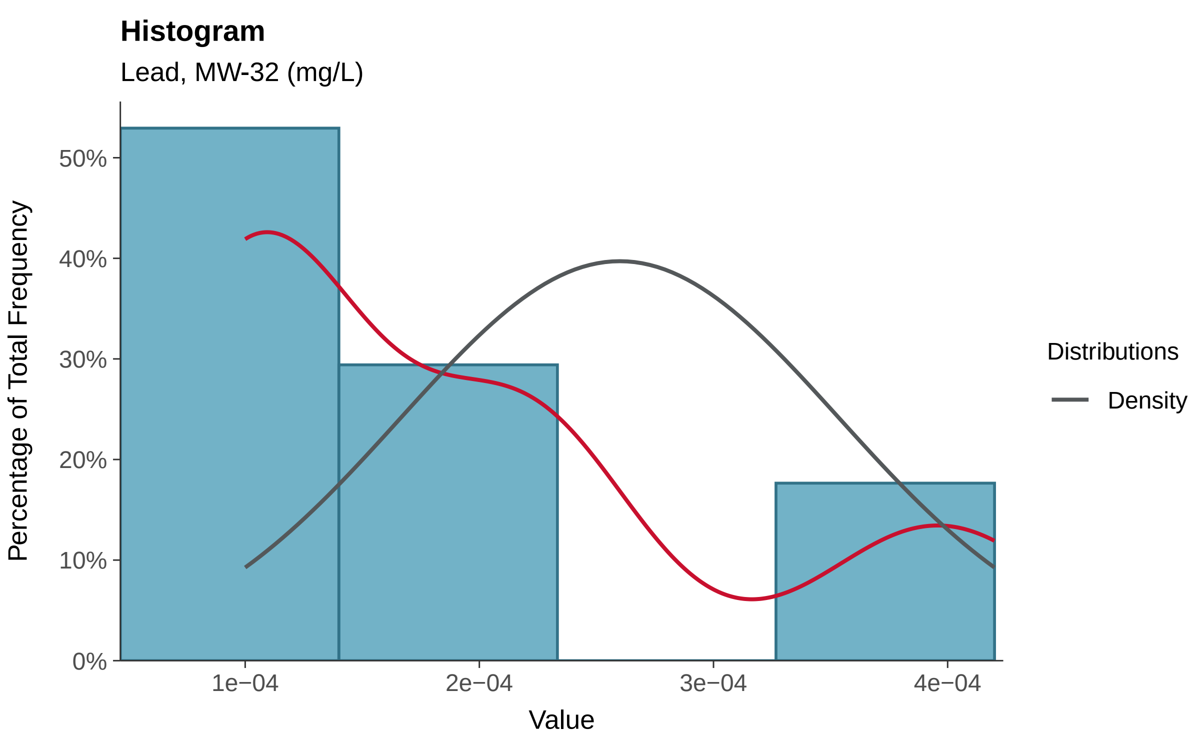
Fluoride (App IV), MW-32 (mg/L)



Appendix IV: Lead, MW-32

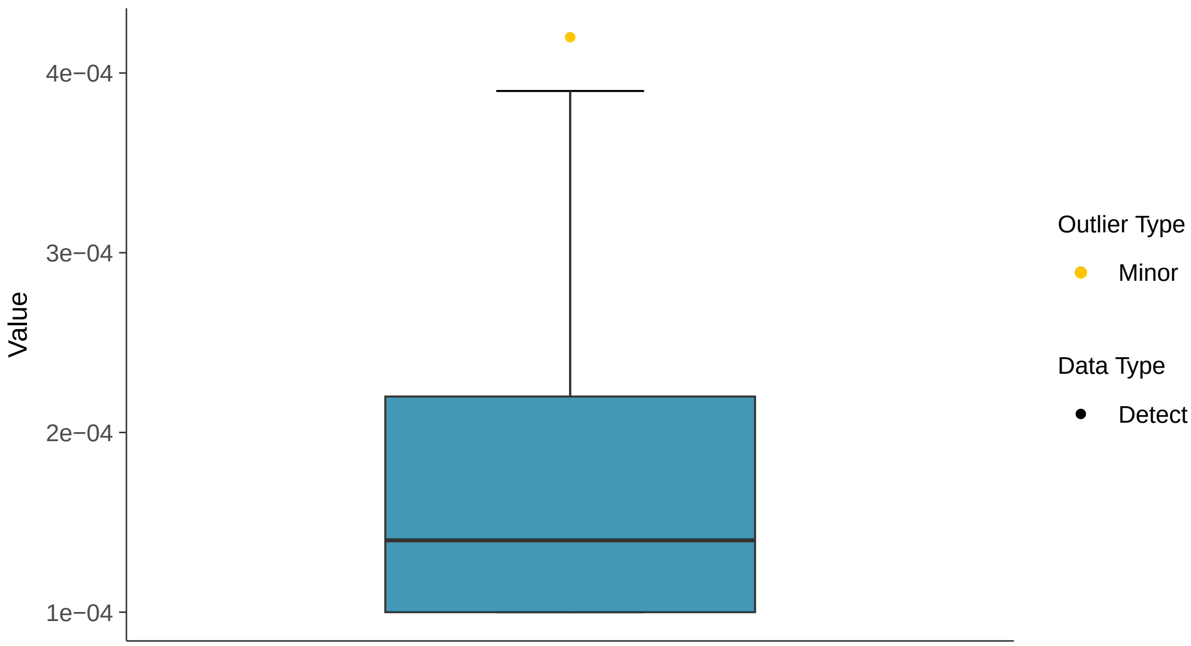
ID: 42_1_4_115





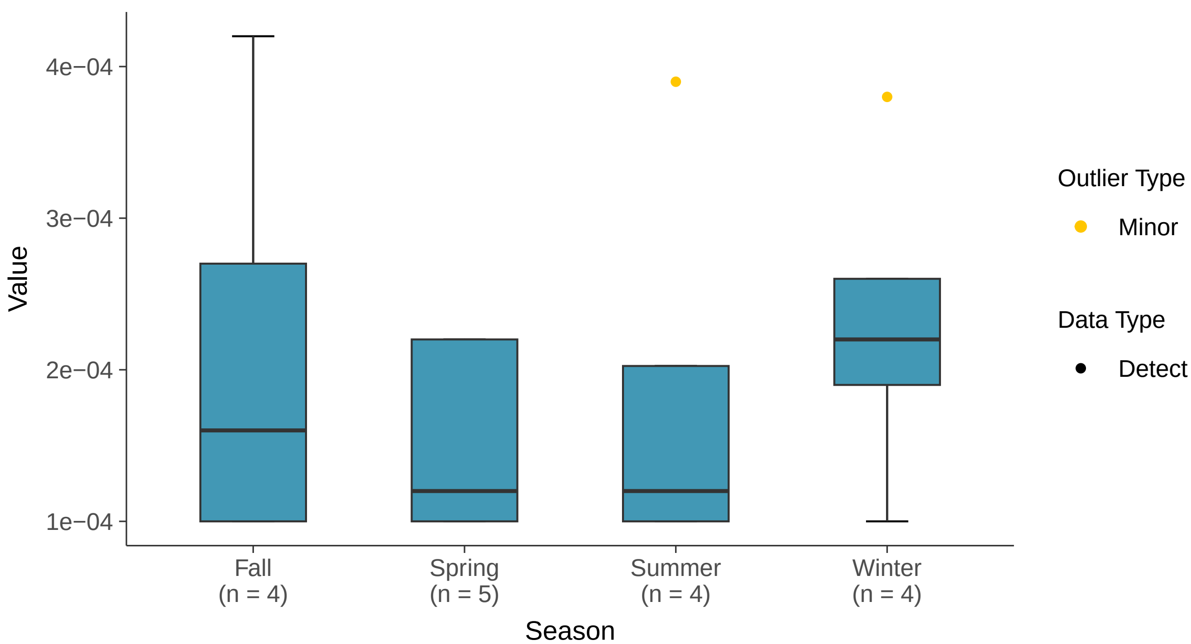
Boxplot

Lead, MW-32 (mg/L)



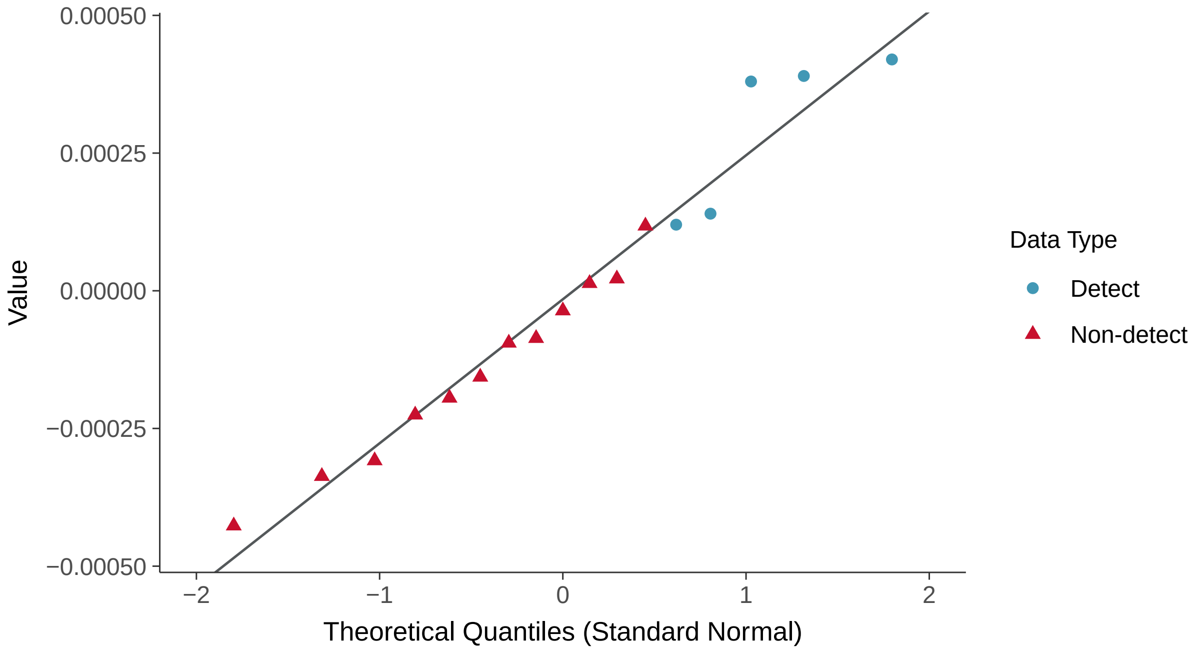
Boxplot by Season

Lead, MW-32 (mg/L)



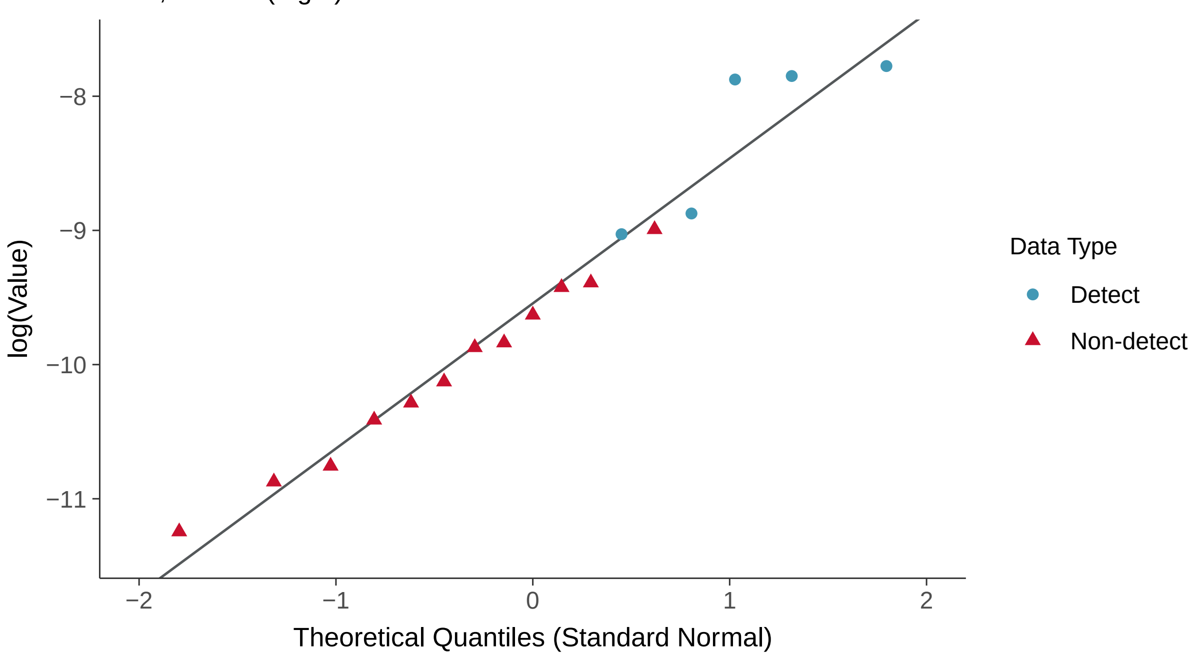
Normal Q-Q plot using ROS Imputed Estimates

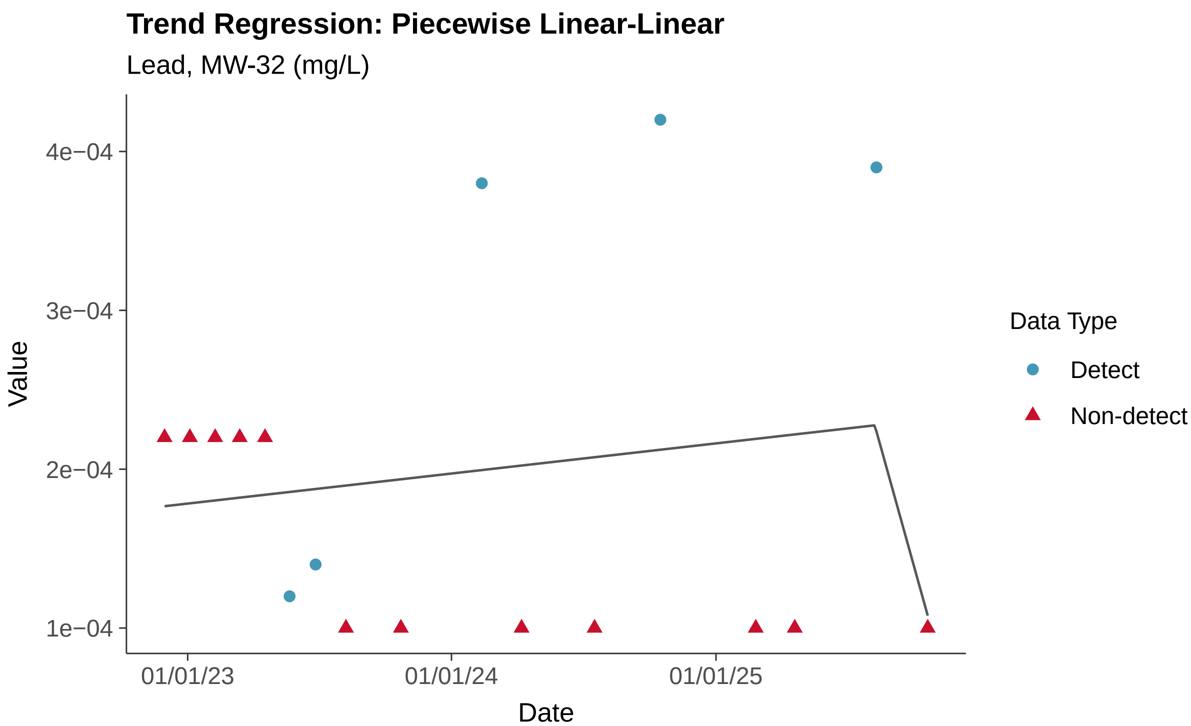
Lead, MW-32 (mg/L)

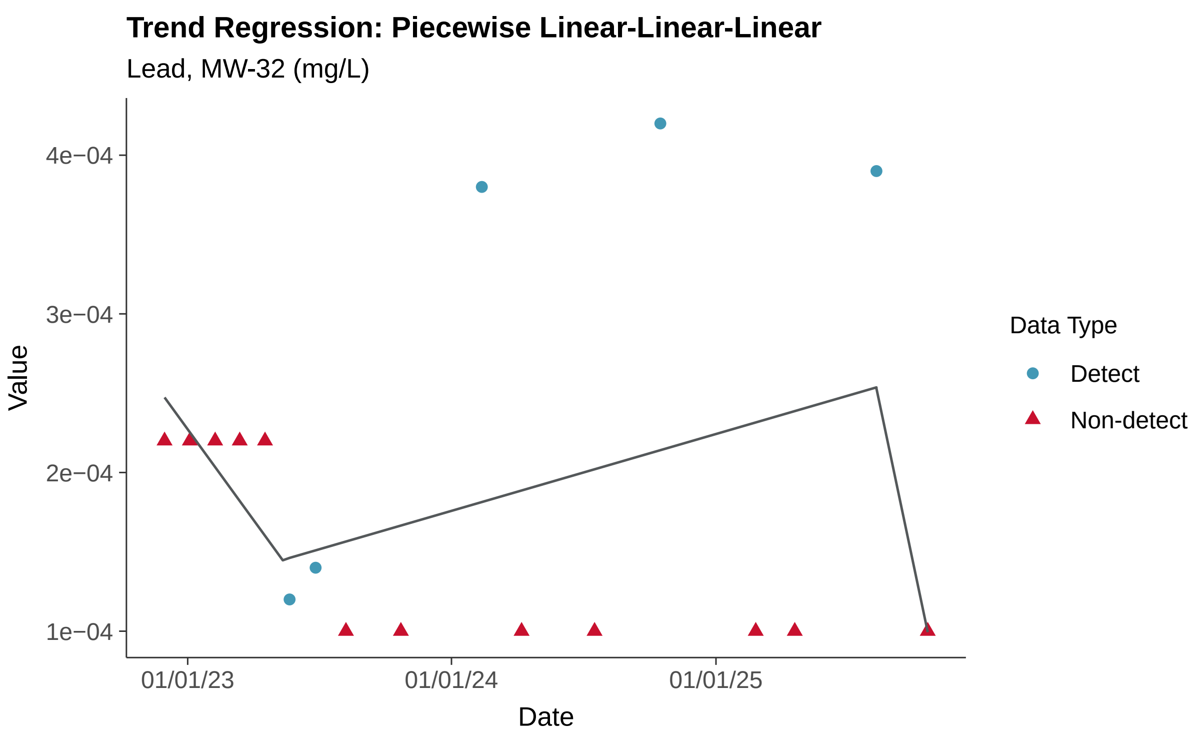


Lognormal Q-Q plot using ROS Imputed Estimates

Lead, MW-32 (mg/L)

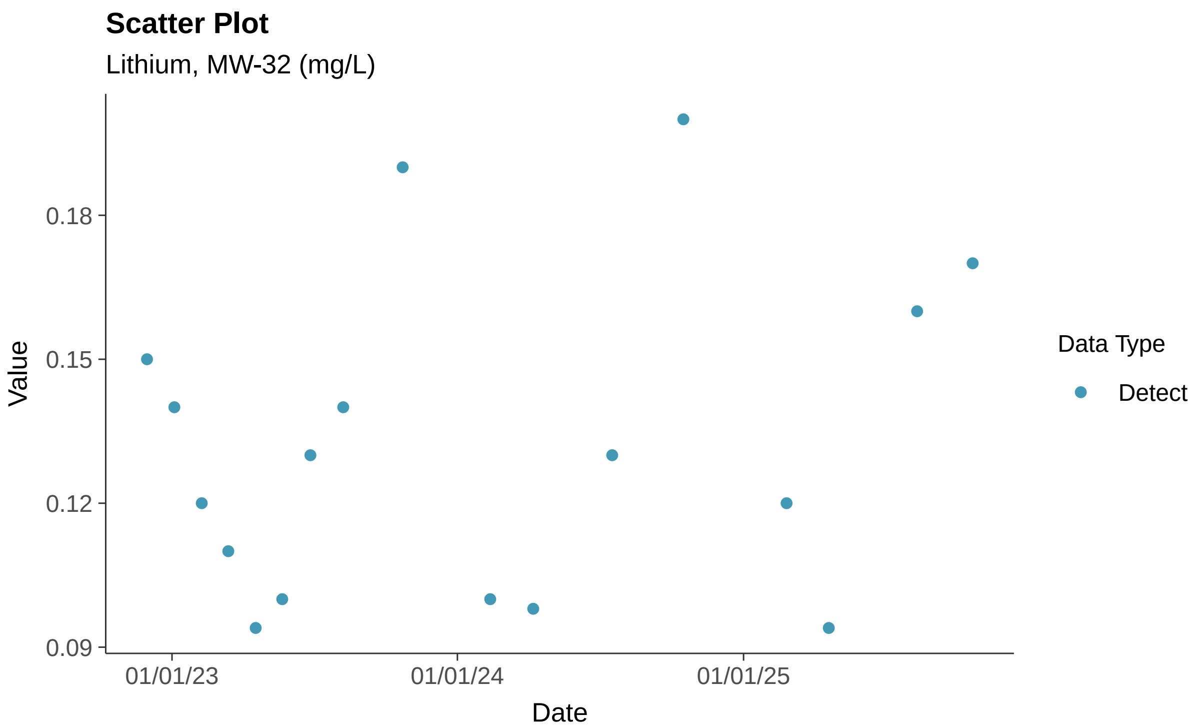


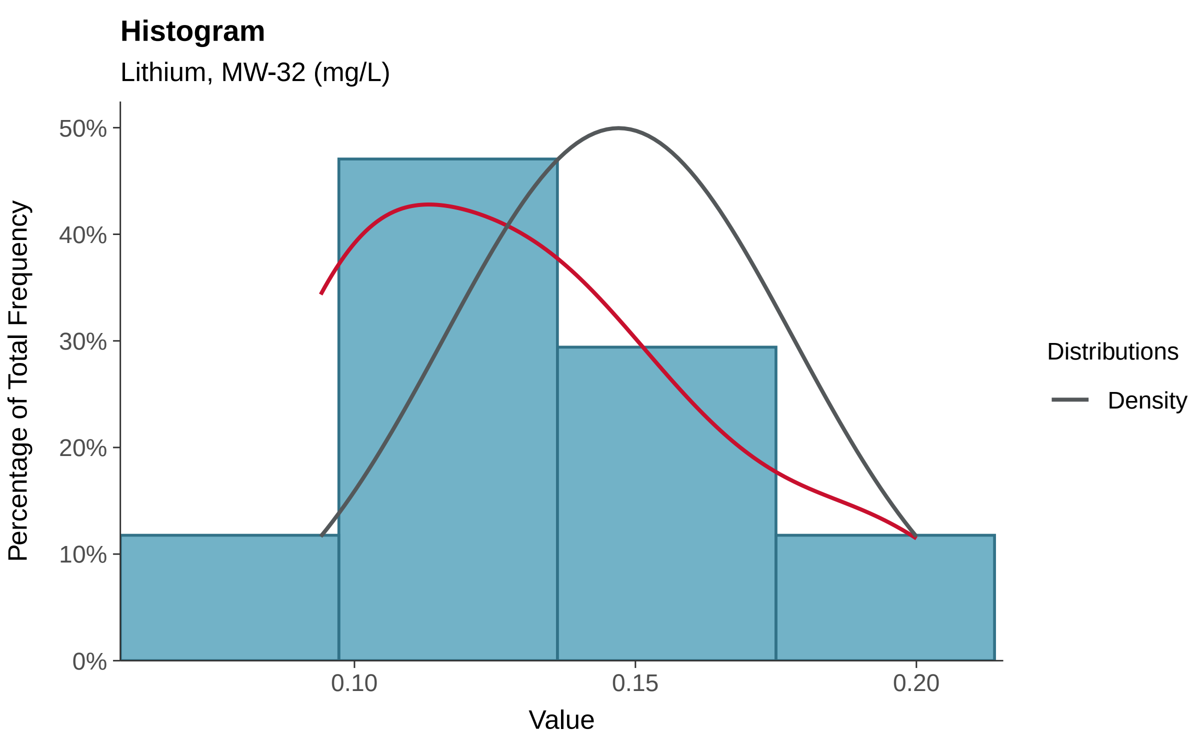

Trend Regression: Piecewise Linear-Linear
Lead, MW-32 (mg/L)
4e−04
3e−04
2e−04
1e−04
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear-Linear
Lead, MW-32 (mg/L)
4e−04
3e−04
2e−04
1e−04
Value
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Appendix IV: Lithium, MW-32

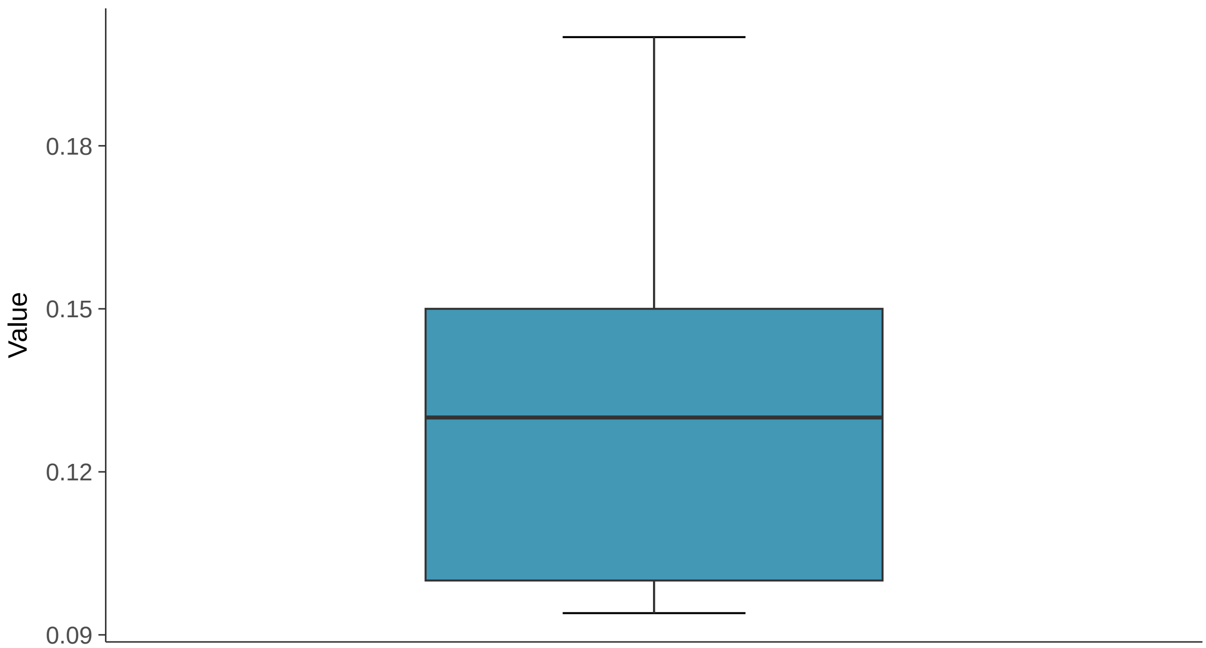
ID: 42_1_4_116





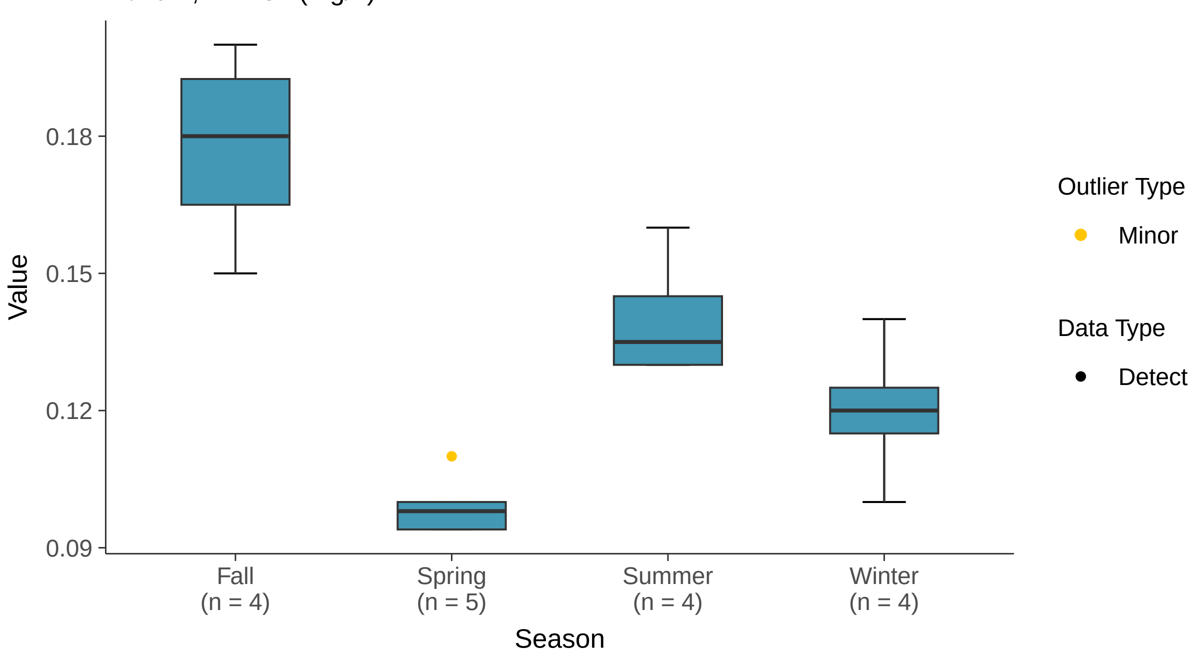
Boxplot

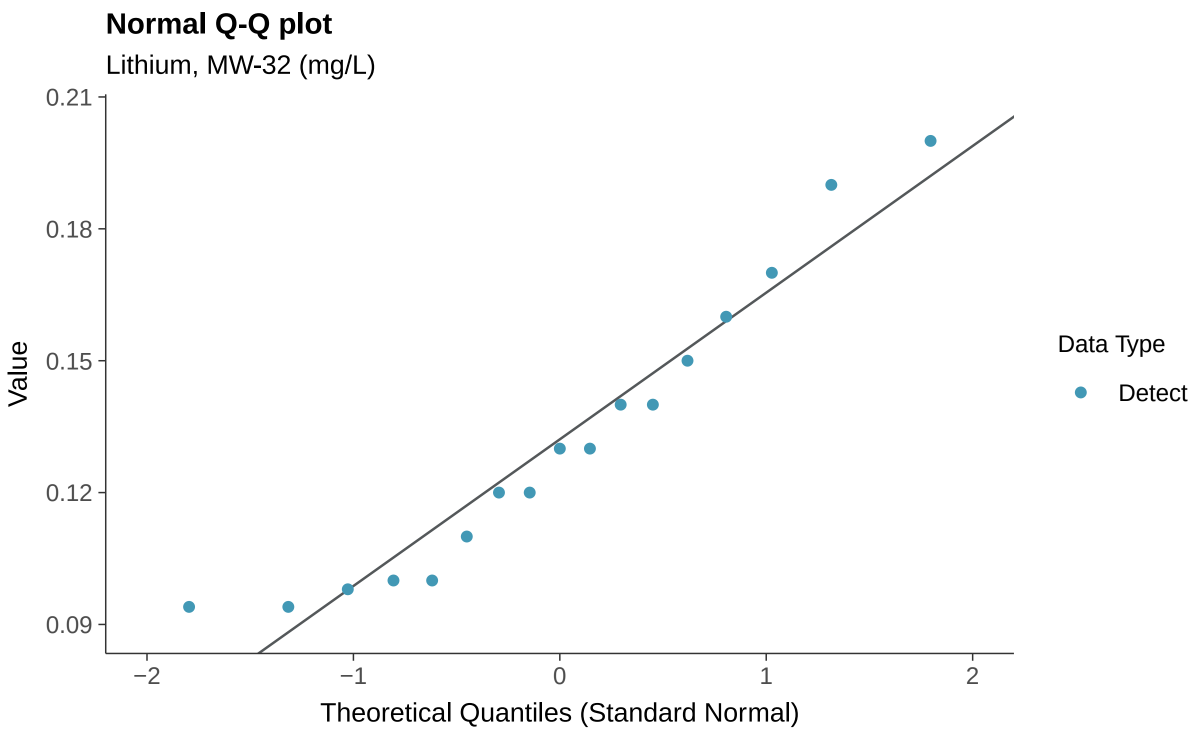
Lithium, MW-32 (mg/L)

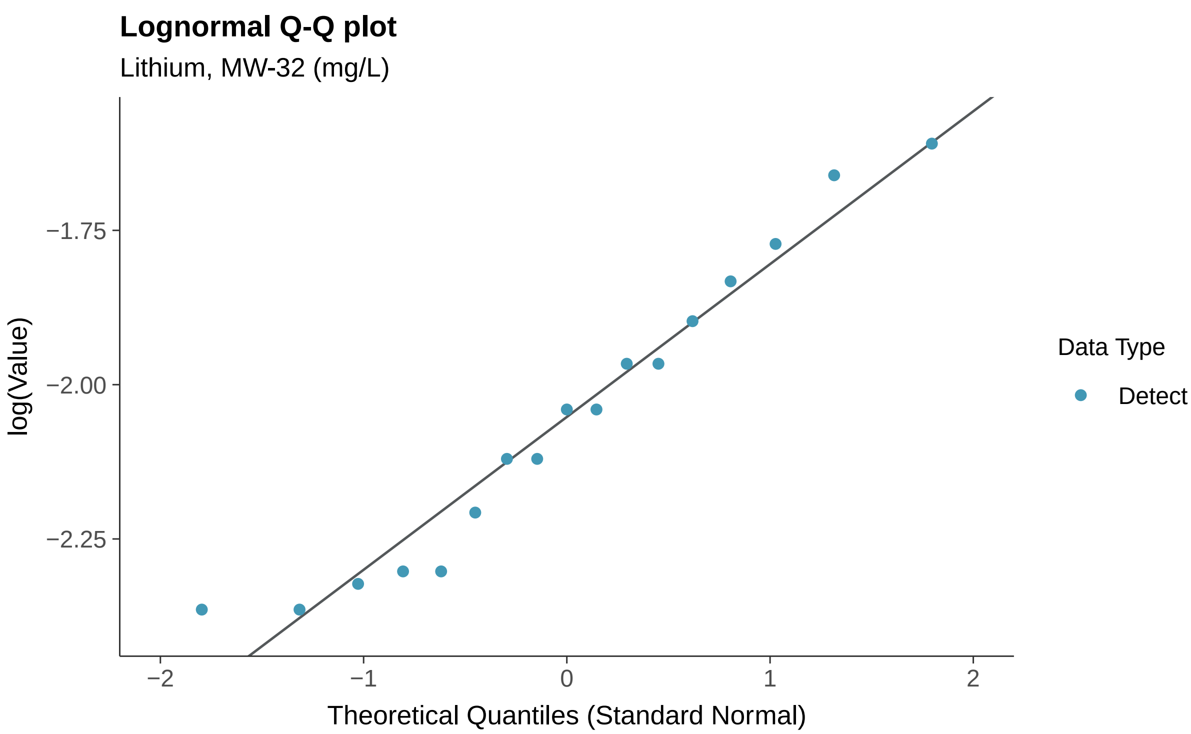


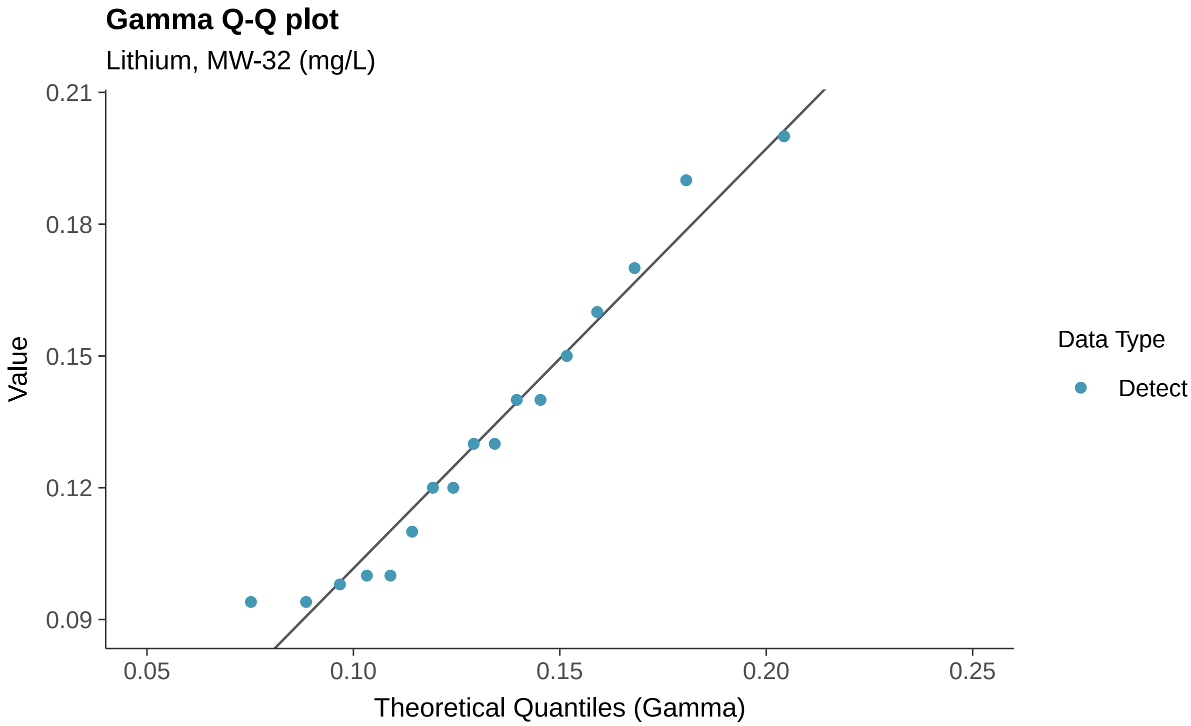
Boxplot by Season

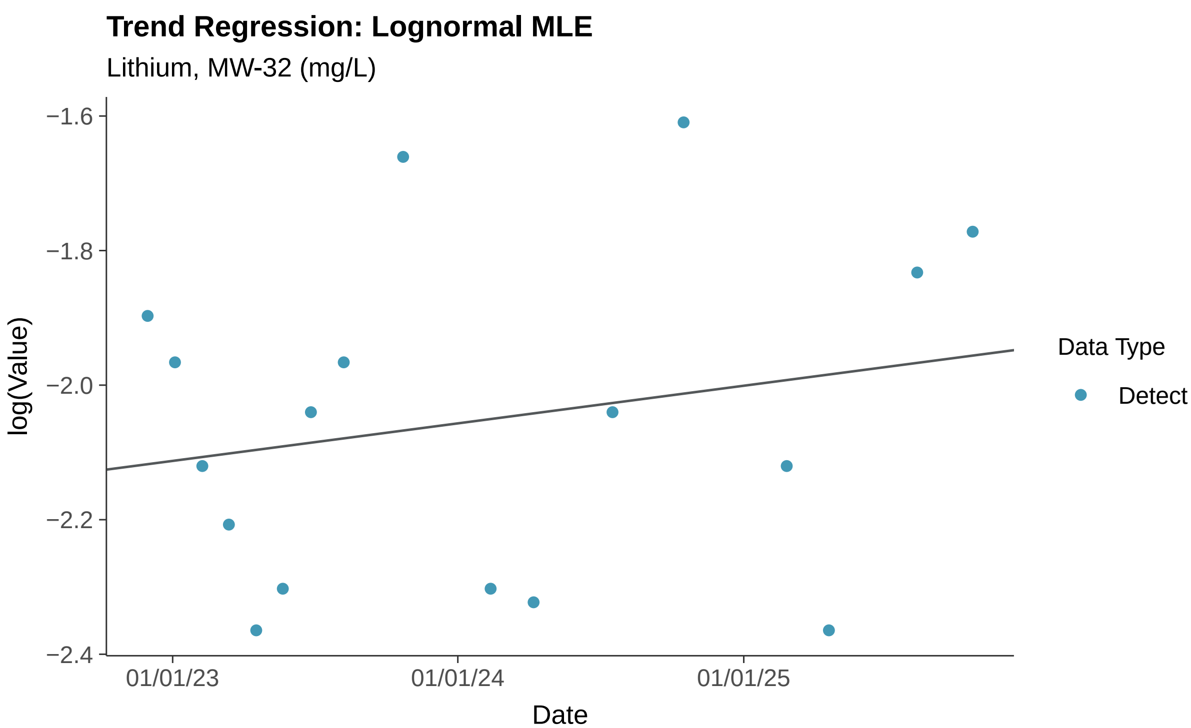
Lithium, MW-32 (mg/L)




Normal Q-Q plot
Lithium, MW-32 (mg/L)
Value
0.21
0.18
0.15
0.12
0.09
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

