Appendix D1
Technical Memorandum

Jacobs

Janicki Environmental, Inc.

Subject	TWA 20TW0002949 P274 Little Manatee River System MFLs Development Support
Attention	Kym Holzwart, Southwest Florida Water Management District
From	Mike Wessel, Janicki Environmental, Inc.
Date	August 18, 2020
Through	James Greco, Jacobs Engineering Group

Dear Kym – On behalf of Janicki Environmental, Inc. and Jacobs Engineering Group, we present this technical memorandum in fulfillment of Task 4.2 of Task Work Order Number 20TW0002949. The deliverables for this task include this technical memorandum, a Microsoft Access database, and a supplemental materials document containing requested descriptive plots and statistics as well as detailed statistical output. We hope that this will serve the District well in its efforts to develop minimum flows for the Little Manatee River. Please feel free to contact us for any reason.

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Background:

The objective of this task was to compile water quality and water quantity data and provide analysis of those data with respect to water quality status and trends in the Little Manatee River System. The data collection and technical assistance services will be used by the DISTRICT for consideration of the Water Quality WRV in support of the establishment of MFLs for the Little Manatee River System. The specific objectives of this task were to:

- Update the water quality status and trends analysis (described in Janicki Environmental 2018) by adding additional years of data since 2016 for the five Hillsborough County Environmental Protection Commission sites (112,113, 180, 181, and 182) located on the Little Manatee River from the USGS Little Manatee River at U.S. 301 Near Wimauma gage (Gage #02300500) to the mouth of the river near Shell Point.

- Investigate additional data sources that may be available for locations in the upper portion of the Little Manatee River above the USGS gage.

- Describe any system-specific water body class(es), water body identification numbers (WBIDs), designated use(s), and any impairments, Total Maximum Daily Loads (TMDLs), and Basin Management Action Plans (BMAPs) previously identified by the Florida Department of Environmental Protection (DEP) for the Little Manatee River.

- Provide univariate, summary statistics, plots of spatial and temporal patterns, identification of outliers and data gaps, statistical relationships between identified water quality parameters and flow, and description of potential limitations, and confounding variables in identified statistical relationships.

In 2016, the Southwest Florida Water Management District (District) contracted Janicki Environmental, Inc. through Greenman Pederson, Inc. to provide technical support and recommendations for developing minimum flows for the freshwater and estuarine segments of the Little Manatee River. A draft recommended minimum flow for the freshwater (Upper) segment of the river was first published in 2011 (Hood et al. 2011) and peer reviewed in 2012 (Powell et al. 2012). No recommended minimum flows had been published for the estuarine (Lower) segment of the Little Manatee River in 2016. Janicki Environmental, Inc. provided a reevaluation of the Upper segment and recommendations for the Lower segment of the Little Manatee River in 2018 (Janicki Environmental, Inc. 2018a and 2018b) using data available through 2014. This technical memorandum describes:

- Updates to the analysis described in section 3.3 of Janicki Environmental, Inc. 2018b by including additional data through 2019 and rerunning all descriptive and statistical analysis presented in that section of the report.

- Searching for additional water quality data in the Upper portion of the Little Manatee River (i.e. above US301) and including those data into the master database for delivery.

In order for a station/constituent combination to be considered for analysis it was required to have at least 60 observations. Data with fatal qualifier codes including "Q", "T", "J", "*" and "?" were removed from analysis. The water quality constituents assessed as part of this contract include: salinity, chlorophyll *a*, dissolved oxygen, total nitrogen, ammonia, organic nitrogen, nitrate/nitrite, total phosphorus, orthophosphate, fecal coliform, fluoride, pH, total suspended solids, and turbidity. Accompanying this memorandum as a deliverable is a database of all data identified, as well as a stand-alone document providing supplementary material describing the data, including univariate statistical summaries, identification of potential outliers, and spatial and temporal plots for data meeting the inclusion criteria.

Task 2.2.1 Update of Section 3.3 (Janicki Environmental, Inc. 2018b)

This section focuses on water quality data collected in the estuarine portion of the Little Manatee River from the USGS gage at U.S. Highway 301 to the mouth of the river near Shell Point. The section headings reflect those of the original report.

3.3.1 FDEP Water Quality Classifications and Standards

The Little Manatee River is designated by FDEP as an Outstanding Florida Waterbody, indicating its special significance as a tidal river in Florida. The tidal reaches of rivers in Florida are evaluated based on a narrative standard. The narrative standard is stated under Rule 62-302.530(47)(b), F.A.C.: "*In no case shall nutrient concentrations of a body of water be altered so as to cause an imbalance in natural populations of aquatic flora or fauna*." Each water body also has a "Designated Use" in Florida statue. For Class III waters, the designated use is defined as "*recreation and propagation and maintenance of a healthy, well-balanced population of fish and wildlife*" (Rule 62-302.400, F.A.C.). Impairment according to the State's Impaired Waters Rule 62-303 (F.A.C.) is determined by evaluating two principal water quality constituents: chlorophyll *a* concentrations and dissolved oxygen expressed as percent saturation. The threshold value for chlorophyll is expressed as an annual geometric average of 11µg/l for estuaries and 20 µg/l for freshwater bodies. The dissolved oxygen criteria for marine waters are expressed as; a daily average shall not be below 42% saturation more than 10% of the time and the fresh water standard exceedance is based on a threshold of 38%. Weekly and monthly averages also apply. The state accounts for areas that transition between salt and freshwaters such as the Little Manatee River depending on the conductivity/salinity at the time dissolved oxygen was measured. For example, if the dissolved oxygen of a waterbody is measured within a transitional zone as defined by FDEP, where conductivity is below 4,580 umhos/cm or 2.7 PSU, then the applicable freshwater standard is applied. Conversely, the marine standard is applied if the conductivity exceeds that threshold.

Based on the latest Florida Department of Environmental Protection evaluation (IWR Run 59: July 2020), no mainstem portion of the Little Manatee River is currently listed as impaired for any parameter other than fecal coliform.

3.3.2 Water Quality Status and Trends

The following subsections describe the general water quality status and trends over time for important water quality constituents measured in the estuarine portion of the Little Manatee River based on data collected by the Hillsborough County Environmental Protection Commission (EPC) at five locations within the system. These five locations are provided in Figure 1.

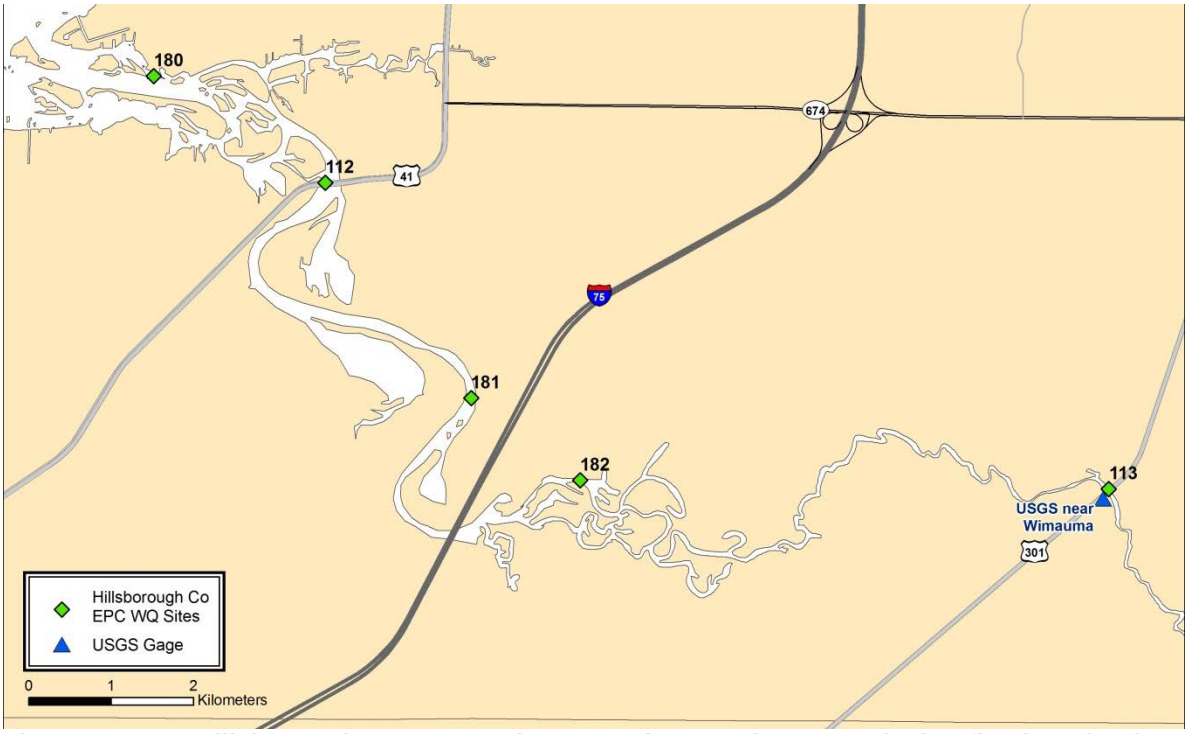

Figure 1. Hillsborough County Environmental Protection Commission fixed station locations in the lower Little Manatee River.

The five EPC fixed stations in Figure 1 are well distributed throughout the Little Manatee River estuary. Station 113 is co-located with the USGS gage near Wimauma (02300500) at the most upstream head of the estuary and has a data record dating back to 1974. Station 112, located near the US41 bridge also has a data record dating back to 1974 while the other three stations were implemented in 2009.

A plot of the salinity distributions at these locations is provided in Figure 2 for reference to the typical physical chemistry of the water quality location. These data are based on a period of record when data were being recorded at all stations (i.e. 2009-2019). These data show the general distribution of the water quality sampling locations along the salinity gradient. The following subsections evaluate the status and trends in other important water quality constituents (other than salinity) using data collected by EPC.

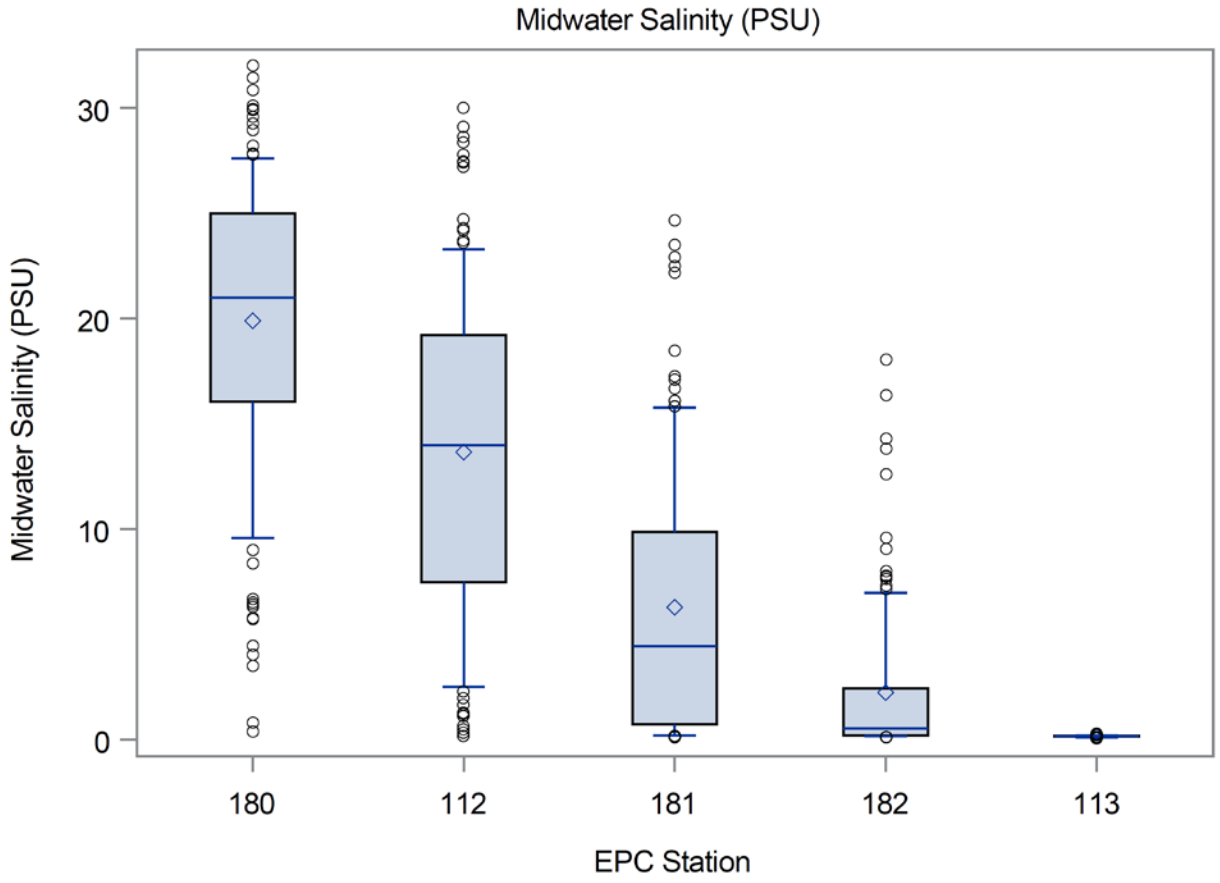

Figure 2. **Salinity distribution at various fixed station locations throughout the estuarine portion of the Little Manatee River (Update of Figure 3-26 in previous report).**

Chlorophyll *a* and Dissolved Oxygen

Given the importance of chlorophyll and dissolved oxygen concentrations as indicators of impairment for tidal rivers, these constituents are evaluated as primary indicators with respect to assessing their status and trends over time. The EPC has historically reported Chlorophyll *a* concentrations using estimates uncorrected for pheophytin and, therefore, the long-term record for chlorophyll was based on these uncorrected values. The station-specific annual distribution of geometric average chlorophyll concentrations is provided in Figure 3. The stations in this plot are oriented from downstream (top) to upstream (bottom). A grey reference line denoting the 11 ug/l threshold is provided within each panel of the plot. The annual averages were generally below the 11 ug/l threshold values, though at stations 181 and 182, where salinity tended to be generally < 10 psu, the averages were more likely to exceed the threshold value. This is typical of the biogeochemistry of tidal rivers where initial mixing of fresh and estuarine waters creates a zone of productivity in the tidal river system.

Dissolved oxygen concentrations (expressed as percent saturation) have been reported since 2002 and tend to be above the 42% threshold for estuarine waters at all stations (Figure 4). The lower "whisker" on the boxplot represents the 10th percentile value which in most years is above the 42% threshold at most stations. Distributions of long-term dissolved oxygen measurements

reported as concentration are provided in Figure 5 which shows inter-annual variation in dissolved oxygen distributions over time. The distributions indicate that dissolved oxygen concentrations are typical of southwest Florida tidal rivers and that hypoxic conditions (i.e. concentrations less than 2 mg/l) are rare at these locations.

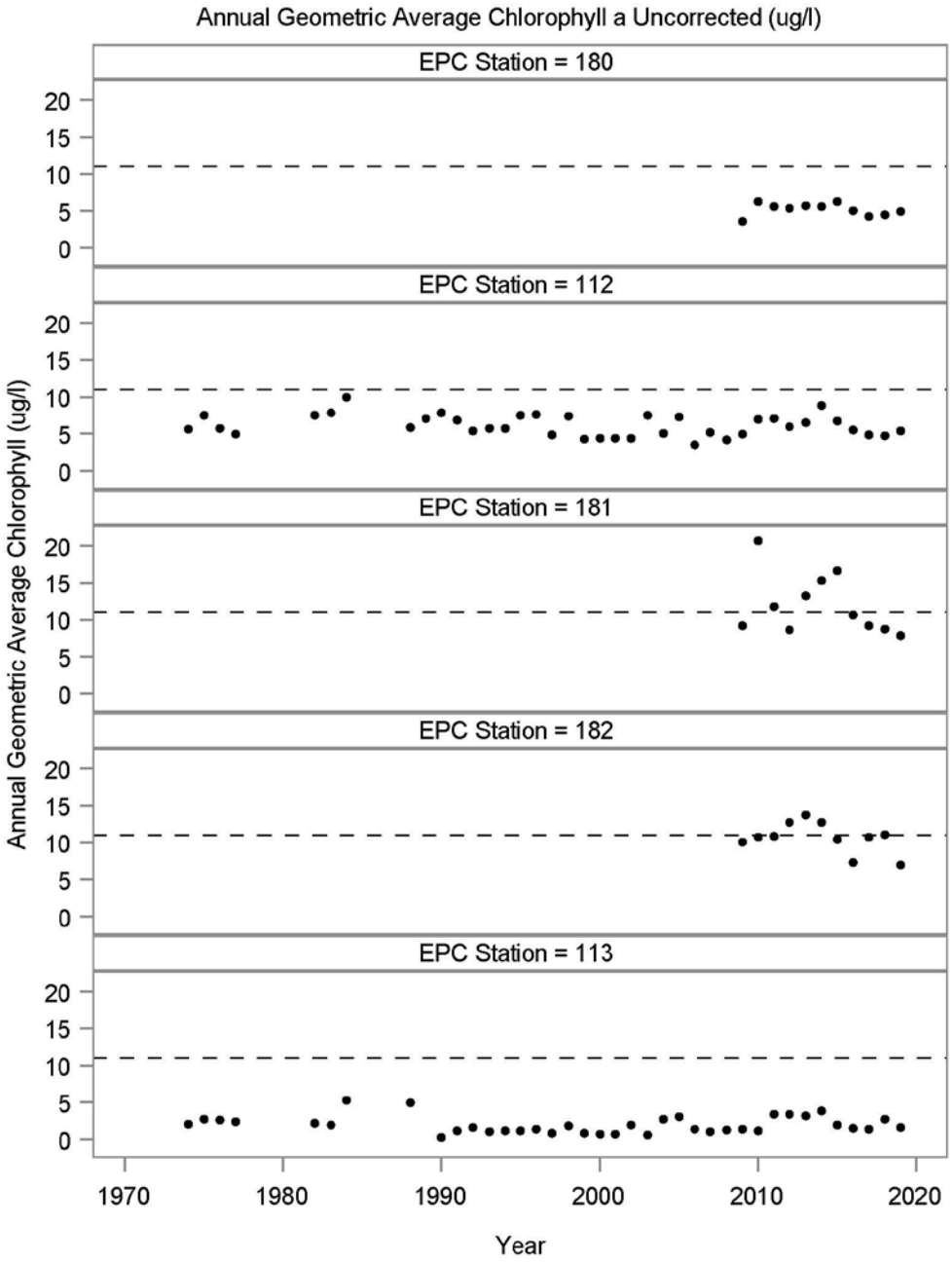

Figure 3. **Annual geometric average chlorophyll concentrations for period of record at each EPC station in the estuarine Little Manatee River. Broken horizontal reference line represents FDEP threshold criteria for evaluating impairment based on narrative standard. (Update of Figure 3-27 in previous report).**

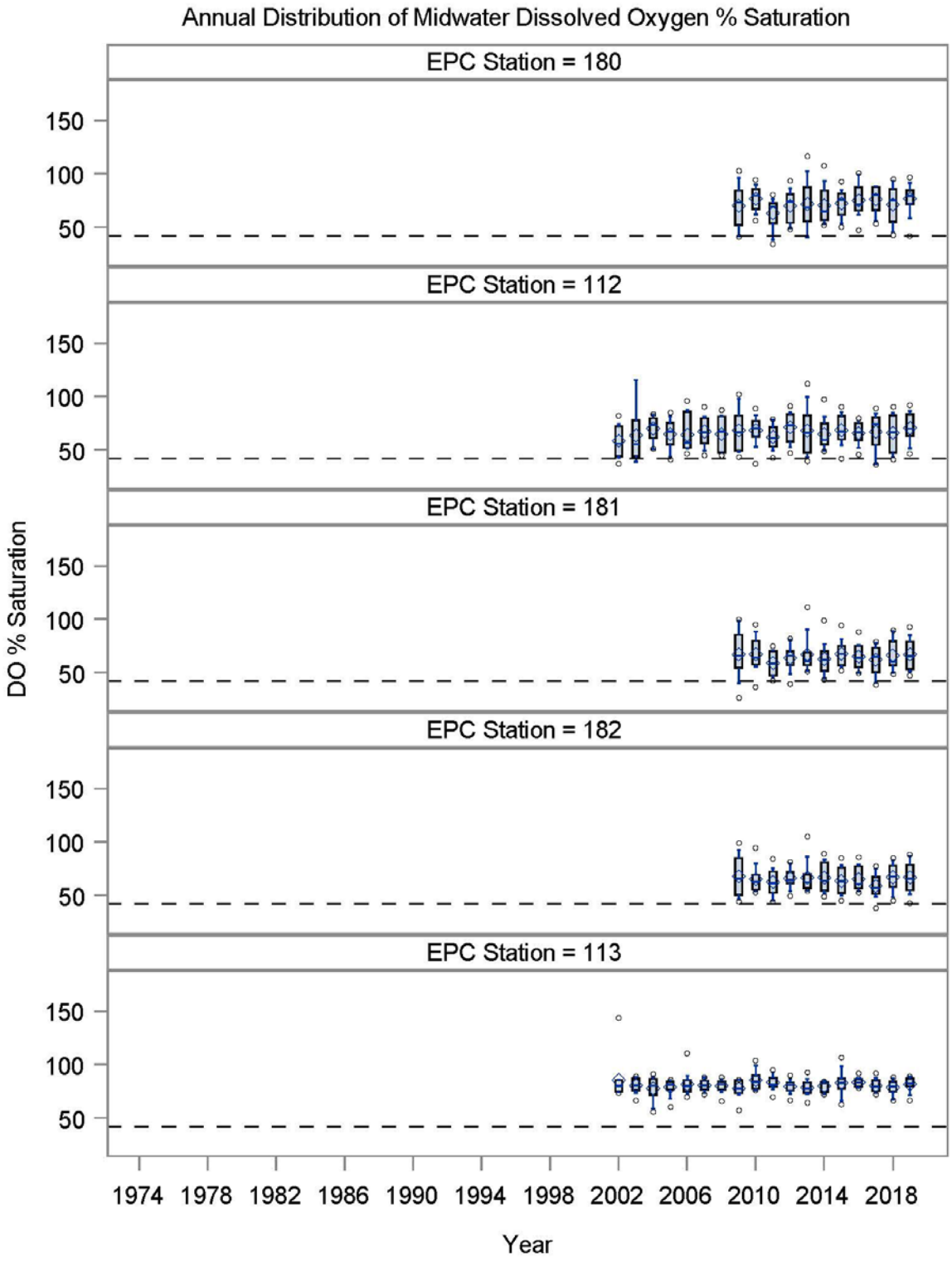

Figure 4. **Annual distribution of dissolved oxygen expressed as percent saturation. Broken horizontal reference line represents FDEP threshold criteria for evaluating impairment based on narrative standard. (Update of Figure 3-28 in previous report).**

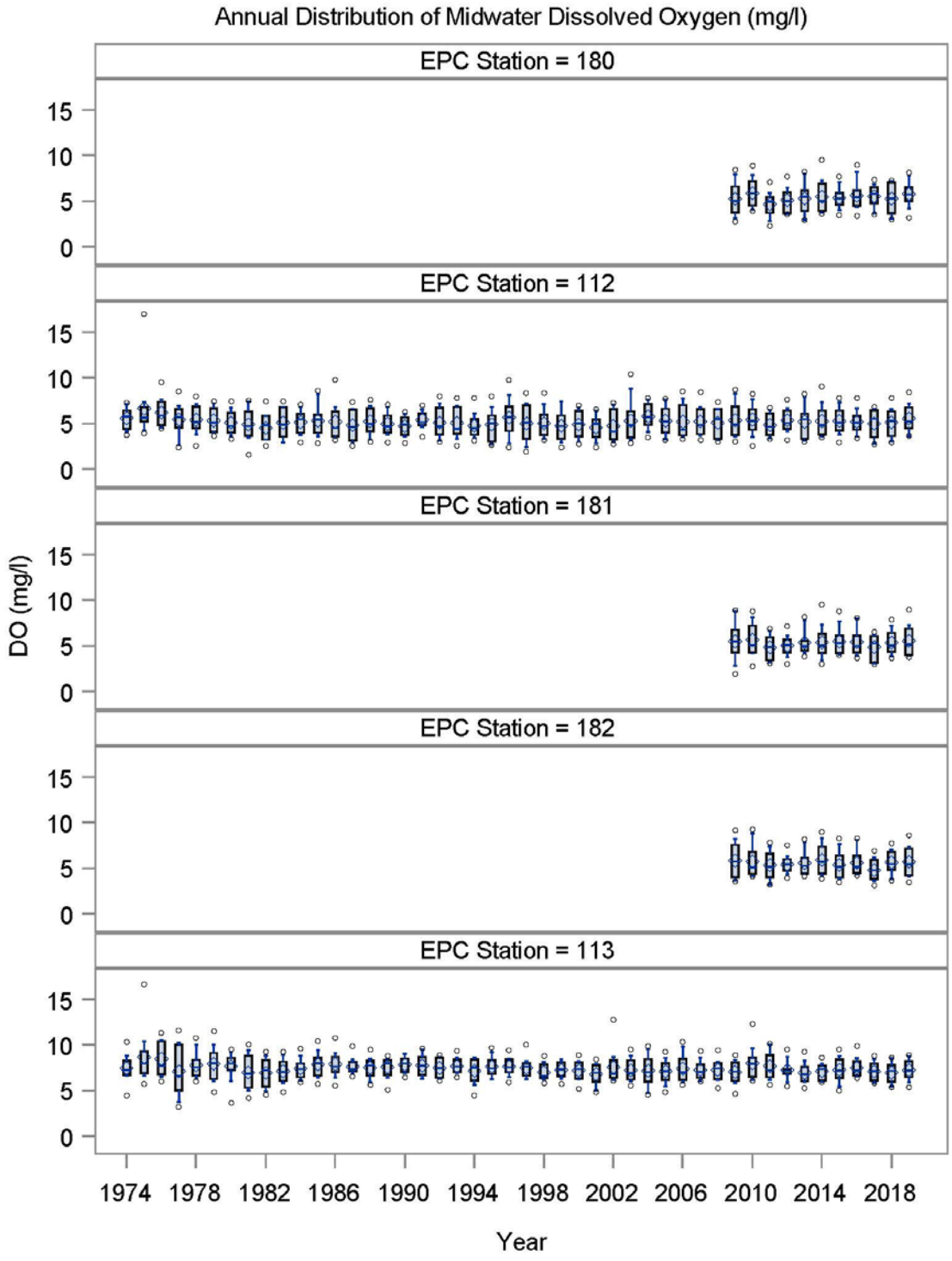

Figure 5 **Annual distribution of midwater dissolved oxygen expressed as concentration. (Update of Figure 3-29 in previous report).**

Trends in water quality over time can provide important information relevant to assessing the status and potential future condition of the waterbody relative to water quality standards. For the freshwater Little Manatee River minimum flows, Hood et al. (2011) evaluated trends in water quality using the Seasonal Kendall Tau Trend Test (Hirsch and Slack 1984) based on data collected by USGS at the Wimauma gage. This nonparametric statistical method tests for a monotonic trend in the data over time but does not provide inference as to what may be causing any detected changes, only that a trend occurred. Hood et al. (2011) elected to partition out the effects of flow on water quality prior to evaluating the data for trend over time. A locally estimated scatterplot smoothing (LOESS) regression was used to predict the effects of flow on water quality and the residuals of that analysis were then used to evaluate the data for a trend over time (after accounting for any trend due to changes in flow over time). Note that USGS no longer collects water quality data at this gage but the EPC station 113 is co-located there. Other District minimum flows reports in tidal rivers (e.g. Lower Hillsborough and Lower Alafia Rivers) did not specifically conduct trend analysis but rather examined the status of water quality constituents as a function of flow. To maintain continuity with the previous reports, this technical memorandum updates previous analysis using the Seasonal Kendall Tau trend test on the water quality data collected by EPC in the estuarine portion of the system both prior to, and after, accounting for the effects of flows. The results are presented in tables in the following subsections by station.

Results of trend tests for chlorophyll *a* and dissolved oxygen are provided in Table 1. Most stations were stable over time for both constituents irrespective of the form of constituent (e.g. DO percent saturation or concentration) or location in the water column. Chlorophyll *a* at station 112 declined over the period of record after accounting for the effects of flow on chlorophyll *a* at this station.

Table 1. Results of Seasonal Kendall Tau trend test for chlorophyll and dissolved oxygen for unadjusted and flow adjusted data. (Update of Table 3-6)

Constituent	Station	Start Year	End Year	# of Samples	Trend Direction	Flow Adjusted Trend Direction
Chlorophyll a (ug/l)	112	1974	2019	403	No Trend	Decreasing
	113	1974	2019	280	No Trend	No Trend
	180	2009	2019	132	No Trend	No Trend
	181	2009	2019	132	No Trend	No Trend
	182	2009	2019	132	No Trend	No Trend
DO Sat Mid (%)	112	2002	2019	209	No Trend	Increasing
	113	2002	2019	213	No Trend	No Trend
	180	2009	2019	130	No Trend	Increasing
	181	2009	2019	132	No Trend	No Trend
	182	2009	2019	132	No Trend	No Trend

Nitrogen

Nitrogen is a principal nutrient that is fundamental to the success of native flora but can cause adverse effects in the form of phytoplankton blooms if it is found in excess. There are several forms of nitrogen measured by EPC including inorganic forms which are more labile and readily

taken up by plants, and organic forms which principally result from decaying organic matter. Total nitrogen is generally computed as the sum of these organic and inorganic forms. That is, total nitrogen is the sum of organic nitrogen, ammonia and nitrate/nitrite. Most of these forms were either stable or decreasing (improving) over time based on EPC station trend results (Table 2). The only exception was organic nitrogen at station 113 which was found to be increasing over time. While this result suggests the potential for increasing nutrient concentrations, the concentrations do not appear to be resulting in adverse effects to the system based on the results of the chlorophyll concentration analysis described above. Time series plots of total nitrogen and ammonia are provided in Figure 6 and Figure 7, respectively.

Table 2. Results of Seasonal Kendall Tau trend test for nitrogen forms for unadjusted and flow adjusted data. (Update of Table 3-7)

Constituent	Station	Start Year	End Year	# of Samples	Trend Direction	Flow Adjusted Trend Direction
Total Nitrogen (mg/l)	112	1981	2019	457	Decreasing	Decreasing
	113	1981	2019	458	No Trend	No Trend
	180	2009	2019	132	Decreasing	Decreasing
	181	2009	2019	132	No Trend	Decreasing
	182	2009	2019	132	Decreasing	Decreasing
Ammonia (mg/l)	112	1974	2019	524	Decreasing	Decreasing
	113	1974	2019	522	Decreasing	Decreasing
	180	2009	2019	132	Decreasing	Decreasing
	181	2009	2019	132	No Trend	Decreasing
	182	2009	2019	132	Decreasing	Decreasing
Organic Nitrogen (mg/l)	112	1975	2019	510	Decreasing	Decreasing
	113	1975	2019	511	Increasing	Increasing
	180	2009	2019	132	No Trend	No Trend
	181	2009	2019	132	No Trend	No Trend
	182	2009	2019	132	No Trend	Decreasing
Nitrates/Nitrites (mg/l)	112	1983	2019	441	Decreasing	Decreasing
	113	1983	2019	440	Decreasing	Decreasing
	180	2009	2019	132	No Trend	Decreasing
	181	2009	2019	132	No Trend	Decreasing
	182	2009	2019	132	Decreasing	Decreasing

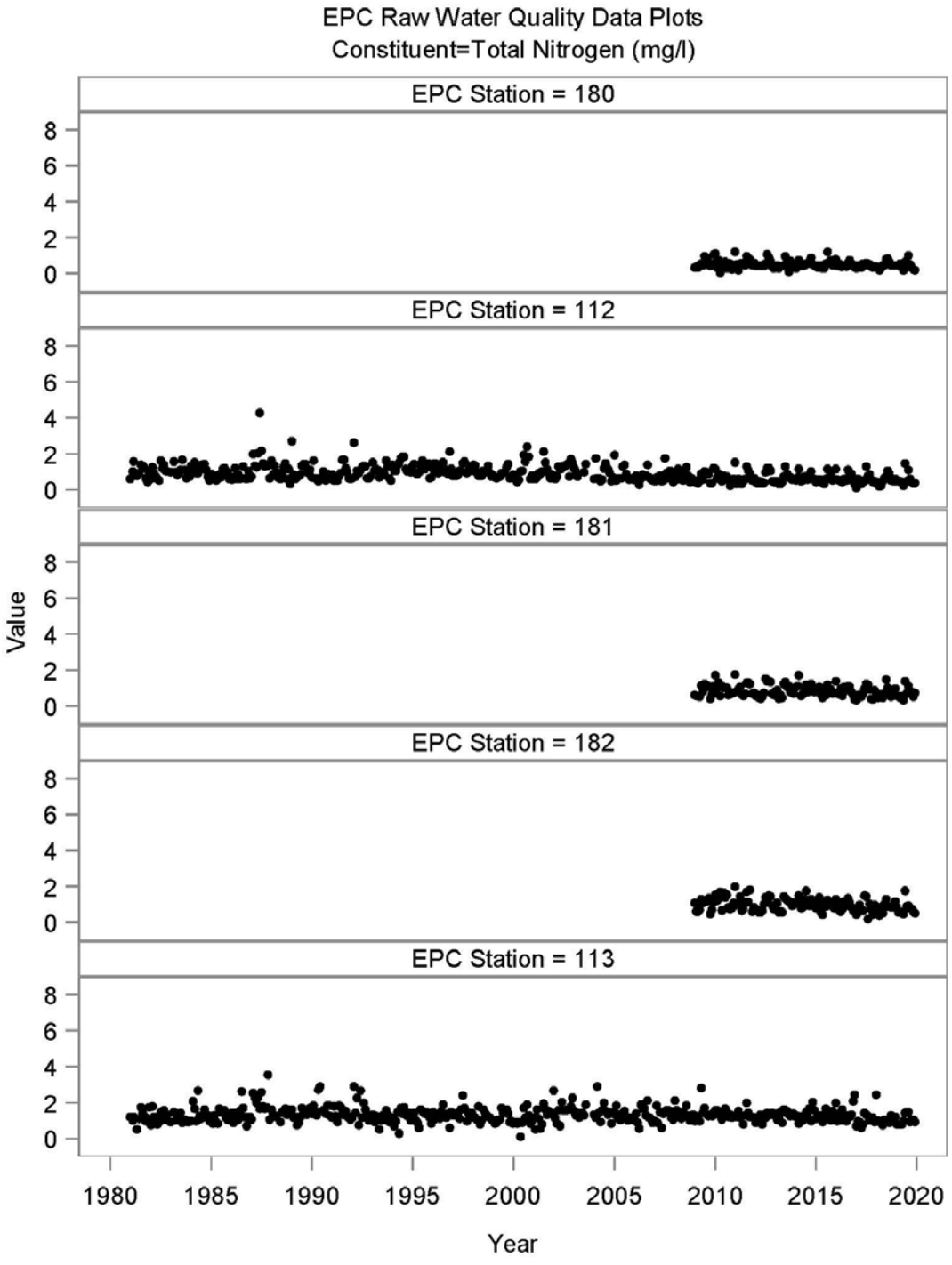

Figure 6. **Timeseries plots of total nitrogen for each EPC station. (Update of Figure 3-30 in previous report).**

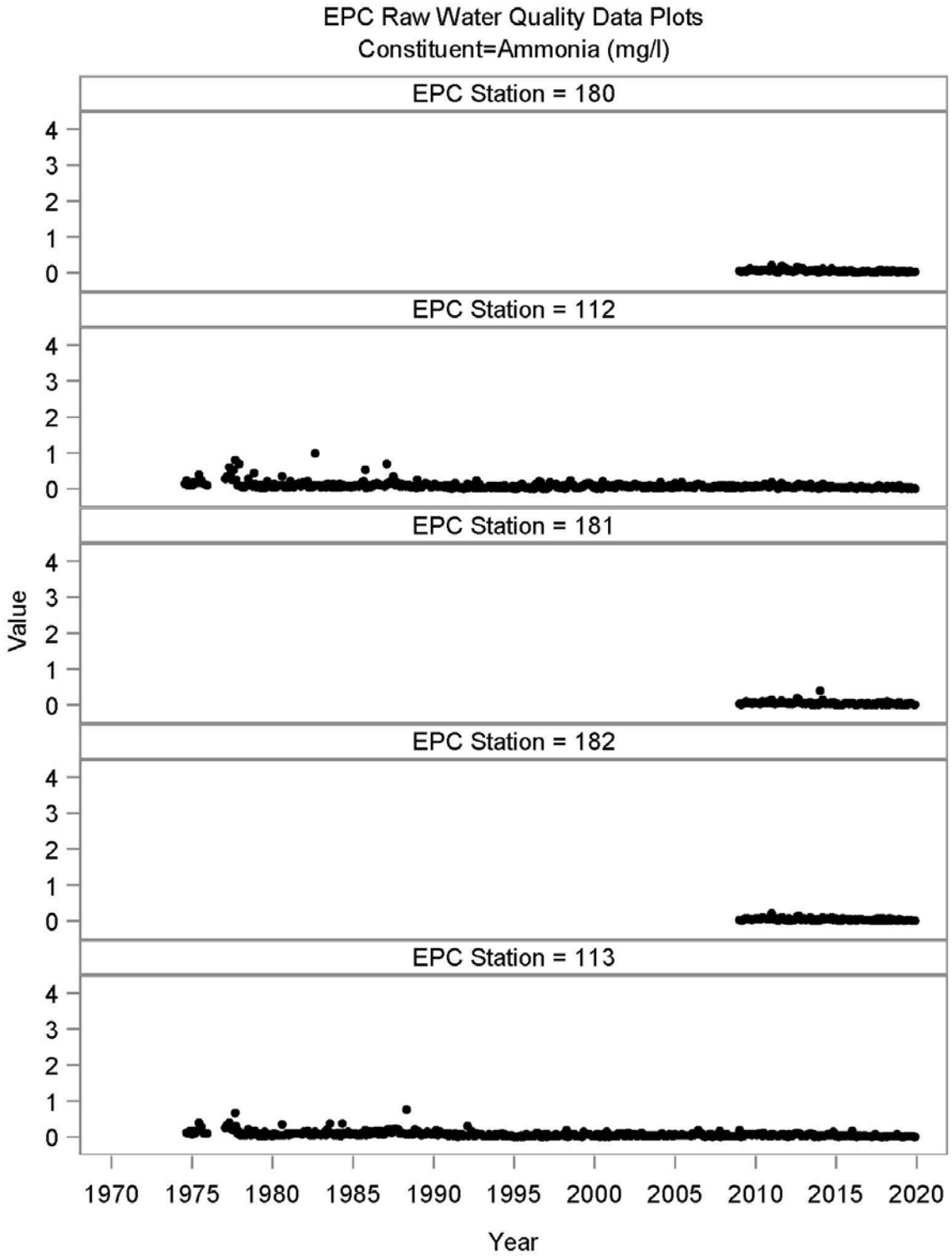

Figure 7. **Timeseries plots of ammonia for each EPC station. (Update of Figure 3-31 in previous report).**

Phosphorus

Phosphorus (P) is an essential nutrient for plants that stimulates early growth. Although P is essential for plant growth, mismanagement can pose a threat to water quality. While the concentration of P is usually sufficiently low in fresh water to be the limiting nutrient, the Little Manatee River resides in the phosphorus-rich "Bone Valley" geological formation and therefore, P is in plentiful supply. Nitrogen is the nutrient that typically limits phytoplankton in Tampa Bay and its tributaries (Fanning and Bell 1985, Vargo et al. 1991, Janicki and Wade 1996, as cited in Flannery et al 2008). Phosphorus is reported by EPC as both orthophosphate and total phosphorus. Results of trend tests suggest phosphorus concentrations at many EPC stations were decreasing (i.e., improving) over time for both constituents (Table 3). Timeseries plots for total phosphorus are provided in Figure 8.

Table 3. Results of Seasonal Kendall Tau trend test for phosphorus forms for unadjusted and flow adjusted data. (Update of Table 3-8)

Constituent	Station	Start Year	End Year	# of Samples	Trend Direction	Flow Adjusted Trend Direction
Total Phosphorus (mg/l)	112	1974	2019	543	Decreasing	Decreasing
	113	1974	2019	543	Decreasing	Decreasing
	180	2009	2019	132	No Trend	Decreasing
	181	2009	2019	132	No Trend	Decreasing
	182	2009	2019	132	No Trend	Decreasing
Ortho Phosphates (mg/l)	112	1974	2019	359	Decreasing	Decreasing
	113	1974	2019	372	Decreasing	Decreasing
	180	2009	2019	132	No Trend	No Trend
	181	2009	2019	132	No Trend	Decreasing
	182	2009	2019	132	No Trend	No Trend

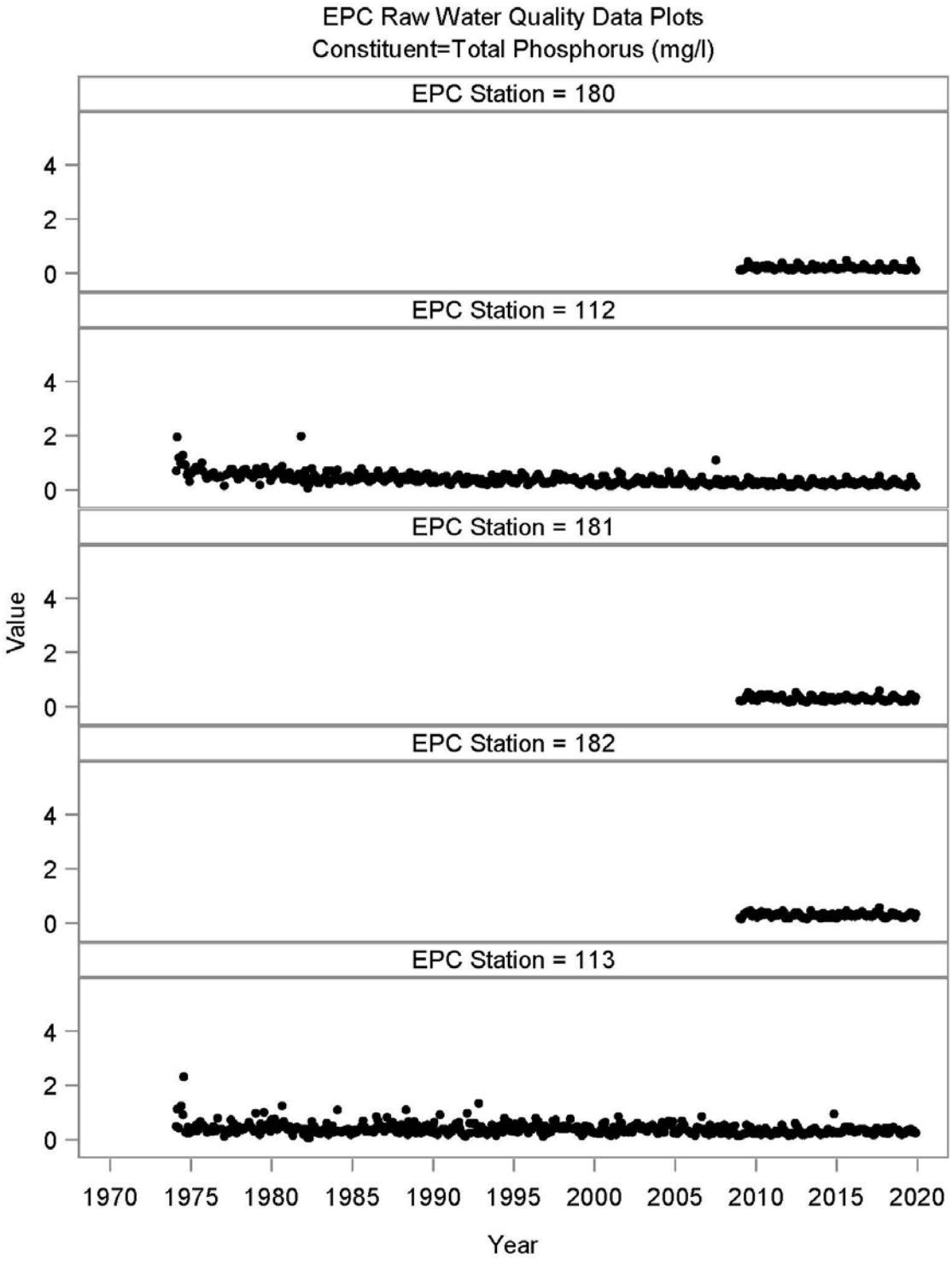

Figure 8. **Timeseries plots of total phosphorus for each EPC station. (Update of Figure 3-32 in previous report).**

Chemical Constituents and Fecal Coliforms

Several other important water quality constituents were evaluated for this project including fecal coliforms, fluoride, pH, total suspended solids and turbidity. The results of trend analysis on these constituents suggest that these water quality parameters were mostly either stable or decreasing (i.e. improving) over time throughout the estuarine portion of the system with the exception of fluoride at stations 113,181, and 182 and pH at stations 112 and 113 (Table 4).

Table 4. Results of Seasonal Kendall Tau trend test for other important water quality constituents for unadjusted and flow adjusted data. (Update of Table 3-9)

Constituent	Station	Start Year	End Year	# of Samples	Trend Direction	Flow Adjusted Trend Direction
Fecal_Coliform (n/100ml)	112	1974	2019	539	Decreasing	Decreasing
	113	1974	2016	504	No Trend	No Trend
	180	2009	2019	132	Decreasing	Decreasing
	181	2009	2019	132	No Trend	Decreasing
	182	2009	2019	132	No Trend	Decreasing
Fluoride (mg/l)	112	1974	2019	531	Decreasing	Decreasing
	113	1974	2019	510	No Trend	Increasing
	180	2009	2019	132	No Trend	No Trend
	181	2009	2019	132	No Trend	Increasing
	182	2009	2019	132	Increasing	Increasing
pH Mid	112	1974	2019	534	Increasing	Increasing
	113	1974	2019	536	No Trend	Increasing
	180	2009	2019	132	Decreasing	No Trend
	181	2009	2019	132	No Trend	No Trend
	182	2009	2019	132	No Trend	No Trend
Total Suspended Solids (mg/l)	112	1974	2008	187	Decreasing	Decreasing
	113	1974	2008	372	No Trend	Decreasing
Turbidity (NTU)	112	1974	2019	543	Decreasing	Decreasing
	113	1974	2019	541	No Trend	Decreasing
	180	2009	2019	132	Decreasing	Decreasing
	181	2009	2019	132	No Trend	Decreasing
	182	2009	2019	132	No Trend	Decreasing

Additional Analysis for Sites from US301 Downstream

In addition to the spatial and temporal plots provided above, the District requested a host of descriptive statistics and plots including: univariate summary statistics and identification of potential outliers. These are provided as a separate “supplemental materials” document attached to this memorandum. Additionally, the District requested an assessment of statistical relationships between water quality and flow for each constituent of interest. Linear regression

was performed on natural log transformed data for both flow and the water quality constituent of interest. Linear regression (Zar, 1984) is a common statistical method relating a predictor variable (e.g. flow) to a response variable (e.g. water quality constituent concentration) under a specific set of assumptions; principally that the relationship is linear. Additional assumptions include that the data are normally distributed, independent, and homoscedastic. These attributes are not typical properties of either flows or most common water quality constituents and, to comply with those assumptions, natural log transformations were applied to both the predictor and response variables. To test for seasonal differences in the mean response to flow, a seasonal (monthly) classification term was added to the model using dummy variables to evaluate how different months changed the average response between flows and water quality constituent concentrations. The coefficient of determination describes variance in a water quality constituent attributable to both flow and season when both are significant ($p < 0.05$). Due to limited data availability for most sites, interaction terms were not considered for these models. To evaluate the model fit and potential utility in assessing these water quality relationships, the sign of the slope statistic (i.e., positive or negative), the p value indicating the statistical significance of the slope statistic, and the coefficient of determination (R^2) defining the proportion of variation explained by the model were used to evaluate the resultant linear regression relationships. The following equation depicts the form of the linear regression that was applied.

$$Ln(Y_{ij}) = \beta_0 + \beta_1 * Ln(flow_i) + \beta_2 * season_j + e_{ij}$$

where:
Y = water quality response
β_0= intercept
β_1= slope estimate for the rate of change in Ln(Y)
per unit change in Ln(flow)
$\beta_2 =$ effect of seasonal covariate defined by month

and the null hypothesis being evaluated:
Ho: $\beta_1 = 0$

The results of these regressions were then summarized in Table 5 below. A zero cell in the table indicates the lack of statistical significance for the flow term for that station. A negative one (-1) indicates a statistically significant inverse relationship between the constituent and flow while a positive one indicates a statistically significant increasing relationship between the constituent and flow. Several constituents had consistent results across stations. Positive relationships with flows across stations included color, orthophosphorus and total organic carbon while consistently decreasing relationships with flow include conductivity, pH, and secchi disk. The remaining constituents exhibited more site specific relationships. Details of the linear regression results for these stations are provided in the supplemental material document associated with this memorandum.

Table 5. **Results of linear regression for the 5 stations in the Lower Little Manatee River based on natural log transformations of both flow and water quality response constituents.**

	Station				
Parameter	**180**	**112**	**181**	**182**	**113**
Ammonia (mg/l)	0	0	0	0	0
Chlorophyll a Corr (ug/l)	1	0	0	-1	0
Chlorophyll a uncorr (ug/l)	1	1	0	-1	1
Color(345)F 45 (PCU)	1	1	1	1	1
Cond Bottom (umho/cm)	-1	-1	-1	-1	-1
Cond Mid (umho/cm)	-1	-1	-1	-1	-1
Cond Top (umho/cm)	-1	-1	-1	-1	-1
DO Bottom (mg/L)	0	0	0	0	-1
DO Mid (mg/L)	0	-1	0	0	-1
DO Sat Bottom (%)	-1	-1	0	0	-1
DO Sat Mid (%)	-1	-1	0	0	-1
DO Sat Top (%)	0	-1	0	0	-1
DO Top (mg/L)	0	0	0	0	-1
Enterococci (n/100ml)	0	1	1	1	1
Fecal_Coliform (n/100ml)	0	1	1	1	1
Fluoride (mg/l)	-1	-1	-1	-1	-1
Kjeldahl Nitrogen (mg/l)	0	1	1	1	1
Nitrates		1			0
Nitrates/Nitrites (mg/l)	1	1	1	1	-1
Organic Nitrogen (mg/l)	0	1	1	1	1
Ortho Phosphates (mg/l)	1	1	1	1	1
pH Bottom	-1	-1	-1	-1	-1
pH Mid	-1	-1	-1	-1	-1
pH Top	-1	-1	-1	-1	-1
Sal Bottom (ppth)	-1	-1	-1	-1	0
Sal Mid (ppth)	-1	-1	-1	-1	0
Sal Top (ppth)	-1	-1	-1	-1	0
Secchi Depth (m)	-1	-1	-1	-1	-1
TOC (mg/l)	1	1	1	1	1
Total Nitrogen (mg/l)	0	1	1	1	1
Total Phosphorus (mg/l)	1	0	1	1	1
Total Suspended Solids (mg/l)		-1			1
Turbidity (NTU)	0	1	0	1	1

Task 2.2.2 – Water Quality Stations Upstream of US301

This task involved querying known water quality repositories for data collected upstream of US301 in the Little Manatee River. The area upstream of US301 includes several tributaries and two additional active flow gages as seen in Figure 9 (Figure 2.3 from Janicki Environmental 2018a).

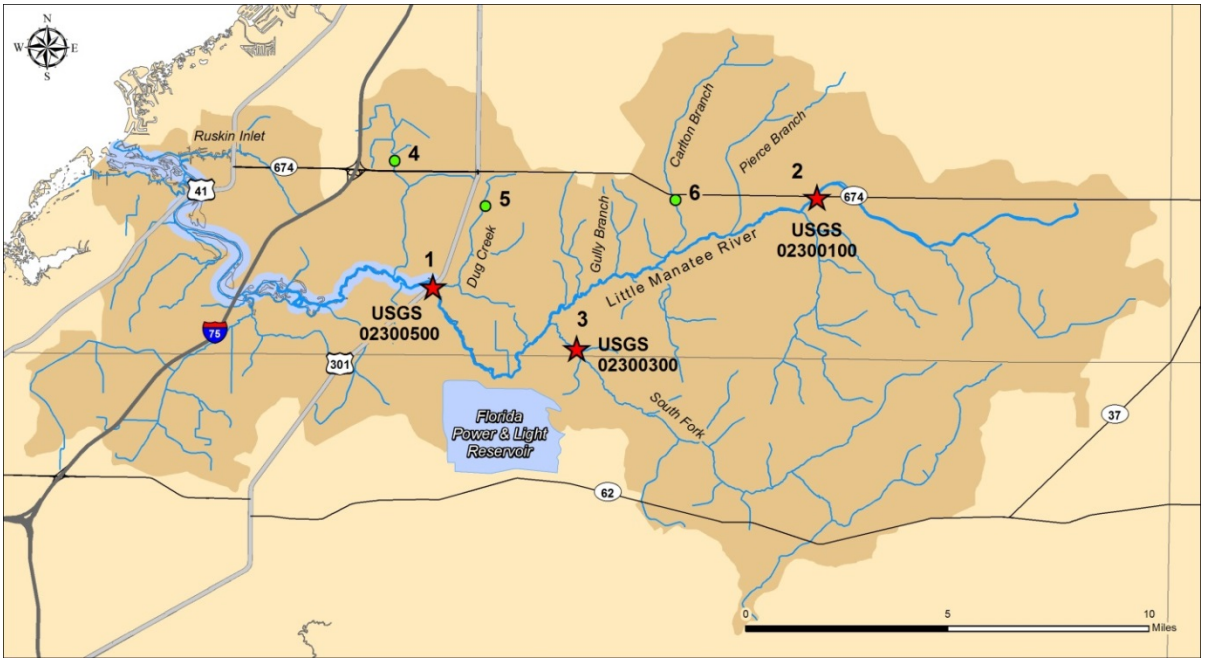

Figure 9. Location of currently active (red stars) and previously operated (green circles) streamflow gages in the Little Manatee River watershed maintained by the USGS (replicated from Hood et. al., 2011).

The EPC and IWR databases were queried to identify routine water quality monitoring sites above US301. Sites were selected if they contained at least 60 observations within their period of record. The identified sites are provided in Table 6. Only the EPC sites (129 and 140) and two Manatee County sites (D1 and D3) are actively sampled. Data for the Manatee County sites are only available through 2017 in the IWR database. A check of the Manatee County Water Atlas (https://manatee.wateratlas.usf.edu/datadownload/SelectStations.aspx) for more recent data suggests no additional data are readily available for these sites though we still consider them active. The remaining stations identified by the query are legacy water quality sampling locations. Therefore, trend test and statistical evaluations were conducted only for these four sites which are identified in Figure 10.

Table 6. Routine water quality sampling stations above US301 in the Little Manatee River with location and period of record of data collection.

Site Id	Site Name	Latitude	Longitude	WBID	First Sample	Most Recent Sample
112WRD 02300100	Little Manatee River near Ft. Lonesome FL	27.70475	-82.1979	1742B	Apr-68	Aug-11
112WRD 02300200	South Fork Little Manatee River near Duette FL	27.59059	-82.1823	1790	Feb-62	Apr-11
21FLHILL129	Little Manatee River at SR 674	27.70468	-82.1978	1742B	Jan-99	Jan-20
21FLHILL140	Little Manatee River at CR 579	27.66283	-82.301	1742B	Jan-99	Jan-20
21FLHILL24010013	Little Manatee River AT CR579	27.6631	-82.3006	1742B	Jan-82	Dec-98
21FLHILL24010110	Little Manatee River AT SR #674	27.7044	-82.1978	1742B	May-76	Dec-98
21FLIMCALM674	Little Manatee R. at SR674	27.70467	-82.1842	1742B	Mar-95	Dec-01
21FLMANAD1	D1	27.64859	-82.2944	1790	Jan-00	Dec-17
21FLMANAD3	D3	27.60194	-82.2111	1790	Feb-00	Dec-17

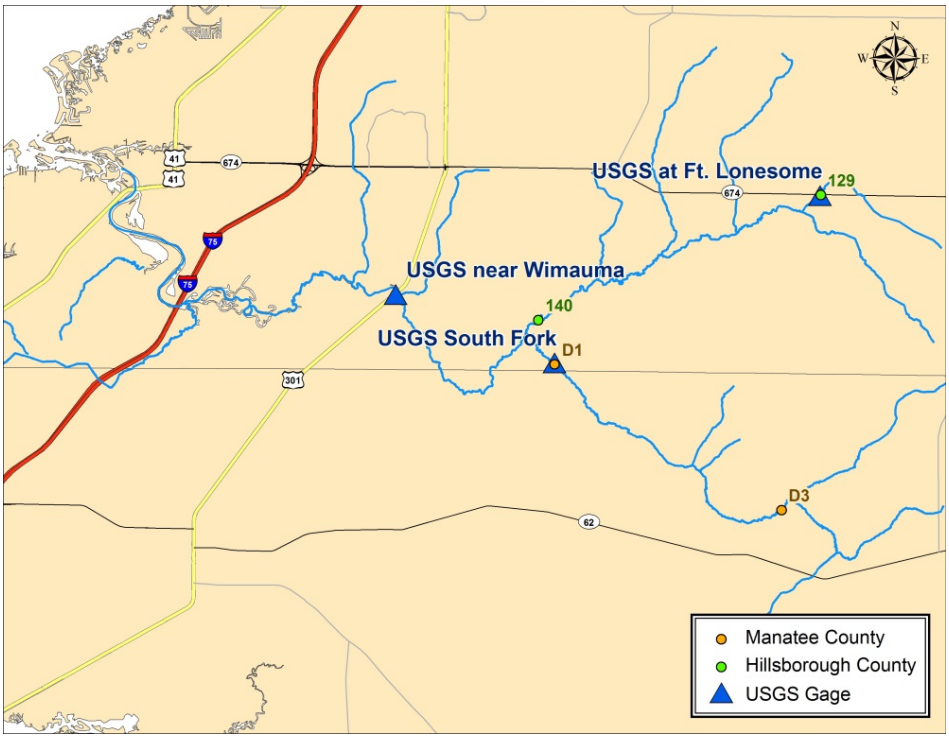

Figure 10. Location of active long-term water quality monitoring sites selected for analysis above US301 in the Little Manatee River.

Results of the Seasonal Kendall Tau trend test for the EPC stations are provided in Table 7. The only difference in results between tests conducted prior to, and after, adjusting for the effects of flow (using the USGS 02300100 - Fort Lonesome discharge values) was dissolved oxygen percent saturation at Station 140 where, after accounting for the effects of flows, the trend results changed from Decreasing to No Trend. Of the significant trend results, most constituents would be considered to be improving over time (e.g. decreasing concentrations of nutrients). The exceptions were increasing trends in organic nitrogen concentrations and an increasing trend in fluoride at station 129.

The results of the log-transformed linear regression analysis are also provided in Table 7 with statistically significant results (i.e. a p value for the flow term < 0.05) indicated by a positive or negative 1. The sign of the value indicates the direction of the trend result. Most of the water quality constituents exhibited a statistically significant relationship with flows. Positive relationships with flow at both stations included total and orthophosphorus, fluoride, fecal coliforms, organic nitrogen and turbidity. Negative relationships with flow at both stations included chlorophyll *a*, dissolved oxygen, nitrate/nitrite, and pH. Detailed linear regression output for these stations can be found in the supplemental materials document accompanying this memorandum.

Table 7. **Results of Seasonal Kendall Tau test for trend and linear log-log regression ("Regression Results") for stations 129 and 140 in the mainstem of the Little Manatee River above US301.**

Water Quality Constituent	Station	Start Year	End Year	# of Samples	Trend Direction	Flow Adjusted Trend Direction	Regression Results
Chlorophyll *a* (ug/l)	129	1976	2019	381	No Trend	No Trend	-1
	140	1981	2019	333	No Trend	No Trend	-1
DO Sat Mid (%)	129	2002	2019	211	Increasing	Increasing	-1
	140	2002	2019	212	Decreasing	No Trend	-1
Total Nitrogen (mg/l)	129	1981	2019	455	No Trend	No Trend	1
	140	1981	2019	447	No Trend	No Trend	0
Ammonia (mg/l)	129	1976	2019	509	Decreasing	Decreasing	-1
	140	1981	2019	452	Decreasing	Decreasing	0
Organic Nitrogen (mg/l)	129	1977	2019	497	Increasing	Increasing	1
Nitrogen (mg/l)	140	1981	2019	446	Increasing	Increasing	1
Nitrates/Nitrites (mg/l)	129	1983	2019	436	No Trend	No Trend	-1
	140	1983	2019	439	Decreasing	Decreasing	-1
Total Phosphorus	129	1976	2019	511	Decreasing	Decreasing	1
(mg/l)	140	1981	2019	454	Decreasing	Decreasing	1
Ortho Phosphates	129	1976	2019	357	Decreasing	Decreasing	1
(mg/l)	140	1981	2019	351	Decreasing	Decreasing	1
Fecal_Coliform (n/100ml)	129	1976	2016	474	No Trend	No Trend	1
	140	1981	2016	418	No Trend	No Trend	1
Fluoride (mg/l)	129	1976	2019	501	Increasing	Increasing	1
	140	1981	2019	450	No Trend	No Trend	1
pH Mid	129	1976	2019	507	Increasing	Increasing	-1
	140	1981	2019	448	Increasing	Increasing	-1
Total Suspended Solids (mg/l)	129	1976	2008	355	No Trend	No Trend	0
	140	1981	2008	300	Decreasing	Decreasing	1
Turbidity (NTU)	129	1976	2019	509	Decreasing	Decreasing	1
	140	1981	2019	450	Decreasing	Decreasing	1

Results for the two Manatee County stations in the South Fork of the Little Manatee are provided in Table 8. BOD and dissolved oxygen (% saturation) were increasing at both stations over time and not effected by flow after accounting for seasonality. The pH trends were decreasing at both stations over time. The remaining trends were either stable (i.e. No Trend) or site specific. Detailed linear regression output for these stations can be found in the supplemental materials document accompanying this memorandum.

Table 8. **Results of Seasonal Kendall Tau test for trend and linear log-log regression ("regression results") for stations D1 and D3 in the South Fork of the Little Manatee River above US301.**

Water Quality Constituent	Station	Start Year	End Year	# of Samples	Trend Direction	Flow Adjusted Trend Direction	Regression Results
BOD 5-Day (mg/L)	D1	2000	2017	89	Increasing	Increasing	0
	D3	2000	2017	92	Increasing	Increasing	0
Color (PCU)	D1	2000	2017	199	Decreasing	No Trend	1
	D3	2000	2017	206	No Trend	No Trend	1
Corr. Chlorophyll-a (µg/L)	D1	2000	2017	190	No Trend	No Trend	0
	D3	2000	2017	198	No Trend	No Trend	0
Dissolved Oxygen (mg/L)	D1	2000	2017	200	No Trend	Increasing	-1
	D3	2000	2017	204	Increasing	No Trend	0
Dissolved Oxygen (Percent Saturation)	D1	2000	2017	197	Increasing	Increasing	0
	D3	2000	2017	201	Increasing	Increasing	0
Fluoride (mg/L)	D1	2000	2017	136	No Trend	No Trend	-1
	D3	2000	2017	137	No Trend	No Trend	-1
Nitrate (mg/L)	D1	2000	2017	153	Increasing	Increasing	-1
	D3	2000	2017	155	Decreasing	No Trend	0
Nitrogen Kjeldahl as N (mg/L)	D1	2000	2017	173	No Trend	No Trend	1
	D3	2000	2017	183	Increasing	No Trend	1
Nitrogen Total as N (mg/L)	D1	2000	2017	188	Increasing	Increasing	0
	D3	2000	2017	195	No Trend	Increasing	1
Nutrients (Nitrate-Nitrite)	D1	2000	2017	188	Increasing	Increasing	-1
	D3	2000	2017	196	No Trend	No Trend	0
pH (SU)	D1	2000	2017	200	Decreasing	Decreasing	1
	D3	2000	2017	206	Decreasing	Decreasing	0
Phosphorus in Total Orthophosphate as P (mg/L)	D1	2000	2017	173	Decreasing	No Trend	1
	D3	2000	2017	179	No Trend	No Trend	0

Water Quality Constituent	Station	Start Year	End Year	# of Samples	Trend Direction	Flow Adjusted Trend Direction	Regression Results
Phosphorus Total as P (mg/L)	D1	2000	2017	189	Decreasing	No Trend	0
	D3	2000	2017	193	No Trend	No Trend	0
Salinity	D1	2000	2017	197	No Trend	No Trend	-1
	D3	2000	2017	202	No Trend	No Trend	-1
Specific Conductance (µmhos/cm)	D1	2000	2017	198	No Trend	No Trend	0
	D3	2000	2017	204	No Trend	No Trend	0
Temperature (C°)	D1	2000	2017	197	No Trend	No Trend	0
	D3	2000	2017	203	No Trend	No Trend	0
Total Ammonia as N (mg/L)	D1	2000	2017	184	No Trend	No Trend	1
	D3	2000	2017	190	No Trend	No Trend	1
Total Suspended Solids (TSS), mg/L	D1	2000	2017	191	No Trend	No Trend	1
	D3	2000	2017	200	No Trend	No Trend	1
Turbidity (NTU)	D1	2000	2017	199	No Trend	No Trend	0
	D3	2000	2017	206	No Trend	No Trend	-1
Un-ionized Ammonia (mg/L)	D1	2000	2017	179	No Trend	No Trend	-1
	D3	2000	2017	185	No Trend	No Trend	-1

Summary and Recommendations:

The results of analyses presented in this technical memorandum largely agree with previous findings. According to DEP's latest assessment (July 2020), the Little Manatee River remains in compliance with state water quality standards for water quality parameters other than fecal coliform. Trends in water quality are generally improving though site specific instances of increasing trends were identified. Four stations upstream of US301 maintain active water quality sampling providing additional information on water quality in the upstream portion of the system. Many of these constituents had statistically significant relationships with flow independent of seasonality. However, as described in the following paragraphs, there are limitations of this analysis in consideration of using water quality as a WRV consistent with the Water Resource Implementation Rule 62-40, Florida Administrative Code (FAC).

The Seasonal Kendall Tau trend test provides a statistical evaluation of a change in a particular water constituent over time but is not an explanatory model. That is, the test does not determine

why the trend over time may exist. Residualizing the data against flow prior to conducting Seasonal Kendall Tau is an attempt to determine if there is a change in the water quality parameter over time after accounting for the relationship between water quality and flow. In many cases, the water quality constituent had both a change associated with flow and a change associated with time indicating other unexplained factors in addition to flow were contributing to a change in the constituent over time.

The flow adjustment was performed using LOESS regression which is a nonparametric smoothing technique used in the original effort to capture potential nonlinear relationships with flow. Since that time, the District has identified natural log transformations as a parametric alternative statistical technique to identify relationships between water quality constituents and flow. The regression results reported in the tables using 0, -1, or 1 are based on the log-log linear regression results.

When a large proportion of values associated with a water quality constituent are reported at their detection limit, this can affect both the timeseries trend tests and the regression results. In both cases, the tests will be reduced in power. Constituents including BOD, chlorophyll and ammonia may have suffered from this artifact. These effects can be seen in the timeseries plots provided in the supplemental materials document.

Finally, streamflow is the product of interactions between rainfall, soil characteristics, storage in the watershed, antecedent conditions, and the effects of both natural and anthropogenic land use changes. Thereby, seasonality in rainfall, which is correlated with temperature, drives both streamflows and changes in water quality. Therefore, while relationships may be present between flows and water quality, it is inappropriate to assign causality to flows as a direct effect based solely on these statistical outcomes. The outcomes suggest that the hypothesis being tested was either rejected or failed to be rejected but the inference from the statistical outcomes must be conveyed within the context of a weight of evidence to determine if the relationship should be used when considering water quality as a water resource value associated with rule 62-40 F.A.C.

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Supplemental Materials Document

Appendix to Task 4.2 Technical Memorandum for District Contract Number TWA 20TW0002949: P274 Little Manatee River System MFLs Development Support

This document contains hyperlinks to associated pages in portable document format (pdf) containing detailed descriptive statistics, plots, and results of statistical analysis. The document is organized by source, station and parameter. Hyperlinks to individual output are described below.

1) EPC station data. These pages contain descriptive statistics and plots for each station with at least 30 observations organized by source and include:
    a. Summary tables of number of observations, sampling period of record and outliers identified using Robust Regression, distribution percentiles, and values deviating by more than three standard deviations from the log normal means. Organized by station.
    b. Univariate histograms organized by water quality constituent including descriptive statistics
    c. Seasonality plots organized by water quality constituent using monthly box and whisker plots
    d. Timeseries plots organized by parameter with outliers identified for each of the three outlier methods described.
    e. Downstream log log linear regression results for EPC station from US301 to the mouth
    f. Upstream log log linear regression results for EPC stations 140 and 129 above US301

2) IWR station data. These pages contain descriptive statistics and plots for each station with at least 30 observations organized by source and include:
    a. Summary tables of number of observations, sampling period of record and outliers identified using Robust Regression, distribution percentiles, and values deviating by more than three standard deviations from the log normal means. Organized by station.
    b. Univariate histograms organized by water quality constituent including descriptive statistics
    c. Seasonality plots organized by water quality constituent using monthly box and whisker plots
    d. Timeseries plots organized by parameter with outliers identified for each of the three outlier methods described.
    e. Linear (log log) regression results for Manatee County stations D1 and D3 in the South Fork of the Little Manatee River.

1a: EPC Summary Table

Little Manatee River
112
112

Parameter	Number of Samples	Average Value	First Sample	Most Recent Sample	Percent Robust Regression Outlier	Percent Outside the 1st and 99th Percentile	Percent Greater/Less than 3 Lognormal Standard Deviations
Ammonia (mg/l)	530	0.09	AUG1974	DEC2019	5.1%	1.7%	0.6%
Chlorophyll a Corr (ug/l)	168	5.08	JAN2006	DEC2019	4.8%	0.6%	0.6%
Chlorophyll a uncorr (ug/l)	406	6.84	JAN1974	DEC2019	3.9%	2.0%	0.7%
Color(345) C (PCU)	429	45.65	JAN1974	DEC2009	6.1%	1.9%	0.2%
Color(345)F 45 (PCU)	121	41.34	JUL2009	DEC2019	5.8%	1.7%	0.0%
Cond Bottom (umho/cm)	370	21890	JAN1987	DEC2019	0.0%	1.6%	3.0%
Cond Mid (umho/cm)	546	21056	JAN1974	DEC2019	0.0%	1.8%	3.1%
Cond Top (umho/cm)	370	20096	JAN1987	DEC2019	0.0%	1.6%	3.0%
DO Bottom (mg/L)	372	4.96	NOV1986	DEC2019	0.0%	1.6%	0.3%
DO Mid (mg/L)	543	5.18	FEB1974	DEC2019	0.4%	1.5%	0.4%
DO Sat Bottom (%)	196	64.64	FEB2002	DEC2019	0.0%	1.0%	0.5%
DO Sat Mid (%)	209	66.33	FEB2002	DEC2019	0.5%	1.9%	0.0%
DO Sat Top (%)	192	65.63	FEB2002	DEC2019	1.0%	1.0%	0.5%
DO Top (mg/L)	371	5.14	NOV1986	DEC2019	0.3%	1.6%	0.0%
Enterococci (n/100ml)	228	370.7	JAN2001	DEC2019	11.4%	0.9%	0.0%
Fecal_Coliform (n/100ml)	546	145.5	JAN1974	DEC2019	11.7%	0.9%	0.9%
Fluoride (mg/l)	536	0.75	JAN1974	DEC2019	0.7%	1.7%	0.7%
Kjeldahl Nitrogen (mg/l)	541	0.75	AUG1974	DEC2019	1.8%	1.3%	2.6%
Nitrates	109	0.09	JAN1974	MAR1983	7.3%	0.9%	0.0%
Nitrates/Nitrites (mg/l)	442	0.11	MAR1983	DEC2019	6.8%	1.8%	0.5%
Organic Nitrogen (mg/l)	515	0.66	JAN1975	DEC2019	1.7%	1.0%	3.7%
Ortho Phosphates (mg/l)	359	0.25	JAN1974	DEC2019	1.4%	1.7%	0.8%
Sal Bottom (ppth)	367	13.39	JAN1987	DEC2019	0.0%	1.6%	2.5%
Sal Mid (ppth)	541	12.81	JAN1974	DEC2019	0.0%	1.8%	3.0%
Sal Top (ppth)	366	12.20	JAN1987	DEC2019	0.0%	1.6%	2.5%
Secchi Depth (m)	550	1.17	JAN1974	DEC2019	1.1%	0.7%	1.3%
TOC (mg/l)	211	10.21	JAN1974	NOV2019	1.9%	1.9%	0.5%
Total Nitrogen (mg/l)	460	0.90	JAN1981	DEC2019	1.7%	1.7%	0.4%
Total Phosphorus (mg/l)	550	0.39	FEB1974	DEC2019	2.2%	1.8%	0.5%
Total Suspended Solids (mg/l)	191	12.32	JAN1974	SEP2008	9.4%	0.0%	0.0%
Turbidity (NTU)	550	3.58	JAN1974	DEC2019	4.4%	1.3%	0.9%
pH Bottom	370	7.33	NOV1986	DEC2019	1.1%	1.4%	0.5%

Little Manatee River
112
112

Parameter	Number of Samples	Average Value	First Sample	Most Recent Sample	Percent Robust Regression Outlier	Percent Outside the 1st and 99th Percentile	Percent Greater/Less than 3 Lognormal Standard Deviations
pH Mid	541	7.36	JAN1974	DEC2019	1.1%	1.5%	0.9%
pH Top	372	7.33	NOV1986	DEC2019	1.9%	1.6%	1.1%

Little Manatee River
113
113

Parameter	Number of Samples	Average Value	First Sample	Most Recent Sample	Percent Robust Regression Outlier	Percent Outside the 1st and 99th Percentile	Percent Greater/Less than 3 Lognormal Standard Deviations
Ammonia (mg/l)	528	0.07	SEP1974	DEC2019	5.9%	1.5%	0.9%
Chlorophyll a Corr (ug/l)	171	2.62	JAN2005	DEC2019	2.9%	0.6%	0.6%
Chlorophyll a uncorr (ug/l)	282	2.50	JAN1974	DEC2019	7.1%	1.4%	1.1%
Color(345) C (PCU)	429	66.73	JAN1974	DEC2009	2.1%	1.6%	0.0%
Color(345)F 45 (PCU)	122	54.25	JUL2009	DEC2019	0.8%	1.6%	0.8%
Cond Bottom (umho/cm)	128	288.5	JUL1987	OCT2019	0.0%	1.6%	0.0%
Cond Mid (umho/cm)	547	446.4	JAN1974	DEC2019	3.5%	1.8%	1.1%
Cond Top (umho/cm)	127	289.9	JUL1987	OCT2019	0.0%	1.6%	0.0%
DO Bottom (mg/L)	128	6.77	JUL1987	OCT2019	0.0%	1.6%	0.0%
DO Mid (mg/L)	546	7.42	JAN1974	DEC2019	1.1%	1.6%	0.7%
DO Sat Bottom (%)	82	76.87	AUG2002	OCT2019	0.0%	0.0%	0.0%
DO Sat Mid (%)	213	80.68	FEB2002	DEC2019	3.3%	1.9%	1.9%
DO Sat Top (%)	80	76.99	AUG2002	OCT2019	0.0%	0.0%	0.0%
DO Top (mg/L)	127	6.76	JUL1987	OCT2019	0.0%	1.6%	0.0%
E_Coliform (n/100ml)	48	404.3	JAN2001	DEC2019	10.4%	0.0%	0.0%
Enterococci (n/100ml)	216	1523	JAN2002	DEC2019	12.0%	0.9%	1.9%
Fecal_Coliform (n/100ml)	510	1516	JAN1974	DEC2016	12.2%	2.0%	1.0%
Fecal_Strep (n/100ml)	292	6125	JAN1976	DEC2000	12.0%	1.4%	1.0%
Fluoride (mg/l)	515	0.44	JAN1974	DEC2019	5.6%	1.9%	0.6%
Kjeldahl Nitrogen (mg/l)	540	0.68	OCT1974	DEC2019	1.7%	1.7%	2.2%
Nitrates	109	0.34	JAN1974	MAR1983	0.0%	0.9%	2.8%
Nitrates/Nitrites (mg/l)	441	0.60	MAR1983	DEC2019	2.5%	1.8%	0.9%
Organic Nitrogen (mg/l)	516	0.62	JAN1975	DEC2019	1.6%	1.0%	3.5%
Ortho Phosphates (mg/l)	372	0.31	JAN1974	DEC2019	2.7%	1.6%	0.5%
Sal Bottom (ppth)	110	0.28	JUL1987	OCT2019	16.4%	0.9%	0.0%
Sal Mid (ppth)	474	0.30	JAN1974	DEC2019	10.5%	1.7%	0.6%
Sal Top (ppth)	108	0.28	JUL1987	OCT2019	16.7%	0.0%	0.0%
Secchi Depth (m)	550	0.70	JAN1974	DEC2019	2.2%	0.2%	1.1%
TOC (mg/l)	213	11.90	JAN1974	DEC2019	1.9%	1.9%	1.4%
Total Nitrogen (mg/l)	461	1.32	JAN1981	DEC2019	3.7%	1.5%	0.7%
Total Phosphorus (mg/l)	550	0.40	FEB1974	DEC2019	3.1%	1.8%	0.7%
Total Suspended Solids (mg/l)	378	6.23	JAN1974	SEP2008	10.6%	0.8%	1.1%
Turbidity (NTU)	548	4.78	JAN1974	DEC2019	9.5%	0.9%	1.6%

Little Manatee River
113
113

Parameter	Number of Samples	Average Value	First Sample	Most Recent Sample	Percent Robust Regression Outlier	Percent Outside the 1st and 99th Percentile	Percent Greater/Less than 3 Lognormal Standard Deviations
pH Bottom	127	6.94	JUL1987	OCT2019	0.0%	1.6%	0.0%
pH Mid	543	7.18	JAN1974	DEC2019	0.9%	1.7%	0.6%
pH Top	127	6.91	JUL1987	OCT2019	0.0%	0.8%	0.0%

Little Manatee River
129
129

Parameter	Number of Samples	Average Value	First Sample	Most Recent Sample	Percent Robust Regression Outlier	Percent Outside the 1st and 99th Percentile	Percent Greater/Less than 3 Lognormal Standard Deviations
Ammonia (mg/l)	514	0.08	MAY1976	DEC2019	6.6%	1.0%	1.0%
Chlorophyll a Corr (ug/l)	161	2.55	JAN2005	DEC2019	1.2%	0.6%	0.0%
Chlorophyll a uncorr (ug/l)	381	3.49	MAY1976	DEC2019	5.8%	1.3%	1.3%
Color(345) C (PCU)	397	97.45	JUN1976	DEC2009	2.0%	1.5%	0.3%
Color(345)F 45 (PCU)	119	81.97	JUL2009	DEC2019	2.5%	1.7%	0.8%
Cond Bottom (umho/cm)	42	303.5	SEP1989	OCT2019	0.0%	0.0%	0.0%
Cond Mid (umho/cm)	515	352.8	MAY1976	DEC2019	4.9%	1.9%	1.4%
Cond Top (umho/cm)	42	302.5	SEP1989	OCT2019	0.0%	0.0%	0.0%
DO Bottom (mg/L)	42	5.52	SEP1989	OCT2019	2.4%	0.0%	2.4%
DO Mid (mg/L)	513	6.83	MAY1976	DEC2019	0.6%	1.9%	1.0%
DO Sat Mid (%)	211	77.62	FEB2002	DEC2019	1.4%	1.9%	0.5%
DO Top (mg/L)	42	5.49	SEP1989	OCT2019	2.4%	0.0%	2.4%
E_Coliform (n/100ml)	47	257.8	JAN2001	DEC2019	12.8%	0.0%	0.0%
Enterococci (n/100ml)	213	981.9	JAN2002	DEC2019	6.6%	1.4%	0.5%
Fecal_Coliform (n/100ml)	480	545.6	MAY1976	DEC2016	11.3%	0.8%	0.8%
Fluoride (mg/l)	506	0.70	MAY1976	DEC2019	3.8%	1.8%	0.4%
Kjeldahl Nitrogen (mg/l)	517	0.77	MAY1976	DEC2019	2.1%	1.5%	2.9%
Nitrates	79	0.16	MAY1976	MAR1983	6.3%	0.0%	1.3%
Nitrates/Nitrites (mg/l)	437	0.19	MAR1983	DEC2019	6.9%	0.9%	1.6%
Organic Nitrogen (mg/l)	501	0.70	FEB1977	DEC2019	1.6%	1.0%	3.8%
Ortho Phosphates (mg/l)	358	0.54	MAY1976	DEC2019	2.5%	1.7%	0.8%
Sal Bottom (ppth)	37	0.24	SEP1989	OCT2019	8.1%	0.0%	0.0%
Sal Mid (ppth)	441	0.27	MAY1976	DEC2019	11.3%	1.6%	0.7%
Sal Top (ppth)	37	0.24	SEP1989	OCT2019	8.1%	0.0%	0.0%
Secchi Depth (m)	515	0.52	MAY1976	DEC2019	1.6%	1.0%	0.0%
TOC (mg/l)	197	17.56	SEP1976	DEC2019	1.5%	1.0%	1.0%
Total Dissolved Solids (mg/l)	273	179.1	MAY1976	DEC2001	5.5%	1.1%	0.7%
Total Nitrogen (mg/l)	458	0.99	JAN1981	DEC2019	2.4%	1.7%	1.1%
Total Phosphorus (mg/l)	517	0.61	MAY1976	DEC2019	3.9%	1.7%	0.6%
Total Suspended Solids (mg/l)	360	3.20	MAY1976	SEP2008	8.9%	0.8%	1.1%
Turbidity (NTU)	515	3.08	MAY1976	DEC2019	7.4%	1.2%	0.6%
pH Bottom	42	6.85	SEP1989	OCT2019	0.0%	0.0%	0.0%

Little Manatee River
129
129

Parameter	Number of Samples	Average Value	First Sample	Most Recent Sample	Percent Robust Regression Outlier	Percent Outside the 1st and 99th Percentile	Percent Greater/Less than 3 Lognormal Standard Deviations
pH Mid	513	7.17	MAY1976	DEC2019	1.4%	1.6%	1.2%
pH Top	42	6.82	SEP1989	OCT2019	0.0%	0.0%	0.0%

Little Manatee River
140
140

Parameter	Number of Samples	Average Value	First Sample	Most Recent Sample	Percent Robust Regression Outlier	Percent Outside the 1st and 99th Percentile	Percent Greater/Less than 3 Lognormal Standard Deviations
Ammonia (mg/l)	453	0.07	DEC1981	DEC2019	5.1%	1.5%	1.1%
Chloride (mg/l)	452	19.63	FEB1982	DEC2019	1.1%	1.1%	1.5%
Chlorophyll a Corr (ug/l)	164	2.86	JAN2005	DEC2019	3.0%	0.6%	2.4%
Chlorophyll a uncorr (ug/l)	333	2.91	DEC1981	DEC2019	5.7%	0.9%	1.8%
Color(345) C (PCU)	333	70.60	DEC1981	DEC2009	2.4%	1.8%	0.0%
Color(345)F 45 (PCU)	122	57.24	JUL2009	DEC2019	3.3%	1.6%	0.8%
Cond Bottom (umho/cm)	85	281.0	JUL1989	DEC2019	1.2%	0.0%	0.0%
Cond Mid (umho/cm)	453	372.8	DEC1981	DEC2019	2.6%	1.8%	1.3%
Cond Top (umho/cm)	84	282.5	JUL1989	DEC2019	1.2%	0.0%	0.0%
DO Bottom (mg/L)	85	6.33	JUL1989	DEC2019	0.0%	0.0%	0.0%
DO Mid (mg/L)	452	7.65	DEC1981	DEC2019	0.0%	1.8%	0.7%
DO Sat Bottom (%)	58	74.97	JUL2002	DEC2019	0.0%	0.0%	0.0%
DO Sat Mid (%)	212	83.19	FEB2002	DEC2019	2.4%	1.9%	1.9%
DO Sat Top (%)	57	74.38	JUL2002	DEC2019	0.0%	0.0%	0.0%
DO Top (mg/L)	84	6.29	JUL1989	DEC2019	1.2%	0.0%	0.0%
E_Coliform (n/100ml)	48	430.1	JAN2001	DEC2019	8.3%	0.0%	0.0%
Enterococci (n/100ml)	216	1359	JAN2002	DEC2019	13.4%	1.9%	1.4%
Fecal_Coliform (n/100ml)	420	1037	DEC1981	DEC2016	11.2%	1.0%	0.7%
Fluoride (mg/l)	452	0.52	DEC1981	DEC2019	6.0%	1.1%	0.4%
Kjeldahl Nitrogen (mg/l)	456	0.89	DEC1981	DEC2019	2.2%	1.8%	1.1%
Nitrates/Nitrites (mg/l)	440	0.74	MAR1983	DEC2019	2.0%	1.8%	0.7%
Organic Nitrogen (mg/l)	447	0.71	DEC1981	DEC2019	1.6%	1.8%	1.1%
Ortho Phosphates (mg/l)	351	0.34	DEC1981	DEC2019	1.4%	1.7%	0.3%
Sal Bottom (ppth)	74	0.27	JUL1989	DEC2019	14.9%	0.0%	0.0%
Sal Mid (ppth)	380	0.24	DEC1981	DEC2019	11.6%	1.1%	0.3%
Sal Top (ppth)	73	0.27	JUL1989	DEC2019	15.1%	0.0%	0.0%
Secchi Depth (m)	455	0.59	DEC1981	DEC2019	1.1%	1.1%	0.2%
TOC (mg/l)	161	12.93	DEC1981	DEC2019	0.0%	1.2%	0.0%
Total Dissolved Solids (mg/l)	218	252.8	DEC1981	DEC2001	1.4%	1.8%	1.8%
Total Nitrogen (mg/l)	449	1.53	DEC1981	DEC2019	2.9%	1.8%	1.8%
Total Phosphorus (mg/l)	456	0.45	DEC1981	DEC2019	2.6%	1.8%	0.4%
Total Suspended Solids (mg/l)	302	5.71	DEC1981	SEP2008	7.6%	1.7%	1.3%
Turbidity (NTU)	452	5.17	DEC1981	DEC2019	8.0%	0.9%	0.9%

Little Manatee River
140
140

Parameter	Number of Samples	Average Value	First Sample	Most Recent Sample	Percent Robust Regression Outlier	Percent Outside the 1st and 99th Percentile	Percent Greater/Less than 3 Lognormal Standard Deviations
pH Bottom	85	6.88	JUL1989	DEC2019	1.2%	0.0%	1.2%
pH Mid	450	7.22	DEC1981	DEC2019	0.7%	1.8%	0.9%
pH Top	84	6.83	JUL1989	DEC2019	0.0%	0.0%	0.0%

Little Manatee River
180
180

Parameter	Number of Samples	Average Value	First Sample	Most Recent Sample	Percent Robust Regression Outlier	Percent Outside the 1st and 99th Percentile	Percent Greater/Less than 3 Lognormal Standard Deviations
Ammonia (mg/l)	132	0.05	JAN2009	DEC2019	3.8%	1.5%	0.8%
Chlorophyll a Corr (ug/l)	132	5.08	JAN2009	DEC2019	3.8%	0.8%	1.5%
Chlorophyll a uncorr (ug/l)	132	5.98	JAN2009	DEC2019	4.5%	1.5%	0.8%
Color(345)F 45 (PCU)	121	28.64	JUL2009	DEC2019	13.2%	1.7%	0.0%
Cond Bottom (umho/cm)	131	32707	JAN2009	DEC2019	2.3%	1.5%	1.5%
Cond Mid (umho/cm)	132	31712	JAN2009	DEC2019	1.5%	1.5%	1.5%
Cond Top (umho/cm)	131	30126	JAN2009	DEC2019	0.0%	1.5%	1.5%
DO Bottom (mg/L)	129	5.40	JAN2009	DEC2019	0.0%	1.6%	0.0%
DO Mid (mg/L)	129	5.37	JAN2009	DEC2019	0.0%	1.6%	0.0%
DO Sat Bottom (%)	130	72.73	JAN2009	DEC2019	0.8%	1.5%	0.0%
DO Sat Mid (%)	130	72.16	JAN2009	DEC2019	0.0%	1.5%	0.0%
DO Sat Top (%)	129	72.66	JAN2009	DEC2019	0.8%	1.6%	0.8%
DO Top (mg/L)	128	5.42	JAN2009	DEC2019	0.0%	1.6%	0.0%
Enterococci (n/100ml)	132	318.9	JAN2009	DEC2019	9.1%	0.8%	0.0%
Fecal_Coliform (n/100ml)	132	46.02	JAN2009	DEC2019	12.1%	0.8%	0.8%
Fluoride (mg/l)	132	0.79	JAN2009	DEC2019	1.5%	1.5%	1.5%
Kjeldahl Nitrogen (mg/l)	132	0.47	JAN2009	DEC2019	0.8%	1.5%	1.5%
Nitrates/Nitrites (mg/l)	132	0.05	JAN2009	DEC2019	9.8%	0.8%	0.0%
Organic Nitrogen (mg/l)	132	0.42	JAN2009	DEC2019	0.8%	1.5%	2.3%
Ortho Phosphates (mg/l)	132	0.16	JAN2009	DEC2019	4.5%	1.5%	0.0%
Sal Bottom (ppth)	131	20.56	JAN2009	DEC2019	0.8%	1.5%	1.5%
Sal Mid (ppth)	132	19.90	JAN2009	DEC2019	0.0%	1.5%	1.5%
Sal Top (ppth)	131	18.83	JAN2009	DEC2019	0.0%	1.5%	1.5%
Secchi Depth (m)	132	1.41	JAN2009	DEC2019	1.5%	0.8%	0.0%
TOC (mg/l)	114	8.37	MAY2010	NOV2019	7.9%	1.8%	0.0%
Total Nitrogen (mg/l)	132	0.51	JAN2009	DEC2019	3.0%	1.5%	0.8%
Total Phosphorus (mg/l)	132	0.21	JAN2009	DEC2019	3.0%	0.8%	0.0%
Turbidity (NTU)	132	2.64	JAN2009	DEC2019	1.5%	1.5%	0.0%
pH Bottom	131	7.71	JAN2009	DEC2019	1.5%	1.5%	0.8%
pH Mid	132	7.71	JAN2009	DEC2019	1.5%	1.5%	0.8%
pH Top	131	7.68	JAN2009	DEC2019	0.8%	1.5%	0.8%

Little Manatee River
181
181

Parameter	Number of Samples	Average Value	First Sample	Most Recent Sample	Percent Robust Regression Outlier	Percent Outside the 1st and 99th Percentile	Percent Greater/Less than 3 Lognormal Standard Deviations
Ammonia (mg/l)	132	0.04	JAN2009	DEC2019	5.3%	0.8%	0.0%
Chlorophyll a Corr (ug/l)	132	13.32	JAN2009	DEC2019	4.5%	1.5%	0.0%
Chlorophyll a uncorr (ug/l)	132	15.67	JAN2009	DEC2019	4.5%	1.5%	0.0%
Color(345)F 45 (PCU)	121	55.36	JUL2009	DEC2019	1.7%	1.7%	0.0%
Cond Bottom (umho/cm)	130	12155	MAR2009	DEC2019	0.0%	1.5%	0.0%
Cond Mid (umho/cm)	132	10647	JAN2009	DEC2019	0.0%	1.5%	0.0%
Cond Top (umho/cm)	130	9351	MAR2009	DEC2019	0.8%	1.5%	0.0%
DO Bottom (mg/L)	129	5.21	MAR2009	DEC2019	0.0%	1.6%	0.0%
DO Mid (mg/L)	131	5.30	JAN2009	DEC2019	0.0%	1.5%	0.8%
DO Sat Bottom (%)	130	64.33	MAR2009	DEC2019	0.8%	1.5%	0.0%
DO Sat Mid (%)	132	64.85	JAN2009	DEC2019	0.8%	1.5%	0.8%
DO Sat Top (%)	130	68.79	MAR2009	DEC2019	1.5%	1.5%	0.0%
DO Top (mg/L)	129	5.60	MAR2009	DEC2019	0.0%	1.6%	0.0%
Enterococci (n/100ml)	132	808.3	JAN2009	DEC2019	6.1%	0.0%	0.0%
Fecal_Coliform (n/100ml)	132	201.0	JAN2009	DEC2019	11.4%	0.8%	1.5%
Fluoride (mg/l)	132	0.56	JAN2009	DEC2019	0.0%	1.5%	0.0%
Kjeldahl Nitrogen (mg/l)	132	0.71	JAN2009	DEC2019	0.0%	1.5%	0.0%
Nitrates/Nitrites (mg/l)	132	0.14	JAN2009	DEC2019	3.0%	0.8%	0.0%
Organic Nitrogen (mg/l)	132	0.67	JAN2009	DEC2019	0.0%	1.5%	0.8%
Ortho Phosphates (mg/l)	132	0.23	JAN2009	DEC2019	0.8%	1.5%	0.0%
Sal Bottom (ppth)	130	7.21	MAR2009	DEC2019	0.0%	1.5%	0.0%
Sal Mid (ppth)	132	6.28	JAN2009	DEC2019	0.8%	1.5%	0.0%
Sal Top (ppth)	130	5.49	MAR2009	DEC2019	3.8%	1.5%	0.0%
Secchi Depth (m)	132	1.00	JAN2009	DEC2019	0.0%	0.8%	0.0%
TOC (mg/l)	116	13.66	APR2010	NOV2019	0.9%	1.7%	0.0%
Total Nitrogen (mg/l)	132	0.84	JAN2009	DEC2019	0.0%	1.5%	0.0%
Total Phosphorus (mg/l)	132	0.30	JAN2009	DEC2019	0.8%	1.5%	0.0%
Turbidity (NTU)	132	3.54	JAN2009	DEC2019	6.1%	0.8%	0.8%
pH Bottom	130	7.30	MAR2009	DEC2019	1.5%	1.5%	1.5%
pH Mid	132	7.27	JAN2009	DEC2019	0.8%	1.5%	0.8%
pH Top	130	7.28	MAR2009	DEC2019	0.8%	1.5%	0.8%

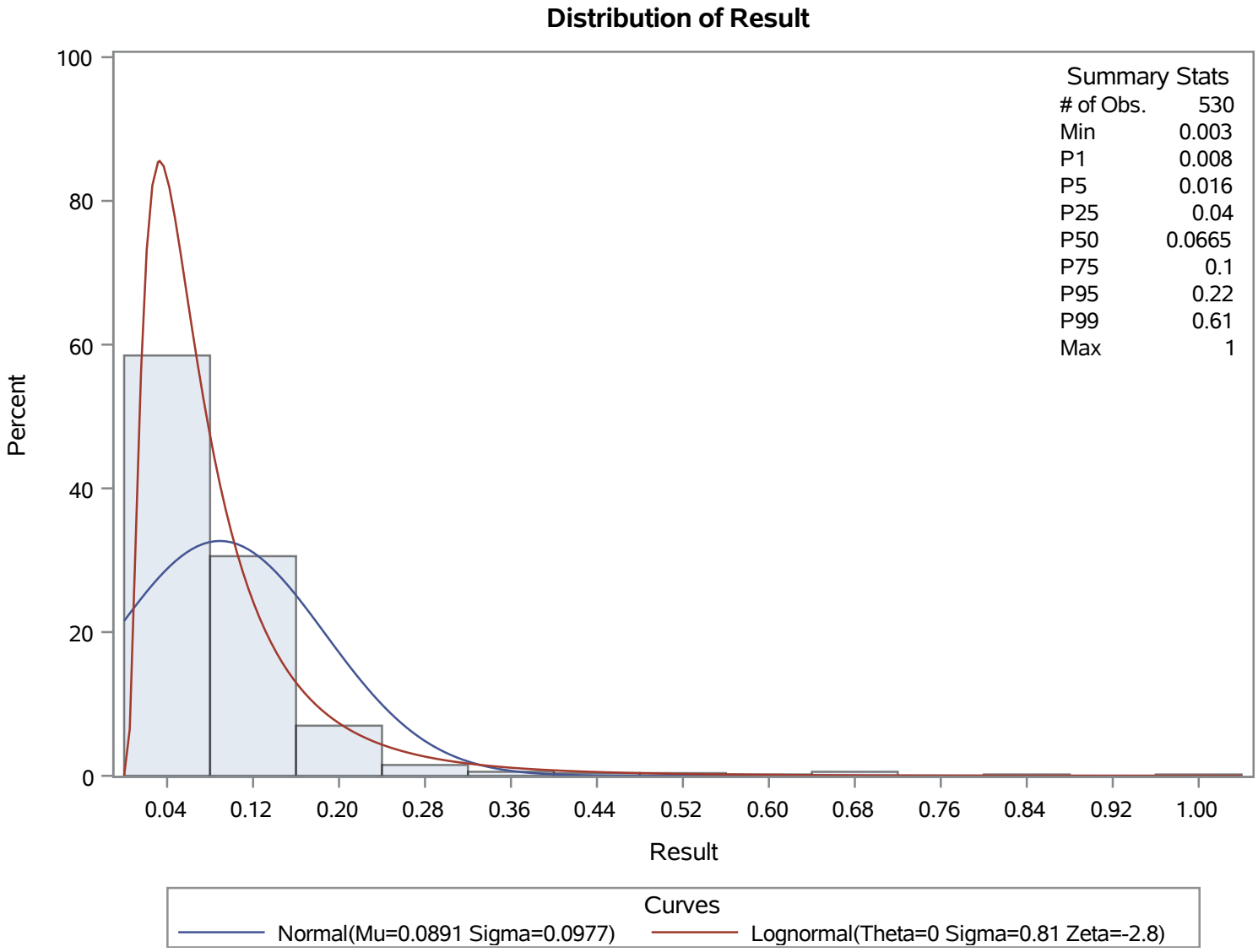
Little Manatee River
182
182

Parameter	Number of Samples	Average Value	First Sample	Most Recent Sample	Percent Robust Regression Outlier	Percent Outside the 1st and 99th Percentile	Percent Greater/Less than 3 Lognormal Standard Deviations
Ammonia (mg/l)	132	0.04	JAN2009	DEC2019	1.5%	0.8%	0.0%
Chlorophyll a Corr (ug/l)	132	11.26	JAN2009	DEC2019	3.8%	1.5%	0.8%
Chlorophyll a uncorr (ug/l)	132	13.58	JAN2009	DEC2019	3.8%	1.5%	0.0%
Color(345)F 45 (PCU)	121	58.15	JUL2009	DEC2019	0.0%	1.7%	0.0%
Cond Bottom (umho/cm)	129	4157	JAN2009	DEC2019	7.0%	1.6%	0.0%
Cond Mid (umho/cm)	132	3966	JAN2009	DEC2019	9.8%	1.5%	0.0%
Cond Top (umho/cm)	129	3654	JAN2009	DEC2019	10.9%	1.6%	0.0%
DO Bottom (mg/L)	128	5.48	JAN2009	DEC2019	0.8%	1.6%	0.0%
DO Mid (mg/L)	131	5.52	JAN2009	DEC2019	0.0%	1.5%	0.0%
DO Sat Bottom (%)	129	64.53	JAN2009	DEC2019	1.6%	1.6%	0.8%
DO Sat Mid (%)	132	64.92	JAN2009	DEC2019	0.0%	1.5%	0.0%
DO Sat Top (%)	129	65.98	JAN2009	DEC2019	0.8%	1.6%	0.0%
DO Top (mg/L)	128	5.58	JAN2009	DEC2019	0.0%	1.6%	0.0%
Enterococci (n/100ml)	132	954.6	JAN2009	DEC2019	7.6%	0.8%	0.0%
Fecal_Coliform (n/100ml)	132	373.7	JAN2009	DEC2019	11.4%	0.8%	0.0%
Fluoride (mg/l)	132	0.48	JAN2009	DEC2019	0.8%	0.8%	0.0%
Kjeldahl Nitrogen (mg/l)	132	0.76	JAN2009	DEC2019	0.8%	1.5%	0.8%
Nitrates/Nitrites (mg/l)	132	0.22	JAN2009	DEC2019	1.5%	0.8%	4.5%
Organic Nitrogen (mg/l)	132	0.71	JAN2009	DEC2019	0.8%	0.8%	1.5%
Ortho Phosphates (mg/l)	132	0.23	JAN2009	DEC2019	0.8%	1.5%	0.0%
Sal Bottom (ppth)	129	2.35	JAN2009	DEC2019	8.5%	0.8%	0.0%
Sal Mid (ppth)	132	2.23	JAN2009	DEC2019	10.6%	0.8%	0.0%
Sal Top (ppth)	129	2.05	JAN2009	DEC2019	12.4%	0.8%	0.0%
Secchi Depth (m)	132	1.00	JAN2009	DEC2019	0.8%	0.8%	0.0%
TOC (mg/l)	115	14.04	APR2010	NOV2019	0.9%	1.7%	0.0%
Total Nitrogen (mg/l)	132	0.97	JAN2009	DEC2019	0.8%	1.5%	0.8%
Total Phosphorus (mg/l)	132	0.30	JAN2009	DEC2019	0.8%	1.5%	0.0%
Turbidity (NTU)	132	3.77	JAN2009	DEC2019	5.3%	1.5%	0.8%
pH Bottom	129	7.24	JAN2009	DEC2019	0.8%	1.6%	0.8%
pH Mid	132	7.15	JAN2009	DEC2019	0.8%	1.5%	0.8%
pH Top	129	7.13	JAN2009	DEC2019	0.8%	1.6%	0.8%

1b: EPC Univariate Histograms

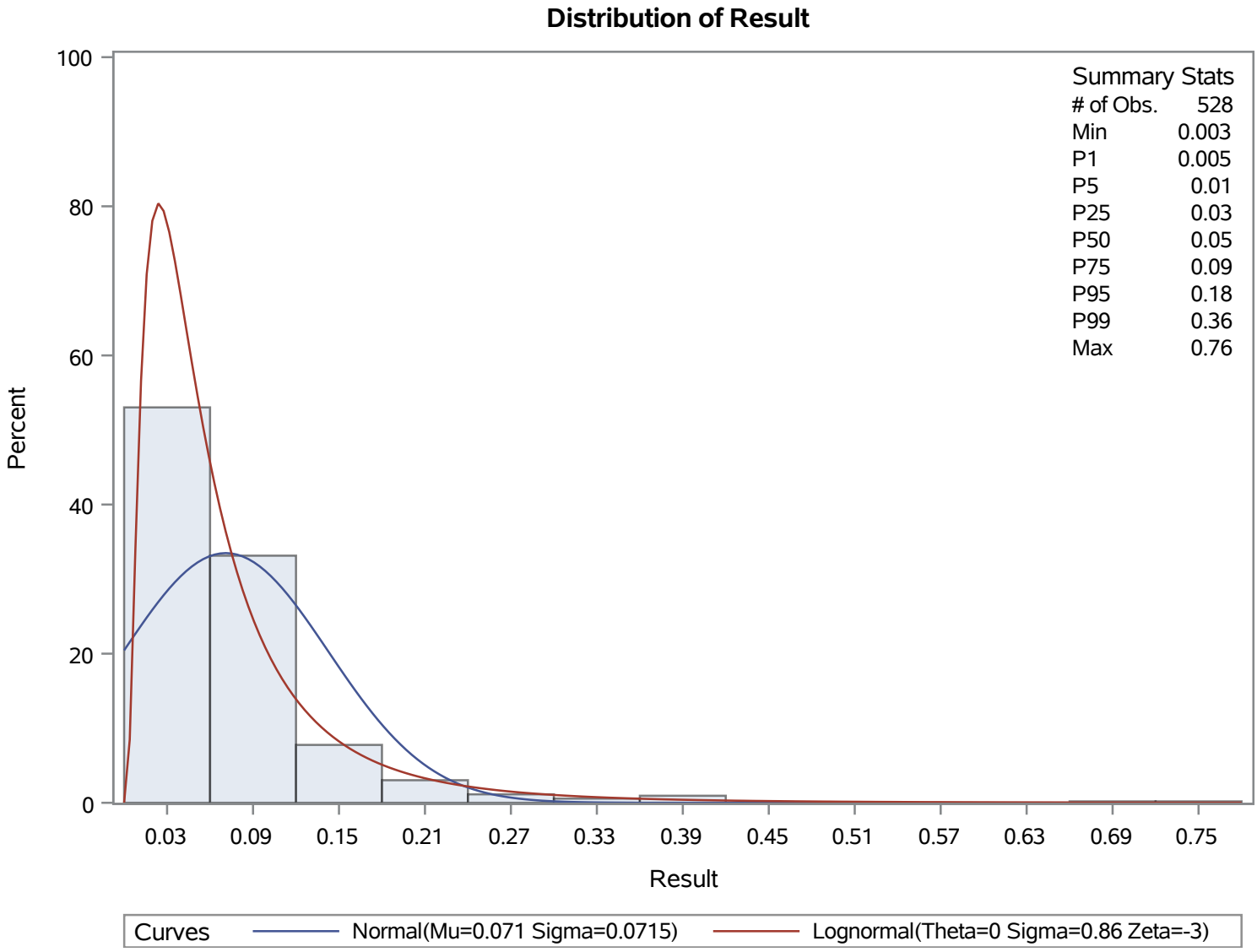
Little Manatee River
112
Ammonia (mg/l)
Site ID = 112

