FINAL

GROUNDWATER BACKGROUND EVALUATION

Fort Wingate Depot Activity
McKinley County, New Mexico

February 19, 2021

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Prepared for:

US Army Corps of Engineers

US Army Corps of Engineers - Tulsa District
1645 South 101st East Avenue
Tulsa, OK 74128

Prepared by:

HDR Environmental, Operations and Construction, Inc.
2365 Iron Point Rd, Suite 300
Folsom, California 95630

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6. AUTHOR(S)
May Raad
Olga Kosta
Carmen Moya Rodriguez
Charlie O'Neill
Joy Rogalla
Todd Wilson

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7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
HDR Environmental, Operations and Construction Inc.
2365 Iron Point Rd, Suite 300
Folsom, California 95630

8. PERFORMING ORGANIZATION REPORT NUMBER
N/A

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)
U.S. Army Corps of Engineers, Tulsa District 1645 South 101st East Avenue
Tulsa, OK 74128
Project Manager: Steve Smith

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14. ABSTRACT
This report presents the statistical analysis of background groundwater quality for the Northern Area groundwater regime at Fort Wingate Depot Activity (FWDA) located in McKinley County, New Mexico. The background groundwater quality was evaluated such that statistically-derived background threshold values (BTVs) could be established for constituents in the alluvial and bedrock aquifers.

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DEPARTMENT OF THE ARMY
OFFICE OF THE DEPUTY CHIEF OF STAFF, G-9
600 ARMY PENTAGON
WASHINGTON, DC 20310-0600

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Base Realignment and Closure Operations Branch

Mr. Kevin Pierard
Chief, Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303

RE: Final Groundwater Background Evaluation, Army's Response to the New Mexico Environment Department Letter of Disapproval dated September 15, 2020. Fort Wingate Depot Activity, McKinley County, New Mexico. EPA# NM6213820974, HWB-FWDA-20-001

Dear Mr. Pierard:

This letter is in reply to the New Mexico Environment Department (NMED) Letter of Disapproval dated September 15, 2020, reference number HWB-FWDA-20-001, Final Groundwater Background Evaluation. The following are Army's response to NMED comments, detailing where each comment was addressed and cross-referencing the numbered NMED comments.

Comments:

SPECIFIC COMMENTS

1. Section 1.3, Study Methodology, lines 36-38, page 2, and lines 4-6, page 3
Permittee Statements: "Alluvial monitoring well TMW28 is located immediately adjacent to the Rio Puerco and groundwater at this location may be influenced by surface water recharge, therefore this well was not included as a background well." and, "BGMW01 was retained as an appropriate background monitoring well because this well is furthest from FWDA operations and is the most hydrogeologically upgradient of the alluvial wells."

NMED Comment: According to Figure 2, *Monitoring Wells Utilized for Statistical Analysis*, well TMW28 is located adjacent to well BGMW01. If well TMW28 is excluded because of the influence from surface water recharge, well BGMW01 located near the Rio Puerco should also be excluded due to the same reason. Provide a more detailed justification for why well BGMW01 is utilized as background evaluation, while well TMW28 is not, in the revised Report.

Army Response, (Section 1.3, page 3 lines 10-22)
Monitoring well BGMW01 was the only alluvial well retained because it is located at one of the most hydraulically upgradient locations (Sundance 2019, Sundance 2017, Sundance 2015) and at the greatest distance from historic FWDA operations. BGMW01 is located approximately 107 feet from a northern branch of the Rio Puerco and at an elevation of 6,690.82 feet mean sea level and hydraulically upgradient of TMW28. Comparatively, TMW28 is located 52 feet from this same northern branch of the Rio Puerco, and at an elevation of 6,688.08 feet mean sea level. According to FWDA personnel, TMW28 is subject to flooding while BGMW01 is not (verbal communication with FWDA staff, 2019). The upgradient location of BGMW01, its distance,

from the drainage, and its higher elevation make the groundwater at BGMW01 less likely to be influenced by surface waters. Lastly, the USGS cites TMW28 in its documentation of the Puerco Flow Path: "A flow path originating from the saturated alluvial deposits underlying the South Fork of the Puerco River". This statement suggests surface water recharge to groundwater at well TMW28 (USGS 2009).

2. Section 1.3, Study Methodology, lines 14-16, page 3

Permittee Statement: "Three wells (BGMW08, BGMW09, BGMW10) located east and hydrogeologically upgradient of the Administration Area were retained as these three wells are furthest from FWDA operations and are the most hydrogeologically upgradient of the bedrock wells."

NMED Comment: Comment 4 in NMED's *Approval with Modifications Final Revision 1 Groundwater Periodic Monitoring Report July through December 2018*, dated July 30, 2020 states, "based on the available data, well BGMW08 must not be used as a background monitoring well." Accordingly, well BGMW08 must not be used as a background well. Revise the Report accordingly.

Army Response:

Pursuant to the Army's response to the NMED comment #4 from the *Groundwater Periodic Monitoring Report July through December 2018*; it is not BGMW08 that is providing erroneous geochemical data, but TMW02. As presented in the Army's response (cited above), bedrock groundwater at TMW02 is likely mixing with alluvial groundwater creating erroneous observations. Therefore, the Army has proposed the retention of BGMW08 concurrent with decommissioning TMW02. No changes were made to the revised report.

3. Section 1.3, Study Methodology, lines 22-27, page 3

Permittee Statement: "The single alluvial well BGMW01, which is at the most upgradient location for the alluvial aquifer in this portion of FWDA, has sufficient data points (15 monitoring events collected across 7 years) to conduct a statistical analysis of alluvial data. The three bedrock background wells BGMW08, BGMW09, BGMW10 each had 3 monitoring events (collected across 1-1/2 years); therefore, the data were pooled to derive a sufficient number of samples for a statistical analysis of bedrock groundwater data (USEPA 2009)."

NMED Comment: Discuss whether compounds originating from anthropogenic sources (e.g., explosives, volatile and semi-volatile compounds) have historically been detected from the groundwater samples collected from wells BGMW01, BGMW09, and BGMW10. If such compounds have been detected, these wells are not appropriate for background evaluation. In addition, compare the concentrations of nitrate, nitrite, and perchlorate detected in the selected background groundwater monitoring wells relative to the other upgradient wells. Based on the comparison, justify the use of these wells for background evaluation for nitrate and perchlorate in the revised Report.

Army Response, (Section 1.3, page 3, lines 33-39, page 4, and page 5 lines 1-18)

There is no evidence to suggest that historic contaminating operations were performed at or near background locations BGMW01, BGMW08, BGMW09 or at BGMW10, or that historic operations influence groundwater quality at these locations. However, the hydraulically upgradient locations of these wells does not preclude the potential for detections of anthropogenic compounds.

To determine whether or not BGMW01, BGMW08, BGMW09 and BGMW10 should be included or excluded due to the presence anthropogenic constituents, a review of groundwater analytical results for anthropogenic compounds (explosives, volatile semi-volatile compounds, polychlorinated biphenyls, herbicides and pesticides) from BGMW01, BGMW08, BGMW09, and BGMW10 was performed.

It was determined that there were no detections of anthropogenic compounds in samples collected from BGMW01 and BGMW09. A single detection of one constituent (methyl acetate) out of all of the compounds in these analysis suites was reported from BGMW10. Upon further review of the laboratory chromatogram and mass spectrum for this sample result, it was determined that although the target analyte identification criteria (mass spectra ion relative intensities and relative retention times) were nominally met, the analyte identification was still questionable. The secondary ion at m/z 43 maximized 1.4 seconds after the primary ion at m/z 74, the tertiary ion at m/z 59 was not present (albeit possibly due to the low concentration), and there were a number of ion masses that appeared in the sample spectrum at approximately the same relative intensities as m/z 43. Further, m/z 43 is a common ion fragment mass and shows up commonly in the mass spectra of lighter analytes, such as methyl acetate. This result would have been more appropriately reported as non-detect at the sample limit of quantitation (LOQ). This single result is not considered valid, as it should have been reported as non-detect (U) at the LOQ. In addition, at BGMW08, low level detections of one herbicide (dinoseb) and two VOCs (benzene and toluene) were reported at estimated concentrations below the limit of detection (LOD) from groundwater samples collected during the 2018 groundwater sampling events. Herbicides have not been reported in bedrock wells BGMW09 or BGMW10, and it has since been recommended to discontinue analyzing for herbicides in these wells during future groundwater monitoring events, as agreed upon in the Army response to the Approval with Modifications letter HWB-FWDA-17-008 dated January 8, 2018. For this reason, the single report of one herbicide (dinoseb) is considered insignificant. The two VOCs (benzene and toluene) are also anthropogenic compounds. Based upon the low estimated concentrations of these two compounds and the hydraulic upgradient location of BGMW08, the estimated detection of the two VOCs (benzene and toluene) are not considered significant to this background evaluation.

The USEPA has recognized, in several documents, the potential for anthropogenic compounds to be present at background monitoring locations (USEPA 2018). The issues for background monitoring points is not the lack of anthropogenic compounds, but the lack of hydrogeologic influence from the site-specific contaminating source(s). Therefore, detections of anthropogenic compounds, if any, do not preclude the use of these wells as background monitoring points, as these detections are representative of local or regional conditions. For example, the concentrations of nitrate and perchlorate detected in the alluvial background wells are orders of magnitude less than the highest concentrations observed in the downgradient wells.

- From April 2012 to October 2018, 327 samples were collected from the alluvial aquifer downgradient wells for analysis of nitrite. The alluvial aquifer downgradient nitrite detections ranged from 0.063 to 4.7 mg/L. Background concentrations of nitrite were not reported for the alluvial background well for this study.

- From April 2012 to October 2018, 327 samples were collected from the alluvial aquifer downgradient wells for nitrate. The alluvial aquifer downgradient nitrate detections ranged from 0.044 to 97 mg/L; and in the single background alluvial well nitrate detections ranged from 0.0970 to 1.90 mg/L.

- From April 2012 to October 2018, 262 samples were collected from the alluvial aquifer downgradient wells for perchlorate. The alluvial aquifer downgradient perchlorate detections ranged from 0.0000041 to 0.0015 mg/L; and in the single background alluvial well perchlorate was non-detect (LOQ 0.00005 - 0.0002)

The concentration of nitrate and perchlorate detected in the bedrock background wells are orders of magnitude less than the highest concentrations observed in the downgradient wells.

- From April 2012 – October 2018, 179 samples were collected from the bedrock aquifer downgradient wells with a nitrite range of 0.053 to 1.2 mg/L. Background concentrations of nitrite were not reported for the bedrock background wells for this study.

- From April 2012 – October 2018, 179 samples were collected from the bedrock aquifer downgradient wells for nitrate. The bedrock aquifer downgradient nitrate detections ranged from 0.046 to 50 mg/L; with a single background bedrock detection of 0.0870 mg/L.

- April 2012 – October 2018, 194 samples collected in the bedrock aquifer downgradient wells for perchlorate. The bedrock aquifer downgradient perchlorate detections ranged from 0.0000063 to 4.4 mg/L; with a bedrock background detections range of 0.0000057 to 0.00000950 mg/L.

4. Section 1.3, Study Methodology, lines 36-39, page 3

Permittee Statement: "The downgradient wells were selected as those wells which are hydrogeologically downgradient from the background wells and completed within the same aquifer as the background well(s). Downgradient well observations are tested against the BTVs to identify groundwater quality changes."

NMED Comments: Table 1, *Monitoring Wells Utilized for Statistical Analysis* lists 23 alluvial downgradient wells where the analytical results are to be compared. However, many of these wells are located in the areas where the water leak from well 69 is likely affecting the groundwater quality and flow direction in the alluvial aquifer. Once the well is abandoned, the flow direction and water quality may change. Comment 8 in NMED's *Disapproval Final Groundwater Periodic Monitoring Report July through December 2018*, dated January 30, 2020, states, "Figure 4-1, *Northern Area Alluvial Groundwater Contour Map July 2018* and Figure 4-2, *Northern Area Alluvial Groundwater Contour Map October 2018*, indicate that the groundwater flow direction in the alluvium is predominantly southwest and west.

However, groundwater leakage from well 69 may have been affecting the Facility's natural groundwater flow direction. According to the figures, the groundwater flow direction south of the Administration Area (e.g., areas around the TNT Leaching Beds) is north to northwest. Presumably, the natural alluvial groundwater flow direction is consistent with local topography toward the Rio Puerco; therefore, a northerly and northwesterly groundwater flow direction is more likely. The areas in the south of the Administration Areas may be less affected by the well 69 leakage and more representative of natural groundwater flow direction. The flow direction may significantly change once the leakage is repaired." Accordingly, the data collected from the

wells located south of the Rio Puerco are not appropriate for comparison. Wells BGMW02, BGMW03, MW23, and MW24 are located north of the Rio Puerco and these wells are located downgradient of well BGMW01. The groundwater quality and flow direction at these well locations are less likely to be affected by the water leak from well 69. Remove all downgradient wells located south of the Rio Puerco, if appropriate, and include wells located north of the Rio Puerco for data comparison; revise the Report accordingly.

Army Response, (Section 1.3, page 6 lines 3 -24)
Background wells are used to calculate BTVs, with downgradient monitoring points only used to determine significance levels for the UPLs. Analytical results from the downgradient wells were not used to calculate BTVs and were not used for comparative purposes; therefore, any potential influence of the Rio Puerco and/or from well 69 is not pertinent to this statistical analysis.

It is the number of downgradient wells that are used to determine the individual test significance level per UPL - not the well location (i.e., wells located south of the Rio Puerco) and not the groundwater analytical results at the downgradient location. The number of downgradient wells is used as input to satisfy the site-wide false positive rate and produce a test significance level. It is only the count of downgradient wells that is required, not the actual location of the wells. This is because the requirement to establish the site-wide false positive rate is of a statistical nature, not of a hydrogeological nature. The Unified Guidance methodology was followed to set individual test significance levels such that their sum over all potential tests in a year does not exceed the recommended site wide false positive rate (SWFPR) of 10 percent (see Section 6, page 6-9, USEPA Unified Guidance 2009).

While groundwater mixing certainly occurs in the Administration Area, and surface water from the Rio Puerco infiltrates to the alluvial aquifer, these inputs to the hydrogeologic regime do not preclude comparison of BTVs calculated from the background monitoring wells to be used as comparative values at downgradient locations. The Army based its rationale on the selection of these 23 downgradient wells per USEPA Federal Register (80 FR 21399), which states "*Because hydrogeologic conditions vary so widely from one site to another, the rule does not prescribe the exact number, location and depth of monitoring wells needed to achieve the general performance standard*." Table 1 identifies the background and downgradient wells by aquifer.

5. Section 2.1, Outlier Test Results – Background Wells, lines 25-26, page 6
Permittee Statement: "For constituents that had NDs, the NDs were removed prior to testing for outliers."

NMED Comment: The ProUCL Technical Guide (Guide) suggests that relevant statistics be computed using data sets with outliers and without outliers for comparison. This extra step helps to see the potential influence of outlier(s) on the various decision-making statistics and helps in making informed decisions about the disposition of outliers. It is important to identify high outliers representing contaminated locations and hot spots. The occurrence of non-detect (ND) observations and other low values is quite common in data sets, especially when the data are collected from a background or a reference area. For the purpose of the identification of high outliers, ProUCL indicates that the ND values may be replaced by their respective detection limits (DLs) or half of the DLs or in some cases, may be ignored (e.g. high reporting limits are associated with NDs) in the outlier tests. Except for the identification of high outlying observations, the outlier test statistics computed with NDs or without NDs are not used in any of

the estimation and decision-making processes. Therefore, for the purpose of testing for high outliers, it does not matter how the ND observations are treated. As such, eliminating the NDs from the datasets prior to testing for outliers may be an acceptable approach. Clarify if the NDs had high reporting limits and whether inclusion of the ND values resulted in any changes in identified outliers in the revised Report.

Army Response, (Section 2.1, page 8 Lines 26 – 39 to page 9 Lines 1 - 19)
Based upon review of the groundwater analytical results utilized for this background evaluation, there were no elevated laboratory detection limits. For those constituents that had NDs, the NDs were removed prior to conducting the Dixon's outlier tests. The NDs that were excluded for Dixon's outlier tests did not have high reporting limits. NDs were not included as part of Dixon's outlier tests for the following reasons:

- While ProUCL states to include the NDs at the limit or ½ limit value, this inclusion is misleading. Researchers in the last 20 years have expounded on not using this substitution method, as it produces bias in the estimates. For example, we have found that when using ND values with ProUCL, the NDs themselves became outliers.

- ProUCL chose to use the variant of the Dixon's outlier test, which assumes an underlying normal distribution except for the outlier, and that there is only one outlier in the sample. The choice of the normal distribution is unexpected, as most of the technical guidance emphasizes the gamma and lognormal distributions as appropriate distributions to model groundwater constituent concentrations. Even the lognormal distribution comes with caveats. Including data samples with NDs and then using the simple substitution method could further distort the distribution from an assumed normal one.

- Dixon's outlier test was conducted with what is available in ProUCL, but multiple lines of evidence were applied using scatter plots and box and whiskers plots, which included using all detect and non-detect values combined with scientific and historic knowledge of the area to determine if the highest value should be removed or kept.

While there are other methods to test for outliers in the presence of NDs in very small samples, the Army's approach is in compliance with the Unified Guidance (USEPA 2009). Due to the small sample sizes, the Army supplemented the statistical outlier tests with visual means using scatter plots and box and whisker plots. When background sample sizes accumulate to 20 or more samples, a sensitivity test may be done to compare outlier test results with or without NDs.

The issue of elimination of values with high reporting limits is not of concern, as the eliminated values did not have high reporting limits. Only detected values were analyzed when running Dixon's outlier test. Using multiple lines of evidence, the statistical outlier tests were substantiated with visual means using scatter plots and box and whiskers plots, which used all detect and non-detect values along with scientific and historic knowledge of the area to determine if the highest value should be removed or retained. In accordance with the Unified Guidance (USEPA 2009), HDR's review by a statistician and hydrogeologist determined that the values exhibited unexceptional ranges from a geological perspective for the constituents in the area.

6. Section 2.1, Outlier Test Results – Background Wells, line 40, page 6, and lines 1-2, page 7
Permittee Statement: "Given the variable nature of groundwater samples and the small sample sizes, the statistical outliers should not be removed from the data set at this time for purposes of determining background concentrations."

NMED Comment: The Guide states that potential outliers be manually identified where they may be present in a data set before proceeding with the computation of the various background threshold value (BTV) estimates and that upper limits computed by including a few low probability high outliers tend to represent locations with those elevated concentrations rather than representing the main dominant population. The Guide further suggests that relevant statistics be computed using data sets with outliers and without outliers for comparison, to see the potential influence of outlier(s) on the various decision-making statistics about the disposition of outliers. Based on the recommendations in ProUCL, inclusion of the outliers may or may not be appropriate as inclusion of the outliers may not represent the main population of background data and could adversely set a higher compliance level than is representative of background. In looking at the box and whisker plots presented in Figures 4A through 4D, some of the data appear to be outliers. In the revised Report, provide additional justification for the inclusion or removal of the identified outliers in the background datasets.

Army Response, (Section 2.1, page 9, Lines 38-39, page 10, and page 11 lines 1-9)
The justification for inclusion of the apparent outliers is based on a review of range of the concentrations in light of the small sample sizes. The review was done in four steps:

1. Identify which constituent-well pairs had statistical outliers based on ProUCL's Dixon's test.
2. Study range of data in scatter plots from the same constituent-well pairs identified in Step 1. Note if the highest values were a magnitude or less in difference from the other values.
3. Study range of data from box and whisker plots for all constituent-well pairs, including those identified in Step 1. Note if the highest values were a magnitude or less in difference from the other values.
4. Check if human activity or error occurred on the dates of the apparent statistical outliers. Since no reason could be found, the values were included in the development of the BTVs.

Outlier tests, whether they are based on Dixon's or use graphical means (e.g., box and whisker plots), are less definitive for very small datasets (less than 20 observations) as we have gathered from the alluvial and bedrock wells. What appears to be an extreme value or outlier in the small dataset is most likely from a portion of the background distribution that has yet to be sampled (See Unified Guidance (2009), page 5-5). Outliers flagged by statistical tests or by means of scatter plots (Figures 3a – 3c) or box and whisker plots (figures 4A – 4D) were evaluated for anomalous ranges and the values are deemed reasonable and expected. The Army does not have other technical information, knowledge, or basis at this time with a very small dataset to remove the highlighted values. Lastly, the values in figures 4A and 4D appear to be outliers because they are plots of all constituents and some of the constituents had statistical outliers based on Dixon's tests as listed in Table 4. Based upon review of the box and whisker plots for ranges within one order of magnitude or less, it was determined the values were not due to data errors, discrepancy or other non-background populations.

The Unified Guidance (USEPA 2009) recommends not removing statistically identified outliers unless some basis for a likely error or discrepancy can be identified, or they are of high magnitude compared to other concentrations. The Unified Guidance (USEPA 2009) recognizes that statistical outlier tests should be done on datasets; however, the decision to drop them rests on whether the values are in error or of very high magnitude (USEPA Unified Guidance page 5-5). Some statisticians have discussed dropping outliers as a rule; however, this is not substantiated

with very small sample sets. Small sample sets are not fully representative of the populations from which they are drawn, as they only have a partial picture of the underlying distribution of groundwater concentrations. What appears to be an extreme value or outlier in the small dataset is most likely from a portion of the background distribution that has yet to be sampled (Unified Guidance 2009). Nevertheless, the outlier analysis for this work was not performed solely by the software; the model output was reviewed by a degreed and practicing statistician and hydrogeologist to ensure the outlier evaluation was appropriate for this specific site evaluation.

7. Section 2.1, Outlier Test Results – Background Wells, lines 3-4, page 7
Permittee Statement: "As new data become available, outlier test results may change and earlier observations thought to be outliers may no longer be outliers."

NMED Comment: It is agreed that the background dataset should also be re-evaluated with each sampling round. In future periodic groundwater monitoring reports, provide a section that includes a discussion of the background level re-evaluation.

Army Response, Report not updated
Per the Permit, the GPMRs are to evaluate groundwater concentrations and trends. Interpretation of data from the GPMRs and background wells will be conducted after the remedy is in-place.

8. Section 2.3, Background Trends, lines 8-10, page 8, and Section 2.4, Statistical Comparison of Alluvial and Bedrock Background Wells, lines 24-27, page 9
Permittee Statements: "Although statistical trends were identified for these three constituents [dissolved nickel, total arsenic and total chromium], these trends were not consistent among alluvial and bedrock monitoring wells (Table 6)." and, "While the sample sizes for the alluvial and bedrock background wells are relatively small, the ANOVA test results and the apparent differences of the distributions based on the side- by-side box and whisker plots between the alluvial and bedrock background wells suggest that the BTVs should be specific to an aquifer and should not be pooled."

NMED Comment: Because statistically significant trends were not observed in the background well regression analyses for dissolved nickel, total arsenic, and total chromium, it is unlikely that many of the underlying conditions needed to pool the background data would be met. The results of the comparison of the alluvial and bedrock data indicate that there are apparent differences in distributions within the two aquifers. Thus, NMED agrees that the background data for the alluvial and bedrock aquifers should not be pooled. No response required.

Army Response,
Comment noted, no action required

9. Section 2.4, Statistical Comparison of Alluvial and Bedrock Background Wells, lines 36-38, page 8
Permittee Statement: "As many groundwater constituents follow lognormal or lognormal- like distributions, the raw data were transformed by taking their natural logarithms."

NMED Comment: The Kruskal-Wallis test does not require log-transformation of the data; however, as log transformation will have no effect at all on the value of the Kruskal-Wallis statistic, there are no issues regarding the use of log-transformed data. No response required.

Army Response,
Comment noted, no action required

10. Section 4, Findings, lines 18-21, page 14
Permittee Statement: "Samples collected from FWDA often have high turbidity which can affect observed analytical results (Sundance, 2019). Well turbidity can introduce excess naturally occurring trace elements into the samples and result in elevated, inconsistent, and incomparable metals results within and between wells."

NMED Comment: The groundwater samples with high turbidity readings must be removed from data evaluation to be used for statistical analyses because inclusion of such data may adversely set a higher compliance level than is representative of background. Revise the Report, as necessary.

Army Response, Report Not updated
The Groundwater Periodic Monitoring Reports from Spring 2009 to Spring 2012 show a collection of 449 samples, with 27% of samples having turbidity greater than100 NTU. In Fall 2019, 69% of samples had turbidity greater than 100 NTU.

As these high turbidity levels reflect conditions at the site, all background samples were retained to establish representative conditions for ground water samples. Removing a large number of samples where turbidity was high would leave fewer data points and less representative points to establish the BTVs.

11. Table 9, Background Threshold Values for Monitoring Constituents, page 44
NMED Comment: The BTVs for the alluvial and bedrock nitrogen concentrations are indicated as 1.90 and 0.0870 mg/L, respectively. Nitrogen was not included in the analytical suite for groundwater samples. The referenced constituent is likely nitrate. Correct the typographical error in the revised Report.

Army Response,
Acknowledged. Table 10 of the revised report was corrected.

12. Appendix A, Statistical Summary Reports, Upper Prediction Limits for Monitoring Constituents in the Alluvial Aquifer, Footnote Number 5. Permittee Statement: "To optimize the process for estimating a reference background concentration when there are multiple forms of the [upper prediction limit (UPL)] formulae for data sets with assumed distributional properties, the averaging of the results over the multiple methods is done. The formulae are comparable and each one offers advantages and also has inherent errors in their methods. The action of averaging these estimates produces a pooled estimate closest to the unknown common truth based on how this error is perceived."

NMED Comment: Pooling of UPLs is not typical and appears to be inappropriate; no technical guidance and/or justification has been found to support pooling UPLs (averaging various UPLs) to derive a single UPL. Further, the distinct tests have differing equations and different underlying assumptions. Revise the determination of the UPL to be based on the best fit or provide additional technical justification and references to support pooling UPLs in the revised Report.

Army Response, Appendix A, Footnote 5

To optimize the process for estimating a reference background concentration when there are multiple forms of the UPL equations for data sets with assumed distributional properties, the averaging of the results over the multiple methods or equations under the recommended distribution assumption is done. The equations are comparable, and each one offers advantages but also has inherent errors in its methods. The action of averaging these estimates produces a pooled estimated closest to the unknown common truth based on how this error is perceived.

The first step in this process is to select one parametric distribution or failing results from the goodness of fit tests (or having 50% or more NDs), selecting nonparametric methods. The ProUCL authors have recognized that the GOF tests at a given significance level can indicate multiple distributions as the best or discernable fit. We see examples of all three parametric distributions passing the GOF tests, two of the three passing, or just one. The very small datasets are unreliable to have confirmation as to the best fit, though results are indicative of a distribution from a type of parametric distribution. For this reason, the latest version of ProUCL no longer recommends a best fit. When multiple distributions are noted as fitting a distribution, we prioritize the selection of the 'recommended' distribution in this order: Gamma, lognormal (provided the standard deviation of the log-transformed data is less than 1), and normal. The ProUCL authors highly recommend gamma over lognormal, even if both pass the GOF tests as the lognormal can have extremely long tails and may produce unrealistic BTVs. (e.g., page 38 of ProUCL Version 5.1 Technical Guide).

Once a parametric distribution has been assigned, and depending on the censorship level of the sample, one or multiple equations are available to estimate the UPL. If there is more than one equation, we average the outputs. The averaging of multiple equations is a method drawn from both meta-analysis (combining outputs from the experts) and machine learning (combining outputs from different algorithms trying to predict the same value).

The work contained in the Unified Guidance and ProUCL are based on information as of the late nineties or early 2000's. Nuances as to how to interpret UPL results using very small datasets are not addressed in depth (e.g., the issue of overfitting a dataset due to small sample size), leaving the ambiguity to be resolved by the practitioner. We have resolved such ambiguity by averaging the different equations within a distribution class as supported by state of the practice for statistical and machine learning analyses. The averaging or pooling is a means to negate the biases from the different equations under very small sample conditions to produce a UPL that is more representative than any one estimate produced by a particular equation. It is noted that the averaging approach in this study will have minimal impact on the recommended UPLs, as the approach specific methods within a parametric class produce very similar UPL estimates.

13. Appendix A, Statistical Summary Reports, Upper Prediction Limits for Monitoring Constituents in the Alluvial Aquifer

NMED Comment: In some cases, the data follow a discernable distribution as determined by ProUCL (e.g., gamma or lognormal); however, a non-parametric test was selected over a distribution-based test. In most cases, the resulting UPL is equivalent to the maximum detected background value and/or is conservative (lower than distribution based UPLs). Therefore, the use of these UPLs is acceptable. However, provide the rationale for selecting a non-distribution based UPL in the revised Report.

Army Response, report not updated
In section 2.2, the rationale for using nonparametric methods is presented. As well, please see page 15-25 of the Unified Guidance, which also uses this method when there are more than 50% NDs in a sample.

If you have questions or require further information, please contact me at George.h.cushman.civ@mail.mil, 703-455-3234 (Temporary Home Office, preferred) or 703-608-2245 (Mobile).

Sincerely,

George H. Cushman IV

George H. Cushman IV
BRAC Environmental Coordinator
Fort Wingate Depot Activity
BRAC Operations Branch
Environmental Division

Enclosures
CF:

Dave Cobrain, NMED, HWB
Ben Wear NMED, HWB
Michiya Suzuki, NMED, HWB
Lucas McKinney, U.S. EPA Region 6
Ian Thomas, BRACD
Steven Smith, USACE
Michael Falcone, USACE
Saqib Khan, USACE
Admin Record, NM
Admin Record, Ohio

Document Certification

40 CFR 270.11

Final Groundwater Background Evaluation Report, Revision 1.0

February 22, 2021

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information; the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

George H. Cushman IV

Mr. George H. Cushman IV
BRAC Environmental Coordinator
Fort Wingate Depot Activity
BRAC Operations Branch Environmental Division

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FINAL

GROUNDWATER BACKGROUND EVALUATION

Fort Wingate Depot Activity
McKinley County, New Mexico

February 19, 2021

Contract No. W912DQ18D3010
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Prepared for:

US Army Corps of Engineers - Tulsa District
1645 South 101st East Avenue
Tulsa, OK 74128

Prepared by:

HDR Environmental, Operations and Construction, Inc.
2365 Iron Point Rd, Suite 300
Folsom, California 95630

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BIA Zuni	Bureau of Indian Affairs – Zuni Representative
BIA-NR	Bureau of Indian Affairs – Navajo Representative
BRACD	(U. S. Army) Base Realignment and Closure Division
FWDA BEC	Fort Wingate Depot Activity Base Environmental Coordinator
NM	New Mexico
NMED HWB	New Mexico Environment Department Hazardous Waste Bureau
NN	Navajo Nation
OH	Ohio
POZ	Pueblo of Zuni
USACE SWF	U.S. Army Corps of Engineers – Fort Worth District
USEPA	United States Environmental Protection Agency

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Acronyms and Abbreviations

ANOVA	analysis of variance
BTVs	background threshold values
COC	Contaminant of Concern
DL	detection limit
DQR	double quantification rule
FWDA	Fort Wingate Depot Activity
GOF	goodness of fit
GPMR	Groundwater Periodic Monitoring Report
IQR	inter-quartile range
LOD	limit of detection
LOQ	limit of quantitation
MDL	method detection limit
mg/L	milligrams per liter
MLE	maximum likelihood estimation
NCSS	Number Cruncher Statistical System
ND	non-detect
NMED	New Mexico Environment Department
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
SPSS	Statistical Package for the Social Sciences
UPL	upper prediction limit
UTL	upper tolerance limit
U.S.	United States
USACE	U.S. Army Corps of Engineers – Tulsa District
USACE SWF	U.S. Army Corps of Engineers – Fort Worth District
USEPA	U.S. Environmental Protection Agency

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1 Introduction

This report describes the development of background threshold values (BTVs) for chemical constituents in groundwater in the Northern Area alluvial and bedrock aquifers at Fort Wingate Depot Activity (FWDA), McKinley County, New Mexico (**Figure 1**). BTVs represent background or aquifer conditions unaffected by FWDA activities and provide a basis for comparison with monitoring and sampling results as an indicator of whether FWDA activities may have affected groundwater. If the monitoring or sampling results for a constituent exceed the applicable BTV, then further action may be required. The BTVs were calculated from analytical results for groundwater samples collected from approved background wells. The number of approved downgradient wells in the monitoring network was used as input for establishing BTVs that satisfy site-wide false positive objectives. The statistical analysis was performed in support of the site's Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) as required by the Permit NM6213820974 (NMED 2015a). The BTVs can be used to compare groundwater analytical results from FWDA monitoring wells as an indication of changes in groundwater quality.

1.1 Report Organization

This report is organized as follows:

- Section 2 characterizes the distributions and trends of the constituent concentrations in the alluvial and bedrock aquifers.
- Section 3 presents the estimated BTVs for the constituents in the alluvial and bedrock aquifers. The BTVs are derived from upper prediction limits (UPLs), which represent the upper boundary of a prediction interval for an independently obtained observation (or an independent future observation). The use of UPLs was presented to in a letter dated June 2019 (DOA 2019)
- Section 4 summarizes the findings from the analysis.
- Appendix A (provided electronically), presents statistical summary reports supporting the statistical output used to profile the data sets, assess outliers, evaluate distributions, assess trends, test for differences in concentration between the two aquifers, and the calculation of estimated UPLs for aquifer-specific BTVs.

The tables and figures are provided at the end of the report.

1.2 Site Summary

The former mission of FWDA was to store, ship, and receive material and to dispose of obsolete or deteriorated explosives and ammunition (PMC Environmental 2001). The FWDA mission ceased and the installation closed in January 1993. The current FWDA operations in the Northern Area are focused on assessment and remediation of contamination resulting from these past military activities. Large quantities of wastewater associated with demilitarization operations were

historically pumped to the leaching beds where the waste water infiltrated to the soil column and groundwater. This resulted in groundwater contamination from explosives, perchlorate, and nitrate in the Northern Area alluvial and bedrock groundwater aquifers.

The corrective action and cleanup objective for groundwater, as currently outlined in the RCRA permit is to reduce concentrations of contaminants of concern (COCs) in the Northern Area groundwater to cleanup levels for explosives, perchlorate, and nitrate in accordance with Permit Section VI.B.6a (Monitoring of Hazardous Constituents).

1.3 Study Methodology

BTVs for chemical constituents in groundwater are needed to support the evaluation of groundwater conditions and determine changes in groundwater quality. Background is defined as the natural or baseline groundwater quality at a site, and can be characterized using data from upgradient, historical, or sometimes cross-gradient well samples. For this study, background wells and wells located downgradient from the background wells in each groundwater aquifer were selected. Background data were evaluated, and background levels established for 23 total and dissolved metals, nitrate, and perchlorate. Background was not established for explosives because those constituents would be considered to represent contamination.

In the Northern Area there are 47 active wells in the alluvial aquifer and 18 wells in the bedrock aquifer from where groundwater samples are collected. Background groundwater monitoring wells for statistical analysis were selected based upon the monitoring well completion interval (alluvial or bedrock aquifer) and potential for water quality influence from FWDA operations (**Figure 2**). The well completion interval was determined from the Groundwater Periodic Monitoring Report (GPMR) designations (Sundance 2019). The following criteria were used to select the background wells:

- Distance from historic FWDA operations.
- Groundwater monitoring well located hydrogeologically upgradient from FWDA operations as documented in the GPMRs with repeated groundwater flow direction and repeated sufficient gradient to preclude FWDA operations as a contaminating source (Sundance 2019, Sundance 2017, Sundance 2015).
- Consultation with the Army and directive from the New Mexico Environment Department (NMED) (NMED 2015b).

Based upon these criteria, there are seven alluvial wells in the in the northeastern portion of the site that are hydrogeologically upgradient with sufficient distance from FWDA operations. These wells are TMW24, TMW26, TMW27, TMW28, BGMW01, BGMW02, and BGMW03. Six of these wells were excluded for the following reasons:

- Administration Area alluvial wells TMW24 and TMW26 are adjacent to the historic leaky cistern and actively leaking deep bedrock well 69 (Sundance 2019). The leakage of bedrock water to the alluvial aquifer may influence groundwater quality at TMW24 and TMW26 and therefore these wells were not included as background wells.

- Alluvial monitoring wells TMW27 was identified as potentially impacted by site activities and was not included as a background well (NMED 2015b).

- Alluvial monitoring well TMW28 is located immediately adjacent to the Rio Puerco and groundwater at this location may be influenced by surface water recharge, therefore this well was not included as a background well.

- Alluvial monitoring wells BGMW01, BGMW02 and BGMW03 were identified by NMED as potentially impacted by site activities (NMED 2015b). Therefore, BGMW02 and BGMW03 were not included as background wells but BGMW01 was included for the following reasons:

Monitoring well BGMW01 was the only alluvial well retained because it is located at one of the most hydraulically upgradient locations (Sundance 2019, Sundance 2017, Sundance 2015) and at the greatest distance from historic FWDA operations. BGMW01 is located approximately 107 feet from a northern branch of the Rio Puerco and at an elevation of 6,690.82 feet mean sea level and hydraulically upgradient of TMW28. Comparatively, TMW28 is located 52 feet from this same northern branch of the Rio Puerco, and at an elevation of 6,688.08 feet mean sea level. According to FWDA personnel, TMW28 is subject to flooding while BGMW01 is not (verbal communication with FWDA staff 2019). The upgradient location of BGMW01, its distance from the drainage, and its higher elevation make the groundwater at BGMW01 less likely to be influenced by surface waters. Lastly, the USGS cites TMW28 in its documentation of the Puerco Flow Path: “A flow path originating from the saturated alluvial deposits underlying the South Fork of the Puerco River”. This statement suggests surface water recharge to groundwater at well TMW28 (USGS 2009).

For the bedrock aquifer, there are 18 active wells from where groundwater samples are collected (Sundance 2019). Fifteen of these wells are located south of the Administration Area and in close proximity to historic FWDA operational areas. Therefore, these fifteen wells were excluded from consideration as background wells due to their close proximity to historic FWDA operations. In addition, two of these fifteen bedrock monitoring wells (TMW17 and TMW19) were identified as potentially impacted by site activities providing further reason for not including them as background wells (NMED 2015b). Three wells remaining wells (BGMW08, BGMW09, BGMW10) located east and hydrogeologically upgradient of the Administration Area were retained as these three wells are furthest from FWDA operations and are the most hydrogeologically upgradient of the bedrock wells (Sundance 2019).

There is no evidence to suggest that historic contaminating operations were performed at or near background locations BGMW01, BGMW08, BGMW09 or at BGMW10 or that historic operations influence groundwater quality at these locations. However, the hydraulically upgradient locations of these wells does not preclude the potential for detections of anthropogenic compounds.

To determine whether or not BGMW01, BGMW08, BGMW09 and BGMW10 should be included or excluded due to the presence anthropogenic constituents, a review of groundwater analytical results for anthropogenic compounds (explosives, volatile semi-volatile compounds,

polychlorinated biphenyls, herbicides and pesticides) from BGMW01, BGMW08, BGMW09, and BGMW10 was performed.

It was determined that there were no detections of anthropogenic compounds in samples collected from BGMW01 and BGMW09. A single detection of one constituent (methyl acetate) out of all of the compounds in these analysis suites was reported from BGMW10. Upon further review of the laboratory chromatogram and mass spectrum for this sample result, it was determined that although the target analyte identification criteria (mass spectra ion relative intensities and relative retention times) were nominally met, the analyte identification was still questionable. The secondary ion at m/z 43 maximized 1.4 seconds after the primary ion at m/z 74, the tertiary ion at m/z 59 was not present (albeit possibly due to the low concentration), and there were a number of ion masses that appeared in the sample spectrum at approximately the same relative intensities as m/z 43. Further, m/z 43 is a common ion fragment mass and shows up commonly in the mass spectra of lighter analytes, such as methyl acetate. This result would have been more appropriately reported as non-detect at the sample limit of quantitation (LOQ). This single result is not considered valid as it should have been reported as non-detect (U) at the LOQ. In addition, at BGMW08, low level detections of one herbicide (dinoseb) and two VOCs (benzene and toluene) were reported at estimated concentrations below the limit of detection (LOD) from groundwater samples collected during the 2018 groundwater sampling events. Herbicides have not been reported in bedrock wells BGMW09 or BGMW10, and it has since been recommended to discontinue analyzing for herbicides in these wells during future groundwater monitoring events, as agreed upon in the Army response to the Approval with Modifications letter HWB-FWDA-17-008 dated January 8, 2018. For this reason, the single report of one herbicide (dinoseb) is considered insignificant. The two VOCs (benzene and toluene) are also anthropogenic compounds. Based upon the low estimated concentrations of these two compounds and the hydraulic upgradient location of BGMW08, the estimated detection of the two VOCs (benzene and toluene) are not considered significant to this background evaluation.

The USEPA has recognized, in several documents, the potential for anthropogenic compounds to be present at background monitoring locations (USEPA 2018). The issues for background monitoring points is not the lack of anthropogenic compounds, but the lack of hydrogeologic influence from the site-specific contaminating source(s). Therefore, detections of anthropogenic compounds, if any, do not preclude the use of these wells as background monitoring points as these detections are representative of local or regional conditions. For example, the concentrations of nitrate and perchlorate detected in the alluvial background wells are orders of magnitude less than the highest concentrations observed in the downgradient wells.

- From April 2012 to October 2018, 327 samples were collected from the alluvial aquifer downgradient wells for analysis of nitrite. The alluvial aquifer downgradient nitrite detections ranged from 0.063 to 4.7 mg/L. Background concentrations of nitrite were not reported for the alluvial background well for this study.

- From April 2012 to October 2018, 327 samples were collected from the alluvial aquifer downgradient wells for nitrate. The alluvial aquifer downgradient nitrate detections ranged

from 0.044 to 97 mg/L; and in the single background alluvial well nitrate detections ranged from 0.0970 to 1.90 mg/L.

- From April 2012 to October 2018, 262 samples were collected from the alluvial aquifer downgradient wells for perchlorate. The alluvial aquifer downgradient perchlorate detections ranged from 0.0000041 to 0.0015 mg/L; and in the single background alluvial well perchlorate was non-detect (LOQ 0.00005 - 0.0002 mg/L).

The concentration of nitrate and perchlorate detected in the bedrock background wells are orders of magnitude less than the highest concentrations observed in the downgradient wells.

- From April 2012 – October 2018, 179 samples were collected from the bedrock aquifer downgradient wells with a nitrite range of 0.053 to 1.2 mg/L. Background concentrations of nitrite were not reported for the bedrock background wells for this study.

- From April 2012 – October 2018, 179 samples were collected from the bedrock aquifer downgradient wells for nitrate. The bedrock aquifer downgradient nitrate detections ranged from 0.046 to 50 mg/L; with a single background bedrock detection of 0.0870 mg/L.

- From April 2012 – October 2018, 194 samples collected in the bedrock aquifer downgradient wells for perchlorate. The bedrock aquifer downgradient perchlorate detections ranged from 0.0000063 to 4.4 mg/L; with a bedrock background detections range of 0.0000057 to 0.00000950 mg/L.

Based upon these criteria presented above, one well (BGMW01) was utilized to establish BTVs in the alluvial aquifer and three wells (BGMW08, BGMW09, BGMW10) were utilized to establish BTVs in the bedrock aquifer. It was beyond the scope of this study to assess differences in groundwater quality among the excluded wells or to perform a comparison of BTVs with and without the excluded wells.

The single alluvial well BGMW01, which is at the most upgradient location for the alluvial aquifer in this portion of FWDA, has sufficient data points (15 monitoring events collected across 7 years) to conduct a statistical analysis of alluvial data. The three bedrock background wells BGMW08, BGMW09, BGMW10 each had 3 monitoring events (collected across 1-1/2 years); therefore the data were pooled to derive a sufficient number of samples for a statistical analysis of bedrock groundwater data (USEPA 2009). Pooling the data increases the statistical power of the analyses and increases the confidence in the final BTVs. When considering a distribution, it is not the number of wells but the number of samples utilized that drives the statistical analysis.

Groundwater analytical results were used to establish BTVs for the selected chemical constituents in groundwater in the alluvial and bedrock aquifers. Fifteen monitoring events at alluvial well BGMW01 were taken between April 2012 and April 2019 and used to establish BTVs for the alluvial aquifer. Three monitoring events at each of the three bedrock wells BGMW08, BGMW09 and BGMW10 were taken between April 2018 and April 2019, and used to establish BTVs for the bedrock aquifer.

The downgradient wells were selected as those wells which are hydrogeologically downgradient from the background wells and completed within the same aquifer as the background well(s) (Table 1). Background wells are used to calculate BTVs, with downgradient monitoring points only used to determine significance levels for the UPLs. Analytical results from the downgradient wells were not used to calculate BTVs were not used for comparative purposes, therefore any potential influence of the Rio Puerco and/or from well 69 is not pertinent to this statistical analysis.

It is the number of downgradient wells that are used to determine the individual test significance level per UPL - not the well location (i.e. wells located south of the Rio Puerco) and not the groundwater analytical results at the downgradient location. The number of downgradient wells is used as input to satisfy the site-wide false positive rate and produce a test significance level. It is only the count of downgradient wells that is required, not the actual location of the wells. This is because the requirement to establish the site-wide false positive rate is of a statistical nature, not of a hydrogeological nature. The Unified Guidance methodology was followed to set individual test significance levels such that their sum over all potential tests in a year does not exceed the recommended site wide false positive rate (SWFPR) of 10 percent (see Section 6, page 6-9, USEPA Unified Guidance 2009).

While groundwater mixing certainly occurs in the Administration Area, and surface water from the Rio Puerco infiltrates to the alluvial aquifer, these inputs to the hydrogeologic regime do not preclude comparison of BTVs calculated from the background monitoring wells to be used as comparative values at downgradient locations. The Army based its rationale on the selection of these 23 downgradient wells per USEPA Federal Register (80 FR 21399.) This states "*Because hydrogeologic conditions vary so widely from one site to another, the rule does not prescribe the exact number, location and depth of monitoring wells needed to achieve the general performance standard*." Table 1 identifies the background and downgradient wells by aquifer.

Since multiple constituents from multiple downgradient wells are being compared there is a cumulative risk of false positive errors; that is, of incorrectly indicating an exceedance of background. The number of downgradient wells is utilized to identify the number of background comparison tests so that the appropriate significance level for establishing the BTVs is selected to control for the side-wide false positive errors.

Software packages ProUCL (Singh and Singh 2015), Number Cruncher Statistical System (NCSS) (NCSS 2013), R (R Core Team 2018), and Statistical Package for the Social Sciences (SPSS) (IBM 2013) were used in the production of the statistics. ProUCL is offered by the United States Environmental Protection Agency (USEPA), R is a free software environment, NCSS and SPSS are licensed software packages. The choice of statistical methods used in the analysis of groundwater data and in the development of BTVs primarily uses concepts and approaches documented in the USEPA's "Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities: Unified Guidance" (Unified Guidance) (USEPA 2009).

2 Statistical Analysis

This section identifies the wells and monitoring constituents used for this study and presents a descriptive statistical evaluation of the groundwater data. This evaluation was performed to assess outliers, evaluate distributions, assess trends, and test for differences in concentration between the two aquifers. The statistical tests described in this section include the following:

- Analysis for statistical outliers using Dixon's test for outliers (Section 2.1). Outliers are values that are not representative of the population from which they are sampled and may be excluded from further analysis to avoid potentially biasing the calculation of background concentrations.

- Goodness Of Fit (GOF) tests to indicate whether parametric or nonparametric distributions best model the observed data (Section 2.2). The outcome of the GOF test (parametric or nonparametric) decides which statistical method to use when assessing trends over time. The two methods considered are the Maximum Likelihood Regression (MLE) for parametric distributions or the Mann-Kendall trend test for nonparametric distributions.

- Trend tests to determine whether groundwater conditions are stable (Section 2.3). The presence of a trend can signify several possibilities such as contaminated background, site-wide changes in the aquifer, seasonal fluctuations, or aquifer disturbances due to new well installation.

- Calculation and comparison of the central tendencies (means or medians) of the constituents between the alluvial and bedrock background wells using analysis of variance (ANOVA) methods (Section 2.4). This analysis addresses the question whether the background data across both aquifers can be pooled to represent overall groundwater conditions.

The wells listed in **Table 1** were selected to be included in the evaluation based upon the well selection criteria described in Section 1.3. The analytical results from the background wells were used to compute the BTVs. The number of downgradient wells were used to determine the number of comparisons required between the BTVs and the analytical results from FWDA monitoring wells to achieve the target site-wide false positive rates. **Figure 2** shows the location of the background wells and the respective downgradient wells. **Table 2** lists the constituents included in the evaluation. The alluvial and bedrock background sample sizes (i.e., quantity of qualifying samples) were evaluated per constituent. In instances where duplicate samples were collected on a given date, the median of the two values was used to represent the sampling event. If duplicate samples exhibited a mix of detect and non-detect (ND) values, the detected value was selected. Descriptive statistics were calculated for the background data set including ND values and excluding ND values. The descriptive analysis was performed with NDs removed to better understand the central tendency and range of the detected values.

The method detection limit (MDL) also referred to as the detection limit (DL), is the lowest level at which a result can be reliably distinguished from method blank results. For the descriptive

statistics of background data sets that included NDs, the DL was substituted as the ND value. When the DL value was not available, the limit of detection (LOD) was used. For consistency throughout this report, DL will be used, regardless of whether the value used was the DL or the LOD.

A summary of the descriptive statistics for each of the alluvial and bedrock background data sets is provided in **Table 3**. Note that for the trend analyses described in Section 2.3 and for the establishment of statistically-derived BTVs in Section 3, imputation methods using the MLE for NDs, Regression on Order Statistics or Kaplan-Meier methods, where appropriate, were used.

Following the calculation of descriptive statistics, the statistical analysis for the alluvial and bedrock background data sets were performed to evaluate for outliers, data distributions, and trends for total and dissolved metals, nitrate, and perchlorate, where data quantity and quality permit. Mean or median concentration differences between the alluvial and bedrock background wells were evaluated for each constituent to assess whether the data across the aquifers can be pooled for establishing BTVs. A total of 15 samples (one sample per monitoring event) from well BGMW01 were included for the descriptive analysis of the background alluvial monitoring well results for the constituents of interest. Nine samples (three monitoring events from BGMW08, BGMW09, and BGMW10) were included for the descriptive analysis of the background bedrock monitoring well results for the same constituents.

Supporting statistical output used to profile the data sets, assess outliers, evaluate distributions, assess trends, and test for differences in concentration between the two aquifers is presented in **Appendix A**.

2.1 Outlier Test Results – Background Wells

Outliers are values that are not representative of the population from which they are sampled. The background data sets were screened for outliers using Dixon's outlier test, which is suitable for data sets containing less than 25 samples. The outlier test was conducted using a significance of one percent or a confidence level of 99 percent. Based upon review of the groundwater analytical results utilized for this background evaluation, there were no elevated laboratory detection limits. For those constituents that had NDs, the NDs were removed prior to conducting the Dixon's outlier tests. The NDs that were excluded for Dixon's outlier tests did not have high reporting limits. NDs were not included as part of Dixon's outlier tests for the following reasons:

- While ProUCL states to include the NDs at the limit or ½ limit value, this inclusion is misleading. Researchers in the last 20 years have expounded on not using this substitution method as it produces bias in the estimates. For example, we have found when using ND values with ProUCL that the NDs themselves became outliers.

- ProUCL chose to use the variant of the Dixon's outlier test which assumes an underlying normal distribution except for the outlier and that there is only one outlier in the sample. The choice of the normal distribution is unexpected as most of the technical guidance emphasizes the gamma and lognormal distributions as appropriate distributions to model groundwater constituent concentrations. Even the lognormal distribution comes with

caveats. Including data samples with NDs and then using the simple substitution method could further distort the distribution from an assumed normal one.

- Dixon's outlier test was conducted with what is available in ProUCL, but multiple lines of evidence were applied using scatter plots and box and whiskers plots which included using all detect and non-detect values combined with scientific and historic knowledge of the area to determine if the highest value should be removed or kept.

While there are other methods to test for outliers in the presence of NDs in very small samples, the Army's approach is in compliance with the Unified Guidance (USEPA 2009). Due to the small sample sizes, the Army supplemented the statistical outlier tests with visual means using scatter plots and box and whisker plots. When background sample sizes accumulate to 20 or more samples, a sensitivity test may be done to compare outlier test results with or without NDs.

The issue of elimination of values with high reporting limits is not of concern as the eliminated values did not have high reporting limits. Only detected values were analyzed when running Dixon's outlier test. Using multiple lines of evidence, the statistical outlier tests were substantiated with visual means using scatter plots and box and whiskers plots which used all detect and non-detect values along with scientific and historic knowledge of the area to determine if the highest value should be removed or retained. In accordance with the Unified Guidance (USEPA 2009), HDR's review by a statistician and hydrogeologist determined that the values exhibited unexceptional ranges from a geological perspective for the constituents in the area.

Statistical outliers were identified in the background data set evaluated both in alluvial and bedrock wells. The constituent concentrations identified as statistical outliers were sampled from alluvial well BGMW01 and bedrock well BGMW09, and are listed in **Table 4**.

As stated in the ProUCL Technical Guide (Singh and Singh 2015), groundwater sample concentrations are typically highly variable in nature, hence outliers identified in a statistical context are expected but do not necessarily signify that the outliers are from different distributions. A visual inspection of concentration versus time plots for constituents including the outliers listed in **Table 4** reveal the presence of the potential outliers as shown in **Figures 3a – 3c.** The Unified Guidance (USEPA 2009) recommends not removing statistically identified outliers unless some basis for a likely error or discrepancy can be identified or they are of high-magnitude compared to other concentrations. The statistical outliers were investigated but neither data entry or measurement errors were identified. Although the elevated values appear as statistical outliers, the values varied within one order of magnitude which is considered a reasonable range of variability. Given the variable nature of groundwater samples and the small sample sizes, the statistical outliers should not be removed from the data set at this time for purposes of determining background concentrations. As additional background samples are collected over time, the variability in concentrations can be better understood. As new data become available, outlier test results may change and earlier observations thought to be outliers may no longer be outliers.

The justification for inclusion of the apparent outliers is based on a review of range of the concentrations in light of the small sample sizes. The review was done in four steps:

1. Identify which constituent-well pairs had statistical outliers based on ProUCL's Dixon's test.
2. Study range of data in scatter plots from the same constituent-well pairs identified in Step 1. Note if the highest values were a magnitude or less in difference from the other values.
3. Study range of data from box and whisker plots for all constituent-well pairs, including those identified in Step 1. Note if the highest values were a magnitude or less in difference from the other values.
4. Check if human activity or error occurred on the dates of the apparent statistical outliers. Since no reason could be found, the values were included in the development of the BTVs.

Outlier tests whether they are based on Dixon's or use graphical means (e.g., box and whisker plots) are less definitive for very small datasets (less than 20 observations) as we have gathered from the alluvial and bedrock wells. What appears to be an extreme value or outlier in the small dataset is most likely from a portion of the background distribution that has yet to be sampled (See Unified Guidance (2009), page 5-5). Outliers flagged by statistical tests or by means of scatter plots (Figures 3a – 3c) or box and whisker plots (figures 4A – 4D) were evaluated for anomalous ranges and the values are deemed reasonable and expected. The Army does not have other technical information, knowledge or basis at this time with a very small dataset to remove the highlighted values. Lastly, the values in figures 4A and 4D appear to be outliers because they are plots of all constituents and some of the constituents had statistical outliers based on Dixon's tests as listed in Table 4. Based upon review of the box and whisker plots for ranges within one order of magnitude or less, it was determined the values were not due to data errors, discrepancy or other non-background populations.

The Unified Guidance (USEPA 2009) recommends not removing statistically identified outliers unless some basis for a likely error or discrepancy can be identified or they are of high magnitude compared to other concentrations. The Unified Guidance (USEPA 2009) recognizes that statistical outlier tests should be done on datasets, however, the decision to drop them rests on whether the values are in error or of very high magnitude (USEPA Unified Guidance page 5-5). Some statisticians have discussed dropping outliers as a rule, however, this is not substantiated with very small sample sets. Small sample sets are not fully representative of the populations from which they are drawn as they only have a partial picture of the underlying distribution of groundwater concentrations. What appears to be an extreme value or outlier in the small dataset is most likely from a portion of the background distribution that has yet to be sampled (Unified Guidance 2009). Nevertheless, the outlier analysis for this work was not performed solely by the software; the model output was reviewed by a degreed and practicing statistician and hydrogeologist to ensure the outlier evaluation was appropriate for this specific site evaluation.

2.2 Data Distribution

Groundwater data was fit to known distribution models using GOF tests incorporated into ProUCL. For data sets comprised of 50 or fewer samples, ProUCL's GOF module incorporates the Shapiro-Wilk GOF test to determine normal or lognormal distribution and Anderson-Darling to determine

gamma distribution. The GOF tests are performed at the 0.05 level of significance. Normal, lognormal and gamma distributions are parametric distributions. If a data set could not be fit with any of these three parametric distributions, it was considered to follow a nonparametric distribution. Background samples that consisted of more than 50 percent NDs were considered to follow a non-parametric distribution as they had an insufficient number of detected values for identifying an appropriate parametric distribution. Data distributions are listed in **Table 5**.

It is important to correctly specify the method used for computing the BTVs. Statistical tests conducted under parametric distribution assumptions have more power to detect an exceedance when compared to tests conducted under nonparametric distribution assumptions; however, if incorrectly specified, parametric tests can result in misleading and inaccurate results. With parametric tests, the distribution is known so more information is available about the characteristics of the data. As a result, inferences can be made about the data with smaller sample sizes. Nonparametric tests are based solely on the data as there is no discernible distribution. Hence, nonparametric tests have less power because they require a larger sample size to draw conclusions with the same degree of confidence. However, nonparametric test results are more reliable when the distribution of the data is not evident.

2.3 Background Trends

Background constituent concentrations in groundwater should demonstrate stable conditions through time, free of trends. As stated in the Unified Guidance (USEPA 2009), a trend can signify several conditions, including contamination, site-wide changes in the aquifer, seasonal fluctuations, or aquifer disturbances due to new well installation. Constituents were analyzed for trends within the data set using a MLE regression for constituents which followed parametric distributions and Mann-Kendall tests for those that were treated under nonparametric distributional assumptions. The MLE regression can be applied to data sets that can be fitted to a specific distribution model and that contain NDs with multiple DLs. The Mann-Kendall test is suitable for data series with no discernable distributions and the same DL value for NDs.

Constituents treated with more than 50 percent NDs or with multiple DLs were not assessed for trends. A trend analysis was conducted for constituents in each of the alluvial and bedrock aquifers with background data sets that had a sufficient number of detected values. Constituents that exhibited a statistically significant trend in the alluvial or bedrock aquifer are summarized in **Table 6**.

Of the 48 different constituents (23 metals (total and dissolved), nitrate and perchlorate) potentially available for trend testing, only three constituents (dissolved nickel and total arsenic in the alluvial well, and total chromium in the bedrock wells) exhibited statistically significant trends. The background well regression analysis showed potentially decreasing trends for dissolved nickel and total arsenic from the alluvial background monitoring well and for total chromium from the bedrock well monitoring wells. There were no increasing or decreasing trends identified for other monitoring constituents with sufficient data quantity and quality for testing with the MLE analysis or Mann-Kendall test. Although statistical trends were identified for these three constituents, these trends were not consistent among alluvial and bedrock monitoring wells

(**Table 6**). Additionally, the limited duration of the sampling program adds potential uncertainty as to the environmentally relevant significance of these trends.

2.4 Statistical Comparison of Alluvial and Bedrock Background Wells

The locations of the one alluvial background well and the three bedrock background wells have been selected to represent overall groundwater conditions at the FWDA site. Given that the wells are screened in different aquifers, aquifer specific BTVs have been derived. However, if the distributions of the monitoring constituents for each of the aquifers are the same (i.e. the constituent follows a normal or lognormal distribution in samples from both aquifers), it may be possible to pool all the data. Pooling increases the sample size for each constituent, providing stronger statistical power to reject the null hypotheses that there are no exceedances when there really are exceedances. To determine if pooling the data between background wells from the two aquifers is possible from a statistical perspective, ANOVA tests were conducted for each monitoring constituent provided the constituent did not have 100 percent of its observations as NDs.

Two different types of hypothesis tests under lognormal and nonparametric distributional assumptions were conducted for each of the background data sets using two types of ANOVA tests: lognormal (parametric) and nonparametric ANOVA. Both methods attempt to assess whether distinct observations differ on average. Specifically for this analysis, the ANOVA was used to determine whether there is a difference between observations collected from the alluvial well BGMW01 and the pooled observations from the bedrock wells BGMW08, BGMW09 and BGMW10 for each of the dissolved metals, total metals, and nitrate, where data quantity and quality permit. Perchlorate was not analyzed as all of the observations in the alluvial well are NDs.

The lognormal (log) ANOVA test is identical to the ANOVA under normality assumptions; that is, the data are independent and identically distributed, the residuals of the data are normally distributed, and the variances among the groups under study are constant. As many groundwater constituents follow lognormal or lognormal-like distributions, the raw data were transformed by taking their natural logarithms. The Kruskal-Wallis test is a non-parametric, rank-based alternative to the parametric ANOVA. Instead of a test of means, the Kruskal-Wallis tests differences among average population ranks equivalent to the medians.

While some constituents followed parametric distributions (see **Table 5**), their distributions were not always consistent between the two background aquifers. For example, a constituent may have both the alluvial and bedrock aquifer distributions as parametric, one parametric and one nonparametric or both nonparametric. Both classes of ANOVA were applied to the monitoring constituents as further lines of evidence and their outcomes are summarized in **Table 7.** In over 60 percent of all tests, the log ANOVA or the Kruskal-Wallis indicated that the background concentrations between the two aquifers were different and hence one would reject the null hypothesis that there are no differences between the results for the background wells from the two aquifers at the 5 percent level of significance. With the majority of constituents showing

differences in average concentrations based on the ANOVA tests, there is evidence to support the assumption that the data from the two aquifers should be treated separately from a groundwater monitoring and data evaluation perspective. **Figure 4** presents side-by-side box and whisker plots for each monitoring constituent. Side-by-side box and whisker plots are a simple visualization tool to demonstrate the degree as how distributions can vary because they summarize the center and spread of the data. The Inter-Quartile Range (IQR) is the distance between the upper (75th percentile) and lower (25th percentile) lines of the box and is a common measure of spread. The box plot whisker is a line that goes out from the box to the whisker boundaries, which is 1.5 times the IQR. Extreme values (outliers), indicated by the red dots, are usually three times the IQR. When plots of differing distributions are placed side-by-side, differences in central tendencies and spread or variance can be observed.

A primary trend which can be easily observed is that the medians of the bedrock constituents tend to be higher than the medians found in the alluvial background well. The variability in the concentrations collected from the three bedrock background wells is notably larger than observed alluvial concentrations. While the sample sizes for the alluvial and bedrock background wells are relatively small, the ANOVA test results and the apparent differences of the distributions based on the side-by-side box and whisker plots between the alluvial and bedrock background wells suggest that the BTVs should be specific to an aquifer and should not be pooled. As more data is collected at the background wells, tests for differences in means or medians between the two monitoring networks may be updated to monitor changes in the distributional differences.

2.5 Summary of Statistical Analysis

A summary of the statistical analysis results is provided in **Table 8,** and is discussed below. Based on the analysis results, the following assumptions were applied to develop the BTVs:

- The statistical outliers identified for the dissolved and total metals from alluvial well BGMW01 and bedrock well BGMW09 were not removed from the data set to be used for developing background concentrations for the site at this time. These metals are flagged as outliers in **Table 8.**

- Monitoring constituents from the alluvial and bedrock monitoring network that are 100 percent NDs were treated under nonparametric distribution assumptions with the maximum DL chosen to represent background.

- For the background alluvial well BGMW01, monitoring constituents which exhibited a more than 50 percent NDs were treated under nonparametric distribution assumptions with the maximum detect value chosen to represent background, until additional results can be included in the data sets. GOF tests were used to fit dissolved and total metals with sufficient background data to known parametric distribution models (e.g., gamma, lognormal, or normal). Metals that could not be fit to a discernible distribution are nonparametric. The monitoring constituents from the alluvial aquifer treated under nonparametric assumptions are listed in **Table 8**.

- For the background data set from the three bedrock aquifer wells BGMW08, BGMW09 and BGMW10, monitoring constituents which exhibited a high percentage of NDs were treated under nonparametric distribution assumptions with the maximum detected value chosen to represent background, until additional results can be included in the data sets. These constituents are listed in **Table 8**. All dissolved and total metals with sufficient background data were fit to a known parametric distribution model using GOF tests.

- Based on the small data set (less than 20 samples) and/or short duration (less than 3 full seasonal cycles for bedrock data) of the monitoring program, results from the outlier and trend analyses should be considered preliminary until additional sample results are included in the data set and re-evaluated.

- Testing and graphing for differences in concentration between the alluvial and bedrock aquifers for the monitoring constituents revealed sufficient differences to treat the two aquifers as distinct to date. As background sample size grows, changes in the differences in concentration should be re-evaluated.

3 Background Threshold Values

This section presents the BTVs for the monitoring constituents in alluvial and bedrock wells.

The BTV is the statistically-derived background concentration (the UPL), or, depending on the proportion of NDs, the maximum detected value or the maximum DL.

Although the upper tolerance limit (UTL) has been used in the past to derive BTVs as suggested in the Risk Guidance (NMED 2019) the UPL is the statistic recommended by both the Unified Guidance (USEPA 2009) and the ProUCL Technical Guide (Singh and Singh 2015) to estimate BTVs for groundwater concentrations. The construction of a UTL is highly similar to that of a UPL; however, the statistical interpretation is different. Unlike the UTL, the UPL can be constructed to control for site-wide false positive errors and improve statistical power. False positive errors arise when concentration increases above background are identified when in actuality no true exceedance has occurred. Good statistical power suggests that concentration increases above background are correctly identified. The UTL lacks the statistical properties that allow practitioners to implement strategies that meet these two performance characteristics for testing for exceedances in background concentrations.

The UPL represents the upper boundary of a prediction interval for an independently obtained observation (or an independent future observation). The significance level per UPL is modified to control for the site-wide false positive rate incurred when evaluating multiple downgradient well-constituent during semi-annual monitoring events for potential exceedances over background. As recommended by the Unified Guidance (USEPA 2009), individual test significance levels are set such that the overall cumulative false positive rate is 10 percent or less. In addition, the UPL estimation methodology incorporates the number of verification sampling events to confirm whether an observed exceedance from a constituent at a particular downgradient well is actually an exceedance or an outcome of random variation.

For constituents that have all ND background values, the maximum DL was chosen to represent the background value and the double quantification rule [1] (DQR) was used to evaluate whether or not there was an exceedance.

The test significance level per constituent was estimated such that the cumulative false positive rate over all well-constituent pair comparisons was approximately ten percent. Depending on the aquifer and constituent, individual UPL test significance levels ranged from 0.0001 to 0.0207 percent (i.e., UPLs ranged from 99.9% to 97.9% confidence levels).

The number of verification samples per constituent was selected to provide sufficient statistical power to detect an exceedance when an exceedance occurred, conditional to the background sample size, its distributional properties, and the total number of statistical test comparisons.

[1]Regardless of the background sample size, when 100 percent of the measurements are NDs, then the DQR can be used to test for an exceedance relative to background. According to the Unified Guidance, a confirmed exceedance is registered if any well-constituent pair in the '100% ND' group exhibits quantified measurements in two consecutive sample and resample events.

The calculated alluvial and bedrock aquifer BTVs for each monitoring constituent are provided in **Table 9**.

4 Findings

The findings of the statistical analyses are provided below:

1. The statistical evaluations deemed the analytical results from the background wells to be representative of current background conditions and therefore appropriate for establishing BTVs.

2. The BTVs were calculated for dissolved metals, total metals, perchlorate, and nitrate for the alluvial and bedrock aquifers. The BTVs are considered to represent background or aquifer conditions unaffected by FWDA activities, and are used to provide a numerical basis for comparison with groundwater monitoring results. Values exceeding the BTV may indicate contamination is present and additional action may be required. The BTVs are provided in **Table 9**.

3. Based upon the ANOVA test results of dissolved and total metals between the alluvial and bedrock aquifers, it appears that the samples were not derived from the same population because they do not share similar concentration averages and variability. Therefore, results for samples collected from the two aquifers should be considered to represent separate populations and the monitoring constituents should be evaluated separately by aquifer.

4. Samples collected from FWDA often have high turbidity which can affect observed analytical results (Sundance, 2019). Well turbidity can introduce excess naturally occurring trace elements into the samples and result in elevated, inconsistent, and incomparable metals results within and between wells. The BTVs for each monitoring constituent from the alluvial and bedrock aquifers reflect the background conditions from which they were sampled. The background data should continue to be monitored and assessed to provide additional information about groundwater quality at the facility. As more data is collected, the BTVs can be updated to reflect background conditions at the facility.

5 References

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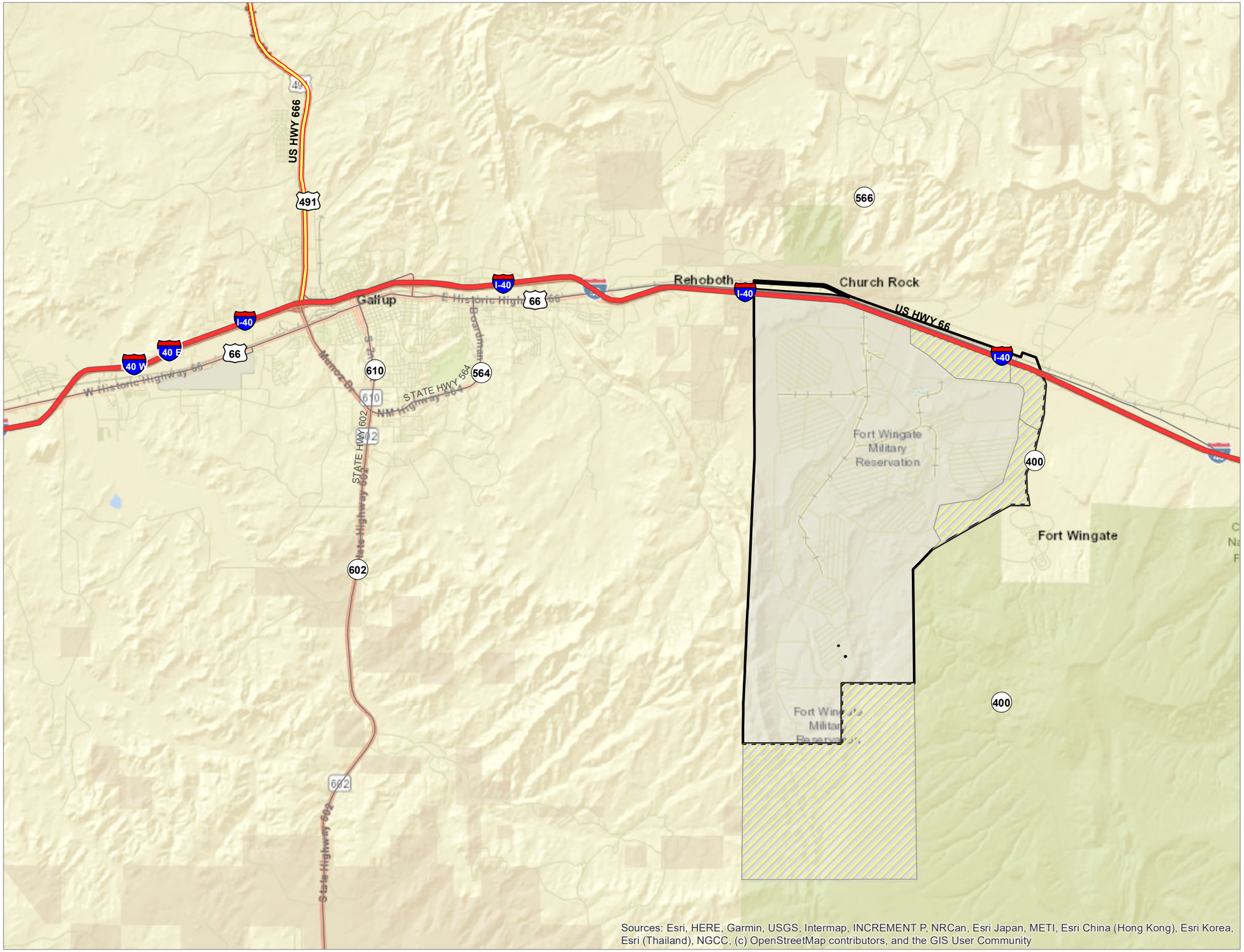
Figures



Legend

- FWDA Site Boundary
- Transferred FWDA Property
- Interstate
- Highways
- Secondary Roads

N W E S

0 0.5 1 2 3
Miles

0 1 2 4
Kilometers

Coordinate System:
WGS 1984 Web Mercator Auxiliary Sphere
Projection:
Mercator Auxiliary Sphere
Datum:
WGS 1984

Figure 1

SITE LOCATION MAP

GROUNDWATER BACKGROUND EVALUATION

FORT WINGATE DEPOT ACTIVITY
MCKINLEY COUNTY, NEW MEXICO

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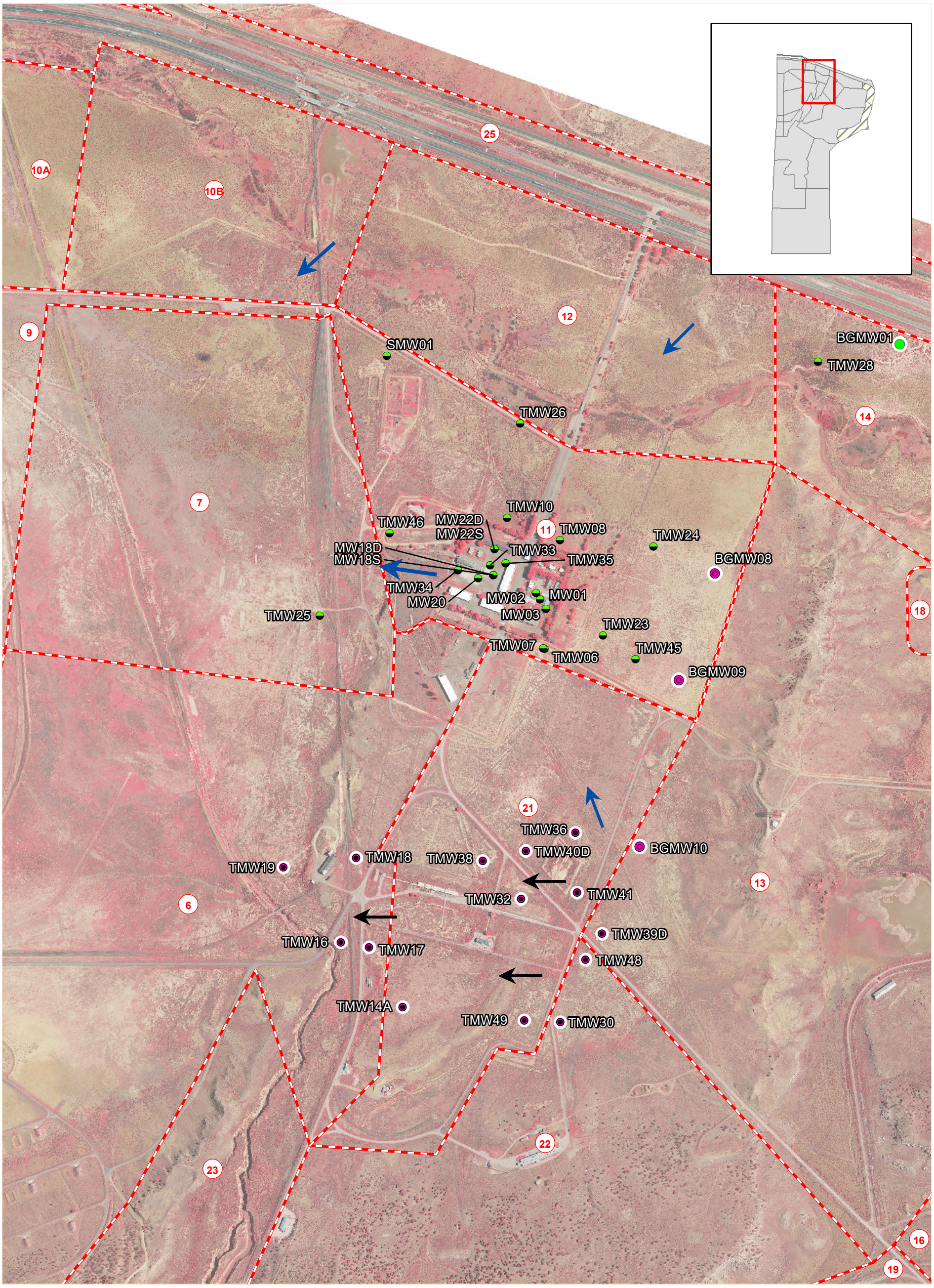

Legend

- Alluvial Background Well
- Alluvial Downgradient Well
- Bedrock Background Well
- Bedrock Downgradient Well
- Alluvial Aquifer Groundwater Flow Direction
- Bedrock Aquifer Groundwater Flow Direction
- FWDA Parcel Boundaries
- FWDA Parcel Number

Notes

FWDA = Fort Wingate Depot Activity

N W E S

0 375 750 1,500
Feet

0 115 230 460
Meters

Coordinate System:
WGS 1984 Web Mercator Auxiliary Sphere
Projection:
Mercator Auxiliary Sphere
Datum:
WGS 1984

Updated:
12/11/2019 10:30:06 AM

Figure 2

MONITORING WELLS UTILIZED FOR STATISTICAL ANALYSIS

GROUNDWATER BACKGROUND EVALUATION

FORT WINGATE DEPOT ACTIVITY
MCKINLEY COUNTY, NEW MEXICO

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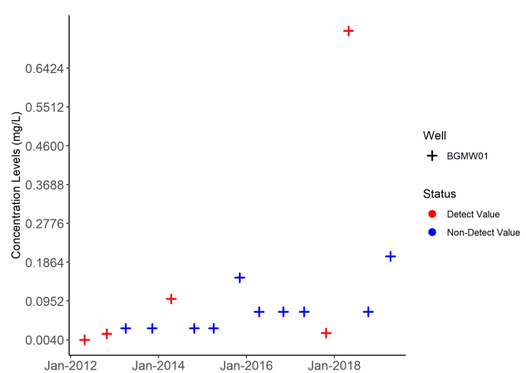
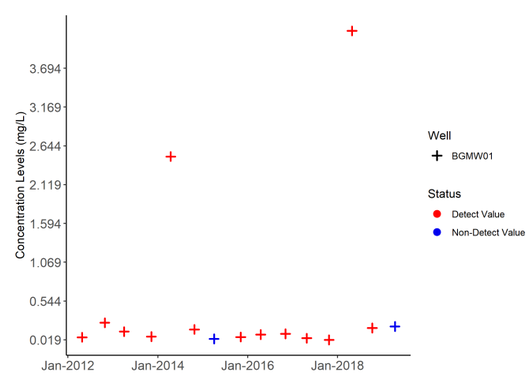
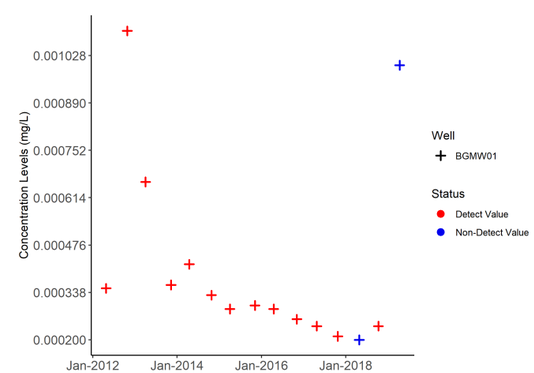


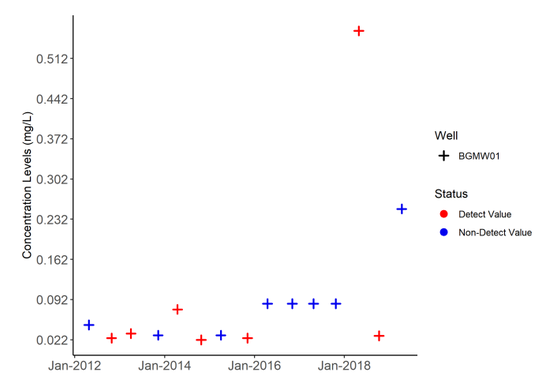
Aluminum (Dissolved) vs.Time



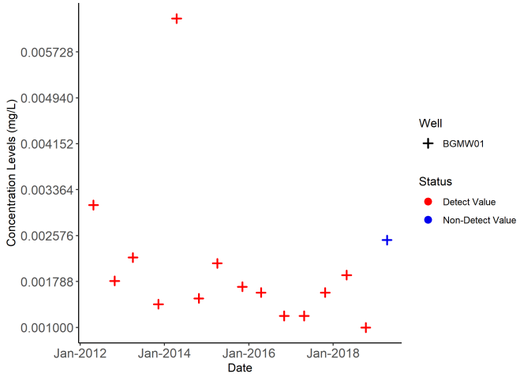
Aluminum (Total) vs.Time



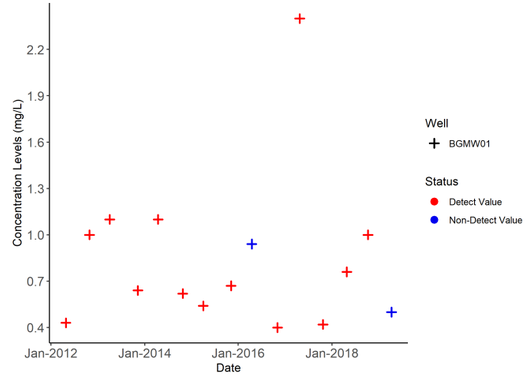
Cobalt (Dissolved) vs.Time



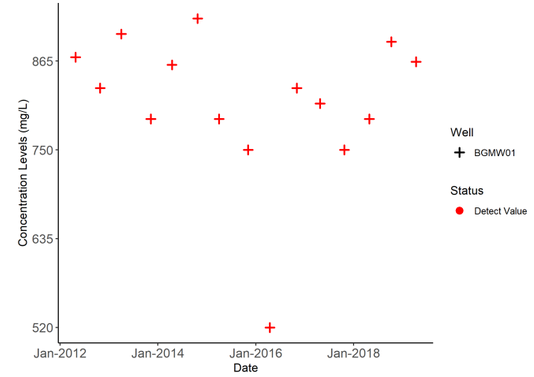
Iron (Dissolved) vs.Time



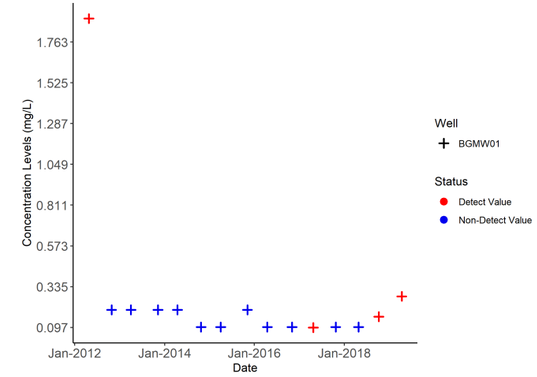
Nickel (Dissolved) vs.Time



Potassium (Dissolved) vs.Time



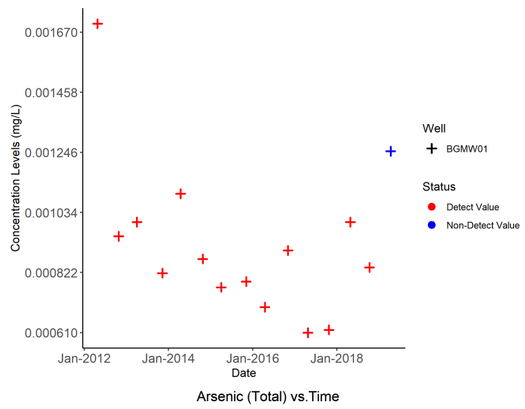
Sodium (Dissolved) vs.Time



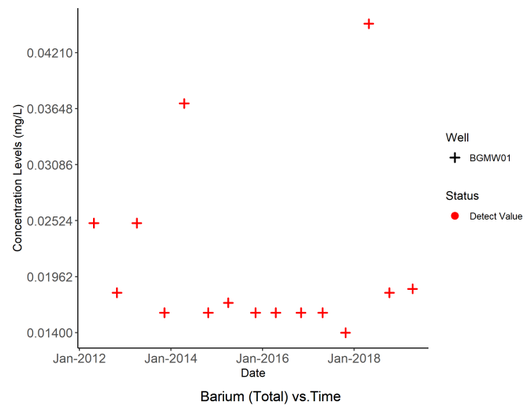
Nitrate vs.Time

Figure 3A

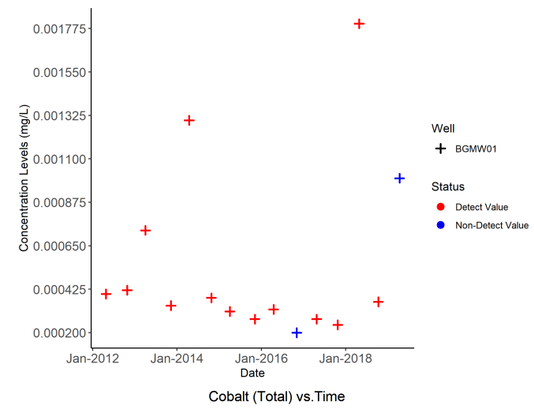
SCATTER PLOTS IN SUPPORT OF OUTLIER ANALYSIS - ALLUVIAL
GROUNDWATER BACKGROUND EVALUATION
FORT WINGATE DEPOT ACTIVITY MCKINLEY COUNTY, NEW MEXICO



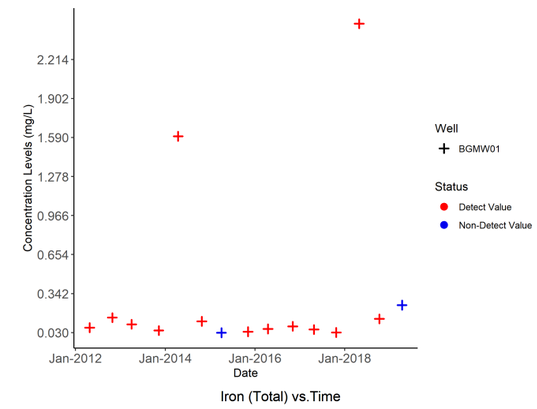
Arsenic (Total) vs.Time



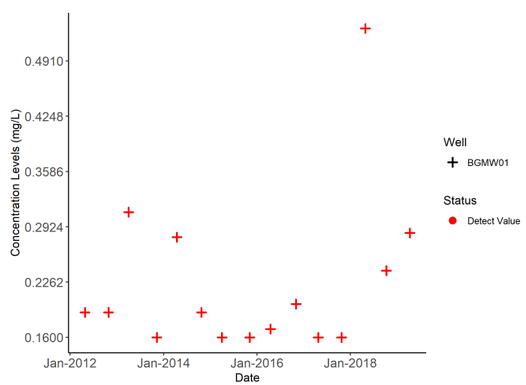
Barium (Total) vs.Time



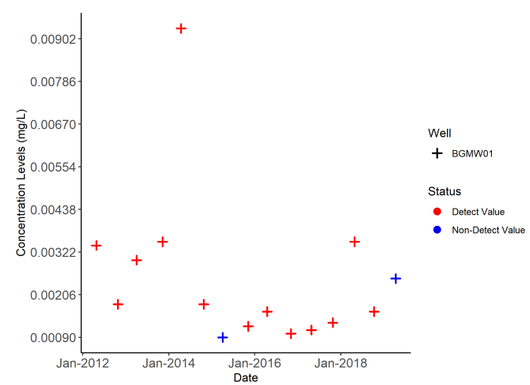
Cobalt (Total) vs.Time



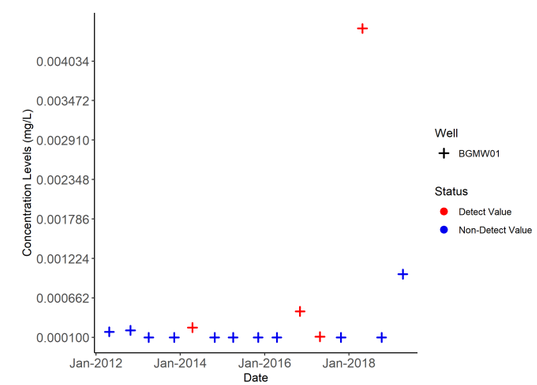
Iron (Total) vs.Time



Manganese (Total) vs.Time



Nickel (Total) vs.Time

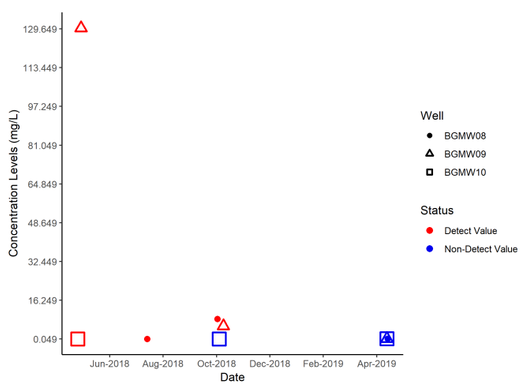


Silver (Total) vs.Time

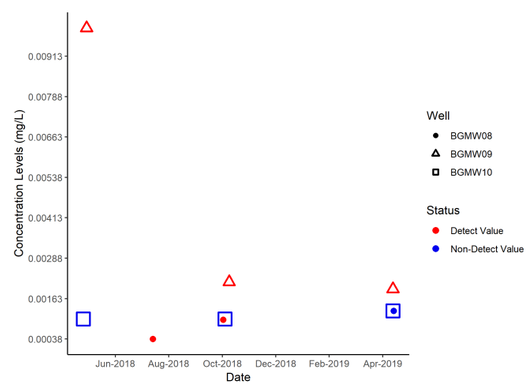
Figure 3B

SCATTER PLOTS IN SUPPORT OF OUTLIER ANALYSIS - ALLUVIAL GROUNDWATER BACKGROUND EVALUATION

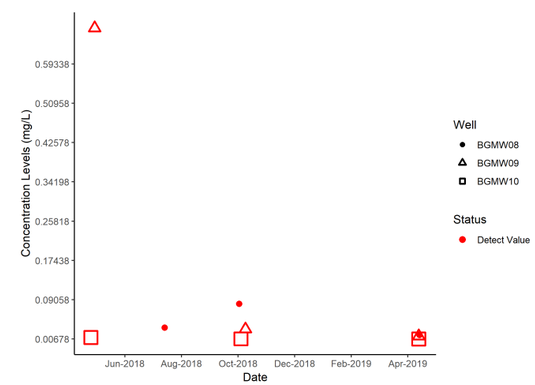
FORT WINGATE DEPOT ACTIVITY MCKINLEY COUNTY, NEW MEXICO



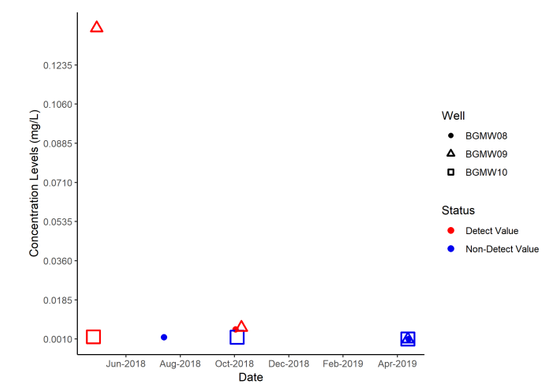
Aluminum (Dissolved) vs.Time



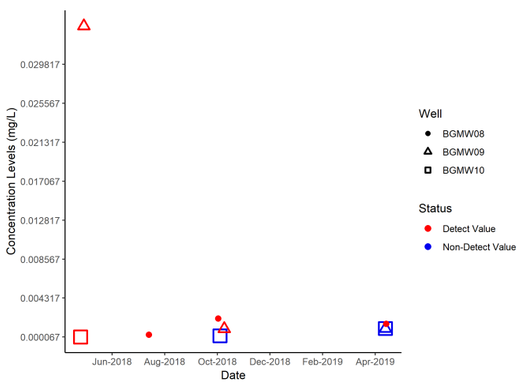
Arsenic (Dissolved) vs.Time



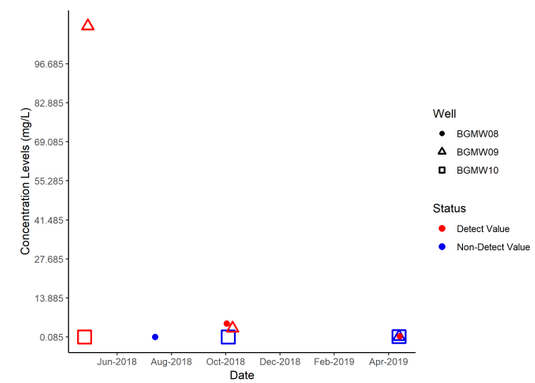
Barium (Dissolved) vs.Time



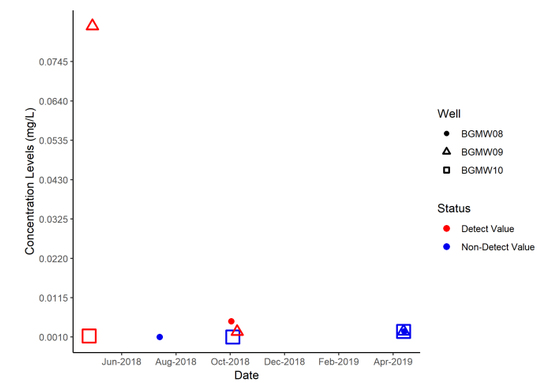
Chromium (Dissolved) vs.Time



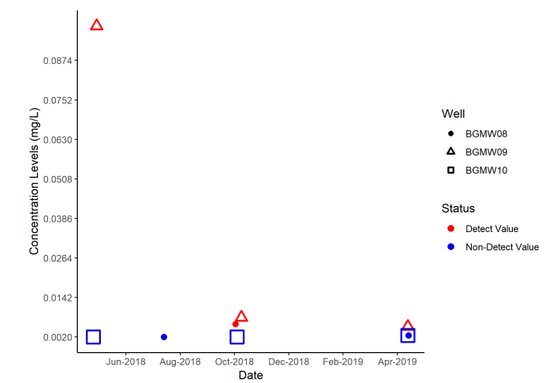
Cobalt (Dissolved) vs.Time



Iron (Dissolved) vs.Time



Nickel (Dissolved) vs.Time

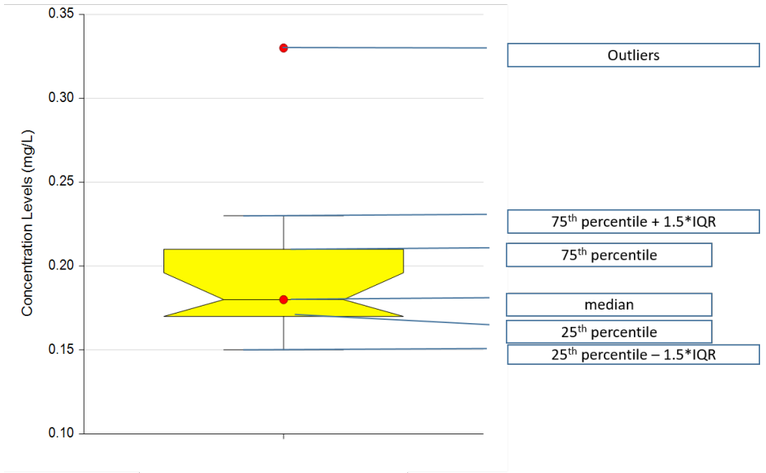


Vanadium (Dissolved) vs.Time

Figure 3C

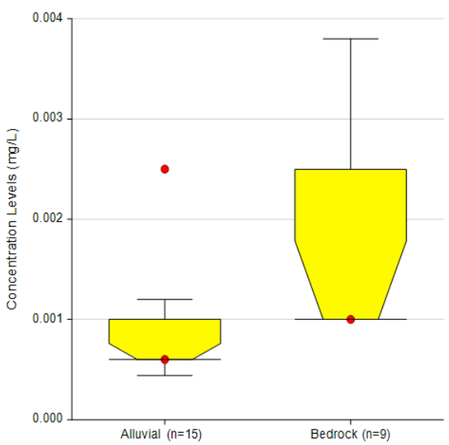
SCATTER PLOTS IN SUPPORT OF OUTLIER ANALYSIS - BEDROCK
GROUNDWATER BACKGROUND EVALUATION
FORT WINGATE DEPOT ACTIVITY MCKINLEY COUNTY, NEW MEXICO

PATH: W:\FORT WINGATE\STATISTCAL ANALYSIS\BLANK1117.MXD - USER: WRITTER - DATE: 12/11/2019

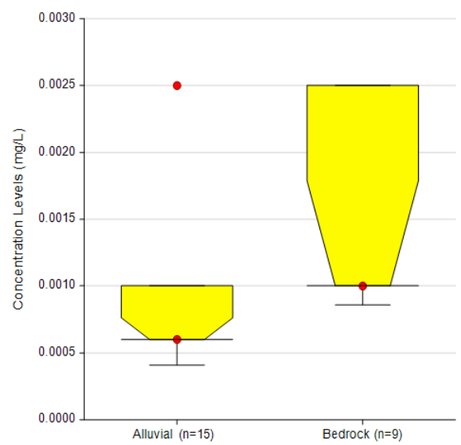


Box Plot Legend

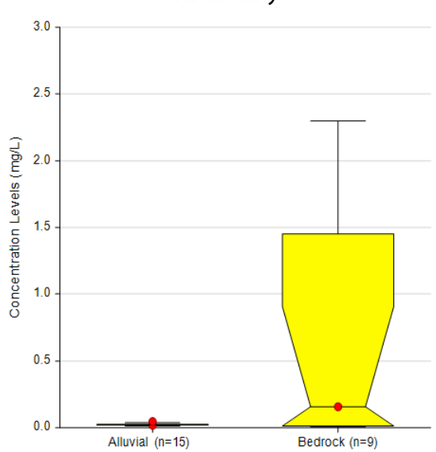
IQR: Inter-Quartile Range
n = number of samples
mg/L = milligrams per liter



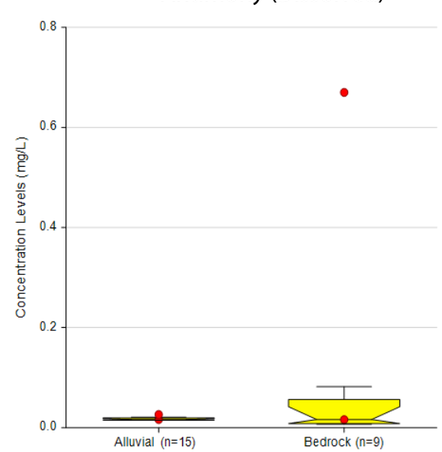
Antimony



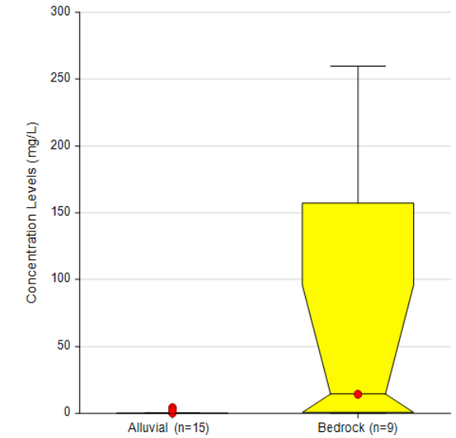
Antimony (Dissolved)



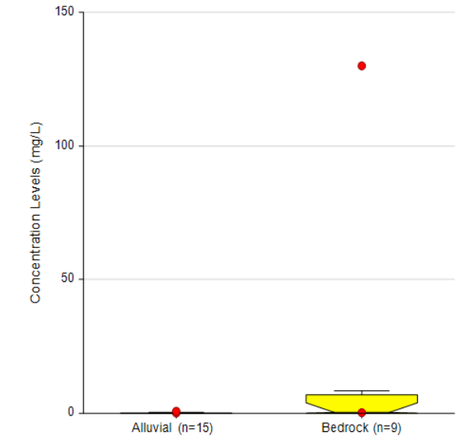
Barium



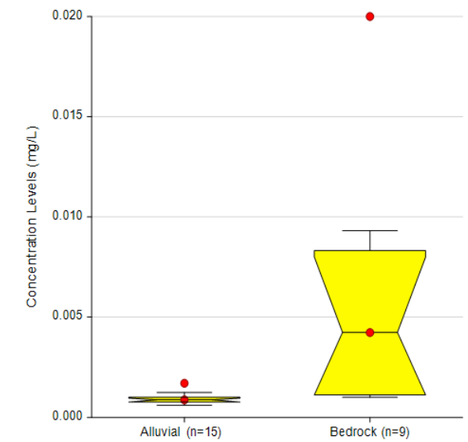
Barium (Dissolved)



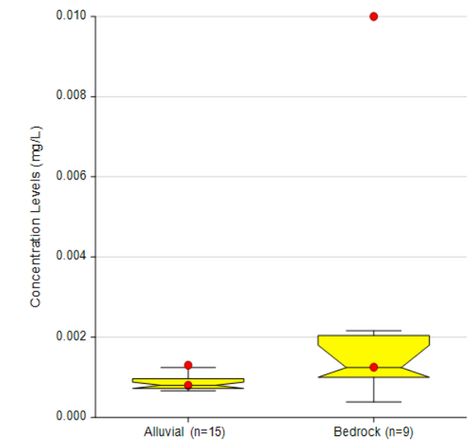
Aluminum



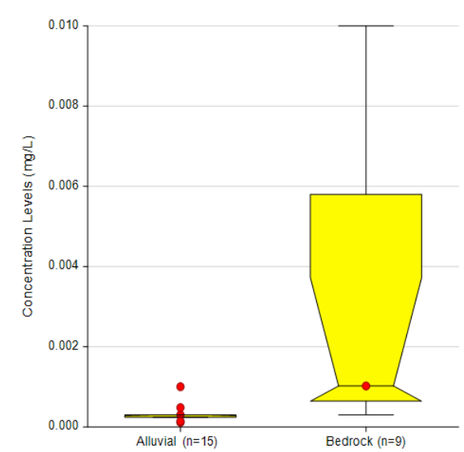
Aluminum (Dissolved)



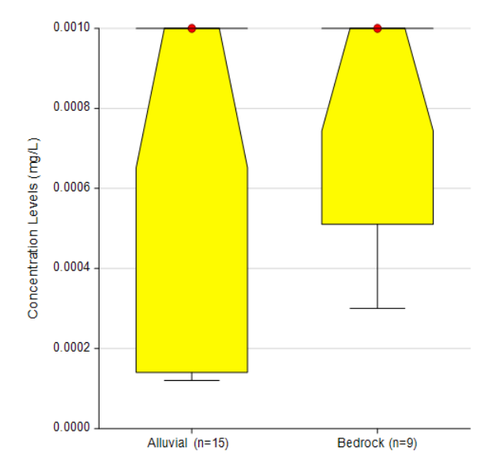
Arsenic



Arsenic (Dissolved)



Beryllium



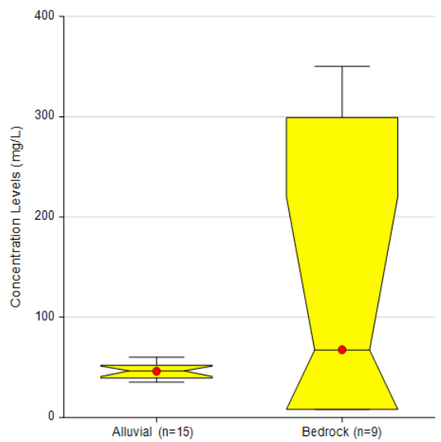
Cadmium

Figure 4A

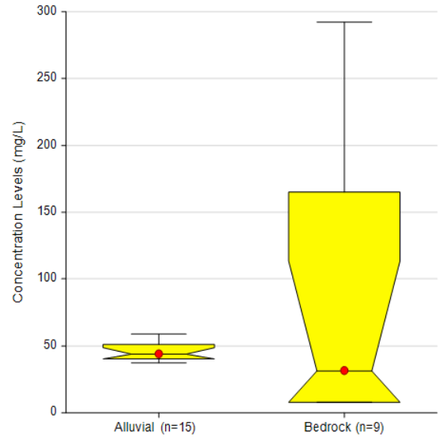
BOX AND WHISKER PLOTS
GROUNDWATER BACKGROUND EVALUATION
FORT WINGATE DEPOT ACTIVITY MCKINLEY COUNTY, NEW MEXICO

HDR

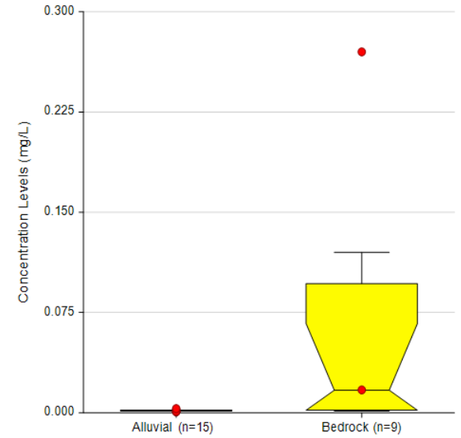
PATH: W:\FORT WINGATE\STATISTCAL ANALYSIS\BLANK1117.MXD - USER: WRITTER - DATE: 12/11/2019



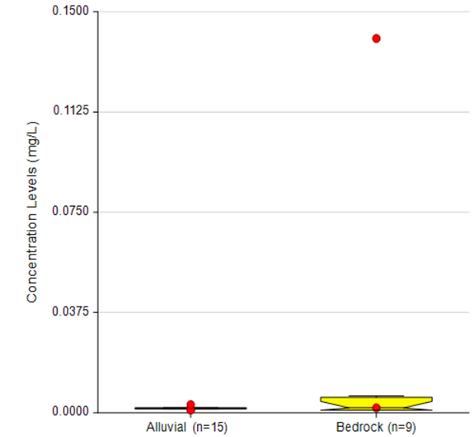
Calcium



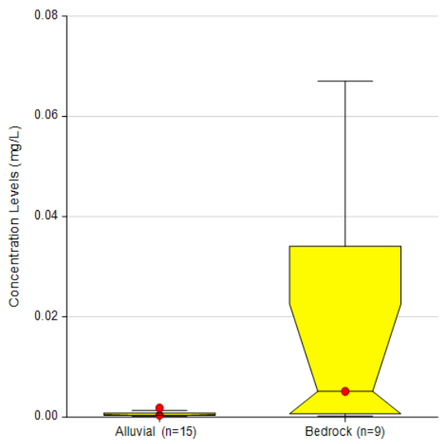
Calcium (Dissolved)



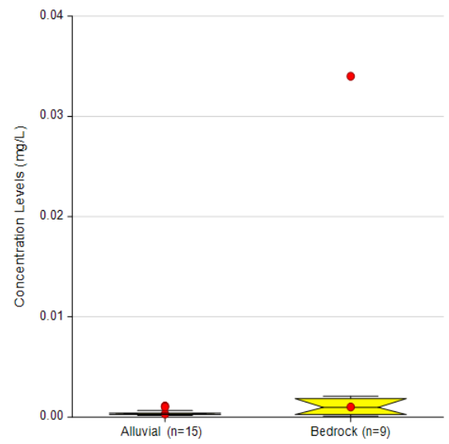
Chromium



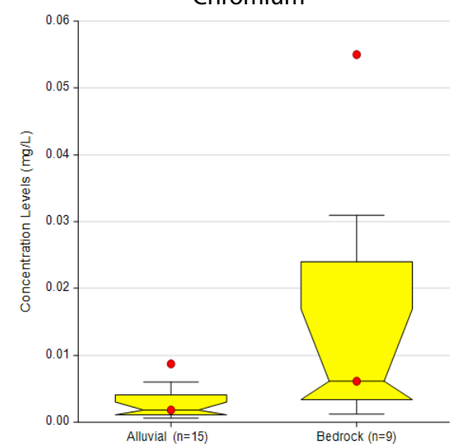
Chromium (Dissolved)



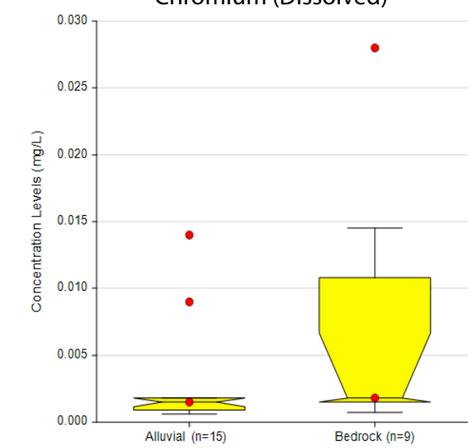
Cobalt



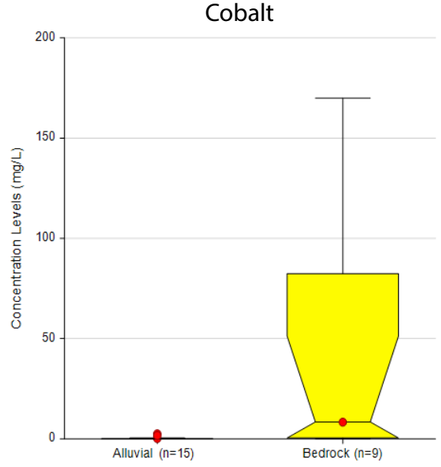
Cobalt (Dissolved)



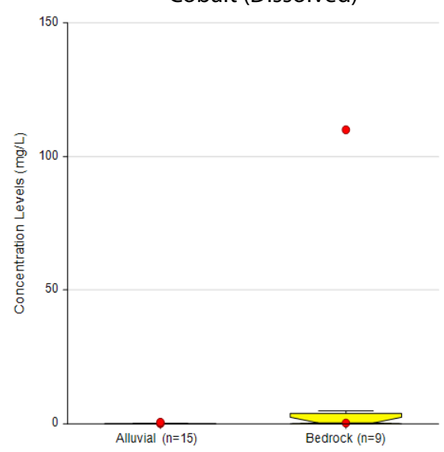
Copper



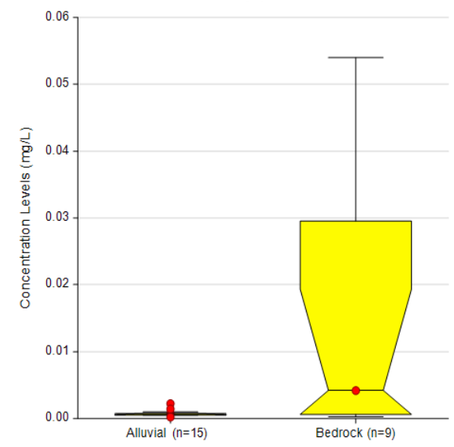
Copper (Dissolved)



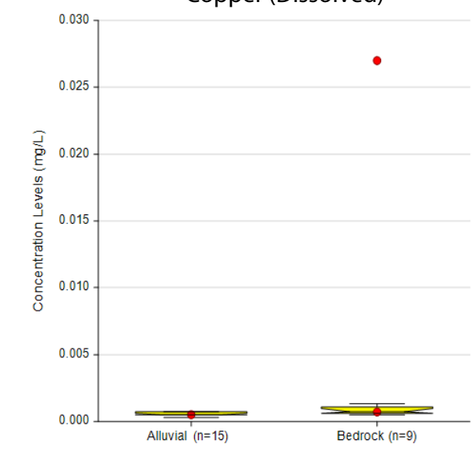
Iron



Iron (Dissolved)



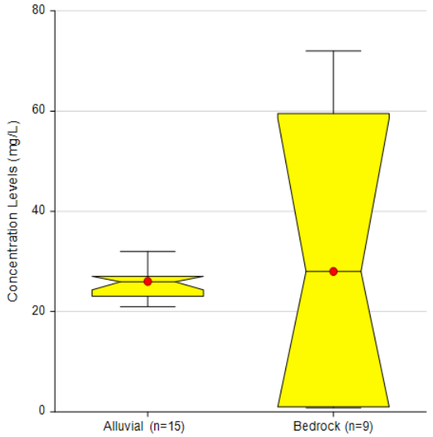
Lead



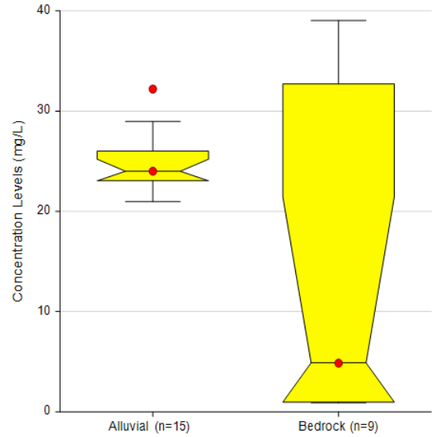
Lead (Dissolved)

Figure 4B

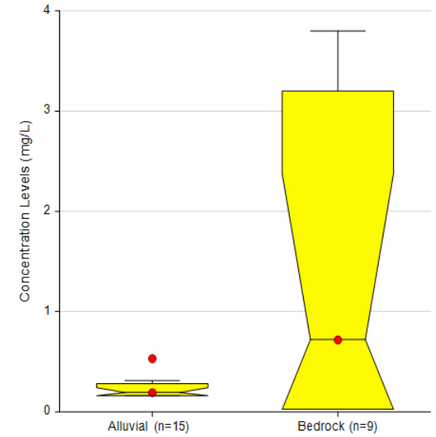
BOX AND WHISKER PLOTS
GROUNDWATER BACKGROUND EVALUATION
FORT WINGATE DEPOT ACTIVITY MCKINLEY COUNTY, NEW MEXICO



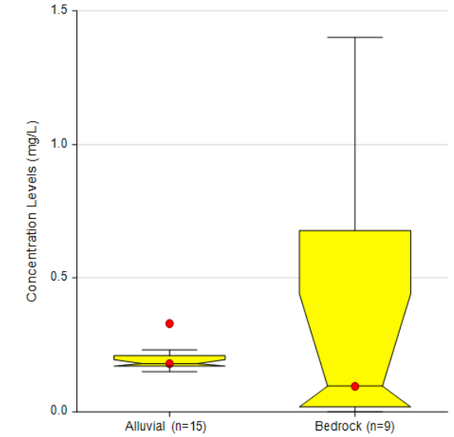
Magnesium



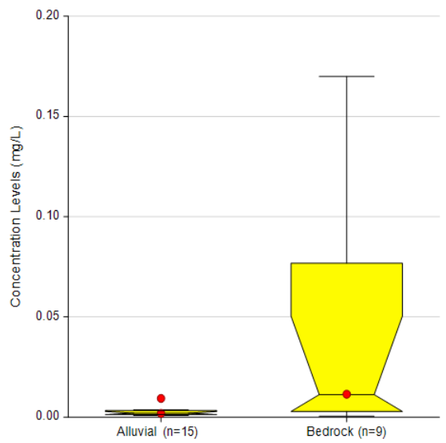
Magnesium (Dissolved)



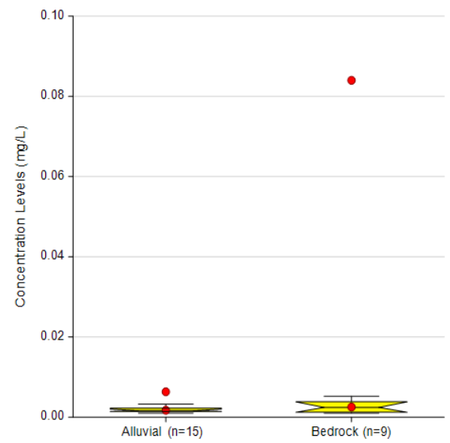
Manganese



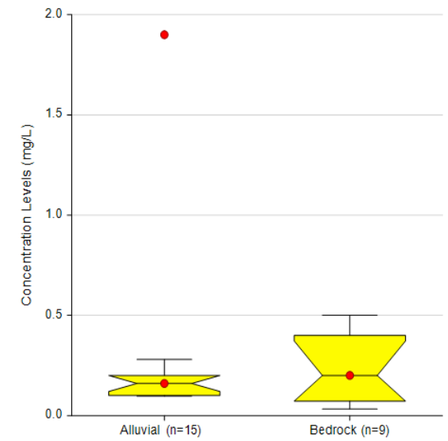
Manganese (Dissolved)



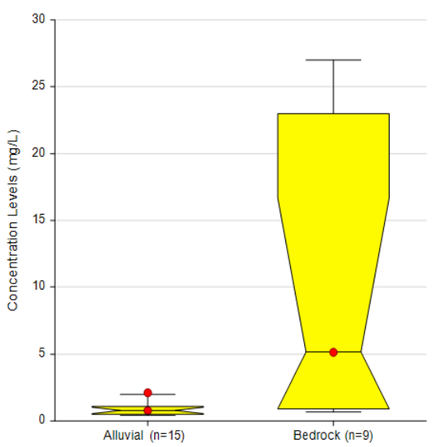
Nickel



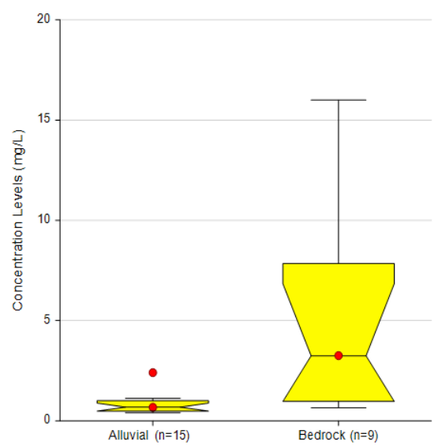
Nickel (Dissolved)



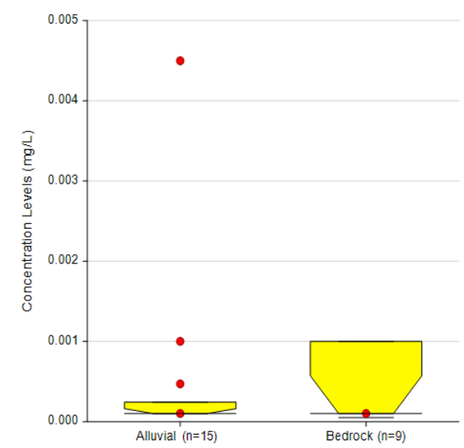
Nitrate



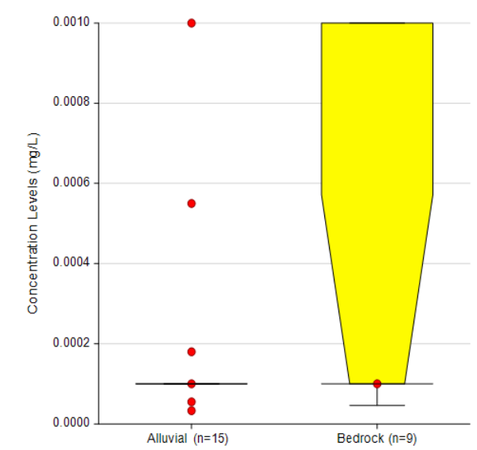
Potassium



Potassium (Dissolved)



Silver

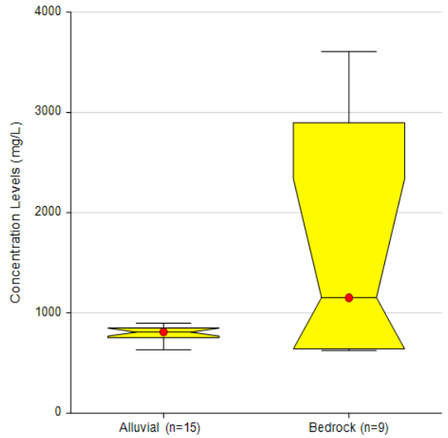


Silver (Dissolved)

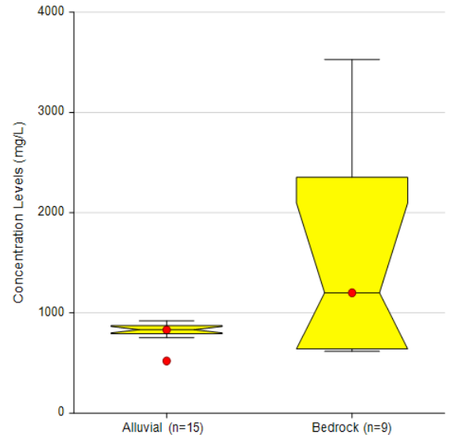
Figure 4C

BOX AND WHISKER PLOTS
GROUNDWATER BACKGROUND EVALUATION
FORT WINGATE DEPOT ACTIVITY MCKINLEY COUNTY, NEW MEXICO

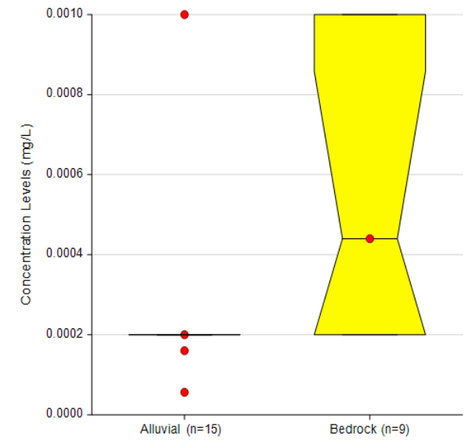
PATH: W:\FORT WINGATE\STATISTCAL ANALYSIS\BLANK1117.MXD - USER: WRITTER - DATE: 12/11/2019



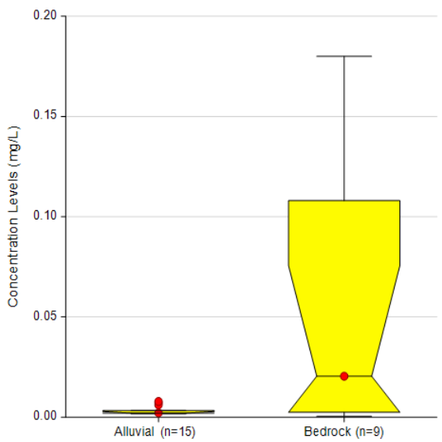
Sodium



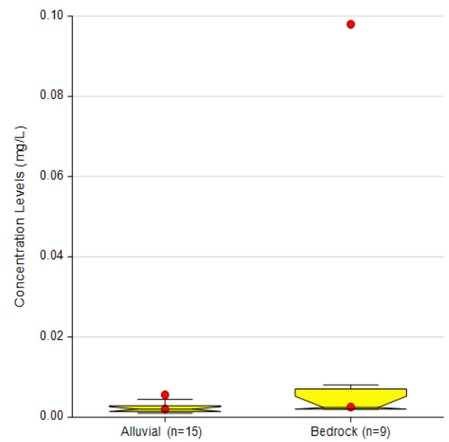
Sodium (Dissolved)



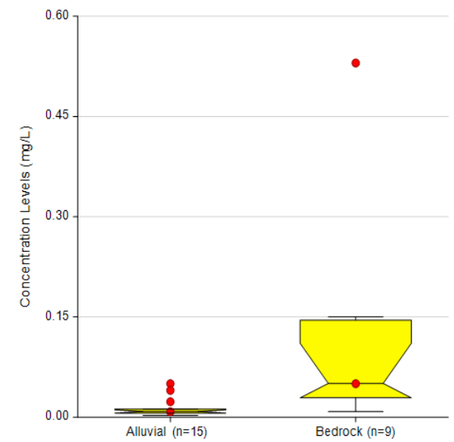
Thallium



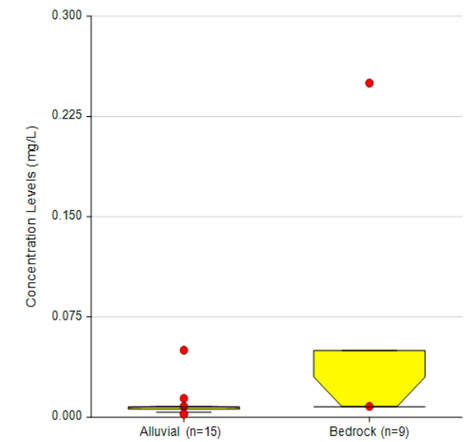
Vanadium



Vanadium (Dissolved)



Zinc



Zinc (Dissolved)

Figure 4D

BOX AND WHISKER PLOTS
GROUNDWATER BACKGROUND EVALUATION
FORT WINGATE DEPOT ACTIVITY MCKINLEY COUNTY, NEW MEXICO

Tables

Table 1: Monitoring Wells Utilized for Statistical Analysis

Background Wells[1]	
Alluvial	**Bedrock**
BGMW01	BGMW08
	BGMW09
	BGMW10
Downgradient Wells[2]	
Alluvial	**Bedrock**
MW01	TMW14A
MW02	TMW16
MW03	TMW17
MW18D	TMW18
MW18S	TMW19
MW22D	TMW30
MW22S	TMW32
SMW01	TMW36
TMW06	TMW38
TMW07	TMW39D
TMW08	TMW40D
TMW10	TMW41A
MW20	TMW48
TMW23	TMW49
TMW24	
TMW25	
TMW26	
TMW28	
TMW33	
TMW34	
TMW35	
TMW45	
TMW46	

[1] The analytical results from the background wells were used to compute the BTVs.
[2] The number of downgradient wells were used to determine the number of comparisons required between the BTVs and the analytical results from FWDA monitoring wells to achieve the target site-wide false positive rates.

Table 2: Constituents Utilized for Statistical Analysis

Dissolved Metals	Total Metals	Other Compounds
Aluminum	Aluminum	Nitrate
Antimony	Antimony	Perchlorate
Arsenic	Arsenic	
Barium	Barium	
Beryllium	Beryllium	
Cadmium	Cadmium	
Calcium	Calcium	
Chromium	Chromium	
Cobalt	Cobalt	
Copper	Copper	
Iron	Iron	
Lead	Lead	
Magnesium	Magnesium	
Manganese	Manganese	
Mercury	Mercury	
Nickel	Nickel	
Potassium	Potassium	
Selenium	Selenium	
Silver	Silver	
Sodium	Sodium	
Thallium	Thallium	
Vanadium	Vanadium	
Zinc	Zinc	

Table 3: Descriptive Statistics for the Background Data Set

Constituent	Aquifer	Unit	Sample Size	No. of NDs	With NDs=DLs Included				With NDs Removed			
					Minimum	Maximum	Mean	Median	Minimum	Maximum	Mean	Median
Dissolved Metals												
Aluminum	Alluvial	mg/L	15	10	0.00400	0.730	0.108	0.0700	0.00400	0.730	0.174	0.0200
Antimony	Alluvial	mg/L	15	13	0.000410	0.00250	0.000837	0.000600	0.000410	0.000530	0.000470	0.000470
Arsenic	Alluvial	mg/L	15	1	0.000660	0.00130	0.000857	0.000800	0.000660	0.00130	0.000829	0.000795
Barium	Alluvial	mg/L	15	0	0.0140	0.0260	0.0175	0.0160	0.0140	0.0260	0.0175	0.0160
Beryllium	Alluvial	mg/L	15	15	0.000240	0.00100	0.000319	0.000300	--	--	--	--
Cadmium	Alluvial	mg/L	15	15	0.000120	0.00100	0.000618	0.00100	--	--	--	--
Calcium	Alluvial	mg/L	15	0	37.0	58.6	45.6	44.0	37.0	58.6	45.6	44.0
Chromium	Alluvial	mg/L	15	13	0.000970	0.00300	0.00165	0.00150	0.000970	0.00300	0.00198	0.00198
Cobalt	Alluvial	mg/L	15	2	0.000200	0.00110	0.000417	0.000300	0.000210	0.00110	0.000388	0.000300
Copper	Alluvial	mg/L	15	6	0.000580	0.0140	0.00262	0.00150	0.000580	0.0140	0.00330	0.00110
Iron	Alluvial	mg/L	15	8	0.0220	0.560	0.0978	0.0480	0.0220	0.560	0.110	0.0290
Lead	Alluvial	mg/L	15	12	0.000280	0.000700	0.000560	0.000500	0.000280	0.000584	0.000401	0.000340
Magnesium	Alluvial	mg/L	15	0	21.0	32.2	25.1	24.0	21.0	32.2	25.1	24.0
Manganese	Alluvial	mg/L	15	0	0.150	0.330	0.195	0.180	0.150	0.330	0.195	0.180
Mercury	Alluvial	mg/L	15	15	0.0000520	0.000100	0.0000795	0.0000800	--	--	--	--
Nickel	Alluvial	mg/L	15	1	0.00100	0.00630	0.00207	0.00170	0.00100	0.00630	0.00204	0.00165
Potassium	Alluvial	mg/L	15	2	0.400	2.40	0.835	0.670	0.400	2.40	0.852	0.670
Selenium	Alluvial	mg/L	15	14	0.00150	0.00300	0.00203	0.00200	0.00300	0.00300	0.00300	0.00300
Silver	Alluvial	mg/L	15	12	0.0000330	0.00100	0.000188	0.000100	0.0000330	0.000550	0.000213	0.0000550
Sodium	Alluvial	mg/L	15	0	520	920	811	830	520	920	811	830
Thallium	Alluvial	mg/L	15	15	0.000100	0.00100	0.000244	0.000200	--	--	--	--
Vanadium	Alluvial	mg/L	15	1	0.00100	0.00554	0.00230	0.00200	0.00100	0.00554	0.00232	0.00185
Zinc	Alluvial	mg/L	15	10	0.00220	0.0500	0.00963	0.00800	0.00220	0.0140	0.00570	0.00340
Aluminum	Bedrock	mg/L	9	4	0.0490	130	16.1	0.200	0.0490	130	28.8	5.55
Antimony	Bedrock	mg/L	9	7	0.000860	0.00250	0.00152	0.00100	0.000860	0.00130	0.00108	0.00108

Table 3: Descriptive Statistics for the Background Data Set (continued)

Constituent	Aquifer	Unit	Sample Size	No. of NDs	With NDs=DLs Included				With NDs Removed			
					Minimum	Maximum	Mean	Median	Minimum	Maximum	Mean	Median
Dissolved Metals												
Arsenic	Bedrock	mg/L	9	4	0.000380	0.0100	0.00222	0.00125	0.000380	0.0100	0.00309	0.00193
Barium	Bedrock	mg/L	9	0	0.00678	0.670	0.0960	0.0158	0.00678	0.670	0.0960	0.0158
Beryllium	Bedrock	mg/L	9	7	0.000130	0.00550	0.00109	0.000300	0.000130	0.00550	0.00282	0.00282
Cadmium	Bedrock	mg/L	9	9	0.00100	0.00100	0.00100	0.00100	--	--	--	--
Calcium	Bedrock	mg/L	9	0	7.80	292	88.3	31.5	7.80	292	88.3	31.5
Chromium	Bedrock	mg/L	9	5	0.00100	0.140	0.0178	0.00180	0.00200	0.140	0.0384	0.00575
Cobalt	Bedrock	mg/L	9	3	0.0000670	0.0340	0.00458	0.00100	0.0000670	0.0340	0.00650	0.00125
Copper	Bedrock	mg/L	9	4	0.000700	0.0280	0.00688	0.00180	0.000700	0.0280	0.0103	0.00715
Iron	Bedrock	mg/L	9	4	0.0850	110	13.3	0.250	0.0880	110	23.7	3.17
Lead	Bedrock	mg/L	9	6	0.000500	0.0270	0.00366	0.000700	0.000874	0.0270	0.00972	0.00130
Magnesium	Bedrock	mg/L	9	0	0.876	39.0	14.3	4.85	0.876	39.0	14.3	4.85
Manganese	Bedrock	mg/L	9	1	0.000950	1.40	0.366	0.0950	0.0174	1.40	0.412	0.212
Mercury	Bedrock	mg/L	9	9	0.0000800	0.000100	0.0000867	0.0000800	--	--	--	--
Nickel	Bedrock	mg/L	9	5	0.00100	0.0840	0.0114	0.00250	0.00130	0.0840	0.0232	0.00382
Potassium	Bedrock	mg/L	9	0	0.645	16.0	4.80	3.25	0.645	16.0	4.80	3.25
Selenium	Bedrock	mg/L	9	9	0.00150	0.00200	0.00183	0.00200	--	--	--	--
Silver	Bedrock	mg/L	9	8	0.0000460	0.00100	0.000394	0.000100	0.0000460	0.0000460	0.0000460	0.0000460
Sodium	Bedrock	mg/L	9	0	618	3,530	1,523	1,200	618	3,530	1,523	1,200
Thallium	Bedrock	mg/L	9	8	0.000200	0.00100	0.000483	0.000200	0.000350	0.000350	0.000350	0.000350
Vanadium	Bedrock	mg/L	9	5	0.00200	0.0980	0.0143	0.00250	0.00523	0.0980	0.0293	0.00703
Zinc	Bedrock	mg/L	9	8	0.00800	0.250	0.0489	0.00800	0.250	0.250	0.250	0.250
Total Metals												
Aluminum	Alluvial	mg/L	15	2	0.0190	4.20	0.538	0.100	0.0190	4.20	0.603	0.100
Antimony	Alluvial	mg/L	15	13	0.000440	0.00250	0.000879	0.000600	0.000440	0.000530	0.000485	0.000485
Arsenic	Alluvial	mg/L	15	1	0.000610	0.00170	0.000928	0.000870	0.000610	0.00170	0.000905	0.000855

Table 3: Descriptive Statistics for the Background Data Set (continued)

Constituent	Aquifer	Unit	Sample Size	No. of NDs	With NDs=DLs Included				With NDs Removed			
					Minimum	Maximum	Mean	Median	Minimum	Maximum	Mean	Median
Total Metals												
Barium	Alluvial	mg/L	15	0	0.0140	0.0450	0.0209	0.0170	0.0140	0.0450	0.0209	0.0170
Beryllium	Alluvial	mg/L	15	13	0.000110	0.00100	0.000316	0.000300	0.000110	0.000140	0.000125	0.000125
Cadmium	Alluvial	mg/L	15	13	0.000120	0.00100	0.000634	0.00100	0.000140	0.000370	0.000255	0.000255
Calcium	Alluvial	mg/L	15	0	35.0	60.0	46.1	46.0	35.0	60.0	46.1	46.0
Chromium	Alluvial	mg/L	15	10	0.000620	0.00300	0.00164	0.00170	0.000620	0.00260	0.00149	0.00170
Cobalt	Alluvial	mg/L	15	2	0.000200	0.00180	0.000556	0.000360	0.000240	0.00180	0.000549	0.000360
Copper	Alluvial	mg/L	15	5	0.000590	0.00870	0.00264	0.00180	0.000590	0.00870	0.00278	0.00145
Iron	Alluvial	mg/L	15	2	0.0300	2.50	0.351	0.0810	0.0310	2.50	0.384	0.0810
Lead	Alluvial	mg/L	15	11	0.000190	0.00220	0.000762	0.000700	0.000190	0.00220	0.00111	0.00102
Magnesium	Alluvial	mg/L	15	0	21.0	32.0	25.6	26.0	21.0	32.0	25.6	26.0
Manganese	Alluvial	mg/L	15	0	0.160	0.530	0.226	0.190	0.160	0.530	0.226	0.190
Mercury	Alluvial	mg/L	15	15	0.0000270	0.000100	0.0000778	0.0000800	--	--	--	--
Nickel	Alluvial	mg/L	15	2	0.000900	0.00930	0.00250	0.00180	0.00100	0.00930	0.00262	0.00180
Potassium	Alluvial	mg/L	15	1	0.420	2.10	0.943	0.770	0.420	2.10	0.975	0.795
Selenium	Alluvial	mg/L	15	14	0.00150	0.00460	0.00227	0.00200	0.00460	0.00460	0.00460	0.00460
Silver	Alluvial	mg/L	15	11	0.000100	0.00450	0.000500	0.000100	0.000110	0.00450	0.00133	0.000355
Sodium	Alluvial	mg/L	15	0	630	894	794	810	630	894	794	810
Thallium	Alluvial	mg/L	15	14	0.0000560	0.00100	0.000241	0.000200	0.0000560	0.0000560	0.0000560	0.0000560
Vanadium	Alluvial	mg/L	15	2	0.00150	0.00780	0.00315	0.00210	0.00150	0.00780	0.00332	0.00220
Zinc	Alluvial	mg/L	15	10	0.00200	0.0500	0.0127	0.00800	0.00200	0.0400	0.0142	0.00320
Aluminum	Bedrock	mg/L	9	2	0.0700	260	74.5	14.2	0.560	260	95.7	78.0
Antimony	Bedrock	mg/L	9	8	0.00100	0.00380	0.00181	0.00100	0.00380	0.00380	0.00380	0.00380
Arsenic	Bedrock	mg/L	9	3	0.00100	0.0200	0.00576	0.00423	0.00144	0.0200	0.00810	0.00683
Barium	Bedrock	mg/L	9	0	0.00758	2.30	0.659	0.156	0.00758	2.30	0.659	0.156
Beryllium	Bedrock	mg/L	9	4	0.000300	0.0100	0.00312	0.00102	0.00102	0.0100	0.00510	0.00380

Table 3: Descriptive Statistics for the Background Data Set (continued)

Constituent	Aquifer	Unit	Sample Size	No. of NDs	With NDs=DLs Included				With NDs Removed			
					Minimum	Maximum	Mean	Median	Minimum	Maximum	Mean	Median
Total Metals												
Cadmium	Bedrock	mg/L	9	6	0.000300	0.00100	0.000813	0.00100	0.000300	0.000540	0.000440	0.000480
Calcium	Bedrock	mg/L	9	0	7.70	350	139	67.5	7.70	350	139	67.5
Chromium	Bedrock	mg/L	9	1	0.00100	0.270	0.0624	0.0170	0.00100	0.270	0.0701	0.0440
Cobalt	Bedrock	mg/L	9	2	0.000200	0.0670	0.0187	0.00511	0.000260	0.0670	0.0238	0.0240
Copper	Bedrock	mg/L	9	3	0.00120	0.0550	0.0149	0.00611	0.00120	0.0550	0.0204	0.0145
Iron	Bedrock	mg/L	9	1	0.0250	170	42.7	8.26	0.0250	170	48.0	24.1
Lead	Bedrock	mg/L	9	2	0.000210	0.0540	0.0154	0.00416	0.000210	0.0540	0.0196	0.0190
Magnesium	Bedrock	mg/L	9	0	0.870	72.0	29.6	28.0	0.870	72.0	29.6	28.0
Manganese	Bedrock	mg/L	9	0	0.0230	3.80	1.35	0.716	0.0230	3.80	1.35	0.716
Mercury	Bedrock	mg/L	9	8	0.0000260	0.000100	0.0000771	0.0000800	0.0000260	0.0000260	0.0000260	0.0000260
Nickel	Bedrock	mg/L	9	1	0.000420	0.170	0.0444	0.0114	0.000420	0.170	0.0496	0.0332
Potassium	Bedrock	mg/L	9	1	0.660	27.0	10.5	5.13	0.660	27.0	11.7	8.39
Selenium	Bedrock	mg/L	9	9	0.00150	0.00200	0.00183	0.00200	--	--	--	--
Silver	Bedrock	mg/L	9	7	0.0000460	0.00100	0.000394	0.000100	0.0000460	0.000100	0.0000730	0.0000730
Sodium	Bedrock	mg/L	9	0	623	3,610	1,647	1,150	623	3,610	1,647	1,150
Thallium	Bedrock	mg/L	9	6	0.000200	0.00100	0.000560	0.000440	0.000300	0.000700	0.000480	0.000440
Vanadium	Bedrock	mg/L	9	2	0.000560	0.180	0.0558	0.0204	0.000560	0.180	0.0712	0.0780
Zinc	Bedrock	mg/L	9	5	0.00800	0.530	0.120	0.0500	0.0910	0.530	0.228	0.145
Other Compounds												
Nitrate	Alluvial	mg/L	15	11	0.0970	1.90	0.269	0.160	0.0970	1.90	0.609	0.220
Nitrate	Bedrock	mg/L	9	8	0.0300	0.500	0.220	0.200	0.0870	0.0870	0.0870	0.0870
Perchlorate	Alluvial	mg/L	15	15	0.0000100	0.000100	0.0000287	0.0000200	--	--	--	--
Perchlorate	Bedrock	mg/L	9	6	0.00000570	0.0000500	0.0000236	0.0000100	0.00000570	0.00000950	0.00000760	0.00000760

Notes:
1. ND = not detected above the laboratory method detection limit.
2. DL = detection limit.
3. "--" indicates all results for the respective constituent were NDs. NDs were flagged but the laboratory did not provide a value for the DL.
4. Numbers are displayed using the same number of significant figures as reported by the laboratory , which is three significant figures.
5. If a constituent had 100% detections the descriptive statistics provided above are identical for the data including NDs and excluding NDs.
6. mg/L = milligram per liter

Table 4: Dixon's Outlier Test Results

Aquifer	Well	Constituent	Constituent Type	Potential Outlier Value	Units	Sampling Event	Sample Date
Alluvial	BGMW01	Aluminum (Dissolved)	Dissolved Metals	0.730	mg/L	April 2018	4/27/2018
		Cobalt (Dissolved)	Dissolved Metals	0.00110	mg/L	October 2012	10/26/2012
		Iron (Dissolved)	Dissolved Metals	0.560	mg/L	April 2018	4/27/2018
		Nickel (Dissolved)	Dissolved Metals	0.00630	mg/L	April 2014	4/15/2014
		Potassium (Dissolved)	Dissolved Metals	2.40	mg/L	April 2017	4/24/2017
		Sodium (Dissolved)	Dissolved Metals	520	mg/L	April 2016	4/15/2016
		Aluminum	Total Metals	4.20	mg/L	April 2018	4/27/2018
		Arsenic	Total Metals	0.00170	mg/L	April 2012	4/25/2012
		Barium	Total Metals	0.0450	mg/L	April 2018	4/27/2018
		Cobalt	Total Metals	0.00180	mg/L	April 2018	4/27/2018
		Iron	Total Metals	2.50	mg/L	April 2018	4/27/2018
		Manganese	Total Metals	0.530	mg/L	April 2018	4/27/2018
		Nickel	Total Metals	0.00930	mg/L	April 2014	4/15/2014
		Silver	Total Metals	0.00450	mg/L	April 2018	4/27/2018
		Nitrate	Other Compounds	1.90	mg/L	April 2012	4/25/2012
Bedrock	BGMW09	Aluminum (Dissolved)	Dissolved Metals	130	mg/L	April 2018	5/1/2018
		Arsenic (Dissolved)	Dissolved Metals	0.0100	mg/L	April 2018	5/1/2018
		Barium (Dissolved)	Dissolved Metals	0.670	mg/L	April 2018	5/1/2018
		Chromium (Dissolved)	Dissolved Metals	0.140	mg/L	April 2018	5/1/2018
		Cobalt (Dissolved)	Dissolved Metals	0.0340	mg/L	April 2018	5/1/2018
		Iron (Dissolved)	Dissolved Metals	110	mg/L	April 2018	5/1/2018
		Nickel (Dissolved)	Dissolved Metals	0.0840	mg/L	April 2018	5/1/2018
		Vanadium (Dissolved)	Dissolved Metals	0.0980	mg/L	April 2018	5/1/2018

Notes:
1. mg/L = milligrams per liter
2. Only constituents from wells in the alluvial or bedrock aquifer that had statistically identified outliers are displayed

Table 5: Data Distributions – Background

Constituent	Aquifer	Sample Size	No. of NDs	Distribution Fit[1]
Dissolved Metals				
Aluminum	Alluvial	15	10	Nonparametric
Antimony	Alluvial	15	13	Nonparametric
Arsenic	Alluvial	15	1	Parametric
Barium	Alluvial	15	0	Parametric
Beryllium	Alluvial	15	15	Nonparametric
Cadmium	Alluvial	15	15	Nonparametric
Calcium	Alluvial	15	0	Parametric
Chromium	Alluvial	15	13	Nonparametric
Cobalt	Alluvial	15	2	Parametric
Copper	Alluvial	15	6	Nonparametric
Iron	Alluvial	15	8	Nonparametric
Lead	Alluvial	15	12	Nonparametric
Magnesium	Alluvial	15	0	Parametric
Manganese	Alluvial	15	0	Parametric
Mercury	Alluvial	15	15	Nonparametric
Nickel	Alluvial	15	1	Parametric
Potassium	Alluvial	15	2	Parametric
Selenium	Alluvial	15	14	Nonparametric
Silver	Alluvial	15	12	Nonparametric
Sodium	Alluvial	15	0	Parametric
Thallium	Alluvial	15	15	Nonparametric
Vanadium	Alluvial	15	1	Parametric
Zinc	Alluvial	15	10	Nonparametric
Aluminum	Bedrock	9	4	Parametric
Antimony	Bedrock	9	7	Nonparametric
Arsenic	Bedrock	9	4	Parametric
Barium	Bedrock	9	0	Parametric
Beryllium	Bedrock	9	7	Nonparametric
Cadmium	Bedrock	9	9	Nonparametric
Calcium	Bedrock	9	0	Parametric
Chromium	Bedrock	9	5	Nonparametric
Cobalt	Bedrock	9	3	Parametric
Copper	Bedrock	9	4	Parametric
Iron	Bedrock	9	4	Parametric
Lead	Bedrock	9	6	Nonparametric
Magnesium	Bedrock	9	0	Parametric

Table 5: Data Distributions – Background (continued)

Constituent	Aquifer	Sample Size	No. of NDs	Distribution Fit[1]
Dissolved Metals				
Manganese	Bedrock	9	1	Parametric
Mercury	Bedrock	9	9	Nonparametric
Nickel	Bedrock	9	5	Nonparametric
Potassium	Bedrock	9	0	Parametric
Selenium	Bedrock	9	9	Nonparametric
Silver	Bedrock	9	8	Nonparametric
Sodium	Bedrock	9	0	Parametric
Thallium	Bedrock	9	8	Nonparametric
Vanadium	Bedrock	9	5	Nonparametric
Zinc	Bedrock	9	8	Nonparametric
Total Metals				
Aluminum	Alluvial	15	2	Parametric
Antimony	Alluvial	15	13	Nonparametric
Arsenic	Alluvial	15	1	Parametric
Barium	Alluvial	15	0	Nonparametric
Beryllium	Alluvial	15	13	Nonparametric
Cadmium	Alluvial	15	13	Nonparametric
Calcium	Alluvial	15	0	Parametric
Chromium	Alluvial	15	10	Nonparametric
Cobalt	Alluvial	15	2	Nonparametric
Copper	Alluvial	15	5	Parametric
Iron	Alluvial	15	2	Nonparametric
Lead	Alluvial	15	11	Nonparametric
Magnesium	Alluvial	15	0	Parametric
Manganese	Alluvial	15	0	Nonparametric
Mercury	Alluvial	15	15	Nonparametric
Nickel	Alluvial	15	2	Parametric
Potassium	Alluvial	15	1	Parametric
Selenium	Alluvial	15	14	Nonparametric
Silver	Alluvial	15	11	Nonparametric
Sodium	Alluvial	15	0	Parametric
Thallium	Alluvial	15	14	Nonparametric
Vanadium	Alluvial	15	2	Nonparametric
Zinc	Alluvial	15	10	Nonparametric
Aluminum	Bedrock	9	2	Parametric
Antimony	Bedrock	9	8	Nonparametric

Table 5: Data Distributions – Background (continued)

Constituent	Aquifer	Sample Size	No. of NDs	Distribution Fit[1]
Total Metals				
Arsenic	Bedrock	9	3	Parametric
Barium	Bedrock	9	0	Parametric
Beryllium	Bedrock	9	4	Parametric
Cadmium	Bedrock	9	6	Nonparametric
Calcium	Bedrock	9	0	Parametric
Chromium	Bedrock	9	1	Parametric
Cobalt	Bedrock	9	2	Parametric
Copper	Bedrock	9	3	Parametric
Iron	Bedrock	9	1	Parametric
Lead	Bedrock	9	2	Parametric
Magnesium	Bedrock	9	0	Parametric
Manganese	Bedrock	9	0	Parametric
Mercury	Bedrock	9	8	Nonparametric
Nickel	Bedrock	9	1	Parametric
Potassium	Bedrock	9	1	Parametric
Selenium	Bedrock	9	9	Nonparametric
Silver	Bedrock	9	7	Nonparametric
Sodium	Bedrock	9	0	Parametric
Thallium	Bedrock	9	6	Nonparametric
Vanadium	Bedrock	9	2	Parametric
Zinc	Bedrock	9	5	Nonparametric
Other Compounds				
Nitrate	Alluvial	15	11	Nonparametric
Nitrate	Bedrock	9	8	Nonparametric
Perchlorate	Alluvial	15	15	Nonparametric
Perchlorate	Bedrock	9	6	Nonparametric

Notes:
1. Best fit is based on detected data.
Constituents are assigned a nonparametric distribution if they could not be fit to a discernible distribution (e.g gamma, lognormal, normal), have a high percentage of NDs, or are all NDs. Constituents that are not flagged as nonparametric follow a parametric distribution.

Table 6: Trend Analysis Results

Constituent[1]	Trend	
	Alluvial	Bedrock
Dissolved Metals		
Nickel	Decreasing	No Trend
Total Metals		
Arsenic	Decreasing	No Trend
Chromium	No Trend	Decreasing

[1] Only displays constituents that had a statistically significant trend in the alluvial or bedrock aquifer.

Table 7: ANOVA Test Results for Differences in Monitoring Constituent Concentrations Between Alluvial & Bedrock Aquifers

Constituent	Constituent Type	Unit	Mean		Median		Sample Size			Test	
			Alluvial	Bedrock	Alluvial	Bedrock	Alluvial	Bedrock	Total	Log ANOVA	Kruskal-Wallis
Aluminum	Dissolved Metals	mg/L	0.108	16.1	0.0700	0.200	15	9	24	✓	✓
	Total Metals	mg/L	0.538	74.5	0.100	14.2	15	9	24	✓	✓
Antimony	Dissolved Metals	mg/L	0.000837	0.00152	0.000600	0.00100	15	9	24	✓	✓
	Total Metals	mg/L	0.000879	0.00181	0.000600	0.00100	15	9	24	✓	✓
Arsenic	Dissolved Metals	mg/L	0.000857	0.00222	0.000800	0.00125	15	9	24	✓	✓
	Total Metals	mg/L	0.000928	0.00576	0.000870	0.00423	15	9	24	✓	✓
Barium	Dissolved Metals	mg/L	0.0175	0.0960	0.0160	0.0158	15	9	24		
	Total Metals	mg/L	0.0209	0.659	0.0170	0.156	15	9	24	✓	
Beryllium	Total Metals	mg/L	0.000316	0.00312	0.000300	0.00102	15	9	24	✓	✓
Cadmium	Total Metals	mg/L	0.000634	0.000813	0.00100	0.00100	15	9	24		
Calcium	Dissolved Metals	mg/L	45.6	88.3	44.0	31.5	15	9	24		
	Total Metals	mg/L	46.1	139	46.0	67.5	15	9	24		
Chromium	Dissolved Metals	mg/L	0.00165	0.0178	0.00150	0.00180	15	9	24		
	Total Metals	mg/L	0.00164	0.0624	0.00170	0.0170	15	9	24	✓	✓

Table 7: ANOVA Test Results for Differences in Monitoring Constituent Concentrations Between Alluvial & Bedrock Aquifers (continued)

Constituent	Constituent Type	Unit	Mean		Median		Sample Size			Test	
			Alluvial	Bedrock	Alluvial	Bedrock	Alluvial	Bedrock	Total	Log ANOVA	Kruskal-Wallis
Cobalt	Dissolved Metals	mg/L	0.000417	0.00458	0.000300	0.00100	15	9	24		
	Total Metals	mg/L	0.000556	0.0187	0.000360	0.00511	15	9	24	✓	✓
Copper	Dissolved Metals	mg/L	0.00262	0.00688	0.00150	0.00180	15	9	24		
	Total Metals	mg/L	0.00264	0.0149	0.00180	0.00611	15	9	24	✓	✓
Iron	Dissolved Metals	mg/L	0.0978	13.3	0.0480	0.250	15	9	24	✓	✓
	Total Metals	mg/L	0.351	42.7	0.0810	8.26	15	9	24	✓	✓
Lead	Dissolved Metals	mg/L	0.000560	0.00366	0.000500	0.000700	15	9	24		✓
	Total Metals	mg/L	0.000762	0.0154	0.000700	0.00416	15	9	24	✓	✓
Magnesium	Dissolved Metals	mg/L	25.1	14.3	24.0	4.85	15	9	24	✓	
	Total Metals	mg/L	25.6	29.6	26.0	28.0	15	9	24		
Manganese	Dissolved Metals	mg/L	0.195	0.366	0.180	0.0950	15	9	24		
	Total Metals	mg/L	0.226	1.35	0.190	0.716	15	9	24		
Nickel	Dissolved Metals	mg/L	0.00207	0.0114	0.00170	0.00250	15	9	24		
	Total Metals	mg/L	0.00250	0.0444	0.00180	0.0114	15	9	24	✓	✓
Nitrate	Other Compound	mg/L	0.269	0.220	0.160	0.200	15	9	24		

Table 7: ANOVA Test Results for Differences in Monitoring Constituent Concentrations Between Alluvial & Bedrock Aquifers (continued)

Constituent	Constituent Type	Unit	Mean		Median		Sample Size			Test	
			Alluvial	Bedrock	Alluvial	Bedrock	Alluvial	Bedrock	Total	Log ANOVA	Kruskal-Wallis
Potassium	Dissolved Metals	mg/L	0.835	4.80	0.670	3.25	15	9	24	✓	✓
	Total Metals	mg/L	0.943	10.5	0.770	5.13	15	9	24	✓	✓
Silver	Dissolved Metals	mg/L	0.000188	0.000394	0.000100	0.000100	15	9	24		
	Total Metals	mg/L	0.000500	0.000394	0.000100	0.000100	15	9	24		
Sodium	Dissolved Metals	mg/L	811	1,523	830	1,200	15	9	24	✓	
	Total Metals	mg/L	794	1,647	810	1,150	15	9	24	✓	
Thallium	Total Metals	mg/L	0.000241	0.000560	0.000200	0.000440	15	9	24	✓	✓
Vanadium	Dissolved Metals	mg/L	0.00230	0.0143	0.00200	0.00250	15	9	24	✓	✓
	Total Metals	mg/L	0.00315	0.0558	0.00210	0.0204	15	9	24	✓	
Zinc	Dissolved Metals	mg/L	0.00963	0.0489	0.00800	0.00800	15	9	24	✓	✓
	Total Metals	mg/L	0.0127	0.120	0.00800	0.0500	15	9	24	✓	✓

Notes:
✓Indicates test for differences was statistically significant at the 5 percent significance level.
mg/L = milligrams per liter
The following constituents were not tested as either the alluvial or bedrock aquifer observations had 100 percent NDs: dissolved beryllium, dissolved cadmium, total and dissolved mercury, and total and dissolved selenium.

Table 8: Summary of Background Data Analysis

Constituent	Aquifer	Statistical Outlier	Nonparametric Data Distribution	Trend
Dissolved Metals				
Aluminum	Alluvial	✓	✓	
Antimony	Alluvial		✓	
Beryllium	Alluvial		✓	
Cadmium	Alluvial		✓	
Chromium	Alluvial		✓	
Cobalt	Alluvial	✓		
Copper	Alluvial		✓	
Iron	Alluvial	✓	✓	
Lead	Alluvial		✓	
Mercury	Alluvial		✓	
Nickel	Alluvial	✓		✓
Potassium	Alluvial	✓		
Selenium	Alluvial		✓	
Silver	Alluvial		✓	
Sodium	Alluvial	✓		
Thallium	Alluvial		✓	
Zinc	Alluvial		✓	
Aluminum	Bedrock	✓		
Antimony	Bedrock		✓	
Arsenic	Bedrock	✓		
Barium	Bedrock	✓		
Beryllium	Bedrock		✓	
Cadmium	Bedrock		✓	
Chromium	Bedrock	✓	✓	
Cobalt	Bedrock	✓		
Iron	Bedrock	✓		
Lead	Bedrock		✓	
Mercury	Bedrock		✓	
Nickel	Bedrock	✓	✓	
Selenium	Bedrock		✓	
Silver	Bedrock		✓	
Thallium	Bedrock		✓	
Vanadium	Bedrock	✓	✓	
Zinc	Bedrock		✓	
Total Metals				
Aluminum	Alluvial	✓		
Antimony	Alluvial		✓	

Table 8: Summary of Background Data Analysis (continued)

Constituent	Aquifer	Statistical Outlier	Nonparametric Data Distribution	Trend
Total Metals				
Arsenic	Alluvial	✓		✓
Barium	Alluvial	✓	✓	
Beryllium	Alluvial		✓	
Cadmium	Alluvial		✓	
Chromium	Alluvial		✓	
Cobalt	Alluvial	✓	✓	
Iron	Alluvial	✓	✓	
Lead	Alluvial		✓	
Manganese	Alluvial	✓	✓	
Mercury	Alluvial		✓	
Nickel	Alluvial	✓		
Selenium	Alluvial		✓	
Silver	Alluvial	✓	✓	
Thallium	Alluvial		✓	
Vanadium	Alluvial		✓	
Zinc	Alluvial		✓	
Antimony	Bedrock		✓	
Cadmium	Bedrock		✓	
Chromium	Bedrock			✓
Mercury	Bedrock		✓	
Selenium	Bedrock		✓	
Silver	Bedrock		✓	
Thallium	Bedrock		✓	
Zinc	Bedrock		✓	
Other Compounds				
Nitrate	Alluvial	✓	✓	
Perchlorate	Alluvial		✓	
Nitrate	Bedrock		✓	
Perchlorate	Bedrock		✓	

Notes:
✓Constituent was flagged during the statistical analysis
Constituents are assigned a nonparametric distribution if they could not be fit to a discernible distribution (e.g gamma, lognormal, normal), have a high percentage of NDs, or are all NDs. Constituents that are not flagged as nonparametric follow a parametric distribution.

Table 9: Background Threshold Values for Monitoring Constituents

Constituent	Aquifer	Unit	No. of Verification Samples	BTV (UPL)
Dissolved Metals				
Aluminum	Alluvial	mg/L	4	0.730
Antimony	Alluvial	mg/L	4	0.000530
Arsenic	Alluvial	mg/L	2	0.00125
Barium	Alluvial	mg/L	2	0.0257
Beryllium	Alluvial	mg/L	NA	*0.00100*
Cadmium	Alluvial	mg/L	NA	*0.00100*
Calcium	Alluvial	mg/L	2	64.7
Chromium	Alluvial	mg/L	4	0.00300
Cobalt	Alluvial	mg/L	2	0.00103
Copper	Alluvial	mg/L	4	0.0140
Iron	Alluvial	mg/L	4	0.560
Lead	Alluvial	mg/L	4	0.000584
Magnesium	Alluvial	mg/L	2	32.3
Manganese	Alluvial	mg/L	2	0.310
Mercury	Alluvial	mg/L	NA	*0.000100*
Nickel	Alluvial	mg/L	2	0.00531
Potassium	Alluvial	mg/L	2	2.21
Selenium	Alluvial	mg/L	4	0.00300
Silver	Alluvial	mg/L	4	0.000550
Sodium	Alluvial	mg/L	2	1,048
Thallium	Alluvial	mg/L	NA	*0.00100*
Vanadium	Alluvial	mg/L	2	0.00772
Zinc	Alluvial	mg/L	4	0.0500
Aluminum	Bedrock	mg/L	3	136
Antimony	Bedrock	mg/L	6	0.00130
Arsenic	Bedrock	mg/L	3	0.0107
Barium	Bedrock	mg/L	3	0.720
Beryllium	Bedrock	mg/L	6	0.00550
Cadmium	Bedrock	mg/L	NA	*0.00100*
Calcium	Bedrock	mg/L	3	623
Chromium	Bedrock	mg/L	6	0.140
Cobalt	Bedrock	mg/L	3	0.0336
Copper	Bedrock	mg/L	3	0.0413
Iron	Bedrock	mg/L	3	104
Lead	Bedrock	mg/L	6	0.0270

Table 9: Background Threshold Values for Monitoring Constituents (continued)

Constituent	Aquifer	Unit	No. of Verification Samples	BTV (UPL)
Dissolved Metals				
Magnesium	Bedrock	mg/L	3	111
Manganese	Bedrock	mg/L	3	3.07
Mercury	Bedrock	mg/L	NA	*0.000100*
Nickel	Bedrock	mg/L	6	0.0840
Potassium	Bedrock	mg/L	3	28.1
Selenium	Bedrock	mg/L	NA	*0.00200*
Silver	Bedrock	mg/L	6	0.0000460
Sodium	Bedrock	mg/L	3	5,240
Thallium	Bedrock	mg/L	6	0.000350
Vanadium	Bedrock	mg/L	6	0.0980
Zinc	Bedrock	mg/L	6	0.250
Total Metals				
Aluminum	Alluvial	mg/L	2	3.43
Antimony	Alluvial	mg/L	4	0.000530
Arsenic	Alluvial	mg/L	2	0.00381
Barium	Alluvial	mg/L	4	0.0450
Beryllium	Alluvial	mg/L	4	0.000140
Cadmium	Alluvial	mg/L	4	0.000370
Calcium	Alluvial	mg/L	2	68.8
Chromium	Alluvial	mg/L	4	0.00300
Cobalt	Alluvial	mg/L	4	0.00180
Copper	Alluvial	mg/L	2	0.0179
Iron	Alluvial	mg/L	4	2.50
Lead	Alluvial	mg/L	4	0.00220
Magnesium	Alluvial	mg/L	2	34.3
Manganese	Alluvial	mg/L	4	0.530
Mercury	Alluvial	mg/L	NA	*0.000100*
Nickel	Alluvial	mg/L	2	0.00969
Potassium	Alluvial	mg/L	2	2.62
Selenium	Alluvial	mg/L	4	0.00460
Silver	Alluvial	mg/L	4	0.00450
Sodium	Alluvial	mg/L	2	986
Thallium	Alluvial	mg/L	4	0.0000560
Vanadium	Alluvial	mg/L	4	0.00780
Zinc	Alluvial	mg/L	4	0.0500

Table 9: Background Threshold Values for Monitoring Constituents (continued)

Constituent	Aquifer	Unit	No. of Verification Samples	BTV (UPL)
Total Metals				
Aluminum	Bedrock	mg/L	3	791
Antimony	Bedrock	mg/L	6	0.00380
Arsenic	Bedrock	mg/L	3	0.0306
Barium	Bedrock	mg/L	3	6.76
Beryllium	Bedrock	mg/L	3	0.0199
Cadmium	Bedrock	mg/L	6	0.000540
Calcium	Bedrock	mg/L	3	1,076
Chromium	Bedrock	mg/L	3	0.525
Cobalt	Bedrock	mg/L	3	0.167
Copper	Bedrock	mg/L	3	0.0963
Iron	Bedrock	mg/L	3	459
Lead	Bedrock	mg/L	3	0.140
Magnesium	Bedrock	mg/L	3	254
Manganese	Bedrock	mg/L	3	12.9
Mercury	Bedrock	mg/L	6	0.0000260
Nickel	Bedrock	mg/L	3	0.388
Potassium	Bedrock	mg/L	3	70.7
Selenium	Bedrock	mg/L	NA	*0.00200*
Silver	Bedrock	mg/L	6	0.000100
Sodium	Bedrock	mg/L	3	6,129
Thallium	Bedrock	mg/L	6	0.000700
Vanadium	Bedrock	mg/L	3	0.524
Zinc	Bedrock	mg/L	6	0.530
Other Compounds				
Nitrate	Alluvial	mg/L	4.0	1.90
Perchlorate	Alluvial	mg/L	NA	*0.000100*
Nitrate	Bedrock	mg/L	6	0.0870
Perchlorate	Bedrock	mg/L	6	0.00000950

Notes:
Italic concentration indicates background sample was 100% non-detect value and that the DQR is recommended for statistical evaluation of downgradient concentrations. The DQR states that a confirmed exceedance is registered if any well-constituent pair in the '100% ND' group exhibits quantified measurements in two consecutive sample and resample events.
NA – Not Applicable
mg/L = milligram per liter
The number of verification samples *m* is the maximum number of resamples permitted to confirm whether an observed exceedance from a given constituent in a given well and aquifer is actually an exceedance or an outcome of random variation. If the initial groundwater observation exceeds the BTV, then as many as *m* samples might be collected. If all *m* values are larger than the BTVs, then an exceedance is declared.

Appendix A: Statistical Summary Reports

Upper Prediction Limits for Monitoring Constituents in the Alluvial Aquifer

Code	Type	Constituent	Unit	n	No. Below MDL	% Below MDL	No. of Distinct Obs.	Lognormal (Full)		Lognormal (with BDLs)			Gamma (Full)		k star for detected data[1,2]					Normal (Full)	Normal (with BDLs)	Nonparametric		Maximum	ProUCL's Best Fit [3]	HDR's Recommended Fit	HDR's Recommendations			Notes
								sd	(1-α)th UPL	sd	LROS(1-α)th UPL	s	WH (1-α)th UPL	HW (1-α)th UPL	k star for detected data[1]	GROS-WH (1-α)th UPL	GROS-HW (1-α)th UPL	KM-WH (1-α)th UPL	KM-HW (1-α)th UPL	(1-α)th UPL	KM (1-α)th UPL	(1-α)th UPL	Chebyshev (1-α)th UPL				Per-Test FPR (α)[4]	No. of Verification Samples	BTV[5]	
1_1_102	Dissolved Metals	aluminum (dissolved)	mg/L	15	10	67%	9			1.42	26.6	17.4			0.310	2.04	2.66	1.82	2.33		0.987	0.730	18.5	0.730	Gamma; Lognormal	Nonparametric	0.0001	4	0.730	***
1_1_104	Dissolved Metals	antimony (dissolved)	mg/L	15	13	87%	6			0.125	0.000848	0.000833			N/A			0.000794	0.000803		0.000741	0.00250	0.00629	0.000530	Nonparametric	Nonparametric	0.0001	4	0.000530	**>
1_1_106	Dissolved Metals	arsenic (dissolved)	mg/L	15	1	7%	12			0.175	0.00125	0.00124			24.1	0.00591	0.00570	0.00123	0.00124		0.00122	0.00130	0.00213	0.00130	Lognormal	Lognormal	0.0156	2	0.00125	
1_1_108	Dissolved Metals	barium (dissolved)	mg/L	15	0	0%	8	0.165	0.0259				0.0257	0.0257						0.0253		0.0260	0.0434	0.0260	Gamma; Lognormal	Gamma	0.0156	2	0.0257	
1_1_110	Dissolved Metals	beryllium (dissolved)	mg/L	15	15	100%	4																	N/A			na	na	0.00100	*
1_1_112	Dissolved Metals	cadmium (dissolved)	mg/L	15	15	100%	4																	N/A			na	na	0.00100	*
1_1_114	Dissolved Metals	calcium (dissolved)	mg/L	15	0	0%	12	0.150	65.5				64.6	64.8						63.1		58.6	104	58.6	Gamma; Lognormal; Normal	Gamma	0.0156	2	64.7	
1_1_116	Dissolved Metals	chromium (dissolved)	mg/L	15	13	87%	5			0.460	0.0110	0.00446			N/A			0.00410	0.00418		0.00371	0.00300	0.0534	0.00300	Nonparametric	Nonparametric	0.0001	4	0.00300	**
1_1_118	Dissolved Metals	cobalt (dissolved)	mg/L	15	2	13%	13			0.496	0.00109	0.000973			3.47	0.0105	0.0107	0.000939	0.000945		0.000927	0.00110	0.00221	0.00110	Lognormal	Lognormal	0.0156	2	0.00103	
1_1_120	Dissolved Metals	copper (dissolved)	mg/L	15	6	40%	10			0.957	0.187	0.133			0.617	0.114	0.168	0.0406	0.0485		0.0214	0.0140	0.385	0.0140	Nonparametric	Nonparametric	0.0001	4	0.0140	
1_1_122	Dissolved Metals	iron (dissolved)	mg/L	15	8	53%	10			0.865	3.18	2.33			0.506	1.51	1.91	1.11	1.24		0.750	0.560	13.8	0.560	Nonparametric	Nonparametric	0.0001	4	0.560	***
1_1_124	Dissolved Metals	lead (dissolved)	mg/L	15	12	80%	5			0.271	0.00133	0.00103			N/A	0.119	0.187	0.000922	0.000944		0.000807	0.000700	0.00970	0.000584	Lognormal; Normal	Nonparametric	0.0001	4	0.000584	**>
1_1_126	Dissolved Metals	magnesium (dissolved)	mg/L	15	0	0%	8	0.106	32.5				32.3	32.3						32.0		32.2	48.1	32.2	Gamma; Lognormal	Gamma	0.0156	2	32.3	
1_1_128	Dissolved Metals	manganese (dissolved)	mg/L	15	0	0%	9	0.200	0.313				0.309	0.310						0.306		0.330	0.563	0.330	Gamma; Lognormal; Normal	Gamma	0.0156	2	0.310	
1_1_130	Dissolved Metals	mercury (dissolved)	mg/L	15	15	100%	3																	N/A			na	na	0.000100	*
1_1_132	Dissolved Metals	nickel (dissolved)	mg/L	15	1	7%	13			0.442	0.00538	0.00523			3.42	0.00885	0.00896	0.00508	0.00510		0.00510	0.00630	0.0123	0.00630	Lognormal	Lognormal	0.0156	2	0.00531	
1_1_136	Dissolved Metals	potassium (dissolved)	mg/L	15	2	13%	13			0.497	2.40	2.32			3.12	2.25	2.30	2.13	2.17		2.02	2.40	4.84	2.40	Gamma; Lognormal	Gamma	0.0156	2	2.21	
1_1_138	Dissolved Metals	selenium (dissolved)	mg/L	15	14	93%	3																	0.00300			0.0001	4	0.00300	**
1_1_140	Dissolved Metals	silver (dissolved)	mg/L	15	12	80%	6			1.01	0.00940	0.00191			N/A	0.155	0.286	0.00107	0.00118		0.000753	0.00100	0.0136	0.000550	Lognormal; Normal	Nonparametric	0.0001	4	0.000550	**>
1_1_142	Dissolved Metals	sodium (dissolved)	mg/L	15	0	0%	11	0.136	1,127				1,094	1,102						1,048		920	1,599	920	Normal	Normal	0.0156	2	1,048	
1_1_144	Dissolved Metals	thallium (dissolved)	mg/L	15	15	100%	4																	N/A			na	na	0.00100	*
1_1_146	Dissolved Metals	vanadium (dissolved)	mg/L	15	1	7%	13			0.486	0.00669	0.00647			3.40	0.00942	0.00965	0.00584	0.00596		0.00531	0.00554	0.0124	0.00554	Gamma; Lognormal; Normal	Gamma	0.0156	2	0.00772	
1_1_148	Dissolved Metals	zinc (dissolved)	mg/L	15	10	67%	8			0.579	0.0657	0.0531			0.945	0.0527	0.0627	0.0303	0.0335		0.0201	0.0500	0.327	0.0140	Gamma; Lognormal; Normal	Nonparametric	0.0001	4	0.0500	***>
1_2_133	Nitrate	nitrate	mg/L	15	11	73%	6			1.09	27.9	6.93			0.376	6.45	9.44	3.66	4.05		2.54	1.90	46.4	1.90	Gamma; Lognormal	Nonparametric	0.0001	4	1.90	**
1_3_134	Perchlorate	perchlorate	mg/L	15	15	100%	4																	N/A			na	na	0.000100	*
1_4_101	Total Metals	aluminum	mg/L	15	2	13%	15			1.58	5.86	4.79			0.400	3.68	3.91	3.38	3.49		3.38	4.20	9.98	4.20	Lognormal	Gamma	0.0156	2	3.43	
1_4_103	Total Metals	antimony	mg/L	15	13	87%	7			0.0856	0.000725	0.000735			N/A			0.000717	0.000721		0.000688	0.00250	0.00485	0.000530	Nonparametric	Nonparametric	0.0001	4	0.000530	**>
1_4_105	Total Metals	arsenic	mg/L	15	1	7%	14			0.249	0.00162	0.00160			11.8	0.00613	0.00596	0.00156	0.00157		0.00153	0.00170	0.00299	0.00170	Gamma; Lognormal; Normal	Gamma	0.0156	2	0.00381	
1_4_107	Total Metals	barium	mg/L	15	0	0%	8	0.339	0.113				0.0866	0.0912						0.0666		0.0450	0.938	0.0450	Nonparametric	Nonparametric	0.0001	4	0.0450	
1_4_109	Total Metals	beryllium	mg/L	15	13	87%	7			0.166	0.000291	0.000231			N/A			0.000219	0.000221		0.000202	0.00100	0.00167	0.000140	Nonparametric	Nonparametric	0.0001	4	0.000140	**>
1_4_111	Total Metals	cadmium	mg/L	15	13	87%	6			0.960	0.00925	0.00123			N/A			0.000879	0.000939		0.000638	0.00100	0.00963	0.000370	Nonparametric	Nonparametric	0.0001	4	0.000370	**>
1_4_113	Total Metals	calcium	mg/L	15	0	0%	14	0.175	70.1				68.6	69.0						66.4		60.0	114	60.0	Gamma; Lognormal; Normal	Gamma	0.0156	2	68.8	
1_4_115	Total Metals	chromium	mg/L	15	10	67%	9			0.528	0.0129	0.0114			1.44	0.0926	0.130	0.00660	0.00729		0.00422	0.00300	0.0661	0.00260	Gamma; Lognormal; Normal	Nonparametric	0.0001	4	0.00300	***>
1_4_117	Total Metals	cobalt	mg/L	15	2	13%	14			0.675	0.0128	0.00885			1.90	0.0468	0.0620	0.00445	0.00501		0.00275	0.00180	0.0453	0.00180	Nonparametric	Nonparametric	0.0001	4	0.00180	
1_4_119	Total Metals	copper	mg/L	15	5	33%	12			0.833	0.0119	0.0115			1.02	0.0248	0.0281	0.00911	0.00950		0.00785	0.00870	0.0209	0.00870	Gamma; Lognormal	Gamma	0.0156	2	0.0179	
1_4_121	Total Metals	iron	mg/L	15	2	13%	15			1.46	172	69.6			0.465	10.3	14.3	8.83	11.5		3.90	2.50	71.8	2.50	Nonparametric	Nonparametric	0.0001	4	2.50	
1_4_123	Total Metals	lead	mg/L	15	11	73%	7			0.990	0.0453	0.0188			0.563	0.107	0.161	0.00636	0.00755		0.00337	0.00220	0.0588	0.00220	Gamma; Lognormal; Normal	Nonparametric	0.0001	4	0.00220	**
1_4_125	Total Metals	magnesium	mg/L	15	0	0%	10	0.125	34.7				34.3	34.4						33.7		32.0	52.4	32.0	Gamma; Lognormal; Normal	Gamma	0.0156	2	34.3	
1_4_127	Total Metals	manganese	mg/L	15	0	0%	9	0.343	1.24				0.946	0.998						0.732		0.530	10.4	0.530	Nonparametric	Nonparametric	0.0001	4	0.530	
1_4_129	Total Metals	mercury	mg/L	15	15	100%	3																	N/A			na	na	0.000100	*
1_4_131	Total Metals	nickel	mg/L	15	2	13%	12			0.700	0.0105	0.00887			1.94	0.0144	0.0152	0.00789	0.00806		0.00750	0.00930	0.0193	0.00930	Lognormal	Lognormal	0.0156	2	0.00969	
1_4_135	Total Metals	potassium	mg/L	15	1	7%	13			0.519	2.96	2.79			3.41	2.68	2.78	2.48	2.54		2.21	2.10	5.16	2.10	Gamma; Lognormal; Normal	Gamma	0.0156	2	2.62	
1_4_137	Total Metals	selenium	mg/L	15	14	93%	4																	0.00460		Nonparametric	0.0001	4	0.00460	**
1_4_139	Total Metals	silver	mg/L	15	11	73%	8			2.77	19.1	0.0269			0.320	0.130	0.216	0.00953	0.0110		0.00605	0.00450	0.113	0.00450	Gamma; Lognormal	Nonparametric	0.0001	4	0.00450	**
1_4_141	Total Metals	sodium	mg/L	15	0	0%	11	0.0925	995				985	987						968		894	1,371	894	Gamma; Lognormal; Normal	Gamma	0.0156	2	986	
1_4_143	Total Metals	thallium	mg/L	15	14	93%	4																	0.0000560			0.0001	4	0.0000560	**>
1_4_145	Total Metals	vanadium	mg/L	15	2	13%	12			0.581	0.0511	0.0419			2.52	0.0403	0.0479	0.0222	0.0249		0.0136	0.00780	0.214	0.00780	Nonparametric	Nonparametric	0.0001	4	0.00780	
1_4_147	Total Metals	zinc	mg/L	15	10	67%	9			0.989	0.645	0.350			0.466	0.114	0.139	0.115	0.137		0.0614	0.0500	1.10	0.0400	Gamma; Lognormal; Normal	Nonparametric	0.0001	4	0.0500	***>

[1] N/A implies that there are not enough detected observations to compute Gamma ROS Statistics - The Gamma ROS methods are not used when kstar of detects is less than 1

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[4] Based on site-wide false positive rate of 10%

[5] To optimize the process for estimating a reference background concentration when there are multiple forms of the UPL equations for data sets with assumed distributional properties, the averaging of the results over the multiple methods or equations under the recommended distribution assumption is done. The equations are comparable and each one offers advantages and also has inherent errors in their methods. The action of averaging the estimates from the equations produces a pooled estimate closest to the unknown common truth based on how this error is perceived.

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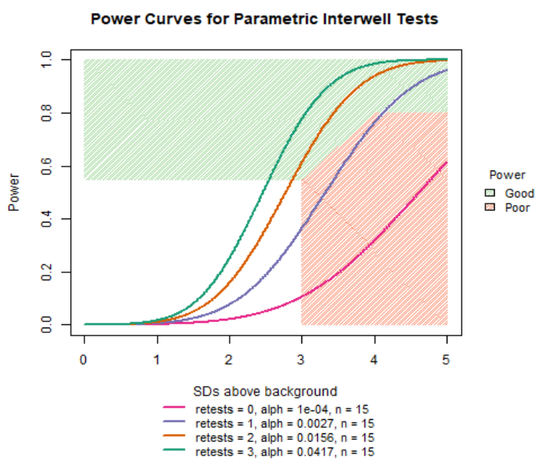
Notes:
* Constituent is 100% Non-Detect (ND) so the maximum detection limit is chosen as the BTV. Recommend using the DQR process to determine if an exceedance has occurred.
** Data set is too small to compute reliable and meaningful statistics and estimates! Recommend maximum value as the upper background limit until more samples can be calculated.
*** Nonparametric methods were used since percent BDL is greater than half.
> Sample contains MDLs that are greater than the maximum detect value.



Upper Prediction Limits for Monitoring Constituents in the Bedrock Aquifer

Code	Type	Constituent	Unit	n	No. Below MDL	% Below MDL	No. of Distinct Obs.	Lognormal (Full)		Lognormal (with BDLs)			Gamma (Full)		Gamma (with BDLs)[2]					Normal (Full)	Normal (with BDLs)	Nonparametric		Maximum	ProUCL's Best Fit [3]	HDR's Recommended Fit	HDR's Recommendations			Notes
								sd	(1-α)th UPL	sd	LROS(1-α)th UPL	KM (1-α)th UPL	WH (1-α)th UPL	HW (1-α)th UPL	k star for detected data[1]	GROS-WH (1-α)th UPL	GROS-HW (1-α)th UPL	KM-WH (1-α)th UPL	KM-HW (1-α)th UPL	(1-α)th UPL	KM (1-α)th UPL	(1-α)th UPL	Chebyshev (1-α)th UPL				Per-Test FPR (α)[4]	No. of Verification Samples	BTV[5]	
2_1_102	Dissolved Metals	aluminum (dissolved)	mg/L	9	4	44%	7			3.25	1,415	554			0.237	151	181	129	144		119	130	309	130	Gamma; Lognormal	Gamma	0.0207	3	136	
2_1_104	Dissolved Metals	antimony (dissolved)	mg/L	9	7	78%	4			0.187	0.00326	0.00262			N/A			0.00235	0.00241		0.00205	0.00250	0.0182	0.00130	Nonparametric	Nonparametric	0.0001	6	0.00130	**>
2_1_106	Dissolved Metals	arsenic (dissolved)	mg/L	9	4	44%	7			1.08	0.0165	0.0142			0.532	0.0327	0.0384	0.0104	0.0109		0.00940	0.0100	0.0230	0.0100	Gamma; Lognormal	Gamma	0.0207	3	0.0107	
2_1_108	Dissolved Metals	barium (dissolved)	mg/L	9	0	0%	9	1.46	1.07				0.702	0.738						0.650		0.670	1.67	0.670	Lognormal	Gamma	0.0207	3	0.720	
2_1_110	Dissolved Metals	beryllium (dissolved)	mg/L	9	7	78%	4			1.65	13.6	0.583			N/A			0.0370	0.0524		0.0122	0.00550	0.179	0.00550	Nonparametric	Nonparametric	0.0001	6	0.00550	**
2_1_112	Dissolved Metals	cadmium (dissolved)	mg/L	9	9	100%	1																	N/A			na	na	0.00100	*
2_1_114	Dissolved Metals	calcium (dissolved)	mg/L	9	0	0%	9	1.43	1,572				577	670						356		292	847	292	Gamma; Lognormal; Normal	Gamma	0.0207	3	623	
2_1_116	Dissolved Metals	chromium (dissolved)	mg/L	9	5	56%	6			3.50	7,610,259	106			0.284	0.980	1.41	1.12	1.79		0.312	0.140	4.58	0.140	Gamma; Lognormal	Nonparametric	0.0001	6	0.140	**
2_1_118	Dissolved Metals	cobalt (dissolved)	mg/L	9	3	33%	8			2.06	0.105	0.0816			0.302	0.0590	0.0730	0.0323	0.0349		0.0312	0.0340	0.0804	0.0340	Gamma; Lognormal	Gamma	0.0207	3	0.0336	
2_1_120	Dissolved Metals	copper (dissolved)	mg/L	9	4	44%	7			1.47	0.101	0.0726			0.442	0.0500	0.0584	0.0393	0.0433		0.0289	0.0280	0.0706	0.0280	Gamma; Lognormal; Normal	Gamma	0.0207	3	0.0413	
2_1_122	Dissolved Metals	iron (dissolved)	mg/L	9	4	44%	7			4.20	5,138	267			0.252	120	139	101	108		101	110	262	110	Gamma; Lognormal	Gamma	0.0207	3	104	
2_1_124	Dissolved Metals	lead (dissolved)	mg/L	9	6	67%	5			4.20	54,225,184	4.10			N/A	0.238	0.375	0.188	0.272		0.0598	0.0270	0.877	0.0270	Lognormal; Normal	Nonparametric	0.0001	6	0.0270	**
2_1_126	Dissolved Metals	magnesium (dissolved)	mg/L	9	0	0%	9	1.61	357				101	121						55.2		39.0	130	39.0	Gamma; Lognormal	Gamma	0.0207	3	111	
2_1_128	Dissolved Metals	manganese (dissolved)	mg/L	9	1	11%	9			2.07	20.8	25.0			0.498	2.81	3.43	2.71	3.43		1.51	1.40	3.61	1.40	Gamma; Lognormal; Normal	Gamma	0.0207	3	3.07	
2_1_130	Dissolved Metals	mercury (dissolved)	mg/L	9	9	100%	2																	N/A			na	na	0.000100	*
2_1_132	Dissolved Metals	nickel (dissolved)	mg/L	9	5	56%	6			2.33	6,942	24.7			0.286	0.605	0.900	0.621	0.937		0.186	0.0840	2.73	0.0840	Gamma; Lognormal	Nonparametric	0.0001	6	0.0840	**
2_1_136	Dissolved Metals	potassium (dissolved)	mg/L	9	0	0%	9	1.14	51.3				26.6	29.6						18.4		16.0	43.3	16.0	Gamma; Lognormal	Gamma	0.0207	3	28.1	
2_1_138	Dissolved Metals	selenium (dissolved)	mg/L	9	9	100%	2																	N/A			na	na	0.00200	*
2_1_140	Dissolved Metals	silver (dissolved)	mg/L	9	8	89%	3																	0.0000460			0.0001	6	0.0000460	**>
2_1_142	Dissolved Metals	sodium (dissolved)	mg/L	9	0	0%	8	0.641	6,517				5,118	5,362						4,136		3,530	8,928	3,530	Gamma; Lognormal; Normal	Gamma	0.0207	3	5,240	
2_1_144	Dissolved Metals	thallium (dissolved)	mg/L	9	8	89%	3																	0.000350			0.0001	6	0.000350	**>
2_1_146	Dissolved Metals	vanadium (dissolved)	mg/L	9	5	56%	6			2.53	33,965	17.0			0.344	0.560	0.730	0.674	0.983		0.216	0.0980	3.15	0.0980	Nonparametric	Nonparametric	0.0001	6	0.0980	**
2_1_148	Dissolved Metals	zinc (dissolved)	mg/L	9	8	89%	3																	0.250			0.0001	6	0.250	**
2_2_133	Nitrate	nitrate	mg/L	9	8	89%	7																	0.0870			0.0001	6	0.0870	**>
2_3_134	Perchlorate	perchlorate	mg/L	9	6	67%	6			0.198	0.0000286	0.0000308			N/A	0.542	1.60	0.0000238	0.0000251		0.0000181	0.0000500	0.000171	0.00000950	Lognormal; Normal	Nonparametric	0.0001	6	0.00000950	**>
2_4_101	Total Metals	aluminum	mg/L	9	2	22%	9			3.17	25,328	20,401			0.375	772	1,140	666	916		322	260	775	260	Gamma; Lognormal; Normal	Gamma	0.0207	3	791	
2_4_103	Total Metals	antimony	mg/L	9	8	89%	3																	0.00380			0.0001	6	0.00380	**
2_4_105	Total Metals	arsenic	mg/L	9	3	33%	8			1.33	0.0865	0.0524			1.08	0.0296	0.0321	0.0288	0.0318		0.0207	0.0200	0.0481	0.0200	Gamma; Lognormal; Normal	Gamma	0.0207	3	0.0306	
2_4_107	Total Metals	barium	mg/L	9	0	0%	9	2.34	52.7				5.88	7.65						2.86		2.30	6.89	2.30	Gamma; Lognormal	Gamma	0.0207	3	6.76	
2_4_109	Total Metals	beryllium	mg/L	9	4	44%	7			1.52	0.0608	0.0454			0.921	0.0257	0.0286	0.0185	0.0212		0.0117	0.0100	0.0278	0.0100	Gamma; Lognormal; Normal	Gamma	0.0207	3	0.0199	
2_4_111	Total Metals	cadmium	mg/L	9	6	67%	4			0.308	0.00346	0.00239			N/A	0.268	0.509	0.00164	0.00176		0.00113	0.00100	0.0112	0.000540	Lognormal; Normal	Nonparametric	0.0001	6	0.000540	**>
2_4_113	Total Metals	calcium	mg/L	9	0	0%	9	1.65	3,934				970	1,183						505		350	1,175	350	Gamma; Lognormal; Normal	Gamma	0.0207	3	1,076	
2_4_115	Total Metals	chromium	mg/L	9	1	11%	8			2.49	7.16	2.61			0.415	0.491	0.601	0.470	0.580		0.276	0.270	0.669	0.270	Gamma; Lognormal; Normal	Gamma	0.0207	3	0.525	
2_4_117	Total Metals	cobalt	mg/L	9	2	22%	9			2.53	2.32	1.23			0.462	0.135	0.166	0.146	0.188		0.0756	0.0670	0.180	0.0670	Gamma; Lognormal; Normal	Gamma	0.0207	3	0.167	
2_4_119	Total Metals	copper	mg/L	9	3	33%	8			1.56	0.301	0.235			0.628	0.0817	0.0911	0.0896	0.103		0.0583	0.0550	0.140	0.0550	Gamma; Lognormal; Normal	Gamma	0.0207	3	0.0963	
2_4_121	Total Metals	iron	mg/L	9	1	11%	9			3.39	21,917	15,099			0.297	436	629	385	533		189	170	456	170	Gamma; Lognormal; Normal	Gamma	0.0207	3	459	
2_4_123	Total Metals	lead	mg/L	9	2	22%	9			2.33	1.26	0.948			0.429	0.119	0.149	0.122	0.157		0.0621	0.0540	0.148	0.0540	Gamma; Lognormal; Normal	Gamma	0.0207	3	0.140	
2_4_125	Total Metals	magnesium	mg/L	9	0	0%	9	1.92	1,453				223	285						104		72.0	240	72.0	Gamma; Lognormal; Normal	Gamma	0.0207	3	254	
2_4_127	Total Metals	manganese	mg/L	9	0	0%	9	2.19	97.5				11.2	14.6						5.39		3.80	12.8	3.80	Gamma; Lognormal	Gamma	0.0207	3	12.9	
2_4_129	Total Metals	mercury	mg/L	9	8	89%	4																	0.0000260			0.0001	6	0.0000260	**>
2_4_131	Total Metals	nickel	mg/L	9	1	11%	9			2.29	3.47	2.53			0.410	0.351	0.438	0.342	0.433		0.184	0.170	0.441	0.170	Gamma; Lognormal; Normal	Gamma	0.0207	3	0.388	
2_4_135	Total Metals	potassium	mg/L	9	1	11%	9			1.54	239	199			0.605	71.0	85.0	64.9	76.6		37.0	27.0	85.5	27.0	Gamma; Lognormal; Normal	Gamma	0.0207	3	70.7	
2_4_137	Total Metals	selenium	mg/L	9	9	100%	2																	N/A			na	na	0.00200	*
2_4_139	Total Metals	silver	mg/L	9	7	78%	3			0.352	0.000562	0.000374			N/A			0.000267	0.000285		0.000192	0.00100	0.00218	0.000100	Nonparametric	Nonparametric	0.0001	6	0.000100	**>
2_4_141	Total Metals	sodium	mg/L	9	0	0%	8	0.700	7,919				5,962	6,295						4,639		3,610	10,128	3,610	Gamma; Lognormal	Gamma	0.0207	3	6,129	
2_4_143	Total Metals	thallium	mg/L	9	6	67%	5			0.777	0.0426	0.00760			N/A	0.262	0.495	0.00304	0.00355		0.00158	0.00100	0.0196	0.000700	Lognormal; Normal	Nonparametric	0.0001	6	0.000700	**>
2_4_145	Total Metals	vanadium	mg/L	9	2	22%	9			2.42	5.55	4.57			0.430	0.430	0.539	0.453	0.594		0.216	0.180	0.511	0.180	Gamma; Lognormal; Normal	Gamma	0.0207	3	0.524	
2_4_147	Total Metals	zinc	mg/L	9	5	56%	6			1.45	849	1,705			0.716	6.13	10.9	5.69	10.1		1.19	0.530	17.0	0.530	Gamma; Lognormal	Nonparametric	0.0001	6	0.530	**

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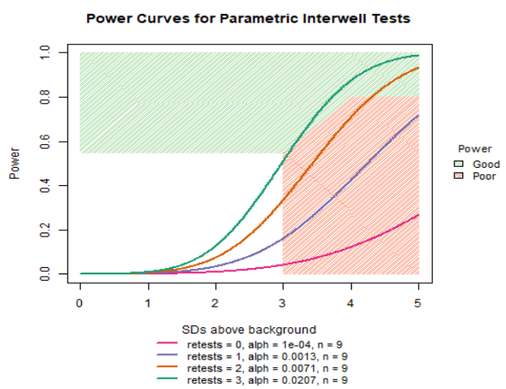


Preliminary Data Analysis With Full Data Set

Code	Aquifer	Constituent Type	Constituent	Unit	n	No. ND[1] BDL[2]	% ND BDL	Mean	Median	Standard Deviation (sd)	Minimum	Maximum	Skewness	Kurtosis	Standard Error of Mean	MAD[3]/0.675	Percentile[4]					Mean + 2sd	110% Maximum	120% Maximum	Serial Correlation with 1 Lag			ProUCL's Best Fit[5]	HDR's Recommended Fit
																	25th	75th	85th	90th	95th				Auto-correlation	Sig.	Auto-correlation Test		
1_1_102	Alluvium	Dissolved Metals	aluminum (dissolved)	mg/L	15	10	67%	0.108	0.0700	0.180	0.00400	0.730	3.34	11.9	0.0465	0.0578	0.0310	0.100	0.180	0.412		0.468	0.803	0.876	-0.11	0.6	No evidence of autocorrelation	Gamma; Lognormal	Nonparametric
1_1_104	Alluvium	Dissolved Metals	antimony (dissolved)	mg/L	15	13	87%	0.000837	0.000600	0.000508	0.000410	0.00250	2.77	8.97	0.000131	0.000119	0.000600	0.00100	0.00100	0.00160		0.00185	0.00275	0.00300	0.11	0.6	No evidence of autocorrelation	Nonparametric	Nonparametric
1_1_106	Alluvium	Dissolved Metals	arsenic (dissolved)	mg/L	15	1	7%	0.000857	0.000800	0.000195	0.000660	0.00130	1.43	1.26	0.0000505	0.000133	0.000730	0.000950	0.00115	0.00127		0.00125	0.00143	0.00156	0.10	0.7	No evidence of autocorrelation	Lognormal	Lognormal
1_1_108	Alluvium	Dissolved Metals	barium (dissolved)	mg/L	15	0	0%	0.0175	0.0160	0.00316	0.0140	0.0260	1.61	2.76	0.000815	0.00148	0.0150	0.0190	0.0210	0.0230		0.0238	0.0286	0.0312	0.11	0.6	No evidence of autocorrelation	Gamma; Lognormal	Gamma
1_1_110	Alluvium	Dissolved Metals	beryllium (dissolved)	mg/L	15	15	100%	0.000319	0.000300	0.000191	0.000240	0.00100	3.71	14.1	0.0000492	0.0000741	0.000240	0.000300	0.000300	0.000580		0.000700	0.00110	0.00120	0.054	0.8	No evidence of autocorrelation		Nonparametric
1_1_112	Alluvium	Dissolved Metals	cadmium (dissolved)	mg/L	15	15	100%	0.000618	0.00100	0.000429	0.000120	0.00100	-0.234	-2.16	0.000111	0.00	0.000120	0.00100	0.00100	0.00100		0.00148	0.00110	0.00120	0.86	<0.001	The data exhibits serial correlation		Nonparametric
1_1_114	Alluvium	Dissolved Metals	calcium (dissolved)	mg/L	15	0	0%	45.6	44.0	7.08	37.0	58.6	0.698	-0.669	1.83	7.41	40.0	51.0	56.4	58.2		59.8	64.5	70.3	-0.0050	>0.9	No evidence of autocorrelation	Gamma; Lognormal; Normal	Gamma
1_1_116	Alluvium	Dissolved Metals	chromium (dissolved)	mg/L	15	13	87%	0.00165	0.00150	0.000461	0.000970	0.00300	1.56	5.24	0.000119	0.000444	0.00150	0.00180	0.00180	0.00228		0.00257	0.00330	0.00360	-0.11	0.6	No evidence of autocorrelation	Nonparametric	Nonparametric
1_1_118	Alluvium	Dissolved Metals	cobalt (dissolved)	mg/L	15	2	13%	0.000417	0.000300	0.000281	0.000200	0.00110	1.83	2.32	0.0000725	0.0000889	0.000240	0.000420	0.000864	0.00104		0.000978	0.00121	0.00132	0.19	0.4	No evidence of autocorrelation	Lognormal	Lognormal
1_1_120	Alluvium	Dissolved Metals	copper (dissolved)	mg/L	15	6	40%	0.00262	0.00150	0.00375	0.000580	0.0140	2.65	6.56	0.000967	0.000444	0.000910	0.00180	0.00611	0.0110		0.0101	0.0154	0.0168	-0.049	0.8	No evidence of autocorrelation	Nonparametric	Nonparametric
1_1_122	Alluvium	Dissolved Metals	iron (dissolved)	mg/L	15	8	53%	0.0978	0.0480	0.140	0.0220	0.560	2.99	9.44	0.0362	0.0385	0.0290	0.0850	0.184	0.374		0.378	0.616	0.672	-0.075	0.7	No evidence of autocorrelation	Nonparametric	Nonparametric
1_1_124	Alluvium	Dissolved Metals	lead (dissolved)	mg/L	15	12	80%	0.000560	0.000500	0.000138	0.000280	0.000700	-0.553	-0.468	0.0000356	0.000237	0.000500	0.000700	0.000700	0.000700		0.000836	0.000770	0.000840	0.17	0.5	No evidence of autocorrelation	Lognormal; Normal	Nonparametric
1_1_126	Alluvium	Dissolved Metals	magnesium (dissolved)	mg/L	15	0	0%	25.1	24.0	2.80	21.0	32.2	1.30	1.99	0.723	1.48	23.0	26.0	28.6	30.3		30.7	35.4	38.6	0.13	0.6	No evidence of autocorrelation	Gamma; Lognormal	Gamma
1_1_128	Alluvium	Dissolved Metals	manganese (dissolved)	mg/L	15	0	0%	0.195	0.180	0.0449	0.150	0.330	2.13	5.63	0.0116	0.0296	0.170	0.210	0.229	0.270		0.284	0.363	0.396	0.14	0.6	No evidence of autocorrelation	Gamma; Lognormal; Normal	Gamma
1_1_130	Alluvium	Dissolved Metals	mercury (dissolved)	mg/L	15	15	100%	0.0000795	0.0000800	0.00000918	0.0000520	0.000100	-1.29	7.79	0.00000237	0.00	0.0000800	0.0000800	0.0000800	0.0000880		0.0000978	0.000110	0.000120	-0.00024	>0.9	No evidence of autocorrelation		Nonparametric
1_1_132	Alluvium	Dissolved Metals	nickel (dissolved)	mg/L	15	1	7%	0.00207	0.00170	0.00129	0.00100	0.00630	2.82	9.09	0.000333	0.000593	0.00140	0.00220	0.00286	0.00438		0.00465	0.00693	0.00756	-0.18	0.5	No evidence of autocorrelation	Lognormal	Lognormal
1_1_136	Alluvium	Dissolved Metals	potassium (dissolved)	mg/L	15	2	13%	0.835	0.670	0.500	0.400	2.40	2.36	7.03	0.129	0.370	0.500	1.00	1.10	1.62		1.83	2.64	2.88	-0.43	0.07	No evidence of autocorrelation	Gamma; Lognormal	Gamma
1_1_138	Alluvium	Dissolved Metals	selenium (dissolved)	mg/L	15	14	93%	0.00203	0.00200	0.000297	0.00150	0.00300	2.37	9.74	0.0000766	0.00	0.00200	0.00200	0.00200	0.00240		0.00263	0.00330	0.00360	-0.00090	>0.9	No evidence of autocorrelation	Nonparametric	Nonparametric
1_1_140	Alluvium	Dissolved Metals	silver (dissolved)	mg/L	15	12	80%	0.000188	0.000100	0.000255	0.0000330	0.00100	2.84	8.04	0.0000658	0.00	0.000100	0.000100	0.000402	0.000730		0.000698	0.00110	0.00120	-0.14	0.5	No evidence of autocorrelation	Lognormal; Normal	Nonparametric
1_1_142	Alluvium	Dissolved Metals	sodium (dissolved)	mg/L	15	0	0%	811	830	96.0	520	920	-2.06	5.90	24.8	59.3	790	870	896	908		1,003	1,012	1,104	0.16	0.5	No evidence of autocorrelation	Normal	Normal
1_1_144	Alluvium	Dissolved Metals	thallium (dissolved)	mg/L	15	15	100%	0.000244	0.000200	0.000211	0.000100	0.00100	3.76	14.4	0.0000544	0.00	0.000200	0.000200	0.000200	0.000520		0.000666	0.00110	0.00120	0.010	>0.9	No evidence of autocorrelation		Nonparametric
1_1_146	Alluvium	Dissolved Metals	vanadium (dissolved)	mg/L	15	1	7%	0.00230	0.00200	0.00125	0.00100	0.00554	1.58	2.29	0.000324	0.000889	0.00140	0.00280	0.00388	0.00486		0.00481	0.00609	0.00665	-0.018	>0.9	No evidence of autocorrelation	Gamma; Lognormal; Normal	Gamma
1_1_148	Alluvium	Dissolved Metals	zinc (dissolved)	mg/L	15	10	67%	0.00963	0.00800	0.0115	0.00220	0.0500	3.47	12.8	0.00298	0.00296	0.00600	0.00800	0.0116	0.0284		0.0327	0.0550	0.0600	0.021	>0.9	No evidence of autocorrelation	Gamma; Lognormal; Normal	Nonparametric
1_2_133	Alluvium	Nitrogen	nitrate	mg/L	15	11	73%	0.269	0.160	0.455	0.0970	1.90	3.77	14.4	0.117	0.0889	0.100	0.200	0.247	0.927		1.18	2.09	2.28	0.034	0.9	No evidence of autocorrelation	Gamma; Lognormal	Nonparametric
1_3_134	Alluvium	Perchlorate	perchlorate	mg/L	15	15	100%	0.0000287	0.0000200	0.0000307	0.0000100	0.000100	1.98	2.78	0.00000792	0.0000148	0.0000100	0.0000200	0.0000800	0.000100		0.0000900	0.000110	0.000120	-0.13	0.6	No evidence of autocorrelation		Nonparametric
1_4_101	Alluvium	Total Metals	aluminum	mg/L	15	2	13%	0.538	0.100	1.19	0.0190	4.20	2.73	7.00	0.307	0.0889	0.0540	0.200	1.60	3.18		2.91	4.62	5.04	-0.15	0.5	No evidence of autocorrelation	Lognormal	Gamma
1_4_103	Alluvium	Total Metals	antimony	mg/L	15	13	87%	0.000879	0.000600	0.000510	0.000440	0.00250	2.50	7.65	0.000132	0.000237	0.000600	0.00100	0.00112	0.00172		0.00190	0.00275	0.00300	0.030	0.9	No evidence of autocorrelation	Nonparametric	Nonparametric
1_4_105	Alluvium	Total Metals	arsenic	mg/L	15	1	7%	0.000928	0.000870	0.000275	0.000610	0.00170	1.66	3.77	0.0000709	0.000193	0.000770	0.00100	0.00119	0.00143		0.00148	0.00187	0.00204	0.096	0.7	No evidence of autocorrelation	Gamma; Lognormal; Normal	Gamma
1_4_107	Alluvium	Total Metals	barium	mg/L	15	0	0%	0.0209	0.0170	0.00888	0.0140	0.0450	2.02	3.51	0.00229	0.00148	0.0160	0.0250	0.0322	0.0402		0.0387	0.0495	0.0540	-0.26	0.3	No evidence of autocorrelation	Nonparametric	Nonparametric
1_4_109	Alluvium	Total Metals	beryllium	mg/L	15	13	87%	0.000316	0.000300	0.000207	0.000110	0.00100	2.88	9.67	0.0000533	0.0000889	0.000240	0.000300	0.000408	0.000688		0.000729	0.00110	0.00120	0.022	>0.9	No evidence of autocorrelation	Nonparametric	Nonparametric
1_4_111	Alluvium	Total Metals	cadmium	mg/L	15	13	87%	0.000634	0.00100	0.000413	0.000120	0.00100	-0.267	-2.09	0.000107	0.00	0.000140	0.00100	0.00100	0.00100		0.00146	0.00110	0.00120	0.86	<0.001	The data exhibits serial correlation	Nonparametric	Nonparametric
1_4_113	Alluvium	Total Metals	calcium	mg/L	15	0	0%	46.1	46.0	8.20	35.0	60.0	0.469	-0.869	2.12	8.89	39.0	52.0	58.6	59.4		62.5	66.0	72.0	0.21	0.4	No evidence of autocorrelation	Gamma; Lognormal; Normal	Gamma
1_4_115	Alluvium	Total Metals	chromium	mg/L	15	10	67%	0.00164	0.00170	0.000626	0.000620	0.00300	0.340	0.910	0.000162	0.000296	0.00150	0.00180	0.00232	0.00276		0.00290	0.00330	0.00360	-0.30	0.2	No evidence of autocorrelation	Gamma; Lognormal; Normal	Nonparametric
1_4_117	Alluvium	Total Metals	cobalt	mg/L	15	2	13%	0.000556	0.000360	0.000462	0.000200	0.00180	1.87	2.94	0.000119	0.000133	0.000270	0.000730	0.00118	0.00150		0.00148	0.00198	0.00216	-0.20	0.4	No evidence of autocorrelation	Nonparametric	Nonparametric
1_4_119	Alluvium	Total Metals	copper	mg/L	15	5	33%	0.00264	0.00180	0.00233	0.000590	0.00870	1.59	2.09	0.000601	0.00150	0.00110	0.00410	0.00560	0.00708		0.00730	0.00957	0.0104	-0.23	0.3	No evidence of autocorrelation	Gamma; Lognormal	Gamma
1_4_121	Alluvium	Total Metals	iron	mg/L	15	2	13%	0.351	0.0810	0.713	0.0300	2.50	2.64	6.38	0.184	0.0637	0.0470	0.150	1.06	1.96		1.78	2.75	3.00	-0.15	0.5	No evidence of autocorrelation	Nonparametric	Nonparametric
1_4_123	Alluvium	Total Metals	lead	mg/L	15	11	73%	0.000762	0.000700	0.000481	0.000190	0.00220	2.20	5.64	0.000124	0.000296	0.000500	0.000700	0.00124	0.00172		0.00172	0.00242	0.00264	-0.078	0.7	No evidence of autocorrelation	Gamma; Lognormal; Normal	Nonparametric
1_4_125	Alluvium	Total Metals	magnesium	mg/L	15	0	0%	25.6	26.0	3.27	21.0	32.0	0.553	-0.352	0.844	4.44	23.0	27.0	30.2	31.4		32.1	35.2	38.4	0.20	0.4	No evidence of autocorrelation	Gamma; Lognormal; Normal	Gamma
1_4_127	Alluvium	Total Metals	manganese	mg/L	15	0	0%	0.226	0.190	0.0984	0.160	0.530	2.37	6.50	0.0254	0.0444	0.160	0.280	0.300	0.398		0.422	0.583	0.636	-0.072	0.8	No evidence of autocorrelation	Nonparametric	Nonparametric
1_4_129	Alluvium	Total Metals	mercury	mg/L	15	15	100%	0.0000778	0.0000800	0.0000150	0.0000270	0.000100	-2.95	11.3	0.00000386	0.00	0.0000800	0.0000800	0.0000800	0.0000880		0.000108	0.000110	0.000120	-0.0015	>0.9	No evidence of autocorrelation		Nonparametric
1_4_131	Alluvium	Total Metals	nickel	mg/L	15	2	13%	0.00250	0.00180	0.00210	0.000900	0.00930	2.67	8.43	0.000542	0.00104	0.00120	0.00340	0.00350	0.00582		0.00670	0.0102	0.0112	0.14	0.5	No evidence of autocorrelation	Lognormal	Lognormal
1_4_135	Alluvium	Total Metals	potassium	mg/L	15	1	7%	0.943	0.770	0.529	0.420	2.10	1.35	0.917	0.137	0.400	0.500	1.10	1.80	2.04		2.00	2.31	2.52	0.055	0.8	No evidence of autocorrelation	Gamma; Lognormal; Normal	Gamma
1_4_137	Alluvium	Total Metals	selenium	mg/L	15	14	93%	0.00227	0.00200	0.000840	0.00150	0.00460	2.36	4.74	0.000217	0.00	0.00200	0.00200	0.00320	0.00424		0.00395	0.00506	0.00552	0.46	0.05	The data exhibits serial correlation	Nonparametric	Nonparametric
1_4_139	Alluvium	Total Metals	silver	mg/L	15	11	73%	0.000500	0.000100	0.00113	0.000100	0.00450	3.61	13.4	0.000292	0.00	0.000100	0.000240	0.000788	0.00240		0.00276	0.00495	0.00540	-0.12	0.6	No evidence of autocorrelation	Gamma; Lognormal	Nonparametric
1_4_141	Alluvium	Total Metals	sodium	mg/L	15	0	0%	794	810	70.2	630	894	-0.958	0.688	18.1	59.3	750	850	856	874		935	983	1,073	0.18	0.4	No evidence of autocorrelation	Gamma; Lognormal; Normal	Gamma
1_4_143	Alluvium	Total Metals	thallium	mg/L	15	14	93%	0.000241	0.000200	0.000213	0.0000560	0.00100	3.65	13.9	0.0000551	0.00	0.000200	0.000200	0.000200	0.000520		0.000668	0.00110	0.00120	0.0066	>0.9	No evidence of autocorrelation	Nonparametric	Nonparametric
1_4_145	Alluvium	Total Metals	vanadium	mg/L	15	2	13%	0.00315	0.00210	0.00208	0.00150	0.00780	1.55	0.996	0.000537	0.000296	0.00200	0.00340	0.00670	0.00738		0.00731	0.00858	0.00936	-0.28	0.2	No evidence of autocorrelation	Nonparametric	Nonparametric
1_4_147	Alluvium	Total Metals	zinc	mg/L	15	10	67%	0.0127	0.00800	0.0141	0.00200	0.0500	2.01	3.23	0.00365	0.00296	0.00600	0.0120	0.0332	0.0440		0.0410	0.0550	0.0600	0.020	>0.9	No evidence of autocorrelation	Gamma; Lognormal; Normal	Nonparametric
2_1_102	Bedrock	Dissolved Metals	aluminum (dissolved)	mg/L	9	4	44%	16.1	0.200	42.8	0.0490	130	2.97	8.87	14.3	0.193	0.0780	6.97	69.2			102	143	156	-0.17	0.5	No evidence of autocorrelation	Gamma; Lognormal	Gamma
2_1_104	Bedrock	Dissolved Metals	antimony (dissolved)	mg/L	9	7	78%	0.00152	0.00100	0.000746	0.000860	0.00250	0.773	-1.74	0.000249	0.000207	0.00100	0.00250	0.00250			0.00301	0.00275	0.00300	0.62	0.03	The data exhibits serial correlation	Nonparametric	Nonparametric
2_1_106	Bedrock	Dissolved Metals	arsenic (dissolved)	mg/L	9	4	44%	0.00222	0.00125	0.00297	0.000380	0.0100	2.82	8.20	0.000989	0.000400	0.000990	0.00204	0.00608			0.00815	0.0110	0.0120	-0.27	0.4	No evidence of autocorrelation	Gamma; Lognormal	Gamma
2_1_108	Bedrock	Dissolved Metals	barium (dissolved)	mg/L	9	0	0%	0.0960	0.0158	0.217	0.00678	0.670	2.94	8.70	0.0722	0.0134	0.00860	0.0565	0.376			0.529	0.737	0.804	-0.16	0.6	No evidence of autocorrelation	Lognormal	Gamma
2_1_110	Bedrock	Dissolved Metals	beryllium (dissolved)	mg/L	9	7	78%	0.00109	0.000300	0.00169	0.000130	0.00550	2.75	7.86	0.000564	0.000252	0.000300	0.00100	0.00325			0.00448	0.00605	0.00660	-0.21	0.5	No evidence of autocorrelation	Nonparametric	Nonparametric
2_1_112	Bedrock	Dissolved Metals	cadmium (dissolved)	mg/L	9	9	100%	0.00100	0.00100	0.00	0.00100	0.00100			0.00	0.00	0.00100	0.00100	0.00100	0.00100	0.00100	0.00100	0.00110	0.00120					Nonparametric
2_1_114	Bedrock	Dissolved Metals	calcium (dissolved)	mg/L	9	0	0%	88.3	31.5	105	7.80	292	1.32	0.507	34.9	35.1	8.02	165	261			298	321	350	-0.16	0.6	No evidence of autocorrelation	Gamma; Lognormal; Normal	Gamma
2_1_116	Bedrock	Dissolved Metals	chromium (dissolved)	mg/L	9	5	56%	0.0178	0.00180	0.0459	0.00100	0.140	2.99	8.95	0.0153	0.00119	0.00100	0.00575	0.0731			0.110	0.154	0.168	-0.15	0.6	No evidence of autocorrelation	Gamma; Lognormal	Nonparametric
2_1_118	Bedrock	Dissolved Metals	cobalt (dissolved)	mg/L	9	3	33%	0.00458	0.00100	0.0111	0.0000670	0.0340	2.98	8.91	0.00368	0.00101	0.000260	0.00181	0.0181			0.0267	0.0374	0.0408	-0.19	0.5	No evidence of autocorrelation	Gamma; Lognormal	Gamma
2_1_120	Bedrock	Dissolved Metals	copper (dissolved)	mg/L	9	4	44%	0.00688	0.00180	0.00905	0.000700	0.0280	1.96	3.67	0.00302	0.00163	0.00150	0.0108	0.0213			0.0250	0.0308	0.0336	-0.26	0.4	No evidence of autocorrelation	Gamma; Lognormal; Normal	Gamma
2_1_122	Bedrock	Dissolved Metals	iron (dissolved)	mg/L	9	4	44%	13.3	0.250	36.3	0.0850	110	2.99	8.94	12.1	0.244	0.0865	4.04	57.5			85.9	121	132	-0.16	0.6	No evidence of autocorrelation	Gamma; Lognormal	Gamma
2_1_124	Bedrock	Dissolved Metals	lead (dissolved)	mg/L	9	6	67%	0.00366	0.000700	0.00875	0.000500	0.0270	3.00	8.98	0.00292	0.000258	0.000600	0.00109	0.0142			0.0212	0.0297	0.0324	-0.14	0.6	No evidence of autocorrelation	Lognormal; Normal	Nonparametric
2_1_126	Bedrock	Dissolved Metals	magnesium (dissolved)	mg/L	9	0	0%	14.3	4.85	16.0	0.876	39.0	0.752	-1.50	5.32	5.89	0.930	32.7	37.2			46.3	42.9	46.8	-0.25	0.4	No evidence of autocorrelation	Gamma; Lognormal	Gamma
2_1_128	Bedrock	Dissolved Metals	manganese (dissolved)	mg/L	9	1	11%	0.366	0.0950	0.474	0.000950	1.40	1.49	1.92	0.158	0.139	0.0187	0.677	1.05			1.31	1.54	1.68	-0.21	0.5	No evidence of autocorrelation	Gamma; Lognormal; Normal	Gamma
2_1_130	Bedrock	Dissolved Metals	mercury (dissolved)	mg/L	9	9	100%	0.0000867	0.0000800	0.0000100	0.0000800	0.000100	0.857	-1.71	0.00000333	0.00	0.0000800	0.000100	0.000100			0.000107	0.000110	0.000120	0.61	0.03	The data exhibits serial correlation		Nonparametric
2_1_132	Bedrock	Dissolved Metals	nickel (dissolved)	mg/L	9	5	56%	0.0114	0.00250	0.0273	0.00100	0.0840	2.99	8.94	0.00909	0.00178	0.00115	0.00385	0.0446			0.0659	0.0924	0.101	-0.17	0.5	No evidence of autocorrelation	Gamma; Lognormal	Nonparametric
2_1_136	Bedrock	Dissolved Metals	potassium (dissolved)	mg/L	9	0	0%	4.80	3.25	5.31	0.645	16.0	1.52	1.53	1.77	3.33	0.950	7.85	13.5			15.4	17.6	19.2	-0.21	0.5	No evidence of autocorrelation	Gamma; Lognormal	Gamma
2_1_138	Bedrock	Dissolved Metals	selenium (dissolved)	mg/L	9	9	100%	0.00183	0.00200	0.000250	0.00150	0.00200	-0.857	-1.71	0.0000833	0.00	0.00150	0.00200	0.00200			0.00233	0.00220	0.00240	0.61	0.03	The data exhibits serial correlation		Nonparametric
2_1_140	Bedrock	Dissolved Metals	silver (dissolved)	mg/L	9	8	89%	0.000394	0.000100	0.000455	0.0000460	0.00100	0.851	-1.71	0.000152	0.00	0.000100	0.00100	0.00100			0.00130	0.00110	0.00120	0.62	0.03	The data exhibits serial correlation	Nonparametric	Nonparametric
2_1_142	Bedrock	Dissolved Metals	sodium (dissolved)	mg/L	9	0	0%	1,523	1,200	1,021	618	3,530	1.15	0.379	340	844	640	2,350	3,115			3,566	3,883	4,236	-0.18	0.5	No evidence of autocorrelation	Gamma; Lognormal; Normal	Gamma
2_1_144	Bedrock	Dissolved Metals	thallium (dissolved)	mg/L	9	8	89%	0.000483	0.000200	0.000391	0.000200	0.00100	0.803	-1.73	0.000130	0.00	0.000200	0.00100	0.00100			0.00126	0.00110	0.00120	0.58	0.04	The data exhibits serial correlation	Nonparametric	Nonparametric
2_1_146	Bedrock	Dissolved Metals	vanadium (dissolved)	mg/L	9	5	56%	0.0143	0.00250	0.0315	0.00200	0.0980	2.97	8.88	0.0105	0.000741	0.00200	0.00703	0.0530			0.0772	0.108	0.118	-0.19	0.5	No evidence of autocorrelation	Nonparametric	Nonparametric
2_1_148	Bedrock	Dissolved Metals	zinc (dissolved)	mg/L	9	8	89%	0.0489	0.00800	0.0781	0.00800	0.250	2.63	7.30	0.0260	0.00	0.00800	0.0500	0.150			0.205	0.275	0.300	-0.24	0.4	No evidence of autocorrelation	Nonparametric	Nonparametric
2_2_133	Bedrock	Nitrogen	nitrate	mg/L	9	8	89%	0.220	0.200	0.180	0.0300	0.500	0.823	-0.740	0.0598	0.167	0.0735	0.400	0.500			0.579	0.550	0.600	0.41	0.1	No evidence of autocorrelation	Nonparametric	Nonparametric
2_3_134	Bedrock	Perchlorate	perchlorate	mg/L	9	6	67%	0.0000236	0.0000100	0.0000202	0.00000570	0.0000500	0.728	-1.77	0.00000672	0.00000637	0.00000855	0.0000500	0.0000500			0.0000639	0.0000550	0.0000600	0.69	0.01	The data exhibits serial correlation	Lognormal; Normal	Nonparametric
2_4_101	Bedrock	Total Metals	aluminum	mg/L	9	2	22%	74.5	14.2	102	0.0700	260	1.24	0.0433	34.2	20.9	0.380	157	245			279	286	312	0.31	0.3	No evidence of autocorrelation	Gamma; Lognormal; Normal	Gamma
2_4_103	Bedrock	Total Metals	antimony	mg/L	9	8	89%	0.00181	0.00100	0.00104	0.00100	0.00380	0.881	-0.354	0.000347	0.00	0.00100	0.00250	0.00315			0.00389	0.00418	0.00456	0.16	0.6	No evidence of autocorrelation	Nonparametric	Nonparametric
2_4_105	Bedrock	Total Metals	arsenic	mg/L	9	3	33%	0.00576	0.00423	0.00617	0.00100	0.0200	1.74	3.37	0.00206	0.00462	0.00113	0.00833	0.0147			0.0181	0.0220	0.0240	-0.0055	>0.9	No evidence of autocorrelation	Gamma; Lognormal; Normal	Gamma
2_4_107	Bedrock	Total Metals	barium	mg/L	9	0	0%	0.659	0.156	0.860	0.00758	2.30	1.09	-0.185	0.287	0.220	0.0119	1.45	1.95			2.38	2.53	2.76	0.42	0.1	No evidence of autocorrelation	Gamma; Lognormal	Gamma
2_4_109	Bedrock	Total Metals	beryllium	mg/L	9	4	44%	0.00312	0.00102	0.00352	0.000300	0.0100	1.31	0.497	0.00117	0.00107	0.000650	0.00580	0.00890			0.0102	0.0110	0.0120	0.18	0.5	No evidence of autocorrelation	Gamma; Lognormal; Normal	Gamma
2_4_111	Bedrock	Total Metals	cadmium	mg/L	9	6	67%	0.000813	0.00100	0.000287	0.000300	0.00100	-1.05	-0.828	0.0000956	0.00	0.000510	0.00100	0.00100			0.00139	0.00110	0.00120	0.39	0.2	No evidence of autocorrelation	Lognormal; Normal	Nonparametric
2_4_113	Bedrock	Total Metals	calcium	mg/L	9	0	0%	139	67.5	143	7.70	350	0.530	-1.80	47.6	88.6	8.13	300	325			425	385	420	0.095	0.7	No evidence of autocorrelation	Gamma; Lognormal; Normal	Gamma
2_4_115	Bedrock	Total Metals	chromium	mg/L	9	1	11%	0.0624	0.0170	0.0887	0.00100	0.270	1.89	3.75	0.0296	0.0237	0.00170	0.0965	0.195			0.240	0.297	0.324	0.090	0.8	No evidence of autocorrelation	Gamma; Lognormal; Normal	Gamma
2_4_117	Bedrock	Total Metals	cobalt	mg/L	9	2	22%	0.0187	0.00511	0.0236	0.000200	0.0670	1.27	0.865	0.00785	0.00727	0.000630	0.0340	0.0550			0.0658	0.0737	0.0804	0.14	0.6	No evidence of autocorrelation	Gamma; Lognormal; Normal	Gamma
2_4_119	Bedrock	Total Metals	copper	mg/L	9	3	33%	0.0149	0.00611	0.0177	0.00120	0.0550	1.77	2.88	0.00591	0.00727	0.00340	0.0240	0.0430			0.0503	0.0605	0.0660	0.090	0.8	No evidence of autocorrelation	Gamma; Lognormal; Normal	Gamma
2_4_121	Bedrock	Total Metals	iron	mg/L	9	1	11%	42.7	8.26	60.4	0.0250	170	1.47	1.40	20.1	12.2	0.340	82.3	140			164	187	204	0.19	0.5	No evidence of autocorrelation	Gamma; Lognormal; Normal	Gamma
2_4_123	Bedrock	Total Metals	lead	mg/L	9	2	22%	0.0154	0.00416	0.0193	0.000210	0.0540	1.17	0.443	0.00644	0.00585	0.000600	0.0295	0.0450			0.0541	0.0594	0.0648	0.18	0.5	No evidence of autocorrelation	Gamma; Lognormal; Normal	Gamma

Code	Aquifer	Constituent Type	Constituent	Unit	n	No. ND[1] BDL[2]	% ND BDL	Mean	Median	Standard Deviation (sd)	Minimum	Maximum	Skewness	Kurtosis	Standard Error of Mean	MAD[3]/0.675	Percentile[4]					Mean + 2sd	110% Maximum	120% Maximum	Serial Correlation with 1 Lag			ProUCL's Best Fit[5]	HDR's Recommended Fit
																	25th	75th	85th	90th	95th				Auto-correlation	Sig.	Auto-correlation Test		
2_4_125	Bedrock	Total Metals	magnesium	mg/L	9	0	0%	29.6	28.0	29.1	0.870	72.0	0.423	-1.55	9.69	39.9	1.01	59.5	70.5			87.8	79.2	86.4	0.19	0.5	No evidence of autocorrelation	Gamma; Lognormal; Normal	Gamma
2_4_127	Bedrock	Total Metals	manganese	mg/L	9	0	0%	1.35	0.716	1.58	0.0230	3.80	0.783	-1.48	0.526	1.03	0.0246	3.20	3.60			4.51	4.18	4.56	0.38	0.2	No evidence of autocorrelation	Gamma; Lognormal	Gamma
2_4_129	Bedrock	Total Metals	mercury	mg/L	9	8	89%	0.0000771	0.0000800	0.0000252	0.0000260	0.000100	-1.23	1.02	0.00000839	0.0000296	0.0000640	0.000100	0.000100			0.000127	0.000110	0.000120	0.26	0.4	No evidence of autocorrelation	Nonparametric	Nonparametric
2_4_131	Bedrock	Total Metals	nickel	mg/L	9	1	11%	0.0444	0.0114	0.0578	0.000420	0.170	1.47	1.87	0.0193	0.0163	0.00265	0.0770	0.132			0.160	0.187	0.204	0.10	0.7	No evidence of autocorrelation	Gamma; Lognormal; Normal	Gamma
2_4_135	Bedrock	Total Metals	potassium	mg/L	9	1	11%	10.5	5.13	11.0	0.660	27.0	0.610	-1.69	3.65	6.62	0.890	23.0	25.5			32.4	29.7	32.4	0.29	0.3	No evidence of autocorrelation	Gamma; Lognormal; Normal	Gamma
2_4_137	Bedrock	Total Metals	selenium	mg/L	9	9	100%	0.00183	0.00200	0.000250	0.00150	0.00200	-0.857	-1.71	0.0000833	0.00	0.00150	0.00200	0.00200			0.00233	0.00220	0.00240	0.61	0.03	The data exhibits serial correlation		Nonparametric
2_4_139	Bedrock	Total Metals	silver	mg/L	9	7	78%	0.000394	0.000100	0.000455	0.0000460	0.00100	0.851	-1.71	0.000152	0.00	0.000100	0.00100	0.00100			0.00130	0.00110	0.00120	0.62	0.03	The data exhibits serial correlation	Nonparametric	Nonparametric
2_4_141	Bedrock	Total Metals	sodium	mg/L	9	0	0%	1,647	1,150	1,170	623	3,610	0.875	-1.02	390	756	640	2,900	3,405			3,986	3,971	4,332	-0.089	0.8	No evidence of autocorrelation	Gamma; Lognormal	Gamma
2_4_143	Bedrock	Total Metals	thallium	mg/L	9	6	67%	0.000560	0.000440	0.000366	0.000200	0.00100	0.325	-2.06	0.000122	0.000356	0.000200	0.00100	0.00100			0.00129	0.00110	0.00120	0.44	0.1	No evidence of autocorrelation	Lognormal; Normal	Nonparametric
2_4_145	Bedrock	Total Metals	vanadium	mg/L	9	2	22%	0.0558	0.0204	0.0663	0.000560	0.180	0.934	-0.353	0.0221	0.0294	0.00225	0.108	0.155			0.188	0.198	0.216	0.16	0.6	No evidence of autocorrelation	Gamma; Lognormal; Normal	Gamma
2_4_147	Bedrock	Total Metals	zinc	mg/L	9	5	56%	0.120	0.0500	0.162	0.00800	0.530	2.47	6.59	0.0540	0.0622	0.0290	0.145	0.340			0.444	0.583	0.636	-0.15	0.6	No evidence of autocorrelation	Gamma; Lognormal	Nonparametric

[1]ND - Non Detect

[2]BDL - Below Method Detection Limit

[3]MAD - Median Absolute Deviation

[4]Percentiles are computed using the weighted average percentile method whereby results are output if the computed rank is within the valid range for the data set (e.g. 95th percentiles are often not produced when sample sizes are small)

[5]Goodness of fit is based on detected data

Preliminary Data Analysis Without Non-Detects

Code	Aquifer	Constituent Type	Constituent	Unit	n	No. ND[1] / BDL[2]	% ND BDL	Mean	Median	Standard Deviation (sd)	Minimum	Maximum	Skewness	Kurtosis	Standard Error of Mean	MAD[3]/0.675	Percentile[4] 25th	75th	85th	90th	95th	Mean + 2sd	110% Maximum	120% Maximum	Serial Correlation with 1 Lag: Auto-correlation	Sig.	Auto-correlation Test	ProUCL's Best Fit[5]	HDR's Recommended Fit
1_1_102	Alluvium	Dissolved Metals	aluminum (dissolved)	mg/L	5			0.174	0.0200	0.313	0.00400	0.730	2.16	4.70	0.140	0.0237	0.0110	0.415				0.800	0.803	0.876	-0.15	0.5	No evidence of autocorrelation	Gamma; Lognormal	Nonparametric
1_1_104	Alluvium	Dissolved Metals	antimony (dissolved)	mg/L	2			0.000470	0.000470	0.0000849	0.000410	0.000530			0.0000600	0.0000889	0.000410					0.000640	0.000583	0.000636				Nonparametric	Nonparametric
1_1_106	Alluvium	Dissolved Metals	arsenic (dissolved)	mg/L	14			0.000829	0.000795	0.000168	0.000660	0.00130	1.87	4.11	0.0000450	0.000111	0.000725	0.000920	0.000988	0.00115		0.00117	0.00143	0.00156	0.31	0.2	No evidence of autocorrelation	Lognormal	Lognormal
1_1_108	Alluvium	Dissolved Metals	barium (dissolved)	mg/L	15			0.0175	0.0160	0.00316	0.0140	0.0260	1.61	2.76	0.000815	0.00148	0.0150	0.0190	0.0210	0.0230		0.0238	0.0286	0.0312	0.11	0.6	No evidence of autocorrelation	Gamma; Lognormal	Gamma
1_1_110	Alluvium	Dissolved Metals	beryllium (dissolved)	mg/L	0																								Nonparametric
1_1_112	Alluvium	Dissolved Metals	cadmium (dissolved)	mg/L	0																								Nonparametric
1_1_114	Alluvium	Dissolved Metals	calcium (dissolved)	mg/L	15			45.6	44.0	7.08	37.0	58.6	0.698	-0.669	1.83	7.41	40.0	51.0	56.4	58.2		59.8	64.5	70.3	-0.0050	>0.9	No evidence of autocorrelation	Gamma; Lognormal; Normal	Gamma
1_1_116	Alluvium	Dissolved Metals	chromium (dissolved)	mg/L	2			0.00199	0.00199	0.00144	0.000970	0.00300			0.00102	0.00150	0.000970					0.00486	0.00330	0.00360				Nonparametric	Nonparametric
1_1_118	Alluvium	Dissolved Metals	cobalt (dissolved)	mg/L	13			0.000388	0.000300	0.000243	0.000210	0.00110	2.50	6.59	0.0000673	0.0000889	0.000250	0.000390	0.000636	0.000924		0.000874	0.00121	0.00132	0.34	0.2	No evidence of autocorrelation	Lognormal	Lognormal
1_1_120	Alluvium	Dissolved Metals	copper (dissolved)	mg/L	9			0.00330	0.00110	0.00482	0.000580	0.0140	1.89	2.57	0.00161	0.000356	0.000740	0.00515	0.0115			0.0129	0.0154	0.0168	-0.13	0.6	No evidence of autocorrelation	Nonparametric	Nonparametric
1_1_122	Alluvium	Dissolved Metals	iron (dissolved)	mg/L	7			0.110	0.0290	0.199	0.0220	0.560	2.60	6.81	0.0753	0.00593	0.0250	0.0750	0.463			0.509	0.616	0.672	-0.11	0.6	No evidence of autocorrelation	Nonparametric	Nonparametric
1_1_124	Alluvium	Dissolved Metals	lead (dissolved)	mg/L	3			0.000401	0.000340	0.000161	0.000280	0.000584	1.47		0.0000930	0.0000889	0.000280					0.000723	0.000642	0.000701	0.0			Lognormal; Normal	Nonparametric
1_1_126	Alluvium	Dissolved Metals	magnesium (dissolved)	mg/L	15			25.1	24.0	2.80	21.0	32.2	1.30	1.99	0.723	1.48	23.0	26.0	28.6	30.3		30.7	35.4	38.6	0.13	0.6	No evidence of autocorrelation	Gamma; Lognormal	Gamma
1_1_128	Alluvium	Dissolved Metals	manganese (dissolved)	mg/L	15			0.195	0.180	0.0449	0.150	0.330	2.13	5.63	0.0116	0.0296	0.170	0.210	0.229	0.270		0.284	0.363	0.396	0.14	0.6	No evidence of autocorrelation	Gamma; Lognormal; Normal	Gamma
1_1_130	Alluvium	Dissolved Metals	mercury (dissolved)	mg/L	0																								Nonparametric
1_1_132	Alluvium	Dissolved Metals	nickel (dissolved)	mg/L	14			0.00204	0.00165	0.00133	0.00100	0.00630	2.86	9.07	0.000356	0.000519	0.00135	0.00213	0.00288	0.00470		0.00471	0.00693	0.00756	-0.16	0.5	No evidence of autocorrelation	Lognormal	Lognormal
1_1_136	Alluvium	Dissolved Metals	potassium (dissolved)	mg/L	13			0.852	0.670	0.530	0.400	2.40	2.27	6.34	0.147	0.370	0.485	1.05	1.10	1.88		1.91	2.64	2.88	-0.42	0.08	No evidence of autocorrelation	Gamma; Lognormal	Gamma
1_1_138	Alluvium	Dissolved Metals	selenium (dissolved)	mg/L	1			0.00300	0.00300		0.00300	0.00300				0.00	0.00300	0.00300	0.00300	0.00300	0.00300		0.00330	0.00360				Nonparametric	Nonparametric
1_1_140	Alluvium	Dissolved Metals	silver (dissolved)	mg/L	3			0.000213	0.0000550	0.000292	0.0000330	0.000550	1.72		0.000169	0.0000326	0.0000330					0.000797	0.000605	0.000660	-0.35	0.2	No evidence of autocorrelation	Lognormal; Normal	Nonparametric
1_1_142	Alluvium	Dissolved Metals	sodium (dissolved)	mg/L	15			811	830	96.0	520	920	-2.06	5.90	24.8	59.3	790	870	896	908		1,003	1,012	1,104	0.16	0.5	No evidence of autocorrelation	Normal	Normal
1_1_144	Alluvium	Dissolved Metals	thallium (dissolved)	mg/L	0																								Nonparametric
1_1_146	Alluvium	Dissolved Metals	vanadium (dissolved)	mg/L	14			0.00232	0.00185	0.00130	0.00100	0.00554	1.49	1.90	0.000347	0.000889	0.00138	0.00288	0.00408	0.00497		0.00492	0.00609	0.00665	-0.025	>0.9	No evidence of autocorrelation	Gamma; Lognormal; Normal	Gamma
1_1_148	Alluvium	Dissolved Metals	zinc (dissolved)	mg/L	5			0.00570	0.00340	0.00497	0.00220	0.0140	1.62	2.36	0.00222	0.00178	0.00225	0.0103				0.0156	0.0154	0.0168	-0.33	0.2	No evidence of autocorrelation	Gamma; Lognormal; Normal	Nonparametric
1_2_133	Alluvium	Nitrogen	nitrate	mg/L	4			0.609	0.220	0.864	0.0970	1.90	1.95	3.84	0.432	0.135	0.113	1.49				2.34	2.09	2.28	0.066	0.7	No evidence of autocorrelation	Gamma; Lognormal	Nonparametric
1_3_134	Alluvium	Perchlorate	perchlorate	mg/L	0																								Nonparametric
1_4_101	Alluvium	Total Metals	aluminum	mg/L	13			0.603	0.100	1.27	0.0190	4.20	2.50	5.70	0.352	0.0874	0.0555	0.215	2.28	3.52		3.14	4.62	5.04	-0.19	0.4	No evidence of autocorrelation	Lognormal	Gamma
1_4_103	Alluvium	Total Metals	antimony	mg/L	2			0.000485	0.000485	0.0000636	0.000440	0.000530			0.0000450	0.0000667	0.000440					0.000612	0.000583	0.000636				Nonparametric	Nonparametric
1_4_105	Alluvium	Total Metals	arsenic	mg/L	14			0.000905	0.000855	0.000270	0.000610	0.00170	2.06	5.84	0.0000720	0.000178	0.000753	0.00100	0.00108	0.00140		0.00144	0.00187	0.00204	0.11	0.6	No evidence of autocorrelation	Gamma; Lognormal; Normal	Gamma
1_4_107	Alluvium	Total Metals	barium	mg/L	15			0.0209	0.0170	0.00888	0.0140	0.0450	2.02	3.51	0.00229	0.00148	0.0160	0.0250	0.0322	0.0402		0.0387	0.0495	0.0540	-0.26	0.3	No evidence of autocorrelation	Nonparametric	Nonparametric
1_4_109	Alluvium	Total Metals	beryllium	mg/L	2			0.000125	0.000125	0.0000212	0.000110	0.000140			0.0000150	0.0000222	0.000110					0.000167	0.000154	0.000168				Nonparametric	Nonparametric
1_4_111	Alluvium	Total Metals	cadmium	mg/L	2			0.000255	0.000255	0.000163	0.000140	0.000370			0.000115	0.000170	0.000140					0.000580	0.000407	0.000444				Nonparametric	Nonparametric
1_4_113	Alluvium	Total Metals	calcium	mg/L	15			46.1	46.0	8.20	35.0	60.0	0.469	-0.869	2.12	8.89	39.0	52.0	58.6	59.4		62.5	66.0	72.0	0.21	0.4	No evidence of autocorrelation	Gamma; Lognormal; Normal	Gamma
1_4_115	Alluvium	Total Metals	chromium	mg/L	5			0.00149	0.00170	0.000857	0.000620	0.00260	0.100	-1.83	0.000383	0.00133	0.000625	0.00225				0.00320	0.00286	0.00312	-0.32	0.05	No evidence of autocorrelation	Gamma; Lognormal; Normal	Nonparametric
1_4_117	Alluvium	Total Metals	cobalt	mg/L	13			0.000549	0.000360	0.000472	0.000240	0.00180	2.12	3.87	0.000131	0.0000889	0.000290	0.000575	0.00124	0.00160		0.00149	0.00198	0.00216	-0.26	0.3	No evidence of autocorrelation	Nonparametric	Nonparametric
1_4_119	Alluvium	Total Metals	copper	mg/L	10			0.00278	0.00145	0.00272	0.000590	0.00870	1.42	1.28	0.000861	0.00121	0.000763	0.00458	0.00695	0.00843		0.00822	0.00957	0.0104	-0.27	0.3	No evidence of autocorrelation	Gamma; Lognormal	Gamma
1_4_121	Alluvium	Total Metals	iron	mg/L	13			0.384	0.0810	0.763	0.0310	2.50	2.43	5.17	0.212	0.0578	0.0510	0.145	1.46	2.14		1.91	2.75	3.00	-0.19	0.4	No evidence of autocorrelation	Nonparametric	Nonparametric
1_4_123	Alluvium	Total Metals	lead	mg/L	4			0.00111	0.00102	0.000883	0.000190	0.00220	0.440	-1.51	0.000442	0.000896	0.000303	0.00200				0.00287	0.00242	0.00264	0.0			Gamma; Lognormal; Normal	Nonparametric
1_4_125	Alluvium	Total Metals	magnesium	mg/L	15			25.6	26.0	3.27	21.0	32.0	0.553	-0.352	0.844	4.44	23.0	27.0	30.2	31.4		32.1	35.2	38.4	0.20	0.4	No evidence of autocorrelation	Gamma; Lognormal; Normal	Gamma
1_4_127	Alluvium	Total Metals	manganese	mg/L	15			0.226	0.190	0.0984	0.160	0.530	2.37	6.50	0.0254	0.0444	0.160	0.280	0.300	0.398		0.422	0.583	0.636	-0.072	0.8	No evidence of autocorrelation	Nonparametric	Nonparametric
1_4_129	Alluvium	Total Metals	mercury	mg/L	0																								Nonparametric
1_1_104	Alluvium	Dissolved Metals	antimony (dissolved)	mg/L	2			0.000470	0.000470	0.0000849	0.000410	0.000530			0.0000600	0.0000889	0.000410					0.000640	0.000583	0.000636				Nonparametric	Nonparametric
1_1_106	Alluvium	Dissolved Metals	arsenic (dissolved)	mg/L	14			0.000829	0.000795	0.000168	0.000660	0.00130	1.87	4.11	0.0000450	0.000111	0.000725	0.000920	0.000988	0.00115		0.00117	0.00143	0.00156	0.31	0.2	No evidence of autocorrelation	Lognormal	Lognormal
1_1_108	Alluvium	Dissolved Metals	barium (dissolved)	mg/L	15			0.0175	0.0160	0.00316	0.0140	0.0260	1.61	2.76	0.000815	0.00148	0.0150	0.0190	0.0210	0.0230		0.0238	0.0286	0.0312	0.11	0.6	No evidence of autocorrelation	Gamma; Lognormal	Gamma
1_1_110	Alluvium	Dissolved Metals	beryllium (dissolved)	mg/L	0																								Nonparametric
1_1_112	Alluvium	Dissolved Metals	cadmium (dissolved)	mg/L	0																								Nonparametric
1_1_114	Alluvium	Dissolved Metals	calcium (dissolved)	mg/L	15			45.6	44.0	7.08	37.0	58.6	0.698	-0.669	1.83	7.41	40.0	51.0	56.4	58.2		59.8	64.5	70.3	-0.0050	>0.9	No evidence of autocorrelation	Gamma; Lognormal; Normal	Gamma
1_1_116	Alluvium	Dissolved Metals	chromium (dissolved)	mg/L	2			0.00199	0.00199	0.00144	0.000970	0.00300			0.00102	0.00150	0.000970					0.00486	0.00330	0.00360				Nonparametric	Nonparametric
1_1_118	Alluvium	Dissolved Metals	cobalt (dissolved)	mg/L	13			0.000388	0.000300	0.000243	0.000210	0.00110	2.50	6.59	0.0000673	0.0000889	0.000250	0.000390	0.000636	0.000924		0.000874	0.00121	0.00132	0.34	0.2	No evidence of autocorrelation	Lognormal	Lognormal
1_1_120	Alluvium	Dissolved Metals	copper (dissolved)	mg/L	9			0.00330	0.00110	0.00482	0.000580	0.0140	1.89	2.57	0.00161	0.000356	0.000740	0.00515	0.0115			0.0129	0.0154	0.0168	-0.13	0.6	No evidence of autocorrelation	Nonparametric	Nonparametric
1_1_122	Alluvium	Dissolved Metals	iron (dissolved)	mg/L	7			0.110	0.0290	0.199	0.0220	0.560	2.60	6.81	0.0753	0.00593	0.0250	0.0750	0.463			0.509	0.616	0.672	-0.11	0.6	No evidence of autocorrelation	Nonparametric	Nonparametric
1_1_124	Alluvium	Dissolved Metals	lead (dissolved)	mg/L	3			0.000401	0.000340	0.000161	0.000280	0.000584	1.47		0.0000930	0.0000889	0.000280					0.000723	0.000642	0.000701	0.0			Lognormal; Normal	Nonparametric
1_1_126	Alluvium	Dissolved Metals	magnesium (dissolved)	mg/L	15			25.1	24.0	2.80	21.0	32.2	1.30	1.99	0.723	1.48	23.0	26.0	28.6	30.3		30.7	35.4	38.6	0.13	0.6	No evidence of autocorrelation	Gamma; Lognormal	Gamma
1_1_128	Alluvium	Dissolved Metals	manganese (dissolved)	mg/L	15			0.195	0.180	0.0449	0.150	0.330	2.13	5.63	0.0116	0.0296	0.170	0.210	0.229	0.270		0.284	0.363	0.396	0.14	0.6	No evidence of autocorrelation	Gamma; Lognormal; Normal	Gamma
1_1_130	Alluvium	Dissolved Metals	mercury (dissolved)	mg/L	0																								Nonparametric
1_1_132	Alluvium	Dissolved Metals	nickel (dissolved)	mg/L	14			0.00204	0.00165	0.00133	0.00100	0.00630	2.86	9.07	0.000356	0.000519	0.00135	0.00213	0.00288	0.00470		0.00471	0.00693	0.00756	-0.16	0.5	No evidence of autocorrelation	Lognormal	Lognormal
1_1_136	Alluvium	Dissolved Metals	potassium (dissolved)	mg/L	13			0.852	0.670	0.530	0.400	2.40	2.27	6.34	0.147	0.370	0.485	1.05	1.10	1.88		1.91	2.64	2.88	-0.42	0.08	No evidence of autocorrelation	Gamma; Lognormal	Gamma
1_1_138	Alluvium	Dissolved Metals	selenium (dissolved)	mg/L	1			0.00300	0.00300		0.00300	0.00300				0.00	0.00300	0.00300	0.00300	0.00300	0.00300		0.00330	0.00360				Nonparametric	Nonparametric
1_1_140	Alluvium	Dissolved Metals	silver (dissolved)	mg/L	3			0.000213	0.0000550	0.000292	0.0000330	0.000550	1.72		0.000169	0.0000326	0.0000330					0.000797	0.000605	0.000660	-0.35	0.2	No evidence of autocorrelation	Lognormal; Normal	Nonparametric
1_1_142	Alluvium	Dissolved Metals	sodium (dissolved)	mg/L	15			811	830	96.0	520	920	-2.06	5.90	24.8	59.3	790	870	896	908		1,003	1,012	1,104	0.16	0.5	No evidence of autocorrelation	Normal	Normal
1_1_144	Alluvium	Dissolved Metals	thallium (dissolved)	mg/L	0																								Nonparametric
1_1_146	Alluvium	Dissolved Metals	vanadium (dissolved)	mg/L	14			0.00232	0.00185	0.00130	0.00100	0.00554	1.49	1.90	0.000347	0.000889	0.00138	0.00288	0.00408	0.00497		0.00492	0.00609	0.00665	-0.025	>0.9	No evidence of autocorrelation	Gamma; Lognormal; Normal	Gamma
1_1_148	Alluvium	Dissolved Metals	zinc (dissolved)	mg/L	5			0.00570	0.00340	0.00497	0.00220	0.0140	1.62	2.36	0.00222	0.00178	0.00225	0.0103				0.0156	0.0154	0.0168	-0.33	0.2	No evidence of autocorrelation	Gamma; Lognormal; Normal	Nonparametric
1_2_133	Alluvium	Nitrogen	nitrate	mg/L	4			0.609	0.220	0.864	0.0970	1.90	1.95	3.84	0.432	0.135	0.113	1.49				2.34	2.09	2.28	0.066	0.7	No evidence of autocorrelation	Gamma; Lognormal	Nonparametric
1_3_134	Alluvium	Perchlorate	perchlorate	mg/L	0																								Nonparametric
1_4_101	Alluvium	Total Metals	aluminum	mg/L	13			0.603	0.100	1.27	0.0190	4.20	2.50	5.70	0.352	0.0874	0.0555	0.215	2.28	3.52		3.14	4.62	5.04	-0.19	0.4	No evidence of autocorrelation	Lognormal	Gamma
1_4_103	Alluvium	Total Metals	antimony	mg/L	2			0.000485	0.000485	0.0000636	0.000440	0.000530			0.0000450	0.0000667	0.000440					0.000612	0.000583	0.000636				Nonparametric	Nonparametric
1_4_105	Alluvium	Total Metals	arsenic	mg/L	14			0.000905	0.000855	0.000270	0.000610	0.00170	2.06	5.84	0.0000720	0.000178	0.000753	0.00100	0.00108	0.00140		0.00144	0.00187	0.00204	0.11	0.6	No evidence of autocorrelation	Gamma; Lognormal; Normal	Gamma
1_4_107	Alluvium	Total Metals	barium	mg/L	15			0.0209	0.0170	0.00888	0.0140	0.0450	2.02	3.51	0.00229	0.00148	0.0160	0.0250	0.0322	0.0402		0.0387	0.0495	0.0540	-0.26	0.3	No evidence of autocorrelation	Nonparametric	Nonparametric
1_4_109	Alluvium	Total Metals	beryllium	mg/L	2			0.000125	0.000125	0.0000212	0.000110	0.000140			0.0000150	0.0000222	0.000110					0.000167	0.000154	0.000168				Nonparametric	Nonparametric
1_4_111	Alluvium	Total Metals	cadmium	mg/L	2			0.000255	0.000255	0.000163	0.000140	0.000370			0.000115	0.000170	0.000140					0.000580	0.000407	0.000444				Nonparametric	Nonparametric
1_4_113	Alluvium	Total Metals	calcium	mg/L	15			46.1	46.0	8.20	35.0	60.0	0.469	-0.869	2.12	8.89	39.0	52.0	58.6	59.4		62.5	66.0	72.0	0.21	0.4	No evidence of autocorrelation	Gamma; Lognormal; Normal	Gamma
1_4_115	Alluvium	Total Metals	chromium	mg/L	5			0.00149	0.00170	0.000857	0.000620	0.00260	0.100	-1.83	0.000383	0.00133	0.000625	0.00225				0.00320	0.00286	0.00312	-0.32	0.05	No evidence of autocorrelation	Gamma; Lognormal; Normal	Nonparametric
1_4_117	Alluvium	Total Metals	cobalt	mg/L	13			0.000549	0.000360	0.000472	0.000240	0.00180	2.12	3.87	0.000131	0.0000889	0.000290	0.000575	0.00124	0.00160		0.00149	0.00198	0.00216	-0.26	0.3	No evidence of autocorrelation	Nonparametric	Nonparametric
1_4_119	Alluvium	Total Metals	copper	mg/L	10			0.00278	0.00145	0.00272	0.000590	0.00870	1.42	1.28	0.000861	0.00121	0.000763	0.00458	0.00695	0.00843		0.00822	0.00957	0.0104	-0.27	0.3	No evidence of autocorrelation	Gamma; Lognormal	Gamma
1_4_121	Alluvium	Total Metals	iron	mg/L	13			0.384	0.0810	0.763	0.0310	2.50	2.43	5.17	0.212	0.0578	0.0510	0.145	1.46	2.14		1.91	2.75	3.00	-0.19	0.4	No evidence of autocorrelation	Nonparametric	Nonparametric
1_4_123	Alluvium	Total Metals	lead	mg/L	4			0.00111	0.00102	0.000883	0.000190	0.00220	0.440	-1.51	0.000442	0.000896	0.000303	0.00200				0.00287	0.00242	0.00264	0.0			Gamma; Lognormal; Normal	Nonparametric
1_4_125	Alluvium	Total Metals	magnesium	mg/L	15			25.6	26.0	3.27	21.0	32.0	0.553	-0.352	0.844	4.44	23.0	27.0	30.2	31.4		32.1	35.2	38.4	0.20	0.4	No evidence of autocorrelation	Gamma; Lognormal; Normal	Gamma
1_4_127	Alluvium	Total Metals	manganese	mg/L	15			0.226	0.190	0.0984	0.160	0.530	2.37	6.50	0.0254	0.0444	0.160	0.280	0.300	0.398		0.422	0.583	0.636	-0.072	0.8	No evidence of autocorrelation	Nonparametric	Nonparametric
1_4_129	Alluvium	Total Metals	mercury	mg/L	0																								Nonparametric
1_4_131	Alluvium	Total Metals	nickel	mg/L	13			0.00262	0.00180	0.00222	0.00100	0.00930	2.56	7.53	0.000615	0.00104	0.00125	0.00345	0.00350	0.00698		0.00706	0.0102	0.0112	0.090	0.7	No evidence of autocorrelation	Lognormal	Lognormal
1_4_135	Alluvium	Total Metals	potassium	mg/L	14			0.975	0.795	0.534	0.420	2.10	1.27	0.681	0.143	0.370	0.613	1.20	1.88	2.05		2.04	2.31	2.52	0.20	0.4	No evidence of autocorrelation	Gamma; Lognormal; Normal	Gamma
1_4_137	Alluvium	Total Metals	selenium	mg/L	1			0.00460	0.00460		0.00460	0.00460				0.00	0.00460	0.00460	0.00460	0.00460	0.00460		0.00506	0.00552				Nonparametric	Nonparametric
1_4_139	Alluvium	Total Metals	silver	mg/L	4			0.00133	0.000355	0.00212	0.000110	0.00450	1.97	3.90	0.00106	0.000267	0.000143	0.00349				0.00557	0.00495	0.00540	0.078	0.7	No evidence of autocorrelation	Gamma; Lognormal	Nonparametric
1_4_141	Alluvium	Total Metals	sodium	mg/L	15			794	810	70.2	630	894	-0.958	0.688	18.1	59.3	750	850	856	874		935	983	1,073	0.18	0.4	No evidence of autocorrelation	Gamma; Lognormal; Normal	Gamma
1_4_143	Alluvium	Total Metals	thallium	mg/L	1			0.0000560	0.0000560		0.0000560	0.0000560				0.00	0.0000560	0.0000560	0.0000560	0.0000560	0.0000560		0.0000616	0.0000672				Nonparametric	Nonparametric
1_4_145	Alluvium	Total Metals	vanadium	mg/L	13			0.00332	0.00220	0.00219	0.00150	0.00780	1.33	0.256	0.000608	0.000889	0.00195	0.00475	0.00700	0.00752		0.00770	0.00858	0.00936	-0.29	0.2	No evidence of autocorrelation	Nonparametric	Nonparametric
1_4_147	Alluvium	Total Metals	zinc	mg/L	5			0.0142	0.00320	0.0169	0.00200	0.0400	1.14	-0.302	0.00756	0.00178	0.00240	0.0315				0.0480	0.0440	0.0480	0.030	>0.9	No evidence of autocorrelation	Gamma; Lognormal; Normal	Nonparametric
2_1_102	Bedrock	Dissolved Metals	aluminum (dissolved)	mg/L	5			28.8	5.55	56.7	0.0490	130	2.21	4.92	25.3	8.09	0.0675	69.2				142	143	156	-0.41	0.2	No evidence of autocorrelation	Gamma; Lognormal	Gamma

Code	Aquifer	Constituent Type	Constituent	Unit	n	No. ND[1] BDL[2]	% ND BDL	Mean	Median	Standard Deviation (sd)	Minimum	Maximum	Skewness	Kurtosis	Standard Error of Mean	MAD[3]/0.675	Percentile[4]					Mean + 2sd	110% Maximum	120% Maximum	Serial Correlation with 1 Lag			ProUCL's Best Fit[5]	HDR's Recommended Fit
																	25th	75th	85th	90th	95th				Auto-correlation	Sig.	Auto-correlation Test		
2_4_131	Bedrock	Total Metals	nickel	mg/L	8			0.0496	0.0332	0.0595	0.000420	0.170	1.31	1.43	0.0210	0.0447	0.00292	0.0850	0.143			0.169	0.187	0.204	-0.058	0.8	No evidence of autocorrelation	Gamma; Lognormal; Normal	Gamma
2_4_135	Bedrock	Total Metals	potassium	mg/L	8			11.7	8.39	11.1	0.660	27.0	0.391	-2.02	3.91	11.3	1.30	23.5	26.0			33.9	29.7	32.4	0.45	0.1	No evidence of autocorrelation	Gamma; Lognormal; Normal	Gamma
2_4_137	Bedrock	Total Metals	selenium	mg/L	0																								Nonparametric
2_4_139	Bedrock	Total Metals	silver	mg/L	2			0.0000730	0.0000730	0.0000382	0.0000460	0.000100			0.0000270	0.0000400	0.0000460					0.000149	0.000110	0.000120				Nonparametric	Nonparametric
2_4_141	Bedrock	Total Metals	sodium	mg/L	9			1,647	1,150	1,170	623	3,610	0.875	-1.02	390	756	640	2,900	3,405			3,986	3,971	4,332	-0.089	0.8	No evidence of autocorrelation	Gamma; Lognormal	Gamma
2_4_143	Bedrock	Total Metals	thallium	mg/L	3			0.000480	0.000440	0.000203	0.000300	0.000700	0.852		0.000117	0.000207	0.000300					0.000886	0.000770	0.000840	-0.11	0.7	No evidence of autocorrelation	Lognormal; Normal	Nonparametric
2_4_145	Bedrock	Total Metals	vanadium	mg/L	7			0.0712	0.0780	0.0680	0.000560	0.180	0.518	-0.926	0.0257	0.0853	0.00310	0.130	0.170			0.207	0.198	0.216	-0.027	>0.9	No evidence of autocorrelation	Gamma; Lognormal; Normal	Gamma
2_4_147	Bedrock	Total Metals	zinc	mg/L	4			0.228	0.145	0.203	0.0910	0.530	1.90	3.71	0.102	0.0437	0.103	0.435				0.634	0.583	0.636	-0.12	0.7	No evidence of autocorrelation	Gamma; Lognormal	Nonparametric

[1]ND - Non Detect

[2]BDL - Below Method Detection Limit

[3]MAD - Median Absolute Deviation

[4]Percentiles are computed using the weighted average percentile method whereby results are output if the computed rank is within the valid range for the data set (e.g. 95th percentiles are often not produced when sample sizes are small)

[5]Goodness of fit is based on detected data

Potential Outlier Values at the 1% Significance Level based on Dixon's and Rosner's Tests

Code	Non-Censored Data								
	Test	Constituent Type	Constituent	Unit	Mean	StDev	No. of Obs.	Outliers - Tests conducted at the 1% level of significance [1]	
1_1_142	Dixon's	Dissolved Metals	sodium (dissolved)	mg/L	811	96.0	15	none	520
1_4_107	Dixon's	Total Metals	barium	mg/L	0.0209	0.00888	15	0.0450	
1_4_127	Dixon's	Total Metals	manganese	mg/L	0.226	0.0984	15	0.530	
2_1_108	Dixon's	Dissolved Metals	barium (dissolved)	mg/L	0.0960	0.217	9	0.670	

Code	Censored Data Excluding Non-Detects										
	Test	Constituent Type	Constituent	Unit	Total N	No. NDs	No. Detects	Mean of Detects	SD of Detects	No. of Data	Outliers - Tests conducted at the 1% level of significance [1]
1_1_102	Dixon's	Dissolved Metals	aluminum (dissolved)	mg/L	15	10	5	0.174	0.313	5	0.730
1_1_118	Dixon's	Dissolved Metals	cobalt (dissolved)	mg/L	15	2	13	0.000388	0.000243	13	0.00110
1_1_122	Dixon's	Dissolved Metals	iron (dissolved)	mg/L	15	8	7	0.110	0.199	7	0.560
1_1_132	Dixon's	Dissolved Metals	nickel (dissolved)	mg/L	15	1	14	0.00204	0.00133	14	0.00630
1_1_136	Dixon's	Dissolved Metals	potassium (dissolved)	mg/L	15	2	13	0.852	0.530	13	2.40
1_2_133	Dixon's	Nitrogen	nitrate	mg/L	15	11	4	0.609	0.864	4	1.90
1_4_101	Dixon's	Total Metals	aluminum	mg/L	15	2	13	0.603	1.27	13	4.20
1_4_105	Dixon's	Total Metals	arsenic	mg/L	15	1	14	0.000905	0.000270	14	0.00170
1_4_117	Dixon's	Total Metals	cobalt	mg/L	15	2	13	0.000549	0.000472	13	0.00180
1_4_121	Dixon's	Total Metals	iron	mg/L	15	2	13	0.384	0.763	13	2.50
1_4_131	Dixon's	Total Metals	nickel	mg/L	15	2	13	0.00262	0.00222	13	0.00930
1_4_139	Dixon's	Total Metals	silver	mg/L	15	11	4	0.00133	0.00212	4	0.00450
2_1_102	Dixon's	Dissolved Metals	aluminum (dissolved)	mg/L	9	4	5	28.8	56.7	5	130
2_1_106	Dixon's	Dissolved Metals	arsenic (dissolved)	mg/L	9	4	5	0.00309	0.00393	5	0.0100
2_1_116	Dixon's	Dissolved Metals	chromium (dissolved)	mg/L	9	5	4	0.0384	0.0678	4	0.140
2_1_118	Dixon's	Dissolved Metals	cobalt (dissolved)	mg/L	9	3	6	0.00650	0.0135	6	0.0340
2_1_122	Dixon's	Dissolved Metals	iron (dissolved)	mg/L	9	4	5	23.7	48.3	5	110
2_1_132	Dixon's	Dissolved Metals	nickel (dissolved)	mg/L	9	5	4	0.0232	0.0405	4	0.0840
2_1_146	Dixon's	Dissolved Metals	vanadium (dissolved)	mg/L	9	5	4	0.0293	0.0458	4	0.0980

[1] Dixon's test checks for an outlier in both tails. By default, the high value outlier is displayed. If two values are displayed, then the value in the first cell indicates a high outlier while the value in the adjacent cell indicates a low outlier. A result of 'none' indicates no high outlier value.