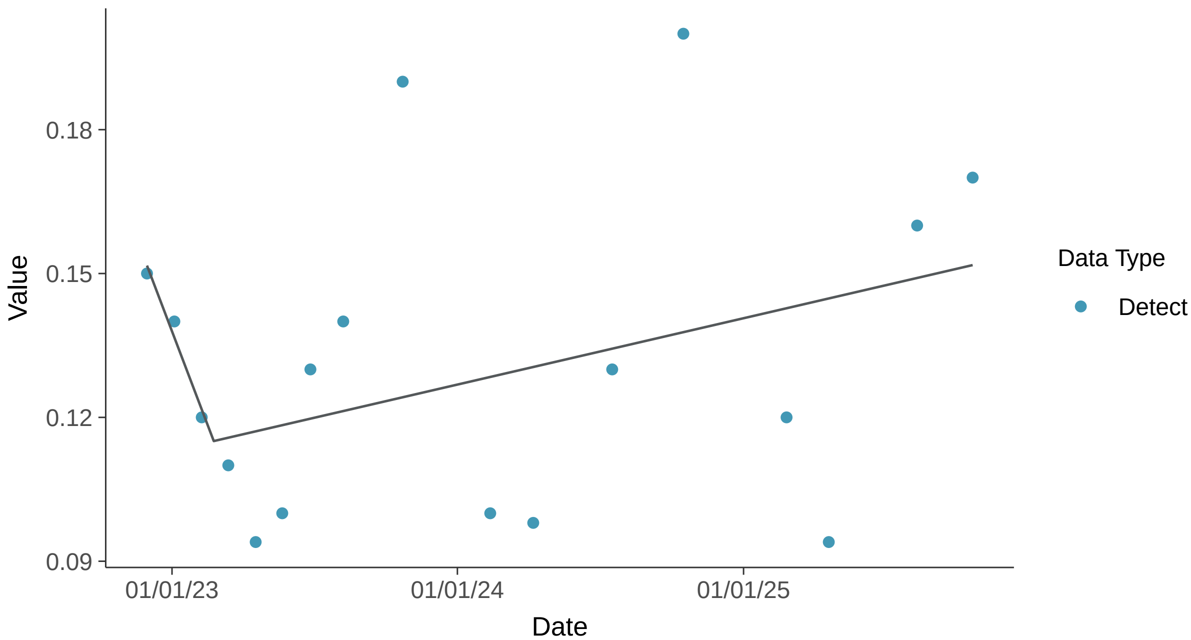

Lognormal Q-Q plot
Lithium, MW-32 (mg/L)
log(Value)
−1.75
−2.00
−2.25
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Lithium, MW-32 (mg/L)
Value
0.21
0.18
0.15
0.12
0.09
0.05
0.10
0.15
0.20
0.25
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Lithium, MW-32 (mg/L)
log(Value)
−1.6
−1.8
−2.0
−2.2
−2.4
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

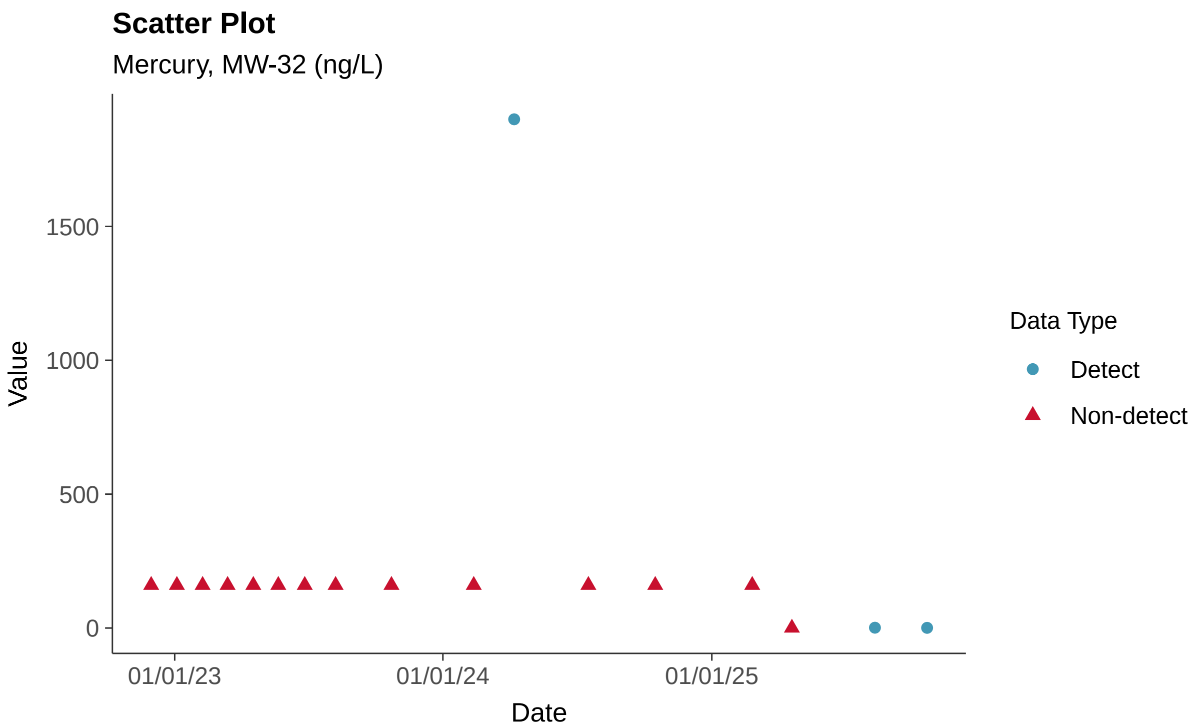
Trend Regression: Piecewise Linear-Linear

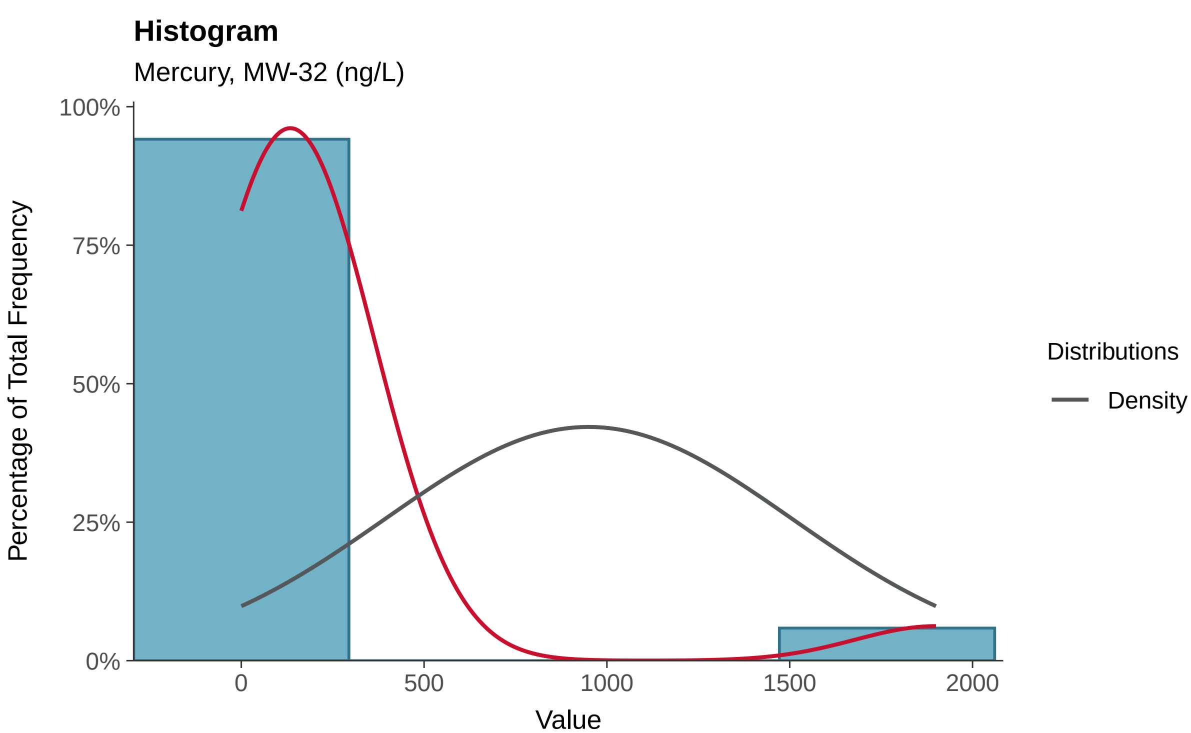
Lithium, MW-32 (mg/L)



Appendix IV: Mercury, MW-32

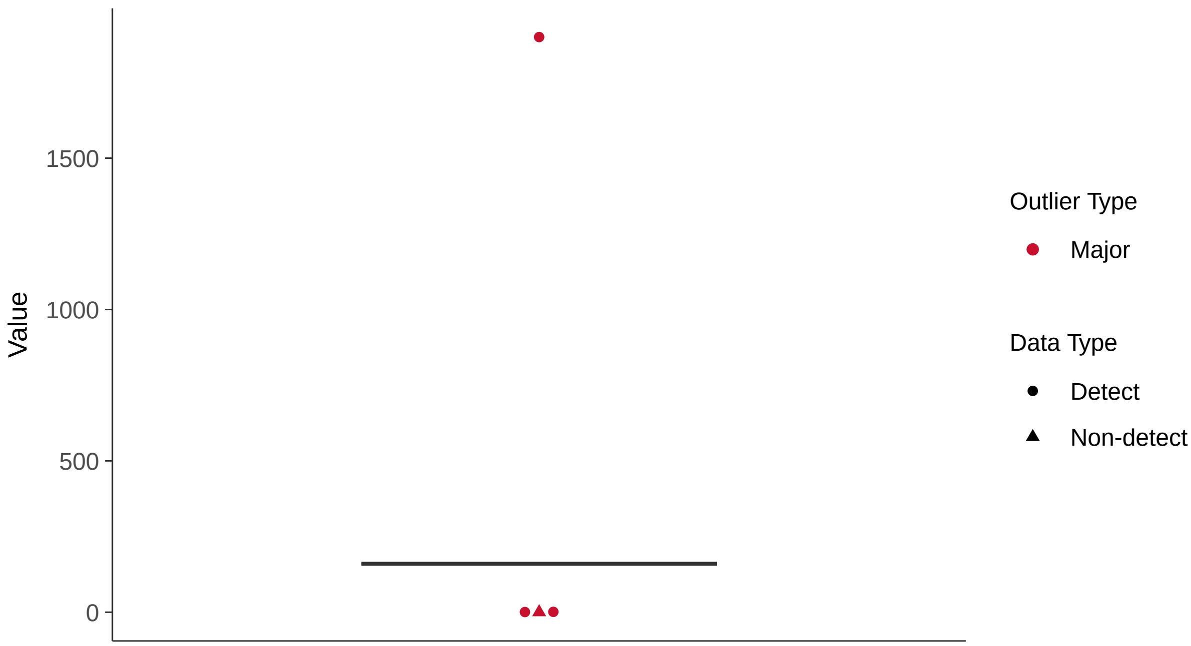
ID: 42_1_4_117





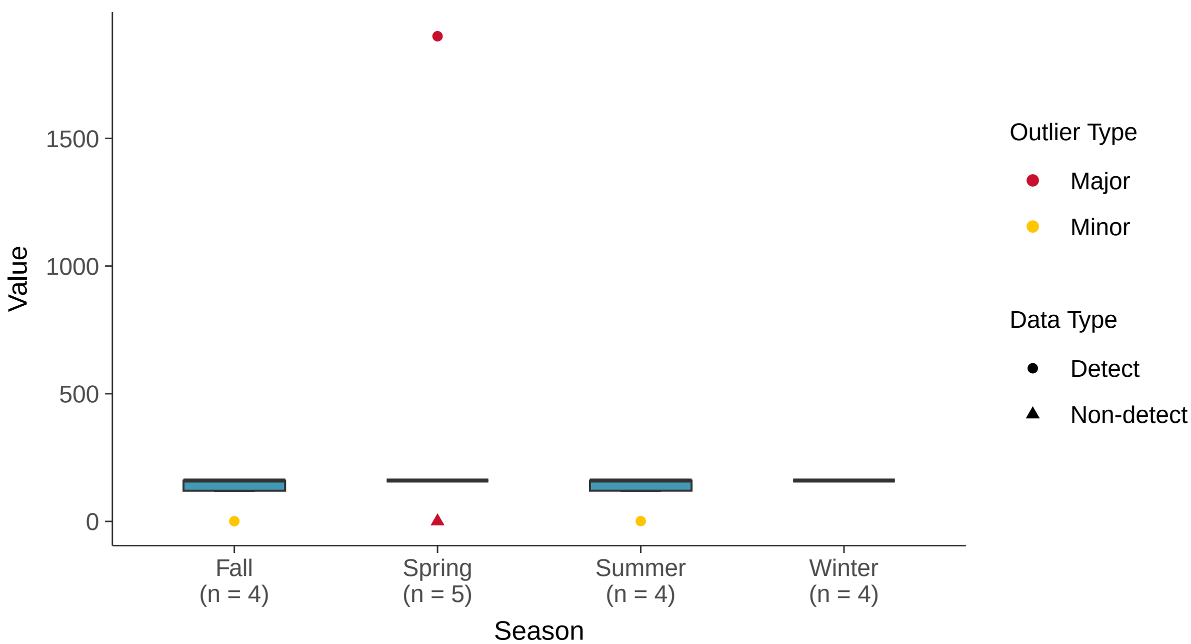
Boxplot

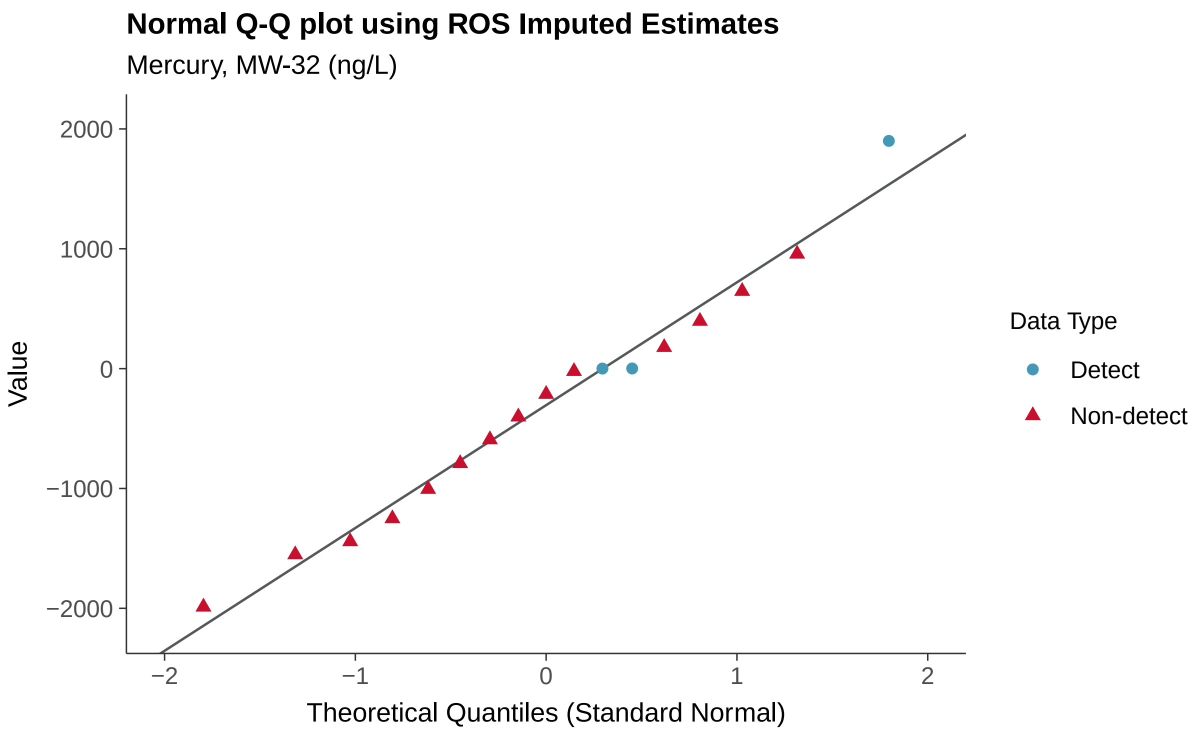
Mercury, MW-32 (ng/L)

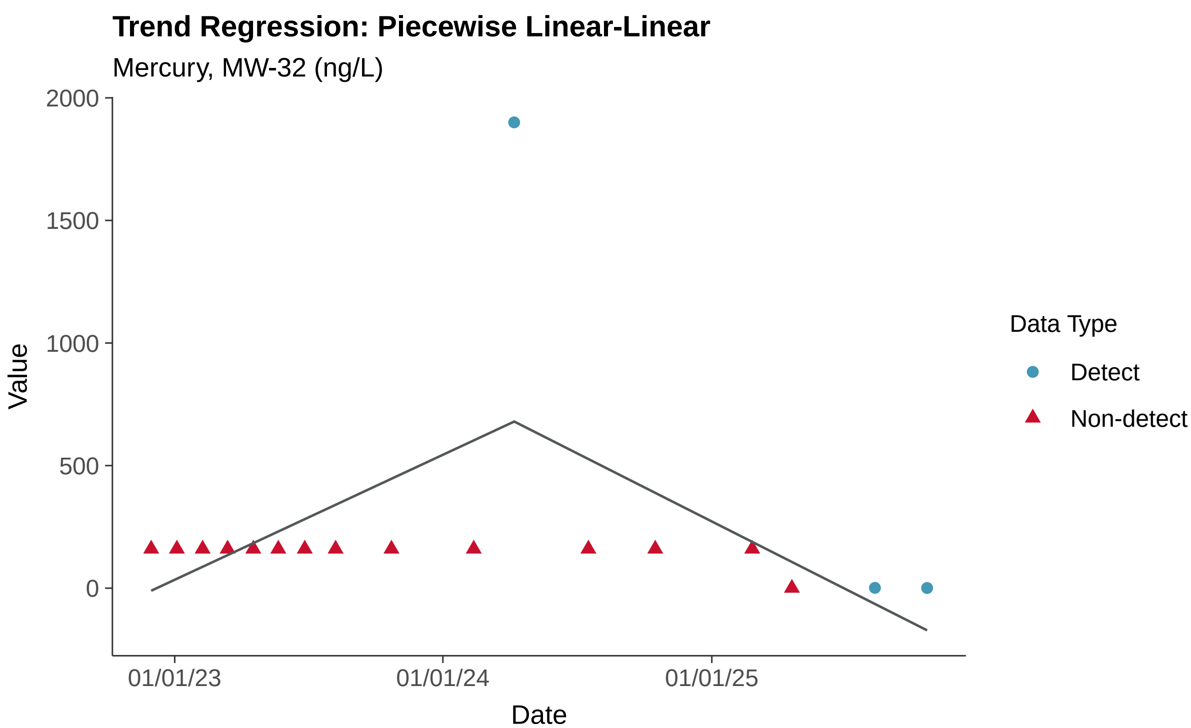


Boxplot by Season

Mercury, MW-32 (ng/L)

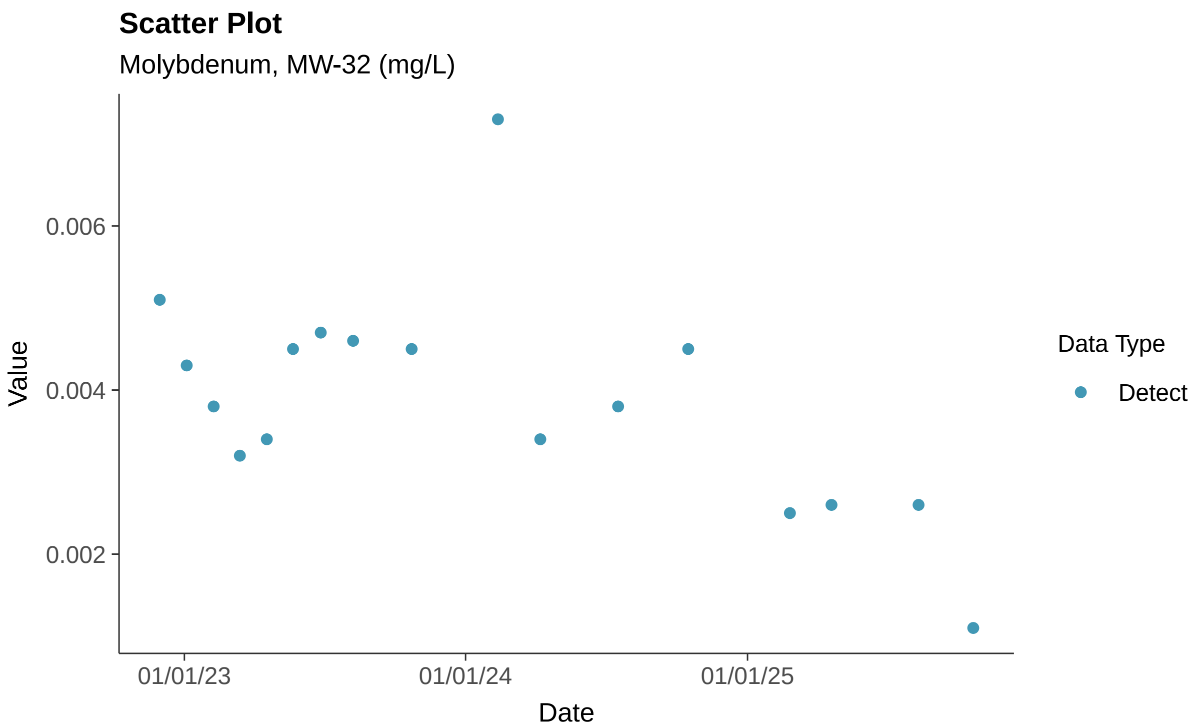


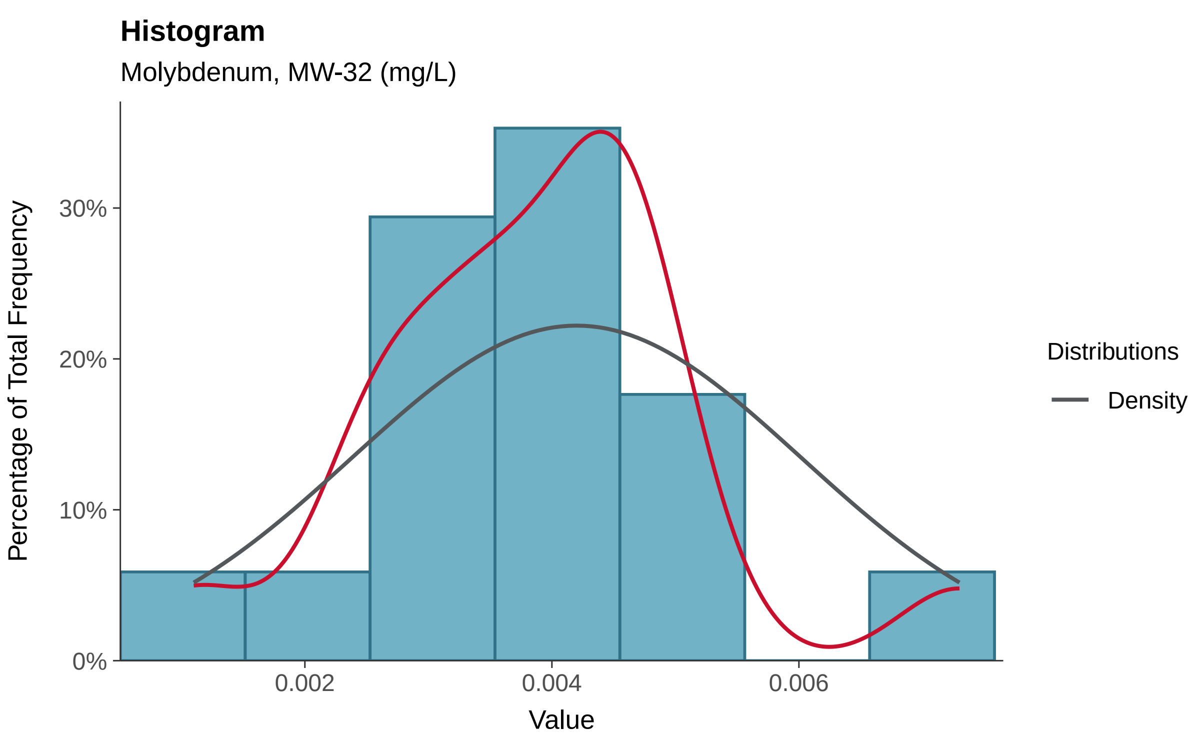

Normal Q-Q plot using ROS Imputed Estimates
Mercury, MW-32 (ng/L)
Value
2000
1000
0
−1000
−2000
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Mercury, MW-32 (ng/L)
Value
2000
1500
1000
500
0
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

Appendix IV: Molybdenum, MW-32

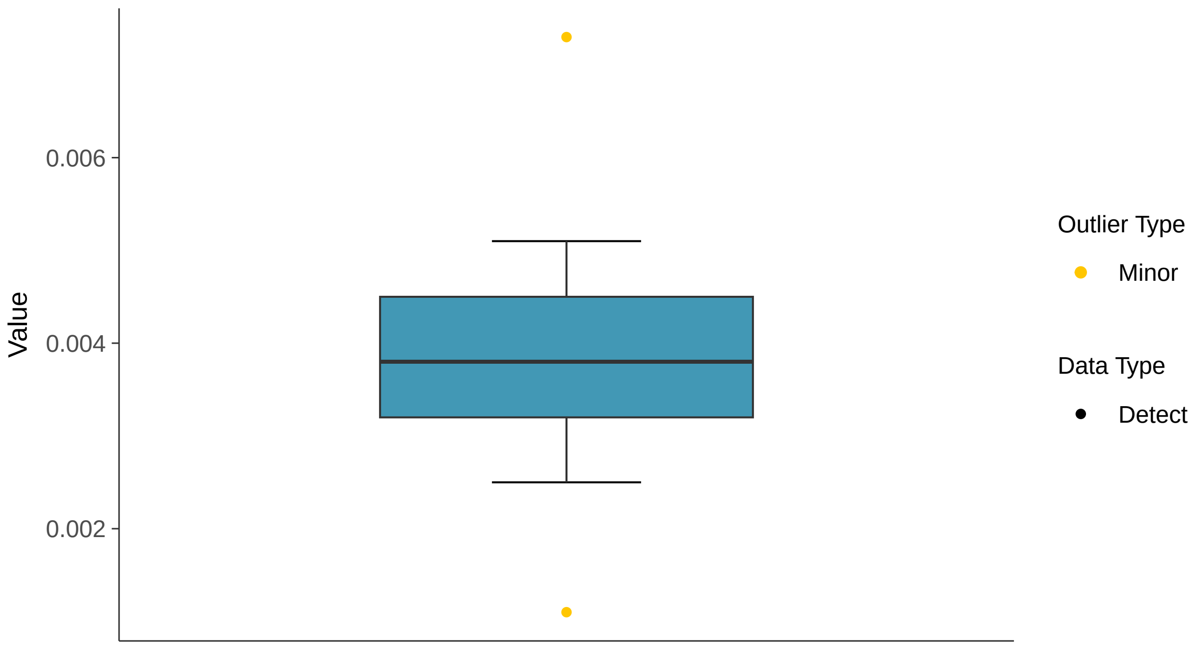
ID: 42_1_4_118





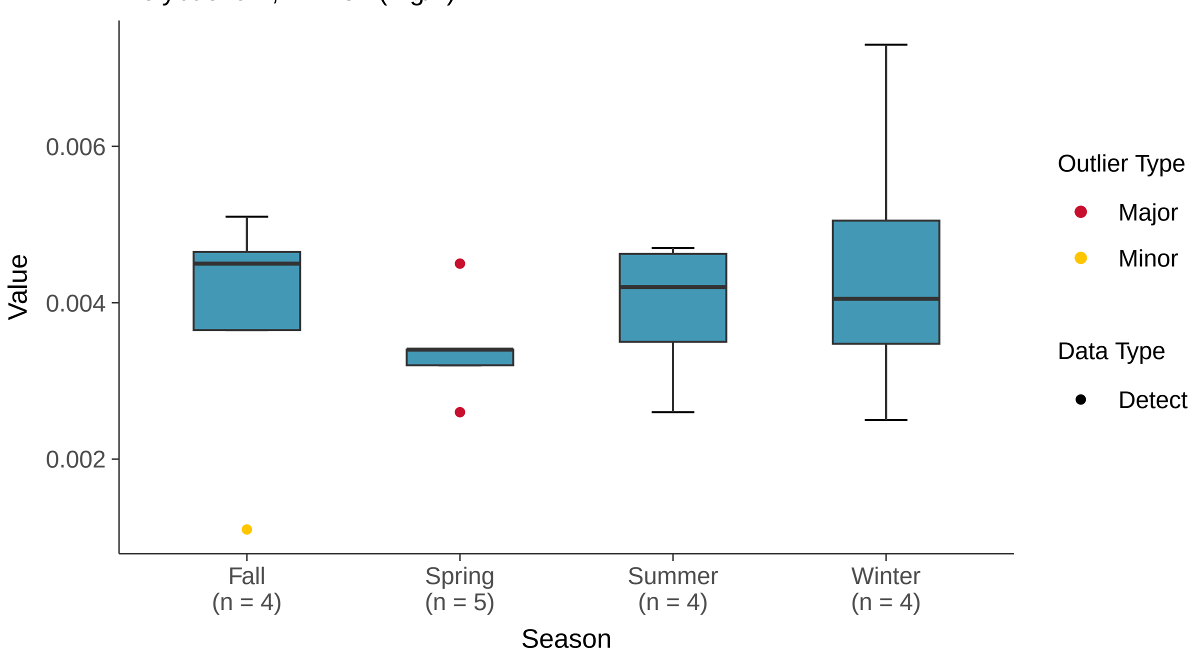
Boxplot

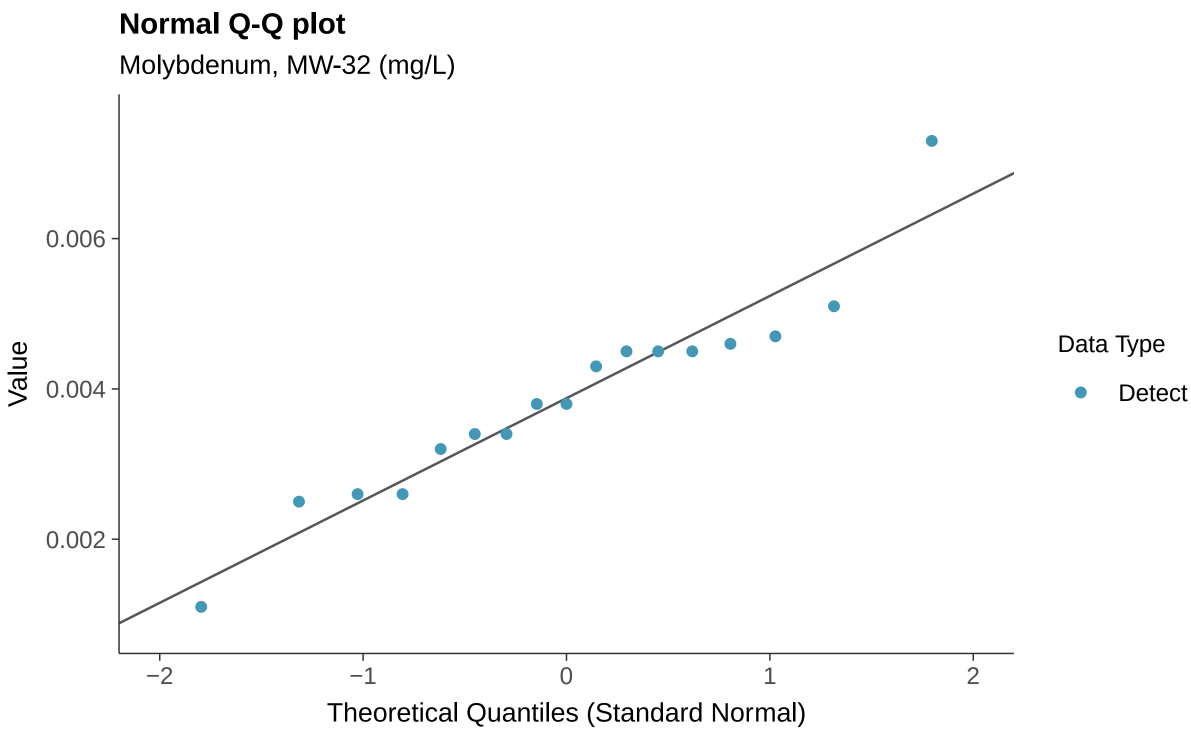
Molybdenum, MW-32 (mg/L)

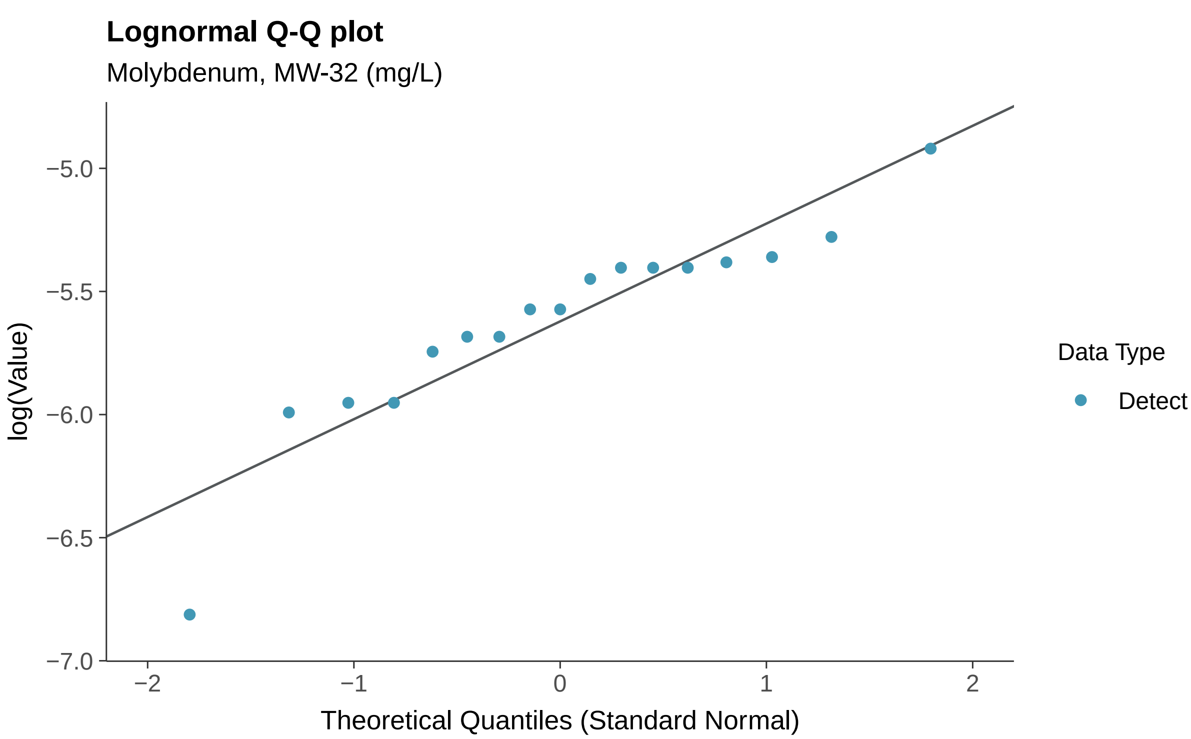


Boxplot by Season

Molybdenum, MW-32 (mg/L)

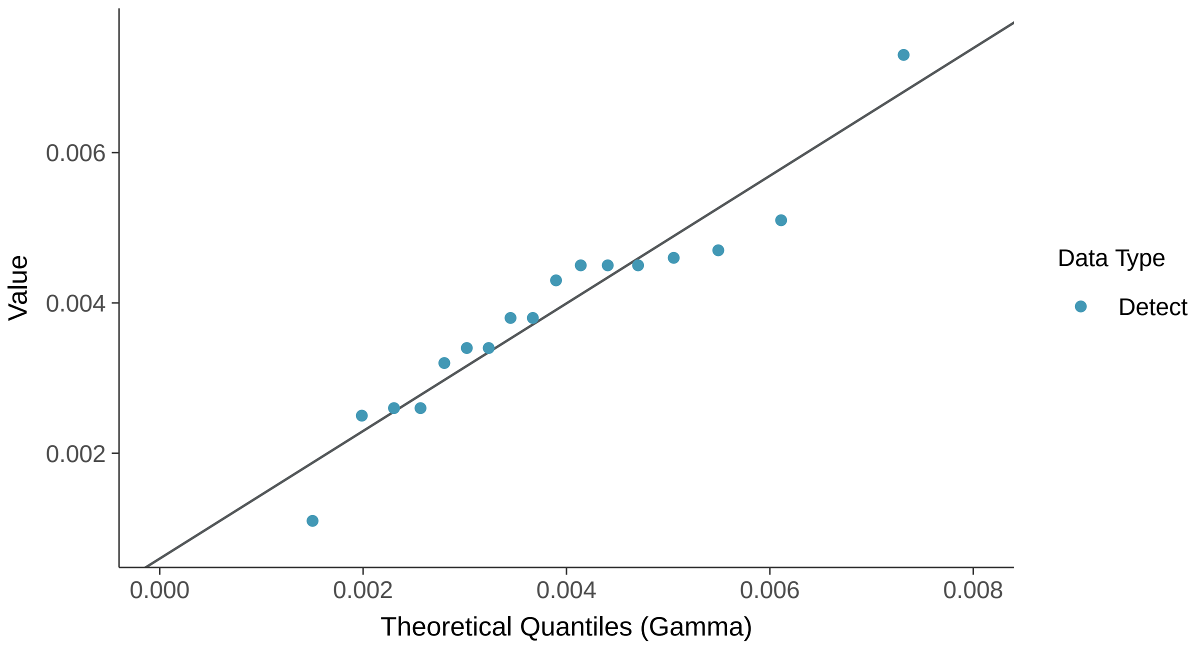



Normal Q-Q plot
Molybdenum, MW-32 (mg/L)
Value
0.006
0.004
0.002
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Molybdenum, MW-32 (mg/L)
log(Value)
−5.0
−5.5
−6.0
−6.5
−7.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

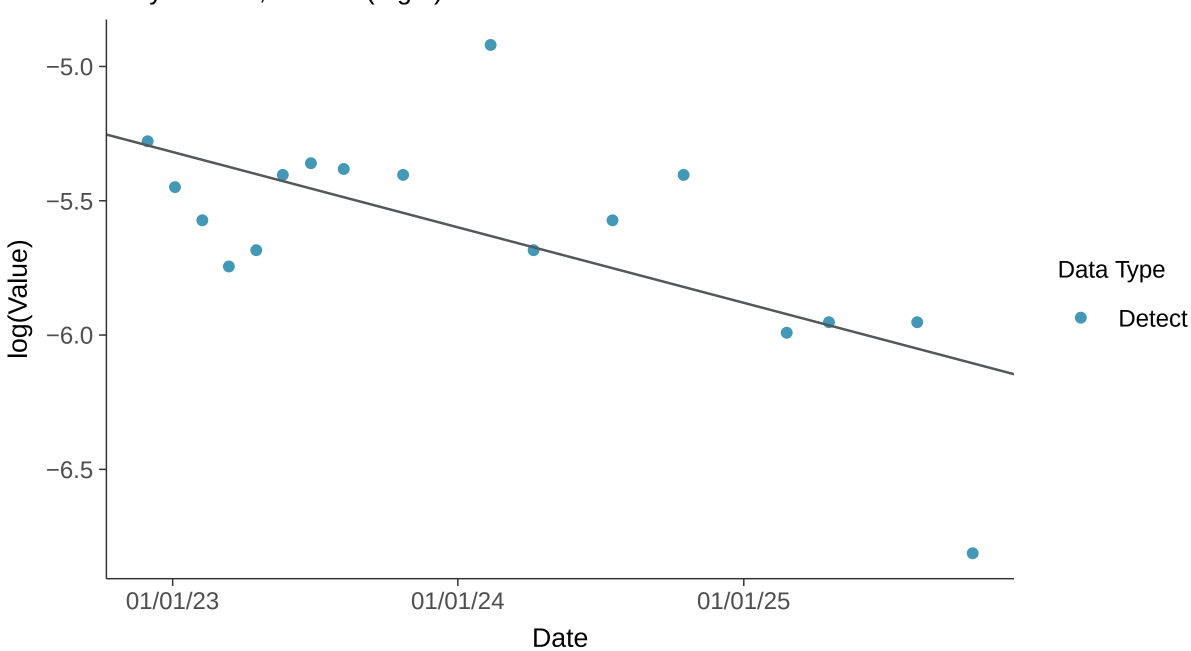
Gamma Q-Q plot

Molybdenum, MW-32 (mg/L)