The UNIVARIATE Procedure



Little Manatee River
113
Ammonia (mg/l)
Site ID = 113

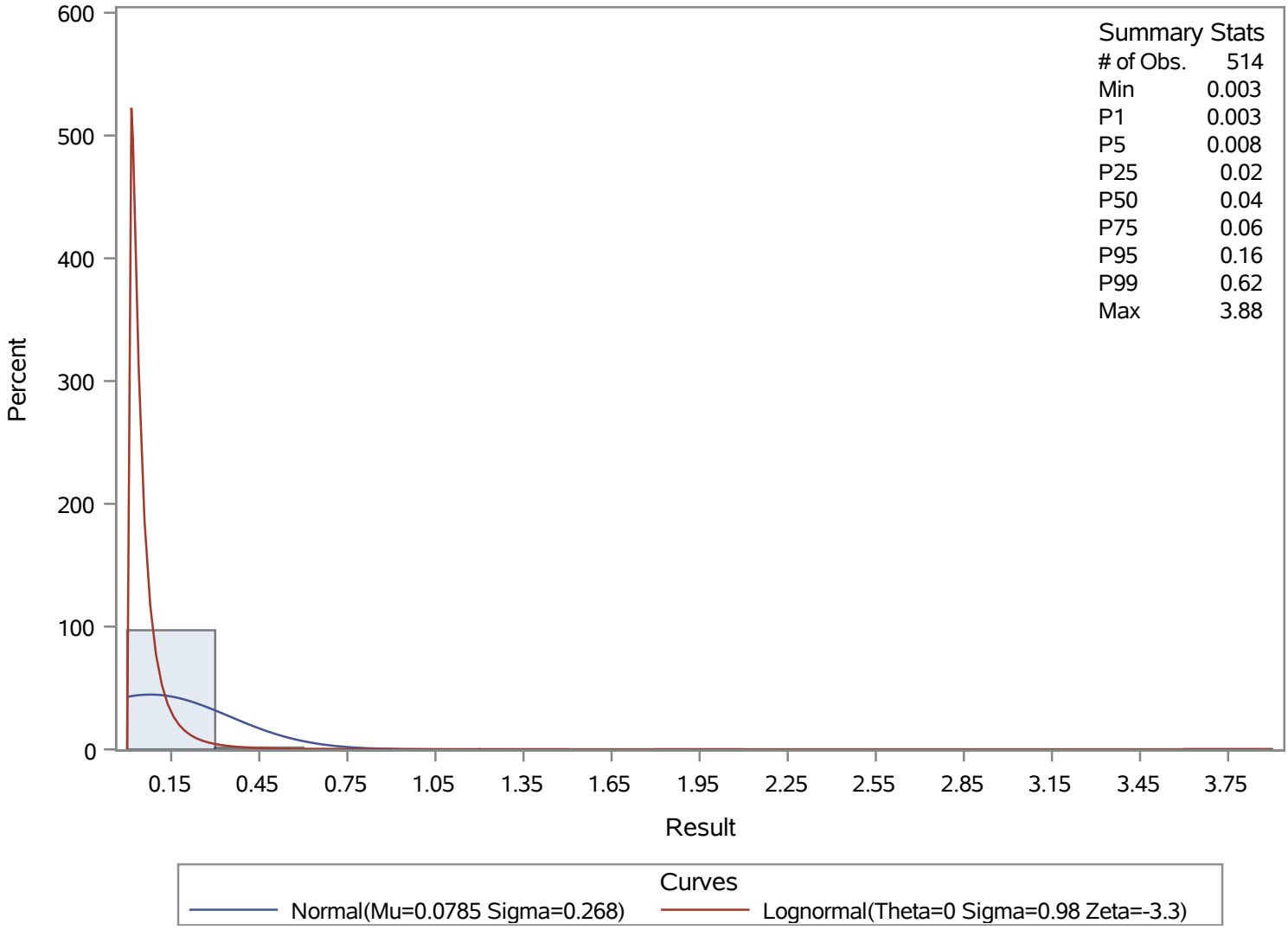
The UNIVARIATE Procedure



Little Manatee River
129
Ammonia (mg/l)
Site ID = 129

The UNIVARIATE Procedure

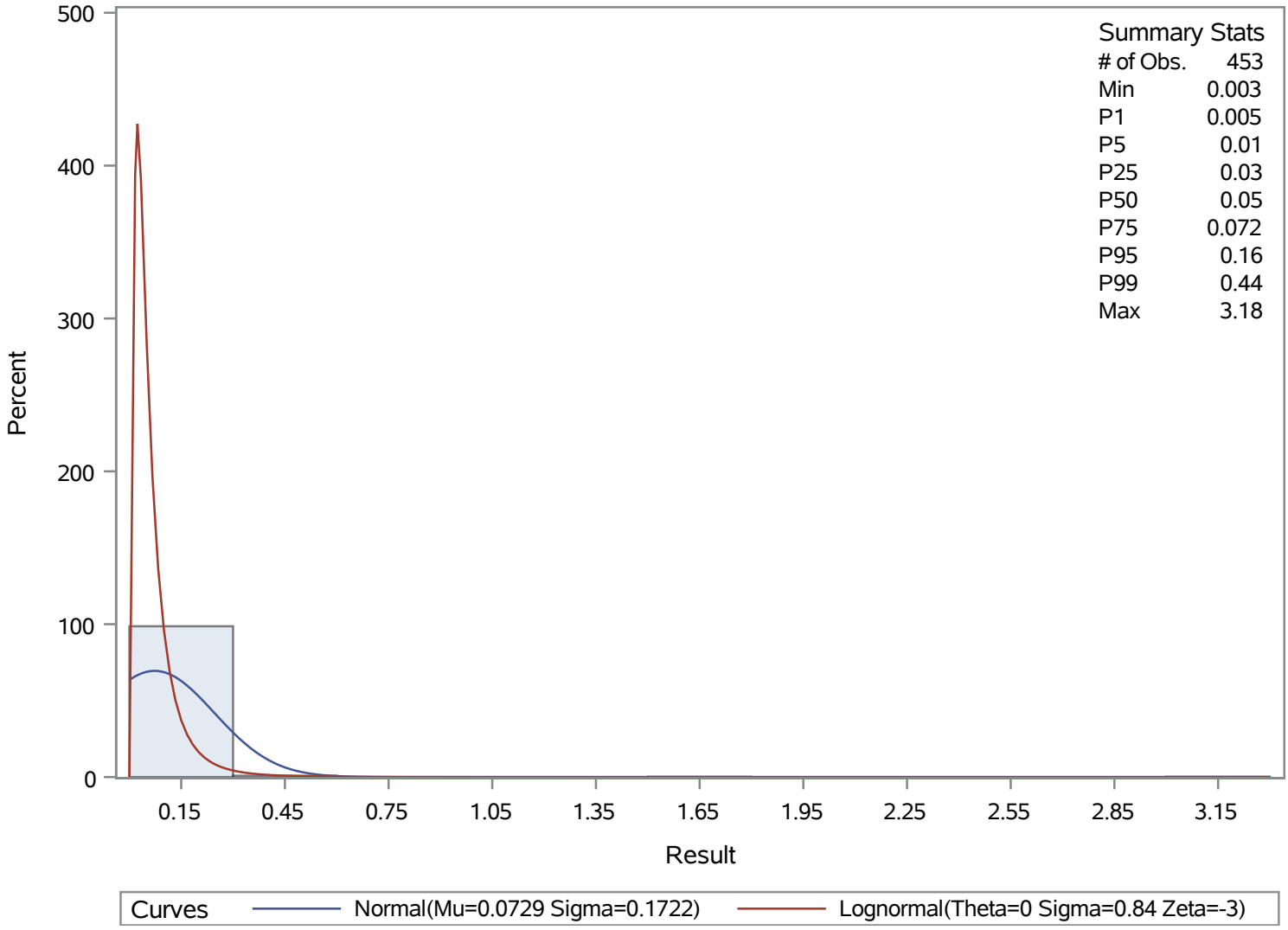
Distribution of Result



Little Manatee River
140
Ammonia (mg/l)
Site ID = 140

The UNIVARIATE Procedure

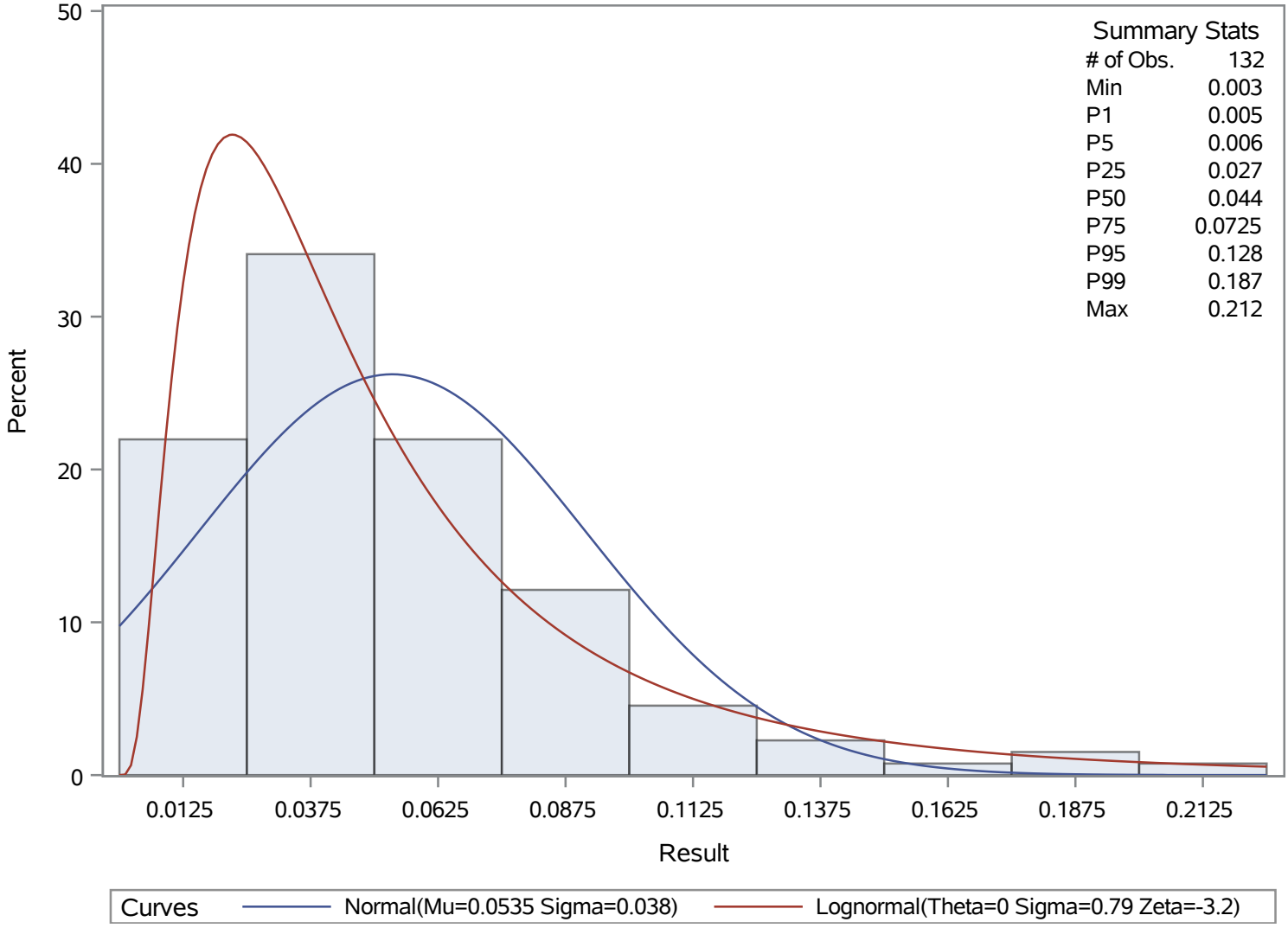
Distribution of Result



Little Manatee River
180
Ammonia (mg/l)
Site ID = 180

The UNIVARIATE Procedure

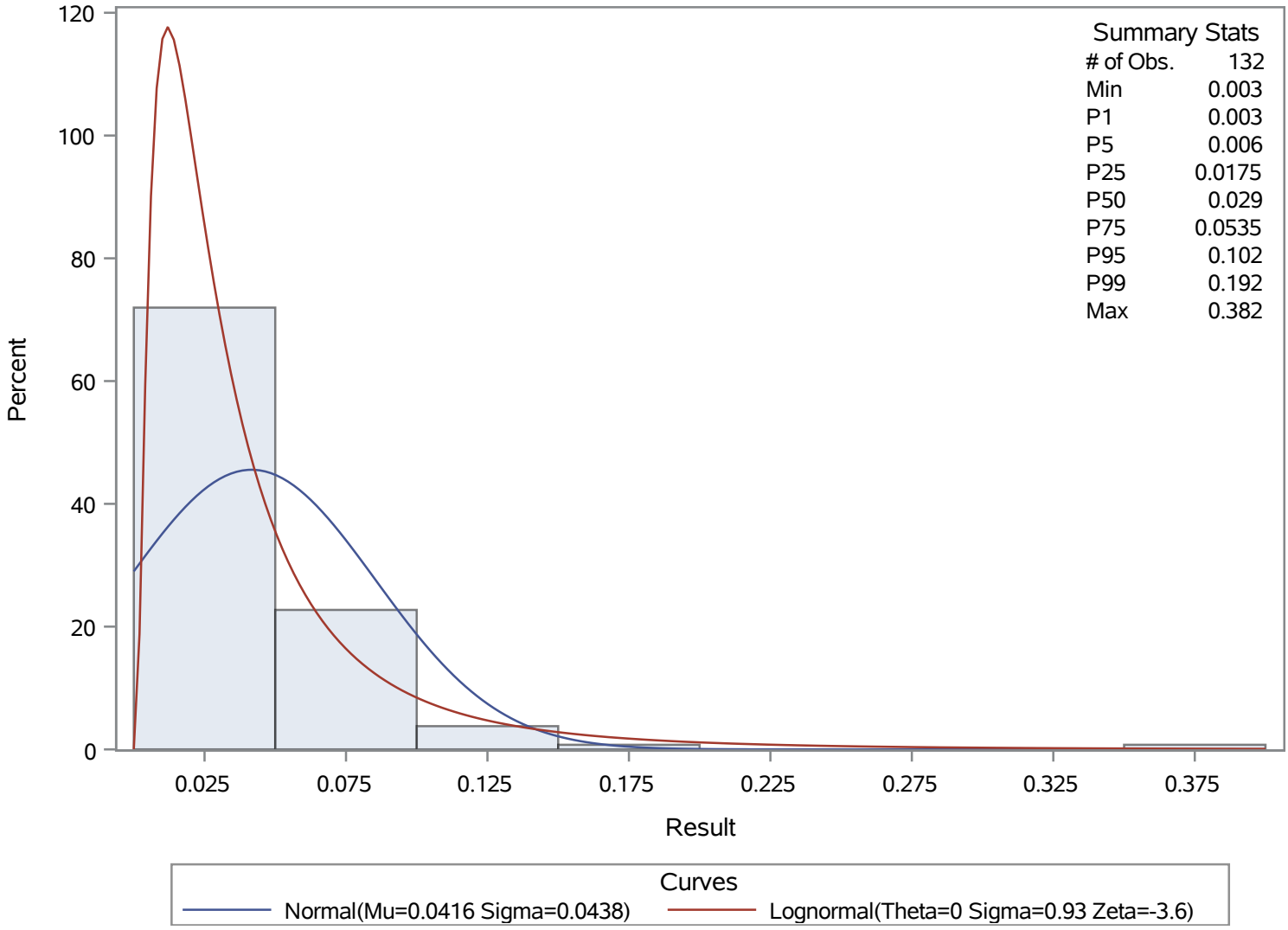
Distribution of Result



Little Manatee River
181
Ammonia (mg/l)
Site ID = 181

The UNIVARIATE Procedure

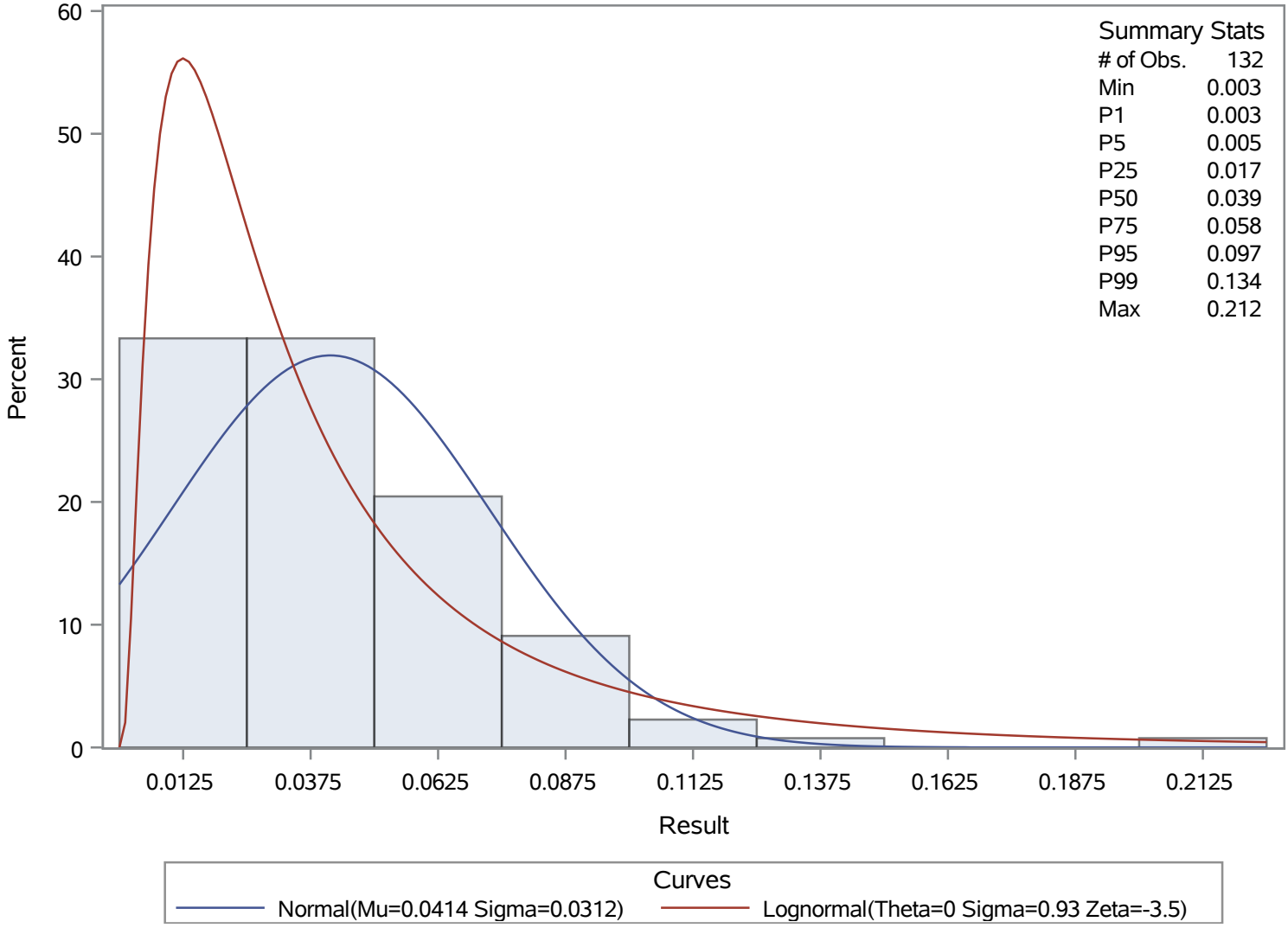
Distribution of Result



Little Manatee River
182
Ammonia (mg/l)
Site ID = 182

The UNIVARIATE Procedure

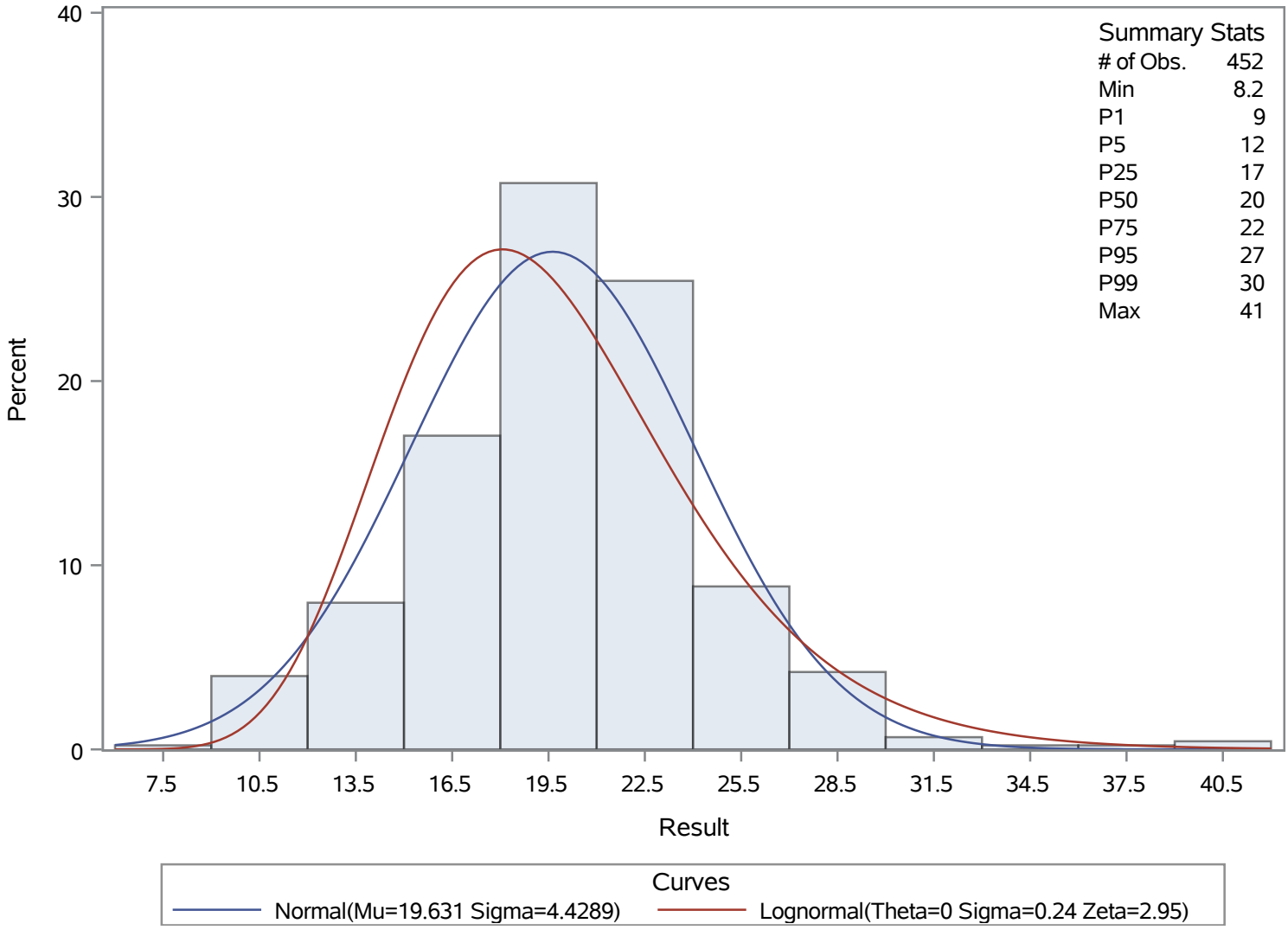
Distribution of Result



Little Manatee River
140
Chloride (mg/l)
Site ID = 140

The UNIVARIATE Procedure

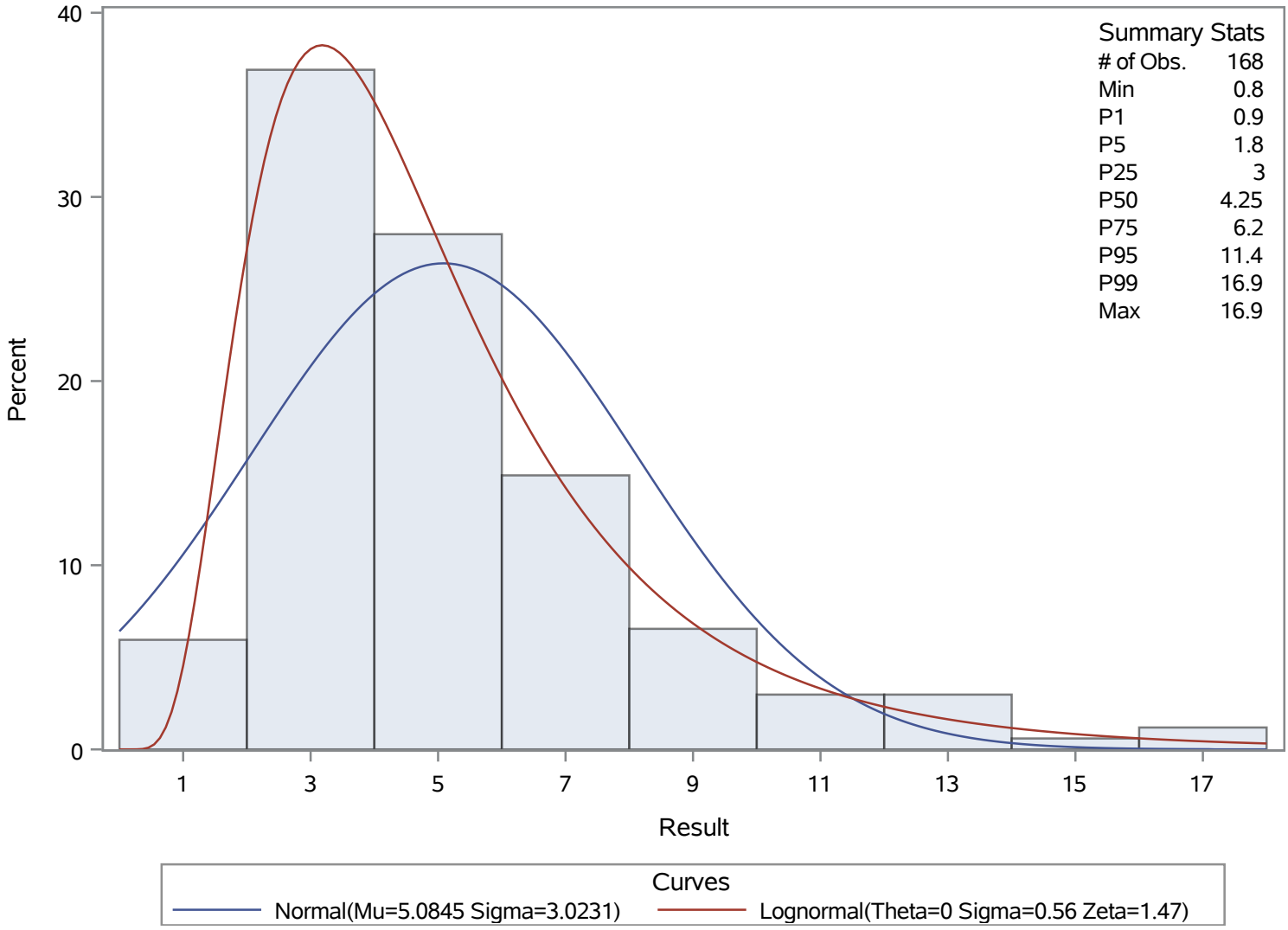
Distribution of Result



Little Manatee River
112
Chlorophyll a Corr (ug/l)
Site ID = 112

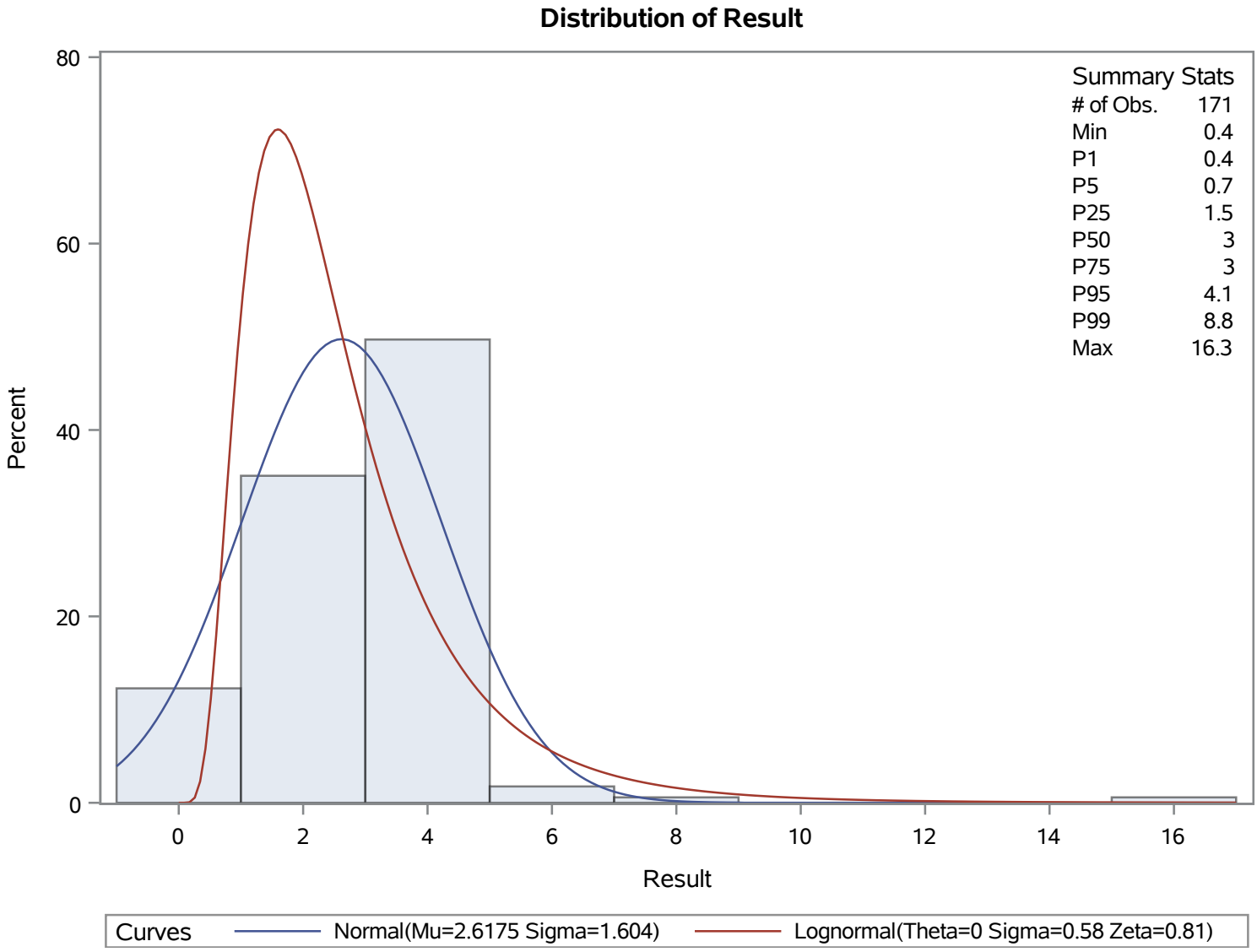
The UNIVARIATE Procedure

Distribution of Result



Little Manatee River
113
Chlorophyll a Corr (ug/l)
Site ID = 113

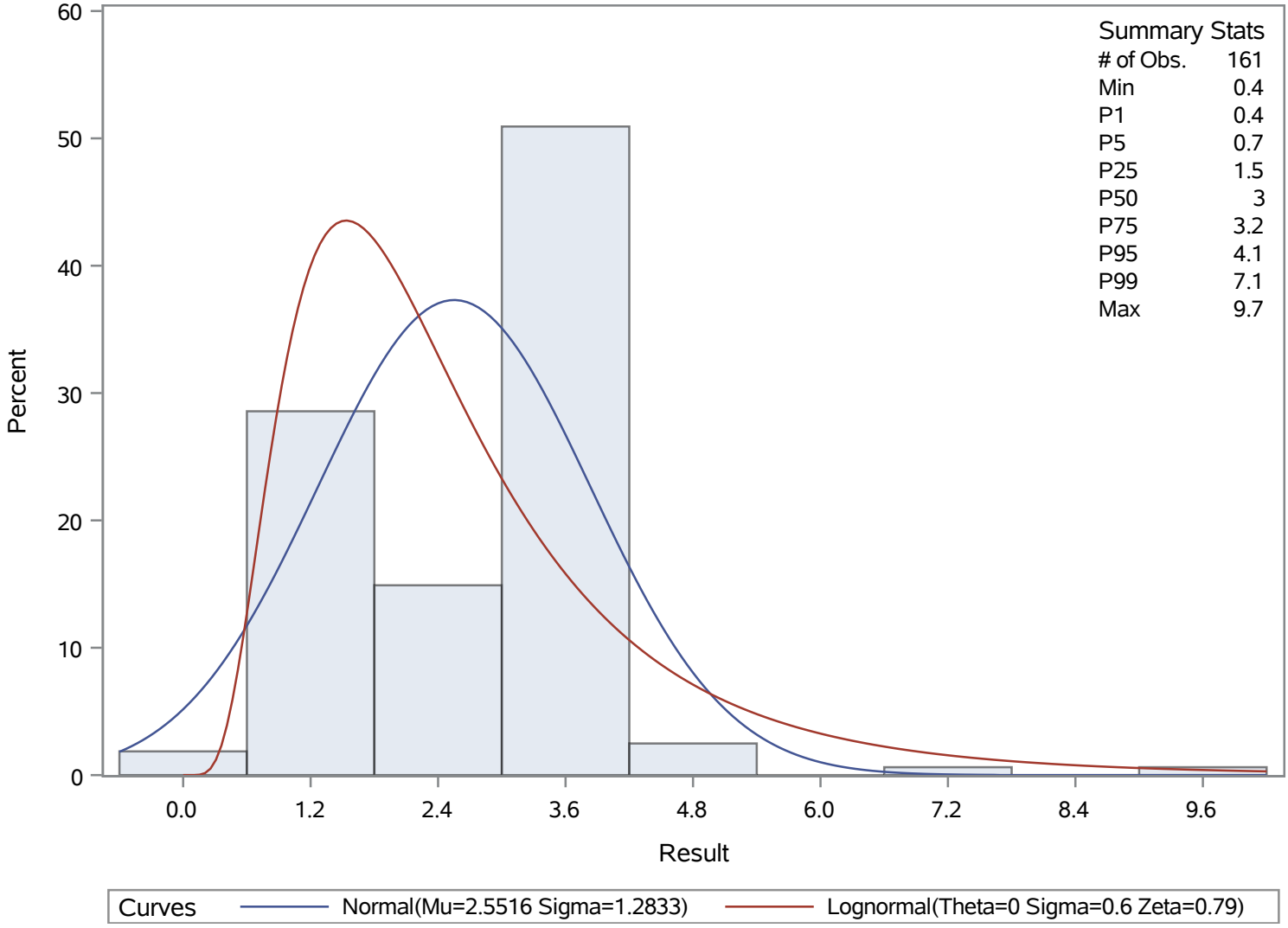
The UNIVARIATE Procedure



Little Manatee River
129
Chlorophyll a Corr (ug/l)
Site ID = 129

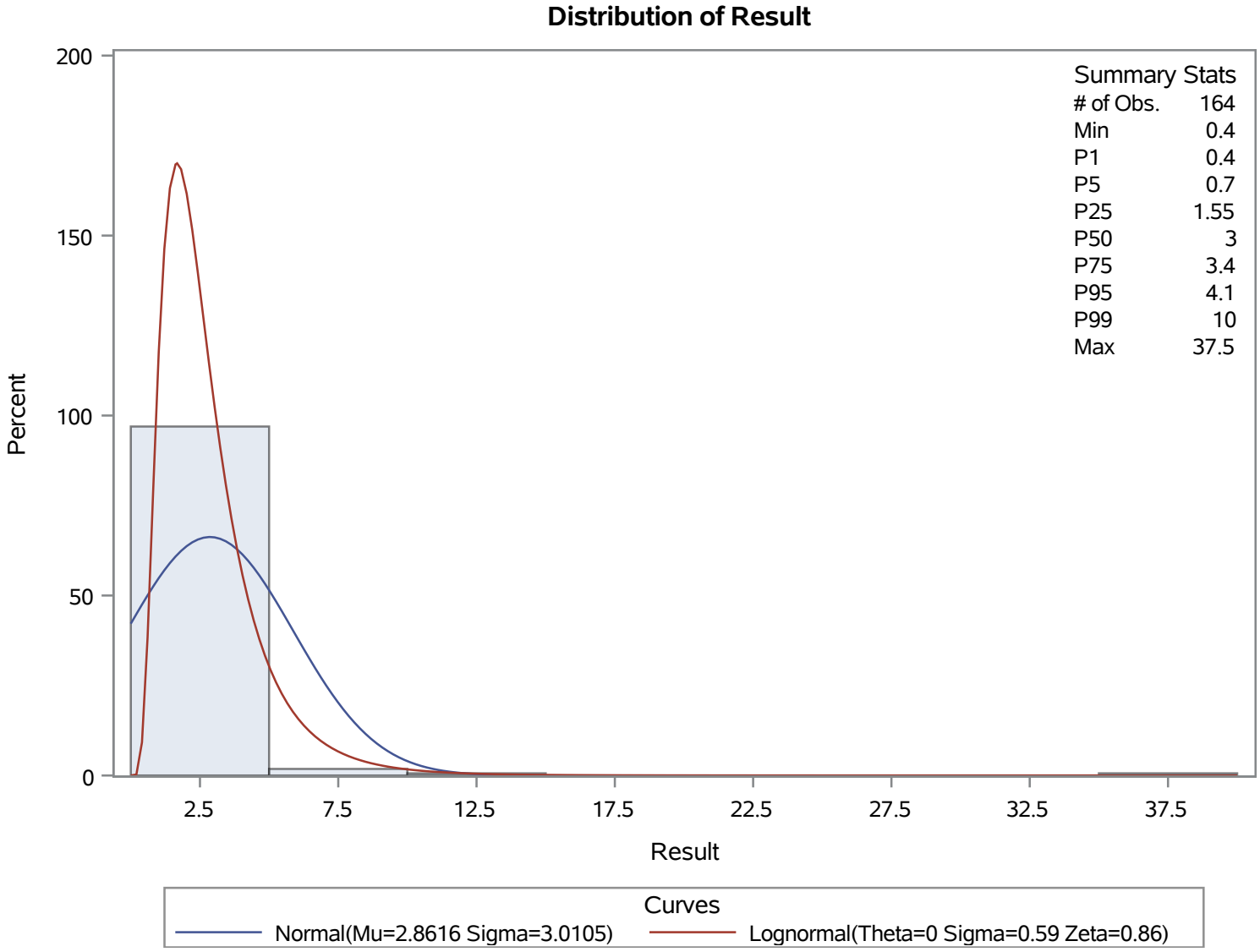
The UNIVARIATE Procedure

Distribution of Result



Little Manatee River
140
Chlorophyll a Corr (ug/l)
Site ID = 140

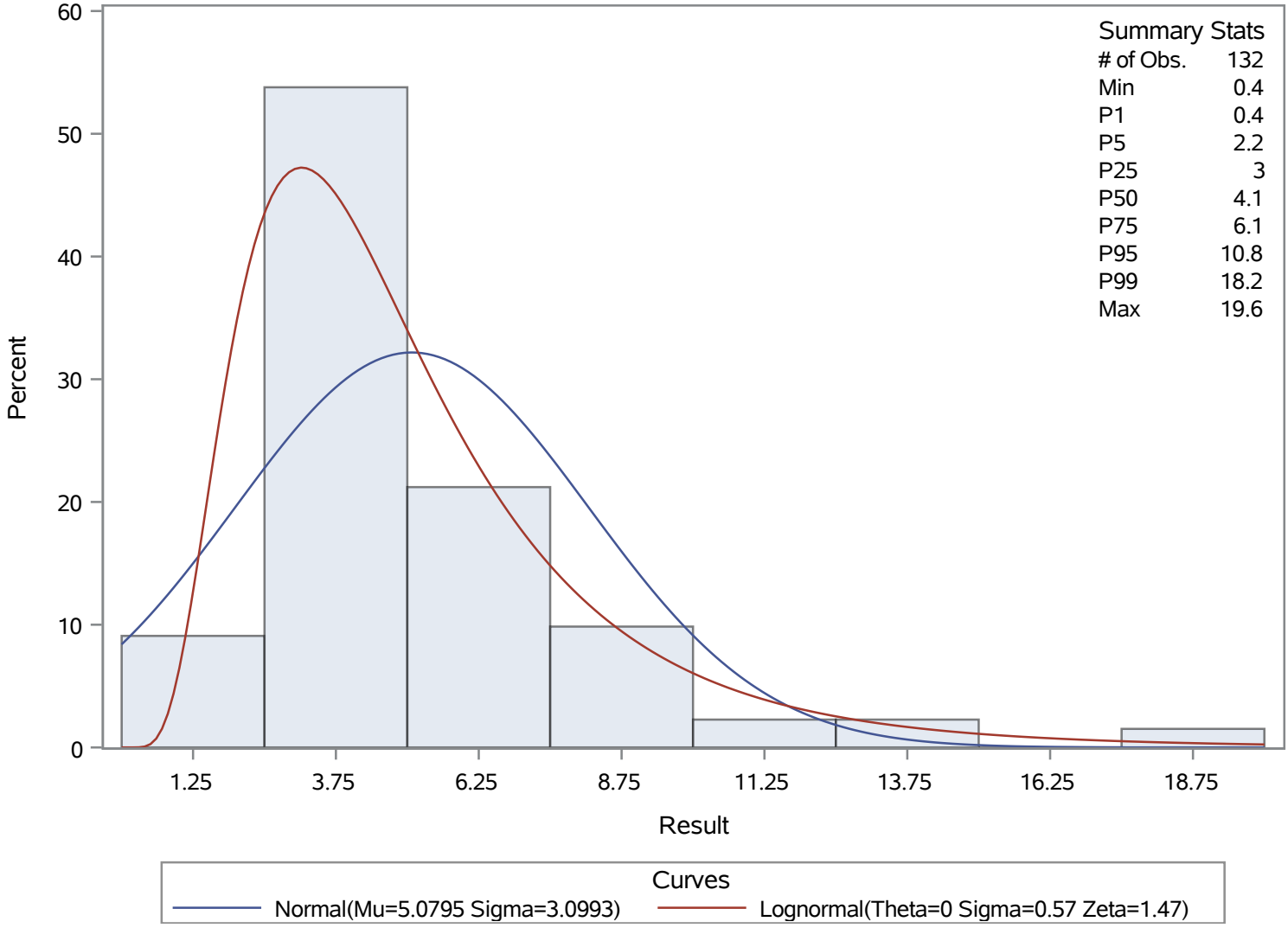
The UNIVARIATE Procedure



Little Manatee River
180
Chlorophyll a Corr (ug/l)
Site ID = 180

The UNIVARIATE Procedure

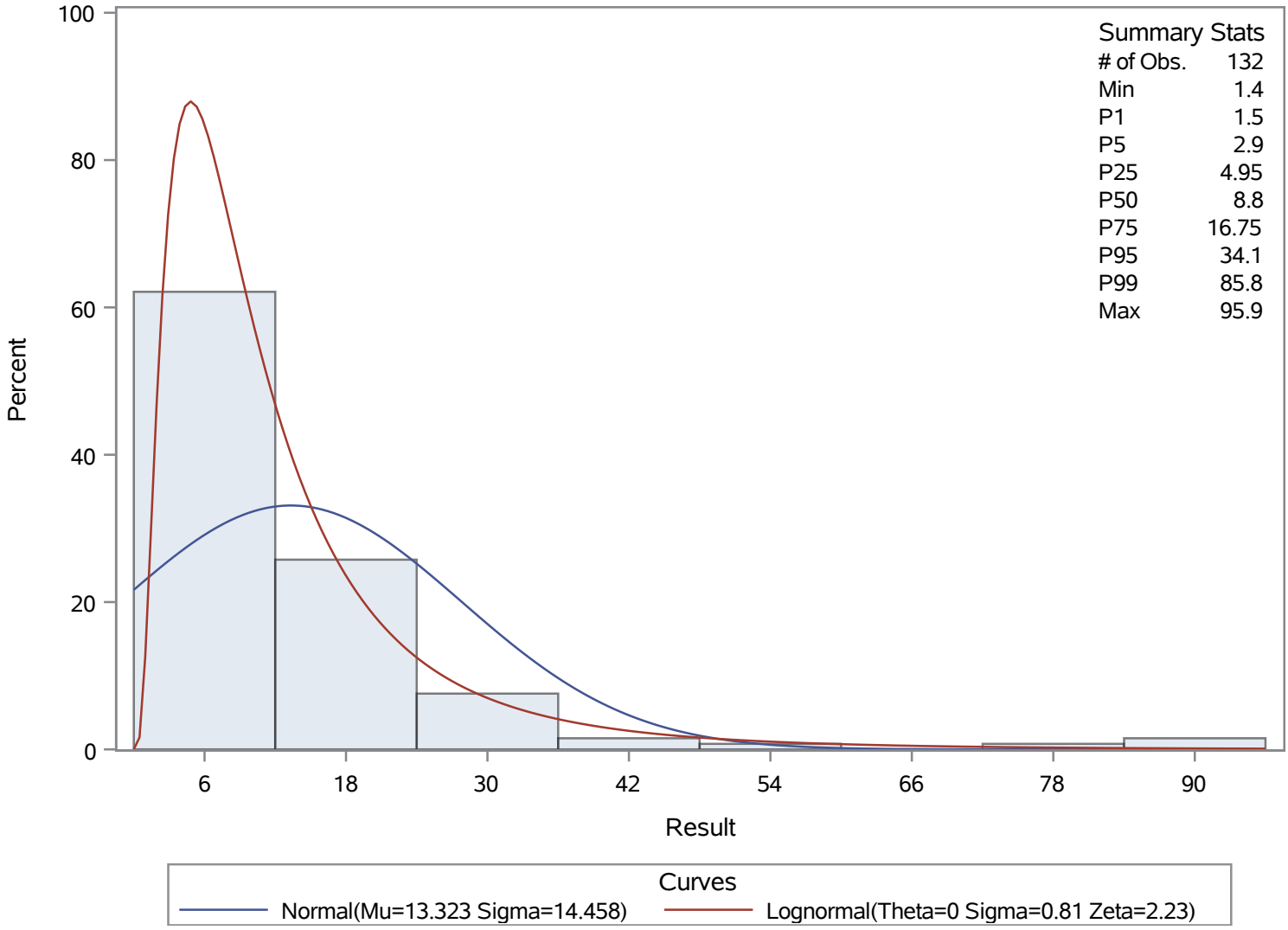
Distribution of Result



Little Manatee River
181
Chlorophyll a Corr (ug/l)
Site ID = 181

The UNIVARIATE Procedure

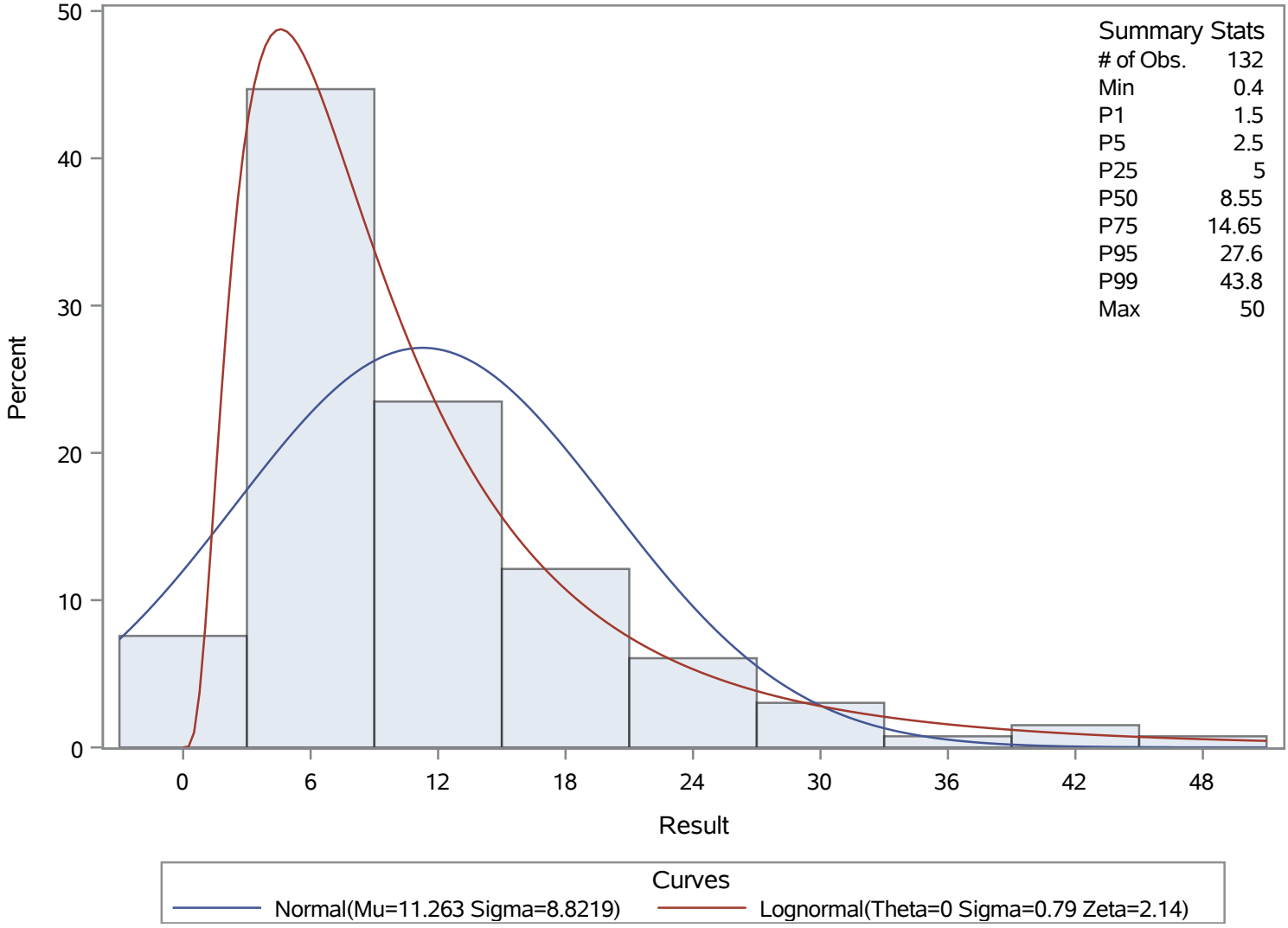
Distribution of Result



Little Manatee River
182
Chlorophyll a Corr (ug/l)
Site ID = 182

The UNIVARIATE Procedure

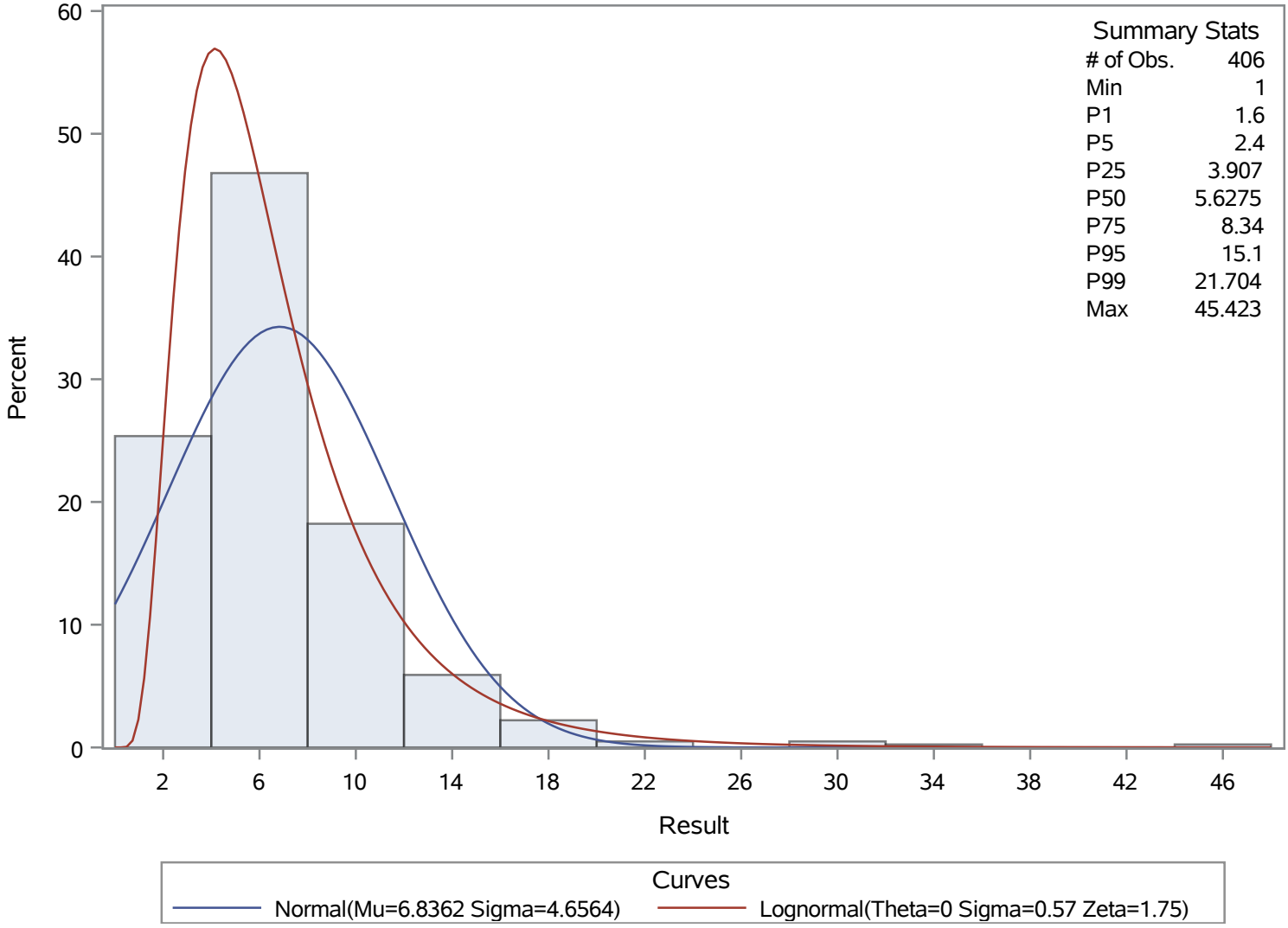
Distribution of Result



Little Manatee River
112
Chlorophyll a uncorr (ug/l)
Site ID = 112

The UNIVARIATE Procedure

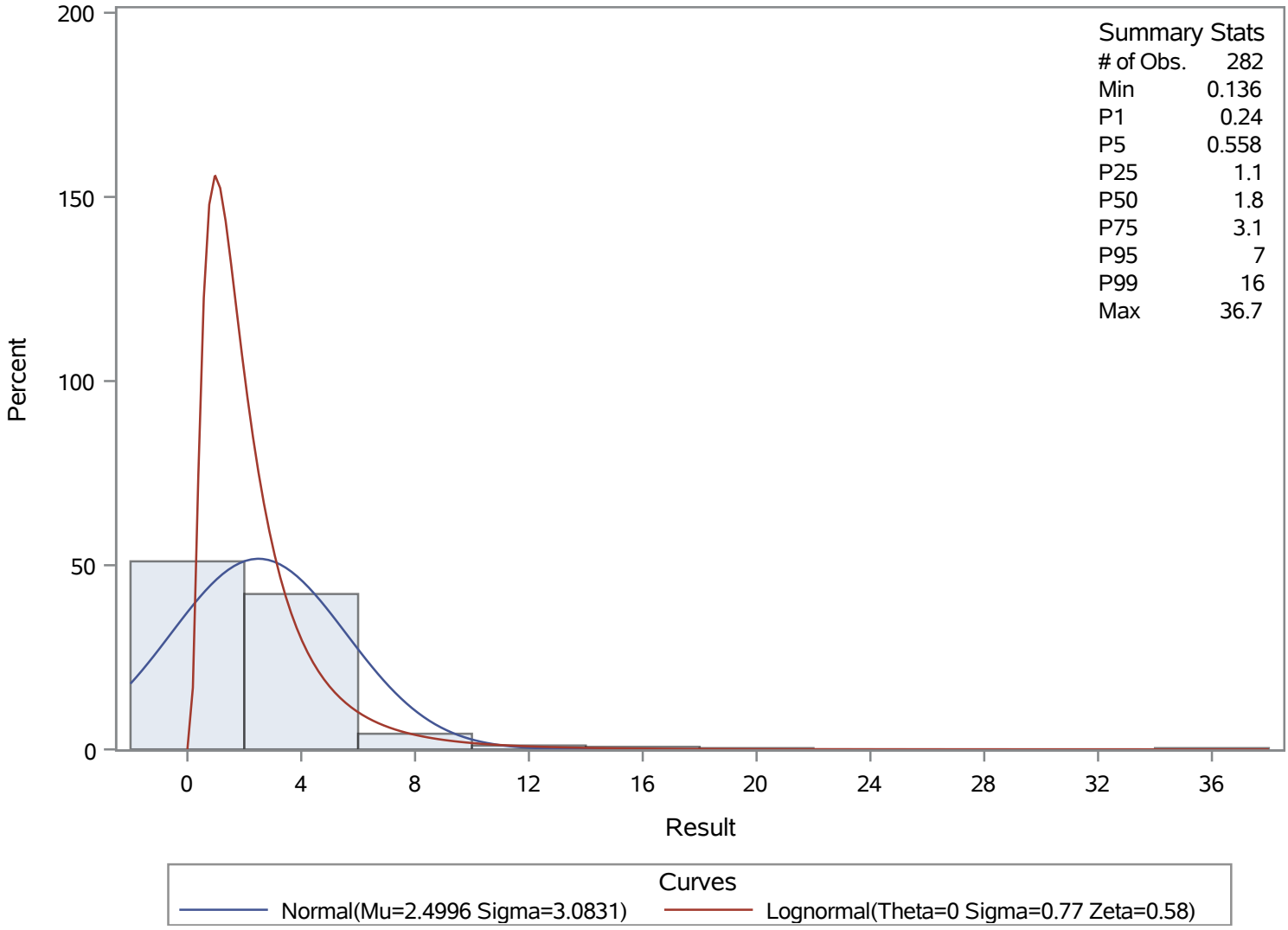
Distribution of Result



Little Manatee River
113
Chlorophyll a uncorr (ug/l)
Site ID = 113

The UNIVARIATE Procedure

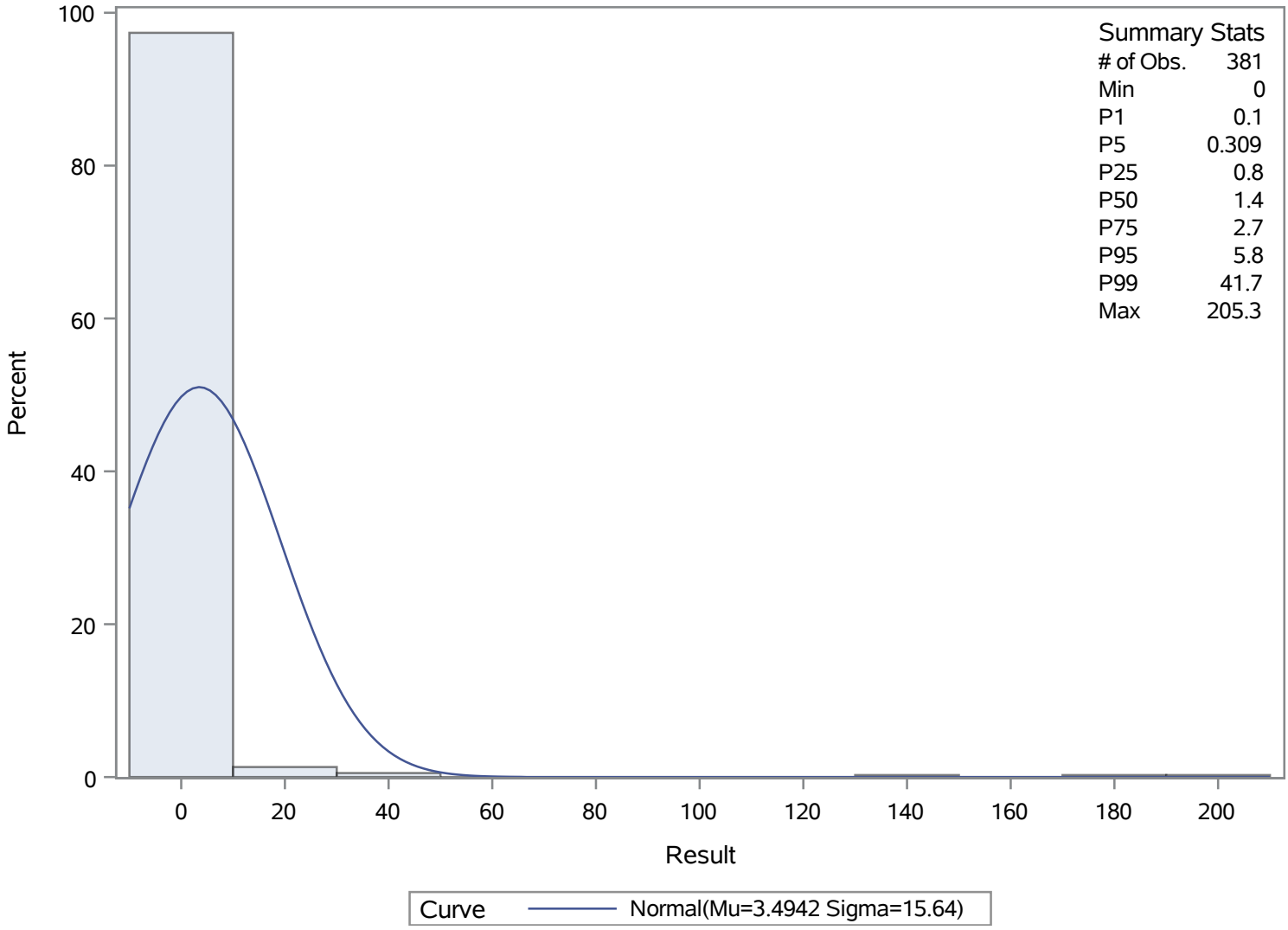
Distribution of Result



Little Manatee River
129
Chlorophyll a uncorr (ug/l)
Site ID = 129

The UNIVARIATE Procedure

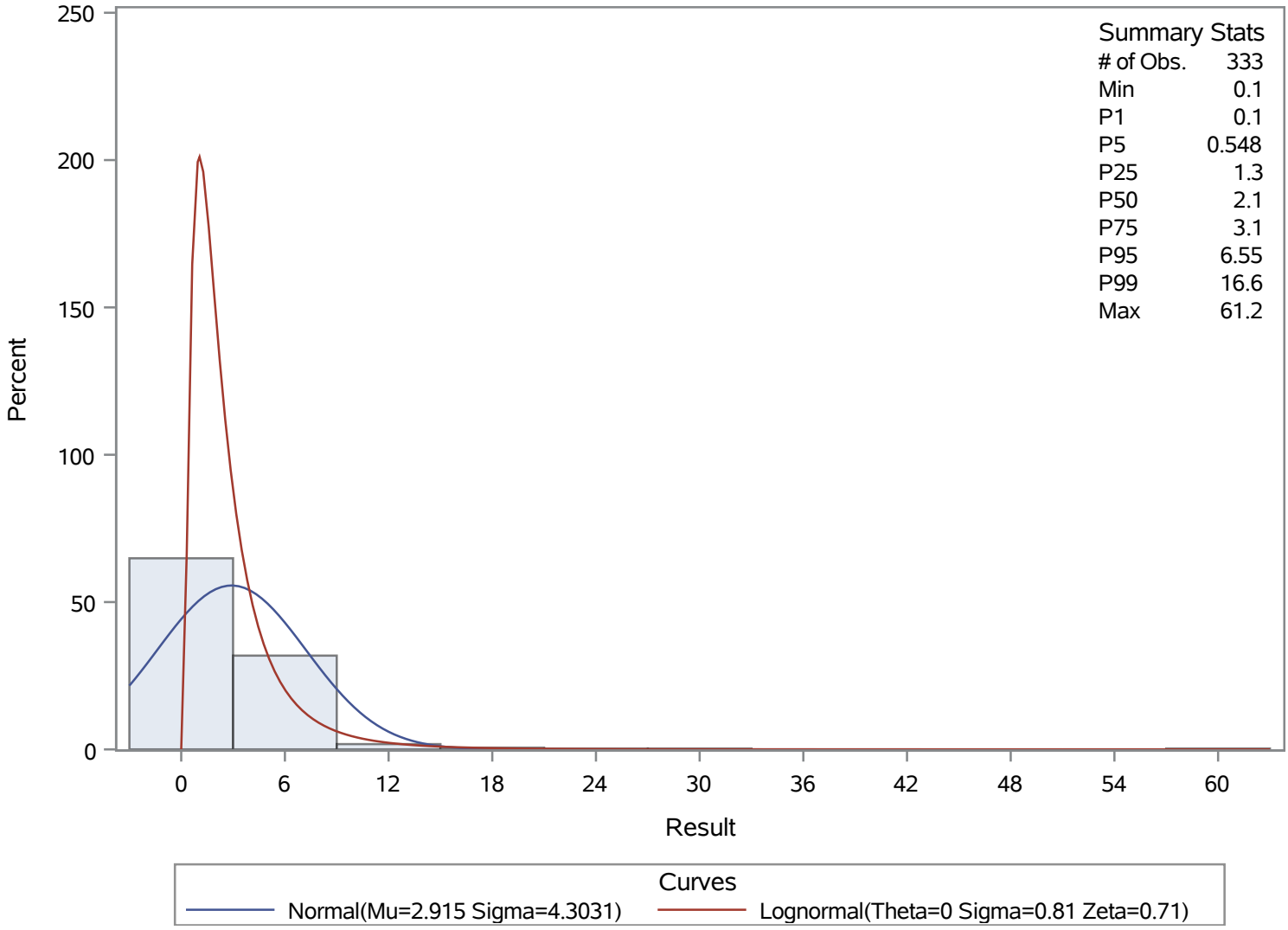
Distribution of Result



Little Manatee River
140
Chlorophyll a uncorr (ug/l)
Site ID = 140

The UNIVARIATE Procedure

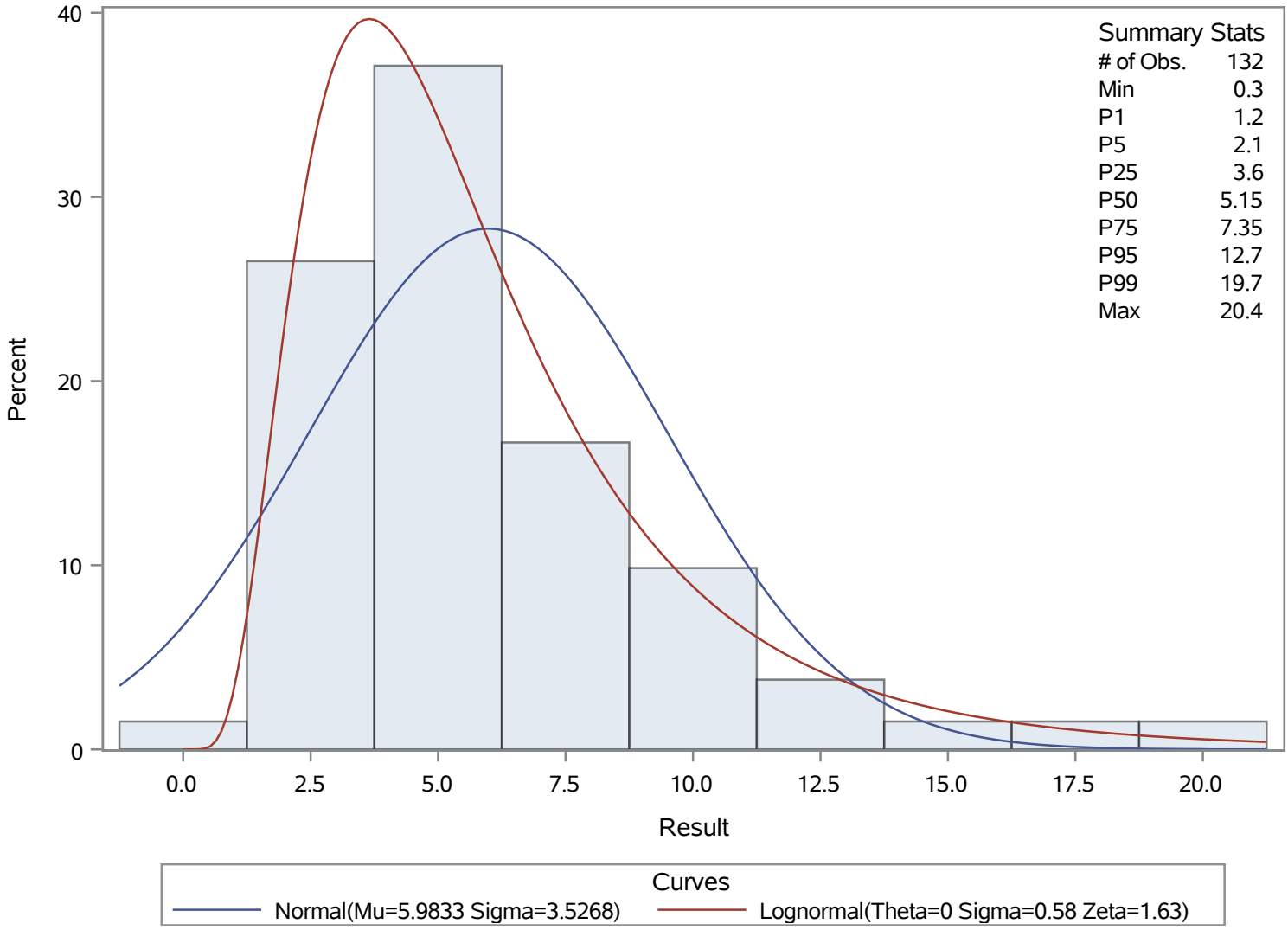
Distribution of Result



Little Manatee River
180
Chlorophyll a uncorr (ug/l)
Site ID = 180

The UNIVARIATE Procedure

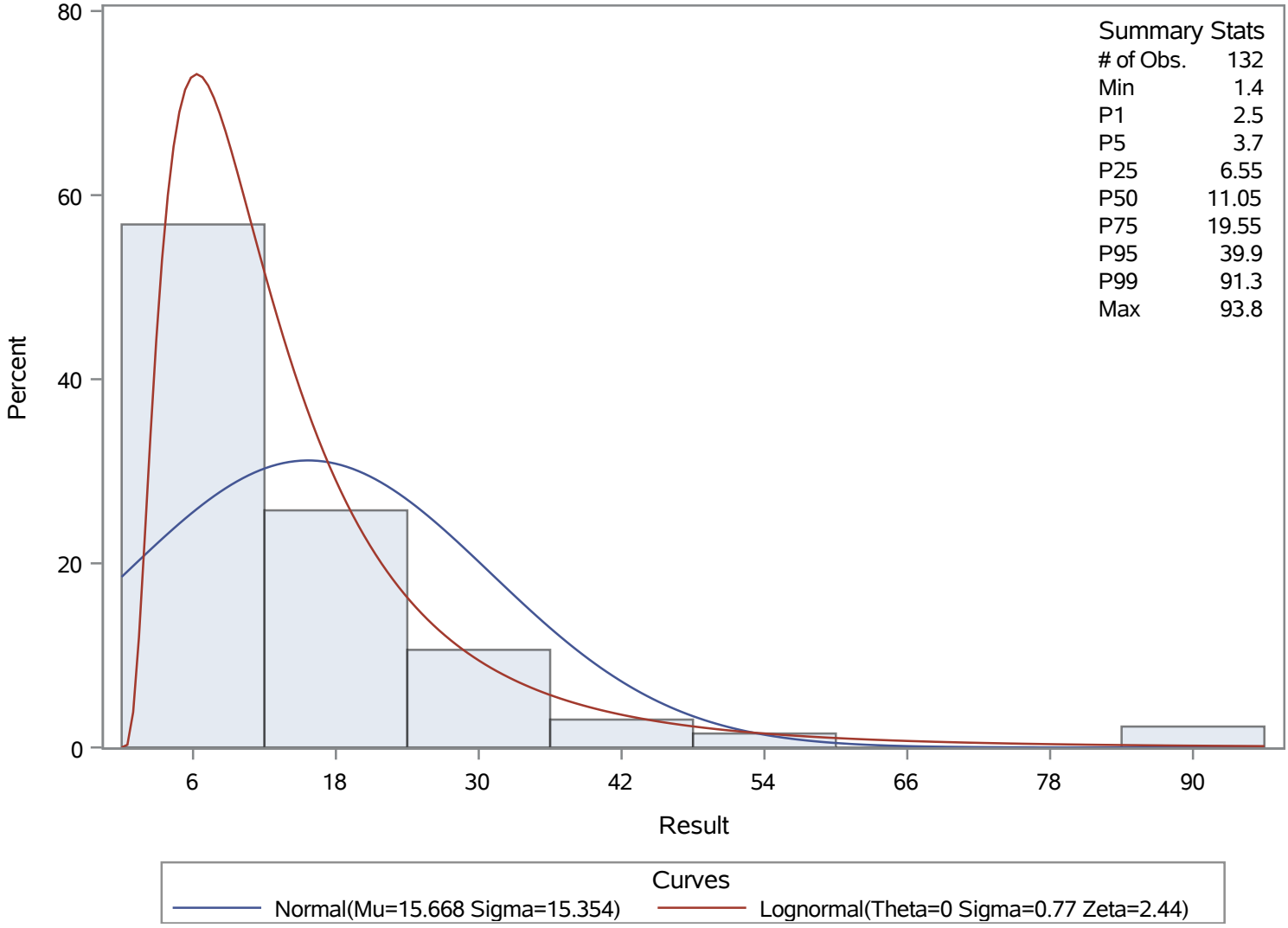
Distribution of Result



Little Manatee River
181
Chlorophyll a uncorr (ug/l)
Site ID = 181

The UNIVARIATE Procedure

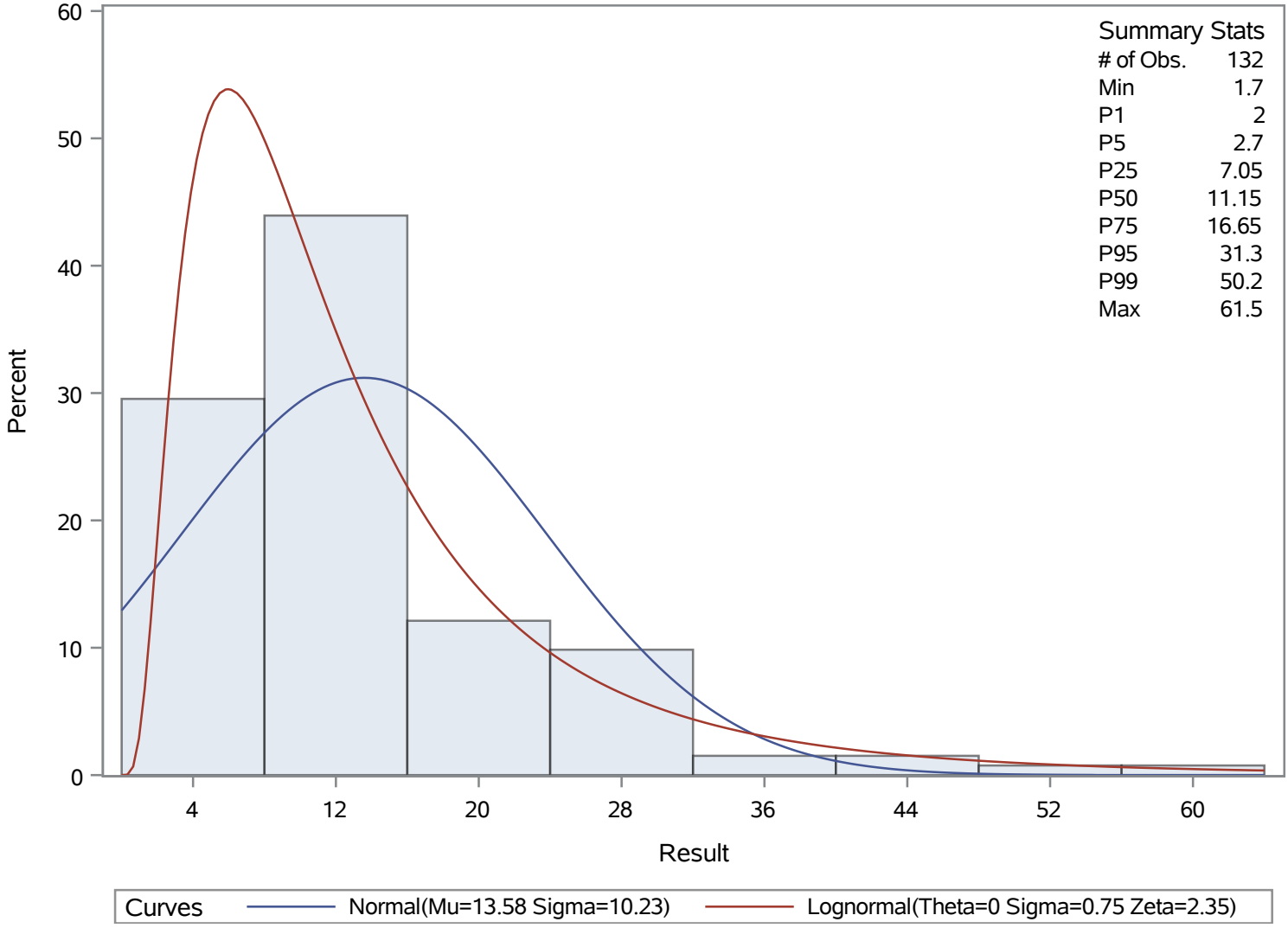
Distribution of Result



Little Manatee River
182
Chlorophyll a uncorr (ug/l)
Site ID = 182

The UNIVARIATE Procedure

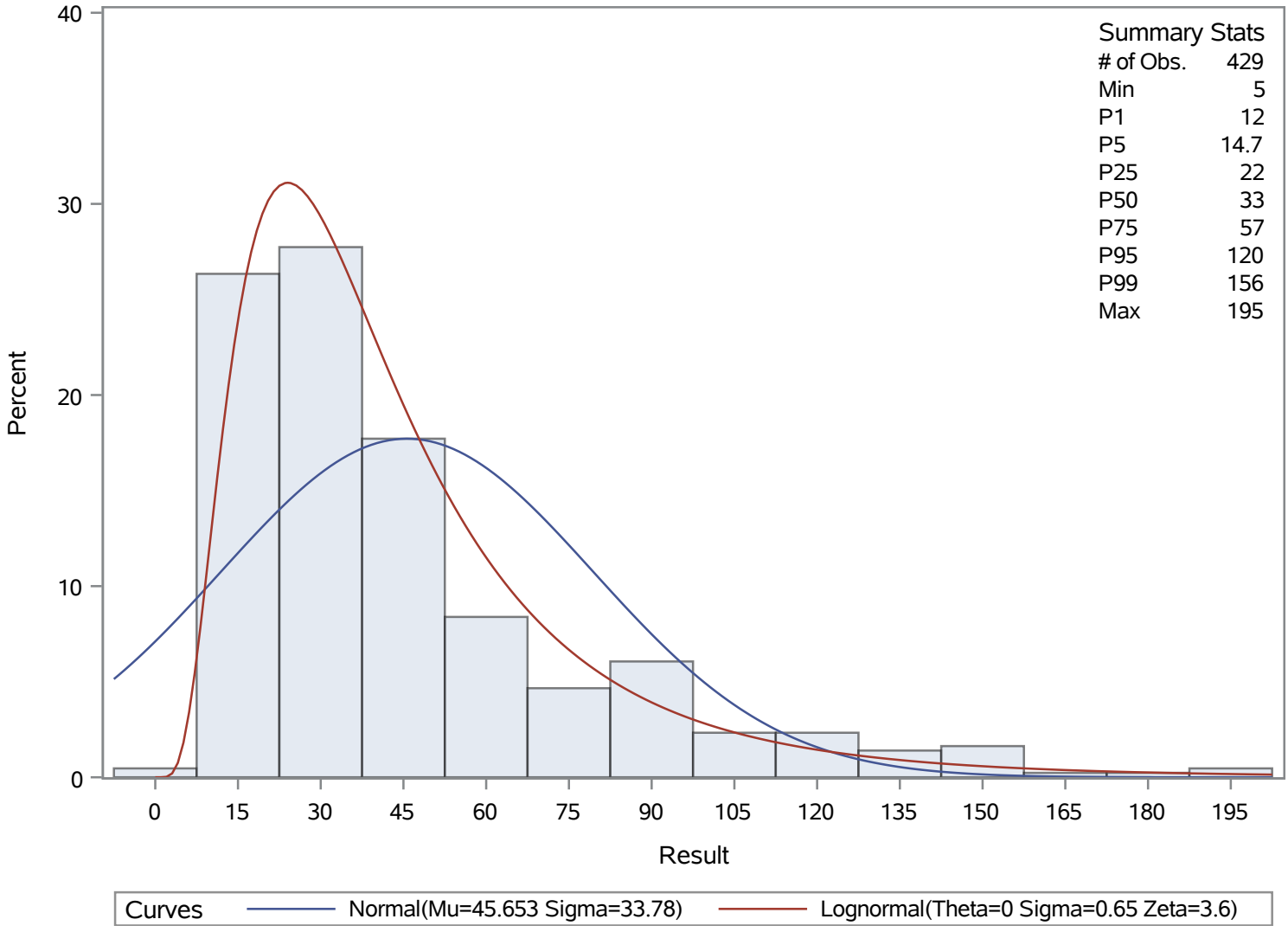
Distribution of Result



Little Manatee River
112
Color(345) C (PCU)
Site ID = 112

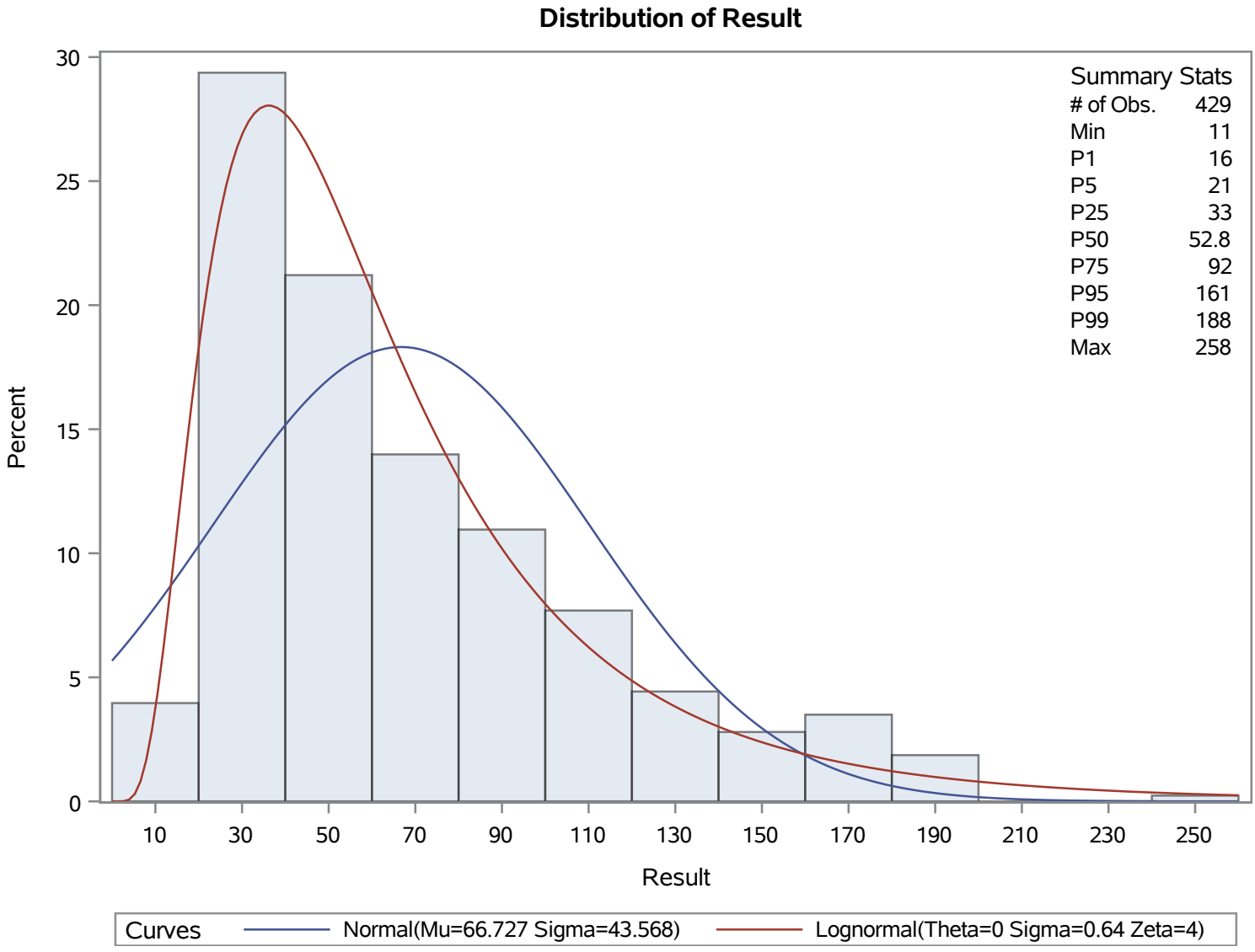
The UNIVARIATE Procedure

Distribution of Result



Little Manatee River
113
Color(345) C (PCU)
Site ID = 113

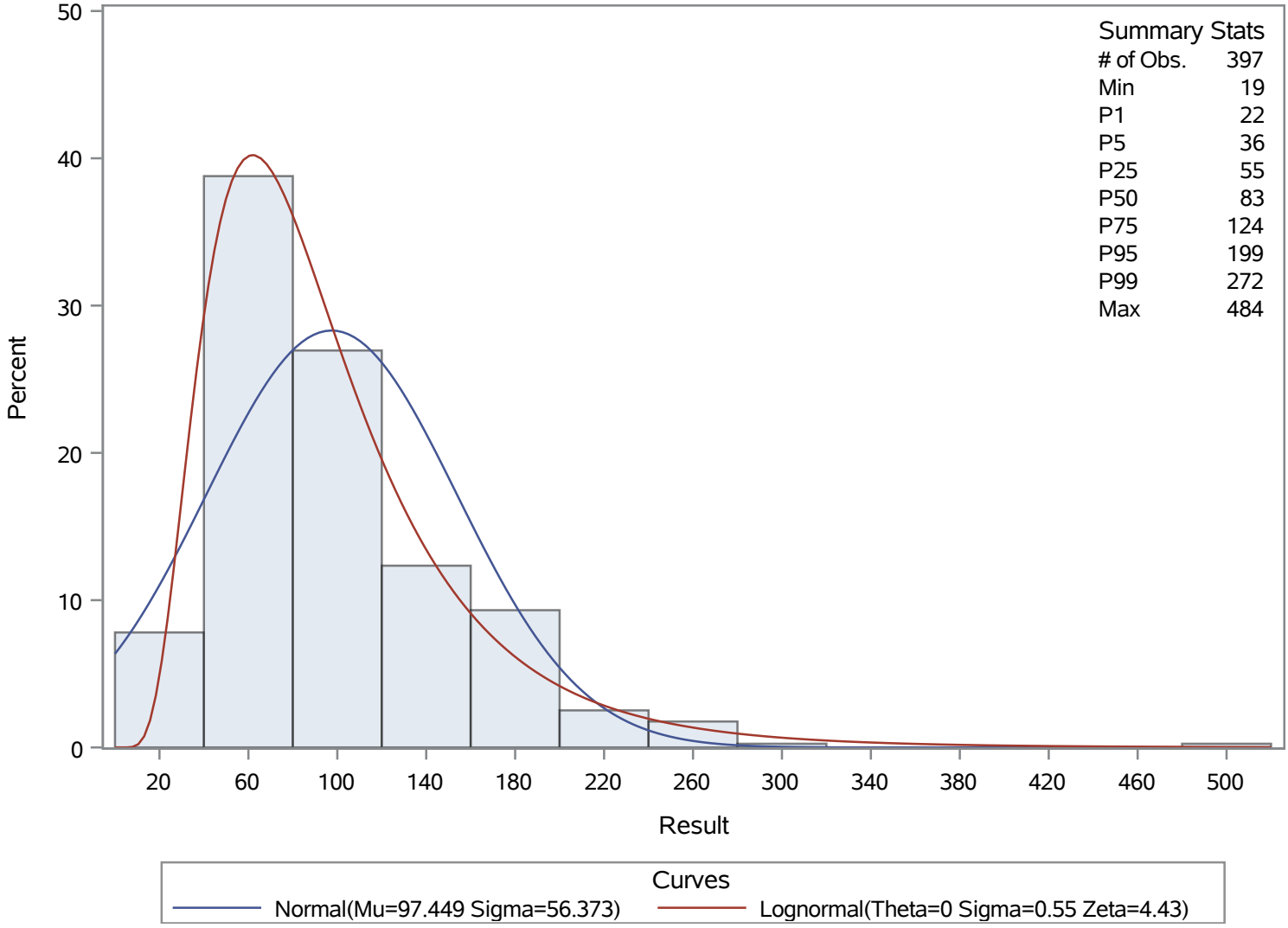
The UNIVARIATE Procedure



Little Manatee River
129
Color(345) C (PCU)
Site ID = 129

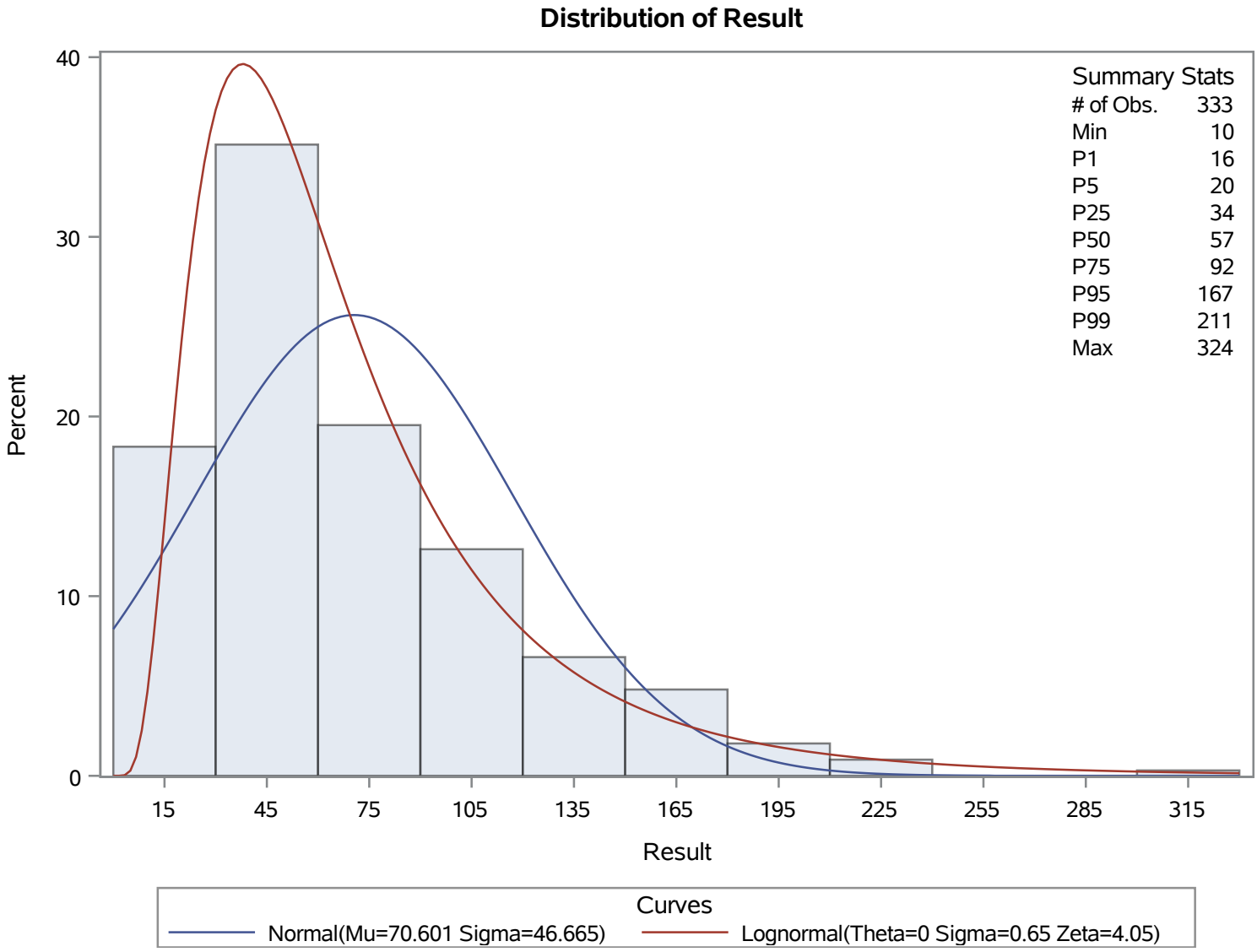
The UNIVARIATE Procedure

Distribution of Result



Little Manatee River
140
Color(345) C (PCU)
Site ID = 140

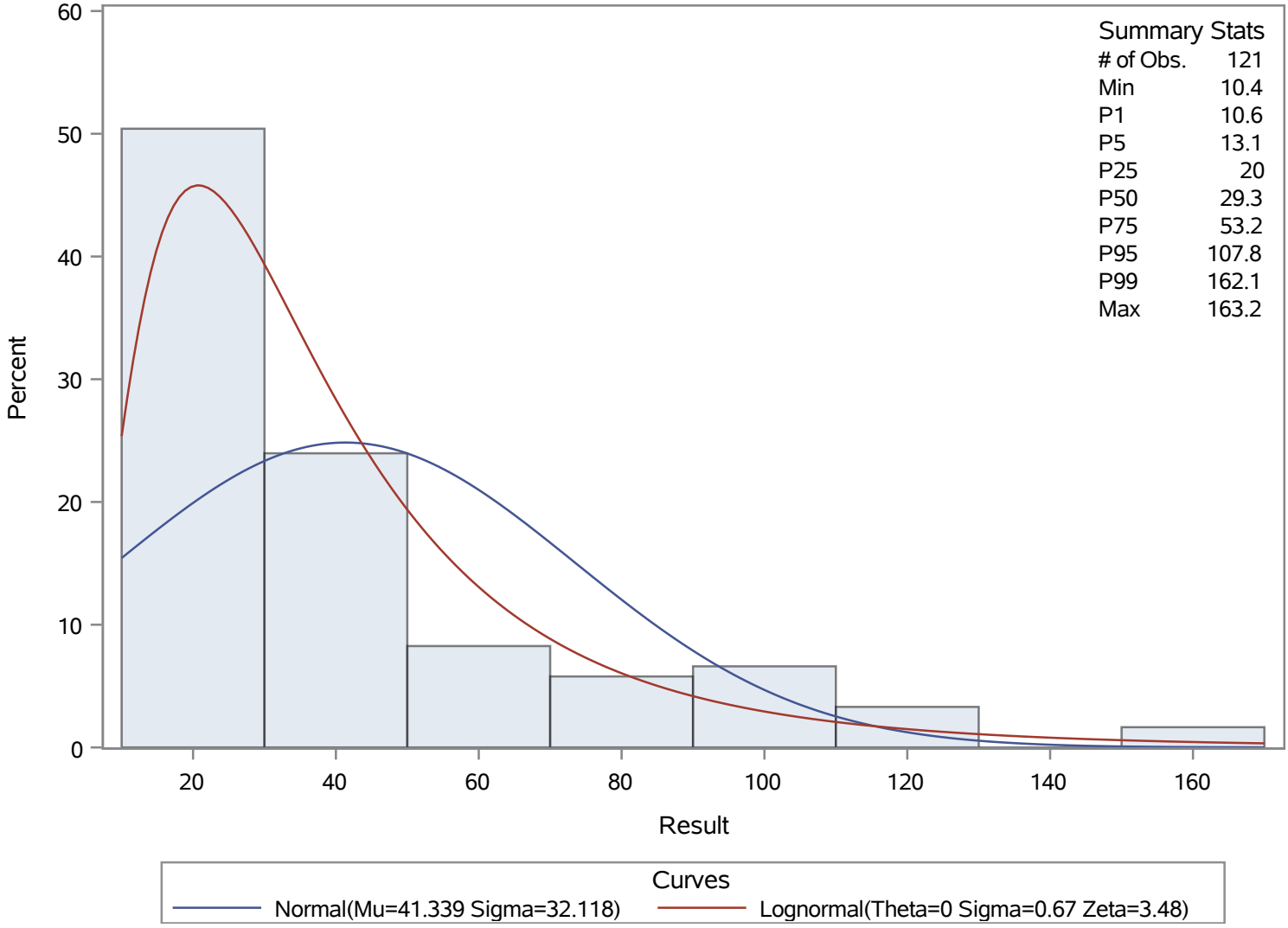
The UNIVARIATE Procedure



Little Manatee River
112
Color(345)F 45 (PCU)
Site ID = 112

The UNIVARIATE Procedure

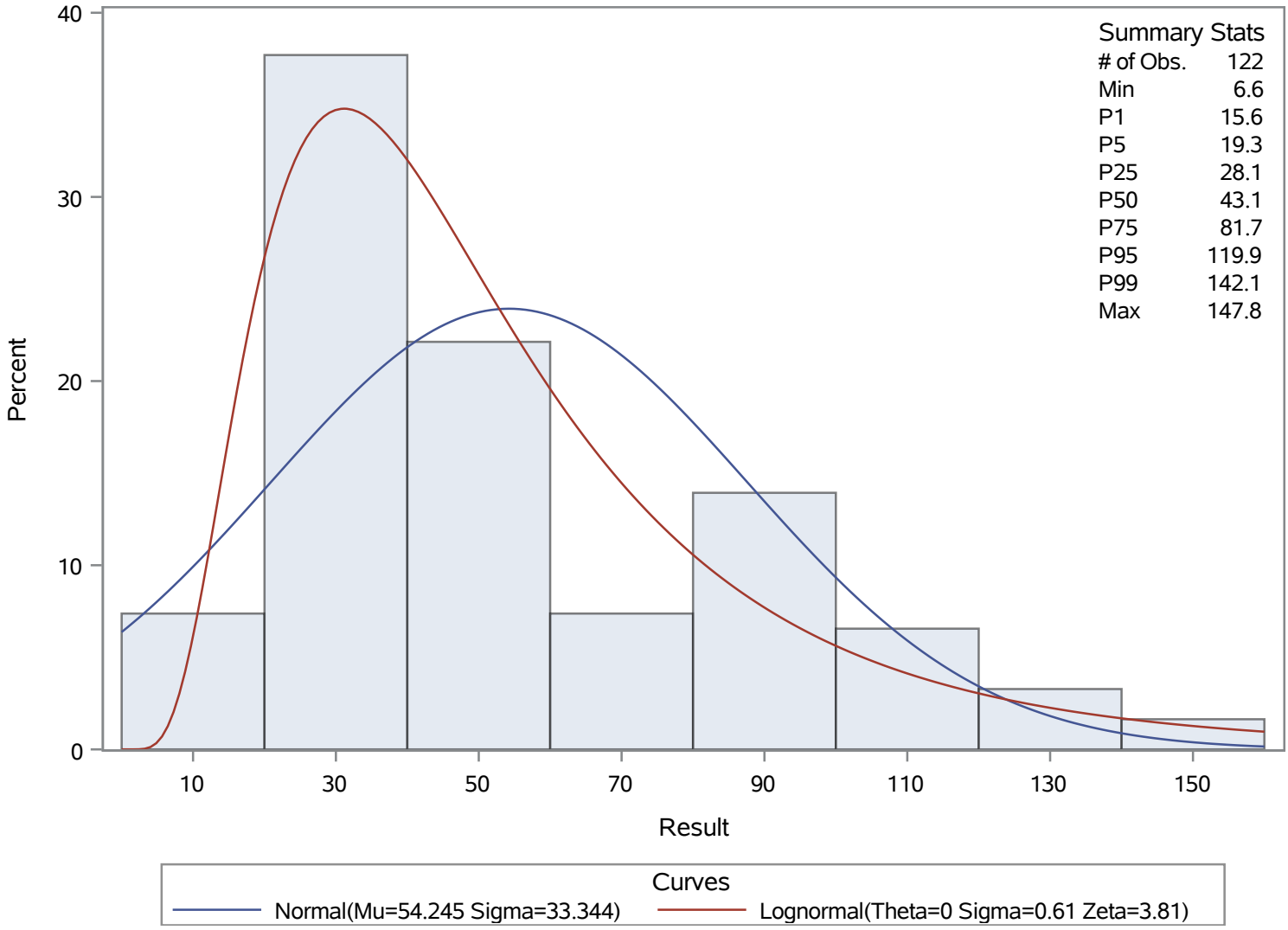
Distribution of Result



Little Manatee River
113
Color(345)F 45 (PCU)
Site ID = 113

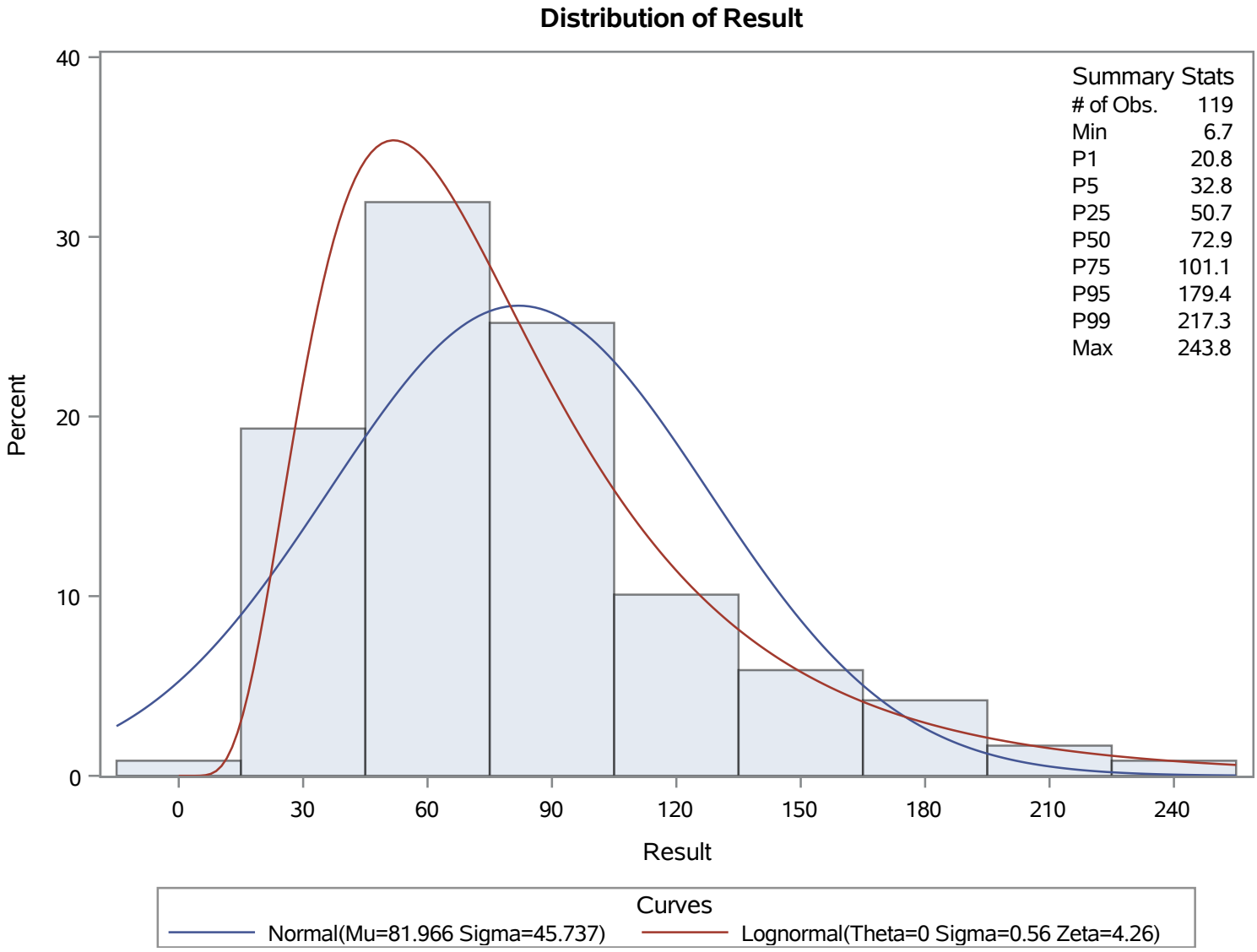
The UNIVARIATE Procedure

Distribution of Result



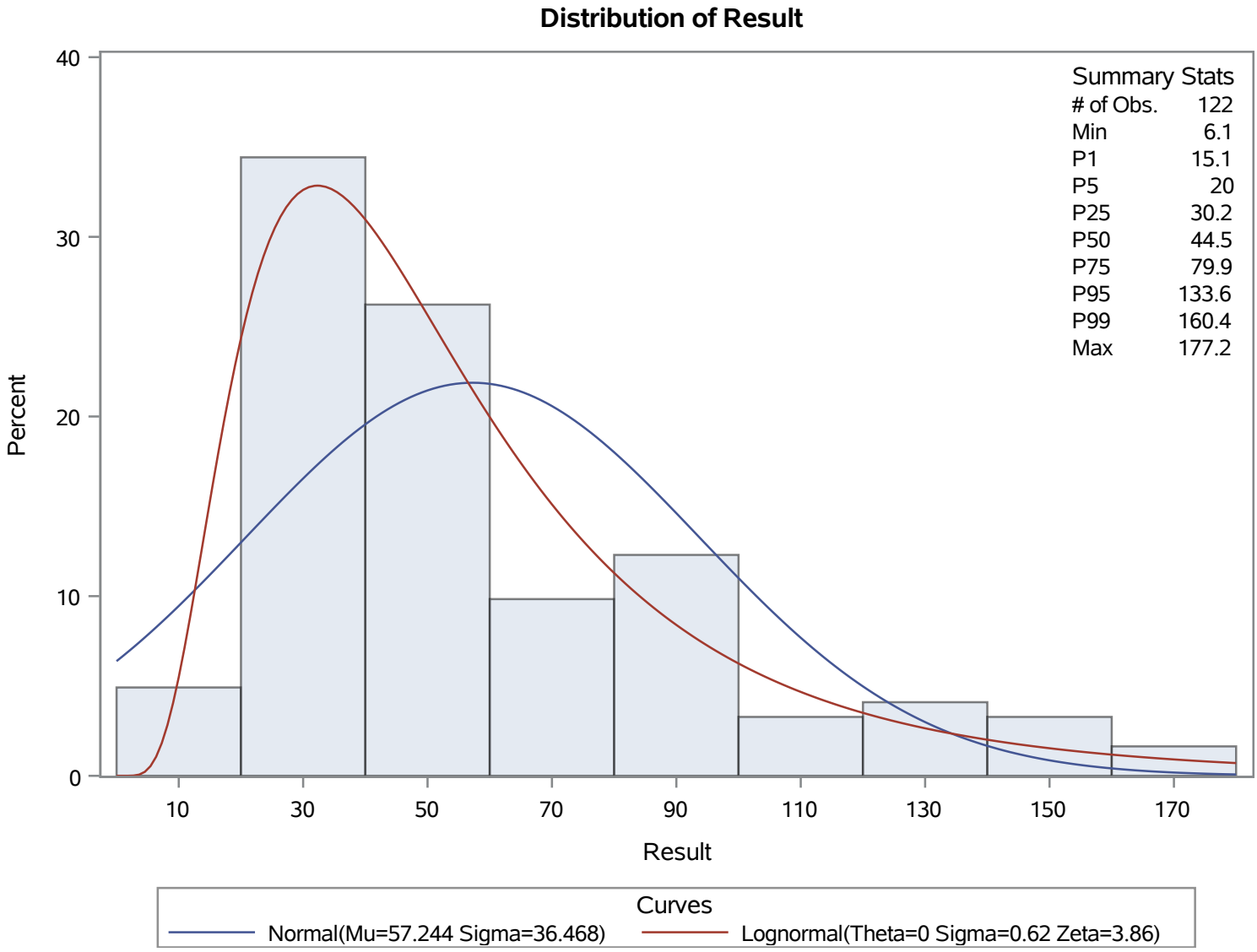
Little Manatee River
129
Color(345)F 45 (PCU)
Site ID = 129

The UNIVARIATE Procedure



Little Manatee River
140
Color(345)F 45 (PCU)
Site ID = 140

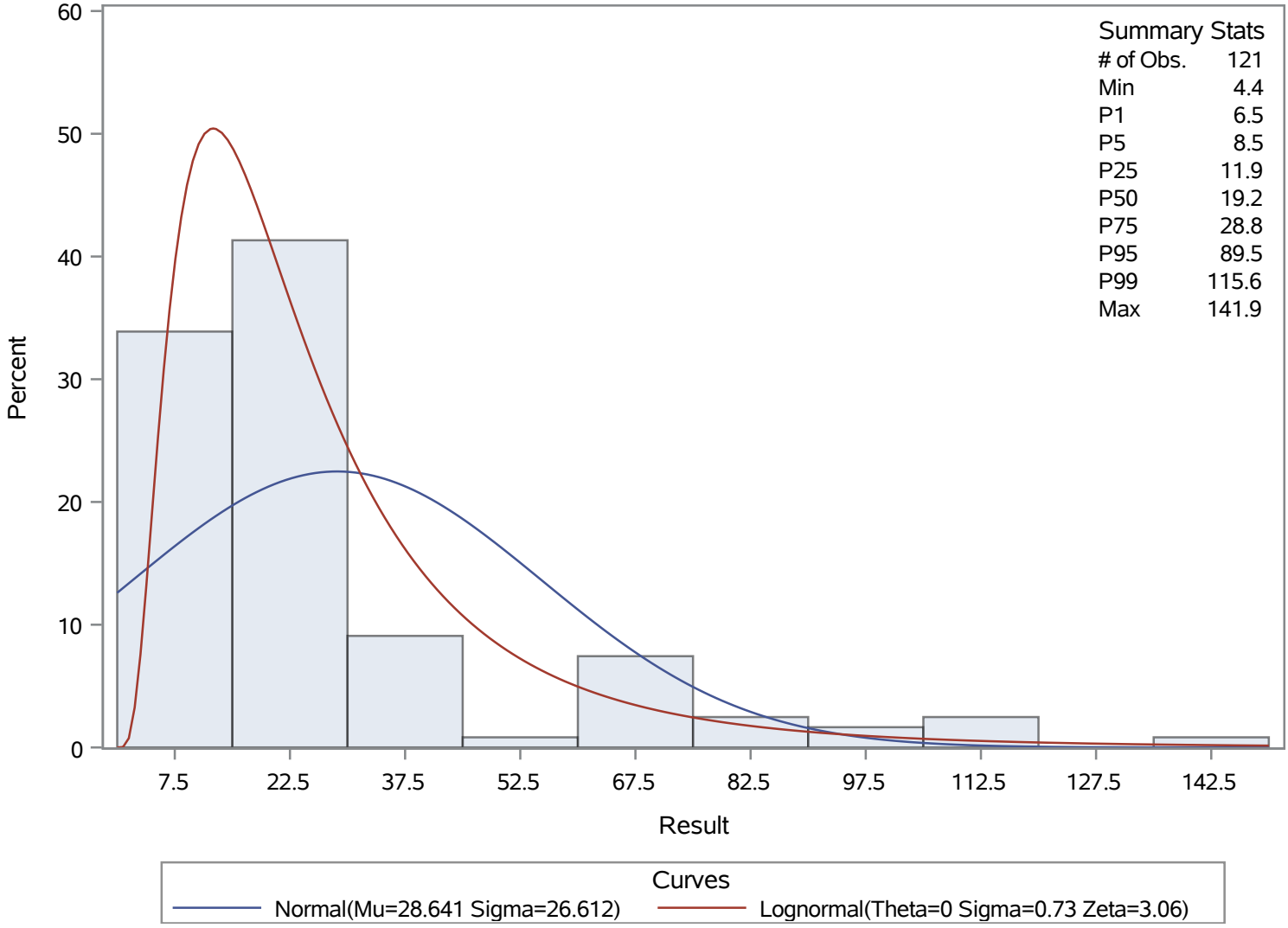
The UNIVARIATE Procedure



Little Manatee River
180
Color(345)F 45 (PCU)
Site ID = 180

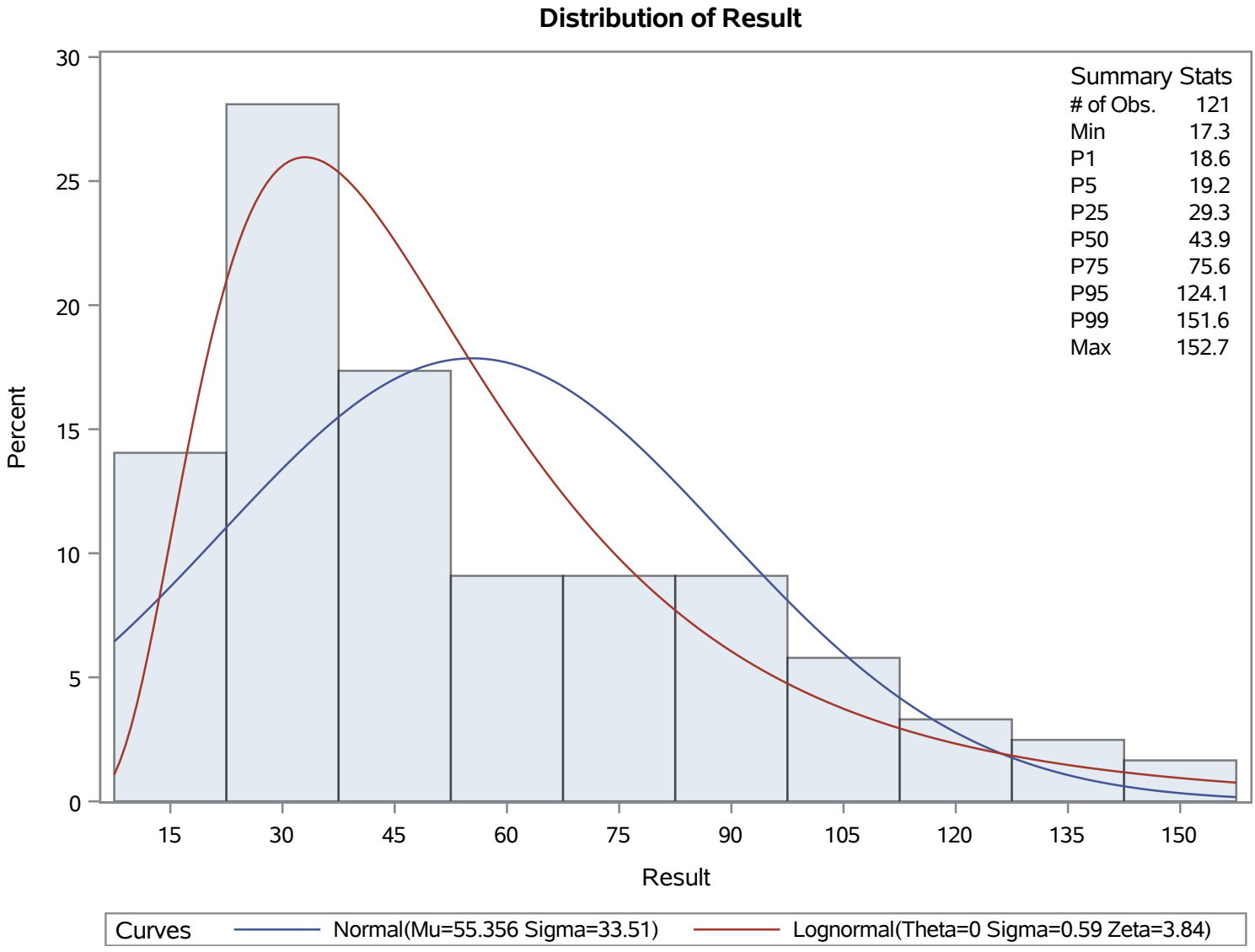
The UNIVARIATE Procedure

Distribution of Result



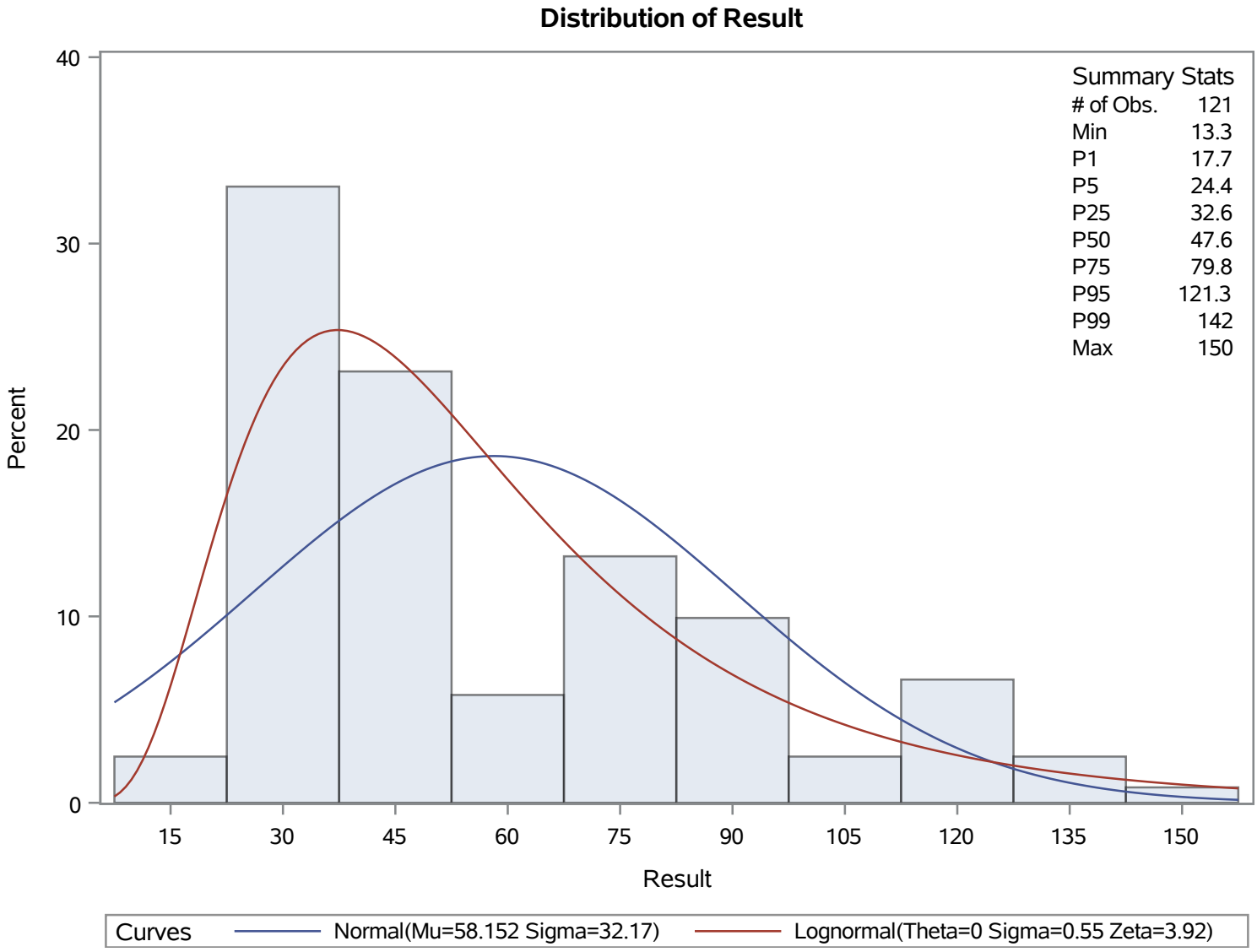
Little Manatee River
181
Color(345)F 45 (PCU)
Site ID = 181

The UNIVARIATE Procedure



Little Manatee River
182
Color(345)F 45 (PCU)
Site ID = 182

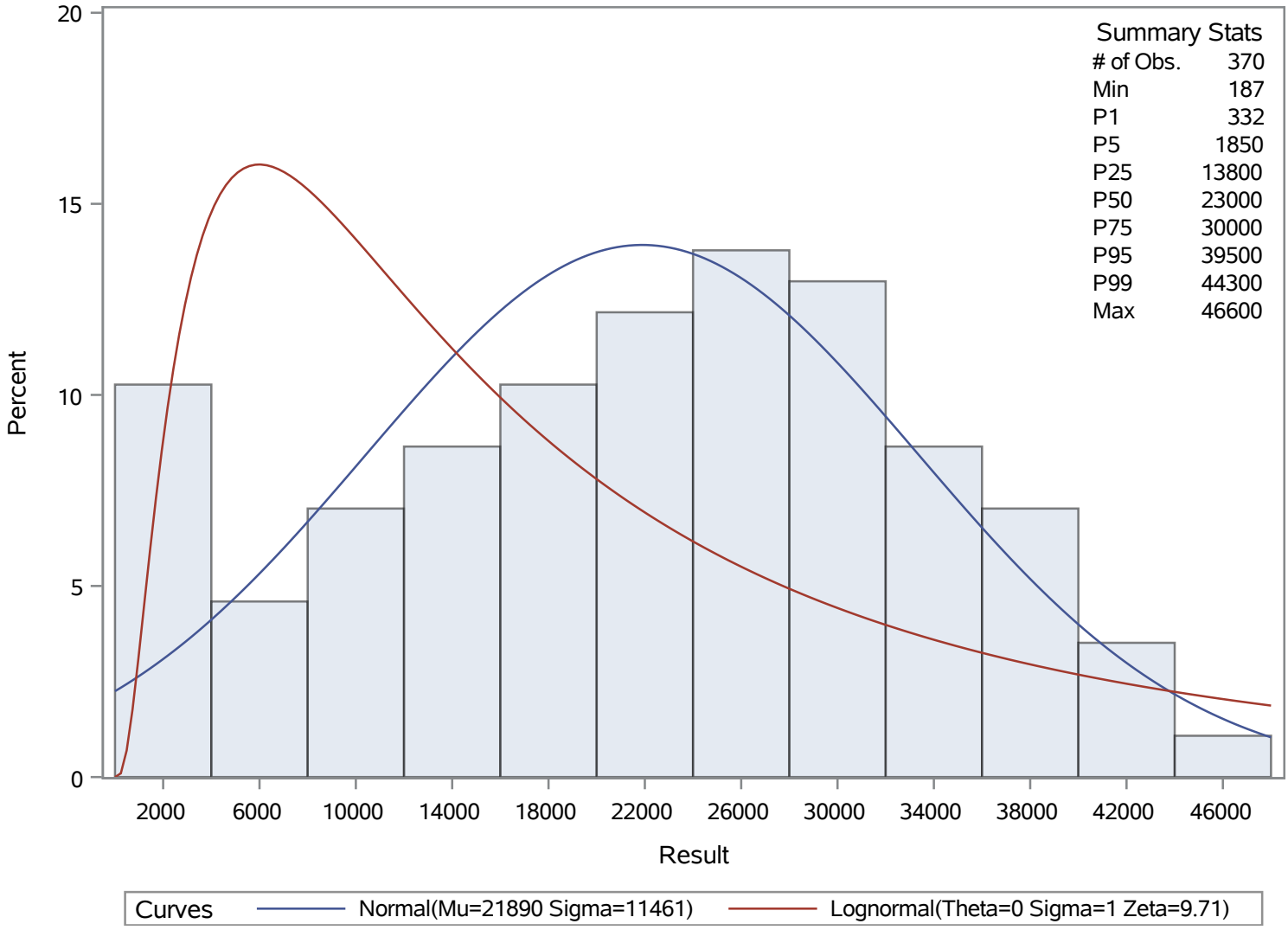
The UNIVARIATE Procedure



Little Manatee River
112
Cond Bottom (umho/cm)
Site ID = 112

The UNIVARIATE Procedure

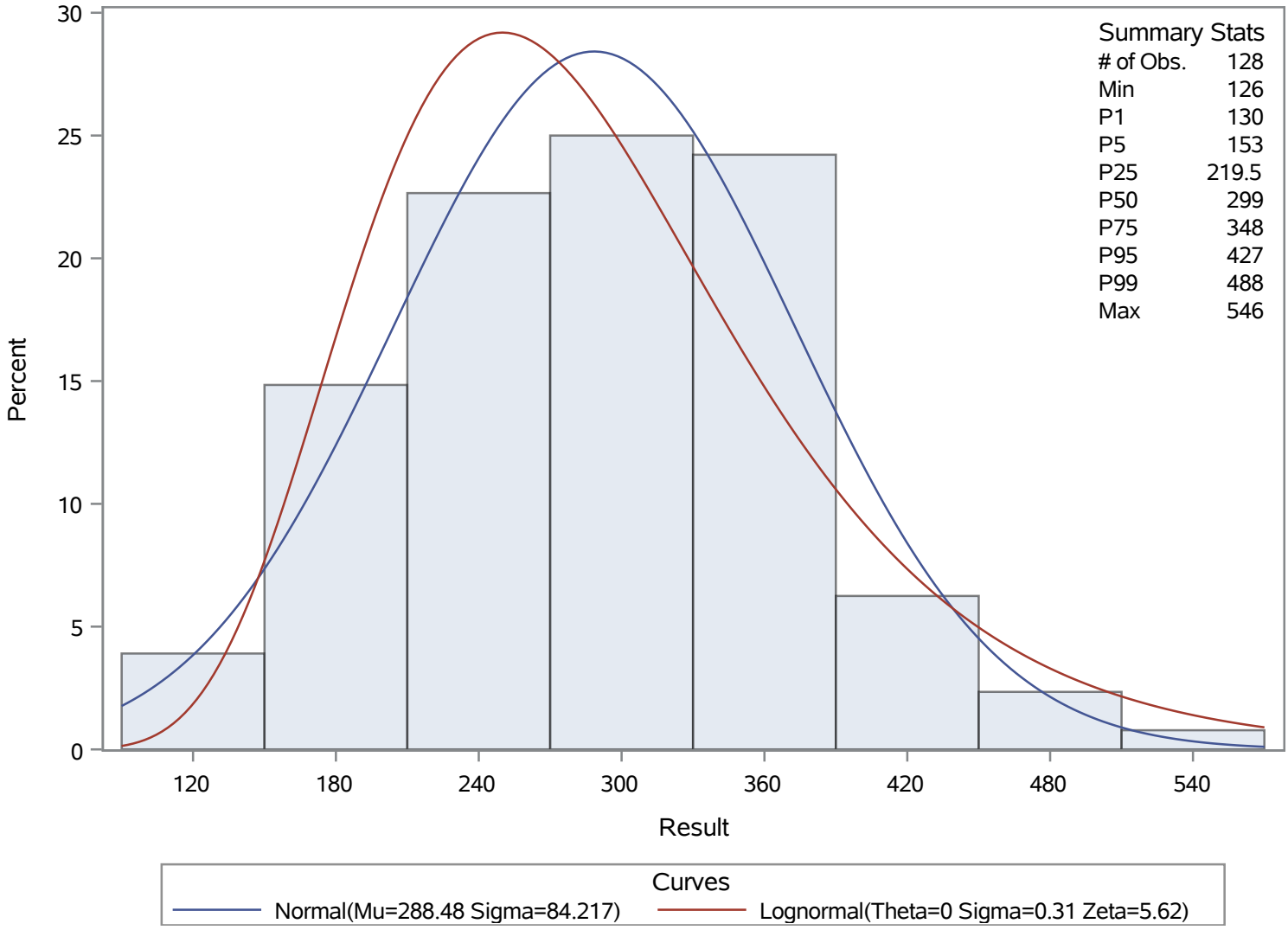
Distribution of Result



Little Manatee River
113
Cond Bottom (umho/cm)
Site ID = 113

The UNIVARIATE Procedure

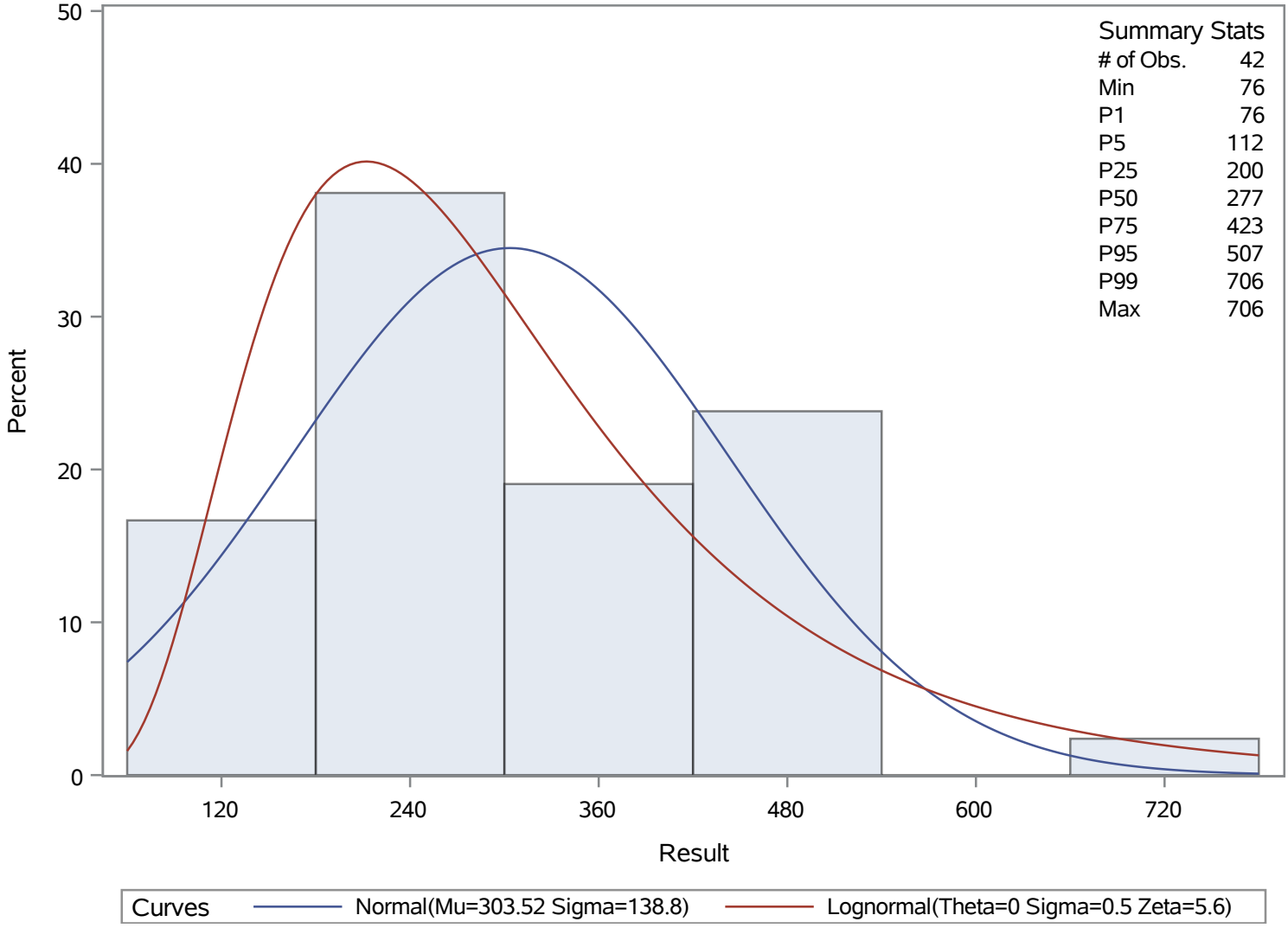
Distribution of Result



Little Manatee River
129
Cond Bottom (umho/cm)
Site ID = 129

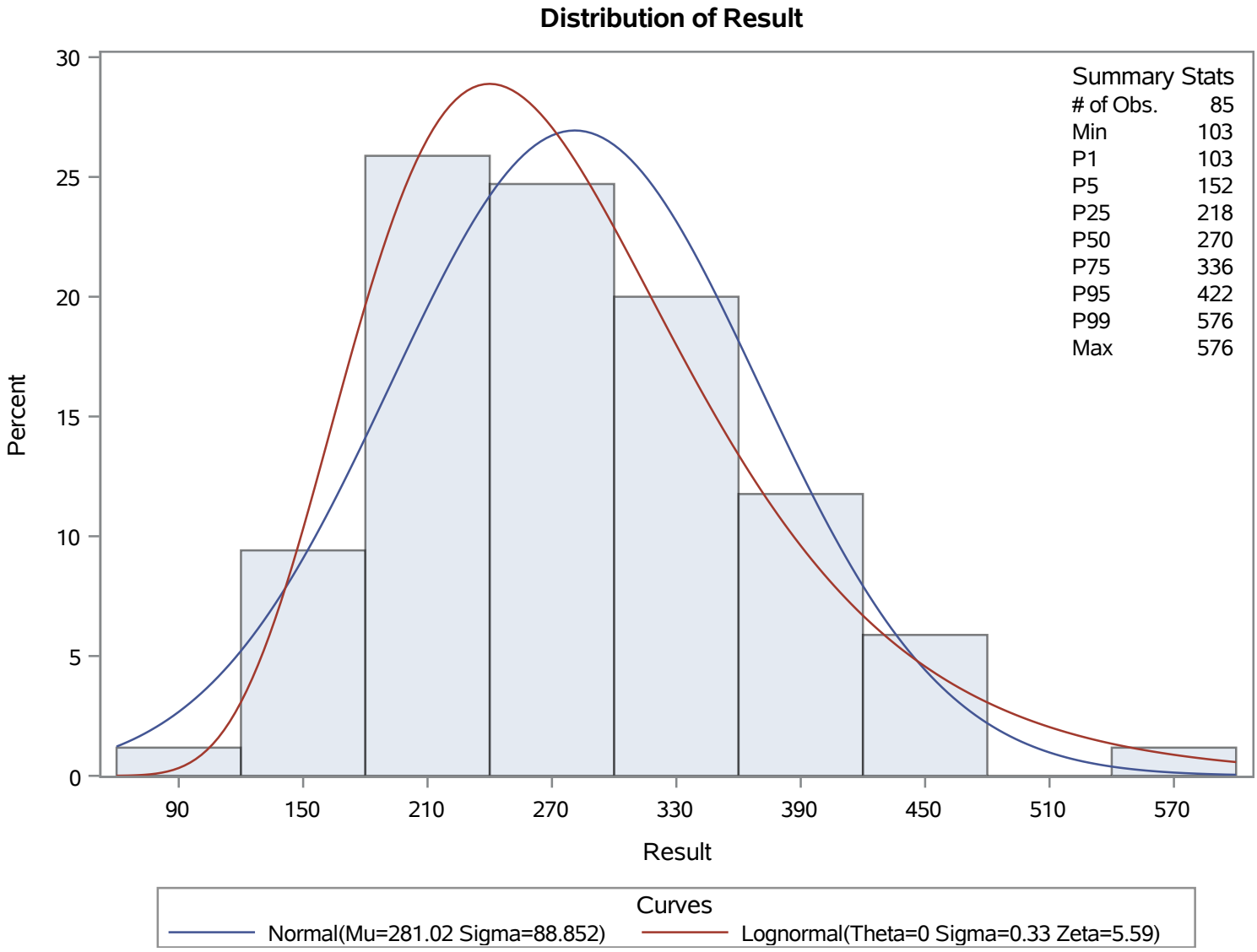
The UNIVARIATE Procedure

Distribution of Result



Little Manatee River
140
Cond Bottom (umho/cm)
Site ID = 140

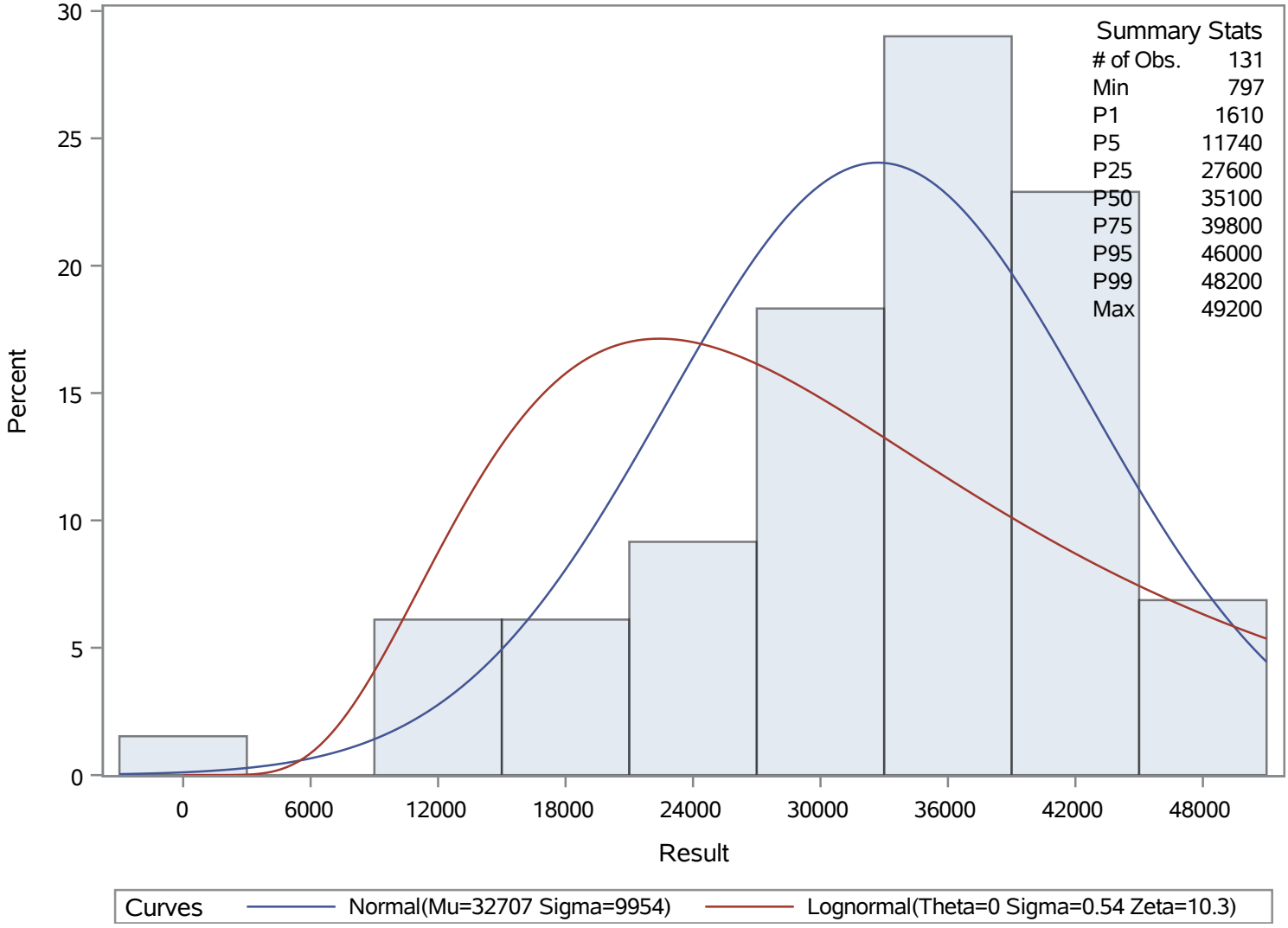
The UNIVARIATE Procedure



Little Manatee River
180
Cond Bottom (umho/cm)
Site ID = 180

The UNIVARIATE Procedure

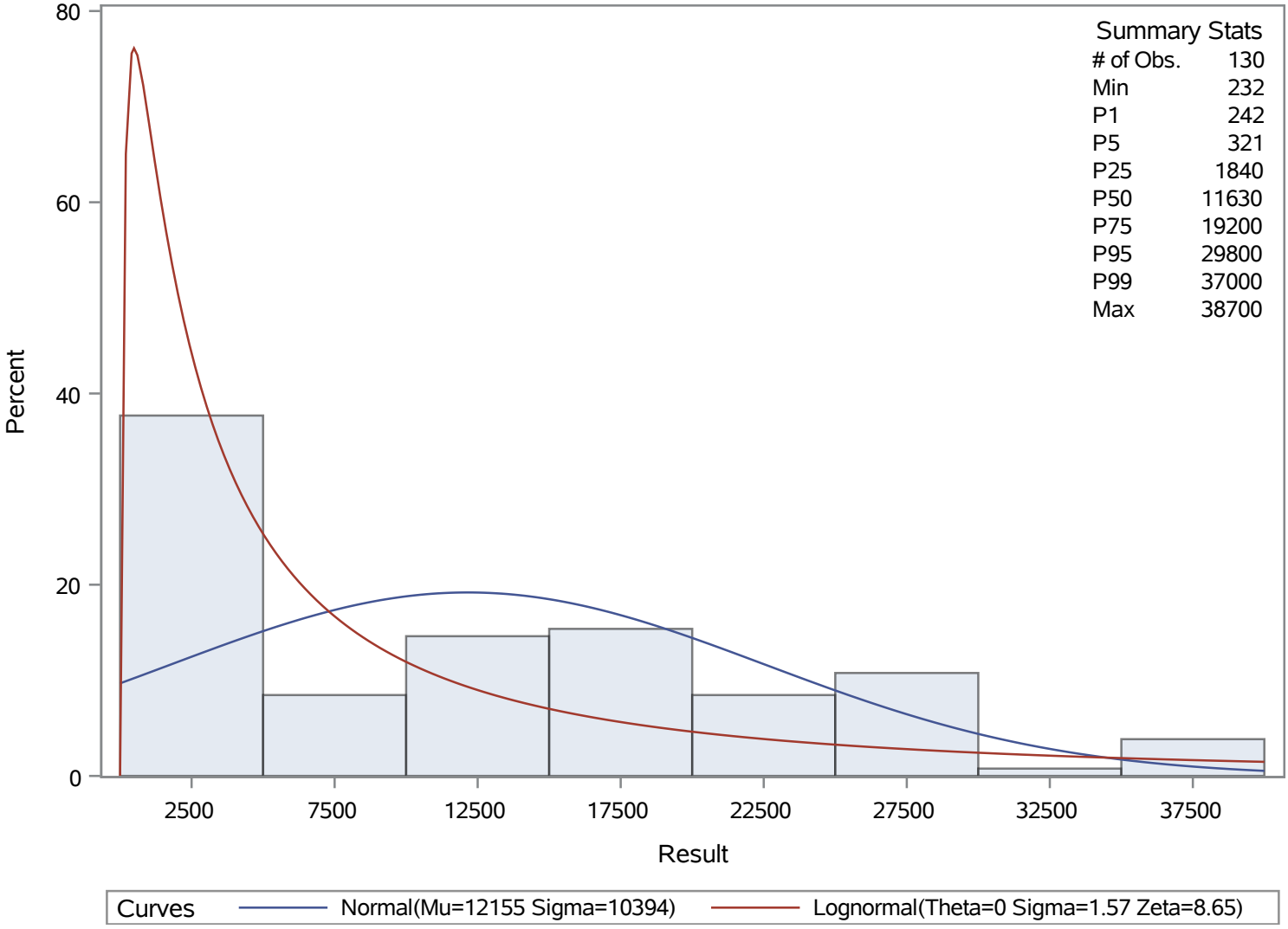
Distribution of Result



Little Manatee River
181
Cond Bottom (umho/cm)
Site ID = 181

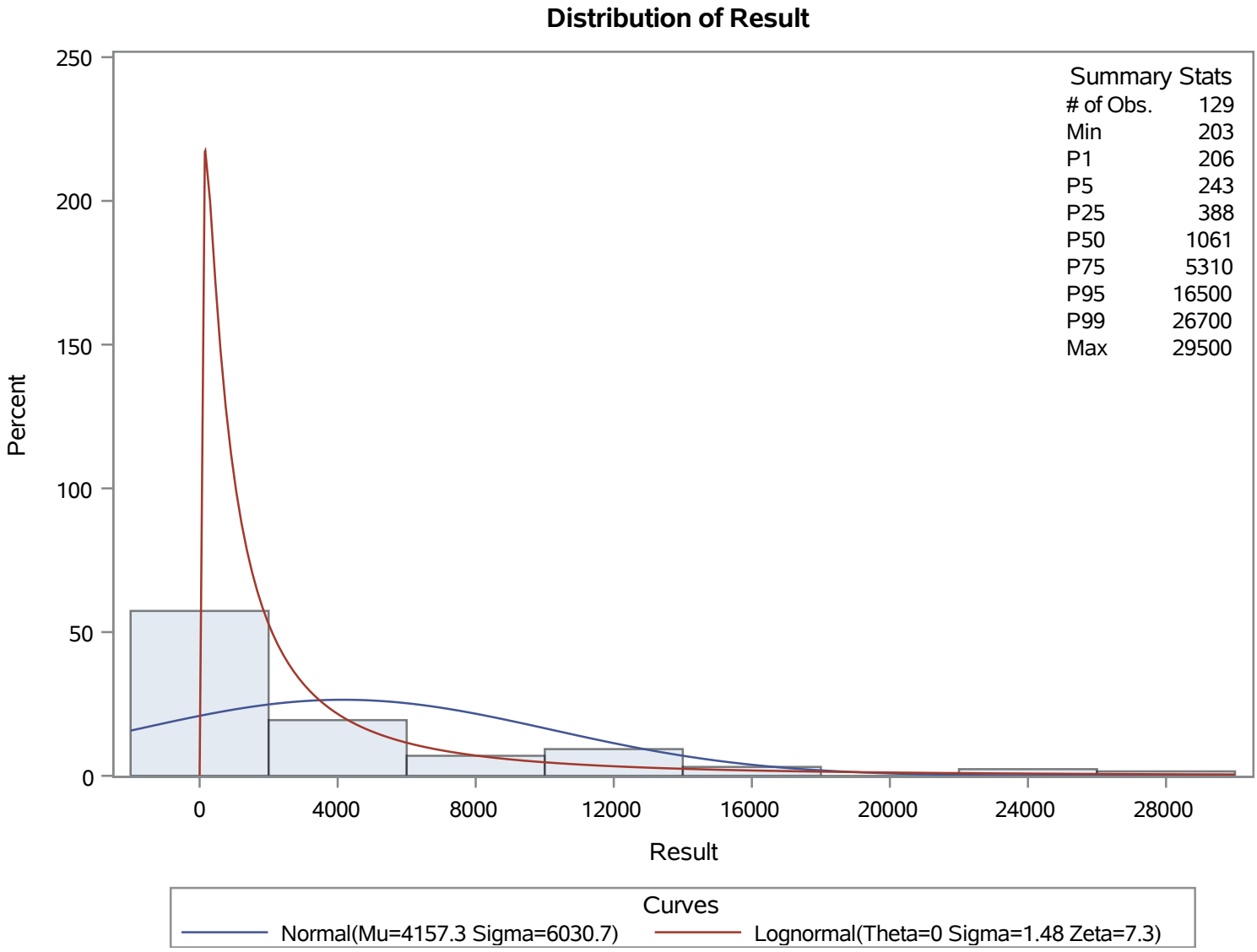
The UNIVARIATE Procedure

Distribution of Result



Little Manatee River
182
Cond Bottom (umho/cm)
Site ID = 182

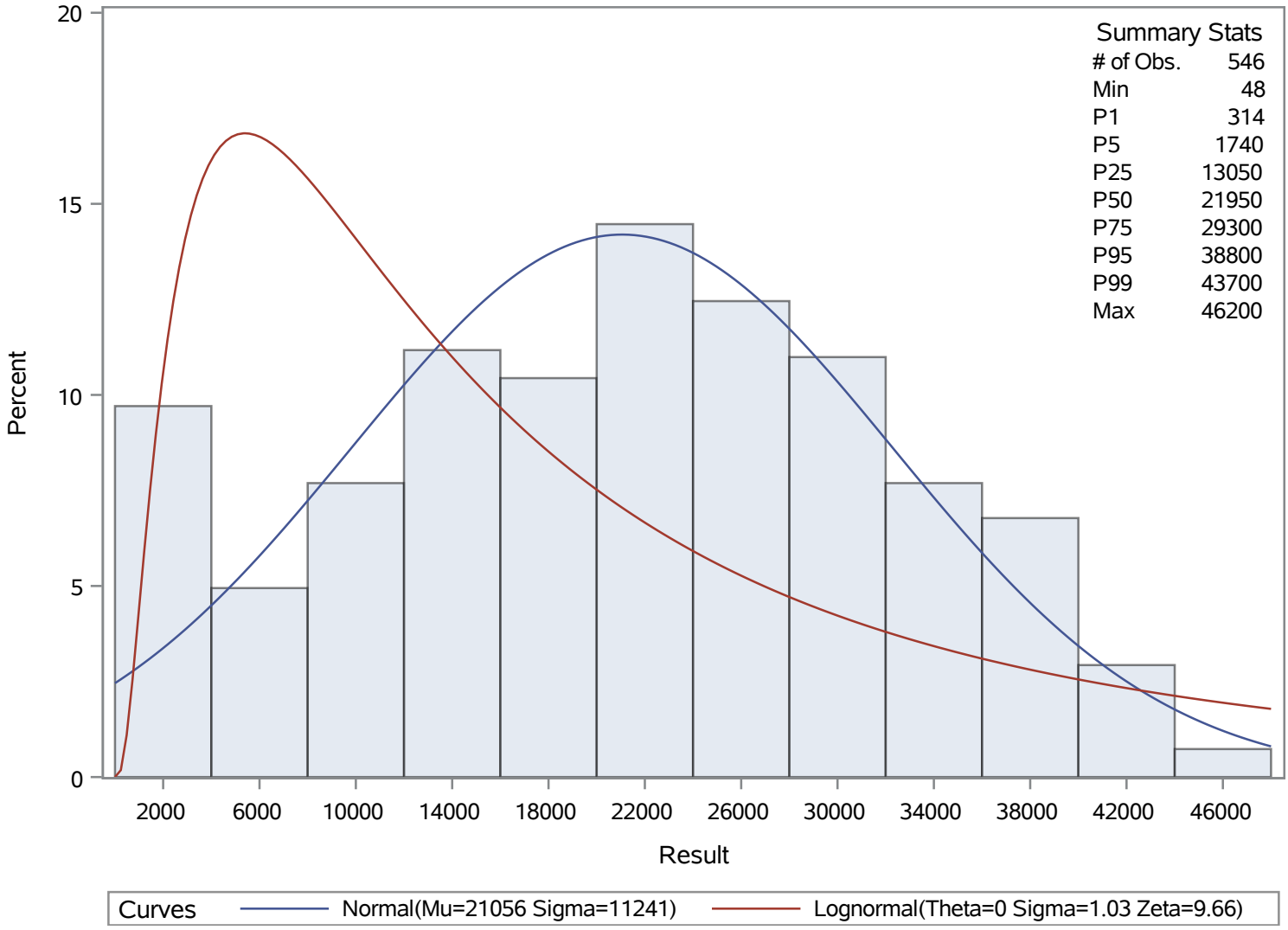
The UNIVARIATE Procedure



Little Manatee River
112
Cond Mid (umho/cm)
Site ID = 112

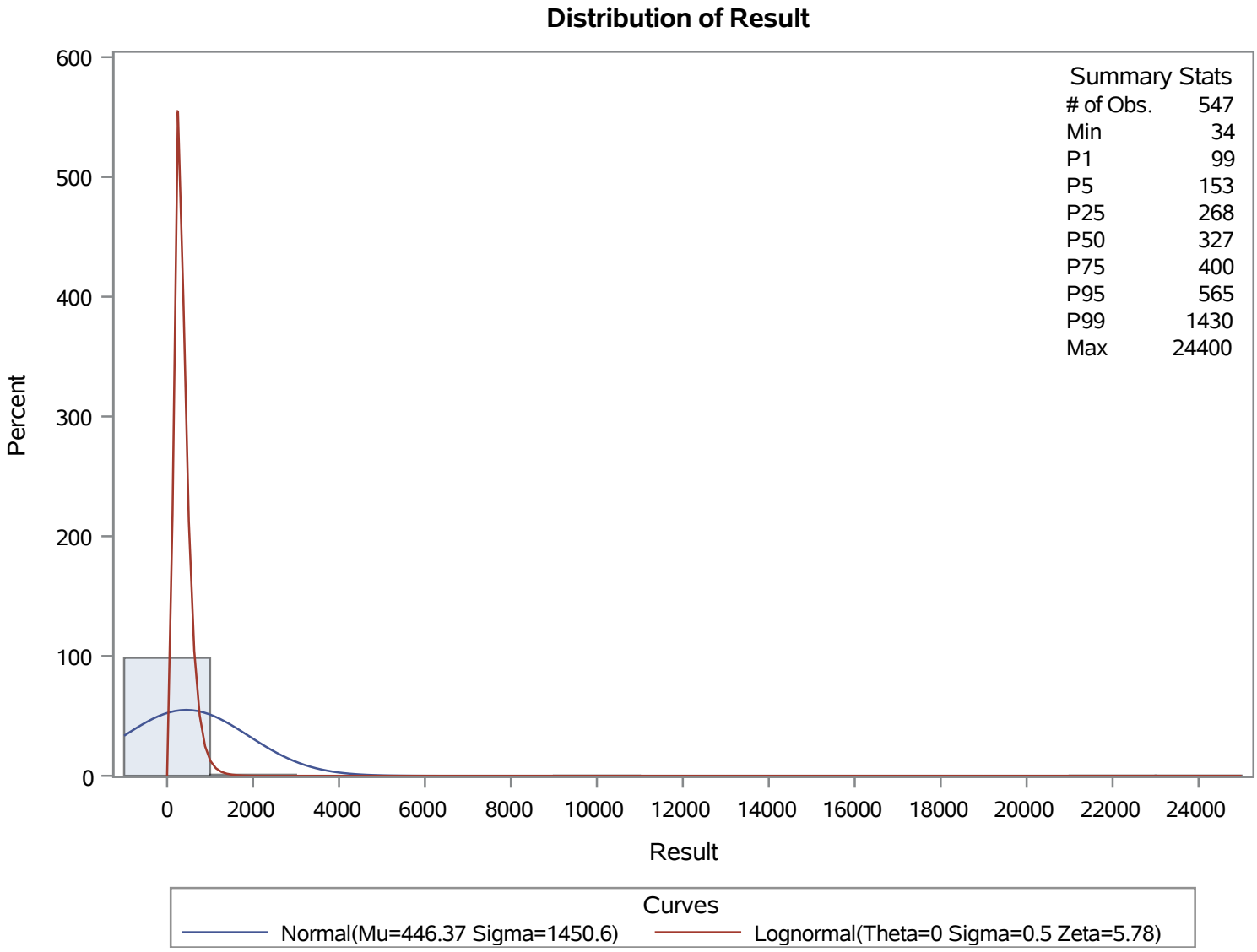
The UNIVARIATE Procedure

Distribution of Result



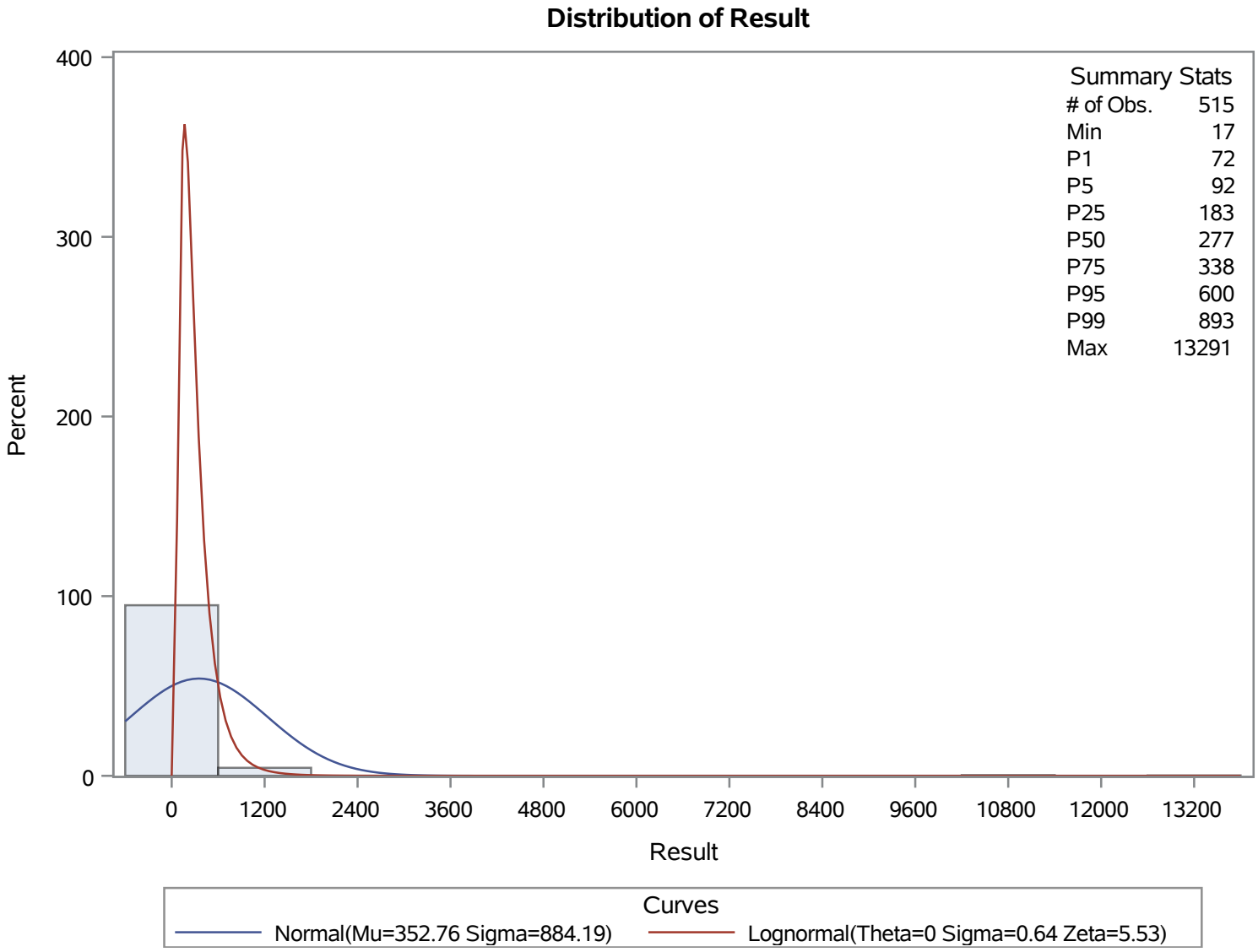
Little Manatee River
113
Cond Mid (umho/cm)
Site ID = 113