Attributes of Potential Outliers

Code	Aquifer	Well	Event	Sample Date	Constituent Type	Constituent	Units	Reported Value
1_2_133	Alluvium	BGMW01	Facility-wide Groundwater April 2012	4/25/2012	Nitrogen	nitrate	mg/L	1.90
1_4_105	Alluvium	BGMW01	Facility-wide Groundwater April 2012	4/25/2012	Total Metals	arsenic	mg/L	0.00170
1_1_132	Alluvium	BGMW01	Facility-wide Groundwater April 2014	4/15/2014	Dissolved Metals	nickel (dissolved)	mg/L	0.00630
1_4_131	Alluvium	BGMW01	Facility-wide Groundwater April 2014	4/15/2014	Total Metals	nickel	mg/L	0.00930
1_1_142	Alluvium	BGMW01	Facility-wide Groundwater April 2016	4/15/2016	Dissolved Metals	sodium (dissolved)	mg/L	520
1_1_136	Alluvium	BGMW01	Facility-wide Groundwater April 2017	4/24/2017	Dissolved Metals	potassium (dissolved)	mg/L	2.40
1_1_102	Alluvium	BGMW01	Facility-wide Groundwater April 2018	4/27/2018	Dissolved Metals	aluminum (dissolved)	mg/L	0.730
1_1_122	Alluvium	BGMW01	Facility-wide Groundwater April 2018	4/27/2018	Dissolved Metals	iron (dissolved)	mg/L	0.560
1_4_101	Alluvium	BGMW01	Facility-wide Groundwater April 2018	4/27/2018	Total Metals	aluminum	mg/L	4.20
1_4_107	Alluvium	BGMW01	Facility-wide Groundwater April 2018	4/27/2018	Total Metals	barium	mg/L	0.0450
1_4_117	Alluvium	BGMW01	Facility-wide Groundwater April 2018	4/27/2018	Total Metals	cobalt	mg/L	0.00180
1_4_121	Alluvium	BGMW01	Facility-wide Groundwater April 2018	4/27/2018	Total Metals	iron	mg/L	2.50
1_4_127	Alluvium	BGMW01	Facility-wide Groundwater April 2018	4/27/2018	Total Metals	manganese	mg/L	0.530
1_4_139	Alluvium	BGMW01	Facility-wide Groundwater April 2018	4/27/2018	Total Metals	silver	mg/L	0.00450
1_1_118	Alluvium	BGMW01	Facility-wide Groundwater October 2012	10/26/2012	Dissolved Metals	cobalt (dissolved)	mg/L	0.00110
2_1_102	Bedrock	BGMW09	Facility-wide Groundwater April 2018	5/1/2018	Dissolved Metals	aluminum (dissolved)	mg/L	130
2_1_106	Bedrock	BGMW09	Facility-wide Groundwater April 2018	5/1/2018	Dissolved Metals	arsenic (dissolved)	mg/L	0.0100
2_1_108	Bedrock	BGMW09	Facility-wide Groundwater April 2018	5/1/2018	Dissolved Metals	barium (dissolved)	mg/L	0.670
2_1_116	Bedrock	BGMW09	Facility-wide Groundwater April 2018	5/1/2018	Dissolved Metals	chromium (dissolved)	mg/L	0.140
2_1_118	Bedrock	BGMW09	Facility-wide Groundwater April 2018	5/1/2018	Dissolved Metals	cobalt (dissolved)	mg/L	0.0340
2_1_122	Bedrock	BGMW09	Facility-wide Groundwater April 2018	5/1/2018	Dissolved Metals	iron (dissolved)	mg/L	110
2_1_132	Bedrock	BGMW09	Facility-wide Groundwater April 2018	5/1/2018	Dissolved Metals	nickel (dissolved)	mg/L	0.0840
2_1_146	Bedrock	BGMW09	Facility-wide Groundwater April 2018	5/1/2018	Dissolved Metals	vanadium (dissolved)	mg/L	0.0980

Non-Detects MLE Regression Trend Analysis for Parametric Constituent-Aquifer Pairs with Sufficient Sample Size and Small Number of Nondetects (n≥8 and BDL<50%)

Code	Aquifer	Constituent Type	Constituent	Unit	n	No. BDL	% BDL	Slope	P-Value	Trend
1_1_106	Alluvium	Dissolved Metals	arsenic (dissolved)	mg/L	15	1	7%	-0.000094	0.2	↔
1_1_108	Alluvium	Dissolved Metals	barium (dissolved)	mg/L	15	0	0%	-0.000075	0.1	↔
1_1_114	Alluvium	Dissolved Metals	calcium (dissolved)	mg/L	15	0	0%	-0.000029	0.5	↔
1_1_118	Alluvium	Dissolved Metals	cobalt (dissolved)	mg/L	15	2	13%	-0.00024	0.2	↔
1_1_126	Alluvium	Dissolved Metals	magnesium (dissolved)	mg/L	15	0	0%	0.000049	0.1	↔
1_1_128	Alluvium	Dissolved Metals	manganese (dissolved)	mg/L	15	0	0%	-0.000015	0.8	↔
1_1_132	Alluvium	Dissolved Metals	nickel (dissolved)	mg/L	15	1	7%	-0.00032	0.02	↓
1_1_136	Alluvium	Dissolved Metals	potassium (dissolved)	mg/L	15	2	13%	-0.000064	0.7	↔
1_1_142	Alluvium	Dissolved Metals	sodium (dissolved)	mg/L	15	0	0%	-0.000026	0.5	↔
1_1_146	Alluvium	Dissolved Metals	vanadium (dissolved)	mg/L	15	1	7%	-0.00016	0.3	↔
1_4_101	Alluvium	Total Metals	aluminum	mg/L	15	2	13%	-0.000036	>0.9	↔
1_4_105	Alluvium	Total Metals	arsenic	mg/L	15	1	7%	-0.00020	0.006	↓
1_4_113	Alluvium	Total Metals	calcium	mg/L	15	0	0%	-0.000058	0.3	↔
1_4_119	Alluvium	Total Metals	copper	mg/L	15	5	33%	-0.00058	0.06	↔
1_4_125	Alluvium	Total Metals	magnesium	mg/L	15	0	0%	0.0000099	0.8	↔
1_4_131	Alluvium	Total Metals	nickel	mg/L	15	2	13%	-0.00037	0.08	↔
1_4_135	Alluvium	Total Metals	potassium	mg/L	15	1	7%	0.000081	0.6	↔
1_4_141	Alluvium	Total Metals	sodium	mg/L	15	0	0%	0.0000034	>0.9	↔
2_1_102	Bedrock	Dissolved Metals	aluminum (dissolved)	mg/L	9	4	44%	-0.022	0.1	↔
2_1_106	Bedrock	Dissolved Metals	arsenic (dissolved)	mg/L	9	4	44%	-0.0024	0.5	↔
2_1_108	Bedrock	Dissolved Metals	barium (dissolved)	mg/L	9	0	0%	-0.0050	0.07	↔
2_1_114	Bedrock	Dissolved Metals	calcium (dissolved)	mg/L	9	0	0%	0.00045	0.9	↔
2_1_118	Bedrock	Dissolved Metals	cobalt (dissolved)	mg/L	9	3	33%	-0.0042	0.5	↔
2_1_120	Bedrock	Dissolved Metals	copper (dissolved)	mg/L	9	4	44%	0.0023	0.6	↔
2_1_122	Bedrock	Dissolved Metals	iron (dissolved)	mg/L	9	4	44%	-0.010	0.3	↔
2_1_126	Bedrock	Dissolved Metals	magnesium (dissolved)	mg/L	9	0	0%	-0.0011	0.8	↔
2_1_128	Bedrock	Dissolved Metals	manganese (dissolved)	mg/L	9	1	11%	0.0024	0.7	↔
2_1_136	Bedrock	Dissolved Metals	potassium (dissolved)	mg/L	9	0	0%	-0.0028	0.3	↔
2_1_142	Bedrock	Dissolved Metals	sodium (dissolved)	mg/L	9	0	0%	0.00073	0.6	↔
2_4_101	Bedrock	Total Metals	aluminum	mg/L	9	2	22%	-0.0091	0.3	↔
2_4_105	Bedrock	Total Metals	arsenic	mg/L	9	3	33%	-0.0030	0.4	↔
2_4_107	Bedrock	Total Metals	barium	mg/L	9	0	0%	-0.0062	0.2	↔
2_4_109	Bedrock	Total Metals	beryllium	mg/L	9	4	44%	-0.0052	0.3	↔
2_4_113	Bedrock	Total Metals	calcium	mg/L	9	0	0%	-0.00061	0.9	↔
2_4_115	Bedrock	Total Metals	chromium	mg/L	9	1	11%	-0.0090	0.05	↓
2_4_117	Bedrock	Total Metals	cobalt	mg/L	9	2	22%	-0.0049	0.4	↔
2_4_119	Bedrock	Total Metals	copper	mg/L	9	3	33%	-0.0051	0.2	↔
2_4_121	Bedrock	Total Metals	iron	mg/L	9	1	11%	-0.0089	0.2	↔
2_4_123	Bedrock	Total Metals	lead	mg/L	9	2	22%	-0.0061	0.3	↔
2_4_125	Bedrock	Total Metals	magnesium	mg/L	9	0	0%	-0.0022	0.6	↔
2_4_127	Bedrock	Total Metals	manganese	mg/L	9	0	0%	-0.0033	0.5	↔
2_4_131	Bedrock	Total Metals	nickel	mg/L	9	1	11%	-0.0068	0.2	↔
2_4_135	Bedrock	Total Metals	potassium	mg/L	9	1	11%	-0.0034	0.3	↔
2_4_141	Bedrock	Total Metals	sodium	mg/L	9	0	0%	0.00075	0.6	↔
2_4_145	Bedrock	Total Metals	vanadium	mg/L	9	2	22%	-0.0052	0.4	↔

Mann-Kendall Trend Tests at the 5% Sig. Level for Non-Parametric Constituent-Aquifer Pairs with Sufficient Sample Size and Small Number of Nondetects (n≥8 and BDL<50%)

Code	Aquifer	Type	Constituent	Unit	n	Minimum	Maximum	Medium	Mean	SD	P-Value	Trend
1_4_107	Alluvium	Total Metals	barium	mg/L	15	0.0140	0.0450	0.0170	0.0209	0.00888	0.3	↔
1_4_127	Alluvium	Total Metals	manganese	mg/L	15	0.160	0.530	0.190	0.226	0.0984	0.4	↔
1_4_145	Alluvium	Total Metals	vanadium	mg/L	15	0.00150	0.00780	0.00210	0.00315	0.00208	0.08	↔
2_4_111	Bedrock	Total Metals	cadmium	mg/L	9	0.000300	0.00100	0.00100	0.000813	0.000287	0.2	↔

Test of Differences between Alluvium and Bedrock Aquifers

Constituent Type	Constituent	Unit	Full								
			Sample Size			Test			Sample Size		
			Alluvium	Bedrock	Total	Kruskal-Wallis	ANOVA	Log ANOVA	Alluvium	Bedrock	Total
Total Metals	aluminum	mg/L	15	9	24	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	13	7	20
Dissolved Metals	aluminum (dissolved)	mg/L	15	9	24	Difference among aquifiers is statistically significant		Difference among aquifiers is statistically significant	5	5	10
Total Metals	antimony	mg/L	15	9	24	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	2	1	3
Dissolved Metals	antimony (dissolved)	mg/L	15	9	24	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	2	2	4
Total Metals	arsenic	mg/L	15	9	24	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	14	6	20
Dissolved Metals	arsenic (dissolved)	mg/L	15	9	24	Difference among aquifiers is statistically significant		Difference among aquifiers is statistically significant	14	5	19
Total Metals	barium	mg/L	15	9	24		Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	15	9	24
Dissolved Metals	barium (dissolved)	mg/L	15	9	24				15	9	24
Total Metals	beryllium	mg/L	15	9	24	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	2	5	7
Dissolved Metals	beryllium (dissolved)	mg/L	15	9	24	Difference among aquifiers is statistically significant		Difference among aquifiers is statistically significant		2	2
Total Metals	cadmium	mg/L	15	9	24				2	3	5
Dissolved Metals	cadmium (dissolved)	mg/L	15	9	24	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant			
Total Metals	calcium	mg/L	15	9	24		Difference among aquifiers is statistically significant		15	9	24
Dissolved Metals	calcium (dissolved)	mg/L	15	9	24				15	9	24
Total Metals	chromium	mg/L	15	9	24	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	5	8	13
Dissolved Metals	chromium (dissolved)	mg/L	15	9	24				2	4	6
Total Metals	cobalt	mg/L	15	9	24	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	13	7	20
Dissolved Metals	cobalt (dissolved)	mg/L	15	9	24				13	6	19
Total Metals	copper	mg/L	15	9	24	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	10	6	16
Dissolved Metals	copper (dissolved)	mg/L	15	9	24				9	5	14
Total Metals	iron	mg/L	15	9	24	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	13	8	21
Dissolved Metals	iron (dissolved)	mg/L	15	9	24	Difference among aquifiers is statistically significant		Difference among aquifiers is statistically significant	7	5	12
Total Metals	lead	mg/L	15	9	24	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	4	7	11
Dissolved Metals	lead (dissolved)	mg/L	15	9	24	Difference among aquifiers is statistically significant			3	3	6
Total Metals	magnesium	mg/L	15	9	24				15	9	24
Dissolved Metals	magnesium (dissolved)	mg/L	15	9	24		Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	15	9	24
Total Metals	manganese	mg/L	15	9	24		Difference among aquifiers is statistically significant		15	9	24
Dissolved Metals	manganese (dissolved)	mg/L	15	9	24				15	8	23
Total Metals	mercury	mg/L	15	9	24						
Dissolved Metals	mercury (dissolved)	mg/L	15	9	24						
Total Metals	nickel	mg/L	15	9	24	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	13	8	21
Dissolved Metals	nickel (dissolved)	mg/L	15	9	24				14	4	18
Nitrogen	nitrate	mg/L	15	9	24				4	1	5
Perchlorate	perchlorate	mg/L	15	9	24					3	3
Total Metals	potassium	mg/L	15	9	24	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	14	8	22
Dissolved Metals	potassium (dissolved)	mg/L	15	9	24	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	13	9	22
Total Metals	selenium	mg/L	15	9	24						
Dissolved Metals	selenium (dissolved)	mg/L	15	9	24						
Total Metals	silver	mg/L	15	9	24				4	2	6
Dissolved Metals	silver (dissolved)	mg/L	15	9	24				3	1	4
Total Metals	sodium	mg/L	15	9	24		Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	15	9	24
Dissolved Metals	sodium (dissolved)	mg/L	15	9	24		Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	15	9	24
Total Metals	thallium	mg/L	15	9	24	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	1	3	4
Dissolved Metals	thallium (dissolved)	mg/L	15	9	24	Difference among aquifiers is statistically significant		Difference among aquifiers is statistically significant			
Total Metals	vanadium	mg/L	15	9	24		Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	13	7	20
Dissolved Metals	vanadium (dissolved)	mg/L	15	9	24	Difference among aquifiers is statistically significant		Difference among aquifiers is statistically significant	14	4	18
Total Metals	zinc	mg/L	15	9	24	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	5	4	9
Dissolved Metals	zinc (dissolved)	mg/L	15	9	24	Difference among aquifiers is statistically significant		Difference among aquifiers is statistically significant	5	1	6

Test of Differences between Alluvium and Bedrock Aquifers

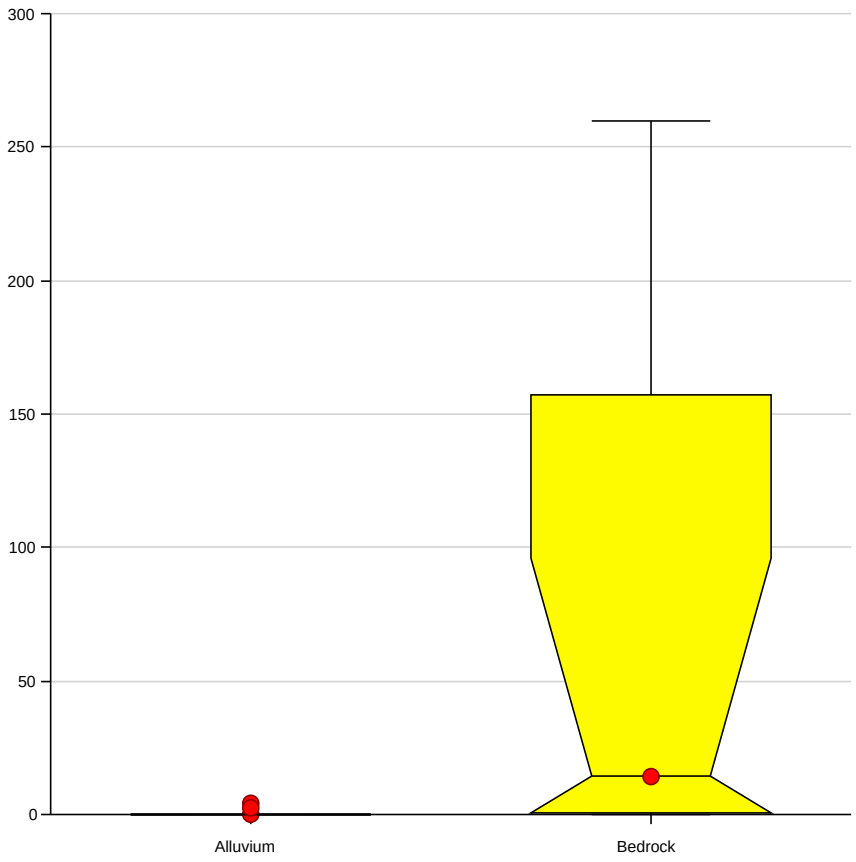
Constituent Type	Constituent	Without Non-Detects		
		Test		
		Kruskal-Wallis	ANOVA	Log ANOVA
Total Metals	aluminum	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant
Dissolved Metals	aluminum (dissolved)			Difference among aquifiers is statistically significant
Total Metals	antimony		Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant
Dissolved Metals	antimony (dissolved)			Difference among aquifiers is statistically significant
Total Metals	arsenic	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant
Dissolved Metals	arsenic (dissolved)		Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant
Total Metals	barium		Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant
Dissolved Metals	barium (dissolved)			
Total Metals	beryllium			Difference among aquifiers is statistically significant
Dissolved Metals	beryllium (dissolved)			Difference among aquifiers is statistically significant
Total Metals	cadmium			
Dissolved Metals	cadmium (dissolved)			Difference among aquifiers is statistically significant
Total Metals	calcium		Difference among aquifiers is statistically significant	
Dissolved Metals	calcium (dissolved)			
Total Metals	chromium	Difference among aquifiers is statistically significant		Difference among aquifiers is statistically significant
Dissolved Metals	chromium (dissolved)			
Total Metals	cobalt	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant
Dissolved Metals	cobalt (dissolved)			
Total Metals	copper	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant
Dissolved Metals	copper (dissolved)			
Total Metals	iron	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant
Dissolved Metals	iron (dissolved)	Difference among aquifiers is statistically significant		Difference among aquifiers is statistically significant
Total Metals	lead			Difference among aquifiers is statistically significant
Dissolved Metals	lead (dissolved)	Difference among aquifiers is statistically significant		
Total Metals	magnesium			
Dissolved Metals	magnesium (dissolved)		Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant
Total Metals	manganese		Difference among aquifiers is statistically significant	
Dissolved Metals	manganese (dissolved)			
Total Metals	mercury			
Dissolved Metals	mercury (dissolved)			
Total Metals	nickel	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant
Dissolved Metals	nickel (dissolved)		Difference among aquifiers is statistically significant	
Nitrogen	nitrate			
Perchlorate	perchlorate			
Total Metals	potassium	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant
Dissolved Metals	potassium (dissolved)	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant
Total Metals	selenium			
Dissolved Metals	selenium (dissolved)			
Total Metals	silver			
Dissolved Metals	silver (dissolved)			
Total Metals	sodium		Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant
Dissolved Metals	sodium (dissolved)		Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant
Total Metals	thallium			Difference among aquifiers is statistically significant
Dissolved Metals	thallium (dissolved)			Difference among aquifiers is statistically significant
Total Metals	vanadium	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant
Dissolved Metals	vanadium (dissolved)	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant
Total Metals	zinc	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant
Dissolved Metals	zinc (dissolved)		Difference among aquifiers is statistically significant	Difference among aquifiers is statistically significant

Appendix B: NCSS Output

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "101"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "101"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: Aquifer
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

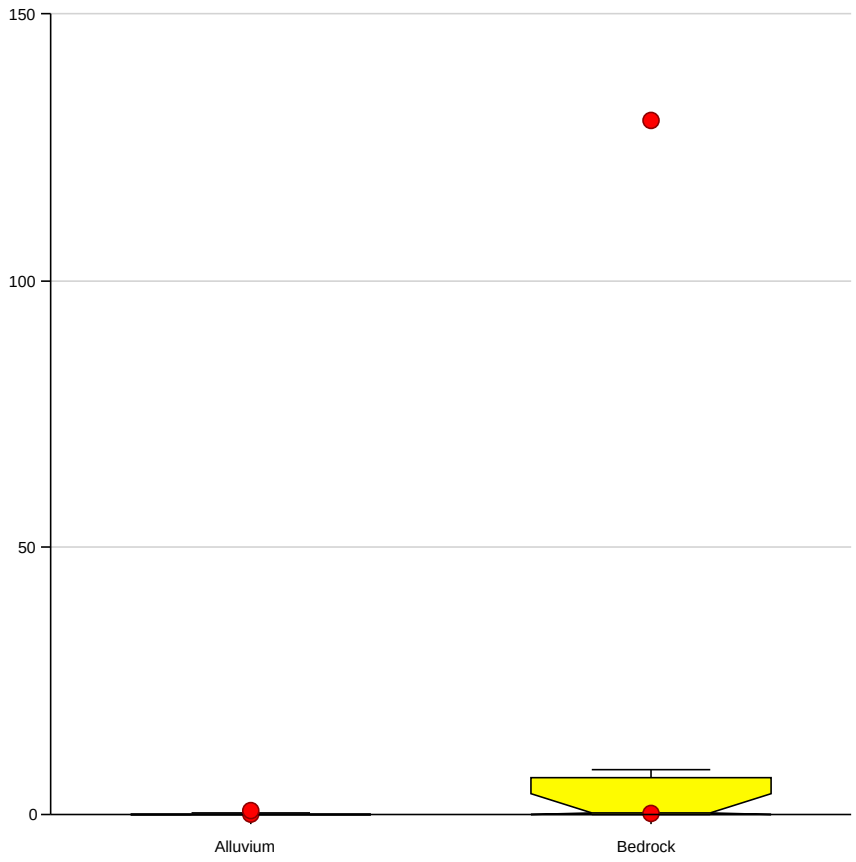
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "102"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "102"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: Aquifer
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

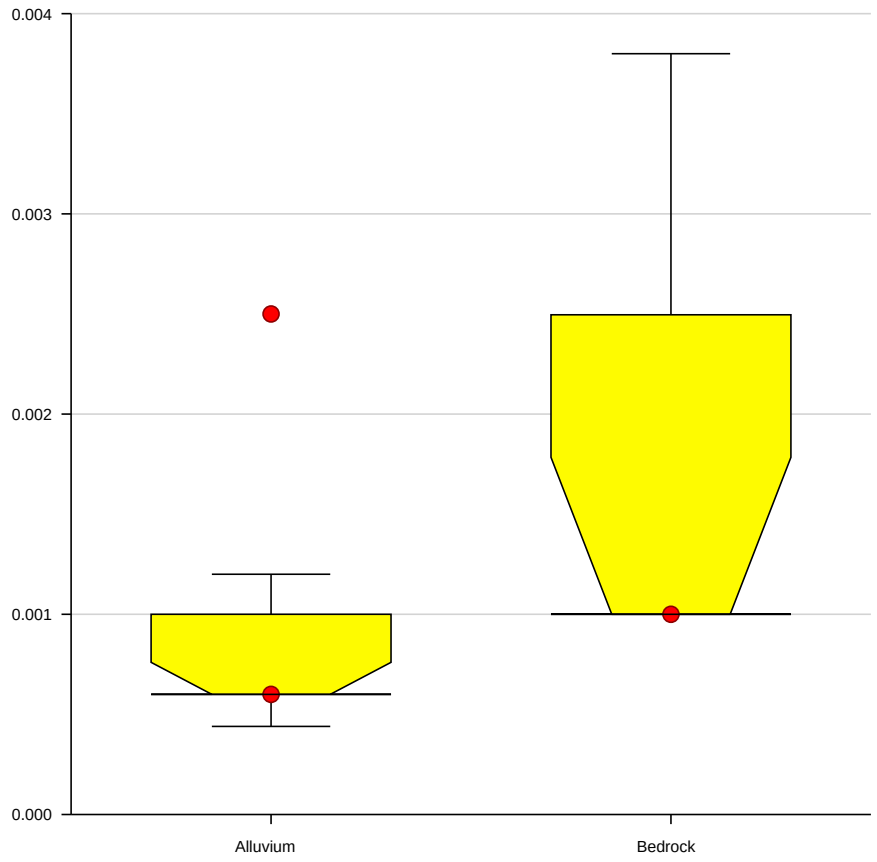
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "103"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "103"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: Aquifer
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

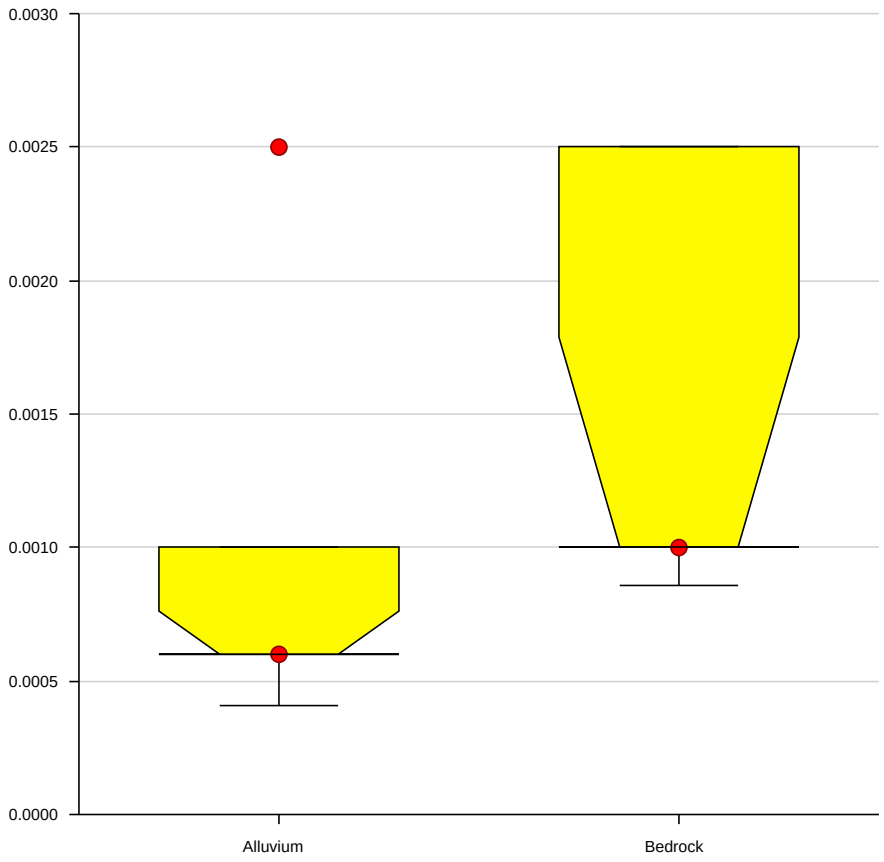
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "104"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "104"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: Aquifer
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

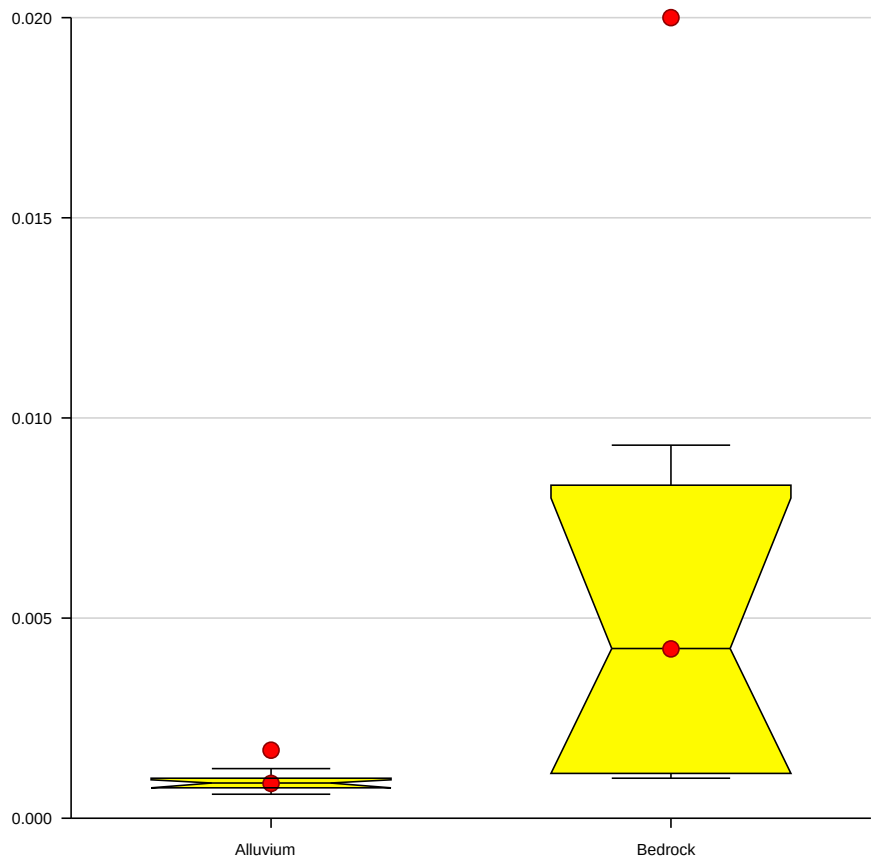
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "105"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "105"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: Aquifer
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

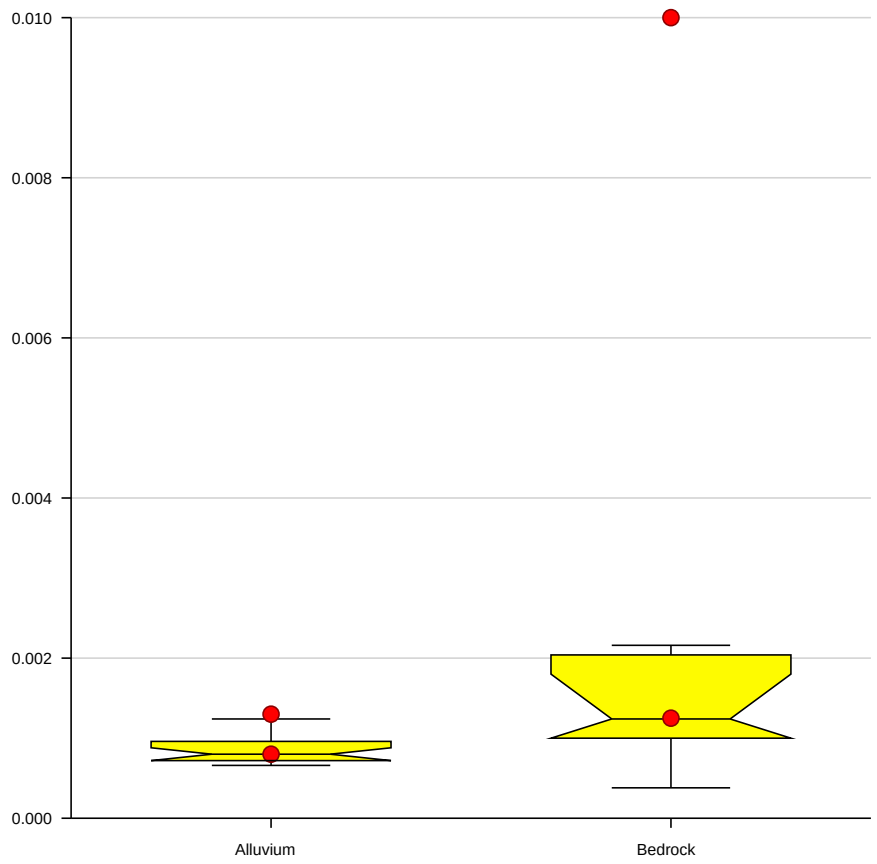
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "106"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "106"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: Aquifer
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

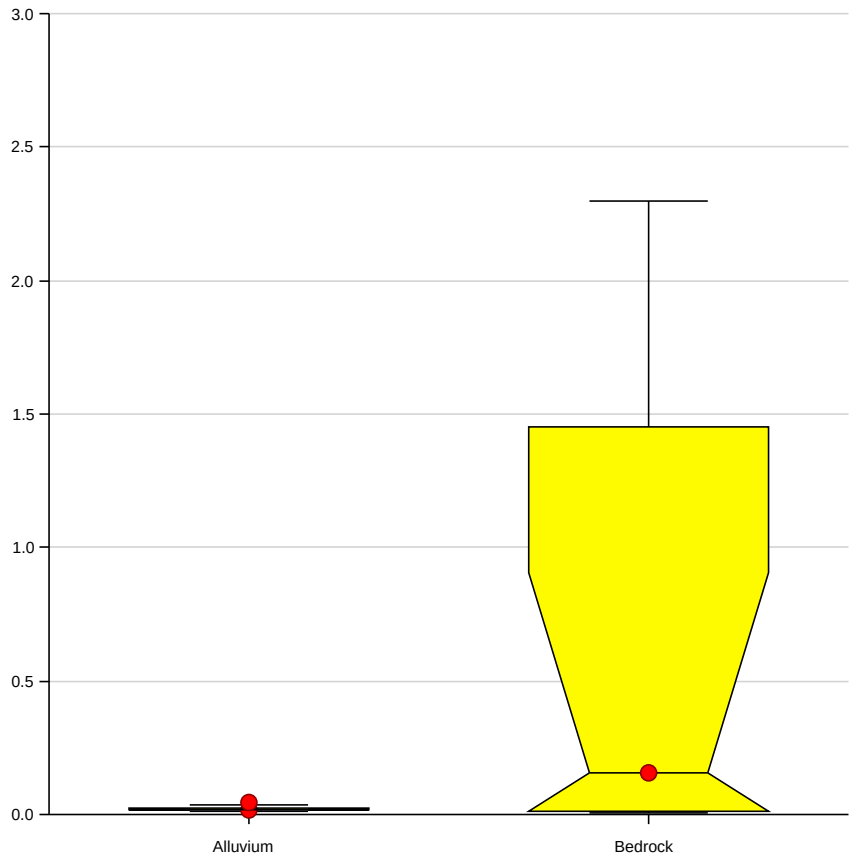
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "107"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "107"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: Aquifer
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

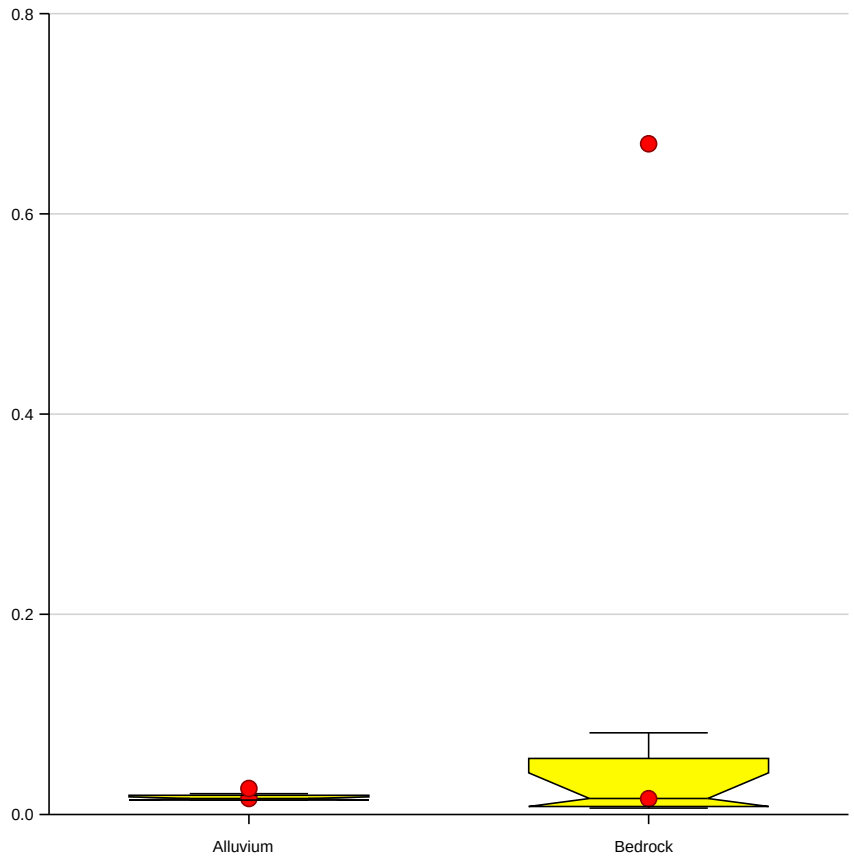
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "108"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "108"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: Aquifer
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

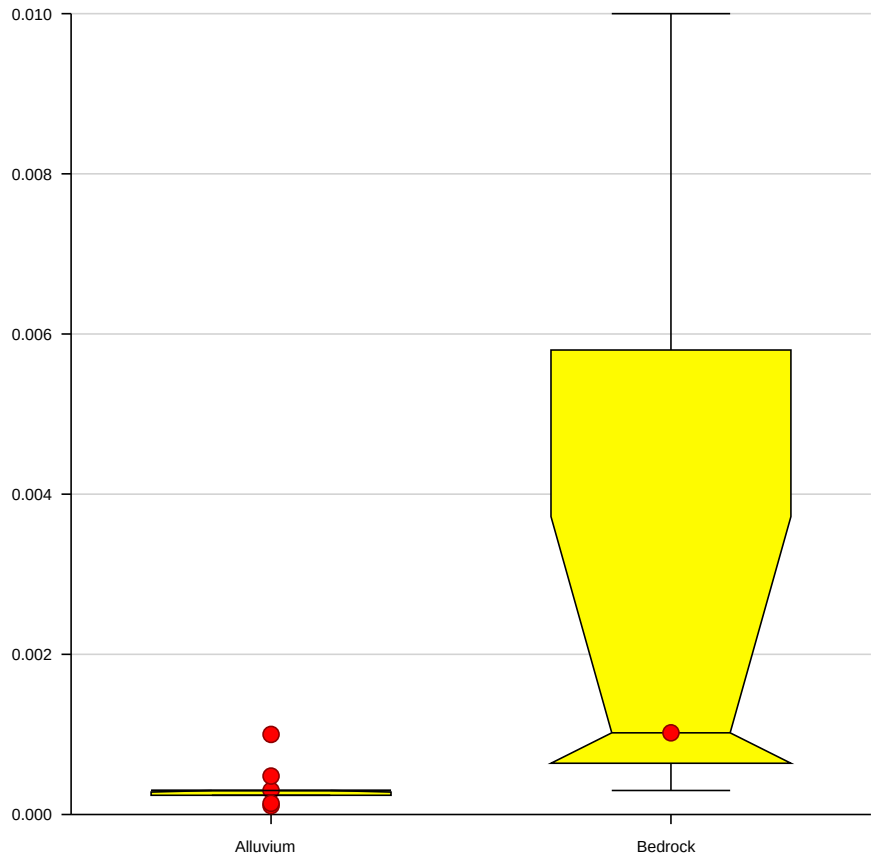
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "109"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "109"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: Aquifer
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

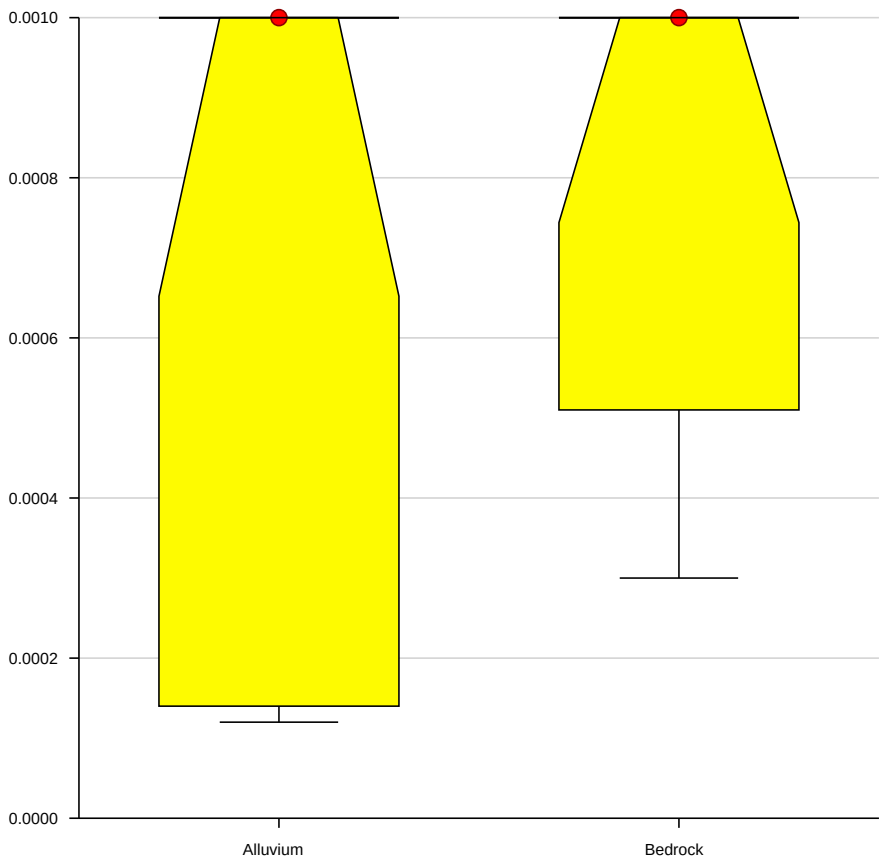
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "111"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "111"

Procedure Input Settings

Variables Tab

-- Variables ----------
Data Variable(s): VALUES
Horizontal (Group) Variable: Aquifer
Frequency Variable: <Empty>
Data Label Variable: <Empty>

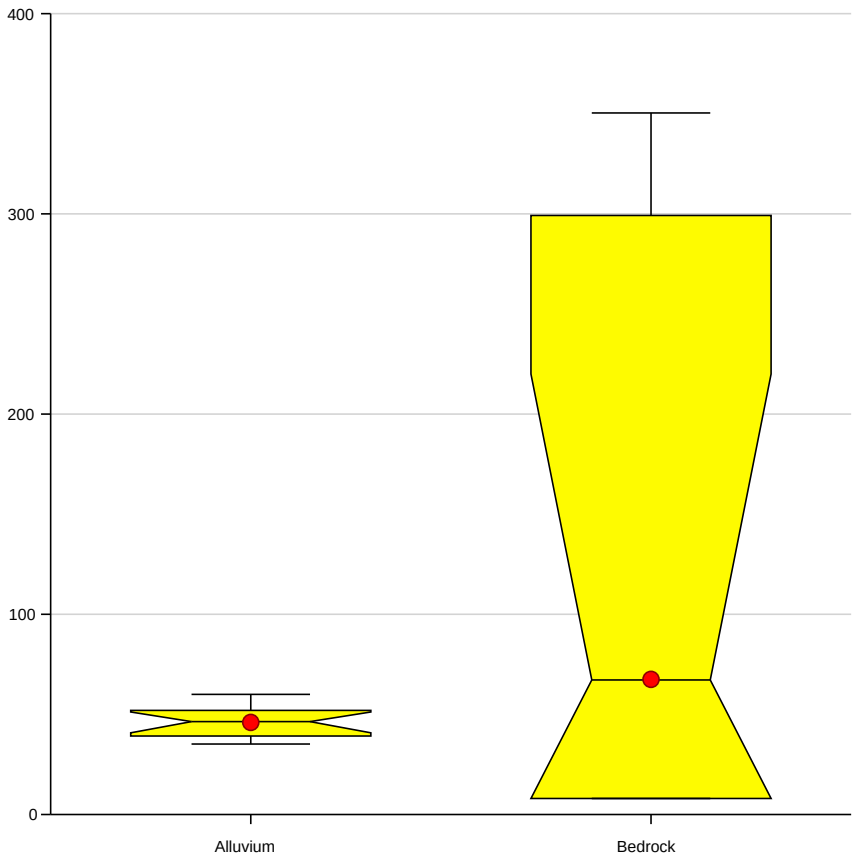
·· Break Variables for Separate Charts ·····
Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

-- Format Options ----------
Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "113"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "113"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: Aquifer
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

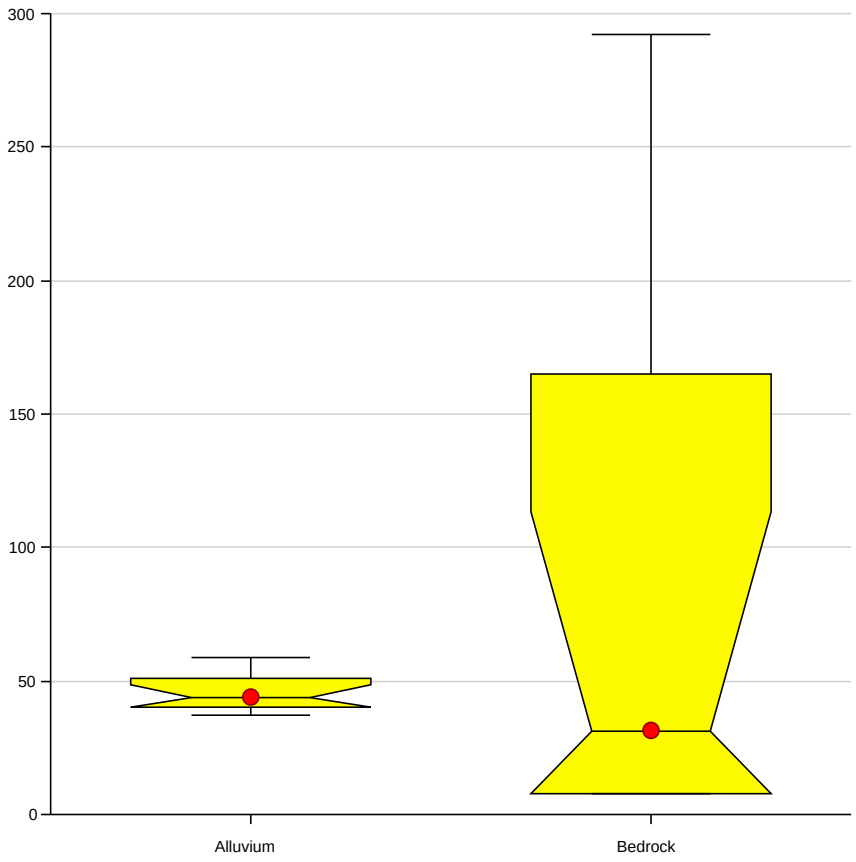
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "114"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "114"

Procedure Input Settings

Variables Tab

-- Variables ----------
Data Variable(s): VALUES
Horizontal (Group) Variable: Aquifer
Frequency Variable: <Empty>
Data Label Variable: <Empty>

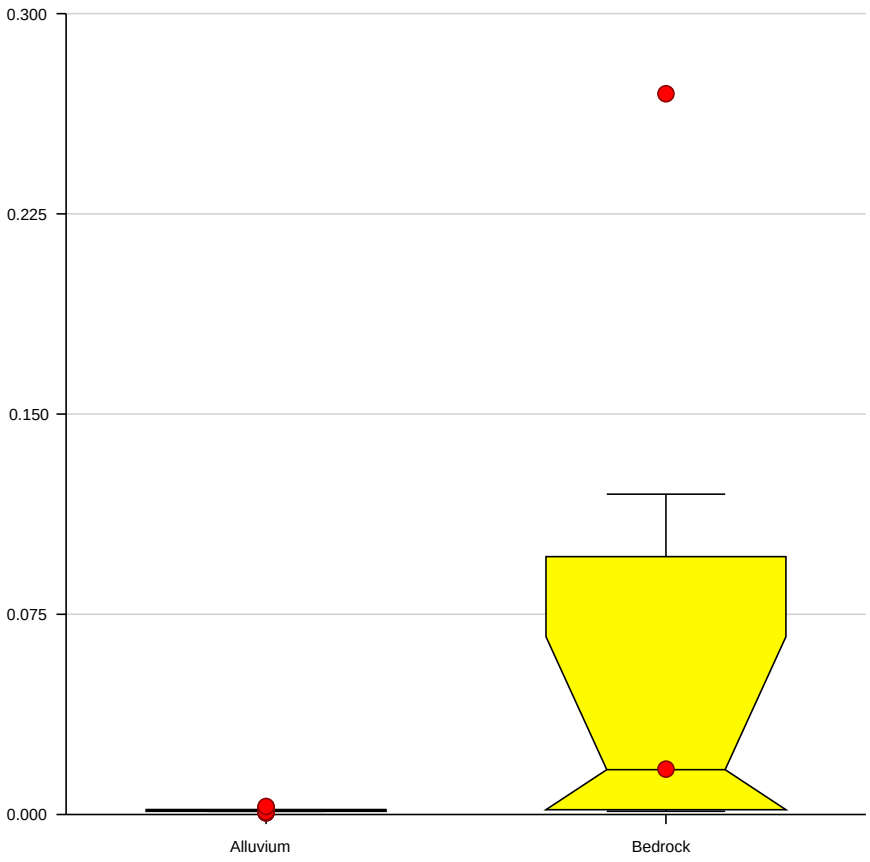
·· Break Variables for Separate Charts ·····
Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

-- Format Options ----------
Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "115"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "115"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: Aquifer
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

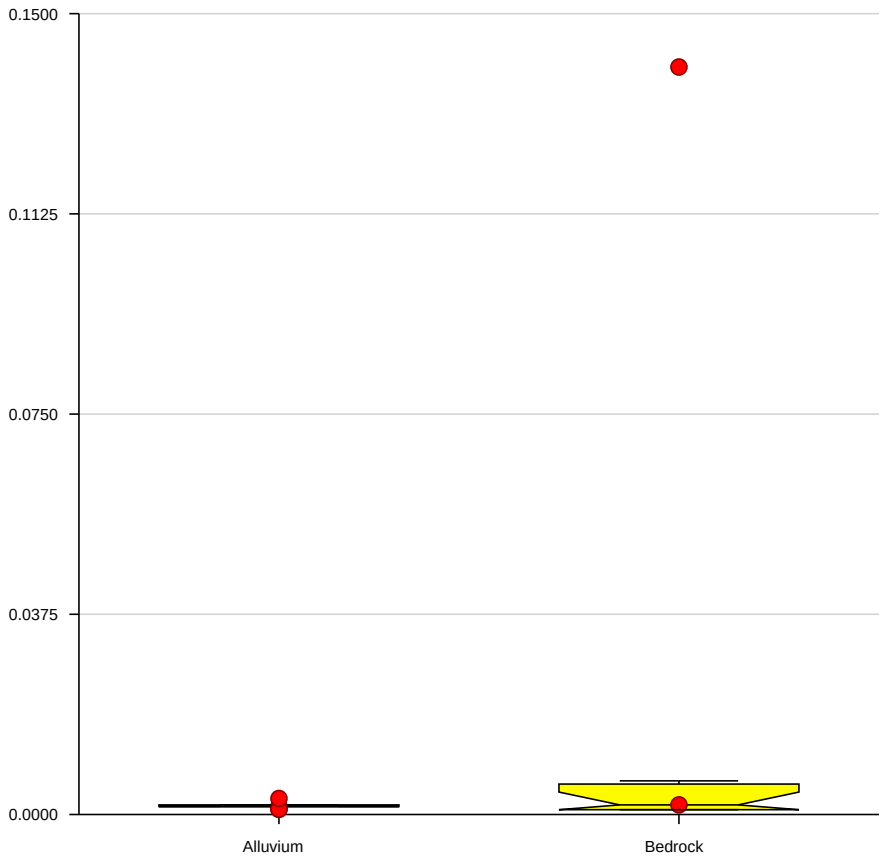
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "116"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "116"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: Aquifer
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

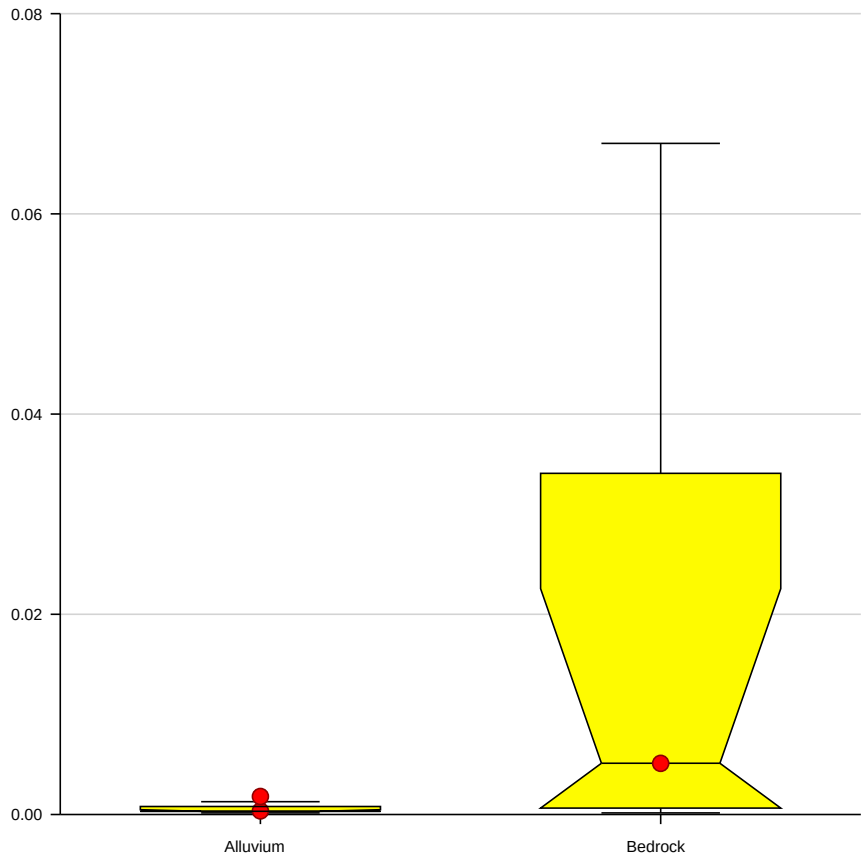
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "117"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "117"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: Aquifer
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

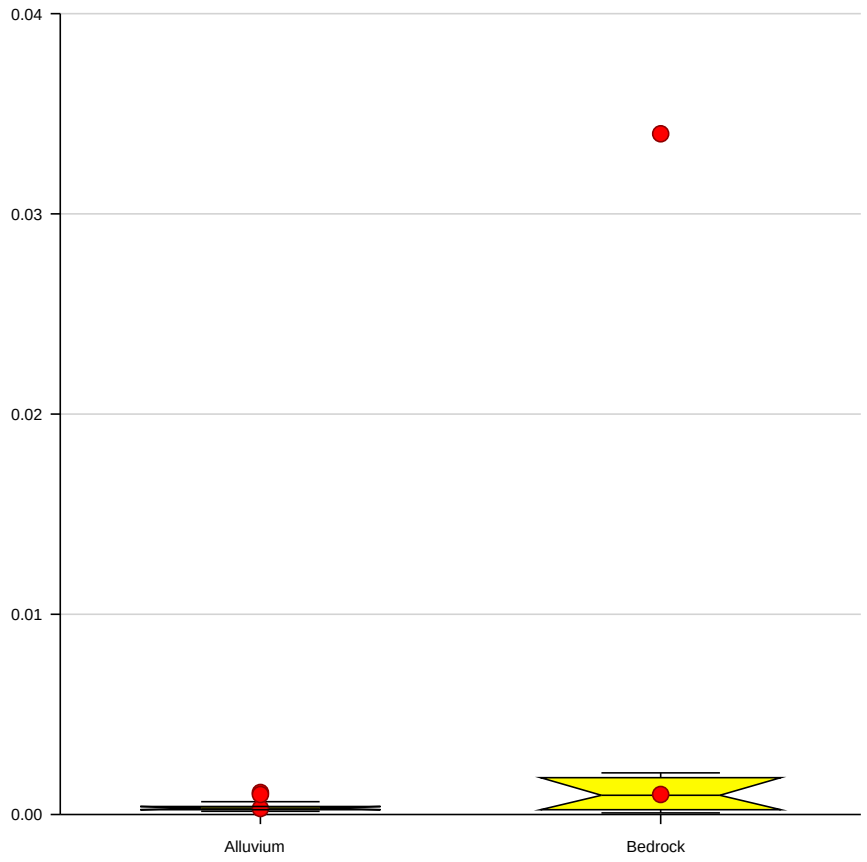
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "118"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "118"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: Aquifer
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

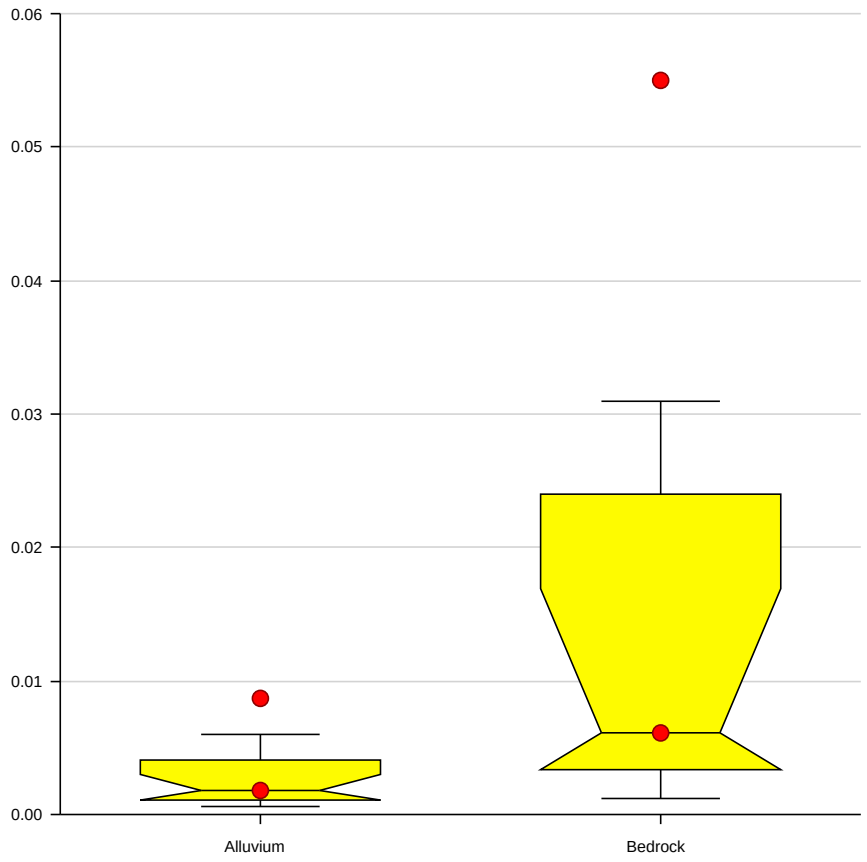
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "119"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "119"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: Aquifer
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

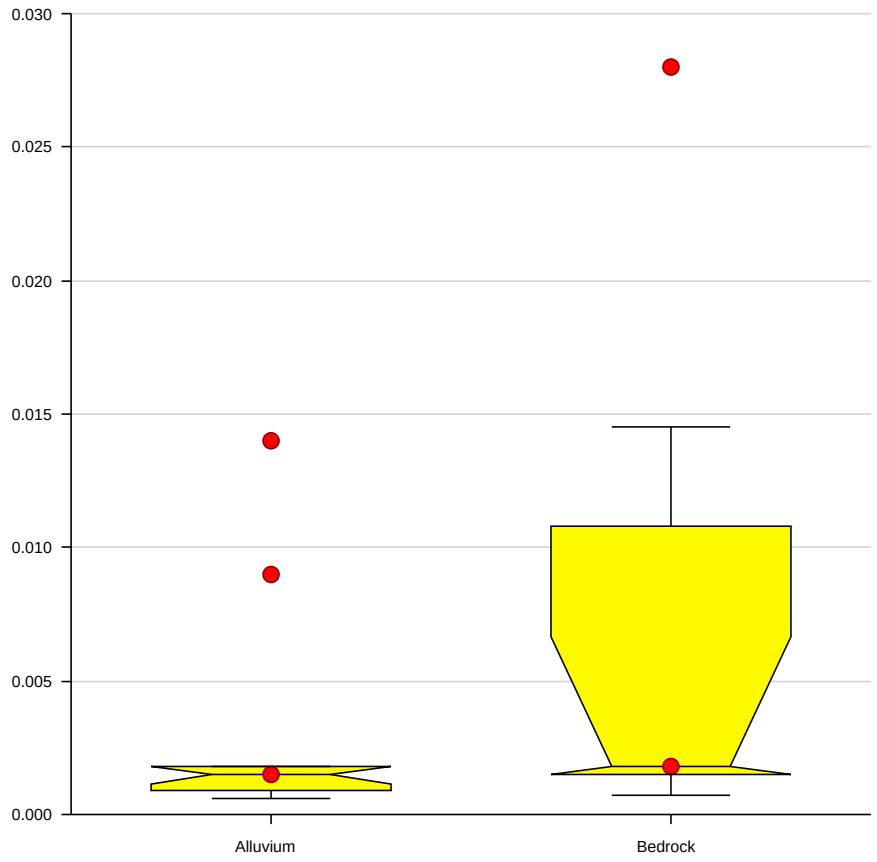
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "120"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "120"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: Aquifer
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

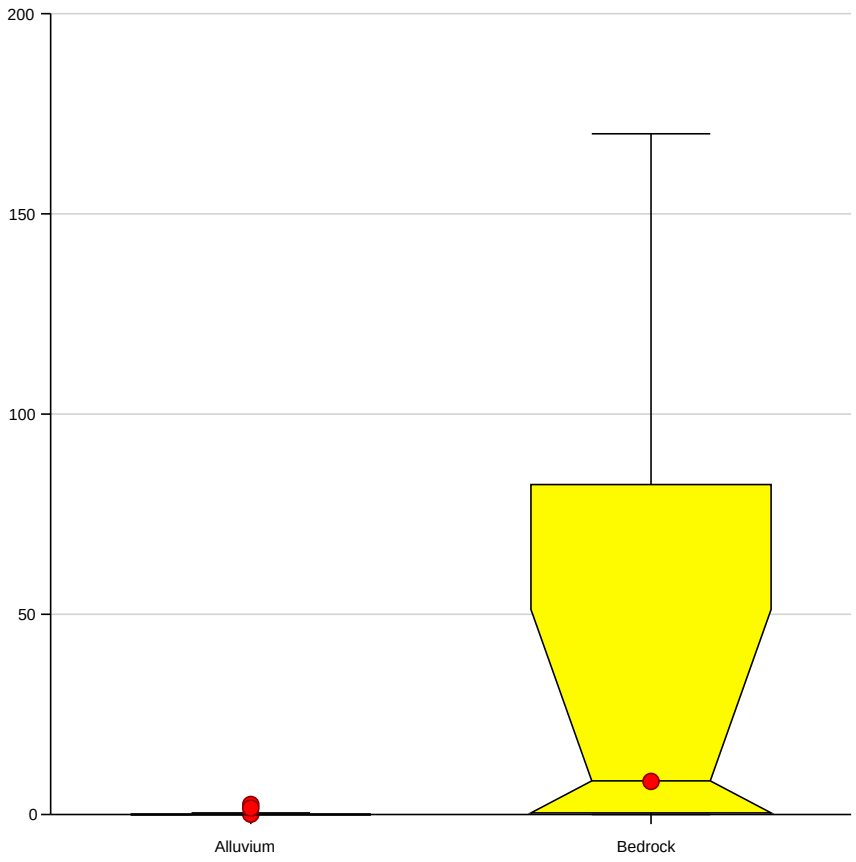
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "121"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "121"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: Aquifer
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

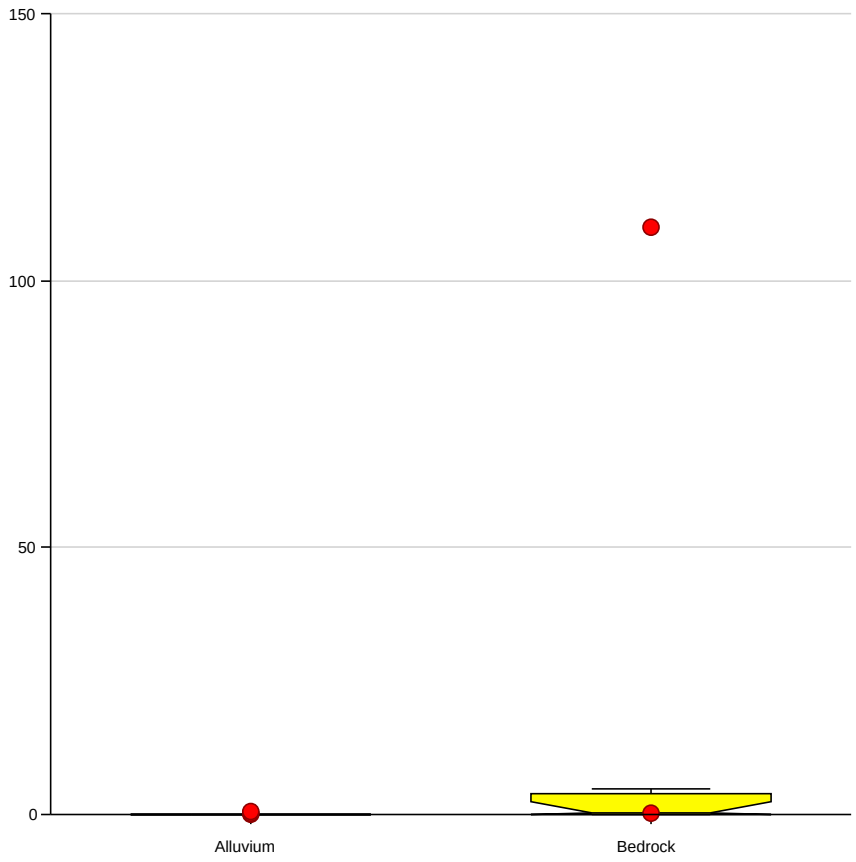
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "122"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "122"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: Aquifer
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

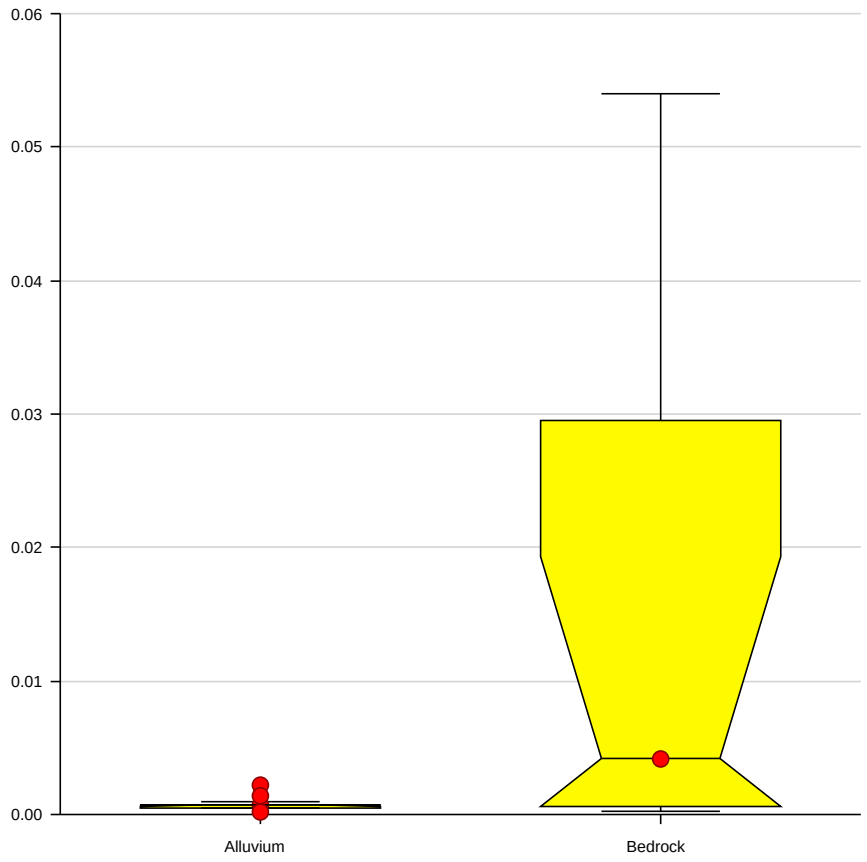
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "123"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "123"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: Aquifer
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

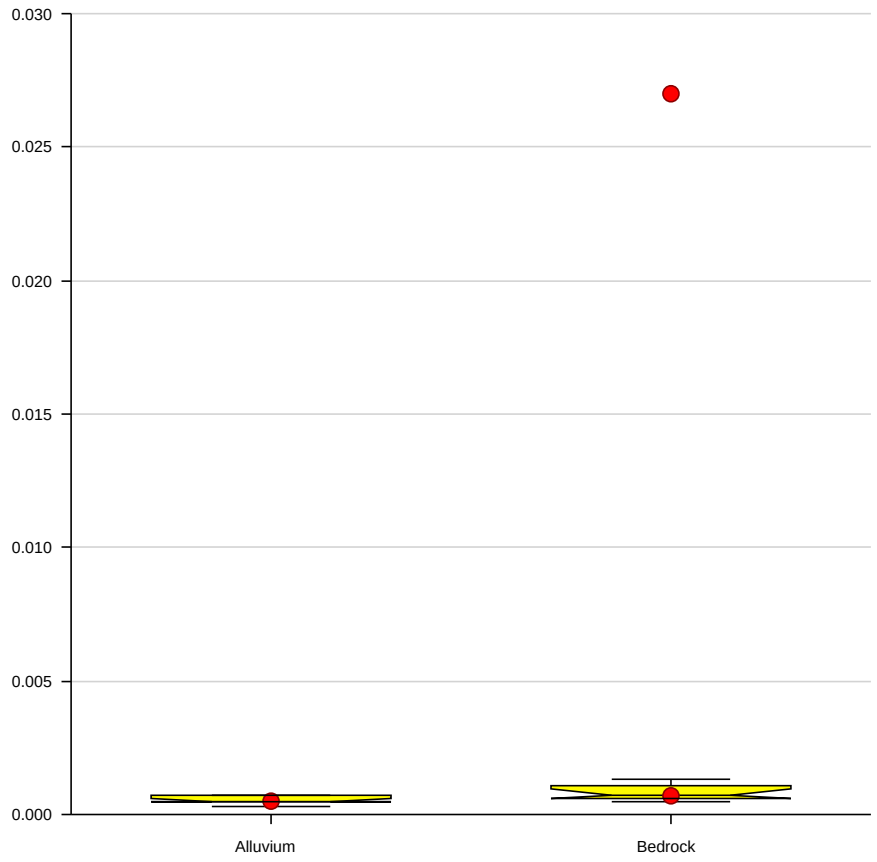
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "124"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "124"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: Aquifer
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

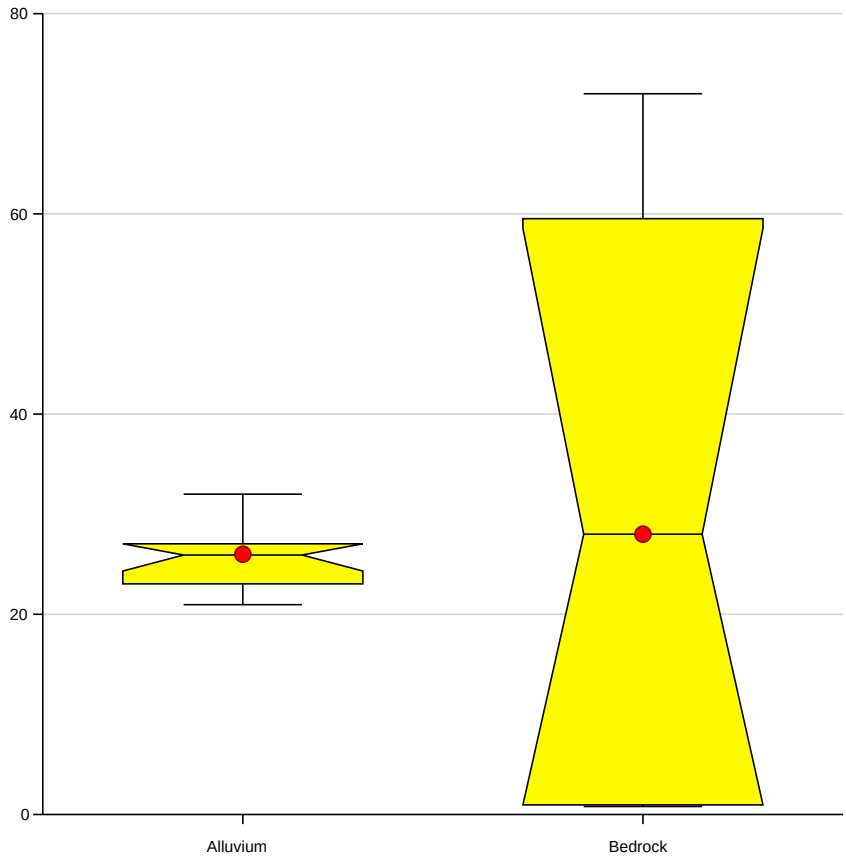
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "125"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "125"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: Aquifer
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

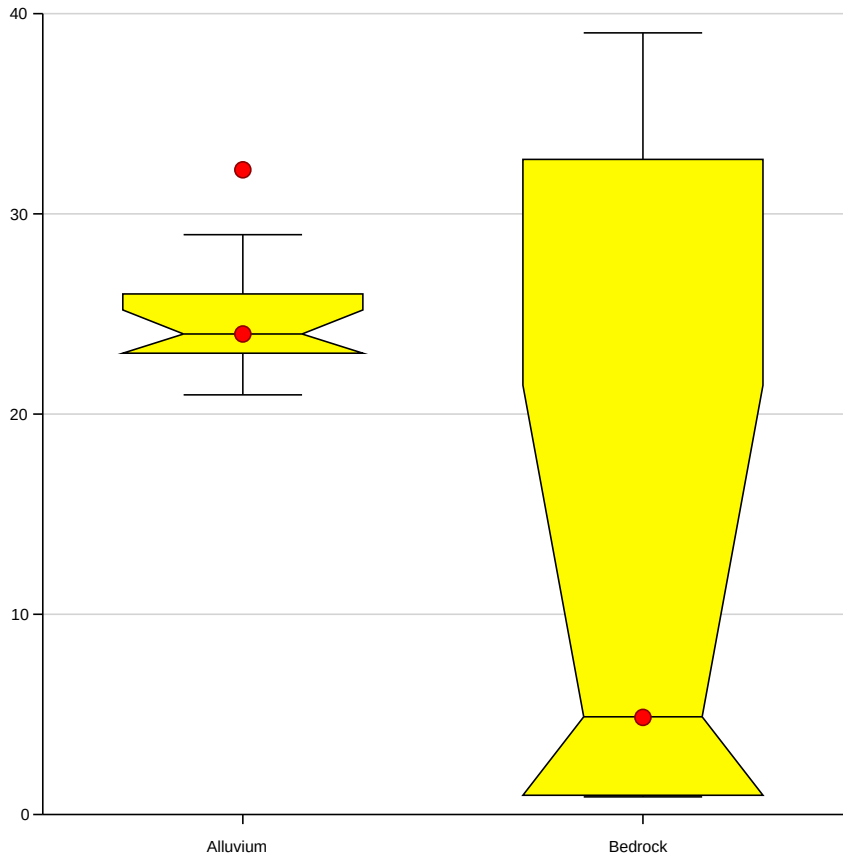
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "126"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "126"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: Aquifer
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

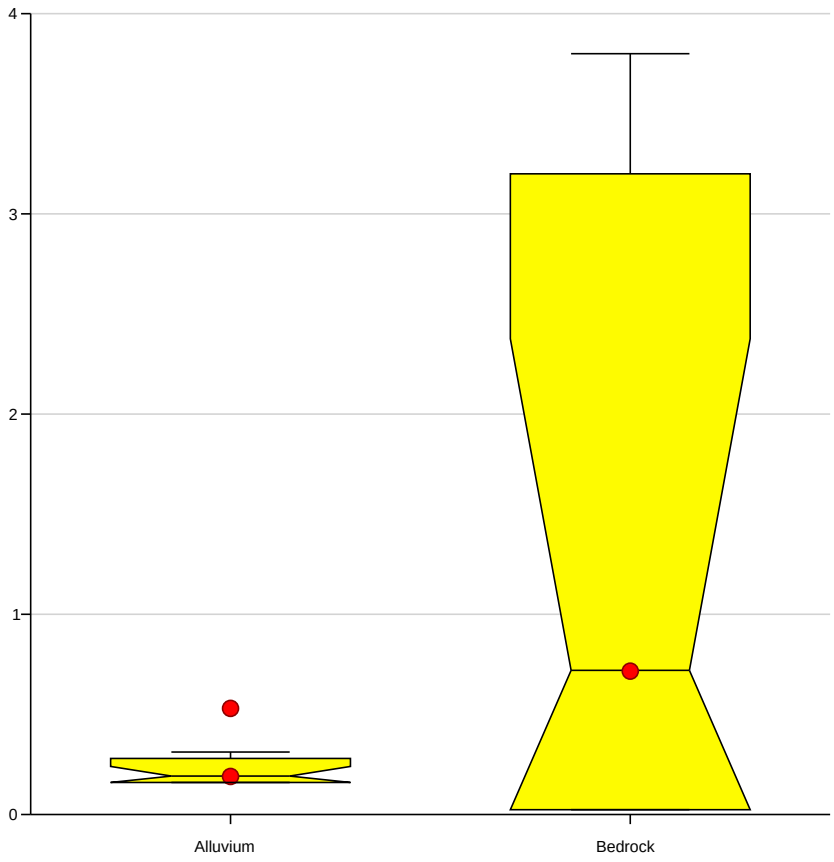
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "127"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "127"

Procedure Input Settings

Variables Tab

-- Variables ----------
Data Variable(s): VALUES
Horizontal (Group) Variable: Aquifer
Frequency Variable: <Empty>
Data Label Variable: <Empty>

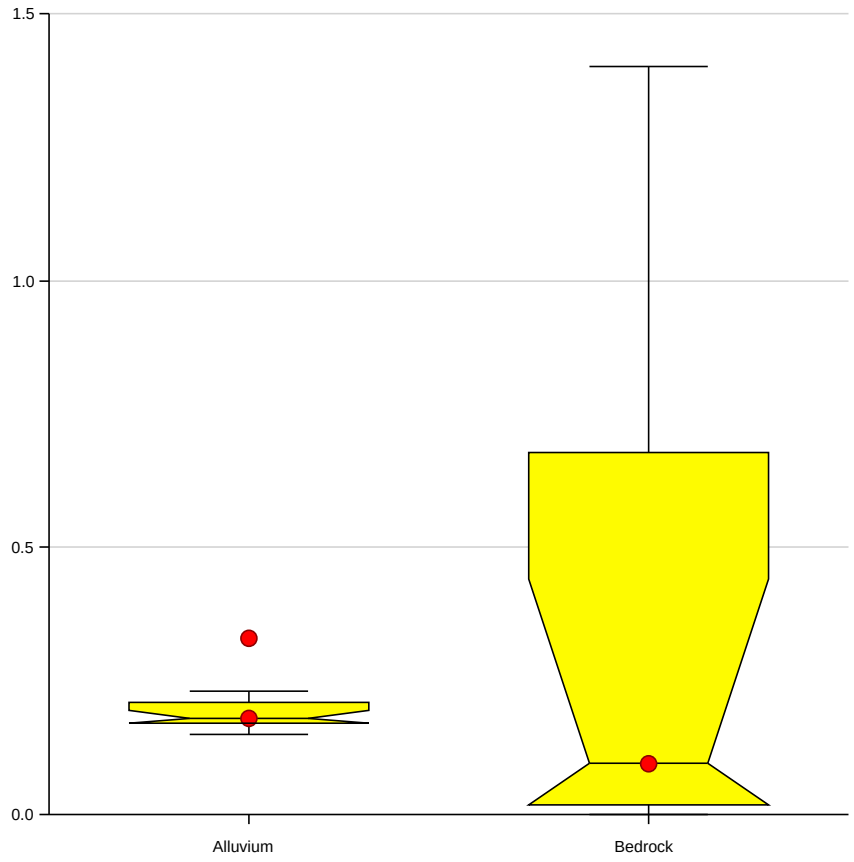
·· Break Variables for Separate Charts ·····
Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

-- Format Options ----------
Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "128"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "128"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: Aquifer
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

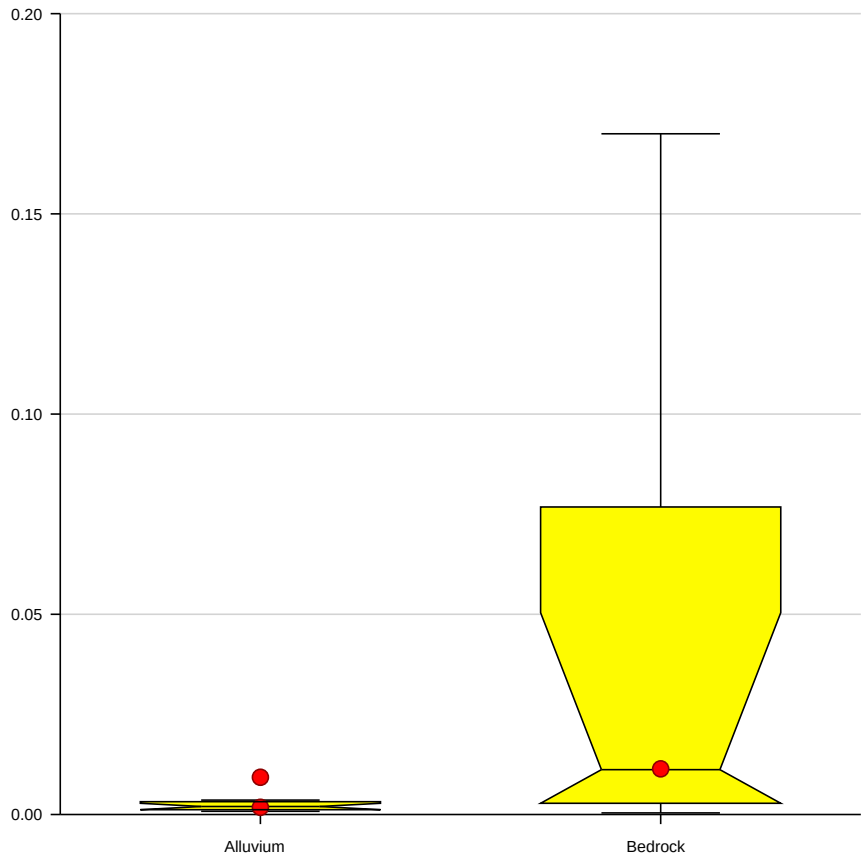
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "131"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "131"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: Aquifer
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

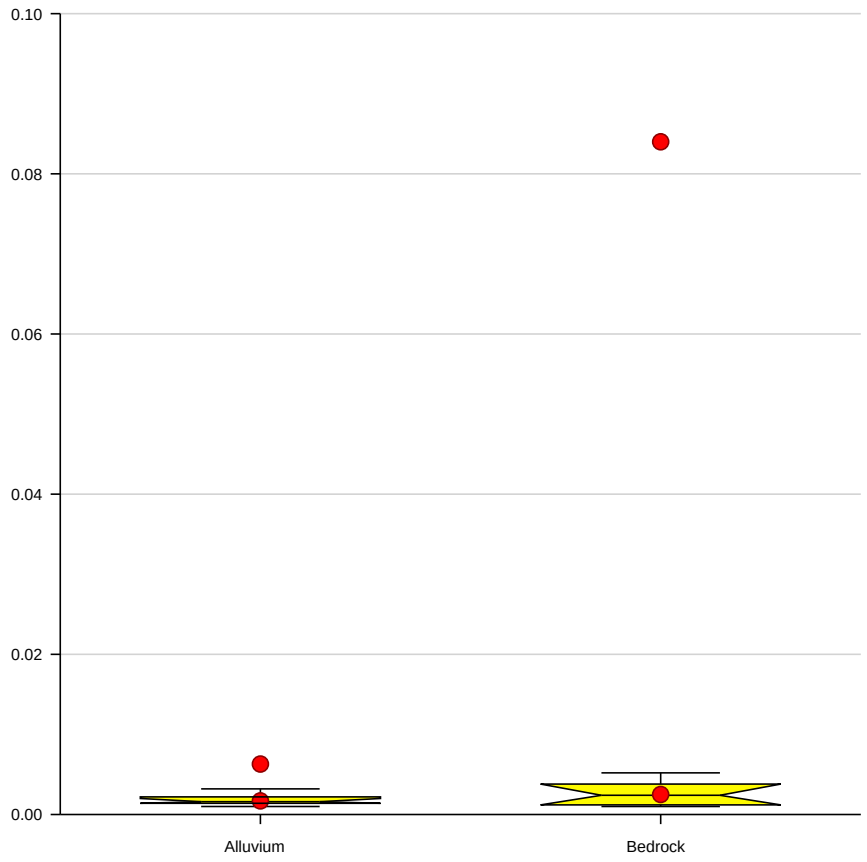
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "132"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "132"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: Aquifer
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

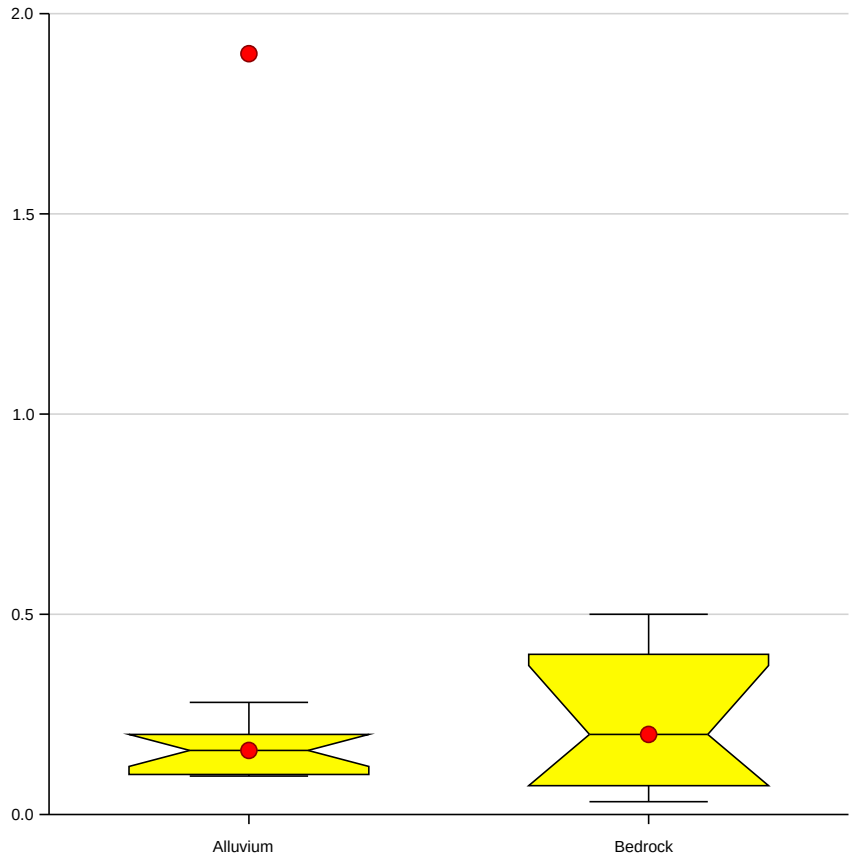
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "133"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "133"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: Aquifer
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

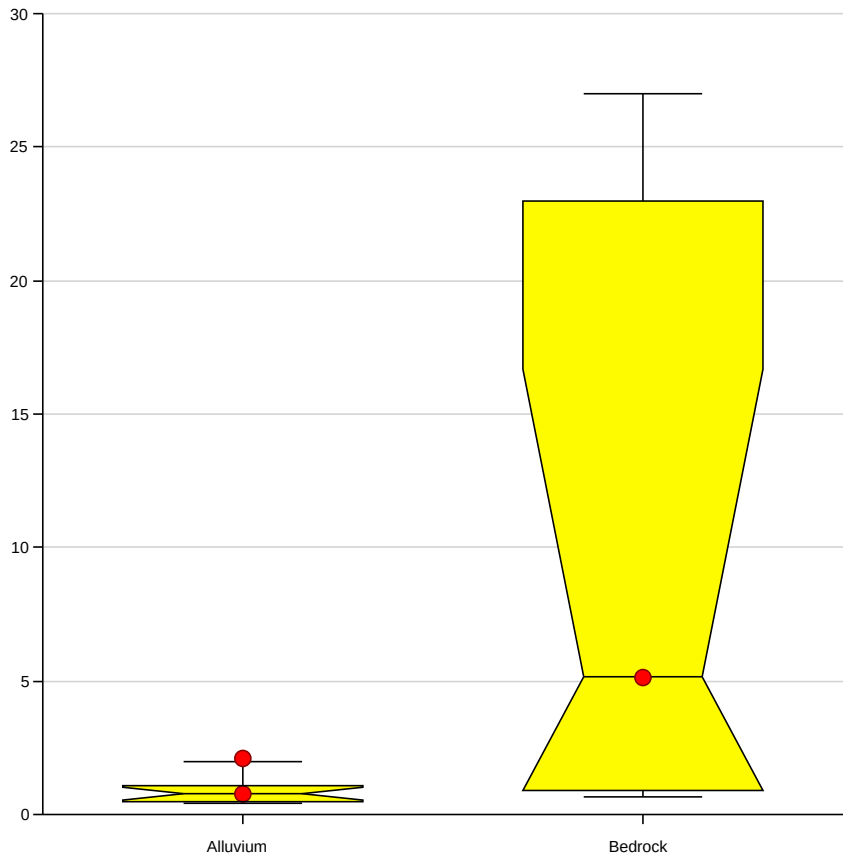
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "135"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "135"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: Aquifer
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

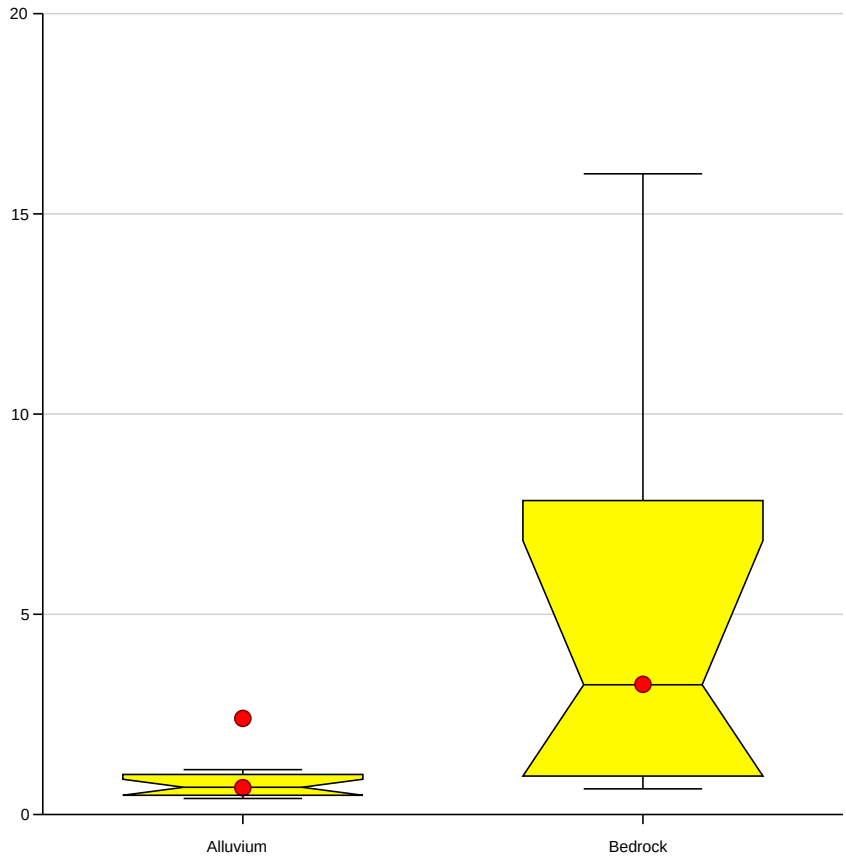
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "136"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "136"

Procedure Input Settings

Variables Tab

-- Variables ----------
Data Variable(s): VALUES
Horizontal (Group) Variable: Aquifer
Frequency Variable: <Empty>
Data Label Variable: <Empty>

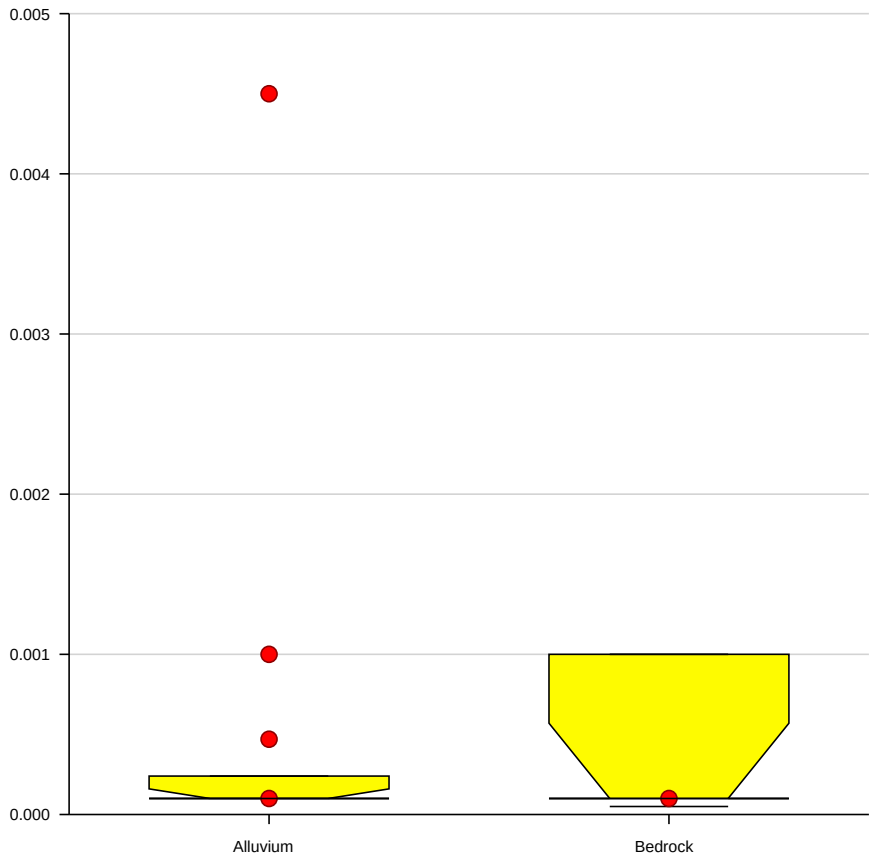
·· Break Variables for Separate Charts ·····
Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

-- Format Options ----------
Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "139"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "139"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: Aquifer
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

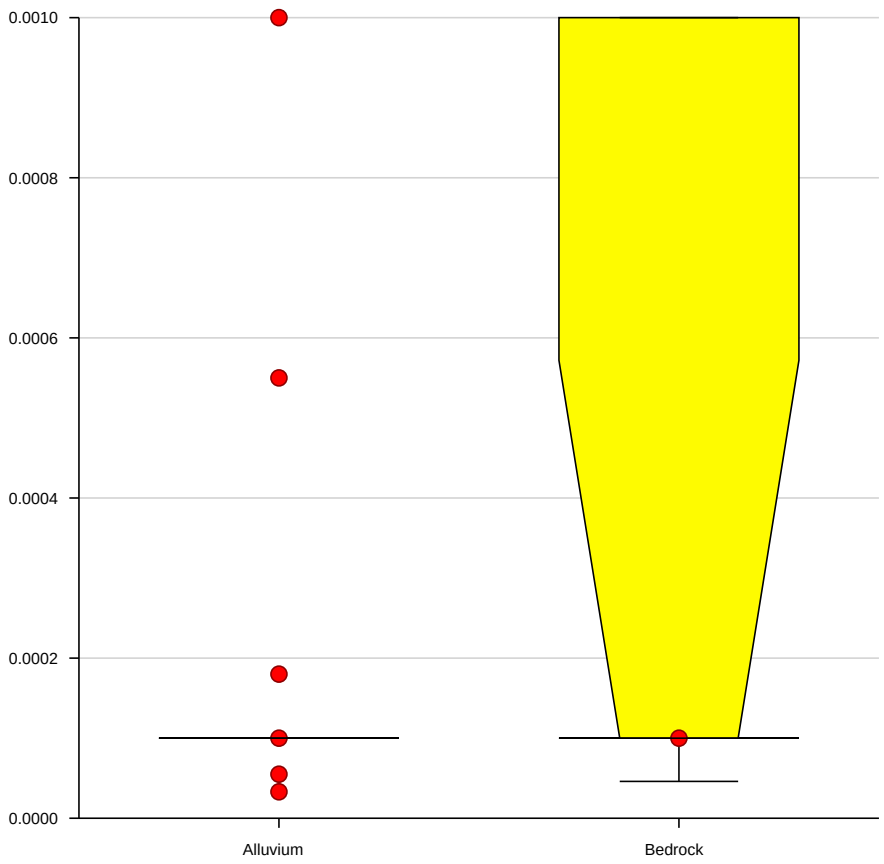
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "140"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "140"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: Aquifer
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

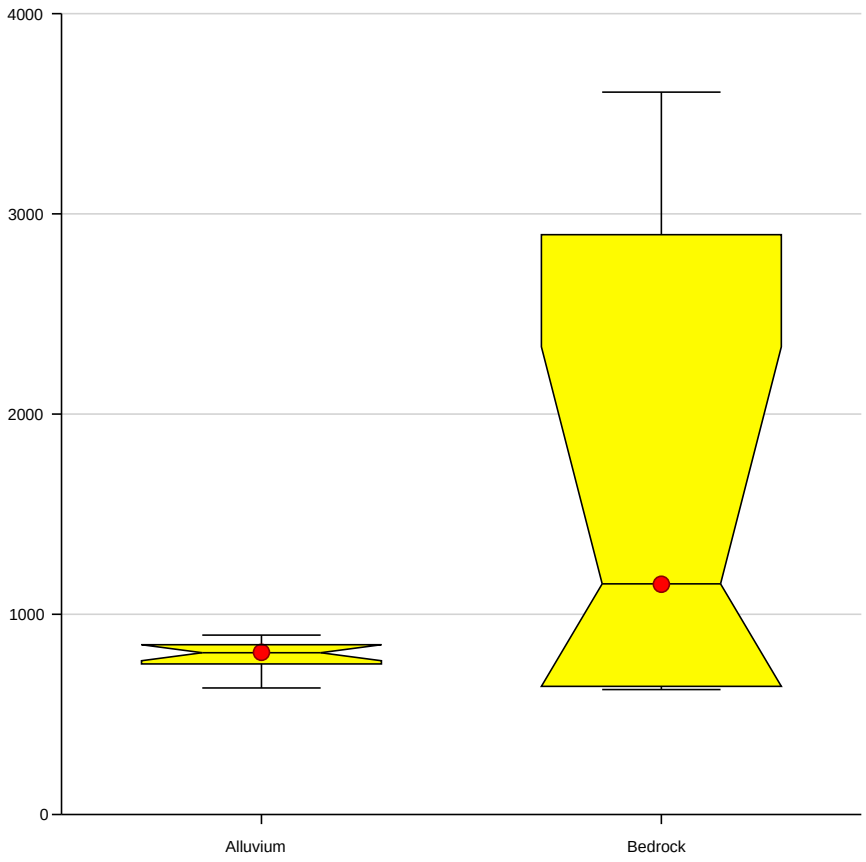
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "141"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "141"

Procedure Input Settings

Variables Tab

-- Variables ----------
Data Variable(s): VALUES
Horizontal (Group) Variable: Aquifer
Frequency Variable: <Empty>
Data Label Variable: <Empty>

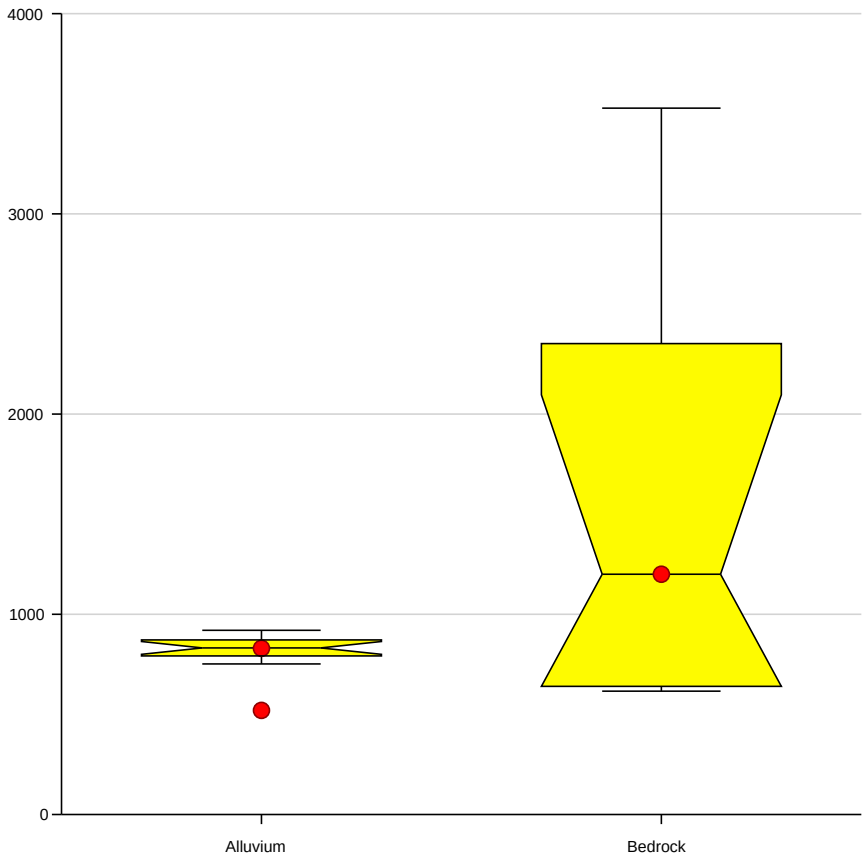
·· Break Variables for Separate Charts ·····
Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

-- Format Options ----------
Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "142"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "142"

Procedure Input Settings

Variables Tab

-- Variables ----------
Data Variable(s): VALUES
Horizontal (Group) Variable: Aquifer
Frequency Variable: <Empty>
Data Label Variable: <Empty>

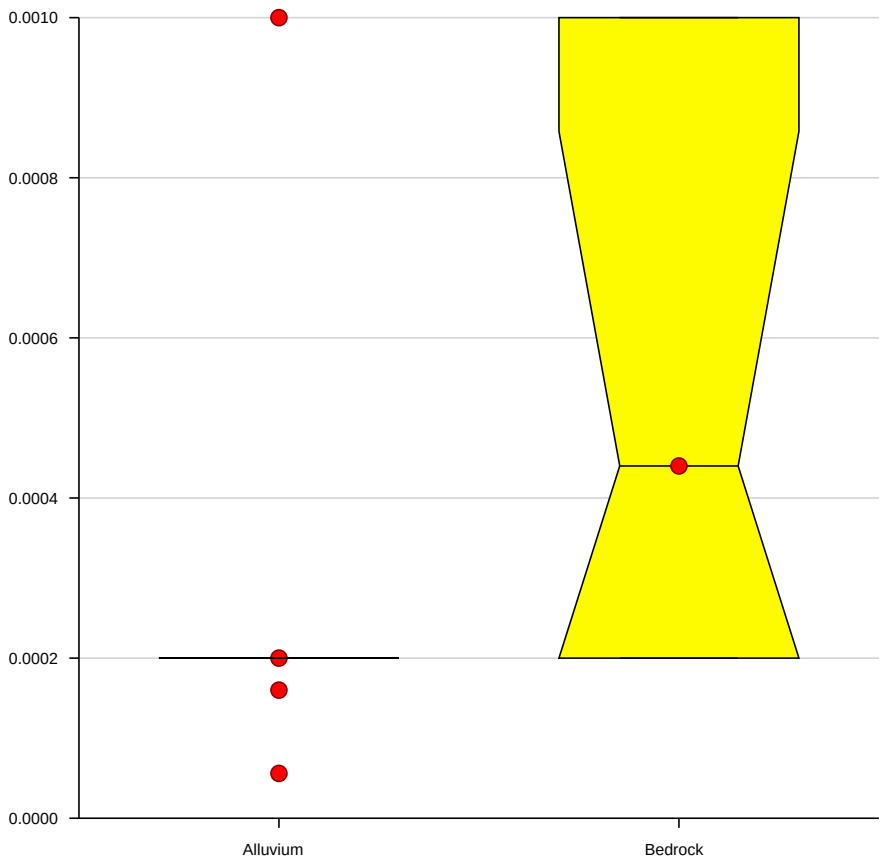
·· Break Variables for Separate Charts ·····
Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

-- Format Options ----------
Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "143"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "143"

Procedure Input Settings

Variables Tab

-- Variables ----------
Data Variable(s): VALUES
Horizontal (Group) Variable: Aquifer
Frequency Variable: <Empty>
Data Label Variable: <Empty>

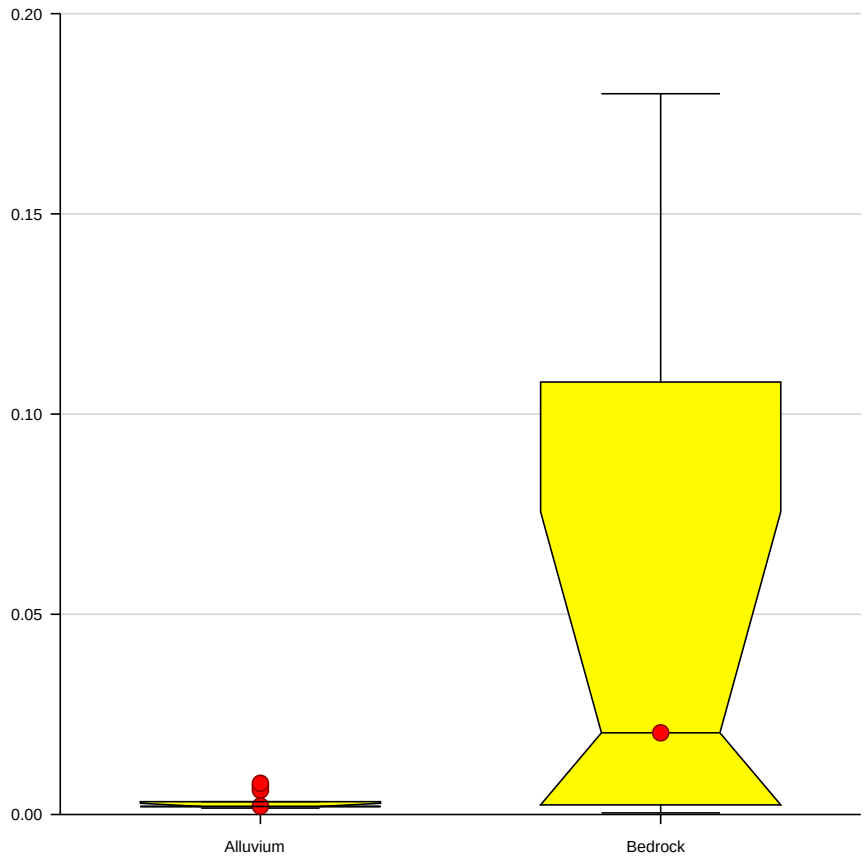
·· Break Variables for Separate Charts ·····
Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

-- Format Options ----------
Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "145"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "145"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: Aquifer
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

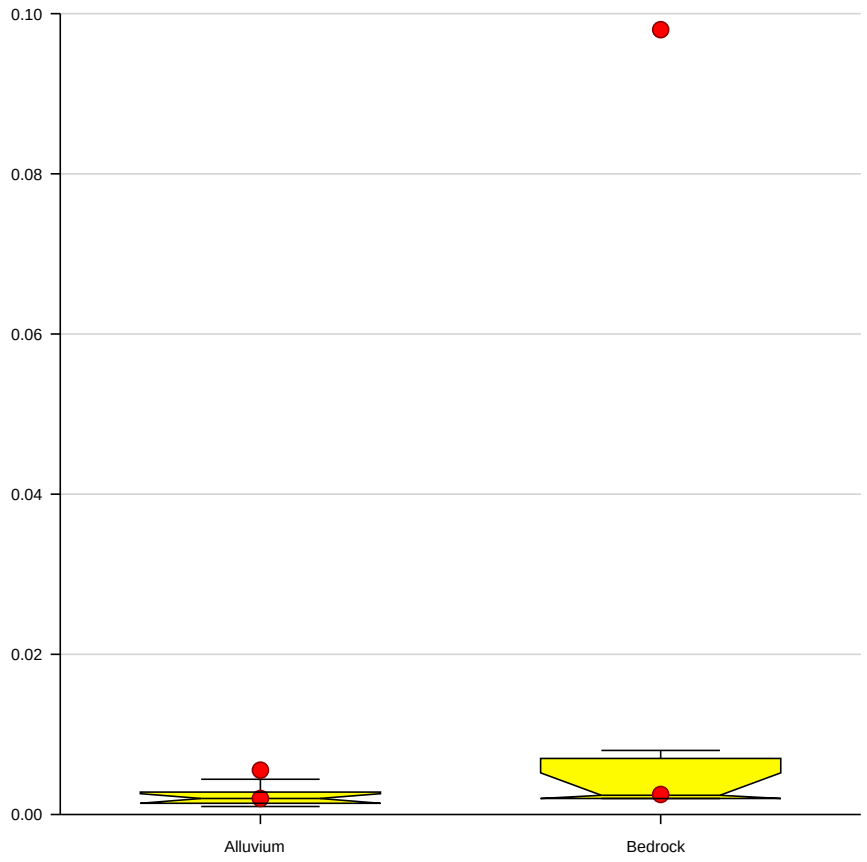
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "146"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "146"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: Aquifer
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

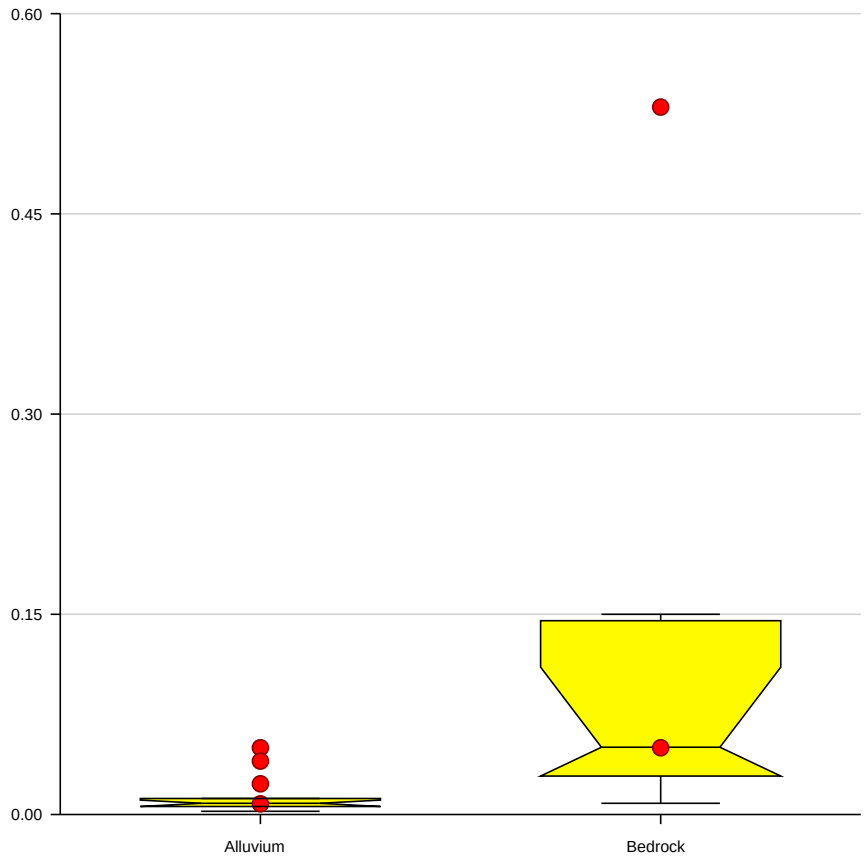
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "147"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "147"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: Aquifer
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

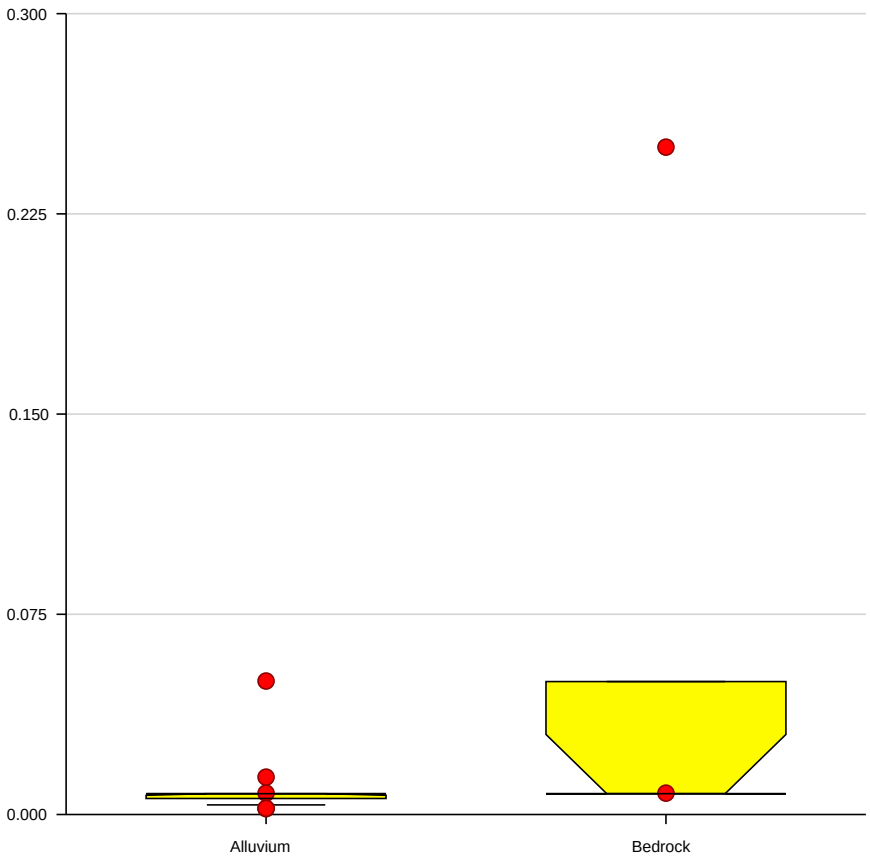
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "148"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_aquifer_forNCSS.xlsx
Filter CONSTITUENT_CODE = "148"

Procedure Input Settings

Variables Tab

-- Variables ----------
Data Variable(s): VALUES
Horizontal (Group) Variable: Aquifer
Frequency Variable: <Empty>
Data Label Variable: <Empty>

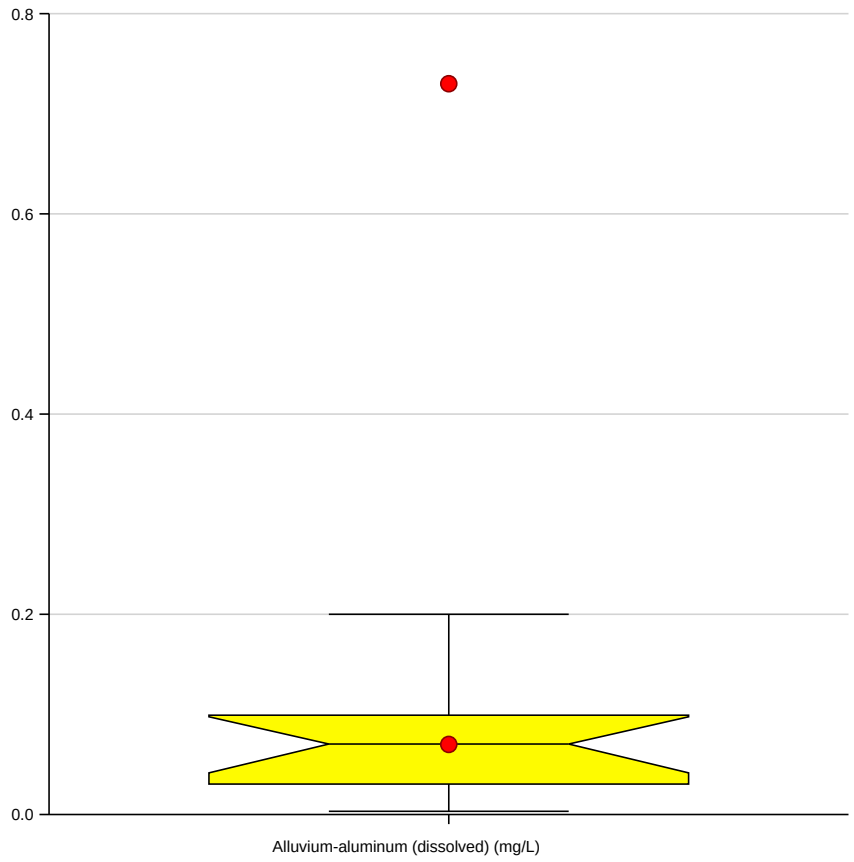
·· Break Variables for Separate Charts ·····
Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

-- Format Options ----------
Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_102"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_102"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

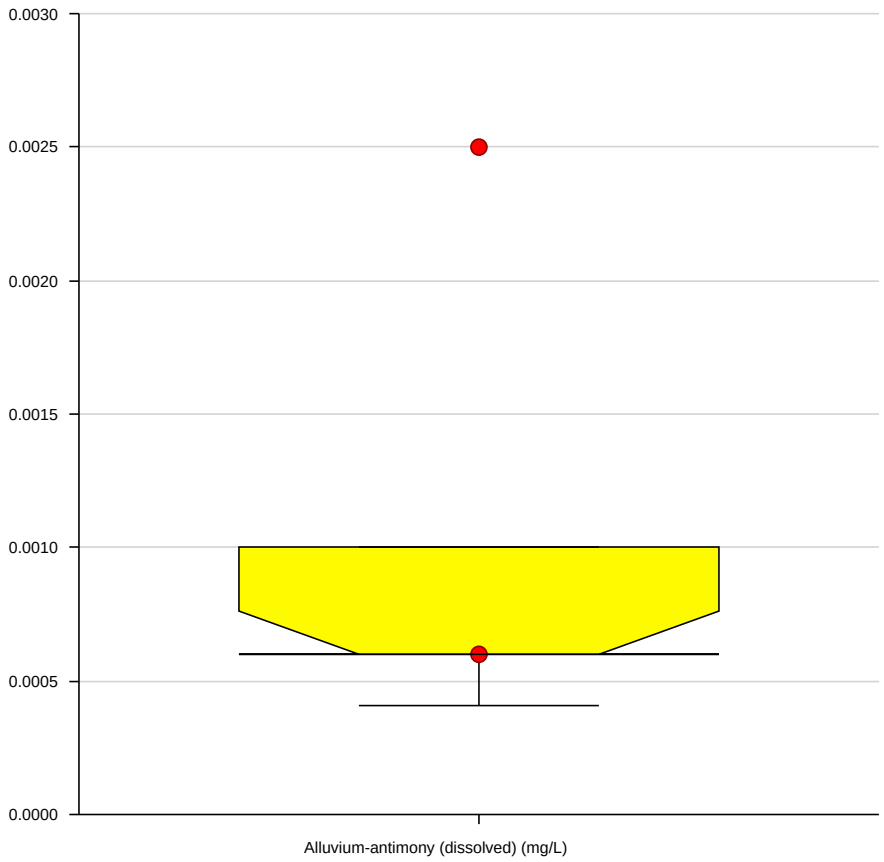
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_104"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_104"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

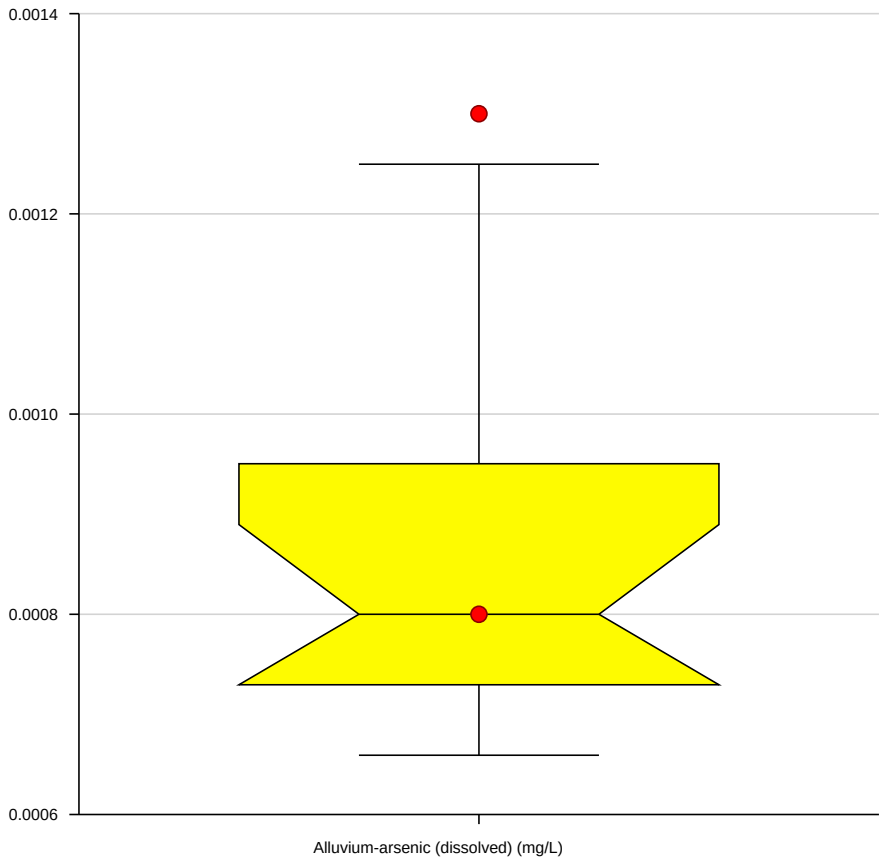
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_106"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_106"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

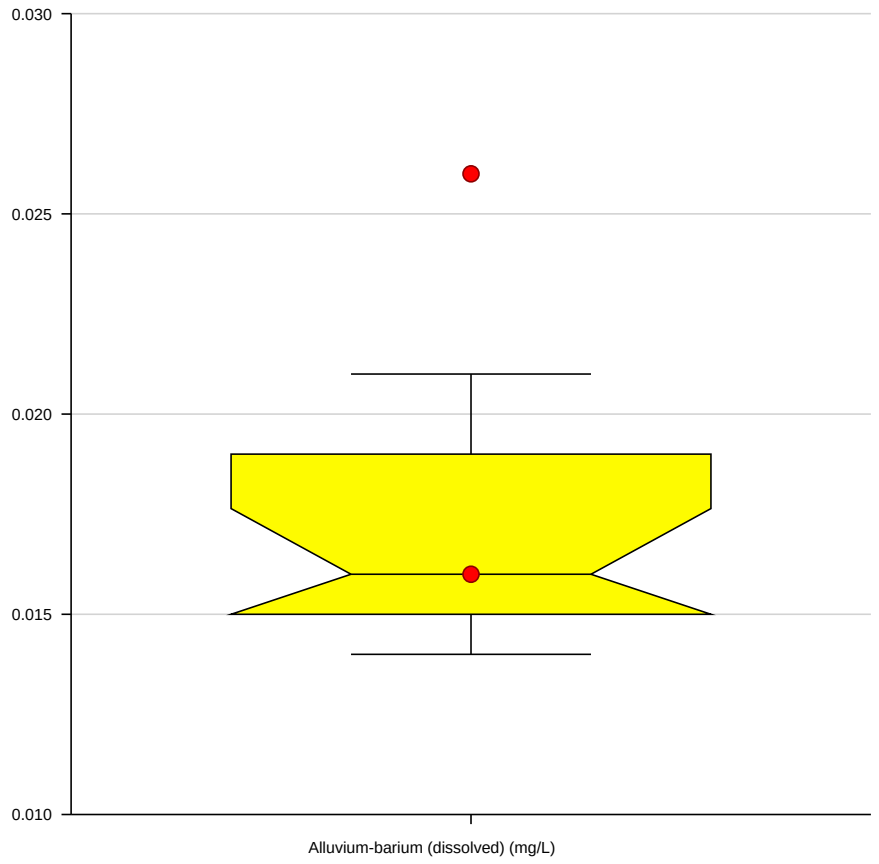
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_108"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_108"

Procedure Input Settings

Variables Tab

-- Variables --

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

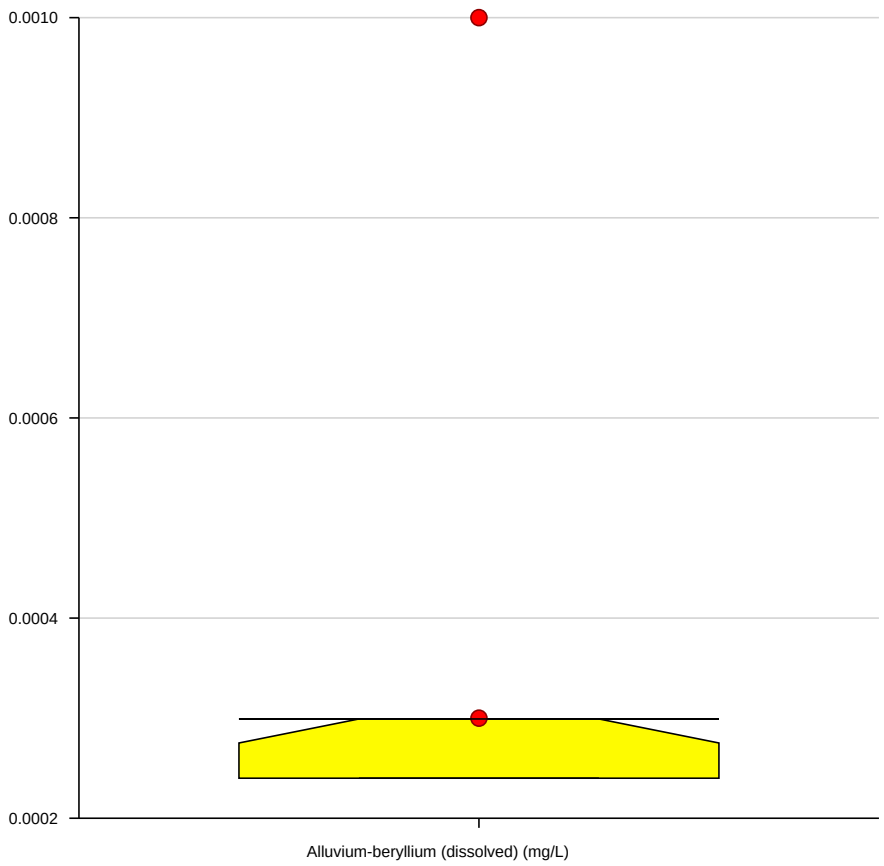
-- Format Options --

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_110"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_110"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

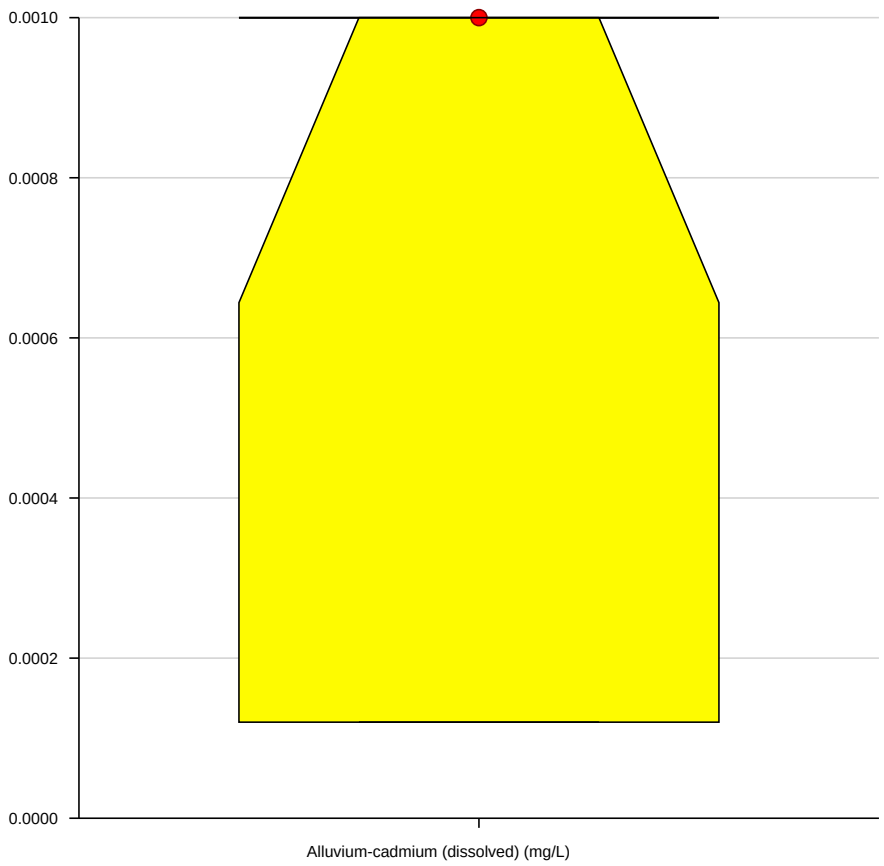
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_112"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_112"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

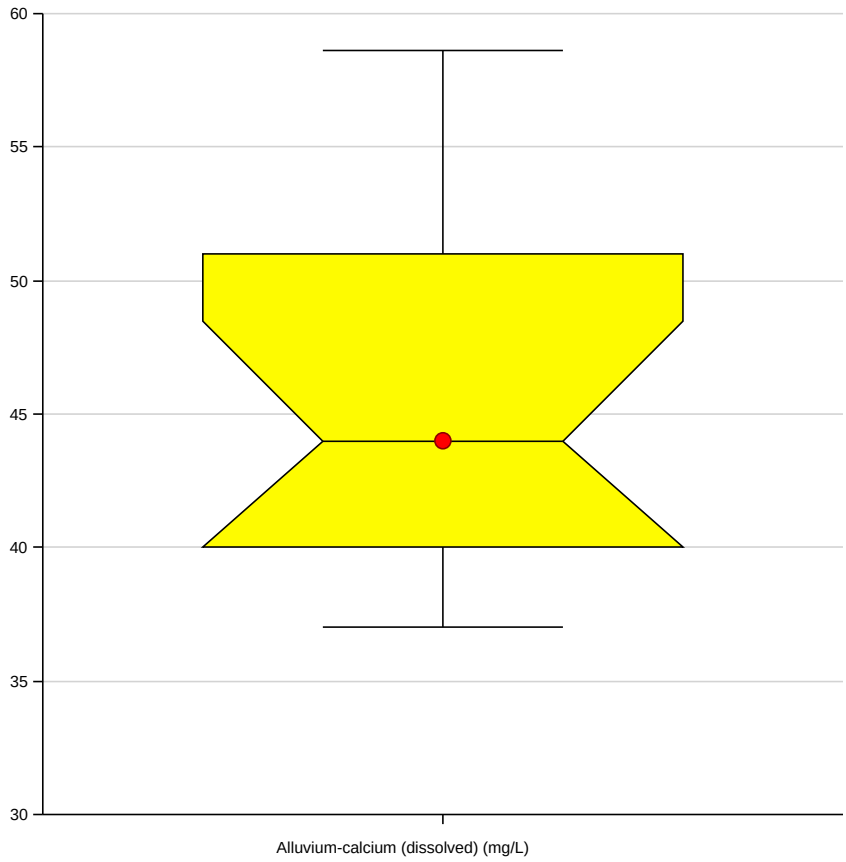
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_114"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_114"

Procedure Input Settings

Variables Tab
-- Variables ----------
Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

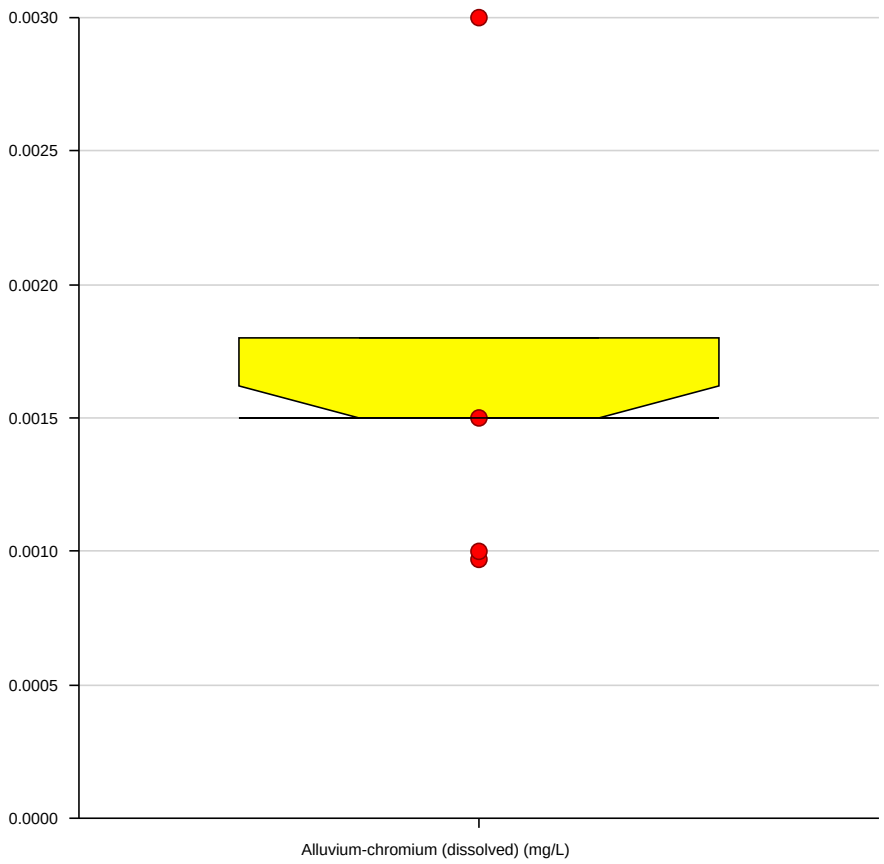
·· Break Variables for Separate Charts ·····
Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

-- Format Options ----------
Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_116"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_116"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

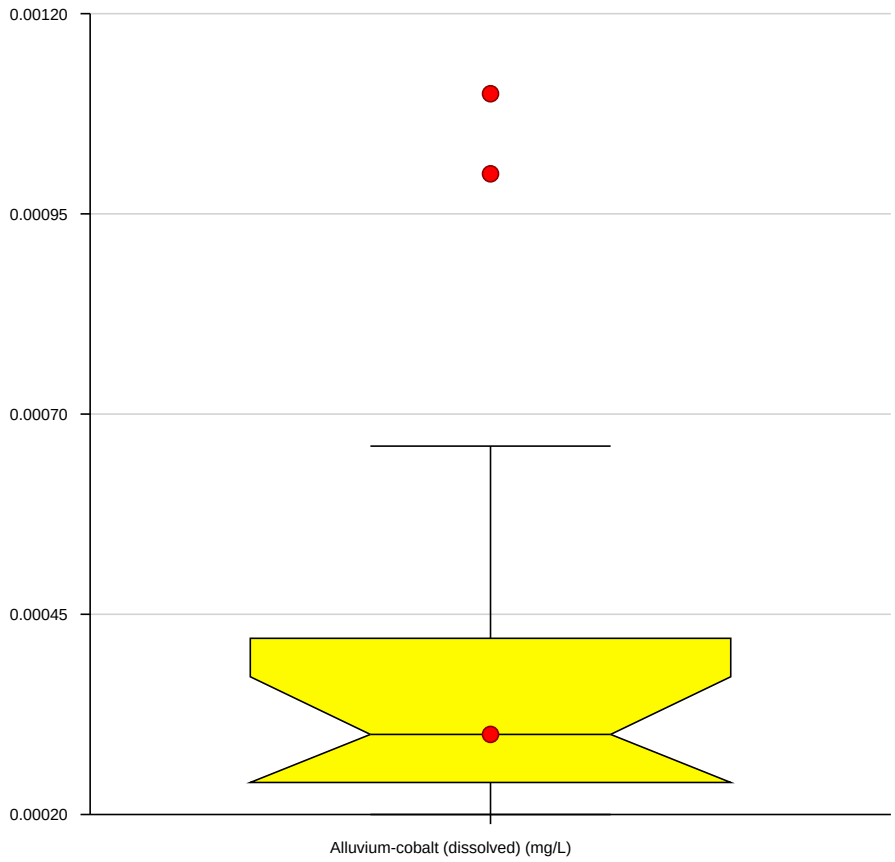
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_118"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_118"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

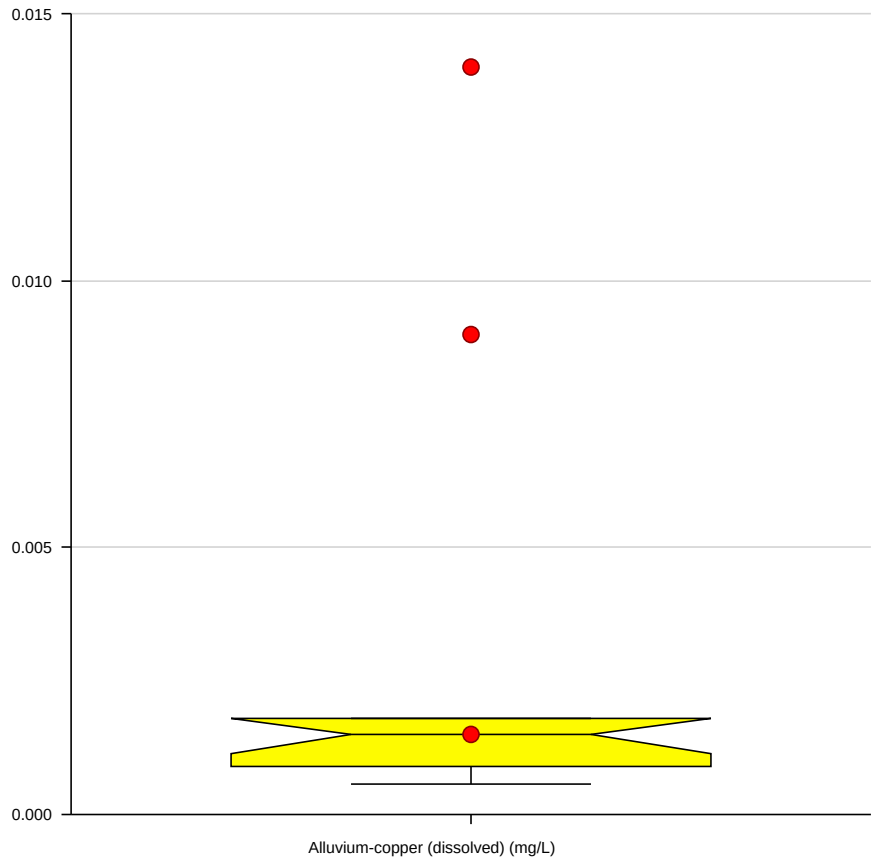
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_120"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_120"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

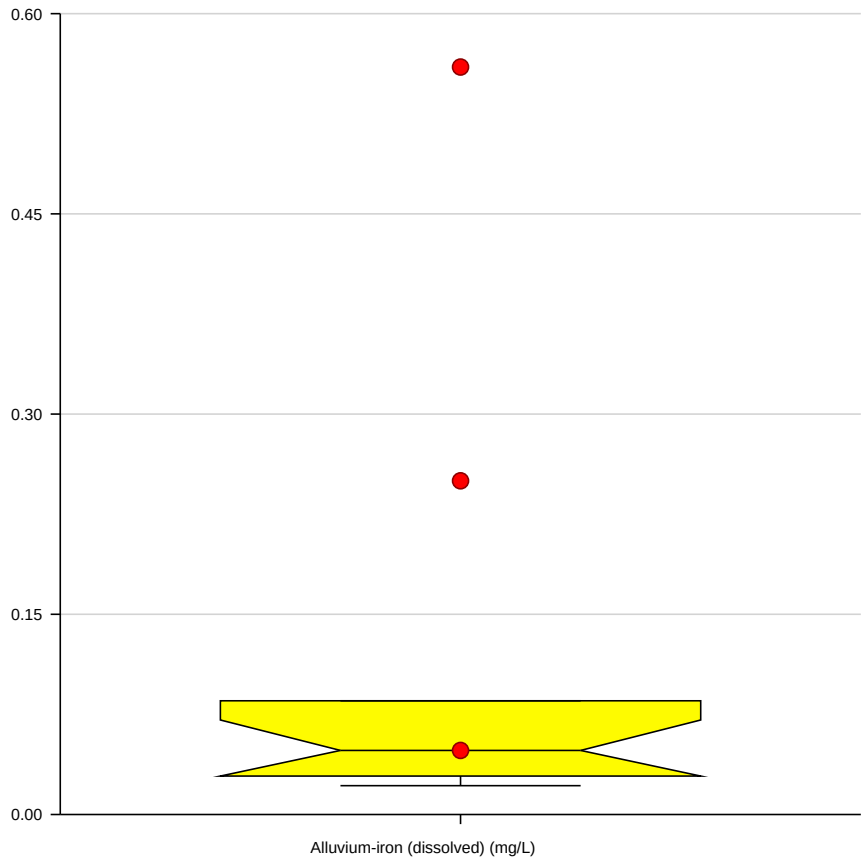
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_122"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_122"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

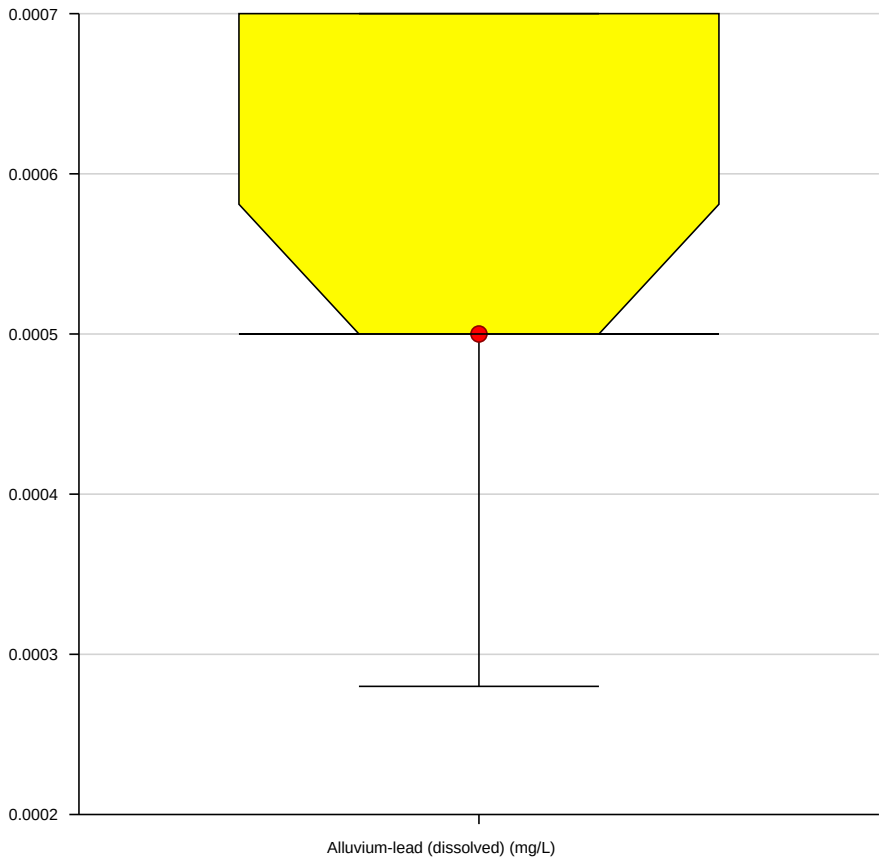
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_124"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_124"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

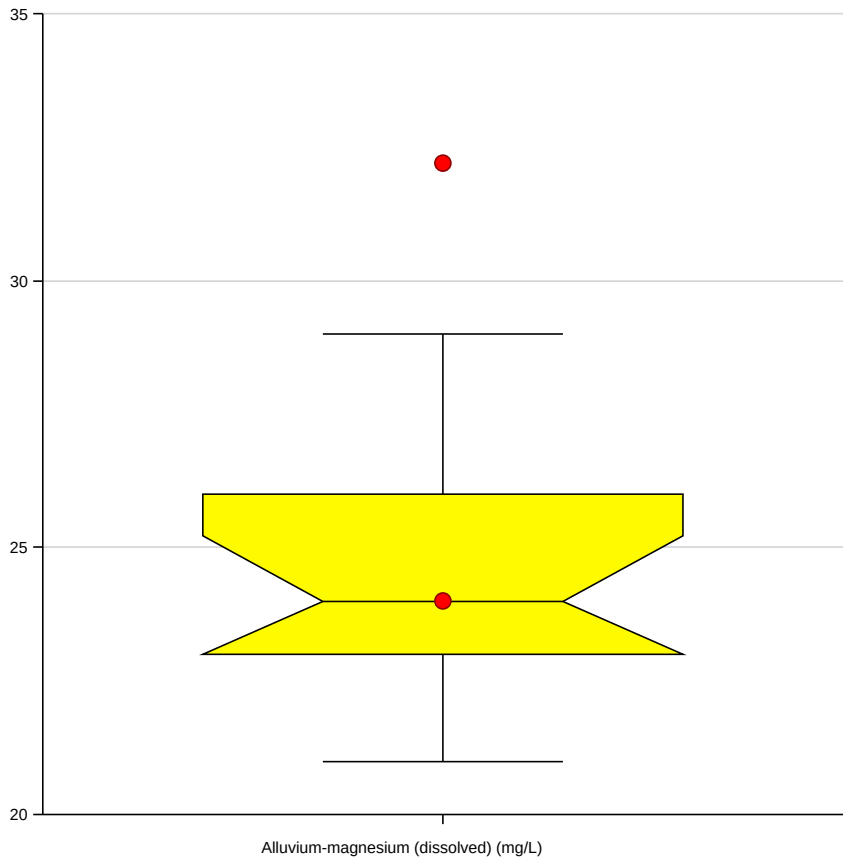
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_126"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_126"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

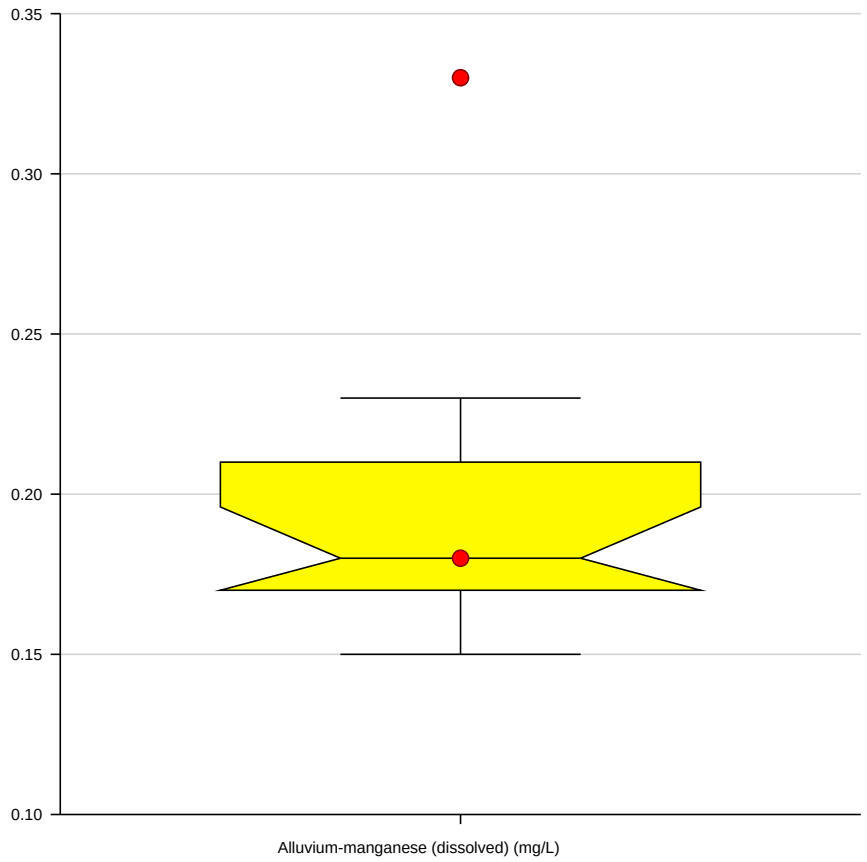
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_128"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_128"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

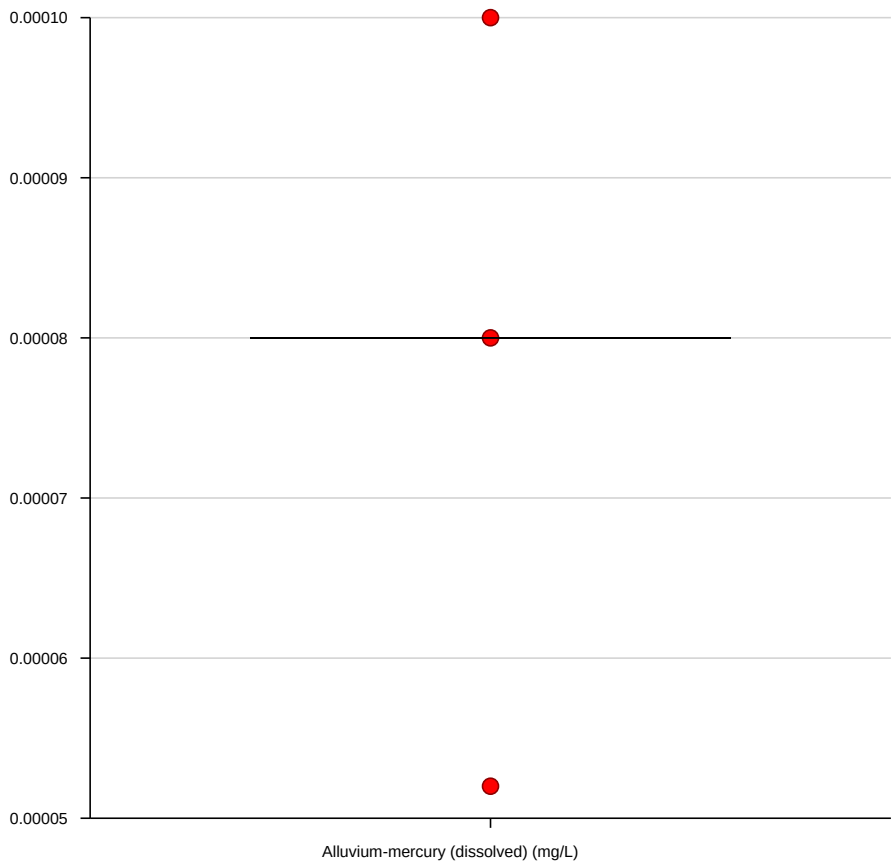
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_130"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_130"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

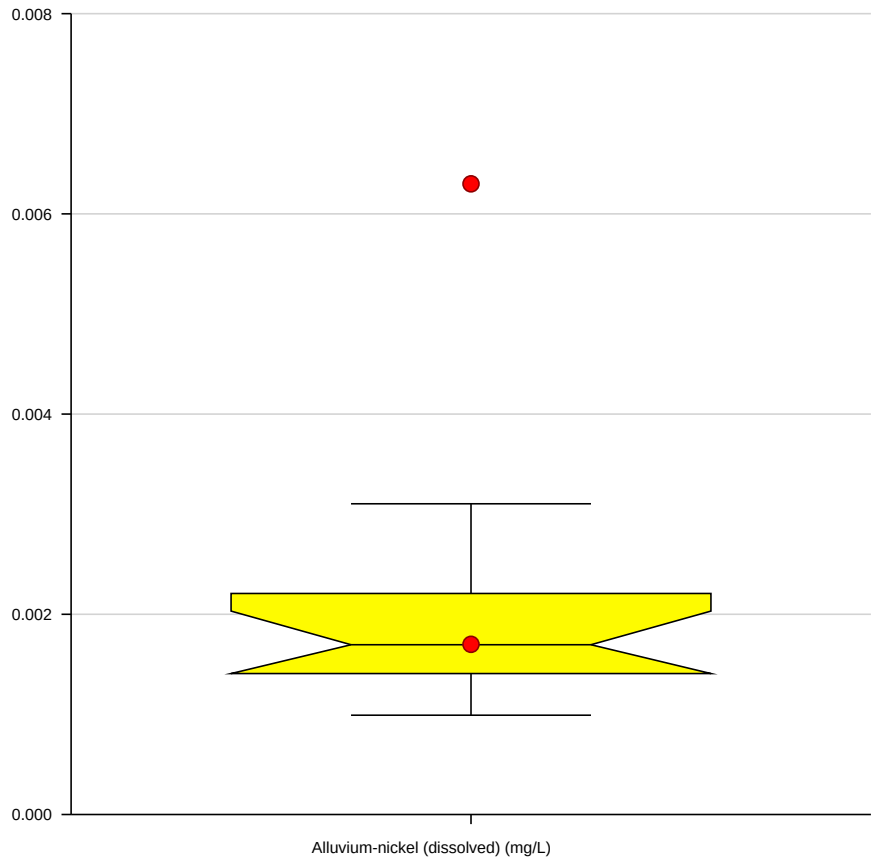
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_132"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_132"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

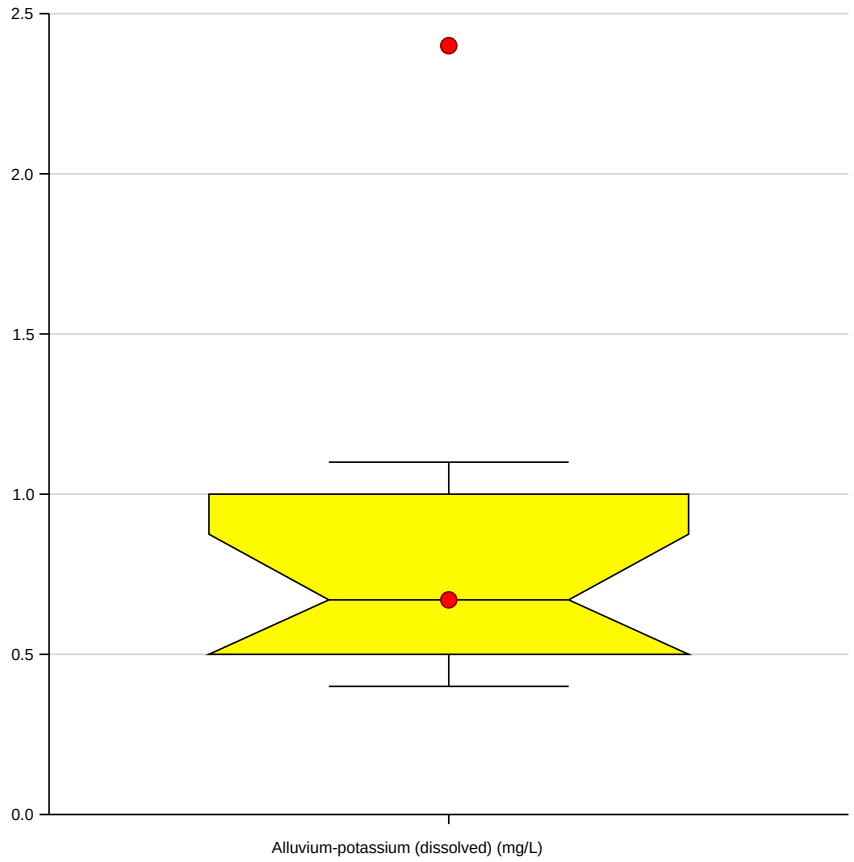
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_136"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_136"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

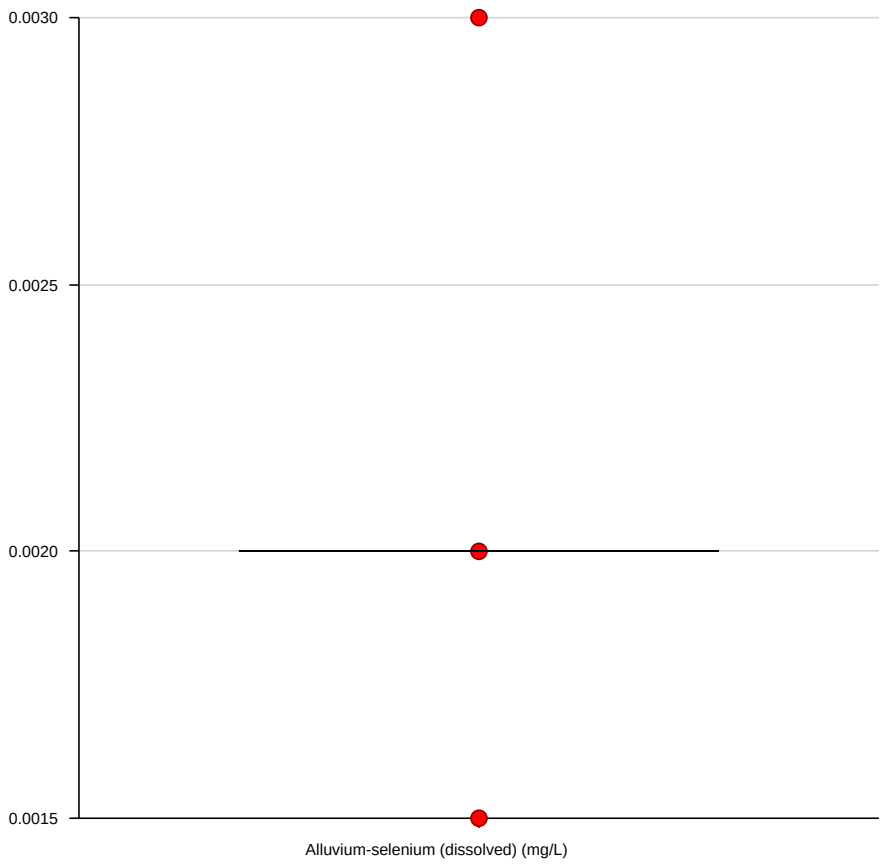
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_138"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_138"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

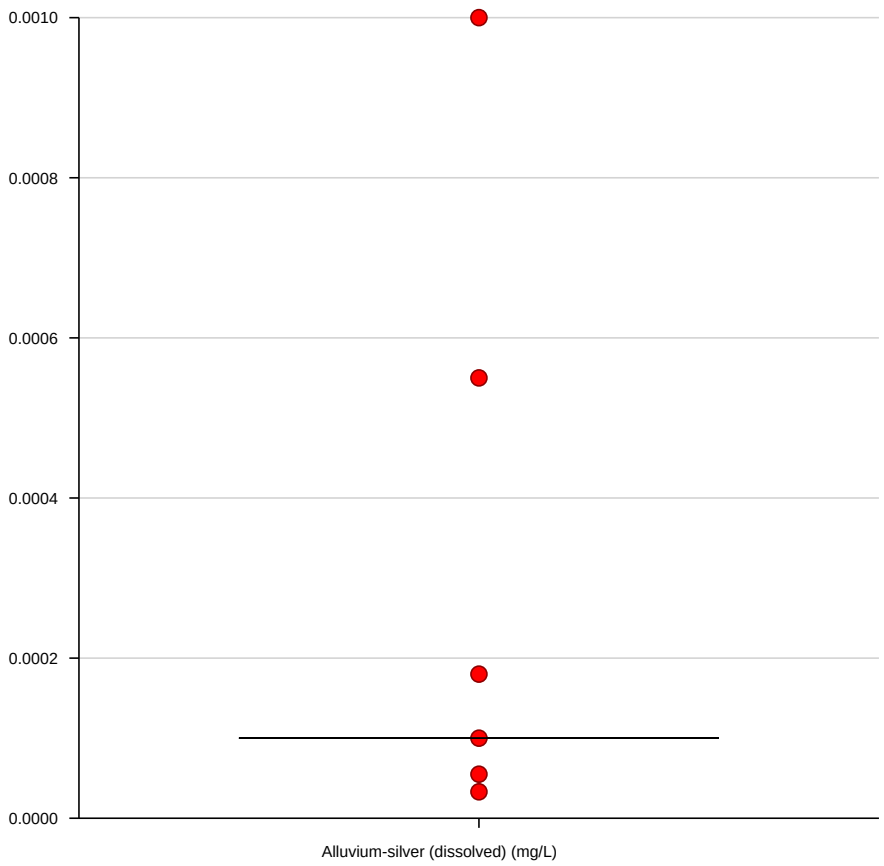
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_140"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_140"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

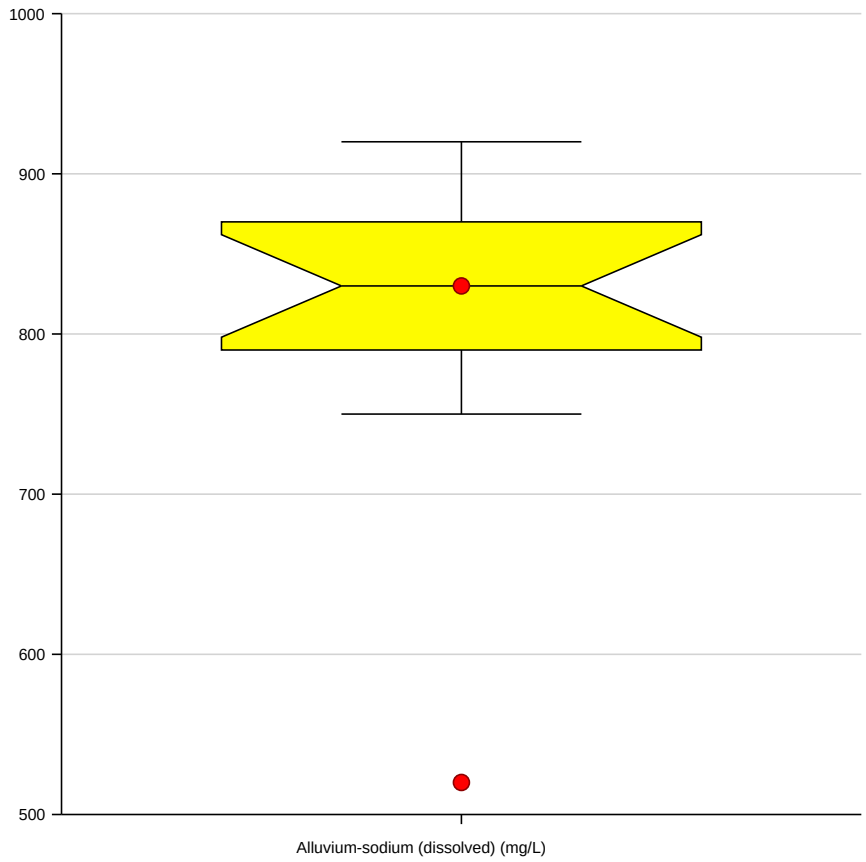
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_142"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_142"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

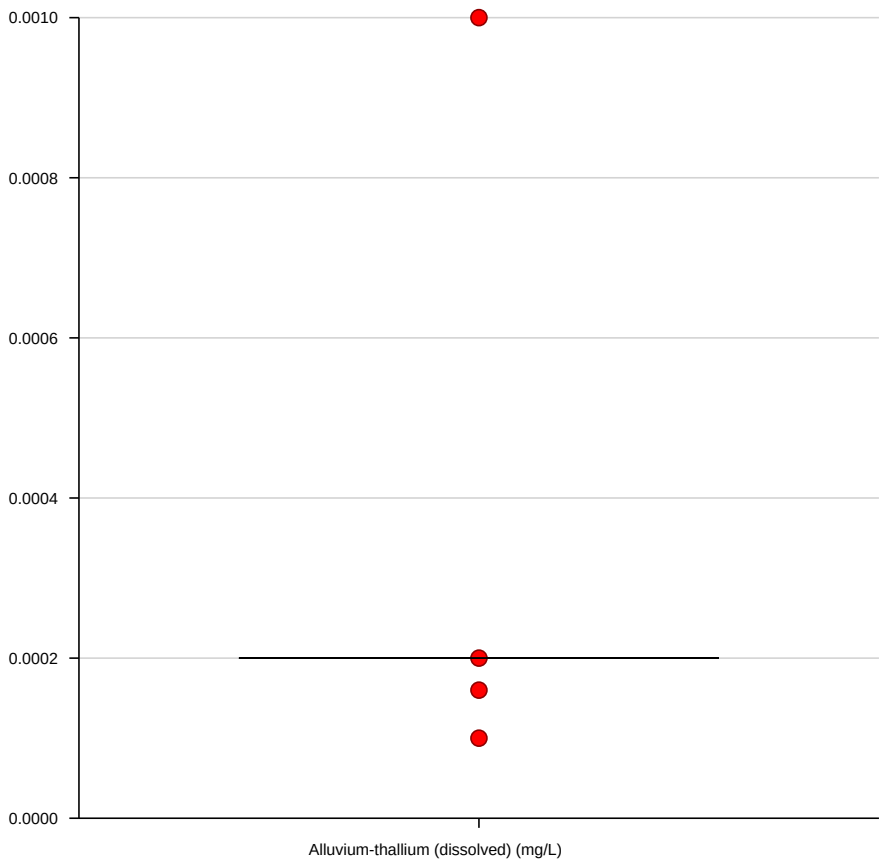
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_144"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_144"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

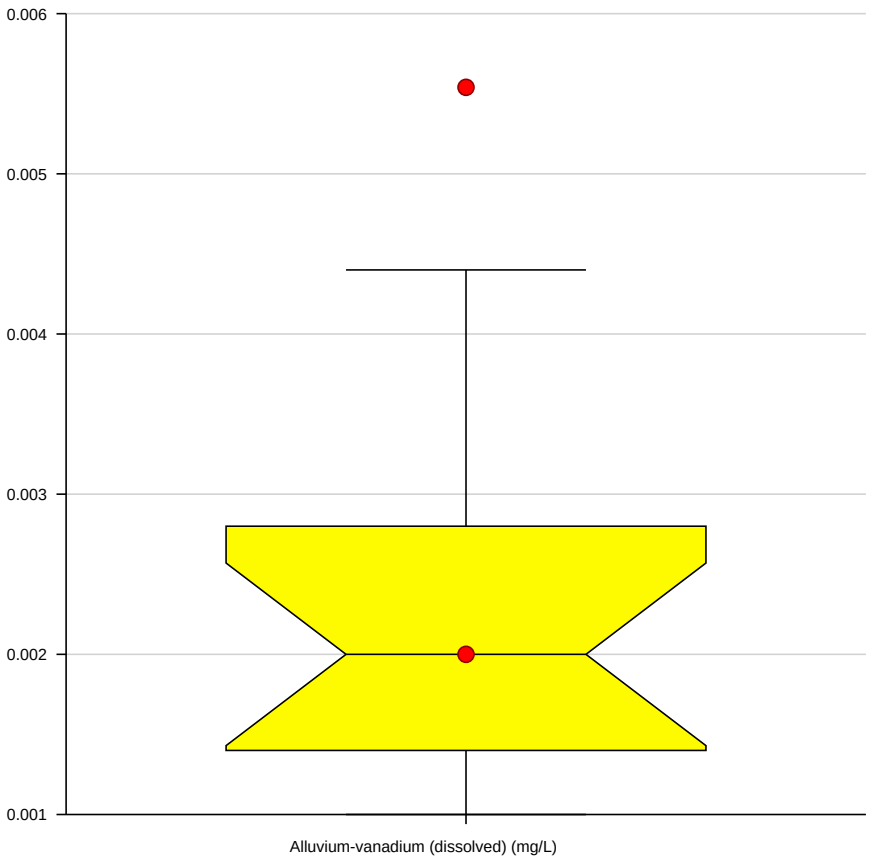
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_146"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_146"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

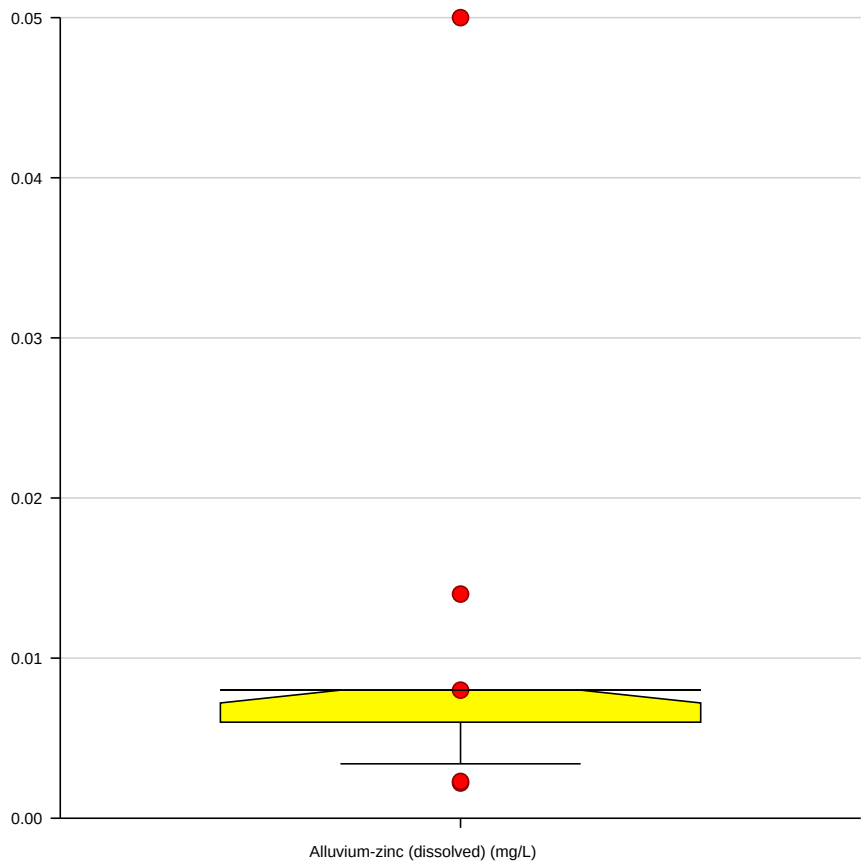
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_148"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_148"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

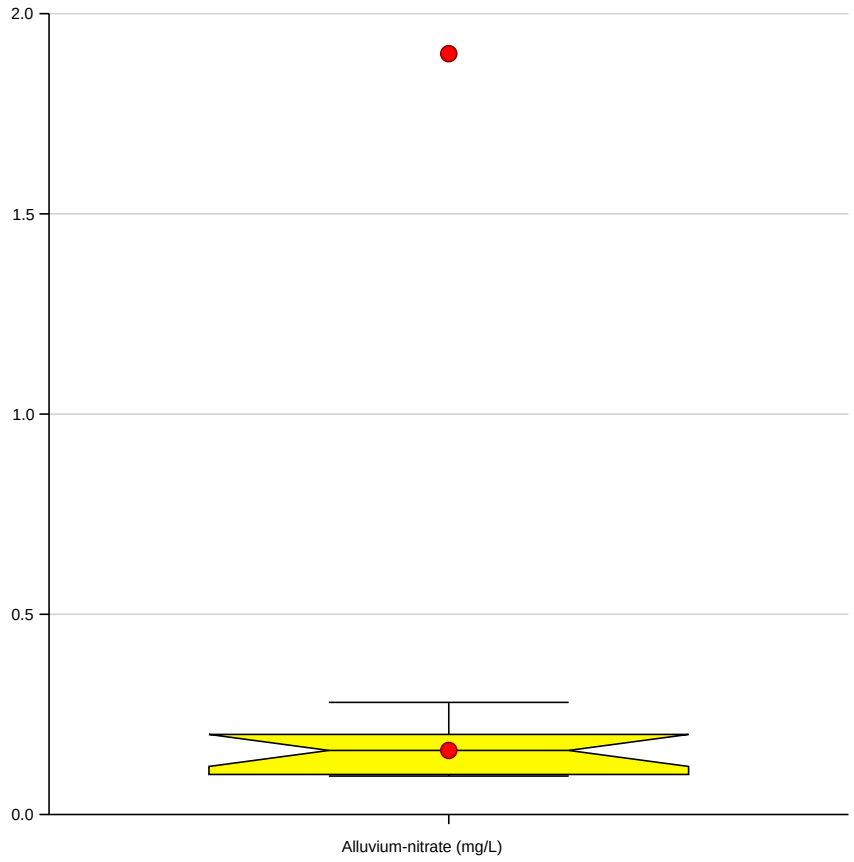
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_2_133"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_2_133"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

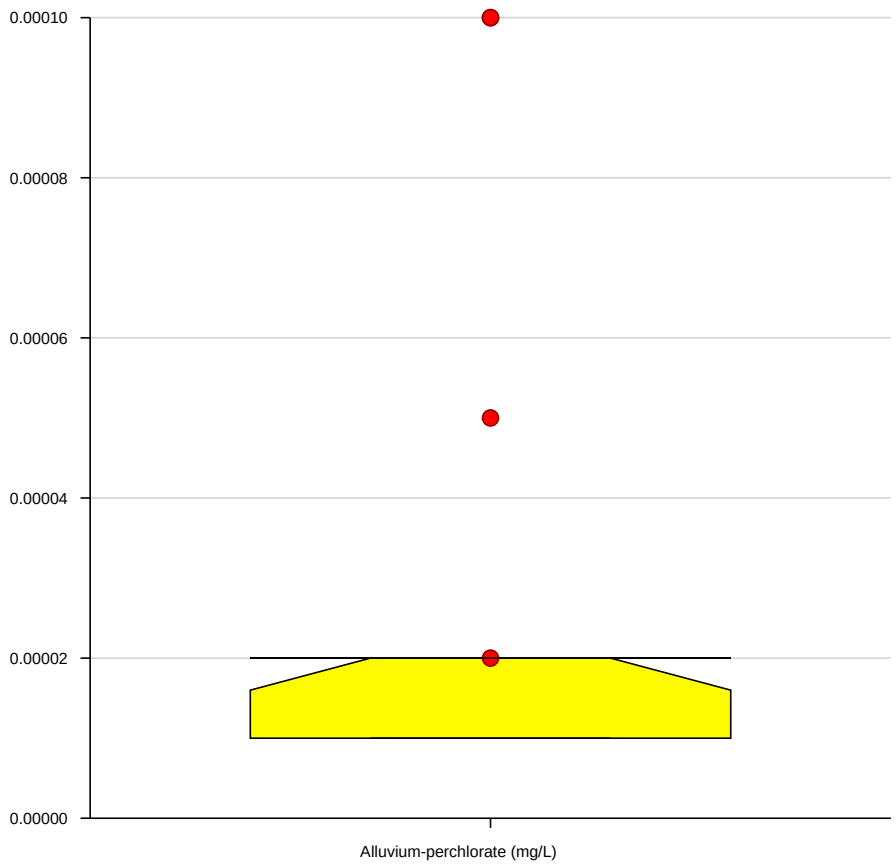
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_3_134"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_3_134"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

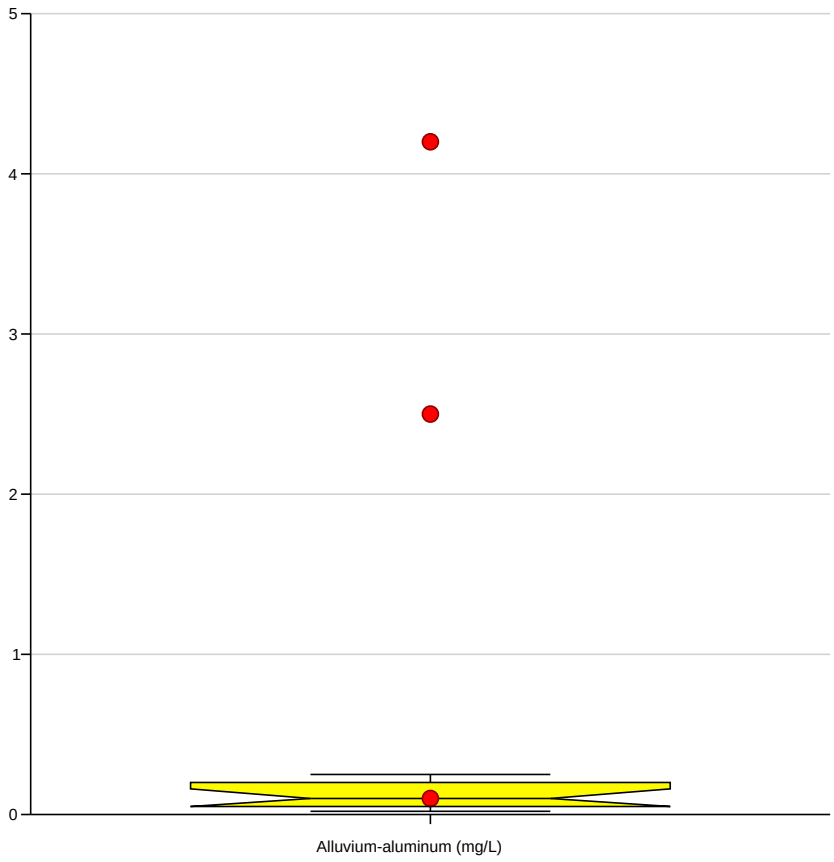
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_101"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_101"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

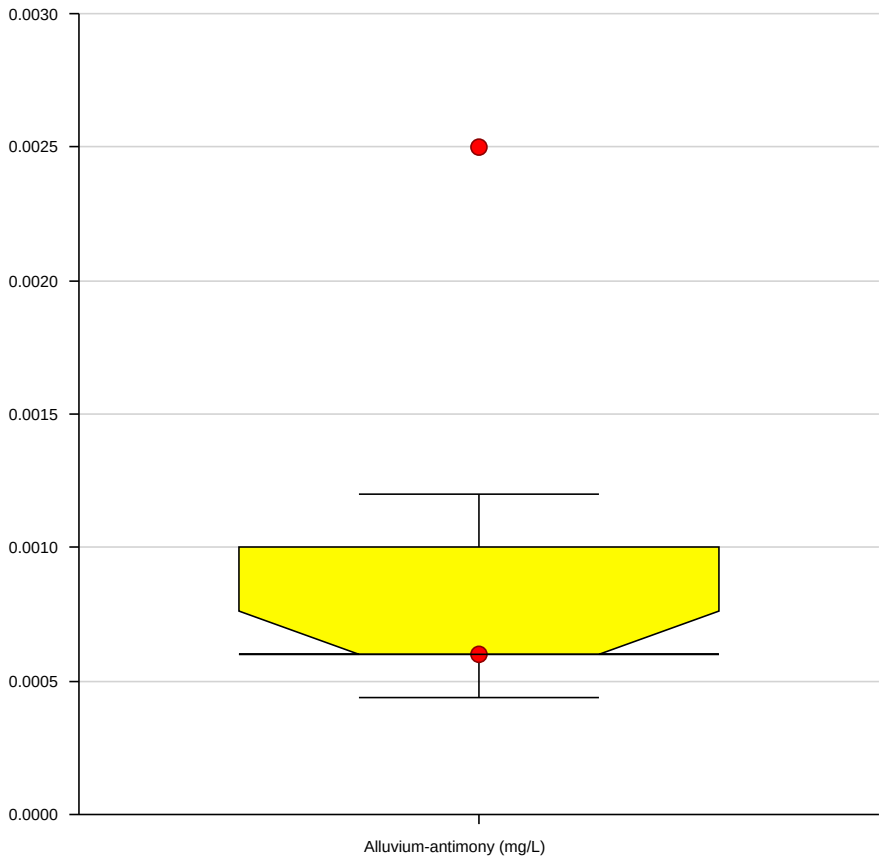
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_103"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_103"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

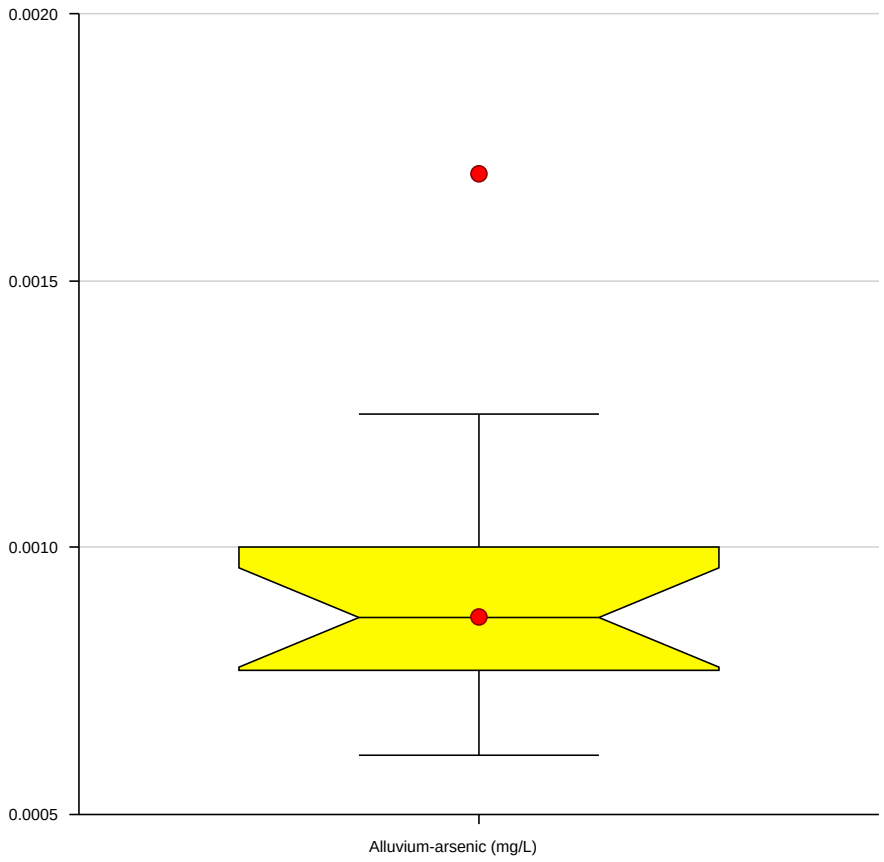
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_105"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_105"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

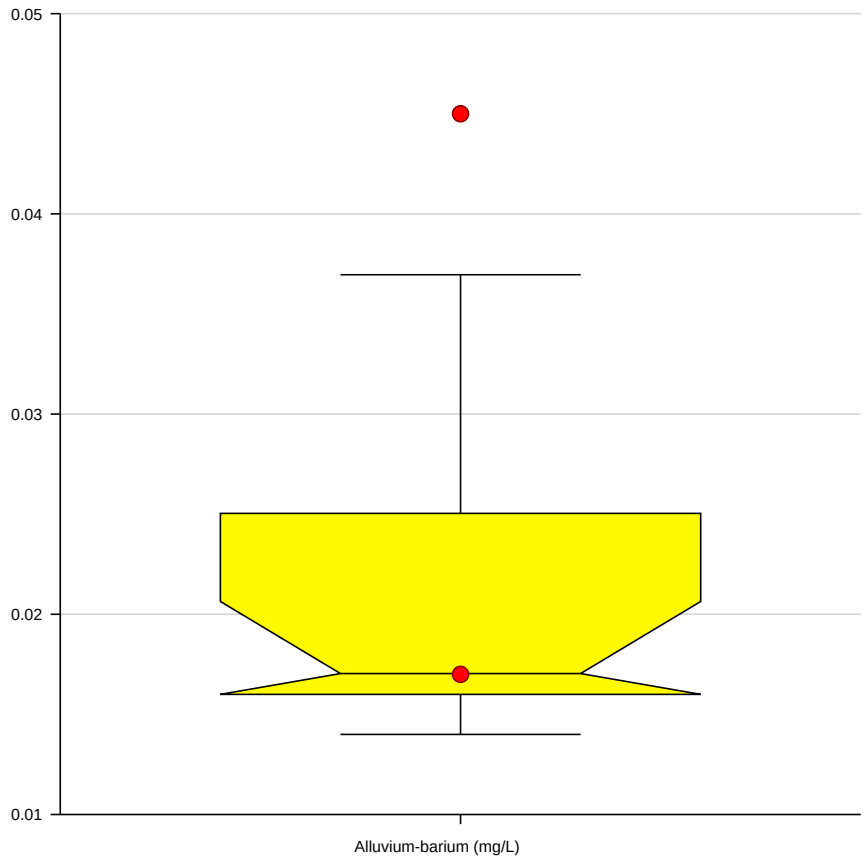
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_107"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_107"

Procedure Input Settings

Variables Tab

-- Variables --
Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

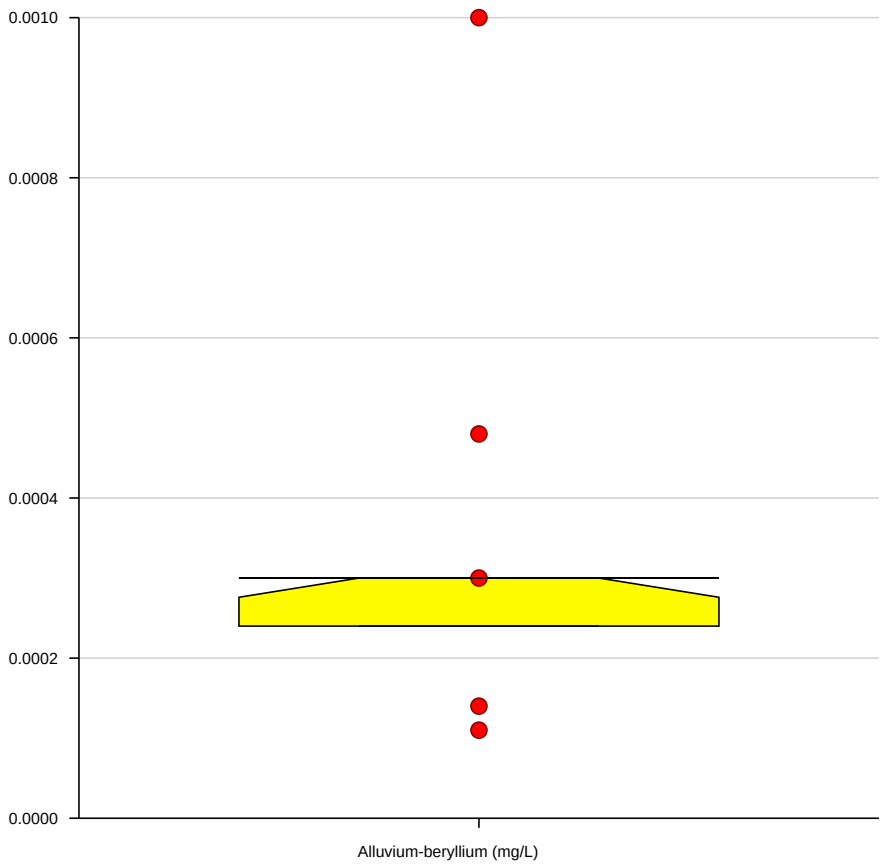
·· Break Variables for Separate Charts ·····
Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

-- Format Options --
Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_109"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_109"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

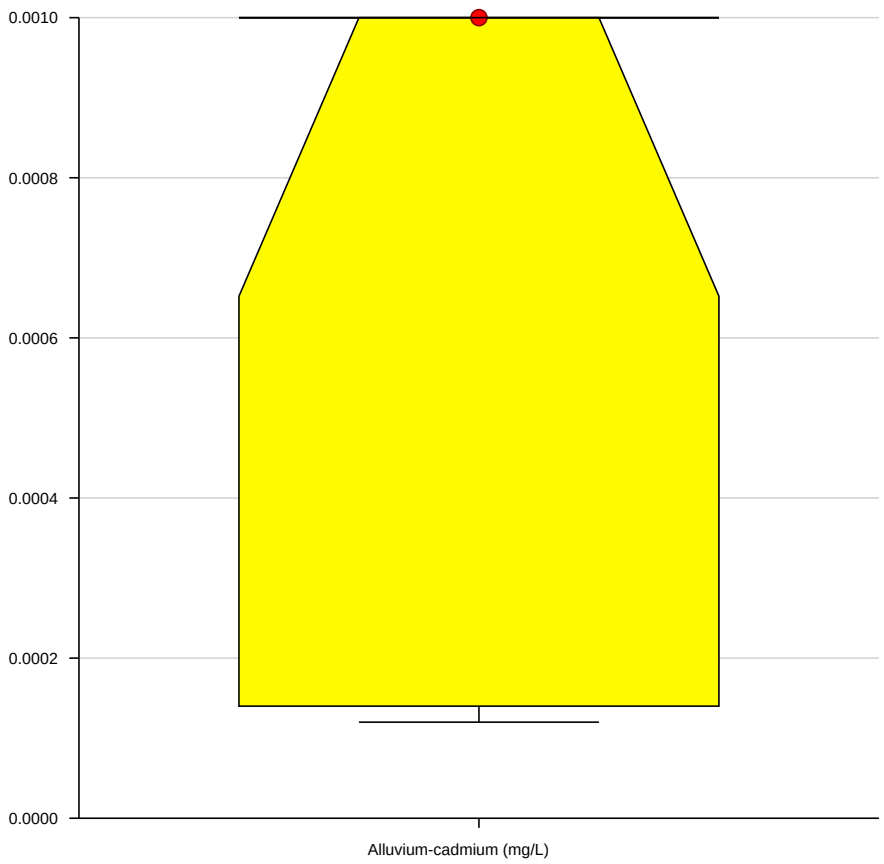
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_111"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_111"

Procedure Input Settings

Variables Tab
-- Variables ----------
Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

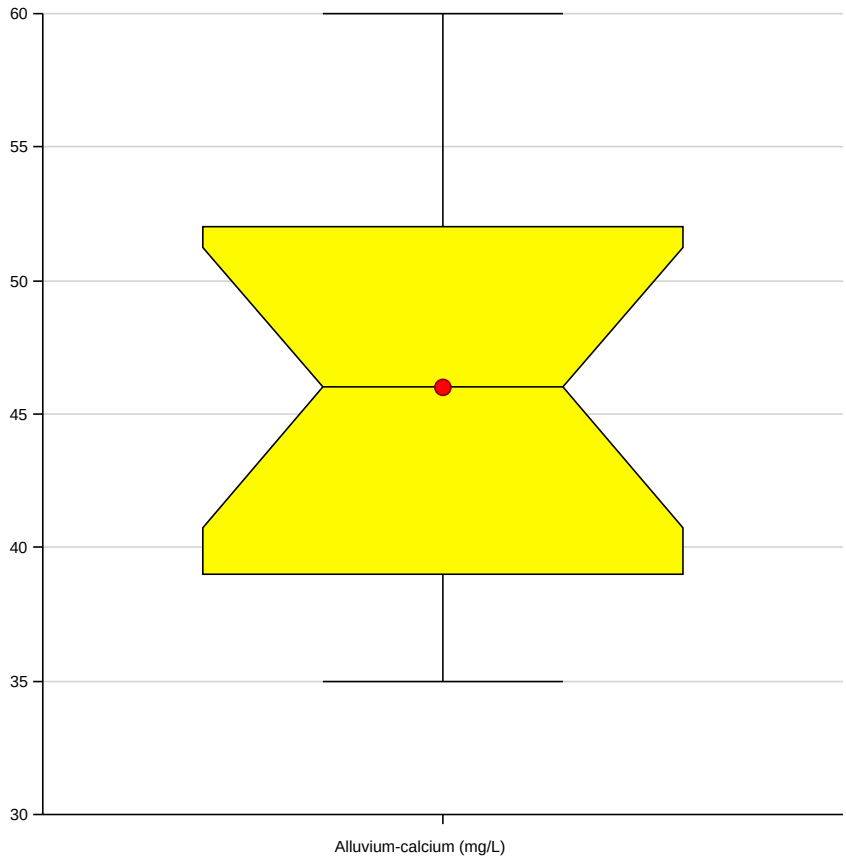
·· Break Variables for Separate Charts ·····
Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

-- Format Options ----------
Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_113"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_113"

Procedure Input Settings

Variables Tab
-- Variables ----------
Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

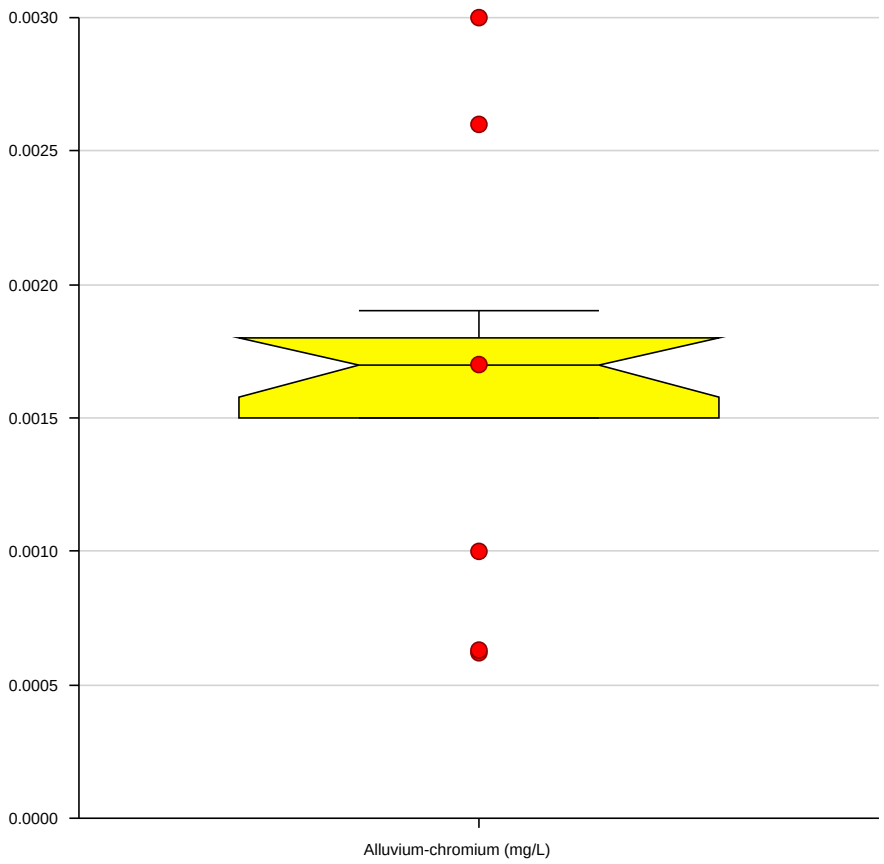
·· Break Variables for Separate Charts ·····
Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

-- Format Options ----------
Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_115"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_115"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

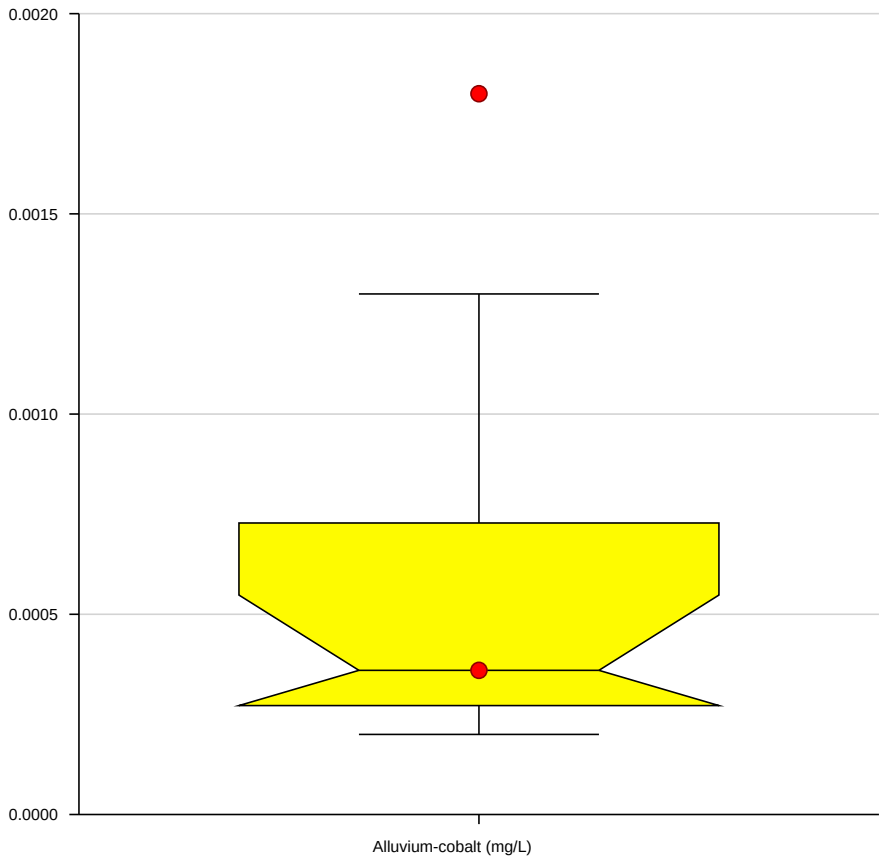
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_117"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_117"

Procedure Input Settings

Variables Tab
-- Variables ----------
Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

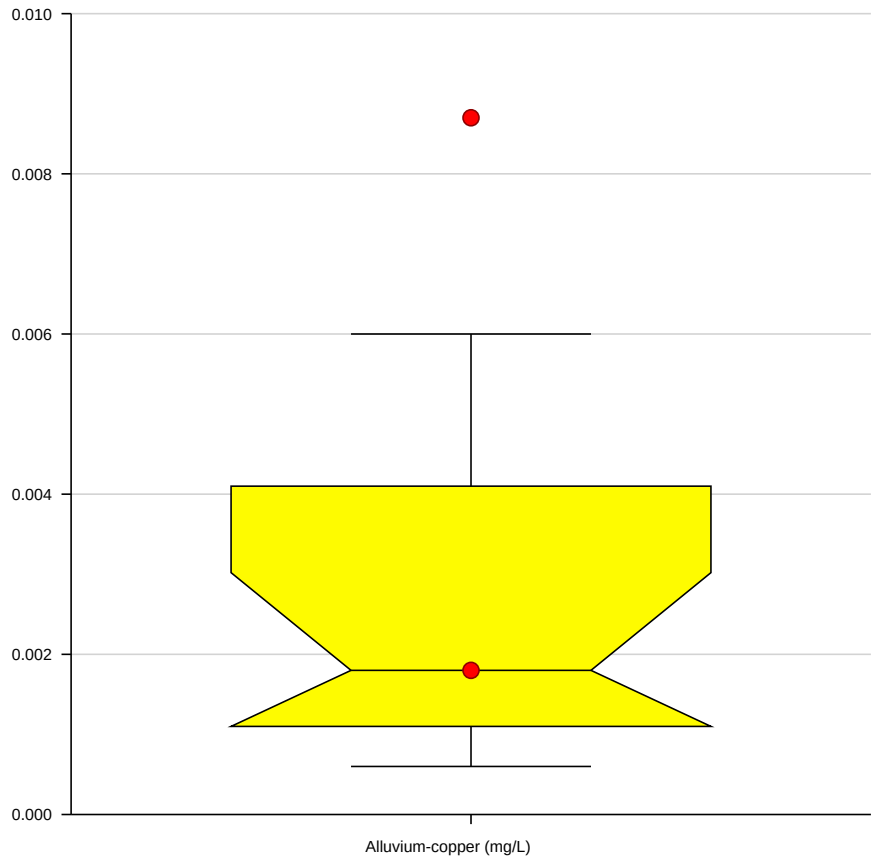
·· Break Variables for Separate Charts ·····
Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

-- Format Options ----------
Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_119"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_119"

Procedure Input Settings ——

Variables Tab
-- Variables ----------
Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

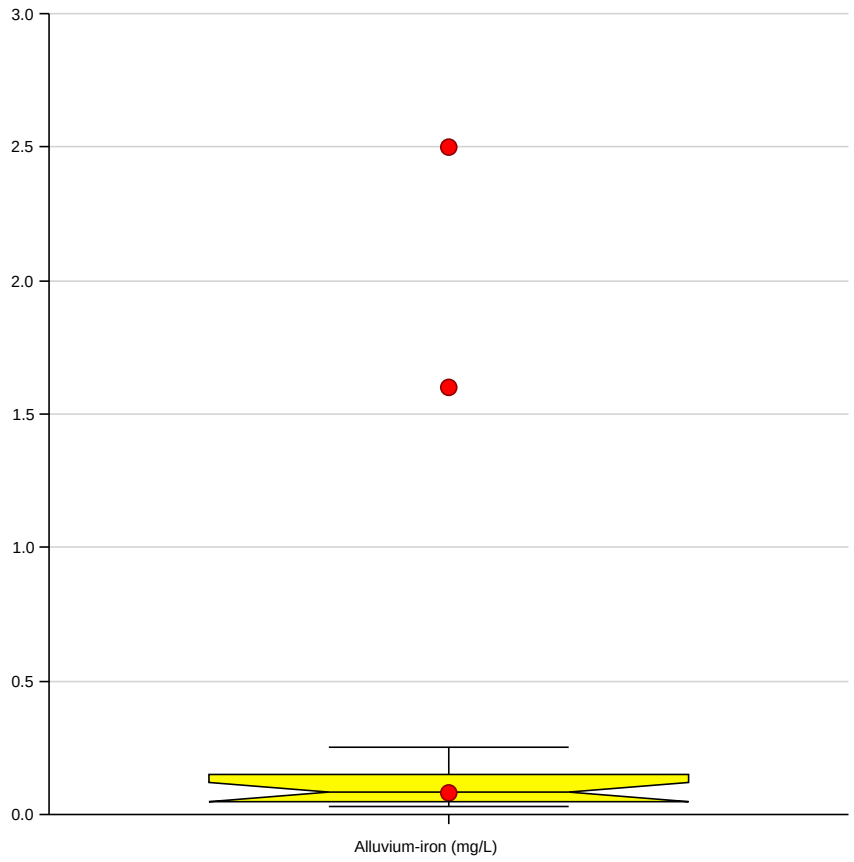
·· Break Variables for Separate Charts ·····
Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

-- Format Options ----------
Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_121"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_121"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

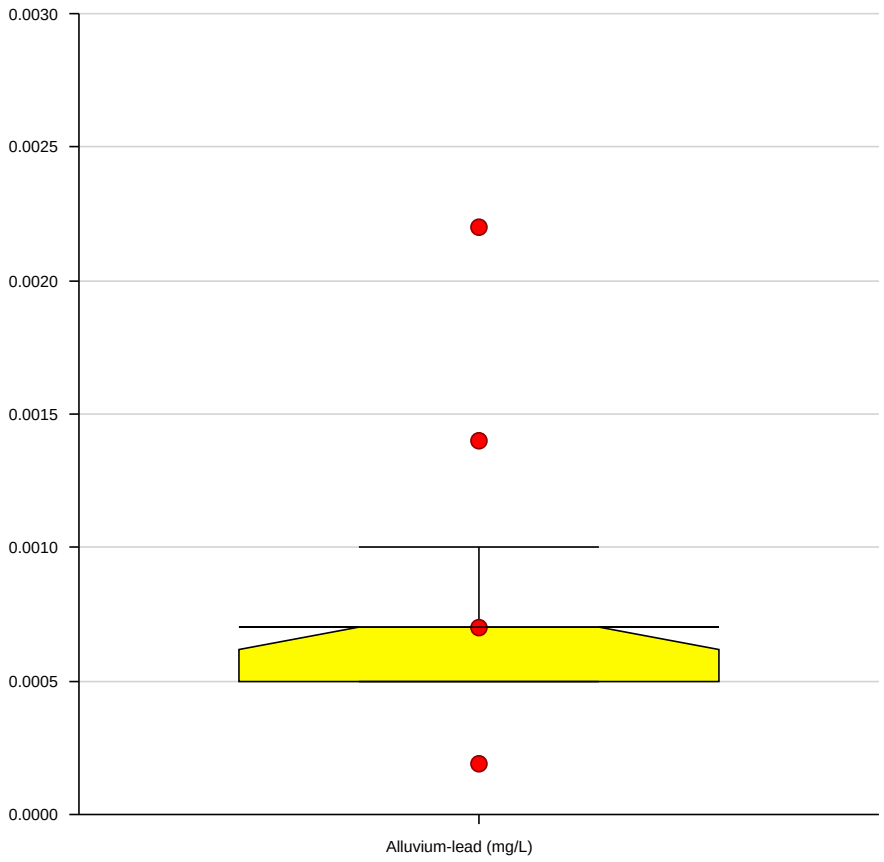
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_123"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_123"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

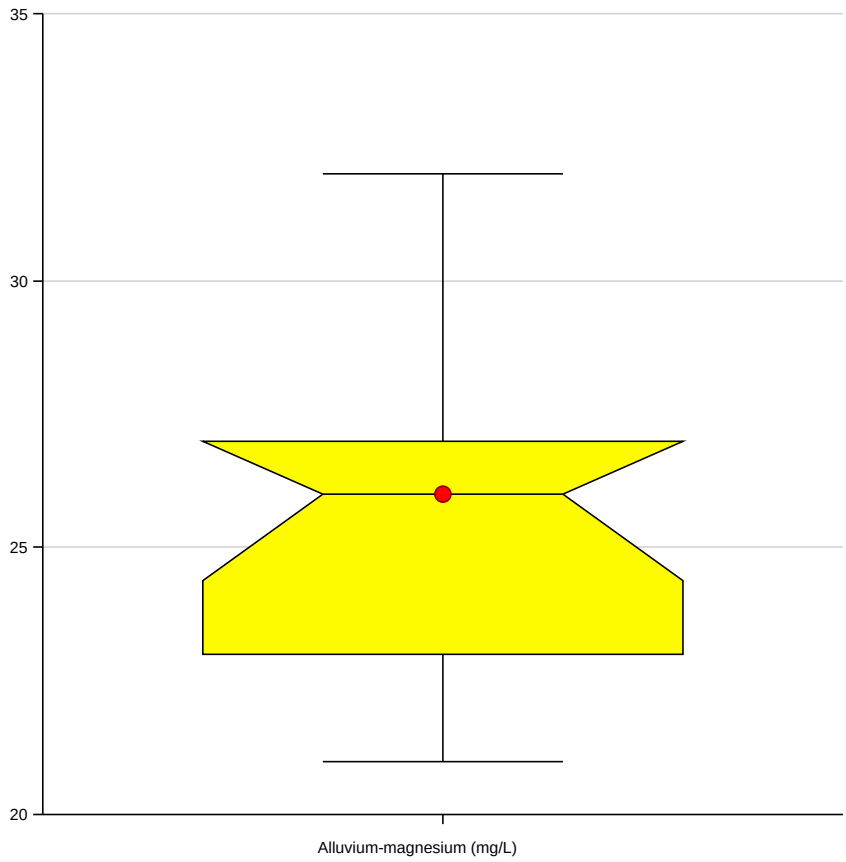
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_125"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_125"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

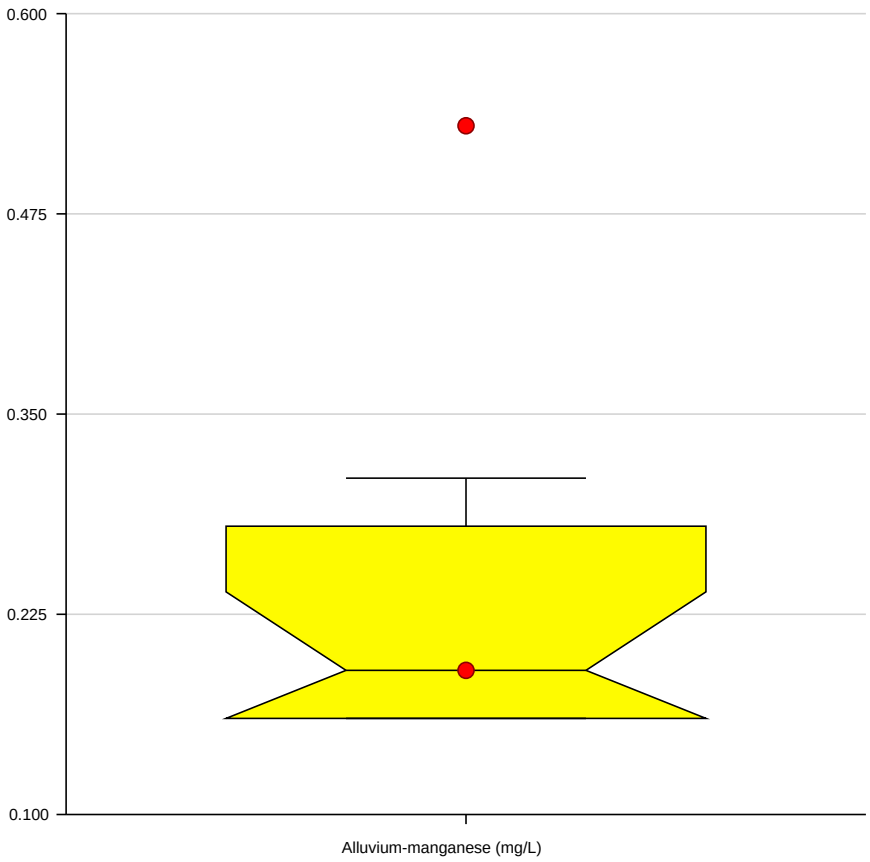
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_127"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_127"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

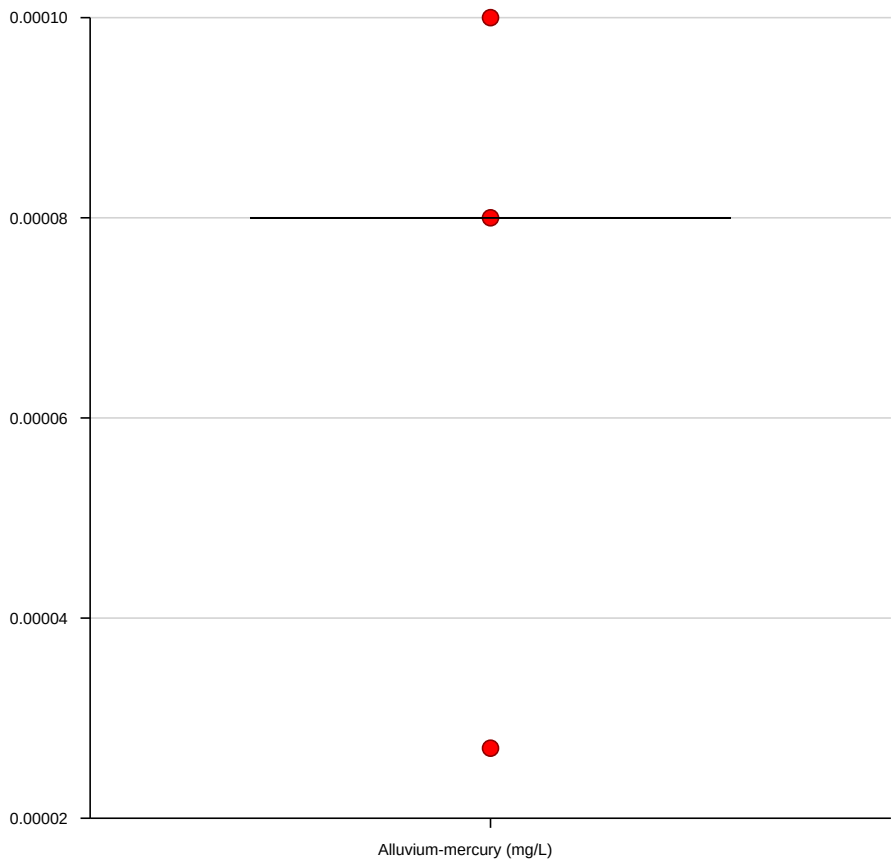
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_129"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_129"

Procedure Input Settings

Variables Tab
-- Variables ----------
Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

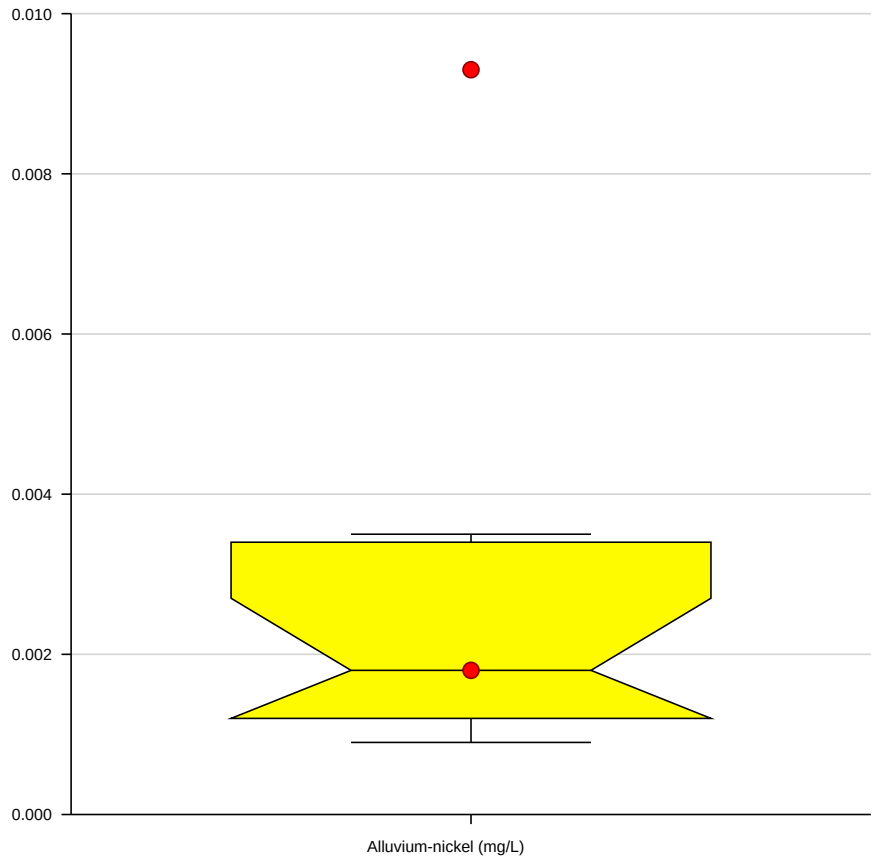
·· Break Variables for Separate Charts ·····
Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

-- Format Options ----------
Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_131"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_131"

Procedure Input Settings

Variables Tab
-- Variables ----------
Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

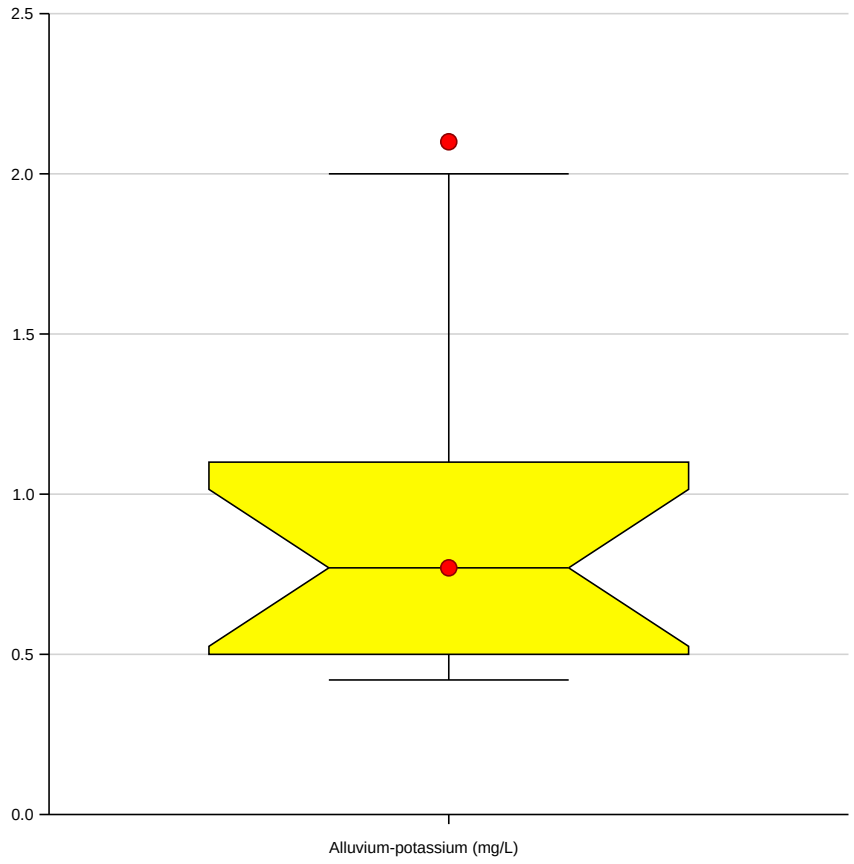
·· Break Variables for Separate Charts ……
Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

-- Format Options ----------
Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_135"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_135"

Procedure Input Settings

Variables Tab
-- Variables ----------
Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

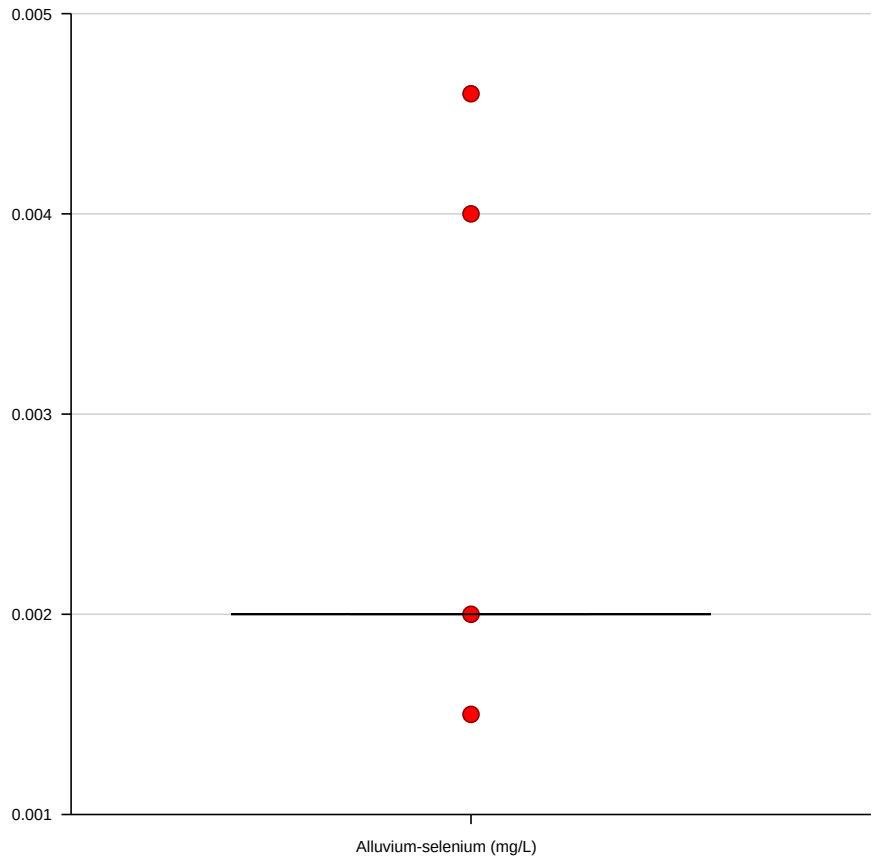
·· Break Variables for Separate Charts ……
Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

-- Format Options ----------
Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_137"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_137"

Procedure Input Settings

Variables Tab

-- Variables --
Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

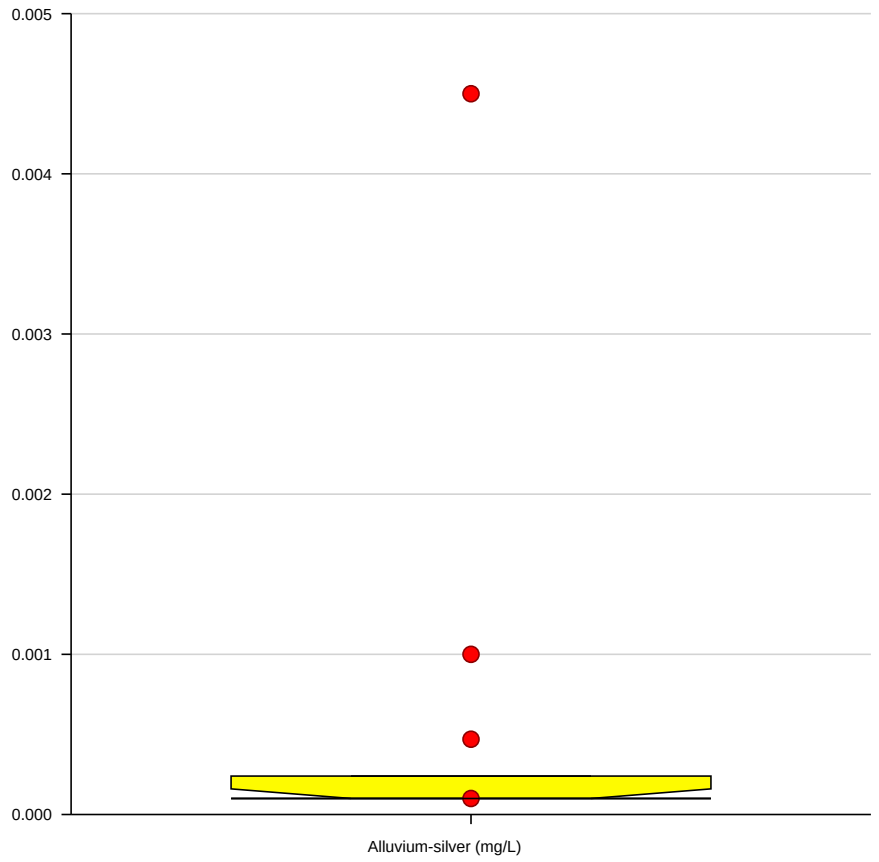
·· Break Variables for Separate Charts ·····
Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

-- Format Options --
Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_139"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_139"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

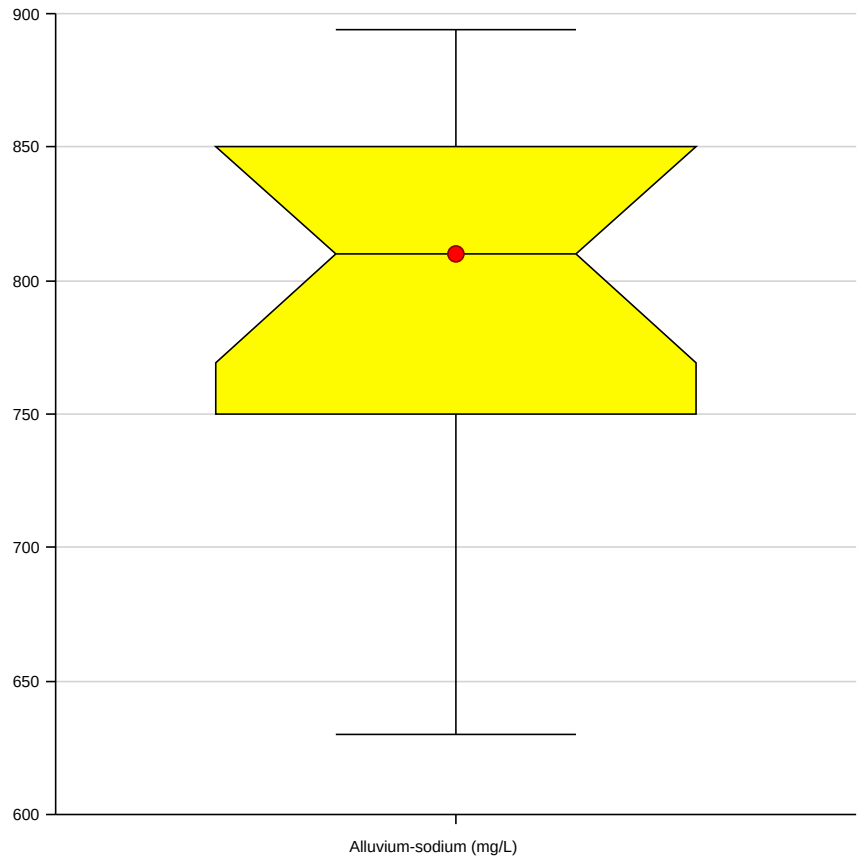
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_141"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_141"

Procedure Input Settings

Variables Tab
-- Variables ----------
Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

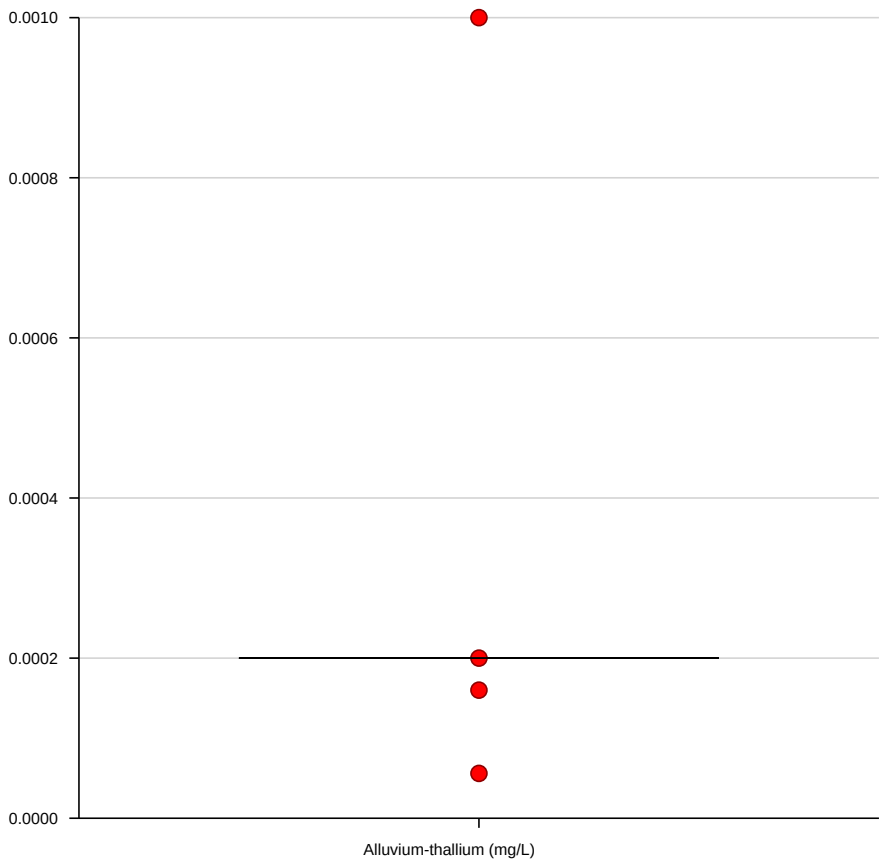
·· Break Variables for Separate Charts ·····
Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

-- Format Options ----------
Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_143"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_143"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

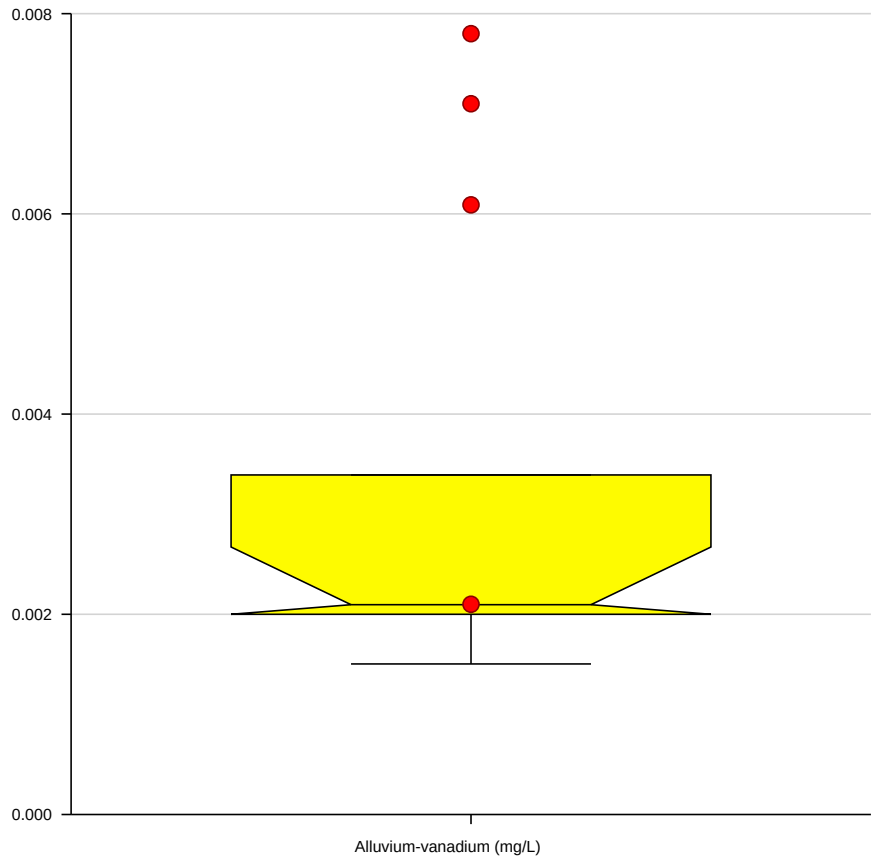
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_145"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_145"

Procedure Input Settings

Variables Tab

-- Variables --
Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

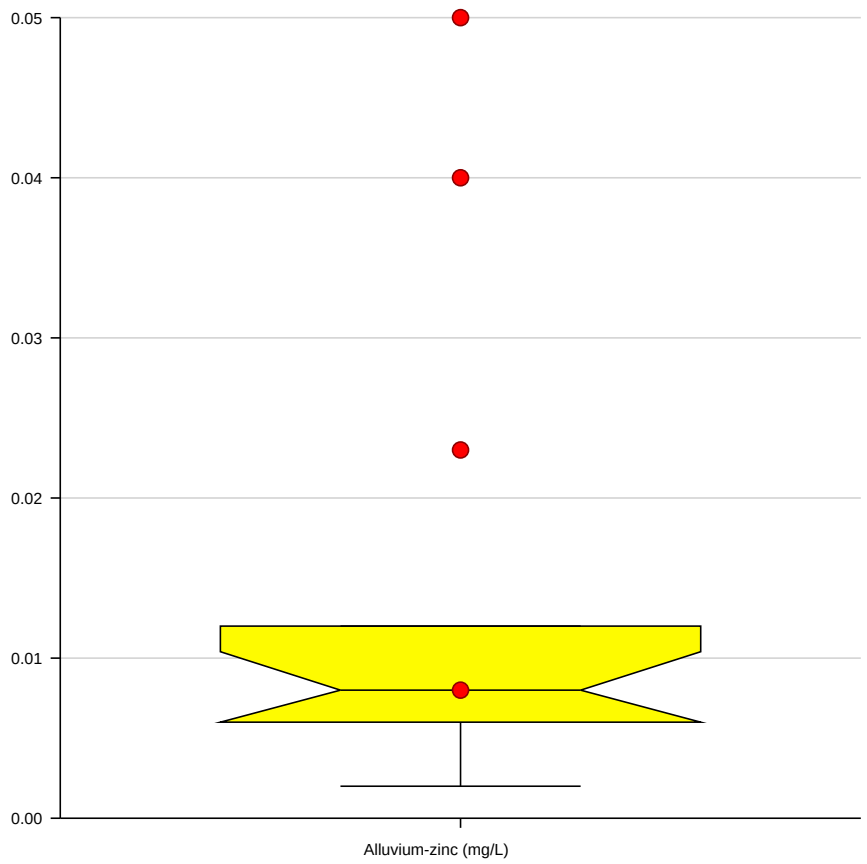
·· Break Variables for Separate Charts ·····
Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

-- Format Options --
Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_147"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_147"

Procedure Input Settings

Variables Tab
-- Variables ----------
Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

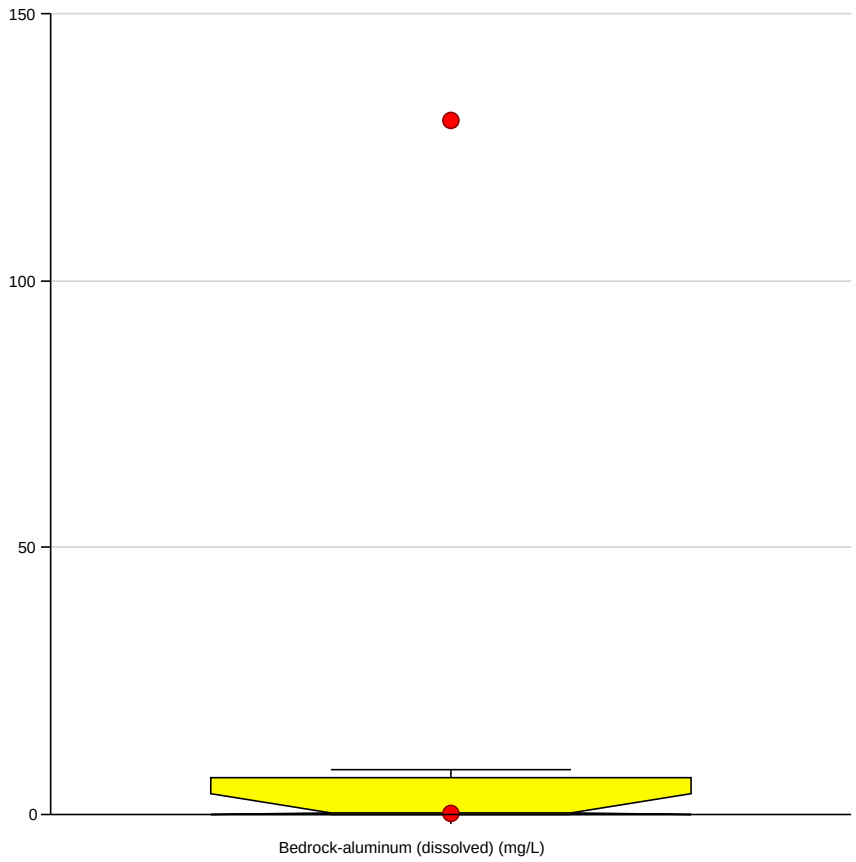
·· Break Variables for Separate Charts ……
Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

-- Format Options ----------
Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_102"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_102"

Procedure Input Settings

Variables Tab
-- Variables ----------
Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

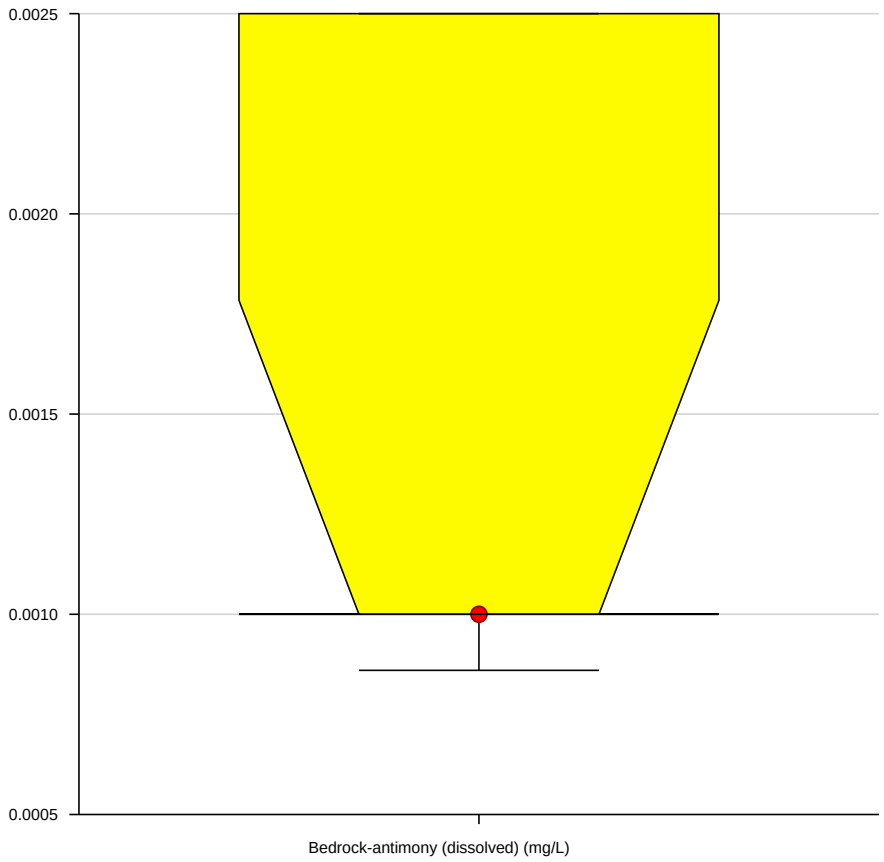
·· Break Variables for Separate Charts ……
Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

-- Format Options ----------
Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_104"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_104"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

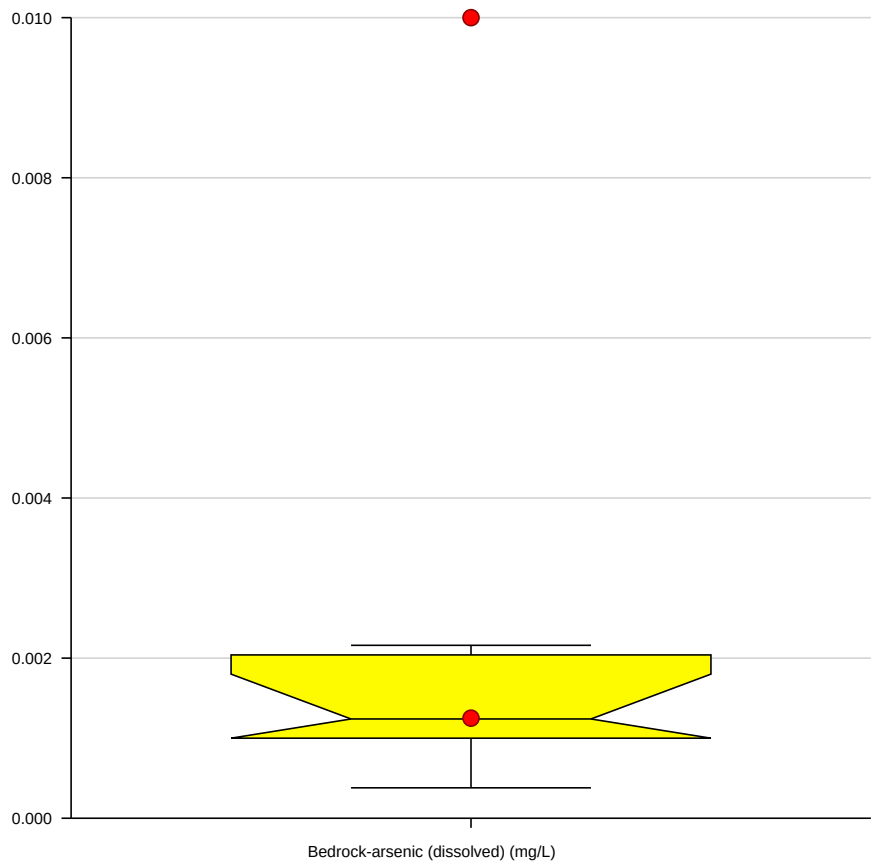
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_106"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_106"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

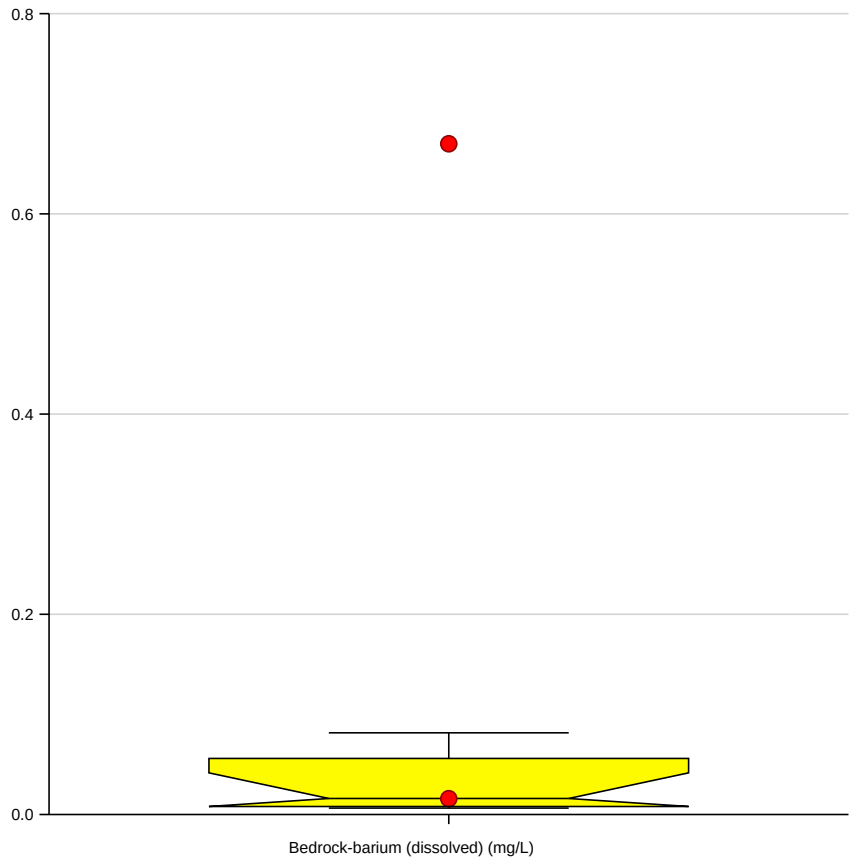
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_108"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_108"

Procedure Input Settings ——

Variables Tab
-- Variables ----------
Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

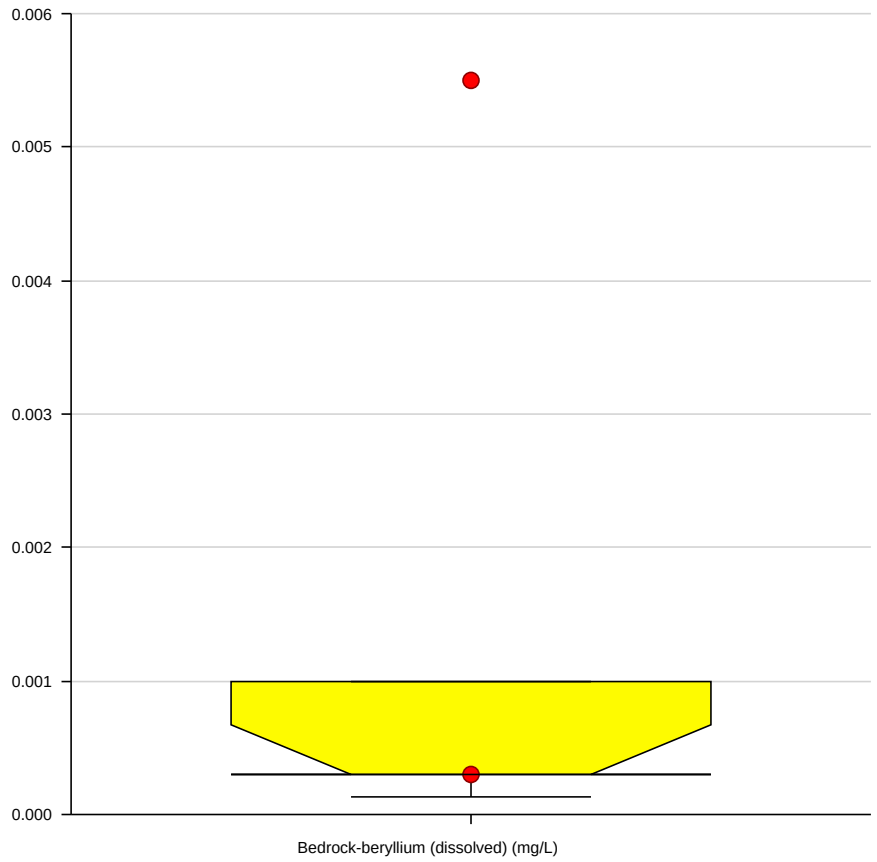
·· Break Variables for Separate Charts ……
Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

-- Format Options ----------
Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_110"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_110"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

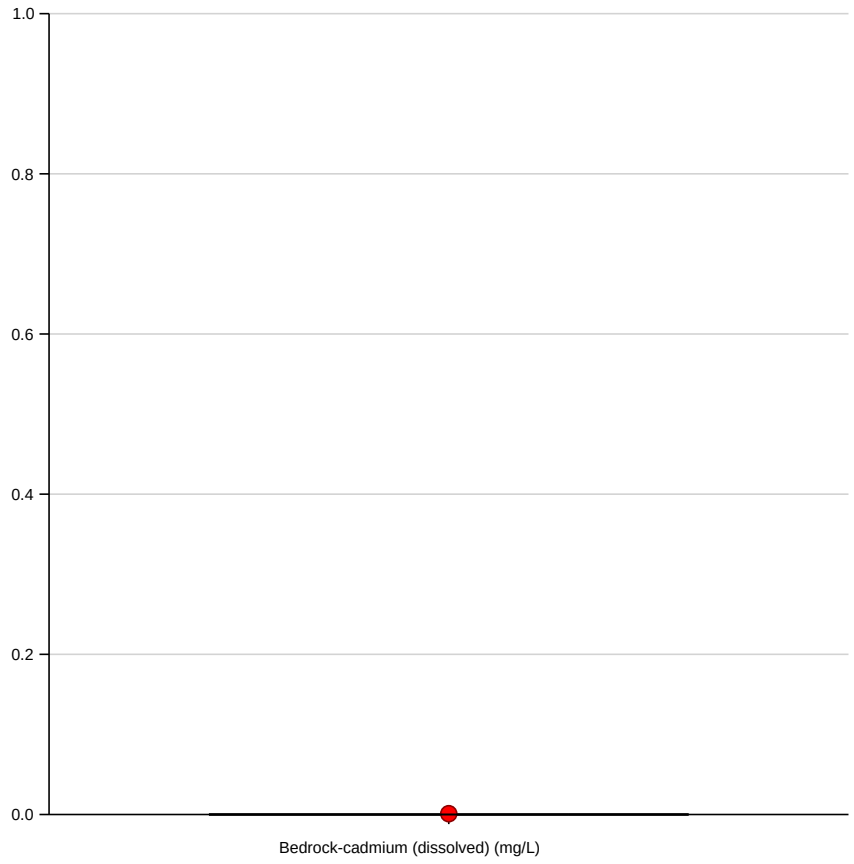
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_112"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_112"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

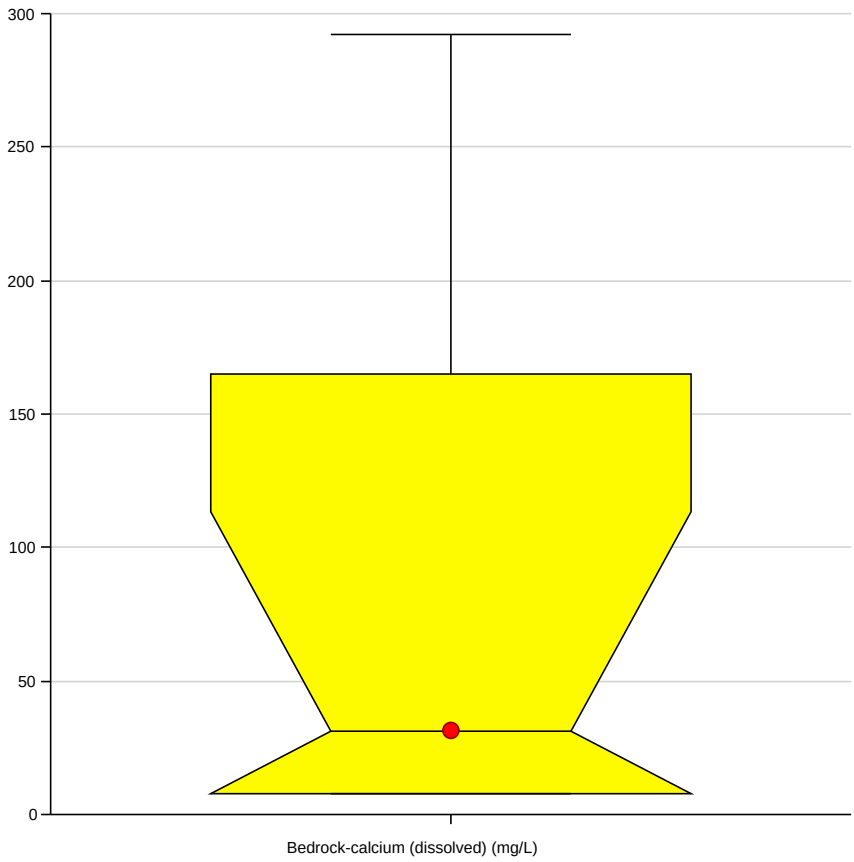
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_114"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_114"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

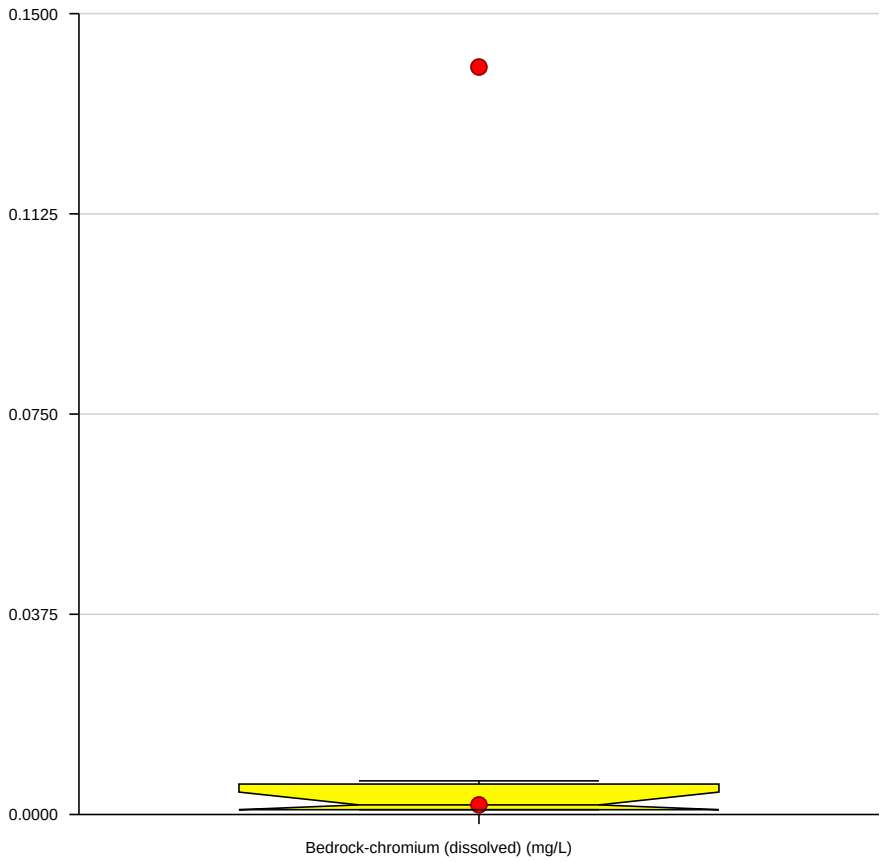
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_116"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_116"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

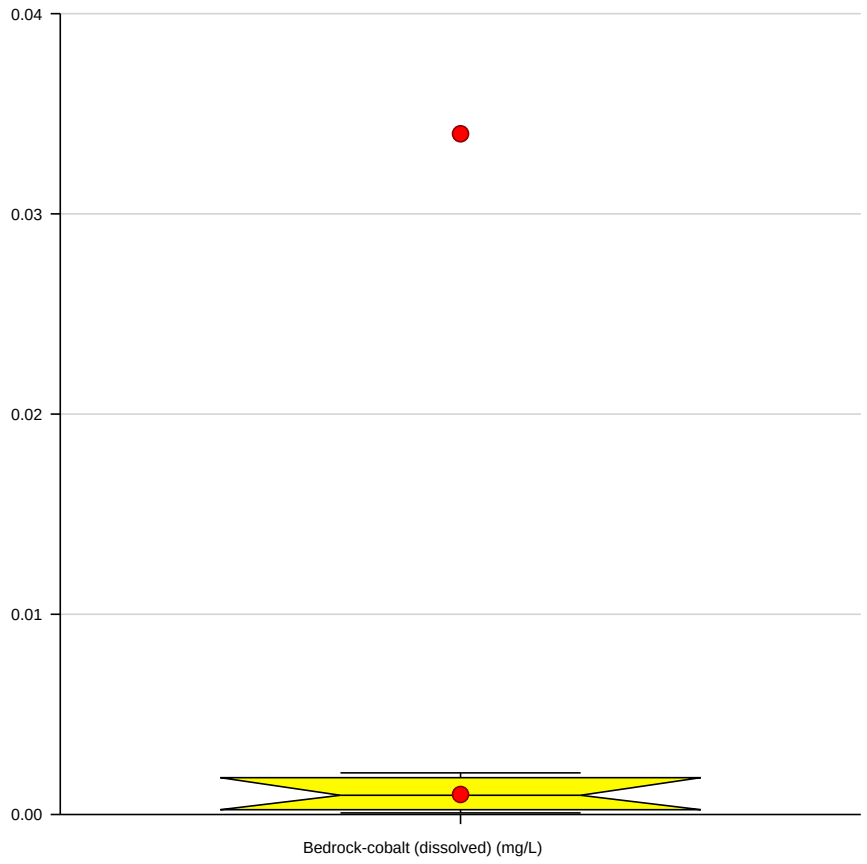
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_118"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_118"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

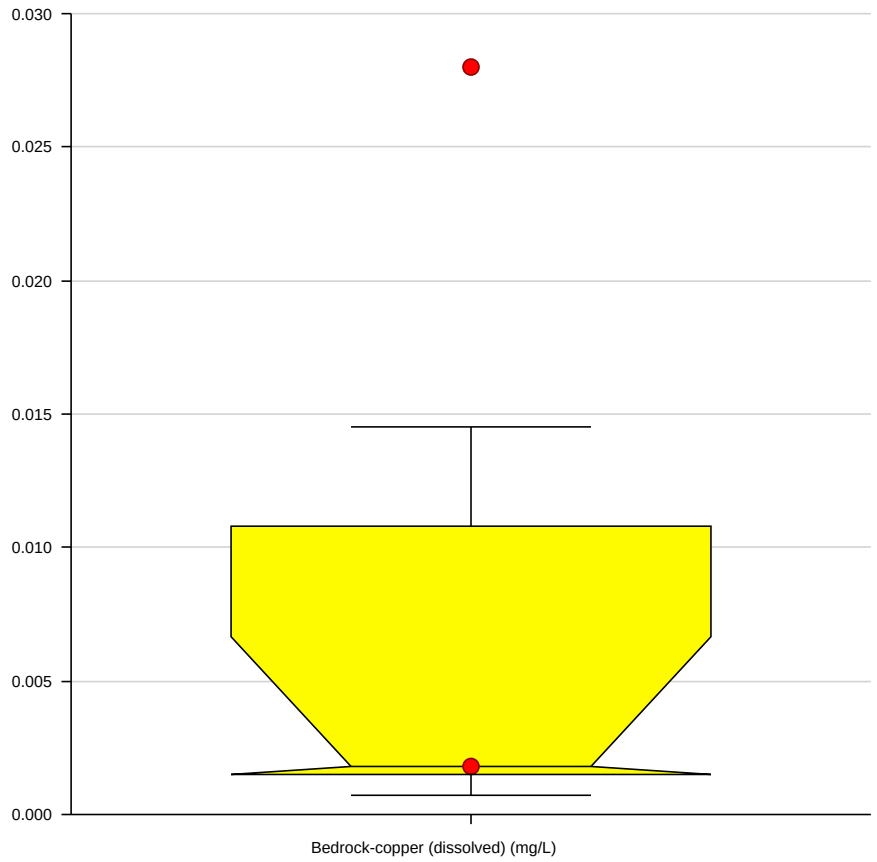
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_120"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_120"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

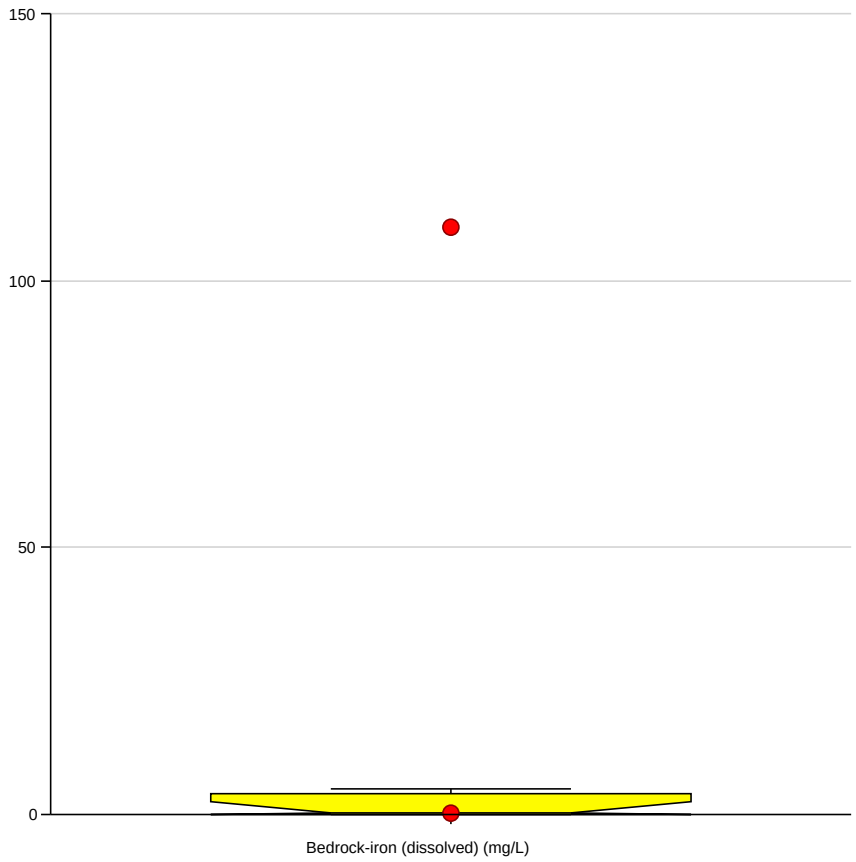
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_122"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_122"

Procedure Input Settings

Variables Tab
-- Variables ----------
Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

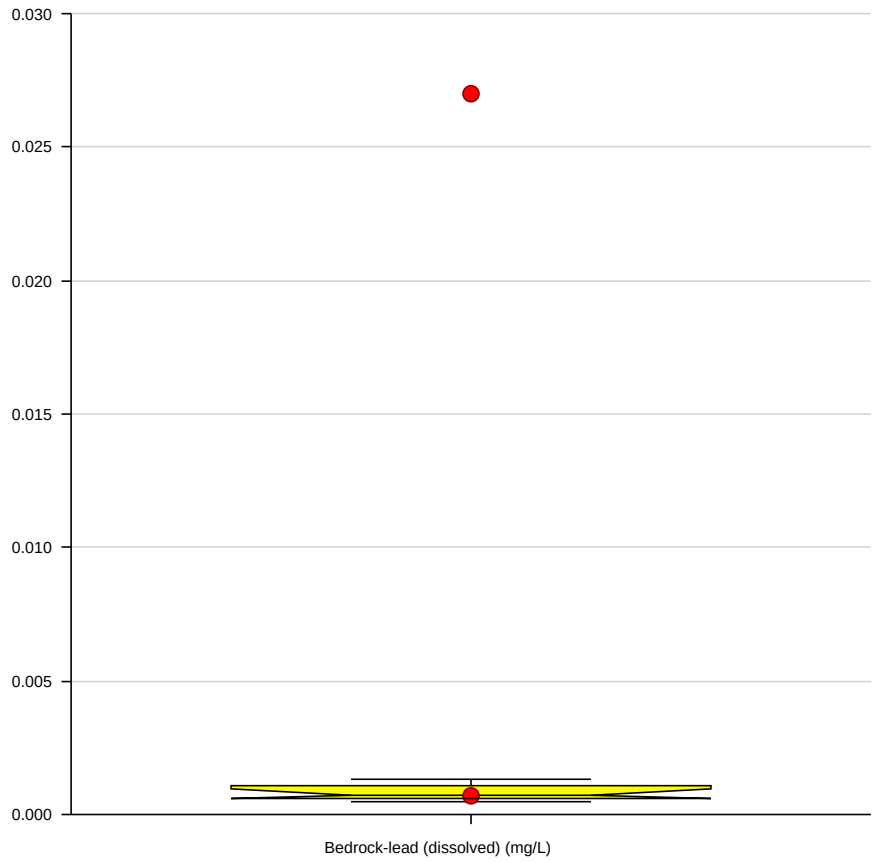
·· Break Variables for Separate Charts ·····
Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

-- Format Options ----------
Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_124"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_124"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

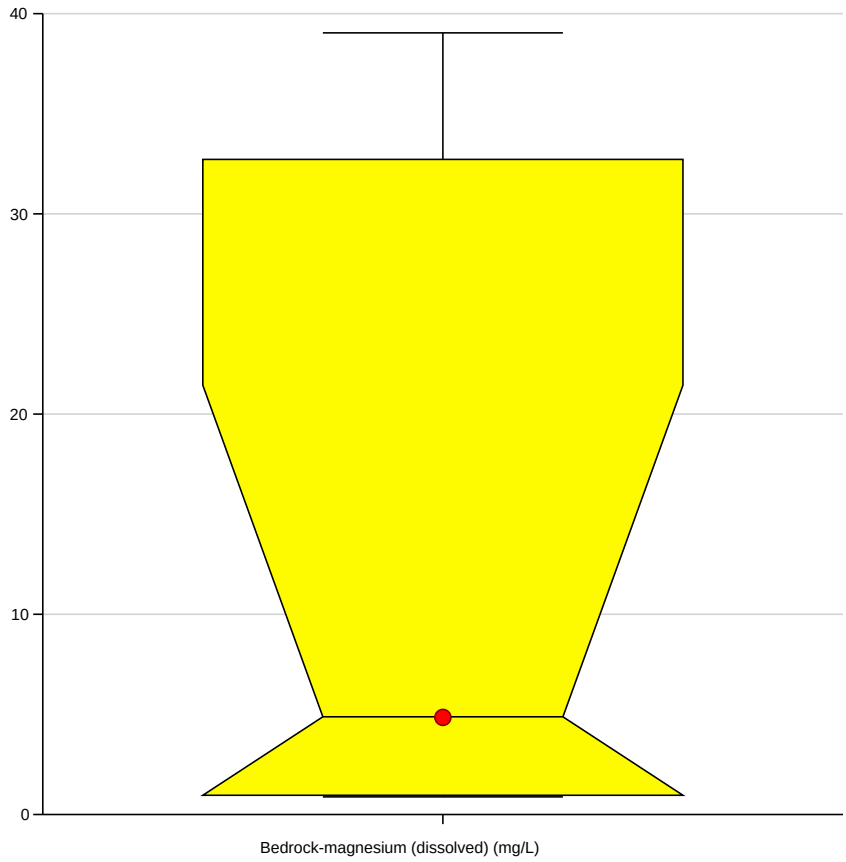
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_126"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_126"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

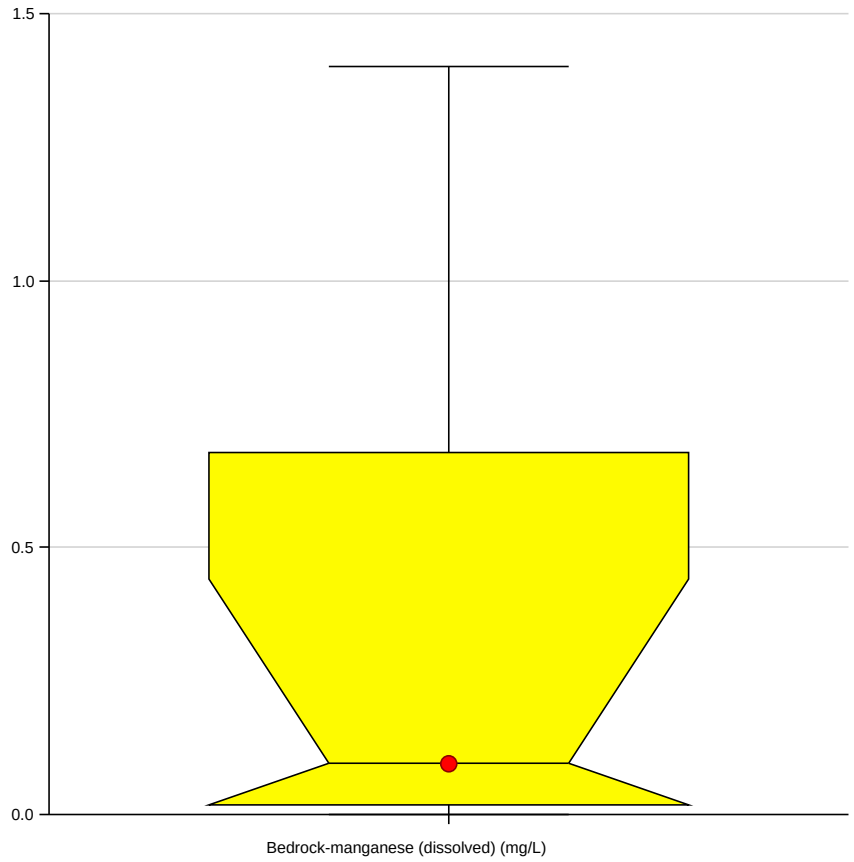
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_128"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_128"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

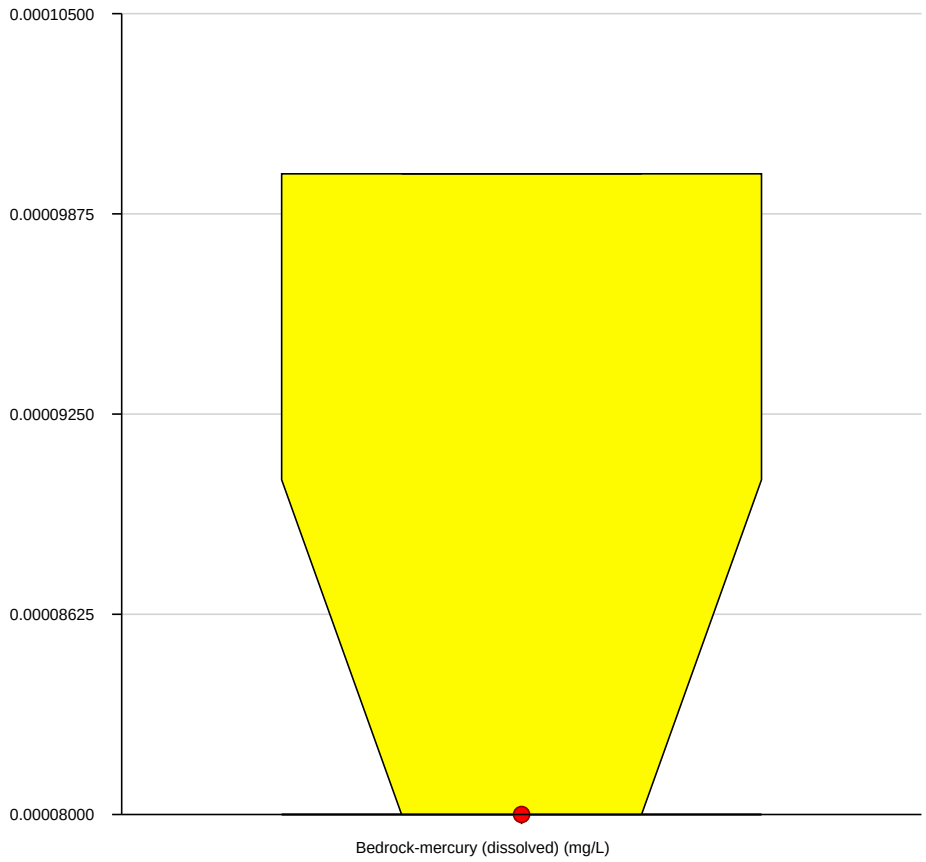
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_130"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_130"

Procedure Input Settings

Variables Tab
-- Variables ----------
Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

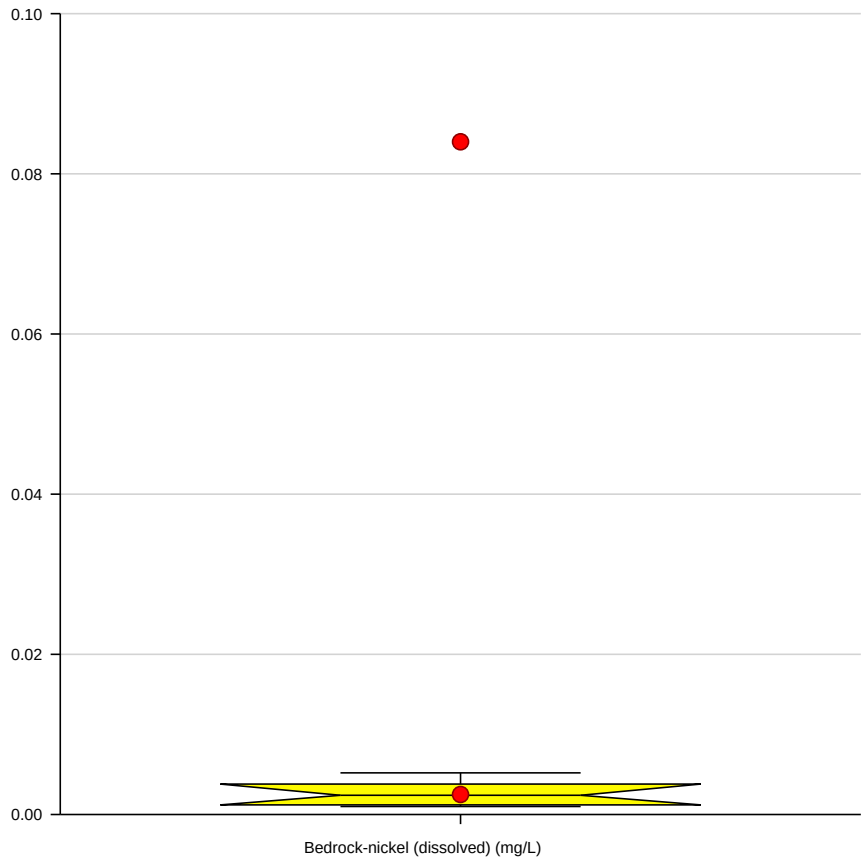
·· Break Variables for Separate Charts ·····
Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

-- Format Options ----------
Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_132"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_132"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