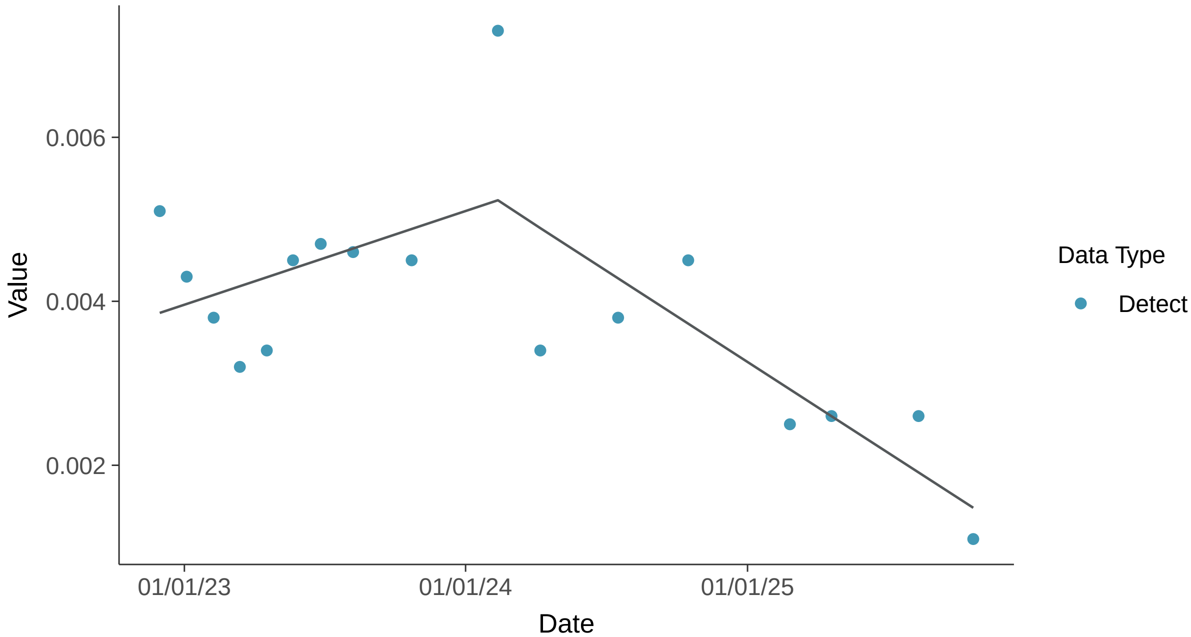
Trend Regression: Lognormal MLE

Molybdenum, MW-32 (mg/L)



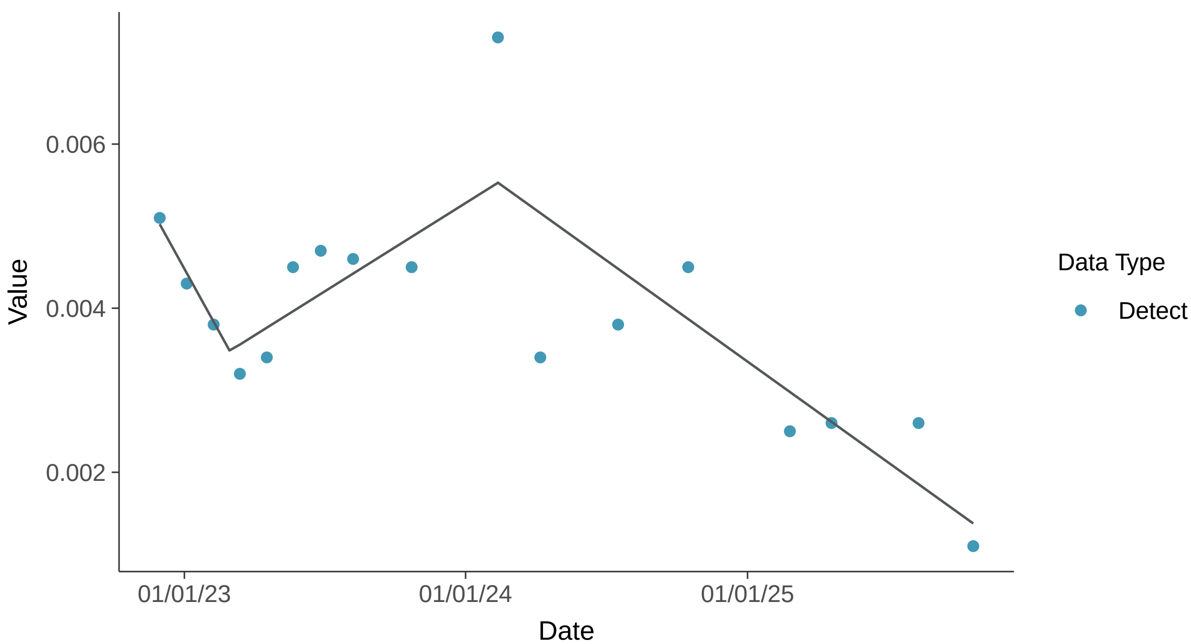
Trend Regression: Piecewise Linear-Linear

Molybdenum, MW-32 (mg/L)



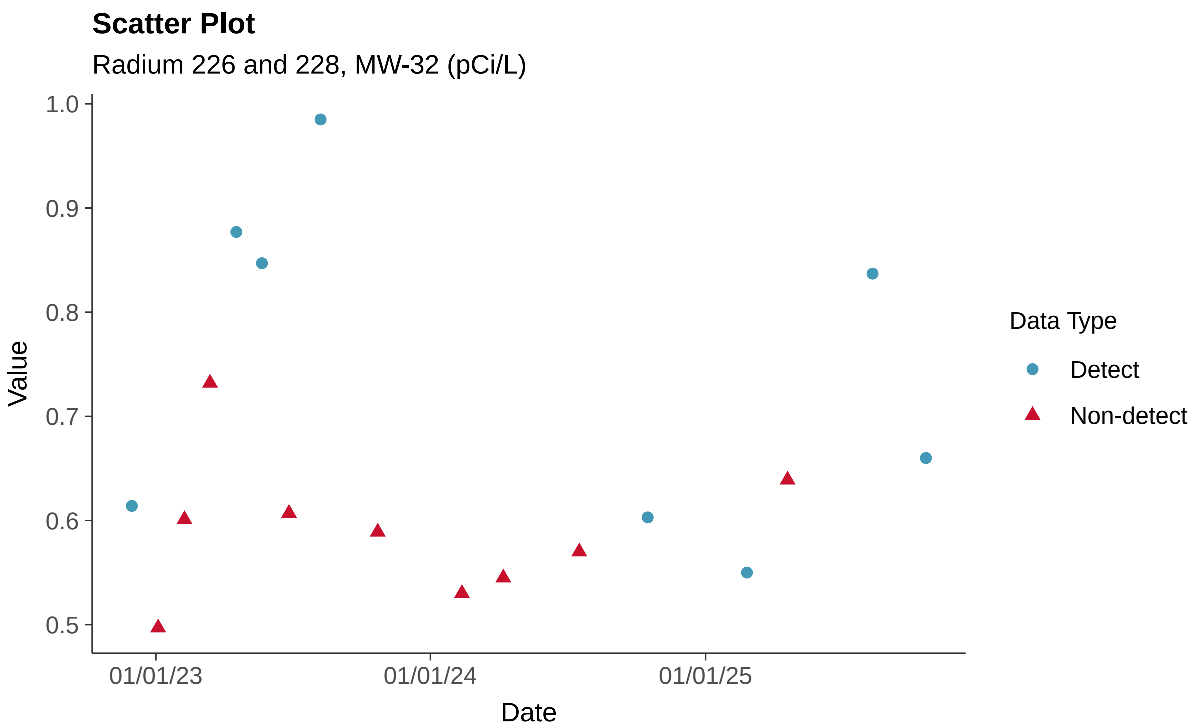
Trend Regression: Piecewise Linear-Linear-Linear

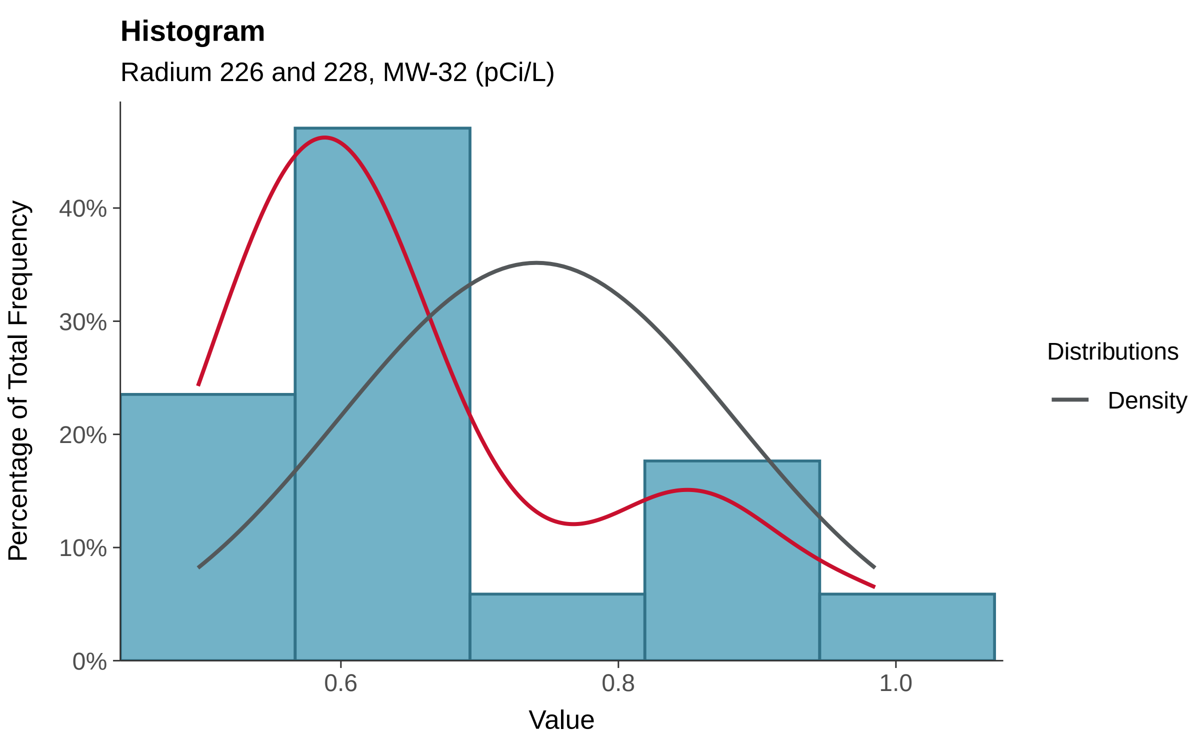
Molybdenum, MW-32 (mg/L)



Appendix IV: Radium 226 and 228, MW-32

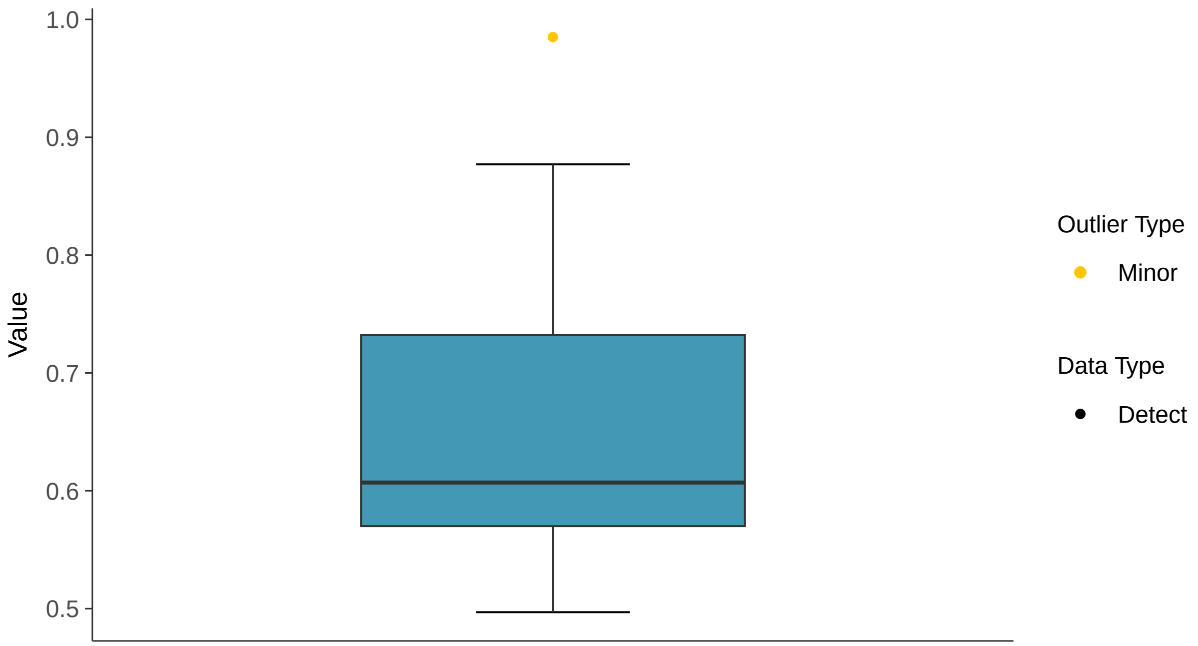
ID: 42_1_4_121





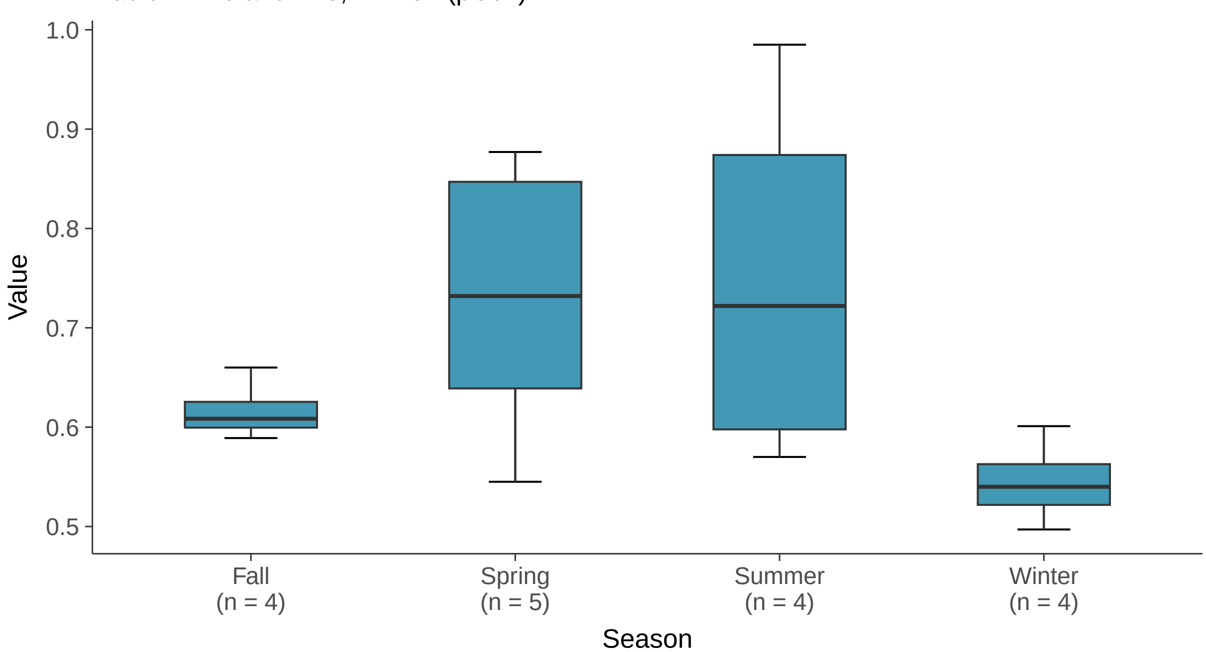
Boxplot

Radium 226 and 228, MW-32 (pCi/L)



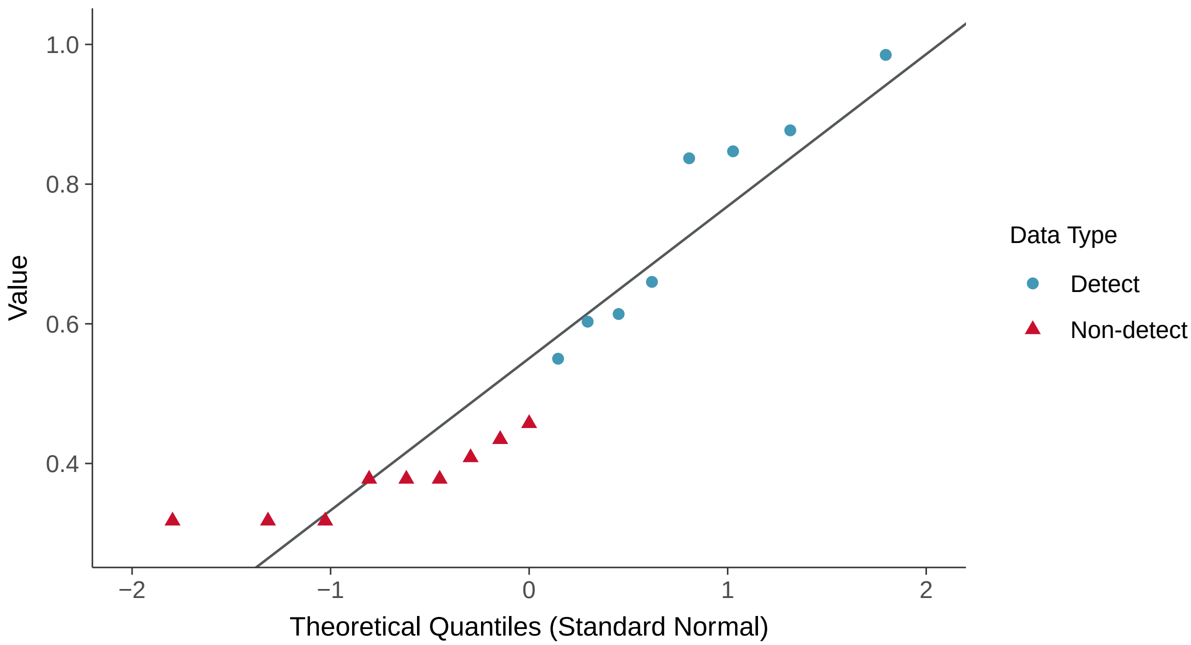
Boxplot by Season

Radium 226 and 228, MW-32 (pCi/L)



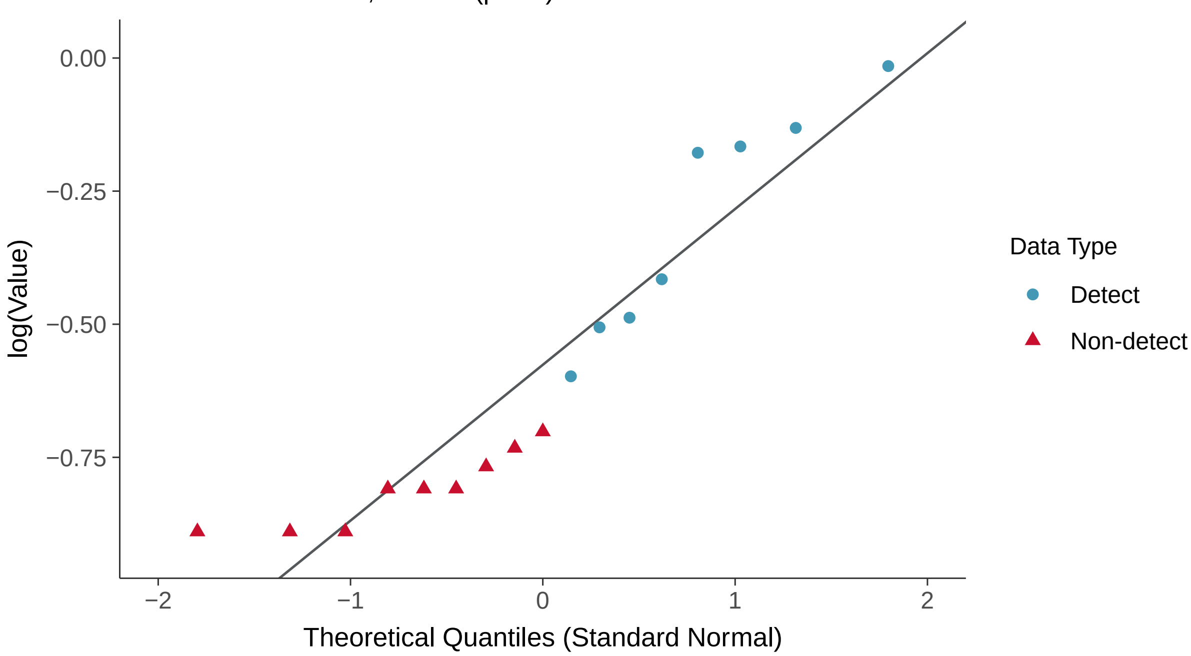
Normal Q-Q plot using ROS Imputed Estimates

Radium 226 and 228, MW-32 (pCi/L)



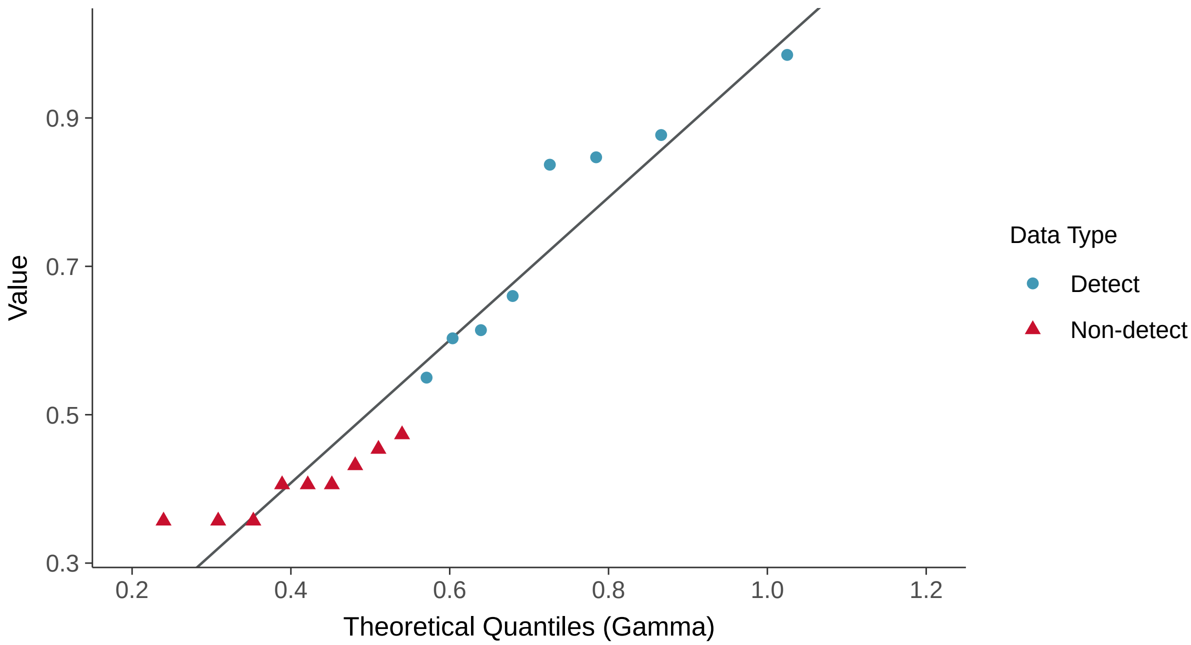
Lognormal Q-Q plot using ROS Imputed Estimates

Radium 226 and 228, MW-32 (pCi/L)



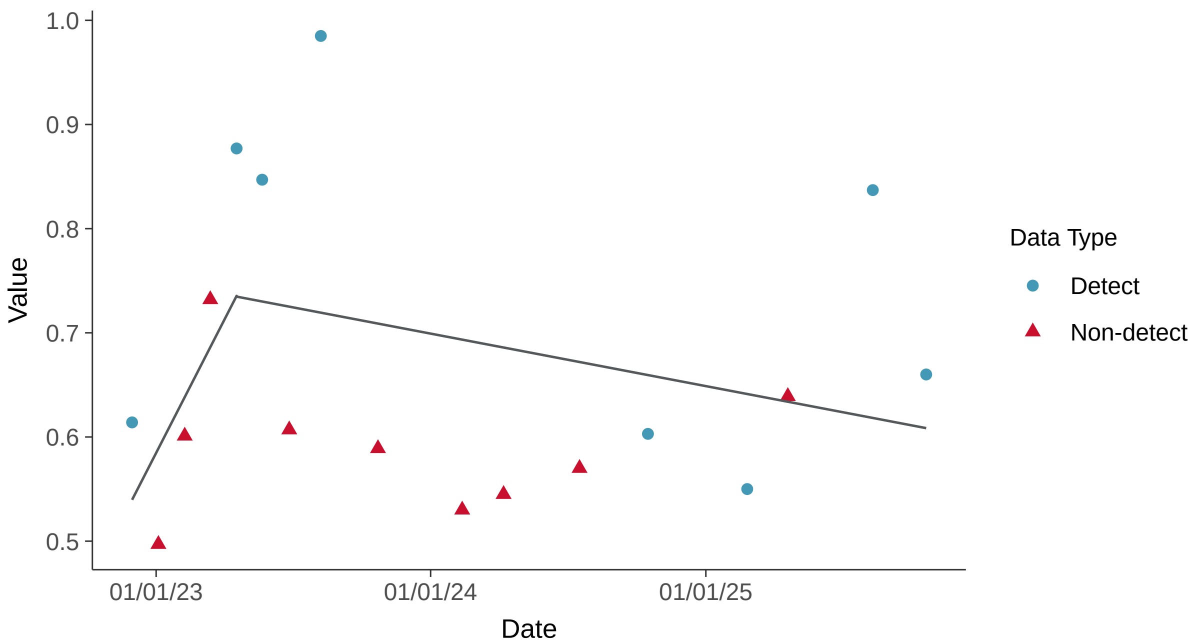
Gamma Q-Q plot using ROS Imputed Estimates

Radium 226 and 228, MW-32 (pCi/L)



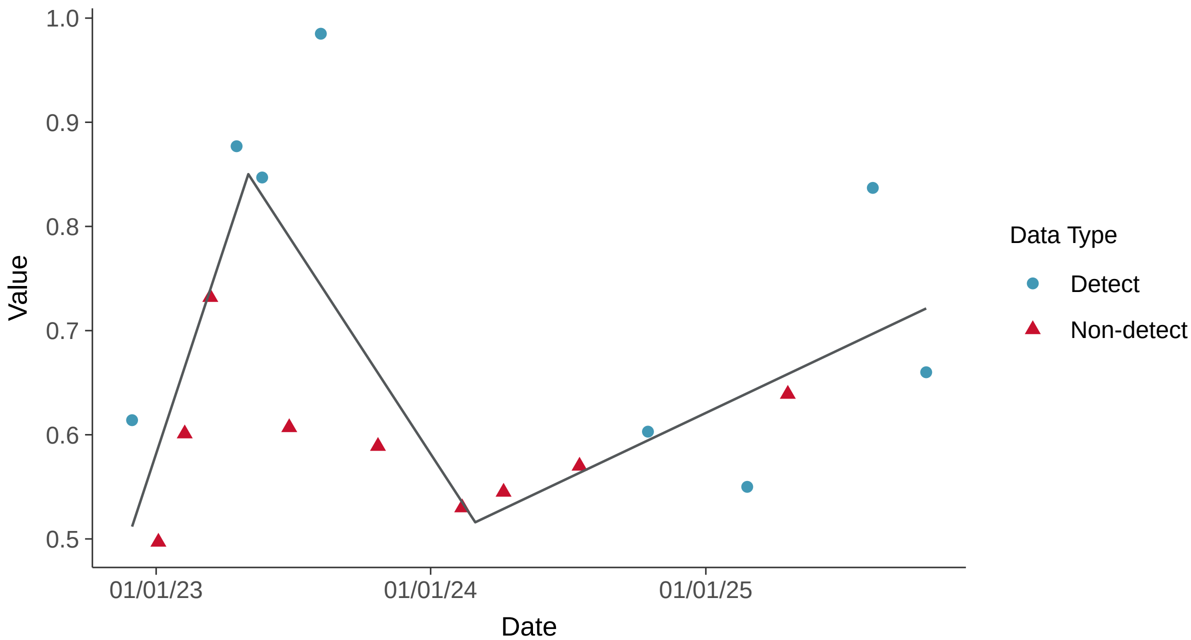
Trend Regression: Piecewise Linear-Linear

Radium 226 and 228, MW-32 (pCi/L)



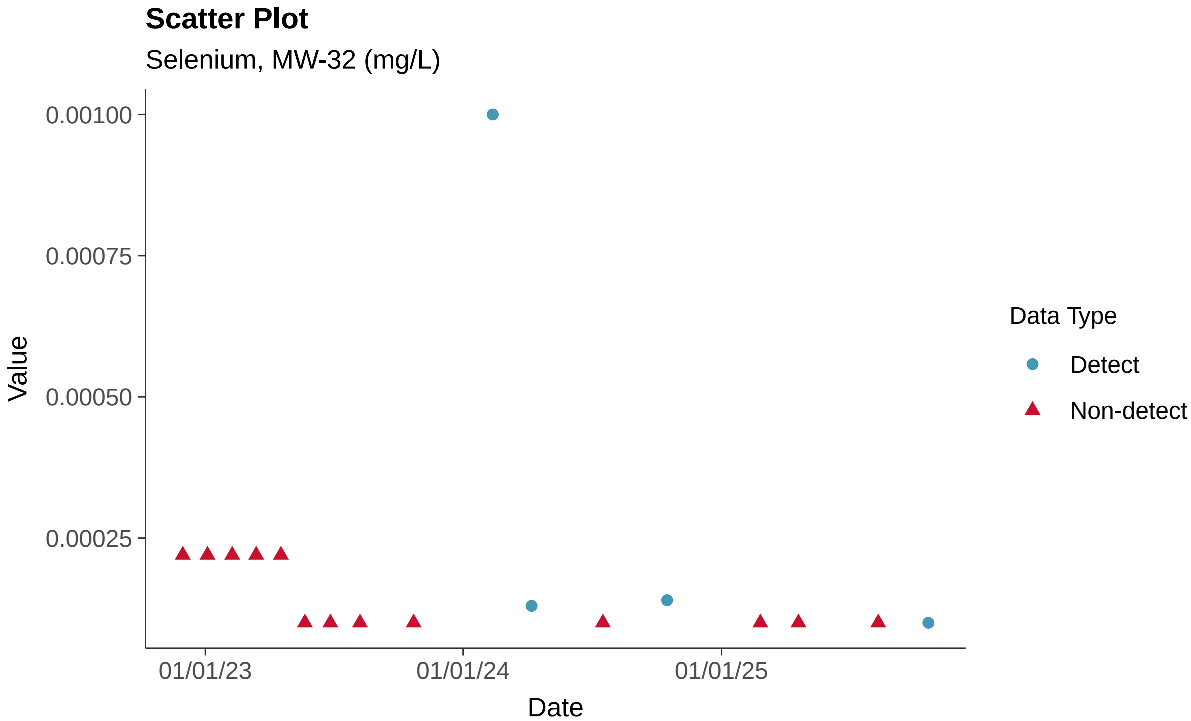
Trend Regression: Piecewise Linear-Linear-Linear

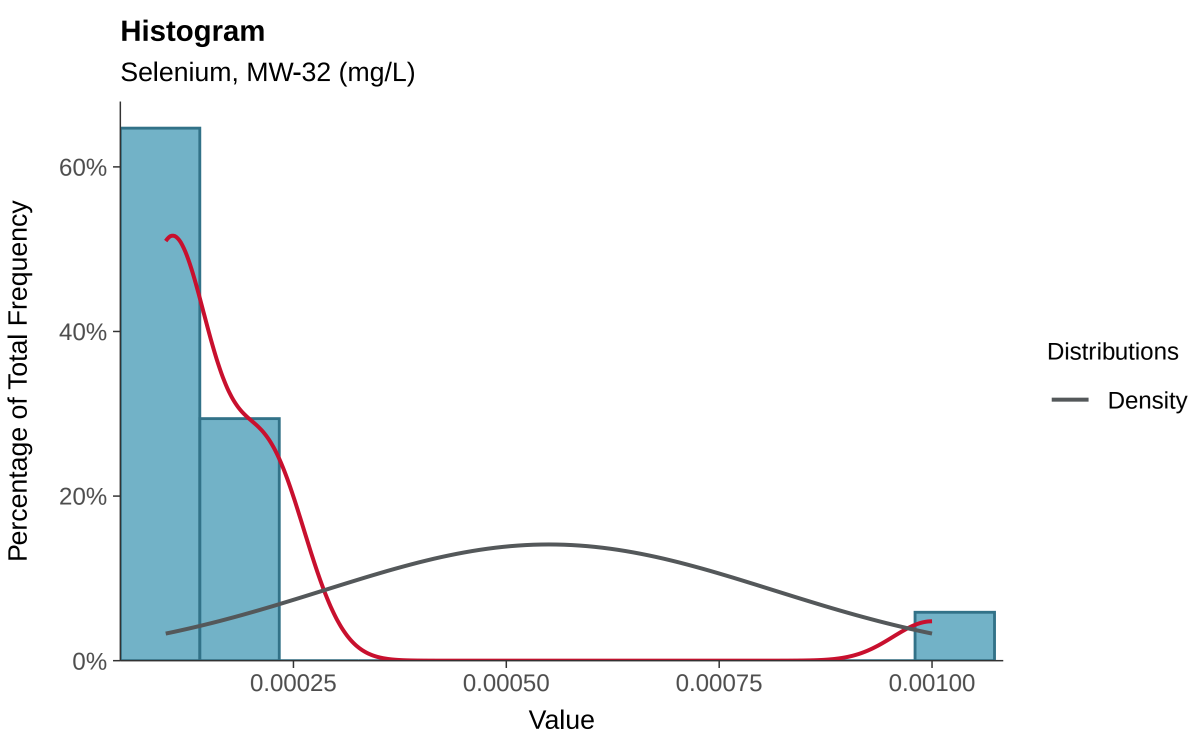
Radium 226 and 228, MW-32 (pCi/L)



Appendix IV: Selenium, MW-32

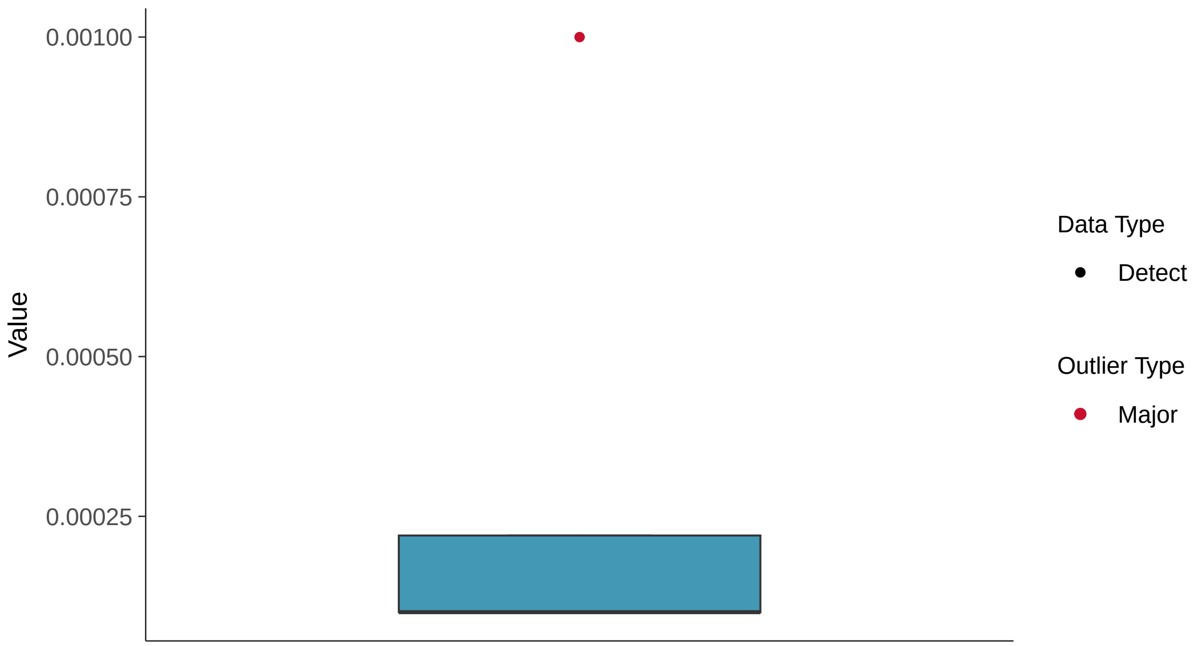
ID: 42_1_4_122





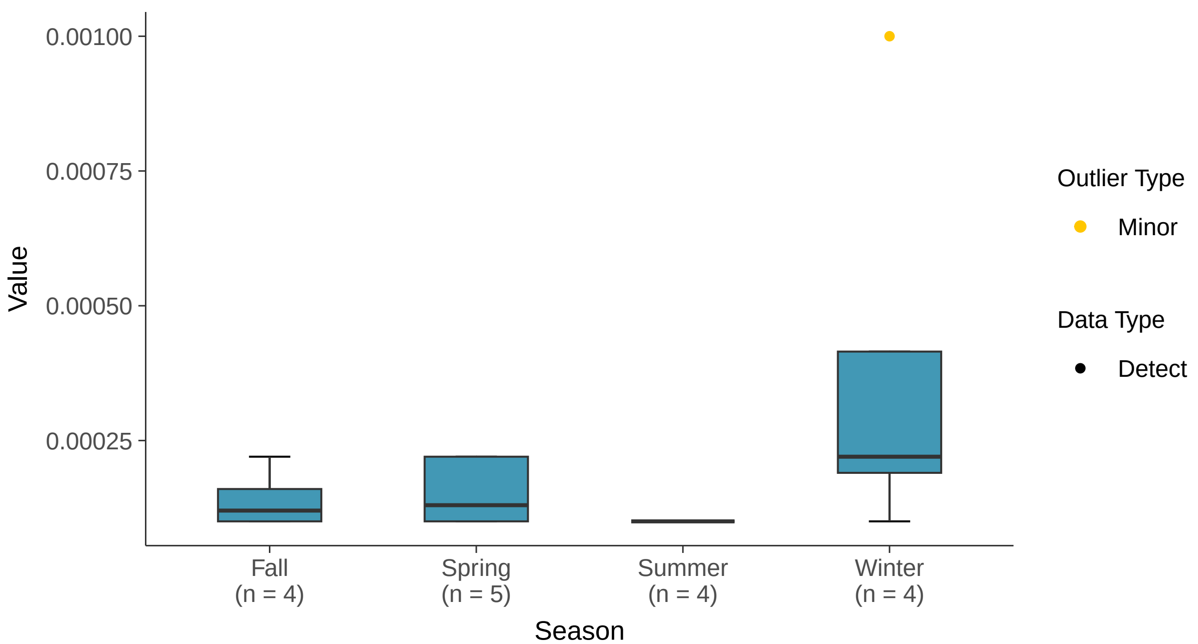
Boxplot

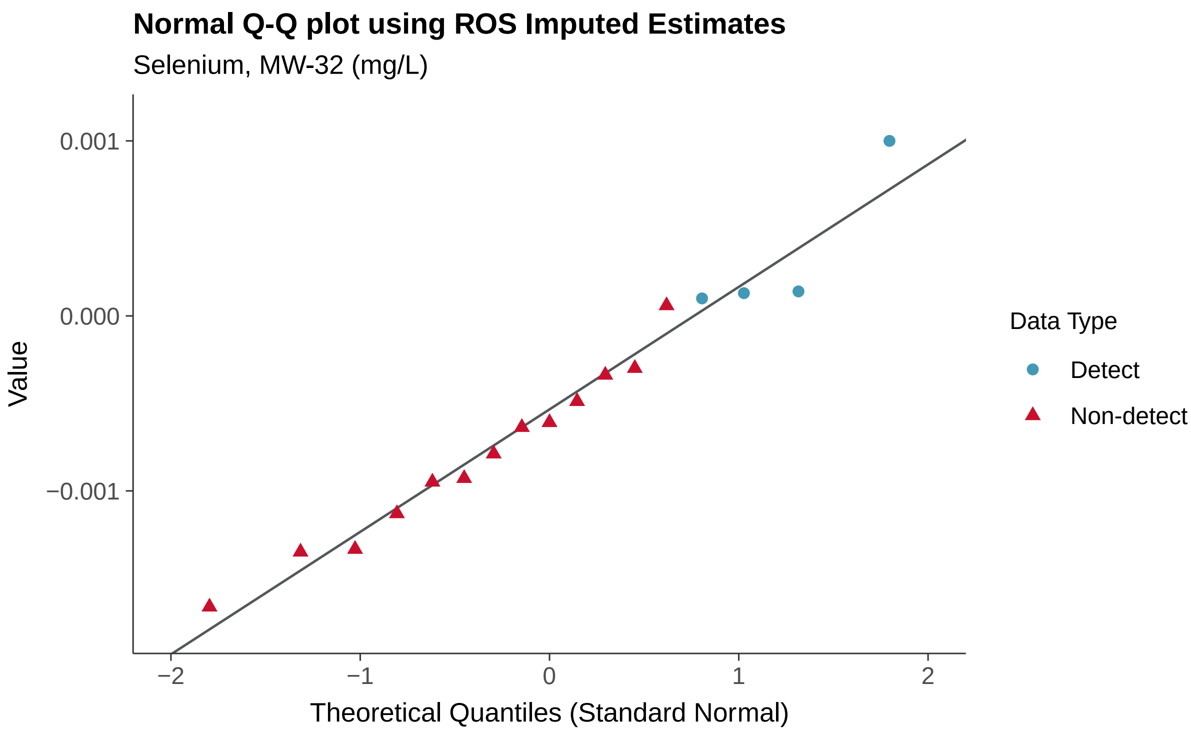
Selenium, MW-32 (mg/L)