The UNIVARIATE Procedure



Little Manatee River
129
Cond Mid (umho/cm)
Site ID = 129

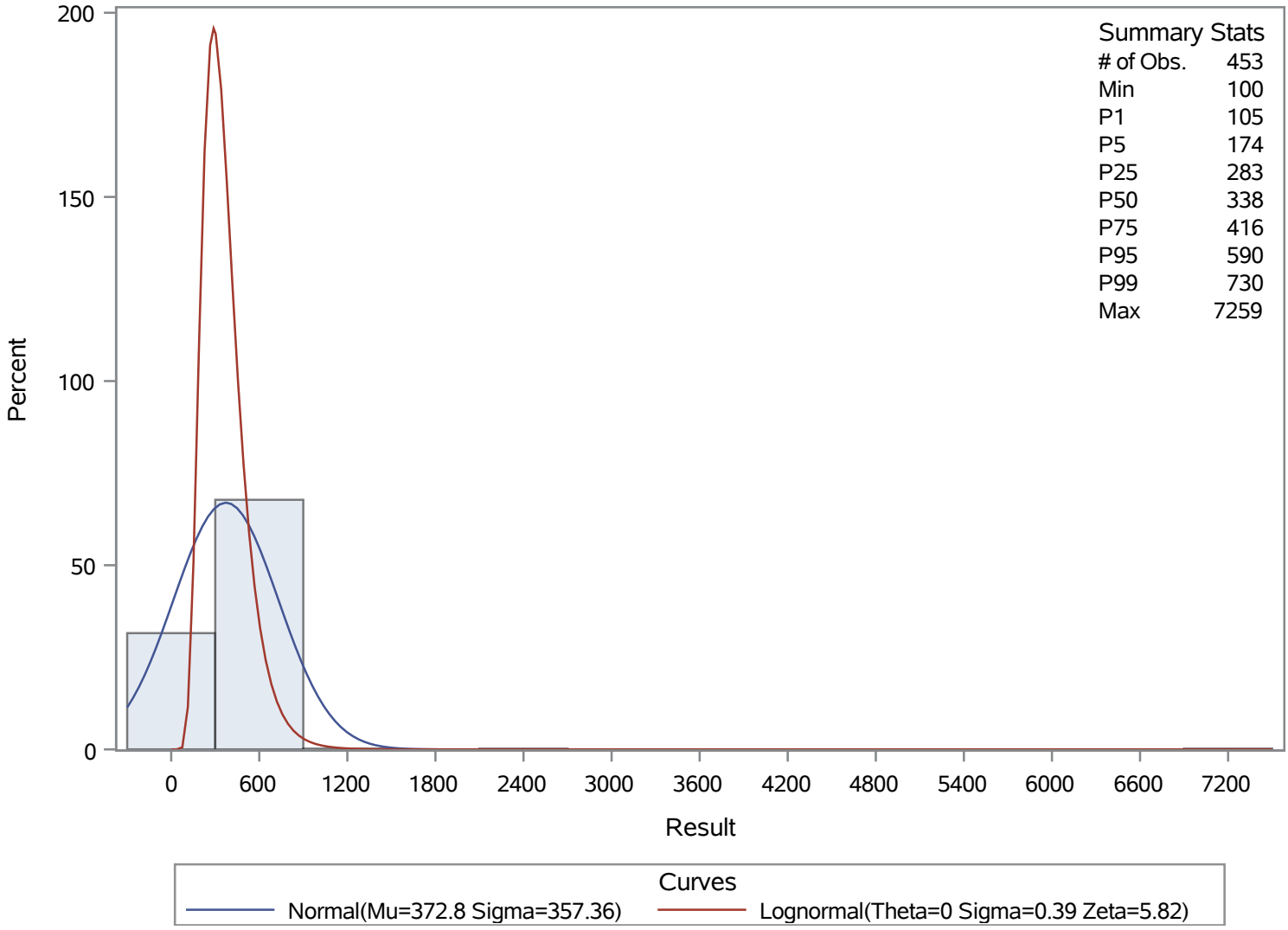
The UNIVARIATE Procedure



Little Manatee River
140
Cond Mid (umho/cm)
Site ID = 140

The UNIVARIATE Procedure

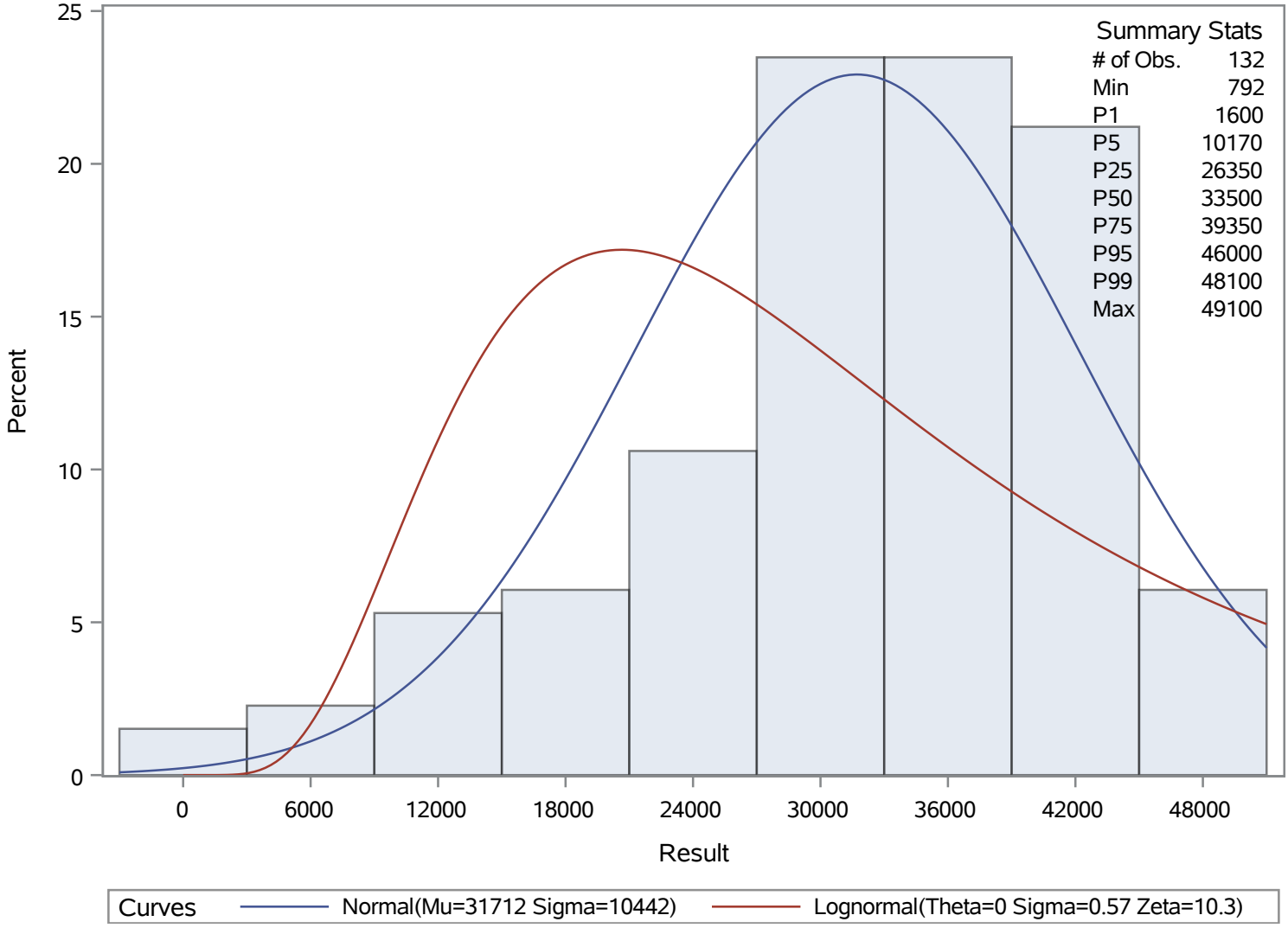
Distribution of Result



Little Manatee River
180
Cond Mid (umho/cm)
Site ID = 180

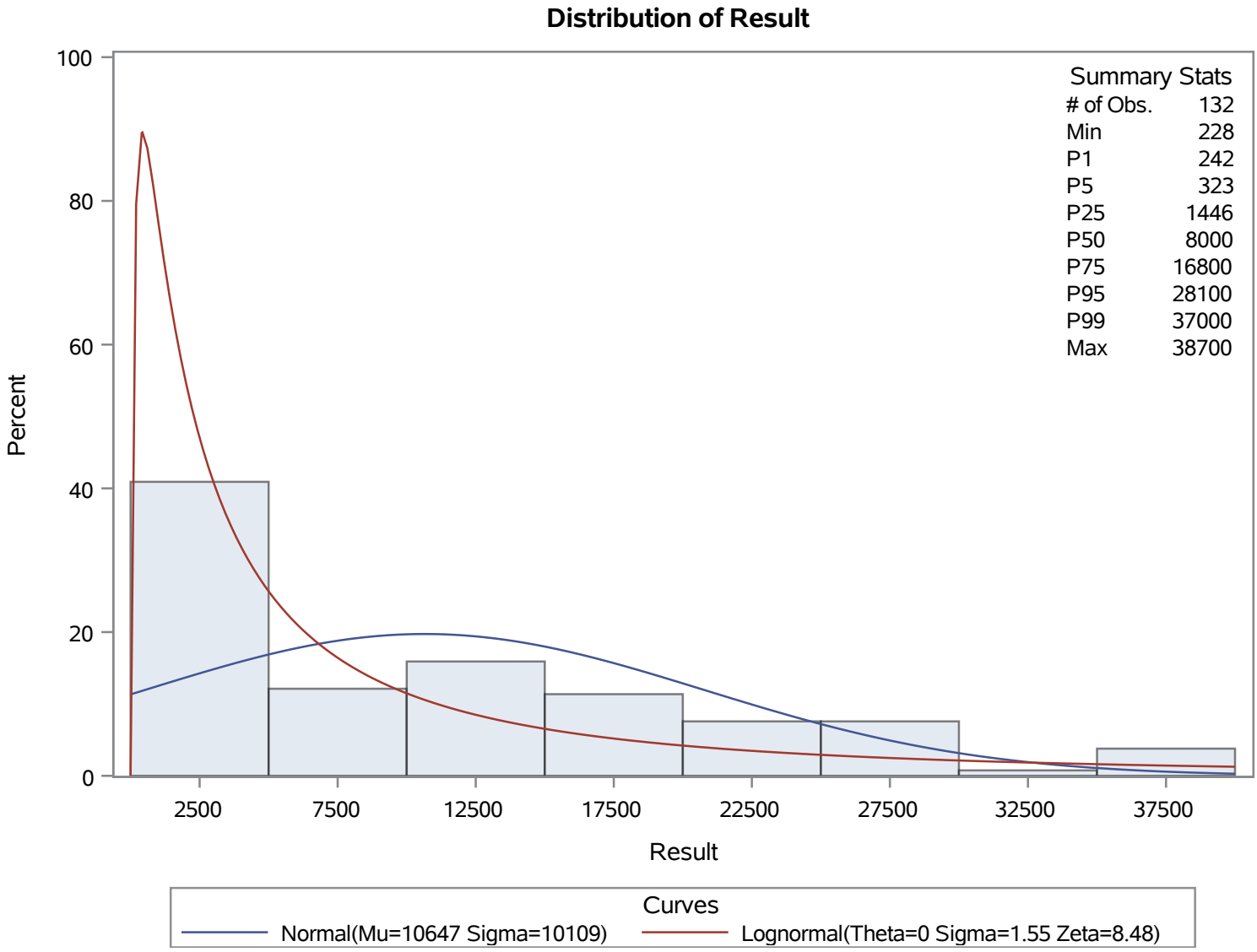
The UNIVARIATE Procedure

Distribution of Result



Little Manatee River
181
Cond Mid (umho/cm)
Site ID = 181

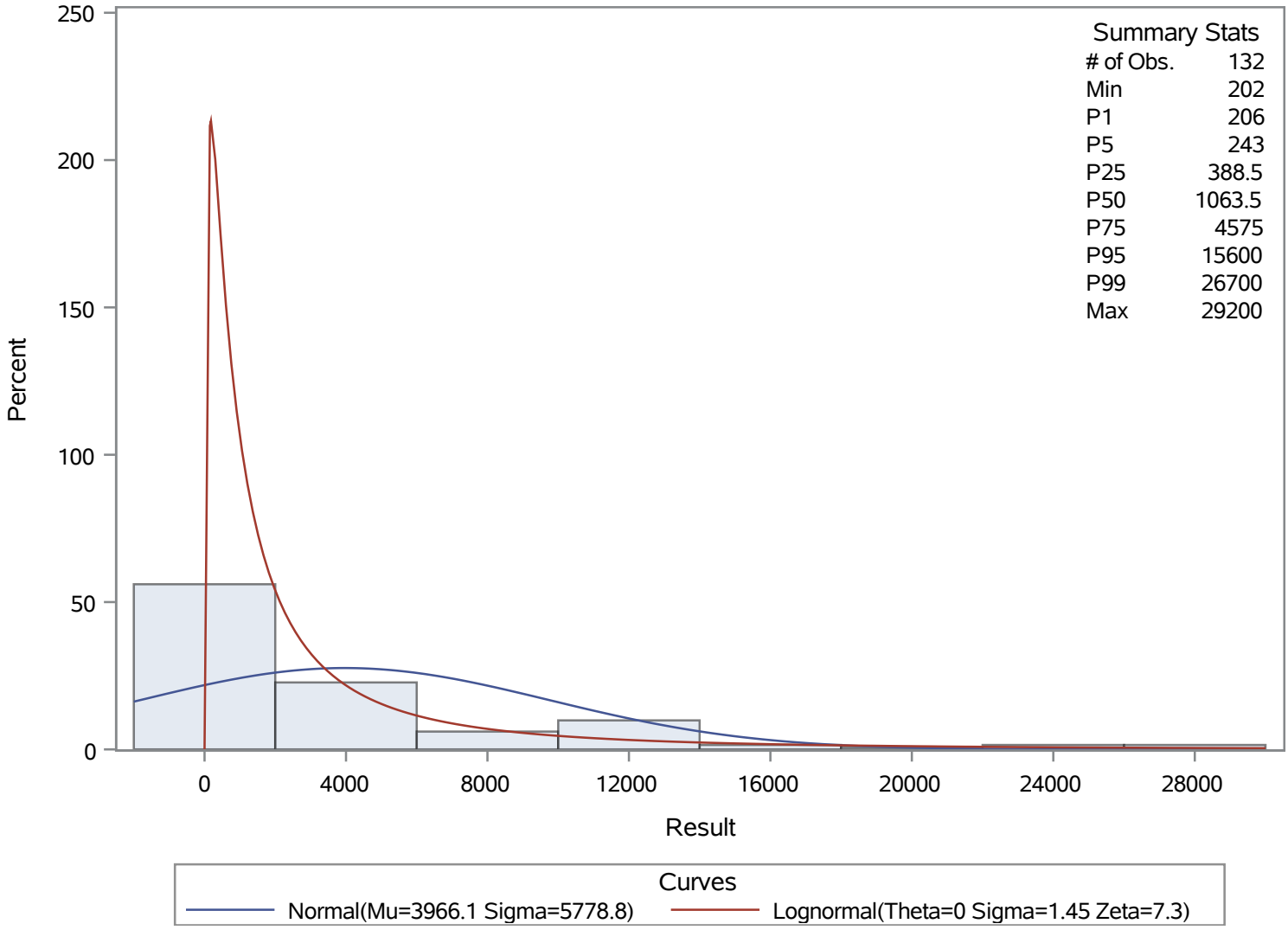
The UNIVARIATE Procedure



Little Manatee River
182
Cond Mid (umho/cm)
Site ID = 182

The UNIVARIATE Procedure

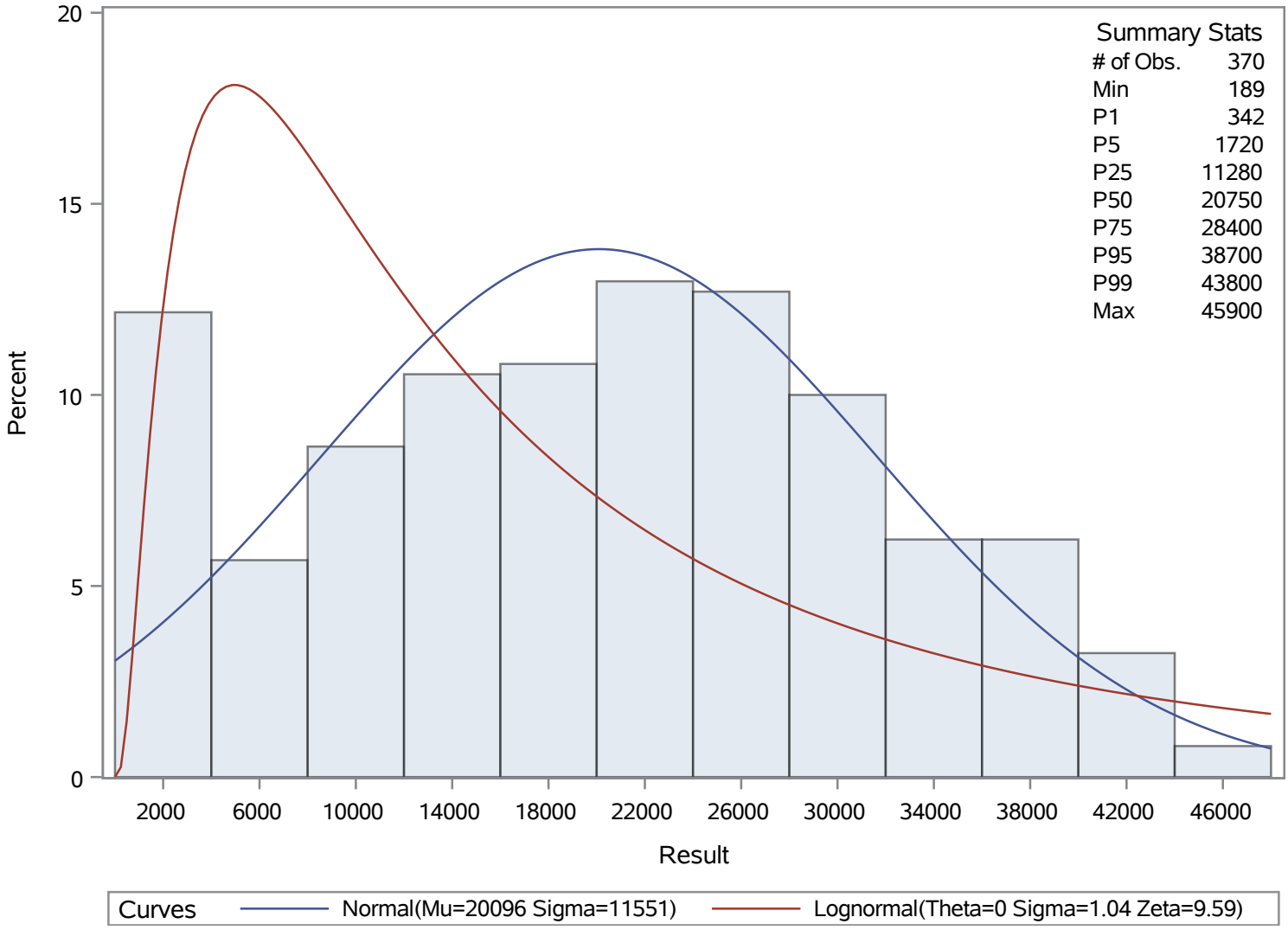
Distribution of Result



Little Manatee River
112
Cond Top (umho/cm)
Site ID = 112

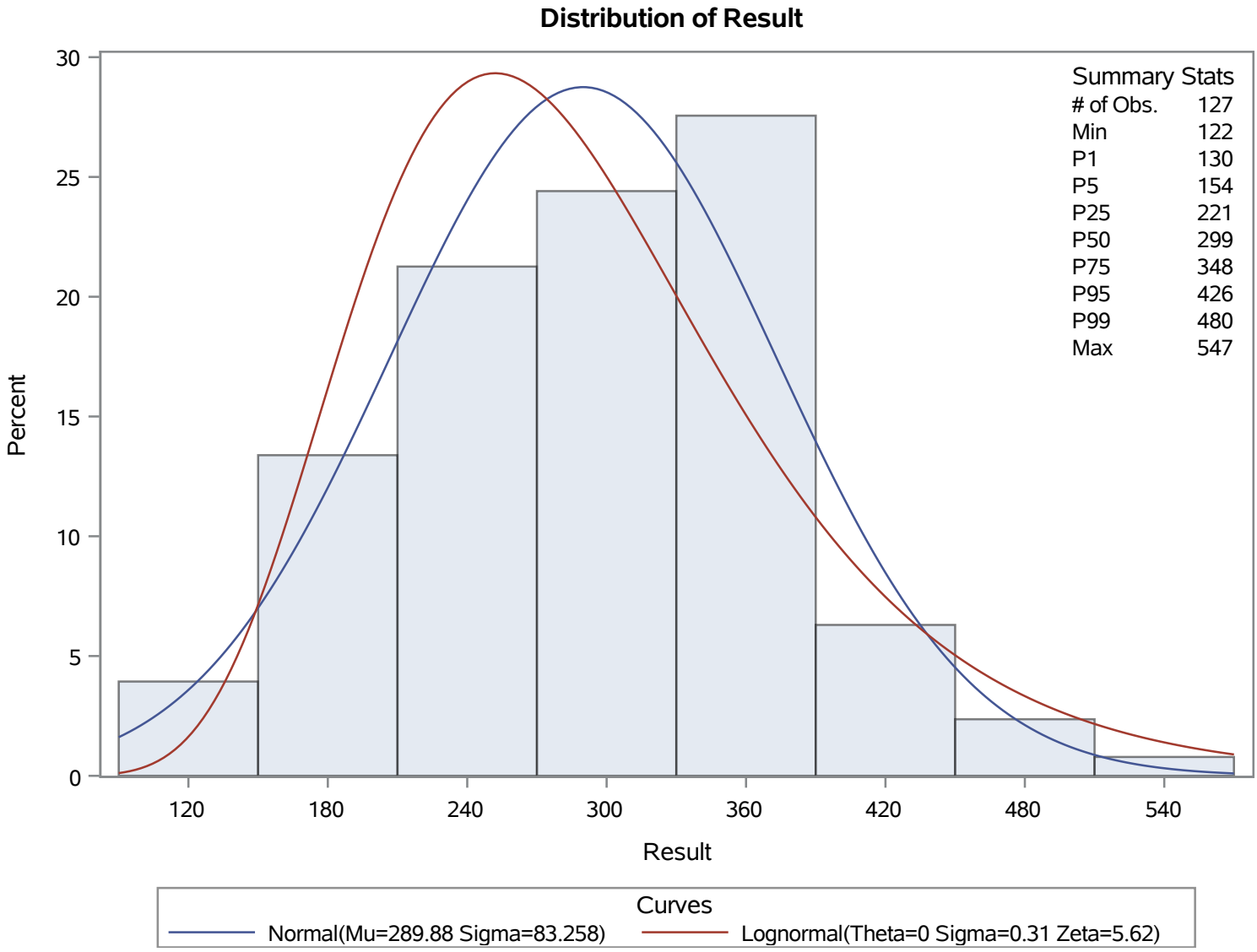
The UNIVARIATE Procedure

Distribution of Result



Little Manatee River
113
Cond Top (umho/cm)
Site ID = 113

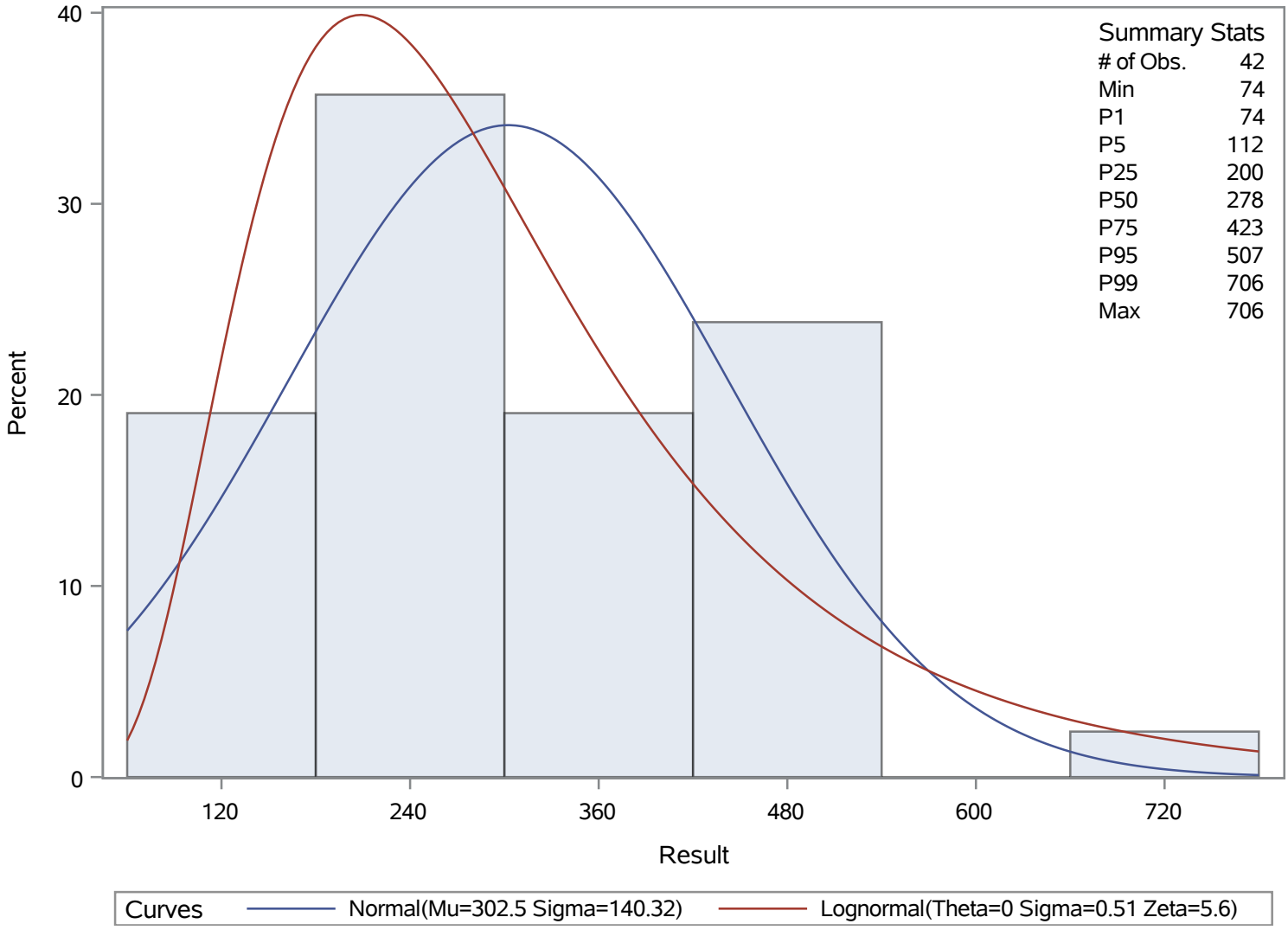
The UNIVARIATE Procedure



Little Manatee River
129
Cond Top (umho/cm)
Site ID = 129

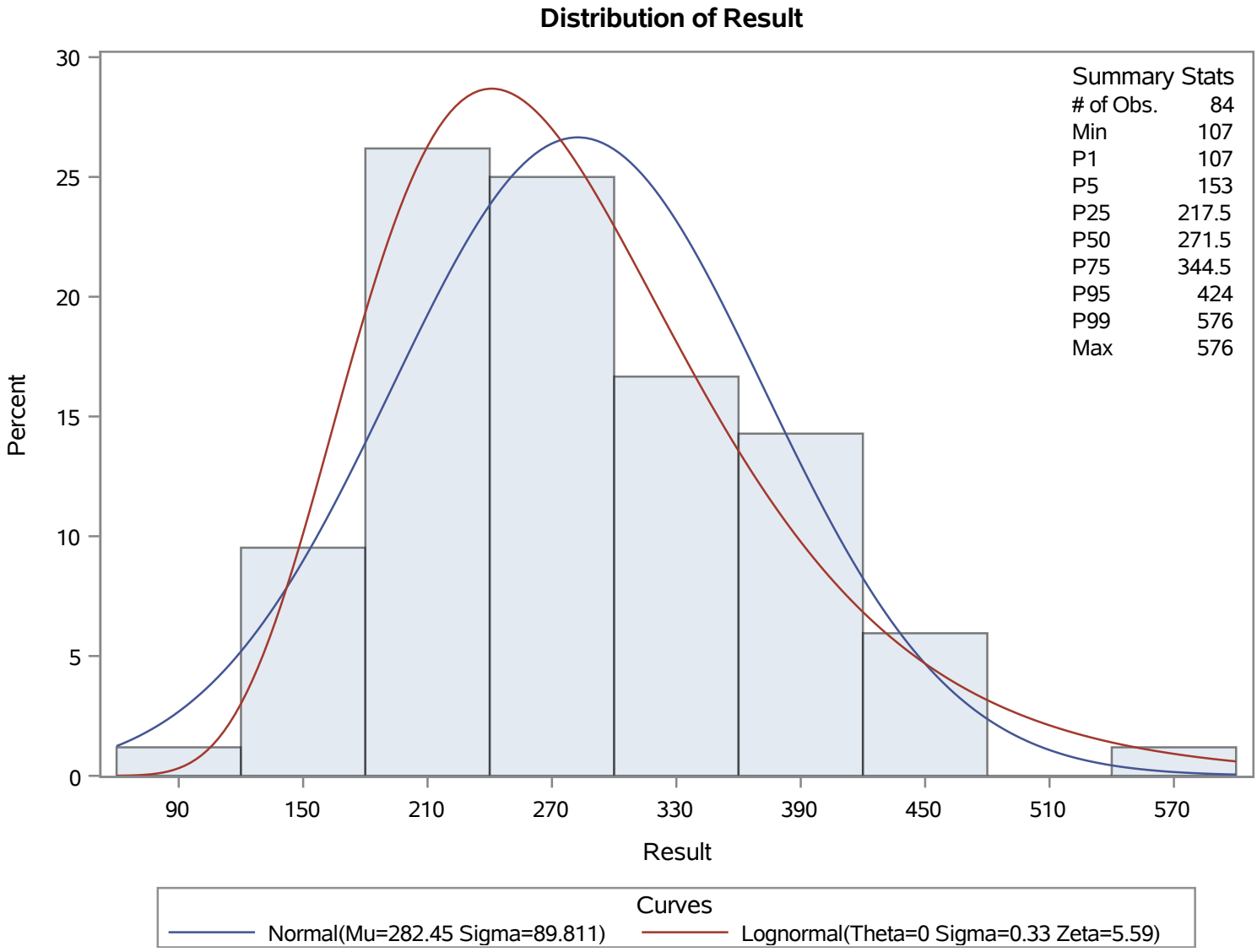
The UNIVARIATE Procedure

Distribution of Result



Little Manatee River
140
Cond Top (umho/cm)
Site ID = 140

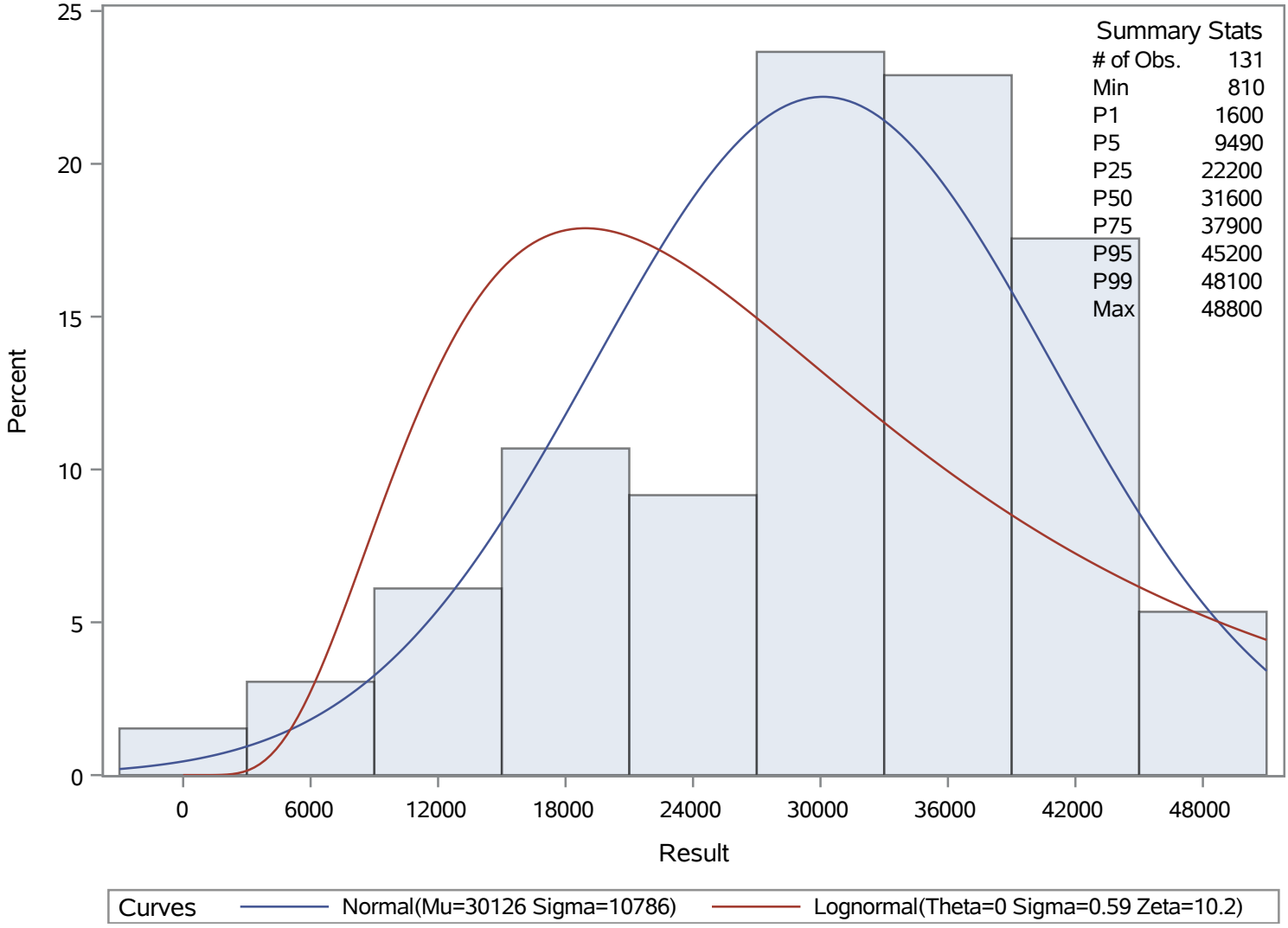
The UNIVARIATE Procedure



Little Manatee River
180
Cond Top (umho/cm)
Site ID = 180

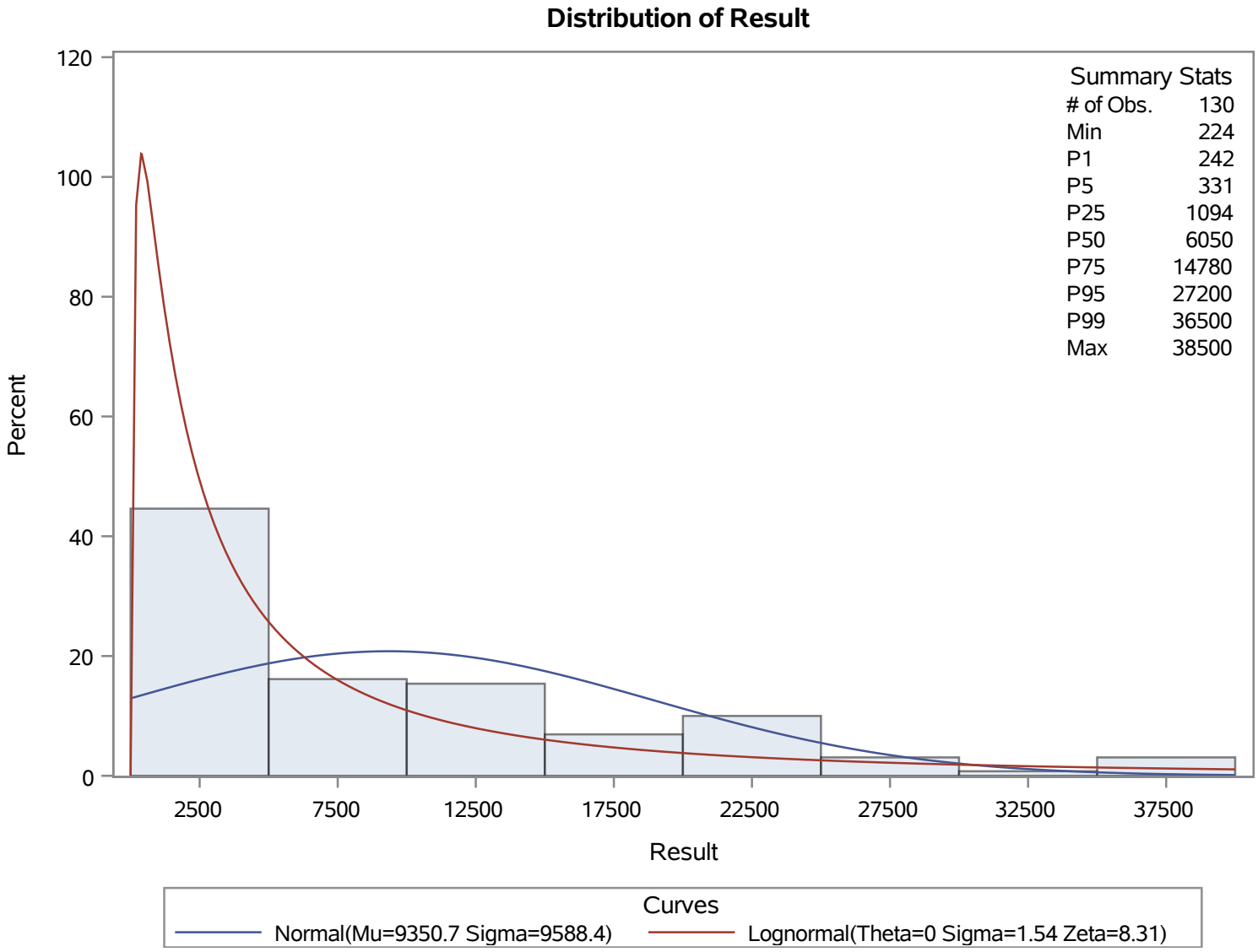
The UNIVARIATE Procedure

Distribution of Result



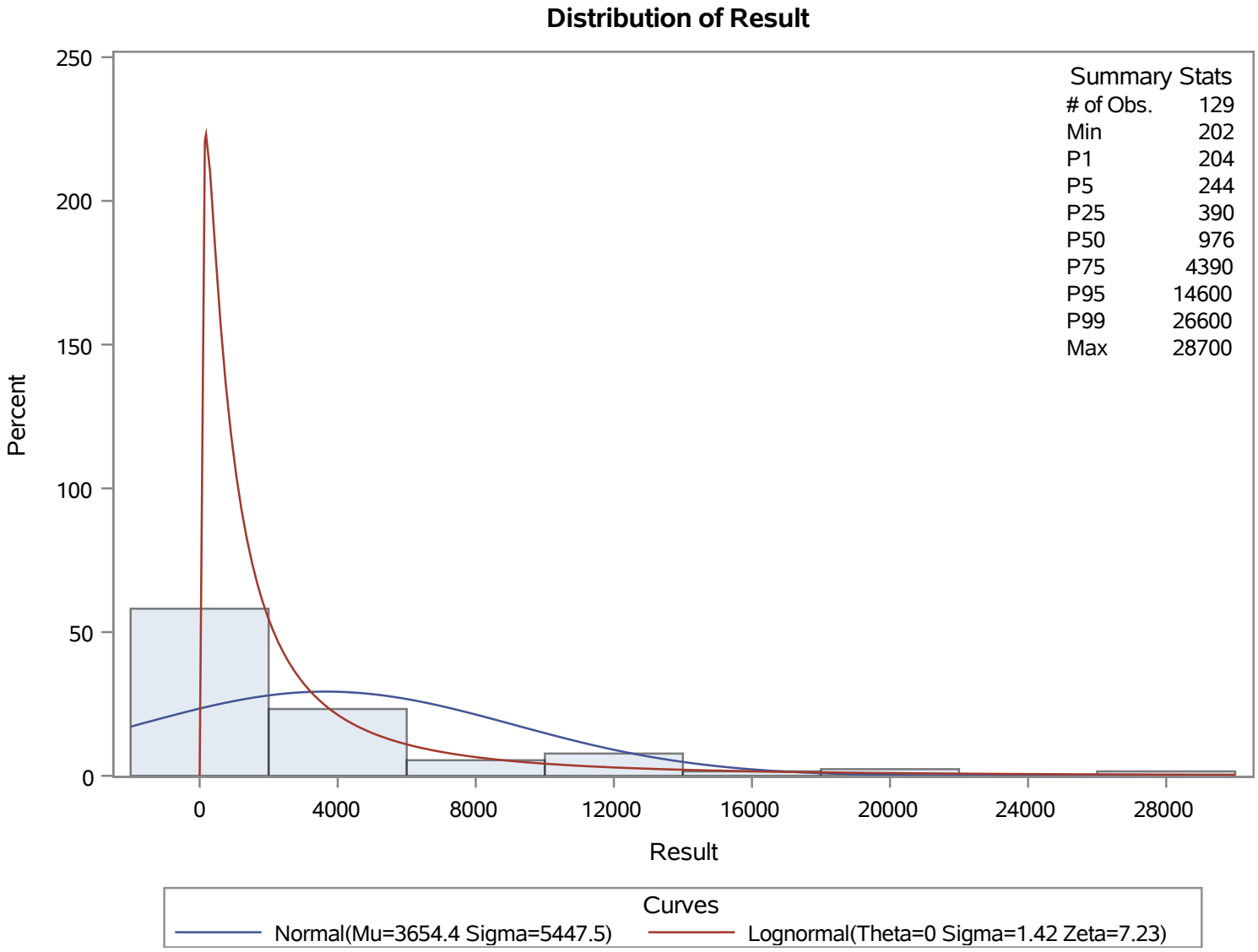
Little Manatee River
181
Cond Top (umho/cm)
Site ID = 181

The UNIVARIATE Procedure



Little Manatee River
182
Cond Top (umho/cm)
Site ID = 182

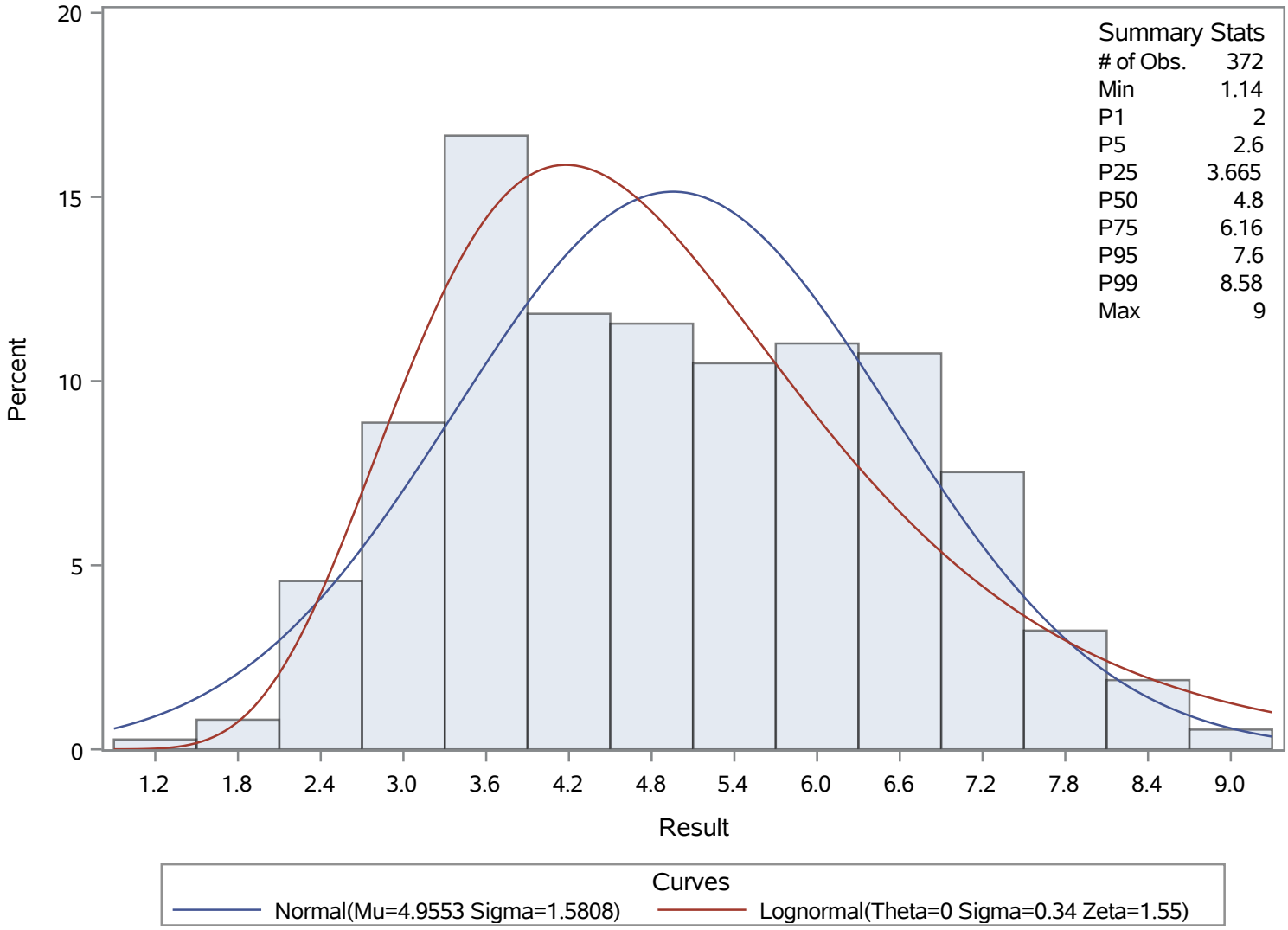
The UNIVARIATE Procedure



Little Manatee River
112
DO Bottom (mg/L)
Site ID = 112

The UNIVARIATE Procedure

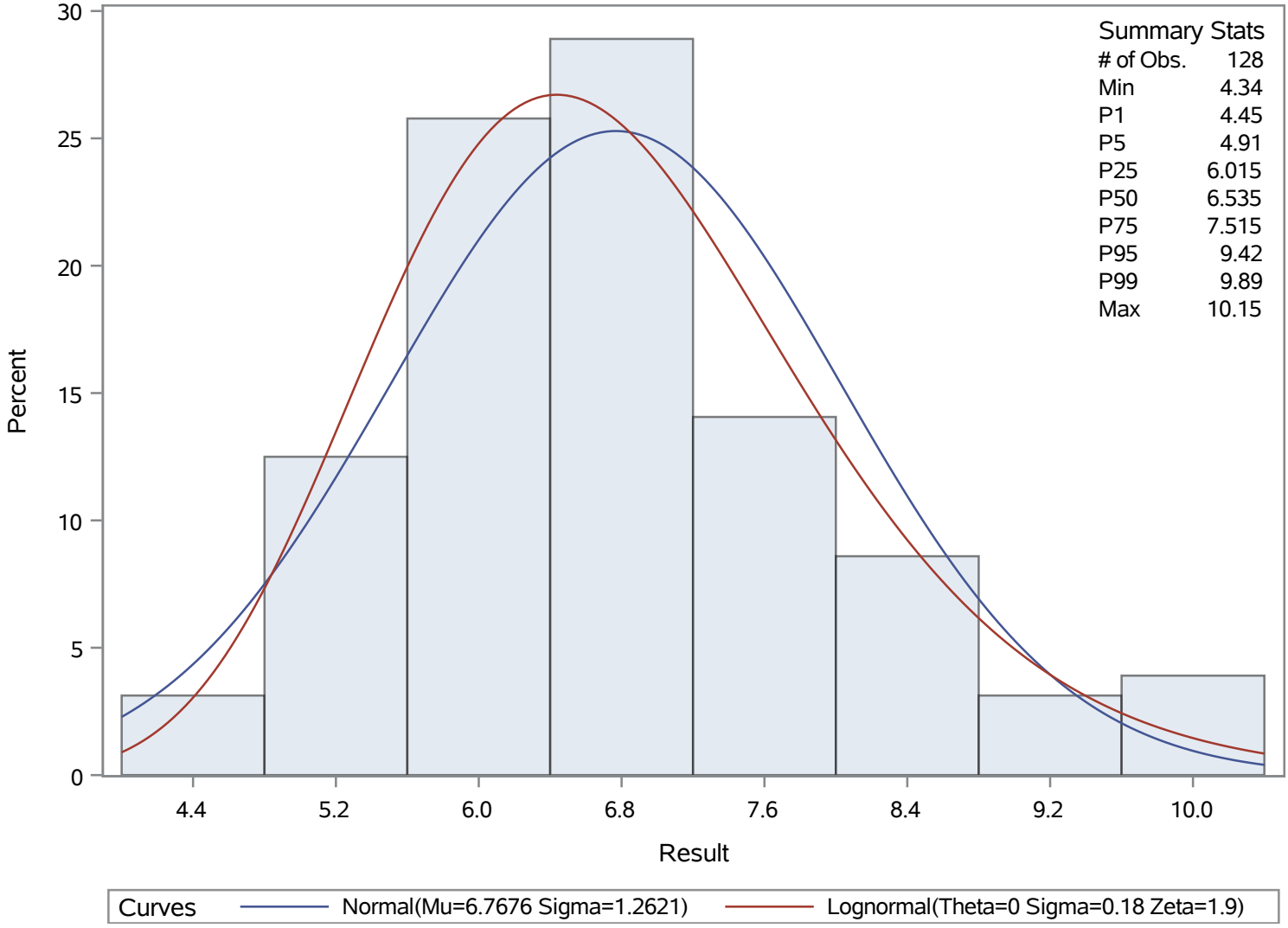
Distribution of Result



Little Manatee River
113
DO Bottom (mg/L)
Site ID = 113

The UNIVARIATE Procedure

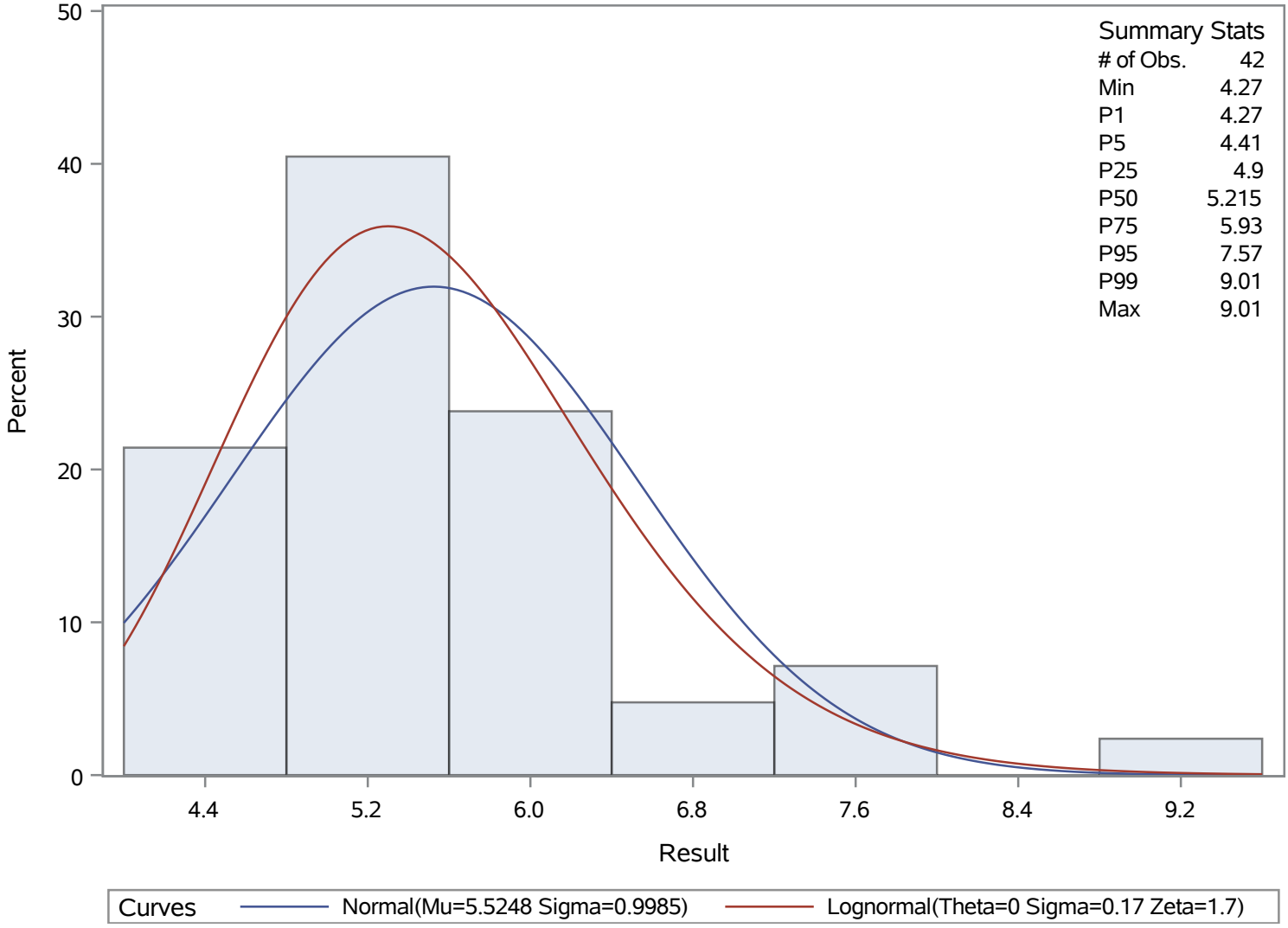
Distribution of Result



Little Manatee River
129
DO Bottom (mg/L)
Site ID = 129

The UNIVARIATE Procedure

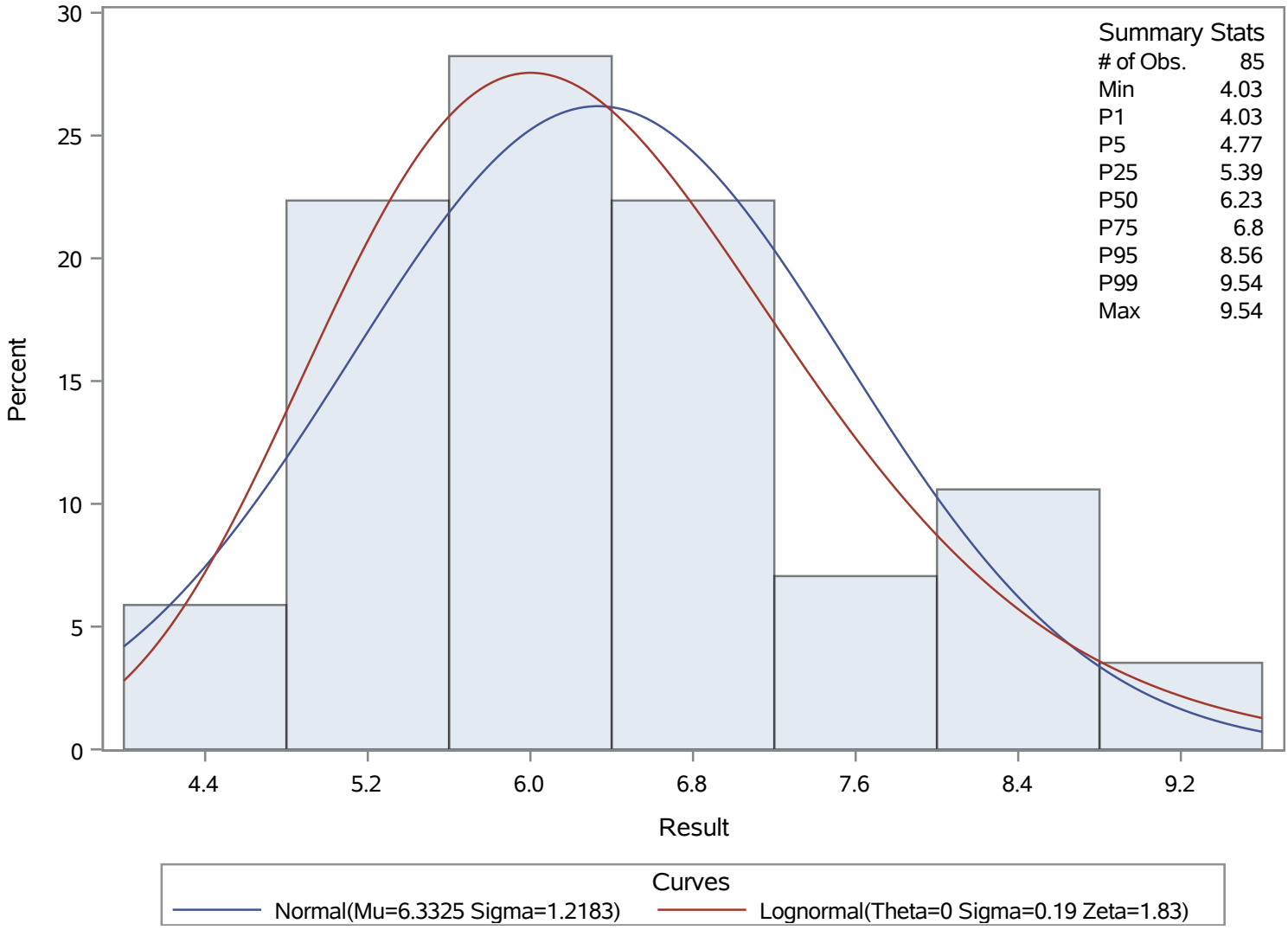
Distribution of Result



Little Manatee River
140
DO Bottom (mg/L)
Site ID = 140

The UNIVARIATE Procedure

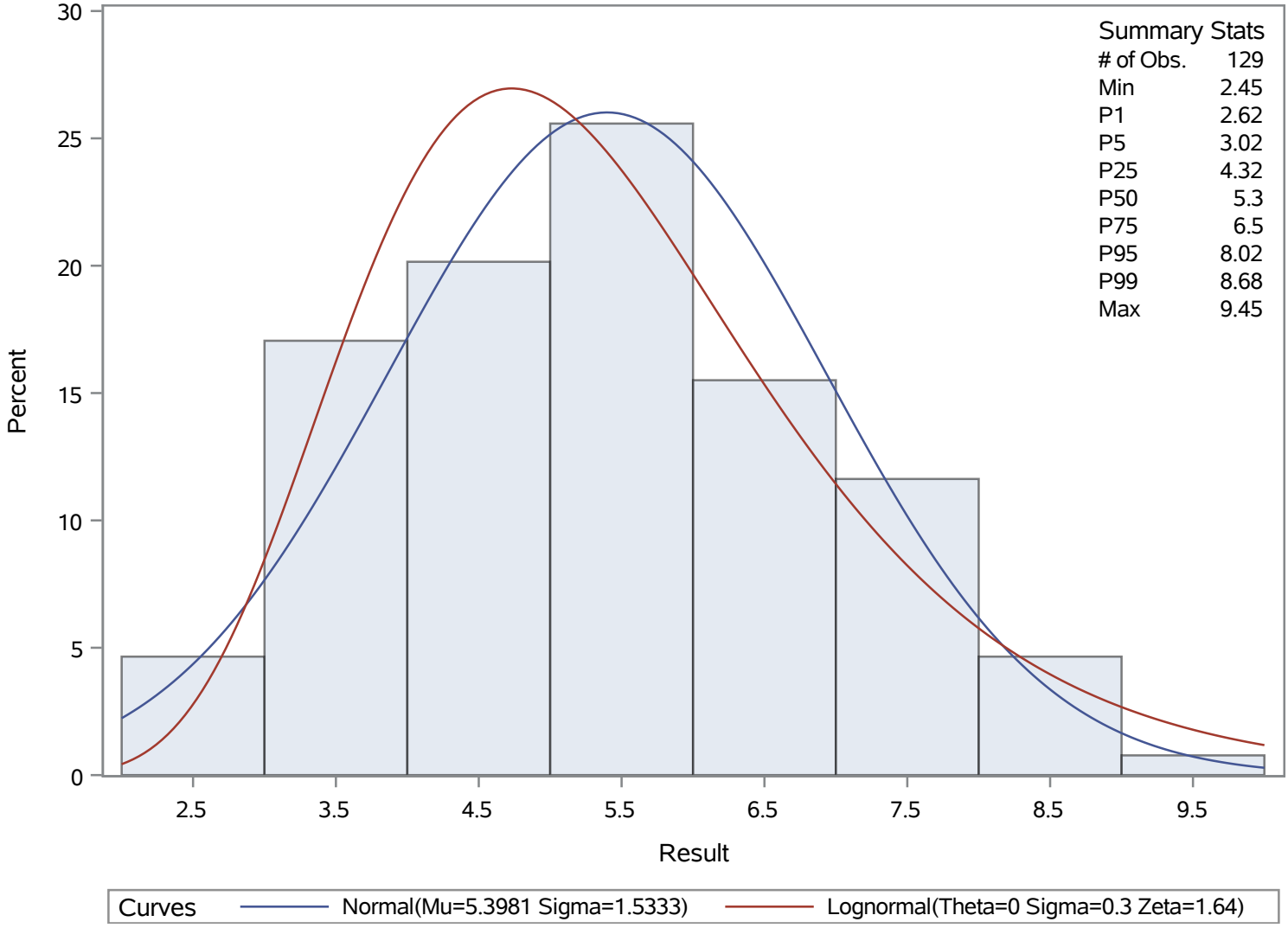
Distribution of Result



Little Manatee River
180
DO Bottom (mg/L)
Site ID = 180

The UNIVARIATE Procedure

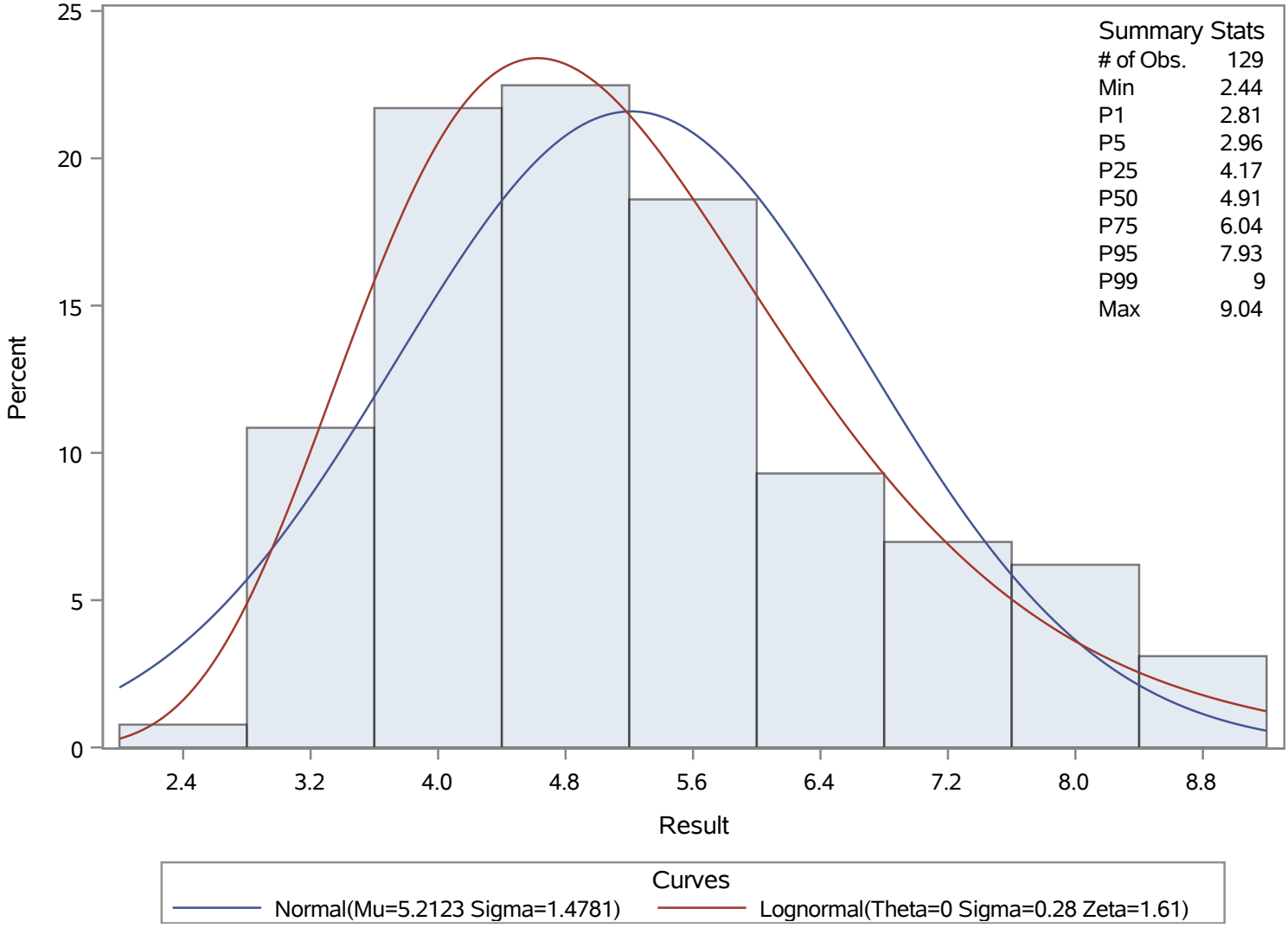
Distribution of Result



Little Manatee River
181
DO Bottom (mg/L)
Site ID = 181

The UNIVARIATE Procedure

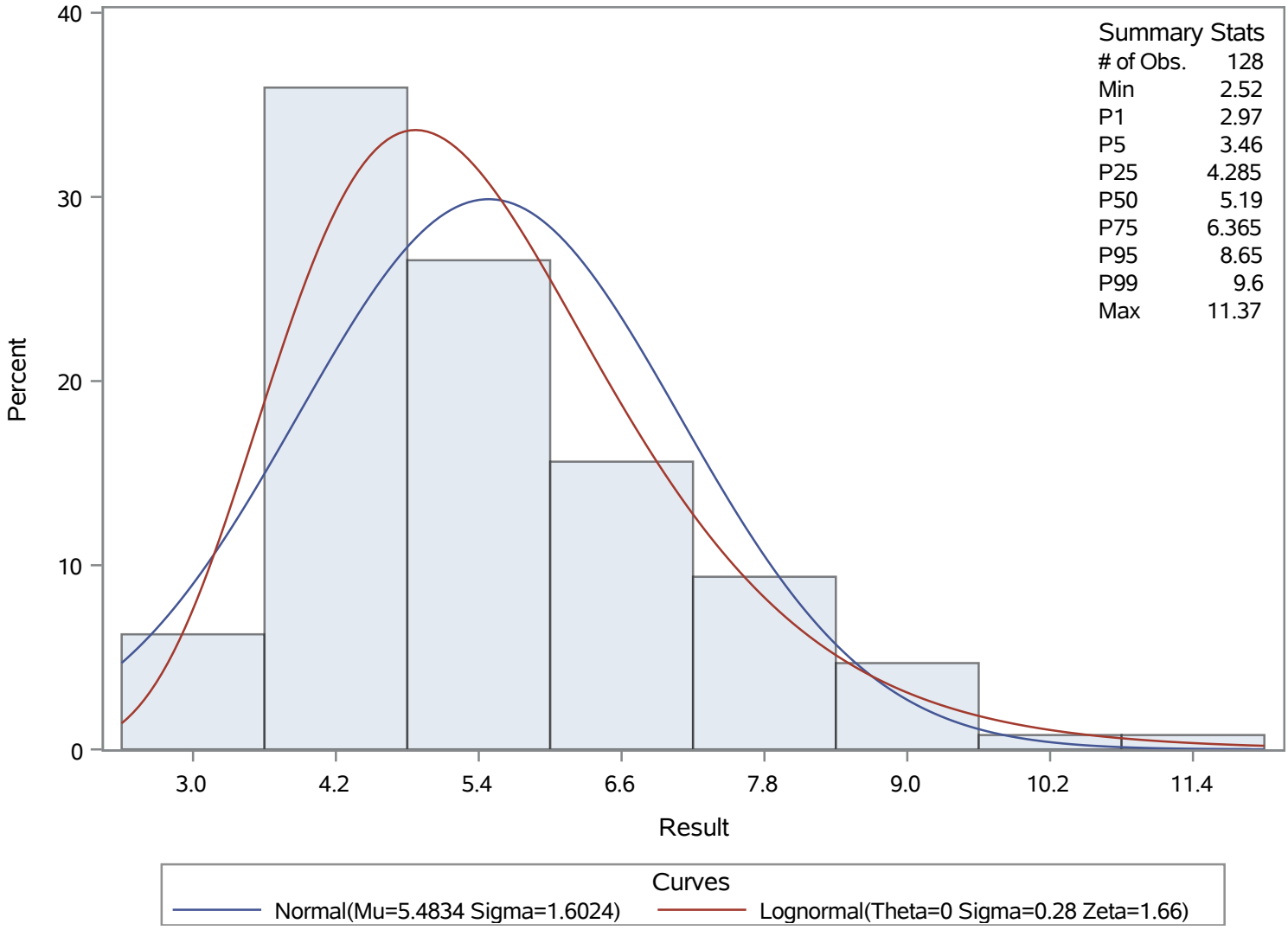
Distribution of Result



Little Manatee River
182
DO Bottom (mg/L)
Site ID = 182

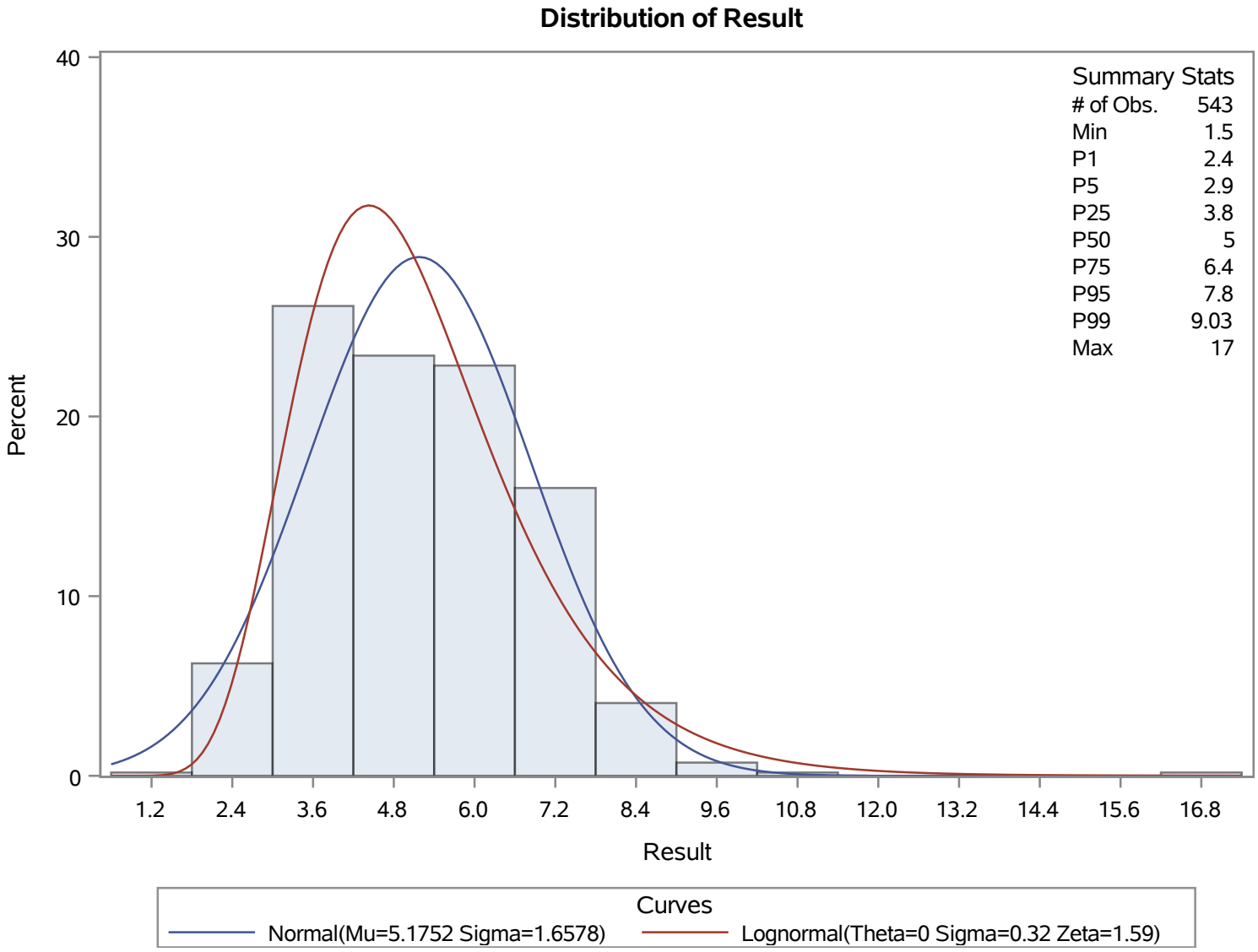
The UNIVARIATE Procedure

Distribution of Result



Little Manatee River
112
DO Mid (mg/L)
Site ID = 112

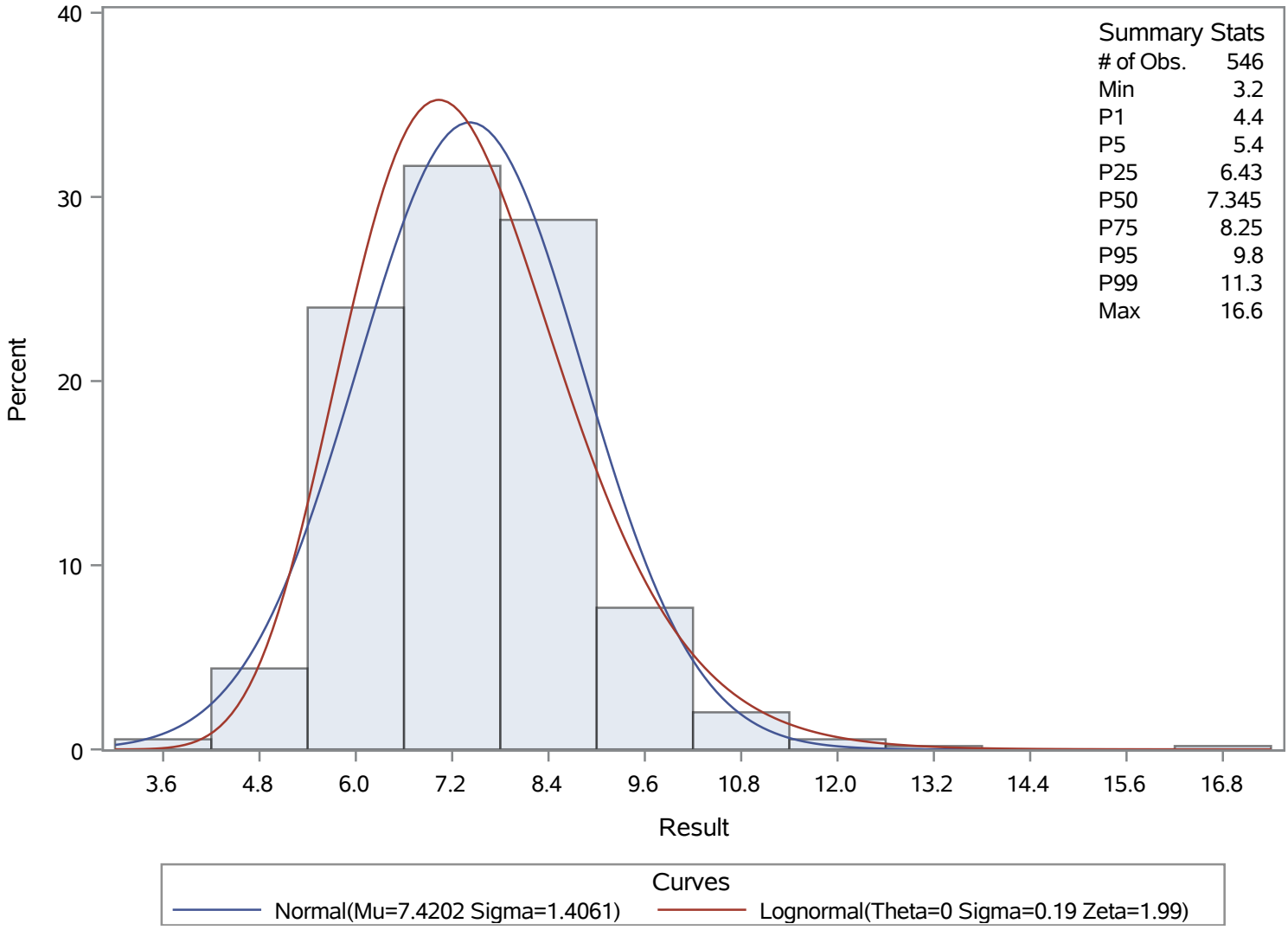
The UNIVARIATE Procedure



Little Manatee River
113
DO Mid (mg/L)
Site ID = 113

The UNIVARIATE Procedure

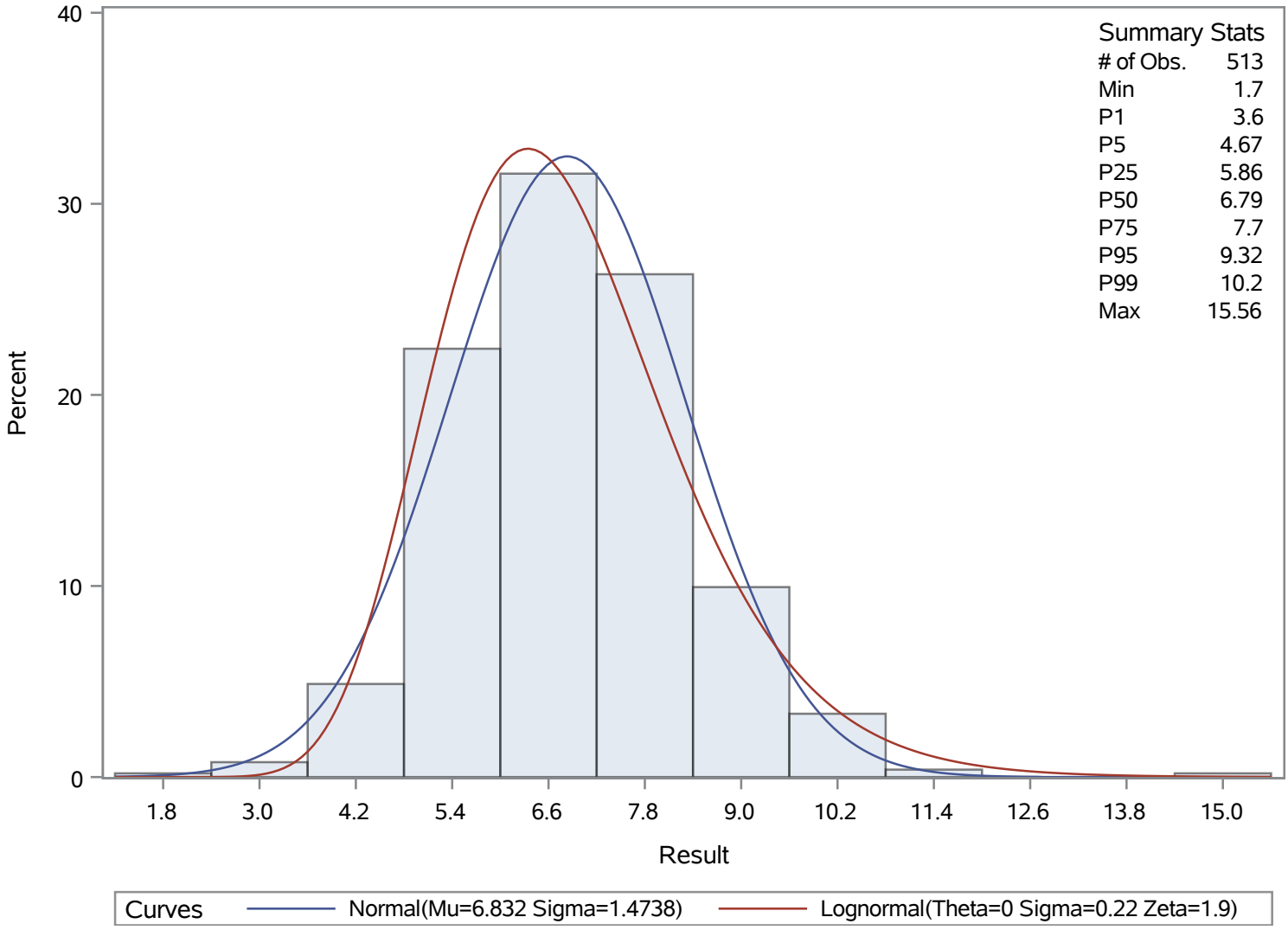
Distribution of Result



Little Manatee River
129
DO Mid (mg/L)
Site ID = 129

The UNIVARIATE Procedure

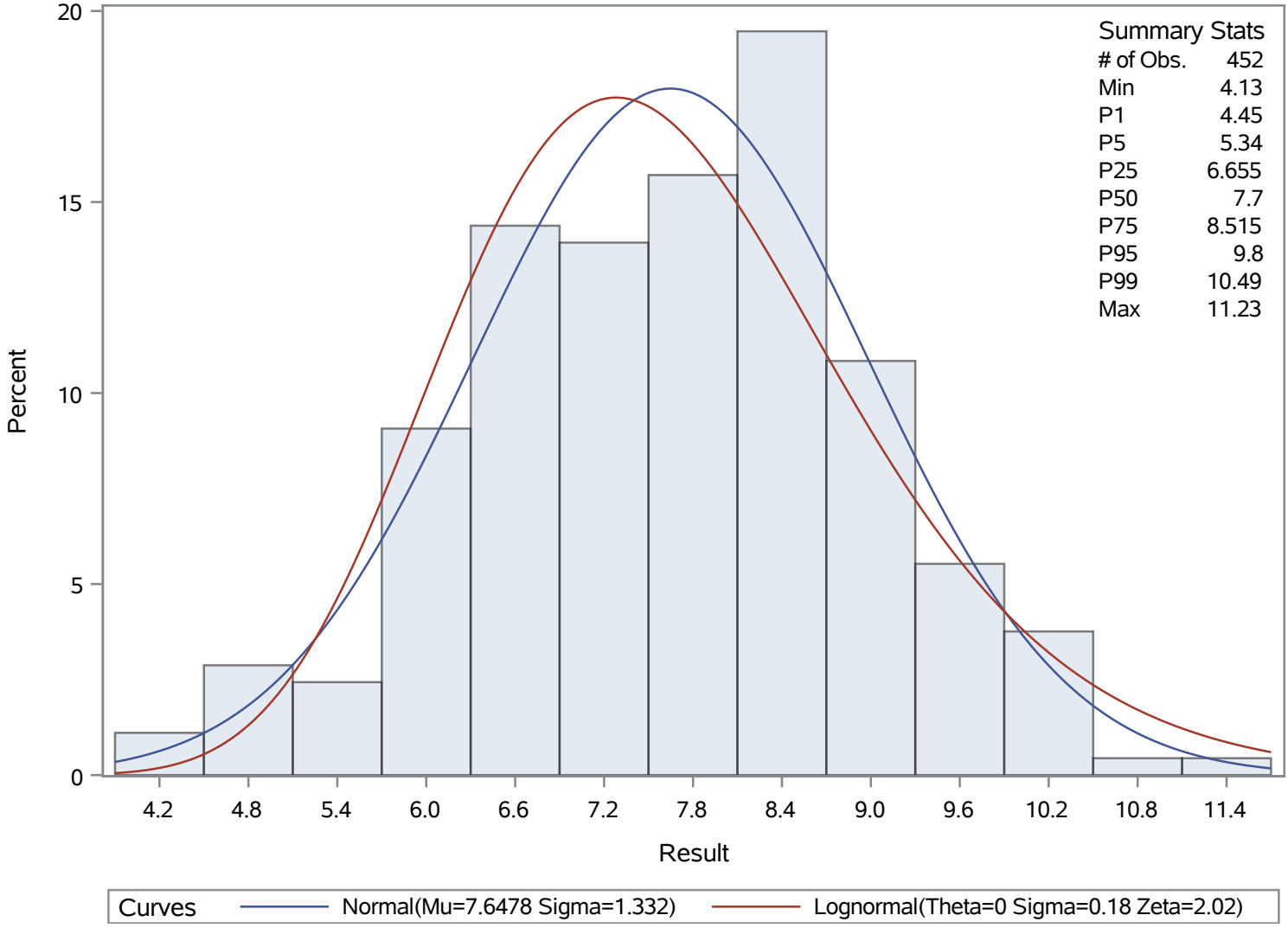
Distribution of Result



Little Manatee River
140
DO Mid (mg/L)
Site ID = 140

The UNIVARIATE Procedure

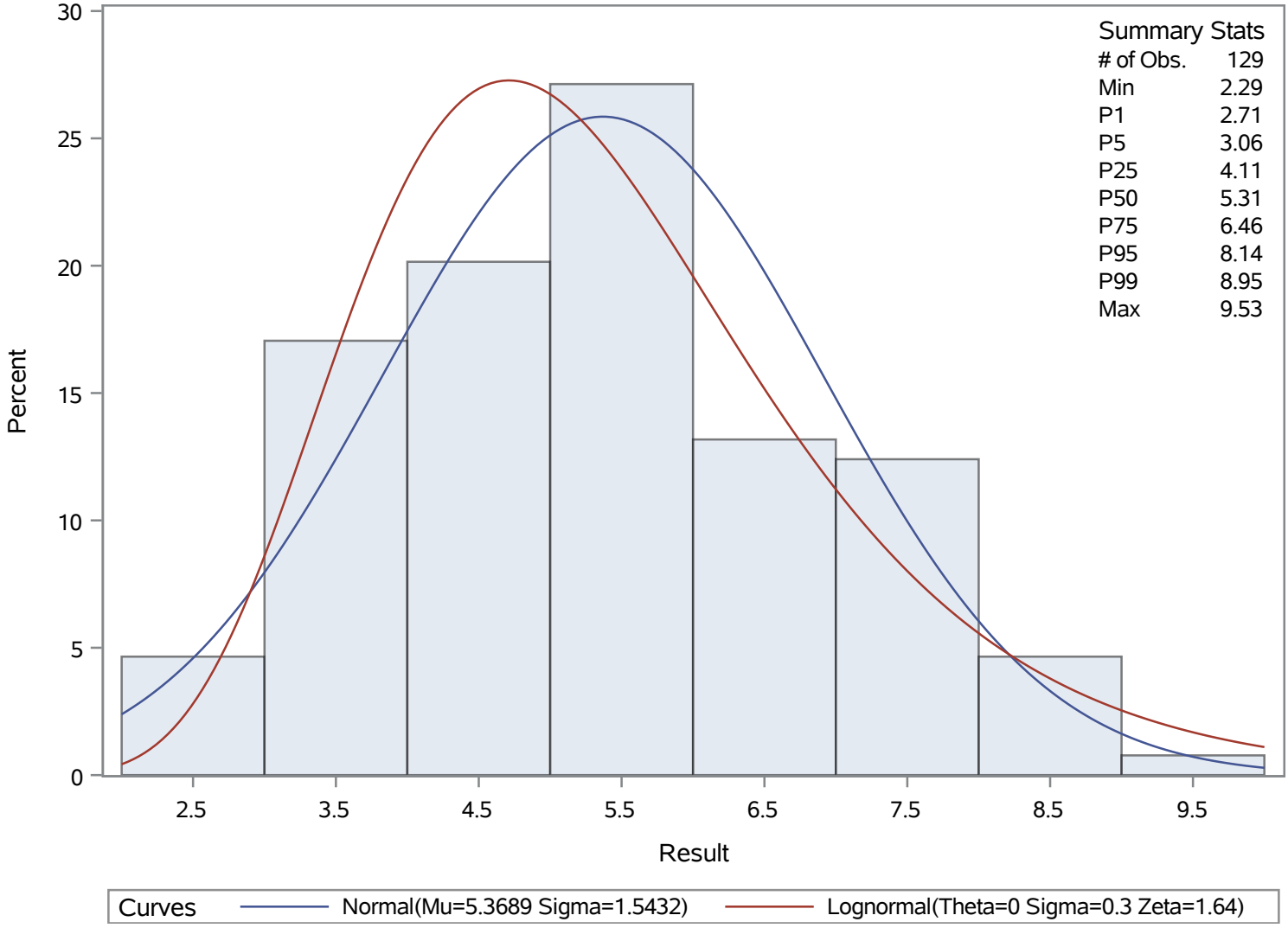
Distribution of Result



Little Manatee River
180
DO Mid (mg/L)
Site ID = 180

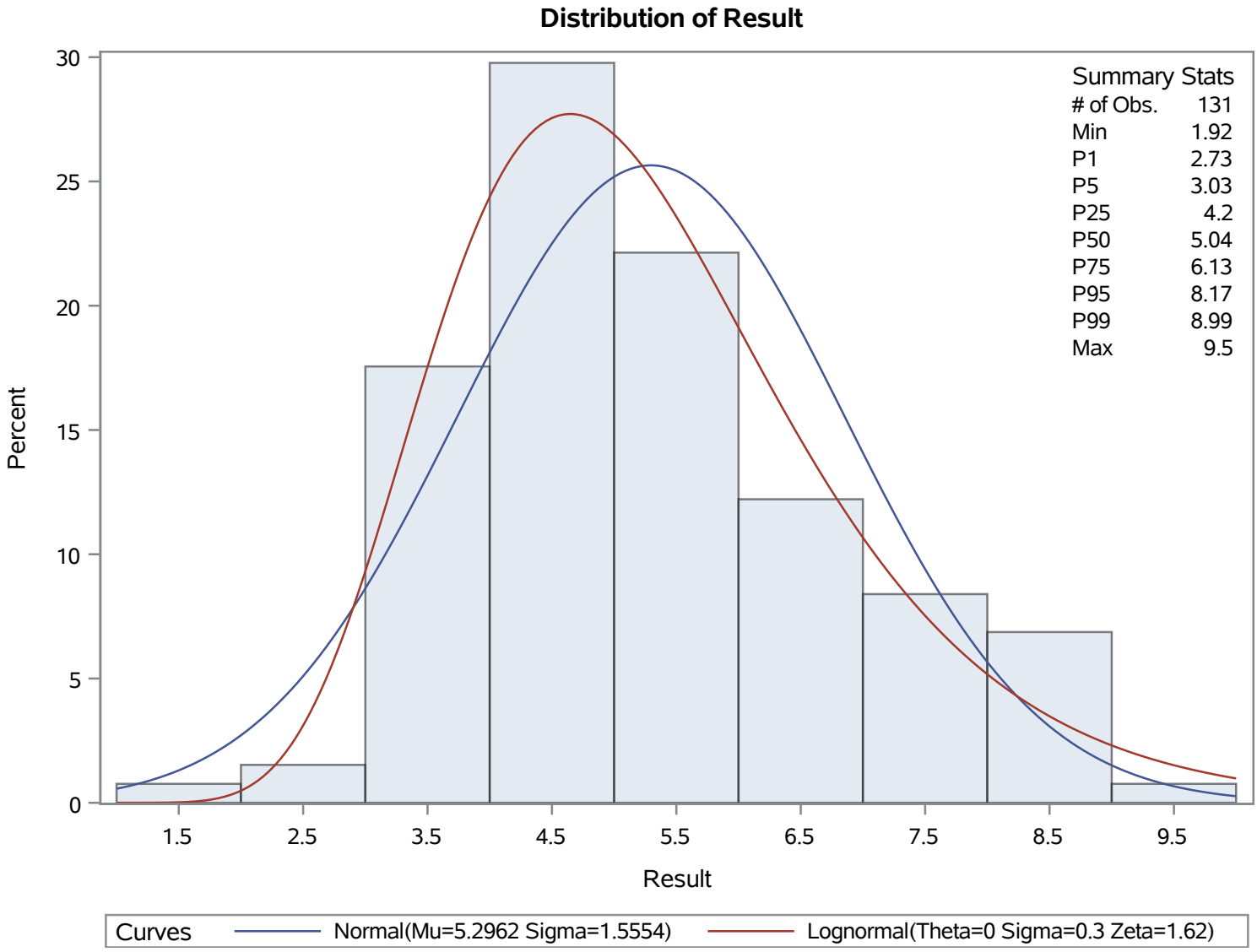
The UNIVARIATE Procedure

Distribution of Result



Little Manatee River
181
DO Mid (mg/L)
Site ID = 181

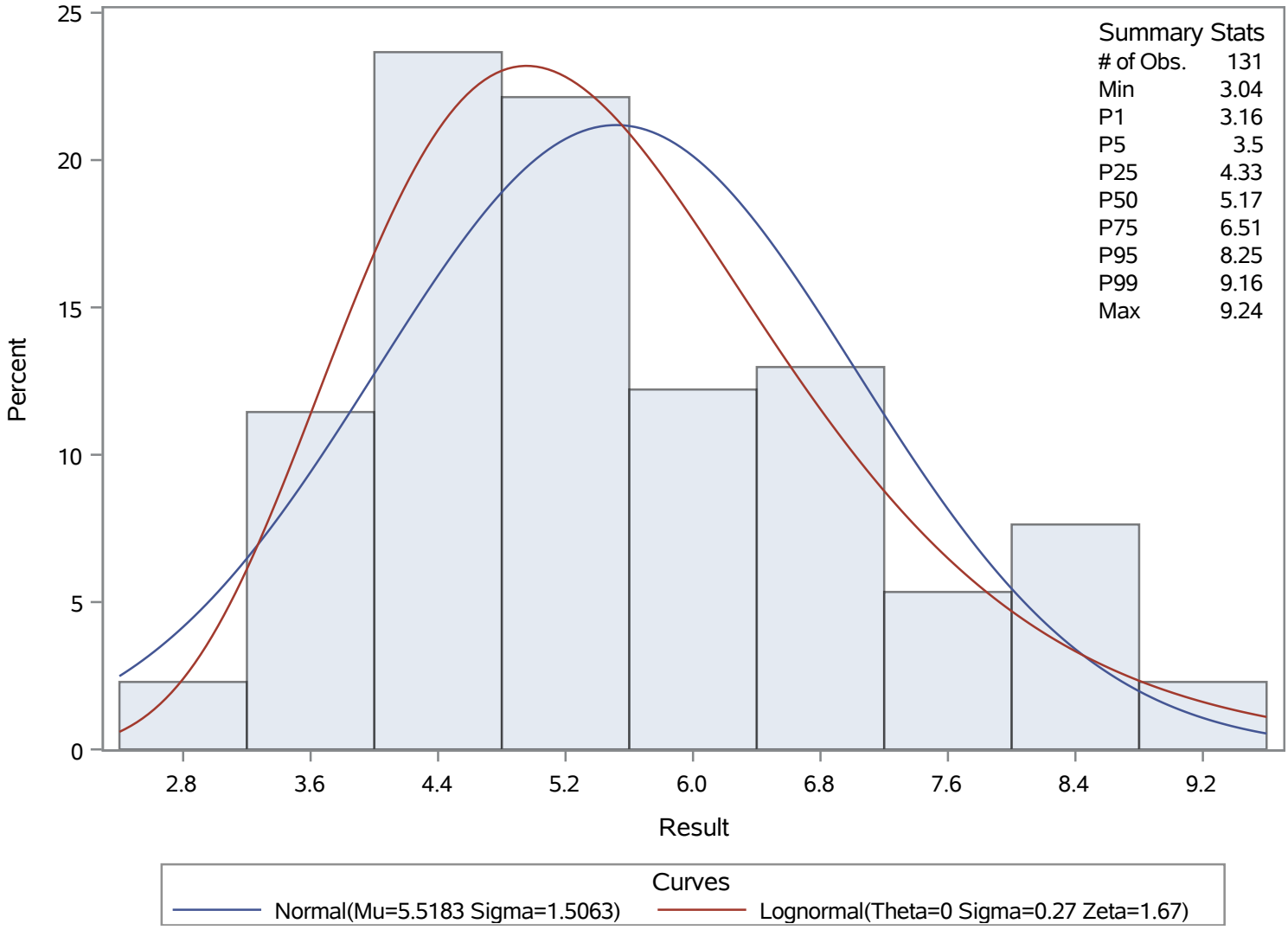
The UNIVARIATE Procedure



Little Manatee River
182
DO Mid (mg/L)
Site ID = 182

The UNIVARIATE Procedure

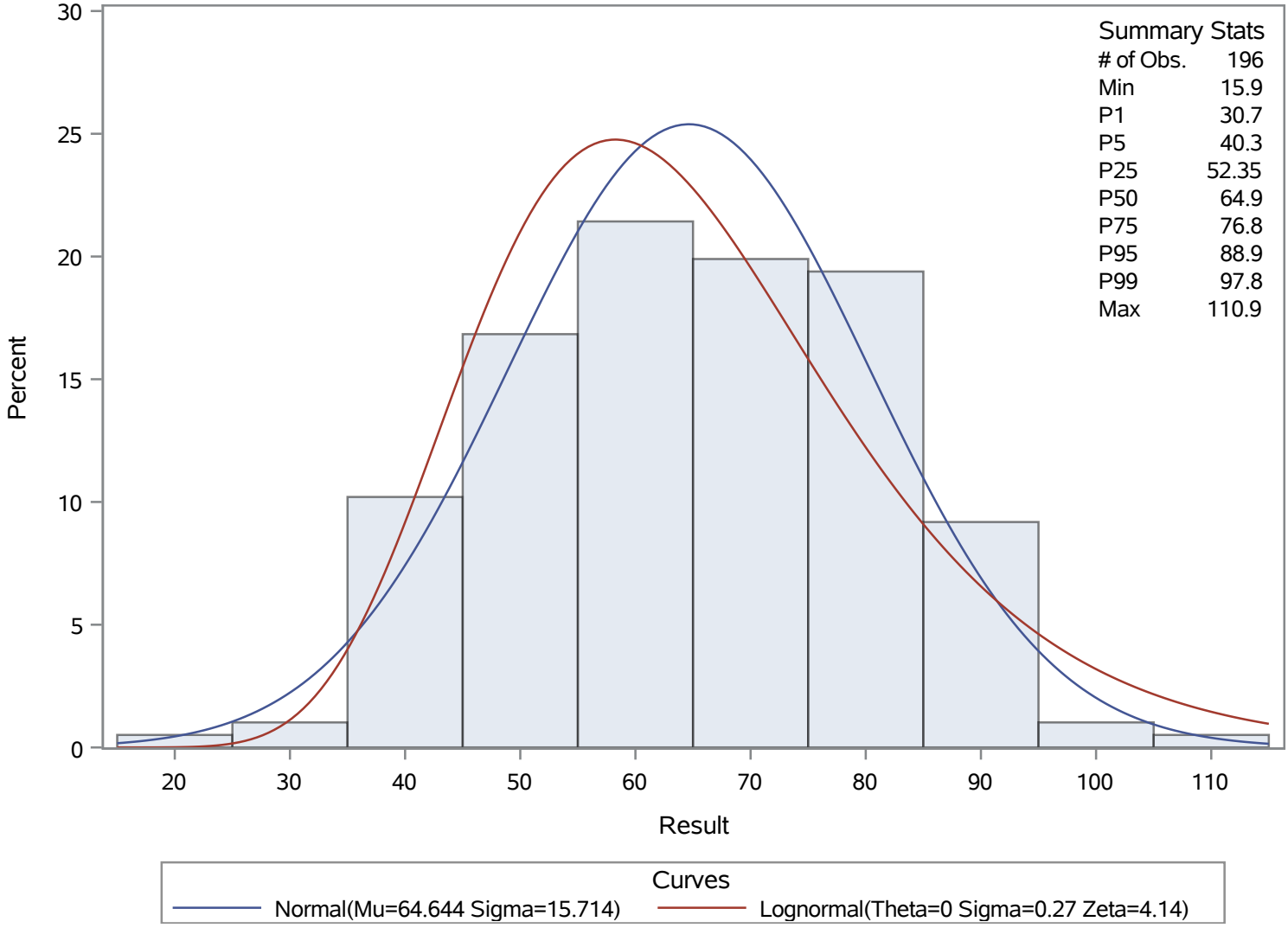
Distribution of Result



Little Manatee River
112
DO Sat Bottom (%)
Site ID = 112

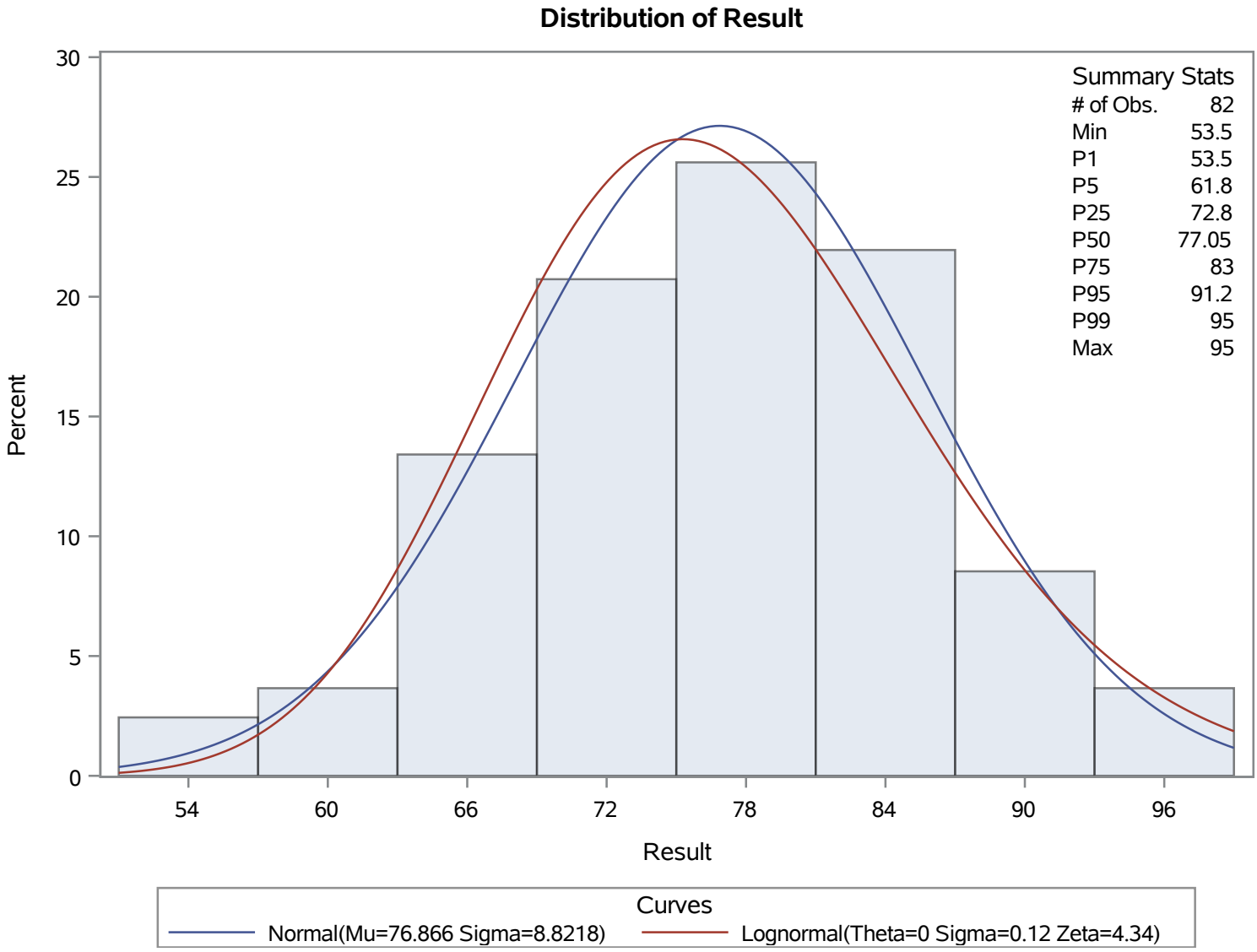
The UNIVARIATE Procedure

Distribution of Result



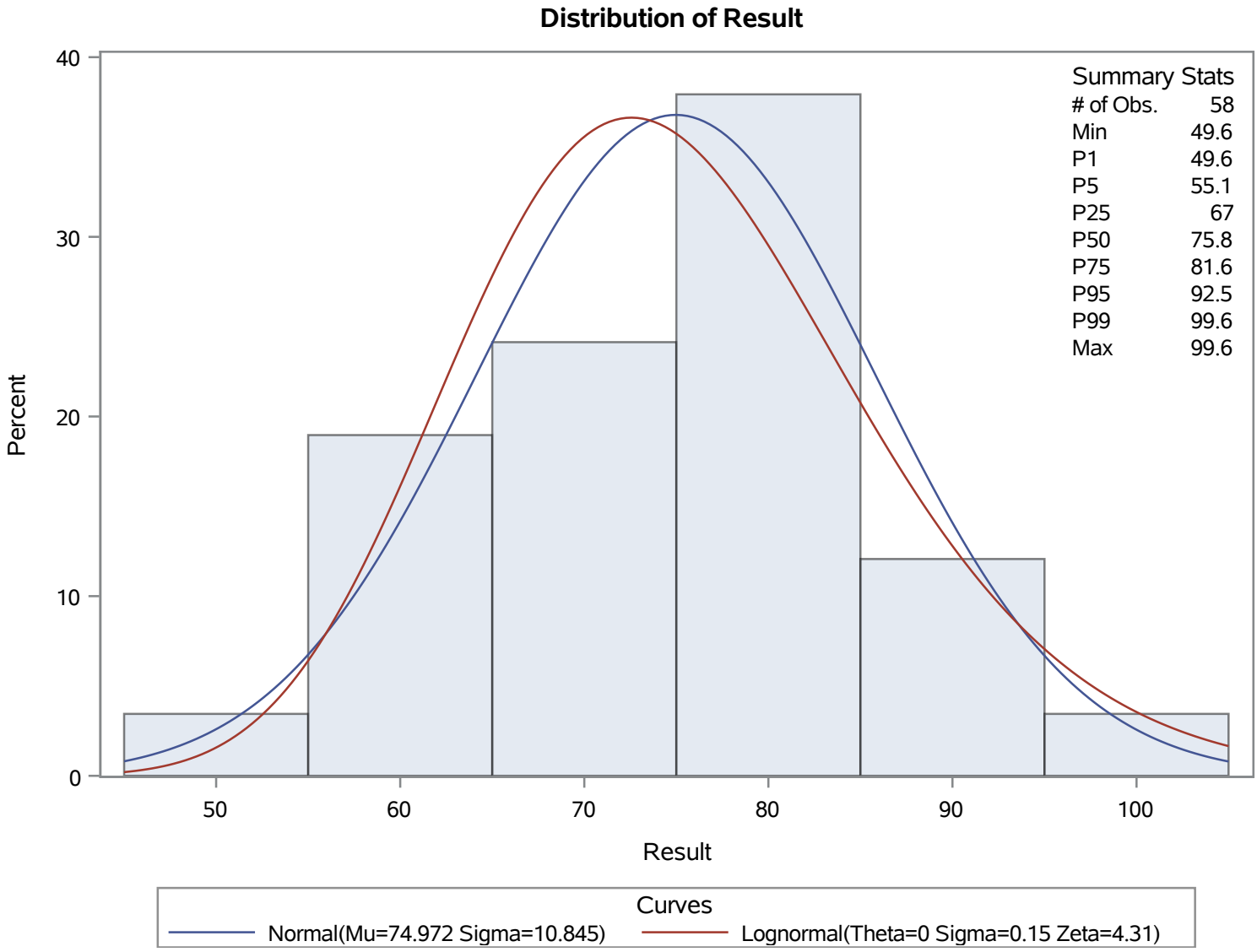
Little Manatee River
113
DO Sat Bottom (%)
Site ID = 113