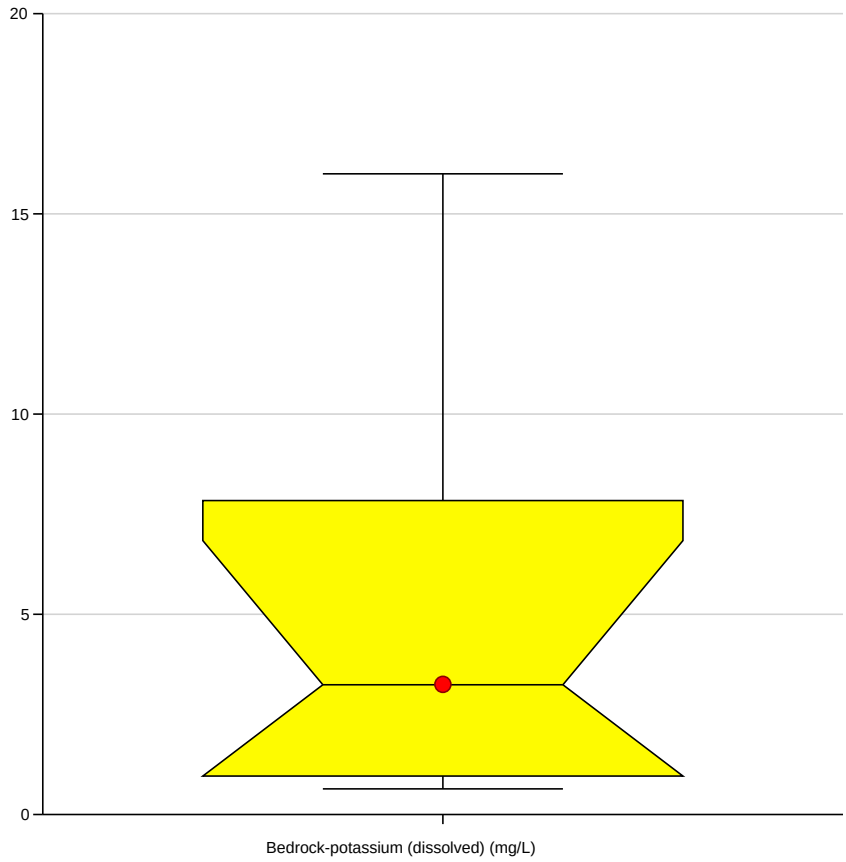
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_136"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_136"

Procedure Input Settings

Variables Tab

-- Variables --
Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

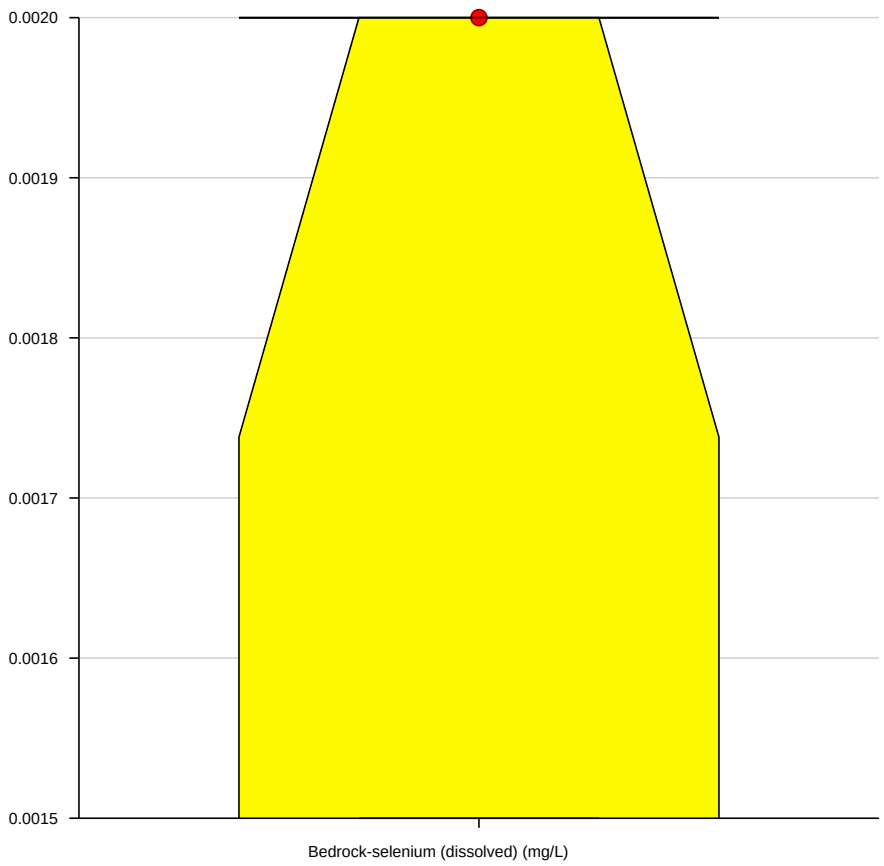
·· Break Variables for Separate Charts ·····
Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

-- Format Options --
Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_138"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_138"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

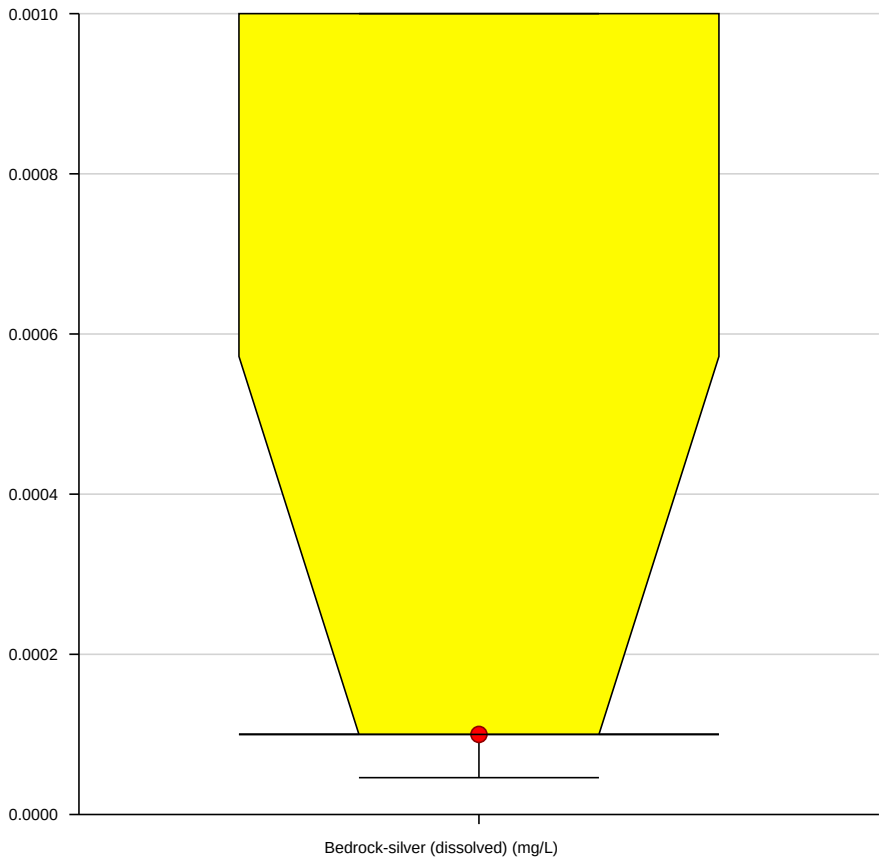
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_140"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_140"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

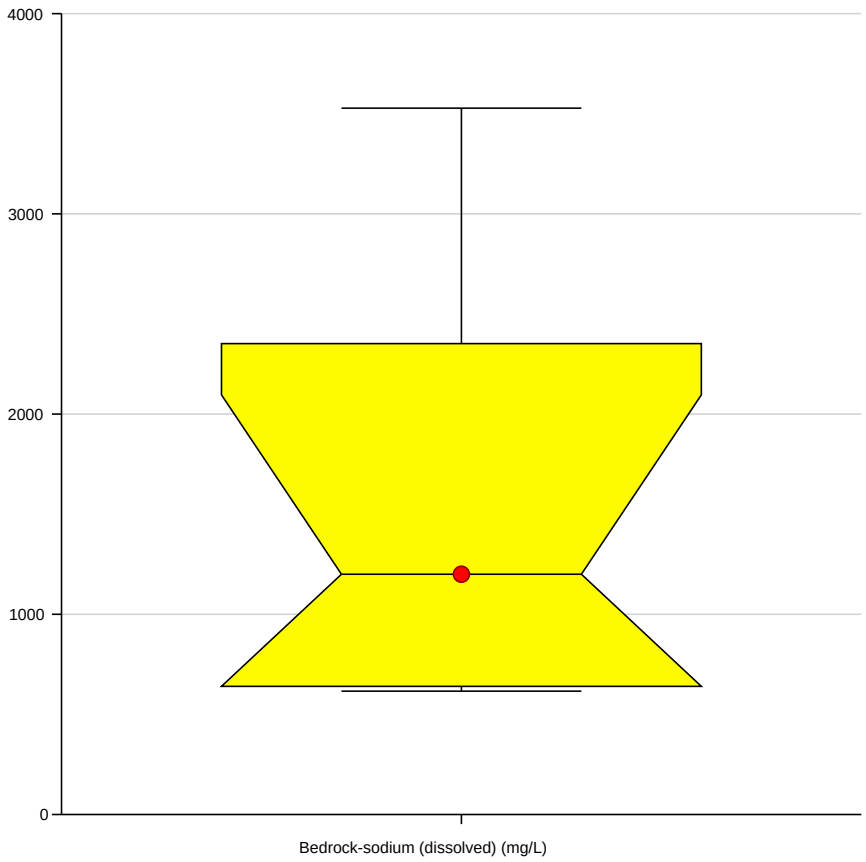
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_142"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_142"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

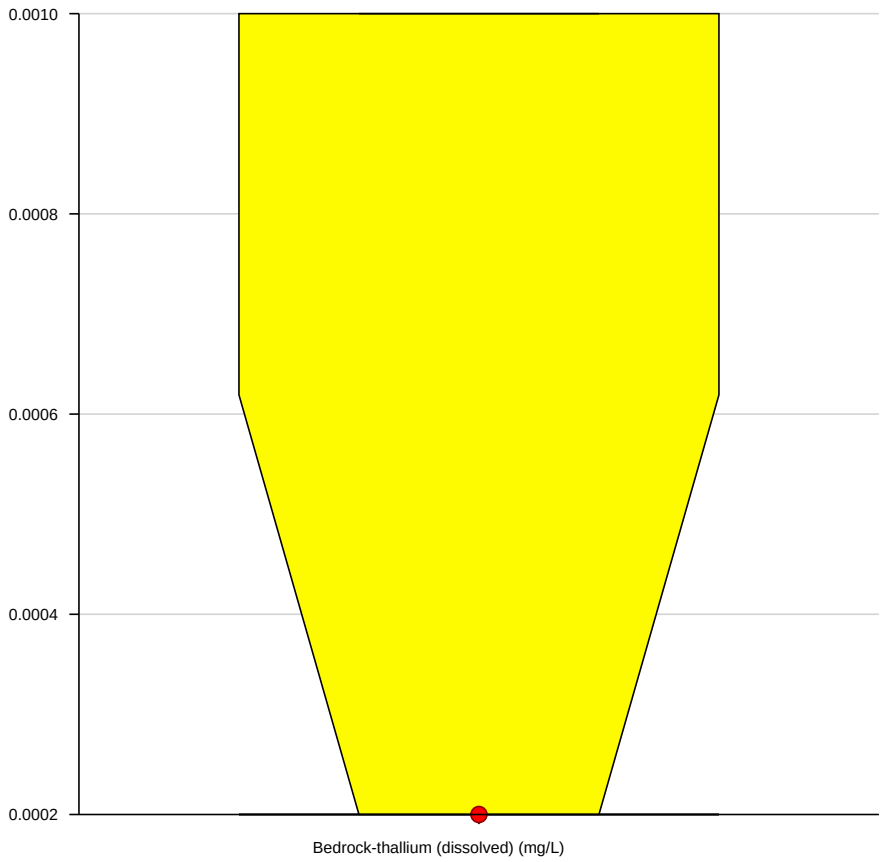
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_144"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_144"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

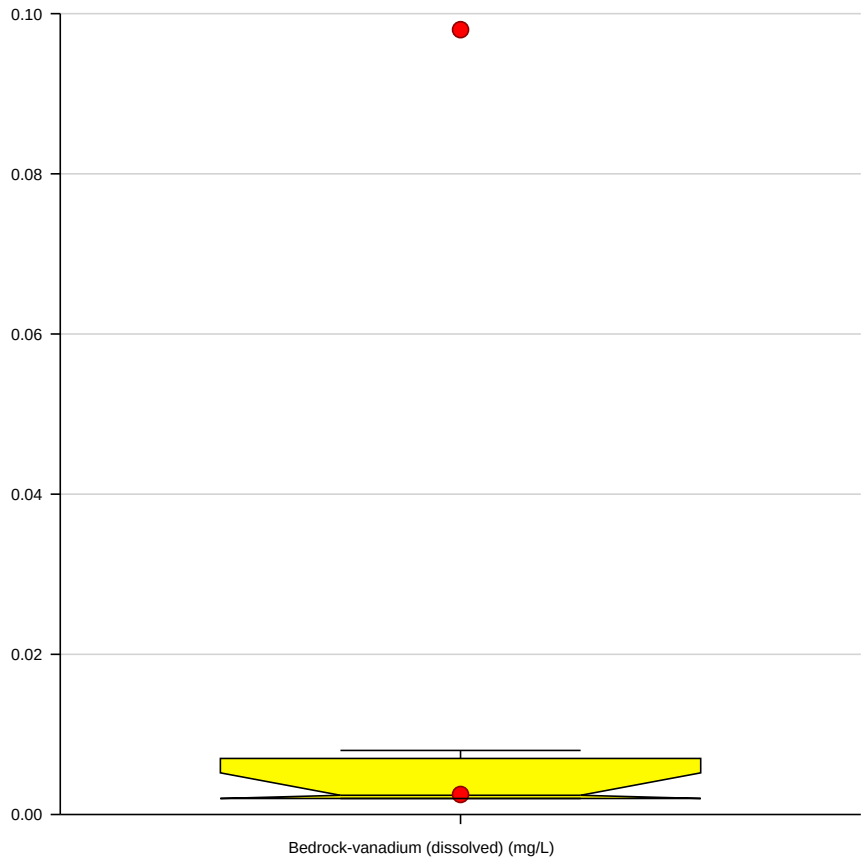
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_146"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_146"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

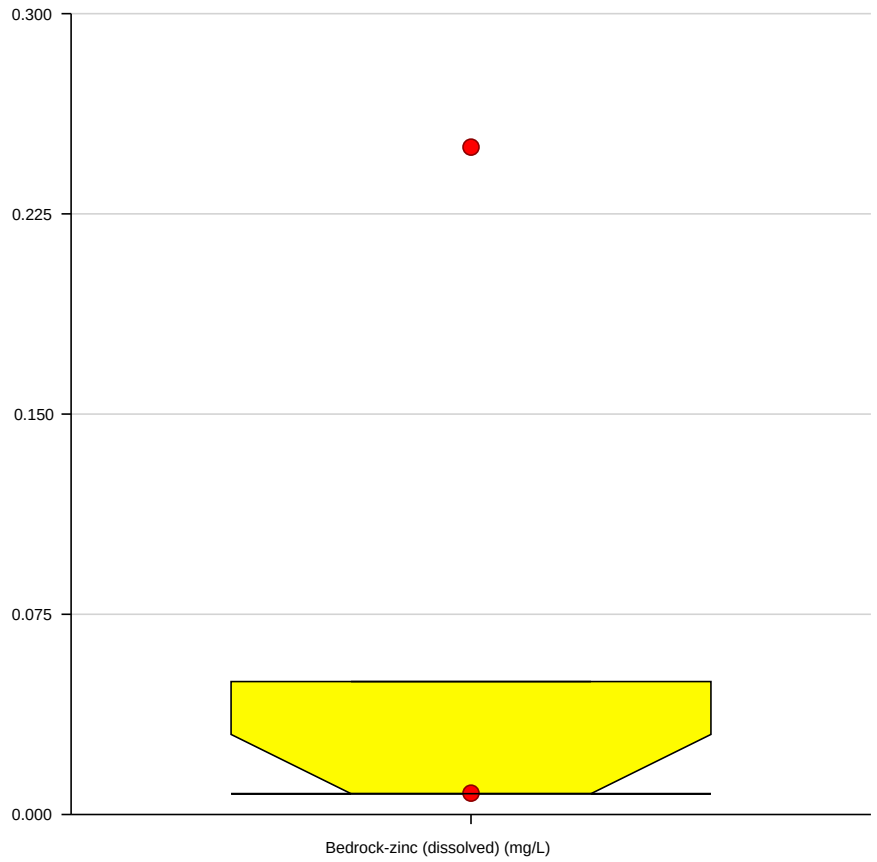
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_148"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_148"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

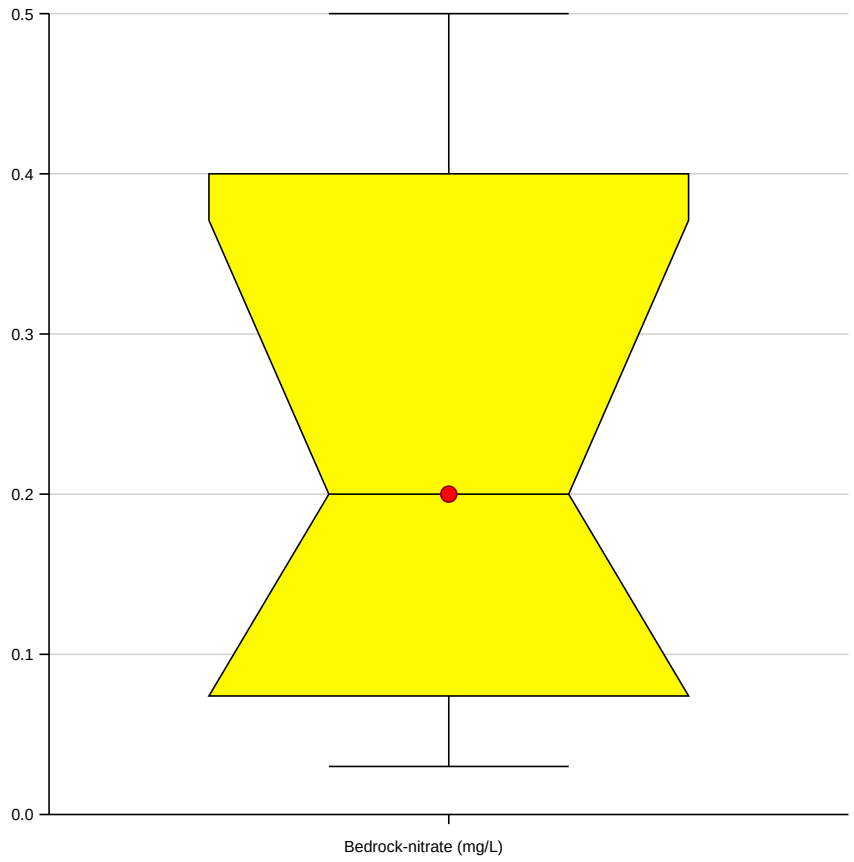
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_2_133"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_2_133"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

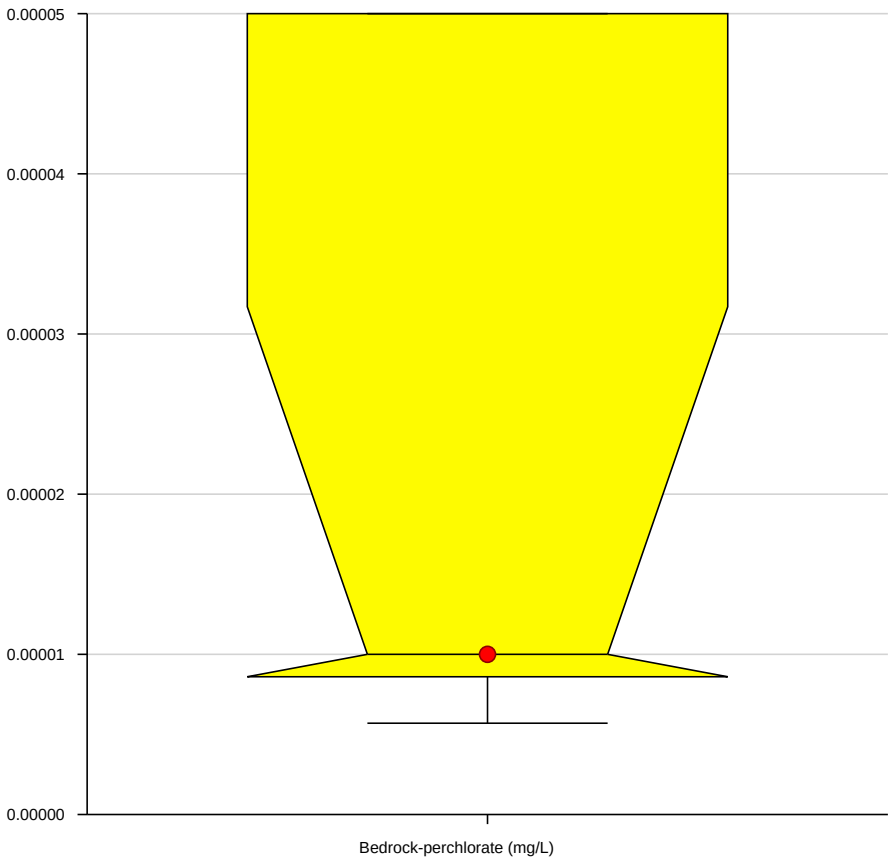
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_3_134"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_3_134"

Procedure Input Settings ——

Variables Tab
-- Variables ----------
Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

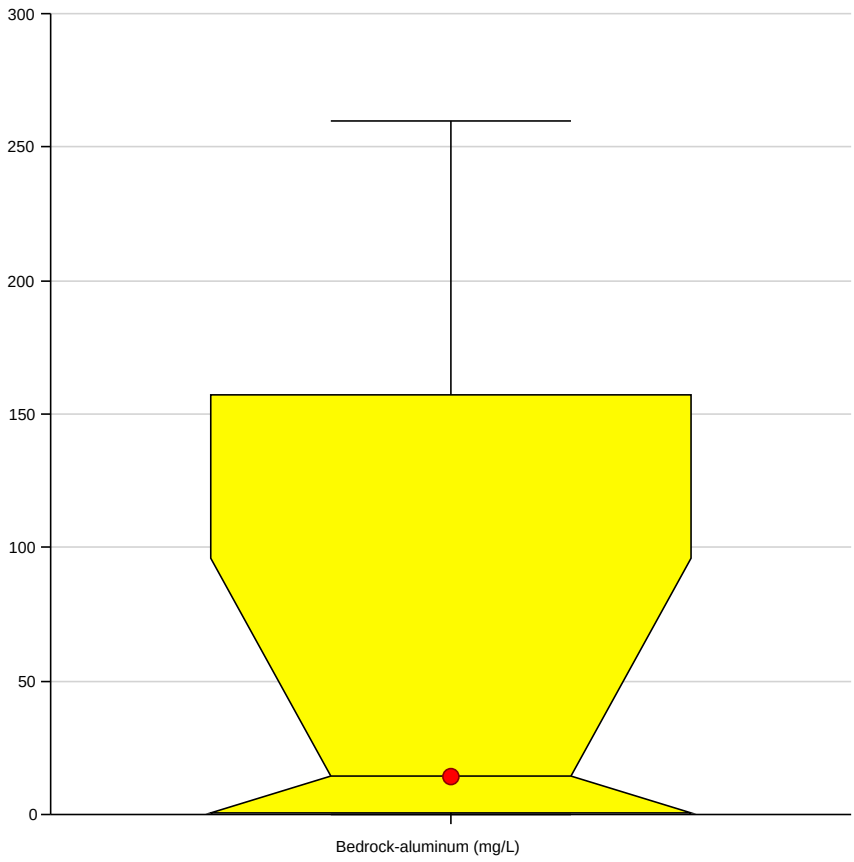
·· Break Variables for Separate Charts ……
Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

-- Format Options ----------
Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_101"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_101"

Procedure Input Settings

Variables Tab
-- Variables ----------
Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

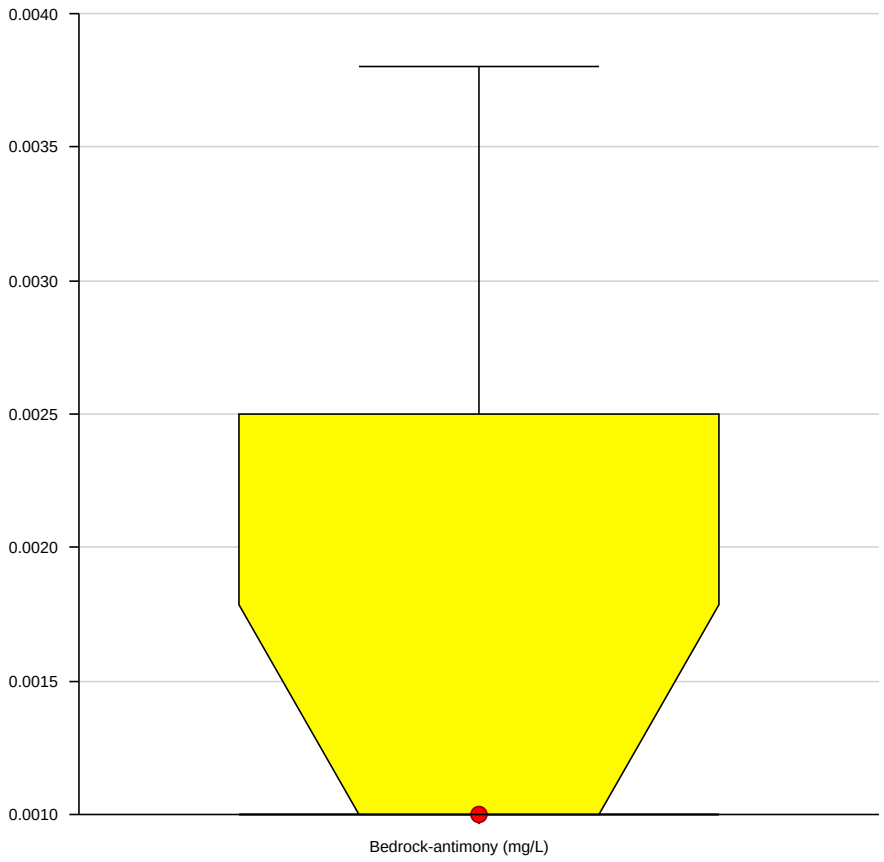
·· Break Variables for Separate Charts ·····
Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

-- Format Options ----------
Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_103"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_103"

Procedure Input Settings

Variables Tab

-- Variables --
Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

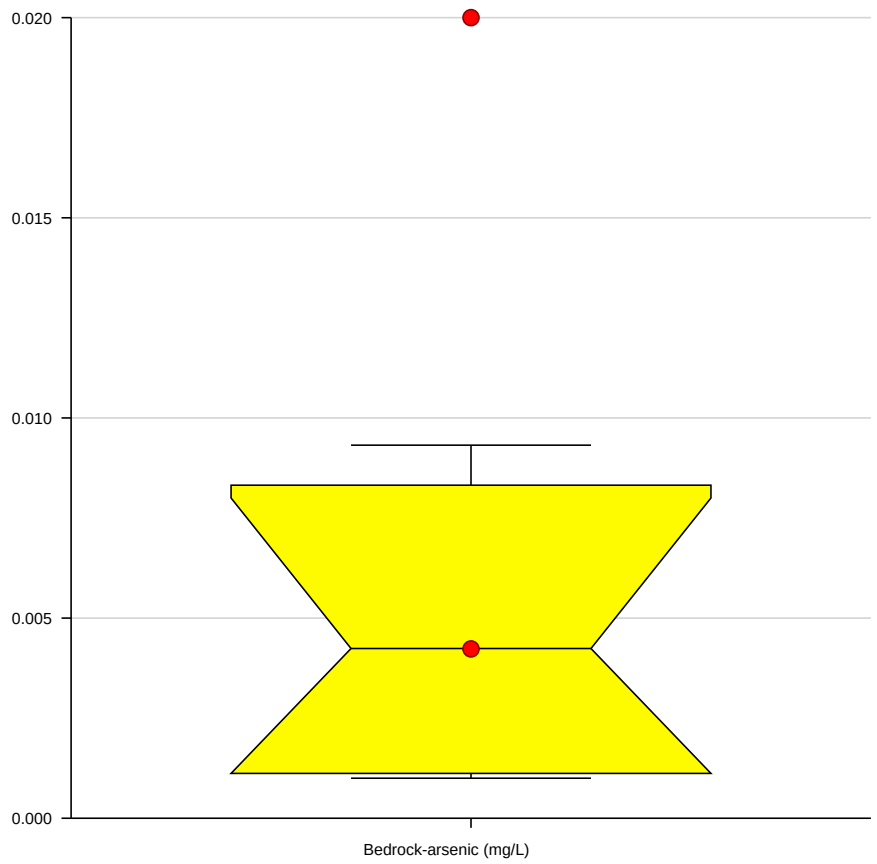
·· Break Variables for Separate Charts ·····
Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

-- Format Options --
Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_105"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_105"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

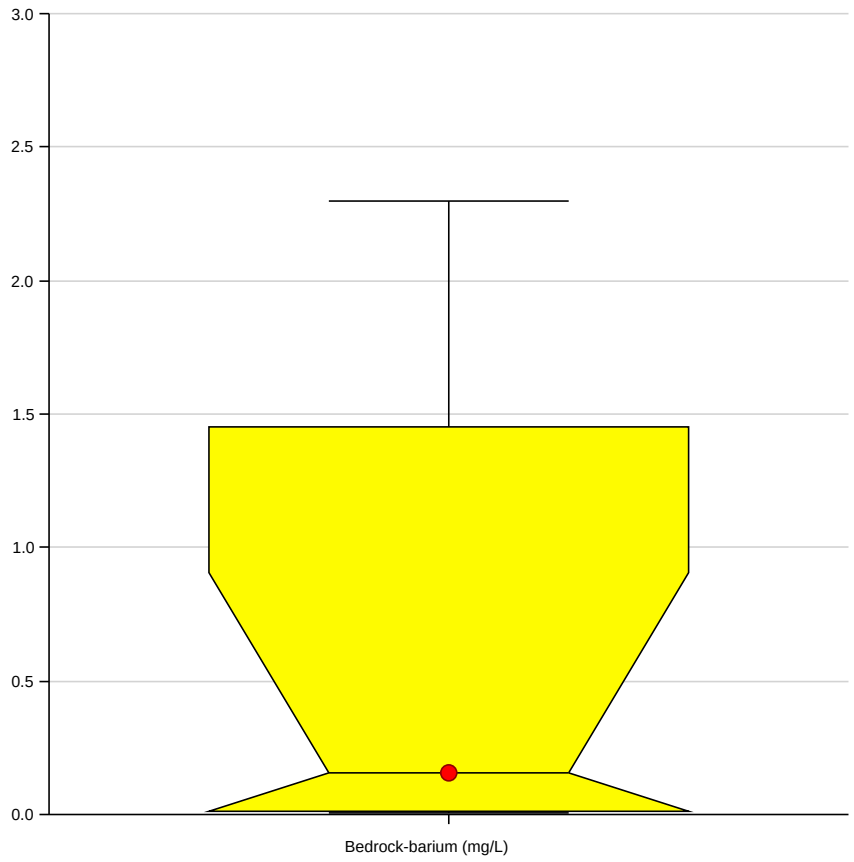
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_107"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_107"

Procedure Input Settings ——

Variables Tab
-- Variables ----------
Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

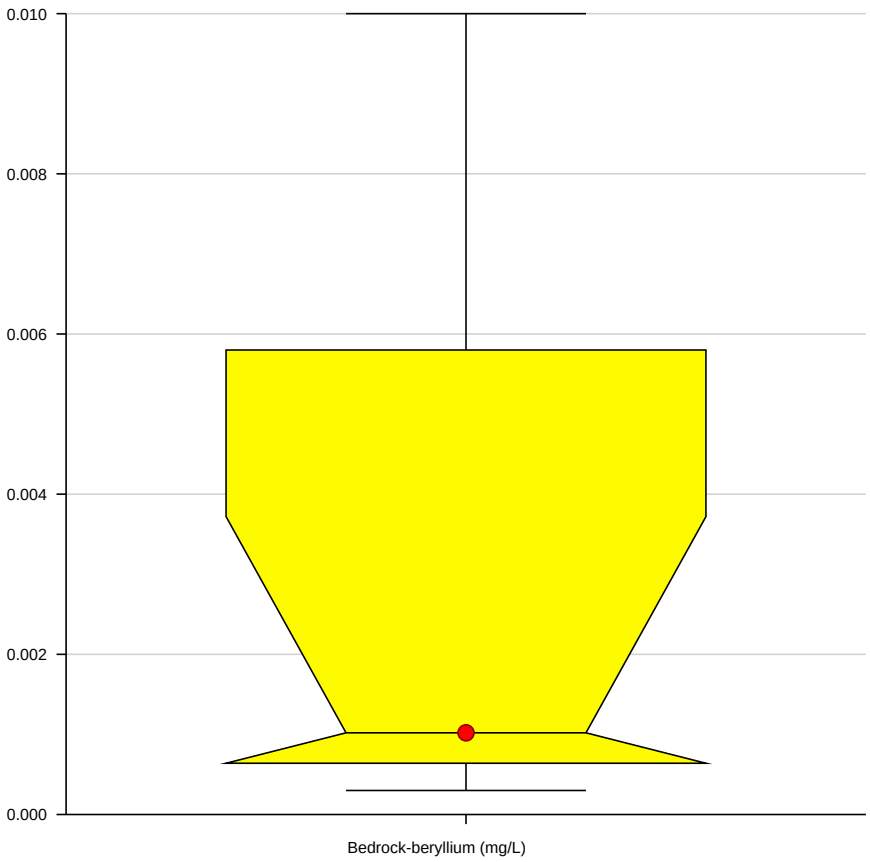
·· Break Variables for Separate Charts ……
Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

-- Format Options ----------
Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_109"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_109"

Procedure Input Settings ——

Variables Tab
-- Variables ----------
Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

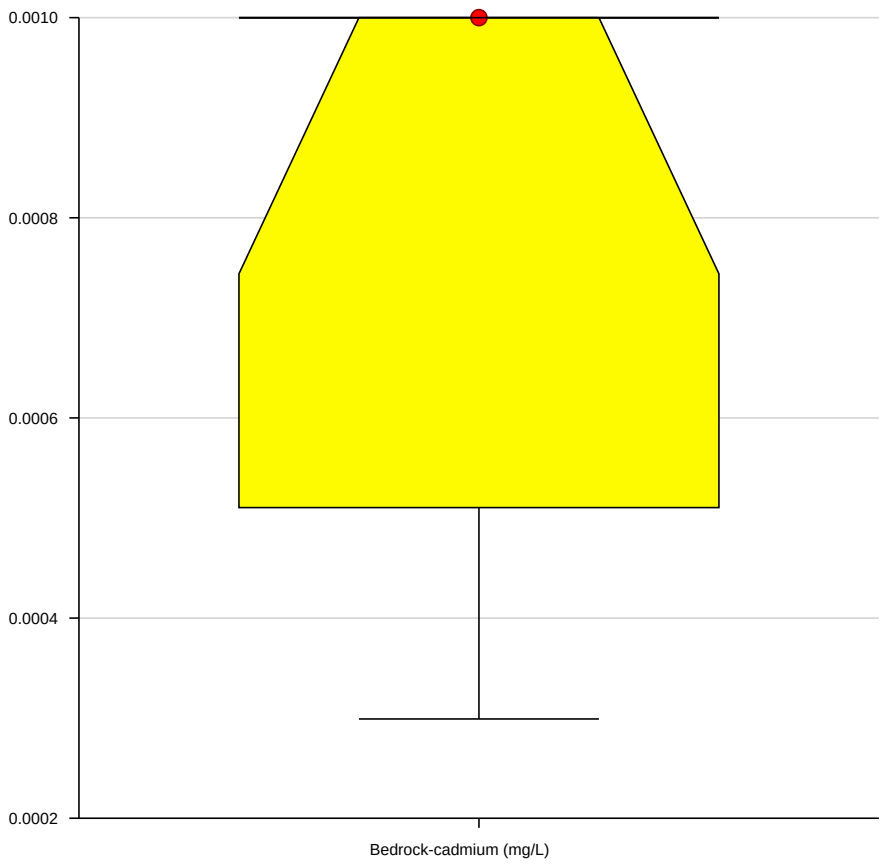
·· Break Variables for Separate Charts ·····
Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

-- Format Options ----------
Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_111"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_111"

Procedure Input Settings

Variables Tab

-- Variables --
Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

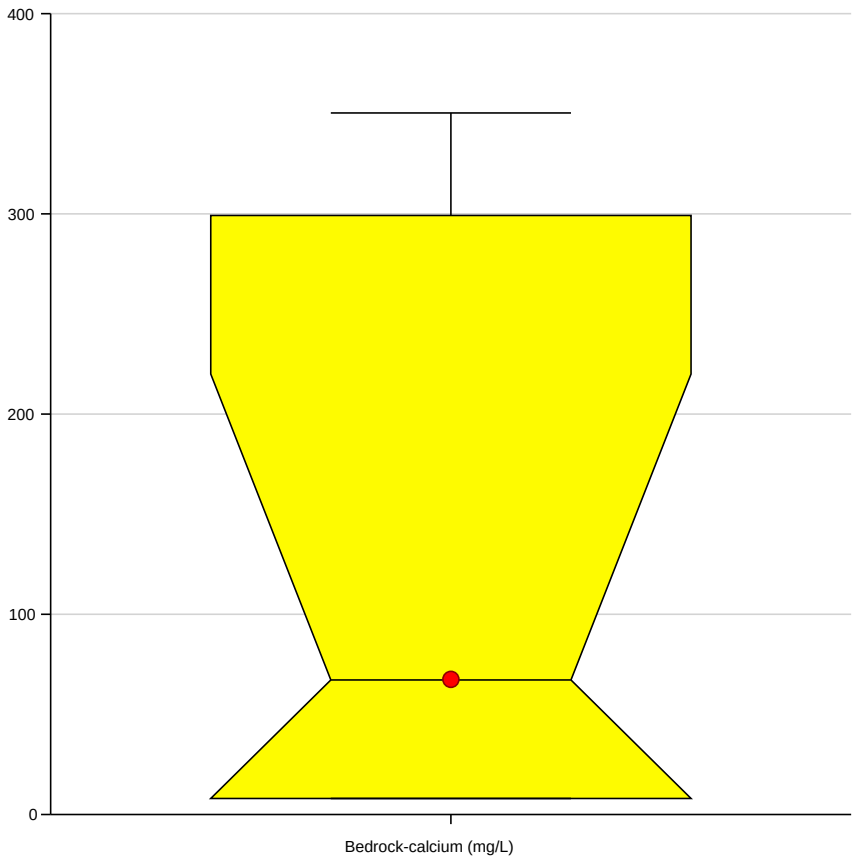
·· Break Variables for Separate Charts ·····
Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

-- Format Options --
Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_113"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_113"

Procedure Input Settings

Variables Tab
-- Variables ----------
Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

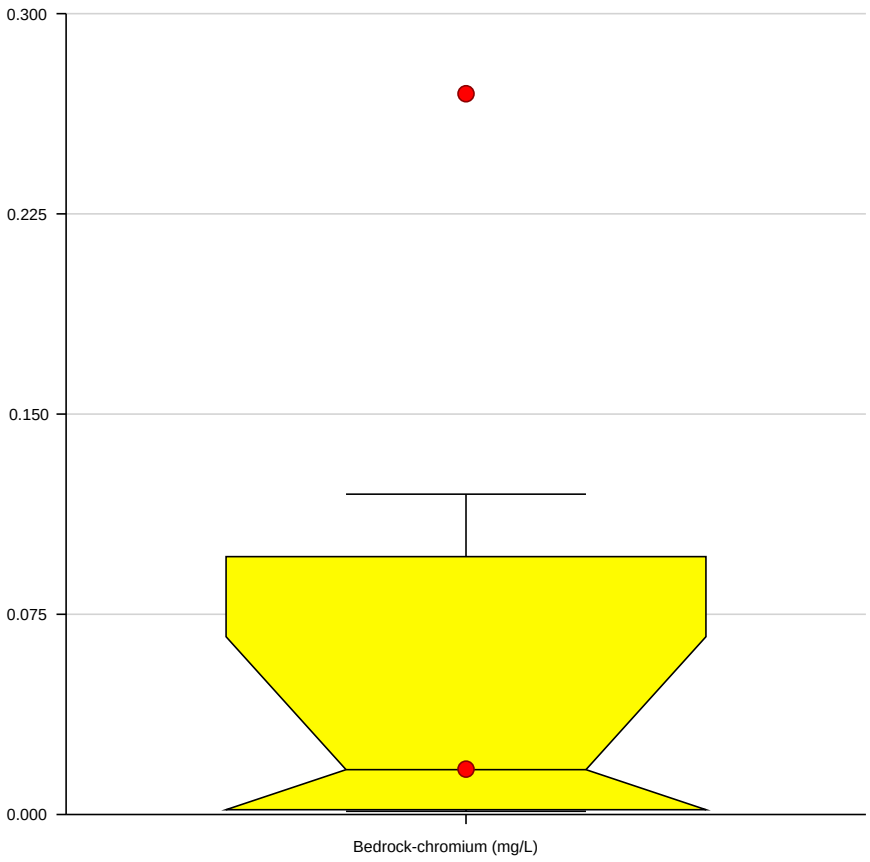
·· Break Variables for Separate Charts ·····
Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

-- Format Options ----------
Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_115"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_115"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

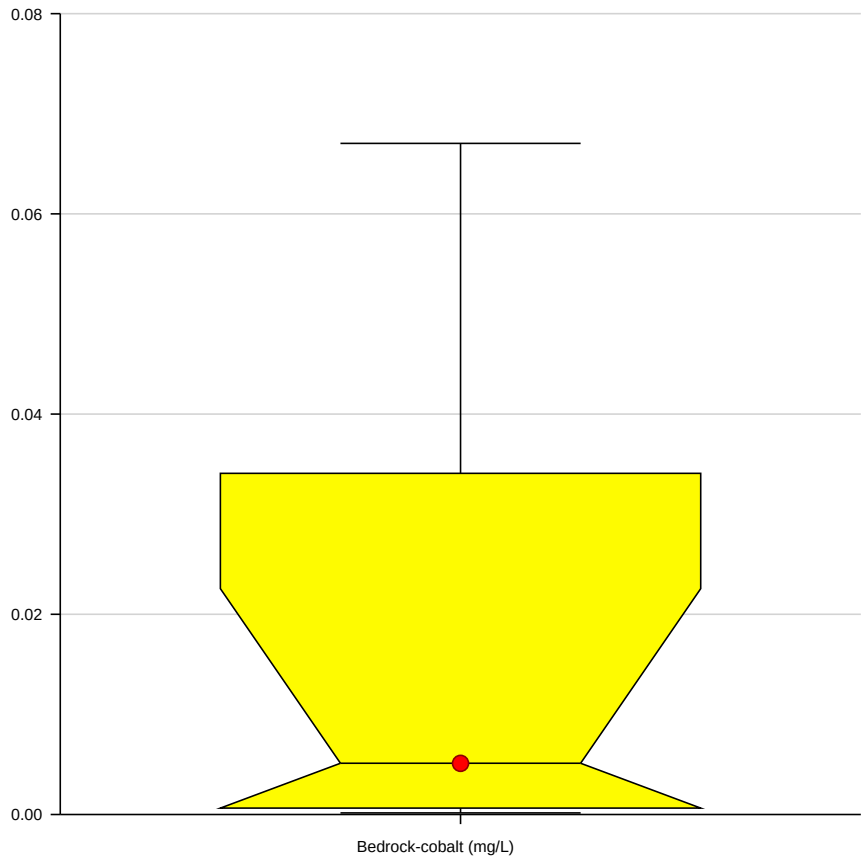
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_117"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_117"

Procedure Input Settings

Variables Tab

-- Variables --
Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

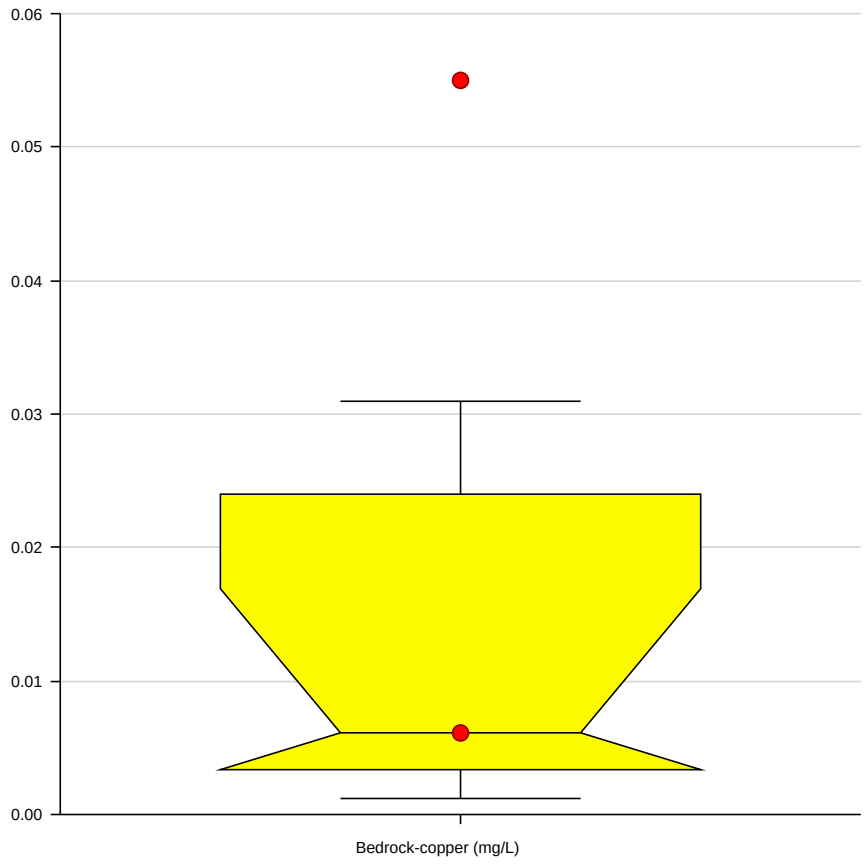
·· Break Variables for Separate Charts ·····
Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

-- Format Options --
Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_119"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_119"

Procedure Input Settings

Variables Tab
-- Variables ----------
Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

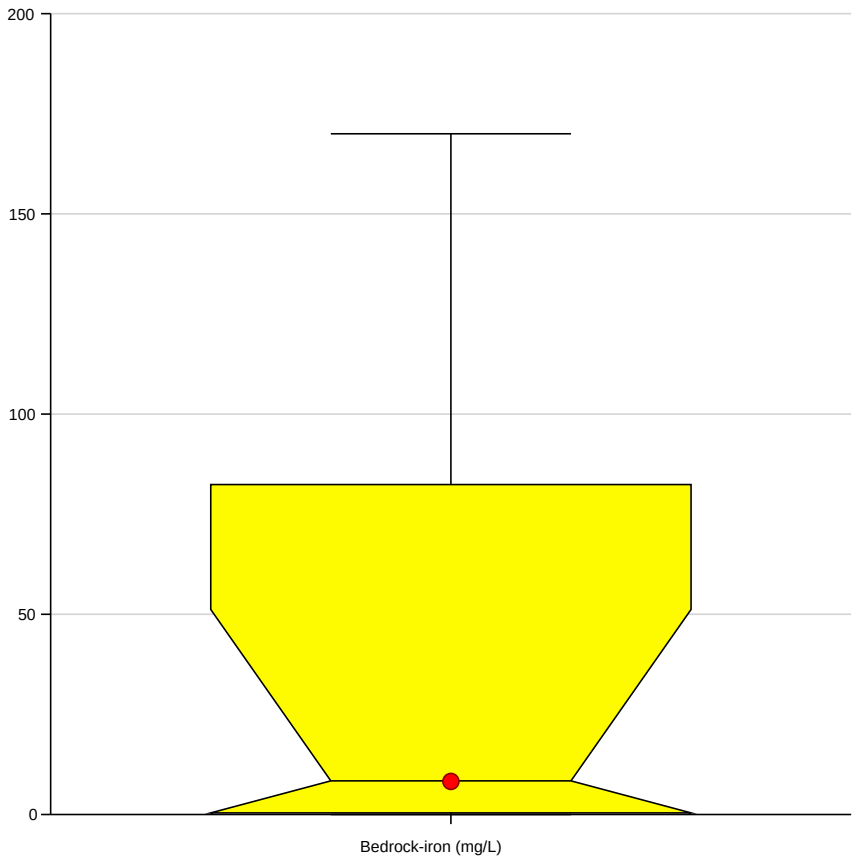
·· Break Variables for Separate Charts ·····
Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

-- Format Options ----------
Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_121"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_121"

Procedure Input Settings

Variables Tab

-- Variables --
Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

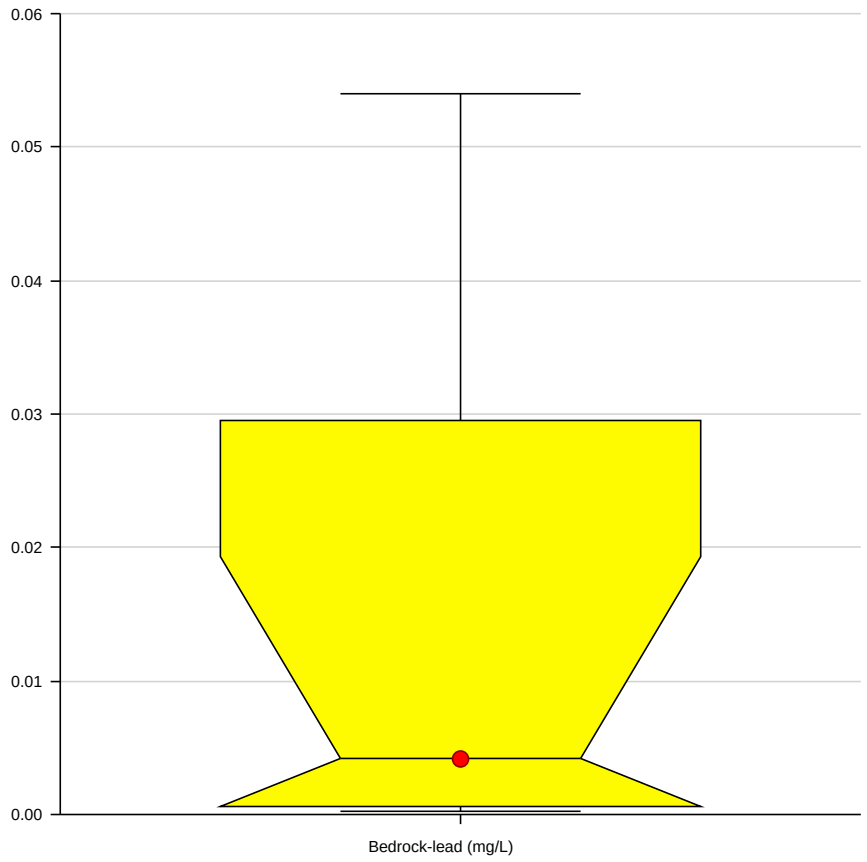
·· Break Variables for Separate Charts ·····
Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

-- Format Options --
Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_123"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_123"

Procedure Input Settings

Variables Tab

-- Variables --
Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

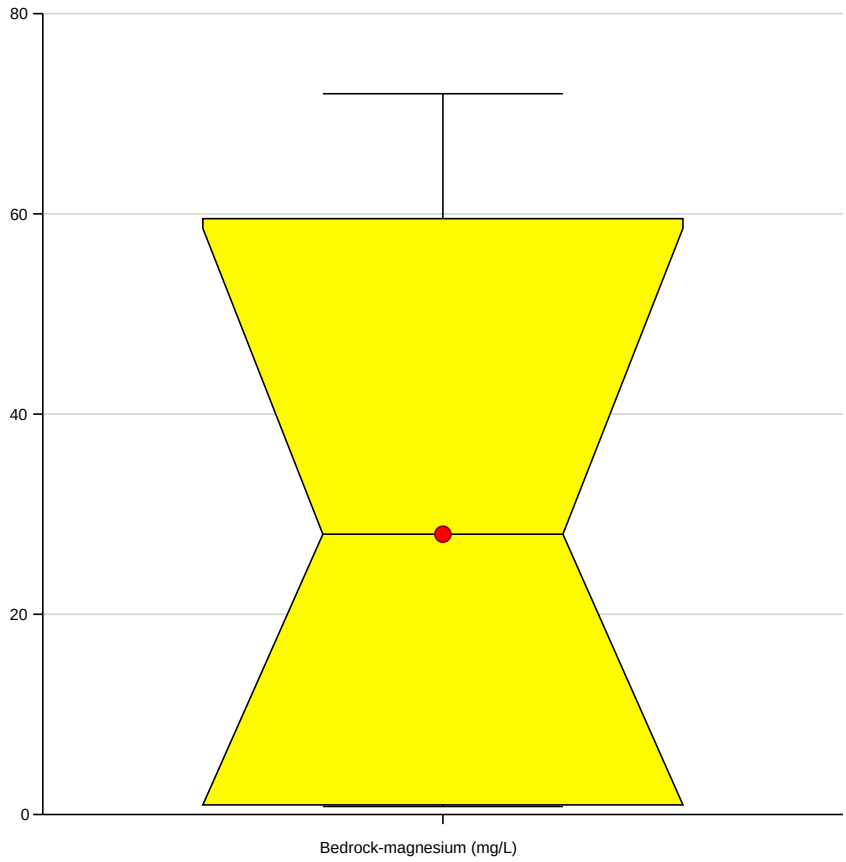
·· Break Variables for Separate Charts ·····
Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

-- Format Options --
Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_125"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_125"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

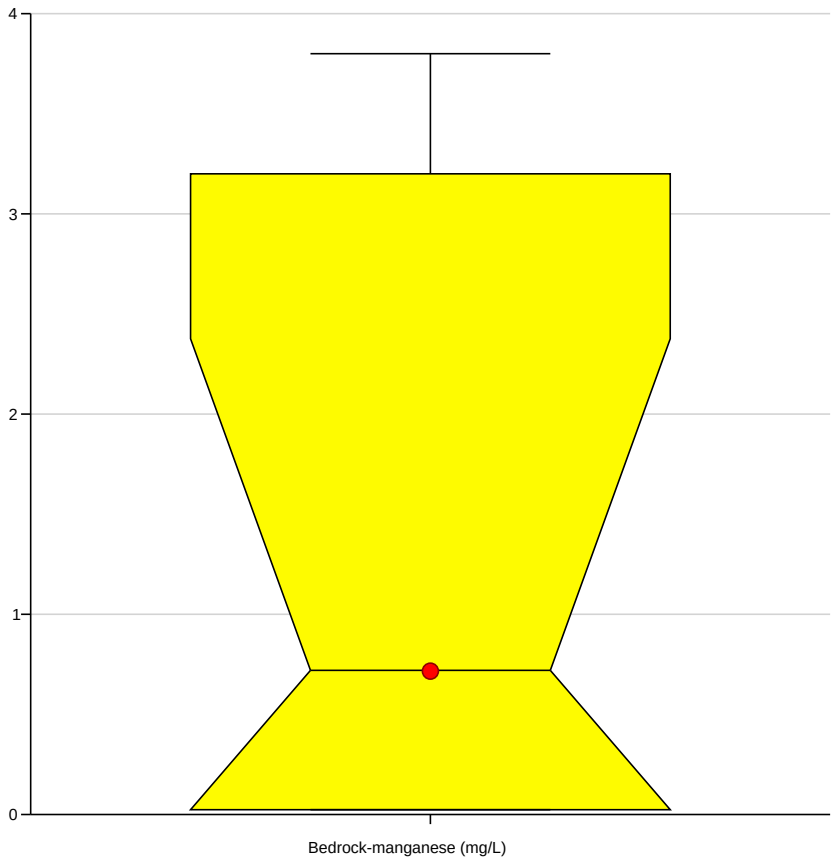
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_127"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_127"

Procedure Input Settings

Variables Tab
-- Variables ----------
Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

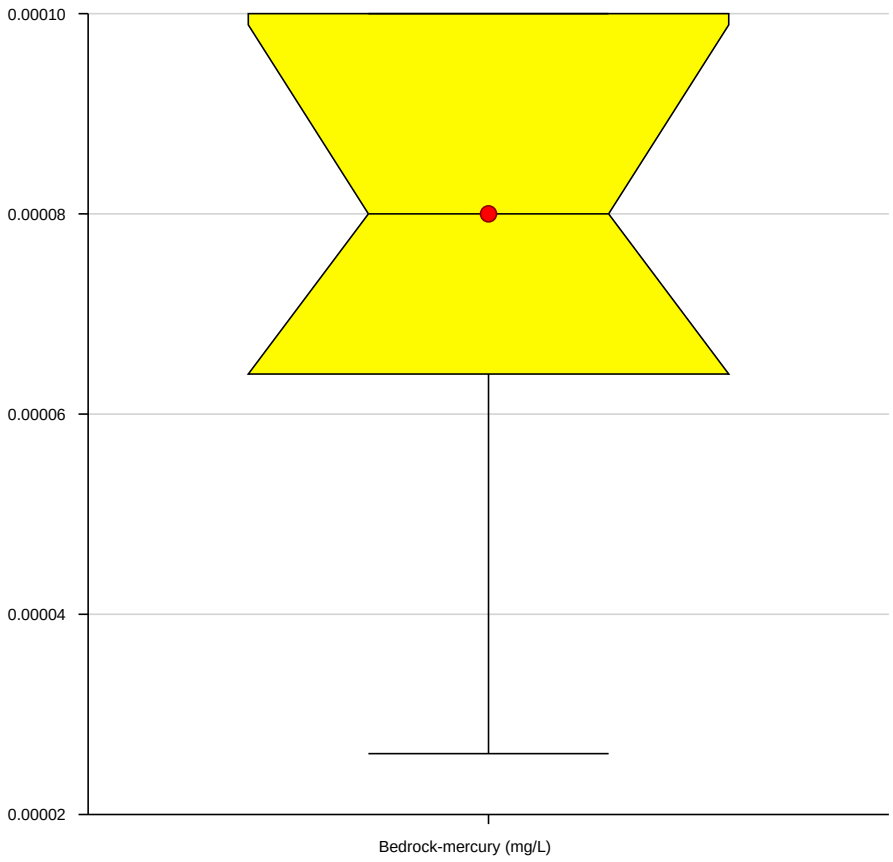
·· Break Variables for Separate Charts ·····
Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

-- Format Options ----------
Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_129"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_129"

Procedure Input Settings

Variables Tab

-- Variables --
Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

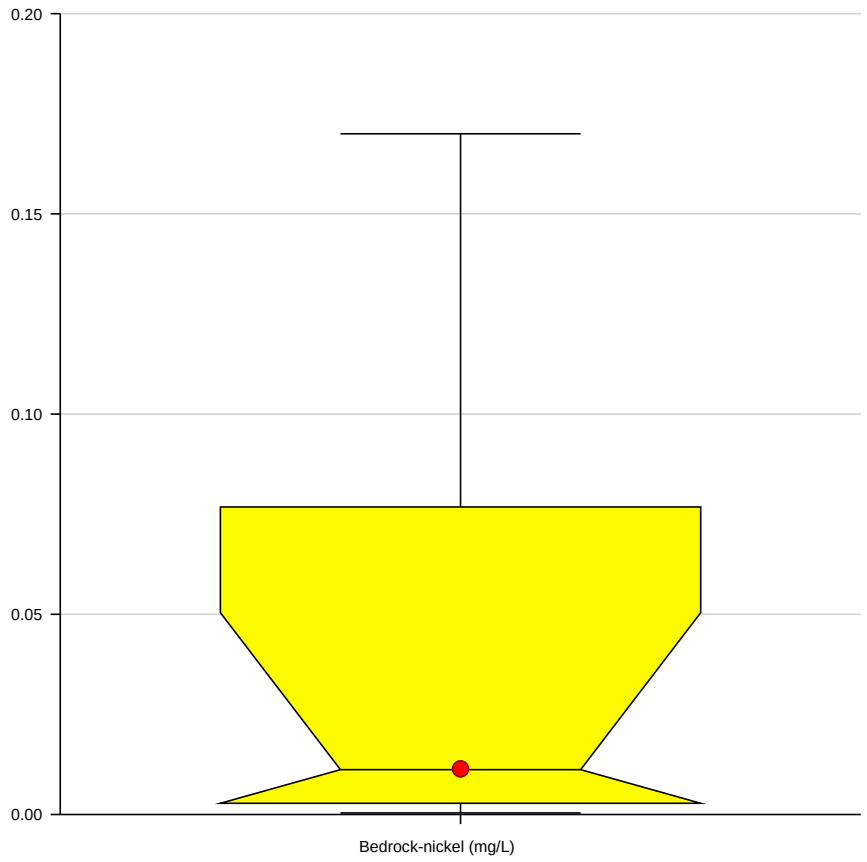
·· Break Variables for Separate Charts ·····
Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

-- Format Options --
Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_131"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_131"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

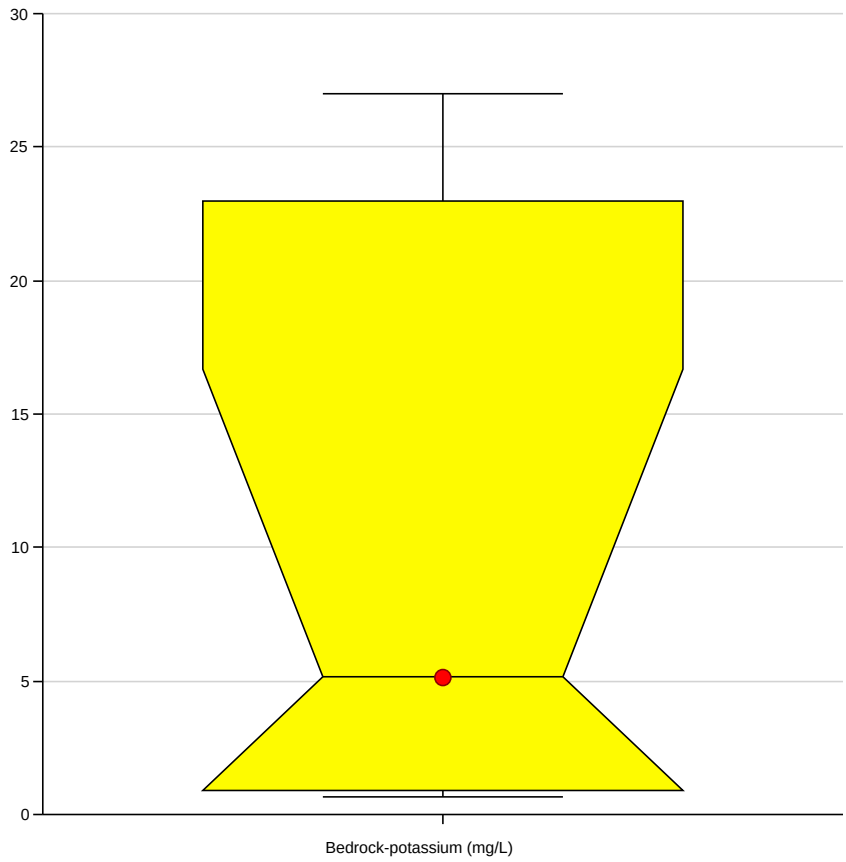
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_135"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_135"

Procedure Input Settings

Variables Tab
-- Variables ----------
Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····
Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

-- Format Options ----------
Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_137"

Box Plots

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_137"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

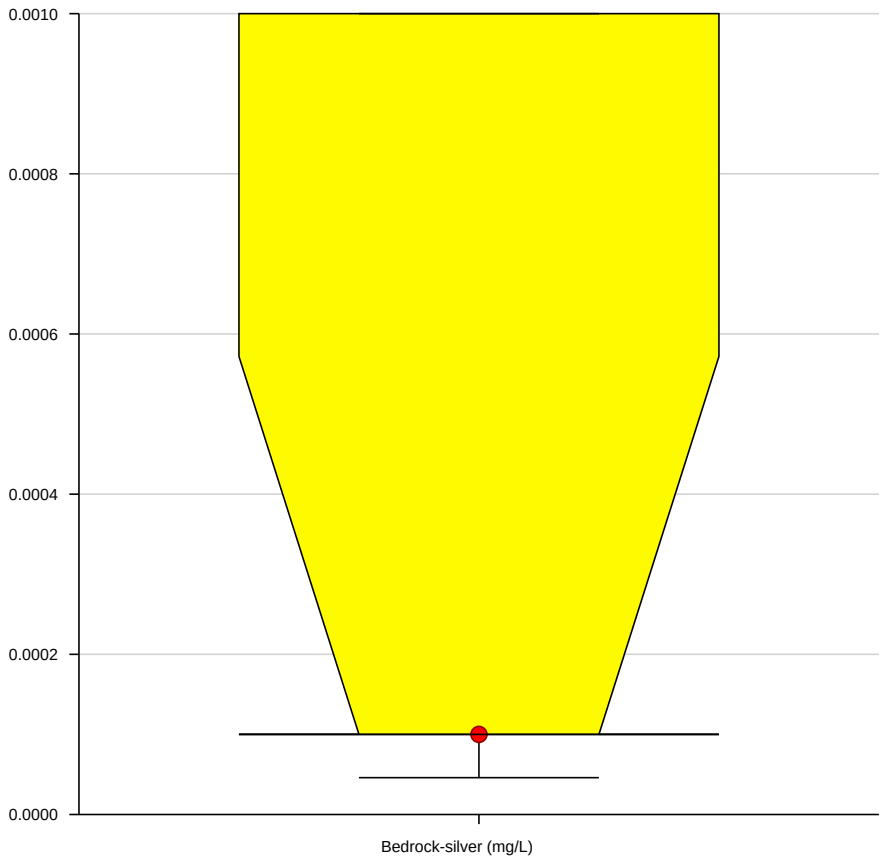
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_139"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_139"

Procedure Input Settings ——

Variables Tab
-- Variables ----------
Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

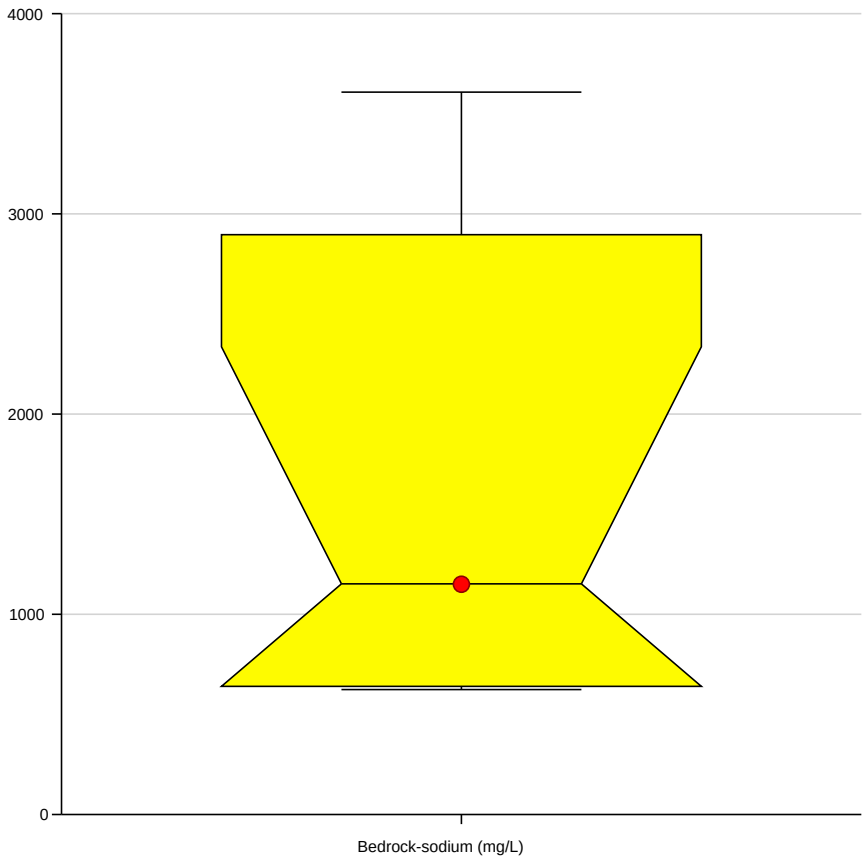
·· Break Variables for Separate Charts ·····
Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

-- Format Options ----------
Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_141"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_141"

Procedure Input Settings

Variables Tab

-- Variables --
Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

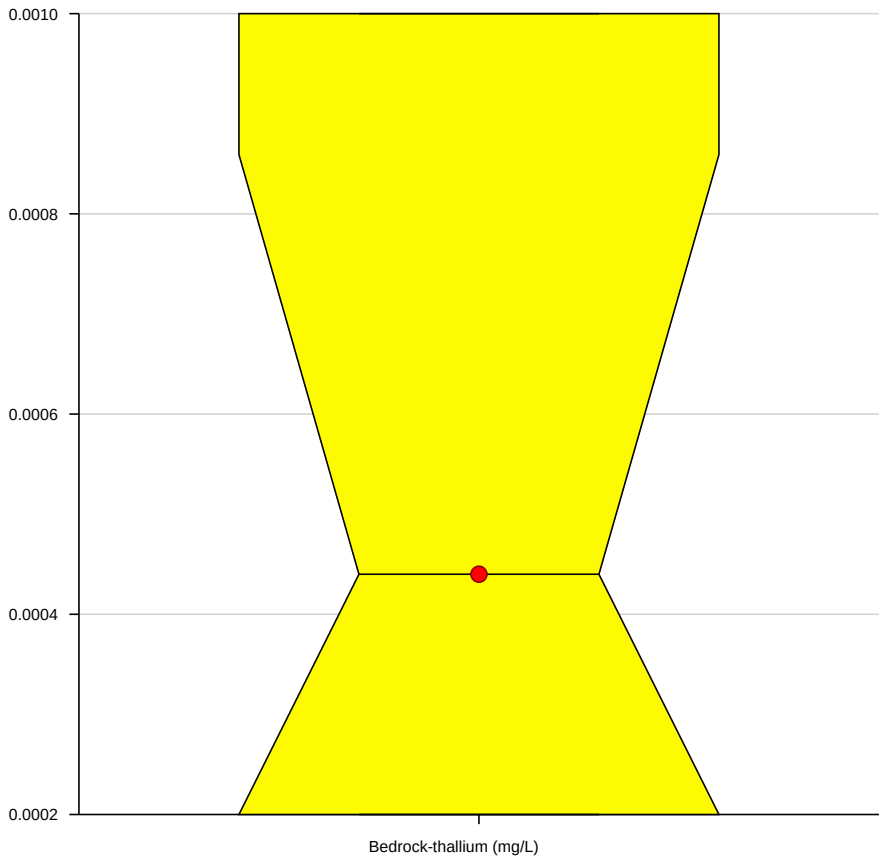
·· Break Variables for Separate Charts ·····
Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

-- Format Options --
Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_143"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_143"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

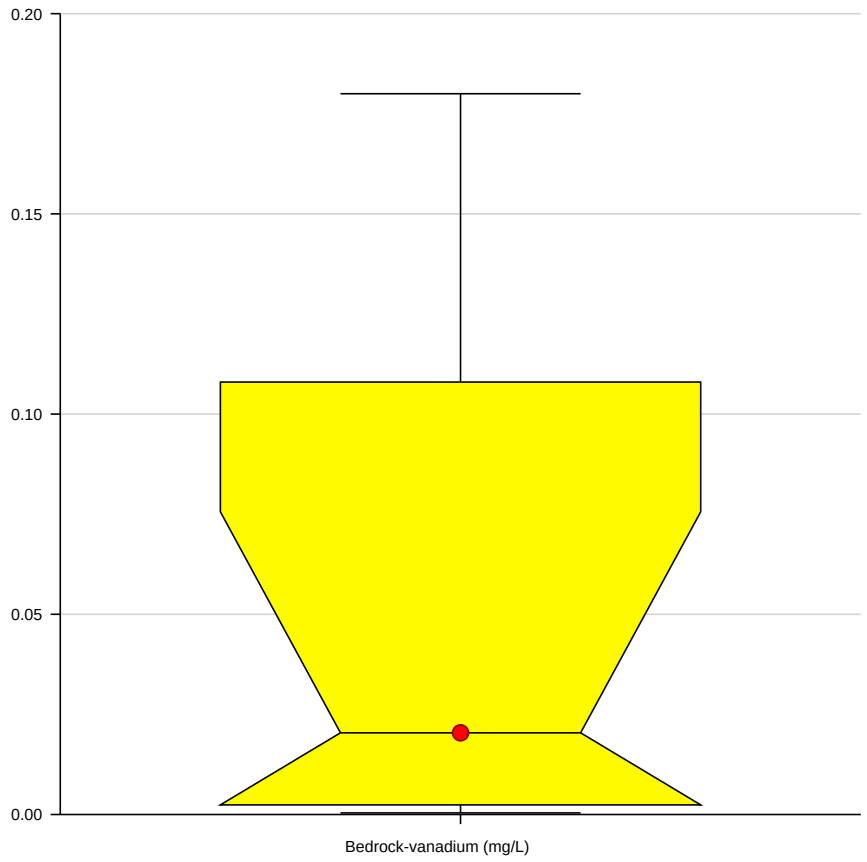
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_145"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_145"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

·· Break Variables for Separate Charts ·····

Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

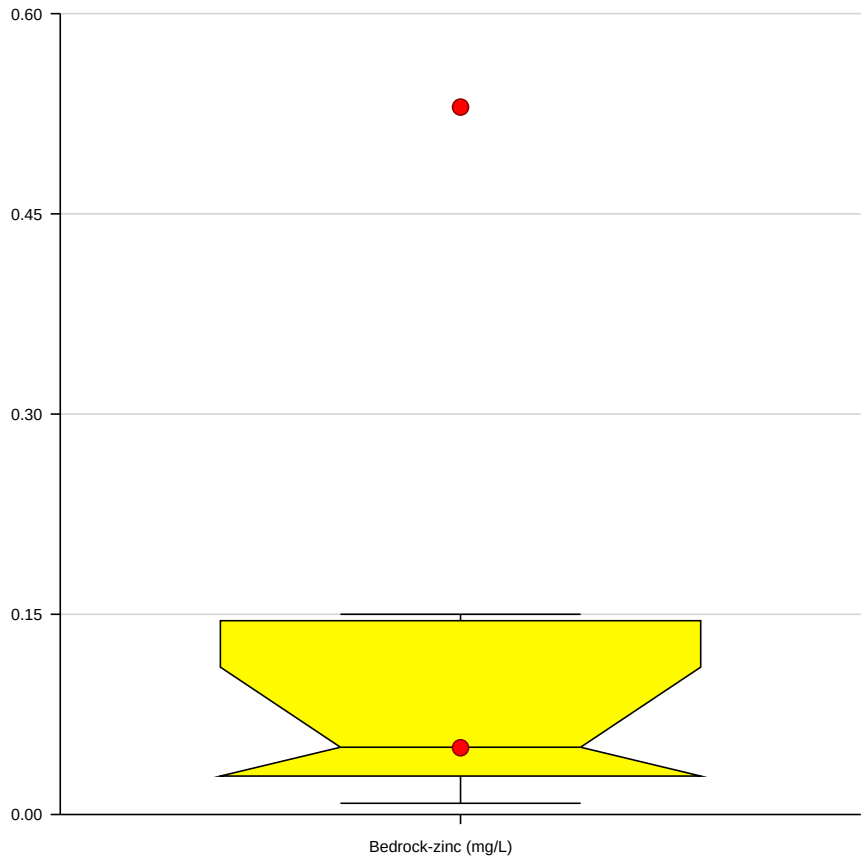
-- Format Options ----------

Variable Names: Names
Value Labels: Data Values

Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_147"

Box Plots



Box Plot

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_147"

Procedure Input Settings

Variables Tab

-- Variables --
Data Variable(s): VALUES
Horizontal (Group) Variable: TITLE
Frequency Variable: <Empty>
Data Label Variable: <Empty>

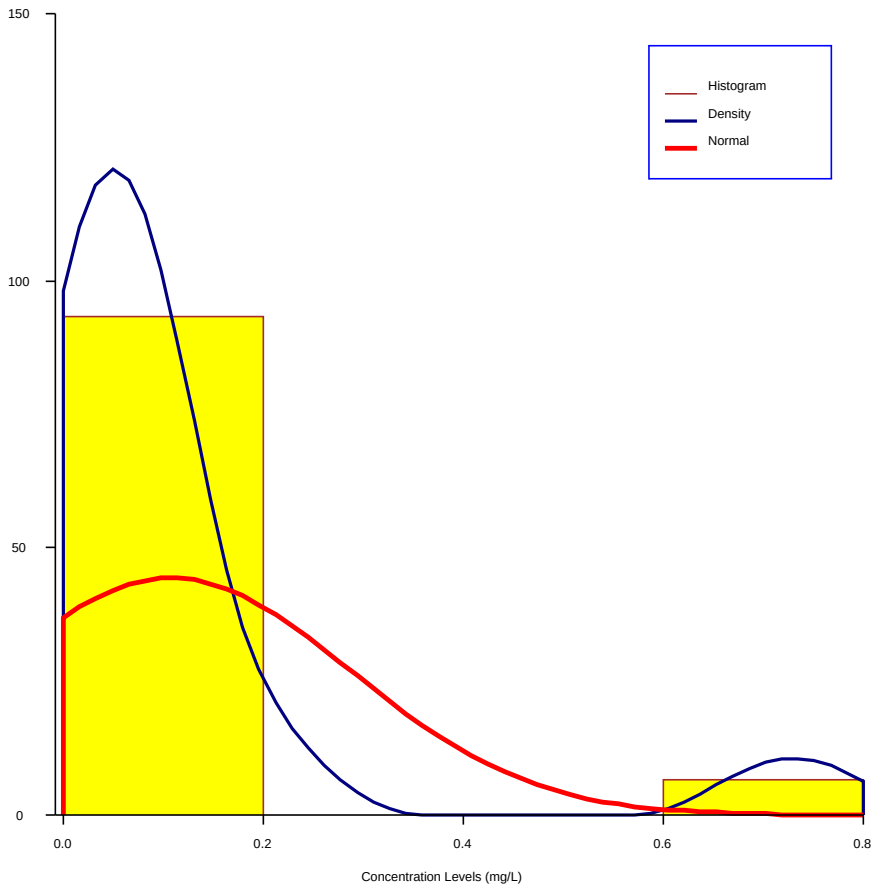
·· Break Variables for Separate Charts ·····
Break Variable 1: <Empty>
Break Variable 2: <Empty>
Break Variable 3: <Empty>
Break Variable 4: <Empty>
Break Variable 5: <Empty>

-- Format Options --
Variable Names: Names
Value Labels: Data Values

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_102"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "1_1_102"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

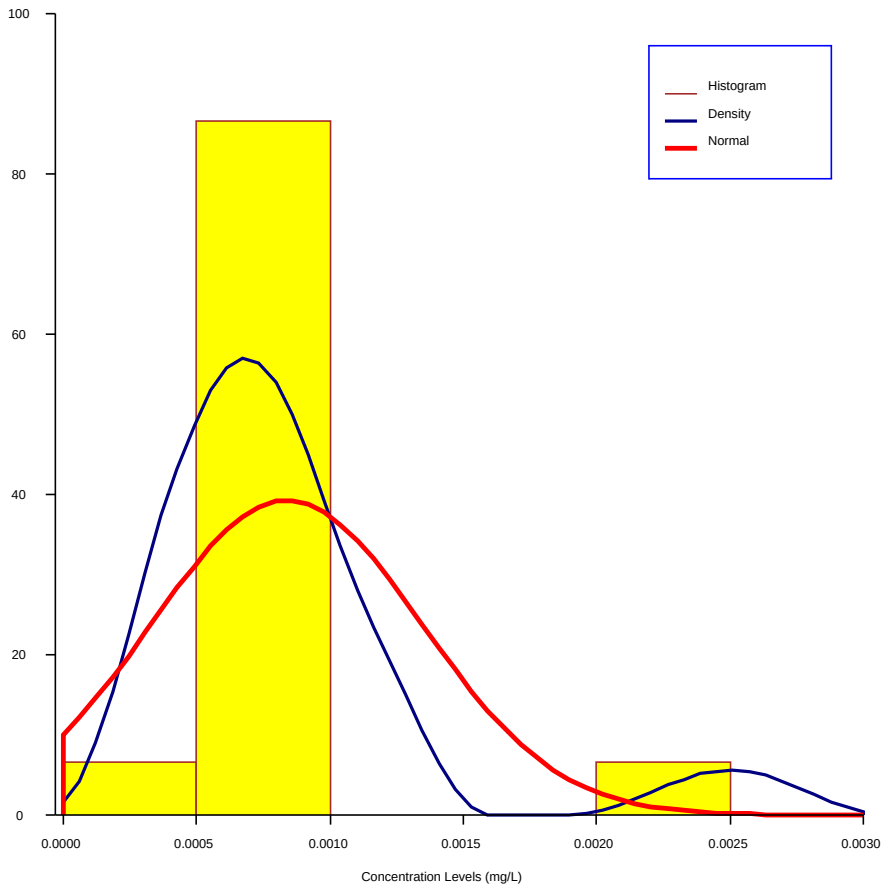
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_104"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "1_1_104"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

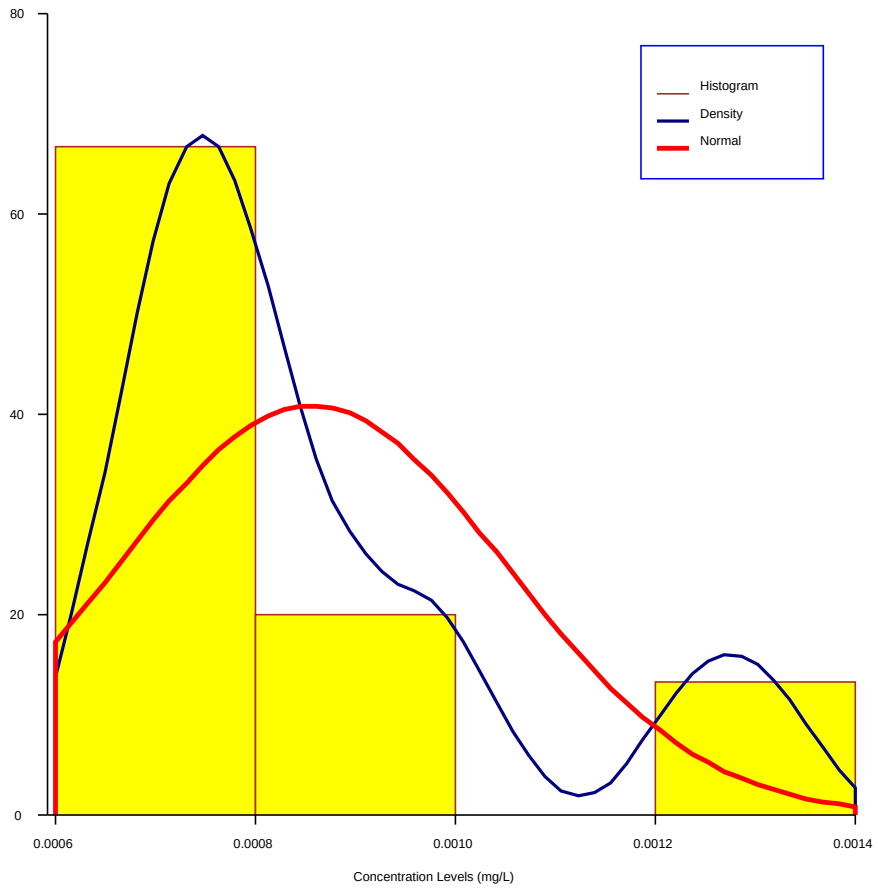
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_106"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "1_1_106"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

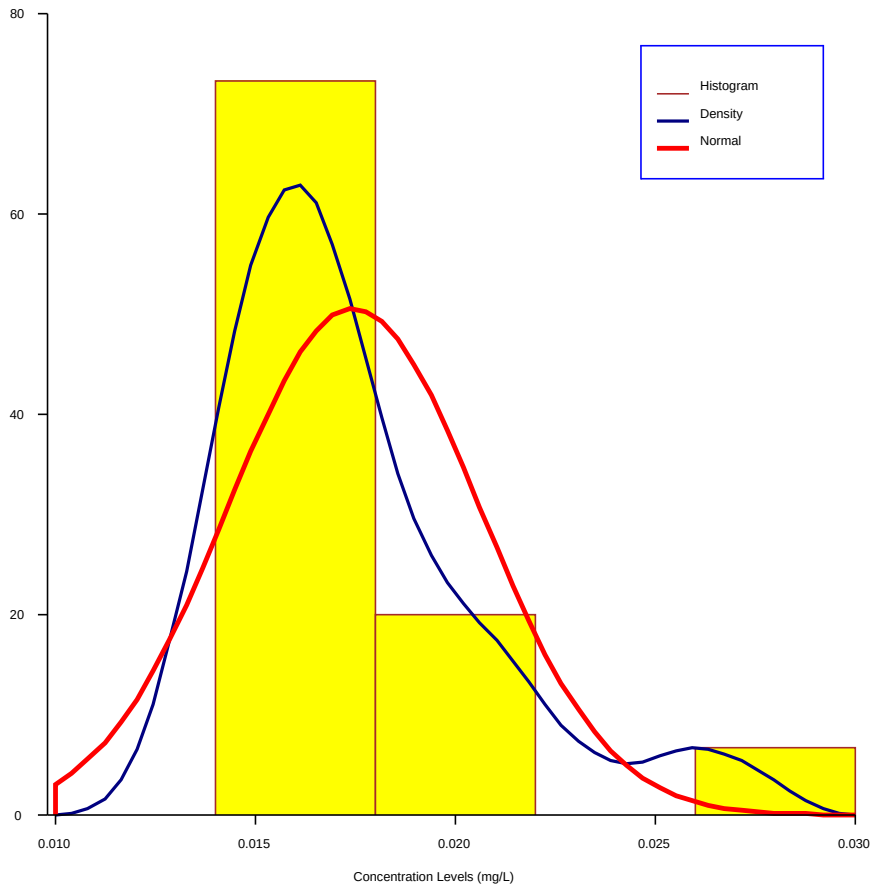
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_108"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "1_1_108"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

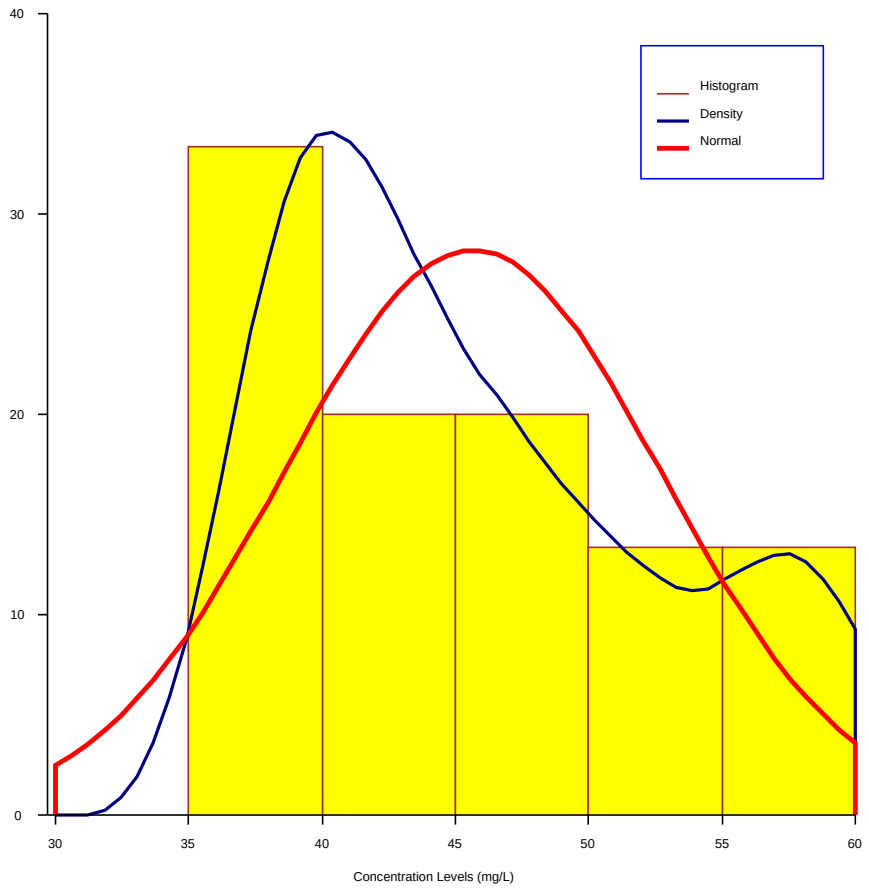
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_114"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "1_1_114"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

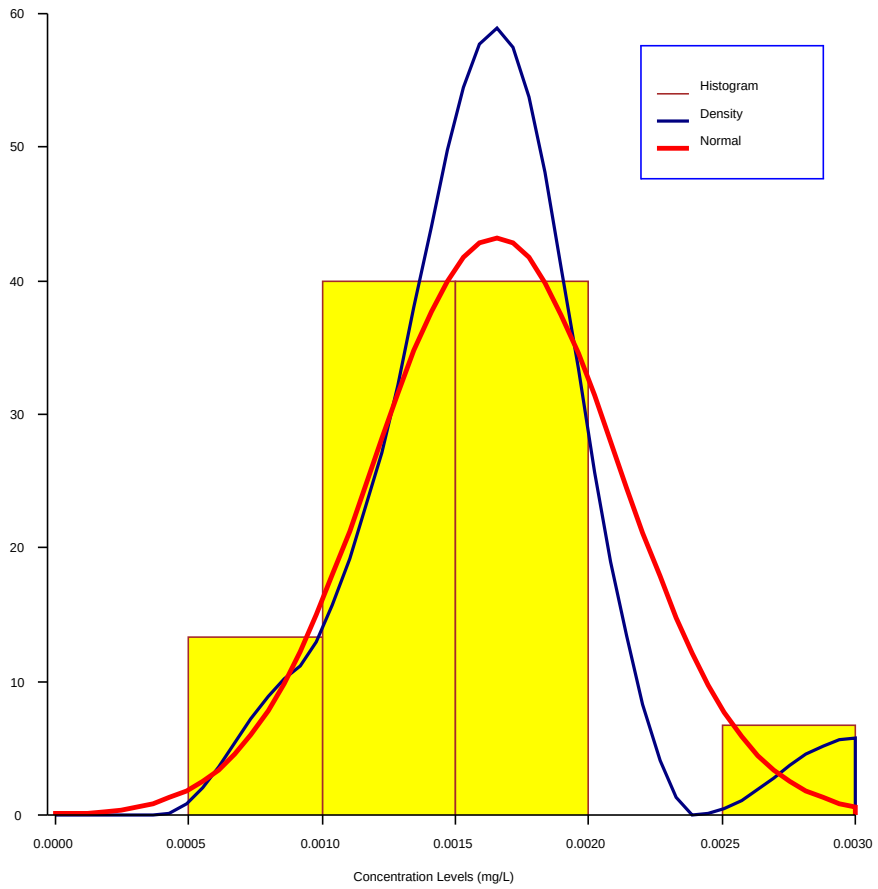
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_116"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "1_1_116"

Procedure Input Settings ——

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

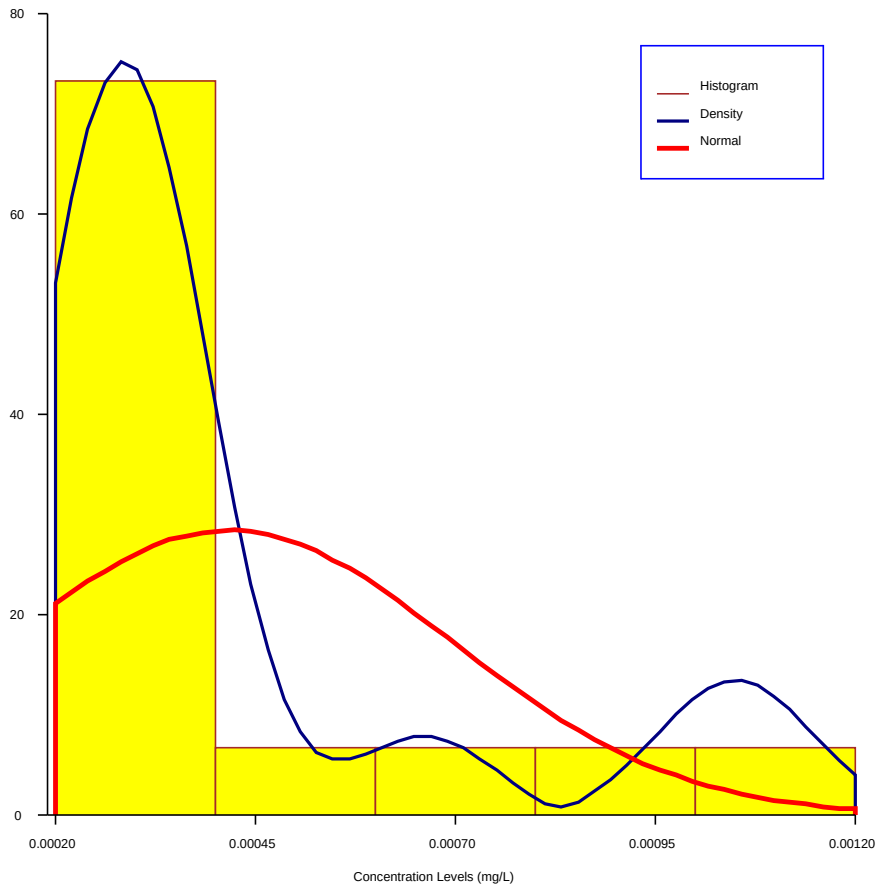
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_118"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "1_1_118"

Procedure Input Settings ——

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

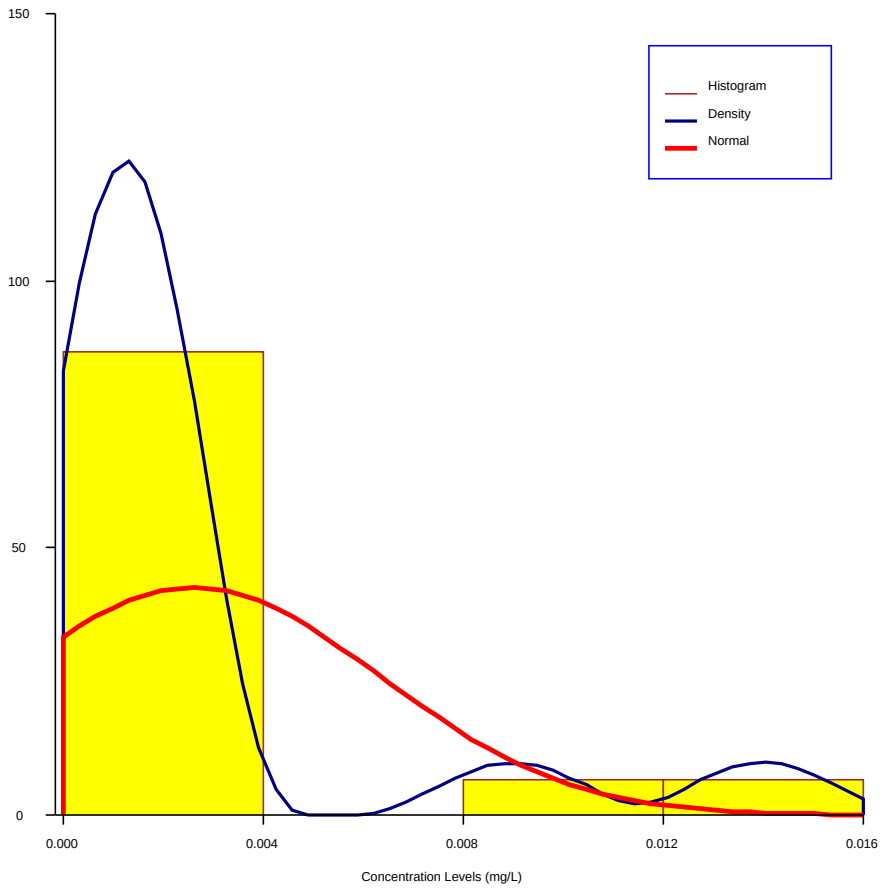
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_120"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "1_1_120"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

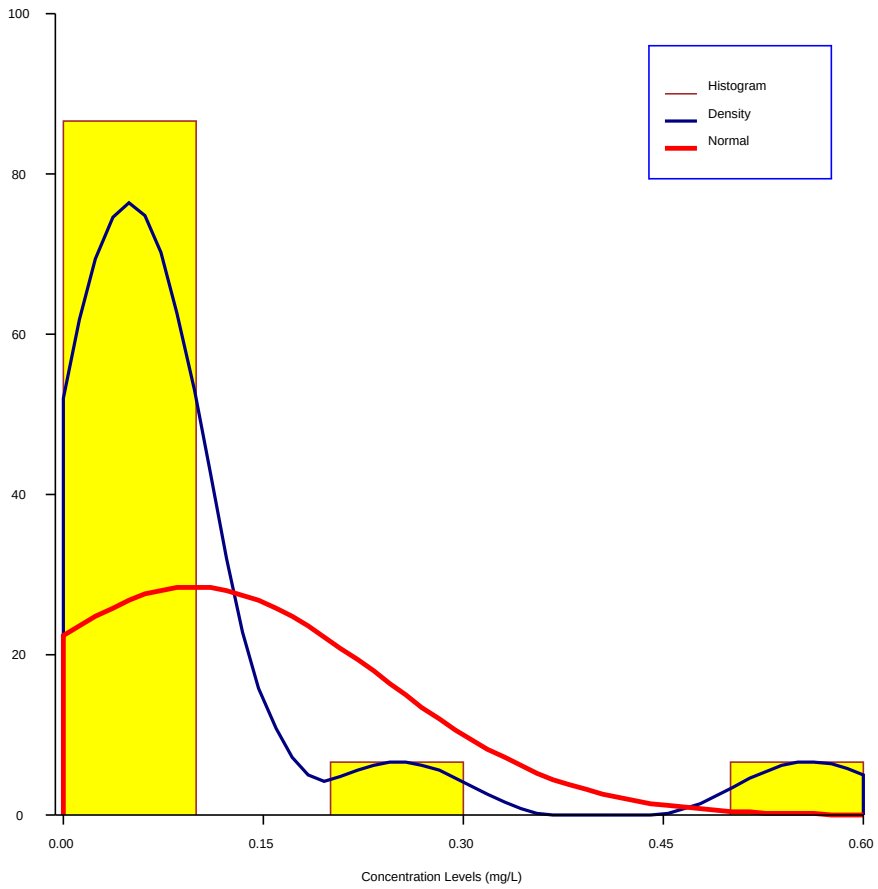
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_122"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "1_1_122"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

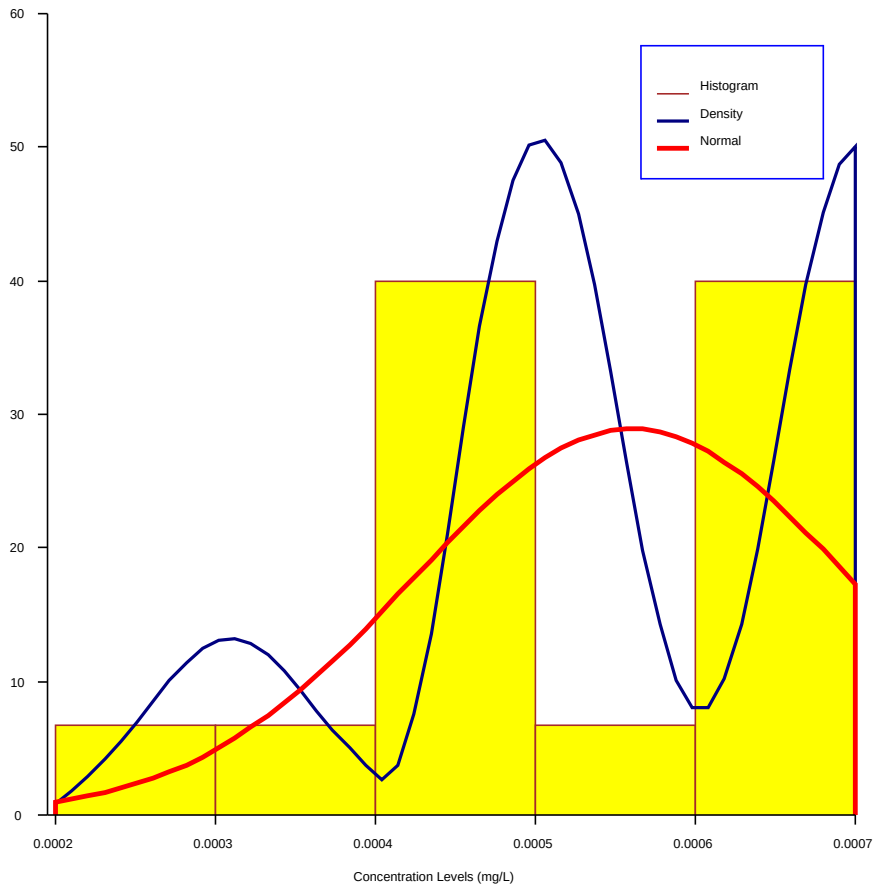
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_124"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "1_1_124"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

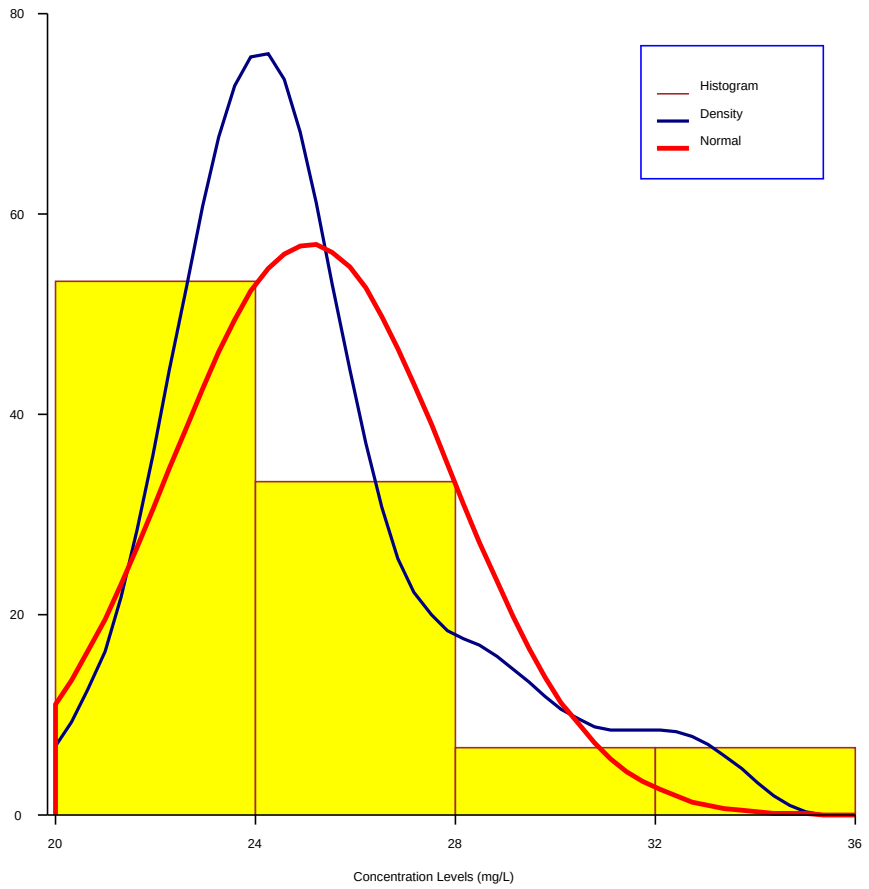
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_126"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "1_1_126"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

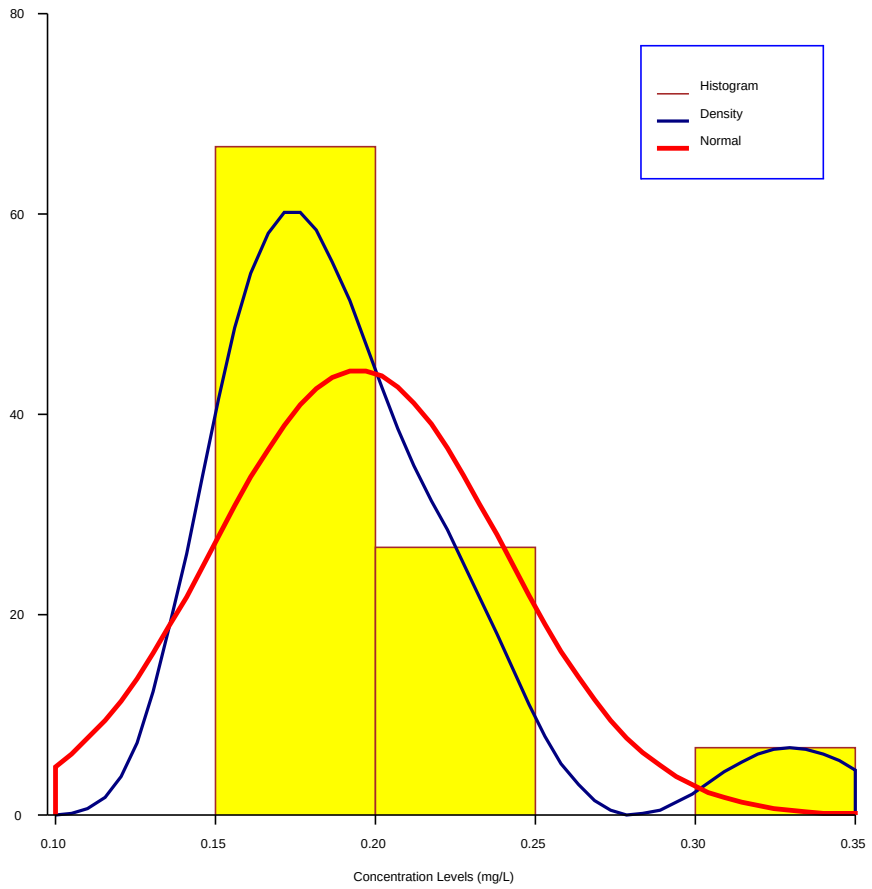
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_128"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "1_1_128"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

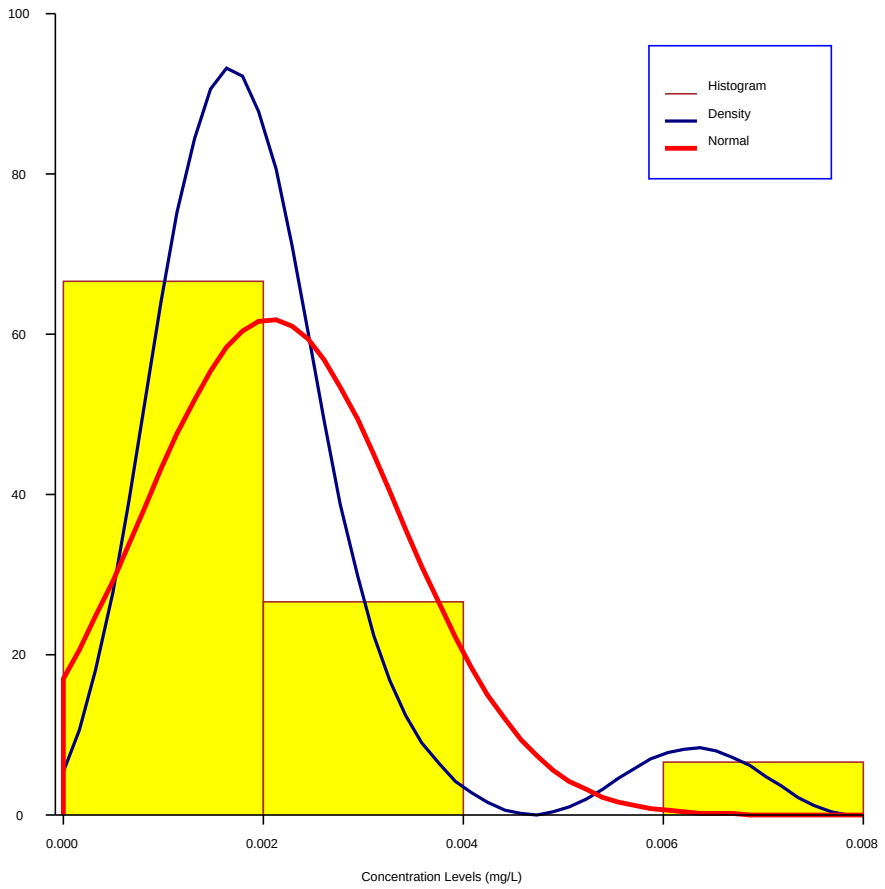
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_132"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "1_1_132"

Procedure Input Settings ——

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

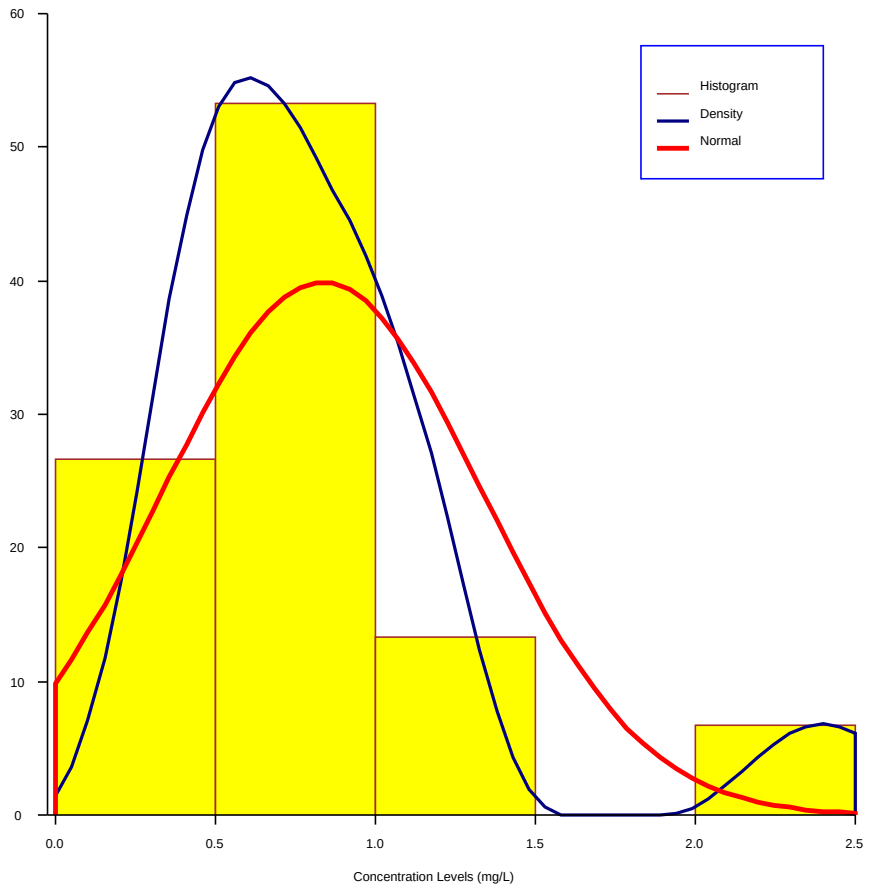
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_136"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "1_1_136"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

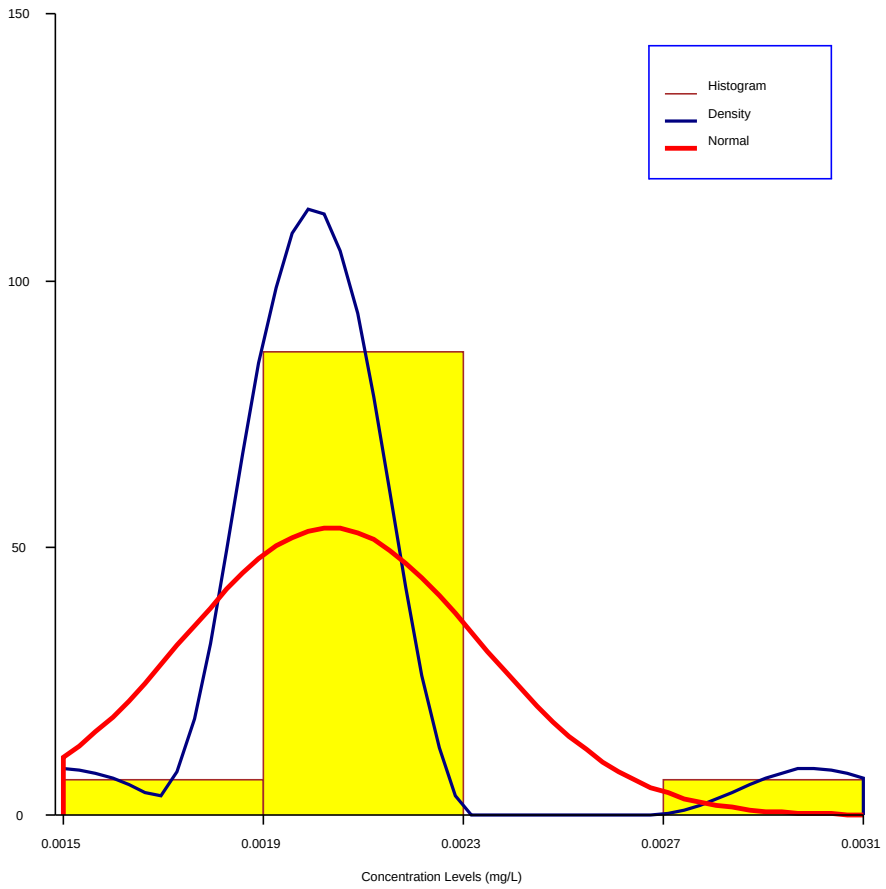
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_138"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "1_1_138"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

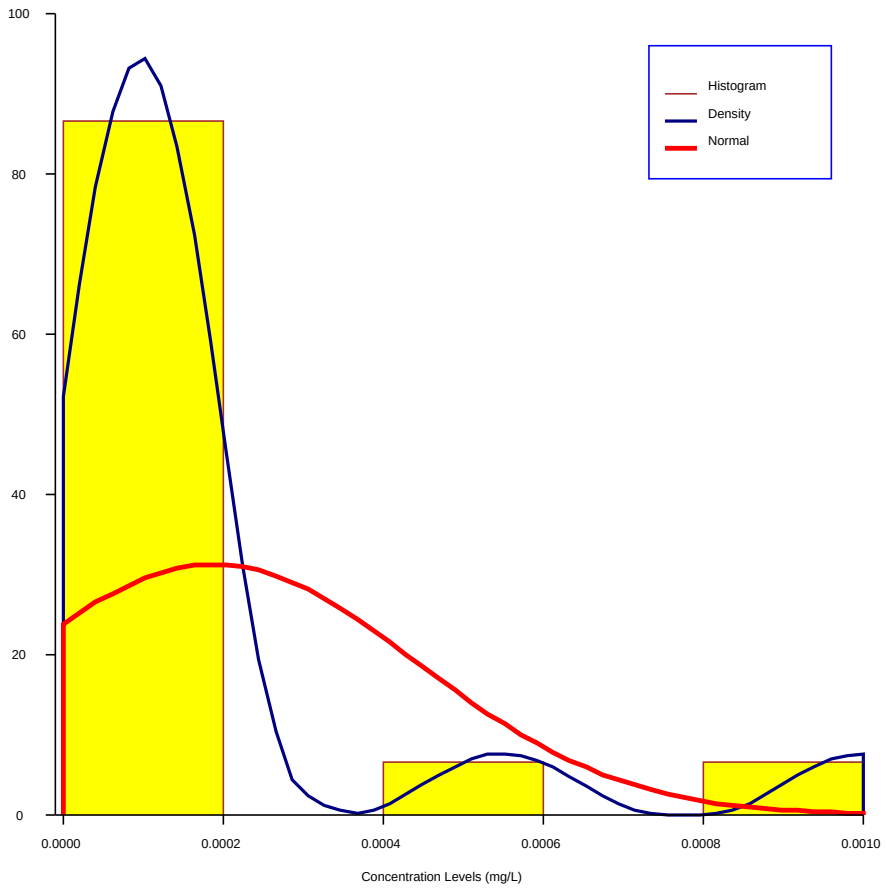
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_140"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "1_1_140"

Procedure Input Settings ——

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

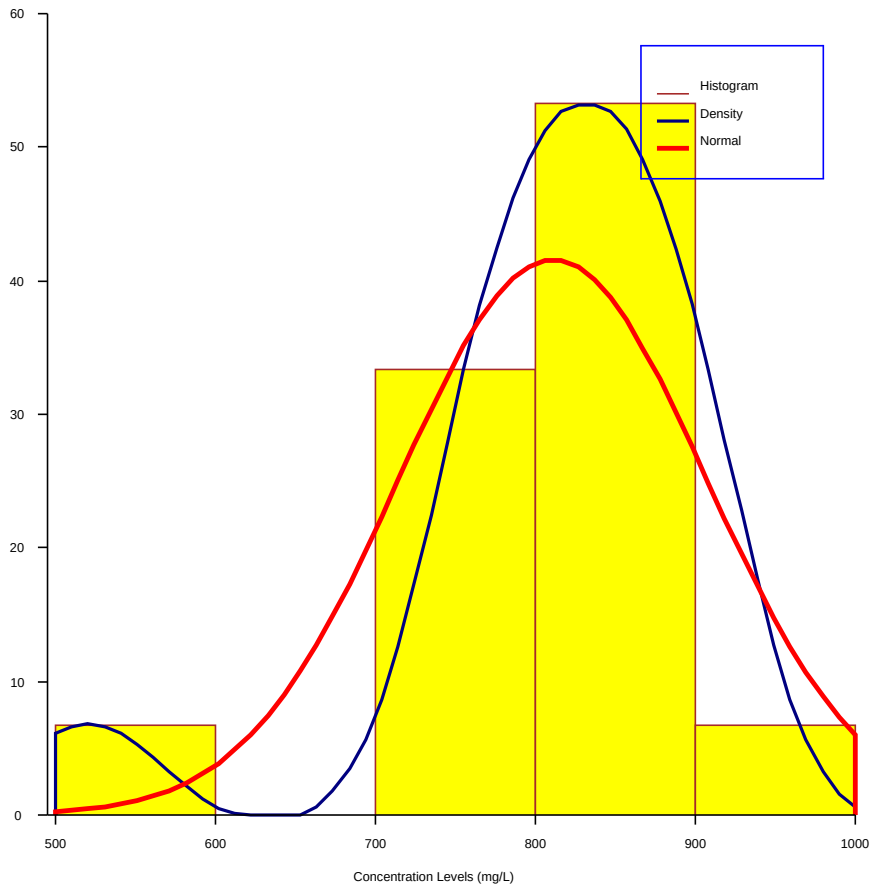
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_142"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "1_1_142"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

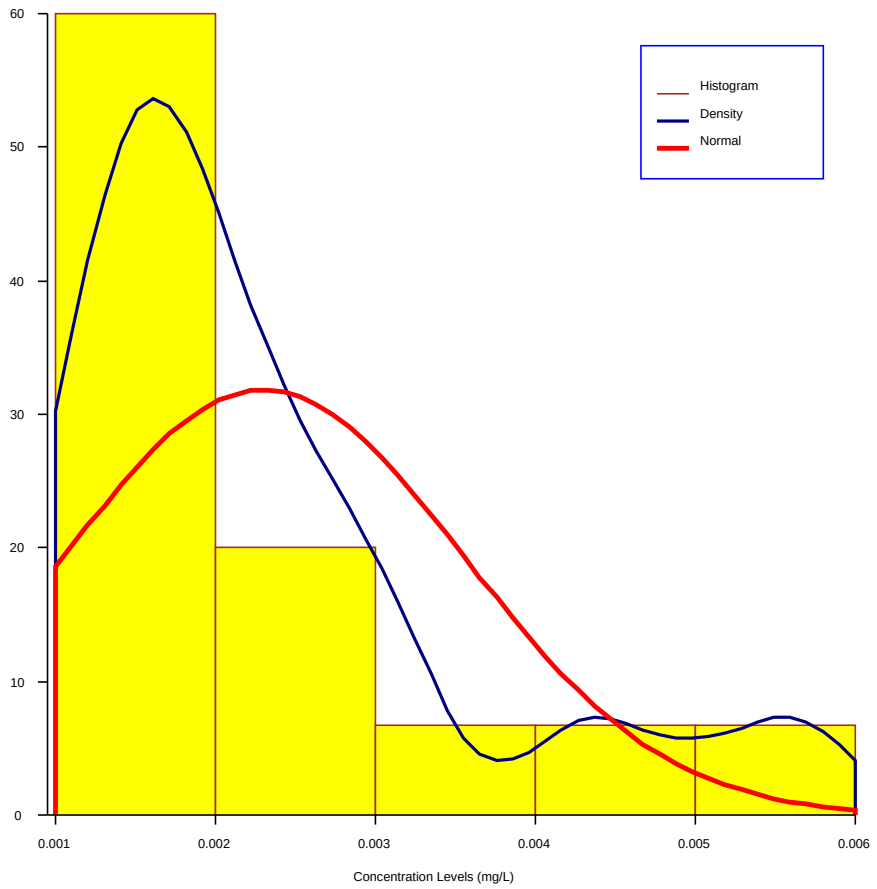
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_146"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "1_1_146"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

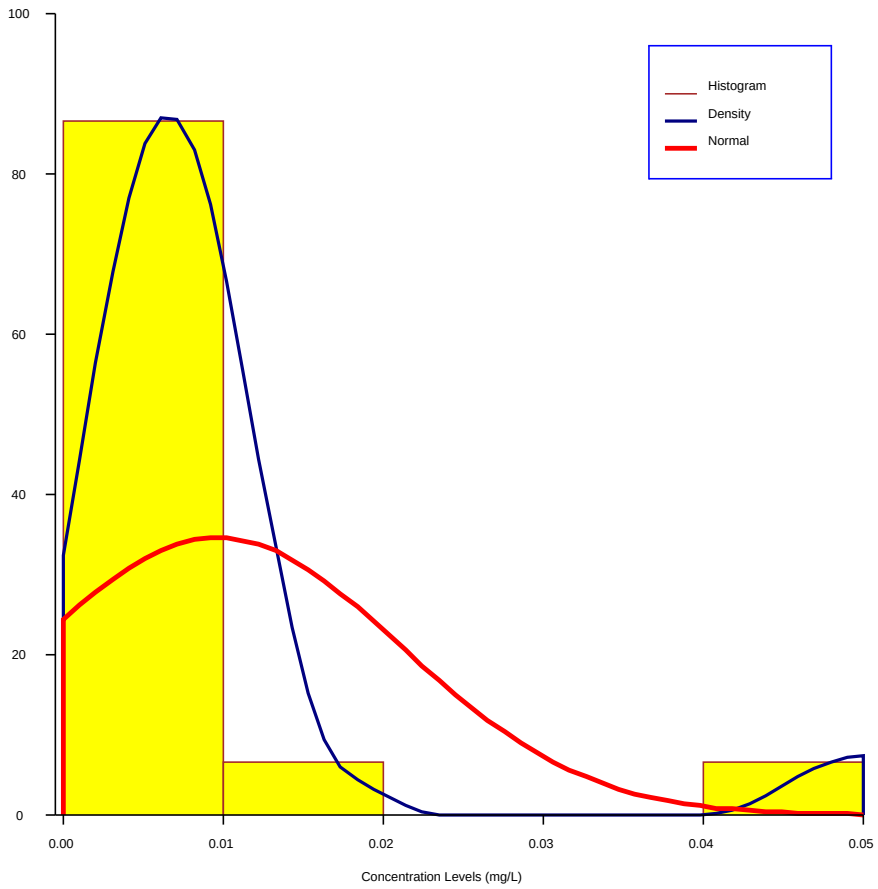
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_148"

Histogram Section



Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_148"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

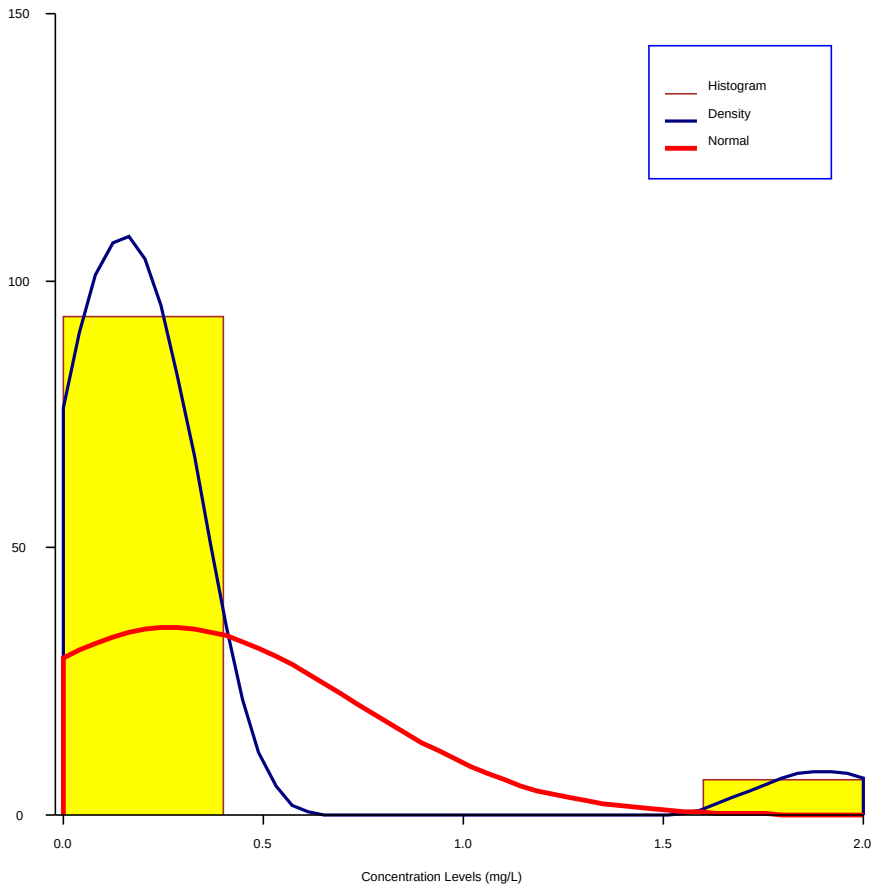
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_2_133"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "1_2_133"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

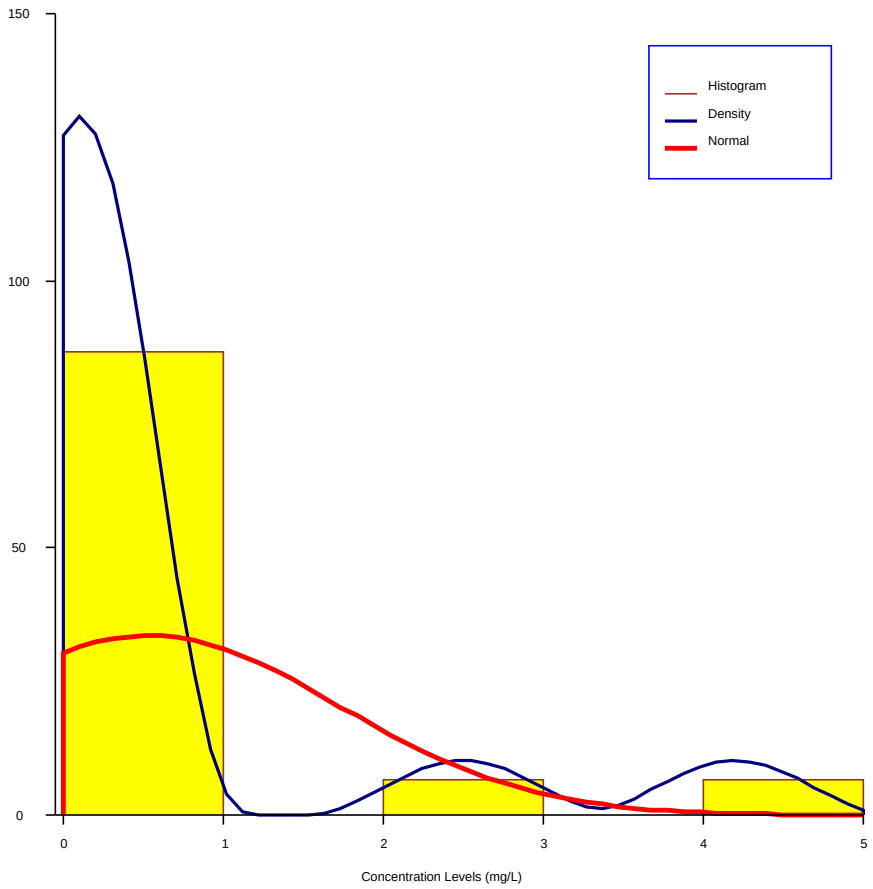
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_101"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "1_4_101"

Procedure Input Settings ——

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

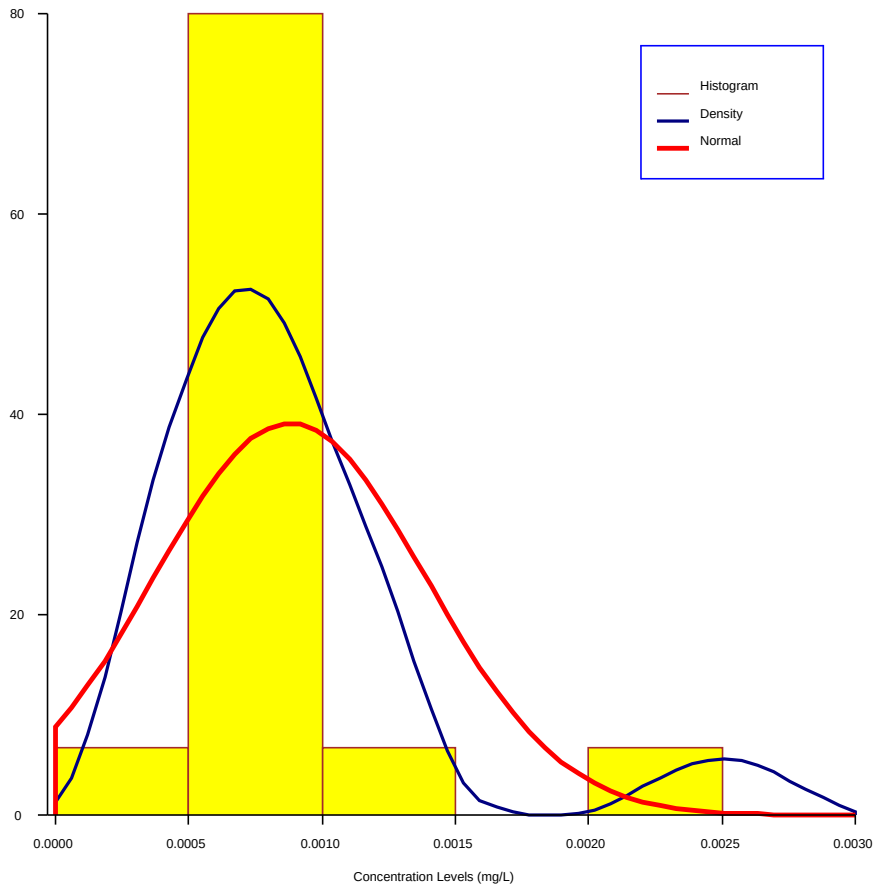
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_103"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "1_4_103"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

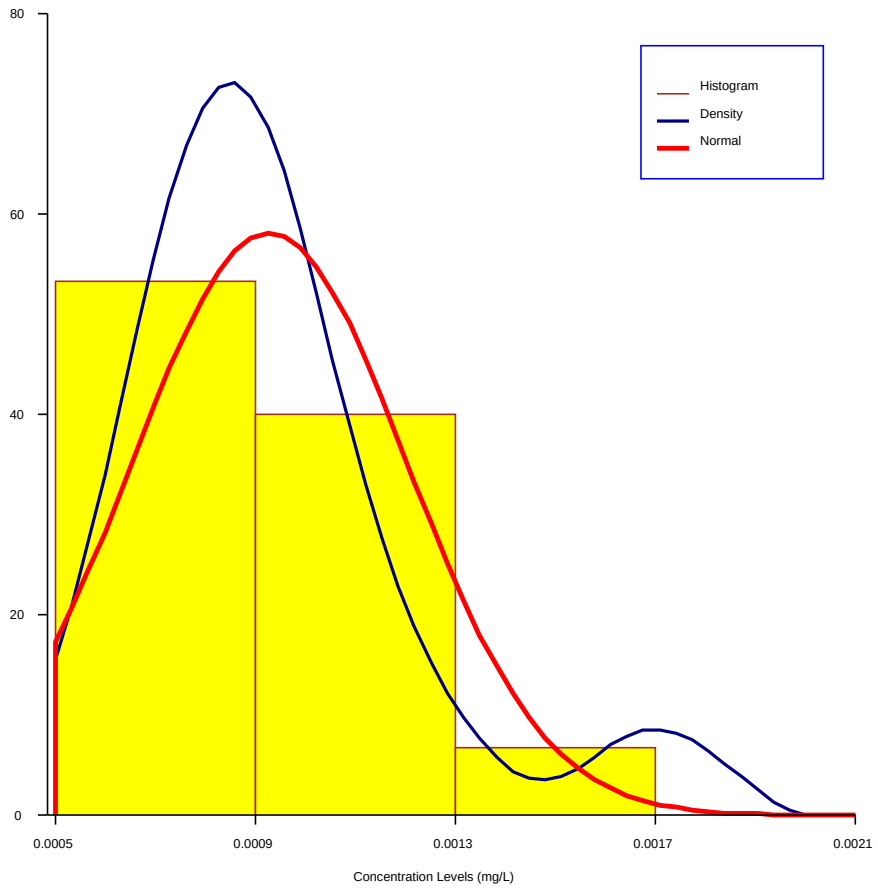
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_105"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "1_4_105"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

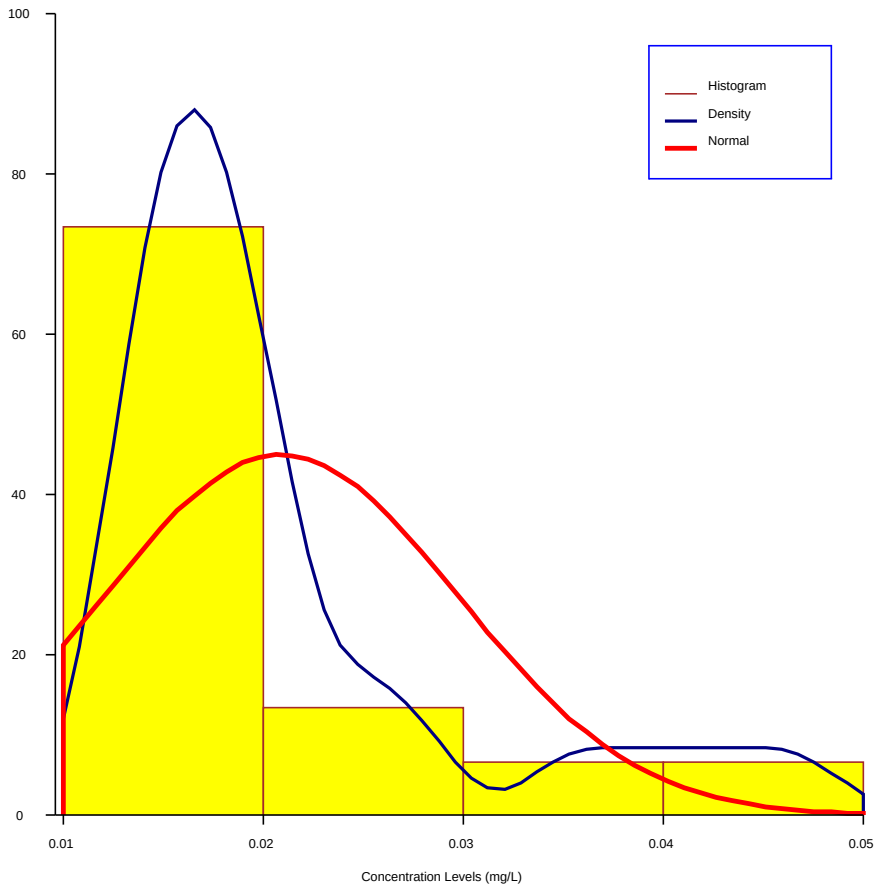
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_107"

Histogram Section



Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_107"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

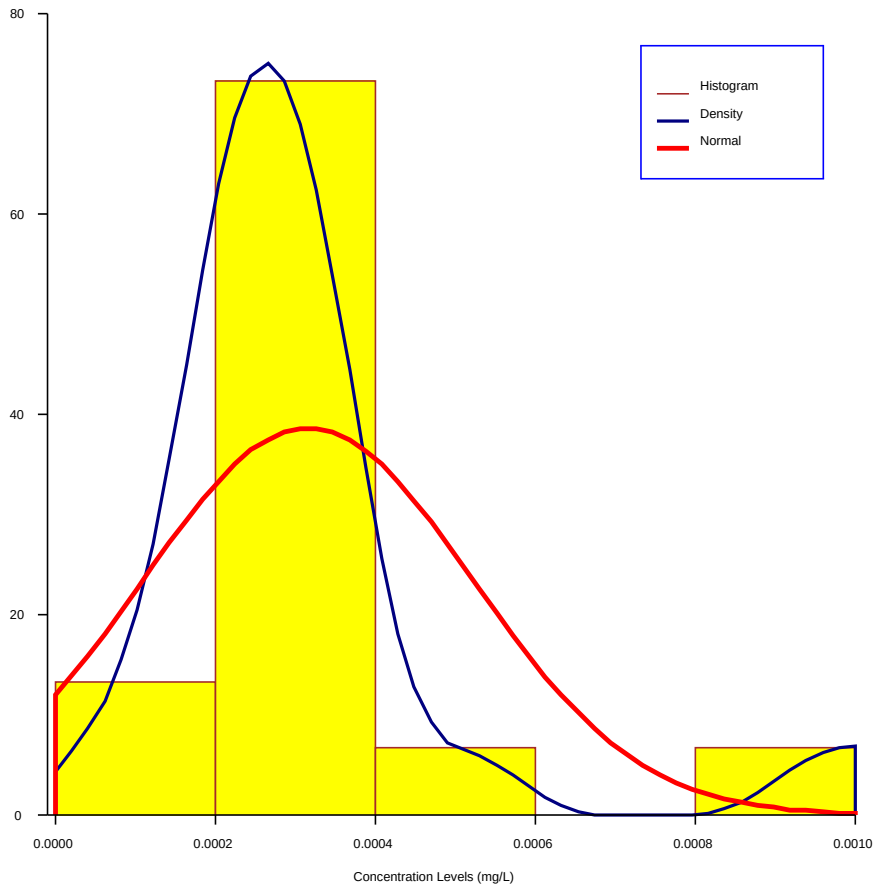
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_109"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "1_4_109"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

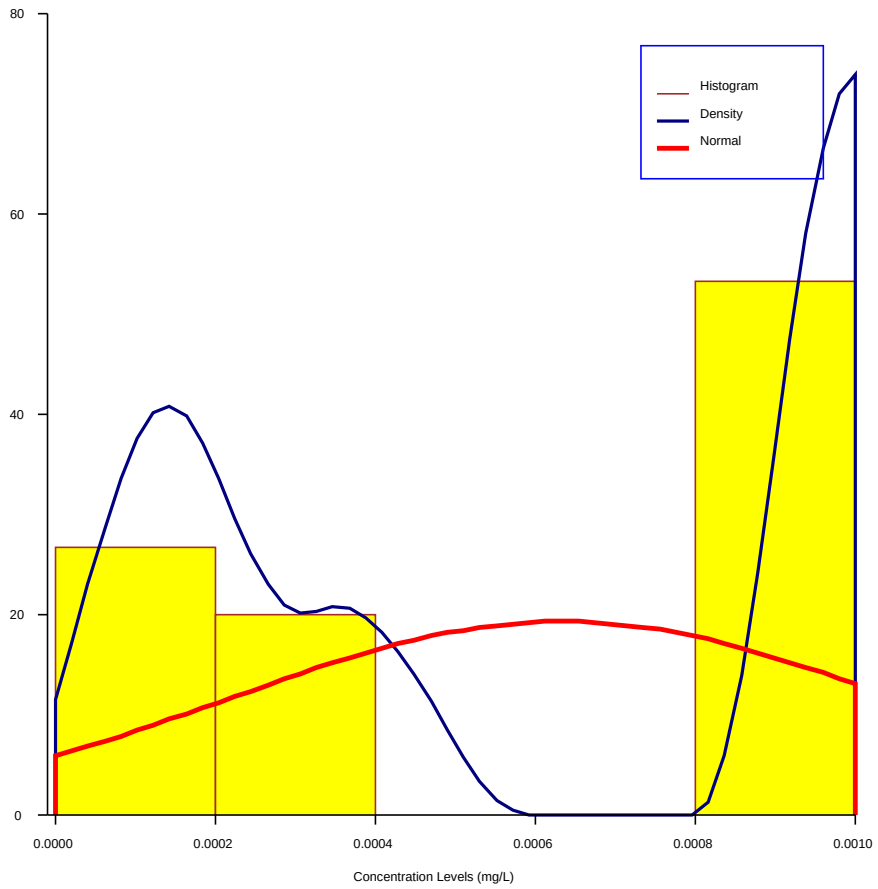
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_111"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "1_4_111"

Procedure Input Settings ——

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

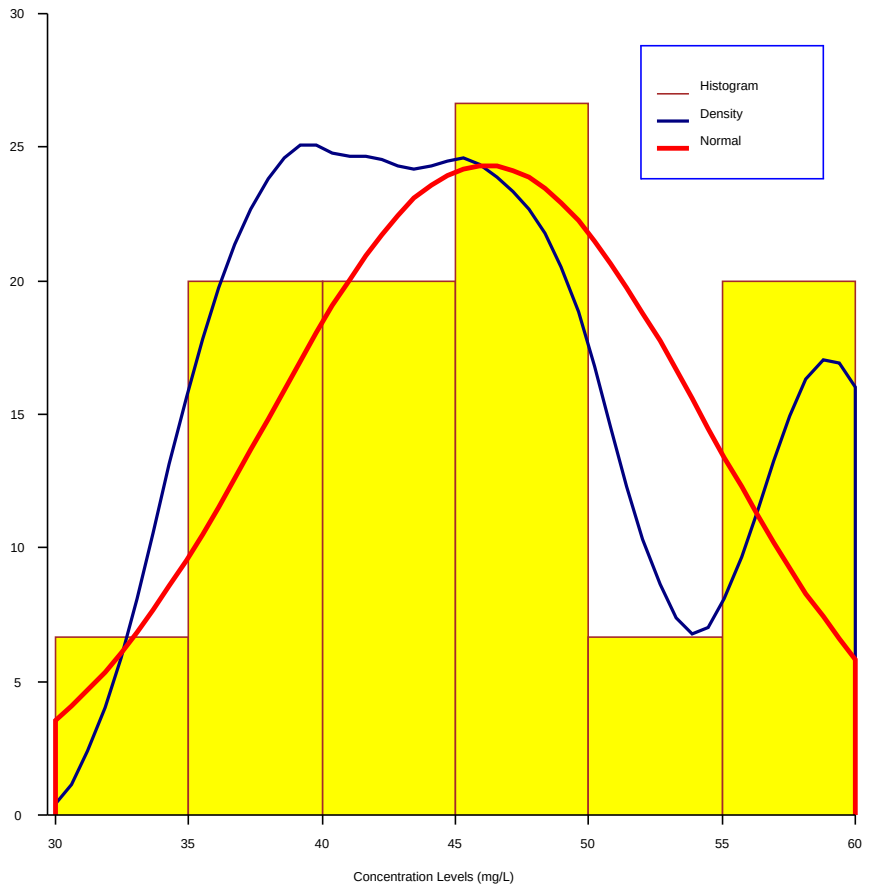
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_113"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "1_4_113"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

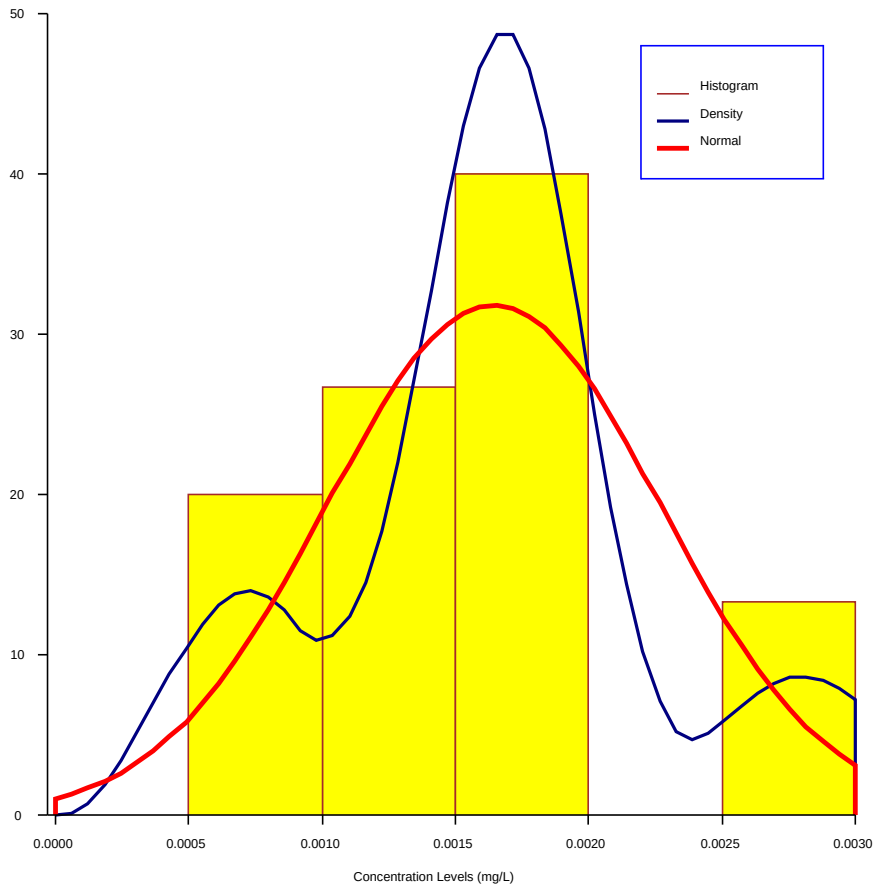
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_115"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "1_4_115"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

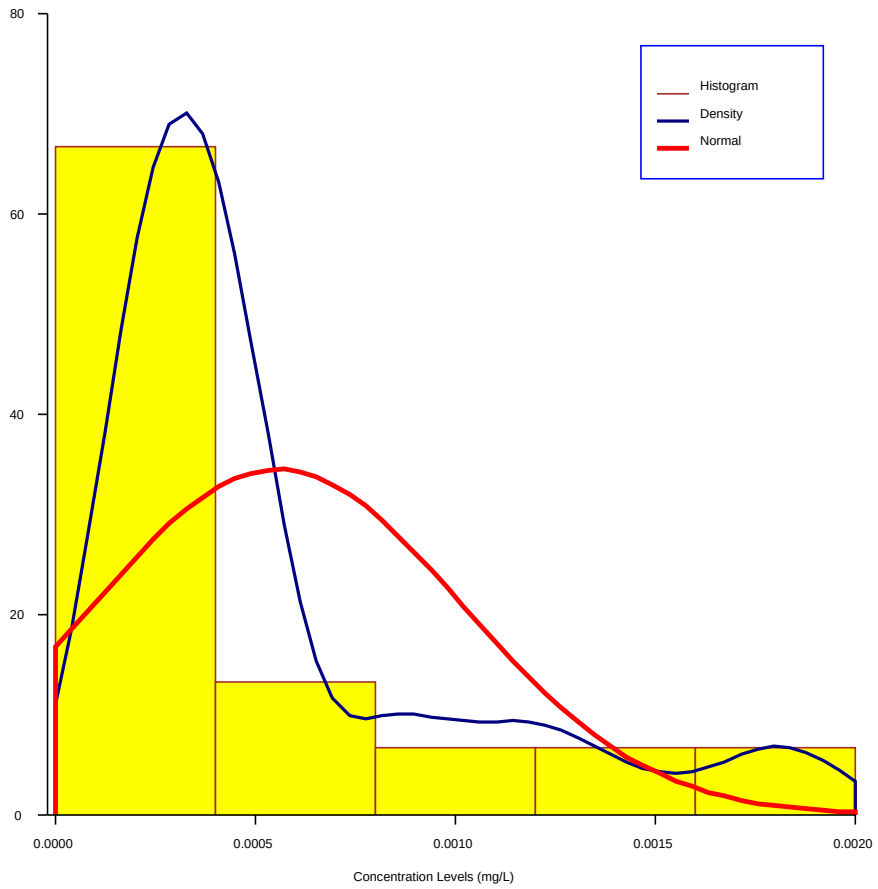
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_117"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "1_4_117"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

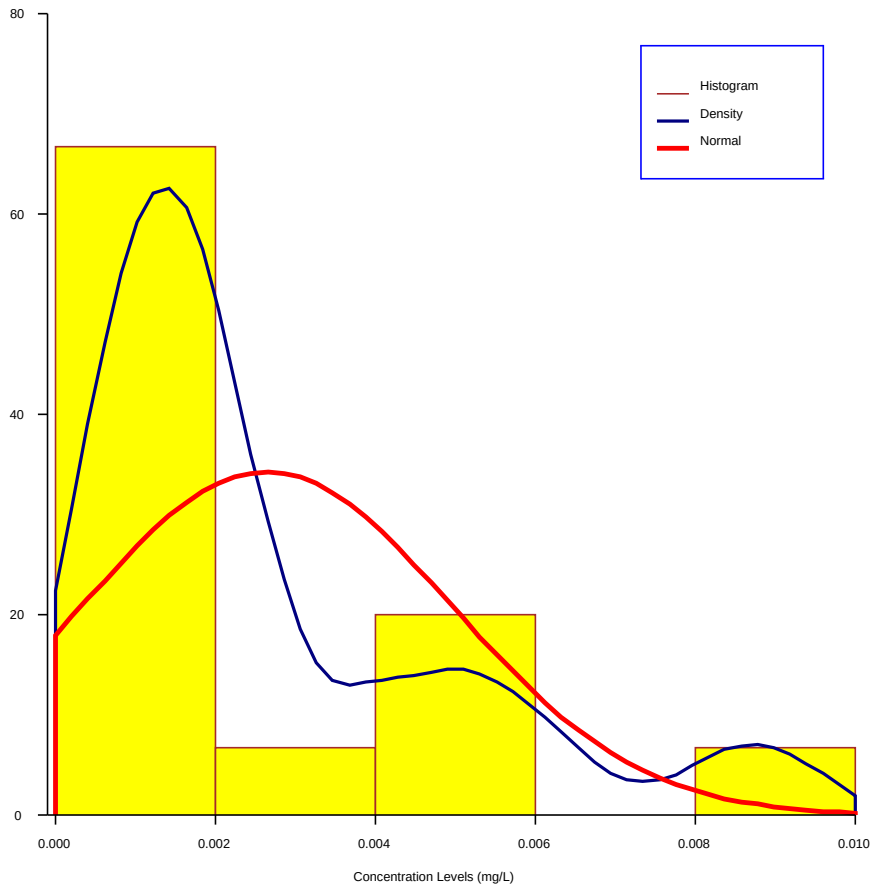
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_119"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "1_4_119"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

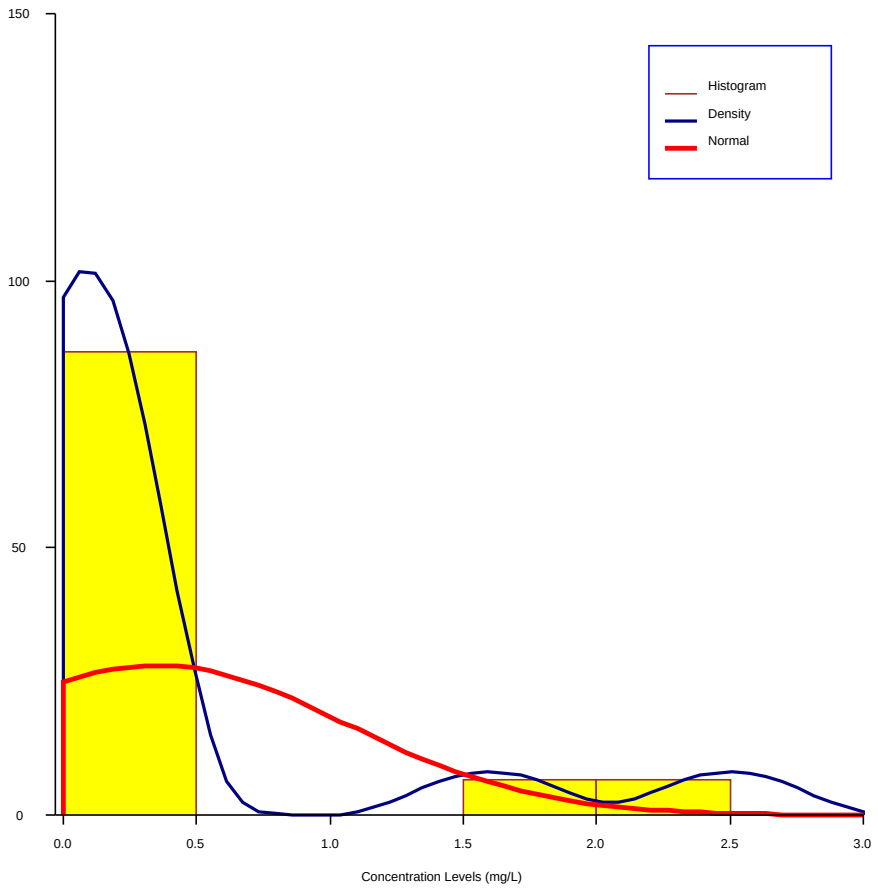
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_121"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "1_4_121"

Procedure Input Settings ——

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

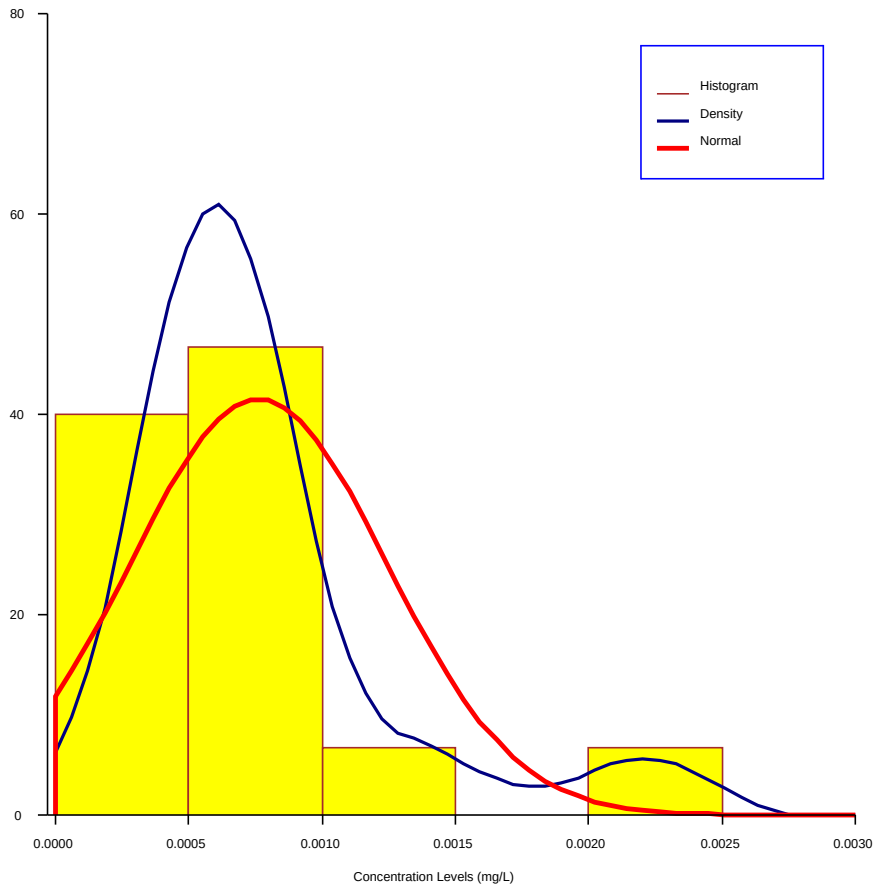
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_123"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "1_4_123"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

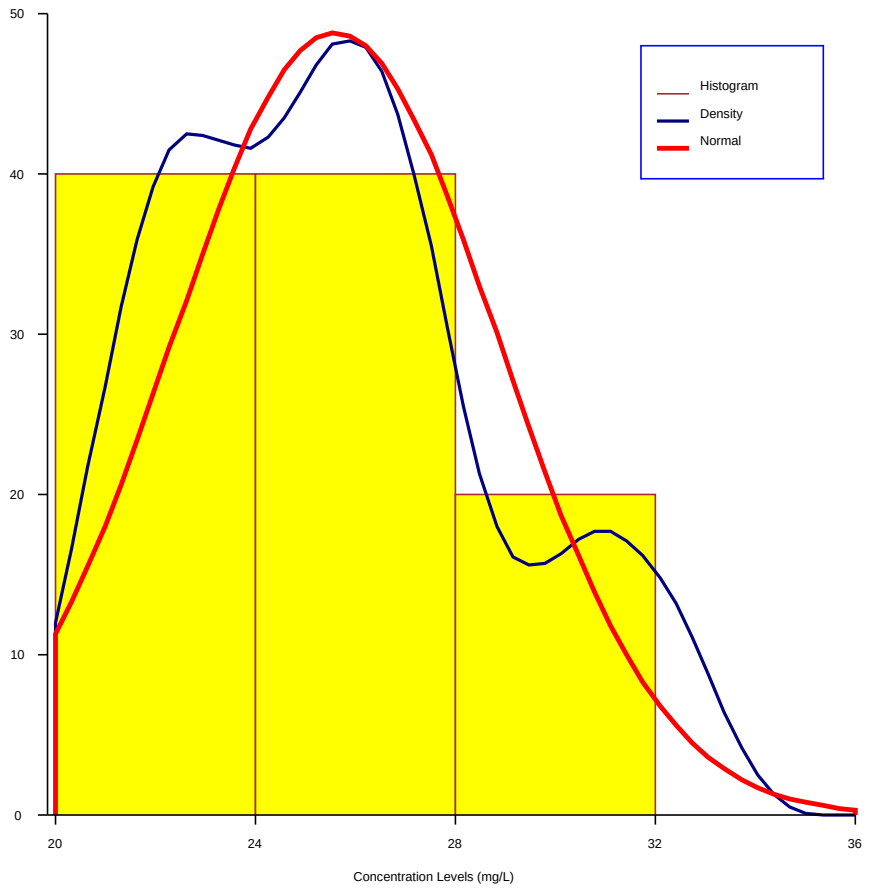
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_125"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "1_4_125"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

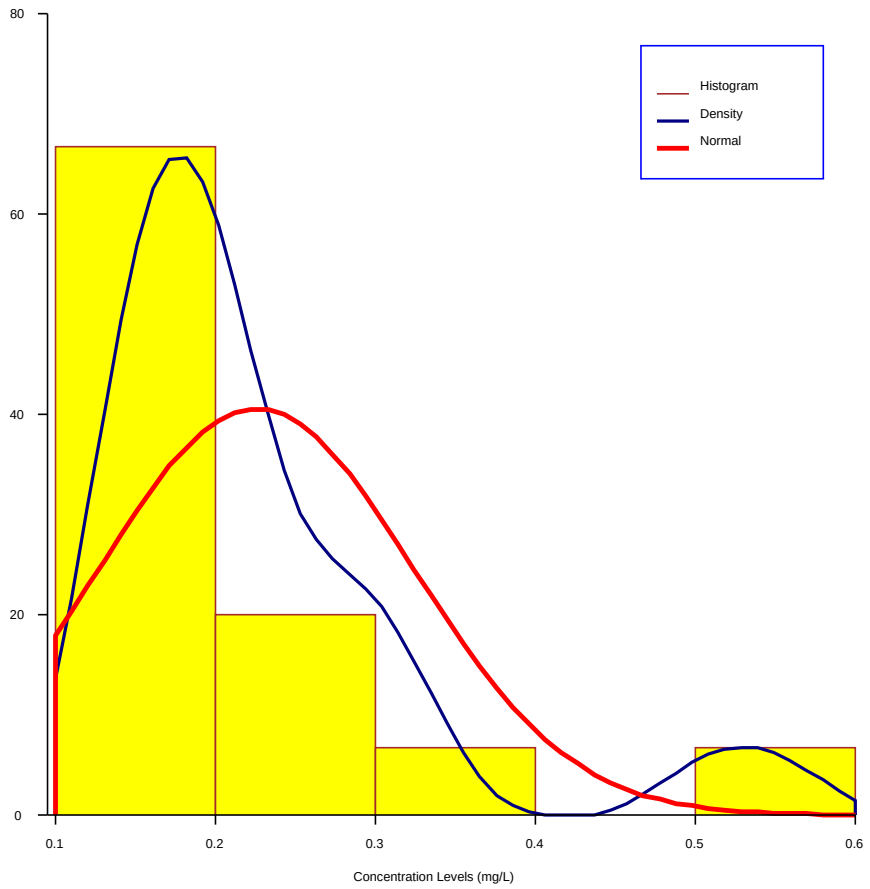
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_127"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "1_4_127"

Procedure Input Settings ——

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

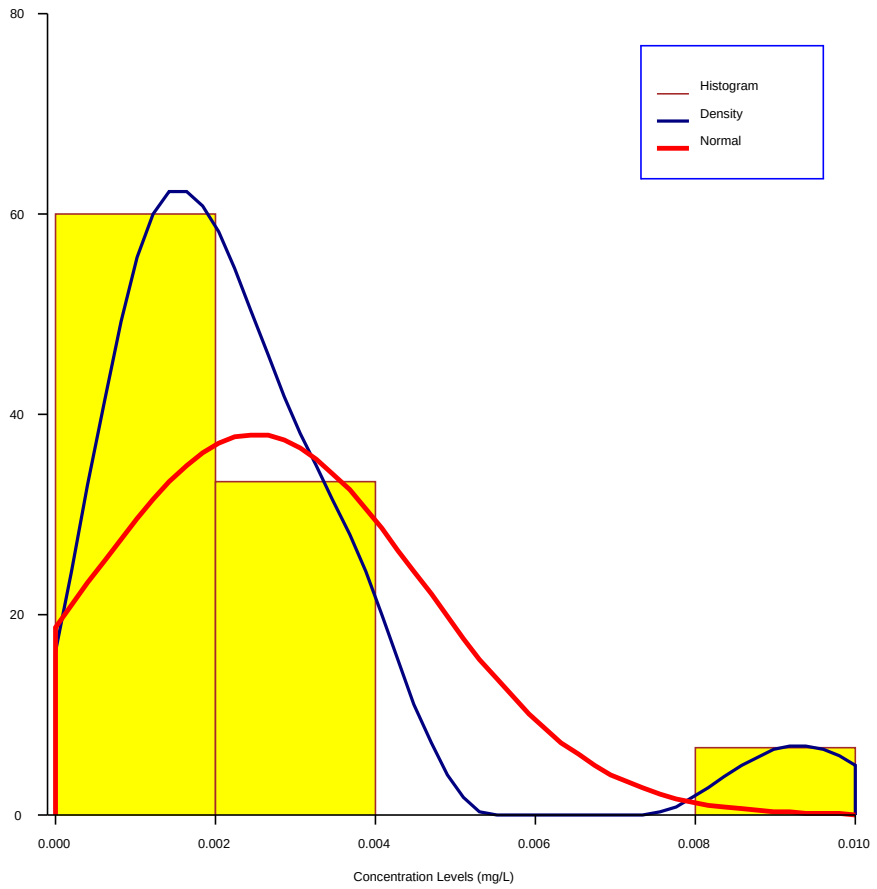
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_131"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "1_4_131"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

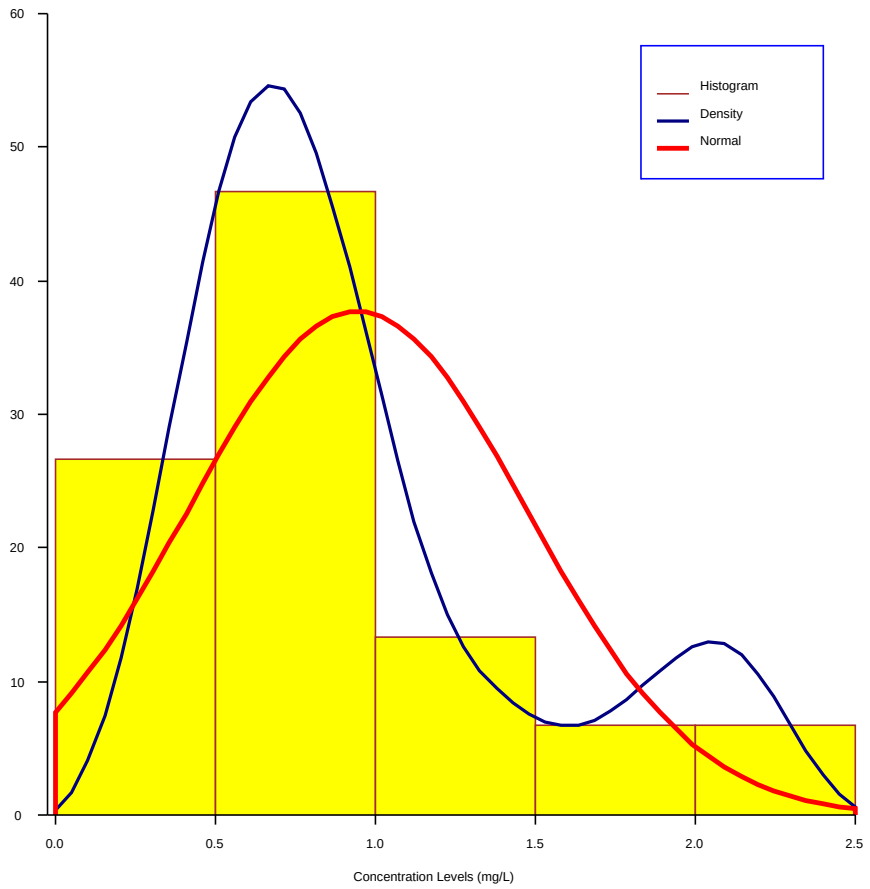
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_135"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "1_4_135"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

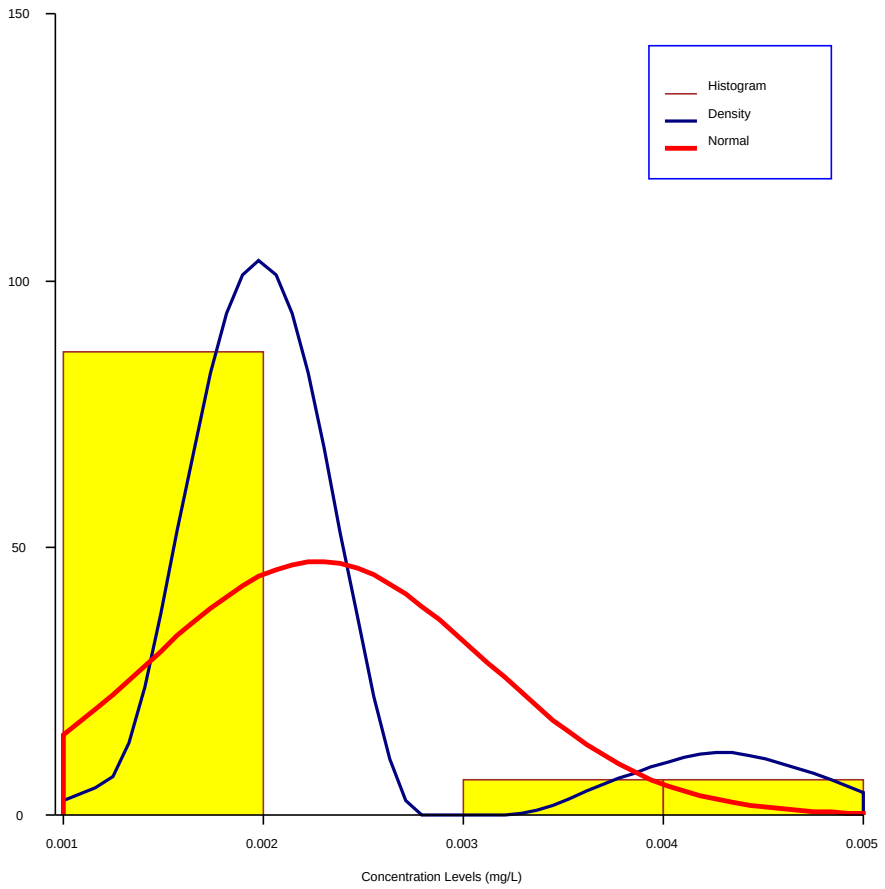
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_137"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "1_4_137"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

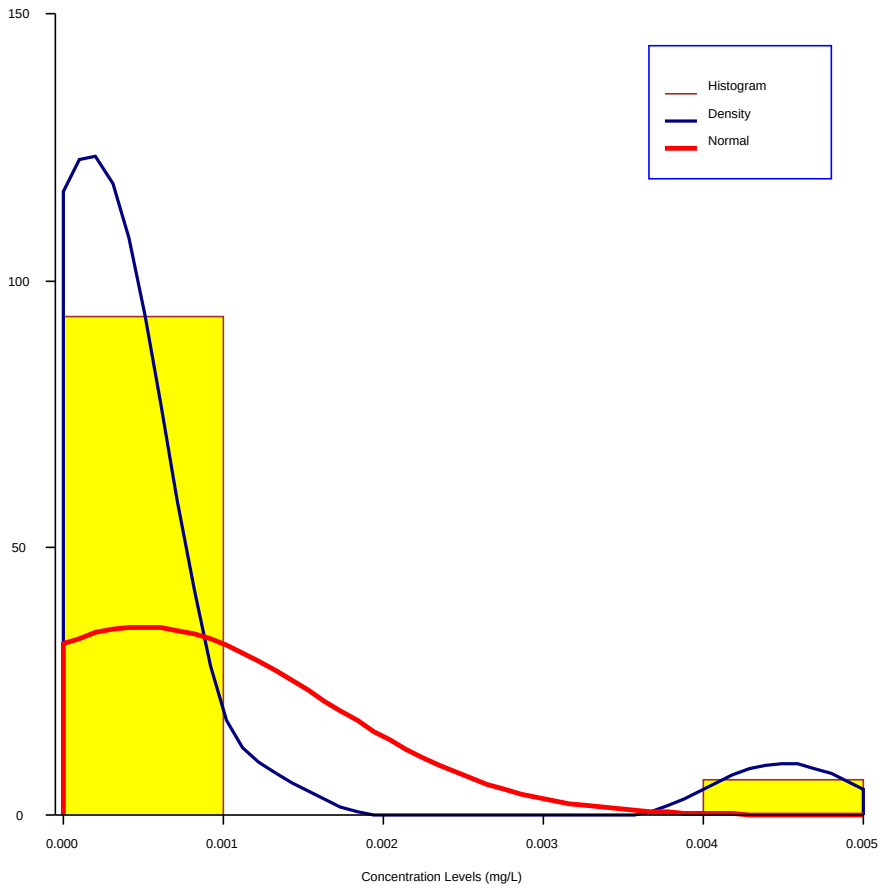
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_139"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "1_4_139"

Procedure Input Settings ——

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

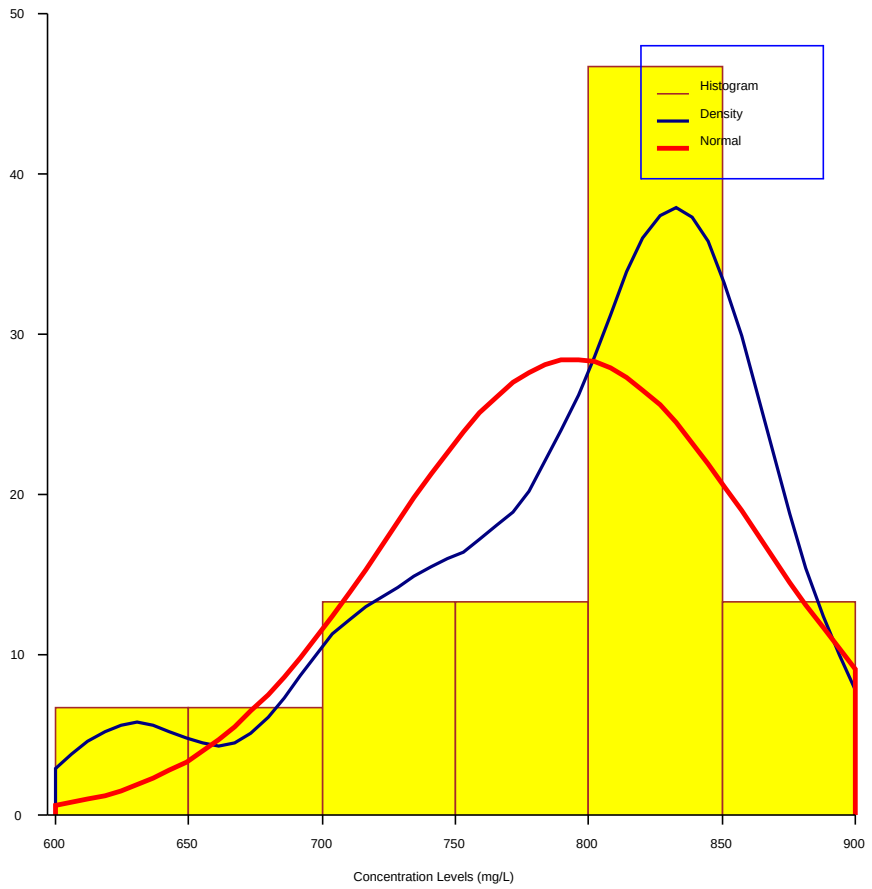
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_141"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "1_4_141"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

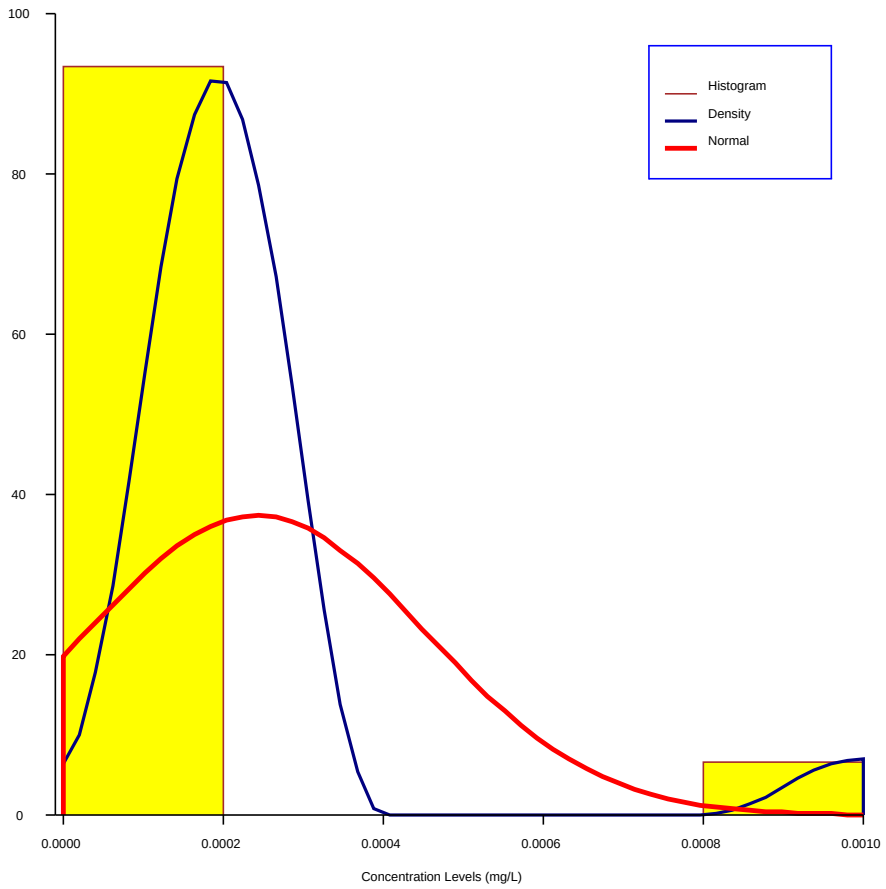
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_143"

Histogram Section



Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_143"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

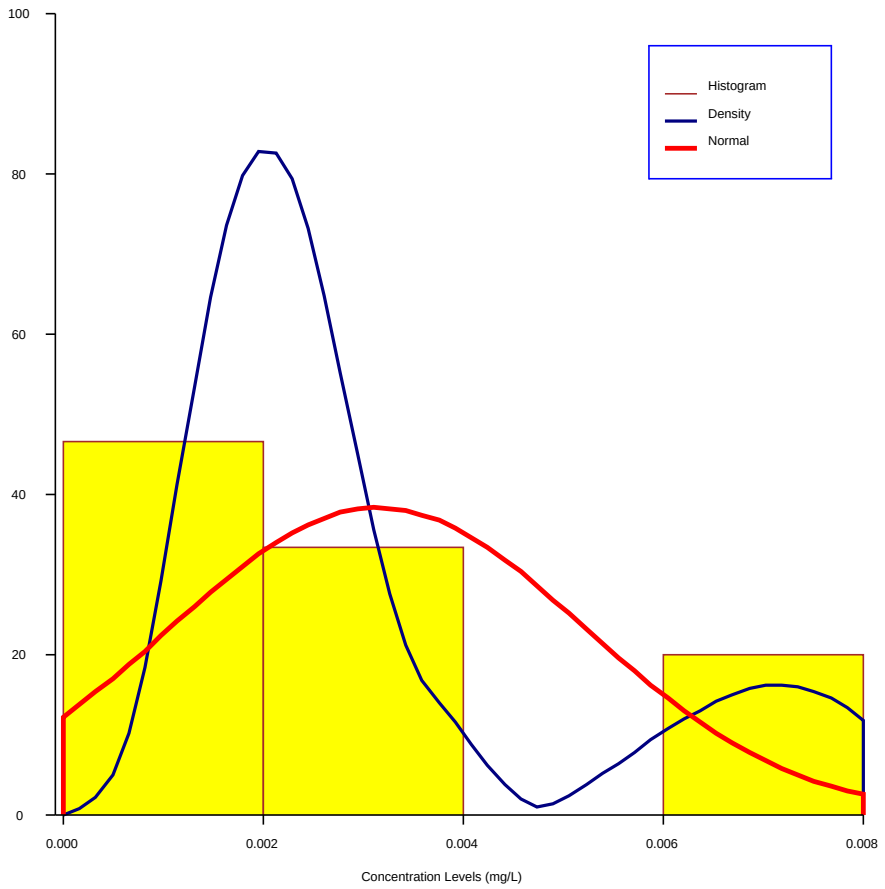
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_145"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "1_4_145"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

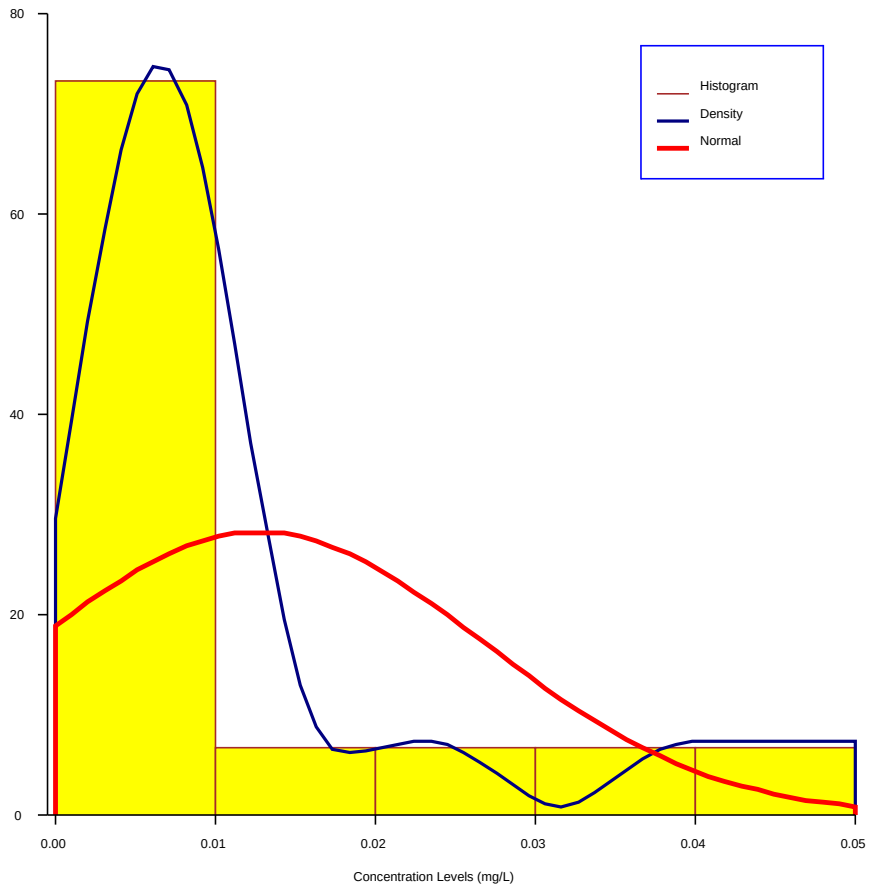
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_147"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "1_4_147"

Procedure Input Settings ——

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

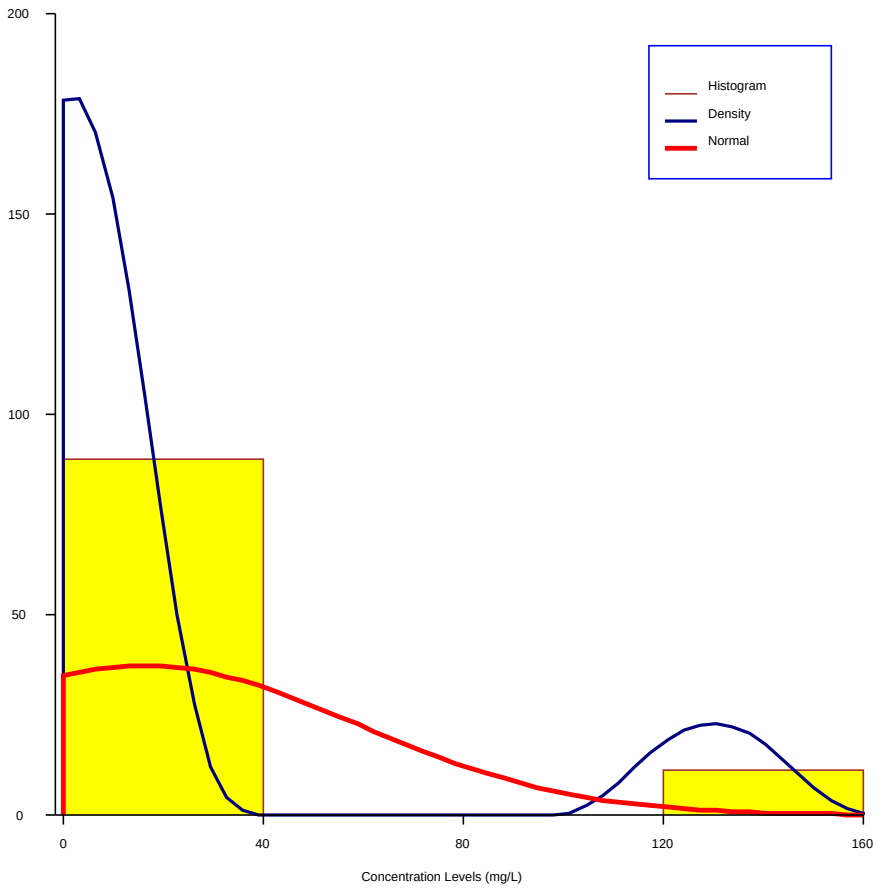
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_102"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "2_1_102"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

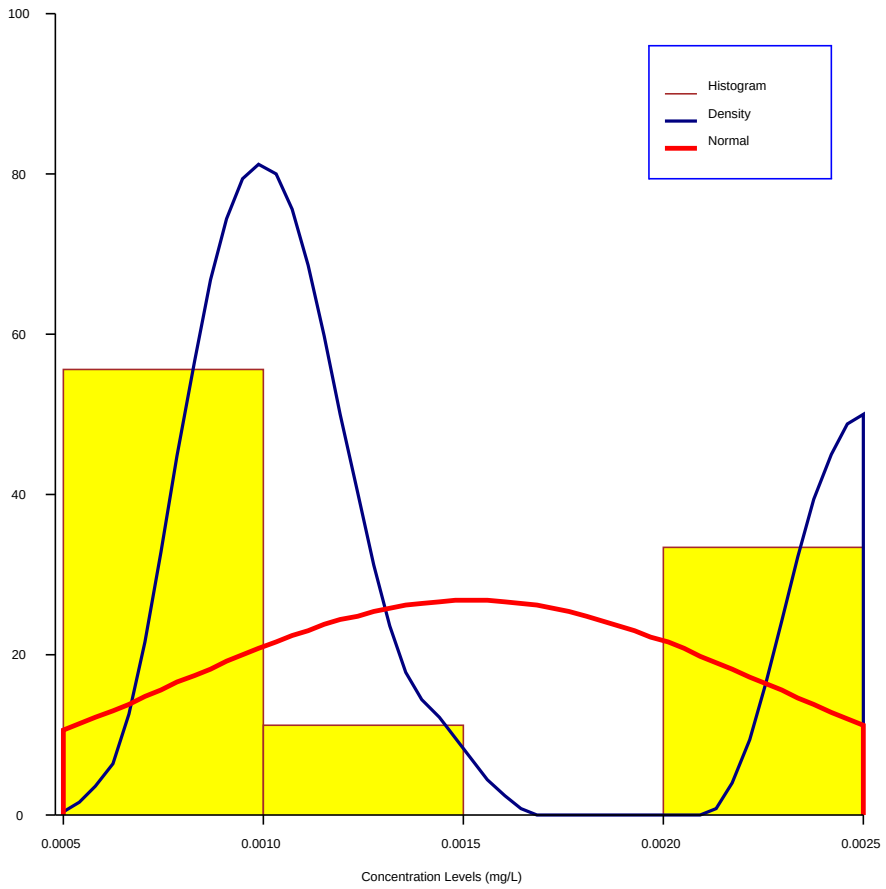
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_104"

Histogram Section



Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_104"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

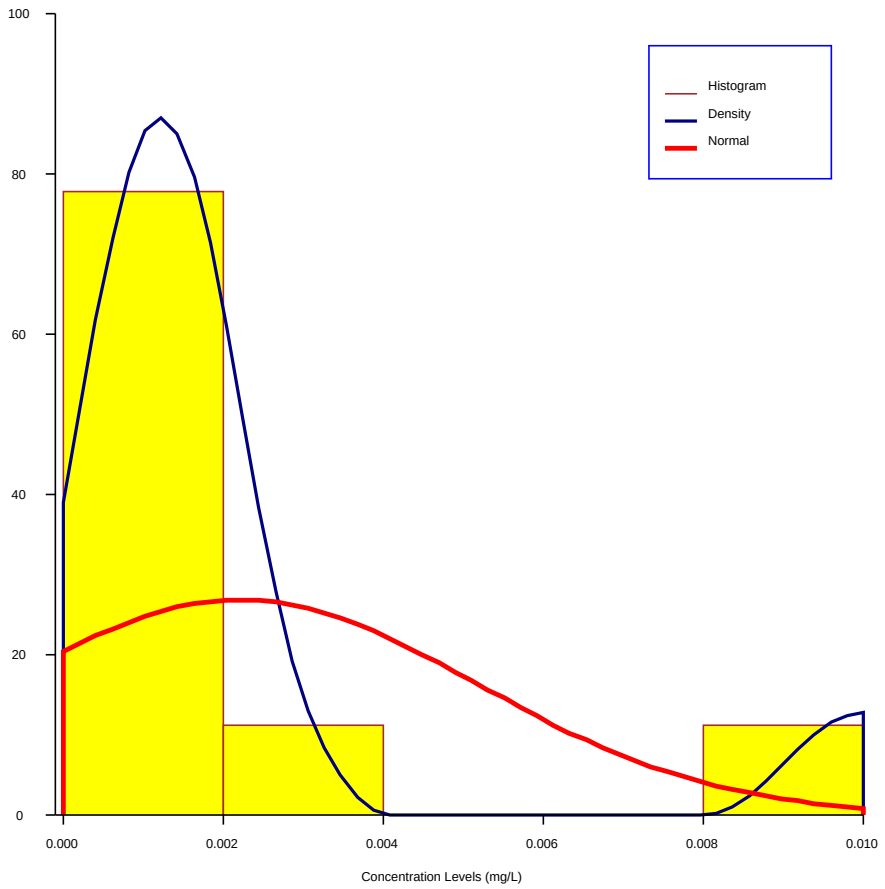
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_106"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "2_1_106"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

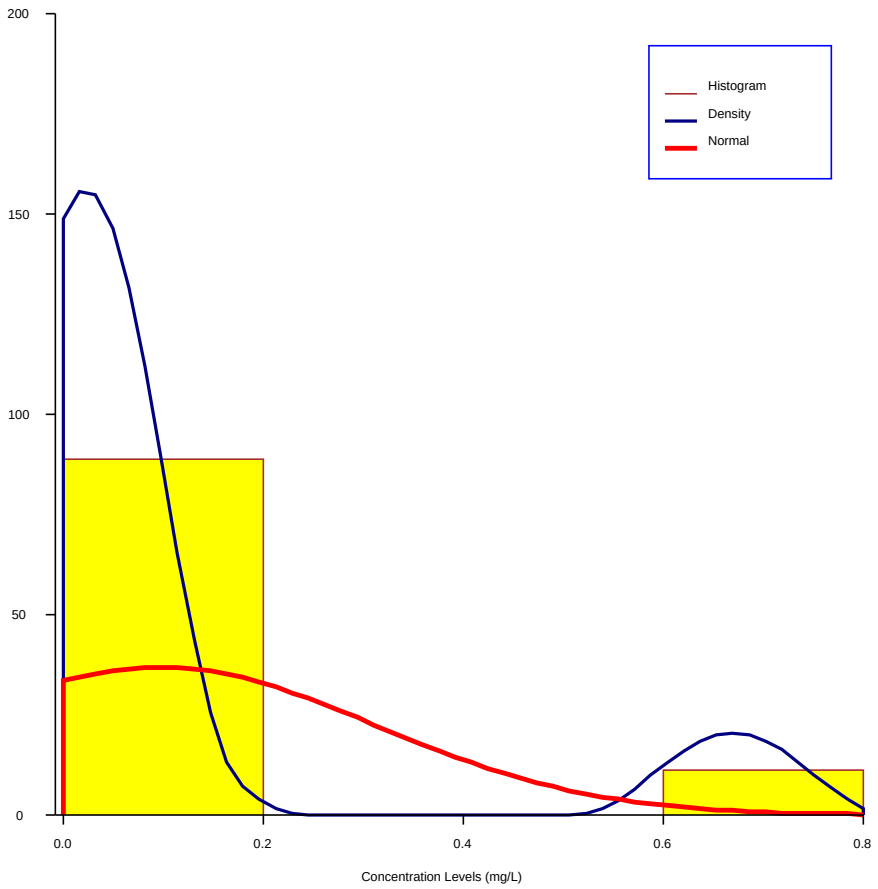
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_108"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "2_1_108"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

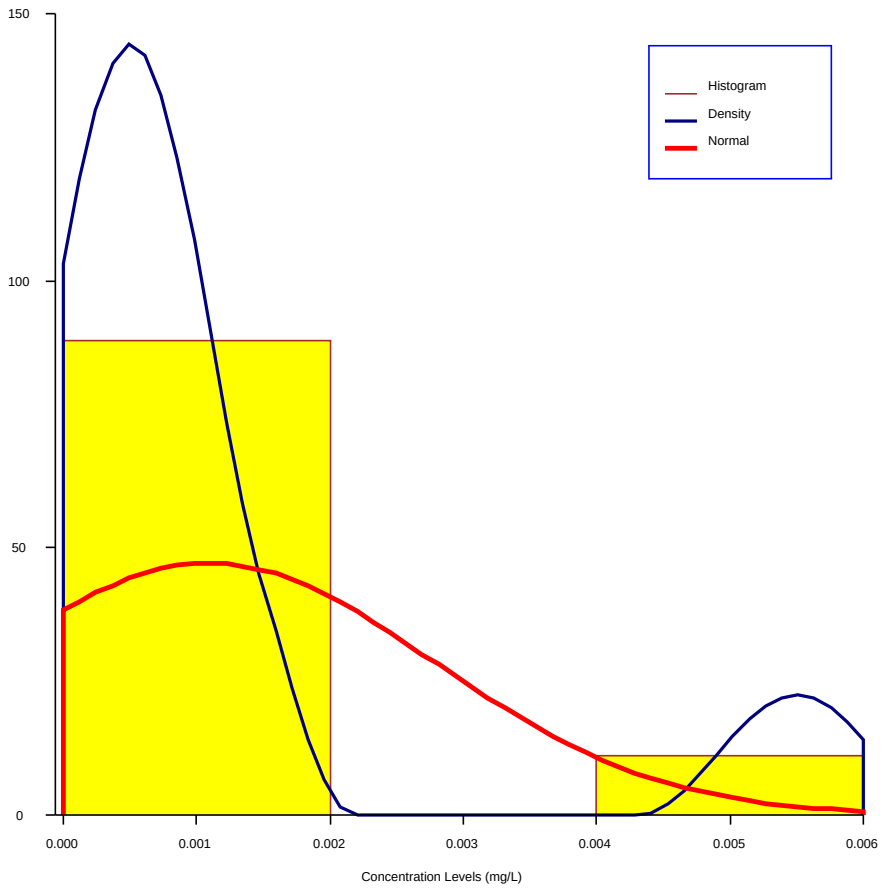
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_110"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "2_1_110"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

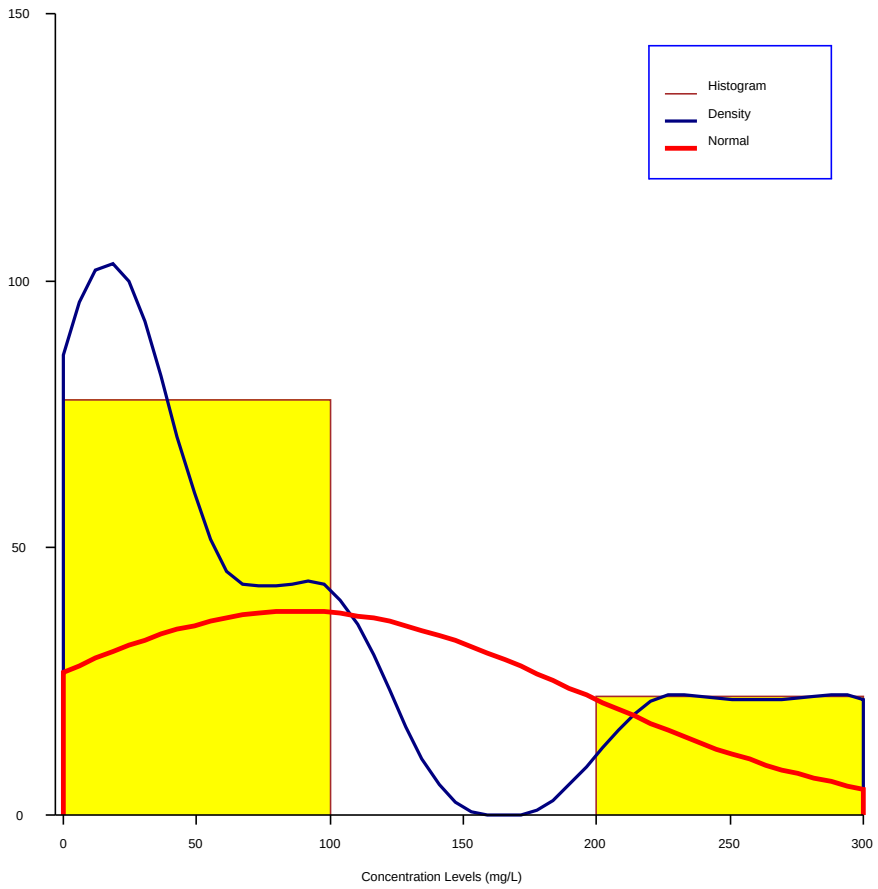
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_114"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "2_1_114"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

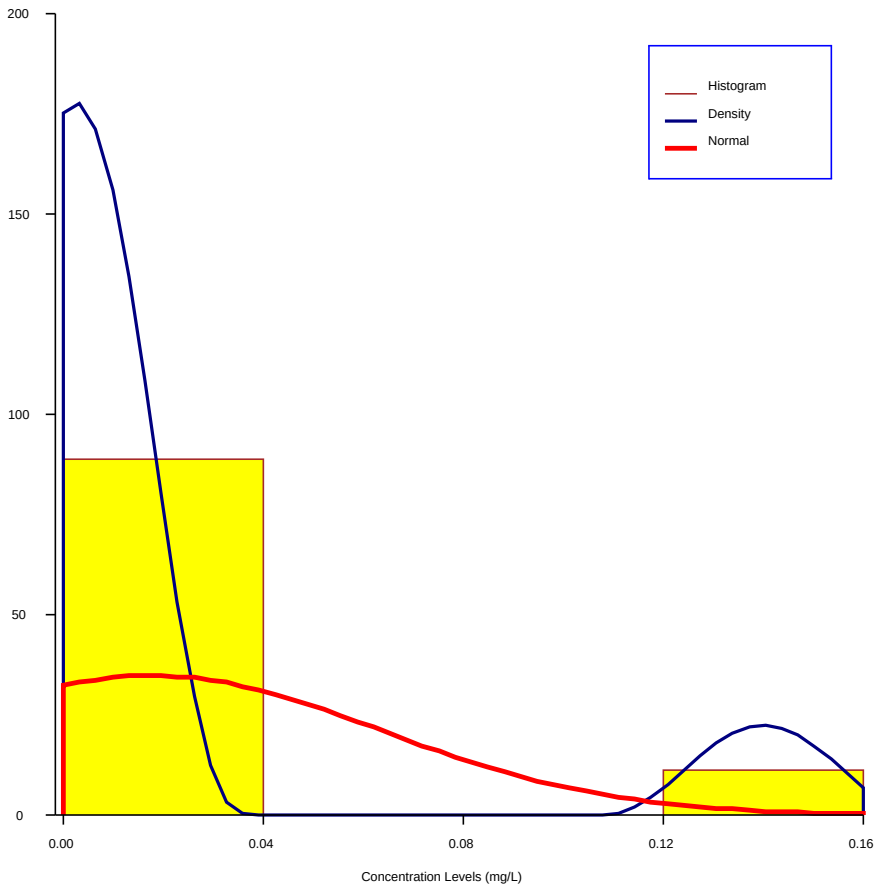
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_116"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "2_1_116"

Procedure Input Settings ——

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

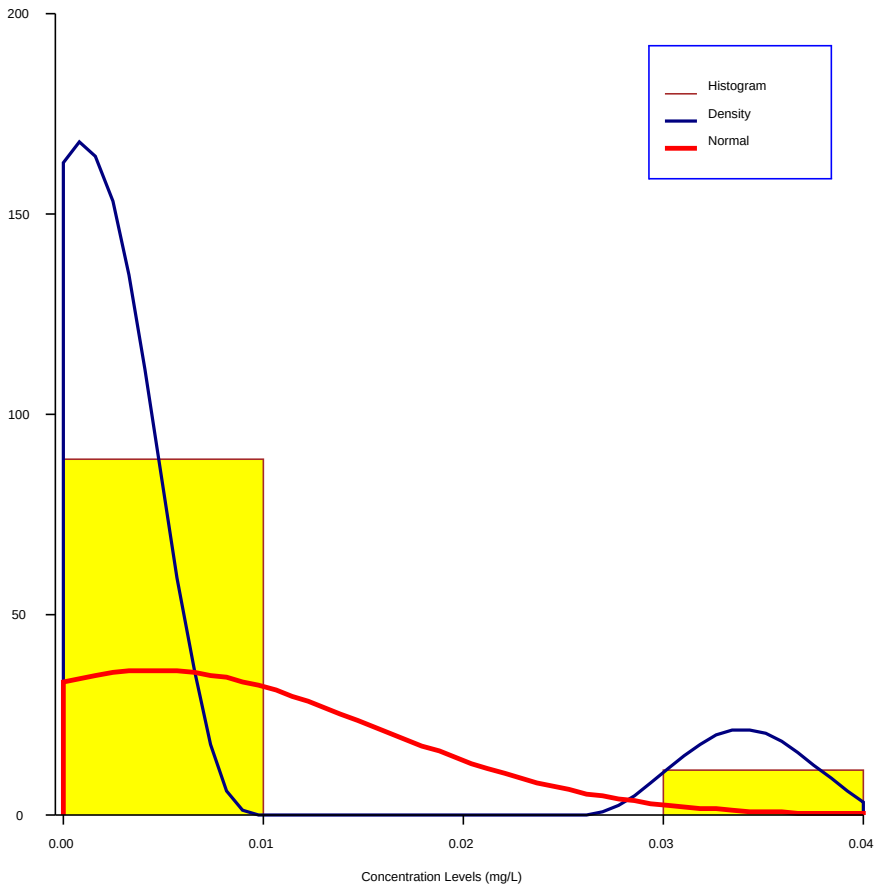
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_118"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "2_1_118"

Procedure Input Settings ——

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

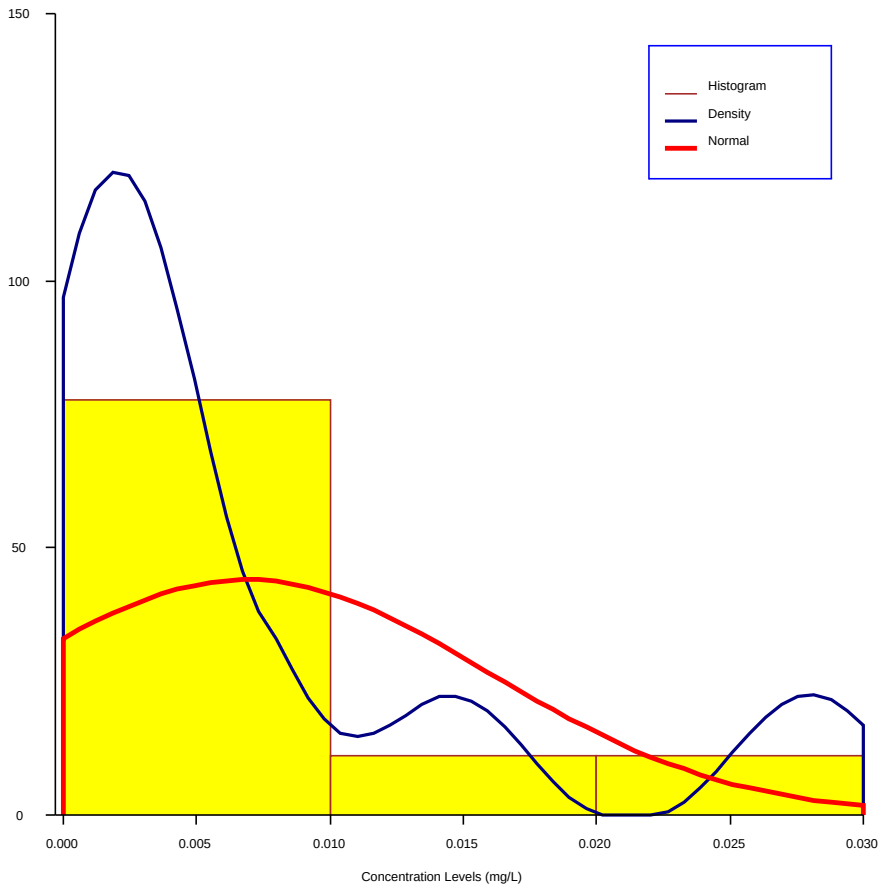
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_120"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "2_1_120"

Procedure Input Settings ——

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

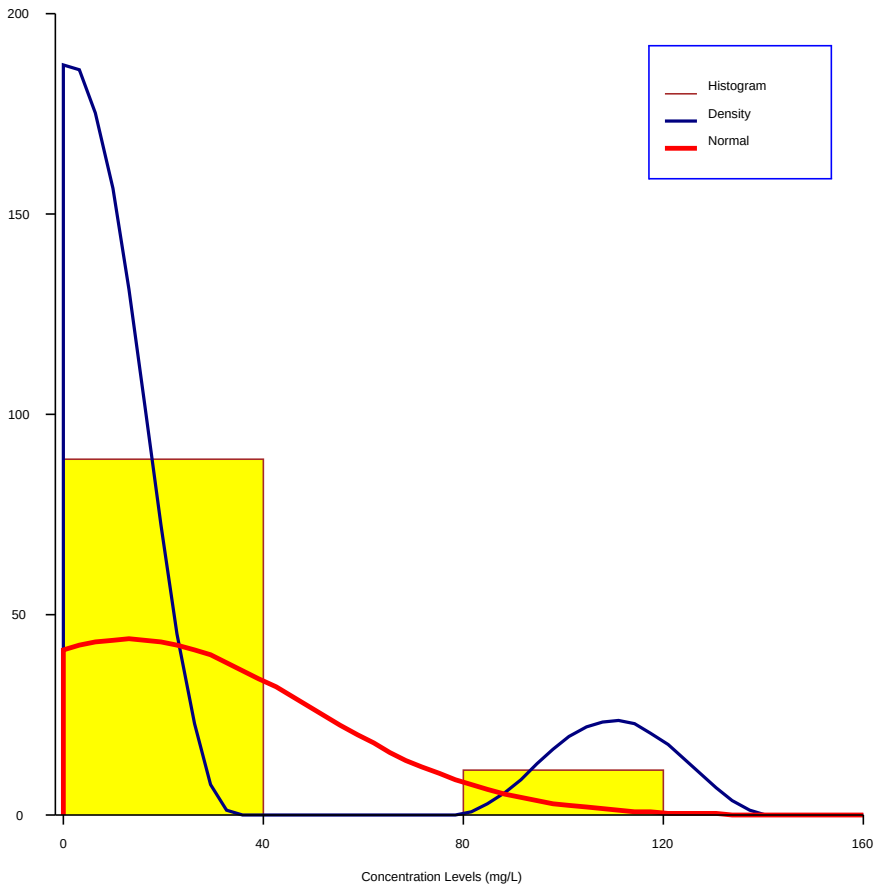
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_122"

Histogram Section



Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_122"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

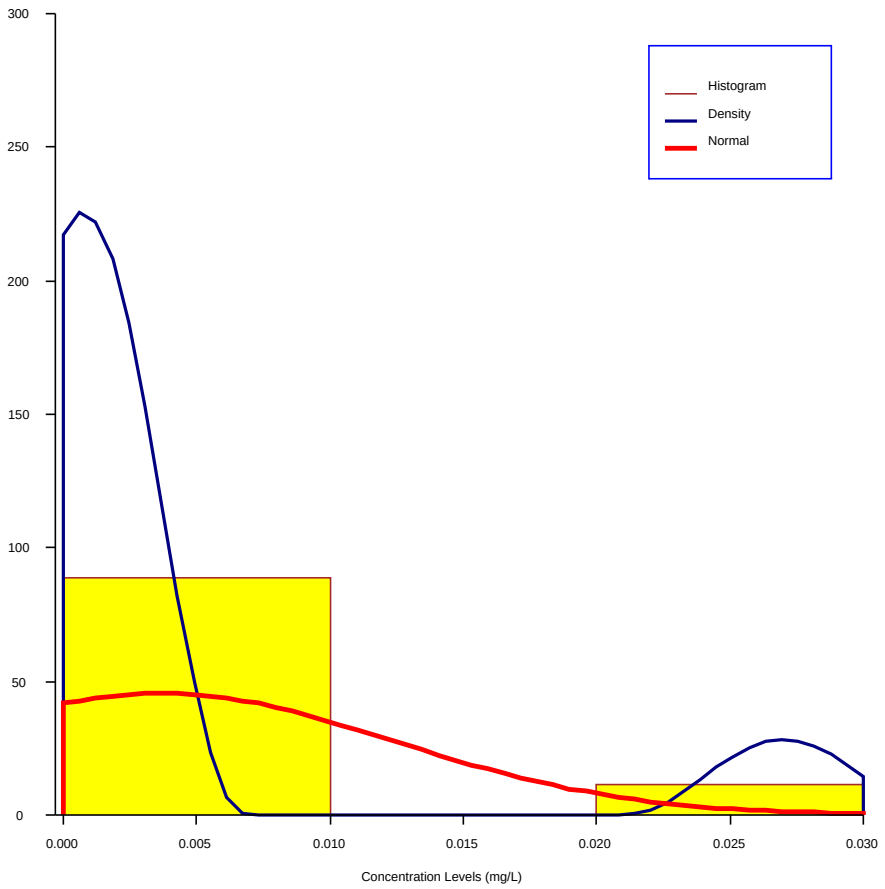
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_124"

Histogram Section



Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_124"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

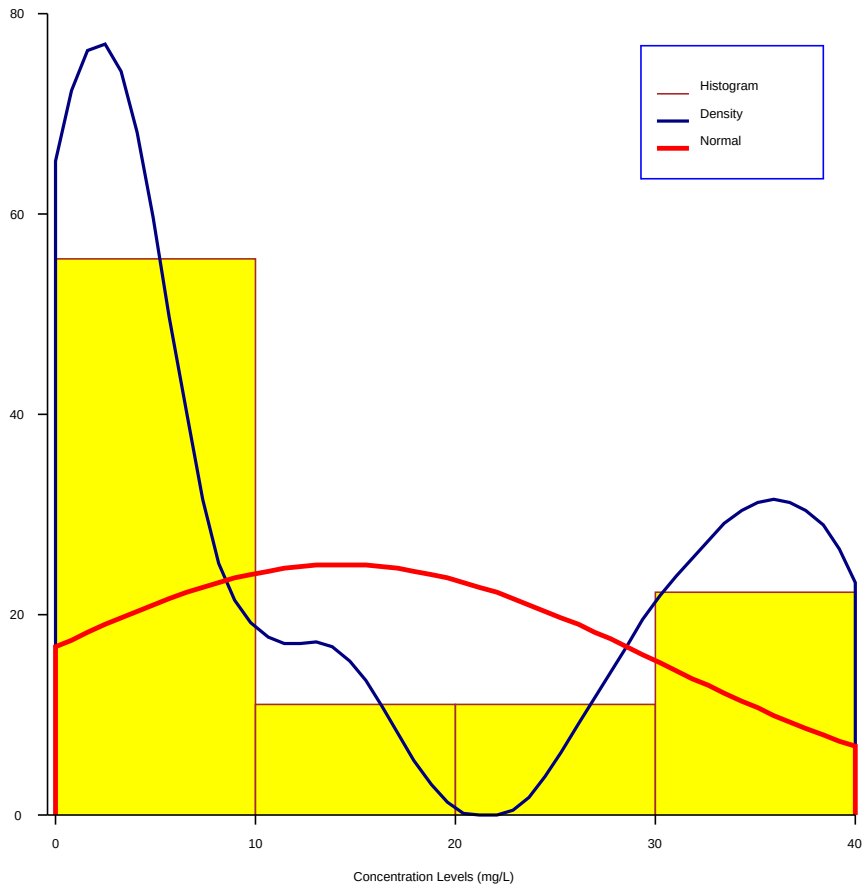
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_126"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "2_1_126"

Procedure Input Settings ——

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

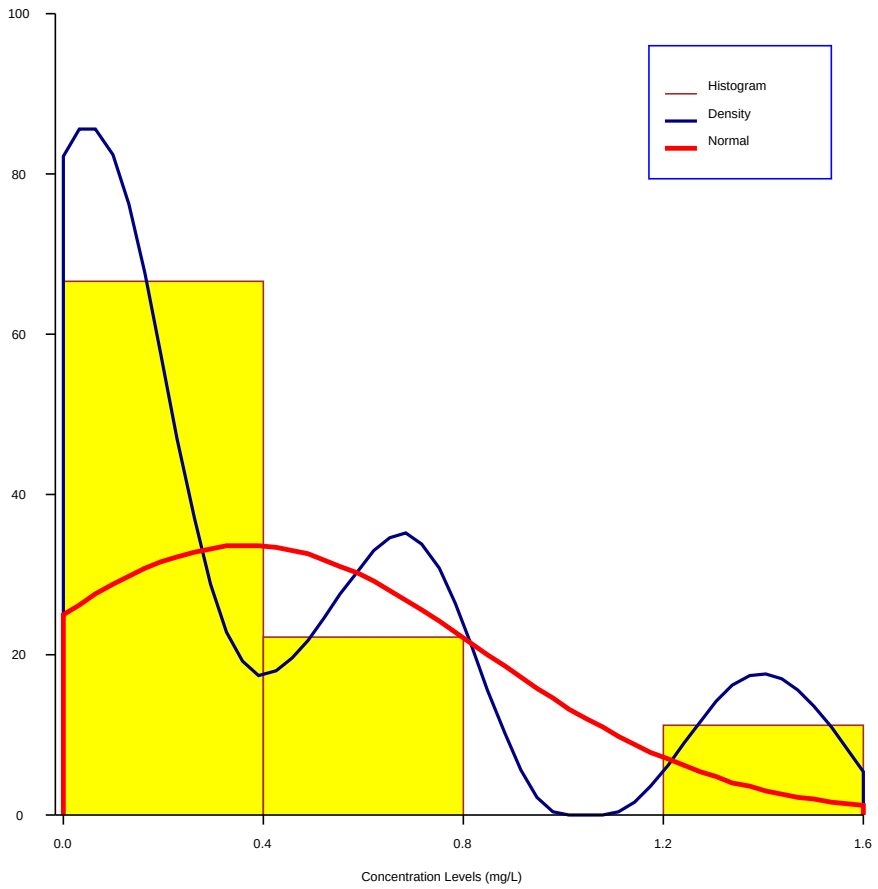
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_128"

Histogram Section



Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_128"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

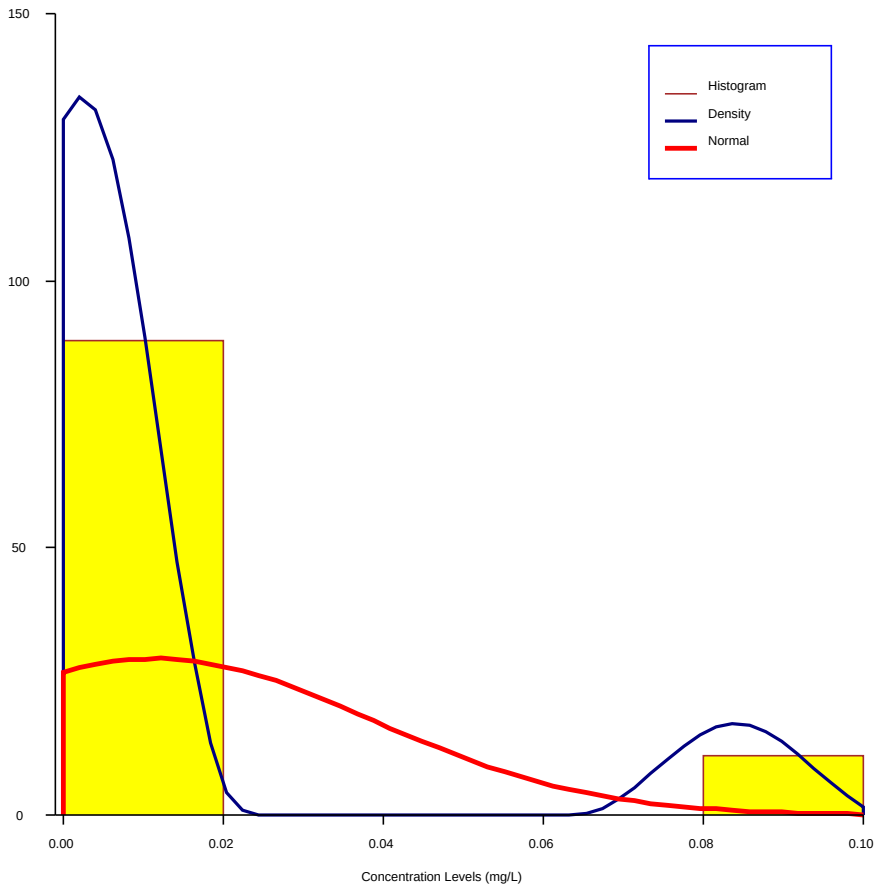
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_132"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "2_1_132"

Procedure Input Settings ——

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

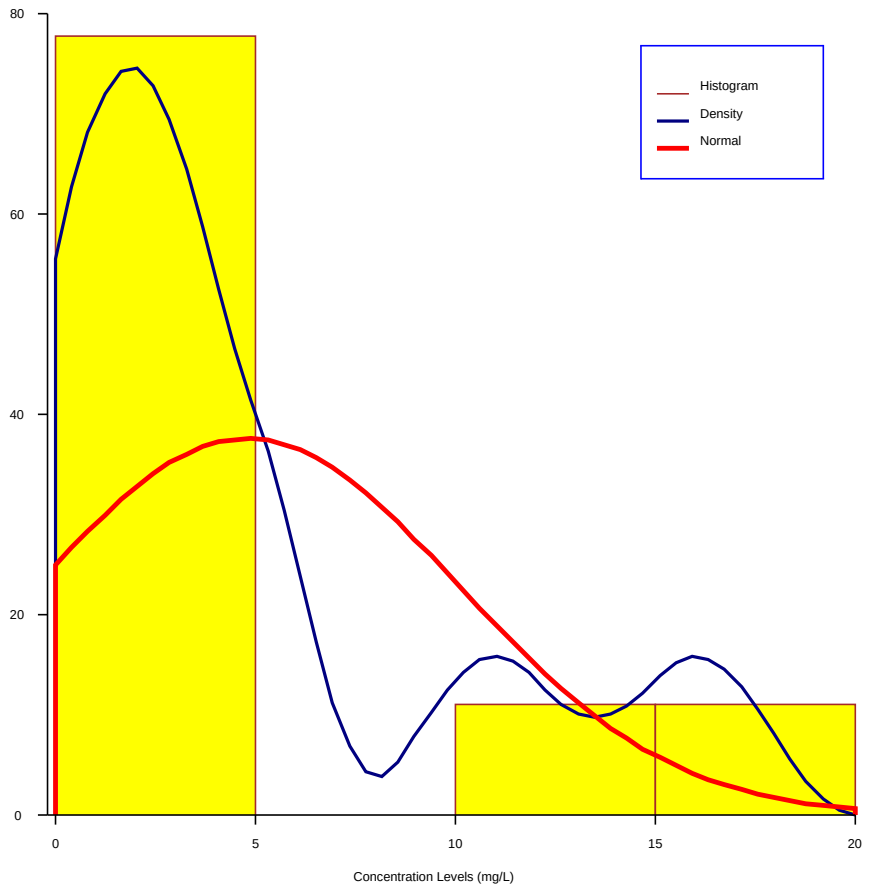
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_136"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "2_1_136"

Procedure Input Settings ——

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

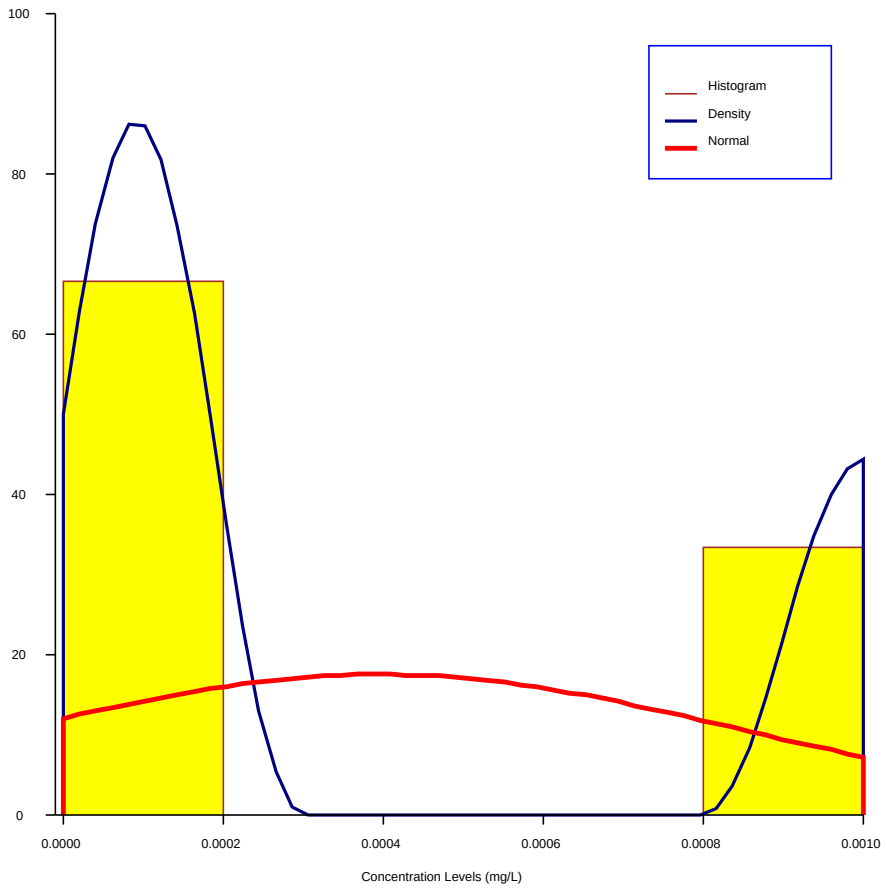
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_140"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "2_1_140"

Procedure Input Settings ——

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

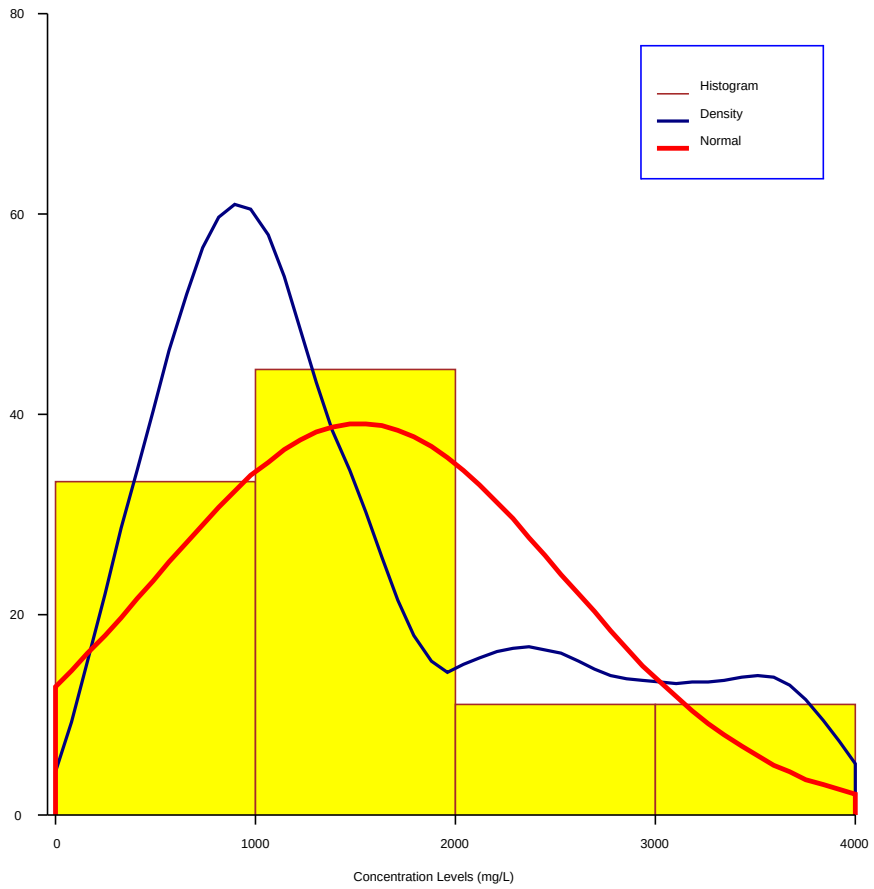
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_142"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "2_1_142"

Procedure Input Settings ——

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

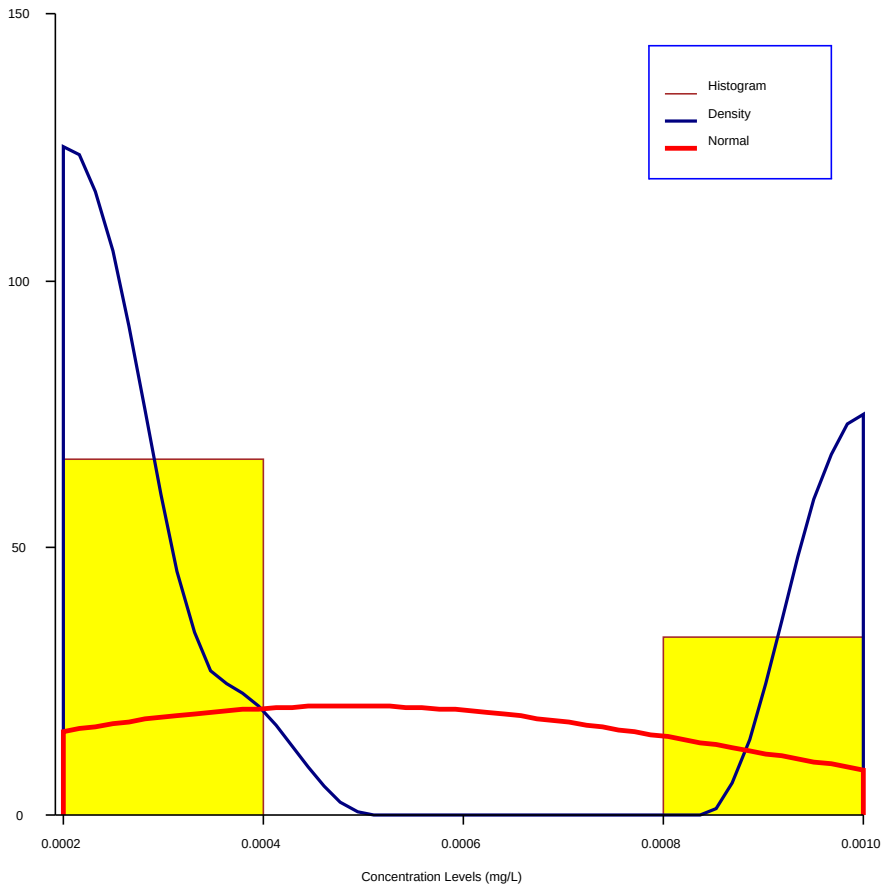
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_144"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "2_1_144"

Procedure Input Settings ——

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

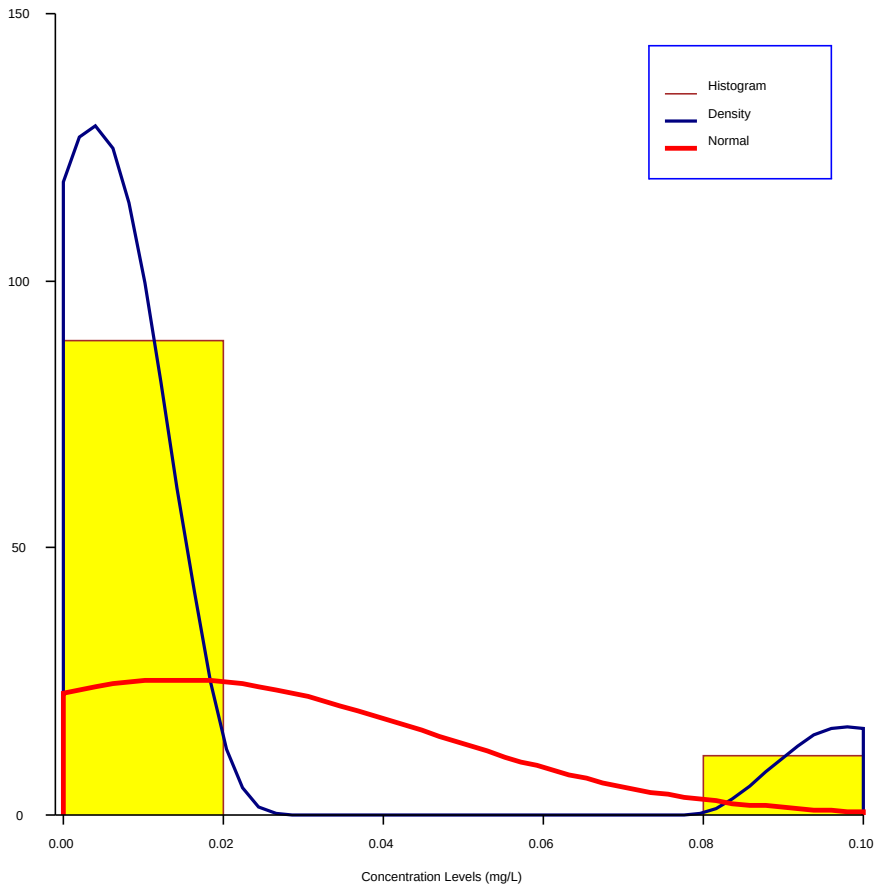
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_146"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "2_1_146"

Procedure Input Settings ——

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

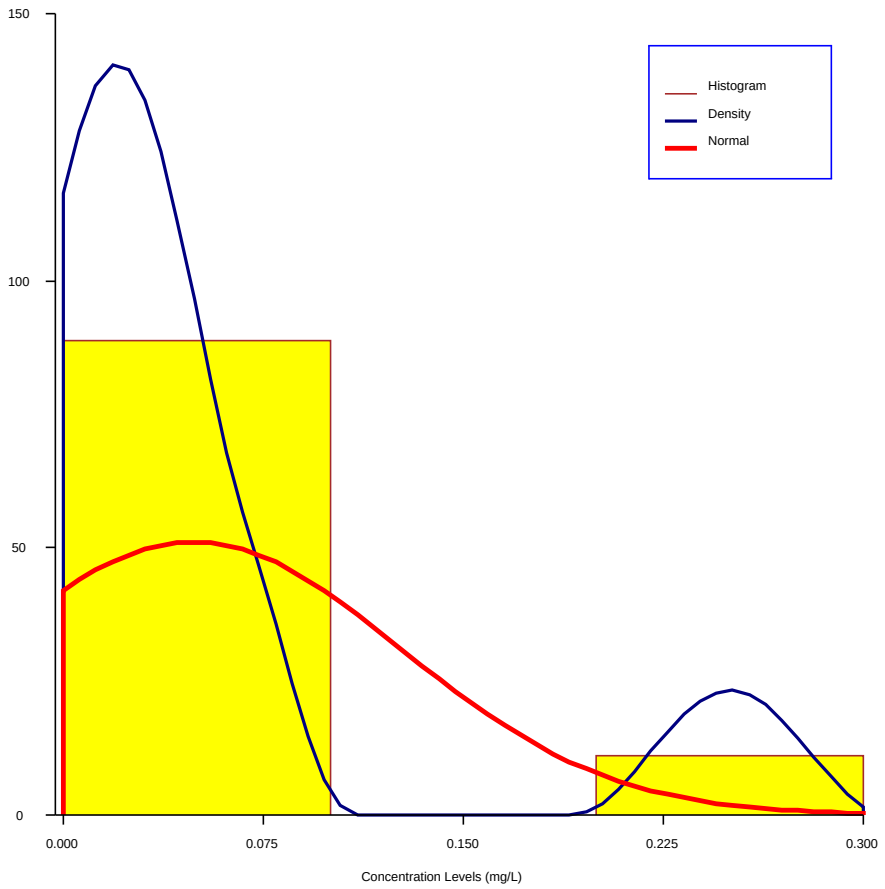
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_148"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "2_1_148"

Procedure Input Settings ——

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

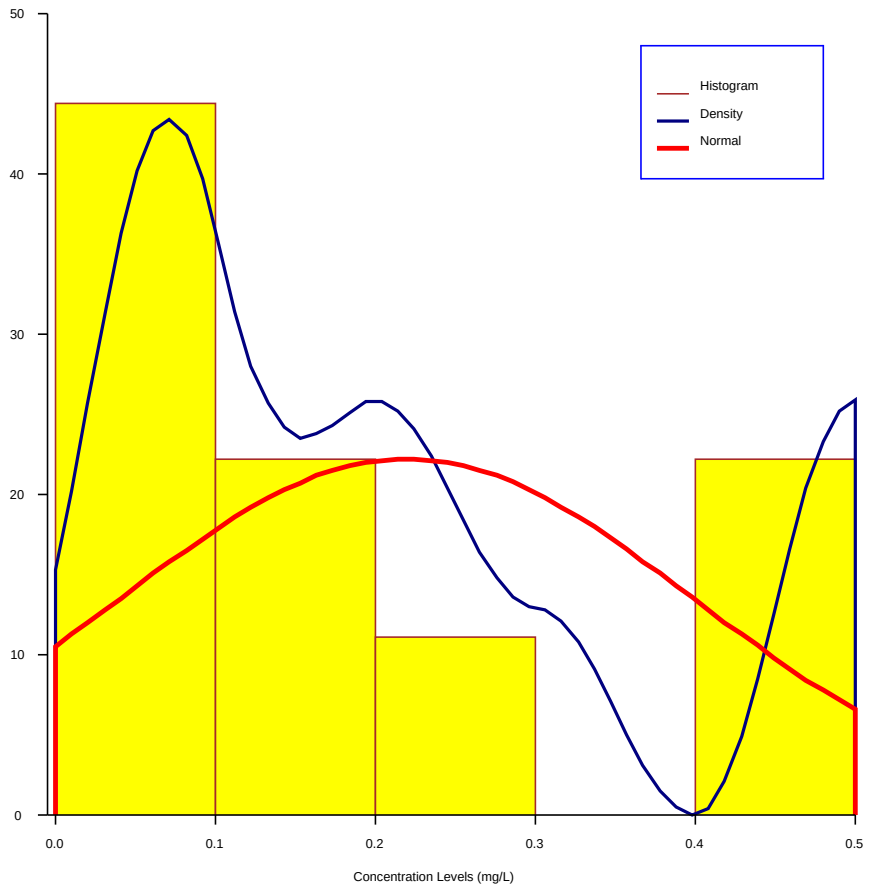
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_2_133"

Histogram Section



Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_2_133"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

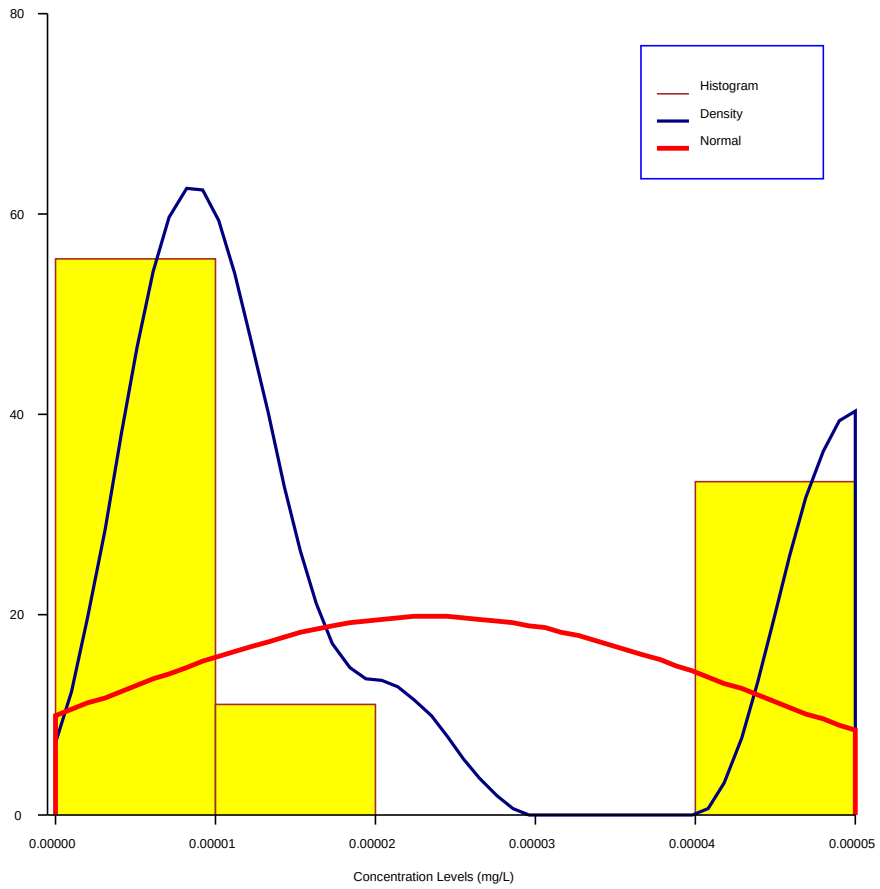
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_3_134"

Histogram Section



Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_3_134"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

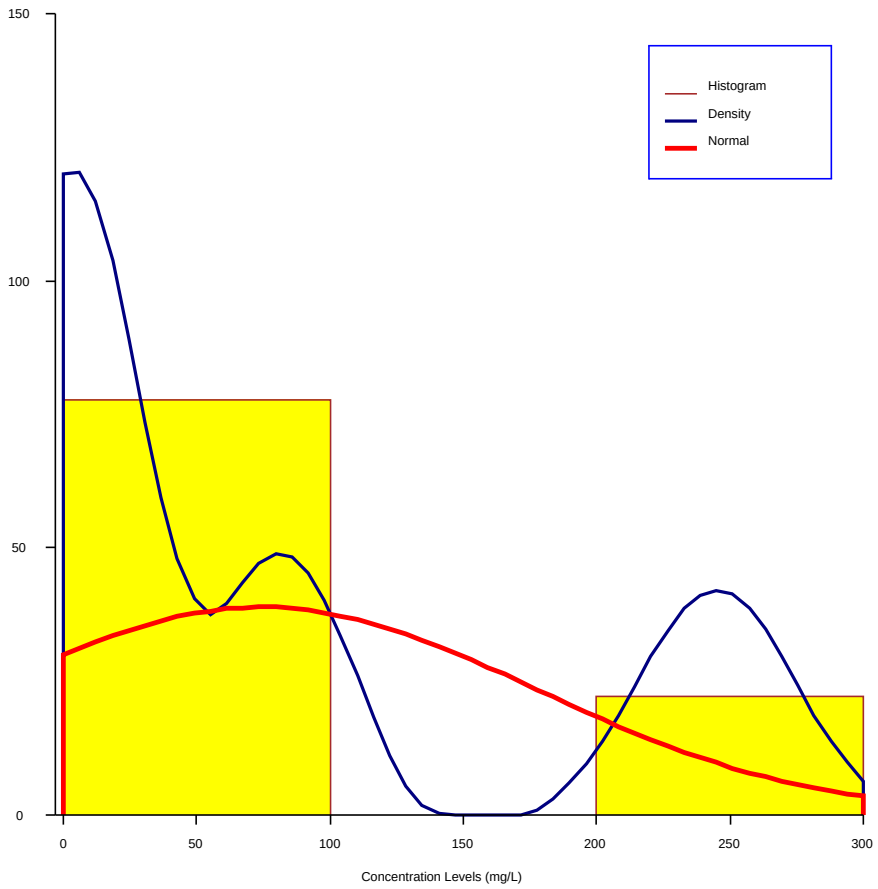
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_101"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "2_4_101"

Procedure Input Settings ——

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

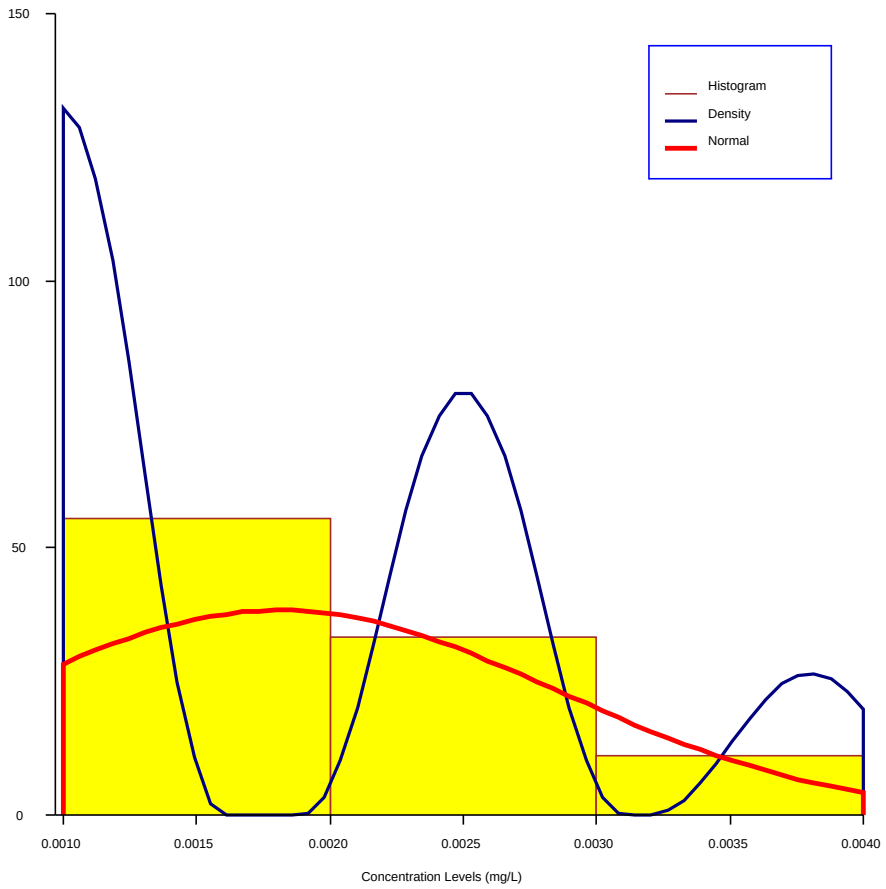
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_103"

Histogram Section



Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_103"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

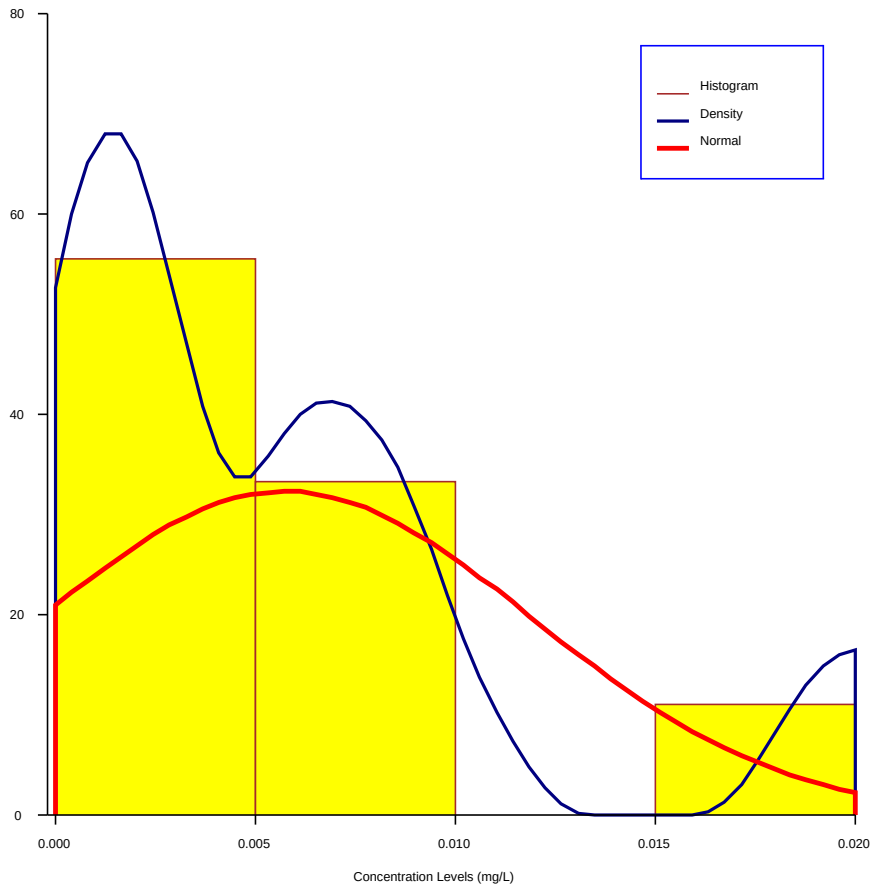
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_105"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "2_4_105"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

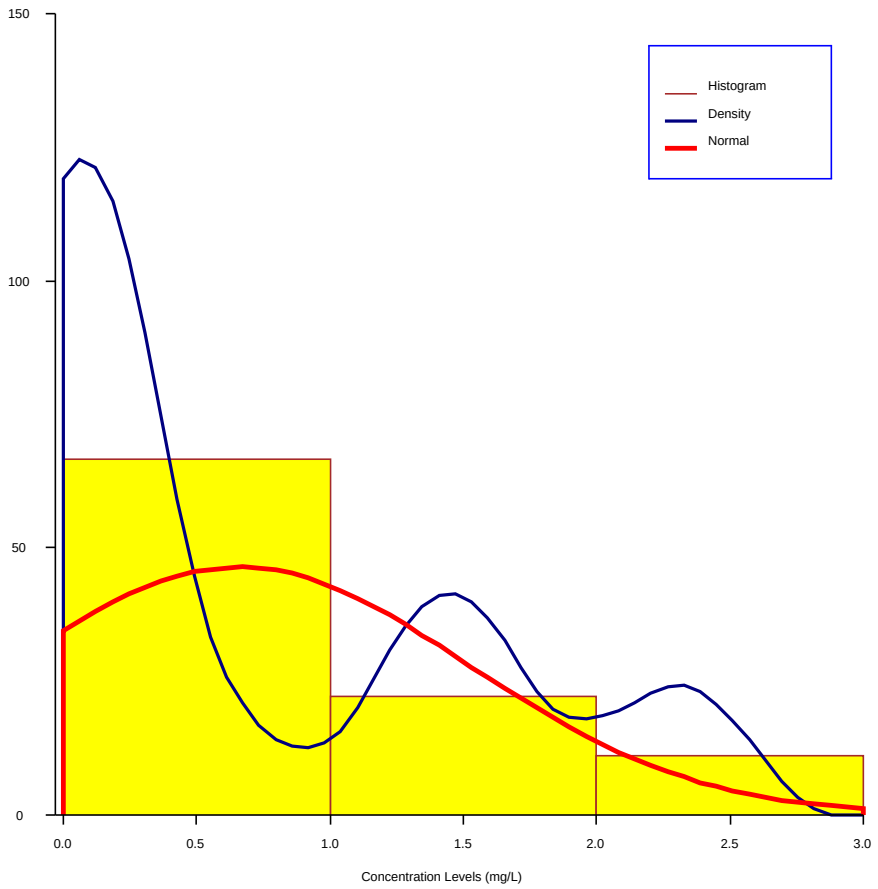
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_107"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "2_4_107"

Procedure Input Settings ——

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

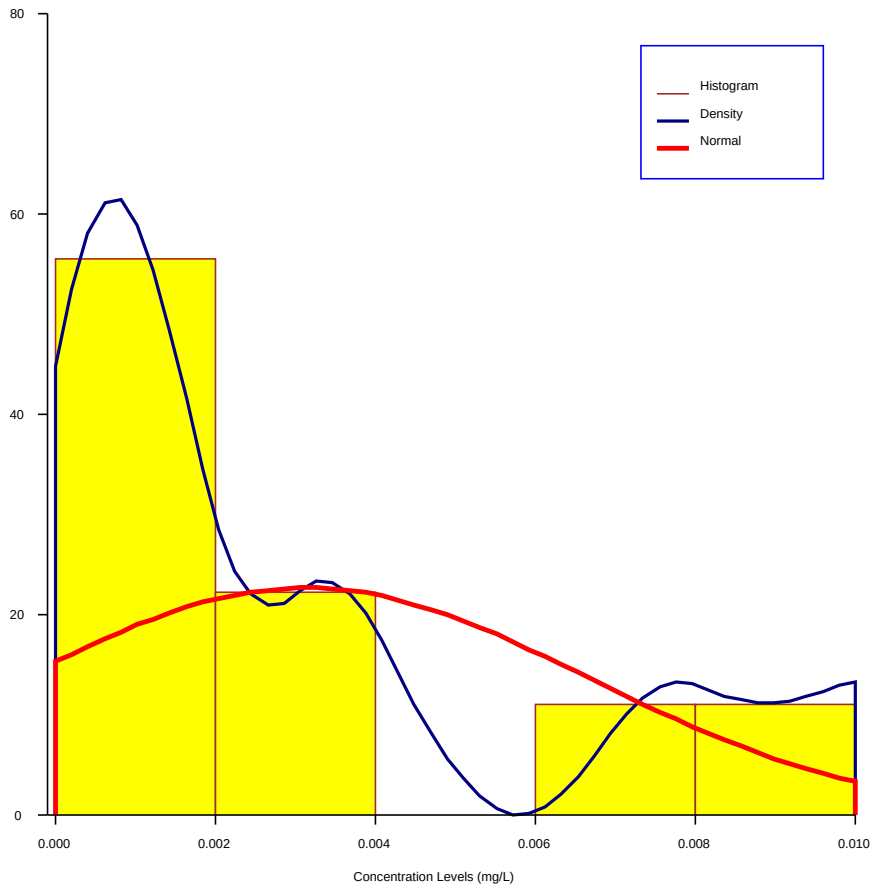
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_109"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "2_4_109"

Procedure Input Settings ——

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

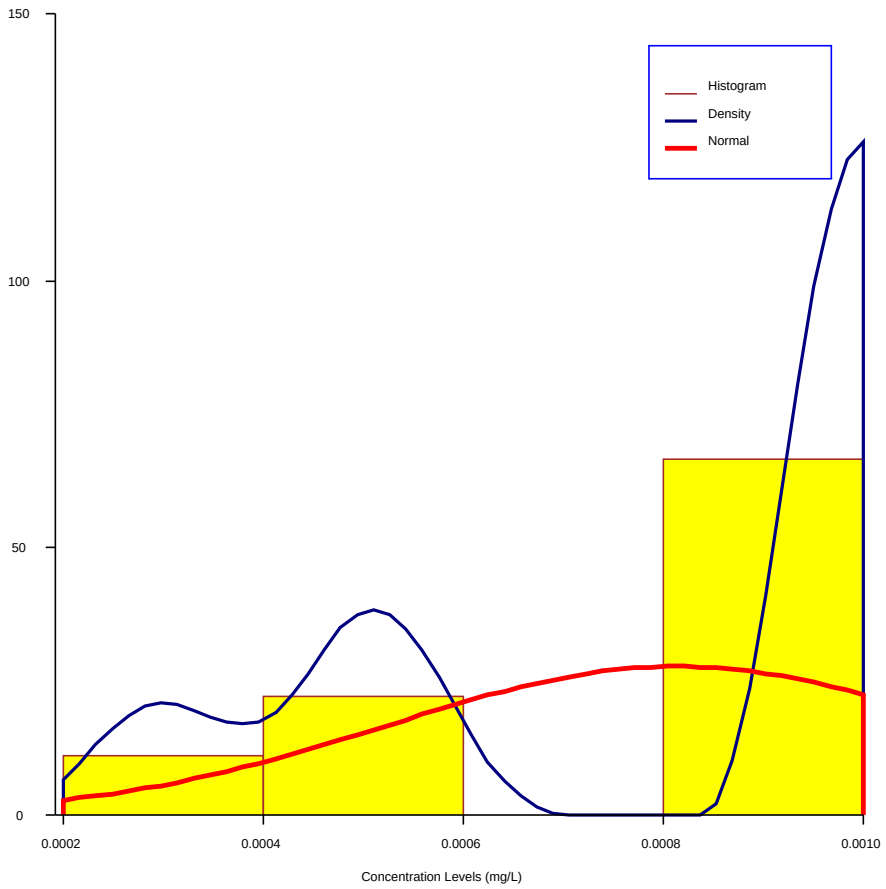
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_111"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "2_4_111"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

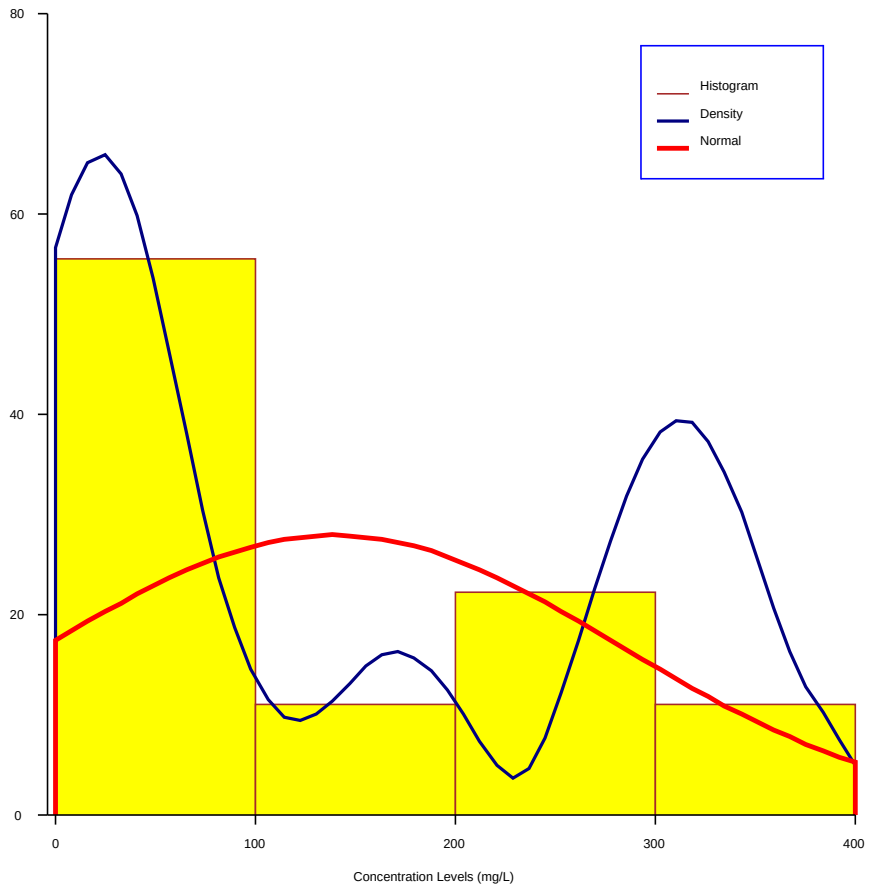
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_113"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "2_4_113"

Procedure Input Settings ——

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

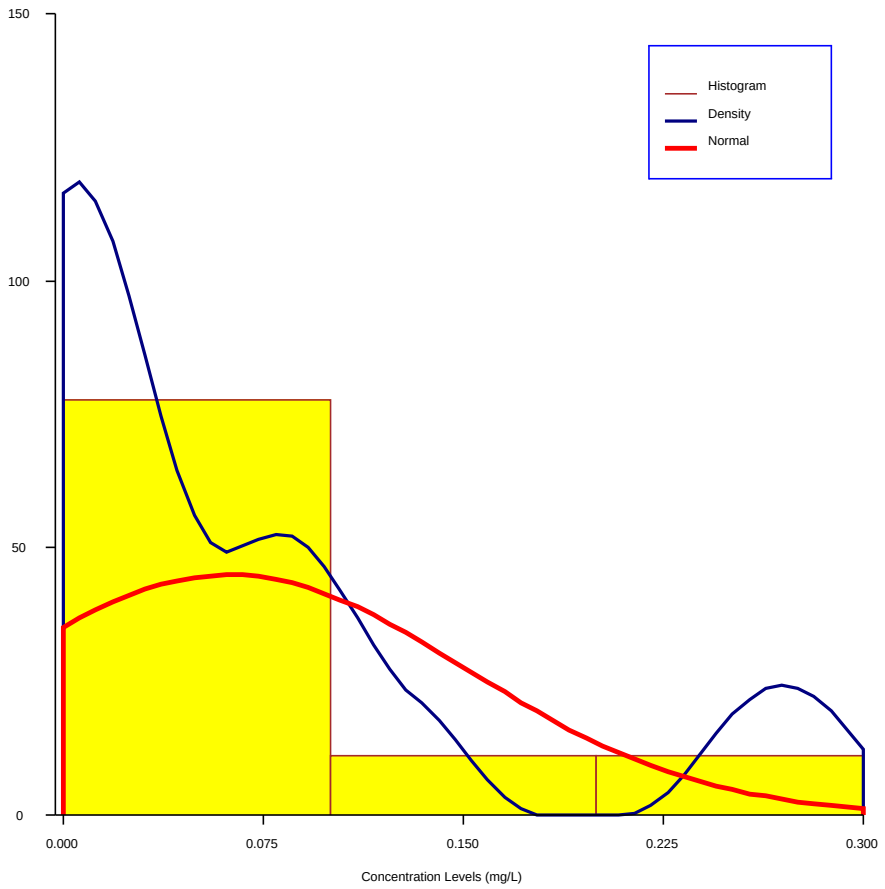
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_115"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "2_4_115"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

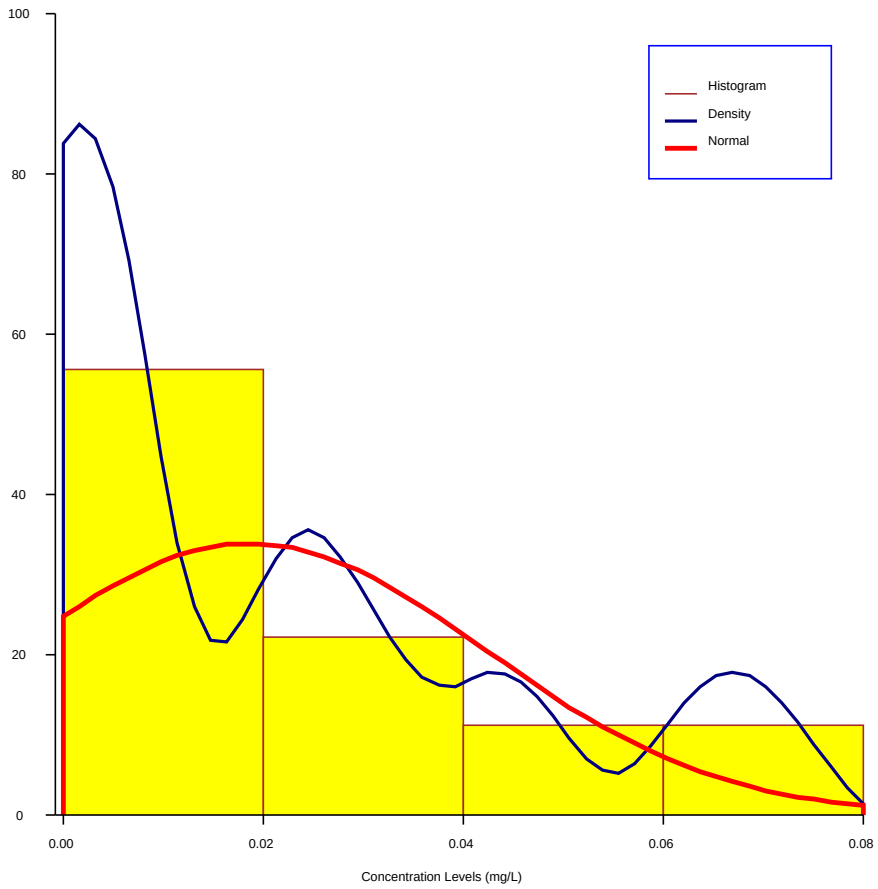
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_117"

Histogram Section



Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_117"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

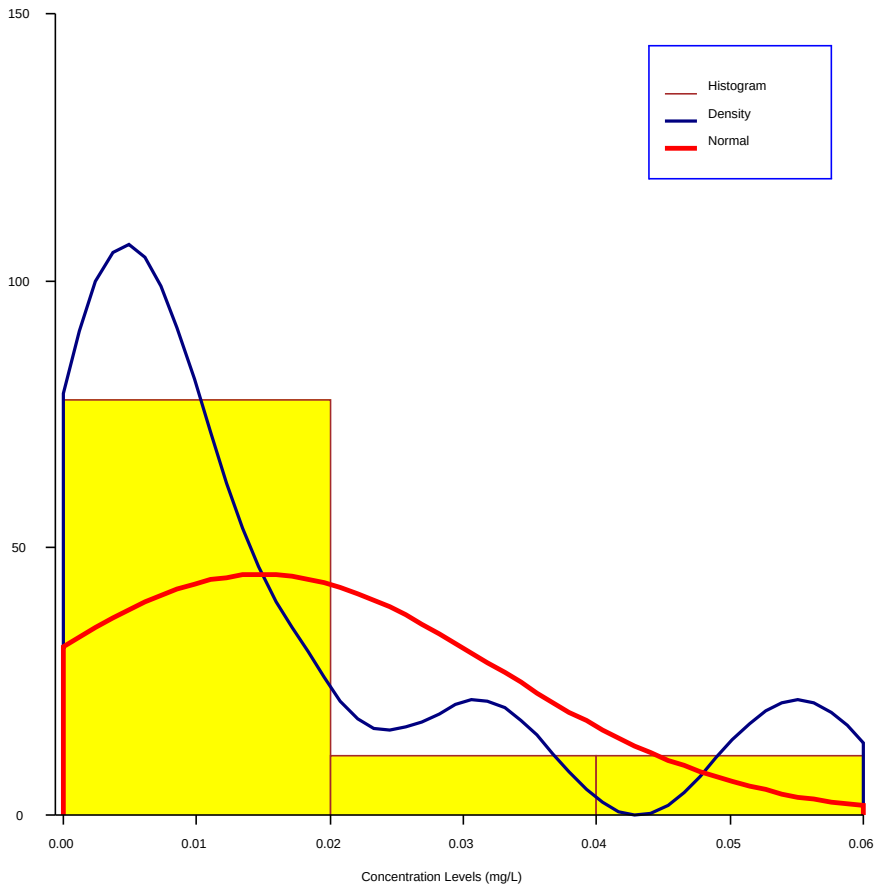
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_119"

Histogram Section



Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_119"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

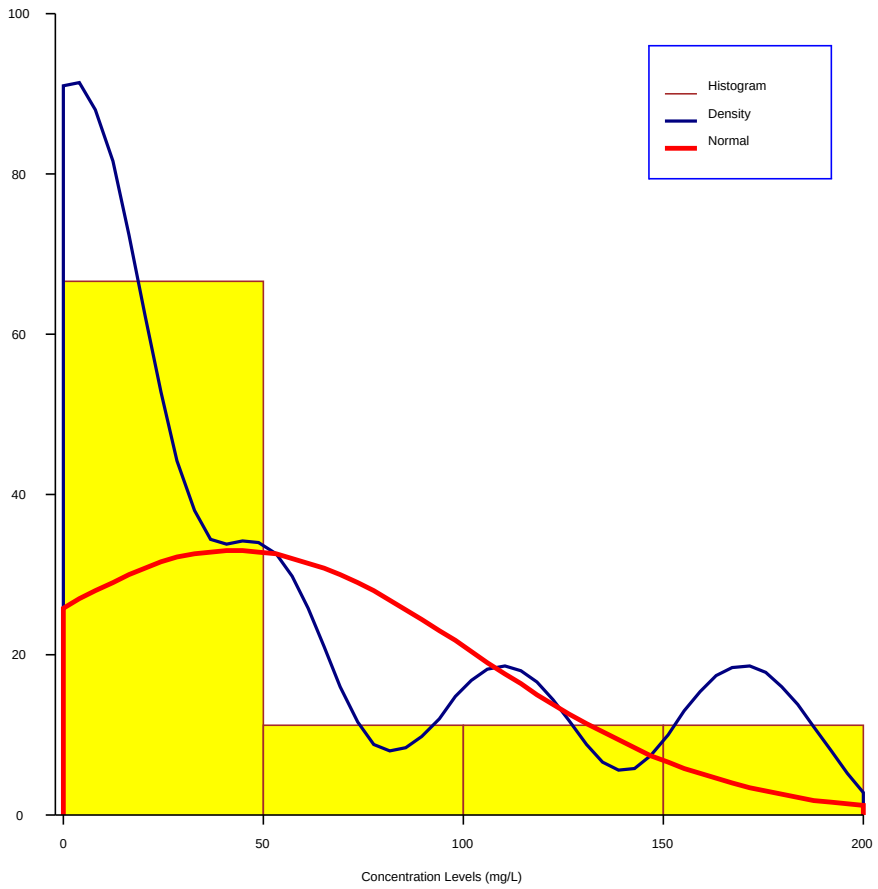
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_121"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "2_4_121"

Procedure Input Settings ——

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

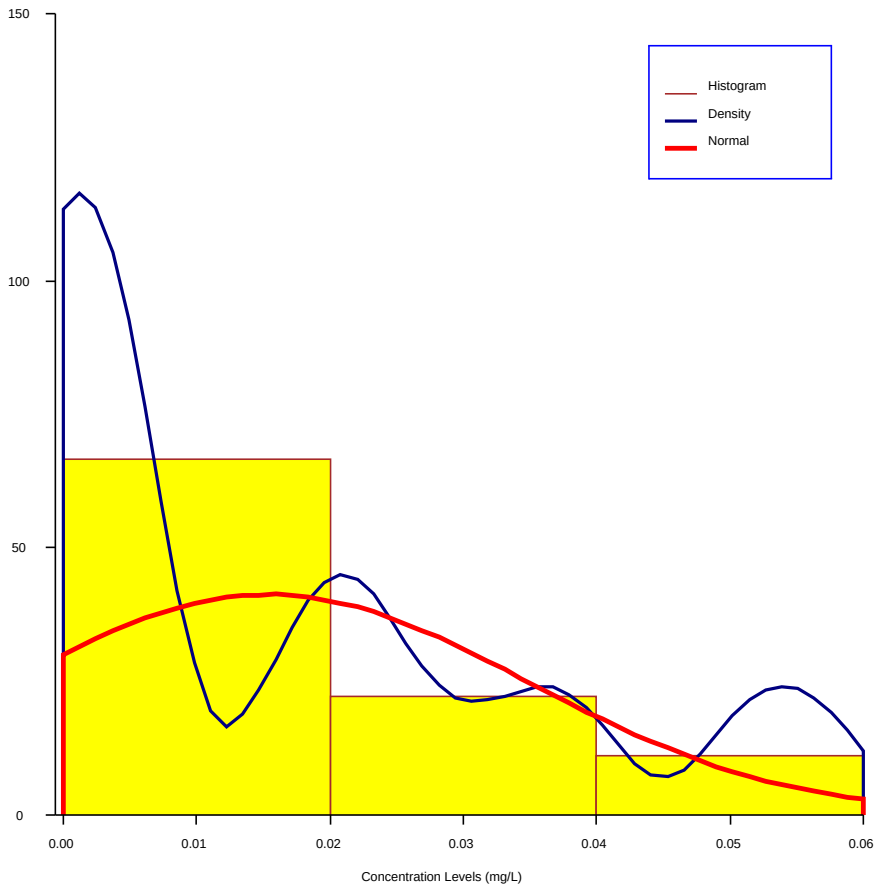
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_123"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "2_4_123"