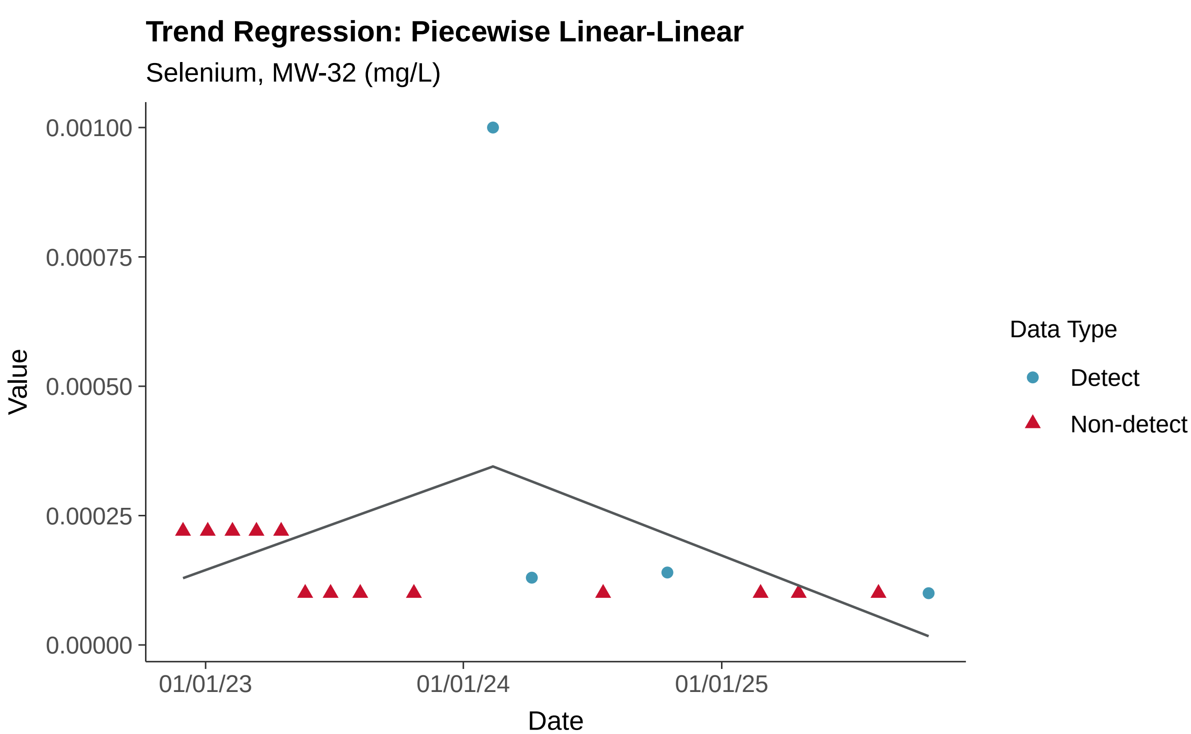


Boxplot by Season

Selenium, MW-32 (mg/L)

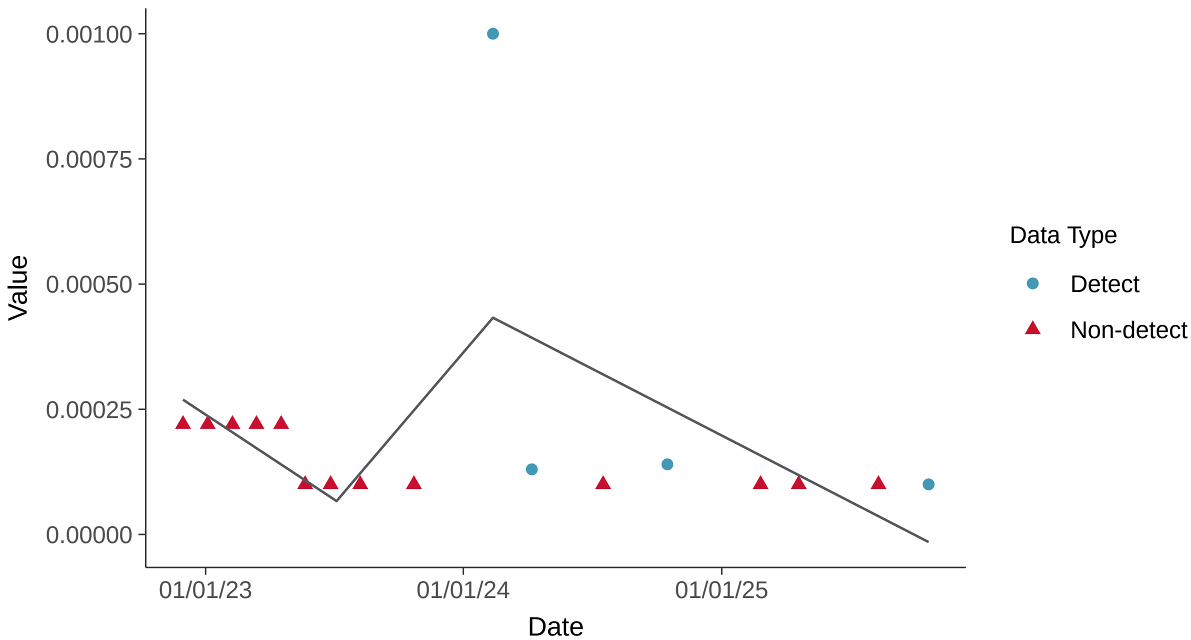



Normal Q-Q plot using ROS Imputed Estimates
Selenium, MW-32 (mg/L)
Value
0.001
0.000
−0.001
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Selenium, MW-32 (mg/L)
Value
0.00100
0.00075
0.00050
0.00025
0.00000
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

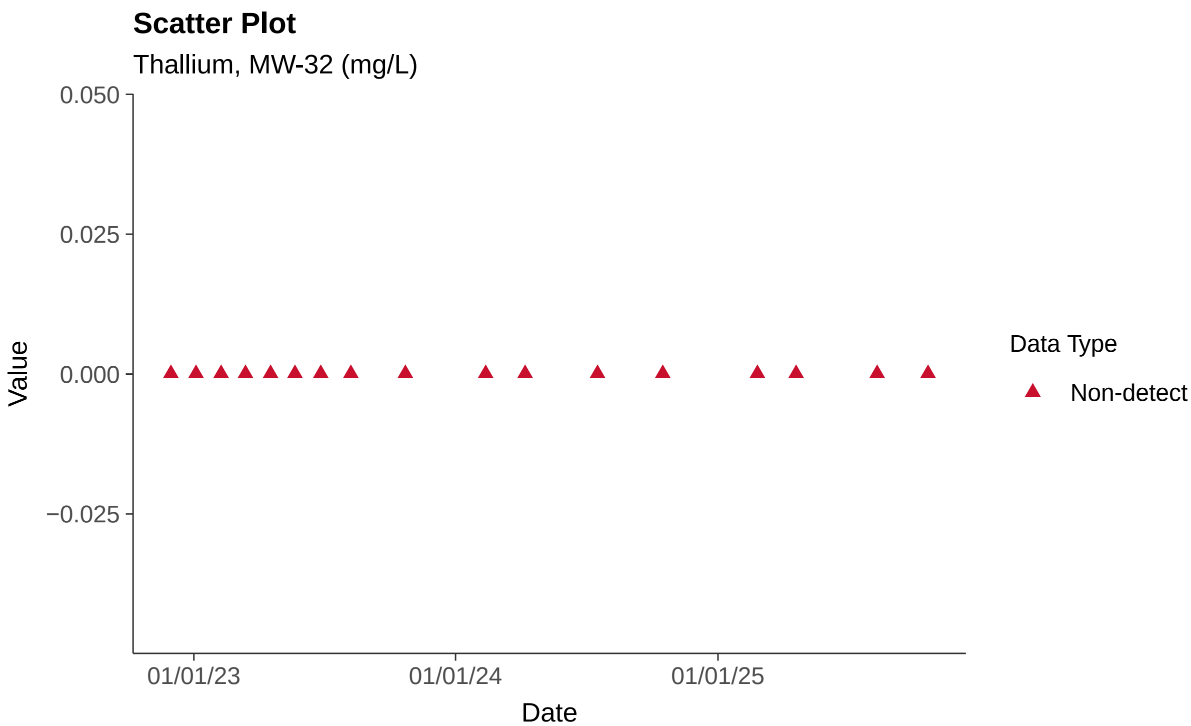
Trend Regression: Piecewise Linear-Linear-Linear

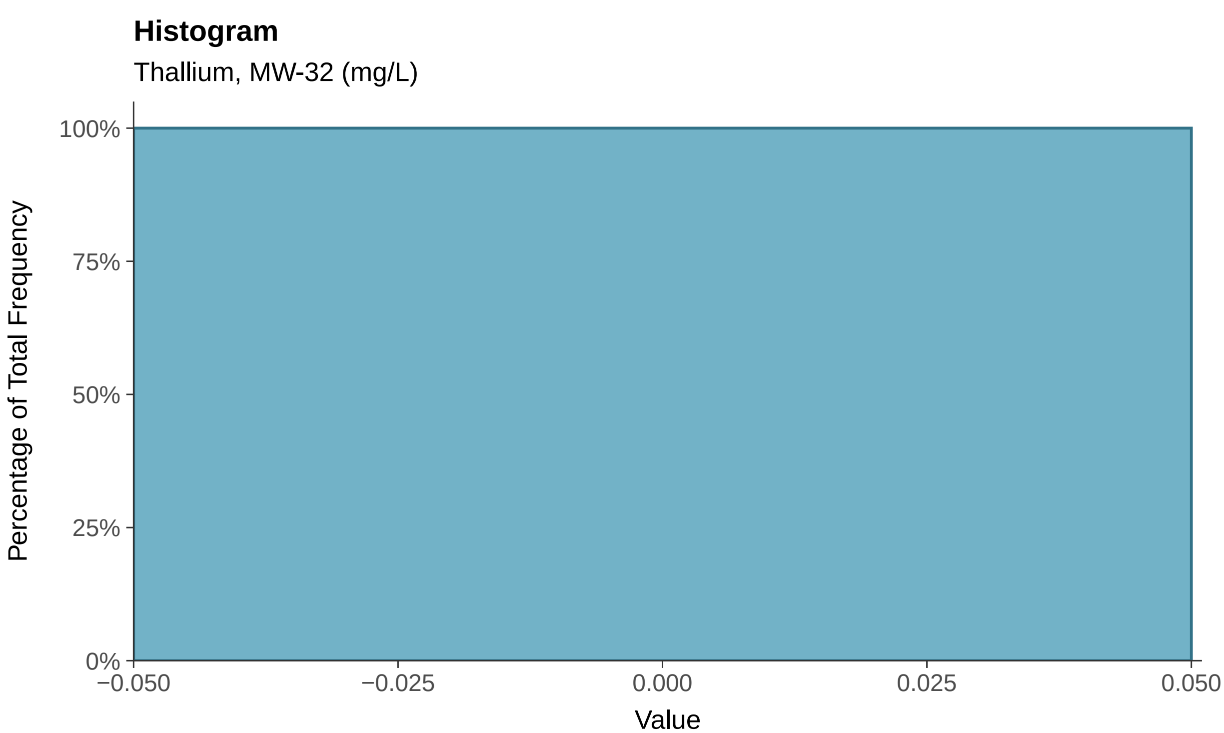
Selenium, MW-32 (mg/L)



Appendix IV: Thallium, MW-32

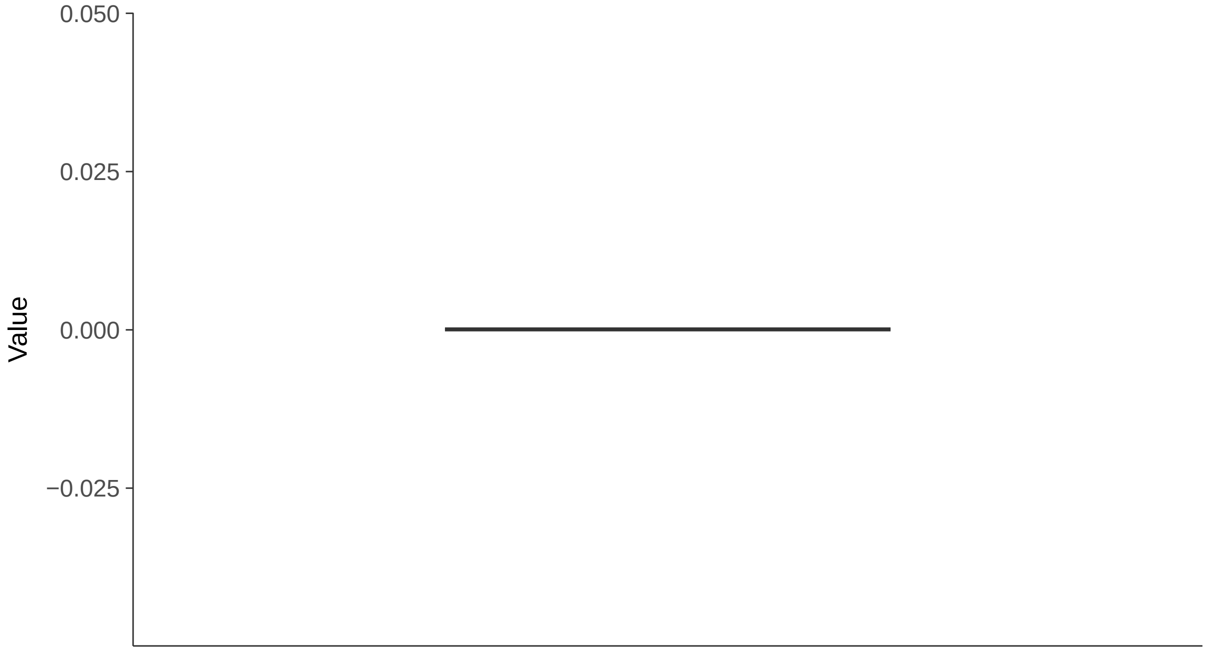
ID: 42_1_4_125





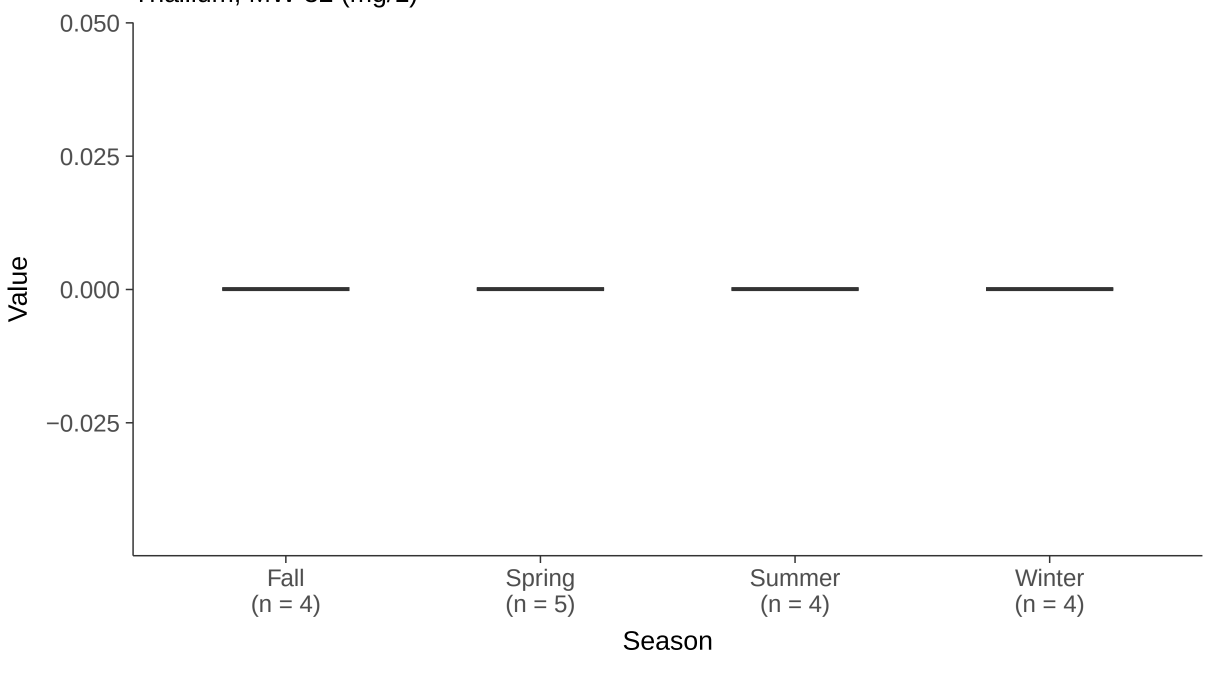
Boxplot

Thallium, MW-32 (mg/L)



Boxplot by Season

Thallium, MW-32 (mg/L)

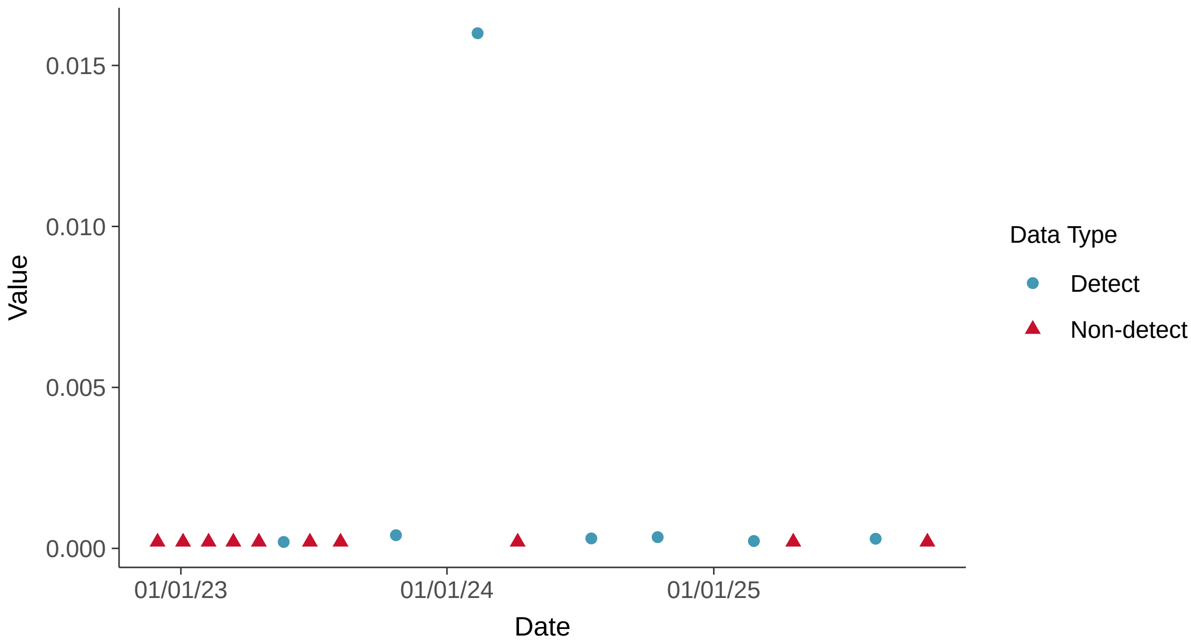


Part 115: Copper, MW-32

ID: 42_1_5_111

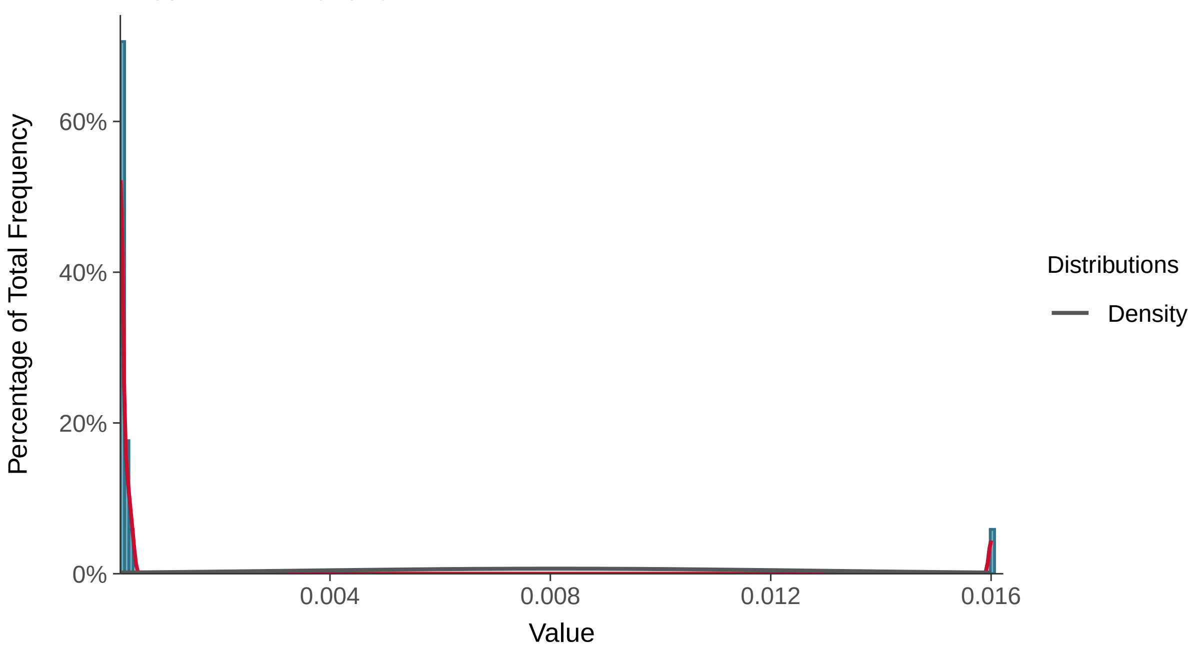
Scatter Plot

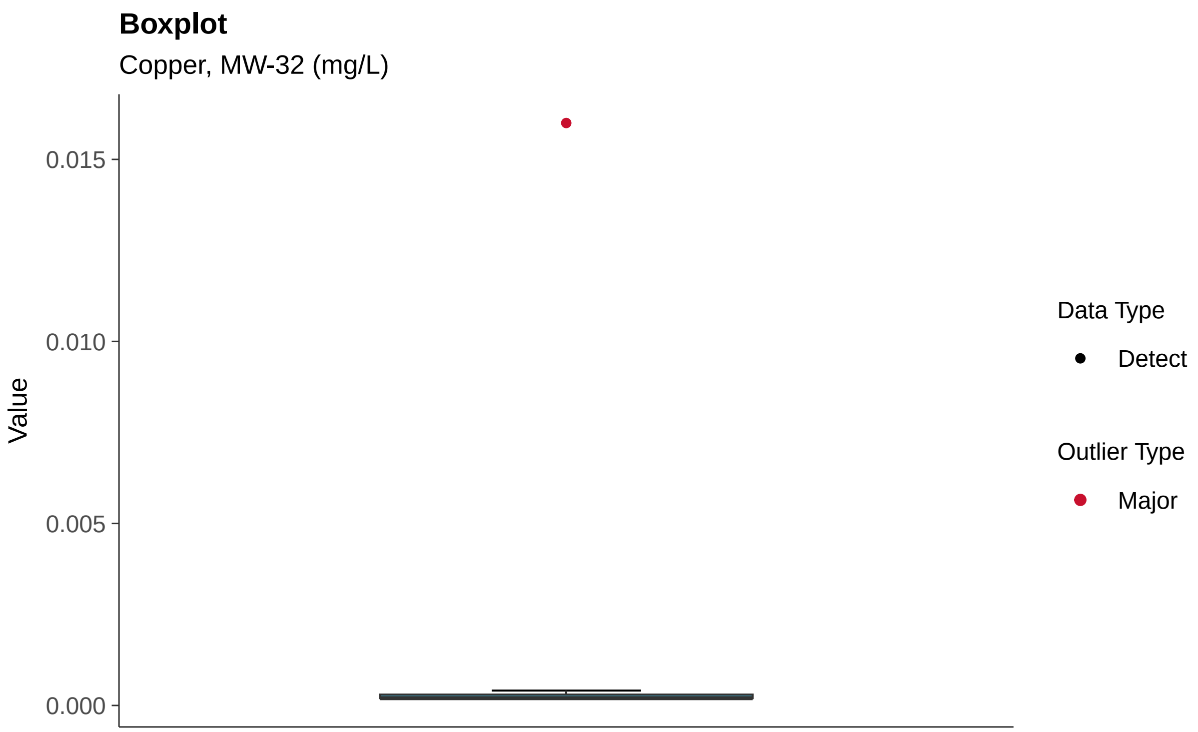
Copper, MW-32 (mg/L)

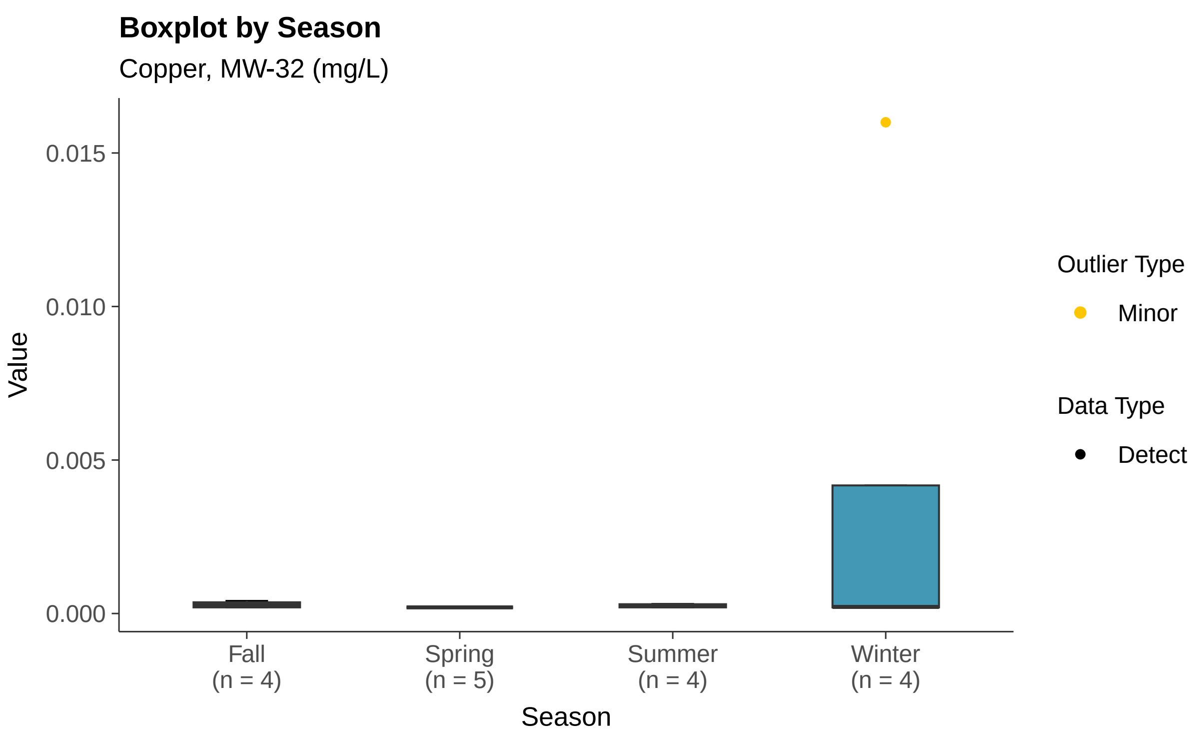


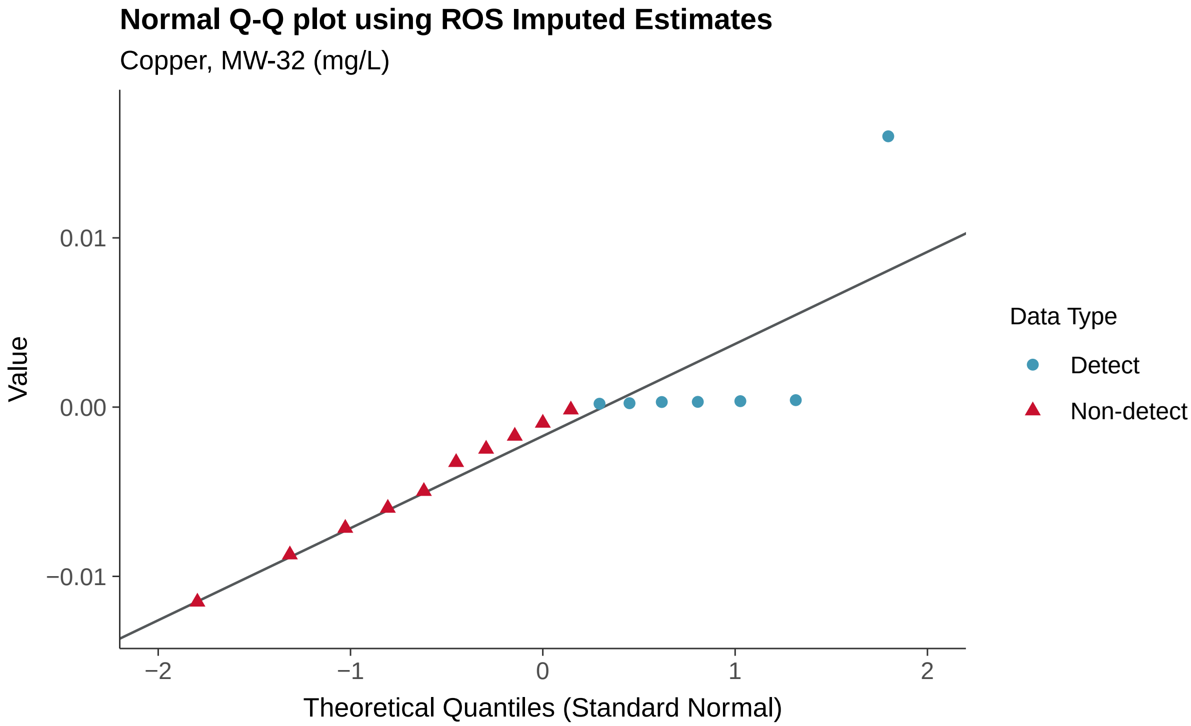
Histogram

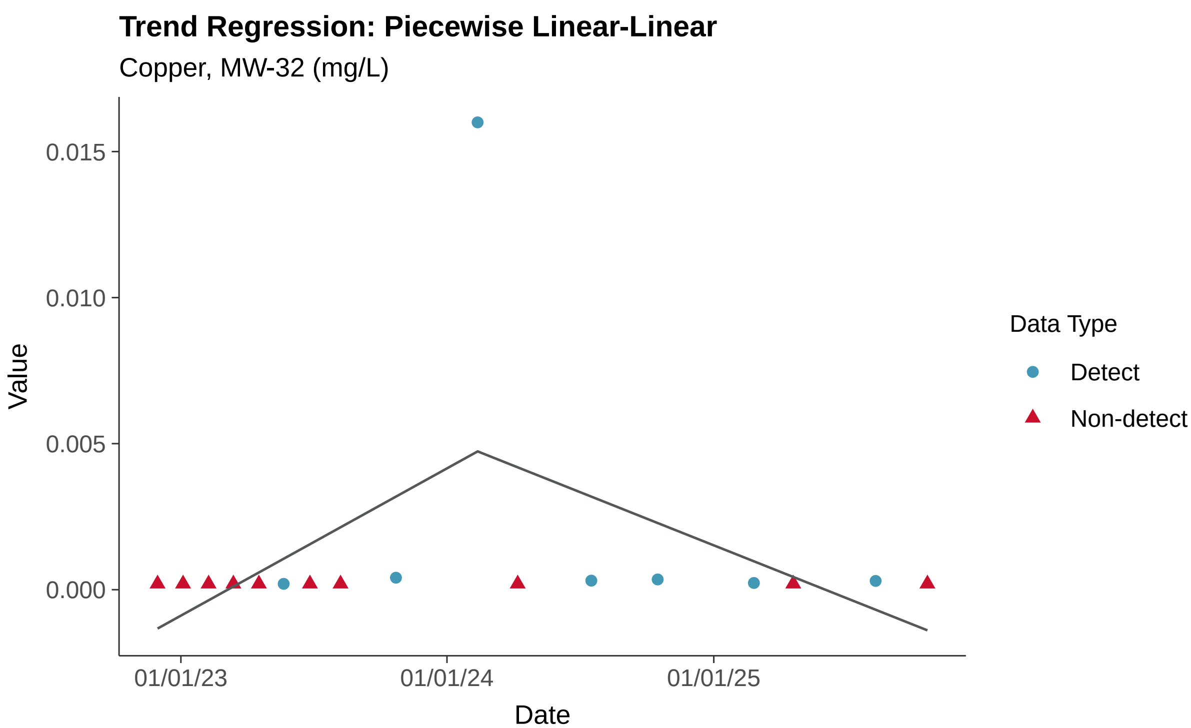
Copper, MW-32 (mg/L)




Boxplot
Copper, MW-32 (mg/L)
Value
0.015
0.010
0.005
0.000
Data Type
Detect
Outlier Type
Major

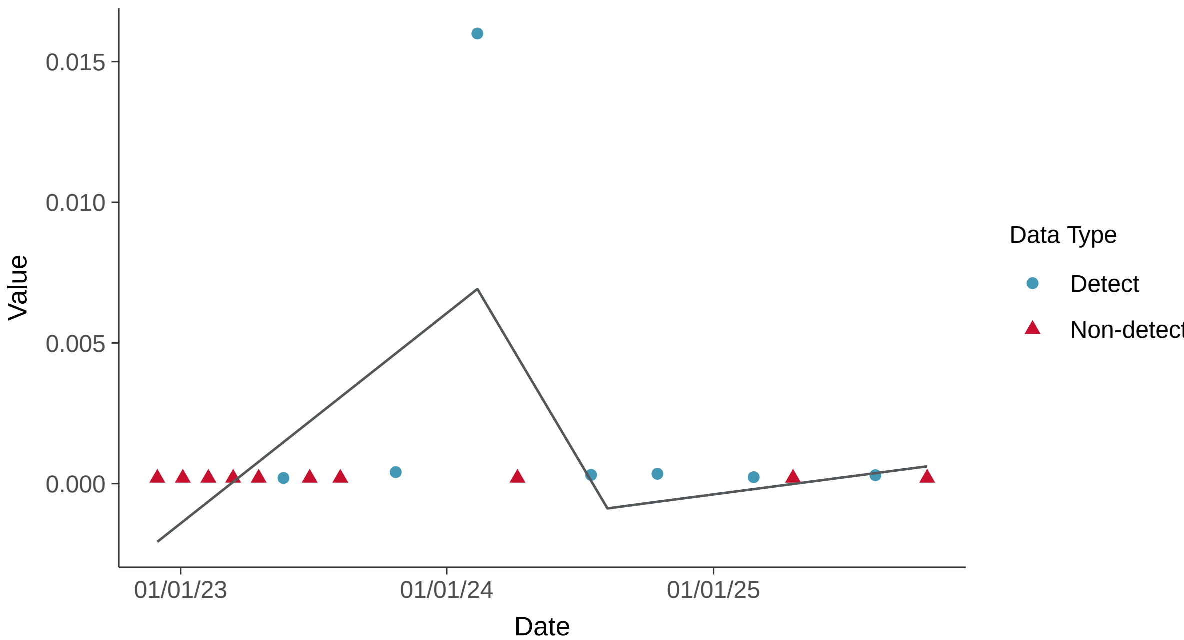

Boxplot by Season
Copper, MW-32 (mg/L)
Value
0.015
0.010
0.005
0.000
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Minor
Data Type
Detect


Normal Q-Q plot using ROS Imputed Estimates
Copper, MW-32 (mg/L)
Value
0.01
0.00
−0.01
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Copper, MW-32 (mg/L)
Value
0.015
0.010
0.005
0.000
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect
Non-detect

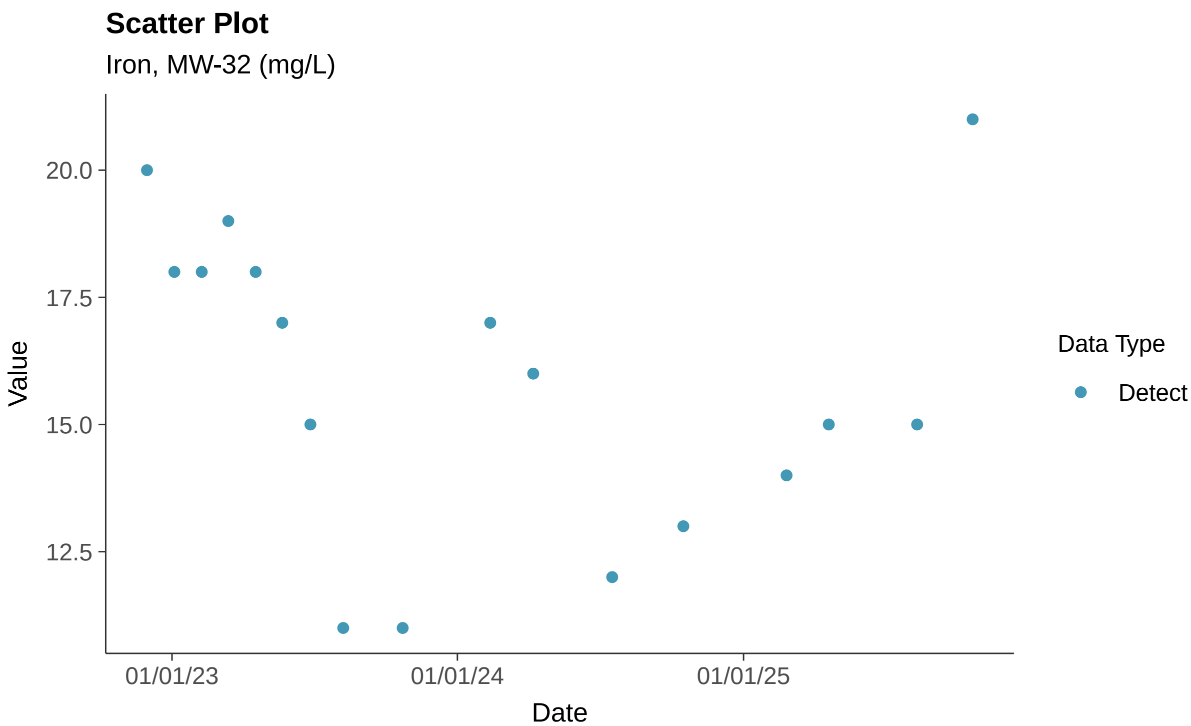
Trend Regression: Piecewise Linear-Linear-Linear

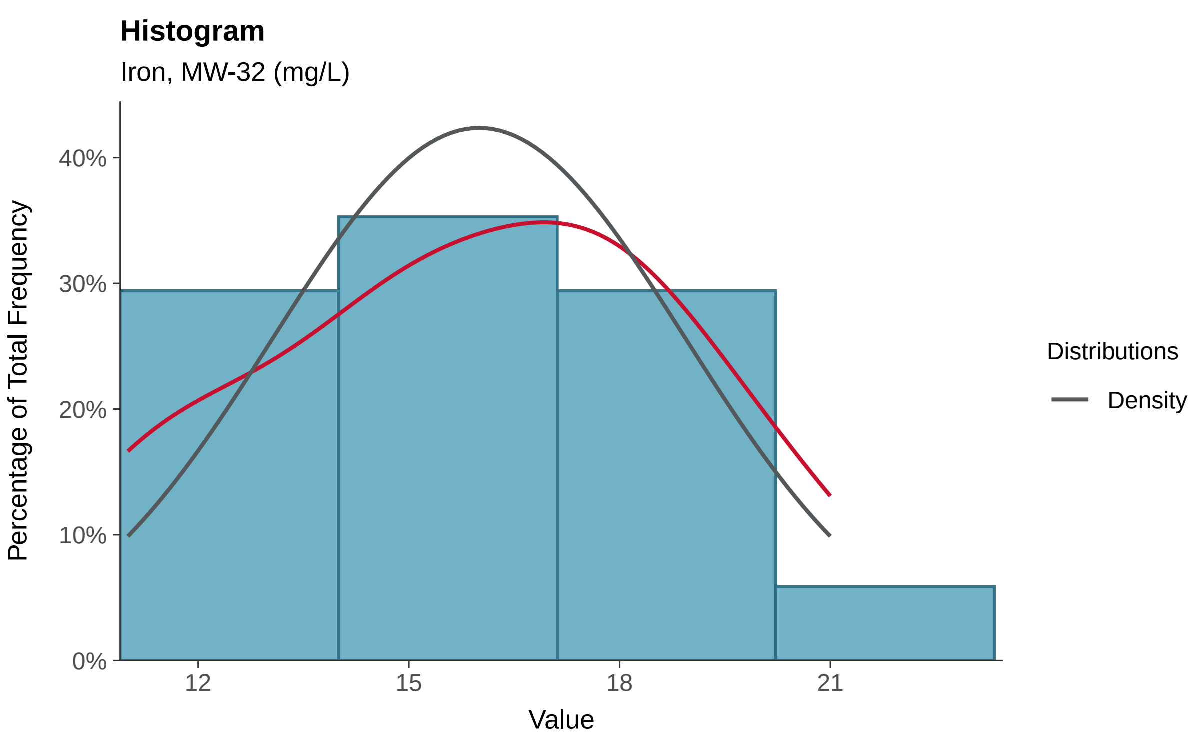
Copper, MW-32 (mg/L)