The UNIVARIATE Procedure



Little Manatee River
140
DO Sat Bottom (%)
Site ID = 140

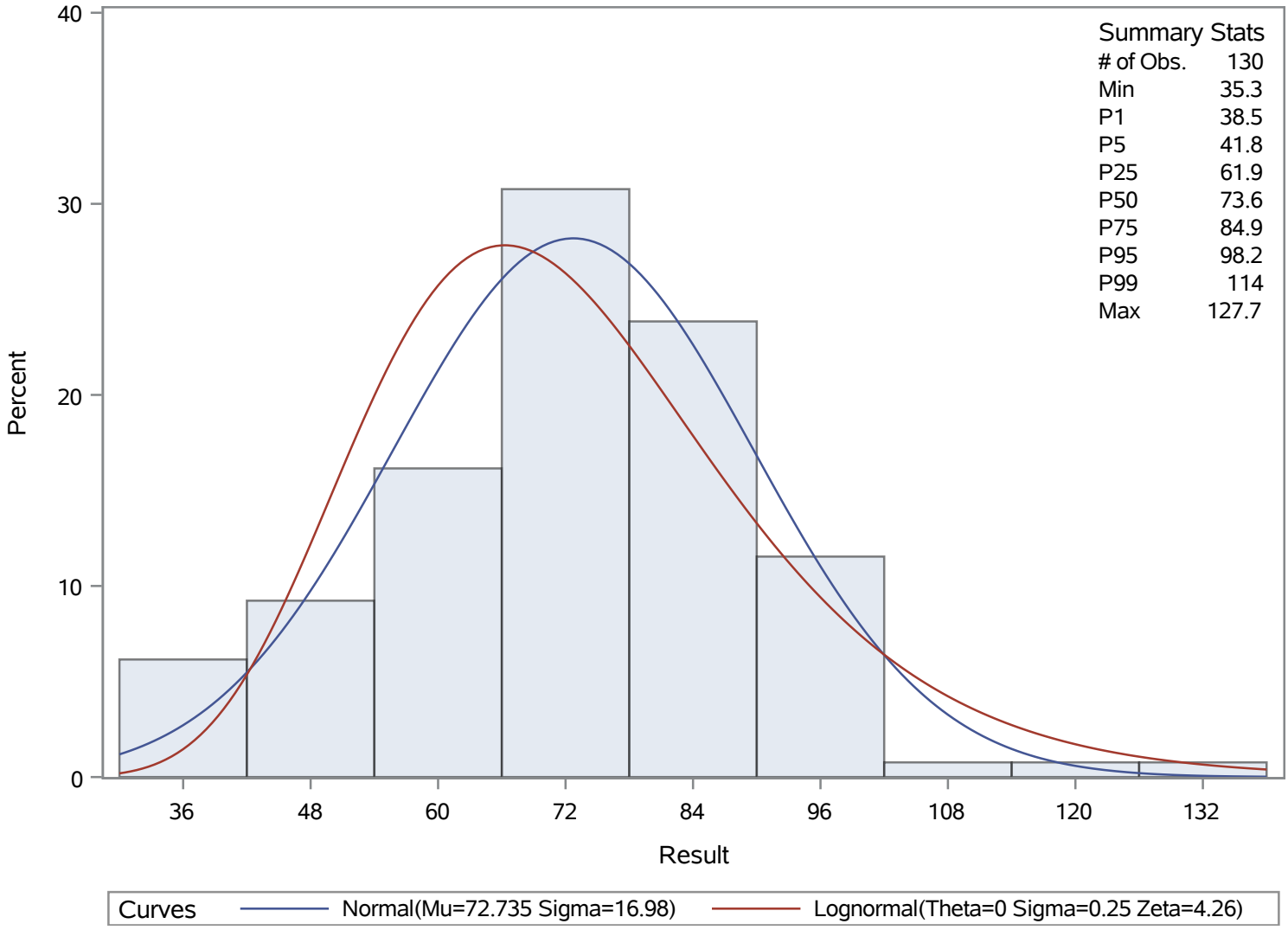
The UNIVARIATE Procedure



Little Manatee River
180
DO Sat Bottom (%)
Site ID = 180

The UNIVARIATE Procedure

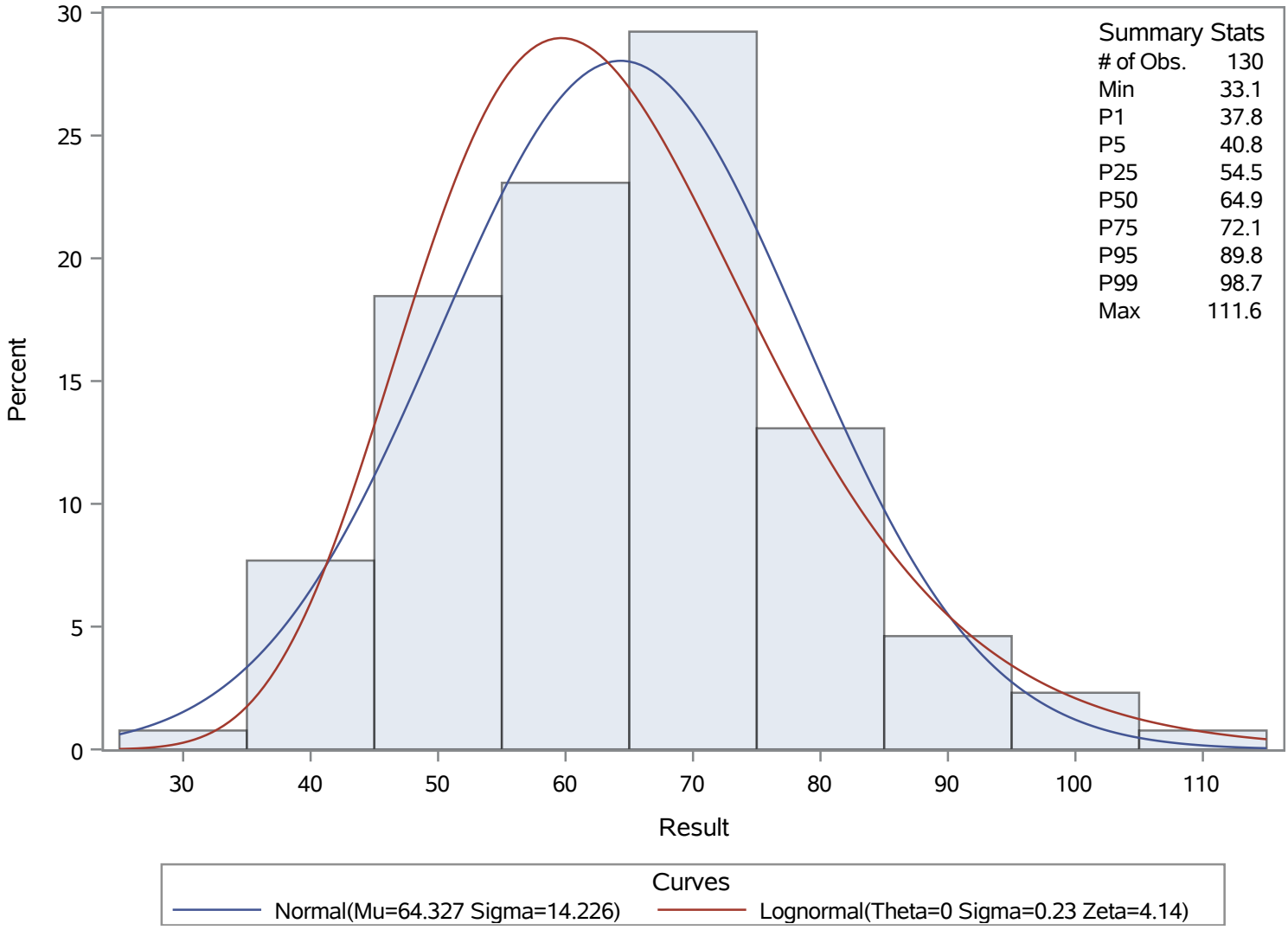
Distribution of Result



Little Manatee River
181
DO Sat Bottom (%)
Site ID = 181

The UNIVARIATE Procedure

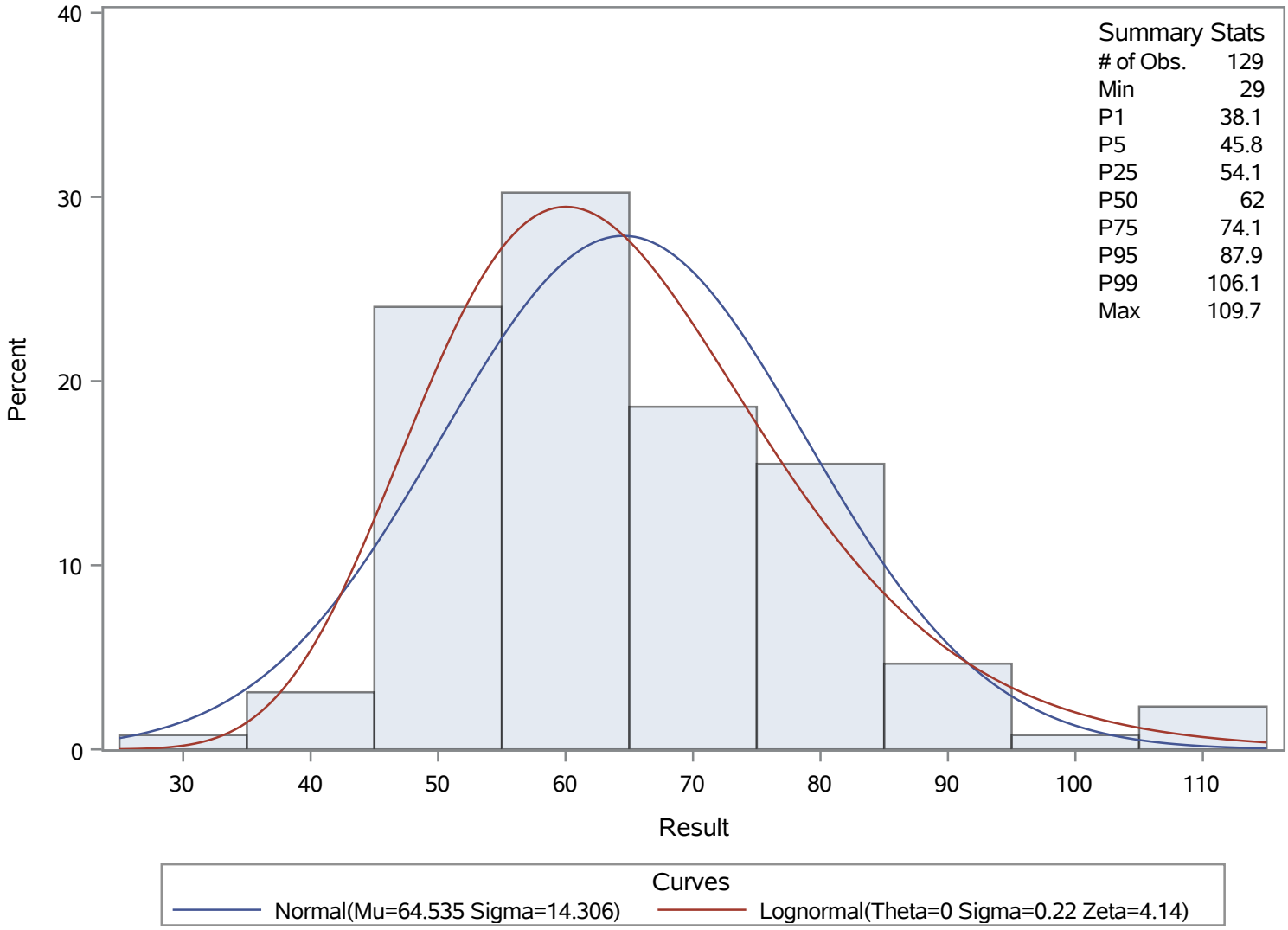
Distribution of Result



Little Manatee River
182
DO Sat Bottom (%)
Site ID = 182

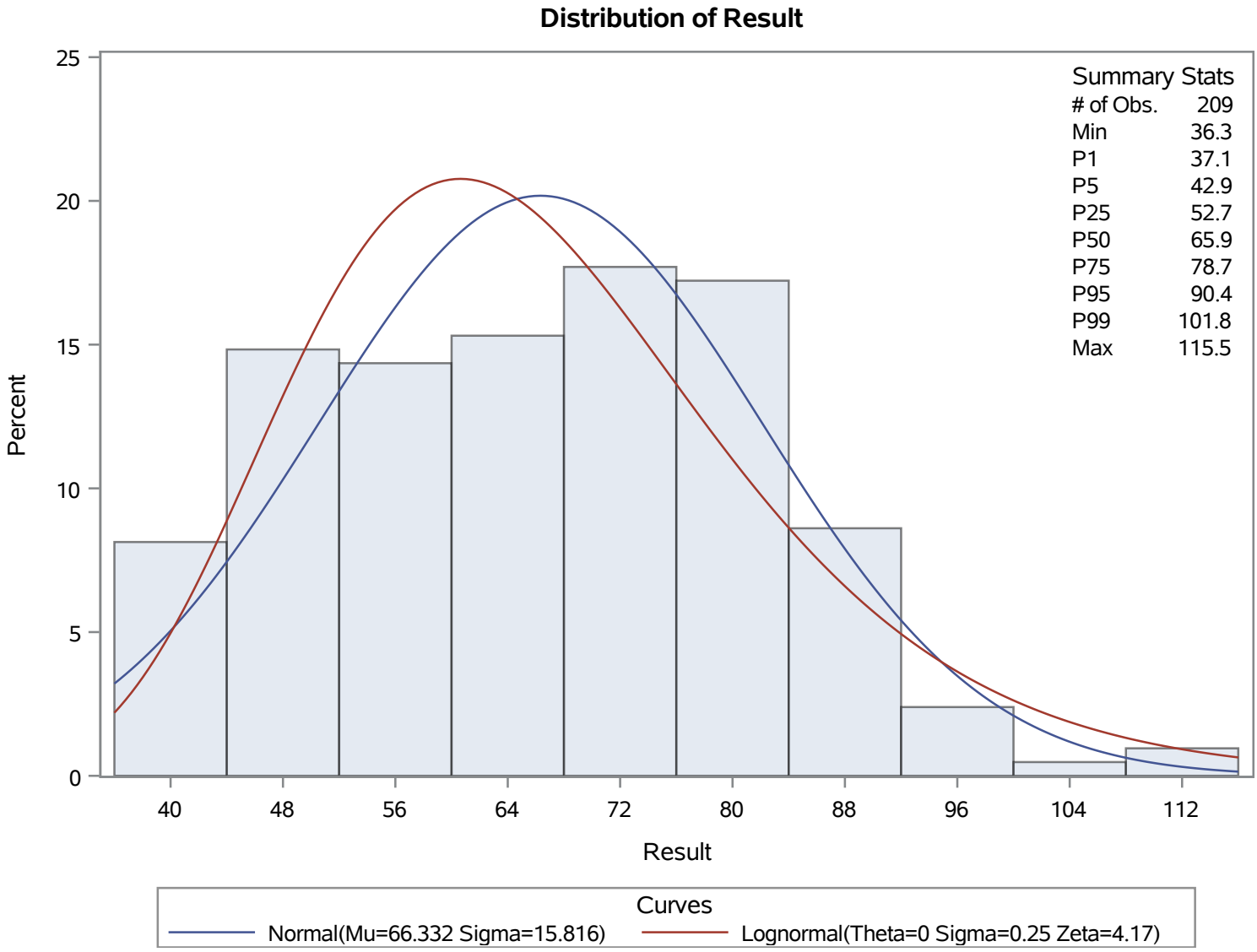
The UNIVARIATE Procedure

Distribution of Result



Little Manatee River
112
DO Sat Mid (%)
Site ID = 112

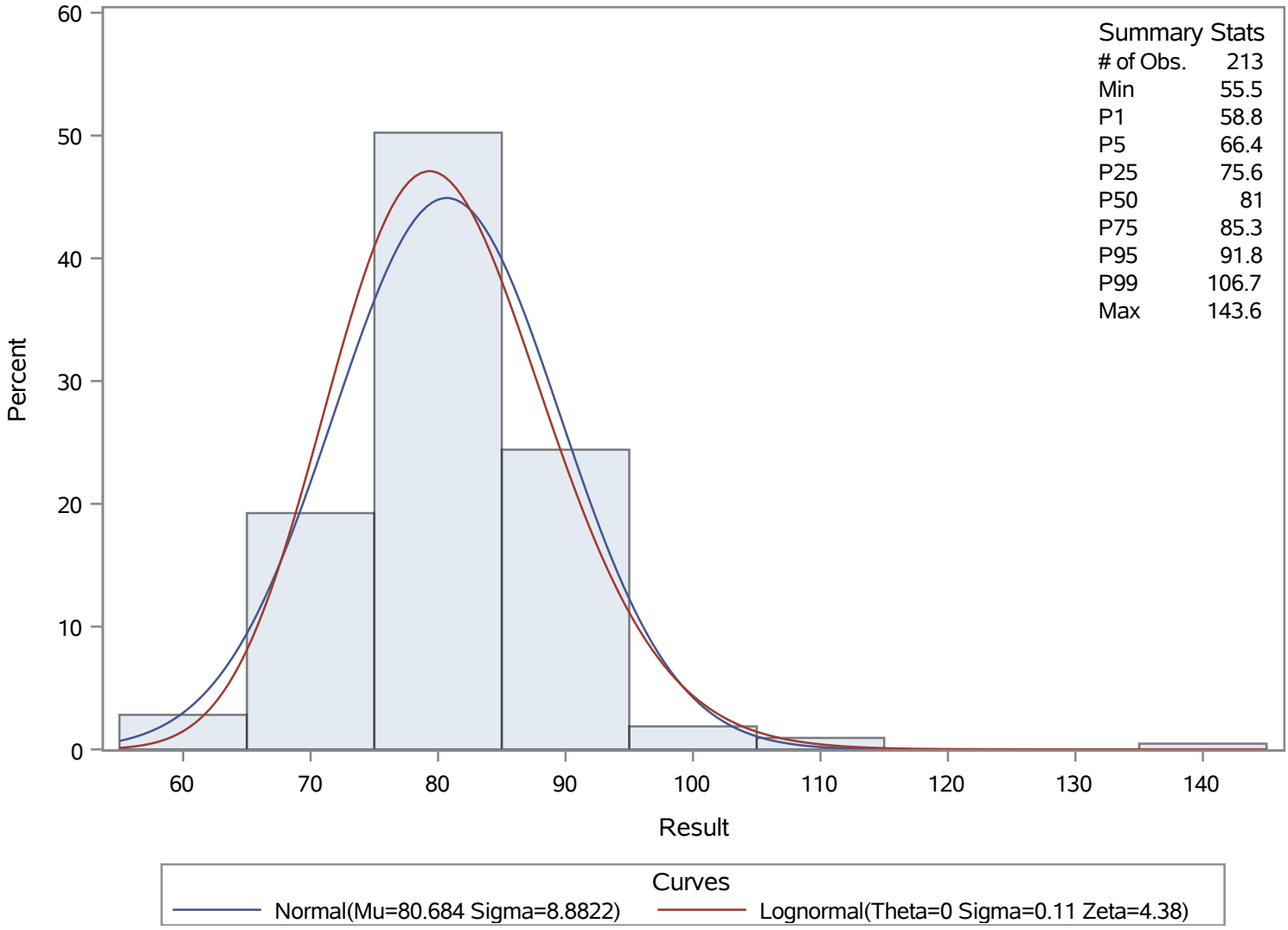
The UNIVARIATE Procedure



Little Manatee River
113
DO Sat Mid (%)
Site ID = 113

The UNIVARIATE Procedure

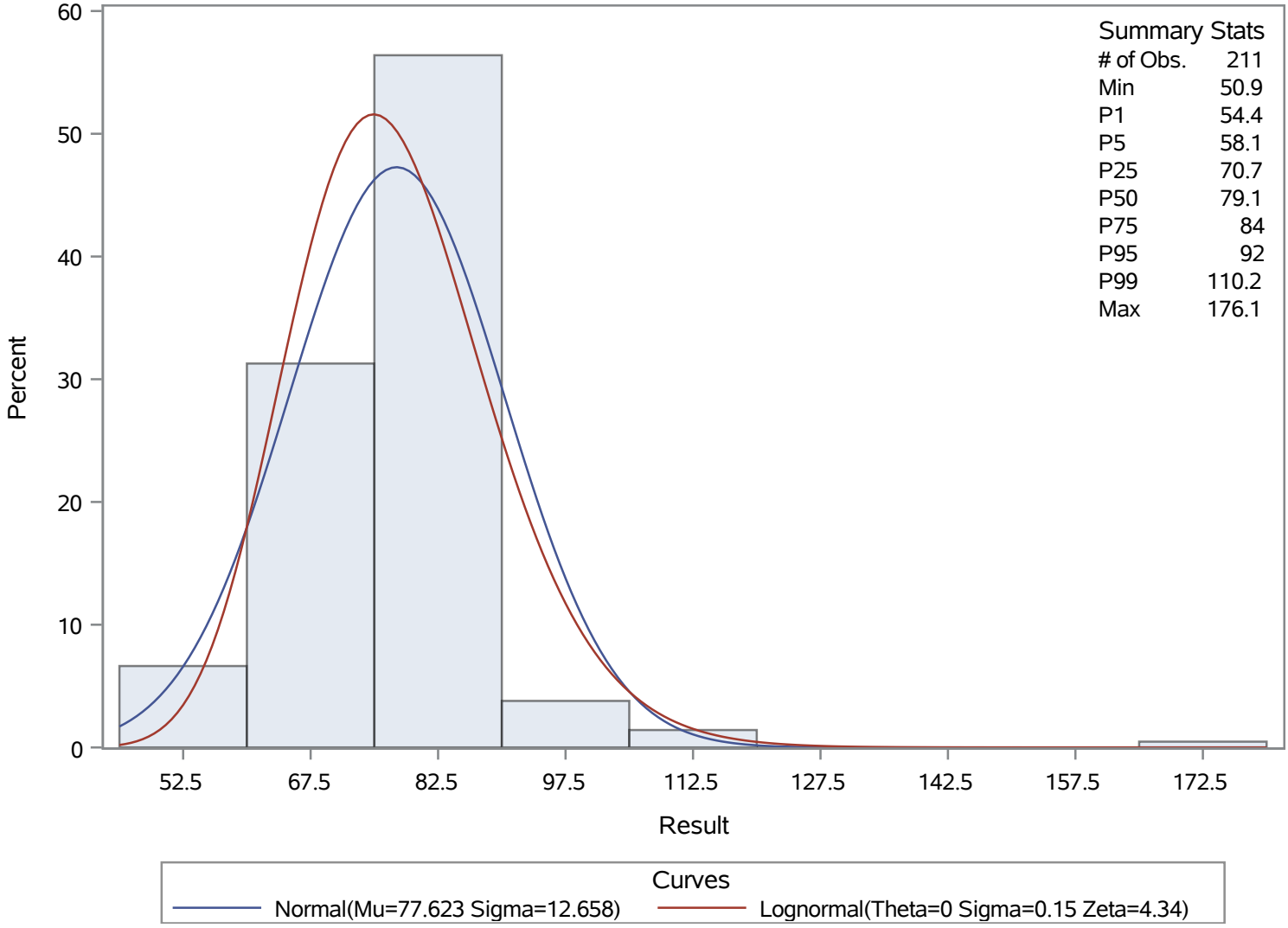
Distribution of Result



Little Manatee River
129
DO Sat Mid (%)
Site ID = 129

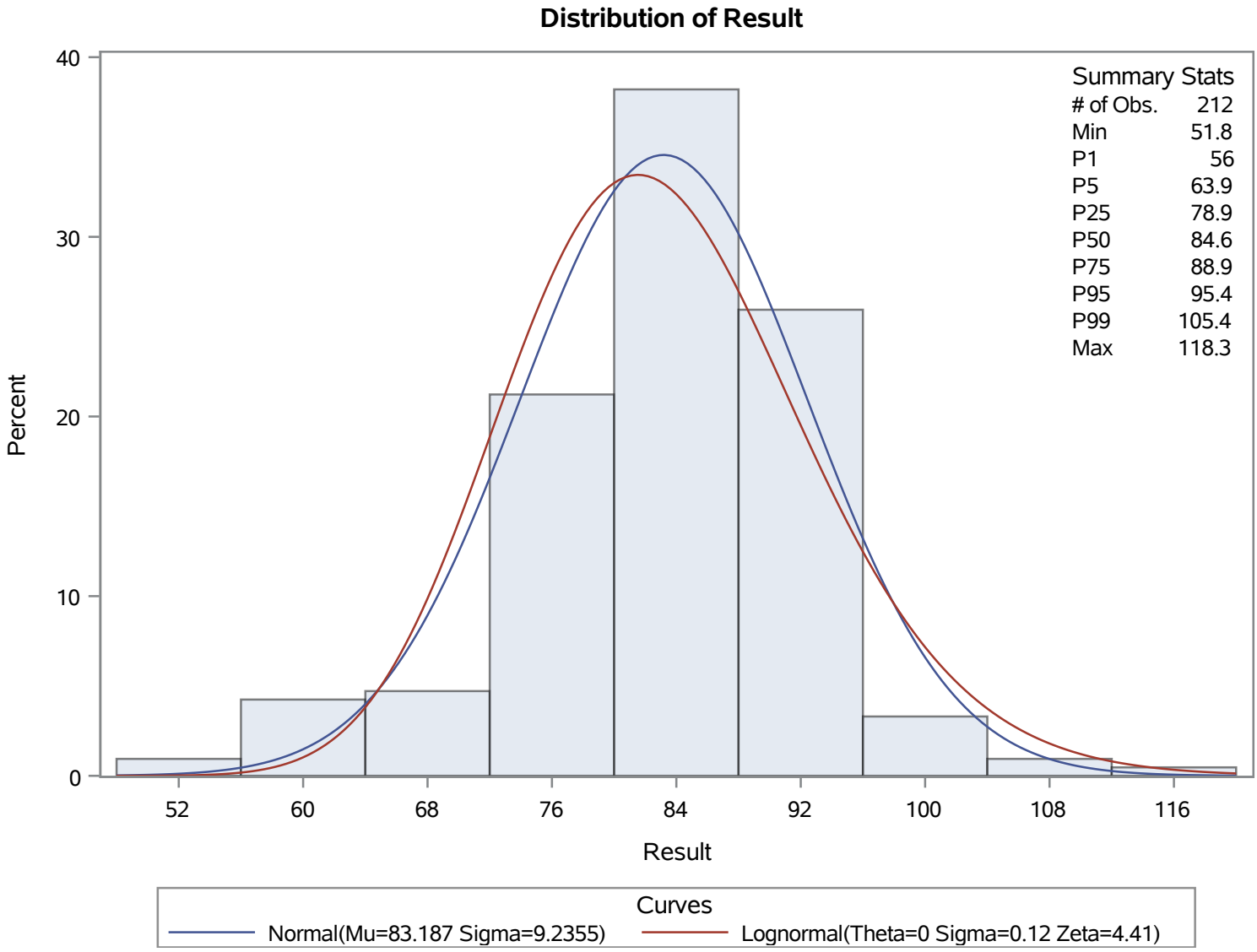
The UNIVARIATE Procedure

Distribution of Result



Little Manatee River
140
DO Sat Mid (%)
Site ID = 140

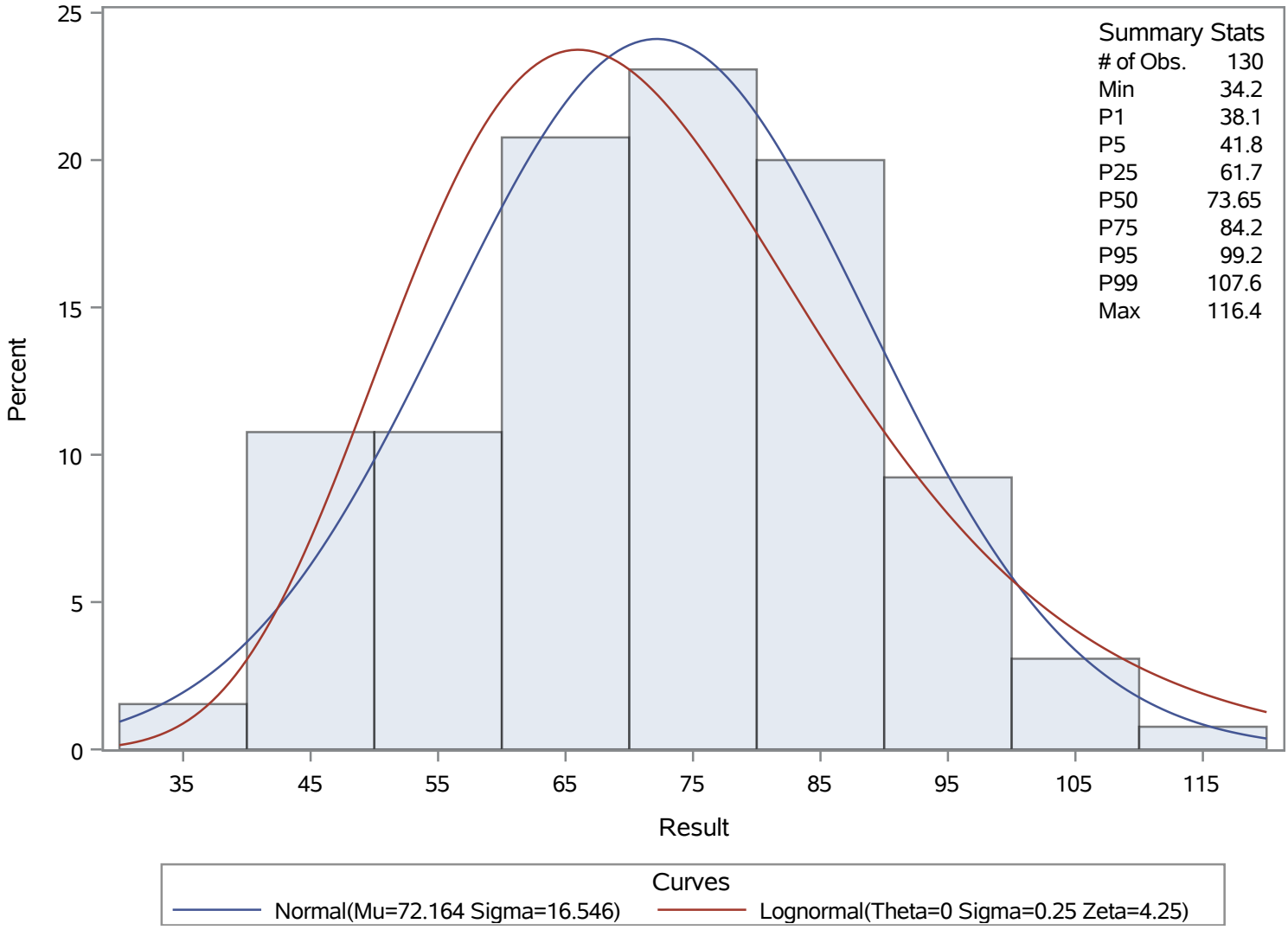
The UNIVARIATE Procedure



Little Manatee River
180
DO Sat Mid (%)
Site ID = 180

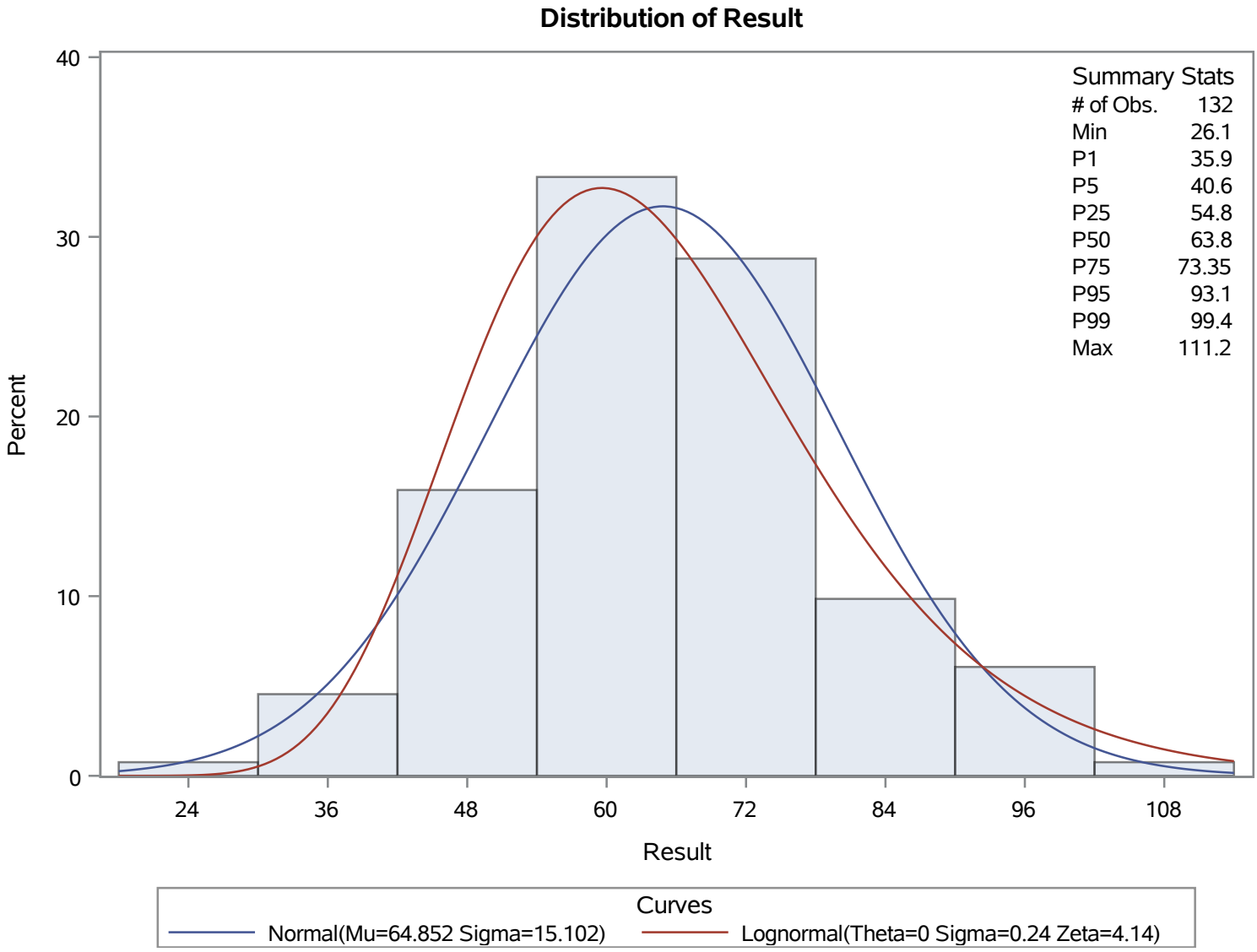
The UNIVARIATE Procedure

Distribution of Result



Little Manatee River
181
DO Sat Mid (%)
Site ID = 181

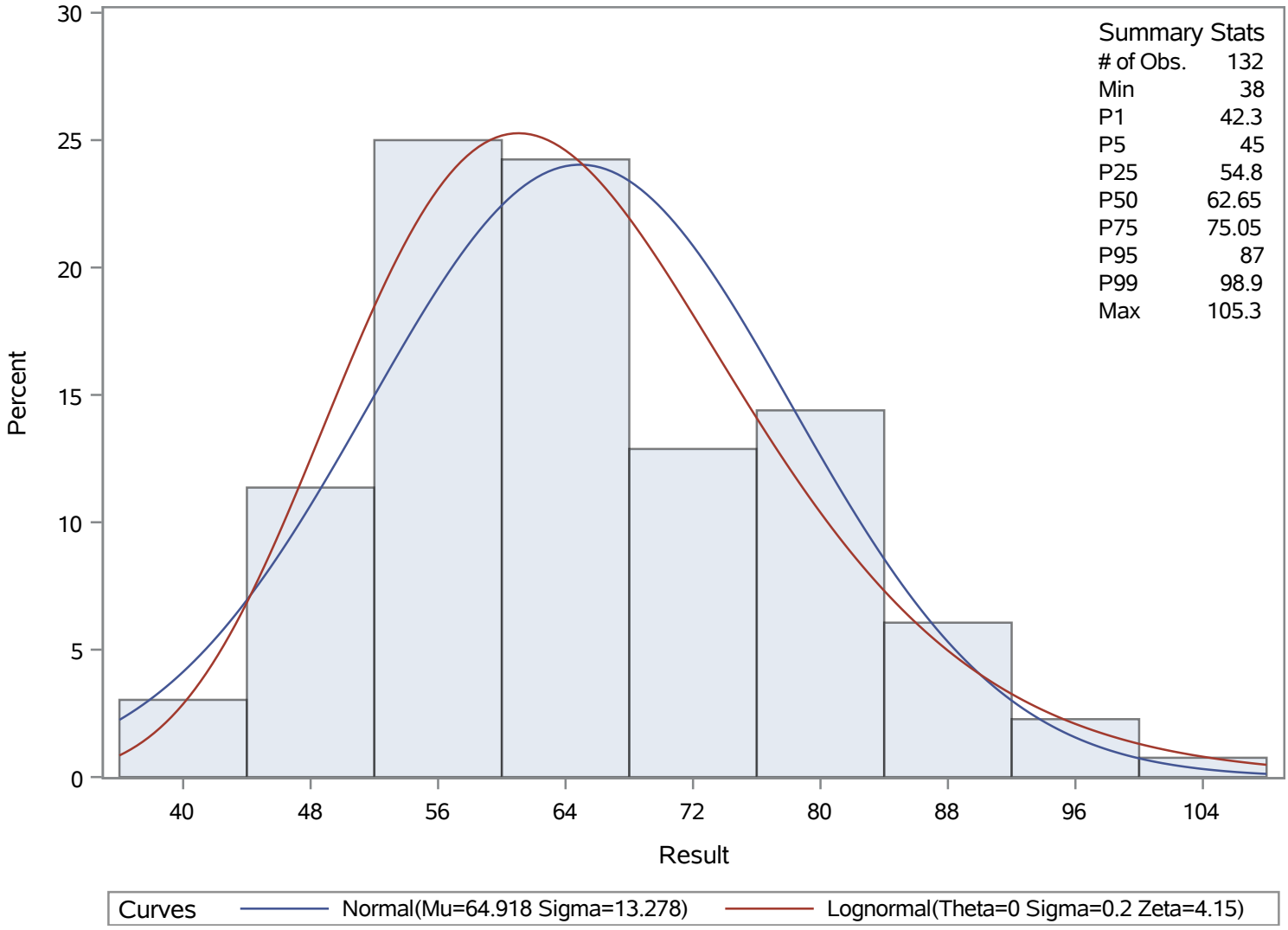
The UNIVARIATE Procedure



Little Manatee River
182
DO Sat Mid (%)
Site ID = 182

The UNIVARIATE Procedure

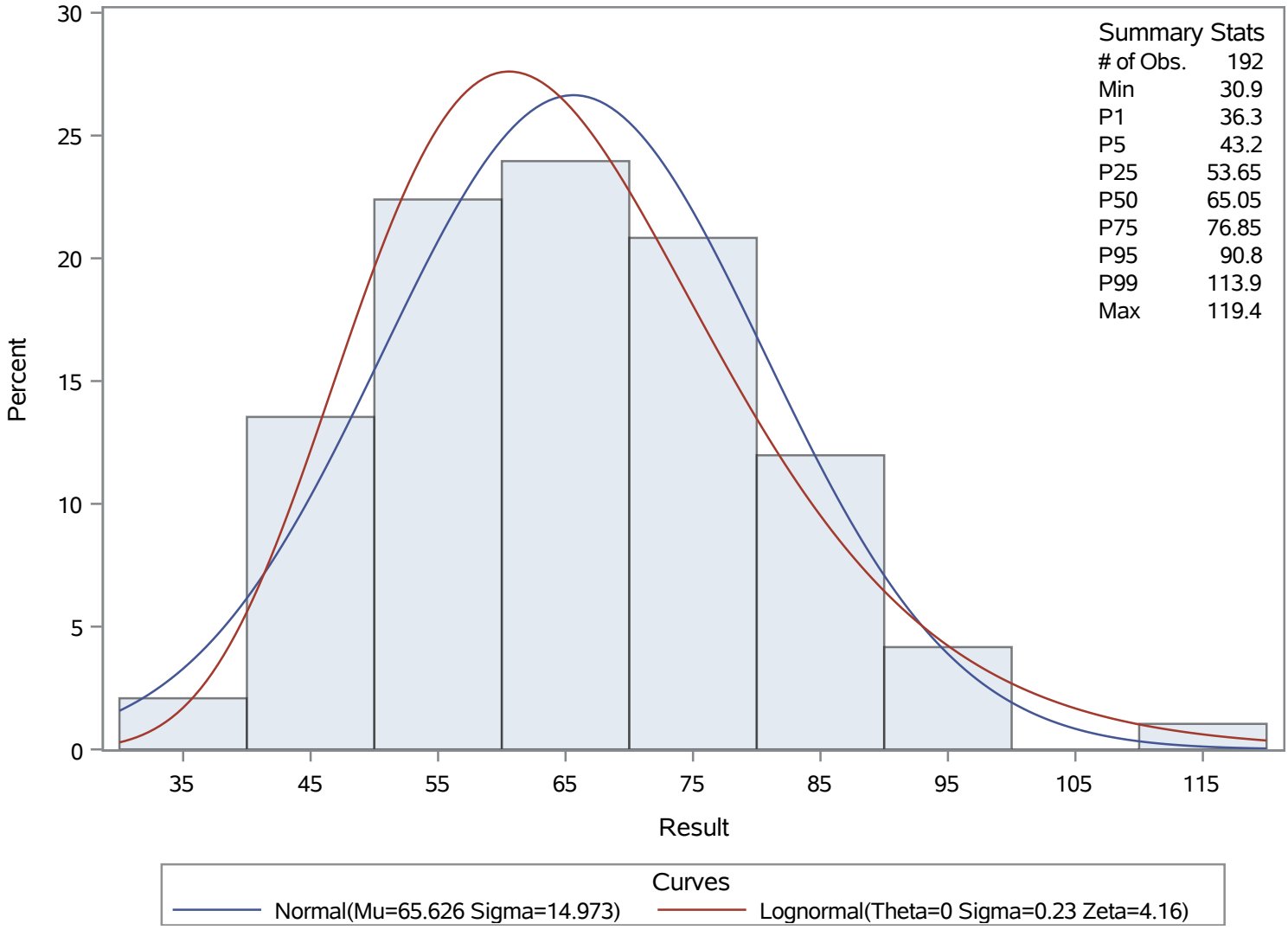
Distribution of Result



Little Manatee River
112
DO Sat Top (%)
Site ID = 112

The UNIVARIATE Procedure

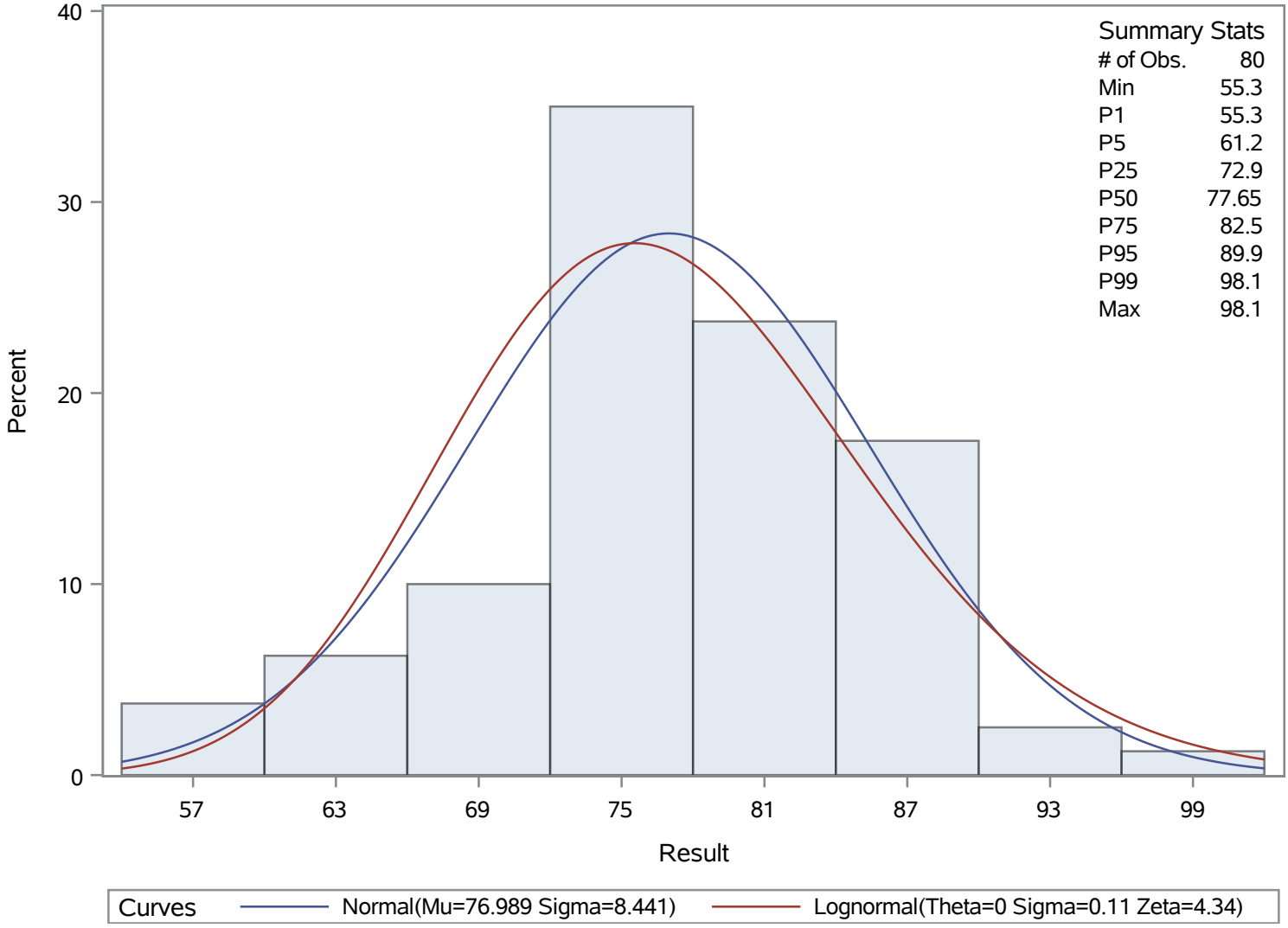
Distribution of Result



Little Manatee River
113
DO Sat Top (%)
Site ID = 113

The UNIVARIATE Procedure

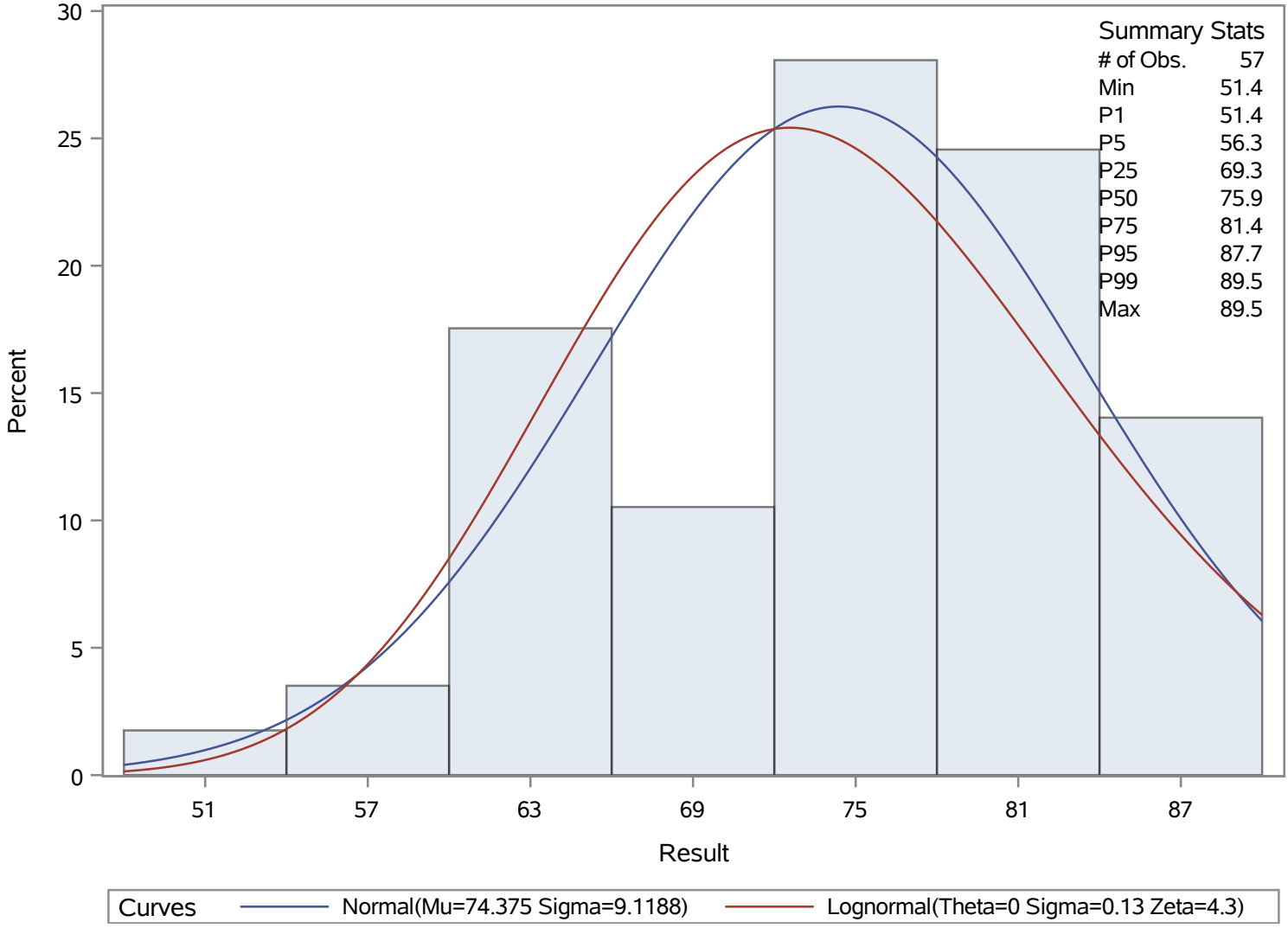
Distribution of Result



Little Manatee River
140
DO Sat Top (%)
Site ID = 140

The UNIVARIATE Procedure

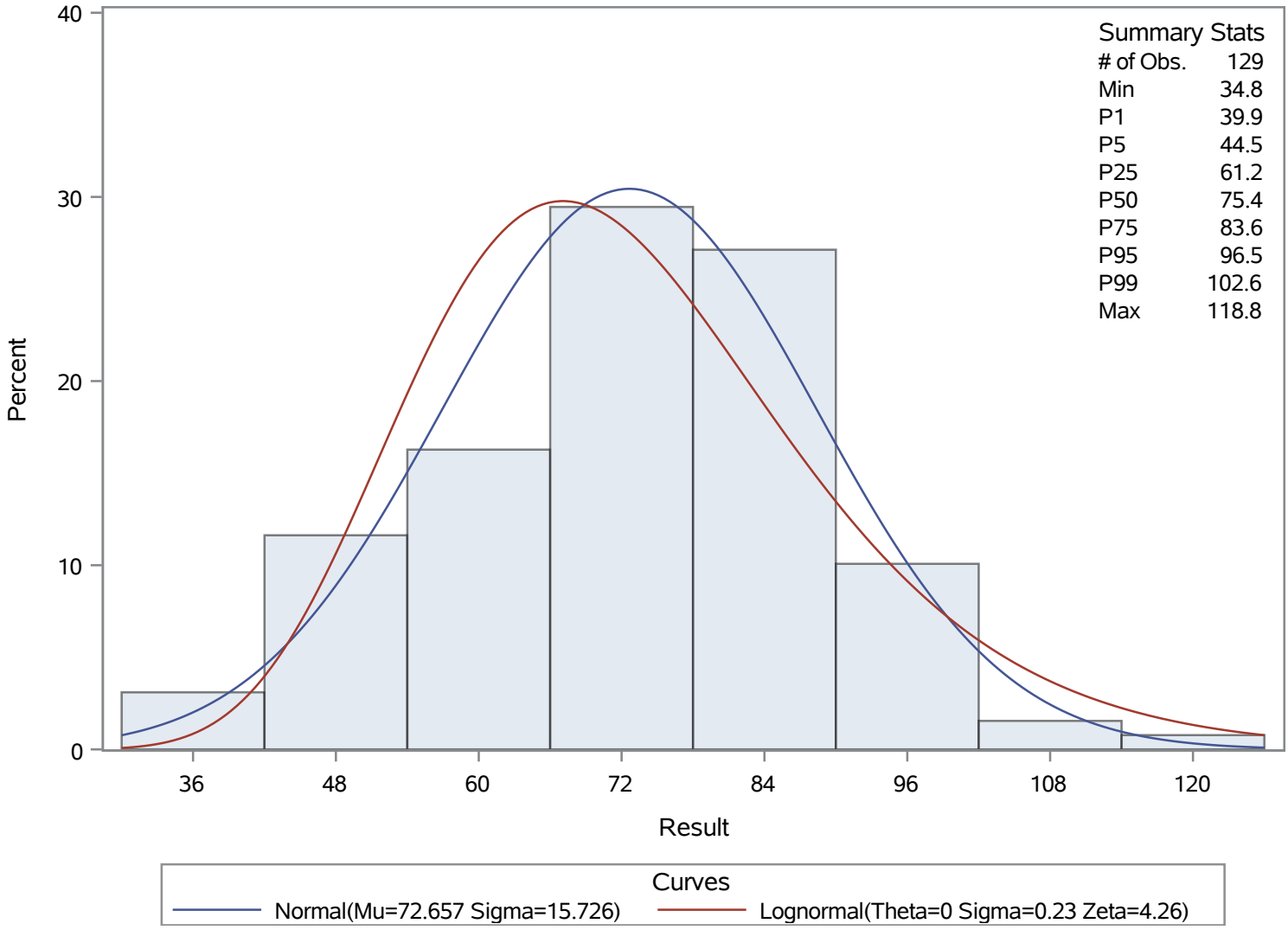
Distribution of Result



Little Manatee River
180
DO Sat Top (%)
Site ID = 180

The UNIVARIATE Procedure

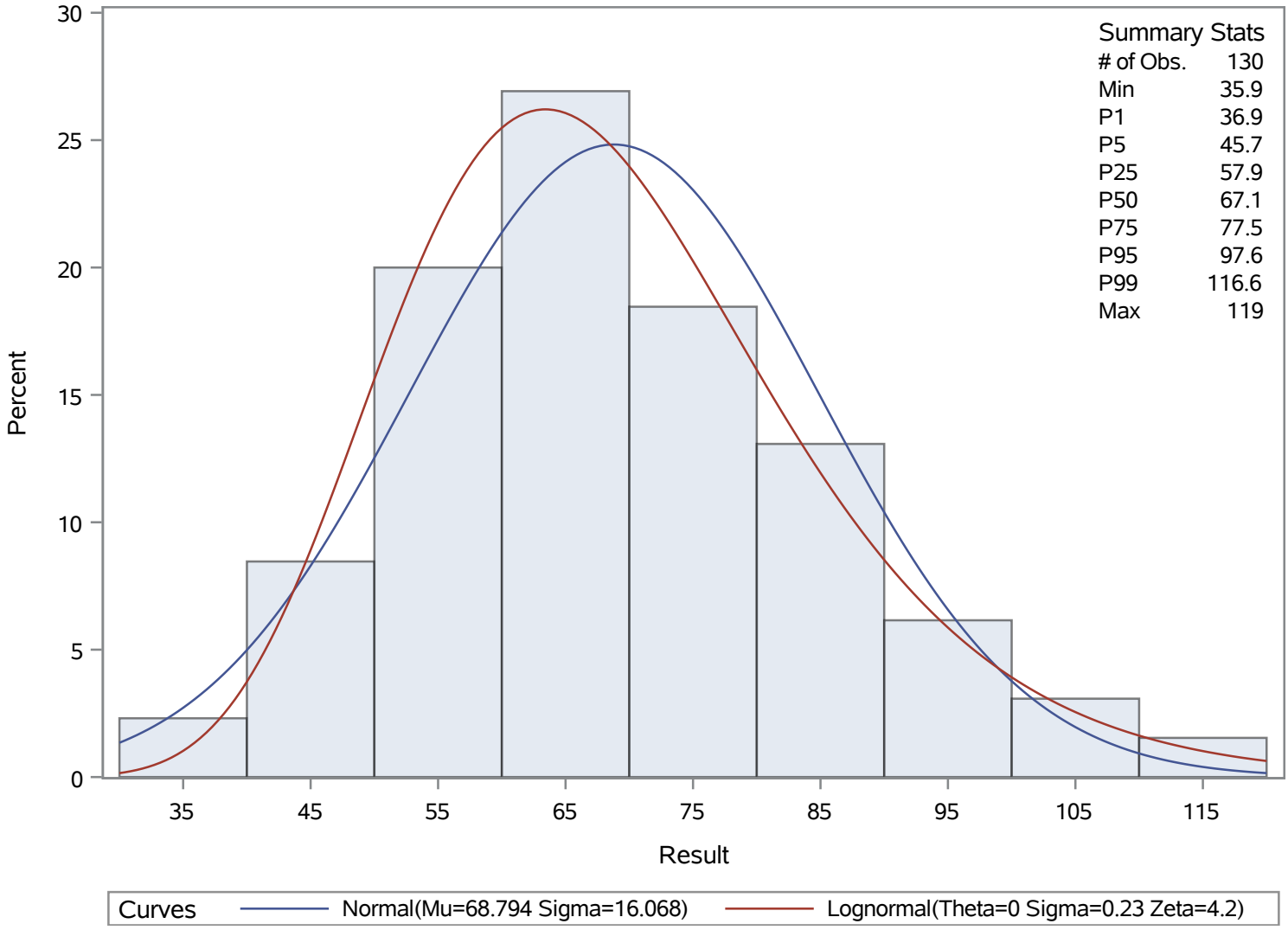
Distribution of Result



Little Manatee River
181
DO Sat Top (%)
Site ID = 181

The UNIVARIATE Procedure

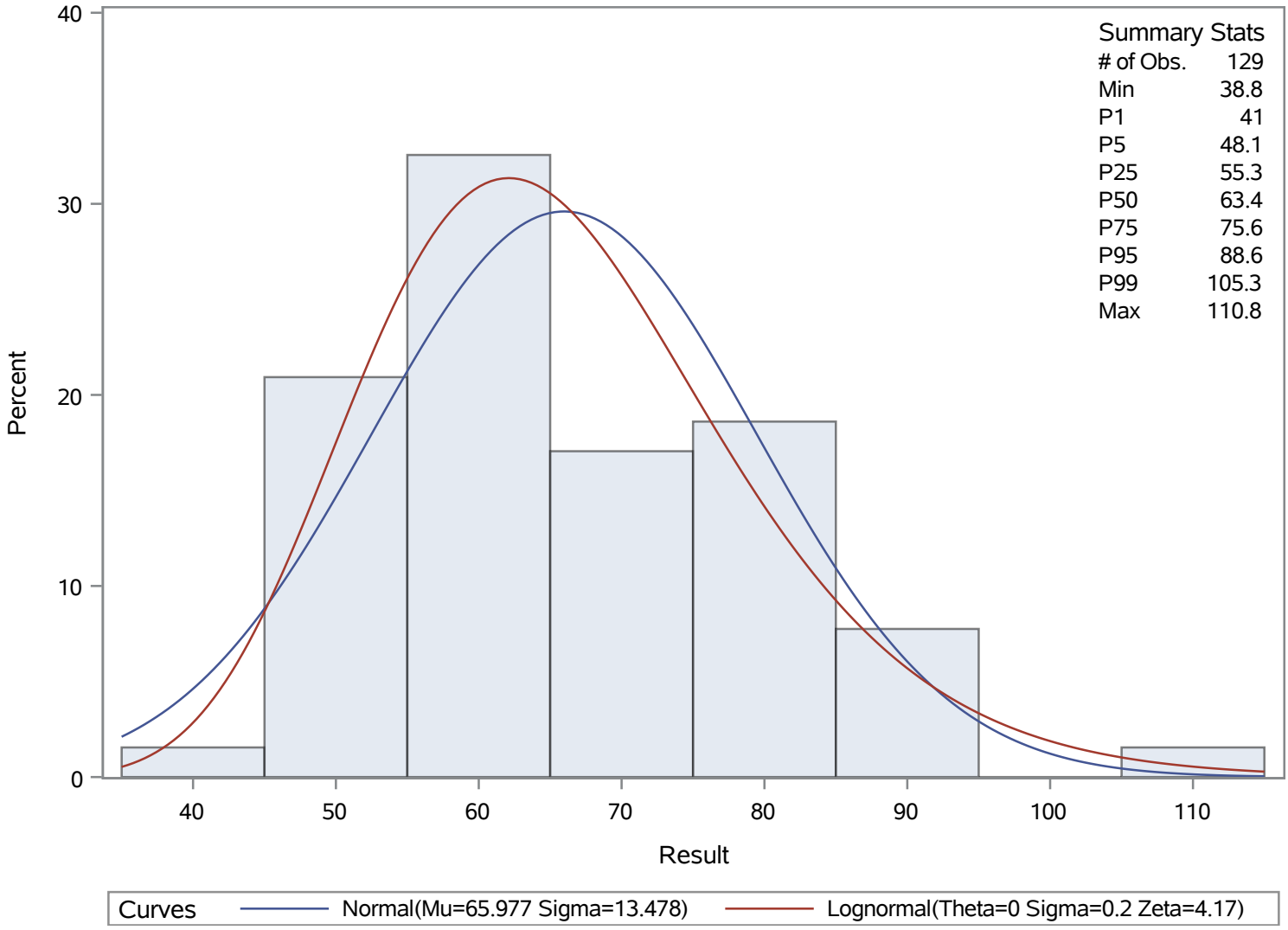
Distribution of Result



Little Manatee River
182
DO Sat Top (%)
Site ID = 182

The UNIVARIATE Procedure

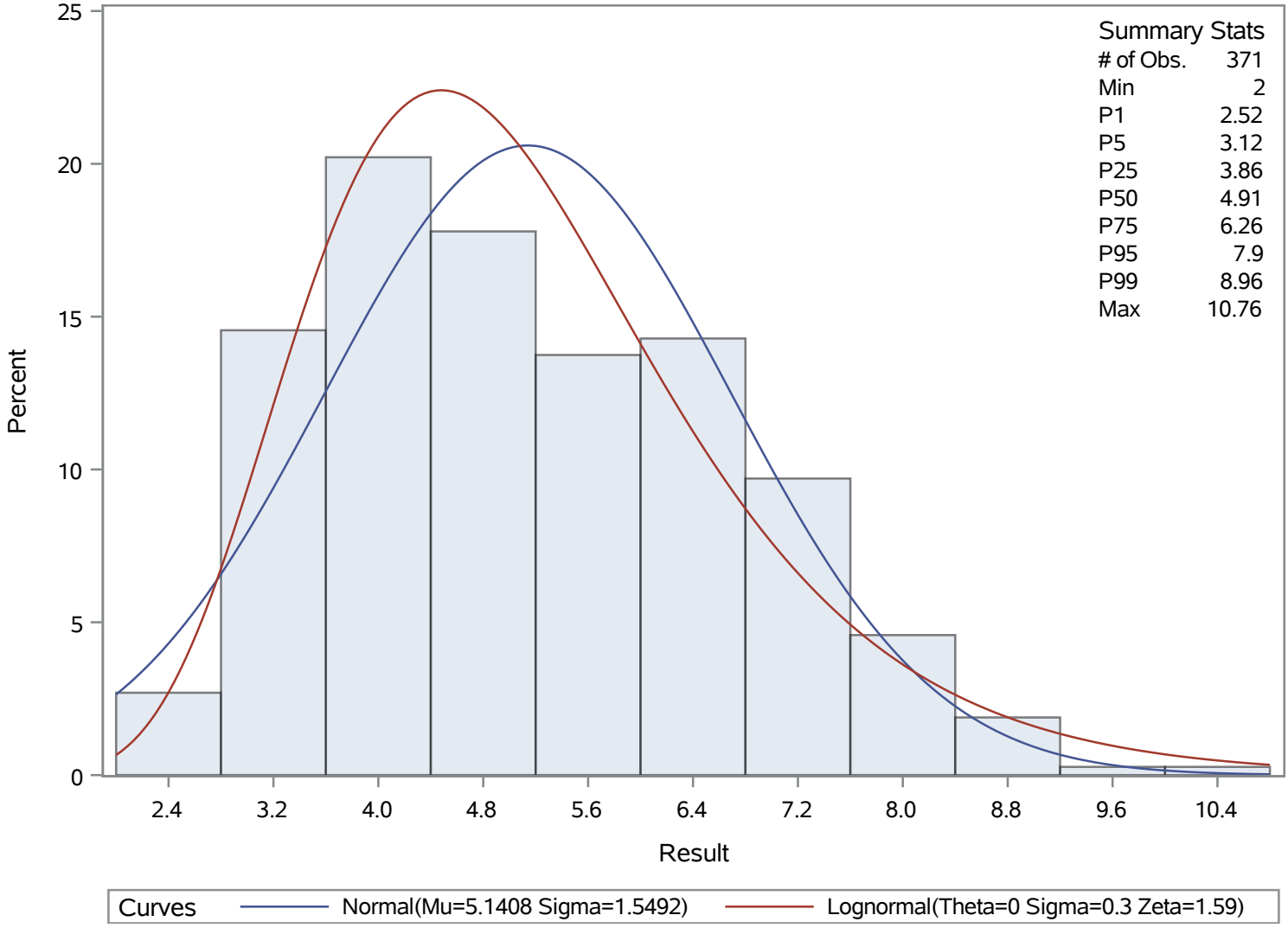
Distribution of Result



Little Manatee River
112
DO Top (mg/L)
Site ID = 112

The UNIVARIATE Procedure

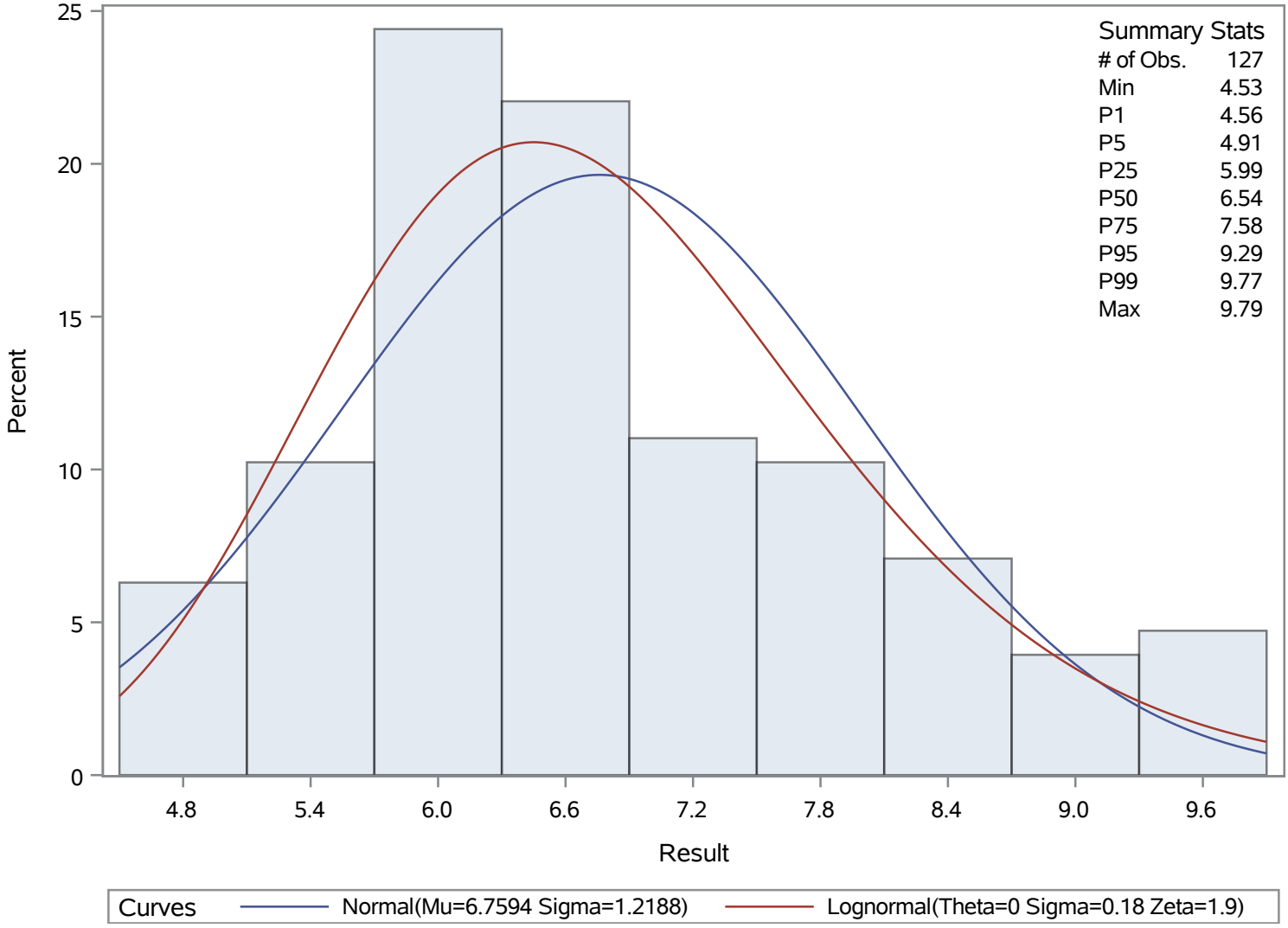
Distribution of Result



Little Manatee River
113
DO Top (mg/L)
Site ID = 113

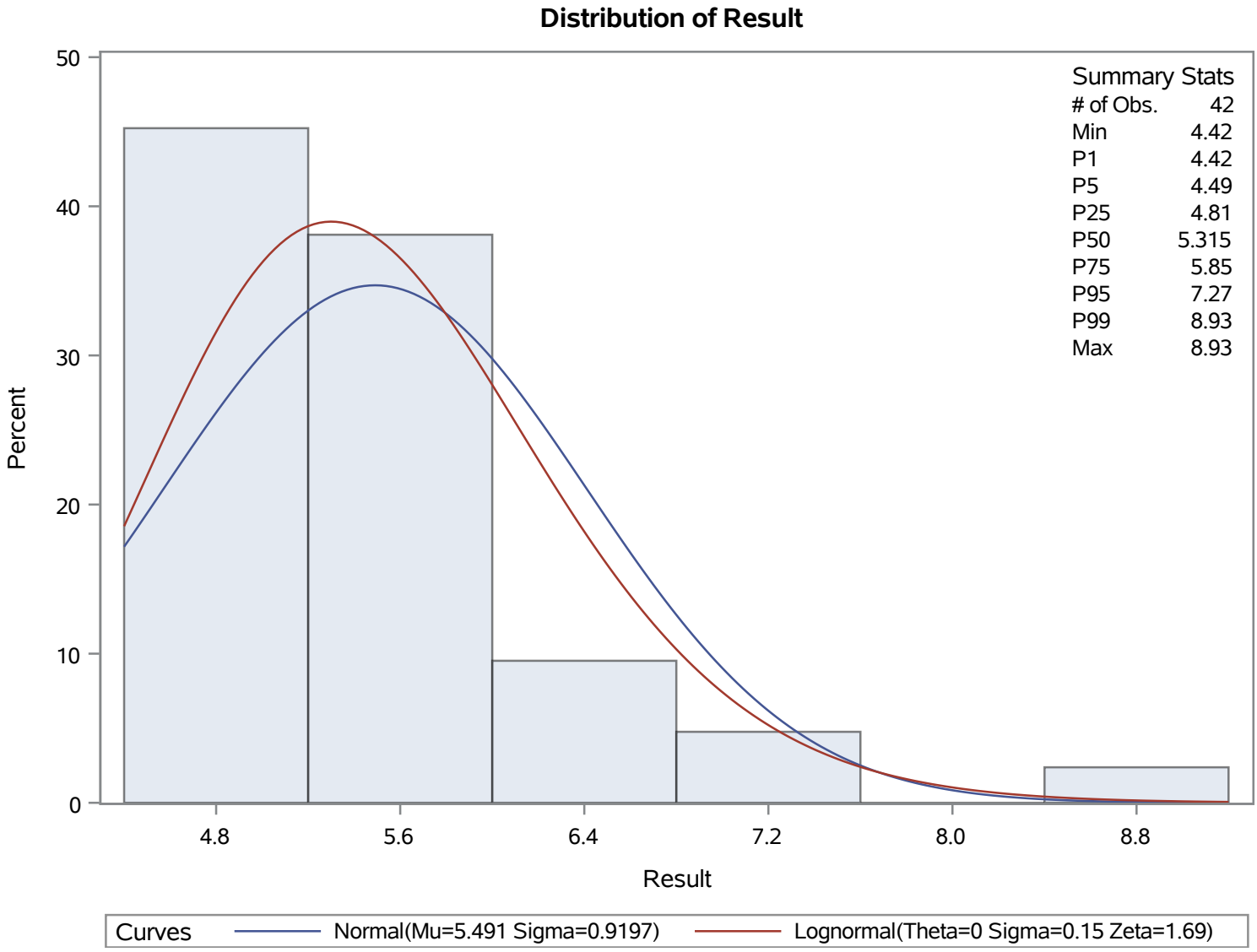
The UNIVARIATE Procedure

Distribution of Result



Little Manatee River
129
DO Top (mg/L)
Site ID = 129

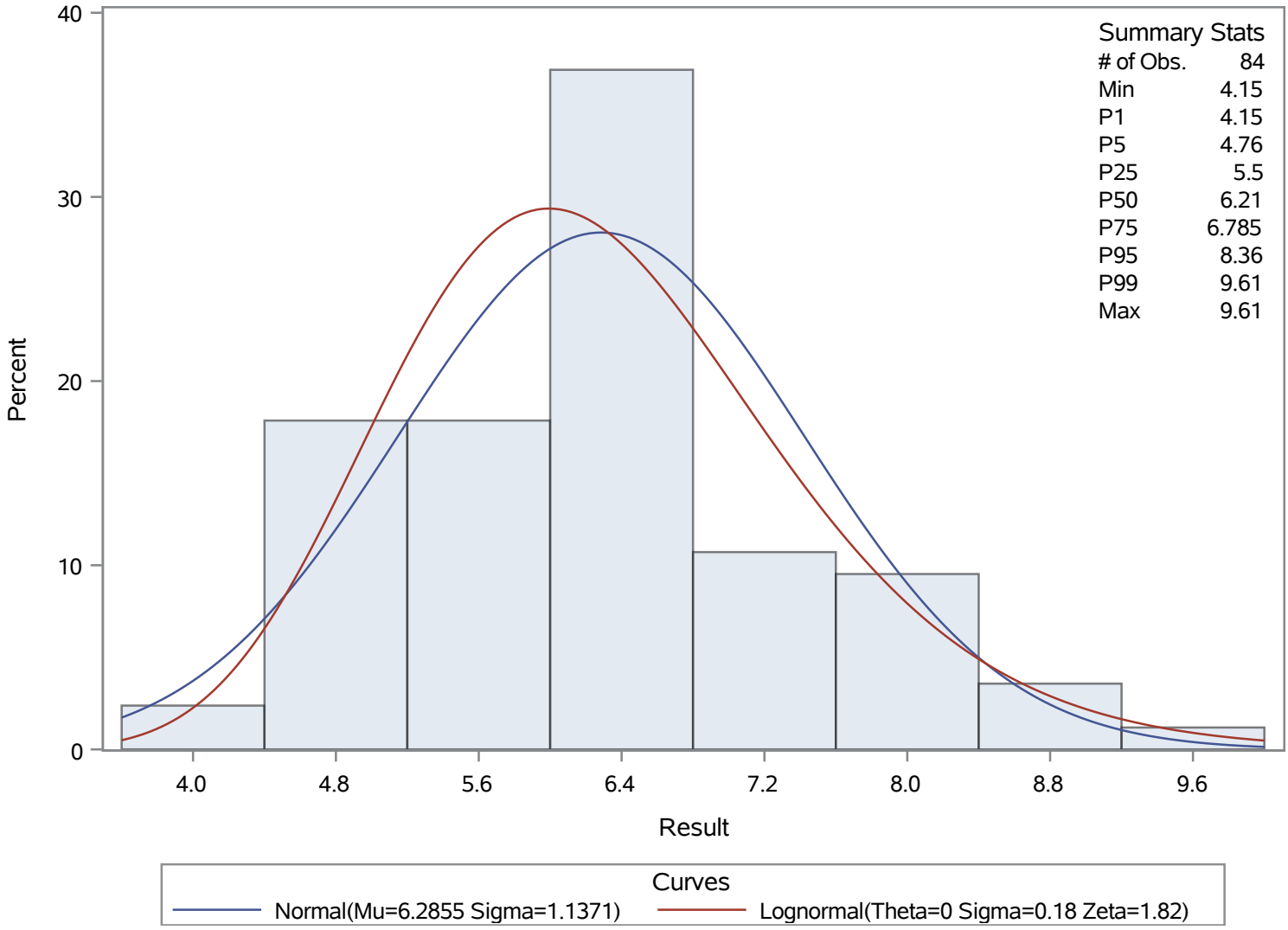
The UNIVARIATE Procedure



Little Manatee River
140
DO Top (mg/L)
Site ID = 140

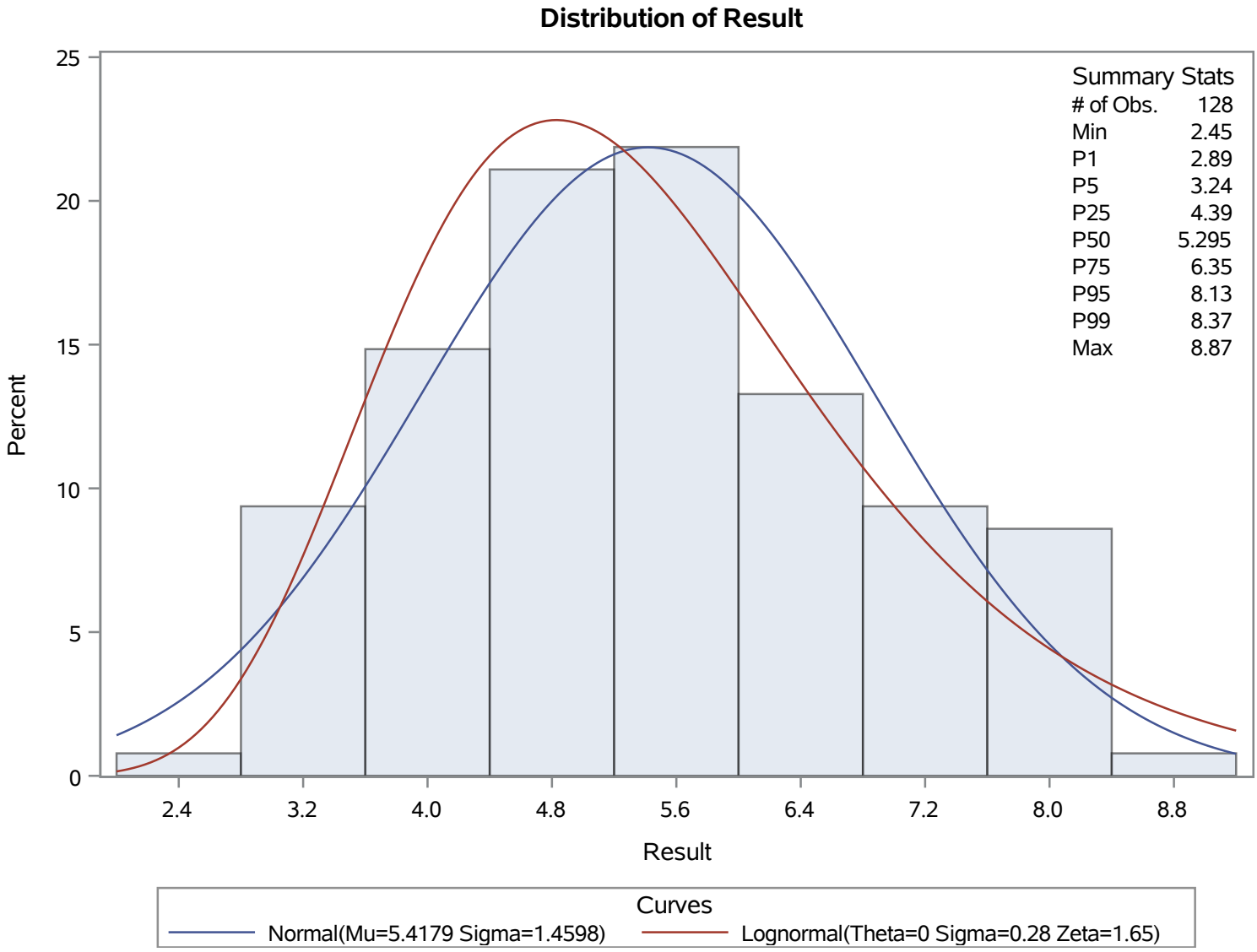
The UNIVARIATE Procedure

Distribution of Result



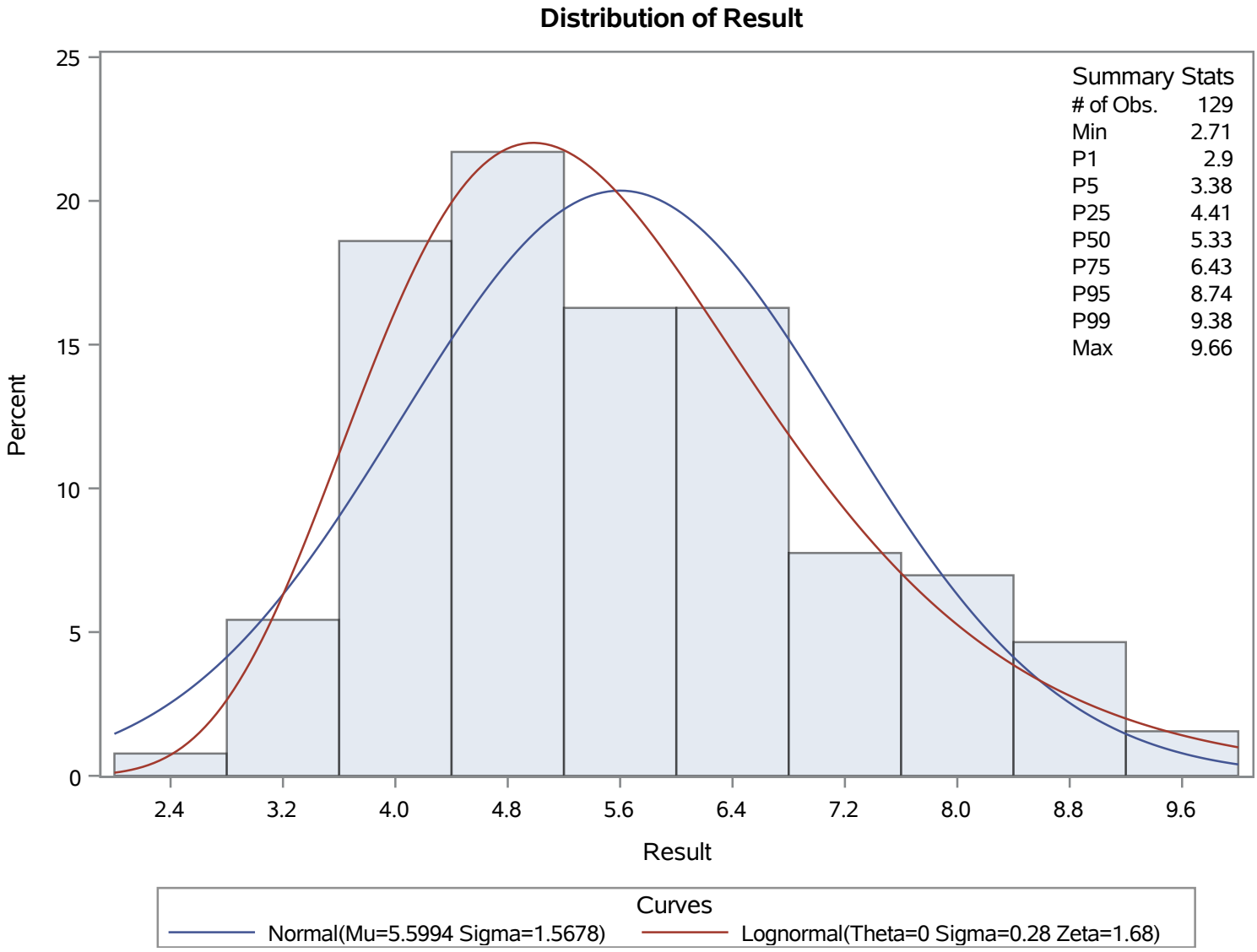
Little Manatee River
180
DO Top (mg/L)
Site ID = 180

The UNIVARIATE Procedure



Little Manatee River
181
DO Top (mg/L)
Site ID = 181

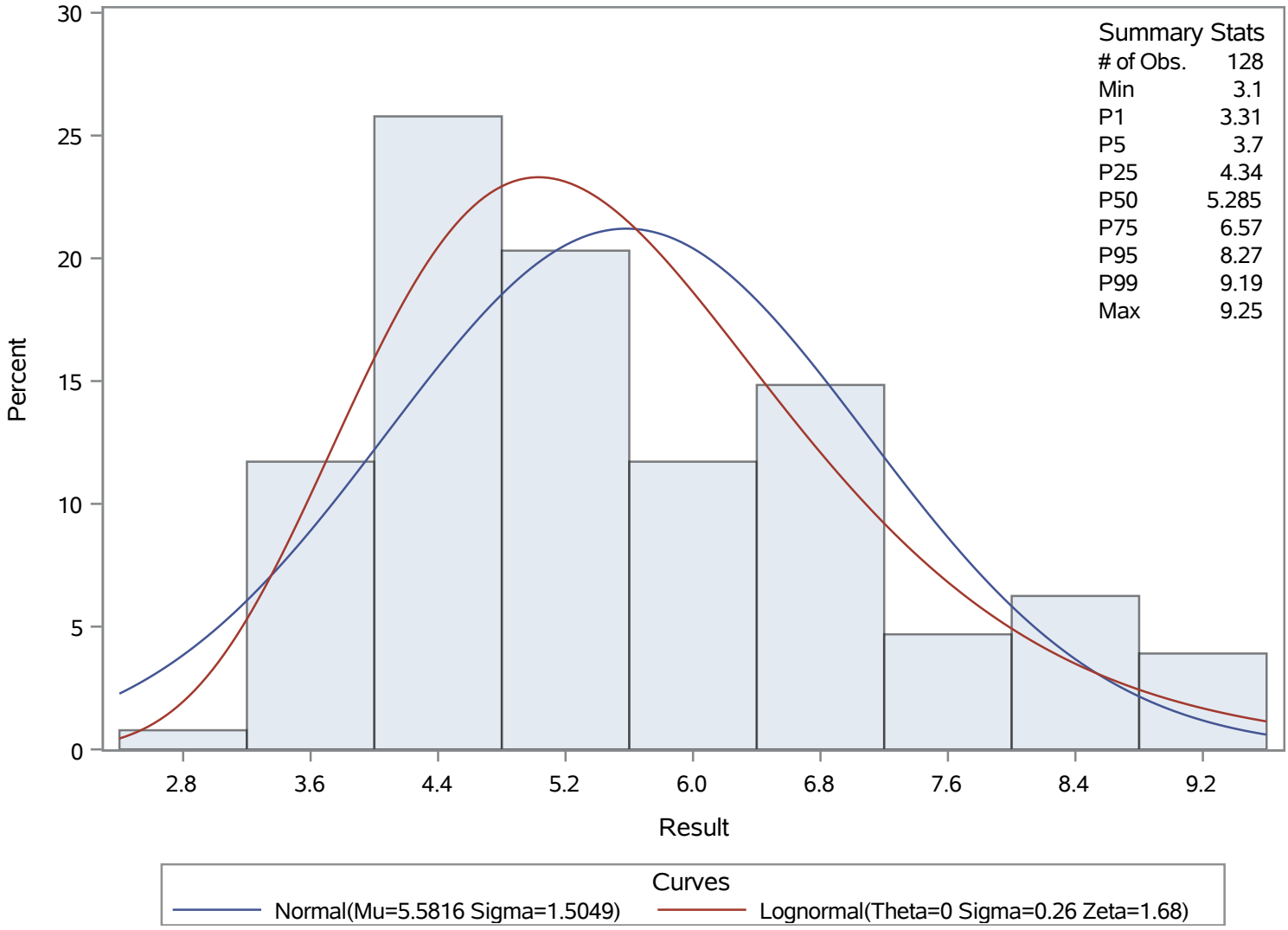
The UNIVARIATE Procedure



Little Manatee River
182
DO Top (mg/L)
Site ID = 182

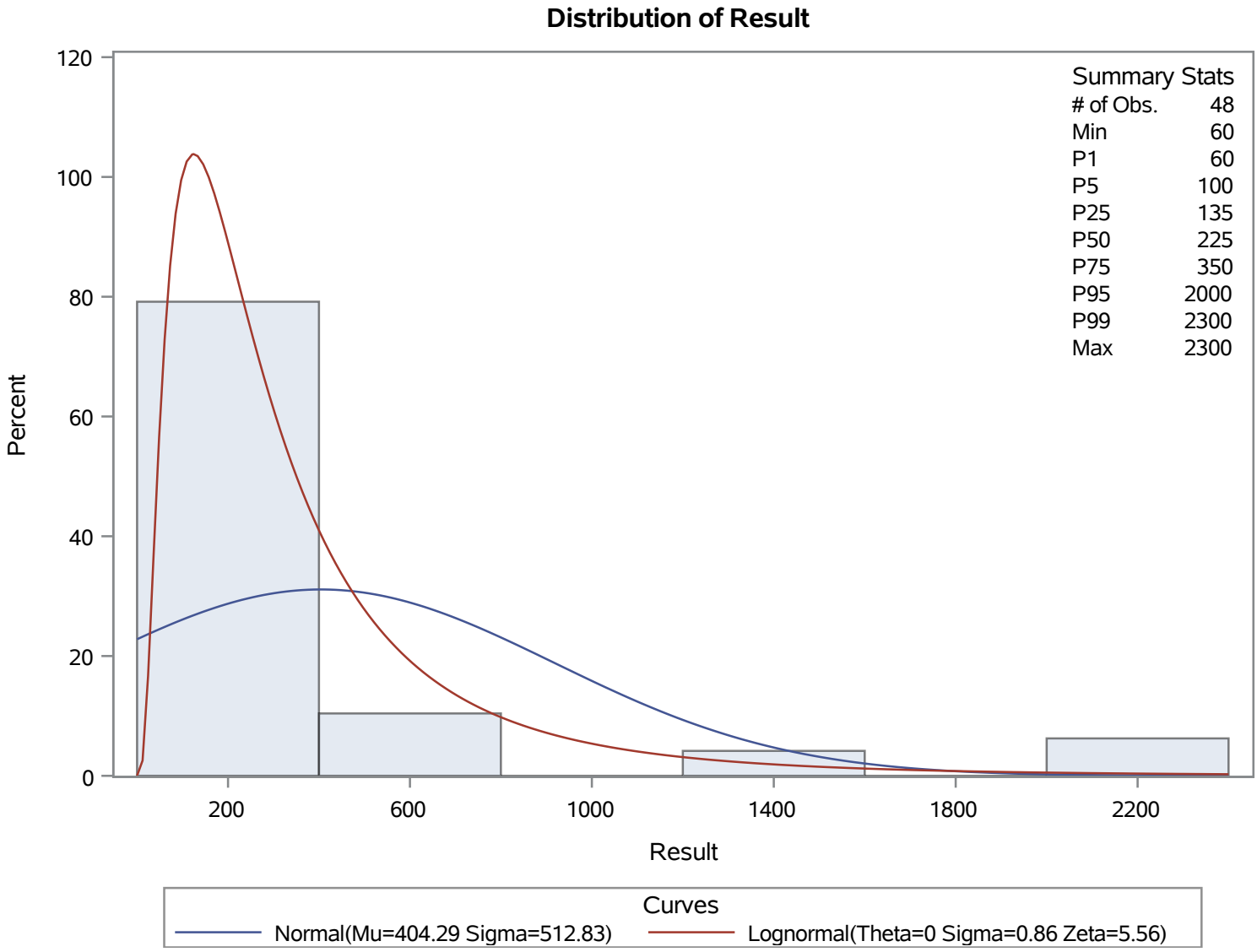
The UNIVARIATE Procedure

Distribution of Result



Little Manatee River
113
E_Coliform (n/100ml)
Site ID = 113

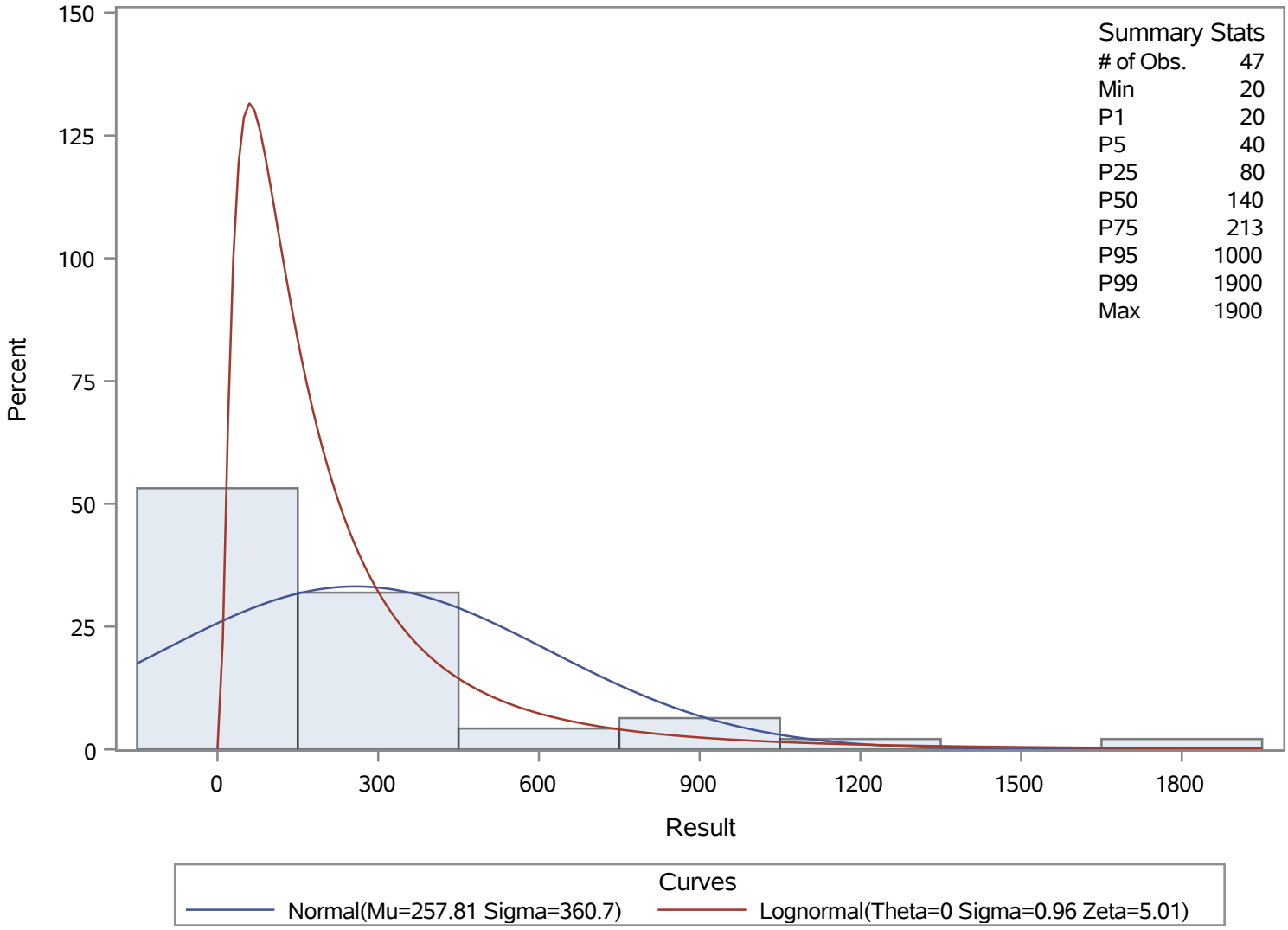
The UNIVARIATE Procedure



Little Manatee River
129
E_Coliform (n/100ml)
Site ID = 129

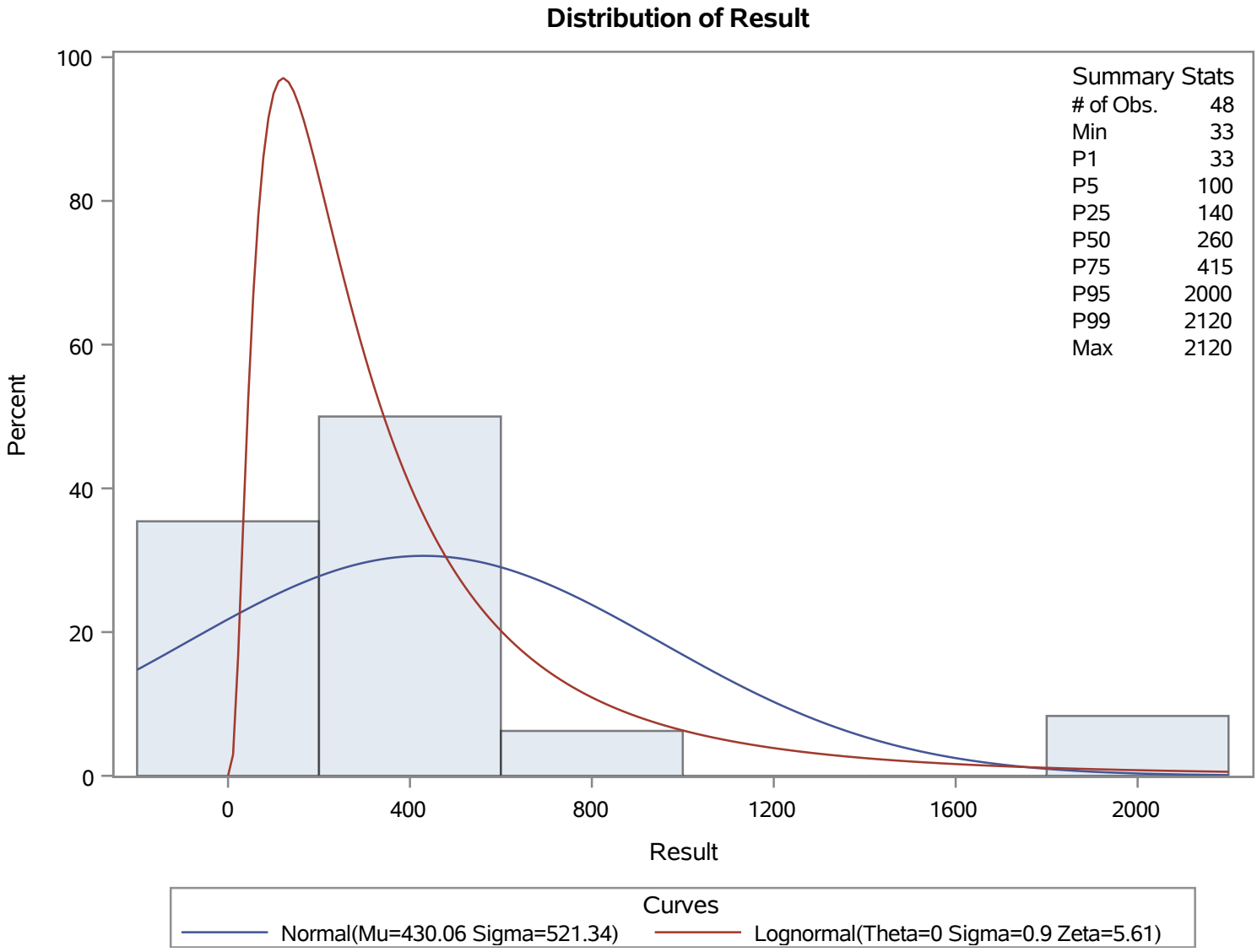
The UNIVARIATE Procedure

Distribution of Result



Little Manatee River
140
E_Coliform (n/100ml)
Site ID = 140

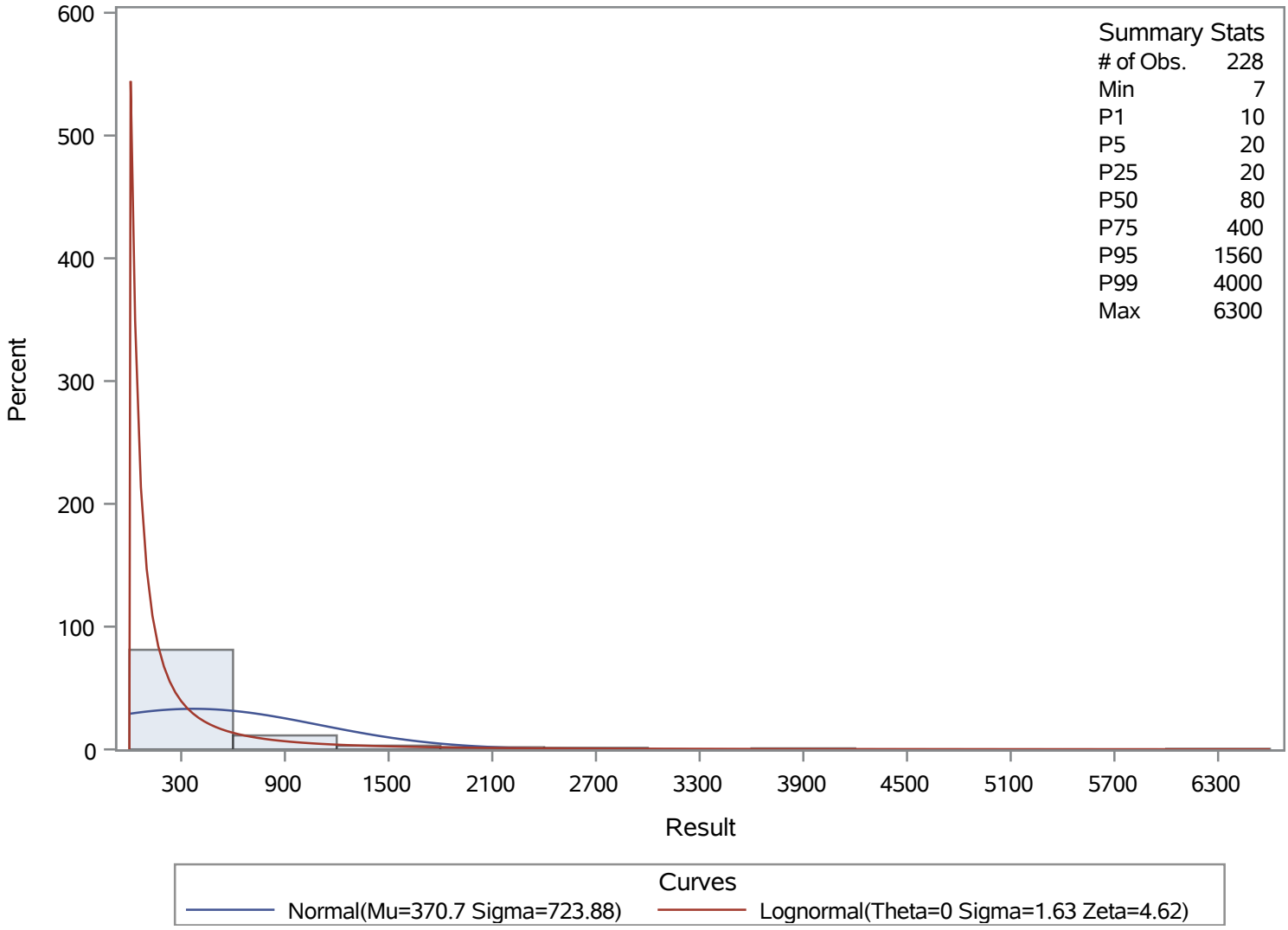
The UNIVARIATE Procedure



Little Manatee River
112
Enterococci (n/100ml)
Site ID = 112

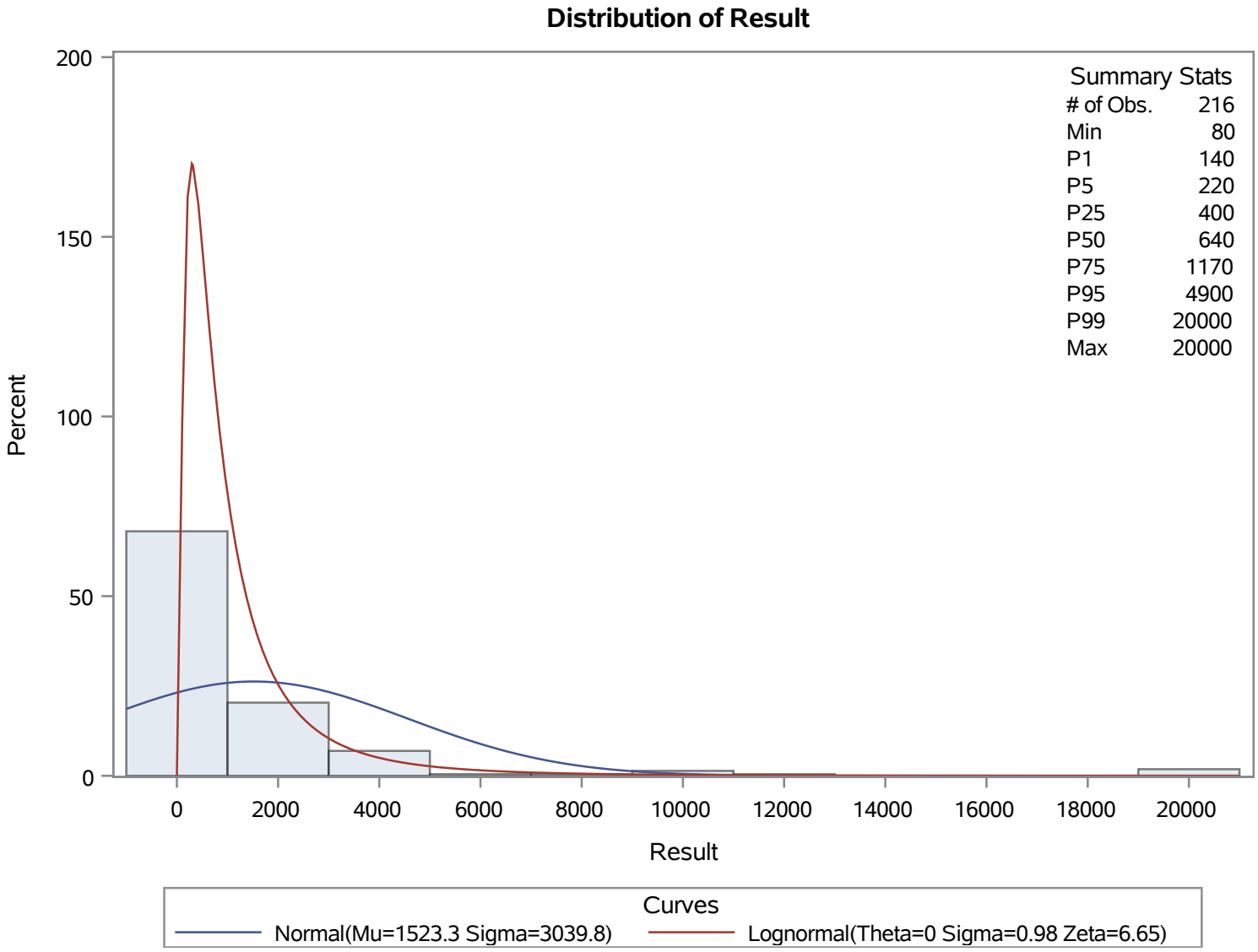
The UNIVARIATE Procedure

Distribution of Result



Little Manatee River
113
Enterococci (n/100ml)
Site ID = 113

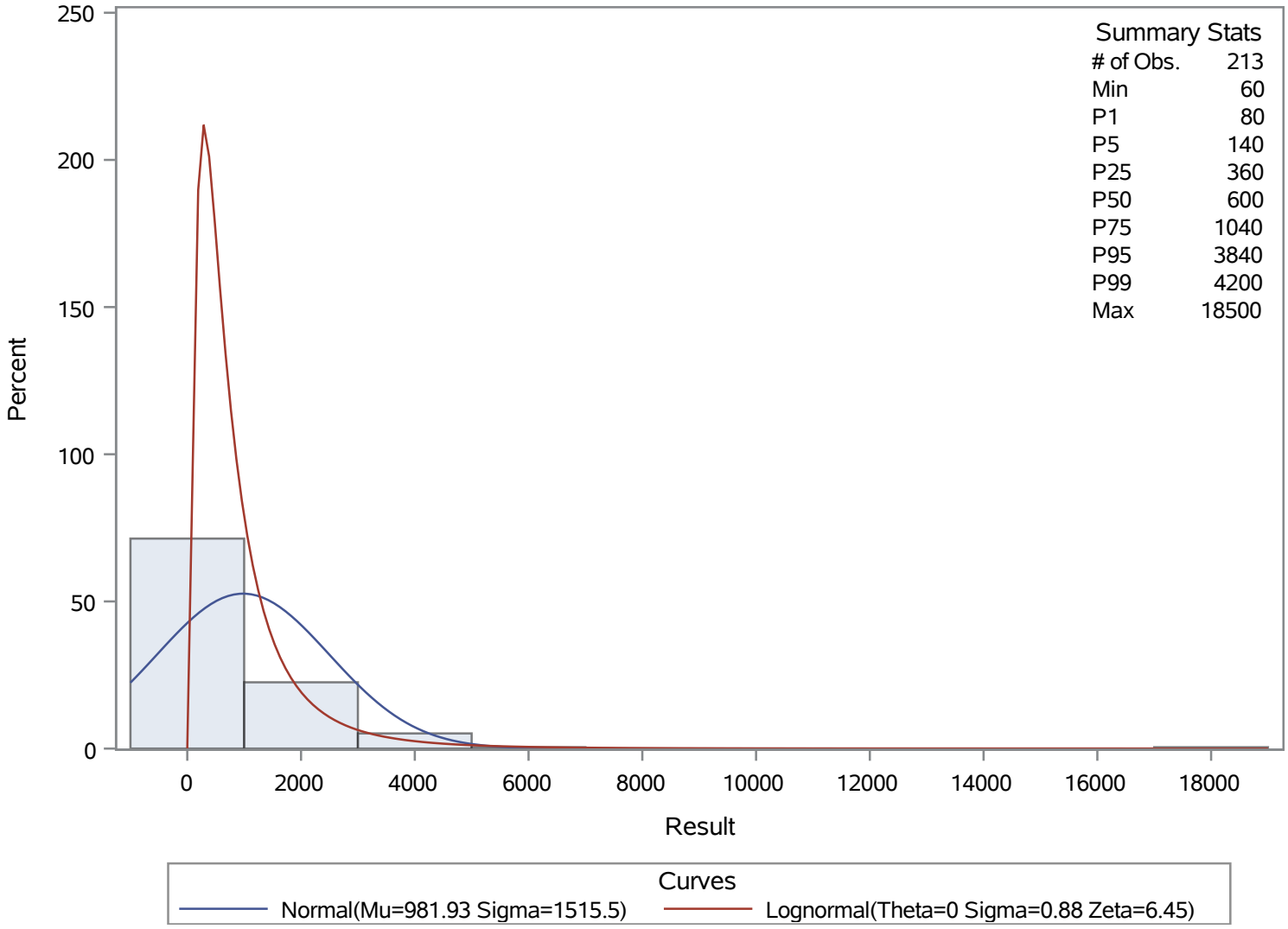
The UNIVARIATE Procedure



Little Manatee River
129
Enterococci (n/100ml)
Site ID = 129

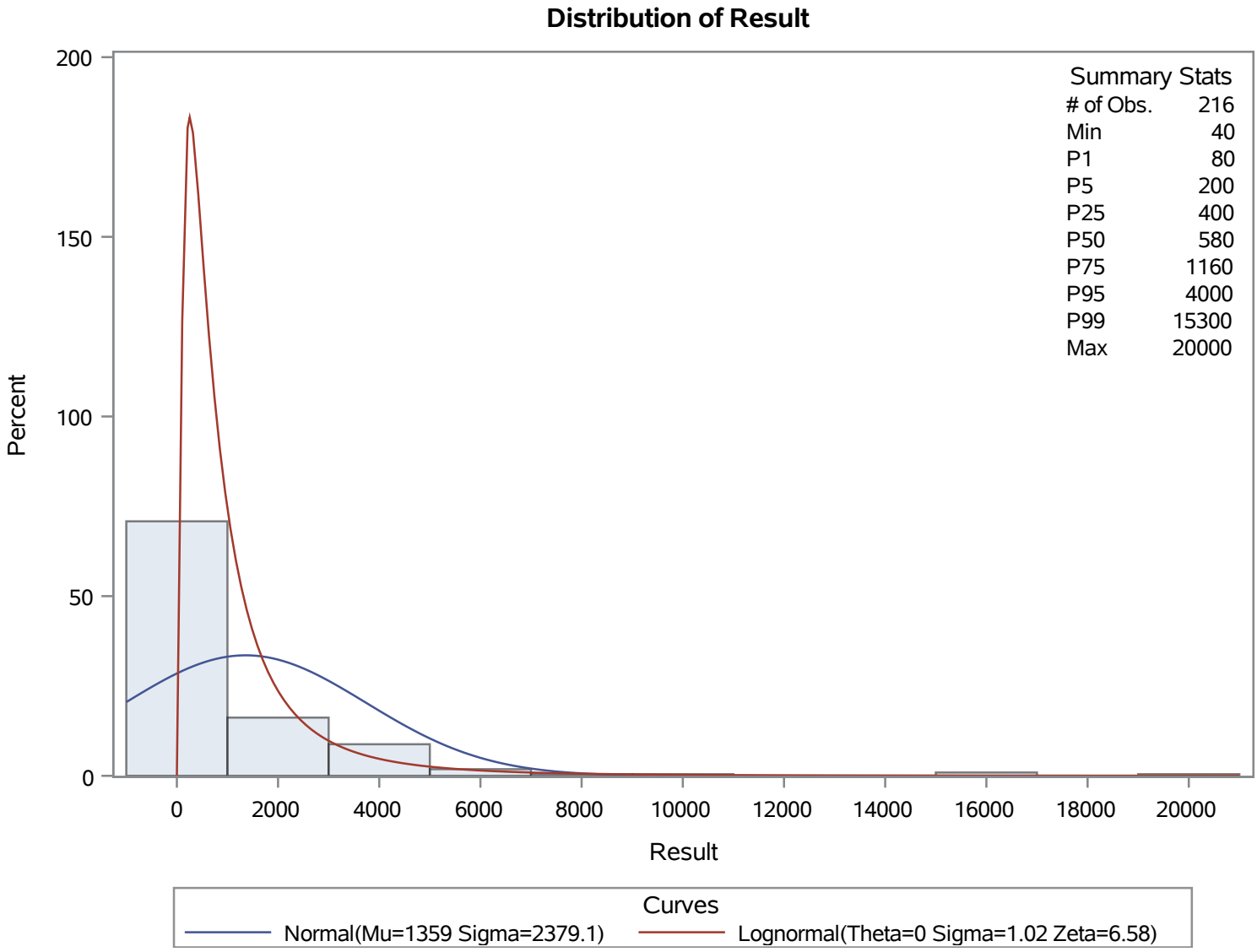
The UNIVARIATE Procedure

Distribution of Result



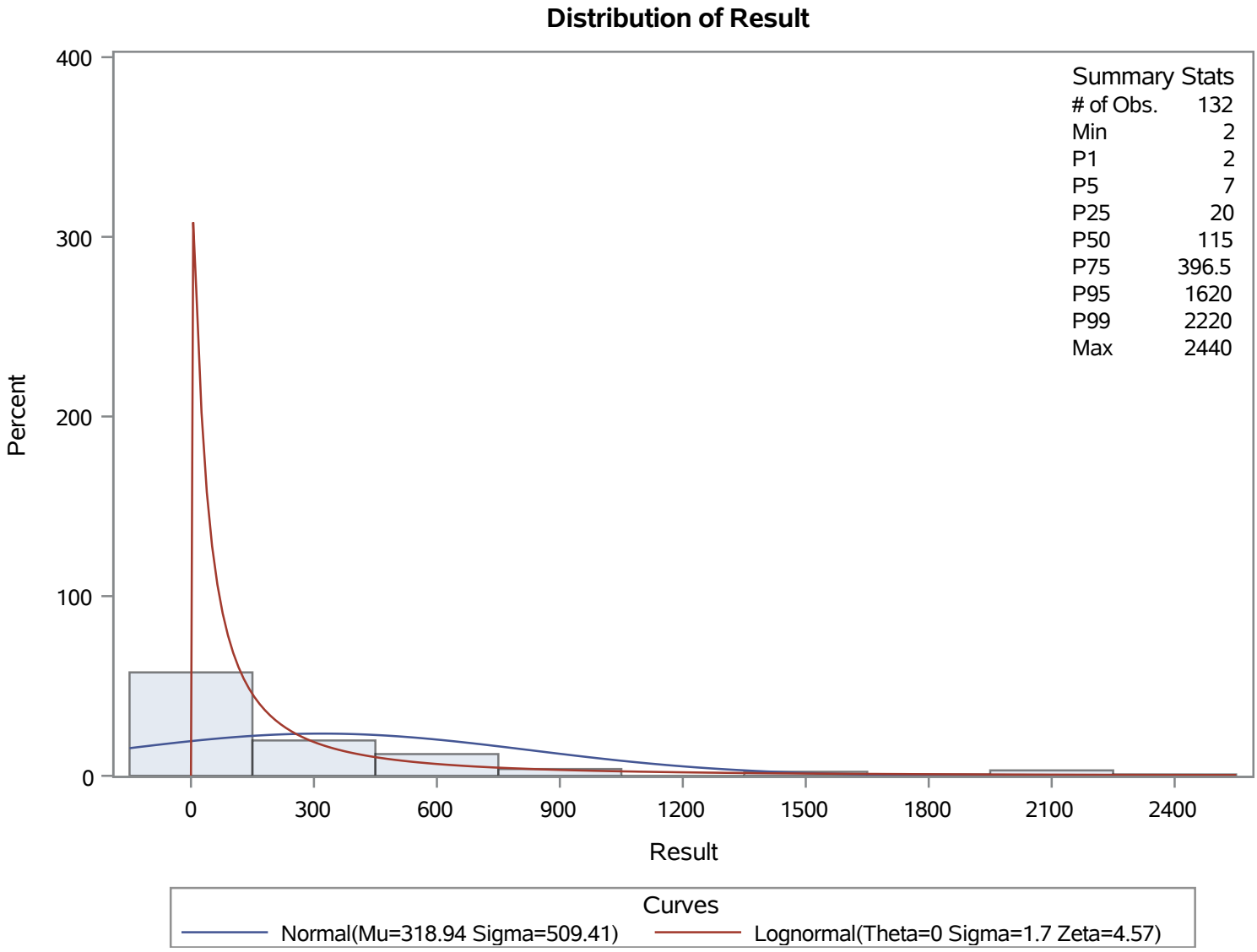
Little Manatee River
140
Enterococci (n/100ml)
Site ID = 140