Procedure Input Settings ——

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

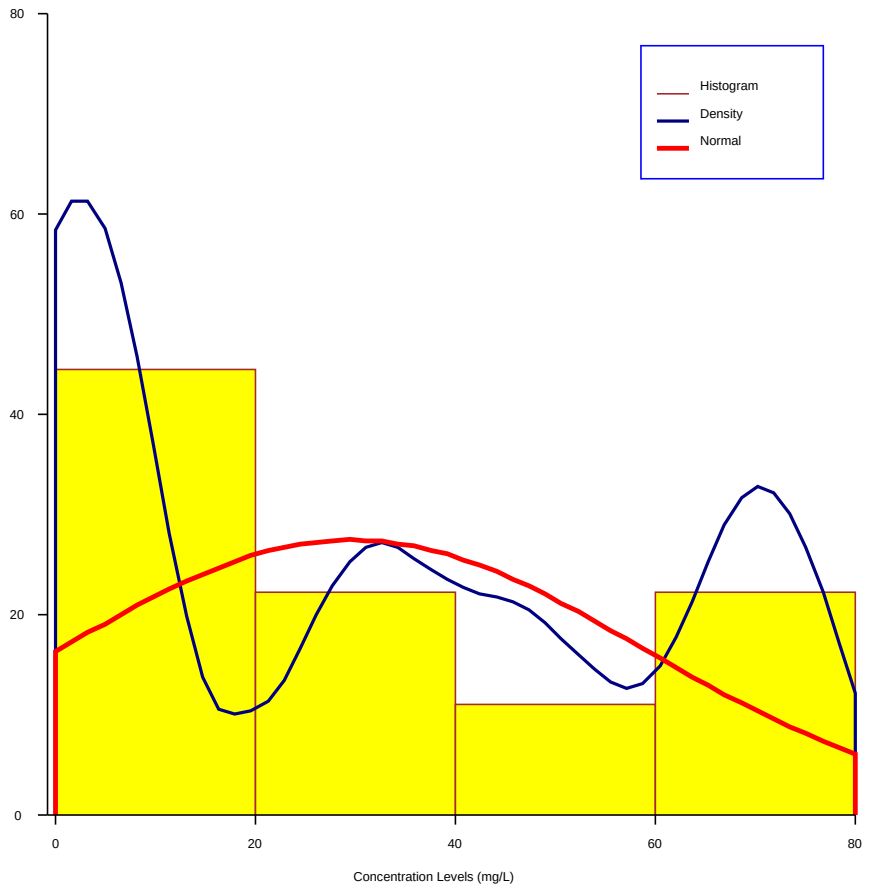
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_125"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "2_4_125"

Procedure Input Settings ——

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

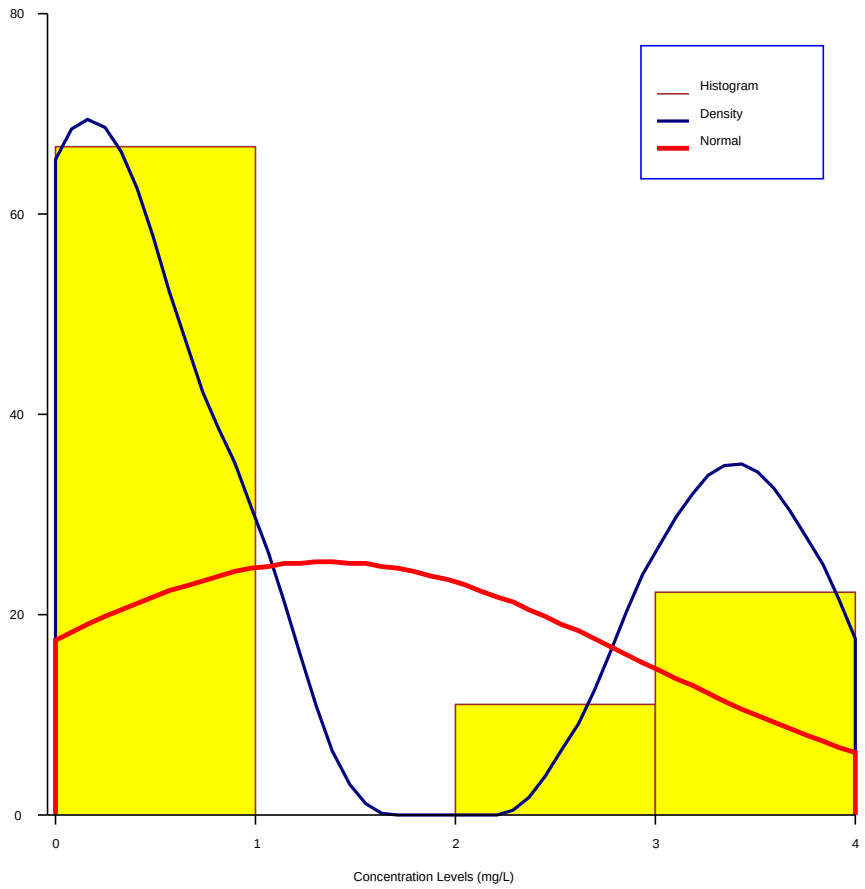
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_127"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "2_4_127"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

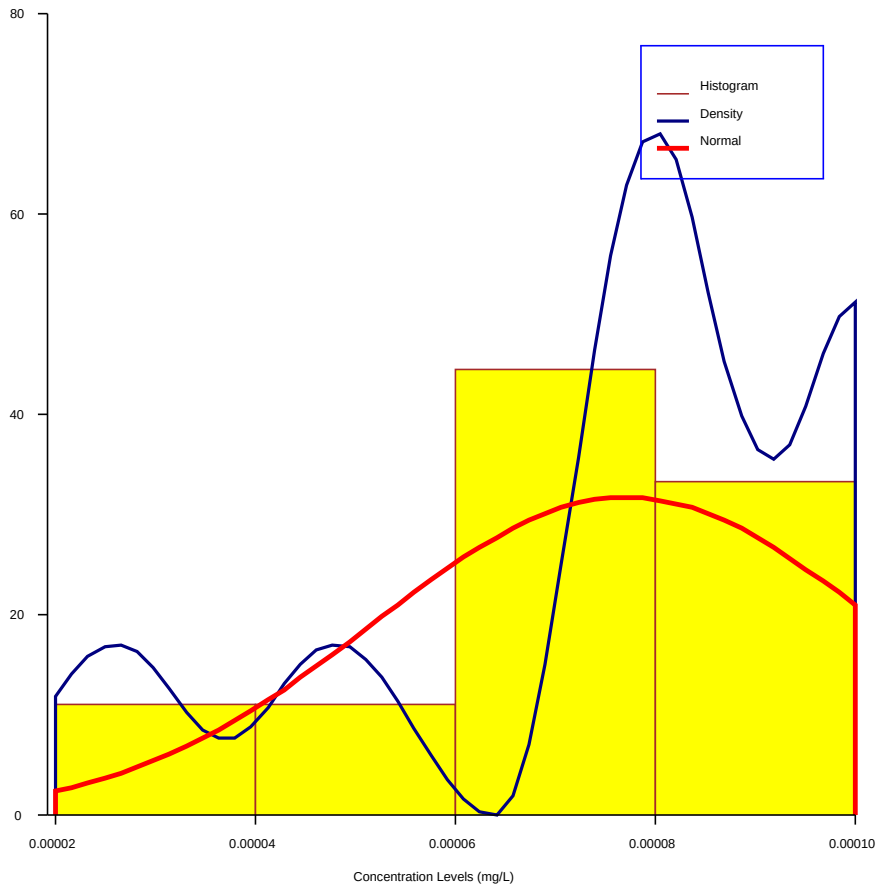
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_129"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "2_4_129"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

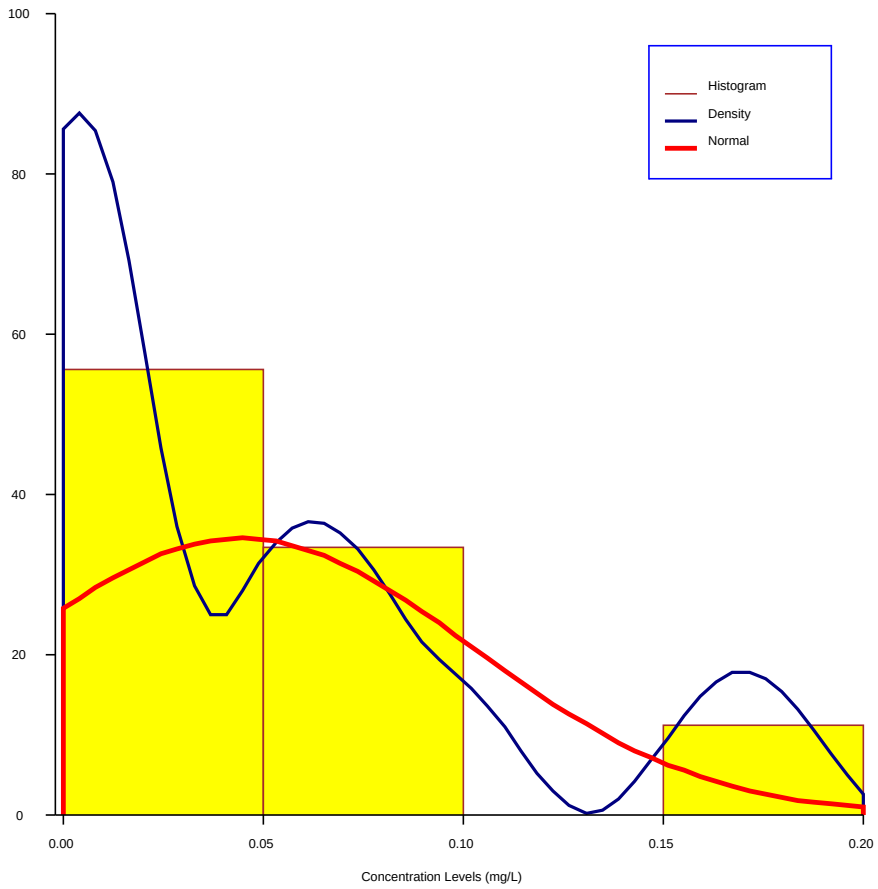
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_131"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "2_4_131"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

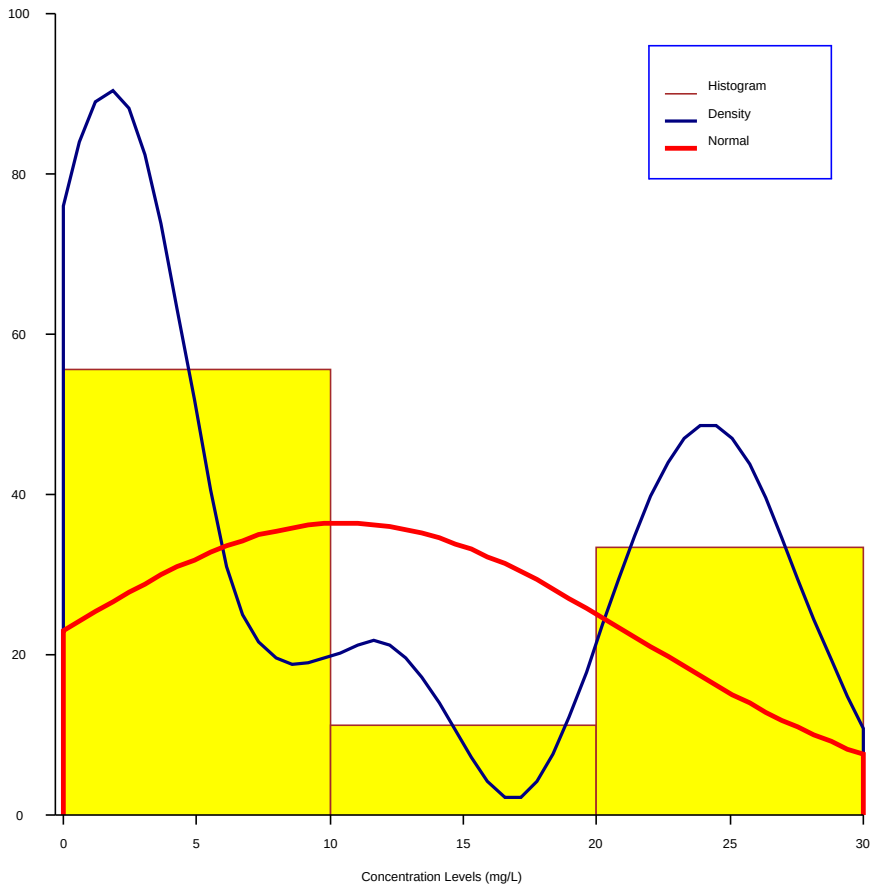
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_135"

Histogram Section



Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_135"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

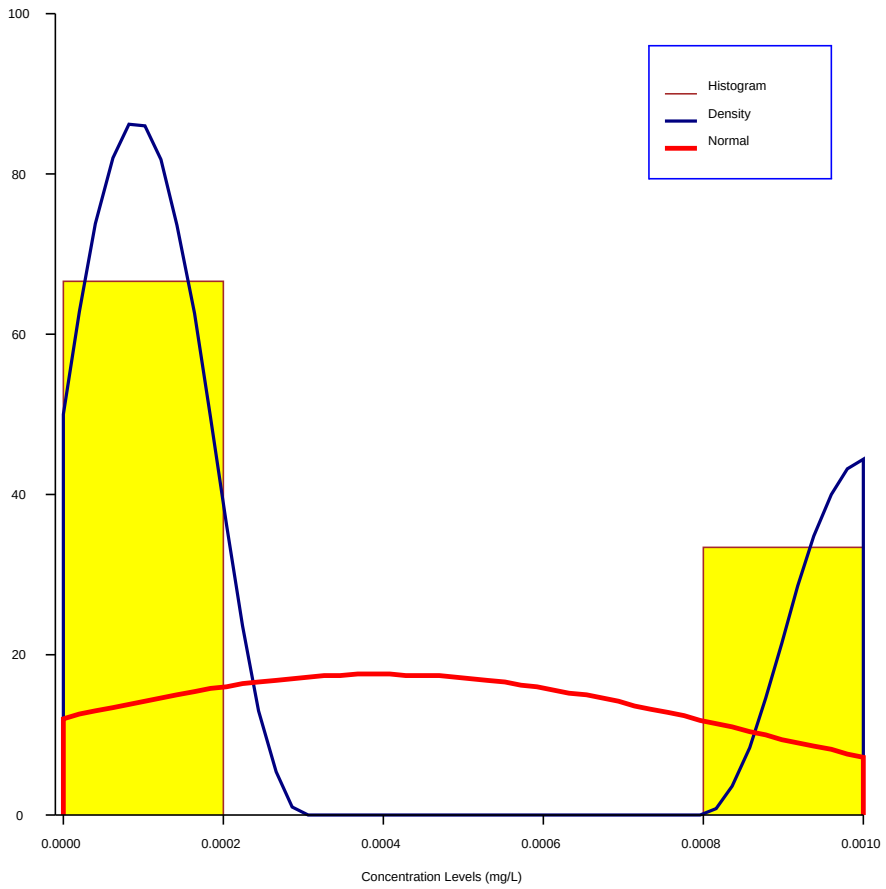
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_139"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "2_4_139"

Procedure Input Settings ——

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

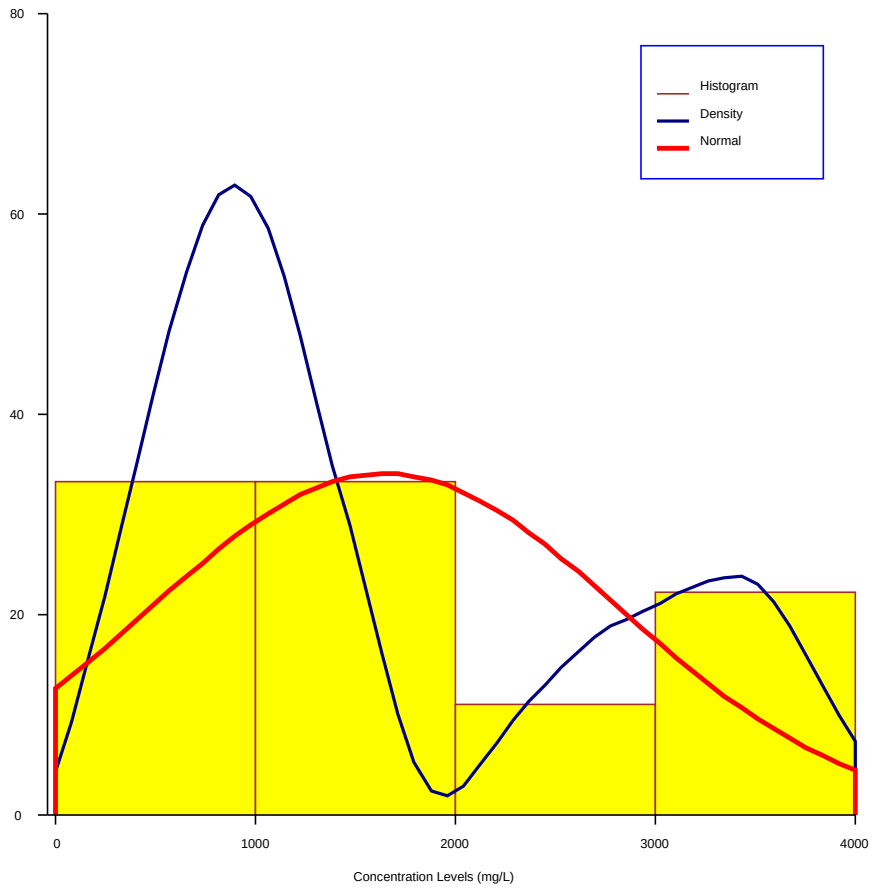
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_141"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "2_4_141"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

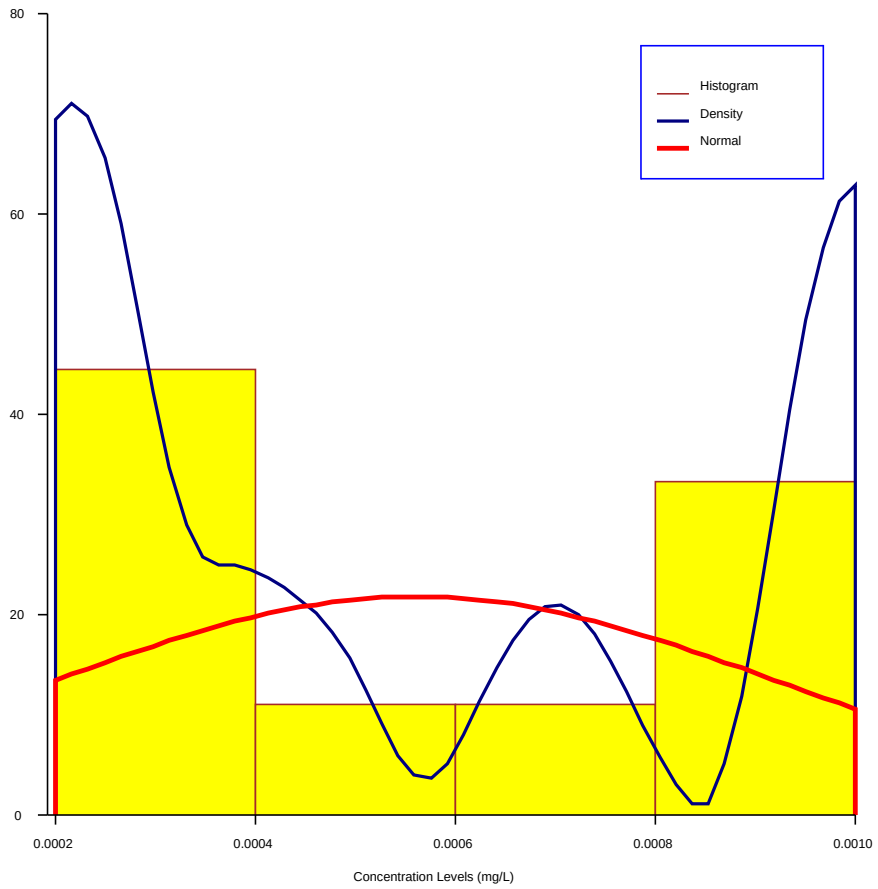
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_143"

Histogram Section



Histograms

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter	GROUP_VAR = "2_4_143"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

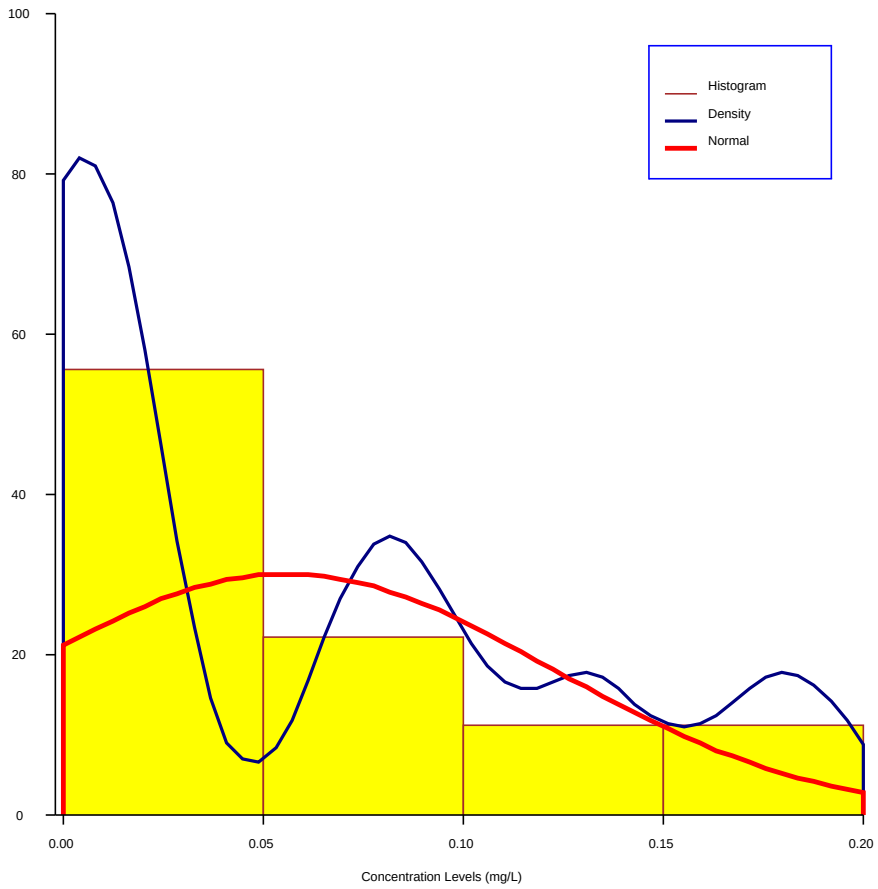
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_145"

Histogram Section



Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_145"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

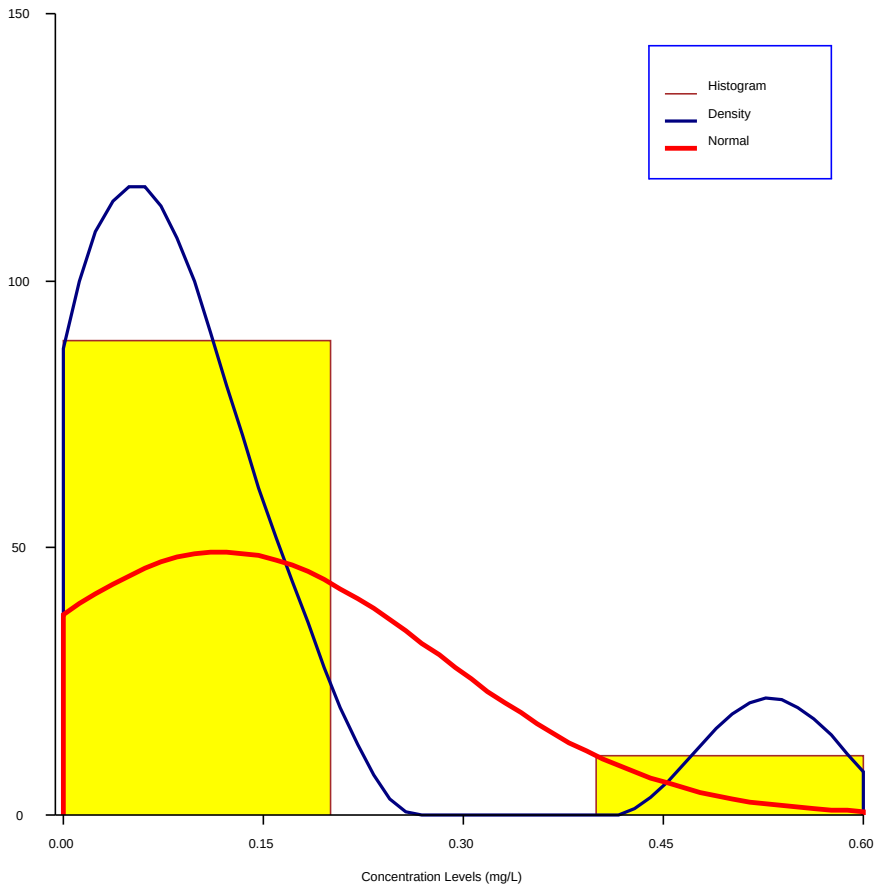
-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_147"

Histogram Section



Histograms

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_147"

Procedure Input Settings

Variables Tab

-- Variables ----------

Data Variable(s):	VALUES
Grouping Variable:	TITLE
Combine All Variables and Groups as One	Unchecked

-- Format Options ----------

Variable Names:	Labels
Value Labels:	Value Labels

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_1_106"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Data Summary Section

Type of Observation	Rows	Count	VALUES Minimum	VALUES Maximum
Missing or Prediction	0			
Detected	14	14	0.001	0.001
Not Detected	1	1	0.001	0.001
Total (Nonmissing)	15	15	0.001	0.001

Means

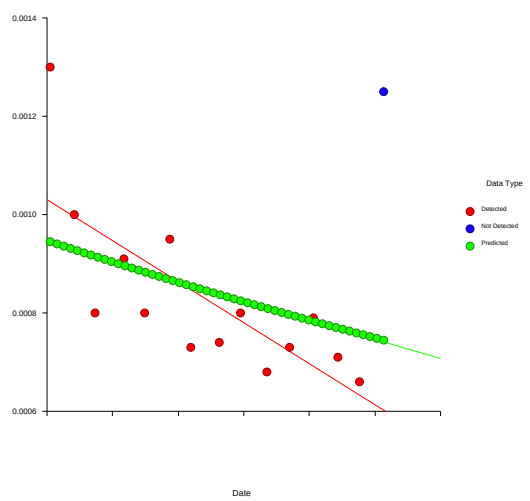
Variable	Mean
VALUES	0.0008566667
DATE	42297.93

Maximum Likelihood Parameter Estimation Section

Parameter Name	Parameter Estimate	Standard Error	Z Value	Prob Level	Lower 95.0% C.L.	Upper 95.0% C.L.
Intercept	-3.122369	2.834155	-1.1017	0.2706	-8.67721	2.432472
DATE	-9.365349E-05	6.713458E-05	-1.3950	0.1630	-0.0002252348	3.792789E-05
Sigma	0.185553	0				

Approximate R-Squared		0.000000
Log Likelihood	106.6798	
Iterations	1	

Plots Section



Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_1_106"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings

Variables Tab

-- Response Variable ----------

Response Variable:	VALUES

-- Frequency (Count) Variable ----------

Frequency Variable:	<Empty>

-- Nondetection Variable ----------

Nondetection (Censor) Variable:	D_VALUES
Detected:	1
Not Detected:	0

-- Independent Variables ----------

X's: Independent Variables:	DATE

-- Probability Distribution ----------

Distribution:	Lognormal

-- Alpha Level ----------

Alpha Level:	0.050

Estimation Tab

-- Estimation Options ----------

Maximum Iterations:	100
Minimum Relative Change:	0.0000001
Parameter Adjustment:	0.2
Starting Sigma:	0 - Data
Derivatives:	0.000006

Reports Tab

-- Select Reports ----------

Data Summary Report	Checked
Parameter Report	Checked
Information Matrix	Unchecked
Residual Report	Unchecked

-- Report Options ----------

Precision:	Single
Variable Names:	Names
Value Labels:	Data Values

·· Decimal Places ·····

Response:	3
Probability:	4

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_1_106"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings (Continued)

Plots Tab

-- Select Plots ----------

X - Y Plots	Checked
Number Predicted:	50
X - Transformed(Y) Plots	Unchecked
Number Predicted:	50
X - Residual Plots	Unchecked

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_1_108"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Data Summary Section

Type of Observation	Rows	Count	VALUES Minimum	VALUES Maximum
Missing or Prediction	0			
Detected	15	15	0.014	0.026
Not Detected	0	0		
Total (Nonmissing)	15	15	0.014	0.026

Means

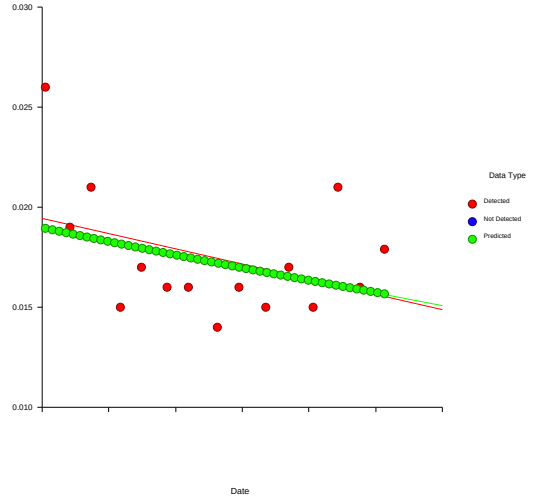
Variable	Mean
VALUES	0.01746
DATE	42297.93

Maximum Likelihood Parameter Estimation Section

Parameter Name	Parameter Estimate	Standard Error	Z Value	Prob Level	Lower 95.0% C.L.	Upper 95.0% C.L.
Intercept	-0.9033214	2.057714	-0.4390	0.6607	-4.936367	3.129724
DATE	-7.466107E-05	4.863966E-05	-1.5350	0.1248	-0.000169993	2.06709E-05
Sigma	0.1482681	0.02707055	5.4771	0.0000	0.1036661	0.21206

Approximate R-Squared		0.135958
Log Likelihood	68.26688	
Iterations	2	

Plots Section



Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_1_108"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings

Variables Tab

-- Response Variable ----------

Response Variable:	VALUES

-- Frequency (Count) Variable ----------

Frequency Variable:	<Empty>

-- Nondetection Variable ----------

Nondetection (Censor) Variable:	D_VALUES
Detected:	1
Not Detected:	0

-- Independent Variables ----------

X's: Independent Variables:	DATE

-- Probability Distribution ----------

Distribution:	Lognormal

-- Alpha Level ----------

Alpha Level:	0.050

Estimation Tab

-- Estimation Options ----------

Maximum Iterations:	100
Minimum Relative Change:	0.0000001
Parameter Adjustment:	0.2
Starting Sigma:	0 - Data
Derivatives:	0.000006

Reports Tab

-- Select Reports ----------

Data Summary Report	Checked
Parameter Report	Checked
Information Matrix	Unchecked
Residual Report	Unchecked

-- Report Options ----------

Precision:	Single
Variable Names:	Names
Value Labels:	Data Values

·· Decimal Places ·····

Response:	3
Probability:	4

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_1_108"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings (Continued)

Plots Tab

-- Select Plots ----------

X - Y Plots	Checked
Number Predicted:	50
X - Transformed(Y) Plots	Unchecked
Number Predicted:	50
X - Residual Plots	Unchecked

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_1_114"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Data Summary Section

Type of Observation	Rows	Count	VALUES Minimum	VALUES Maximum
Missing or Prediction	0			
Detected	15	15	37.000	58.600
Not Detected	0	0		
Total (Nonmissing)	15	15	37.000	58.600

Means

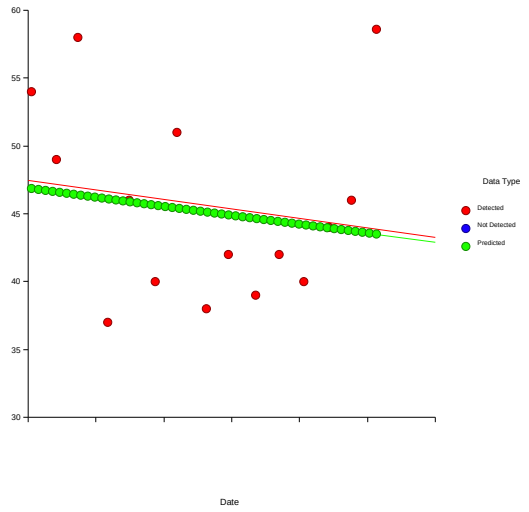
Variable	Mean
VALUES	45.64
DATE	42297.93

Maximum Likelihood Parameter Estimation Section

Parameter Name	Parameter Estimate	Standard Error	Z Value	Prob Level	Lower 95.0% C.L.	Upper 95.0% C.L.
Intercept	5.047145	1.987979	2.5388	0.0111	1.150777	8.943513
DATE	-2.924766E-05	4.69913E-05	-0.6224	0.5337	-0.0001213489	6.285359E-05
Sigma	0.1433602	0.02617448	5.4771	0.0000	0.1002346	0.2050405

Approximate R-Squared		0.025178
Log Likelihood	-49.2986	
Iterations	2	

Plots Section



Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_1_114"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings

Variables Tab

-- Response Variable ----------

Response Variable:	VALUES

-- Frequency (Count) Variable ----------

Frequency Variable:	<Empty>

-- Nondetection Variable ----------

Nondetection (Censor) Variable:	D_VALUES
Detected:	1
Not Detected:	0

-- Independent Variables ----------

X's: Independent Variables:	DATE

-- Probability Distribution ----------

Distribution:	Lognormal

-- Alpha Level ----------

Alpha Level:	0.050

Estimation Tab

-- Estimation Options ----------

Maximum Iterations:	100
Minimum Relative Change:	0.0000001
Parameter Adjustment:	0.2
Starting Sigma:	0 - Data
Derivatives:	0.000006

Reports Tab

-- Select Reports ----------

Data Summary Report	Checked
Parameter Report	Checked
Information Matrix	Unchecked
Residual Report	Unchecked

-- Report Options ----------

Precision:	Single
Variable Names:	Names
Value Labels:	Data Values

·· Decimal Places ·····

Response:	3
Probability:	4

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_1_114"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings (Continued)

Plots Tab

-- Select Plots ----------

X - Y Plots	Checked
Number Predicted:	50
X - Transformed(Y) Plots	Unchecked
Number Predicted:	50
X - Residual Plots	Unchecked

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_1_118"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Data Summary Section

Type of Observation	Rows	Count	VALUES Minimum	VALUES Maximum
Missing or Prediction	0			
Detected	13	13	0.000	0.001
Not Detected	2	2	0.000	0.001
Total (Nonmissing)	15	15	0.000	0.001

Means

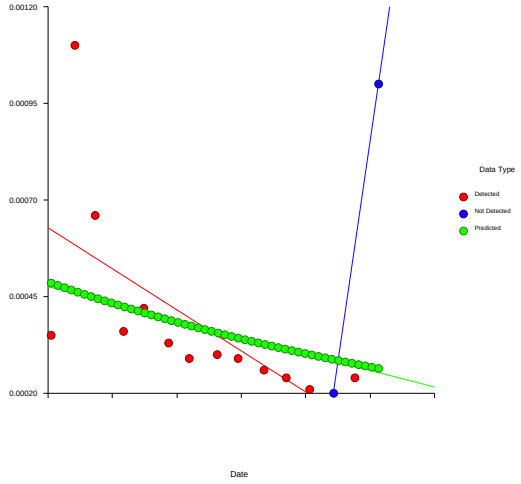
Variable	Mean
VALUES	0.0004166667
DATE	42297.93

Maximum Likelihood Parameter Estimation Section

Parameter Name	Parameter Estimate	Standard Error	Z Value	Prob Level	Lower 95.0% C.L.	Upper 95.0% C.L.
Intercept	2.168191	7.336267	0.2955	0.7676	-12.21063	16.54701
DATE	-0.000238874	0.0001738489	-1.3740	0.1694	-0.0005796115	0.0001018635
Sigma	0.4730492	0				

Approximate R-Squared		0.000000
Log Likelihood	96.63834	
Iterations	1	

Plots Section



Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_1_118"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings

Variables Tab

-- Response Variable ----------

Response Variable:	VALUES

-- Frequency (Count) Variable ----------

Frequency Variable:	<Empty>

-- Nondetection Variable ----------

Nondetection (Censor) Variable:	D_VALUES
Detected:	1
Not Detected:	0

-- Independent Variables ----------

X's: Independent Variables:	DATE

-- Probability Distribution ----------

Distribution:	Lognormal

-- Alpha Level ----------

Alpha Level:	0.050

Estimation Tab

-- Estimation Options ----------

Maximum Iterations:	100
Minimum Relative Change:	0.0000001
Parameter Adjustment:	0.2
Starting Sigma:	0 - Data
Derivatives:	0.000006

Reports Tab

-- Select Reports ----------

Data Summary Report	Checked
Parameter Report	Checked
Information Matrix	Unchecked
Residual Report	Unchecked

-- Report Options ----------

Precision:	Single
Variable Names:	Names
Value Labels:	Data Values

·· Decimal Places ·····

Response:	3
Probability:	4

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_1_118"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings (Continued)

Plots Tab

-- Select Plots ----------

X - Y Plots	Checked
Number Predicted:	50
X - Transformed(Y) Plots	Unchecked
Number Predicted:	50
X - Residual Plots	Unchecked

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_1_126"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Data Summary Section

Type of Observation	Rows	Count	VALUES Minimum	VALUES Maximum
Missing or Prediction	0			
Detected	15	15	21.000	32.200
Not Detected	0	0		
Total (Nonmissing)	15	15	21.000	32.200

Means

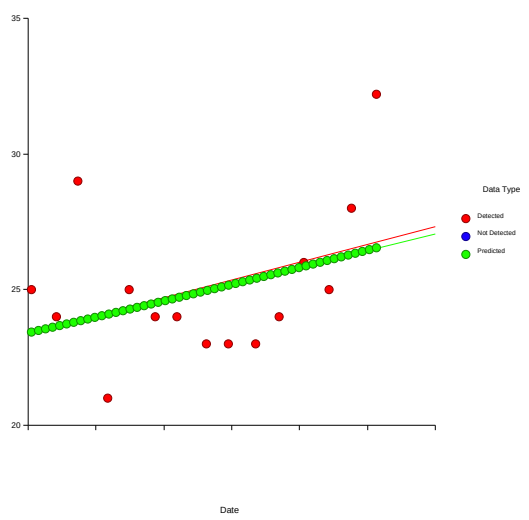
Variable	Mean
VALUES	25.08
DATE	42297.93

Maximum Likelihood Parameter Estimation Section

Parameter Name	Parameter Estimate	Standard Error	Z Value	Prob Level	Lower 95.0% C.L.	Upper 95.0% C.L.
Intercept	1.145303	1.320254	0.8675	0.3857	-1.442347	3.732954
DATE	4.896987E-05	3.120779E-05	1.5692	0.1166	-1.219628E-05	0.000110136
Sigma	0.09521548	0.01738417	5.4771	0.0000	0.06657293	0.1361813

Approximate R-Squared		0.140999
Log Likelihood	-34.2593	
Iterations	2	

Plots Section



Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_1_126"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings

Variables Tab

-- Response Variable ----------

Response Variable:	VALUES

-- Frequency (Count) Variable ----------

Frequency Variable:	<Empty>

-- Nondetection Variable ----------

Nondetection (Censor) Variable:	D_VALUES
Detected:	1
Not Detected:	0

-- Independent Variables ----------

X's: Independent Variables:	DATE

-- Probability Distribution ----------

Distribution:	Lognormal

-- Alpha Level ----------

Alpha Level:	0.050

Estimation Tab

-- Estimation Options ----------

Maximum Iterations:	100
Minimum Relative Change:	0.0000001
Parameter Adjustment:	0.2
Starting Sigma:	0 - Data
Derivatives:	0.000006

Reports Tab

-- Select Reports ----------

Data Summary Report	Checked
Parameter Report	Checked
Information Matrix	Unchecked
Residual Report	Unchecked

-- Report Options ----------

Precision:	Single
Variable Names:	Names
Value Labels:	Data Values

·· Decimal Places ·····

Response:	3
Probability:	4

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_1_126"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings (Continued)

Plots Tab

-- Select Plots ----------

X - Y Plots	Checked
Number Predicted:	50
X - Transformed(Y) Plots	Unchecked
Number Predicted:	50
X - Residual Plots	Unchecked

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_1_128"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Data Summary Section

Type of Observation	Rows	Count	VALUES Minimum	VALUES Maximum
Missing or Prediction	0			
Detected	15	15	0.150	0.330
Not Detected	0	0		
Total (Nonmissing)	15	15	0.150	0.330

Means

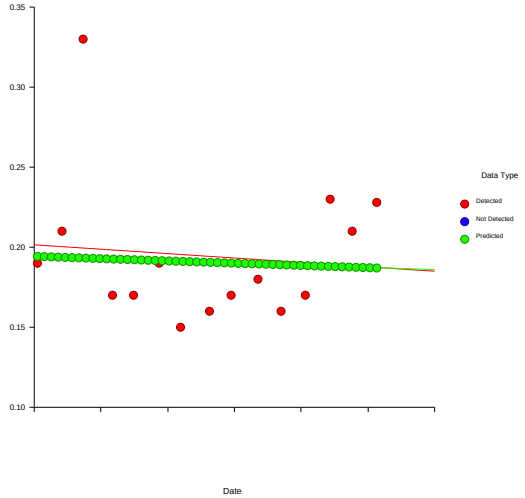
Variable	Mean
VALUES	0.1945333
DATE	42297.93

Maximum Likelihood Parameter Estimation Section

Parameter Name	Parameter Estimate	Standard Error	Z Value	Prob Level	Lower 95.0% C.L.	Upper 95.0% C.L.
Intercept	-1.027269	2.675028	-0.3840	0.7010	-6.270228	4.21569
DATE	-1.490282E-05	6.323153E-05	-0.2357	0.8137	-0.0001388343	0.0001090287
Sigma	0.1931661	0.03526765	5.4771	0.0000	0.1350583	0.2762744

Approximate R-Squared		0.003680
Log Likelihood	28.24341	
Iterations	2	

Plots Section



Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_1_128"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings

Variables Tab

-- Response Variable ----------

Response Variable:	VALUES

-- Frequency (Count) Variable ----------

Frequency Variable:	<Empty>

-- Nondetection Variable ----------

Nondetection (Censor) Variable:	D_VALUES
Detected:	1
Not Detected:	0

-- Independent Variables ----------

X's: Independent Variables:	DATE

-- Probability Distribution ----------

Distribution:	Lognormal

-- Alpha Level ----------

Alpha Level:	0.050

Estimation Tab

-- Estimation Options ----------

Maximum Iterations:	100
Minimum Relative Change:	0.0000001
Parameter Adjustment:	0.2
Starting Sigma:	0 - Data
Derivatives:	0.000006

Reports Tab

-- Select Reports ----------

Data Summary Report	Checked
Parameter Report	Checked
Information Matrix	Unchecked
Residual Report	Unchecked

-- Report Options ----------

Precision:	Single
Variable Names:	Names
Value Labels:	Data Values

·· Decimal Places ·····

Response:	3
Probability:	4

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_1_128"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings (Continued)

Plots Tab

-- Select Plots ----------

X - Y Plots	Checked
Number Predicted:	50
X - Transformed(Y) Plots	Unchecked
Number Predicted:	50
X - Residual Plots	Unchecked

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_1_132"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Data Summary Section

Type of Observation	Rows	Count	VALUES Minimum	VALUES Maximum
Missing or Prediction	0			
Detected	14	14	0.001	0.006
Not Detected	1	1	0.003	0.003
Total (Nonmissing)	15	15	0.001	0.006

Means

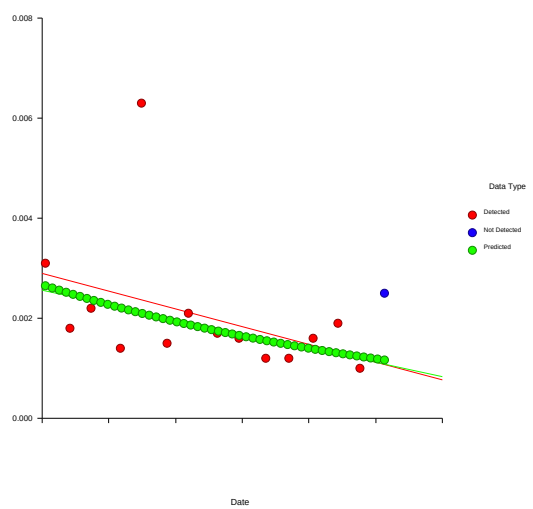
Variable	Mean
VALUES	0.002073333
DATE	42297.93

Maximum Likelihood Parameter Estimation Section

Parameter Name	Parameter Estimate	Standard Error	Z Value	Prob Level	Lower 95.0% C.L.	Upper 95.0% C.L.
Intercept	7.317384	5.64165	1.2970	0.1946	-3.740047	18.37481
DATE	-0.0003229995	0.0001336129	-2.4174	0.0156	-0.000584876	-6.112306E-05
Sigma	0.3726282	0.06976851	5.3409	0.0000	0.2581679	0.5378352

Approximate R-Squared		0.283550
Log Likelihood	82.28291	
Iterations	74	

Plots Section



Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_1_132"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings

Variables Tab

-- Response Variable ----------

Response Variable:	VALUES

-- Frequency (Count) Variable ----------

Frequency Variable:	<Empty>

-- Nondetection Variable ----------

Nondetection (Censor) Variable:	D_VALUES
Detected:	1
Not Detected:	0

-- Independent Variables ----------

X's: Independent Variables:	DATE

-- Probability Distribution ----------

Distribution:	Lognormal

-- Alpha Level ----------

Alpha Level:	0.050

Estimation Tab

-- Estimation Options ----------

Maximum Iterations:	100
Minimum Relative Change:	0.0000001
Parameter Adjustment:	0.2
Starting Sigma:	0 - Data
Derivatives:	0.000006

Reports Tab

-- Select Reports ----------

Data Summary Report	Checked
Parameter Report	Checked
Information Matrix	Unchecked
Residual Report	Unchecked

-- Report Options ----------

Precision:	Single
Variable Names:	Names
Value Labels:	Data Values

·· Decimal Places ·····

Response:	3
Probability:	4

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_1_132"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings (Continued)

Plots Tab

-- Select Plots ----------

X - Y Plots	Checked
Number Predicted:	50
X - Transformed(Y) Plots	Unchecked
Number Predicted:	50
X - Residual Plots	Unchecked

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_1_136"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Data Summary Section

Type of Observation	Rows	Count	VALUES Minimum	VALUES Maximum
Missing or Prediction	0			
Detected	13	13	0.400	2.400
Not Detected	2	2	0.500	0.940
Total (Nonmissing)	15	15	0.400	2.400

Means

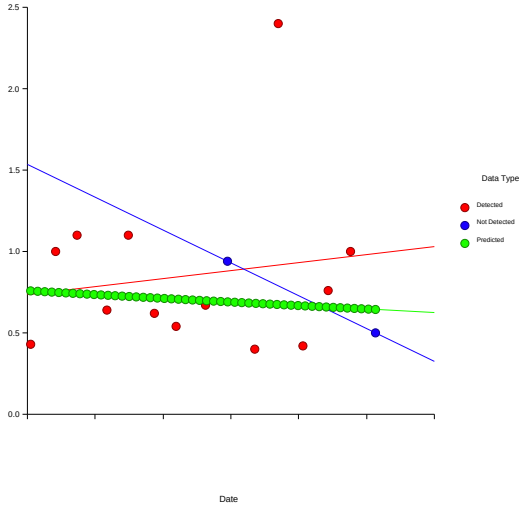
Variable	Mean
VALUES	0.8346667
DATE	42297.93

Maximum Likelihood Parameter Estimation Section

Parameter Name	Parameter Estimate	Standard Error	Z Value	Prob Level	Lower 95.0% C.L.	Upper 95.0% C.L.
Intercept	2.360159	7.11045	0.3319	0.7400	-11.57607	16.29638
DATE	-6.42849E-05	0.0001682142	-0.3822	0.7023	-0.0003939787	0.0002654089
Sigma	0.4990234	0.09833124	5.0749	0.0000	0.3391516	0.7342567

Approximate R-Squared	
Log Likelihood	-6.977371
Iterations	72

Plots Section



Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_1_136"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings

Variables Tab

-- Response Variable ----------

Response Variable:	VALUES

-- Frequency (Count) Variable ----------

Frequency Variable:	<Empty>

-- Nondetection Variable ----------

Nondetection (Censor) Variable:	D_VALUES
Detected:	1
Not Detected:	0

-- Independent Variables ----------

X's: Independent Variables:	DATE

-- Probability Distribution ----------

Distribution:	Lognormal

-- Alpha Level ----------

Alpha Level:	0.050

Estimation Tab

-- Estimation Options ----------

Maximum Iterations:	100
Minimum Relative Change:	0.0000001
Parameter Adjustment:	0.2
Starting Sigma:	0 - Data
Derivatives:	0.000006

Reports Tab

-- Select Reports ----------

Data Summary Report	Checked
Parameter Report	Checked
Information Matrix	Unchecked
Residual Report	Unchecked

-- Report Options ----------

Precision:	Single
Variable Names:	Names
Value Labels:	Data Values

·· Decimal Places ·····

Response:	3
Probability:	4

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_1_136"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings (Continued)

Plots Tab

-- Select Plots ----------

X - Y Plots	Checked
Number Predicted:	50
X - Transformed(Y) Plots	Unchecked
Number Predicted:	50
X - Residual Plots	Unchecked

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_1_142"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Data Summary Section

Type of Observation	Rows	Count	VALUES Minimum	VALUES Maximum
Missing or Prediction	0			
Detected	15	15	520.000	920.000
Not Detected	0	0		
Total (Nonmissing)	15	15	520.000	920.000

Means

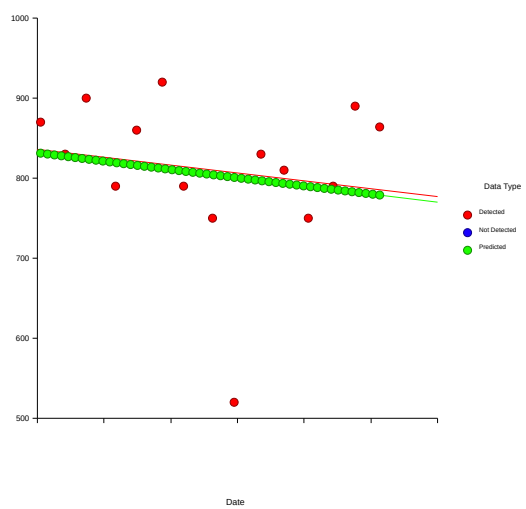
Variable	Mean
VALUES	810.9333
DATE	42297.93

Maximum Likelihood Parameter Estimation Section

Parameter Name	Parameter Estimate	Standard Error	Z Value	Prob Level	Lower 95.0% C.L.	Upper 95.0% C.L.
Intercept	7.772258	1.804634	4.3068	0.0000	4.235241	11.30927
DATE	-2.557874E-05	4.265743E-05	-0.5996	0.5488	-0.0001091858	5.802829E-05
Sigma	0.1300319	0.02374257	5.4767	0.0000	0.0909136	0.1859821

Approximate R-Squared		0.023449
Log Likelihood	-91.0394	
Iterations	2	

Plots Section



Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_1_142"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings

Variables Tab

-- Response Variable ----------

Response Variable:	VALUES

-- Frequency (Count) Variable ----------

Frequency Variable:	<Empty>

-- Nondetection Variable ----------

Nondetection (Censor) Variable:	D_VALUES
Detected:	1
Not Detected:	0

-- Independent Variables ----------

X's: Independent Variables:	DATE

-- Probability Distribution ----------

Distribution:	Lognormal

-- Alpha Level ----------

Alpha Level:	0.050

Estimation Tab

-- Estimation Options ----------

Maximum Iterations:	100
Minimum Relative Change:	0.0000001
Parameter Adjustment:	0.2
Starting Sigma:	0 - Data
Derivatives:	0.000006

Reports Tab

-- Select Reports ----------

Data Summary Report	Checked
Parameter Report	Checked
Information Matrix	Unchecked
Residual Report	Unchecked

-- Report Options ----------

Precision:	Single
Variable Names:	Names
Value Labels:	Data Values

·· Decimal Places ·····

Response:	3
Probability:	4

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_1_142"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings (Continued)

Plots Tab

-- Select Plots ----------

X - Y Plots	Checked
Number Predicted:	50
X - Transformed(Y) Plots	Unchecked
Number Predicted:	50
X - Residual Plots	Unchecked

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_1_146"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Data Summary Section

Type of Observation	Rows	Count	VALUES Minimum	VALUES Maximum
Missing or Prediction	0			
Detected	14	14	0.001	0.006
Not Detected	1	1	0.002	0.002
Total (Nonmissing)	15	15	0.001	0.006

Means

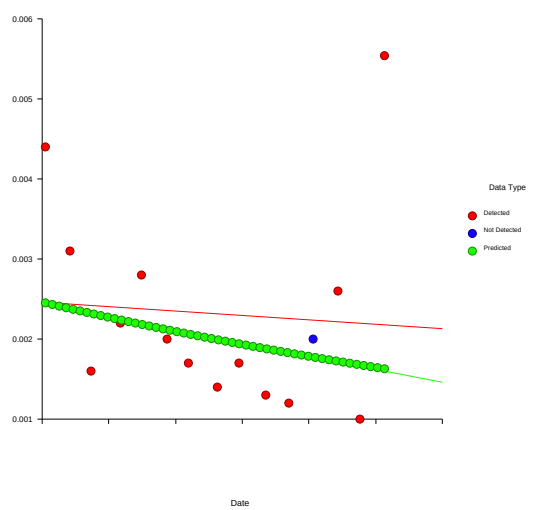
Variable	Mean
VALUES	0.002302667
DATE	42297.93

Maximum Likelihood Parameter Estimation Section

Parameter Name	Parameter Estimate	Standard Error	Z Value	Prob Level	Lower 95.0% C.L.	Upper 95.0% C.L.
Intercept	0.5905272	6.508	0.0907	0.9277	-12.16492	13.34597
DATE	-0.0001609118	0.000153903	-1.0455	0.2958	-0.0004625561	0.0001407325
Sigma	0.463549	0.08748141	5.2988	0.0000	0.3202256	0.6710196

Approximate R-Squared		0.045345
Log Likelihood	76.91208	
Iterations	100	
Warning:	The maximum likelihood algorithm was terminated because the Maximum Iterations was reached. You should increase the Maximum Iterations and rerun the analysis.	

Plots Section



Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_1_146"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings

Autosaved Template File
C:\Users\CMOYARODRI\Documents\NCSS 12\Procedure Templates\Autosave\Nondetects-Data Regression - Autosaved 2019_10_15-11_40_56.t263

Variables Tab
-- Response Variable ----------
Response Variable: VALUES

-- Frequency (Count) Variable ----------
Frequency Variable: <Empty>

-- Nondetection Variable ----------
Nondetection (Censor) Variable: D_VALUES
Detected: 1
Not Detected: 0

-- Independent Variables ----------
X's: Independent Variables: DATE

-- Probability Distribution ----------
Distribution: Lognormal

-- Alpha Level ----------
Alpha Level: 0.050

Estimation Tab
-- Estimation Options ----------
Maximum Iterations: 100
Minimum Relative Change: 0.0000000001
Parameter Adjustment: 0.2
Starting Sigma: 0 - Data
Derivatives: 0.0001

Reports Tab
-- Select Reports ----------
Data Summary Report Checked
Parameter Report Checked
Information Matrix Unchecked
Residual Report Unchecked

-- Report Options ----------
Precision: Single
Variable Names: Names
Value Labels: Data Values

·· Decimal Places ·····
Response: 3
Probability: 4

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_1_146"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings (Continued)

Plots Tab

-- Select Plots ----------

X - Y Plots	Checked
Number Predicted:	50
X - Transformed(Y) Plots	Unchecked
Number Predicted:	50
X - Residual Plots	Unchecked

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_4_101"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Data Summary Section

Type of Observation	Rows	Count	VALUES Minimum	VALUES Maximum
Missing or Prediction	0			
Detected	13	13	0.019	4.200
Not Detected	2	2	0.031	0.200
Total (Nonmissing)	15	15	0.019	4.200

Means

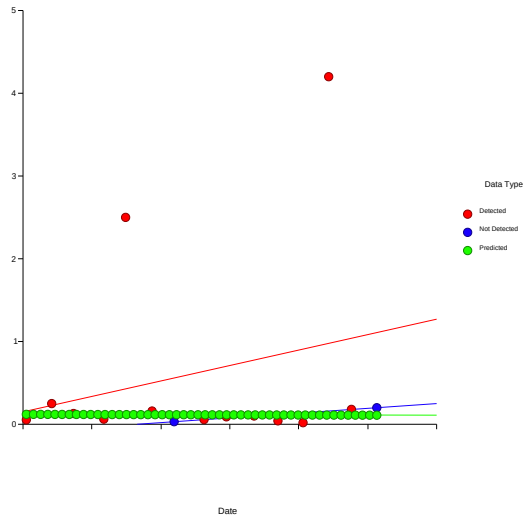
Variable	Mean
VALUES	0.5382667
DATE	42297.93

Maximum Likelihood Parameter Estimation Section

Parameter Name	Parameter Estimate	Standard Error	Z Value	Prob Level	Lower 95.0% C.L.	Upper 95.0% C.L.
Intercept	-0.6560025	21.97286	-0.0299	0.9761	-43.72203	42.41002
DATE	-3.570987E-05	0.0005198961	-0.0687	0.9452	-0.001054688	0.0009832678
Sigma	1.558661	0.3091218	5.0422	0.0000	1.056665	2.299145

Approximate R-Squared	
Log Likelihood	-0.7224824
Iterations	79

Plots Section



Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_4_101"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings

Variables Tab

-- Response Variable ----------

Response Variable:	VALUES

-- Frequency (Count) Variable ----------

Frequency Variable:	<Empty>

-- Nondetection Variable ----------

Nondetection (Censor) Variable:	D_VALUES
Detected:	1
Not Detected:	0

-- Independent Variables ----------

X's: Independent Variables:	DATE

-- Probability Distribution ----------

Distribution:	Lognormal

-- Alpha Level ----------

Alpha Level:	0.050

Estimation Tab

-- Estimation Options ----------

Maximum Iterations:	100
Minimum Relative Change:	0.0000001
Parameter Adjustment:	0.2
Starting Sigma:	0 - Data
Derivatives:	0.000006

Reports Tab

-- Select Reports ----------

Data Summary Report	Checked
Parameter Report	Checked
Information Matrix	Unchecked
Residual Report	Unchecked

-- Report Options ----------

Precision:	Single
Variable Names:	Names
Value Labels:	Data Values

·· Decimal Places ·····

Response:	3
Probability:	4

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_4_101"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings (Continued)

Plots Tab

-- Select Plots ----------

X - Y Plots	Checked
Number Predicted:	50
X - Transformed(Y) Plots	Unchecked
Number Predicted:	50
X - Residual Plots	Unchecked

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_4_105"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Data Summary Section

Type of Observation	Rows	Count	VALUES Minimum	VALUES Maximum
Missing or Prediction	0			
Detected	14	14	0.001	0.002
Not Detected	1	1	0.001	0.001
Total (Nonmissing)	15	15	0.001	0.002

Means

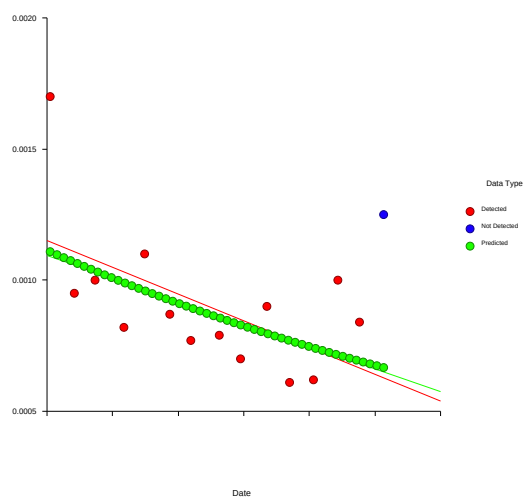
Variable	Mean
VALUES	0.000928
DATE	42297.93

Maximum Likelihood Parameter Estimation Section

Parameter Name	Parameter Estimate	Standard Error	Z Value	Prob Level	Lower 95.0% C.L.	Upper 95.0% C.L.
Intercept	1.398998	3.067374	0.4561	0.6483	-4.612944	7.410939
DATE	-0.0001999719	7.26613E-05	-2.7521	0.0059	-0.0003423855	-5.755841E-05
Sigma	0.2008264	0.03788529	5.3009	0.0000	0.1387536	0.2906681

Approximate R-Squared		0.349077
Log Likelihood	101.1812	
Iterations	71	

Plots Section



Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_4_105"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings

Variables Tab

-- Response Variable ----------

Response Variable:	VALUES

-- Frequency (Count) Variable ----------

Frequency Variable:	<Empty>

-- Nondetection Variable ----------

Nondetection (Censor) Variable:	D_VALUES
Detected:	1
Not Detected:	0

-- Independent Variables ----------

X's: Independent Variables:	DATE

-- Probability Distribution ----------

Distribution:	Lognormal

-- Alpha Level ----------

Alpha Level:	0.050

Estimation Tab

-- Estimation Options ----------

Maximum Iterations:	100
Minimum Relative Change:	0.0000001
Parameter Adjustment:	0.2
Starting Sigma:	0 - Data
Derivatives:	0.000006

Reports Tab

-- Select Reports ----------

Data Summary Report	Checked
Parameter Report	Checked
Information Matrix	Unchecked
Residual Report	Unchecked

-- Report Options ----------

Precision:	Single
Variable Names:	Names
Value Labels:	Data Values

·· Decimal Places ·····

Response:	3
Probability:	4

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_4_105"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings (Continued)

Plots Tab

-- Select Plots ----------

X - Y Plots	Checked
Number Predicted:	50
X - Transformed(Y) Plots	Unchecked
Number Predicted:	50
X - Residual Plots	Unchecked

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_4_113"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Data Summary Section

Type of Observation	Rows	Count	VALUES Minimum	VALUES Maximum
Missing or Prediction	0			
Detected	15	15	35.000	60.000
Not Detected	0	0		
Total (Nonmissing)	15	15	35.000	60.000

Means

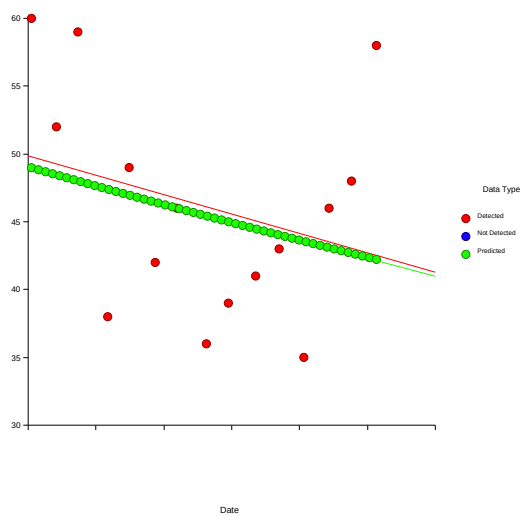
Variable	Mean
VALUES	46.13334
DATE	42297.93

Maximum Likelihood Parameter Estimation Section

Parameter Name	Parameter Estimate	Standard Error	Z Value	Prob Level	Lower 95.0% C.L.	Upper 95.0% C.L.
Intercept	6.289001	2.258593	2.7845	0.0054	1.86224	10.71576
DATE	-5.844049E-05	5.338798E-05	-1.0946	0.2737	-0.000163079	4.619803E-05
Sigma	0.162873	0.02973732	5.4771	0.0000	0.1138772	0.2329492

Approximate R-Squared		0.073982
Log Likelihood	-51.31863	
Iterations	2	

Plots Section



Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_4_113"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings

Variables Tab

-- Response Variable ----------

Response Variable:	VALUES

-- Frequency (Count) Variable ----------

Frequency Variable:	<Empty>

-- Nondetection Variable ----------

Nondetection (Censor) Variable:	D_VALUES
Detected:	1
Not Detected:	0

-- Independent Variables ----------

X's: Independent Variables:	DATE

-- Probability Distribution ----------

Distribution:	Lognormal

-- Alpha Level ----------

Alpha Level:	0.050

Estimation Tab

-- Estimation Options ----------

Maximum Iterations:	100
Minimum Relative Change:	0.0000001
Parameter Adjustment:	0.2
Starting Sigma:	0 - Data
Derivatives:	0.000006

Reports Tab

-- Select Reports ----------

Data Summary Report	Checked
Parameter Report	Checked
Information Matrix	Unchecked
Residual Report	Unchecked

-- Report Options ----------

Precision:	Single
Variable Names:	Names
Value Labels:	Data Values

·· Decimal Places ·····

Response:	3
Probability:	4

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_4_113"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings (Continued)

Plots Tab

-- Select Plots ----------

X - Y Plots	Checked
Number Predicted:	50
X - Transformed(Y) Plots	Unchecked
Number Predicted:	50
X - Residual Plots	Unchecked

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_4_119"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Data Summary Section

Type of Observation	Rows	Count	VALUES Minimum	VALUES Maximum
Missing or Prediction	0			
Detected	10	10	0.001	0.009
Not Detected	5	5	0.002	0.005
Total (Nonmissing)	15	15	0.001	0.009

Means

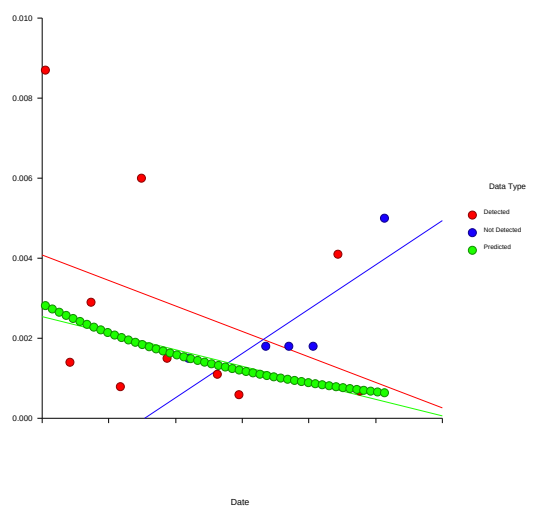
Variable	Mean
VALUES	0.002644
DATE	42297.93

Maximum Likelihood Parameter Estimation Section

Parameter Name	Parameter Estimate	Standard Error	Z Value	Prob Level	Lower 95.0% C.L.	Upper 95.0% C.L.
Intercept	18.07844	13.27426	1.3619	0.1732	-7.938634	44.09552
DATE	-0.0005838292	0.0003152224	-1.8521	0.0640	-0.001201654	3.399538E-05
Sigma	0.8153884	0.1790794	4.5532	0.0000	0.5301756	1.254034

Approximate R-Squared		0.098216
Log Likelihood	48.88848	
Iterations	83	

Plots Section



Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_4_119"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings

Variables Tab

-- Response Variable ----------

Response Variable:	VALUES

-- Frequency (Count) Variable ----------

Frequency Variable:	<Empty>

-- Nondetection Variable ----------

Nondetection (Censor) Variable:	D_VALUES
Detected:	1
Not Detected:	0

-- Independent Variables ----------

X's: Independent Variables:	DATE

-- Probability Distribution ----------

Distribution:	Lognormal

-- Alpha Level ----------

Alpha Level:	0.050

Estimation Tab

-- Estimation Options ----------

Maximum Iterations:	100
Minimum Relative Change:	0.0000001
Parameter Adjustment:	0.2
Starting Sigma:	0 - Data
Derivatives:	0.000006

Reports Tab

-- Select Reports ----------

Data Summary Report	Checked
Parameter Report	Checked
Information Matrix	Unchecked
Residual Report	Unchecked

-- Report Options ----------

Precision:	Single
Variable Names:	Names
Value Labels:	Data Values

·· Decimal Places ·····

Response:	3
Probability:	4

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_4_119"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings (Continued)

Plots Tab

-- Select Plots ----------

X - Y Plots	Checked
Number Predicted:	50
X - Transformed(Y) Plots	Unchecked
Number Predicted:	50
X - Residual Plots	Unchecked

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_4_125"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Data Summary Section

Type of Observation	Rows	Count	VALUES Minimum	VALUES Maximum
Missing or Prediction	0			
Detected	15	15	21.000	32.000
Not Detected	0	0		
Total (Nonmissing)	15	15	21.000	32.000

Means

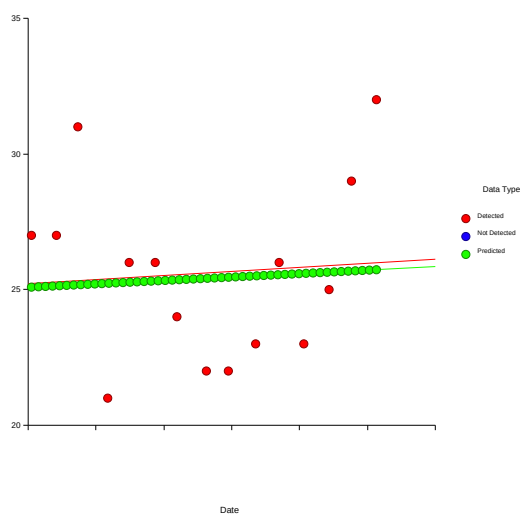
Variable	Mean
VALUES	25.6
DATE	42297.93

Maximum Likelihood Parameter Estimation Section

Parameter Name	Parameter Estimate	Standard Error	Z Value	Prob Level	Lower 95.0% C.L.	Upper 95.0% C.L.
Intercept	2.815329	1.676615	1.6792	0.0931	-0.4707753	6.101433
DATE	9.925743E-06	3.963133E-05	0.2505	0.8022	-6.775023E-05	8.760171E-05
Sigma	0.1209565	0.0220842	5.4771	0.0000	0.08457017	0.1729981

Approximate R-Squared		0.004161
Log Likelihood	-38.12672	
Iterations	2	

Plots Section



Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_4_125"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings

Variables Tab

-- Response Variable ----------

Response Variable:	VALUES

-- Frequency (Count) Variable ----------

Frequency Variable:	<Empty>

-- Nondetection Variable ----------

Nondetection (Censor) Variable:	D_VALUES
Detected:	1
Not Detected:	0

-- Independent Variables ----------

X's: Independent Variables:	DATE

-- Probability Distribution ----------

Distribution:	Lognormal

-- Alpha Level ----------

Alpha Level:	0.050

Estimation Tab

-- Estimation Options ----------

Maximum Iterations:	100
Minimum Relative Change:	0.0000001
Parameter Adjustment:	0.2
Starting Sigma:	0 - Data
Derivatives:	0.000006

Reports Tab

-- Select Reports ----------

Data Summary Report	Checked
Parameter Report	Checked
Information Matrix	Unchecked
Residual Report	Unchecked

-- Report Options ----------

Precision:	Single
Variable Names:	Names
Value Labels:	Data Values

·· Decimal Places ·····

Response:	3
Probability:	4

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_4_125"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings (Continued)

Plots Tab

-- Select Plots ----------

X - Y Plots	Checked
Number Predicted:	50
X - Transformed(Y) Plots	Unchecked
Number Predicted:	50
X - Residual Plots	Unchecked

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_4_131"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Data Summary Section

Type of Observation	Rows	Count	VALUES Minimum	VALUES Maximum
Missing or Prediction	0			
Detected	13	13	0.001	0.009
Not Detected	2	2	0.001	0.003
Total (Nonmissing)	15	15	0.001	0.009

Means

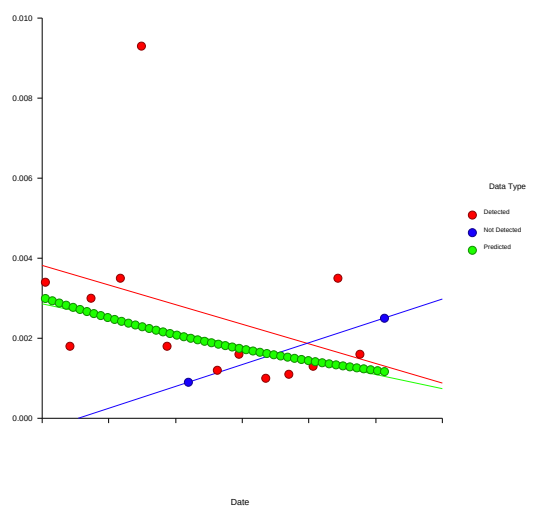
Variable	Mean
VALUES	0.0025
DATE	42297.93

Maximum Likelihood Parameter Estimation Section

Parameter Name	Parameter Estimate	Standard Error	Z Value	Prob Level	Lower 95.0% C.L.	Upper 95.0% C.L.
Intercept	9.390224	8.902026	1.0548	0.2915	-8.057426	26.83787
DATE	-0.0003705524	0.0002107419	-1.7583	0.0787	-0.0007835989	4.249414E-05
Sigma	0.5998066	0.1184398	5.0642	0.0000	0.4073148	0.8832675

Approximate R-Squared		0.188623
Log Likelihood	66.85391	
Iterations	75	

Plots Section



Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_4_131"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings

Variables Tab

-- Response Variable ----------

Response Variable:	VALUES

-- Frequency (Count) Variable ----------

Frequency Variable:	<Empty>

-- Nondetection Variable ----------

Nondetection (Censor) Variable:	D_VALUES
Detected:	1
Not Detected:	0

-- Independent Variables ----------

X's: Independent Variables:	DATE

-- Probability Distribution ----------

Distribution:	Lognormal

-- Alpha Level ----------

Alpha Level:	0.050

Estimation Tab

-- Estimation Options ----------

Maximum Iterations:	100
Minimum Relative Change:	0.0000001
Parameter Adjustment:	0.2
Starting Sigma:	0 - Data
Derivatives:	0.000006

Reports Tab

-- Select Reports ----------

Data Summary Report	Checked
Parameter Report	Checked
Information Matrix	Unchecked
Residual Report	Unchecked

-- Report Options ----------

Precision:	Single
Variable Names:	Names
Value Labels:	Data Values

·· Decimal Places ·····

Response:	3
Probability:	4

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_4_131"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings (Continued)

Plots Tab

-- Select Plots ----------

X - Y Plots	Checked
Number Predicted:	50
X - Transformed(Y) Plots	Unchecked
Number Predicted:	50
X - Residual Plots	Unchecked

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_4_135"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Data Summary Section

Type of Observation	Rows	Count	VALUES Minimum	VALUES Maximum
Missing or Prediction	0			
Detected	14	14	0.420	2.100
Not Detected	1	1	0.500	0.500
Total (Nonmissing)	15	15	0.420	2.100

Means

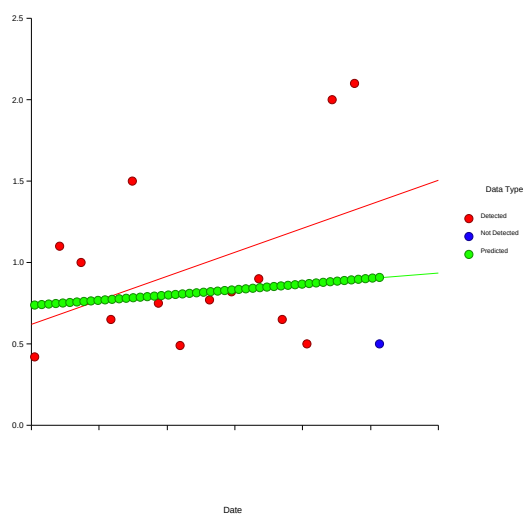
Variable	Mean
VALUES	0.9433333
DATE	42297.93

Maximum Likelihood Parameter Estimation Section

Parameter Name	Parameter Estimate	Standard Error	Z Value	Prob Level	Lower 95.0% C.L.	Upper 95.0% C.L.
Intercept	-3.641284	7.090303	-0.5136	0.6075	-17.53802	10.25546
DATE	8.137113E-05	0.000167666	0.4853	0.6275	-0.0002472481	0.0004099904
Sigma	0.5025193	0.09663346	5.2003	0.0000	0.3447215	0.7325497

Approximate R-Squared		0.057754
Log Likelihood	-9.324281	
Iterations	70	

Plots Section



Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_4_135"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings

Variables Tab

-- Response Variable ----------

Response Variable:	VALUES

-- Frequency (Count) Variable ----------

Frequency Variable:	<Empty>

-- Nondetection Variable ----------

Nondetection (Censor) Variable:	D_VALUES
Detected:	1
Not Detected:	0

-- Independent Variables ----------

X's: Independent Variables:	DATE

-- Probability Distribution ----------

Distribution:	Lognormal

-- Alpha Level ----------

Alpha Level:	0.050

Estimation Tab

-- Estimation Options ----------

Maximum Iterations:	100
Minimum Relative Change:	0.0000001
Parameter Adjustment:	0.2
Starting Sigma:	0 - Data
Derivatives:	0.000006

Reports Tab

-- Select Reports ----------

Data Summary Report	Checked
Parameter Report	Checked
Information Matrix	Unchecked
Residual Report	Unchecked

-- Report Options ----------

Precision:	Single
Variable Names:	Names
Value Labels:	Data Values

·· Decimal Places ·····

Response:	3
Probability:	4

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_4_135"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings (Continued)

Plots Tab

-- Select Plots ----------

X - Y Plots	Checked
Number Predicted:	50
X - Transformed(Y) Plots	Unchecked
Number Predicted:	50
X - Residual Plots	Unchecked

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_4_141"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Data Summary Section

Type of Observation	Rows	Count	VALUES Minimum	VALUES Maximum
Missing or Prediction	0			
Detected	15	15	630.000	894.000
Not Detected	0	0		
Total (Nonmissing)	15	15	630.000	894.000

Means

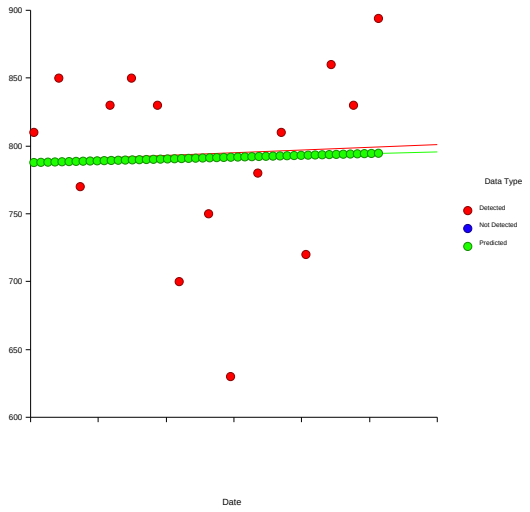
Variable	Mean
VALUES	794.2667
DATE	42297.93

Maximum Likelihood Parameter Estimation Section

Parameter Name	Parameter Estimate	Standard Error	Z Value	Prob Level	Lower 95.0% C.L.	Upper 95.0% C.L.
Intercept	6.530035	1.239814	5.2669	0.0000	4.100044	8.960026
DATE	3.392984E-06	2.930639E-05	0.1158	0.9078	-5.404649E-05	6.083246E-05
Sigma	0.08930209	0.01630655	5.4765	0.0000	0.06243561	0.1277294

Approximate R-Squared		0.000895
Log Likelihood	-85.15139	
Iterations	2	

Plots Section



Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_4_141"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings

Variables Tab

-- Response Variable ----------

Response Variable:	VALUES

-- Frequency (Count) Variable ----------

Frequency Variable:	<Empty>

-- Nondetection Variable ----------

Nondetection (Censor) Variable:	D_VALUES
Detected:	1
Not Detected:	0

-- Independent Variables ----------

X's: Independent Variables:	DATE

-- Probability Distribution ----------

Distribution:	Lognormal

-- Alpha Level ----------

Alpha Level:	0.050

Estimation Tab

-- Estimation Options ----------

Maximum Iterations:	100
Minimum Relative Change:	0.0000001
Parameter Adjustment:	0.2
Starting Sigma:	0 - Data
Derivatives:	0.000006

Reports Tab

-- Select Reports ----------

Data Summary Report	Checked
Parameter Report	Checked
Information Matrix	Unchecked
Residual Report	Unchecked

-- Report Options ----------

Precision:	Single
Variable Names:	Names
Value Labels:	Data Values

·· Decimal Places ·····

Response:	3
Probability:	4

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "1_4_141"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings (Continued)

Plots Tab

-- Select Plots ----------

X - Y Plots	Checked
Number Predicted:	50
X - Transformed(Y) Plots	Unchecked
Number Predicted:	50
X - Residual Plots	Unchecked

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_1_102"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Data Summary Section

Type of Observation	Rows	Count	VALUES Minimum	VALUES Maximum
Missing or Prediction	0			
Detected	5	5	0.049	130.000
Not Detected	4	4	0.070	0.200
Total (Nonmissing)	9	9	0.049	130.000

Means

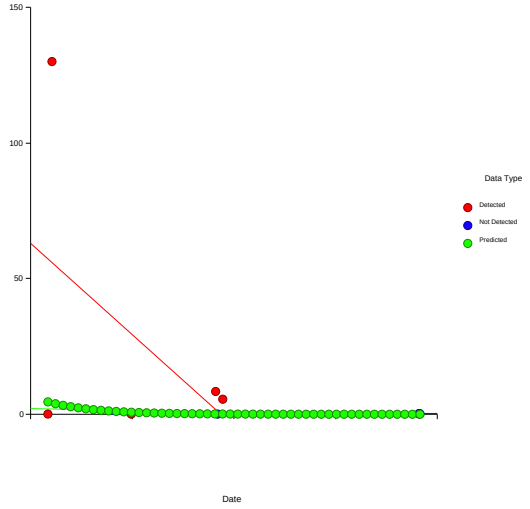
Variable	Mean
VALUES	16.08383
DATE	43404.33

Maximum Likelihood Parameter Estimation Section

Parameter Name	Parameter Estimate	Standard Error	Z Value	Prob Level	Lower 95.0% C.L.	Upper 95.0% C.L.
Intercept	947.5307	586.7689	1.6148	0.1064	-202.5151	2097.577
DATE	-0.02188978	0.0135416	-1.6165	0.1060	-0.04843083	0.004651266
Sigma	3.512434	1.15919	3.0301	0.0012	1.839461	6.706961

Approximate R-Squared	
Log Likelihood	-17.97474
Iterations	99

Plots Section



Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_1_102"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings

Variables Tab

-- Response Variable ----------

Response Variable:	VALUES

-- Frequency (Count) Variable ----------

Frequency Variable:	<Empty>

-- Nondetection Variable ----------

Nondetection (Censor) Variable:	D_VALUES
Detected:	1
Not Detected:	0

-- Independent Variables ----------

X's: Independent Variables:	DATE

-- Probability Distribution ----------

Distribution:	Lognormal

-- Alpha Level ----------

Alpha Level:	0.050

Estimation Tab

-- Estimation Options ----------

Maximum Iterations:	100
Minimum Relative Change:	0.0000001
Parameter Adjustment:	0.2
Starting Sigma:	0 - Data
Derivatives:	0.000006

Reports Tab

-- Select Reports ----------

Data Summary Report	Checked
Parameter Report	Checked
Information Matrix	Unchecked
Residual Report	Unchecked

-- Report Options ----------

Precision:	Single
Variable Names:	Names
Value Labels:	Data Values

·· Decimal Places ·····

Response:	3
Probability:	4

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_1_102"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings (Continued)

Plots Tab

-- Select Plots ----------

X - Y Plots	Checked
Number Predicted:	50
X - Transformed(Y) Plots	Unchecked
Number Predicted:	50
X - Residual Plots	Unchecked

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_1_106"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Data Summary Section

Type of Observation	Rows	Count	VALUES Minimum	VALUES Maximum
Missing or Prediction	0			
Detected	5	5	0.000	0.010
Not Detected	4	4	0.001	0.001
Total (Nonmissing)	9	9	0.000	0.010

Means

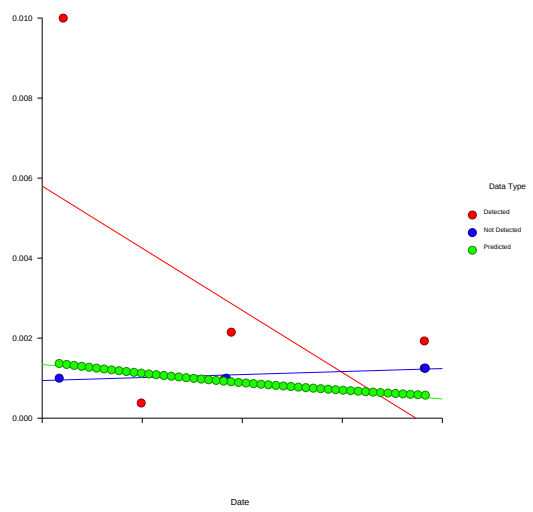
Variable	Mean
VALUES	0.002215556
DATE	43404.33

Maximum Likelihood Parameter Estimation Section

Parameter Name	Parameter Estimate	Standard Error	Z Value	Prob Level	Lower 95.0% C.L.	Upper 95.0% C.L.
Intercept	95.46029	142.5104	0.6698	0.5030	-183.855	374.7755
DATE	-0.002361475	0.003285053	-0.7189	0.4722	-0.008800061	0.004077111
Sigma	1.173109	0.3831281	3.0619	0.0011	0.6185043	2.225021

Approximate R-Squared	
Log Likelihood	21.57187
Iterations	89

Plots Section



Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_1_106"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings

Variables Tab

-- Response Variable ----------

Response Variable:	VALUES

-- Frequency (Count) Variable ----------

Frequency Variable:	<Empty>

-- Nondetection Variable ----------

Nondetection (Censor) Variable:	D_VALUES
Detected:	1
Not Detected:	0

-- Independent Variables ----------

X's: Independent Variables:	DATE

-- Probability Distribution ----------

Distribution:	Lognormal

-- Alpha Level ----------

Alpha Level:	0.050

Estimation Tab

-- Estimation Options ----------

Maximum Iterations:	100
Minimum Relative Change:	0.0000001
Parameter Adjustment:	0.2
Starting Sigma:	0 - Data
Derivatives:	0.000006

Reports Tab

-- Select Reports ----------

Data Summary Report	Checked
Parameter Report	Checked
Information Matrix	Unchecked
Residual Report	Unchecked

-- Report Options ----------

Precision:	Single
Variable Names:	Names
Value Labels:	Data Values

·· Decimal Places ·····

Response:	3
Probability:	4

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_1_106"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings (Continued)

Plots Tab

-- Select Plots ----------

X - Y Plots	Checked
Number Predicted:	50
X - Transformed(Y) Plots	Unchecked
Number Predicted:	50
X - Residual Plots	Unchecked

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_1_108"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Data Summary Section

Type of Observation	Rows	Count	VALUES Minimum	VALUES Maximum
Missing or Prediction	0			
Detected	9	9	0.007	0.670
Not Detected	0	0		
Total (Nonmissing)	9	9	0.007	0.670

Means

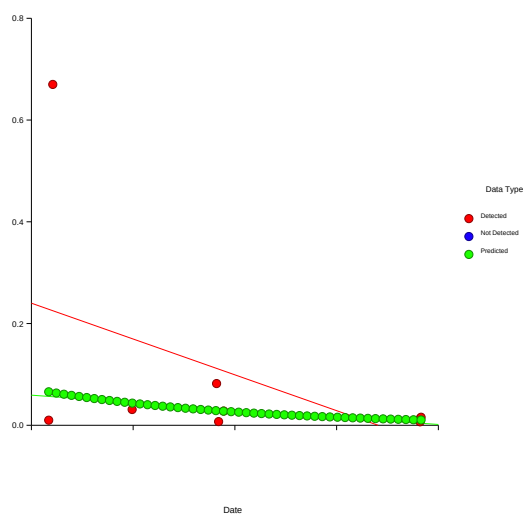
Variable	Mean
VALUES	0.09599778
DATE	43404.33

Maximum Likelihood Parameter Estimation Section

Parameter Name	Parameter Estimate	Standard Error	Z Value	Prob Level	Lower 95.0% C.L.	Upper 95.0% C.L.
Intercept	214.3769	122.1771	1.7546	0.0793	-25.0858	453.8396
DATE	-0.005023438	0.002814845	-1.7846	0.0743	-0.01054043	0.0004935563
Sigma	1.180686	0.2782958	4.2426	0.0000	0.7438755	1.873995

Approximate R-Squared		0.261448
Log Likelihood	18.69343	
Iterations	2	

Plots Section



Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_1_108"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings

Variables Tab

-- Response Variable ----------

Response Variable:	VALUES

-- Frequency (Count) Variable ----------

Frequency Variable:	<Empty>

-- Nondetection Variable ----------

Nondetection (Censor) Variable:	D_VALUES
Detected:	1
Not Detected:	0

-- Independent Variables ----------

X's: Independent Variables:	DATE

-- Probability Distribution ----------

Distribution:	Lognormal

-- Alpha Level ----------

Alpha Level:	0.050

Estimation Tab

-- Estimation Options ----------

Maximum Iterations:	100
Minimum Relative Change:	0.0000001
Parameter Adjustment:	0.2
Starting Sigma:	0 - Data
Derivatives:	0.000006

Reports Tab

-- Select Reports ----------

Data Summary Report	Checked
Parameter Report	Checked
Information Matrix	Unchecked
Residual Report	Unchecked

-- Report Options ----------

Precision:	Single
Variable Names:	Names
Value Labels:	Data Values

·· Decimal Places ·····

Response:	3
Probability:	4

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_1_108"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings (Continued)

Plots Tab

-- Select Plots ----------

X - Y Plots	Checked
Number Predicted:	50
X - Transformed(Y) Plots	Unchecked
Number Predicted:	50
X - Residual Plots	Unchecked

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_1_114"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Data Summary Section

Type of Observation	Rows	Count	VALUES Minimum	VALUES Maximum
Missing or Prediction	0			
Detected	9	9	7.800	292.000
Not Detected	0	0		
Total (Nonmissing)	9	9	7.800	292.000

Means

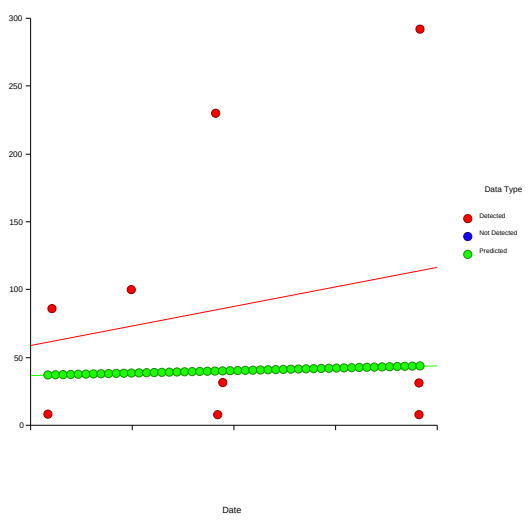
Variable	Mean
VALUES	88.28222
DATE	43404.33

Maximum Likelihood Parameter Estimation Section

Parameter Name	Parameter Estimate	Standard Error	Z Value	Prob Level	Lower 95.0% C.L.	Upper 95.0% C.L.
Intercept	-15.87147	136.6016	-0.1162	0.9075	-283.6057	251.8628
DATE	0.000450865	0.003147172	0.1433	0.8861	-0.005717479	0.006619209
Sigma	1.348197	0.3177821	4.2425	0.0000	0.8494104	2.139879

Approximate R-Squared		0.002182
Log Likelihood	-48.74162	
Iterations	16	

Plots Section



Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_1_114"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings

Variables Tab

-- Response Variable ----------

Response Variable:	VALUES

-- Frequency (Count) Variable ----------

Frequency Variable:	<Empty>

-- Nondetection Variable ----------

Nondetection (Censor) Variable:	D_VALUES
Detected:	1
Not Detected:	0

-- Independent Variables ----------

X's: Independent Variables:	DATE

-- Probability Distribution ----------

Distribution:	Lognormal

-- Alpha Level ----------

Alpha Level:	0.050

Estimation Tab

-- Estimation Options ----------

Maximum Iterations:	100
Minimum Relative Change:	0.0000001
Parameter Adjustment:	0.2
Starting Sigma:	0 - Data
Derivatives:	0.000006

Reports Tab

-- Select Reports ----------

Data Summary Report	Checked
Parameter Report	Checked
Information Matrix	Unchecked
Residual Report	Unchecked

-- Report Options ----------

Precision:	Single
Variable Names:	Names
Value Labels:	Data Values

·· Decimal Places ·····

Response:	3
Probability:	4

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_1_114"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings (Continued)

Plots Tab

-- Select Plots ----------

X - Y Plots	Checked
Number Predicted:	50
X - Transformed(Y) Plots	Unchecked
Number Predicted:	50
X - Residual Plots	Unchecked

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_1_118"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Data Summary Section

Type of Observation	Rows	Count	VALUES Minimum	VALUES Maximum
Missing or Prediction	0			
Detected	6	6	0.000	0.034
Not Detected	3	3	0.000	0.001
Total (Nonmissing)	9	9	0.000	0.034

Means

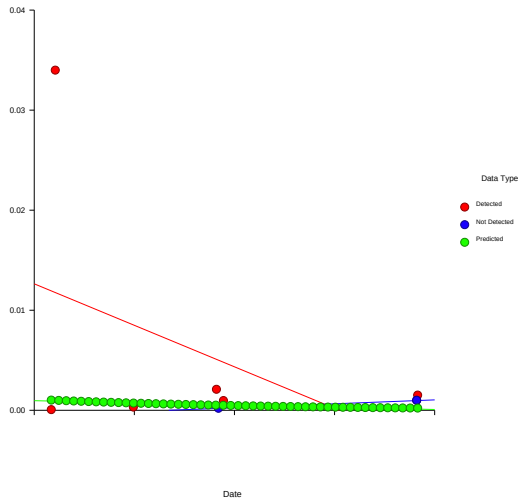
Variable	Mean
VALUES	0.004575778
DATE	43404.33

Maximum Likelihood Parameter Estimation Section

Parameter Name	Parameter Estimate	Standard Error	Z Value	Prob Level	Lower 95.0% C.L.	Upper 95.0% C.L.
Intercept	173.6191	252.1065	0.6887	0.4910	-320.5005	667.7387
DATE	-0.004176746	0.005812552	-0.7186	0.4724	-0.01556914	0.007215647
Sigma	2.092076	0.6189228	3.3802	0.0004	1.171539	3.735925

Approximate R-Squared	
Log Likelihood	25.98669
Iterations	90

Plots Section



Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_1_118"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings

Variables Tab

-- Response Variable ----------

Response Variable:	VALUES

-- Frequency (Count) Variable ----------

Frequency Variable:	<Empty>

-- Nondetection Variable ----------

Nondetection (Censor) Variable:	D_VALUES
Detected:	1
Not Detected:	0

-- Independent Variables ----------

X's: Independent Variables:	DATE

-- Probability Distribution ----------

Distribution:	Lognormal

-- Alpha Level ----------

Alpha Level:	0.050

Estimation Tab

-- Estimation Options ----------

Maximum Iterations:	100
Minimum Relative Change:	0.0000001
Parameter Adjustment:	0.2
Starting Sigma:	0 - Data
Derivatives:	0.000006

Reports Tab

-- Select Reports ----------

Data Summary Report	Checked
Parameter Report	Checked
Information Matrix	Unchecked
Residual Report	Unchecked

-- Report Options ----------

Precision:	Single
Variable Names:	Names
Value Labels:	Data Values

·· Decimal Places ·····

Response:	3
Probability:	4

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_1_118"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings (Continued)

Plots Tab

-- Select Plots ----------

X - Y Plots	Checked
Number Predicted:	50
X - Transformed(Y) Plots	Unchecked
Number Predicted:	50
X - Residual Plots	Unchecked

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_1_120"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Data Summary Section

Type of Observation	Rows	Count	VALUES Minimum	VALUES Maximum
Missing or Prediction	0			
Detected	5	5	0.001	0.028
Not Detected	4	4	0.002	0.005
Total (Nonmissing)	9	9	0.001	0.028

Means

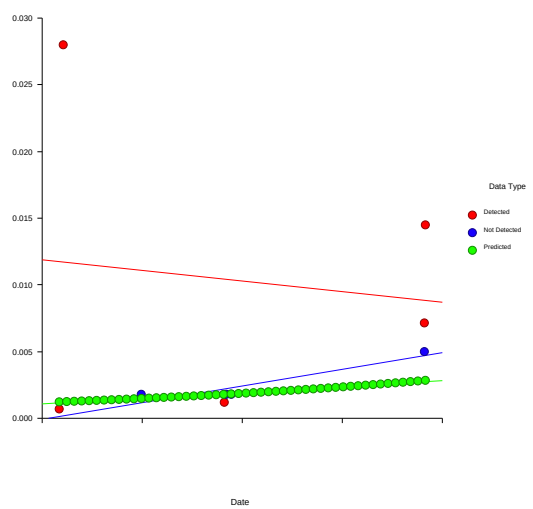
Variable	Mean
VALUES	0.006883333
DATE	43404.33

Maximum Likelihood Parameter Estimation Section

Parameter Name	Parameter Estimate	Standard Error	Z Value	Prob Level	Lower 95.0% C.L.	Upper 95.0% C.L.
Intercept	-105.3938	176.0008	-0.5988	0.5493	-450.349	239.5614
DATE	0.002283741	0.00405541	0.5631	0.5734	-0.005664716	0.0102322
Sigma	1.60903	0.5365109	2.9991	0.0014	0.8370308	3.093048

Approximate R-Squared	
Log Likelihood	14.67591
Iterations	74

Plots Section



Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_1_120"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings

Variables Tab

-- Response Variable ----------

Response Variable:	VALUES

-- Frequency (Count) Variable ----------

Frequency Variable:	<Empty>

-- Nondetection Variable ----------

Nondetection (Censor) Variable:	D_VALUES
Detected:	1
Not Detected:	0

-- Independent Variables ----------

X's: Independent Variables:	DATE

-- Probability Distribution ----------

Distribution:	Lognormal

-- Alpha Level ----------

Alpha Level:	0.050

Estimation Tab

-- Estimation Options ----------

Maximum Iterations:	100
Minimum Relative Change:	0.0000001
Parameter Adjustment:	0.2
Starting Sigma:	0 - Data
Derivatives:	0.000006

Reports Tab

-- Select Reports ----------

Data Summary Report	Checked
Parameter Report	Checked
Information Matrix	Unchecked
Residual Report	Unchecked

-- Report Options ----------

Precision:	Single
Variable Names:	Names
Value Labels:	Data Values

·· Decimal Places ·····

Response:	3
Probability:	4

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_1_120"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings (Continued)

Plots Tab

-- Select Plots ----------

X - Y Plots	Checked
Number Predicted:	50
X - Transformed(Y) Plots	Unchecked
Number Predicted:	50
X - Residual Plots	Unchecked

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_1_122"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Data Summary Section

Type of Observation	Rows	Count	VALUES Minimum	VALUES Maximum
Missing or Prediction	0			
Detected	5	5	0.088	110.000
Not Detected	4	4	0.085	0.250
Total (Nonmissing)	9	9	0.085	110.000

Means

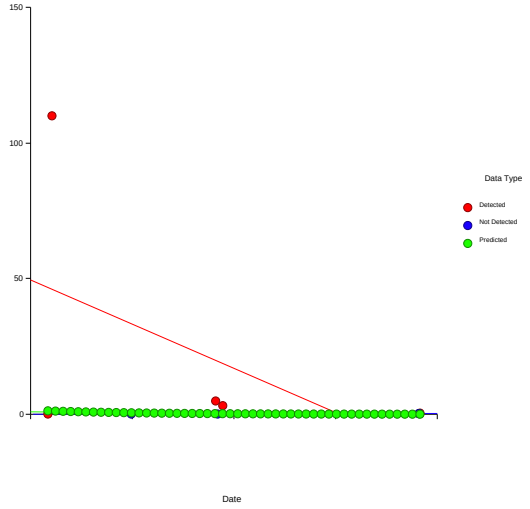
Variable	Mean
VALUES	13.25056
DATE	43404.33

Maximum Likelihood Parameter Estimation Section

Parameter Name	Parameter Estimate	Standard Error	Z Value	Prob Level	Lower 95.0% C.L.	Upper 95.0% C.L.
Intercept	443.1375	398.3701	1.1124	0.2660	-337.6535	1223.929
DATE	-0.01024822	0.00918465	-1.1158	0.2645	-0.0282498	0.007753364
Sigma	3.324291	1.130848	2.9396	0.0016	1.706631	6.475279

Approximate R-Squared	
Log Likelihood	-19.86874
Iterations	95

Plots Section



Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_1_122"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings

Variables Tab

-- Response Variable ----------

Response Variable:	VALUES

-- Frequency (Count) Variable ----------

Frequency Variable:	<Empty>

-- Nondetection Variable ----------

Nondetection (Censor) Variable:	D_VALUES
Detected:	1
Not Detected:	0

-- Independent Variables ----------

X's: Independent Variables:	DATE

-- Probability Distribution ----------

Distribution:	Lognormal

-- Alpha Level ----------

Alpha Level:	0.050

Estimation Tab

-- Estimation Options ----------

Maximum Iterations:	100
Minimum Relative Change:	0.0000001
Parameter Adjustment:	0.2
Starting Sigma:	0 - Data
Derivatives:	0.000006

Reports Tab

-- Select Reports ----------

Data Summary Report	Checked
Parameter Report	Checked
Information Matrix	Unchecked
Residual Report	Unchecked

-- Report Options ----------

Precision:	Single
Variable Names:	Names
Value Labels:	Data Values

·· Decimal Places ·····

Response:	3
Probability:	4

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_1_122"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings (Continued)

Plots Tab

-- Select Plots ----------

X - Y Plots	Checked
Number Predicted:	50
X - Transformed(Y) Plots	Unchecked
Number Predicted:	50
X - Residual Plots	Unchecked

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_1_126"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Data Summary Section

Type of Observation	Rows	Count	VALUES Minimum	VALUES Maximum
Missing or Prediction	0			
Detected	9	9	0.876	39.000
Not Detected	0	0		
Total (Nonmissing)	9	9	0.876	39.000

Means

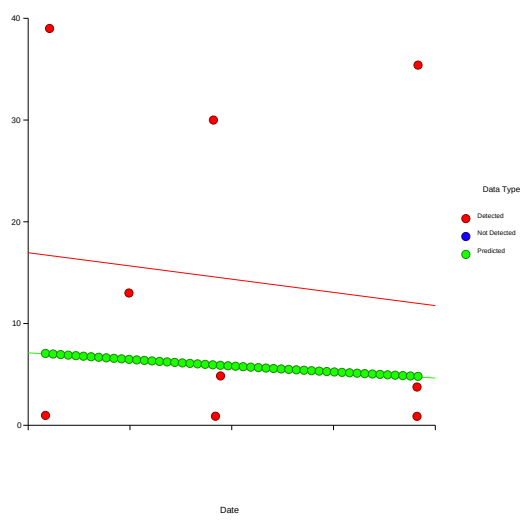
Variable	Mean
VALUES	14.30511
DATE	43404.33

Maximum Likelihood Parameter Estimation Section

Parameter Name	Parameter Estimate	Standard Error	Z Value	Prob Level	Lower 95.0% C.L.	Upper 95.0% C.L.
Intercept	47.35376	156.8103	0.3020	0.7627	-259.9889	354.6964
DATE	-0.001050493	0.003612762	-0.2908	0.7712	-0.008131376	0.006030391
Sigma	1.511648	0.3563062	4.2426	0.0000	0.9523936	2.399302

Approximate R-Squared		0.009356
Log Likelihood	-32.30969	
Iterations	6	

Plots Section



Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_1_126"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings

Variables Tab

-- Response Variable ----------

Response Variable:	VALUES

-- Frequency (Count) Variable ----------

Frequency Variable:	<Empty>

-- Nondetection Variable ----------

Nondetection (Censor) Variable:	D_VALUES
Detected:	1
Not Detected:	0

-- Independent Variables ----------

X's: Independent Variables:	DATE

-- Probability Distribution ----------

Distribution:	Lognormal

-- Alpha Level ----------

Alpha Level:	0.050

Estimation Tab

-- Estimation Options ----------

Maximum Iterations:	100
Minimum Relative Change:	0.0000001
Parameter Adjustment:	0.2
Starting Sigma:	0 - Data
Derivatives:	0.000006

Reports Tab

-- Select Reports ----------

Data Summary Report	Checked
Parameter Report	Checked
Information Matrix	Unchecked
Residual Report	Unchecked

-- Report Options ----------

Precision:	Single
Variable Names:	Names
Value Labels:	Data Values

·· Decimal Places ·····

Response:	3
Probability:	4

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_1_126"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings (Continued)

Plots Tab

-- Select Plots ----------

X - Y Plots	Checked
Number Predicted:	50
X - Transformed(Y) Plots	Unchecked
Number Predicted:	50
X - Residual Plots	Unchecked

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_1_128"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Data Summary Section

Type of Observation	Rows	Count	VALUES Minimum	VALUES Maximum
Missing or Prediction	0			
Detected	8	8	0.017	1.400
Not Detected	1	1	0.001	0.001
Total (Nonmissing)	9	9	0.001	1.400

Means

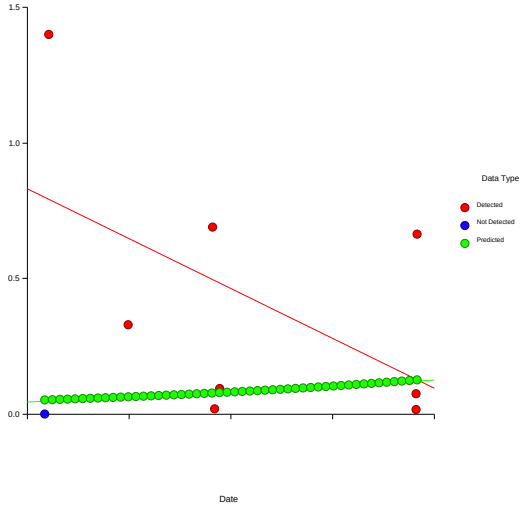
Variable	Mean
VALUES	0.3658944
DATE	43404.33

Maximum Likelihood Parameter Estimation Section

Parameter Name	Parameter Estimate	Standard Error	Z Value	Prob Level	Lower 95.0% C.L.	Upper 95.0% C.L.
Intercept	-106.1916	255.2794	-0.4160	0.6774	-606.53	394.1469
DATE	0.002389172	0.005880924	0.4063	0.6845	-0.009137229	0.01391557
Sigma	2.427432	0.6309208	3.8474	0.0001	1.458508	4.040037

Approximate R-Squared	
Log Likelihood	-5.298247
Iterations	86

Plots Section



Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_1_128"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings

Variables Tab

-- Response Variable ----------

Response Variable:	VALUES

-- Frequency (Count) Variable ----------

Frequency Variable:	<Empty>

-- Nondetection Variable ----------

Nondetection (Censor) Variable:	D_VALUES
Detected:	1
Not Detected:	0

-- Independent Variables ----------

X's: Independent Variables:	DATE

-- Probability Distribution ----------

Distribution:	Lognormal

-- Alpha Level ----------

Alpha Level:	0.050

Estimation Tab

-- Estimation Options ----------

Maximum Iterations:	100
Minimum Relative Change:	0.0000001
Parameter Adjustment:	0.2
Starting Sigma:	0 - Data
Derivatives:	0.000006

Reports Tab

-- Select Reports ----------

Data Summary Report	Checked
Parameter Report	Checked
Information Matrix	Unchecked
Residual Report	Unchecked

-- Report Options ----------

Precision:	Single
Variable Names:	Names
Value Labels:	Data Values

·· Decimal Places ·····

Response:	3
Probability:	4

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_1_128"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings (Continued)

Plots Tab

-- Select Plots ----------

X - Y Plots	Checked
Number Predicted:	50
X - Transformed(Y) Plots	Unchecked
Number Predicted:	50
X - Residual Plots	Unchecked

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_1_136"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Data Summary Section

Type of Observation	Rows	Count	VALUES Minimum	VALUES Maximum
Missing or Prediction	0			
Detected	9	9	0.645	16.000
Not Detected	0	0		
Total (Nonmissing)	9	9	0.645	16.000

Means

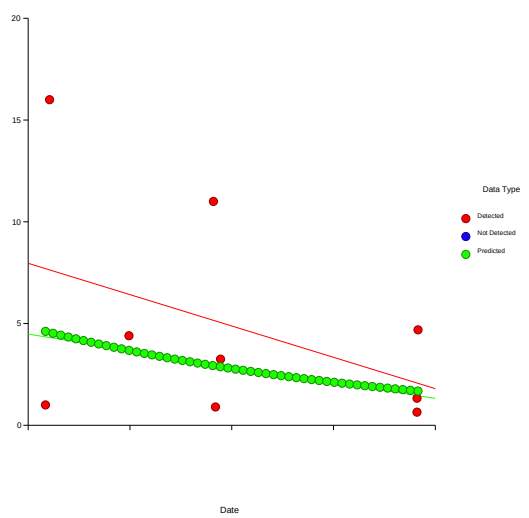
Variable	Mean
VALUES	4.801667
DATE	43404.33

Maximum Likelihood Parameter Estimation Section

Parameter Name	Parameter Estimate	Standard Error	Z Value	Prob Level	Lower 95.0% C.L.	Upper 95.0% C.L.
Intercept	120.616	104.1735	1.1578	0.2469	-83.56023	324.7922
DATE	-0.002755553	0.002400058	-1.1481	0.2509	-0.00745958	0.001948474
Sigma	1.006739	0.237294	4.2426	0.0000	0.6342843	1.597901

Approximate R-Squared		0.127784
Log Likelihood	-21.94839	
Iterations	2	

Plots Section



Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_1_136"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings

Variables Tab

-- Response Variable ----------

Response Variable:	VALUES

-- Frequency (Count) Variable ----------

Frequency Variable:	<Empty>

-- Nondetection Variable ----------

Nondetection (Censor) Variable:	D_VALUES
Detected:	1
Not Detected:	0

-- Independent Variables ----------

X's: Independent Variables:	DATE

-- Probability Distribution ----------

Distribution:	Lognormal

-- Alpha Level ----------

Alpha Level:	0.050

Estimation Tab

-- Estimation Options ----------

Maximum Iterations:	100
Minimum Relative Change:	0.0000001
Parameter Adjustment:	0.2
Starting Sigma:	0 - Data
Derivatives:	0.000006

Reports Tab

-- Select Reports ----------

Data Summary Report	Checked
Parameter Report	Checked
Information Matrix	Unchecked
Residual Report	Unchecked

-- Report Options ----------

Precision:	Single
Variable Names:	Names
Value Labels:	Data Values

·· Decimal Places ·····

Response:	3
Probability:	4

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_1_136"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings (Continued)

Plots Tab

-- Select Plots ----------

X - Y Plots	Checked
Number Predicted:	50
X - Transformed(Y) Plots	Unchecked
Number Predicted:	50
X - Residual Plots	Unchecked

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_1_142"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Data Summary Section

Type of Observation	Rows	Count	VALUES Minimum	VALUES Maximum
Missing or Prediction	0			
Detected	9	9	618.000	3530.000
Not Detected	0	0		
Total (Nonmissing)	9	9	618.000	3530.000

Means

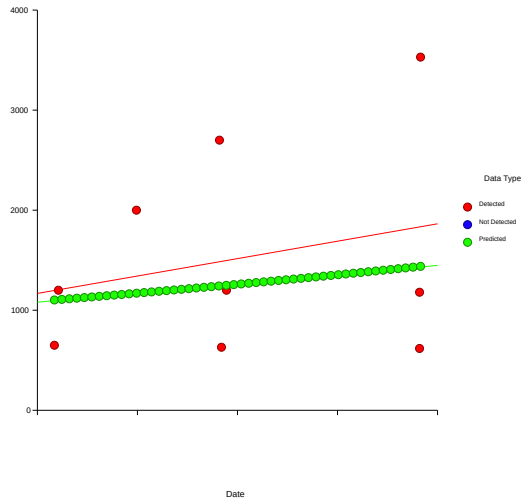
Variable	Mean
VALUES	1523.111
DATE	43404.33

Maximum Likelihood Parameter Estimation Section

Parameter Name	Parameter Estimate	Standard Error	Z Value	Prob Level	Lower 95.0% C.L.	Upper 95.0% C.L.
Intercept	-24.40866	61.5962	-0.3963	0.6919	-145.135	96.31767
DATE	0.0007268897	0.001419118	0.5122	0.6085	-0.002054531	0.00350831
Sigma	0.5960674	0.1405159	4.2420	0.0000	0.3755213	0.9461415

Approximate R-Squared		0.028260
Log Likelihood	-72.3874	
Iterations	3	

Plots Section



Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_1_142"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings

Variables Tab

-- Response Variable ----------

Response Variable:	VALUES

-- Frequency (Count) Variable ----------

Frequency Variable:	<Empty>

-- Nondetection Variable ----------

Nondetection (Censor) Variable:	D_VALUES
Detected:	1
Not Detected:	0

-- Independent Variables ----------

X's: Independent Variables:	DATE

-- Probability Distribution ----------

Distribution:	Lognormal

-- Alpha Level ----------

Alpha Level:	0.050

Estimation Tab

-- Estimation Options ----------

Maximum Iterations:	100
Minimum Relative Change:	0.0000001
Parameter Adjustment:	0.2
Starting Sigma:	0 - Data
Derivatives:	0.000006

Reports Tab

-- Select Reports ----------

Data Summary Report	Checked
Parameter Report	Checked
Information Matrix	Unchecked
Residual Report	Unchecked

-- Report Options ----------

Precision:	Single
Variable Names:	Names
Value Labels:	Data Values

·· Decimal Places ·····

Response:	3
Probability:	4

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_1_142"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings (Continued)

Plots Tab

-- Select Plots ----------

X - Y Plots	Checked
Number Predicted:	50
X - Transformed(Y) Plots	Unchecked
Number Predicted:	50
X - Residual Plots	Unchecked

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_101"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Data Summary Section

Type of Observation	Rows	Count	VALUES Minimum	VALUES Maximum
Missing or Prediction	0			
Detected	7	7	0.560	260.000
Not Detected	2	2	0.070	0.200
Total (Nonmissing)	9	9	0.070	260.000

Means

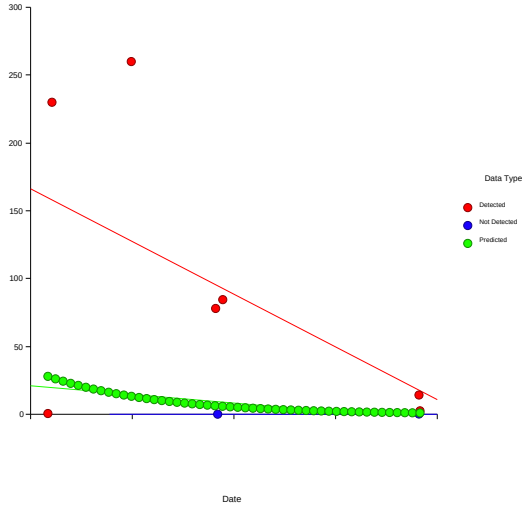
Variable	Mean
VALUES	74.45222
DATE	43404.33

Maximum Likelihood Parameter Estimation Section

Parameter Name	Parameter Estimate	Standard Error	Z Value	Prob Level	Lower 95.0% C.L.	Upper 95.0% C.L.
Intercept	395.953	368.4593	1.0746	0.2826	-326.2139	1118.12
DATE	-0.009084912	0.00849034	-1.0700	0.2846	-0.02572567	0.007555848
Sigma	3.456527	0.9820522	3.5197	0.0002	1.980617	6.03225

Approximate R-Squared	
Log Likelihood	-43.47342
Iterations	86

Plots Section



Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_101"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings

Variables Tab

-- Response Variable ----------

Response Variable:	VALUES

-- Frequency (Count) Variable ----------

Frequency Variable:	<Empty>

-- Nondetection Variable ----------

Nondetection (Censor) Variable:	D_VALUES
Detected:	1
Not Detected:	0

-- Independent Variables ----------

X's: Independent Variables:	DATE

-- Probability Distribution ----------

Distribution:	Lognormal

-- Alpha Level ----------

Alpha Level:	0.050

Estimation Tab

-- Estimation Options ----------

Maximum Iterations:	100
Minimum Relative Change:	0.0000001
Parameter Adjustment:	0.2
Starting Sigma:	0 - Data
Derivatives:	0.000006

Reports Tab

-- Select Reports ----------

Data Summary Report	Checked
Parameter Report	Checked
Information Matrix	Unchecked
Residual Report	Unchecked

-- Report Options ----------

Precision:	Single
Variable Names:	Names
Value Labels:	Data Values

·· Decimal Places ·····

Response:	3
Probability:	4

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_101"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings (Continued)

Plots Tab

-- Select Plots ----------

X - Y Plots	Checked
Number Predicted:	50
X - Transformed(Y) Plots	Unchecked
Number Predicted:	50
X - Residual Plots	Unchecked

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_105"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Data Summary Section

Type of Observation	Rows	Count	VALUES Minimum	VALUES Maximum
Missing or Prediction	0			
Detected	6	6	0.001	0.020
Not Detected	3	3	0.001	0.001
Total (Nonmissing)	9	9	0.001	0.020

Means

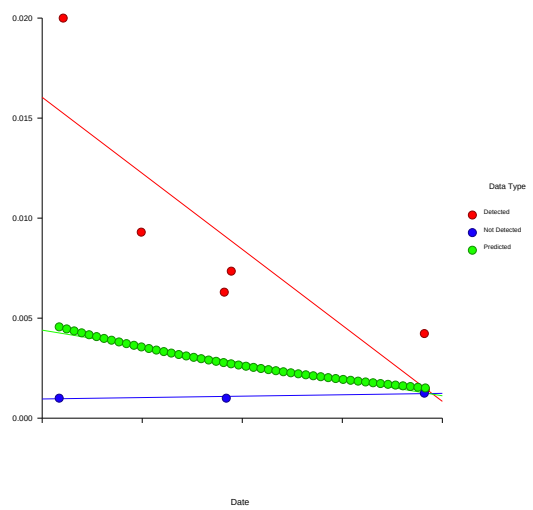
Variable	Mean
VALUES	0.005763333
DATE	43404.33

Maximum Likelihood Parameter Estimation Section

Parameter Name	Parameter Estimate	Standard Error	Z Value	Prob Level	Lower 95.0% C.L.	Upper 95.0% C.L.
Intercept	125.1017	149.321	0.8378	0.4021	-167.5621	417.7656
DATE	-0.003019439	0.003440374	-0.8776	0.3802	-0.009762448	0.003723571
Sigma	1.371509	0.4353429	3.1504	0.0008	0.7362262	2.554972

Approximate R-Squared	
Log Likelihood	17.32121
Iterations	85

Plots Section



Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_105"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings

Variables Tab

-- Response Variable ----------

Response Variable:	VALUES

-- Frequency (Count) Variable ----------

Frequency Variable:	<Empty>

-- Nondetection Variable ----------

Nondetection (Censor) Variable:	D_VALUES
Detected:	1
Not Detected:	0

-- Independent Variables ----------

X's: Independent Variables:	DATE

-- Probability Distribution ----------

Distribution:	Lognormal

-- Alpha Level ----------

Alpha Level:	0.050

Estimation Tab

-- Estimation Options ----------

Maximum Iterations:	100
Minimum Relative Change:	0.0000001
Parameter Adjustment:	0.2
Starting Sigma:	0 - Data
Derivatives:	0.000006

Reports Tab

-- Select Reports ----------

Data Summary Report	Checked
Parameter Report	Checked
Information Matrix	Unchecked
Residual Report	Unchecked

-- Report Options ----------

Precision:	Single
Variable Names:	Names
Value Labels:	Data Values

·· Decimal Places ·····

Response:	3
Probability:	4

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_105"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings (Continued)

Plots Tab

-- Select Plots ----------

X - Y Plots	Checked
Number Predicted:	50
X - Transformed(Y) Plots	Unchecked
Number Predicted:	50
X - Residual Plots	Unchecked

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_107"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Data Summary Section

Type of Observation	Rows	Count	VALUES Minimum	VALUES Maximum
Missing or Prediction	0			
Detected	9	9	0.008	2.300
Not Detected	0	0		
Total (Nonmissing)	9	9	0.008	2.300

Means

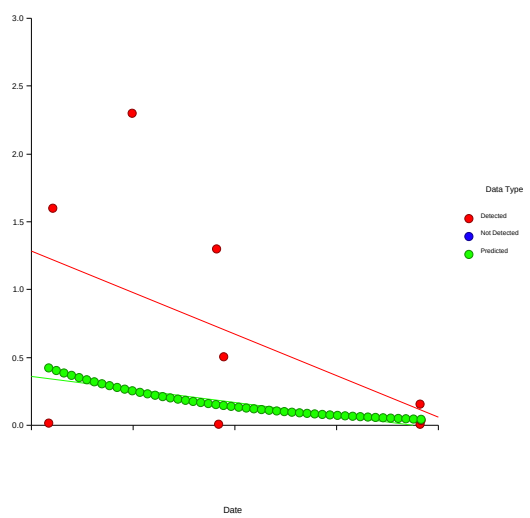
Variable	Mean
VALUES	0.6586645
DATE	43404.33

Maximum Likelihood Parameter Estimation Section

Parameter Name	Parameter Estimate	Standard Error	Z Value	Prob Level	Lower 95.0% C.L.	Upper 95.0% C.L.
Intercept	266.6339	209.9376	1.2701	0.2040	-144.8363	678.104
DATE	-0.006189569	0.004836764	-1.2797	0.2007	-0.01566945	0.003290314
Sigma	2.028824	0.478206	4.2426	0.0000	1.278236	3.220162

Approximate R-Squared		0.153986
Log Likelihood	-0.9552856	
Iterations	5	

Plots Section



Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_107"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings

Variables Tab

-- Response Variable ----------

Response Variable:	VALUES

-- Frequency (Count) Variable ----------

Frequency Variable:	<Empty>

-- Nondetection Variable ----------

Nondetection (Censor) Variable:	D_VALUES
Detected:	1
Not Detected:	0

-- Independent Variables ----------

X's: Independent Variables:	DATE

-- Probability Distribution ----------

Distribution:	Lognormal

-- Alpha Level ----------

Alpha Level:	0.050

Estimation Tab

-- Estimation Options ----------

Maximum Iterations:	100
Minimum Relative Change:	0.0000001
Parameter Adjustment:	0.2
Starting Sigma:	0 - Data
Derivatives:	0.000006

Reports Tab

-- Select Reports ----------

Data Summary Report	Checked
Parameter Report	Checked
Information Matrix	Unchecked
Residual Report	Unchecked

-- Report Options ----------

Precision:	Single
Variable Names:	Names
Value Labels:	Data Values

·· Decimal Places ·····

Response:	3
Probability:	4

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_107"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings (Continued)

Plots Tab

-- Select Plots ----------

X - Y Plots	Checked
Number Predicted:	50
X - Transformed(Y) Plots	Unchecked
Number Predicted:	50
X - Residual Plots	Unchecked

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_109"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Data Summary Section

Type of Observation	Rows	Count	VALUES Minimum	VALUES Maximum
Missing or Prediction	0			
Detected	5	5	0.001	0.010
Not Detected	4	4	0.000	0.001
Total (Nonmissing)	9	9	0.000	0.010

Means

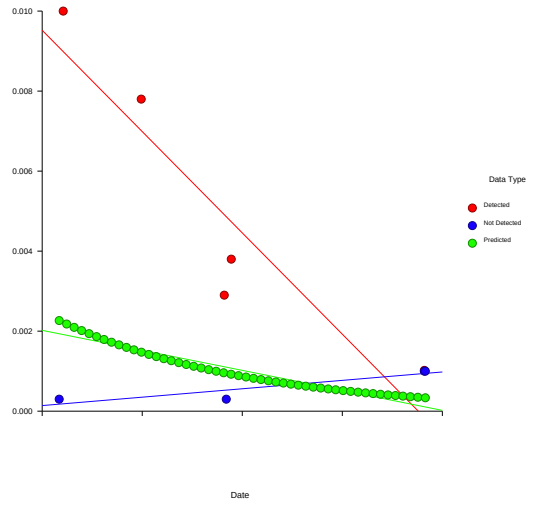
Variable	Mean
VALUES	0.003124445
DATE	43404.33

Maximum Likelihood Parameter Estimation Section

Parameter Name	Parameter Estimate	Standard Error	Z Value	Prob Level	Lower 95.0% C.L.	Upper 95.0% C.L.
Intercept	219.6707	215.9337	1.0173	0.3090	-203.5517	642.8931
DATE	-0.005223888	0.004977987	-1.0494	0.2940	-0.01498056	0.004532786
Sigma	1.799771	0.6266868	2.8719	0.0020	0.9095483	3.561301

Approximate R-Squared	
Log Likelihood	14.75129
Iterations	95

Plots Section



Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_109"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings

Variables Tab

-- Response Variable ----------

Response Variable:	VALUES

-- Frequency (Count) Variable ----------

Frequency Variable:	<Empty>

-- Nondetection Variable ----------

Nondetection (Censor) Variable:	D_VALUES
Detected:	1
Not Detected:	0

-- Independent Variables ----------

X's: Independent Variables:	DATE

-- Probability Distribution ----------

Distribution:	Lognormal

-- Alpha Level ----------

Alpha Level:	0.050

Estimation Tab

-- Estimation Options ----------

Maximum Iterations:	100
Minimum Relative Change:	0.0000001
Parameter Adjustment:	0.2
Starting Sigma:	0 - Data
Derivatives:	0.000006

Reports Tab

-- Select Reports ----------

Data Summary Report	Checked
Parameter Report	Checked
Information Matrix	Unchecked
Residual Report	Unchecked

-- Report Options ----------

Precision:	Single
Variable Names:	Names
Value Labels:	Data Values

·· Decimal Places ·····

Response:	3
Probability:	4

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_109"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings (Continued)

Plots Tab

-- Select Plots ----------

X - Y Plots	Checked
Number Predicted:	50
X - Transformed(Y) Plots	Unchecked
Number Predicted:	50
X - Residual Plots	Unchecked

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_113"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Data Summary Section

Type of Observation	Rows	Count	VALUES Minimum	VALUES Maximum
Missing or Prediction	0			
Detected	9	9	7.700	350.000
Not Detected	0	0		
Total (Nonmissing)	9	9	7.700	350.000

Means

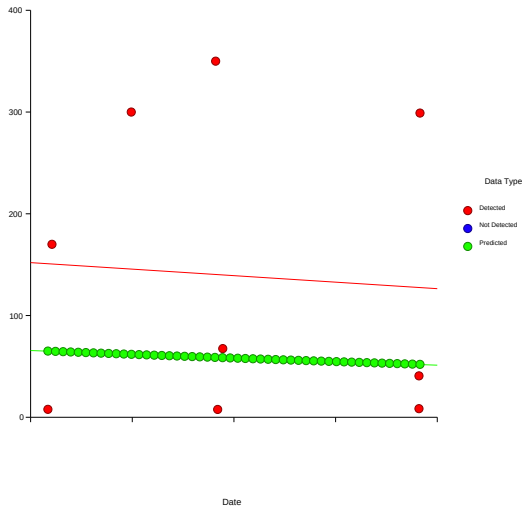
Variable	Mean
VALUES	139.0178
DATE	43404.33

Maximum Likelihood Parameter Estimation Section

Parameter Name	Parameter Estimate	Standard Error	Z Value	Prob Level	Lower 95.0% C.L.	Upper 95.0% C.L.
Intercept	30.6342	160.2394	0.1912	0.8484	-283.4292	344.6976
DATE	-0.0006122298	0.003691764	-0.1658	0.8683	-0.007847954	0.006623494
Sigma	1.551651	0.3657326	4.2426	0.0000	0.9776003	2.462788

Approximate R-Squared		0.003035
Log Likelihood	-53.27133	
Iterations	3	

Plots Section



Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_113"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings

Variables Tab

-- Response Variable ----------

Response Variable:	VALUES

-- Frequency (Count) Variable ----------

Frequency Variable:	<Empty>

-- Nondetection Variable ----------

Nondetection (Censor) Variable:	D_VALUES
Detected:	1
Not Detected:	0

-- Independent Variables ----------

X's: Independent Variables:	DATE

-- Probability Distribution ----------

Distribution:	Lognormal

-- Alpha Level ----------

Alpha Level:	0.050

Estimation Tab

-- Estimation Options ----------

Maximum Iterations:	100
Minimum Relative Change:	0.0000001
Parameter Adjustment:	0.2
Starting Sigma:	0 - Data
Derivatives:	0.000006

Reports Tab

-- Select Reports ----------

Data Summary Report	Checked
Parameter Report	Checked
Information Matrix	Unchecked
Residual Report	Unchecked

-- Report Options ----------

Precision:	Single
Variable Names:	Names
Value Labels:	Data Values

·· Decimal Places ·····

Response:	3
Probability:	4

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_113"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings (Continued)

Plots Tab

-- Select Plots ----------

X - Y Plots	Checked
Number Predicted:	50
X - Transformed(Y) Plots	Unchecked
Number Predicted:	50
X - Residual Plots	Unchecked

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_115"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Data Summary Section

Type of Observation	Rows	Count	VALUES Minimum	VALUES Maximum
Missing or Prediction	0			
Detected	8	8	0.001	0.270
Not Detected	1	1	0.001	0.001
Total (Nonmissing)	9	9	0.001	0.270

Means

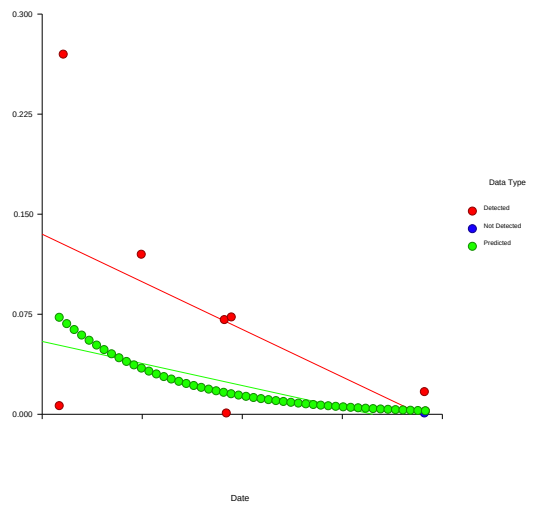
Variable	Mean
VALUES	0.06243222
DATE	43404.33

Maximum Likelihood Parameter Estimation Section

Parameter Name	Parameter Estimate	Standard Error	Z Value	Prob Level	Lower 95.0% C.L.	Upper 95.0% C.L.
Intercept	387.6052	195.6296	1.9813	0.0476	4.178192	771.0321
DATE	-0.009029462	0.004507753	-2.0031	0.0452	-0.0178645	-0.0001944283
Sigma	1.83779	0.4682035	3.9252	0.0000	1.115424	3.027972

Approximate R-Squared		0.111266
Log Likelihood	13.62086	
Iterations	86	

Plots Section



Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_115"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings

Variables Tab

-- Response Variable ----------

Response Variable:	VALUES

-- Frequency (Count) Variable ----------

Frequency Variable:	<Empty>

-- Nondetection Variable ----------

Nondetection (Censor) Variable:	D_VALUES
Detected:	1
Not Detected:	0

-- Independent Variables ----------

X's: Independent Variables:	DATE

-- Probability Distribution ----------

Distribution:	Lognormal

-- Alpha Level ----------

Alpha Level:	0.050

Estimation Tab

-- Estimation Options ----------

Maximum Iterations:	100
Minimum Relative Change:	0.0000001
Parameter Adjustment:	0.2
Starting Sigma:	0 - Data
Derivatives:	0.000006

Reports Tab

-- Select Reports ----------

Data Summary Report	Checked
Parameter Report	Checked
Information Matrix	Unchecked
Residual Report	Unchecked

-- Report Options ----------

Precision:	Single
Variable Names:	Names
Value Labels:	Data Values

·· Decimal Places ·····

Response:	3
Probability:	4

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_115"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings (Continued)

Plots Tab

-- Select Plots ----------

X - Y Plots	Checked
Number Predicted:	50
X - Transformed(Y) Plots	Unchecked
Number Predicted:	50
X - Residual Plots	Unchecked

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_117"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Data Summary Section

Type of Observation	Rows	Count	VALUES Minimum	VALUES Maximum
Missing or Prediction	0			
Detected	7	7	0.000	0.067
Not Detected	2	2	0.000	0.001
Total (Nonmissing)	9	9	0.000	0.067

Means

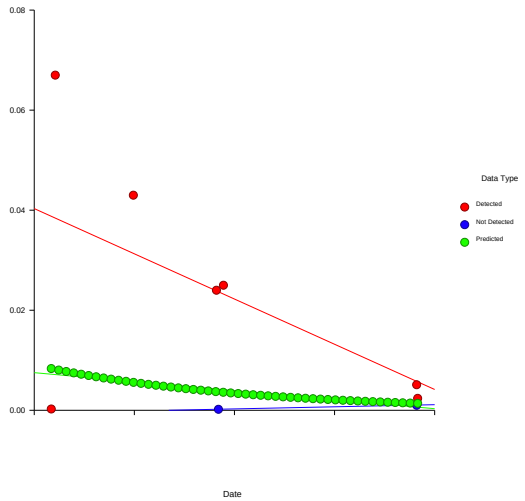
Variable	Mean
VALUES	0.01866222
DATE	43404.33

Maximum Likelihood Parameter Estimation Section

Parameter Name	Parameter Estimate	Standard Error	Z Value	Prob Level	Lower 95.0% C.L.	Upper 95.0% C.L.
Intercept	206.6214	264.4799	0.7812	0.4347	-311.7496	724.9924
DATE	-0.004891765	0.006094542	-0.8026	0.4222	-0.01683685	0.007053318
Sigma	2.466099	0.6921979	3.5627	0.0002	1.422626	4.274942

Approximate R-Squared	
Log Likelihood	14.69424
Iterations	88

Plots Section



Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_117"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings

Variables Tab

-- Response Variable ----------

Response Variable:	VALUES

-- Frequency (Count) Variable ----------

Frequency Variable:	<Empty>

-- Nondetection Variable ----------

Nondetection (Censor) Variable:	D_VALUES
Detected:	1
Not Detected:	0

-- Independent Variables ----------

X's: Independent Variables:	DATE

-- Probability Distribution ----------

Distribution:	Lognormal

-- Alpha Level ----------

Alpha Level:	0.050

Estimation Tab

-- Estimation Options ----------

Maximum Iterations:	100
Minimum Relative Change:	0.0000001
Parameter Adjustment:	0.2
Starting Sigma:	0 - Data
Derivatives:	0.000006

Reports Tab

-- Select Reports ----------

Data Summary Report	Checked
Parameter Report	Checked
Information Matrix	Unchecked
Residual Report	Unchecked

-- Report Options ----------

Precision:	Single
Variable Names:	Names
Value Labels:	Data Values

·· Decimal Places ·····

Response:	3
Probability:	4

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_117"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings (Continued)

Plots Tab

-- Select Plots ----------

X - Y Plots	Checked
Number Predicted:	50
X - Transformed(Y) Plots	Unchecked
Number Predicted:	50
X - Residual Plots	Unchecked

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_119"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Data Summary Section

Type of Observation	Rows	Count	VALUES Minimum	VALUES Maximum
Missing or Prediction	0			
Detected	6	6	0.001	0.055
Not Detected	3	3	0.002	0.005
Total (Nonmissing)	9	9	0.001	0.055

Means

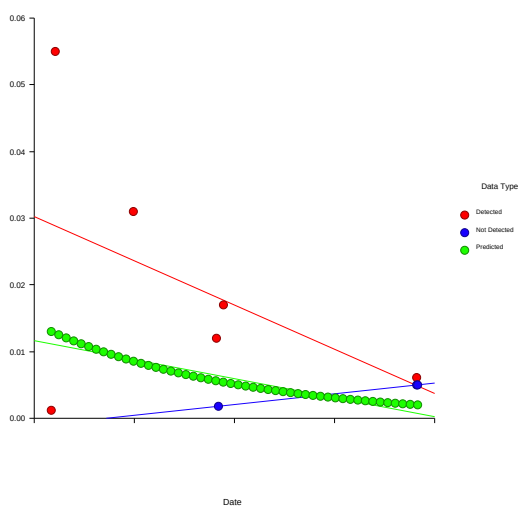
Variable	Mean
VALUES	0.01490111
DATE	43404.33

Maximum Likelihood Parameter Estimation Section

Parameter Name	Parameter Estimate	Standard Error	Z Value	Prob Level	Lower 95.0% C.L.	Upper 95.0% C.L.
Intercept	215.9993	179.8039	1.2013	0.2296	-136.4099	568.4085
DATE	-0.005098488	0.004145417	-1.2299	0.2187	-0.01322336	0.00302638
Sigma	1.504608	0.4524866	3.3252	0.0004	0.834523	2.712742

Approximate R-Squared	
Log Likelihood	13.82999
Iterations	94

Plots Section



Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_119"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings

Variables Tab

-- Response Variable ----------

Response Variable:	VALUES

-- Frequency (Count) Variable ----------

Frequency Variable:	<Empty>

-- Nondetection Variable ----------

Nondetection (Censor) Variable:	D_VALUES
Detected:	1
Not Detected:	0

-- Independent Variables ----------

X's: Independent Variables:	DATE

-- Probability Distribution ----------

Distribution:	Lognormal

-- Alpha Level ----------

Alpha Level:	0.050

Estimation Tab

-- Estimation Options ----------

Maximum Iterations:	100
Minimum Relative Change:	0.0000001
Parameter Adjustment:	0.2
Starting Sigma:	0 - Data
Derivatives:	0.000006

Reports Tab

-- Select Reports ----------

Data Summary Report	Checked
Parameter Report	Checked
Information Matrix	Unchecked
Residual Report	Unchecked

-- Report Options ----------

Precision:	Single
Variable Names:	Names
Value Labels:	Data Values

·· Decimal Places ·····

Response:	3
Probability:	4

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_119"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings (Continued)

Plots Tab

-- Select Plots ----------

X - Y Plots	Checked
Number Predicted:	50
X - Transformed(Y) Plots	Unchecked
Number Predicted:	50
X - Residual Plots	Unchecked

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_121"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Data Summary Section

Type of Observation	Rows	Count	VALUES Minimum	VALUES Maximum
Missing or Prediction	0			
Detected	8	8	0.025	170.000
Not Detected	1	1	0.250	0.250
Total (Nonmissing)	9	9	0.025	170.000

Means

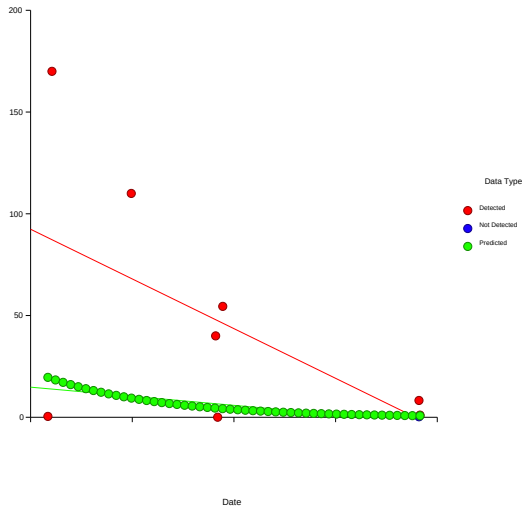
Variable	Mean
VALUES	42.725
DATE	43404.33

Maximum Likelihood Parameter Estimation Section

Parameter Name	Parameter Estimate	Standard Error	Z Value	Prob Level	Lower 95.0% C.L.	Upper 95.0% C.L.
Intercept	388.9827	322.1419	1.2075	0.2272	-242.4038	1020.369
DATE	-0.008931824	0.007423003	-1.2033	0.2289	-0.02348064	0.005616994
Sigma	3.018141	0.7661762	3.9392	0.0000	1.835085	4.9639

Approximate R-Squared	
Log Likelihood	-36.18688
Iterations	87

Plots Section



Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_121"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings

Variables Tab

-- Response Variable ----------

Response Variable:	VALUES

-- Frequency (Count) Variable ----------

Frequency Variable:	<Empty>

-- Nondetection Variable ----------

Nondetection (Censor) Variable:	D_VALUES
Detected:	1
Not Detected:	0

-- Independent Variables ----------

X's: Independent Variables:	DATE

-- Probability Distribution ----------

Distribution:	Lognormal

-- Alpha Level ----------

Alpha Level:	0.050

Estimation Tab

-- Estimation Options ----------

Maximum Iterations:	100
Minimum Relative Change:	0.0000001
Parameter Adjustment:	0.2
Starting Sigma:	0 - Data
Derivatives:	0.000006

Reports Tab

-- Select Reports ----------

Data Summary Report	Checked
Parameter Report	Checked
Information Matrix	Unchecked
Residual Report	Unchecked

-- Report Options ----------

Precision:	Single
Variable Names:	Names
Value Labels:	Data Values

·· Decimal Places ·····

Response:	3
Probability:	4

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_121"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings (Continued)

Plots Tab

-- Select Plots ----------

X - Y Plots	Checked
Number Predicted:	50
X - Transformed(Y) Plots	Unchecked
Number Predicted:	50
X - Residual Plots	Unchecked

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_123"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Data Summary Section

Type of Observation	Rows	Count	VALUES Minimum	VALUES Maximum
Missing or Prediction	0			
Detected	7	7	0.000	0.054
Not Detected	2	2	0.001	0.001
Total (Nonmissing)	9	9	0.000	0.054

Means

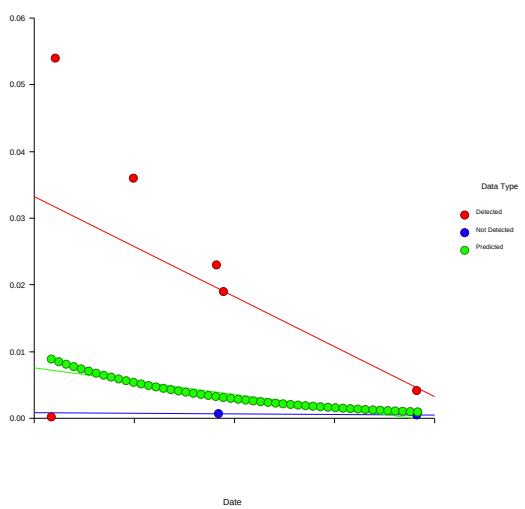
Variable	Mean
VALUES	0.01538467
DATE	43404.33

Maximum Likelihood Parameter Estimation Section

Parameter Name	Parameter Estimate	Standard Error	Z Value	Prob Level	Lower 95.0% C.L.	Upper 95.0% C.L.
Intercept	257.9828	242.663	1.0631	0.2877	-217.628	733.5936
DATE	-0.006078782	0.005591706	-1.0871	0.2770	-0.01703832	0.004880762
Sigma	2.269915	0.6324934	3.5888	0.0002	1.314707	3.919133

Approximate R-Squared	
Log Likelihood	17.51541
Iterations	88

Plots Section



Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_123"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings

Variables Tab

-- Response Variable ----------

Response Variable:	VALUES

-- Frequency (Count) Variable ----------

Frequency Variable:	<Empty>

-- Nondetection Variable ----------

Nondetection (Censor) Variable:	D_VALUES
Detected:	1
Not Detected:	0

-- Independent Variables ----------

X's: Independent Variables:	DATE

-- Probability Distribution ----------

Distribution:	Lognormal

-- Alpha Level ----------

Alpha Level:	0.050

Estimation Tab

-- Estimation Options ----------

Maximum Iterations:	100
Minimum Relative Change:	0.0000001
Parameter Adjustment:	0.2
Starting Sigma:	0 - Data
Derivatives:	0.000006

Reports Tab

-- Select Reports ----------

Data Summary Report	Checked
Parameter Report	Checked
Information Matrix	Unchecked
Residual Report	Unchecked

-- Report Options ----------

Precision:	Single
Variable Names:	Names
Value Labels:	Data Values

·· Decimal Places ·····

Response:	3
Probability:	4

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_123"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings (Continued)

Plots Tab

-- Select Plots ----------

X - Y Plots	Checked
Number Predicted:	50
X - Transformed(Y) Plots	Unchecked
Number Predicted:	50
X - Residual Plots	Unchecked

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_125"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Data Summary Section

Type of Observation	Rows	Count	VALUES Minimum	VALUES Maximum
Missing or Prediction	0			
Detected	9	9	0.870	72.000
Not Detected	0	0		
Total (Nonmissing)	9	9	0.870	72.000

Means

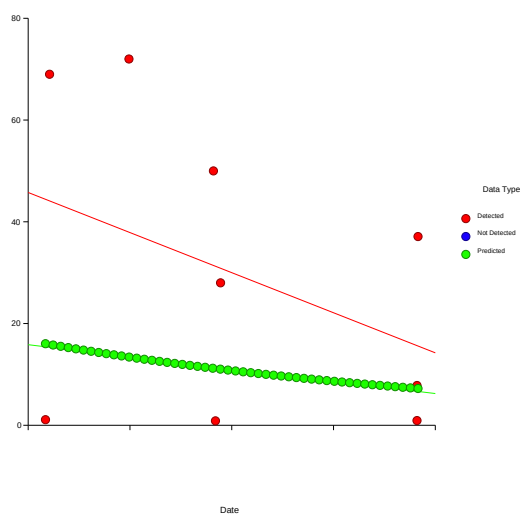
Variable	Mean
VALUES	29.64611
DATE	43404.33

Maximum Likelihood Parameter Estimation Section

Parameter Name	Parameter Estimate	Standard Error	Z Value	Prob Level	Lower 95.0% C.L.	Upper 95.0% C.L.
Intercept	96.82764	184.7769	0.5240	0.6003	-265.3284	458.9837
DATE	-0.002176294	0.004257085	-0.5112	0.6092	-0.01052003	0.006167439
Sigma	1.785378	0.4208238	4.2426	0.0000	1.124856	2.833761

Approximate R-Squared		0.028236
Log Likelihood	-39.2905	
Iterations	2	

Plots Section



Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_125"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings

Variables Tab

-- Response Variable ----------

Response Variable:	VALUES

-- Frequency (Count) Variable ----------

Frequency Variable:	<Empty>

-- Nondetection Variable ----------

Nondetection (Censor) Variable:	D_VALUES
Detected:	1
Not Detected:	0

-- Independent Variables ----------

X's: Independent Variables:	DATE

-- Probability Distribution ----------

Distribution:	Lognormal

-- Alpha Level ----------

Alpha Level:	0.050

Estimation Tab

-- Estimation Options ----------

Maximum Iterations:	100
Minimum Relative Change:	0.0000001
Parameter Adjustment:	0.2
Starting Sigma:	0 - Data
Derivatives:	0.000006

Reports Tab

-- Select Reports ----------

Data Summary Report	Checked
Parameter Report	Checked
Information Matrix	Unchecked
Residual Report	Unchecked

-- Report Options ----------

Precision:	Single
Variable Names:	Names
Value Labels:	Data Values

·· Decimal Places ·····

Response:	3
Probability:	4

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_125"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings (Continued)

Plots Tab

-- Select Plots ----------

X - Y Plots	Checked
Number Predicted:	50
X - Transformed(Y) Plots	Unchecked
Number Predicted:	50
X - Residual Plots	Unchecked

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_127"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Data Summary Section

Type of Observation	Rows	Count	VALUES Minimum	VALUES Maximum
Missing or Prediction	0			
Detected	9	9	0.023	3.800
Not Detected	0	0		
Total (Nonmissing)	9	9	0.023	3.800

Means

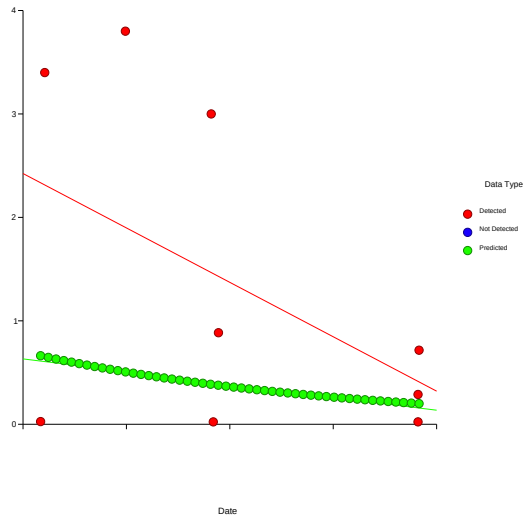
Variable	Mean
VALUES	1.351244
DATE	43404.33

Maximum Likelihood Parameter Estimation Section

Parameter Name	Parameter Estimate	Standard Error	Z Value	Prob Level	Lower 95.0% C.L.	Upper 95.0% C.L.
Intercept	141.2099	208.2517	0.6781	0.4977	-266.9558	549.3757
DATE	-0.003276985	0.004797922	-0.6830	0.4946	-0.01268074	0.006126767
Sigma	2.014485	0.474829	4.2425	0.0000	1.269198	3.197411

Approximate R-Squared		0.049202
Log Likelihood	-9.844546	
Iterations	2	

Plots Section



Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_127"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings

Variables Tab

-- Response Variable ----------

Response Variable:	VALUES

-- Frequency (Count) Variable ----------

Frequency Variable:	<Empty>

-- Nondetection Variable ----------

Nondetection (Censor) Variable:	D_VALUES
Detected:	1
Not Detected:	0

-- Independent Variables ----------

X's: Independent Variables:	DATE

-- Probability Distribution ----------

Distribution:	Lognormal

-- Alpha Level ----------

Alpha Level:	0.050

Estimation Tab

-- Estimation Options ----------

Maximum Iterations:	100
Minimum Relative Change:	0.0000001
Parameter Adjustment:	0.2
Starting Sigma:	0 - Data
Derivatives:	0.000006

Reports Tab

-- Select Reports ----------

Data Summary Report	Checked
Parameter Report	Checked
Information Matrix	Unchecked
Residual Report	Unchecked

-- Report Options ----------

Precision:	Single
Variable Names:	Names
Value Labels:	Data Values

·· Decimal Places ·····

Response:	3
Probability:	4

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_127"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings (Continued)

Plots Tab

-- Select Plots ----------

X - Y Plots	Checked
Number Predicted:	50
X - Transformed(Y) Plots	Unchecked
Number Predicted:	50
X - Residual Plots	Unchecked

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_131"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Data Summary Section

Type of Observation	Rows	Count	VALUES Minimum	VALUES Maximum
Missing or Prediction	0			
Detected	8	8	0.000	0.170
Not Detected	1	1	0.003	0.003
Total (Nonmissing)	9	9	0.000	0.170

Means

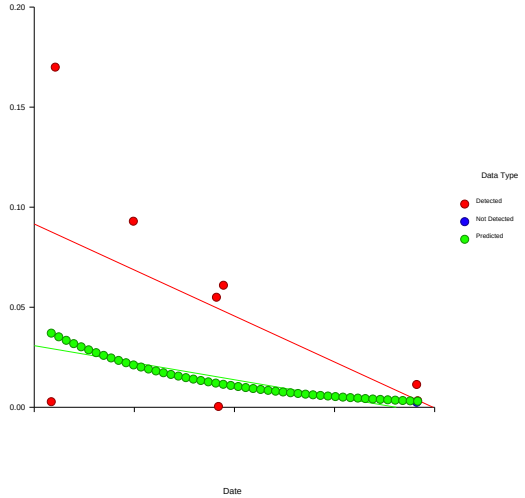
Variable	Mean
VALUES	0.04437667
DATE	43404.33

Maximum Likelihood Parameter Estimation Section

Parameter Name	Parameter Estimate	Standard Error	Z Value	Prob Level	Lower 95.0% C.L.	Upper 95.0% C.L.
Intercept	291.2531	206.3338	1.4116	0.1581	-113.1537	695.66
DATE	-0.006815566	0.004754589	-1.4335	0.1517	-0.01613439	0.002503258
Sigma	1.923397	0.4851103	3.9649	0.0000	1.173229	3.153226

Approximate R-Squared		0.052723
Log Likelihood	16.37427	
Iterations	84	

Plots Section



Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_131"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings

Variables Tab

-- Response Variable ----------

Response Variable:	VALUES

-- Frequency (Count) Variable ----------

Frequency Variable:	<Empty>

-- Nondetection Variable ----------

Nondetection (Censor) Variable:	D_VALUES
Detected:	1
Not Detected:	0

-- Independent Variables ----------

X's: Independent Variables:	DATE

-- Probability Distribution ----------

Distribution:	Lognormal

-- Alpha Level ----------

Alpha Level:	0.050

Estimation Tab

-- Estimation Options ----------

Maximum Iterations:	100
Minimum Relative Change:	0.0000001
Parameter Adjustment:	0.2
Starting Sigma:	0 - Data
Derivatives:	0.000006

Reports Tab

-- Select Reports ----------

Data Summary Report	Checked
Parameter Report	Checked
Information Matrix	Unchecked
Residual Report	Unchecked

-- Report Options ----------

Precision:	Single
Variable Names:	Names
Value Labels:	Data Values

·· Decimal Places ·····

Response:	3
Probability:	4

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_131"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings (Continued)

Plots Tab

-- Select Plots ----------

X - Y Plots	Checked
Number Predicted:	50
X - Transformed(Y) Plots	Unchecked
Number Predicted:	50
X - Residual Plots	Unchecked

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_135"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Data Summary Section

Type of Observation	Rows	Count	VALUES Minimum	VALUES Maximum
Missing or Prediction	0			
Detected	8	8	0.660	27.000
Not Detected	1	1	0.940	0.940
Total (Nonmissing)	9	9	0.660	27.000

Means

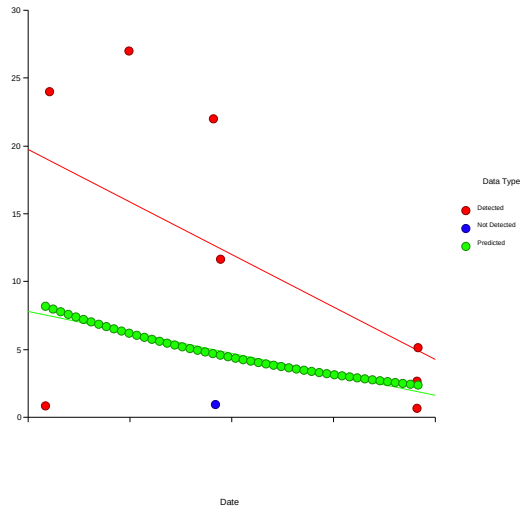
Variable	Mean
VALUES	10.54222
DATE	43404.33

Maximum Likelihood Parameter Estimation Section

Parameter Name	Parameter Estimate	Standard Error	Z Value	Prob Level	Lower 95.0% C.L.	Upper 95.0% C.L.
Intercept	148.1839	154.3924	0.9598	0.3372	-154.4196	450.7875
DATE	-0.003380197	0.003557013	-0.9503	0.3420	-0.01035181	0.003591421
Sigma	1.492951	0.383256	3.8954	0.0000	0.9026787	2.469208

Approximate R-Squared		0.106401
Log Likelihood	-29.70546	
Iterations	71	

Plots Section



Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_135"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings

Variables Tab

-- Response Variable ----------

Response Variable:	VALUES

-- Frequency (Count) Variable ----------

Frequency Variable:	<Empty>

-- Nondetection Variable ----------

Nondetection (Censor) Variable:	D_VALUES
Detected:	1
Not Detected:	0

-- Independent Variables ----------

X's: Independent Variables:	DATE

-- Probability Distribution ----------

Distribution:	Lognormal

-- Alpha Level ----------

Alpha Level:	0.050

Estimation Tab

-- Estimation Options ----------

Maximum Iterations:	100
Minimum Relative Change:	0.0000001
Parameter Adjustment:	0.2
Starting Sigma:	0 - Data
Derivatives:	0.000006

Reports Tab

-- Select Reports ----------

Data Summary Report	Checked
Parameter Report	Checked
Information Matrix	Unchecked
Residual Report	Unchecked

-- Report Options ----------

Precision:	Single
Variable Names:	Names
Value Labels:	Data Values

·· Decimal Places ·····

Response:	3
Probability:	4

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_135"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings (Continued)

Plots Tab

-- Select Plots ----------

X - Y Plots	Checked
Number Predicted:	50
X - Transformed(Y) Plots	Unchecked
Number Predicted:	50
X - Residual Plots	Unchecked

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_141"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Data Summary Section

Type of Observation	Rows	Count	VALUES Minimum	VALUES Maximum
Missing or Prediction	0			
Detected	9	9	623.000	3610.000
Not Detected	0	0		
Total (Nonmissing)	9	9	623.000	3610.000

Means

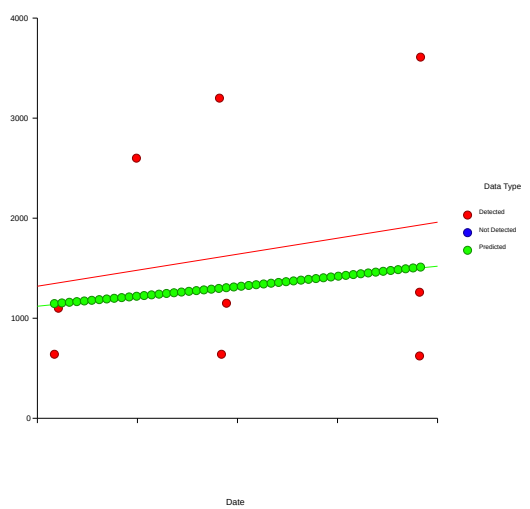
Variable	Mean
VALUES	1647
DATE	43404.33

Maximum Likelihood Parameter Estimation Section

Parameter Name	Parameter Estimate	Standard Error	Z Value	Prob Level	Lower 95.0% C.L.	Upper 95.0% C.L.
Intercept	-25.56011	67.33781	-0.3796	0.7042	-157.5398	106.4196
DATE	0.0007544397	0.0015514	0.4863	0.6268	-0.002286248	0.003795127
Sigma	0.6516618	0.1536182	4.2421	0.0000	0.4105499	1.034377

Approximate R-Squared		0.025541
Log Likelihood	-73.58895	
Iterations	5	

Plots Section



Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_141"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings

Variables Tab

-- Response Variable ----------

Response Variable:	VALUES

-- Frequency (Count) Variable ----------

Frequency Variable:	<Empty>

-- Nondetection Variable ----------

Nondetection (Censor) Variable:	D_VALUES
Detected:	1
Not Detected:	0

-- Independent Variables ----------

X's: Independent Variables:	DATE

-- Probability Distribution ----------

Distribution:	Lognormal

-- Alpha Level ----------

Alpha Level:	0.050

Estimation Tab

-- Estimation Options ----------

Maximum Iterations:	100
Minimum Relative Change:	0.0000001
Parameter Adjustment:	0.2
Starting Sigma:	0 - Data
Derivatives:	0.000006

Reports Tab

-- Select Reports ----------

Data Summary Report	Checked
Parameter Report	Checked
Information Matrix	Unchecked
Residual Report	Unchecked

-- Report Options ----------

Precision:	Single
Variable Names:	Names
Value Labels:	Data Values

·· Decimal Places ·····

Response:	3
Probability:	4

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_141"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings (Continued)

Plots Tab

-- Select Plots ----------

X - Y Plots	Checked
Number Predicted:	50
X - Transformed(Y) Plots	Unchecked
Number Predicted:	50
X - Residual Plots	Unchecked

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_145"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Data Summary Section

Type of Observation	Rows	Count	VALUES Minimum	VALUES Maximum
Missing or Prediction	0			
Detected	7	7	0.001	0.180
Not Detected	2	2	0.002	0.003
Total (Nonmissing)	9	9	0.001	0.180

Means

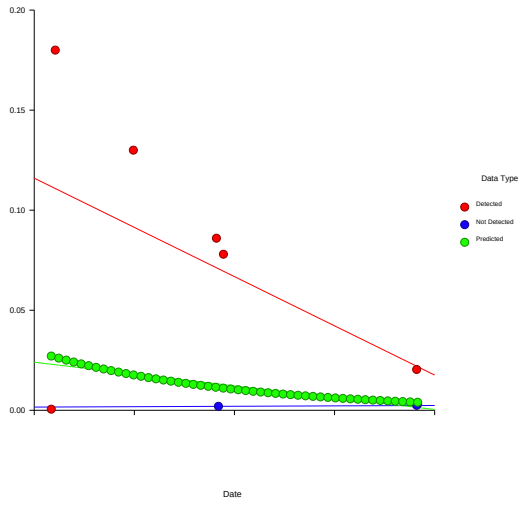
Variable	Mean
VALUES	0.05584
DATE	43404.33

Maximum Likelihood Parameter Estimation Section

Parameter Name	Parameter Estimate	Standard Error	Z Value	Prob Level	Lower 95.0% C.L.	Upper 95.0% C.L.
Intercept	221.2987	255.1586	0.8673	0.3858	-278.8029	721.4003
DATE	-0.005204131	0.005879698	-0.8851	0.3761	-0.01672813	0.006319867
Sigma	2.382839	0.6633444	3.5922	0.0002	1.38081	4.112024

Approximate R-Squared	
Log Likelihood	8.152729
Iterations	91

Plots Section



Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_145"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings

Variables Tab

-- Response Variable ----------

Response Variable:	VALUES

-- Frequency (Count) Variable ----------

Frequency Variable:	<Empty>

-- Nondetection Variable ----------

Nondetection (Censor) Variable:	D_VALUES
Detected:	1
Not Detected:	0

-- Independent Variables ----------

X's: Independent Variables:	DATE

-- Probability Distribution ----------

Distribution:	Lognormal

-- Alpha Level ----------

Alpha Level:	0.050

Estimation Tab

-- Estimation Options ----------

Maximum Iterations:	100
Minimum Relative Change:	0.0000001
Parameter Adjustment:	0.2
Starting Sigma:	0 - Data
Derivatives:	0.000006

Reports Tab

-- Select Reports ----------

Data Summary Report	Checked
Parameter Report	Checked
Information Matrix	Unchecked
Residual Report	Unchecked

-- Report Options ----------

Precision:	Single
Variable Names:	Names
Value Labels:	Data Values

·· Decimal Places ·····

Response:	3
Probability:	4

Nondetects-Data Lognormal Regression Report

Dataset	G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_MLE.xlsx
Filter	GROUP_VAR = "2_4_145"
Response Variable	LN(VALUES)
Censor Variable	D_VALUES

Procedure Input Settings (Continued)

Plots Tab

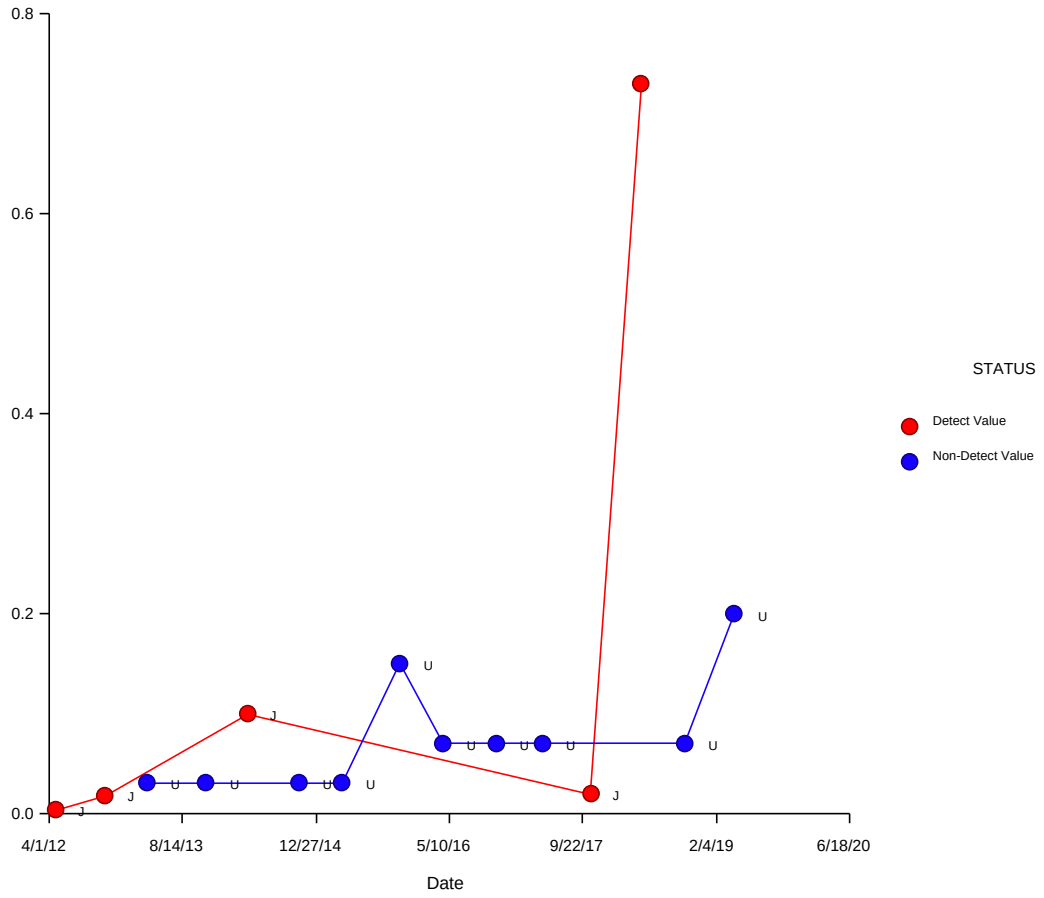
-- Select Plots ----------

X - Y Plots	Checked
Number Predicted:	50
X - Transformed(Y) Plots	Unchecked
Number Predicted:	50
X - Residual Plots	Unchecked

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_102"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_102"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

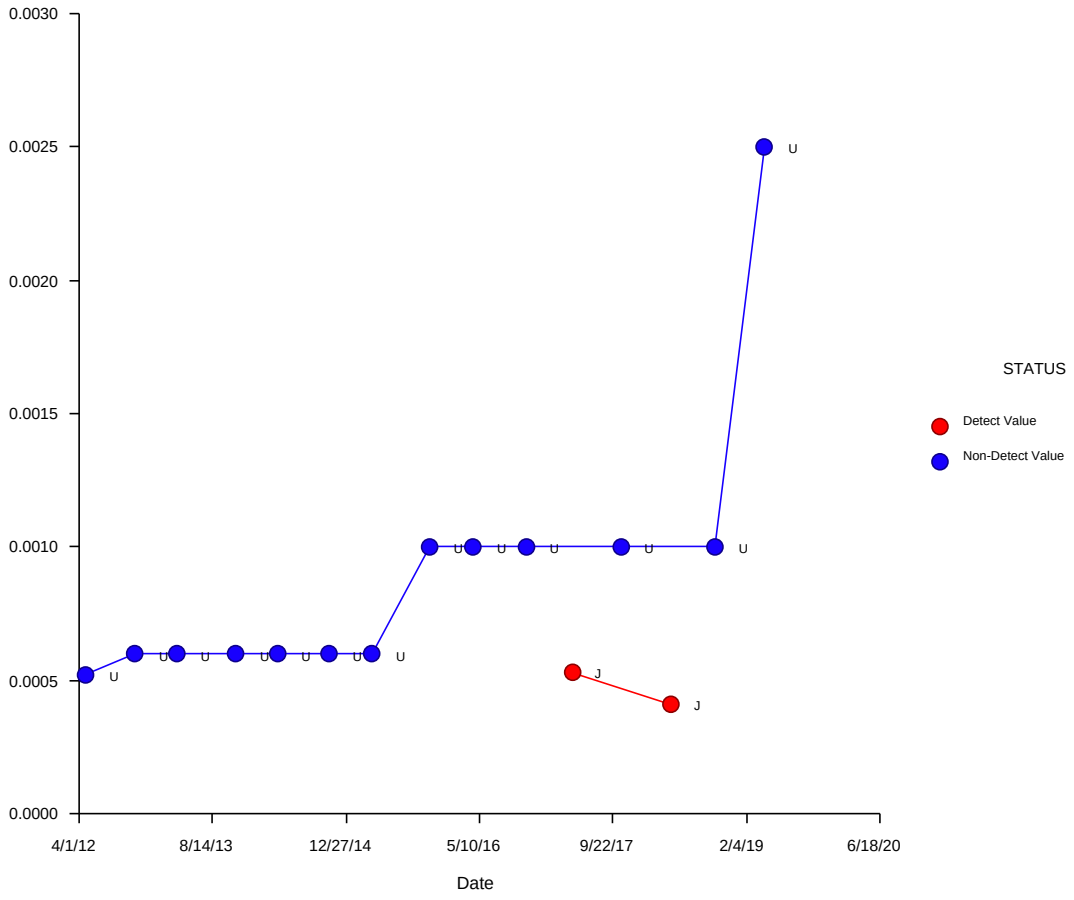
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_104"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_104"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

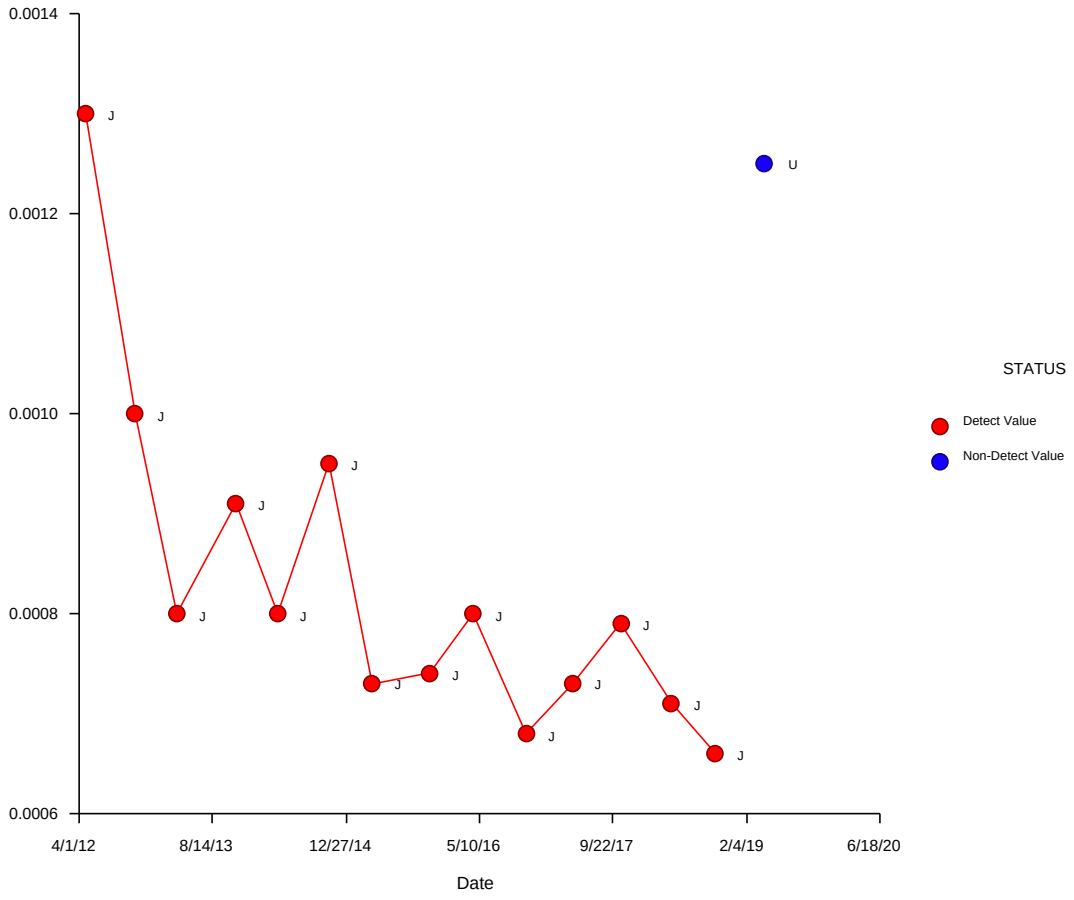
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_106"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_106"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

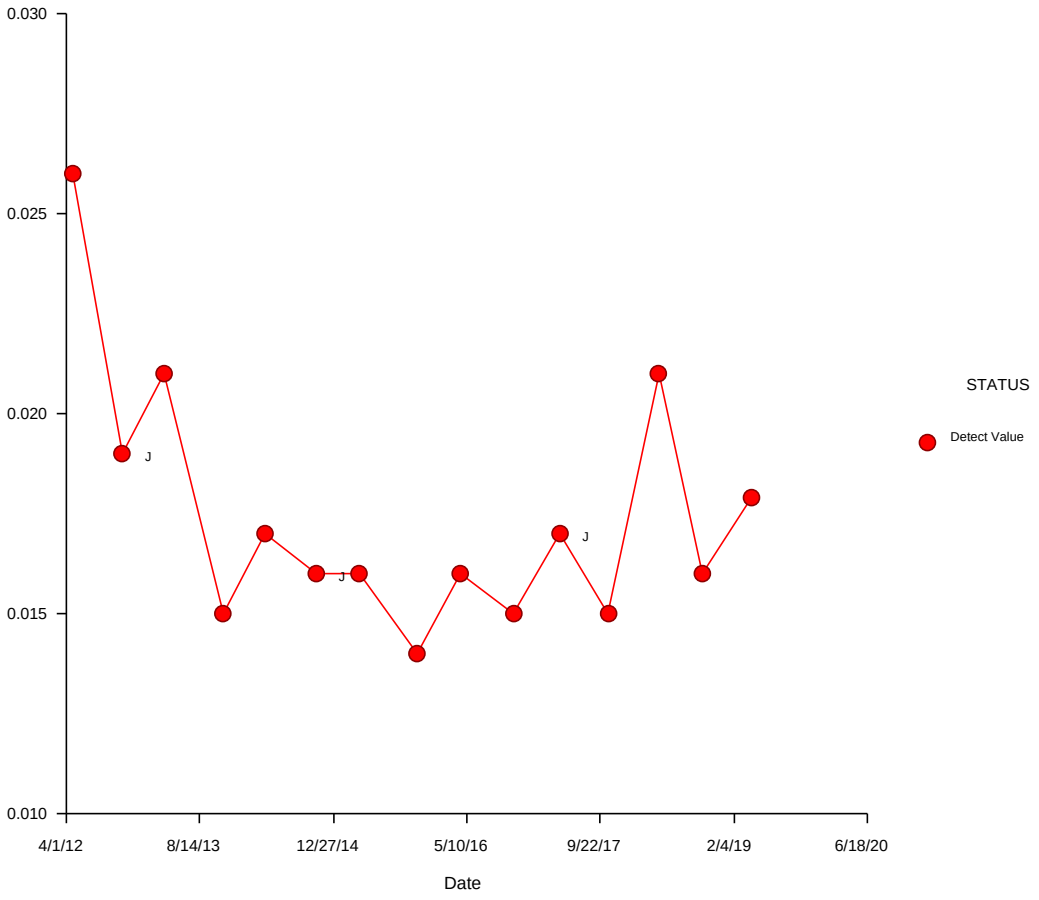
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_108"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_108"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

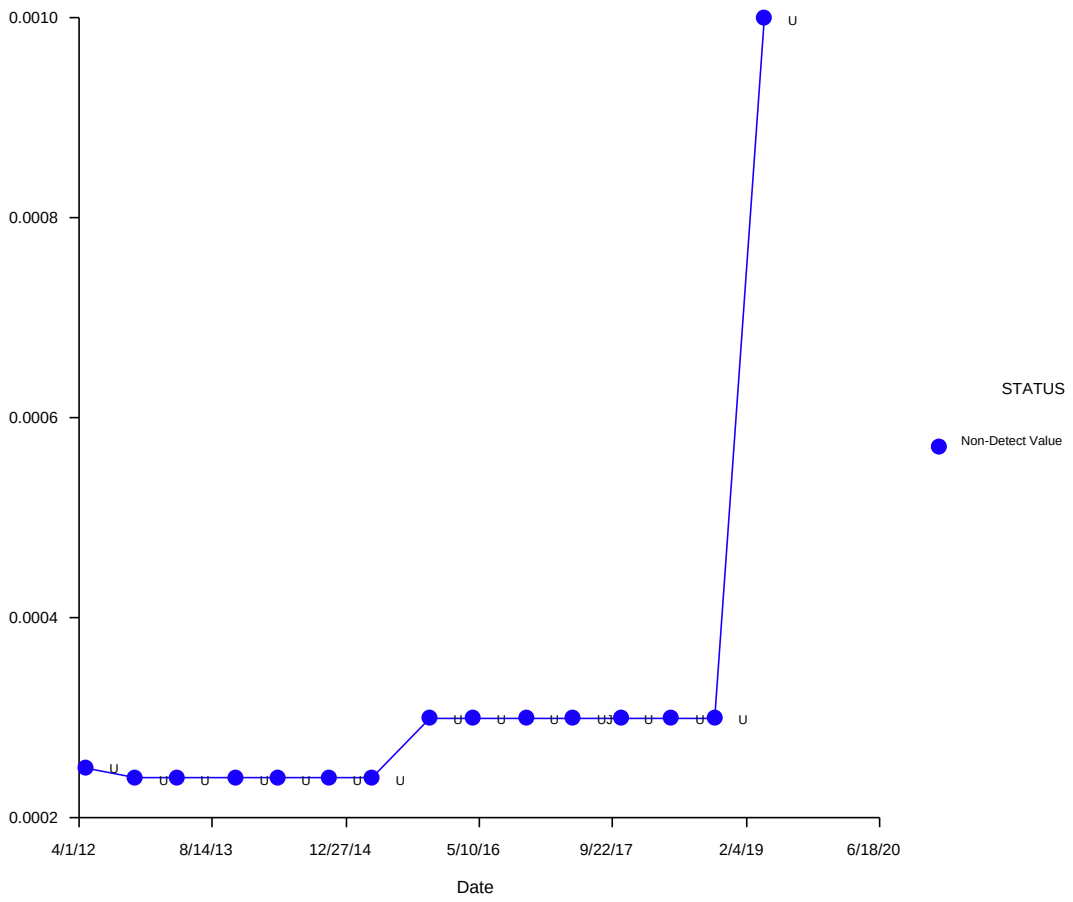
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_110"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_110"

Procedure Input Settings

Variables Tab

-- Variables ----------

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options ----------

Variable Names:	Names
Value Labels:	Data Values

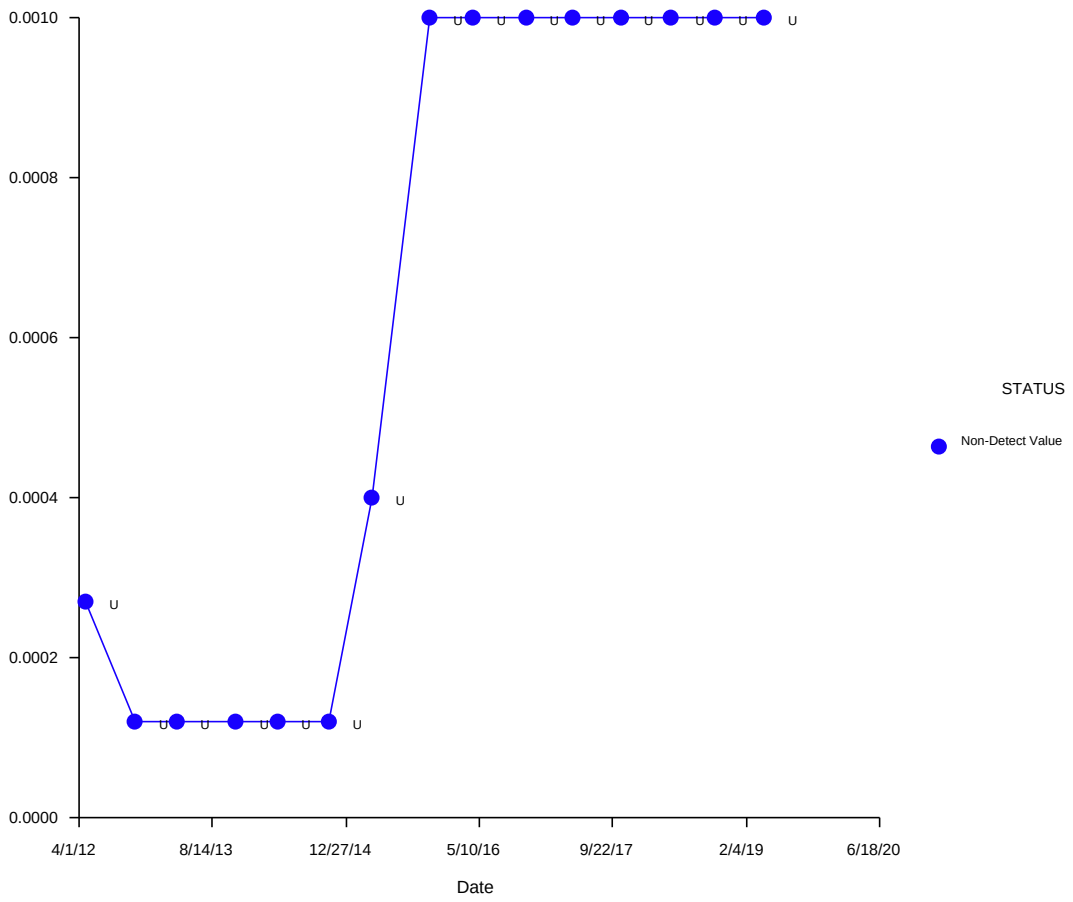
-- Symbol Size Options ----------

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_112"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_112"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

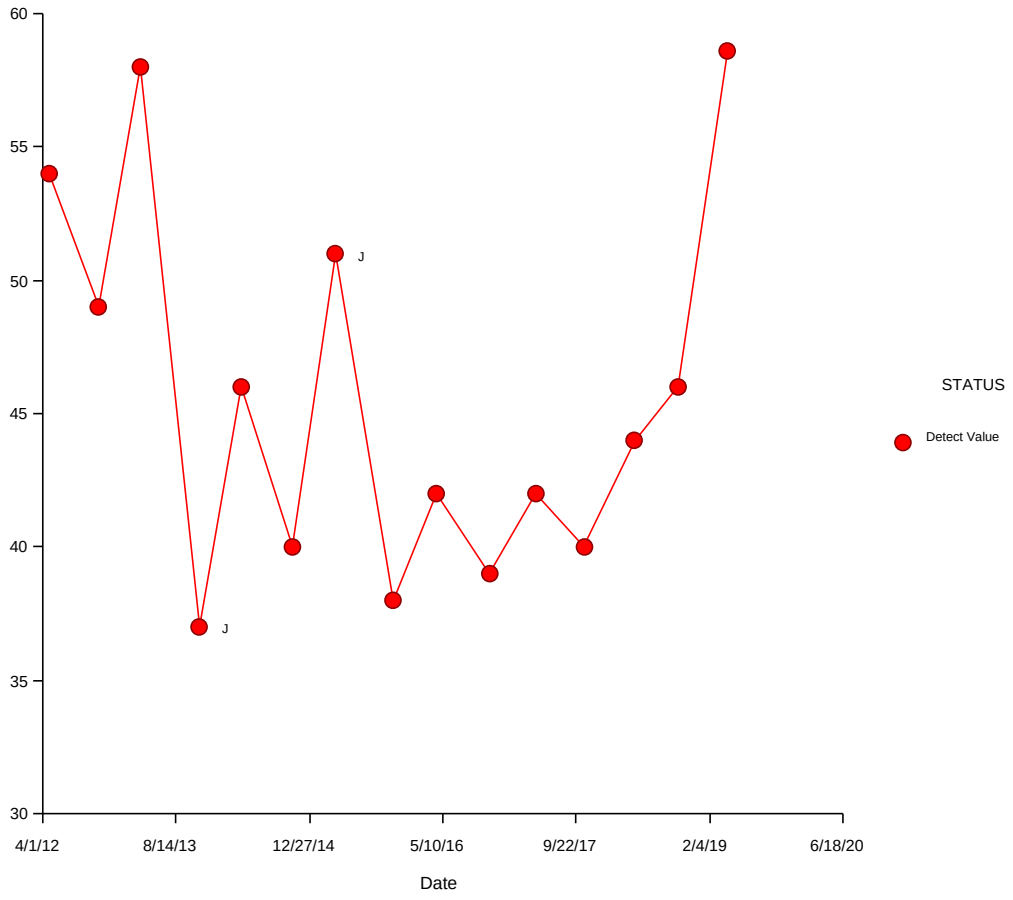
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_114"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_114"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

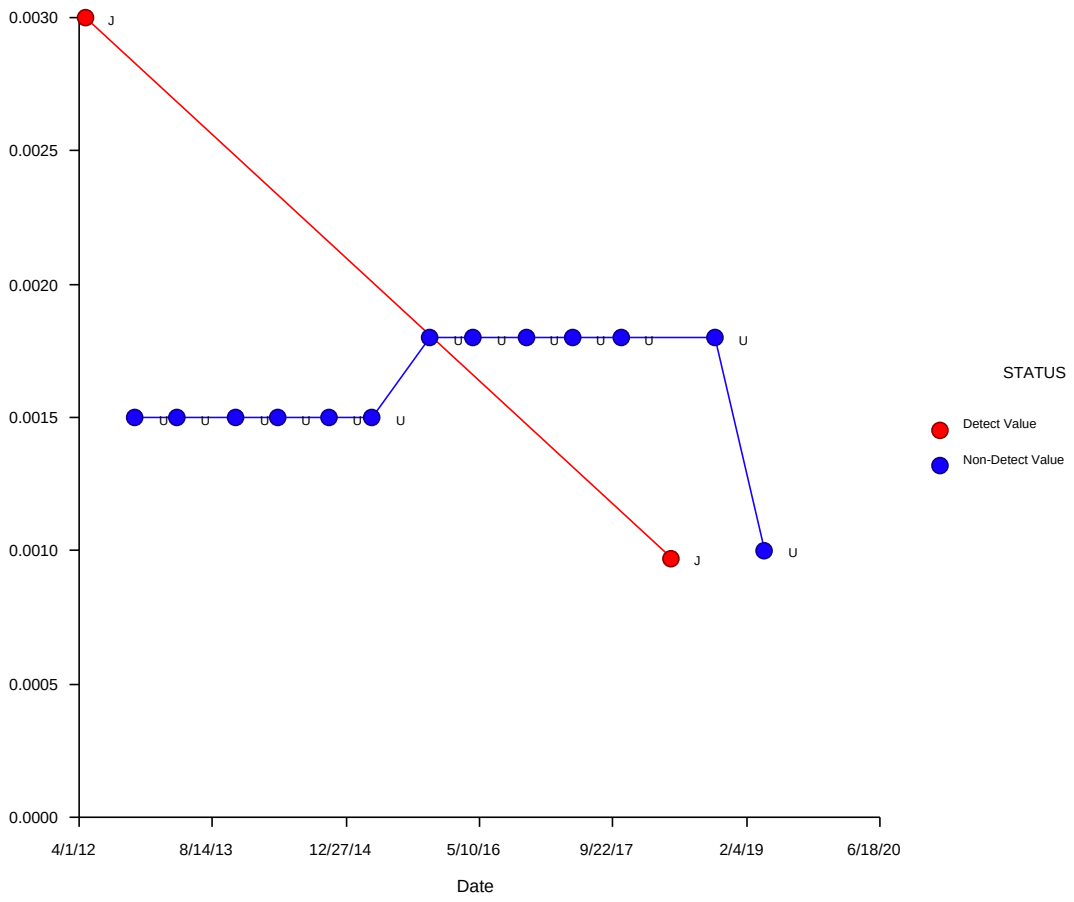
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_116"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_116"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

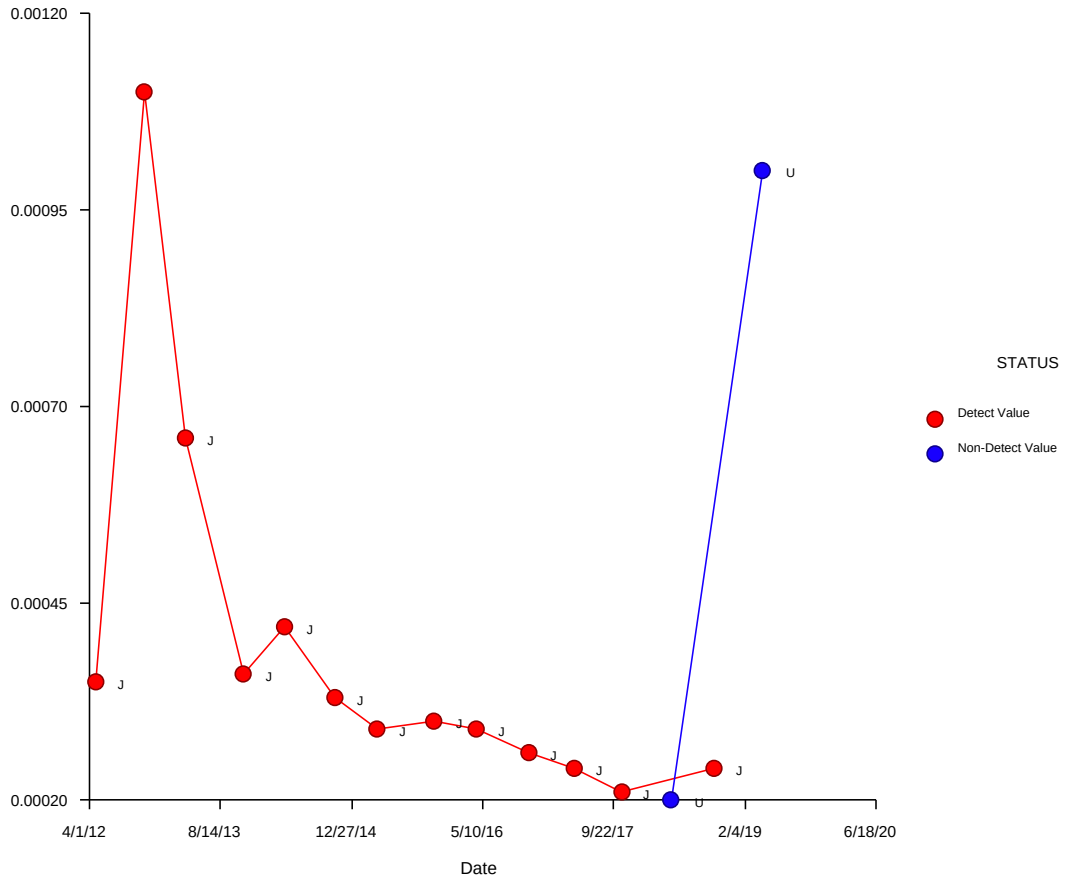
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_118"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_118"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

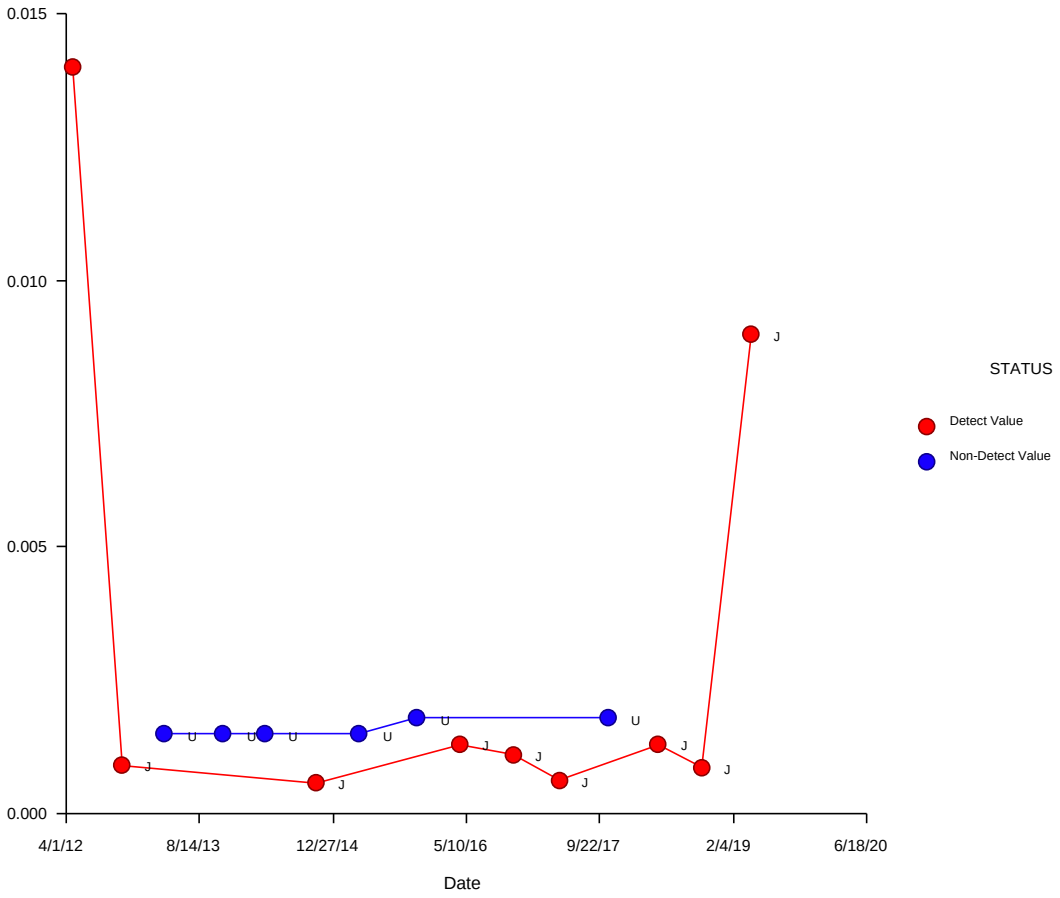
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_120"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_120"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

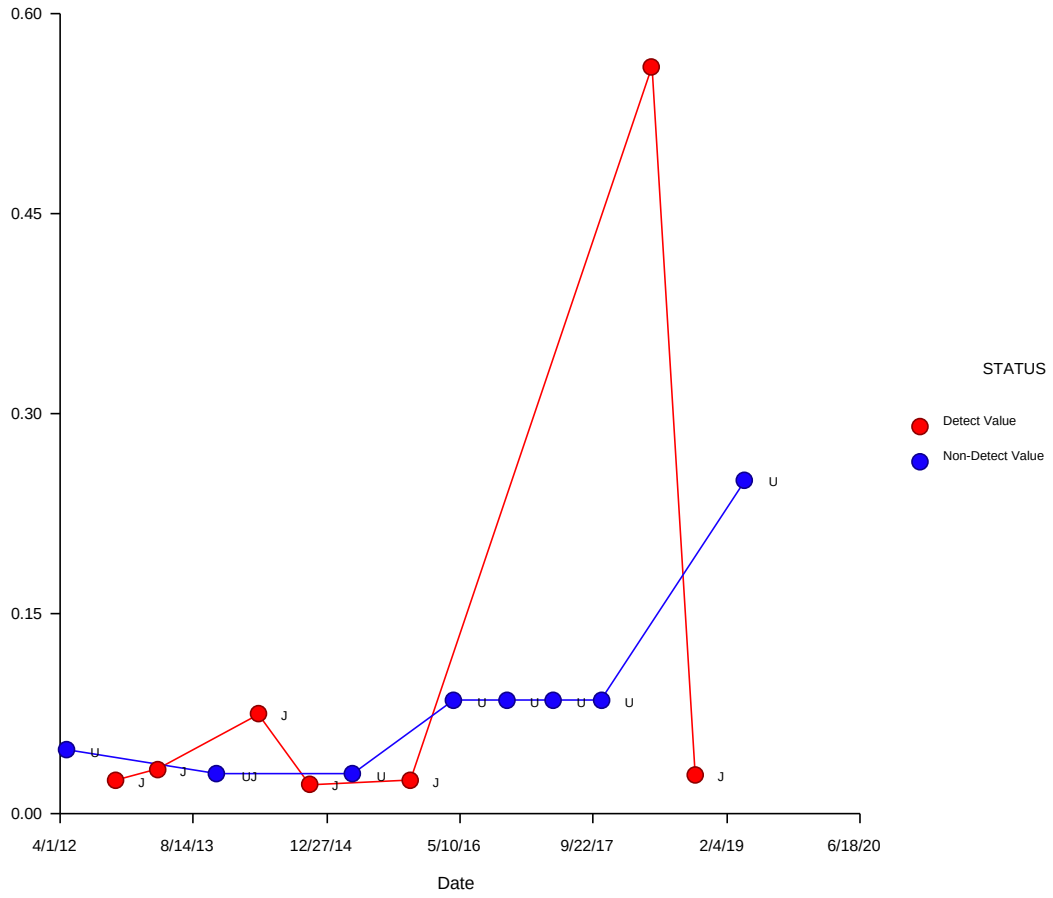
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_122"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_122"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

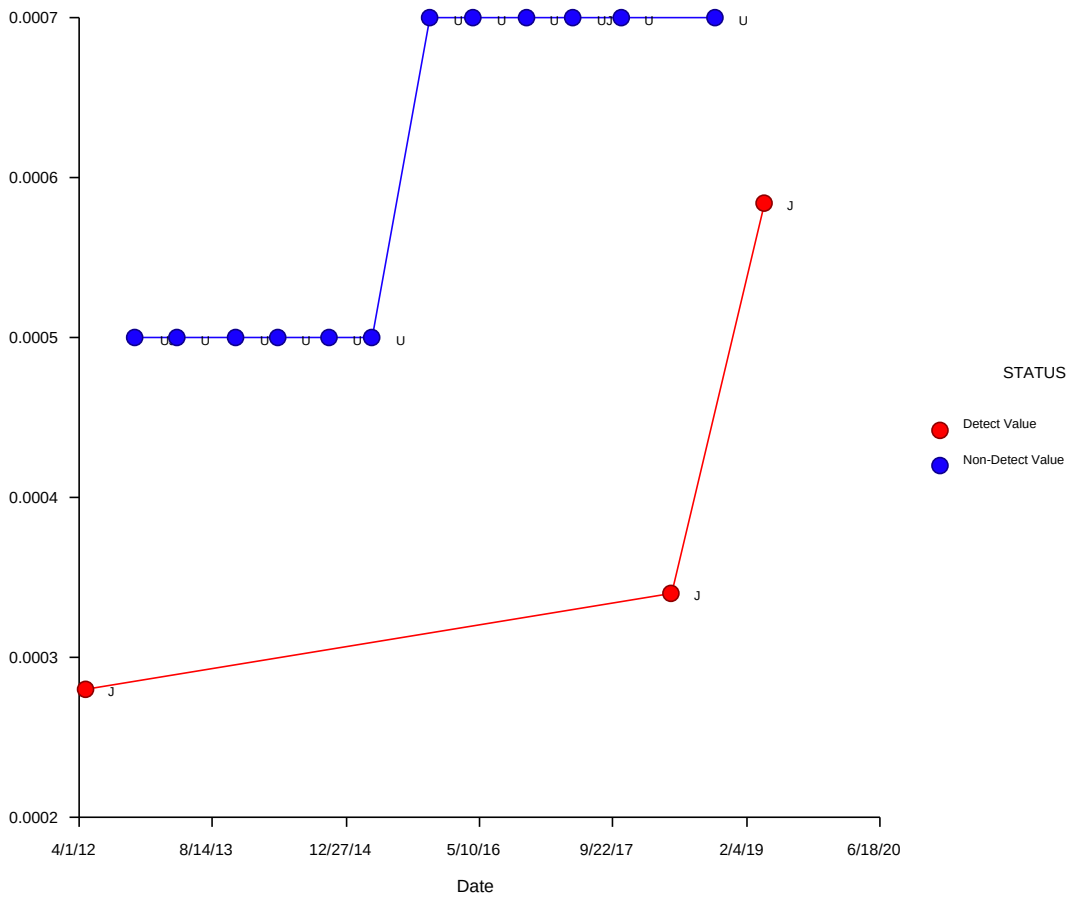
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_124"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_124"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

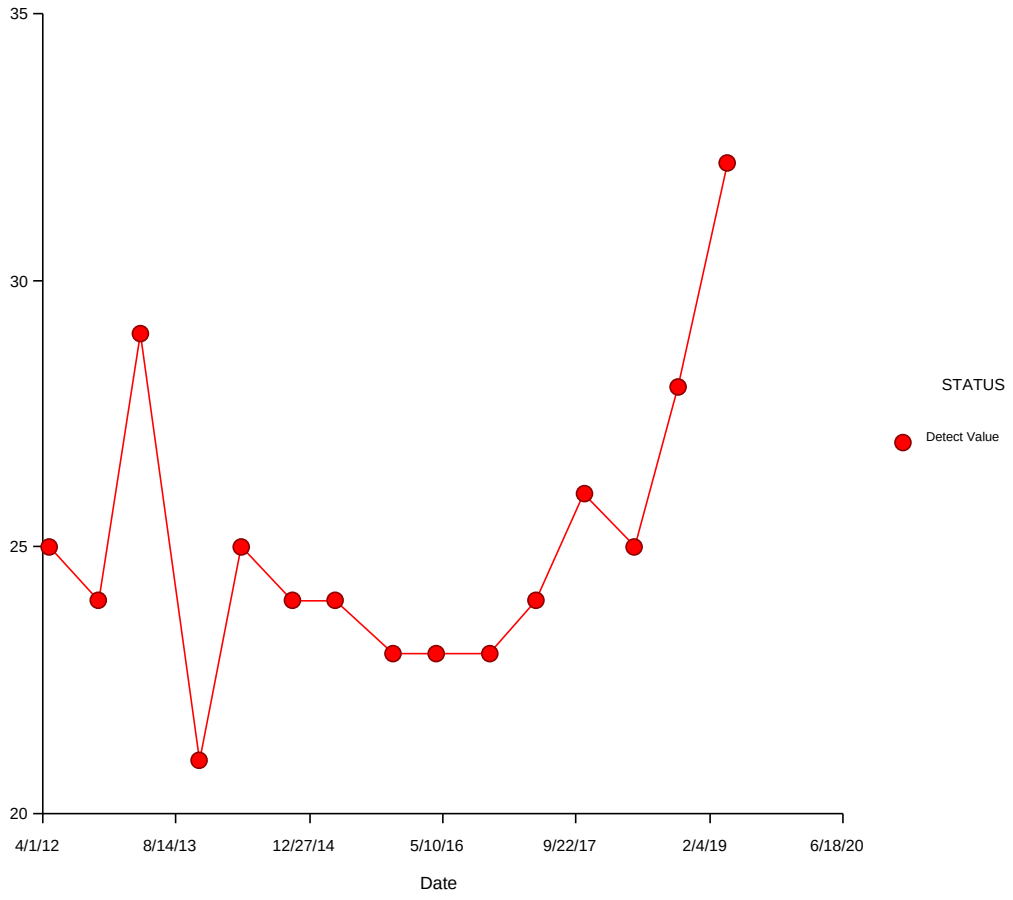
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_126"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_126"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

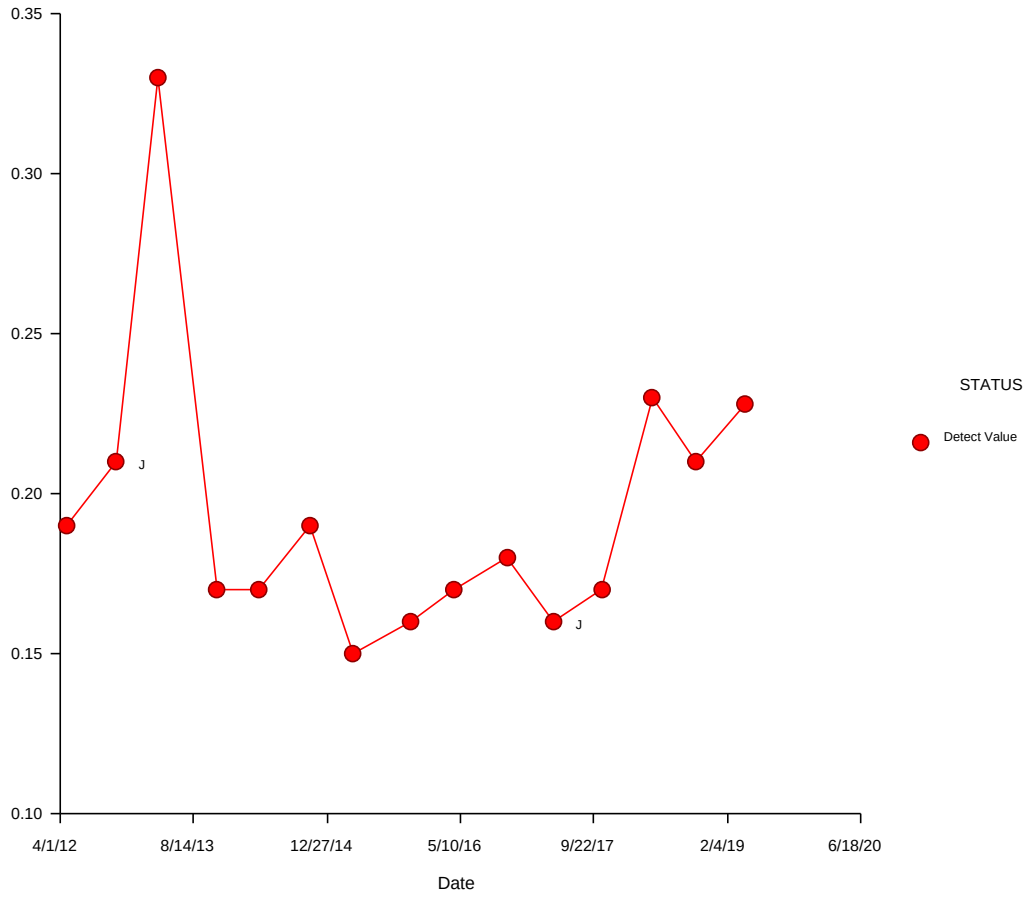
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_128"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_128"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

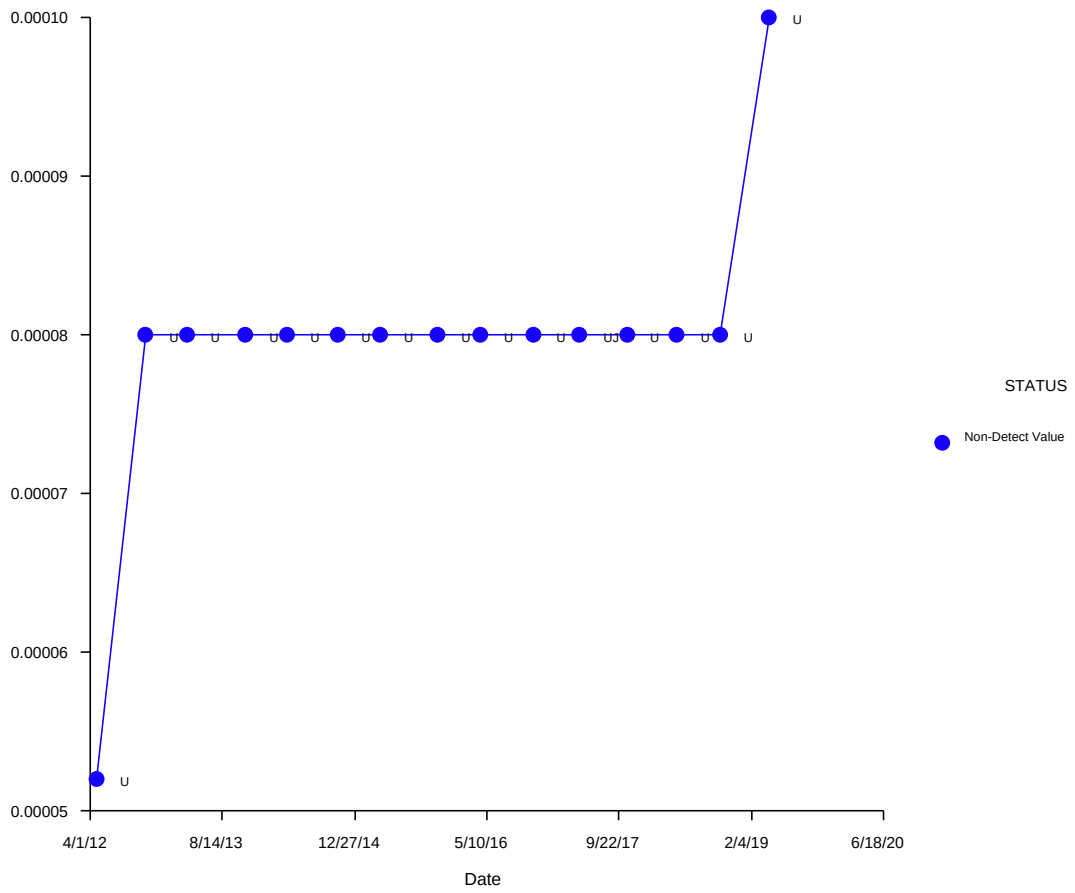
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_130"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_130"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

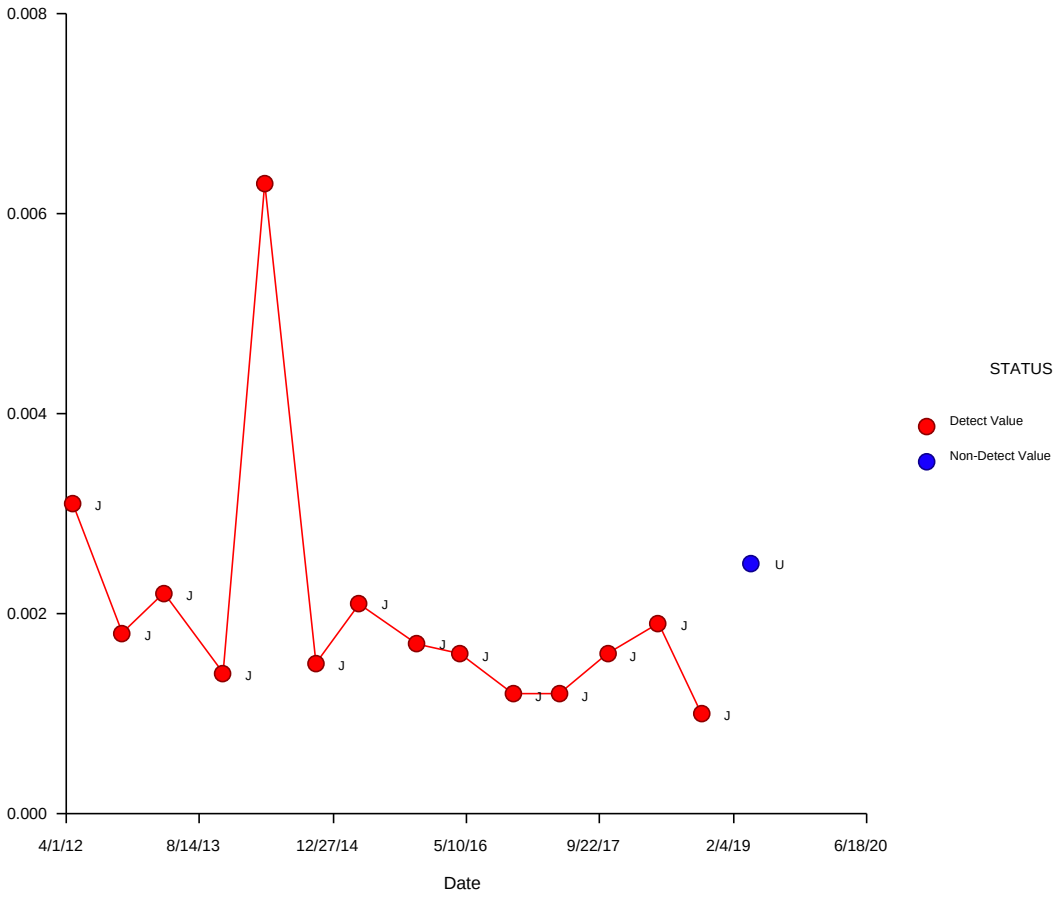
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_132"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_132"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

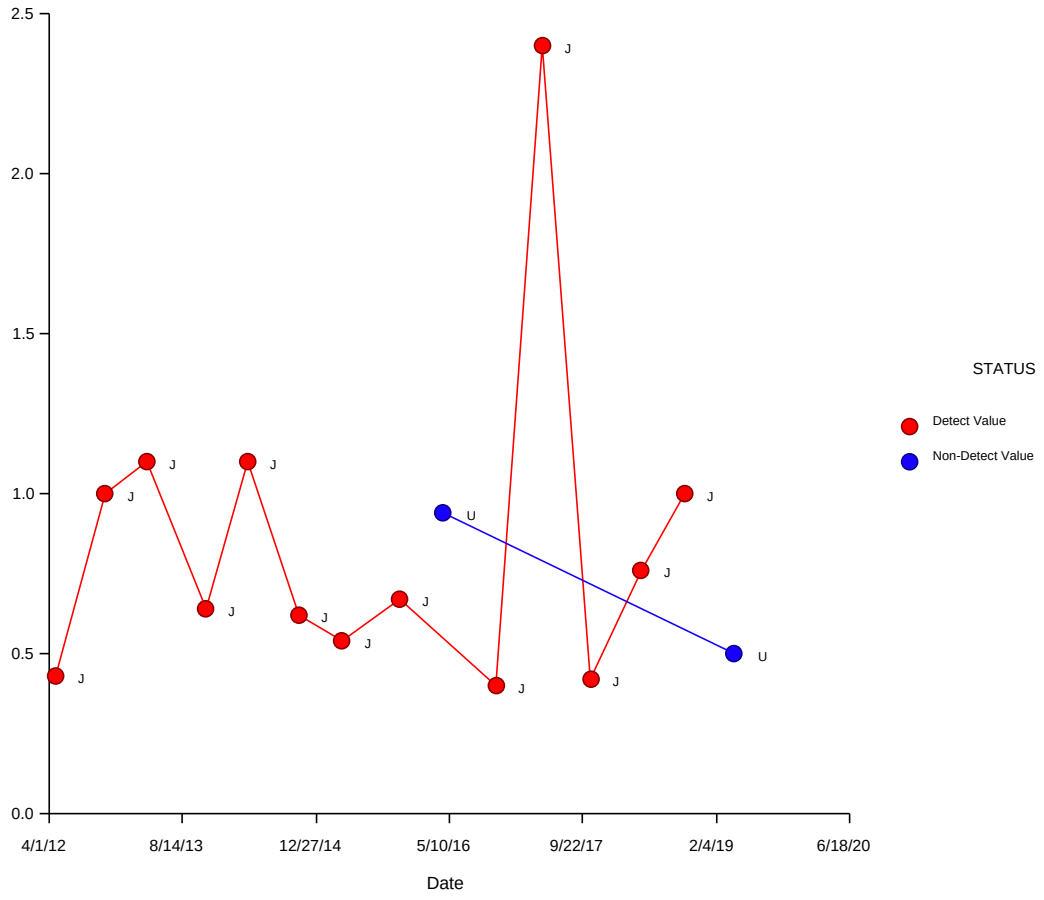
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_136"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_136"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

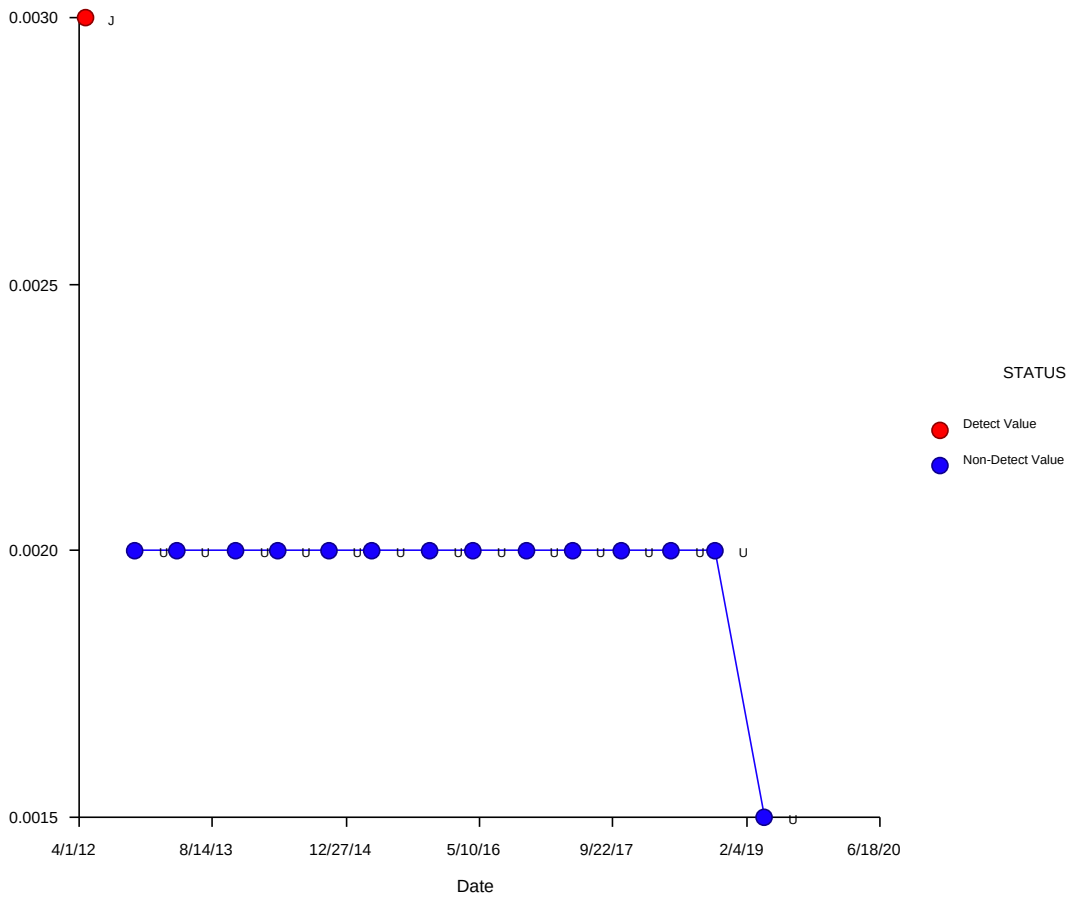
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_138"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_138"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

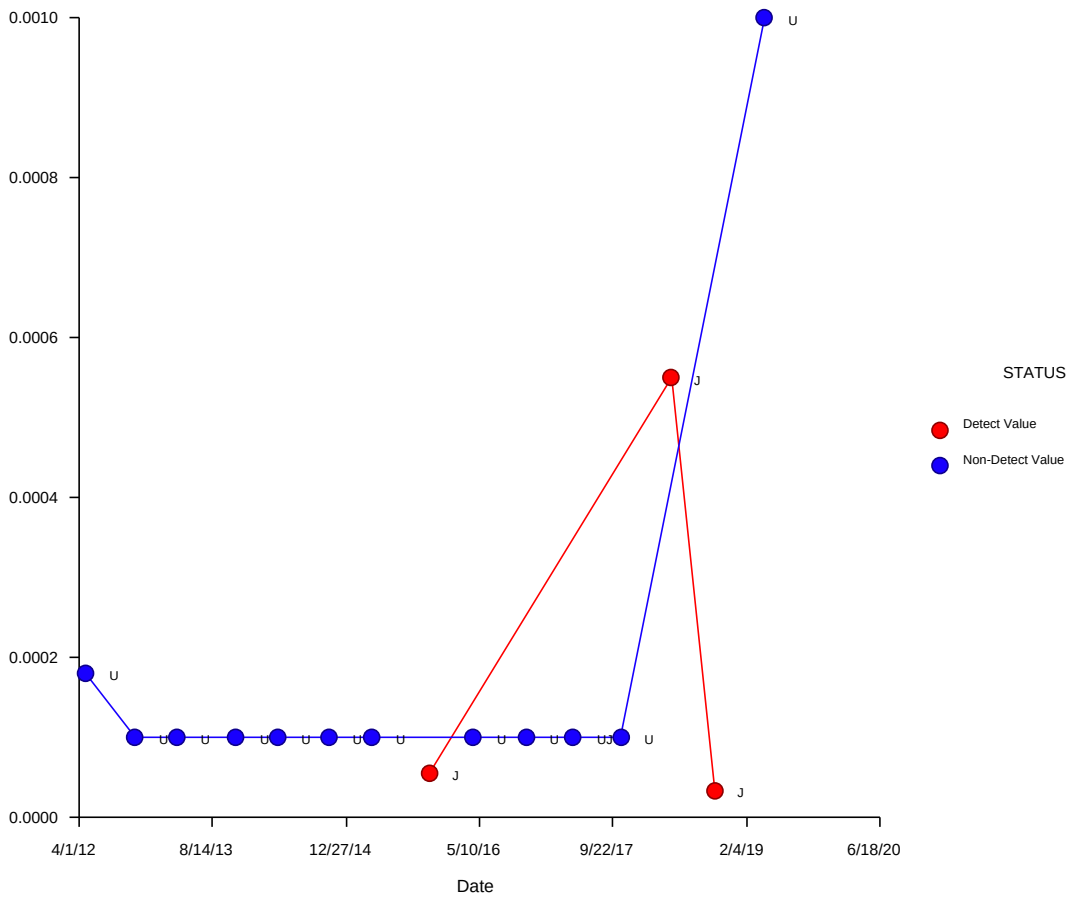
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_140"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_140"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

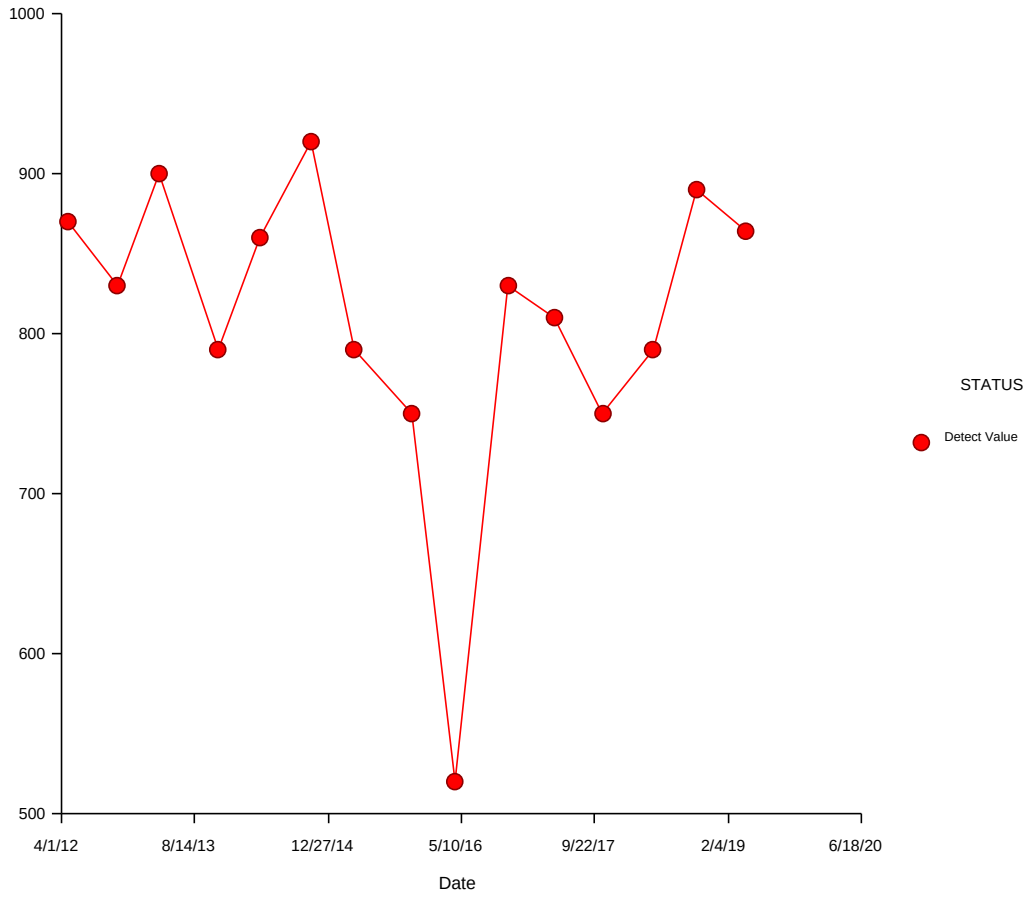
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_142"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_142"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

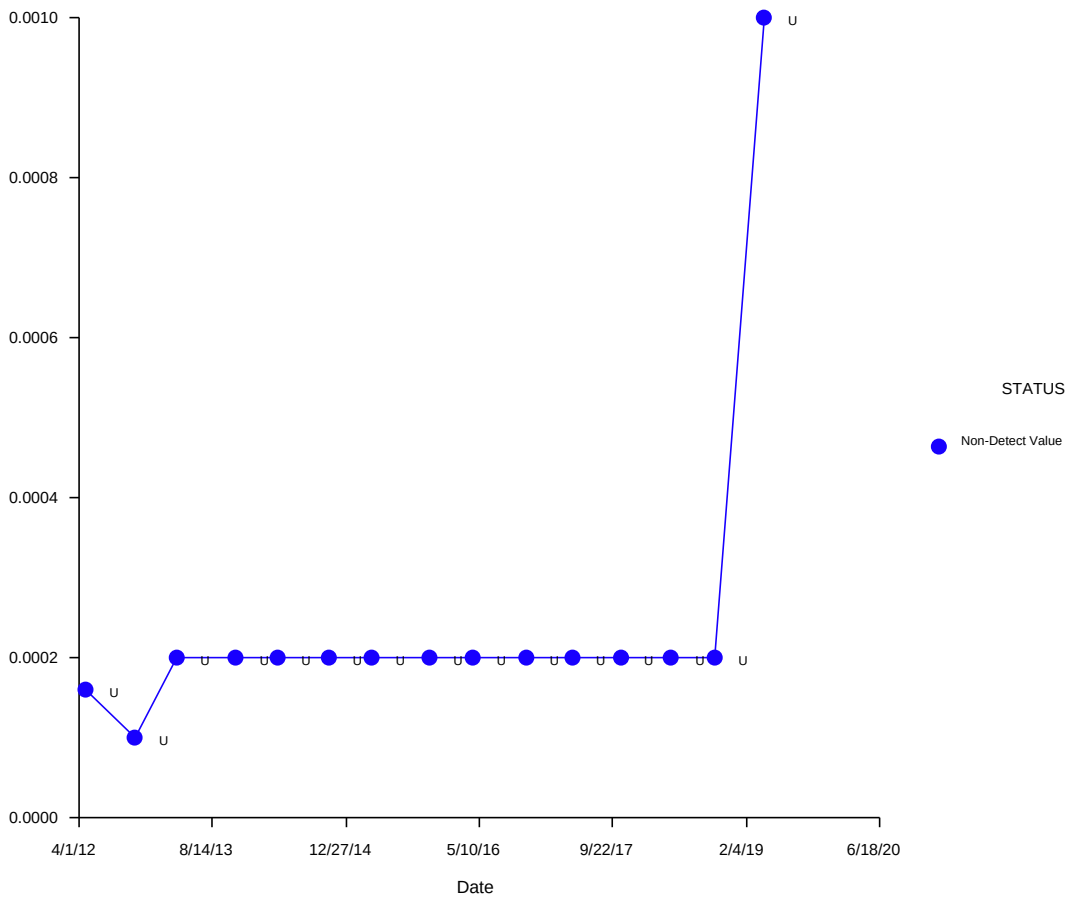
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_144"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_144"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

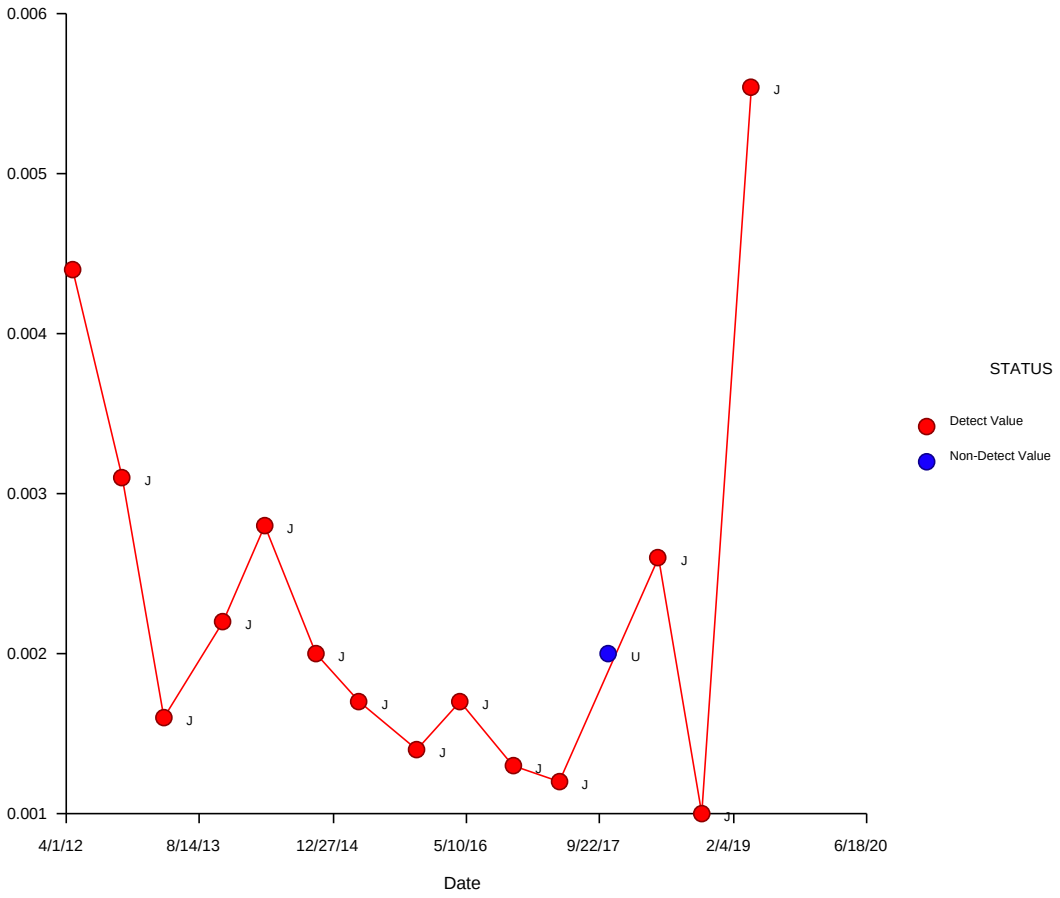
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_146"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_146"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

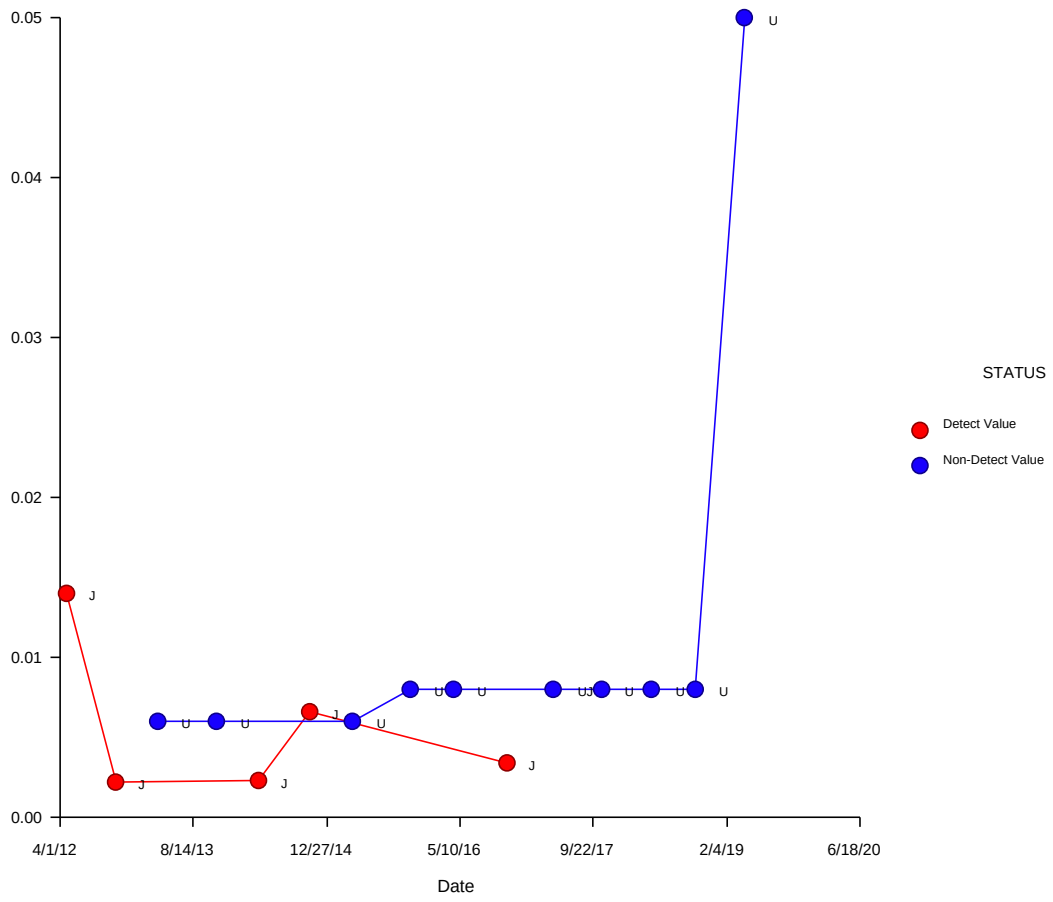
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_148"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_148"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

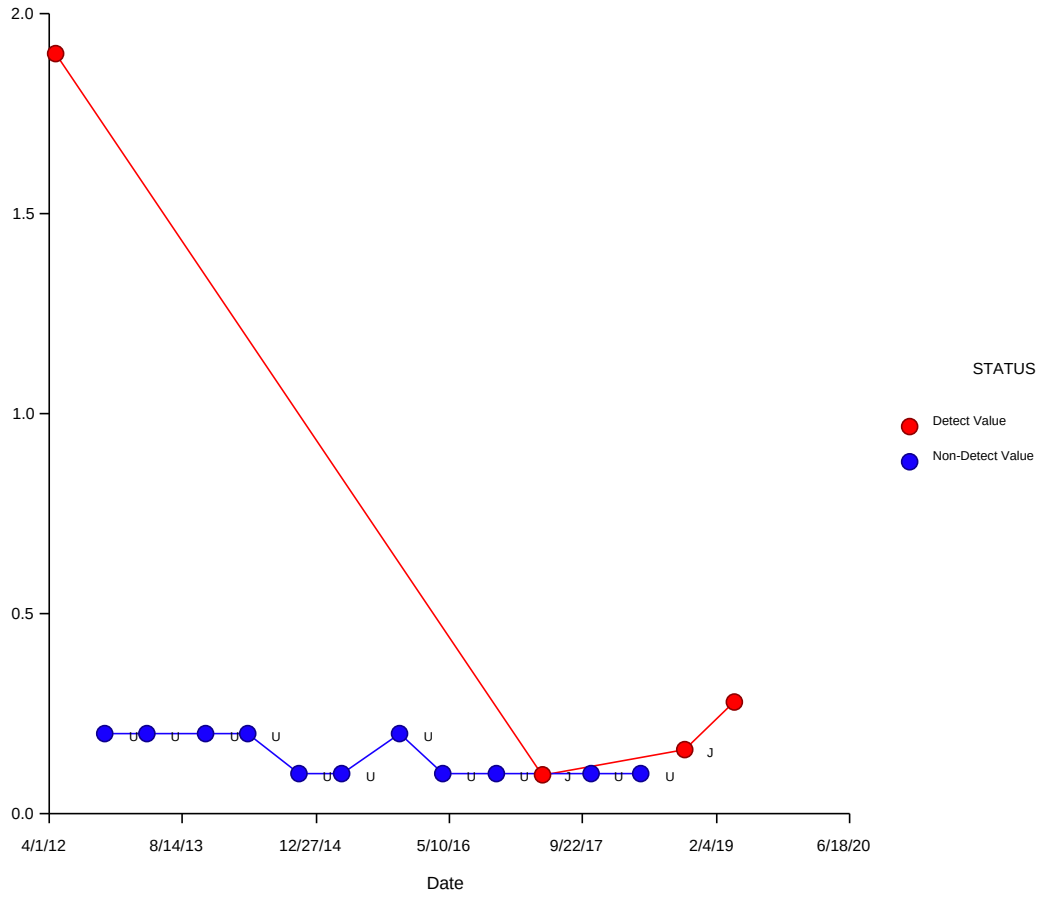
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_2_133"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_2_133"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

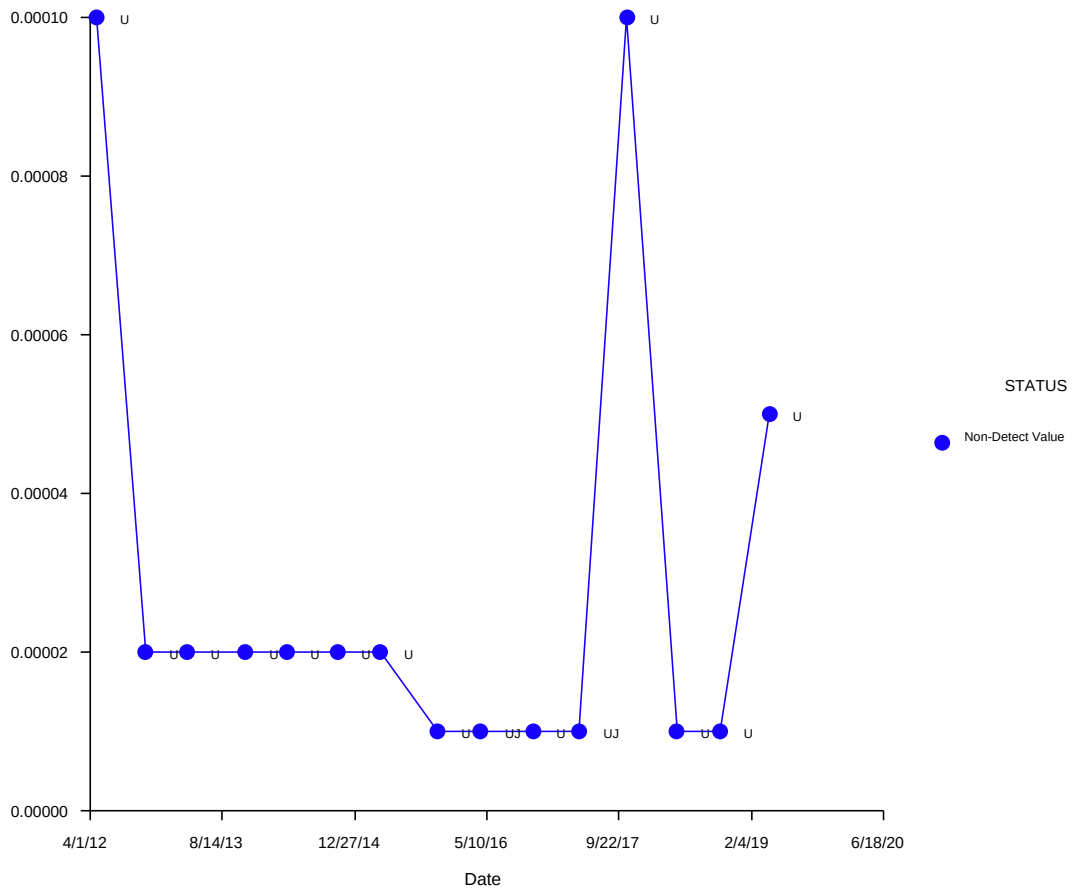
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_3_134"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_3_134"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

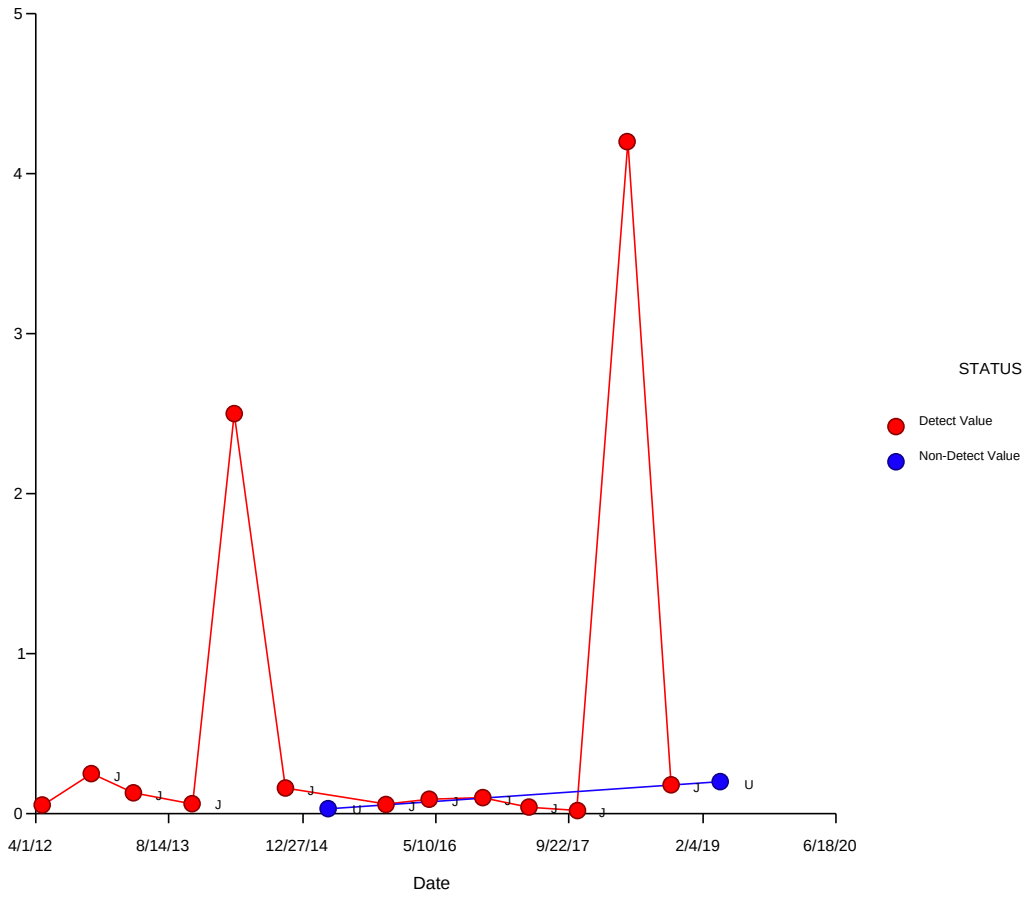
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_101"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_101"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

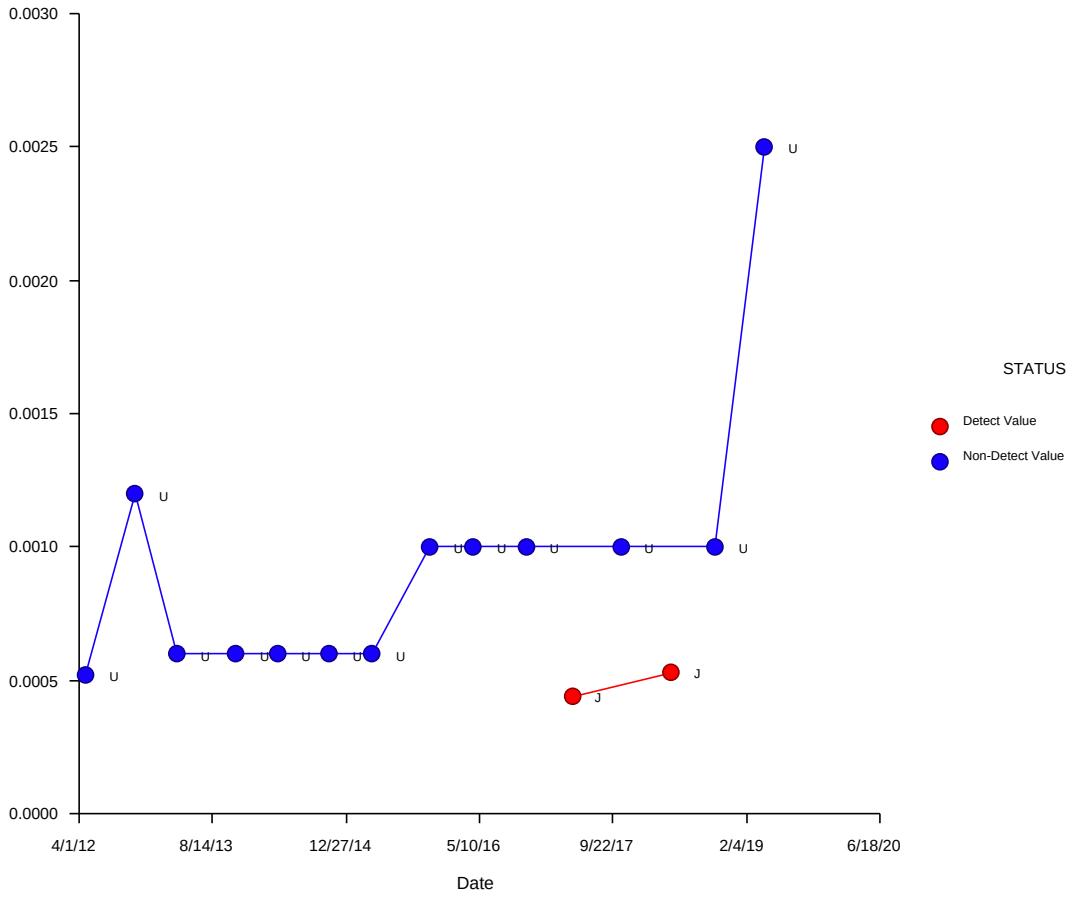
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_103"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_103"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

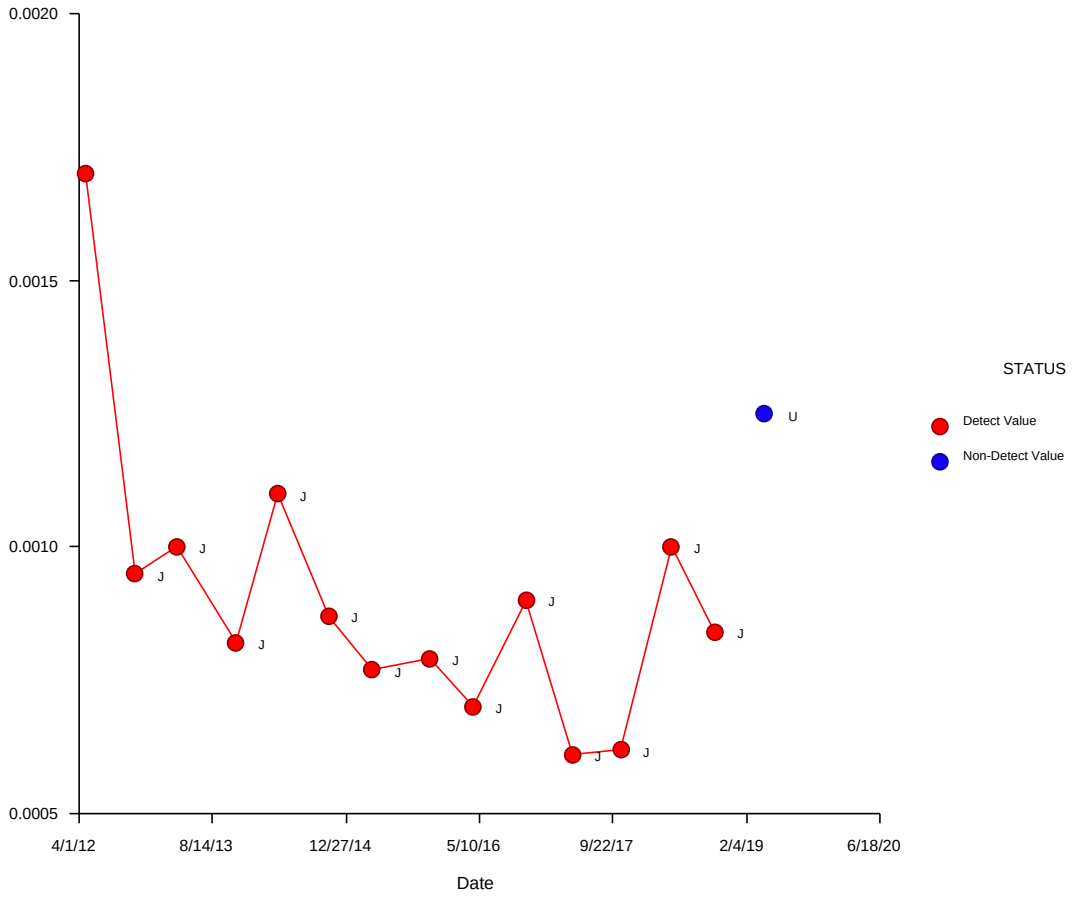
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_105"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_105"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

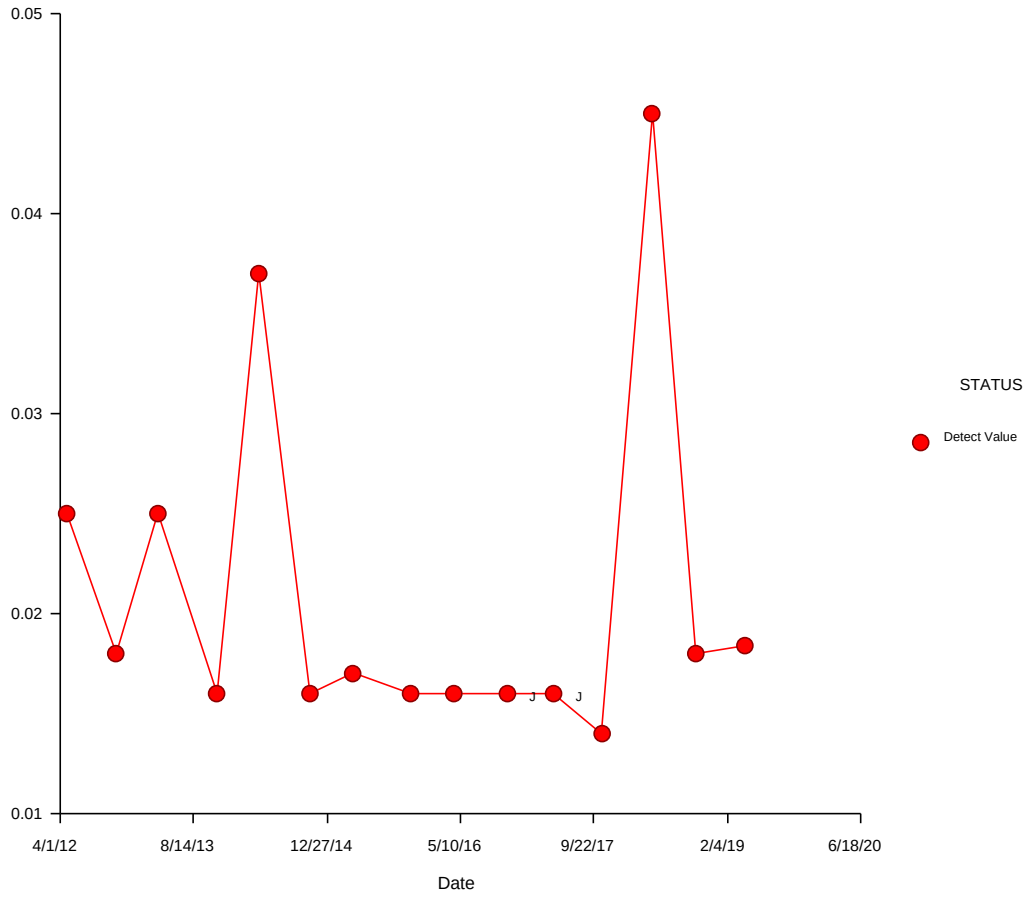
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_107"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_107"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

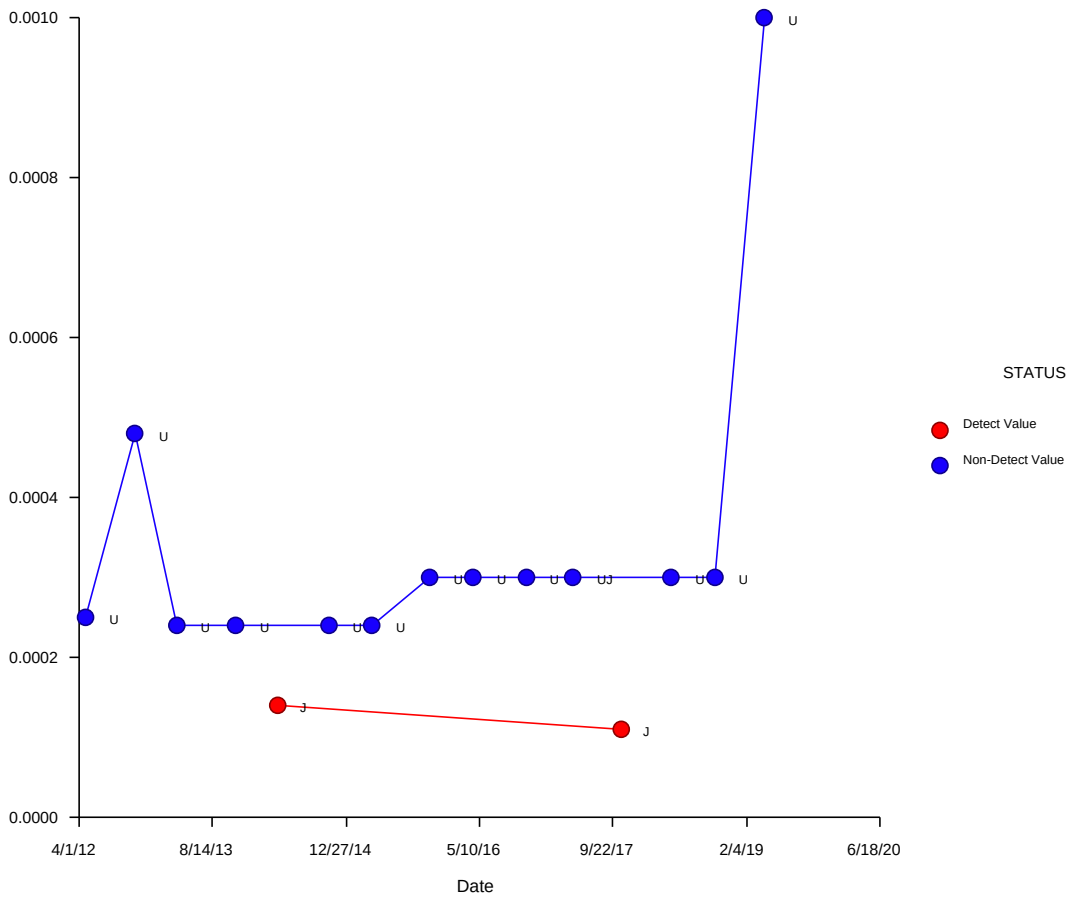
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_109"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_109"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

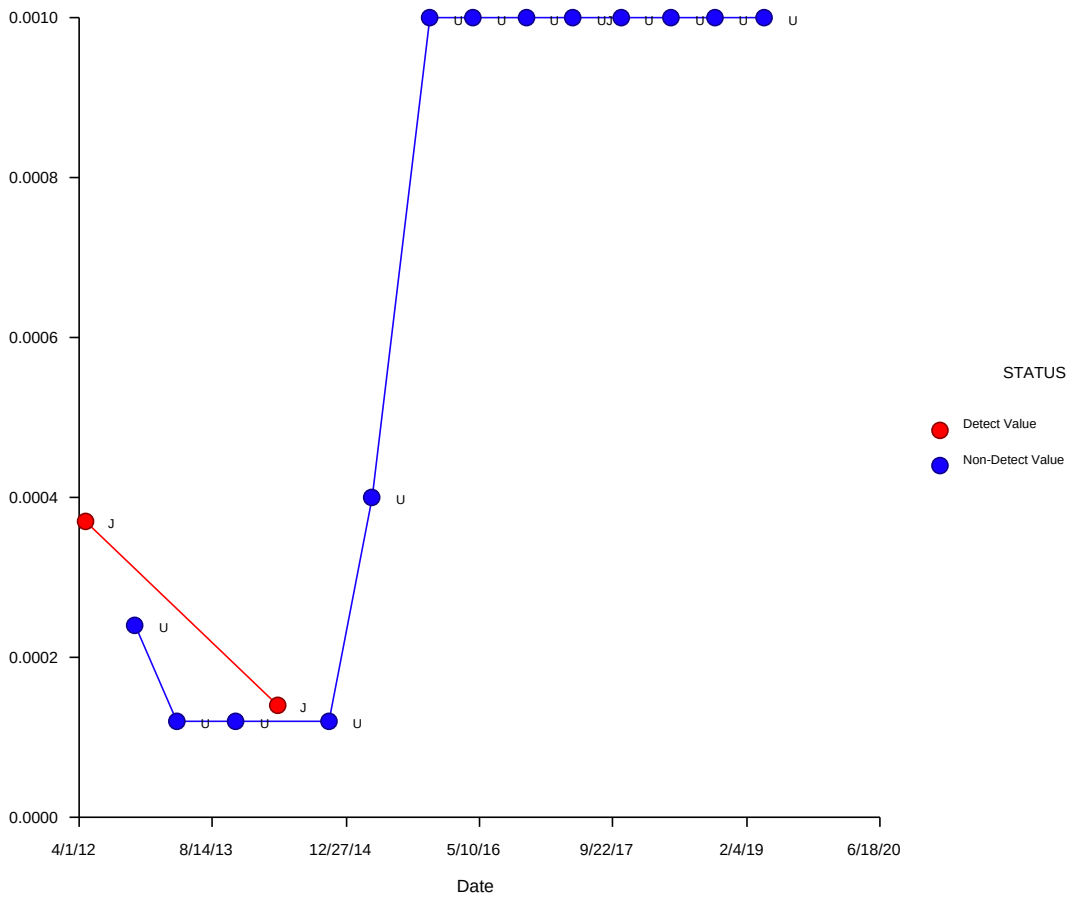
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_111"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_111"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

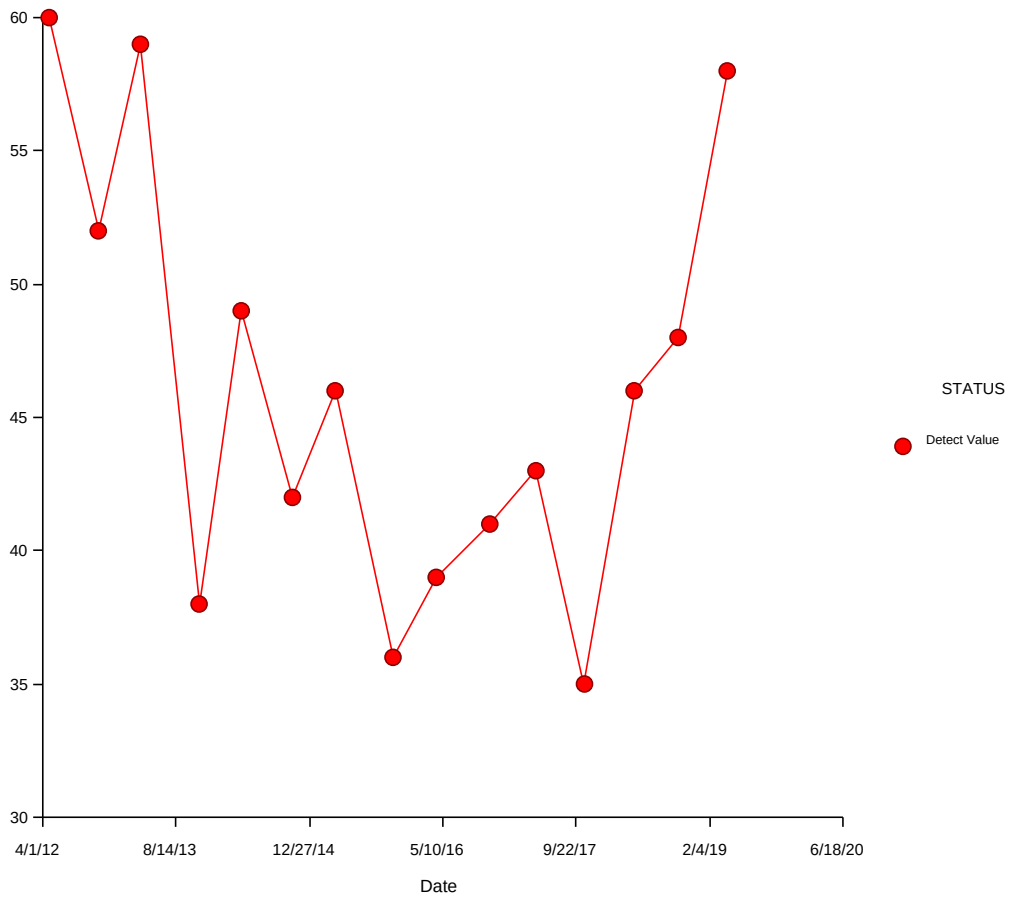
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_113"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_113"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

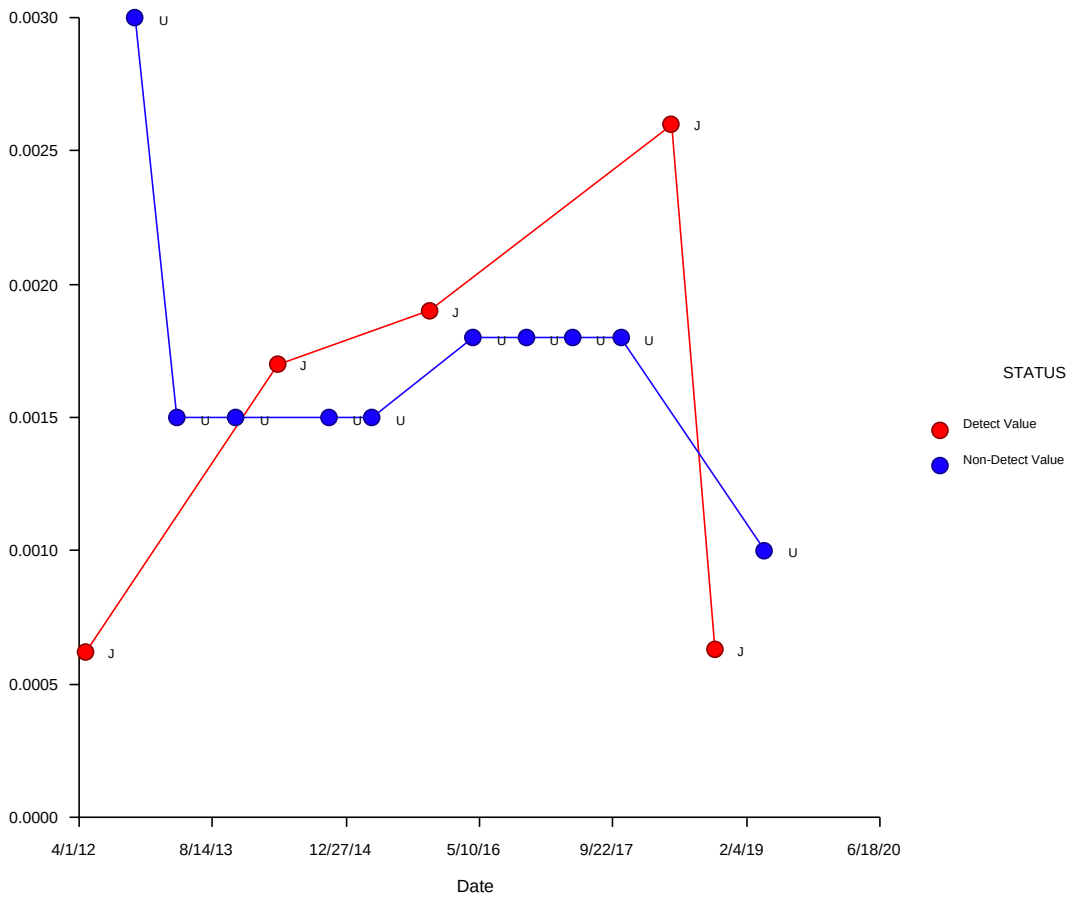
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_115"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_115"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