Part 115: Iron, MW-32

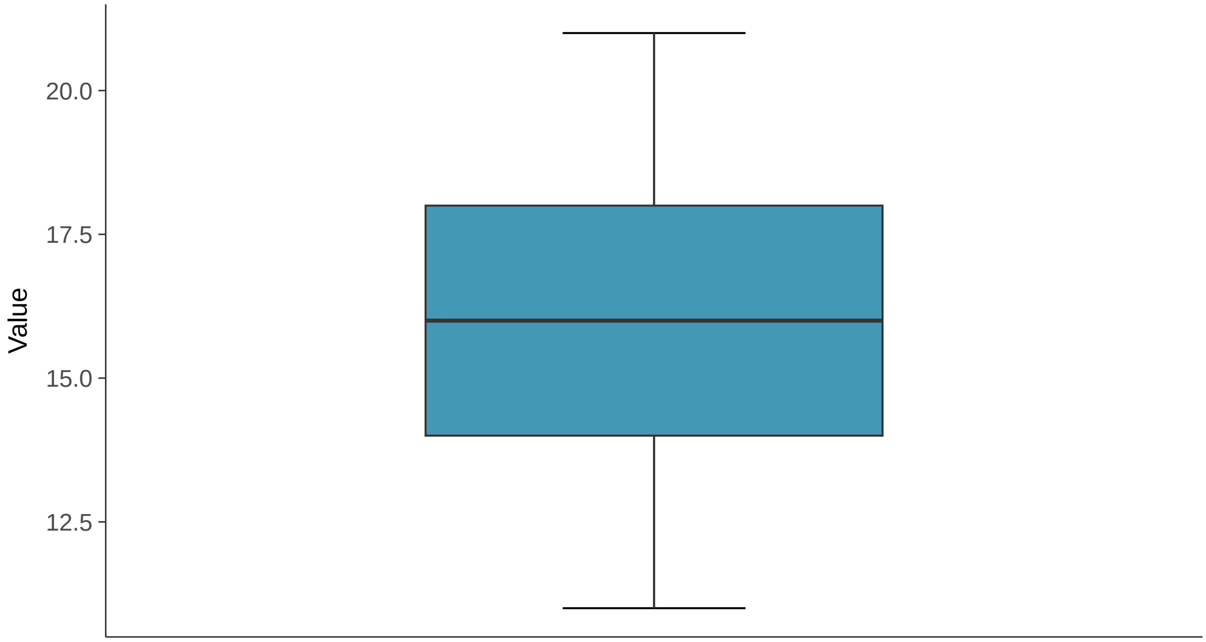
ID: 42_1_5_114





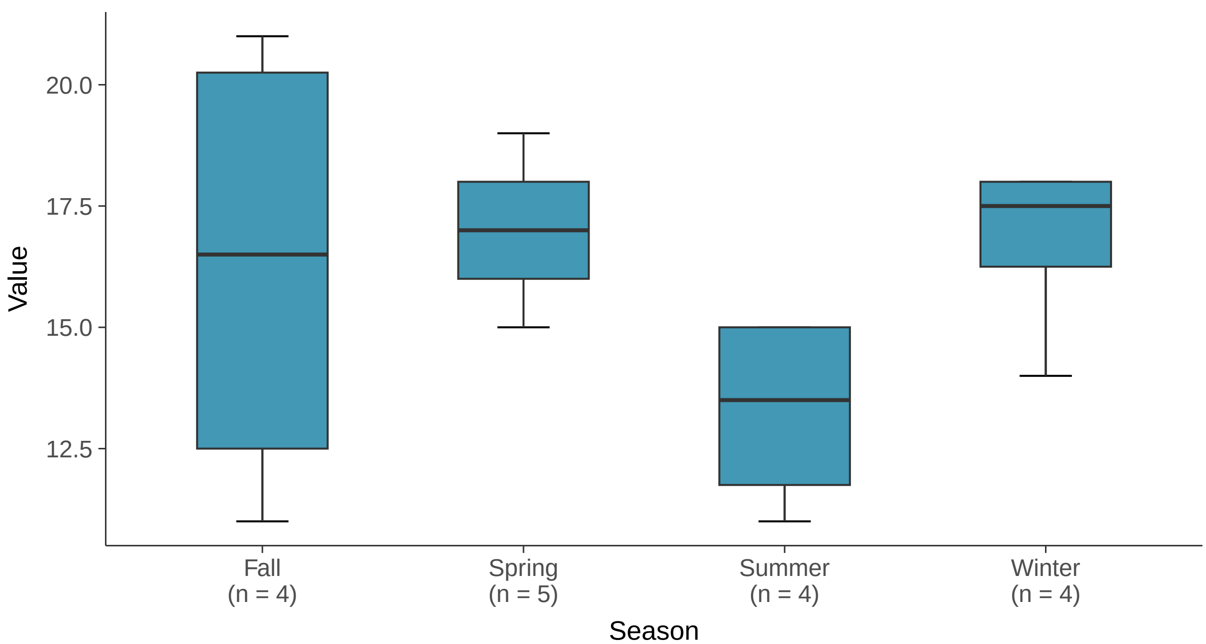
Boxplot

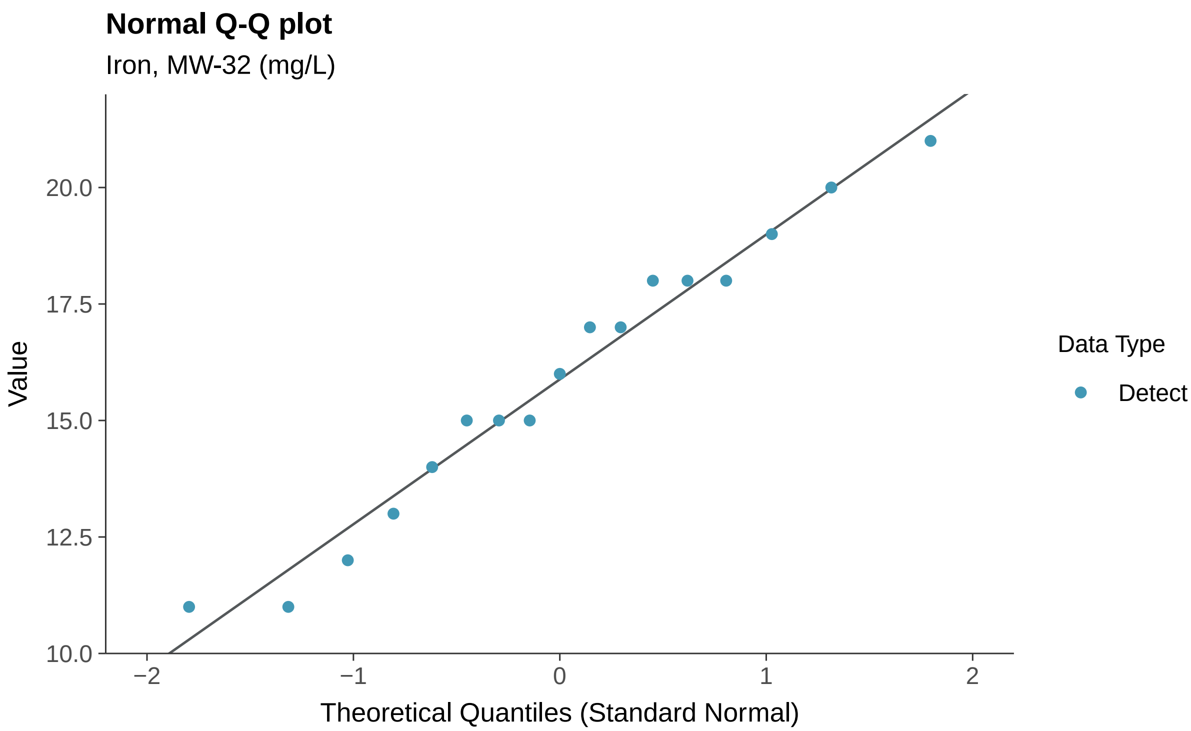
Iron, MW-32 (mg/L)

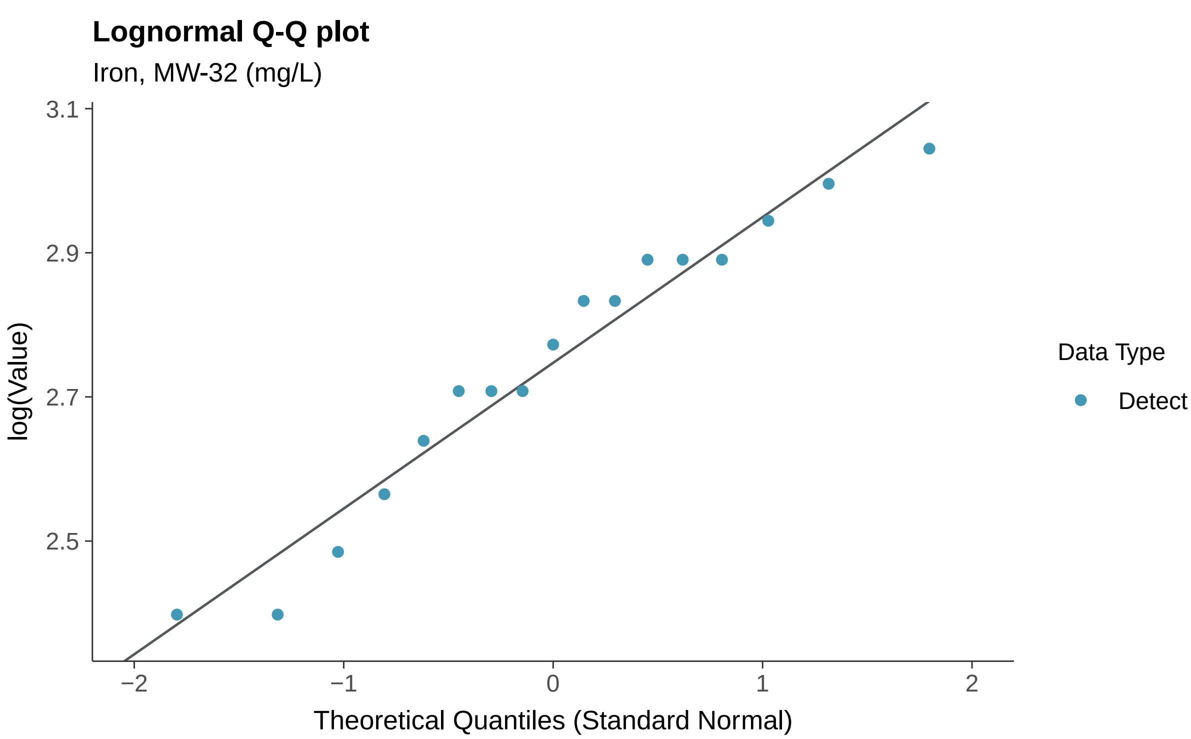


Boxplot by Season

Iron, MW-32 (mg/L)

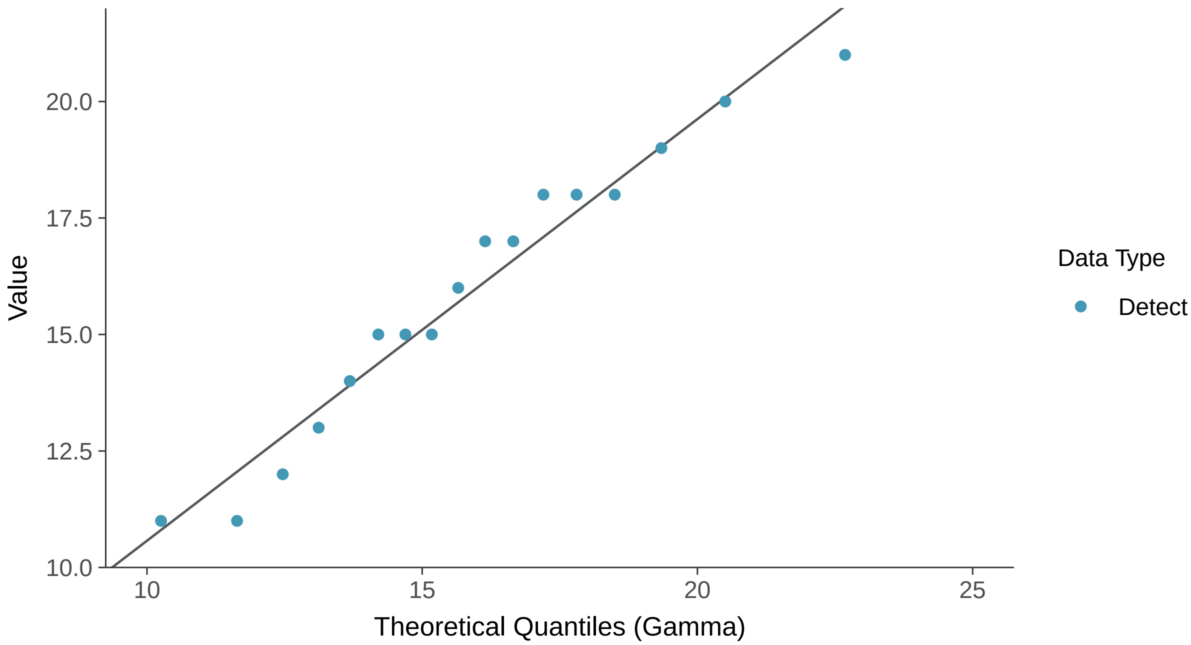



Normal Q-Q plot
Iron, MW-32 (mg/L)
Value
20.0
17.5
15.0
12.5
10.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Iron, MW-32 (mg/L)
log(Value)
3.1
2.9
2.7
2.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

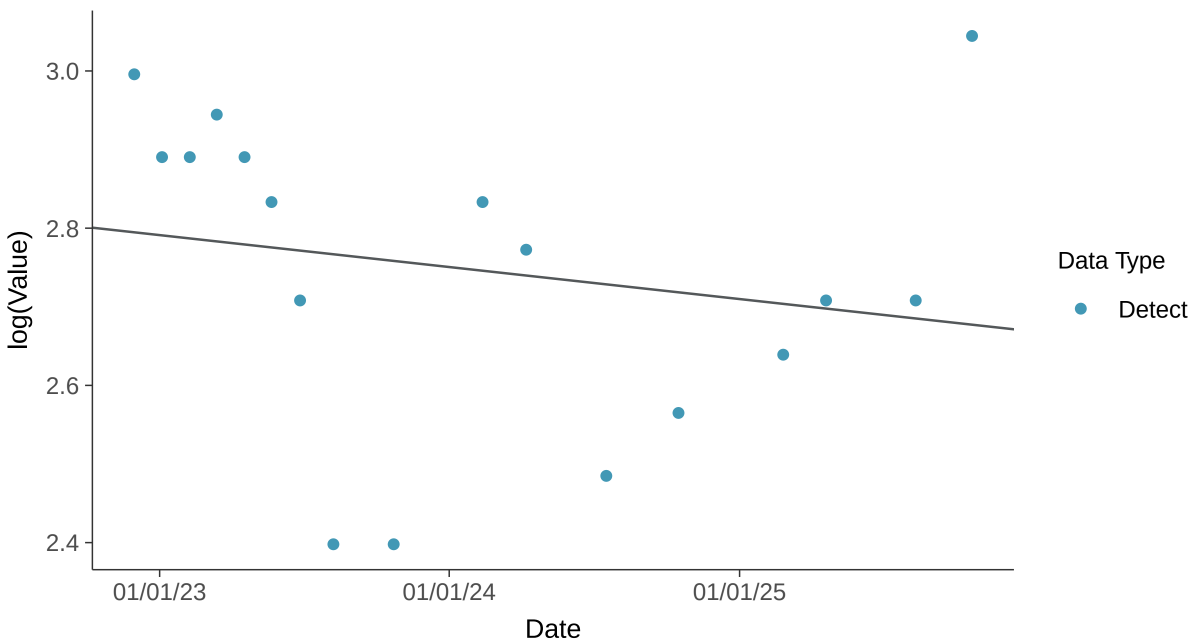
Gamma Q-Q plot

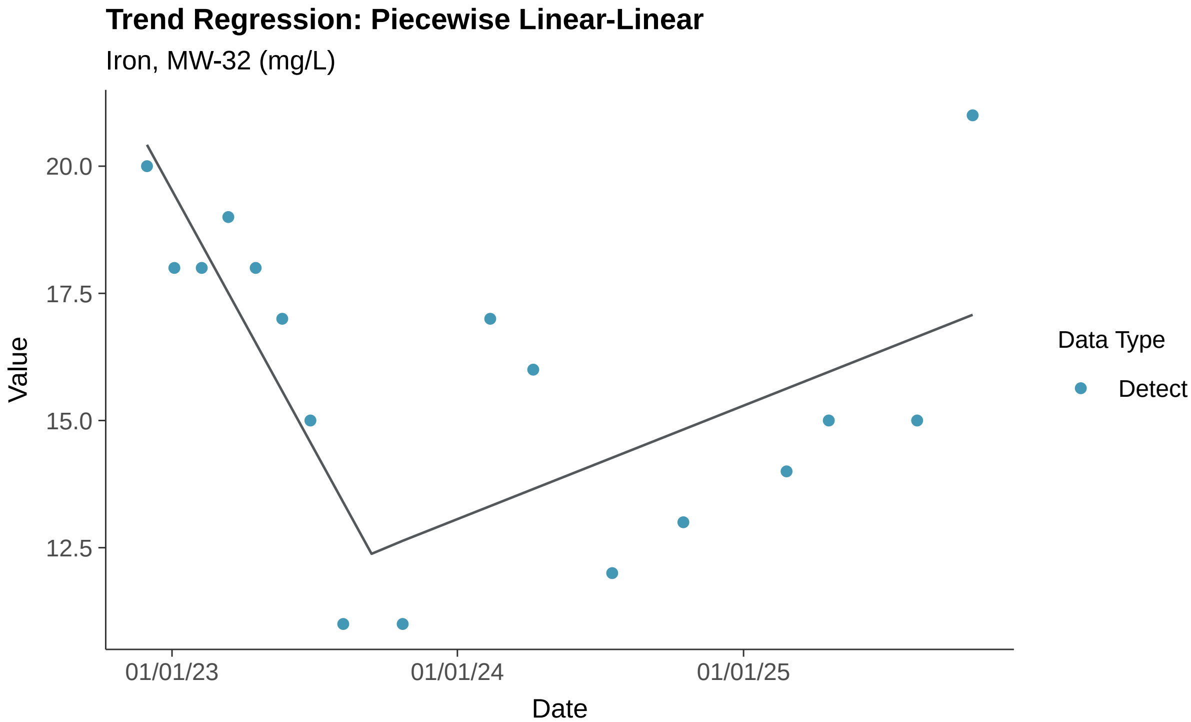
Iron, MW-32 (mg/L)

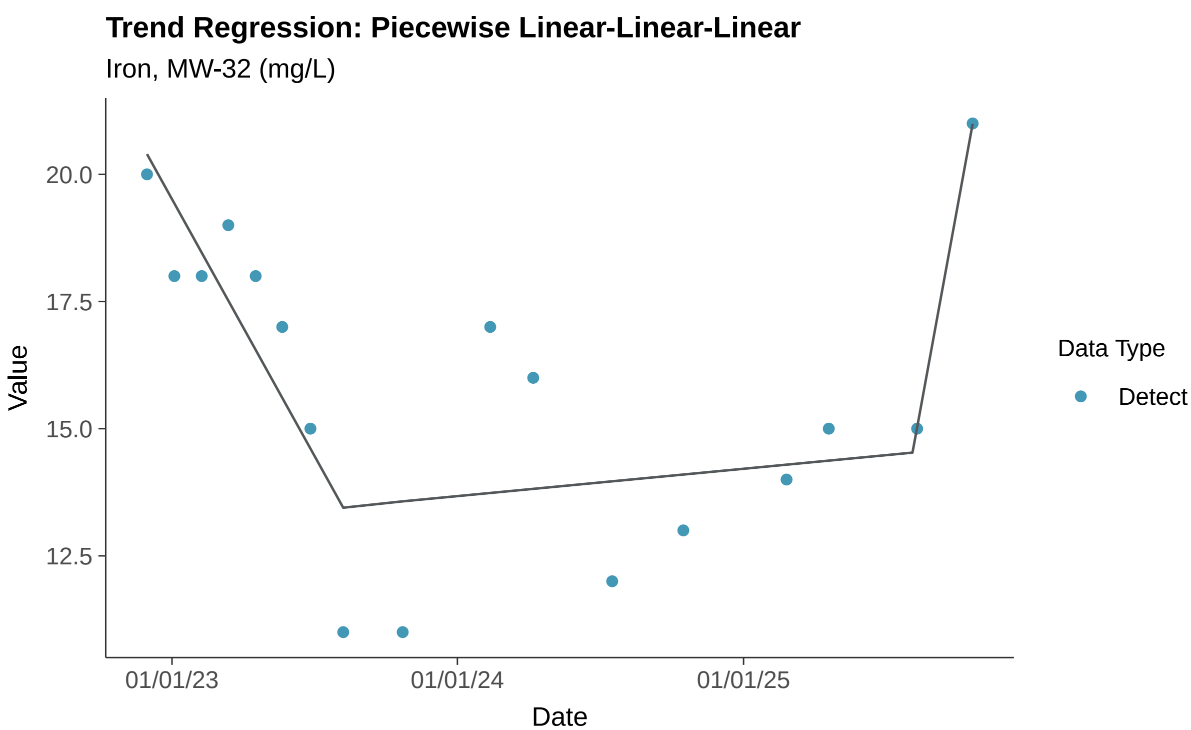


Trend Regression: Lognormal MLE

Iron, MW-32 (mg/L)

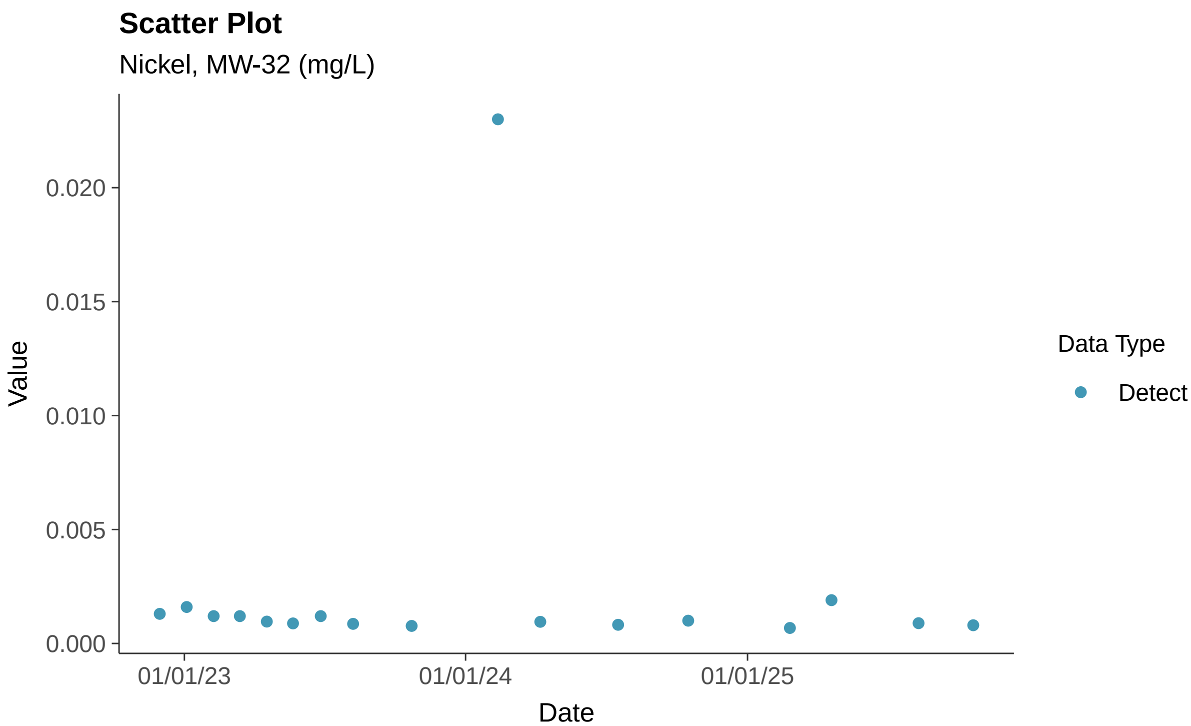


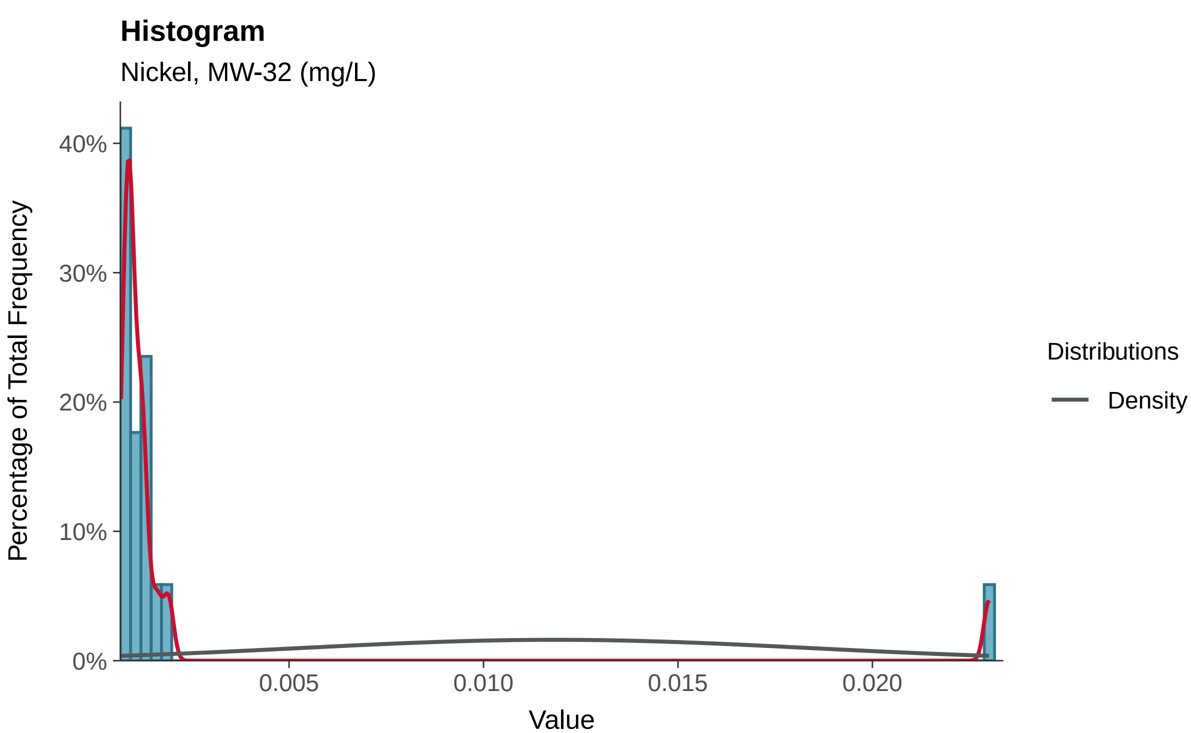

Trend Regression: Piecewise Linear-Linear
Iron, MW-32 (mg/L)
Value
20.0
17.5
15.0
12.5
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
Iron, MW-32 (mg/L)
Value
20.0
17.5
15.0
12.5
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

Part 115: Nickel, MW-32

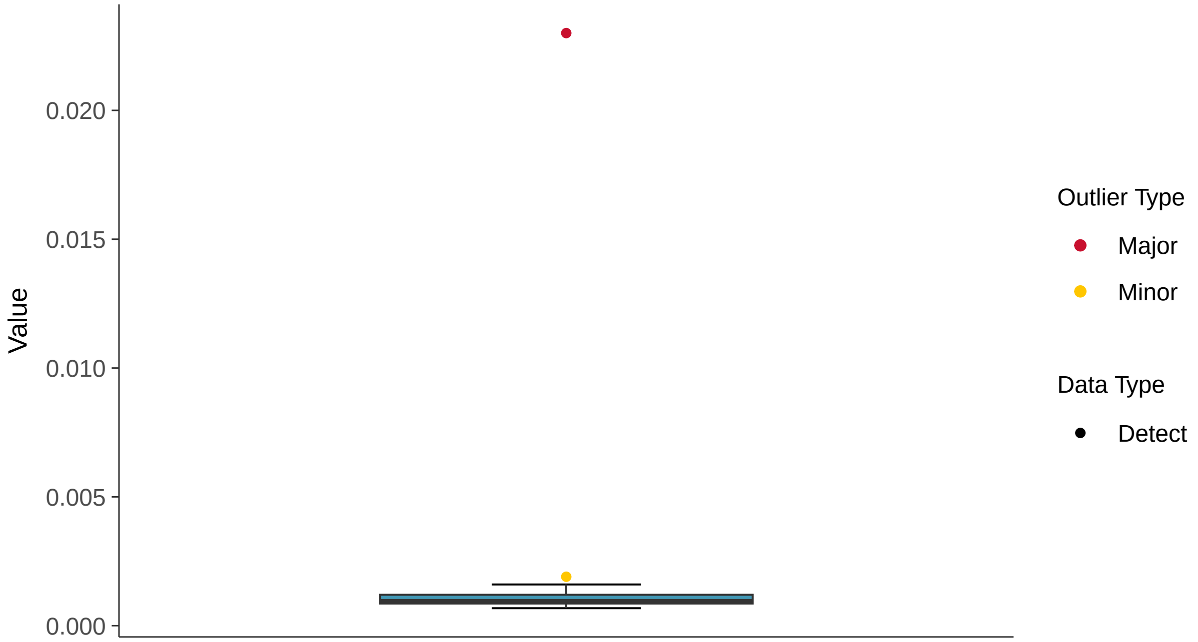
ID: 42_1_5_119





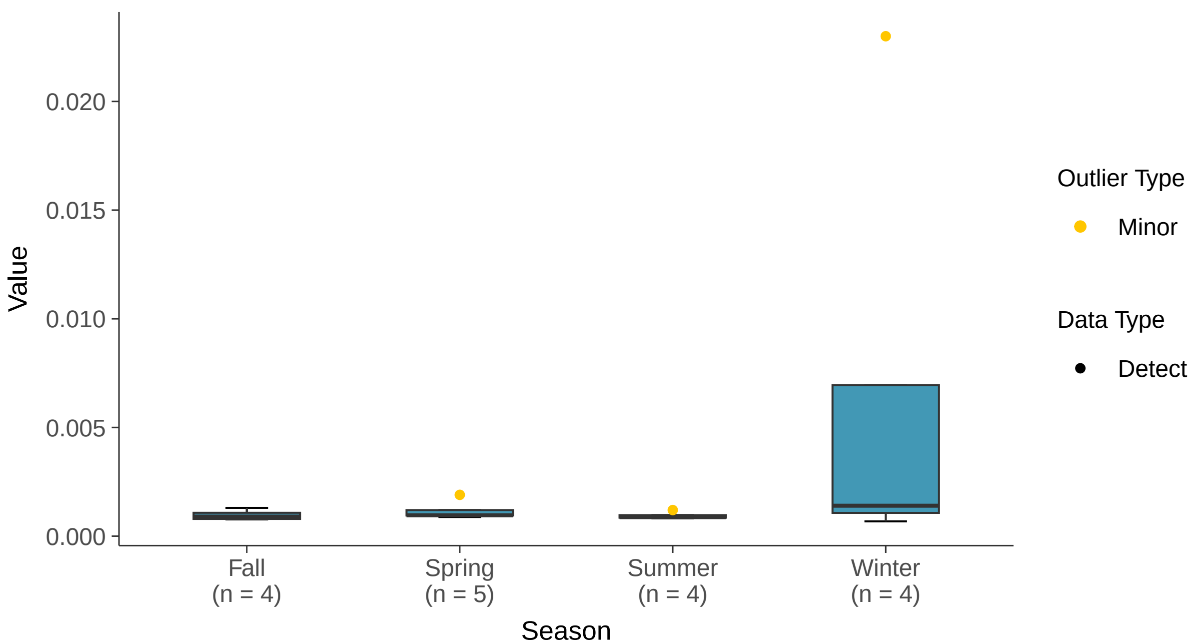
Boxplot

Nickel, MW-32 (mg/L)



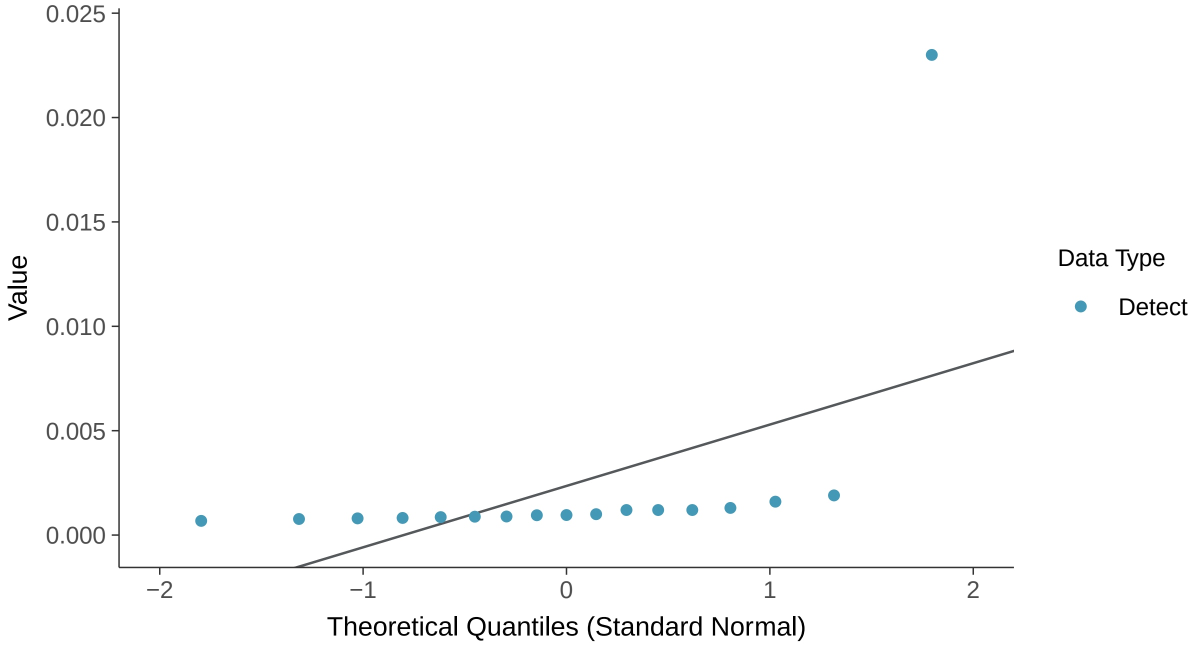
Boxplot by Season

Nickel, MW-32 (mg/L)



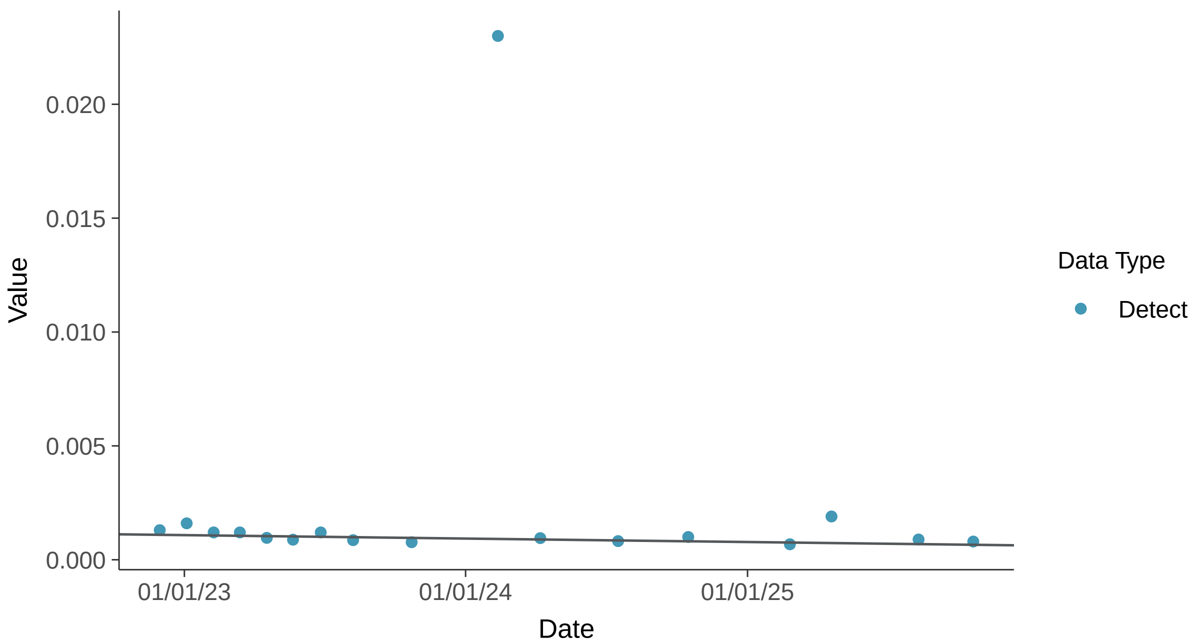
Normal Q-Q plot

Nickel, MW-32 (mg/L)



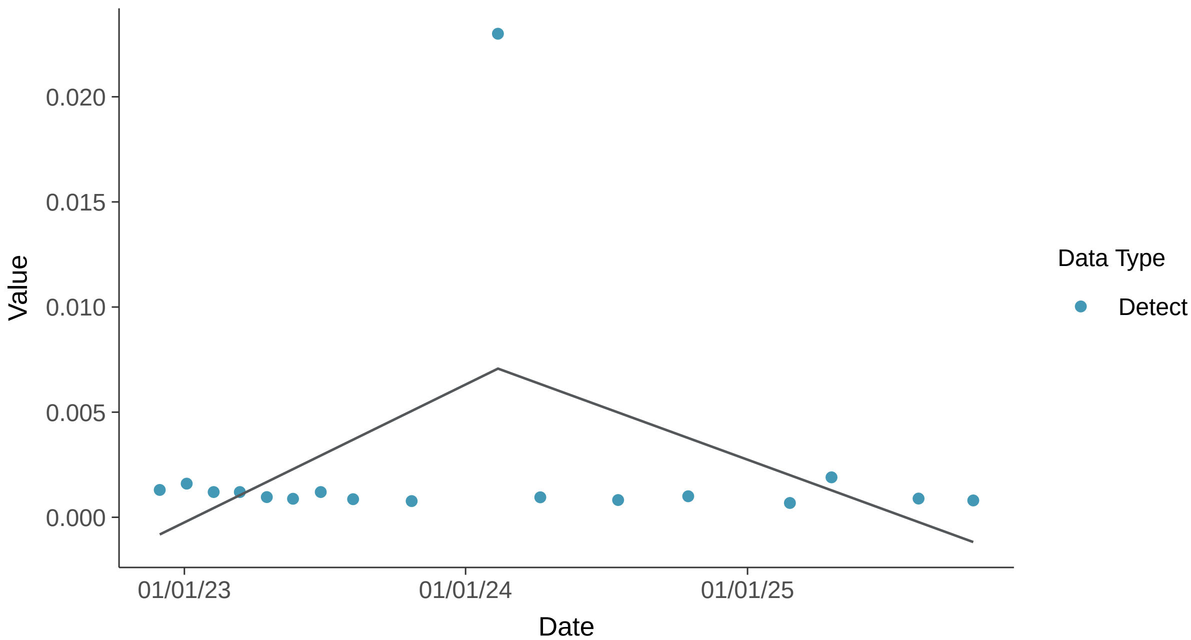
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Nickel, MW-32 (mg/L)



Trend Regression: Piecewise Linear-Linear

Nickel, MW-32 (mg/L)