The UNIVARIATE Procedure



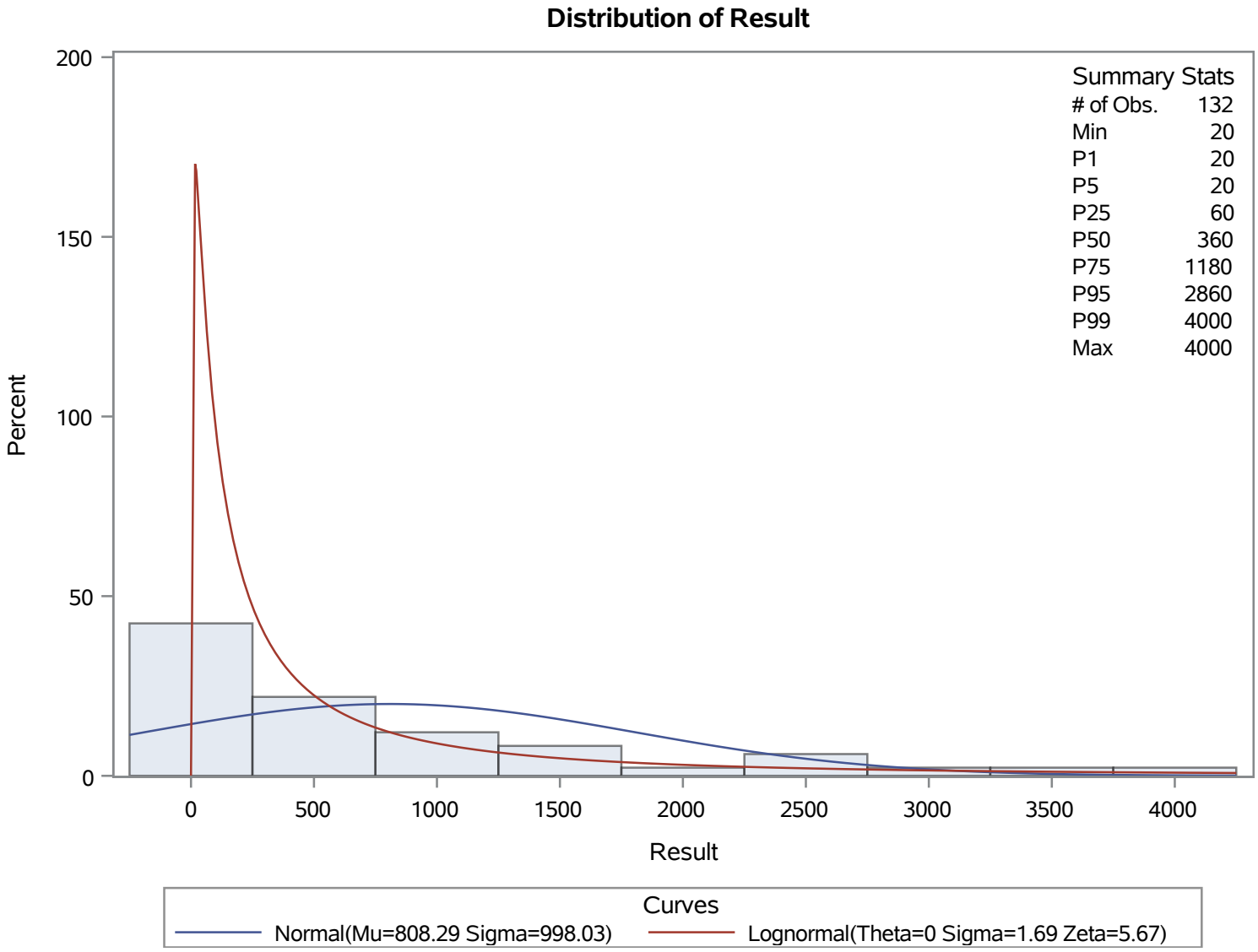
Little Manatee River
180
Enterococci (n/100ml)
Site ID = 180

The UNIVARIATE Procedure



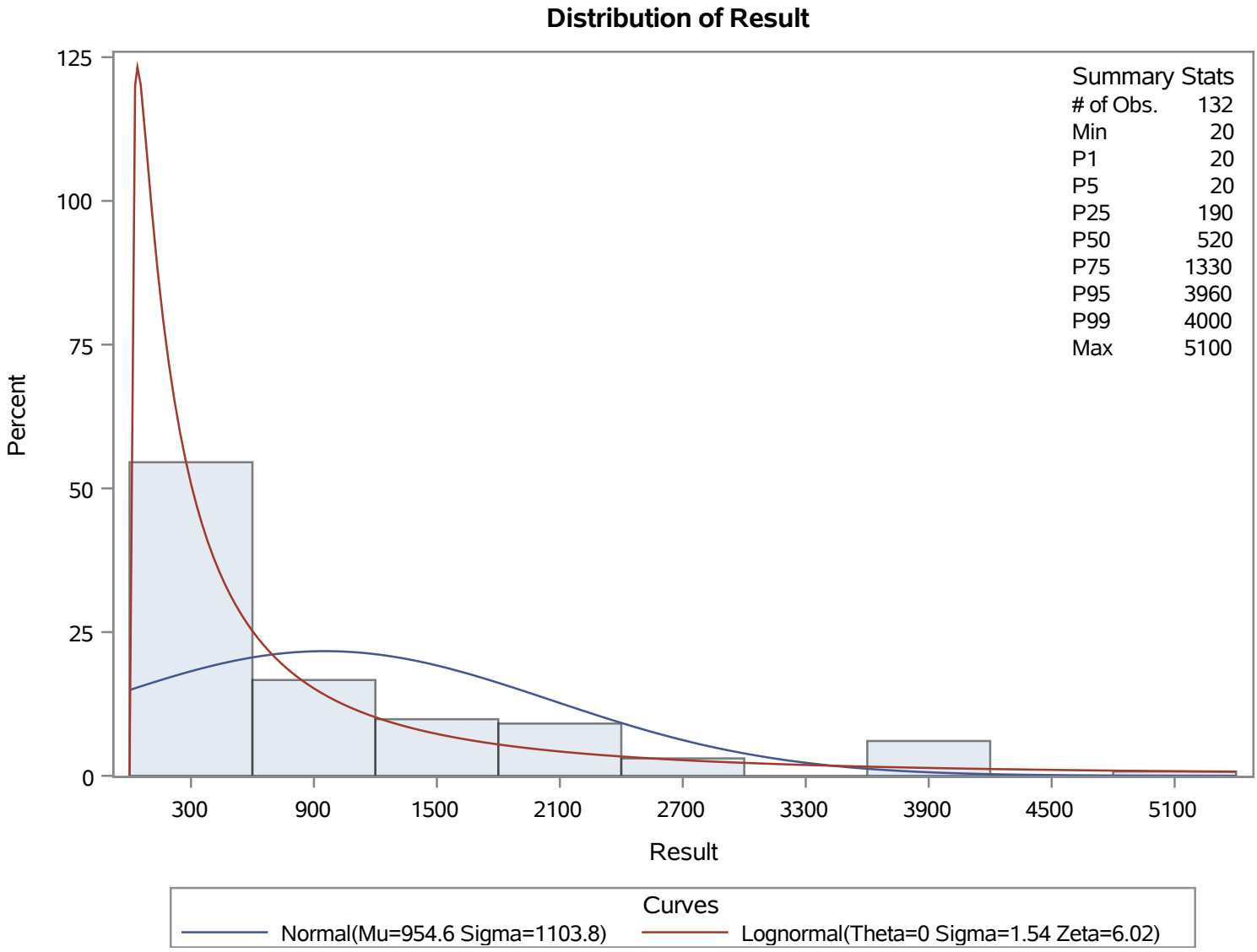
Little Manatee River
181
Enterococci (n/100ml)
Site ID = 181

The UNIVARIATE Procedure



Little Manatee River
182
Enterococci (n/100ml)
Site ID = 182

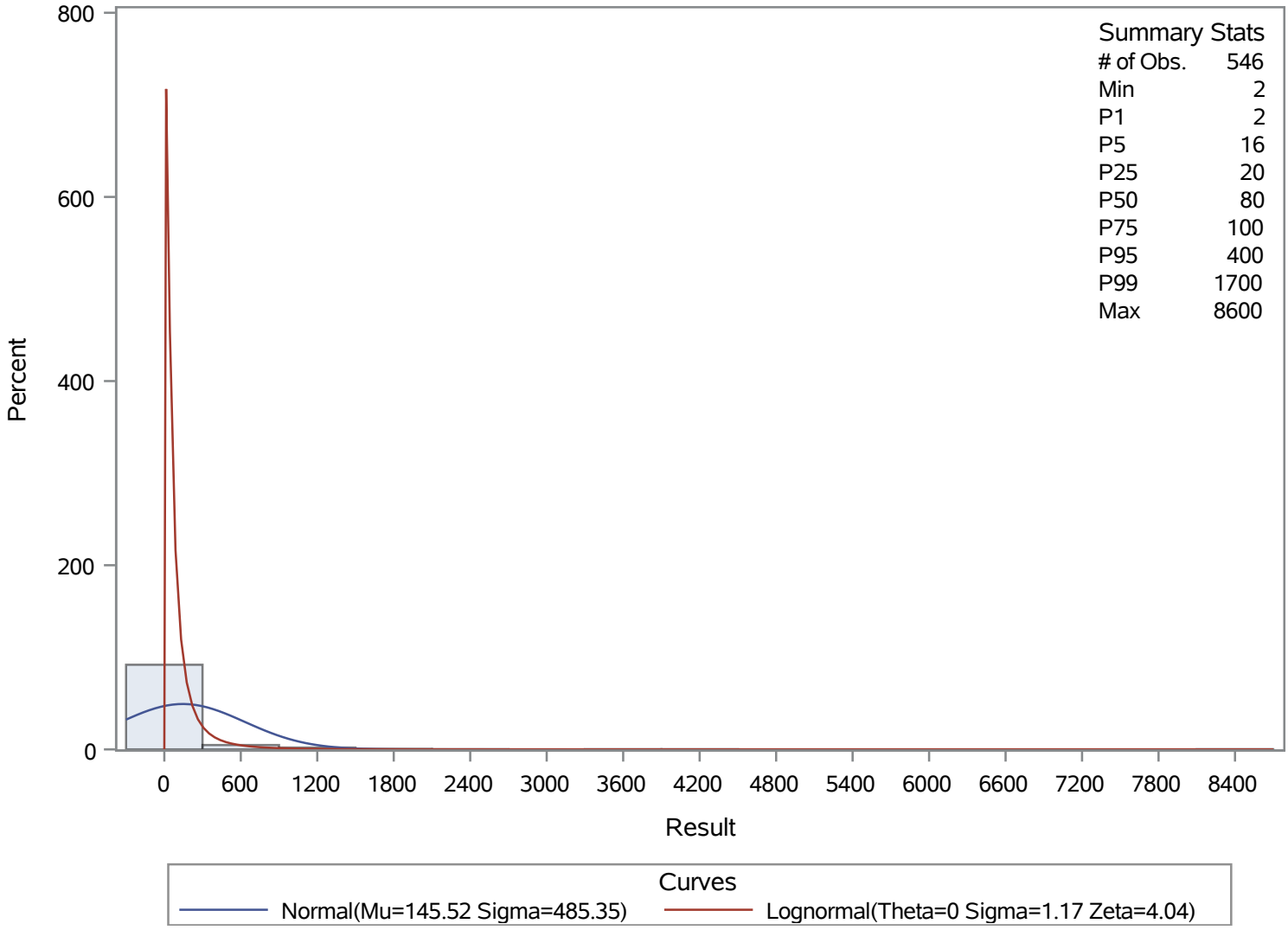
The UNIVARIATE Procedure



Little Manatee River
112
Fecal_Coliform (n/100ml)
Site ID = 112

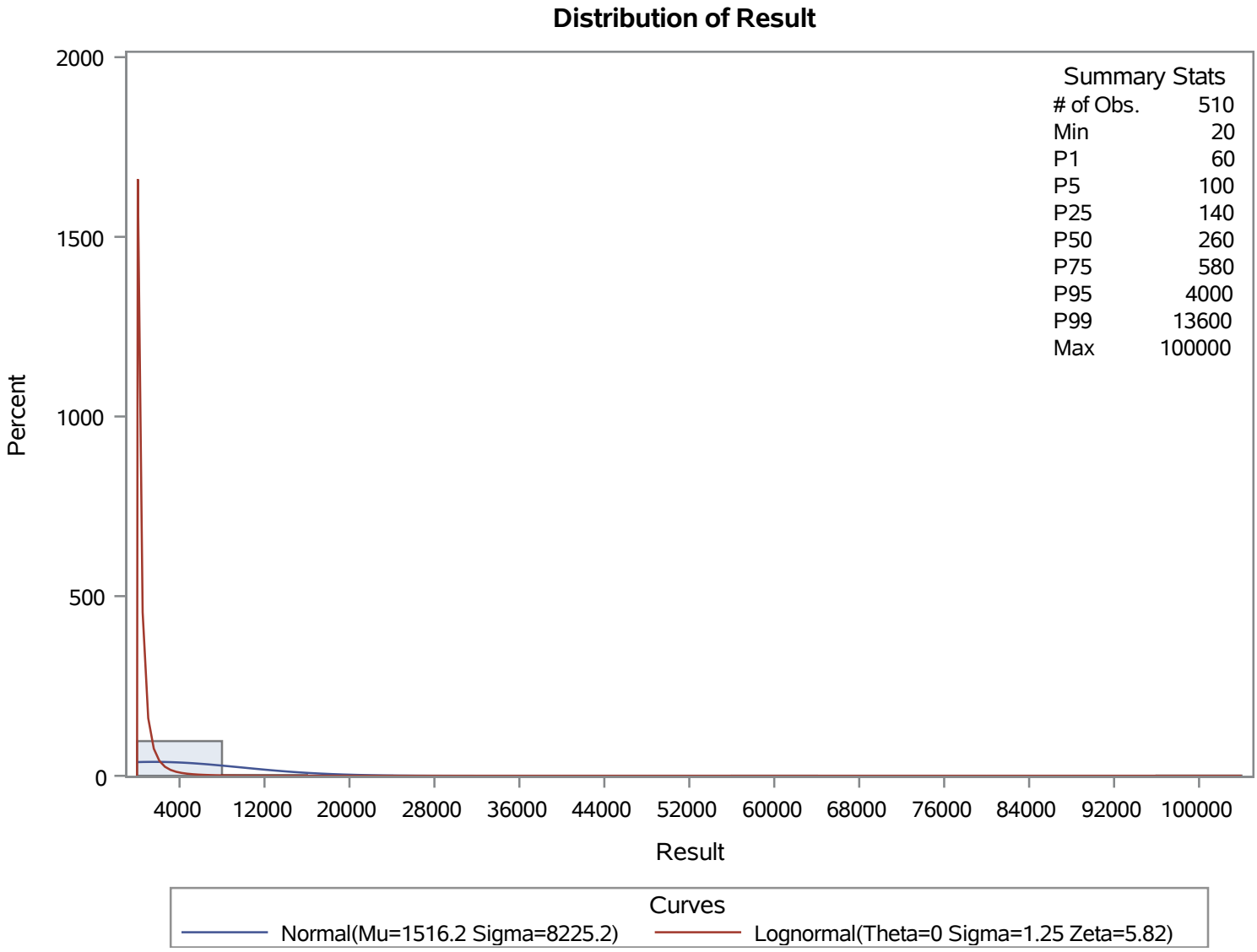
The UNIVARIATE Procedure

Distribution of Result



Little Manatee River
113
Fecal_Coliform (n/100ml)
Site ID = 113

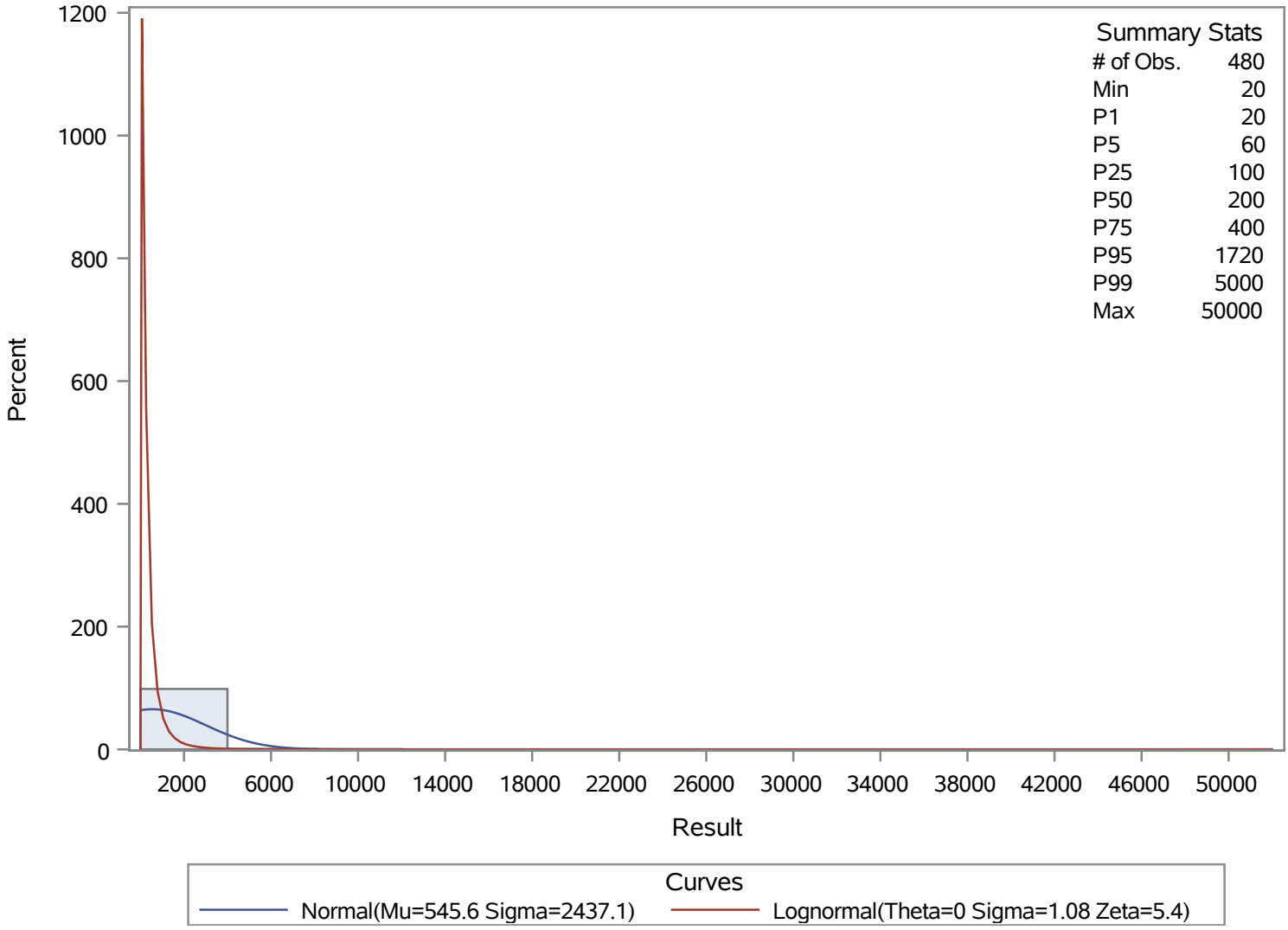
The UNIVARIATE Procedure



Little Manatee River
129
Fecal_Coliform (n/100ml)
Site ID = 129

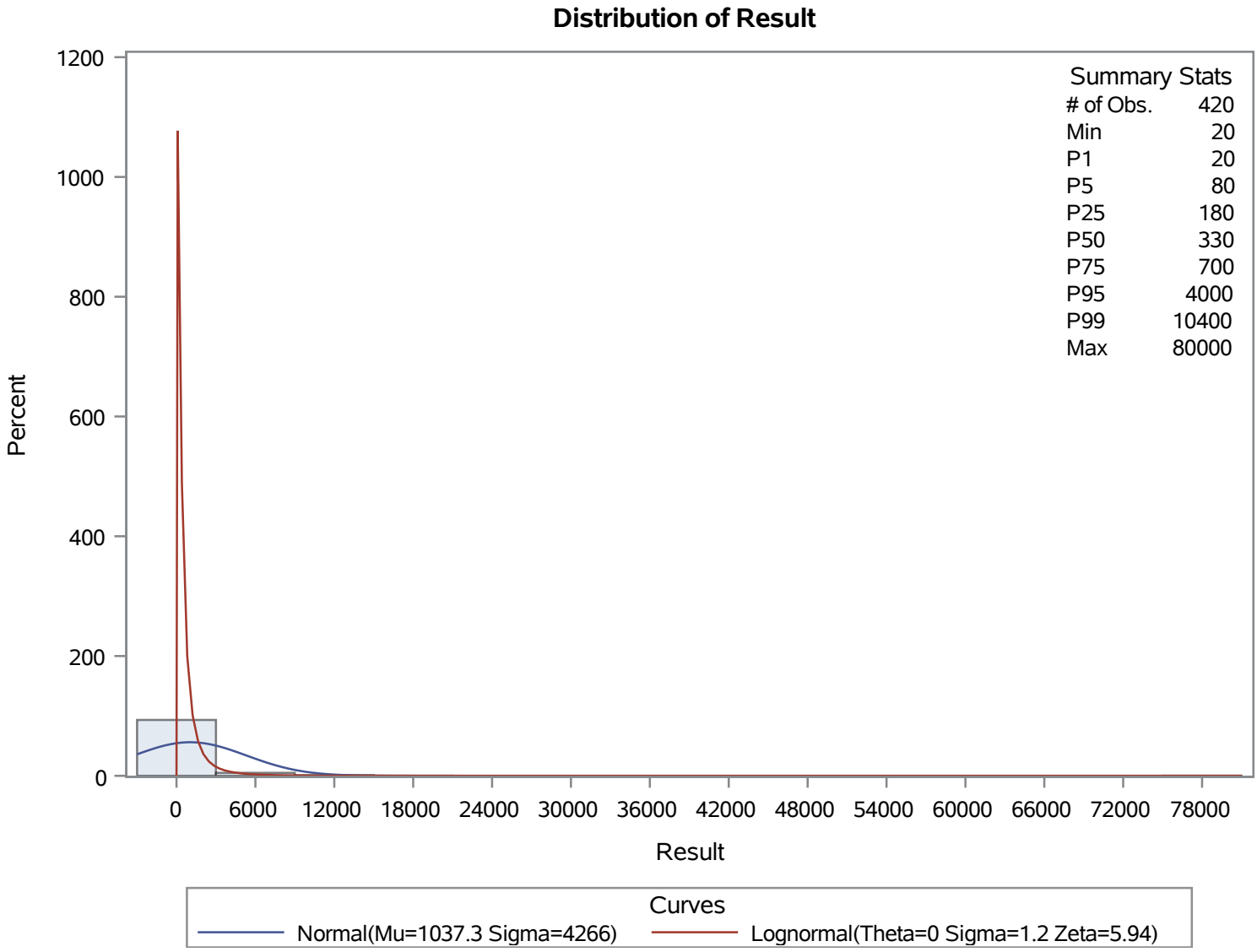
The UNIVARIATE Procedure

Distribution of Result



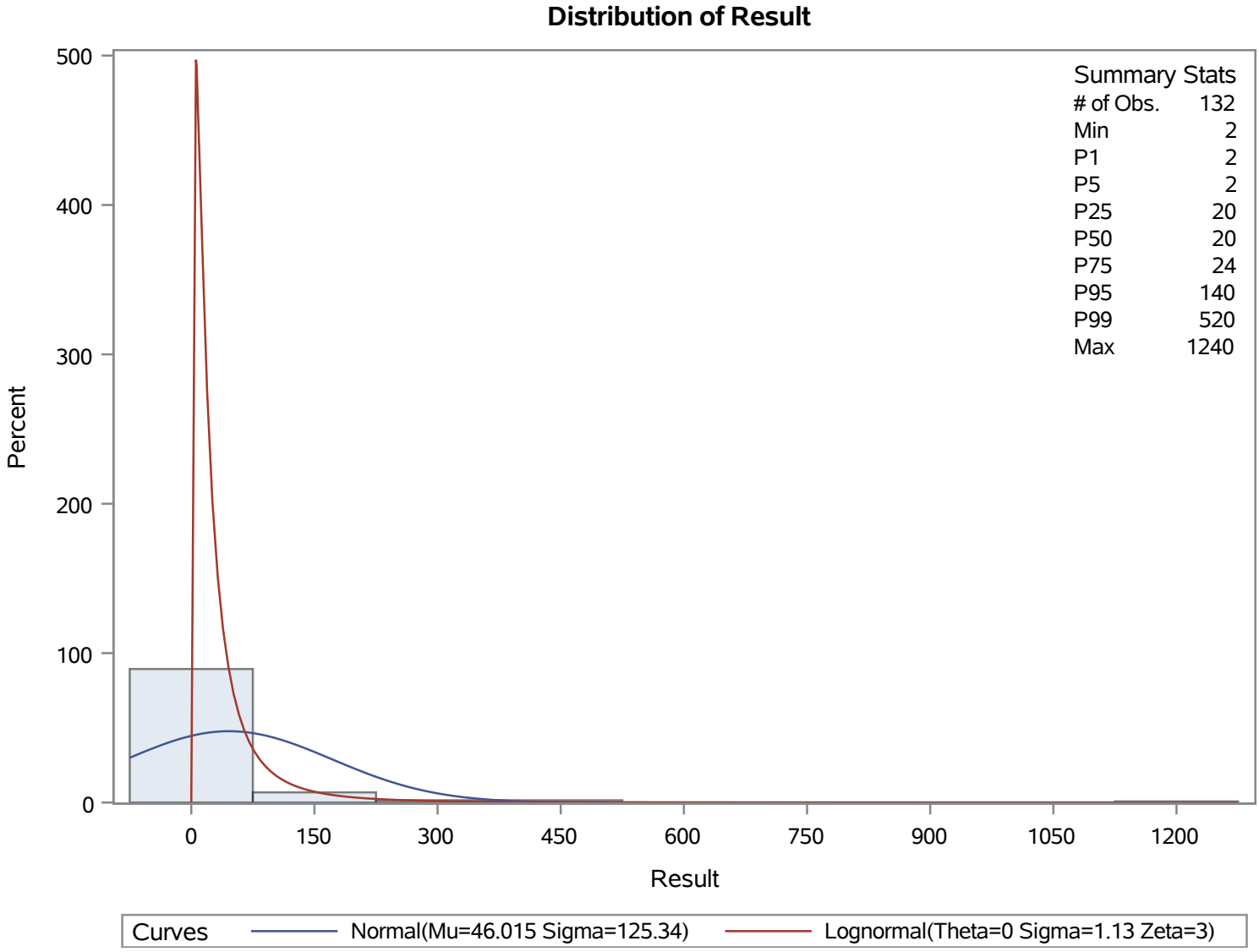
Little Manatee River
140
Fecal_Coliform (n/100ml)
Site ID = 140

The UNIVARIATE Procedure



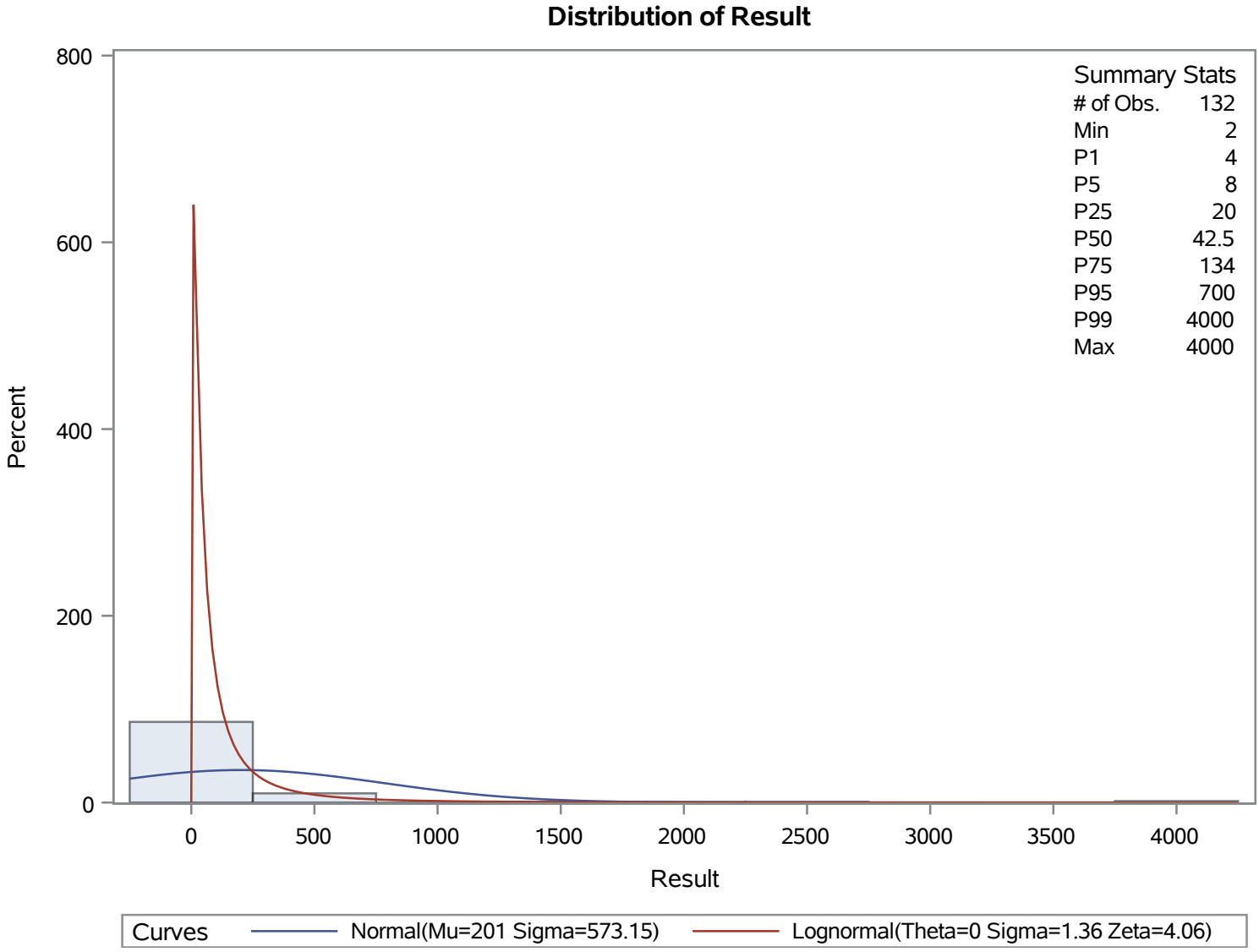
Little Manatee River
180
Fecal_Coliform (n/100ml)
Site ID = 180

The UNIVARIATE Procedure



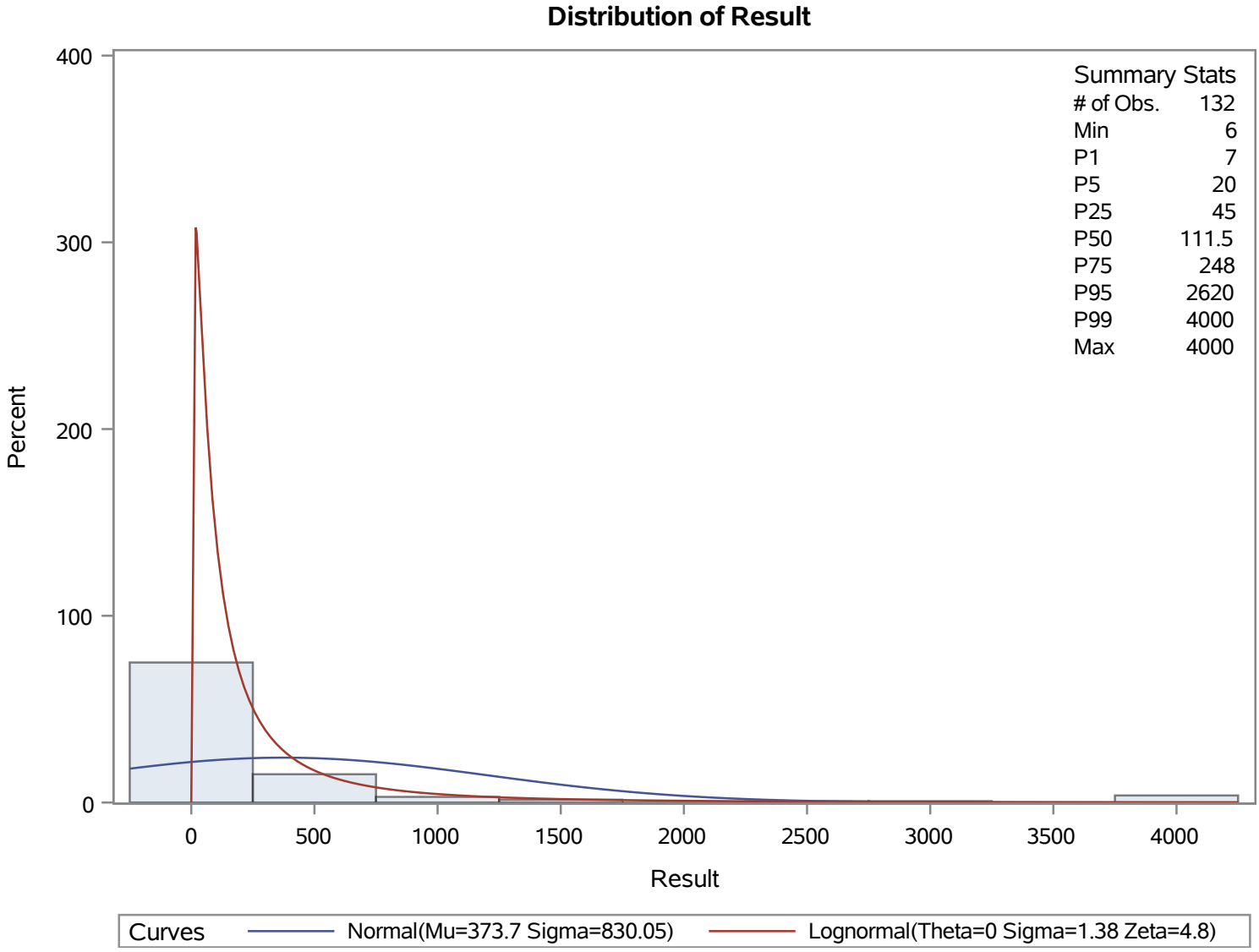
Little Manatee River
181
Fecal_Coliform (n/100ml)
Site ID = 181

The UNIVARIATE Procedure



Little Manatee River
182
Fecal_Coliform (n/100ml)
Site ID = 182

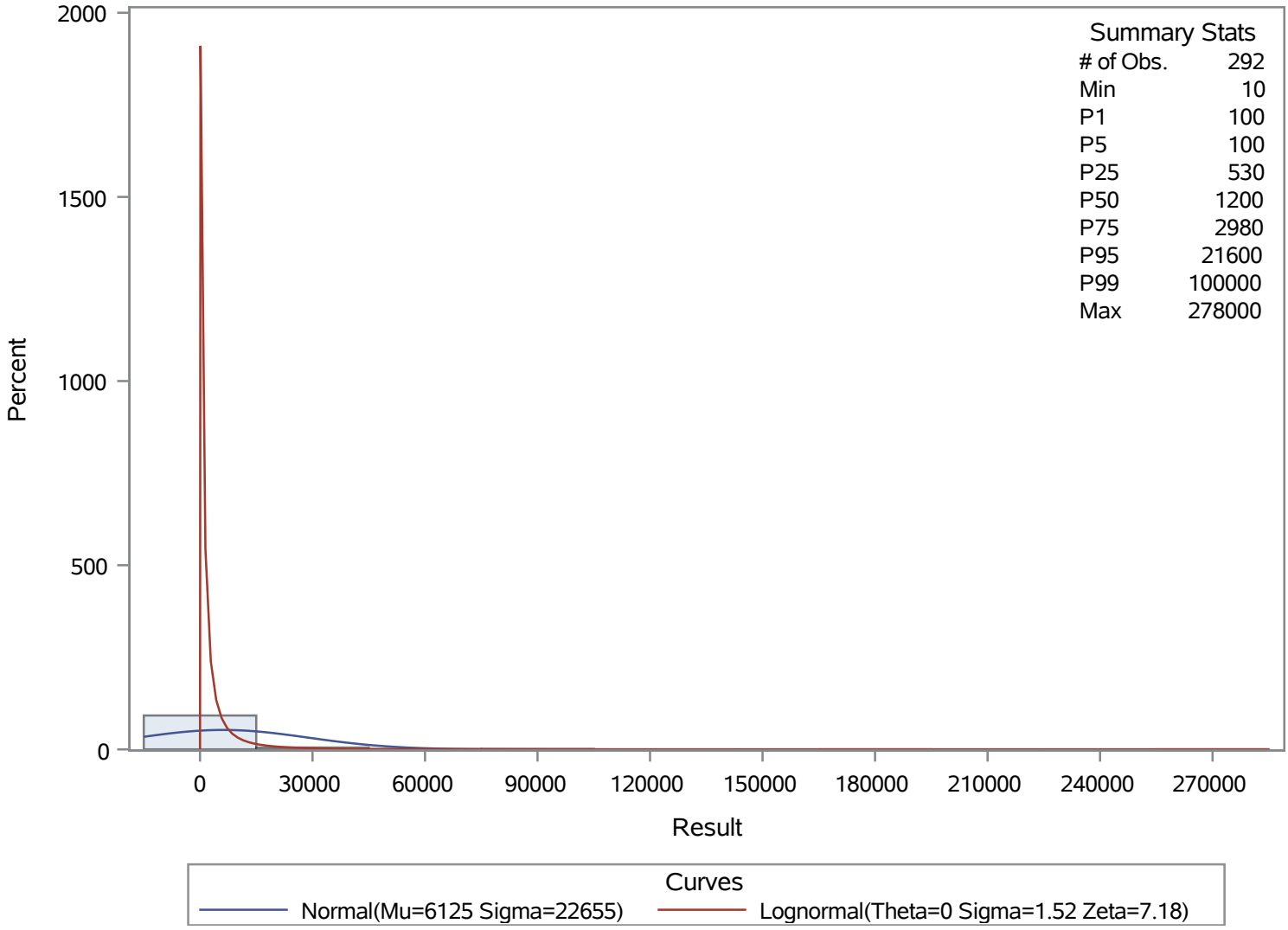
The UNIVARIATE Procedure



Little Manatee River
113
Fecal_Strep (n/100ml)
Site ID = 113

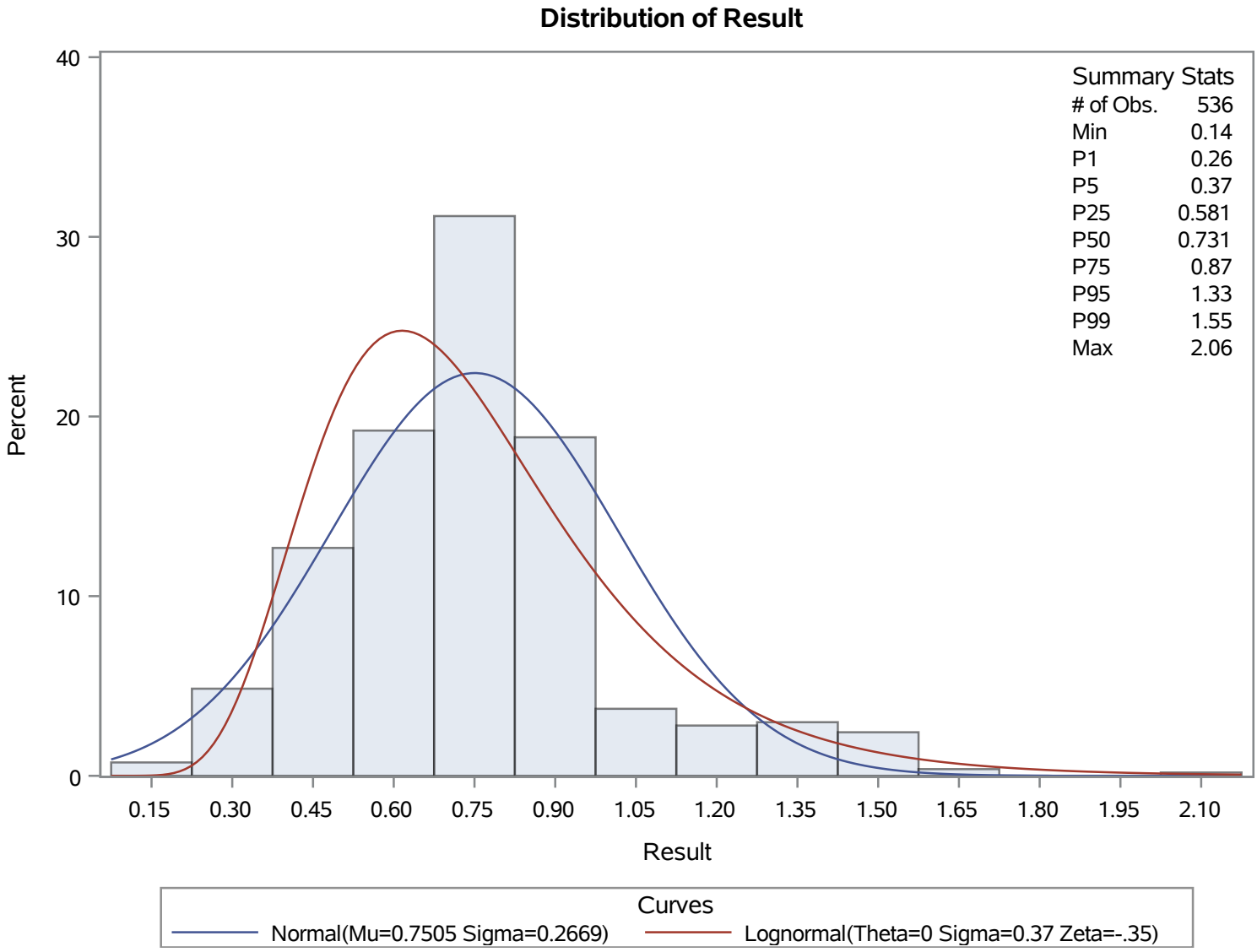
The UNIVARIATE Procedure

Distribution of Result



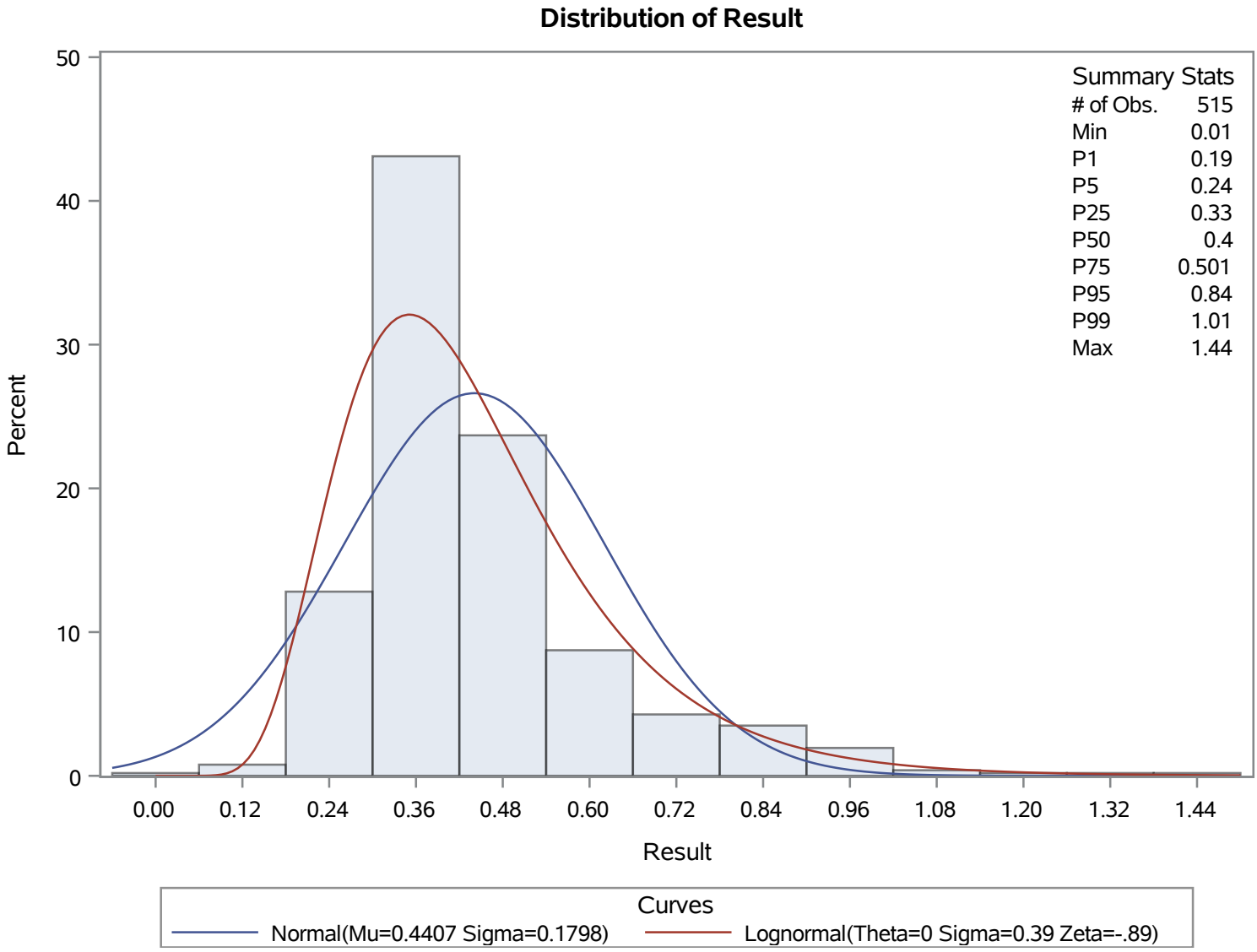
Little Manatee River
112
Fluoride (mg/l)
Site ID = 112

The UNIVARIATE Procedure



Little Manatee River
113
Fluoride (mg/l)
Site ID = 113

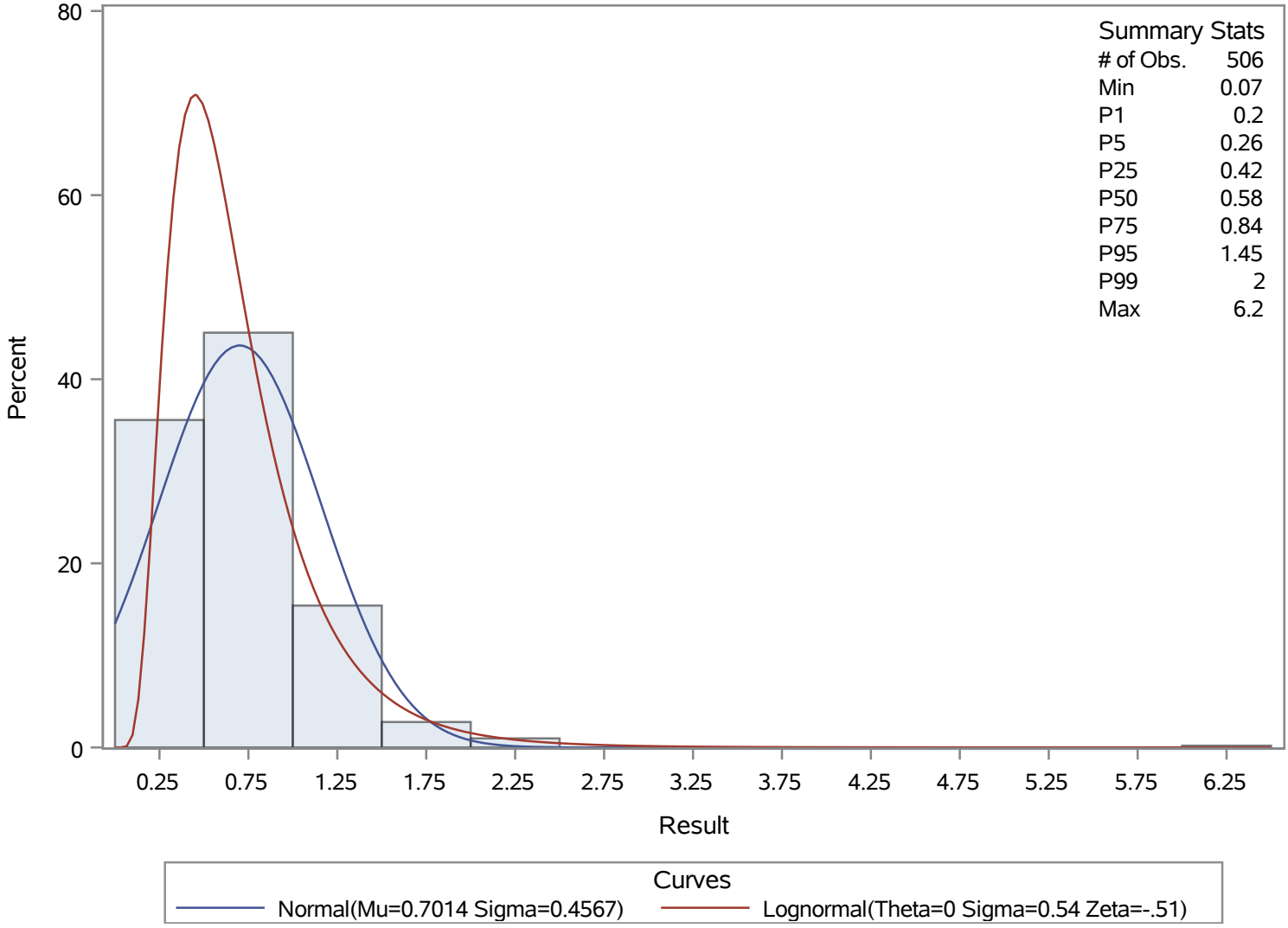
The UNIVARIATE Procedure



Little Manatee River
129
Fluoride (mg/l)
Site ID = 129

The UNIVARIATE Procedure

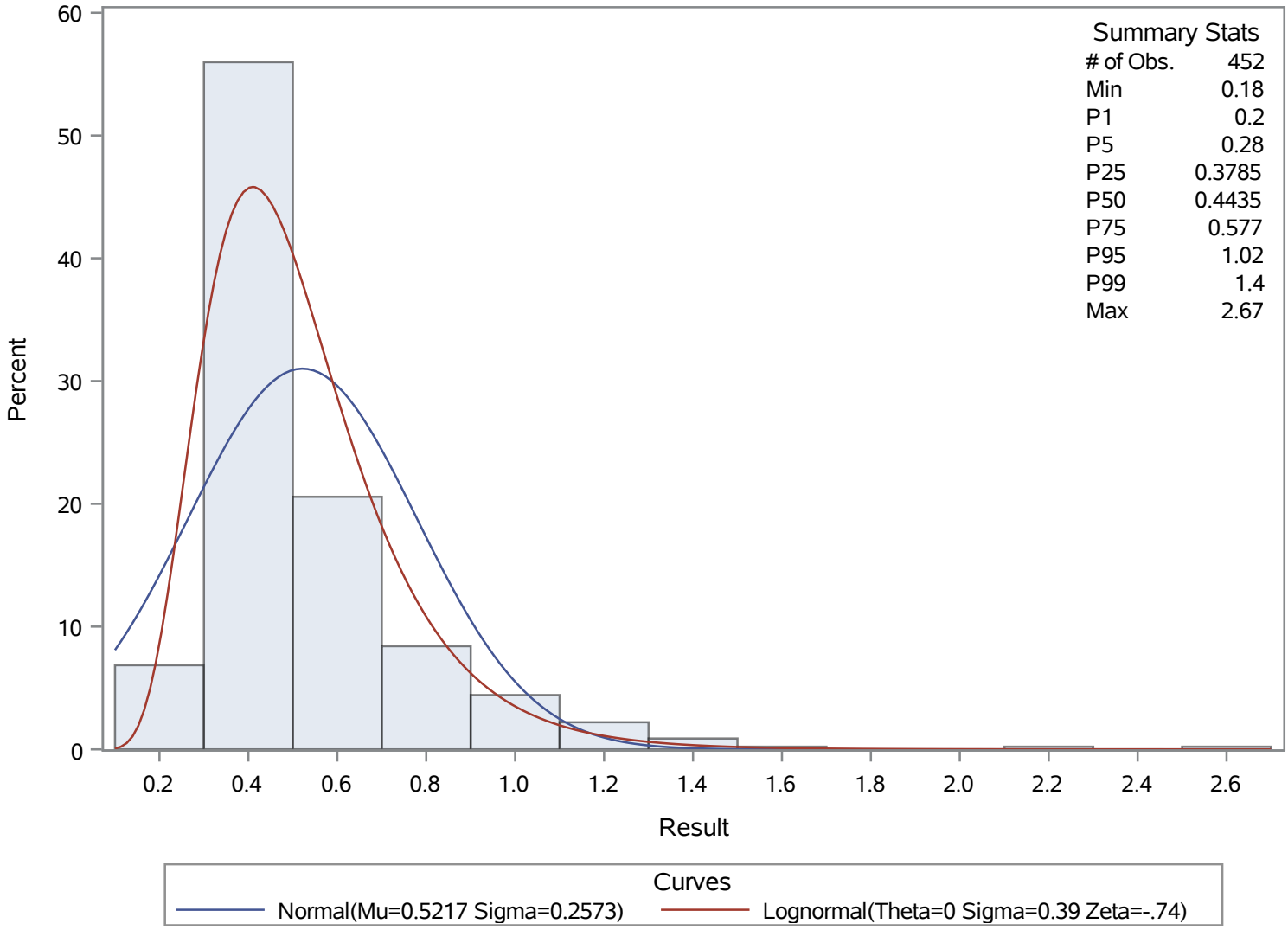
Distribution of Result



Little Manatee River
140
Fluoride (mg/l)
Site ID = 140

The UNIVARIATE Procedure

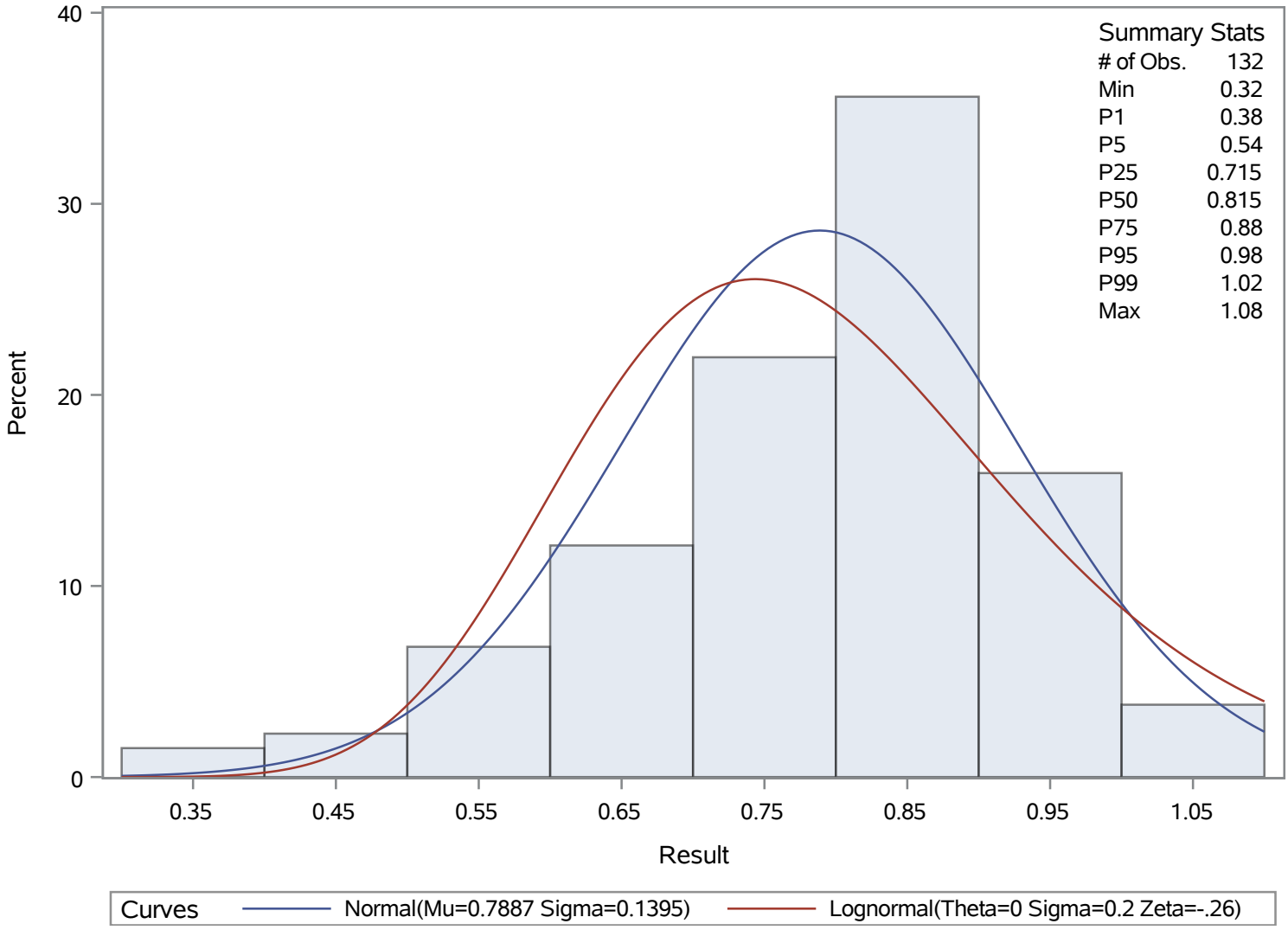
Distribution of Result



Little Manatee River
180
Fluoride (mg/l)
Site ID = 180

The UNIVARIATE Procedure

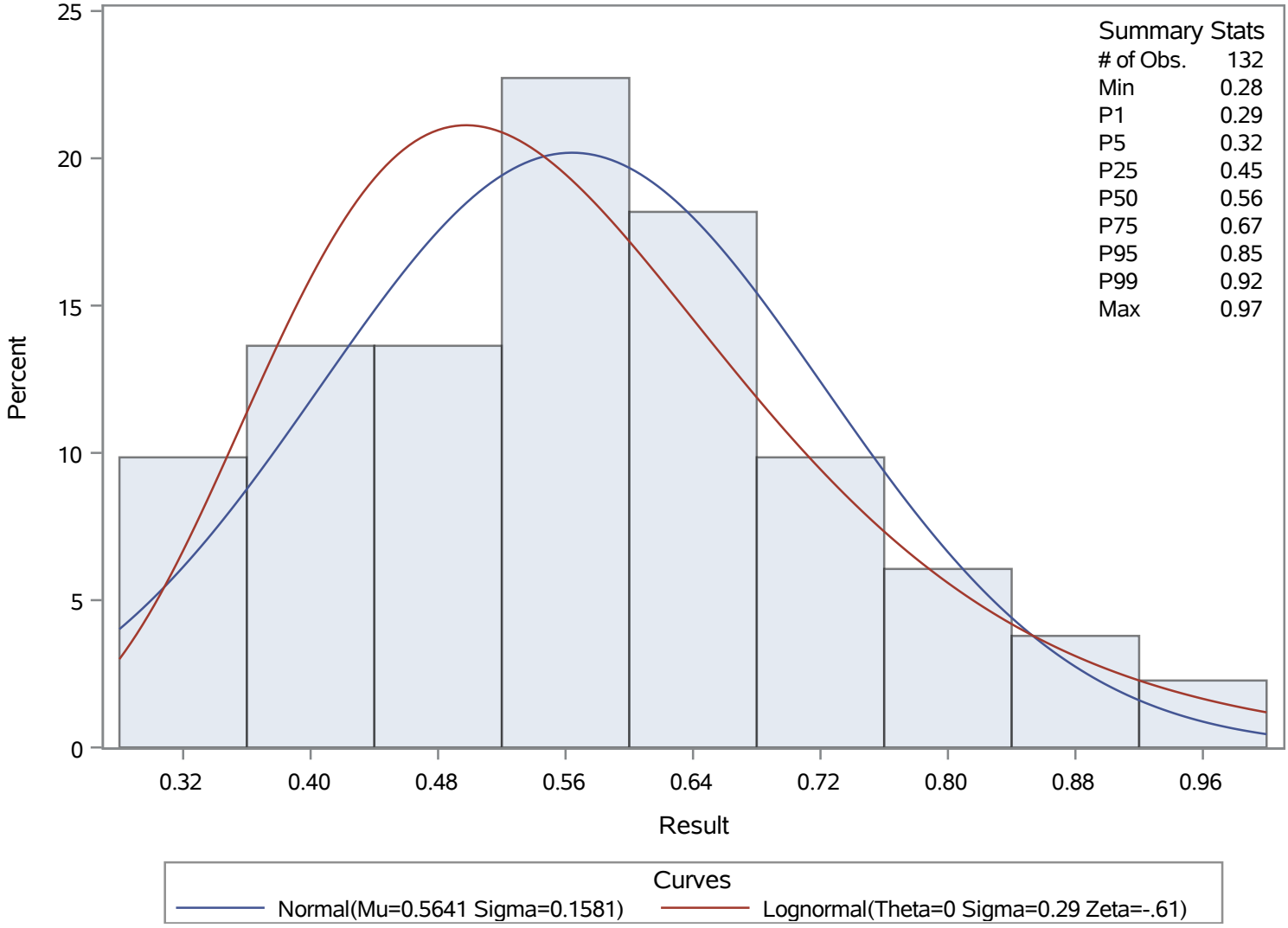
Distribution of Result



Little Manatee River
181
Fluoride (mg/l)
Site ID = 181

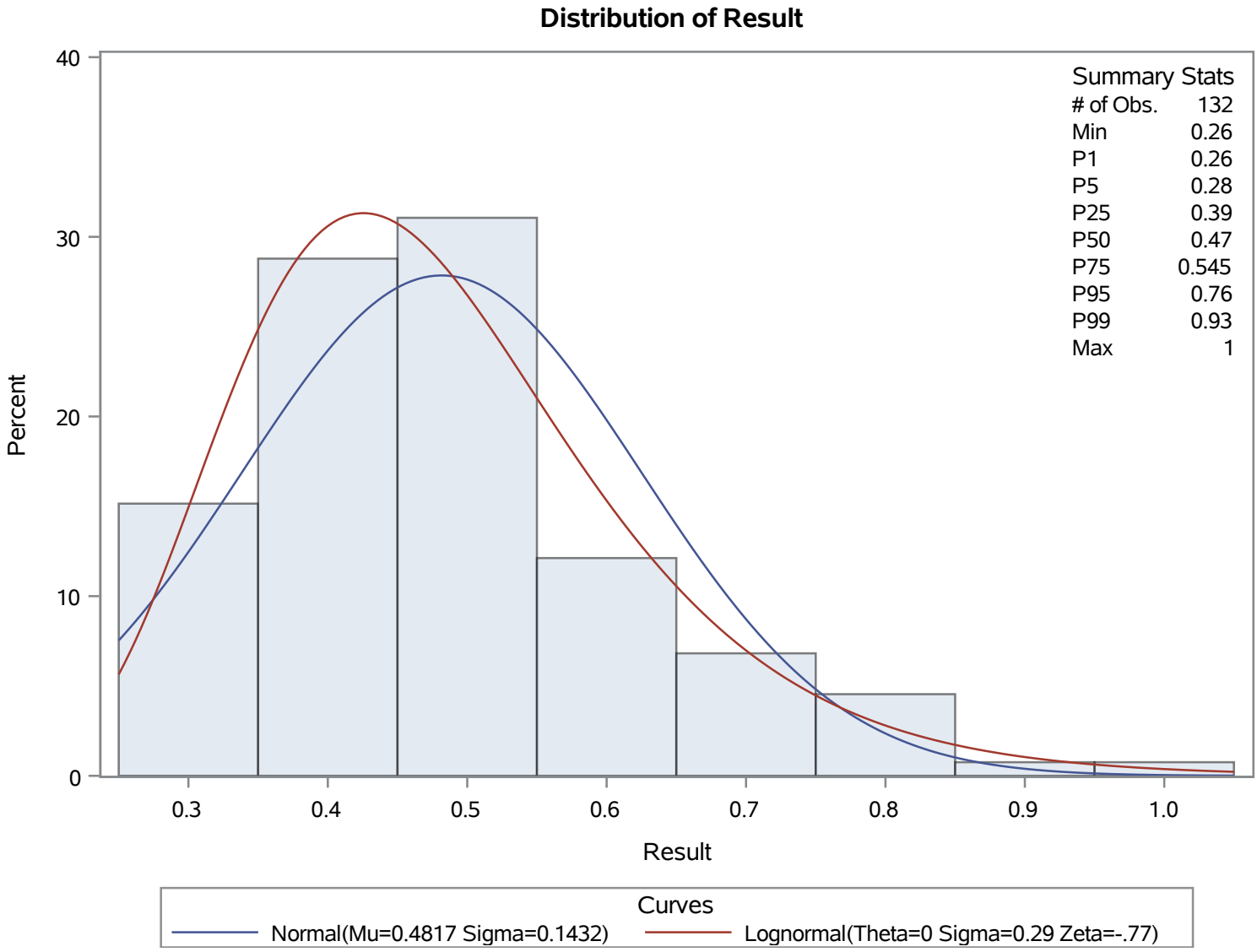
The UNIVARIATE Procedure

Distribution of Result



Little Manatee River
182
Fluoride (mg/l)
Site ID = 182

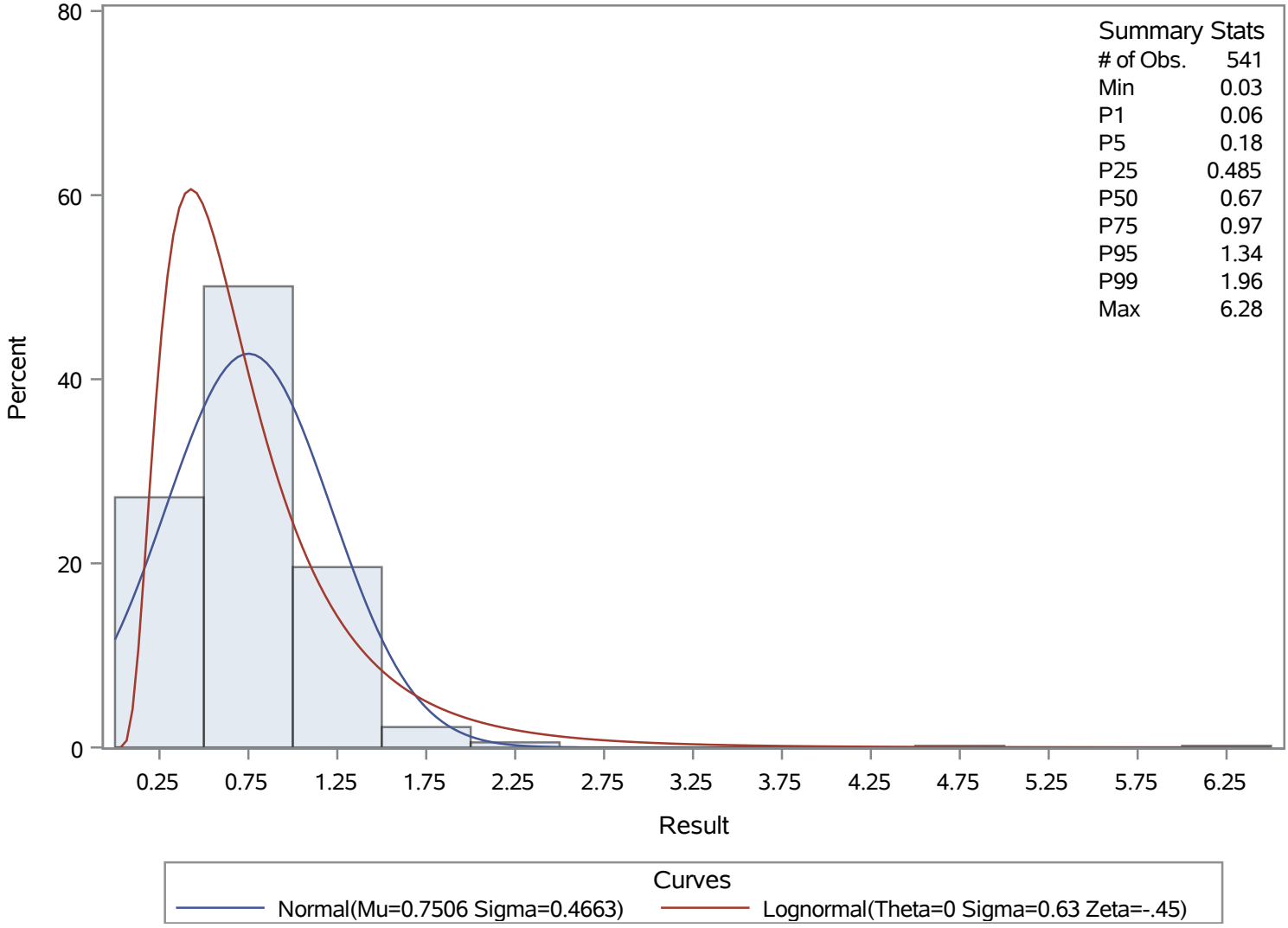
The UNIVARIATE Procedure



Little Manatee River
112
Kjeldahl Nitrogen (mg/l)
Site ID = 112

The UNIVARIATE Procedure

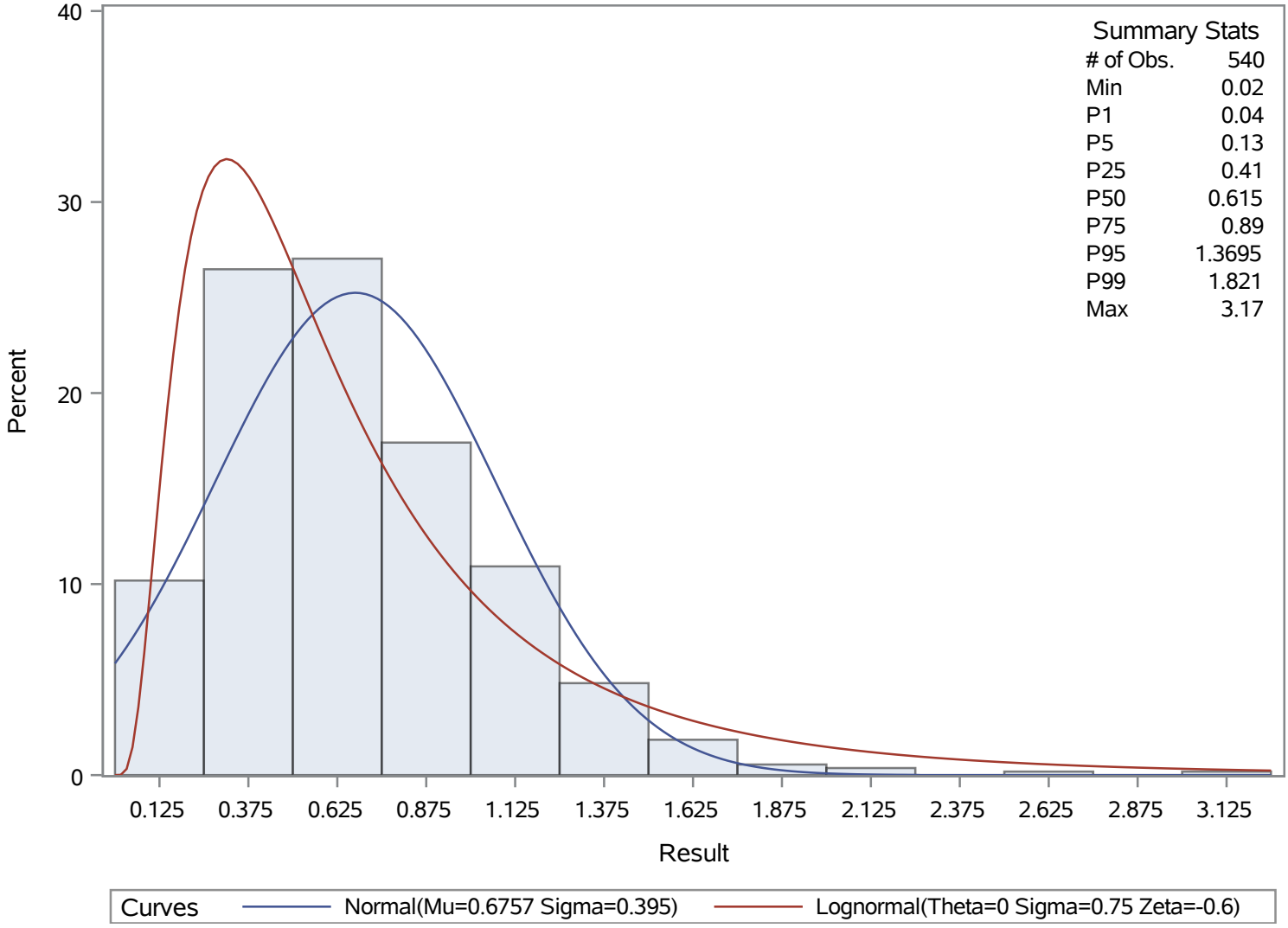
Distribution of Result



Little Manatee River
113
Kjeldahl Nitrogen (mg/l)
Site ID = 113

The UNIVARIATE Procedure

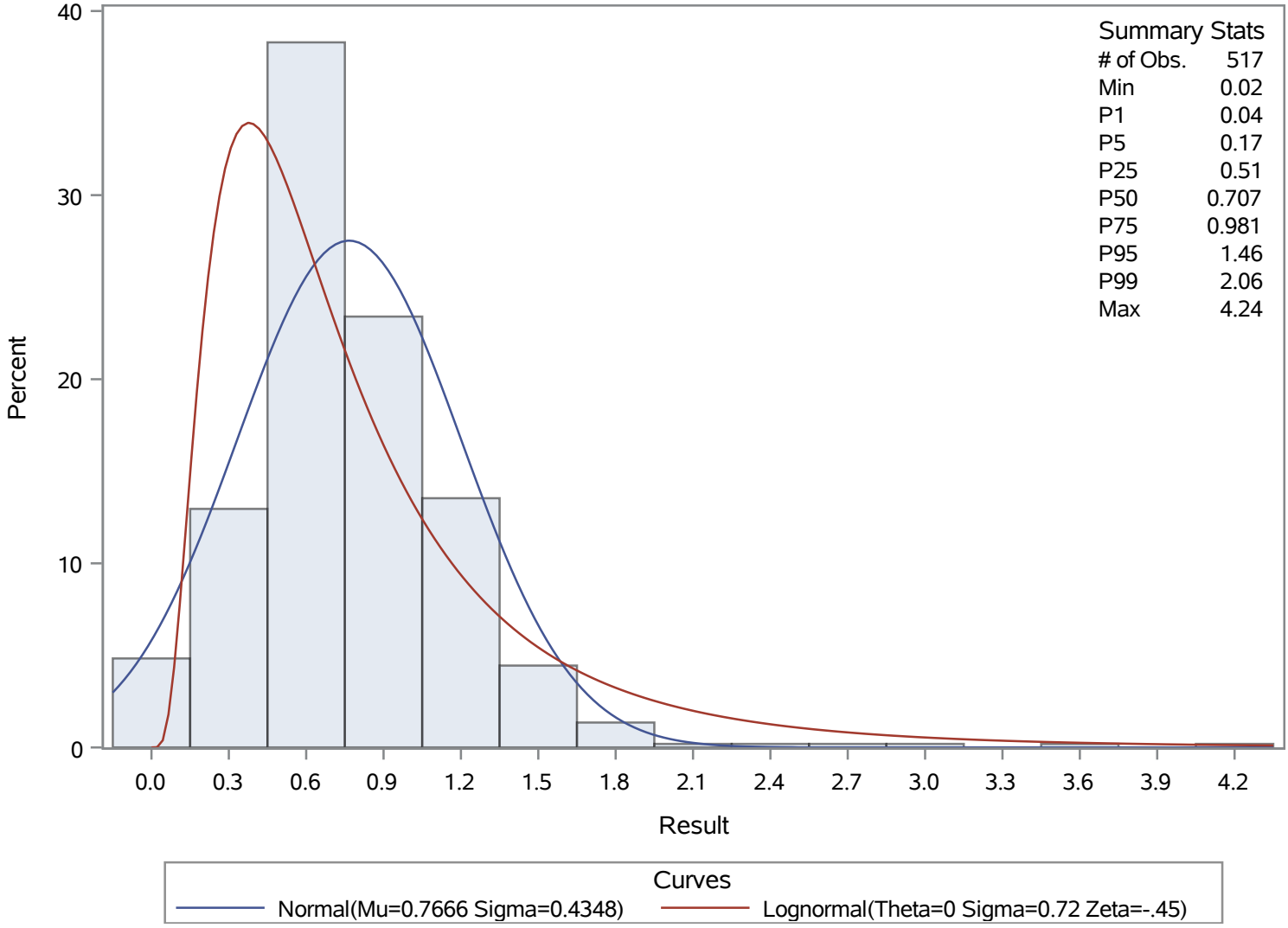
Distribution of Result



Little Manatee River
129
Kjeldahl Nitrogen (mg/l)
Site ID = 129

The UNIVARIATE Procedure

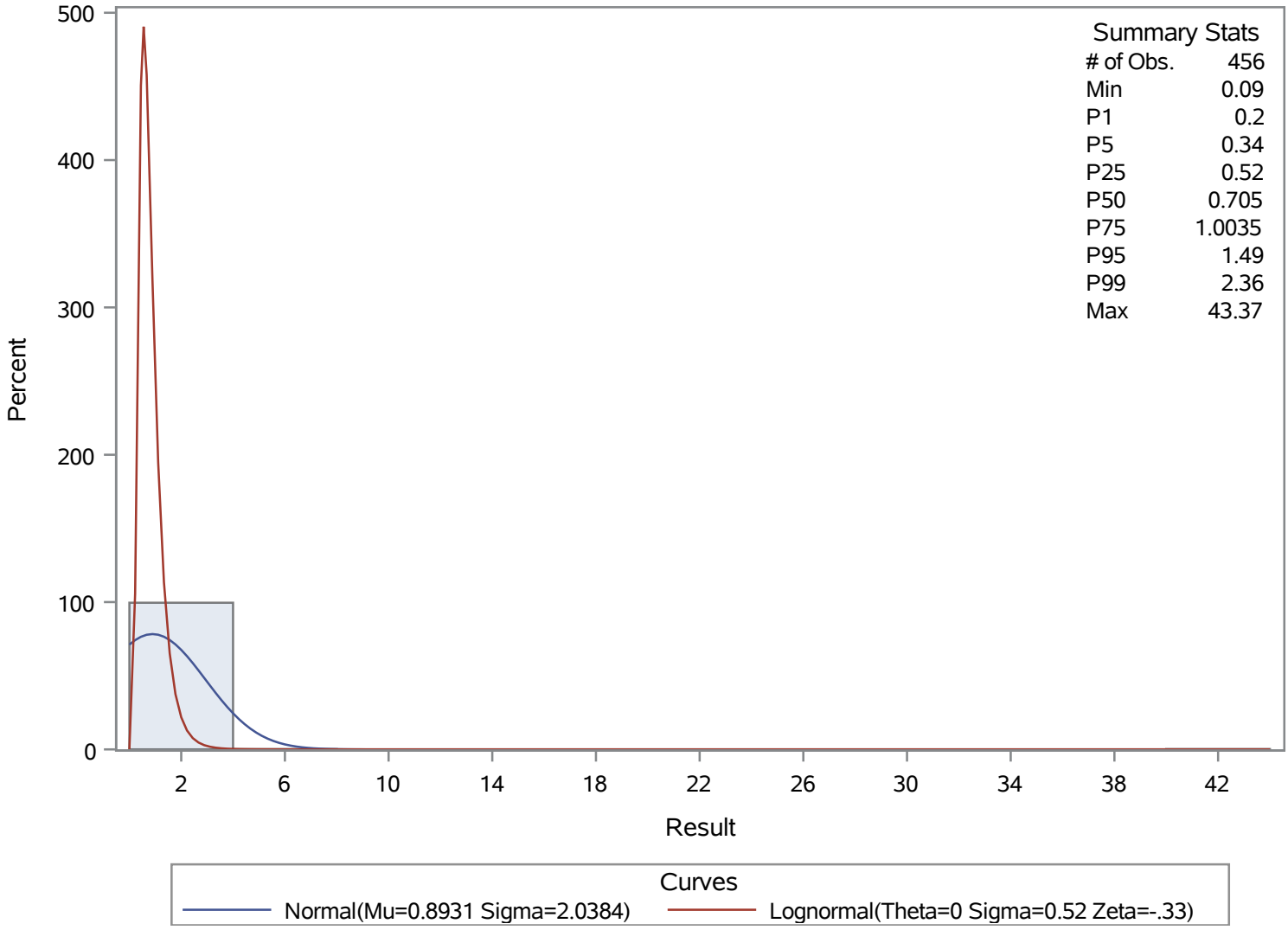
Distribution of Result



Little Manatee River
140
Kjeldahl Nitrogen (mg/l)
Site ID = 140

The UNIVARIATE Procedure

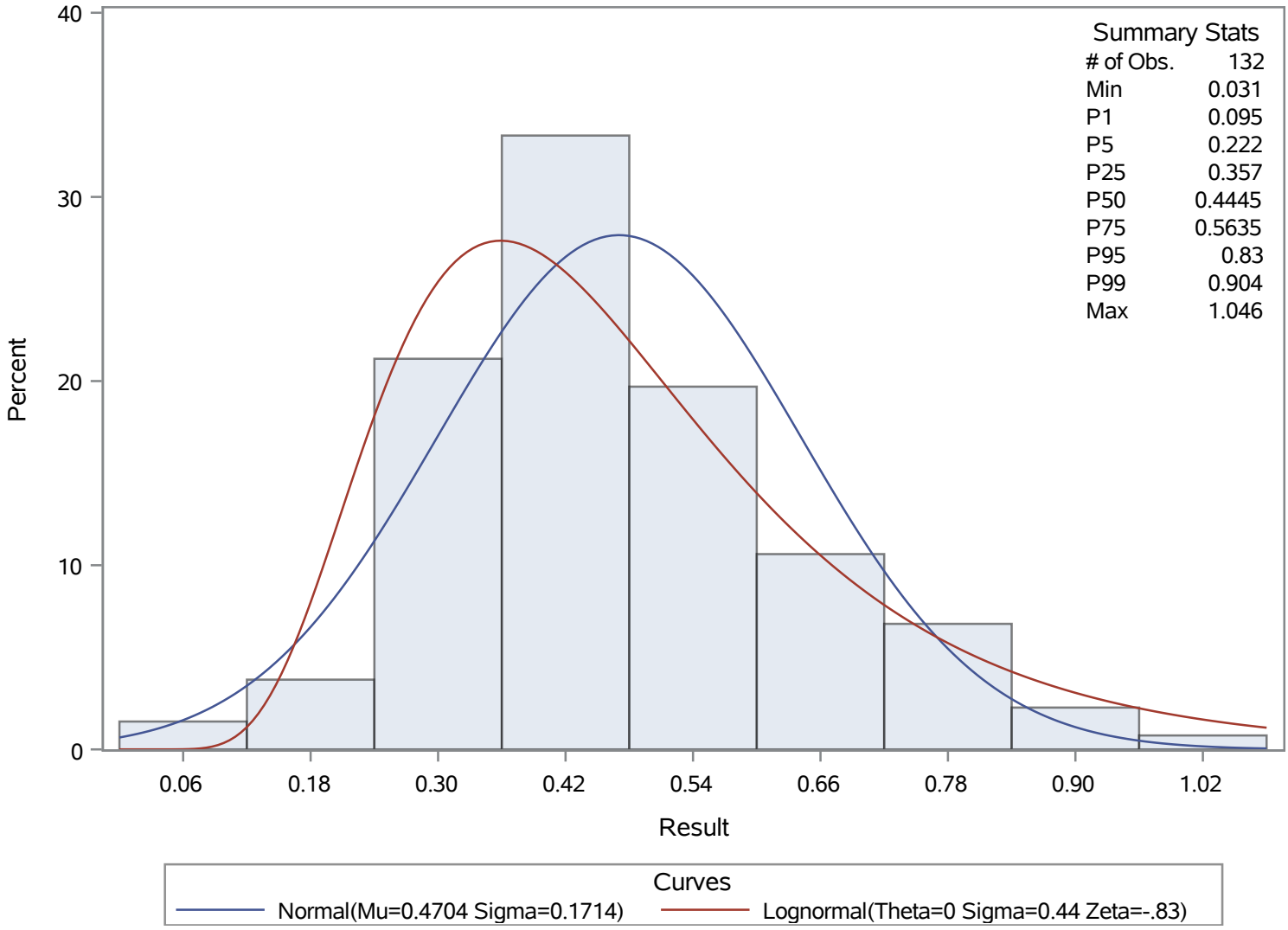
Distribution of Result



Little Manatee River
180
Kjeldahl Nitrogen (mg/l)
Site ID = 180

The UNIVARIATE Procedure

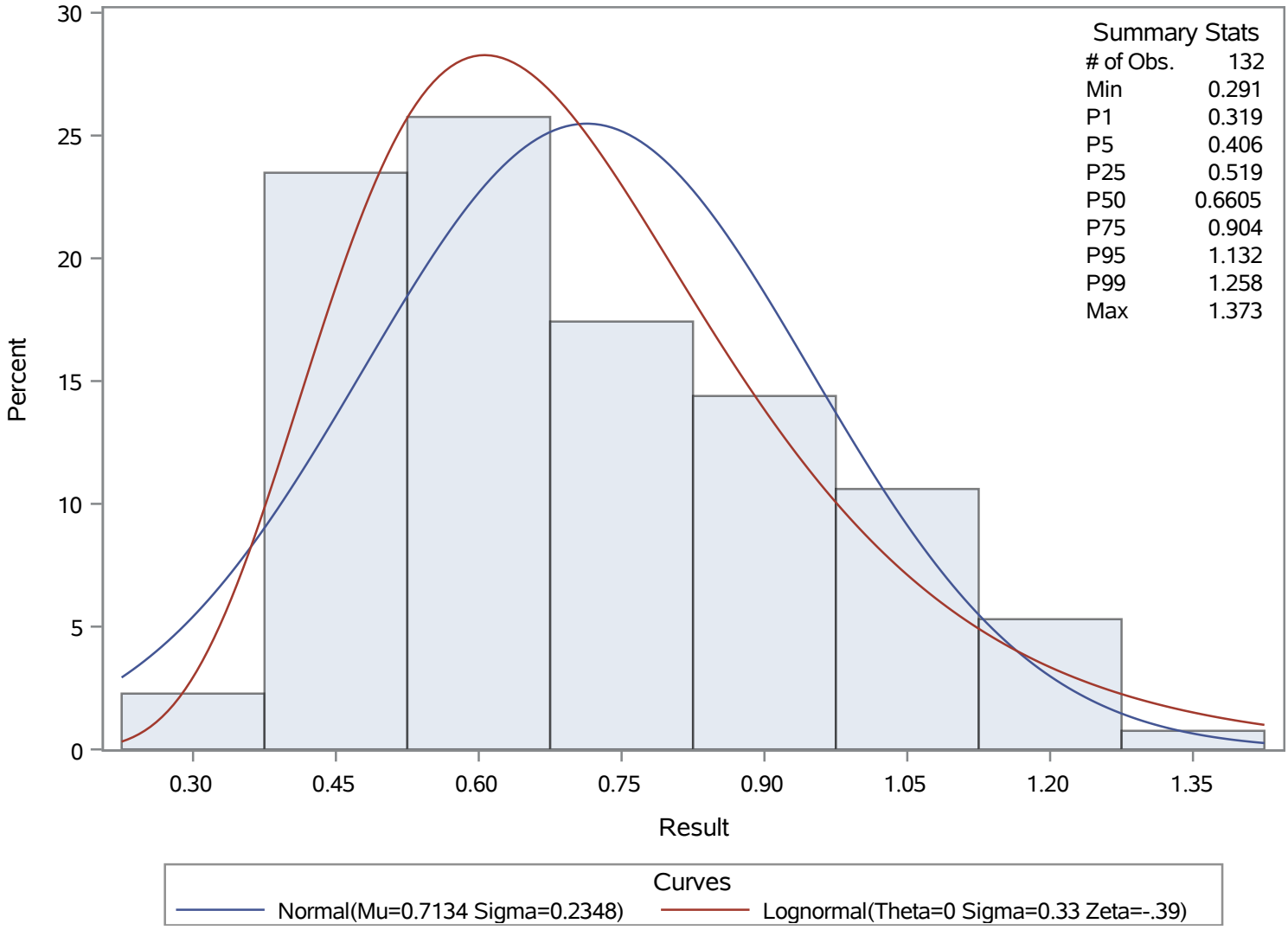
Distribution of Result



Little Manatee River
181
Kjeldahl Nitrogen (mg/l)
Site ID = 181

The UNIVARIATE Procedure

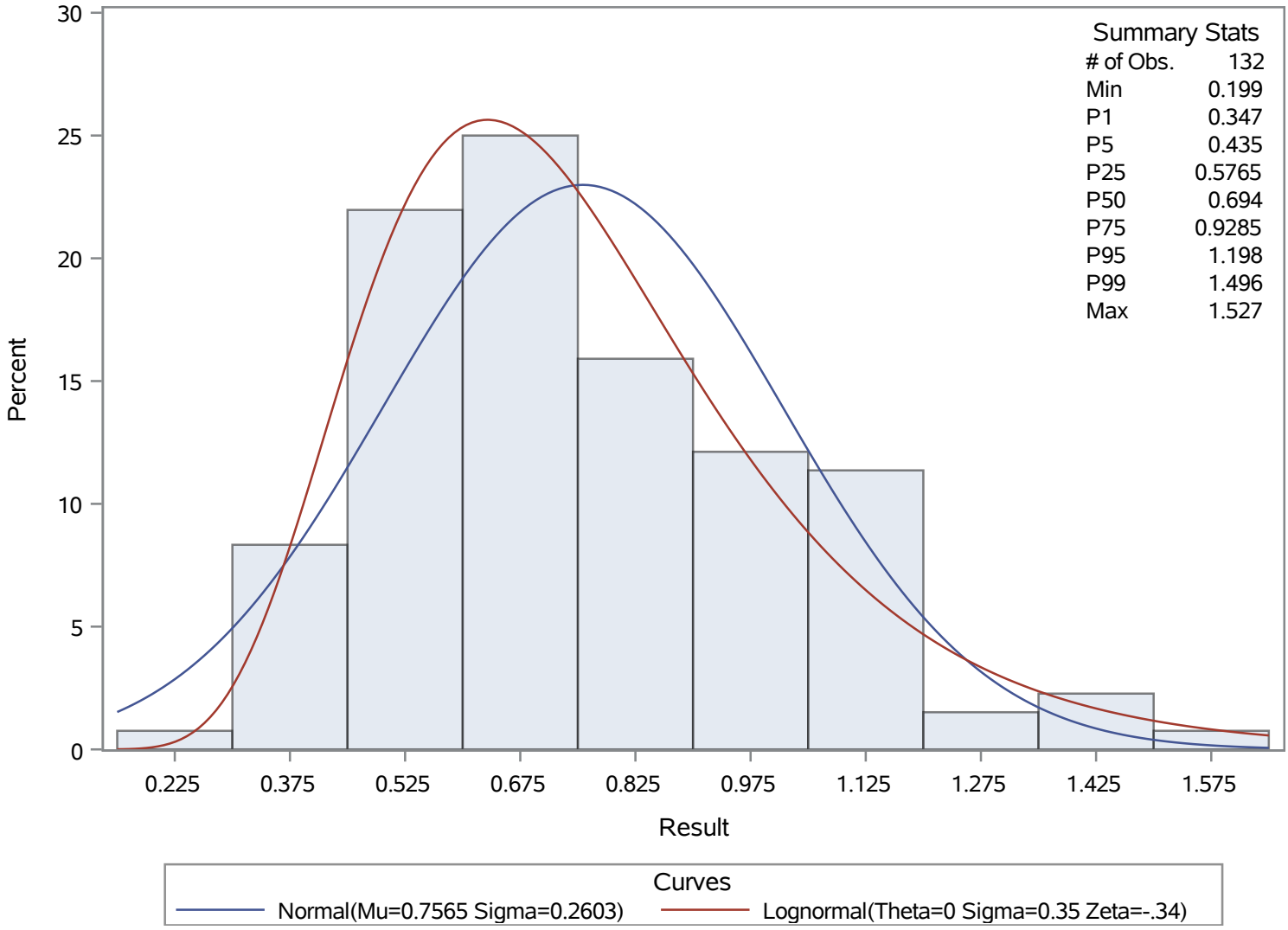
Distribution of Result



Little Manatee River
182
Kjeldahl Nitrogen (mg/l)
Site ID = 182

The UNIVARIATE Procedure

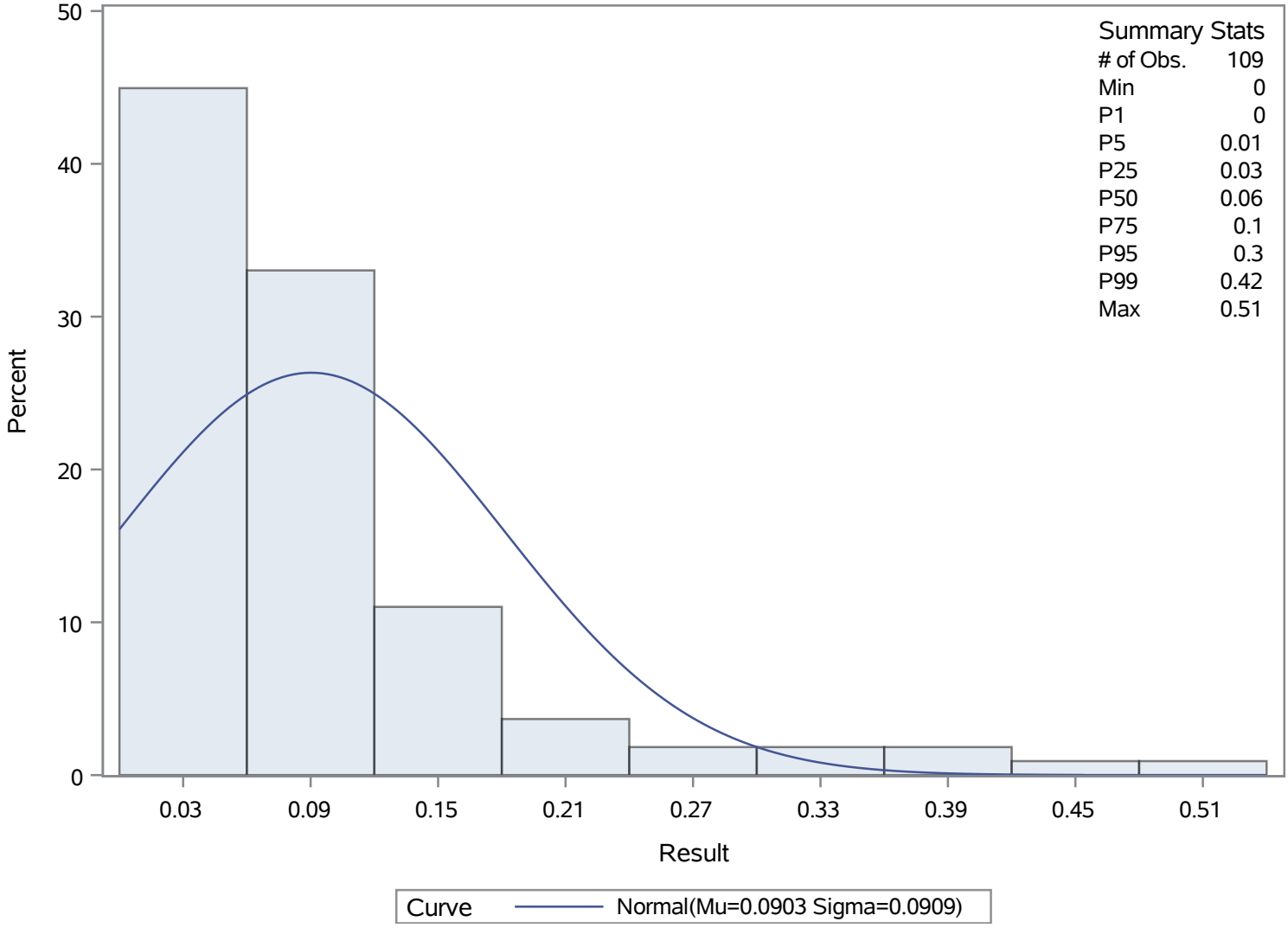
Distribution of Result



Little Manatee River
112
Nitrates
Site ID = 112

The UNIVARIATE Procedure

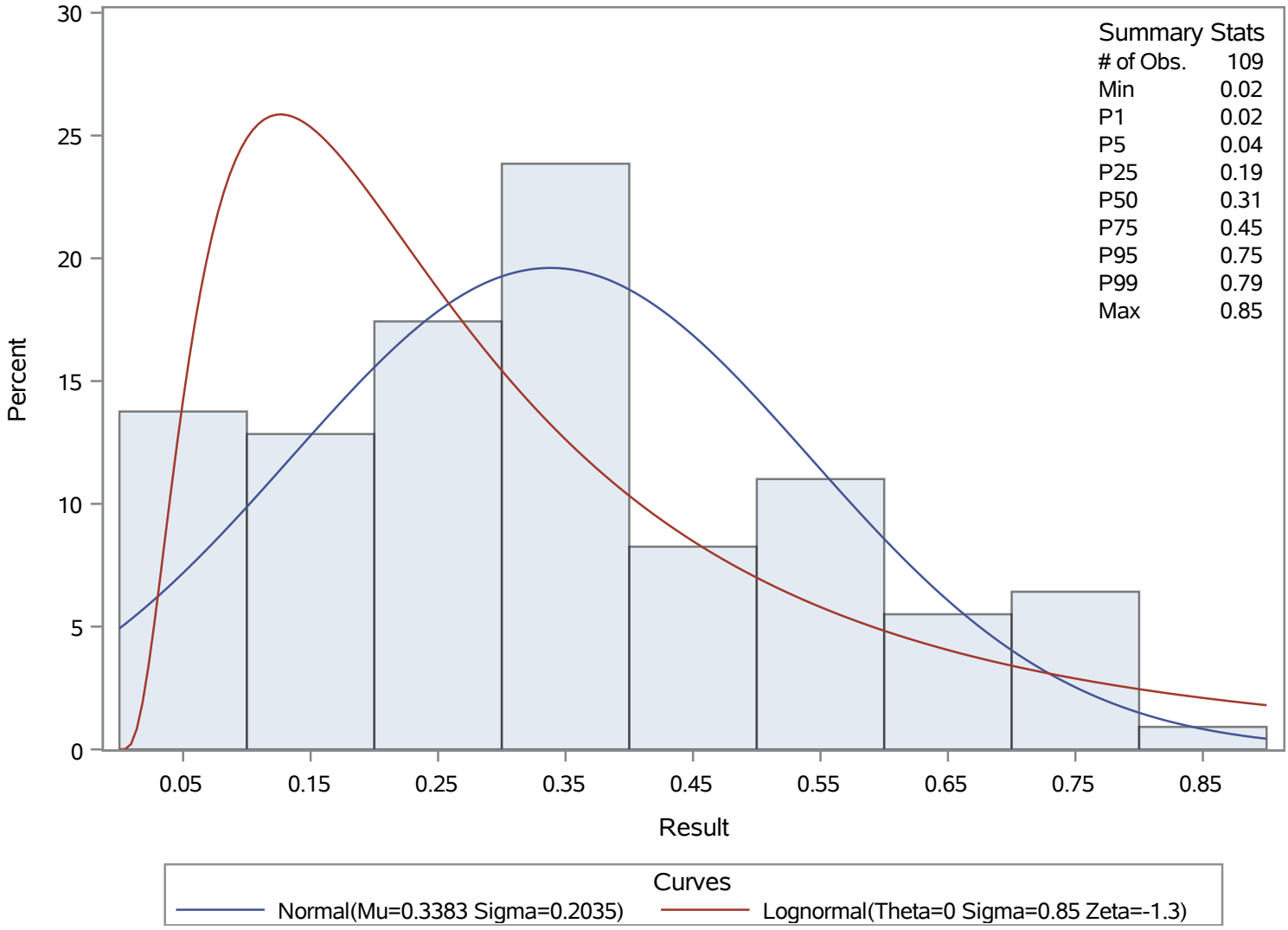
Distribution of Result



Little Manatee River
113
Nitrates
Site ID = 113

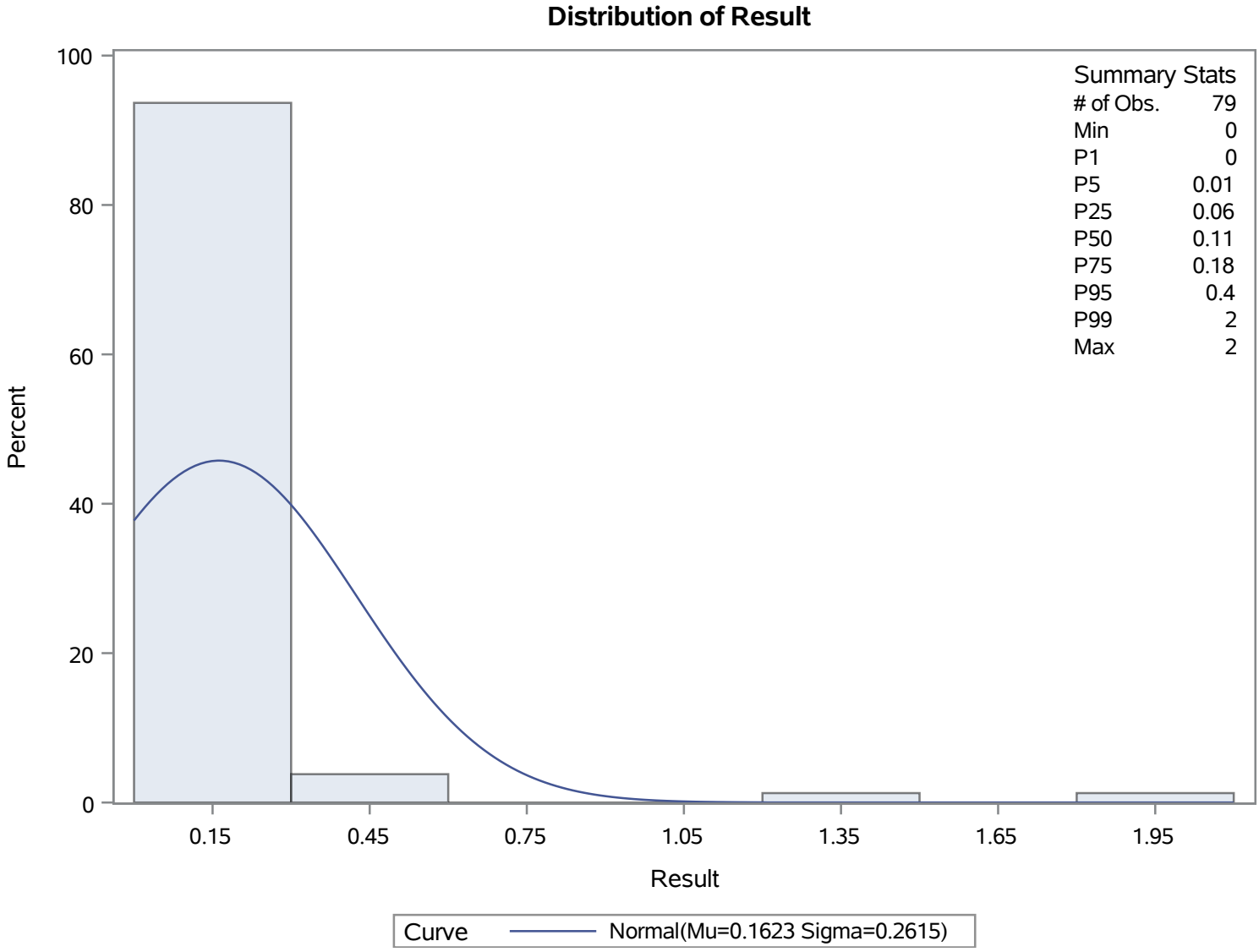
The UNIVARIATE Procedure

Distribution of Result



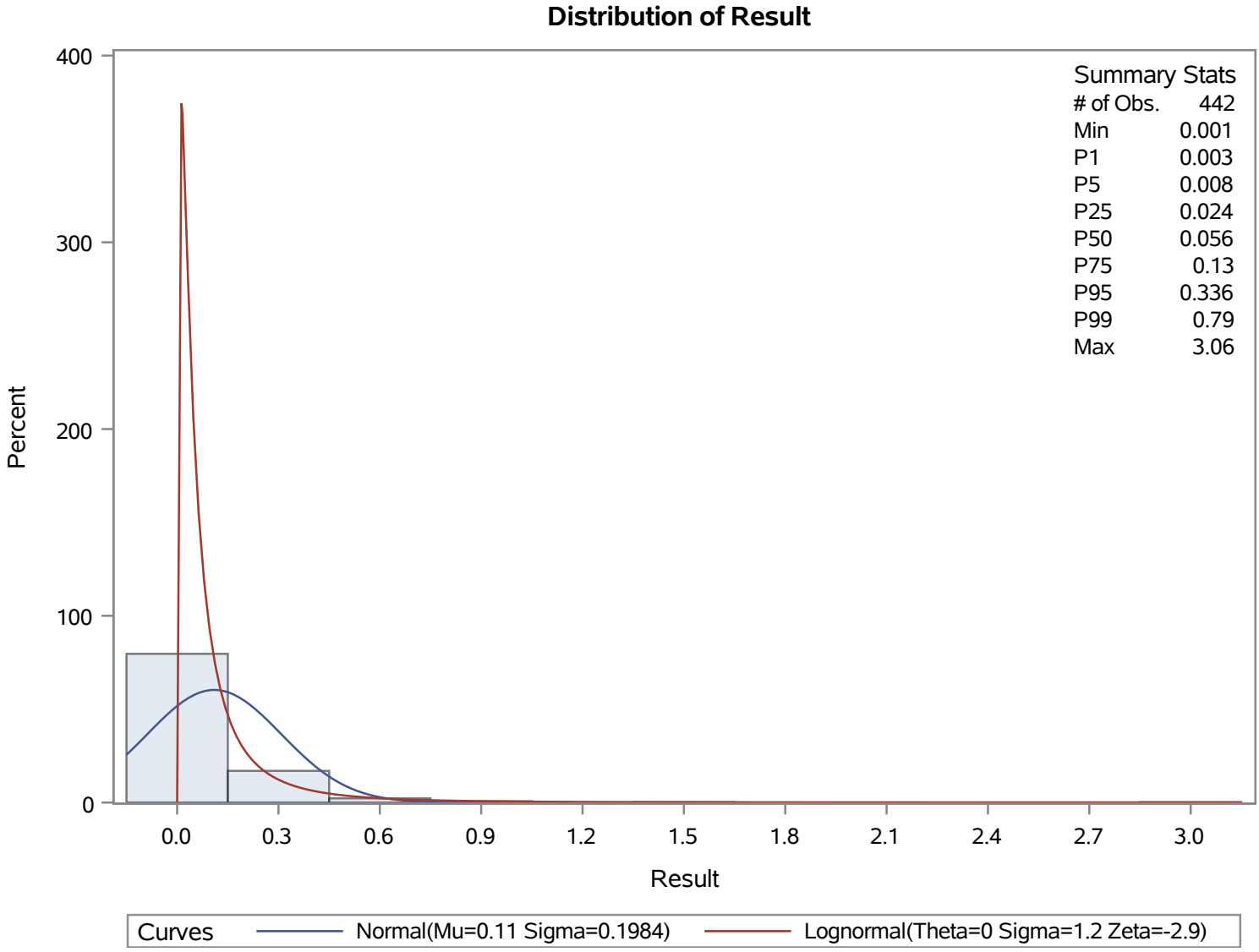
Little Manatee River
129
Nitrates
Site ID = 129