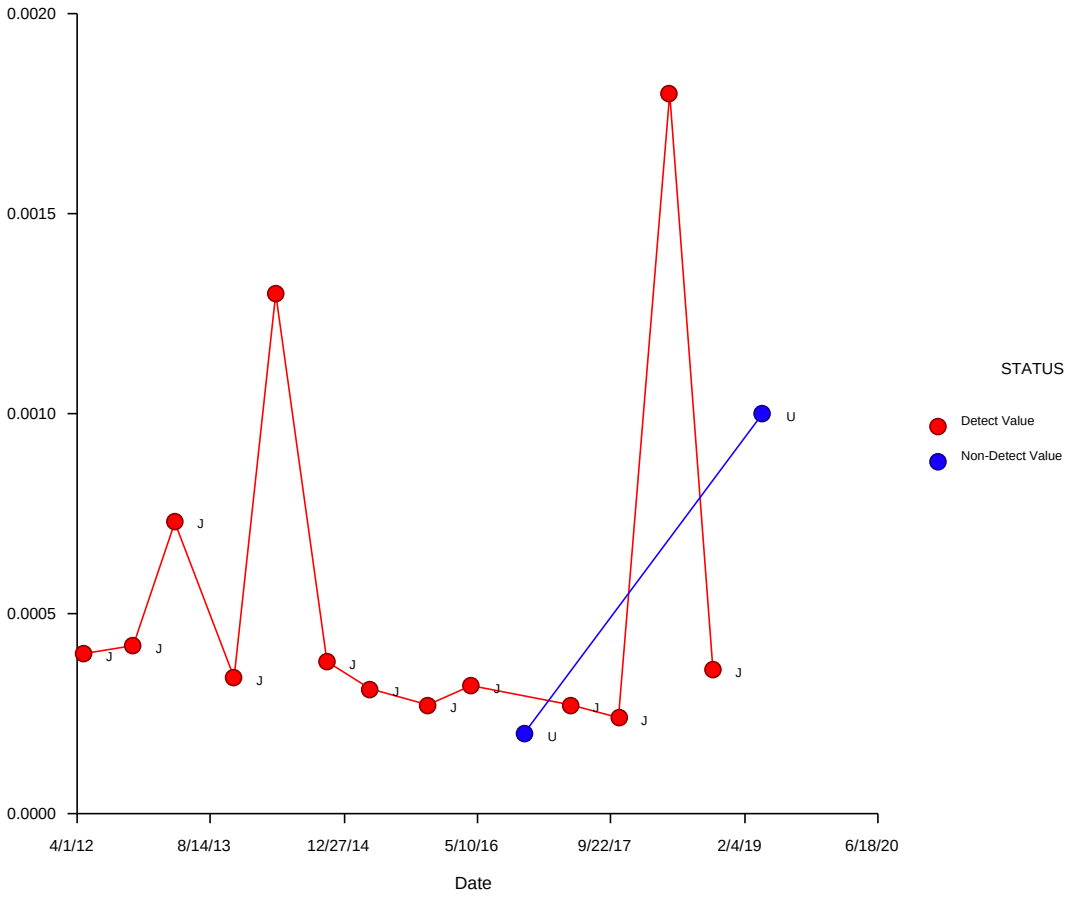
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_117"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_117"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

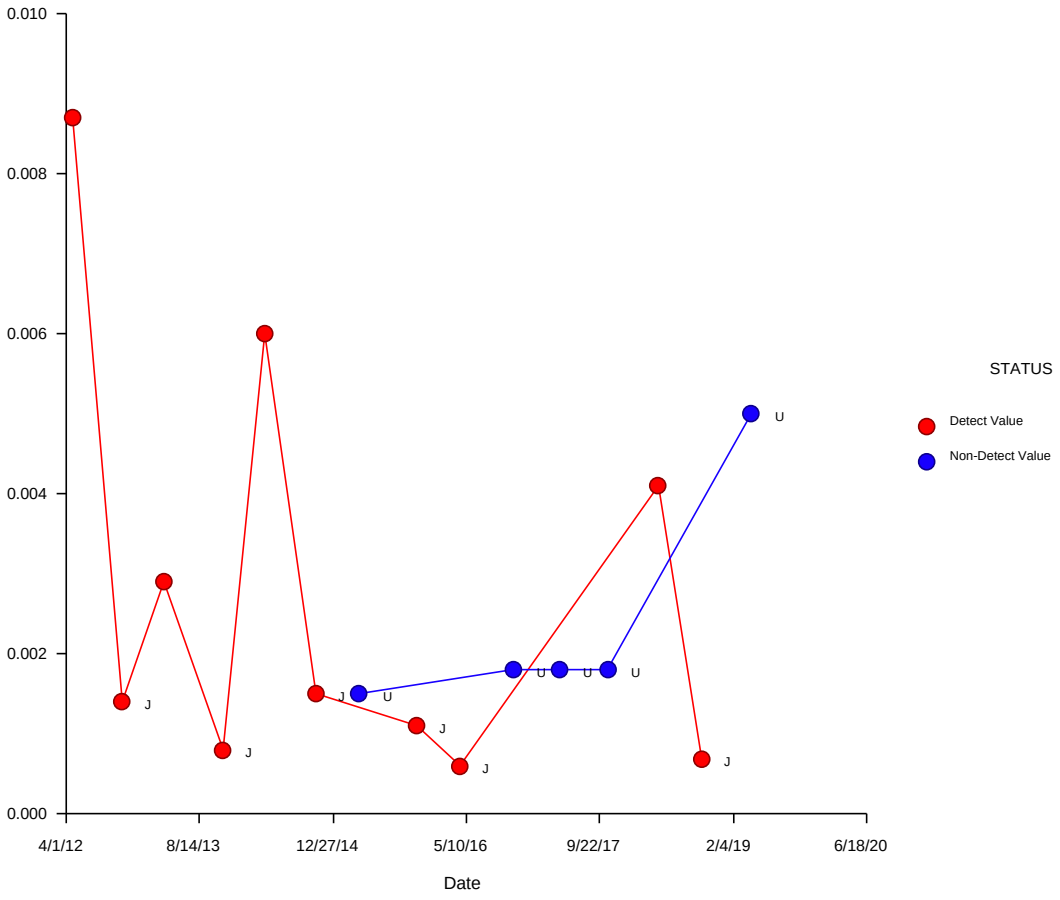
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_119"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_119"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

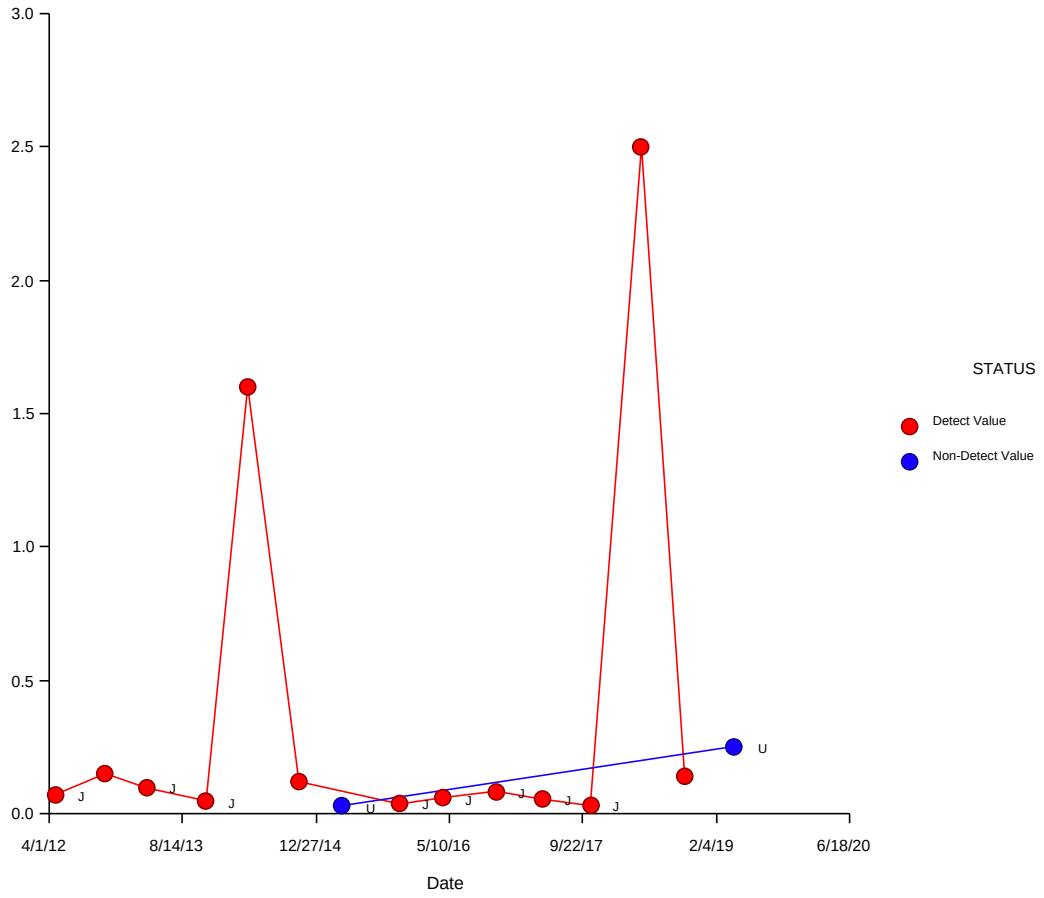
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_121"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_121"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

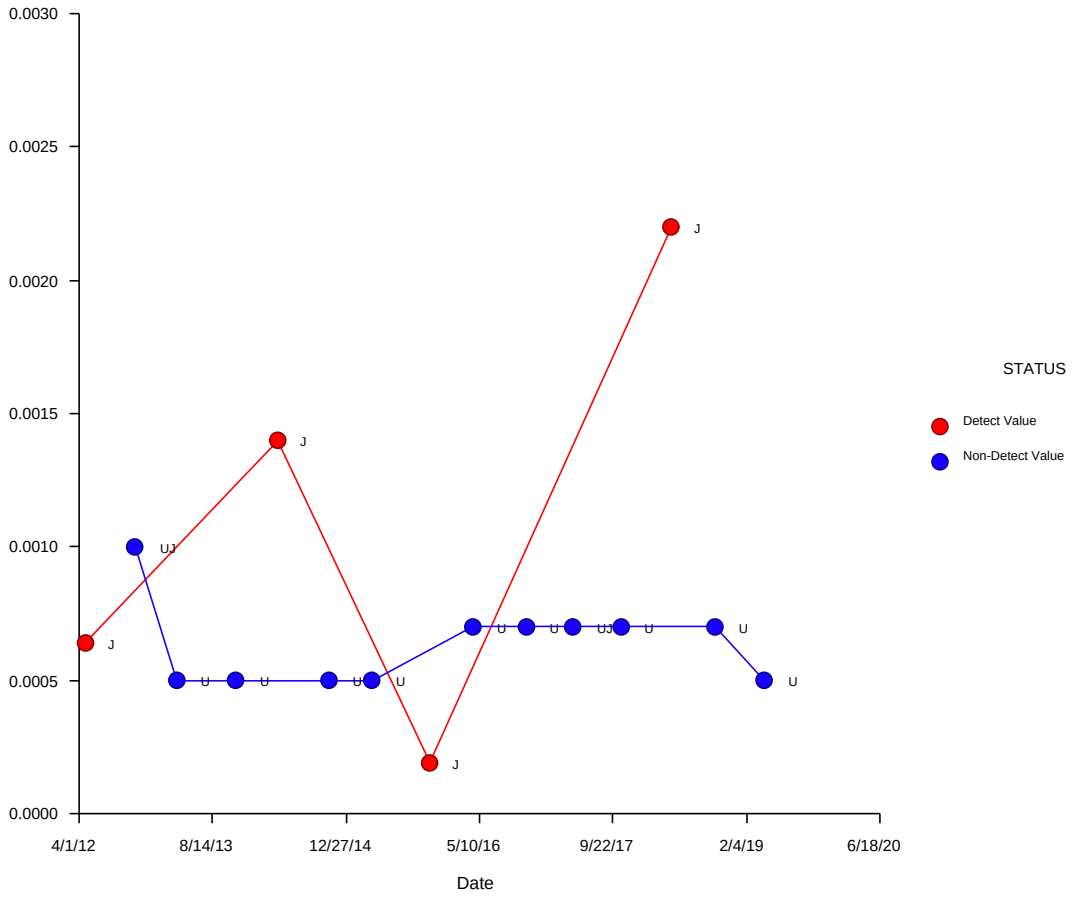
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_123"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_123"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

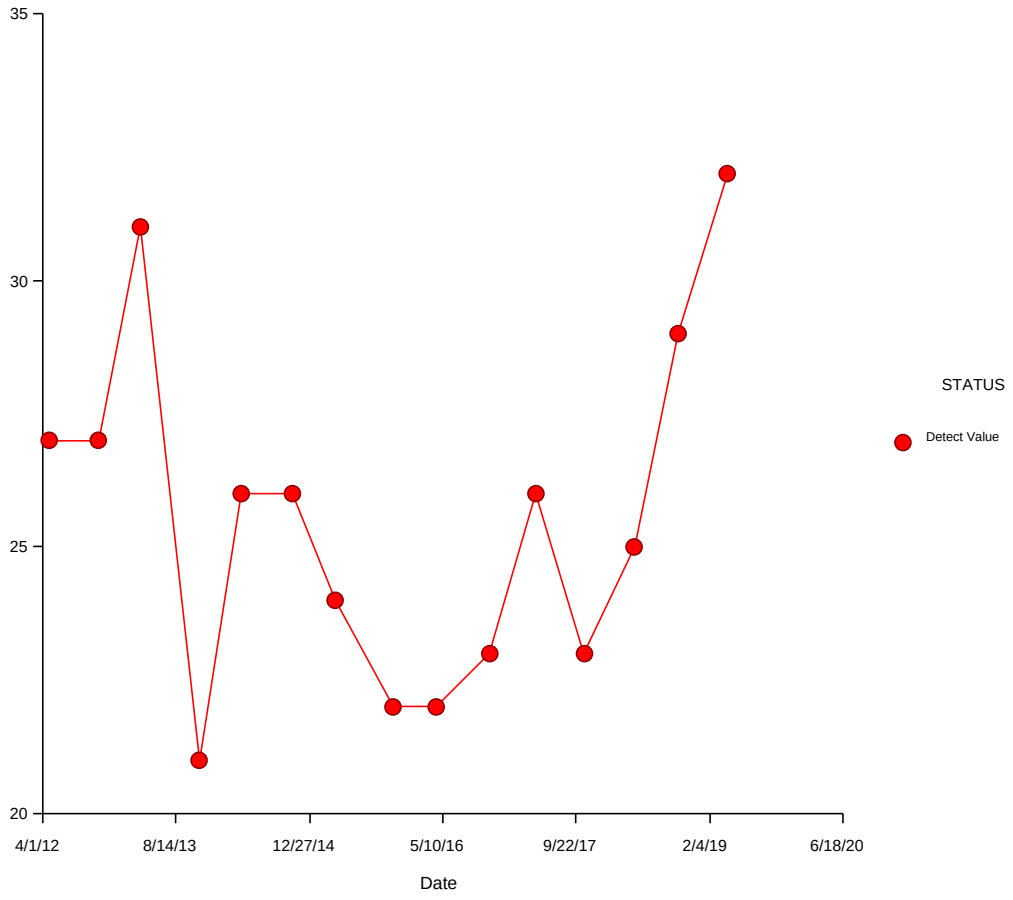
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_125"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_125"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

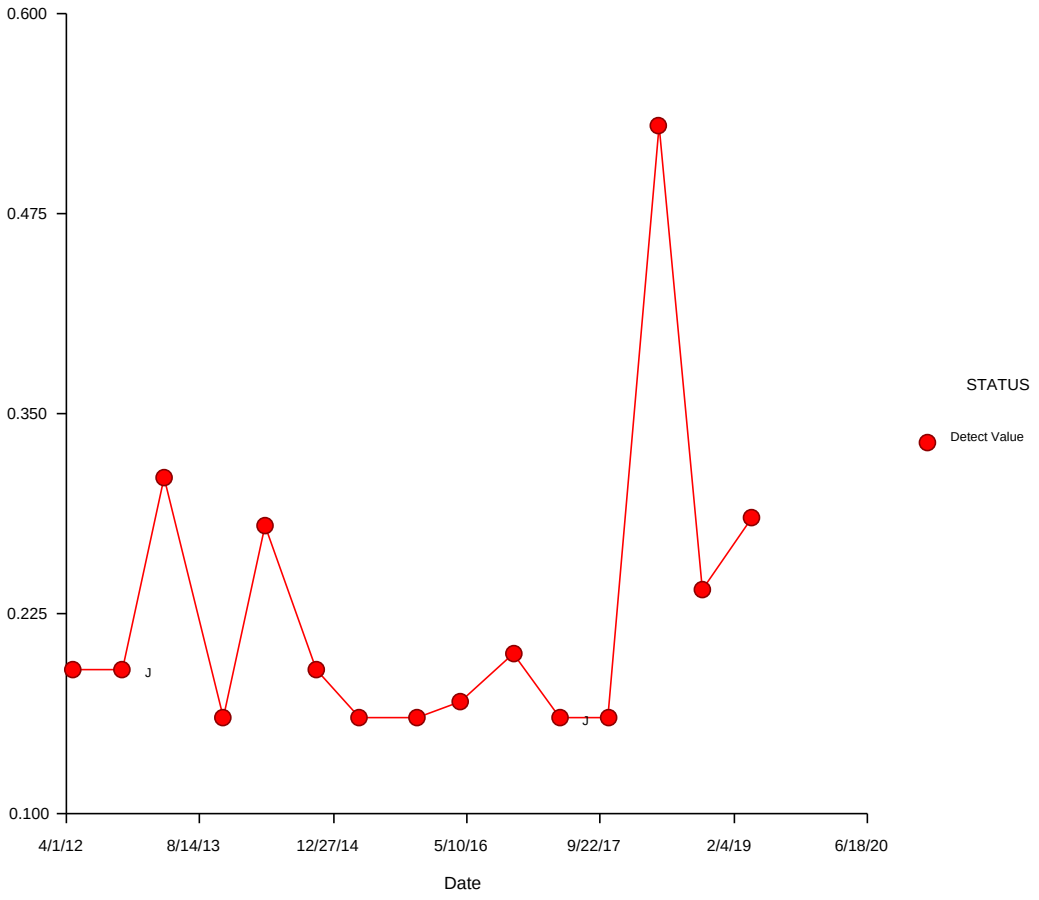
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_127"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_127"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

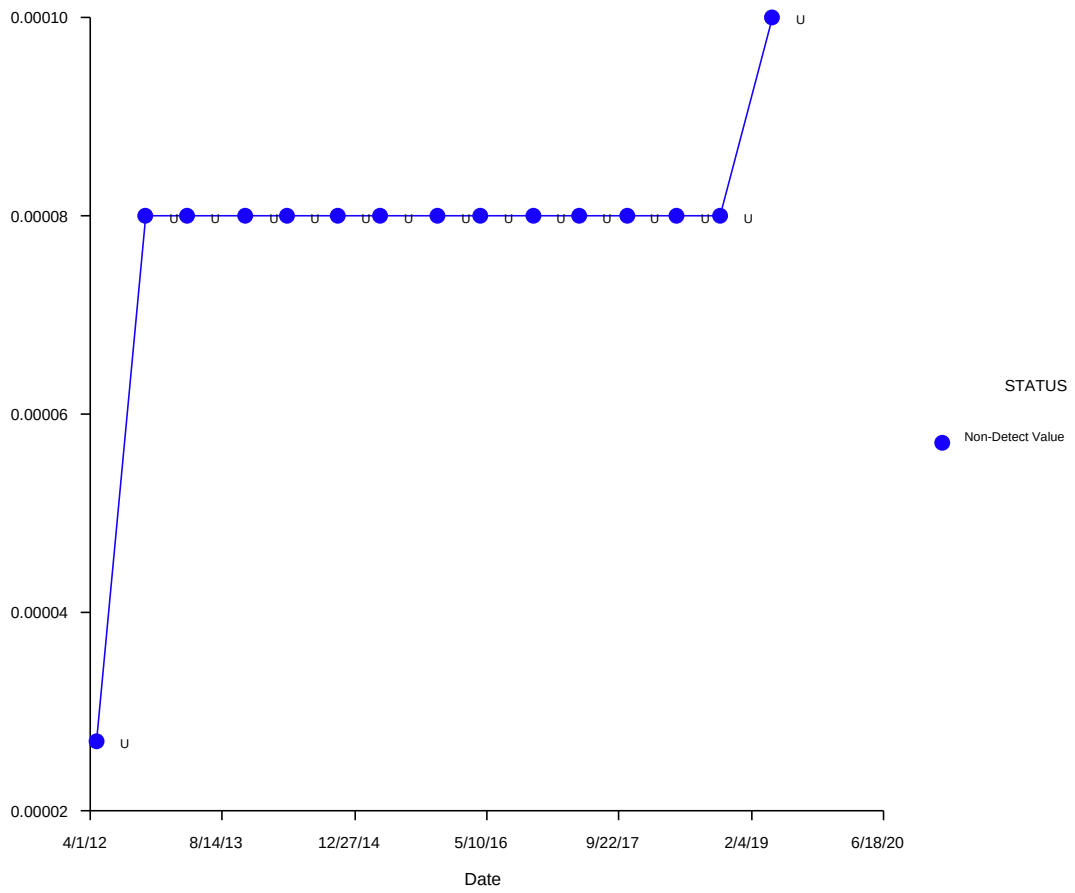
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_129"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_129"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

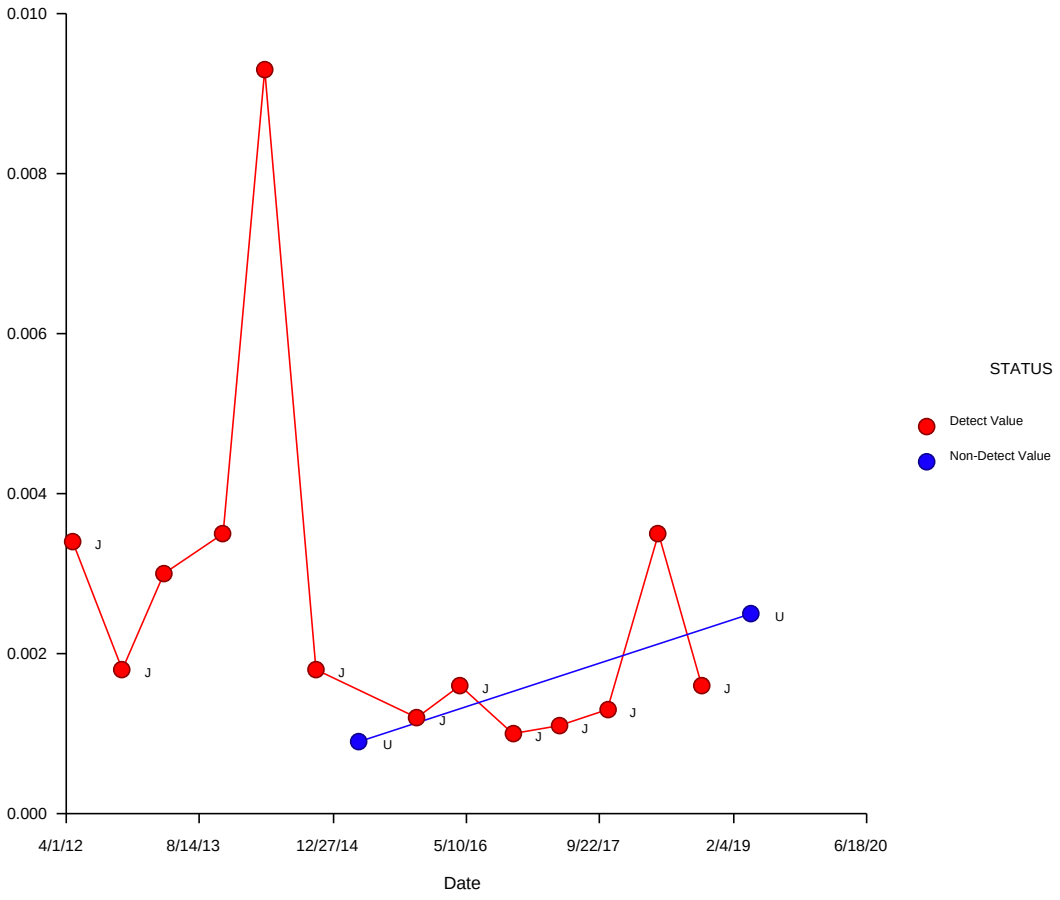
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_131"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_131"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

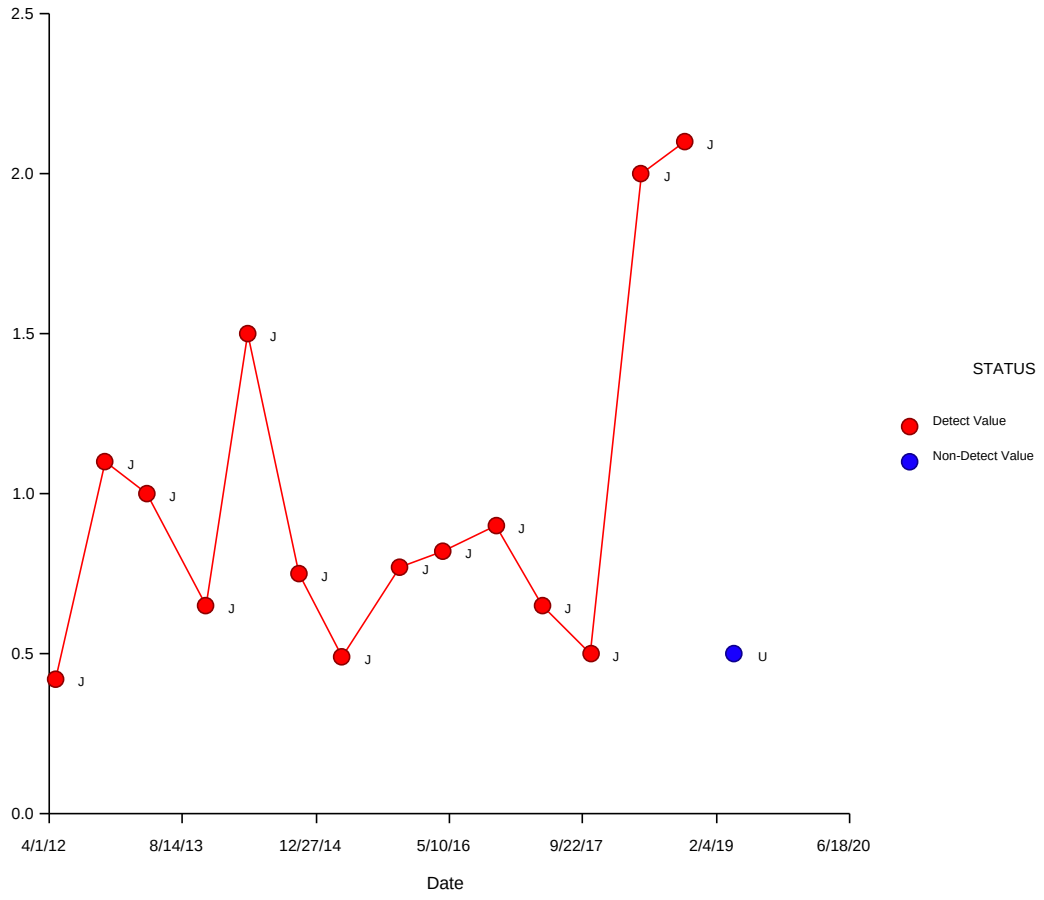
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_135"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_135"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

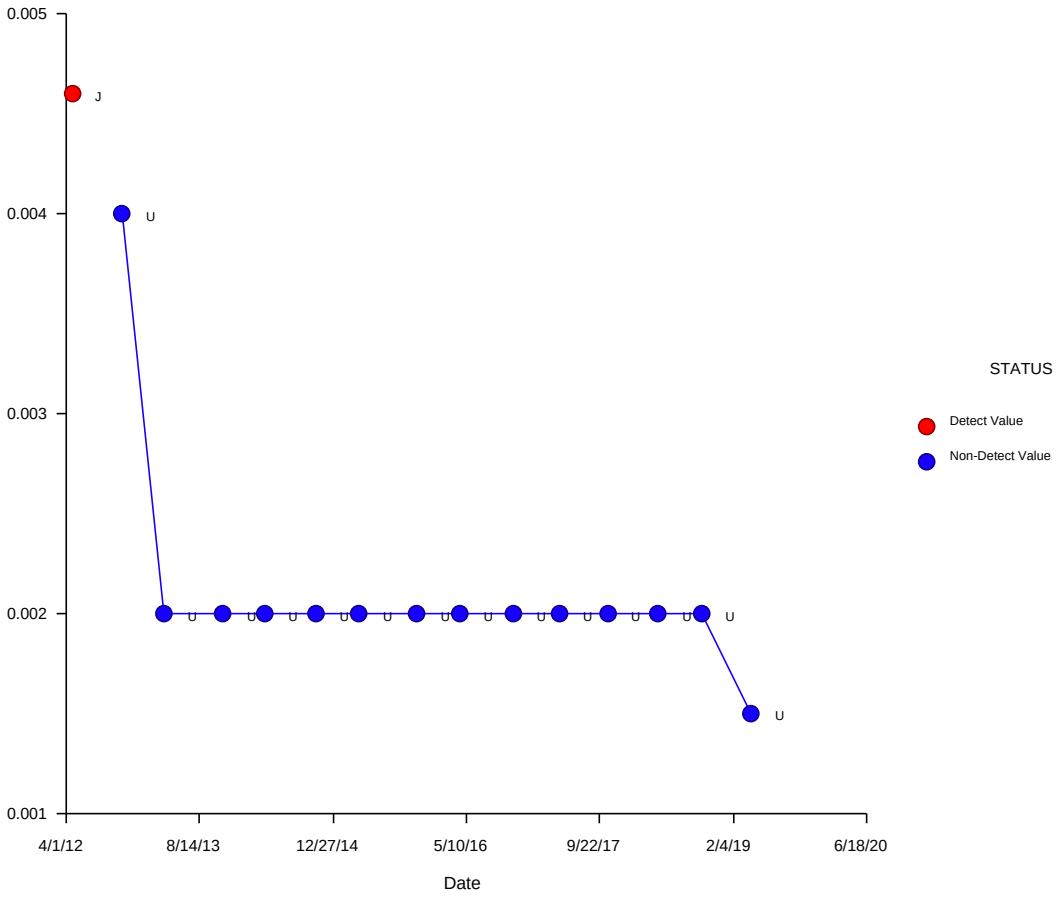
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_137"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_137"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

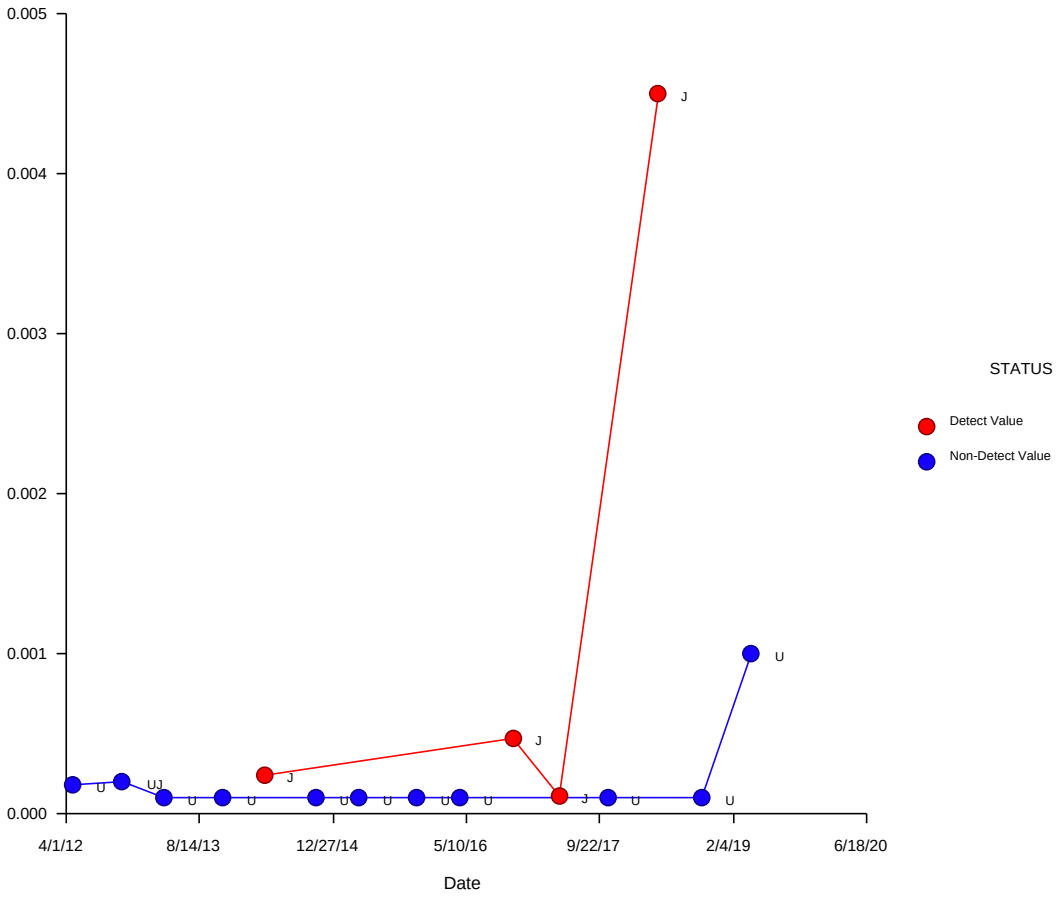
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_139"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_139"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

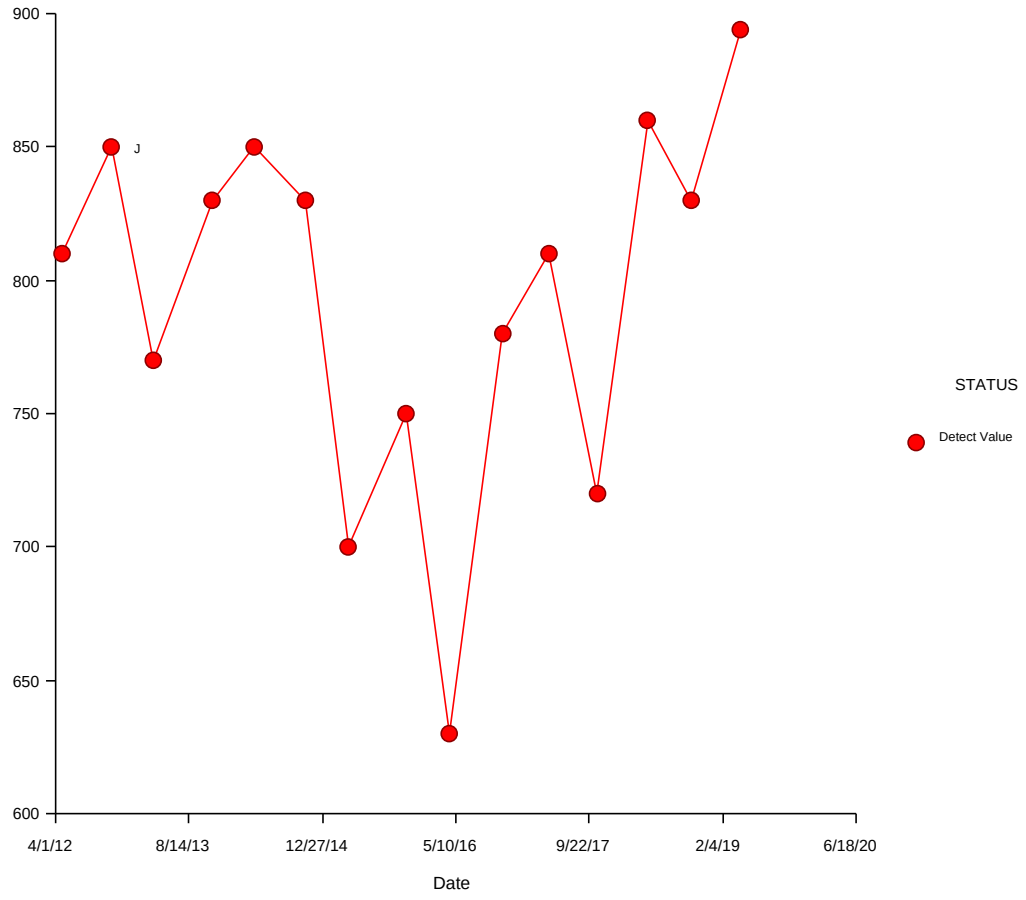
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_141"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_141"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

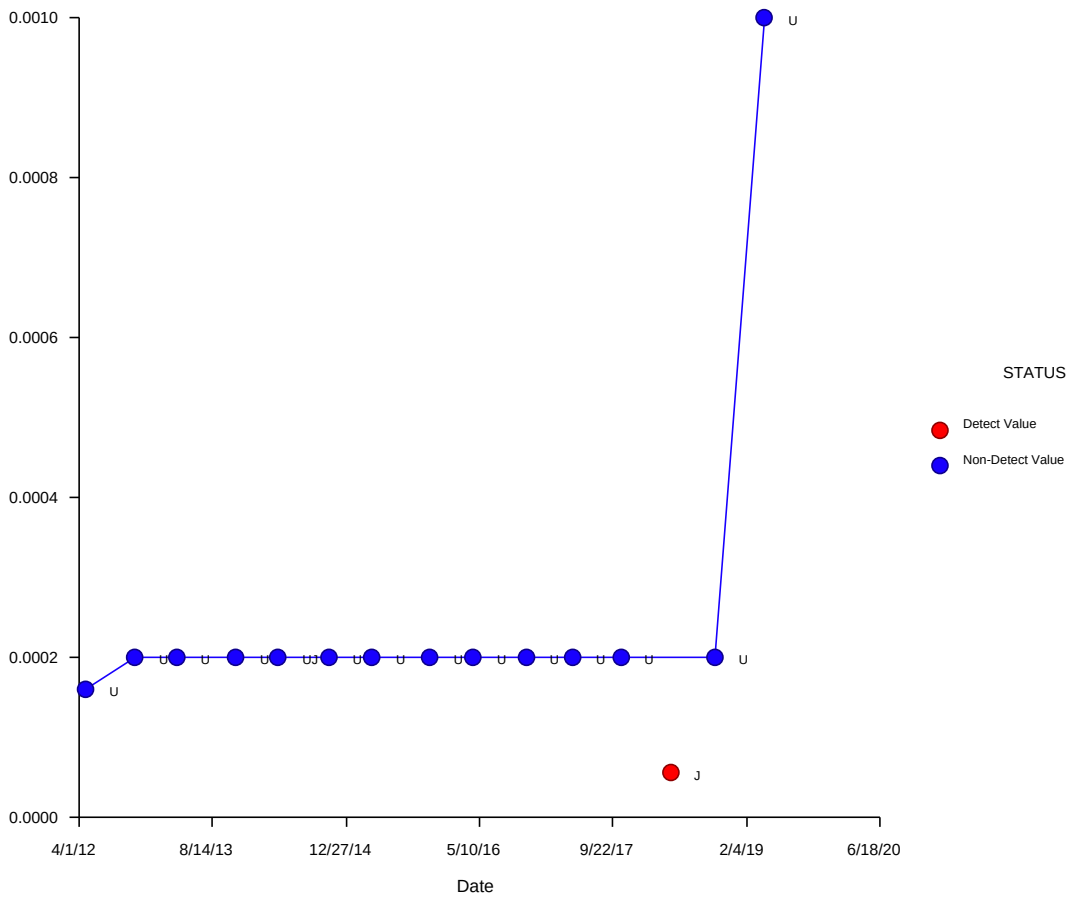
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_143"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_143"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

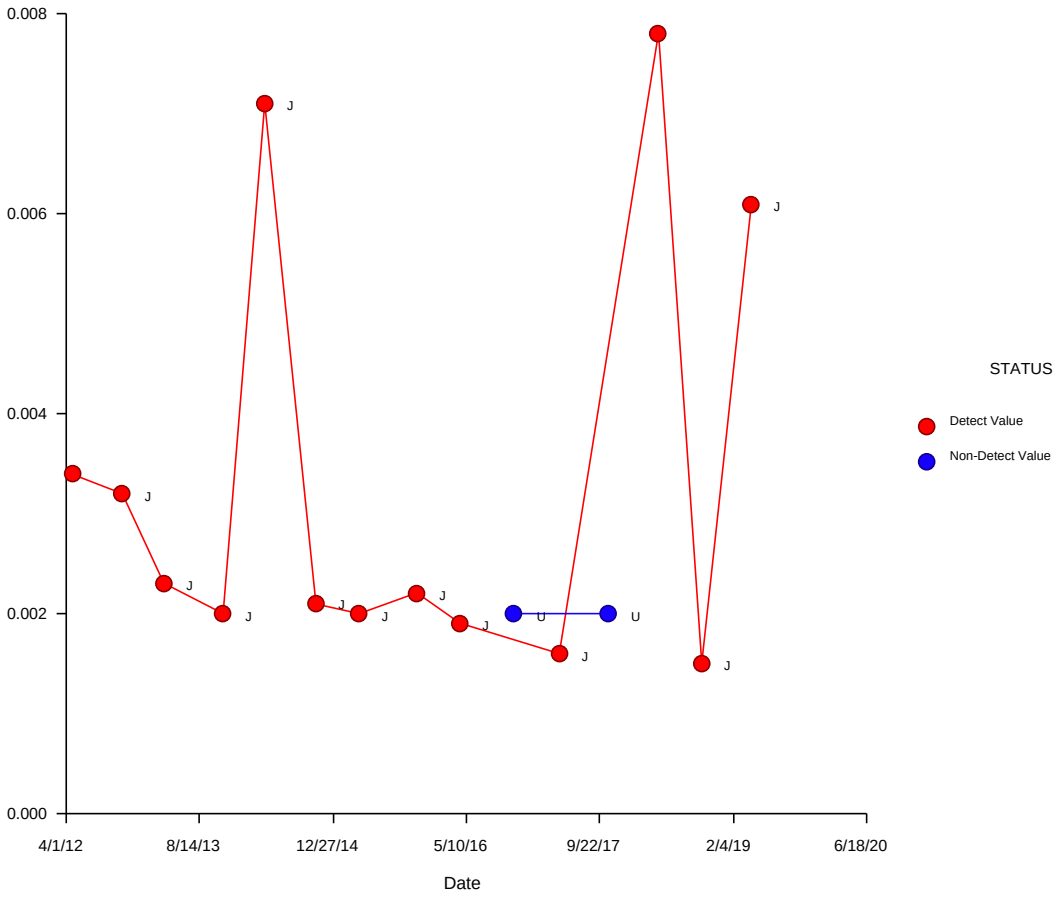
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_145"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_145"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

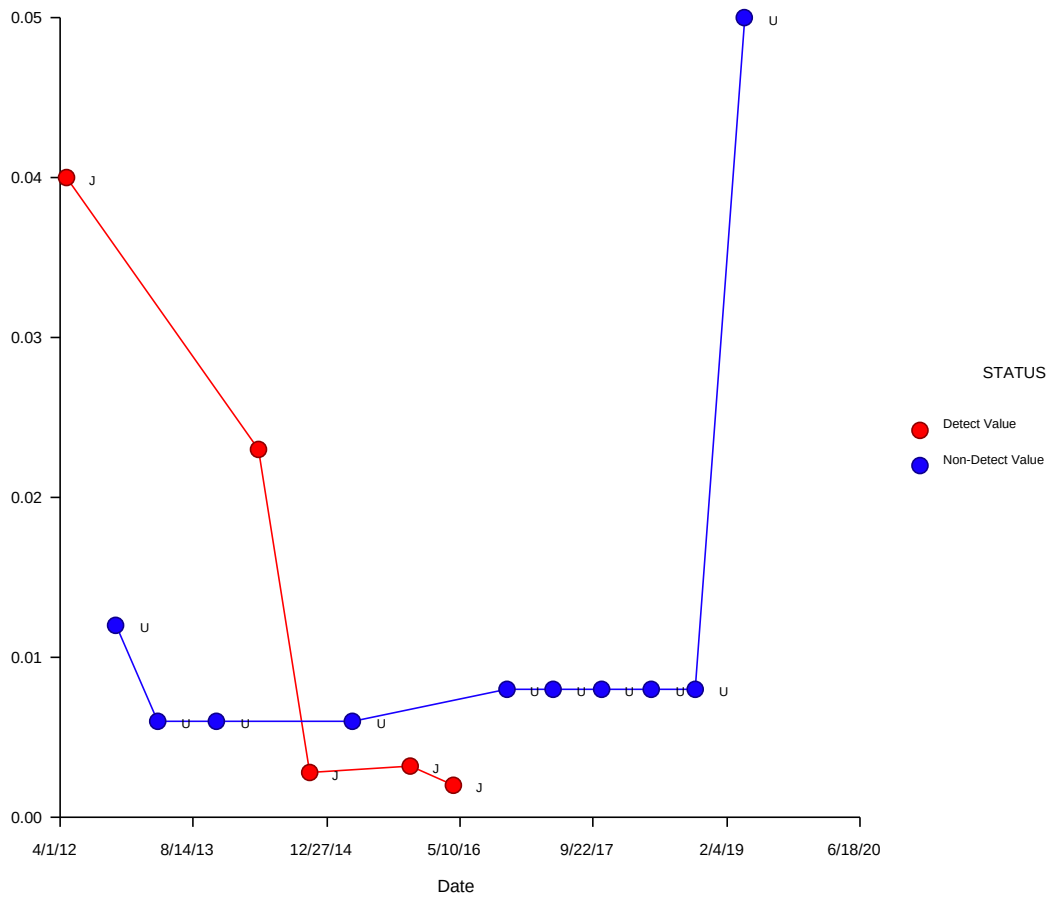
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_147"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_147"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

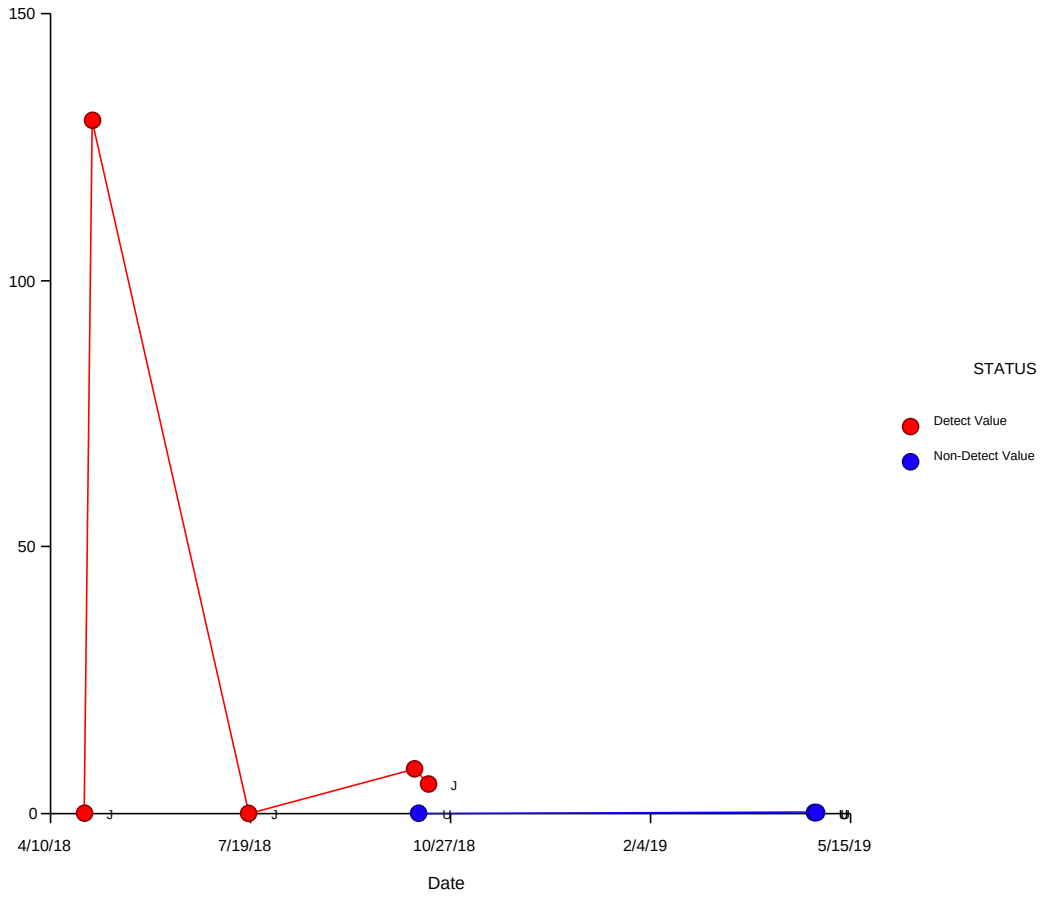
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_102"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_102"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

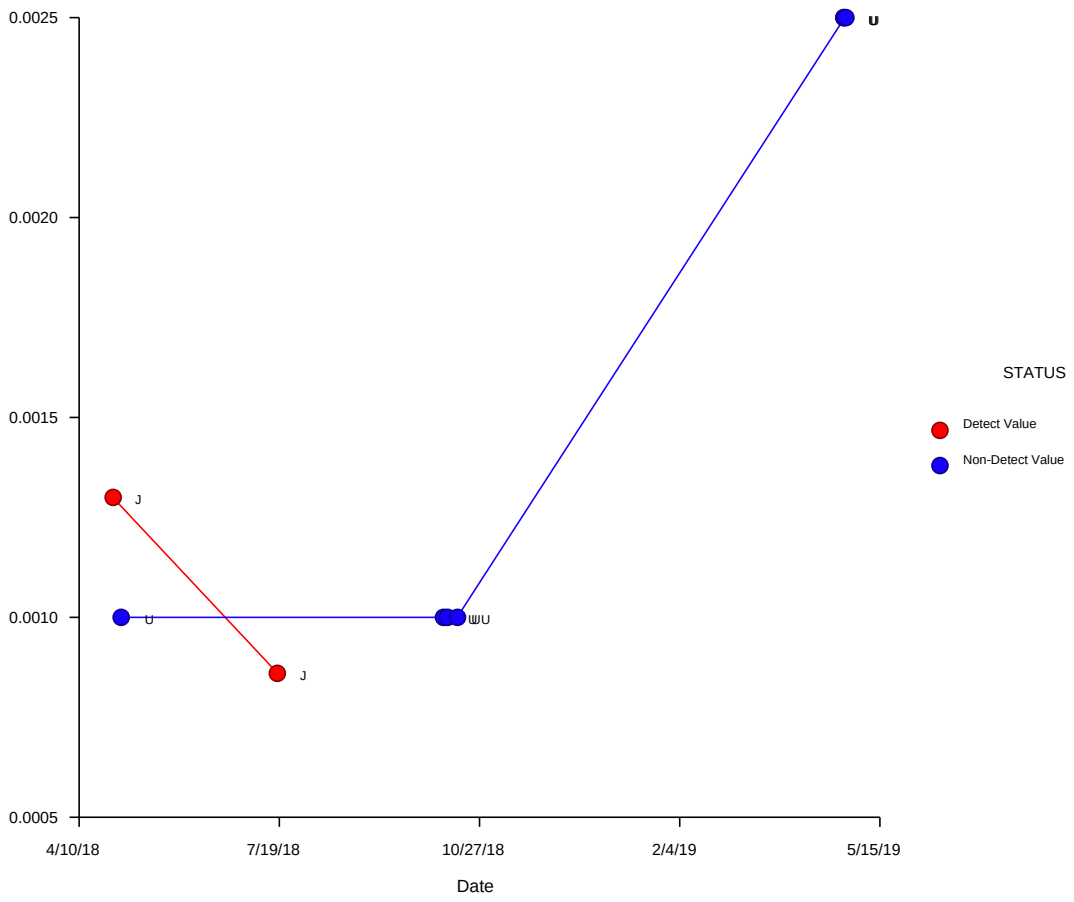
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_104"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_104"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

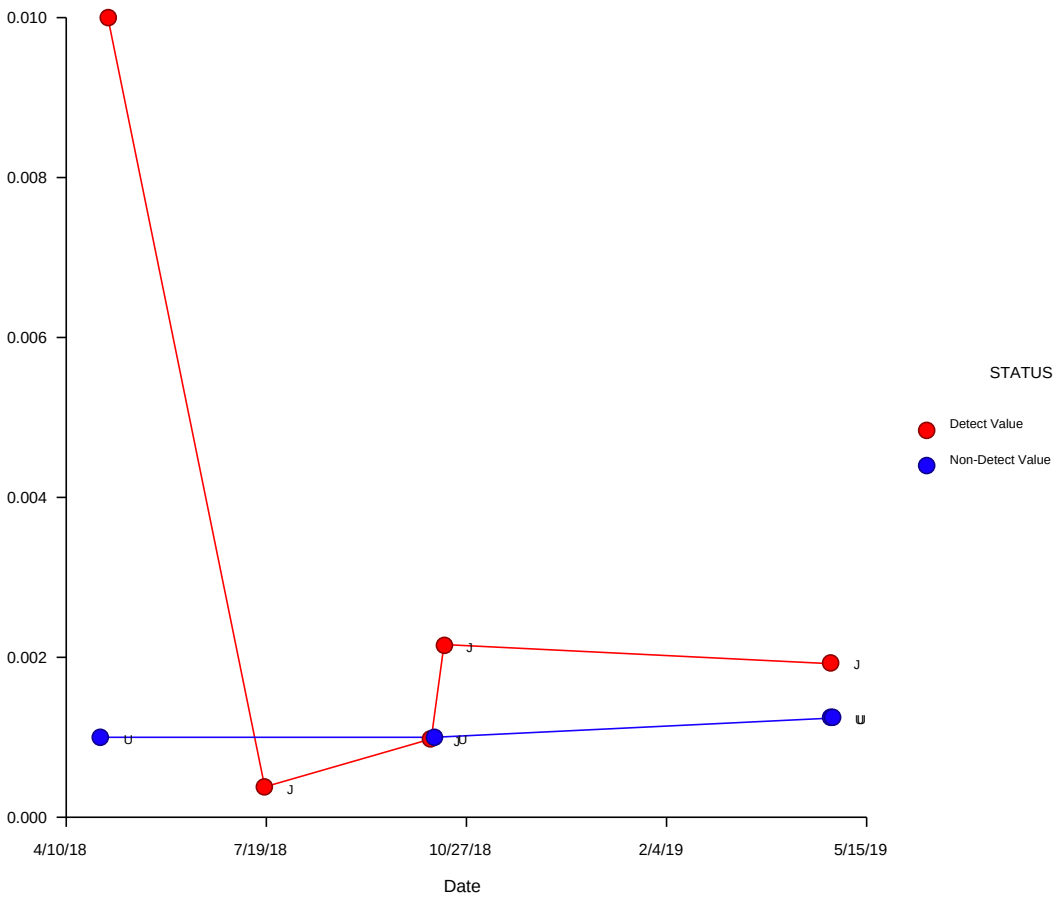
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_106"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_106"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

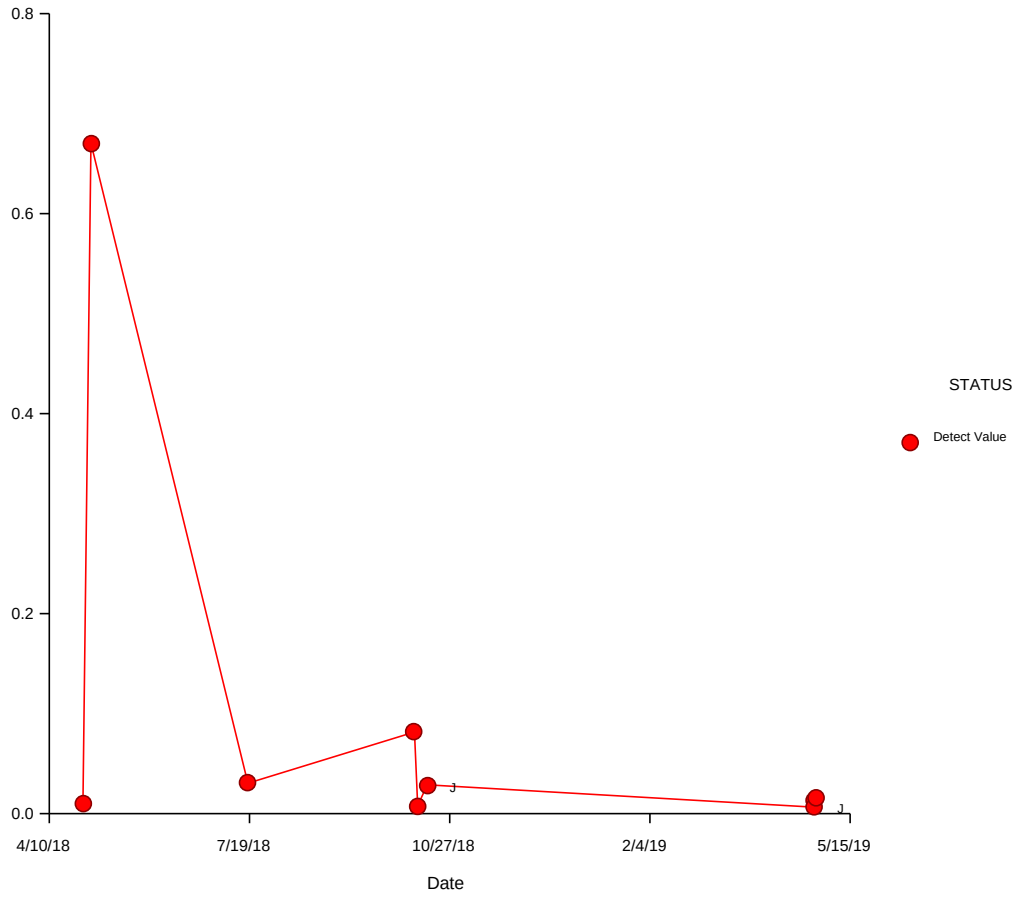
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_108"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_108"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

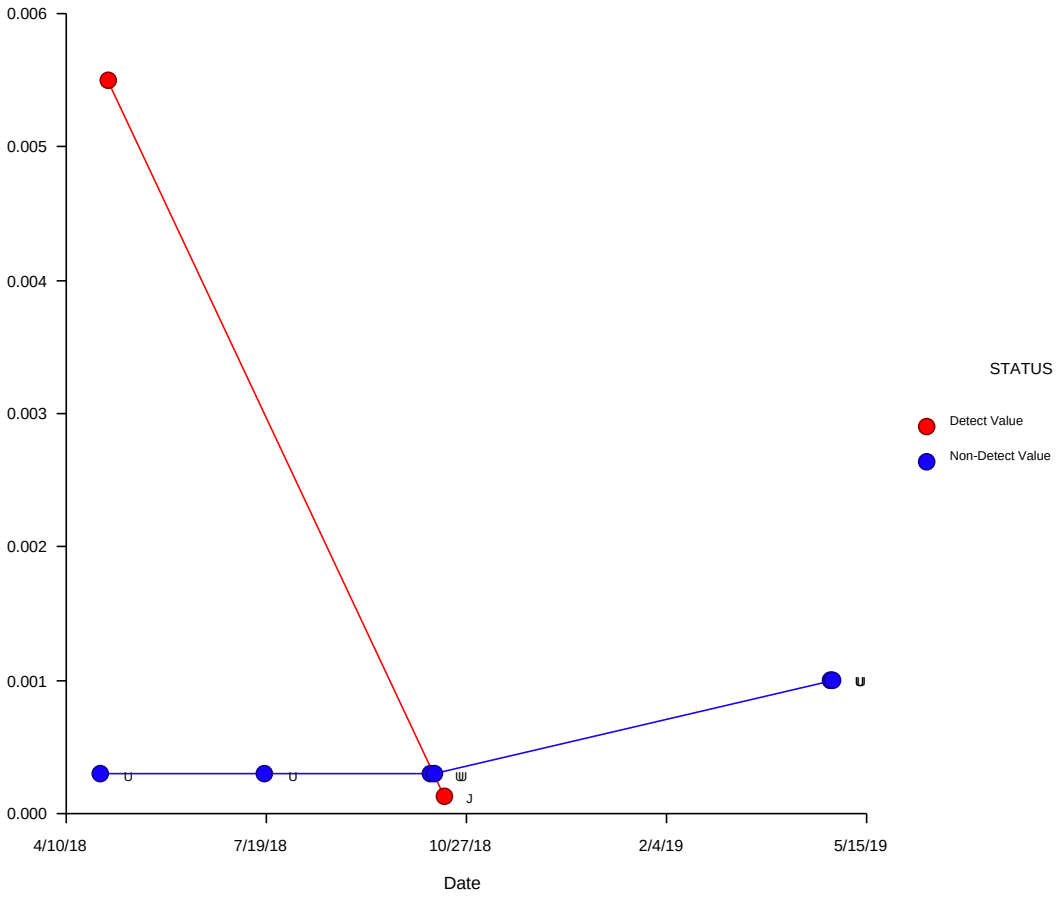
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_110"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_110"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

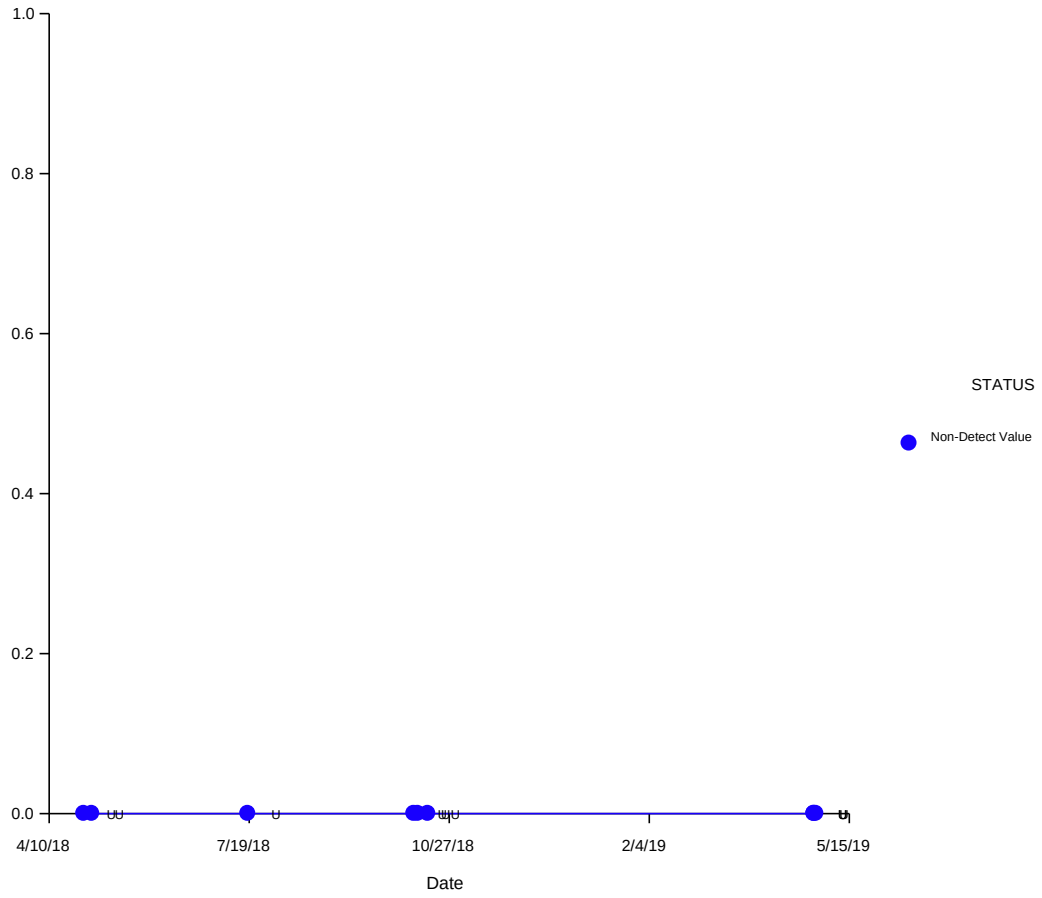
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_112"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_112"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

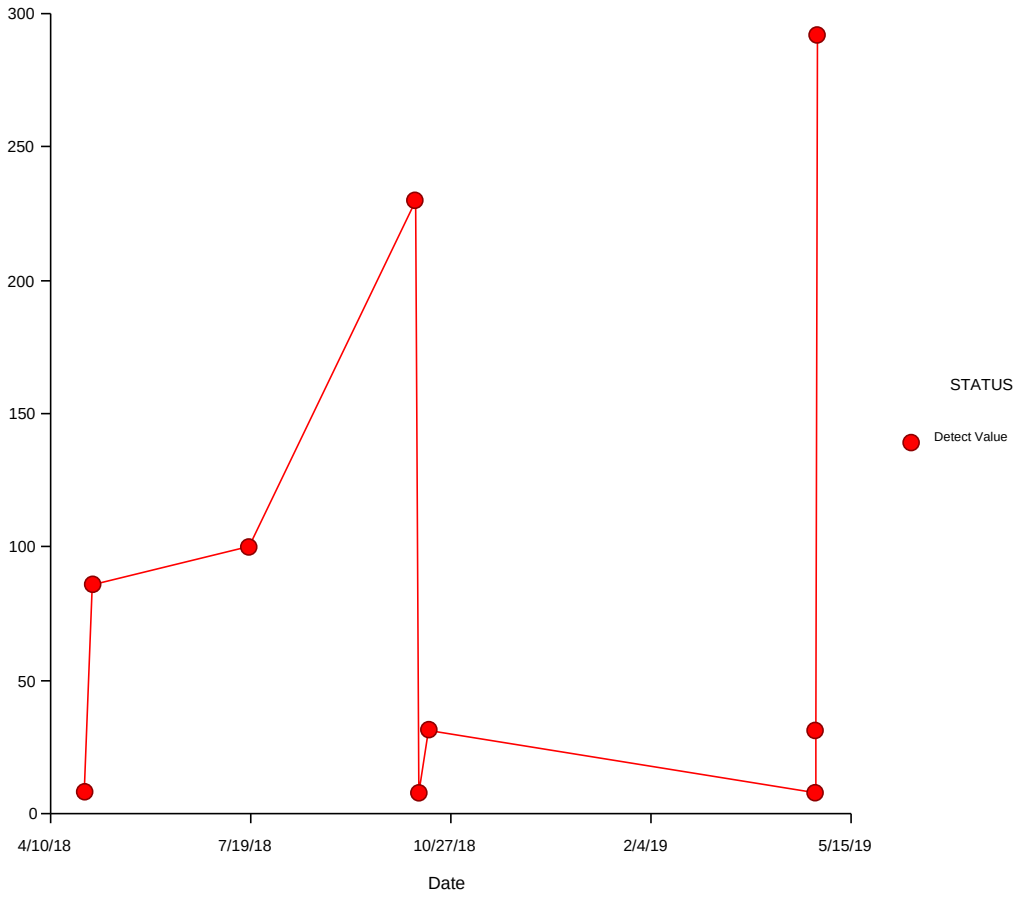
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_114"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_114"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

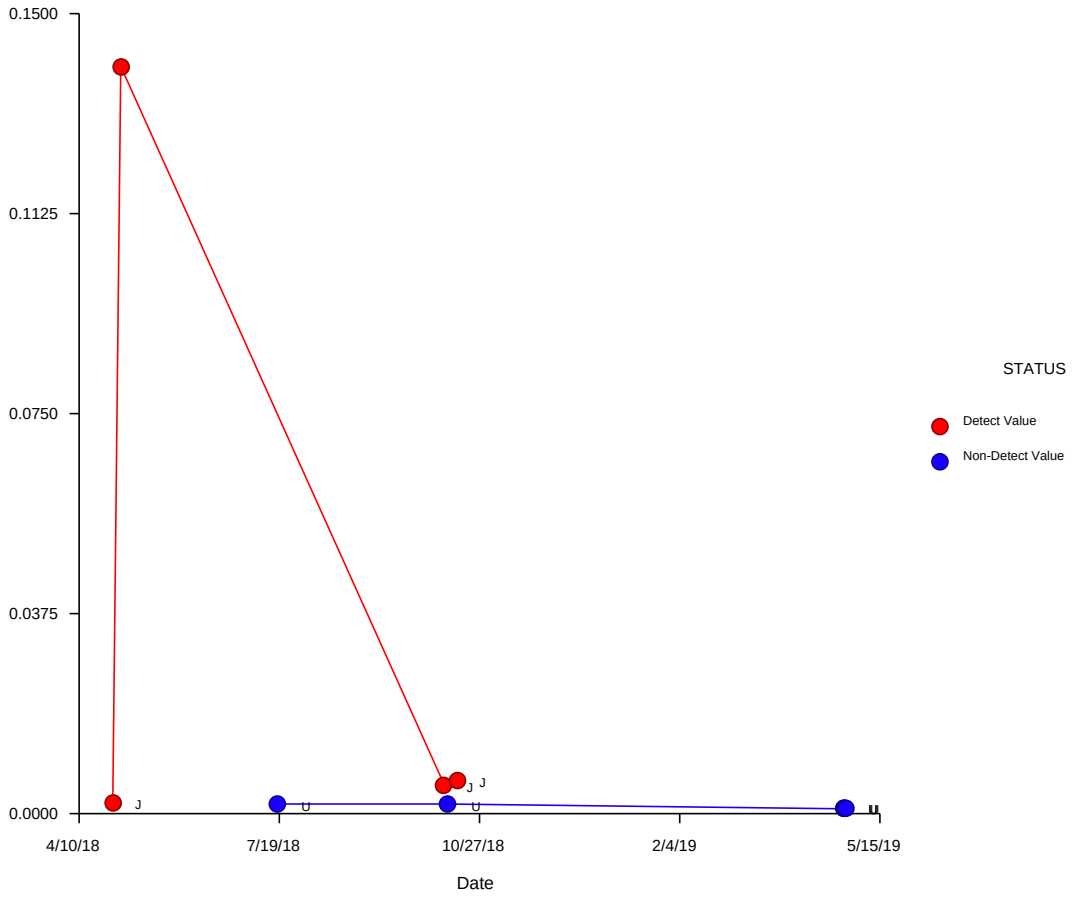
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_116"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_116"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

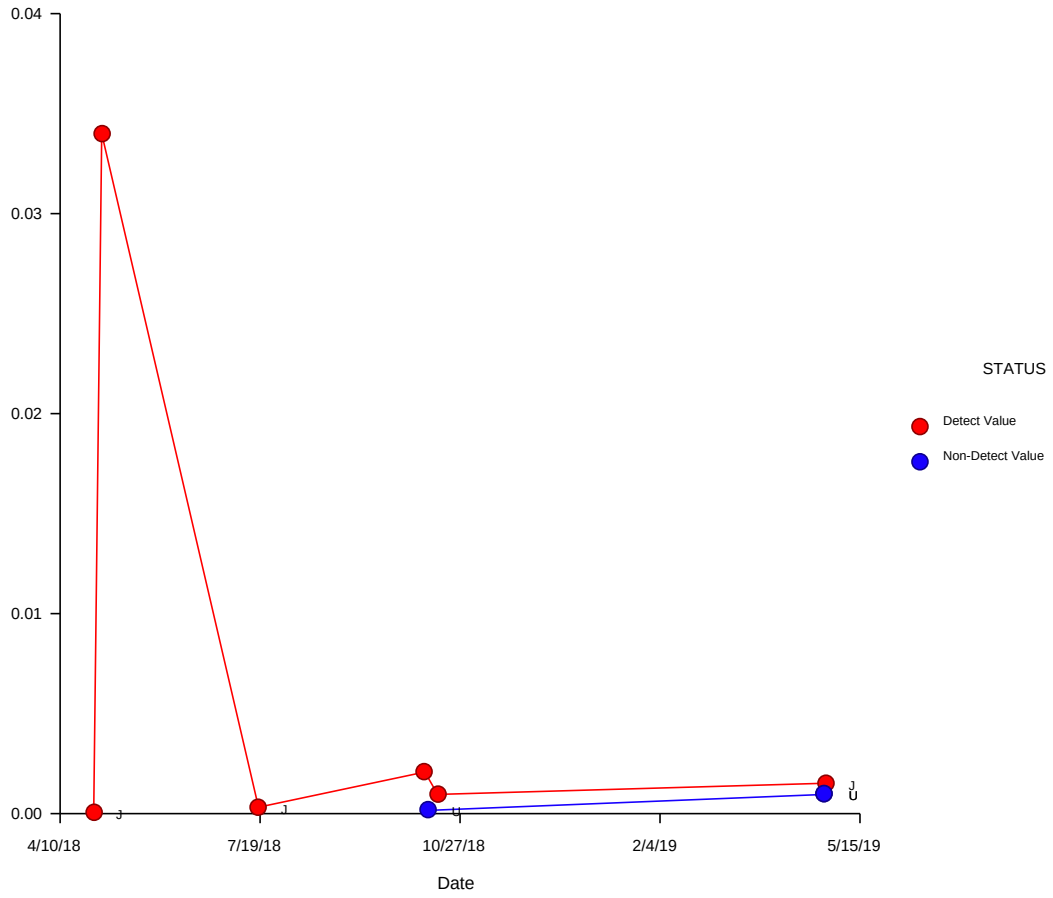
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_118"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_118"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

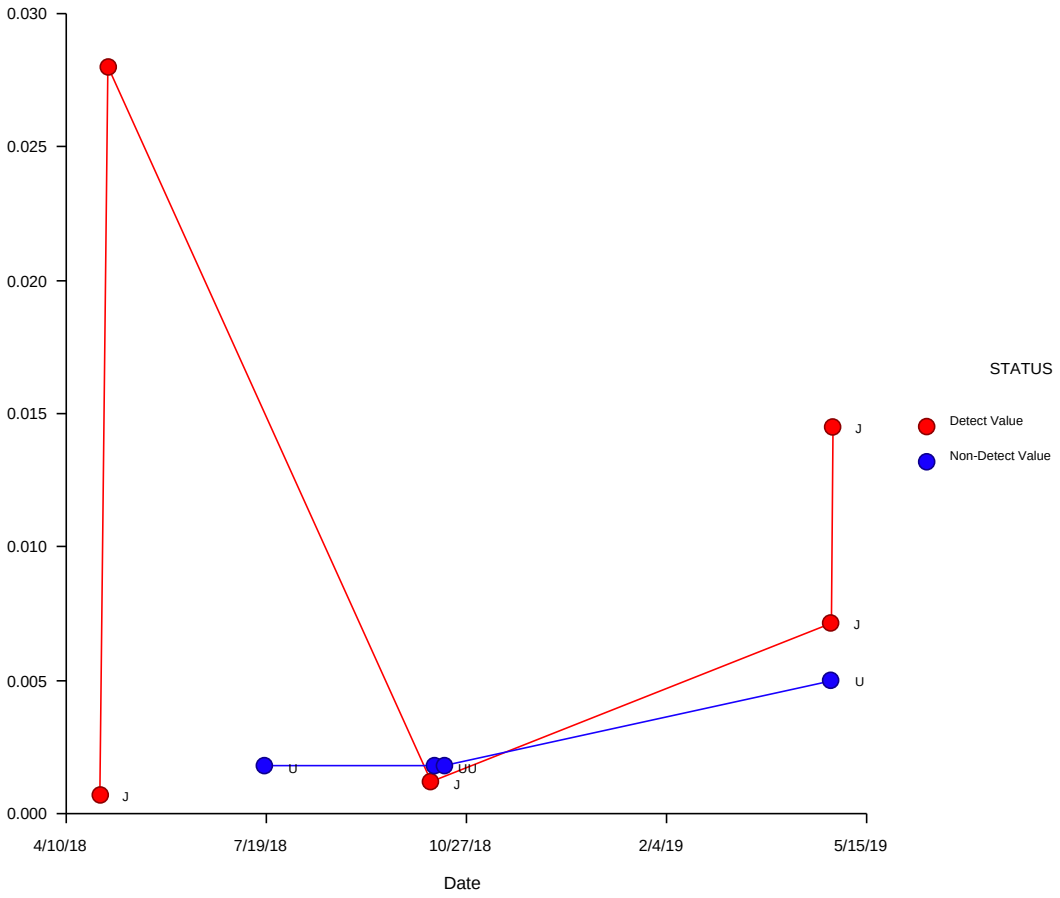
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_120"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_120"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

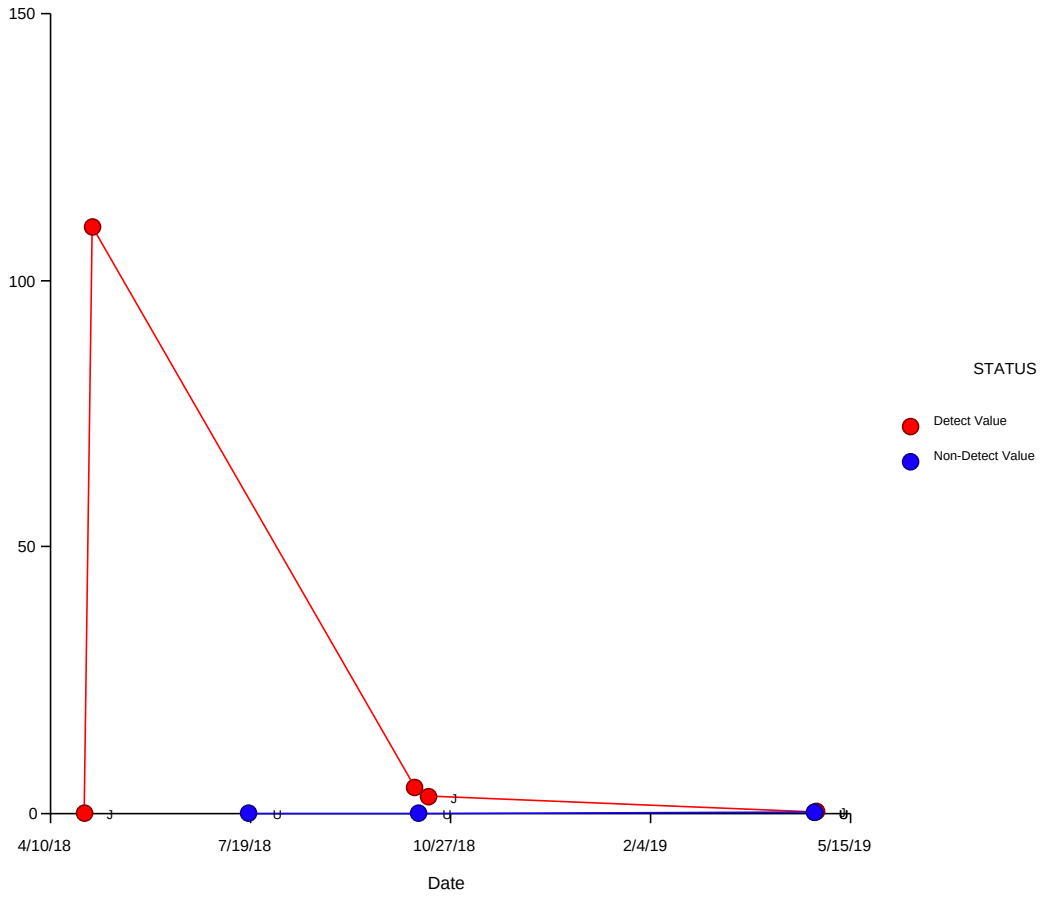
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_122"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_122"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

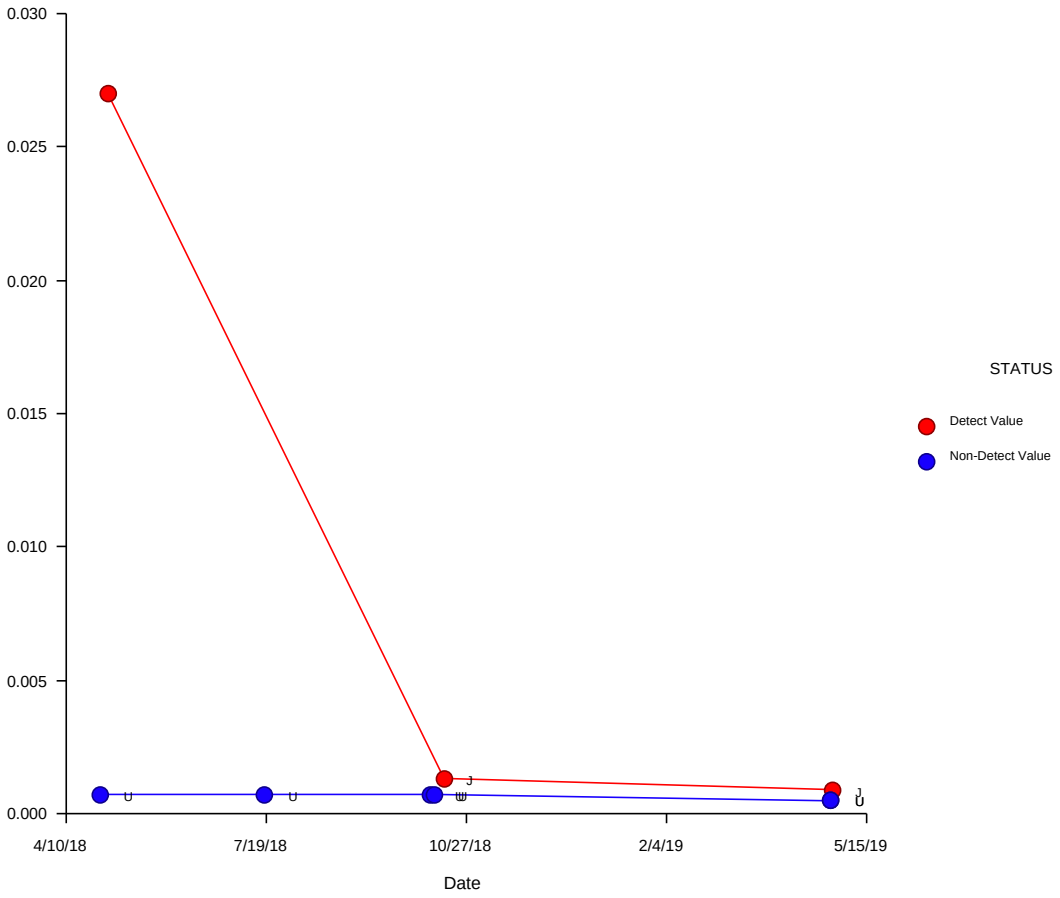
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_124"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_124"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

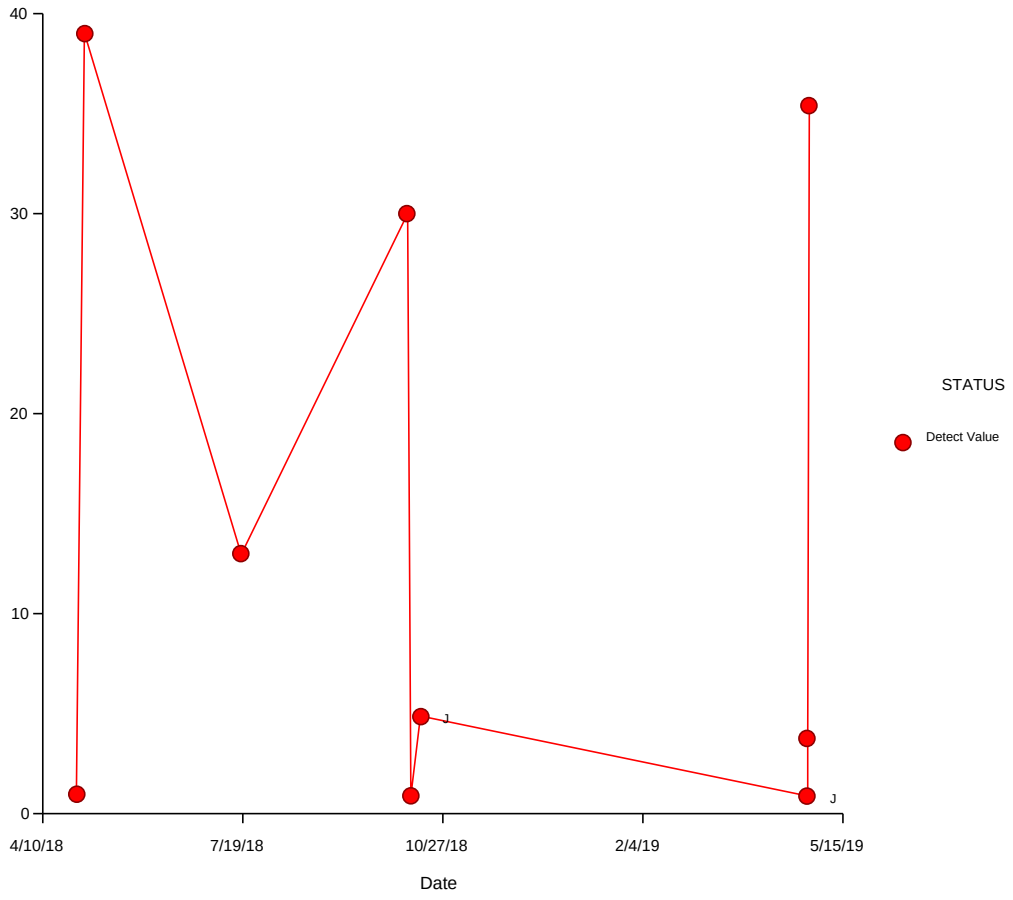
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_126"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_126"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

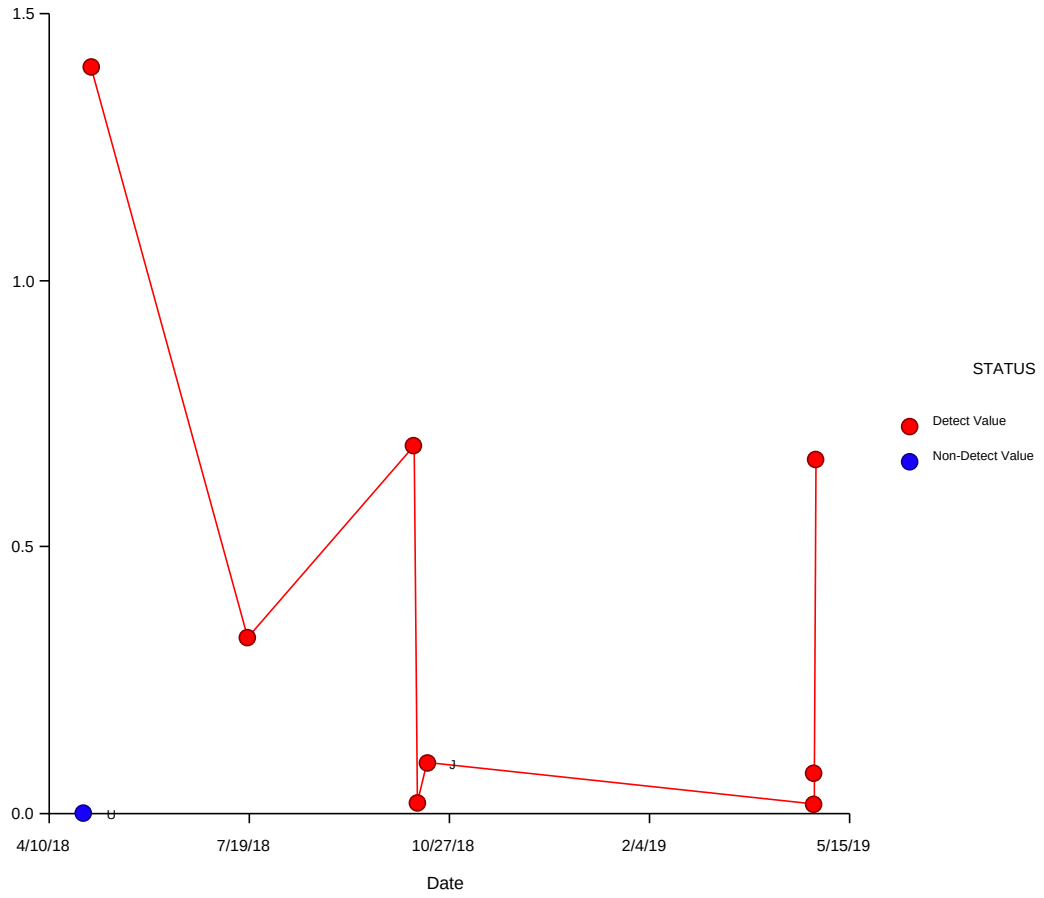
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_128"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_128"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

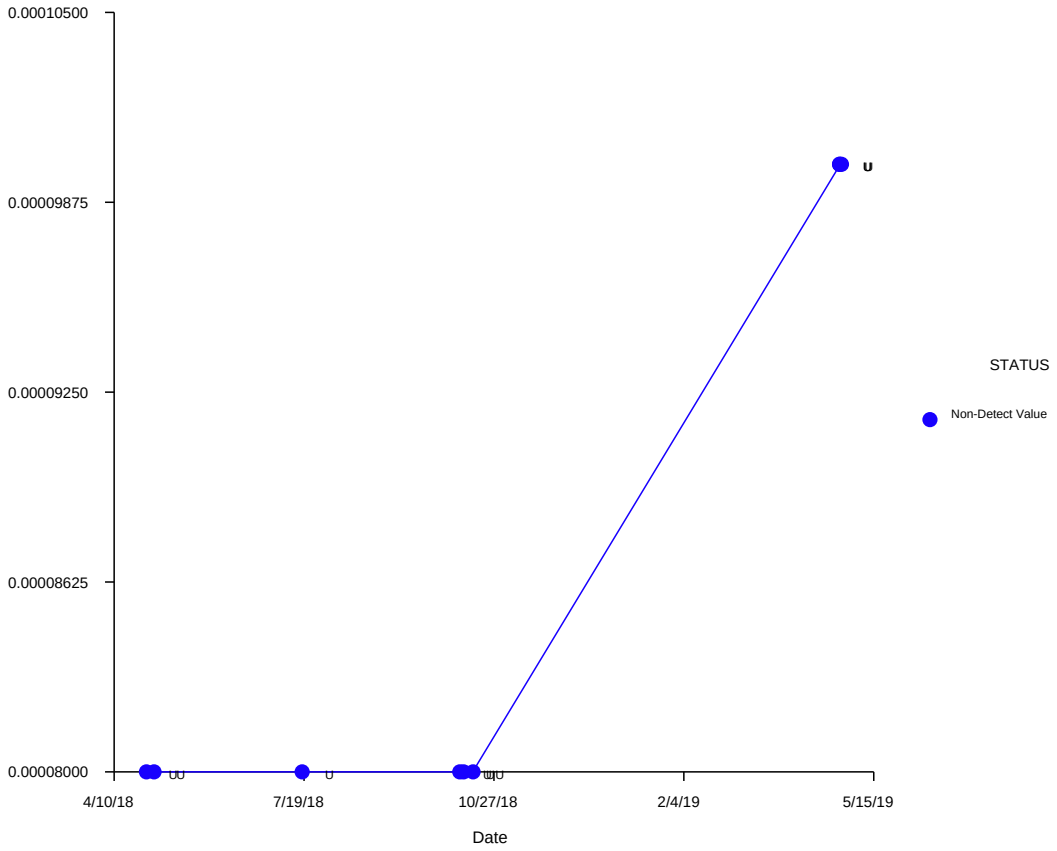
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_130"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_130"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

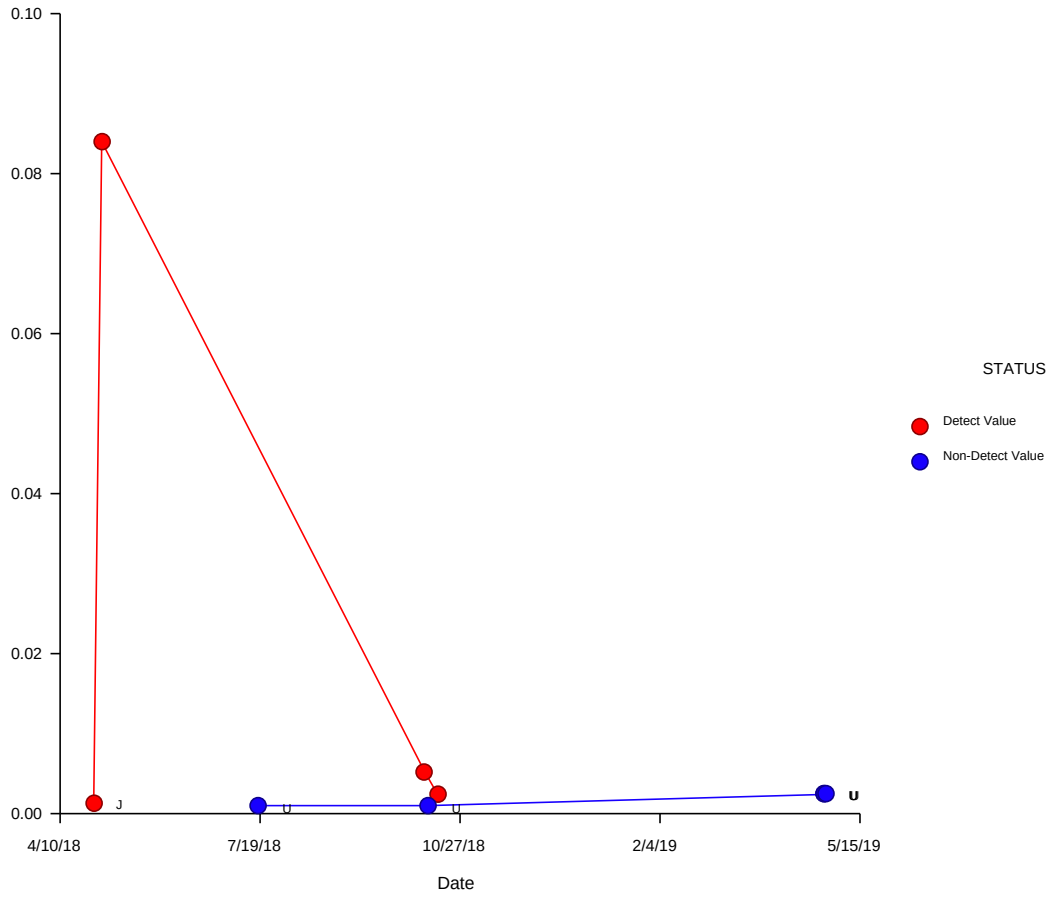
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_132"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_132"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

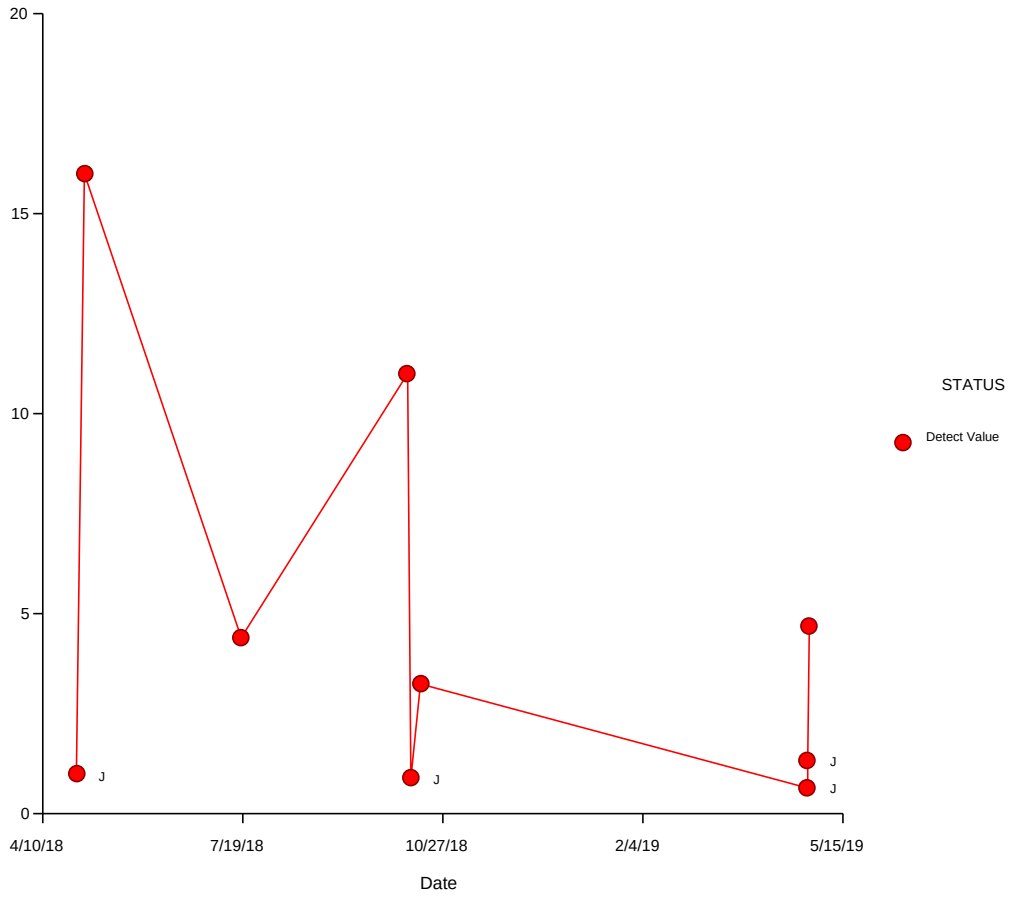
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_136"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_136"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

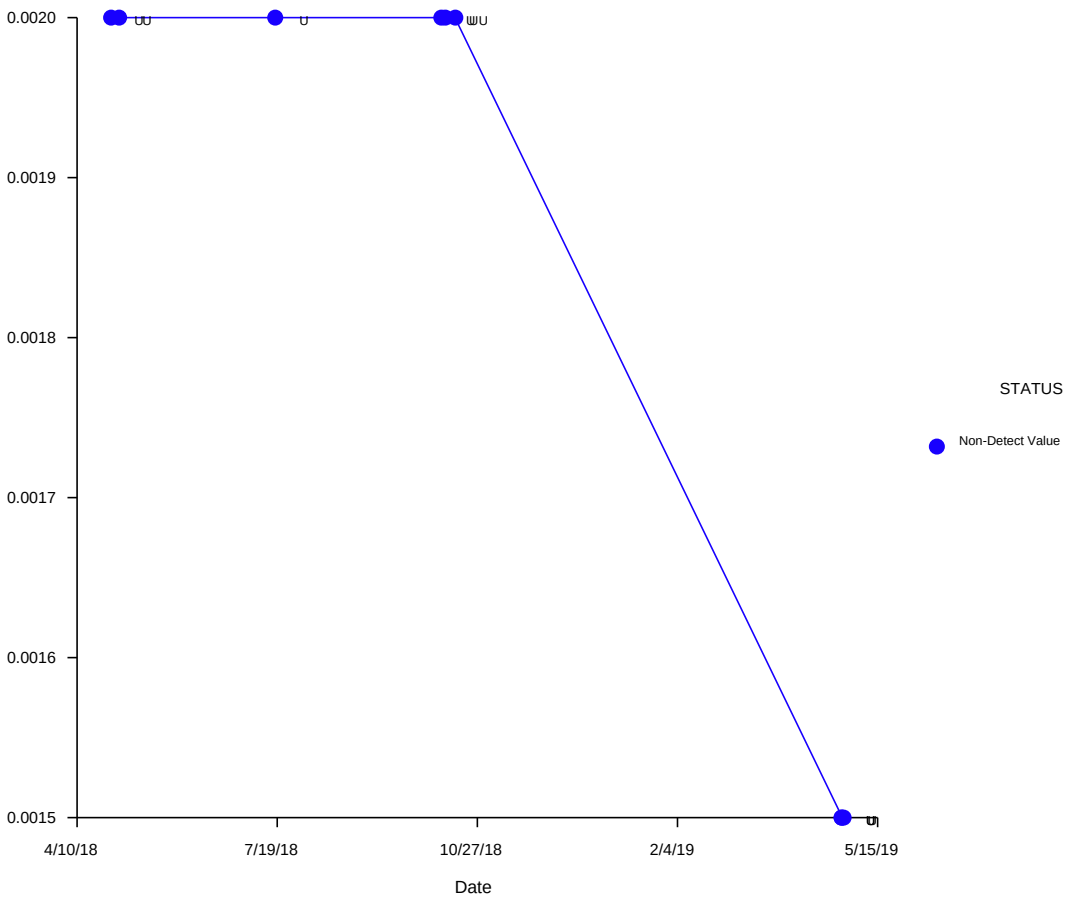
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_138"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_138"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

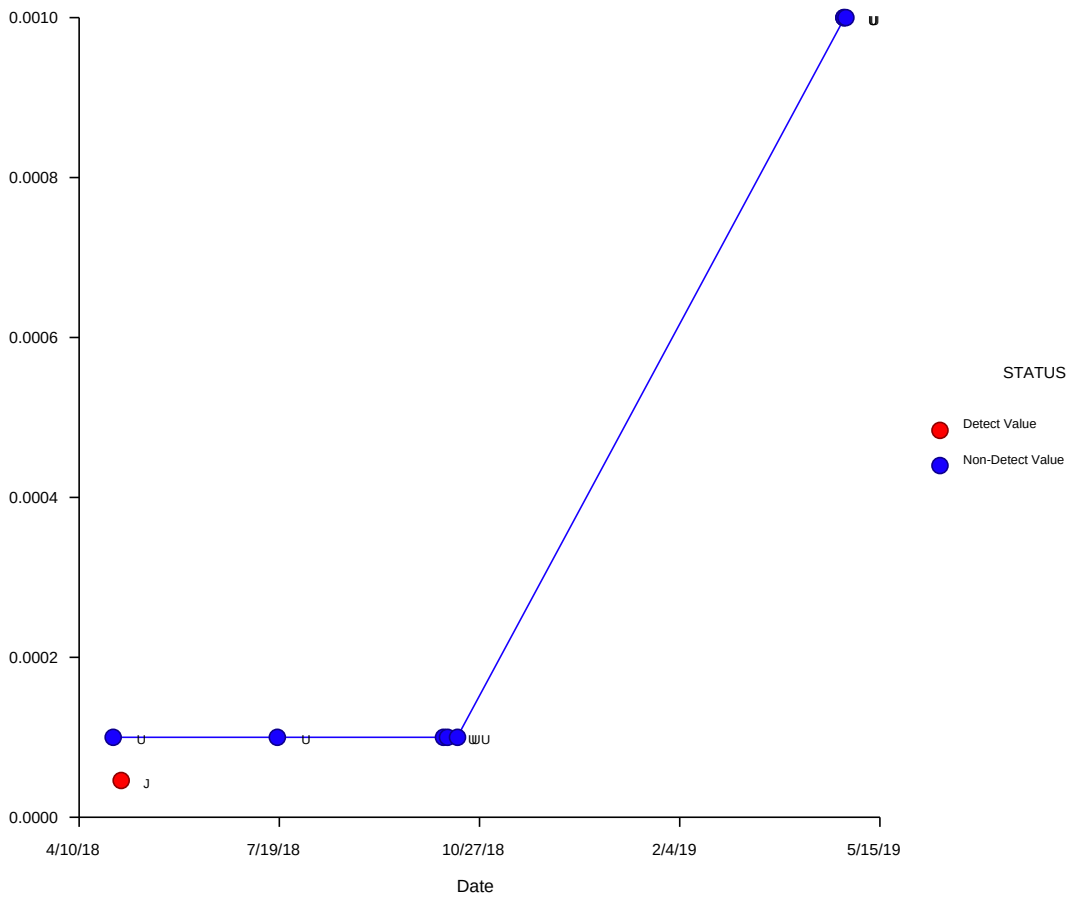
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_140"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_140"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

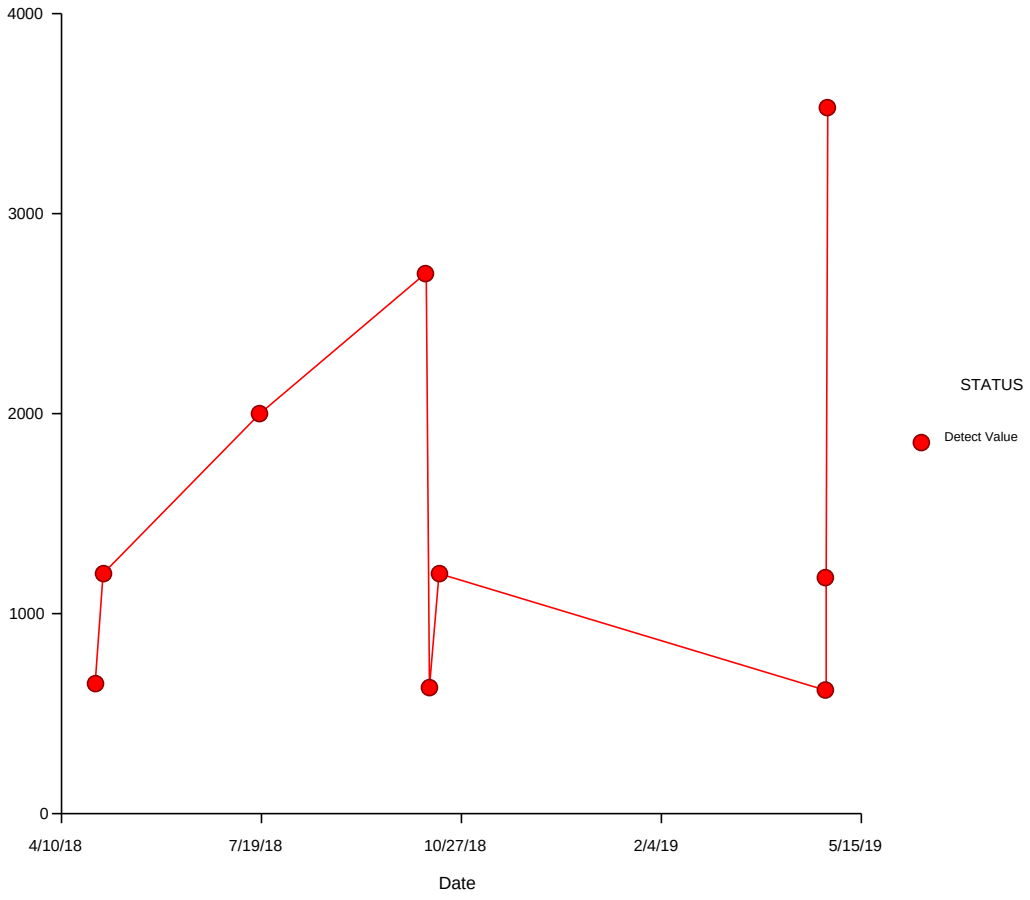
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_142"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_142"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

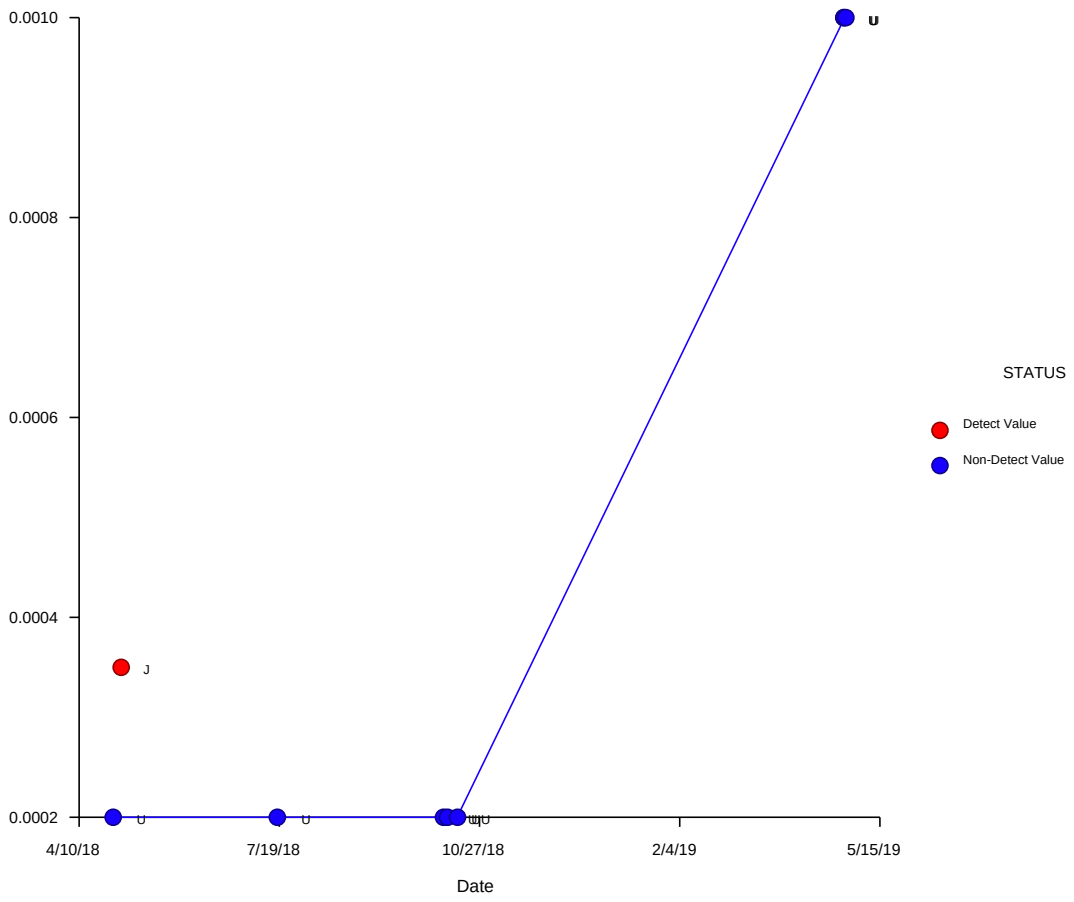
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_144"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_144"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

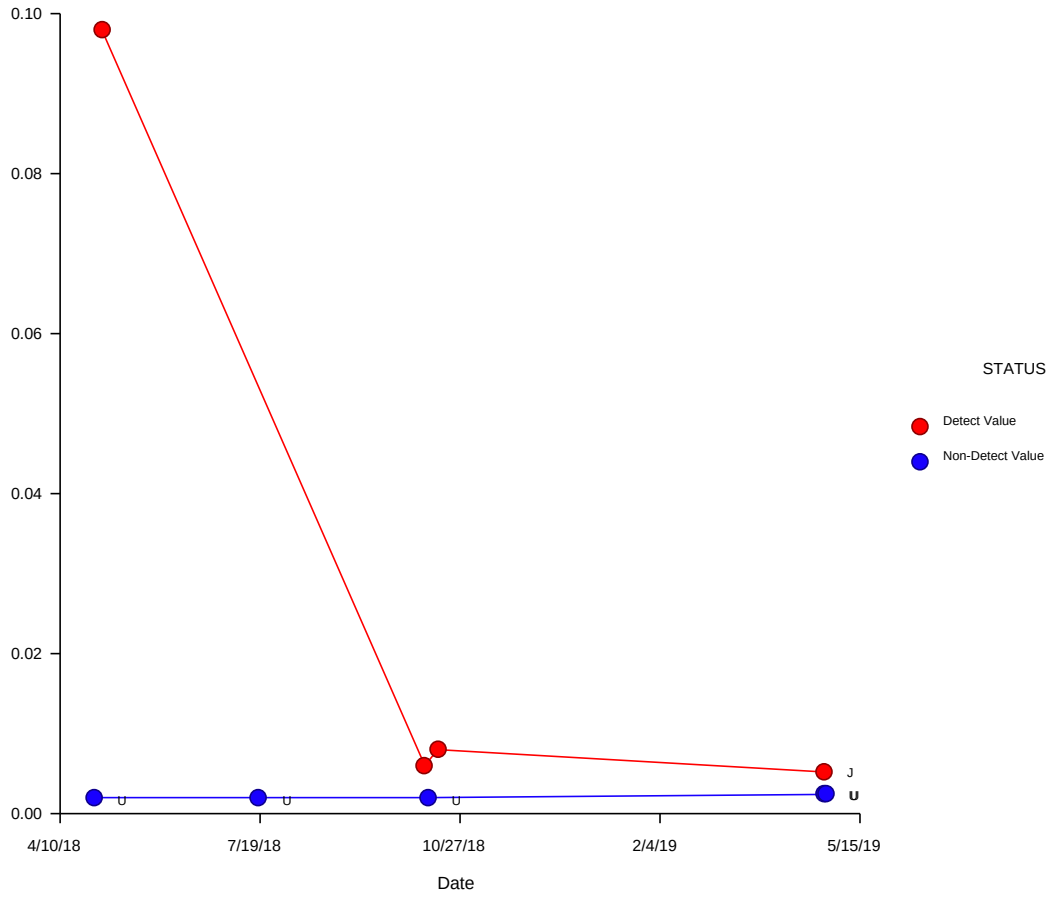
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_146"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_146"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

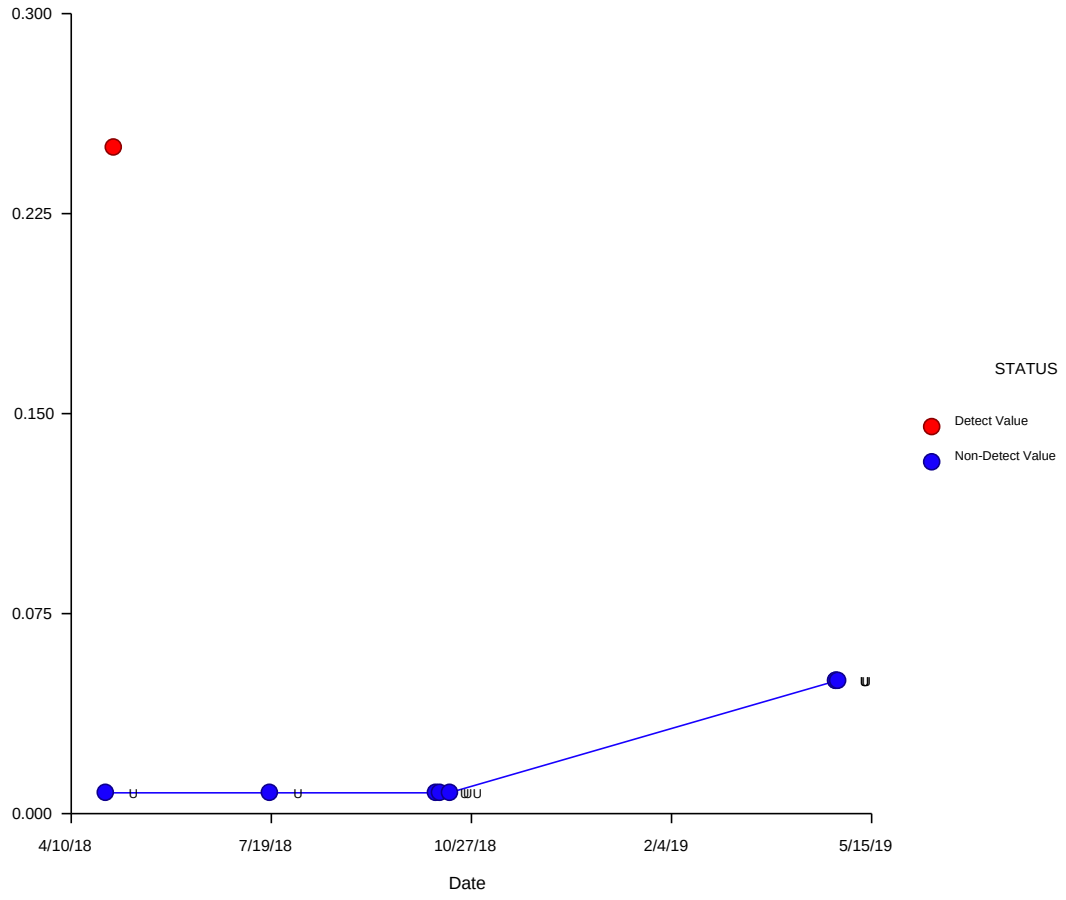
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_148"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_148"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

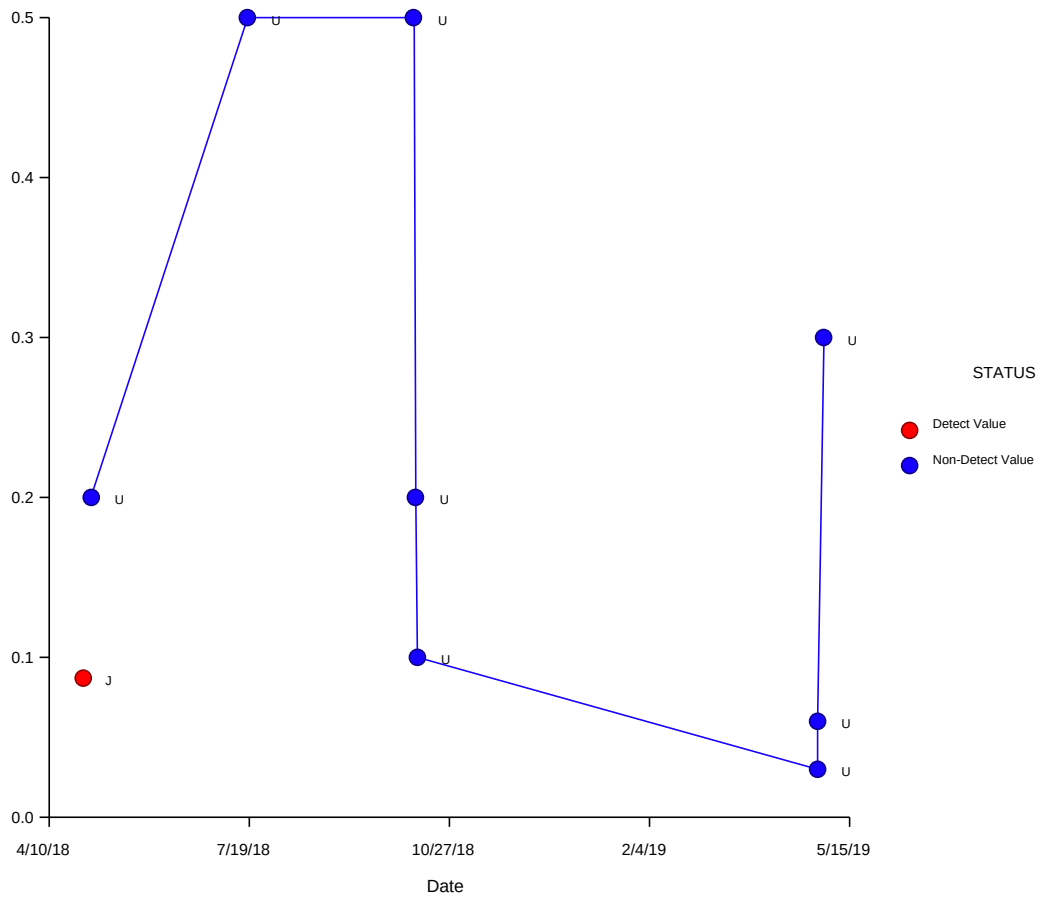
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_2_133"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_2_133"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

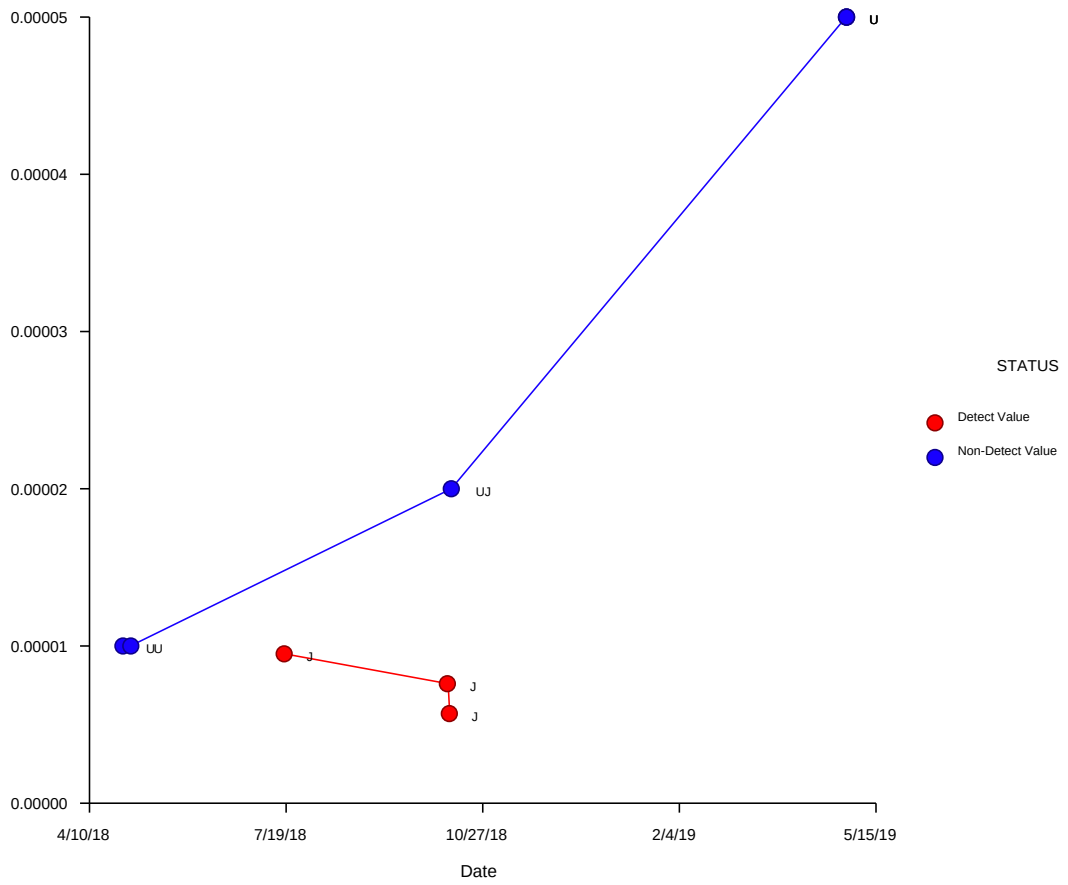
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_3_134"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_3_134"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

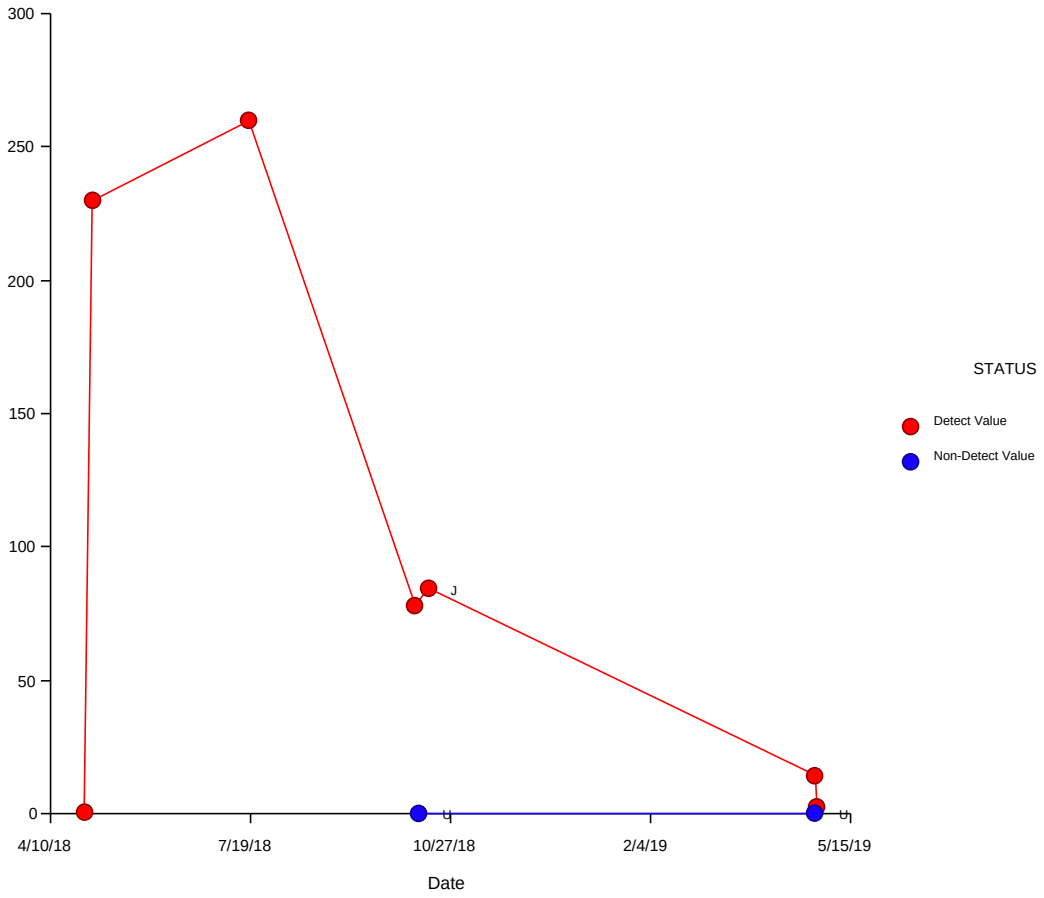
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_101"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_101"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

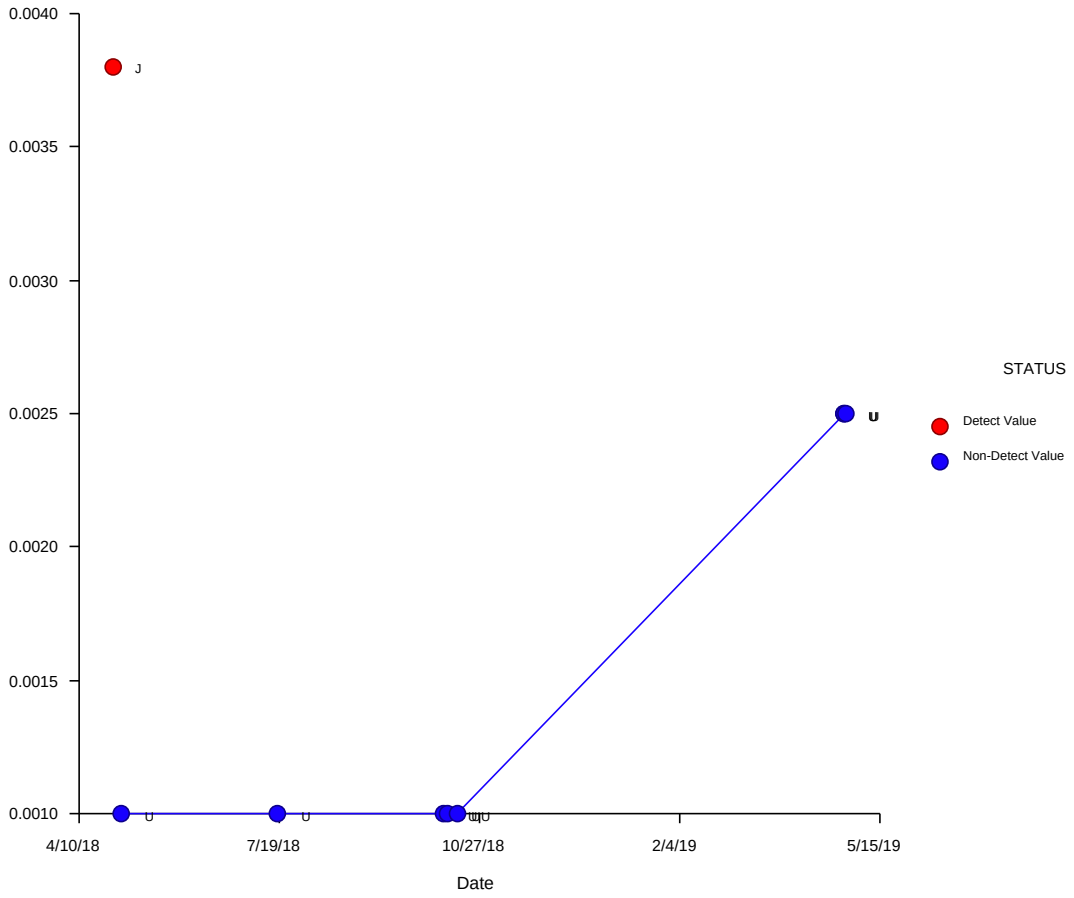
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_103"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_103"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

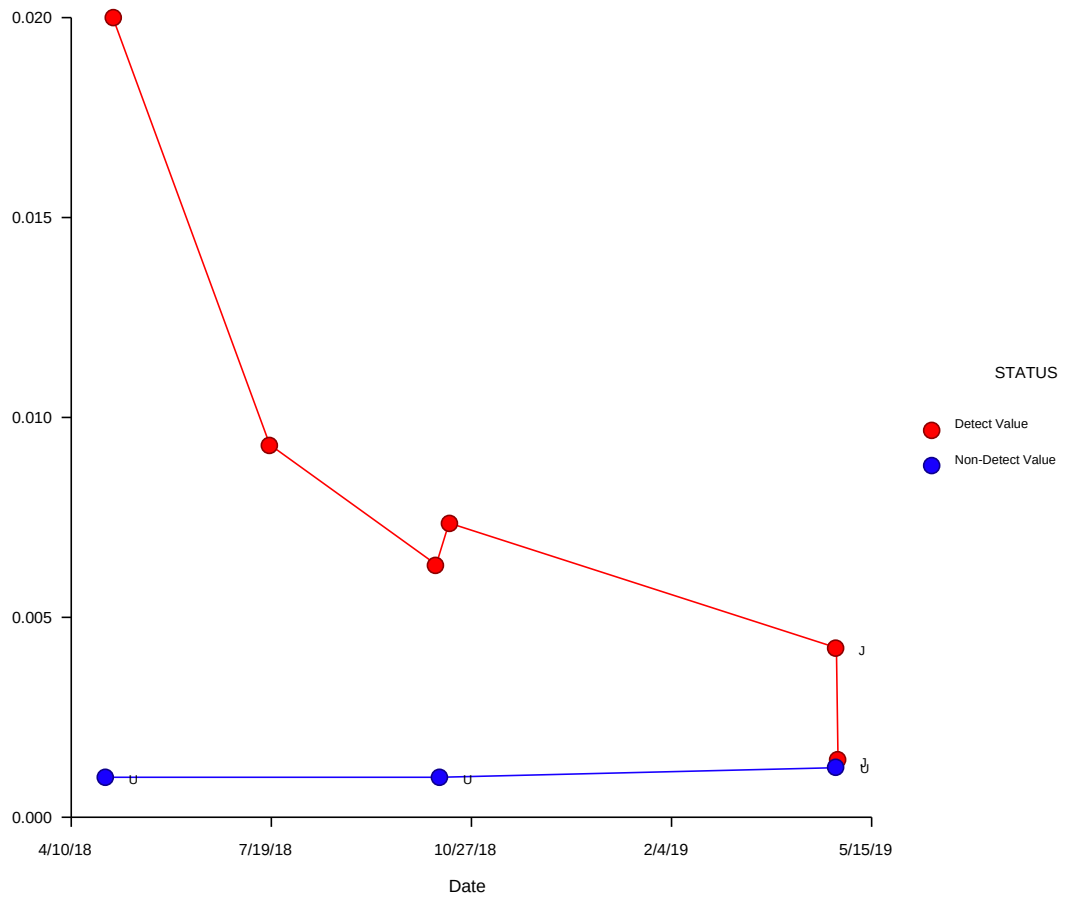
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_105"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_105"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

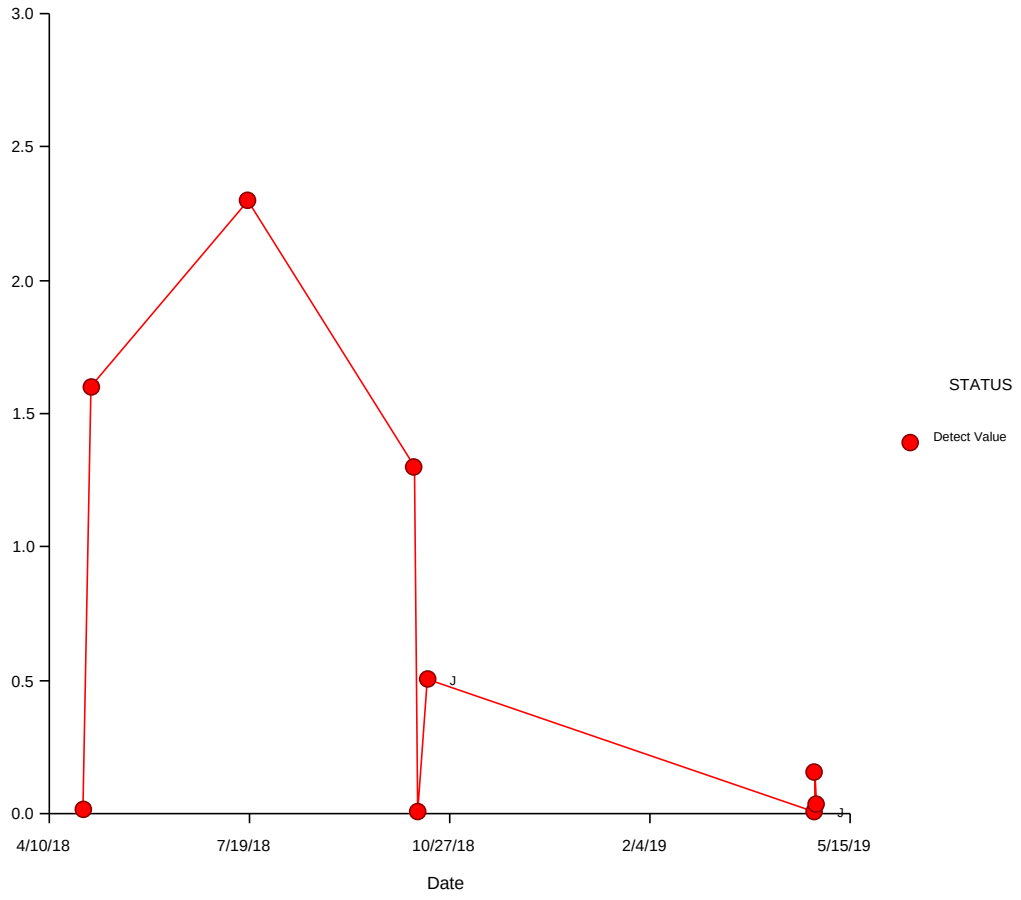
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_107"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_107"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

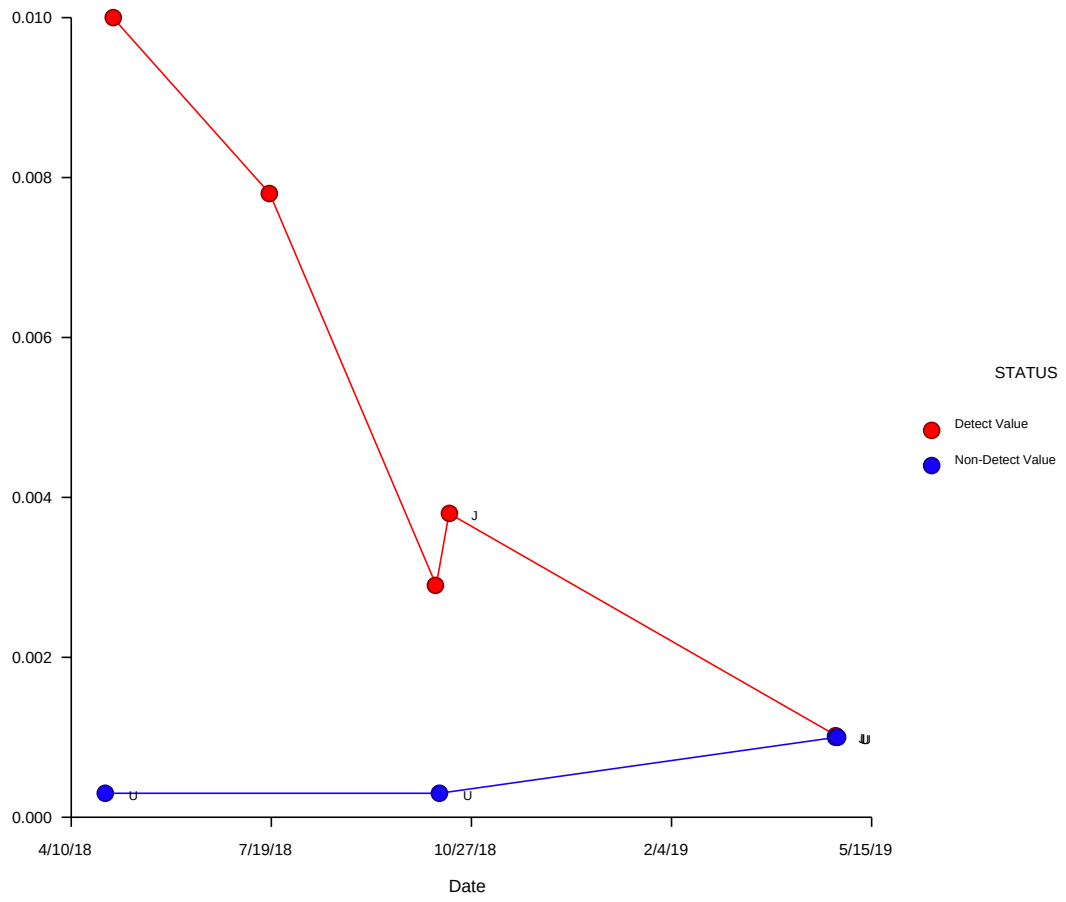
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_109"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_109"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

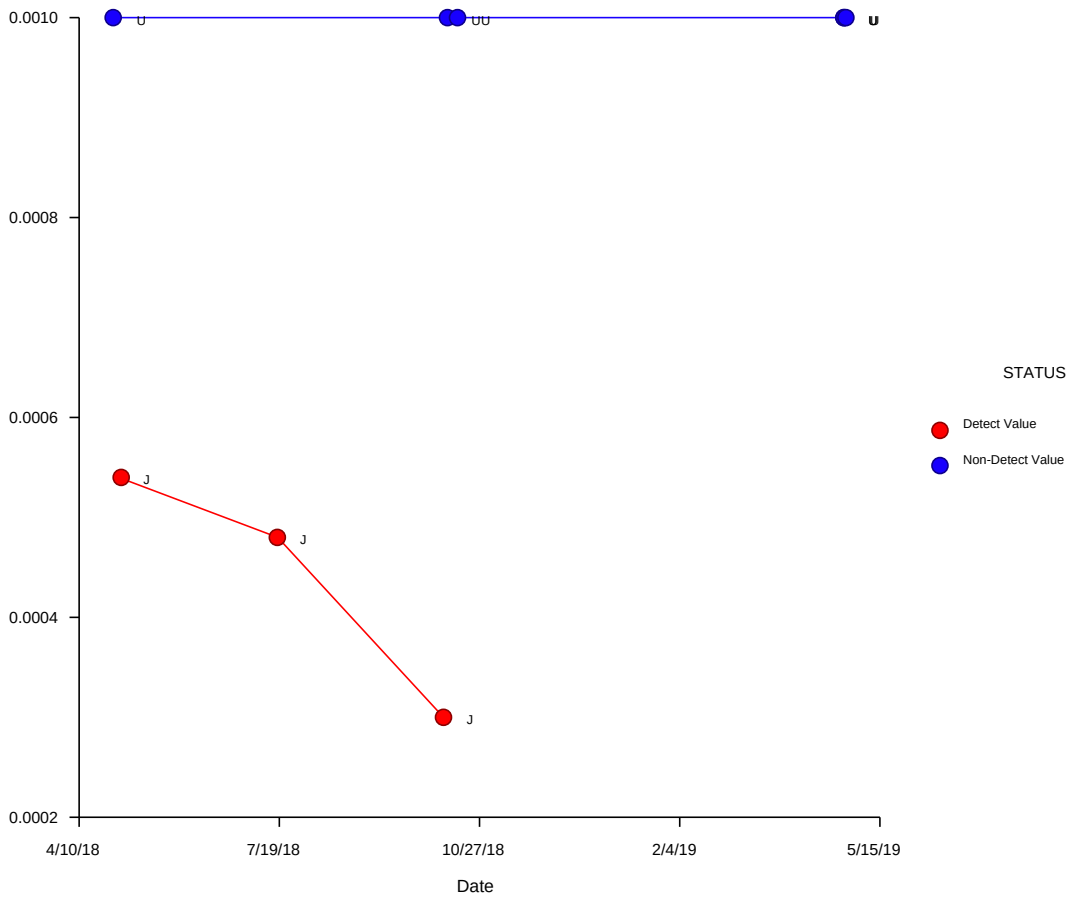
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_111"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_111"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

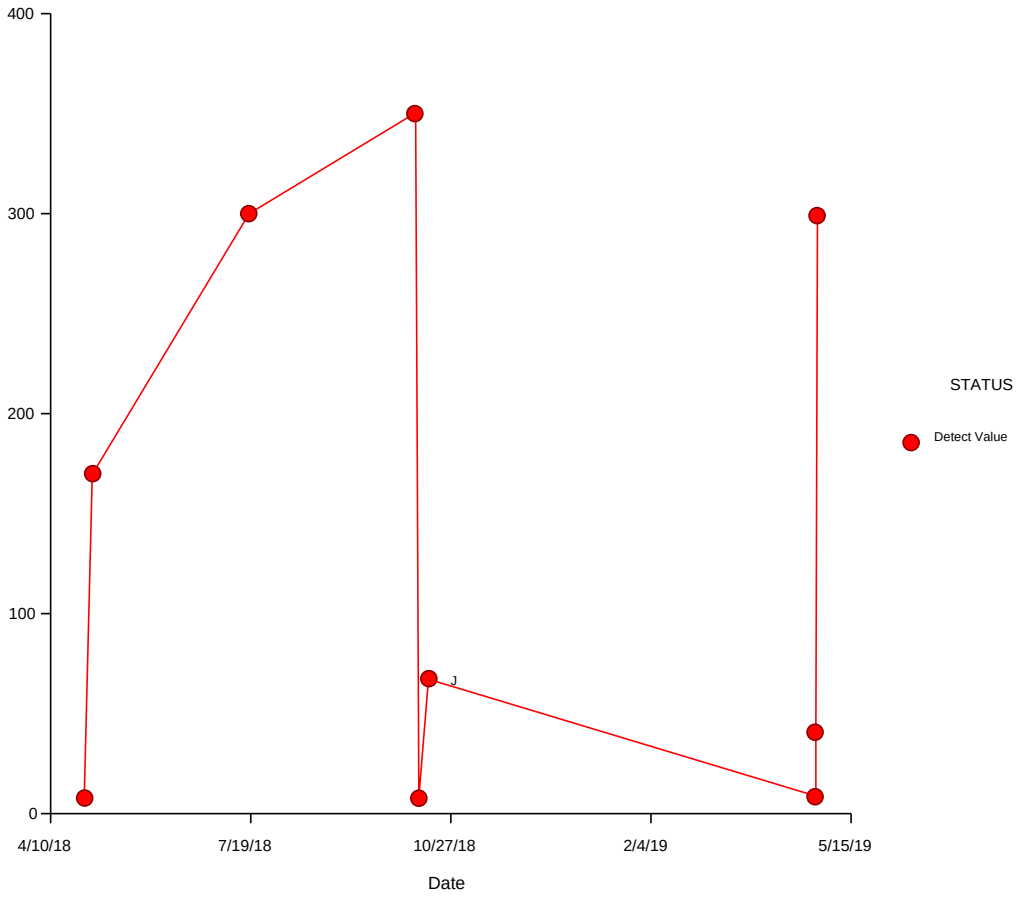
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_113"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_113"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

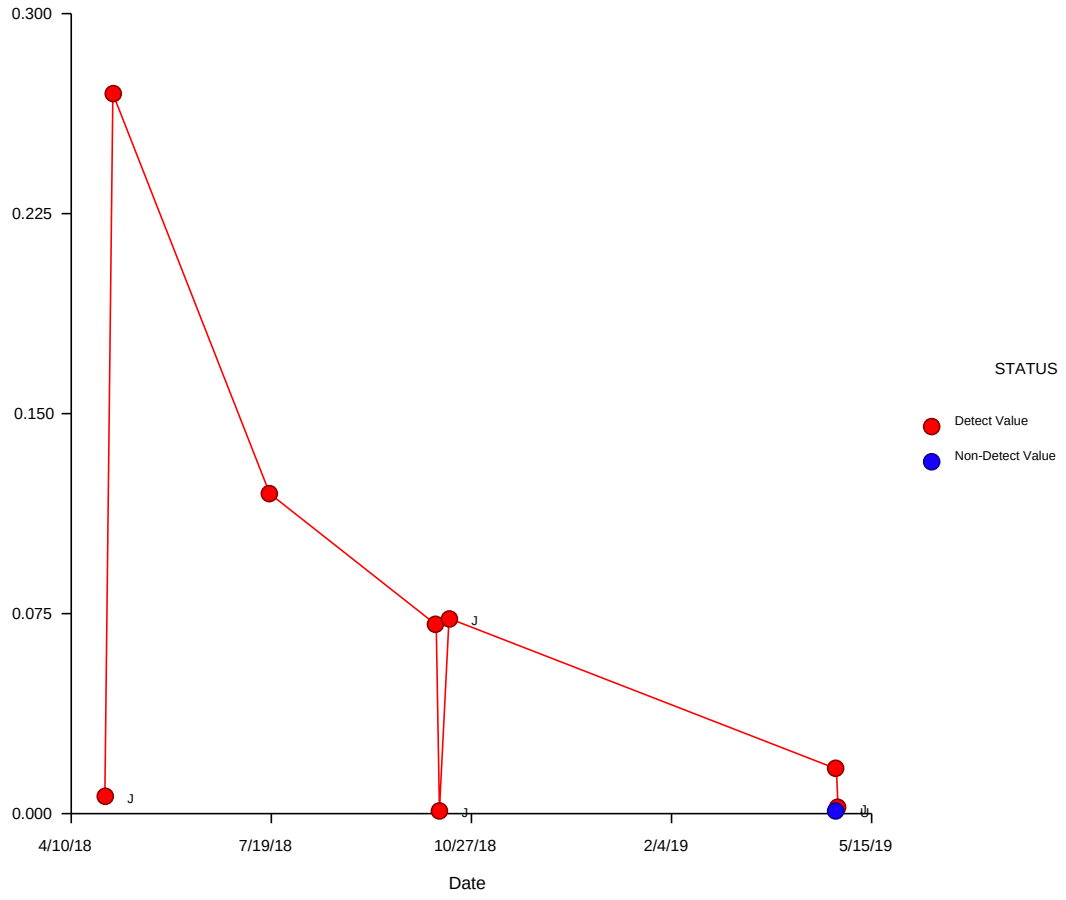
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_115"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_115"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

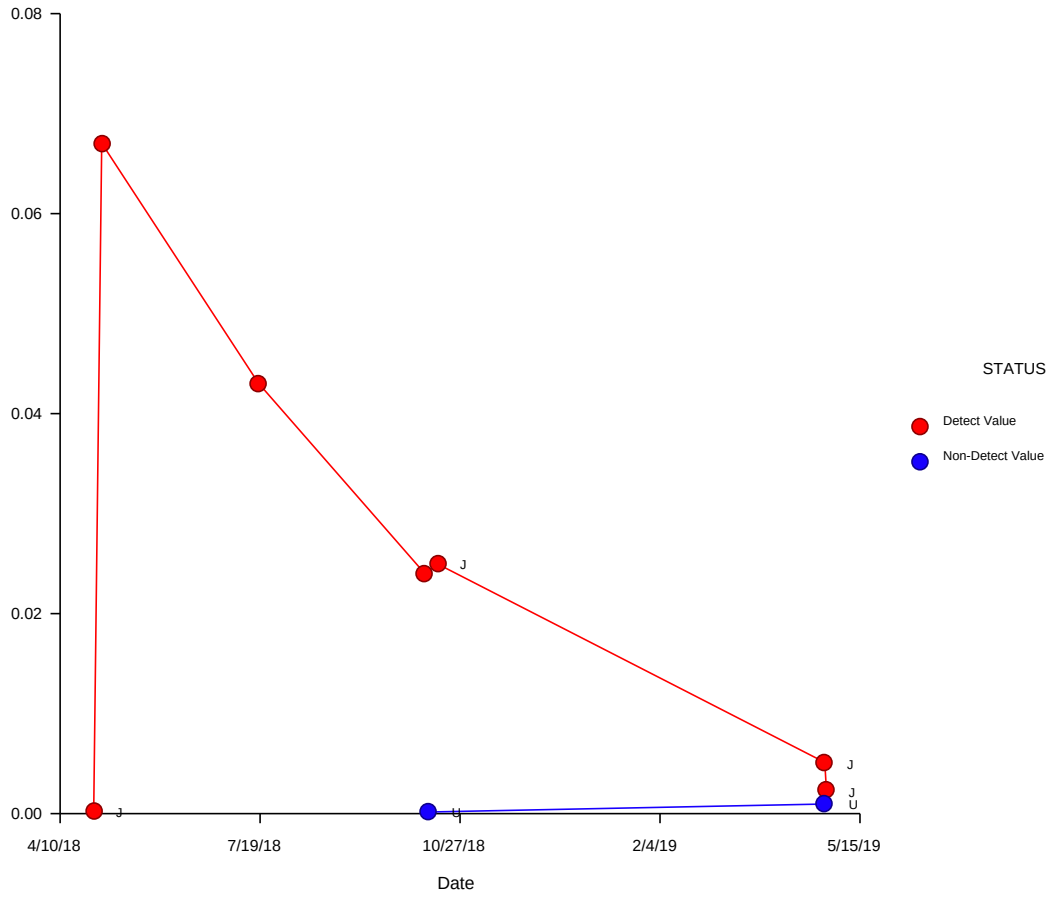
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_117"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_117"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

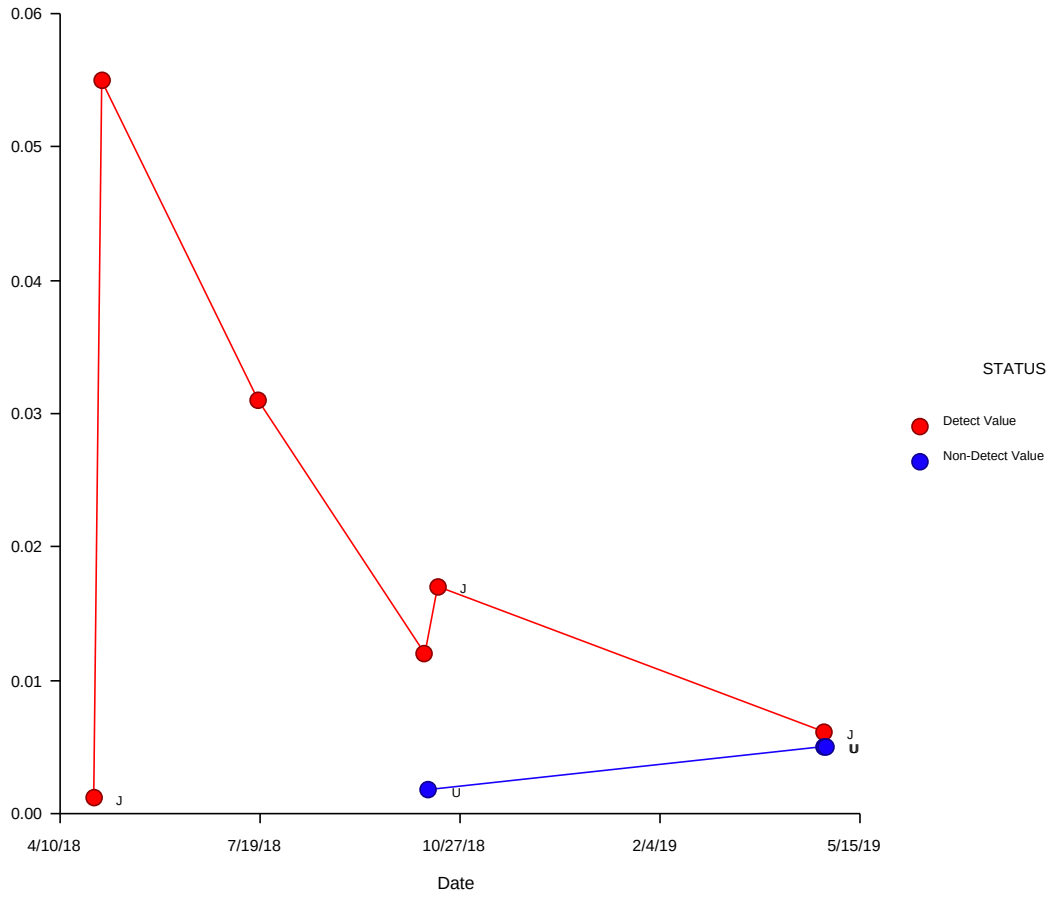
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_119"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_119"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

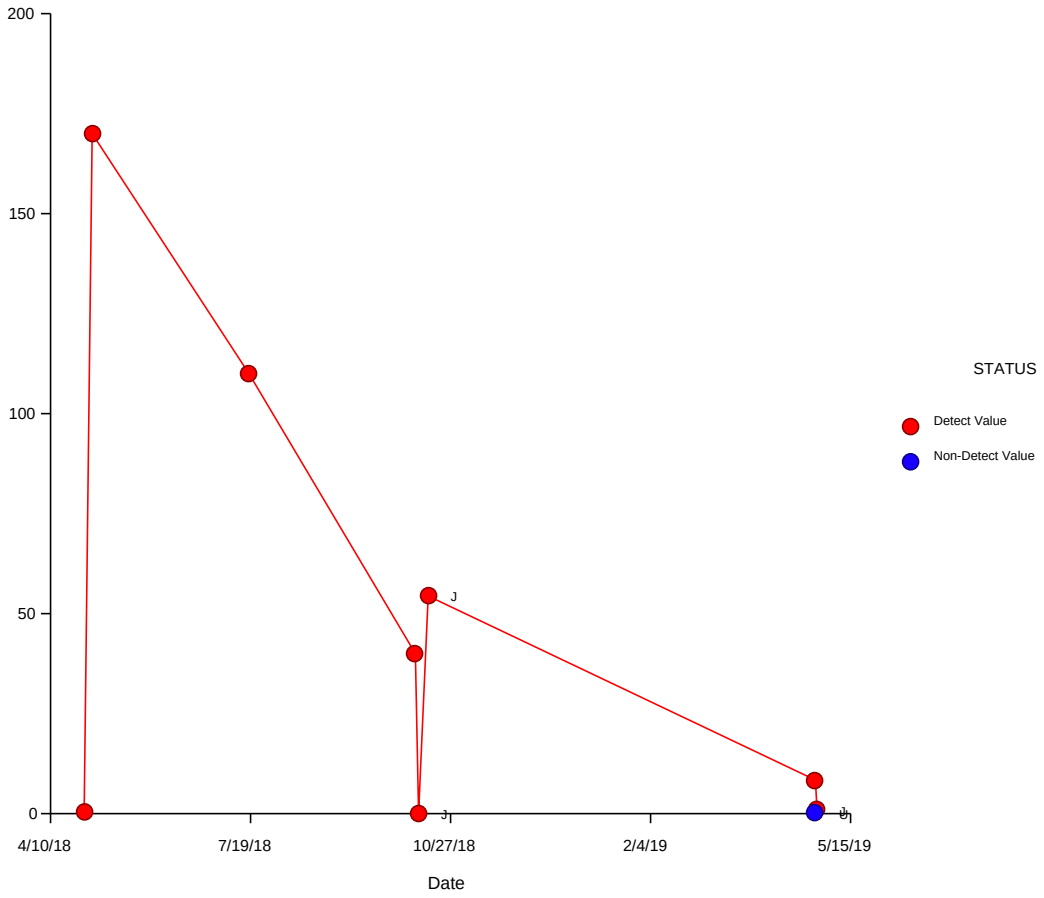
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_121"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_121"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

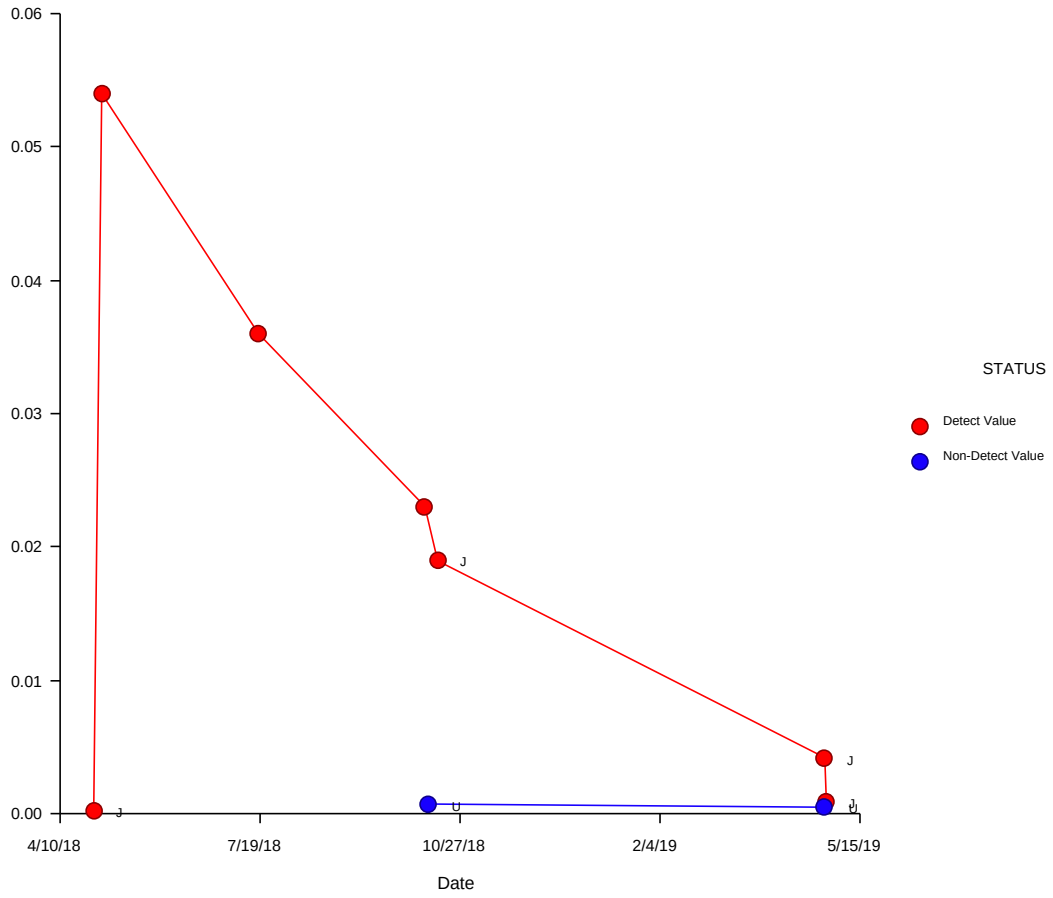
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_123"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_123"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

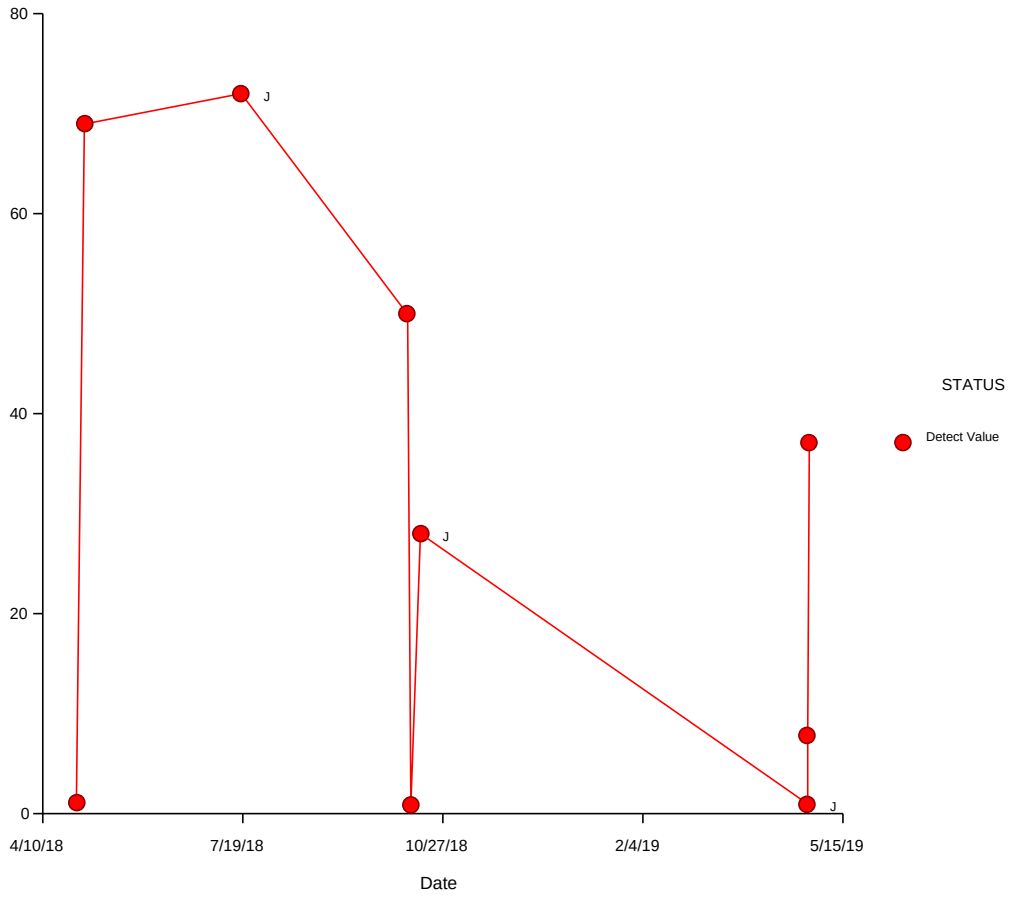
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_125"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_125"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

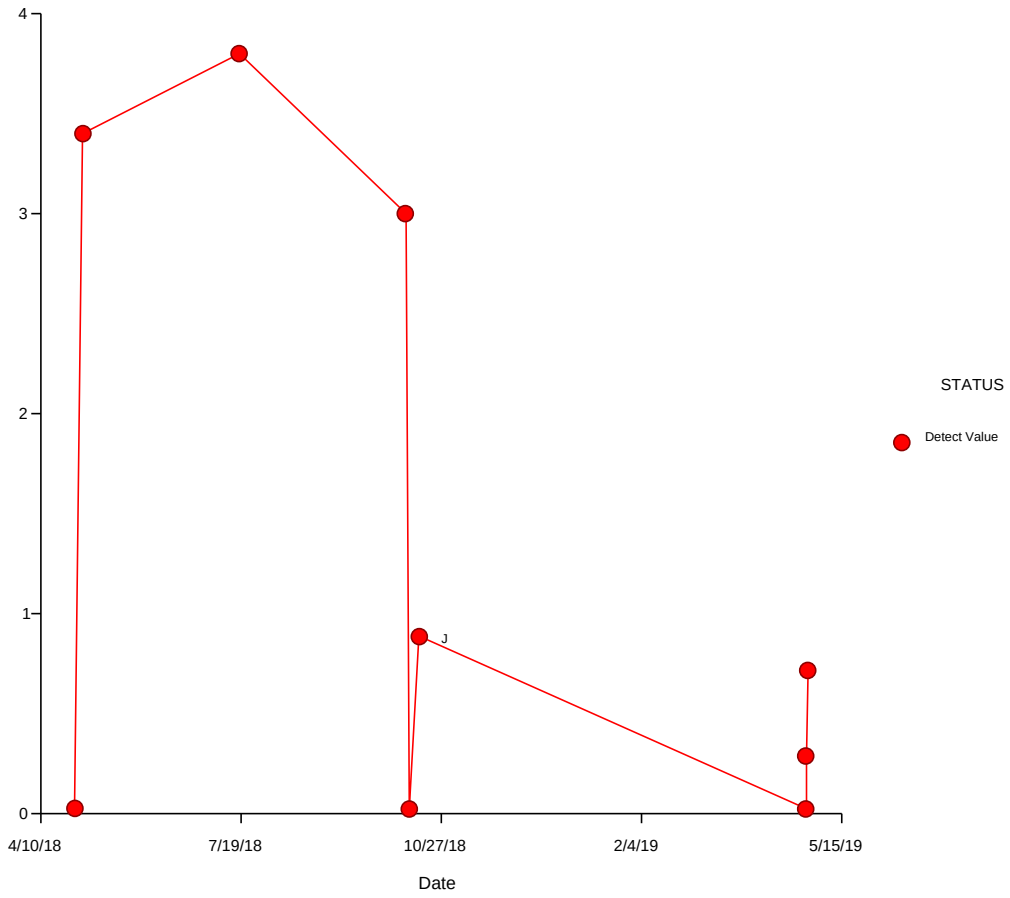
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_127"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_127"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

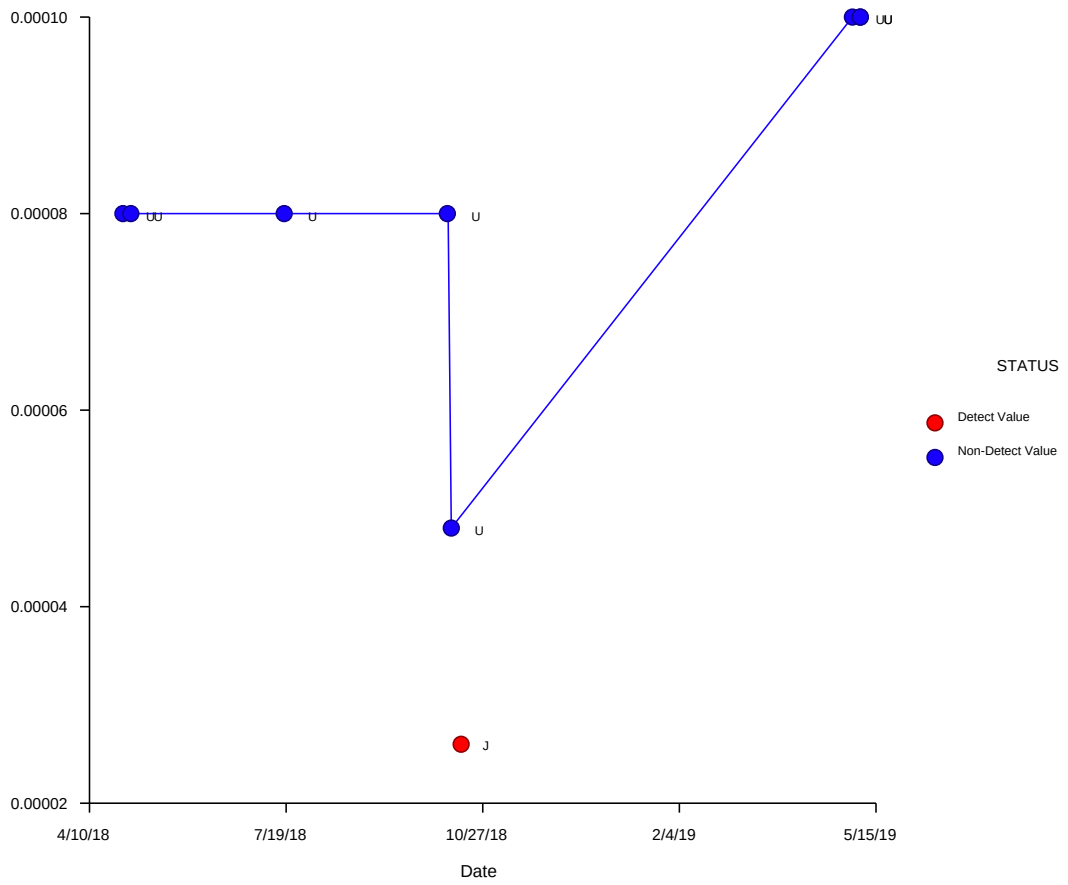
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_129"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_129"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

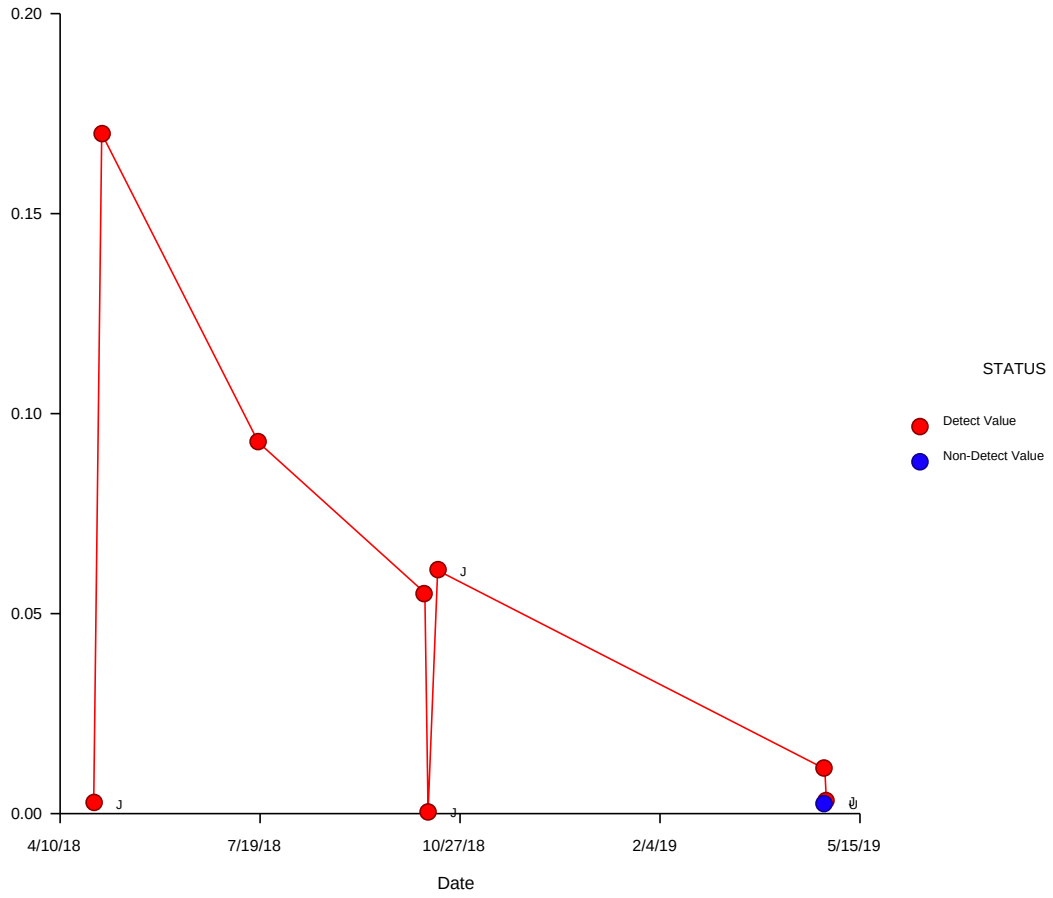
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_131"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_131"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

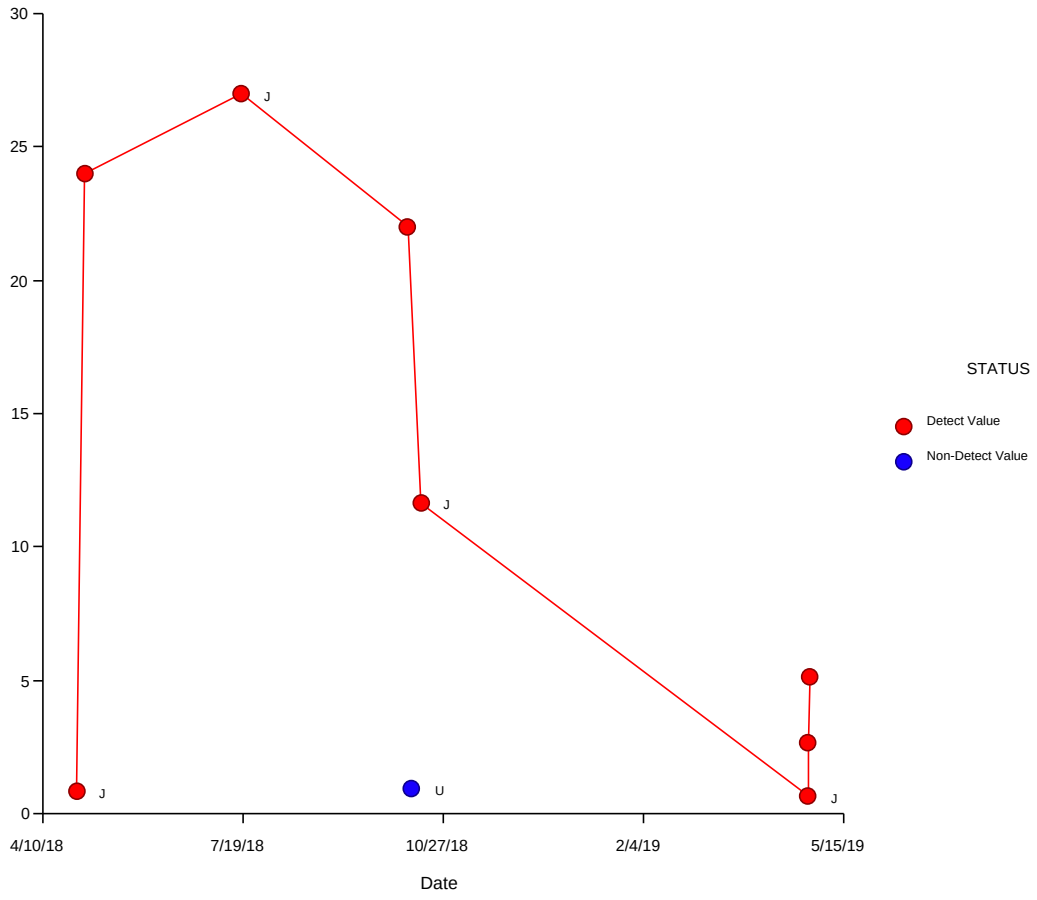
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_135"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_135"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

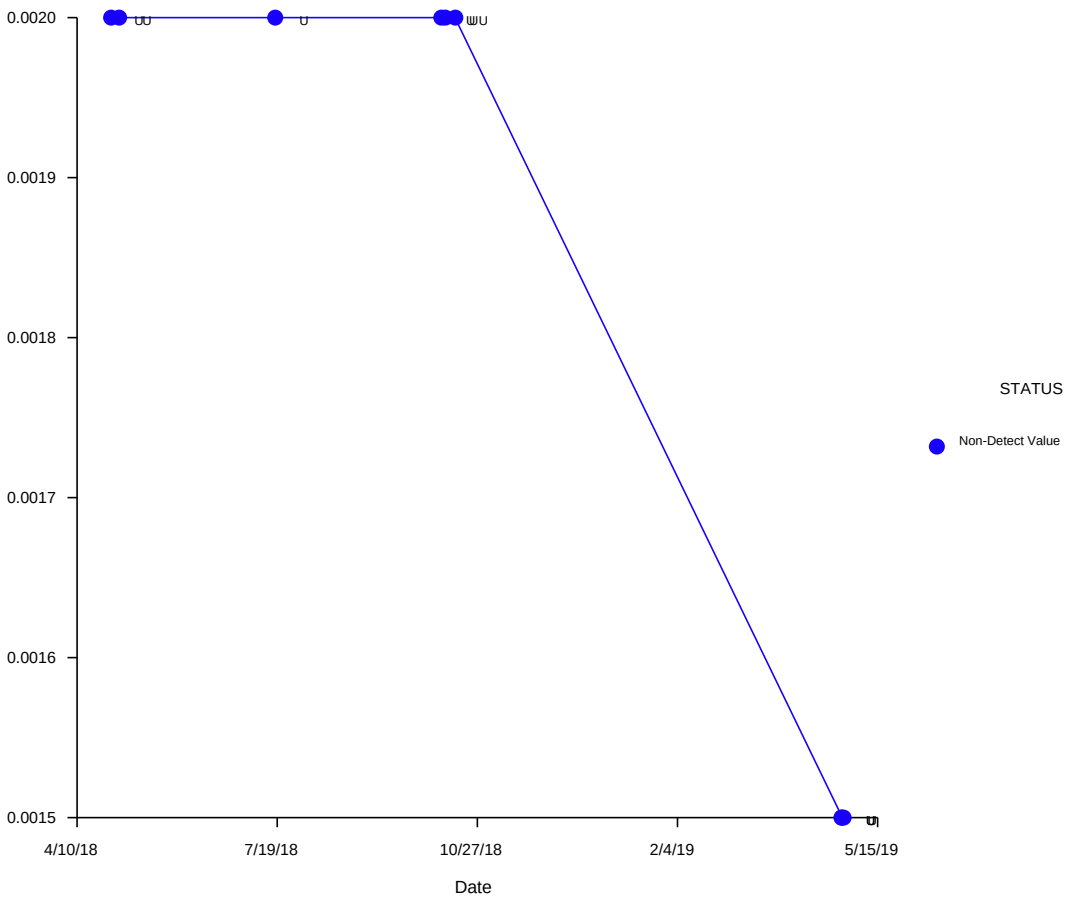
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_137"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_137"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

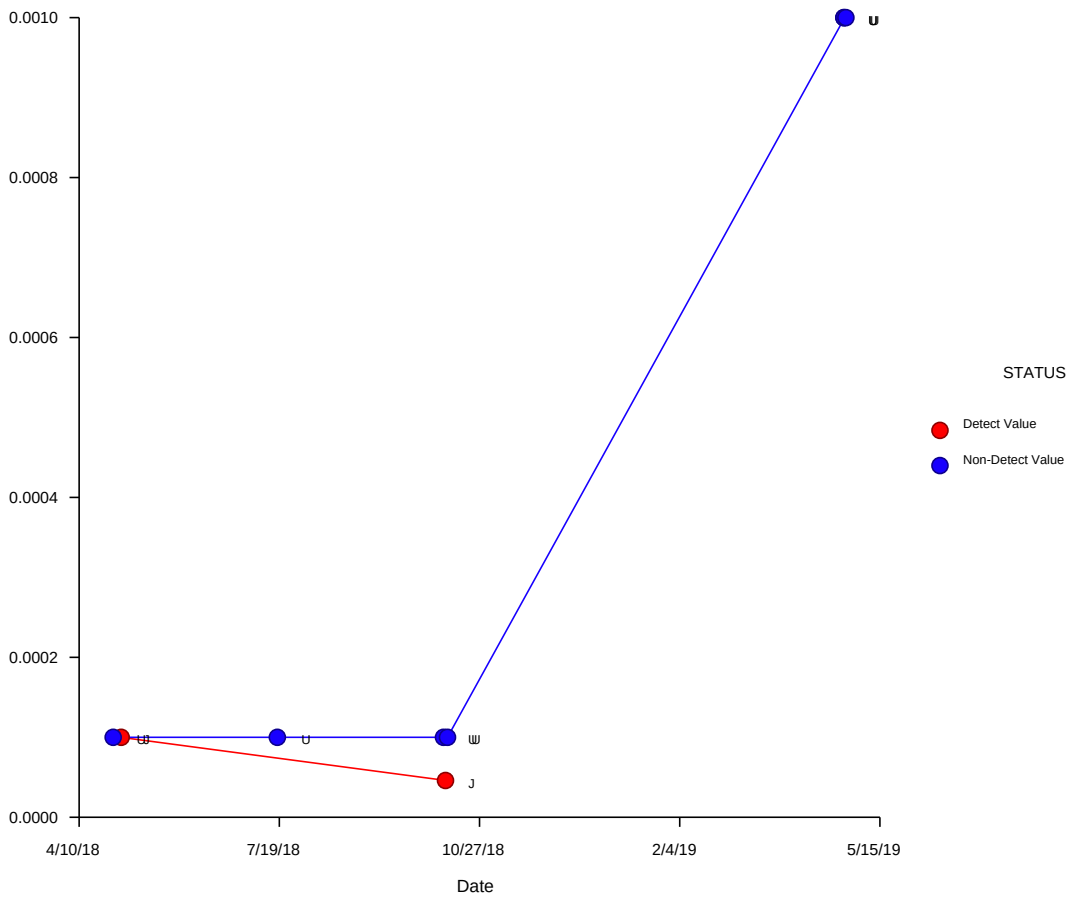
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_139"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_139"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

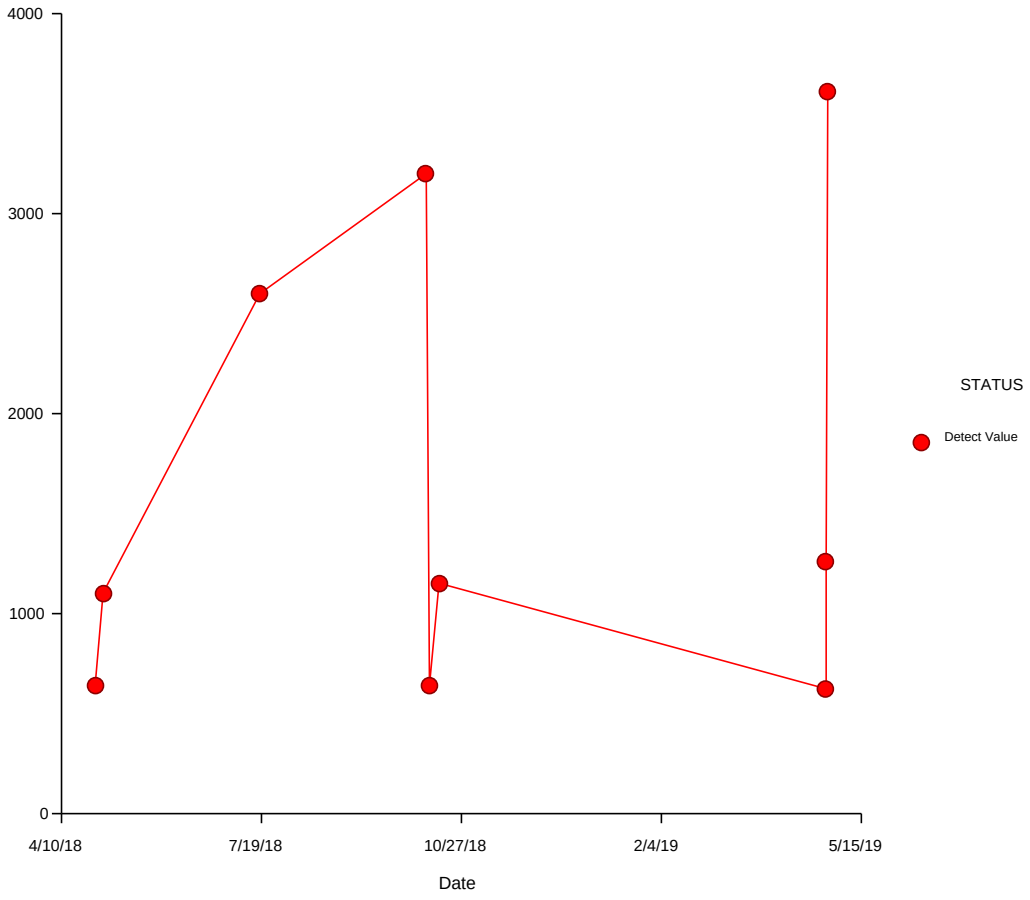
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_141"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_141"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

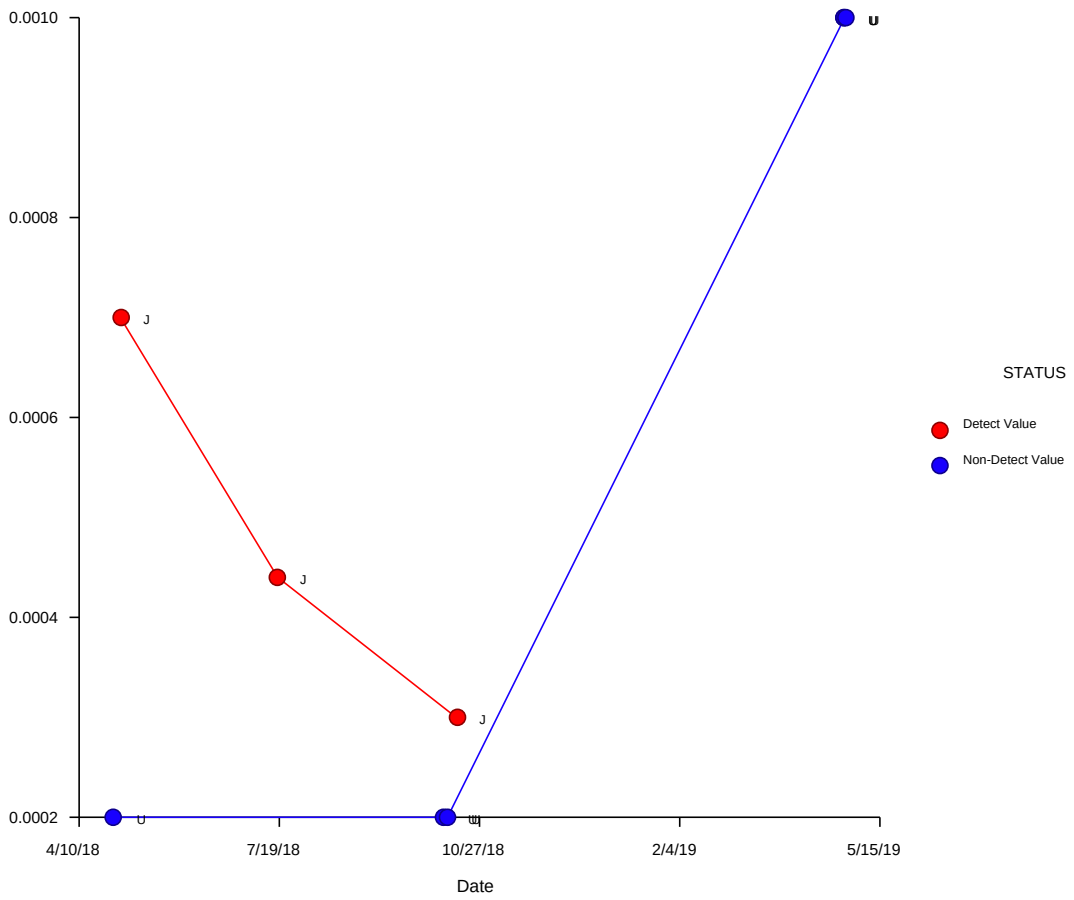
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_143"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_143"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

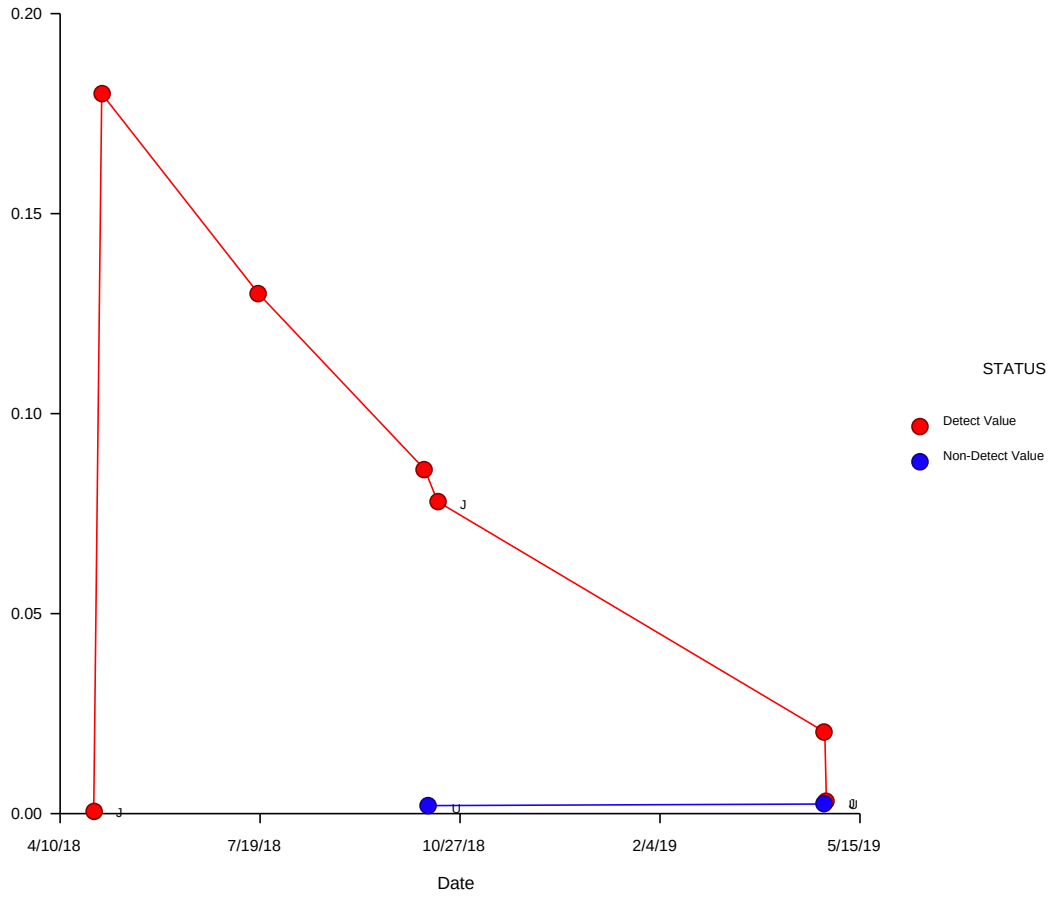
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_145"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_145"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

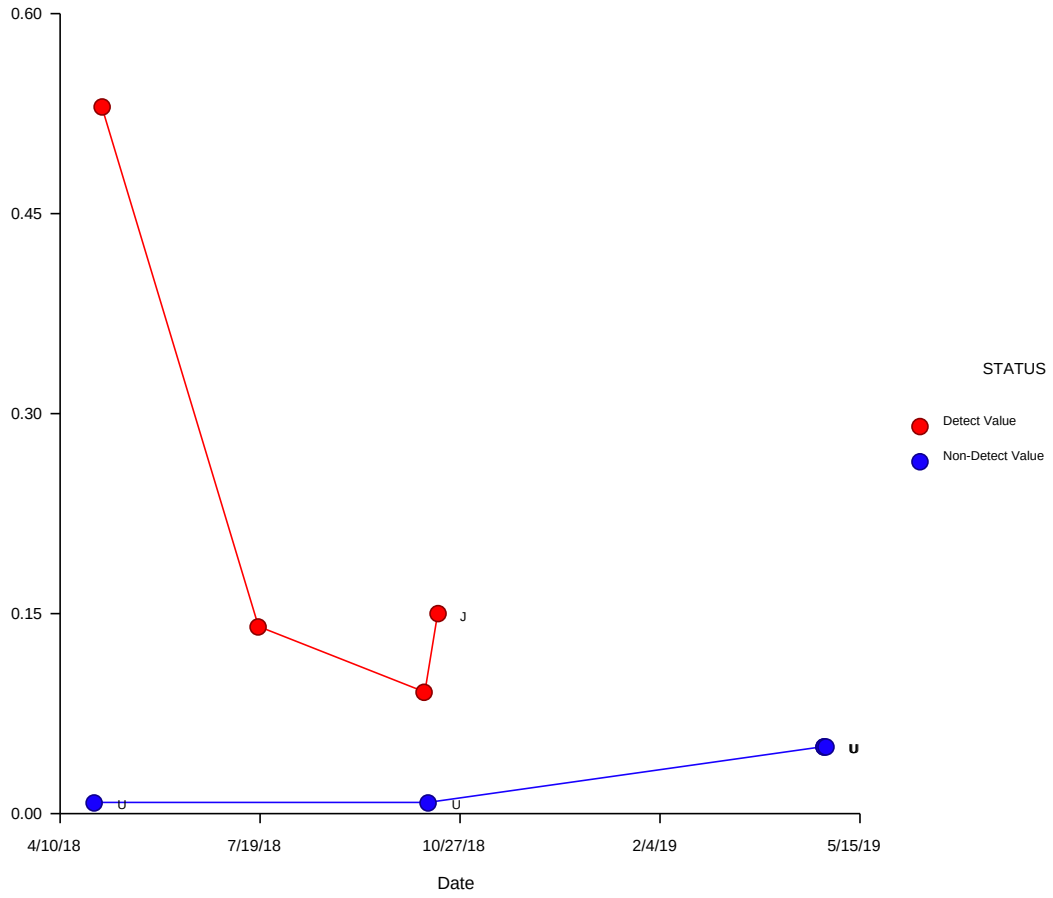
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_147"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_147"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	FLAG
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

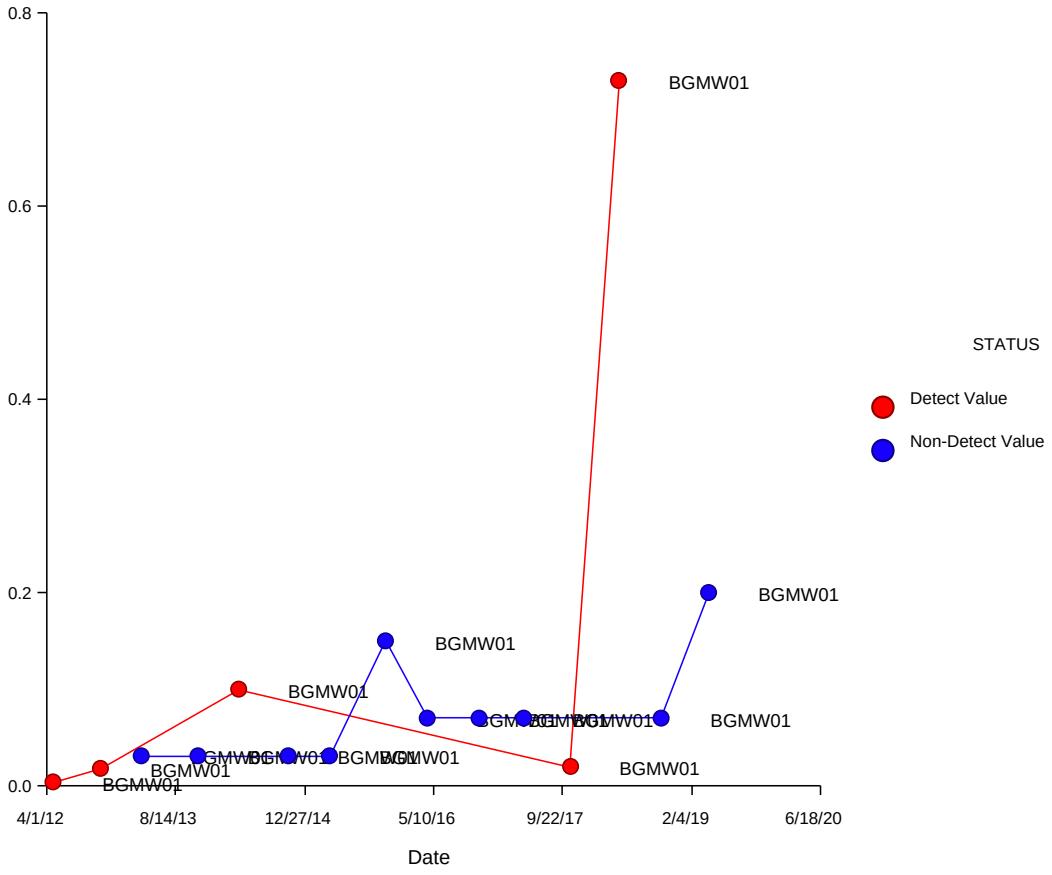
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_102"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_102"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

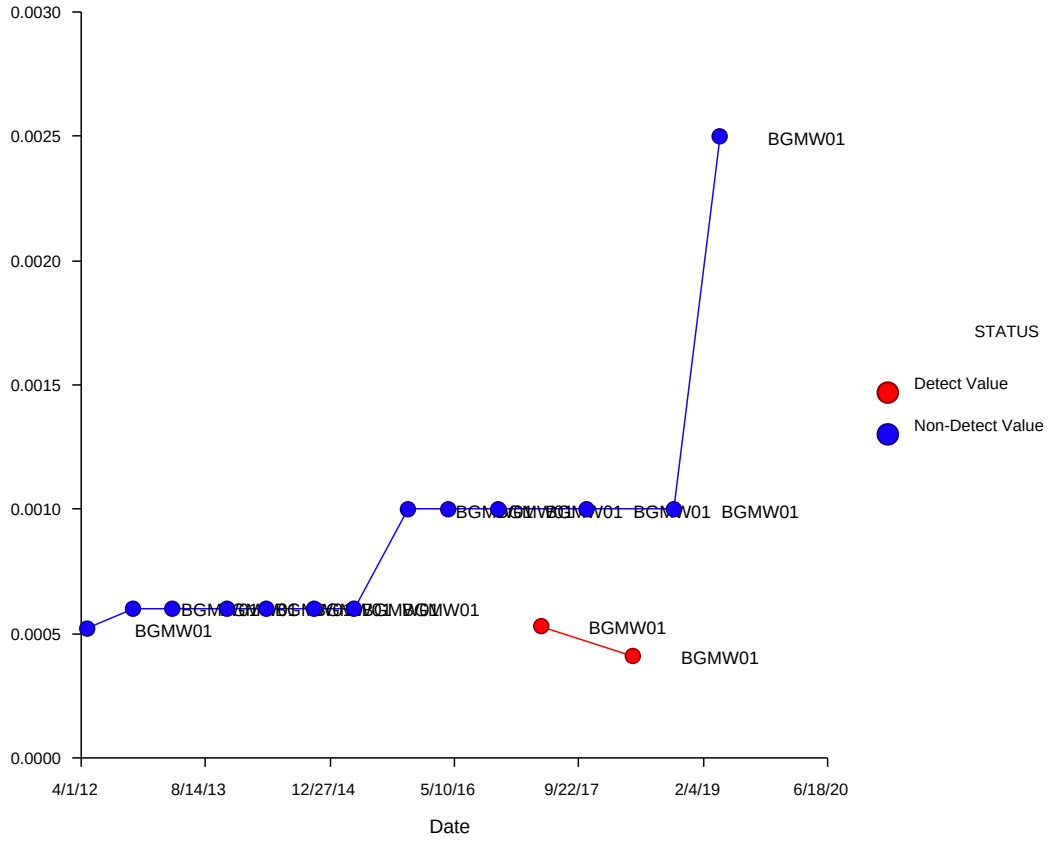
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_104"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_104"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

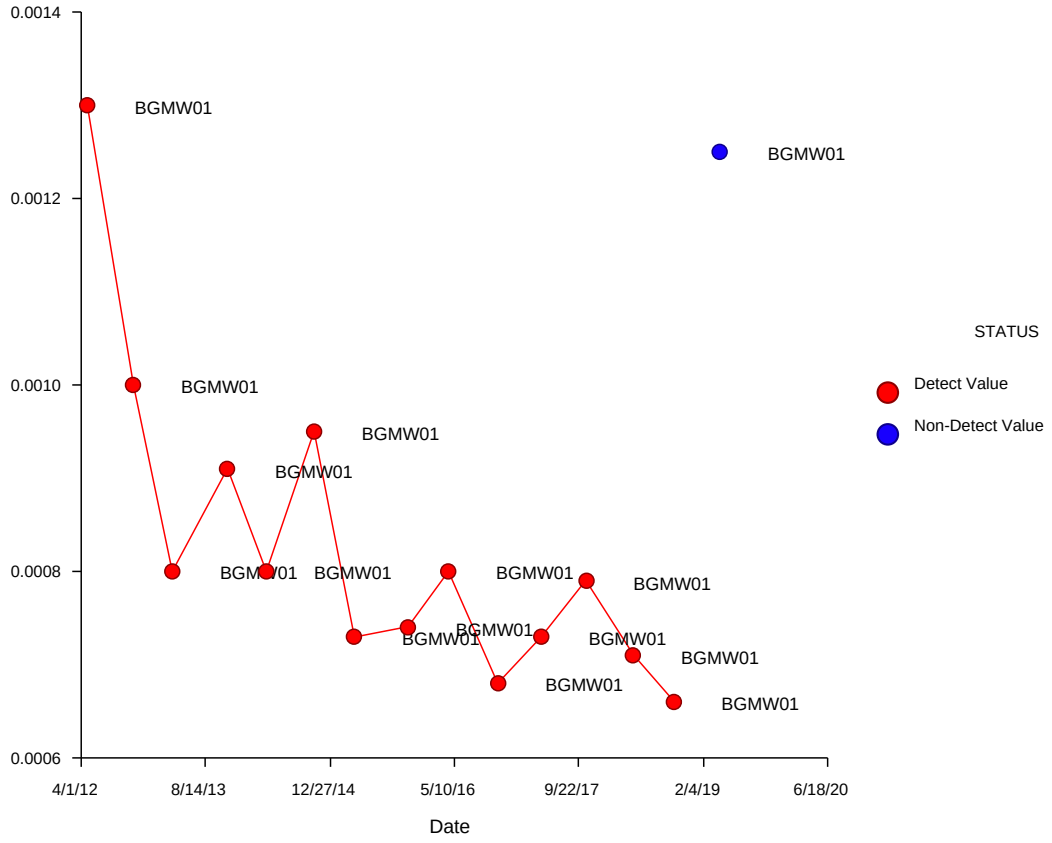
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_106"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_106"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

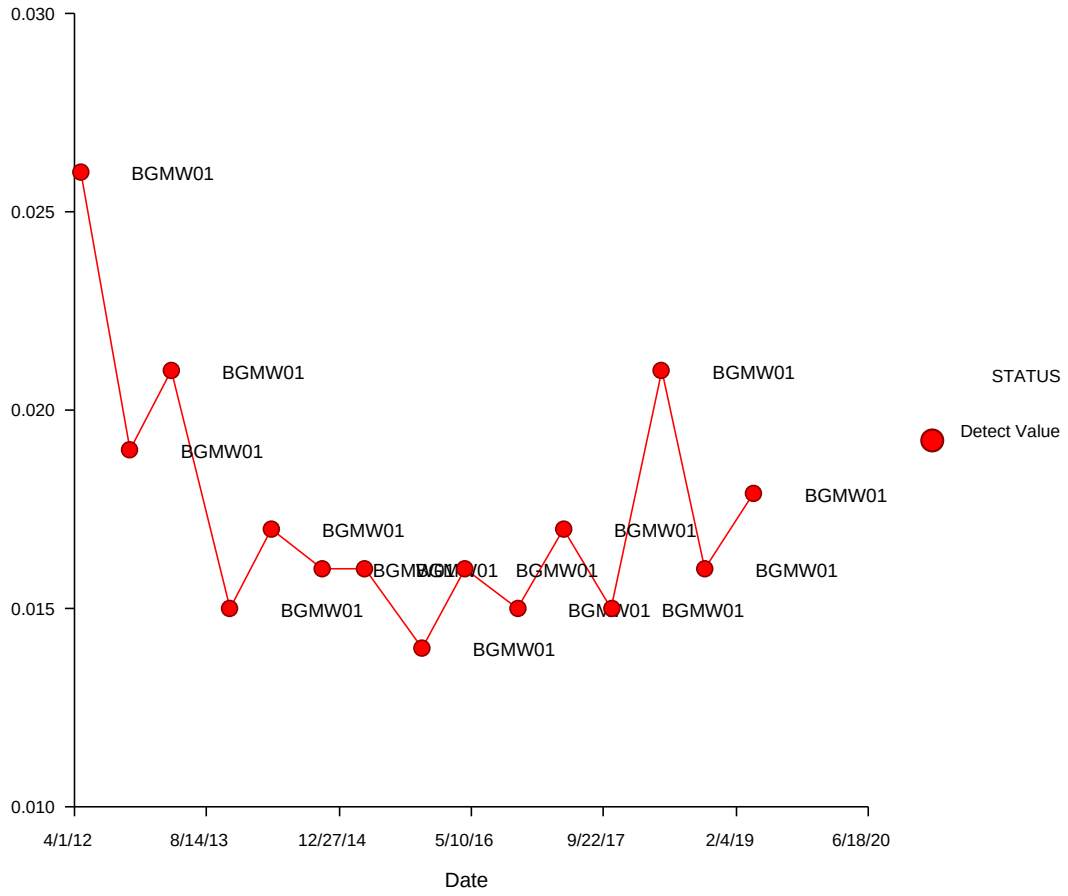
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_108"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_108"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

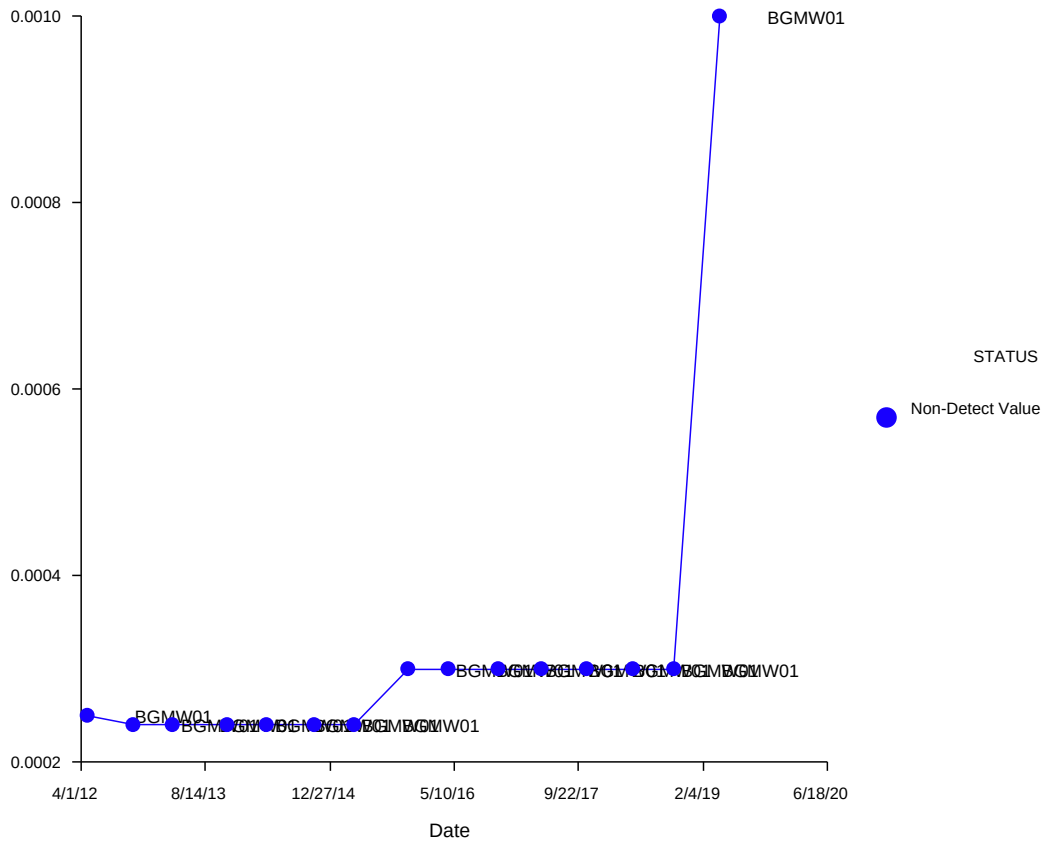
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_110"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_110"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

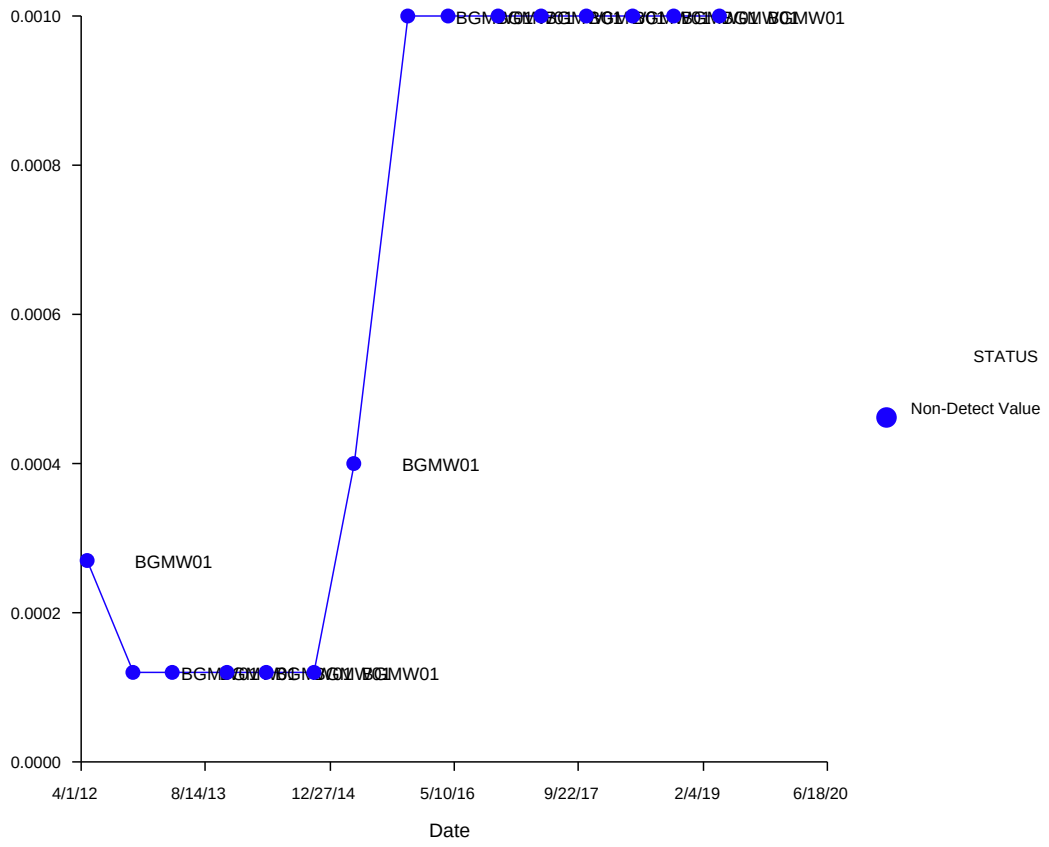
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_112"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_112"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

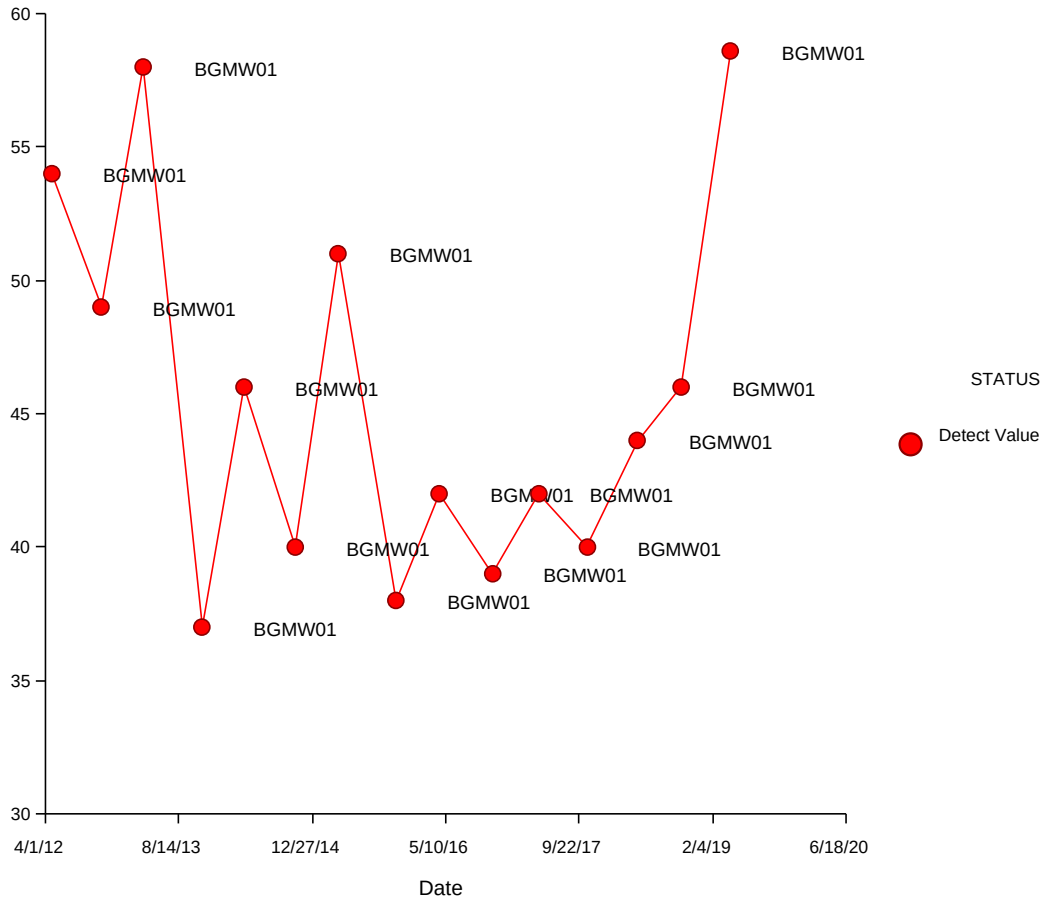
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_114"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_114"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

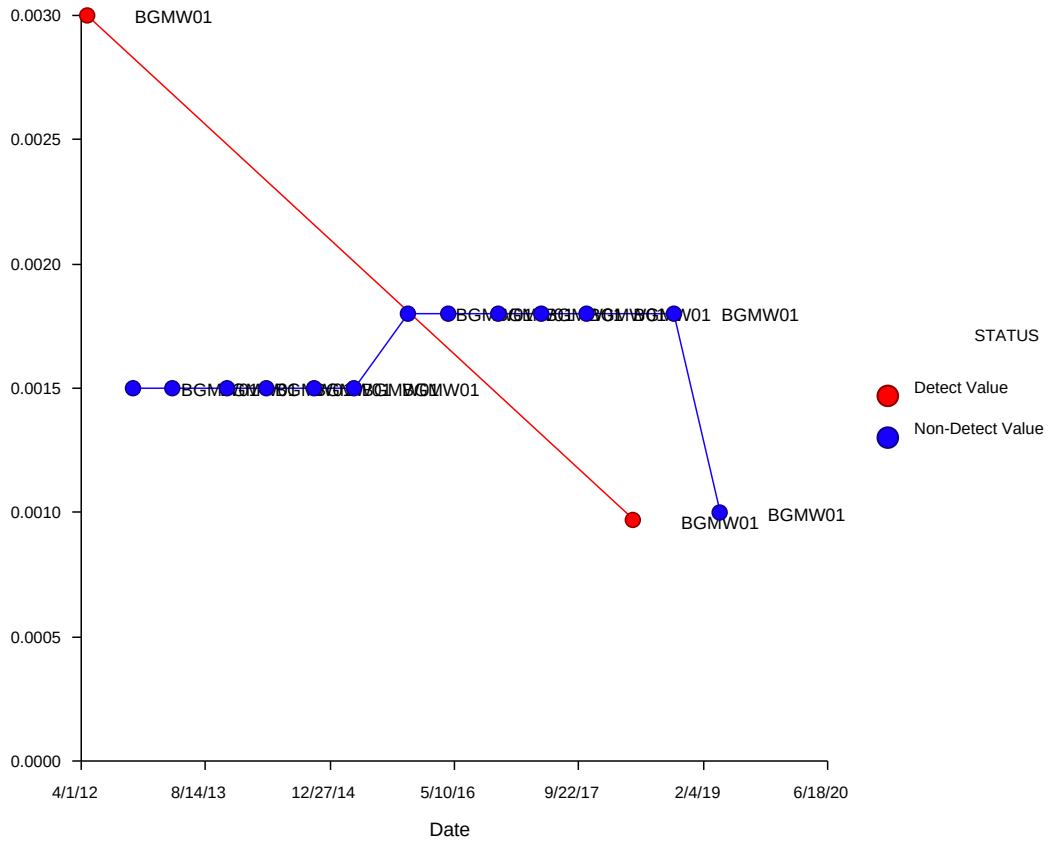
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_116"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_116"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

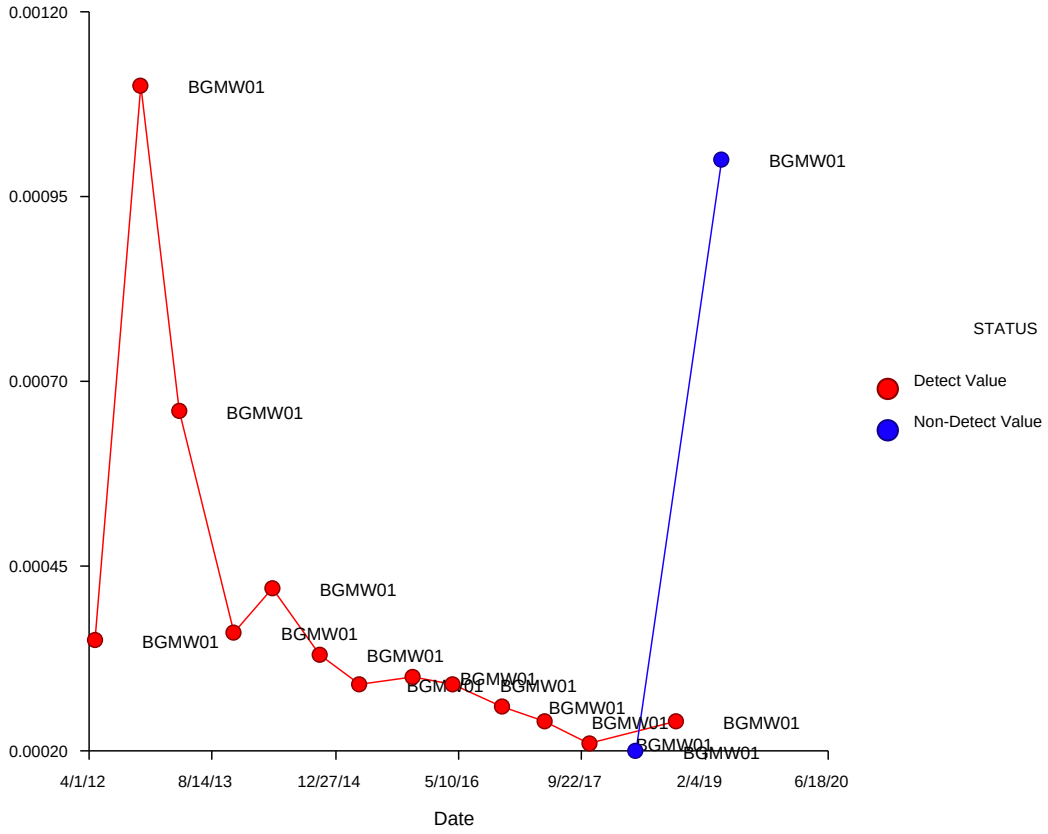
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_118"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_118"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

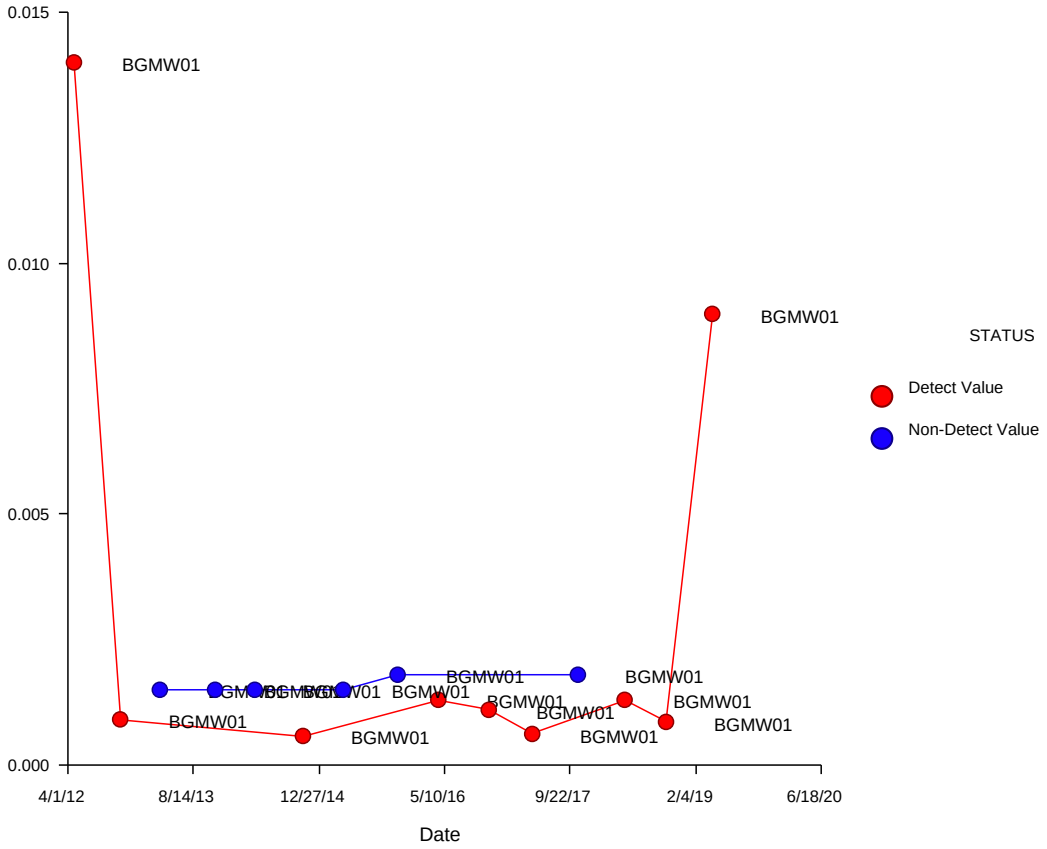
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_120"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_120"

Procedure Input Settings

Variables Tab

-- Variables ----------

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options ----------

Variable Names:	Names
Value Labels:	Data Values

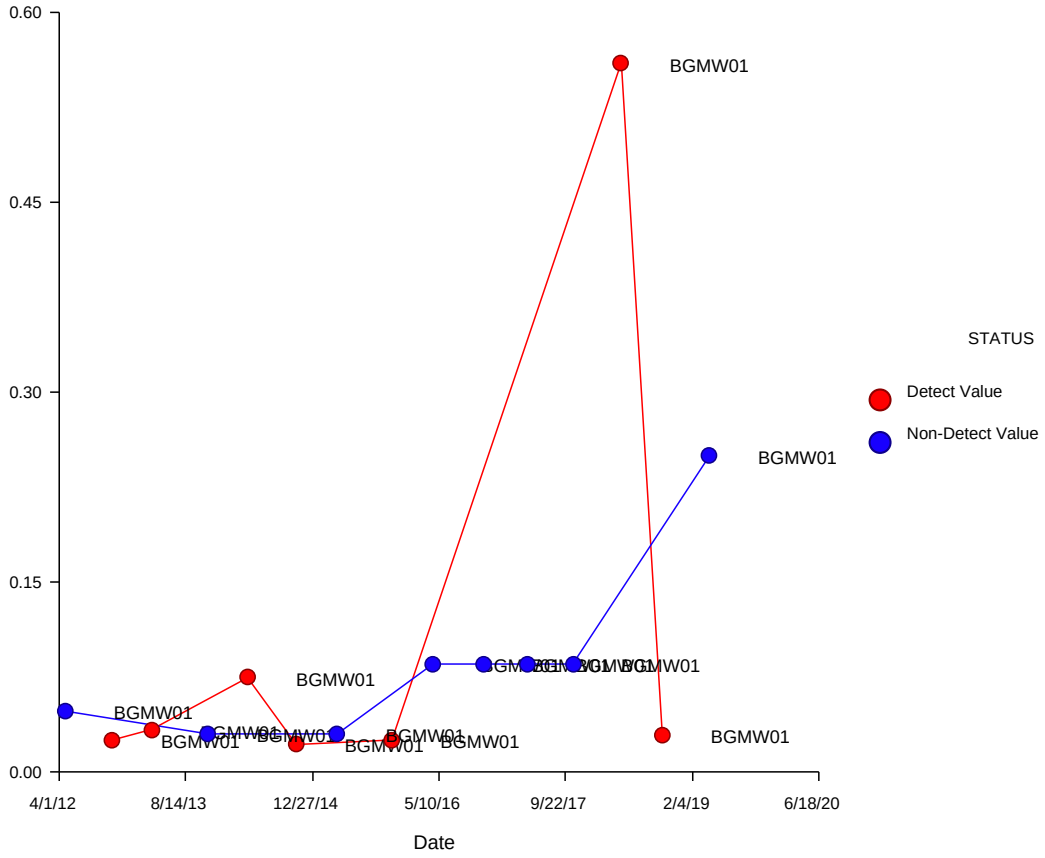
-- Symbol Size Options ----------

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_122"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_122"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

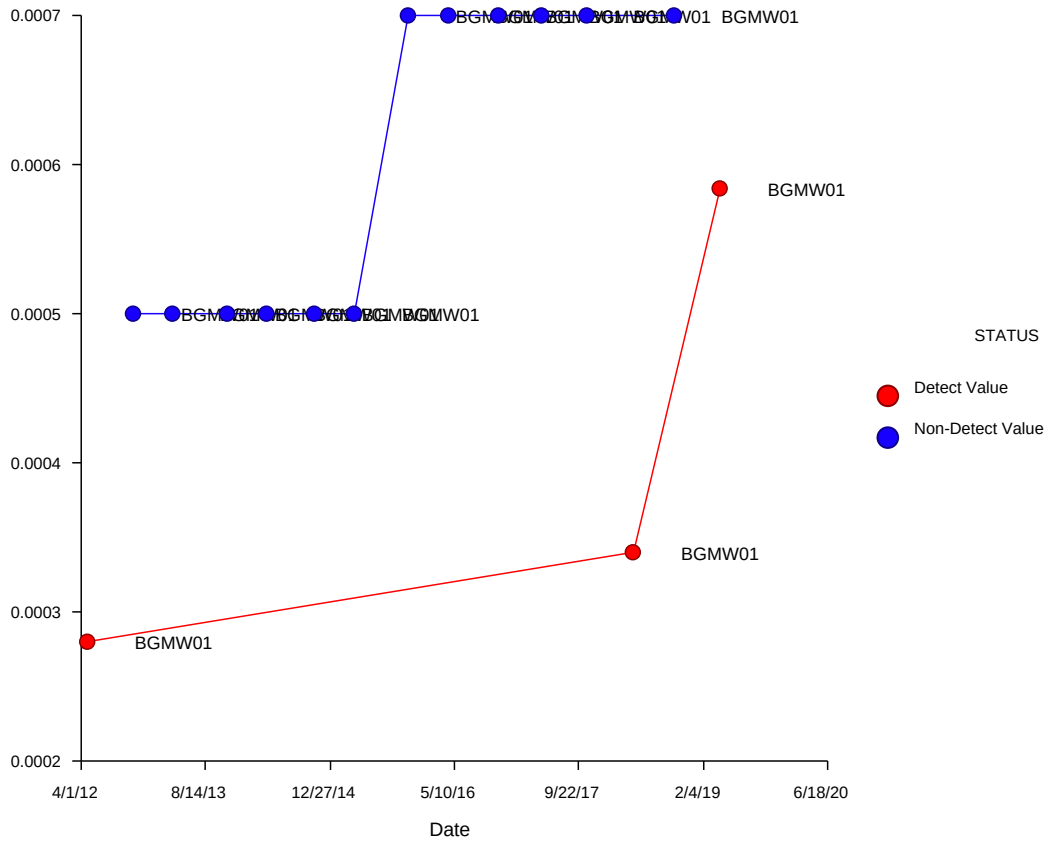
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_124"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_124"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

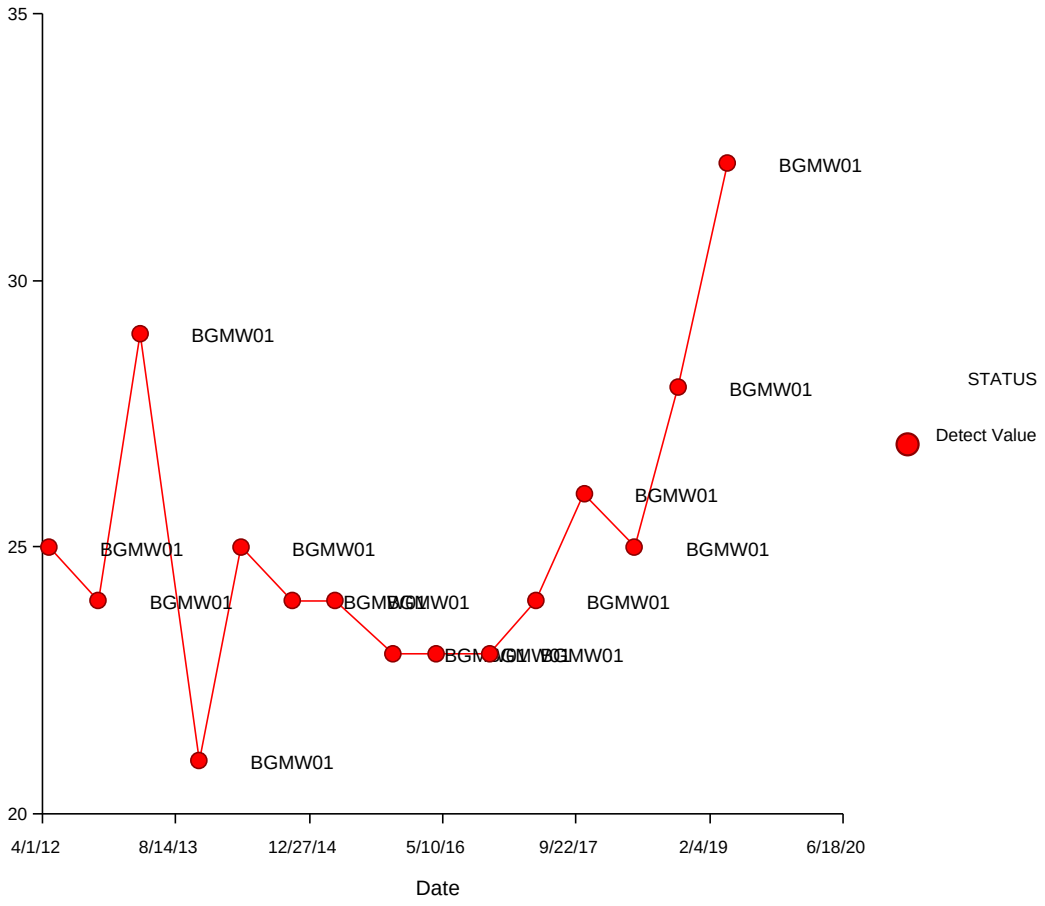
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_126"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_126"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

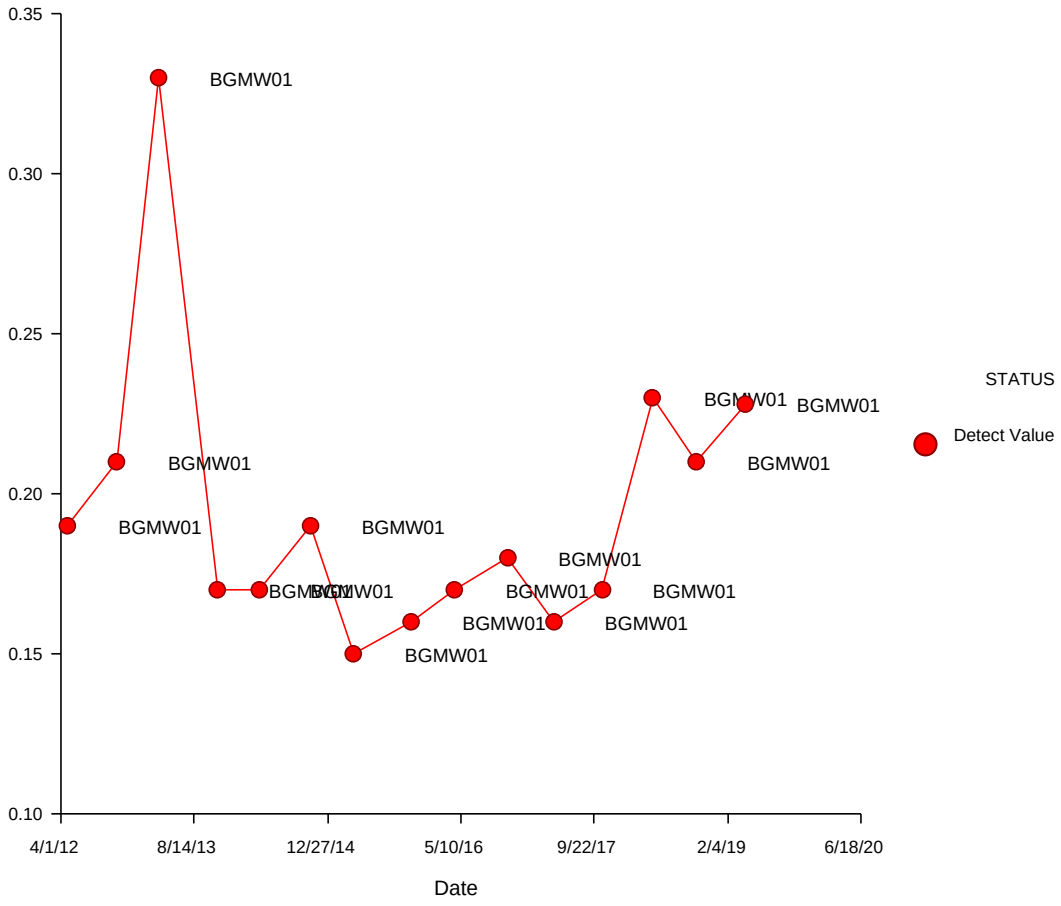
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_128"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_128"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

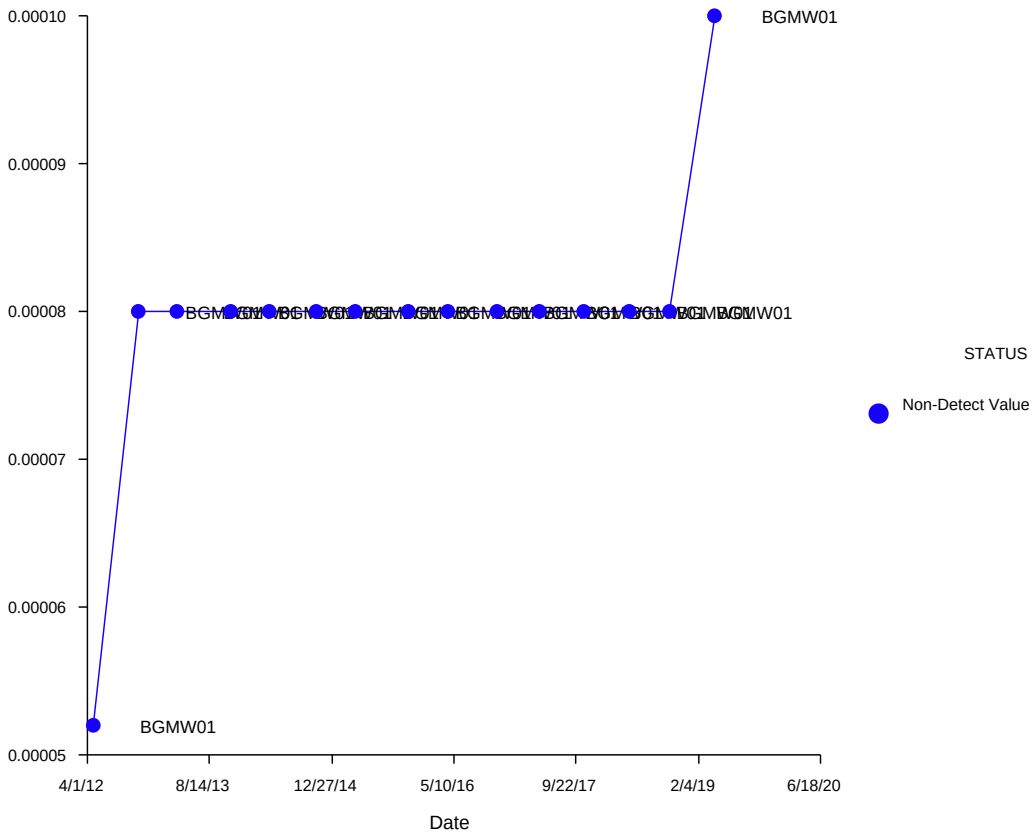
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_130"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_130"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

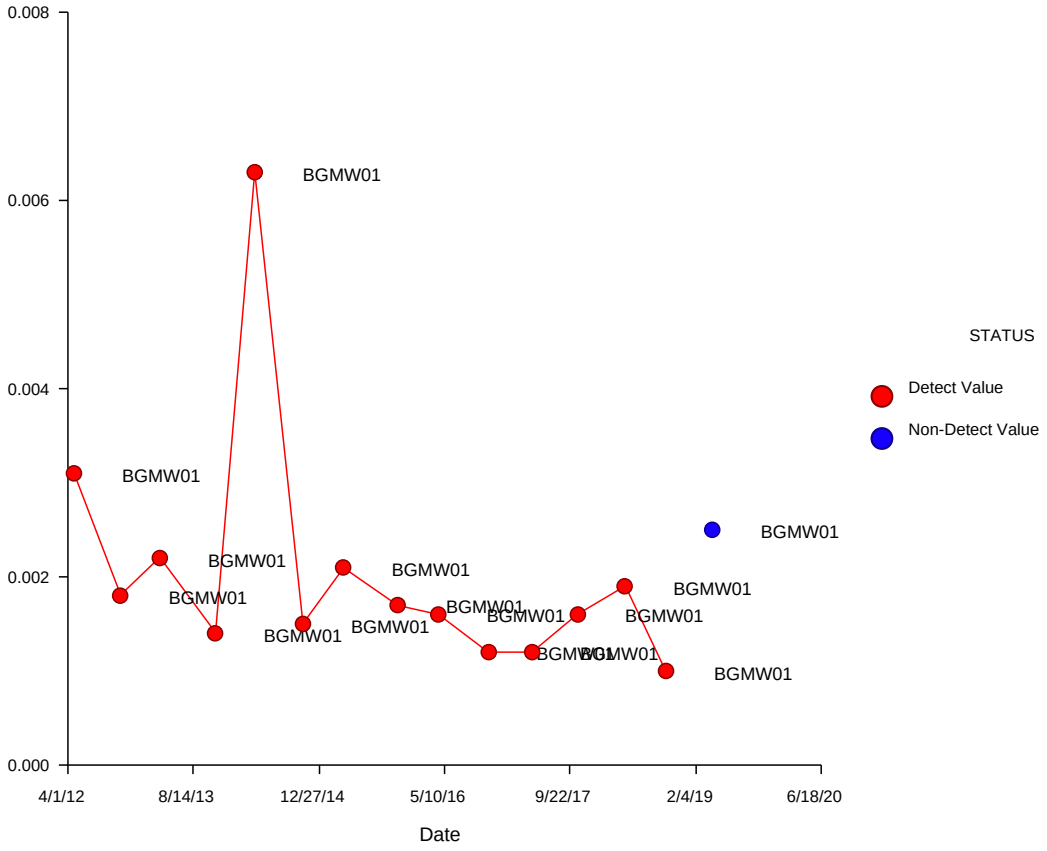
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_132"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_132"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

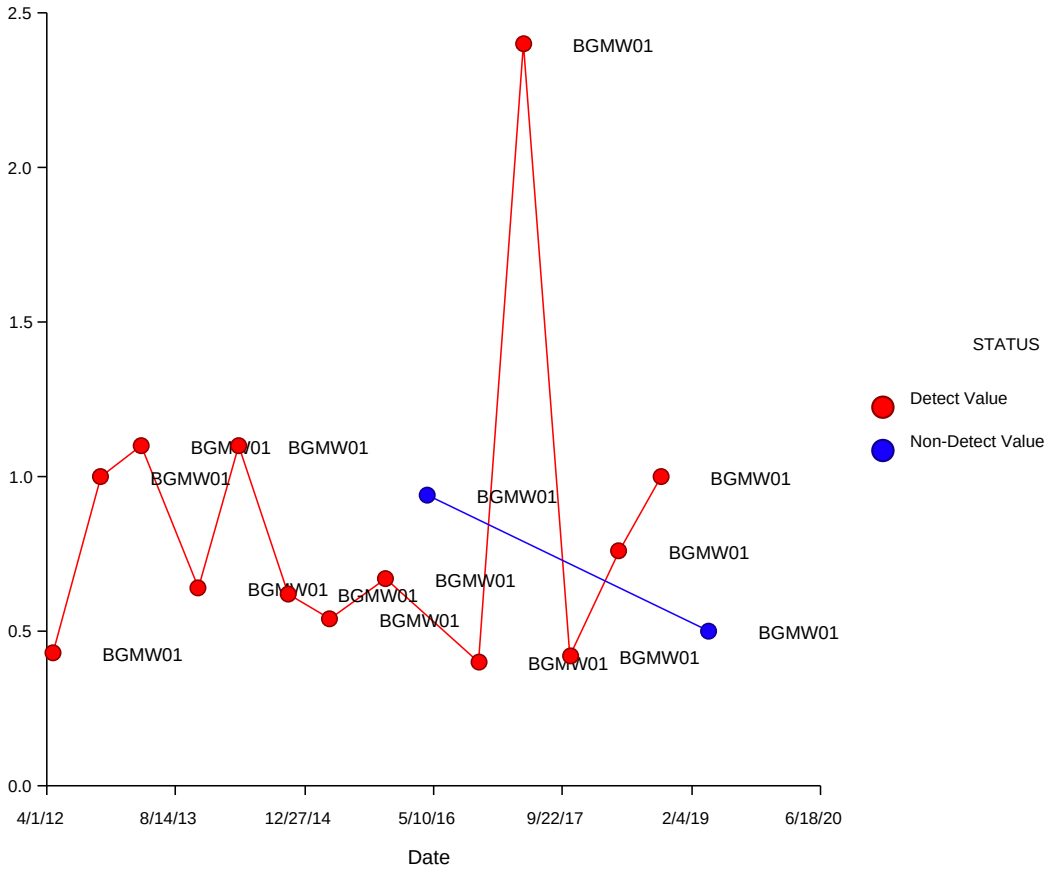
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_136"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_136"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

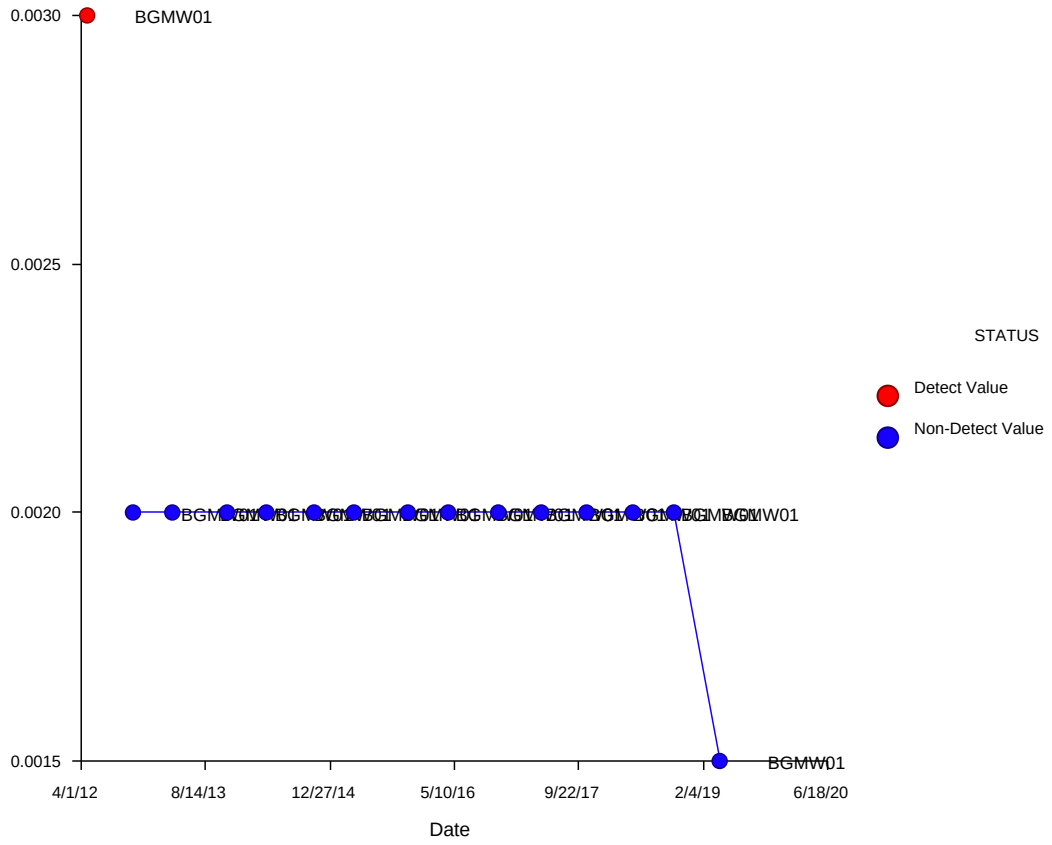
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_138"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_138"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

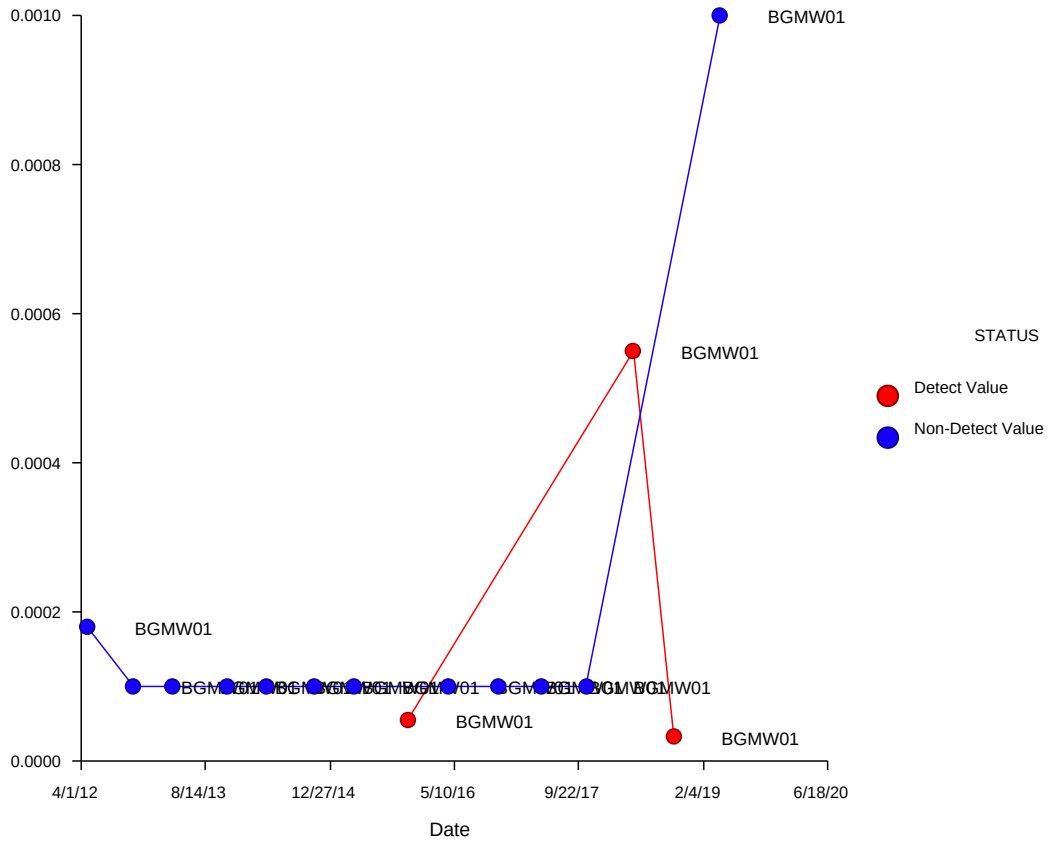
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_140"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_140"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

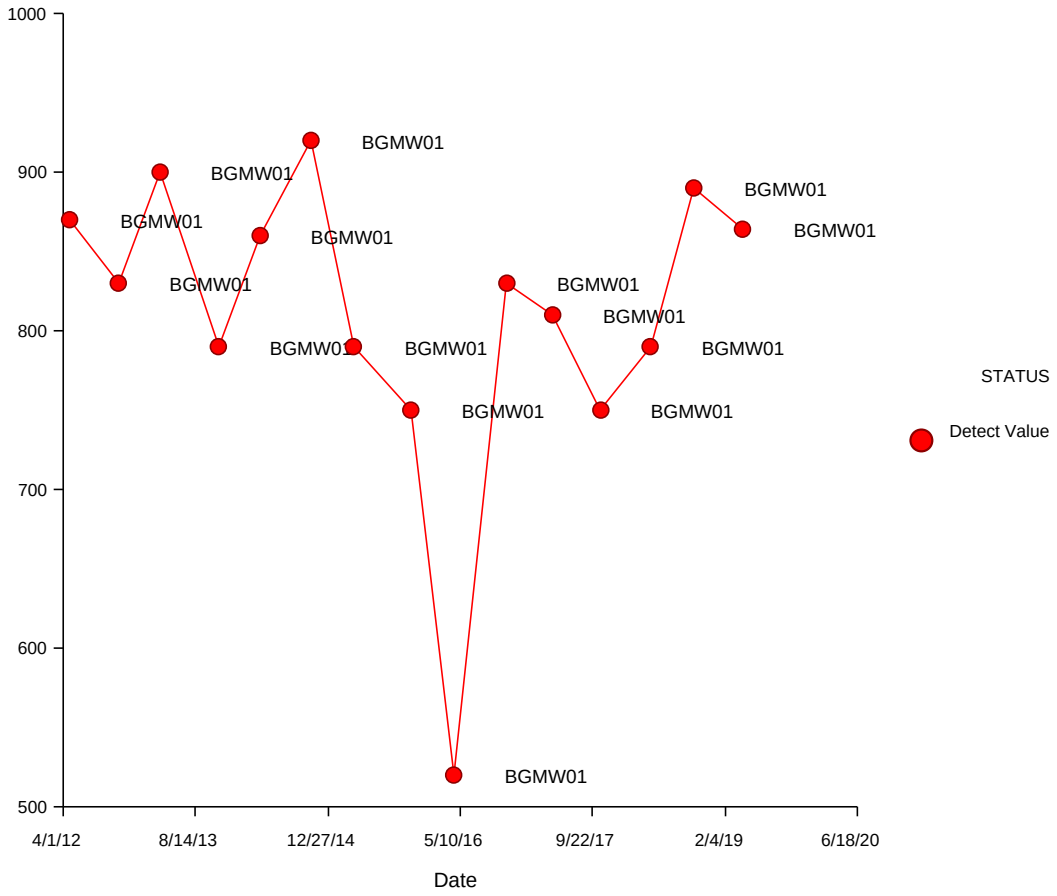
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_142"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_142"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

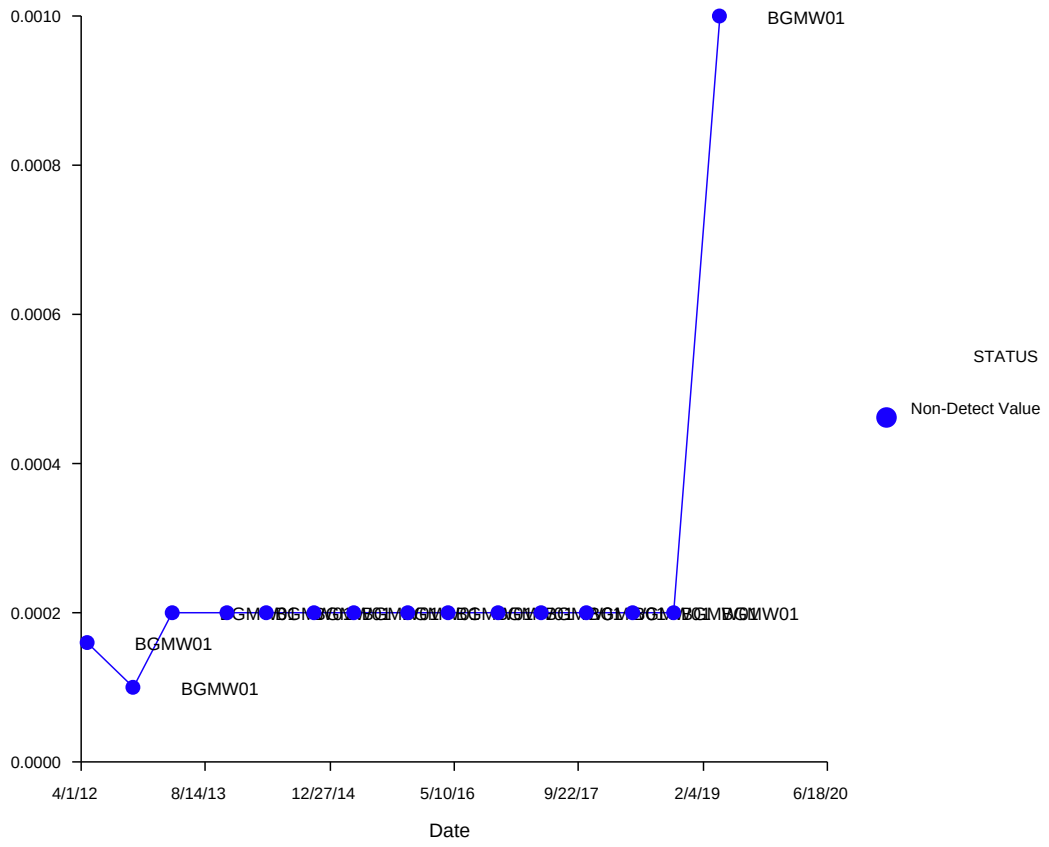
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_144"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_144"

Procedure Input Settings

Variables Tab

-- Variables ----------

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options ----------

Variable Names:	Names
Value Labels:	Data Values

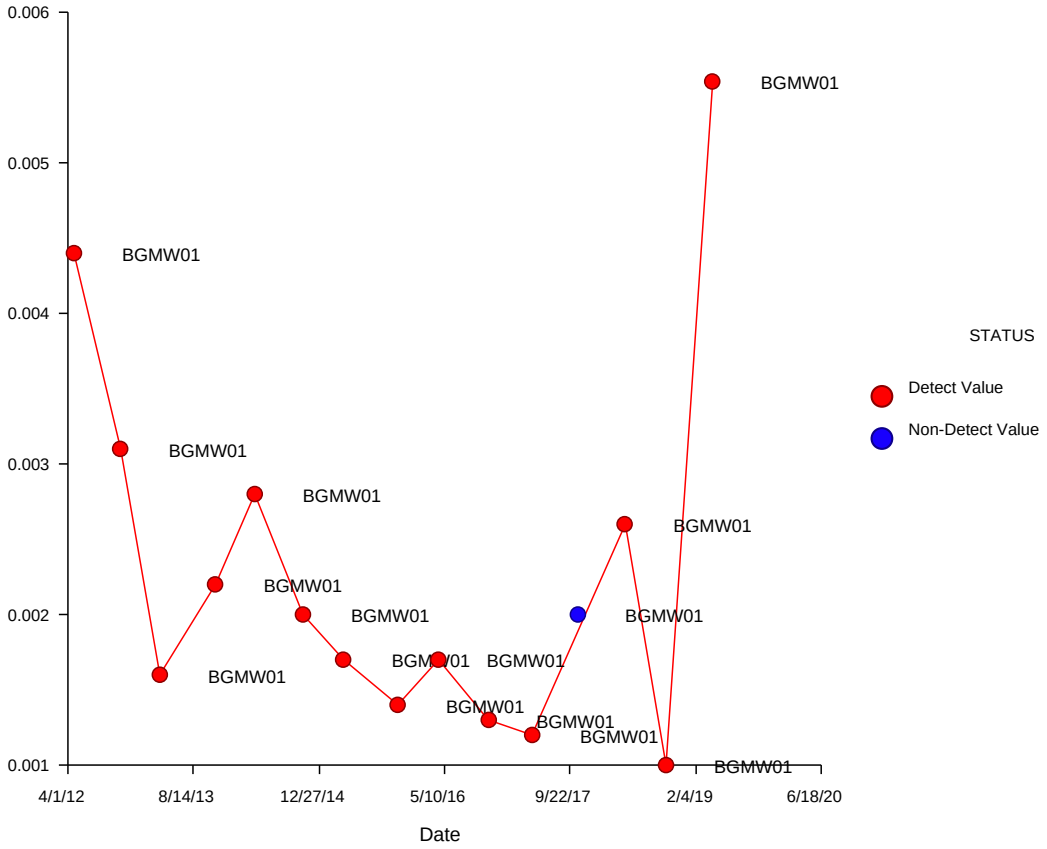
-- Symbol Size Options ----------

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_146"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_146"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

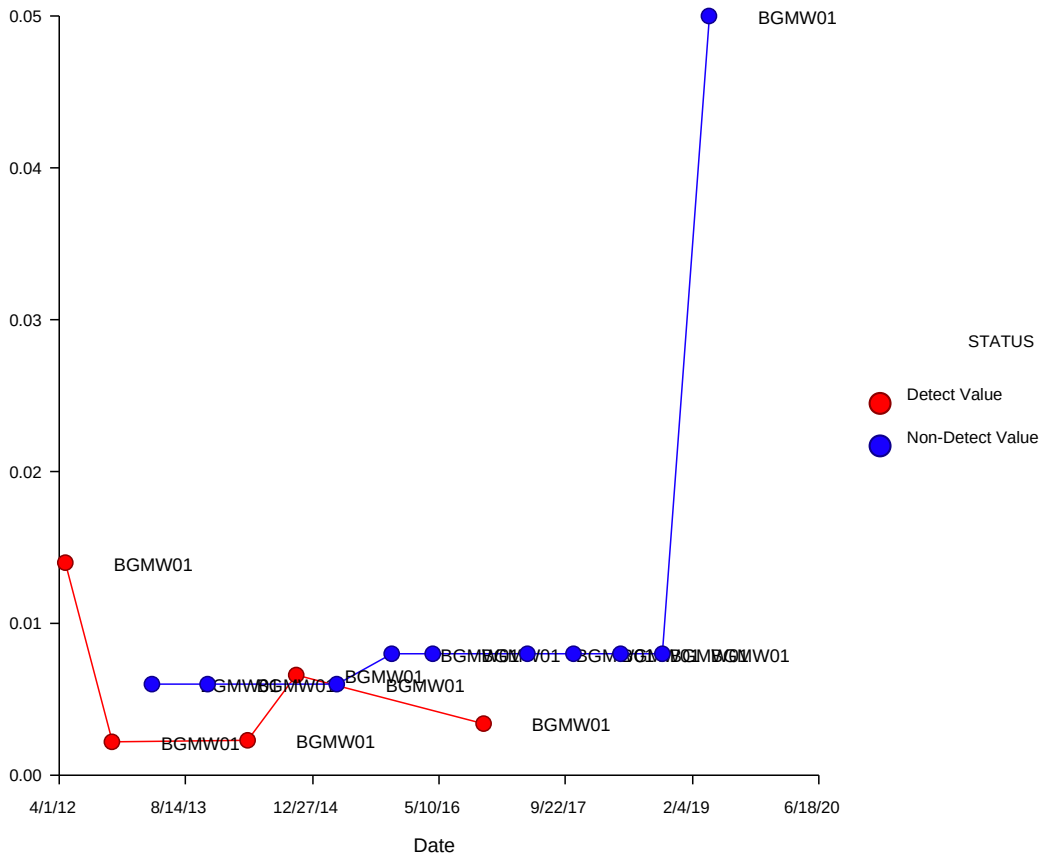
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_148"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_1_148"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

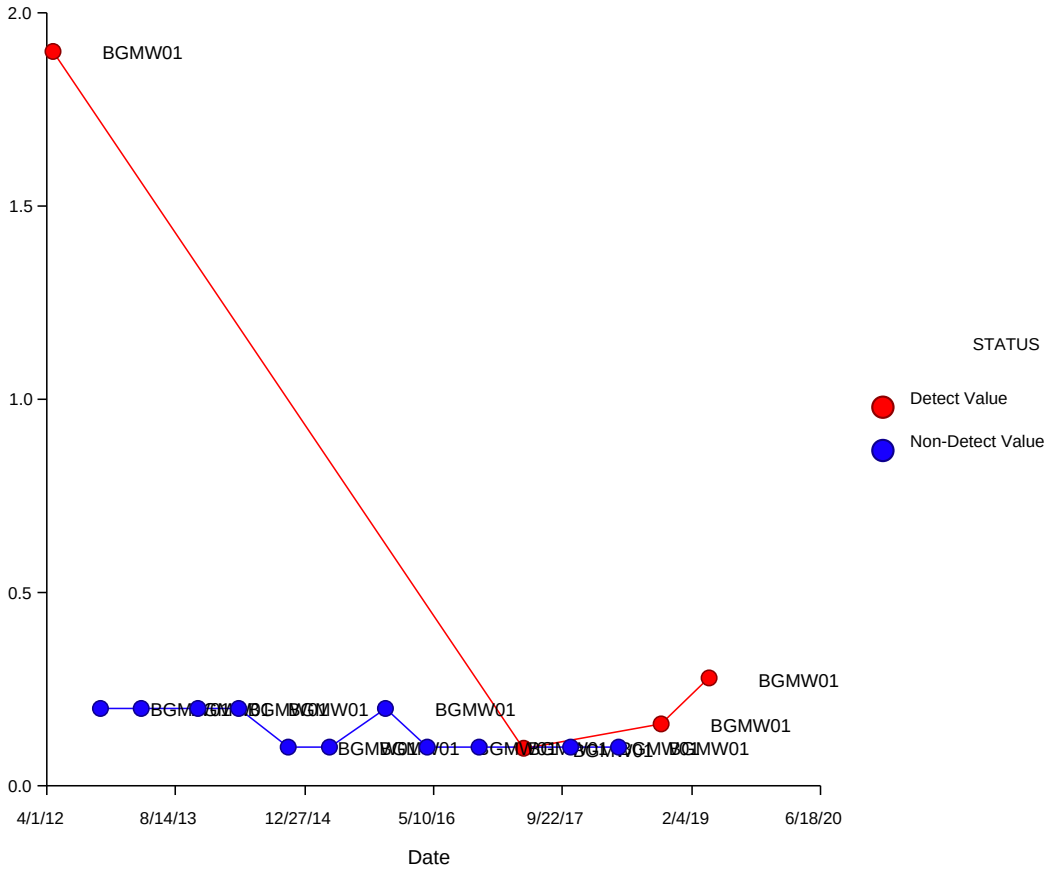
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_2_133"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_2_133"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

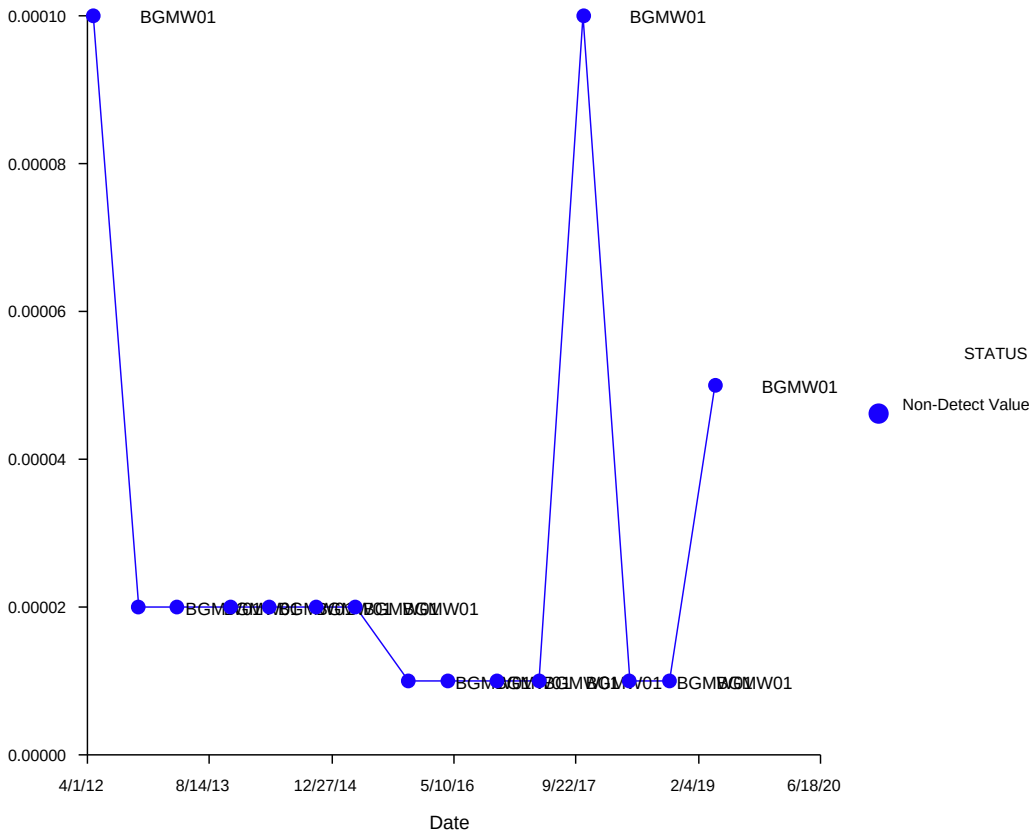
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_3_134"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_3_134"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

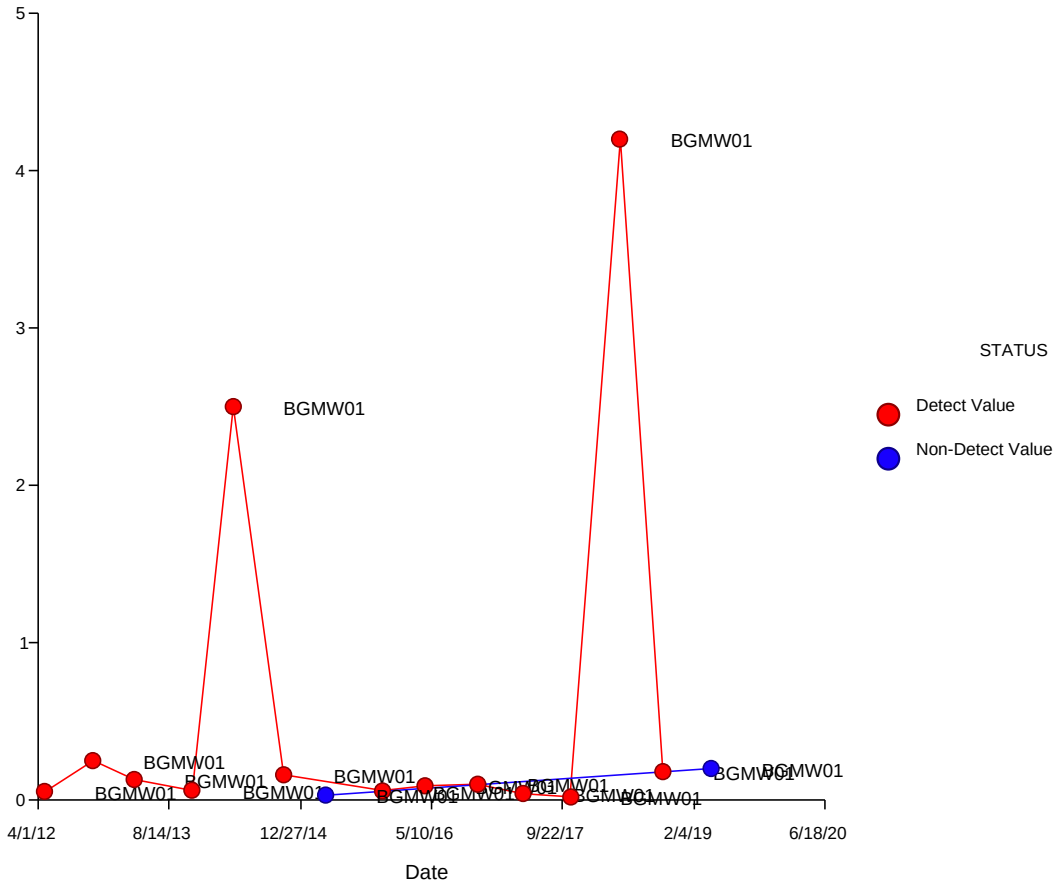
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_101"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_101"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