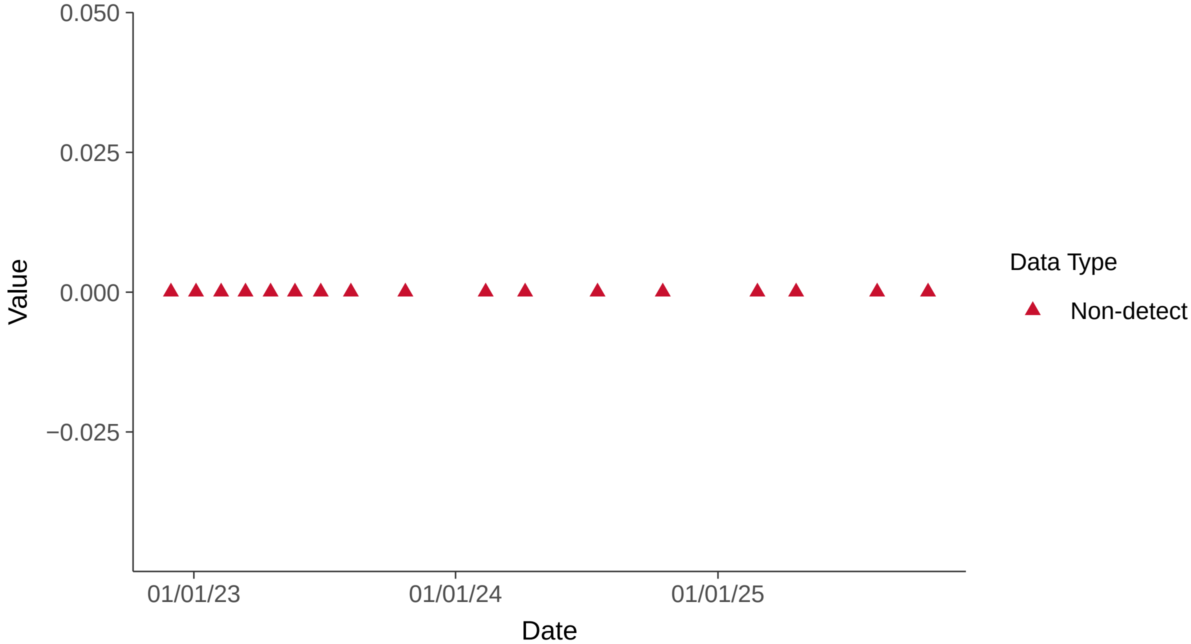


Part 115: Silver, MW-32

ID: 42_1_5_123

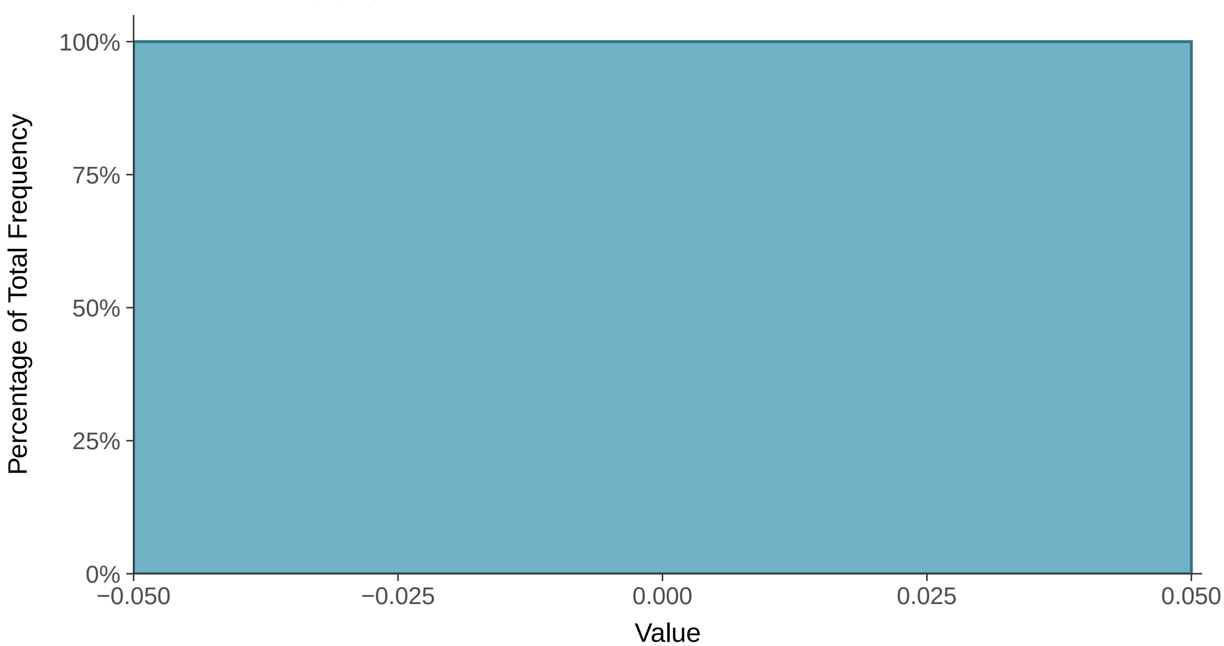
Scatter Plot

Silver, MW-32 (mg/L)



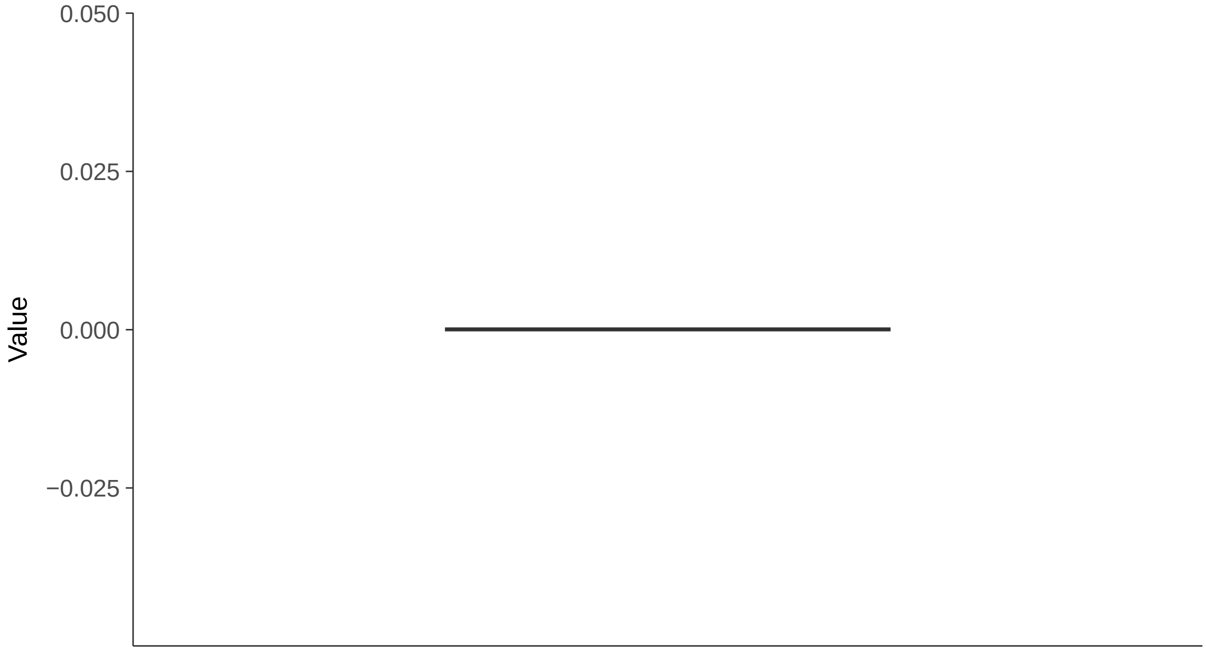
Histogram

Silver, MW-32 (mg/L)



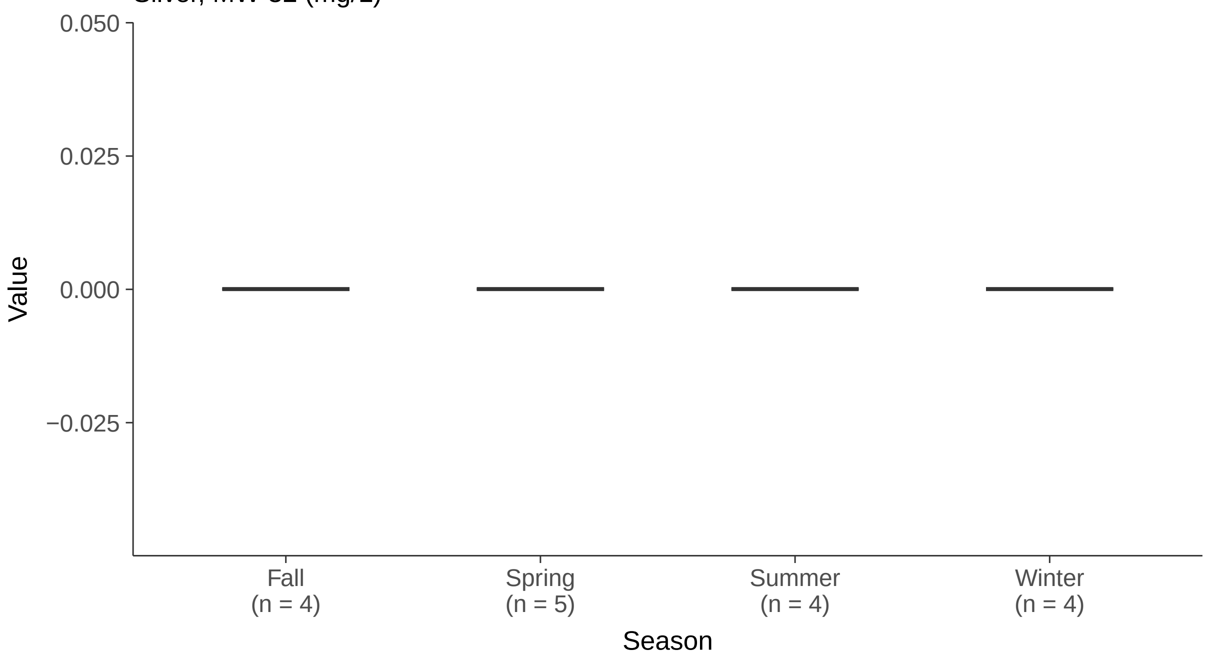
Boxplot

Silver, MW-32 (mg/L)



Boxplot by Season

Silver, MW-32 (mg/L)

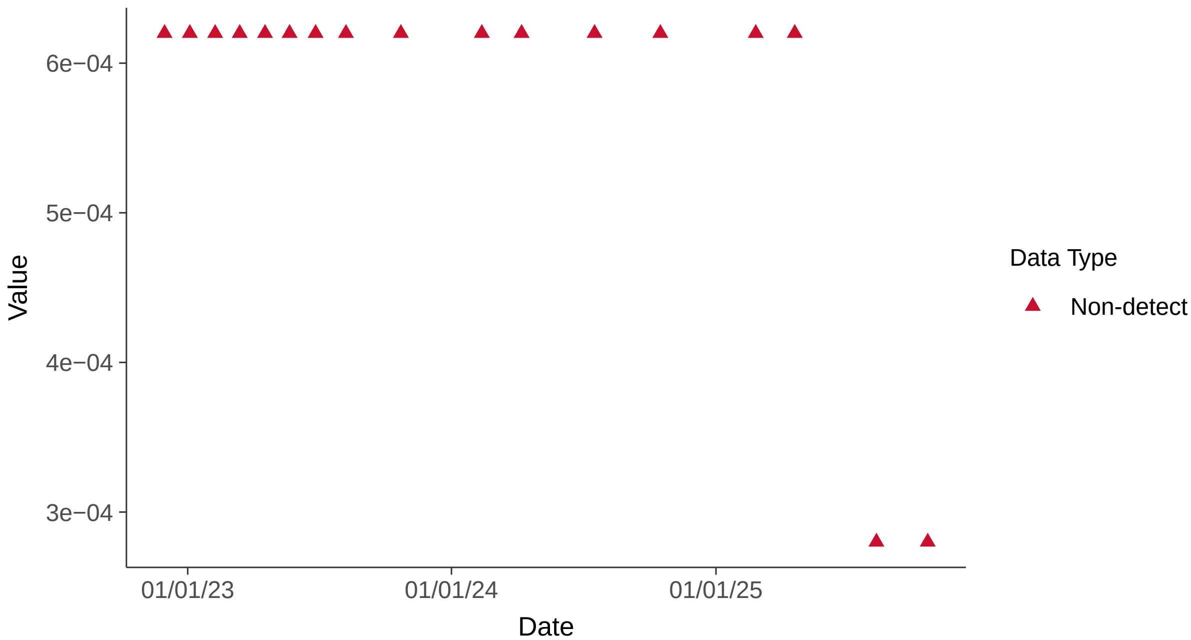


Part 115: Vanadium, MW-32

ID: 42_1_5_128

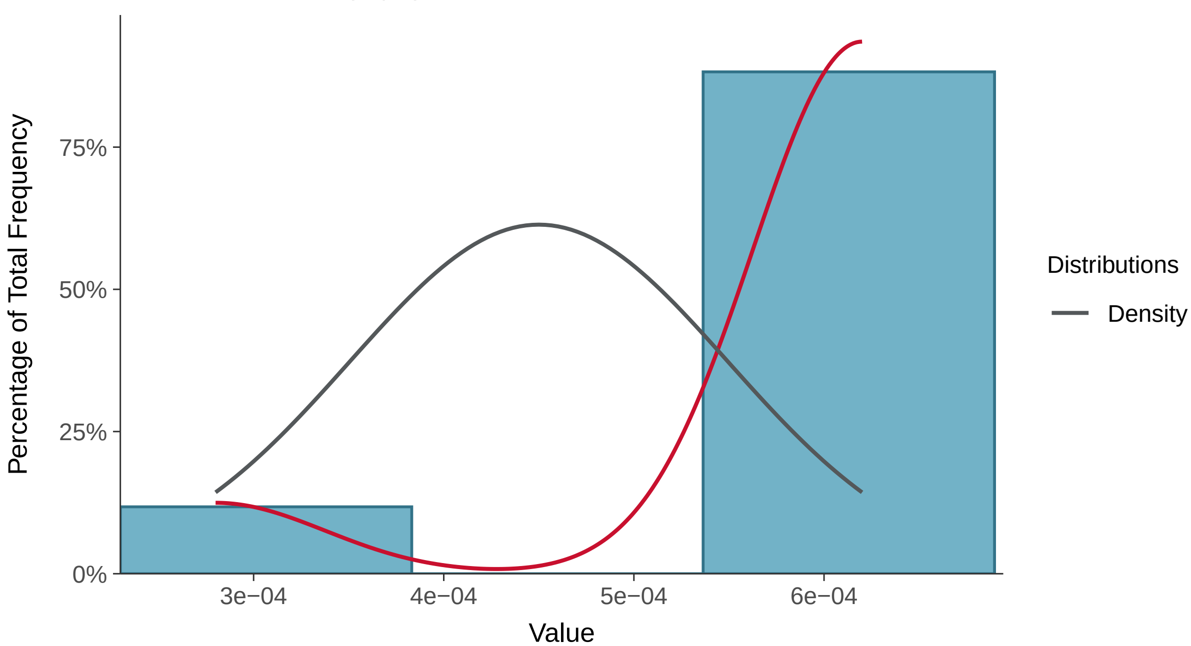
Scatter Plot

Vanadium, MW-32 (mg/L)



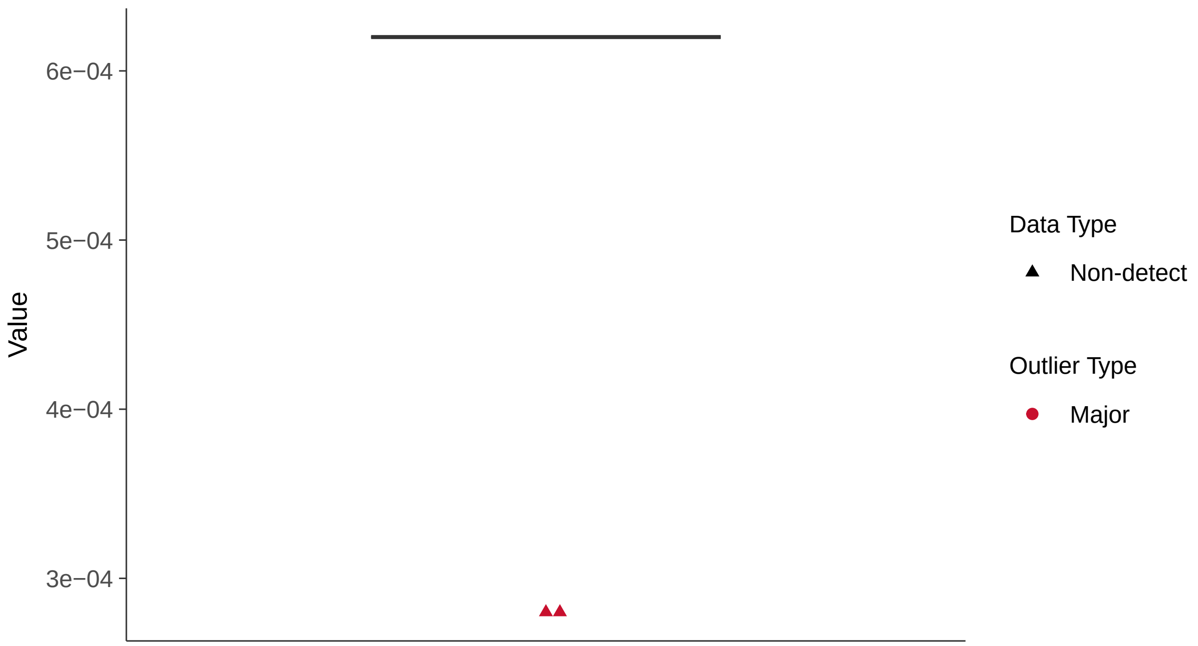
Histogram

Vanadium, MW-32 (mg/L)



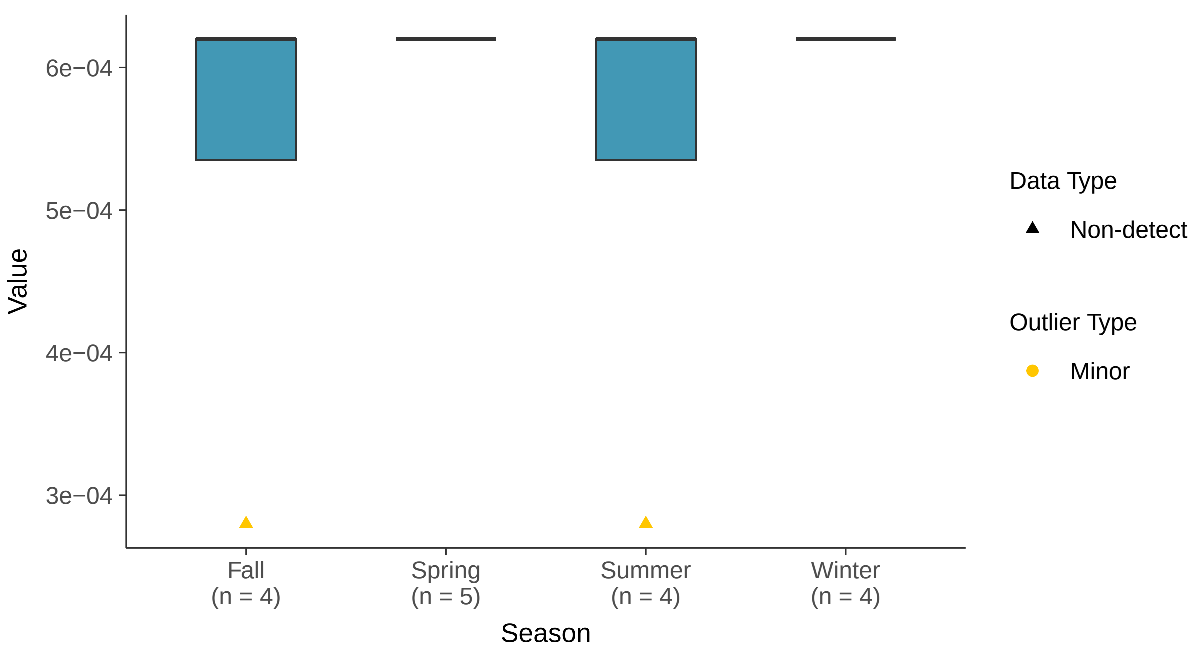
Boxplot

Vanadium, MW-32 (mg/L)



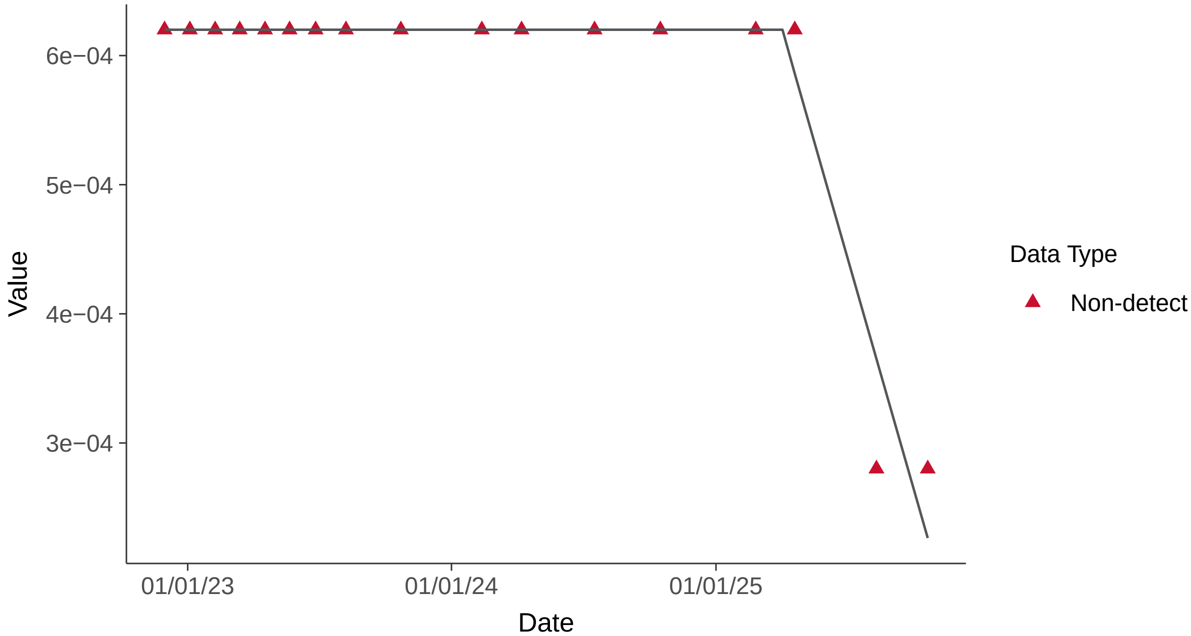
Boxplot by Season

Vanadium, MW-32 (mg/L)



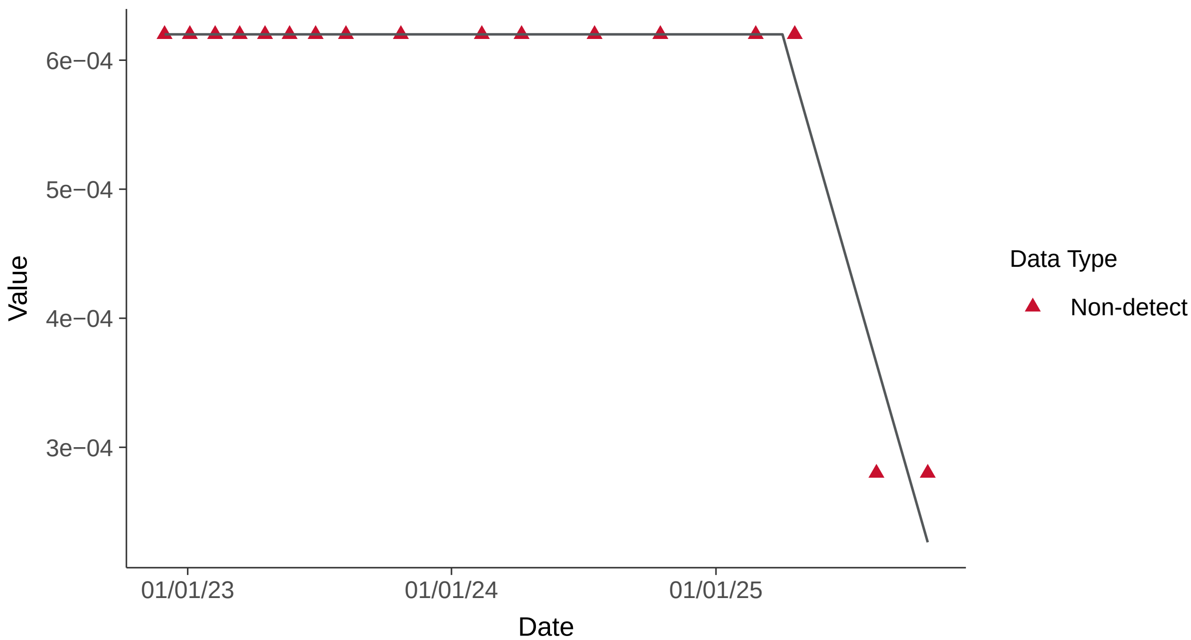
Trend Regression: Piecewise Linear-Linear

Vanadium, MW-32 (mg/L)



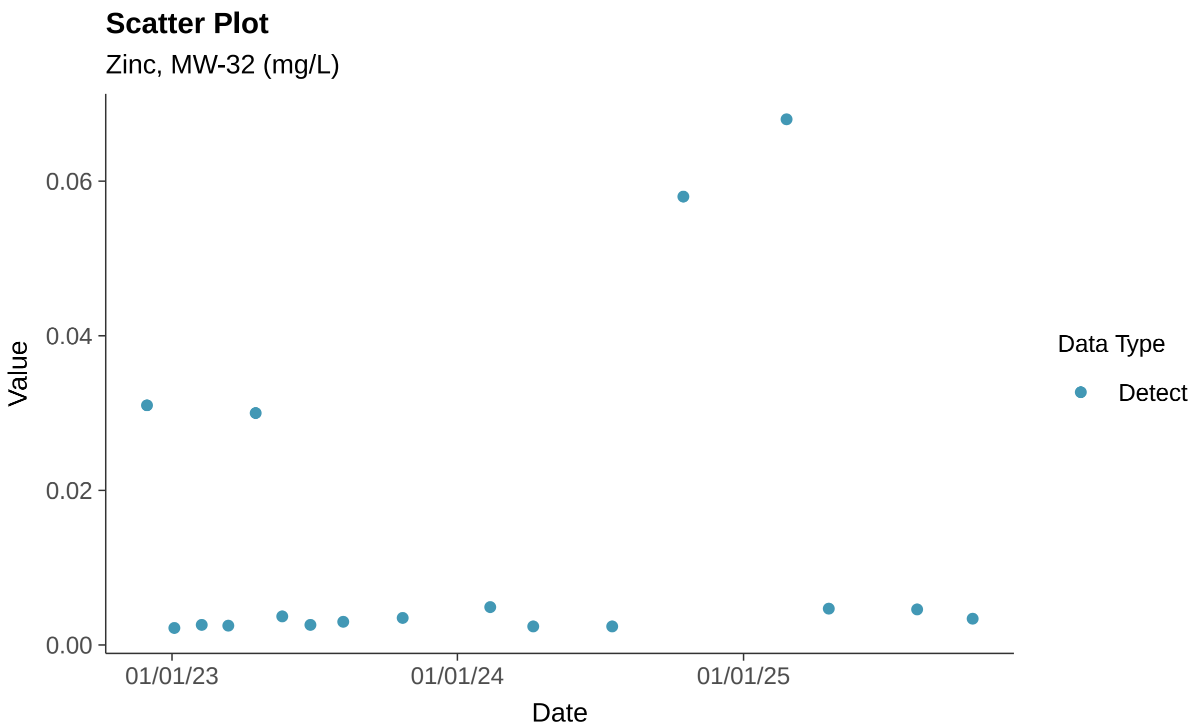
Trend Regression: Piecewise Linear-Linear-Linear

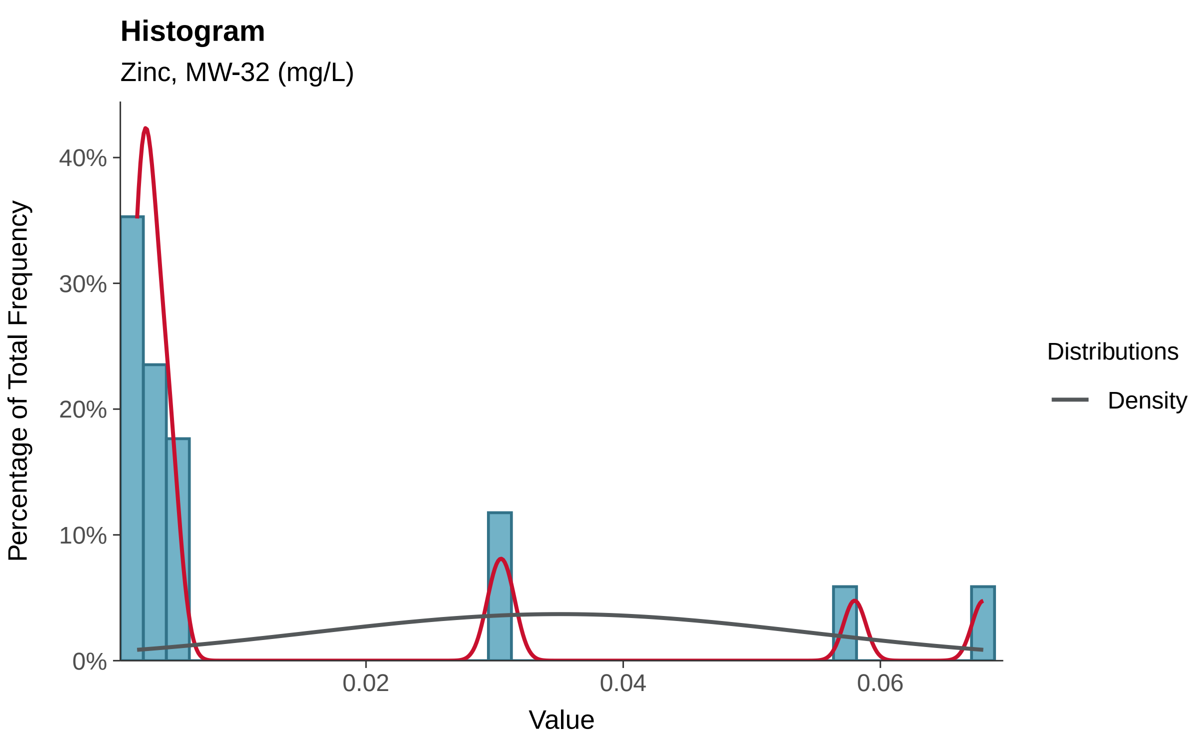
Vanadium, MW-32 (mg/L)

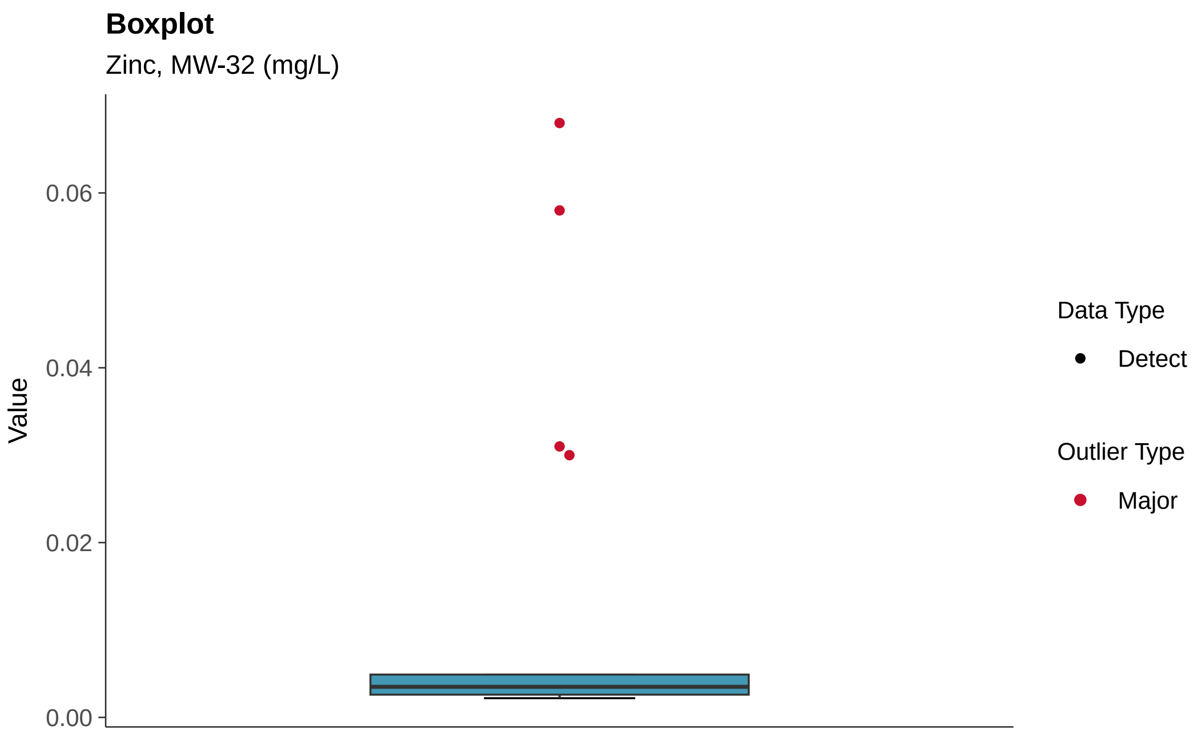


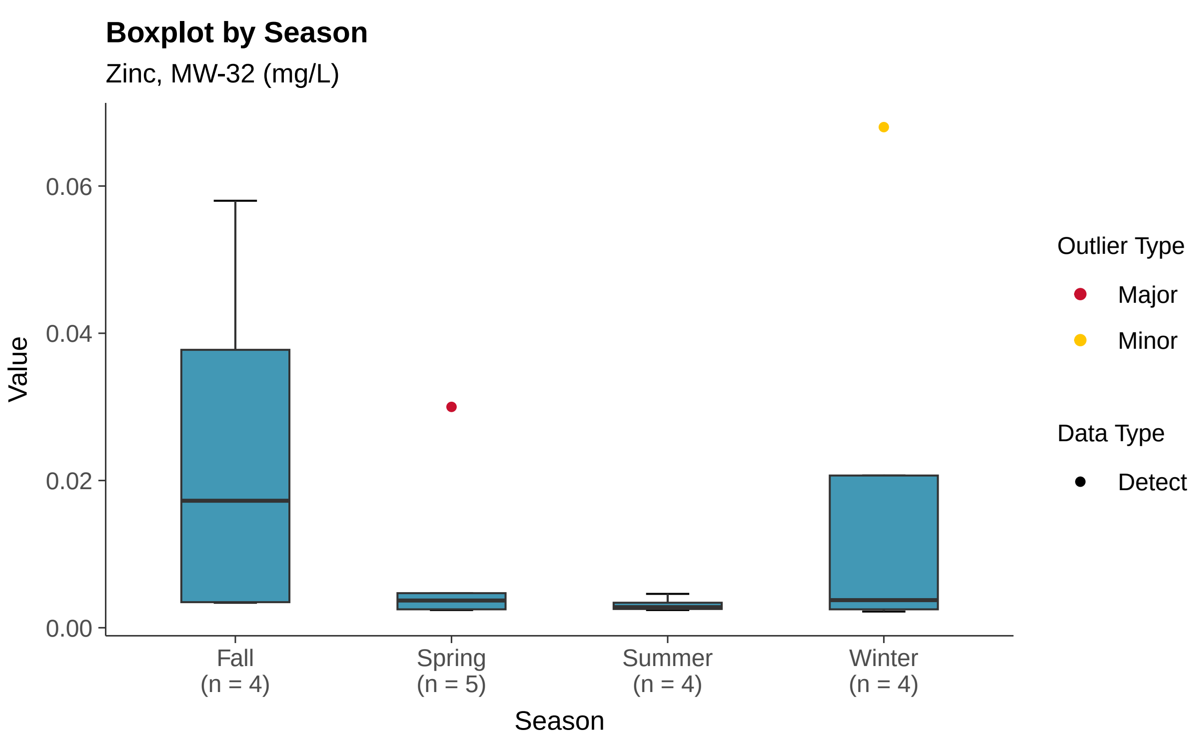
Part 115: Zinc, MW-32

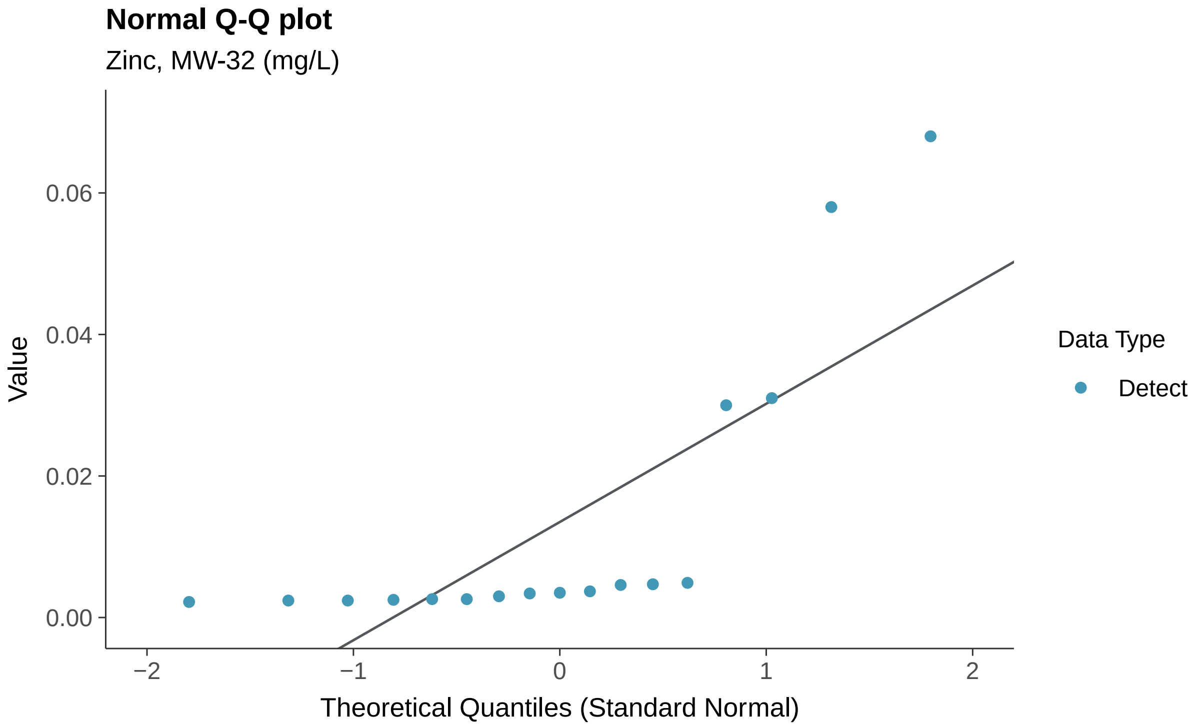
ID: 42_1_5_129

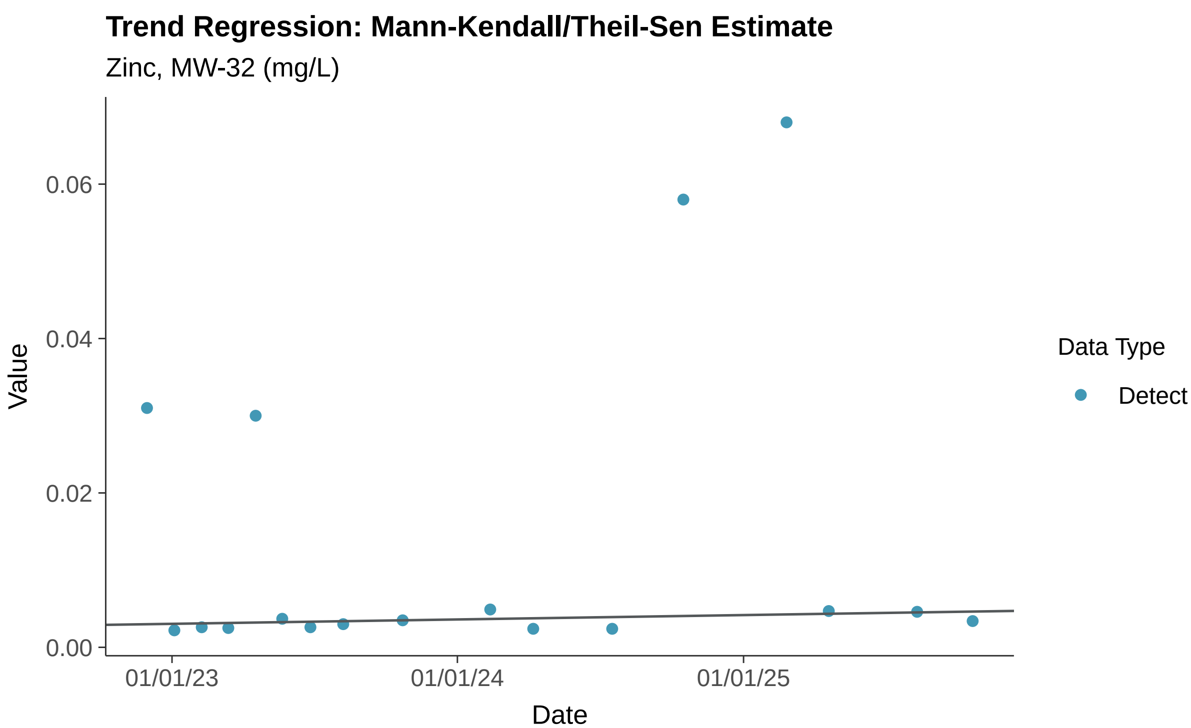





Boxplot
Zinc, MW-32 (mg/L)
Value
0.06
0.04
0.02
0.00
Data Type
Detect
Outlier Type
Major