The UNIVARIATE Procedure



Little Manatee River
112
Nitrates/Nitrites (mg/l)
Site ID = 112

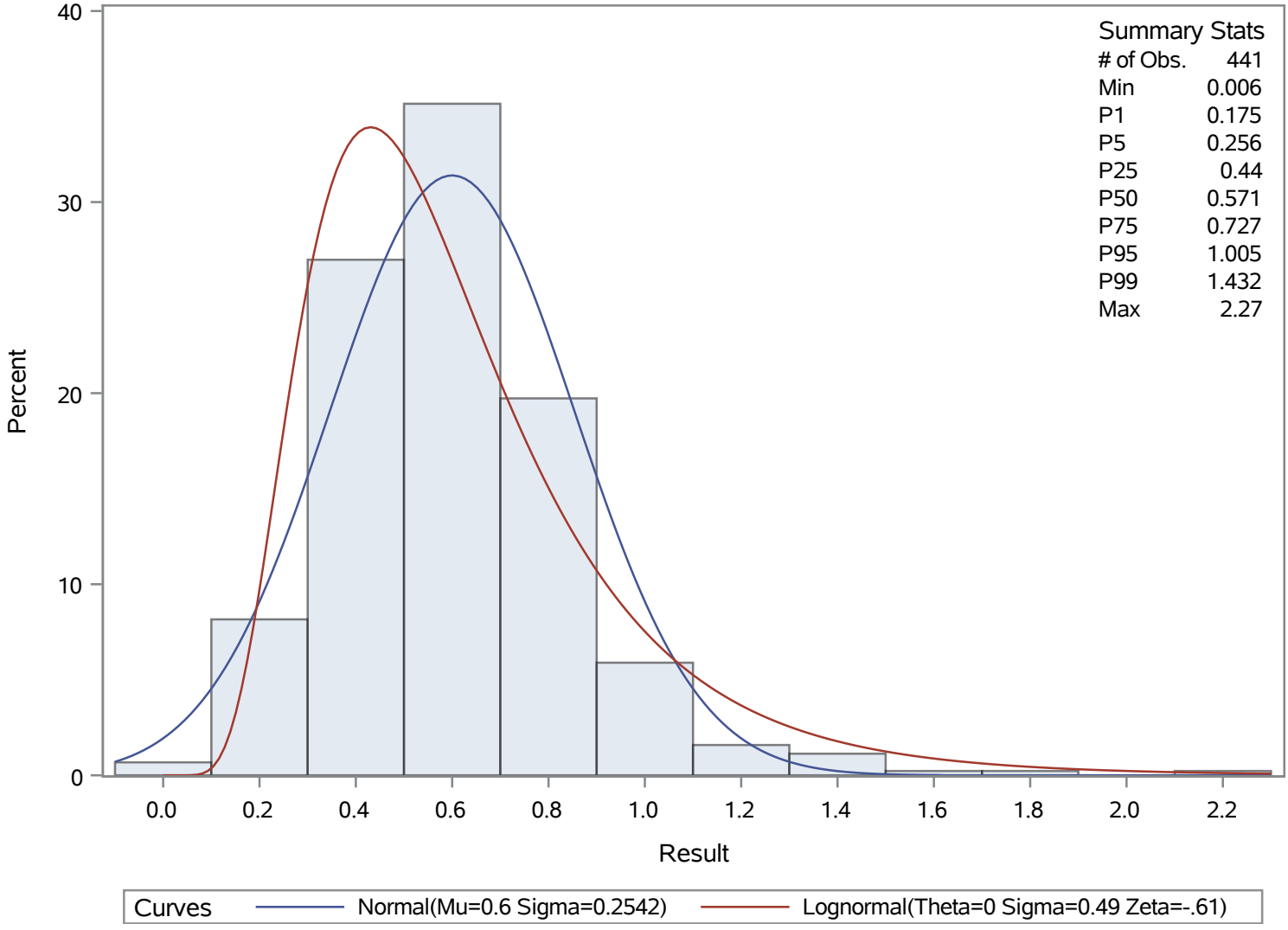
The UNIVARIATE Procedure



Little Manatee River
113
Nitrates/Nitrites (mg/l)
Site ID = 113

The UNIVARIATE Procedure

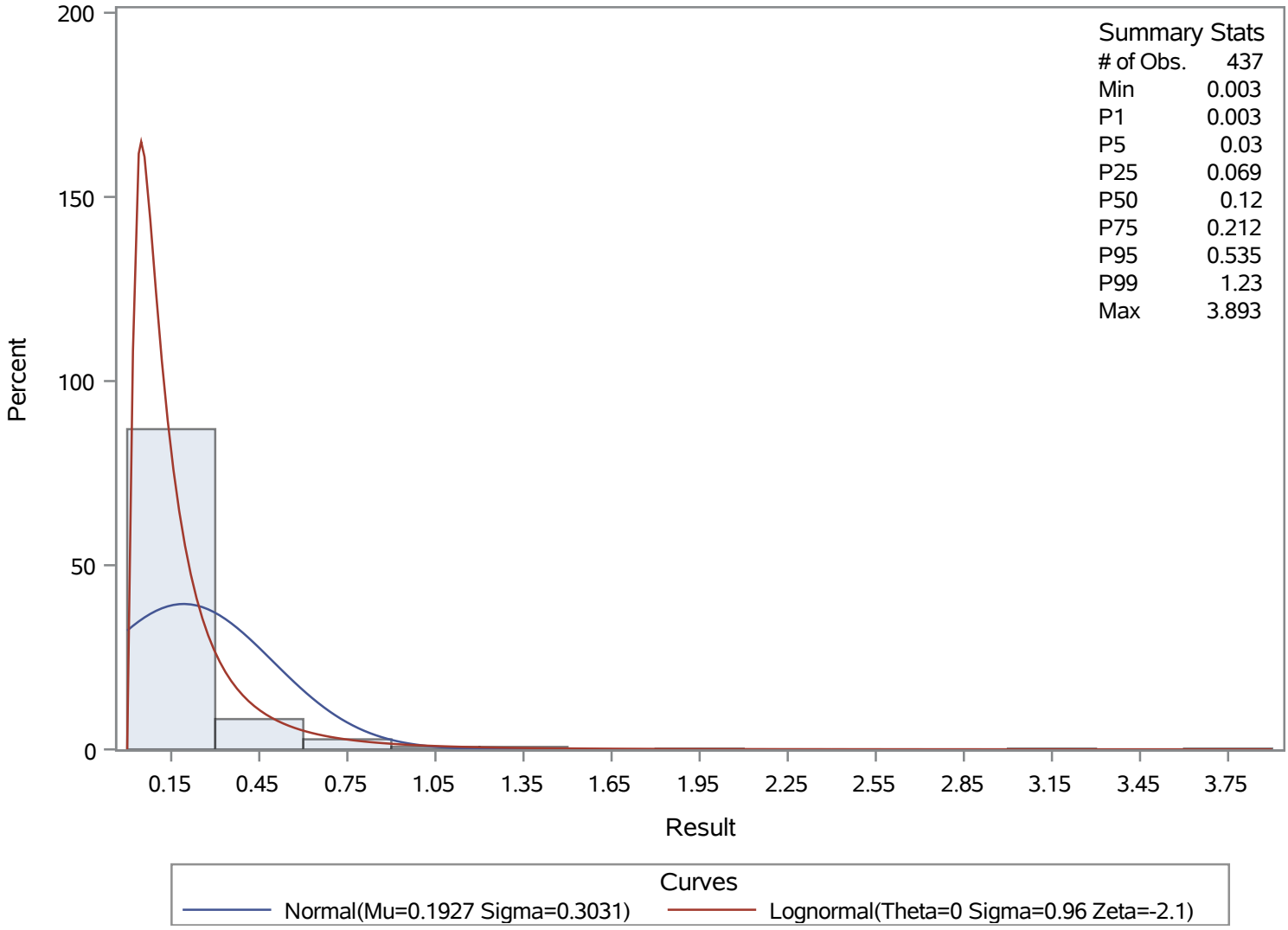
Distribution of Result



Little Manatee River
129
Nitrates/Nitrites (mg/l)
Site ID = 129

The UNIVARIATE Procedure

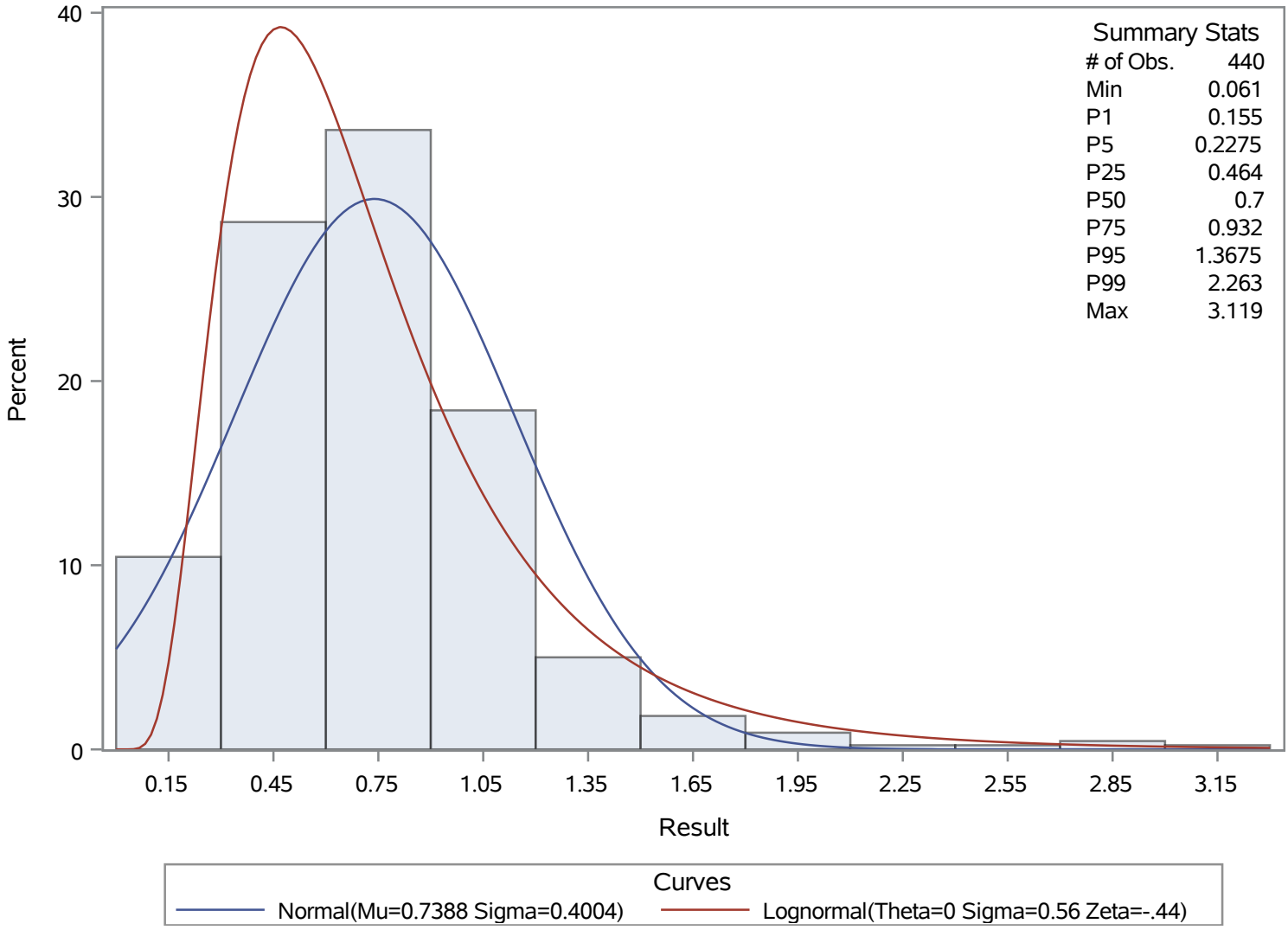
Distribution of Result



Little Manatee River
140
Nitrates/Nitrites (mg/l)
Site ID = 140

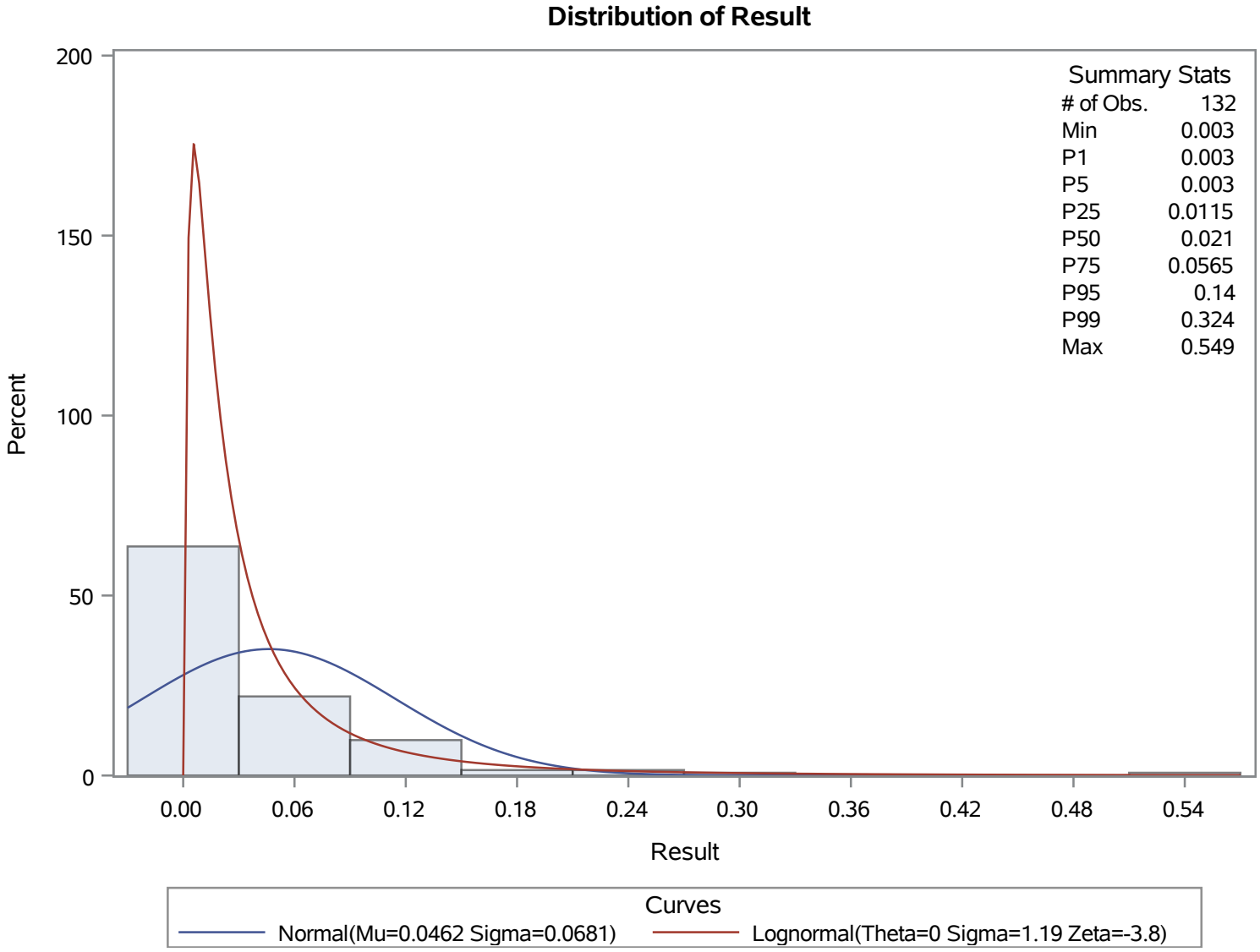
The UNIVARIATE Procedure

Distribution of Result



Little Manatee River
180
Nitrates/Nitrites (mg/l)
Site ID = 180

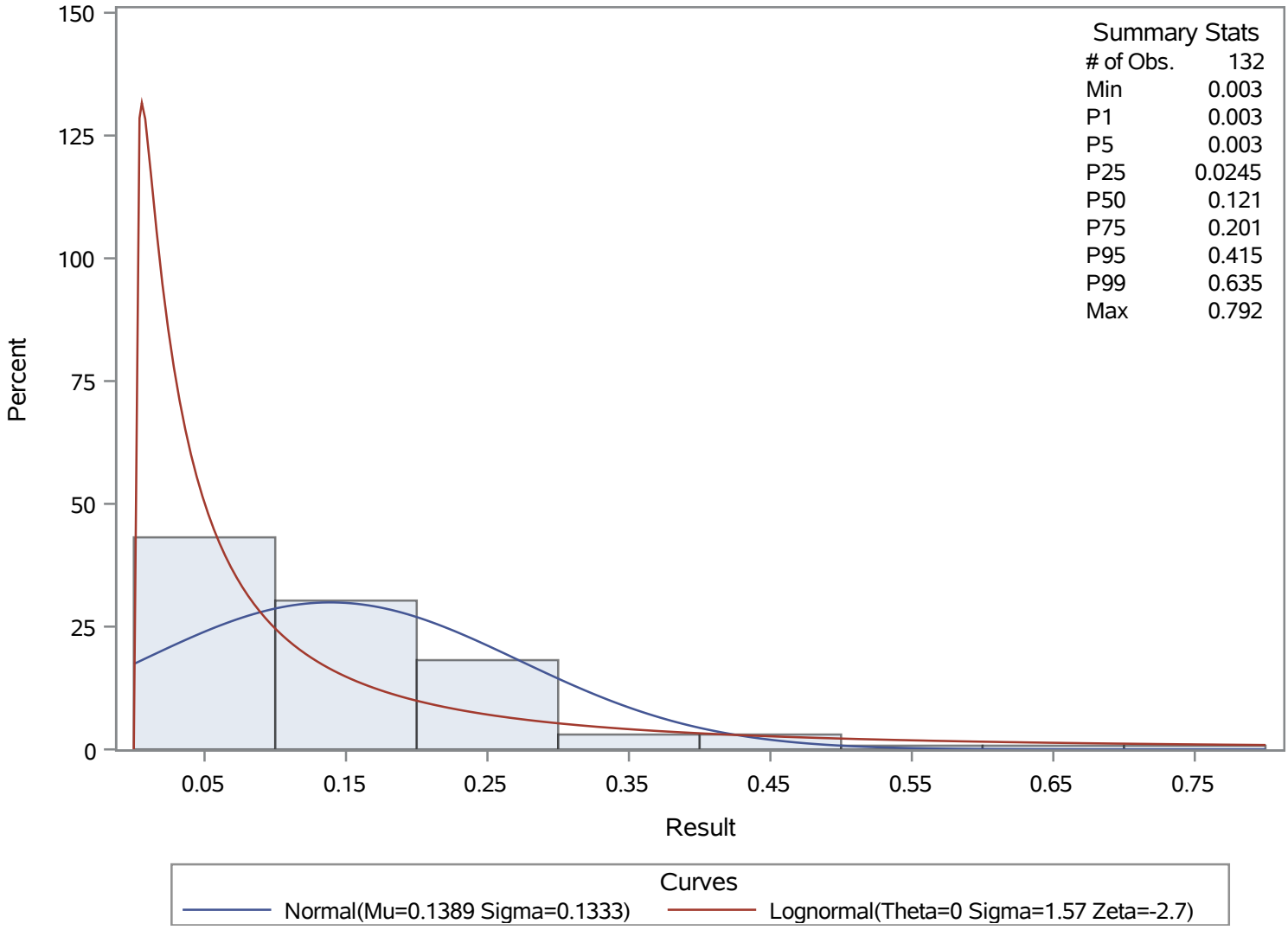
The UNIVARIATE Procedure



Little Manatee River
181
Nitrates/Nitrites (mg/l)
Site ID = 181

The UNIVARIATE Procedure

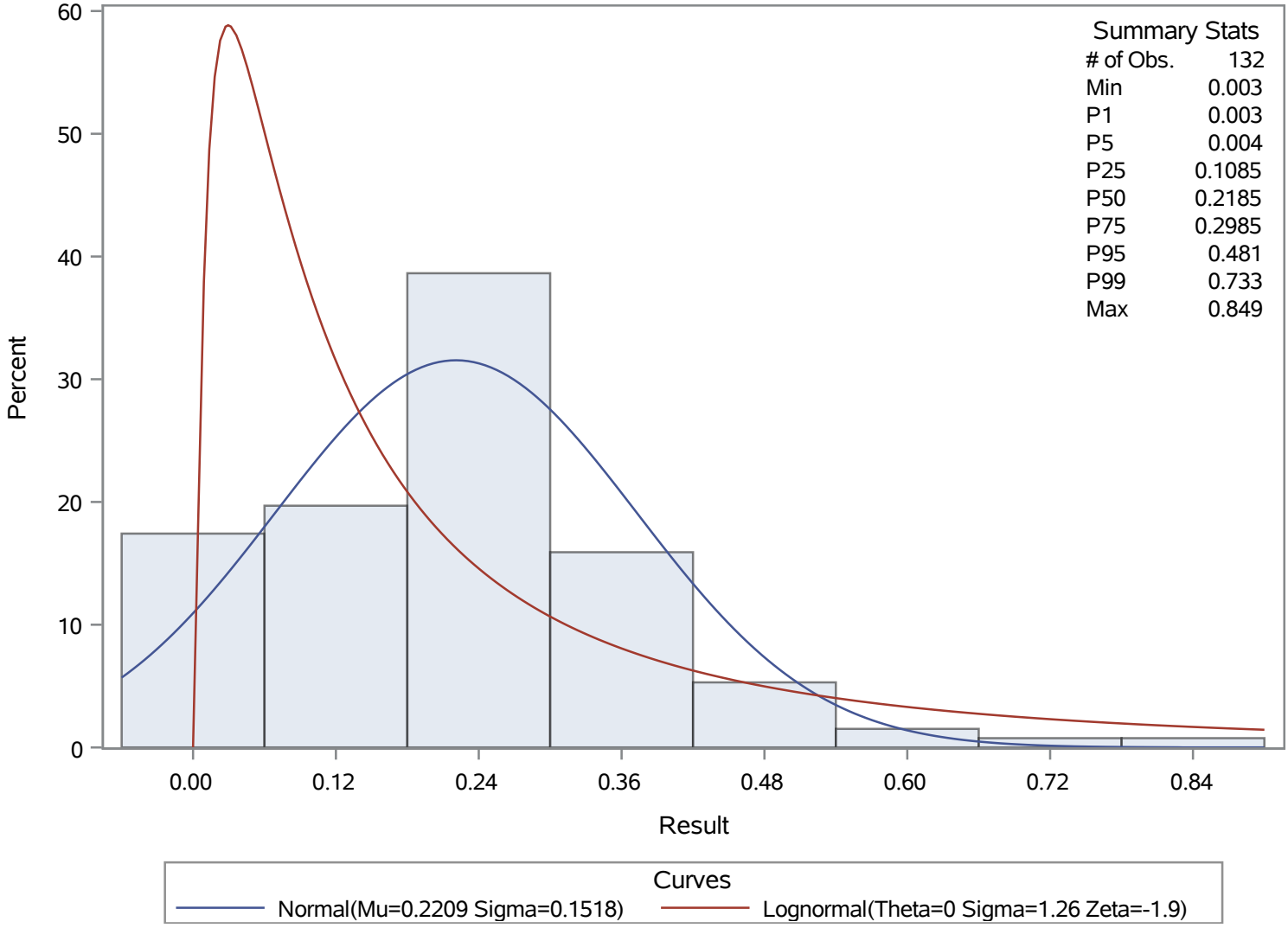
Distribution of Result



Little Manatee River
182
Nitrates/Nitrites (mg/l)
Site ID = 182

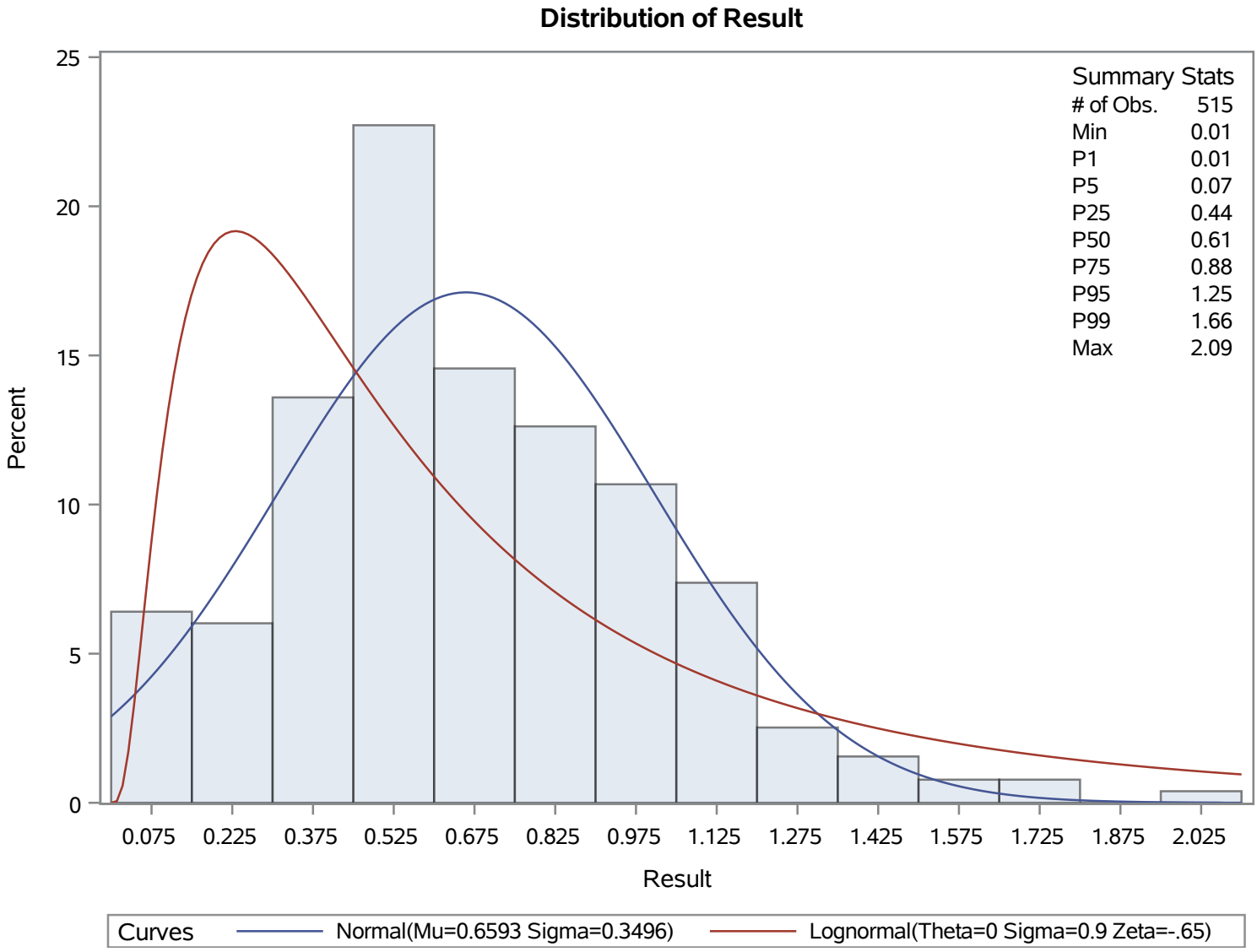
The UNIVARIATE Procedure

Distribution of Result



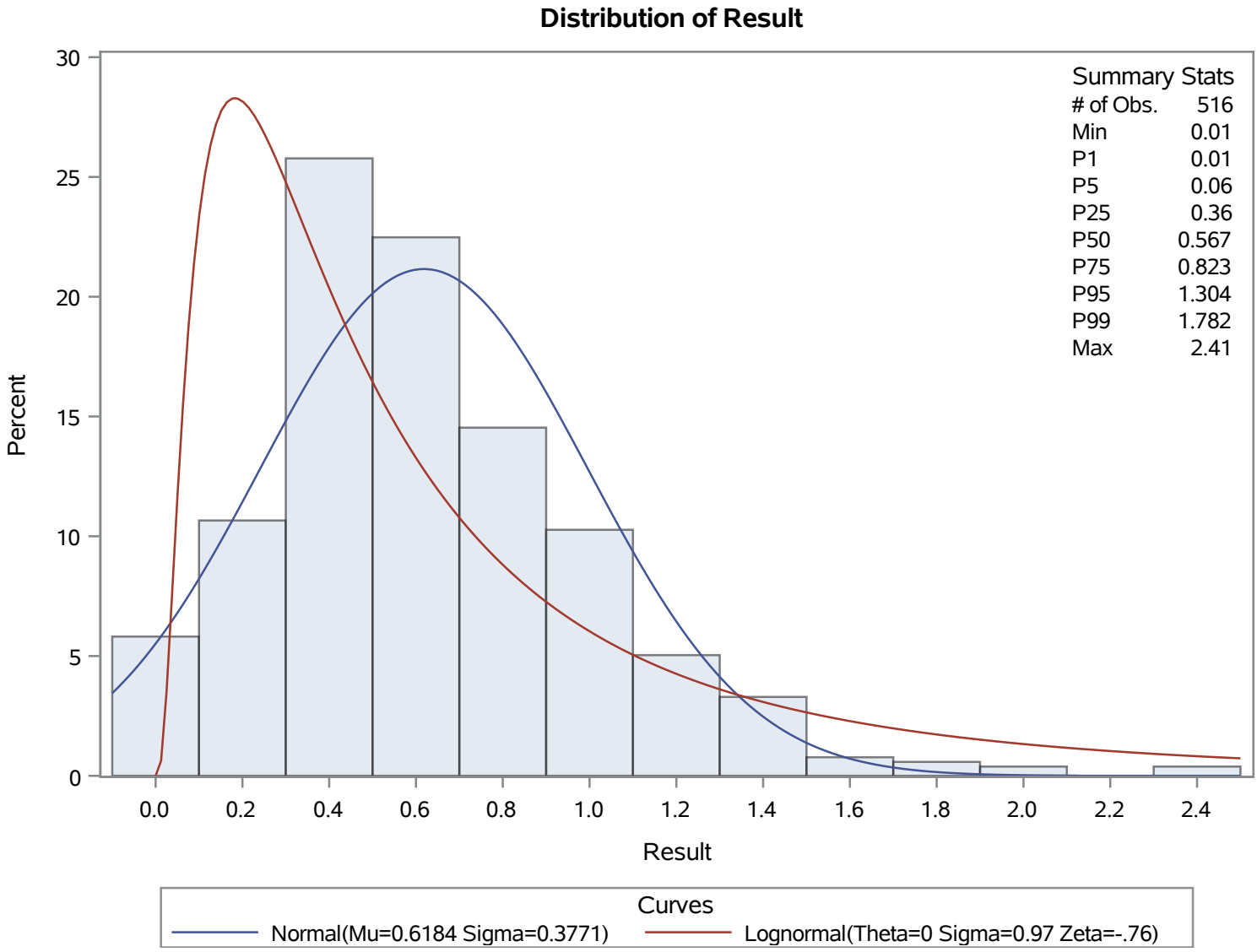
Little Manatee River
112
Organic Nitrogen (mg/l)
Site ID = 112

The UNIVARIATE Procedure



Little Manatee River
113
Organic Nitrogen (mg/l)
Site ID = 113

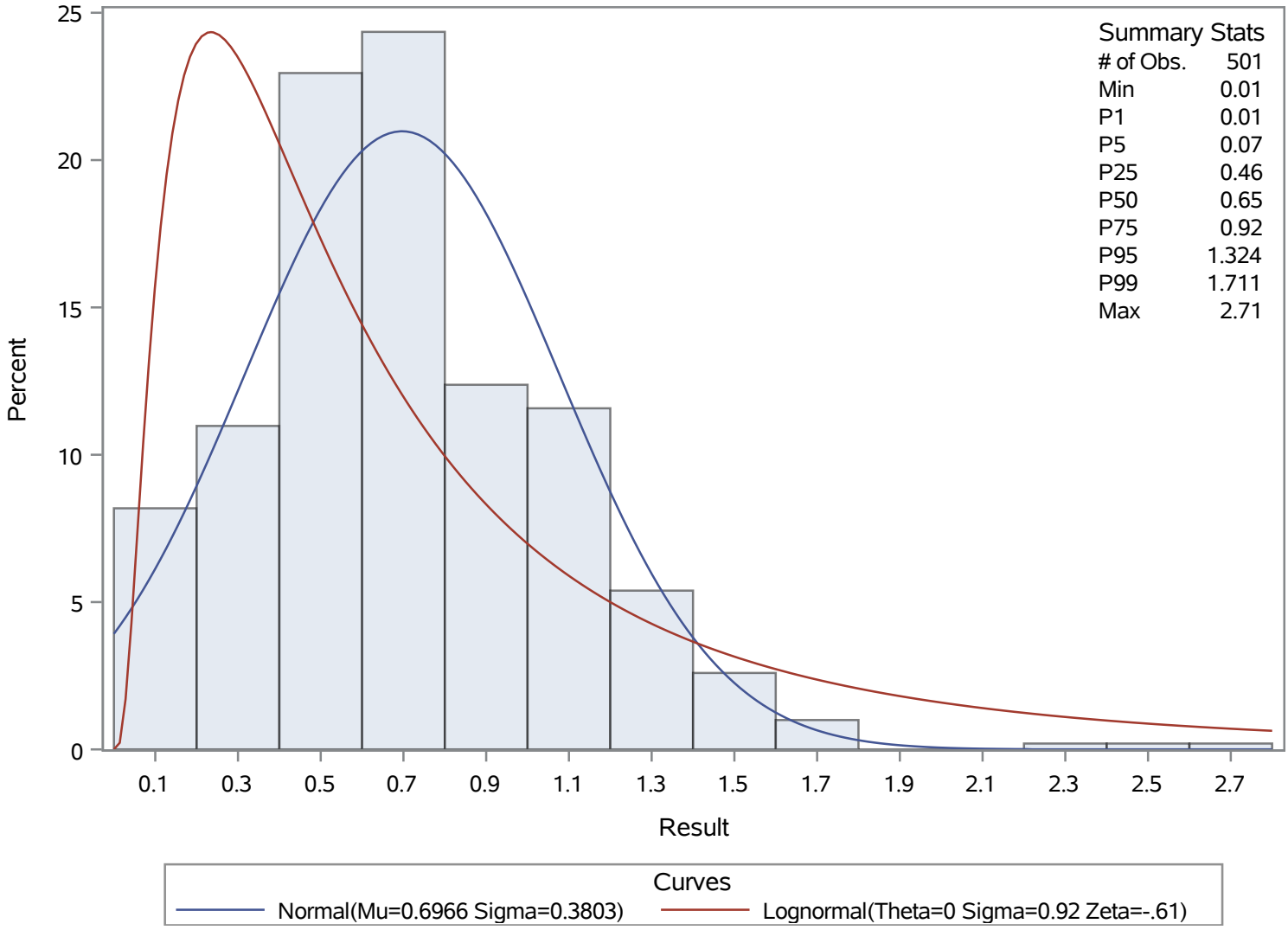
The UNIVARIATE Procedure



Little Manatee River
129
Organic Nitrogen (mg/l)
Site ID = 129

The UNIVARIATE Procedure

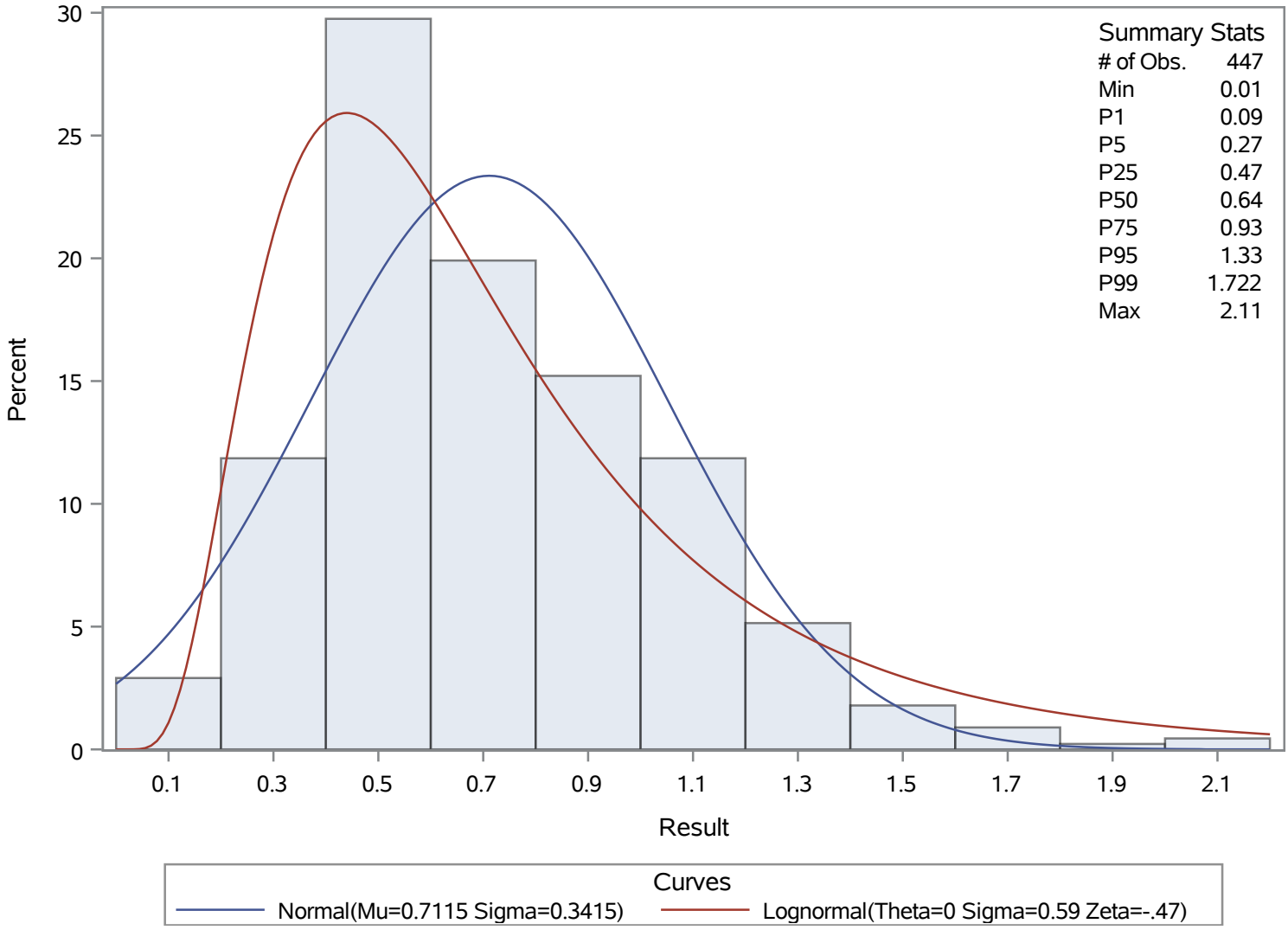
Distribution of Result



Little Manatee River
140
Organic Nitrogen (mg/l)
Site ID = 140

The UNIVARIATE Procedure

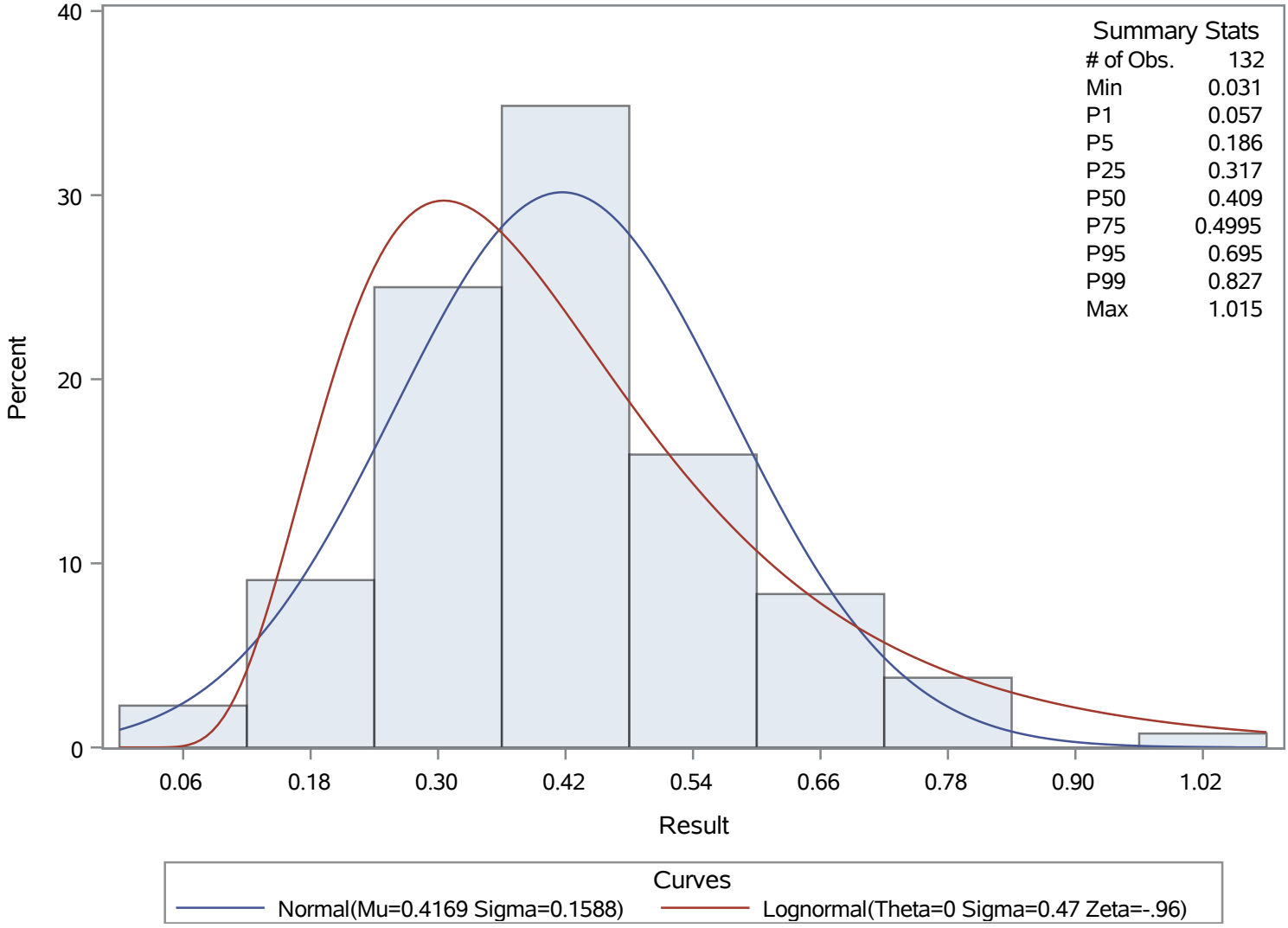
Distribution of Result



Little Manatee River
180
Organic Nitrogen (mg/l)
Site ID = 180

The UNIVARIATE Procedure

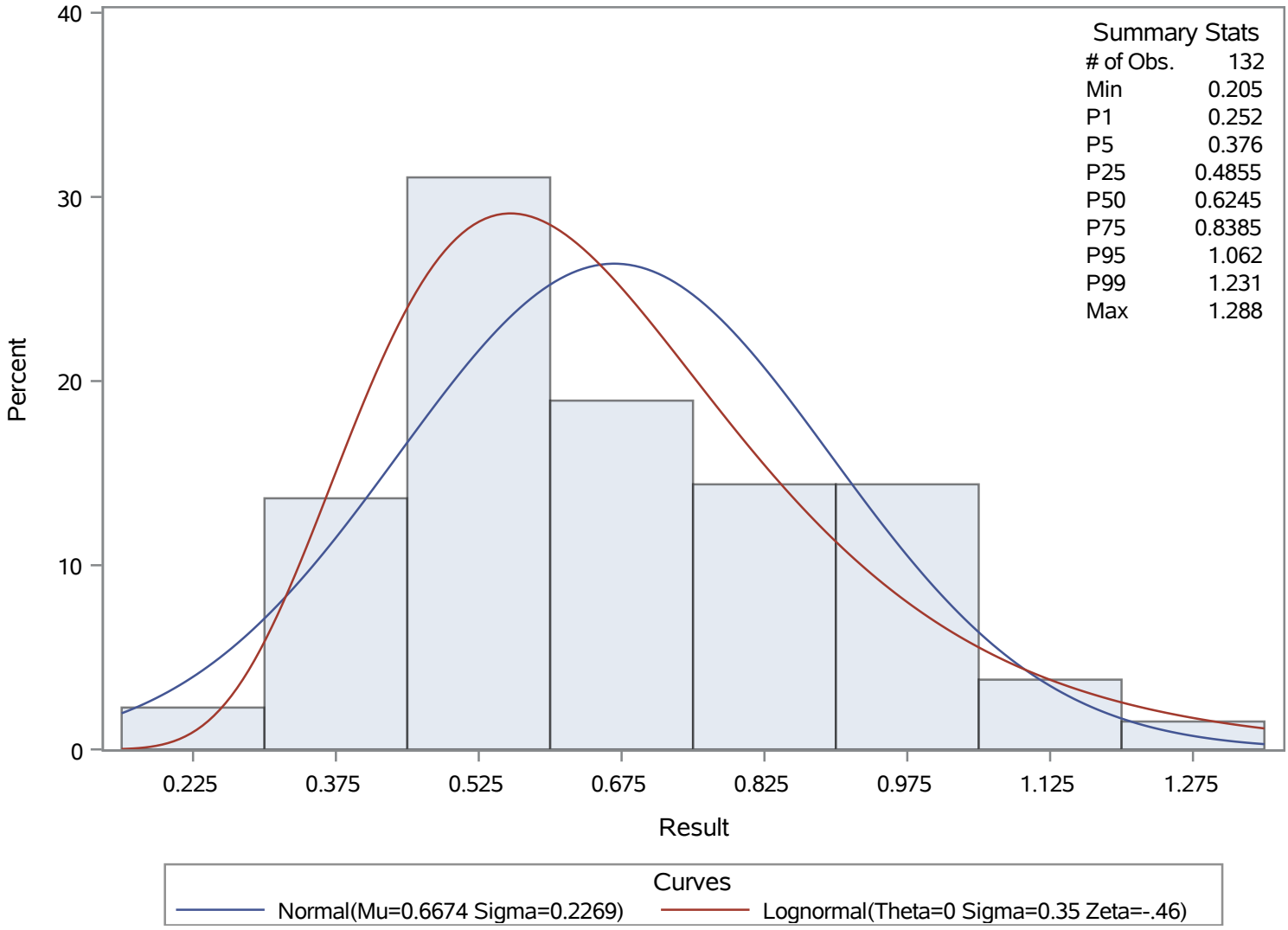
Distribution of Result



Little Manatee River
181
Organic Nitrogen (mg/l)
Site ID = 181

The UNIVARIATE Procedure

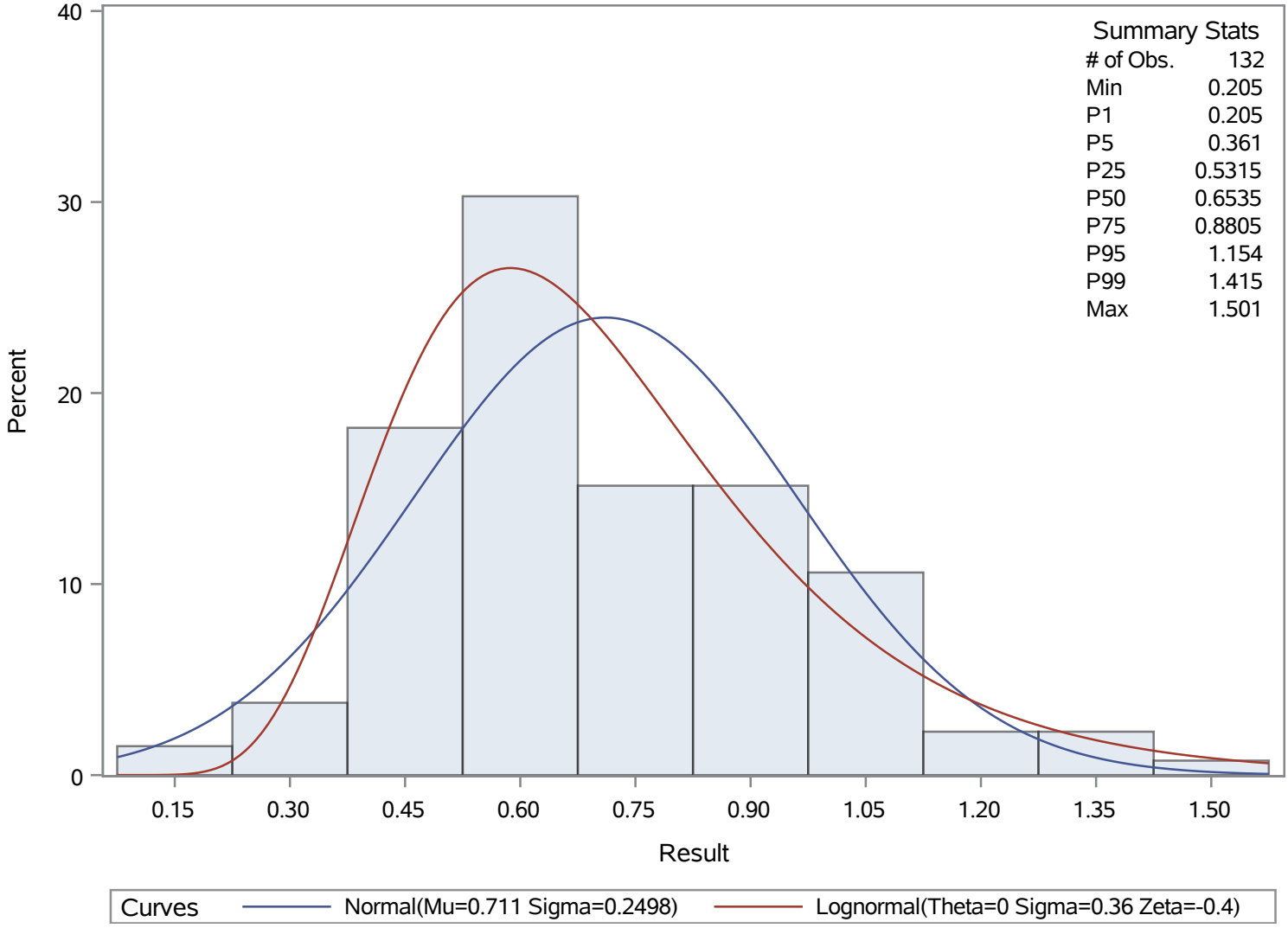
Distribution of Result



Little Manatee River
182
Organic Nitrogen (mg/l)
Site ID = 182

The UNIVARIATE Procedure

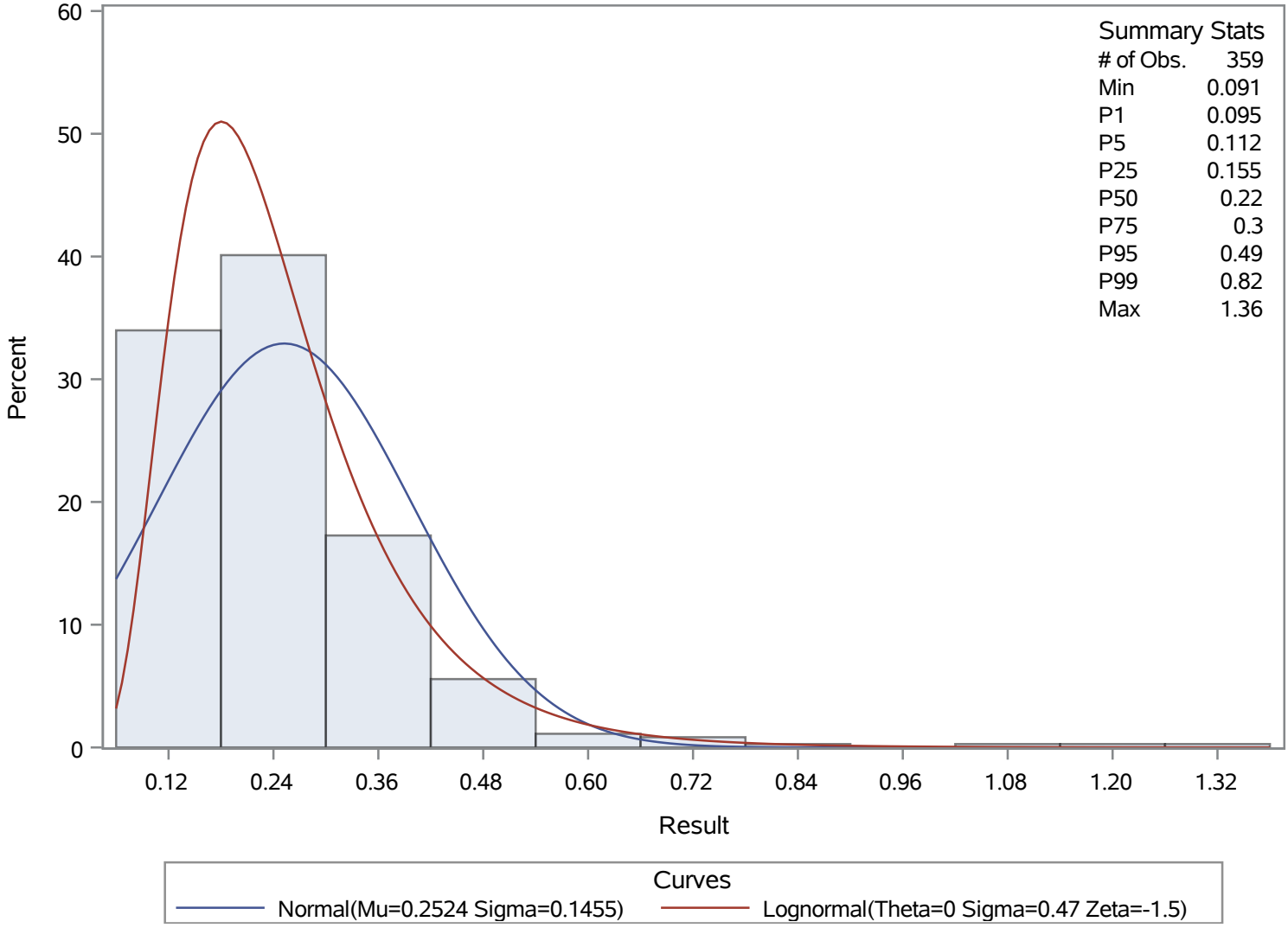
Distribution of Result



Little Manatee River
112
Ortho Phosphates (mg/l)
Site ID = 112

The UNIVARIATE Procedure

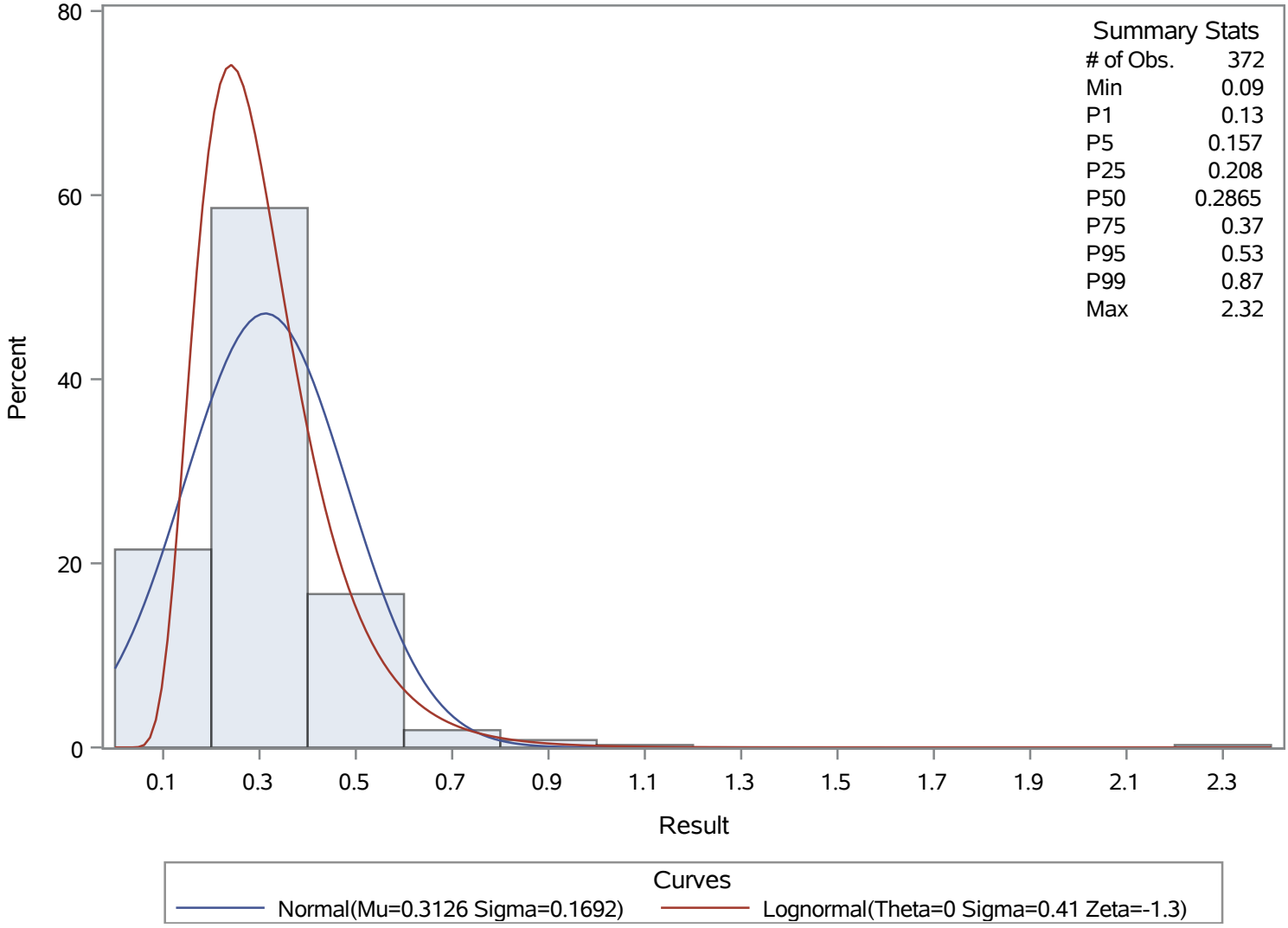
Distribution of Result



Little Manatee River
113
Ortho Phosphates (mg/l)
Site ID = 113

The UNIVARIATE Procedure

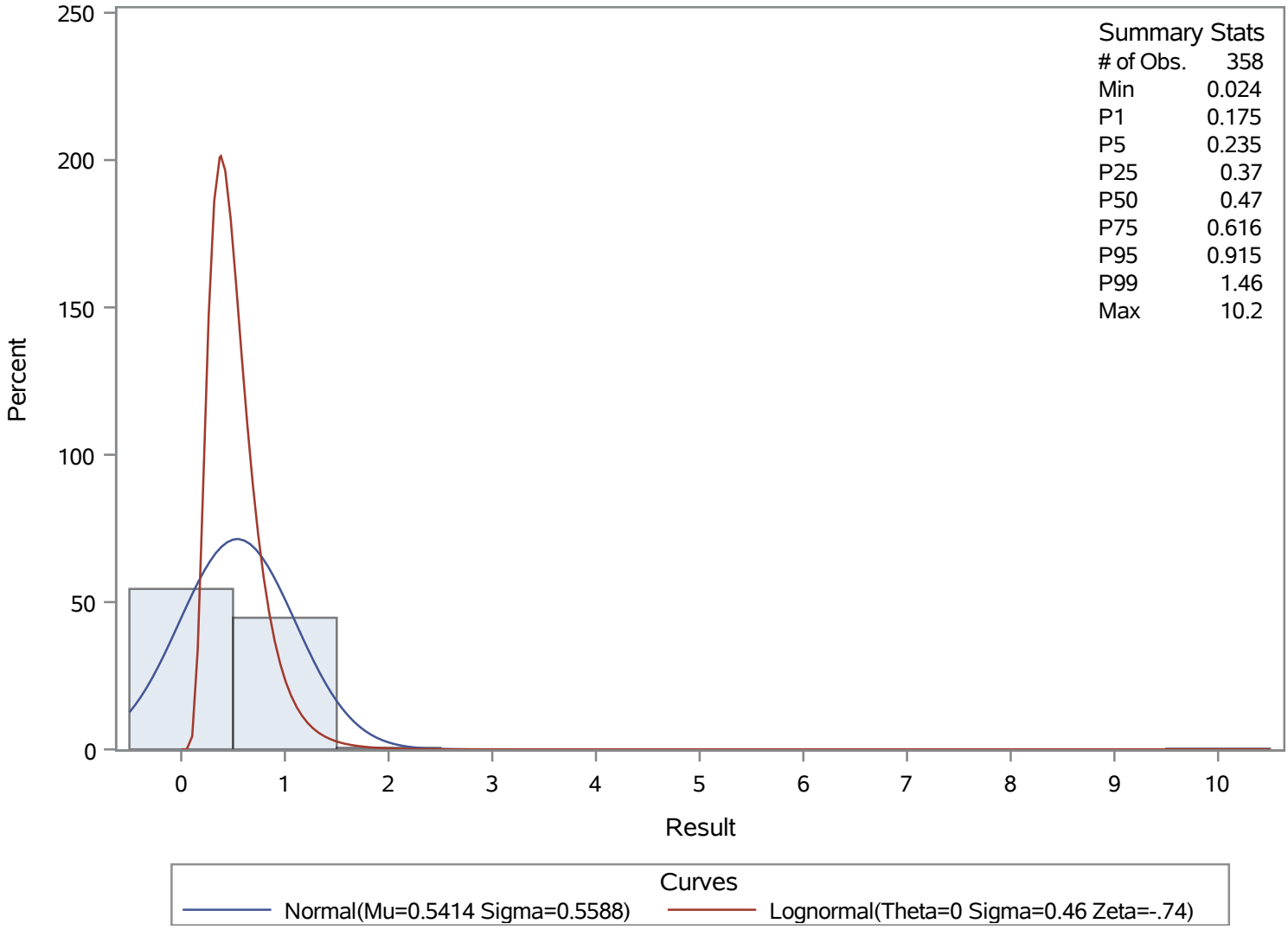
Distribution of Result



Little Manatee River
129
Ortho Phosphates (mg/l)
Site ID = 129

The UNIVARIATE Procedure

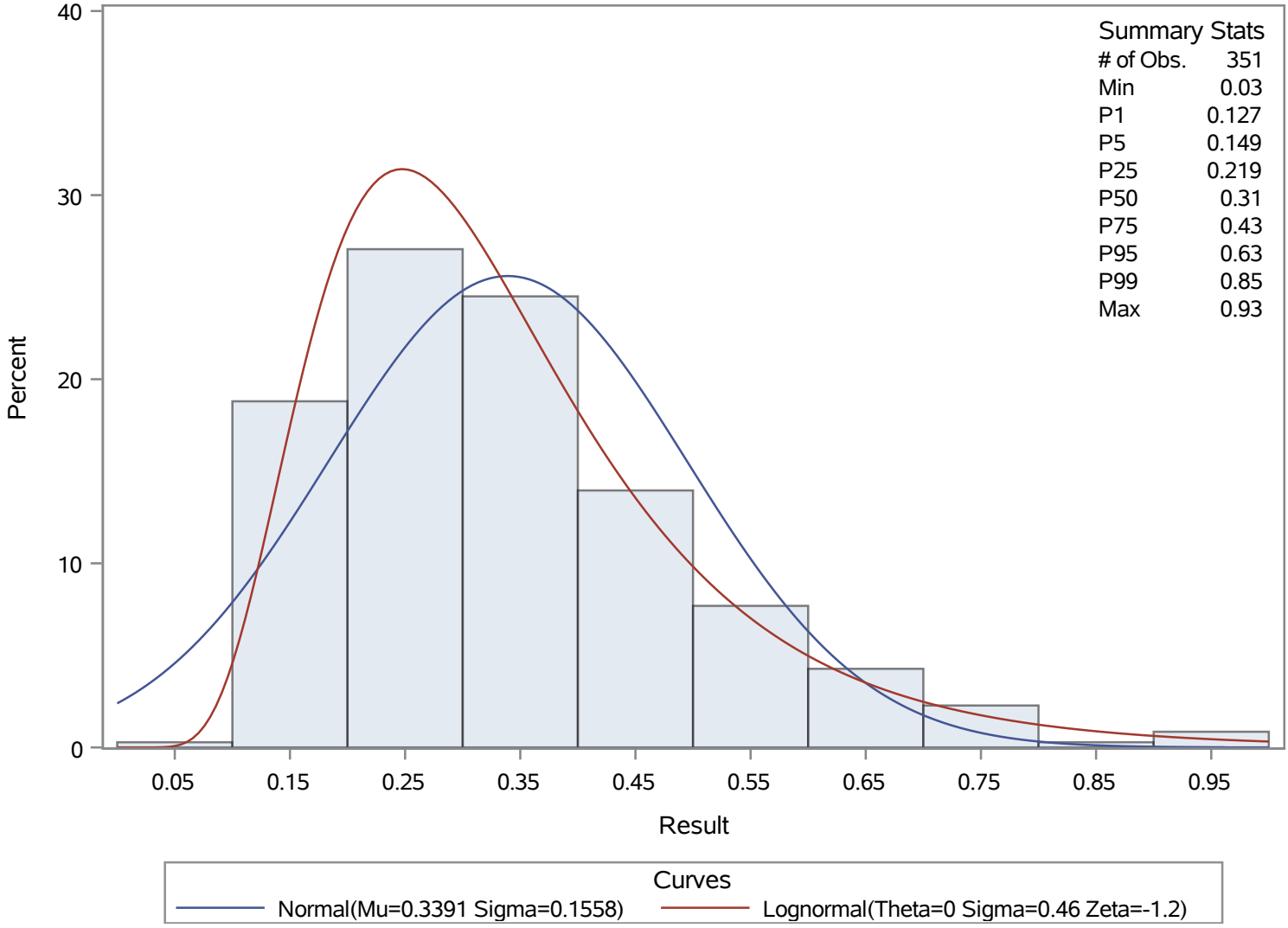
Distribution of Result



Little Manatee River
140
Ortho Phosphates (mg/l)
Site ID = 140

The UNIVARIATE Procedure

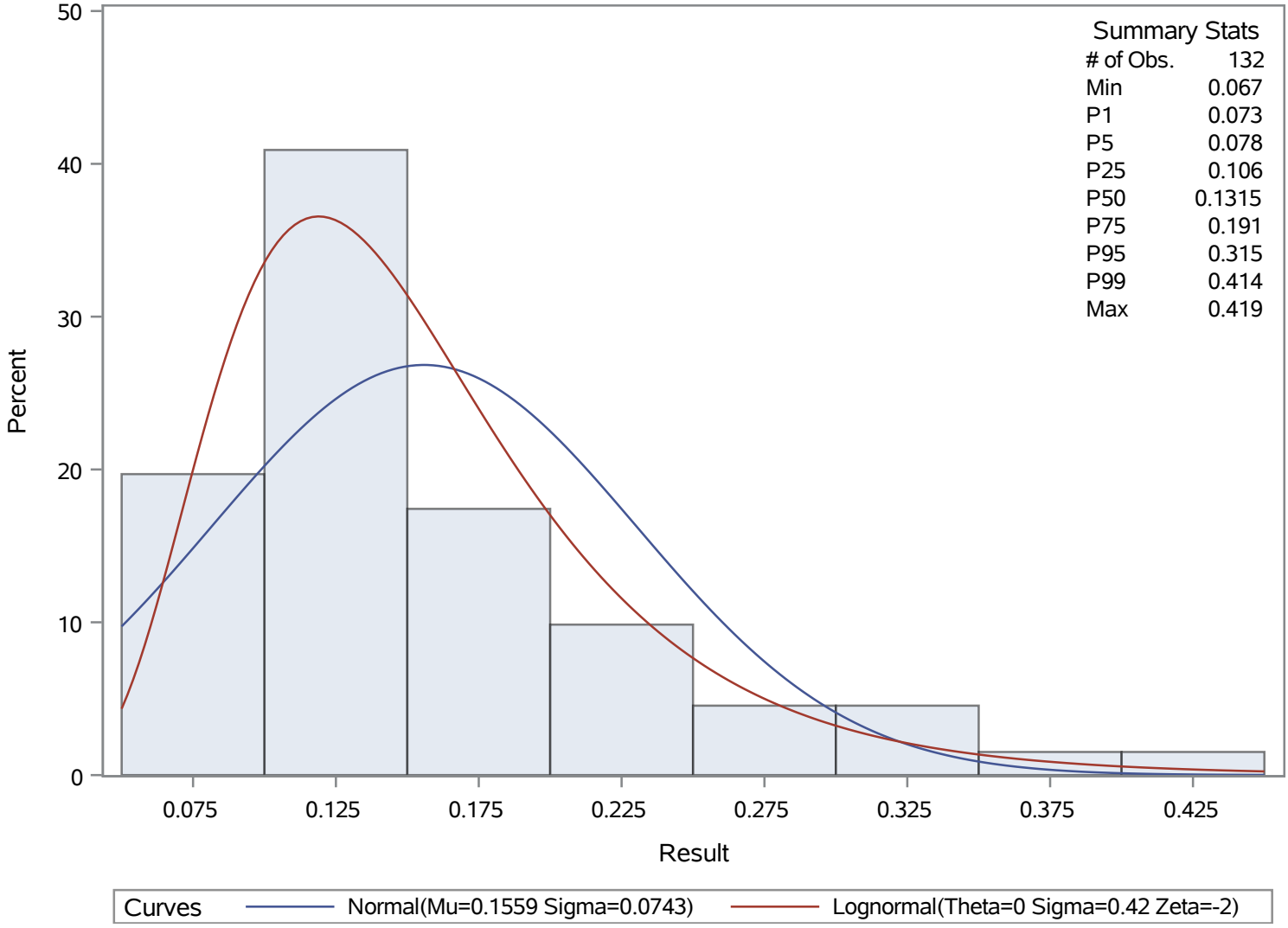
Distribution of Result



Little Manatee River
180
Ortho Phosphates (mg/l)
Site ID = 180

The UNIVARIATE Procedure

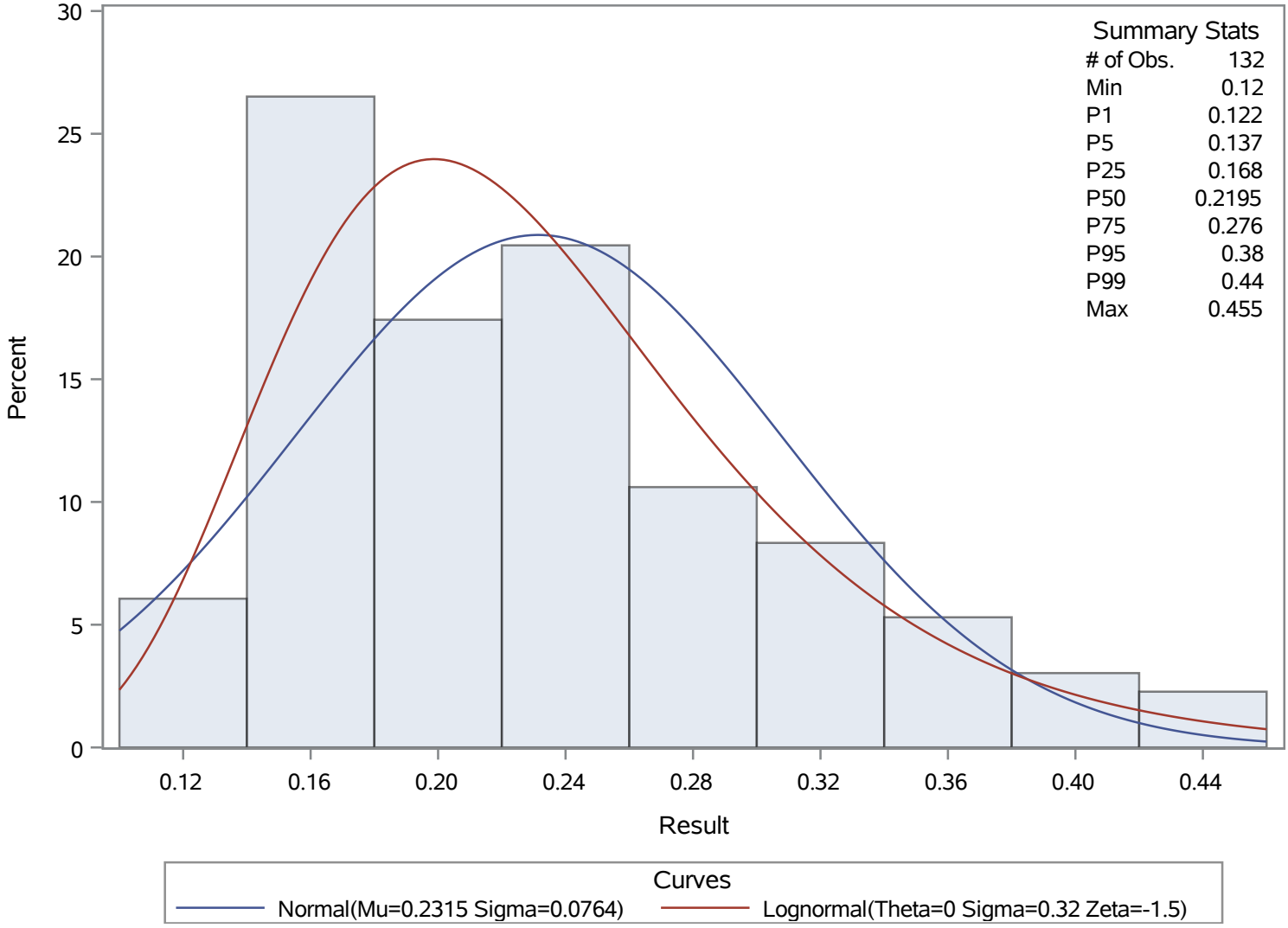
Distribution of Result



Little Manatee River
181
Ortho Phosphates (mg/l)
Site ID = 181

The UNIVARIATE Procedure

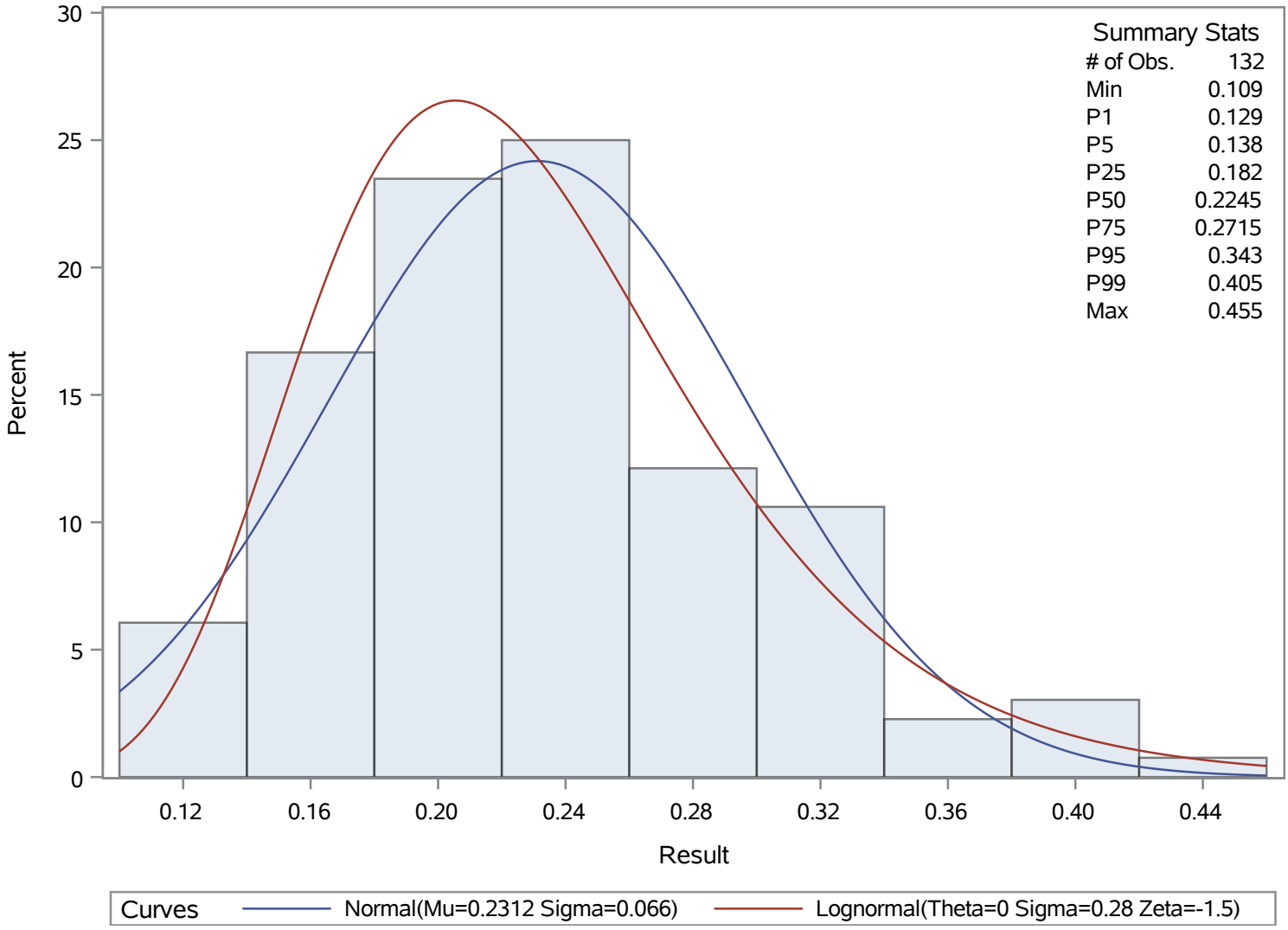
Distribution of Result



Little Manatee River
182
Ortho Phosphates (mg/l)
Site ID = 182

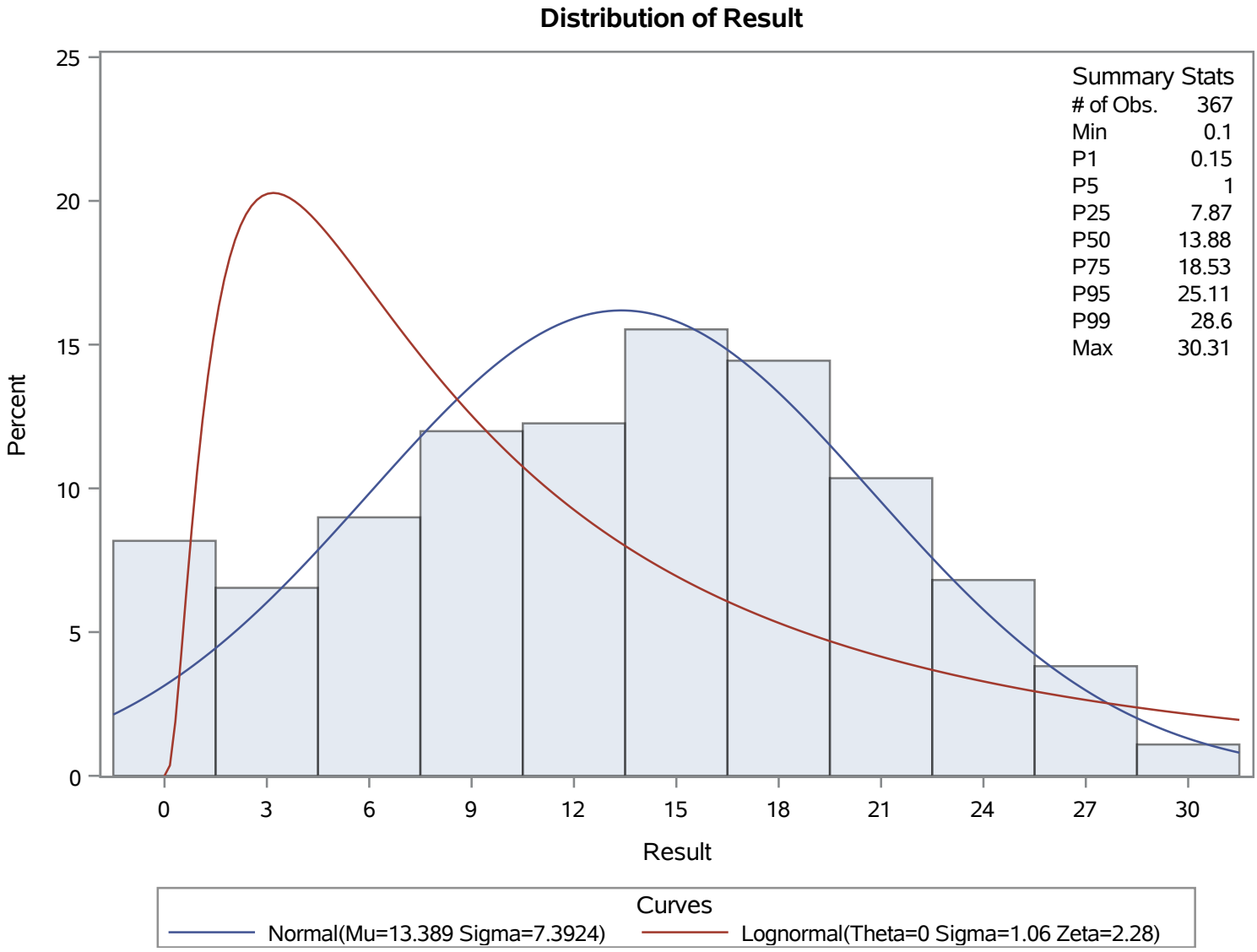
The UNIVARIATE Procedure

Distribution of Result



Little Manatee River
112
Sal Bottom (ppth)
Site ID = 112

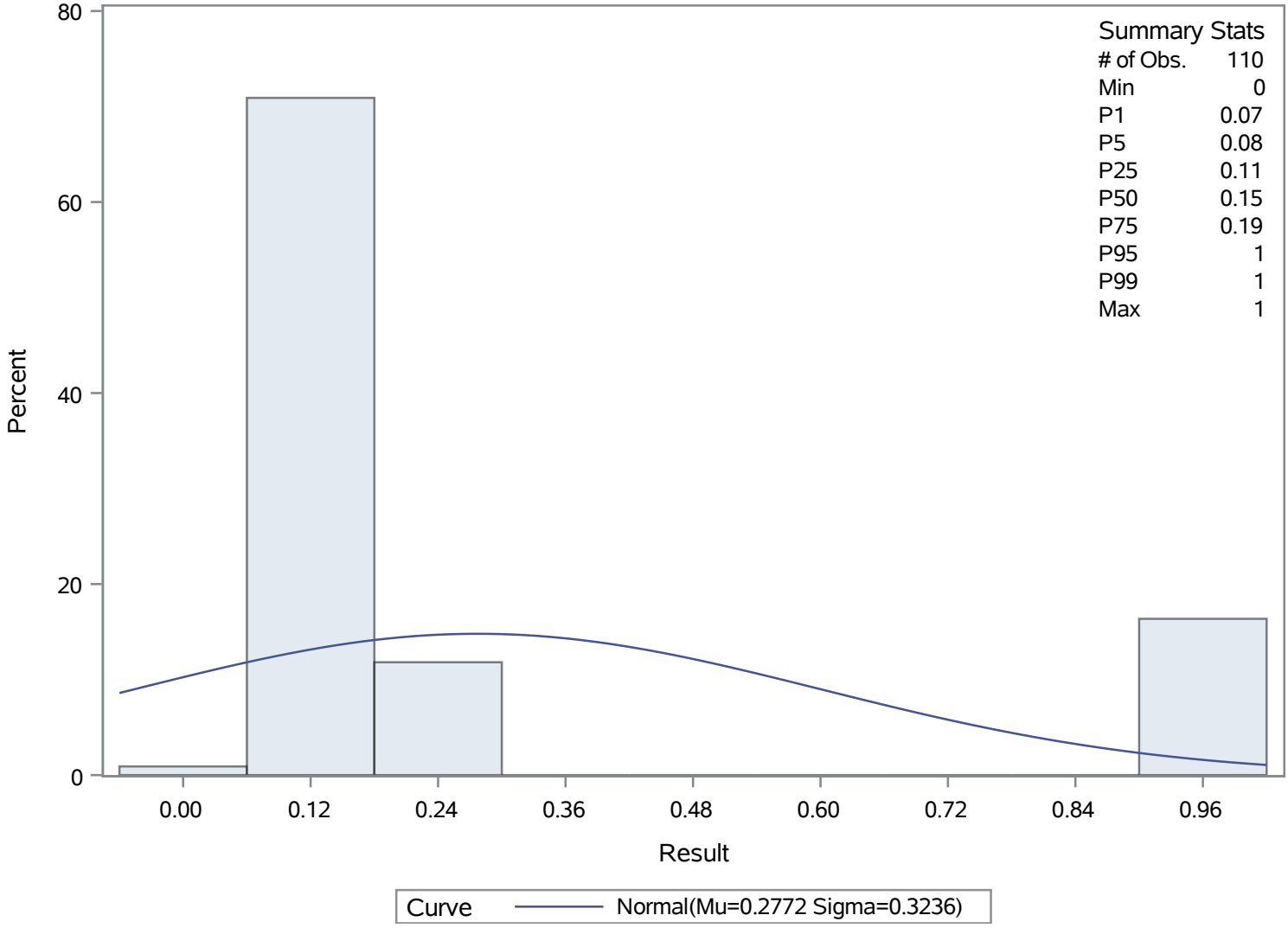
The UNIVARIATE Procedure



Little Manatee River
113
Sal Bottom (ppth)
Site ID = 113

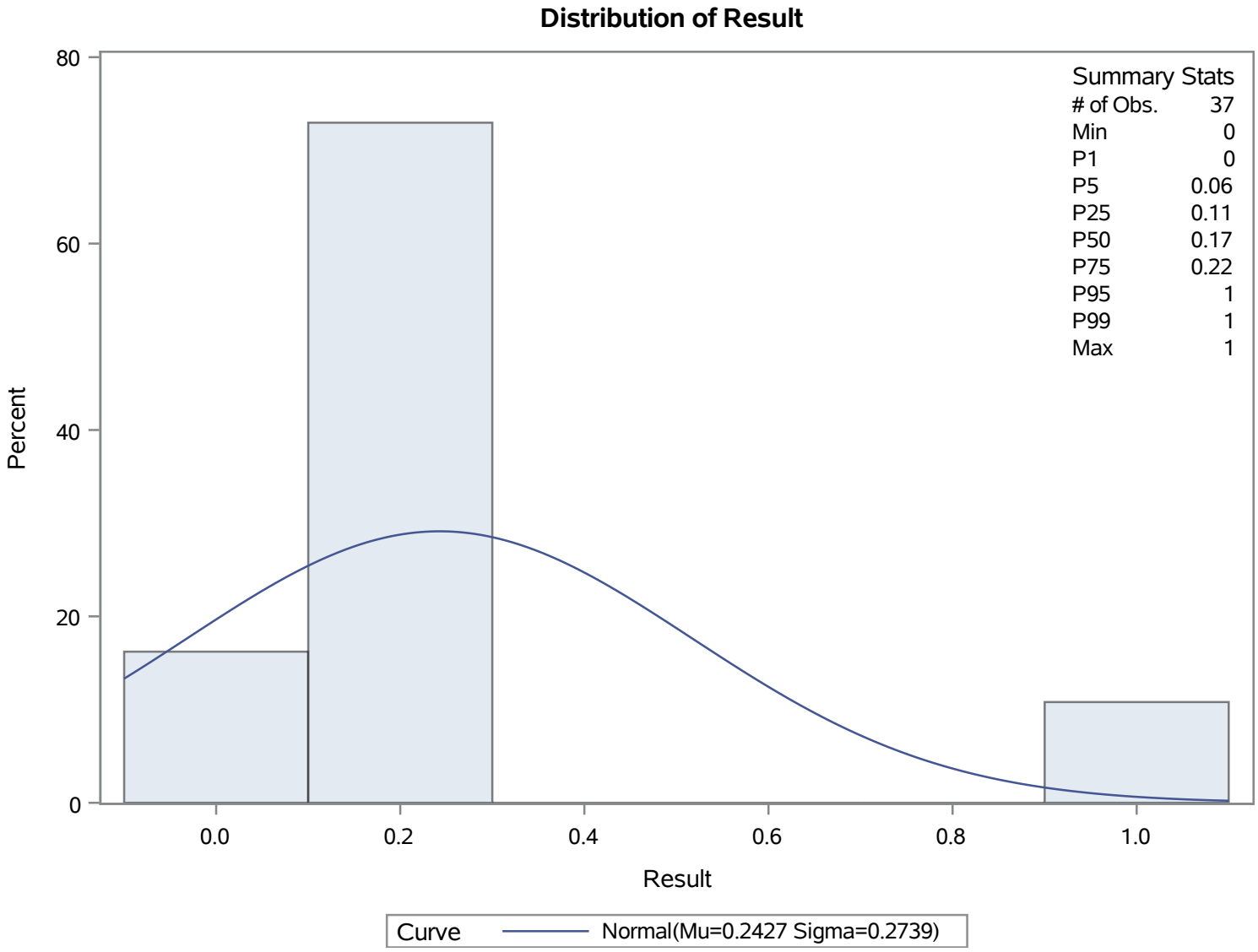
The UNIVARIATE Procedure

Distribution of Result



Little Manatee River
129
Sal Bottom (ppth)
Site ID = 129

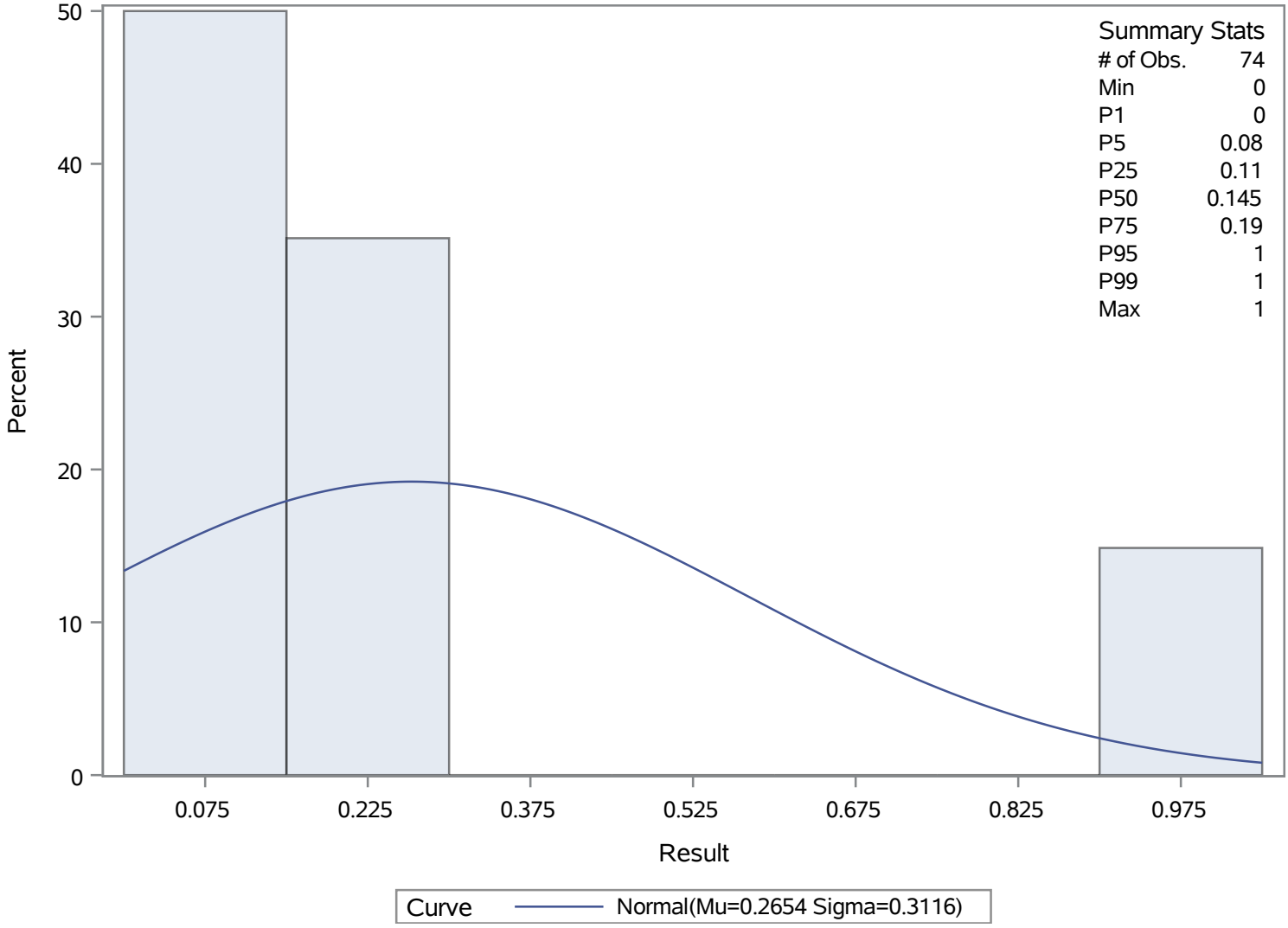
The UNIVARIATE Procedure



Little Manatee River
140
Sal Bottom (ppth)
Site ID = 140

The UNIVARIATE Procedure

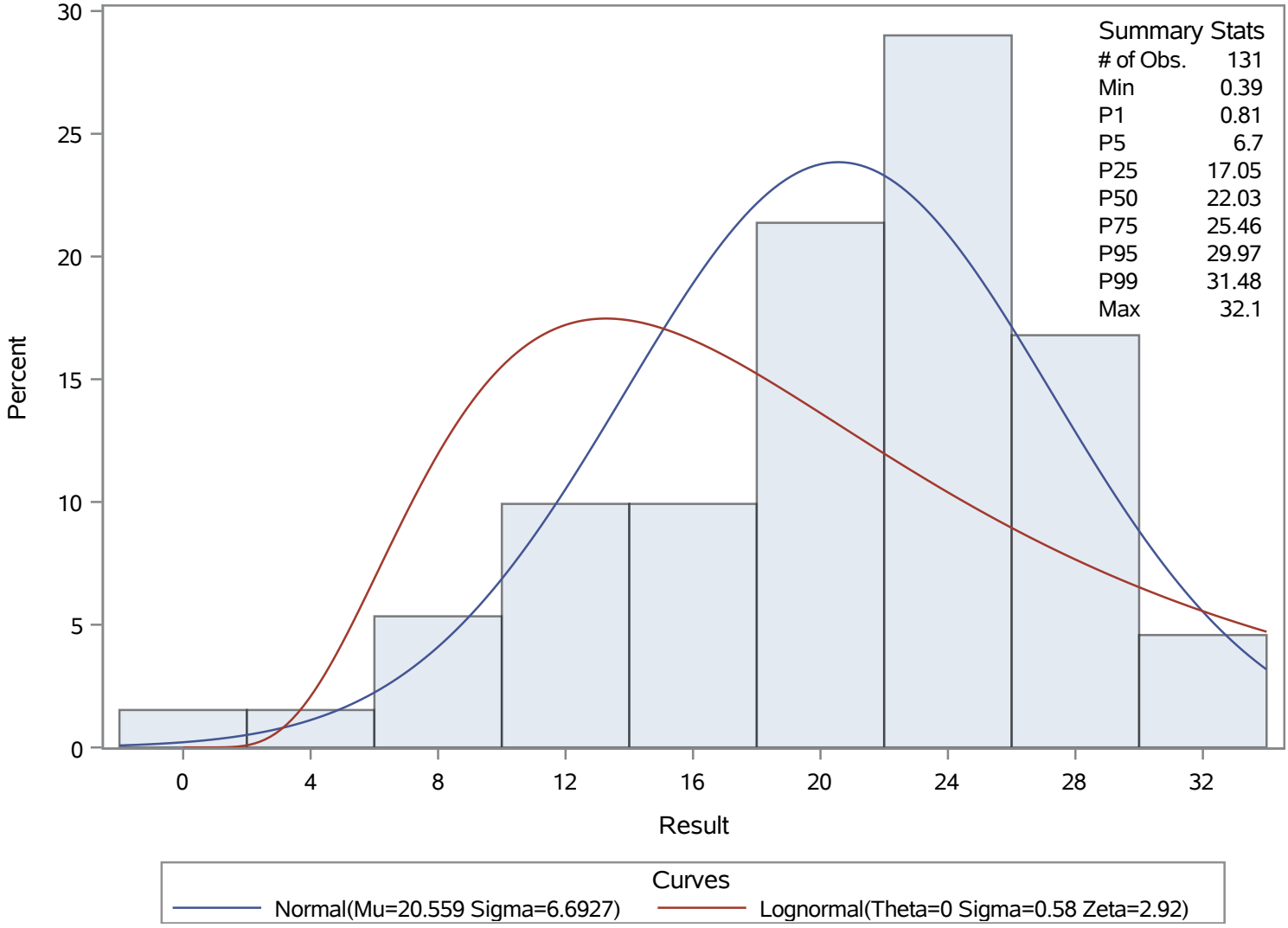
Distribution of Result



Little Manatee River
180
Sal Bottom (ppth)
Site ID = 180

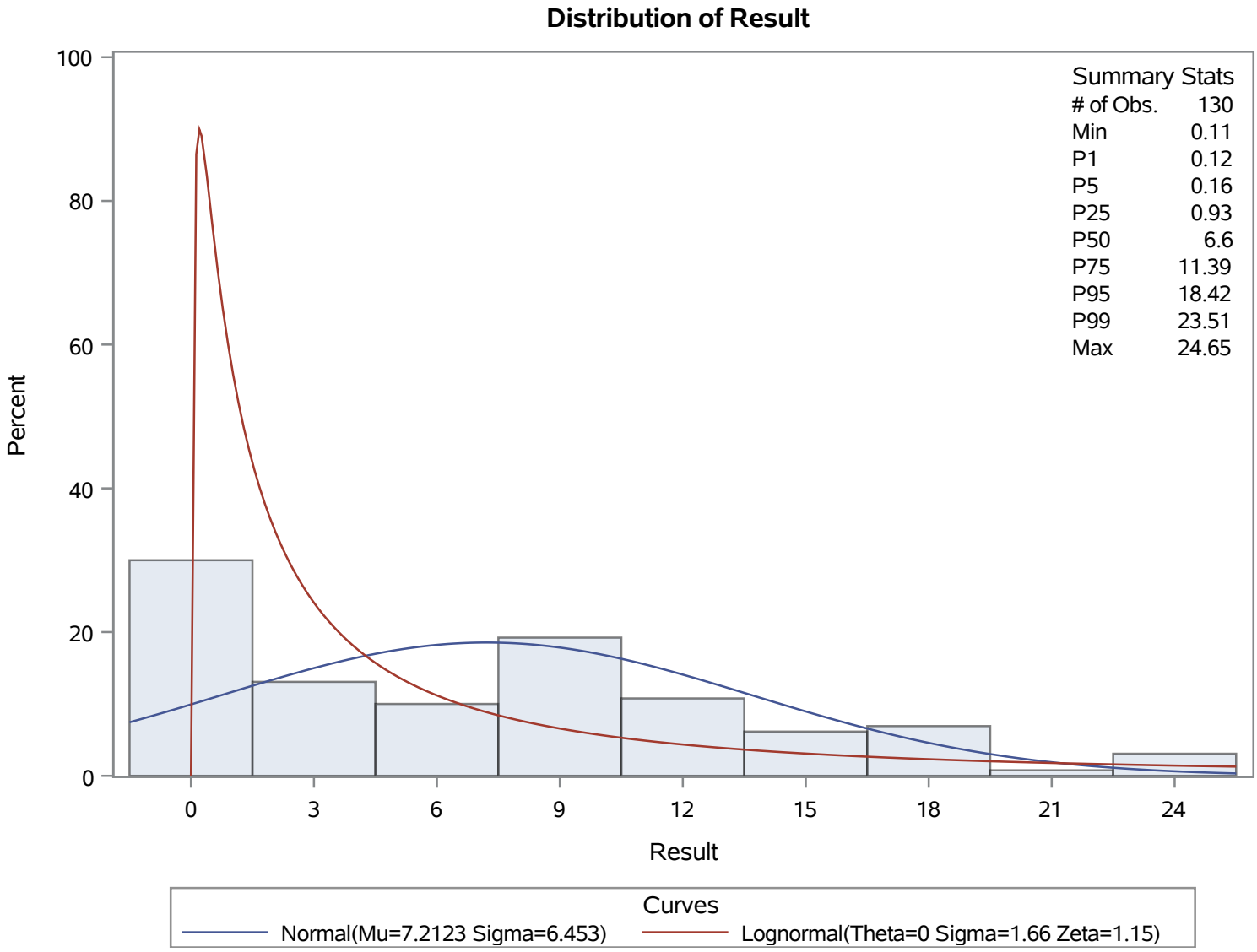
The UNIVARIATE Procedure

Distribution of Result



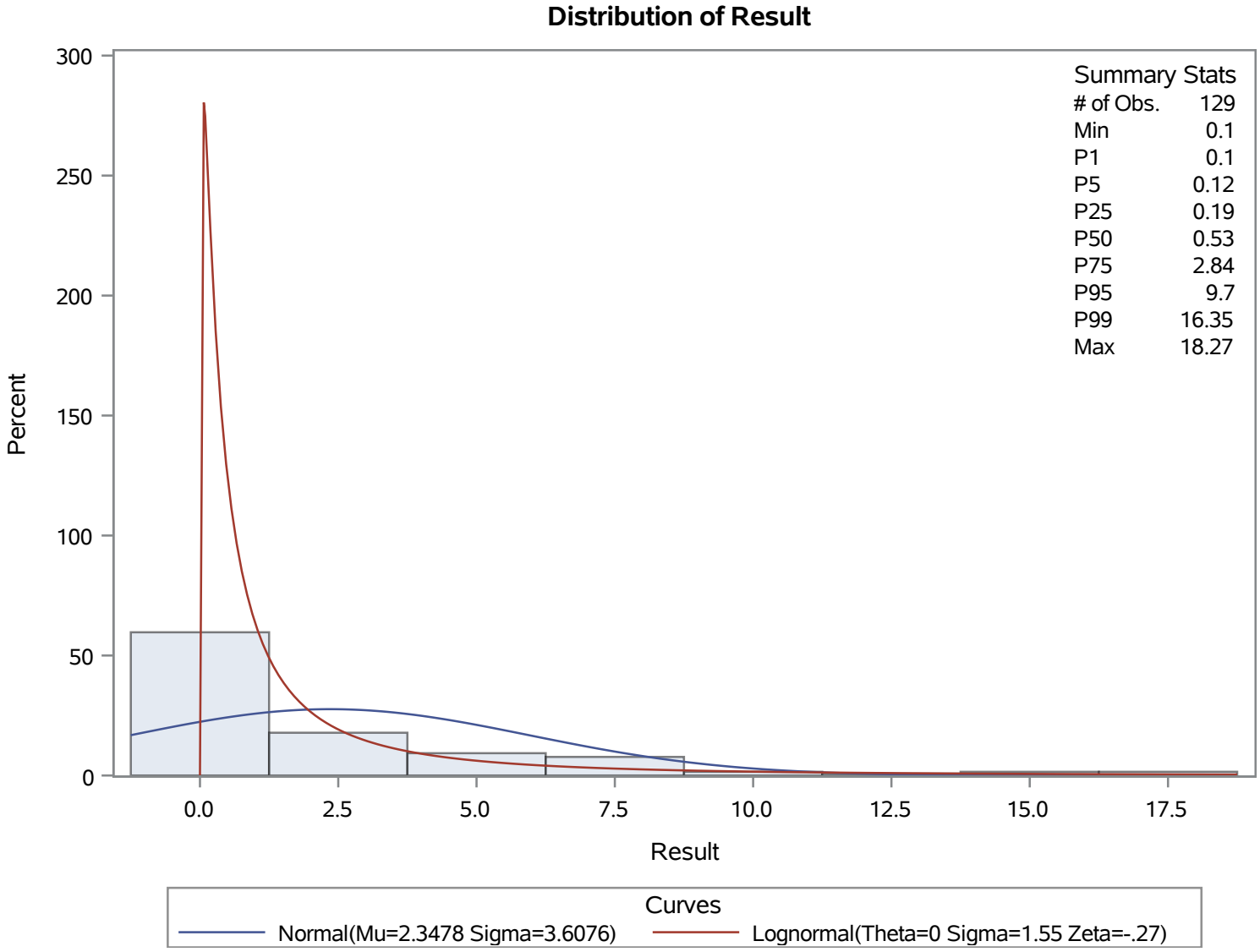
Little Manatee River
181
Sal Bottom (ppth)
Site ID = 181

The UNIVARIATE Procedure



Little Manatee River
182
Sal Bottom (ppth)
Site ID = 182

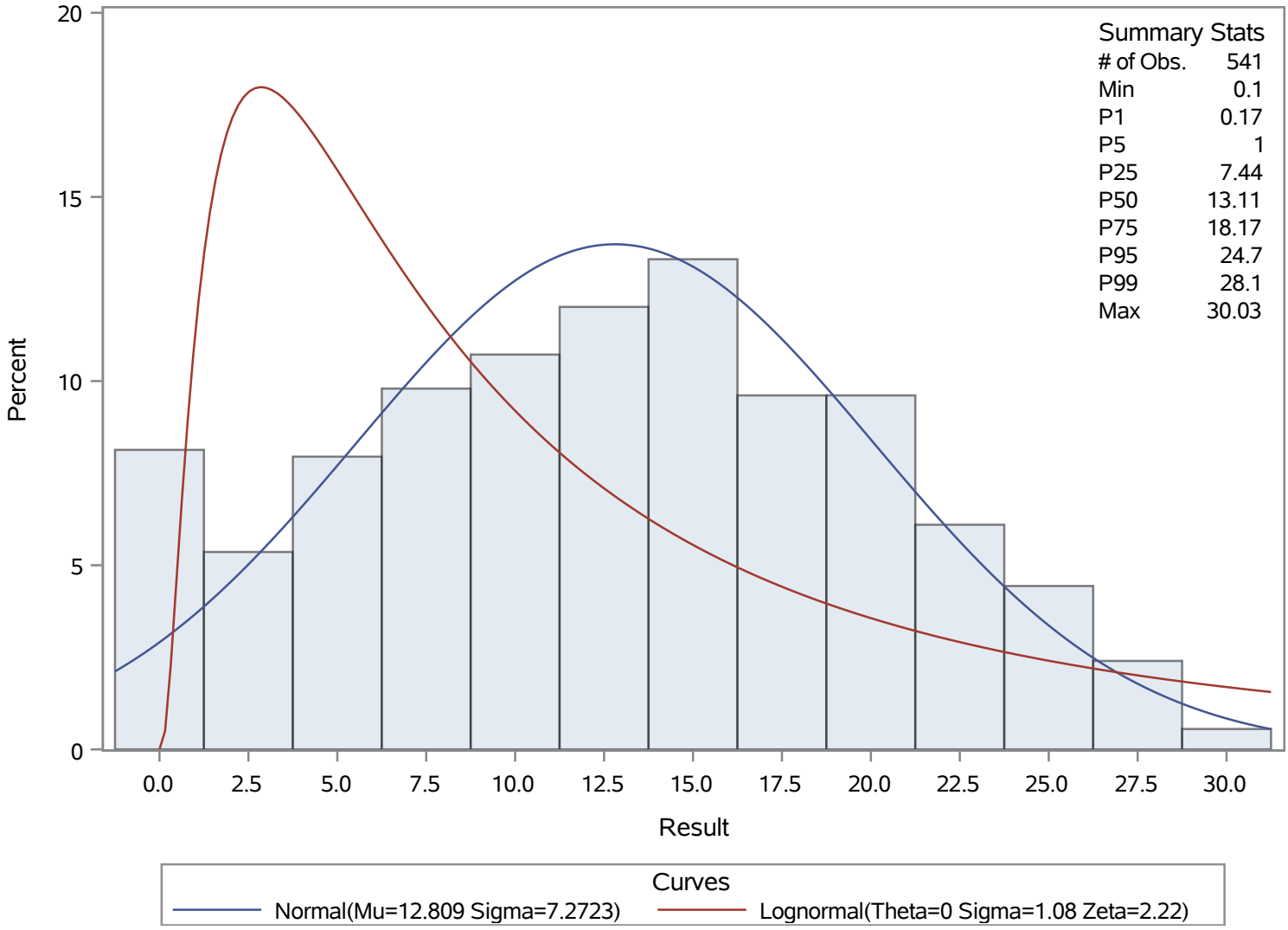
The UNIVARIATE Procedure



Little Manatee River
112
Sal Mid (ppth)
Site ID = 112

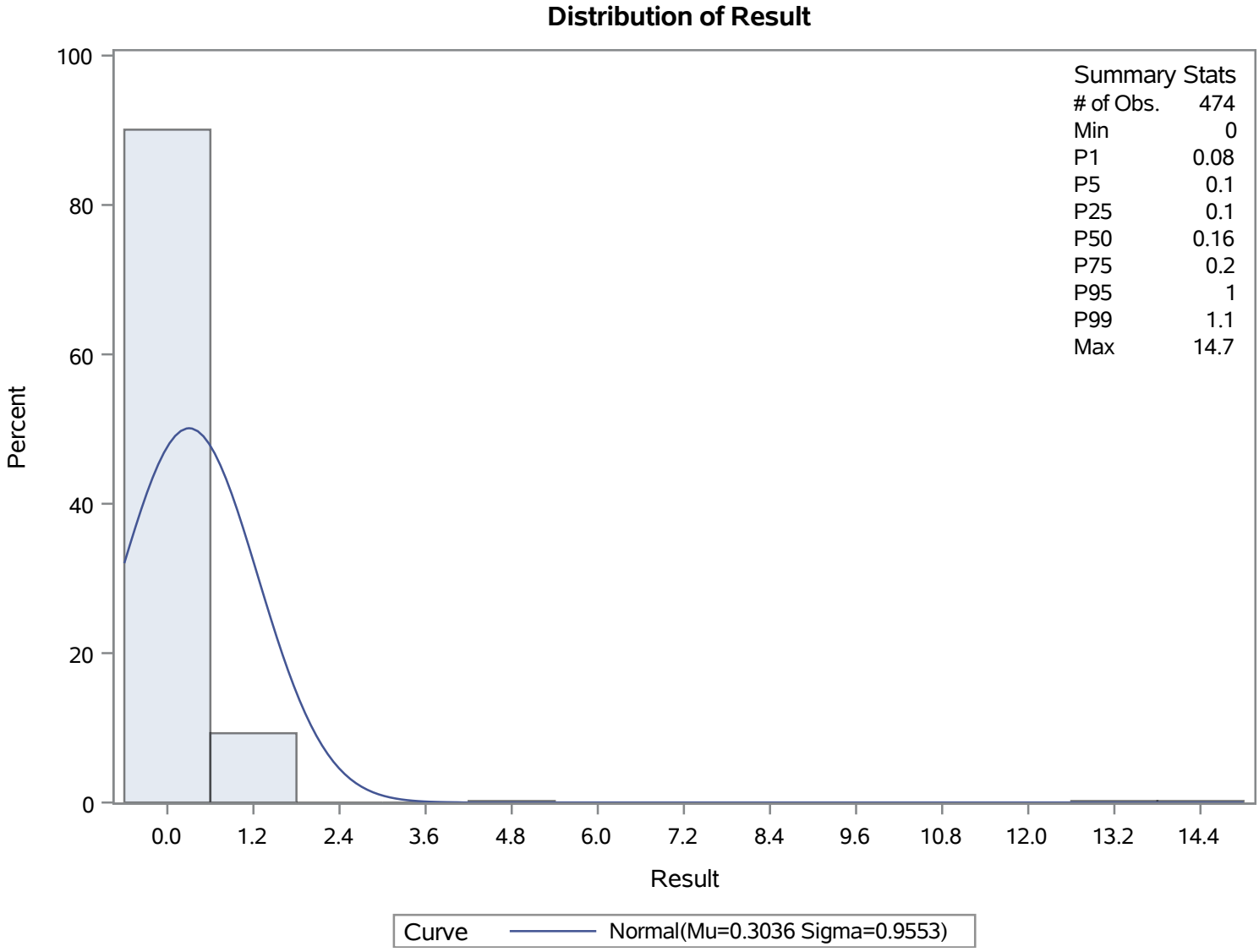
The UNIVARIATE Procedure

Distribution of Result



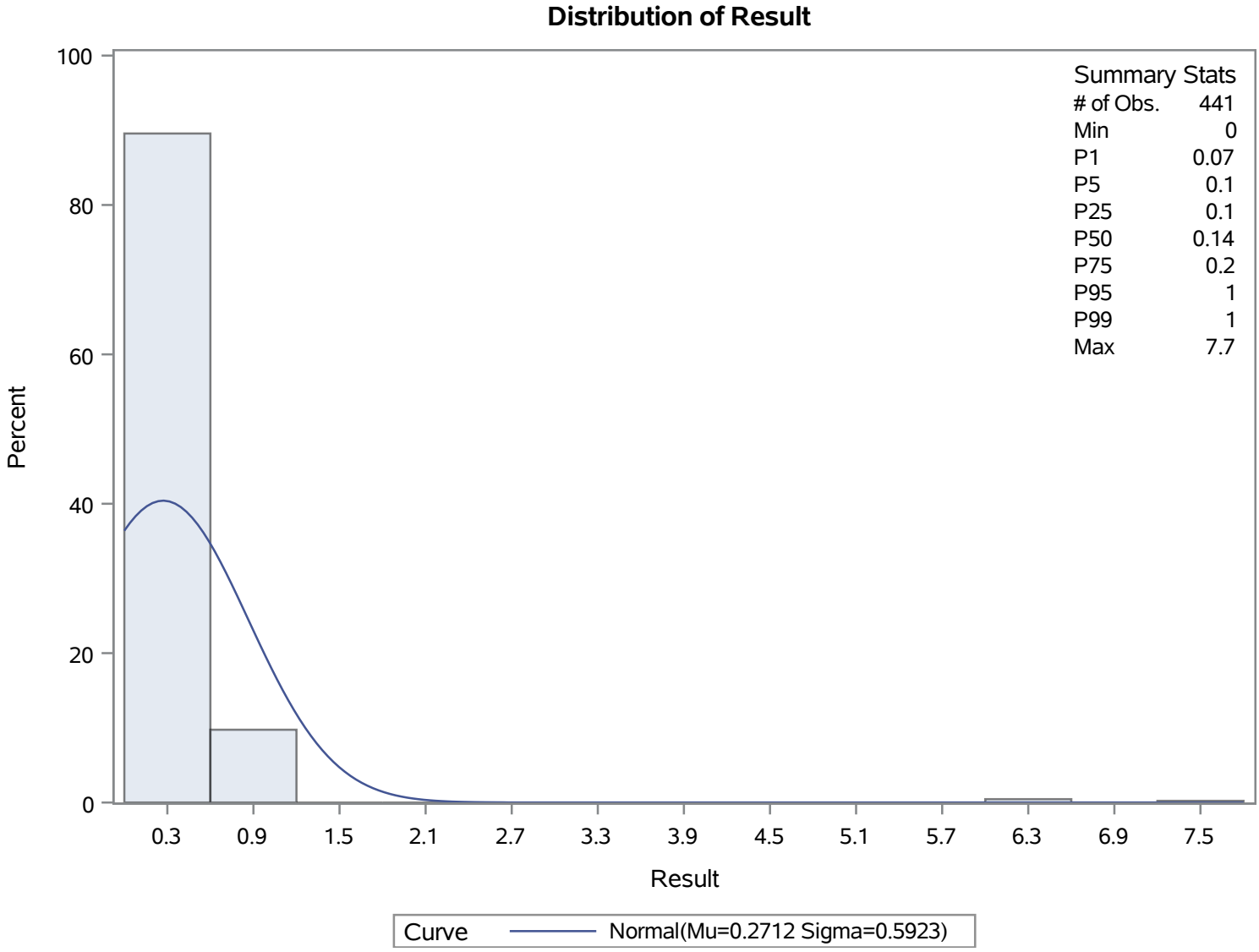
Little Manatee River
113
Sal Mid (ppth)
Site ID = 113