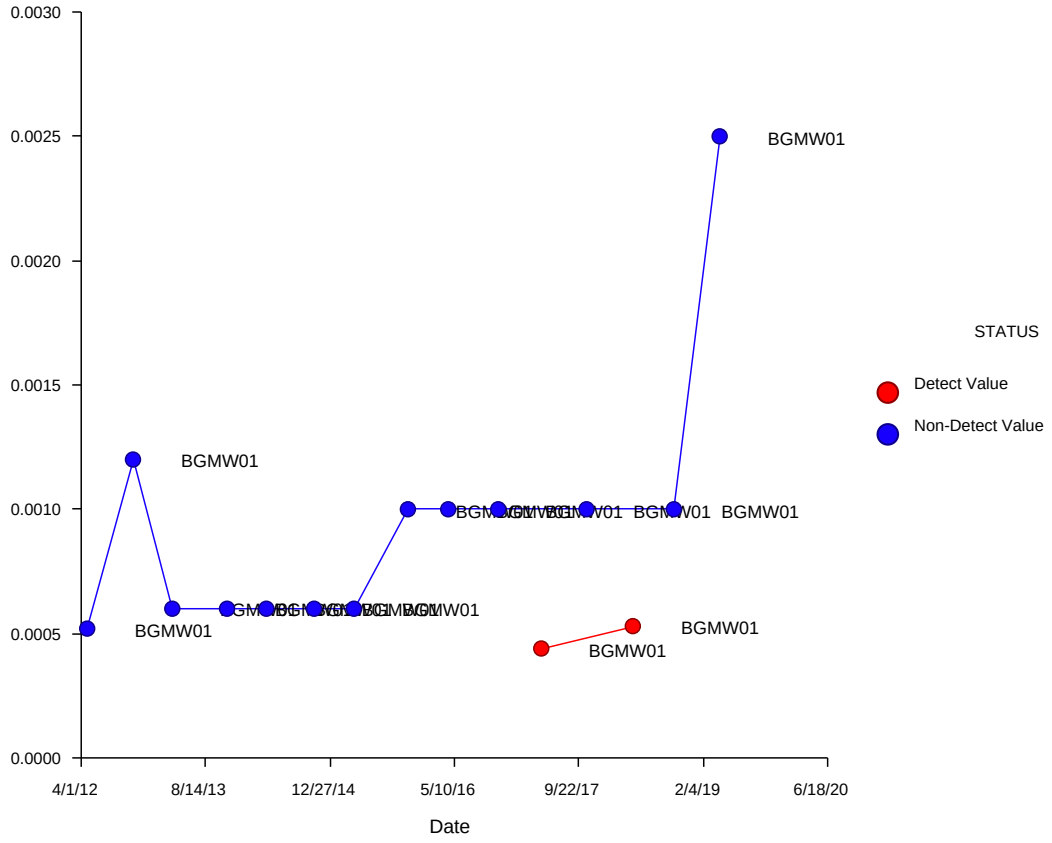
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_103"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_103"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

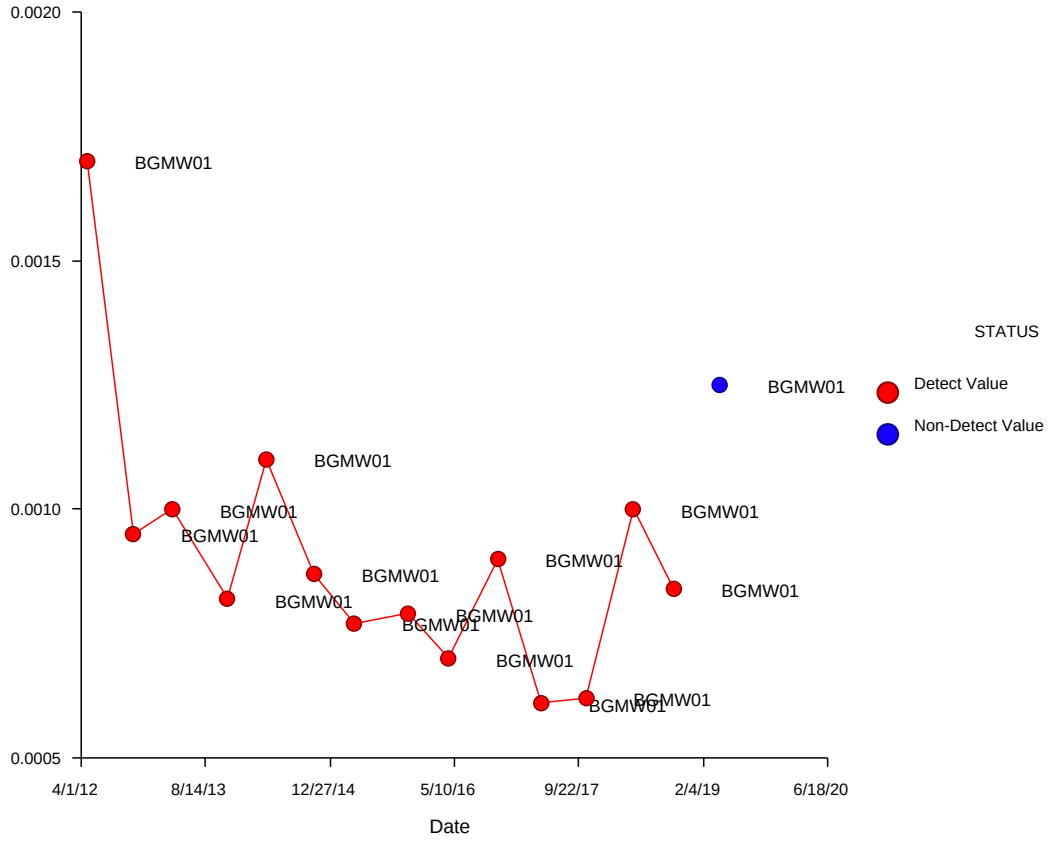
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_105"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_105"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

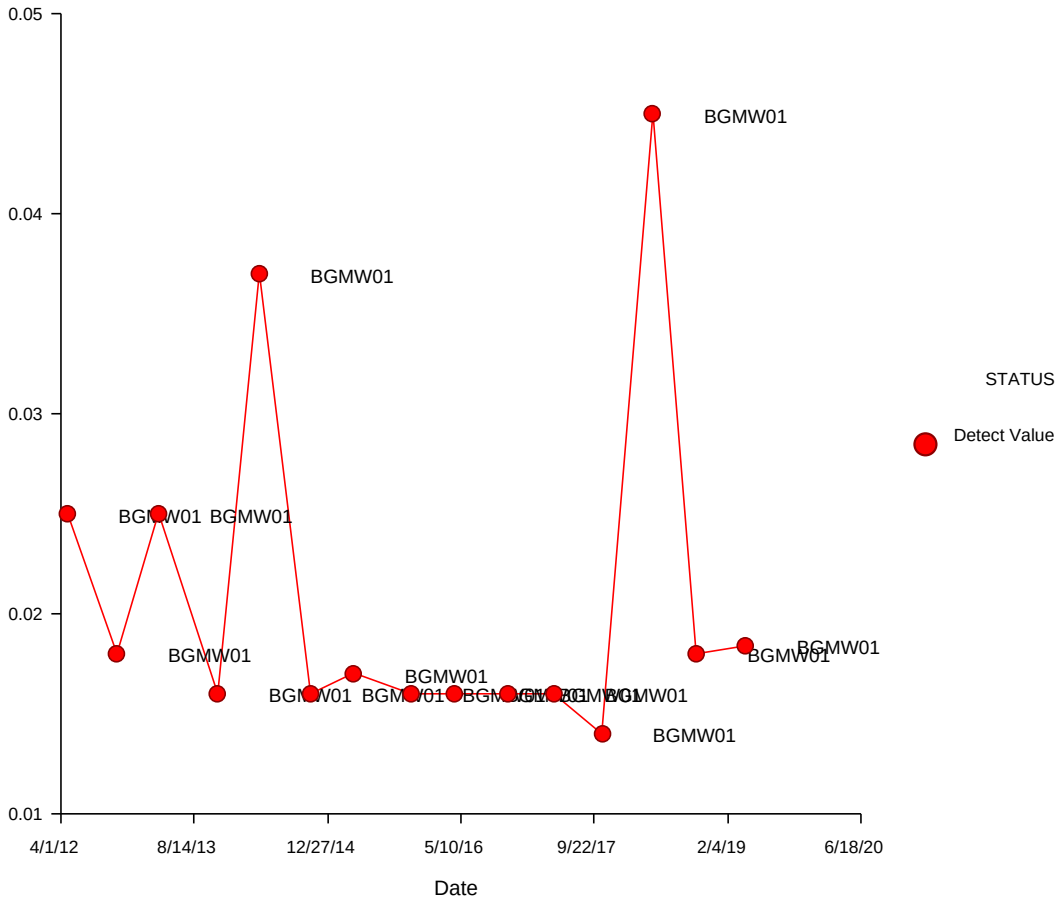
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_107"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_107"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

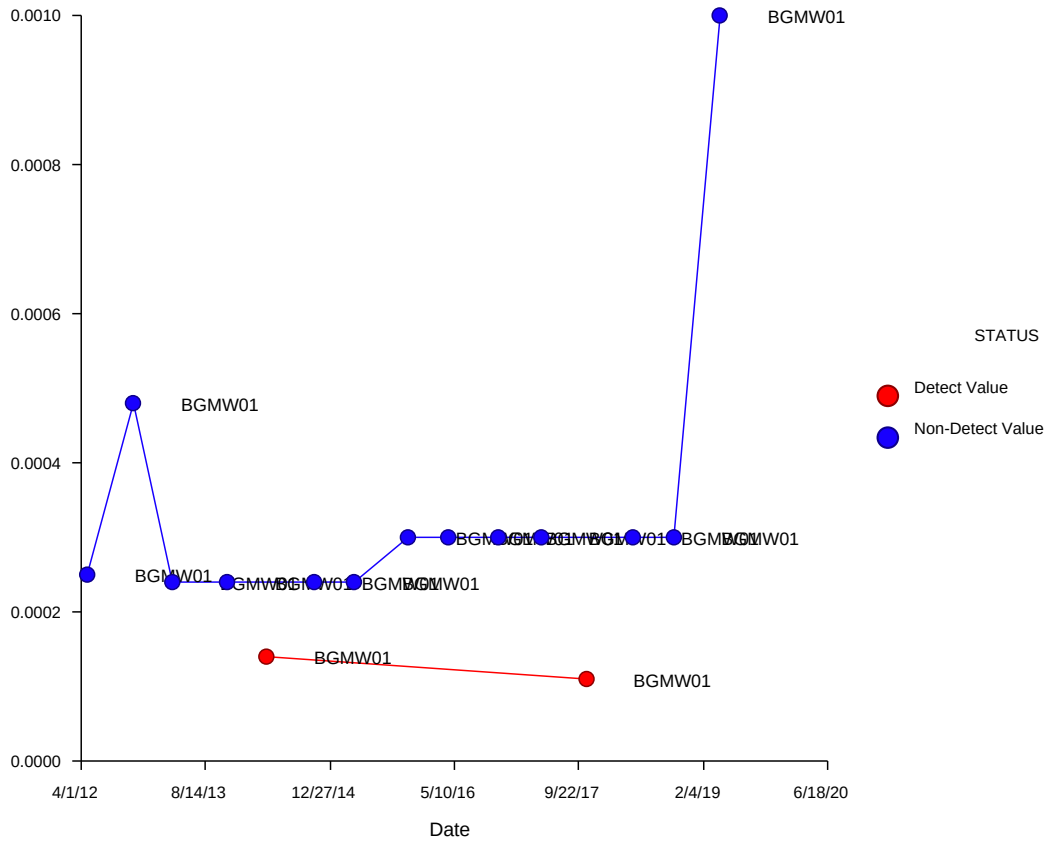
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_109"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_109"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

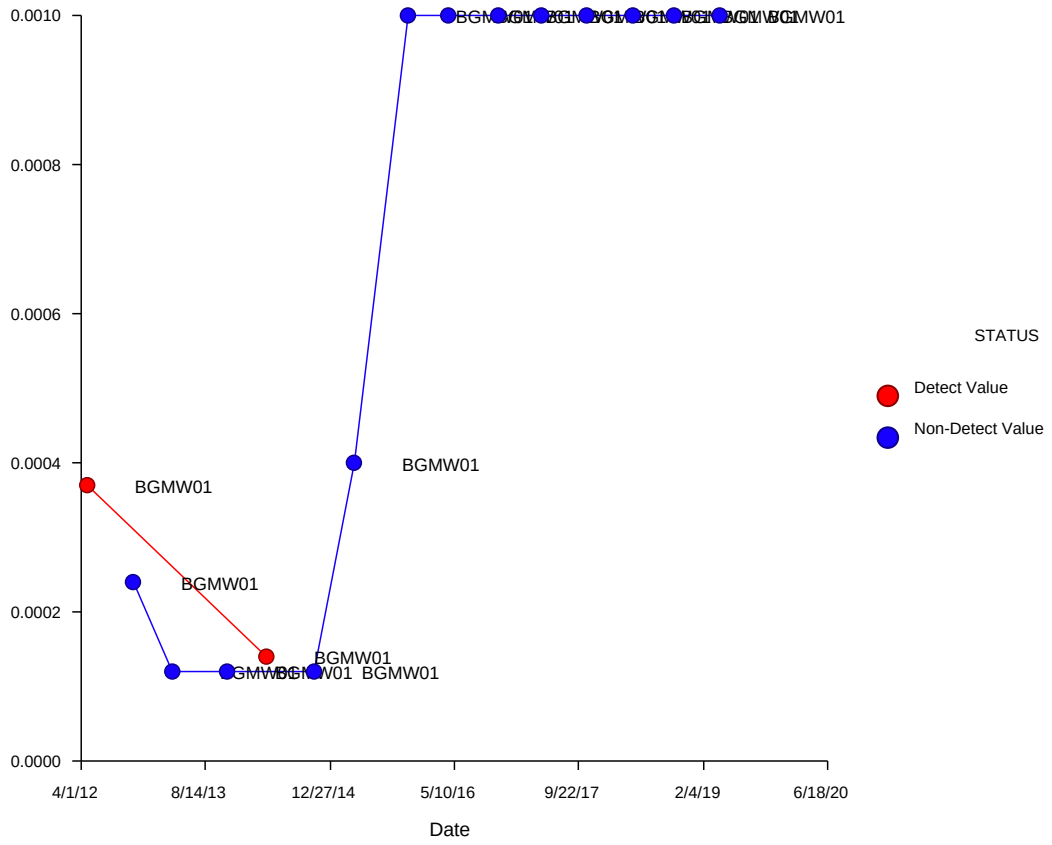
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_111"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_111"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

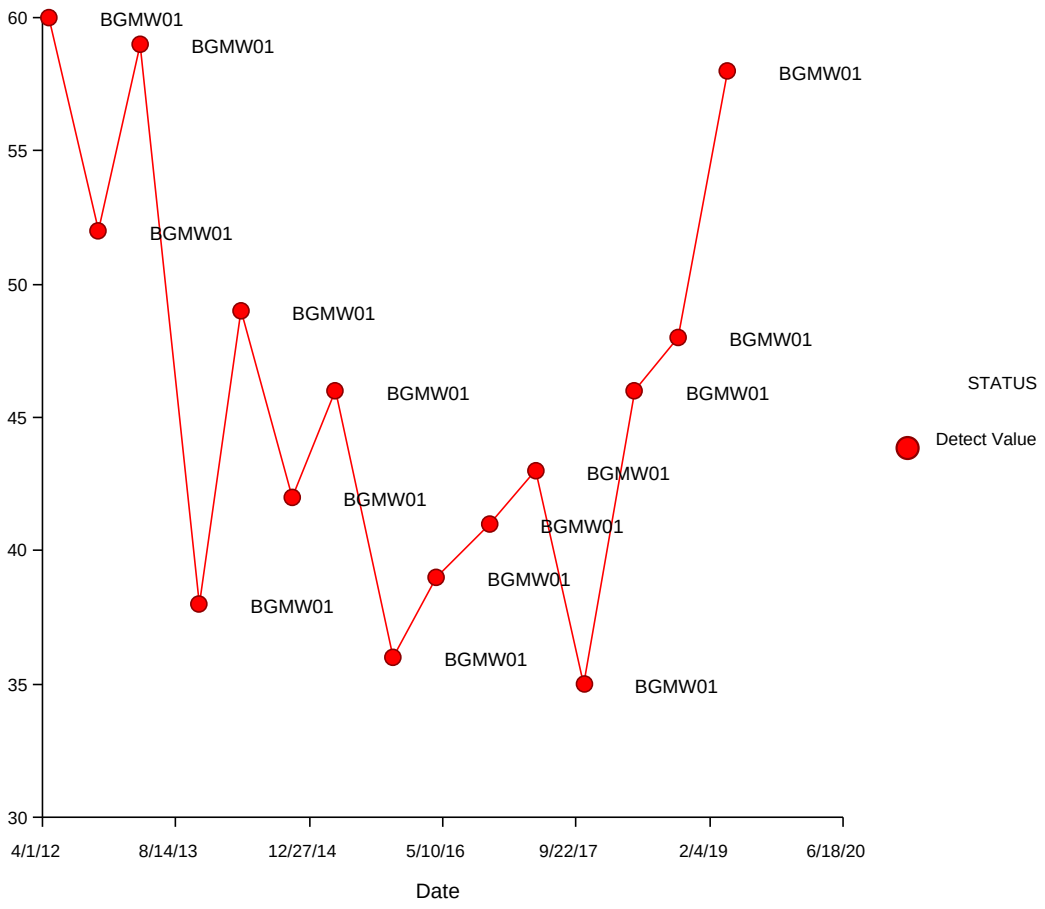
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_113"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_113"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

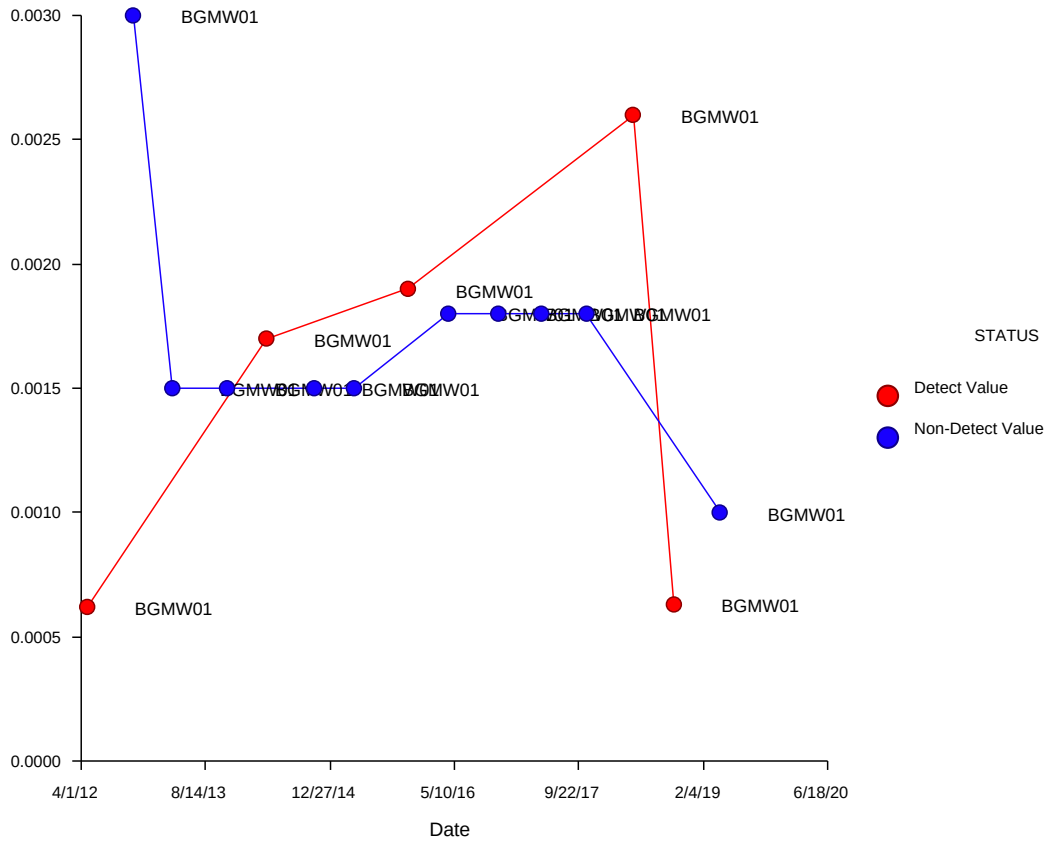
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_115"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_115"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

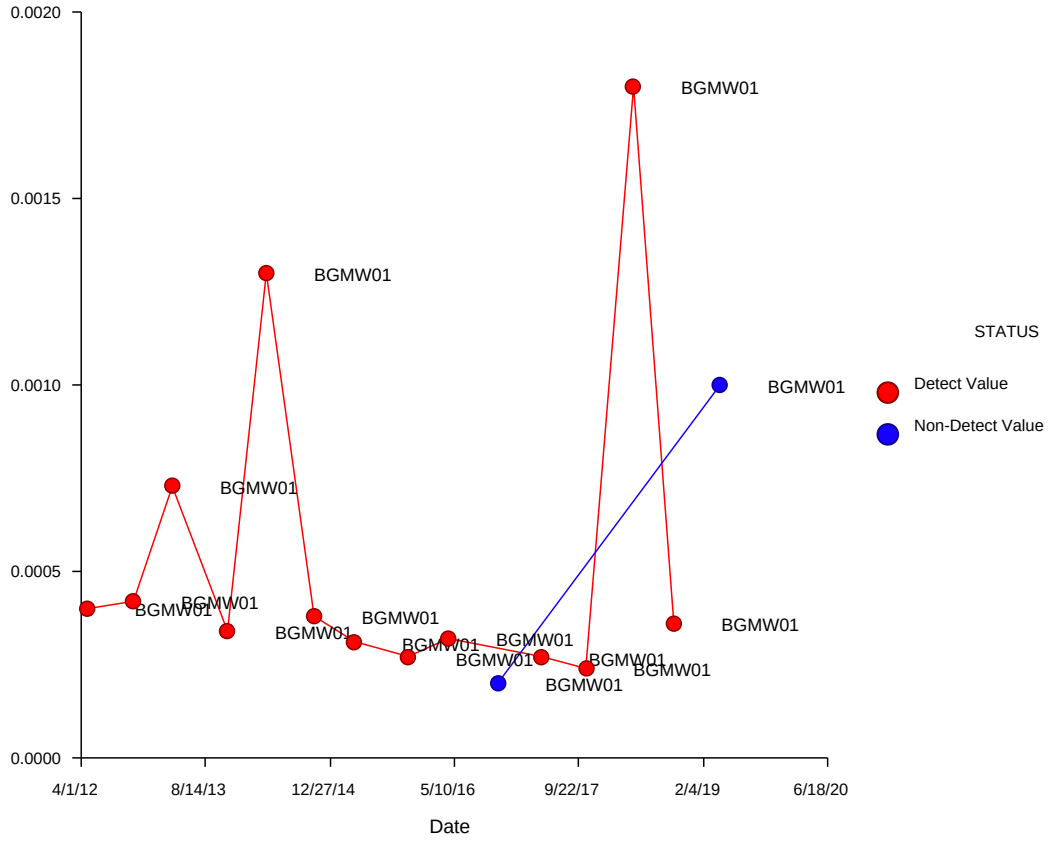
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_117"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_117"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

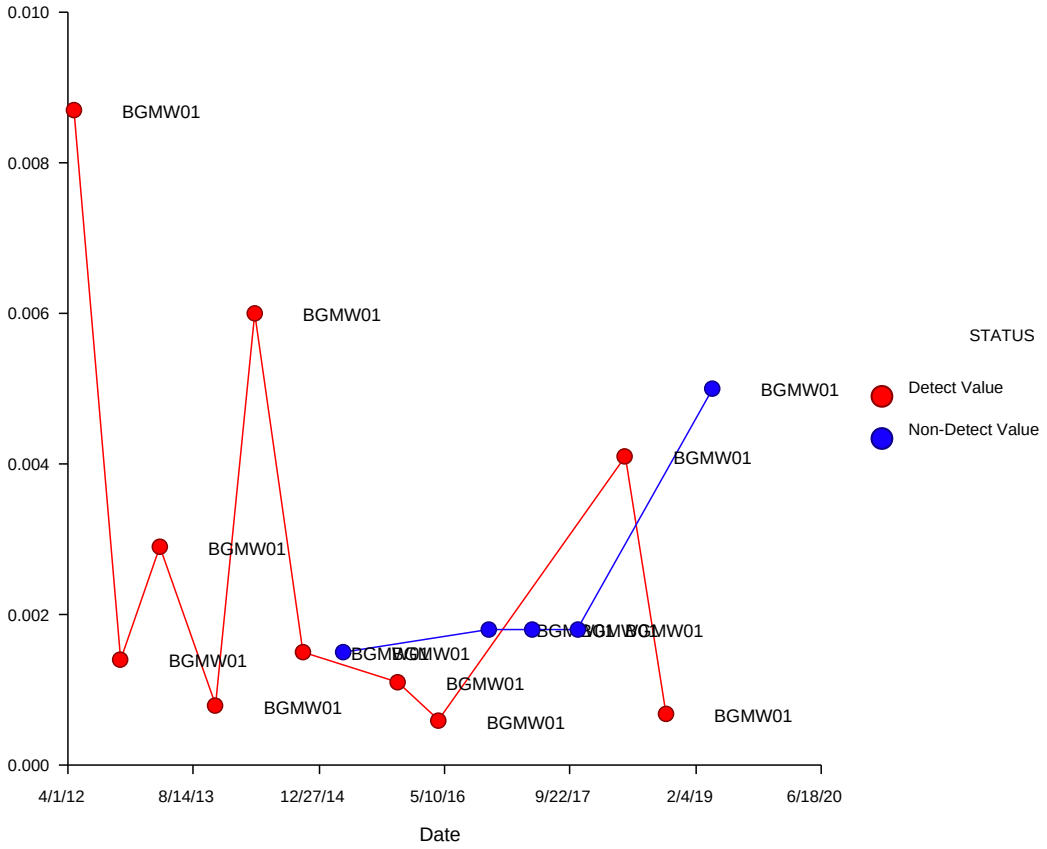
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_119"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_119"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

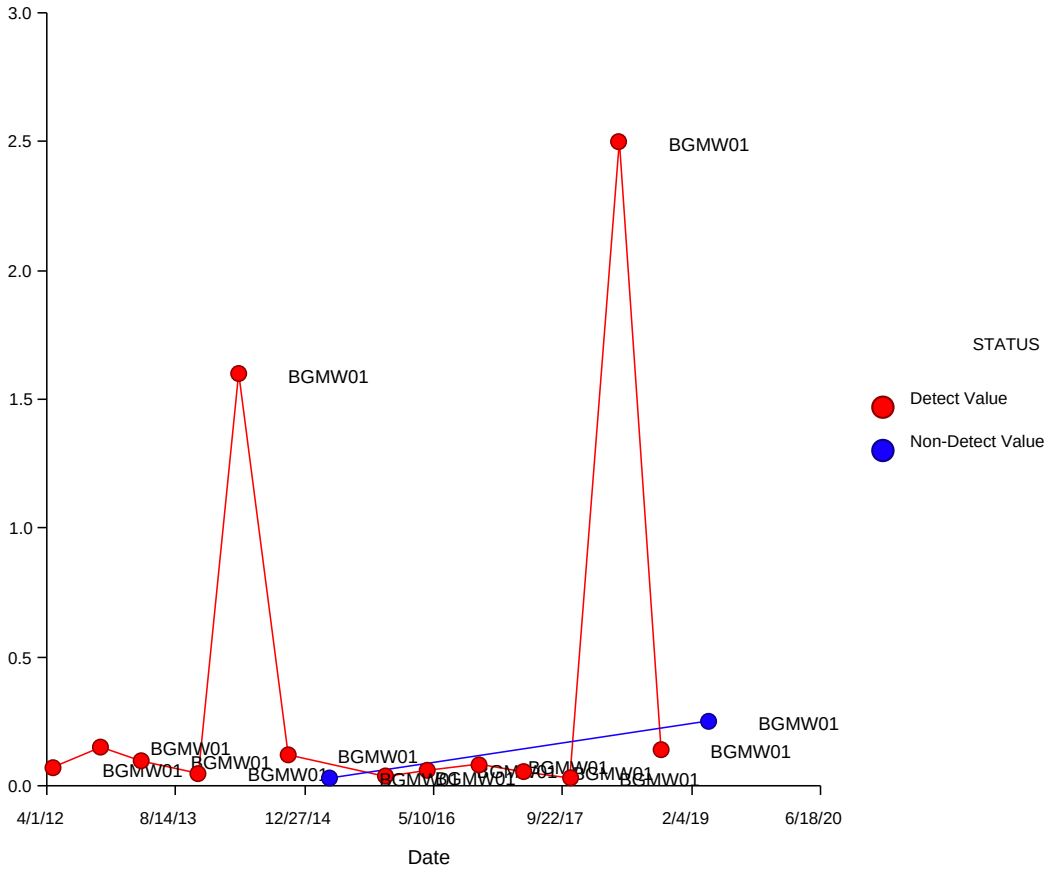
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_121"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_121"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

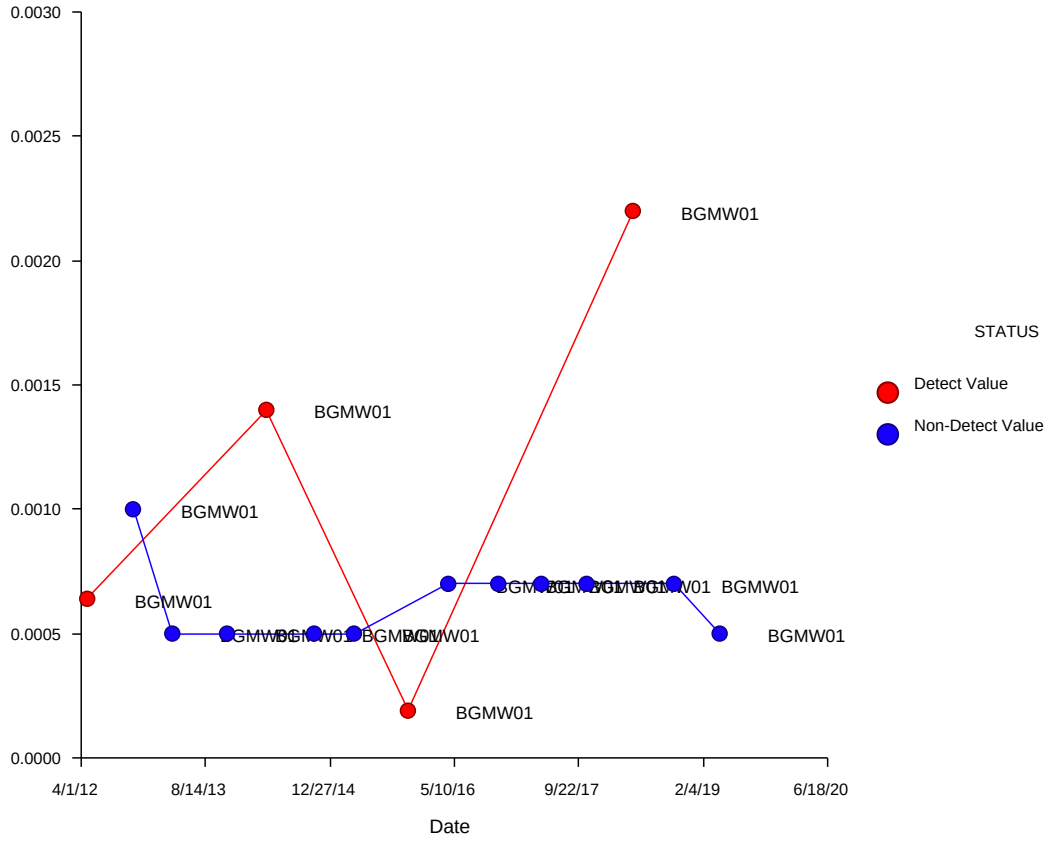
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_123"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_123"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

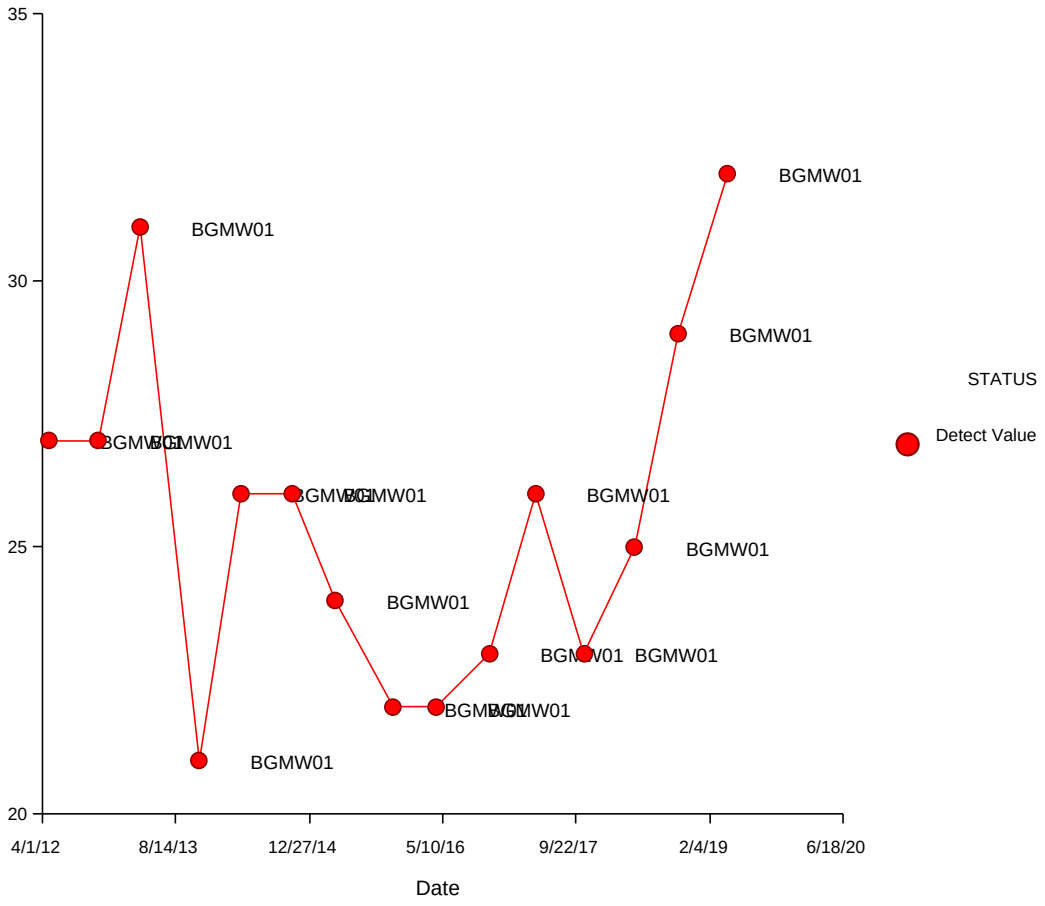
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_125"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_125"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

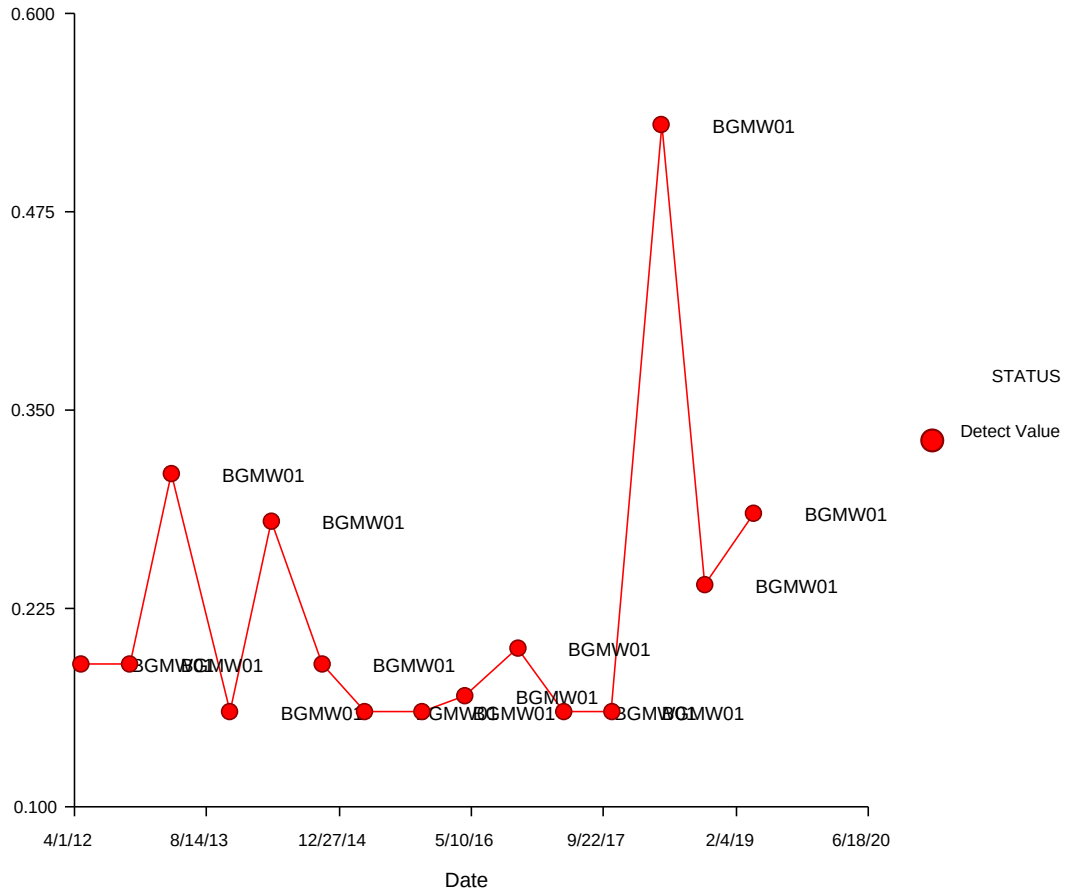
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_127"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_127"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

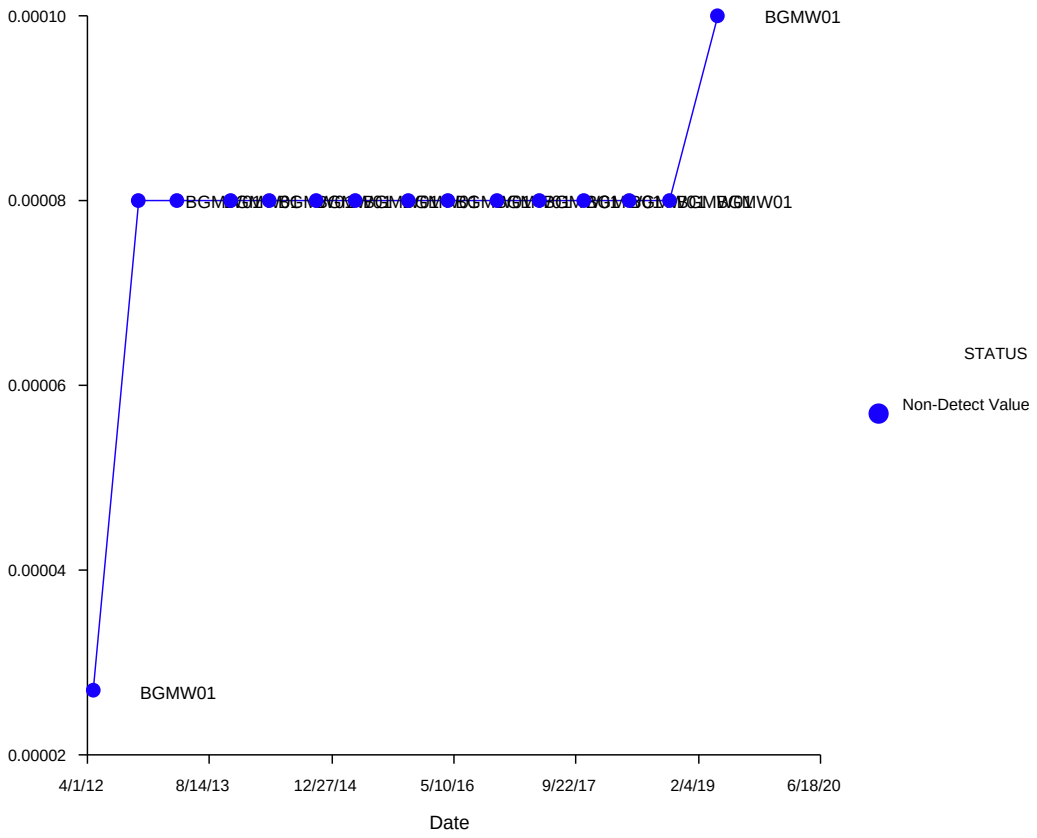
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_129"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_129"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

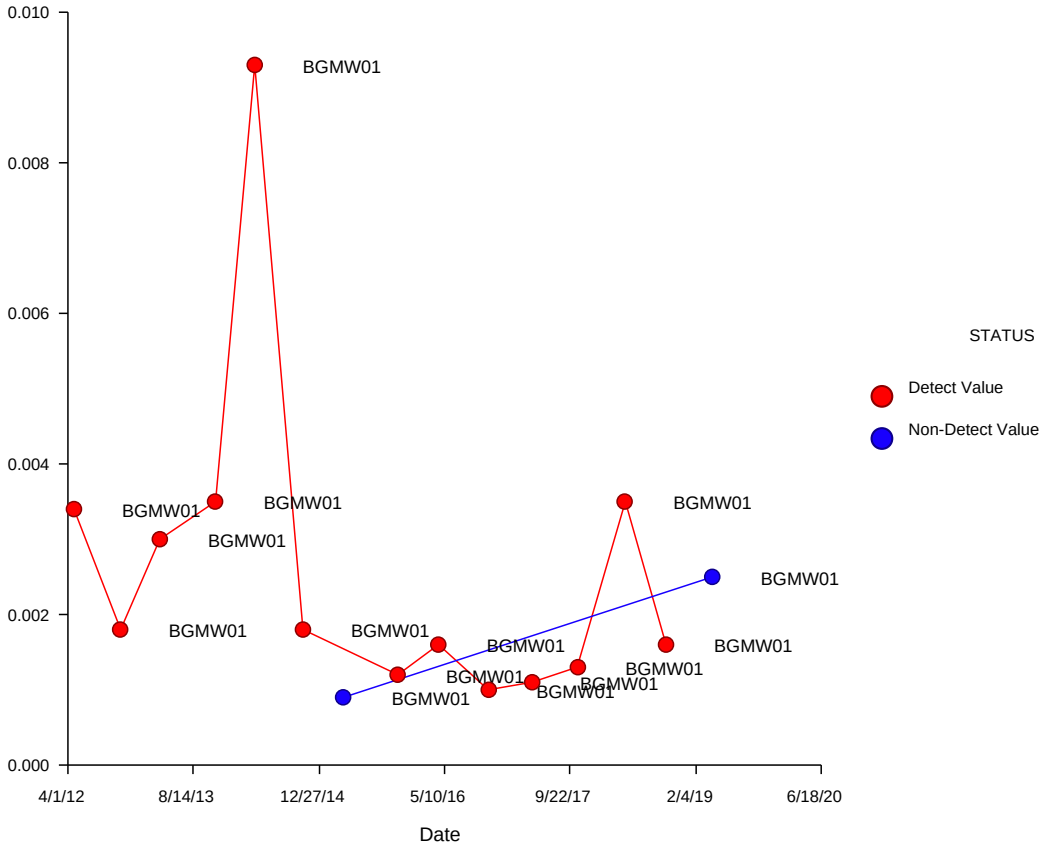
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_131"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_131"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

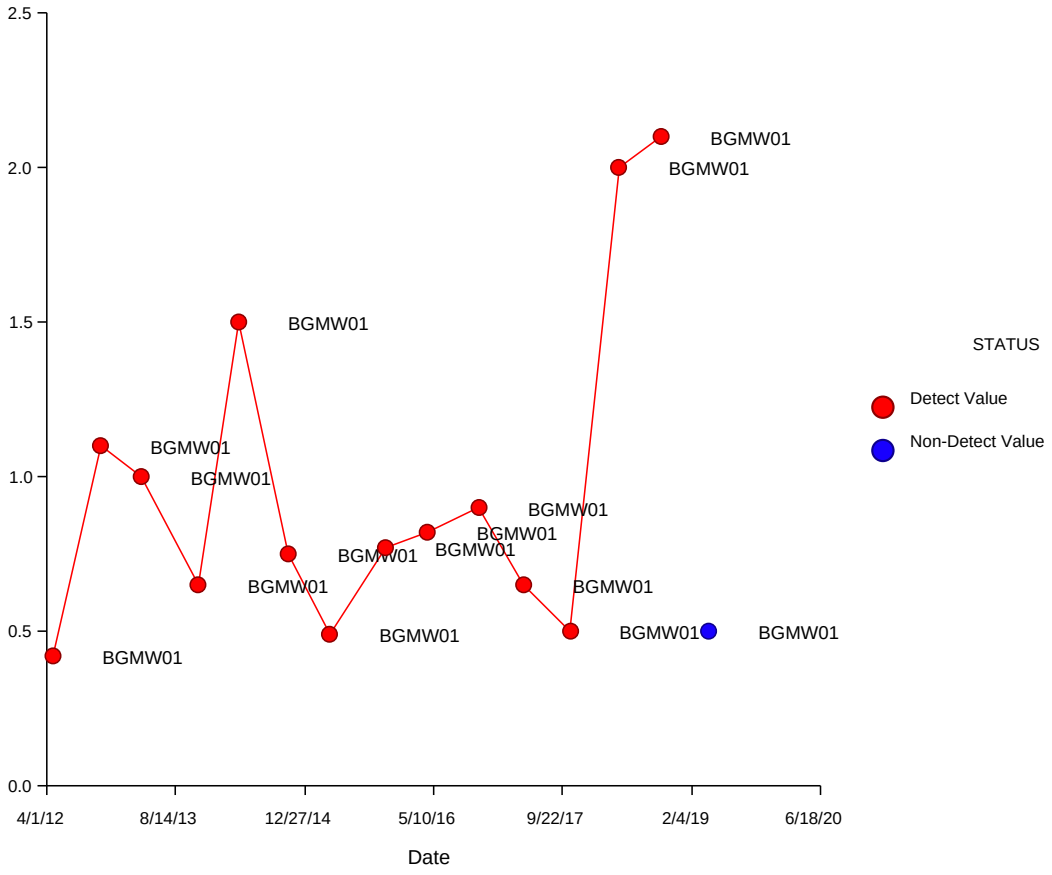
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_135"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_135"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

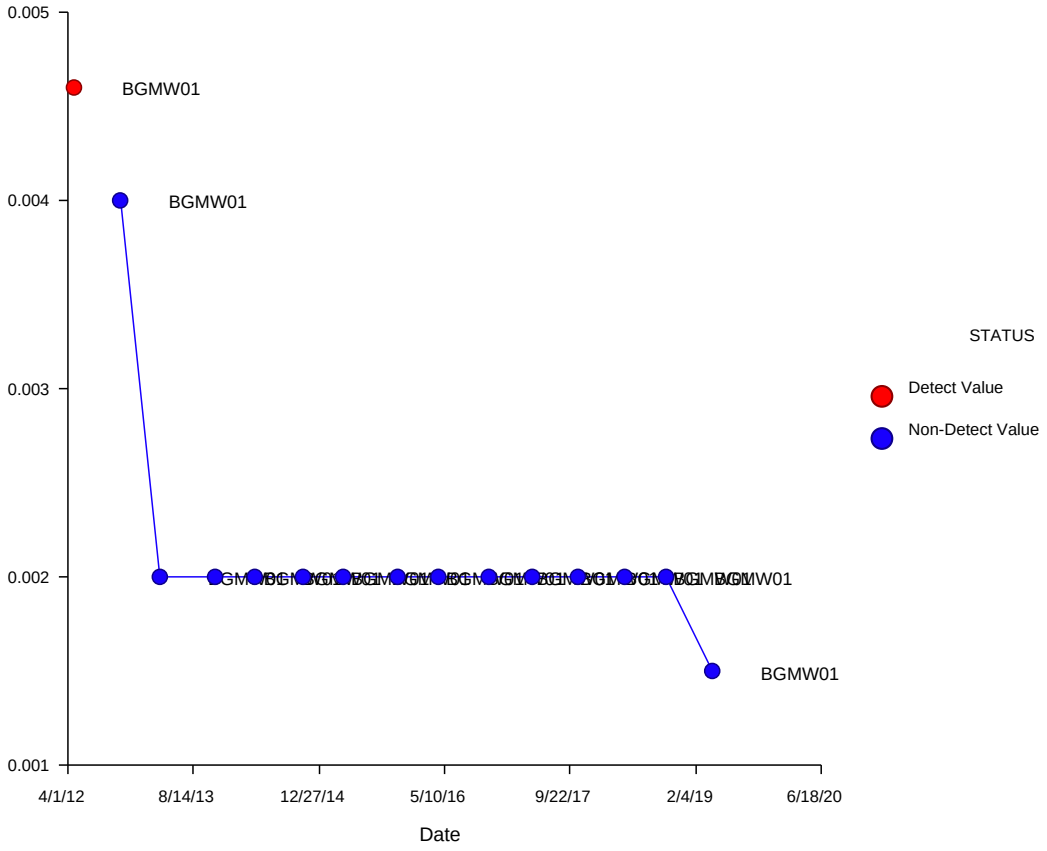
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_137"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_137"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

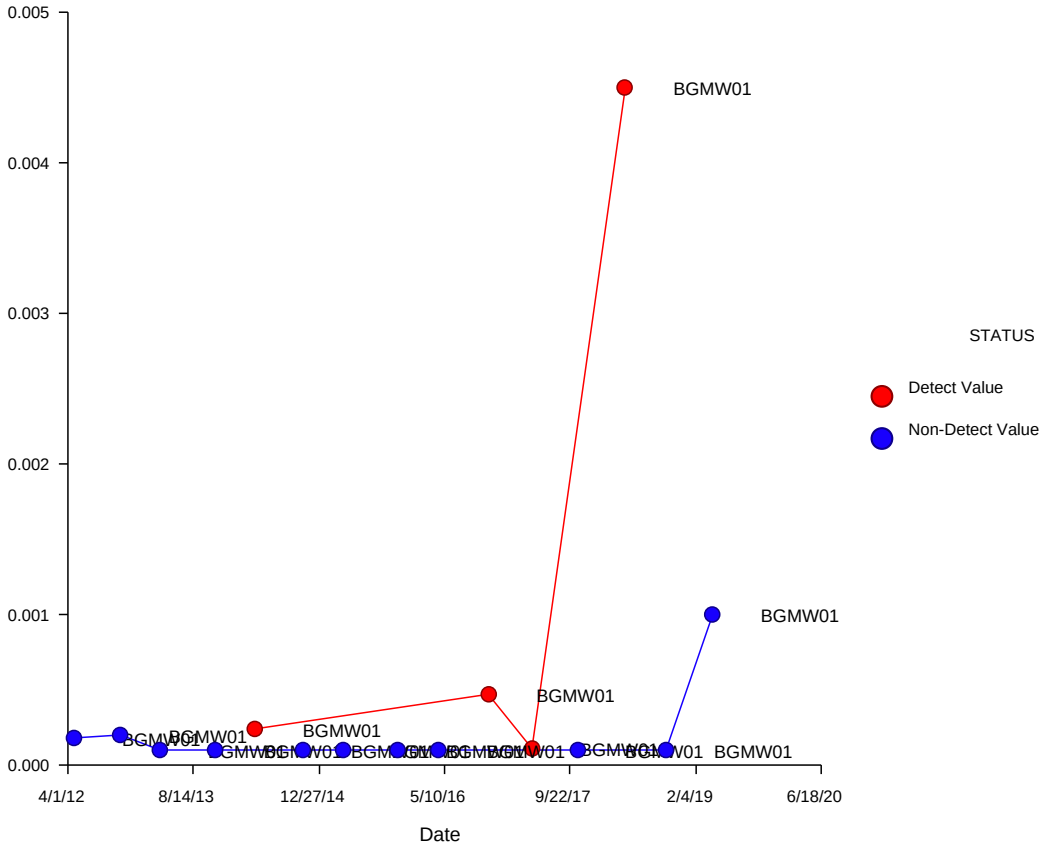
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_139"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_139"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

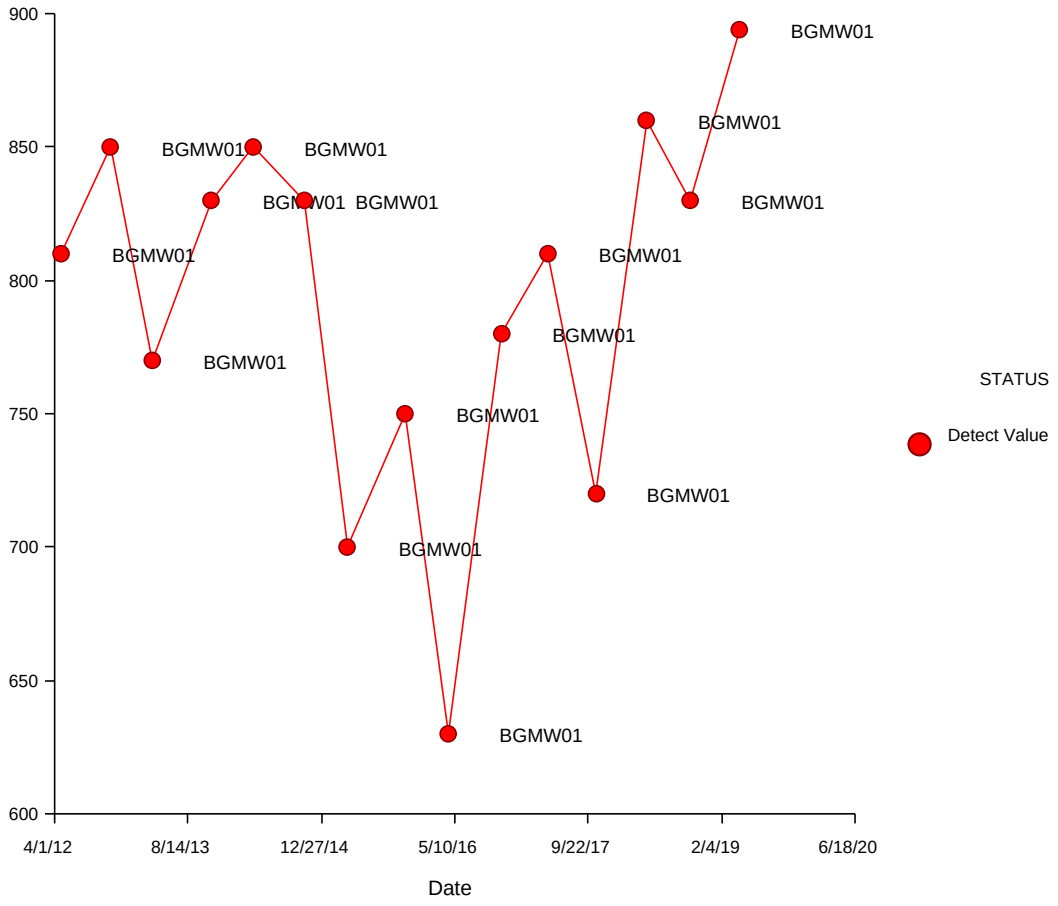
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_141"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_141"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

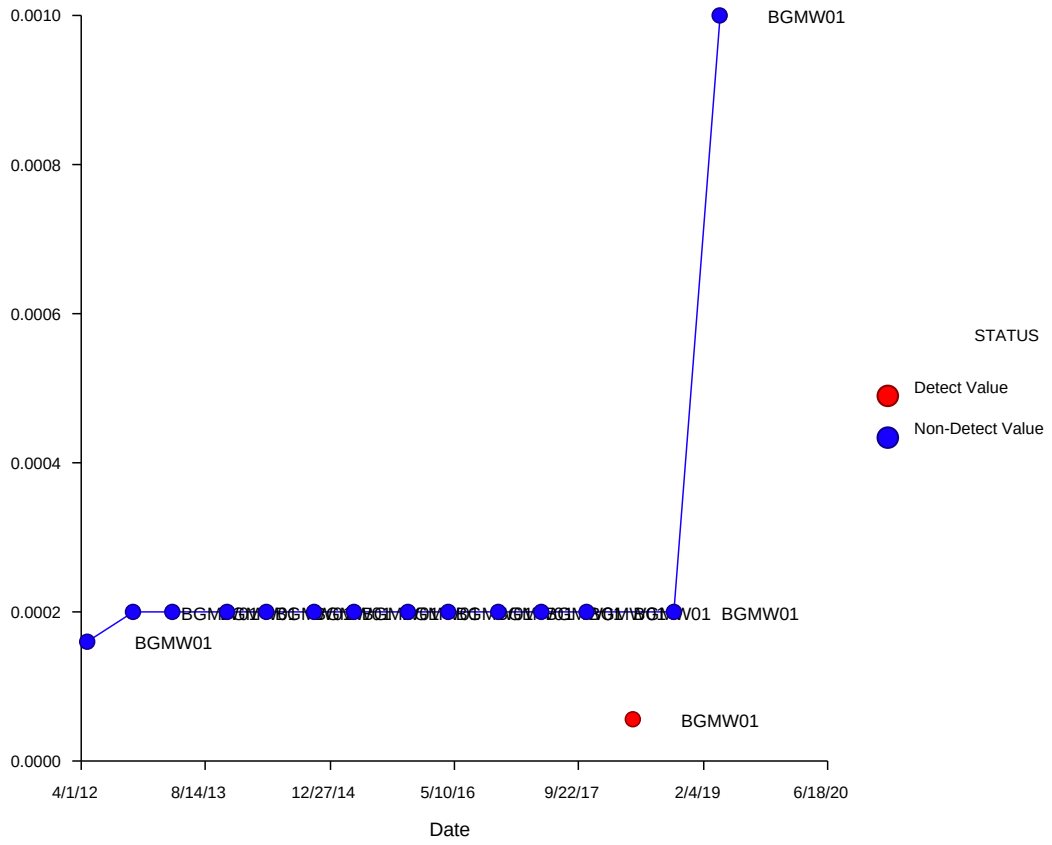
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_143"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_143"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

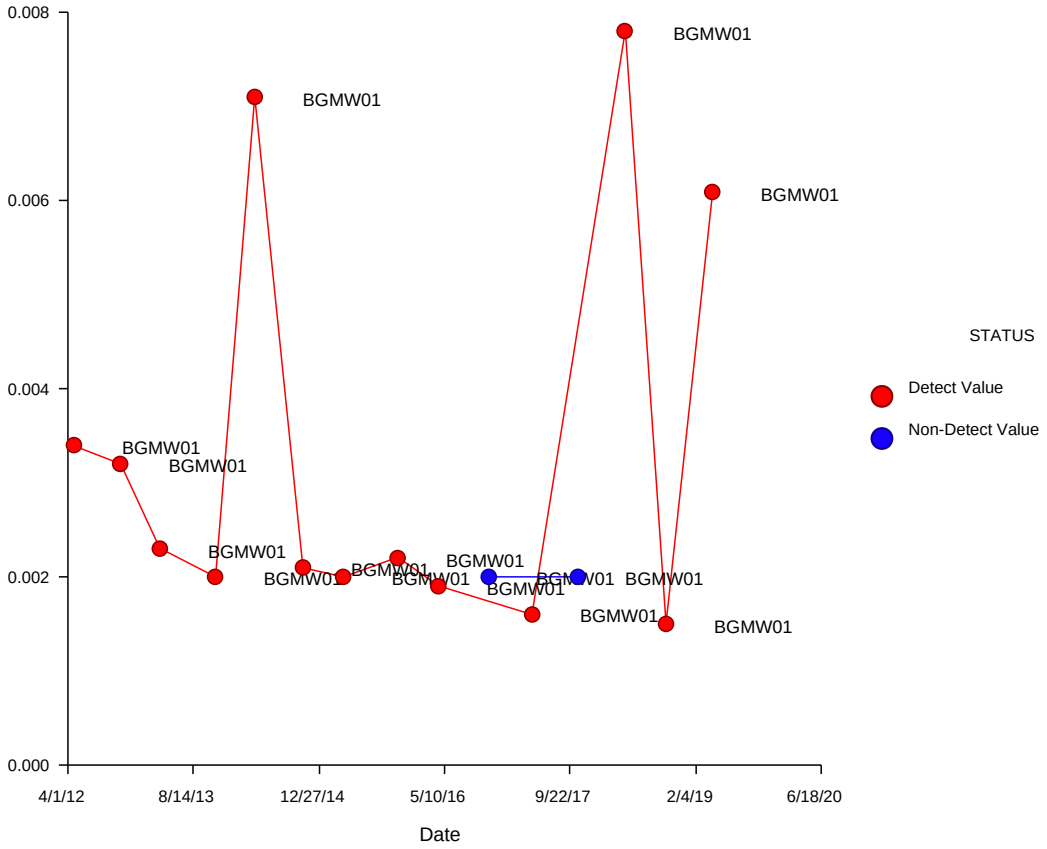
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_145"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_145"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

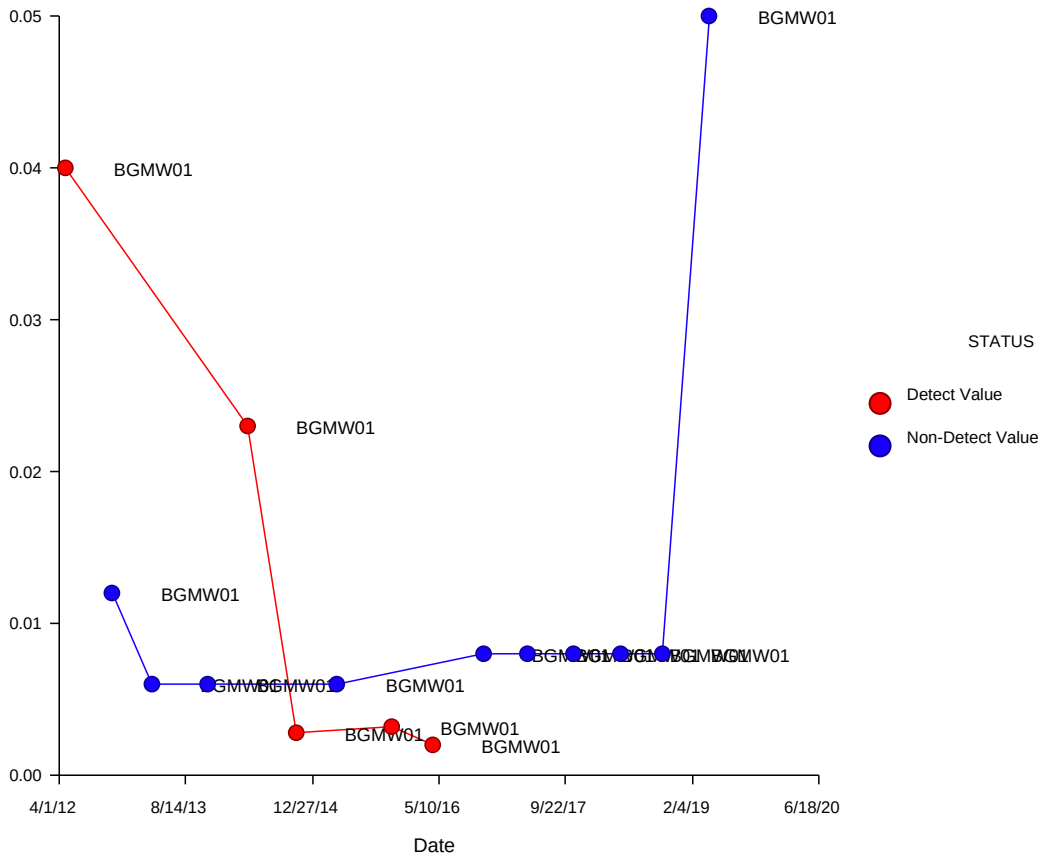
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_147"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "1_4_147"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

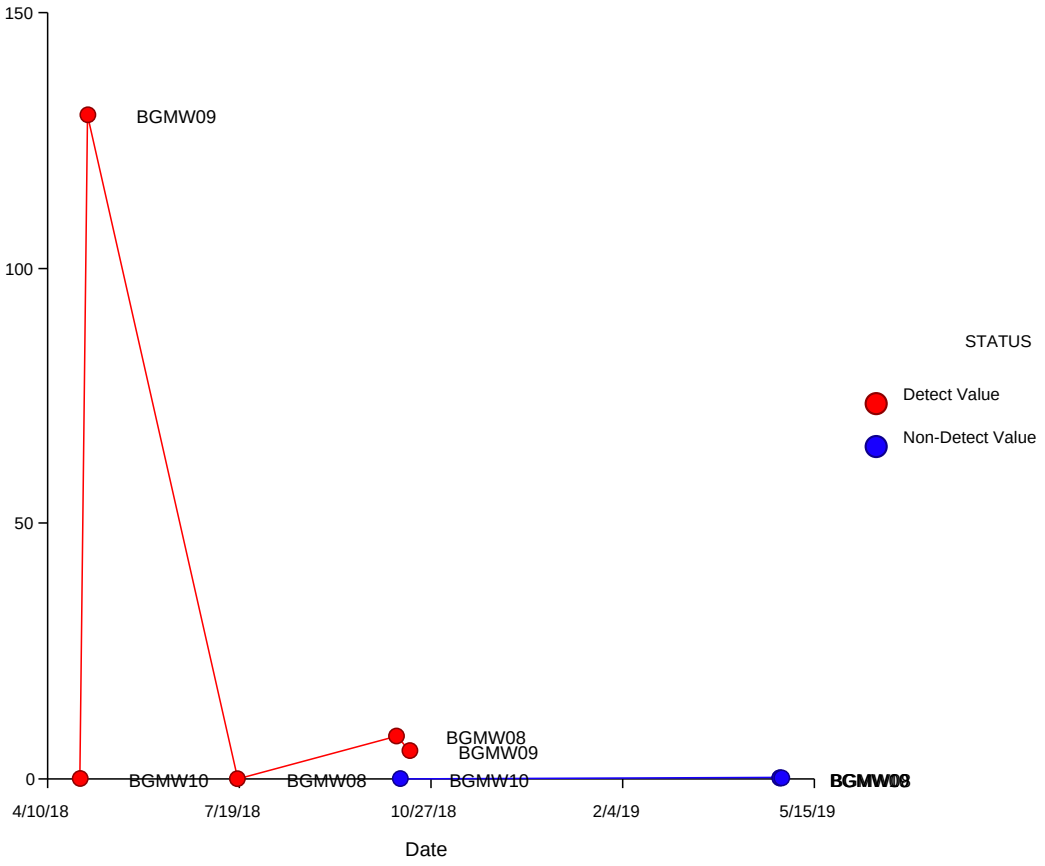
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_102"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_102"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

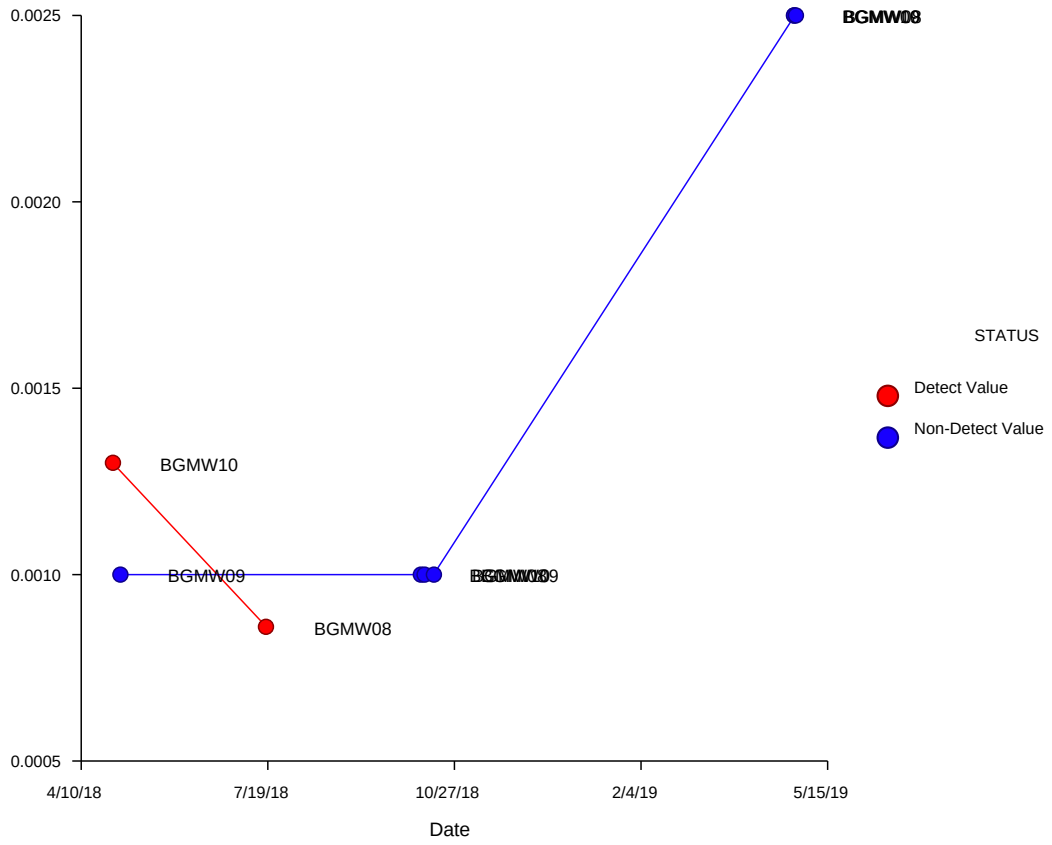
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_104"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_104"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

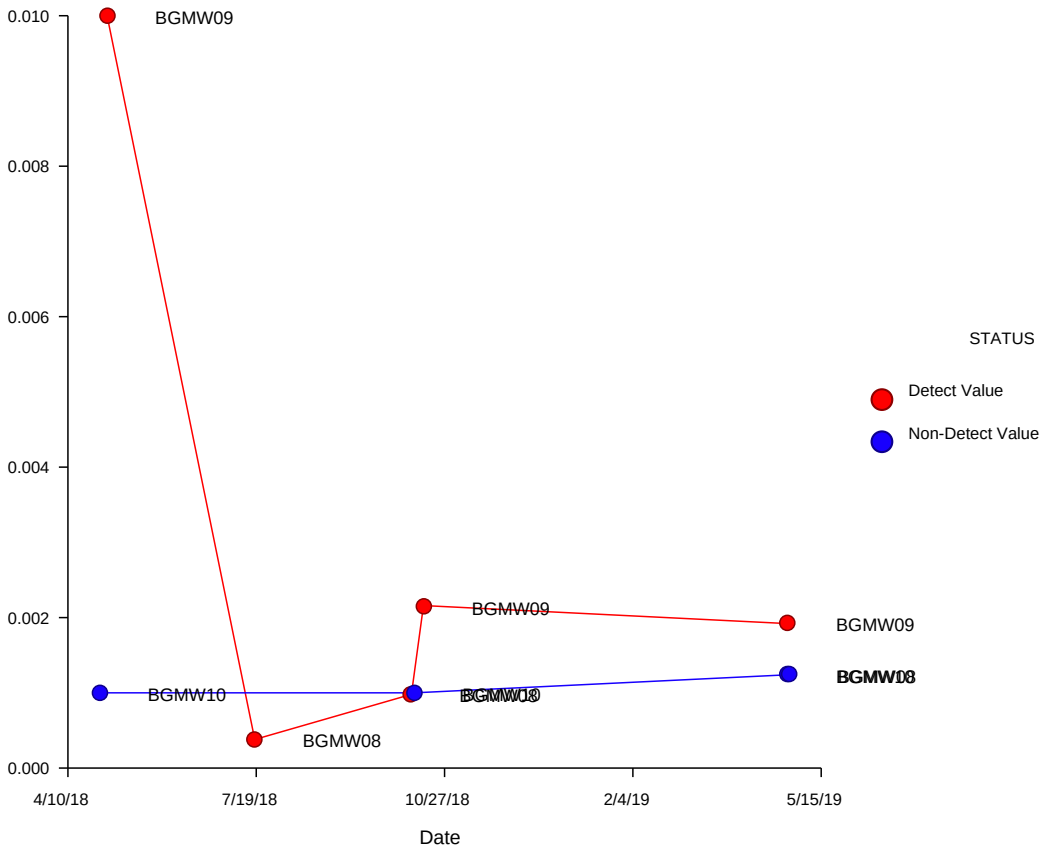
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_106"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_106"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

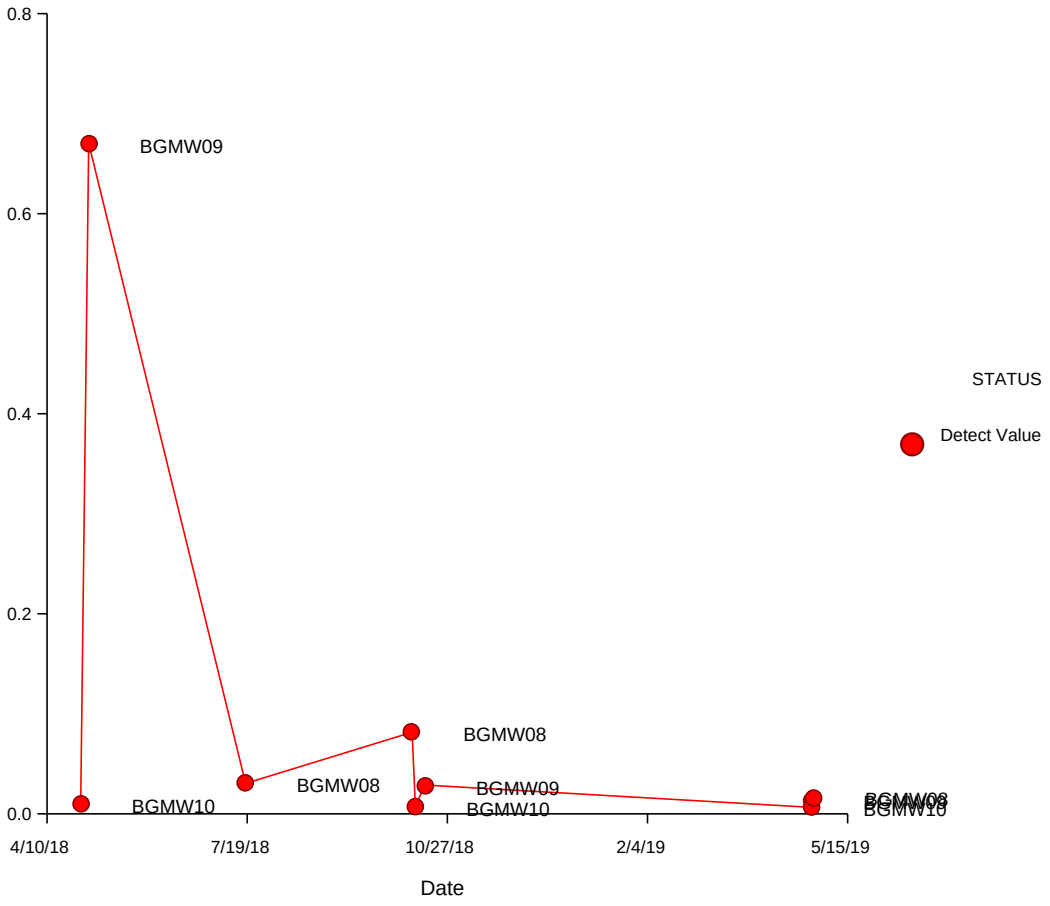
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_108"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_108"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

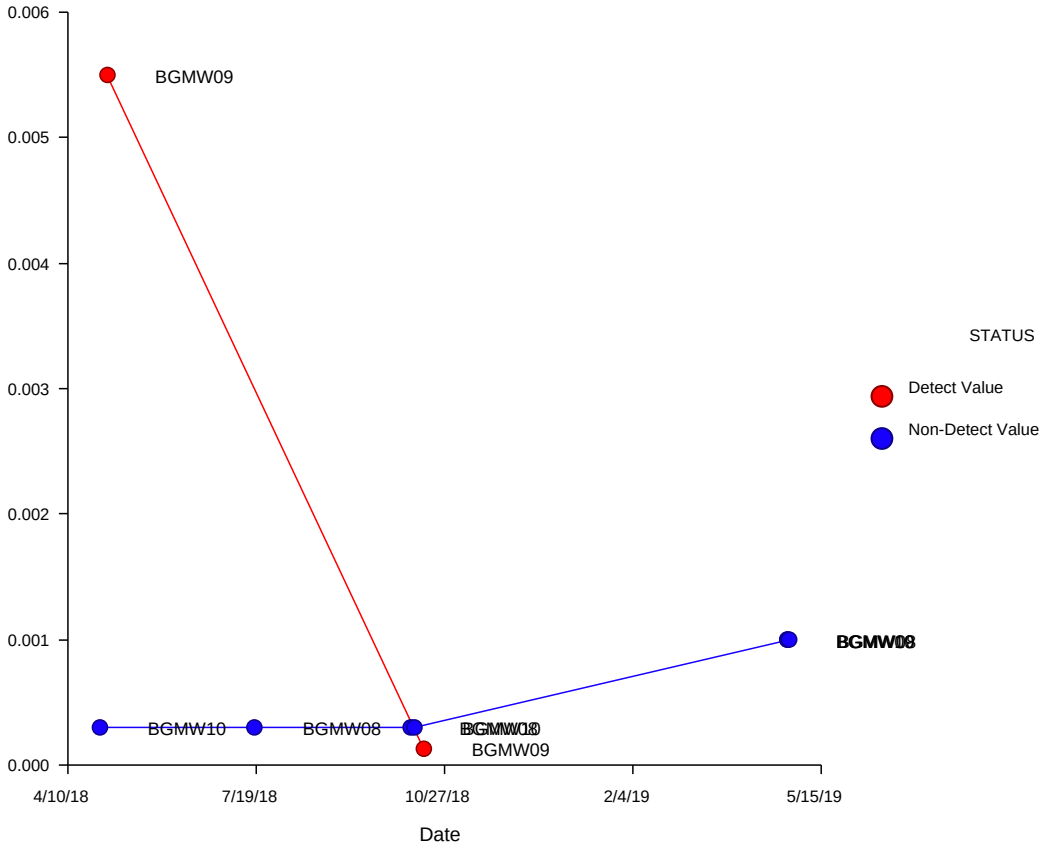
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_110"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_110"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

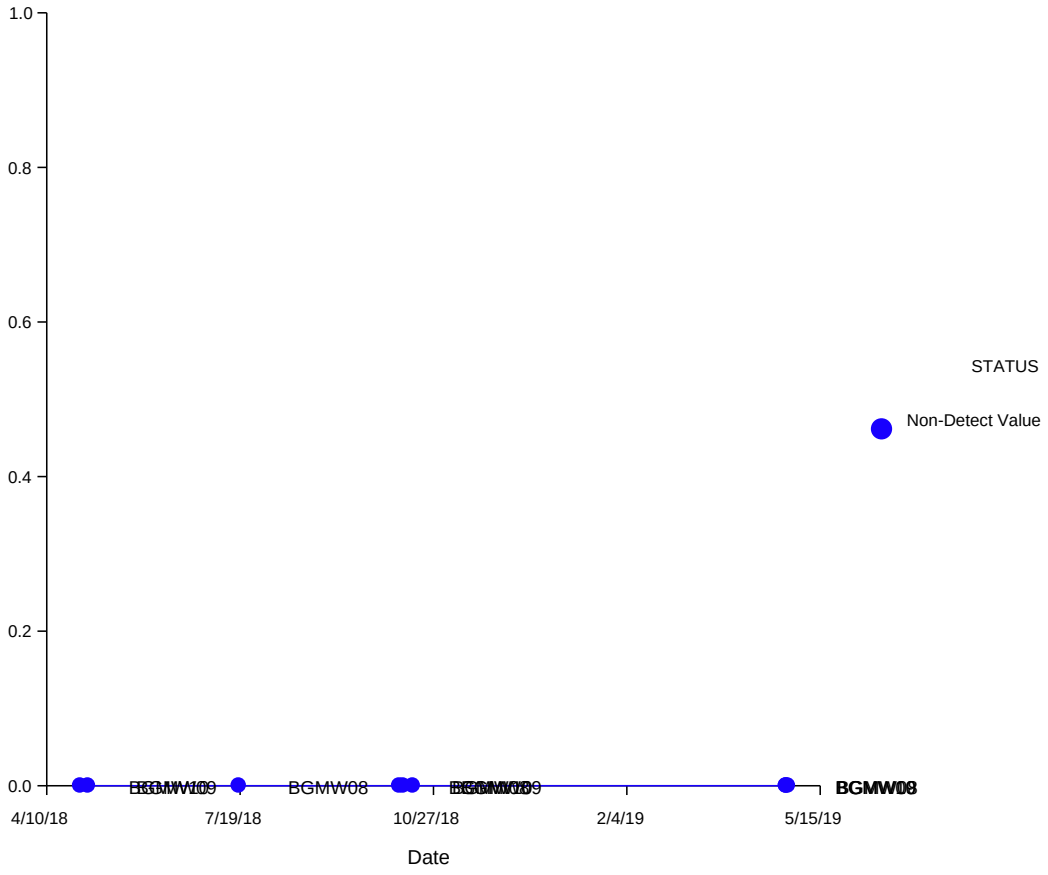
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_112"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_112"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

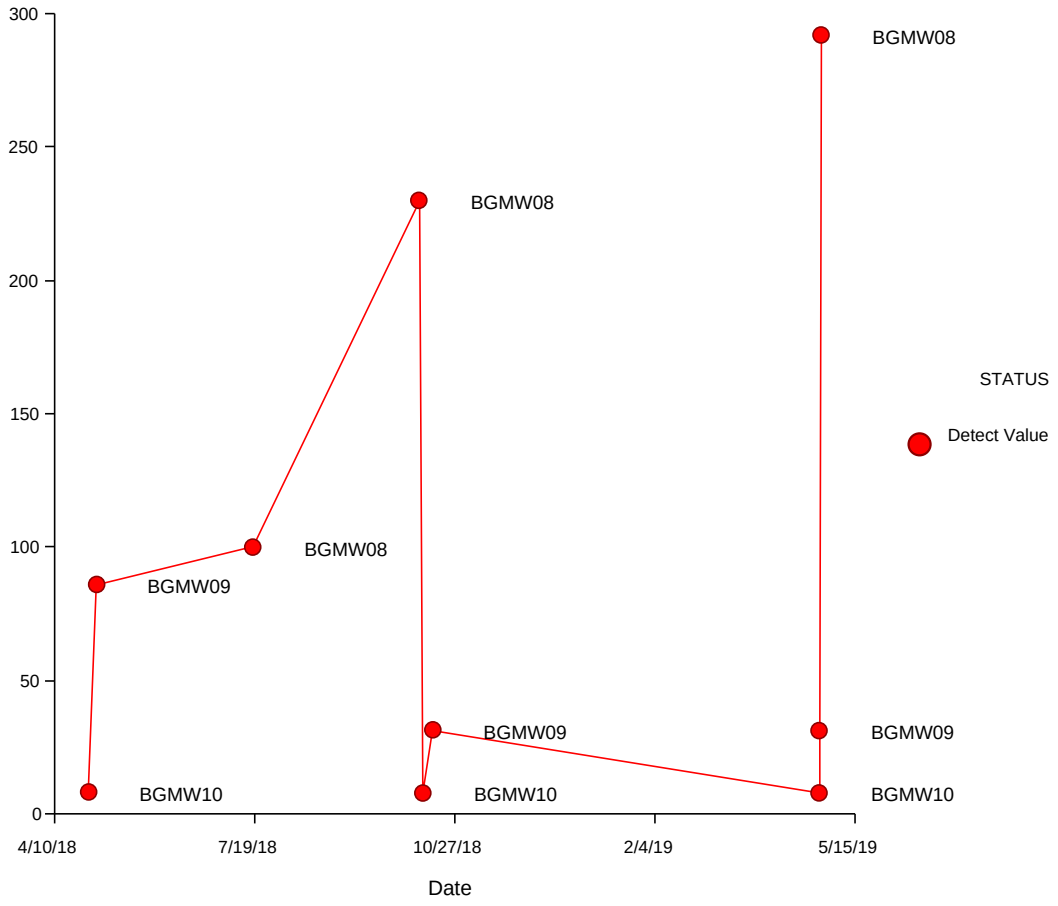
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_114"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_114"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

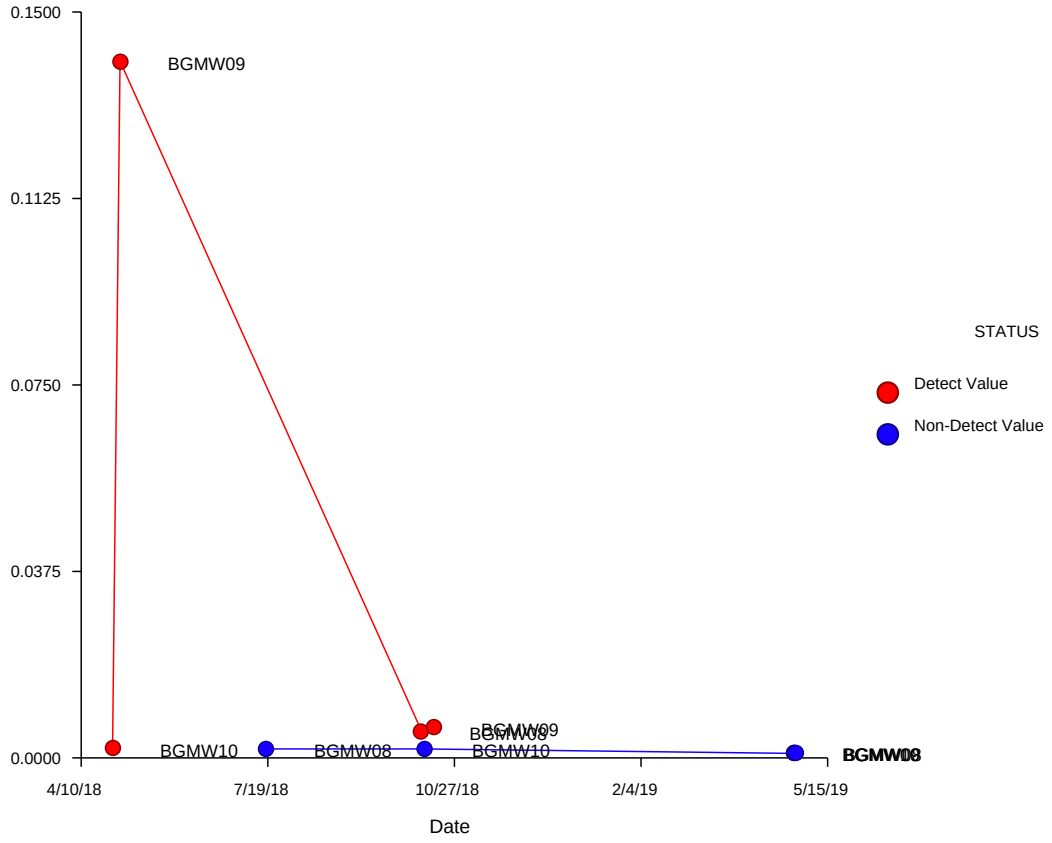
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_116"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_116"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

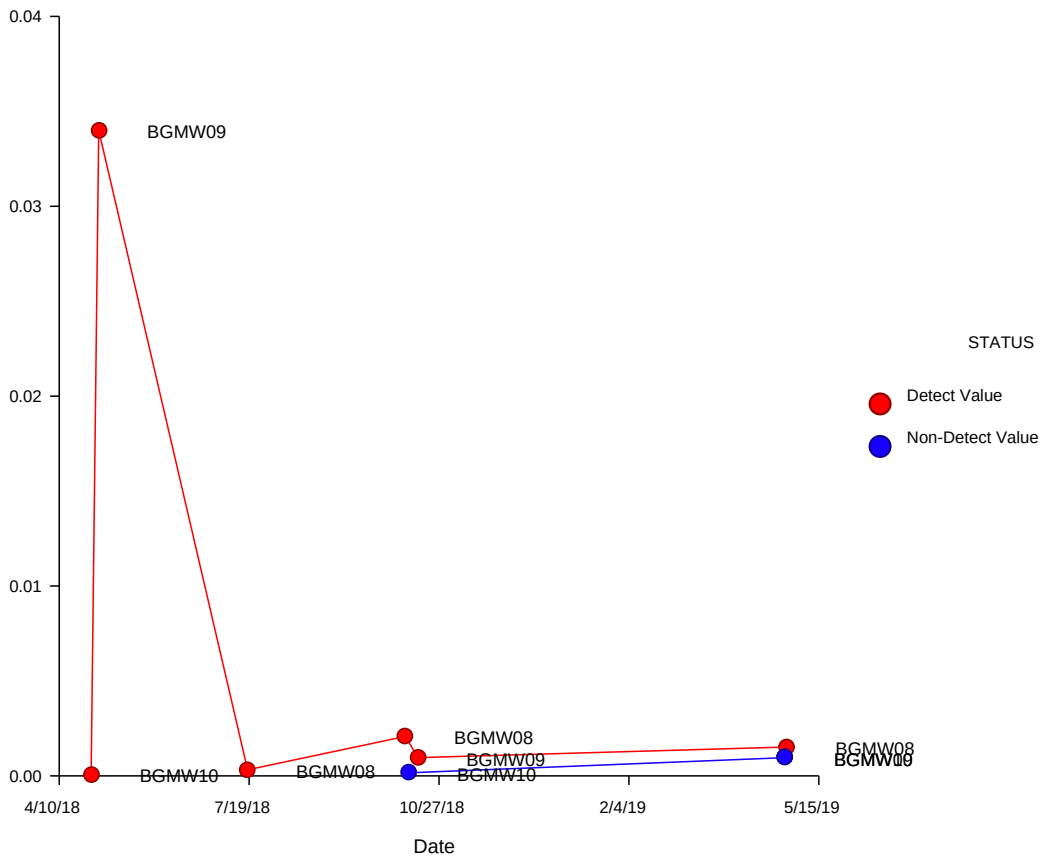
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_118"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_118"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

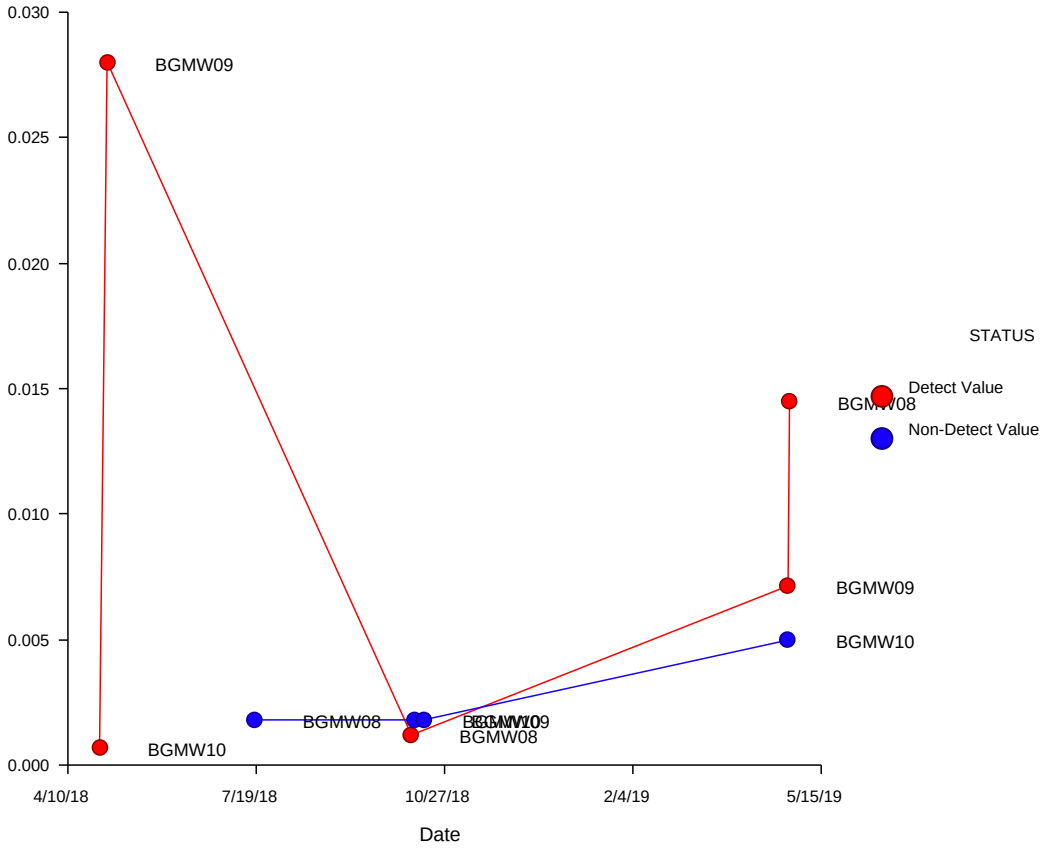
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_120"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_120"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

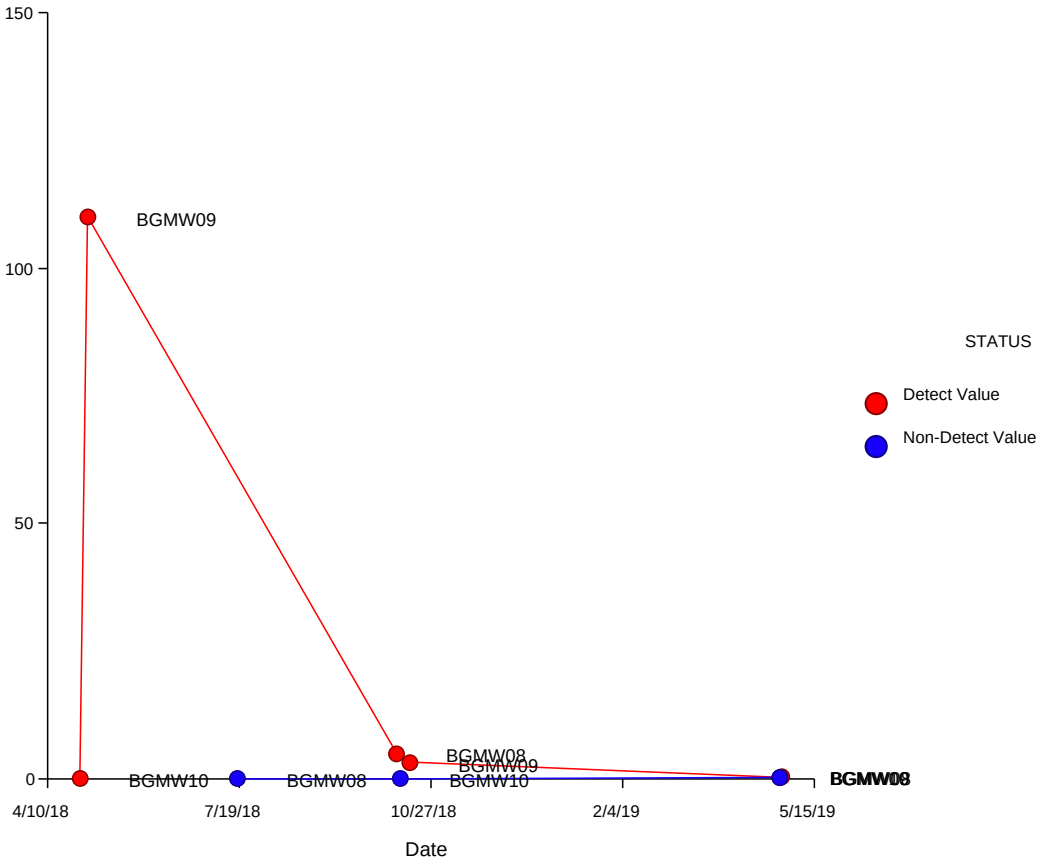
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_122"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_122"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

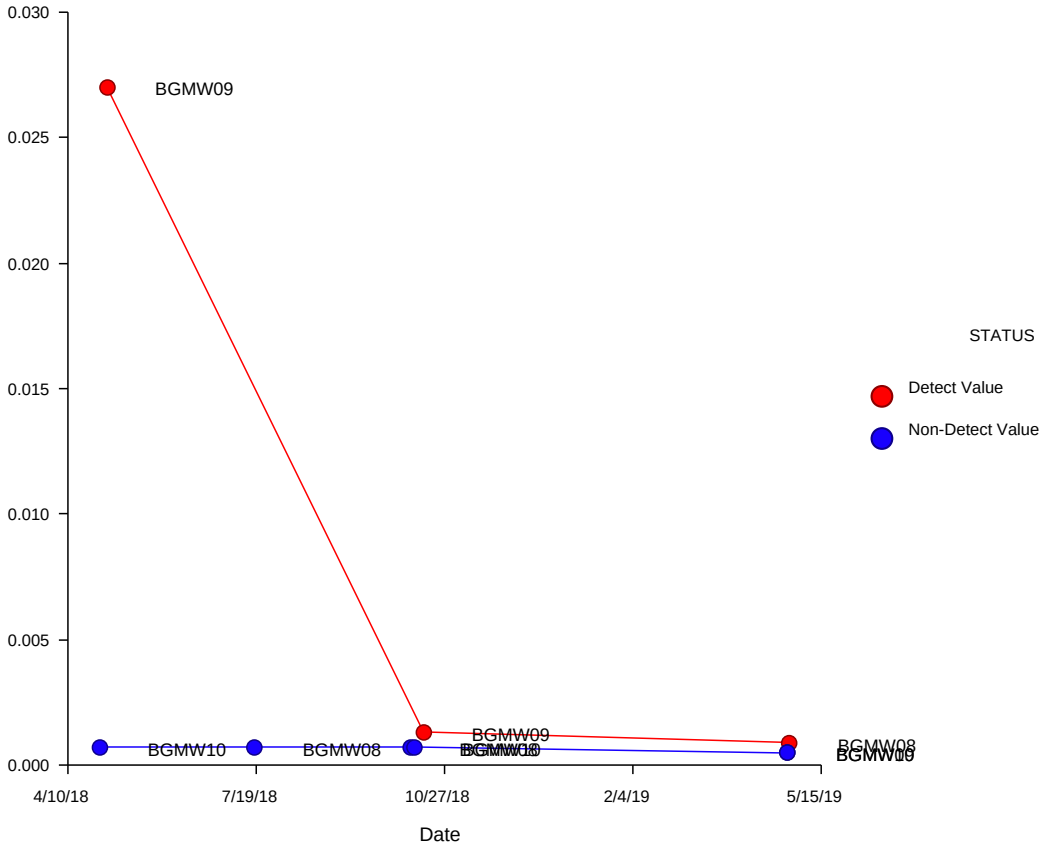
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_124"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_124"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

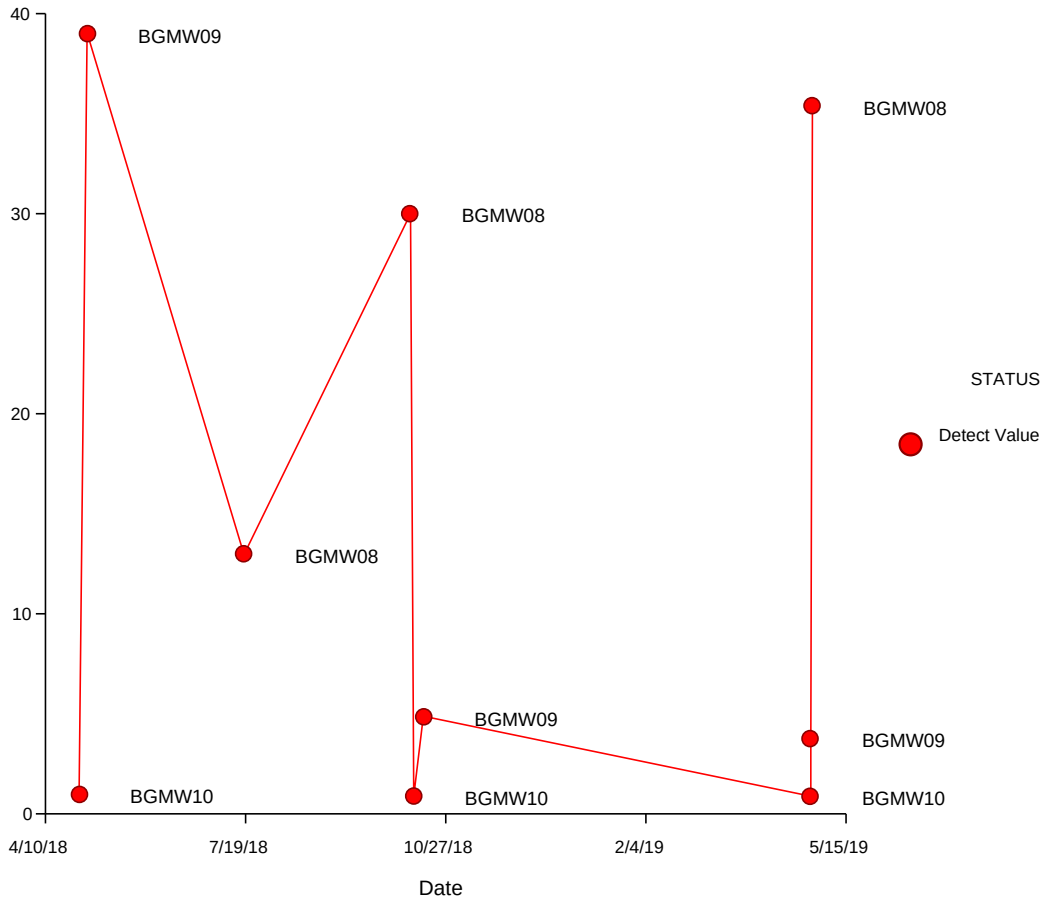
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_126"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_126"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

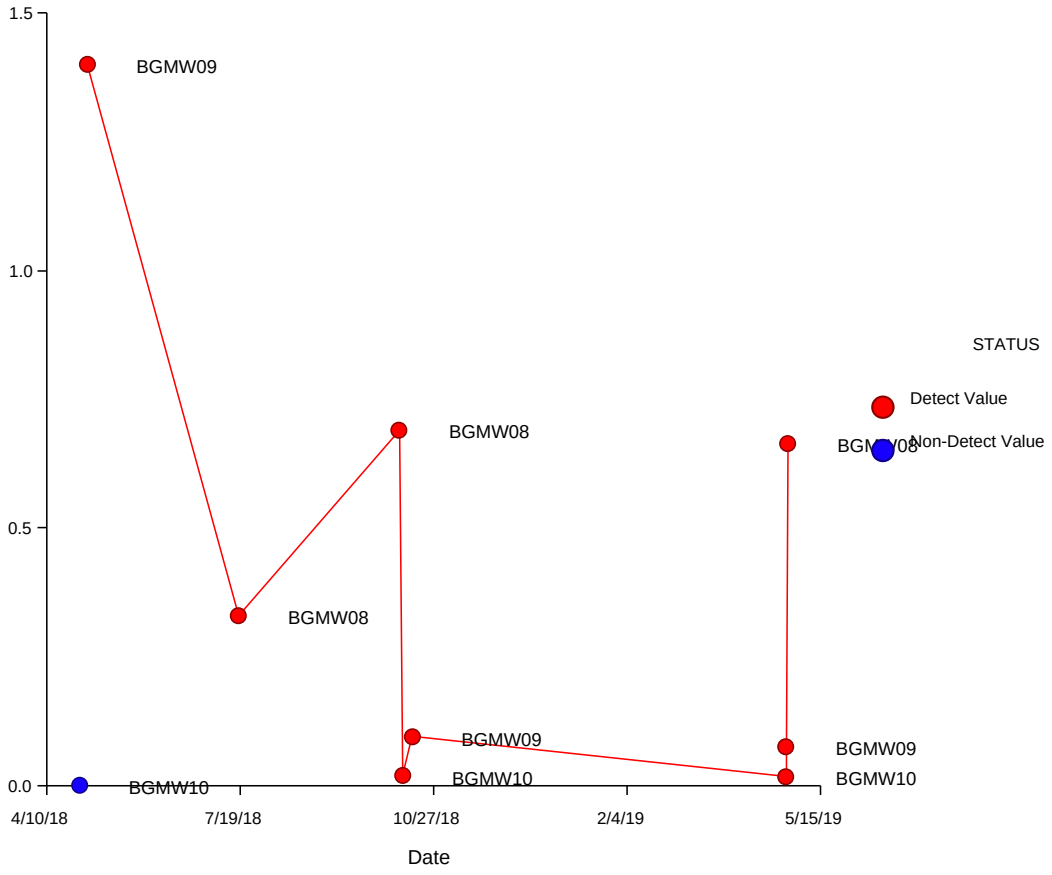
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_128"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_128"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

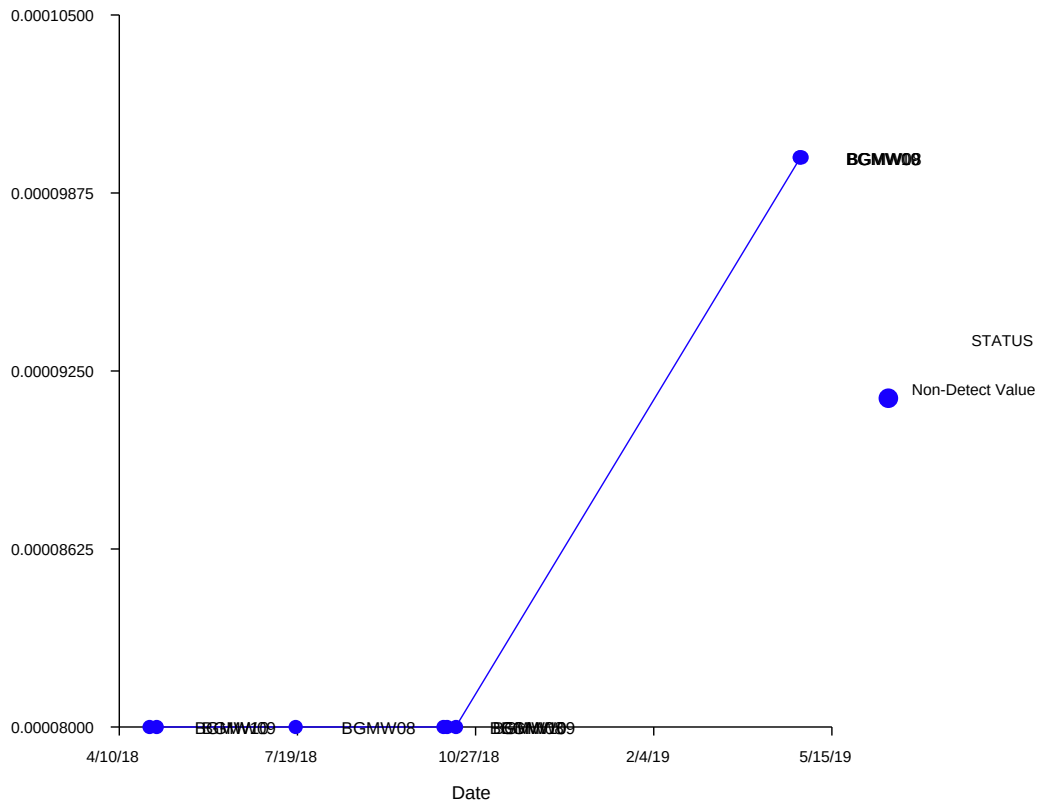
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_130"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_130"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

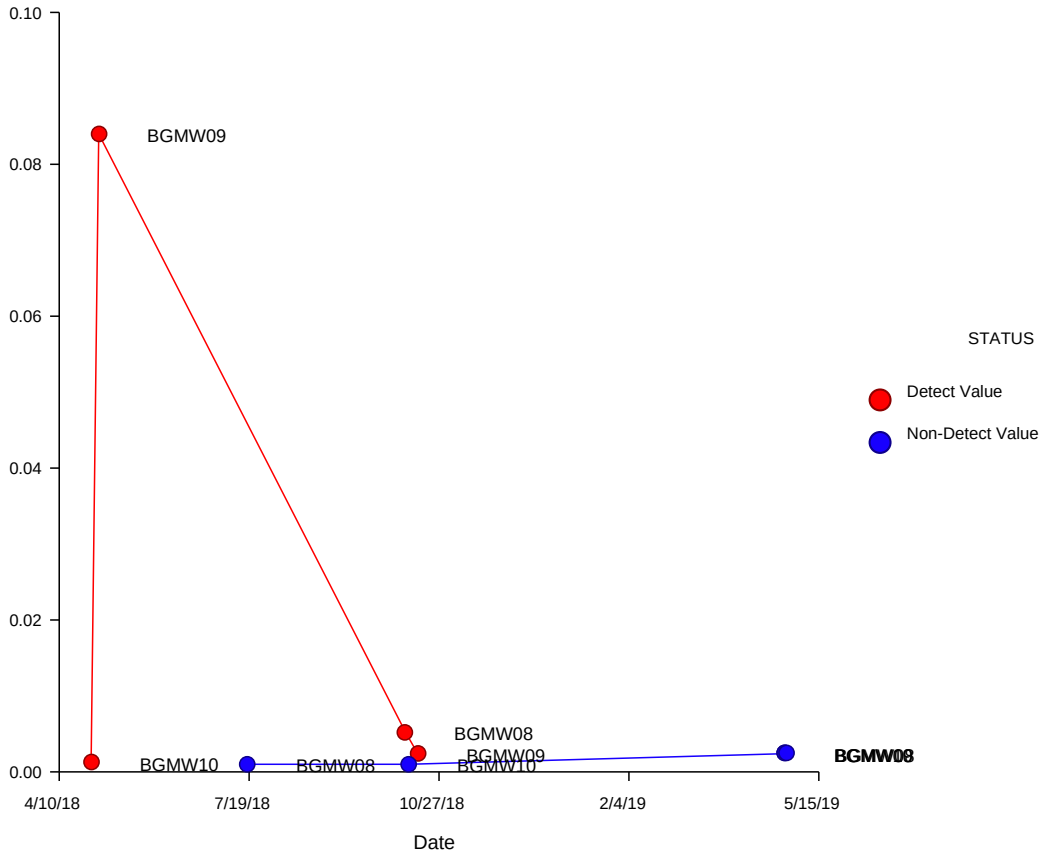
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_132"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_132"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

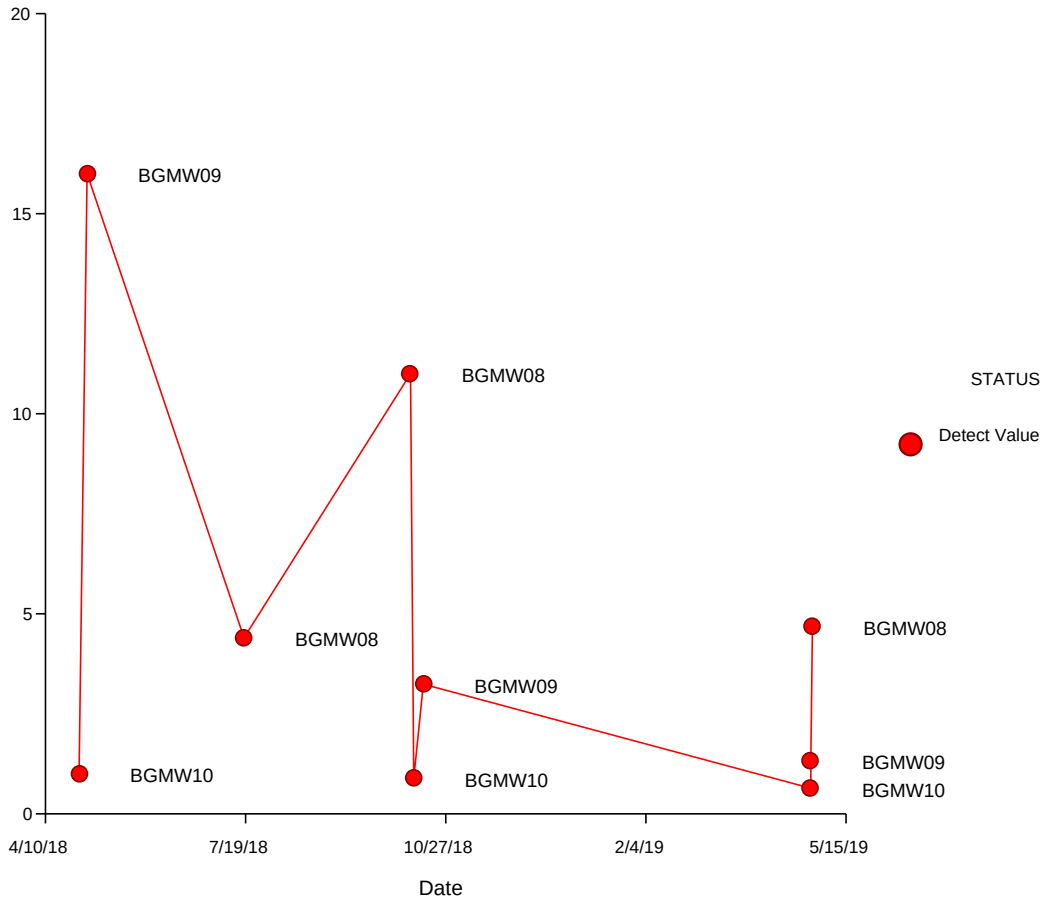
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_136"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_136"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

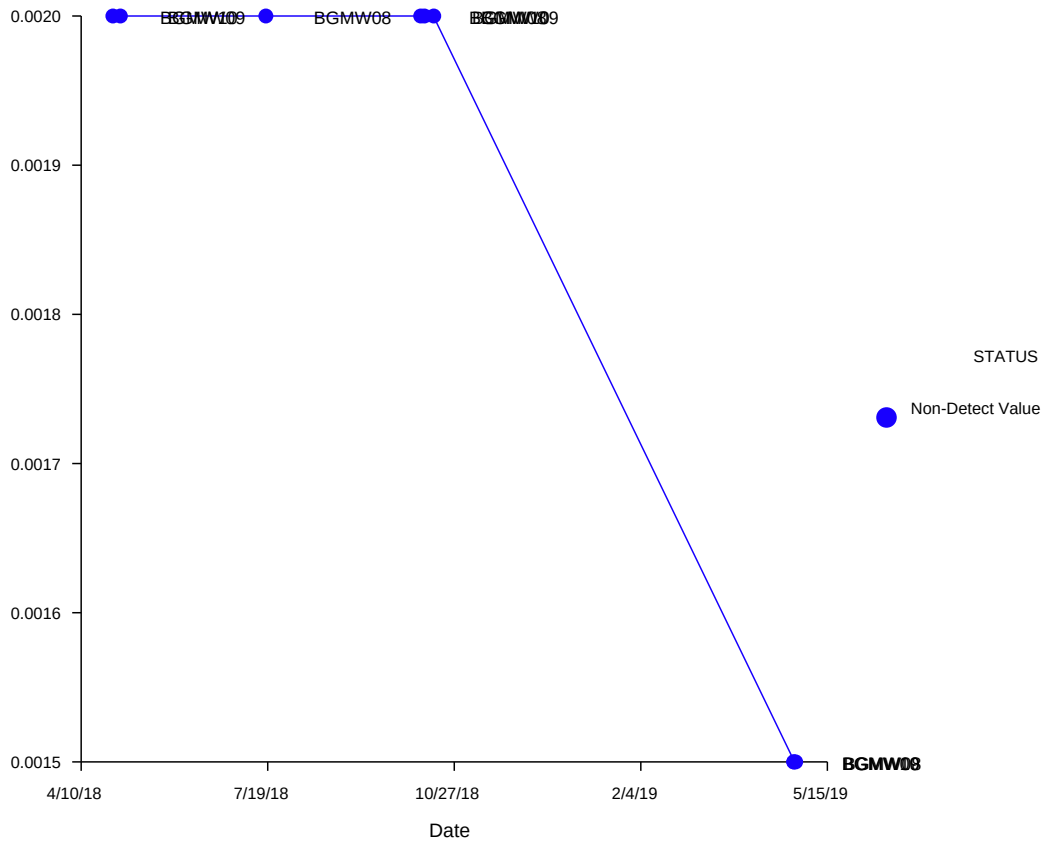
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_138"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_138"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

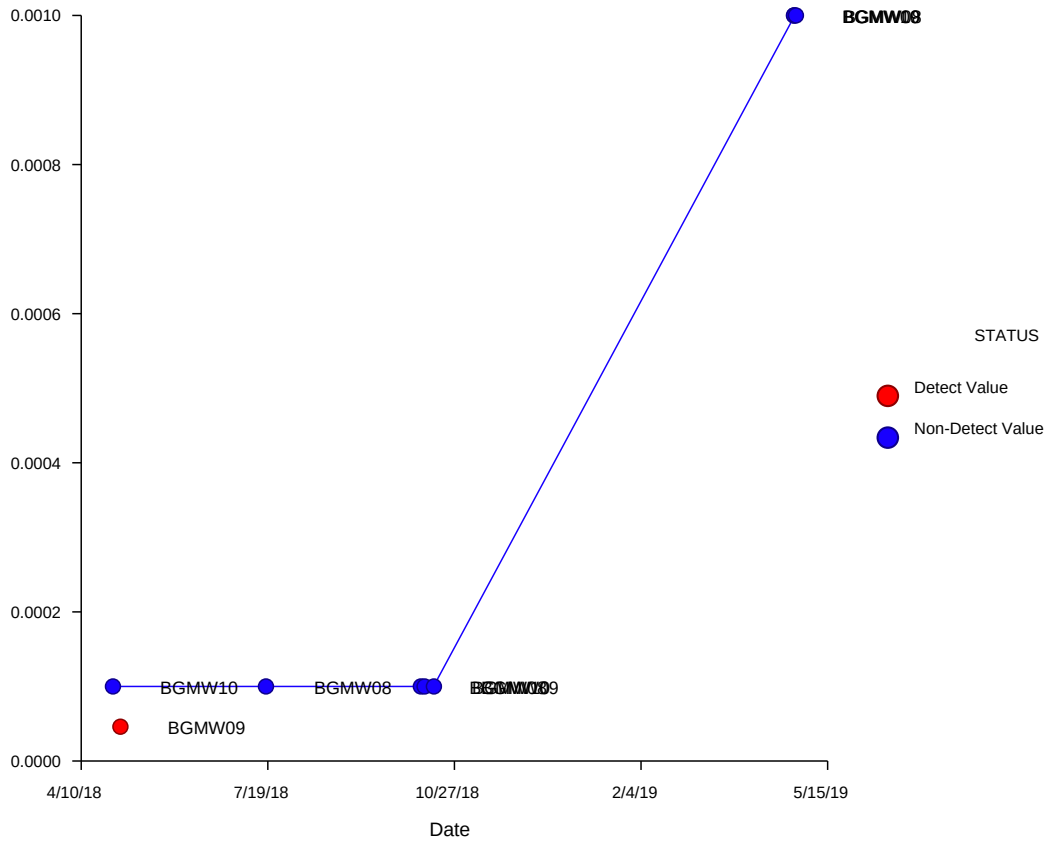
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_140"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_140"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

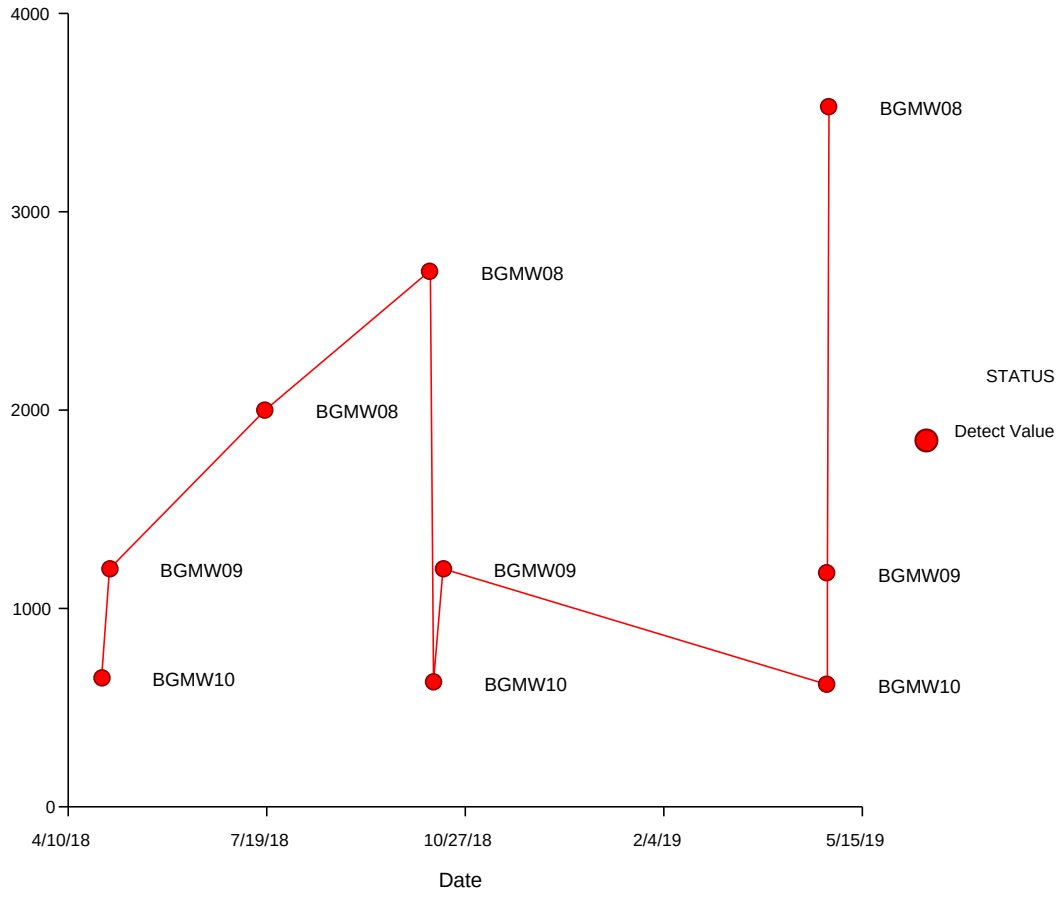
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_142"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_142"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

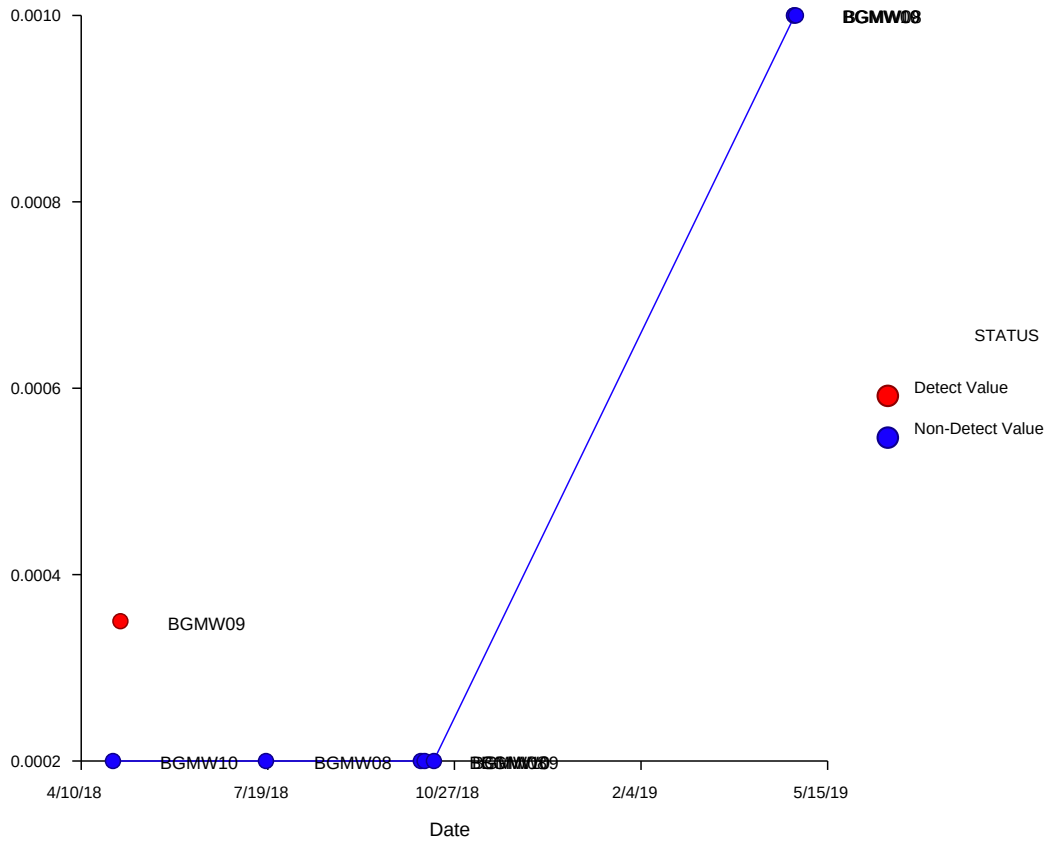
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_144"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_144"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

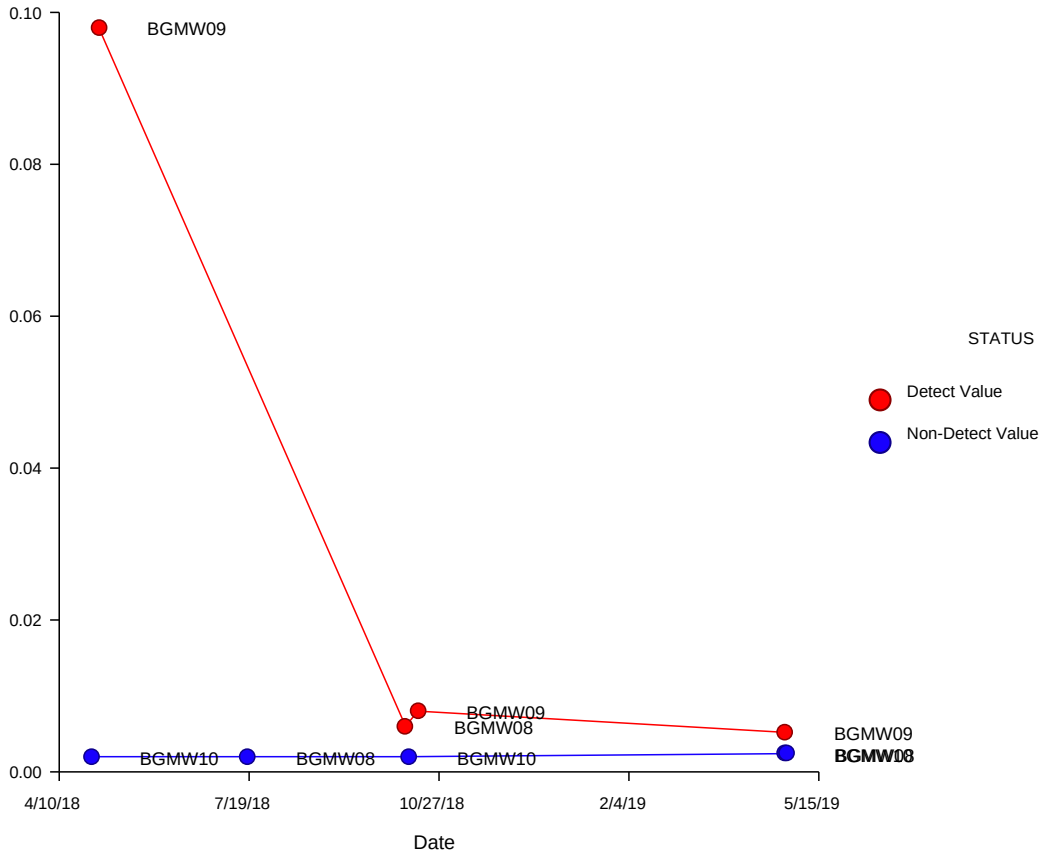
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_146"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_146"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

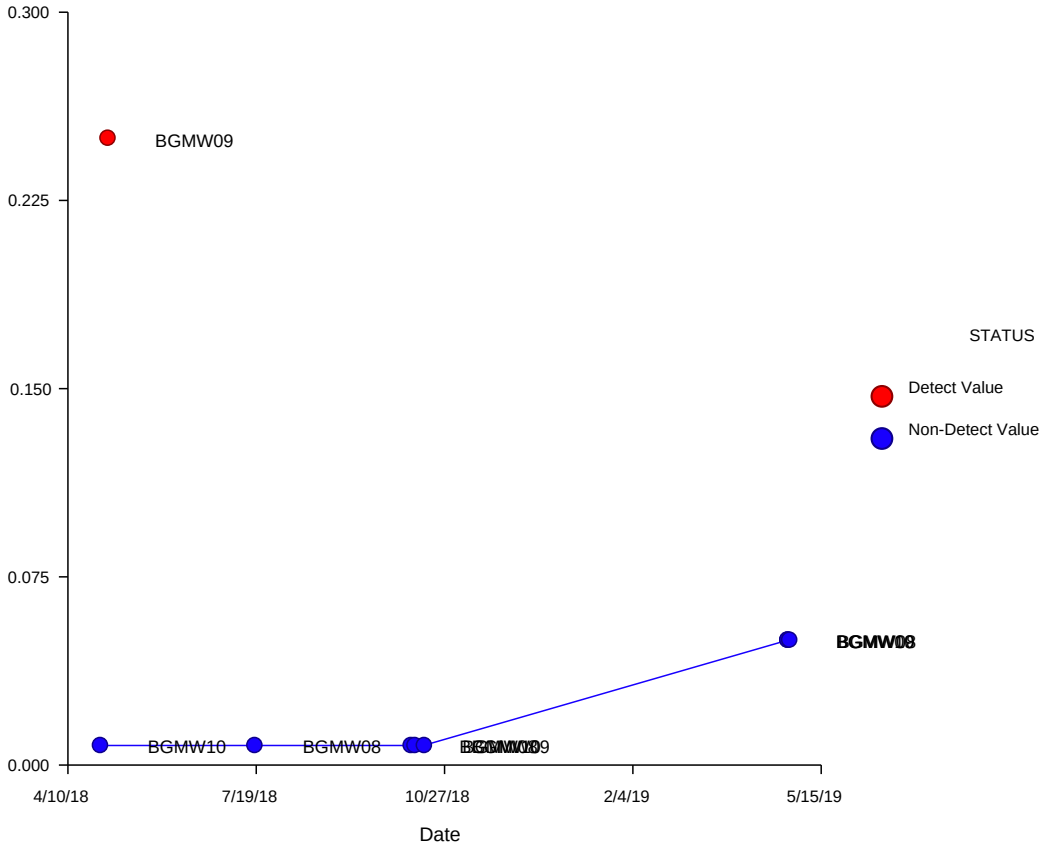
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_148"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_1_148"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

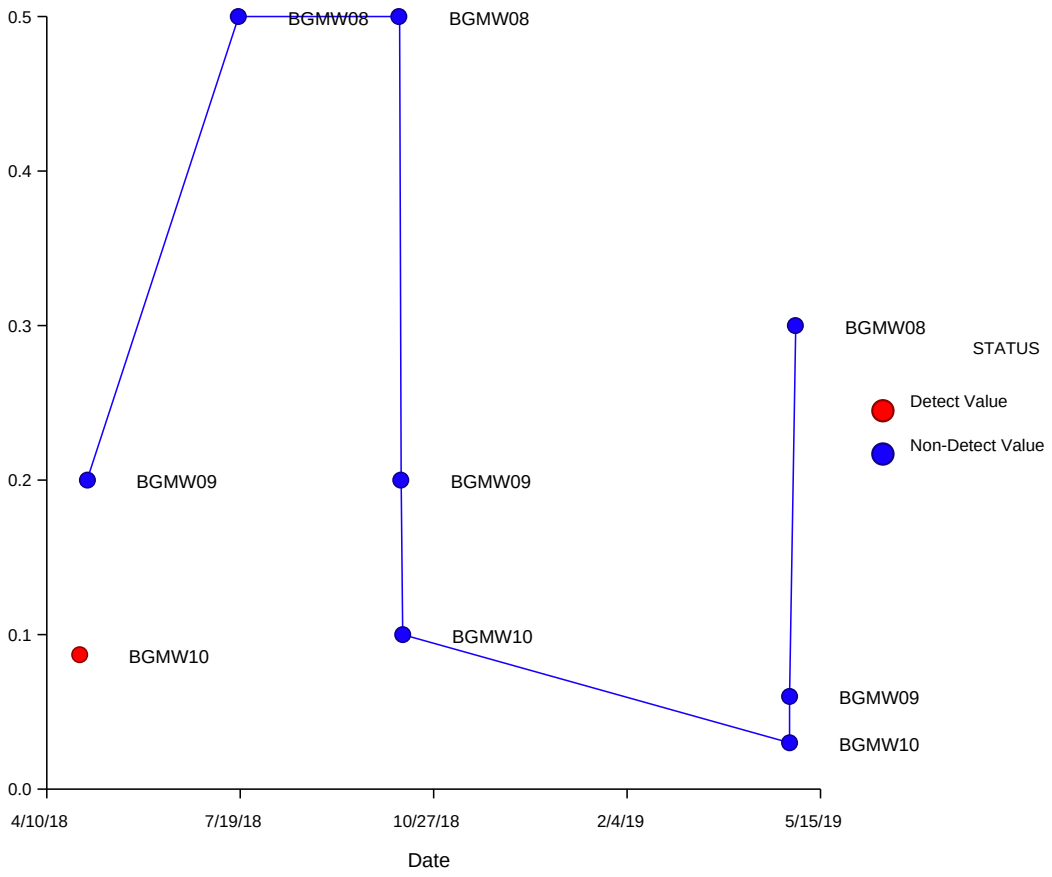
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_2_133"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_2_133"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

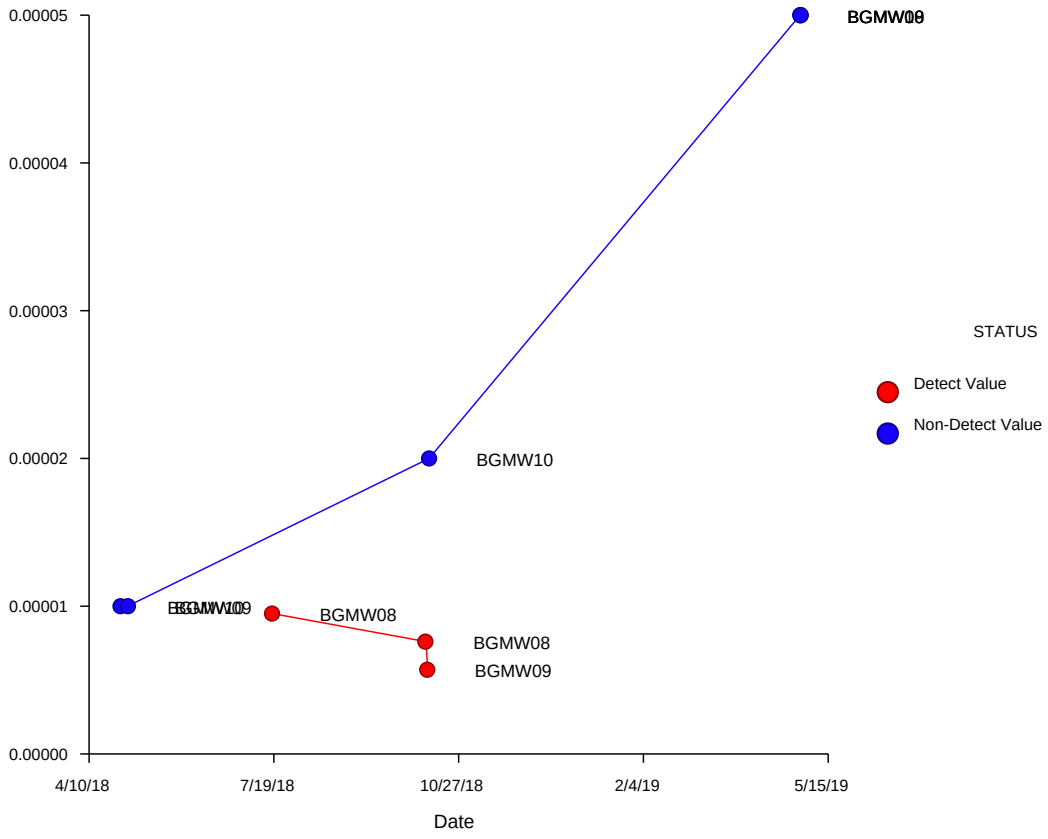
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_3_134"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_3_134"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

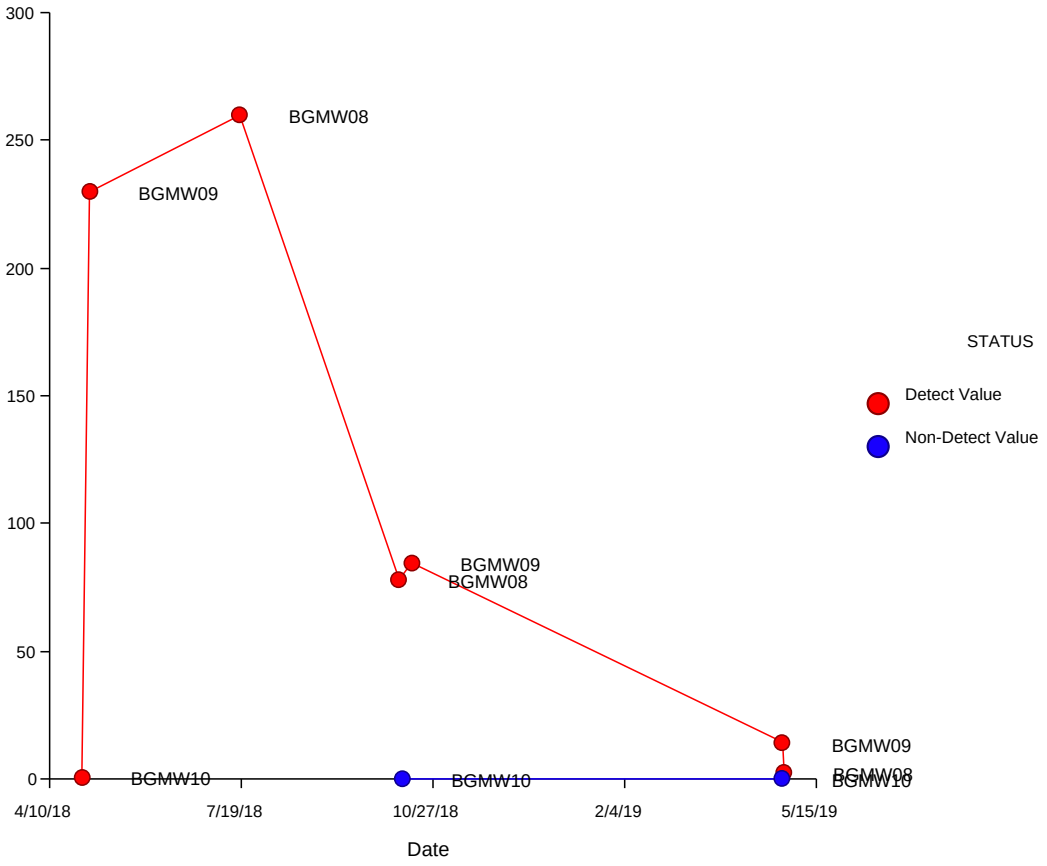
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_101"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_101"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

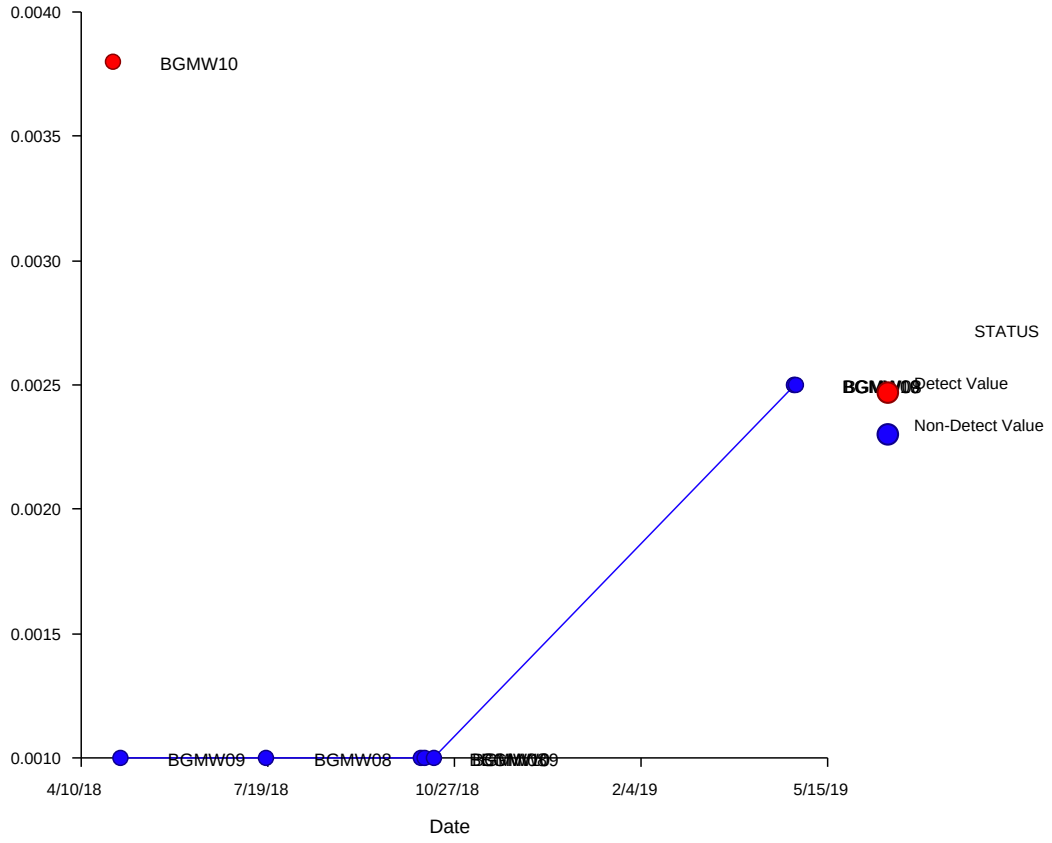
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_103"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_103"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

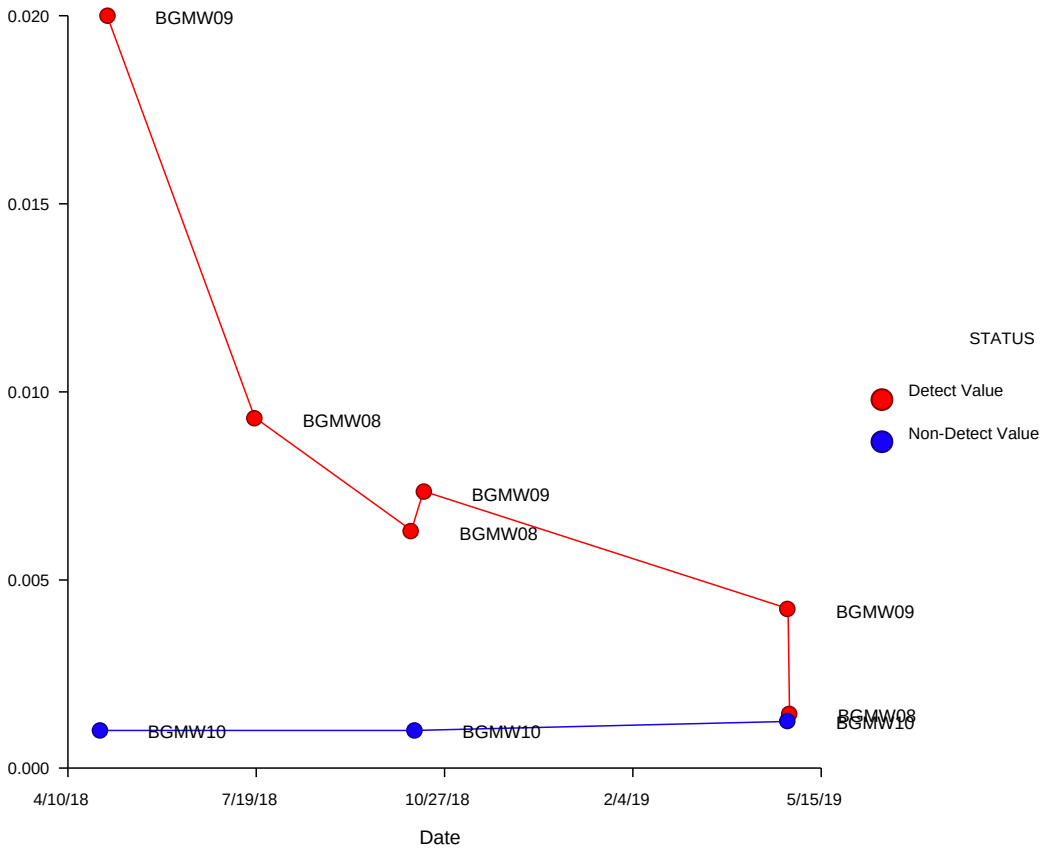
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_105"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_105"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

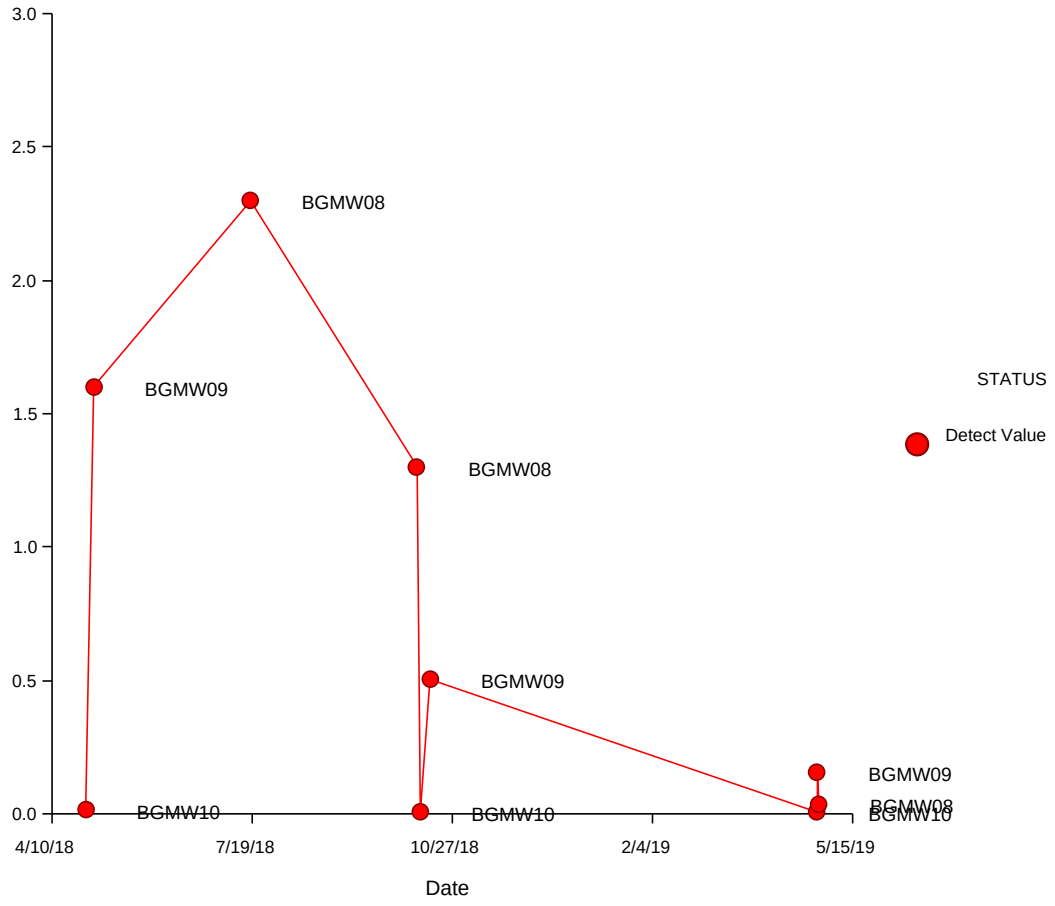
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_107"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_107"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

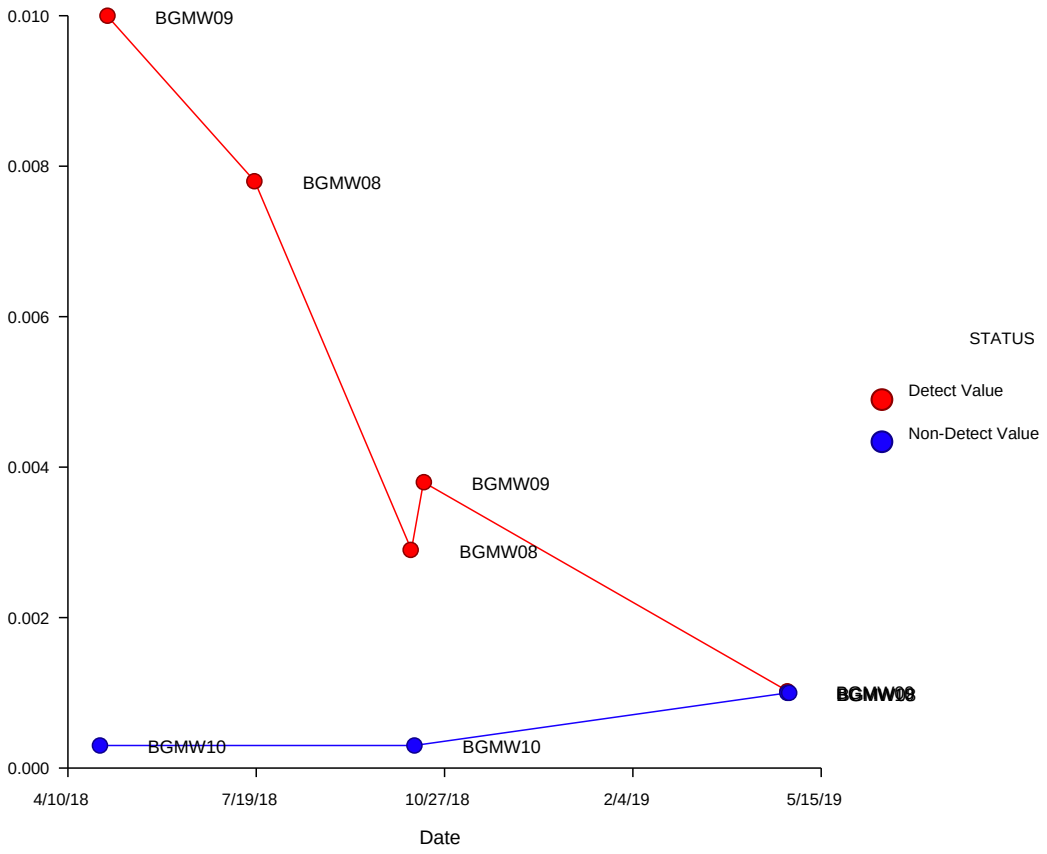
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_109"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_109"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

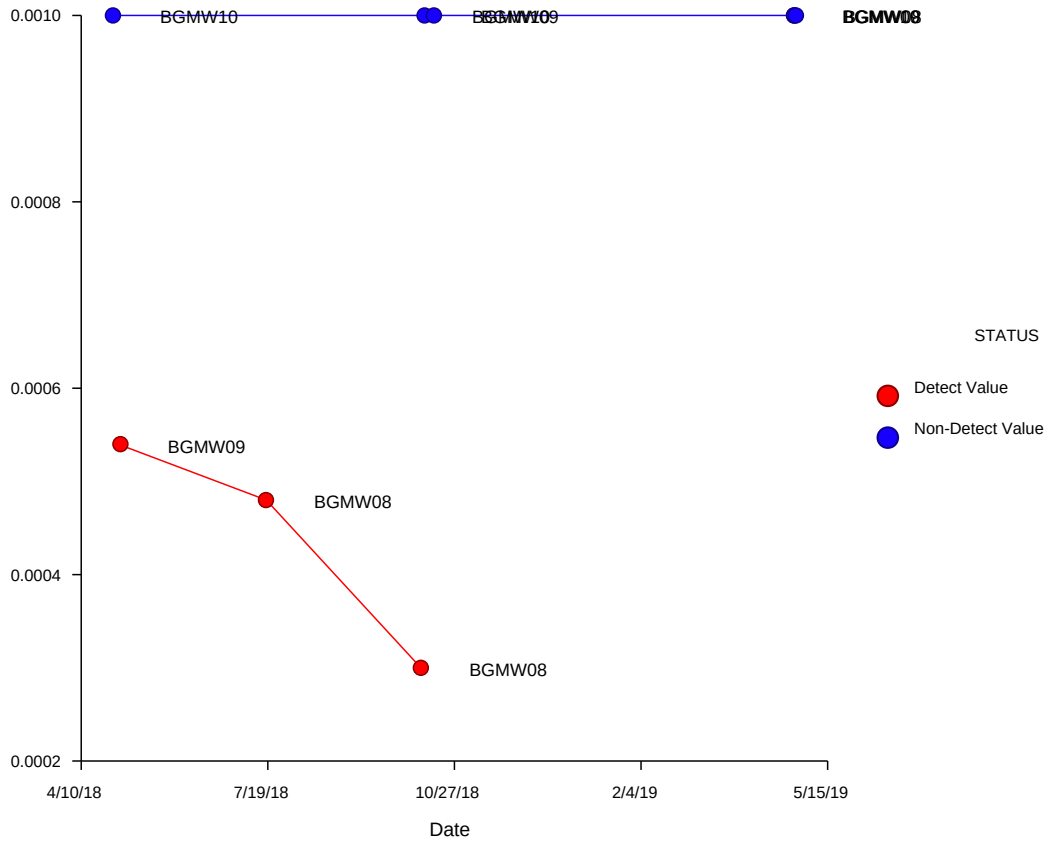
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_111"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_111"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

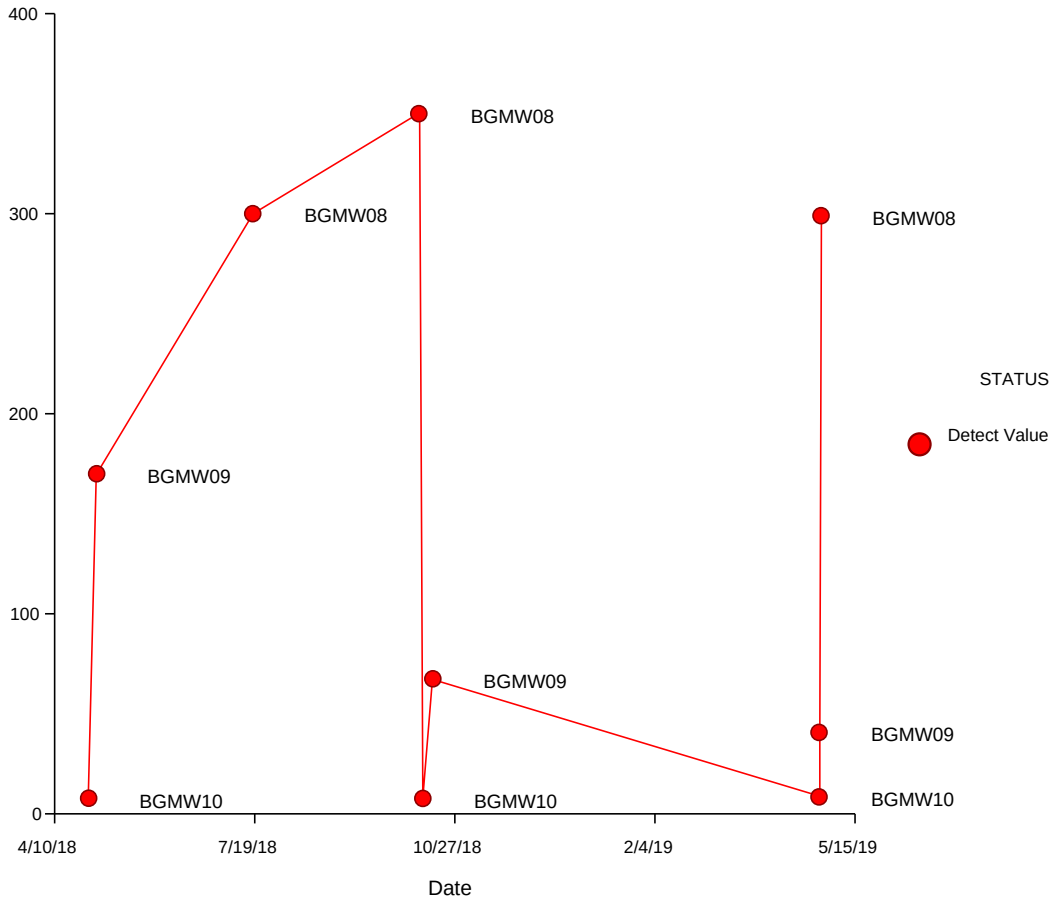
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_113"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_113"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

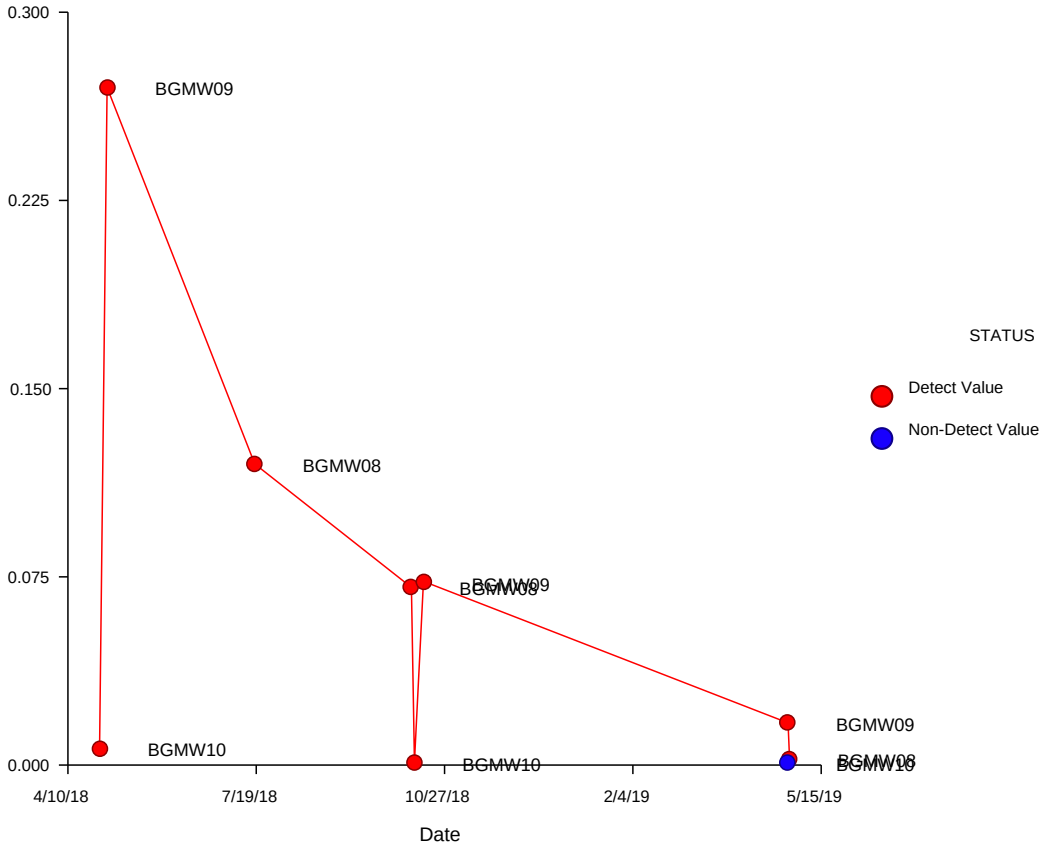
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_115"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_115"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

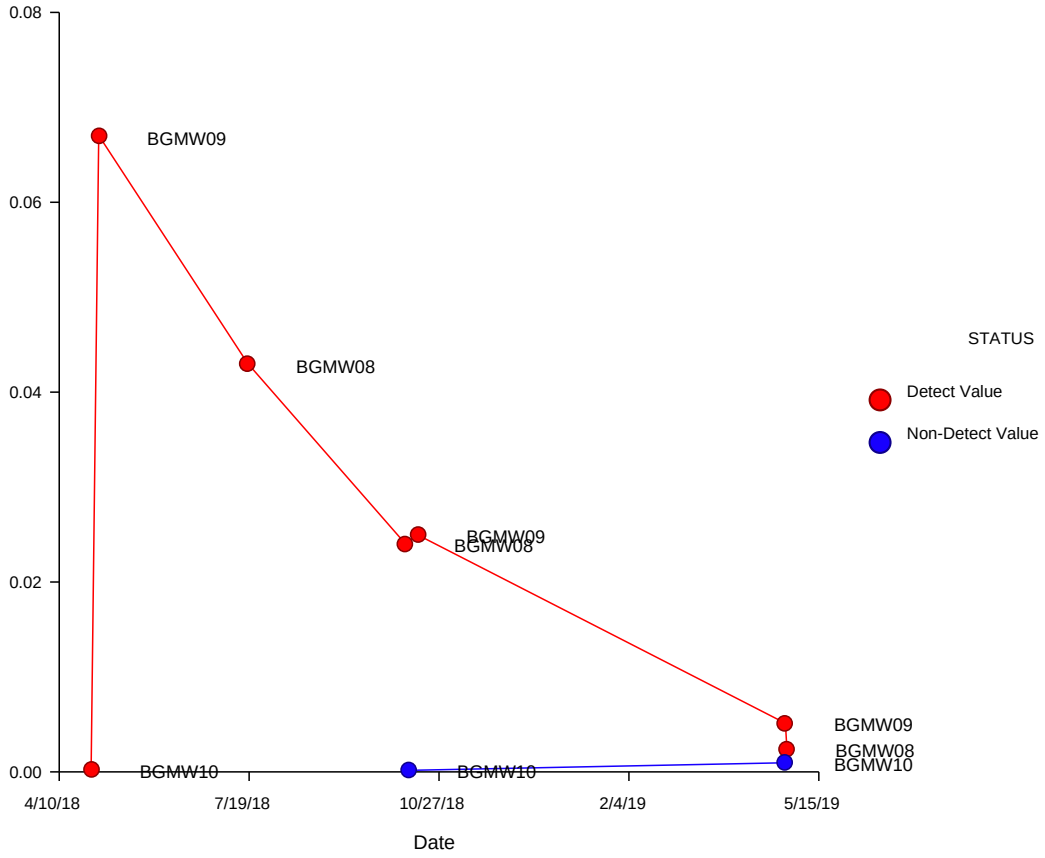
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_117"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_117"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

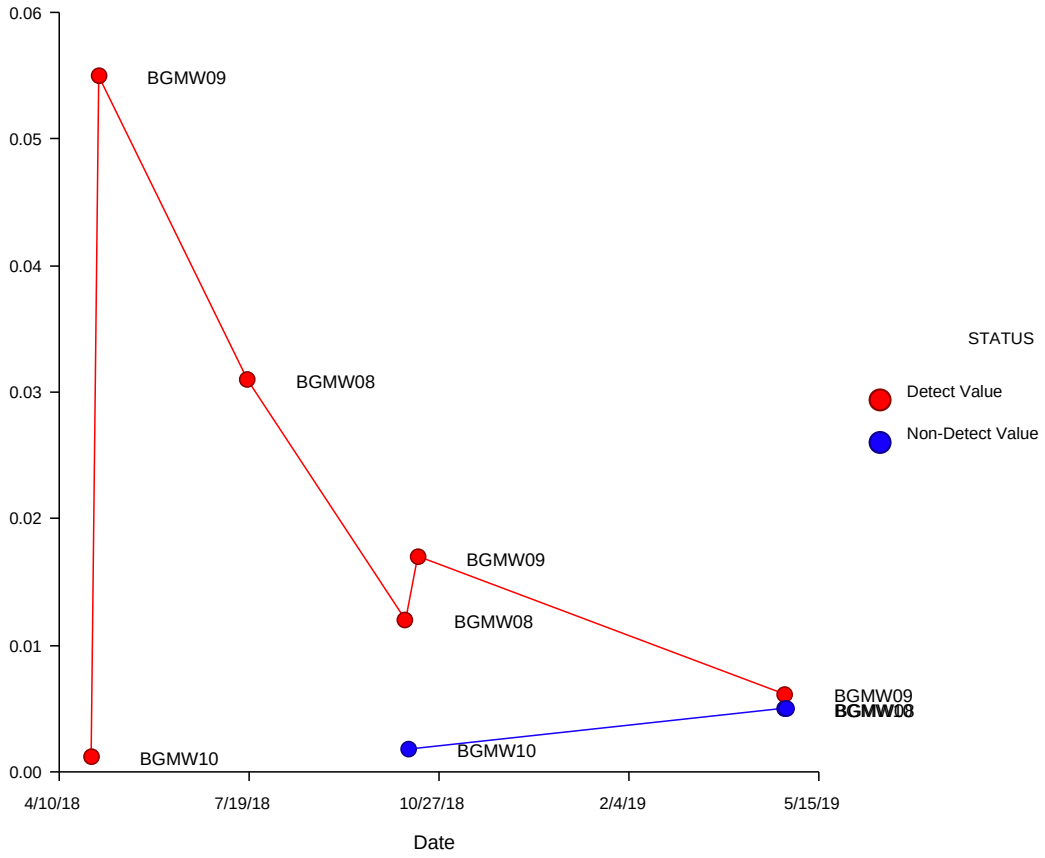
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_119"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_119"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

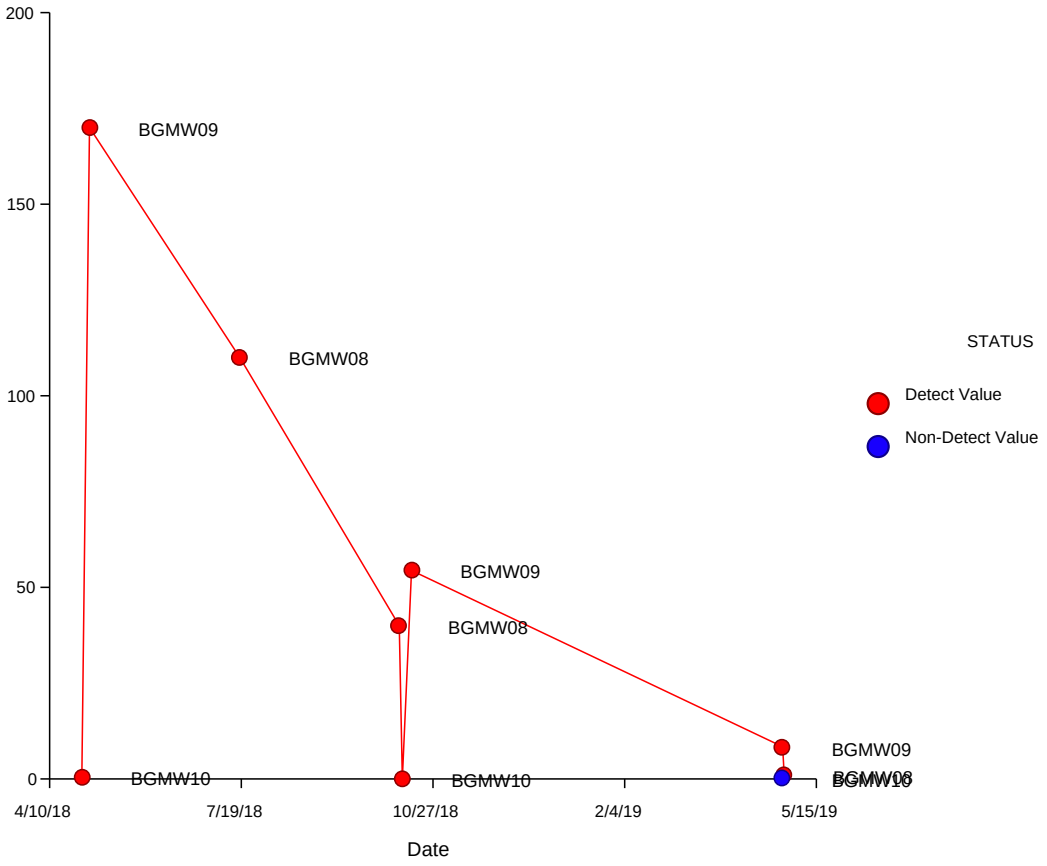
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_121"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_121"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

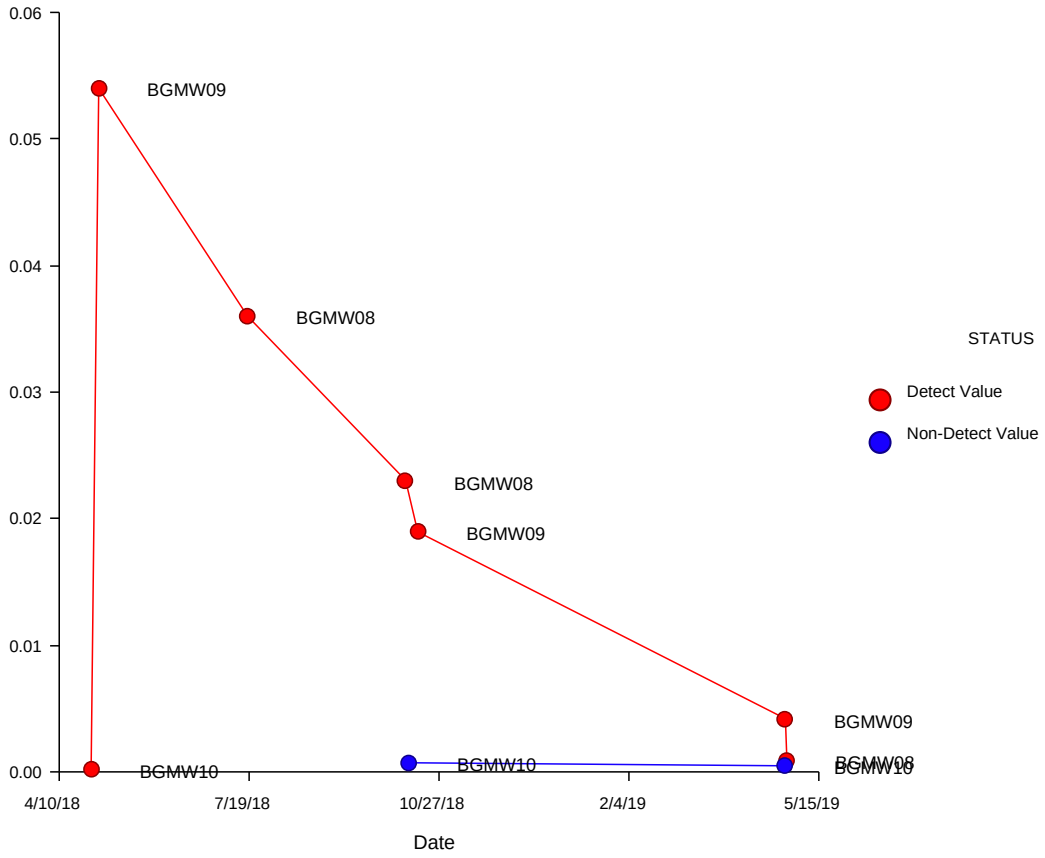
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_123"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_123"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

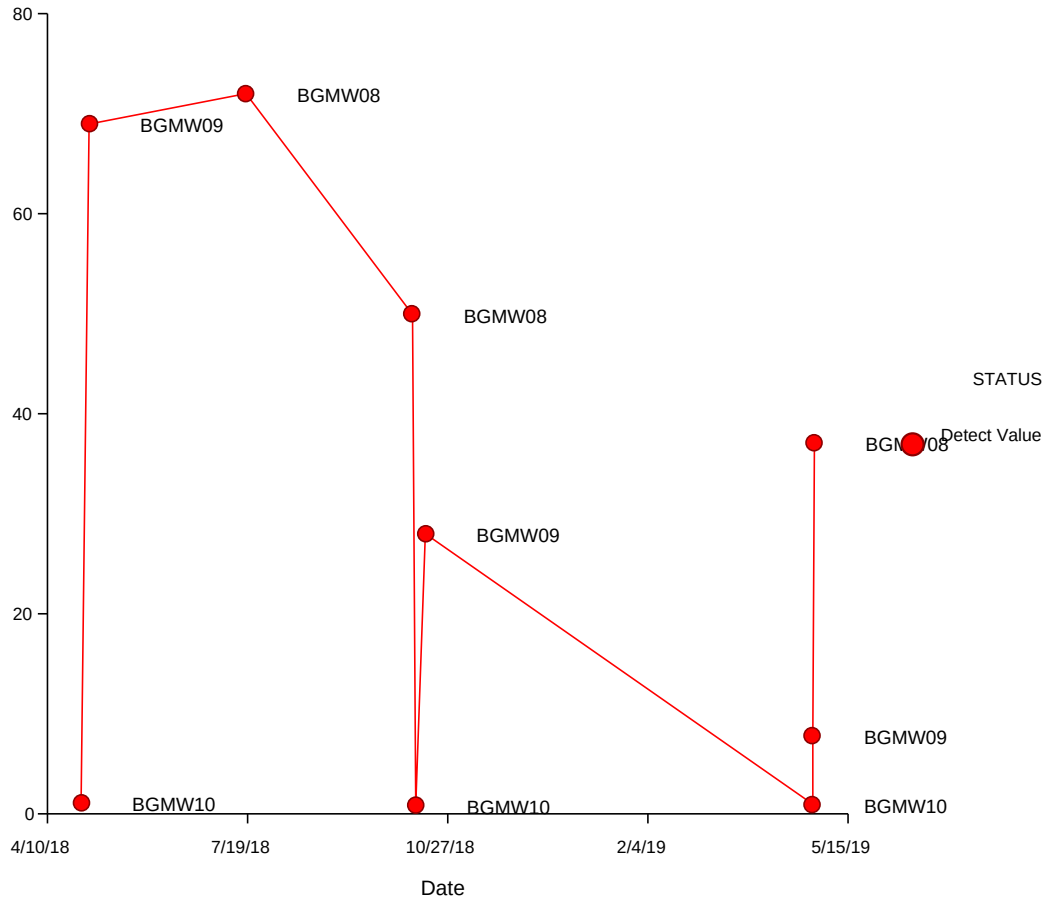
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_125"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_125"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

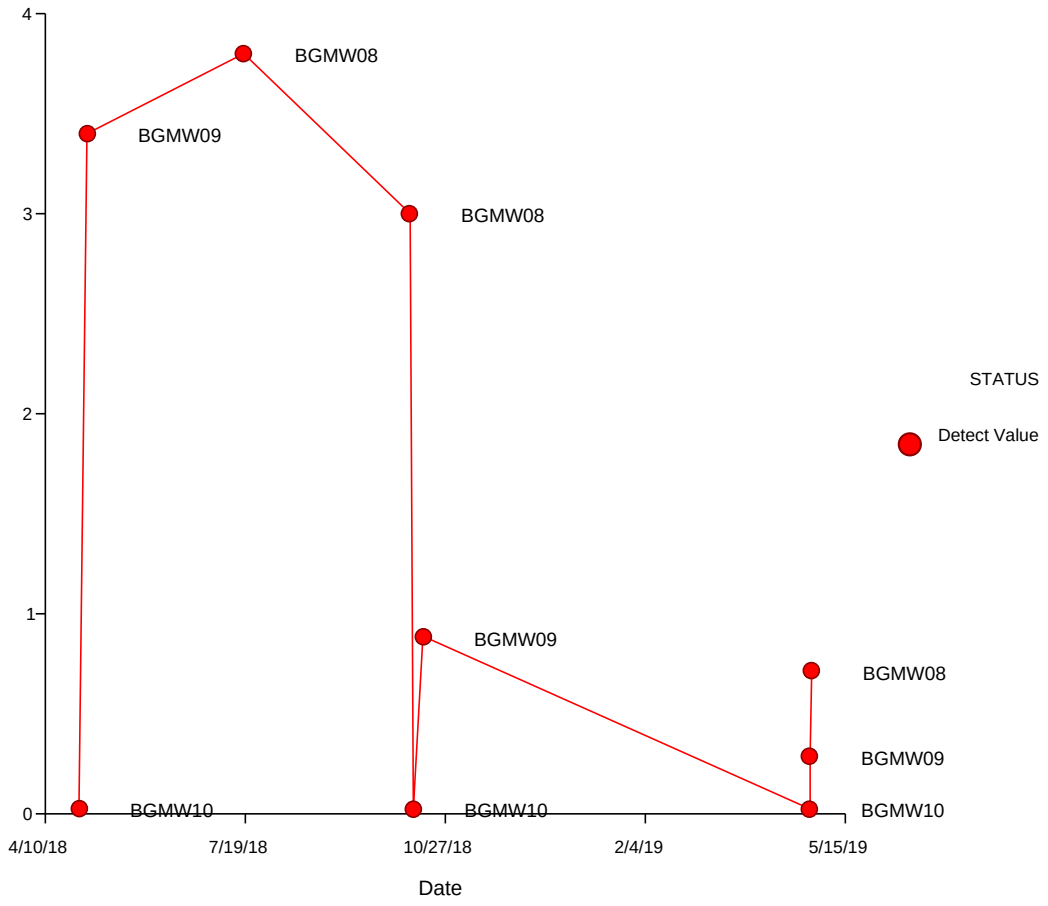
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_127"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_127"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

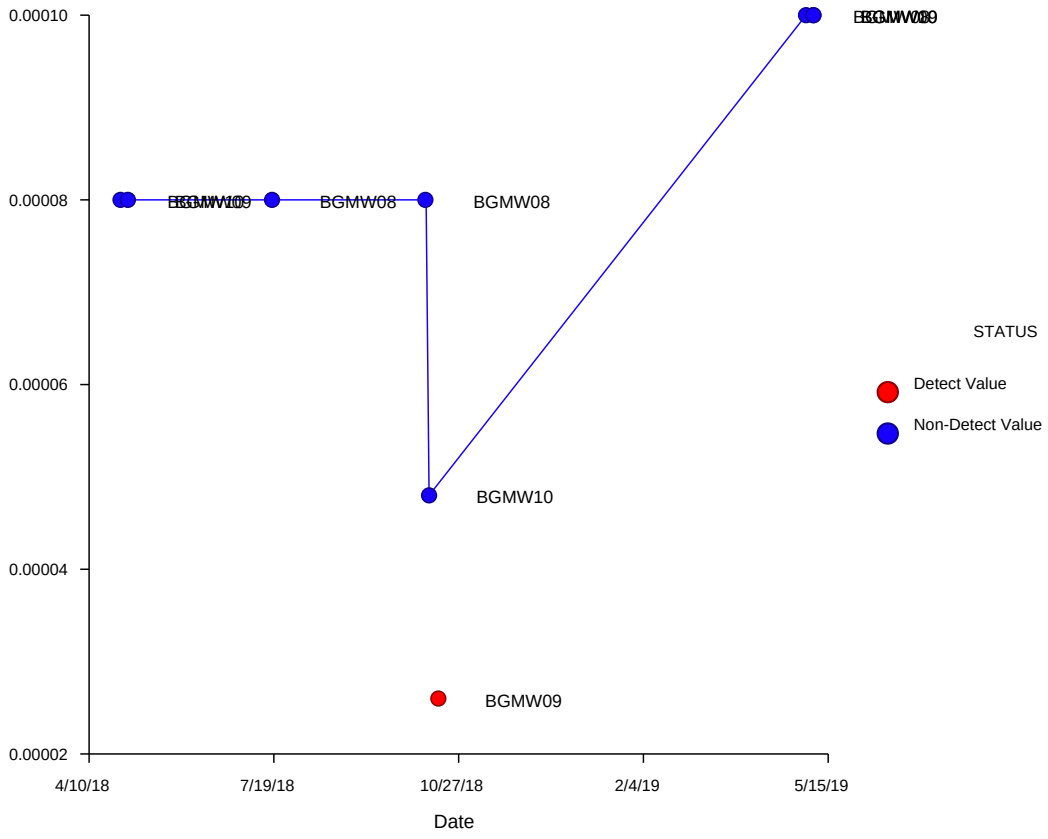
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_129"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_129"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

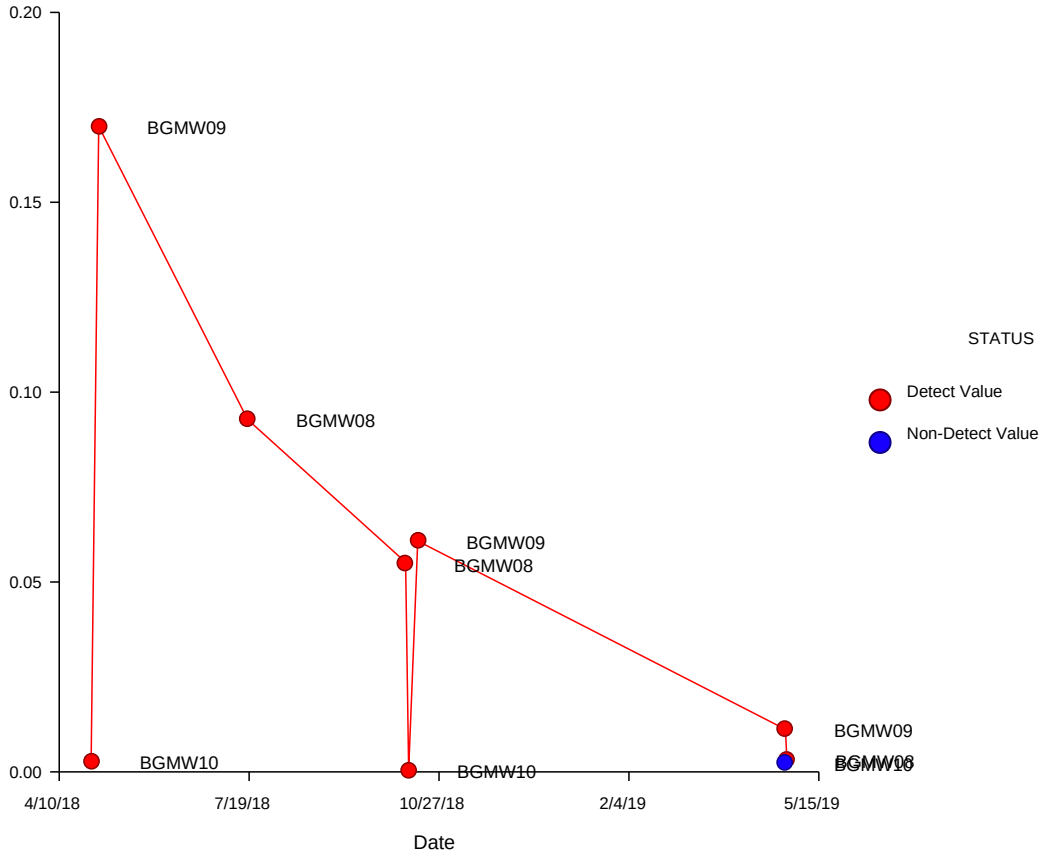
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_131"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_131"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

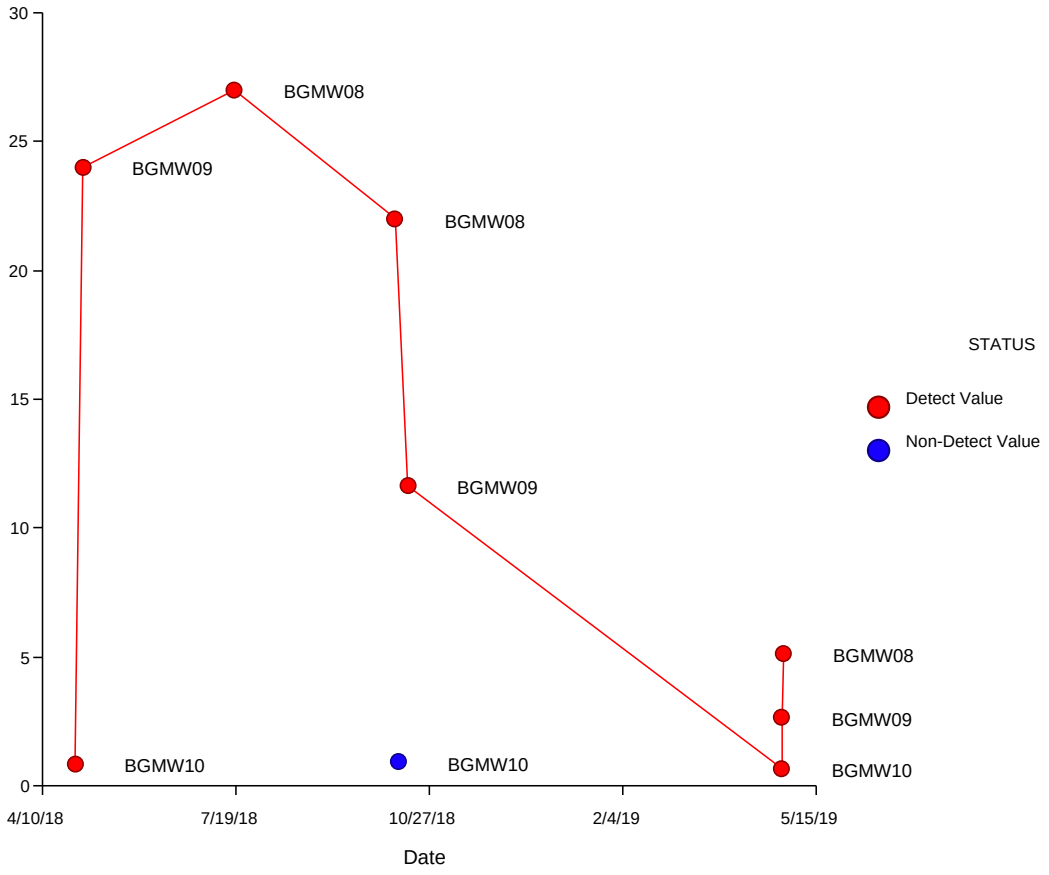
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_135"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_135"

Procedure Input Settings

Variables Tab

-- Variables ----------

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options ----------

Variable Names:	Names
Value Labels:	Data Values

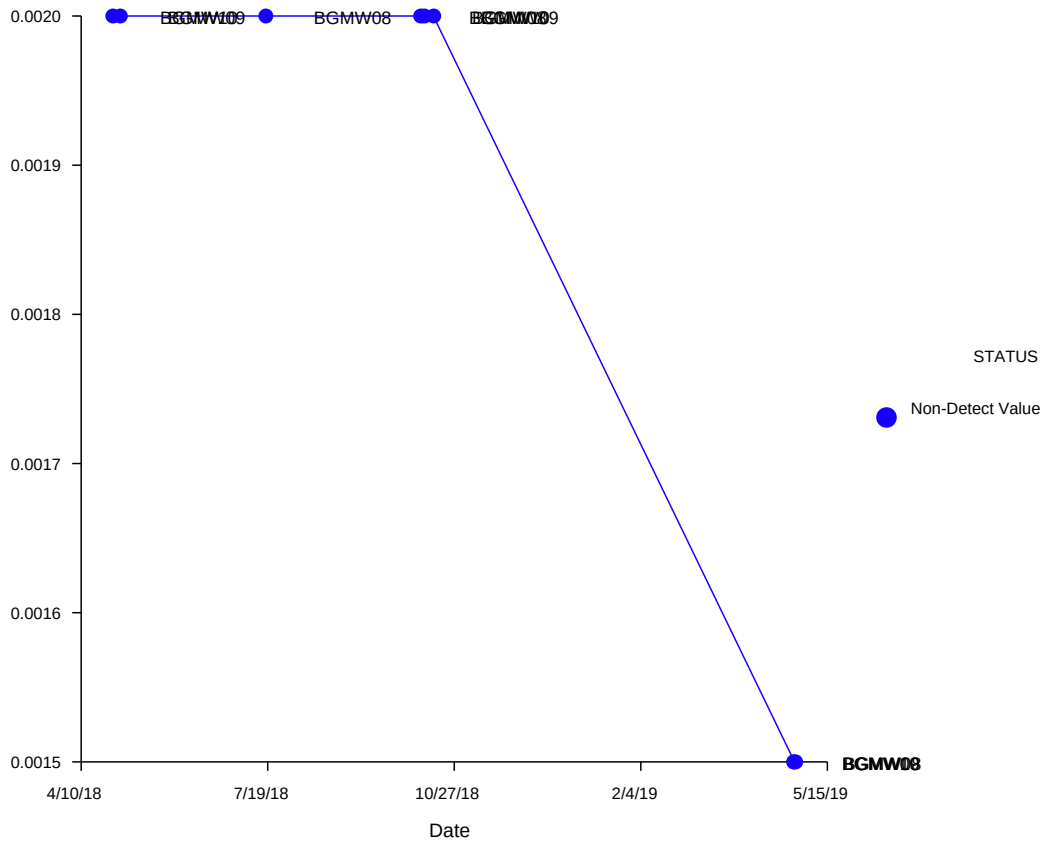
-- Symbol Size Options ----------

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_137"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_137"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

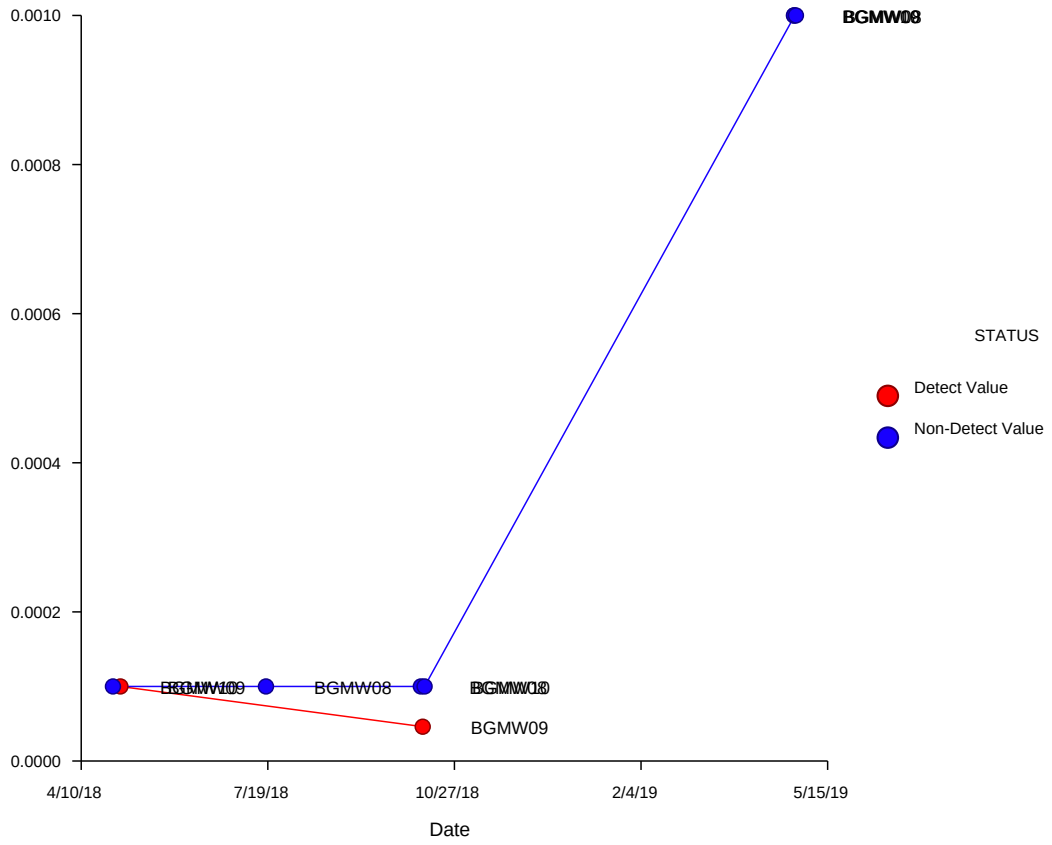
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_139"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_139"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

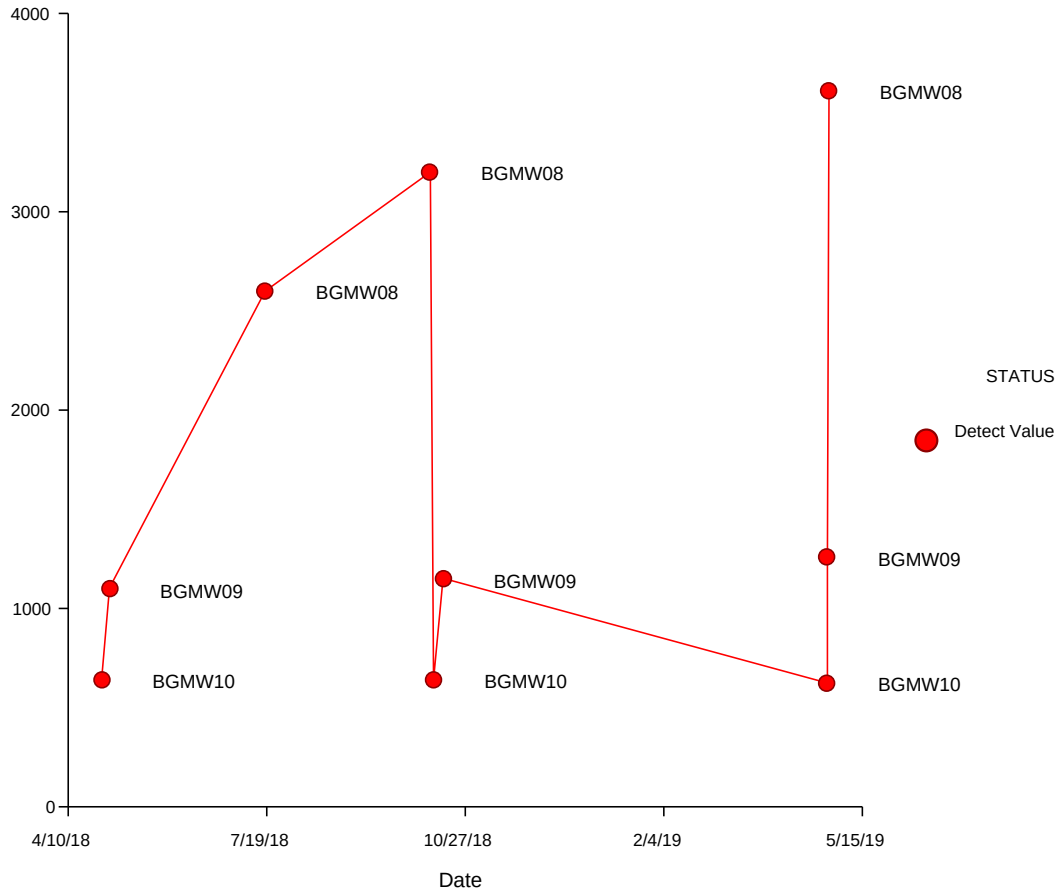
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_141"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_141"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

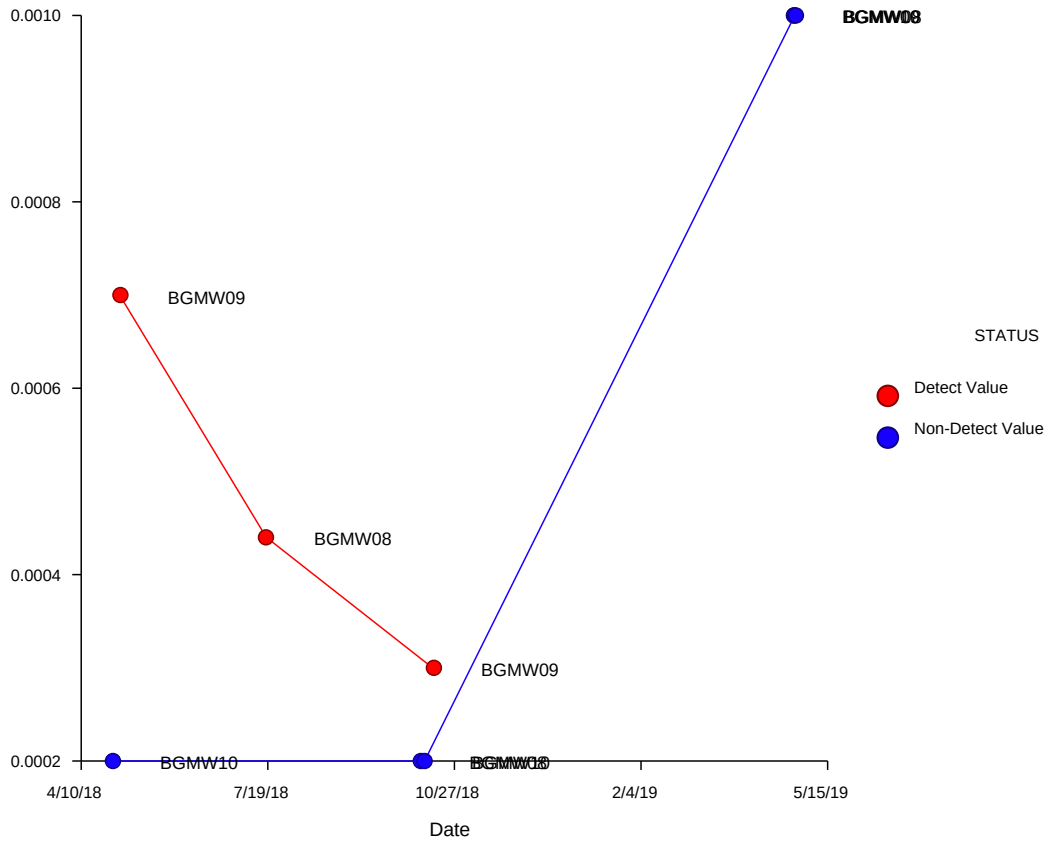
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_143"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_143"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

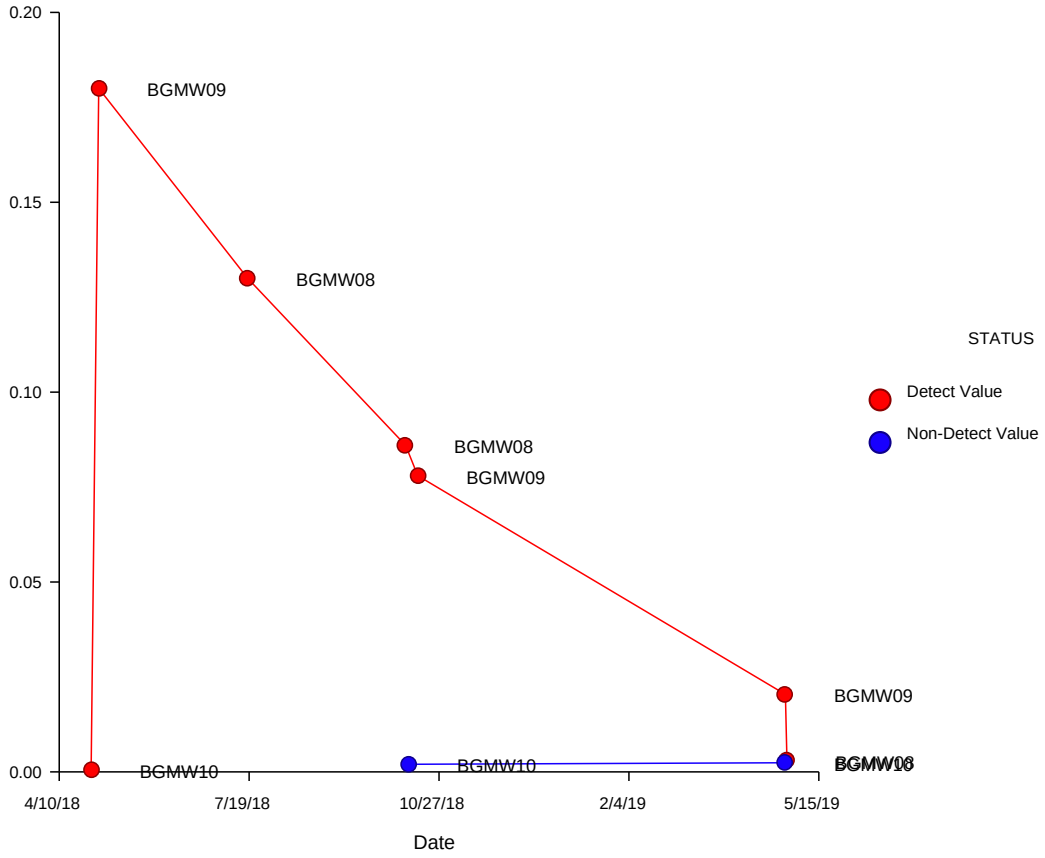
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_145"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_145"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

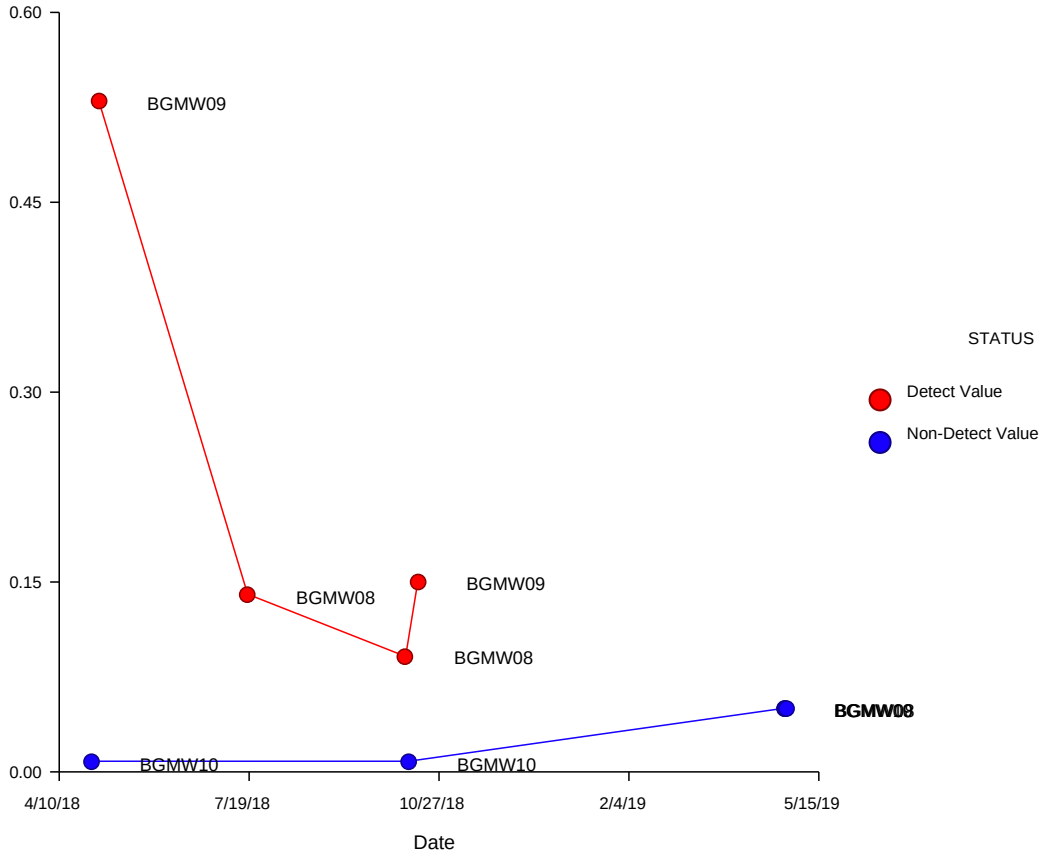
-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_147"

Scatter Plot Section



Scatter Plots

Dataset G:\...\8.0 NCSS\BACKGROUND\Inputs\FWDA_DATA_BG.xlsx
Filter GROUP_VAR = "2_4_147"

Procedure Input Settings

Variables Tab

-- Variables --

Y (Vertical) Variable(s):	VALUES
X (Horizontal) Variable(s):	DATE
Grouping (Symbol) Variable:	Status
Data Label Variable:	Well
Frequency (Count) Variable:	<Empty>
Weight Variable:	<Empty>
Plot Overlay:	None

-- Format Options --

Variable Names:	Names
Value Labels:	Data Values

-- Symbol Size Options --

Symbol Size Variable:	<Empty>

Appendix C: ProUCL Output

Goodness-of-Fit Test Statistics for Data Sets with Non-Detects

User Selected Options

Date/Time of Computation	ProUCL 5.110/15/2019 10:38:37 AM
From File	FWDA_DATA_CENSORED_BG.xls
Full Precision	OFF
Confidence Coefficient	0.95

VALUES (1_1_102)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	15	0	15	5	10	66.67%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	10	0.031	0.2	0.0754	0.07	0.0569
Statistics (Non-Detects Only)	5	0.004	0.73	0.174	0.02	0.313
Statistics (All: NDs treated as DL value)	15	0.004	0.73	0.108	0.07	0.18
Statistics (All: NDs treated as DL/2 value)	15	0.004	0.73	0.0833	0.035	0.181
Statistics (Normal ROS Imputed Data)	15	-0.157	0.73	0.0703	0.0416	0.206
Statistics (Gamma ROS Imputed Data)	15	0.004	0.73	0.0724	0.01	0.184
Statistics (Lognormal ROS Imputed Data)	15	0.00291	0.73	0.069	0.0174	0.184

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	0.441	0.31	0.395	-3.214	1.981	-0.616
Statistics (NDs = DL)	0.823	0.703	0.132	-2.94	1.207	-0.41
Statistics (NDs = DL/2)	0.664	0.576	0.125	-3.403	1.198	-0.352
Statistics (Gamma ROS Estimates)	0.503	0.447	0.144	-3.887	1.334	-0.343
Statistics (Lognormal ROS Estimates)	--	--	--	-4.038	1.421	-0.352

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.792	0.707	0.622	0.834

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.644	0.762	Data Not Normal
Shapiro-Wilk (NDs = DL)	0.529	0.881	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.418	0.881	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.725	0.881	Data Not Normal
Lilliefors (Detects Only)	0.394	0.343	Data Not Normal
Lilliefors (NDs = DL)	0.319	0.22	Data Not Normal
Lilliefors (NDs = DL/2)	0.397	0.22	Data Not Normal
Lilliefors (Normal ROS Estimates)	0.245	0.22	Data Not Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	0.986	0.907	0.86	0.874

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	0.452	0.719	
Kolmogorov-Smirnov (Detects Only)	0.302	0.374	Detected Data Appear Gamma Distributed
Anderson-Darling (NDs = DL)	0.81	0.772	

Kolmogorov-Smirnov (NDs = DL)	0.229	0.23	Detected Data appear Approximate Gamma Distr
Anderson-Darling (NDs = DL/2)	1.58	0.781	
Kolmogorov-Smirnov (NDs = DL/2)	0.307	0.231	Data Not Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	2.334	0.793	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.334	0.234	Data Not Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.975	0.968	0.937	0.943

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.956	0.762	Data Appear Lognormal
Shapiro-Wilk (NDs = DL)	0.957	0.881	Data Appear Lognormal
Shapiro-Wilk (NDs = DL/2)	0.9	0.881	Data Appear Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.9	0.881	Data Appear Lognormal
Lilliefors (Detects Only)	0.238	0.343	Data Appear Lognormal
Lilliefors (NDs = DL)	0.141	0.22	Data Appear Lognormal
Lilliefors (NDs = DL/2)	0.217	0.22	Data Appear Lognormal
Lilliefors (Lognormal ROS Estimates)	0.198	0.22	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (1_1_104)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	15	0	15	2	13	86.67%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	13	5.2000E-4	0.0025	8.9385E-4	6.0000E-4	5.2392E-4
Statistics (Non-Detects Only)	2	4.1000E-4	5.3000E-4	4.7000E-4	4.7000E-4	8.4853E-5
Statistics (All: NDs treated as DL value)	15	4.1000E-4	0.0025	8.3733E-4	6.0000E-4	5.0797E-4
Statistics (All: NDs treated as DL/2 value)	15	2.6000E-4	0.00125	4.5000E-4	4.1000E-4	2.4372E-4
Statistics (Normal ROS Imputed Data)	15	3.5534E-4	5.3860E-4	4.4757E-4	4.4697E-4	5.8634E-5
Statistics (Gamma ROS Imputed Data)	15	N/A	N/A	N/A	N/A	N/A
Statistics (Lognormal ROS Imputed Data)	15	3.6475E-4	5.3984E-4	4.4761E-4	4.4374E-4	5.6572E-5

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	N/A	N/A	N/A	N/A	N/A	N/A
Statistics (NDs = DL)	4.662	3.774	1.7961E-4	-7.196	0.446	-0.0619
Statistics (NDs = DL/2)	5.667	4.578	7.9413E-5	-7.797	0.405	-0.052
Statistics (Gamma ROS Estimates)	N/A	N/A	N/A	N/A	N/A	N/A
Statistics (Lognormal ROS Estimates)	--	--	--	-7.719	0.125	-0.0163

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	1	0.781	0.78	0.981

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (NDs = DL)	0.637	0.881	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.635	0.881	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.947	0.881	Data Appear Normal

Lilliefors (Detects Only)	N/A	N/A	
Lilliefors (NDs = DL)	0.308	0.22	Data Not Normal
Lilliefors (NDs = DL/2)	0.305	0.22	Data Not Normal
Lilliefors (Normal ROS Estimates)	0.139	0.22	Data Appear Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	N/A	0.862	0.854	0.448

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	N/A	N/A	
Kolmogorov-Smirnov (Detects Only)	N/A	N/A	
Anderson-Darling (NDs = DL)	1.35	0.739	
Kolmogorov-Smirnov (NDs = DL)	0.299	0.222	Data Not Gamma Distributed
Anderson-Darling (NDs = DL/2)	1.33	0.738	
Kolmogorov-Smirnov (NDs = DL/2)	0.243	0.222	Data Not Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	N/A	0.734	
Kolmogorov-Smirnov (Gamma ROS Est.)	N/A	0.221	

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	1	0.899	0.887	N/A

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (NDs = DL)	0.826	0.881	Data Not Lognormal
Shapiro-Wilk (NDs = DL/2)	0.8	0.881	Data Not Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.947	0.881	Data Appear Lognormal
Lilliefors (Detects Only)	N/A	N/A	
Lilliefors (NDs = DL)	0.291	0.22	Data Not Lognormal
Lilliefors (NDs = DL/2)	0.248	0.22	Data Not Lognormal
Lilliefors (Lognormal ROS Estimates)	0.139	0.22	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (1_1_106)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	15	0	15	14	1	6.67%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	1	0.00125	0.00125	0.00125	0.00125	N/A
Statistics (Non-Detects Only)	14	6.6000E-4	0.0013	8.2857E-4	7.9500E-4	1.6843E-4
Statistics (All: NDs treated as DL value)	15	6.6000E-4	0.0013	8.5667E-4	8.0000E-4	1.9540E-4
Statistics (All: NDs treated as DL/2 value)	15	6.2500E-4	0.0013	8.1500E-4	7.9000E-4	1.7060E-4
Statistics (Normal ROS Imputed Data)	15	6.6000E-4	0.0013	8.2735E-4	8.0000E-4	1.6237E-4
Statistics (Gamma ROS Imputed Data)	15	6.6000E-4	0.01	0.00144	8.0000E-4	0.00237
Statistics (Lognormal ROS Imputed Data)	15	6.6000E-4	0.0013	8.2658E-4	7.9865E-4	1.6248E-4

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	30.62	24.11	2.7060E-5	-7.112	0.181	-0.0255
Statistics (NDs = DL)	23.69	18.99	3.6165E-5	-7.084	0.207	-0.0292

Statistics (NDs = DL/2)	28.57	22.9	2.8531E-5	-7.13	0.188	-0.0263
Statistics (Gamma ROS Estimates)	1.387	1.154	0.00104	-6.945	0.67	-0.0965
Statistics (Lognormal ROS Estimates)	--	--	--	-7.114	0.175	-0.0246

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.893	0.907	0.905	0.889

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.811	0.874	Data Not Normal
Shapiro-Wilk (NDs = DL)	0.819	0.881	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.835	0.881	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.807	0.881	Data Not Normal
Lilliefors (Detects Only)	0.282	0.226	Data Not Normal
Lilliefors (NDs = DL)	0.281	0.22	Data Not Normal
Lilliefors (NDs = DL/2)	0.268	0.22	Data Not Normal
Lilliefors (Normal ROS Estimates)	0.275	0.22	Data Not Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	0.923	0.935	0.934	0.748

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	0.739	0.734	
Kolmogorov-Smirnov (Detects Only)	0.267	0.228	Data Not Gamma Distributed
Anderson-Darling (NDs = DL)	0.881	0.735	
Kolmogorov-Smirnov (NDs = DL)	0.269	0.221	Data Not Gamma Distributed
Anderson-Darling (NDs = DL/2)	0.635	0.735	
Kolmogorov-Smirnov (NDs = DL/2)	0.248	0.221	Detected Data appear Approximate Gamma Distr
Anderson-Darling (Gamma ROS Estimates)	3.741	0.756	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.411	0.226	Data Not Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.932	0.937	0.946	0.927

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.878	0.874	Data Appear Lognormal
Shapiro-Wilk (NDs = DL)	0.873	0.881	Data Not Lognormal
Shapiro-Wilk (NDs = DL/2)	0.906	0.881	Data Appear Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.871	0.881	Data Not Lognormal
Lilliefors (Detects Only)	0.255	0.226	Data Not Lognormal
Lilliefors (NDs = DL)	0.257	0.22	Data Not Lognormal
Lilliefors (NDs = DL/2)	0.235	0.22	Data Not Lognormal
Lilliefors (Lognormal ROS Estimates)	0.273	0.22	Data Not Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (1_1_110)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	15	0	15	0	15	100.00%

Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable VALUES (1_1_110) was not processed!

VALUES (1_1_112)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	15	0	15	0	15	100.00%

Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable VALUES (1_1_112) was not processed!

VALUES (1_1_116)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	15	0	15	2	13	86.67%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	13	0.001	0.0018	0.0016	0.0015	2.3452E-4
Statistics (Non-Detects Only)	2	9.7000E-4	0.003	0.00199	0.00199	0.00144
Statistics (All: NDs treated as DL value)	15	9.7000E-4	0.003	0.00165	0.0015	4.6116E-4
Statistics (All: NDs treated as DL/2 value)	15	5.0000E-4	0.003	9.5800E-4	9.0000E-4	5.7690E-4
Statistics (Normal ROS Imputed Data)	15	-1.173E-4	0.003	0.00109	9.7000E-4	8.2682E-4
Statistics (Gamma ROS Imputed Data)	15	N/A	N/A	N/A	N/A	N/A
Statistics (Lognormal ROS Imputed Data)	15	5.2981E-4	0.003	0.00115	9.7000E-4	6.2168E-4

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	N/A	N/A	N/A	N/A	N/A	N/A
Statistics (NDs = DL)	15.28	12.27	1.0805E-4	-6.439	0.264	-0.041
Statistics (NDs = DL/2)	5.76	4.652	1.6632E-4	-7.04	0.377	-0.0535
Statistics (Gamma ROS Estimates)	N/A	N/A	N/A	N/A	N/A	N/A
Statistics (Lognormal ROS Estimates)	--	--	--	-6.873	0.46	-0.0669

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	1	0.864	0.651	0.975

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (NDs = DL)	0.777	0.881	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.461	0.881	Data Not Normal

Shapiro-Wilk (Normal ROS Estimates)	0.954	0.881	Data Appear Normal
Lilliefors (Detects Only)	N/A	N/A	
Lilliefors (NDs = DL)	0.307	0.22	Data Not Normal
Lilliefors (NDs = DL/2)	0.425	0.22	Data Not Normal
Lilliefors (Normal ROS Estimates)	0.138	0.22	Data Appear Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	N/A	0.886	0.738	0.512

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	N/A	N/A	
Kolmogorov-Smirnov (Detects Only)	N/A	N/A	
Anderson-Darling (NDs = DL)	1.186	0.736	
Kolmogorov-Smirnov (NDs = DL)	0.268	0.221	Data Not Gamma Distributed
Anderson-Darling (NDs = DL/2)	2.548	0.738	
Kolmogorov-Smirnov (NDs = DL/2)	0.37	0.222	Data Not Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	N/A	0.734	
Kolmogorov-Smirnov (Gamma ROS Est.)	N/A	0.221	

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	1	0.902	0.779	N/A

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (NDs = DL)	0.839	0.881	Data Not Lognormal
Shapiro-Wilk (NDs = DL/2)	0.649	0.881	Data Not Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.954	0.881	Data Appear Lognormal
Lilliefors (Detects Only)	N/A	N/A	
Lilliefors (NDs = DL)	0.272	0.22	Data Not Lognormal
Lilliefors (NDs = DL/2)	0.338	0.22	Data Not Lognormal
Lilliefors (Lognormal ROS Estimates)	0.138	0.22	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (1_1_118)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	15	0	15	13	2	13.33%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	2	2.0000E-4	0.001	6.0000E-4	6.0000E-4	5.6569E-4
Statistics (Non-Detects Only)	13	2.1000E-4	0.0011	3.8846E-4	3.0000E-4	2.4262E-4
Statistics (All: NDs treated as DL value)	15	2.0000E-4	0.0011	4.1667E-4	3.0000E-4	2.8081E-4
Statistics (All: NDs treated as DL/2 value)	15	1.0000E-4	0.0011	3.7667E-4	3.0000E-4	2.3904E-4
Statistics (Normal ROS Imputed Data)	15	-1.053E-4	0.0011	3.5162E-4	3.0000E-4	2.5819E-4
Statistics (Gamma ROS Imputed Data)	15	2.1000E-4	0.01	0.00167	3.3000E-4	0.00339
Statistics (Lognormal ROS Imputed Data)	15	1.2520E-4	0.0011	3.6543E-4	3.0000E-4	2.3520E-4

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	4.444	3.47	8.7412E-5	-7.97	0.454	-0.057

Statistics (NDs = DL)	3.437	2.794	1.2122E-4	-7.936	0.527	-0.0664
Statistics (NDs = DL/2)	3.632	2.95	1.0372E-4	-8.028	0.541	-0.0674
Statistics (Gamma ROS Estimates)	0.555	0.488	0.00301	-7.521	1.256	-0.167
Statistics (Lognormal ROS Estimates)	--	--	--	-8.046	0.496	-0.0616

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.803	0.84	0.861	0.863

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.666	0.866	Data Not Normal
Shapiro-Wilk (NDs = DL)	0.708	0.881	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.766	0.881	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.782	0.881	Data Not Normal
Lilliefors (Detects Only)	0.316	0.234	Data Not Normal
Lilliefors (NDs = DL)	0.313	0.22	Data Not Normal
Lilliefors (NDs = DL/2)	0.261	0.22	Data Not Normal
Lilliefors (Normal ROS Estimates)	0.287	0.22	Data Not Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	0.896	0.926	0.939	0.881

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	1.132	0.737	
Kolmogorov-Smirnov (Detects Only)	0.269	0.238	Data Not Gamma Distributed
Anderson-Darling (NDs = DL)	1.263	0.743	
Kolmogorov-Smirnov (NDs = DL)	0.266	0.223	Data Not Gamma Distributed
Anderson-Darling (NDs = DL/2)	0.622	0.742	
Kolmogorov-Smirnov (NDs = DL/2)	0.197	0.223	Data Appear Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	3.025	0.789	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.374	0.233	Data Not Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.91	0.925	0.959	0.94

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.839	0.866	Data Not Lognormal
Shapiro-Wilk (NDs = DL)	0.85	0.881	Data Not Lognormal
Shapiro-Wilk (NDs = DL/2)	0.944	0.881	Data Appear Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.909	0.881	Data Appear Lognormal
Lilliefors (Detects Only)	0.234	0.234	Data Appear Lognormal
Lilliefors (NDs = DL)	0.229	0.22	Data Not Lognormal
Lilliefors (NDs = DL/2)	0.161	0.22	Data Appear Lognormal
Lilliefors (Lognormal ROS Estimates)	0.207	0.22	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (1_1_120)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	15	0	15	9	6	40.00%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	6	0.0015	0.0018	0.0016	0.0015	1.5492E-4
Statistics (Non-Detects Only)	9	5.8000E-4	0.014	0.0033	0.0011	0.00482
Statistics (All: NDs treated as DL value)	15	5.8000E-4	0.014	0.00262	0.0015	0.00375
Statistics (All: NDs treated as DL/2 value)	15	5.8000E-4	0.014	0.0023	9.0000E-4	0.00386
Statistics (Normal ROS Imputed Data)	15	-0.00128	0.014	0.00269	0.0011	0.00395
Statistics (Gamma ROS Imputed Data)	15	5.8000E-4	0.014	0.00598	0.00899	0.00498
Statistics (Lognormal ROS Imputed Data)	15	4.6968E-4	0.014	0.00247	0.0011	0.00381

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	0.814	0.617	0.00405	-6.442	1.148	-0.178
Statistics (NDs = DL)	1.145	0.96	0.00229	-6.442	0.87	-0.135
Statistics (NDs = DL/2)	0.908	0.771	0.00253	-6.719	0.938	-0.14
Statistics (Gamma ROS Estimates)	0.984	0.832	0.00608	-5.708	1.273	-0.223
Statistics (Lognormal ROS Estimates)	--	--	--	-6.603	0.957	-0.145

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.782	0.711	0.677	0.841

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.62	0.829	Data Not Normal
Shapiro-Wilk (NDs = DL)	0.526	0.881	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.478	0.881	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.726	0.881	Data Not Normal
Lilliefors (Detects Only)	0.438	0.274	Data Not Normal
Lilliefors (NDs = DL)	0.453	0.22	Data Not Normal
Lilliefors (NDs = DL/2)	0.469	0.22	Data Not Normal
Lilliefors (Normal ROS Estimates)	0.305	0.22	Data Not Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	0.949	0.89	0.888	0.819

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	1.338	0.749	
Kolmogorov-Smirnov (Detects Only)	0.409	0.289	Data Not Gamma Distributed
Anderson-Darling (NDs = DL)	2.133	0.76	
Kolmogorov-Smirnov (NDs = DL)	0.388	0.227	Data Not Gamma Distributed
Anderson-Darling (NDs = DL/2)	3.049	0.767	
Kolmogorov-Smirnov (NDs = DL/2)	0.418	0.229	Data Not Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	1.775	0.764	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.311	0.228	Data Not Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS

Correlation Coefficient R	0.882	0.885	0.802	0.905

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.774	0.829	Data Not Lognormal
Shapiro-Wilk (NDs = DL)	0.793	0.881	Data Not Lognormal
Shapiro-Wilk (NDs = DL/2)	0.653	0.881	Data Not Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.824	0.881	Data Not Lognormal
Lilliefors (Detects Only)	0.348	0.274	Data Not Lognormal
Lilliefors (NDs = DL)	0.311	0.22	Data Not Lognormal
Lilliefors (NDs = DL/2)	0.335	0.22	Data Not Lognormal
Lilliefors (Lognormal ROS Estimates)	0.225	0.22	Data Not Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (1_1_122)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	15	0	15	7	8	53.33%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	8	0.03	0.25	0.0873	0.085	0.0703
Statistics (Non-Detects Only)	7	0.022	0.56	0.11	0.029	0.199
Statistics (All: NDs treated as DL value)	15	0.022	0.56	0.0978	0.048	0.14
Statistics (All: NDs treated as DL/2 value)	15	0.015	0.56	0.0745	0.033	0.137
Statistics (Normal ROS Imputed Data)	15	-0.0573	0.56	0.0735	0.033	0.144
Statistics (Gamma ROS Imputed Data)	15	0.01	0.56	0.0657	0.025	0.14
Statistics (Lognormal ROS Imputed Data)	15	0.015	0.56	0.0688	0.029	0.137

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	0.72	0.506	0.153	-3.045	1.161	-0.381
Statistics (NDs = DL)	1.106	0.929	0.0884	-2.841	0.925	-0.326
Statistics (NDs = DL/2)	0.946	0.801	0.0788	-3.211	0.918	-0.286
Statistics (Gamma ROS Estimates)	0.685	0.592	0.0959	-3.609	1.133	-0.314
Statistics (Lognormal ROS Estimates)	--	--	--	-3.296	0.865	-0.262

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.701	0.729	0.635	0.753

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.519	0.803	Data Not Normal
Shapiro-Wilk (NDs = DL)	0.556	0.881	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.434	0.881	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.6	0.881	Data Not Normal
Lilliefors (Detects Only)	0.427	0.304	Data Not Normal
Lilliefors (NDs = DL)	0.403	0.22	Data Not Normal
Lilliefors (NDs = DL/2)	0.392	0.22	Data Not Normal
Lilliefors (Normal ROS Estimates)	0.324	0.22	Data Not Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS

Correlation Coefficient R	0.923	0.91	0.849	0.877

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	1.331	0.738	
Kolmogorov-Smirnov (Detects Only)	0.381	0.323	Data Not Gamma Distributed
Anderson-Darling (NDs = DL)	1.348	0.761	
Kolmogorov-Smirnov (NDs = DL)	0.295	0.227	Data Not Gamma Distributed
Anderson-Darling (NDs = DL/2)	1.91	0.766	
Kolmogorov-Smirnov (NDs = DL/2)	0.356	0.228	Data Not Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	1.757	0.78	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.308	0.231	Data Not Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.831	0.925	0.898	0.844

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.706	0.803	Data Not Lognormal
Shapiro-Wilk (NDs = DL)	0.856	0.881	Data Not Lognormal
Shapiro-Wilk (NDs = DL/2)	0.822	0.881	Data Not Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.738	0.881	Data Not Lognormal
Lilliefors (Detects Only)	0.338	0.304	Data Not Lognormal
Lilliefors (NDs = DL)	0.209	0.22	Data Appear Lognormal
Lilliefors (NDs = DL/2)	0.277	0.22	Data Not Lognormal
Lilliefors (Lognormal ROS Estimates)	0.281	0.22	Data Not Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (1_1_124)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	15	0	15	3	12	80.00%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	12	5.0000E-4	7.0000E-4	6.0000E-4	6.0000E-4	1.0445E-4
Statistics (Non-Detects Only)	3	2.8000E-4	5.8400E-4	4.0133E-4	3.4000E-4	1.6101E-4
Statistics (All: NDs treated as DL value)	15	2.8000E-4	7.0000E-4	5.6027E-4	5.0000E-4	1.3799E-4
Statistics (All: NDs treated as DL/2 value)	15	2.5000E-4	5.8400E-4	3.2027E-4	3.4000E-4	8.7217E-5
Statistics (Normal ROS Imputed Data)	15	1.7022E-4	5.8400E-4	3.4057E-4	3.4000E-4	1.1386E-4
Statistics (Gamma ROS Imputed Data)	15	2.8000E-4	0.01	0.00808	0.01	0.00397
Statistics (Lognormal ROS Imputed Data)	15	2.1969E-4	5.8400E-4	3.4199E-4	3.3034E-4	9.8358E-5

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	N/A	N/A	N/A	N/A	N/A	N/A
Statistics (NDs = DL)	15.21	12.21	3.6830E-5	-7.52	0.279	-0.0371
Statistics (NDs = DL/2)	17.72	14.22	1.8077E-5	-8.075	0.237	-0.0293
Statistics (Gamma ROS Estimates)	1.277	1.066	0.00633	-5.258	1.36	-0.259
Statistics (Lognormal ROS Estimates)	--	--	--	-8.016	0.271	-0.0338

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS

Correlation Coefficient R	0.944	0.918	0.83	0.989

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.891	0.767	Data Appear Normal
Shapiro-Wilk (NDs = DL)	0.832	0.881	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.706	0.881	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.976	0.881	Data Appear Normal
Lilliefors (Detects Only)	0.315	0.425	Data Appear Normal
Lilliefors (NDs = DL)	0.244	0.22	Data Not Normal
Lilliefors (NDs = DL/2)	0.3	0.22	Data Not Normal
Lilliefors (Normal ROS Estimates)	0.0988	0.22	Data Appear Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	N/A	0.889	0.866	0.489

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	N/A	N/A	
Kolmogorov-Smirnov (Detects Only)	N/A	N/A	
Anderson-Darling (NDs = DL)	1.134	0.736	
Kolmogorov-Smirnov (NDs = DL)	0.238	0.221	Data Not Gamma Distributed
Anderson-Darling (NDs = DL/2)	1.376	0.735	
Kolmogorov-Smirnov (NDs = DL/2)	0.257	0.221	Data Not Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	4.042	0.758	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.507	0.227	Data Not Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.965	0.901	0.876	0.99

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.931	0.767	Data Appear Lognormal
Shapiro-Wilk (NDs = DL)	0.809	0.881	Data Not Lognormal
Shapiro-Wilk (NDs = DL/2)	0.775	0.881	Data Not Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.978	0.881	Data Appear Lognormal
Lilliefors (Detects Only)	0.286	0.425	Data Appear Lognormal
Lilliefors (NDs = DL)	0.253	0.22	Data Not Lognormal
Lilliefors (NDs = DL/2)	0.244	0.22	Data Not Lognormal
Lilliefors (Lognormal ROS Estimates)	0.0834	0.22	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (1_1_130)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	15	0	15	0	15	100.00%

Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!

Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!

The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable VALUES (1_1_130) was not processed!

VALUES (1_1_132)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	15	0	15	14	1	6.67%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	1	0.0025	0.0025	0.0025	0.0025	N/A
Statistics (Non-Detects Only)	14	0.001	0.0063	0.00204	0.00165	0.00133
Statistics (All: NDs treated as DL value)	15	0.001	0.0063	0.00207	0.0017	0.00129
Statistics (All: NDs treated as DL/2 value)	15	0.001	0.0063	0.00199	0.0016	0.0013
Statistics (Normal ROS Imputed Data)	15	0.001	0.0063	0.00203	0.0017	0.00129
Statistics (Gamma ROS Imputed Data)	15	0.001	0.01	0.00257	0.0017	0.00242
Statistics (Lognormal ROS Imputed Data)	15	0.001	0.0063	0.00202	0.00165	0.00129

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	4.298	3.424	4.7536E-4	-6.314	0.459	-0.0726
Statistics (NDs = DL)	4.541	3.677	4.5656E-4	-6.293	0.45	-0.0715
Statistics (NDs = DL/2)	4.35	3.525	4.5743E-4	-6.339	0.452	-0.0713
Statistics (Gamma ROS Estimates)	2.256	1.849	0.00114	-6.2	0.624	-0.101
Statistics (Lognormal ROS Estimates)	--	--	--	-6.32	0.442	-0.07

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.785	0.802	0.777	0.776

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.643	0.874	Data Not Normal
Shapiro-Wilk (NDs = DL)	0.67	0.881	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.631	0.881	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.631	0.881	Data Not Normal
Lilliefors (Detects Only)	0.31	0.226	Data Not Normal
Lilliefors (NDs = DL)	0.261	0.22	Data Not Normal
Lilliefors (NDs = DL/2)	0.303	0.22	Data Not Normal
Lilliefors (Normal ROS Estimates)	0.313	0.22	Data Not Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	0.878	0.889	0.872	0.899

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	1.004	0.739	
Kolmogorov-Smirnov (Detects Only)	0.233	0.23	Data Not Gamma Distributed
Anderson-Darling (NDs = DL)	0.835	0.739	
Kolmogorov-Smirnov (NDs = DL)	0.188	0.222	Detected Data appear Approximate Gamma Distr
Anderson-Darling (NDs = DL/2)	1.081	0.74	
Kolmogorov-Smirnov (NDs = DL/2)	0.222	0.222	Detected Data appear Approximate Gamma Distr
Anderson-Darling (Gamma ROS Estimates)	1.59	0.746	

Kolmogorov-Smirnov (Gamma ROS Est.)	0.301	0.224	Data Not Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.923	0.94	0.919	0.916

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.871	0.874	Data Not Lognormal
Shapiro-Wilk (NDs = DL)	0.899	0.881	Data Appear Lognormal
Shapiro-Wilk (NDs = DL/2)	0.862	0.881	Data Not Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.858	0.881	Data Not Lognormal
Lilliefors (Detects Only)	0.193	0.226	Data Appear Lognormal
Lilliefors (NDs = DL)	0.15	0.22	Data Appear Lognormal
Lilliefors (NDs = DL/2)	0.18	0.22	Data Appear Lognormal
Lilliefors (Lognormal ROS Estimates)	0.191	0.22	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (1_1_136)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	15	0	15	13	2	13.33%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	2	0.5	0.94	0.72	0.72	0.311
Statistics (Non-Detects Only)	13	0.4	2.4	0.852	0.67	0.53
Statistics (All: NDs treated as DL value)	15	0.4	2.4	0.835	0.67	0.5
Statistics (All: NDs treated as DL/2 value)	15	0.25	2.4	0.787	0.64	0.522
Statistics (Normal ROS Imputed Data)	15	0.278	2.4	0.796	0.64	0.516
Statistics (Gamma ROS Imputed Data)	15	0.293	2.4	0.793	0.64	0.517
Statistics (Lognormal ROS Imputed Data)	15	0.4	2.4	0.802	0.64	0.509

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	3.983	3.115	0.214	-0.291	0.503	-1.731
Statistics (NDs = DL)	4.278	3.467	0.195	-0.302	0.482	-1.594
Statistics (NDs = DL/2)	3.392	2.758	0.232	-0.395	0.553	-1.403
Statistics (Gamma ROS Estimates)	3.609	2.932	0.22	-0.377	0.529	-1.406
Statistics (Lognormal ROS Estimates)	--	--	--	-0.352	0.497	-1.412

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.853	0.85	0.862	0.858

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.747	0.866	Data Not Normal
Shapiro-Wilk (NDs = DL)	0.743	0.881	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.765	0.881	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.758	0.881	Data Not Normal
Lilliefors (Detects Only)	0.243	0.234	Data Not Normal
Lilliefors (NDs = DL)	0.231	0.22	Data Not Normal
Lilliefors (NDs = DL/2)	0.207	0.22	Data Appear Normal

Lilliefors (Normal ROS Estimates)	0.211	0.22	Data Appear Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	0.927	0.921	0.936	0.932

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	0.522	0.737	
Kolmogorov-Smirnov (Detects Only)	0.166	0.238	Detected Data Appear Gamma Distributed
Anderson-Darling (NDs = DL)	0.536	0.74	
Kolmogorov-Smirnov (NDs = DL)	0.158	0.222	Data Appear Gamma Distributed
Anderson-Darling (NDs = DL/2)	0.435	0.743	
Kolmogorov-Smirnov (NDs = DL/2)	0.141	0.223	Data Appear Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	0.476	0.742	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.153	0.223	Data Appear Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.96	0.96	0.976	0.952

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.923	0.866	Data Appear Lognormal
Shapiro-Wilk (NDs = DL)	0.925	0.881	Data Appear Lognormal
Shapiro-Wilk (NDs = DL/2)	0.964	0.881	Data Appear Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.906	0.881	Data Appear Lognormal
Lilliefors (Detects Only)	0.145	0.234	Data Appear Lognormal
Lilliefors (NDs = DL)	0.138	0.22	Data Appear Lognormal
Lilliefors (NDs = DL/2)	0.121	0.22	Data Appear Lognormal
Lilliefors (Lognormal ROS Estimates)	0.139	0.22	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (1_1_138)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	15	0	15	1	14	93.33%

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable VALUES (1_1_138) was not processed!

VALUES (1_1_140)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	15	0	15	3	12	80.00%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	12	1.0000E-4	0.001	1.8167E-4	1.0000E-4	2.5873E-4

Statistics (Non-Detects Only)	3	3.3000E-5	5.5000E-4	2.1267E-4	5.5000E-5	2.9235E-4
Statistics (All: NDs treated as DL value)	15	3.3000E-5	0.001	1.8787E-4	1.0000E-4	2.5490E-4
Statistics (All: NDs treated as DL/2 value)	15	3.3000E-5	5.5000E-4	1.1520E-4	5.0000E-5	1.6704E-4
Statistics (Normal ROS Imputed Data)	15	-2.430E-4	5.5000E-4	9.0022E-5	6.3540E-5	1.9236E-4
Statistics (Gamma ROS Imputed Data)	15	3.3000E-5	0.01	0.00804	0.01	0.00405
Statistics (Lognormal ROS Imputed Data)	15	8.9264E-6	5.5000E-4	9.1030E-5	5.0767E-5	1.3474E-4

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	N/A	N/A	N/A	N/A	N/A	N/A
Statistics (NDs = DL)	1.283	1.071	1.4647E-4	-9.018	0.827	-0.0918
Statistics (NDs = DL/2)	1.131	0.949	1.0188E-4	-9.572	0.842	-0.088
Statistics (Gamma ROS Estimates)	0.839	0.715	0.00959	-5.526	1.989	-0.36
Statistics (Lognormal ROS Estimates)	--	--	--	-9.861	1.009	-0.102

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.884	0.697	0.672	0.971

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.782	0.767	Data Appear Normal
Shapiro-Wilk (NDs = DL)	0.511	0.881	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.464	0.881	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.958	0.881	Data Appear Normal
Lilliefors (Detects Only)	0.372	0.425	Data Appear Normal
Lilliefors (NDs = DL)	0.435	0.22	Data Not Normal
Lilliefors (NDs = DL/2)	0.441	0.22	Data Not Normal
Lilliefors (Normal ROS Estimates)	0.169	0.22	Data Appear Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	N/A	0.877	0.852	0.436

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	N/A	N/A	
Kolmogorov-Smirnov (Detects Only)	N/A	N/A	
Anderson-Darling (NDs = DL)	2.615	0.758	
Kolmogorov-Smirnov (NDs = DL)	0.432	0.227	Data Not Gamma Distributed
Anderson-Darling (NDs = DL/2)	3.673	0.761	
Kolmogorov-Smirnov (NDs = DL/2)	0.444	0.227	Data Not Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	4.052	0.771	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.516	0.229	Data Not Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.939	0.846	0.744	0.978

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.881	0.767	Data Appear Lognormal
Shapiro-Wilk (NDs = DL)	0.741	0.881	Data Not Lognormal
Shapiro-Wilk (NDs = DL/2)	0.568	0.881	Data Not Lognormal

Shapiro-Wilk (Lognormal ROS Estimates)	0.969	0.881	Data Appear Lognormal
Lilliefors (Detects Only)	0.322	0.425	Data Appear Lognormal
Lilliefors (NDs = DL)	0.392	0.22	Data Not Lognormal
Lilliefors (NDs = DL/2)	0.41	0.22	Data Not Lognormal
Lilliefors (Lognormal ROS Estimates)	0.146	0.22	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (1_1_144)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	15	0	15	0	15	100.00%

Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable VALUES (1_1_144) was not processed!

VALUES (1_1_146)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	15	0	15	14	1	6.67%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	1	0.002	0.002	0.002	0.002	N/A
Statistics (Non-Detects Only)	14	0.001	0.00554	0.00232	0.00185	0.0013
Statistics (All: NDs treated as DL value)	15	0.001	0.00554	0.0023	0.002	0.00125
Statistics (All: NDs treated as DL/2 value)	15	0.001	0.00554	0.00224	0.0017	0.0013
Statistics (Normal ROS Imputed Data)	15	0.001	0.00554	0.00227	0.0017	0.00127
Statistics (Gamma ROS Imputed Data)	15	0.001	0.01	0.00284	0.002	0.00234
Statistics (Lognormal ROS Imputed Data)	15	0.001	0.00554	0.00226	0.0017	0.00127

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	4.268	3.401	5.4452E-4	-6.186	0.495	-0.0801
Statistics (NDs = DL)	4.536	3.674	5.0759E-4	-6.188	0.477	-0.0771
Statistics (NDs = DL/2)	3.974	3.223	5.6272E-4	-6.234	0.512	-0.0822
Statistics (Gamma ROS Estimates)	2.477	2.026	0.00115	-6.081	0.628	-0.103
Statistics (Lognormal ROS Estimates)	--	--	--	-6.21	0.486	-0.0783

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.919	0.914	0.915	0.908

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.848	0.874	Data Not Normal
Shapiro-Wilk (NDs = DL)	0.841	0.881	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.84	0.881	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.829	0.881	Data Not Normal
Lilliefors (Detects Only)	0.185	0.226	Data Appear Normal

Lilliefors (NDs = DL)	0.199	0.22	Data Appear Normal
Lilliefors (NDs = DL/2)	0.194	0.22	Data Appear Normal
Lilliefors (Normal ROS Estimates)	0.205	0.22	Data Appear Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	0.977	0.973	0.977	0.945

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	0.388	0.74	
Kolmogorov-Smirnov (Detects Only)	0.173	0.23	Detected Data Appear Gamma Distributed
Anderson-Darling (NDs = DL)	0.405	0.739	
Kolmogorov-Smirnov (NDs = DL)	0.153	0.222	Data Appear Gamma Distributed
Anderson-Darling (NDs = DL/2)	0.407	0.74	
Kolmogorov-Smirnov (NDs = DL/2)	0.17	0.223	Data Appear Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	0.703	0.746	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.166	0.224	Data Appear Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.984	0.983	0.981	0.977

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.962	0.874	Data Appear Lognormal
Shapiro-Wilk (NDs = DL)	0.964	0.881	Data Appear Lognormal
Shapiro-Wilk (NDs = DL/2)	0.953	0.881	Data Appear Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.95	0.881	Data Appear Lognormal
Lilliefors (Detects Only)	0.15	0.226	Data Appear Lognormal
Lilliefors (NDs = DL)	0.122	0.22	Data Appear Lognormal
Lilliefors (NDs = DL/2)	0.143	0.22	Data Appear Lognormal
Lilliefors (Lognormal ROS Estimates)	0.168	0.22	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (1_1_148)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	15	0	15	5	10	66.67%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	10	0.006	0.05	0.0116	0.008	0.0135
Statistics (Non-Detects Only)	5	0.0022	0.014	0.0057	0.0034	0.00497
Statistics (All: NDs treated as DL value)	15	0.0022	0.05	0.00963	0.008	0.0115
Statistics (All: NDs treated as DL/2 value)	15	0.0022	0.025	0.00577	0.004	0.00604
Statistics (Normal ROS Imputed Data)	15	-8.642E-4	0.014	0.00409	0.0034	0.00356
Statistics (Gamma ROS Imputed Data)	15	0.0022	0.014	0.00857	0.01	0.00339
Statistics (Lognormal ROS Imputed Data)	15	0.00145	0.014	0.004	0.00325	0.00313

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	2.029	0.945	0.00281	-5.434	0.786	-0.145
Statistics (NDs = DL)	1.696	1.401	0.00568	-4.965	0.738	-0.149

Statistics (NDs = DL/2)	1.99	1.636	0.0029	-5.428	0.654	-0.12
Statistics (Gamma ROS Estimates)	4.278	3.467	0.002	-4.881	0.583	-0.119
Statistics (Lognormal ROS Estimates)	--	--	--	-5.705	0.579	-0.102

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.892	0.684	0.732	0.935

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.798	0.762	Data Appear Normal
Shapiro-Wilk (NDs = DL)	0.5	0.881	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.558	0.881	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.893	0.881	Data Appear Normal
Lilliefors (Detects Only)	0.278	0.343	Data Appear Normal
Lilliefors (NDs = DL)	0.423	0.22	Data Not Normal
Lilliefors (NDs = DL/2)	0.415	0.22	Data Not Normal
Lilliefors (Normal ROS Estimates)	0.146	0.22	Data Appear Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	0.986	0.828	0.879	0.79

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	0.429	0.684	
Kolmogorov-Smirnov (Detects Only)	0.268	0.36	Detected Data Appear Gamma Distributed
Anderson-Darling (NDs = DL)	1.496	0.751	
Kolmogorov-Smirnov (NDs = DL)	0.356	0.225	Data Not Gamma Distributed
Anderson-Darling (NDs = DL/2)	1.999	0.747	
Kolmogorov-Smirnov (NDs = DL/2)	0.396	0.224	Data Not Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	2.464	0.74	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.421	0.222	Data Not Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.951	0.909	0.873	0.966

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.891	0.762	Data Appear Lognormal
Shapiro-Wilk (NDs = DL)	0.85	0.881	Data Not Lognormal
Shapiro-Wilk (NDs = DL/2)	0.774	0.881	Data Not Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.941	0.881	Data Appear Lognormal
Lilliefors (Detects Only)	0.225	0.343	Data Appear Lognormal
Lilliefors (NDs = DL)	0.293	0.22	Data Not Lognormal
Lilliefors (NDs = DL/2)	0.357	0.22	Data Not Lognormal
Lilliefors (Lognormal ROS Estimates)	0.145	0.22	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (1_2_133)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	15	0	15	4	11	73.33%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	11	0.1	0.2	0.145	0.1	0.0522
Statistics (Non-Detects Only)	4	0.097	1.9	0.609	0.22	0.864
Statistics (All: NDs treated as DL value)	15	0.097	1.9	0.269	0.16	0.455
Statistics (All: NDs treated as DL/2 value)	15	0.05	1.9	0.216	0.1	0.47
Statistics (Normal ROS Imputed Data)	15	-0.798	1.9	0.0343	0.0821	0.629
Statistics (Gamma ROS Imputed Data)	15	0.01	1.9	0.189	0.01	0.481
Statistics (Lognormal ROS Imputed Data)	15	0.0218	1.9	0.226	0.097	0.468

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	0.838	0.376	0.727	-1.2	1.302	-1.085
Statistics (NDs = DL)	1.215	1.017	0.221	-1.778	0.766	-0.431
Statistics (NDs = DL/2)	0.79	0.677	0.273	-2.286	0.957	-0.419
Statistics (Gamma ROS Estimates)	0.393	0.359	0.481	-3.347	1.731	-0.517
Statistics (Lognormal ROS Estimates)	--	--	--	-2.272	1.088	-0.479

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.835	0.596	0.587	0.899

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.708	0.748	Data Not Normal
Shapiro-Wilk (NDs = DL)	0.386	0.881	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.375	0.881	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.833	0.881	Data Not Normal
Lilliefors (Detects Only)	0.399	0.375	Data Not Normal
Lilliefors (NDs = DL)	0.427	0.22	Data Not Normal
Lilliefors (NDs = DL/2)	0.414	0.22	Data Not Normal
Lilliefors (Normal ROS Estimates)	0.215	0.22	Data Appear Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	0.986	0.791	0.824	0.906

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	0.508	0.669	
Kolmogorov-Smirnov (Detects Only)	0.348	0.404	Detected Data Appear Gamma Distributed
Anderson-Darling (NDs = DL)	2.533	0.759	
Kolmogorov-Smirnov (NDs = DL)	0.366	0.227	Data Not Gamma Distributed
Anderson-Darling (NDs = DL/2)	2.606	0.773	
Kolmogorov-Smirnov (NDs = DL/2)	0.383	0.23	Data Not Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	2.001	0.816	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.355	0.237	Data Not Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.945	0.811	0.833	0.95

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.899	0.748	Data Appear Lognormal
Shapiro-Wilk (NDs = DL)	0.678	0.881	Data Not Lognormal
Shapiro-Wilk (NDs = DL/2)	0.71	0.881	Data Not Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.919	0.881	Data Appear Lognormal
Lilliefors (Detects Only)	0.273	0.375	Data Appear Lognormal
Lilliefors (NDs = DL)	0.28	0.22	Data Not Lognormal
Lilliefors (NDs = DL/2)	0.307	0.22	Data Not Lognormal
Lilliefors (Lognormal ROS Estimates)	0.143	0.22	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (1_3_134)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	15	0	15	0	15	100.00%

Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable VALUES (1_3_134) was not processed!

VALUES (1_4_101)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	15	0	15	13	2	13.33%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	2	0.031	0.2	0.116	0.116	0.12
Statistics (Non-Detects Only)	13	0.019	4.2	0.603	0.1	1.269
Statistics (All: NDs treated as DL value)	15	0.019	4.2	0.538	0.1	1.188
Statistics (All: NDs treated as DL/2 value)	15	0.0155	4.2	0.531	0.1	1.191
Statistics (Normal ROS Imputed Data)	15	-1.026	4.2	0.468	0.1	1.25
Statistics (Gamma ROS Imputed Data)	15	0.01	4.2	0.524	0.09	1.193
Statistics (Lognormal ROS Imputed Data)	15	0.0106	4.2	0.529	0.09	1.191

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	0.454	0.4	1.33	-1.927	1.54	-0.799
Statistics (NDs = DL)	0.463	0.415	1.164	-2.009	1.485	-0.739
Statistics (NDs = DL/2)	0.441	0.397	1.202	-2.102	1.539	-0.732
Statistics (Gamma ROS Estimates)	0.401	0.366	1.306	-2.284	1.709	-0.748
Statistics (Lognormal ROS Estimates)	--	--	--	-2.145	1.581	-0.737

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.701	0.677	0.674	0.753

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)

Shapiro-Wilk (Detects Only)	0.51	0.866	Data Not Normal
Shapiro-Wilk (NDs = DL)	0.479	0.881	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.475	0.881	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.599	0.881	Data Not Normal
Lilliefors (Detects Only)	0.456	0.234	Data Not Normal
Lilliefors (NDs = DL)	0.463	0.22	Data Not Normal
Lilliefors (NDs = DL/2)	0.46	0.22	Data Not Normal
Lilliefors (Normal ROS Estimates)	0.436	0.22	Data Not Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	0.945	0.932	0.934	0.94

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	1.775	0.799	
Kolmogorov-Smirnov (Detects Only)	0.347	0.251	Data Not Gamma Distributed
Anderson-Darling (NDs = DL)	1.991	0.801	
Kolmogorov-Smirnov (NDs = DL)	0.348	0.235	Data Not Gamma Distributed
Anderson-Darling (NDs = DL/2)	2.012	0.805	
Kolmogorov-Smirnov (NDs = DL/2)	0.336	0.236	Data Not Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	1.701	0.814	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.316	0.237	Data Not Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.925	0.931	0.932	0.94

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.861	0.866	Data Not Lognormal
Shapiro-Wilk (NDs = DL)	0.871	0.881	Data Not Lognormal
Shapiro-Wilk (NDs = DL/2)	0.874	0.881	Data Not Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.891	0.881	Data Appear Lognormal
Lilliefors (Detects Only)	0.214	0.234	Data Appear Lognormal
Lilliefors (NDs = DL)	0.204	0.22	Data Appear Lognormal
Lilliefors (NDs = DL/2)	0.201	0.22	Data Appear Lognormal
Lilliefors (Lognormal ROS Estimates)	0.193	0.22	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (1_4_103)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	15	0	15	2	13	86.67%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	13	5.2000E-4	0.0025	9.4000E-4	0.001	5.2230E-4
Statistics (Non-Detects Only)	2	4.4000E-4	5.3000E-4	4.8500E-4	4.8500E-4	6.3640E-5
Statistics (All: NDs treated as DL value)	15	4.4000E-4	0.0025	8.7933E-4	6.0000E-4	5.0966E-4
Statistics (All: NDs treated as DL/2 value)	15	2.6000E-4	0.00125	4.7200E-4	5.0000E-4	2.4243E-4
Statistics (Normal ROS Imputed Data)	15	4.0545E-4	5.3000E-4	4.6818E-4	4.6773E-4	4.1403E-5
Statistics (Gamma ROS Imputed Data)	15	N/A	N/A	N/A	N/A	N/A

Statistics (Lognormal ROS Imputed Data)	15	4.0966E-4	5.3000E-4	4.6801E-4	4.6596E-4	4.0344E-5

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	N/A	N/A	N/A	N/A	N/A	N/A
Statistics (NDs = DL)	4.743	3.839	1.8538E-4	-7.145	0.45	-0.063
Statistics (NDs = DL/2)	5.867	4.738	8.0451E-5	-7.746	0.406	-0.0524
Statistics (Gamma ROS Estimates)	N/A	N/A	N/A	N/A	N/A	N/A
Statistics (Lognormal ROS Estimates)	--	--	--	-7.67	0.0856	-0.0112

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	1	0.817	0.813	0.965

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (NDs = DL)	0.691	0.881	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.686	0.881	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.914	0.881	Data Appear Normal
Lilliefors (Detects Only)	N/A	N/A	
Lilliefors (NDs = DL)	0.273	0.22	Data Not Normal
Lilliefors (NDs = DL/2)	0.272	0.22	Data Not Normal
Lilliefors (Normal ROS Estimates)	0.171	0.22	Data Appear Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	N/A	0.892	0.879	0.449

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	N/A	N/A	
Kolmogorov-Smirnov (Detects Only)	N/A	N/A	
Anderson-Darling (NDs = DL)	1.077	0.739	
Kolmogorov-Smirnov (NDs = DL)	0.267	0.222	Data Not Gamma Distributed
Anderson-Darling (NDs = DL/2)	1.085	0.738	
Kolmogorov-Smirnov (NDs = DL/2)	0.21	0.222	Detected Data appear Approximate Gamma Distr
Anderson-Darling (Gamma ROS Estimates)	N/A	0.734	
Kolmogorov-Smirnov (Gamma ROS Est.)	N/A	0.221	

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	1	0.922	0.912	N/A

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (NDs = DL)	0.86	0.881	Data Not Lognormal
Shapiro-Wilk (NDs = DL/2)	0.843	0.881	Data Not Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.914	0.881	Data Appear Lognormal
Lilliefors (Detects Only)	N/A	N/A	
Lilliefors (NDs = DL)	0.261	0.22	Data Not Lognormal
Lilliefors (NDs = DL/2)	0.216	0.22	Data Appear Lognormal
Lilliefors (Lognormal ROS Estimates)	0.171	0.22	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (1_4_105)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	15	0	15	14	1	6.67%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	1	0.00125	0.00125	0.00125	0.00125	N/A
Statistics (Non-Detects Only)	14	6.1000E-4	0.0017	9.0500E-4	8.5500E-4	2.6955E-4
Statistics (All: NDs treated as DL value)	15	6.1000E-4	0.0017	9.2800E-4	8.7000E-4	2.7460E-4
Statistics (All: NDs treated as DL/2 value)	15	6.1000E-4	0.0017	8.8633E-4	8.4000E-4	2.6962E-4
Statistics (Normal ROS Imputed Data)	15	6.1000E-4	0.0017	9.0306E-4	8.7000E-4	2.5985E-4
Statistics (Gamma ROS Imputed Data)	15	6.1000E-4	0.01	0.00151	8.7000E-4	0.00236
Statistics (Lognormal ROS Imputed Data)	15	6.1000E-4	0.0017	9.0130E-4	8.4956E-4	2.6014E-4

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	15.01	11.84	6.0275E-5	-7.041	0.258	-0.0367
Statistics (NDs = DL)	14.45	11.61	6.4205E-5	-7.017	0.265	-0.0378
Statistics (NDs = DL/2)	14.34	11.52	6.1792E-5	-7.064	0.264	-0.0373
Statistics (Gamma ROS Estimates)	1.446	1.201	0.00105	-6.879	0.676	-0.0983
Statistics (Lognormal ROS Estimates)	--	--	--	-7.043	0.249	-0.0354

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.886	0.922	0.888	0.88

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.807	0.874	Data Not Normal
Shapiro-Wilk (NDs = DL)	0.864	0.881	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.807	0.881	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.798	0.881	Data Not Normal
Lilliefors (Detects Only)	0.219	0.226	Data Appear Normal
Lilliefors (NDs = DL)	0.197	0.22	Data Appear Normal
Lilliefors (NDs = DL/2)	0.203	0.22	Data Appear Normal
Lilliefors (Normal ROS Estimates)	0.221	0.22	Data Not Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	0.923	0.955	0.925	0.769

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	0.488	0.734	
Kolmogorov-Smirnov (Detects Only)	0.173	0.228	Detected Data Appear Gamma Distributed
Anderson-Darling (NDs = DL)	0.354	0.736	
Kolmogorov-Smirnov (NDs = DL)	0.154	0.221	Data Appear Gamma Distributed
Anderson-Darling (NDs = DL/2)	0.483	0.736	
Kolmogorov-Smirnov (NDs = DL/2)	0.157	0.221	Data Appear Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	3.069	0.755	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.397	0.226	Data Not Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.952	0.972	0.952	0.946

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.92	0.874	Data Appear Lognormal
Shapiro-Wilk (NDs = DL)	0.952	0.881	Data Appear Lognormal
Shapiro-Wilk (NDs = DL/2)	0.915	0.881	Data Appear Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.912	0.881	Data Appear Lognormal
Lilliefors (Detects Only)	0.16	0.226	Data Appear Lognormal
Lilliefors (NDs = DL)	0.14	0.22	Data Appear Lognormal
Lilliefors (NDs = DL/2)	0.144	0.22	Data Appear Lognormal
Lilliefors (Lognormal ROS Estimates)	0.16	0.22	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (1_4_109)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	15	0	15	2	13	86.67%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	13	2.4000E-4	0.001	3.4538E-4	3.0000E-4	2.0666E-4
Statistics (Non-Detects Only)	2	1.1000E-4	1.4000E-4	1.2500E-4	1.2500E-4	2.1213E-5
Statistics (All: NDs treated as DL value)	15	1.1000E-4	0.001	3.1600E-4	3.0000E-4	2.0653E-4
Statistics (All: NDs treated as DL/2 value)	15	1.1000E-4	5.0000E-4	1.6633E-4	1.5000E-4	9.7293E-5
Statistics (Normal ROS Imputed Data)	15	8.7822E-5	1.6218E-4	1.2500E-4	1.2500E-4	2.0605E-5
Statistics (Gamma ROS Imputed Data)	15	N/A	N/A	N/A	N/A	N/A
Statistics (Lognormal ROS Imputed Data)	15	9.2038E-5	1.6732E-4	1.2569E-4	1.2410E-4	2.0863E-5

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	N/A	N/A	N/A	N/A	N/A	N/A
Statistics (NDs = DL)	4.014	3.255	7.8732E-5	-8.189	0.493	-0.0602
Statistics (NDs = DL/2)	5.799	4.683	2.8684E-5	-8.79	0.378	-0.043
Statistics (Gamma ROS Estimates)	N/A	N/A	N/A	N/A	N/A	N/A
Statistics (Lognormal ROS Estimates)	--	--	--	-8.994	0.166	-0.0184

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	1	0.771	0.694	0.996

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (NDs = DL)	0.628	0.881	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.511	0.881	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.988	0.881	Data Appear Normal
Lilliefors (Detects Only)	N/A	N/A	
Lilliefors (NDs = DL)	0.398	0.22	Data Not Normal
Lilliefors (NDs = DL/2)	0.433	0.22	Data Not Normal
Lilliefors (Normal ROS Estimates)	0.1	0.22	Data Appear Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	N/A	0.855	0.79	0.4

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	N/A	N/A	
Kolmogorov-Smirnov (Detects Only)	N/A	N/A	
Anderson-Darling (NDs = DL)	1.366	0.74	
Kolmogorov-Smirnov (NDs = DL)	0.341	0.223	Data Not Gamma Distributed
Anderson-Darling (NDs = DL/2)	2.28	0.738	
Kolmogorov-Smirnov (NDs = DL/2)	0.408	0.222	Data Not Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	N/A	0.734	
Kolmogorov-Smirnov (Gamma ROS Est.)	N/A	0.221	

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	1	0.905	0.802	N/A

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (NDs = DL)	0.849	0.881	Data Not Lognormal
Shapiro-Wilk (NDs = DL/2)	0.668	0.881	Data Not Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.988	0.881	Data Appear Lognormal
Lilliefors (Detects Only)	N/A	N/A	
Lilliefors (NDs = DL)	0.304	0.22	Data Not Lognormal
Lilliefors (NDs = DL/2)	0.382	0.22	Data Not Lognormal
Lilliefors (Lognormal ROS Estimates)	0.1	0.22	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (1_4_111)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	15	0	15	2	13	86.67%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	13	1.2000E-4	0.001	6.9231E-4	0.001	4.1130E-4
Statistics (Non-Detects Only)	2	1.4000E-4	3.7000E-4	2.5500E-4	2.5500E-4	1.6263E-4
Statistics (All: NDs treated as DL value)	15	1.2000E-4	0.001	6.3400E-4	0.001	4.1300E-4
Statistics (All: NDs treated as DL/2 value)	15	6.0000E-5	5.0000E-4	3.3400E-4	5.0000E-4	1.9791E-4
Statistics (Normal ROS Imputed Data)	15	-4.050E-4	3.7000E-4	-3.758E-5	-6.500E-5	2.2713E-4
Statistics (Gamma ROS Imputed Data)	15	N/A	N/A	N/A	N/A	N/A
Statistics (Lognormal ROS Imputed Data)	15	1.3996E-5	3.7000E-4	1.0194E-4	5.8875E-5	1.0555E-4

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	N/A	N/A	N/A	N/A	N/A	N/A
Statistics (NDs = DL)	1.701	1.405	3.7278E-4	-7.685	0.931	-0.121
Statistics (NDs = DL/2)	1.925	1.584	1.7354E-4	-8.286	0.888	-0.107
Statistics (Gamma ROS Estimates)	N/A	N/A	N/A	N/A	N/A	N/A
Statistics (Lognormal ROS Estimates)	--	--	--	-9.624	0.96	-0.0997

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS

Correlation Coefficient R	1	0.865	0.872	0.992

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (NDs = DL)	0.718	0.881	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.733	0.881	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.975	0.881	Data Appear Normal
Lilliefors (Detects Only)	N/A	N/A	
Lilliefors (NDs = DL)	0.346	0.22	Data Not Normal
Lilliefors (NDs = DL/2)	0.333	0.22	Data Not Normal
Lilliefors (Normal ROS Estimates)	0.107	0.22	Data Appear Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	N/A	0.76	0.757	0.42

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	N/A	N/A	
Kolmogorov-Smirnov (Detects Only)	N/A	N/A	
Anderson-Darling (NDs = DL)	1.767	0.751	
Kolmogorov-Smirnov (NDs = DL)	0.347	0.225	Data Not Gamma Distributed
Anderson-Darling (NDs = DL/2)	1.772	0.748	
Kolmogorov-Smirnov (NDs = DL/2)	0.331	0.225	Data Not Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	N/A	0.734	
Kolmogorov-Smirnov (Gamma ROS Est.)	N/A	0.221	

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	1	0.88	0.873	N/A

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (NDs = DL)	0.747	0.881	Data Not Lognormal
Shapiro-Wilk (NDs = DL/2)	0.739	0.881	Data Not Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.975	0.881	Data Appear Lognormal
Lilliefors (Detects Only)	N/A	N/A	
Lilliefors (NDs = DL)	0.331	0.22	Data Not Lognormal
Lilliefors (NDs = DL/2)	0.313	0.22	Data Not Lognormal
Lilliefors (Lognormal ROS Estimates)	0.107	0.22	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (1_4_115)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	15	0	15	5	10	66.67%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	10	0.001	0.003	0.00172	0.00165	5.1381E-4
Statistics (Non-Detects Only)	5	6.2000E-4	0.0026	0.00149	0.0017	8.5744E-4
Statistics (All: NDs treated as DL value)	15	6.2000E-4	0.003	0.00164	0.0017	6.2639E-4
Statistics (All: NDs treated as DL/2 value)	15	5.0000E-4	0.0026	0.00107	9.0000E-4	5.8905E-4
Statistics (Normal ROS Imputed Data)	15	6.3345E-5	0.0026	9.8247E-4	8.4237E-4	6.7895E-4

Statistics (Gamma ROS Imputed Data)	15	6.2000E-4	0.01	0.00716	0.01	0.00418
Statistics (Lognormal ROS Imputed Data)	15	4.1691E-4	0.0026	9.8590E-4	7.6535E-4	6.1689E-4

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	3.259	1.437	4.5718E-4	-6.67	0.665	-0.0996
Statistics (NDs = DL)	6.457	5.21	2.5449E-4	-6.49	0.438	-0.0674
Statistics (NDs = DL/2)	4.606	3.73	2.3229E-4	-6.953	0.466	-0.067
Statistics (Gamma ROS Estimates)	1.555	1.289	0.00461	-5.294	1.068	-0.202
Statistics (Lognormal ROS Estimates)	--	--	--	-7.066	0.528	-0.0747

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.956	0.951	0.882	0.961

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.895	0.762	Data Appear Normal
Shapiro-Wilk (NDs = DL)	0.912	0.881	Data Appear Normal
Shapiro-Wilk (NDs = DL/2)	0.785	0.881	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.928	0.881	Data Appear Normal
Lilliefors (Detects Only)	0.242	0.343	Data Appear Normal
Lilliefors (NDs = DL)	0.21	0.22	Data Appear Normal
Lilliefors (NDs = DL/2)	0.347	0.22	Data Not Normal
Lilliefors (Normal ROS Estimates)	0.168	0.22	Data Appear Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	0.947	0.952	0.949	0.648

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	0.478	0.682	
Kolmogorov-Smirnov (Detects Only)	0.278	0.359	Detected Data Appear Gamma Distributed
Anderson-Darling (NDs = DL)	0.816	0.738	
Kolmogorov-Smirnov (NDs = DL)	0.262	0.222	Data Not Gamma Distributed
Anderson-Darling (NDs = DL/2)	1.038	0.739	
Kolmogorov-Smirnov (NDs = DL/2)	0.314	0.222	Data Not Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	2.537	0.753	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.426	0.225	Data Not Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.931	0.928	0.944	0.965

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.841	0.762	Data Appear Lognormal
Shapiro-Wilk (NDs = DL)	0.865	0.881	Data Not Lognormal
Shapiro-Wilk (NDs = DL/2)	0.891	0.881	Data Appear Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.927	0.881	Data Appear Lognormal
Lilliefors (Detects Only)	0.27	0.343	Data Appear Lognormal
Lilliefors (NDs = DL)	0.289	0.22	Data Not Lognormal
Lilliefors (NDs = DL/2)	0.285	0.22	Data Not Lognormal

Lilliefors (Lognormal ROS Estimates)	0.168	0.22	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (1_4_117)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	15	0	15	13	2	13.33%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	2	2.0000E-4	0.001	6.0000E-4	6.0000E-4	5.6569E-4
Statistics (Non-Detects Only)	13	2.4000E-4	0.0018	5.4923E-4	3.6000E-4	4.7164E-4
Statistics (All: NDs treated as DL value)	15	2.0000E-4	0.0018	5.5600E-4	3.6000E-4	4.6243E-4
Statistics (All: NDs treated as DL/2 value)	15	1.0000E-4	0.0018	5.1600E-4	3.6000E-4	4.5174E-4
Statistics (Normal ROS Imputed Data)	15	-3.988E-4	0.0018	4.7554E-4	3.6000E-4	5.0081E-4
Statistics (Gamma ROS Imputed Data)	15	2.4000E-4	0.01	0.00181	3.8000E-4	0.00335
Statistics (Lognormal ROS Imputed Data)	15	1.1212E-4	0.0018	5.0685E-4	3.5065E-4	4.5299E-4

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	2.408	1.904	2.2805E-4	-7.729	0.621	-0.0803
Statistics (NDs = DL)	2.31	1.892	2.4072E-4	-7.727	0.65	-0.0841
Statistics (NDs = DL/2)	2.155	1.769	2.3942E-4	-7.819	0.692	-0.0886
Statistics (Gamma ROS Estimates)	0.617	0.538	0.00293	-7.312	1.24	-0.17
Statistics (Lognormal ROS Estimates)	--	--	--	-7.835	0.675	-0.0861

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.8	0.843	0.822	0.861

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.652	0.866	Data Not Normal
Shapiro-Wilk (NDs = DL)	0.718	0.881	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.693	0.881	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.772	0.881	Data Not Normal
Lilliefors (Detects Only)	0.377	0.234	Data Not Normal
Lilliefors (NDs = DL)	0.349	0.22	Data Not Normal
Lilliefors (NDs = DL/2)	0.317	0.22	Data Not Normal
Lilliefors (Normal ROS Estimates)	0.344	0.22	Data Not Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	0.92	0.95	0.934	0.899

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	1.486	0.742	
Kolmogorov-Smirnov (Detects Only)	0.34	0.239	Data Not Gamma Distributed
Anderson-Darling (NDs = DL)	1.232	0.746	
Kolmogorov-Smirnov (NDs = DL)	0.305	0.224	Data Not Gamma Distributed
Anderson-Darling (NDs = DL/2)	1.052	0.746	
Kolmogorov-Smirnov (NDs = DL/2)	0.257	0.224	Data Not Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	2.407	0.785	

Kolmogorov-Smirnov (Gamma ROS Est.)	0.348	0.232	Data Not Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.895	0.934	0.946	0.93

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.801	0.866	Data Not Lognormal
Shapiro-Wilk (NDs = DL)	0.87	0.881	Data Not Lognormal
Shapiro-Wilk (NDs = DL/2)	0.914	0.881	Data Appear Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.882	0.881	Data Appear Lognormal
Lilliefors (Detects Only)	0.299	0.234	Data Not Lognormal
Lilliefors (NDs = DL)	0.263	0.22	Data Not Lognormal
Lilliefors (NDs = DL/2)	0.208	0.22	Data Appear Lognormal
Lilliefors (Lognormal ROS Estimates)	0.265	0.22	Data Not Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (1_4_119)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	15	0	15	10	5	33.33%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	5	0.0015	0.005	0.00238	0.0018	0.00147
Statistics (Non-Detects Only)	10	5.9000E-4	0.0087	0.00278	0.00145	0.00272
Statistics (All: NDs treated as DL value)	15	5.9000E-4	0.0087	0.00264	0.0018	0.00233
Statistics (All: NDs treated as DL/2 value)	15	5.9000E-4	0.0087	0.00225	0.0011	0.00235
Statistics (Normal ROS Imputed Data)	15	-1.351E-4	0.0087	0.00227	0.0014	0.00236
Statistics (Gamma ROS Imputed Data)	15	5.9000E-4	0.01	0.00518	0.0041	0.00415
Statistics (Lognormal ROS Imputed Data)	15	5.9000E-4	0.0087	0.00221	0.00125	0.00234

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	1.365	1.022	0.00203	-6.296	0.945	-0.15
Statistics (NDs = DL)	1.748	1.443	0.00151	-6.248	0.804	-0.129
Statistics (NDs = DL/2)	1.457	1.21	0.00154	-6.479	0.844	-0.13
Statistics (Gamma ROS Estimates)	1.203	1.007	0.00431	-5.732	1.12	-0.195
Statistics (Lognormal ROS Estimates)	--	--	--	-6.49	0.833	-0.128

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.9	0.892	0.844	0.883

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.807	0.842	Data Not Normal
Shapiro-Wilk (NDs = DL)	0.8	0.881	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.72	0.881	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.791	0.881	Data Not Normal
Lilliefors (Detects Only)	0.28	0.262	Data Not Normal
Lilliefors (NDs = DL)	0.308	0.22	Data Not Normal
Lilliefors (NDs = DL/2)	0.291	0.22	Data Not Normal

Lilliefors (Normal ROS Estimates)	0.253	0.22	Data Not Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	0.99	0.983	0.972	0.838

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	0.459	0.742	
Kolmogorov-Smirnov (Detects Only)	0.238	0.272	Detected Data Appear Gamma Distributed
Anderson-Darling (NDs = DL)	0.556	0.75	
Kolmogorov-Smirnov (NDs = DL)	0.252	0.225	Detected Data appear Approximate Gamma Distr
Anderson-Darling (NDs = DL/2)	1.02	0.755	
Kolmogorov-Smirnov (NDs = DL/2)	0.234	0.226	Data Not Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	1.005	0.759	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.22	0.227	Detected Data appear Approximate Gamma Distr

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.974	0.981	0.947	0.954

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.93	0.842	Data Appear Lognormal
Shapiro-Wilk (NDs = DL)	0.953	0.881	Data Appear Lognormal
Shapiro-Wilk (NDs = DL/2)	0.887	0.881	Data Appear Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.9	0.881	Data Appear Lognormal
Lilliefors (Detects Only)	0.186	0.262	Data Appear Lognormal
Lilliefors (NDs = DL)	0.202	0.22	Data Appear Lognormal
Lilliefors (NDs = DL/2)	0.203	0.22	Data Appear Lognormal
Lilliefors (Lognormal ROS Estimates)	0.202	0.22	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (1_4_121)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	15	0	15	13	2	13.33%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	2	0.03	0.25	0.14	0.14	0.156
Statistics (Non-Detects Only)	13	0.031	2.5	0.384	0.081	0.763
Statistics (All: NDs treated as DL value)	15	0.03	2.5	0.351	0.081	0.713
Statistics (All: NDs treated as DL/2 value)	15	0.015	2.5	0.342	0.081	0.715
Statistics (Normal ROS Imputed Data)	15	-0.99	2.5	0.277	0.081	0.791
Statistics (Gamma ROS Imputed Data)	15	0.01	2.5	0.334	0.07	0.718
Statistics (Lognormal ROS Imputed Data)	15	0.00632	2.5	0.338	0.0733	0.717

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	0.538	0.465	0.713	-2.124	1.342	-0.632
Statistics (NDs = DL)	0.557	0.49	0.63	-2.167	1.31	-0.605
Statistics (NDs = DL/2)	0.53	0.469	0.645	-2.26	1.354	-0.599
Statistics (Gamma ROS Estimates)	0.472	0.422	0.708	-2.455	1.519	-0.618

Statistics (Lognormal ROS Estimates)	--	--	--	-2.353	1.457	-0.619

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.703	0.692	0.681	0.783

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.511	0.866	Data Not Normal
Shapiro-Wilk (NDs = DL)	0.498	0.881	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.483	0.881	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.649	0.881	Data Not Normal
Lilliefors (Detects Only)	0.467	0.234	Data Not Normal
Lilliefors (NDs = DL)	0.423	0.22	Data Not Normal
Lilliefors (NDs = DL/2)	0.472	0.22	Data Not Normal
Lilliefors (Normal ROS Estimates)	0.428	0.22	Data Not Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	0.933	0.929	0.922	0.929

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	2.059	0.787	
Kolmogorov-Smirnov (Detects Only)	0.393	0.249	Data Not Gamma Distributed
Anderson-Darling (NDs = DL)	2.034	0.789	
Kolmogorov-Smirnov (NDs = DL)	0.335	0.233	Data Not Gamma Distributed
Anderson-Darling (NDs = DL/2)	2.141	0.791	
Kolmogorov-Smirnov (NDs = DL/2)	0.386	0.233	Data Not Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	1.858	0.799	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.358	0.235	Data Not Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.887	0.912	0.917	0.923

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.789	0.866	Data Not Lognormal
Shapiro-Wilk (NDs = DL)	0.831	0.881	Data Not Lognormal
Shapiro-Wilk (NDs = DL/2)	0.851	0.881	Data Not Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.87	0.881	Data Not Lognormal
Lilliefors (Detects Only)	0.279	0.234	Data Not Lognormal
Lilliefors (NDs = DL)	0.218	0.22	Data Appear Lognormal
Lilliefors (NDs = DL/2)	0.261	0.22	Data Not Lognormal
Lilliefors (Lognormal ROS Estimates)	0.244	0.22	Data Not Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (1_4_123)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	15	0	15	4	11	73.33%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	11	5.0000E-4	0.001	6.3636E-4	7.0000E-4	1.5667E-4
Statistics (Non-Detects Only)	4	1.9000E-4	0.0022	0.00111	0.00102	8.8308E-4
Statistics (All: NDs treated as DL value)	15	1.9000E-4	0.0022	7.6200E-4	7.0000E-4	4.8078E-4
Statistics (All: NDs treated as DL/2 value)	15	1.9000E-4	0.0022	5.2867E-4	3.5000E-4	5.4957E-4
Statistics (Normal ROS Imputed Data)	15	-7.693E-4	0.0022	3.2139E-4	1.9000E-4	7.6779E-4
Statistics (Gamma ROS Imputed Data)	15	1.9000E-4	0.01	0.00763	0.01	0.00409
Statistics (Lognormal ROS Imputed Data)	15	6.6018E-5	0.0022	4.6403E-4	2.1727E-4	5.8594E-4

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	1.584	0.563	6.9899E-4	-7.153	1.073	-0.15
Statistics (NDs = DL)	3.64	2.956	2.0934E-4	-7.323	0.544	-0.0743
Statistics (NDs = DL/2)	1.896	1.561	2.7884E-4	-7.831	0.681	-0.087
Statistics (Gamma ROS Estimates)	1.366	1.137	0.00559	-5.285	1.268	-0.24
Statistics (Lognormal ROS Estimates)	--	--	--	-8.189	0.99	-0.121

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.99	0.842	0.757	0.965

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.973	0.748	Data Appear Normal
Shapiro-Wilk (NDs = DL)	0.735	0.881	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.592	0.881	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.938	0.881	Data Appear Normal
Lilliefors (Detects Only)	0.202	0.375	Data Appear Normal
Lilliefors (NDs = DL)	0.351	0.22	Data Not Normal
Lilliefors (NDs = DL/2)	0.361	0.22	Data Not Normal
Lilliefors (Normal ROS Estimates)	0.139	0.22	Data Appear Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	0.963	0.922	0.903	0.571

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	0.223	0.662	
Kolmogorov-Smirnov (Detects Only)	0.216	0.399	Detected Data Appear Gamma Distributed
Anderson-Darling (NDs = DL)	1.019	0.742	
Kolmogorov-Smirnov (NDs = DL)	0.293	0.223	Data Not Gamma Distributed
Anderson-Darling (NDs = DL/2)	1.804	0.748	
Kolmogorov-Smirnov (NDs = DL/2)	0.344	0.225	Data Not Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	3.038	0.756	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.464	0.226	Data Not Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.978	0.927	0.887	0.98

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)

Shapiro-Wilk (Detects Only)	0.954	0.748	Data Appear Lognormal
Shapiro-Wilk (NDs = DL)	0.887	0.881	Data Appear Lognormal
Shapiro-Wilk (NDs = DL/2)	0.794	0.881	Data Not Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.957	0.881	Data Appear Lognormal
Lilliefors (Detects Only)	0.206	0.375	Data Appear Lognormal
Lilliefors (NDs = DL)	0.257	0.22	Data Not Lognormal
Lilliefors (NDs = DL/2)	0.307	0.22	Data Not Lognormal
Lilliefors (Lognormal ROS Estimates)	0.131	0.22	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (1_4_129)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	15	0	15	0	15	100.00%

Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable VALUES (1_4_129) was not processed!