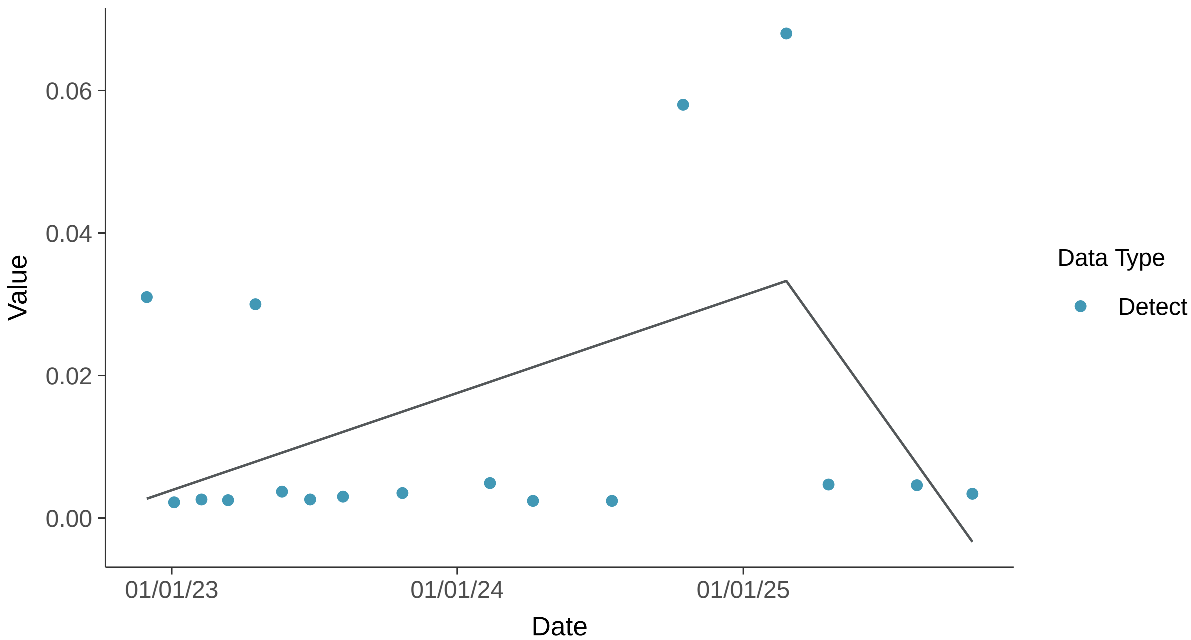

Boxplot by Season
Zinc, MW-32 (mg/L)
Value
0.06
0.04
0.02
0.00
Fall
(n = 4)
Spring
(n = 5)
Summer
(n = 4)
Winter
(n = 4)
Season
Outlier Type
Major
Minor
Data Type
Detect


Normal Q-Q plot
Zinc, MW-32 (mg/L)
Value
0.06
0.04
0.02
0.00
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Mann-Kendall/Theil-Sen Estimate
Zinc, MW-32 (mg/L)
Value
0.06
0.04
0.02
0.00
01/01/23
01/01/24
01/01/25
Date
Data Type
Detect

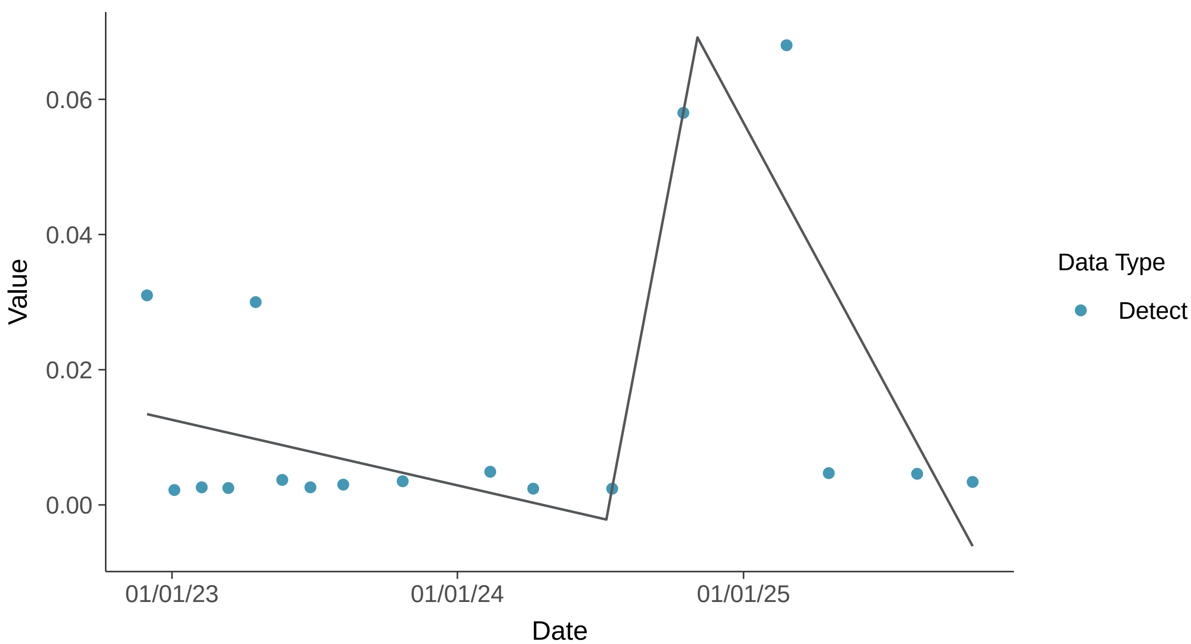
Trend Regression: Piecewise Linear-Linear

Zinc, MW-32 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Zinc, MW-32 (mg/L)



Grand Haven, Downgradient Wells
95% Lower Confidence Limits

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	LCL	Method
11_2_3_105	MW-01R	Appendix III	Boron	mg/L	17	0	0%	2022-11-29 to 2025-10-22	96	Normal LCL
11_2_3_107	MW-01R	Appendix III	Calcium	mg/L	17	0	0%	2022-11-29 to 2025-10-22	200	Normal LCL
11_2_3_108	MW-01R	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-11-29 to 2025-10-22	110	Normal LCL
11_2_3_112	MW-01R	Appendix III	Fluoride	mg/L	17	0	0%	2022-11-29 to 2025-10-22	11	Normal LCL
11_2_3_120	MW-01R	Appendix III	pH (field)	su	17	0	0%	2022-11-29 to 2025-10-22	7.7	Nonparametric LCL around the Median
11_2_3_124	MW-01R	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	2022-11-29 to 2025-10-22	280	Adjusted Gamma LCL
11_2_3_126	MW-01R	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-11-29 to 2025-10-22	2300	Normal LCL
11_2_4_101	MW-01R	Appendix IV	Antimony	mg/L	17	3	18%	2022-11-29 to 2025-10-22	0.00021	Nonparametric LCL around the Median
11_2_4_102	MW-01R	Appendix IV	Arsenic	mg/L	17	0	0%	2022-11-29 to 2025-10-22	0.0013	Nonparametric LCL around the Median
11_2_4_103	MW-01R	Appendix IV	Barium	mg/L	17	0	0%	2022-11-29 to 2025-10-22	0.31	Normal LCL
11_2_4_104	MW-01R	Appendix IV	Beryllium	mg/L	17	2	12%	2022-11-29 to 2025-10-22	0.00015	Normal MLE LCL
11_2_4_106	MW-01R	Appendix IV	Cadmium	mg/L	17	13	76%	2022-11-29 to 2025-10-22	0.000075	Nonparametric LCL around the Median
11_2_4_109	MW-01R	Appendix IV	Chromium, Total	mg/L	17	0	0%	2022-11-29 to 2025-10-22	0.0023	Lognormal H-LCL
11_2_4_110	MW-01R	Appendix IV	Cobalt	mg/L	17	0	0%	2022-11-29 to 2025-10-22	0.0010	Nonparametric LCL around the Median
11_2_4_113	MW-01R	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-11-29 to 2025-10-22	11	Normal LCL
11_2_4_115	MW-01R	Appendix IV	Lead	mg/L	17	2	12%	2022-11-29 to 2025-10-22	0.00077	Gamma MLE Normal Approx. LCL
11_2_4_116	MW-01R	Appendix IV	Lithium	mg/L	17	0	0%	2022-11-29 to 2025-10-22	2.1	Normal LCL
11_2_4_117	MW-01R	Appendix IV	Mercury	ng/L	17	15	88%	2022-11-29 to 2025-10-22	160	Nonparametric LCL around the Median
11_2_4_118	MW-01R	Appendix IV	Molybdenum	mg/L	17	2	12%	2022-11-29 to 2025-10-22	0.00070	Lognormal MLE Likelihood Profile LCL
11_2_4_121	MW-01R	Appendix IV	Radium 226 and 228	pCi/L	17	11	65%	2022-11-29 to 2025-10-22	0.74	Nonparametric LCL around the Median
11_2_4_122	MW-01R	Appendix IV	Selenium	mg/L	17	0	0%	2022-11-29 to 2025-10-22	0.00061	Lognormal H-LCL
11_2_4_125	MW-01R	Appendix IV	Thallium	mg/L	17	17	100%	2022-11-29 to 2025-10-22	0.000075	Nonparametric LCL around the Median
11_2_5_111	MW-01R	Part 115	Copper	mg/L	17	6	35%	2022-11-29 to 2025-10-22	0.00026	Lognormal MLE Likelihood Profile LCL
11_2_5_114	MW-01R	Part 115	Iron	mg/L	17	0	0%	2022-11-29 to 2025-10-22	0.31	Adjusted Gamma LCL
11_2_5_119	MW-01R	Part 115	Nickel	mg/L	17	0	0%	2022-11-29 to 2025-10-22	0.0018	Nonparametric LCL around the Median
11_2_5_123	MW-01R	Part 115	Silver	mg/L	17	17	100%	2022-11-29 to 2025-10-22	0.000050	Nonparametric LCL around the Median
11_2_5_128	MW-01R	Part 115	Vanadium	mg/L	17	2	12%	2022-11-29 to 2025-10-22	0.0014	Normal MLE LCL
11_2_5_129	MW-01R	Part 115	Zinc	mg/L	17	3	18%	2022-11-29 to 2025-10-22	0.0012	Nonparametric LCL around the Median
12_2_3_105	MW-02	Appendix III	Boron	mg/L	17	0	0%	2022-11-28 to 2025-10-22	96	Lognormal H-LCL
12_2_3_107	MW-02	Appendix III	Calcium	mg/L	17	0	0%	2022-11-28 to 2025-10-22	190	Normal LCL
12_2_3_108	MW-02	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-11-28 to 2025-10-22	140	Nonparametric LCL around the Median
12_2_3_112	MW-02	Appendix III	Fluoride	mg/L	17	0	0%	2022-11-28 to 2025-10-22	9.4	Nonparametric LCL around the Median
12_2_3_120	MW-02	Appendix III	pH (field)	su	17	0	0%	2022-11-28 to 2025-10-22	7.2	Normal LCL
12_2_3_124	MW-02	Appendix III	Sulfate (as SO4)	mg/L	17	10	59%	2022-11-28 to 2025-10-22	0.41	Nonparametric LCL around the Median
12_2_3_126	MW-02	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-11-28 to 2025-10-22	1800	Normal LCL
12_2_4_101	MW-02	Appendix IV	Antimony	mg/L	17	3	18%	2022-11-28 to 2025-10-22	0.00018	Gamma MLE Normal Approx. LCL
12_2_4_102	MW-02	Appendix IV	Arsenic	mg/L	17	0	0%	2022-11-28 to 2025-10-22	0.0064	Normal LCL
12_2_4_103	MW-02	Appendix IV	Barium	mg/L	17	0	0%	2022-11-28 to 2025-10-22	0.43	Normal LCL
12_2_4_104	MW-02	Appendix IV	Beryllium	mg/L	17	1	6%	2022-11-28 to 2025-10-22	0.00021	Normal MLE LCL
12_2_4_106	MW-02	Appendix IV	Cadmium	mg/L	17	12	71%	2022-11-28 to 2025-10-22	0.000075	Nonparametric LCL around the Median
12_2_4_109	MW-02	Appendix IV	Chromium, Total	mg/L	17	0	0%	2022-11-28 to 2025-10-22	0.034	Normal LCL
12_2_4_110	MW-02	Appendix IV	Cobalt	mg/L	17	0	0%	2022-11-28 to 2025-10-22	0.0052	Normal LCL
12_2_4_113	MW-02	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-11-28 to 2025-10-22	9.4	Nonparametric LCL around the Median
12_2_4_115	MW-02	Appendix IV	Lead	mg/L	17	1	6%	2022-11-28 to 2025-10-22	0.0020	Normal MLE LCL
12_2_4_116	MW-02	Appendix IV	Lithium	mg/L	17	0	0%	2022-11-28 to 2025-10-22	1.3	Normal LCL
12_2_4_117	MW-02	Appendix IV	Mercury	ng/L	17	14	82%	2022-11-28 to 2025-10-22	160	Nonparametric LCL around the Median
12_2_4_118	MW-02	Appendix IV	Molybdenum	mg/L	17	0	0%	2022-11-28 to 2025-10-22	0.0062	Lognormal H-LCL
12_2_4_121	MW-02	Appendix IV	Radium 226 and 228	pCi/L	16	5	31%	2022-11-28 to 2025-10-22	0.91	Normal MLE LCL
12_2_4_122	MW-02	Appendix IV	Selenium	mg/L	17	0	0%	2022-11-28 to 2025-10-22	0.0011	Normal LCL
12_2_4_125	MW-02	Appendix IV	Thallium	mg/L	17	16	94%	2022-11-28 to 2025-10-22	0.000075	Nonparametric LCL around the Median
12_2_5_111	MW-02	Part 115	Copper	mg/L	17	0	0%	2022-11-28 to 2025-10-22	0.0016	Normal LCL
12_2_5_114	MW-02	Part 115	Iron	mg/L	17	0	0%	2022-11-28 to 2025-10-22	22	Normal LCL
12_2_5_119	MW-02	Part 115	Nickel	mg/L	17	0	0%	2022-11-28 to 2025-10-22	0.020	Normal LCL
12_2_5_123	MW-02	Part 115	Silver	mg/L	17	17	100%	2022-11-28 to 2025-10-22	0.000050	Nonparametric LCL around the Median
12_2_5_128	MW-02	Part 115	Vanadium	mg/L	17	1	6%	2022-11-28 to 2025-10-22	0.0031	Normal MLE LCL
12_2_5_129	MW-02	Part 115	Zinc	mg/L	17	0	0%	2022-11-28 to 2025-10-22	0.0024	Nonparametric LCL around the Median
13_2_3_105	MW-03	Appendix III	Boron	mg/L	17	0	0%	2022-11-28 to 2025-10-22	4.0	Normal LCL
13_2_3_107	MW-03	Appendix III	Calcium	mg/L	17	0	0%	2022-11-28 to 2025-10-22	350	Normal LCL
13_2_3_108	MW-03	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-11-28 to 2025-10-22	130	Normal LCL
13_2_3_112	MW-03	Appendix III	Fluoride	mg/L	17	0	0%	2022-11-28 to 2025-10-22	0.60	Nonparametric LCL around the Median
13_2_3_120	MW-03	Appendix III	pH (field)	su	17	0	0%	2022-11-28 to 2025-10-22	7.3	Normal LCL
13_2_3_124	MW-03	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	2022-11-28 to 2025-10-22	240	Normal LCL
13_2_3_126	MW-03	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-11-28 to 2025-10-22	1800	Nonparametric LCL around the Median
13_2_4_101	MW-03	Appendix IV	Antimony	mg/L	17	11	65%	2022-11-28 to 2025-10-22	0.00010	Nonparametric LCL around the Median
13_2_4_102	MW-03	Appendix IV	Arsenic	mg/L	17	0	0%	2022-11-28 to 2025-10-22	0.00081	Normal LCL
13_2_4_103	MW-03	Appendix IV	Barium	mg/L	17	0	0%	2022-11-28 to 2025-10-22	0.32	Normal LCL
13_2_4_104	MW-03	Appendix IV	Beryllium	mg/L	17	11	65%	2022-11-28 to 2025-10-22	0.000052	Nonparametric LCL around the Median
13_2_4_106	MW-03	Appendix IV	Cadmium	mg/L	17	16	94%	2022-11-28 to 2025-10-22	0.000075	Nonparametric LCL around the Median
13_2_4_109	MW-03	Appendix IV	Chromium, Total	mg/L	17	0	0%	2022-11-28 to 2025-10-22	0.0040	Normal LCL
13_2_4_110	MW-03	Appendix IV	Cobalt	mg/L	17	0	0%	2022-11-28 to 2025-10-22	0.00064	Normal LCL
13_2_4_113	MW-03	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-11-28 to 2025-10-22	0.60	Nonparametric LCL around the Median
13_2_4_115	MW-03	Appendix IV	Lead	mg/L	17	16	94%	2022-11-28 to 2025-10-22	0.00010	Nonparametric LCL around the Median
13_2_4_116	MW-03	Appendix IV	Lithium	mg/L	17	0	0%	2022-11-28 to 2025-10-22	0.034	Adjusted Gamma LCL
13_2_4_117	MW-03	Appendix IV	Mercury	ng/L	17	14	82%	2022-11-28 to 2025-10-22	160	Nonparametric LCL around the Median
13_2_4_118	MW-03	Appendix IV	Molybdenum	mg/L	17	13	76%	2022-11-28 to 2025-10-22	0.00025	Nonparametric LCL around the Median
13_2_4_121	MW-03	Appendix IV	Radium 226 and 228	pCi/L	16	2	12%	2022-11-28 to 2025-10-22	0.85	Normal MLE LCL
13_2_4_122	MW-03	Appendix IV	Selenium	mg/L	17	3	18%	2022-11-28 to 2025-10-22	0.00032	Normal MLE LCL
13_2_4_125	MW-03	Appendix IV	Thallium	mg/L	17	16	94%	2022-11-28 to 2025-10-22	0.000075	Nonparametric LCL around the Median
13_2_5_111	MW-03	Part 115	Copper	mg/L	17	8	47%	2022-11-28 to 2025-10-22	0.00020	Nonparametric LCL around the Median
13_2_5_114	MW-03	Part 115	Iron	mg/L	17	0	0%	2022-11-28 to 2025-10-22	0.83	Adjusted Gamma LCL
13_2_5_119	MW-03	Part 115	Nickel	mg/L	17	1	6%	2022-11-28 to 2025-10-22	0.0012	Nonparametric LCL around the Median
13_2_5_123	MW-03	Part 115	Silver	mg/L	17	17	100%	2022-11-28 to 2025-10-22	0.000050	Nonparametric LCL around the Median
13_2_5_128	MW-03	Part 115	Vanadium	mg/L	17	9	53%	2022-11-28 to 2025-10-22	0.00062	Nonparametric LCL around the Median
13_2_5_129	MW-03	Part 115	Zinc	mg/L	17	9	53%	2022-11-28 to 2025-10-22	0.0012	Nonparametric LCL around the Median

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	LCL	Method
14_2_3_105	MW-04	Appendix III	Boron	mg/L	17	0	0%	2022-11-28 to 2025-10-22	3.8	Normal LCL
14_2_3_107	MW-04	Appendix III	Calcium	mg/L	17	0	0%	2022-11-28 to 2025-10-22	340	Normal LCL
14_2_3_108	MW-04	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-11-28 to 2025-10-22	120	Normal LCL
14_2_3_112	MW-04	Appendix III	Fluoride	mg/L	17	0	0%	2022-11-28 to 2025-10-22	1.3	Lognormal H-LCL
14_2_3_120	MW-04	Appendix III	pH (field)	su	17	0	0%	2022-11-28 to 2025-10-22	7.3	Nonparametric LCL around the Median
14_2_3_124	MW-04	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	2022-11-28 to 2025-10-22	520	Normal LCL
14_2_3_126	MW-04	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-11-28 to 2025-10-22	1800	Normal LCL
14_2_4_101	MW-04	Appendix IV	Antimony	mg/L	17	11	65%	2022-11-28 to 2025-10-22	0.00010	Nonparametric LCL around the Median
14_2_4_102	MW-04	Appendix IV	Arsenic	mg/L	17	0	0%	2022-11-28 to 2025-10-22	0.00089	Adjusted Gamma LCL
14_2_4_103	MW-04	Appendix IV	Barium	mg/L	17	0	0%	2022-11-28 to 2025-10-22	0.11	Nonparametric LCL around the Median
14_2_4_104	MW-04	Appendix IV	Beryllium	mg/L	17	15	88%	2022-11-28 to 2025-10-22	0.000052	Nonparametric LCL around the Median
14_2_4_106	MW-04	Appendix IV	Cadmium	mg/L	17	17	100%	2022-11-28 to 2025-10-22	0.000075	Nonparametric LCL around the Median
14_2_4_109	MW-04	Appendix IV	Chromium, Total	mg/L	17	0	0%	2022-11-28 to 2025-10-22	0.0031	Normal LCL
14_2_4_110	MW-04	Appendix IV	Cobalt	mg/L	17	0	0%	2022-11-28 to 2025-10-22	0.00040	Lognormal H-LCL
14_2_4_113	MW-04	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-11-28 to 2025-10-22	1.3	Lognormal H-LCL
14_2_4_115	MW-04	Appendix IV	Lead	mg/L	17	15	88%	2022-11-28 to 2025-10-22	0.00016	Nonparametric LCL around the Median
14_2_4_116	MW-04	Appendix IV	Lithium	mg/L	17	0	0%	2022-11-28 to 2025-10-22	0.056	Normal LCL
14_2_4_117	MW-04	Appendix IV	Mercury	ng/L	17	14	82%	2022-11-28 to 2025-10-22	160	Nonparametric LCL around the Median
14_2_4_118	MW-04	Appendix IV	Molybdenum	mg/L	17	2	12%	2022-11-28 to 2025-10-22	0.00074	Nonparametric LCL around the Median
14_2_4_121	MW-04	Appendix IV	Radium 226 and 228	pCi/L	17	6	35%	2022-11-28 to 2025-10-22	0.66	Normal MLE LCL
14_2_4_122	MW-04	Appendix IV	Selenium	mg/L	17	5	29%	2022-11-28 to 2025-10-22	0.00019	Gamma MLE Normal Approx. LCL
14_2_4_125	MW-04	Appendix IV	Thallium	mg/L	17	17	100%	2022-11-28 to 2025-10-22	0.000075	Nonparametric LCL around the Median
14_2_5_111	MW-04	Part 115	Copper	mg/L	17	13	76%	2022-11-28 to 2025-10-22	0.00020	Nonparametric LCL around the Median
14_2_5_114	MW-04	Part 115	Iron	mg/L	17	0	0%	2022-11-28 to 2025-10-22	4.8	Nonparametric LCL around the Median
14_2_5_119	MW-04	Part 115	Nickel	mg/L	17	0	0%	2022-11-28 to 2025-10-22	0.011	Normal LCL
14_2_5_123	MW-04	Part 115	Silver	mg/L	17	17	100%	2022-11-28 to 2025-10-22	0.000050	Nonparametric LCL around the Median
14_2_5_128	MW-04	Part 115	Vanadium	mg/L	17	10	59%	2022-11-28 to 2025-10-22	0.00062	Nonparametric LCL around the Median
14_2_5_129	MW-04	Part 115	Zinc	mg/L	17	10	59%	2022-11-28 to 2025-10-22	0.0012	Nonparametric LCL around the Median
16_1_3_105	MW-06	Appendix III	Boron	mg/L	17	0	0%	2022-11-29 to 2025-10-23	8.7	Normal LCL
16_1_3_107	MW-06	Appendix III	Calcium	mg/L	17	0	0%	2022-11-29 to 2025-10-23	230	Normal LCL
16_1_3_108	MW-06	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-11-29 to 2025-10-23	53	Normal LCL
16_1_3_112	MW-06	Appendix III	Fluoride	mg/L	17	0	0%	2022-11-29 to 2025-10-23	1.1	Normal LCL
16_1_3_120	MW-06	Appendix III	pH (field)	su	17	0	0%	2022-11-29 to 2025-10-23	7.2	Nonparametric LCL around the Median
16_1_3_124	MW-06	Appendix III	Sulfate (as SO4)	mg/L	17	2	12%	2022-11-29 to 2025-10-23	6.0	Normal MLE LCL
16_1_3_126	MW-06	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-11-29 to 2025-10-23	1200	Nonparametric LCL around the Median
16_1_4_101	MW-06	Appendix IV	Antimony	mg/L	17	15	88%	2022-11-29 to 2025-10-23	0.00010	Nonparametric LCL around the Median
16_1_4_102	MW-06	Appendix IV	Arsenic	mg/L	17	0	0%	2022-11-29 to 2025-10-23	0.00062	Normal LCL
16_1_4_103	MW-06	Appendix IV	Barium	mg/L	17	0	0%	2022-11-29 to 2025-10-23	1.4	Normal LCL
16_1_4_104	MW-06	Appendix IV	Beryllium	mg/L	17	16	94%	2022-11-29 to 2025-10-23	0.000052	Nonparametric LCL around the Median
16_1_4_106	MW-06	Appendix IV	Cadmium	mg/L	17	17	100%	2022-11-29 to 2025-10-23	0.000075	Nonparametric LCL around the Median
16_1_4_109	MW-06	Appendix IV	Chromium, Total	mg/L	17	0	0%	2022-11-29 to 2025-10-23	0.0014	Adjusted Gamma LCL
16_1_4_110	MW-06	Appendix IV	Cobalt	mg/L	17	0	0%	2022-11-29 to 2025-10-23	0.00044	Normal LCL
16_1_4_113	MW-06	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-11-29 to 2025-10-23	1.1	Normal LCL
16_1_4_115	MW-06	Appendix IV	Lead	mg/L	17	10	59%	2022-11-29 to 2025-10-23	0.00010	Nonparametric LCL around the Median
16_1_4_116	MW-06	Appendix IV	Lithium	mg/L	17	0	0%	2022-11-29 to 2025-10-23	0.16	Normal LCL
16_1_4_117	MW-06	Appendix IV	Mercury	ng/L	17	14	82%	2022-11-29 to 2025-10-23	160	Nonparametric LCL around the Median
16_1_4_118	MW-06	Appendix IV	Molybdenum	mg/L	17	10	59%	2022-11-29 to 2025-10-23	0.00025	Nonparametric LCL around the Median
16_1_4_121	MW-06	Appendix IV	Radium 226 and 228	pCi/L	17	3	18%	2022-11-29 to 2025-10-23	0.72	Gamma MLE Normal Approx. LCL
16_1_4_122	MW-06	Appendix IV	Selenium	mg/L	17	5	29%	2022-11-29 to 2025-10-23	0.00020	Nonparametric LCL around the Median
16_1_4_125	MW-06	Appendix IV	Thallium	mg/L	17	17	100%	2022-11-29 to 2025-10-23	0.000075	Nonparametric LCL around the Median
16_1_5_111	MW-06	Part 115	Copper	mg/L	17	13	76%	2022-11-29 to 2025-10-23	0.00020	Nonparametric LCL around the Median
16_1_5_114	MW-06	Part 115	Iron	mg/L	17	0	0%	2022-11-29 to 2025-10-23	14	Normal LCL
16_1_5_119	MW-06	Part 115	Nickel	mg/L	17	6	35%	2022-11-29 to 2025-10-23	0.00055	Normal MLE LCL
16_1_5_123	MW-06	Part 115	Silver	mg/L	17	17	100%	2022-11-29 to 2025-10-23	0.000050	Nonparametric LCL around the Median
16_1_5_128	MW-06	Part 115	Vanadium	mg/L	17	14	82%	2022-11-29 to 2025-10-23	0.00062	Nonparametric LCL around the Median
16_1_5_129	MW-06	Part 115	Zinc	mg/L	17	2	12%	2022-11-29 to 2025-10-23	0.0013	Nonparametric LCL around the Median
17_1_3_105	MW-07	Appendix III	Boron	mg/L	17	0	0%	2022-11-30 to 2025-10-22	11	Normal LCL
17_1_3_107	MW-07	Appendix III	Calcium	mg/L	17	0	0%	2022-11-30 to 2025-10-22	140	Normal LCL
17_1_3_108	MW-07	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-11-30 to 2025-10-22	14	Nonparametric LCL around the Median
17_1_3_112	MW-07	Appendix III	Fluoride	mg/L	17	4	24%	2022-11-30 to 2025-10-22	0.078	Normal MLE LCL
17_1_3_120	MW-07	Appendix III	pH (field)	su	17	0	0%	2022-11-30 to 2025-10-22	6.9	Nonparametric LCL around the Median
17_1_3_124	MW-07	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	2022-11-30 to 2025-10-22	23	Normal LCL
17_1_3_126	MW-07	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-11-30 to 2025-10-22	620	Normal LCL
17_1_4_101	MW-07	Appendix IV	Antimony	mg/L	17	16	94%	2022-11-30 to 2025-10-22	0.000071	Nonparametric LCL around the Median
17_1_4_102	MW-07	Appendix IV	Arsenic	mg/L	17	0	0%	2022-11-30 to 2025-10-22	0.00019	Normal LCL
17_1_4_103	MW-07	Appendix IV	Barium	mg/L	17	0	0%	2022-11-30 to 2025-10-22	0.34	Normal LCL
17_1_4_104	MW-07	Appendix IV	Beryllium	mg/L	17	13	76%	2022-11-30 to 2025-10-22	0.000052	Nonparametric LCL around the Median
17_1_4_106	MW-07	Appendix IV	Cadmium	mg/L	17	17	100%	2022-11-30 to 2025-10-22	0.000032	Nonparametric LCL around the Median
17_1_4_109	MW-07	Appendix IV	Chromium, Total	mg/L	17	0	0%	2022-11-30 to 2025-10-22	0.00033	Adjusted Gamma LCL
17_1_4_110	MW-07	Appendix IV	Cobalt	mg/L	17	0	0%	2022-11-30 to 2025-10-22	0.00088	Normal LCL
17_1_4_113	MW-07	Appendix IV	Fluoride (App IV)	mg/L	17	4	24%	2022-11-30 to 2025-10-22	0.078	Normal MLE LCL
17_1_4_115	MW-07	Appendix IV	Lead	mg/L	17	17	100%	2022-11-30 to 2025-10-22	0.00010	Nonparametric LCL around the Median
17_1_4_116	MW-07	Appendix IV	Lithium	mg/L	17	0	0%	2022-11-30 to 2025-10-22	0.0054	Normal LCL
17_1_4_117	MW-07	Appendix IV	Mercury	ng/L	17	16	94%	2022-11-30 to 2025-10-22	160	Nonparametric LCL around the Median
17_1_4_118	MW-07	Appendix IV	Molybdenum	mg/L	17	17	100%	2022-11-30 to 2025-10-22	0.00025	Nonparametric LCL around the Median
17_1_4_121	MW-07	Appendix IV	Radium 226 and 228	pCi/L	17	2	12%	2022-11-30 to 2025-10-22	0.81	Gamma MLE Normal Approx. LCL
17_1_4_122	MW-07	Appendix IV	Selenium	mg/L	17	9	53%	2022-11-30 to 2025-10-22	0.00010	Nonparametric LCL around the Median
17_1_4_125	MW-07	Appendix IV	Thallium	mg/L	17	17	100%	2022-11-30 to 2025-10-22	0.000075	Nonparametric LCL around the Median
17_1_5_111	MW-07	Part 115	Copper	mg/L	17	13	76%	2022-11-30 to 2025-10-22	0.00020	Nonparametric LCL around the Median
17_1_5_114	MW-07	Part 115	Iron	mg/L	17	0	0%	2022-11-30 to 2025-10-22	15	Normal LCL
17_1_5_119	MW-07	Part 115	Nickel	mg/L	17	14	82%	2022-11-30 to 2025-10-22	0.00065	Nonparametric LCL around the Median
17_1_5_123	MW-07	Part 115	Silver	mg/L	17	17	100%	2022-11-30 to 2025-10-22	0.000050	Nonparametric LCL around the Median
17_1_5_128	MW-07	Part 115	Vanadium	mg/L	17	12	71%	2022-11-30 to 2025-10-22	0.00062	Nonparametric LCL around the Median
17_1_5_129	MW-07	Part 115	Zinc	mg/L	17	10	59%	2022-11-30 to 2025-10-22	0.0012	Nonparametric LCL around the Median
18_1_3_105	MW-08	Appendix III	Boron	mg/L	17	0	0%	2022-12-01 to 2025-10-22	5.4	Normal LCL
18_1_3_107	MW-08	Appendix III	Calcium	mg/L	17	0	0%	2022-12-01 to 2025-10-22	130	Nonparametric LCL around the Median

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	LCL	Method
18_1_3_108	MW-08	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-12-01 to 2025-10-22	25	Nonparametric LCL around the Median
18_1_3_112	MW-08	Appendix III	Fluoride	mg/L	17	0	0%	2022-12-01 to 2025-10-22	0.82	Normal LCL
18_1_3_120	MW-08	Appendix III	pH (field)	su	17	0	0%	2022-12-01 to 2025-10-22	7.2	Nonparametric LCL around the Median
18_1_3_124	MW-08	Appendix III	Sulfate (as SO4)	mg/L	17	4	24%	2022-12-01 to 2025-10-22	5.4	Gamma MLE Normal Approx. LCL
18_1_3_126	MW-08	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-12-01 to 2025-10-22	530	Normal LCL
18_1_4_101	MW-08	Appendix IV	Antimony	mg/L	17	9	53%	2022-12-01 to 2025-10-22	0.00010	Nonparametric LCL around the Median
18_1_4_102	MW-08	Appendix IV	Arsenic	mg/L	17	0	0%	2022-12-01 to 2025-10-22	0.031	Normal LCL
18_1_4_103	MW-08	Appendix IV	Barium	mg/L	17	0	0%	2022-12-01 to 2025-10-22	1.1	Normal LCL
18_1_4_104	MW-08	Appendix IV	Beryllium	mg/L	17	16	94%	2022-12-01 to 2025-10-22	0.000052	Nonparametric LCL around the Median
18_1_4_106	MW-08	Appendix IV	Cadmium	mg/L	17	16	94%	2022-12-01 to 2025-10-22	0.000032	Nonparametric LCL around the Median
18_1_4_109	MW-08	Appendix IV	Chromium, Total	mg/L	17	0	0%	2022-12-01 to 2025-10-22	0.00068	Normal LCL
18_1_4_110	MW-08	Appendix IV	Cobalt	mg/L	17	0	0%	2022-12-01 to 2025-10-22	0.00043	Normal LCL
18_1_4_113	MW-08	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-12-01 to 2025-10-22	0.82	Normal LCL
18_1_4_115	MW-08	Appendix IV	Lead	mg/L	17	11	65%	2022-12-01 to 2025-10-22	0.00010	Nonparametric LCL around the Median
18_1_4_116	MW-08	Appendix IV	Lithium	mg/L	17	0	0%	2022-12-01 to 2025-10-22	0.089	Normal LCL
18_1_4_117	MW-08	Appendix IV	Mercury	ng/L	17	16	94%	2022-12-01 to 2025-10-22	160	Nonparametric LCL around the Median
18_1_4_118	MW-08	Appendix IV	Molybdenum	mg/L	17	1	6%	2022-12-01 to 2025-10-22	0.00096	Normal MLE LCL
18_1_4_121	MW-08	Appendix IV	Radium 226 and 228	pCi/L	17	4	24%	2022-12-01 to 2025-10-22	0.72	Normal MLE LCL
18_1_4_122	MW-08	Appendix IV	Selenium	mg/L	17	6	35%	2022-12-01 to 2025-10-22	0.00013	Lognormal MLE Likelihood Profile LCL
18_1_4_125	MW-08	Appendix IV	Thallium	mg/L	17	16	94%	2022-12-01 to 2025-10-22	0.000075	Nonparametric LCL around the Median
18_1_5_111	MW-08	Part 115	Copper	mg/L	17	6	35%	2022-12-01 to 2025-10-22	0.00015	Normal MLE LCL
18_1_5_114	MW-08	Part 115	Iron	mg/L	17	0	0%	2022-12-01 to 2025-10-22	16	Normal LCL
18_1_5_119	MW-08	Part 115	Nickel	mg/L	17	0	0%	2022-12-01 to 2025-10-22	0.0011	Nonparametric LCL around the Median
18_1_5_123	MW-08	Part 115	Silver	mg/L	17	17	100%	2022-12-01 to 2025-10-22	0.000050	Nonparametric LCL around the Median
18_1_5_128	MW-08	Part 115	Vanadium	mg/L	17	14	82%	2022-12-01 to 2025-10-22	0.00062	Nonparametric LCL around the Median
18_1_5_129	MW-08	Part 115	Zinc	mg/L	17	3	18%	2022-12-01 to 2025-10-22	0.0014	Nonparametric LCL around the Median
19_2_3_105	MW-09	Appendix III	Boron	mg/L	17	0	0%	2022-11-28 to 2025-10-20	5.5	Normal LCL
19_2_3_107	MW-09	Appendix III	Calcium	mg/L	17	0	0%	2022-11-28 to 2025-10-20	360	Normal LCL
19_2_3_108	MW-09	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-11-28 to 2025-10-20	20	Lognormal H-LCL
19_2_3_112	MW-09	Appendix III	Fluoride	mg/L	17	0	0%	2022-11-28 to 2025-10-20	2.4	Normal LCL
19_2_3_120	MW-09	Appendix III	pH (field)	su	17	0	0%	2022-11-28 to 2025-10-20	7.1	Normal LCL
19_2_3_124	MW-09	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	2022-11-28 to 2025-10-20	400	Normal LCL
19_2_3_126	MW-09	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-11-28 to 2025-10-20	1300	Normal LCL
19_2_4_101	MW-09	Appendix IV	Antimony	mg/L	17	12	71%	2022-11-28 to 2025-10-20	0.00010	Nonparametric LCL around the Median
19_2_4_102	MW-09	Appendix IV	Arsenic	mg/L	17	0	0%	2022-11-28 to 2025-10-20	0.0016	Nonparametric LCL around the Median
19_2_4_103	MW-09	Appendix IV	Barium	mg/L	17	0	0%	2022-11-28 to 2025-10-20	0.23	Lognormal H-LCL
19_2_4_104	MW-09	Appendix IV	Beryllium	mg/L	17	13	76%	2022-11-28 to 2025-10-20	0.000052	Nonparametric LCL around the Median
19_2_4_106	MW-09	Appendix IV	Cadmium	mg/L	17	17	100%	2022-11-28 to 2025-10-20	0.000075	Nonparametric LCL around the Median
19_2_4_109	MW-09	Appendix IV	Chromium, Total	mg/L	17	0	0%	2022-11-28 to 2025-10-20	0.0022	Normal LCL
19_2_4_110	MW-09	Appendix IV	Cobalt	mg/L	17	0	0%	2022-11-28 to 2025-10-20	0.00040	Normal LCL
19_2_4_113	MW-09	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-11-28 to 2025-10-20	2.4	Normal LCL
19_2_4_115	MW-09	Appendix IV	Lead	mg/L	17	17	100%	2022-11-28 to 2025-10-20	0.00010	Nonparametric LCL around the Median
19_2_4_116	MW-09	Appendix IV	Lithium	mg/L	17	0	0%	2022-11-28 to 2025-10-20	0.29	Normal LCL
19_2_4_117	MW-09	Appendix IV	Mercury	ng/L	17	14	82%	2022-11-28 to 2025-10-20	160	Nonparametric LCL around the Median
19_2_4_118	MW-09	Appendix IV	Molybdenum	mg/L	17	0	0%	2022-11-28 to 2025-10-20	0.020	Normal LCL
19_2_4_121	MW-09	Appendix IV	Radium 226 and 228	pCi/L	17	15	88%	2022-11-28 to 2025-10-20	0.69	Nonparametric LCL around the Median
19_2_4_122	MW-09	Appendix IV	Selenium	mg/L	17	2	12%	2022-11-28 to 2025-10-20	0.00023	Normal MLE LCL
19_2_4_125	MW-09	Appendix IV	Thallium	mg/L	17	17	100%	2022-11-28 to 2025-10-20	0.000075	Nonparametric LCL around the Median
19_2_5_111	MW-09	Part 115	Copper	mg/L	17	11	65%	2022-11-28 to 2025-10-20	0.00020	Nonparametric LCL around the Median
19_2_5_114	MW-09	Part 115	Iron	mg/L	17	0	0%	2022-11-28 to 2025-10-20	19	Normal LCL
19_2_5_119	MW-09	Part 115	Nickel	mg/L	17	0	0%	2022-11-28 to 2025-10-20	0.0012	Nonparametric LCL around the Median
19_2_5_123	MW-09	Part 115	Silver	mg/L	17	17	100%	2022-11-28 to 2025-10-20	0.000050	Nonparametric LCL around the Median
19_2_5_128	MW-09	Part 115	Vanadium	mg/L	17	15	88%	2022-11-28 to 2025-10-20	0.00062	Nonparametric LCL around the Median
19_2_5_129	MW-09	Part 115	Zinc	mg/L	17	8	47%	2022-11-28 to 2025-10-20	0.0016	Gamma MLE Normal Approx. LCL
20_3_3_105	MW-10	Appendix III	Boron	mg/L	17	0	0%	2022-11-29 to 2025-10-20	15	Normal LCL
20_3_3_107	MW-10	Appendix III	Calcium	mg/L	17	0	0%	2022-11-29 to 2025-10-20	250	Adjusted Gamma LCL
20_3_3_108	MW-10	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-11-29 to 2025-10-20	240	Normal LCL
20_3_3_112	MW-10	Appendix III	Fluoride	mg/L	17	0	0%	2022-11-29 to 2025-10-20	4.6	Normal LCL
20_3_3_120	MW-10	Appendix III	pH (field)	su	17	0	0%	2022-11-29 to 2025-10-20	7.6	Normal LCL
20_3_3_124	MW-10	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	2022-11-29 to 2025-10-20	420	Normal LCL
20_3_3_126	MW-10	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-11-29 to 2025-10-20	1900	Lognormal H-LCL
20_3_4_101	MW-10	Appendix IV	Antimony	mg/L	17	13	76%	2022-11-29 to 2025-10-20	0.00010	Nonparametric LCL around the Median
20_3_4_102	MW-10	Appendix IV	Arsenic	mg/L	17	0	0%	2022-11-29 to 2025-10-20	0.00059	Normal LCL
20_3_4_103	MW-10	Appendix IV	Barium	mg/L	17	0	0%	2022-11-29 to 2025-10-20	0.26	Normal LCL
20_3_4_104	MW-10	Appendix IV	Beryllium	mg/L	17	7	41%	2022-11-29 to 2025-10-20	0.000013	Normal MLE LCL
20_3_4_106	MW-10	Appendix IV	Cadmium	mg/L	17	17	100%	2022-11-29 to 2025-10-20	0.000075	Nonparametric LCL around the Median
20_3_4_109	MW-10	Appendix IV	Chromium, Total	mg/L	17	0	0%	2022-11-29 to 2025-10-20	0.0031	Normal LCL
20_3_4_110	MW-10	Appendix IV	Cobalt	mg/L	17	1	6%	2022-11-29 to 2025-10-20	0.00035	Gamma MLE Normal Approx. LCL
20_3_4_113	MW-10	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-11-29 to 2025-10-20	4.6	Normal LCL
20_3_4_115	MW-10	Appendix IV	Lead	mg/L	17	15	88%	2022-11-29 to 2025-10-20	0.00010	Nonparametric LCL around the Median
20_3_4_116	MW-10	Appendix IV	Lithium	mg/L	17	0	0%	2022-11-29 to 2025-10-20	0.84	Normal LCL
20_3_4_117	MW-10	Appendix IV	Mercury	ng/L	17	15	88%	2022-11-29 to 2025-10-20	160	Nonparametric LCL around the Median
20_3_4_118	MW-10	Appendix IV	Molybdenum	mg/L	17	0	0%	2022-11-29 to 2025-10-20	0.0023	Normal LCL
20_3_4_121	MW-10	Appendix IV	Radium 226 and 228	pCi/L	17	13	76%	2022-11-29 to 2025-10-20	0.73	Nonparametric LCL around the Median
20_3_4_122	MW-10	Appendix IV	Selenium	mg/L	17	1	6%	2022-11-29 to 2025-10-20	0.00031	Gamma MLE Normal Approx. LCL
20_3_4_125	MW-10	Appendix IV	Thallium	mg/L	17	17	100%	2022-11-29 to 2025-10-20	0.000075	Nonparametric LCL around the Median
20_3_5_111	MW-10	Part 115	Copper	mg/L	17	14	82%	2022-11-29 to 2025-10-20	0.00020	Nonparametric LCL around the Median
20_3_5_114	MW-10	Part 115	Iron	mg/L	17	0	0%	2022-11-29 to 2025-10-20	4.1	Normal LCL
20_3_5_119	MW-10	Part 115	Nickel	mg/L	17	7	41%	2022-11-29 to 2025-10-20	0.00065	Nonparametric LCL around the Median
20_3_5_123	MW-10	Part 115	Silver	mg/L	17	17	100%	2022-11-29 to 2025-10-20	0.000050	Nonparametric LCL around the Median
20_3_5_128	MW-10	Part 115	Vanadium	mg/L	17	12	71%	2022-11-29 to 2025-10-20	0.00062	Nonparametric LCL around the Median
20_3_5_129	MW-10	Part 115	Zinc	mg/L	17	7	41%	2022-11-29 to 2025-10-20	0.0012	Nonparametric LCL around the Median
21_2_3_105	MW-11	Appendix III	Boron	mg/L	17	0	0%	2022-11-29 to 2025-10-23	4.7	Normal LCL
21_2_3_107	MW-11	Appendix III	Calcium	mg/L	17	0	0%	2022-11-29 to 2025-10-23	230	Normal LCL
21_2_3_108	MW-11	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-11-29 to 2025-10-23	61	Normal LCL
21_2_3_112	MW-11	Appendix III	Fluoride	mg/L	17	0	0%	2022-11-29 to 2025-10-23	0.50	Normal LCL