The UNIVARIATE Procedure



Little Manatee River
129
Sal Mid (ppth)
Site ID = 129

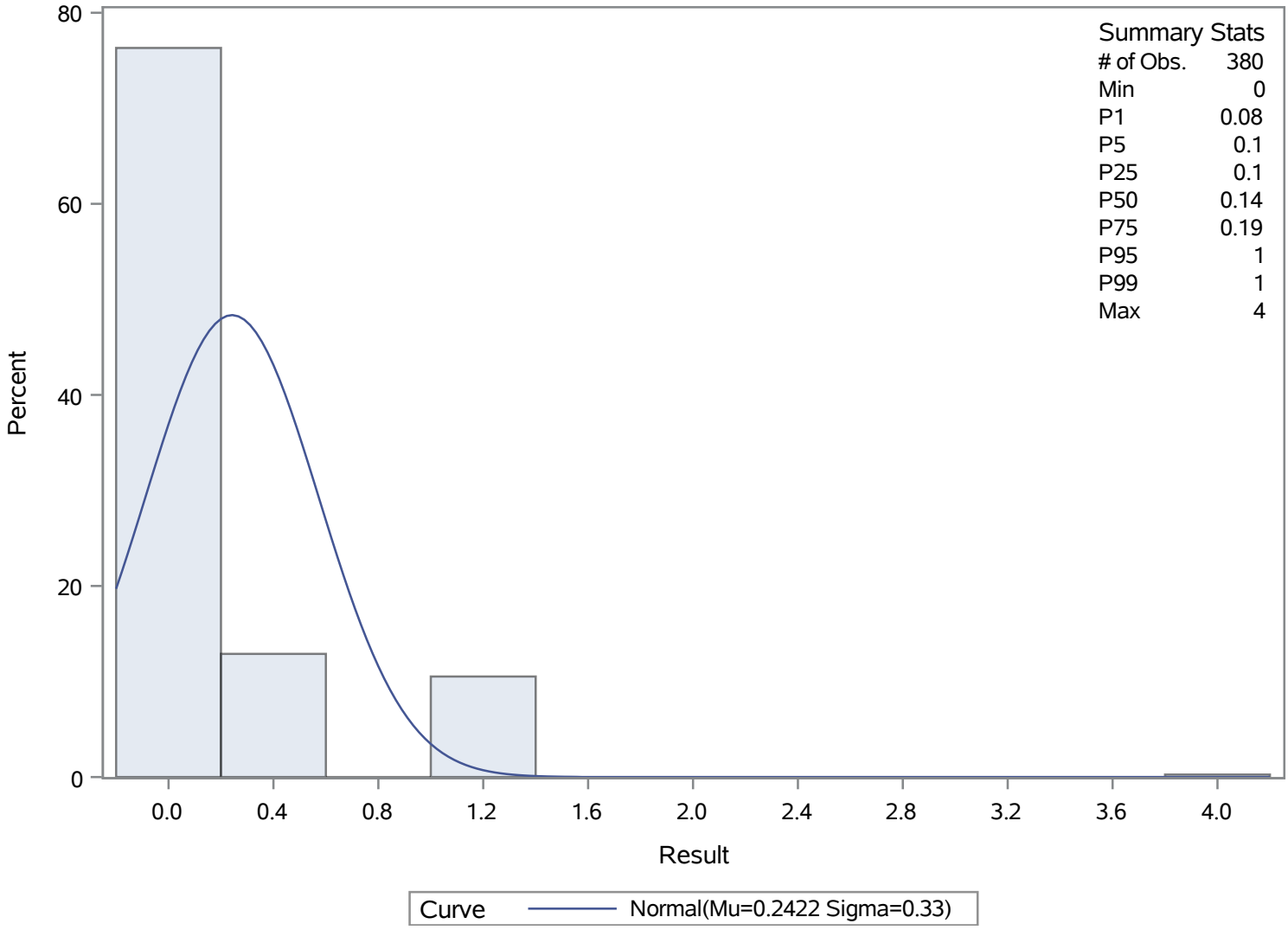
The UNIVARIATE Procedure



Little Manatee River
140
Sal Mid (ppth)
Site ID = 140

The UNIVARIATE Procedure

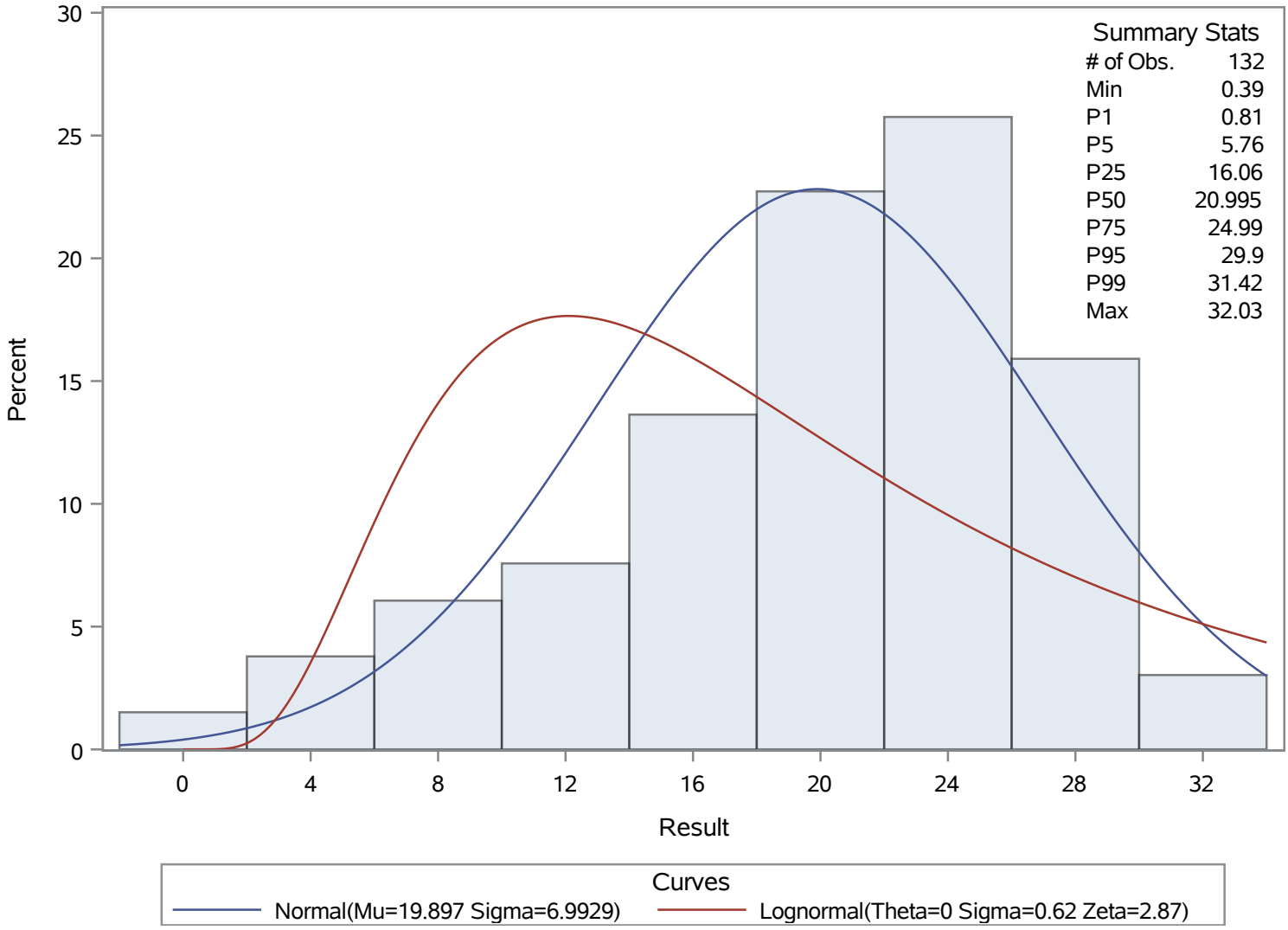
Distribution of Result



Little Manatee River
180
Sal Mid (ppth)
Site ID = 180

The UNIVARIATE Procedure

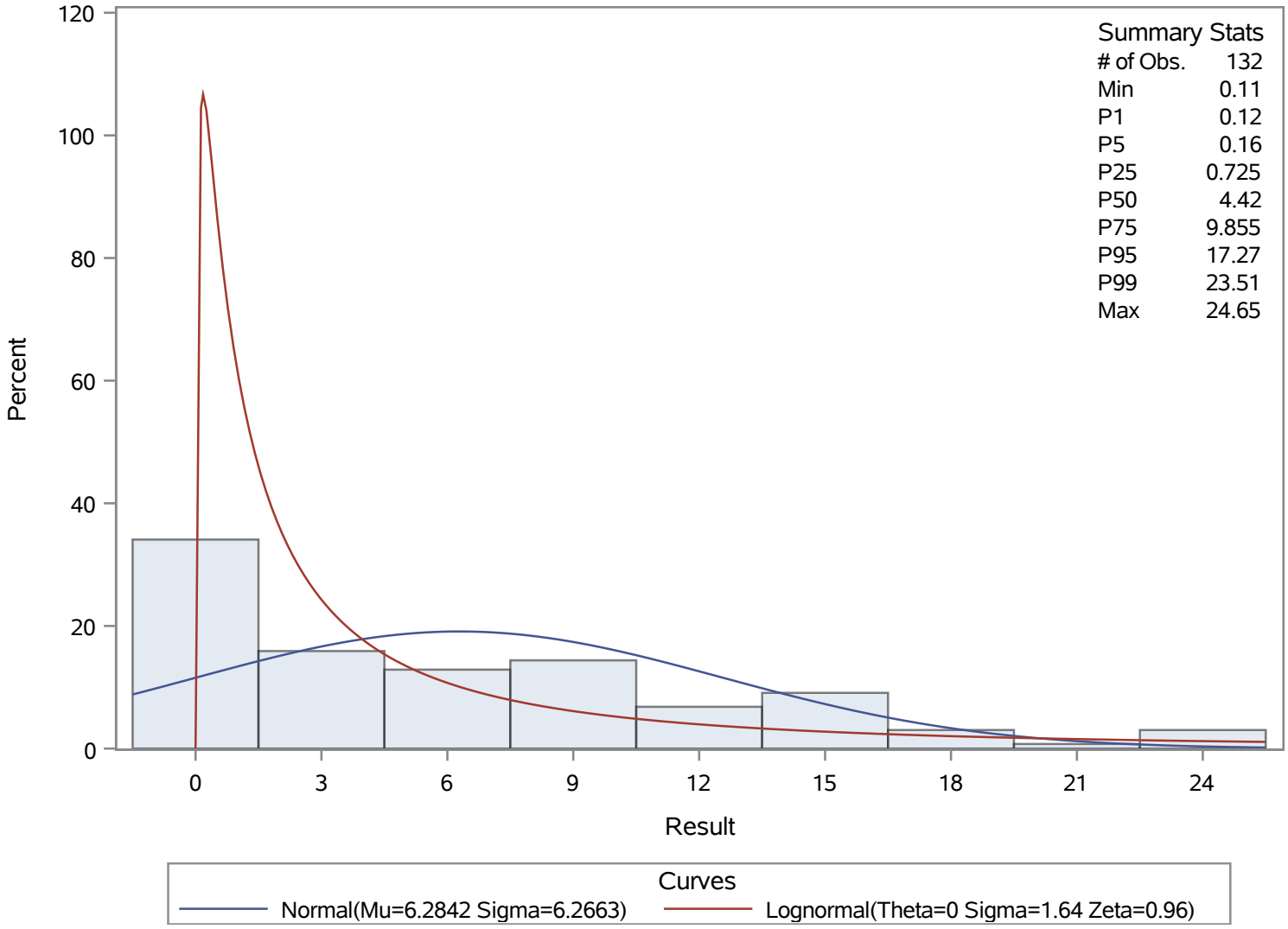
Distribution of Result



Little Manatee River
181
Sal Mid (ppth)
Site ID = 181

The UNIVARIATE Procedure

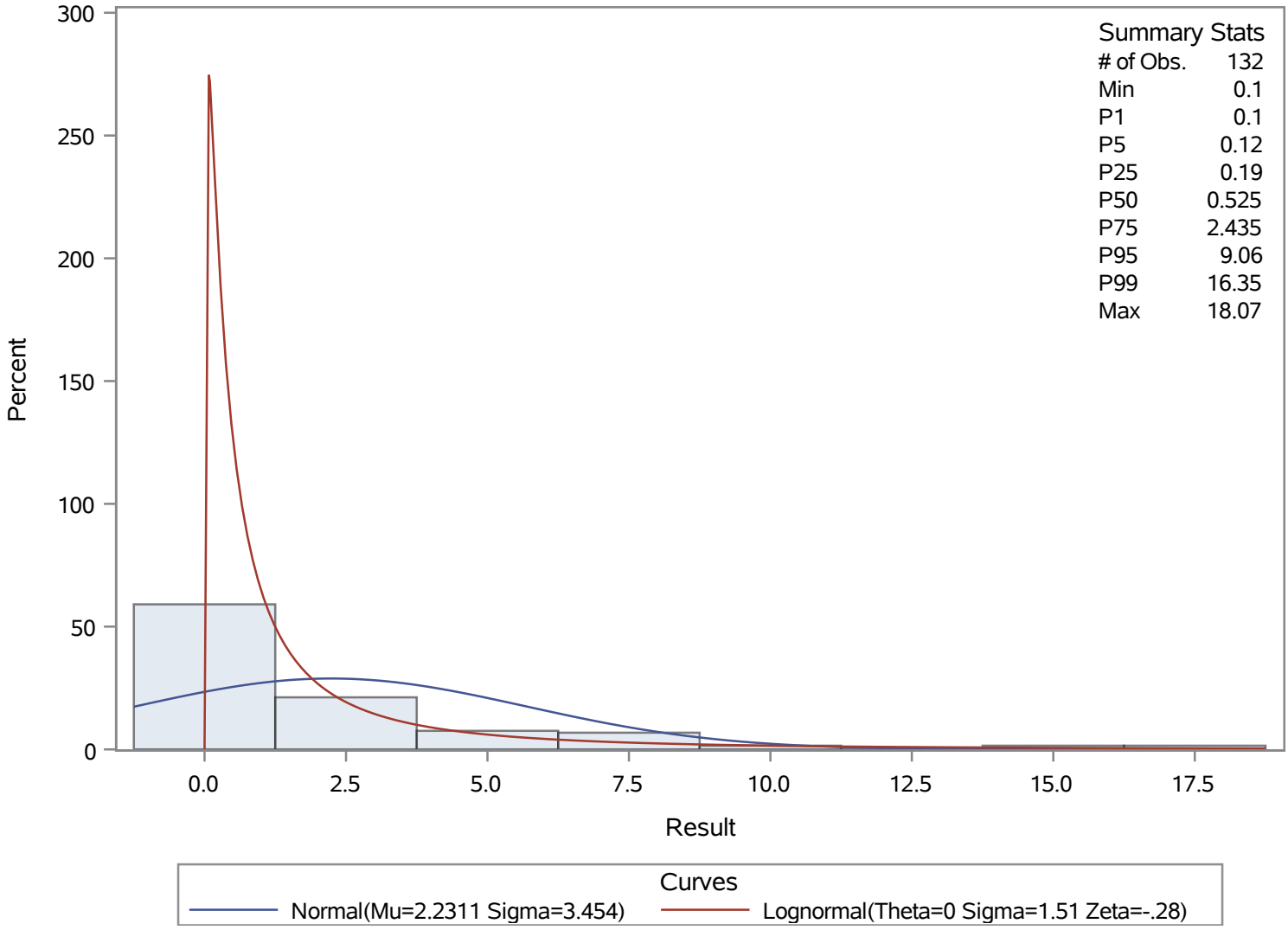
Distribution of Result



Little Manatee River
182
Sal Mid (ppth)
Site ID = 182

The UNIVARIATE Procedure

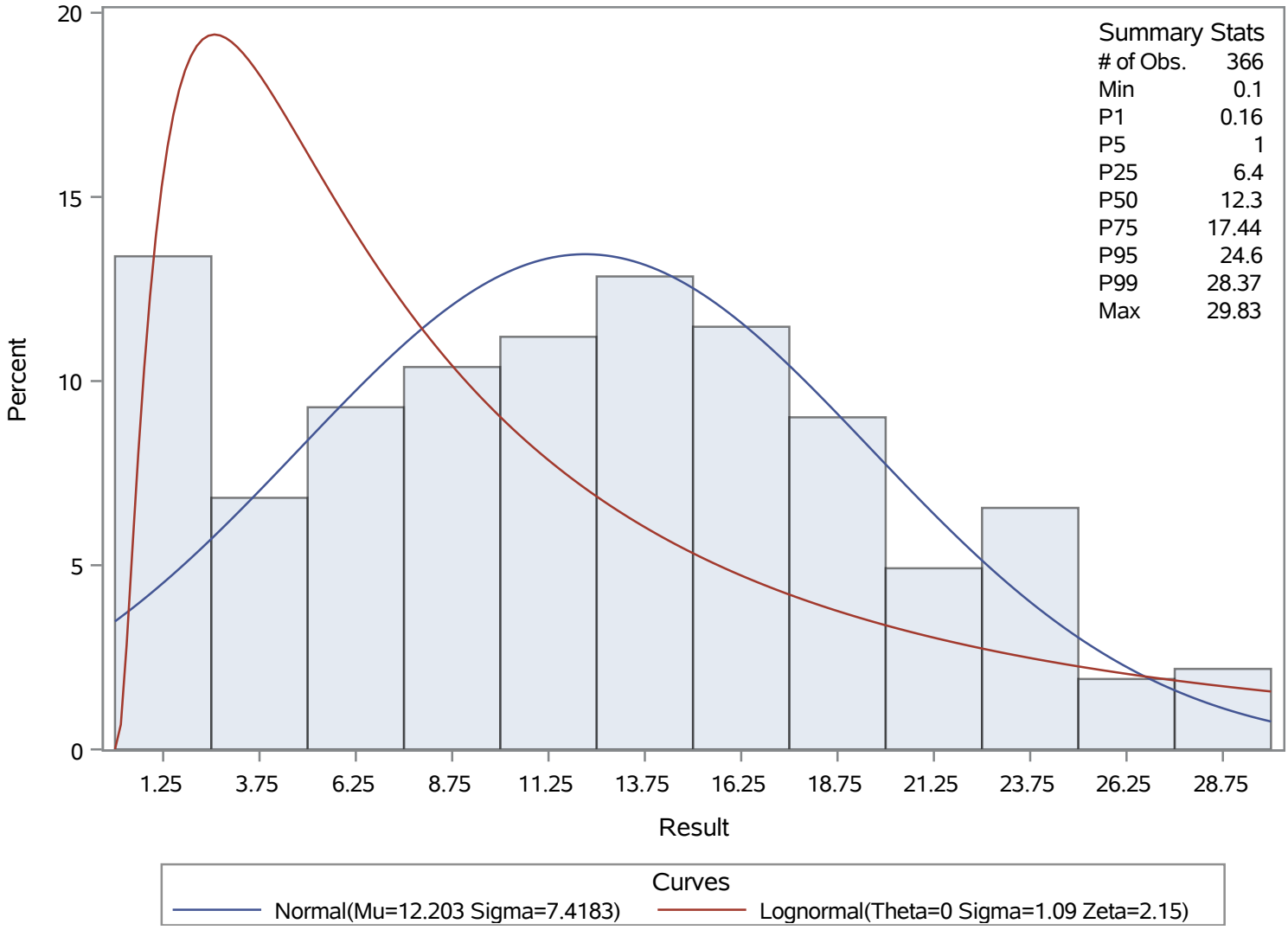
Distribution of Result



Little Manatee River
112
Sal Top (ppth)
Site ID = 112

The UNIVARIATE Procedure

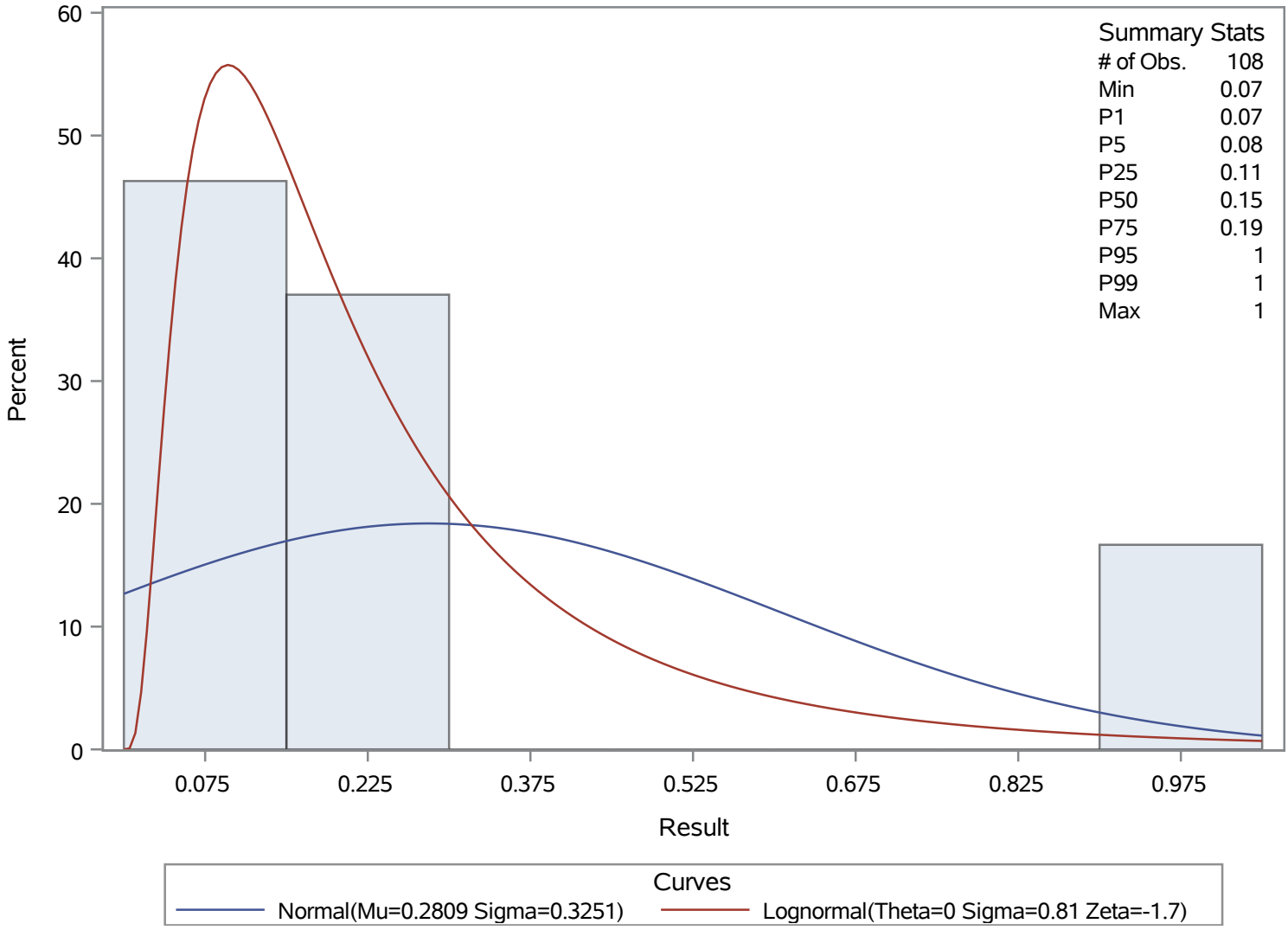
Distribution of Result



Little Manatee River
113
Sal Top (ppth)
Site ID = 113

The UNIVARIATE Procedure

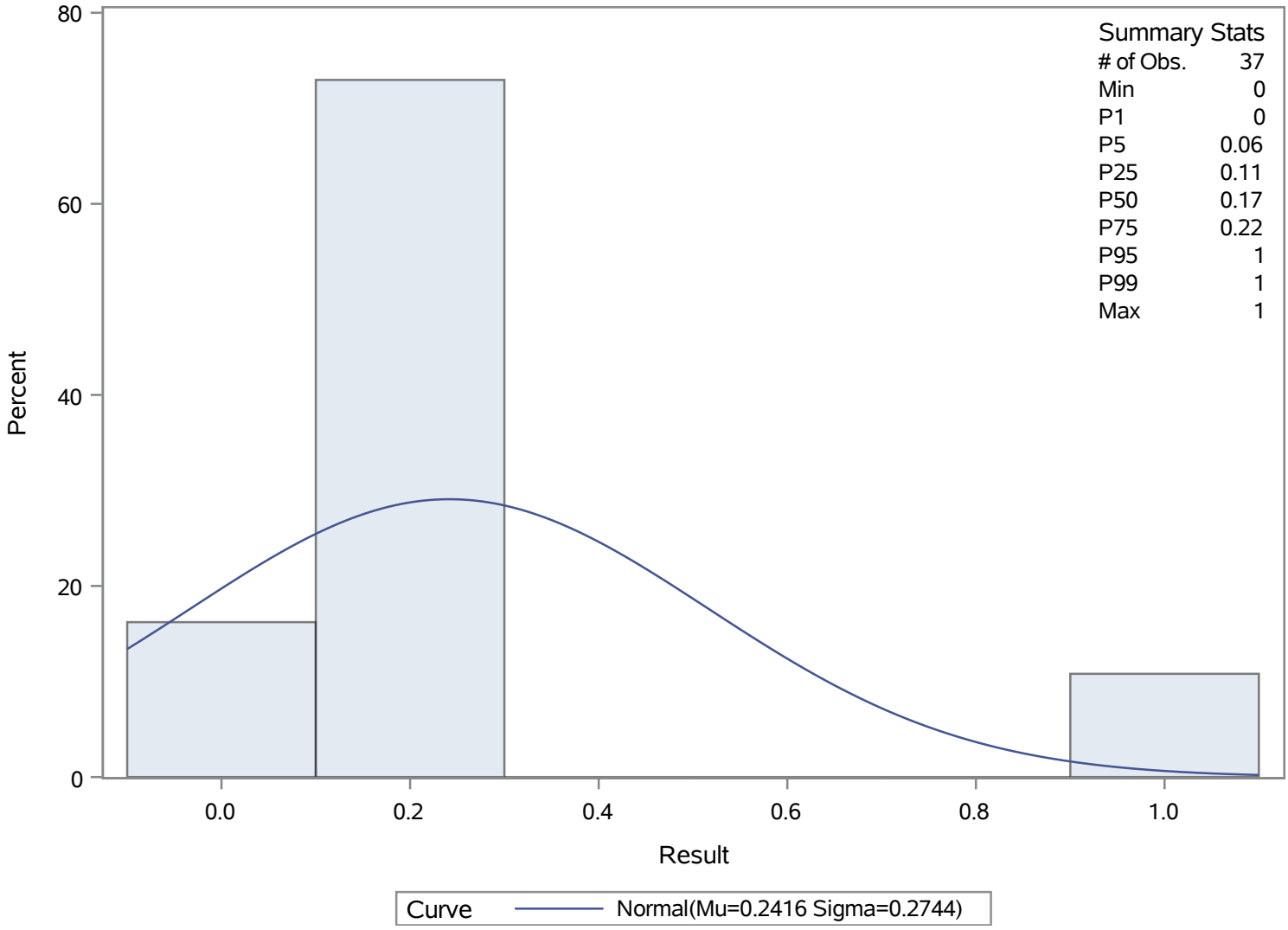
Distribution of Result



Little Manatee River
129
Sal Top (ppth)
Site ID = 129

The UNIVARIATE Procedure

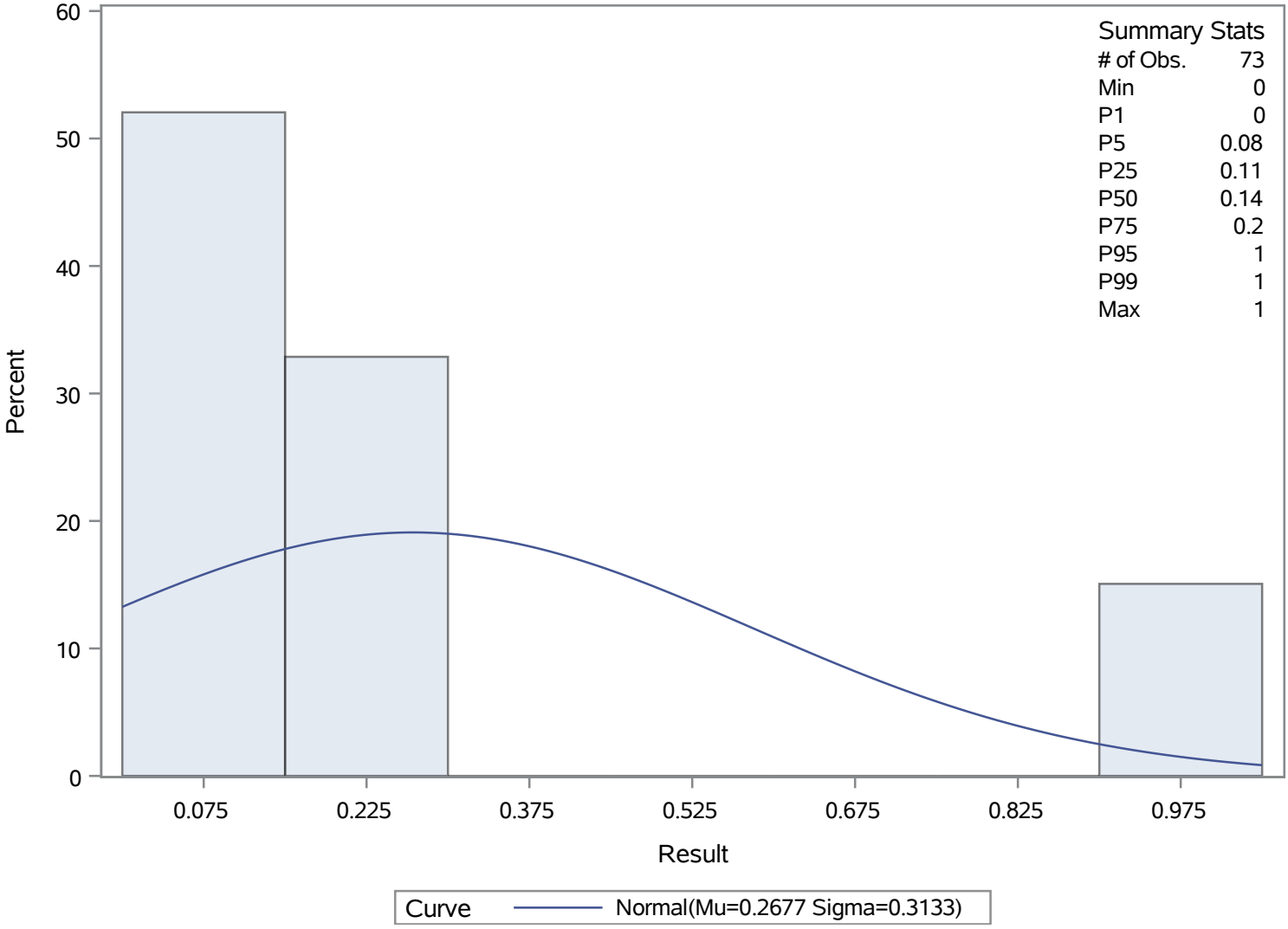
Distribution of Result



Little Manatee River
140
Sal Top (ppth)
Site ID = 140

The UNIVARIATE Procedure

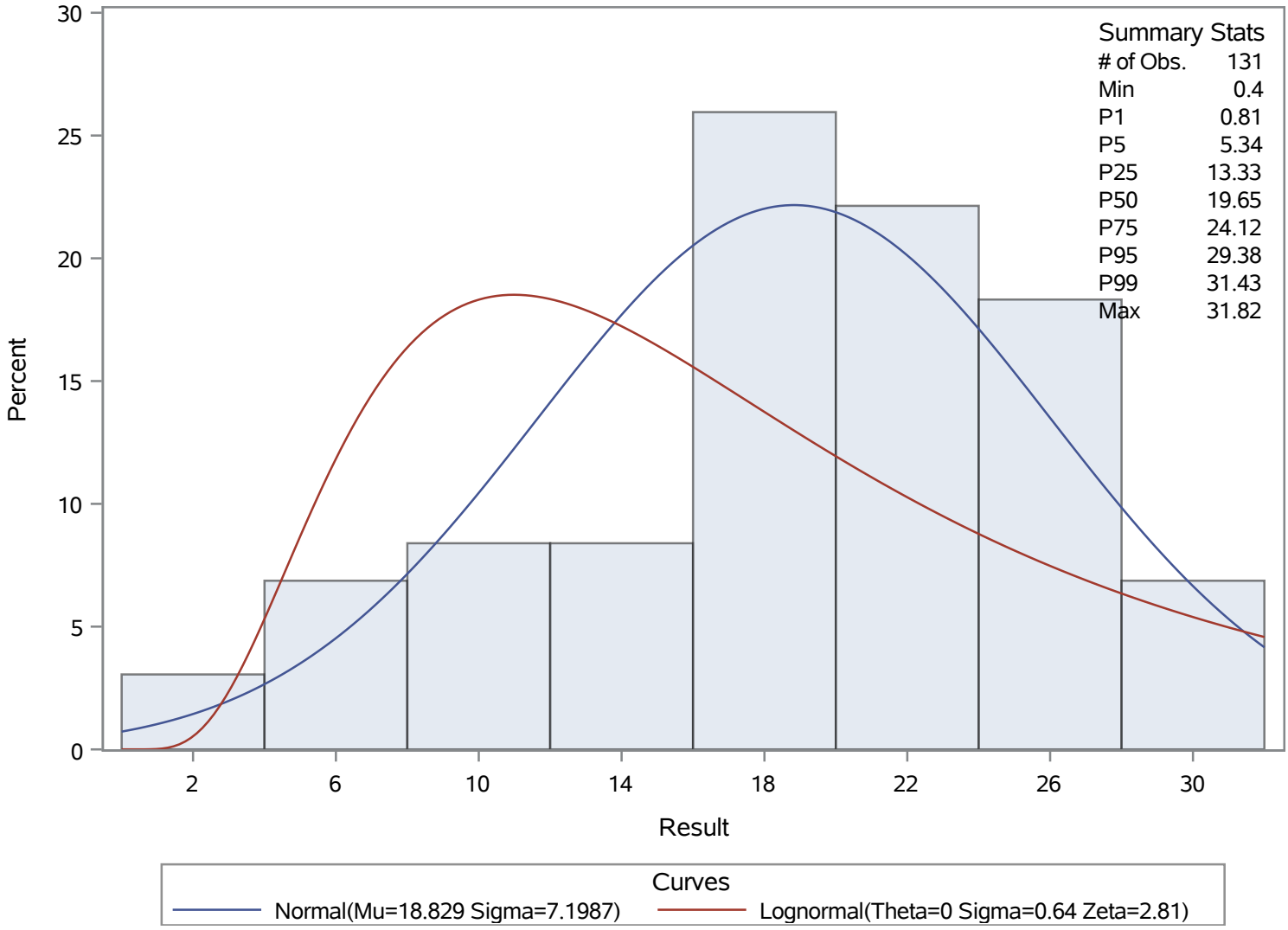
Distribution of Result



Little Manatee River
180
Sal Top (ppth)
Site ID = 180

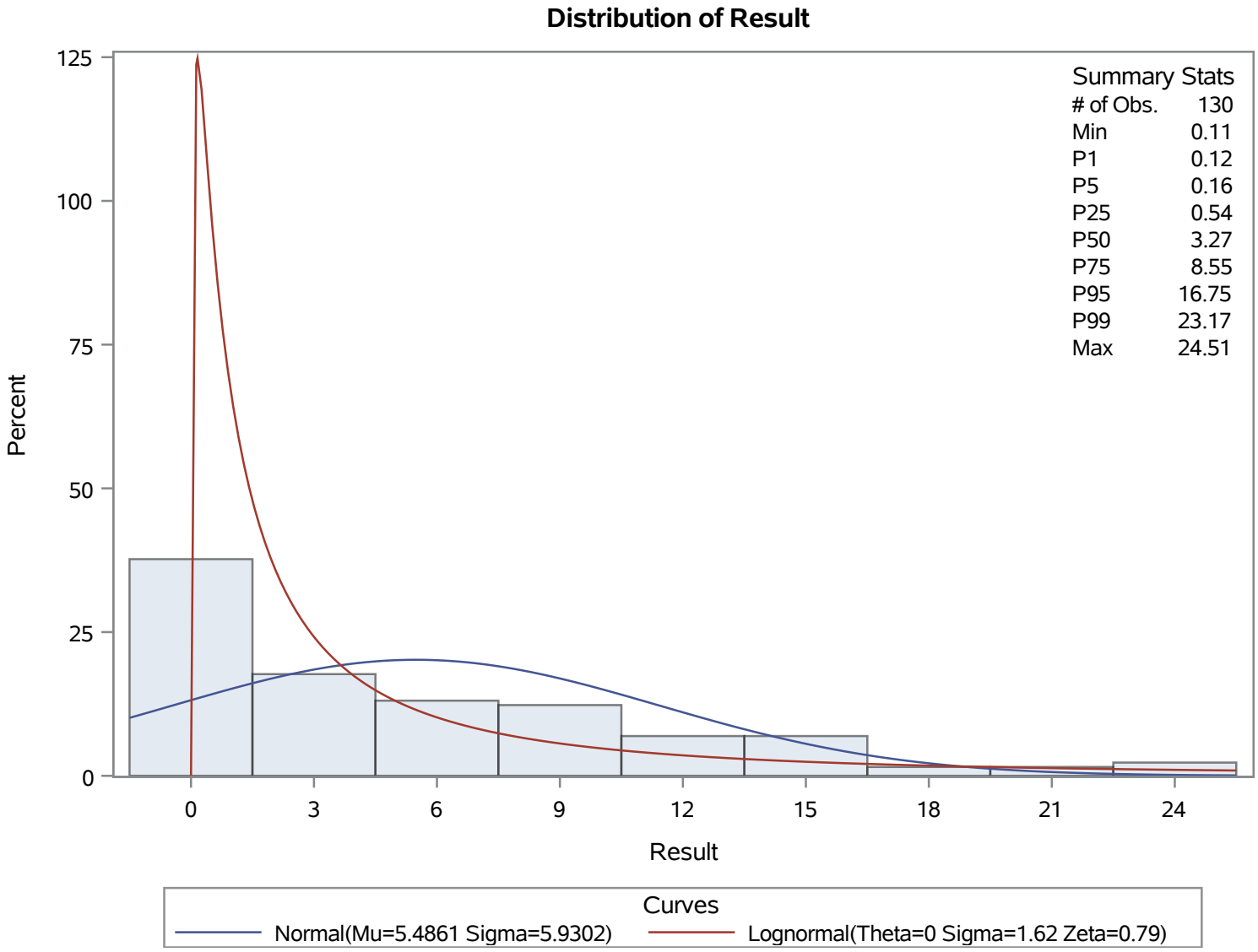
The UNIVARIATE Procedure

Distribution of Result



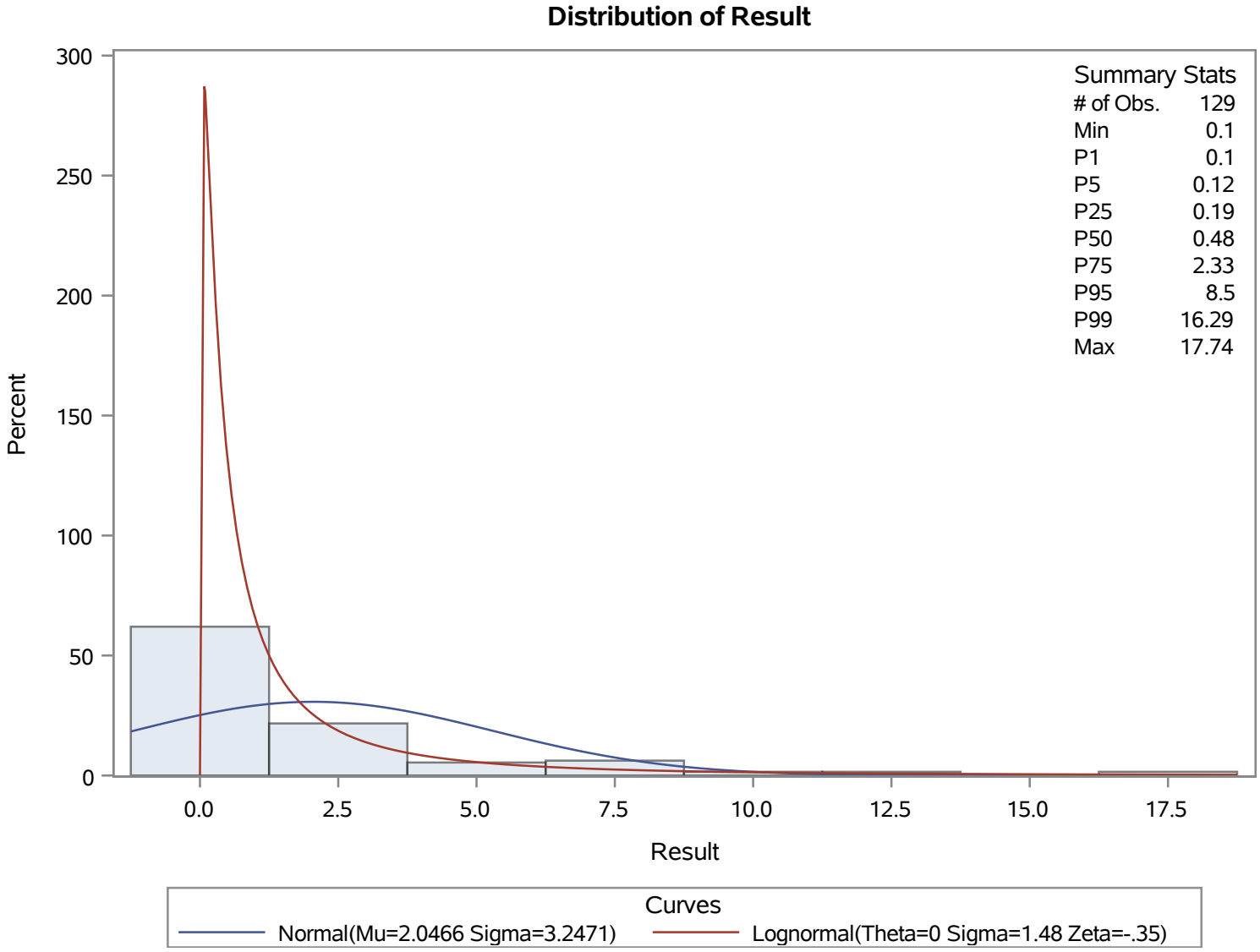
Little Manatee River
181
Sal Top (ppth)
Site ID = 181