VALUES (1_4_131)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	15	0	15	13	2	13.33%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	2	9.0000E-4	0.0025	0.0017	0.0017	0.00113
Statistics (Non-Detects Only)	13	0.001	0.0093	0.00262	0.0018	0.00222
Statistics (All: NDs treated as DL value)	15	9.0000E-4	0.0093	0.0025	0.0018	0.0021
Statistics (All: NDs treated as DL/2 value)	15	4.5000E-4	0.0093	0.00239	0.0016	0.00215
Statistics (Normal ROS Imputed Data)	15	-0.00172	0.0093	0.00224	0.0016	0.00235
Statistics (Gamma ROS Imputed Data)	15	0.001	0.01	0.00361	0.0018	0.00331
Statistics (Lognormal ROS Imputed Data)	15	4.9428E-4	0.0093	0.0024	0.0016	0.00215

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	2.456	1.941	0.00107	-6.161	0.633	-0.103
Statistics (NDs = DL)	2.483	2.031	0.00101	-6.206	0.628	-0.101
Statistics (NDs = DL/2)	2.069	1.7	0.00115	-6.299	0.716	-0.114
Statistics (Gamma ROS Estimates)	1.671	1.381	0.00216	-5.953	0.802	-0.135
Statistics (Lognormal ROS Estimates)	--	--	--	-6.287	0.7	-0.111

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.809	0.811	0.815	0.865

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.677	0.866	Data Not Normal
Shapiro-Wilk (NDs = DL)	0.68	0.881	Data Not Normal

Shapiro-Wilk (NDs = DL/2)	0.69	0.881	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.784	0.881	Data Not Normal
Lilliefors (Detects Only)	0.269	0.234	Data Not Normal
Lilliefors (NDs = DL)	0.25	0.22	Data Not Normal
Lilliefors (NDs = DL/2)	0.274	0.22	Data Not Normal
Lilliefors (Normal ROS Estimates)	0.242	0.22	Data Not Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	0.915	0.914	0.922	0.927

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	0.766	0.741	
Kolmogorov-Smirnov (Detects Only)	0.247	0.239	Data Not Gamma Distributed
Anderson-Darling (NDs = DL)	0.673	0.746	
Kolmogorov-Smirnov (NDs = DL)	0.207	0.224	Data Appear Gamma Distributed
Anderson-Darling (NDs = DL/2)	0.665	0.747	
Kolmogorov-Smirnov (NDs = DL/2)	0.226	0.224	Detected Data appear Approximate Gamma Distr
Anderson-Darling (Gamma ROS Estimates)	1.065	0.751	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.236	0.225	Data Not Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.947	0.959	0.965	0.966

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.899	0.866	Data Appear Lognormal
Shapiro-Wilk (NDs = DL)	0.923	0.881	Data Appear Lognormal
Shapiro-Wilk (NDs = DL/2)	0.949	0.881	Data Appear Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.949	0.881	Data Appear Lognormal
Lilliefors (Detects Only)	0.215	0.234	Data Appear Lognormal
Lilliefors (NDs = DL)	0.172	0.22	Data Appear Lognormal
Lilliefors (NDs = DL/2)	0.179	0.22	Data Appear Lognormal
Lilliefors (Lognormal ROS Estimates)	0.185	0.22	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (1_4_135)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	15	0	15	14	1	6.67%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	1	0.5	0.5	0.5	0.5	N/A
Statistics (Non-Detects Only)	14	0.42	2.1	0.975	0.795	0.534
Statistics (All: NDs treated as DL value)	15	0.42	2.1	0.943	0.77	0.529
Statistics (All: NDs treated as DL/2 value)	15	0.25	2.1	0.927	0.77	0.548
Statistics (Normal ROS Imputed Data)	15	0.201	2.1	0.923	0.77	0.552
Statistics (Gamma ROS Imputed Data)	15	0.27	2.1	0.928	0.77	0.546
Statistics (Lognormal ROS Imputed Data)	15	0.399	2.1	0.937	0.77	0.536

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	4.282	3.412	0.228	-0.147	0.498	-3.394
Statistics (NDs = DL)	4.169	3.379	0.226	-0.183	0.5	-2.73
Statistics (NDs = DL/2)	3.424	2.783	0.271	-0.229	0.576	-2.515
Statistics (Gamma ROS Estimates)	3.504	2.847	0.265	-0.224	0.566	-2.524
Statistics (Lognormal ROS Estimates)	--	--	--	-0.198	0.519	-2.621

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.92	0.912	0.934	0.938

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.84	0.874	Data Not Normal
Shapiro-Wilk (NDs = DL)	0.825	0.881	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.87	0.881	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.879	0.881	Data Not Normal
Lilliefors (Detects Only)	0.199	0.226	Data Appear Normal
Lilliefors (NDs = DL)	0.199	0.22	Data Appear Normal
Lilliefors (NDs = DL/2)	0.186	0.22	Data Appear Normal
Lilliefors (Normal ROS Estimates)	0.184	0.22	Data Appear Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	0.967	0.965	0.976	0.975

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	0.468	0.74	
Kolmogorov-Smirnov (Detects Only)	0.144	0.23	Detected Data Appear Gamma Distributed
Anderson-Darling (NDs = DL)	0.553	0.74	
Kolmogorov-Smirnov (NDs = DL)	0.145	0.222	Data Appear Gamma Distributed
Anderson-Darling (NDs = DL/2)	0.304	0.743	
Kolmogorov-Smirnov (NDs = DL/2)	0.116	0.223	Data Appear Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	0.316	0.742	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.118	0.223	Data Appear Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.978	0.972	0.988	0.979

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.946	0.874	Data Appear Lognormal
Shapiro-Wilk (NDs = DL)	0.934	0.881	Data Appear Lognormal
Shapiro-Wilk (NDs = DL/2)	0.975	0.881	Data Appear Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.946	0.881	Data Appear Lognormal
Lilliefors (Detects Only)	0.113	0.226	Data Appear Lognormal
Lilliefors (NDs = DL)	0.113	0.22	Data Appear Lognormal
Lilliefors (NDs = DL/2)	0.0967	0.22	Data Appear Lognormal
Lilliefors (Lognormal ROS Estimates)	0.1	0.22	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (1_4_137)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	15	0	15	1	14	93.33%

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable VALUES (1_4_137) was not processed!

VALUES (1_4_139)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	15	0	15	4	11	73.33%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	11	1.0000E-4	0.001	1.9818E-4	1.0000E-4	2.6840E-4
Statistics (Non-Detects Only)	4	1.1000E-4	0.0045	0.00133	3.5500E-4	0.00212
Statistics (All: NDs treated as DL value)	15	1.0000E-4	0.0045	5.0000E-4	1.0000E-4	0.00113
Statistics (All: NDs treated as DL/2 value)	15	5.0000E-5	0.0045	4.2733E-4	5.0000E-5	0.00114
Statistics (Normal ROS Imputed Data)	15	-0.00889	0.0045	-0.00316	-0.00362	0.00341
Statistics (Gamma ROS Imputed Data)	15	1.1000E-4	0.01	0.00769	0.01	0.00409
Statistics (Lognormal ROS Imputed Data)	15	1.1760E-7	0.0045	3.6019E-4	8.6074E-6	0.00115

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	0.612	0.32	0.00217	-7.629	1.598	-0.209
Statistics (NDs = DL)	0.644	0.56	7.7589E-4	-8.55	1.11	-0.13
Statistics (NDs = DL/2)	0.49	0.437	8.7197E-4	-9.058	1.303	-0.144
Statistics (Gamma ROS Estimates)	1.056	0.889	0.00728	-5.412	1.569	-0.29
Statistics (Lognormal ROS Estimates)	--	--	--	-11.29	2.766	-0.245

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.826	0.615	0.585	0.978

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.693	0.748	Data Not Normal
Shapiro-Wilk (NDs = DL)	0.407	0.881	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.372	0.881	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.963	0.881	Data Appear Normal
Lilliefors (Detects Only)	0.408	0.375	Data Not Normal
Lilliefors (NDs = DL)	0.391	0.22	Data Not Normal
Lilliefors (NDs = DL/2)	0.408	0.22	Data Not Normal
Lilliefors (Normal ROS Estimates)	0.152	0.22	Data Appear Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	0.988	0.874	0.866	0.531

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	0.48	0.676	
Kolmogorov-Smirnov (Detects Only)	0.346	0.408	Detected Data Appear Gamma Distributed
Anderson-Darling (NDs = DL)	2.719	0.783	
Kolmogorov-Smirnov (NDs = DL)	0.336	0.232	Data Not Gamma Distributed
Anderson-Darling (NDs = DL/2)	2.586	0.795	
Kolmogorov-Smirnov (NDs = DL/2)	0.34	0.234	Data Not Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	3.349	0.762	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.461	0.228	Data Not Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.959	0.819	0.842	0.984

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.926	0.748	Data Appear Lognormal
Shapiro-Wilk (NDs = DL)	0.679	0.881	Data Not Lognormal
Shapiro-Wilk (NDs = DL/2)	0.716	0.881	Data Not Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.973	0.881	Data Appear Lognormal
Lilliefors (Detects Only)	0.258	0.375	Data Appear Lognormal
Lilliefors (NDs = DL)	0.295	0.22	Data Not Lognormal
Lilliefors (NDs = DL/2)	0.275	0.22	Data Not Lognormal
Lilliefors (Lognormal ROS Estimates)	0.152	0.22	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (1_4_143)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	15	0	15	1	14	93.33%

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable VALUES (1_4_143) was not processed!

VALUES (1_4_145)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	15	0	15	13	2	13.33%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	2	0.002	0.002	0.002	0.002	0
Statistics (Non-Detects Only)	13	0.0015	0.0078	0.00332	0.0022	0.00219
Statistics (All: NDs treated as DL value)	15	0.0015	0.0078	0.00315	0.0021	0.00208
Statistics (All: NDs treated as DL/2 value)	15	0.001	0.0078	0.00301	0.0021	0.00219
Statistics (Normal ROS Imputed Data)	15	2.9506E-4	0.0078	0.00299	0.0021	0.00222
Statistics (Gamma ROS Imputed Data)	15	0.0015	0.01	0.00421	0.0023	0.0031
Statistics (Lognormal ROS Imputed Data)	15	0.00122	0.0078	0.00307	0.0021	0.00214

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	3.203	2.515	0.00104	-5.871	0.565	-0.0963
Statistics (NDs = DL)	3.375	2.745	9.3212E-4	-5.917	0.537	-0.0908
Statistics (NDs = DL/2)	2.599	2.124	0.00116	-6.009	0.638	-0.106
Statistics (Gamma ROS Estimates)	2.301	1.885	0.00183	-5.702	0.687	-0.121
Statistics (Lognormal ROS Estimates)	--	--	--	-5.965	0.581	-0.0974

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.874	0.845	0.884	0.899

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.756	0.866	Data Not Normal
Shapiro-Wilk (NDs = DL)	0.712	0.881	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.777	0.881	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.808	0.881	Data Not Normal
Lilliefors (Detects Only)	0.295	0.234	Data Not Normal
Lilliefors (NDs = DL)	0.324	0.22	Data Not Normal
Lilliefors (NDs = DL/2)	0.294	0.22	Data Not Normal
Lilliefors (Normal ROS Estimates)	0.288	0.22	Data Not Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	0.941	0.925	0.953	0.949

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	1.091	0.739	
Kolmogorov-Smirnov (Detects Only)	0.281	0.238	Data Not Gamma Distributed
Anderson-Darling (NDs = DL)	1.562	0.743	
Kolmogorov-Smirnov (NDs = DL)	0.307	0.223	Data Not Gamma Distributed
Anderson-Darling (NDs = DL/2)	0.831	0.745	
Kolmogorov-Smirnov (NDs = DL/2)	0.247	0.224	Data Not Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	1.103	0.746	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.26	0.224	Data Not Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.93	0.906	0.962	0.94

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.852	0.866	Data Not Lognormal
Shapiro-Wilk (NDs = DL)	0.813	0.881	Data Not Lognormal
Shapiro-Wilk (NDs = DL/2)	0.916	0.881	Data Appear Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.874	0.881	Data Not Lognormal
Lilliefors (Detects Only)	0.256	0.234	Data Not Lognormal
Lilliefors (NDs = DL)	0.282	0.22	Data Not Lognormal
Lilliefors (NDs = DL/2)	0.208	0.22	Data Appear Lognormal
Lilliefors (Lognormal ROS Estimates)	0.242	0.22	Data Not Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (1_4_147)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	15	0	15	5	10	66.67%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	10	0.006	0.05	0.012	0.008	0.0135
Statistics (Non-Detects Only)	5	0.002	0.04	0.0142	0.0032	0.0169
Statistics (All: NDs treated as DL value)	15	0.002	0.05	0.0127	0.008	0.0141
Statistics (All: NDs treated as DL/2 value)	15	0.002	0.04	0.00873	0.004	0.0113
Statistics (Normal ROS Imputed Data)	15	-0.00884	0.04	0.00763	0.00442	0.0119
Statistics (Gamma ROS Imputed Data)	15	0.002	0.04	0.0115	0.01	0.00926
Statistics (Lognormal ROS Imputed Data)	15	9.6418E-4	0.04	0.00711	0.00301	0.0106

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	0.83	0.466	0.0171	-4.966	1.367	-0.275
Statistics (NDs = DL)	1.336	1.113	0.00953	-4.782	0.899	-0.188
Statistics (NDs = DL/2)	1.13	0.948	0.00773	-5.245	0.912	-0.174
Statistics (Gamma ROS Estimates)	2.147	1.762	0.00535	-4.718	0.753	-0.16
Statistics (Lognormal ROS Estimates)	--	--	--	-5.53	0.989	-0.179

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.897	0.819	0.768	0.929

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.794	0.762	Data Appear Normal
Shapiro-Wilk (NDs = DL)	0.679	0.881	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.601	0.881	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.88	0.881	Data Not Normal
Lilliefors (Detects Only)	0.342	0.343	Data Appear Normal
Lilliefors (NDs = DL)	0.365	0.22	Data Not Normal
Lilliefors (NDs = DL/2)	0.396	0.22	Data Not Normal
Lilliefors (Normal ROS Estimates)	0.206	0.22	Data Appear Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	0.973	0.947	0.93	0.89

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	0.576	0.696	
Kolmogorov-Smirnov (Detects Only)	0.357	0.366	Detected Data Appear Gamma Distributed
Anderson-Darling (NDs = DL)	1.061	0.757	
Kolmogorov-Smirnov (NDs = DL)	0.312	0.226	Data Not Gamma Distributed
Anderson-Darling (NDs = DL/2)	2.274	0.761	
Kolmogorov-Smirnov (NDs = DL/2)	0.39	0.227	Data Not Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	1.594	0.746	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.314	0.224	Data Not Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.926	0.958	0.868	0.947

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.836	0.762	Data Appear Lognormal
Shapiro-Wilk (NDs = DL)	0.919	0.881	Data Appear Lognormal
Shapiro-Wilk (NDs = DL/2)	0.755	0.881	Data Not Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.903	0.881	Data Appear Lognormal
Lilliefors (Detects Only)	0.316	0.343	Data Appear Lognormal
Lilliefors (NDs = DL)	0.254	0.22	Data Not Lognormal
Lilliefors (NDs = DL/2)	0.353	0.22	Data Not Lognormal
Lilliefors (Lognormal ROS Estimates)	0.186	0.22	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (2_1_102)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	9	0	9	5	4	44.44%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	4	0.07	0.2	0.168	0.2	0.065
Statistics (Non-Detects Only)	5	0.049	130	28.82	5.55	56.68
Statistics (All: NDs treated as DL value)	9	0.049	130	16.08	0.2	42.83
Statistics (All: NDs treated as DL/2 value)	9	0.035	130	16.05	0.1	42.84
Statistics (Normal ROS Imputed Data)	9	-35.51	130	8.657	0.086	48.06
Statistics (Gamma ROS Imputed Data)	9	0.01	130	16.01	0.049	42.86
Statistics (Lognormal ROS Imputed Data)	9	0.00831	130	16.05	0.086	42.84

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	0.26	0.237	110.8	0.648	3.323	5.128
Statistics (NDs = DL)	0.223	0.223	72.24	-0.472	2.718	-5.76
Statistics (NDs = DL/2)	0.206	0.211	77.89	-0.78	2.914	-3.736
Statistics (Gamma ROS Estimates)	0.169	0.187	94.61	-1.687	3.631	-2.153
Statistics (Lognormal ROS Estimates)	--	--	--	-1.056	3.249	-3.075

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.767	0.64	0.639	0.812

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.608	0.762	Data Not Normal
Shapiro-Wilk (NDs = DL)	0.439	0.829	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.439	0.829	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.692	0.829	Data Not Normal
Lilliefors (Detects Only)	0.441	0.343	Data Not Normal
Lilliefors (NDs = DL)	0.46	0.274	Data Not Normal
Lilliefors (NDs = DL/2)	0.46	0.274	Data Not Normal
Lilliefors (Normal ROS Estimates)	0.391	0.274	Data Not Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	0.985	0.95	0.954	0.961

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	0.368	0.754	
Kolmogorov-Smirnov (Detects Only)	0.243	0.383	Detected Data Appear Gamma Distributed
Anderson-Darling (NDs = DL)	1.212	0.838	
Kolmogorov-Smirnov (NDs = DL)	0.372	0.307	Data Not Gamma Distributed
Anderson-Darling (NDs = DL/2)	1.303	0.845	
Kolmogorov-Smirnov (NDs = DL/2)	0.39	0.308	Data Not Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	1.111	0.875	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.337	0.311	Data Not Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.962	0.915	0.892	0.959

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.911	0.762	Data Appear Lognormal
Shapiro-Wilk (NDs = DL)	0.833	0.829	Data Appear Lognormal
Shapiro-Wilk (NDs = DL/2)	0.791	0.829	Data Not Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.911	0.829	Data Appear Lognormal
Lilliefors (Detects Only)	0.226	0.343	Data Appear Lognormal
Lilliefors (NDs = DL)	0.329	0.274	Data Not Lognormal
Lilliefors (NDs = DL/2)	0.366	0.274	Data Not Lognormal
Lilliefors (Lognormal ROS Estimates)	0.222	0.274	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (2_1_104)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	9	0	9	2	7	77.78%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	7	0.001	0.0025	0.00164	0.001	8.0178E-4
Statistics (Non-Detects Only)	2	8.6000E-4	0.0013	0.00108	0.00108	3.1113E-4
Statistics (All: NDs treated as DL value)	9	8.6000E-4	0.0025	0.00152	0.001	7.4555E-4
Statistics (All: NDs treated as DL/2 value)	9	5.0000E-4	0.0013	8.7889E-4	8.6000E-4	3.8162E-4
Statistics (Normal ROS Imputed Data)	9	6.5097E-4	0.0013	9.2440E-4	9.1811E-4	1.9934E-4
Statistics (Gamma ROS Imputed Data)	9	N/A	N/A	N/A	N/A	N/A
Statistics (Lognormal ROS Imputed Data)	9	7.0672E-4	0.0013	9.2837E-4	9.0823E-4	1.8196E-4

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	N/A	N/A	N/A	N/A	N/A	N/A
Statistics (NDs = DL)	5.19	3.534	2.9245E-4	-6.59	0.461	-0.07
Statistics (NDs = DL/2)	5.585	3.797	1.5737E-4	-7.129	0.464	-0.0651
Statistics (Gamma ROS Estimates)	N/A	N/A	N/A	N/A	N/A	N/A
Statistics (Lognormal ROS Estimates)	--	--	--	-6.998	0.187	-0.0267

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	1	0.858	0.885	0.984

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (NDs = DL)	0.71	0.829	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.748	0.829	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.971	0.829	Data Appear Normal
Lilliefors (Detects Only)	N/A	N/A	
Lilliefors (NDs = DL)	0.312	0.274	Data Not Normal
Lilliefors (NDs = DL/2)	0.284	0.274	Data Not Normal
Lilliefors (Normal ROS Estimates)	0.179	0.274	Data Appear Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	N/A	0.88	0.869	0.561

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	N/A	N/A	
Kolmogorov-Smirnov (Detects Only)	N/A	N/A	
Anderson-Darling (NDs = DL)	1.228	0.723	
Kolmogorov-Smirnov (NDs = DL)	0.325	0.28	Data Not Gamma Distributed
Anderson-Darling (NDs = DL/2)	1.15	0.723	
Kolmogorov-Smirnov (NDs = DL/2)	0.302	0.28	Data Not Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	N/A	0.72	
Kolmogorov-Smirnov (Gamma ROS Est.)	N/A	0.279	

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	1	0.882	0.88	N/A

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (NDs = DL)	0.753	0.829	Data Not Lognormal
Shapiro-Wilk (NDs = DL/2)	0.738	0.829	Data Not Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.971	0.829	Data Appear Lognormal
Lilliefors (Detects Only)	N/A	N/A	
Lilliefors (NDs = DL)	0.31	0.274	Data Not Lognormal
Lilliefors (NDs = DL/2)	0.29	0.274	Data Not Lognormal
Lilliefors (Lognormal ROS Estimates)	0.179	0.274	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (2_1_106)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	9	0	9	5	4	44.44%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	4	0.001	0.00125	0.00113	0.00113	1.4434E-4
Statistics (Non-Detects Only)	5	3.8000E-4	0.01	0.00309	0.00193	0.00393

Statistics (All: NDs treated as DL value)	9	3.8000E-4	0.01	0.00222	0.00125	0.00297
Statistics (All: NDs treated as DL/2 value)	9	3.8000E-4	0.01	0.00197	6.2500E-4	0.00308
Statistics (Normal ROS Imputed Data)	9	-9.568E-4	0.01	0.00176	0.00117	0.00328
Statistics (Gamma ROS Imputed Data)	9	3.8000E-4	0.01	0.00616	0.01	0.00458
Statistics (Lognormal ROS Imputed Data)	9	3.6301E-4	0.01	0.00198	8.2472E-4	0.00308

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	0.996	0.532	0.0031	-6.36	1.2	-0.189
Statistics (NDs = DL)	1.273	0.923	0.00174	-6.554	0.882	-0.135
Statistics (NDs = DL/2)	0.925	0.691	0.00213	-6.862	1.039	-0.151
Statistics (Gamma ROS Estimates)	1.158	0.846	0.00532	-5.58	1.255	-0.225
Statistics (Lognormal ROS Estimates)	--	--	--	-6.872	1.082	-0.158

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.838	0.723	0.729	0.823

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.721	0.762	Data Not Normal
Shapiro-Wilk (NDs = DL)	0.555	0.829	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.559	0.829	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.704	0.829	Data Not Normal
Lilliefors (Detects Only)	0.394	0.343	Data Not Normal
Lilliefors (NDs = DL)	0.398	0.274	Data Not Normal
Lilliefors (NDs = DL/2)	0.365	0.274	Data Not Normal
Lilliefors (Normal ROS Estimates)	0.342	0.274	Data Not Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	0.971	0.889	0.921	0.719

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	0.371	0.691	
Kolmogorov-Smirnov (Detects Only)	0.298	0.364	Detected Data Appear Gamma Distributed
Anderson-Darling (NDs = DL)	1.018	0.738	
Kolmogorov-Smirnov (NDs = DL)	0.284	0.285	Detected Data appear Approximate Gamma Distr
Anderson-Darling (NDs = DL/2)	0.994	0.746	
Kolmogorov-Smirnov (NDs = DL/2)	0.266	0.288	Detected Data appear Approximate Gamma Distr
Anderson-Darling (Gamma ROS Estimates)	1.076	0.741	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.363	0.286	Data Not Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.978	0.917	0.918	0.936

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.97	0.762	Data Appear Lognormal
Shapiro-Wilk (NDs = DL)	0.872	0.829	Data Appear Lognormal
Shapiro-Wilk (NDs = DL/2)	0.849	0.829	Data Appear Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.877	0.829	Data Appear Lognormal

Lilliefors (Detects Only)	0.228	0.343	Data Appear Lognormal
Lilliefors (NDs = DL)	0.226	0.274	Data Appear Lognormal
Lilliefors (NDs = DL/2)	0.246	0.274	Data Appear Lognormal
Lilliefors (Lognormal ROS Estimates)	0.187	0.274	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (2_1_110)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	9	0	9	2	7	77.78%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	7	3.0000E-4	0.001	6.0000E-4	3.0000E-4	3.7417E-4
Statistics (Non-Detects Only)	2	1.3000E-4	0.0055	0.00282	0.00282	0.0038
Statistics (All: NDs treated as DL value)	9	1.3000E-4	0.0055	0.00109	3.0000E-4	0.00169
Statistics (All: NDs treated as DL/2 value)	9	1.3000E-4	0.0055	8.5889E-4	1.5000E-4	0.00175
Statistics (Normal ROS Imputed Data)	9	-0.0023	0.0055	6.7513E-4	1.3000E-4	0.00236
Statistics (Gamma ROS Imputed Data)	9	N/A	N/A	N/A	N/A	N/A
Statistics (Lognormal ROS Imputed Data)	9	2.3877E-5	0.0055	7.9318E-4	1.3000E-4	0.00178

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	N/A	N/A	N/A	N/A	N/A	N/A
Statistics (NDs = DL)	0.887	0.665	0.00123	-7.48	1.113	-0.149
Statistics (NDs = DL/2)	0.638	0.5	0.00135	-8.019	1.214	-0.151
Statistics (Gamma ROS Estimates)	N/A	N/A	N/A	N/A	N/A	N/A
Statistics (Lognormal ROS Estimates)	--	--	--	-8.568	1.646	-0.192

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	1	0.732	0.66	0.966

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (NDs = DL)	0.564	0.829	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.466	0.829	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.941	0.829	Data Appear Normal
Lilliefors (Detects Only)	N/A	N/A	
Lilliefors (NDs = DL)	0.411	0.274	Data Not Normal
Lilliefors (NDs = DL/2)	0.47	0.274	Data Not Normal
Lilliefors (Normal ROS Estimates)	0.147	0.274	Data Appear Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	N/A	0.914	0.894	0.504

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	N/A	N/A	
Kolmogorov-Smirnov (Detects Only)	N/A	N/A	
Anderson-Darling (NDs = DL)	0.929	0.747	
Kolmogorov-Smirnov (NDs = DL)	0.289	0.288	Data Not Gamma Distributed
Anderson-Darling (NDs = DL/2)	1.519	0.76	

Kolmogorov-Smirnov (NDs = DL/2)	0.374	0.291	Data Not Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	N/A	0.72	
Kolmogorov-Smirnov (Gamma ROS Est.)	N/A	0.279	

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	1	0.928	0.851	N/A

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (NDs = DL)	0.876	0.829	Data Appear Lognormal
Shapiro-Wilk (NDs = DL/2)	0.737	0.829	Data Not Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.941	0.829	Data Appear Lognormal
Lilliefors (Detects Only)	N/A	N/A	
Lilliefors (NDs = DL)	0.27	0.274	Data Appear Lognormal
Lilliefors (NDs = DL/2)	0.297	0.274	Data Not Lognormal
Lilliefors (Lognormal ROS Estimates)	0.147	0.274	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (2_1_112)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	9	0	9	0	9	100.00%

Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable VALUES (2_1_112) was not processed!

VALUES (2_1_116)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	9	0	9	4	5	55.56%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	5	0.001	0.0018	0.00132	0.001	4.3818E-4
Statistics (Non-Detects Only)	4	0.002	0.14	0.0384	0.00575	0.0678
Statistics (All: NDs treated as DL value)	9	0.001	0.14	0.0178	0.0018	0.0459
Statistics (All: NDs treated as DL/2 value)	9	5.0000E-4	0.14	0.0174	9.0000E-4	0.046
Statistics (Normal ROS Imputed Data)	9	-0.224	0.14	-0.0719	-0.103	0.118
Statistics (Gamma ROS Imputed Data)	9	0.002	0.14	0.0226	0.01	0.0441
Statistics (Lognormal ROS Imputed Data)	9	3.7802E-6	0.14	0.0171	1.4062E-4	0.0462

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	0.47	0.284	0.0817	-4.626	1.843	-0.398
Statistics (NDs = DL)	0.382	0.329	0.0465	-5.763	1.577	-0.274
Statistics (NDs = DL/2)	0.324	0.29	0.0537	-6.148	1.847	-0.3
Statistics (Gamma ROS Estimates)	0.728	0.56	0.031	-4.614	1.128	-0.245
Statistics (Lognormal ROS Estimates)	--	--	--	-7.929	3.501	-0.442

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.801	0.626	0.629	0.971

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.655	0.748	Data Not Normal
Shapiro-Wilk (NDs = DL)	0.423	0.829	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.427	0.829	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.939	0.829	Data Appear Normal
Lilliefors (Detects Only)	0.433	0.375	Data Not Normal
Lilliefors (NDs = DL)	0.489	0.274	Data Not Normal
Lilliefors (NDs = DL/2)	0.485	0.274	Data Not Normal
Lilliefors (Normal ROS Estimates)	0.179	0.274	Data Appear Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	0.984	0.91	0.922	0.865

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	0.639	0.684	
Kolmogorov-Smirnov (Detects Only)	0.422	0.411	Detected Data appear Approximate Gamma Distr
Anderson-Darling (NDs = DL)	1.733	0.792	
Kolmogorov-Smirnov (NDs = DL)	0.386	0.298	Data Not Gamma Distributed
Anderson-Darling (NDs = DL/2)	1.472	0.803	
Kolmogorov-Smirnov (NDs = DL/2)	0.349	0.301	Data Not Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	1.675	0.753	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.469	0.29	Data Not Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.915	0.852	0.892	0.981

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.852	0.748	Data Appear Lognormal
Shapiro-Wilk (NDs = DL)	0.741	0.829	Data Not Lognormal
Shapiro-Wilk (NDs = DL/2)	0.802	0.829	Data Not Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.953	0.829	Data Appear Lognormal
Lilliefors (Detects Only)	0.348	0.375	Data Appear Lognormal
Lilliefors (NDs = DL)	0.279	0.274	Data Not Lognormal
Lilliefors (NDs = DL/2)	0.236	0.274	Data Appear Lognormal
Lilliefors (Lognormal ROS Estimates)	0.161	0.274	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (2_1_118)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	9	0	9	6	3	33.33%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	3	2.0000E-4	0.001	7.3333E-4	0.001	4.6188E-4
Statistics (Non-Detects Only)	6	6.7000E-5	0.034	0.0065	0.00125	0.0135
Statistics (All: NDs treated as DL value)	9	6.7000E-5	0.034	0.00458	0.001	0.0111
Statistics (All: NDs treated as DL/2 value)	9	6.7000E-5	0.034	0.00445	5.0000E-4	0.0111
Statistics (Normal ROS Imputed Data)	9	-0.00698	0.034	0.00318	9.7500E-4	0.012
Statistics (Gamma ROS Imputed Data)	9	6.7000E-5	0.034	0.00766	0.0021	0.0108
Statistics (Lognormal ROS Imputed Data)	9	5.3294E-5	0.034	0.00439	3.7022E-4	0.0111

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	0.382	0.302	0.017	-6.771	2.081	-0.307
Statistics (NDs = DL)	0.408	0.346	0.0112	-6.996	1.742	-0.249
Statistics (NDs = DL/2)	0.368	0.319	0.0121	-7.227	1.841	-0.255
Statistics (Gamma ROS Estimates)	0.534	0.43	0.0144	-6.049	1.97	-0.326
Statistics (Lognormal ROS Estimates)	--	--	--	-7.526	2.06	-0.274

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.724	0.642	0.642	0.769

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.55	0.788	Data Not Normal
Shapiro-Wilk (NDs = DL)	0.444	0.829	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.444	0.829	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.626	0.829	Data Not Normal
Lilliefors (Detects Only)	0.461	0.325	Data Not Normal
Lilliefors (NDs = DL)	0.478	0.274	Data Not Normal
Lilliefors (NDs = DL/2)	0.473	0.274	Data Not Normal
Lilliefors (Normal ROS Estimates)	0.425	0.274	Data Not Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	0.96	0.912	0.92	0.967

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	0.582	0.754	
Kolmogorov-Smirnov (Detects Only)	0.344	0.353	Detected Data Appear Gamma Distributed
Anderson-Darling (NDs = DL)	1.099	0.788	
Kolmogorov-Smirnov (NDs = DL)	0.349	0.297	Data Not Gamma Distributed
Anderson-Darling (NDs = DL/2)	1.052	0.795	
Kolmogorov-Smirnov (NDs = DL/2)	0.325	0.299	Data Not Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	0.307	0.768	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.188	0.293	Data Appear Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.974	0.95	0.959	0.96

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.966	0.788	Data Appear Lognormal

Shapiro-Wilk (NDs = DL)	0.925	0.829	Data Appear Lognormal
Shapiro-Wilk (NDs = DL/2)	0.932	0.829	Data Appear Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.922	0.829	Data Appear Lognormal
Lilliefors (Detects Only)	0.219	0.325	Data Appear Lognormal
Lilliefors (NDs = DL)	0.206	0.274	Data Appear Lognormal
Lilliefors (NDs = DL/2)	0.171	0.274	Data Appear Lognormal
Lilliefors (Lognormal ROS Estimates)	0.147	0.274	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (2_1_120)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	9	0	9	5	4	44.44%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	4	0.0018	0.005	0.0026	0.0018	0.0016
Statistics (Non-Detects Only)	5	7.0000E-4	0.028	0.0103	0.00715	0.0114
Statistics (All: NDs treated as DL value)	9	7.0000E-4	0.028	0.00688	0.0018	0.00905
Statistics (All: NDs treated as DL/2 value)	9	7.0000E-4	0.028	0.00631	0.0012	0.00934
Statistics (Normal ROS Imputed Data)	9	-0.00588	0.028	0.00575	0.0012	0.0101
Statistics (Gamma ROS Imputed Data)	9	7.0000E-4	0.028	0.0102	0.01	0.00803
Statistics (Lognormal ROS Imputed Data)	9	3.8042E-4	0.028	0.00624	0.0012	0.00938

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	0.771	0.442	0.0134	-5.348	1.591	-0.297
Statistics (NDs = DL)	0.855	0.644	0.00805	-5.666	1.227	-0.217
Statistics (NDs = DL/2)	0.67	0.52	0.00942	-5.974	1.384	-0.232
Statistics (Gamma ROS Estimates)	1.305	0.944	0.00779	-5.018	1.191	-0.237
Statistics (Lognormal ROS Estimates)	--	--	--	-6.059	1.473	-0.243

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.944	0.843	0.822	0.914

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.884	0.762	Data Appear Normal
Shapiro-Wilk (NDs = DL)	0.722	0.829	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.685	0.829	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.852	0.829	Data Appear Normal
Lilliefors (Detects Only)	0.21	0.343	Data Appear Normal
Lilliefors (NDs = DL)	0.268	0.274	Data Appear Normal
Lilliefors (NDs = DL/2)	0.325	0.274	Data Not Normal
Lilliefors (Normal ROS Estimates)	0.23	0.274	Data Appear Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	0.986	0.988	0.988	0.949

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	0.274	0.698	

Kolmogorov-Smirnov (Detects Only)	0.238	0.366	Detected Data Appear Gamma Distributed
Anderson-Darling (NDs = DL)	0.556	0.748	
Kolmogorov-Smirnov (NDs = DL)	0.29	0.288	Detected Data appear Approximate Gamma Distr
Anderson-Darling (NDs = DL/2)	0.877	0.758	
Kolmogorov-Smirnov (NDs = DL/2)	0.291	0.291	Detected Data appear Approximate Gamma Distr
Anderson-Darling (Gamma ROS Estimates)	0.69	0.738	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.275	0.285	Data Appear Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.971	0.969	0.923	0.96

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.921	0.762	Data Appear Lognormal
Shapiro-Wilk (NDs = DL)	0.932	0.829	Data Appear Lognormal
Shapiro-Wilk (NDs = DL/2)	0.837	0.829	Data Appear Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.91	0.829	Data Appear Lognormal
Lilliefors (Detects Only)	0.207	0.343	Data Appear Lognormal
Lilliefors (NDs = DL)	0.258	0.274	Data Appear Lognormal
Lilliefors (NDs = DL/2)	0.262	0.274	Data Appear Lognormal
Lilliefors (Lognormal ROS Estimates)	0.23	0.274	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (2_1_122)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	9	0	9	5	4	44.44%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	4	0.085	0.25	0.168	0.168	0.0953
Statistics (Non-Detects Only)	5	0.088	110	23.72	3.175	48.27
Statistics (All: NDs treated as DL value)	9	0.085	110	13.25	0.25	36.32
Statistics (All: NDs treated as DL/2 value)	9	0.0425	110	13.21	0.125	36.34
Statistics (Normal ROS Imputed Data)	9	-96.13	110	-17.94	0.088	61.72
Statistics (Gamma ROS Imputed Data)	9	0.01	110	13.18	0.088	36.35
Statistics (Lognormal ROS Imputed Data)	9	3.7552E-4	110	13.18	0.088	36.35

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	0.296	0.252	80.16	0.83	2.7	3.251
Statistics (NDs = DL)	0.24	0.234	55.2	-0.395	2.429	-6.157
Statistics (NDs = DL/2)	0.221	0.221	59.88	-0.703	2.664	-3.791
Statistics (Gamma ROS Estimates)	0.18	0.194	73.36	-1.585	3.443	-2.171
Statistics (Lognormal ROS Estimates)	--	--	--	-2.2	4.2	-1.909

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.755	0.627	0.627	0.943

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.589	0.762	Data Not Normal

Shapiro-Wilk (NDs = DL)	0.424	0.829	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.424	0.829	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.901	0.829	Data Appear Normal
Lilliefors (Detects Only)	0.452	0.343	Data Not Normal
Lilliefors (NDs = DL)	0.48	0.274	Data Not Normal
Lilliefors (NDs = DL/2)	0.479	0.274	Data Not Normal
Lilliefors (Normal ROS Estimates)	0.245	0.274	Data Appear Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	0.979	0.939	0.944	0.953

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	0.436	0.741	
Kolmogorov-Smirnov (Detects Only)	0.32	0.38	Detected Data Appear Gamma Distributed
Anderson-Darling (NDs = DL)	1.293	0.831	
Kolmogorov-Smirnov (NDs = DL)	0.326	0.306	Data Not Gamma Distributed
Anderson-Darling (NDs = DL/2)	1.196	0.839	
Kolmogorov-Smirnov (NDs = DL/2)	0.3	0.307	Detected Data appear Approximate Gamma Distr
Anderson-Darling (Gamma ROS Estimates)	0.984	0.865	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.239	0.31	Detected Data appear Approximate Gamma Distr

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.985	0.917	0.93	0.99

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.975	0.762	Data Appear Lognormal
Shapiro-Wilk (NDs = DL)	0.839	0.829	Data Appear Lognormal
Shapiro-Wilk (NDs = DL/2)	0.861	0.829	Data Appear Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.968	0.829	Data Appear Lognormal
Lilliefors (Detects Only)	0.189	0.343	Data Appear Lognormal
Lilliefors (NDs = DL)	0.243	0.274	Data Appear Lognormal
Lilliefors (NDs = DL/2)	0.253	0.274	Data Appear Lognormal
Lilliefors (Lognormal ROS Estimates)	0.123	0.274	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (2_1_124)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	9	0	9	3	6	66.67%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	6	5.0000E-4	7.0000E-4	6.3333E-4	7.0000E-4	1.0328E-4
Statistics (Non-Detects Only)	3	8.7400E-4	0.027	0.00972	0.0013	0.015
Statistics (All: NDs treated as DL value)	9	5.0000E-4	0.027	0.00366	7.0000E-4	0.00875
Statistics (All: NDs treated as DL/2 value)	9	2.5000E-4	0.027	0.00345	3.5000E-4	0.00884
Statistics (Normal ROS Imputed Data)	9	-0.072	0.027	-0.0282	-0.0345	0.0324
Statistics (Gamma ROS Imputed Data)	9	8.7400E-4	0.027	0.00991	0.01	0.00748
Statistics (Lognormal ROS Imputed Data)	9	7.7271E-8	0.027	0.00325	9.9870E-6	0.00892

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	N/A	N/A	N/A	N/A	N/A	N/A
Statistics (NDs = DL)	0.514	0.417	0.00713	-6.84	1.244	-0.182
Statistics (NDs = DL/2)	0.402	0.342	0.00858	-7.302	1.492	-0.204
Statistics (Gamma ROS Estimates)	1.467	1.052	0.00675	-4.992	1.103	-0.221
Statistics (Lognormal ROS Estimates)	--	--	--	-10.69	4.197	-0.393

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.873	0.617	0.623	0.983

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.762	0.767	Data Not Normal
Shapiro-Wilk (NDs = DL)	0.412	0.829	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.42	0.829	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.958	0.829	Data Appear Normal
Lilliefors (Detects Only)	0.38	0.425	Data Appear Normal
Lilliefors (NDs = DL)	0.495	0.274	Data Not Normal
Lilliefors (NDs = DL/2)	0.485	0.274	Data Not Normal
Lilliefors (Normal ROS Estimates)	0.149	0.274	Data Appear Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	N/A	0.884	0.906	0.877

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	N/A	N/A	
Kolmogorov-Smirnov (Detects Only)	N/A	N/A	
Anderson-Darling (NDs = DL)	2.283	0.77	
Kolmogorov-Smirnov (NDs = DL)	0.446	0.294	Data Not Gamma Distributed
Anderson-Darling (NDs = DL/2)	1.958	0.789	
Kolmogorov-Smirnov (NDs = DL/2)	0.383	0.298	Data Not Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	1.236	0.735	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.392	0.284	Data Not Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.914	0.749	0.811	0.984

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.835	0.767	Data Appear Lognormal
Shapiro-Wilk (NDs = DL)	0.59	0.829	Data Not Lognormal
Shapiro-Wilk (NDs = DL/2)	0.677	0.829	Data Not Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.96	0.829	Data Appear Lognormal
Lilliefors (Detects Only)	0.347	0.425	Data Appear Lognormal
Lilliefors (NDs = DL)	0.342	0.274	Data Not Lognormal
Lilliefors (NDs = DL/2)	0.337	0.274	Data Not Lognormal
Lilliefors (Lognormal ROS Estimates)	0.141	0.274	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (2_1_128)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	9	0	9	8	1	11.11%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	1	9.5000E-4	9.5000E-4	9.5000E-4	9.5000E-4	N/A
Statistics (Non-Detects Only)	8	0.0174	1.4	0.412	0.213	0.485
Statistics (All: NDs treated as DL value)	9	9.5000E-4	1.4	0.366	0.095	0.474
Statistics (All: NDs treated as DL/2 value)	9	4.7500E-4	1.4	0.366	0.095	0.474
Statistics (Normal ROS Imputed Data)	9	-0.724	1.4	0.285	0.095	0.591
Statistics (Gamma ROS Imputed Data)	9	0.01	1.4	0.367	0.095	0.473
Statistics (Lognormal ROS Imputed Data)	9	0.00277	1.4	0.366	0.095	0.474

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	0.663	0.498	0.621	-1.806	1.667	-0.923
Statistics (NDs = DL)	0.467	0.386	0.783	-2.379	2.32	-0.975
Statistics (NDs = DL/2)	0.446	0.371	0.82	-2.456	2.496	-1.016
Statistics (Gamma ROS Estimates)	0.56	0.447	0.655	-2.117	1.817	-0.858
Statistics (Lognormal ROS Estimates)	--	--	--	-2.26	2.07	-0.916

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.908	0.889	0.889	0.958

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.823	0.818	Data Appear Normal
Shapiro-Wilk (NDs = DL)	0.793	0.829	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.793	0.829	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.94	0.829	Data Appear Normal
Lilliefors (Detects Only)	0.243	0.283	Data Appear Normal
Lilliefors (NDs = DL)	0.272	0.274	Data Appear Normal
Lilliefors (NDs = DL/2)	0.272	0.274	Data Appear Normal
Lilliefors (Normal ROS Estimates)	0.214	0.274	Data Appear Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	0.981	0.979	0.978	0.983

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	0.326	0.751	
Kolmogorov-Smirnov (Detects Only)	0.199	0.306	Detected Data Appear Gamma Distributed
Anderson-Darling (NDs = DL)	0.232	0.777	
Kolmogorov-Smirnov (NDs = DL)	0.155	0.295	Data Appear Gamma Distributed
Anderson-Darling (NDs = DL/2)	0.223	0.781	
Kolmogorov-Smirnov (NDs = DL/2)	0.156	0.296	Data Appear Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	0.379	0.766	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.193	0.293	Data Appear Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.969	0.964	0.951	0.977

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.917	0.818	Data Appear Lognormal
Shapiro-Wilk (NDs = DL)	0.928	0.829	Data Appear Lognormal
Shapiro-Wilk (NDs = DL/2)	0.909	0.829	Data Appear Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.945	0.829	Data Appear Lognormal
Lilliefors (Detects Only)	0.174	0.283	Data Appear Lognormal
Lilliefors (NDs = DL)	0.152	0.274	Data Appear Lognormal
Lilliefors (NDs = DL/2)	0.15	0.274	Data Appear Lognormal
Lilliefors (Lognormal ROS Estimates)	0.155	0.274	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (2_1_130)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	9	0	9	0	9	100.00%

Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable VALUES (2_1_130) was not processed!

VALUES (2_1_132)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	9	0	9	4	5	55.56%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	5	0.001	0.0025	0.0019	0.0025	8.2158E-4
Statistics (Non-Detects Only)	4	0.0013	0.084	0.0232	0.00382	0.0405
Statistics (All: NDs treated as DL value)	9	0.001	0.084	0.0114	0.0025	0.0273
Statistics (All: NDs treated as DL/2 value)	9	5.0000E-4	0.084	0.0109	0.00125	0.0275
Statistics (Normal ROS Imputed Data)	9	-0.0697	0.084	-0.0121	-0.00274	0.0456
Statistics (Gamma ROS Imputed Data)	9	0.0013	0.084	0.0159	0.01	0.0258
Statistics (Lognormal ROS Imputed Data)	9	4.2819E-5	0.084	0.0106	0.0013	0.0276

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	0.478	0.286	0.0486	-5.1	1.838	-0.36
Statistics (NDs = DL)	0.483	0.396	0.0236	-5.799	1.354	-0.233
Statistics (NDs = DL/2)	0.397	0.339	0.0274	-6.184	1.565	-0.253
Statistics (Gamma ROS Estimates)	0.861	0.648	0.0184	-4.825	1.156	-0.24
Statistics (Lognormal ROS Estimates)	--	--	--	-6.985	2.331	-0.334

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.808	0.63	0.631	0.944

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.666	0.748	Data Not Normal
Shapiro-Wilk (NDs = DL)	0.429	0.829	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.43	0.829	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.904	0.829	Data Appear Normal
Lilliefors (Detects Only)	0.422	0.375	Data Not Normal
Lilliefors (NDs = DL)	0.479	0.274	Data Not Normal
Lilliefors (NDs = DL/2)	0.47	0.274	Data Not Normal
Lilliefors (Normal ROS Estimates)	0.241	0.274	Data Appear Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	0.987	0.896	0.912	0.876

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	0.564	0.683	
Kolmogorov-Smirnov (Detects Only)	0.375	0.411	Detected Data Appear Gamma Distributed
Anderson-Darling (NDs = DL)	1.793	0.774	
Kolmogorov-Smirnov (NDs = DL)	0.408	0.295	Data Not Gamma Distributed
Anderson-Darling (NDs = DL/2)	1.65	0.79	
Kolmogorov-Smirnov (NDs = DL/2)	0.357	0.298	Data Not Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	1.082	0.748	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.399	0.288	Data Not Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.936	0.842	0.873	0.978

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.883	0.748	Data Appear Lognormal
Shapiro-Wilk (NDs = DL)	0.732	0.829	Data Not Lognormal
Shapiro-Wilk (NDs = DL/2)	0.781	0.829	Data Not Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.959	0.829	Data Appear Lognormal
Lilliefors (Detects Only)	0.284	0.375	Data Appear Lognormal
Lilliefors (NDs = DL)	0.334	0.274	Data Not Lognormal
Lilliefors (NDs = DL/2)	0.283	0.274	Data Not Lognormal
Lilliefors (Lognormal ROS Estimates)	0.118	0.274	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (2_1_138)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	9	0	9	0	9	100.00%

Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!

Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!

The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable VALUES (2_1_138) was not processed!

VALUES (2_1_140)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	9	0	9	1	8	88.89%

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable VALUES (2_1_140) was not processed!

VALUES (2_1_144)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	9	0	9	1	8	88.89%

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable VALUES (2_1_144) was not processed!

VALUES (2_1_146)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	9	0	9	4	5	55.56%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	5	0.002	0.0025	0.0022	0.002	2.7386E-4
Statistics (Non-Detects Only)	4	0.00523	0.098	0.0293	0.00703	0.0458
Statistics (All: NDs treated as DL value)	9	0.002	0.098	0.0143	0.0025	0.0315
Statistics (All: NDs treated as DL/2 value)	9	0.001	0.098	0.0136	0.00125	0.0317
Statistics (Normal ROS Imputed Data)	9	-0.148	0.098	-0.0452	-0.0665	0.0799
Statistics (Gamma ROS Imputed Data)	9	0.00523	0.098	0.0186	0.01	0.0298
Statistics (Lognormal ROS Imputed Data)	9	4.3792E-5	0.098	0.0132	5.9140E-4	0.032

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	0.71	0.344	0.0413	-4.379	1.382	-0.316
Statistics (NDs = DL)	0.567	0.452	0.0251	-5.349	1.254	-0.234
Statistics (NDs = DL/2)	0.449	0.373	0.0304	-5.734	1.542	-0.269
Statistics (Gamma ROS Estimates)	1.1	0.807	0.0169	-4.504	0.855	-0.19
Statistics (Lognormal ROS Estimates)	--	--	--	-6.756	2.531	-0.375

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS

Correlation Coefficient R	0.8	0.645	0.654	0.972

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.653	0.748	Data Not Normal
Shapiro-Wilk (NDs = DL)	0.447	0.829	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.458	0.829	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.939	0.829	Data Appear Normal
Lilliefors (Detects Only)	0.429	0.375	Data Not Normal
Lilliefors (NDs = DL)	0.467	0.274	Data Not Normal
Lilliefors (NDs = DL/2)	0.459	0.274	Data Not Normal
Lilliefors (Normal ROS Estimates)	0.181	0.274	Data Appear Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	0.978	0.896	0.916	0.836

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	0.774	0.672	
Kolmogorov-Smirnov (Detects Only)	0.432	0.406	Data Not Gamma Distributed
Anderson-Darling (NDs = DL)	1.633	0.766	
Kolmogorov-Smirnov (NDs = DL)	0.362	0.293	Data Not Gamma Distributed
Anderson-Darling (NDs = DL/2)	1.351	0.78	
Kolmogorov-Smirnov (NDs = DL/2)	0.314	0.296	Data Not Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	2.006	0.742	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.49	0.286	Data Not Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.856	0.846	0.885	0.977

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.743	0.748	Data Not Lognormal
Shapiro-Wilk (NDs = DL)	0.73	0.829	Data Not Lognormal
Shapiro-Wilk (NDs = DL/2)	0.786	0.829	Data Not Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.948	0.829	Data Appear Lognormal
Lilliefors (Detects Only)	0.376	0.375	Data Not Lognormal
Lilliefors (NDs = DL)	0.251	0.274	Data Appear Lognormal
Lilliefors (NDs = DL/2)	0.287	0.274	Data Not Lognormal
Lilliefors (Lognormal ROS Estimates)	0.168	0.274	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (2_1_148)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	9	0	9	1	8	88.89%

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable VALUES (2_1_148) was not processed!

VALUES (2_2_133)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	9	0	9	1	8	88.89%

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable VALUES (2_2_133) was not processed!

VALUES (2_3_134)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	9	0	9	3	6	66.67%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	6	1.0000E-5	5.0000E-5	3.1667E-5	3.5000E-5	2.0412E-5
Statistics (Non-Detects Only)	3	5.7000E-6	9.5000E-6	7.6000E-6	7.6000E-6	1.9000E-6
Statistics (All: NDs treated as DL value)	9	5.7000E-6	5.0000E-5	2.3644E-5	1.0000E-5	2.0152E-5
Statistics (All: NDs treated as DL/2 value)	9	5.0000E-6	2.5000E-5	1.3089E-5	9.5000E-6	9.1079E-6
Statistics (Normal ROS Imputed Data)	9	5.7000E-6	9.5000E-6	7.6000E-6	7.6000E-6	1.4741E-6
Statistics (Gamma ROS Imputed Data)	9	5.7000E-6	0.01	0.00667	0.01	0.005
Statistics (Lognormal ROS Imputed Data)	9	5.7000E-6	9.6027E-6	7.5684E-6	7.4382E-6	1.4846E-6

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	N/A	N/A	N/A	N/A	N/A	N/A
Statistics (NDs = DL)	1.593	1.136	1.4847E-5	-11	0.885	-0.0804
Statistics (NDs = DL/2)	2.464	1.717	5.3119E-6	-11.46	0.694	-0.0605
Statistics (Gamma ROS Estimates)	0.339	0.3	0.0197	-7.006	3.604	-0.514
Statistics (Lognormal ROS Estimates)	--	--	--	-11.81	0.198	-0.0168

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	1	0.872	0.883	0.961

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	1	0.767	Data Appear Normal
Shapiro-Wilk (NDs = DL)	0.733	0.829	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.75	0.829	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.897	0.829	Data Appear Normal
Lilliefors (Detects Only)	0.175	0.425	Data Appear Normal
Lilliefors (NDs = DL)	0.306	0.274	Data Not Normal
Lilliefors (NDs = DL/2)	0.299	0.274	Data Not Normal
Lilliefors (Normal ROS Estimates)	0.167	0.274	Data Appear Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	N/A	0.882	0.894	0.465

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	N/A	N/A	
Kolmogorov-Smirnov (Detects Only)	N/A	N/A	
Anderson-Darling (NDs = DL)	0.904	0.734	
Kolmogorov-Smirnov (NDs = DL)	0.304	0.284	Data Not Gamma Distributed
Anderson-Darling (NDs = DL/2)	0.818	0.728	
Kolmogorov-Smirnov (NDs = DL/2)	0.243	0.282	Detected Data appear Approximate Gamma Distr
Anderson-Darling (Gamma ROS Estimates)	2.058	0.8	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.458	0.3	Data Not Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.997	0.927	0.929	0.968

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.995	0.767	Data Appear Lognormal
Shapiro-Wilk (NDs = DL)	0.833	0.829	Data Appear Lognormal
Shapiro-Wilk (NDs = DL/2)	0.831	0.829	Data Appear Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.912	0.829	Data Appear Lognormal
Lilliefors (Detects Only)	0.2	0.425	Data Appear Lognormal
Lilliefors (NDs = DL)	0.275	0.274	Data Not Lognormal
Lilliefors (NDs = DL/2)	0.227	0.274	Data Appear Lognormal
Lilliefors (Lognormal ROS Estimates)	0.167	0.274	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (2_4_101)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	9	0	9	7	2	22.22%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	2	0.07	0.2	0.135	0.135	0.0919
Statistics (Non-Detects Only)	7	0.56	260	95.69	78	107.9
Statistics (All: NDs treated as DL value)	9	0.07	260	74.45	14.2	102.5
Statistics (All: NDs treated as DL/2 value)	9	0.035	260	74.44	14.2	102.5
Statistics (Normal ROS Imputed Data)	9	-162.3	260	38.36	14.2	147.2
Statistics (Gamma ROS Imputed Data)	9	0.01	260	74.42	14.2	102.5
Statistics (Lognormal ROS Imputed Data)	9	0.105	260	74.45	14.2	102.5

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	0.489	0.375	195.8	3.257	2.351	0.722
Statistics (NDs = DL)	0.305	0.278	243.8	2.059	3.141	1.526
Statistics (NDs = DL/2)	0.289	0.266	258	1.905	3.378	1.774
Statistics (Gamma ROS Estimates)	0.253	0.243	294	1.51	4.02	2.663
Statistics (Lognormal ROS Estimates)	--	--	--	2.033	3.169	1.559

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.922	0.875	0.875	0.967

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.828	0.803	Data Appear Normal
Shapiro-Wilk (NDs = DL)	0.752	0.829	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.752	0.829	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.921	0.829	Data Appear Normal
Lilliefors (Detects Only)	0.256	0.304	Data Appear Normal
Lilliefors (NDs = DL)	0.277	0.274	Data Not Normal
Lilliefors (NDs = DL/2)	0.277	0.274	Data Not Normal
Lilliefors (Normal ROS Estimates)	0.176	0.274	Data Appear Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	0.911	0.919	0.916	0.909

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	0.316	0.753	
Kolmogorov-Smirnov (Detects Only)	0.207	0.328	Detected Data Appear Gamma Distributed
Anderson-Darling (NDs = DL)	0.38	0.806	
Kolmogorov-Smirnov (NDs = DL)	0.178	0.301	Data Appear Gamma Distributed
Anderson-Darling (NDs = DL/2)	0.351	0.812	
Kolmogorov-Smirnov (NDs = DL/2)	0.183	0.302	Data Appear Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	0.358	0.826	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.194	0.305	Data Appear Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.953	0.964	0.962	0.954

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.894	0.803	Data Appear Lognormal
Shapiro-Wilk (NDs = DL)	0.903	0.829	Data Appear Lognormal
Shapiro-Wilk (NDs = DL/2)	0.902	0.829	Data Appear Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.88	0.829	Data Appear Lognormal
Lilliefors (Detects Only)	0.251	0.304	Data Appear Lognormal
Lilliefors (NDs = DL)	0.212	0.274	Data Appear Lognormal
Lilliefors (NDs = DL/2)	0.21	0.274	Data Appear Lognormal
Lilliefors (Lognormal ROS Estimates)	0.213	0.274	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (2_4_103)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	9	0	9	1	8	88.89%

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!

It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable VALUES (2_4_103) was not processed!

VALUES (2_4_105)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	9	0	9	6	3	33.33%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	3	0.001	0.00125	0.00108	0.001	1.4434E-4
Statistics (Non-Detects Only)	6	0.00144	0.02	0.0081	0.00683	0.00642
Statistics (All: NDs treated as DL value)	9	0.001	0.02	0.00576	0.00423	0.00617
Statistics (All: NDs treated as DL/2 value)	9	5.0000E-4	0.02	0.00558	0.00423	0.00633
Statistics (Normal ROS Imputed Data)	9	-0.0109	0.02	0.00264	0.00423	0.00972
Statistics (Gamma ROS Imputed Data)	9	0.00144	0.02	0.00874	0.0093	0.00516
Statistics (Lognormal ROS Imputed Data)	9	4.5705E-4	0.02	0.00563	0.00423	0.00629

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	1.93	1.076	0.0042	-5.096	0.877	-0.172
Statistics (NDs = DL)	1.1	0.807	0.00524	-5.675	1.113	-0.196
Statistics (NDs = DL/2)	0.823	0.623	0.00678	-5.906	1.4	-0.237
Statistics (Gamma ROS Estimates)	2.755	1.911	0.00317	-4.933	0.735	-0.149
Statistics (Lognormal ROS Estimates)	--	--	--	-5.842	1.327	-0.227

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.927	0.886	0.897	0.979

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.877	0.788	Data Appear Normal
Shapiro-Wilk (NDs = DL)	0.793	0.829	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.811	0.829	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.958	0.829	Data Appear Normal
Lilliefors (Detects Only)	0.259	0.325	Data Appear Normal
Lilliefors (NDs = DL)	0.22	0.274	Data Appear Normal
Lilliefors (NDs = DL/2)	0.211	0.274	Data Appear Normal
Lilliefors (Normal ROS Estimates)	0.142	0.274	Data Appear Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	0.983	0.987	0.989	0.947

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	0.21	0.705	
Kolmogorov-Smirnov (Detects Only)	0.165	0.336	Detected Data Appear Gamma Distributed
Anderson-Darling (NDs = DL)	0.455	0.742	
Kolmogorov-Smirnov (NDs = DL)	0.244	0.286	Data Appear Gamma Distributed
Anderson-Darling (NDs = DL/2)	0.386	0.749	
Kolmogorov-Smirnov (NDs = DL/2)	0.19	0.289	Data Appear Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	0.448	0.728	

Kolmogorov-Smirnov (Gamma ROS Est.)	0.223	0.282	Data Appear Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.974	0.957	0.959	0.976

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.966	0.788	Data Appear Lognormal
Shapiro-Wilk (NDs = DL)	0.894	0.829	Data Appear Lognormal
Shapiro-Wilk (NDs = DL/2)	0.895	0.829	Data Appear Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.936	0.829	Data Appear Lognormal
Lilliefors (Detects Only)	0.18	0.325	Data Appear Lognormal
Lilliefors (NDs = DL)	0.227	0.274	Data Appear Lognormal
Lilliefors (NDs = DL/2)	0.187	0.274	Data Appear Lognormal
Lilliefors (Lognormal ROS Estimates)	0.167	0.274	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (2_4_109)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	9	0	9	5	4	44.44%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	4	3.0000E-4	0.001	6.5000E-4	6.5000E-4	4.0415E-4
Statistics (Non-Detects Only)	5	0.00102	0.01	0.0051	0.0038	0.00369
Statistics (All: NDs treated as DL value)	9	3.0000E-4	0.01	0.00312	0.00102	0.00352
Statistics (All: NDs treated as DL/2 value)	9	1.5000E-4	0.01	0.00298	0.00102	0.00363
Statistics (Normal ROS Imputed Data)	9	-0.00765	0.01	2.9042E-4	0.00102	0.00642
Statistics (Gamma ROS Imputed Data)	9	0.00102	0.01	0.00728	0.01	0.00367
Statistics (Lognormal ROS Imputed Data)	9	1.9437E-4	0.01	0.00299	0.00102	0.00362

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	1.97	0.921	0.00259	-5.553	0.902	-0.162
Statistics (NDs = DL)	0.895	0.671	0.00349	-6.422	1.285	-0.2
Statistics (NDs = DL/2)	0.665	0.518	0.00448	-6.73	1.593	-0.237
Statistics (Gamma ROS Estimates)	2.548	1.773	0.00286	-5.131	0.81	-0.158
Statistics (Lognormal ROS Estimates)	--	--	--	-6.683	1.518	-0.227

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.975	0.896	0.898	0.977

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.939	0.762	Data Appear Normal
Shapiro-Wilk (NDs = DL)	0.796	0.829	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.797	0.829	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.933	0.829	Data Appear Normal
Lilliefors (Detects Only)	0.238	0.343	Data Appear Normal
Lilliefors (NDs = DL)	0.281	0.274	Data Not Normal
Lilliefors (NDs = DL/2)	0.261	0.274	Data Appear Normal

Lilliefors (Normal ROS Estimates)	0.183	0.274	Data Appear Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	0.964	0.977	0.974	0.753

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	0.232	0.685	
Kolmogorov-Smirnov (Detects Only)	0.208	0.361	Detected Data Appear Gamma Distributed
Anderson-Darling (NDs = DL)	0.421	0.747	
	0.253	0.288	Data Appear Gamma Distributed
Anderson-Darling (NDs = DL/2)	0.372	0.758	
Kolmogorov-Smirnov (NDs = DL/2)	0.198	0.291	Data Appear Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	1.122	0.728	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.326	0.282	Data Not Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.975	0.97	0.972	0.969

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.947	0.762	Data Appear Lognormal
Shapiro-Wilk (NDs = DL)	0.92	0.829	Data Appear Lognormal
Shapiro-Wilk (NDs = DL/2)	0.919	0.829	Data Appear Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.911	0.829	Data Appear Lognormal
Lilliefors (Detects Only)	0.181	0.343	Data Appear Lognormal
Lilliefors (NDs = DL)	0.197	0.274	Data Appear Lognormal
Lilliefors (NDs = DL/2)	0.156	0.274	Data Appear Lognormal
Lilliefors (Lognormal ROS Estimates)	0.181	0.274	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (2_4_111)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	9	0	9	3	6	66.67%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	6	0.001	0.001	0.001	0.001	0
Statistics (Non-Detects Only)	3	3.0000E-4	5.4000E-4	4.4000E-4	4.8000E-4	1.2490E-4
Statistics (All: NDs treated as DL value)	9	3.0000E-4	0.001	8.1333E-4	0.001	2.8688E-4
Statistics (All: NDs treated as DL/2 value)	9	3.0000E-4	5.4000E-4	4.8000E-4	5.0000E-4	6.9282E-5
Statistics (Normal ROS Imputed Data)	9	2.5007E-4	6.2993E-4	4.4000E-4	4.7203E-4	1.2534E-4
Statistics (Gamma ROS Imputed Data)	9	3.0000E-4	0.01	0.00681	0.01	0.00478
Statistics (Lognormal ROS Imputed Data)	9	2.6806E-4	6.7963E-4	4.4486E-4	4.6165E-4	1.3375E-4

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	N/A	N/A	N/A	N/A	N/A	N/A
Statistics (NDs = DL)	6.641	4.501	1.2248E-4	-7.192	0.453	-0.063
Statistics (NDs = DL/2)	42.11	28.15	1.1399E-5	-7.654	0.174	-0.0228
Statistics (Gamma ROS Estimates)	0.878	0.66	0.00776	-5.656	1.585	-0.28

Statistics (Lognormal ROS Estimates)	--	--	--	-7.759	0.308	-0.0397

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.961	0.835	0.727	0.987

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.923	0.767	Data Appear Normal
Shapiro-Wilk (NDs = DL)	0.685	0.829	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.569	0.829	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.965	0.829	Data Appear Normal
Lilliefors (Detects Only)	0.292	0.425	Data Appear Normal
Lilliefors (NDs = DL)	0.409	0.274	Data Not Normal
Lilliefors (NDs = DL/2)	0.391	0.274	Data Not Normal
Lilliefors (Normal ROS Estimates)	0.156	0.274	Data Appear Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	N/A	0.755	0.702	0.587

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	N/A	N/A	
Kolmogorov-Smirnov (Detects Only)	N/A	N/A	
Anderson-Darling (NDs = DL)	1.46	0.722	
Kolmogorov-Smirnov (NDs = DL)	0.418	0.28	Data Not Gamma Distributed
Anderson-Darling (NDs = DL/2)	2.072	0.721	
Kolmogorov-Smirnov (NDs = DL/2)	0.409	0.279	Data Not Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	1.792	0.747	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.435	0.288	Data Not Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.945	0.836	0.702	0.987

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.893	0.767	Data Appear Lognormal
Shapiro-Wilk (NDs = DL)	0.695	0.829	Data Not Lognormal
Shapiro-Wilk (NDs = DL/2)	0.53	0.829	Data Not Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.964	0.829	Data Appear Lognormal
Lilliefors (Detects Only)	0.314	0.425	Data Appear Lognormal
Lilliefors (NDs = DL)	0.401	0.274	Data Not Lognormal
Lilliefors (NDs = DL/2)	0.416	0.274	Data Not Lognormal
Lilliefors (Lognormal ROS Estimates)	0.156	0.274	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (2_4_115)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	9	0	9	8	1	11.11%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	1	0.001	0.001	0.001	0.001	N/A
Statistics (Non-Detects Only)	8	0.001	0.27	0.0701	0.044	0.0916
Statistics (All: NDs treated as DL value)	9	0.001	0.27	0.0624	0.017	0.0887
Statistics (All: NDs treated as DL/2 value)	9	5.0000E-4	0.27	0.0624	0.017	0.0887
Statistics (Normal ROS Imputed Data)	9	-0.138	0.27	0.047	0.017	0.11
Statistics (Gamma ROS Imputed Data)	9	0.001	0.27	0.0634	0.017	0.088
Statistics (Lognormal ROS Imputed Data)	9	1.5876E-4	0.27	0.0623	0.017	0.0888

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	0.531	0.415	0.132	-3.843	2	-0.52
Statistics (NDs = DL)	0.457	0.379	0.137	-4.184	2.132	-0.51
Statistics (NDs = DL/2)	0.437	0.365	0.143	-4.261	2.252	-0.528
Statistics (Gamma ROS Estimates)	0.537	0.432	0.118	-3.928	1.888	-0.481
Statistics (Lognormal ROS Estimates)	--	--	--	-4.388	2.485	-0.566

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.882	0.86	0.86	0.944

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.785	0.818	Data Not Normal
Shapiro-Wilk (NDs = DL)	0.749	0.829	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.75	0.829	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.919	0.829	Data Appear Normal
Lilliefors (Detects Only)	0.237	0.283	Data Appear Normal
Lilliefors (NDs = DL)	0.251	0.274	Data Appear Normal
Lilliefors (NDs = DL/2)	0.251	0.274	Data Appear Normal
Lilliefors (Normal ROS Estimates)	0.227	0.274	Data Appear Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	0.991	0.992	0.992	0.993

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	0.252	0.76	
Kolmogorov-Smirnov (Detects Only)	0.181	0.308	Detected Data Appear Gamma Distributed
Anderson-Darling (NDs = DL)	0.356	0.779	
Kolmogorov-Smirnov (NDs = DL)	0.168	0.296	Data Appear Gamma Distributed
Anderson-Darling (NDs = DL/2)	0.291	0.782	
Kolmogorov-Smirnov (NDs = DL/2)	0.167	0.296	Data Appear Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	0.27	0.768	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.177	0.293	Data Appear Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.977	0.967	0.977	0.978

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)

Shapiro-Wilk (Detects Only)	0.939	0.818	Data Appear Lognormal
Shapiro-Wilk (NDs = DL)	0.91	0.829	Data Appear Lognormal
Shapiro-Wilk (NDs = DL/2)	0.936	0.829	Data Appear Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.946	0.829	Data Appear Lognormal
Lilliefors (Detects Only)	0.225	0.283	Data Appear Lognormal
Lilliefors (NDs = DL)	0.209	0.274	Data Appear Lognormal
Lilliefors (NDs = DL/2)	0.208	0.274	Data Appear Lognormal
Lilliefors (Lognormal ROS Estimates)	0.203	0.274	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (2_4_117)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	9	0	9	7	2	22.22%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	2	2.0000E-4	0.001	6.0000E-4	6.0000E-4	5.6569E-4
Statistics (Non-Detects Only)	7	2.6000E-4	0.067	0.0238	0.024	0.0245
Statistics (All: NDs treated as DL value)	9	2.0000E-4	0.067	0.0187	0.00511	0.0236
Statistics (All: NDs treated as DL/2 value)	9	1.0000E-4	0.067	0.0186	0.00511	0.0236
Statistics (Normal ROS Imputed Data)	9	-0.0357	0.067	0.0122	0.00511	0.0315
Statistics (Gamma ROS Imputed Data)	9	2.6000E-4	0.067	0.0208	0.01	0.0221
Statistics (Lognormal ROS Imputed Data)	9	7.7855E-5	0.067	0.0186	0.00511	0.0236

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	0.642	0.462	0.0371	-4.691	1.963	-0.418
Statistics (NDs = DL)	0.465	0.384	0.0401	-5.362	2.197	-0.41
Statistics (NDs = DL/2)	0.425	0.358	0.0437	-5.516	2.395	-0.434
Statistics (Gamma ROS Estimates)	0.751	0.575	0.0276	-4.672	1.7	-0.364
Statistics (Lognormal ROS Estimates)	--	--	--	-5.622	2.527	-0.45

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.949	0.903	0.904	0.989

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.893	0.803	Data Appear Normal
Shapiro-Wilk (NDs = DL)	0.811	0.829	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.811	0.829	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.979	0.829	Data Appear Normal
Lilliefors (Detects Only)	0.206	0.304	Data Appear Normal
Lilliefors (NDs = DL)	0.273	0.274	Data Appear Normal
Lilliefors (NDs = DL/2)	0.272	0.274	Data Appear Normal
Lilliefors (Normal ROS Estimates)	0.145	0.274	Data Appear Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	0.965	0.972	0.969	0.99

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)

Anderson-Darling (Detects Only)	0.268	0.743	
Kolmogorov-Smirnov (Detects Only)	0.237	0.325	Detected Data Appear Gamma Distributed
Anderson-Darling (NDs = DL)	0.341	0.777	
Kolmogorov-Smirnov (NDs = DL)	0.191	0.295	Data Appear Gamma Distributed
Anderson-Darling (NDs = DL/2)	0.333	0.784	
Kolmogorov-Smirnov (NDs = DL/2)	0.196	0.297	Data Appear Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	0.163	0.751	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.141	0.289	Data Appear Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.949	0.968	0.968	0.959

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.899	0.803	Data Appear Lognormal
Shapiro-Wilk (NDs = DL)	0.912	0.829	Data Appear Lognormal
Shapiro-Wilk (NDs = DL/2)	0.915	0.829	Data Appear Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.897	0.829	Data Appear Lognormal
Lilliefors (Detects Only)	0.259	0.304	Data Appear Lognormal
Lilliefors (NDs = DL)	0.216	0.274	Data Appear Lognormal
Lilliefors (NDs = DL/2)	0.217	0.274	Data Appear Lognormal
Lilliefors (Lognormal ROS Estimates)	0.217	0.274	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (2_4_119)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	9	0	9	6	3	33.33%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	3	0.0018	0.005	0.00393	0.005	0.00185
Statistics (Non-Detects Only)	6	0.0012	0.055	0.0204	0.0145	0.0198
Statistics (All: NDs treated as DL value)	9	0.0012	0.055	0.0149	0.00611	0.0177
Statistics (All: NDs treated as DL/2 value)	9	9.0000E-4	0.055	0.0142	0.00611	0.0182
Statistics (Normal ROS Imputed Data)	9	-0.0155	0.055	0.0106	0.00611	0.0217
Statistics (Gamma ROS Imputed Data)	9	0.0012	0.055	0.0169	0.01	0.0165
Statistics (Lognormal ROS Imputed Data)	9	7.7292E-4	0.055	0.014	0.00611	0.0183

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	1.034	0.628	0.0197	-4.449	1.349	-0.303
Statistics (NDs = DL)	0.913	0.683	0.0163	-4.846	1.256	-0.259
Statistics (NDs = DL/2)	0.728	0.56	0.0196	-5.077	1.453	-0.286
Statistics (Gamma ROS Estimates)	1.327	0.958	0.0128	-4.501	1.069	-0.237
Statistics (Lognormal ROS Estimates)	--	--	--	-5.191	1.559	-0.3

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.947	0.877	0.878	0.963

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)

Shapiro-Wilk (Detects Only)	0.899	0.788	Data Appear Normal
Shapiro-Wilk (NDs = DL)	0.777	0.829	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.775	0.829	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.933	0.829	Data Appear Normal
Lilliefors (Detects Only)	0.234	0.325	Data Appear Normal
Lilliefors (NDs = DL)	0.246	0.274	Data Appear Normal
Lilliefors (NDs = DL/2)	0.231	0.274	Data Appear Normal
Lilliefors (Normal ROS Estimates)	0.161	0.274	Data Appear Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	0.996	0.994	0.998	0.977

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	0.144	0.715	
Kolmogorov-Smirnov (Detects Only)	0.115	0.341	Detected Data Appear Gamma Distributed
Anderson-Darling (NDs = DL)	0.283	0.746	
Kolmogorov-Smirnov (NDs = DL)	0.2	0.288	Data Appear Gamma Distributed
Anderson-Darling (NDs = DL/2)	0.321	0.753	
Kolmogorov-Smirnov (NDs = DL/2)	0.213	0.29	Data Appear Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	0.394	0.738	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.197	0.285	Data Appear Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.974	0.99	0.984	0.973

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.954	0.788	Data Appear Lognormal
Shapiro-Wilk (NDs = DL)	0.971	0.829	Data Appear Lognormal
Shapiro-Wilk (NDs = DL/2)	0.95	0.829	Data Appear Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.926	0.829	Data Appear Lognormal
Lilliefors (Detects Only)	0.174	0.325	Data Appear Lognormal
Lilliefors (NDs = DL)	0.137	0.274	Data Appear Lognormal
Lilliefors (NDs = DL/2)	0.18	0.274	Data Appear Lognormal
Lilliefors (Lognormal ROS Estimates)	0.189	0.274	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (2_4_121)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	9	0	9	8	1	11.11%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	1	0.25	0.25	0.25	0.25	N/A
Statistics (Non-Detects Only)	8	0.025	170	48.03	24.13	62.31
Statistics (All: NDs treated as DL value)	9	0.025	170	42.73	8.26	60.43
Statistics (All: NDs treated as DL/2 value)	9	0.025	170	42.71	8.26	60.44
Statistics (Normal ROS Imputed Data)	9	-45.42	170	37.65	8.26	66.09
Statistics (Gamma ROS Imputed Data)	9	0.01	170	42.7	8.26	60.45

Statistics (Lognormal ROS Imputed Data)	9	0.025	170	42.7	8.26	60.45

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	0.342	0.297	140.7	1.895	3.119	1.646
Statistics (NDs = DL)	0.309	0.28	138.5	1.53	3.116	2.036
Statistics (NDs = DL/2)	0.3	0.274	142.5	1.453	3.205	2.205
Statistics (Gamma ROS Estimates)	0.272	0.255	157.3	1.173	3.634	3.099
Statistics (Lognormal ROS Estimates)	--	--	--	1.319	3.391	2.572

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.905	0.879	0.88	0.942

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.813	0.818	Data Not Normal
Shapiro-Wilk (NDs = DL)	0.771	0.829	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.771	0.829	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.895	0.829	Data Appear Normal
Lilliefors (Detects Only)	0.238	0.283	Data Appear Normal
Lilliefors (NDs = DL)	0.271	0.274	Data Appear Normal
Lilliefors (NDs = DL/2)	0.271	0.274	Data Appear Normal
Lilliefors (Normal ROS Estimates)	0.227	0.274	Data Appear Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	0.967	0.972	0.971	0.968

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	0.254	0.79	
Kolmogorov-Smirnov (Detects Only)	0.181	0.315	Detected Data Appear Gamma Distributed
Anderson-Darling (NDs = DL)	0.322	0.806	
Kolmogorov-Smirnov (NDs = DL)	0.197	0.301	Data Appear Gamma Distributed
Anderson-Darling (NDs = DL/2)	0.314	0.807	
Kolmogorov-Smirnov (NDs = DL/2)	0.188	0.301	Data Appear Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	0.295	0.819	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.17	0.303	Data Appear Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.959	0.97	0.97	0.961

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.909	0.818	Data Appear Lognormal
Shapiro-Wilk (NDs = DL)	0.924	0.829	Data Appear Lognormal
Shapiro-Wilk (NDs = DL/2)	0.92	0.829	Data Appear Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.898	0.829	Data Appear Lognormal
Lilliefors (Detects Only)	0.217	0.283	Data Appear Lognormal
Lilliefors (NDs = DL)	0.2	0.274	Data Appear Lognormal
Lilliefors (NDs = DL/2)	0.202	0.274	Data Appear Lognormal
Lilliefors (Lognormal ROS Estimates)	0.202	0.274	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (2_4_123)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	9	0	9	7	2	22.22%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	2	5.0000E-4	7.0000E-4	6.0000E-4	6.0000E-4	1.4142E-4
Statistics (Non-Detects Only)	7	2.1000E-4	0.054	0.0196	0.019	0.0201
Statistics (All: NDs treated as DL value)	9	2.1000E-4	0.054	0.0154	0.00416	0.0193
Statistics (All: NDs treated as DL/2 value)	9	2.1000E-4	0.054	0.0153	0.00416	0.0194
Statistics (Normal ROS Imputed Data)	9	-0.0114	0.054	0.0127	0.00416	0.0222
Statistics (Gamma ROS Imputed Data)	9	2.1000E-4	0.054	0.0175	0.01	0.0179
Statistics (Lognormal ROS Imputed Data)	9	2.1000E-4	0.054	0.0153	0.00416	0.0194

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	0.584	0.429	0.0335	-4.993	2.085	-0.417
Statistics (NDs = DL)	0.471	0.388	0.0327	-5.535	2.103	-0.38
Statistics (NDs = DL/2)	0.431	0.361	0.0356	-5.689	2.275	-0.4
Statistics (Gamma ROS Estimates)	0.703	0.542	0.0249	-4.907	1.813	-0.37
Statistics (Lognormal ROS Estimates)	--	--	--	-5.736	2.331	-0.406

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.956	0.906	0.906	0.964

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.902	0.803	Data Appear Normal
Shapiro-Wilk (NDs = DL)	0.813	0.829	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.813	0.829	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.921	0.829	Data Appear Normal
Lilliefors (Detects Only)	0.207	0.304	Data Appear Normal
Lilliefors (NDs = DL)	0.275	0.274	Data Not Normal
Lilliefors (NDs = DL/2)	0.273	0.274	Data Appear Normal
Lilliefors (Normal ROS Estimates)	0.206	0.274	Data Appear Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	0.953	0.967	0.963	0.986

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	0.31	0.746	
Kolmogorov-Smirnov (Detects Only)	0.233	0.326	Detected Data Appear Gamma Distributed
Anderson-Darling (NDs = DL)	0.482	0.776	
Kolmogorov-Smirnov (NDs = DL)	0.239	0.295	Data Appear Gamma Distributed
Anderson-Darling (NDs = DL/2)	0.507	0.783	
Kolmogorov-Smirnov (NDs = DL/2)	0.215	0.297	Data Appear Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	0.201	0.755	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.161	0.29	Data Appear Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.95	0.96	0.949	0.94

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.891	0.803	Data Appear Lognormal
Shapiro-Wilk (NDs = DL)	0.897	0.829	Data Appear Lognormal
Shapiro-Wilk (NDs = DL/2)	0.869	0.829	Data Appear Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.852	0.829	Data Appear Lognormal
Lilliefors (Detects Only)	0.261	0.304	Data Appear Lognormal
Lilliefors (NDs = DL)	0.217	0.274	Data Appear Lognormal
Lilliefors (NDs = DL/2)	0.22	0.274	Data Appear Lognormal
Lilliefors (Lognormal ROS Estimates)	0.221	0.274	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (2_4_129)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	9	0	9	1	8	88.89%

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable VALUES (2_4_129) was not processed!

VALUES (2_4_131)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	9	0	9	8	1	11.11%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	1	0.0025	0.0025	0.0025	0.0025	N/A
Statistics (Non-Detects Only)	8	4.2000E-4	0.17	0.0496	0.0332	0.0595
Statistics (All: NDs treated as DL value)	9	4.2000E-4	0.17	0.0444	0.0114	0.0578
Statistics (All: NDs treated as DL/2 value)	9	4.2000E-4	0.17	0.0442	0.0114	0.0579
Statistics (Normal ROS Imputed Data)	9	-0.0406	0.17	0.0396	0.0114	0.0632
Statistics (Gamma ROS Imputed Data)	9	4.2000E-4	0.17	0.0452	0.0114	0.0572
Statistics (Lognormal ROS Imputed Data)	9	4.2000E-4	0.17	0.0441	0.0114	0.058

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	0.522	0.41	0.095	-4.212	2.1	-0.499
Statistics (NDs = DL)	0.492	0.402	0.0902	-4.41	2.052	-0.465
Statistics (NDs = DL/2)	0.469	0.387	0.0944	-4.487	2.13	-0.475
Statistics (Gamma ROS Estimates)	0.541	0.435	0.0835	-4.256	1.969	-0.463
Statistics (Lognormal ROS Estimates)	--	--	--	-4.601	2.285	-0.497

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.914	0.89	0.891	0.947

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.834	0.818	Data Appear Normal
Shapiro-Wilk (NDs = DL)	0.793	0.829	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.795	0.829	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.908	0.829	Data Appear Normal
Lilliefors (Detects Only)	0.24	0.283	Data Appear Normal
Lilliefors (NDs = DL)	0.271	0.274	Data Appear Normal
Lilliefors (NDs = DL/2)	0.27	0.274	Data Appear Normal
Lilliefors (Normal ROS Estimates)	0.228	0.274	Data Appear Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	0.98	0.984	0.983	0.987

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	0.303	0.761	
Kolmogorov-Smirnov (Detects Only)	0.205	0.309	Detected Data Appear Gamma Distributed
Anderson-Darling (NDs = DL)	0.409	0.772	
Kolmogorov-Smirnov (NDs = DL)	0.226	0.294	Data Appear Gamma Distributed
Anderson-Darling (NDs = DL/2)	0.374	0.776	
Kolmogorov-Smirnov (NDs = DL/2)	0.214	0.295	Data Appear Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	0.282	0.768	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.19	0.293	Data Appear Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.966	0.968	0.973	0.963

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.924	0.818	Data Appear Lognormal
Shapiro-Wilk (NDs = DL)	0.926	0.829	Data Appear Lognormal
Shapiro-Wilk (NDs = DL/2)	0.929	0.829	Data Appear Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.903	0.829	Data Appear Lognormal
Lilliefors (Detects Only)	0.234	0.283	Data Appear Lognormal
Lilliefors (NDs = DL)	0.213	0.274	Data Appear Lognormal
Lilliefors (NDs = DL/2)	0.216	0.274	Data Appear Lognormal
Lilliefors (Lognormal ROS Estimates)	0.216	0.274	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (2_4_135)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	9	0	9	8	1	11.11%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	1	0.94	0.94	0.94	0.94	N/A
Statistics (Non-Detects Only)	8	0.66	27	11.74	8.39	11.06

Statistics (All: NDs treated as DL value)	9	0.66	27	10.54	5.13	10.95
Statistics (All: NDs treated as DL/2 value)	9	0.47	27	10.49	5.13	11.01
Statistics (Normal ROS Imputed Data)	9	-1.488	27	10.27	5.13	11.25
Statistics (Gamma ROS Imputed Data)	9	0.66	27	10.53	5.13	10.97
Statistics (Lognormal ROS Imputed Data)	9	0.66	27	10.54	5.13	10.96

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	0.834	0.605	14.08	1.755	1.499	0.854
Statistics (NDs = DL)	0.747	0.572	14.11	1.554	1.527	0.983
Statistics (NDs = DL/2)	0.693	0.536	15.15	1.477	1.633	1.106
Statistics (Gamma ROS Estimates)	0.737	0.566	14.28	1.54	1.543	1.002
Statistics (Lognormal ROS Estimates)	--	--	--	1.546	1.536	0.994

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.939	0.92	0.922	0.937

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.852	0.818	Data Appear Normal
Shapiro-Wilk (NDs = DL)	0.819	0.829	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.822	0.829	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.853	0.829	Data Appear Normal
Lilliefors (Detects Only)	0.225	0.283	Data Appear Normal
Lilliefors (NDs = DL)	0.245	0.274	Data Appear Normal
Lilliefors (NDs = DL/2)	0.242	0.274	Data Appear Normal
Lilliefors (Normal ROS Estimates)	0.232	0.274	Data Appear Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	0.893	0.906	0.901	0.905

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	0.416	0.742	
Kolmogorov-Smirnov (Detects Only)	0.214	0.303	Detected Data Appear Gamma Distributed
Anderson-Darling (NDs = DL)	0.515	0.752	
Kolmogorov-Smirnov (NDs = DL)	0.196	0.289	Data Appear Gamma Distributed
Anderson-Darling (NDs = DL/2)	0.475	0.756	
Kolmogorov-Smirnov (NDs = DL/2)	0.194	0.29	Data Appear Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	0.532	0.752	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.201	0.29	Data Appear Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.953	0.951	0.955	0.949

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.88	0.818	Data Appear Lognormal
Shapiro-Wilk (NDs = DL)	0.873	0.829	Data Appear Lognormal
Shapiro-Wilk (NDs = DL/2)	0.882	0.829	Data Appear Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.868	0.829	Data Appear Lognormal

Lilliefors (Detects Only)	0.189	0.283	Data Appear Lognormal
Lilliefors (NDs = DL)	0.188	0.274	Data Appear Lognormal
Lilliefors (NDs = DL/2)	0.177	0.274	Data Appear Lognormal
Lilliefors (Lognormal ROS Estimates)	0.196	0.274	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (2_4_137)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	9	0	9	0	9	100.00%

Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable VALUES (2_4_137) was not processed!

VALUES (2_4_139)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	9	0	9	2	7	77.78%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	7	1.0000E-4	0.001	4.8571E-4	1.0000E-4	4.8107E-4
Statistics (Non-Detects Only)	2	4.6000E-5	1.0000E-4	7.3000E-5	7.3000E-5	3.8184E-5
Statistics (All: NDs treated as DL value)	9	4.6000E-5	0.001	3.9400E-4	1.0000E-4	4.5483E-4
Statistics (All: NDs treated as DL/2 value)	9	4.6000E-5	5.0000E-4	2.0511E-4	5.0000E-5	2.2178E-4
Statistics (Normal ROS Imputed Data)	9	2.0346E-5	1.0000E-4	5.3904E-5	5.3131E-5	2.4465E-5
Statistics (Gamma ROS Imputed Data)	9	N/A	N/A	N/A	N/A	N/A
Statistics (Lognormal ROS Imputed Data)	9	3.1808E-5	1.0000E-4	5.4603E-5	5.0968E-5	2.0944E-5

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	N/A	N/A	N/A	N/A	N/A	N/A
Statistics (NDs = DL)	0.853	0.643	4.6186E-4	-8.529	1.242	-0.146
Statistics (NDs = DL/2)	1.002	0.742	2.0480E-4	-9.068	1.124	-0.124
Statistics (Gamma ROS Estimates)	N/A	N/A	N/A	N/A	N/A	N/A
Statistics (Lognormal ROS Estimates)	--	--	--	-9.873	0.352	-0.0356

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	1	0.816	0.824	0.984

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (NDs = DL)	0.643	0.829	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.653	0.829	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.971	0.829	Data Appear Normal
Lilliefors (Detects Only)	N/A	N/A	
Lilliefors (NDs = DL)	0.408	0.274	Data Not Normal
Lilliefors (NDs = DL/2)	0.349	0.274	Data Not Normal

Lilliefors (Normal ROS Estimates)	0.179	0.274	Data Appear Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	N/A	0.84	0.852	0.441

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	N/A	N/A	
Kolmogorov-Smirnov (Detects Only)	N/A	N/A	
Anderson-Darling (NDs = DL)	1.477	0.748	
Kolmogorov-Smirnov (NDs = DL)	0.407	0.288	Data Not Gamma Distributed
Anderson-Darling (NDs = DL/2)	1.425	0.743	
Kolmogorov-Smirnov (NDs = DL/2)	0.34	0.287	Data Not Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	N/A	0.72	
Kolmogorov-Smirnov (Gamma ROS Est.)	N/A	0.279	

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	1	0.867	0.857	N/A

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (NDs = DL)	0.737	0.829	Data Not Lognormal
Shapiro-Wilk (NDs = DL/2)	0.706	0.829	Data Not Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.971	0.829	Data Appear Lognormal
Lilliefors (Detects Only)	N/A	N/A	
Lilliefors (NDs = DL)	0.375	0.274	Data Not Lognormal
Lilliefors (NDs = DL/2)	0.327	0.274	Data Not Lognormal
Lilliefors (Lognormal ROS Estimates)	0.179	0.274	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (2_4_143)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	9	0	9	3	6	66.67%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	6	2.0000E-4	0.001	6.0000E-4	6.0000E-4	4.3818E-4
Statistics (Non-Detects Only)	3	3.0000E-4	7.0000E-4	4.8000E-4	4.4000E-4	2.0298E-4
Statistics (All: NDs treated as DL value)	9	2.0000E-4	0.001	5.6000E-4	4.4000E-4	3.6592E-4
Statistics (All: NDs treated as DL/2 value)	9	1.0000E-4	7.0000E-4	3.6000E-4	4.4000E-4	2.2000E-4
Statistics (Normal ROS Imputed Data)	9	-4.235E-4	7.0000E-4	1.3382E-4	1.3382E-4	3.7027E-4
Statistics (Gamma ROS Imputed Data)	9	3.0000E-4	0.01	0.00683	0.01	0.00476
Statistics (Lognormal ROS Imputed Data)	9	6.7930E-5	7.0000E-4	2.8214E-4	2.1869E-4	2.0837E-4

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	N/A	N/A	N/A	N/A	N/A	N/A
Statistics (NDs = DL)	2.413	1.683	2.3207E-4	-7.709	0.729	-0.0945
Statistics (NDs = DL/2)	2.222	1.556	1.6199E-4	-8.171	0.809	-0.099
Statistics (Gamma ROS Estimates)	0.899	0.673	0.00759	-5.637	1.563	-0.277
Statistics (Lognormal ROS Estimates)	--	--	--	-8.428	0.777	-0.0921

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.985	0.915	0.943	0.988

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.971	0.767	Data Appear Normal
Shapiro-Wilk (NDs = DL)	0.801	0.829	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.872	0.829	Data Appear Normal
Shapiro-Wilk (Normal ROS Estimates)	0.965	0.829	Data Appear Normal
Lilliefors (Detects Only)	0.245	0.425	Data Appear Normal
Lilliefors (NDs = DL)	0.219	0.274	Data Appear Normal
Lilliefors (NDs = DL/2)	0.215	0.274	Data Appear Normal
Lilliefors (Normal ROS Estimates)	0.145	0.274	Data Appear Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	N/A	0.899	0.909	0.59

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	N/A	N/A	
Kolmogorov-Smirnov (Detects Only)	N/A	N/A	
Anderson-Darling (NDs = DL)	0.722	0.729	
Kolmogorov-Smirnov (NDs = DL)	0.219	0.282	Data Appear Gamma Distributed
Anderson-Darling (NDs = DL/2)	0.842	0.729	
Kolmogorov-Smirnov (NDs = DL/2)	0.258	0.282	Detected Data appear Approximate Gamma Distr
Anderson-Darling (Gamma ROS Estimates)	1.742	0.747	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.435	0.288	Data Not Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.998	0.927	0.903	0.986

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.997	0.767	Data Appear Lognormal
Shapiro-Wilk (NDs = DL)	0.822	0.829	Data Not Lognormal
Shapiro-Wilk (NDs = DL/2)	0.79	0.829	Data Not Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.962	0.829	Data Appear Lognormal
Lilliefors (Detects Only)	0.192	0.425	Data Appear Lognormal
Lilliefors (NDs = DL)	0.2	0.274	Data Appear Lognormal
Lilliefors (NDs = DL/2)	0.263	0.274	Data Appear Lognormal
Lilliefors (Lognormal ROS Estimates)	0.145	0.274	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (2_4_145)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	9	0	9	7	2	22.22%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	2	0.002	0.0025	0.00225	0.00225	3.5355E-4
Statistics (Non-Detects Only)	7	5.6000E-4	0.18	0.0712	0.078	0.068
Statistics (All: NDs treated as DL value)	9	5.6000E-4	0.18	0.0558	0.0204	0.0663
Statistics (All: NDs treated as DL/2 value)	9	5.6000E-4	0.18	0.0556	0.0204	0.0665
Statistics (Normal ROS Imputed Data)	9	-0.0351	0.18	0.0475	0.0204	0.0753
Statistics (Gamma ROS Imputed Data)	9	5.6000E-4	0.18	0.0576	0.0204	0.0648
Statistics (Lognormal ROS Imputed Data)	9	5.6000E-4	0.18	0.0555	0.0204	0.0666

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	0.585	0.43	0.122	-3.702	2.17	-0.586
Statistics (NDs = DL)	0.474	0.39	0.118	-4.236	2.158	-0.509
Statistics (NDs = DL/2)	0.433	0.363	0.128	-4.39	2.323	-0.529
Statistics (Gamma ROS Estimates)	0.591	0.468	0.0974	-3.903	1.921	-0.492
Statistics (Lognormal ROS Estimates)	--	--	--	-4.467	2.416	-0.541

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.966	0.918	0.918	0.966

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.916	0.803	Data Appear Normal
Shapiro-Wilk (NDs = DL)	0.83	0.829	Data Appear Normal
Shapiro-Wilk (NDs = DL/2)	0.829	0.829	Data Appear Normal
Shapiro-Wilk (Normal ROS Estimates)	0.92	0.829	Data Appear Normal
Lilliefors (Detects Only)	0.201	0.304	Data Appear Normal
Lilliefors (NDs = DL)	0.259	0.274	Data Appear Normal
Lilliefors (NDs = DL/2)	0.257	0.274	Data Appear Normal
Lilliefors (Normal ROS Estimates)	0.196	0.274	Data Appear Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	0.926	0.946	0.94	0.959

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	0.384	0.746	
Kolmogorov-Smirnov (Detects Only)	0.266	0.326	Detected Data Appear Gamma Distributed
Anderson-Darling (NDs = DL)	0.507	0.775	
Kolmogorov-Smirnov (NDs = DL)	0.245	0.295	Data Appear Gamma Distributed
Anderson-Darling (NDs = DL/2)	0.534	0.783	
Kolmogorov-Smirnov (NDs = DL/2)	0.221	0.297	Data Appear Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	0.297	0.764	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.195	0.292	Data Appear Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.932	0.955	0.947	0.937

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.861	0.803	Data Appear Lognormal

Shapiro-Wilk (NDs = DL)	0.89	0.829	Data Appear Lognormal
Shapiro-Wilk (NDs = DL/2)	0.867	0.829	Data Appear Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.846	0.829	Data Appear Lognormal
Lilliefors (Detects Only)	0.274	0.304	Data Appear Lognormal
Lilliefors (NDs = DL)	0.227	0.274	Data Appear Lognormal
Lilliefors (NDs = DL/2)	0.23	0.274	Data Appear Lognormal
Lilliefors (Lognormal ROS Estimates)	0.231	0.274	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

VALUES (2_4_147)

	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs
Raw Statistics	9	0	9	4	5	55.56%

	Number	Minimum	Maximum	Mean	Median	SD
Statistics (Non-Detects Only)	5	0.008	0.05	0.0332	0.05	0.023
Statistics (Non-Detects Only)	4	0.091	0.53	0.228	0.145	0.203
Statistics (All: NDs treated as DL value)	9	0.008	0.53	0.12	0.05	0.162
Statistics (All: NDs treated as DL/2 value)	9	0.004	0.53	0.11	0.025	0.167
Statistics (Normal ROS Imputed Data)	9	-0.598	0.53	-0.119	-0.218	0.37
Statistics (Gamma ROS Imputed Data)	9	0.01	0.53	0.107	0.01	0.169
Statistics (Lognormal ROS Imputed Data)	9	0.0069	0.53	0.111	0.0308	0.167

	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV
Statistics (Non-Detects Only)	2.199	0.716	0.104	-1.724	0.759	-0.44
Statistics (NDs = DL)	0.827	0.625	0.145	-2.838	1.355	-0.478
Statistics (NDs = DL/2)	0.605	0.478	0.182	-3.223	1.656	-0.514
Statistics (Gamma ROS Estimates)	0.572	0.456	0.187	-3.325	1.588	-0.478
Statistics (Lognormal ROS Estimates)	--	--	--	-3.091	1.448	-0.469

Normal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Normal ROS
Correlation Coefficient R	0.854	0.804	0.804	0.977

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.743	0.748	Data Not Normal
Shapiro-Wilk (NDs = DL)	0.67	0.829	Data Not Normal
Shapiro-Wilk (NDs = DL/2)	0.667	0.829	Data Not Normal
Shapiro-Wilk (Normal ROS Estimates)	0.947	0.829	Data Appear Normal
Lilliefors (Detects Only)	0.399	0.375	Data Not Normal
Lilliefors (NDs = DL)	0.315	0.274	Data Not Normal
Lilliefors (NDs = DL/2)	0.295	0.274	Data Not Normal
Lilliefors (Normal ROS Estimates)	0.161	0.274	Data Appear Normal

Gamma GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Gamma ROS
Correlation Coefficient R	0.964	0.957	0.972	0.973

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Anderson-Darling (Detects Only)	0.549	0.66	

Kolmogorov-Smirnov (Detects Only)	0.385	0.398	Detected Data Appear Gamma Distributed
Anderson-Darling (NDs = DL)	0.403	0.749	
Kolmogorov-Smirnov (NDs = DL)	0.175	0.289	Data Appear Gamma Distributed
Anderson-Darling (NDs = DL/2)	0.396	0.763	
Kolmogorov-Smirnov (NDs = DL/2)	0.236	0.292	Data Appear Gamma Distributed
Anderson-Darling (Gamma ROS Estimates)	0.975	0.765	
Kolmogorov-Smirnov (Gamma ROS Est.)	0.349	0.293	Data Not Gamma Distributed

Lognormal GOF Test Results

	No NDs	NDs = DL	NDs = DL/2	Log ROS
Correlation Coefficient R	0.922	0.961	0.969	0.982

	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)
Shapiro-Wilk (Detects Only)	0.865	0.748	Data Appear Lognormal
Shapiro-Wilk (NDs = DL)	0.922	0.829	Data Appear Lognormal
Shapiro-Wilk (NDs = DL/2)	0.93	0.829	Data Appear Lognormal
Shapiro-Wilk (Lognormal ROS Estimates)	0.953	0.829	Data Appear Lognormal
Lilliefors (Detects Only)	0.34	0.375	Data Appear Lognormal
Lilliefors (NDs = DL)	0.231	0.274	Data Appear Lognormal
Lilliefors (NDs = DL/2)	0.167	0.274	Data Appear Lognormal
Lilliefors (Lognormal ROS Estimates)	0.161	0.274	Data Appear Lognormal

Note: Substitution methods such as DL or DL/2 are not recommended.

Goodness-of-Fit Test Statistics for Uncensored Full Data Sets without Non-Detects

User Selected Options

Date/Time of Computation	ProUCL 5.110/15/2019 10:39:56 AM
From File	FWDA_DATA_UNCENSORED_BG.xls
Full Precision	OFF
Confidence Coefficient	0.95

VALUES (1_1_108)

Raw Statistics

Number of Valid Observations	15
Number of Distinct Observations	8
Minimum	0.014
Maximum	0.026
Mean of Raw Data	0.0175
Standard Deviation of Raw Data	0.00316
Khat	37.24
Theta hat	4.6890E-4
Kstar	29.83
Theta star	5.8525E-4
Mean of Log Transformed Data	-4.061
Standard Deviation of Log Transformed Data	0.165

Normal GOF Test Results

Correlation Coefficient R	0.908
Shapiro Wilk Test Statistic	0.835
Shapiro Wilk Critical (0.05) Value	0.881
Approximate Shapiro Wilk P Value	0.00923
Lilliefors Test Statistic	0.225
Lilliefors Critical (0.05) Value	0.22

Data not Normal at (0.05) Significance Level

Gamma GOF Test Results

Correlation Coefficient R	0.934
A-D Test Statistic	0.782
A-D Critical (0.05) Value	0.735
K-S Test Statistic	0.214
K-S Critical(0.05) Value	0.221

Data follow Appr. Gamma Distribution at (0.05) Significance Level

Lognormal GOF Test Results

Correlation Coefficient R	0.938
Shapiro Wilk Test Statistic	0.886
Shapiro Wilk Critical (0.05) Value	0.881
Approximate Shapiro Wilk P Value	0.0558
Lilliefors Test Statistic	0.206
Lilliefors Critical (0.05) Value	0.22

Data appear Lognormal at (0.05) Significance Level

VALUES (1_1_114)

Raw Statistics

Number of Valid Observations	15
Number of Distinct Observations	12
Minimum	37
Maximum	58.6
Mean of Raw Data	45.64
Standard Deviation of Raw Data	7.075
Khat	46.66
Theta hat	0.978
Kstar	37.37
Theta star	1.221
Mean of Log Transformed Data	3.81
Standard Deviation of Log Transformed Data	0.15

Normal GOF Test Results

Correlation Coefficient R	0.964
Shapiro Wilk Test Statistic	0.912
Shapiro Wilk Critical (0.05) Value	0.881
Approximate Shapiro Wilk P Value	0.189
Lilliefors Test Statistic	0.163
Lilliefors Critical (0.05) Value	0.22

Data appear Normal at (0.05) Significance Level

Gamma GOF Test Results

Correlation Coefficient R	0.972
A-D Test Statistic	0.427
A-D Critical (0.05) Value	0.734
K-S Test Statistic	0.162
K-S Critical(0.05) Value	0.221

Data appear Gamma Distributed at (0.05) Significance Level

Lognormal GOF Test Results

Correlation Coefficient R	0.974
Shapiro Wilk Test Statistic	0.932
Shapiro Wilk Critical (0.05) Value	0.881
Approximate Shapiro Wilk P Value	0.365
Lilliefors Test Statistic	0.152
Lilliefors Critical (0.05) Value	0.22

Data appear Lognormal at (0.05) Significance Level

VALUES (1_1_126)

Raw Statistics

Number of Valid Observations	15
Number of Distinct Observations	8
Minimum	21
Maximum	32.2
Mean of Raw Data	25.08

Standard Deviation of Raw Data	2.8
Khat	92.02
Theta hat	0.273
Kstar	73.66
Theta star	0.34
Mean of Log Transformed Data	3.217
Standard Deviation of Log Transformed Data	0.106

Normal GOF Test Results

Correlation Coefficient R	0.931
Shapiro Wilk Test Statistic	0.88
Shapiro Wilk Critical (0.05) Value	0.881
Approximate Shapiro Wilk P Value	0.0403
Lilliefors Test Statistic	0.245
Lilliefors Critical (0.05) Value	0.22

Data not Normal at (0.05) Significance Level

Gamma GOF Test Results

Correlation Coefficient R	0.945
A-D Test Statistic	0.71
A-D Critical (0.05) Value	0.734
K-S Test Statistic	0.232
K-S Critical(0.05) Value	0.221

Data follow Appr. Gamma Distribution at (0.05) Significance Level

Lognormal GOF Test Results

Correlation Coefficient R	0.947
Shapiro Wilk Test Statistic	0.911
Shapiro Wilk Critical (0.05) Value	0.881
Approximate Shapiro Wilk P Value	0.119
Lilliefors Test Statistic	0.225
Lilliefors Critical (0.05) Value	0.22

Data appear Approximate_Lognormal at (0.05) Significance Level

VALUES (1_1_128)

Raw Statistics

Number of Valid Observations	15
Number of Distinct Observations	9
Minimum	0.15
Maximum	0.33
Mean of Raw Data	0.195
Standard Deviation of Raw Data	0.0449
Khat	24.58
Theta hat	0.00791
Kstar	19.71
Theta star	0.00987
Mean of Log Transformed Data	-1.658
Standard Deviation of Log Transformed Data	0.2

Normal GOF Test Results

Correlation Coefficient R	0.872
Shapiro Wilk Test Statistic	0.78
Shapiro Wilk Critical (0.05) Value	0.881
Approximate Shapiro Wilk P Value	0.00137
Lilliefors Test Statistic	0.207
Lilliefors Critical (0.05) Value	0.22

Data appear Approximate Normal at (0.05) Significance Level

Gamma GOF Test Results

Correlation Coefficient R	0.908
A-D Test Statistic	0.801
A-D Critical (0.05) Value	0.735
K-S Test Statistic	0.188
K-S Critical(0.05) Value	0.221

Data follow Appr. Gamma Distribution at (0.05) Significance Level

Lognormal GOF Test Results

Correlation Coefficient R	0.924
Shapiro Wilk Test Statistic	0.865
Shapiro Wilk Critical (0.05) Value	0.881
Approximate Shapiro Wilk P Value	0.025
Lilliefors Test Statistic	0.183
Lilliefors Critical (0.05) Value	0.22

Data appear Approximate_Lognormal at (0.05) Significance Level

VALUES (1_1_142)

Raw Statistics

Number of Valid Observations	15
Number of Distinct Observations	11
Minimum	520
Maximum	920
Mean of Raw Data	810.9
Standard Deviation of Raw Data	95.95
Khat	63.81
Theta hat	12.71
Kstar	51.09
Theta star	15.87
Mean of Log Transformed Data	6.69
Standard Deviation of Log Transformed Data	0.136

Normal GOF Test Results

Correlation Coefficient R	0.886
Shapiro Wilk Test Statistic	0.807
Shapiro Wilk Critical (0.05) Value	0.881
Approximate Shapiro Wilk P Value	0.00317
Lilliefors Test Statistic	0.214
Lilliefors Critical (0.05) Value	0.22

Data appear Approximate Normal at (0.05) Significance Level

Gamma GOF Test Results

Correlation Coefficient R	0.87
A-D Test Statistic	1.103
A-D Critical (0.05) Value	0.734
K-S Test Statistic	0.234
K-S Critical(0.05) Value	0.221

Data not Gamma Distributed at (0.05) Significance Level

Lognormal GOF Test Results

Correlation Coefficient R	0.839
Shapiro Wilk Test Statistic	0.73
Shapiro Wilk Critical (0.05) Value	0.881
Approximate Shapiro Wilk P Value	2.8834E-4
Lilliefors Test Statistic	0.247
Lilliefors Critical (0.05) Value	0.22

Data not Lognormal at (0.05) Significance Level

VALUES (1_4_107)

Raw Statistics

Number of Valid Observations	15
Number of Distinct Observations	8
Minimum	0.014
Maximum	0.045
Mean of Raw Data	0.0209
Standard Deviation of Raw Data	0.00888
Khat	8.183
Theta hat	0.00255
Kstar	6.591
Theta star	0.00317
Mean of Log Transformed Data	-3.931
Standard Deviation of Log Transformed Data	0.339

Normal GOF Test Results

Correlation Coefficient R	0.819
Shapiro Wilk Test Statistic	0.682
Shapiro Wilk Critical (0.05) Value	0.881
Approximate Shapiro Wilk P Value	8.4619E-5
Lilliefors Test Statistic	0.344
Lilliefors Critical (0.05) Value	0.22

Data not Normal at (0.05) Significance Level

Gamma GOF Test Results

Correlation Coefficient R	0.889
A-D Test Statistic	1.785
A-D Critical (0.05) Value	0.738
K-S Test Statistic	0.327

K-S Critical(0.05) Value	0.222

Data not Gamma Distributed at (0.05) Significance Level

Lognormal GOF Test Results

Correlation Coefficient R	0.87
Shapiro Wilk Test Statistic	0.762
Shapiro Wilk Critical (0.05) Value	0.881
Approximate Shapiro Wilk P Value	9.2610E-4
Lilliefors Test Statistic	0.309
Lilliefors Critical (0.05) Value	0.22

Data not Lognormal at (0.05) Significance Level

Non-parametric GOF Test Results

Data do not follow a discernible distribution at (0.05) Level of Significance

VALUES (1_4_113)

Raw Statistics

Number of Valid Observations	15
Number of Distinct Observations	14
Minimum	35
Maximum	60
Mean of Raw Data	46.13
Standard Deviation of Raw Data	8.202
Khat	34.77
Theta hat	1.327
Kstar	27.86
Theta star	1.656
Mean of Log Transformed Data	3.817
Standard Deviation of Log Transformed Data	0.175

Normal GOF Test Results

Correlation Coefficient R	0.975
Shapiro Wilk Test Statistic	0.934
Shapiro Wilk Critical (0.05) Value	0.881
Approximate Shapiro Wilk P Value	0.388
Lilliefors Test Statistic	0.126
Lilliefors Critical (0.05) Value	0.22

Data appear Normal at (0.05) Significance Level

Gamma GOF Test Results

Correlation Coefficient R	0.979
A-D Test Statistic	0.29
A-D Critical (0.05) Value	0.735
K-S Test Statistic	0.128
K-S Critical(0.05) Value	0.221

Data appear Gamma Distributed at (0.05) Significance Level

Lognormal GOF Test Results

Correlation Coefficient R	0.984
Shapiro Wilk Test Statistic	0.951
Shapiro Wilk Critical (0.05) Value	0.881
Approximate Shapiro Wilk P Value	0.641
Lilliefors Test Statistic	0.118
Lilliefors Critical (0.05) Value	0.22

Data appear Lognormal at (0.05) Significance Level

VALUES (1_4_125)

Raw Statistics

Number of Valid Observations	15
Number of Distinct Observations	10
Minimum	21
Maximum	32
Mean of Raw Data	25.6
Standard Deviation of Raw Data	3.269
Khat	67.5
Theta hat	0.379
Kstar	54.05
Theta star	0.474
Mean of Log Transformed Data	3.235
Standard Deviation of Log Transformed Data	0.125

Normal GOF Test Results

Correlation Coefficient R	0.977
Shapiro Wilk Test Statistic	0.946
Shapiro Wilk Critical (0.05) Value	0.881
Approximate Shapiro Wilk P Value	0.511
Lilliefors Test Statistic	0.134
Lilliefors Critical (0.05) Value	0.22

Data appear Normal at (0.05) Significance Level

Gamma GOF Test Results

Correlation Coefficient R	0.983
A-D Test Statistic	0.287
A-D Critical (0.05) Value	0.734
K-S Test Statistic	0.128
K-S Critical(0.05) Value	0.221

Data appear Gamma Distributed at (0.05) Significance Level

Lognormal GOF Test Results

Correlation Coefficient R	0.984
Shapiro Wilk Test Statistic	0.959
Shapiro Wilk Critical (0.05) Value	0.881
Approximate Shapiro Wilk P Value	0.724
Lilliefors Test Statistic	0.12
Lilliefors Critical (0.05) Value	0.22

Data appear Lognormal at (0.05) Significance Level

VALUES (1_4_127)

Raw Statistics

Number of Valid Observations	15
Number of Distinct Observations	9
Minimum	0.16
Maximum	0.53
Mean of Raw Data	0.226
Standard Deviation of Raw Data	0.0984
Khat	7.996
Theta hat	0.0282
Kstar	6.441
Theta star	0.035
Mean of Log Transformed Data	-1.553
Standard Deviation of Log Transformed Data	0.343

Normal GOF Test Results

Correlation Coefficient R	0.825
Shapiro Wilk Test Statistic	0.697
Shapiro Wilk Critical (0.05) Value	0.881
Approximate Shapiro Wilk P Value	1.2311E-4
Lilliefors Test Statistic	0.27
Lilliefors Critical (0.05) Value	0.22

Data not Normal at (0.05) Significance Level

Gamma GOF Test Results

Correlation Coefficient R	0.896
A-D Test Statistic	1.193
A-D Critical (0.05) Value	0.738
K-S Test Statistic	0.252
K-S Critical(0.05) Value	0.222

Data not Gamma Distributed at (0.05) Significance Level

Lognormal GOF Test Results

Correlation Coefficient R	0.897
Shapiro Wilk Test Statistic	0.808
Shapiro Wilk Critical (0.05) Value	0.881
Approximate Shapiro Wilk P Value	0.00411
Lilliefors Test Statistic	0.233
Lilliefors Critical (0.05) Value	0.22

Data not Lognormal at (0.05) Significance Level

Non-parametric GOF Test Results

Data do not follow a discernible distribution at (0.05) Level of Significance

VALUES (1_4_141)

Raw Statistics

Number of Valid Observations	15
Number of Distinct Observations	11
Minimum	630
Maximum	894
Mean of Raw Data	794.3
Standard Deviation of Raw Data	70.17
Khat	129.4
Theta hat	6.137
Kstar	103.6
Theta star	7.668
Mean of Log Transformed Data	6.674
Standard Deviation of Log Transformed Data	0.0925

Normal GOF Test Results

Correlation Coefficient R	0.963
Shapiro Wilk Test Statistic	0.932
Shapiro Wilk Critical (0.05) Value	0.881
Approximate Shapiro Wilk P Value	0.278
Lilliefors Test Statistic	0.189
Lilliefors Critical (0.05) Value	0.22

Data appear Normal at (0.05) Significance Level

Gamma GOF Test Results

Correlation Coefficient R	0.954
A-D Test Statistic	0.524
A-D Critical (0.05) Value	0.734
K-S Test Statistic	0.2
K-S Critical(0.05) Value	0.221

Data appear Gamma Distributed at (0.05) Significance Level

Lognormal GOF Test Results

Correlation Coefficient R	0.95
Shapiro Wilk Test Statistic	0.909
Shapiro Wilk Critical (0.05) Value	0.881
Approximate Shapiro Wilk P Value	0.124
Lilliefors Test Statistic	0.2
Lilliefors Critical (0.05) Value	0.22

Data appear Lognormal at (0.05) Significance Level

VALUES (2_1_108)

Raw Statistics

Number of Valid Observations	9
Number of Distinct Observations	9
Minimum	0.00678
Maximum	0.67
Mean of Raw Data	0.096
Standard Deviation of Raw Data	0.217
Khat	0.484
Theta hat	0.198

Kstar	0.397
Theta star	0.242
Mean of Log Transformed Data	-3.662
Standard Deviation of Log Transformed Data	1.457

Normal GOF Test Results

Correlation Coefficient R	0.664
Shapiro Wilk Test Statistic	0.471
Shapiro Wilk Critical (0.05) Value	0.829
Approximate Shapiro Wilk P Value	4.4866E-6
Lilliefors Test Statistic	0.415
Lilliefors Critical (0.05) Value	0.274

Data not Normal at (0.05) Significance Level

Gamma GOF Test Results

Correlation Coefficient R	0.921
A-D Test Statistic	1.246
A-D Critical (0.05) Value	0.774
K-S Test Statistic	0.34
K-S Critical(0.05) Value	0.295

Data not Gamma Distributed at (0.05) Significance Level

Lognormal GOF Test Results

Correlation Coefficient R	0.915
Shapiro Wilk Test Statistic	0.845
Shapiro Wilk Critical (0.05) Value	0.829
Approximate Shapiro Wilk P Value	0.0565
Lilliefors Test Statistic	0.226
Lilliefors Critical (0.05) Value	0.274

Data appear Lognormal at (0.05) Significance Level

VALUES (2_1_114)

Raw Statistics

Number of Valid Observations	9
Number of Distinct Observations	9
Minimum	7.8
Maximum	292
Mean of Raw Data	88.28
Standard Deviation of Raw Data	104.6
Khat	0.763
Theta hat	115.7
Kstar	0.583
Theta star	151.5
Mean of Log Transformed Data	3.698
Standard Deviation of Log Transformed Data	1.432

Normal GOF Test Results

Correlation Coefficient R	0.893

Shapiro Wilk Test Statistic	0.788
Shapiro Wilk Critical (0.05) Value	0.829
Approximate Shapiro Wilk P Value	0.0187
Lilliefors Test Statistic	0.262
Lilliefors Critical (0.05) Value	0.274

Data appear Approximate Normal at (0.05) Significance Level

Gamma GOF Test Results

Correlation Coefficient R	0.974
A-D Test Statistic	0.447
A-D Critical (0.05) Value	0.751
K-S Test Statistic	0.197
K-S Critical(0.05) Value	0.289

Data appear Gamma Distributed at (0.05) Significance Level

Lognormal GOF Test Results

Correlation Coefficient R	0.958
Shapiro Wilk Test Statistic	0.89
Shapiro Wilk Critical (0.05) Value	0.829
Approximate Shapiro Wilk P Value	0.333
Lilliefors Test Statistic	0.201
Lilliefors Critical (0.05) Value	0.274

Data appear Lognormal at (0.05) Significance Level

VALUES (2_1_126)

Raw Statistics

Number of Valid Observations	9
Number of Distinct Observations	9
Minimum	0.876
Maximum	39
Mean of Raw Data	14.31
Standard Deviation of Raw Data	15.97
Khat	0.673
Theta hat	21.25
Kstar	0.523
Theta star	27.36
Mean of Log Transformed Data	1.758
Standard Deviation of Log Transformed Data	1.611

Normal GOF Test Results

Correlation Coefficient R	0.905
Shapiro Wilk Test Statistic	0.794
Shapiro Wilk Critical (0.05) Value	0.829
Approximate Shapiro Wilk P Value	0.0304
Lilliefors Test Statistic	0.279
Lilliefors Critical (0.05) Value	0.274

Data not Normal at (0.05) Significance Level

Gamma GOF Test Results

Correlation Coefficient R	0.91
A-D Test Statistic	0.555
A-D Critical (0.05) Value	0.757
K-S Test Statistic	0.197
K-S Critical(0.05) Value	0.291

Data appear Gamma Distributed at (0.05) Significance Level

Lognormal GOF Test Results

Correlation Coefficient R	0.946
Shapiro Wilk Test Statistic	0.86
Shapiro Wilk Critical (0.05) Value	0.829
Approximate Shapiro Wilk P Value	0.189
Lilliefors Test Statistic	0.2
Lilliefors Critical (0.05) Value	0.274

Data appear Lognormal at (0.05) Significance Level

VALUES (2_1_136)

Raw Statistics

Number of Valid Observations	9
Number of Distinct Observations	9
Minimum	0.645
Maximum	16
Mean of Raw Data	4.802
Standard Deviation of Raw Data	5.308
Khat	1.034
Theta hat	4.643
Kstar	0.764
Theta star	6.288
Mean of Log Transformed Data	1.013
Standard Deviation of Log Transformed Data	1.143

Normal GOF Test Results

Correlation Coefficient R	0.888
Shapiro Wilk Test Statistic	0.789
Shapiro Wilk Critical (0.05) Value	0.829
Approximate Shapiro Wilk P Value	0.0161
Lilliefors Test Statistic	0.286
Lilliefors Critical (0.05) Value	0.274

Data not Normal at (0.05) Significance Level

Gamma GOF Test Results

Correlation Coefficient R	0.986
A-D Test Statistic	0.407
A-D Critical (0.05) Value	0.743
K-S Test Statistic	0.21
K-S Critical(0.05) Value	0.287

Data appear Gamma Distributed at (0.05) Significance Level

Lognormal GOF Test Results

Correlation Coefficient R	0.975
Shapiro Wilk Test Statistic	0.932
Shapiro Wilk Critical (0.05) Value	0.829
Approximate Shapiro Wilk P Value	0.649
Lilliefors Test Statistic	0.182
Lilliefors Critical (0.05) Value	0.274

Data appear Lognormal at (0.05) Significance Level

VALUES (2_1_142)

Raw Statistics

Number of Valid Observations	9
Number of Distinct Observations	8
Minimum	618
Maximum	3530
Mean of Raw Data	1523
Standard Deviation of Raw Data	1021
Khat	2.829
Theta hat	538.3
Kstar	1.96
Theta star	777
Mean of Log Transformed Data	7.142
Standard Deviation of Log Transformed Data	0.641

Normal GOF Test Results

Correlation Coefficient R	0.923
Shapiro Wilk Test Statistic	0.844
Shapiro Wilk Critical (0.05) Value	0.829
Approximate Shapiro Wilk P Value	0.0753
Lilliefors Test Statistic	0.291
Lilliefors Critical (0.05) Value	0.274

Data appear Approximate Normal at (0.05) Significance Level

Gamma GOF Test Results

Correlation Coefficient R	0.979
A-D Test Statistic	0.477
A-D Critical (0.05) Value	0.727
K-S Test Statistic	0.239
K-S Critical(0.05) Value	0.282

Data appear Gamma Distributed at (0.05) Significance Level

Lognormal GOF Test Results

Correlation Coefficient R	0.959
Shapiro Wilk Test Statistic	0.901
Shapiro Wilk Critical (0.05) Value	0.829
Approximate Shapiro Wilk P Value	0.365
Lilliefors Test Statistic	0.199
Lilliefors Critical (0.05) Value	0.274

Data appear Lognormal at (0.05) Significance Level

VALUES (2_4_107)

Raw Statistics

Number of Valid Observations	9
Number of Distinct Observations	9
Minimum	0.00758
Maximum	2.3
Mean of Raw Data	0.659
Standard Deviation of Raw Data	0.86
Khat	0.409
Theta hat	1.61
Kstar	0.347
Theta star	1.899
Mean of Log Transformed Data	-2.02
Standard Deviation of Log Transformed Data	2.34

Normal GOF Test Results

Correlation Coefficient R	0.896
Shapiro Wilk Test Statistic	0.792
Shapiro Wilk Critical (0.05) Value	0.829
Approximate Shapiro Wilk P Value	0.0219
Lilliefors Test Statistic	0.276
Lilliefors Critical (0.05) Value	0.274

Data not Normal at (0.05) Significance Level

Gamma GOF Test Results

Correlation Coefficient R	0.948
A-D Test Statistic	0.472
A-D Critical (0.05) Value	0.787
K-S Test Statistic	0.209
K-S Critical(0.05) Value	0.297

Data appear Gamma Distributed at (0.05) Significance Level

Lognormal GOF Test Results

Correlation Coefficient R	0.956
Shapiro Wilk Test Statistic	0.881
Shapiro Wilk Critical (0.05) Value	0.829
Approximate Shapiro Wilk P Value	0.297
Lilliefors Test Statistic	0.169
Lilliefors Critical (0.05) Value	0.274

Data appear Lognormal at (0.05) Significance Level

VALUES (2_4_113)

Raw Statistics

Number of Valid Observations	9
Number of Distinct Observations	9
Minimum	7.7

Maximum	350
Mean of Raw Data	139
Standard Deviation of Raw Data	142.9
Khat	0.693
Theta hat	200.7
Kstar	0.536
Theta star	259.4
Mean of Log Transformed Data	4.061
Standard Deviation of Log Transformed Data	1.648

Normal GOF Test Results

Correlation Coefficient R	0.921
Shapiro Wilk Test Statistic	0.82
Shapiro Wilk Critical (0.05) Value	0.829
Approximate Shapiro Wilk P Value	0.0632
Lilliefors Test Statistic	0.247
Lilliefors Critical (0.05) Value	0.274

Data appear Approximate Normal at (0.05) Significance Level

Gamma GOF Test Results

Correlation Coefficient R	0.89
A-D Test Statistic	0.577
A-D Critical (0.05) Value	0.756
K-S Test Statistic	0.212
K-S Critical(0.05) Value	0.29

Data appear Gamma Distributed at (0.05) Significance Level

Lognormal GOF Test Results

Correlation Coefficient R	0.935
Shapiro Wilk Test Statistic	0.839
Shapiro Wilk Critical (0.05) Value	0.829
Approximate Shapiro Wilk P Value	0.114
Lilliefors Test Statistic	0.212
Lilliefors Critical (0.05) Value	0.274

Data appear Lognormal at (0.05) Significance Level

VALUES (2_4_125)

Raw Statistics

Number of Valid Observations	9
Number of Distinct Observations	9
Minimum	0.87
Maximum	72
Mean of Raw Data	29.65
Standard Deviation of Raw Data	29.07
Khat	0.604
Theta hat	49.1
Kstar	0.477
Theta star	62.2
Mean of Log Transformed Data	2.367

Standard Deviation of Log Transformed Data	1.921

Normal GOF Test Results

Correlation Coefficient R	0.945
Shapiro Wilk Test Statistic	0.864
Shapiro Wilk Critical (0.05) Value	0.829
Approximate Shapiro Wilk P Value	0.188
Lilliefors Test Statistic	0.218
Lilliefors Critical (0.05) Value	0.274

Data appear Normal at (0.05) Significance Level

Gamma GOF Test Results

Correlation Coefficient R	0.887
A-D Test Statistic	0.62
A-D Critical (0.05) Value	0.763
K-S Test Statistic	0.221
K-S Critical(0.05) Value	0.292

Data appear Gamma Distributed at (0.05) Significance Level

Lognormal GOF Test Results

Correlation Coefficient R	0.92
Shapiro Wilk Test Statistic	0.813
Shapiro Wilk Critical (0.05) Value	0.829
Approximate Shapiro Wilk P Value	0.0574
Lilliefors Test Statistic	0.248
Lilliefors Critical (0.05) Value	0.274

Data appear Approximate_Lognormal at (0.05) Significance Level

VALUES (2_4_127)

Raw Statistics

Number of Valid Observations	9
Number of Distinct Observations	9
Minimum	0.023
Maximum	3.8
Mean of Raw Data	1.351
Standard Deviation of Raw Data	1.579
Khat	0.482
Theta hat	2.805
Kstar	0.395
Theta star	3.419
Mean of Log Transformed Data	-1.025
Standard Deviation of Log Transformed Data	2.191

Normal GOF Test Results

Correlation Coefficient R	0.901
Shapiro Wilk Test Statistic	0.788
Shapiro Wilk Critical (0.05) Value	0.829
Approximate Shapiro Wilk P Value	0.0255

Lilliefors Test Statistic	0.283
Lilliefors Critical (0.05) Value	0.274

Data not Normal at (0.05) Significance Level

Gamma GOF Test Results

Correlation Coefficient R	0.887
A-D Test Statistic	0.527
A-D Critical (0.05) Value	0.774
K-S Test Statistic	0.215
K-S Critical(0.05) Value	0.295

Data appear Gamma Distributed at (0.05) Significance Level

Lognormal GOF Test Results

Correlation Coefficient R	0.933
Shapiro Wilk Test Statistic	0.837
Shapiro Wilk Critical (0.05) Value	0.829
Approximate Shapiro Wilk P Value	0.105
Lilliefors Test Statistic	0.218
Lilliefors Critical (0.05) Value	0.274

Data appear Lognormal at (0.05) Significance Level

VALUES (2_4_141)

Raw Statistics

Number of Valid Observations	9
Number of Distinct Observations	8
Minimum	623
Maximum	3610
Mean of Raw Data	1647
Standard Deviation of Raw Data	1170
Khat	2.417
Theta hat	681.3
Kstar	1.686
Theta star	977.1
Mean of Log Transformed Data	7.186
Standard Deviation of Log Transformed Data	0.7

Normal GOF Test Results

Correlation Coefficient R	0.915
Shapiro Wilk Test Statistic	0.818
Shapiro Wilk Critical (0.05) Value	0.829
Approximate Shapiro Wilk P Value	0.0493
Lilliefors Test Statistic	0.296
Lilliefors Critical (0.05) Value	0.274

Data not Normal at (0.05) Significance Level

Gamma GOF Test Results

Correlation Coefficient R	0.956
A-D Test Statistic	0.615

A-D Critical (0.05) Value	0.729
K-S Test Statistic	0.237
K-S Critical(0.05) Value	0.282

Data appear Gamma Distributed at (0.05) Significance Level

Lognormal GOF Test Results

Correlation Coefficient R	0.947
Shapiro Wilk Test Statistic	0.869
Shapiro Wilk Critical (0.05) Value	0.829
Approximate Shapiro Wilk P Value	0.204
Lilliefors Test Statistic	0.193
Lilliefors Critical (0.05) Value	0.274

Data appear Lognormal at (0.05) Significance Level

Mann-Kendall Trend Test Analysis

User Selected Options	
Date/Time of Computation	ProUCL 5.110/15/2019 11:01:32 AM
From File	FWDA_DATA_MK.xls
Full Precision	OFF
Confidence Coefficient	0.95
Level of Significance	0.05

VALUES-1_4_107

General Statistics

Number or Reported Events Not Used	0
Number of Generated Events	15
Number Values Reported (n)	15
Minimum	0.014
Maximum	0.045
Mean	0.0209
Geometric Mean	0.0196
Median	0.017
Standard Deviation	0.00888
Coefficient of Variation	0.425

Mann-Kendall Test

M-K Test Value (S)	-14
Tabulated p-value	0.248
Standard Deviation of S	19.44
Standardized Value of S	-0.669
Approximate p-value	0.252

Insufficient evidence to identify a significant trend at the specified level of significance.

VALUES-1_4_127

General Statistics

Number or Reported Events Not Used	0
Number of Generated Events	15
Number Values Reported (n)	15
Minimum	0.16
Maximum	0.53
Mean	0.226
Geometric Mean	0.212
Median	0.19
Standard Deviation	0.0984
Coefficient of Variation	0.436

Mann-Kendall Test

M-K Test Value (S)	8
Tabulated p-value	0.349
Standard Deviation of S	19.7
Standardized Value of S	0.355
Approximate p-value	0.361

Insufficient evidence to identify a significant

trend at the specified level of significance.

VALUES-1_4_145

General Statistics

Number or Reported Events Not Used	0
Number of Generated Events	15
Number Values Reported (n)	15
Minimum	0.0015
Maximum	0.0078
Mean	0.00315
Geometric Mean	0.00269
Median	0.0021
Standard Deviation	0.00208
Coefficient of Variation	0.662

Mann-Kendall Test

M-K Test Value (S)	-29
Tabulated p-value	0.084
Standard Deviation of S	19.99
Standardized Value of S	-1.401
Approximate p-value	0.0807

Insufficient evidence to identify a significant trend at the specified level of significance.

VALUES-2_4_111

General Statistics

Number or Reported Events Not Used	0
Number of Generated Events	9
Number Values Reported (n)	9
Minimum	3.0000E-4
Maximum	0.001
Mean	8.1333E-4
Geometric Mean	7.5292E-4
Median	0.001
Standard Deviation	2.8688E-4
Coefficient of Variation	0.353

Mann-Kendall Test

M-K Test Value (S)	9
Tabulated p-value	0.238
Standard Deviation of S	7.979
Standardized Value of S	1.003
Approximate p-value	0.158

Insufficient evidence to identify a significant trend at the specified level of significance.

Outlier Tests for Selected Variables excluding nondetects

User Selected Options

Date/Time of Computation	ProUCL 5.110/15/2019 10:41:22 AM
From File	FWDA_DATA_CENSORED_BG.xls
Full Precision	OFF

Dixon's Outlier Test for VALUES (1_1_102)

Total N = 15
Number NDs = 10
Number Detects = 5
10% critical value: 0.557
5% critical value: 0.642
1% critical value: 0.78
Note: NDs excluded from Outlier Test

1. Data Value 0.73 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.868

For 10% significance level, 0.73 is an outlier.
For 5% significance level, 0.73 is an outlier.
For 1% significance level, 0.73 is an outlier.

2. Data Value 0.004 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.019

For 10% significance level, 0.004 is not an outlier.
For 5% significance level, 0.004 is not an outlier.
For 1% significance level, 0.004 is not an outlier.

No Outlier Test for VALUES (1_1_104)

Dixon's Outlier Test for VALUES (1_1_106)

Total N = 15
Number NDs = 1
Number Detects = 14
10% critical value: 0.492
5% critical value: 0.546
1% critical value: 0.641
Note: NDs excluded from Outlier Test

1. Data Value 0.0013 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.593

For 10% significance level, 0.0013 is an outlier.
For 5% significance level, 0.0013 is an outlier.
For 1% significance level, 0.0013 is not an outlier.

2. Data Value 0.00066 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.172

For 10% significance level, 0.00066 is not an outlier.
For 5% significance level, 0.00066 is not an outlier.
For 1% significance level, 0.00066 is not an outlier.

No Outlier Test for VALUES (1_1_110)

No Outlier Test for VALUES (1_1_112)

No Outlier Test for VALUES (1_1_116)

Dixon's Outlier Test for VALUES (1_1_118)

Total N = 15
Number NDs = 2
Number Detects = 13
10% critical value: 0.467
5% critical value: 0.521
1% critical value: 0.615
Note: NDs excluded from Outlier Test

1. Data Value 0.0011 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.791

For 10% significance level, 0.0011 is an outlier.
For 5% significance level, 0.0011 is an outlier.
For 1% significance level, 0.0011 is an outlier.

2. Data Value 0.00021 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.067

For 10% significance level, 0.00021 is not an outlier.
For 5% significance level, 0.00021 is not an outlier.
For 1% significance level, 0.00021 is not an outlier.

Dixon's Outlier Test for VALUES (1_1_120)

Total N = 15
Number NDs = 6
Number Detects = 9
10% critical value: 0.441
5% critical value: 0.512
1% critical value: 0.635
Note: NDs excluded from Outlier Test

1. Data Value 0.014 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.374

For 10% significance level, 0.014 is not an outlier.
For 5% significance level, 0.014 is not an outlier.
For 1% significance level, 0.014 is not an outlier.

2. Data Value 0.00058 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.005

For 10% significance level, 0.00058 is not an outlier.
For 5% significance level, 0.00058 is not an outlier.
For 1% significance level, 0.00058 is not an outlier.

Dixon's Outlier Test for VALUES (1_1_122)

Total N = 15
Number NDs = 8
Number Detects = 7
10% critical value: 0.434
5% critical value: 0.507
1% critical value: 0.637
Note: NDs excluded from Outlier Test

1. Data Value 0.56 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.901

For 10% significance level, 0.56 is an outlier.
For 5% significance level, 0.56 is an outlier.
For 1% significance level, 0.56 is an outlier.

2. Data Value 0.022 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.006

For 10% significance level, 0.022 is not an outlier.
For 5% significance level, 0.022 is not an outlier.
For 1% significance level, 0.022 is not an outlier.

Dixon's Outlier Test for VALUES (1_1_124)

Total N = 15
Number NDs = 12
Number Detects = 3
10% critical value: 0.886
5% critical value: 0.941
1% critical value: 0.988
Note: NDs excluded from Outlier Test

1. Data Value 0.000584 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.803

For 10% significance level, 0.000584 is not an outlier.
For 5% significance level, 0.000584 is not an outlier.
For 1% significance level, 0.000584 is not an outlier.

2. Data Value 0.00028 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.197

For 10% significance level, 0.00028 is not an outlier.
For 5% significance level, 0.00028 is not an outlier.
For 1% significance level, 0.00028 is not an outlier.

No Outlier Test for VALUES (1_1_130)

Dixon's Outlier Test for VALUES (1_1_132)

Total N = 15
Number NDs = 1
Number Detects = 14
10% critical value: 0.492
5% critical value: 0.546
1% critical value: 0.641
Note: NDs excluded from Outlier Test

1. Data Value 0.0063 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.804

For 10% significance level, 0.0063 is an outlier.
For 5% significance level, 0.0063 is an outlier.
For 1% significance level, 0.0063 is an outlier.

2. Data Value 0.001 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.167

For 10% significance level, 0.001 is not an outlier.
For 5% significance level, 0.001 is not an outlier.
For 1% significance level, 0.001 is not an outlier.

Dixon's Outlier Test for VALUES (1_1_136)

Total N = 15
Number NDs = 2
Number Detects = 13
10% critical value: 0.467

5% critical value: 0.521
1% critical value: 0.615
Note: NDs excluded from Outlier Test

1. Data Value 2.4 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.657

For 10% significance level, 2.4 is an outlier.
For 5% significance level, 2.4 is an outlier.
For 1% significance level, 2.4 is an outlier.

2. Data Value 0.4 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.043

For 10% significance level, 0.4 is not an outlier.
For 5% significance level, 0.4 is not an outlier.
For 1% significance level, 0.4 is not an outlier.

No Outlier Test for VALUES (1_1_138)

Dixon's Outlier Test for VALUES (1_1_140)

Total N = 15
Number NDs = 12
Number Detects = 3
10% critical value: 0.886
5% critical value: 0.941
1% critical value: 0.988
Note: NDs excluded from Outlier Test

1. Data Value 0.00055 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.957

For 10% significance level, 0.00055 is an outlier.
For 5% significance level, 0.00055 is an outlier.
For 1% significance level, 0.00055 is not an outlier.

2. Data Value 3.3E-05 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.043

For 10% significance level, 3.3E-05 is not an outlier.
For 5% significance level, 3.3E-05 is not an outlier.
For 1% significance level, 3.3E-05 is not an outlier.

No Outlier Test for VALUES (1_1_144)

Dixon's Outlier Test for VALUES (1_1_146)

Total N = 15
Number NDs = 1
Number Detects = 14
10% critical value: 0.492
5% critical value: 0.546
1% critical value: 0.641
Note: NDs excluded from Outlier Test

1. Data Value 0.00554 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.575

For 10% significance level, 0.00554 is an outlier.
For 5% significance level, 0.00554 is an outlier.
For 1% significance level, 0.00554 is not an outlier.

2. Data Value 0.001 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.143

For 10% significance level, 0.001 is not an outlier.
For 5% significance level, 0.001 is not an outlier.
For 1% significance level, 0.001 is not an outlier.

Dixon's Outlier Test for VALUES (1_1_148)

Total N = 15
Number NDs = 10
Number Detects = 5
10% critical value: 0.557
5% critical value: 0.642
1% critical value: 0.78
Note: NDs excluded from Outlier Test

1. Data Value 0.014 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.627

For 10% significance level, 0.014 is an outlier.
For 5% significance level, 0.014 is not an outlier.
For 1% significance level, 0.014 is not an outlier.

2. Data Value 0.0022 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.008

For 10% significance level, 0.0022 is not an outlier.
For 5% significance level, 0.0022 is not an outlier.
For 1% significance level, 0.0022 is not an outlier.

Dixon's Outlier Test for VALUES (1_2_133)

Total N = 15
Number NDs = 11
Number Detects = 4
10% critical value: 0.679
5% critical value: 0.765
1% critical value: 0.889
Note: NDs excluded from Outlier Test

1. Data Value 1.9 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.899

For 10% significance level, 1.9 is an outlier.
For 5% significance level, 1.9 is an outlier.
For 1% significance level, 1.9 is an outlier.

2. Data Value 0.097 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.035

For 10% significance level, 0.097 is not an outlier.
For 5% significance level, 0.097 is not an outlier.
For 1% significance level, 0.097 is not an outlier.

No Outlier Test for VALUES (1_3_134)

Dixon's Outlier Test for VALUES (1_4_101)

Total N = 15
Number NDs = 2
Number Detects = 13
10% critical value: 0.467
5% critical value: 0.521
1% critical value: 0.615
Note: NDs excluded from Outlier Test

1. Data Value 4.2 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.950

For 10% significance level, 4.2 is an outlier.
For 5% significance level, 4.2 is an outlier.
For 1% significance level, 4.2 is an outlier.

2. Data Value 0.019 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.014

For 10% significance level, 0.019 is not an outlier.
For 5% significance level, 0.019 is not an outlier.

For 1% significance level, 0.019 is not an outlier.

No Outlier Test for VALUES (1_4_103)

Dixon's Outlier Test for VALUES (1_4_105)

Total N = 15
Number NDs = 1
Number Detects = 14
10% critical value: 0.492
5% critical value: 0.546
1% critical value: 0.641
Note: NDs excluded from Outlier Test

1. Data Value 0.0017 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.700

For 10% significance level, 0.0017 is an outlier.
For 5% significance level, 0.0017 is an outlier.
For 1% significance level, 0.0017 is an outlier.

2. Data Value 0.00061 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.231

For 10% significance level, 0.00061 is not an outlier.
For 5% significance level, 0.00061 is not an outlier.
For 1% significance level, 0.00061 is not an outlier.

No Outlier Test for VALUES (1_4_109)

No Outlier Test for VALUES (1_4_111)

Dixon's Outlier Test for VALUES (1_4_115)

Total N = 15
Number NDs = 10
Number Detects = 5
10% critical value: 0.557
5% critical value: 0.642
1% critical value: 0.78
Note: NDs excluded from Outlier Test

1. Data Value 0.002600000000001 is a Potential Outlier (Upp

Test Statistic: 0.354

For 10% significance level, 0.002600000000001 is not an outli
For 5% significance level, 0.002600000000001 is not an outlie
For 1% significance level, 0.002600000000001 is not an outlie

2. Data Value 0.00062 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.005

For 10% significance level, 0.00062 is not an outlier.
For 5% significance level, 0.00062 is not an outlier.
For 1% significance level, 0.00062 is not an outlier.

Dixon's Outlier Test for VALUES (1_4_117)

Total N = 15
Number NDs = 2
Number Detects = 13
10% critical value: 0.467
5% critical value: 0.521
1% critical value: 0.615
Note: NDs excluded from Outlier Test

1. Data Value 0.001800000000001 is a Potential Outlier (Upp

Test Statistic: 0.699

For 10% significance level, 0.001800000000001 is an outlier.
For 5% significance level, 0.001800000000001 is an outlier.
For 1% significance level, 0.001800000000001 is an outlier.

2. Data Value 0.00024 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.028

For 10% significance level, 0.00024 is not an outlier.
For 5% significance level, 0.00024 is not an outlier.
For 1% significance level, 0.00024 is not an outlier.

Dixon's Outlier Test for VALUES (1_4_119)

Total N = 15
Number NDs = 5
Number Detects = 10
10% critical value: 0.409
5% critical value: 0.477
1% critical value: 0.597
Note: NDs excluded from Outlier Test

1. Data Value 0.0087 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.337

For 10% significance level, 0.0087 is not an outlier.
For 5% significance level, 0.0087 is not an outlier.

For 1% significance level, 0.0087 is not an outlier.

2. Data Value 0.00059 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.017

For 10% significance level, 0.00059 is not an outlier.
For 5% significance level, 0.00059 is not an outlier.
For 1% significance level, 0.00059 is not an outlier.

Dixon's Outlier Test for VALUES (1_4_121)

Total N = 15
Number NDs = 2
Number Detects = 13
10% critical value: 0.467
5% critical value: 0.521
1% critical value: 0.615
Note: NDs excluded from Outlier Test

1. Data Value 2.5 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.955

For 10% significance level, 2.5 is an outlier.
For 5% significance level, 2.5 is an outlier.
For 1% significance level, 2.5 is an outlier.

2. Data Value 0.031 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.010

For 10% significance level, 0.031 is not an outlier.
For 5% significance level, 0.031 is not an outlier.
For 1% significance level, 0.031 is not an outlier.

Dixon's Outlier Test for VALUES (1_4_123)

Total N = 15
Number NDs = 11
Number Detects = 4
10% critical value: 0.679
5% critical value: 0.765
1% critical value: 0.889
Note: NDs excluded from Outlier Test

1. Data Value 0.0022 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.398

For 10% significance level, 0.0022 is not an outlier.

For 5% significance level, 0.0022 is not an outlier.
For 1% significance level, 0.0022 is not an outlier.

2. Data Value 0.00019 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.224

For 10% significance level, 0.00019 is not an outlier.
For 5% significance level, 0.00019 is not an outlier.
For 1% significance level, 0.00019 is not an outlier.

No Outlier Test for VALUES (1_4_129)

Dixon's Outlier Test for VALUES (1_4_131)

Total N = 15
Number NDs = 2
Number Detects = 13
10% critical value: 0.467
5% critical value: 0.521
1% critical value: 0.615
Note: NDs excluded from Outlier Test

1. Data Value 0.009300000000001 is a Potential Outlier (Upp

Test Statistic: 0.707

For 10% significance level, 0.009300000000001 is an outlier.
For 5% significance level, 0.009300000000001 is an outlier.
For 1% significance level, 0.009300000000001 is an outlier.

2. Data Value 0.001 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.080

For 10% significance level, 0.001 is not an outlier.
For 5% significance level, 0.001 is not an outlier.
For 1% significance level, 0.001 is not an outlier.

Dixon's Outlier Test for VALUES (1_4_135)

Total N = 15
Number NDs = 1
Number Detects = 14
10% critical value: 0.492
5% critical value: 0.546
1% critical value: 0.641
Note: NDs excluded from Outlier Test

1. Data Value 2.1 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.375

For 10% significance level, 2.1 is not an outlier.
For 5% significance level, 2.1 is not an outlier.
For 1% significance level, 2.1 is not an outlier.

2. Data Value 0.42 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.074

For 10% significance level, 0.42 is not an outlier.
For 5% significance level, 0.42 is not an outlier.
For 1% significance level, 0.42 is not an outlier.

No Outlier Test for VALUES (1_4_137)

Dixon's Outlier Test for VALUES (1_4_139)

Total N = 15
Number NDs = 11
Number Detects = 4
10% critical value: 0.679
5% critical value: 0.765
1% critical value: 0.889
Note: NDs excluded from Outlier Test

1. Data Value 0.004500000000001 is a Potential Outlier (Upp

Test Statistic: 0.918

For 10% significance level, 0.004500000000001 is an outlier.
For 5% significance level, 0.004500000000001 is an outlier.
For 1% significance level, 0.004500000000001 is an outlier.

2. Data Value 0.00011 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.030

For 10% significance level, 0.00011 is not an outlier.
For 5% significance level, 0.00011 is not an outlier.
For 1% significance level, 0.00011 is not an outlier.

No Outlier Test for VALUES (1_4_143)

Dixon's Outlier Test for VALUES (1_4_145)

Total N = 15
Number NDs = 2
Number Detects = 13
10% critical value: 0.467
5% critical value: 0.521

1% critical value: 0.615
Note: NDs excluded from Outlier Test

1. Data Value 0.0078 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.276

For 10% significance level, 0.0078 is not an outlier.
For 5% significance level, 0.0078 is not an outlier.
For 1% significance level, 0.0078 is not an outlier.

2. Data Value 0.0015 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.071

For 10% significance level, 0.0015 is not an outlier.
For 5% significance level, 0.0015 is not an outlier.
For 1% significance level, 0.0015 is not an outlier.

Dixon's Outlier Test for VALUES (1_4_147)

Total N = 15
Number NDs = 10
Number Detects = 5
10% critical value: 0.557
5% critical value: 0.642
1% critical value: 0.78
Note: NDs excluded from Outlier Test

1. Data Value 0.04 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.447

For 10% significance level, 0.04 is not an outlier.
For 5% significance level, 0.04 is not an outlier.
For 1% significance level, 0.04 is not an outlier.

2. Data Value 0.002 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.021

For 10% significance level, 0.002 is not an outlier.
For 5% significance level, 0.002 is not an outlier.
For 1% significance level, 0.002 is not an outlier.

Dixon's Outlier Test for VALUES (2_1_102)

Total N = 9
Number NDs = 4
Number Detects = 5
10% critical value: 0.557

5% critical value: 0.642
1% critical value: 0.78
Note: NDs excluded from Outlier Test

1. Data Value 130 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.936

For 10% significance level, 130 is an outlier.
For 5% significance level, 130 is an outlier.
For 1% significance level, 130 is an outlier.

2. Data Value 0.049 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.000

For 10% significance level, 0.049 is not an outlier.
For 5% significance level, 0.049 is not an outlier.
For 1% significance level, 0.049 is not an outlier.

No Outlier Test for VALUES (2_1_104)

Dixon's Outlier Test for VALUES (2_1_106)

Total N = 9
Number NDs = 4
Number Detects = 5
10% critical value: 0.557
5% critical value: 0.642
1% critical value: 0.78
Note: NDs excluded from Outlier Test

1. Data Value 0.01 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.816

For 10% significance level, 0.01 is an outlier.
For 5% significance level, 0.01 is an outlier.
For 1% significance level, 0.01 is an outlier.

2. Data Value 0.00038 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.062

For 10% significance level, 0.00038 is not an outlier.
For 5% significance level, 0.00038 is not an outlier.
For 1% significance level, 0.00038 is not an outlier.

No Outlier Test for VALUES (2_1_110)

No Outlier Test for VALUES (2_1_112)

Dixon's Outlier Test for VALUES (2_1_116)

Total N = 9
Number NDs = 5
Number Detects = 4
10% critical value: 0.679
5% critical value: 0.765
1% critical value: 0.889
Note: NDs excluded from Outlier Test

1. Data Value 0.14 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.970

For 10% significance level, 0.14 is an outlier.
For 5% significance level, 0.14 is an outlier.
For 1% significance level, 0.14 is an outlier.

2. Data Value 0.002 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.024

For 10% significance level, 0.002 is not an outlier.
For 5% significance level, 0.002 is not an outlier.
For 1% significance level, 0.002 is not an outlier.

Dixon's Outlier Test for VALUES (2_1_118)

Total N = 9
Number NDs = 3
Number Detects = 6
10% critical value: 0.482
5% critical value: 0.56
1% critical value: 0.698
Note: NDs excluded from Outlier Test

1. Data Value 0.034 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.940

For 10% significance level, 0.034 is an outlier.
For 5% significance level, 0.034 is an outlier.
For 1% significance level, 0.034 is an outlier.

2. Data Value 6.7E-05 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.007

For 10% significance level, 6.7E-05 is not an outlier.
For 5% significance level, 6.7E-05 is not an outlier.
For 1% significance level, 6.7E-05 is not an outlier.

Dixon's Outlier Test for VALUES (2_1_120)

Total N = 9
Number NDs = 4
Number Detects = 5
10% critical value: 0.557
5% critical value: 0.642
1% critical value: 0.78
Note: NDs excluded from Outlier Test

1. Data Value 0.028 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.495

For 10% significance level, 0.028 is not an outlier.
For 5% significance level, 0.028 is not an outlier.
For 1% significance level, 0.028 is not an outlier.

2. Data Value 0.0007 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.018

For 10% significance level, 0.0007 is not an outlier.
For 5% significance level, 0.0007 is not an outlier.
For 1% significance level, 0.0007 is not an outlier.

Dixon's Outlier Test for VALUES (2_1_122)

Total N = 9
Number NDs = 4
Number Detects = 5
10% critical value: 0.557
5% critical value: 0.642
1% critical value: 0.78
Note: NDs excluded from Outlier Test

1. Data Value 110 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.956

For 10% significance level, 110 is an outlier.
For 5% significance level, 110 is an outlier.
For 1% significance level, 110 is an outlier.

2. Data Value 0.088 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.003

For 10% significance level, 0.088 is not an outlier.
For 5% significance level, 0.088 is not an outlier.

For 1% significance level, 0.088 is not an outlier.

Dixon's Outlier Test for VALUES (2_1_124)

Total N = 9
Number NDs = 6
Number Detects = 3
10% critical value: 0.886
5% critical value: 0.941
1% critical value: 0.988
Note: NDs excluded from Outlier Test

1. Data Value 0.027 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.984

For 10% significance level, 0.027 is an outlier.
For 5% significance level, 0.027 is an outlier.
For 1% significance level, 0.027 is not an outlier.

2. Data Value 0.000874 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.016

For 10% significance level, 0.000874 is not an outlier.
For 5% significance level, 0.000874 is not an outlier.
For 1% significance level, 0.000874 is not an outlier.

Dixon's Outlier Test for VALUES (2_1_128)

Total N = 9
Number NDs = 1
Number Detects = 8
10% critical value: 0.479
5% critical value: 0.554
1% critical value: 0.683
Note: NDs excluded from Outlier Test

1. Data Value 1.4 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.514

For 10% significance level, 1.4 is an outlier.
For 5% significance level, 1.4 is not an outlier.
For 1% significance level, 1.4 is not an outlier.

2. Data Value 0.0174 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.004

For 10% significance level, 0.0174 is not an outlier.

For 5% significance level, 0.0174 is not an outlier.
For 1% significance level, 0.0174 is not an outlier.

No Outlier Test for VALUES (2_1_130)

Dixon's Outlier Test for VALUES (2_1_132)

Total N = 9
Number NDs = 5
Number Detects = 4
10% critical value: 0.679
5% critical value: 0.765
1% critical value: 0.889
Note: NDs excluded from Outlier Test

1. Data Value 0.084 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.953

For 10% significance level, 0.084 is an outlier.
For 5% significance level, 0.084 is an outlier.
For 1% significance level, 0.084 is an outlier.

2. Data Value 0.001300000000001 is a Potential Outlier (Lowe

Test Statistic: 0.014

For 10% significance level, 0.001300000000001 is not an outli
For 5% significance level, 0.001300000000001 is not an outlie
For 1% significance level, 0.001300000000001 is not an outlie

No Outlier Test for VALUES (2_1_138)

No Outlier Test for VALUES (2_1_140)

No Outlier Test for VALUES (2_1_144)

Dixon's Outlier Test for VALUES (2_1_146)

Total N = 9
Number NDs = 5
Number Detects = 4
10% critical value: 0.679
5% critical value: 0.765
1% critical value: 0.889
Note: NDs excluded from Outlier Test

1. Data Value 0.098 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.970

For 10% significance level, 0.098 is an outlier.
For 5% significance level, 0.098 is an outlier.
For 1% significance level, 0.098 is an outlier.

2. Data Value 0.00523 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.008

For 10% significance level, 0.00523 is not an outlier.
For 5% significance level, 0.00523 is not an outlier.
For 1% significance level, 0.00523 is not an outlier.

No Outlier Test for VALUES (2_1_148)

No Outlier Test for VALUES (2_2_133)

Dixon's Outlier Test for VALUES (2_3_134)

Total N = 9
Number NDs = 6
Number Detects = 3
10% critical value: 0.886
5% critical value: 0.941
1% critical value: 0.988
Note: NDs excluded from Outlier Test

1. Data Value 9.5E-06 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.500

For 10% significance level, 9.5E-06 is not an outlier.
For 5% significance level, 9.5E-06 is not an outlier.
For 1% significance level, 9.5E-06 is not an outlier.

2. Data Value 5.700000001E-06 is a Potential Outlier (Lower T

Test Statistic: 0.500

For 10% significance level, 5.700000001E-06 is not an outlier.
For 5% significance level, 5.700000001E-06 is not an outlier.
For 1% significance level, 5.700000001E-06 is not an outlier.

Dixon's Outlier Test for VALUES (2_4_101)

Total N = 9
Number NDs = 2
Number Detects = 7
10% critical value: 0.434
5% critical value: 0.507
1% critical value: 0.637
Note: NDs excluded from Outlier Test

1. Data Value 260 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.116

For 10% significance level, 260 is not an outlier.
For 5% significance level, 260 is not an outlier.
For 1% significance level, 260 is not an outlier.

2. Data Value 0.56 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.008

For 10% significance level, 0.56 is not an outlier.
For 5% significance level, 0.56 is not an outlier.
For 1% significance level, 0.56 is not an outlier.

No Outlier Test for VALUES (2_4_103)

Dixon's Outlier Test for VALUES (2_4_105)

Total N = 9
Number NDs = 3
Number Detects = 6
10% critical value: 0.482
5% critical value: 0.56
1% critical value: 0.698
Note: NDs excluded from Outlier Test

1. Data Value 0.02 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.577

For 10% significance level, 0.02 is an outlier.
For 5% significance level, 0.02 is an outlier.
For 1% significance level, 0.02 is not an outlier.

2. Data Value 0.00144 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.150

For 10% significance level, 0.00144 is not an outlier.
For 5% significance level, 0.00144 is not an outlier.
For 1% significance level, 0.00144 is not an outlier.

Dixon's Outlier Test for VALUES (2_4_109)

Total N = 9
Number NDs = 4
Number Detects = 5
10% critical value: 0.557

5% critical value: 0.642
1% critical value: 0.78
Note: NDs excluded from Outlier Test

1. Data Value 0.01 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.245

For 10% significance level, 0.01 is not an outlier.
For 5% significance level, 0.01 is not an outlier.
For 1% significance level, 0.01 is not an outlier.

2. Data Value 0.00102 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.209

For 10% significance level, 0.00102 is not an outlier.
For 5% significance level, 0.00102 is not an outlier.
For 1% significance level, 0.00102 is not an outlier.

Dixon's Outlier Test for VALUES (2_4_111)

Total N = 9
Number NDs = 6
Number Detects = 3
10% critical value: 0.886
5% critical value: 0.941
1% critical value: 0.988
Note: NDs excluded from Outlier Test

1. Data Value 0.00054 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.250

For 10% significance level, 0.00054 is not an outlier.
For 5% significance level, 0.00054 is not an outlier.
For 1% significance level, 0.00054 is not an outlier.

2. Data Value 0.0003 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.750

For 10% significance level, 0.0003 is not an outlier.
For 5% significance level, 0.0003 is not an outlier.
For 1% significance level, 0.0003 is not an outlier.

Dixon's Outlier Test for VALUES (2_4_115)

Total N = 9
Number NDs = 1
Number Detects = 8

10% critical value: 0.479
5% critical value: 0.554
1% critical value: 0.683
Note: NDs excluded from Outlier Test

1. Data Value 0.27 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.561

For 10% significance level, 0.27 is an outlier.
For 5% significance level, 0.27 is an outlier.
For 1% significance level, 0.27 is not an outlier.

2. Data Value 0.001 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.012

For 10% significance level, 0.001 is not an outlier.
For 5% significance level, 0.001 is not an outlier.
For 1% significance level, 0.001 is not an outlier.

Dixon's Outlier Test for VALUES (2_4_117)

Total N = 9
Number NDs = 2
Number Detects = 7
10% critical value: 0.434
5% critical value: 0.507
1% critical value: 0.637
Note: NDs excluded from Outlier Test

1. Data Value 0.067 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.360

For 10% significance level, 0.067 is not an outlier.
For 5% significance level, 0.067 is not an outlier.
For 1% significance level, 0.067 is not an outlier.

2. Data Value 0.000260000000001 is a Potential Outlier (Lowe

Test Statistic: 0.032

For 10% significance level, 0.000260000000001 is not an outli
For 5% significance level, 0.000260000000001 is not an outlie
For 1% significance level, 0.000260000000001 is not an outlie

Dixon's Outlier Test for VALUES (2_4_119)

Total N = 9
Number NDs = 3

Number Detects = 6
10% critical value: 0.482
5% critical value: 0.56
1% critical value: 0.698
Note: NDs excluded from Outlier Test

1. Data Value 0.055 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.446

For 10% significance level, 0.055 is not an outlier.
For 5% significance level, 0.055 is not an outlier.
For 1% significance level, 0.055 is not an outlier.

2. Data Value 0.0012 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.091

For 10% significance level, 0.0012 is not an outlier.
For 5% significance level, 0.0012 is not an outlier.
For 1% significance level, 0.0012 is not an outlier.

Dixon's Outlier Test for VALUES (2_4_121)

Total N = 9
Number NDs = 1
Number Detects = 8
10% critical value: 0.479
5% critical value: 0.554
1% critical value: 0.683
Note: NDs excluded from Outlier Test

1. Data Value 170 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.354

For 10% significance level, 170 is not an outlier.
For 5% significance level, 170 is not an outlier.
For 1% significance level, 170 is not an outlier.

2. Data Value 0.025 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.004

For 10% significance level, 0.025 is not an outlier.
For 5% significance level, 0.025 is not an outlier.
For 1% significance level, 0.025 is not an outlier.

Dixon's Outlier Test for VALUES (2_4_123)

Total N = 9

Number NDs = 2
Number Detects = 7
10% critical value: 0.434
5% critical value: 0.507
1% critical value: 0.637
Note: NDs excluded from Outlier Test

1. Data Value 0.054 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.335

For 10% significance level, 0.054 is not an outlier.
For 5% significance level, 0.054 is not an outlier.
For 1% significance level, 0.054 is not an outlier.

2. Data Value 0.00021 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.013

For 10% significance level, 0.00021 is not an outlier.
For 5% significance level, 0.00021 is not an outlier.
For 1% significance level, 0.00021 is not an outlier.

No Outlier Test for VALUES (2_4_129)

Dixon's Outlier Test for VALUES (2_4_131)

Total N = 9
Number NDs = 1
Number Detects = 8
10% critical value: 0.479
5% critical value: 0.554
1% critical value: 0.683
Note: NDs excluded from Outlier Test

1. Data Value 0.17 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.461

For 10% significance level, 0.17 is not an outlier.
For 5% significance level, 0.17 is not an outlier.
For 1% significance level, 0.17 is not an outlier.

2. Data Value 0.00042 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.026

For 10% significance level, 0.00042 is not an outlier.
For 5% significance level, 0.00042 is not an outlier.
For 1% significance level, 0.00042 is not an outlier.

Dixon's Outlier Test for VALUES (2_4_135)

Total N = 9
Number NDs = 1
Number Detects = 8
10% critical value: 0.479
5% critical value: 0.554
1% critical value: 0.683
Note: NDs excluded from Outlier Test

1. Data Value 27 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.115

For 10% significance level, 27 is not an outlier.
For 5% significance level, 27 is not an outlier.
For 1% significance level, 27 is not an outlier.

2. Data Value 0.66 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.008

For 10% significance level, 0.66 is not an outlier.
For 5% significance level, 0.66 is not an outlier.
For 1% significance level, 0.66 is not an outlier.

No Outlier Test for VALUES (2_4_137)

No Outlier Test for VALUES (2_4_139)

Dixon's Outlier Test for VALUES (2_4_143)

Total N = 9
Number NDs = 6
Number Detects = 3
10% critical value: 0.886
5% critical value: 0.941
1% critical value: 0.988
Note: NDs excluded from Outlier Test

1. Data Value 0.0007 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.650

For 10% significance level, 0.0007 is not an outlier.
For 5% significance level, 0.0007 is not an outlier.
For 1% significance level, 0.0007 is not an outlier.

2. Data Value 0.0003 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.350

For 10% significance level, 0.0003 is not an outlier.
For 5% significance level, 0.0003 is not an outlier.
For 1% significance level, 0.0003 is not an outlier.

Dixon's Outlier Test for VALUES (2_4_145)

Total N = 9
Number NDs = 2
Number Detects = 7
10% critical value: 0.434
5% critical value: 0.507
1% critical value: 0.637
Note: NDs excluded from Outlier Test

1. Data Value 0.18 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.279

For 10% significance level, 0.18 is not an outlier.
For 5% significance level, 0.18 is not an outlier.
For 1% significance level, 0.18 is not an outlier.

2. Data Value 0.000560000000001 is a Potential Outlier (Lowe

Test Statistic: 0.014

For 10% significance level, 0.000560000000001 is not an outli
For 5% significance level, 0.000560000000001 is not an outlie
For 1% significance level, 0.000560000000001 is not an outlie

Dixon's Outlier Test for VALUES (2_4_147)

Total N = 9
Number NDs = 5
Number Detects = 4
10% critical value: 0.679
5% critical value: 0.765
1% critical value: 0.889
Note: NDs excluded from Outlier Test

1. Data Value 0.53 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.866

For 10% significance level, 0.53 is an outlier.
For 5% significance level, 0.53 is an outlier.
For 1% significance level, 0.53 is not an outlier.

2. Data Value 0.091 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.112

For 10% significance level, 0.091 is not an outlier.

For 5% significance level, 0.091 is not an outlier.

For 1% significance level, 0.091 is not an outlier.

Outlier Tests for Selected Uncensored Variables

User Selected Options

Date/Time of Computation	ProUCL 5.110/15/2019 10:42:42 AM
From File	FWDA_DATA_UNCENSORED_BG.xls
Full Precision	OFF

Dixon's Outlier Test for VALUES (1_1_108)

Number of Observations = 15

10% critical value: 0.472

5% critical value: 0.525

1% critical value: 0.616

1. Observation Value 0.026 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.455

For 10% significance level, 0.026 is not an outlier.

For 5% significance level, 0.026 is not an outlier.

For 1% significance level, 0.026 is not an outlier.

2. Observation Value 0.014 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.143

For 10% significance level, 0.014 is not an outlier.

For 5% significance level, 0.014 is not an outlier.

For 1% significance level, 0.014 is not an outlier.

Dixon's Outlier Test for VALUES (1_1_114)

Number of Observations = 15

10% critical value: 0.472

5% critical value: 0.525

1% critical value: 0.616

1. Observation Value 58.6 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.235

For 10% significance level, 58.6 is not an outlier.

For 5% significance level, 58.6 is not an outlier.

For 1% significance level, 58.6 is not an outlier.

2. Observation Value 37 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.118

For 10% significance level, 37 is not an outlier.

For 5% significance level, 37 is not an outlier.

For 1% significance level, 37 is not an outlier.

Dixon's Outlier Test for VALUES (1_1_126)

Number of Observations = 15
10% critical value: 0.472
5% critical value: 0.525
1% critical value: 0.616

1. Observation Value 32.2 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.457

For 10% significance level, 32.2 is not an outlier.
For 5% significance level, 32.2 is not an outlier.
For 1% significance level, 32.2 is not an outlier.

2. Observation Value 21 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.286

For 10% significance level, 21 is not an outlier.
For 5% significance level, 21 is not an outlier.
For 1% significance level, 21 is not an outlier.

Dixon's Outlier Test for VALUES (1_1_128)

Number of Observations = 15
10% critical value: 0.472
5% critical value: 0.525
1% critical value: 0.616

1. Observation Value 0.33 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.600

For 10% significance level, 0.33 is an outlier.
For 5% significance level, 0.33 is an outlier.
For 1% significance level, 0.33 is not an outlier.

2. Observation Value 0.15 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.128

For 10% significance level, 0.15 is not an outlier.
For 5% significance level, 0.15 is not an outlier.
For 1% significance level, 0.15 is not an outlier.

Dixon's Outlier Test for VALUES (1_1_142)

Number of Observations = 15

10% critical value: 0.472
5% critical value: 0.525
1% critical value: 0.616

1. Observation Value 920 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.176

For 10% significance level, 920 is not an outlier.
For 5% significance level, 920 is not an outlier.
For 1% significance level, 920 is not an outlier.

2. Observation Value 520 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.622

For 10% significance level, 520 is an outlier.
For 5% significance level, 520 is an outlier.
For 1% significance level, 520 is an outlier.

Dixon's Outlier Test for VALUES (1_4_107)

Number of Observations = 15
10% critical value: 0.472
5% critical value: 0.525
1% critical value: 0.616

1. Observation Value 0.045 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.690

For 10% significance level, 0.045 is an outlier.
For 5% significance level, 0.045 is an outlier.
For 1% significance level, 0.045 is an outlier.

2. Observation Value 0.014 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.182

For 10% significance level, 0.014 is not an outlier.
For 5% significance level, 0.014 is not an outlier.
For 1% significance level, 0.014 is not an outlier.

Dixon's Outlier Test for VALUES (1_4_113)

Number of Observations = 15
10% critical value: 0.472
5% critical value: 0.525
1% critical value: 0.616

1. Observation Value 60 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.091

For 10% significance level, 60 is not an outlier.
For 5% significance level, 60 is not an outlier.
For 1% significance level, 60 is not an outlier.

2. Observation Value 35 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.130

For 10% significance level, 35 is not an outlier.
For 5% significance level, 35 is not an outlier.
For 1% significance level, 35 is not an outlier.

Dixon's Outlier Test for VALUES (1_4_125)

Number of Observations = 15
10% critical value: 0.472
5% critical value: 0.525
1% critical value: 0.616

1. Observation Value 32 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.300

For 10% significance level, 32 is not an outlier.
For 5% significance level, 32 is not an outlier.
For 1% significance level, 32 is not an outlier.

2. Observation Value 21 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.125

For 10% significance level, 21 is not an outlier.
For 5% significance level, 21 is not an outlier.
For 1% significance level, 21 is not an outlier.

Dixon's Outlier Test for VALUES (1_4_127)

Number of Observations = 15
10% critical value: 0.472
5% critical value: 0.525
1% critical value: 0.616

1. Observation Value 0.53 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.662

For 10% significance level, 0.53 is an outlier.
For 5% significance level, 0.53 is an outlier.

For 1% significance level, 0.53 is an outlier.

2. Observation Value 0.16 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.000

For 10% significance level, 0.16 is not an outlier.
For 5% significance level, 0.16 is not an outlier.
For 1% significance level, 0.16 is not an outlier.

Dixon's Outlier Test for VALUES (1_4_141)

Number of Observations = 15
10% critical value: 0.472
5% critical value: 0.525
1% critical value: 0.616

1. Observation Value 894 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.253

For 10% significance level, 894 is not an outlier.
For 5% significance level, 894 is not an outlier.
For 1% significance level, 894 is not an outlier.

2. Observation Value 630 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.409

For 10% significance level, 630 is not an outlier.
For 5% significance level, 630 is not an outlier.
For 1% significance level, 630 is not an outlier.

Dixon's Outlier Test for VALUES (2_1_108)

Number of Observations = 9
10% critical value: 0.441
5% critical value: 0.512
1% critical value: 0.635

1. Observation Value 0.67 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.887

For 10% significance level, 0.67 is an outlier.
For 5% significance level, 0.67 is an outlier.
For 1% significance level, 0.67 is an outlier.

2. Observation Value 0.00678 is a Potential Outlier (Lower Tai

Test Statistic: 0.006

For 10% significance level, 0.00678 is not an outlier.
For 5% significance level, 0.00678 is not an outlier.
For 1% significance level, 0.00678 is not an outlier.

Dixon's Outlier Test for VALUES (2_1_114)

Number of Observations = 9
10% critical value: 0.441
5% critical value: 0.512
1% critical value: 0.635

1. Observation Value 292 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.218

For 10% significance level, 292 is not an outlier.
For 5% significance level, 292 is not an outlier.
For 1% significance level, 292 is not an outlier.

2. Observation Value 7.8 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.000

For 10% significance level, 7.8 is not an outlier.
For 5% significance level, 7.8 is not an outlier.
For 1% significance level, 7.8 is not an outlier.

Dixon's Outlier Test for VALUES (2_1_126)

Number of Observations = 9
10% critical value: 0.441
5% critical value: 0.512
1% critical value: 0.635

1. Observation Value 39 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.094

For 10% significance level, 39 is not an outlier.
For 5% significance level, 39 is not an outlier.
For 1% significance level, 39 is not an outlier.

2. Observation Value 0.876 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.000

For 10% significance level, 0.876 is not an outlier.
For 5% significance level, 0.876 is not an outlier.
For 1% significance level, 0.876 is not an outlier.

Dixon's Outlier Test for VALUES (2_1_136)

Number of Observations = 9
10% critical value: 0.441
5% critical value: 0.512
1% critical value: 0.635

1. Observation Value 16 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.331

For 10% significance level, 16 is not an outlier.
For 5% significance level, 16 is not an outlier.
For 1% significance level, 16 is not an outlier.

2. Observation Value 0.645 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.025

For 10% significance level, 0.645 is not an outlier.
For 5% significance level, 0.645 is not an outlier.
For 1% significance level, 0.645 is not an outlier.

Dixon's Outlier Test for VALUES (2_1_142)

Number of Observations = 9
10% critical value: 0.441
5% critical value: 0.512
1% critical value: 0.635

1. Observation Value 3530 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.286

For 10% significance level, 3530 is not an outlier.
For 5% significance level, 3530 is not an outlier.
For 1% significance level, 3530 is not an outlier.

2. Observation Value 618 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.006

For 10% significance level, 618 is not an outlier.
For 5% significance level, 618 is not an outlier.
For 1% significance level, 618 is not an outlier.

Dixon's Outlier Test for VALUES (2_4_107)

Number of Observations = 9
10% critical value: 0.441

5% critical value: 0.512
1% critical value: 0.635

1. Observation Value 2.3 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.305

For 10% significance level, 2.3 is not an outlier.
For 5% significance level, 2.3 is not an outlier.
For 1% significance level, 2.3 is not an outlier.

2. Observation Value 0.00758 is a Potential Outlier (Lower Tai

Test Statistic: 0.000

For 10% significance level, 0.00758 is not an outlier.
For 5% significance level, 0.00758 is not an outlier.
For 1% significance level, 0.00758 is not an outlier.

Dixon's Outlier Test for VALUES (2_4_113)

Number of Observations = 9
10% critical value: 0.441
5% critical value: 0.512
1% critical value: 0.635

1. Observation Value 350 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.146

For 10% significance level, 350 is not an outlier.
For 5% significance level, 350 is not an outlier.
For 1% significance level, 350 is not an outlier.

2. Observation Value 7.7 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.000

For 10% significance level, 7.7 is not an outlier.
For 5% significance level, 7.7 is not an outlier.
For 1% significance level, 7.7 is not an outlier.

Dixon's Outlier Test for VALUES (2_4_125)

Number of Observations = 9
10% critical value: 0.441
5% critical value: 0.512
1% critical value: 0.635

1. Observation Value 72 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.042

For 10% significance level, 72 is not an outlier.
For 5% significance level, 72 is not an outlier.
For 1% significance level, 72 is not an outlier.

2. Observation Value 0.87 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.001

For 10% significance level, 0.87 is not an outlier.
For 5% significance level, 0.87 is not an outlier.
For 1% significance level, 0.87 is not an outlier.

Dixon's Outlier Test for VALUES (2_4_127)

Number of Observations = 9
10% critical value: 0.441
5% critical value: 0.512
1% critical value: 0.635

1. Observation Value 3.8 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.106

For 10% significance level, 3.8 is not an outlier.
For 5% significance level, 3.8 is not an outlier.
For 1% significance level, 3.8 is not an outlier.

2. Observation Value 0.023 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.000

For 10% significance level, 0.023 is not an outlier.
For 5% significance level, 0.023 is not an outlier.
For 1% significance level, 0.023 is not an outlier.

Dixon's Outlier Test for VALUES (2_4_141)

Number of Observations = 9
10% critical value: 0.441
5% critical value: 0.512
1% critical value: 0.635

1. Observation Value 3610 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.138

For 10% significance level, 3610 is not an outlier.
For 5% significance level, 3610 is not an outlier.
For 1% significance level, 3610 is not an outlier.

2. Observation Value 623 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.007

For 10% significance level, 623 is not an outlier.

For 5% significance level, 623 is not an outlier.

For 1% significance level, 623 is not an outlier.

Background Statistics for Data Sets with Non-Detects

User Selected Options

Date/Time of Computation	ProUCL 5.110/15/2019 3:04:27 PM
From File	FWDA_ALLUVIUM_nonpar_cens1.xls
Full Precision	OFF
Confidence Coefficient	99.99%
Coverage	95%
Different or Future K Observations	1
Number of Bootstrap Operations	2000

VALUES (1_1_102)

General Statistics

Total Number of Observations	15	Number of Missing Observations	0
Number of Distinct Observations	9		
Number of Detects	5	Number of Non-Detects	10
Number of Distinct Detects	5	Number of Distinct Non-Detects	4
Minimum Detect	0.004	Minimum Non-Detect	0.031
Maximum Detect	0.73	Maximum Non-Detect	0.2
Variance Detected	0.0979	Percent Non-Detects	66.67%
Mean Detected	0.174	SD Detected	0.313
Mean of Detected Logged Data	-3.214	SD of Detected Logged Data	1.981

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	5.904	d2max (for USL)	3.19

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.644	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.394	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.343	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	0.0684	KM SD	0.178
99.99% UTL95% Coverage	1.122	99.99% KM UPL (t)	0.987
90% KM Percentile (z)	0.297	95% KM Percentile (z)	0.362
99% KM Percentile (z)	0.483	99.99% KM Percentile (z)	0.732
99.99% KM USL	0.638		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	0.0833	SD	0.181
99.99% UTL95% Coverage	1.155	99.99% UPL (t)	1.018
90% Percentile (z)	0.316	95% Percentile (z)	0.382
99% Percentile (z)	0.505	99.99% Percentile (z)	0.758
99.99% USL	0.662		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.452	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.719	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.302	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.374	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.441	k star (bias corrected MLE)	0.31
Theta hat (MLE)	0.395	Theta star (bias corrected MLE)	0.563
nu hat (MLE)	4.415	nu star (bias corrected)	3.099
MLE Mean (bias corrected)	0.174		
MLE Sd (bias corrected)	0.313	99.99% Percentile of Chisquare (2kstar)	13.49

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.004	Mean	0.0724
Maximum	0.73	Median	0.01
SD	0.184	CV	2.543
k hat (MLE)	0.503	k star (bias corrected MLE)	0.447
Theta hat (MLE)	0.144	Theta star (bias corrected MLE)	0.162
nu hat (MLE)	15.08	nu star (bias corrected)	13.4
MLE Mean (bias corrected)	0.0724	MLE Sd (bias corrected)	0.108
		99.99% Percentile of Chisquare (2kstar)	14.71
90% Percentile	0.2	95% Percentile	0.29
99% Percentile	0.511	99.99% Percentile	1.193

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	2.8	3.907	99.99% Approx. Gamma UPL	2.04	2.663
99.99% Gamma USL	0.735	0.795			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0684	SD (KM)	0.178
Variance (KM)	0.0318	SE of Mean (KM)	0.0517
k hat (KM)	0.147	k star (KM)	0.162
nu hat (KM)	4.412	nu star (KM)	4.863
theta hat (KM)	0.465	theta star (KM)	0.422
99.99% gamma percentile (KM)	2.475	90% gamma percentile (KM)	0.205
95% gamma percentile (KM)	0.371	99% gamma percentile (KM)	0.845

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	2.092	2.756	99.99% Approx. Gamma UPL	1.818	2.328
99.99% KM Gamma Percentile	0.894	1.001	99.99% Gamma USL	0.654	0.696

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.956	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.238	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.343	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.069	Mean in Log Scale	-4.038
SD in Original Scale	0.184	SD in Log Scale	1.421
99.99% UTL95% Coverage	77.81	99.99% BCA UTL95% Coverage	0.73
99.99% Bootstrap (%) UTL95% Coverage	0.73	99.99% UPL (t)	26.59
90% Percentile (z)	0.109	95% Percentile (z)	0.183
99% Percentile (z)	0.481	99.99% USL	1.643

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-4.036	99.99% KM UTL (Lognormal)95% Coverage	47.68
KM SD of Logged Data	1.338	99.99% KM UPL (Lognormal)	17.35
99.99% KM Percentile Lognormal (z)	2.561	99.99% KM USL (Lognormal)	1.262

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	0.0833	Mean in Log Scale	-3.403
SD in Original Scale	0.181	SD in Log Scale	1.198
99.99% UTL95% Coverage	39.24	99.99% UPL (t)	15.87
90% Percentile (z)	0.155	95% Percentile (z)	0.239
99% Percentile (z)	0.54	99.99% USL	1.52

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	15	99.99% UTL with95% Coverage	0.73
Approx, f used to compute achieved CC	0.789	Approximate Actual Confidence Coefficient achieved by UTL	0.537
Approximate Sample Size needed to achieve specified CC	182	99.99% UPL	0.73
99.99% USL	0.73	99.99% KM Chebyshev UPL	18.49

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (1_1_104)

General Statistics

Total Number of Observations	15	Number of Missing Observations	0
Number of Distinct Observations	6		
Number of Detects	2	Number of Non-Detects	13
Number of Distinct Detects	2	Number of Distinct Non-Detects	4
Minimum Detect	4.1000E-4	Minimum Non-Detect	5.2000E-4
Maximum Detect	5.3000E-4	Maximum Non-Detect	0.0025
Variance Detected	7.2000E-9	Percent Non-Detects	86.67%
Mean Detected	4.7000E-4	SD Detected	8.4853E-5
Mean of Detected Logged Data	-7.671	SD of Detected Logged Data	0.182

Warning: Data set has only 2 Detected Values.

This is not enough to compute meaningful or reliable statistics and estimates.

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	5.904	d2max (for USL)	3.19

Normal GOF Test on Detects Only

Not Enough Data to Perform GOF Test

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	4.5000E-4	KM SD	5.6569E-5
99.99% UTL95% Coverage	7.8398E-4	99.99% KM UPL (t)	7.4124E-4
90% KM Percentile (z)	5.2250E-4	95% KM Percentile (z)	5.4305E-4
99% KM Percentile (z)	5.8160E-4	99.99% KM Percentile (z)	6.6038E-4
99.99% KM USL	6.3045E-4		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	4.5000E-4	SD	2.4372E-4
99.99% UTL95% Coverage	0.00189	99.99% UPL (t)	0.0017
90% Percentile (z)	7.6234E-4	95% Percentile (z)	8.5089E-4
99% Percentile (z)	0.00102	99.99% Percentile (z)	0.00136
99.99% USL	0.00123		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	61.03	k star (bias corrected MLE)	N/A
Theta hat (MLE)	7.7016E-6	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	244.1	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A		
MLE Sd (bias corrected)	N/A	99.99% Percentile of Chisquare (2kstar)	N/A

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	4.5000E-4	SD (KM)	5.6569E-5
Variance (KM)	3.2000E-9	SE of Mean (KM)	4.6188E-5
k hat (KM)	63.28	k star (KM)	50.67
nu hat (KM)	1898	nu star (KM)	1520
theta hat (KM)	7.1111E-6	theta star (KM)	8.8811E-6
99.99% gamma percentile (KM)	7.2384E-4	90% gamma percentile (KM)	5.3268E-4
95% gamma percentile (KM)	5.5878E-4	99% gamma percentile (KM)	6.0998E-4

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	8.2064E-4	8.3075E-4	99.99% Approx. Gamma UPL	7.9429E-4	8.0293E-4
99.99% KM Gamma Percentile	6.8468E-4	6.8836E-4	99.99% Gamma USL	6.4682E-4	6.4923E-4

Lognormal GOF Test on Detected Observations Only

Not Enough Data to Perform GOF Test

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	4.4761E-4	Mean in Log Scale	-7.719
SD in Original Scale	5.6572E-5	SD in Log Scale	0.125
99.99% UTL95% Coverage	9.3181E-4	99.99% BCA UTL95% Coverage	5.3984E-4
99.99% Bootstrap (%) UTL95% Coverage	5.3984E-4	99.99% UPL (t)	8.4756E-4
90% Percentile (z)	5.2181E-4	95% Percentile (z)	5.4614E-4
99% Percentile (z)	5.9488E-4	99.99% USL	6.6293E-4

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-7.714	99.99% KM UTL (Lognormal)95% Coverage	9.1254E-4
KM SD of Logged Data	0.121	99.99% KM UPL (Lognormal)	8.3280E-4
99.99% KM Percentile Lognormal (z)	7.0051E-4	99.99% KM USL (Lognormal)	6.5706E-4

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	4.5000E-4	Mean in Log Scale	-7.797
SD in Original Scale	2.4372E-4	SD in Log Scale	0.405
99.99% UTL95% Coverage	0.00449	99.99% UPL (t)	0.00331
90% Percentile (z)	6.9068E-4	95% Percentile (z)	8.0021E-4
99% Percentile (z)	0.00105	99.99% USL	0.0015

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	15	99.99% UTL with95% Coverage	0.0025
Approx, f used to compute achieved CC	0.789	Approximate Actual Confidence Coefficient achieved by UTL	0.537
Approximate Sample Size needed to achieve specified CC	182	99.99% UPL	0.0025
99.99% USL	0.0025	99.99% KM Chebyshev UPL	0.00629

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (1_1_110)

General Statistics

Total Number of Observations	15	Number of Missing Observations	0
Number of Distinct Observations	4		
Number of Detects	0	Number of Non-Detects	15
Number of Distinct Detects	0	Number of Distinct Non-Detects	4
Minimum Detect	N/A	Minimum Non-Detect	2.4000E-4
Maximum Detect	N/A	Maximum Non-Detect	0.001
Variance Detected	N/A	Percent Non-Detects	100%
Mean Detected	N/A	SD Detected	N/A
Mean of Detected Logged Data	N/A	SD of Detected Logged Data	N/A

Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable VALUES (1_1_110) was not processed!

VALUES (1_1_112)

General Statistics

Total Number of Observations	15	Number of Missing Observations	0
Number of Distinct Observations	4		
Number of Detects	0	Number of Non-Detects	15
Number of Distinct Detects	0	Number of Distinct Non-Detects	4
Minimum Detect	N/A	Minimum Non-Detect	1.2000E-4
Maximum Detect	N/A	Maximum Non-Detect	0.001
Variance Detected	N/A	Percent Non-Detects	100%
Mean Detected	N/A	SD Detected	N/A
Mean of Detected Logged Data	N/A	SD of Detected Logged Data	N/A

Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable VALUES (1_1_112) was not processed!

VALUES (1_1_116)

General Statistics

Total Number of Observations	15	Number of Missing Observations	0
Number of Distinct Observations	5		
Number of Detects	2	Number of Non-Detects	13
Number of Distinct Detects	2	Number of Distinct Non-Detects	3
Minimum Detect	9.7000E-4	Minimum Non-Detect	0.001
Maximum Detect	0.003	Maximum Non-Detect	0.0018
Variance Detected	2.0605E-6	Percent Non-Detects	86.67%
Mean Detected	0.00199	SD Detected	0.00144
Mean of Detected Logged Data	-6.374	SD of Detected Logged Data	0.798

Warning: Data set has only 2 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	5.904	d2max (for USL)	3.19

Normal GOF Test on Detects Only
Not Enough Data to Perform GOF Test

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	0.00111	KM SD	5.0637E-4
99.99% UTL95% Coverage	0.00409	99.99% KM UPL (t)	0.00371
90% KM Percentile (z)	0.00175	95% KM Percentile (z)	0.00194
99% KM Percentile (z)	0.00228	99.99% KM Percentile (z)	0.00299
99.99% KM USL	0.00272		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	9.5800E-4	SD	5.7690E-4
99.99% UTL95% Coverage	0.00436	99.99% UPL (t)	0.00393
90% Percentile (z)	0.0017	95% Percentile (z)	0.00191
99% Percentile (z)	0.0023	99.99% Percentile (z)	0.0031
99.99% USL	0.0028		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	3.457	k star (bias corrected MLE)	N/A
Theta hat (MLE)	5.7417E-4	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	13.83	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A		
MLE Sd (bias corrected)	N/A	99.99% Percentile of Chisquare (2kstar)	N/A

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00111	SD (KM)	5.0637E-4
Variance (KM)	2.5641E-7	SE of Mean (KM)	1.8490E-4
k hat (KM)	4.765	k star (KM)	3.856
nu hat (KM)	142.9	nu star (KM)	115.7
theta hat (KM)	2.3198E-4	theta star (KM)	2.8663E-4
99.99% gamma percentile (KM)	0.00448	90% gamma percentile (KM)	0.00186
95% gamma percentile (KM)	0.00216	99% gamma percentile (KM)	0.00281

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	0.00439	0.00449	99.99% Approx. Gamma UPL	0.0041	0.00418
99.99% KM Gamma Percentile	0.00298	0.00298	99.99% Gamma USL	0.00263	0.00261

Lognormal GOF Test on Detected Observations Only

Not Enough Data to Perform GOF Test

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.00115	Mean in Log Scale	-6.873
SD in Original Scale	6.2168E-4	SD in Log Scale	0.46
99.99% UTL95% Coverage	0.0156	99.99% BCA UTL95% Coverage	0.003
99.99% Bootstrap (%) UTL95% Coverage	0.003	99.99% UPL (t)	0.011
90% Percentile (z)	0.00187	95% Percentile (z)	0.00221
99% Percentile (z)	0.00302	99.99% USL	0.00449

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-6.863	99.99% KM UTL (Lognormal)95% Coverage	0.00552
KM SD of Logged Data	0.282	99.99% KM UPL (Lognormal)	0.00446
99.99% KM Percentile Lognormal (z)	0.00298	99.99% KM USL (Lognormal)	0.00257

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	9.5800E-4	Mean in Log Scale	-7.04
SD in Original Scale	5.7690E-4	SD in Log Scale	0.377
99.99% UTL95% Coverage	0.00811	99.99% UPL (t)	0.0061
90% Percentile (z)	0.00142	95% Percentile (z)	0.00163
99% Percentile (z)	0.00211	99.99% USL	0.00292

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	15	99.99% UTL with95% Coverage	0.003
Approx, f used to compute achieved CC	0.789	Approximate Actual Confidence Coefficient achieved by UTL	0.537
Approximate Sample Size needed to achieve specified CC	182	99.99% UPL	0.003
99.99% USL	0.003	99.99% KM Chebyshev UPL	0.0534

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (1_1_120)

General Statistics

Total Number of Observations	15	Number of Missing Observations	0
Number of Distinct Observations	10		
Number of Detects	9	Number of Non-Detects	6
Number of Distinct Detects	8	Number of Distinct Non-Detects	2
Minimum Detect	5.8000E-4	Minimum Non-Detect	0.0015
Maximum Detect	0.014	Maximum Non-Detect	0.0018
Variance Detected	2.3244E-5	Percent Non-Detects	40%
Mean Detected	0.0033	SD Detected	0.00482
Mean of Detected Logged Data	-6.442	SD of Detected Logged Data	1.148

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	5.904	d2max (for USL)	3.19

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.62	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.438	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.274	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	0.00236	KM SD	0.00371
99.99% UTL95% Coverage	0.0242	99.99% KM UPL (t)	0.0214
90% KM Percentile (z)	0.00711	95% KM Percentile (z)	0.00846
99% KM Percentile (z)	0.011	99.99% KM Percentile (z)	0.0161
99.99% KM USL	0.0142		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	0.0023	SD	0.00386
99.99% UTL95% Coverage	0.0251	99.99% UPL (t)	0.0222
90% Percentile (z)	0.00724	95% Percentile (z)	0.00864
99% Percentile (z)	0.0113	99.99% Percentile (z)	0.0166
99.99% USL	0.0146		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.338	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.749	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.409	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.289	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.814	k star (bias corrected MLE)	0.617
Theta hat (MLE)	0.00405	Theta star (bias corrected MLE)	0.00534
nu hat (MLE)	14.65	nu star (bias corrected)	11.1
MLE Mean (bias corrected)	0.0033		
MLE Sd (bias corrected)	0.0042	99.99% Percentile of Chisquare (2kstar)	16

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	5.8000E-4	Mean	0.00598
Maximum	0.014	Median	0.00899
SD	0.00498	CV	0.834
k hat (MLE)	0.984	k star (bias corrected MLE)	0.832
Theta hat (MLE)	0.00608	Theta star (bias corrected MLE)	0.00719
nu hat (MLE)	29.52	nu star (bias corrected)	24.95
MLE Mean (bias corrected)	0.00598	MLE Sd (bias corrected)	0.00655
		99.99% Percentile of Chisquare (2kstar)	17.41
90% Percentile	0.0144	95% Percentile	0.0191
99% Percentile	0.0302	99.99% Percentile	0.0626

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	0.151	0.236	99.99% Approx. Gamma UPL	0.114	0.168
99.99% Gamma USL	0.0475	0.0587			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00236	SD (KM)	0.00371
Variance (KM)	1.3744E-5	SE of Mean (KM)	0.00102
k hat (KM)	0.405	k star (KM)	0.368
nu hat (KM)	12.14	nu star (KM)	11.05
theta hat (KM)	0.00583	theta star (KM)	0.00641
99.99% gamma percentile (KM)	0.045	90% gamma percentile (KM)	0.00676
95% gamma percentile (KM)	0.0101	99% gamma percentile (KM)	0.0185

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	0.0459	0.0561	99.99% Approx. Gamma UPL	0.0406	0.0485
99.99% KM Gamma Percentile	0.0219	0.0239	99.99% Gamma USL	0.0169	0.0177

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.774	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.348	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.274	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.00247	Mean in Log Scale	-6.603
SD in Original Scale	0.00381	SD in Log Scale	0.957
99.99% UTL95% Coverage	0.386	99.99% BCA UTL95% Coverage	0.014
99.99% Bootstrap (%) UTL95% Coverage	0.014	99.99% UPL (t)	0.187
90% Percentile (z)	0.00462	95% Percentile (z)	0.00655
99% Percentile (z)	0.0126	99.99% USL	0.0287

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-6.666	99.99% KM UTL (Lognormal)95% Coverage	0.262
KM SD of Logged Data	0.902	99.99% KM UPL (Lognormal)	0.133
99.99% KM Percentile Lognormal (z)	0.0365	99.99% KM USL (Lognormal)	0.0227

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	0.0023	Mean in Log Scale	-6.719
SD in Original Scale	0.00386	SD in Log Scale	0.938
99.99% UTL95% Coverage	0.306	99.99% UPL (t)	0.151
90% Percentile (z)	0.00402	95% Percentile (z)	0.00565
99% Percentile (z)	0.0107	99.99% USL	0.024

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	15	99.99% UTL with95% Coverage	0.014
Approx, f used to compute achieved CC	0.789	Approximate Actual Confidence Coefficient achieved by UTL	0.537
Approximate Sample Size needed to achieve specified CC	182	99.99% UPL	0.014
99.99% USL	0.014	99.99% KM Chebyshev UPL	0.385

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (1_1_122)

General Statistics

Total Number of Observations	15	Number of Missing Observations	0
Number of Distinct Observations	10		
Number of Detects	7	Number of Non-Detects	8
Number of Distinct Detects	6	Number of Distinct Non-Detects	4
Minimum Detect	0.022	Minimum Non-Detect	0.03
Maximum Detect	0.56	Maximum Non-Detect	0.25
Variance Detected	0.0397	Percent Non-Detects	53.33%
Mean Detected	0.11	SD Detected	0.199
Mean of Detected Logged Data	-3.045	SD of Detected Logged Data	1.161

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	5.904	d2max (for USL)	3.19

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.519	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.803	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.427	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.304	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	0.067	KM SD	0.133
99.99% UTL95% Coverage	0.85	99.99% KM UPL (t)	0.75
90% KM Percentile (z)	0.237	95% KM Percentile (z)	0.285
99% KM Percentile (z)	0.376	99.99% KM Percentile (z)	0.56
99.99% KM USL	0.49		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	0.0745	SD	0.137
99.99% UTL95% Coverage	0.884	99.99% UPL (t)	0.781
90% Percentile (z)	0.25	95% Percentile (z)	0.3
99% Percentile (z)	0.394	99.99% Percentile (z)	0.585
99.99% USL	0.512		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.331	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.738	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.381	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.323	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.72	k star (bias corrected MLE)	0.506
Theta hat (MLE)	0.153	Theta star (bias corrected MLE)	0.217
nu hat (MLE)	10.07	nu star (bias corrected)	7.09
MLE Mean (bias corrected)	0.11		
MLE Sd (bias corrected)	0.154	99.99% Percentile of Chisquare (2kstar)	15.19

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.0657
Maximum	0.56	Median	0.025
SD	0.14	CV	2.13
k hat (MLE)	0.685	k star (bias corrected MLE)	0.592
Theta hat (MLE)	0.0959	Theta star (bias corrected MLE)	0.111
nu hat (MLE)	20.54	nu star (bias corrected)	17.77
MLE Mean (bias corrected)	0.0657	MLE Sd (bias corrected)	0.0853
		99.99% Percentile of Chisquare (2kstar)	15.82
90% Percentile	0.171	95% Percentile	0.237
99% Percentile	0.397	99.99% Percentile	0.877

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	2.04	2.728	99.99% Approx. Gamma UPL	1.511	1.905
99.99% Gamma USL	0.581	0.624			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.067	SD (KM)	0.133
Variance (KM)	0.0176	SE of Mean (KM)	0.0371
k hat (KM)	0.255	k star (KM)	0.248
nu hat (KM)	7.651	nu star (KM)	7.454
theta hat (KM)	0.263	theta star (KM)	0.27
99.99% gamma percentile (KM)	1.731	90% gamma percentile (KM)	0.201
95% gamma percentile (KM)	0.325	99% gamma percentile (KM)	0.654

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	1.255	1.435	99.99% Approx. Gamma UPL	1.11	1.244
99.99% KM Gamma Percentile	0.601	0.618	99.99% Gamma USL	0.462	0.461

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.706	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.803	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.338	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.304	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.0688	Mean in Log Scale	-3.296
SD in Original Scale	0.137	SD in Log Scale	0.865
99.99% UTL95% Coverage	6.106	99.99% BCA UTL95% Coverage	0.56
99.99% Bootstrap (%) UTL95% Coverage	0.56	99.99% UPL (t)	3.177
90% Percentile (z)	0.112	95% Percentile (z)	0.154
99% Percentile (z)	0.277	99.99% USL	0.584

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-3.331	99.99% KM UTL (Lognormal)95% Coverage	4.291
KM SD of Logged Data	0.811	99.99% KM UPL (Lognormal)	2.325
99.99% KM Percentile Lognormal (z)	0.729	99.99% KM USL (Lognormal)	0.475

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	0.0745	Mean in Log Scale	-3.211
SD in Original Scale	0.137	SD in Log Scale	0.918
99.99% UTL95% Coverage	9.106	99.99% UPL (t)	4.551
90% Percentile (z)	0.131	95% Percentile (z)	0.183
99% Percentile (z)	0.341	99.99% USL	0.754

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	15	99.99% UTL with95% Coverage	0.56
Approx, f used to compute achieved CC	0.789	Approximate Actual Confidence Coefficient achieved by UTL	0.537
Approximate Sample Size needed to achieve specified CC	182	99.99% UPL	0.56
99.99% USL	0.56	99.99% KM Chebyshev UPL	13.76

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (1_1_124)

General Statistics

Total Number of Observations	15	Number of Missing Observations	0
Number of Distinct Observations	5		
Number of Detects	3	Number of Non-Detects	12
Number of Distinct Detects	3	Number of Distinct Non-Detects	2
Minimum Detect	2.8000E-4	Minimum Non-Detect	5.0000E-4
Maximum Detect	5.8400E-4	Maximum Non-Detect	7.0000E-4
Variance Detected	2.5925E-8	Percent Non-Detects	80%
Mean Detected	4.0133E-4	SD Detected	1.6101E-4
Mean of Detected Logged Data	-7.871	SD of Detected Logged Data	0.381

Warning: Data set has only 3 Detected Values.

This is not enough to compute meaningful or reliable statistics and estimates.

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	5.904	d2max (for USL)	3.19

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.891	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.315	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.425	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	3.4044E-4	KM SD	9.0636E-5
99.99% UTL95% Coverage	8.7556E-4	99.99% KM UPL (t)	8.0708E-4
90% KM Percentile (z)	4.5660E-4	95% KM Percentile (z)	4.8953E-4
99% KM Percentile (z)	5.5130E-4	99.99% KM Percentile (z)	6.7752E-4
99.99% KM USL	6.2956E-4		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	3.2027E-4	SD	8.7217E-5
99.99% UTL95% Coverage	8.3520E-4	99.99% UPL (t)	7.6930E-4
90% Percentile (z)	4.3204E-4	95% Percentile (z)	4.6373E-4
99% Percentile (z)	5.2316E-4	99.99% Percentile (z)	6.4463E-4
99.99% USL	5.9848E-4		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	10.11	k star (bias corrected MLE)	N/A
Theta hat (MLE)	3.9678E-5	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	60.69	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A		
MLE Sd (bias corrected)	N/A	99.99% Percentile of Chisquare (2kstar)	N/A

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	2.8000E-4	Mean	0.00808
Maximum	0.01	Median	0.01
SD	0.00397	CV	0.492
k hat (MLE)	1.277	k star (bias corrected MLE)	1.066
Theta hat (MLE)	0.00633	Theta star (bias corrected MLE)	0.00758
nu hat (MLE)	38.32	nu star (bias corrected)	31.99
MLE Mean (bias corrected)	0.00808	MLE Sd (bias corrected)	0.00783
		99.99% Percentile of Chisquare (2kstar)	18.8
90% Percentile	0.0183	95% Percentile	0.0237
99% Percentile	0.036	99.99% Percentile	0.0712

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	0.154	0.258	99.99% Approx. Gamma UPL	0.119	0.187
99.99% Gamma USL	0.0529	0.0698			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	3.4044E-4	SD (KM)	9.0636E-5
Variance (KM)	8.2149E-9	SE of Mean (KM)	4.2061E-5
k hat (KM)	14.11	k star (KM)	11.33
nu hat (KM)	423.3	nu star (KM)	339.9
theta hat (KM)	2.4130E-5	theta star (KM)	3.0044E-5
99.99% gamma percentile (KM)	8.4955E-4	90% gamma percentile (KM)	4.7477E-4
95% gamma percentile (KM)	5.2205E-4	99% gamma percentile (KM)	6.1868E-4

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	9.7293E-4	9.9988E-4	99.99% Approx. Gamma UPL	9.2207E-4	9.4425E-4
99.99% KM Gamma Percentile	7.1865E-4	7.2587E-4	99.99% Gamma USL	6.5171E-4	6.5553E-4

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.931	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.286	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.425	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	3.4199E-4	Mean in Log Scale	-8.016
SD in Original Scale	9.8358E-5	SD in Log Scale	0.271
99.99% UTL95% Coverage	0.00164	99.99% BCA UTL95% Coverage	5.8400E-4
99.99% Bootstrap (%) UTL95% Coverage	5.8400E-4	99.99% UPL (t)	0.00133
90% Percentile (z)	4.6734E-4	95% Percentile (z)	5.1576E-4
99% Percentile (z)	6.2052E-4	99.99% USL	7.8437E-4

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-8.013	99.99% KM UTL (Lognormal)95% Coverage	0.00122
KM SD of Logged Data	0.22	99.99% KM UPL (Lognormal)	0.00103
99.99% KM Percentile Lognormal (z)	7.5181E-4	99.99% KM USL (Lognormal)	6.6905E-4

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	3.2027E-4	Mean in Log Scale	-8.075
SD in Original Scale	8.7217E-5	SD in Log Scale	0.237
99.99% UTL95% Coverage	0.00126	99.99% UPL (t)	0.00105
90% Percentile (z)	4.2169E-4	95% Percentile (z)	4.5959E-4
99% Percentile (z)	5.4012E-4	99.99% USL	6.6274E-4

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	15	99.99% UTL with95% Coverage	7.0000E-4
Approx, f used to compute achieved CC	0.789	Approximate Actual Confidence Coefficient achieved by UTL	0.537
Approximate Sample Size needed to achieve specified CC	182	99.99% UPL	7.0000E-4
99.99% USL	7.0000E-4	99.99% KM Chebyshev UPL	0.0097

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (1_1_130)

General Statistics

Total Number of Observations	15	Number of Missing Observations	0
Number of Distinct Observations	3		
Number of Detects	0	Number of Non-Detects	15
Number of Distinct Detects	0	Number of Distinct Non-Detects	3
Minimum Detect	N/A	Minimum Non-Detect	5.2000E-5
Maximum Detect	N/A	Maximum Non-Detect	1.0000E-4
Variance Detected	N/A	Percent Non-Detects	100%
Mean Detected	N/A	SD Detected	N/A
Mean of Detected Logged Data	N/A	SD of Detected Logged Data	N/A

Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable VALUES (1_1_130) was not processed!

VALUES (1_1_138)

General Statistics

Total Number of Observations	15	Number of Missing Observations	0
Number of Distinct Observations	3		
Number of Detects	1	Number of Non-Detects	14
Number of Distinct Detects	1	Number of Distinct Non-Detects	2
Minimum Detect	0.003	Minimum Non-Detect	0.0015
Maximum Detect	0.003	Maximum Non-Detect	0.002
Variance Detected	N/A	Percent Non-Detects	93.33%
Mean Detected	0.003	SD Detected	N/A
Mean of Detected Logged Data	-5.809	SD of Detected Logged Data	N/A

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable VALUES (1_1_138) was not processed!

VALUES (1_1_140)

General Statistics

Total Number of Observations	15	Number of Missing Observations	0
Number of Distinct Observations	6		
Number of Detects	3	Number of Non-Detects	12
Number of Distinct Detects	3	Number of Distinct Non-Detects	3
Minimum Detect	3.3000E-5	Minimum Non-Detect	1.0000E-4
Maximum Detect	5.5000E-4	Maximum Non-Detect	0.001
Variance Detected	8.5466E-8	Percent Non-Detects	80%
Mean Detected	2.1267E-4	SD Detected	2.9235E-4
Mean of Detected Logged Data	-9.211	SD of Detected Logged Data	1.499

Warning: Data set has only 3 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	5.904	d2max (for USL)	3.19

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.782	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.372	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.425	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	8.0143E-5	KM SD	1.3075E-4
99.99% UTL95% Coverage	8.5207E-4	99.99% KM UPL (t)	7.5329E-4
90% KM Percentile (z)	2.4770E-4	95% KM Percentile (z)	2.9520E-4
99% KM Percentile (z)	3.8430E-4	99.99% KM Percentile (z)	5.6639E-4
99.99% KM USL	4.9721E-4		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	1.1520E-4	SD	1.6704E-4
99.99% UTL95% Coverage	0.0011	99.99% UPL (t)	9.7522E-4
90% Percentile (z)	3.2927E-4	95% Percentile (z)	3.8996E-4
99% Percentile (z)	5.0380E-4	99.99% Percentile (z)	7.3644E-4
99.99% USL	6.4805E-4		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only
Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	0.788	k star (bias corrected MLE)	N/A
Theta hat (MLE)	2.7003E-4	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	4.725	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A		
MLE Sd (bias corrected)	N/A	99.99% Percentile of Chisquare (2kstar)	N/A

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	3.3000E-5	Mean	0.00804
Maximum	0.01	Median	0.01
SD	0.00405	CV	0.504
k hat (MLE)	0.839	k star (bias corrected MLE)	0.715
Theta hat (MLE)	0.00959	Theta star (bias corrected MLE)	0.0112
nu hat (MLE)	25.16	nu star (bias corrected)	21.46
MLE Mean (bias corrected)	0.00804	MLE Sd (bias corrected)	0.00951
		99.99% Percentile of Chisquare (2kstar)	16.67
90% Percentile	0.0201	95% Percentile	0.0272
99% Percentile	0.044	99.99% Percentile	0.0937

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	0.205	0.407	99.99% Approx. Gamma UPL	0.155	0.286
99.99% Gamma USL	0.0652	0.0966			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	8.0143E-5	SD (KM)	1.3075E-4
Variance (KM)	1.7094E-8	SE of Mean (KM)	4.3563E-5
k hat (KM)	0.376	k star (KM)	0.345
nu hat (KM)	11.27	nu star (KM)	10.35
theta hat (KM)	2.1330E-4	theta star (KM)	2.3228E-4
99.99% gamma percentile (KM)	0.00161	90% gamma percentile (KM)	2.3193E-4
95% gamma percentile (KM)	3.5017E-4	99% gamma percentile (KM)	6.5239E-4

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	0.0012	0.00134	99.99% Approx. Gamma UPL	0.00107	0.00118
99.99% KM Gamma Percentile	6.0447E-4	6.1821E-4	99.99% Gamma USL	4.7430E-4	4.7333E-4

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.881	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.322	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.425	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	9.1030E-5	Mean in Log Scale	-9.861
SD in Original Scale	1.3474E-4	SD in Log Scale	1.009
99.99% UTL95% Coverage	0.0201	99.99% BCA UTL95% Coverage	5.5000E-4
99.99% Bootstrap (%) UTL95% Coverage	5.5000E-4	99.99% UPL (t)	0.0094
90% Percentile (z)	1.9004E-4	95% Percentile (z)	2.7416E-4
99% Percentile (z)	5.4524E-4	99.99% USL	0.0013

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-9.881	99.99% KM UTL (Lognormal)95% Coverage	0.00325
KM SD of Logged Data	0.703	99.99% KM UPL (Lognormal)	0.00191
99.99% KM Percentile Lognormal (z)	6.9929E-4	99.99% KM USL (Lognormal)	4.8201E-4

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	1.1520E-4	Mean in Log Scale	-9.572
SD in Original Scale	1.6704E-4	SD in Log Scale	0.842
99.99% UTL95% Coverage	0.0101	99.99% UPL (t)	0.00532
90% Percentile (z)	2.0494E-4	95% Percentile (z)	2.7832E-4
99% Percentile (z)	4.9414E-4	99.99% USL	0.00102

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	15	99.99% UTL with95% Coverage	0.001
Approx, f used to compute achieved CC	0.789	Approximate Actual Confidence Coefficient achieved by UTL	0.537
Approximate Sample Size needed to achieve specified CC	182	99.99% UPL	0.001
99.99% USL	0.001	99.99% KM Chebyshev UPL	0.0136

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (1_1_144)

General Statistics

Total Number of Observations	15	Number of Missing Observations	0
Number of Distinct Observations	4		
Number of Detects	0	Number of Non-Detects	15
Number of Distinct Detects	0	Number of Distinct Non-Detects	4
Minimum Detect	N/A	Minimum Non-Detect	1.0000E-4
Maximum Detect	N/A	Maximum Non-Detect	0.001
Variance Detected	N/A	Percent Non-Detects	100%
Mean Detected	N/A	SD Detected	N/A
Mean of Detected Logged Data	N/A	SD of Detected Logged Data	N/A

Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable VALUES (1_1_144) was not processed!

VALUES (1_1_148)

General Statistics

Total Number of Observations	15	Number of Missing Observations	0
Number of Distinct Observations	8		
Number of Detects	5	Number of Non-Detects	10
Number of Distinct Detects	5	Number of Distinct Non-Detects	3
Minimum Detect	0.0022	Minimum Non-Detect	0.006
Maximum Detect	0.014	Maximum Non-Detect	0.05
Variance Detected	2.4700E-5	Percent Non-Detects	66.67%
Mean Detected	0.0057	SD Detected	0.00497
Mean of Detected Logged Data	-5.434	SD of Detected Logged Data	0.786

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	5.904	d2max (for USL)	3.19

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.798	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.278	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.343	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	0.00397	KM SD	0.00312
99.99% UTL95% Coverage	0.0224	99.99% KM UPL (t)	0.0201
90% KM Percentile (z)	0.00798	95% KM Percentile (z)	0.00911
99% KM Percentile (z)	0.0112	99.99% KM Percentile (z)	0.0156
99.99% KM USL	0.0139		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	0.00577	SD	0.00604
99.99% UTL95% Coverage	0.0414	99.99% UPL (t)	0.0369
90% Percentile (z)	0.0135	95% Percentile (z)	0.0157
99% Percentile (z)	0.0198	99.99% Percentile (z)	0.0282
99.99% USL	0.025		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.429	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.684	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.268	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.36	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	2.029	k star (bias corrected MLE)	0.945
Theta hat (MLE)	0.00281	Theta star (bias corrected MLE)	0.00603
nu hat (MLE)	20.29	nu star (bias corrected)	9.45
MLE Mean (bias corrected)	0.0057		
MLE Sd (bias corrected)	0.00586	99.99% Percentile of Chisquare (2kstar)	18.1

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0022	Mean	0.00857
Maximum	0.014	Median	0.01
SD	0.00339	CV	0.395
k hat (MLE)	4.278	k star (bias corrected MLE)	3.467
Theta hat (MLE)	0.002	Theta star (bias corrected MLE)	0.00247
nu hat (MLE)	128.3	nu star (bias corrected)	104
MLE Mean (bias corrected)	0.00857	MLE Sd (bias corrected)	0.0046
		99.99% Percentile of Chisquare (2kstar)	29.75
90% Percentile	0.0147	95% Percentile	0.0173
99% Percentile	0.0227	99.99% Percentile	0.0368

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	0.0643	0.079	99.99% Approx. Gamma UPL	0.0527	0.0627
99.99% Gamma USL	0.0293	0.0321			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00397	SD (KM)	0.00312
Variance (KM)	9.7606E-6	SE of Mean (KM)	0.00103
k hat (KM)	1.616	k star (KM)	1.337
nu hat (KM)	48.48	nu star (KM)	40.12
theta hat (KM)	0.00246	theta star (KM)	0.00297
99.99% gamma percentile (KM)	0.0301	90% gamma percentile (KM)	0.00851
95% gamma percentile (KM)	0.0108	99% gamma percentile (KM)	0.0159

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	0.0333	0.0373	99.99% Approx. Gamma UPL	0.0303	0.0335
99.99% KM Gamma Percentile	0.0191	0.02	99.99% Gamma USL	0.0158	0.0162

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.891	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.225	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.343	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.004	Mean in Log Scale	-5.705
SD in Original Scale	0.00313	SD in Log Scale	0.579
99.99% UTL95% Coverage	0.102	99.99% BCA UTL95% Coverage	0.014

99.99% Bootstrap (%) UTL95% Coverage	0.014	99.99% UPL (t)	0.0657
90% Percentile (z)	0.007	95% Percentile (z)	0.00864
99% Percentile (z)	0.0128	99.99% USL	0.0211

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-5.714	99.99% KM UTL (Lognormal)95% Coverage	0.0799
KM SD of Logged Data	0.54	99.99% KM UPL (Lognormal)	0.0531
99.99% KM Percentile Lognormal (z)	0.0246	99.99% KM USL (Lognormal)	0.0185

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	0.00577	Mean in Log Scale	-5.428
SD in Original Scale	0.00604	SD in Log Scale	0.654
99.99% UTL95% Coverage	0.209	99.99% UPL (t)	0.127
90% Percentile (z)	0.0102	95% Percentile (z)	0.0129
99% Percentile (z)	0.0201	99.99% USL	0.0354

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	15	99.99% UTL with95% Coverage	0.05
Approx, f used to compute achieved CC	0.789	Approximate Actual Confidence Coefficient achieved by UTL	0.537
Approximate Sample Size needed to achieve specified CC	182	99.99% UPL	0.05
99.99% USL	0.05	99.99% KM Chebyshev UPL	0.327

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (1_2_133)

General Statistics

Total Number of Observations	15	Number of Missing Observations	0
Number of Distinct Observations	6		
Number of Detects	4	Number of Non-Detects	11
Number of Distinct Detects	4	Number of Distinct Non-Detects	2
Minimum Detect	0.097	Minimum Non-Detect	0.1
Maximum Detect	1.9	Maximum Non-Detect	0.2
Variance Detected	0.746	Percent Non-Detects	73.33%
Mean Detected	0.609	SD Detected	0.864
Mean of Detected Logged Data	-1.2	SD of Detected Logged Data	1.302

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	5.904	d2max (for USL)	3.19

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.708	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.748	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.399	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.375	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	0.236	KM SD	0.447
99.99% UTL95% Coverage	2.876	99.99% KM UPL (t)	2.539
90% KM Percentile (z)	0.809	95% KM Percentile (z)	0.972
99% KM Percentile (z)	1.277	99.99% KM Percentile (z)	1.899
99.99% KM USL	1.663		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	0.216	SD	0.47
99.99% UTL95% Coverage	2.989	99.99% UPL (t)	2.634
90% Percentile (z)	0.818	95% Percentile (z)	0.988
99% Percentile (z)	1.309	99.99% Percentile (z)	1.963
99.99% USL	1.714		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.508	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.669	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.348	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.404	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.838	k star (bias corrected MLE)	0.376
Theta hat (MLE)	0.727	Theta star (bias corrected MLE)	1.619
nu hat (MLE)	6.702	nu star (bias corrected)	3.009
MLE Mean (bias corrected)	0.609		
MLE Sd (bias corrected)	0.993	99.99% Percentile of Chisquare (2kstar)	14.11

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.189
Maximum	1.9	Median	0.01
SD	0.481	CV	2.55
k hat (MLE)	0.393	k star (bias corrected MLE)	0.359
Theta hat (MLE)	0.481	Theta star (bias corrected MLE)	0.527
nu hat (MLE)	11.78	nu star (bias corrected)	10.76
MLE Mean (bias corrected)	0.189	MLE Sd (bias corrected)	0.315
		99.99% Percentile of Chisquare (2kstar)	13.95
90% Percentile	0.543	95% Percentile	0.814
99% Percentile	1.504	99.99% Percentile	3.673

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	8.958	14.17	99.99% Approx. Gamma UPL	6.448	9.443
99.99% Gamma USL	2.209	2.584			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.236	SD (KM)	0.447
Variance (KM)	0.2	SE of Mean (KM)	0.133
k hat (KM)	0.279	k star (KM)	0.268
nu hat (KM)	8.366	nu star (KM)	8.026
theta hat (KM)	0.847	theta star (KM)	0.883
99.99% gamma percentile (KM)	5.76	90% gamma percentile (KM)	0.705
95% gamma percentile (KM)	1.12	99% gamma percentile (KM)	2.214

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	4.126	4.654	99.99% Approx. Gamma UPL	3.656	4.049
99.99% KM Gamma Percentile	2.005	2.049	99.99% Gamma USL	1.55	1.541

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.899	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.273	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.375	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.226	Mean in Log Scale	-2.272
SD in Original Scale	0.468	SD in Log Scale	1.088
99.99% UTL95% Coverage	63.51	99.99% BCA UTL95% Coverage	1.9
99.99% Bootstrap (%) UTL95% Coverage	1.9	99.99% UPL (t)	27.92
90% Percentile (z)	0.416	95% Percentile (z)	0.617
99% Percentile (z)	1.296	99.99% USL	3.315

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-2.01	99.99% KM UTL (Lognormal)95% Coverage	12.36
KM SD of Logged Data	0.766	99.99% KM UPL (Lognormal)	6.926
99.99% KM Percentile Lognormal (z)	2.316	99.99% KM USL (Lognormal)	1.544

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	0.216	Mean in Log Scale	-2.286
SD in Original Scale	0.47	SD in Log Scale	0.957
99.99% UTL95% Coverage	28.92	99.99% UPL (t)	14.03
90% Percentile (z)	0.347	95% Percentile (z)	0.491
99% Percentile (z)	0.942	99.99% USL	2.153

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	15	99.99% UTL with95% Coverage	1.9
Approx, f used to compute achieved CC	0.789	Approximate Actual Confidence Coefficient achieved by UTL	0.537
Approximate Sample Size needed to achieve specified CC	182	99.99% UPL	1.9

99.99% USL	1.9	99.99% KM Chebyshev UPL	46.42

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (1_3_134)

General Statistics

Total Number of Observations	15	Number of Missing Observations	0
Number of Distinct Observations	4		
Number of Detects	0	Number of Non-Detects	15
Number of Distinct Detects	0	Number of Distinct Non-Detects	4
Minimum Detect	N/A	Minimum Non-Detect	1.0000E-5
Maximum Detect	N/A	Maximum Non-Detect	1.0000E-4
Variance Detected	N/A	Percent Non-Detects	100%
Mean Detected	N/A	SD Detected	N/A
Mean of Detected Logged Data	N/A	SD of Detected Logged Data	N/A

Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable VALUES (1_3_134) was not processed!

VALUES (1_4_103)

General Statistics

Total Number of Observations	15	Number of Missing Observations	0
Number of Distinct Observations	7		
Number of Detects	2	Number of Non-Detects	13
Number of Distinct Detects	2	Number of Distinct Non-Detects	5
Minimum Detect	4.4000E-4	Minimum Non-Detect	5.2000E-4
Maximum Detect	5.3000E-4	Maximum Non-Detect	0.0025
Variance Detected	4.0500E-9	Percent Non-Detects	86.67%
Mean Detected	4.8500E-4	SD Detected	6.3640E-5
Mean of Detected Logged Data	-7.636	SD of Detected Logged Data	0.132

Warning: Data set has only 2 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	5.904	d2max (for USL)	3.19

Normal GOF Test on Detects Only
Not Enough Data to Perform GOF Test

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	4.7000E-4	KM SD	4.2426E-5
99.99% UTL95% Coverage	7.2049E-4	99.99% KM UPL (t)	6.8843E-4
90% KM Percentile (z)	5.2437E-4	95% KM Percentile (z)	5.3979E-4
99% KM Percentile (z)	5.6870E-4	99.99% KM Percentile (z)	6.2778E-4
99.99% KM USL	6.0534E-4		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	4.7200E-4	SD	2.4243E-4
99.99% UTL95% Coverage	0.0019	99.99% UPL (t)	0.00172
90% Percentile (z)	7.8269E-4	95% Percentile (z)	8.7077E-4
99% Percentile (z)	0.00104	99.99% Percentile (z)	0.00137
99.99% USL	0.00125		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only
Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	115.8	k star (bias corrected MLE)	N/A
Theta hat (MLE)	4.1873E-6	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	463.3	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A		
MLE Sd (bias corrected)	N/A	99.99% Percentile of Chisquare (2kstar)	N/A

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	4.7000E-4	SD (KM)	4.2426E-5
Variance (KM)	1.8000E-9	SE of Mean (KM)	3.4641E-5
k hat (KM)	122.7	k star (KM)	98.22
nu hat (KM)	3682	nu star (KM)	2947
theta hat (KM)	3.8298E-6	theta star (KM)	4.7851E-6
99.99% gamma percentile (KM)	6.6714E-4	90% gamma percentile (KM)	5.3171E-4
95% gamma percentile (KM)	5.5063E-4	99% gamma percentile (KM)	5.8730E-4

The following statistics are computed using gamma distribution and KM estimates
Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	7.3481E-4	7.3984E-4	99.99% Approx. Gamma UPL	7.1681E-4	7.2113E-4
99.99% KM Gamma Percentile	6.4085E-4	6.4273E-4	99.99% Gamma USL	6.1415E-4	6.1539E-4

Lognormal GOF Test on Detected Observations Only
Not Enough Data to Perform GOF Test

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	4.6801E-4	Mean in Log Scale	-7.67
SD in Original Scale	4.0344E-5	SD in Log Scale	0.0856
99.99% UTL95% Coverage	7.7318E-4	99.99% BCA UTL95% Coverage	5.3000E-4
99.99% Bootstrap (%) UTL95% Coverage	5.3000E-4	99.99% UPL (t)	7.2475E-4
90% Percentile (z)	5.2049E-4	95% Percentile (z)	5.3693E-4
99% Percentile (z)	5.6919E-4	99.99% USL	6.1287E-4

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-7.667	99.99% KM UTL (Lognormal)95% Coverage	7.8585E-4
KM SD of Logged Data	0.0877	99.99% KM UPL (Lognormal)	7.3545E-4
99.99% KM Percentile Lognormal (z)	6.4877E-4	99.99% KM USL (Lognormal)	6.1934E-4

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	4.7200E-4	Mean in Log Scale	-7.746
SD in Original Scale	2.4243E-4	SD in Log Scale	0.406
99.99% UTL95% Coverage	0.00475	99.99% UPL (t)	0.0035
90% Percentile (z)	7.2758E-4	95% Percentile (z)	8.4324E-4
99% Percentile (z)	0.00111	99.99% USL	0.00158

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	15	99.99% UTL with95% Coverage	0.0025
Approx, f used to compute achieved CC	0.789	Approximate Actual Confidence Coefficient achieved by UTL	0.537
Approximate Sample Size needed to achieve specified CC	182	99.99% UPL	0.0025
99.99% USL	0.0025	99.99% KM Chebyshev UPL	0.00485

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (1_4_109)

General Statistics

Total Number of Observations	15	Number of Missing Observations	0
Number of Distinct Observations	7		
Number of Detects	2	Number of Non-Detects	13
Number of Distinct Detects	2	Number of Distinct Non-Detects	5
Minimum Detect	1.1000E-4	Minimum Non-Detect	2.4000E-4
Maximum Detect	1.4000E-4	Maximum Non-Detect	0.001
Variance Detected	4.500E-10	Percent Non-Detects	86.67%
Mean Detected	1.2500E-4	SD Detected	2.1213E-5
Mean of Detected Logged Data	-8.994	SD of Detected Logged Data	0.171

Warning: Data set has only 2 Detected Values.

This is not enough to compute meaningful or reliable statistics and estimates.

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	5.904	d2max (for USL)	3.19

Normal GOF Test on Detects Only

Not Enough Data to Perform GOF Test

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	1.2500E-4	KM SD	1.5000E-5
99.99% UTL95% Coverage	2.1356E-4	99.99% KM UPL (t)	2.0223E-4
90% KM Percentile (z)	1.4422E-4	95% KM Percentile (z)	1.4967E-4
99% KM Percentile (z)	1.5990E-4	99.99% KM Percentile (z)	1.8079E-4
99.99% KM USL	1.7285E-4		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	1.6633E-4	SD	9.7293E-5
99.99% UTL95% Coverage	7.4075E-4	99.99% UPL (t)	6.6725E-4
90% Percentile (z)	2.9102E-4	95% Percentile (z)	3.2637E-4
99% Percentile (z)	3.9267E-4	99.99% Percentile (z)	5.2817E-4
99.99% USL	4.7669E-4		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	69.11	k star (bias corrected MLE)	N/A
Theta hat (MLE)	1.8087E-6	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	276.4	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A		
MLE Sd (bias corrected)	N/A	99.99% Percentile of Chisquare (2kstar)	N/A

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	1.2500E-4	SD (KM)	1.5000E-5
Variance (KM)	2.250E-10	SE of Mean (KM)	1.5000E-5
k hat (KM)	69.44	k star (KM)	55.6
nu hat (KM)	2083	nu star (KM)	1668
theta hat (KM)	1.8000E-6	theta star (KM)	2.2482E-6

99.99% gamma percentile (KM)	1.9714E-4	90% gamma percentile (KM)	1.4691E-4
95% gamma percentile (KM)	1.5379E-4	99% gamma percentile (KM)	1.6727E-4

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	2.2579E-4	2.2894E-4	99.99% Approx. Gamma UPL	2.1865E-4	2.2137E-4
99.99% KM Gamma Percentile	1.8890E-4	1.9015E-4	99.99% Gamma USL	1.7861E-4	1.7947E-4

Lognormal GOF Test on Detected Observations Only

Not Enough Data to Perform GOF Test

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	1.2569E-4	Mean in Log Scale	-8.994
SD in Original Scale	2.0863E-5	SD in Log Scale	0.166
99.99% UTL95% Coverage	3.2996E-4	99.99% BCA UTL95% Coverage	1.6732E-4
99.99% Bootstrap (%) UTL95% Coverage	1.6732E-4	99.99% UPL (t)	2.9115E-4
90% Percentile (z)	1.5344E-4	95% Percentile (z)	1.6296E-4
99% Percentile (z)	1.8243E-4	99.99% USL	2.1049E-4

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-8.994	99.99% KM UTL (Lognormal)95% Coverage	2.5290E-4
KM SD of Logged Data	0.121	99.99% KM UPL (Lognormal)	2.3087E-4
99.99% KM Percentile Lognormal (z)	1.9432E-4	99.99% KM USL (Lognormal)	1.8231E-4

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	1.6633E-4	Mean in Log Scale	-8.79
SD in Original Scale	9.7293E-5	SD in Log Scale	0.378
99.99% UTL95% Coverage	0.00142	99.99% UPL (t)	0.00107
90% Percentile (z)	2.4709E-4	95% Percentile (z)	2.8346E-4
99% Percentile (z)	3.6676E-4	99.99% USL	5.0834E-4

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	15	99.99% UTL with95% Coverage	0.001
Approx, f used to compute achieved CC	0.789	Approximate Actual Confidence Coefficient achieved by UTL	0.537
Approximate Sample Size needed to achieve specified CC	182	99.99% UPL	0.001
99.99% USL	0.001	99.99% KM Chebyshev UPL	0.00167

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (1_4_111)

General Statistics

Total Number of Observations	15	Number of Missing Observations	0
Number of Distinct Observations	6		
Number of Detects	2	Number of Non-Detects	13
Number of Distinct Detects	2	Number of Distinct Non-Detects	4
Minimum Detect	1.4000E-4	Minimum Non-Detect	1.2000E-4
Maximum Detect	3.7000E-4	Maximum Non-Detect	0.001
Variance Detected	2.6450E-8	Percent Non-Detects	86.67%
Mean Detected	2.5500E-4	SD Detected	1.6263E-4
Mean of Detected Logged Data	-8.388	SD of Detected Logged Data	0.687

Warning: Data set has only 2 Detected Values.

This is not enough to compute meaningful or reliable statistics and estimates.

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	5.904	d2max (for USL)	3.19

Normal GOF Test on Detects Only

Not Enough Data to Perform GOF Test

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	1.6583E-4	KM SD	9.1648E-5
99.99% UTL95% Coverage	7.0692E-4	99.99% KM UPL (t)	6.3768E-4
90% KM Percentile (z)	2.8328E-4	95% KM Percentile (z)	3.1658E-4
99% KM Percentile (z)	3.7904E-4	99.99% KM Percentile (z)	5.0667E-4
99.99% KM USL	4.5818E-4		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	3.3400E-4	SD	1.9791E-4
99.99% UTL95% Coverage	0.0015	99.99% UPL (t)	0.00135
90% Percentile (z)	5.8763E-4	95% Percentile (z)	6.5953E-4
99% Percentile (z)	7.9441E-4	99.99% Percentile (z)	0.00107
99.99% USL	9.6532E-4		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	4.558	k star (bias corrected MLE)	N/A
Theta hat (MLE)	5.5946E-5	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	18.23	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A		
MLE Sd (bias corrected)	N/A	99.99% Percentile of Chisquare (2kstar)	N/A

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	1.6583E-4	SD (KM)	9.1648E-5
Variance (KM)	8.3993E-9	SE of Mean (KM)	5.2962E-5
k hat (KM)	3.274	k star (KM)	2.664
nu hat (KM)	98.22	nu star (KM)	79.91
theta hat (KM)	5.0649E-5	theta star (KM)	6.2255E-5
99.99% gamma percentile (KM)	8.2326E-4	90% gamma percentile (KM)	3.0201E-4
95% gamma percentile (KM)	3.6029E-4	99% gamma percentile (KM)	4.8744E-4

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	9.5441E-4	0.00103	99.99% Approx. Gamma UPL	8.7930E-4	9.3919E-4
99.99% KM Gamma Percentile	5.9457E-4	6.1266E-4	99.99% Gamma USL	5.0725E-4	5.1664E-4

Lognormal GOF Test on Detected Observations Only

Not Enough Data to Perform GOF Test

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	1.0194E-4	Mean in Log Scale	-9.624
SD in Original Scale	1.0555E-4	SD in Log Scale	0.96
99.99% UTL95% Coverage	0.0191	99.99% BCA UTL95% Coverage	3.7000E-4
99.99% Bootstrap (%) UTL95% Coverage	3.7000E-4	99.99% UPL (t)	0.00925
90% Percentile (z)	2.2615E-4	95% Percentile (z)	3.2050E-4
99% Percentile (z)	6.1642E-4	99.99% USL	0.00141

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-8.808	99.99% KM UTL (Lognormal)95% Coverage	0.00168
KM SD of Logged Data	0.41	99.99% KM UPL (Lognormal)	0.00123
99.99% KM Percentile Lognormal (z)	6.8639E-4	99.99% KM USL (Lognormal)	5.5258E-4

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	3.3400E-4	Mean in Log Scale	-8.286
SD in Original Scale	1.9791E-4	SD in Log Scale	0.888
99.99% UTL95% Coverage	0.0476	99.99% UPL (t)	0.0243
90% Percentile (z)	7.8601E-4	95% Percentile (z)	0.00109
99% Percentile (z)	0.00199	99.99% USL	0.00428

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	15	99.99% UTL with95% Coverage	0.001
Approx, f used to compute achieved CC	0.789	Approximate Actual Confidence Coefficient achieved by UTL	0.537
Approximate Sample Size needed to achieve specified CC	182	99.99% UPL	0.001
99.99% USL	0.001	99.99% KM Chebyshev UPL	0.00963

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (1_4_115)

General Statistics

Total Number of Observations	15	Number of Missing Observations	0
Number of Distinct Observations	9		
Number of Detects	5	Number of Non-Detects	10
Number of Distinct Detects	5	Number of Distinct Non-Detects	4
Minimum Detect	6.2000E-4	Minimum Non-Detect	0.001
Maximum Detect	0.0026	Maximum Non-Detect	0.003
Variance Detected	7.3520E-7	Percent Non-Detects	66.67%
Mean Detected	0.00149	SD Detected	8.5744E-4
Mean of Detected Logged Data	-6.67	SD of Detected Logged Data	0.665

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	5.904	d2max (for USL)	3.19

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.895	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.242	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.343	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	9.7232E-4	KM SD	6.3082E-4
99.99% UTL95% Coverage	0.0047	99.99% KM UPL (t)	0.00422
90% KM Percentile (z)	0.00178	95% KM Percentile (z)	0.00201
99% KM Percentile (z)	0.00244	99.99% KM Percentile (z)	0.00332
99.99% KM USL	0.00298		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	0.00107	SD	5.8905E-4
99.99% UTL95% Coverage	0.00455	99.99% UPL (t)	0.0041
90% Percentile (z)	0.00182	95% Percentile (z)	0.00204
99% Percentile (z)	0.00244	99.99% Percentile (z)	0.00326
99.99% USL	0.00295		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.478	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.682	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.278	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.359	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	3.259	k star (bias corrected MLE)	1.437
Theta hat (MLE)	4.5718E-4	Theta star (bias corrected MLE)	0.00104
nu hat (MLE)	32.59	nu star (bias corrected)	14.37
MLE Mean (bias corrected)	0.00149		
MLE Sd (bias corrected)	0.00124	99.99% Percentile of Chisquare (2kstar)	20.79

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	6.2000E-4	Mean	0.00716
Maximum	0.01	Median	0.01
SD	0.00418	CV	0.583
k hat (MLE)	1.555	k star (bias corrected MLE)	1.289
Theta hat (MLE)	0.00461	Theta star (bias corrected MLE)	0.00556
nu hat (MLE)	46.66	nu star (bias corrected)	38.66
MLE Mean (bias corrected)	0.00716	MLE Sd (bias corrected)	0.00631
		99.99% Percentile of Chisquare (2kstar)	20.02
90% Percentile	0.0155	95% Percentile	0.0196
99% Percentile	0.0291	99.99% Percentile	0.0556

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	0.119	0.177	99.99% Approx. Gamma UPL	0.0926	0.13
99.99% Gamma USL	0.0425	0.0516			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	9.7232E-4	SD (KM)	6.3082E-4
Variance (KM)	3.9794E-7	SE of Mean (KM)	2.0093E-4
k hat (KM)	2.376	k star (KM)	1.945
nu hat (KM)	71.27	nu star (KM)	58.35
theta hat (KM)	4.0926E-4	theta star (KM)	4.9989E-4
99.99% gamma percentile (KM)	0.00581	90% gamma percentile (KM)	0.0019
95% gamma percentile (KM)	0.00233	99% gamma percentile (KM)	0.00327

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	0.00723	0.00808	99.99% Approx. Gamma UPL	0.0066	0.00729
99.99% KM Gamma Percentile	0.00426	0.00448	99.99% Gamma USL	0.00355	0.00368

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.841	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.27	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.343	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	9.8590E-4	Mean in Log Scale	-7.066
SD in Original Scale	6.1689E-4	SD in Log Scale	0.528
99.99% UTL95% Coverage	0.0193	99.99% BCA UTL95% Coverage	0.0026

99.99% Bootstrap (%) UTL95% Coverage	0.0026	99.99% UPL (t)	0.0129
90% Percentile (z)	0.00168	95% Percentile (z)	0.00203
99% Percentile (z)	0.00292	99.99% USL	0.0046

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-7.089	99.99% KM UTL (Lognormal)95% Coverage	0.0167
KM SD of Logged Data	0.508	99.99% KM UPL (Lognormal)	0.0114
99.99% KM Percentile Lognormal (z)	0.00551	99.99% KM USL (Lognormal)	0.00421

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	0.00107	Mean in Log Scale	-6.953
SD in Original Scale	5.8905E-4	SD in Log Scale	0.466
99.99% UTL95% Coverage	0.015	99.99% UPL (t)	0.0105
90% Percentile (z)	0.00174	95% Percentile (z)	0.00206
99% Percentile (z)	0.00283	99.99% USL	0.00423

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	15	99.99% UTL with95% Coverage	0.003
Approx, f used to compute achieved CC	0.789	Approximate Actual Confidence Coefficient achieved by UTL	0.537
Approximate Sample Size needed to achieve specified CC	182	99.99% UPL	0.003
99.99% USL	0.003	99.99% KM Chebyshev UPL	0.0661

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (1_4_117)

General Statistics

Total Number of Observations	15	Number of Missing Observations	0
Number of Distinct Observations	14		
Number of Detects	13	Number of Non-Detects	2
Number of Distinct Detects	12	Number of Distinct Non-Detects	2
Minimum Detect	2.4000E-4	Minimum Non-Detect	2.0000E-4
Maximum Detect	0.0018	Maximum Non-Detect	0.001
Variance Detected	2.2244E-7	Percent Non-Detects	13.33%
Mean Detected	5.4923E-4	SD Detected	4.7164E-4
Mean of Detected Logged Data	-7.729	SD of Detected Logged Data	0.621

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	5.904	d2max (for USL)	3.19

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.652	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.866	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.377	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.234	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	5.1289E-4	KM SD	4.3411E-4
99.99% UTL95% Coverage	0.00308	99.99% KM UPL (t)	0.00275
90% KM Percentile (z)	0.00107	95% KM Percentile (z)	0.00123
99% KM Percentile (z)	0.00152	99.99% KM Percentile (z)	0.00213
99.99% KM USL	0.0019		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	5.1600E-4	SD	4.5174E-4
99.99% UTL95% Coverage	0.00318	99.99% UPL (t)	0.00284
90% Percentile (z)	0.00109	95% Percentile (z)	0.00126
99% Percentile (z)	0.00157	99.99% Percentile (z)	0.0022
99.99% USL	0.00196		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.486	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.742	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.34	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.239	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	2.408	k star (bias corrected MLE)	1.904
Theta hat (MLE)	2.2805E-4	Theta star (bias corrected MLE)	2.8848E-4
nu hat (MLE)	62.62	nu star (bias corrected)	49.5
MLE Mean (bias corrected)	5.4923E-4		
MLE Sd (bias corrected)	3.9805E-4	99.99% Percentile of Chisquare (2kstar)	23.07

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	2.4000E-4	Mean	0.00181
Maximum	0.01	Median	3.8000E-4
SD	0.00335	CV	1.854
k hat (MLE)	0.617	k star (bias corrected MLE)	0.538
Theta hat (MLE)	0.00293	Theta star (bias corrected MLE)	0.00336
nu hat (MLE)	18.51	nu star (bias corrected)	16.14
MLE Mean (bias corrected)	0.00181	MLE Sd (bias corrected)	0.00247
		99.99% Percentile of Chisquare (2kstar)	15.43
90% Percentile	0.00482	95% Percentile	0.00677
99% Percentile	0.0115	99.99% Percentile	0.0259

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	0.0636	0.0897	99.99% Approx. Gamma UPL	0.0468	0.062
99.99% Gamma USL	0.0175	0.0195			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	5.1289E-4	SD (KM)	4.3411E-4
Variance (KM)	1.8845E-7	SE of Mean (KM)	1.1704E-4
k hat (KM)	1.396	k star (KM)	1.161
nu hat (KM)	41.88	nu star (KM)	34.84
theta hat (KM)	3.6742E-4	theta star (KM)	4.4170E-4
99.99% gamma percentile (KM)	0.00427	90% gamma percentile (KM)	0.00114
95% gamma percentile (KM)	0.00146	99% gamma percentile (KM)	0.00219

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	0.00492	0.00561	99.99% Approx. Gamma UPL	0.00445	0.00501
99.99% KM Gamma Percentile	0.00274	0.0029	99.99% Gamma USL	0.00224	0.00233

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.801	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.866	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.299	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.234	Data Not Lognormal at 5% Significance Level	

Data Not Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	5.0685E-4	Mean in Log Scale	-7.835
SD in Original Scale	4.5299E-4	SD in Log Scale	0.675
99.99% UTL95% Coverage	0.0213	99.99% BCA UTL95% Coverage	0.0018
99.99% Bootstrap (%) UTL95% Coverage	0.0018	99.99% UPL (t)	0.0128
90% Percentile (z)	9.3937E-4	95% Percentile (z)	0.0012
99% Percentile (z)	0.0019	99.99% USL	0.0034

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-7.8	99.99% KM UTL (Lognormal)95% Coverage	0.0139
KM SD of Logged Data	0.597	99.99% KM UPL (Lognormal)	0.00885
99.99% KM Percentile Lognormal (z)	0.00377	99.99% KM USL (Lognormal)	0.00275

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	5.1600E-4	Mean in Log Scale	-7.819
SD in Original Scale	4.5174E-4	SD in Log Scale	0.692
99.99% UTL95% Coverage	0.024	99.99% UPL (t)	0.0142
90% Percentile (z)	9.7639E-4	95% Percentile (z)	0.00126
99% Percentile (z)	0.00201	99.99% USL	0.00366

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	15	99.99% UTL with95% Coverage	0.0018
Approx, f used to compute achieved CC	0.789	Approximate Actual Confidence Coefficient achieved by UTL	0.537
Approximate Sample Size needed to achieve specified CC	182	99.99% UPL	0.0018
99.99% USL	0.0018	99.99% KM Chebyshev UPL	0.0453

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (1_4_121)

General Statistics

Total Number of Observations	15	Number of Missing Observations	0
Number of Distinct Observations	15		
Number of Detects	13	Number of Non-Detects	2
Number of Distinct Detects	13	Number of Distinct Non-Detects	2
Minimum Detect	0.031	Minimum Non-Detect	0.03
Maximum Detect	2.5	Maximum Non-Detect	0.25
Variance Detected	0.582	Percent Non-Detects	13.33%
Mean Detected	0.384	SD Detected	0.763
Mean of Detected Logged Data	-2.124	SD of Detected Logged Data	1.342

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	5.904	d2max (for USL)	3.19

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.511	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.866	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.467	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.234	Data Not Normal at 5% Significance Level	

Data Not Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	0.34	KM SD	0.692
99.99% UTL95% Coverage	4.423	99.99% KM UPL (t)	3.901
90% KM Percentile (z)	1.226	95% KM Percentile (z)	1.477
99% KM Percentile (z)	1.949	99.99% KM Percentile (z)	2.912
99.99% KM USL	2.546		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	0.342	SD	0.715
99.99% UTL95% Coverage	4.564	99.99% UPL (t)	4.024
90% Percentile (z)	1.258	95% Percentile (z)	1.518
99% Percentile (z)	2.006	99.99% Percentile (z)	3.002
99.99% USL	2.623		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	2.059	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.787	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.393	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.249	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.538	k star (bias corrected MLE)	0.465
Theta hat (MLE)	0.713	Theta star (bias corrected MLE)	0.825
nu hat (MLE)	13.99	nu star (bias corrected)	12.1
MLE Mean (bias corrected)	0.384		
MLE Sd (bias corrected)	0.563	99.99% Percentile of Chisquare (2kstar)	14.86

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.334
Maximum	2.5	Median	0.07
SD	0.718	CV	2.151
k hat (MLE)	0.472	k star (bias corrected MLE)	0.422
Theta hat (MLE)	0.708	Theta star (bias corrected MLE)	0.791
nu hat (MLE)	14.16	nu star (bias corrected)	12.66
MLE Mean (bias corrected)	0.334	MLE Sd (bias corrected)	0.514
		99.99% Percentile of Chisquare (2kstar)	14.51
90% Percentile	0.934	95% Percentile	1.362
99% Percentile	2.432	99.99% Percentile	5.741

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	14.12	21.14	99.99% Approx. Gamma UPL	10.25	14.3
99.99% Gamma USL	3.641	4.143			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.34	SD (KM)	0.692
Variance (KM)	0.478	SE of Mean (KM)	0.186
k hat (KM)	0.241	k star (KM)	0.237
nu hat (KM)	7.237	nu star (KM)	7.123
theta hat (KM)	1.408	theta star (KM)	1.431
99.99% gamma percentile (KM)	9.095	90% gamma percentile (KM)	1.023
95% gamma percentile (KM)	1.669	99% gamma percentile (KM)	3.403

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	10.13	13.57	99.99% Approx. Gamma UPL	8.829	11.5
99.99% KM Gamma Percentile	4.402	5.03	99.99% Gamma USL	3.245	3.526

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.789	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.866	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.279	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.234	Data Not Lognormal at 5% Significance Level	

Data Not Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.338	Mean in Log Scale	-2.353
SD in Original Scale	0.717	SD in Log Scale	1.457
99.99% UTL95% Coverage	517.2	99.99% BCA UTL95% Coverage	2.5
99.99% Bootstrap (%) UTL95% Coverage	2.5	99.99% UPL (t)	172
90% Percentile (z)	0.615	95% Percentile (z)	1.044
99% Percentile (z)	2.818	99.99% USL	9.917

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-2.256	99.99% KM UTL (Lognormal)95% Coverage	180.6
KM SD of Logged Data	1.262	99.99% KM UPL (Lognormal)	69.6
99.99% KM Percentile Lognormal (z)	11.46	99.99% KM USL (Lognormal)	5.875

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	0.342	Mean in Log Scale	-2.26
SD in Original Scale	0.715	SD in Log Scale	1.354
99.99% UTL95% Coverage	308.5	99.99% UPL (t)	110.9
90% Percentile (z)	0.591	95% Percentile (z)	0.967
99% Percentile (z)	2.433	99.99% USL	7.829

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	15	99.99% UTL with95% Coverage	2.5
Approx, f used to compute achieved CC	0.789	Approximate Actual Confidence Coefficient achieved by UTL	0.537
Approximate Sample Size needed to achieve specified CC	182	99.99% UPL	2.5
99.99% USL	2.5	99.99% KM Chebyshev UPL	71.77

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (1_4_123)

General Statistics

Total Number of Observations	15	Number of Missing Observations	0
Number of Distinct Observations	7		
Number of Detects	4	Number of Non-Detects	11
Number of Distinct Detects	4	Number of Distinct Non-Detects	3
Minimum Detect	1.9000E-4	Minimum Non-Detect	5.0000E-4
Maximum Detect	0.0022	Maximum Non-Detect	0.001
Variance Detected	7.7983E-7	Percent Non-Detects	73.33%
Mean Detected	0.00111	SD Detected	8.8308E-4
Mean of Detected Logged Data	-7.153	SD of Detected Logged Data	1.073

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	5.904	d2max (for USL)	3.19

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.973	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.202	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.375	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	4.6038E-4	KM SD	5.6472E-4
99.99% UTL95% Coverage	0.00379	99.99% KM UPL (t)	0.00337
90% KM Percentile (z)	0.00118	95% KM Percentile (z)	0.00139
99% KM Percentile (z)	0.00177	99.99% KM Percentile (z)	0.00256
99.99% KM USL	0.00226		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	5.2867E-4	SD	5.4957E-4
99.99% UTL95% Coverage	0.00377	99.99% UPL (t)	0.00336
90% Percentile (z)	0.00123	95% Percentile (z)	0.00143
99% Percentile (z)	0.00181	99.99% Percentile (z)	0.00257
99.99% USL	0.00228		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.223	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.662	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.216	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.399	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.584	k star (bias corrected MLE)	0.563
Theta hat (MLE)	6.9899E-4	Theta star (bias corrected MLE)	0.00197
nu hat (MLE)	12.68	nu star (bias corrected)	4.502
MLE Mean (bias corrected)	0.00111		
MLE Sd (bias corrected)	0.00148	99.99% Percentile of Chisquare (2kstar)	15.61

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	1.9000E-4	Mean	0.00763
Maximum	0.01	Median	0.01
SD	0.00409	CV	0.536
k hat (MLE)	1.366	k star (bias corrected MLE)	1.137
Theta hat (MLE)	0.00559	Theta star (bias corrected MLE)	0.00671
nu hat (MLE)	40.97	nu star (bias corrected)	34.11
MLE Mean (bias corrected)	0.00763	MLE Sd (bias corrected)	0.00715
		99.99% Percentile of Chisquare (2kstar)	19.2
90% Percentile	0.017	95% Percentile	0.0218
99% Percentile	0.033	99.99% Percentile	0.0644

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	0.138	0.221	99.99% Approx. Gamma UPL	0.107	0.161
99.99% Gamma USL	0.0481	0.0616			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	4.6038E-4	SD (KM)	5.6472E-4
Variance (KM)	3.1891E-7	SE of Mean (KM)	1.7316E-4
k hat (KM)	0.665	k star (KM)	0.576
nu hat (KM)	19.94	nu star (KM)	17.28
theta hat (KM)	6.9271E-4	theta star (KM)	7.9909E-4
99.99% gamma percentile (KM)	0.00628	90% gamma percentile (KM)	0.00121
95% gamma percentile (KM)	0.00168	99% gamma percentile (KM)	0.00283

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	0.00714	0.00864	99.99% Approx. Gamma UPL	0.00636	0.00755
99.99% KM Gamma Percentile	0.00359	0.00392	99.99% Gamma USL	0.00282	0.00298

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.954	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.206	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.375	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	4.6403E-4	Mean in Log Scale	-8.189
SD in Original Scale	5.8594E-4	SD in Log Scale	0.99
99.99% UTL95% Coverage	0.0958	99.99% BCA UTL95% Coverage	0.0022
99.99% Bootstrap (%) UTL95% Coverage	0.0022	99.99% UPL (t)	0.0453
90% Percentile (z)	9.8734E-4	95% Percentile (z)	0.00141
99% Percentile (z)	0.00278	99.99% USL	0.00653

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-8.122	99.99% KM UTL (Lognormal)95% Coverage	0.0345
KM SD of Logged Data	0.805	99.99% KM UPL (Lognormal)	0.0188
99.99% KM Percentile Lognormal (z)	0.00594	99.99% KM USL (Lognormal)	0.00388

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	5.2867E-4	Mean in Log Scale	-7.831
SD in Original Scale	5.4957E-4	SD in Log Scale	0.681
99.99% UTL95% Coverage	0.0221	99.99% UPL (t)	0.0132
90% Percentile (z)	9.5034E-4	95% Percentile (z)	0.00122
99% Percentile (z)	0.00194	99.99% USL	0.00349

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	15	99.99% UTL with95% Coverage	0.0022
Approx, f used to compute achieved CC	0.789	Approximate Actual Confidence Coefficient achieved by UTL	0.537
Approximate Sample Size needed to achieve specified CC	182	99.99% UPL	0.0022
99.99% USL	0.0022	99.99% KM Chebyshev UPL	0.0588

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (1_4_129)

General Statistics

Total Number of Observations	15	Number of Missing Observations	0
Number of Distinct Observations	3		
Number of Detects	0	Number of Non-Detects	15
Number of Distinct Detects	0	Number of Distinct Non-Detects	3
Minimum Detect	N/A	Minimum Non-Detect	2.7000E-5
Maximum Detect	N/A	Maximum Non-Detect	1.0000E-4
Variance Detected	N/A	Percent Non-Detects	100%
Mean Detected	N/A	SD Detected	N/A
Mean of Detected Logged Data	N/A	SD of Detected Logged Data	N/A

Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable VALUES (1_4_129) was not processed!

VALUES (1_4_137)

General Statistics

Total Number of Observations	15	Number of Missing Observations	0
Number of Distinct Observations	4		
Number of Detects	1	Number of Non-Detects	14
Number of Distinct Detects	1	Number of Distinct Non-Detects	3
Minimum Detect	0.0046	Minimum Non-Detect	0.0015
Maximum Detect	0.0046	Maximum Non-Detect	0.004
Variance Detected	N/A	Percent Non-Detects	93.33%
Mean Detected	0.0046	SD Detected	N/A
Mean of Detected Logged Data	-5.382	SD of Detected Logged Data	N/A

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable VALUES (1_4_137) was not processed!