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	LCL	Method
21_2_3_120	MW-11	Appendix III	pH (field)	su	17	0	0%	2022-11-29 to 2025-10-23	7.3	Normal LCL
21_2_3_124	MW-11	Appendix III	Sulfate (as SO4)	mg/L	17	6	35%	2022-11-29 to 2025-10-23	6.5	Gamma MLE Normal Approx. LCL
21_2_3_126	MW-11	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-11-29 to 2025-10-23	940	Normal LCL
21_2_4_101	MW-11	Appendix IV	Antimony	mg/L	17	12	71%	2022-11-29 to 2025-10-23	0.00010	Nonparametric LCL around the Median
21_2_4_102	MW-11	Appendix IV	Arsenic	mg/L	17	0	0%	2022-11-29 to 2025-10-23	0.0014	Normal LCL
21_2_4_103	MW-11	Appendix IV	Barium	mg/L	17	0	0%	2022-11-29 to 2025-10-23	0.56	Normal LCL
21_2_4_104	MW-11	Appendix IV	Beryllium	mg/L	17	13	76%	2022-11-29 to 2025-10-23	0.000052	Nonparametric LCL around the Median
21_2_4_106	MW-11	Appendix IV	Cadmium	mg/L	17	14	82%	2022-11-29 to 2025-10-23	0.000075	Nonparametric LCL around the Median
21_2_4_109	MW-11	Appendix IV	Chromium, Total	mg/L	17	0	0%	2022-11-29 to 2025-10-23	0.00078	Nonparametric LCL around the Median
21_2_4_110	MW-11	Appendix IV	Cobalt	mg/L	17	0	0%	2022-11-29 to 2025-10-23	0.00051	Lognormal H-LCL
21_2_4_113	MW-11	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-11-29 to 2025-10-23	0.50	Normal LCL
21_2_4_115	MW-11	Appendix IV	Lead	mg/L	17	3	18%	2022-11-29 to 2025-10-23	0.0018	Gamma MLE Normal Approx. LCL
21_2_4_116	MW-11	Appendix IV	Lithium	mg/L	17	0	0%	2022-11-29 to 2025-10-23	0.045	Normal LCL
21_2_4_117	MW-11	Appendix IV	Mercury	ng/L	17	13	76%	2022-11-29 to 2025-10-23	160	Nonparametric LCL around the Median
21_2_4_118	MW-11	Appendix IV	Molybdenum	mg/L	17	2	12%	2022-11-29 to 2025-10-23	0.00090	Normal MLE LCL
21_2_4_121	MW-11	Appendix IV	Radium 226 and 228	pCi/L	16	5	31%	2022-11-29 to 2025-10-23	0.65	Normal MLE LCL
21_2_4_122	MW-11	Appendix IV	Selenium	mg/L	17	3	18%	2022-11-29 to 2025-10-23	0.00019	Lognormal MLE Likelihood Profile LCL
21_2_4_125	MW-11	Appendix IV	Thallium	mg/L	17	16	94%	2022-11-29 to 2025-10-23	0.000075	Nonparametric LCL around the Median
21_2_5_111	MW-11	Part 115	Copper	mg/L	17	4	24%	2022-11-29 to 2025-10-23	0.00020	Nonparametric LCL around the Median
21_2_5_114	MW-11	Part 115	Iron	mg/L	17	0	0%	2022-11-29 to 2025-10-23	6.3	Normal LCL
21_2_5_119	MW-11	Part 115	Nickel	mg/L	17	0	0%	2022-11-29 to 2025-10-23	0.0012	Nonparametric LCL around the Median
21_2_5_123	MW-11	Part 115	Silver	mg/L	17	14	82%	2022-11-29 to 2025-10-23	0.000050	Nonparametric LCL around the Median
21_2_5_128	MW-11	Part 115	Vanadium	mg/L	17	13	76%	2022-11-29 to 2025-10-23	0.00062	Nonparametric LCL around the Median
21_2_5_129	MW-11	Part 115	Zinc	mg/L	17	4	24%	2022-11-29 to 2025-10-23	0.0080	Gamma MLE Normal Approx. LCL
22_2_3_105	MW-12	Appendix III	Boron	mg/L	17	0	0%	2022-11-28 to 2025-10-22	0.28	Normal LCL
22_2_3_107	MW-12	Appendix III	Calcium	mg/L	17	0	0%	2022-11-28 to 2025-10-22	60	Normal LCL
22_2_3_108	MW-12	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-11-28 to 2025-10-22	17	Lognormal H-LCL
22_2_3_112	MW-12	Appendix III	Fluoride	mg/L	17	0	0%	2022-11-28 to 2025-10-22	0.28	Adjusted Gamma LCL
22_2_3_120	MW-12	Appendix III	pH (field)	su	17	0	0%	2022-11-28 to 2025-10-22	7.5	Normal LCL
22_2_3_124	MW-12	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	2022-11-28 to 2025-10-22	84	Normal LCL
22_2_3_126	MW-12	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-11-28 to 2025-10-22	250	Normal LCL
22_2_4_101	MW-12	Appendix IV	Antimony	mg/L	17	0	0%	2022-11-28 to 2025-10-22	0.00051	Normal LCL
22_2_4_102	MW-12	Appendix IV	Arsenic	mg/L	17	0	0%	2022-11-28 to 2025-10-22	0.0021	Normal LCL
22_2_4_103	MW-12	Appendix IV	Barium	mg/L	17	0	0%	2022-11-28 to 2025-10-22	0.036	Normal LCL
22_2_4_104	MW-12	Appendix IV	Beryllium	mg/L	17	17	100%	2022-11-28 to 2025-10-22	0.000052	Nonparametric LCL around the Median
22_2_4_106	MW-12	Appendix IV	Cadmium	mg/L	17	0	0%	2022-11-28 to 2025-10-22	0.0016	Adjusted Gamma LCL
22_2_4_109	MW-12	Appendix IV	Chromium, Total	mg/L	17	6	35%	2022-11-28 to 2025-10-22	0.00014	Normal MLE LCL
22_2_4_110	MW-12	Appendix IV	Cobalt	mg/L	17	5	29%	2022-11-28 to 2025-10-22	0.00022	Gamma MLE Normal Approx. LCL
22_2_4_113	MW-12	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-11-28 to 2025-10-22	0.28	Adjusted Gamma LCL
22_2_4_115	MW-12	Appendix IV	Lead	mg/L	17	6	35%	2022-11-28 to 2025-10-22	0.00013	Normal MLE LCL
22_2_4_116	MW-12	Appendix IV	Lithium	mg/L	17	0	0%	2022-11-28 to 2025-10-22	0.0031	Normal LCL
22_2_4_117	MW-12	Appendix IV	Mercury	ng/L	17	12	71%	2022-11-28 to 2025-10-22	160	Nonparametric LCL around the Median
22_2_4_118	MW-12	Appendix IV	Molybdenum	mg/L	17	0	0%	2022-11-28 to 2025-10-22	0.0067	Adjusted Gamma LCL
22_2_4_121	MW-12	Appendix IV	Radium 226 and 228	pCi/L	17	10	59%	2022-11-28 to 2025-10-22	0.54	Nonparametric LCL around the Median
22_2_4_122	MW-12	Appendix IV	Selenium	mg/L	17	0	0%	2022-11-28 to 2025-10-22	0.00076	Adjusted Gamma LCL
22_2_4_125	MW-12	Appendix IV	Thallium	mg/L	17	17	100%	2022-11-28 to 2025-10-22	0.000075	Nonparametric LCL around the Median
22_2_5_111	MW-12	Part 115	Copper	mg/L	17	0	0%	2022-11-28 to 2025-10-22	0.0011	Normal LCL
22_2_5_114	MW-12	Part 115	Iron	mg/L	17	6	35%	2022-11-28 to 2025-10-22	0.026	Nonparametric LCL around the Median
22_2_5_119	MW-12	Part 115	Nickel	mg/L	17	0	0%	2022-11-28 to 2025-10-22	0.0025	Adjusted Gamma LCL
22_2_5_123	MW-12	Part 115	Silver	mg/L	17	17	100%	2022-11-28 to 2025-10-22	0.000050	Nonparametric LCL around the Median
22_2_5_128	MW-12	Part 115	Vanadium	mg/L	17	6	35%	2022-11-28 to 2025-10-22	0.00048	Normal MLE LCL
22_2_5_129	MW-12	Part 115	Zinc	mg/L	17	0	0%	2022-11-28 to 2025-10-22	0.0078	Adjusted Gamma LCL
28_1_3_105	MW-18	Appendix III	Boron	mg/L	17	0	0%	2022-11-30 to 2025-10-22	2.7	Normal LCL
28_1_3_107	MW-18	Appendix III	Calcium	mg/L	17	0	0%	2022-11-30 to 2025-10-22	300	Normal LCL
28_1_3_108	MW-18	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-11-30 to 2025-10-22	21	Normal LCL
28_1_3_112	MW-18	Appendix III	Fluoride	mg/L	17	0	0%	2022-11-30 to 2025-10-22	3.7	Normal LCL
28_1_3_120	MW-18	Appendix III	pH (field)	su	17	0	0%	2022-11-30 to 2025-10-22	7.2	Normal LCL
28_1_3_124	MW-18	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	2022-11-30 to 2025-10-22	690	Normal LCL
28_1_3_126	MW-18	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-11-30 to 2025-10-22	1300	Normal LCL
28_1_4_101	MW-18	Appendix IV	Antimony	mg/L	17	3	18%	2022-11-30 to 2025-10-22	0.00015	Lognormal MLE Likelihood Profile LCL
28_1_4_102	MW-18	Appendix IV	Arsenic	mg/L	17	0	0%	2022-11-30 to 2025-10-22	0.025	Normal LCL
28_1_4_103	MW-18	Appendix IV	Barium	mg/L	17	0	0%	2022-11-30 to 2025-10-22	0.017	Normal LCL
28_1_4_104	MW-18	Appendix IV	Beryllium	mg/L	17	14	82%	2022-11-30 to 2025-10-22	0.000052	Nonparametric LCL around the Median
28_1_4_106	MW-18	Appendix IV	Cadmium	mg/L	17	7	41%	2022-11-30 to 2025-10-22	0.00010	Gamma MLE Normal Approx. LCL
28_1_4_109	MW-18	Appendix IV	Chromium, Total	mg/L	17	15	88%	2022-11-30 to 2025-10-22	0.00018	Nonparametric LCL around the Median
28_1_4_110	MW-18	Appendix IV	Cobalt	mg/L	17	0	0%	2022-11-30 to 2025-10-22	0.0022	Lognormal H-LCL
28_1_4_113	MW-18	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-11-30 to 2025-10-22	3.7	Normal LCL
28_1_4_115	MW-18	Appendix IV	Lead	mg/L	17	10	59%	2022-11-30 to 2025-10-22	0.00014	Nonparametric LCL around the Median
28_1_4_116	MW-18	Appendix IV	Lithium	mg/L	17	0	0%	2022-11-30 to 2025-10-22	0.032	Normal LCL
28_1_4_117	MW-18	Appendix IV	Mercury	ng/L	17	15	88%	2022-11-30 to 2025-10-22	160	Nonparametric LCL around the Median
28_1_4_118	MW-18	Appendix IV	Molybdenum	mg/L	17	0	0%	2022-11-30 to 2025-10-22	0.014	Normal LCL
28_1_4_121	MW-18	Appendix IV	Radium 226 and 228	pCi/L	17	9	53%	2022-11-30 to 2025-10-22	0.56	Nonparametric LCL around the Median
28_1_4_122	MW-18	Appendix IV	Selenium	mg/L	17	0	0%	2022-11-30 to 2025-10-22	0.00041	Normal LCL
28_1_4_125	MW-18	Appendix IV	Thallium	mg/L	17	16	94%	2022-11-30 to 2025-10-22	0.000075	Nonparametric LCL around the Median
28_1_5_111	MW-18	Part 115	Copper	mg/L	17	0	0%	2022-11-30 to 2025-10-22	0.00043	Nonparametric LCL around the Median
28_1_5_114	MW-18	Part 115	Iron	mg/L	17	0	0%	2022-11-30 to 2025-10-22	5.7	Normal LCL
28_1_5_119	MW-18	Part 115	Nickel	mg/L	17	0	0%	2022-11-30 to 2025-10-22	0.0055	Adjusted Gamma LCL
28_1_5_123	MW-18	Part 115	Silver	mg/L	17	17	100%	2022-11-30 to 2025-10-22	0.000050	Nonparametric LCL around the Median
28_1_5_128	MW-18	Part 115	Vanadium	mg/L	17	16	94%	2022-11-30 to 2025-10-22	0.00062	Nonparametric LCL around the Median
28_1_5_129	MW-18	Part 115	Zinc	mg/L	17	0	0%	2022-11-30 to 2025-10-22	0.043	Adjusted Gamma LCL
29_1_3_105	MW-19	Appendix III	Boron	mg/L	17	0	0%	2022-11-30 to 2025-10-22	1.9	Normal LCL
29_1_3_107	MW-19	Appendix III	Calcium	mg/L	17	0	0%	2022-11-30 to 2025-10-22	440	Normal LCL
29_1_3_108	MW-19	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-11-30 to 2025-10-22	36	Normal LCL
29_1_3_112	MW-19	Appendix III	Fluoride	mg/L	17	0	0%	2022-11-30 to 2025-10-22	1.7	Normal LCL
29_1_3_120	MW-19	Appendix III	pH (field)	su	17	0	0%	2022-11-30 to 2025-10-22	6.8	Normal LCL
29_1_3_124	MW-19	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	2022-11-30 to 2025-10-22	910	Normal LCL

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	LCL	Method
29_1_3_126	MW-19	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-11-30 to 2025-10-22	1700	Normal LCL
29_1_4_101	MW-19	Appendix IV	Antimony	mg/L	17	12	71%	2022-11-30 to 2025-10-22	0.00010	Nonparametric LCL around the Median
29_1_4_102	MW-19	Appendix IV	Arsenic	mg/L	17	0	0%	2022-11-30 to 2025-10-22	0.0041	Normal LCL
29_1_4_103	MW-19	Appendix IV	Barium	mg/L	17	0	0%	2022-11-30 to 2025-10-22	0.037	Normal LCL
29_1_4_104	MW-19	Appendix IV	Beryllium	mg/L	17	3	18%	2022-11-30 to 2025-10-22	0.000066	Normal MLE LCL
29_1_4_106	MW-19	Appendix IV	Cadmium	mg/L	17	16	94%	2022-11-30 to 2025-10-22	0.000075	Nonparametric LCL around the Median
29_1_4_109	MW-19	Appendix IV	Chromium, Total	mg/L	17	5	29%	2022-11-30 to 2025-10-22	0.00022	Gamma MLE Normal Approx. LCL
29_1_4_110	MW-19	Appendix IV	Cobalt	mg/L	17	1	6%	2022-11-30 to 2025-10-22	0.00040	Normal MLE LCL
29_1_4_113	MW-19	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-11-30 to 2025-10-22	1.7	Normal LCL
29_1_4_115	MW-19	Appendix IV	Lead	mg/L	17	17	100%	2022-11-30 to 2025-10-22	0.00010	Nonparametric LCL around the Median
29_1_4_116	MW-19	Appendix IV	Lithium	mg/L	17	0	0%	2022-11-30 to 2025-10-22	0.085	Normal LCL
29_1_4_117	MW-19	Appendix IV	Mercury	ng/L	17	16	94%	2022-11-30 to 2025-10-22	160	Nonparametric LCL around the Median
29_1_4_118	MW-19	Appendix IV	Molybdenum	mg/L	17	0	0%	2022-11-30 to 2025-10-22	0.0097	Normal LCL
29_1_4_121	MW-19	Appendix IV	Radium 226 and 228	pCi/L	17	8	47%	2022-11-30 to 2025-10-22	0.45	Normal MLE LCL
29_1_4_122	MW-19	Appendix IV	Selenium	mg/L	17	11	65%	2022-11-30 to 2025-10-22	0.00010	Nonparametric LCL around the Median
29_1_4_125	MW-19	Appendix IV	Thallium	mg/L	17	16	94%	2022-11-30 to 2025-10-22	0.000075	Nonparametric LCL around the Median
29_1_5_111	MW-19	Part 115	Copper	mg/L	17	13	76%	2022-11-30 to 2025-10-22	0.00020	Nonparametric LCL around the Median
29_1_5_114	MW-19	Part 115	Iron	mg/L	17	0	0%	2022-11-30 to 2025-10-22	14	Normal LCL
29_1_5_119	MW-19	Part 115	Nickel	mg/L	17	1	6%	2022-11-30 to 2025-10-22	0.0025	Lognormal MLE Likelihood Profile LCL
29_1_5_123	MW-19	Part 115	Silver	mg/L	17	17	100%	2022-11-30 to 2025-10-22	0.000050	Nonparametric LCL around the Median
29_1_5_128	MW-19	Part 115	Vanadium	mg/L	17	14	82%	2022-11-30 to 2025-10-22	0.00062	Nonparametric LCL around the Median
29_1_5_129	MW-19	Part 115	Zinc	mg/L	17	10	59%	2022-11-30 to 2025-10-22	0.0012	Nonparametric LCL around the Median
30_1_3_105	MW-20	Appendix III	Boron	mg/L	17	0	0%	2022-11-30 to 2025-10-22	0.91	Normal LCL
30_1_3_107	MW-20	Appendix III	Calcium	mg/L	17	0	0%	2022-11-30 to 2025-10-22	120	Normal LCL
30_1_3_108	MW-20	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-11-30 to 2025-10-22	50	Normal LCL
30_1_3_112	MW-20	Appendix III	Fluoride	mg/L	17	0	0%	2022-11-30 to 2025-10-22	0.22	Nonparametric LCL around the Median
30_1_3_120	MW-20	Appendix III	pH (field)	su	17	0	0%	2022-11-30 to 2025-10-22	7.3	Normal LCL
30_1_3_124	MW-20	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	2022-11-30 to 2025-10-22	46	Normal LCL
30_1_3_126	MW-20	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-11-30 to 2025-10-22	620	Normal LCL
30_1_4_101	MW-20	Appendix IV	Antimony	mg/L	17	6	35%	2022-11-30 to 2025-10-22	0.000084	Lognormal MLE Likelihood Profile LCL
30_1_4_102	MW-20	Appendix IV	Arsenic	mg/L	17	0	0%	2022-11-30 to 2025-10-22	0.0013	Normal LCL
30_1_4_103	MW-20	Appendix IV	Barium	mg/L	17	0	0%	2022-11-30 to 2025-10-22	0.46	Adjusted Gamma LCL
30_1_4_104	MW-20	Appendix IV	Beryllium	mg/L	17	16	94%	2022-11-30 to 2025-10-22	0.000052	Nonparametric LCL around the Median
30_1_4_106	MW-20	Appendix IV	Cadmium	mg/L	17	16	94%	2022-11-30 to 2025-10-22	0.000032	Nonparametric LCL around the Median
30_1_4_109	MW-20	Appendix IV	Chromium, Total	mg/L	17	9	53%	2022-11-30 to 2025-10-22	0.00020	Nonparametric LCL around the Median
30_1_4_110	MW-20	Appendix IV	Cobalt	mg/L	17	0	0%	2022-11-30 to 2025-10-22	0.0011	Normal LCL
30_1_4_113	MW-20	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-11-30 to 2025-10-22	0.22	Nonparametric LCL around the Median
30_1_4_115	MW-20	Appendix IV	Lead	mg/L	17	0	0%	2022-11-30 to 2025-10-22	0.0019	Lognormal H-LCL
30_1_4_116	MW-20	Appendix IV	Lithium	mg/L	17	0	0%	2022-11-30 to 2025-10-22	0.051	Normal LCL
30_1_4_117	MW-20	Appendix IV	Mercury	ng/L	17	14	82%	2022-11-30 to 2025-10-22	160	Nonparametric LCL around the Median
30_1_4_118	MW-20	Appendix IV	Molybdenum	mg/L	17	0	0%	2022-11-30 to 2025-10-22	0.0041	Normal LCL
30_1_4_121	MW-20	Appendix IV	Radium 226 and 228	pCi/L	16	8	50%	2022-11-30 to 2025-10-22	0.54	Nonparametric LCL around the Median
30_1_4_122	MW-20	Appendix IV	Selenium	mg/L	17	10	59%	2022-11-30 to 2025-10-22	0.00010	Nonparametric LCL around the Median
30_1_4_125	MW-20	Appendix IV	Thallium	mg/L	17	16	94%	2022-11-30 to 2025-10-22	0.000075	Nonparametric LCL around the Median
30_1_5_111	MW-20	Part 115	Copper	mg/L	17	2	12%	2022-11-30 to 2025-10-22	0.00033	Lognormal MLE Likelihood Profile LCL
30_1_5_114	MW-20	Part 115	Iron	mg/L	17	0	0%	2022-11-30 to 2025-10-22	17	Normal LCL
30_1_5_119	MW-20	Part 115	Nickel	mg/L	17	0	0%	2022-11-30 to 2025-10-22	0.0067	Nonparametric LCL around the Median
30_1_5_123	MW-20	Part 115	Silver	mg/L	17	17	100%	2022-11-30 to 2025-10-22	0.000050	Nonparametric LCL around the Median
30_1_5_128	MW-20	Part 115	Vanadium	mg/L	17	17	100%	2022-11-30 to 2025-10-22	0.00062	Nonparametric LCL around the Median
30_1_5_129	MW-20	Part 115	Zinc	mg/L	17	0	0%	2022-11-30 to 2025-10-22	0.029	Lognormal H-LCL
40_1_3_105	MW-30	Appendix III	Boron	mg/L	17	0	0%	2022-11-30 to 2025-10-21	1.8	Lognormal H-LCL
40_1_3_107	MW-30	Appendix III	Calcium	mg/L	17	0	0%	2022-11-30 to 2025-10-21	430	Nonparametric LCL around the Median
40_1_3_108	MW-30	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-11-30 to 2025-10-21	110	Nonparametric LCL around the Median
40_1_3_112	MW-30	Appendix III	Fluoride	mg/L	17	0	0%	2022-11-30 to 2025-10-21	1.0	Nonparametric LCL around the Median
40_1_3_120	MW-30	Appendix III	pH (field)	su	17	0	0%	2022-11-30 to 2025-10-21	7.0	Nonparametric LCL around the Median
40_1_3_124	MW-30	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	2022-11-30 to 2025-10-21	780	Normal LCL
40_1_3_126	MW-30	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-11-30 to 2025-10-21	2200	Nonparametric LCL around the Median
40_1_4_101	MW-30	Appendix IV	Antimony	mg/L	17	14	82%	2022-11-30 to 2025-10-21	0.00010	Nonparametric LCL around the Median
40_1_4_102	MW-30	Appendix IV	Arsenic	mg/L	17	2	12%	2022-11-30 to 2025-10-21	0.00039	Nonparametric LCL around the Median
40_1_4_103	MW-30	Appendix IV	Barium	mg/L	17	0	0%	2022-11-30 to 2025-10-21	0.060	Normal LCL
40_1_4_104	MW-30	Appendix IV	Beryllium	mg/L	17	13	76%	2022-11-30 to 2025-10-21	0.000052	Nonparametric LCL around the Median
40_1_4_106	MW-30	Appendix IV	Cadmium	mg/L	17	16	94%	2022-11-30 to 2025-10-21	0.000075	Nonparametric LCL around the Median
40_1_4_109	MW-30	Appendix IV	Chromium, Total	mg/L	17	0	0%	2022-11-30 to 2025-10-21	0.0077	Normal LCL
40_1_4_110	MW-30	Appendix IV	Cobalt	mg/L	17	0	0%	2022-11-30 to 2025-10-21	0.00077	Nonparametric LCL around the Median
40_1_4_113	MW-30	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-11-30 to 2025-10-21	1.0	Nonparametric LCL around the Median
40_1_4_115	MW-30	Appendix IV	Lead	mg/L	17	15	88%	2022-11-30 to 2025-10-21	0.00050	Nonparametric LCL around the Median
40_1_4_116	MW-30	Appendix IV	Lithium	mg/L	17	0	0%	2022-11-30 to 2025-10-21	0.12	Adjusted Gamma LCL
40_1_4_117	MW-30	Appendix IV	Mercury	ng/L	17	16	94%	2022-11-30 to 2025-10-21	160	Nonparametric LCL around the Median
40_1_4_118	MW-30	Appendix IV	Molybdenum	mg/L	17	3	18%	2022-11-30 to 2025-10-21	0.00073	Nonparametric LCL around the Median
40_1_4_121	MW-30	Appendix IV	Radium 226 and 228	pCi/L	17	9	53%	2022-11-30 to 2025-10-21	0.56	Nonparametric LCL around the Median
40_1_4_122	MW-30	Appendix IV	Selenium	mg/L	17	7	41%	2022-11-30 to 2025-10-21	0.00013	Nonparametric LCL around the Median
40_1_4_125	MW-30	Appendix IV	Thallium	mg/L	17	17	100%	2022-11-30 to 2025-10-21	0.000075	Nonparametric LCL around the Median
40_1_5_111	MW-30	Part 115	Copper	mg/L	17	11	65%	2022-11-30 to 2025-10-21	0.00020	Nonparametric LCL around the Median
40_1_5_114	MW-30	Part 115	Iron	mg/L	17	0	0%	2022-11-30 to 2025-10-21	2.9	Adjusted Gamma LCL
40_1_5_119	MW-30	Part 115	Nickel	mg/L	17	3	18%	2022-11-30 to 2025-10-21	0.0011	Nonparametric LCL around the Median
40_1_5_123	MW-30	Part 115	Silver	mg/L	17	16	94%	2022-11-30 to 2025-10-21	0.000050	Nonparametric LCL around the Median
40_1_5_128	MW-30	Part 115	Vanadium	mg/L	17	15	88%	2022-11-30 to 2025-10-21	0.00062	Nonparametric LCL around the Median
40_1_5_129	MW-30	Part 115	Zinc	mg/L	17	10	59%	2022-11-30 to 2025-10-21	0.0012	Nonparametric LCL around the Median
41_1_3_105	MW-31	Appendix III	Boron	mg/L	17	0	0%	2022-12-01 to 2025-10-21	4.5	Normal LCL
41_1_3_107	MW-31	Appendix III	Calcium	mg/L	17	0	0%	2022-12-01 to 2025-10-21	160	Normal LCL
41_1_3_108	MW-31	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-12-01 to 2025-10-21	99	Nonparametric LCL around the Median
41_1_3_112	MW-31	Appendix III	Fluoride	mg/L	17	0	0%	2022-12-01 to 2025-10-21	4.5	Nonparametric LCL around the Median
41_1_3_120	MW-31	Appendix III	pH (field)	su	17	0	0%	2022-12-01 to 2025-10-21	7.8	Normal LCL
41_1_3_124	MW-31	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	2022-12-01 to 2025-10-21	110	Normal LCL
41_1_3_126	MW-31	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-12-01 to 2025-10-21	790	Normal LCL
41_1_4_101	MW-31	Appendix IV	Antimony	mg/L	17	7	41%	2022-12-01 to 2025-10-21	0.00010*	Nonparametric LCL around the Median

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Date Range	LCL	Method
41_1_4_102	MW-31	Appendix IV	Arsenic	mg/L	17	0	0%	2022-12-01 to 2025-10-21	0.0012	Normal LCL
41_1_4_103	MW-31	Appendix IV	Barium	mg/L	17	0	0%	2022-12-01 to 2025-10-21	0.16	Normal LCL
41_1_4_104	MW-31	Appendix IV	Beryllium	mg/L	17	15	88%	2022-12-01 to 2025-10-21	0.000052	Nonparametric LCL around the Median
41_1_4_106	MW-31	Appendix IV	Cadmium	mg/L	17	16	94%	2022-12-01 to 2025-10-21	0.000032	Nonparametric LCL around the Median
41_1_4_109	MW-31	Appendix IV	Chromium, Total	mg/L	17	0	0%	2022-12-01 to 2025-10-21	0.0022	Normal LCL
41_1_4_110	MW-31	Appendix IV	Cobalt	mg/L	17	3	18%	2022-12-01 to 2025-10-21	0.00013	Normal MLE LCL
41_1_4_113	MW-31	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-12-01 to 2025-10-21	4.5	Nonparametric LCL around the Median
41_1_4_115	MW-31	Appendix IV	Lead	mg/L	17	13	76%	2022-12-01 to 2025-10-21	0.00010	Nonparametric LCL around the Median
41_1_4_116	MW-31	Appendix IV	Lithium	mg/L	17	0	0%	2022-12-01 to 2025-10-21	0.046	Normal LCL
41_1_4_117	MW-31	Appendix IV	Mercury	ng/L	17	14	82%	2022-12-01 to 2025-10-21	160	Nonparametric LCL around the Median
41_1_4_118	MW-31	Appendix IV	Molybdenum	mg/L	17	0	0%	2022-12-01 to 2025-10-21	0.0011	Nonparametric LCL around the Median
41_1_4_121	MW-31	Appendix IV	Radium 226 and 228	pCi/L	17	7	41%	2022-12-01 to 2025-10-21	0.53	Gamma MLE Normal Approx. LCL
41_1_4_122	MW-31	Appendix IV	Selenium	mg/L	17	6	35%	2022-12-01 to 2025-10-21	0.00012	Nonparametric LCL around the Median
41_1_4_125	MW-31	Appendix IV	Thallium	mg/L	17	16	94%	2022-12-01 to 2025-10-21	0.000075	Nonparametric LCL around the Median
41_1_5_111	MW-31	Part 115	Copper	mg/L	17	10	59%	2022-12-01 to 2025-10-21	0.00020	Nonparametric LCL around the Median
41_1_5_114	MW-31	Part 115	Iron	mg/L	17	0	0%	2022-12-01 to 2025-10-21	0.19	Nonparametric LCL around the Median
41_1_5_119	MW-31	Part 115	Nickel	mg/L	17	10	59%	2022-12-01 to 2025-10-21	0.00065	Nonparametric LCL around the Median
41_1_5_123	MW-31	Part 115	Silver	mg/L	17	17	100%	2022-12-01 to 2025-10-21	0.000050	Nonparametric LCL around the Median
41_1_5_128	MW-31	Part 115	Vanadium	mg/L	17	12	71%	2022-12-01 to 2025-10-21	0.00062	Nonparametric LCL around the Median
41_1_5_129	MW-31	Part 115	Zinc	mg/L	17	9	53%	2022-12-01 to 2025-10-21	0.0012	Nonparametric LCL around the Median
42_1_3_105	MW-32	Appendix III	Boron	mg/L	17	0	0%	2022-11-30 to 2025-10-21	3.0	Nonparametric LCL around the Median
42_1_3_107	MW-32	Appendix III	Calcium	mg/L	17	0	0%	2022-11-30 to 2025-10-21	160	Normal LCL
42_1_3_108	MW-32	Appendix III	Chloride (as Cl)	mg/L	17	0	0%	2022-11-30 to 2025-10-21	44	Normal LCL
42_1_3_112	MW-32	Appendix III	Fluoride	mg/L	17	0	0%	2022-11-30 to 2025-10-21	1.4	Normal LCL
42_1_3_120	MW-32	Appendix III	pH (field)	su	17	0	0%	2022-11-30 to 2025-10-21	7.6	Normal LCL
42_1_3_124	MW-32	Appendix III	Sulfate (as SO4)	mg/L	17	0	0%	2022-11-30 to 2025-10-21	47	Adjusted Gamma LCL
42_1_3_126	MW-32	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2022-11-30 to 2025-10-21	650	Normal LCL
42_1_4_101	MW-32	Appendix IV	Antimony	mg/L	17	13	76%	2022-11-30 to 2025-10-21	0.00010	Nonparametric LCL around the Median
42_1_4_102	MW-32	Appendix IV	Arsenic	mg/L	17	0	0%	2022-11-30 to 2025-10-21	0.00046	Nonparametric LCL around the Median
42_1_4_103	MW-32	Appendix IV	Barium	mg/L	17	0	0%	2022-11-30 to 2025-10-21	0.51	Normal LCL
42_1_4_104	MW-32	Appendix IV	Beryllium	mg/L	17	16	94%	2022-11-30 to 2025-10-21	0.000052	Nonparametric LCL around the Median
42_1_4_106	MW-32	Appendix IV	Cadmium	mg/L	17	16	94%	2022-11-30 to 2025-10-21	0.000032	Nonparametric LCL around the Median
42_1_4_109	MW-32	Appendix IV	Chromium, Total	mg/L	17	0	0%	2022-11-30 to 2025-10-21	0.00035	Nonparametric LCL around the Median
42_1_4_110	MW-32	Appendix IV	Cobalt	mg/L	17	0	0%	2022-11-30 to 2025-10-21	0.00040	Adjusted Gamma LCL
42_1_4_113	MW-32	Appendix IV	Fluoride (App IV)	mg/L	17	0	0%	2022-11-30 to 2025-10-21	1.4	Normal LCL
42_1_4_115	MW-32	Appendix IV	Lead	mg/L	17	12	71%	2022-11-30 to 2025-10-21	0.00010	Nonparametric LCL around the Median
42_1_4_116	MW-32	Appendix IV	Lithium	mg/L	17	0	0%	2022-11-30 to 2025-10-21	0.12	Normal LCL
42_1_4_117	MW-32	Appendix IV	Mercury	ng/L	17	14	82%	2022-11-30 to 2025-10-21	160	Nonparametric LCL around the Median
42_1_4_118	MW-32	Appendix IV	Molybdenum	mg/L	17	0	0%	2022-11-30 to 2025-10-21	0.0033	Normal LCL
42_1_4_121	MW-32	Appendix IV	Radium 226 and 228	pCi/L	17	9	53%	2022-11-30 to 2025-10-21	0.57	Nonparametric LCL around the Median
42_1_4_122	MW-32	Appendix IV	Selenium	mg/L	17	13	76%	2022-11-30 to 2025-10-21	0.00010	Nonparametric LCL around the Median
42_1_4_125	MW-32	Appendix IV	Thallium	mg/L	17	17	100%	2022-11-30 to 2025-10-21	0.000075	Nonparametric LCL around the Median
42_1_5_111	MW-32	Part 115	Copper	mg/L	17	10	59%	2022-11-30 to 2025-10-21	0.00020	Nonparametric LCL around the Median
42_1_5_114	MW-32	Part 115	Iron	mg/L	17	0	0%	2022-11-30 to 2025-10-21	15	Normal LCL
42_1_5_119	MW-32	Part 115	Nickel	mg/L	17	0	0%	2022-11-30 to 2025-10-21	0.00086	Nonparametric LCL around the Median
42_1_5_123	MW-32	Part 115	Silver	mg/L	17	17	100%	2022-11-30 to 2025-10-21	0.000050	Nonparametric LCL around the Median
42_1_5_128	MW-32	Part 115	Vanadium	mg/L	17	17	100%	2022-11-30 to 2025-10-21	0.00062	Nonparametric LCL around the Median
42_1_5_129	MW-32	Part 115	Zinc	mg/L	17	0	0%	2022-11-30 to 2025-10-21	0.0026	Nonparametric LCL around the Median

* Due to negative parametric LCLs, non-parametric methods were used for this group.