VALUES (1_4_139)

General Statistics

Total Number of Observations	15	Number of Missing Observations	0
Number of Distinct Observations	8		
Number of Detects	4	Number of Non-Detects	11
Number of Distinct Detects	4	Number of Distinct Non-Detects	4
Minimum Detect	1.1000E-4	Minimum Non-Detect	1.0000E-4
Maximum Detect	0.0045	Maximum Non-Detect	0.001
Variance Detected	4.4883E-6	Percent Non-Detects	73.33%
Mean Detected	0.00133	SD Detected	0.00212
Mean of Detected Logged Data	-7.629	SD of Detected Logged Data	1.598

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	5.904	d2max (for USL)	3.19

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.693	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.748	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.408	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.375	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	4.3083E-4	KM SD	0.00109
99.99% UTL95% Coverage	0.00688	99.99% KM UPL (t)	0.00605
90% KM Percentile (z)	0.00183	95% KM Percentile (z)	0.00223
99% KM Percentile (z)	0.00297	99.99% KM Percentile (z)	0.00449
99.99% KM USL	0.00391		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	4.2733E-4	SD	0.00114
99.99% UTL95% Coverage	0.00714	99.99% UPL (t)	0.00628
90% Percentile (z)	0.00188	95% Percentile (z)	0.0023
99% Percentile (z)	0.00307	99.99% Percentile (z)	0.00465
99.99% USL	0.00405		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.48	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.676	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.346	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.408	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.612	k star (bias corrected MLE)	0.32
Theta hat (MLE)	0.00217	Theta star (bias corrected MLE)	0.00416
nu hat (MLE)	4.897	nu star (bias corrected)	2.557
MLE Mean (bias corrected)	0.00133		
MLE Sd (bias corrected)	0.00235	99.99% Percentile of Chisquare (2kstar)	13.58

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	1.1000E-4	Mean	0.00769
Maximum	0.01	Median	0.01
SD	0.00409	CV	0.532
k hat (MLE)	1.056	k star (bias corrected MLE)	0.889
Theta hat (MLE)	0.00728	Theta star (bias corrected MLE)	0.00865
nu hat (MLE)	31.67	nu star (bias corrected)	26.67
MLE Mean (bias corrected)	0.00769	MLE Sd (bias corrected)	0.00815
		99.99% Percentile of Chisquare (2kstar)	17.76
90% Percentile	0.0182	95% Percentile	0.024
99% Percentile	0.0376	99.99% Percentile	0.0768

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	0.17	0.302	99.99% Approx. Gamma UPL	0.13	0.216
99.99% Gamma USL	0.0561	0.0769			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	4.3083E-4	SD (KM)	0.00109
Variance (KM)	1.1925E-6	SE of Mean (KM)	3.2567E-4
k hat (KM)	0.156	k star (KM)	0.169
nu hat (KM)	4.67	nu star (KM)	5.069
theta hat (KM)	0.00277	theta star (KM)	0.00255
99.99% gamma percentile (KM)	0.0151	90% gamma percentile (KM)	0.00129
95% gamma percentile (KM)	0.00231	99% gamma percentile (KM)	0.0052

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	0.0109	0.0129	99.99% Approx. Gamma UPL	0.00953	0.011
99.99% KM Gamma Percentile	0.00485	0.00503	99.99% Gamma USL	0.00361	0.0036

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.926	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.258	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.375	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	3.6019E-4	Mean in Log Scale	-11.29
SD in Original Scale	0.00115	SD in Log Scale	2.766
99.99% UTL95% Coverage	154.6	99.99% BCA UTL95% Coverage	0.0045
99.99% Bootstrap (%) UTL95% Coverage	0.0045	99.99% UPL (t)	19.12
90% Percentile (z)	4.3336E-4	95% Percentile (z)	0.00118
99% Percentile (z)	0.00779	99.99% USL	0.0849

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-8.774	99.99% KM UTL (Lognormal)95% Coverage	0.0573
KM SD of Logged Data	1.002	99.99% KM UPL (Lognormal)	0.0269
99.99% KM Percentile Lognormal (z)	0.00642	99.99% KM USL (Lognormal)	0.00378

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	4.2733E-4	Mean in Log Scale	-9.058
SD in Original Scale	0.00114	SD in Log Scale	1.303
99.99% UTL95% Coverage	0.255	99.99% UPL (t)	0.0953
90% Percentile (z)	6.1826E-4	95% Percentile (z)	9.9246E-4
99% Percentile (z)	0.00241	99.99% USL	0.00743

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	15	99.99% UTL with95% Coverage	0.0045
Approx, f used to compute achieved CC	0.789	Approximate Actual Confidence Coefficient achieved by UTL	0.537
Approximate Sample Size needed to achieve specified CC	182	99.99% UPL	0.0045
99.99% USL	0.0045	99.99% KM Chebyshev UPL	0.113

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (1_4_143)

General Statistics

Total Number of Observations	15	Number of Missing Observations	0
Number of Distinct Observations	4		
Number of Detects	1	Number of Non-Detects	14
Number of Distinct Detects	1	Number of Distinct Non-Detects	3
Minimum Detect	5.6000E-5	Minimum Non-Detect	1.6000E-4
Maximum Detect	5.6000E-5	Maximum Non-Detect	0.001
Variance Detected	N/A	Percent Non-Detects	93.33%
Mean Detected	5.6000E-5	SD Detected	N/A
Mean of Detected Logged Data	-9.79	SD of Detected Logged Data	N/A

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable VALUES (1_4_143) was not processed!

VALUES (1_4_145)

General Statistics

Total Number of Observations	15	Number of Missing Observations	0
Number of Distinct Observations	12		
Number of Detects	13	Number of Non-Detects	2
Number of Distinct Detects	12	Number of Distinct Non-Detects	1
Minimum Detect	0.0015	Minimum Non-Detect	0.002
Maximum Detect	0.0078	Maximum Non-Detect	0.002
Variance Detected	4.8006E-6	Percent Non-Detects	13.33%
Mean Detected	0.00332	SD Detected	0.00219
Mean of Detected Logged Data	-5.871	SD of Detected Logged Data	0.565

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	5.904	d2max (for USL)	3.19

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.756	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.866	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.295	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.234	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	0.0031	KM SD	0.00204
99.99% UTL95% Coverage	0.0151	99.99% KM UPL (t)	0.0136
90% KM Percentile (z)	0.00572	95% KM Percentile (z)	0.00646
99% KM Percentile (z)	0.00785	99.99% KM Percentile (z)	0.0107
99.99% KM USL	0.00961		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	0.00301	SD	0.00219
99.99% UTL95% Coverage	0.0159	99.99% UPL (t)	0.0143
90% Percentile (z)	0.00582	95% Percentile (z)	0.00661
99% Percentile (z)	0.0081	99.99% Percentile (z)	0.0111
99.99% USL	0.00999		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.091	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.739	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.281	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.238	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	3.203	k star (bias corrected MLE)	2.515
Theta hat (MLE)	0.00104	Theta star (bias corrected MLE)	0.00132
nu hat (MLE)	83.28	nu star (bias corrected)	65.4
MLE Mean (bias corrected)	0.00332		
MLE Sd (bias corrected)	0.00209	99.99% Percentile of Chisquare (2kstar)	25.81

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0015	Mean	0.00421
Maximum	0.01	Median	0.0023
SD	0.0031	CV	0.737
k hat (MLE)	2.301	k star (bias corrected MLE)	1.885
Theta hat (MLE)	0.00183	Theta star (bias corrected MLE)	0.00223
nu hat (MLE)	69.03	nu star (bias corrected)	56.56
MLE Mean (bias corrected)	0.00421	MLE Sd (bias corrected)	0.00307
		99.99% Percentile of Chisquare (2kstar)	22.98
90% Percentile	0.00831	95% Percentile	0.0102
99% Percentile	0.0144	99.99% Percentile	0.0257

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	0.0509	0.0628	99.99% Approx. Gamma UPL	0.0403	0.0479
99.99% Gamma USL	0.0198	0.0214			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0031	SD (KM)	0.00204
Variance (KM)	4.1611E-6	SE of Mean (KM)	5.4862E-4
k hat (KM)	2.312	k star (KM)	1.894
nu hat (KM)	69.35	nu star (KM)	56.82
theta hat (KM)	0.00134	theta star (KM)	0.00164
99.99% gamma percentile (KM)	0.0188	90% gamma percentile (KM)	0.00611
95% gamma percentile (KM)	0.00749	99% gamma percentile (KM)	0.0105

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	0.0244	0.0276	99.99% Approx. Gamma UPL	0.0222	0.0249
99.99% KM Gamma Percentile	0.0142	0.0151	99.99% Gamma USL	0.0118	0.0123

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.852	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.866	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.256	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.234	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.00307	Mean in Log Scale	-5.965
SD in Original Scale	0.00214	SD in Log Scale	0.581
99.99% UTL95% Coverage	0.0792	99.99% BCA UTL95% Coverage	0.0078
99.99% Bootstrap (%) UTL95% Coverage	0.0078	99.99% UPL (t)	0.0511
90% Percentile (z)	0.00541	95% Percentile (z)	0.00668
99% Percentile (z)	0.00992	99.99% USL	0.0164

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-5.942	99.99% KM UTL (Lognormal)95% Coverage	0.0629
KM SD of Logged Data	0.538	99.99% KM UPL (Lognormal)	0.0419
99.99% KM Percentile Lognormal (z)	0.0194	99.99% KM USL (Lognormal)	0.0146

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	0.00301	Mean in Log Scale	-6.009
SD in Original Scale	0.00219	SD in Log Scale	0.638
99.99% UTL95% Coverage	0.106	99.99% UPL (t)	0.0655
90% Percentile (z)	0.00556	95% Percentile (z)	0.00701
99% Percentile (z)	0.0108	99.99% USL	0.0188

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	15	99.99% UTL with95% Coverage	0.0078
Approx, f used to compute achieved CC	0.789	Approximate Actual Confidence Coefficient achieved by UTL	0.537
Approximate Sample Size needed to achieve specified CC	182	99.99% UPL	0.0078
99.99% USL	0.0078	99.99% KM Chebyshev UPL	0.214

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (1_4_147)

General Statistics

Total Number of Observations	15	Number of Missing Observations	0
Number of Distinct Observations	9		
Number of Detects	5	Number of Non-Detects	10
Number of Distinct Detects	5	Number of Distinct Non-Detects	4
Minimum Detect	0.002	Minimum Non-Detect	0.006
Maximum Detect	0.04	Maximum Non-Detect	0.05
Variance Detected	2.8572E-4	Percent Non-Detects	66.67%
Mean Detected	0.0142	SD Detected	0.0169
Mean of Detected Logged Data	-4.966	SD of Detected Logged Data	1.367

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	5.904	d2max (for USL)	3.19

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.794	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.342	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.343	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	0.00679	KM SD	0.0106
99.99% UTL95% Coverage	0.0694	99.99% KM UPL (t)	0.0614
90% KM Percentile (z)	0.0204	95% KM Percentile (z)	0.0242
99% KM Percentile (z)	0.0314	99.99% KM Percentile (z)	0.0462
99.99% KM USL	0.0406		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	0.00873	SD	0.0113
99.99% UTL95% Coverage	0.0752	99.99% UPL (t)	0.0667
90% Percentile (z)	0.0232	95% Percentile (z)	0.0273
99% Percentile (z)	0.0349	99.99% Percentile (z)	0.0506
99.99% USL	0.0447		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.576	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.696	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.357	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.366	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.83	k star (bias corrected MLE)	0.466
Theta hat (MLE)	0.0171	Theta star (bias corrected MLE)	0.0305
nu hat (MLE)	8.305	nu star (bias corrected)	4.655
MLE Mean (bias corrected)	0.0142		
MLE Sd (bias corrected)	0.0208	99.99% Percentile of Chisquare (2kstar)	14.87

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.002	Mean	0.0115
Maximum	0.04	Median	0.01
SD	0.00926	CV	0.807
k hat (MLE)	2.147	k star (bias corrected MLE)	1.762
Theta hat (MLE)	0.00535	Theta star (bias corrected MLE)	0.00651
nu hat (MLE)	64.4	nu star (bias corrected)	52.85
MLE Mean (bias corrected)	0.0115	MLE Sd (bias corrected)	0.00865
		99.99% Percentile of Chisquare (2kstar)	22.39
90% Percentile	0.023	95% Percentile	0.0284
99% Percentile	0.0403	99.99% Percentile	0.0729

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	0.145	0.183	99.99% Approx. Gamma UPL	0.114	0.139
99.99% Gamma USL	0.0557	0.0611			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00679	SD (KM)	0.0106
Variance (KM)	1.1233E-4	SE of Mean (KM)	0.00318
k hat (KM)	0.41	k star (KM)	0.372
nu hat (KM)	12.3	nu star (KM)	11.17
theta hat (KM)	0.0166	theta star (KM)	0.0182
99.99% gamma percentile (KM)	0.128	90% gamma percentile (KM)	0.0194
95% gamma percentile (KM)	0.0289	99% gamma percentile (KM)	0.053

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	0.13	0.158	99.99% Approx. Gamma UPL	0.115	0.137
99.99% KM Gamma Percentile	0.0624	0.0675	99.99% Gamma USL	0.048	0.0502

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.836	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.316	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.343	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.00711	Mean in Log Scale	-5.53
SD in Original Scale	0.0106	SD in Log Scale	0.989
99.99% UTL95% Coverage	1.362	99.99% BCA UTL95% Coverage	0.04
99.99% Bootstrap (%) UTL95% Coverage	0.04	99.99% UPL (t)	0.645
90% Percentile (z)	0.0141	95% Percentile (z)	0.0202
99% Percentile (z)	0.0396	99.99% USL	0.093

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-5.596	99.99% KM UTL (Lognormal)95% Coverage	0.682
KM SD of Logged Data	0.883	99.99% KM UPL (Lognormal)	0.35
99.99% KM Percentile Lognormal (z)	0.0991	99.99% KM USL (Lognormal)	0.0621

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	0.00873	Mean in Log Scale	-5.245
SD in Original Scale	0.0113	SD in Log Scale	0.912
99.99% UTL95% Coverage	1.149	99.99% UPL (t)	0.577
90% Percentile (z)	0.017	95% Percentile (z)	0.0236
99% Percentile (z)	0.044	99.99% USL	0.0967

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	15	99.99% UTL with95% Coverage	0.05

Approx, f used to compute achieved CC	0.789	Approximate Actual Confidence Coefficient achieved by UTL	0.537
Approximate Sample Size needed to achieve specified CC	182	99.99% UPL	0.05
99.99% USL	0.05	99.99% KM Chebyshev UPL	1.101

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

Background Statistics for Uncensored Full Data Sets

User Selected Options

Date/Time of Computation	ProUCL 5.110/15/2019 3:05:34 PM
From File	G:\7900\7967 USACE New Mexico GW Analysis\7.0 ProUCL\BACKGROUND\INPUTS\FWDA_ALLUVIUM_non
Full Precision	OFF
Confidence Coefficient	99.99%
Coverage	95%
New or Future K Observations	1
Number of Bootstrap Operations	2000

VALUES (1_4_107)

General Statistics

Total Number of Observations	15	Number of Distinct Observations	8
Minimum	0.014	First Quartile	0.016
Second Largest	0.037	Median	0.017
Maximum	0.045	Third Quartile	0.0217
Mean	0.0209	SD	0.00888
Coefficient of Variation	0.425	Skewness	2.022
Mean of logged Data	-3.931	SD of logged Data	0.339

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	5.904	d2max (for USL)	3.19

Normal GOF Test

Shapiro Wilk Test Statistic	0.682	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.881	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.344	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.22	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Background Statistics Assuming Normal Distribution

99.99% UTL with 95% Coverage	0.0733	90% Percentile (z)	0.0323
99.99% UPL (t)	0.0666	95% Percentile (z)	0.0355
99.99% USL	0.0492	99% Percentile (z)	0.0415
		99.99% Percentile (z)	0.0539

Gamma GOF Test

A-D Test Statistic	1.785	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.738	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.327	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.222	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	8.183	k star (bias corrected MLE)	6.591
Theta hat (MLE)	0.00255	Theta star (bias corrected MLE)	0.00317
nu hat (MLE)	245.5	nu star (bias corrected)	197.7
MLE Mean (bias corrected)	0.0209	MLE Sd (bias corrected)	0.00814

Background Statistics Assuming Gamma Distribution

99.99% Wilson Hilferty (WH) Approx. Gamma UPL	0.0866	90% Percentile	0.0318
99.99% Hawkins Wixley (HW) Approx. Gamma UPL	0.0912	95% Percentile	0.0358

99.99% WH Approx. Gamma UTL with 95% Coverage	0.102	99% Percentile	0.0443
99.99% HW Approx. Gamma UTL with 95% Coverage	0.109	99.99% Percentile	0.0653
99.99% WH USL	0.0537	99.99% HW USL	0.0546

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.762	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.881	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.309	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.22	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

Background Statistics assuming Lognormal Distribution

99.99% UTL with 95% Coverage	0.146	90% Percentile (z)	0.0303
99.99% UPL (t)	0.113	95% Percentile (z)	0.0343
99.99% USL	0.0579	99% Percentile (z)	0.0432
		99.99% Percentile (z)	0.0693

Nonparametric Distribution Free Background Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Upper Limits for Background Threshold Values

Order of Statistic, r	15	99.99% UTL with 95% Coverage	0.045
Approx, f used to compute achieved CC	0.789	Approximate Actual Confidence Coefficient achieved by UTL	0.537
		Approximate Sample Size needed to achieve specified CC	182
99.99% Percentile Bootstrap UTL with 95% Coverage	0.045	99.99% BCA Bootstrap UTL with 95% Coverage	0.045
99.99% UPL	0.045	90% Percentile	0.0322
90% Chebyshev UPL	0.0484	95% Percentile	0.0394
99.99% Chebyshev UPL	0.938	99% Percentile	0.0439
95% Chebyshev UPL	0.0609	99.99% Percentile	0.045
99.99% USL	0.045		

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20. Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (1_4_127)

General Statistics

Total Number of Observations	15	Number of Distinct Observations	9
Minimum	0.16	First Quartile	0.16
Second Largest	0.31	Median	0.19
Maximum	0.53	Third Quartile	0.26
Mean	0.226	SD	0.0984
Coefficient of Variation	0.436	Skewness	2.372
Mean of logged Data	-1.553	SD of logged Data	0.343

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	5.904	d2max (for USL)	3.19

Normal GOF Test

Shapiro Wilk Test Statistic	0.697	**Shapiro Wilk GOF Test**

5% Shapiro Wilk Critical Value	0.881	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.27	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.22	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Background Statistics Assuming Normal Distribution

99.99% UTL with 95% Coverage	0.807	90% Percentile (z)	0.352
99.99% UPL (t)	0.732	95% Percentile (z)	0.388
99.99% USL	0.54	99% Percentile (z)	0.455
		99.99% Percentile (z)	0.592

Gamma GOF Test

A-D Test Statistic	1.193	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.738	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.252	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.222	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	7.996	k star (bias corrected MLE)	6.441
Theta hat (MLE)	0.0282	Theta star (bias corrected MLE)	0.035
nu hat (MLE)	239.9	nu star (bias corrected)	193.2
MLE Mean (bias corrected)	0.226	MLE Sd (bias corrected)	0.0889

Background Statistics Assuming Gamma Distribution

99.99% Wilson Hilferty (WH) Approx. Gamma UPL	0.946	90% Percentile	0.344
99.99% Hawkins Wixley (HW) Approx. Gamma UPL	0.998	95% Percentile	0.389
99.99% WH Approx. Gamma UTL with 95% Coverage	1.118	99% Percentile	0.482
99.99% HW Approx. Gamma UTL with 95% Coverage	1.198	99.99% Percentile	0.712
99.99% WH USL	0.585	99.99% HW USL	0.595

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.808	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.881	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.233	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.22	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

Background Statistics assuming Lognormal Distribution

99.99% UTL with 95% Coverage	1.605	90% Percentile (z)	0.329
99.99% UPL (t)	1.239	95% Percentile (z)	0.372
99.99% USL	0.633	99% Percentile (z)	0.47
		99.99% Percentile (z)	0.759

Nonparametric Distribution Free Background Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Upper Limits for Background Threshold Values

Order of Statistic, r	15	99.99% UTL with 95% Coverage	0.53
Approx, f used to compute achieved CC	0.789	Approximate Actual Confidence Coefficient achieved by UTL	0.537
		Approximate Sample Size needed to achieve specified CC	182
99.99% Percentile Bootstrap UTL with 95% Coverage	0.53	99.99% BCA Bootstrap UTL with 95% Coverage	0.53
99.99% UPL	0.53	90% Percentile	0.3

90% Chebyshev UPL	0.531	95% Percentile	0.376
99.99% Chebyshev UPL	10.39	99% Percentile	0.499
95% Chebyshev UPL	0.669	99.99% Percentile	0.53
99.99% USL	0.53		

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20. Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

Background Statistics for Data Sets with Non-Detects

User Selected Options

Date/Time of Computation	ProUCL 5.110/15/2019 3:19:01 PM
From File	FWDA_ALLUVIUM_par_cens1.xls
Full Precision	OFF
Confidence Coefficient	98.44%
Coverage	95%
Different or Future K Observations	1
Number of Bootstrap Operations	2000

VALUES (1_1_106)

General Statistics

Total Number of Observations	15	Number of Missing Observations	0
Number of Distinct Observations	12		
Number of Detects	14	Number of Non-Detects	1
Number of Distinct Detects	11	Number of Distinct Non-Detects	1
Minimum Detect	6.6000E-4	Minimum Non-Detect	0.00125
Maximum Detect	0.0013	Maximum Non-Detect	0.00125
Variance Detected	2.8367E-8	Percent Non-Detects	6.667%
Mean Detected	8.2857E-4	SD Detected	1.6843E-4
Mean of Detected Logged Data	-7.112	SD of Detected Logged Data	0.181

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	2.98	d2max (for USL)	2.633

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.811	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.874	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.282	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.226	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	8.2615E-4	KM SD	1.5916E-4
98.44% UTL95% Coverage	0.0013	98.44% KM UPL (t)	0.00122
90% KM Percentile (z)	0.00103	95% KM Percentile (z)	0.00109
98.44% KM Percentile (z)	0.00117	99% KM Percentile (z)	0.0012
98.44% KM USL	0.00125		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	8.1500E-4	SD	1.7060E-4
98.44% UTL95% Coverage	0.00132	98.44% UPL (t)	0.00124
90% Percentile (z)	0.00103	95% Percentile (z)	0.0011
98.44% Percentile (z)	0.00118	99% Percentile (z)	0.00121
98.44% USL	0.00126		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.739	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.734	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.267	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.228	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	30.62	k star (bias corrected MLE)	24.11
Theta hat (MLE)	2.7060E-5	Theta star (bias corrected MLE)	3.4372E-5
nu hat (MLE)	857.3	nu star (bias corrected)	675
MLE Mean (bias corrected)	8.2857E-4		
MLE Sd (bias corrected)	1.6876E-4	98.44% Percentile of Chisquare (2kstar)	71.74

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	6.6000E-4	Mean	0.00144
Maximum	0.01	Median	8.0000E-4
SD	0.00237	CV	1.648
k hat (MLE)	1.387	k star (bias corrected MLE)	1.154
Theta hat (MLE)	0.00104	Theta star (bias corrected MLE)	0.00125
nu hat (MLE)	41.61	nu star (bias corrected)	34.62
MLE Mean (bias corrected)	0.00144	MLE Sd (bias corrected)	0.00134
		98.44% Percentile of Chisquare (2kstar)	8.987
90% Percentile	0.0032	95% Percentile	0.0041
98.44% Percentile	0.00561	99% Percentile	0.00618

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
98.44% Approx. Gamma UTL with 95% Coverage	0.00764	0.00751	98.44% Approx. Gamma UPL	0.00591	0.0057
98.44% Gamma USL	0.00642	0.00623			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	8.2615E-4	SD (KM)	1.5916E-4
Variance (KM)	2.5330E-8	SE of Mean (KM)	4.3242E-5
k hat (KM)	26.95	k star (KM)	21.6
nu hat (KM)	808.4	nu star (KM)	648
theta hat (KM)	3.0661E-5	theta star (KM)	3.8247E-5
98.44% gamma percentile (KM)	0.00125	90% gamma percentile (KM)	0.00106
95% gamma percentile (KM)	0.00114	99% gamma percentile (KM)	0.00129

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
98.44% Approx. Gamma UTL with 95% Coverage	0.00139	0.0014	98.44% Approx. Gamma UPL	0.00123	0.00124
98.44% KM Gamma Percentile	0.00117	0.00117	98.44% Gamma USL	0.00126	0.00127

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.878	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.874	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.255	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.226	Data Not Lognormal at 5% Significance Level

Detected Data appear Approximate Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	8.2658E-4	Mean in Log Scale	-7.114
SD in Original Scale	1.6248E-4	SD in Log Scale	0.175
98.44% UTL95% Coverage	0.00137	98.44% BCA UTL95% Coverage	0.0013
98.44% Bootstrap (%) UTL95% Coverage	0.0013	98.44% UPL (t)	0.00125
90% Percentile (z)	0.00102	95% Percentile (z)	0.00109
98.44% Percentile (z)	0.00119	99% Percentile (z)	0.00122
98.44% USL	0.00129		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-7.115	98.44% KM UTL (Lognormal)95% Coverage	0.00136
KM SD of Logged Data	0.172	98.44% KM UPL (Lognormal)	0.00124
98.44% KM Percentile Lognormal (z)	0.00118	98.44% KM USL (Lognormal)	0.00128

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	8.1500E-4	Mean in Log Scale	-7.13
SD in Original Scale	1.7060E-4	SD in Log Scale	0.188
98.44% UTL95% Coverage	0.0014	98.44% UPL (t)	0.00127
90% Percentile (z)	0.00102	95% Percentile (z)	0.00109
98.44% Percentile (z)	0.0012	99% Percentile (z)	0.00124
98.44% USL	0.00131		

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	15	98.44% UTL with95% Coverage	0.0013
Approx, f used to compute achieved CC	0.789	Approximate Actual Confidence Coefficient achieved by UTL	0.537
Approximate Sample Size needed to achieve specified CC	82	98.44% UPL	0.0013
98.44% USL	0.0013	98.44% KM Chebyshev UPL	0.00213

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (1_1_118)

General Statistics

Total Number of Observations	15	Number of Missing Observations	0
Number of Distinct Observations	13		
Number of Detects	13	Number of Non-Detects	2
Number of Distinct Detects	11	Number of Distinct Non-Detects	2
Minimum Detect	2.1000E-4	Minimum Non-Detect	2.0000E-4
Maximum Detect	0.0011	Maximum Non-Detect	0.001
Variance Detected	5.8864E-8	Percent Non-Detects	13.33%
Mean Detected	3.8846E-4	SD Detected	2.4262E-4
Mean of Detected Logged Data	-7.97	SD of Detected Logged Data	0.454

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	2.98	d2max (for USL)	2.633

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.666	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.866	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.316	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.234	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	3.7128E-4	KM SD	2.2444E-4
98.44% UTL95% Coverage	0.00104	98.44% KM UPL (t)	9.2652E-4
90% KM Percentile (z)	6.5891E-4	95% KM Percentile (z)	7.4045E-4
98.44% KM Percentile (z)	8.5500E-4	99% KM Percentile (z)	8.9340E-4
98.44% KM USL	9.6216E-4		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	3.7667E-4	SD	2.3904E-4
98.44% UTL95% Coverage	0.00109	98.44% UPL (t)	9.6802E-4
90% Percentile (z)	6.8300E-4	95% Percentile (z)	7.6985E-4
98.44% Percentile (z)	8.9184E-4	99% Percentile (z)	9.3275E-4
98.44% USL	0.00101		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.132	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.737	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.269	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.238	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	4.444	k star (bias corrected MLE)	3.47
Theta hat (MLE)	8.7412E-5	Theta star (bias corrected MLE)	1.1196E-4
nu hat (MLE)	115.5	nu star (bias corrected)	90.21
MLE Mean (bias corrected)	3.8846E-4		
MLE Sd (bias corrected)	2.0854E-4	98.44% Percentile of Chisquare (2kstar)	17.2

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	2.1000E-4	Mean	0.00167

Maximum	0.01	Median	3.3000E-4
SD	0.00339	CV	2.03
k hat (MLE)	0.555	k star (bias corrected MLE)	0.488
Theta hat (MLE)	0.00301	Theta star (bias corrected MLE)	0.00342
nu hat (MLE)	16.65	nu star (bias corrected)	14.65
MLE Mean (bias corrected)	0.00167	MLE Sd (bias corrected)	0.00239
		98.44% Percentile of Chisquare (2kstar)	5.783
90% Percentile	0.00454	95% Percentile	0.00647
98.44% Percentile	0.00989	99% Percentile	0.0112

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
98.44% Approx. Gamma UTL with 95% Coverage	0.0148	0.0158	98.44% Approx. Gamma UPL	0.0105	0.0107
98.44% Gamma USL	0.0117	0.0121			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	3.7128E-4	SD (KM)	2.2444E-4
Variance (KM)	5.0372E-8	SE of Mean (KM)	6.0886E-5
k hat (KM)	2.737	k star (KM)	2.234
nu hat (KM)	82.1	nu star (KM)	67.01
theta hat (KM)	1.3567E-4	theta star (KM)	1.6621E-4
98.44% gamma percentile (KM)	0.00109	90% gamma percentile (KM)	7.0373E-4
95% gamma percentile (KM)	8.5075E-4	99% gamma percentile (KM)	0.00117

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
98.44% Approx. Gamma UTL with 95% Coverage	0.00122	0.00124	98.44% Approx. Gamma UPL	9.3945E-4	9.4525E-4
98.44% KM Gamma Percentile	8.3936E-4	8.3977E-4	98.44% Gamma USL	9.9217E-4	0.001

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.839	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.866	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.234	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.234	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Approximate Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	3.6543E-4	Mean in Log Scale	-8.046
SD in Original Scale	2.3520E-4	SD in Log Scale	0.496
98.44% UTL95% Coverage	0.0014	98.44% BCA UTL95% Coverage	0.0011
98.44% Bootstrap (%) UTL95% Coverage	0.0011	98.44% UPL (t)	0.00109
90% Percentile (z)	6.0471E-4	95% Percentile (z)	7.2398E-4
98.44% Percentile (z)	9.3231E-4	99% Percentile (z)	0.00101
98.44% USL	0.00118		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-8.015	98.44% KM UTL (Lognormal)95% Coverage	0.00121
KM SD of Logged Data	0.436	98.44% KM UPL (Lognormal)	9.7256E-4
98.44% KM Percentile Lognormal (z)	8.4628E-4	98.44% KM USL (Lognormal)	0.00104

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	3.7667E-4	Mean in Log Scale	-8.028
SD in Original Scale	2.3904E-4	SD in Log Scale	0.541
98.44% UTL95% Coverage	0.00164	98.44% UPL (t)	0.00124
90% Percentile (z)	6.5267E-4	95% Percentile (z)	7.9451E-4
98.44% Percentile (z)	0.00105	99% Percentile (z)	0.00115
98.44% USL	0.00136		

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	15	98.44% UTL with95% Coverage	0.0011
Approx, f used to compute achieved CC	0.789	Approximate Actual Confidence Coefficient achieved by UTL	0.537
Approximate Sample Size needed to achieve specified CC	82	98.44% UPL	0.0011
98.44% USL	0.0011	98.44% KM Chebyshev UPL	0.00221

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (1_1_132)

General Statistics

Total Number of Observations	15	Number of Missing Observations	0
Number of Distinct Observations	13		
Number of Detects	14	Number of Non-Detects	1
Number of Distinct Detects	12	Number of Distinct Non-Detects	1
Minimum Detect	0.001	Minimum Non-Detect	0.0025
Maximum Detect	0.0063	Maximum Non-Detect	0.0025
Variance Detected	1.7749E-6	Percent Non-Detects	6.667%
Mean Detected	0.00204	SD Detected	0.00133
Mean of Detected Logged Data	-6.314	SD of Detected Logged Data	0.459

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	2.98	d2max (for USL)	2.633

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.643	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.874	Data Not Normal at 5% Significance Level

Lilliefors Test Statistic	0.31	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.226	Data Not Normal at 5% Significance Level	

Data Not Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	0.00201	KM SD	0.00125
98.44% UTL95% Coverage	0.00573	98.44% KM UPL (t)	0.0051
90% KM Percentile (z)	0.00361	95% KM Percentile (z)	0.00407
98.44% KM Percentile (z)	0.0047	99% KM Percentile (z)	0.00492
98.44% KM USL	0.0053		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	0.00199	SD	0.0013
98.44% UTL95% Coverage	0.00586	98.44% UPL (t)	0.00521
90% Percentile (z)	0.00366	95% Percentile (z)	0.00413
98.44% Percentile (z)	0.00479	99% Percentile (z)	0.00501
98.44% USL	0.00541		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.004	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.739	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.233	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.23	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	4.298	k star (bias corrected MLE)	3.424
Theta hat (MLE)	4.7536E-4	Theta star (bias corrected MLE)	5.9659E-4
nu hat (MLE)	120.3	nu star (bias corrected)	95.88
MLE Mean (bias corrected)	0.00204		
MLE Sd (bias corrected)	0.0011	98.44% Percentile of Chisquare (2kstar)	17.06

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.001	Mean	0.00257
Maximum	0.01	Median	0.0017
SD	0.00242	CV	0.941
k hat (MLE)	2.256	k star (bias corrected MLE)	1.849
Theta hat (MLE)	0.00114	Theta star (bias corrected MLE)	0.00139
nu hat (MLE)	67.67	nu star (bias corrected)	55.47
MLE Mean (bias corrected)	0.00257	MLE Sd (bias corrected)	0.00189
		98.44% Percentile of Chisquare (2kstar)	11.7
90% Percentile	0.0051	95% Percentile	0.00626
98.44% Percentile	0.00814	99% Percentile	0.00884

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
98.44% Approx. Gamma UTL with 95% Coverage	0.011	0.0114	98.44% Approx. Gamma UPL	0.00885	0.00896
98.44% Gamma USL	0.0095	0.00967			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00201	SD (KM)	0.00125
Variance (KM)	1.5587E-6	SE of Mean (KM)	3.3548E-4
k hat (KM)	2.601	k star (KM)	2.125
nu hat (KM)	78.02	nu star (KM)	63.75
theta hat (KM)	7.7419E-4	theta star (KM)	9.4750E-4
98.44% gamma percentile (KM)	0.00602	90% gamma percentile (KM)	0.00386
95% gamma percentile (KM)	0.00469	99% gamma percentile (KM)	0.00651

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
98.44% Approx. Gamma UTL with 95% Coverage	0.00657	0.00671	98.44% Approx. Gamma UPL	0.00508	0.0051
98.44% KM Gamma Percentile	0.00454	0.00453	98.44% Gamma USL	0.00536	0.0054

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.871	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.874	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.193	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.226	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Approximate Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.00202	Mean in Log Scale	-6.32
SD in Original Scale	0.00129	SD in Log Scale	0.442
98.44% UTL95% Coverage	0.00673	98.44% BCA UTL95% Coverage	0.0063
98.44% Bootstrap (%) UTL95% Coverage	0.0063	98.44% UPL (t)	0.00538
90% Percentile (z)	0.00317	95% Percentile (z)	0.00373
98.44% Percentile (z)	0.00467	99% Percentile (z)	0.00504
98.44% USL	0.00577		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-6.324	98.44% KM UTL (Lognormal)95% Coverage	0.0065
KM SD of Logged Data	0.432	98.44% KM UPL (Lognormal)	0.00523
98.44% KM Percentile Lognormal (z)	0.00455	98.44% KM USL (Lognormal)	0.0056

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	0.00199	Mean in Log Scale	-6.339
SD in Original Scale	0.0013	SD in Log Scale	0.452
98.44% UTL95% Coverage	0.00679	98.44% UPL (t)	0.0054
90% Percentile (z)	0.00315	95% Percentile (z)	0.00372
98.44% Percentile (z)	0.00468	99% Percentile (z)	0.00506
98.44% USL	0.00581		

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	15	98.44% UTL with95% Coverage	0.0063
Approx, f used to compute achieved CC	0.789	Approximate Actual Confidence Coefficient achieved by UTL	0.537
Approximate Sample Size needed to achieve specified CC	82	98.44% UPL	0.0063
98.44% USL	0.0063	98.44% KM Chebyshev UPL	0.0123

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (1_1_136)

General Statistics

Total Number of Observations	15	Number of Missing Observations	0
Number of Distinct Observations	13		
Number of Detects	13	Number of Non-Detects	2
Number of Distinct Detects	11	Number of Distinct Non-Detects	2
Minimum Detect	0.4	Minimum Non-Detect	0.5
Maximum Detect	2.4	Maximum Non-Detect	0.94
Variance Detected	0.281	Percent Non-Detects	13.33%
Mean Detected	0.852	SD Detected	0.53
Mean of Detected Logged Data	-0.291	SD of Detected Logged Data	0.503

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	2.98	d2max (for USL)	2.633

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.747	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.866	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.243	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.234	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	0.803	KM SD	0.492
98.44% UTL95% Coverage	2.27	98.44% KM UPL (t)	2.02
90% KM Percentile (z)	1.433	95% KM Percentile (z)	1.612
98.44% KM Percentile (z)	1.863	99% KM Percentile (z)	1.948
98.44% KM USL	2.099		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	0.787	SD	0.522
98.44% UTL95% Coverage	2.342	98.44% UPL (t)	2.078
90% Percentile (z)	1.456	95% Percentile (z)	1.645
98.44% Percentile (z)	1.912	99% Percentile (z)	2.001
98.44% USL	2.161		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.522	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.737	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.166	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.238	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	3.983	k star (bias corrected MLE)	3.115
Theta hat (MLE)	0.214	Theta star (bias corrected MLE)	0.274
nu hat (MLE)	103.6	nu star (bias corrected)	81
MLE Mean (bias corrected)	0.852		
MLE Sd (bias corrected)	0.483	98.44% Percentile of Chisquare (2kstar)	16.06

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.293	Mean	0.793
Maximum	2.4	Median	0.64
SD	0.517	CV	0.651
k hat (MLE)	3.609	k star (bias corrected MLE)	2.932
Theta hat (MLE)	0.22	Theta star (bias corrected MLE)	0.271
nu hat (MLE)	108.3	nu star (bias corrected)	87.96
MLE Mean (bias corrected)	0.793	MLE Sd (bias corrected)	0.463
		98.44% Percentile of Chisquare (2kstar)	15.46
90% Percentile	1.414	95% Percentile	1.676
98.44% Percentile	2.091	99% Percentile	2.243

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
98.44% Approx. Gamma UTL with 95% Coverage	2.716	2.821	98.44% Approx. Gamma UPL	2.25	2.302
98.44% Gamma USL	2.39	2.456			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.803	SD (KM)	0.492
Variance (KM)	0.242	SE of Mean (KM)	0.133
k hat (KM)	2.66	k star (KM)	2.172
nu hat (KM)	79.8	nu star (KM)	65.17

theta hat (KM)	0.302	theta star (KM)	0.37
98.44% gamma percentile (KM)	2.377	90% gamma percentile (KM)	1.531
95% gamma percentile (KM)	1.855	99% gamma percentile (KM)	2.57

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
98.44% Approx. Gamma UTL with 95% Coverage	2.795	2.898	98.44% Approx. Gamma UPL	2.133	2.167
98.44% KM Gamma Percentile	1.895	1.912	98.44% Gamma USL	2.259	2.303

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.923	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.866	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.145	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.234	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.802	Mean in Log Scale	-0.352
SD in Original Scale	0.509	SD in Log Scale	0.497
98.44% UTL95% Coverage	3.092	98.44% BCA UTL95% Coverage	2.4
98.44% Bootstrap (%) UTL95% Coverage	2.4	98.44% UPL (t)	2.404
90% Percentile (z)	1.329	95% Percentile (z)	1.592
98.44% Percentile (z)	2.052	99% Percentile (z)	2.234
98.44% USL	2.602		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-0.353	98.44% KM UTL (Lognormal)95% Coverage	2.961
KM SD of Logged Data	0.483	98.44% KM UPL (Lognormal)	2.319
98.44% KM Percentile Lognormal (z)	1.989	98.44% KM USL (Lognormal)	2.504

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	0.787	Mean in Log Scale	-0.395
SD in Original Scale	0.522	SD in Log Scale	0.553
98.44% UTL95% Coverage	3.507	98.44% UPL (t)	2.65
90% Percentile (z)	1.37	95% Percentile (z)	1.675
98.44% Percentile (z)	2.222	99% Percentile (z)	2.443
98.44% USL	2.894		

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	15	98.44% UTL with95% Coverage	2.4
Approx, f used to compute achieved CC	0.789	Approximate Actual Confidence Coefficient achieved by UTL	0.537
Approximate Sample Size needed to achieve specified CC	82	98.44% UPL	2.4
98.44% USL	2.4	98.44% KM Chebyshev UPL	4.844

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (1_1_146)

General Statistics

Total Number of Observations	15	Number of Missing Observations	0
Number of Distinct Observations	13		
Number of Detects	14	Number of Non-Detects	1
Number of Distinct Detects	13	Number of Distinct Non-Detects	1
Minimum Detect	0.001	Minimum Non-Detect	0.002
Maximum Detect	0.00554	Maximum Non-Detect	0.002
Variance Detected	1.6846E-6	Percent Non-Detects	6.667%
Mean Detected	0.00232	SD Detected	0.0013
Mean of Detected Logged Data	-6.186	SD of Detected Logged Data	0.495

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	2.98	d2max (for USL)	2.633

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.848	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.874	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.185	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.226	Detected Data appear Normal at 5% Significance Level

Detected Data appear Approximate Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	0.00226	KM SD	0.00123
98.44% UTL95% Coverage	0.00593	98.44% KM UPL (t)	0.00531
90% KM Percentile (z)	0.00384	95% KM Percentile (z)	0.00429
98.44% KM Percentile (z)	0.00492	99% KM Percentile (z)	0.00513
98.44% KM USL	0.0055		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	0.00224	SD	0.0013
98.44% UTL95% Coverage	0.0061	98.44% UPL (t)	0.00544
90% Percentile (z)	0.0039	95% Percentile (z)	0.00437
98.44% Percentile (z)	0.00503	99% Percentile (z)	0.00525
98.44% USL	0.00565		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.388	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.74	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.173	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.23	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	4.268	k star (bias corrected MLE)	3.401
Theta hat (MLE)	5.4452E-4	Theta star (bias corrected MLE)	6.8333E-4
nu hat (MLE)	119.5	nu star (bias corrected)	95.24
MLE Mean (bias corrected)	0.00232		
MLE Sd (bias corrected)	0.00126	98.44% Percentile of Chisquare (2kstar)	16.98

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.001	Mean	0.00284
Maximum	0.01	Median	0.002
SD	0.00234	CV	0.826
k hat (MLE)	2.477	k star (bias corrected MLE)	2.026
Theta hat (MLE)	0.00115	Theta star (bias corrected MLE)	0.0014
nu hat (MLE)	74.3	nu star (bias corrected)	60.77
MLE Mean (bias corrected)	0.00284	MLE Sd (bias corrected)	0.00199
		98.44% Percentile of Chisquare (2kstar)	12.34
90% Percentile	0.0055	95% Percentile	0.0067
98.44% Percentile	0.00864	99% Percentile	0.00936

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
98.44% Approx. Gamma UTL with 95% Coverage	0.0117	0.0122	98.44% Approx. Gamma UPL	0.00942	0.00965
98.44% Gamma USL	0.0101	0.0104			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00226	SD (KM)	0.00123
Variance (KM)	1.5156E-6	SE of Mean (KM)	3.3037E-4
k hat (KM)	3.381	k star (KM)	2.749
nu hat (KM)	101.4	nu star (KM)	82.47
theta hat (KM)	6.6953E-4	theta star (KM)	8.2338E-4
98.44% gamma percentile (KM)	0.00611	90% gamma percentile (KM)	0.00409
95% gamma percentile (KM)	0.00487	99% gamma percentile (KM)	0.00657

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
98.44% Approx. Gamma UTL with 95% Coverage	0.00759	0.00791	98.44% Approx. Gamma UPL	0.00584	0.00596
98.44% KM Gamma Percentile	0.00521	0.00528	98.44% Gamma USL	0.00617	0.00632

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.962	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.874	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.15	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.226	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.00226	Mean in Log Scale	-6.21
SD in Original Scale	0.00127	SD in Log Scale	0.486
98.44% UTL95% Coverage	0.00856	98.44% BCA UTL95% Coverage	0.00554
98.44% Bootstrap (%) UTL95% Coverage	0.00554	98.44% UPL (t)	0.00669
90% Percentile (z)	0.00375	95% Percentile (z)	0.00447
98.44% Percentile (z)	0.00573	99% Percentile (z)	0.00623
98.44% USL	0.00723		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-6.212	98.44% KM UTL (Lognormal)95% Coverage	0.00822
KM SD of Logged Data	0.474	98.44% KM UPL (Lognormal)	0.00647
98.44% KM Percentile Lognormal (z)	0.00556	98.44% KM USL (Lognormal)	0.00698

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	0.00224	Mean in Log Scale	-6.234
SD in Original Scale	0.0013	SD in Log Scale	0.512
98.44% UTL95% Coverage	0.00903	98.44% UPL (t)	0.00697
90% Percentile (z)	0.00378	95% Percentile (z)	0.00456
98.44% Percentile (z)	0.00592	99% Percentile (z)	0.00646
98.44% USL	0.00756		

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	15	98.44% UTL with95% Coverage	0.00554
Approx, f used to compute achieved CC	0.789	Approximate Actual Confidence Coefficient achieved by UTL	0.537
Approximate Sample Size needed to achieve specified CC	82	98.44% UPL	0.00554
98.44% USL	0.00554	98.44% KM Chebyshev UPL	0.0124

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (1_4_101)

General Statistics

Total Number of Observations	15	Number of Missing Observations	0
Number of Distinct Observations	15		
Number of Detects	13	Number of Non-Detects	2
Number of Distinct Detects	13	Number of Distinct Non-Detects	2
Minimum Detect	0.019	Minimum Non-Detect	0.031
Maximum Detect	4.2	Maximum Non-Detect	0.2
Variance Detected	1.61	Percent Non-Detects	13.33%
Mean Detected	0.603	SD Detected	1.269
Mean of Detected Logged Data	-1.927	SD of Detected Logged Data	1.54

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	2.98	d2max (for USL)	2.633

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.51	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.866	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.456	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.234	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	0.53	KM SD	1.151
98.44% UTL95% Coverage	3.959	98.44% KM UPL (t)	3.376
90% KM Percentile (z)	2.004	95% KM Percentile (z)	2.422
98.44% KM Percentile (z)	3.01	99% KM Percentile (z)	3.206
98.44% KM USL	3.559		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	0.531	SD	1.191
98.44% UTL95% Coverage	4.079	98.44% UPL (t)	3.476
90% Percentile (z)	2.056	95% Percentile (z)	2.489
98.44% Percentile (z)	3.097	99% Percentile (z)	3.3
98.44% USL	3.665		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.775	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.799	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.347	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.251	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.454	k star (bias corrected MLE)	0.4
Theta hat (MLE)	1.33	Theta star (bias corrected MLE)	1.508
nu hat (MLE)	11.79	nu star (bias corrected)	10.4
MLE Mean (bias corrected)	0.603		
MLE Sd (bias corrected)	0.954	98.44% Percentile of Chisquare (2kstar)	5.244

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.524
Maximum	4.2	Median	0.09
SD	1.193	CV	2.276
k hat (MLE)	0.401	k star (bias corrected MLE)	0.366
Theta hat (MLE)	1.306	Theta star (bias corrected MLE)	1.434
nu hat (MLE)	12.04	nu star (bias corrected)	10.97
MLE Mean (bias corrected)	0.524	MLE Sd (bias corrected)	0.867
		98.44% Percentile of Chisquare (2kstar)	5.017
90% Percentile	1.503	95% Percentile	2.246
98.44% Percentile	3.597	99% Percentile	4.132

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
98.44% Approx. Gamma UTL with 95% Coverage	5.322	6.019	98.44% Approx. Gamma UPL	3.679	3.905
98.44% Gamma USL	4.151	4.495			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.53	SD (KM)	1.151
Variance (KM)	1.324	SE of Mean (KM)	0.309
k hat (KM)	0.212	k star (KM)	0.214
nu hat (KM)	6.357	nu star (KM)	6.419
theta hat (KM)	2.5	theta star (KM)	2.476
98.44% gamma percentile (KM)	4.768	90% gamma percentile (KM)	1.601
95% gamma percentile (KM)	2.68	99% gamma percentile (KM)	5.62

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
98.44% Approx. Gamma UTL with 95% Coverage	5.755	6.478	98.44% Approx. Gamma UPL	3.377	3.485
98.44% KM Gamma Percentile	2.632	2.622	98.44% Gamma USL	3.795	3.987

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.861	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.866	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.214	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.234	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Approximate Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.529	Mean in Log Scale	-2.145
SD in Original Scale	1.191	SD in Log Scale	1.581
98.44% UTL95% Coverage	13.04	98.44% BCA UTL95% Coverage	4.2
98.44% Bootstrap (%) UTL95% Coverage	4.2	98.44% UPL (t)	5.857
90% Percentile (z)	0.889	95% Percentile (z)	1.579
98.44% Percentile (z)	3.538	99% Percentile (z)	4.638
98.44% USL	7.528		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-2.116	98.44% KM UTL (Lognormal)95% Coverage	10.18
KM SD of Logged Data	1.489	98.44% KM UPL (Lognormal)	4.792
98.44% KM Percentile Lognormal (z)	2.982	98.44% KM USL (Lognormal)	6.07

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	0.531	Mean in Log Scale	-2.102
SD in Original Scale	1.191	SD in Log Scale	1.539
98.44% UTL95% Coverage	12	98.44% UPL (t)	5.507
90% Percentile (z)	0.879	95% Percentile (z)	1.537
98.44% Percentile (z)	3.372	99% Percentile (z)	4.388
98.44% USL	7.032		

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	15	98.44% UTL with95% Coverage	4.2
Approx, f used to compute achieved CC	0.789	Approximate Actual Confidence Coefficient achieved by UTL	0.537
Approximate Sample Size needed to achieve specified CC	82	98.44% UPL	4.2
98.44% USL	4.2	98.44% KM Chebyshev UPL	9.978

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (1_4_105)

General Statistics

Total Number of Observations	15	Number of Missing Observations	0
Number of Distinct Observations	14		
Number of Detects	14	Number of Non-Detects	1
Number of Distinct Detects	13	Number of Distinct Non-Detects	1
Minimum Detect	6.1000E-4	Minimum Non-Detect	0.00125
Maximum Detect	0.0017	Maximum Non-Detect	0.00125
Variance Detected	7.2658E-8	Percent Non-Detects	6.667%
Mean Detected	9.0500E-4	SD Detected	2.6955E-4
Mean of Detected Logged Data	-7.041	SD of Detected Logged Data	0.258

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	2.98	d2max (for USL)	2.633

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.807	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.874	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.219	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.226	Detected Data appear Normal at 5% Significance Level

Detected Data appear Approximate Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	9.0092E-4	KM SD	2.5408E-4
98.44% UTL95% Coverage	0.00166	98.44% KM UPL (t)	0.00153
90% KM Percentile (z)	0.00123	95% KM Percentile (z)	0.00132

98.44% KM Percentile (z)	0.00145	99% KM Percentile (z)	0.00149
98.44% KM USL	0.00157		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	8.8633E-4	SD	2.6962E-4
98.44% UTL95% Coverage	0.00169	98.44% UPL (t)	0.00155
90% Percentile (z)	0.00123	95% Percentile (z)	0.00133
98.44% Percentile (z)	0.00147	99% Percentile (z)	0.00151
98.44% USL	0.0016		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.488	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.734	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.173	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.228	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	15.01	k star (bias corrected MLE)	11.84
Theta hat (MLE)	6.0275E-5	Theta star (bias corrected MLE)	7.6406E-5
nu hat (MLE)	420.4	nu star (bias corrected)	331.7
MLE Mean (bias corrected)	9.0500E-4		
MLE Sd (bias corrected)	2.6296E-4	98.44% Percentile of Chisquare (2kstar)	40.86

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	6.1000E-4	Mean	0.00151
Maximum	0.01	Median	8.7000E-4
SD	0.00236	CV	1.563
k hat (MLE)	1.446	k star (bias corrected MLE)	1.201
Theta hat (MLE)	0.00105	Theta star (bias corrected MLE)	0.00126
nu hat (MLE)	43.38	nu star (bias corrected)	36.03
MLE Mean (bias corrected)	0.00151	MLE Sd (bias corrected)	0.00138
		98.44% Percentile of Chisquare (2kstar)	9.184
90% Percentile	0.00333	95% Percentile	0.00425
98.44% Percentile	0.00578	99% Percentile	0.00636

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
98.44% Approx. Gamma UTL with 95% Coverage	0.0079	0.00783	98.44% Approx. Gamma UPL	0.00613	0.00596
98.44% Gamma USL	0.00665	0.0065			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	9.0092E-4	SD (KM)	2.5408E-4
Variance (KM)	6.4556E-8	SE of Mean (KM)	6.8844E-5
k hat (KM)	12.57	k star (KM)	10.1
nu hat (KM)	377.2	nu star (KM)	303.1
theta hat (KM)	7.1655E-5	theta star (KM)	8.9175E-5
98.44% gamma percentile (KM)	0.00162	90% gamma percentile (KM)	0.00128
95% gamma percentile (KM)	0.00141	99% gamma percentile (KM)	0.00169

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
98.44% Approx. Gamma UTL with 95% Coverage	0.00183	0.00186	98.44% Approx. Gamma UPL	0.00156	0.00157
98.44% KM Gamma Percentile	0.00146	0.00146	98.44% Gamma USL	0.00162	0.00163

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.92	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.874	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.16	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.226	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	9.0130E-4	Mean in Log Scale	-7.043
SD in Original Scale	2.6014E-4	SD in Log Scale	0.249
98.44% UTL95% Coverage	0.00183	98.44% BCA UTL95% Coverage	0.0017
98.44% Bootstrap (%) UTL95% Coverage	0.0017	98.44% UPL (t)	0.00162
90% Percentile (z)	0.0012	95% Percentile (z)	0.00132
98.44% Percentile (z)	0.00149	99% Percentile (z)	0.00156
98.44% USL	0.00168		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-7.045	98.44% KM UTL (Lognormal)95% Coverage	0.00181
KM SD of Logged Data	0.245	98.44% KM UPL (Lognormal)	0.0016
98.44% KM Percentile Lognormal (z)	0.00148	98.44% KM USL (Lognormal)	0.00166

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	8.8633E-4	Mean in Log Scale	-7.064
SD in Original Scale	2.6962E-4	SD in Log Scale	0.264
98.44% UTL95% Coverage	0.00188	98.44% UPL (t)	0.00164
90% Percentile (z)	0.0012	95% Percentile (z)	0.00132
98.44% Percentile (z)	0.00151	99% Percentile (z)	0.00158
98.44% USL	0.00171		

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	15	98.44% UTL with95% Coverage	0.0017
Approx, f used to compute achieved CC	0.789	Approximate Actual Confidence Coefficient achieved by UTL	0.537
Approximate Sample Size needed to achieve specified CC	82	98.44% UPL	0.0017
98.44% USL	0.0017	98.44% KM Chebyshev UPL	0.00299

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (1_4_119)

General Statistics

Total Number of Observations	15	Number of Missing Observations	0
Number of Distinct Observations	12		
Number of Detects	10	Number of Non-Detects	5
Number of Distinct Detects	10	Number of Distinct Non-Detects	3
Minimum Detect	5.9000E-4	Minimum Non-Detect	0.0015
Maximum Detect	0.0087	Maximum Non-Detect	0.005
Variance Detected	7.4114E-6	Percent Non-Detects	33.33%
Mean Detected	0.00278	SD Detected	0.00272
Mean of Detected Logged Data	-6.296	SD of Detected Logged Data	0.945

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	2.98	d2max (for USL)	2.633

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.807	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.842	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.28	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.262	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	0.0022	KM SD	0.00228
98.44% UTL95% Coverage	0.00901	98.44% KM UPL (t)	0.00785
90% KM Percentile (z)	0.00513	95% KM Percentile (z)	0.00596
98.44% KM Percentile (z)	0.00712	99% KM Percentile (z)	0.00751
98.44% KM USL	0.00821		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	0.00225	SD	0.00235
98.44% UTL95% Coverage	0.00925	98.44% UPL (t)	0.00806
90% Percentile (z)	0.00526	95% Percentile (z)	0.00611
98.44% Percentile (z)	0.00731	99% Percentile (z)	0.00771
98.44% USL	0.00843		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.459	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.742	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.238	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.272	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.365	k star (bias corrected MLE)	1.022
Theta hat (MLE)	0.00203	Theta star (bias corrected MLE)	0.00272
nu hat (MLE)	27.3	nu star (bias corrected)	20.44
MLE Mean (bias corrected)	0.00278		
MLE Sd (bias corrected)	0.00275	98.44% Percentile of Chisquare (2kstar)	8.421

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	5.9000E-4	Mean	0.00518
Maximum	0.01	Median	0.0041
SD	0.00415	CV	0.8
k hat (MLE)	1.203	k star (bias corrected MLE)	1.007
Theta hat (MLE)	0.00431	Theta star (bias corrected MLE)	0.00515
nu hat (MLE)	36.09	nu star (bias corrected)	30.2
MLE Mean (bias corrected)	0.00518	MLE Sd (bias corrected)	0.00517
		98.44% Percentile of Chisquare (2kstar)	8.354
90% Percentile	0.0119	95% Percentile	0.0155
98.44% Percentile	0.0215	99% Percentile	0.0238

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
98.44% Approx. Gamma UTL with 95% Coverage	0.0325	0.0383	98.44% Approx. Gamma UPL	0.0248	0.0281
98.44% Gamma USL	0.0271	0.031			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0022	SD (KM)	0.00228
Variance (KM)	5.2081E-6	SE of Mean (KM)	6.2890E-4
k hat (KM)	0.933	k star (KM)	0.791
nu hat (KM)	28	nu star (KM)	23.74
theta hat (KM)	0.00236	theta star (KM)	0.00279
98.44% gamma percentile (KM)	0.0103	90% gamma percentile (KM)	0.00538
95% gamma percentile (KM)	0.00718	99% gamma percentile (KM)	0.0114

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
98.44% Approx. Gamma UTL with 95% Coverage	0.0133	0.0145	98.44% Approx. Gamma UPL	0.00911	0.0095
98.44% KM Gamma Percentile	0.00768	0.00787	98.44% Gamma USL	0.00989	0.0104

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.93	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.842	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.186	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.262	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.00221	Mean in Log Scale	-6.49
SD in Original Scale	0.00234	SD in Log Scale	0.833
98.44% UTL95% Coverage	0.0182	98.44% BCA UTL95% Coverage	0.0087
98.44% Bootstrap (%) UTL95% Coverage	0.0087	98.44% UPL (t)	0.0119
90% Percentile (z)	0.00441	95% Percentile (z)	0.00597
98.44% Percentile (z)	0.00914	99% Percentile (z)	0.0105
98.44% USL	0.0136		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-6.512	98.44% KM UTL (Lognormal)95% Coverage	0.0176
KM SD of Logged Data	0.829	98.44% KM UPL (Lognormal)	0.0115
98.44% KM Percentile Lognormal (z)	0.00886	98.44% KM USL (Lognormal)	0.0132

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	0.00225	Mean in Log Scale	-6.479
SD in Original Scale	0.00235	SD in Log Scale	0.844
98.44% UTL95% Coverage	0.019	98.44% UPL (t)	0.0124
90% Percentile (z)	0.00453	95% Percentile (z)	0.00616
98.44% Percentile (z)	0.00947	99% Percentile (z)	0.0109
98.44% USL	0.0142		

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	15	98.44% UTL with95% Coverage	0.0087
Approx, f used to compute achieved CC	0.789	Approximate Actual Confidence Coefficient achieved by UTL	0.537
Approximate Sample Size needed to achieve specified CC	82	98.44% UPL	0.0087
98.44% USL	0.0087	98.44% KM Chebyshev UPL	0.0209

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (1_4_131)

General Statistics

Total Number of Observations	15	Number of Missing Observations	0
Number of Distinct Observations	12		
Number of Detects	13	Number of Non-Detects	2
Number of Distinct Detects	10	Number of Distinct Non-Detects	2
Minimum Detect	0.001	Minimum Non-Detect	9.0000E-4
Maximum Detect	0.0093	Maximum Non-Detect	0.0025
Variance Detected	4.9203E-6	Percent Non-Detects	13.33%
Mean Detected	0.00262	SD Detected	0.00222
Mean of Detected Logged Data	-6.161	SD of Detected Logged Data	0.633

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	2.98	d2max (for USL)	2.633

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.677	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.866	Data Not Normal at 5% Significance Level

Lilliefors Test Statistic	0.269	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.234	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	0.00242	KM SD	0.00205
98.44% UTL95% Coverage	0.00854	98.44% KM UPL (t)	0.0075
90% KM Percentile (z)	0.00505	95% KM Percentile (z)	0.0058
98.44% KM Percentile (z)	0.00684	99% KM Percentile (z)	0.0072
98.44% KM USL	0.00782		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	0.00239	SD	0.00215
98.44% UTL95% Coverage	0.0088	98.44% UPL (t)	0.00771
90% Percentile (z)	0.00514	95% Percentile (z)	0.00593
98.44% Percentile (z)	0.00702	99% Percentile (z)	0.00739
98.44% USL	0.00805		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.766	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.741	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.247	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.239	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	2.456	k star (bias corrected MLE)	1.941
Theta hat (MLE)	0.00107	Theta star (bias corrected MLE)	0.00135
nu hat (MLE)	63.86	nu star (bias corrected)	50.46
MLE Mean (bias corrected)	0.00262		
MLE Sd (bias corrected)	0.00188	98.44% Percentile of Chisquare (2kstar)	12.04

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.001	Mean	0.00361
Maximum	0.01	Median	0.0018
SD	0.00331	CV	0.918
k hat (MLE)	1.671	k star (bias corrected MLE)	1.381
Theta hat (MLE)	0.00216	Theta star (bias corrected MLE)	0.00261
nu hat (MLE)	50.12	nu star (bias corrected)	41.43
MLE Mean (bias corrected)	0.00361	MLE Sd (bias corrected)	0.00307
		98.44% Percentile of Chisquare (2kstar)	9.915
90% Percentile	0.00767	95% Percentile	0.00966
98.44% Percentile	0.0129	99% Percentile	0.0142

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
98.44% Approx. Gamma UTL with 95% Coverage	0.0185	0.0199	98.44% Approx. Gamma UPL	0.0144	0.0152
98.44% Gamma USL	0.0156	0.0166			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00242	SD (KM)	0.00205

Variance (KM)	4.2069E-6	SE of Mean (KM)	5.5171E-4
k hat (KM)	1.397	k star (KM)	1.162
nu hat (KM)	41.92	nu star (KM)	34.87
theta hat (KM)	0.00174	theta star (KM)	0.00209
98.44% gamma percentile (KM)	0.00941	90% gamma percentile (KM)	0.00538
95% gamma percentile (KM)	0.00689	99% gamma percentile (KM)	0.0104

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
98.44% Approx. Gamma UTL with 95% Coverage	0.0109	0.0114	98.44% Approx. Gamma UPL	0.00789	0.00806
98.44% KM Gamma Percentile	0.00685	0.00691	98.44% Gamma USL	0.00845	0.00868

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.899	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.866	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.215	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.234	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.0024	Mean in Log Scale	-6.287
SD in Original Scale	0.00215	SD in Log Scale	0.7
98.44% UTL95% Coverage	0.015	98.44% BCA UTL95% Coverage	0.0093
98.44% Bootstrap (%) UTL95% Coverage	0.0093	98.44% UPL (t)	0.0105
90% Percentile (z)	0.00456	95% Percentile (z)	0.00589
98.44% Percentile (z)	0.00842	99% Percentile (z)	0.00949
98.44% USL	0.0118		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-6.248	98.44% KM UTL (Lognormal)95% Coverage	0.0121
KM SD of Logged Data	0.616	98.44% KM UPL (Lognormal)	0.00887
98.44% KM Percentile Lognormal (z)	0.00729	98.44% KM USL (Lognormal)	0.00978

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	0.00239	Mean in Log Scale	-6.299
SD in Original Scale	0.00215	SD in Log Scale	0.716
98.44% UTL95% Coverage	0.0155	98.44% UPL (t)	0.0108
90% Percentile (z)	0.0046	95% Percentile (z)	0.00597
98.44% Percentile (z)	0.00861	99% Percentile (z)	0.00973
98.44% USL	0.0121		

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	15	98.44% UTL with95% Coverage	0.0093
Approx, f used to compute achieved CC	0.789	Approximate Actual Confidence Coefficient achieved by UTL	0.537
Approximate Sample Size needed to achieve specified CC	82	98.44% UPL	0.0093
98.44% USL	0.0093	98.44% KM Chebyshev UPL	0.0193

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (1_4_135)

General Statistics

Total Number of Observations	15	Number of Missing Observations	0
Number of Distinct Observations	13		
Number of Detects	14	Number of Non-Detects	1
Number of Distinct Detects	13	Number of Distinct Non-Detects	1
Minimum Detect	0.42	Minimum Non-Detect	0.5
Maximum Detect	2.1	Maximum Non-Detect	0.5
Variance Detected	0.285	Percent Non-Detects	6.667%
Mean Detected	0.975	SD Detected	0.534
Mean of Detected Logged Data	-0.147	SD of Detected Logged Data	0.498

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	2.98	d2max (for USL)	2.633

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.84	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.874	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.199	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.226	Detected Data appear Normal at 5% Significance Level

Detected Data appear Approximate Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	0.94	KM SD	0.514
98.44% UTL95% Coverage	2.472	98.44% KM UPL (t)	2.212
90% KM Percentile (z)	1.599	95% KM Percentile (z)	1.786
98.44% KM Percentile (z)	2.048	99% KM Percentile (z)	2.136
98.44% KM USL	2.294		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	0.927	SD	0.548
98.44% UTL95% Coverage	2.559	98.44% UPL (t)	2.282
90% Percentile (z)	1.629	95% Percentile (z)	1.828
98.44% Percentile (z)	2.107	99% Percentile (z)	2.201
98.44% USL	2.369		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.468	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.74	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.144	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.23	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	4.282	k star (bias corrected MLE)	3.412
Theta hat (MLE)	0.228	Theta star (bias corrected MLE)	0.286
nu hat (MLE)	119.9	nu star (bias corrected)	95.53
MLE Mean (bias corrected)	0.975		
MLE Sd (bias corrected)	0.528	98.44% Percentile of Chisquare (2kstar)	17.02

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.27	Mean	0.928
Maximum	2.1	Median	0.77
SD	0.546	CV	0.588
k hat (MLE)	3.504	k star (bias corrected MLE)	2.847
Theta hat (MLE)	0.265	Theta star (bias corrected MLE)	0.326
nu hat (MLE)	105.1	nu star (bias corrected)	85.42
MLE Mean (bias corrected)	0.928	MLE Sd (bias corrected)	0.55
		98.44% Percentile of Chisquare (2kstar)	15.18
90% Percentile	1.665	95% Percentile	1.977
98.44% Percentile	2.473	99% Percentile	2.655

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
98.44% Approx. Gamma UTL with 95% Coverage	3.238	3.417	98.44% Approx. Gamma UPL	2.676	2.776
98.44% Gamma USL	2.845	2.966			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.94	SD (KM)	0.514
Variance (KM)	0.264	SE of Mean (KM)	0.138
k hat (KM)	3.346	k star (KM)	2.721
nu hat (KM)	100.4	nu star (KM)	81.63
theta hat (KM)	0.281	theta star (KM)	0.346
98.44% gamma percentile (KM)	2.549	90% gamma percentile (KM)	1.704
95% gamma percentile (KM)	2.03	99% gamma percentile (KM)	2.74

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
98.44% Approx. Gamma UTL with 95% Coverage	3.234	3.384	98.44% Approx. Gamma UPL	2.475	2.535
98.44% KM Gamma Percentile	2.202	2.237	98.44% Gamma USL	2.619	2.693

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.946	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.874	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.113	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.226	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.937	Mean in Log Scale	-0.198
SD in Original Scale	0.536	SD in Log Scale	0.519
98.44% UTL95% Coverage	3.855	98.44% BCA UTL95% Coverage	2.1
98.44% Bootstrap (%) UTL95% Coverage	2.1	98.44% UPL (t)	2.964
90% Percentile (z)	1.596	95% Percentile (z)	1.927
98.44% Percentile (z)	2.512	99% Percentile (z)	2.745
98.44% USL	3.219		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-0.19	98.44% KM UTL (Lognormal)95% Coverage	3.57
KM SD of Logged Data	0.491	98.44% KM UPL (Lognormal)	2.785
98.44% KM Percentile Lognormal (z)	2.382	98.44% KM USL (Lognormal)	3.011

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	0.927	Mean in Log Scale	-0.229
SD in Original Scale	0.548	SD in Log Scale	0.576
98.44% UTL95% Coverage	4.431	98.44% UPL (t)	3.31
90% Percentile (z)	1.664	95% Percentile (z)	2.052
98.44% Percentile (z)	2.754	99% Percentile (z)	3.04
98.44% USL	3.627		

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	15	98.44% UTL with95% Coverage	2.1
Approx, f used to compute achieved CC	0.789	Approximate Actual Confidence Coefficient achieved by UTL	0.537
Approximate Sample Size needed to achieve specified CC	82	98.44% UPL	2.1
98.44% USL	2.1	98.44% KM Chebyshev UPL	5.162

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

Background Statistics for Uncensored Full Data Sets

User Selected Options

Date/Time of Computation	ProUCL 5.110/15/2019 3:19:58 PM
From File	G:\7900\7967 USACE New Mexico GW Analysis\7.0 ProUCL\BACKGROUND\INPUTS\FWDA_ALLUVIUM_par_cens0.xls
Full Precision	OFF
Confidence Coefficient	98.44%
Coverage	95%
New or Future K Observations	1
Number of Bootstrap Operations	2000

VALUES (1_1_108)

General Statistics

Total Number of Observations	15	Number of Distinct Observations	8
Minimum	0.014	First Quartile	0.0155
Second Largest	0.021	Median	0.016
Maximum	0.026	Third Quartile	0.0185
Mean	0.0175	SD	0.00316
Coefficient of Variation	0.181	Skewness	1.613
Mean of logged Data	-4.061	SD of logged Data	0.165

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	2.98	d2max (for USL)	2.633

Normal GOF Test

Shapiro Wilk Test Statistic	0.835	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.881	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.225	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.22	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Background Statistics Assuming Normal Distribution

98.44% UTL with 95% Coverage	0.0269	90% Percentile (z)	0.0215
98.44% UPL (t)	0.0253	95% Percentile (z)	0.0227
98.44% USL	0.0258	98.44% Percentile (z)	0.0243
		99% Percentile (z)	0.0248

Gamma GOF Test

A-D Test Statistic	0.782	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.735	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.214	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.221	Detected data appear Gamma Distributed at 5% Significance Level

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics

k hat (MLE)	37.24	k star (bias corrected MLE)	29.83
Theta hat (MLE)	4.6890E-4	Theta star (bias corrected MLE)	5.8525E-4
nu hat (MLE)	1117	nu star (bias corrected)	895
MLE Mean (bias corrected)	0.0175	MLE Sd (bias corrected)	0.0032

Background Statistics Assuming Gamma Distribution

98.44% Wilson Hilferty (WH) Approx. Gamma UPL	0.0257	90% Percentile	0.0217
98.44% Hawkins Wixley (HW) Approx. Gamma UPL	0.0257	95% Percentile	0.023
98.44% WH Approx. Gamma UTL with 95% Coverage	0.0276	98.44% Percentile	0.025
98.44% HW Approx. Gamma UTL with 95% Coverage	0.0278	99% Percentile	0.0257
98.44% WH USL	0.0263	98.44% HW USL	0.0263

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.886	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.881	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.206	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.22	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Background Statistics assuming Lognormal Distribution

98.44% UTL with 95% Coverage	0.0282	90% Percentile (z)	0.0213
98.44% UPL (t)	0.0259	95% Percentile (z)	0.0226
98.44% USL	0.0266	98.44% Percentile (z)	0.0246
		99% Percentile (z)	0.0253

Nonparametric Distribution Free Background Statistics

Data appear Approximate Gamma Distribution at 5% Significance Level

Nonparametric Upper Limits for Background Threshold Values

Order of Statistic, r	15	98.44% UTL with 95% Coverage	0.026
Approx, f used to compute achieved CC	0.789	Approximate Actual Confidence Coefficient achieved by UTL	0.537
		Approximate Sample Size needed to achieve specified CC	82
98.44% Percentile Bootstrap UTL with 95% Coverage	0.026	98.44% BCA Bootstrap UTL with 95% Coverage	0.026
98.44% UPL	0.026	90% Percentile	0.021
90% Chebyshev UPL	0.0272	95% Percentile	0.0225
98.44% Chebyshev UPL	0.0434	98.44% Percentile	0.0249
95% Chebyshev UPL	0.0317	99% Percentile	0.0253
98.44% USL	0.026		

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (1_1_114)

General Statistics

Total Number of Observations	15	Number of Distinct Observations	12
Minimum	37	First Quartile	40
Second Largest	58	Median	44
Maximum	58.6	Third Quartile	50
Mean	45.64	SD	7.075
Coefficient of Variation	0.155	Skewness	0.698
Mean of logged Data	3.81	SD of logged Data	0.15

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	2.98	d2max (for USL)	2.633

Normal GOF Test

Shapiro Wilk Test Statistic	0.912	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.881	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.163	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.22	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Background Statistics Assuming Normal Distribution

98.44% UTL with 95% Coverage	66.73	90% Percentile (z)	54.71
98.44% UPL (t)	63.14	95% Percentile (z)	57.28
98.44% USL	64.27	98.44% Percentile (z)	60.89
		99% Percentile (z)	62.1

Gamma GOF Test

A-D Test Statistic	0.427	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.734	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.162	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.221	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	46.66	k star (bias corrected MLE)	37.37
Theta hat (MLE)	0.978	Theta star (bias corrected MLE)	1.221
nu hat (MLE)	1400	nu star (bias corrected)	1121
MLE Mean (bias corrected)	45.64	MLE Sd (bias corrected)	7.466

Background Statistics Assuming Gamma Distribution

98.44% Wilson Hilferty (WH) Approx. Gamma UPL	64.57	90% Percentile	55.43
98.44% Hawkins Wixley (HW) Approx. Gamma UPL	64.78	95% Percentile	58.57
98.44% WH Approx. Gamma UTL with 95% Coverage	69.08	98.44% Percentile	63.18
98.44% HW Approx. Gamma UTL with 95% Coverage	69.45	99% Percentile	64.78
98.44% WH USL	65.96	98.44% HW USL	66.22

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.932	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.881	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.152	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.22	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Background Statistics assuming Lognormal Distribution

98.44% UTL with 95% Coverage	70.66	90% Percentile (z)	54.74
98.44% UPL (t)	65.49	95% Percentile (z)	57.81
98.44% USL	67.07	98.44% Percentile (z)	62.42
		99% Percentile (z)	64.05

Nonparametric Distribution Free Background Statistics

Data appear Normal at 5% Significance Level

Nonparametric Upper Limits for Background Threshold Values

Order of Statistic, r	15	98.44% UTL with 95% Coverage	58.6
Approx, f used to compute achieved CC	0.789	Approximate Actual Confidence Coefficient achieved by UTL	0.537
		Approximate Sample Size needed to achieve specified CC	82
98.44% Percentile Bootstrap UTL with 95% Coverage	58.6	98.44% BCA Bootstrap UTL with 95% Coverage	58.6
98.44% UPL	58.6	90% Percentile	56.4
90% Chebyshev UPL	67.56	95% Percentile	58.18
98.44% Chebyshev UPL	103.7	98.44% Percentile	58.47
95% Chebyshev UPL	77.49	99% Percentile	58.52
98.44% USL	58.6		

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (1_1_126)

General Statistics

Total Number of Observations	15	Number of Distinct Observations	8
Minimum	21	First Quartile	23.5
Second Largest	29	Median	24
Maximum	32.2	Third Quartile	25.5
Mean	25.08	SD	2.8
Coefficient of Variation	0.112	Skewness	1.303
Mean of logged Data	3.217	SD of logged Data	0.106

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	2.98	d2max (for USL)	2.633

Normal GOF Test

Shapiro Wilk Test Statistic	0.88	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.881	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.245	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.22	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Background Statistics Assuming Normal Distribution

98.44% UTL with 95% Coverage	33.42	90% Percentile (z)	28.67
98.44% UPL (t)	32.01	95% Percentile (z)	29.69
98.44% USL	32.45	98.44% Percentile (z)	31.11
		99% Percentile (z)	31.59

Gamma GOF Test

A-D Test Statistic	0.71	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.734	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.232	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.221	Data Not Gamma Distributed at 5% Significance Level

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics

k hat (MLE)	92.02	k star (bias corrected MLE)	73.66
Theta hat (MLE)	0.273	Theta star (bias corrected MLE)	0.34
nu hat (MLE)	2761	nu star (bias corrected)	2210
MLE Mean (bias corrected)	25.08	MLE Sd (bias corrected)	2.922

Background Statistics Assuming Gamma Distribution

98.44% Wilson Hilferty (WH) Approx. Gamma UPL	32.28	90% Percentile	28.89
98.44% Hawkins Wixley (HW) Approx. Gamma UPL	32.32	95% Percentile	30.07
98.44% WH Approx. Gamma UTL with 95% Coverage	33.93	98.44% Percentile	31.79
98.44% HW Approx. Gamma UTL with 95% Coverage	34	99% Percentile	32.37
98.44% WH USL	32.79	98.44% HW USL	32.84

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.911	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.881	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.225	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.22	Data Not Lognormal at 5% Significance Level

Data appear Approximate Lognormal at 5% Significance Level

Background Statistics assuming Lognormal Distribution

98.44% UTL with 95% Coverage	34.24	90% Percentile (z)	28.59
98.44% UPL (t)	32.45	95% Percentile (z)	29.71
98.44% USL	33	98.44% Percentile (z)	31.37
		99% Percentile (z)	31.94

Nonparametric Distribution Free Background Statistics

Data appear Approximate Gamma Distribution at 5% Significance Level

Nonparametric Upper Limits for Background Threshold Values

Order of Statistic, r	15	98.44% UTL with 95% Coverage	32.2
Approx, f used to compute achieved CC	0.789	Approximate Actual Confidence Coefficient achieved by UTL	0.537
		Approximate Sample Size needed to achieve specified CC	82
98.44% Percentile Bootstrap UTL with 95% Coverage	32.2	98.44% BCA Bootstrap UTL with 95% Coverage	32.2
98.44% UPL	32.2	90% Percentile	28.6
90% Chebyshev UPL	33.75	95% Percentile	29.96
98.44% Chebyshev UPL	48.07	98.44% Percentile	31.5
95% Chebyshev UPL	37.68	99% Percentile	31.75
98.44% USL	32.2		

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (1_1_128)

General Statistics

Total Number of Observations	15	Number of Distinct Observations	9
Minimum	0.15	First Quartile	0.17
Second Largest	0.23	Median	0.18
Maximum	0.33	Third Quartile	0.21
Mean	0.195	SD	0.0449
Coefficient of Variation	0.231	Skewness	2.132
Mean of logged Data	-1.658	SD of logged Data	0.2

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	2.98	d2max (for USL)	2.633

Normal GOF Test

Shapiro Wilk Test Statistic	0.78	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.881	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.207	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.22	Data appear Normal at 5% Significance Level

Data appear Approximate Normal at 5% Significance Level

Background Statistics Assuming Normal Distribution

98.44% UTL with 95% Coverage	0.328	90% Percentile (z)	0.252
98.44% UPL (t)	0.306	95% Percentile (z)	0.268
98.44% USL	0.313	98.44% Percentile (z)	0.291
		99% Percentile (z)	0.299

Gamma GOF Test

A-D Test Statistic	0.801	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.735	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.188	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.221	Detected data appear Gamma Distributed at 5% Significance Level

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics

k hat (MLE)	24.58	k star (bias corrected MLE)	19.71
Theta hat (MLE)	0.00791	Theta star (bias corrected MLE)	0.00987
nu hat (MLE)	737.5	nu star (bias corrected)	591.4
MLE Mean (bias corrected)	0.195	MLE Sd (bias corrected)	0.0438

Background Statistics Assuming Gamma Distribution

98.44% Wilson Hilferty (WH) Approx. Gamma UPL	0.309	90% Percentile	0.252
98.44% Hawkins Wixley (HW) Approx. Gamma UPL	0.31	95% Percentile	0.272
98.44% WH Approx. Gamma UTL with 95% Coverage	0.338	98.44% Percentile	0.301
98.44% HW Approx. Gamma UTL with 95% Coverage	0.34	99% Percentile	0.311
98.44% WH USL	0.318	98.44% HW USL	0.319

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.865	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.881	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.183	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.22	Data appear Lognormal at 5% Significance Level

Data appear Approximate Lognormal at 5% Significance Level

Background Statistics assuming Lognormal Distribution

98.44% UTL with 95% Coverage	0.346		90% Percentile (z)	0.246
98.44% UPL (t)	0.313		95% Percentile (z)	0.265
98.44% USL	0.323		98.44% Percentile (z)	0.293
			99% Percentile (z)	0.304

Nonparametric Distribution Free Background Statistics

Data appear Approximate Normal at 5% Significance Level

Nonparametric Upper Limits for Background Threshold Values

Order of Statistic, r	15	98.44% UTL with 95% Coverage	0.33
Approx, f used to compute achieved CC	0.789	Approximate Actual Confidence Coefficient achieved by UTL	0.537
		Approximate Sample Size needed to achieve specified CC	82
98.44% Percentile Bootstrap UTL with 95% Coverage	0.33	98.44% BCA Bootstrap UTL with 95% Coverage	0.33
98.44% UPL	0.33	90% Percentile	0.229
90% Chebyshev UPL	0.334	95% Percentile	0.26
98.44% Chebyshev UPL	0.563	98.44% Percentile	0.308
95% Chebyshev UPL	0.397	99% Percentile	0.316
98.44% USL	0.33		

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (1_1_142)

General Statistics

Total Number of Observations	15	Number of Distinct Observations	11
Minimum	520	First Quartile	790
Second Largest	900	Median	830
Maximum	920	Third Quartile	867
Mean	810.9	SD	95.95
Coefficient of Variation	0.118	Skewness	-2.063
Mean of logged Data	6.69	SD of logged Data	0.136

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	2.98	d2max (for USL)	2.633

Normal GOF Test

Shapiro Wilk Test Statistic	0.807	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.881	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.214	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.22	Data appear Normal at 5% Significance Level

Data appear Approximate Normal at 5% Significance Level

Background Statistics Assuming Normal Distribution

98.44% UTL with 95% Coverage	1097	90% Percentile (z)	933.9
98.44% UPL (t)	1048	95% Percentile (z)	968.8
98.44% USL	1064	98.44% Percentile (z)	1018
		99% Percentile (z)	1034

Gamma GOF Test

A-D Test Statistic	1.103	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.734	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.234	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.221	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	63.81	k star (bias corrected MLE)	51.09
Theta hat (MLE)	12.71	Theta star (bias corrected MLE)	15.87
nu hat (MLE)	1914	nu star (bias corrected)	1533
MLE Mean (bias corrected)	810.9	MLE Sd (bias corrected)	113.4

Background Statistics Assuming Gamma Distribution

98.44% Wilson Hilferty (WH) Approx. Gamma UPL	1094	90% Percentile	959.3
98.44% Hawkins Wixley (HW) Approx. Gamma UPL	1102	95% Percentile	1006
98.44% WH Approx. Gamma UTL with 95% Coverage	1161	98.44% Percentile	1074
98.44% HW Approx. Gamma UTL with 95% Coverage	1171	99% Percentile	1098
98.44% WH USL	1115	98.44% HW USL	1123

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.73	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.881	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.247	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.22	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

Background Statistics assuming Lognormal Distribution

98.44% UTL with 95% Coverage	1207	90% Percentile (z)	958
98.44% UPL (t)	1127	95% Percentile (z)	1007
98.44% USL	1152	98.44% Percentile (z)	1079
		99% Percentile (z)	1105

Nonparametric Distribution Free Background Statistics

Data appear Approximate Normal at 5% Significance Level

Nonparametric Upper Limits for Background Threshold Values

Order of Statistic, r	15	98.44% UTL with 95% Coverage	920
Approx, f used to compute achieved CC	0.789	Approximate Actual Confidence Coefficient achieved by UTL	0.537
		Approximate Sample Size needed to achieve specified CC	82
98.44% Percentile Bootstrap UTL with 95% Coverage	920	98.44% BCA Bootstrap UTL with 95% Coverage	920
98.44% UPL	920	90% Percentile	896
90% Chebyshev UPL	1108	95% Percentile	906
98.44% Chebyshev UPL	1599	98.44% Percentile	915.6
95% Chebyshev UPL	1243	99% Percentile	917.2
98.44% USL	920		

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (1_4_113)

General Statistics

Total Number of Observations	15	Number of Distinct Observations	14
Minimum	35	First Quartile	40
Second Largest	59	Median	46
Maximum	60	Third Quartile	50.5
Mean	46.13	SD	8.202
Coefficient of Variation	0.178	Skewness	0.469
Mean of logged Data	3.817	SD of logged Data	0.175

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	2.98	d2max (for USL)	2.633

Normal GOF Test

Shapiro Wilk Test Statistic	0.934	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.881	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.126	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.22	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Background Statistics Assuming Normal Distribution

98.44% UTL with 95% Coverage	70.58	90% Percentile (z)	56.64
98.44% UPL (t)	66.42	95% Percentile (z)	59.62
98.44% USL	67.73	98.44% Percentile (z)	63.81
		99% Percentile (z)	65.21

Gamma GOF Test

A-D Test Statistic	0.29	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.735	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.128	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.221	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	34.77	k star (bias corrected MLE)	27.86
Theta hat (MLE)	1.327	Theta star (bias corrected MLE)	1.656
nu hat (MLE)	1043	nu star (bias corrected)	835.9
MLE Mean (bias corrected)	46.13	MLE Sd (bias corrected)	8.74

Background Statistics Assuming Gamma Distribution

98.44% Wilson Hilferty (WH) Approx. Gamma UPL	68.63	90% Percentile	57.63
98.44% Hawkins Wixley (HW) Approx. Gamma UPL	68.98	95% Percentile	61.39
98.44% WH Approx. Gamma UTL with 95% Coverage	74.12	98.44% Percentile	66.93
98.44% HW Approx. Gamma UTL with 95% Coverage	74.69	99% Percentile	68.86
98.44% WH USL	70.32	98.44% HW USL	70.73

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.951	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.881	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.118	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.22	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Background Statistics assuming Lognormal Distribution

98.44% UTL with 95% Coverage	76.65	90% Percentile (z)	56.92
98.44% UPL (t)	70.14	95% Percentile (z)	60.66
98.44% USL	72.12	98.44% Percentile (z)	66.33
		99% Percentile (z)	68.35

Nonparametric Distribution Free Background Statistics

Data appear Normal at 5% Significance Level

Nonparametric Upper Limits for Background Threshold Values

Order of Statistic, r	15	98.44% UTL with 95% Coverage	60
Approx, f used to compute achieved CC	0.789	Approximate Actual Confidence Coefficient achieved by UTL	0.537
		Approximate Sample Size needed to achieve specified CC	82
98.44% Percentile Bootstrap UTL with 95% Coverage	60	98.44% BCA Bootstrap UTL with 95% Coverage	60
98.44% UPL	60	90% Percentile	58.6
90% Chebyshev UPL	71.55	95% Percentile	59.3
98.44% Chebyshev UPL	113.5	98.44% Percentile	59.78
95% Chebyshev UPL	83.06	99% Percentile	59.86
98.44% USL	60		

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (1_4_125)

General Statistics

Total Number of Observations	15	Number of Distinct Observations	10
Minimum	21	First Quartile	23
Second Largest	31	Median	26
Maximum	32	Third Quartile	27
Mean	25.6	SD	3.269
Coefficient of Variation	0.128	Skewness	0.553
Mean of logged Data	3.235	SD of logged Data	0.125

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	2.98	d2max (for USL)	2.633

Normal GOF Test

Shapiro Wilk Test Statistic	0.946	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.881	Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.134	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.22	Data appear Normal at 5% Significance Level	

Data appear Normal at 5% Significance Level

Background Statistics Assuming Normal Distribution

98.44% UTL with 95% Coverage	35.34	90% Percentile (z)	29.79
98.44% UPL (t)	33.69	95% Percentile (z)	30.98
98.44% USL	34.21	98.44% Percentile (z)	32.65
		99% Percentile (z)	33.2

Gamma GOF Test

A-D Test Statistic	0.287	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.734	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.128	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.221	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	67.5	k star (bias corrected MLE)	54.05
Theta hat (MLE)	0.379	Theta star (bias corrected MLE)	0.474
nu hat (MLE)	2025	nu star (bias corrected)	1621
MLE Mean (bias corrected)	25.6	MLE Sd (bias corrected)	3.482

Background Statistics Assuming Gamma Distribution

98.44% Wilson Hilferty (WH) Approx. Gamma UPL	34.28	90% Percentile	30.15
98.44% Hawkins Wixley (HW) Approx. Gamma UPL	34.37	95% Percentile	31.58
98.44% WH Approx. Gamma UTL with 95% Coverage	36.31	98.44% Percentile	33.67
98.44% HW Approx. Gamma UTL with 95% Coverage	36.45	99% Percentile	34.39
98.44% WH USL	34.91	98.44% HW USL	35.01

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.959	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.881	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.12	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.22	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Background Statistics assuming Lognormal Distribution

98.44% UTL with 95% Coverage	36.93	90% Percentile (z)	29.84
98.44% UPL (t)	34.66	95% Percentile (z)	31.23
98.44% USL	35.36	98.44% Percentile (z)	33.3
		99% Percentile (z)	34.02

Nonparametric Distribution Free Background Statistics

Data appear Normal at 5% Significance Level

Nonparametric Upper Limits for Background Threshold Values

Order of Statistic, r	15	98.44% UTL with 95% Coverage	32
Approx, f used to compute achieved CC	0.789	Approximate Actual Confidence Coefficient achieved by UTL	0.537
		Approximate Sample Size needed to achieve specified CC	82
98.44% Percentile Bootstrap UTL with 95% Coverage	32	98.44% BCA Bootstrap UTL with 95% Coverage	32
98.44% UPL	32	90% Percentile	30.2
90% Chebyshev UPL	35.73	95% Percentile	31.3
98.44% Chebyshev UPL	52.44	98.44% Percentile	31.78
95% Chebyshev UPL	40.32	99% Percentile	31.86
98.44% USL	32		

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (1_4_141)

General Statistics

Total Number of Observations	15	Number of Distinct Observations	11
Minimum	630	First Quartile	760
Second Largest	860	Median	810
Maximum	894	Third Quartile	840
Mean	794.3	SD	70.17
Coefficient of Variation	0.0884	Skewness	-0.958
Mean of logged Data	6.674	SD of logged Data	0.0925

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	2.98	d2max (for USL)	2.633

Normal GOF Test

Shapiro Wilk Test Statistic	0.932	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.881	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.189	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.22	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Background Statistics Assuming Normal Distribution

98.44% UTL with 95% Coverage	1003	90% Percentile (z)	884.2
98.44% UPL (t)	967.9	95% Percentile (z)	909.7
98.44% USL	979	98.44% Percentile (z)	945.5
		99% Percentile (z)	957.5

Gamma GOF Test

A-D Test Statistic	0.524	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.734	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.2	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.221	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	129.4	k star (bias corrected MLE)	103.6
Theta hat (MLE)	6.137	Theta star (bias corrected MLE)	7.668
nu hat (MLE)	3883	nu star (bias corrected)	3108
MLE Mean (bias corrected)	794.3	MLE Sd (bias corrected)	78.04

Background Statistics Assuming Gamma Distribution

98.44% Wilson Hilferty (WH) Approx. Gamma UPL	984.5	90% Percentile	895.8
98.44% Hawkins Wixley (HW) Approx. Gamma UPL	986.9	95% Percentile	926.8
98.44% WH Approx. Gamma UTL with 95% Coverage	1027	98.44% Percentile	971.7
98.44% HW Approx. Gamma UTL with 95% Coverage	1031	99% Percentile	987
98.44% WH USL	997.8	98.44% HW USL	1000

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.909	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.881	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.2	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.22	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Background Statistics assuming Lognormal Distribution

98.44% UTL with 95% Coverage	1042	90% Percentile (z)	890.8
98.44% UPL (t)	994.6	95% Percentile (z)	921.2
98.44% USL	1009	98.44% Percentile (z)	965.7
		99% Percentile (z)	981.1

Nonparametric Distribution Free Background Statistics

Data appear Normal at 5% Significance Level

Nonparametric Upper Limits for Background Threshold Values

Order of Statistic, r	15	98.44% UTL with 95% Coverage	894
Approx, f used to compute achieved CC	0.789	Approximate Actual Confidence Coefficient achieved by UTL	0.537
		Approximate Sample Size needed to achieve specified CC	82
98.44% Percentile Bootstrap UTL with 95% Coverage	894	98.44% BCA Bootstrap UTL with 95% Coverage	894
98.44% UPL	894	90% Percentile	856
90% Chebyshev UPL	1012	95% Percentile	870.2
98.44% Chebyshev UPL	1371	98.44% Percentile	886.6
95% Chebyshev UPL	1110	99% Percentile	889.2
98.44% USL	894		

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

Background Statistics for Uncensored Full Data Sets

User Selected Options

Date/Time of Computation	ProUCL 5.110/15/2019 3:26:04 PM
From File	G:\7900\7967 USACE New Mexico GW Analysis\7.0 ProUCL\BACKGROUND\INPUTS\FWDA_BEDROCK_par_cens0.xls
Full Precision	OFF
Confidence Coefficient	97.93%
Coverage	95%
New or Future K Observations	1
Number of Bootstrap Operations	2000

VALUES (2_1_108)

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
Minimum	0.00678	First Quartile	0.01
Second Largest	0.082	Median	0.0158
Maximum	0.67	Third Quartile	0.031
Mean	0.096	SD	0.217
Coefficient of Variation	2.255	Skewness	2.935
Mean of logged Data	-3.662	SD of logged Data	1.457

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	3.424	d2max (for USL)	2.24

Normal GOF Test

Shapiro Wilk Test Statistic	0.471	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.415	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.274	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Background Statistics Assuming Normal Distribution

97.93% UTL with 95% Coverage	0.837	90% Percentile (z)	0.373
97.93% UPL (t)	0.65	95% Percentile (z)	0.452
97.93% USL	0.581	97.93% Percentile (z)	0.538
		99% Percentile (z)	0.6

Gamma GOF Test

A-D Test Statistic	1.246	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.774	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.34	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.295	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.484	k star (bias corrected MLE)	0.397
Theta hat (MLE)	0.198	Theta star (bias corrected MLE)	0.242
nu hat (MLE)	8.714	nu star (bias corrected)	7.143
MLE Mean (bias corrected)	0.096	MLE Sd (bias corrected)	0.152

Background Statistics Assuming Gamma Distribution

97.93% Wilson Hilferty (WH) Approx. Gamma UPL	0.702	90% Percentile	0.272
97.93% Hawkins Wixley (HW) Approx. Gamma UPL	0.738	95% Percentile	0.4
97.93% WH Approx. Gamma UTL with 95% Coverage	1.247	97.93% Percentile	0.574
97.93% HW Approx. Gamma UTL with 95% Coverage	1.44	99% Percentile	0.723
97.93% WH USL	0.551	97.93% HW USL	0.559

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.845	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.226	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.274	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Background Statistics assuming Lognormal Distribution

97.93% UTL with 95% Coverage	3.771	90% Percentile (z)	0.166
97.93% UPL (t)	1.068	95% Percentile (z)	0.282
97.93% USL	0.672	97.93% Percentile (z)	0.502
		99% Percentile (z)	0.762

Nonparametric Distribution Free Background Statistics

Data appear Lognormal at 5% Significance Level

Nonparametric Upper Limits for Background Threshold Values

Order of Statistic, r	9	97.93% UTL with 95% Coverage	0.67
Approx, f used to compute achieved CC	0.474	Approximate Actual Confidence Coefficient achieved by UTL	0.37
		Approximate Sample Size needed to achieve specified CC	76
97.93% Percentile Bootstrap UTL with 95% Coverage	0.67	97.93% BCA Bootstrap UTL with 95% Coverage	0.67
97.93% UPL	0.67	90% Percentile	0.2
90% Chebyshev UPL	0.781	95% Percentile	0.435
97.93% Chebyshev UPL	1.666	97.93% Percentile	0.573
95% Chebyshev UPL	1.091	99% Percentile	0.623
97.93% USL	0.67		

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (2_1_114)

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
Minimum	7.8	First Quartile	8.2
Second Largest	230	Median	31.5
Maximum	292	Third Quartile	100
Mean	88.28	SD	104.6
Coefficient of Variation	1.185	Skewness	1.316
Mean of logged Data	3.698	SD of logged Data	1.432

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	3.424	d2max (for USL)	2.24

Normal GOF Test

Shapiro Wilk Test Statistic	0.788	Shapiro Wilk GOF Test
5% Shapiro Wilk Critical Value	0.829	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.262	Lilliefors GOF Test
5% Lilliefors Critical Value	0.274	Data appear Normal at 5% Significance Level

Data appear Approximate Normal at 5% Significance Level

Background Statistics Assuming Normal Distribution

97.93% UTL with 95% Coverage	446.5	90% Percentile (z)	222.4
97.93% UPL (t)	355.9	95% Percentile (z)	260.4
97.93% USL	322.6	97.93% Percentile (z)	301.7
		99% Percentile (z)	331.7

Gamma GOF Test

A-D Test Statistic	0.447	Anderson-Darling Gamma GOF Test
5% A-D Critical Value	0.751	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.197	Kolmogorov-Smirnov Gamma GOF Test
5% K-S Critical Value	0.289	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.763	k star (bias corrected MLE)	0.583
Theta hat (MLE)	115.7	Theta star (bias corrected MLE)	151.5
nu hat (MLE)	13.74	nu star (bias corrected)	10.49
MLE Mean (bias corrected)	88.28	MLE Sd (bias corrected)	115.6

Background Statistics Assuming Gamma Distribution

97.93% Wilson Hilferty (WH) Approx. Gamma UPL	576.9	90% Percentile	231.1
97.93% Hawkins Wixley (HW) Approx. Gamma UPL	669.5	95% Percentile	321
97.93% WH Approx. Gamma UTL with 95% Coverage	958.5	97.93% Percentile	439.2
97.93% HW Approx. Gamma UTL with 95% Coverage	1216	99% Percentile	539
97.93% WH USL	467.4	97.93% HW USL	524.5

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.89	Shapiro Wilk Lognormal GOF Test
5% Shapiro Wilk Critical Value	0.829	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.201	Lilliefors Lognormal GOF Test
5% Lilliefors Critical Value	0.274	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Background Statistics assuming Lognormal Distribution

97.93% UTL with 95% Coverage	5430	90% Percentile (z)	252.8
97.93% UPL (t)	1572	95% Percentile (z)	425.3
97.93% USL	996.8	97.93% Percentile (z)	748.2
		99% Percentile (z)	1128

Nonparametric Distribution Free Background Statistics

Data appear Approximate Normal at 5% Significance Level

Nonparametric Upper Limits for Background Threshold Values

Order of Statistic, r	9	97.93% UTL with 95% Coverage	292
Approx, f used to compute achieved CC	0.474	Approximate Actual Confidence Coefficient achieved by UTL	0.37
		Approximate Sample Size needed to achieve specified CC	76
97.93% Percentile Bootstrap UTL with 95% Coverage	292	97.93% BCA Bootstrap UTL with 95% Coverage	292
97.93% UPL	292	90% Percentile	242.4
90% Chebyshev UPL	419.1	95% Percentile	267.2
97.93% Chebyshev UPL	846.8	97.93% Percentile	281.7
95% Chebyshev UPL	569	99% Percentile	287
97.93% USL	292		

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (2_1_126)

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
Minimum	0.876	First Quartile	0.97
Second Largest	35.4	Median	4.85
Maximum	39	Third Quartile	30
Mean	14.31	SD	15.97
Coefficient of Variation	1.117	Skewness	0.752
Mean of logged Data	1.758	SD of logged Data	1.611

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	3.424	d2max (for USL)	2.24

Normal GOF Test

Shapiro Wilk Test Statistic	0.794	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.279	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.274	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Background Statistics Assuming Normal Distribution

97.93% UTL with 95% Coverage	69	90% Percentile (z)	34.78
97.93% UPL (t)	55.17	95% Percentile (z)	40.58
97.93% USL	50.09	97.93% Percentile (z)	46.89
		99% Percentile (z)	51.47

Gamma GOF Test

A-D Test Statistic	0.555	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.757	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.197	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.291	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.673	k star (bias corrected MLE)	0.523
Theta hat (MLE)	21.25	Theta star (bias corrected MLE)	27.36
nu hat (MLE)	12.12	nu star (bias corrected)	9.411
MLE Mean (bias corrected)	14.31	MLE Sd (bias corrected)	19.78

Background Statistics Assuming Gamma Distribution

97.93% Wilson Hilferty (WH) Approx. Gamma UPL	100.8	90% Percentile	38.34
97.93% Hawkins Wixley (HW) Approx. Gamma UPL	120.9	95% Percentile	54.08
97.93% WH Approx. Gamma UTL with 95% Coverage	170.1	97.93% Percentile	74.95
97.93% HW Approx. Gamma UTL with 95% Coverage	225.5	99% Percentile	92.63
97.93% WH USL	81.05	97.93% HW USL	93.64

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.86	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.2	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.274	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Background Statistics assuming Lognormal Distribution

97.93% UTL with 95% Coverage	1442	90% Percentile (z)	45.71
97.93% UPL (t)	357.4	95% Percentile (z)	82.07
97.93% USL	214	97.93% Percentile (z)	155
		99% Percentile (z)	246

Nonparametric Distribution Free Background Statistics

Data appear Gamma Distributed at 5% Significance Level

Nonparametric Upper Limits for Background Threshold Values

Order of Statistic, r	9	97.93% UTL with 95% Coverage	39
Approx, f used to compute achieved CC	0.474	Approximate Actual Confidence Coefficient achieved by UTL	0.37
		Approximate Sample Size needed to achieve specified CC	76
97.93% Percentile Bootstrap UTL with 95% Coverage	39	97.93% BCA Bootstrap UTL with 95% Coverage	39
97.93% UPL	39	90% Percentile	36.12
90% Chebyshev UPL	64.82	95% Percentile	37.56
97.93% Chebyshev UPL	130.1	97.93% Percentile	38.4
95% Chebyshev UPL	87.7	99% Percentile	38.71
97.93% USL	39		

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20. Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (2_1_136)

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
Minimum	0.645	First Quartile	1
Second Largest	11	Median	3.25
Maximum	16	Third Quartile	4.69
Mean	4.802	SD	5.308
Coefficient of Variation	1.105	Skewness	1.516
Mean of logged Data	1.013	SD of logged Data	1.143

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	3.424	d2max (for USL)	2.24

Normal GOF Test

Shapiro Wilk Test Statistic	0.789	Shapiro Wilk GOF Test
5% Shapiro Wilk Critical Value	0.829	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.286	Lilliefors GOF Test
5% Lilliefors Critical Value	0.274	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Background Statistics Assuming Normal Distribution

97.93% UTL with 95% Coverage	22.98	90% Percentile (z)	11.6
97.93% UPL (t)	18.38	95% Percentile (z)	13.53
97.93% USL	16.69	97.93% Percentile (z)	15.63
		99% Percentile (z)	17.15

Gamma GOF Test

A-D Test Statistic	0.407	Anderson-Darling Gamma GOF Test
5% A-D Critical Value	0.743	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.21	Kolmogorov-Smirnov Gamma GOF Test
5% K-S Critical Value	0.287	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.034	k star (bias corrected MLE)	0.764
Theta hat (MLE)	4.643	Theta star (bias corrected MLE)	6.288
nu hat (MLE)	18.62	nu star (bias corrected)	13.74
MLE Mean (bias corrected)	4.802	MLE Sd (bias corrected)	5.495

Background Statistics Assuming Gamma Distribution

97.93% Wilson Hilferty (WH) Approx. Gamma UPL	26.64	90% Percentile	11.81
97.93% Hawkins Wixley (HW) Approx. Gamma UPL	29.61	95% Percentile	15.84
97.93% WH Approx. Gamma UTL with 95% Coverage	42.54	97.93% Percentile	21.05
97.93% HW Approx. Gamma UTL with 95% Coverage	50.82	99% Percentile	25.4
97.93% WH USL	21.98	97.93% HW USL	23.8

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.932	Shapiro Wilk Lognormal GOF Test
5% Shapiro Wilk Critical Value	0.829	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.182	Lilliefors Lognormal GOF Test
5% Lilliefors Critical Value	0.274	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Background Statistics assuming Lognormal Distribution

97.93% UTL with 95% Coverage	138.1	90% Percentile (z)	11.92
97.93% UPL (t)	51.32	95% Percentile (z)	18.06
97.93% USL	35.66	97.93% Percentile (z)	28.36
		99% Percentile (z)	39.37

Nonparametric Distribution Free Background Statistics

Data appear Gamma Distributed at 5% Significance Level

Nonparametric Upper Limits for Background Threshold Values

Order of Statistic, r	9	97.93% UTL with 95% Coverage	16
Approx, f used to compute achieved CC	0.474	Approximate Actual Confidence Coefficient achieved by UTL	0.37
		Approximate Sample Size needed to achieve specified CC	76
97.93% Percentile Bootstrap UTL with 95% Coverage	16	97.93% BCA Bootstrap UTL with 95% Coverage	16
97.93% UPL	16	90% Percentile	12
90% Chebyshev UPL	21.59	95% Percentile	14
97.93% Chebyshev UPL	43.29	97.93% Percentile	15.17
95% Chebyshev UPL	29.19	99% Percentile	15.6
97.93% USL	16		

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (2_1_142)

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
Minimum	618	First Quartile	650
Second Largest	2700	Median	1200
Maximum	3530	Third Quartile	2000
Mean	1523	SD	1021
Coefficient of Variation	0.671	Skewness	1.145
Mean of logged Data	7.142	SD of logged Data	0.641

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	3.424	d2max (for USL)	2.24

Normal GOF Test

Shapiro Wilk Test Statistic	0.844	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.291	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.274	Data Not Normal at 5% Significance Level

Data appear Approximate Normal at 5% Significance Level

Background Statistics Assuming Normal Distribution

97.93% UTL with 95% Coverage	5020	90% Percentile (z)	2832
97.93% UPL (t)	4136	95% Percentile (z)	3203
97.93% USL	3811	97.93% Percentile (z)	3606
		99% Percentile (z)	3899

Gamma GOF Test

A-D Test Statistic	0.477	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.727	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.239	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.282	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	2.829	k star (bias corrected MLE)	1.96
Theta hat (MLE)	538.3	Theta star (bias corrected MLE)	777
nu hat (MLE)	50.93	nu star (bias corrected)	35.29
MLE Mean (bias corrected)	1523	MLE Sd (bias corrected)	1088

Background Statistics Assuming Gamma Distribution

97.93% Wilson Hilferty (WH) Approx. Gamma UPL	5118	90% Percentile	2976
97.93% Hawkins Wixley (HW) Approx. Gamma UPL	5362	95% Percentile	3636
97.93% WH Approx. Gamma UTL with 95% Coverage	7223	97.93% Percentile	4447
97.93% HW Approx. Gamma UTL with 95% Coverage	7848	99% Percentile	5100
97.93% WH USL	4461	97.93% HW USL	4617

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.901	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.199	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.274	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Background Statistics assuming Lognormal Distribution

97.93% UTL with 95% Coverage	11356	90% Percentile (z)	2874
97.93% UPL (t)	6517	95% Percentile (z)	3628
97.93% USL	5314	97.93% Percentile (z)	4673
		99% Percentile (z)	5617

Nonparametric Distribution Free Background Statistics

Data appear Approximate Normal at 5% Significance Level

Nonparametric Upper Limits for Background Threshold Values

Order of Statistic, r	9	97.93% UTL with 95% Coverage	3530
Approx, f used to compute achieved CC	0.474	Approximate Actual Confidence Coefficient achieved by UTL	0.37
		Approximate Sample Size needed to achieve specified CC	76
97.93% Percentile Bootstrap UTL with 95% Coverage	3530	97.93% BCA Bootstrap UTL with 95% Coverage	3530
97.93% UPL	3530	90% Percentile	2866
90% Chebyshev UPL	4753	95% Percentile	3198
97.93% Chebyshev UPL	8928	97.93% Percentile	3393
95% Chebyshev UPL	6216	99% Percentile	3464
97.93% USL	3530		

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20. Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (2_4_107)

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
Minimum	0.00758	First Quartile	0.016
Second Largest	1.6	Median	0.156
Maximum	2.3	Third Quartile	1.3
Mean	0.659	SD	0.86
Coefficient of Variation	1.306	Skewness	1.094
Mean of logged Data	-2.02	SD of logged Data	2.34

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	3.424	d2max (for USL)	2.24

Normal GOF Test

Shapiro Wilk Test Statistic	0.792	Shapiro Wilk GOF Test
5% Shapiro Wilk Critical Value	0.829	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.276	Lilliefors GOF Test
5% Lilliefors Critical Value	0.274	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Background Statistics Assuming Normal Distribution

97.93% UTL with 95% Coverage	3.603	90% Percentile (z)	1.761
97.93% UPL (t)	2.859	95% Percentile (z)	2.073
97.93% USL	2.585	97.93% Percentile (z)	2.413
		99% Percentile (z)	2.659

Gamma GOF Test

A-D Test Statistic	0.472	Anderson-Darling Gamma GOF Test
5% A-D Critical Value	0.787	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.209	Kolmogorov-Smirnov Gamma GOF Test
5% K-S Critical Value	0.297	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.409	k star (bias corrected MLE)	0.347
Theta hat (MLE)	1.61	Theta star (bias corrected MLE)	1.899
nu hat (MLE)	7.364	nu star (bias corrected)	6.242
MLE Mean (bias corrected)	0.659	MLE Sd (bias corrected)	1.118

Background Statistics Assuming Gamma Distribution

97.93% Wilson Hilferty (WH) Approx. Gamma UPL	5.884	90% Percentile	1.905
97.93% Hawkins Wixley (HW) Approx. Gamma UPL	7.645	95% Percentile	2.873
97.93% WH Approx. Gamma UTL with 95% Coverage	10.57	97.93% Percentile	4.199
97.93% HW Approx. Gamma UTL with 95% Coverage	15.67	99% Percentile	5.346
97.93% WH USL	4.592	97.93% HW USL	5.664

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.881	Shapiro Wilk Lognormal GOF Test
5% Shapiro Wilk Critical Value	0.829	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.169	Lilliefors Lognormal GOF Test
5% Lilliefors Critical Value	0.274	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Background Statistics assuming Lognormal Distribution

97.93% UTL with 95% Coverage	399.6	90% Percentile (z)	2.659
97.93% UPL (t)	52.71	95% Percentile (z)	6.221
97.93% USL	25.03	97.93% Percentile (z)	15.66
		99% Percentile (z)	30.64

Nonparametric Distribution Free Background Statistics

Data appear Gamma Distributed at 5% Significance Level

Nonparametric Upper Limits for Background Threshold Values

Order of Statistic, r	9	97.93% UTL with 95% Coverage	2.3
Approx, f used to compute achieved CC	0.474	Approximate Actual Confidence Coefficient achieved by UTL	0.37
		Approximate Sample Size needed to achieve specified CC	76
97.93% Percentile Bootstrap UTL with 95% Coverage	2.3	97.93% BCA Bootstrap UTL with 95% Coverage	2.3
97.93% UPL	2.3	90% Percentile	1.74
90% Chebyshev UPL	3.378	95% Percentile	2.02
97.93% Chebyshev UPL	6.894	97.93% Percentile	2.184
95% Chebyshev UPL	4.61	99% Percentile	2.244
97.93% USL	2.3		

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (2_4_113)

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
Minimum	7.7	First Quartile	8.46
Second Largest	300	Median	67.5
Maximum	350	Third Quartile	299
Mean	139	SD	142.9
Coefficient of Variation	1.028	Skewness	0.53
Mean of logged Data	4.061	SD of logged Data	1.648

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	3.424	d2max (for USL)	2.24

Normal GOF Test

Shapiro Wilk Test Statistic	0.82	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.247	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.274	Data appear Normal at 5% Significance Level

Data appear Approximate Normal at 5% Significance Level

Background Statistics Assuming Normal Distribution

97.93% UTL with 95% Coverage	628.2	90% Percentile (z)	322.1
97.93% UPL (t)	504.5	95% Percentile (z)	374
97.93% USL	459	97.93% Percentile (z)	430.4
		99% Percentile (z)	471.4

Gamma GOF Test

A-D Test Statistic	0.577	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.756	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.212	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.29	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.693	k star (bias corrected MLE)	0.536
Theta hat (MLE)	200.7	Theta star (bias corrected MLE)	259.4
nu hat (MLE)	12.47	nu star (bias corrected)	9.645
MLE Mean (bias corrected)	139	MLE Sd (bias corrected)	189.9

Background Statistics Assuming Gamma Distribution

97.93% Wilson Hilferty (WH) Approx. Gamma UPL	969.6	90% Percentile	370.7
97.93% Hawkins Wixley (HW) Approx. Gamma UPL	1183	95% Percentile	521
97.93% WH Approx. Gamma UTL with 95% Coverage	1628	97.93% Percentile	719.9
97.93% HW Approx. Gamma UTL with 95% Coverage	2197	99% Percentile	888.3
97.93% WH USL	781.7	97.93% HW USL	917.8

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.839	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.212	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.274	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Background Statistics assuming Lognormal Distribution

97.93% UTL with 95% Coverage	16391	90% Percentile (z)	479.7
97.93% UPL (t)	3934	95% Percentile (z)	873
97.93% USL	2328	97.93% Percentile (z)	1673
		99% Percentile (z)	2684

Nonparametric Distribution Free Background Statistics

Data appear Approximate Normal at 5% Significance Level

Nonparametric Upper Limits for Background Threshold Values

Order of Statistic, r	9	97.93% UTL with 95% Coverage	350
Approx, f used to compute achieved CC	0.474	Approximate Actual Confidence Coefficient achieved by UTL	0.37
		Approximate Sample Size needed to achieve specified CC	76
97.93% Percentile Bootstrap UTL with 95% Coverage	350	97.93% BCA Bootstrap UTL with 95% Coverage	350
97.93% UPL	350	90% Percentile	310
90% Chebyshev UPL	590.8	95% Percentile	330
97.93% Chebyshev UPL	1175	97.93% Percentile	341.7
95% Chebyshev UPL	795.4	99% Percentile	346
97.93% USL	350		

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20. Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (2_4_125)

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
Minimum	0.87	First Quartile	1.1
Second Largest	69	Median	28
Maximum	72	Third Quartile	50
Mean	29.65	SD	29.07
Coefficient of Variation	0.98	Skewness	0.423
Mean of logged Data	2.367	SD of logged Data	1.921

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	3.424	d2max (for USL)	2.24

Normal GOF Test

Shapiro Wilk Test Statistic	0.864	Shapiro Wilk GOF Test
5% Shapiro Wilk Critical Value	0.829	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.218	Lilliefors GOF Test
5% Lilliefors Critical Value	0.274	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Background Statistics Assuming Normal Distribution

97.93% UTL with 95% Coverage	129.2	90% Percentile (z)	66.9
97.93% UPL (t)	104	95% Percentile (z)	77.46
97.93% USL	94.75	97.93% Percentile (z)	88.93
		99% Percentile (z)	97.27

Gamma GOF Test

A-D Test Statistic	0.62	Anderson-Darling Gamma GOF Test
5% A-D Critical Value	0.763	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.221	Kolmogorov-Smirnov Gamma GOF Test
5% K-S Critical Value	0.292	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.604	k star (bias corrected MLE)	0.477
Theta hat (MLE)	49.1	Theta star (bias corrected MLE)	62.2
nu hat (MLE)	10.87	nu star (bias corrected)	8.579
MLE Mean (bias corrected)	29.65	MLE Sd (bias corrected)	42.94

Background Statistics Assuming Gamma Distribution

97.93% Wilson Hilferty (WH) Approx. Gamma UPL	222.8	90% Percentile	81
97.93% Hawkins Wixley (HW) Approx. Gamma UPL	285.4	95% Percentile	115.8
97.93% WH Approx. Gamma UTL with 95% Coverage	379.3	97.93% Percentile	162.3
97.93% HW Approx. Gamma UTL with 95% Coverage	544.1	99% Percentile	201.9
97.93% WH USL	178.4	97.93% HW USL	218.8

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.813	Shapiro Wilk Lognormal GOF Test
5% Shapiro Wilk Critical Value	0.829	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.248	Lilliefors Lognormal GOF Test
5% Lilliefors Critical Value	0.274	Data appear Lognormal at 5% Significance Level

Data appear Approximate Lognormal at 5% Significance Level

Background Statistics assuming Lognormal Distribution

97.93% UTL with 95% Coverage	7666	90% Percentile (z)	125.1
97.93% UPL (t)	1453	95% Percentile (z)	251.3
97.93% USL	788.3	97.93% Percentile (z)	536.4
		99% Percentile (z)	930.7

Nonparametric Distribution Free Background Statistics

Data appear Normal at 5% Significance Level

Nonparametric Upper Limits for Background Threshold Values

Order of Statistic, r	9	97.93% UTL with 95% Coverage	72
Approx, f used to compute achieved CC	0.474	Approximate Actual Confidence Coefficient achieved by UTL	0.37
		Approximate Sample Size needed to achieve specified CC	76
97.93% Percentile Bootstrap UTL with 95% Coverage	72	97.93% BCA Bootstrap UTL with 95% Coverage	72
97.93% UPL	72	90% Percentile	69.6
90% Chebyshev UPL	121.6	95% Percentile	70.8
97.93% Chebyshev UPL	240.4	97.93% Percentile	71.5
95% Chebyshev UPL	163.2	99% Percentile	71.76
97.93% USL	72		

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (2_4_127)

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
Minimum	0.023	First Quartile	0.026
Second Largest	3.4	Median	0.716
Maximum	3.8	Third Quartile	3
Mean	1.351	SD	1.579
Coefficient of Variation	1.169	Skewness	0.783
Mean of logged Data	-1.025	SD of logged Data	2.191

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	3.424	d2max (for USL)	2.24

Normal GOF Test

Shapiro Wilk Test Statistic	0.788	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.829	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.283	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.274	Data Not Normal at 5% Significance Level	

Data Not Normal at 5% Significance Level

Background Statistics Assuming Normal Distribution

97.93% UTL with 95% Coverage	6.758	90% Percentile (z)	3.375
97.93% UPL (t)	5.391	95% Percentile (z)	3.949
97.93% USL	4.888	97.93% Percentile (z)	4.572
		99% Percentile (z)	5.025

Gamma GOF Test

A-D Test Statistic	0.527	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.774	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.215	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.295	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.482	k star (bias corrected MLE)	0.395
Theta hat (MLE)	2.805	Theta star (bias corrected MLE)	3.419
nu hat (MLE)	8.67	nu star (bias corrected)	7.113
MLE Mean (bias corrected)	1.351	MLE Sd (bias corrected)	2.15

Background Statistics Assuming Gamma Distribution

97.93% Wilson Hilferty (WH) Approx. Gamma UPL	11.24	90% Percentile	3.825
97.93% Hawkins Wixley (HW) Approx. Gamma UPL	14.6	95% Percentile	5.638
97.93% WH Approx. Gamma UTL with 95% Coverage	19.71	97.93% Percentile	8.093
97.93% HW Approx. Gamma UTL with 95% Coverage	28.98	99% Percentile	10.2
97.93% WH USL	8.871	97.93% HW USL	10.98

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.837	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.218	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.274	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Background Statistics assuming Lognormal Distribution

97.93% UTL with 95% Coverage	650.3	90% Percentile (z)	5.946
97.93% UPL (t)	97.54	95% Percentile (z)	13.18
97.93% USL	48.56	97.93% Percentile (z)	31.3
		99% Percentile (z)	58.69

Nonparametric Distribution Free Background Statistics

Data appear Gamma Distributed at 5% Significance Level

Nonparametric Upper Limits for Background Threshold Values

Order of Statistic, r	9	97.93% UTL with 95% Coverage	3.8
Approx, f used to compute achieved CC	0.474	Approximate Actual Confidence Coefficient achieved by UTL	0.37
		Approximate Sample Size needed to achieve specified CC	76
97.93% Percentile Bootstrap UTL with 95% Coverage	3.8	97.93% BCA Bootstrap UTL with 95% Coverage	3.8
97.93% UPL	3.8	90% Percentile	3.48
90% Chebyshev UPL	6.345	95% Percentile	3.64
97.93% Chebyshev UPL	12.8	97.93% Percentile	3.734
95% Chebyshev UPL	8.607	99% Percentile	3.768
97.93% USL	3.8		

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20. Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (2_4_141)

General Statistics

Total Number of Observations	9	Number of Distinct Observations	8
Minimum	623	First Quartile	640
Second Largest	3200	Median	1150
Maximum	3610	Third Quartile	2600
Mean	1647	SD	1170
Coefficient of Variation	0.71	Skewness	0.875
Mean of logged Data	7.186	SD of logged Data	0.7

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	3.424	d2max (for USL)	2.24

Normal GOF Test

Shapiro Wilk Test Statistic	0.818	Shapiro Wilk GOF Test
5% Shapiro Wilk Critical Value	0.829	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.296	Lilliefors GOF Test
5% Lilliefors Critical Value	0.274	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Background Statistics Assuming Normal Distribution

97.93% UTL with 95% Coverage	5652	90% Percentile (z)	3146
97.93% UPL (t)	4639	95% Percentile (z)	3571
97.93% USL	4267	97.93% Percentile (z)	4033
		99% Percentile (z)	4368

Gamma GOF Test

A-D Test Statistic	0.615	Anderson-Darling Gamma GOF Test
5% A-D Critical Value	0.729	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.237	Kolmogorov-Smirnov Gamma GOF Test
5% K-S Critical Value	0.282	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	2.417	k star (bias corrected MLE)	1.686
Theta hat (MLE)	681.3	Theta star (bias corrected MLE)	977.1
nu hat (MLE)	43.51	nu star (bias corrected)	30.34
MLE Mean (bias corrected)	1647	MLE Sd (bias corrected)	1269

Background Statistics Assuming Gamma Distribution

97.93% Wilson Hilferty (WH) Approx. Gamma UPL	5962	90% Percentile	3336
97.93% Hawkins Wixley (HW) Approx. Gamma UPL	6295	95% Percentile	4128
97.93% WH Approx. Gamma UTL with 95% Coverage	8570	97.93% Percentile	5108
97.93% HW Approx. Gamma UTL with 95% Coverage	9426	99% Percentile	5902
97.93% WH USL	5156	97.93% HW USL	5368

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.869	Shapiro Wilk Lognormal GOF Test
5% Shapiro Wilk Critical Value	0.829	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.193	Lilliefors Lognormal GOF Test
5% Lilliefors Critical Value	0.274	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Background Statistics assuming Lognormal Distribution

97.93% UTL with 95% Coverage	14520	90% Percentile (z)	3239
97.93% UPL (t)	7919	95% Percentile (z)	4178
97.93% USL	6337	97.93% Percentile (z)	5508

99% Percentile (z)	6733

Nonparametric Distribution Free Background Statistics

Data appear Gamma Distributed at 5% Significance Level

Nonparametric Upper Limits for Background Threshold Values

Order of Statistic, r	9	97.93% UTL with 95% Coverage	3610
Approx, f used to compute achieved CC	0.474	Approximate Actual Confidence Coefficient achieved by UTL	0.37
		Approximate Sample Size needed to achieve specified CC	76
97.93% Percentile Bootstrap UTL with 95% Coverage	3610	97.93% BCA Bootstrap UTL with 95% Coverage	3610
97.93% UPL	3610	90% Percentile	3282
90% Chebyshev UPL	5346	95% Percentile	3446
97.93% Chebyshev UPL	10128	97.93% Percentile	3542
95% Chebyshev UPL	7022	99% Percentile	3577
97.93% USL	3610		

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

Background Statistics for Data Sets with Non-Detects

User Selected Options

Date/Time of Computation	ProUCL 5.110/15/2019 3:11:35 PM
From File	FWDA_BEDROCK_nonpar_cens1.xls
Full Precision	OFF
Confidence Coefficient	99.99%
Coverage	95%
Different or Future K Observations	1
Number of Bootstrap Operations	2000

VALUES (2_1_104)

General Statistics

Total Number of Observations	9	Number of Missing Observations	0
Number of Distinct Observations	4		
Number of Detects	2	Number of Non-Detects	7
Number of Distinct Detects	2	Number of Distinct Non-Detects	2
Minimum Detect	8.6000E-4	Minimum Non-Detect	0.001
Maximum Detect	0.0013	Maximum Non-Detect	0.0025
Variance Detected	9.6800E-8	Percent Non-Detects	77.78%
Mean Detected	0.00108	SD Detected	3.1113E-4
Mean of Detected Logged Data	-6.852	SD of Detected Logged Data	0.292

Warning: Data set has only 2 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	23.91	d2max (for USL)	2.577

Normal GOF Test on Detects Only
Not Enough Data to Perform GOF Test

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	9.3333E-4	KM SD	1.6398E-4
99.99% UTL95% Coverage	0.00485	99.99% KM UPL (t)	0.00205
90% KM Percentile (z)	0.00114	95% KM Percentile (z)	0.0012
99% KM Percentile (z)	0.00131	99.99% KM Percentile (z)	0.00154
99.99% KM USL	0.00136		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	8.7889E-4	SD	3.8162E-4
99.99% UTL95% Coverage	0.01	99.99% UPL (t)	0.00347
90% Percentile (z)	0.00137	95% Percentile (z)	0.00151
99% Percentile (z)	0.00177	99.99% Percentile (z)	0.0023
99.99% USL	0.00186		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only
Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	23.76	k star (bias corrected MLE)	N/A
Theta hat (MLE)	4.5452E-5	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	95.04	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A		
MLE Sd (bias corrected)	N/A	99.99% Percentile of Chisquare (2kstar)	N/A

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	9.3333E-4	SD (KM)	1.6398E-4
Variance (KM)	2.6889E-8	SE of Mean (KM)	9.4673E-5
k hat (KM)	32.4	k star (KM)	21.67
nu hat (KM)	583.1	nu star (KM)	390.1
theta hat (KM)	2.8810E-5	theta star (KM)	4.3067E-5
99.99% gamma percentile (KM)	0.00187	90% gamma percentile (KM)	0.0012
95% gamma percentile (KM)	0.00129	99% gamma percentile (KM)	0.00146

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	0.00225	0.0023	99.99% Approx. Gamma UPL	0.00235	0.00241
99.99% KM Gamma Percentile	0.0016	0.00161	99.99% Gamma USL	0.00136	0.00137

Lognormal GOF Test on Detected Observations Only

Not Enough Data to Perform GOF Test

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	9.2837E-4	Mean in Log Scale	-6.998
SD in Original Scale	1.8196E-4	SD in Log Scale	0.187
99.99% UTL95% Coverage	0.0802	99.99% BCA UTL95% Coverage	0.0013
99.99% Bootstrap (%) UTL95% Coverage	0.0013	99.99% UPL (t)	0.00326
90% Percentile (z)	0.00116	95% Percentile (z)	0.00124
99% Percentile (z)	0.00141	99.99% USL	0.00148

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-6.99	99.99% KM UTL (Lognormal)95% Coverage	0.0366
KM SD of Logged Data	0.154	99.99% KM UPL (Lognormal)	0.00262
99.99% KM Percentile Lognormal (z)	0.00163	99.99% KM USL (Lognormal)	0.00137

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	8.7889E-4	Mean in Log Scale	-7.129
SD in Original Scale	3.8162E-4	SD in Log Scale	0.464
99.99% UTL95% Coverage	52.61	99.99% UPL (t)	0.0187
90% Percentile (z)	0.00145	95% Percentile (z)	0.00172
99% Percentile (z)	0.00236	99.99% USL	0.00265

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	9	99.99% UTL with95% Coverage	0.0025
Approx, f used to compute achieved CC	0.474	Approximate Actual Confidence Coefficient achieved by UTL	0.37
Approximate Sample Size needed to achieve specified CC	182	99.99% UPL	0.0025
99.99% USL	0.0025	99.99% KM Chebyshev UPL	0.0182

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (2_1_110)

General Statistics

Total Number of Observations	9	Number of Missing Observations	0
Number of Distinct Observations	4		
Number of Detects	2	Number of Non-Detects	7
Number of Distinct Detects	2	Number of Distinct Non-Detects	2
Minimum Detect	1.3000E-4	Minimum Non-Detect	3.0000E-4
Maximum Detect	0.0055	Maximum Non-Detect	0.001
Variance Detected	1.4418E-5	Percent Non-Detects	77.78%
Mean Detected	0.00282	SD Detected	0.0038
Mean of Detected Logged Data	-7.075	SD of Detected Logged Data	2.648

Warning: Data set has only 2 Detected Values.

This is not enough to compute meaningful or reliable statistics and estimates.

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	23.91	d2max (for USL)	2.577

Normal GOF Test on Detects Only

Not Enough Data to Perform GOF Test

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	7.2667E-4	KM SD	0.00169
99.99% UTL95% Coverage	0.0411	99.99% KM UPL (t)	0.0122
90% KM Percentile (z)	0.00289	95% KM Percentile (z)	0.0035
99% KM Percentile (z)	0.00465	99.99% KM Percentile (z)	0.007
99.99% KM USL	0.00508		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	8.5889E-4	SD	0.00175
99.99% UTL95% Coverage	0.0427	99.99% UPL (t)	0.0127
90% Percentile (z)	0.0031	95% Percentile (z)	0.00374
99% Percentile (z)	0.00493	99.99% Percentile (z)	0.00736
99.99% USL	0.00537		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	0.524	k star (bias corrected MLE)	N/A
Theta hat (MLE)	0.00537	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	2.097	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A		
MLE Sd (bias corrected)	N/A	99.99% Percentile of Chisquare (2kstar)	N/A

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	7.2667E-4	SD (KM)	0.00169
Variance (KM)	2.8481E-6	SE of Mean (KM)	7.9556E-4
k hat (KM)	0.185	k star (KM)	0.198
nu hat (KM)	3.337	nu star (KM)	3.558
theta hat (KM)	0.00392	theta star (KM)	0.00368
99.99% gamma percentile (KM)	0.0225	90% gamma percentile (KM)	0.0022
95% gamma percentile (KM)	0.00376	99% gamma percentile (KM)	0.00805

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	0.0322	0.0443	99.99% Approx. Gamma UPL	0.037	0.0524
99.99% KM Gamma Percentile	0.00949	0.0103	99.99% Gamma USL	0.00462	0.00452

Lognormal GOF Test on Detected Observations Only

Not Enough Data to Perform GOF Test

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	7.9318E-4	Mean in Log Scale	-8.568
SD in Original Scale	0.00178	SD in Log Scale	1.646
99.99% UTL95% Coverage	2.364E+13	99.99% BCA UTL95% Coverage	0.0055
99.99% Bootstrap (%) UTL95% Coverage	0.0055	99.99% UPL (t)	13.63
90% Percentile (z)	0.00157	95% Percentile (z)	0.00285
99% Percentile (z)	0.00876	99.99% USL	0.0132

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-8.532	99.99% KM UTL (Lognormal)95% Coverage	3.270E+8
KM SD of Logged Data	1.177	99.99% KM UPL (Lognormal)	0.583
99.99% KM Percentile Lognormal (z)	0.0157	99.99% KM USL (Lognormal)	0.00409

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	8.5889E-4	Mean in Log Scale	-8.019
SD in Original Scale	0.00175	SD in Log Scale	1.214
99.99% UTL95% Coverage	1.320E+9	99.99% UPL (t)	1.25
90% Percentile (z)	0.00156	95% Percentile (z)	0.00242
99% Percentile (z)	0.00554	99.99% USL	0.00751

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	9	99.99% UTL with95% Coverage	0.0055
Approx, f used to compute achieved CC	0.474	Approximate Actual Confidence Coefficient achieved by UTL	0.37
Approximate Sample Size needed to achieve specified CC	182	99.99% UPL	0.0055
99.99% USL	0.0055	99.99% KM Chebyshev UPL	0.179

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (2_1_112)

General Statistics

Total Number of Observations	9	Number of Missing Observations	0
Number of Distinct Observations	1		
Number of Detects	0	Number of Non-Detects	9
Number of Distinct Detects	0	Number of Distinct Non-Detects	1
Minimum Detect	N/A	Minimum Non-Detect	0.001
Maximum Detect	N/A	Maximum Non-Detect	0.001
Variance Detected	N/A	Percent Non-Detects	100%
Mean Detected	N/A	SD Detected	N/A
Mean of Detected Logged Data	N/A	SD of Detected Logged Data	N/A

Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable VALUES (2_1_112) was not processed!

VALUES (2_1_116)

General Statistics

Total Number of Observations	9	Number of Missing Observations	0
Number of Distinct Observations	6		
Number of Detects	4	Number of Non-Detects	5
Number of Distinct Detects	4	Number of Distinct Non-Detects	2
Minimum Detect	0.002	Minimum Non-Detect	0.001
Maximum Detect	0.14	Maximum Non-Detect	0.0018
Variance Detected	0.00459	Percent Non-Detects	55.56%
Mean Detected	0.0384	SD Detected	0.0678
Mean of Detected Logged Data	-4.626	SD of Detected Logged Data	1.843

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	23.91	d2max (for USL)	2.577

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.655	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.748	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.433	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.375	Data Not Normal at 5% Significance Level	

Data Not Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	0.0176	KM SD	0.0433
99.99% UTL95% Coverage	1.053	99.99% KM UPL (t)	0.312
90% KM Percentile (z)	0.0731	95% KM Percentile (z)	0.0889
99% KM Percentile (z)	0.118	99.99% KM Percentile (z)	0.179
99.99% KM USL	0.129		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	0.0174	SD	0.046
99.99% UTL95% Coverage	1.118	99.99% UPL (t)	0.33
90% Percentile (z)	0.0764	95% Percentile (z)	0.0931
99% Percentile (z)	0.124	99.99% Percentile (z)	0.189
99.99% USL	0.136		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.639	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.684	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.422	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.411	Data Not Gamma Distributed at 5% Significance Level

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.47	k star (bias corrected MLE)	0.284
Theta hat (MLE)	0.0817	Theta star (bias corrected MLE)	0.135
nu hat (MLE)	3.757	nu star (bias corrected)	2.273
MLE Mean (bias corrected)	0.0384		
MLE Sd (bias corrected)	0.072	99.99% Percentile of Chisquare (2kstar)	13.23

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.002	Mean	0.0226
Maximum	0.14	Median	0.01
SD	0.0441	CV	1.951
k hat (MLE)	0.728	k star (bias corrected MLE)	0.56
Theta hat (MLE)	0.031	Theta star (bias corrected MLE)	0.0404
nu hat (MLE)	13.11	nu star (bias corrected)	10.07
MLE Mean (bias corrected)	0.0226	MLE Sd (bias corrected)	0.0302
		99.99% Percentile of Chisquare (2kstar)	15.59
90% Percentile	0.0597	95% Percentile	0.0834
99% Percentile	0.141	99.99% Percentile	0.315

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	24.75	81.69	99.99% Approx. Gamma UPL	0.98	1.406
99.99% Gamma USL	0.141	0.145			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0176	SD (KM)	0.0433
Variance (KM)	0.00188	SE of Mean (KM)	0.0167
k hat (KM)	0.165	k star (KM)	0.184
nu hat (KM)	2.976	nu star (KM)	3.317
theta hat (KM)	0.107	theta star (KM)	0.0956
99.99% gamma percentile (KM)	0.576	90% gamma percentile (KM)	0.0532
95% gamma percentile (KM)	0.0926	99% gamma percentile (KM)	0.203

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	0.973	1.493	99.99% Approx. Gamma UPL	1.123	1.785
99.99% KM Gamma Percentile	0.268	0.311	99.99% Gamma USL	0.124	0.125

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.852	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.348	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.375	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.0171	Mean in Log Scale	-7.929
SD in Original Scale	0.0462	SD in Log Scale	3.501
99.99% UTL95% Coverage	8.097E+32	99.99% BCA UTL95% Coverage	0.14
99.99% Bootstrap (%) UTL95% Coverage	0.14	99.99% UPL (t)	7610259
90% Percentile (z)	0.032	95% Percentile (z)	0.114
99% Percentile (z)	1.24	99.99% USL	2.983

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-5.894	99.99% KM UTL (Lognormal)95% Coverage	3.828E+13
KM SD of Logged Data	1.555	99.99% KM UPL (Lognormal)	106
99.99% KM Percentile Lognormal (z)	0.894	99.99% KM USL (Lognormal)	0.152

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	0.0174	Mean in Log Scale	-6.148
SD in Original Scale	0.046	SD in Log Scale	1.847
99.99% UTL95% Coverage	3.186E+16	99.99% UPL (t)	596.7
90% Percentile (z)	0.0228	95% Percentile (z)	0.0446
99% Percentile (z)	0.157	99.99% USL	0.249

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	9	99.99% UTL with95% Coverage	0.14
Approx, f used to compute achieved CC	0.474	Approximate Actual Confidence Coefficient achieved by UTL	0.37
Approximate Sample Size needed to achieve specified CC	182	99.99% UPL	0.14
99.99% USL	0.14	99.99% KM Chebyshev UPL	4.583

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (2_1_124)

General Statistics

Total Number of Observations	9	Number of Missing Observations	0
Number of Distinct Observations	5		
Number of Detects	3	Number of Non-Detects	6
Number of Distinct Detects	3	Number of Distinct Non-Detects	2
Minimum Detect	8.7400E-4	Minimum Non-Detect	5.0000E-4
Maximum Detect	0.027	Maximum Non-Detect	7.0000E-4
Variance Detected	2.2387E-4	Percent Non-Detects	66.67%
Mean Detected	0.00972	SD Detected	0.015
Mean of Detected Logged Data	-5.767	SD of Detected Logged Data	1.877

Warning: Data set has only 3 Detected Values.

This is not enough to compute meaningful or reliable statistics and estimates.

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	23.91	d2max (for USL)	2.577

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.762	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.767	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.38	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.425	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Approximate Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	0.00357	KM SD	0.00829
99.99% UTL95% Coverage	0.202	99.99% KM UPL (t)	0.0598
90% KM Percentile (z)	0.0142	95% KM Percentile (z)	0.0172
99% KM Percentile (z)	0.0229	99.99% KM Percentile (z)	0.0344
99.99% KM USL	0.0249		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	0.00345	SD	0.00884
99.99% UTL95% Coverage	0.215	99.99% UPL (t)	0.0635
90% Percentile (z)	0.0148	95% Percentile (z)	0.018
99% Percentile (z)	0.024	99.99% Percentile (z)	0.0363
99.99% USL	0.0262		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	0.552	k star (bias corrected MLE)	N/A
Theta hat (MLE)	0.0176	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	3.312	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A		
MLE Sd (bias corrected)	N/A	99.99% Percentile of Chisquare (2kstar)	N/A

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	8.7400E-4	Mean	0.00991
Maximum	0.027	Median	0.01
SD	0.00748	CV	0.755
k hat (MLE)	1.467	k star (bias corrected MLE)	1.052
Theta hat (MLE)	0.00675	Theta star (bias corrected MLE)	0.00942
nu hat (MLE)	26.41	nu star (bias corrected)	18.94
MLE Mean (bias corrected)	0.00991	MLE Sd (bias corrected)	0.00966
		99.99% Percentile of Chisquare (2kstar)	18.72
90% Percentile	0.0225	95% Percentile	0.0292
99% Percentile	0.0445	99.99% Percentile	0.0881

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	4.724	16.29	99.99% Approx. Gamma UPL	0.238	0.375
99.99% Gamma USL	0.0463	0.0534			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00357	SD (KM)	0.00829
Variance (KM)	6.8659E-5	SE of Mean (KM)	0.00338
k hat (KM)	0.186	k star (KM)	0.198
nu hat (KM)	3.35	nu star (KM)	3.567
theta hat (KM)	0.0192	theta star (KM)	0.018
99.99% gamma percentile (KM)	0.11	90% gamma percentile (KM)	0.0108
95% gamma percentile (KM)	0.0185	99% gamma percentile (KM)	0.0396

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	0.163	0.229	99.99% Approx. Gamma UPL	0.188	0.272
99.99% KM Gamma Percentile	0.0478	0.0527	99.99% Gamma USL	0.0231	0.0228

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.835	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.347	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.425	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.00325	Mean in Log Scale	-10.69
SD in Original Scale	0.00892	SD in Log Scale	4.197
99.99% UTL95% Coverage	8.655E+38	99.99% BCA UTL95% Coverage	0.027
99.99% Bootstrap (%) UTL95% Coverage	0.027	99.99% UPL (t)	54225184
90% Percentile (z)	0.00492	95% Percentile (z)	0.0226
99% Percentile (z)	0.395	99.99% USL	1.131

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-6.989	99.99% KM UTL (Lognormal)95% Coverage	6.433E+9
KM SD of Logged Data	1.237	99.99% KM UPL (Lognormal)	4.098
99.99% KM Percentile Lognormal (z)	0.0917	99.99% KM USL (Lognormal)	0.0223

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	0.00345	Mean in Log Scale	-7.302
SD in Original Scale	0.00884	SD in Log Scale	1.492
99.99% UTL95% Coverage	2.077E+12	99.99% UPL (t)	16.91
90% Percentile (z)	0.00456	95% Percentile (z)	0.00784
99% Percentile (z)	0.0217	99.99% USL	0.0315

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	9	99.99% UTL with95% Coverage	0.027
Approx, f used to compute achieved CC	0.474	Approximate Actual Confidence Coefficient achieved by UTL	0.37
Approximate Sample Size needed to achieve specified CC	182	99.99% UPL	0.027
99.99% USL	0.027	99.99% KM Chebyshev UPL	0.877

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (2_1_130)

General Statistics

Total Number of Observations	9	Number of Missing Observations	0
Number of Distinct Observations	2		
Number of Detects	0	Number of Non-Detects	9
Number of Distinct Detects	0	Number of Distinct Non-Detects	2
Minimum Detect	N/A	Minimum Non-Detect	8.0000E-5
Maximum Detect	N/A	Maximum Non-Detect	1.0000E-4
Variance Detected	N/A	Percent Non-Detects	100%
Mean Detected	N/A	SD Detected	N/A
Mean of Detected Logged Data	N/A	SD of Detected Logged Data	N/A

Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable VALUES (2_1_130) was not processed!

VALUES (2_1_132)

General Statistics

Total Number of Observations	9	Number of Missing Observations	0
Number of Distinct Observations	6		
Number of Detects	4	Number of Non-Detects	5
Number of Distinct Detects	4	Number of Distinct Non-Detects	2
Minimum Detect	0.0013	Minimum Non-Detect	0.001
Maximum Detect	0.084	Maximum Non-Detect	0.0025
Variance Detected	0.00164	Percent Non-Detects	55.56%
Mean Detected	0.0232	SD Detected	0.0405
Mean of Detected Logged Data	-5.1	SD of Detected Logged Data	1.838

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	23.91	d2max (for USL)	2.577

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.666	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.748	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.422	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.375	Data Not Normal at 5% Significance Level	

Data Not Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	0.011	KM SD	0.0258
99.99% UTL95% Coverage	0.629	99.99% KM UPL (t)	0.186
90% KM Percentile (z)	0.0441	95% KM Percentile (z)	0.0535
99% KM Percentile (z)	0.0711	99.99% KM Percentile (z)	0.107
99.99% KM USL	0.0776		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	0.0109	SD	0.0275
99.99% UTL95% Coverage	0.668	99.99% UPL (t)	0.197
90% Percentile (z)	0.0461	95% Percentile (z)	0.056
99% Percentile (z)	0.0748	99.99% Percentile (z)	0.113
99.99% USL	0.0816		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.564	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.683	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.375	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.411	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.478	k star (bias corrected MLE)	0.286
Theta hat (MLE)	0.0486	Theta star (bias corrected MLE)	0.0812
nu hat (MLE)	3.824	nu star (bias corrected)	2.289
MLE Mean (bias corrected)	0.0232		
MLE Sd (bias corrected)	0.0434	99.99% Percentile of Chisquare (2kstar)	13.25

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0013	Mean	0.0159
Maximum	0.084	Median	0.01
SD	0.0258	CV	1.624
k hat (MLE)	0.861	k star (bias corrected MLE)	0.648
Theta hat (MLE)	0.0184	Theta star (bias corrected MLE)	0.0245
nu hat (MLE)	15.5	nu star (bias corrected)	11.67
MLE Mean (bias corrected)	0.0159	MLE Sd (bias corrected)	0.0197
		99.99% Percentile of Chisquare (2kstar)	16.22
90% Percentile	0.0406	95% Percentile	0.0556
99% Percentile	0.0916	99.99% Percentile	0.199

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	14.48	48.92	99.99% Approx. Gamma UPL	0.605	0.9
99.99% Gamma USL	0.0937	0.1			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.011	SD (KM)	0.0258
Variance (KM)	6.6731E-4	SE of Mean (KM)	0.00994
k hat (KM)	0.182	k star (KM)	0.196
nu hat (KM)	3.279	nu star (KM)	3.519
theta hat (KM)	0.0605	theta star (KM)	0.0564
99.99% gamma percentile (KM)	0.344	90% gamma percentile (KM)	0.0333
95% gamma percentile (KM)	0.0571	99% gamma percentile (KM)	0.123

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	0.54	0.789	99.99% Approx. Gamma UPL	0.621	0.937
99.99% KM Gamma Percentile	0.155	0.175	99.99% Gamma USL	0.0738	0.074

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.883	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.284	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.375	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.0106	Mean in Log Scale	-6.985
SD in Original Scale	0.0276	SD in Log Scale	2.331
99.99% UTL95% Coverage	1.484E+21	99.99% BCA UTL95% Coverage	0.084
99.99% Bootstrap (%) UTL95% Coverage	0.084	99.99% UPL (t)	6942
90% Percentile (z)	0.0184	95% Percentile (z)	0.0428
99% Percentile (z)	0.21	99.99% USL	0.376

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-6.009	99.99% KM UTL (Lognormal)95% Coverage	3.023E+11
KM SD of Logged Data	1.357	99.99% KM UPL (Lognormal)	24.69
99.99% KM Percentile Lognormal (z)	0.382	99.99% KM USL (Lognormal)	0.0811

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	0.0109	Mean in Log Scale	-6.184
SD in Original Scale	0.0275	SD in Log Scale	1.565
99.99% UTL95% Coverage	3.698E+13	99.99% UPL (t)	85.28
90% Percentile (z)	0.0153	95% Percentile (z)	0.0271
99% Percentile (z)	0.0787	99.99% USL	0.116

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	9	99.99% UTL with95% Coverage	0.084
Approx, f used to compute achieved CC	0.474	Approximate Actual Confidence Coefficient achieved by UTL	0.37
Approximate Sample Size needed to achieve specified CC	182	99.99% UPL	0.084
99.99% USL	0.084	99.99% KM Chebyshev UPL	2.734

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (2_1_138)

General Statistics

Total Number of Observations	9	Number of Missing Observations	0
Number of Distinct Observations	2		
Number of Detects	0	Number of Non-Detects	9
Number of Distinct Detects	0	Number of Distinct Non-Detects	2
Minimum Detect	N/A	Minimum Non-Detect	0.0015
Maximum Detect	N/A	Maximum Non-Detect	0.002
Variance Detected	N/A	Percent Non-Detects	100%
Mean Detected	N/A	SD Detected	N/A
Mean of Detected Logged Data	N/A	SD of Detected Logged Data	N/A

Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable VALUES (2_1_138) was not processed!

VALUES (2_1_140)

General Statistics

Total Number of Observations	9	Number of Missing Observations	0
Number of Distinct Observations	3		
Number of Detects	1	Number of Non-Detects	8
Number of Distinct Detects	1	Number of Distinct Non-Detects	2
Minimum Detect	4.6000E-5	Minimum Non-Detect	1.0000E-4
Maximum Detect	4.6000E-5	Maximum Non-Detect	0.001
Variance Detected	N/A	Percent Non-Detects	88.89%
Mean Detected	4.6000E-5	SD Detected	N/A
Mean of Detected Logged Data	-9.987	SD of Detected Logged Data	N/A

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable VALUES (2_1_140) was not processed!

VALUES (2_1_144)

General Statistics

Total Number of Observations	9	Number of Missing Observations	0
Number of Distinct Observations	3		
Number of Detects	1	Number of Non-Detects	8
Number of Distinct Detects	1	Number of Distinct Non-Detects	2
Minimum Detect	3.5000E-4	Minimum Non-Detect	2.0000E-4
Maximum Detect	3.5000E-4	Maximum Non-Detect	0.001
Variance Detected	N/A	Percent Non-Detects	88.89%
Mean Detected	3.5000E-4	SD Detected	N/A
Mean of Detected Logged Data	-7.958	SD of Detected Logged Data	N/A

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable VALUES (2_1_144) was not processed!

VALUES (2_1_146)

General Statistics

Total Number of Observations	9	Number of Missing Observations	0
Number of Distinct Observations	6		
Number of Detects	4	Number of Non-Detects	5
Number of Distinct Detects	4	Number of Distinct Non-Detects	2
Minimum Detect	0.00523	Minimum Non-Detect	0.002
Maximum Detect	0.098	Maximum Non-Detect	0.0025
Variance Detected	0.0021	Percent Non-Detects	55.56%
Mean Detected	0.0293	SD Detected	0.0458
Mean of Detected Logged Data	-4.379	SD of Detected Logged Data	1.382

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	23.91	d2max (for USL)	2.577

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.653	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.748	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.429	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.375	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	0.0141	KM SD	0.0297
99.99% UTL95% Coverage	0.725	99.99% KM UPL (t)	0.216
90% KM Percentile (z)	0.0522	95% KM Percentile (z)	0.063
99% KM Percentile (z)	0.0833	99.99% KM Percentile (z)	0.125
99.99% KM USL	0.0907		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	0.0136	SD	0.0317
99.99% UTL95% Coverage	0.773	99.99% UPL (t)	0.229
90% Percentile (z)	0.0543	95% Percentile (z)	0.0659
99% Percentile (z)	0.0875	99.99% Percentile (z)	0.132
99.99% USL	0.0955		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.774	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.672	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.432	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.406	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.71	k star (bias corrected MLE)	0.344
Theta hat (MLE)	0.0413	Theta star (bias corrected MLE)	0.0852
nu hat (MLE)	5.683	nu star (bias corrected)	2.754
MLE Mean (bias corrected)	0.0293		
MLE Sd (bias corrected)	0.05	99.99% Percentile of Chisquare (2kstar)	13.82

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.00523	Mean	0.0186
Maximum	0.098	Median	0.01
SD	0.0298	CV	1.605
k hat (MLE)	1.1	k star (bias corrected MLE)	0.807
Theta hat (MLE)	0.0169	Theta star (bias corrected MLE)	0.023
nu hat (MLE)	19.8	nu star (bias corrected)	14.53
MLE Mean (bias corrected)	0.0186	MLE Sd (bias corrected)	0.0207
		99.99% Percentile of Chisquare (2kstar)	17.26
90% Percentile	0.0451	95% Percentile	0.0601
99% Percentile	0.0955	99.99% Percentile	0.199

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	12.43	34.19	99.99% Approx. Gamma UPL	0.56	0.73
99.99% Gamma USL	0.0956	0.0961			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0141	SD (KM)	0.0297
Variance (KM)	8.8357E-4	SE of Mean (KM)	0.0114
k hat (KM)	0.226	k star (KM)	0.225
nu hat (KM)	4.074	nu star (KM)	4.05
theta hat (KM)	0.0625	theta star (KM)	0.0629
99.99% gamma percentile (KM)	0.395	90% gamma percentile (KM)	0.0427
95% gamma percentile (KM)	0.0706	99% gamma percentile (KM)	0.146

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	0.589	0.834	99.99% Approx. Gamma UPL	0.674	0.983
99.99% KM Gamma Percentile	0.178	0.201	99.99% Gamma USL	0.0889	0.09

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.743	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.748	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.376	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.375	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.0132	Mean in Log Scale	-6.756
SD in Original Scale	0.032	SD in Log Scale	2.531
99.99% UTL95% Coverage	2.234E+23	99.99% BCA UTL95% Coverage	0.098
99.99% Bootstrap (%) UTL95% Coverage	0.098	99.99% UPL (t)	33965
90% Percentile (z)	0.0298	95% Percentile (z)	0.0748
99% Percentile (z)	0.42	99.99% USL	0.792

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-5.399	99.99% KM UTL (Lognormal)95% Coverage	1.741E+10
KM SD of Logged Data	1.212	99.99% KM UPL (Lognormal)	16.99
99.99% KM Percentile Lognormal (z)	0.41	99.99% KM USL (Lognormal)	0.103

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	0.0136	Mean in Log Scale	-5.734
SD in Original Scale	0.0317	SD in Log Scale	1.542
99.99% UTL95% Coverage	3.310E+13	99.99% UPL (t)	114
90% Percentile (z)	0.0233	95% Percentile (z)	0.0409
99% Percentile (z)	0.117	99.99% USL	0.172

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	9	99.99% UTL with95% Coverage	0.098
Approx, f used to compute achieved CC	0.474	Approximate Actual Confidence Coefficient achieved by UTL	0.37
Approximate Sample Size needed to achieve specified CC	182	99.99% UPL	0.098
99.99% USL	0.098	99.99% KM Chebyshev UPL	3.147

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (2_1_148)

General Statistics

Total Number of Observations	9	Number of Missing Observations	0
Number of Distinct Observations	3		
Number of Detects	1	Number of Non-Detects	8
Number of Distinct Detects	1	Number of Distinct Non-Detects	2
Minimum Detect	0.25	Minimum Non-Detect	0.008
Maximum Detect	0.25	Maximum Non-Detect	0.05
Variance Detected	N/A	Percent Non-Detects	88.89%
Mean Detected	0.25	SD Detected	N/A
Mean of Detected Logged Data	-1.386	SD of Detected Logged Data	N/A

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable VALUES (2_1_148) was not processed!

VALUES (2_2_133)

General Statistics

Total Number of Observations	9	Number of Missing Observations	0
Number of Distinct Observations	7		
Number of Detects	1	Number of Non-Detects	8
Number of Distinct Detects	1	Number of Distinct Non-Detects	6
Minimum Detect	0.087	Minimum Non-Detect	0.03
Maximum Detect	0.087	Maximum Non-Detect	0.5
Variance Detected	N/A	Percent Non-Detects	88.89%
Mean Detected	0.087	SD Detected	N/A
Mean of Detected Logged Data	-2.442	SD of Detected Logged Data	N/A

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable VALUES (2_2_133) was not processed!

VALUES (2_3_134)

General Statistics

Total Number of Observations	9	Number of Missing Observations	0
Number of Distinct Observations	6		
Number of Detects	3	Number of Non-Detects	6
Number of Distinct Detects	3	Number of Distinct Non-Detects	3
Minimum Detect	5.7000E-6	Minimum Non-Detect	1.0000E-5
Maximum Detect	9.5000E-6	Maximum Non-Detect	5.0000E-5
Variance Detected	3.610E-12	Percent Non-Detects	66.67%
Mean Detected	7.6000E-6	SD Detected	1.9000E-6
Mean of Detected Logged Data	-11.81	SD of Detected Logged Data	0.256

Warning: Data set has only 3 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	23.91	d2max (for USL)	2.577

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	1	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.175	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.425	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	7.6000E-6	KM SD	1.5513E-6
99.99% UTL95% Coverage	4.4689E-5	99.99% KM UPL (t)	1.8134E-5
90% KM Percentile (z)	9.5881E-6	95% KM Percentile (z)	1.0152E-5
99% KM Percentile (z)	1.1209E-5	99.99% KM Percentile (z)	1.3369E-5
99.99% KM USL	1.1598E-5		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	1.3089E-5	SD	9.1079E-6
99.99% UTL95% Coverage	2.3084E-4	99.99% UPL (t)	7.4936E-5
90% Percentile (z)	2.4761E-5	95% Percentile (z)	2.8070E-5
99% Percentile (z)	3.4277E-5	99.99% Percentile (z)	4.6961E-5
99.99% USL	3.6560E-5		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	23.41	k star (bias corrected MLE)	N/A
Theta hat (MLE)	3.2468E-7	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	140.4	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A		
MLE Sd (bias corrected)	N/A	99.99% Percentile of Chisquare (2kstar)	N/A

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	5.7000E-6	Mean	0.00667
Maximum	0.01	Median	0.01
SD	0.005	CV	0.749
k hat (MLE)	0.339	k star (bias corrected MLE)	0.3
Theta hat (MLE)	0.0197	Theta star (bias corrected MLE)	0.0222
nu hat (MLE)	6.096	nu star (bias corrected)	5.397
MLE Mean (bias corrected)	0.00667	MLE Sd (bias corrected)	0.0122
		99.99% Percentile of Chisquare (2kstar)	13.39
90% Percentile	0.0197	95% Percentile	0.0305
99% Percentile	0.0587	99.99% Percentile	0.149

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	15.47	131.1	99.99% Approx. Gamma UPL	0.542	1.599
99.99% Gamma USL	0.0652	0.104			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	7.6000E-6	SD (KM)	1.5513E-6
Variance (KM)	2.407E-12	SE of Mean (KM)	1.0970E-6
k hat (KM)	24	k star (KM)	16.07
nu hat (KM)	432	nu star (KM)	289.3
theta hat (KM)	3.1667E-7	theta star (KM)	4.7281E-7
99.99% gamma percentile (KM)	1.6735E-5	90% gamma percentile (KM)	1.0108E-5
95% gamma percentile (KM)	1.0963E-5	99% gamma percentile (KM)	1.2690E-5

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	2.2565E-5	2.3662E-5	99.99% Approx. Gamma UPL	2.3816E-5	2.5090E-5
99.99% KM Gamma Percentile	1.4902E-5	1.5177E-5	99.99% Gamma USL	1.2263E-5	1.2372E-5

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.995	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.2	**Lilliefors GOF Test**

5% Lilliefors Critical Value	0.425	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	7.5684E-6	Mean in Log Scale	-11.81
SD in Original Scale	1.4846E-6	SD in Log Scale	0.198
99.99% UTL95% Coverage	8.5359E-4	99.99% BCA UTL95% Coverage	9.6027E-6
99.99% Bootstrap (%) UTL95% Coverage	9.6027E-6	99.99% UPL (t)	2.8610E-5
90% Percentile (z)	9.5915E-6	95% Percentile (z)	1.0308E-5
99% Percentile (z)	1.1800E-5	99.99% USL	1.2402E-5

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-11.81	99.99% KM UTL (Lognormal)95% Coverage	0.0011
KM SD of Logged Data	0.209	99.99% KM UPL (Lognormal)	3.0769E-5
99.99% KM Percentile Lognormal (z)	1.6188E-5	99.99% KM USL (Lognormal)	1.2749E-5

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	1.3089E-5	Mean in Log Scale	-11.46
SD in Original Scale	9.1079E-6	SD in Log Scale	0.694
99.99% UTL95% Coverage	167.6	99.99% UPL (t)	0.00117
90% Percentile (z)	2.5641E-5	95% Percentile (z)	3.2990E-5
99% Percentile (z)	5.2925E-5	99.99% USL	6.2973E-5

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	9	99.99% UTL with95% Coverage	5.0000E-5
Approx, f used to compute achieved CC	0.474	Approximate Actual Confidence Coefficient achieved by UTL	0.37
Approximate Sample Size needed to achieve specified CC	182	99.99% UPL	5.0000E-5
99.99% USL	5.0000E-5	99.99% KM Chebyshev UPL	1.7112E-4

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (2_4_103)

General Statistics

Total Number of Observations	9	Number of Missing Observations	0
Number of Distinct Observations	3		
Number of Detects	1	Number of Non-Detects	8
Number of Distinct Detects	1	Number of Distinct Non-Detects	2
Minimum Detect	0.0038	Minimum Non-Detect	0.001
Maximum Detect	0.0038	Maximum Non-Detect	0.0025
Variance Detected	N/A	Percent Non-Detects	88.89%
Mean Detected	0.0038	SD Detected	N/A
Mean of Detected Logged Data	-5.573	SD of Detected Logged Data	N/A

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable VALUES (2_4_103) was not processed!

VALUES (2_4_111)

General Statistics

Total Number of Observations	9	Number of Missing Observations	0
Number of Distinct Observations	4		
Number of Detects	3	Number of Non-Detects	6
Number of Distinct Detects	3	Number of Distinct Non-Detects	1
Minimum Detect	3.0000E-4	Minimum Non-Detect	0.001
Maximum Detect	5.4000E-4	Maximum Non-Detect	0.001
Variance Detected	1.5600E-8	Percent Non-Detects	66.67%
Mean Detected	4.4000E-4	SD Detected	1.2490E-4
Mean of Detected Logged Data	-7.759	SD of Detected Logged Data	0.311

Warning: Data set has only 3 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	23.91	d2max (for USL)	2.577

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.923	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.292	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.425	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	4.4000E-4	KM SD	1.0198E-4
99.99% UTL95% Coverage	0.00288	99.99% KM UPL (t)	0.00113
90% KM Percentile (z)	5.7069E-4	95% KM Percentile (z)	6.0774E-4
99% KM Percentile (z)	6.7724E-4	99.99% KM Percentile (z)	8.1927E-4
99.99% KM USL	7.0280E-4		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	4.8000E-4	SD	6.9282E-5
99.99% UTL95% Coverage	0.00214	99.99% UPL (t)	9.5046E-4
90% Percentile (z)	5.6879E-4	95% Percentile (z)	5.9396E-4
99% Percentile (z)	6.4117E-4	99.99% Percentile (z)	7.3766E-4
99.99% USL	6.5854E-4		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	16.61	k star (bias corrected MLE)	N/A
Theta hat (MLE)	2.6482E-5	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	99.69	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A		
MLE Sd (bias corrected)	N/A	99.99% Percentile of Chisquare (2kstar)	N/A

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	3.0000E-4	Mean	0.00681
Maximum	0.01	Median	0.01
SD	0.00478	CV	0.702
k hat (MLE)	0.878	k star (bias corrected MLE)	0.66
Theta hat (MLE)	0.00776	Theta star (bias corrected MLE)	0.0103
nu hat (MLE)	15.81	nu star (bias corrected)	11.87
MLE Mean (bias corrected)	0.00681	MLE Sd (bias corrected)	0.00839
		99.99% Percentile of Chisquare (2kstar)	16.29
90% Percentile	0.0173	95% Percentile	0.0237
99% Percentile	0.0389	99.99% Percentile	0.0841

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	6.265	29.05	99.99% Approx. Gamma UPL	0.268	0.509
99.99% Gamma USL	0.0426	0.0536			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	4.4000E-4	SD (KM)	1.0198E-4
Variance (KM)	1.0400E-8	SE of Mean (KM)	7.2111E-5
k hat (KM)	18.62	k star (KM)	12.48
nu hat (KM)	335.1	nu star (KM)	224.7
theta hat (KM)	2.3636E-5	theta star (KM)	3.5244E-5
99.99% gamma percentile (KM)	0.00106	90% gamma percentile (KM)	6.0522E-4
95% gamma percentile (KM)	6.6283E-4	99% gamma percentile (KM)	7.8017E-4

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	0.00154	0.00165	99.99% Approx. Gamma UPL	0.00164	0.00176
99.99% KM Gamma Percentile	9.6168E-4	9.8930E-4	99.99% Gamma USL	7.6852E-4	7.7995E-4

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.893	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.314	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.425	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	4.4486E-4	Mean in Log Scale	-7.759

SD in Original Scale	1.3375E-4	SD in Log Scale	0.308
99.99% UTL95% Coverage	0.677	99.99% BCA UTL95% Coverage	6.7963E-4
99.99% Bootstrap (%) UTL95% Coverage	6.7963E-4	99.99% UPL (t)	0.00346
90% Percentile (z)	6.3359E-4	95% Percentile (z)	7.0867E-4
99% Percentile (z)	8.7433E-4	99.99% USL	9.4456E-4

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-7.759	99.99% KM UTL (Lognormal)95% Coverage	0.185
KM SD of Logged Data	0.254	99.99% KM UPL (Lognormal)	0.00239
99.99% KM Percentile Lognormal (z)	0.0011	99.99% KM USL (Lognormal)	8.2116E-4

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	4.8000E-4	Mean in Log Scale	-7.654
SD in Original Scale	6.9282E-5	SD in Log Scale	0.174
99.99% UTL95% Coverage	0.0307	99.99% UPL (t)	0.00155
90% Percentile (z)	5.9315E-4	95% Percentile (z)	6.3196E-4
99% Percentile (z)	7.1175E-4	99.99% USL	7.4356E-4

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	9	99.99% UTL with95% Coverage	0.001
Approx, f used to compute achieved CC	0.474	Approximate Actual Confidence Coefficient achieved by UTL	0.37
Approximate Sample Size needed to achieve specified CC	182	99.99% UPL	0.001
99.99% USL	0.001	99.99% KM Chebyshev UPL	0.0112

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (2_4_129)

General Statistics

Total Number of Observations	9	Number of Missing Observations	0
Number of Distinct Observations	4		
Number of Detects	1	Number of Non-Detects	8
Number of Distinct Detects	1	Number of Distinct Non-Detects	3
Minimum Detect	2.6000E-5	Minimum Non-Detect	4.8000E-5
Maximum Detect	2.6000E-5	Maximum Non-Detect	1.0000E-4
Variance Detected	N/A	Percent Non-Detects	88.89%
Mean Detected	2.6000E-5	SD Detected	N/A
Mean of Detected Logged Data	-10.56	SD of Detected Logged Data	N/A

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable VALUES (2_4_129) was not processed!

VALUES (2_4_137)

General Statistics

Total Number of Observations	9	Number of Missing Observations	0
Number of Distinct Observations	2		
Number of Detects	0	Number of Non-Detects	9
Number of Distinct Detects	0	Number of Distinct Non-Detects	2
Minimum Detect	N/A	Minimum Non-Detect	0.0015
Maximum Detect	N/A	Maximum Non-Detect	0.002
Variance Detected	N/A	Percent Non-Detects	100%
Mean Detected	N/A	SD Detected	N/A
Mean of Detected Logged Data	N/A	SD of Detected Logged Data	N/A

Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable VALUES (2_4_137) was not processed!

VALUES (2_4_139)

General Statistics

Total Number of Observations	9	Number of Missing Observations	0
Number of Distinct Observations	3		
Number of Detects	2	Number of Non-Detects	7
Number of Distinct Detects	2	Number of Distinct Non-Detects	2
Minimum Detect	4.6000E-5	Minimum Non-Detect	1.0000E-4
Maximum Detect	1.0000E-4	Maximum Non-Detect	0.001
Variance Detected	1.4580E-9	Percent Non-Detects	77.78%
Mean Detected	7.3000E-5	SD Detected	3.8184E-5
Mean of Detected Logged Data	-9.599	SD of Detected Logged Data	0.549

Warning: Data set has only 2 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	23.91	d2max (for USL)	2.577

Normal GOF Test on Detects Only
Not Enough Data to Perform GOF Test

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	5.5000E-5	KM SD	2.0125E-5
99.99% UTL95% Coverage	5.3613E-4	99.99% KM UPL (t)	1.9166E-4
90% KM Percentile (z)	8.0791E-5	95% KM Percentile (z)	8.8102E-5
99% KM Percentile (z)	1.0182E-4	99.99% KM Percentile (z)	1.2984E-4
99.99% KM USL	1.0686E-4		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	2.0511E-4	SD	2.2178E-4
99.99% UTL95% Coverage	0.00551	99.99% UPL (t)	0.00171
90% Percentile (z)	4.8933E-4	95% Percentile (z)	5.6990E-4
99% Percentile (z)	7.2104E-4	99.99% Percentile (z)	0.00103
99.99% USL	7.7663E-4		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	6.96	k star (bias corrected MLE)	N/A
Theta hat (MLE)	1.0488E-5	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	27.84	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A		
MLE Sd (bias corrected)	N/A	99.99% Percentile of Chisquare (2kstar)	N/A

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	5.5000E-5	SD (KM)	2.0125E-5
Variance (KM)	4.050E-10	SE of Mean (KM)	1.1619E-5
k hat (KM)	7.469	k star (KM)	5.053
nu hat (KM)	134.4	nu star (KM)	90.96
theta hat (KM)	7.3636E-6	theta star (KM)	1.0884E-5
99.99% gamma percentile (KM)	1.9459E-4	90% gamma percentile (KM)	8.7752E-5
95% gamma percentile (KM)	1.0042E-4	99% gamma percentile (KM)	1.2719E-4

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	2.4875E-4	2.6395E-4	99.99% Approx. Gamma UPL	2.6688E-4	2.8517E-4
99.99% KM Gamma Percentile	1.4278E-4	1.4509E-4	99.99% Gamma USL	1.0895E-4	1.0927E-4

Lognormal GOF Test on Detected Observations Only

Not Enough Data to Perform GOF Test

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	5.4603E-5	Mean in Log Scale	-9.873
SD in Original Scale	2.0944E-5	SD in Log Scale	0.352
99.99% UTL95% Coverage	0.232	99.99% BCA UTL95% Coverage	1.0000E-4
99.99% Bootstrap (%) UTL95% Coverage	1.0000E-4	99.99% UPL (t)	5.6184E-4
90% Percentile (z)	8.0895E-5	95% Percentile (z)	9.1925E-5
99% Percentile (z)	1.1683E-4	99.99% USL	1.2760E-4

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-9.857	99.99% KM UTL (Lognormal)95% Coverage	0.0529
KM SD of Logged Data	0.289	99.99% KM UPL (Lognormal)	3.7360E-4
99.99% KM Percentile Lognormal (z)	1.5360E-4	99.99% KM USL (Lognormal)	1.1037E-4

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	2.0511E-4	Mean in Log Scale	-9.068
SD in Original Scale	2.2178E-4	SD in Log Scale	1.124
99.99% UTL95% Coverage	54454957	99.99% UPL (t)	0.239
90% Percentile (z)	4.8700E-4	95% Percentile (z)	7.3271E-4
99% Percentile (z)	0.00158	99.99% USL	0.00209

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	9	99.99% UTL with95% Coverage	0.001
Approx, f used to compute achieved CC	0.474	Approximate Actual Confidence Coefficient achieved by UTL	0.37
Approximate Sample Size needed to achieve specified CC	182	99.99% UPL	0.001
99.99% USL	0.001	99.99% KM Chebyshev UPL	0.00218

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (2_4_143)

General Statistics

Total Number of Observations	9	Number of Missing Observations	0
Number of Distinct Observations	5		
Number of Detects	3	Number of Non-Detects	6
Number of Distinct Detects	3	Number of Distinct Non-Detects	2
Minimum Detect	3.0000E-4	Minimum Non-Detect	2.0000E-4
Maximum Detect	7.0000E-4	Maximum Non-Detect	0.001
Variance Detected	4.1200E-8	Percent Non-Detects	66.67%
Mean Detected	4.8000E-4	SD Detected	2.0298E-4
Mean of Detected Logged Data	-7.702	SD of Detected Logged Data	0.424

Warning: Data set has only 3 Detected Values.

This is not enough to compute meaningful or reliable statistics and estimates.

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	23.91	d2max (for USL)	2.577

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.971	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.245	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.425	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	3.4000E-4	KM SD	1.8257E-4
99.99% UTL95% Coverage	0.0047	99.99% KM UPL (t)	0.00158
90% KM Percentile (z)	5.7398E-4	95% KM Percentile (z)	6.4031E-4
99% KM Percentile (z)	7.6473E-4	99.99% KM Percentile (z)	0.00102
99.99% KM USL	8.1049E-4		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	3.6000E-4	SD	2.2000E-4
99.99% UTL95% Coverage	0.00562	99.99% UPL (t)	0.00185
90% Percentile (z)	6.4194E-4	95% Percentile (z)	7.2187E-4
99% Percentile (z)	8.7180E-4	99.99% Percentile (z)	0.00118
99.99% USL	9.2694E-4		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	8.51	k star (bias corrected MLE)	N/A
Theta hat (MLE)	5.6407E-5	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	51.06	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A		
MLE Sd (bias corrected)	N/A	99.99% Percentile of Chisquare (2kstar)	N/A

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	3.0000E-4	Mean	0.00683
Maximum	0.01	Median	0.01
SD	0.00476	CV	0.697
k hat (MLE)	0.899	k star (bias corrected MLE)	0.673
Theta hat (MLE)	0.00759	Theta star (bias corrected MLE)	0.0101
nu hat (MLE)	16.18	nu star (bias corrected)	12.12
MLE Mean (bias corrected)	0.00683	MLE Sd (bias corrected)	0.00832
		99.99% Percentile of Chisquare (2kstar)	16.39
90% Percentile	0.0173	95% Percentile	0.0236
99% Percentile	0.0386	99.99% Percentile	0.0831

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	6.092	27.92	99.99% Approx. Gamma UPL	0.262	0.495
99.99% Gamma USL	0.0421	0.0528			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	3.4000E-4	SD (KM)	1.8257E-4
Variance (KM)	3.3333E-8	SE of Mean (KM)	9.1287E-5
k hat (KM)	3.468	k star (KM)	2.386
nu hat (KM)	62.42	nu star (KM)	42.95
theta hat (KM)	9.8039E-5	theta star (KM)	1.4249E-4
99.99% gamma percentile (KM)	0.0018	90% gamma percentile (KM)	6.3476E-4
95% gamma percentile (KM)	7.6348E-4	99% gamma percentile (KM)	0.00105

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	0.00277	0.0032	99.99% Approx. Gamma UPL	0.00304	0.00355
99.99% KM Gamma Percentile	0.00133	0.00141	99.99% Gamma USL	9.1457E-4	9.3634E-4

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.997	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.192	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.425	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	2.8214E-4	Mean in Log Scale	-8.428
SD in Original Scale	2.0837E-4	SD in Log Scale	0.777
99.99% UTL95% Coverage	25262	99.99% BCA UTL95% Coverage	7.0000E-4
99.99% Bootstrap (%) UTL95% Coverage	7.0000E-4	99.99% UPL (t)	0.0426
90% Percentile (z)	5.9161E-4	95% Percentile (z)	7.8443E-4
99% Percentile (z)	0.00133	99.99% USL	0.00162

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-8.109	99.99% KM UTL (Lognormal)95% Coverage	26.14
KM SD of Logged Data	0.476	99.99% KM UPL (Lognormal)	0.0076
99.99% KM Percentile Lognormal (z)	0.00176	99.99% KM USL (Lognormal)	0.00102

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	3.6000E-4	Mean in Log Scale	-8.171
SD in Original Scale	2.2000E-4	SD in Log Scale	0.809
99.99% UTL95% Coverage	71093	99.99% UPL (t)	0.0688
90% Percentile (z)	7.9744E-4	95% Percentile (z)	0.00107
99% Percentile (z)	0.00186	99.99% USL	0.00227

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	9	99.99% UTL with95% Coverage	0.001
Approx, f used to compute achieved CC	0.474	Approximate Actual Confidence Coefficient achieved by UTL	0.37
Approximate Sample Size needed to achieve specified CC	182	99.99% UPL	0.001
99.99% USL	0.001	99.99% KM Chebyshev UPL	0.0196

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (2_4_147)

General Statistics

Total Number of Observations	9	Number of Missing Observations	0
Number of Distinct Observations	6		
Number of Detects	4	Number of Non-Detects	5
Number of Distinct Detects	4	Number of Distinct Non-Detects	2
Minimum Detect	0.091	Minimum Non-Detect	0.008
Maximum Detect	0.53	Maximum Non-Detect	0.05
Variance Detected	0.0413	Percent Non-Detects	55.56%
Mean Detected	0.228	SD Detected	0.203
Mean of Detected Logged Data	-1.724	SD of Detected Logged Data	0.759

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	23.91	d2max (for USL)	2.577

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.743	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.748	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.399	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.375	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	0.106	KM SD	0.16
99.99% UTL95% Coverage	3.937	99.99% KM UPL (t)	1.194
90% KM Percentile (z)	0.311	95% KM Percentile (z)	0.369
99% KM Percentile (z)	0.478	99.99% KM Percentile (z)	0.702
99.99% KM USL	0.519		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	0.11	SD	0.167
99.99% UTL95% Coverage	4.106	99.99% UPL (t)	1.245
90% Percentile (z)	0.325	95% Percentile (z)	0.385
99% Percentile (z)	0.499	99.99% Percentile (z)	0.732
99.99% USL	0.541		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.549	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.66	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.385	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.398	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	2.199	k star (bias corrected MLE)	0.716
Theta hat (MLE)	0.104	Theta star (bias corrected MLE)	0.318
nu hat (MLE)	17.59	nu star (bias corrected)	5.732
MLE Mean (bias corrected)	0.228		
MLE Sd (bias corrected)	0.269	99.99% Percentile of Chisquare (2kstar)	16.68

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.107
Maximum	0.53	Median	0.01
SD	0.169	CV	1.585
k hat (MLE)	0.572	k star (bias corrected MLE)	0.456
Theta hat (MLE)	0.187	Theta star (bias corrected MLE)	0.234
nu hat (MLE)	10.3	nu star (bias corrected)	8.199
MLE Mean (bias corrected)	0.107	MLE Sd (bias corrected)	0.158
		99.99% Percentile of Chisquare (2kstar)	14.78
90% Percentile	0.294	95% Percentile	0.424
99% Percentile	0.746	99.99% Percentile	1.733

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	165.9	736.8	99.99% Approx. Gamma UPL	6.13	10.86
99.99% Gamma USL	0.799	0.921			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.106	SD (KM)	0.16
Variance (KM)	0.0257	SE of Mean (KM)	0.0617
k hat (KM)	0.435	k star (KM)	0.364
nu hat (KM)	7.827	nu star (KM)	6.551
theta hat (KM)	0.243	theta star (KM)	0.29
99.99% gamma percentile (KM)	2.033	90% gamma percentile (KM)	0.303
95% gamma percentile (KM)	0.453	99% gamma percentile (KM)	0.835

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
99.99% Approx. Gamma UTL with 95% Coverage	4.966	8.511	99.99% Approx. Gamma UPL	5.688	10.08
99.99% KM Gamma Percentile	1.497	1.962	99.99% Gamma USL	0.743	0.853

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.865	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.34	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.375	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.111	Mean in Log Scale	-3.091
SD in Original Scale	0.167	SD in Log Scale	1.448
99.99% UTL95% Coverage	4.963E+13	99.99% BCA UTL95% Coverage	0.53
99.99% Bootstrap (%) UTL95% Coverage	0.53	99.99% UPL (t)	849
90% Percentile (z)	0.291	95% Percentile (z)	0.492
99% Percentile (z)	1.321	99.99% USL	1.899

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-3.449	99.99% KM UTL (Lognormal)95% Coverage	1.423E+15
KM SD of Logged Data	1.604	99.99% KM UPL (Lognormal)	1705
99.99% KM Percentile Lognormal (z)	12.37	99.99% KM USL (Lognormal)	1.982

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	0.11	Mean in Log Scale	-3.223
SD in Original Scale	0.167	SD in Log Scale	1.656
99.99% UTL95% Coverage	6.211E+15	99.99% UPL (t)	3046
90% Percentile (z)	0.333	95% Percentile (z)	0.607
99% Percentile (z)	1.877	99.99% USL	2.842

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	9	99.99% UTL with95% Coverage	0.53
Approx, f used to compute achieved CC	0.474	Approximate Actual Confidence Coefficient achieved by UTL	0.37
Approximate Sample Size needed to achieve specified CC	182	99.99% UPL	0.53
99.99% USL	0.53	99.99% KM Chebyshev UPL	17

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

Background Statistics for Data Sets with Non-Detects

User Selected Options

Date/Time of Computation	ProUCL 5.19/22/2020 3:42:15 PM
From File	FWDA_BEDROCK_par_cens1.xls
Full Precision	OFF
Confidence Coefficient	97.93%
Coverage	95%
Different or Future K Observations	1
Number of Bootstrap Operations	2000

VALUES (2_1_102)

General Statistics

Total Number of Observations	9	Number of Missing Observations	0
Number of Distinct Observations	7		
Number of Detects	5	Number of Non-Detects	4
Number of Distinct Detects	5	Number of Distinct Non-Detects	2
Minimum Detect	0.049	Minimum Non-Detect	0.07
Maximum Detect	130	Maximum Non-Detect	0.2
Variance Detected	3212	Percent Non-Detects	44.44%
Mean Detected	28.82	SD Detected	56.68
Mean of Detected Logged Data	0.648	SD of Detected Logged Data	3.323

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	3.424	d2max (for USL)	2.24

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.608	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.441	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.343	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	16.04	KM SD	40.4
97.93% UTL95% Coverage	154.4	97.93% KM UPL (t)	119.4
90% KM Percentile (z)	67.81	95% KM Percentile (z)	82.48
97.93% KM Percentile (z)	98.42	99% KM Percentile (z)	110
97.93% KM USL	106.5		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	16.05	SD	42.84
97.93% UTL95% Coverage	162.7	97.93% UPL (t)	125.6
90% Percentile (z)	70.95	95% Percentile (z)	86.52
97.93% Percentile (z)	103.4	99% Percentile (z)	115.7
97.93% USL	112		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.368	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.754	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.243	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.383	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.26	k star (bias corrected MLE)	0.237
Theta hat (MLE)	110.8	Theta star (bias corrected MLE)	121.4
nu hat (MLE)	2.601	nu star (bias corrected)	2.374
MLE Mean (bias corrected)	28.82		
MLE Sd (bias corrected)	59.14	97.93% Percentile of Chisquare (2kstar)	3.619

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	16.01
Maximum	130	Median	0.049
SD	42.86	CV	2.676
k hat (MLE)	0.169	k star (bias corrected MLE)	0.187
Theta hat (MLE)	94.61	Theta star (bias corrected MLE)	85.67
nu hat (MLE)	3.047	nu star (bias corrected)	3.365
MLE Mean (bias corrected)	16.01	MLE Sd (bias corrected)	37.04
		97.93% Percentile of Chisquare (2kstar)	3.177
90% Percentile	48.37	95% Percentile	83.94
97.93% Percentile	136.1	99% Percentile	183

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
97.93% Approx. Gamma UTL with 95% Coverage	305.1	438.6	97.93% Approx. Gamma UPL	151.1	181.2
97.93% Gamma USL	111.2	123.8			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	16.04	SD (KM)	40.4
Variance (KM)	1632	SE of Mean (KM)	15.06
k hat (KM)	0.158	k star (KM)	0.179
nu hat (KM)	2.836	nu star (KM)	3.224
theta hat (KM)	101.8	theta star (KM)	89.52
97.93% gamma percentile (KM)	138.9	90% gamma percentile (KM)	48.35
95% gamma percentile (KM)	84.93	99% gamma percentile (KM)	187.5

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
97.93% Approx. Gamma UTL with 95% Coverage	292.8	399.9	97.93% Approx. Gamma UPL	128.6	144.3
97.93% KM Gamma Percentile	78.25	78.76	97.93% Gamma USL	95.76	100.6

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.911	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.226	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.343	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	16.05	Mean in Log Scale	-1.056
SD in Original Scale	42.84	SD in Log Scale	3.249
97.93% UTL95% Coverage	23561	97.93% BCA UTL95% Coverage	130
97.93% Bootstrap (%) UTL95% Coverage	130	97.93% UPL (t)	1415
90% Percentile (z)	22.35	95% Percentile (z)	72.77
97.93% Percentile (z)	262.3	99% Percentile (z)	666
97.93% USL	502.9		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-0.918	97.93% KM UTL (Lognormal)95% Coverage	6416
KM SD of Logged Data	2.828	97.93% KM UPL (Lognormal)	554.3
97.93% KM Percentile Lognormal (z)	127.8	97.93% KM USL (Lognormal)	225.3

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	16.05	Mean in Log Scale	-0.78
SD in Original Scale	42.84	SD in Log Scale	2.914
97.93% UTL95% Coverage	9881	97.93% UPL (t)	792.6
90% Percentile (z)	19.2	95% Percentile (z)	55.34
97.93% Percentile (z)	174.8	99% Percentile (z)	403.2
97.93% USL	313.4		

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	9	97.93% UTL with95% Coverage	130
Approx, f used to compute achieved CC	0.474	Approximate Actual Confidence Coefficient achieved by UTL	0.37
Approximate Sample Size needed to achieve specified CC	76	97.93% UPL	130
97.93% USL	130	97.93% KM Chebyshev UPL	308.9

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (2_1_106)

General Statistics

Total Number of Observations	9	Number of Missing Observations	0
Number of Distinct Observations	7		
Number of Detects	5	Number of Non-Detects	4
Number of Distinct Detects	5	Number of Distinct Non-Detects	2
Minimum Detect	3.8000E-4	Minimum Non-Detect	0.001
Maximum Detect	0.01	Maximum Non-Detect	0.00125
Variance Detected	1.5443E-5	Percent Non-Detects	44.44%
Mean Detected	0.00309	SD Detected	0.00393
Mean of Detected Logged Data	-6.36	SD of Detected Logged Data	1.2

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	3.424	d2max (for USL)	2.24

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.721	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.394	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.343	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	0.00202	KM SD	0.00289
97.93% UTL95% Coverage	0.0119	97.93% KM UPL (t)	0.0094
90% KM Percentile (z)	0.00572	95% KM Percentile (z)	0.00677
97.93% KM Percentile (z)	0.00791	99% KM Percentile (z)	0.00873
97.93% KM USL	0.00848		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	0.00197	SD	0.00308
97.93% UTL95% Coverage	0.0125	97.93% UPL (t)	0.00985
90% Percentile (z)	0.00591	95% Percentile (z)	0.00703
97.93% Percentile (z)	0.00825	99% Percentile (z)	0.00913
97.93% USL	0.00887		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.371	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.691	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.298	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.364	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.996	k star (bias corrected MLE)	0.532
Theta hat (MLE)	0.0031	Theta star (bias corrected MLE)	0.00581
nu hat (MLE)	9.958	nu star (bias corrected)	5.316
MLE Mean (bias corrected)	0.00309		
MLE Sd (bias corrected)	0.00424	97.93% Percentile of Chisquare (2kstar)	5.527

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	3.8000E-4	Mean	0.00616
Maximum	0.01	Median	0.01
SD	0.00458	CV	0.744
k hat (MLE)	1.158	k star (bias corrected MLE)	0.846
Theta hat (MLE)	0.00532	Theta star (bias corrected MLE)	0.00728
nu hat (MLE)	20.84	nu star (bias corrected)	15.22
MLE Mean (bias corrected)	0.00616	MLE Sd (bias corrected)	0.0067
		97.93% Percentile of Chisquare (2kstar)	7.075
90% Percentile	0.0148	95% Percentile	0.0196
97.93% Percentile	0.0258	99% Percentile	0.0309

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
97.93% Approx. Gamma UTL with 95% Coverage	0.0512	0.0652	97.93% Approx. Gamma UPL	0.0327	0.0384
97.93% Gamma USL	0.0272	0.0311			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00202	SD (KM)	0.00289
Variance (KM)	8.3354E-6	SE of Mean (KM)	0.00108
k hat (KM)	0.488	k star (KM)	0.4
nu hat (KM)	8.792	nu star (KM)	7.195
theta hat (KM)	0.00413	theta star (KM)	0.00505
97.93% gamma percentile (KM)	0.012	90% gamma percentile (KM)	0.0057
95% gamma percentile (KM)	0.00839	99% gamma percentile (KM)	0.0151

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
97.93% Approx. Gamma UTL with 95% Coverage	0.0183	0.0207	97.93% Approx. Gamma UPL	0.0104	0.0109
97.93% KM Gamma Percentile	0.00754	0.00762	97.93% Gamma USL	0.00856	0.00877

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.97	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.228	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.343	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.00198	Mean in Log Scale	-6.872
SD in Original Scale	0.00308	SD in Log Scale	1.082
97.93% UTL95% Coverage	0.0422	97.93% BCA UTL95% Coverage	0.01
97.93% Bootstrap (%) UTL95% Coverage	0.01	97.93% UPL (t)	0.0165
90% Percentile (z)	0.00415	95% Percentile (z)	0.00615
97.93% Percentile (z)	0.00943	99% Percentile (z)	0.0129
97.93% USL	0.0117		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-6.823	97.93% KM UTL (Lognormal)95% Coverage	0.0338
KM SD of Logged Data	1.004	97.93% KM UPL (Lognormal)	0.0142
97.93% KM Percentile Lognormal (z)	0.00843	97.93% KM USL (Lognormal)	0.0103

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	0.00197	Mean in Log Scale	-6.862
SD in Original Scale	0.00308	SD in Log Scale	1.039
97.93% UTL95% Coverage	0.0368	97.93% UPL (t)	0.0149
90% Percentile (z)	0.00397	95% Percentile (z)	0.00578
97.93% Percentile (z)	0.00872	99% Percentile (z)	0.0117
97.93% USL	0.0107		

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	9	97.93% UTL with95% Coverage	0.01
Approx, f used to compute achieved CC	0.474	Approximate Actual Confidence Coefficient achieved by UTL	0.37
Approximate Sample Size needed to achieve specified CC	76	97.93% UPL	0.01
97.93% USL	0.01	97.93% KM Chebyshev UPL	0.023

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (2_1_118)

General Statistics

Total Number of Observations	9	Number of Missing Observations	0
Number of Distinct Observations	8		
Number of Detects	6	Number of Non-Detects	3
Number of Distinct Detects	6	Number of Distinct Non-Detects	2
Minimum Detect	6.7000E-5	Minimum Non-Detect	2.0000E-4
Maximum Detect	0.034	Maximum Non-Detect	0.001
Variance Detected	1.8210E-4	Percent Non-Detects	33.33%
Mean Detected	0.0065	SD Detected	0.0135
Mean of Detected Logged Data	-6.771	SD of Detected Logged Data	2.081

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	3.424	d2max (for USL)	2.24

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.55	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.461	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.325	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	0.00442	KM SD	0.0105
97.93% UTL95% Coverage	0.0403	97.93% KM UPL (t)	0.0312
90% KM Percentile (z)	0.0178	95% KM Percentile (z)	0.0217
97.93% KM Percentile (z)	0.0258	99% KM Percentile (z)	0.0288
97.93% KM USL	0.0279		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	0.00445	SD	0.0111
97.93% UTL95% Coverage	0.0425	97.93% UPL (t)	0.0329
90% Percentile (z)	0.0187	95% Percentile (z)	0.0227
97.93% Percentile (z)	0.0271	99% Percentile (z)	0.0303
97.93% USL	0.0293		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.582	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.754	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.344	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.353	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.382	k star (bias corrected MLE)	0.302
Theta hat (MLE)	0.017	Theta star (bias corrected MLE)	0.0215
nu hat (MLE)	4.586	nu star (bias corrected)	3.626
MLE Mean (bias corrected)	0.0065		
MLE Sd (bias corrected)	0.0118	97.93% Percentile of Chisquare (2kstar)	4.114

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	6.7000E-5	Mean	0.00766
Maximum	0.034	Median	0.0021
SD	0.0108	CV	1.411
k hat (MLE)	0.534	k star (bias corrected MLE)	0.43
Theta hat (MLE)	0.0144	Theta star (bias corrected MLE)	0.0178
nu hat (MLE)	9.608	nu star (bias corrected)	7.739
MLE Mean (bias corrected)	0.00766	MLE Sd (bias corrected)	0.0117
		97.93% Percentile of Chisquare (2kstar)	4.946
90% Percentile	0.0214	95% Percentile	0.0311
97.93% Percentile	0.0441	99% Percentile	0.0552

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
97.93% Approx. Gamma UTL with 95% Coverage	0.102	0.141	97.93% Approx. Gamma UPL	0.059	0.073
97.93% Gamma USL	0.0469	0.0555			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00442	SD (KM)	0.0105
Variance (KM)	1.0985E-4	SE of Mean (KM)	0.00383
k hat (KM)	0.178	k star (KM)	0.193
nu hat (KM)	3.199	nu star (KM)	3.466
theta hat (KM)	0.0249	theta star (KM)	0.0229
97.93% gamma percentile (KM)	0.0371	90% gamma percentile (KM)	0.0134
95% gamma percentile (KM)	0.023	99% gamma percentile (KM)	0.0497

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
97.93% Approx. Gamma UTL with 95% Coverage	0.0681	0.0849	97.93% Approx. Gamma UPL	0.0323	0.0349
97.93% KM Gamma Percentile	0.0208	0.0209	97.93% Gamma USL	0.0249	0.0257

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.966	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.219	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.325	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.00439	Mean in Log Scale	-7.526
SD in Original Scale	0.0111	SD in Log Scale	2.06
97.93% UTL95% Coverage	0.623	97.93% BCA UTL95% Coverage	0.034
97.93% Bootstrap (%) UTL95% Coverage	0.034	97.93% UPL (t)	0.105
90% Percentile (z)	0.00755	95% Percentile (z)	0.016
97.93% Percentile (z)	0.036	99% Percentile (z)	0.065
97.93% USL	0.0544		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-7.482	97.93% KM UTL (Lognormal)95% Coverage	0.44
KM SD of Logged Data	1.945	97.93% KM UPL (Lognormal)	0.0816
97.93% KM Percentile Lognormal (z)	0.0298	97.93% KM USL (Lognormal)	0.0439

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	0.00445	Mean in Log Scale	-7.227
SD in Original Scale	0.0111	SD in Log Scale	1.841
97.93% UTL95% Coverage	0.397	97.93% UPL (t)	0.0807
90% Percentile (z)	0.00769	95% Percentile (z)	0.015
97.93% Percentile (z)	0.0311	99% Percentile (z)	0.0527
97.93% USL	0.0449		

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	9	97.93% UTL with95% Coverage	0.034
Approx, f used to compute achieved CC	0.474	Approximate Actual Confidence Coefficient achieved by UTL	0.37
Approximate Sample Size needed to achieve specified CC	76	97.93% UPL	0.034
97.93% USL	0.034	97.93% KM Chebyshev UPL	0.0804

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (2_1_120)

General Statistics

Total Number of Observations	9	Number of Missing Observations	0
Number of Distinct Observations	7		
Number of Detects	5	Number of Non-Detects	4
Number of Distinct Detects	5	Number of Distinct Non-Detects	2
Minimum Detect	7.0000E-4	Minimum Non-Detect	0.0018
Maximum Detect	0.028	Maximum Non-Detect	0.005
Variance Detected	1.2896E-4	Percent Non-Detects	44.44%
Mean Detected	0.0103	SD Detected	0.0114
Mean of Detected Logged Data	-5.348	SD of Detected Logged Data	1.591

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	3.424	d2max (for USL)	2.24

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.884	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.21	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.343	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	0.00615	KM SD	0.00889
97.93% UTL95% Coverage	0.0366	97.93% KM UPL (t)	0.0289
90% KM Percentile (z)	0.0175	95% KM Percentile (z)	0.0208
97.93% KM Percentile (z)	0.0243	99% KM Percentile (z)	0.0268
97.93% KM USL	0.0261		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	0.00631	SD	0.00934
97.93% UTL95% Coverage	0.0383	97.93% UPL (t)	0.0302
90% Percentile (z)	0.0183	95% Percentile (z)	0.0217
97.93% Percentile (z)	0.0254	99% Percentile (z)	0.028
97.93% USL	0.0272		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.274	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.698	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.238	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.366	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.771	k star (bias corrected MLE)	0.442
Theta hat (MLE)	0.0134	Theta star (bias corrected MLE)	0.0233
nu hat (MLE)	7.712	nu star (bias corrected)	4.418
MLE Mean (bias corrected)	0.0103		
MLE Sd (bias corrected)	0.0155	97.93% Percentile of Chisquare (2kstar)	5.017

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	7.0000E-4	Mean	0.0102
Maximum	0.028	Median	0.01
SD	0.00803	CV	0.79
k hat (MLE)	1.305	k star (bias corrected MLE)	0.944
Theta hat (MLE)	0.00779	Theta star (bias corrected MLE)	0.0108
nu hat (MLE)	23.49	nu star (bias corrected)	16.99
MLE Mean (bias corrected)	0.0102	MLE Sd (bias corrected)	0.0105
		97.93% Percentile of Chisquare (2kstar)	7.513
90% Percentile	0.0238	95% Percentile	0.0311
97.93% Percentile	0.0405	99% Percentile	0.0482

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
97.93% Approx. Gamma UTL with 95% Coverage	0.0771	0.0968	97.93% Approx. Gamma UPL	0.05	0.0584
97.93% Gamma USL	0.0419	0.0476			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00615	SD (KM)	0.00889
Variance (KM)	7.8973E-5	SE of Mean (KM)	0.00331
k hat (KM)	0.479	k star (KM)	0.393
nu hat (KM)	8.621	nu star (KM)	7.08
theta hat (KM)	0.0128	theta star (KM)	0.0156
97.93% gamma percentile (KM)	0.0369	90% gamma percentile (KM)	0.0174
95% gamma percentile (KM)	0.0257	99% gamma percentile (KM)	0.0466

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
97.93% Approx. Gamma UTL with 95% Coverage	0.0746	0.0914	97.93% Approx. Gamma UPL	0.0393	0.0433
97.93% KM Gamma Percentile	0.0273	0.0285	97.93% Gamma USL	0.0316	0.0337

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.921	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.207	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.343	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.00624	Mean in Log Scale	-6.059
SD in Original Scale	0.00938	SD in Log Scale	1.473
97.93% UTL95% Coverage	0.362	97.93% BCA UTL95% Coverage	0.028
97.93% Bootstrap (%) UTL95% Coverage	0.028	97.93% UPL (t)	0.101
90% Percentile (z)	0.0154	95% Percentile (z)	0.0264
97.93% Percentile (z)	0.0471	99% Percentile (z)	0.0719
97.93% USL	0.0633		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-6.08	97.93% KM UTL (Lognormal)95% Coverage	0.234
KM SD of Logged Data	1.351	97.93% KM UPL (Lognormal)	0.0726
97.93% KM Percentile Lognormal (z)	0.036	97.93% KM USL (Lognormal)	0.0472

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	0.00631	Mean in Log Scale	-5.974
SD in Original Scale	0.00934	SD in Log Scale	1.384
97.93% UTL95% Coverage	0.29	97.93% UPL (t)	0.0876
90% Percentile (z)	0.015	95% Percentile (z)	0.0248
97.93% Percentile (z)	0.0428	99% Percentile (z)	0.0636
97.93% USL	0.0564		

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	9	97.93% UTL with95% Coverage	0.028
Approx, f used to compute achieved CC	0.474	Approximate Actual Confidence Coefficient achieved by UTL	0.37
Approximate Sample Size needed to achieve specified CC	76	97.93% UPL	0.028
97.93% USL	0.028	97.93% KM Chebyshev UPL	0.0706

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (2_1_122)

General Statistics

Total Number of Observations	9	Number of Missing Observations	0
Number of Distinct Observations	7		
Number of Detects	5	Number of Non-Detects	4
Number of Distinct Detects	5	Number of Distinct Non-Detects	2
Minimum Detect	0.088	Minimum Non-Detect	0.085
Maximum Detect	110	Maximum Non-Detect	0.25
Variance Detected	2330	Percent Non-Detects	44.44%
Mean Detected	23.72	SD Detected	48.27
Mean of Detected Logged Data	0.83	SD of Detected Logged Data	2.7

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	3.424	d2max (for USL)	2.24

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.589	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.452	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.343	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	13.21	KM SD	34.26
97.93% UTL95% Coverage	130.5	97.93% KM UPL (t)	100.9
90% KM Percentile (z)	57.12	95% KM Percentile (z)	69.56
97.93% KM Percentile (z)	83.08	99% KM Percentile (z)	92.91
97.93% KM USL	89.95		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	13.21	SD	36.34
97.93% UTL95% Coverage	137.6	97.93% UPL (t)	106.2
90% Percentile (z)	59.78	95% Percentile (z)	72.98
97.93% Percentile (z)	87.32	99% Percentile (z)	97.75
97.93% USL	94.6		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.436	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.741	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.32	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.38	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.296	k star (bias corrected MLE)	0.252
Theta hat (MLE)	80.16	Theta star (bias corrected MLE)	94.23
nu hat (MLE)	2.959	nu star (bias corrected)	2.517
MLE Mean (bias corrected)	23.72		
MLE Sd (bias corrected)	47.27	97.93% Percentile of Chisquare (2kstar)	3.734

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	13.18
Maximum	110	Median	0.088
SD	36.35	CV	2.758
k hat (MLE)	0.18	k star (bias corrected MLE)	0.194
Theta hat (MLE)	73.36	Theta star (bias corrected MLE)	67.99
nu hat (MLE)	3.234	nu star (bias corrected)	3.489
MLE Mean (bias corrected)	13.18	MLE Sd (bias corrected)	29.94
		97.93% Percentile of Chisquare (2kstar)	3.242
90% Percentile	39.85	95% Percentile	68.46
97.93% Percentile	110.2	99% Percentile	147.6

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
97.93% Approx. Gamma UTL with 95% Coverage	240.7	332.9	97.93% Approx. Gamma UPL	119.8	139.3
97.93% Gamma USL	88.37	95.7			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	13.21	SD (KM)	34.26
Variance (KM)	1174	SE of Mean (KM)	12.77
k hat (KM)	0.149	k star (KM)	0.173
nu hat (KM)	2.678	nu star (KM)	3.119
theta hat (KM)	88.82	theta star (KM)	76.27
97.93% gamma percentile (KM)	116.1	90% gamma percentile (KM)	39.76
95% gamma percentile (KM)	70.53	99% gamma percentile (KM)	157.4

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
97.93% Approx. Gamma UTL with 95% Coverage	226.7	290.3	97.93% Approx. Gamma UPL	100.9	108
97.93% KM Gamma Percentile	61.98	60.2	97.93% Gamma USL	75.54	76.21

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.975	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.189	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.343	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	13.18	Mean in Log Scale	-2.2
SD in Original Scale	36.35	SD in Log Scale	4.2
97.93% UTL95% Coverage	194959	97.93% BCA UTL95% Coverage	110
97.93% Bootstrap (%) UTL95% Coverage	110	97.93% UPL (t)	5138
90% Percentile (z)	24.11	95% Percentile (z)	110.9
97.93% Percentile (z)	581.7	99% Percentile (z)	1940
97.93% USL	1350		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-0.632	97.93% KM UTL (Lognormal)95% Coverage	2194
KM SD of Logged Data	2.431	97.93% KM UPL (Lognormal)	267.3
97.93% KM Percentile Lognormal (z)	75.74	97.93% KM USL (Lognormal)	123.3

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	13.21	Mean in Log Scale	-0.703
SD in Original Scale	36.34	SD in Log Scale	2.664
97.93% UTL95% Coverage	4527	97.93% UPL (t)	451
90% Percentile (z)	15.04	95% Percentile (z)	39.6
97.93% Percentile (z)	113.3	99% Percentile (z)	243.2
97.93% USL	193.2		

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	9	97.93% UTL with95% Coverage	110
Approx, f used to compute achieved CC	0.474	Approximate Actual Confidence Coefficient achieved by UTL	0.37
Approximate Sample Size needed to achieve specified CC	76	97.93% UPL	110
97.93% USL	110	97.93% KM Chebyshev UPL	261.6

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (2_1_128)

General Statistics

Total Number of Observations	9	Number of Missing Observations	0
Number of Distinct Observations	9		
Number of Detects	8	Number of Non-Detects	1
Number of Distinct Detects	8	Number of Distinct Non-Detects	1
Minimum Detect	0.0174	Minimum Non-Detect	9.5000E-4
Maximum Detect	1.4	Maximum Non-Detect	9.5000E-4
Variance Detected	0.235	Percent Non-Detects	11.11%
Mean Detected	0.412	SD Detected	0.485
Mean of Detected Logged Data	-1.806	SD of Detected Logged Data	1.667

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	3.424	d2max (for USL)	2.24

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.823	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.818	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.243	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.283	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	0.366	KM SD	0.447
97.93% UTL95% Coverage	1.896	97.93% KM UPL (t)	1.509
90% KM Percentile (z)	0.938	95% KM Percentile (z)	1.101
97.93% KM Percentile (z)	1.277	99% KM Percentile (z)	1.405
97.93% KM USL	1.367		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	0.366	SD	0.474
97.93% UTL95% Coverage	1.989	97.93% UPL (t)	1.578
90% Percentile (z)	0.973	95% Percentile (z)	1.145
97.93% Percentile (z)	1.332	99% Percentile (z)	1.468
97.93% USL	1.427		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.326	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.751	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.199	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.306	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.663	k star (bias corrected MLE)	0.498
Theta hat (MLE)	0.621	Theta star (bias corrected MLE)	0.827
nu hat (MLE)	10.61	nu star (bias corrected)	7.964
MLE Mean (bias corrected)	0.412		
MLE Sd (bias corrected)	0.583	97.93% Percentile of Chisquare (2kstar)	5.339

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.367
Maximum	1.4	Median	0.095
SD	0.473	CV	1.289
k hat (MLE)	0.56	k star (bias corrected MLE)	0.447
Theta hat (MLE)	0.655	Theta star (bias corrected MLE)	0.82
nu hat (MLE)	10.08	nu star (bias corrected)	8.054
MLE Mean (bias corrected)	0.367	MLE Sd (bias corrected)	0.549
		97.93% Percentile of Chisquare (2kstar)	5.05
90% Percentile	1.015	95% Percentile	1.466
97.93% Percentile	2.071	99% Percentile	2.587

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
97.93% Approx. Gamma UTL with 95% Coverage	4.858	6.614	97.93% Approx. Gamma UPL	2.811	3.431
97.93% Gamma USL	2.235	2.616			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.366	SD (KM)	0.447
Variance (KM)	0.2	SE of Mean (KM)	0.159
k hat (KM)	0.671	k star (KM)	0.521
nu hat (KM)	12.07	nu star (KM)	9.382
theta hat (KM)	0.546	theta star (KM)	0.702
97.93% gamma percentile (KM)	1.92	90% gamma percentile (KM)	0.981
95% gamma percentile (KM)	1.385	99% gamma percentile (KM)	2.373

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
97.93% Approx. Gamma UTL with 95% Coverage	5.284	7.738	97.93% Approx. Gamma UPL	2.709	3.431
97.93% KM Gamma Percentile	1.841	2.161	97.93% Gamma USL	2.15	2.6

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.917	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.818	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.174	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.283	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.366	Mean in Log Scale	-2.26
SD in Original Scale	0.474	SD in Log Scale	2.07
97.93% UTL95% Coverage	125	97.93% BCA UTL95% Coverage	1.4
97.93% Bootstrap (%) UTL95% Coverage	1.4	97.93% UPL (t)	20.82
90% Percentile (z)	1.481	95% Percentile (z)	3.143
97.93% Percentile (z)	7.115	99% Percentile (z)	12.88
97.93% USL	10.77		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-2.379	97.93% KM UTL (Lognormal)95% Coverage	165.8
KM SD of Logged Data	2.187	97.93% KM UPL (Lognormal)	24.95
97.93% KM Percentile Lognormal (z)	8.023	97.93% KM USL (Lognormal)	12.44

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	0.366	Mean in Log Scale	-2.456
SD in Original Scale	0.474	SD in Log Scale	2.496
97.93% UTL95% Coverage	441.6	97.93% UPL (t)	50.88
90% Percentile (z)	2.102	95% Percentile (z)	5.205
97.93% Percentile (z)	13.94	99% Percentile (z)	28.52
97.93% USL	22.99		

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	9	97.93% UTL with95% Coverage	1.4
Approx, f used to compute achieved CC	0.474	Approximate Actual Confidence Coefficient achieved by UTL	0.37
Approximate Sample Size needed to achieve specified CC	76	97.93% UPL	1.4
97.93% USL	1.4	97.93% KM Chebyshev UPL	3.605

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (2_4_101)

General Statistics

Total Number of Observations	9	Number of Missing Observations	0
Number of Distinct Observations	9		
Number of Detects	7	Number of Non-Detects	2
Number of Distinct Detects	7	Number of Distinct Non-Detects	2
Minimum Detect	0.56	Minimum Non-Detect	0.07
Maximum Detect	260	Maximum Non-Detect	0.2
Variance Detected	11640	Percent Non-Detects	22.22%
Mean Detected	95.69	SD Detected	107.9
Mean of Detected Logged Data	3.257	SD of Detected Logged Data	2.351

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	3.424	d2max (for USL)	2.24

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.828	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.803	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.256	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.304	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	74.44	KM SD	96.65
97.93% UTL95% Coverage	405.4	97.93% KM UPL (t)	321.7
90% KM Percentile (z)	198.3	95% KM Percentile (z)	233.4
97.93% KM Percentile (z)	271.5	99% KM Percentile (z)	299.3
97.93% KM USL	290.9		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	74.44	SD	102.5
97.93% UTL95% Coverage	425.4	97.93% UPL (t)	336.7
90% Percentile (z)	205.8	95% Percentile (z)	243
97.93% Percentile (z)	283.5	99% Percentile (z)	312.9
97.93% USL	304		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.316	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.753	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.207	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.328	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.489	k star (bias corrected MLE)	0.375
Theta hat (MLE)	195.8	Theta star (bias corrected MLE)	255.5
nu hat (MLE)	6.842	nu star (bias corrected)	5.243
MLE Mean (bias corrected)	95.69		
MLE Sd (bias corrected)	156.4	97.93% Percentile of Chisquare (2kstar)	4.603

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	74.42
Maximum	260	Median	14.2
SD	102.5	CV	1.377
k hat (MLE)	0.253	k star (bias corrected MLE)	0.243
Theta hat (MLE)	294	Theta star (bias corrected MLE)	306.5
nu hat (MLE)	4.557	nu star (bias corrected)	4.371
MLE Mean (bias corrected)	74.42	MLE Sd (bias corrected)	151
		97.93% Percentile of Chisquare (2kstar)	3.664
90% Percentile	223.8	95% Percentile	363.4
97.93% Percentile	561.4	99% Percentile	736.3

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
97.93% Approx. Gamma UTL with 95% Coverage	1441	2509	97.93% Approx. Gamma UPL	772.4	1140
97.93% Gamma USL	591.9	816.4			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	74.44	SD (KM)	96.65
Variance (KM)	9340	SE of Mean (KM)	34.8
k hat (KM)	0.593	k star (KM)	0.47
nu hat (KM)	10.68	nu star (KM)	8.452
theta hat (KM)	125.5	theta star (KM)	158.5
97.93% gamma percentile (KM)	410.5	90% gamma percentile (KM)	204
95% gamma percentile (KM)	292.4	99% gamma percentile (KM)	511.1

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
97.93% Approx. Gamma UTL with 95% Coverage	1387	2294	97.93% Approx. Gamma UPL	665.9	916.1
97.93% KM Gamma Percentile	432.3	537.2	97.93% Gamma USL	514.6	665.9

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.894	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.803	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.251	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.304	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	74.45	Mean in Log Scale	2.033
SD in Original Scale	102.5	SD in Log Scale	3.169
97.93% UTL95% Coverage	393654	97.93% BCA UTL95% Coverage	260
97.93% Bootstrap (%) UTL95% Coverage	260	97.93% UPL (t)	25328
90% Percentile (z)	443.2	95% Percentile (z)	1402
97.93% Percentile (z)	4895	99% Percentile (z)	12148
97.93% USL	9237		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	1.942	97.93% KM UTL (Lognormal)95% Coverage	303903
KM SD of Logged Data	3.12	97.93% KM UPL (Lognormal)	20401
97.93% KM Percentile Lognormal (z)	4044	97.93% KM USL (Lognormal)	7557

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	74.44	Mean in Log Scale	1.905
SD in Original Scale	102.5	SD in Log Scale	3.378
97.93% UTL95% Coverage	708809	97.93% UPL (t)	38049
90% Percentile (z)	509.8	95% Percentile (z)	1739
97.93% Percentile (z)	6597	99% Percentile (z)	17385
97.93% USL	12982		

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	9	97.93% UTL with95% Coverage	260
Approx, f used to compute achieved CC	0.474	Approximate Actual Confidence Coefficient achieved by UTL	0.37
Approximate Sample Size needed to achieve specified CC	76	97.93% UPL	260
97.93% USL	260	97.93% KM Chebyshev UPL	775.1

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (2_4_105)

General Statistics

Total Number of Observations	9	Number of Missing Observations	0
Number of Distinct Observations	8		
Number of Detects	6	Number of Non-Detects	3
Number of Distinct Detects	6	Number of Distinct Non-Detects	2
Minimum Detect	0.00144	Minimum Non-Detect	0.001
Maximum Detect	0.02	Maximum Non-Detect	0.00125
Variance Detected	4.1237E-5	Percent Non-Detects	33.33%
Mean Detected	0.0081	SD Detected	0.00642
Mean of Detected Logged Data	-5.096	SD of Detected Logged Data	0.877

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	3.424	d2max (for USL)	2.24

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.877	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.259	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.325	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	0.00574	KM SD	0.00584
97.93% UTL95% Coverage	0.0257	97.93% KM UPL (t)	0.0207
90% KM Percentile (z)	0.0132	95% KM Percentile (z)	0.0153
97.93% KM Percentile (z)	0.0176	99% KM Percentile (z)	0.0193
97.93% KM USL	0.0188		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	0.00558	SD	0.00633
97.93% UTL95% Coverage	0.0273	97.93% UPL (t)	0.0218
90% Percentile (z)	0.0137	95% Percentile (z)	0.016
97.93% Percentile (z)	0.0185	99% Percentile (z)	0.0203
97.93% USL	0.0198		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.21	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.705	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.165	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.336	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.93	k star (bias corrected MLE)	1.076
Theta hat (MLE)	0.0042	Theta star (bias corrected MLE)	0.00753
nu hat (MLE)	23.15	nu star (bias corrected)	12.91
MLE Mean (bias corrected)	0.0081		
MLE Sd (bias corrected)	0.00781	97.93% Percentile of Chisquare (2kstar)	8.077

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.00144	Mean	0.00874
Maximum	0.02	Median	0.0093
SD	0.00516	CV	0.591
k hat (MLE)	2.755	k star (bias corrected MLE)	1.911
Theta hat (MLE)	0.00317	Theta star (bias corrected MLE)	0.00457
nu hat (MLE)	49.59	nu star (bias corrected)	34.39
MLE Mean (bias corrected)	0.00874	MLE Sd (bias corrected)	0.00632
		97.93% Percentile of Chisquare (2kstar)	11.27
90% Percentile	0.0172	95% Percentile	0.021
97.93% Percentile	0.0258	99% Percentile	0.0296

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
97.93% Approx. Gamma UTL with 95% Coverage	0.0419	0.0474	97.93% Approx. Gamma UPL	0.0296	0.0321
97.93% Gamma USL	0.0258	0.0276			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00574	SD (KM)	0.00584
Variance (KM)	3.4122E-5	SE of Mean (KM)	0.00213
k hat (KM)	0.964	k star (KM)	0.717
nu hat (KM)	17.35	nu star (KM)	12.9
theta hat (KM)	0.00595	theta star (KM)	0.008
97.93% gamma percentile (KM)	0.0259	90% gamma percentile (KM)	0.0143
95% gamma percentile (KM)	0.0194	99% gamma percentile (KM)	0.0314

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
97.93% Approx. Gamma UTL with 95% Coverage	0.0499	0.0599	97.93% Approx. Gamma UPL	0.0288	0.0318
97.93% KM Gamma Percentile	0.0212	0.0225	97.93% Gamma USL	0.024	0.0258

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.966	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.18	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.325	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.00563	Mean in Log Scale	-5.842
SD in Original Scale	0.00629	SD in Log Scale	1.327
97.93% UTL95% Coverage	0.273	97.93% BCA UTL95% Coverage	0.02
97.93% Bootstrap (%) UTL95% Coverage	0.02	97.93% UPL (t)	0.0865
90% Percentile (z)	0.0159	95% Percentile (z)	0.0257
97.93% Percentile (z)	0.0434	99% Percentile (z)	0.0636
97.93% USL	0.0567		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-5.7	97.93% KM UTL (Lognormal)95% Coverage	0.133
KM SD of Logged Data	1.075	97.93% KM UPL (Lognormal)	0.0524
97.93% KM Percentile Lognormal (z)	0.03	97.93% KM USL (Lognormal)	0.0372

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	0.00558	Mean in Log Scale	-5.906
SD in Original Scale	0.00633	SD in Log Scale	1.4
97.93% UTL95% Coverage	0.329	97.93% UPL (t)	0.0978
90% Percentile (z)	0.0164	95% Percentile (z)	0.0272
97.93% Percentile (z)	0.0473	99% Percentile (z)	0.0707
97.93% USL	0.0627		

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	9	97.93% UTL with95% Coverage	0.02
Approx, f used to compute achieved CC	0.474	Approximate Actual Confidence Coefficient achieved by UTL	0.37
Approximate Sample Size needed to achieve specified CC	76	97.93% UPL	0.02
97.93% USL	0.02	97.93% KM Chebyshev UPL	0.0481

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (2_4_109)

General Statistics

Total Number of Observations	9	Number of Missing Observations	0
Number of Distinct Observations	7		
Number of Detects	5	Number of Non-Detects	4
Number of Distinct Detects	5	Number of Distinct Non-Detects	2
Minimum Detect	0.00102	Minimum Non-Detect	3.0000E-4
Maximum Detect	0.01	Maximum Non-Detect	0.001
Variance Detected	1.3619E-5	Percent Non-Detects	44.44%
Mean Detected	0.0051	SD Detected	0.00369
Mean of Detected Logged Data	-5.553	SD of Detected Logged Data	0.902

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	3.424	d2max (for USL)	2.24

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.939	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.238	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.343	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	0.00297	KM SD	0.00343
97.93% UTL95% Coverage	0.0147	97.93% KM UPL (t)	0.0117
90% KM Percentile (z)	0.00736	95% KM Percentile (z)	0.00861
97.93% KM Percentile (z)	0.00996	99% KM Percentile (z)	0.0109
97.93% KM USL	0.0106		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	0.00298	SD	0.00363
97.93% UTL95% Coverage	0.0154	97.93% UPL (t)	0.0123
90% Percentile (z)	0.00763	95% Percentile (z)	0.00895
97.93% Percentile (z)	0.0104	99% Percentile (z)	0.0114
97.93% USL	0.0111		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.232	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.685	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.208	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.361	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.97	k star (bias corrected MLE)	0.921
Theta hat (MLE)	0.00259	Theta star (bias corrected MLE)	0.00554
nu hat (MLE)	19.7	nu star (bias corrected)	9.213
MLE Mean (bias corrected)	0.0051		
MLE Sd (bias corrected)	0.00532	97.93% Percentile of Chisquare (2kstar)	7.413

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.00102	Mean	0.00728
Maximum	0.01	Median	0.01
SD	0.00367	CV	0.504
k hat (MLE)	2.548	k star (bias corrected MLE)	1.773
Theta hat (MLE)	0.00286	Theta star (bias corrected MLE)	0.00411
nu hat (MLE)	45.87	nu star (bias corrected)	31.91
MLE Mean (bias corrected)	0.00728	MLE Sd (bias corrected)	0.00547
		97.93% Percentile of Chisquare (2kstar)	10.78
90% Percentile	0.0146	95% Percentile	0.0179
97.93% Percentile	0.0221	99% Percentile	0.0255

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
97.93% Approx. Gamma UTL with 95% Coverage	0.0366	0.0428	97.93% Approx. Gamma UPL	0.0257	0.0286
97.93% Gamma USL	0.0223	0.0243			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00297	SD (KM)	0.00343
Variance (KM)	1.1751E-5	SE of Mean (KM)	0.00128
k hat (KM)	0.75	k star (KM)	0.574
nu hat (KM)	13.5	nu star (KM)	10.33
theta hat (KM)	0.00396	theta star (KM)	0.00517
97.93% gamma percentile (KM)	0.0149	90% gamma percentile (KM)	0.0078
95% gamma percentile (KM)	0.0109	99% gamma percentile (KM)	0.0183

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
97.93% Approx. Gamma UTL with 95% Coverage	0.0343	0.044	97.93% Approx. Gamma UPL	0.0185	0.0212
97.93% KM Gamma Percentile	0.013	0.0141	97.93% Gamma USL	0.015	0.0166

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.947	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.181	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.343	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.00299	Mean in Log Scale	-6.683
SD in Original Scale	0.00362	SD in Log Scale	1.518
97.93% UTL95% Coverage	0.226	97.93% BCA UTL95% Coverage	0.01
97.93% Bootstrap (%) UTL95% Coverage	0.01	97.93% UPL (t)	0.0608
90% Percentile (z)	0.00876	95% Percentile (z)	0.0152
97.93% Percentile (z)	0.0277	99% Percentile (z)	0.0428
97.93% USL	0.0375		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-6.69	97.93% KM UTL (Lognormal)95% Coverage	0.154
KM SD of Logged Data	1.407	97.93% KM UPL (Lognormal)	0.0454
97.93% KM Percentile Lognormal (z)	0.0219	97.93% KM USL (Lognormal)	0.029

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	0.00298	Mean in Log Scale	-6.73
SD in Original Scale	0.00363	SD in Log Scale	1.593
97.93% UTL95% Coverage	0.28	97.93% UPL (t)	0.0704
90% Percentile (z)	0.0092	95% Percentile (z)	0.0164
97.93% Percentile (z)	0.0308	99% Percentile (z)	0.0486
97.93% USL	0.0424		

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	9	97.93% UTL with95% Coverage	0.01
Approx, f used to compute achieved CC	0.474	Approximate Actual Confidence Coefficient achieved by UTL	0.37
Approximate Sample Size needed to achieve specified CC	76	97.93% UPL	0.01
97.93% USL	0.01	97.93% KM Chebyshev UPL	0.0278

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (2_4_115)

General Statistics

Total Number of Observations	9	Number of Missing Observations	0
Number of Distinct Observations	8		
Number of Detects	8	Number of Non-Detects	1
Number of Distinct Detects	8	Number of Distinct Non-Detects	1
Minimum Detect	0.001	Minimum Non-Detect	0.001
Maximum Detect	0.27	Maximum Non-Detect	0.001
Variance Detected	0.00838	Percent Non-Detects	11.11%
Mean Detected	0.0701	SD Detected	0.0916
Mean of Detected Logged Data	-3.843	SD of Detected Logged Data	2

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	3.424	d2max (for USL)	2.24

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.785	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.818	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.237	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.283	Detected Data appear Normal at 5% Significance Level

Detected Data appear Approximate Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	0.0624	KM SD	0.0836
97.93% UTL95% Coverage	0.349	97.93% KM UPL (t)	0.276
90% KM Percentile (z)	0.17	95% KM Percentile (z)	0.2
97.93% KM Percentile (z)	0.233	99% KM Percentile (z)	0.257
97.93% KM USL	0.25		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	0.0624	SD	0.0887
97.93% UTL95% Coverage	0.366	97.93% UPL (t)	0.289
90% Percentile (z)	0.176	95% Percentile (z)	0.208
97.93% Percentile (z)	0.243	99% Percentile (z)	0.269
97.93% USL	0.261		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.252	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.76	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.181	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.308	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.531	k star (bias corrected MLE)	0.415
Theta hat (MLE)	0.132	Theta star (bias corrected MLE)	0.169
nu hat (MLE)	8.493	nu star (bias corrected)	6.641
MLE Mean (bias corrected)	0.0701		
MLE Sd (bias corrected)	0.109	97.93% Percentile of Chisquare (2kstar)	4.857

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.001	Mean	0.0634
Maximum	0.27	Median	0.017
SD	0.088	CV	1.387
k hat (MLE)	0.537	k star (bias corrected MLE)	0.432
Theta hat (MLE)	0.118	Theta star (bias corrected MLE)	0.147
nu hat (MLE)	9.664	nu star (bias corrected)	7.776
MLE Mean (bias corrected)	0.0634	MLE Sd (bias corrected)	0.0965
		97.93% Percentile of Chisquare (2kstar)	4.959
90% Percentile	0.177	95% Percentile	0.257
97.93% Percentile	0.364	99% Percentile	0.456

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
97.93% Approx. Gamma UTL with 95% Coverage	0.852	1.165	97.93% Approx. Gamma UPL	0.491	0.601
97.93% Gamma USL	0.39	0.457			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0624	SD (KM)	0.0836
Variance (KM)	0.00699	SE of Mean (KM)	0.0298
k hat (KM)	0.557	k star (KM)	0.446
nu hat (KM)	10.03	nu star (KM)	8.023
theta hat (KM)	0.112	theta star (KM)	0.14
97.93% gamma percentile (KM)	0.353	90% gamma percentile (KM)	0.173
95% gamma percentile (KM)	0.25	99% gamma percentile (KM)	0.441

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
97.93% Approx. Gamma UTL with 95% Coverage	0.927	1.321	97.93% Approx. Gamma UPL	0.47	0.58
97.93% KM Gamma Percentile	0.317	0.363	97.93% Gamma USL	0.371	0.438

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.939	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.818	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.225	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.283	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.0623	Mean in Log Scale	-4.388
SD in Original Scale	0.0888	SD in Log Scale	2.485
97.93% UTL95% Coverage	61.51	97.93% BCA UTL95% Coverage	0.27
97.93% Bootstrap (%) UTL95% Coverage	0.27	97.93% UPL (t)	7.157
90% Percentile (z)	0.3	95% Percentile (z)	0.74
97.93% Percentile (z)	1.972	99% Percentile (z)	4.023
97.93% USL	3.245		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-4.184	97.93% KM UTL (Lognormal)95% Coverage	14.84
KM SD of Logged Data	2.01	97.93% KM UPL (Lognormal)	2.605
97.93% KM Percentile Lognormal (z)	0.919	97.93% KM USL (Lognormal)	1.374

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	0.0624	Mean in Log Scale	-4.261
SD in Original Scale	0.0887	SD in Log Scale	2.252
97.93% UTL95% Coverage	31.45	97.93% UPL (t)	4.478
90% Percentile (z)	0.253	95% Percentile (z)	0.573
97.93% Percentile (z)	1.393	99% Percentile (z)	2.657
97.93% USL	2.187		

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	9	97.93% UTL with95% Coverage	0.27
Approx, f used to compute achieved CC	0.474	Approximate Actual Confidence Coefficient achieved by UTL	0.37
Approximate Sample Size needed to achieve specified CC	76	97.93% UPL	0.27
97.93% USL	0.27	97.93% KM Chebyshev UPL	0.669

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (2_4_117)

General Statistics

Total Number of Observations	9	Number of Missing Observations	0
Number of Distinct Observations	9		
Number of Detects	7	Number of Non-Detects	2
Number of Distinct Detects	7	Number of Distinct Non-Detects	2
Minimum Detect	2.6000E-4	Minimum Non-Detect	2.0000E-4
Maximum Detect	0.067	Maximum Non-Detect	0.001
Variance Detected	5.9970E-4	Percent Non-Detects	22.22%
Mean Detected	0.0238	SD Detected	0.0245
Mean of Detected Logged Data	-4.691	SD of Detected Logged Data	1.963

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	3.424	d2max (for USL)	2.24

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.893	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.803	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.206	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.304	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	0.0186	KM SD	0.0223
97.93% UTL95% Coverage	0.0948	97.93% KM UPL (t)	0.0756
90% KM Percentile (z)	0.0471	95% KM Percentile (z)	0.0552
97.93% KM Percentile (z)	0.064	99% KM Percentile (z)	0.0704
97.93% KM USL	0.0685		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	0.0186	SD	0.0236
97.93% UTL95% Coverage	0.0994	97.93% UPL (t)	0.079
90% Percentile (z)	0.0489	95% Percentile (z)	0.0574
97.93% Percentile (z)	0.0667	99% Percentile (z)	0.0735
97.93% USL	0.0715		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.268	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.743	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.237	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.325	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.642	k star (bias corrected MLE)	0.462
Theta hat (MLE)	0.0371	Theta star (bias corrected MLE)	0.0516
nu hat (MLE)	8.982	nu star (bias corrected)	6.466
MLE Mean (bias corrected)	0.0238		
MLE Sd (bias corrected)	0.0351	97.93% Percentile of Chisquare (2kstar)	5.134

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	2.6000E-4	Mean	0.0208
Maximum	0.067	Median	0.01
SD	0.0221	CV	1.063
k hat (MLE)	0.751	k star (bias corrected MLE)	0.575
Theta hat (MLE)	0.0276	Theta star (bias corrected MLE)	0.0361
nu hat (MLE)	13.52	nu star (bias corrected)	10.35
MLE Mean (bias corrected)	0.0208	MLE Sd (bias corrected)	0.0274
		97.93% Percentile of Chisquare (2kstar)	5.758
90% Percentile	0.0545	95% Percentile	0.0758
97.93% Percentile	0.104	99% Percentile	0.128

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
97.93% Approx. Gamma UTL with 95% Coverage	0.223	0.303	97.93% Approx. Gamma UPL	0.135	0.166
97.93% Gamma USL	0.11	0.13			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0186	SD (KM)	0.0223
Variance (KM)	4.9613E-4	SE of Mean (KM)	0.00802
k hat (KM)	0.696	k star (KM)	0.538
nu hat (KM)	12.52	nu star (KM)	9.68
theta hat (KM)	0.0267	theta star (KM)	0.0345
97.93% gamma percentile (KM)	0.096	90% gamma percentile (KM)	0.0495
95% gamma percentile (KM)	0.0695	99% gamma percentile (KM)	0.118

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
97.93% Approx. Gamma UTL with 95% Coverage	0.291	0.437	97.93% Approx. Gamma UPL	0.146	0.188
97.93% KM Gamma Percentile	0.0982	0.116	97.93% Gamma USL	0.115	0.141

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.899	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.803	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.259	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.304	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.0186	Mean in Log Scale	-5.622
SD in Original Scale	0.0236	SD in Log Scale	2.527
97.93% UTL95% Coverage	20.72	97.93% BCA UTL95% Coverage	0.067
97.93% Bootstrap (%) UTL95% Coverage	0.067	97.93% UPL (t)	2.323
90% Percentile (z)	0.0923	95% Percentile (z)	0.231
97.93% Percentile (z)	0.626	99% Percentile (z)	1.293
97.93% USL	1.039		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-5.527	97.93% KM UTL (Lognormal)95% Coverage	8.517
KM SD of Logged Data	2.24	97.93% KM UPL (Lognormal)	1.225
97.93% KM Percentile Lognormal (z)	0.383	97.93% KM USL (Lognormal)	0.601

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	0.0186	Mean in Log Scale	-5.516
SD in Original Scale	0.0236	SD in Log Scale	2.395
97.93% UTL95% Coverage	14.64	97.93% UPL (t)	1.84
90% Percentile (z)	0.0865	95% Percentile (z)	0.207
97.93% Percentile (z)	0.531	99% Percentile (z)	1.056
97.93% USL	0.859		

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	9	97.93% UTL with95% Coverage	0.067
Approx, f used to compute achieved CC	0.474	Approximate Actual Confidence Coefficient achieved by UTL	0.37
Approximate Sample Size needed to achieve specified CC	76	97.93% UPL	0.067
97.93% USL	0.067	97.93% KM Chebyshev UPL	0.18

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (2_4_119)

General Statistics

Total Number of Observations	9	Number of Missing Observations	0
Number of Distinct Observations	8		
Number of Detects	6	Number of Non-Detects	3
Number of Distinct Detects	6	Number of Distinct Non-Detects	2
Minimum Detect	0.0012	Minimum Non-Detect	0.0018
Maximum Detect	0.055	Maximum Non-Detect	0.005
Variance Detected	3.9290E-4	Percent Non-Detects	33.33%
Mean Detected	0.0204	SD Detected	0.0198
Mean of Detected Logged Data	-4.449	SD of Detected Logged Data	1.349

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	3.424	d2max (for USL)	2.24

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.899	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.234	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.325	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	0.014	KM SD	0.0173
97.93% UTL95% Coverage	0.0733	97.93% KM UPL (t)	0.0583
90% KM Percentile (z)	0.0362	95% KM Percentile (z)	0.0425
97.93% KM Percentile (z)	0.0493	99% KM Percentile (z)	0.0543
97.93% KM USL	0.0528		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	0.0142	SD	0.0182
97.93% UTL95% Coverage	0.0765	97.93% UPL (t)	0.0608
90% Percentile (z)	0.0375	95% Percentile (z)	0.0442
97.93% Percentile (z)	0.0513	99% Percentile (z)	0.0565
97.93% USL	0.055		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.144	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.715	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.115	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.341	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.034	k star (bias corrected MLE)	0.628
Theta hat (MLE)	0.0197	Theta star (bias corrected MLE)	0.0325
nu hat (MLE)	12.41	nu star (bias corrected)	7.536
MLE Mean (bias corrected)	0.0204		
MLE Sd (bias corrected)	0.0257	97.93% Percentile of Chisquare (2kstar)	6.033

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0012	Mean	0.0169
Maximum	0.055	Median	0.01
SD	0.0165	CV	0.975
k hat (MLE)	1.327	k star (bias corrected MLE)	0.958
Theta hat (MLE)	0.0128	Theta star (bias corrected MLE)	0.0177
nu hat (MLE)	23.88	nu star (bias corrected)	17.25
MLE Mean (bias corrected)	0.0169	MLE Sd (bias corrected)	0.0173
		97.93% Percentile of Chisquare (2kstar)	7.576
90% Percentile	0.0394	95% Percentile	0.0515
97.93% Percentile	0.0669	99% Percentile	0.0796

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
97.93% Approx. Gamma UTL with 95% Coverage	0.126	0.15	97.93% Approx. Gamma UPL	0.0817	0.0911
97.93% Gamma USL	0.0685	0.0746			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.014	SD (KM)	0.0173
Variance (KM)	3.0007E-4	SE of Mean (KM)	0.00633
k hat (KM)	0.652	k star (KM)	0.509
nu hat (KM)	11.74	nu star (KM)	9.16
theta hat (KM)	0.0214	theta star (KM)	0.0275
97.93% gamma percentile (KM)	0.0742	90% gamma percentile (KM)	0.0377
95% gamma percentile (KM)	0.0534	99% gamma percentile (KM)	0.0919

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
97.93% Approx. Gamma UTL with 95% Coverage	0.168	0.217	97.93% Approx. Gamma UPL	0.0896	0.103
97.93% KM Gamma Percentile	0.0626	0.0681	97.93% Gamma USL	0.0722	0.0804

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.954	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.174	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.325	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.014	Mean in Log Scale	-5.191
SD in Original Scale	0.0183	SD in Log Scale	1.559
97.93% UTL95% Coverage	1.16	97.93% BCA UTL95% Coverage	0.055
97.93% Bootstrap (%) UTL95% Coverage	0.055	97.93% UPL (t)	0.301
90% Percentile (z)	0.0411	95% Percentile (z)	0.0724
97.93% Percentile (z)	0.134	99% Percentile (z)	0.209
97.93% USL	0.183		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-5.208	97.93% KM UTL (Lognormal)95% Coverage	0.841
KM SD of Logged Data	1.47	97.93% KM UPL (Lognormal)	0.235
97.93% KM Percentile Lognormal (z)	0.11	97.93% KM USL (Lognormal)	0.147

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	0.0142	Mean in Log Scale	-5.077
SD in Original Scale	0.0182	SD in Log Scale	1.453
97.93% UTL95% Coverage	0.902	97.93% UPL (t)	0.256
90% Percentile (z)	0.0401	95% Percentile (z)	0.068
97.93% Percentile (z)	0.121	99% Percentile (z)	0.183
97.93% USL	0.162		

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	9	97.93% UTL with95% Coverage	0.055
Approx, f used to compute achieved CC	0.474	Approximate Actual Confidence Coefficient achieved by UTL	0.37
Approximate Sample Size needed to achieve specified CC	76	97.93% UPL	0.055
97.93% USL	0.055	97.93% KM Chebyshev UPL	0.14

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (2_4_121)

General Statistics

Total Number of Observations	9	Number of Missing Observations	0
Number of Distinct Observations	9		
Number of Detects	8	Number of Non-Detects	1
Number of Distinct Detects	8	Number of Distinct Non-Detects	1
Minimum Detect	0.025	Minimum Non-Detect	0.25
Maximum Detect	170	Maximum Non-Detect	0.25
Variance Detected	3883	Percent Non-Detects	11.11%
Mean Detected	48.03	SD Detected	62.31
Mean of Detected Logged Data	1.895	SD of Detected Logged Data	3.119

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	3.424	d2max (for USL)	2.24

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.813	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.818	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.238	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.283	Detected Data appear Normal at 5% Significance Level

Detected Data appear Approximate Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	42.7	KM SD	56.99
97.93% UTL95% Coverage	237.8	97.93% KM UPL (t)	188.5
90% KM Percentile (z)	115.7	95% KM Percentile (z)	136.4
97.93% KM Percentile (z)	158.9	99% KM Percentile (z)	175.3
97.93% KM USL	170.4		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	42.71	SD	60.44
97.93% UTL95% Coverage	249.6	97.93% UPL (t)	197.3
90% Percentile (z)	120.2	95% Percentile (z)	142.1
97.93% Percentile (z)	166	99% Percentile (z)	183.3
97.93% USL	178.1		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.254	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.79	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.181	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.315	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.342	k star (bias corrected MLE)	0.297
Theta hat (MLE)	140.7	Theta star (bias corrected MLE)	161.9
nu hat (MLE)	5.464	nu star (bias corrected)	4.748
MLE Mean (bias corrected)	48.03		
MLE Sd (bias corrected)	88.17	97.93% Percentile of Chisquare (2kstar)	4.075

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	42.7
Maximum	170	Median	8.26
SD	60.45	CV	1.416
k hat (MLE)	0.272	k star (bias corrected MLE)	0.255
Theta hat (MLE)	157.3	Theta star (bias corrected MLE)	167.4
nu hat (MLE)	4.887	nu star (bias corrected)	4.591
MLE Mean (bias corrected)	42.7	MLE Sd (bias corrected)	84.54
		97.93% Percentile of Chisquare (2kstar)	3.761
90% Percentile	128	95% Percentile	205.4
97.93% Percentile	314.8	99% Percentile	411.1

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
97.93% Approx. Gamma UTL with 95% Coverage	812.2	1374	97.93% Approx. Gamma UPL	436.4	628.7
97.93% Gamma USL	334.7	451.6			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	42.7	SD (KM)	56.99
Variance (KM)	3248	SE of Mean (KM)	20.31
k hat (KM)	0.561	k star (KM)	0.448
nu hat (KM)	10.11	nu star (KM)	8.07
theta hat (KM)	76.06	theta star (KM)	95.24
97.93% gamma percentile (KM)	240.8	90% gamma percentile (KM)	118.1
95% gamma percentile (KM)	170.5	99% gamma percentile (KM)	300.7

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
97.93% Approx. Gamma UTL with 95% Coverage	804.1	1343	97.93% Approx. Gamma UPL	384.8	533
97.93% KM Gamma Percentile	249.1	311.2	97.93% Gamma USL	296.9	386.4

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.909	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.818	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.217	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.283	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	42.7	Mean in Log Scale	1.319
SD in Original Scale	60.45	SD in Log Scale	3.391
97.93% UTL95% Coverage	413057	97.93% BCA UTL95% Coverage	170
97.93% Bootstrap (%) UTL95% Coverage	170	97.93% UPL (t)	21917
90% Percentile (z)	288.7	95% Percentile (z)	989.7
97.93% Percentile (z)	3774	99% Percentile (z)	9983
97.93% USL	7446		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	1.275	97.93% KM UTL (Lognormal)95% Coverage	254632
KM SD of Logged Data	3.263	97.93% KM UPL (Lognormal)	15099
97.93% KM Percentile Lognormal (z)	2779	97.93% KM USL (Lognormal)	5344

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	42.71	Mean in Log Scale	1.453
SD in Original Scale	60.44	SD in Log Scale	3.205
97.93% UTL95% Coverage	249232	97.93% UPL (t)	15546
90% Percentile (z)	259.9	95% Percentile (z)	832.6
97.93% Percentile (z)	2949	99% Percentile (z)	7395
97.93% USL	5605		

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	9	97.93% UTL with95% Coverage	170
Approx, f used to compute achieved CC	0.474	Approximate Actual Confidence Coefficient achieved by UTL	0.37
Approximate Sample Size needed to achieve specified CC	76	97.93% UPL	170
97.93% USL	170	97.93% KM Chebyshev UPL	455.9

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (2_4_123)

General Statistics

Total Number of Observations	9	Number of Missing Observations	0
Number of Distinct Observations	9		
Number of Detects	7	Number of Non-Detects	2
Number of Distinct Detects	7	Number of Distinct Non-Detects	2
Minimum Detect	2.1000E-4	Minimum Non-Detect	5.0000E-4
Maximum Detect	0.054	Maximum Non-Detect	7.0000E-4
Variance Detected	4.0477E-4	Percent Non-Detects	22.22%
Mean Detected	0.0196	SD Detected	0.0201
Mean of Detected Logged Data	-4.993	SD of Detected Logged Data	2.085

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	3.424	d2max (for USL)	2.24

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.902	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.803	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.207	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.304	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	0.0153	KM SD	0.0183
97.93% UTL95% Coverage	0.078	97.93% KM UPL (t)	0.0621
90% KM Percentile (z)	0.0388	95% KM Percentile (z)	0.0454
97.93% KM Percentile (z)	0.0526	99% KM Percentile (z)	0.0579
97.93% KM USL	0.0563		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	0.0153	SD	0.0194
97.93% UTL95% Coverage	0.0817	97.93% UPL (t)	0.0649
90% Percentile (z)	0.0402	95% Percentile (z)	0.0472
97.93% Percentile (z)	0.0549	99% Percentile (z)	0.0604
97.93% USL	0.0588		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.31	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.746	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.233	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.326	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.584	k star (bias corrected MLE)	0.429
Theta hat (MLE)	0.0335	Theta star (bias corrected MLE)	0.0457
nu hat (MLE)	8.183	nu star (bias corrected)	6.009
MLE Mean (bias corrected)	0.0196		
MLE Sd (bias corrected)	0.0299	97.93% Percentile of Chisquare (2kstar)	4.942

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	2.1000E-4	Mean	0.0175
Maximum	0.054	Median	0.01
SD	0.0179	CV	1.026
k hat (MLE)	0.703	k star (bias corrected MLE)	0.542
Theta hat (MLE)	0.0249	Theta star (bias corrected MLE)	0.0322
nu hat (MLE)	12.65	nu star (bias corrected)	9.764
MLE Mean (bias corrected)	0.0175	MLE Sd (bias corrected)	0.0237
		97.93% Percentile of Chisquare (2kstar)	5.585
90% Percentile	0.0465	95% Percentile	0.0652
97.93% Percentile	0.09	99% Percentile	0.111

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
97.93% Approx. Gamma UTL with 95% Coverage	0.197	0.275	97.93% Approx. Gamma UPL	0.119	0.149
97.93% Gamma USL	0.096	0.116			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0153	SD (KM)	0.0183
Variance (KM)	3.3489E-4	SE of Mean (KM)	0.00659
k hat (KM)	0.699	k star (KM)	0.54
nu hat (KM)	12.58	nu star (KM)	9.719
theta hat (KM)	0.0219	theta star (KM)	0.0283
97.93% gamma percentile (KM)	0.0789	90% gamma percentile (KM)	0.0407
95% gamma percentile (KM)	0.0572	99% gamma percentile (KM)	0.0973

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
97.93% Approx. Gamma UTL with 95% Coverage	0.245	0.367	97.93% Approx. Gamma UPL	0.122	0.157
97.93% KM Gamma Percentile	0.0817	0.0965	97.93% Gamma USL	0.0961	0.117

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.891	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.803	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.261	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.304	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.0153	Mean in Log Scale	-5.736
SD in Original Scale	0.0194	SD in Log Scale	2.331
97.93% UTL95% Coverage	9.451	97.93% BCA UTL95% Coverage	0.054
97.93% Bootstrap (%) UTL95% Coverage	0.054	97.93% UPL (t)	1.256
90% Percentile (z)	0.064	95% Percentile (z)	0.149
97.93% Percentile (z)	0.375	99% Percentile (z)	0.731
97.93% USL	0.598		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-5.765	97.93% KM UTL (Lognormal)95% Coverage	6.548
KM SD of Logged Data	2.233	97.93% KM UPL (Lognormal)	0.948
97.93% KM Percentile Lognormal (z)	0.298	97.93% KM USL (Lognormal)	0.466

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	0.0153	Mean in Log Scale	-5.689
SD in Original Scale	0.0194	SD in Log Scale	2.275
97.93% UTL95% Coverage	8.162	97.93% UPL (t)	1.139
90% Percentile (z)	0.0624	95% Percentile (z)	0.143
97.93% Percentile (z)	0.35	99% Percentile (z)	0.672
97.93% USL	0.552		

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	9	97.93% UTL with95% Coverage	0.054
Approx, f used to compute achieved CC	0.474	Approximate Actual Confidence Coefficient achieved by UTL	0.37
Approximate Sample Size needed to achieve specified CC	76	97.93% UPL	0.054
97.93% USL	0.054	97.93% KM Chebyshev UPL	0.148

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (2_4_131)

General Statistics

Total Number of Observations	9	Number of Missing Observations	0
Number of Distinct Observations	9		
Number of Detects	8	Number of Non-Detects	1
Number of Distinct Detects	8	Number of Distinct Non-Detects	1
Minimum Detect	4.2000E-4	Minimum Non-Detect	0.0025
Maximum Detect	0.17	Maximum Non-Detect	0.0025
Variance Detected	0.00354	Percent Non-Detects	11.11%
Mean Detected	0.0496	SD Detected	0.0595
Mean of Detected Logged Data	-4.212	SD of Detected Logged Data	2.1

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	3.424	d2max (for USL)	2.24

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.834	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.818	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.24	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.283	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	0.0441	KM SD	0.0547
97.93% UTL95% Coverage	0.231	97.93% KM UPL (t)	0.184
90% KM Percentile (z)	0.114	95% KM Percentile (z)	0.134
97.93% KM Percentile (z)	0.156	99% KM Percentile (z)	0.171
97.93% KM USL	0.167		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	0.0442	SD	0.0579
97.93% UTL95% Coverage	0.243	97.93% UPL (t)	0.192
90% Percentile (z)	0.118	95% Percentile (z)	0.139
97.93% Percentile (z)	0.162	99% Percentile (z)	0.179
97.93% USL	0.174		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.303	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.761	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.205	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.309	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.522	k star (bias corrected MLE)	0.41
Theta hat (MLE)	0.095	Theta star (bias corrected MLE)	0.121
nu hat (MLE)	8.355	nu star (bias corrected)	6.555
MLE Mean (bias corrected)	0.0496		
MLE Sd (bias corrected)	0.0775	97.93% Percentile of Chisquare (2kstar)	4.824

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	4.2000E-4	Mean	0.0452
Maximum	0.17	Median	0.0114
SD	0.0572	CV	1.265
k hat (MLE)	0.541	k star (bias corrected MLE)	0.435
Theta hat (MLE)	0.0835	Theta star (bias corrected MLE)	0.104
nu hat (MLE)	9.744	nu star (bias corrected)	7.829
MLE Mean (bias corrected)	0.0452	MLE Sd (bias corrected)	0.0686
		97.93% Percentile of Chisquare (2kstar)	4.976
90% Percentile	0.126	95% Percentile	0.182
97.93% Percentile	0.259	99% Percentile	0.324

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
97.93% Approx. Gamma UTL with 95% Coverage	0.607	0.848	97.93% Approx. Gamma UPL	0.351	0.438
97.93% Gamma USL	0.279	0.333			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0441	SD (KM)	0.0547
Variance (KM)	0.00299	SE of Mean (KM)	0.0195
k hat (KM)	0.652	k star (KM)	0.509
nu hat (KM)	11.73	nu star (KM)	9.156
theta hat (KM)	0.0677	theta star (KM)	0.0868
97.93% gamma percentile (KM)	0.234	90% gamma percentile (KM)	0.119
95% gamma percentile (KM)	0.169	99% gamma percentile (KM)	0.29

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
97.93% Approx. Gamma UTL with 95% Coverage	0.677	0.997	97.93% Approx. Gamma UPL	0.342	0.433
97.93% KM Gamma Percentile	0.23	0.269	97.93% Gamma USL	0.269	0.325

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.924	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.818	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.234	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.283	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.0441	Mean in Log Scale	-4.601
SD in Original Scale	0.058	SD in Log Scale	2.285
97.93% UTL95% Coverage	25.13	97.93% BCA UTL95% Coverage	0.17
97.93% Bootstrap (%) UTL95% Coverage	0.17	97.93% UPL (t)	3.474
90% Percentile (z)	0.188	95% Percentile (z)	0.431
97.93% Percentile (z)	1.062	99% Percentile (z)	2.045
97.93% USL	1.679		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-4.608	97.93% KM UTL (Lognormal)95% Coverage	16.5
KM SD of Logged Data	2.164	97.93% KM UPL (Lognormal)	2.533
97.93% KM Percentile Lognormal (z)	0.824	97.93% KM USL (Lognormal)	1.272

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	0.0442	Mean in Log Scale	-4.487
SD in Original Scale	0.0579	SD in Log Scale	2.13
97.93% UTL95% Coverage	16.58	97.93% UPL (t)	2.621
90% Percentile (z)	0.173	95% Percentile (z)	0.374
97.93% Percentile (z)	0.868	99% Percentile (z)	1.599
97.93% USL	1.33		

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	9	97.93% UTL with95% Coverage	0.17
Approx, f used to compute achieved CC	0.474	Approximate Actual Confidence Coefficient achieved by UTL	0.37
Approximate Sample Size needed to achieve specified CC	76	97.93% UPL	0.17
97.93% USL	0.17	97.93% KM Chebyshev UPL	0.441

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (2_4_135)

General Statistics

Total Number of Observations	9	Number of Missing Observations	0
Number of Distinct Observations	9		
Number of Detects	8	Number of Non-Detects	1
Number of Distinct Detects	8	Number of Distinct Non-Detects	1
Minimum Detect	0.66	Minimum Non-Detect	0.94
Maximum Detect	27	Maximum Non-Detect	0.94
Variance Detected	122.3	Percent Non-Detects	11.11%
Mean Detected	11.74	SD Detected	11.06
Mean of Detected Logged Data	1.755	SD of Detected Logged Data	1.499

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	3.424	d2max (for USL)	2.24

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.852	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.818	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.225	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.283	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	10.52	KM SD	10.35
97.93% UTL95% Coverage	45.95	97.93% KM UPL (t)	36.99
90% KM Percentile (z)	23.78	95% KM Percentile (z)	27.54
97.93% KM Percentile (z)	31.62	99% KM Percentile (z)	34.59
97.93% KM USL	33.7		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	10.49	SD	11.01
97.93% UTL95% Coverage	48.18	97.93% UPL (t)	38.65
90% Percentile (z)	24.6	95% Percentile (z)	28.59
97.93% Percentile (z)	32.94	99% Percentile (z)	36.09
97.93% USL	35.14		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.416	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.742	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.214	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.303	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.834	k star (bias corrected MLE)	0.605
Theta hat (MLE)	14.08	Theta star (bias corrected MLE)	19.42
nu hat (MLE)	13.34	nu star (bias corrected)	9.674
MLE Mean (bias corrected)	11.74		
MLE Sd (bias corrected)	15.1	97.93% Percentile of Chisquare (2kstar)	5.913

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.66	Mean	10.53
Maximum	27	Median	5.13
SD	10.97	CV	1.041
k hat (MLE)	0.737	k star (bias corrected MLE)	0.566
Theta hat (MLE)	14.28	Theta star (bias corrected MLE)	18.62
nu hat (MLE)	13.27	nu star (bias corrected)	10.18
MLE Mean (bias corrected)	10.53	MLE Sd (bias corrected)	14
		97.93% Percentile of Chisquare (2kstar)	5.709
90% Percentile	27.75	95% Percentile	38.71
97.93% Percentile	53.15	99% Percentile	65.35

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
97.93% Approx. Gamma UTL with 95% Coverage	118.3	155.9	97.93% Approx. Gamma UPL	70.97	84.98
97.93% Gamma USL	57.41	66.29			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	10.52	SD (KM)	10.35
Variance (KM)	107.1	SE of Mean (KM)	3.687
k hat (KM)	1.034	k star (KM)	0.763
nu hat (KM)	18.61	nu star (KM)	13.74
theta hat (KM)	10.18	theta star (KM)	13.78
97.93% gamma percentile (KM)	46.13	90% gamma percentile (KM)	25.87
95% gamma percentile (KM)	34.71	99% gamma percentile (KM)	55.66

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
97.93% Approx. Gamma UTL with 95% Coverage	119	157.4	97.93% Approx. Gamma UPL	64.86	76.57
97.93% KM Gamma Percentile	45.93	51.24	97.93% Gamma USL	52.73	60.13

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.88	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.818	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.189	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.283	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	10.54	Mean in Log Scale	1.546
SD in Original Scale	10.96	SD in Log Scale	1.536
97.93% UTL95% Coverage	903.7	97.93% BCA UTL95% Coverage	27
97.93% Bootstrap (%) UTL95% Coverage	27	97.93% UPL (t)	239
90% Percentile (z)	33.62	95% Percentile (z)	58.74
97.93% Percentile (z)	107.7	99% Percentile (z)	167.4
97.93% USL	146.5		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	1.528	97.93% KM UTL (Lognormal)95% Coverage	709.6
KM SD of Logged Data	1.471	97.93% KM UPL (Lognormal)	198.6
97.93% KM Percentile Lognormal (z)	92.57	97.93% KM USL (Lognormal)	124.3

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	10.49	Mean in Log Scale	1.477
SD in Original Scale	11.01	SD in Log Scale	1.633
97.93% UTL95% Coverage	1173	97.93% UPL (t)	285.3
90% Percentile (z)	35.48	95% Percentile (z)	64.22
97.93% Percentile (z)	122.3	99% Percentile (z)	195.4
97.93% USL	169.7		

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	9	97.93% UTL with95% Coverage	27
Approx, f used to compute achieved CC	0.474	Approximate Actual Confidence Coefficient achieved by UTL	0.37
Approximate Sample Size needed to achieve specified CC	76	97.93% UPL	27
97.93% USL	27	97.93% KM Chebyshev UPL	85.54

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

VALUES (2_4_145)

General Statistics

Total Number of Observations	9	Number of Missing Observations	0
Number of Distinct Observations	9		
Number of Detects	7	Number of Non-Detects	2
Number of Distinct Detects	7	Number of Distinct Non-Detects	2
Minimum Detect	5.6000E-4	Minimum Non-Detect	0.002
Maximum Detect	0.18	Maximum Non-Detect	0.0025
Variance Detected	0.00463	Percent Non-Detects	22.22%
Mean Detected	0.0712	SD Detected	0.068
Mean of Detected Logged Data	-3.702	SD of Detected Logged Data	2.17

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	3.424	d2max (for USL)	2.24

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.916	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.803	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.201	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.304	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	0.0555	KM SD	0.0628
97.93% UTL95% Coverage	0.271	97.93% KM UPL (t)	0.216
90% KM Percentile (z)	0.136	95% KM Percentile (z)	0.159
97.93% KM Percentile (z)	0.184	99% KM Percentile (z)	0.202
97.93% KM USL	0.196		

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	0.0556	SD	0.0665
97.93% UTL95% Coverage	0.283	97.93% UPL (t)	0.226
90% Percentile (z)	0.141	95% Percentile (z)	0.165
97.93% Percentile (z)	0.191	99% Percentile (z)	0.21
97.93% USL	0.205		

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.384	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.746	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.266	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.326	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.585	k star (bias corrected MLE)	0.43
Theta hat (MLE)	0.122	Theta star (bias corrected MLE)	0.166
nu hat (MLE)	8.196	nu star (bias corrected)	6.017
MLE Mean (bias corrected)	0.0712		
MLE Sd (bias corrected)	0.109	97.93% Percentile of Chisquare (2kstar)	4.945

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	5.6000E-4	Mean	0.0576
Maximum	0.18	Median	0.0204
SD	0.0648	CV	1.126
k hat (MLE)	0.591	k star (bias corrected MLE)	0.468
Theta hat (MLE)	0.0974	Theta star (bias corrected MLE)	0.123
nu hat (MLE)	10.64	nu star (bias corrected)	8.424
MLE Mean (bias corrected)	0.0576	MLE Sd (bias corrected)	0.0841
		97.93% Percentile of Chisquare (2kstar)	5.17
90% Percentile	0.158	95% Percentile	0.226
97.93% Percentile	0.318	99% Percentile	0.396

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
97.93% Approx. Gamma UTL with 95% Coverage	0.734	1.028	97.93% Approx. Gamma UPL	0.43	0.539
97.93% Gamma USL	0.344	0.413			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0555	SD (KM)	0.0628
Variance (KM)	0.00395	SE of Mean (KM)	0.0226
k hat (KM)	0.779	k star (KM)	0.594
nu hat (KM)	14.03	nu star (KM)	10.69
theta hat (KM)	0.0712	theta star (KM)	0.0934
97.93% gamma percentile (KM)	0.274	90% gamma percentile (KM)	0.145
95% gamma percentile (KM)	0.2	99% gamma percentile (KM)	0.335

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
97.93% Approx. Gamma UTL with 95% Coverage	0.907	1.399	97.93% Approx. Gamma UPL	0.453	0.594
97.93% KM Gamma Percentile	0.302	0.364	97.93% Gamma USL	0.355	0.443

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.861	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.803	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.274	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.304	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.0555	Mean in Log Scale	-4.467
SD in Original Scale	0.0666	SD in Log Scale	2.416
97.93% UTL95% Coverage	44.96	97.93% BCA UTL95% Coverage	0.18
97.93% Bootstrap (%) UTL95% Coverage	0.18	97.93% UPL (t)	5.55
90% Percentile (z)	0.254	95% Percentile (z)	0.611
97.93% Percentile (z)	1.585	99% Percentile (z)	3.169
97.93% USL	2.572		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-4.543	97.93% KM UTL (Lognormal)95% Coverage	35.57
KM SD of Logged Data	2.37	97.93% KM UPL (Lognormal)	4.57
97.93% KM Percentile Lognormal (z)	1.337	97.93% KM USL (Lognormal)	2.149

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	0.0556	Mean in Log Scale	-4.39
SD in Original Scale	0.0665	SD in Log Scale	2.323
97.93% UTL95% Coverage	35.34	97.93% UPL (t)	4.728
90% Percentile (z)	0.244	95% Percentile (z)	0.566
97.93% Percentile (z)	1.417	99% Percentile (z)	2.759
97.93% USL	2.257		

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	9	97.93% UTL with95% Coverage	0.18
Approx, f used to compute achieved CC	0.474	Approximate Actual Confidence Coefficient achieved by UTL	0.37
Approximate Sample Size needed to achieve specified CC	76	97.93% UPL	0.18
97.93% USL	0.18	97.93% KM Chebyshev UPL	0.511

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

Appendix D: SPSS Output

Constituent	ChemicalGroup	UNIT	Alluvium	Bedrock	Total	KW_CHISQUARE_4layer_FULL	KW_DF_4layer_FULL	KW_SIGNIFICANCE_4layer_FULL	LOGANOVA_SUMSQUARE_4layer_FULL	LOGANOVA_DF_4layer_FULL	LOGANOVA_MEANSQUARE_4layer_FULL	LOGANOVA_F_4layer_FULL	LOGANOVA_SIG_4layer_FULL	KW_CHISQUARE_4layer_WOND	KW_DF_4layer_WOND
aluminum	Total Metals	mg/L	15	9	24	9.618404137	1	0.001926371	93.08510589	1	93.08510589	18.6553314	0.00027667	11.3422292	1
aluminum (dissolved)	Dissolved Metals	mg/L	15	9	24	7.327433628	1	0.006790995	34.27637967	1	34.27637967	9.48612437	0.00547557	3.152727273	1
antimony	Total Metals	mg/L	15	9	24	7.351258907	1	0.006701581	2.689333353	1	2.689333353	11.1998306	0.00292012	1.5	1
antimony (dissolved)	Dissolved Metals	mg/L	15	9	24	7.756440281	1	0.005352134	2.068622248	1	2.068622248	10.1522105	0.00426802	2.4	1
arsenic	Total Metals	mg/L	15	9	24	11.6075142	1	0.000656859	10.13113496	1	10.13113496	20.4566279	0.0001682	11.44397864	1
arsenic (dissolved)	Dissolved Metals	mg/L	15	9	24	6.158363698	1	0.013079215	1.578565396	1	1.578565396	5.08618315	0.03440216	3.107916929	1
barium	Total Metals	mg/L	15	9	24	2.189434037	1	0.138960368	20.52961461	1	20.52961461	9.94831192	0.00460317	2.189434037	1
barium (dissolved)	Dissolved Metals	mg/L	15	9	24	0.043860673	1	0.834113044	0.896621325	1	0.896621325	1.13567219	0.29812512	0.043860673	1
beryllium	Total Metals	mg/L	15	9	24	11.85536381	1	0.000574955	17.56475263	1	17.56475263	23.2560415	8.11E-05	3.75	1
cadmium	Total Metals	mg/L	15	9	24	1.360371779	1	0.24347306	1.371844048	1	1.371844048	2.18870379	0.15320404	1.333333333	1
calcium	Total Metals	mg/L	15	9	24	0.470426756	1	0.492790907	0.334039255	1	0.334039255	0.33156353	0.57058378	0.470426756	1
calcium (dissolved)	Dissolved Metals	mg/L	15	9	24	0.20026121	1	0.654510087	0.07056188	1	0.07056188	0.09289602	0.76339192	0.20026121	1
chromium	Total Metals	mg/L	15	9	24	5.893497364	1	0.01519689	29.92795303	1	29.92795303	16.8670305	0.00046464	5.485714286	1
chromium (dissolved)	Dissolved Metals	mg/L	15	9	24	1.220451405	1	0.269272082	2.572197871	1	2.572197871	2.70985449	0.11394256	1.928571429	1
cobalt	Total Metals	mg/L	15	9	24	5.006530257	1	0.02525187	31.44162623	1	31.44162623	15.5318795	0.00069629	7.052398317	1
cobalt (dissolved)	Dissolved Metals	mg/L	15	9	24	2.410893056	1	0.120493609	4.971576381	1	4.971576381	3.88195136	0.06152224	2.781803434	1
copper	Total Metals	mg/L	15	9	24	6.92874301	1	0.008482128	11.0600055	1	11.0600055	11.2310333	0.00288793	6.223529412	1
copper (dissolved)	Dissolved Metals	mg/L	15	9	24	3.57620097	1	0.058613052	3.384391102	1	3.384391102	3.2900576	0.08336488	1.607978463	1
iron	Total Metals	mg/L	15	9	24	7.52682809	1	0.006078684	76.91624615	1	76.91624615	16.6336625	0.00049813	6.424825175	1
iron (dissolved)	Dissolved Metals	mg/L	15	9	24	10.36159559	1	0.001286639	33.66199023	1	33.66199023	12.5120903	0.00185095	6.358496241	1
lead	Total Metals	mg/L	15	9	24	4.115475835	1	0.04249257	17.98261295	1	17.98261295	10.0082106	0.0045018	2.892857143	1
lead (dissolved)	Dissolved Metals	mg/L	15	9	24	5.024887589	1	0.024985547	2.604120026	1	2.604120026	4.25358022	0.0511711	3.857142857	1
magnesium	Total Metals	mg/L	15	9	24	0.072219799	1	0.788131756	4.239221375	1	4.239221375	3.1357178	0.09045082	0.072219799	1
magnesium (dissolved)	Dissolved Metals	mg/L	15	9	24	1.979043724	1	0.159491185	11.97056829	1	11.97056829	12.5896015	0.00180291	1.979043724	1
manganese	Total Metals	mg/L	15	9	24	1.50997852	1	0.219142364	1.562602113	1	1.562602113	0.85810638	0.36432038	1.50997852	1
manganese (dissolved)	Dissolved Metals	mg/L	15	9	24	0.228949159	1	0.632304108	2.926170247	1	2.926170247	1.47565763	0.23733289	0.001048922	1
nickel	Total Metals	mg/L	15	9	24	5.14316686	1	0.023338038	18.154771	1	18.154771	10.1844869	0.00421748	4.729493018	1
nickel (dissolved)	Dissolved Metals	mg/L	15	9	24	0.805604203	1	0.369423069	1.371040028	1	1.371040028	1.72428998	0.20267401	2.215098242	1
nitrate	Other Compound	mg/L	15	9	24	0.000934817	1	0.97560866	0.05325771	1	0.05325771	0.07490047	0.78688395	2	1
potassium	Total Metals	mg/L	15	9	24	8.029204139	1	0.004602906	16.9636566	1	16.9636566	16.8423335	0.00046807	7.835169492	1
potassium (dissolved)	Dissolved Metals	mg/L	15	9	24	8.381776809	1	0.003790017	9.729784772	1	9.729784772	15.6185968	0.00067791	7.701788774	1
silver	Total Metals	mg/L	15	9	24	0.208053536	1	0.648297319	0.002405414	1	0.002405414	0.00178929	0.96664115	3.428571429	1
silver (dissolved)	Dissolved Metals	mg/L	15	9	24	0.680693642	1	0.409347973	1.343255702	1	1.343255702	1.34842671	0.25799827	0.2	1
sodium	Total Metals	mg/L	15	9	24	2.14073751	1	0.143432922	1.476230319	1	1.476230319	8.03515092	0.00964484	2.14073751	1
sodium (dissolved)	Dissolved Metals	mg/L	15	9	24	2.319058003	1	0.127797398	1.145031621	1	1.145031621	7.09522239	0.01418639	2.319058003	1
thallium	Total Metals	mg/L	15	9	24	8.33849711	1	0.003881369	3.607005368	1	3.607005368	9.3298532	0.00581061	1.8	1
vanadium	Total Metals	mg/L	15	9	24	3.788499025	1	0.051605906	15.90015718	1	15.90015718	8.47138887	0.00810632	4.752395836	1
vanadium (dissolved)	Dissolved Metals	mg/L	15	9	24	4.524163496	1	0.033419409	3.958981106	1	3.958981106	5.52599017	0.02811037	8.230298111	1
zinc	Total Metals	mg/L	15	9	24	10.30106627	1	0.001329534	21.27499914	1	21.27499914	18.0021743	0.00033337	6	1
zinc (dissolved)	Dissolved Metals	mg/L	15	9	24	6.653845326	1	0.009894207	7.187656749	1	7.187656749	7.65007836	0.0112746	2.142857143	1