The UNIVARIATE Procedure



Little Manatee River
182
Sal Top (ppth)
Site ID = 182

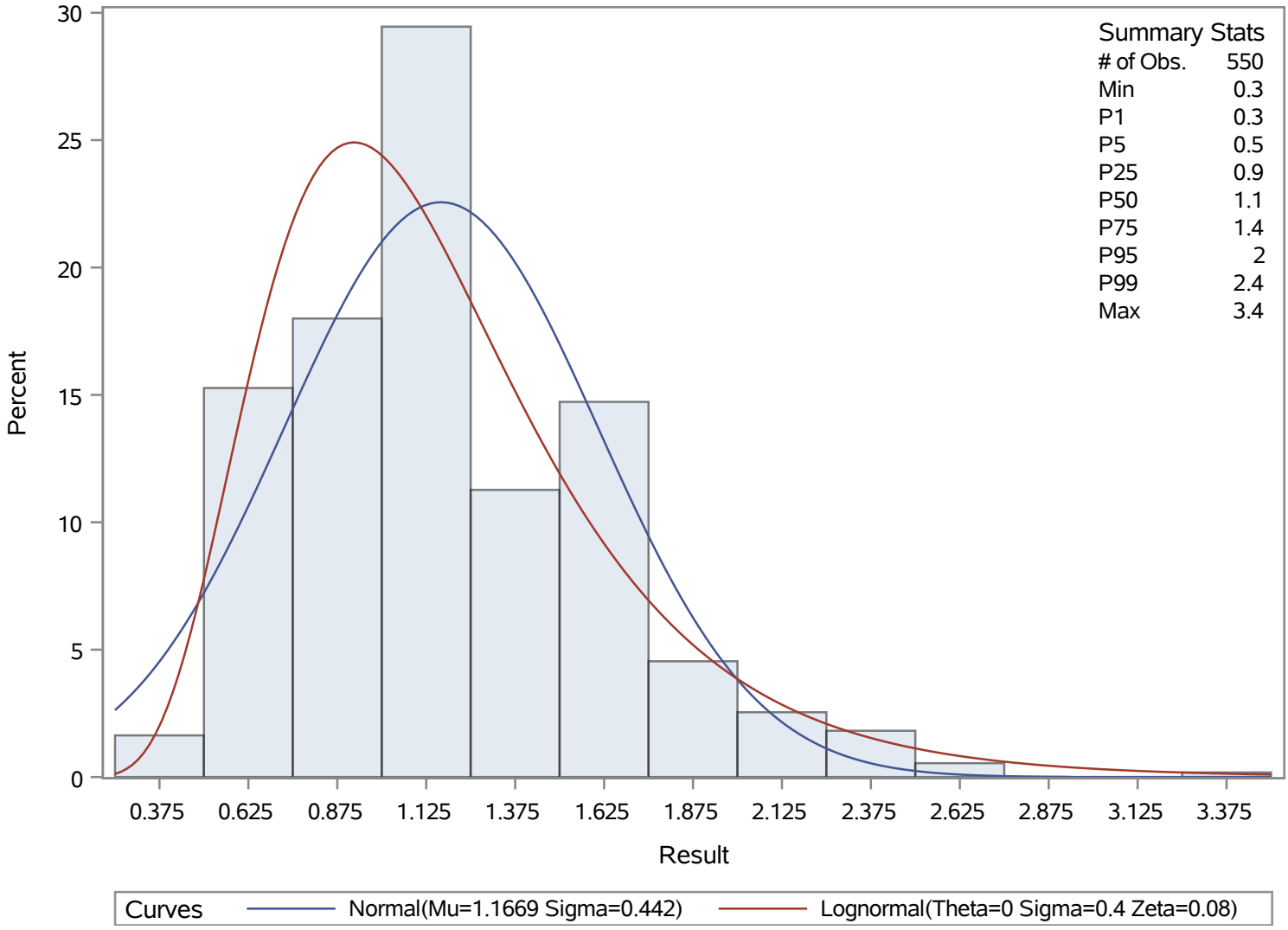
The UNIVARIATE Procedure



Little Manatee River
112
Secchi Depth (m)
Site ID = 112

The UNIVARIATE Procedure

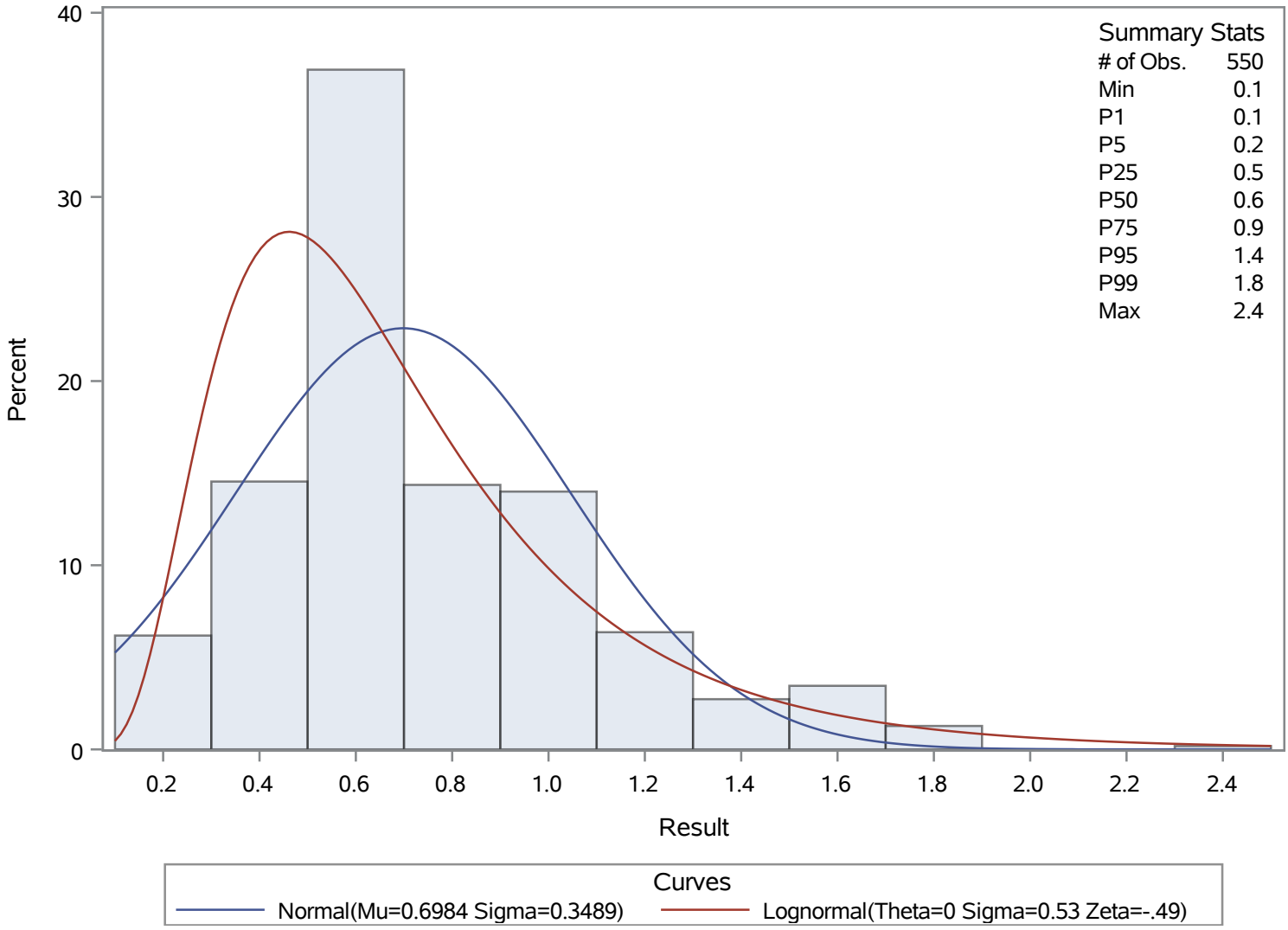
Distribution of Result



Little Manatee River
113
Secchi Depth (m)
Site ID = 113

The UNIVARIATE Procedure

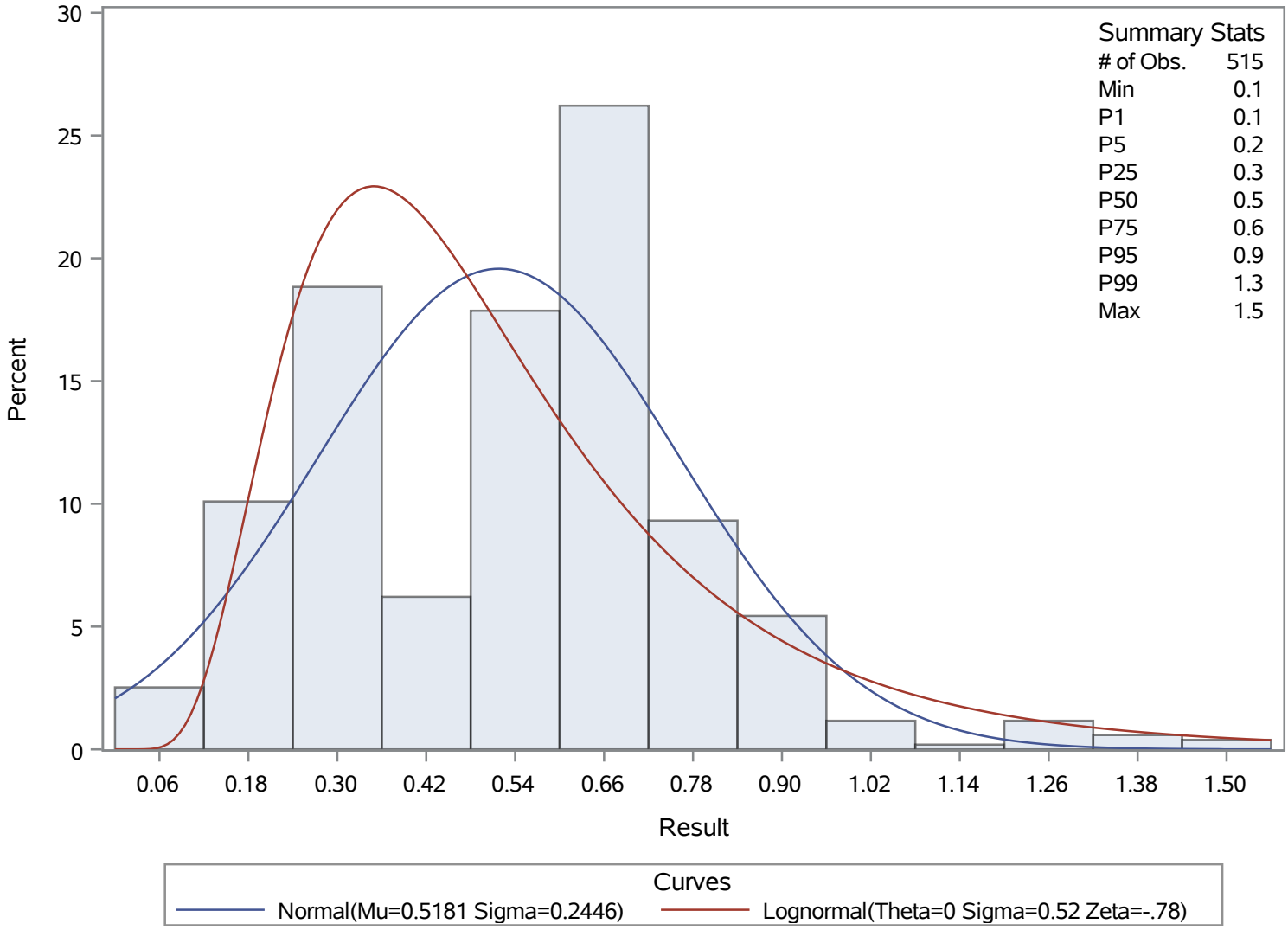
Distribution of Result



Little Manatee River
129
Secchi Depth (m)
Site ID = 129

The UNIVARIATE Procedure

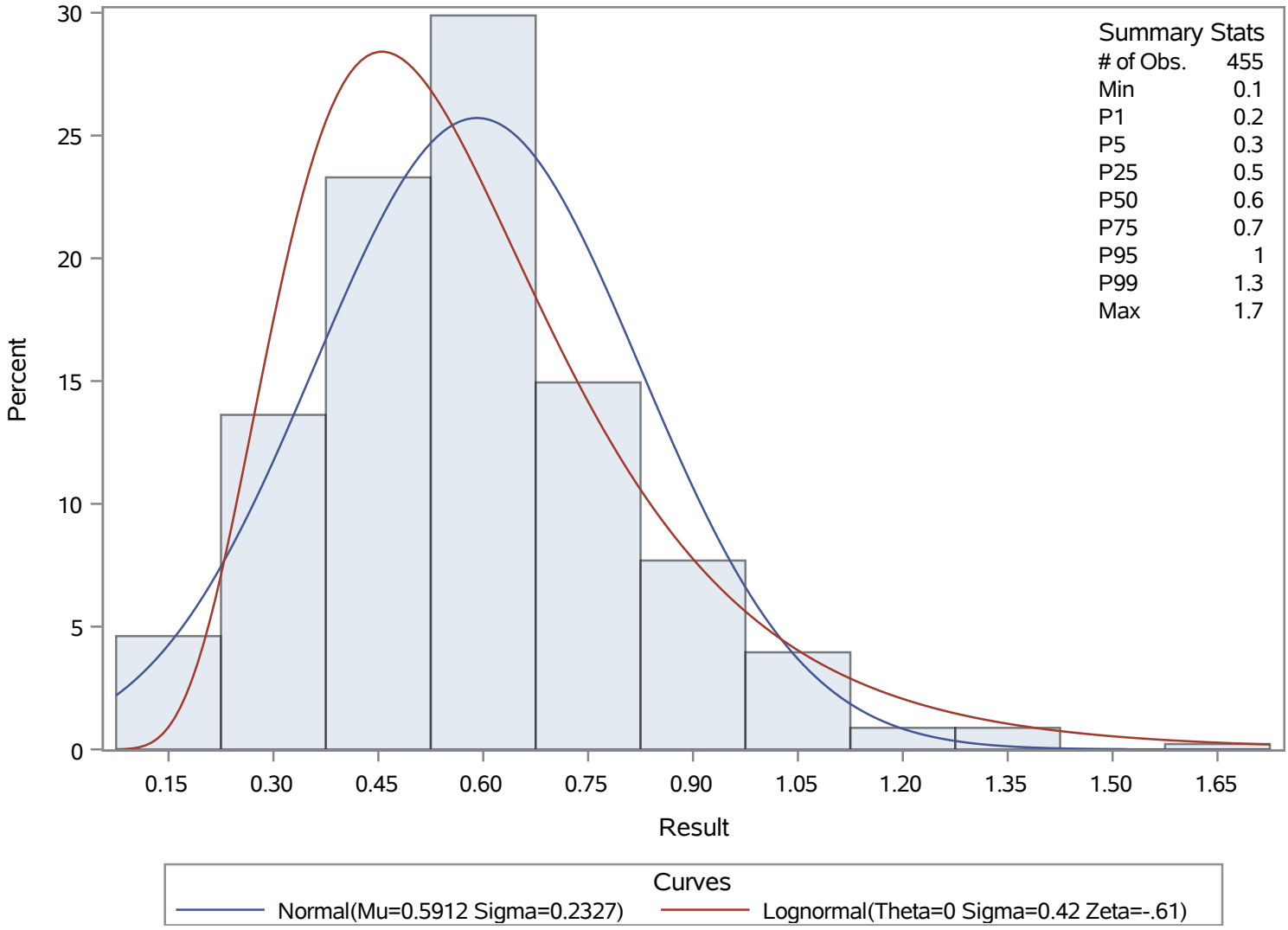
Distribution of Result



Little Manatee River
140
Secchi Depth (m)
Site ID = 140

The UNIVARIATE Procedure

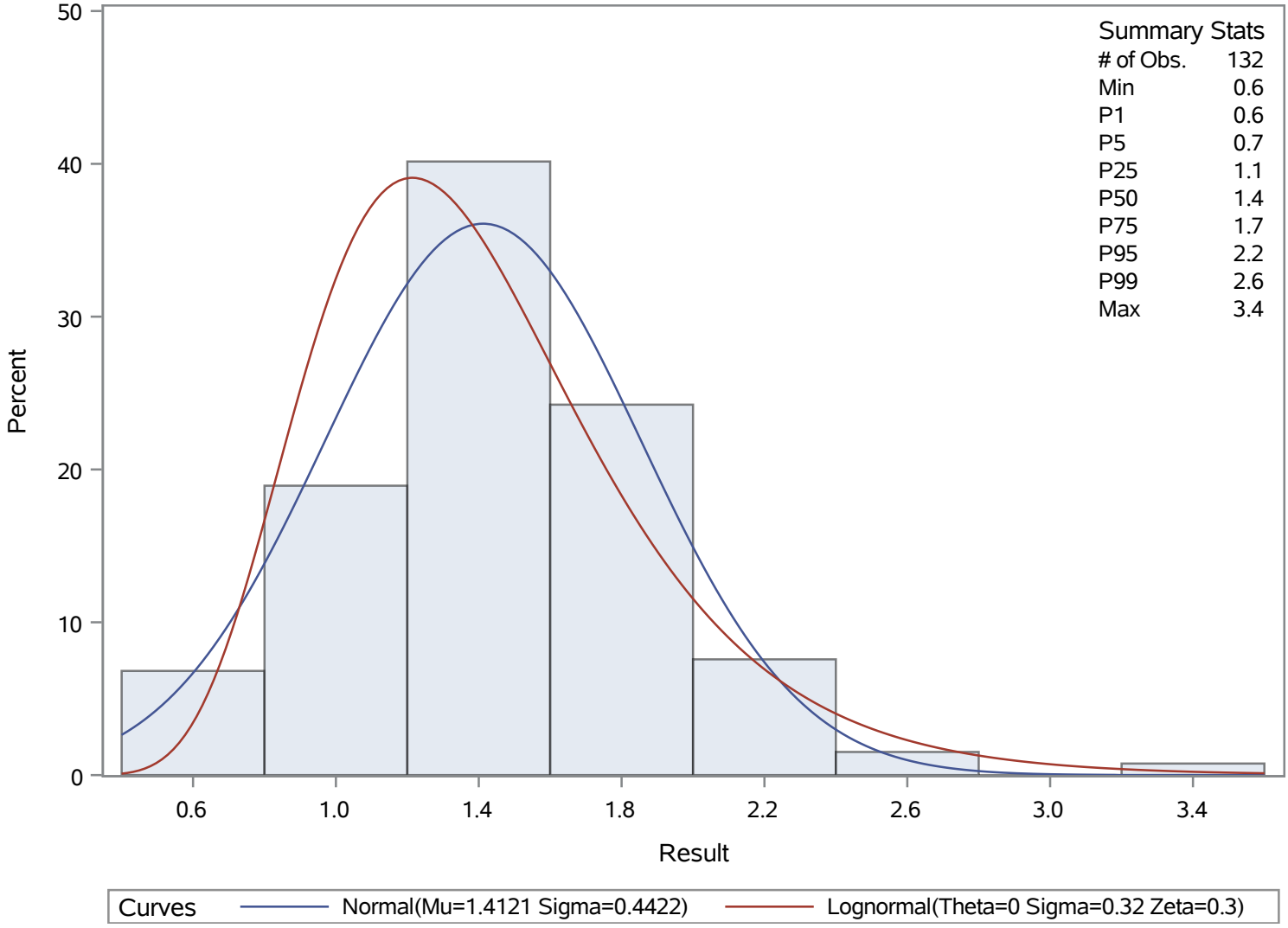
Distribution of Result



Little Manatee River
180
Secchi Depth (m)
Site ID = 180

The UNIVARIATE Procedure

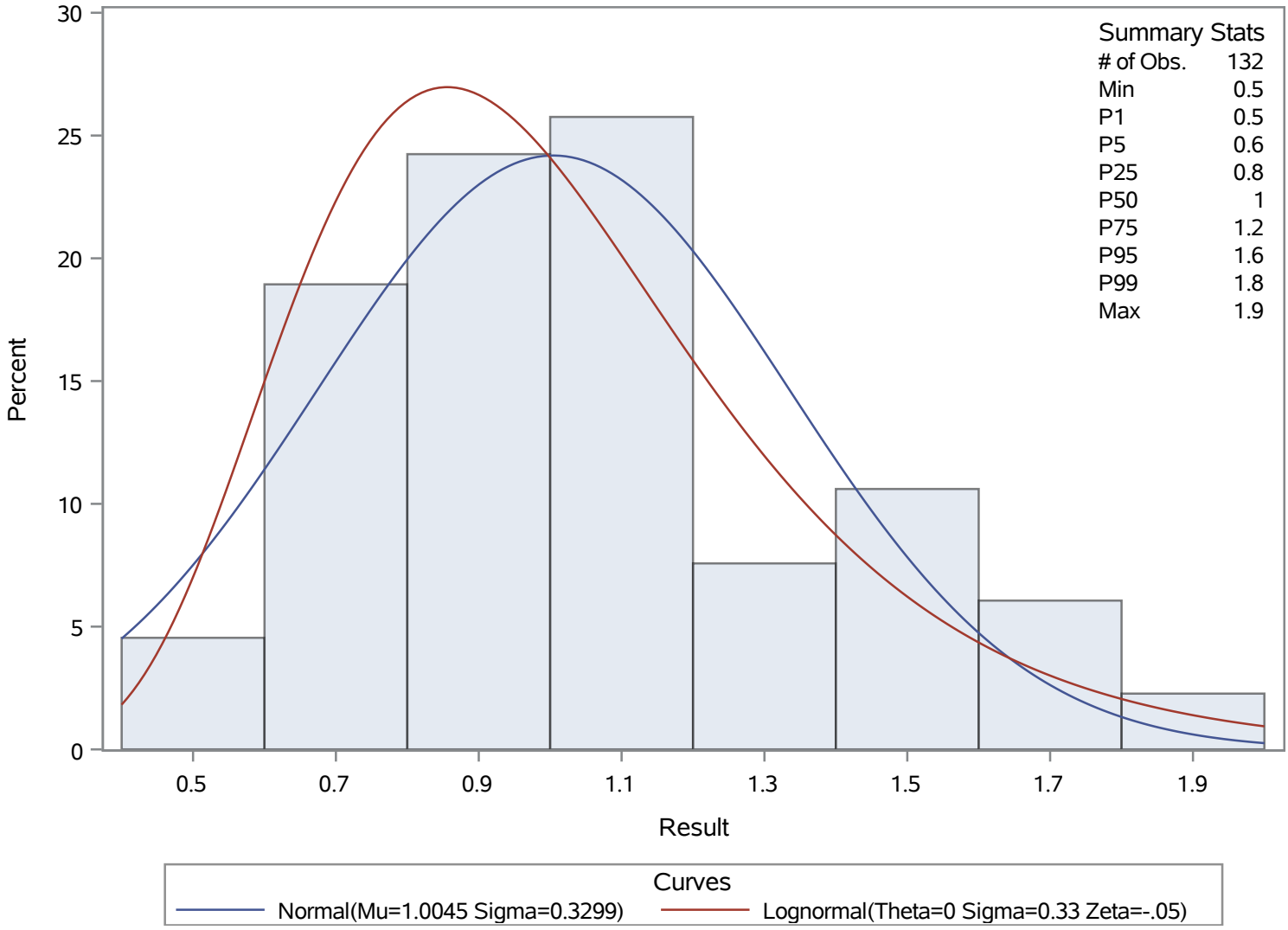
Distribution of Result



Little Manatee River
181
Secchi Depth (m)
Site ID = 181

The UNIVARIATE Procedure

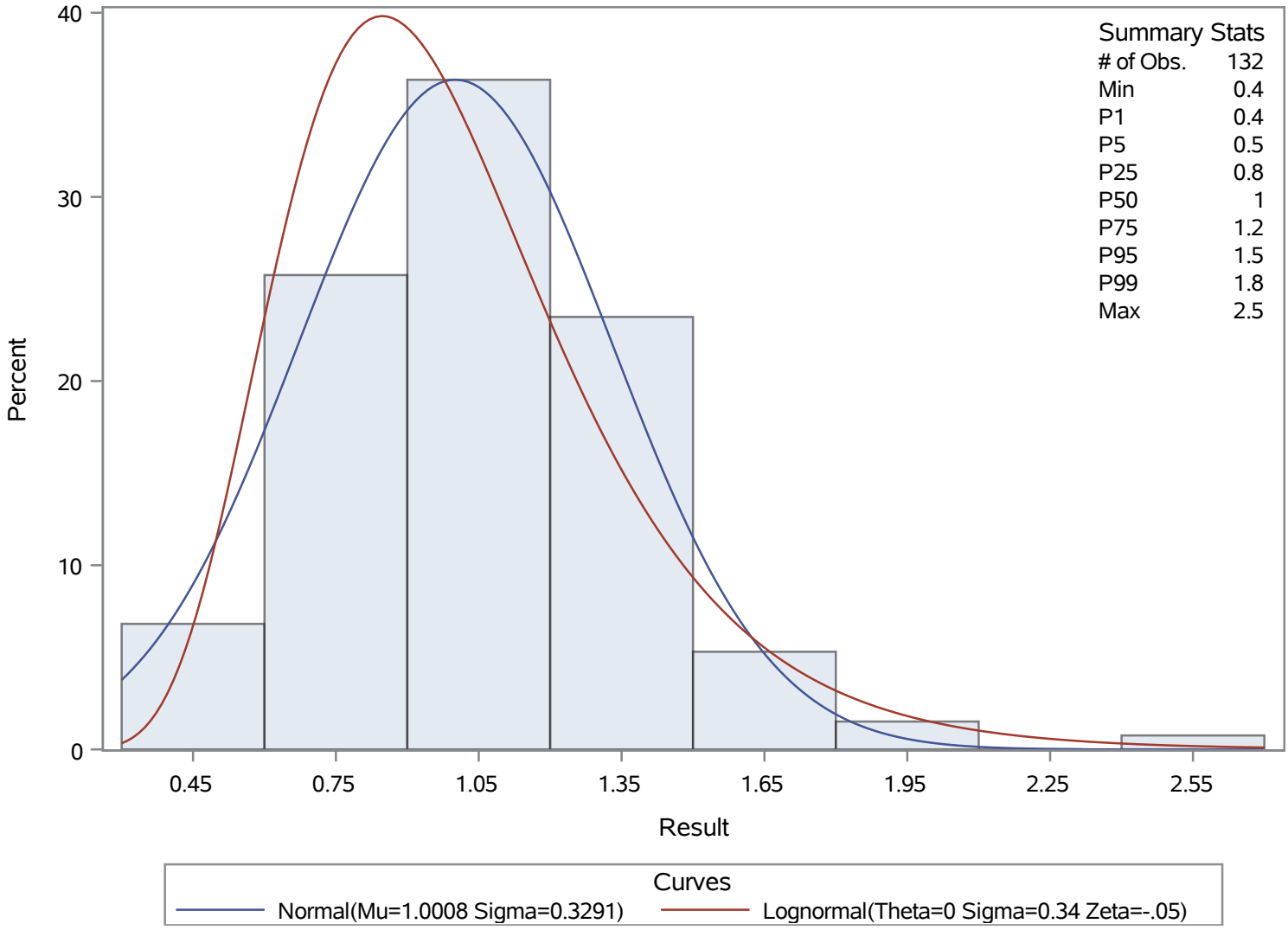
Distribution of Result



Little Manatee River
182
Secchi Depth (m)
Site ID = 182

The UNIVARIATE Procedure

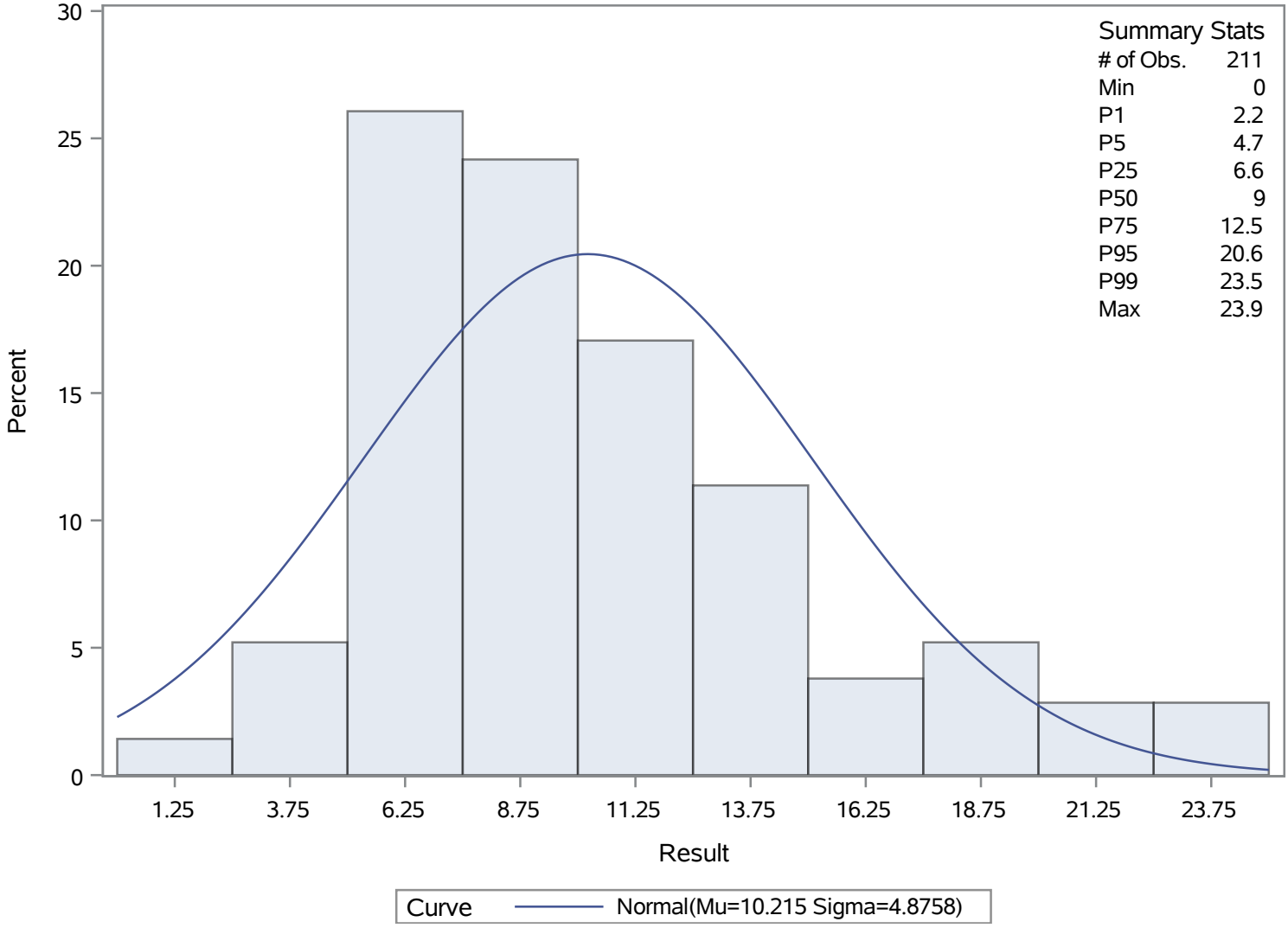
Distribution of Result



Little Manatee River
112
TOC (mg/l)
Site ID = 112

The UNIVARIATE Procedure

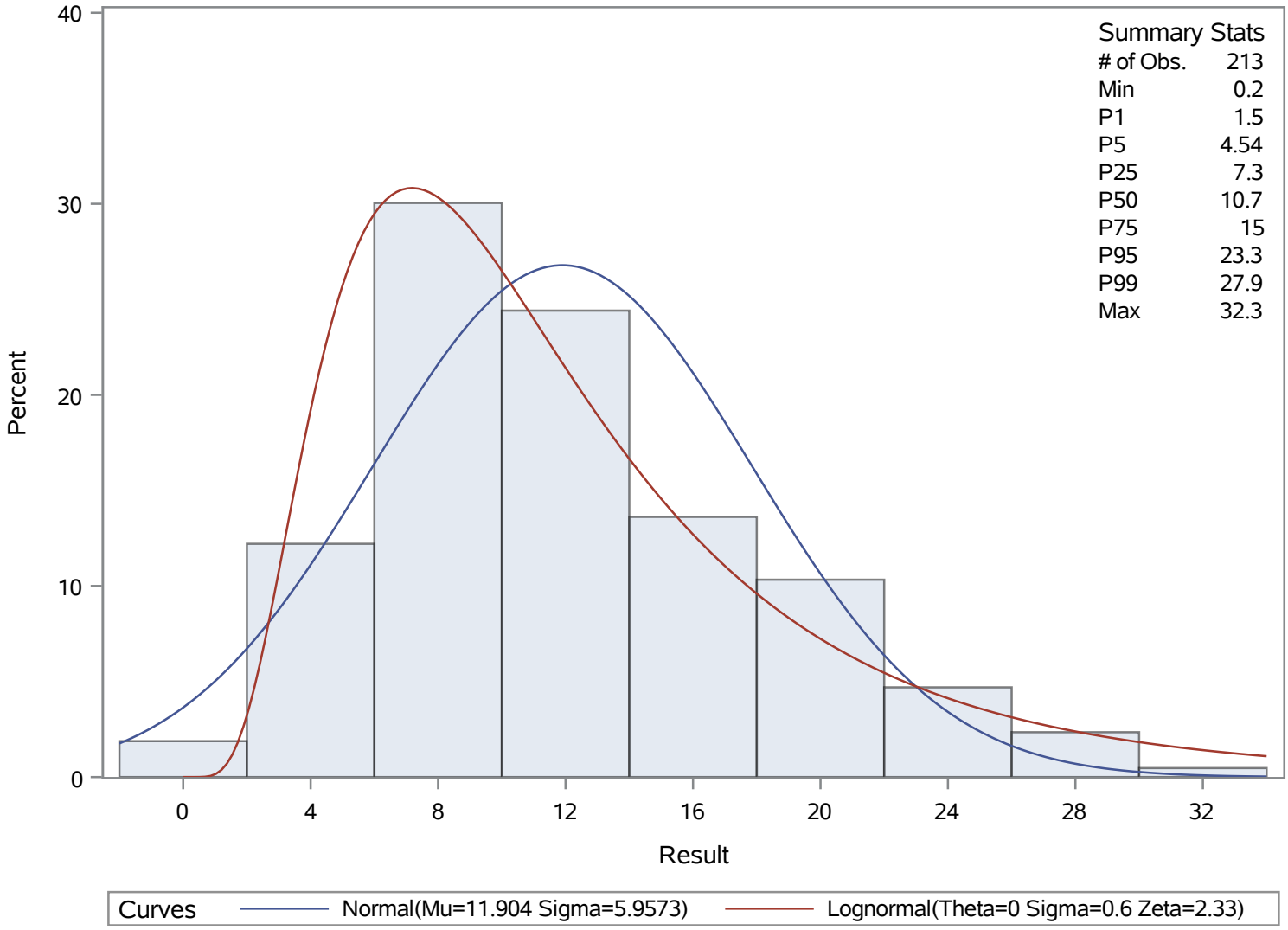
Distribution of Result



Little Manatee River
113
TOC (mg/l)
Site ID = 113

The UNIVARIATE Procedure

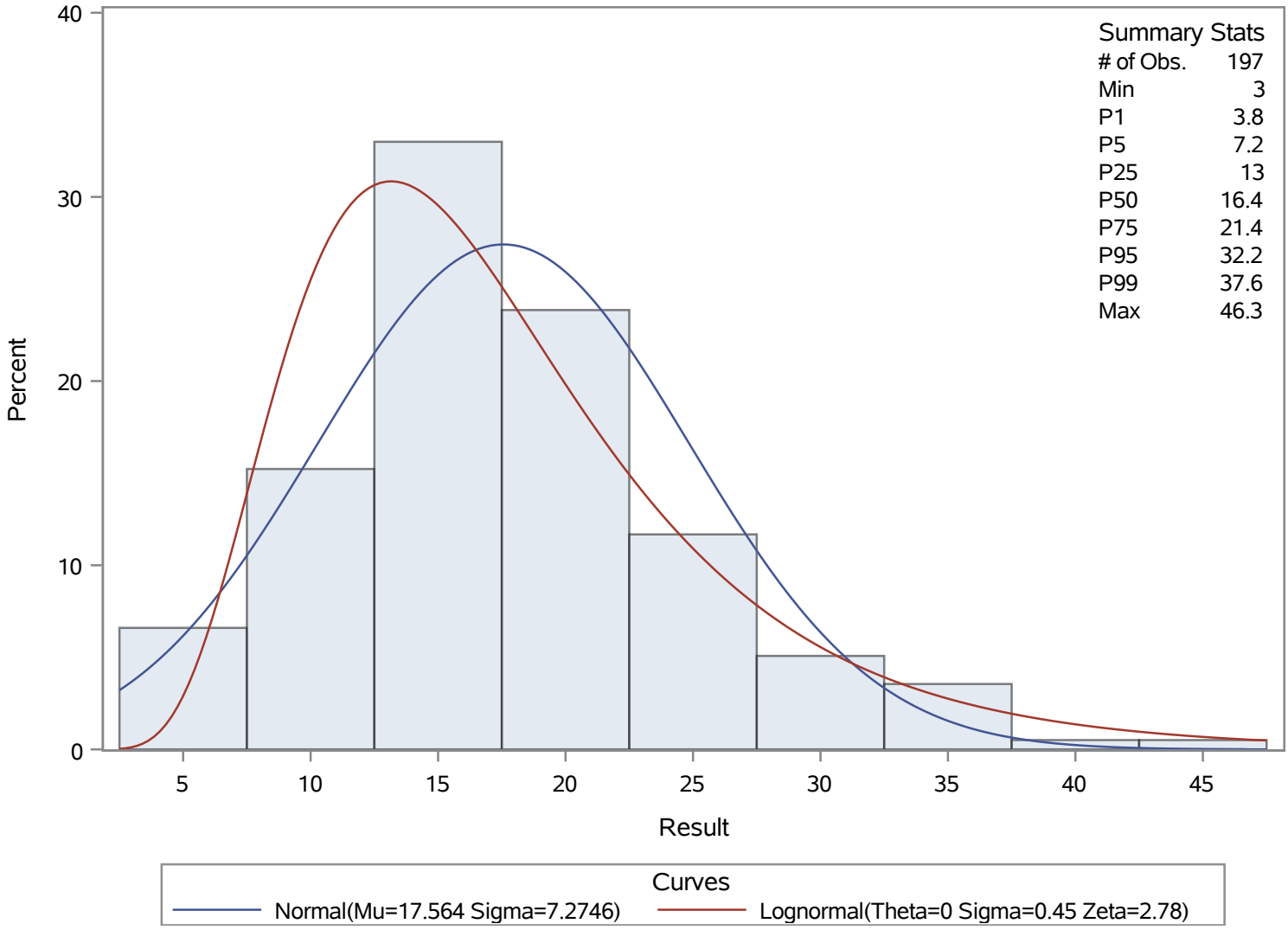
Distribution of Result



Little Manatee River
129
TOC (mg/l)
Site ID = 129

The UNIVARIATE Procedure

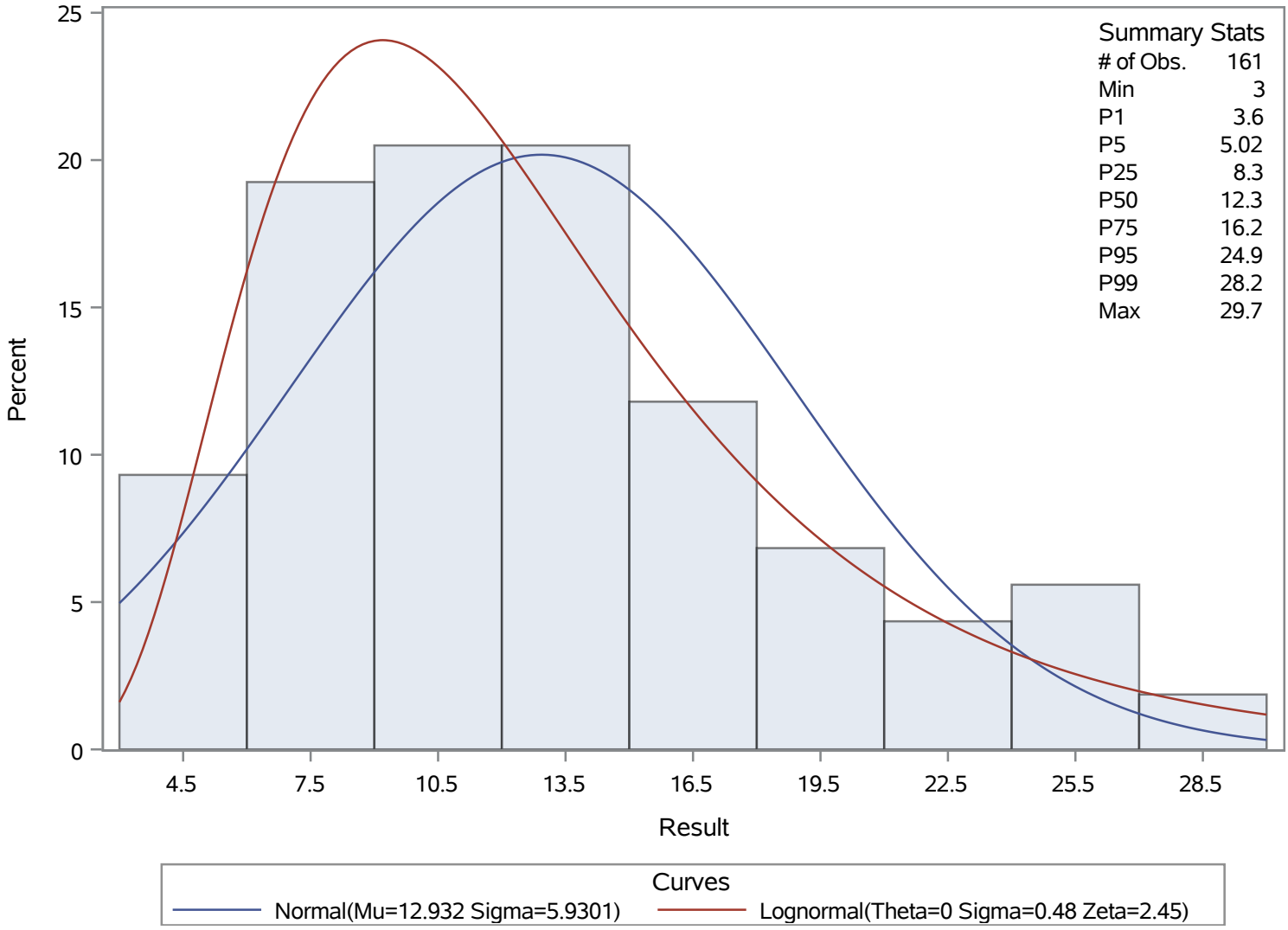
Distribution of Result



Little Manatee River
140
TOC (mg/l)
Site ID = 140

The UNIVARIATE Procedure

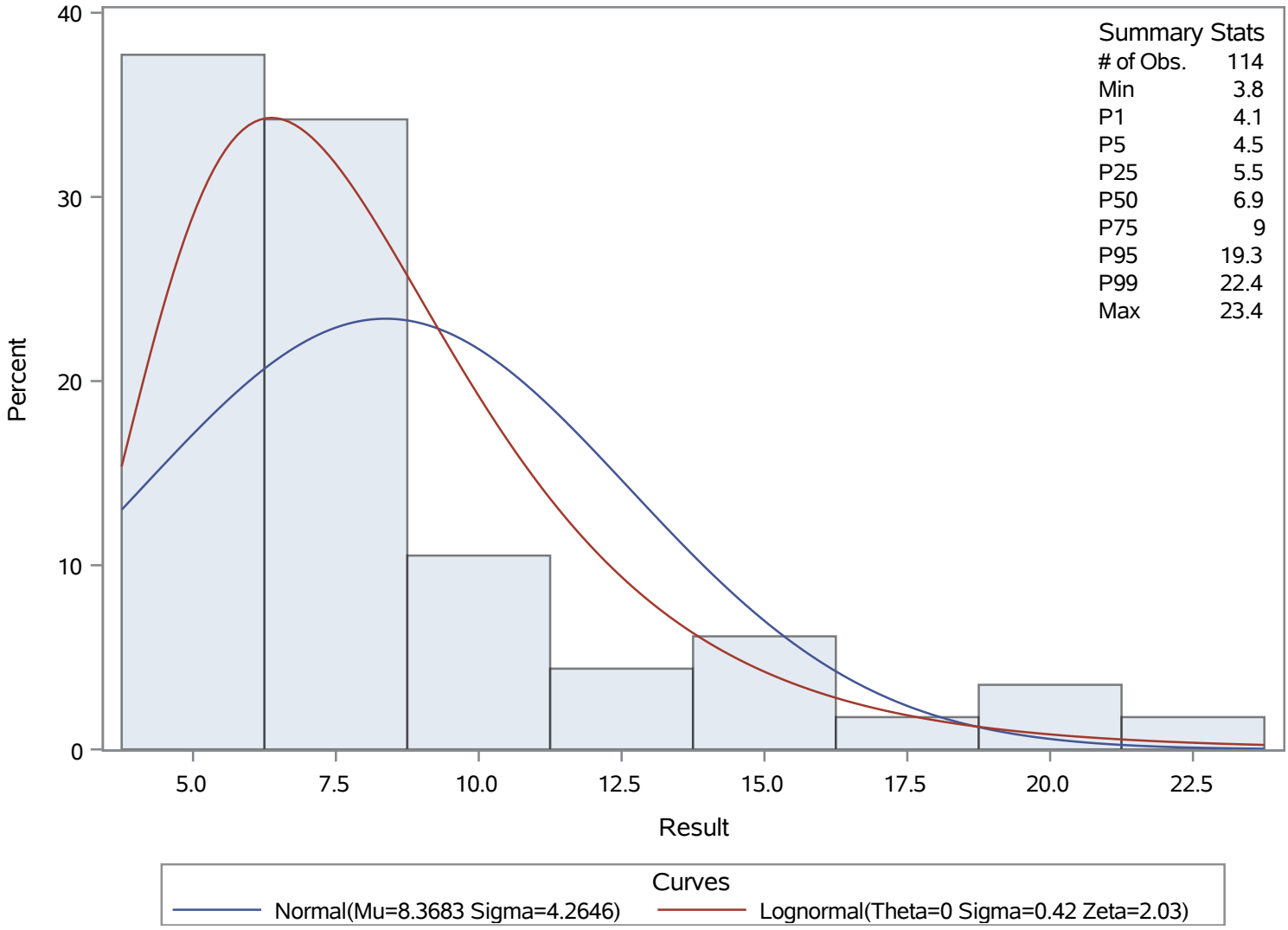
Distribution of Result



Little Manatee River
180
TOC (mg/l)
Site ID = 180

The UNIVARIATE Procedure

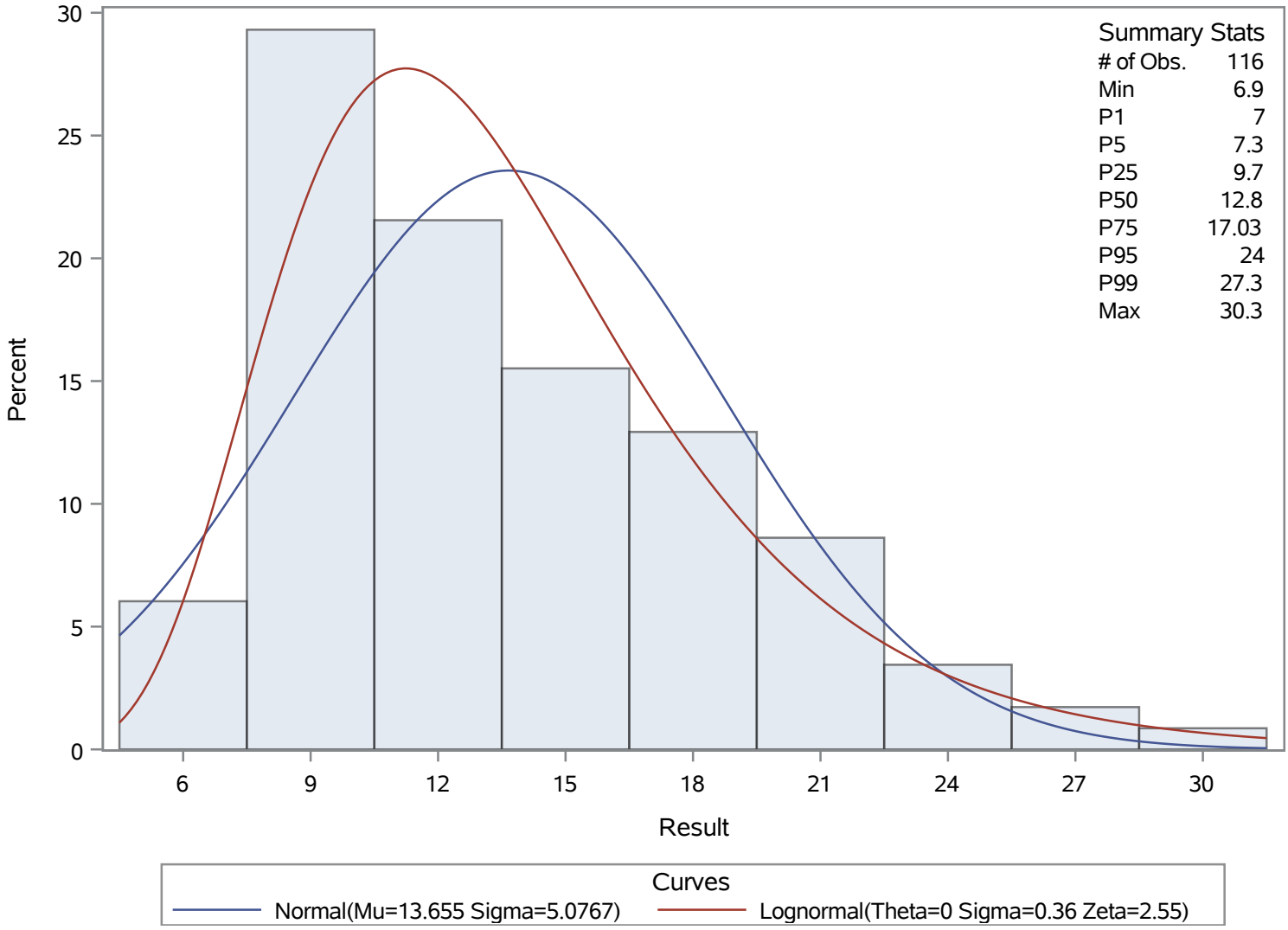
Distribution of Result



Little Manatee River
181
TOC (mg/l)
Site ID = 181

The UNIVARIATE Procedure

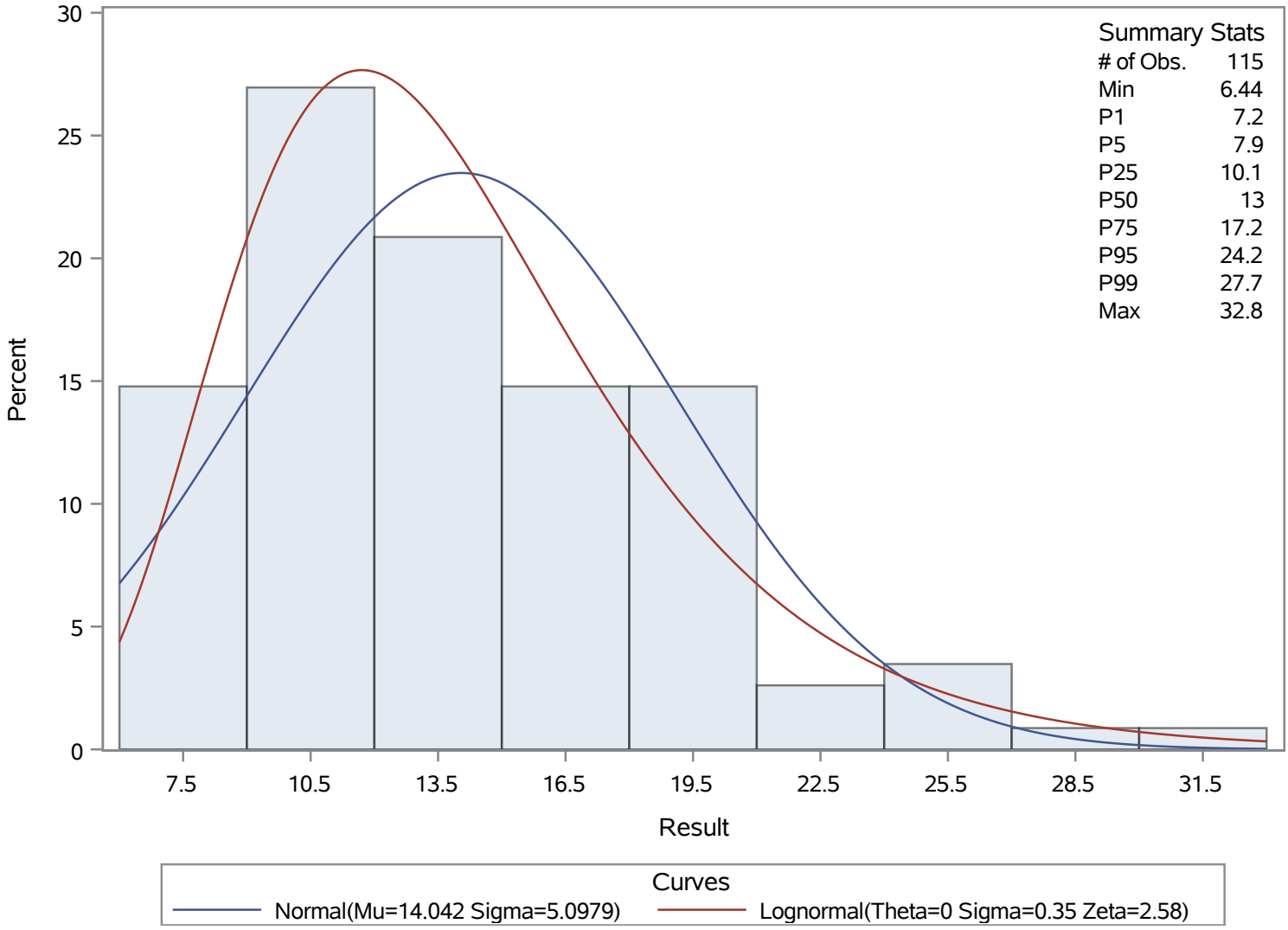
Distribution of Result



Little Manatee River
182
TOC (mg/l)
Site ID = 182

The UNIVARIATE Procedure

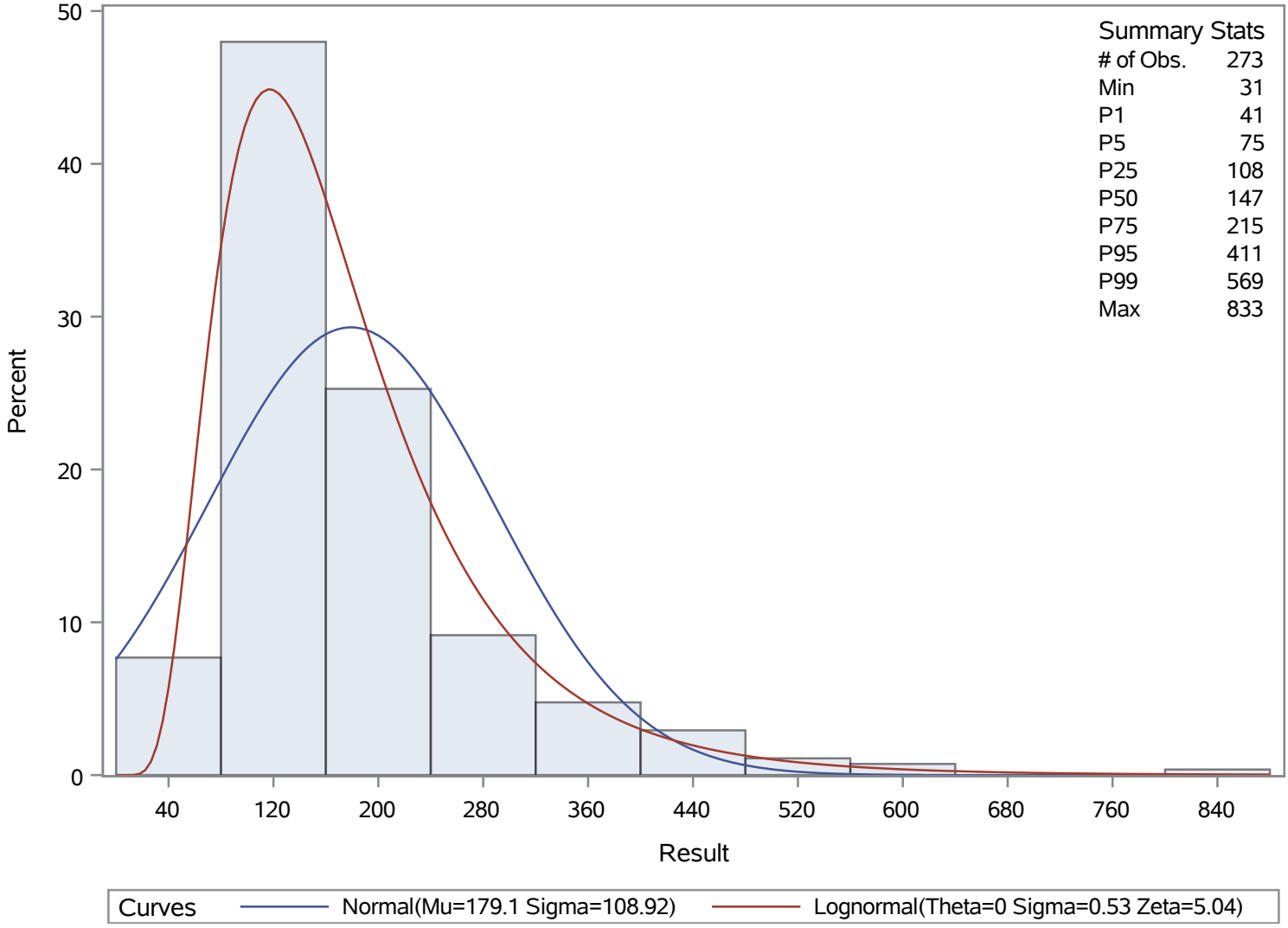
Distribution of Result



Little Manatee River
129
Total Dissolved Solids (mg/l)
Site ID = 129

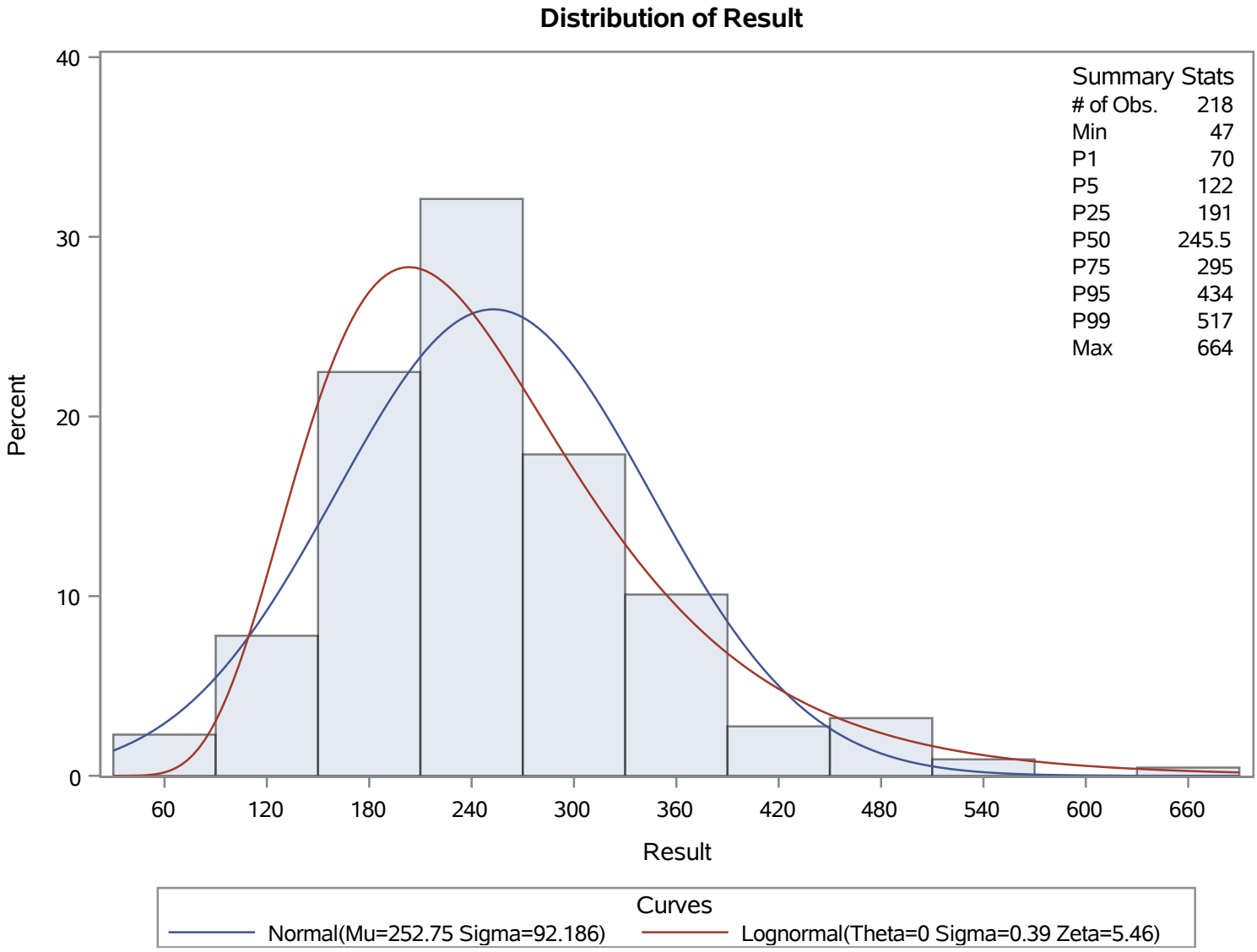
The UNIVARIATE Procedure

Distribution of Result



Little Manatee River
140
Total Dissolved Solids (mg/l)
Site ID = 140

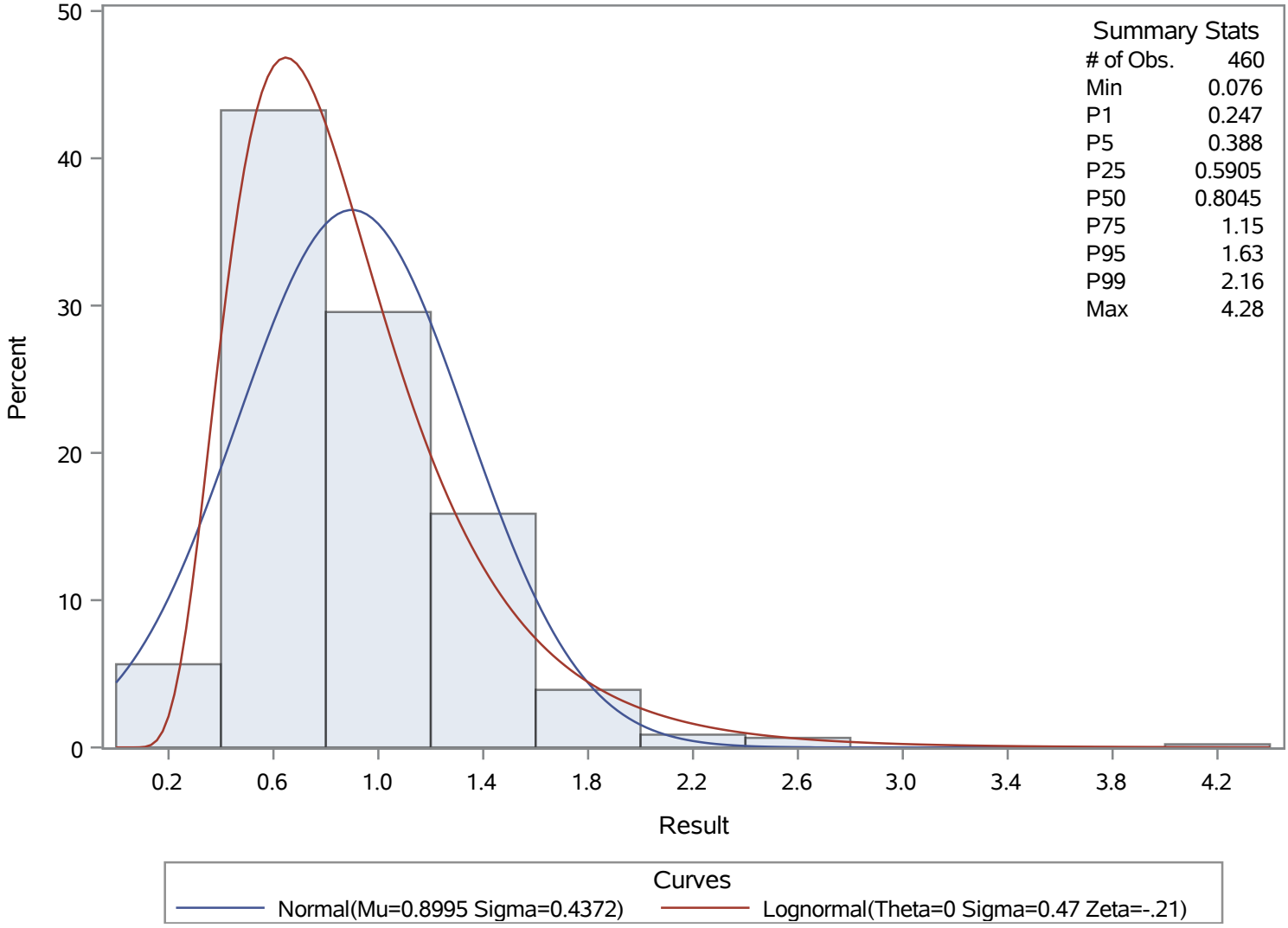
The UNIVARIATE Procedure



Little Manatee River
112
Total Nitrogen (mg/l)
Site ID = 112

The UNIVARIATE Procedure

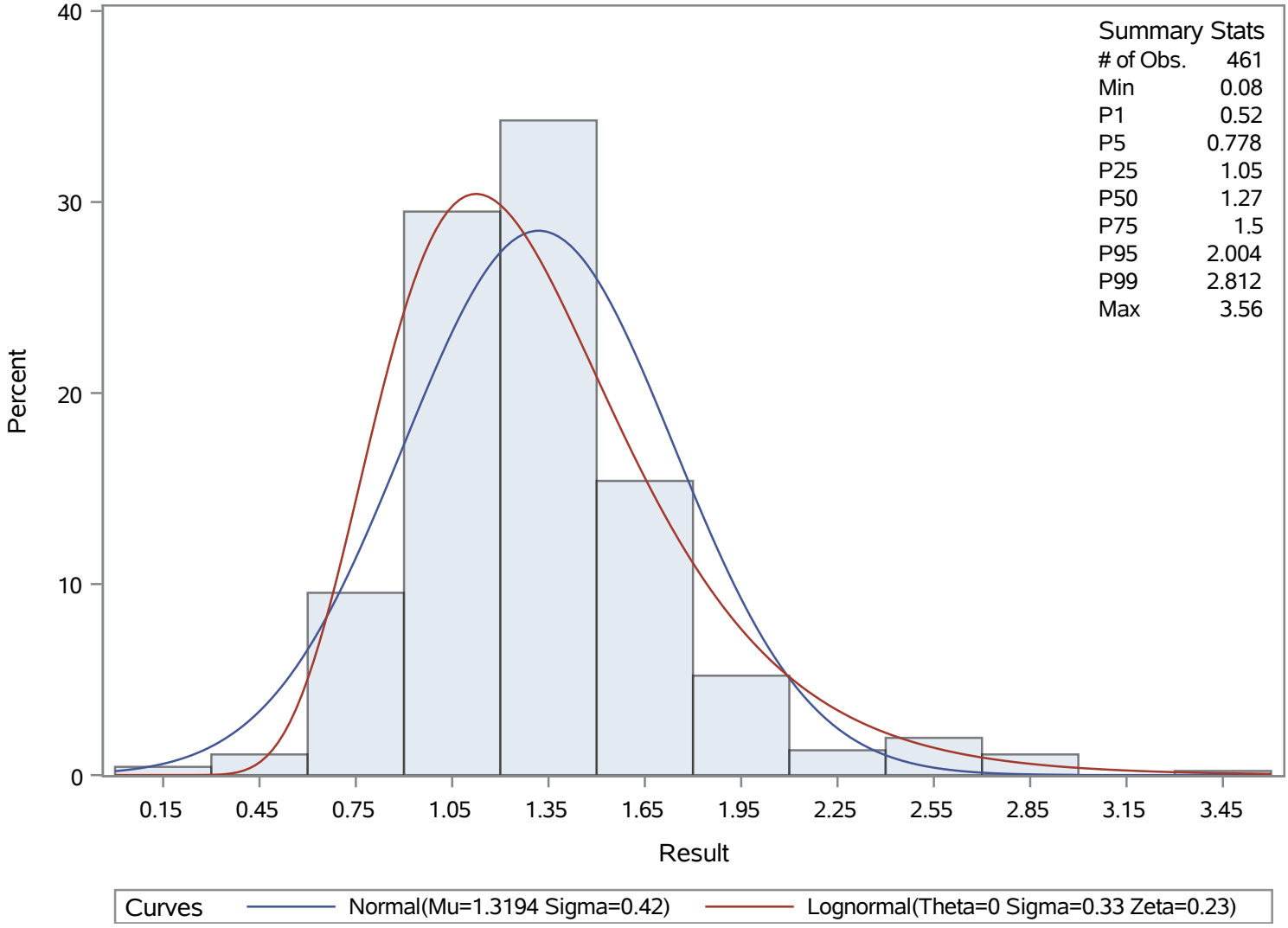
Distribution of Result



Little Manatee River
113
Total Nitrogen (mg/l)
Site ID = 113

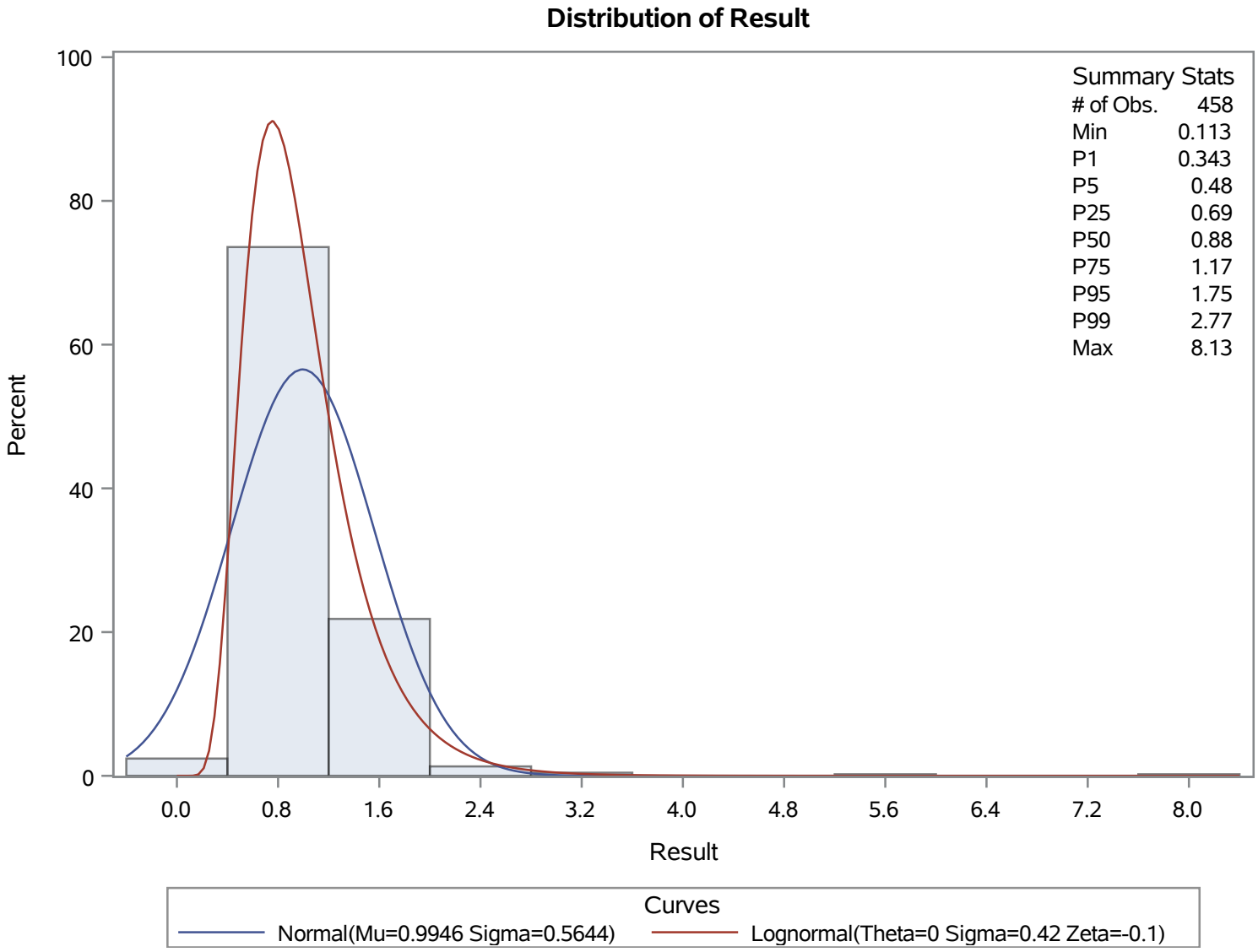
The UNIVARIATE Procedure

Distribution of Result



Little Manatee River
129
Total Nitrogen (mg/l)
Site ID = 129

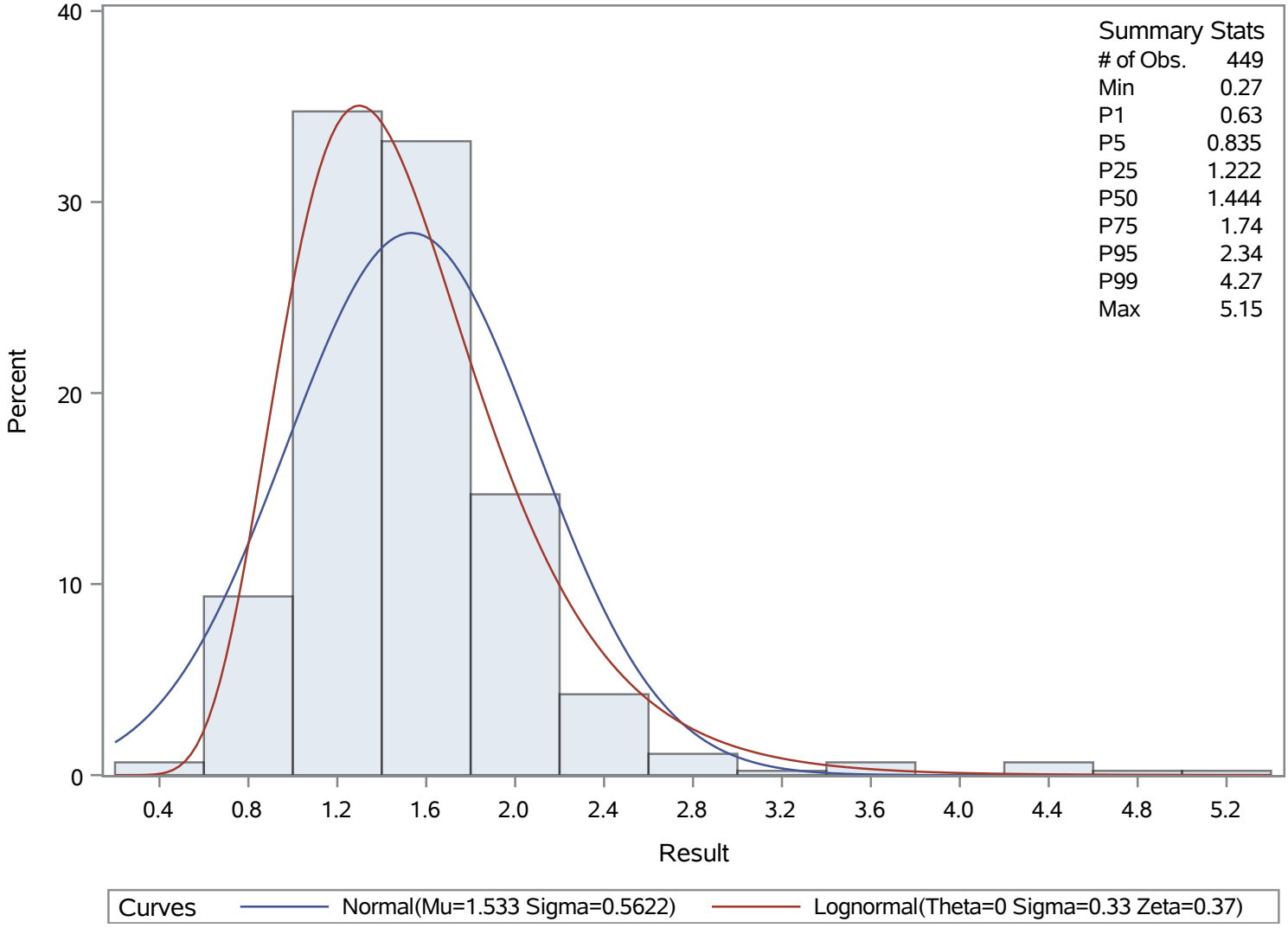
The UNIVARIATE Procedure



Little Manatee River
140
Total Nitrogen (mg/l)
Site ID = 140

The UNIVARIATE Procedure

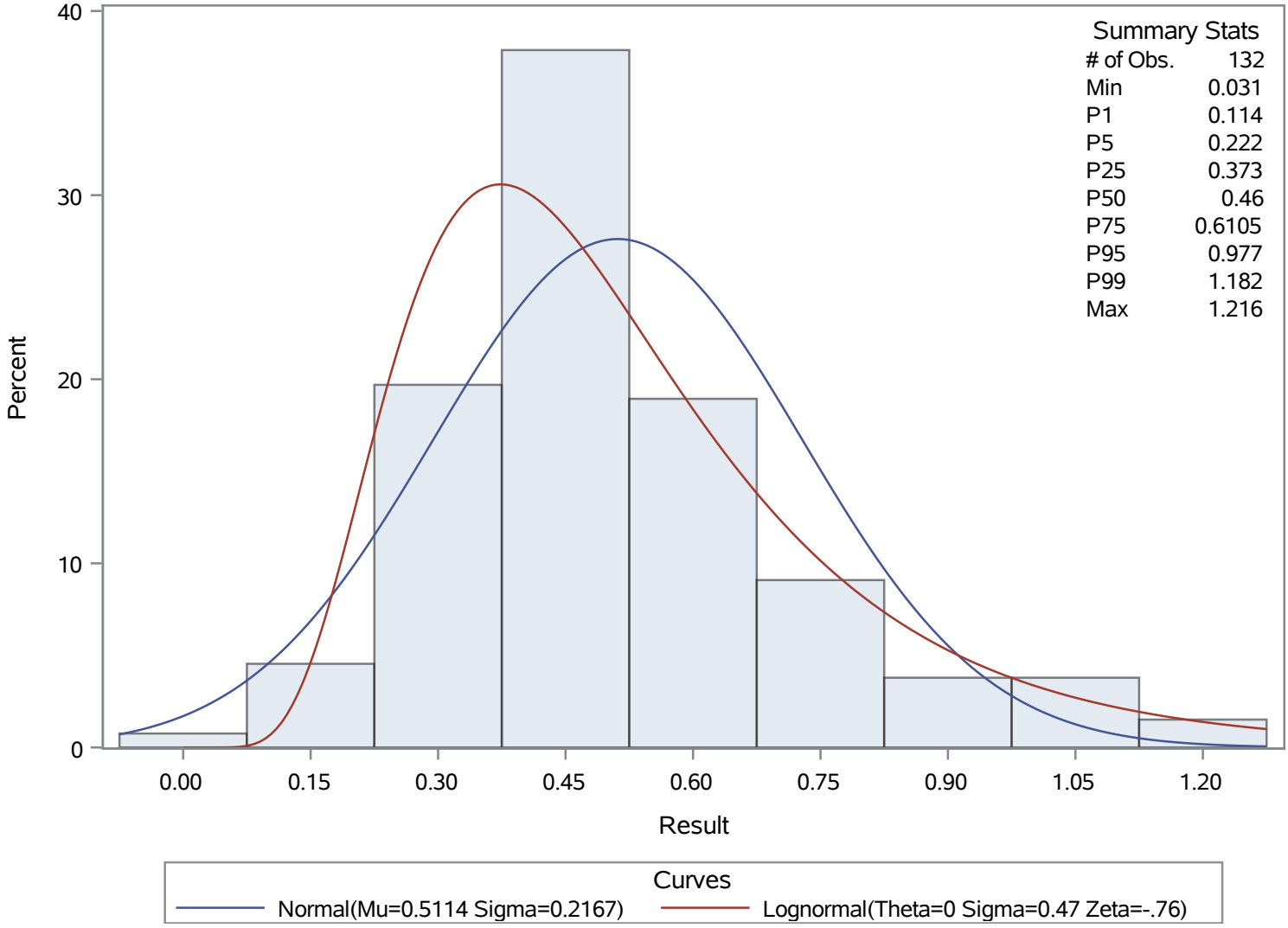
Distribution of Result



Little Manatee River
180
Total Nitrogen (mg/l)
Site ID = 180

The UNIVARIATE Procedure

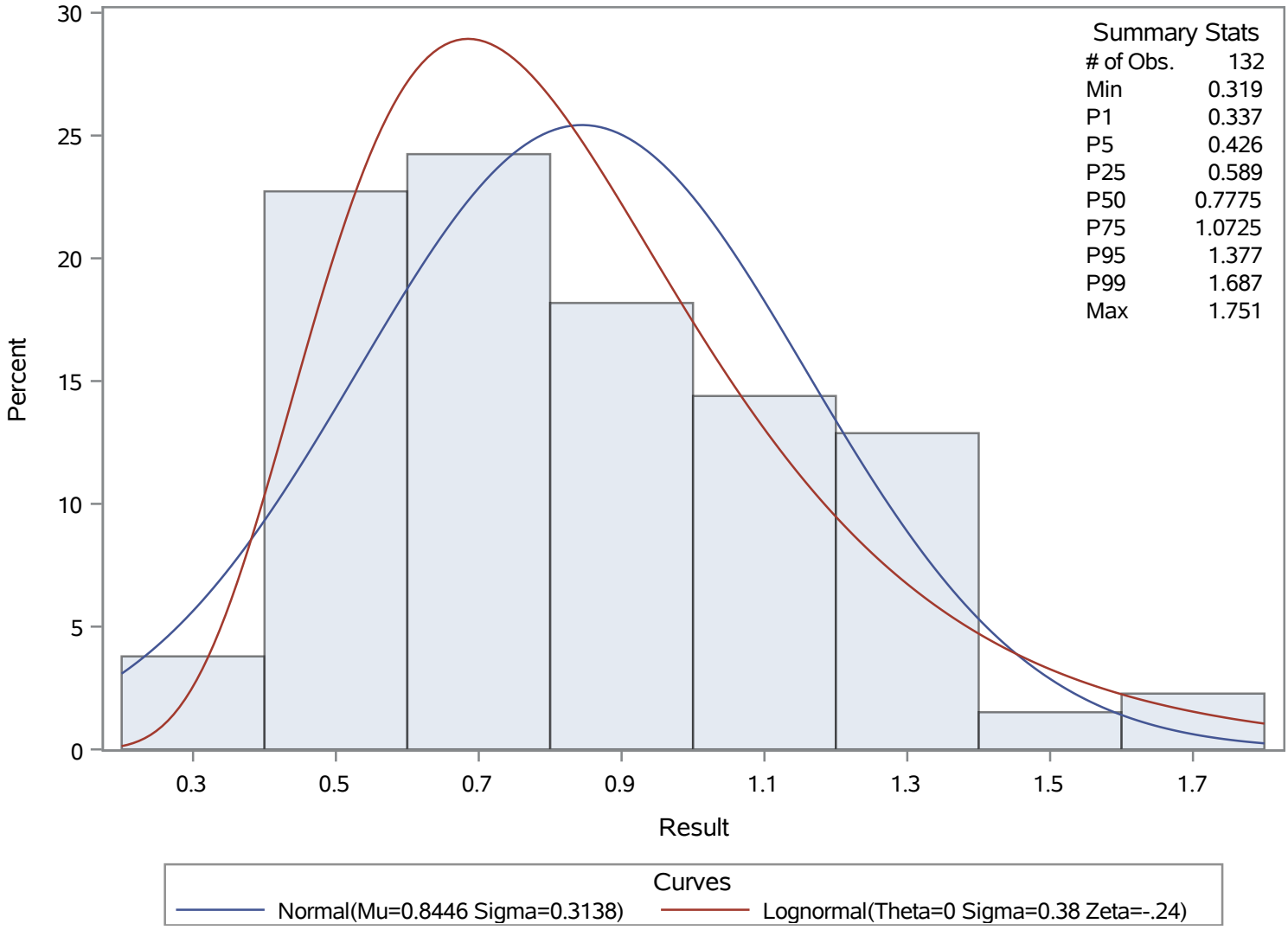
Distribution of Result



Little Manatee River
181
Total Nitrogen (mg/l)
Site ID = 181

The UNIVARIATE Procedure

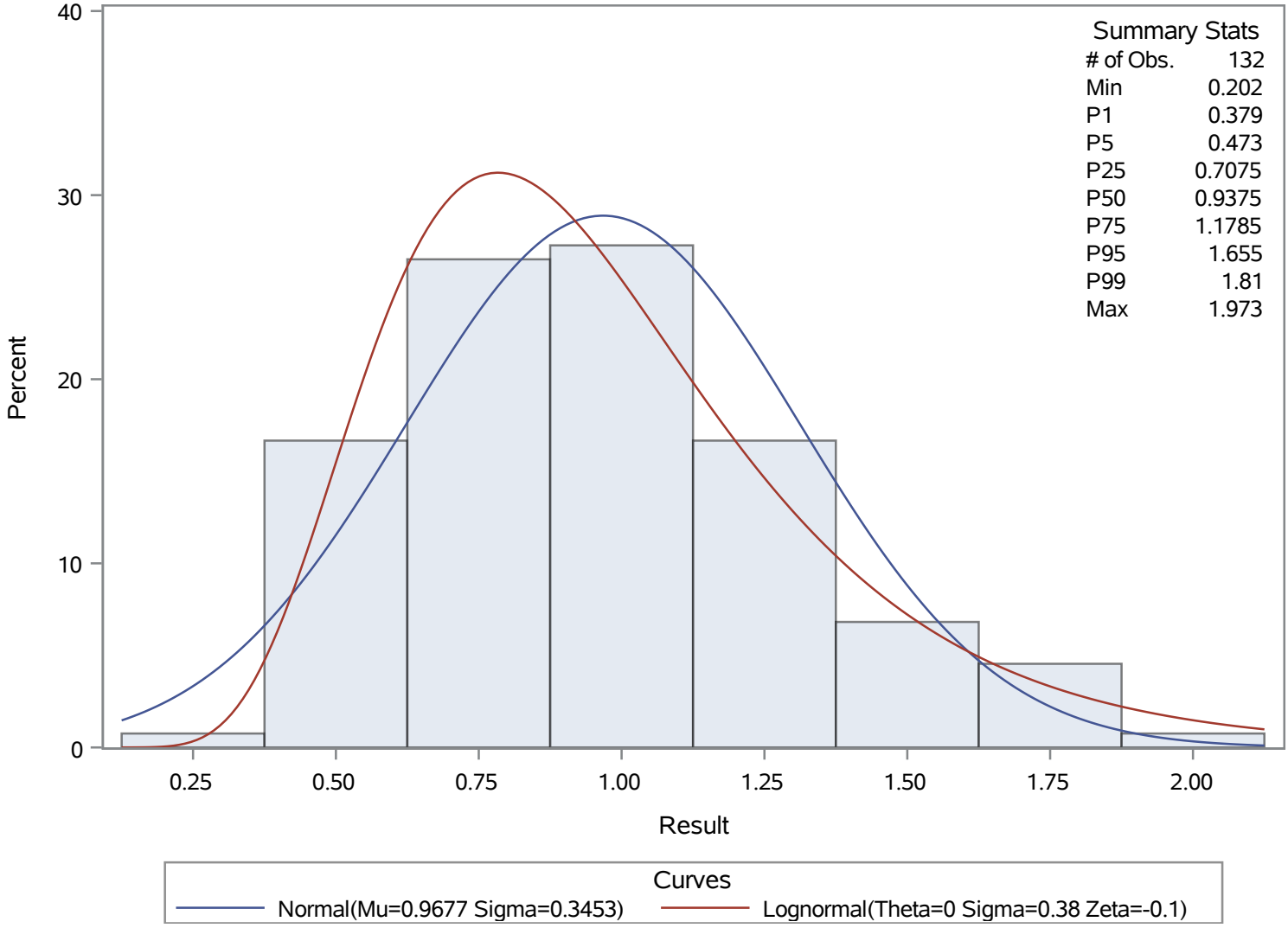
Distribution of Result



Little Manatee River
182
Total Nitrogen (mg/l)
Site ID = 182

The UNIVARIATE Procedure

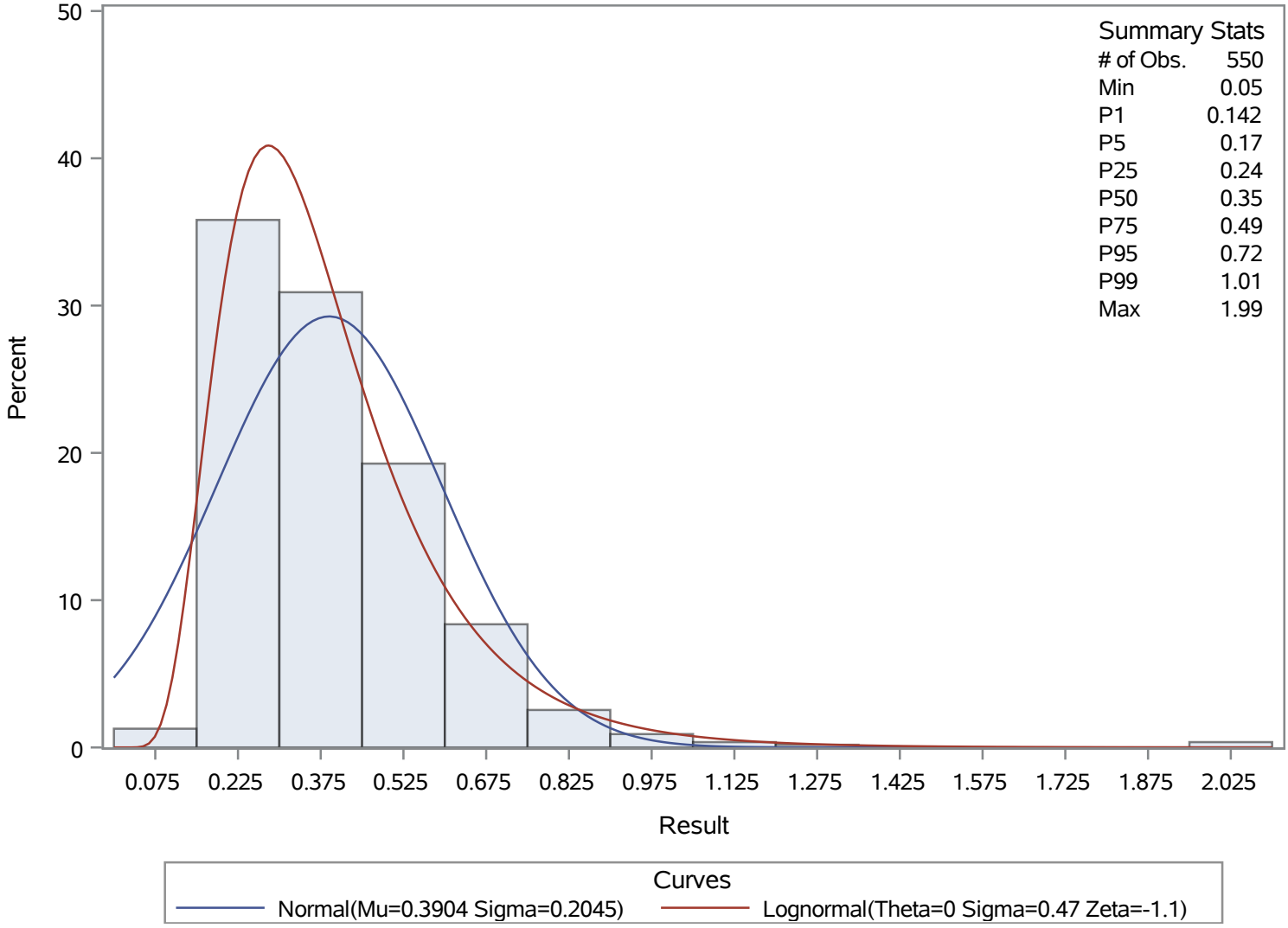
Distribution of Result



Little Manatee River
112
Total Phosphorus (mg/l)
Site ID = 112

The UNIVARIATE Procedure

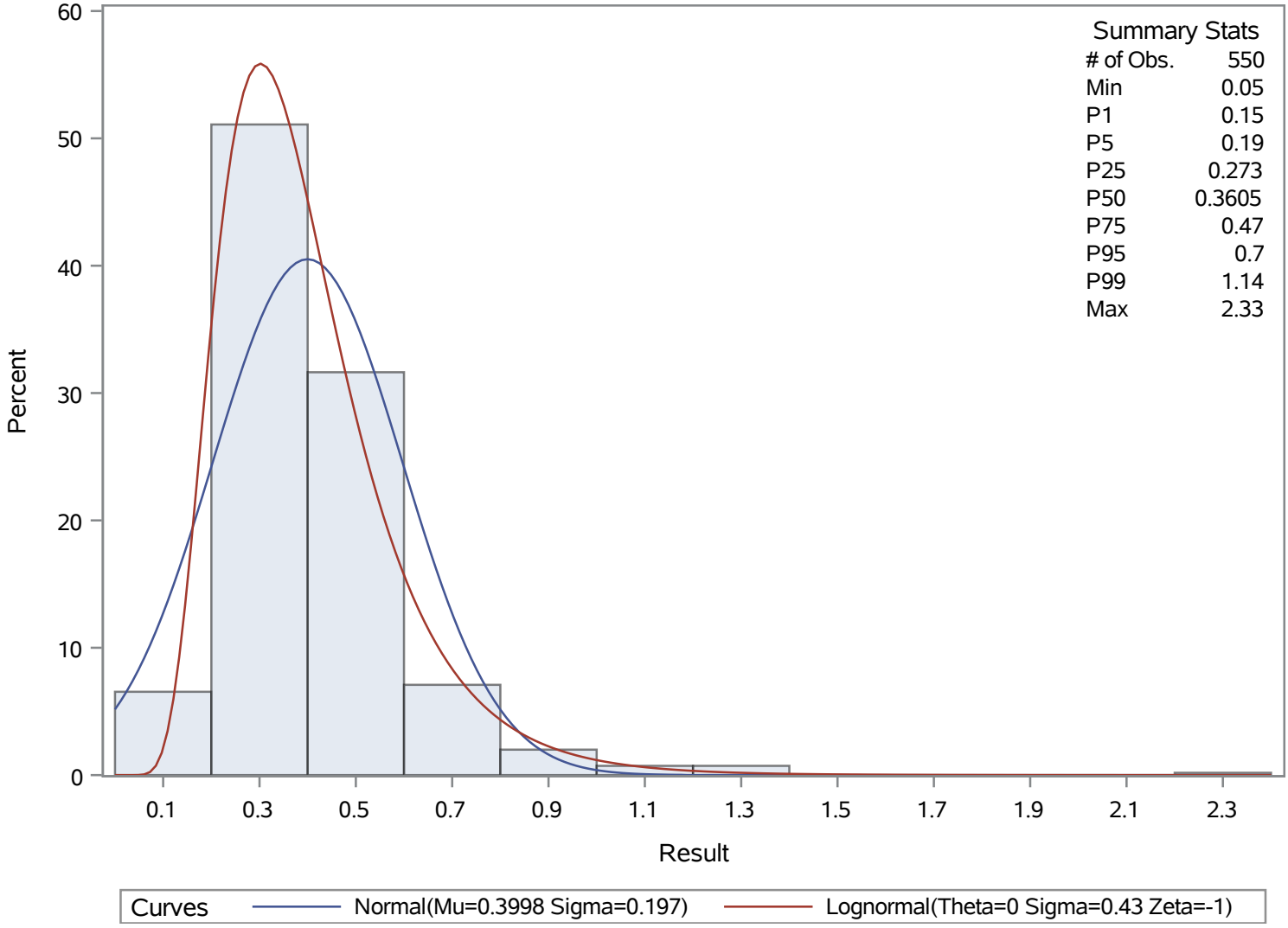
Distribution of Result



Little Manatee River
113
Total Phosphorus (mg/l)
Site ID = 113

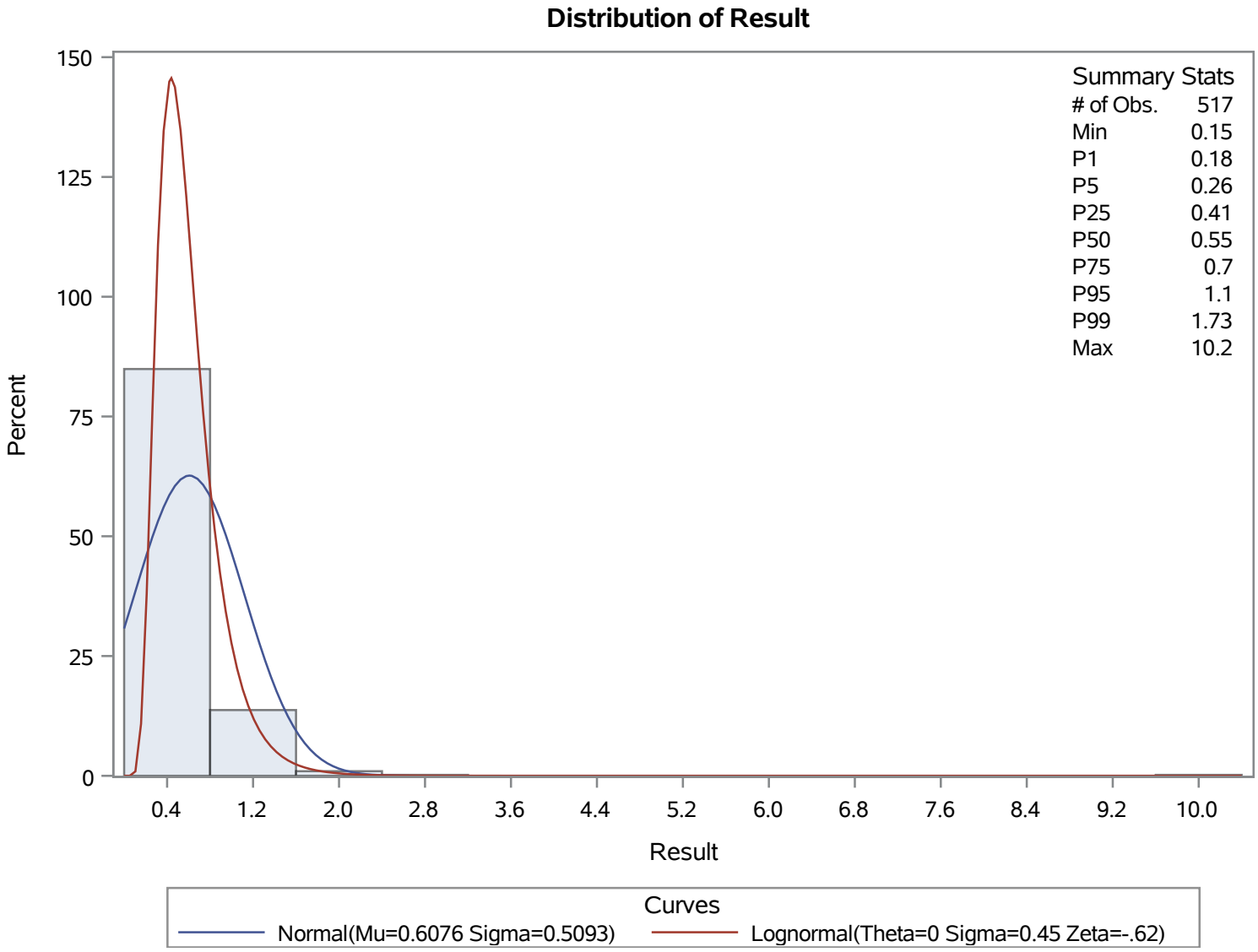
The UNIVARIATE Procedure

Distribution of Result



Little Manatee River
129
Total Phosphorus (mg/l)
Site ID = 129

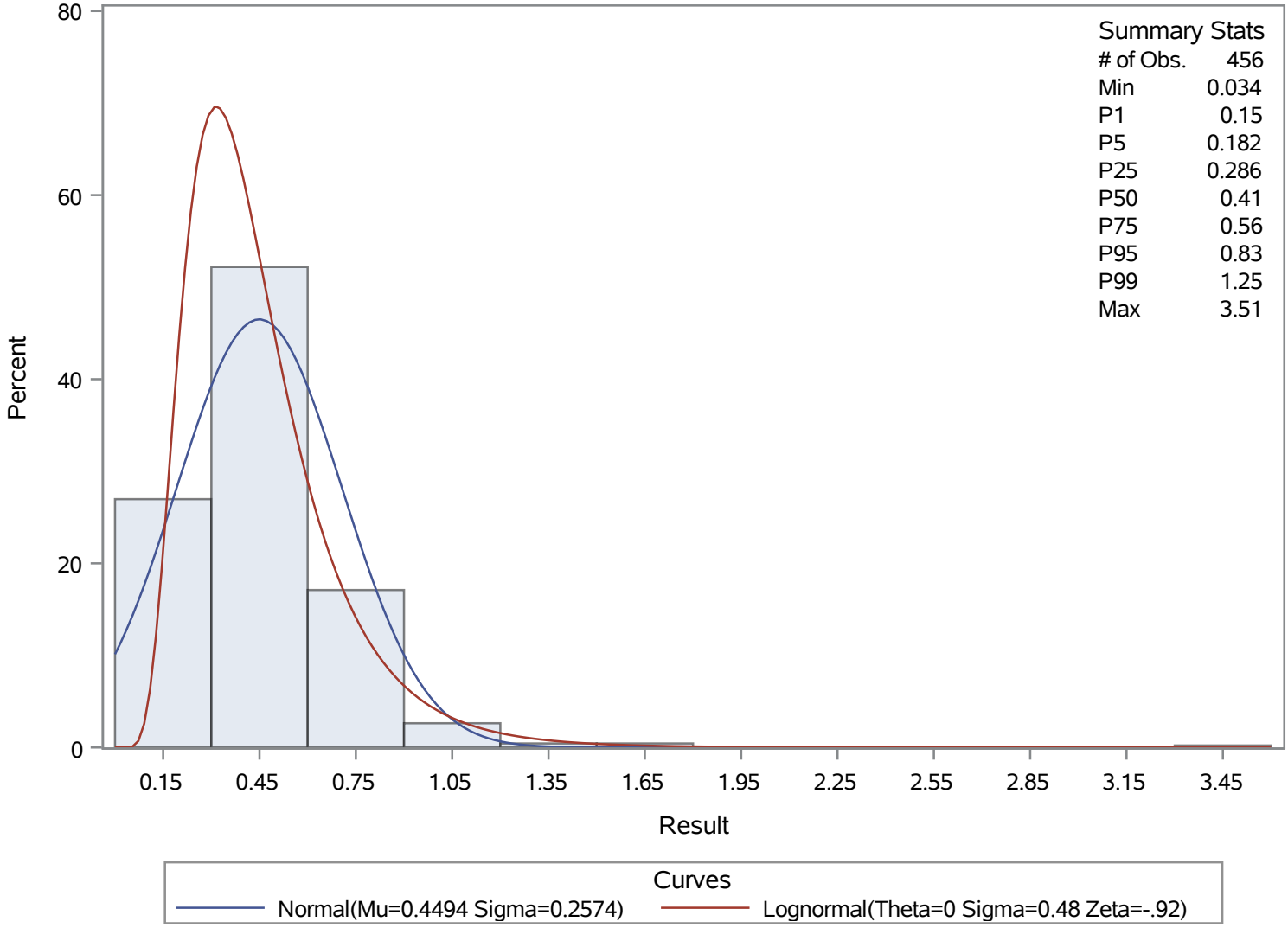
The UNIVARIATE Procedure



Little Manatee River
140
Total Phosphorus (mg/l)
Site ID = 140

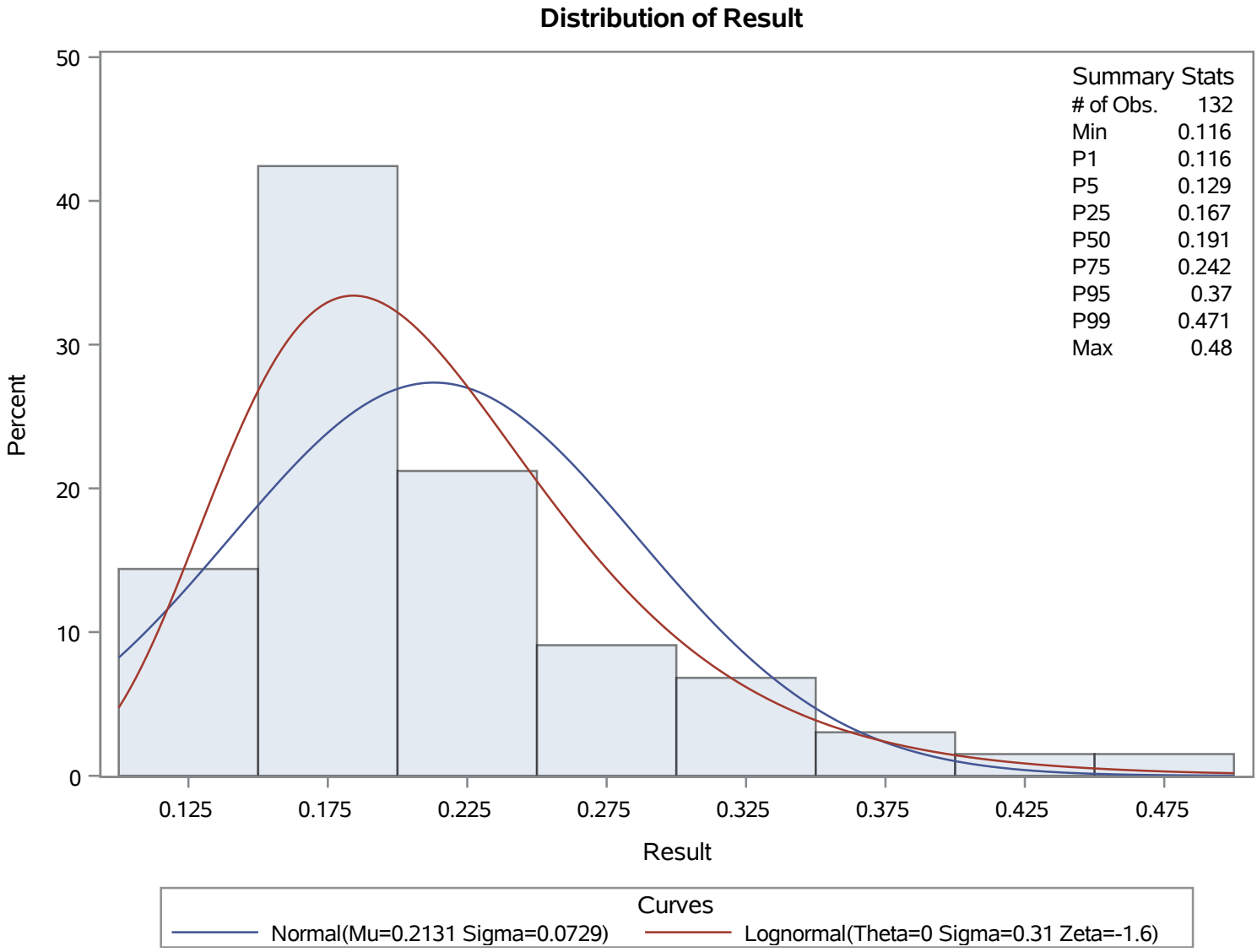
The UNIVARIATE Procedure

Distribution of Result



Little Manatee River
180
Total Phosphorus (mg/l)
Site ID = 180

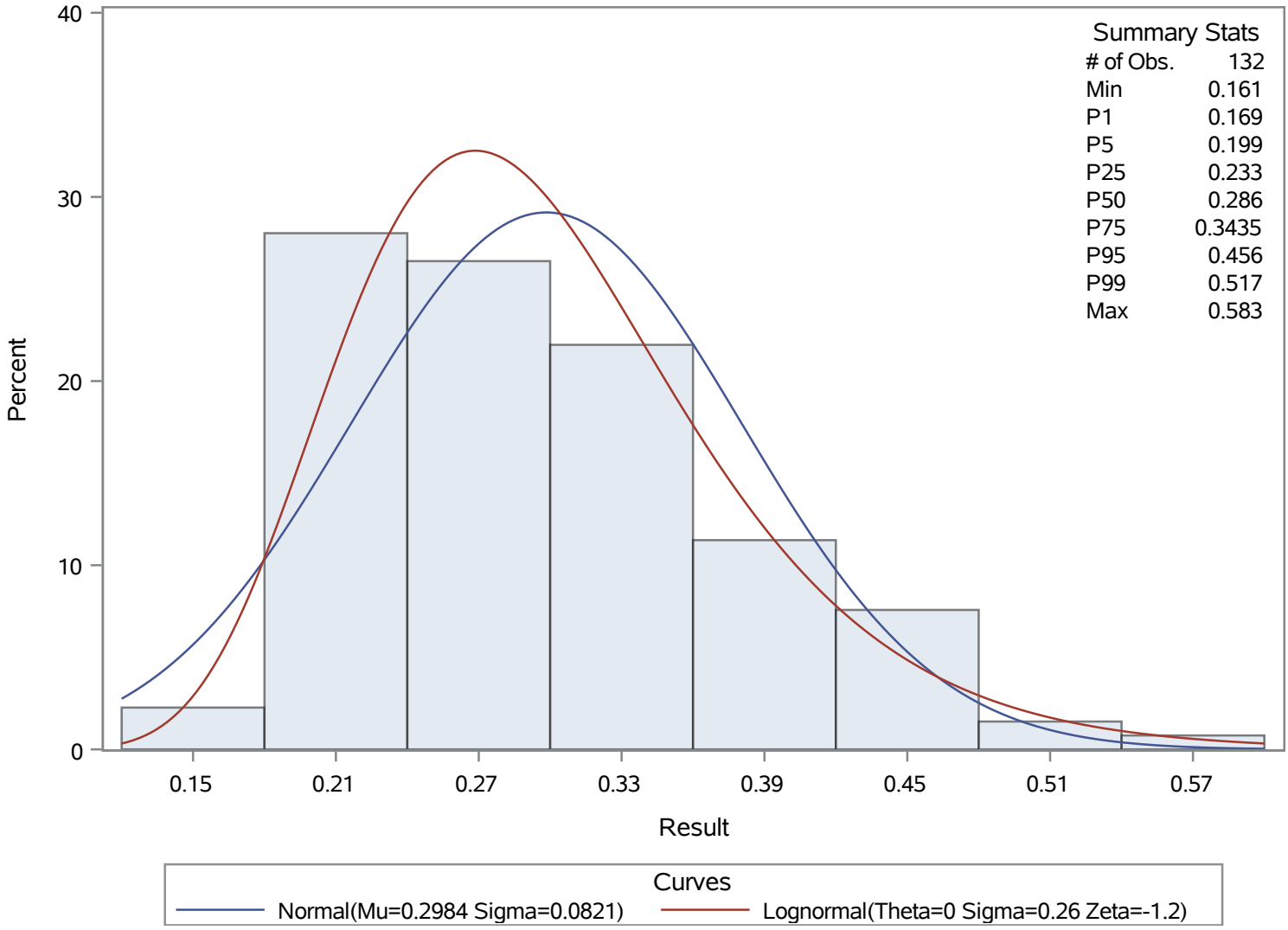
The UNIVARIATE Procedure



Little Manatee River
181
Total Phosphorus (mg/l)
Site ID = 181

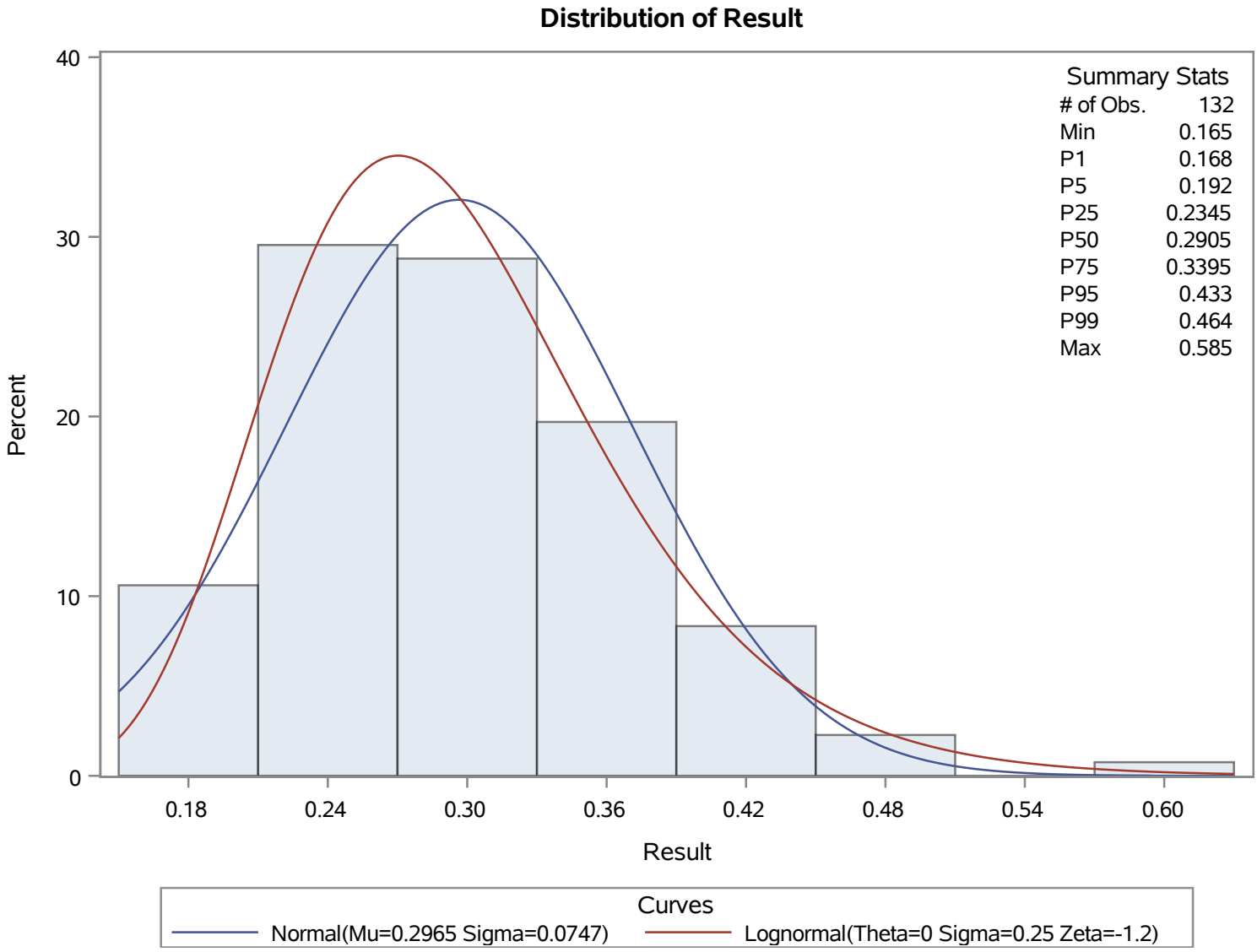
The UNIVARIATE Procedure

Distribution of Result



Little Manatee River
182
Total Phosphorus (mg/l)
Site ID = 182

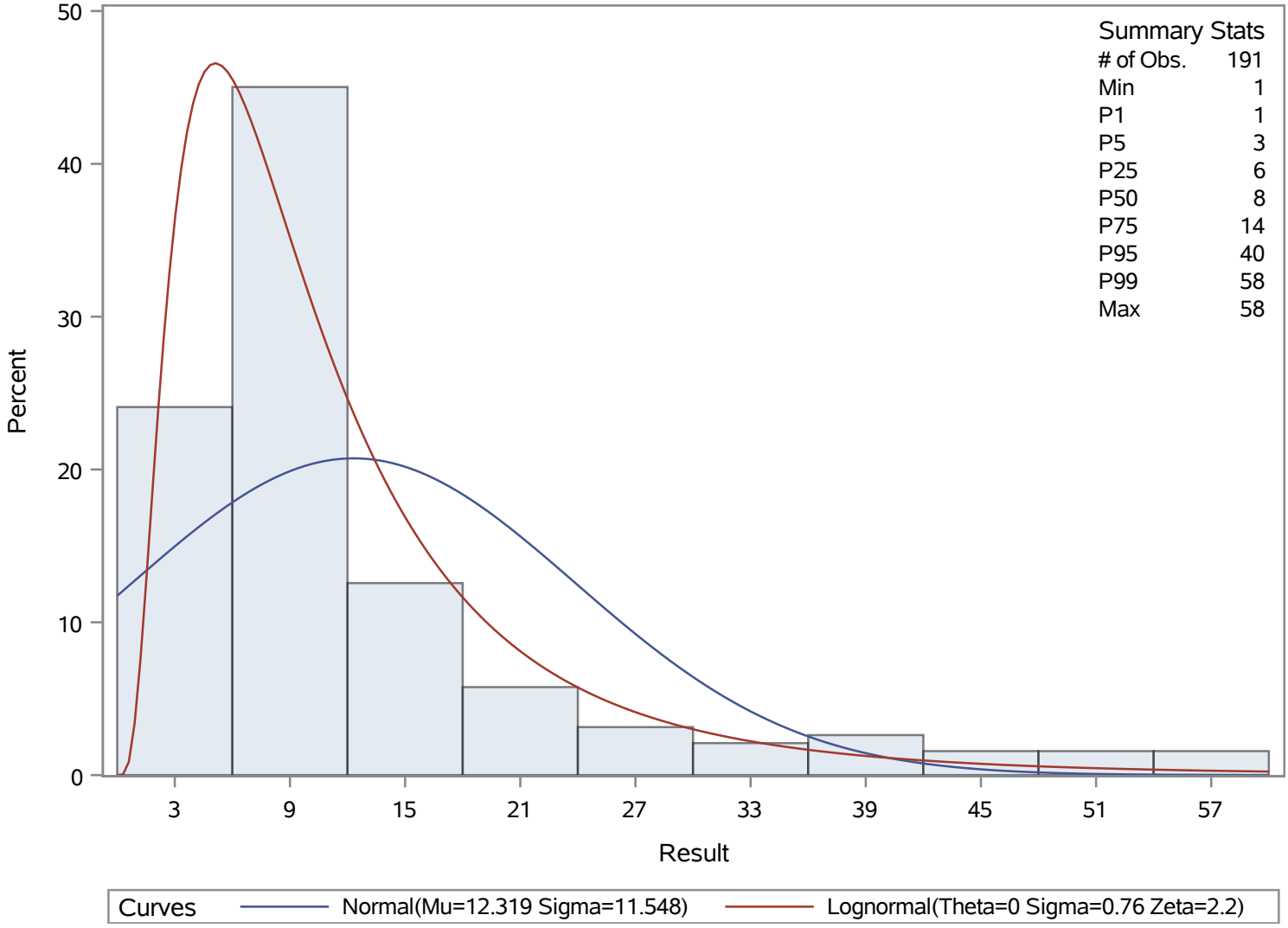
The UNIVARIATE Procedure



Little Manatee River
112
Total Suspended Solids (mg/l)
Site ID = 112

The UNIVARIATE Procedure

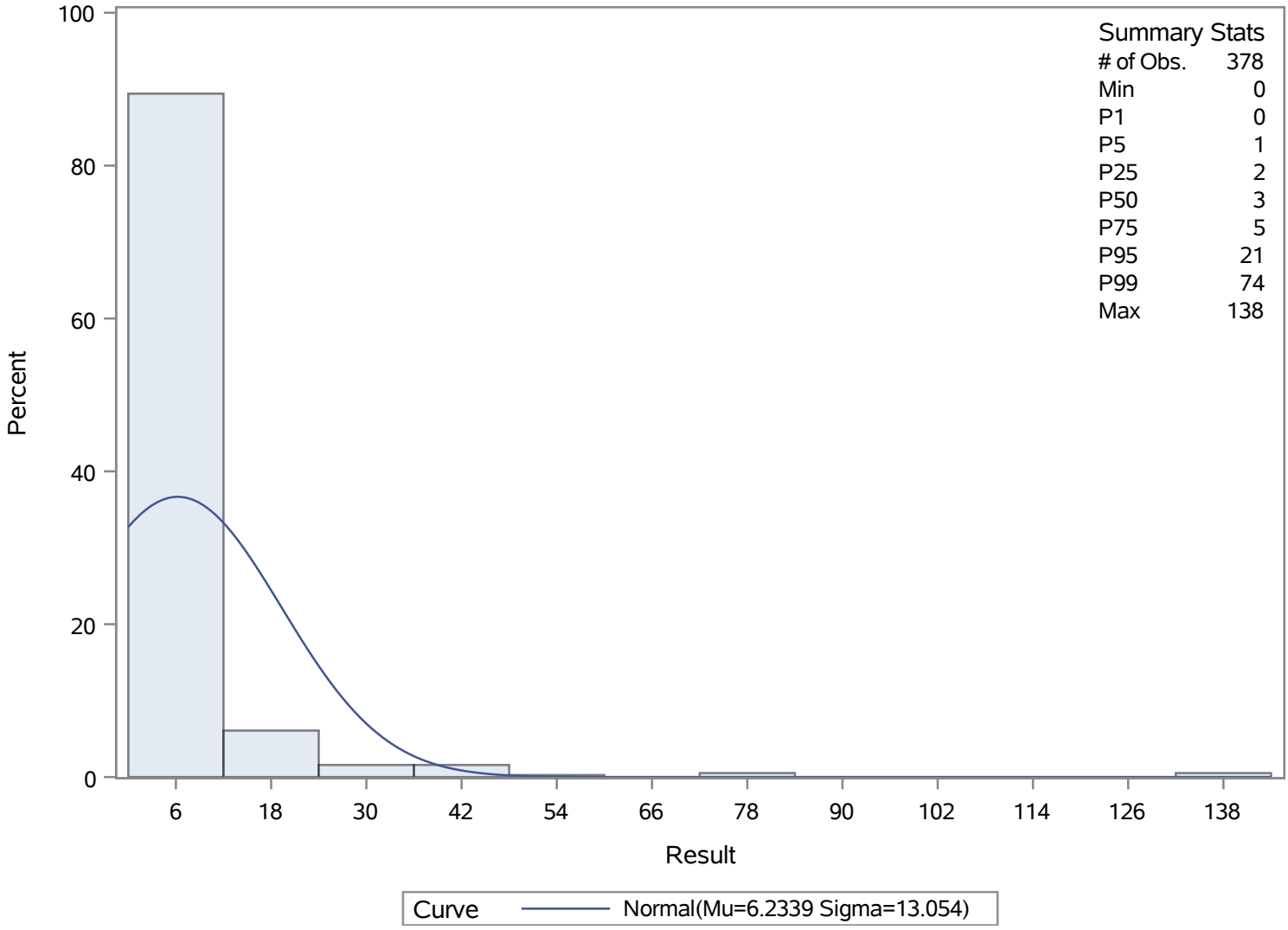
Distribution of Result



Little Manatee River
113
Total Suspended Solids (mg/l)
Site ID = 113

The UNIVARIATE Procedure

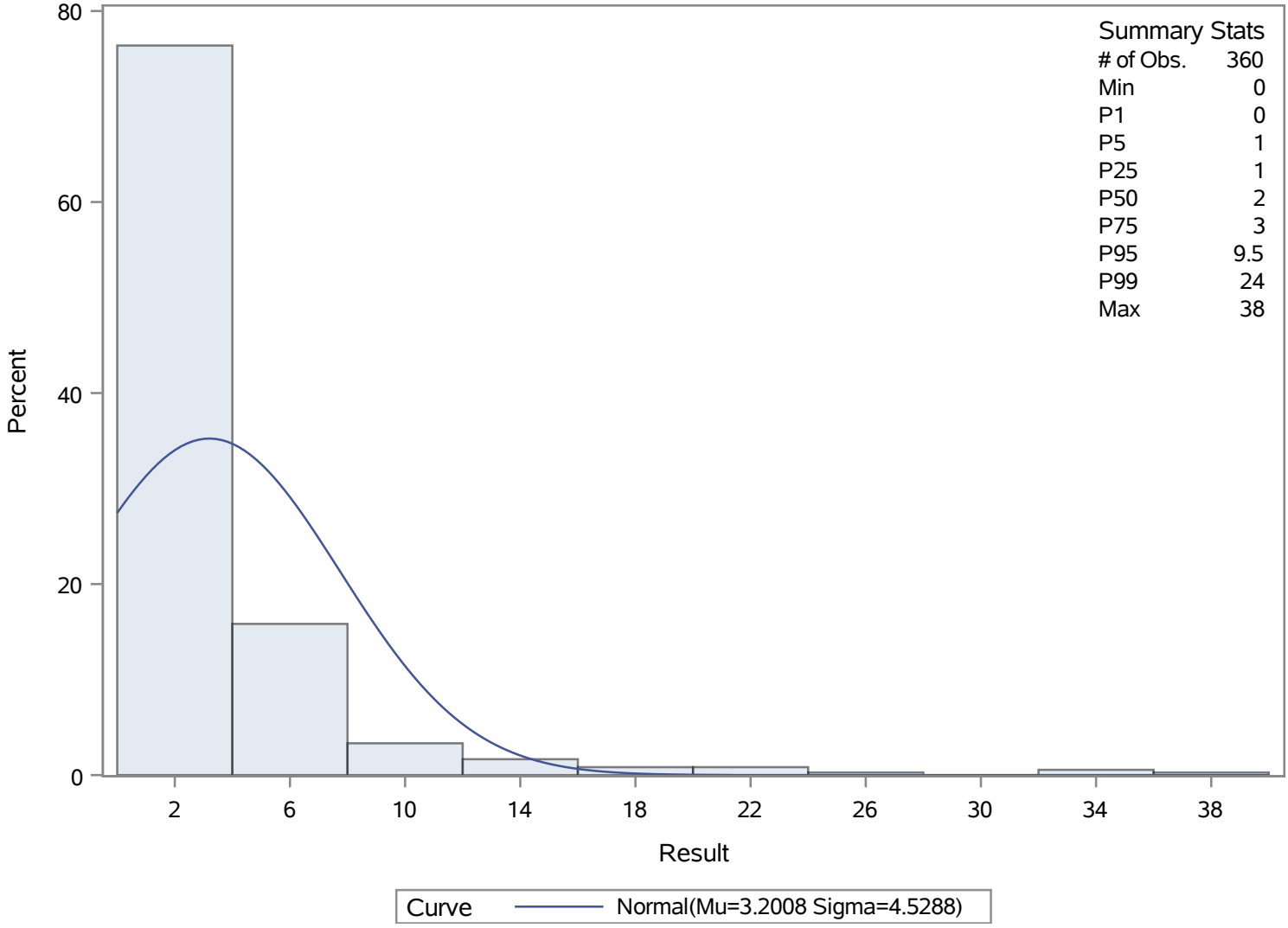
Distribution of Result



Little Manatee River
129
Total Suspended Solids (mg/l)
Site ID = 129

The UNIVARIATE Procedure

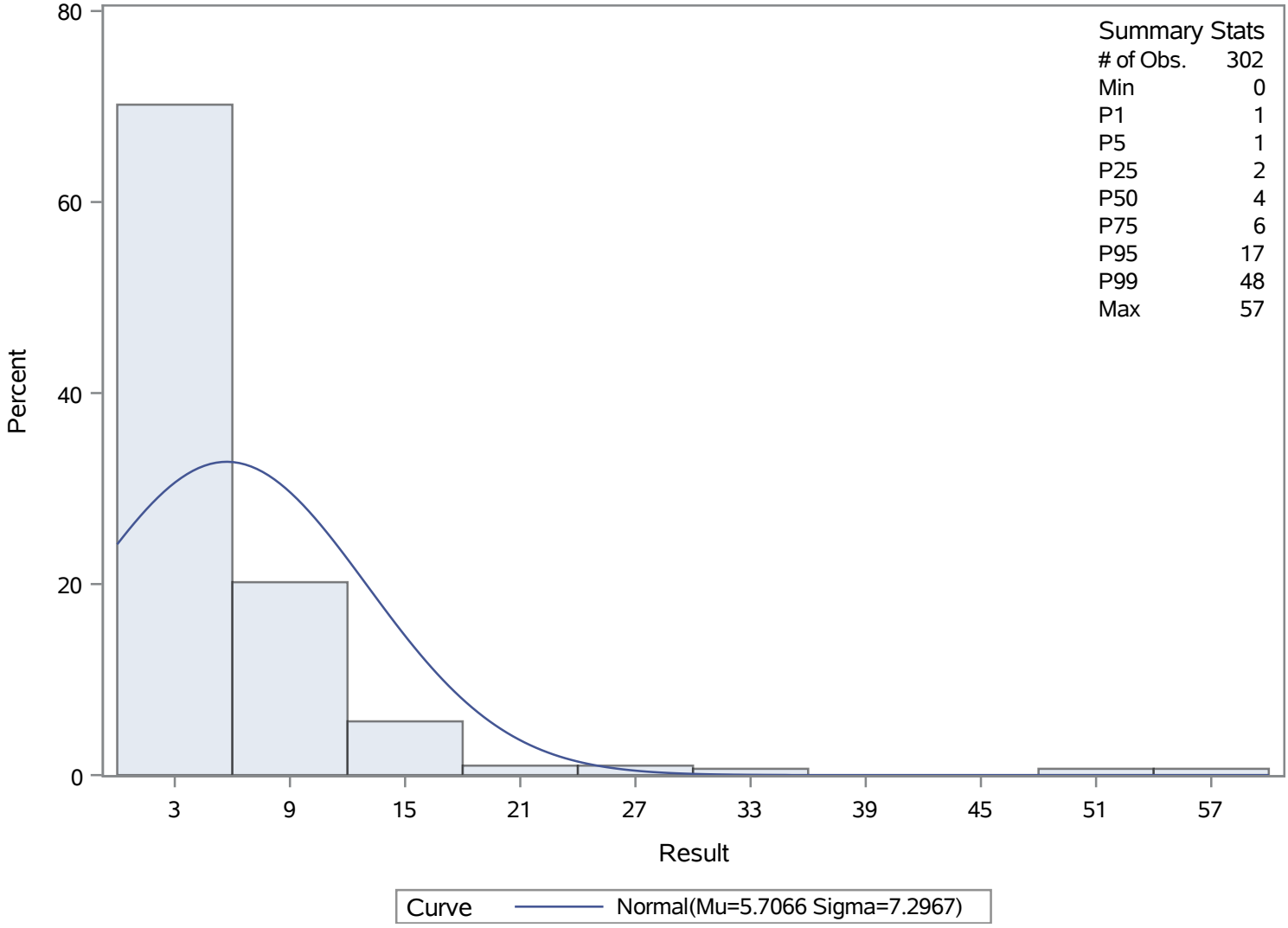
Distribution of Result



Little Manatee River
140
Total Suspended Solids (mg/l)
Site ID = 140

The UNIVARIATE Procedure

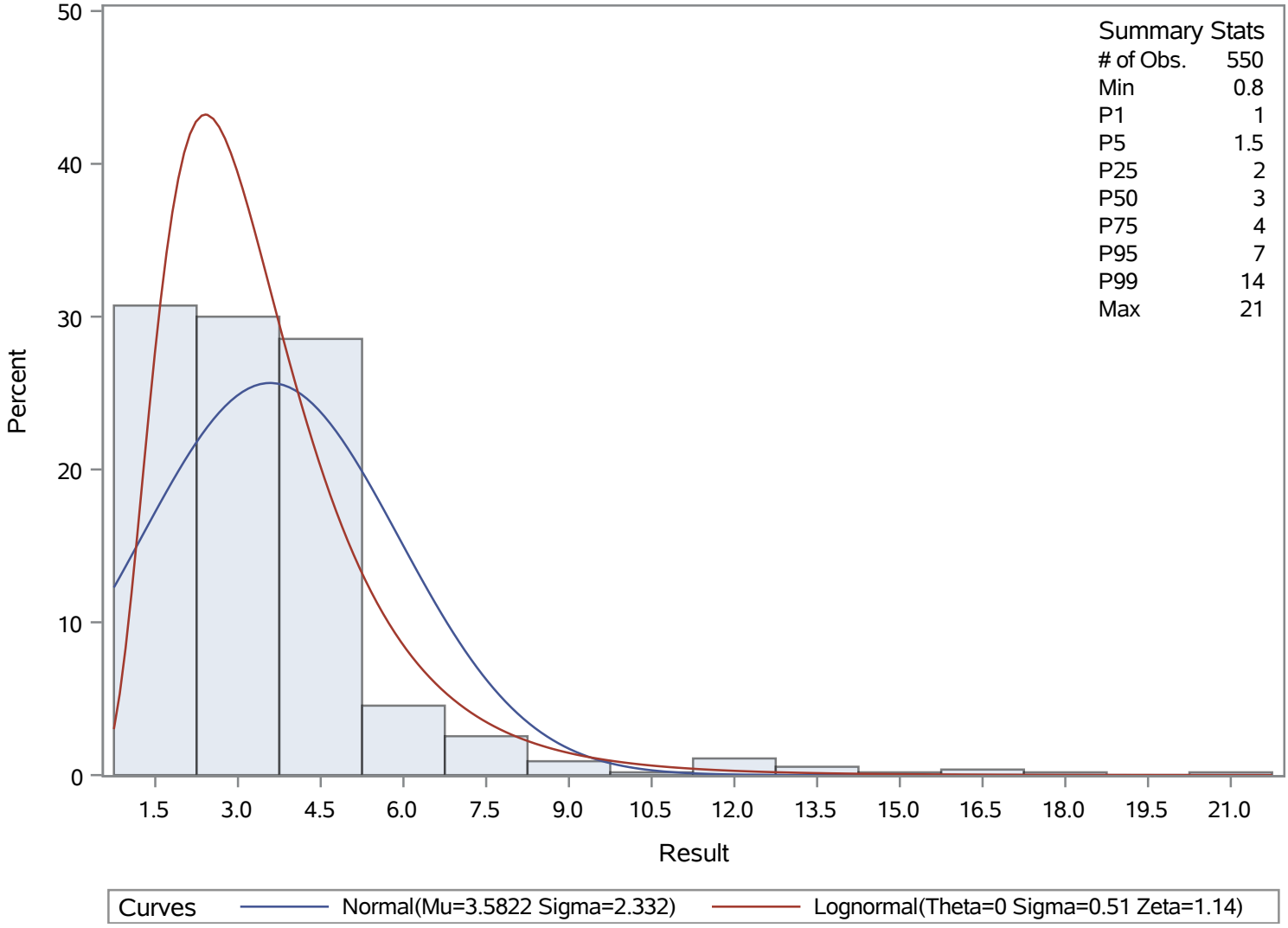
Distribution of Result



Little Manatee River
112
Turbidity (NTU)
Site ID = 112

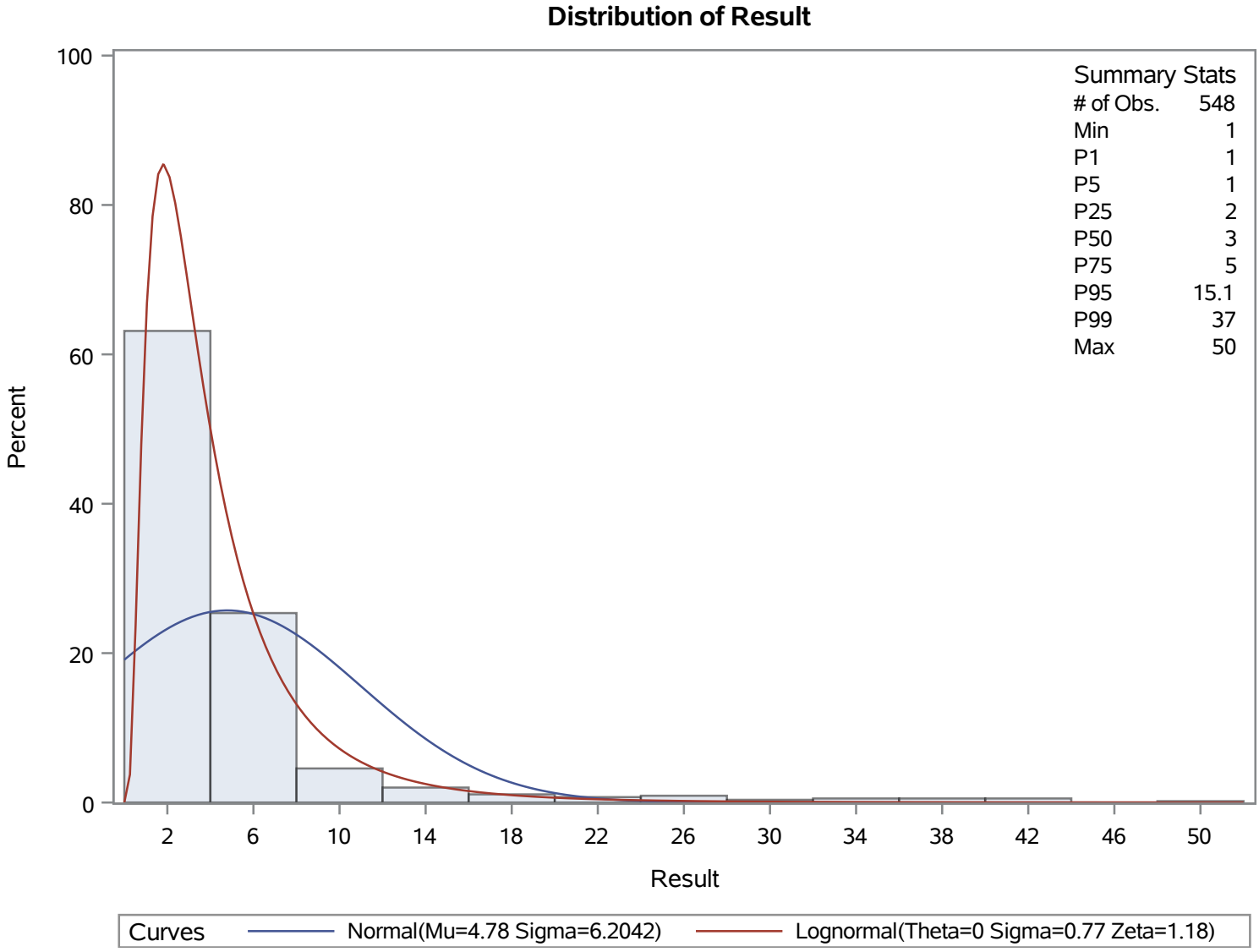
The UNIVARIATE Procedure

Distribution of Result



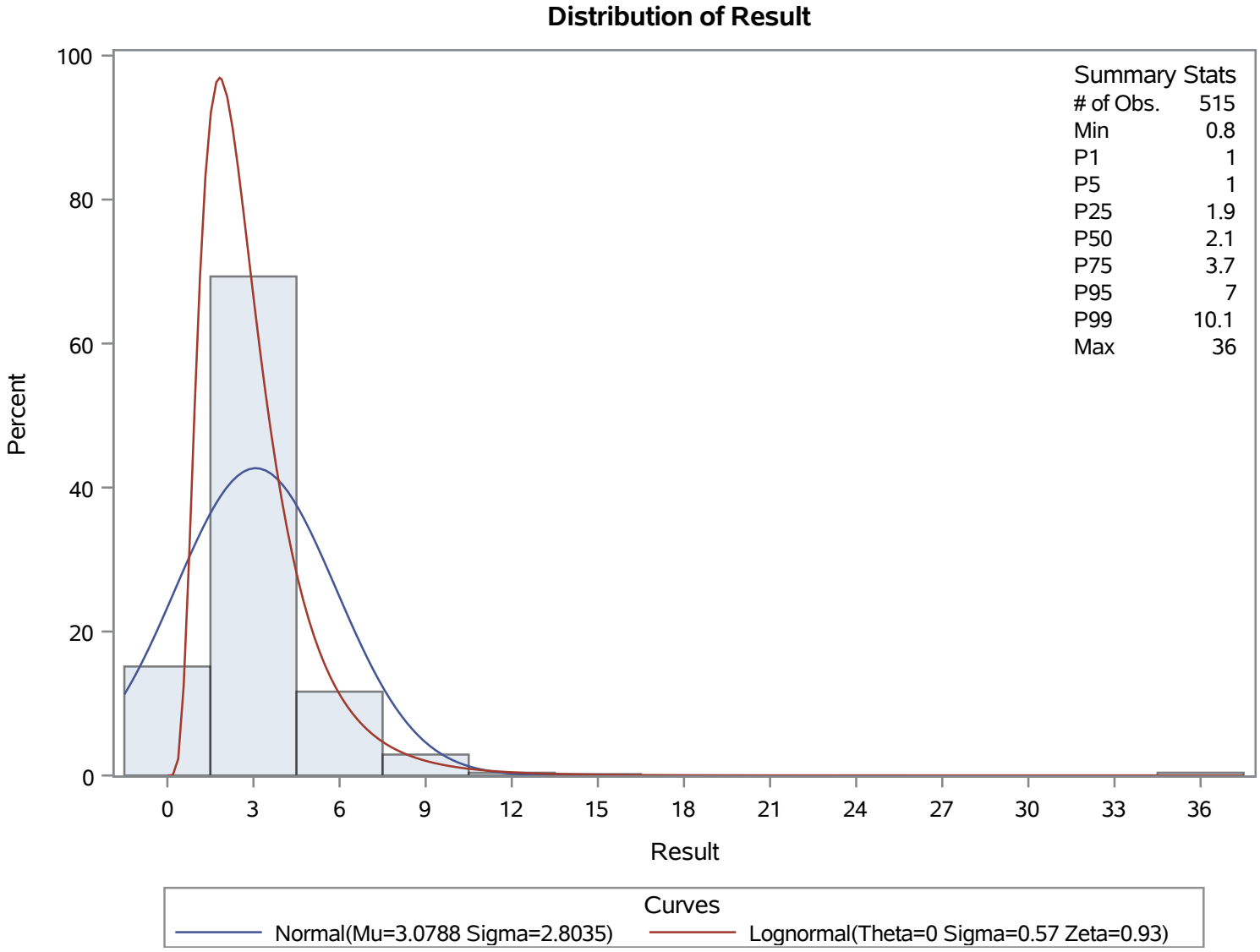
Little Manatee River
113
Turbidity (NTU)
Site ID = 113

The UNIVARIATE Procedure



Little Manatee River
129
Turbidity (NTU)
Site ID = 129

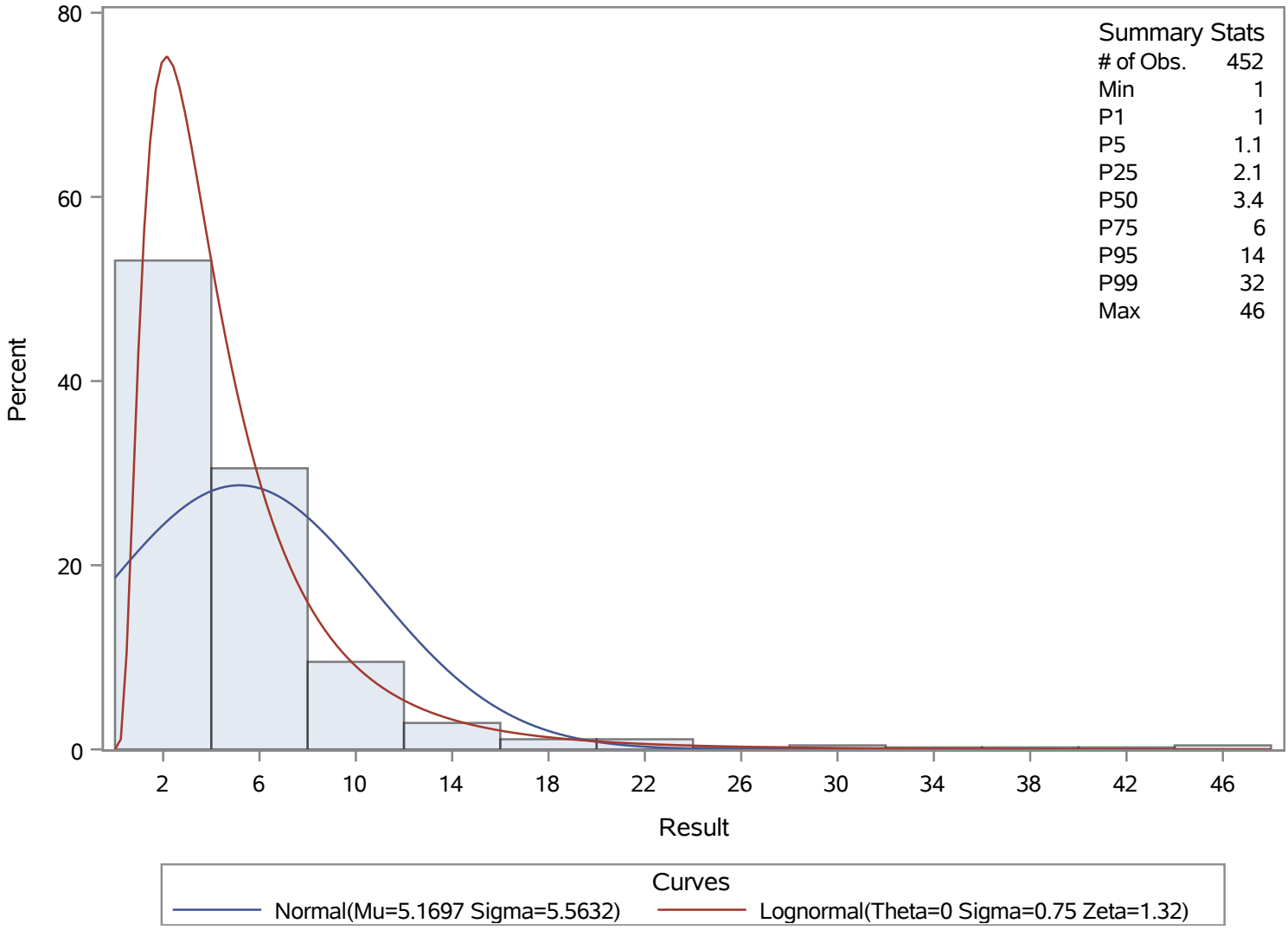
The UNIVARIATE Procedure



Little Manatee River
140
Turbidity (NTU)
Site ID = 140

The UNIVARIATE Procedure

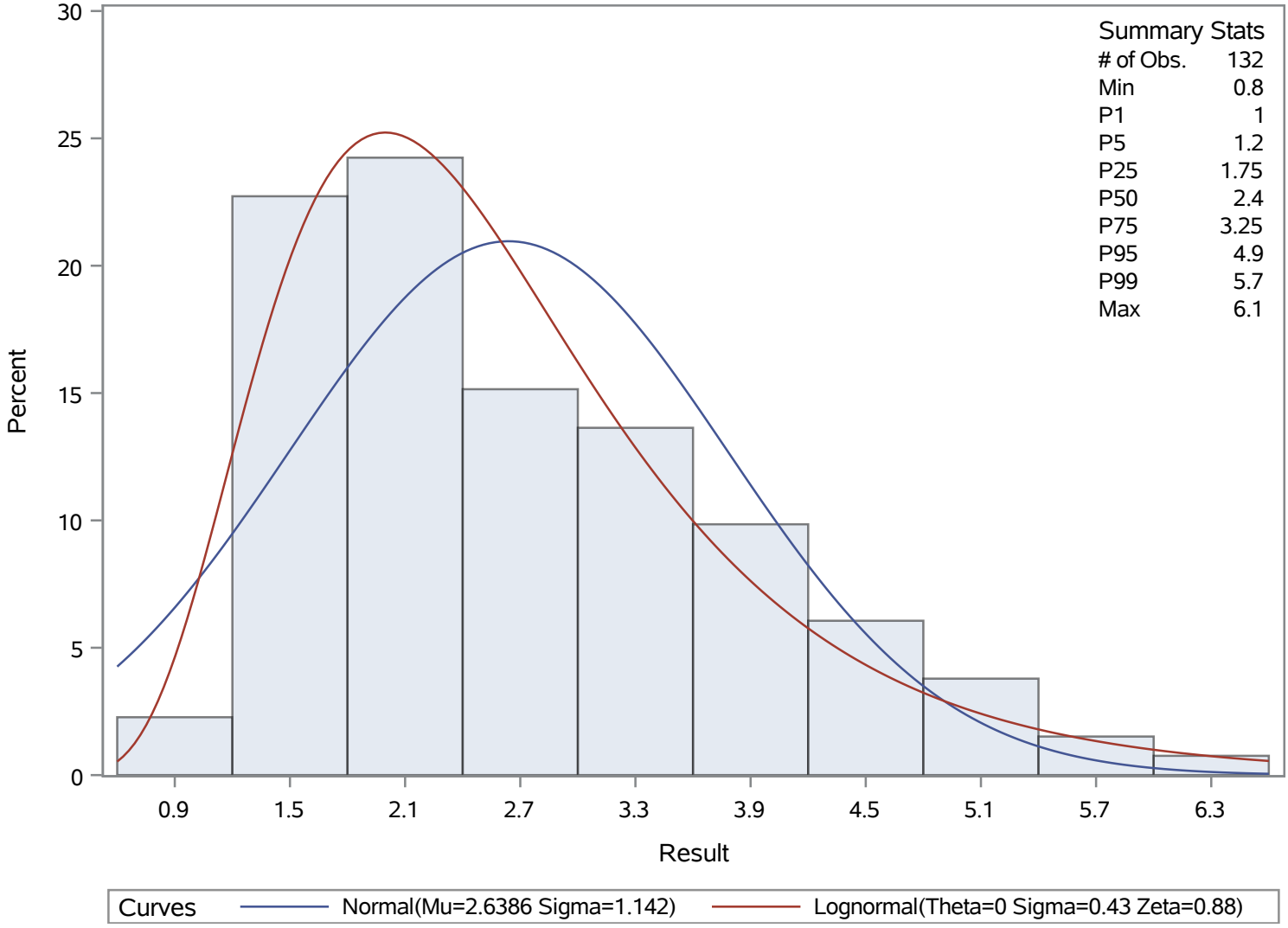
Distribution of Result



Little Manatee River
180
Turbidity (NTU)
Site ID = 180

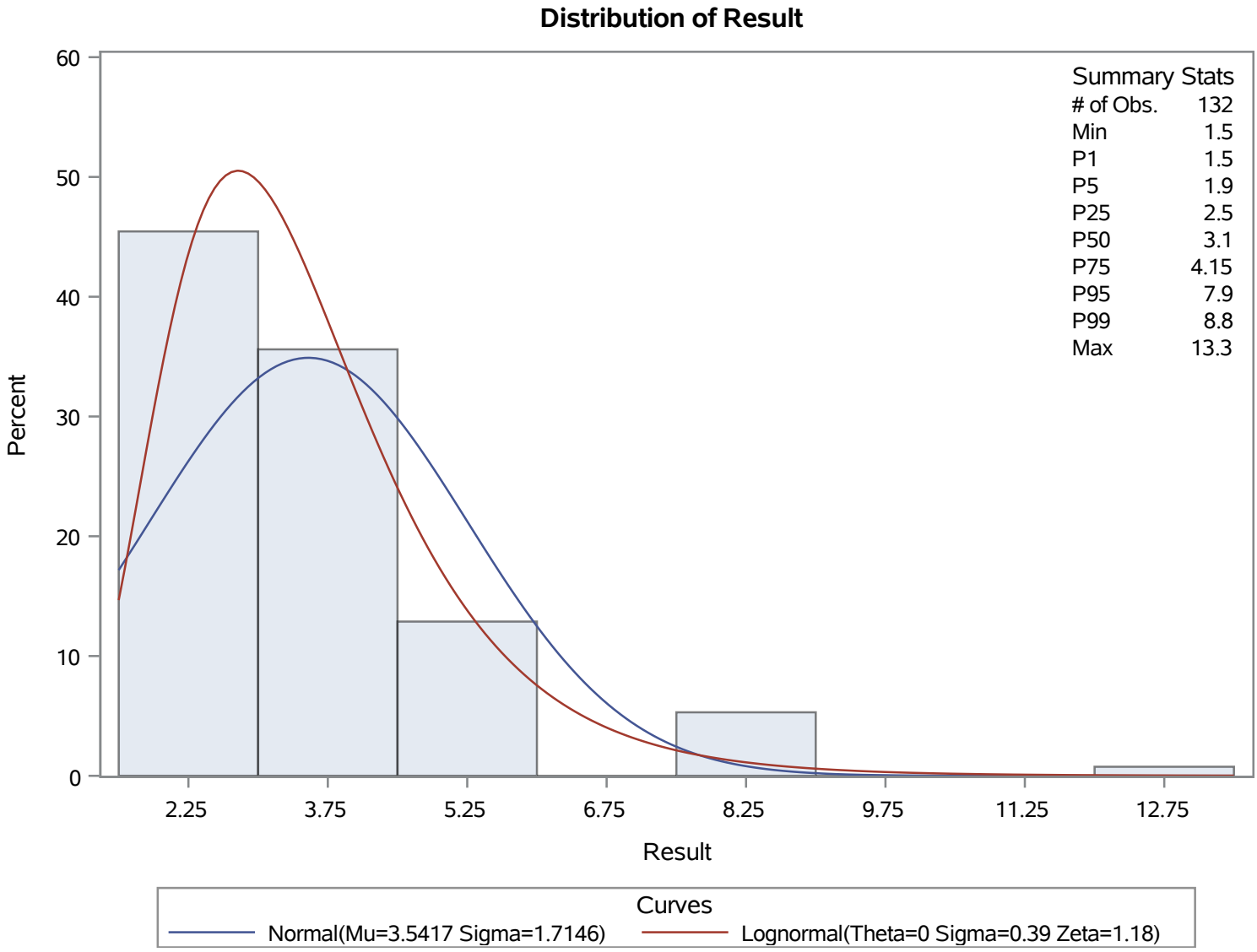
The UNIVARIATE Procedure

Distribution of Result



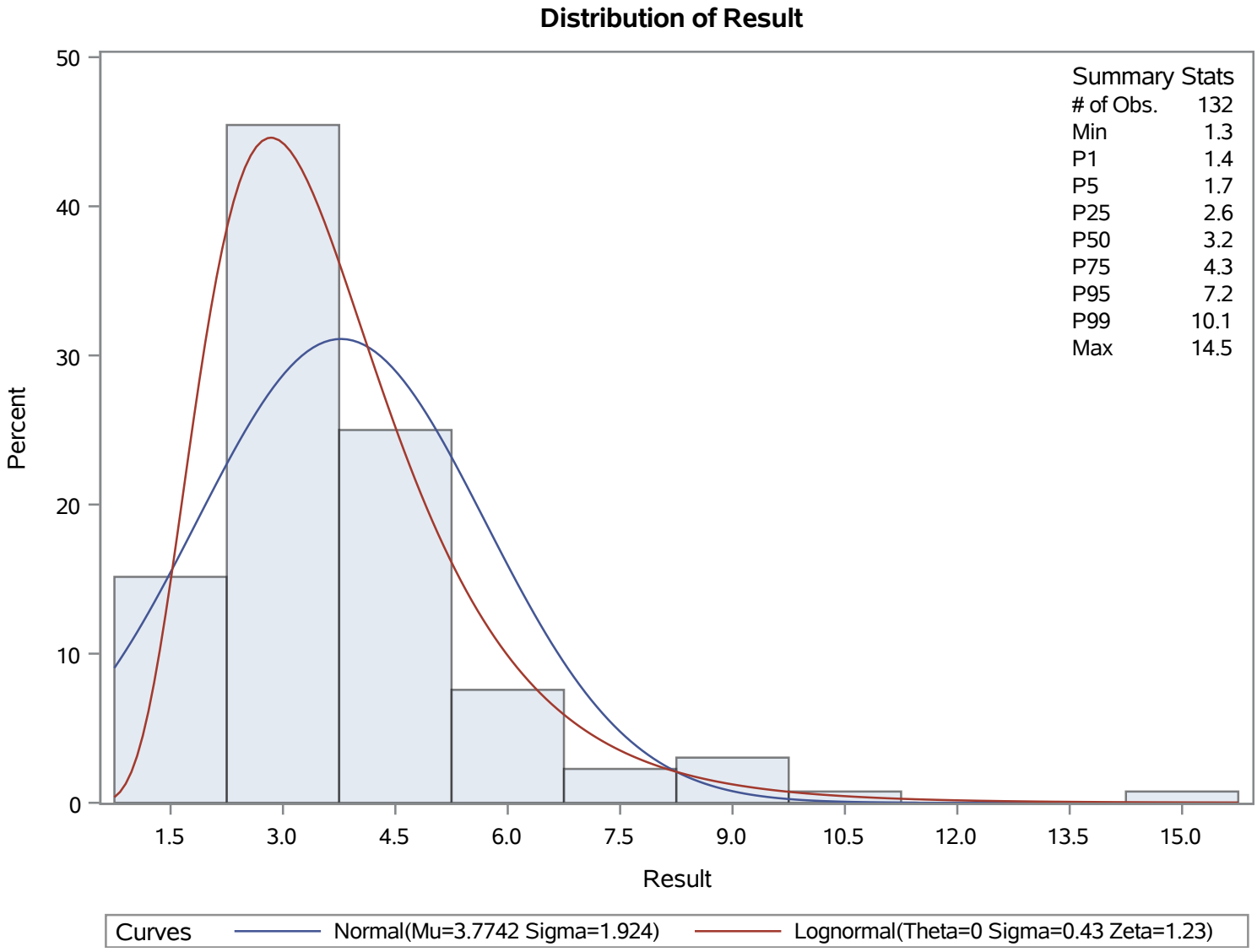
Little Manatee River
181
Turbidity (NTU)
Site ID = 181

The UNIVARIATE Procedure



Little Manatee River
182
Turbidity (NTU)
Site ID = 182

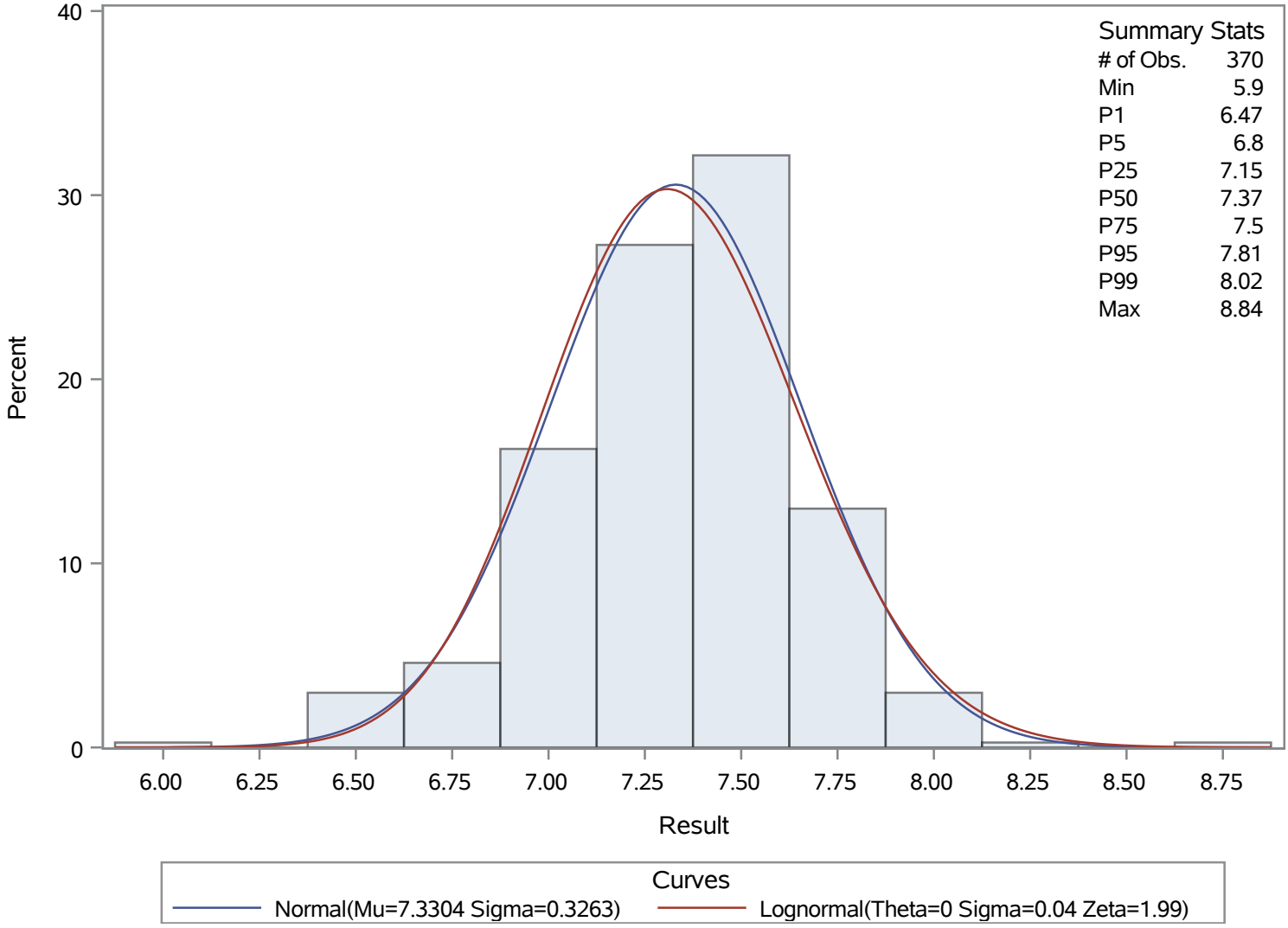
The UNIVARIATE Procedure



Little Manatee River
112
pH Bottom
Site ID = 112

The UNIVARIATE Procedure

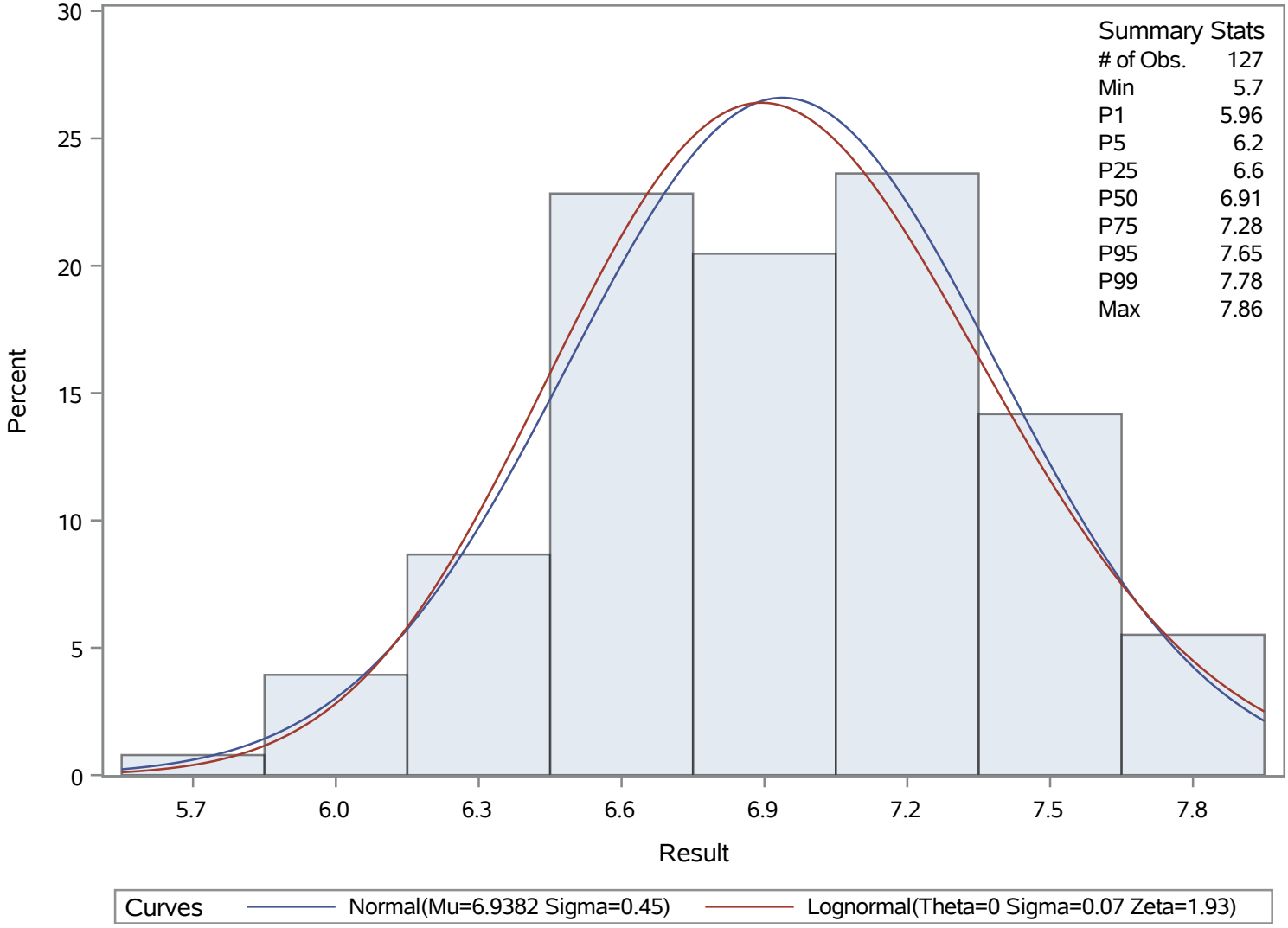
Distribution of Result



Little Manatee River
113
pH Bottom
Site ID = 113

The UNIVARIATE Procedure

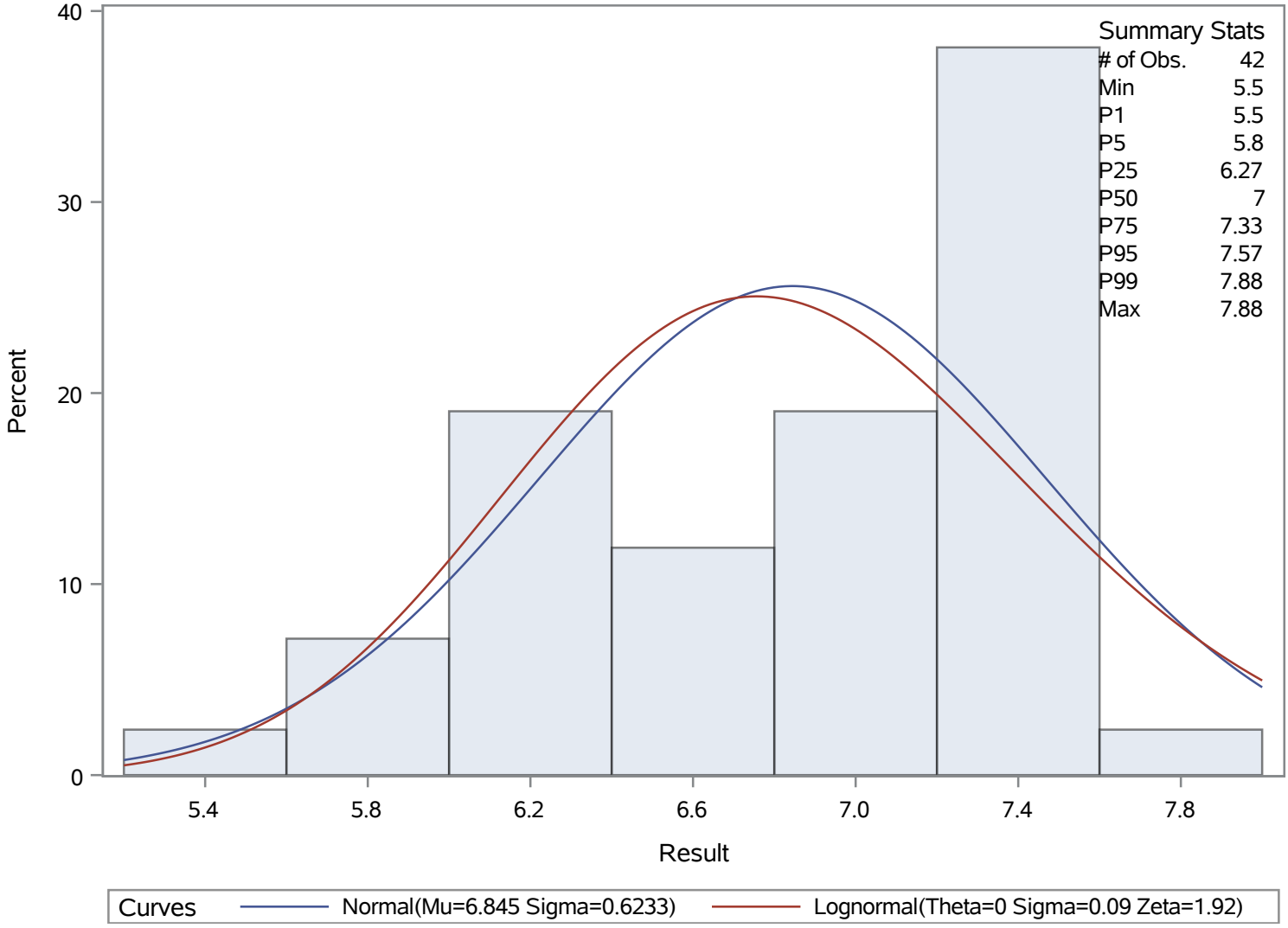
Distribution of Result



Little Manatee River
129
pH Bottom
Site ID = 129

The UNIVARIATE Procedure

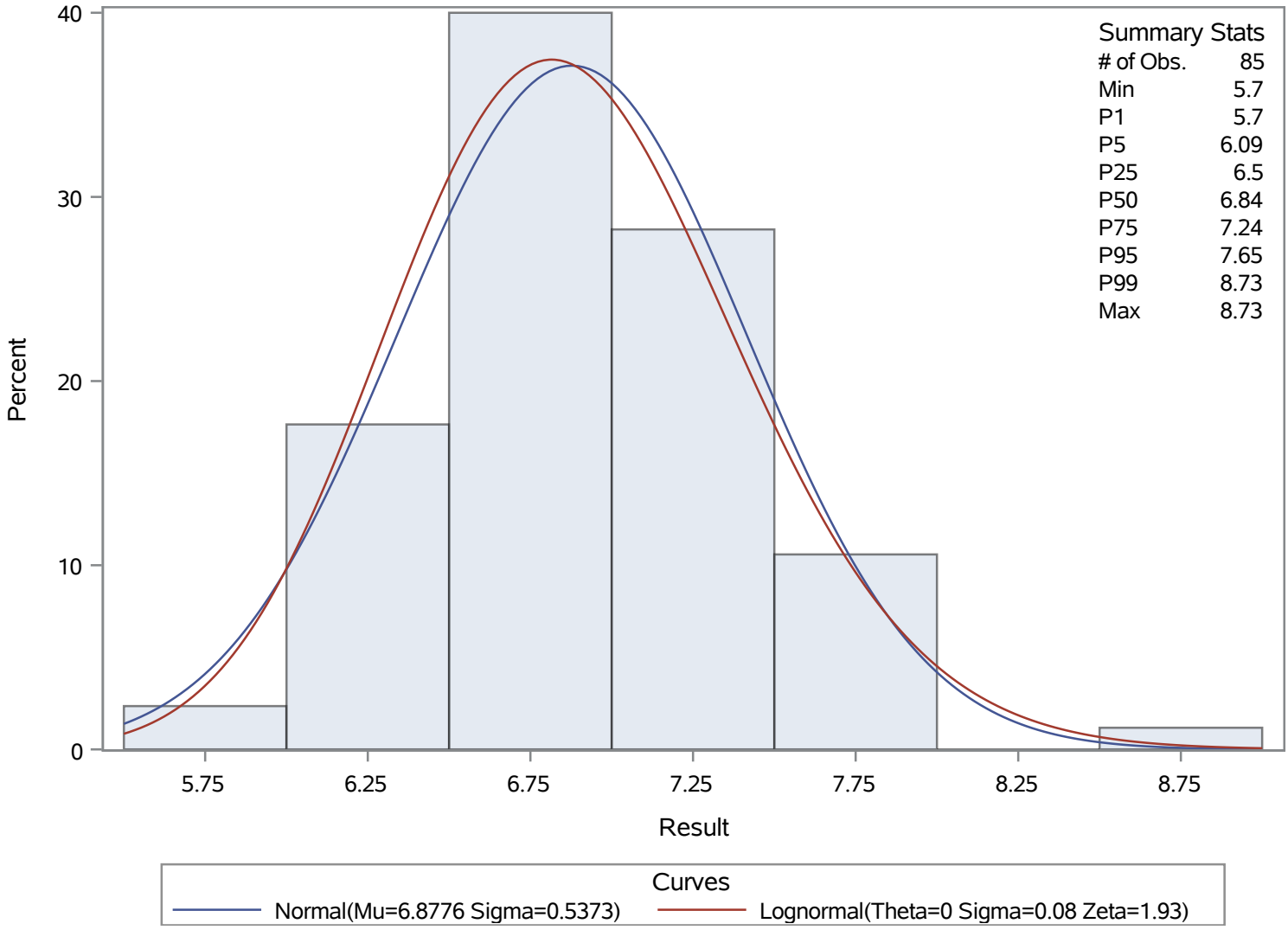
Distribution of Result



Little Manatee River
140
pH Bottom
Site ID = 140

The UNIVARIATE Procedure

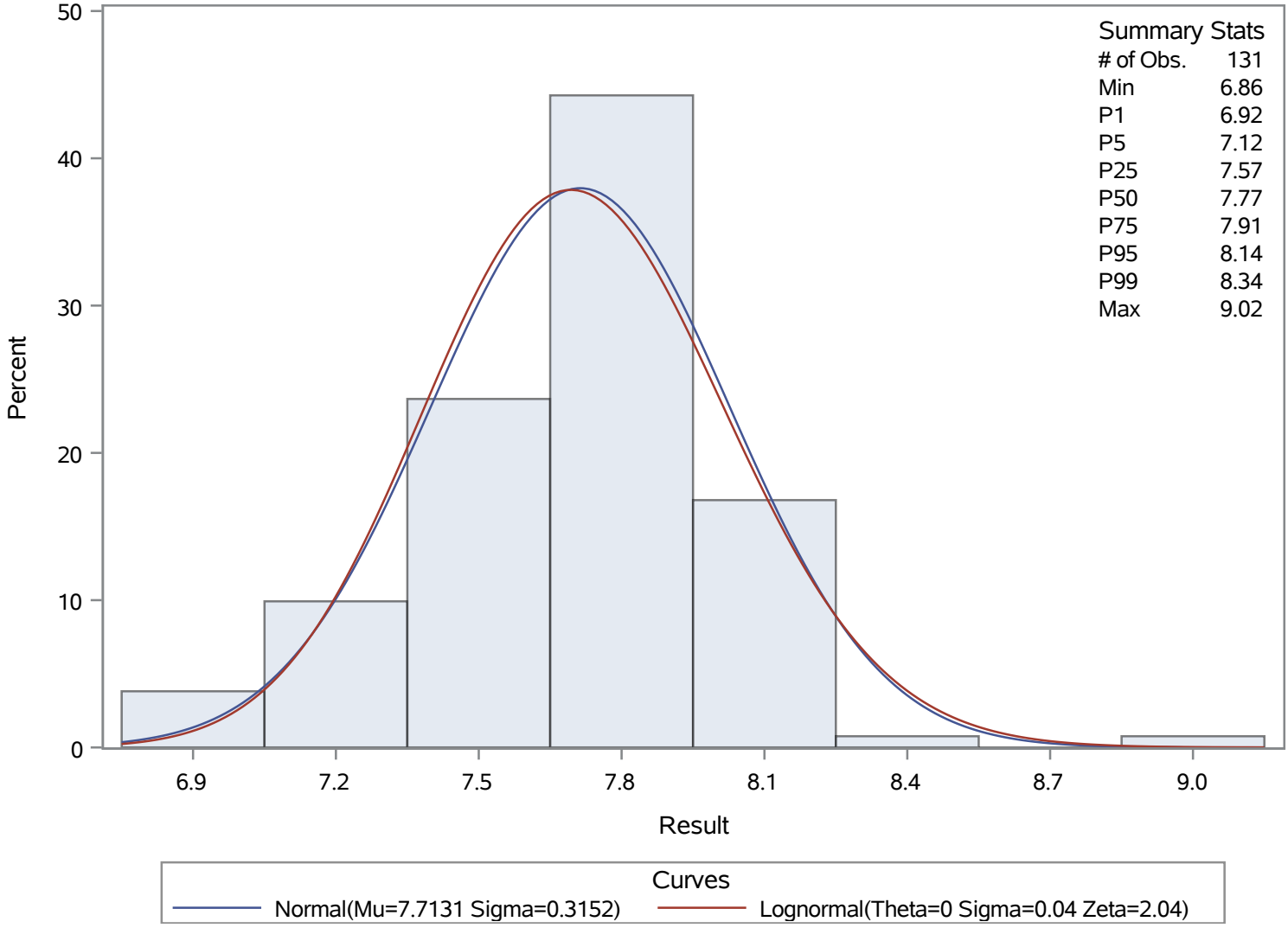
Distribution of Result



Little Manatee River
180
pH Bottom
Site ID = 180

The UNIVARIATE Procedure

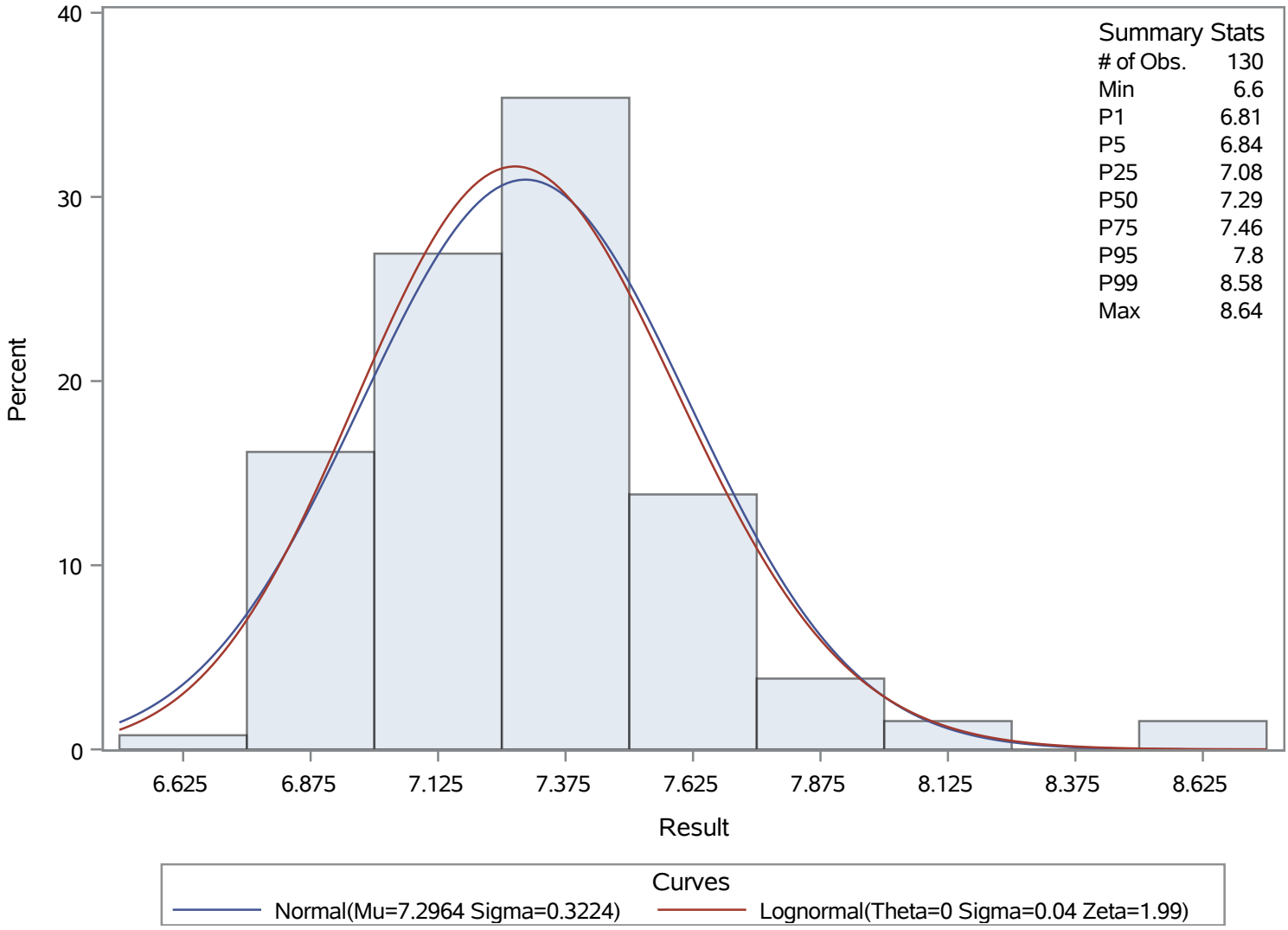
Distribution of Result



Little Manatee River
181
pH Bottom
Site ID = 181

The UNIVARIATE Procedure

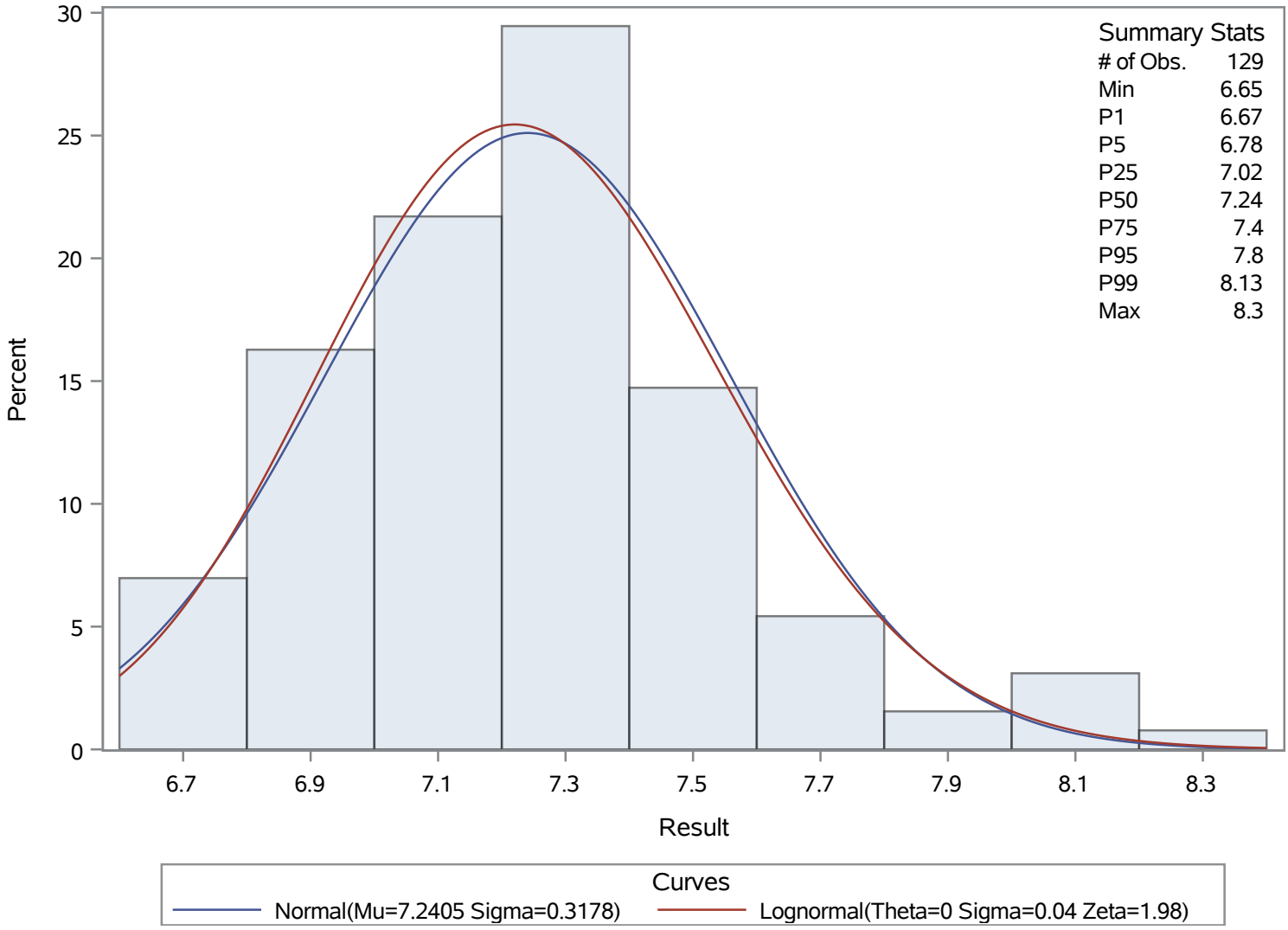
Distribution of Result



Little Manatee River
182
pH Bottom
Site ID = 182

The UNIVARIATE Procedure

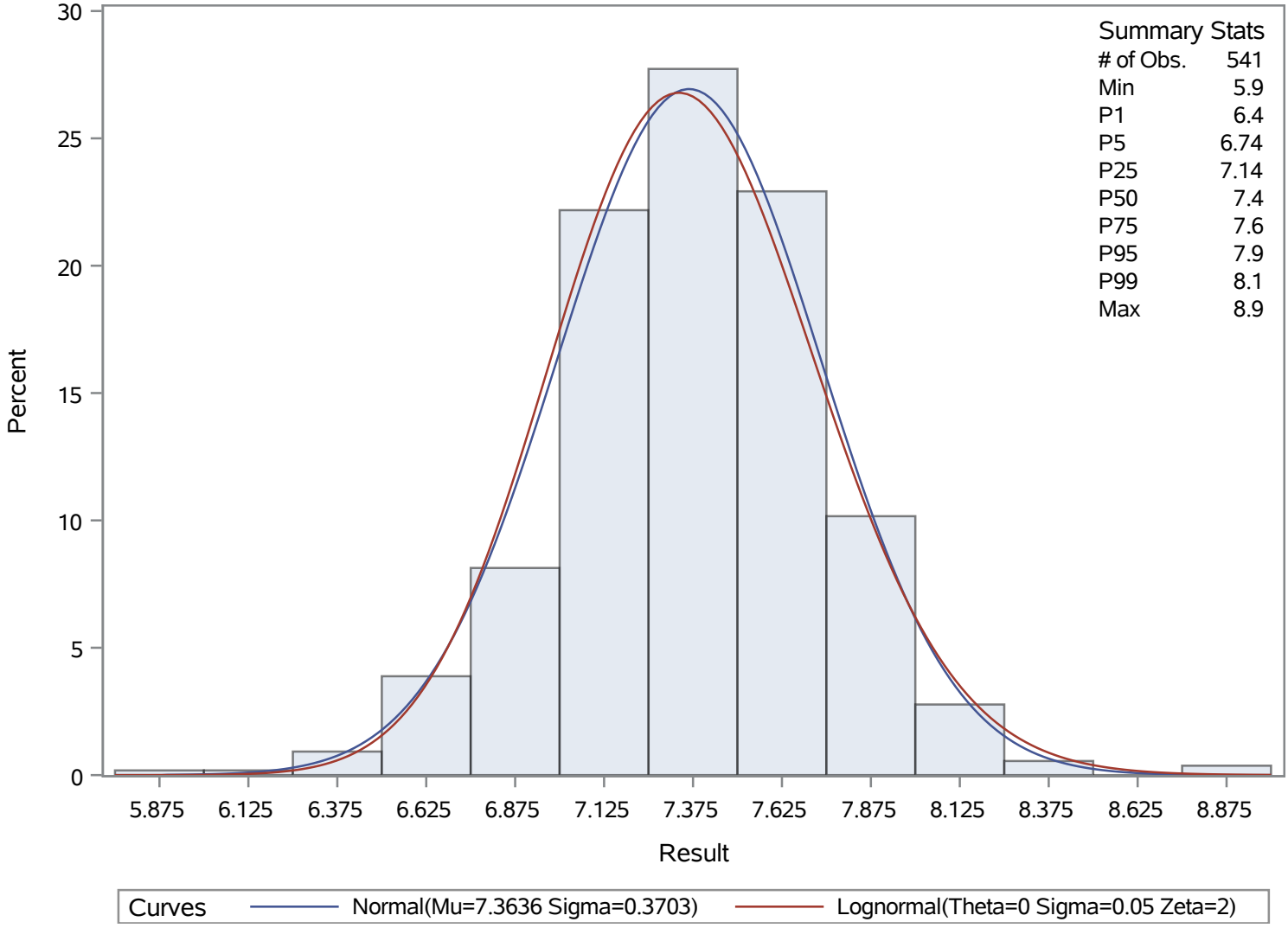
Distribution of Result



Little Manatee River
112
pH Mid
Site ID = 112

The UNIVARIATE Procedure

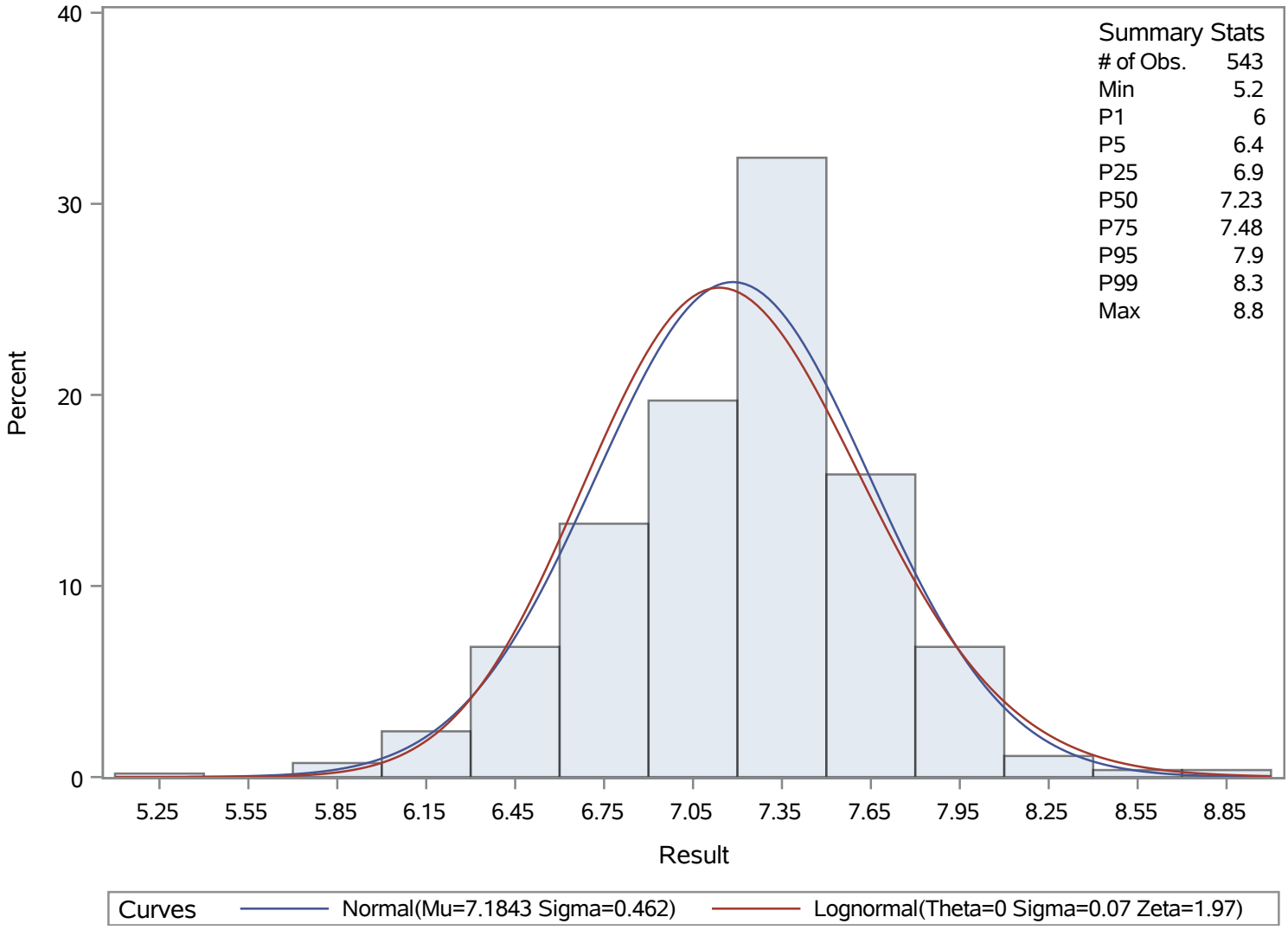
Distribution of Result



Little Manatee River
113
pH Mid
Site ID = 113

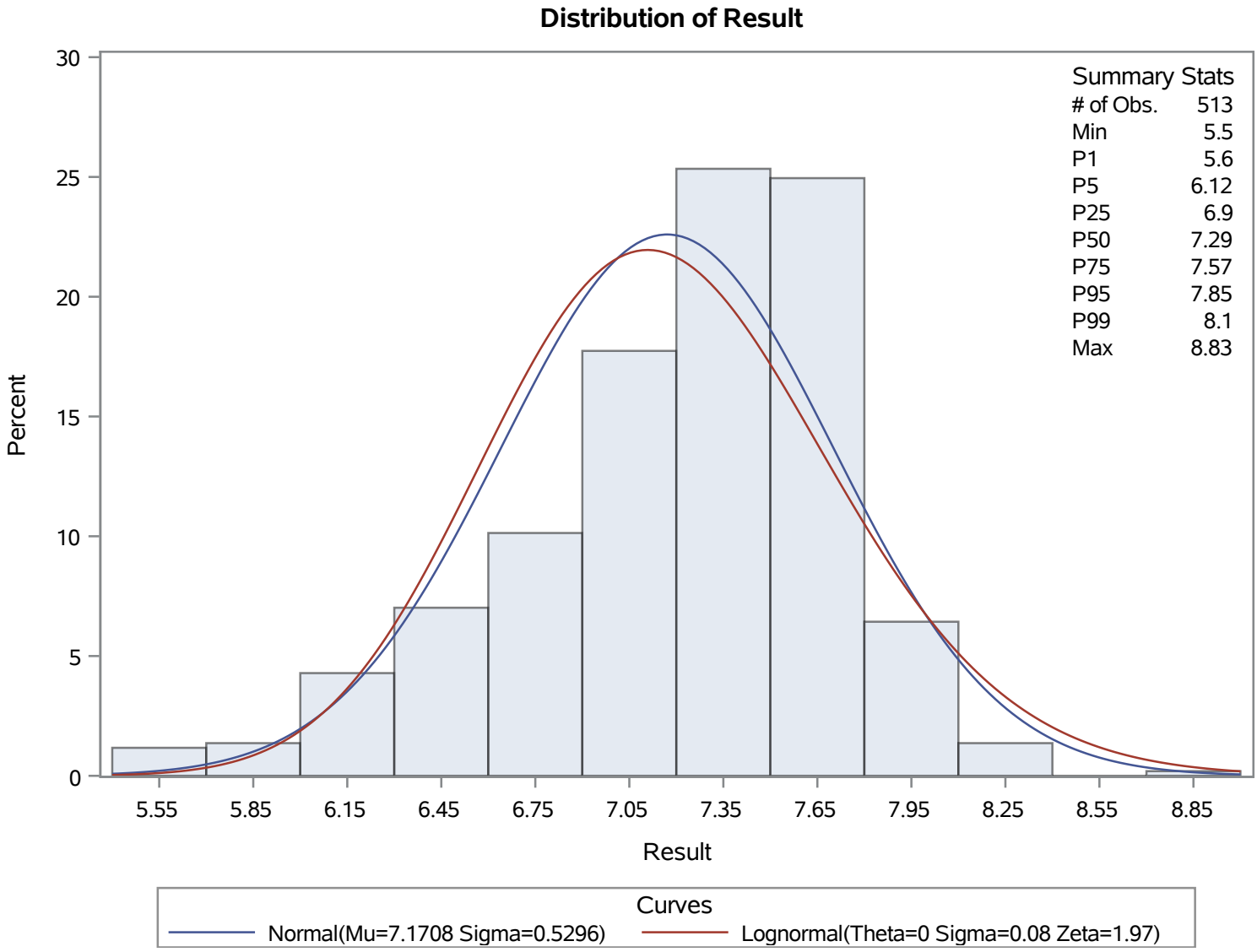
The UNIVARIATE Procedure

Distribution of Result



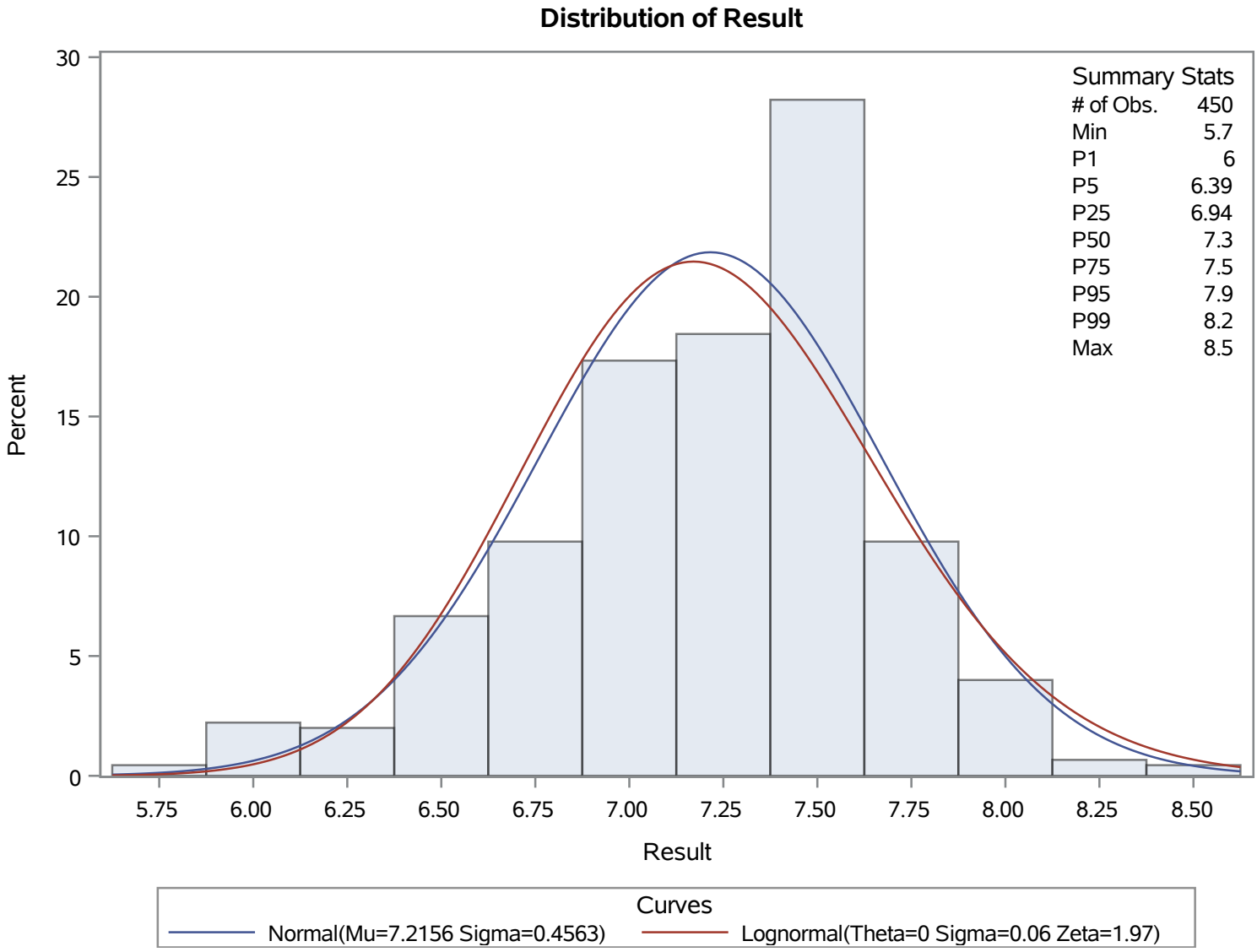
Little Manatee River
129
pH Mid
Site ID = 129

The UNIVARIATE Procedure



Little Manatee River
140
pH Mid
Site ID = 140

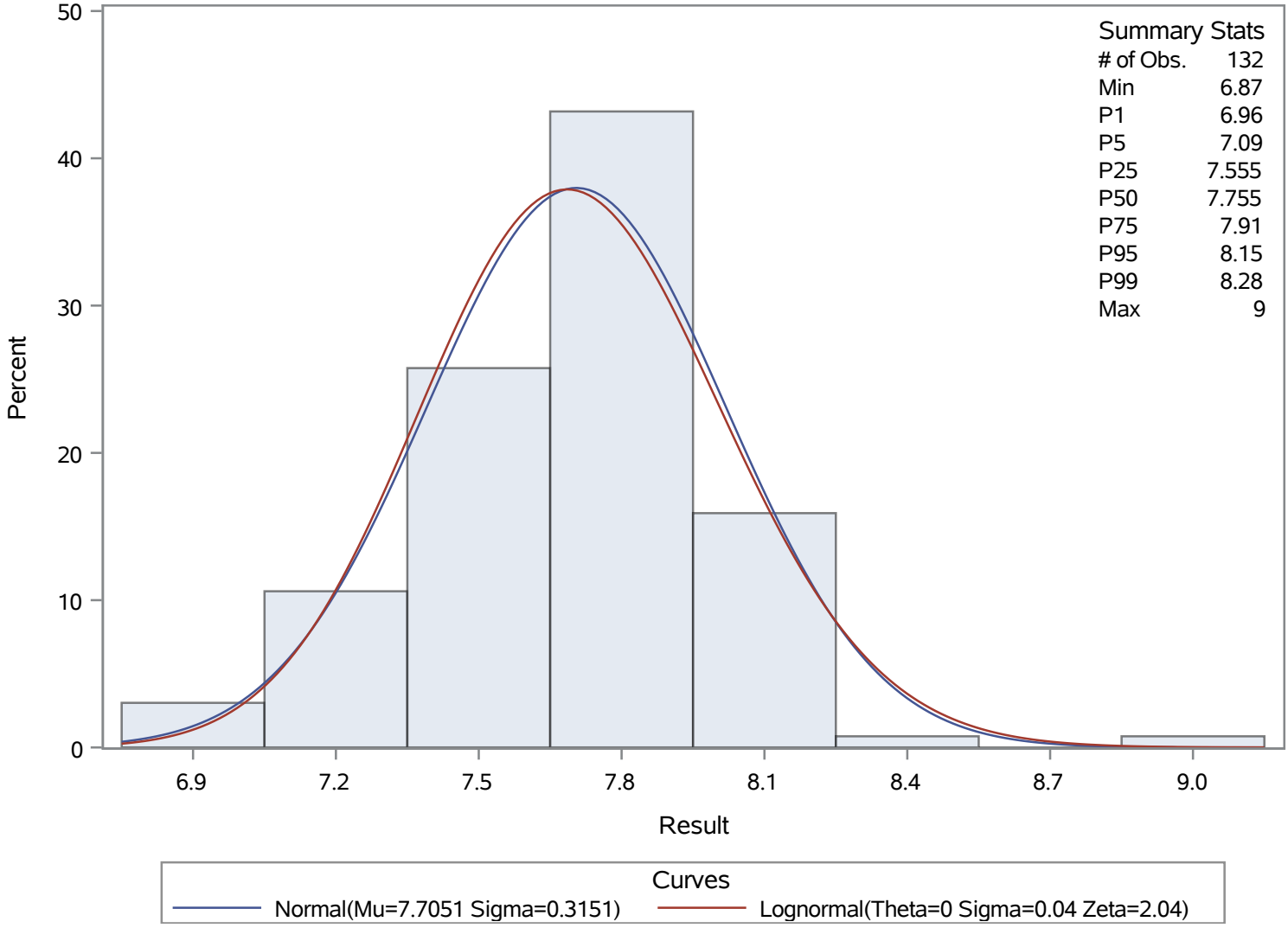
The UNIVARIATE Procedure



Little Manatee River
180
pH Mid
Site ID = 180

The UNIVARIATE Procedure

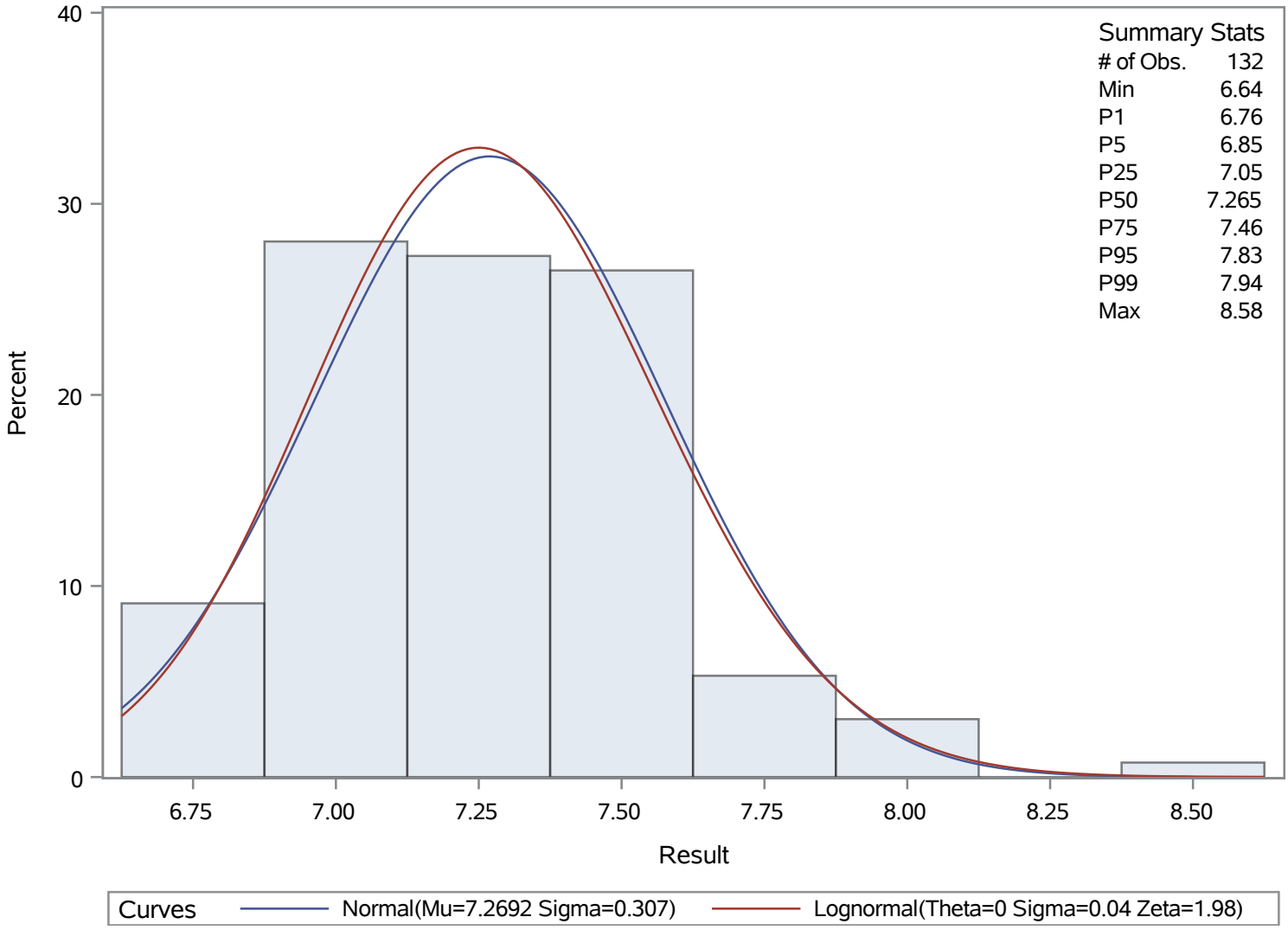
Distribution of Result



Little Manatee River
181
pH Mid
Site ID = 181

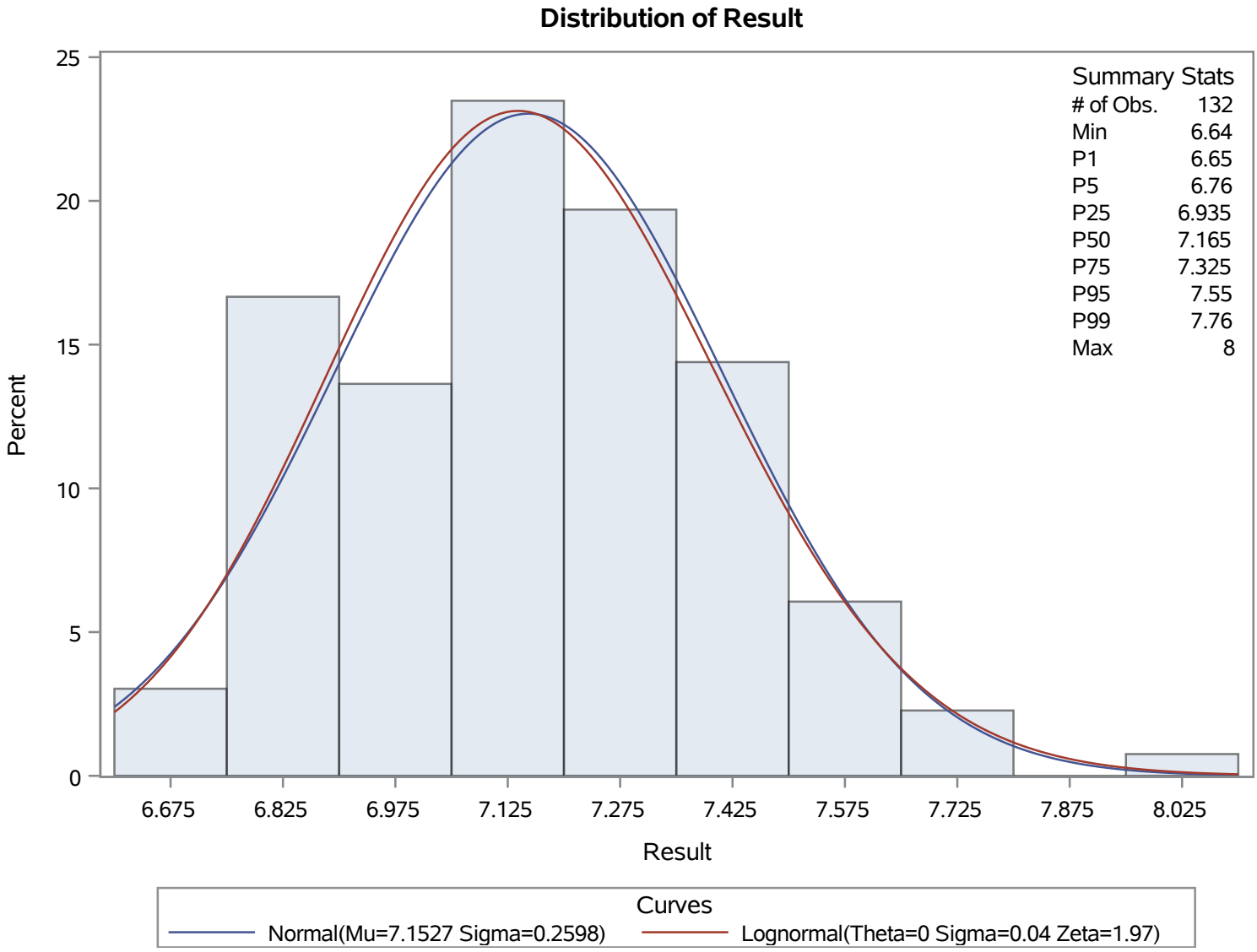
The UNIVARIATE Procedure

Distribution of Result



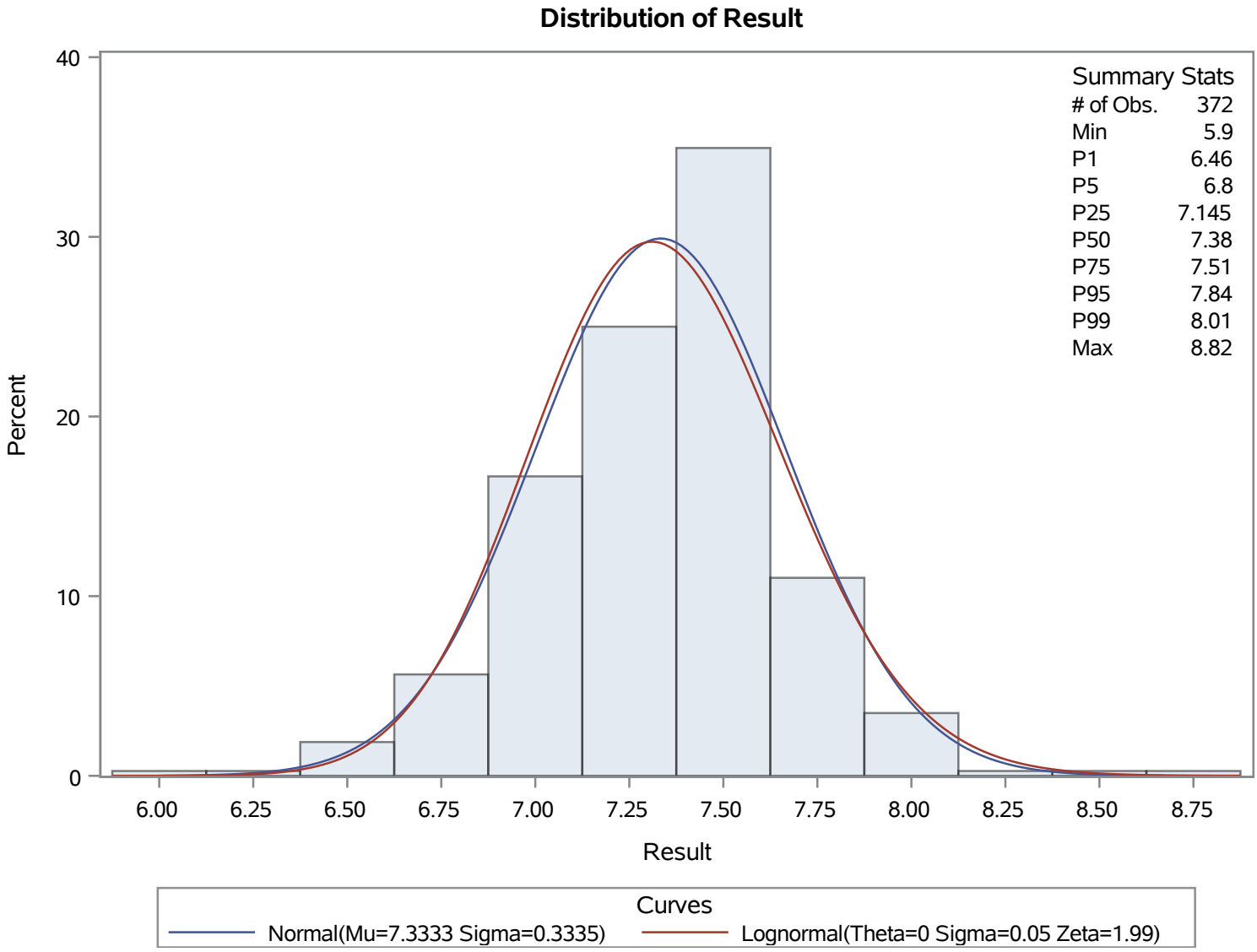
Little Manatee River
182
pH Mid
Site ID = 182

The UNIVARIATE Procedure



Little Manatee River
112
pH Top
Site ID = 112

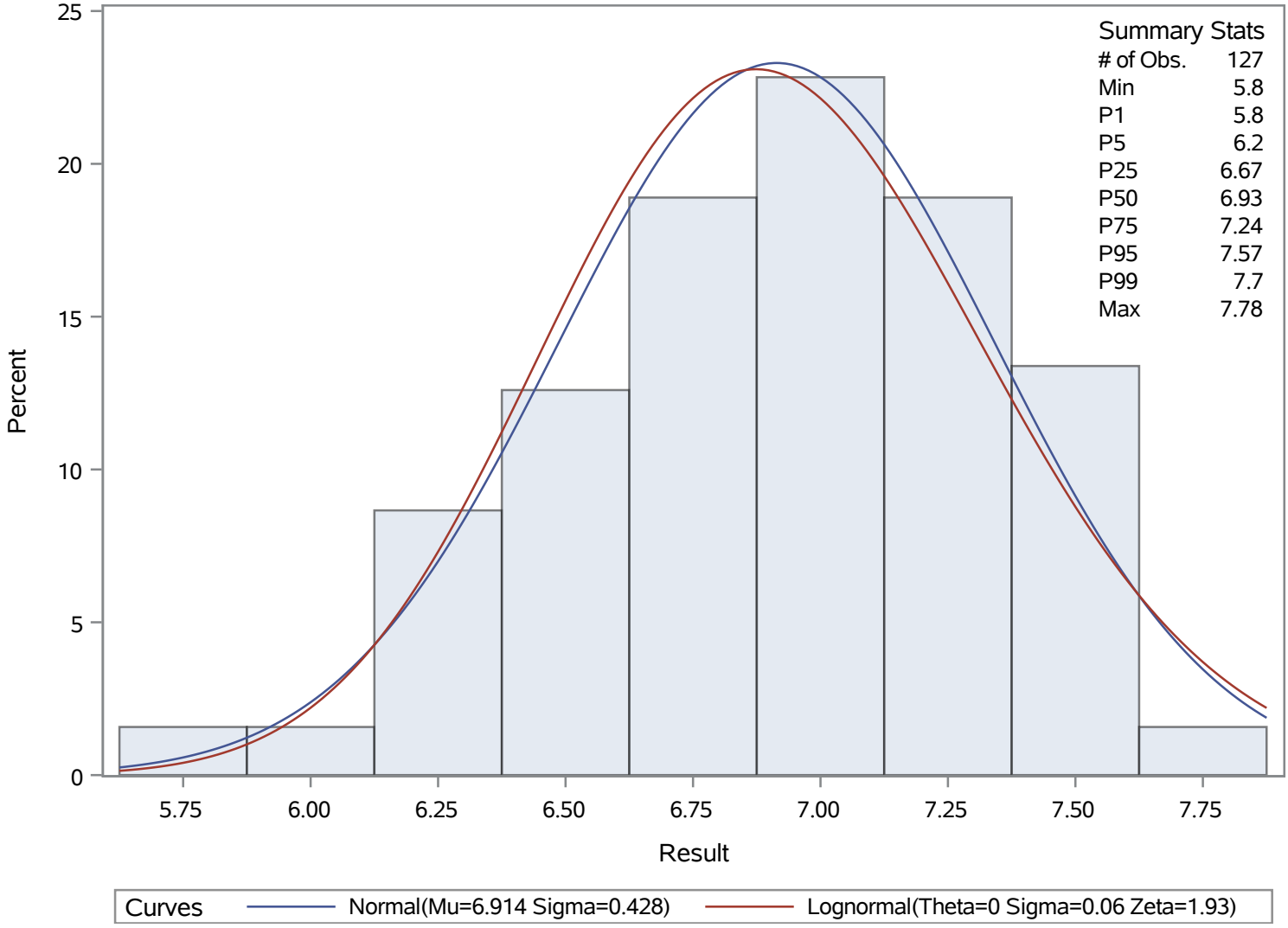
The UNIVARIATE Procedure



Little Manatee River
113
pH Top
Site ID = 113

The UNIVARIATE Procedure

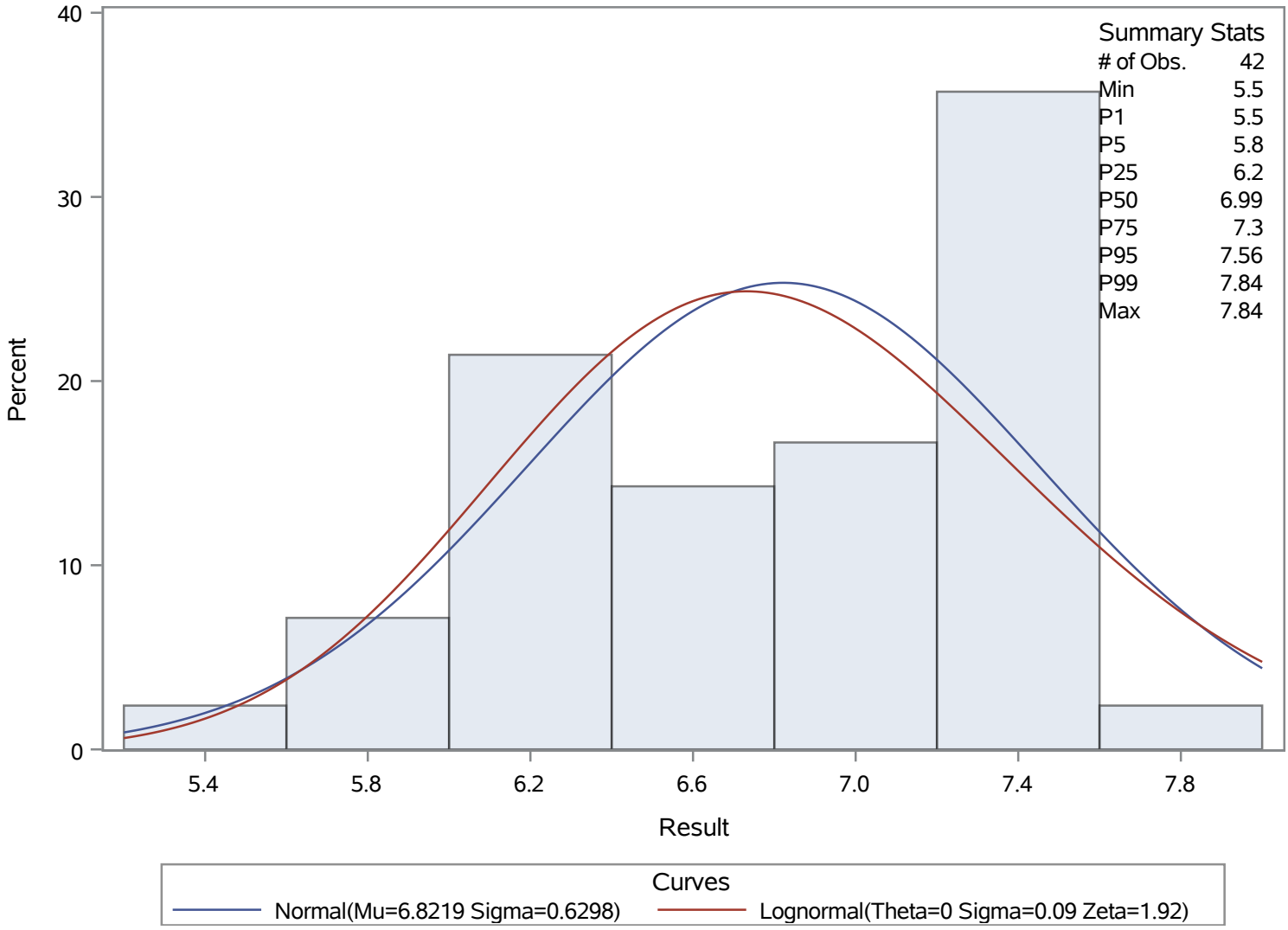
Distribution of Result



Little Manatee River
129
pH Top
Site ID = 129

The UNIVARIATE Procedure

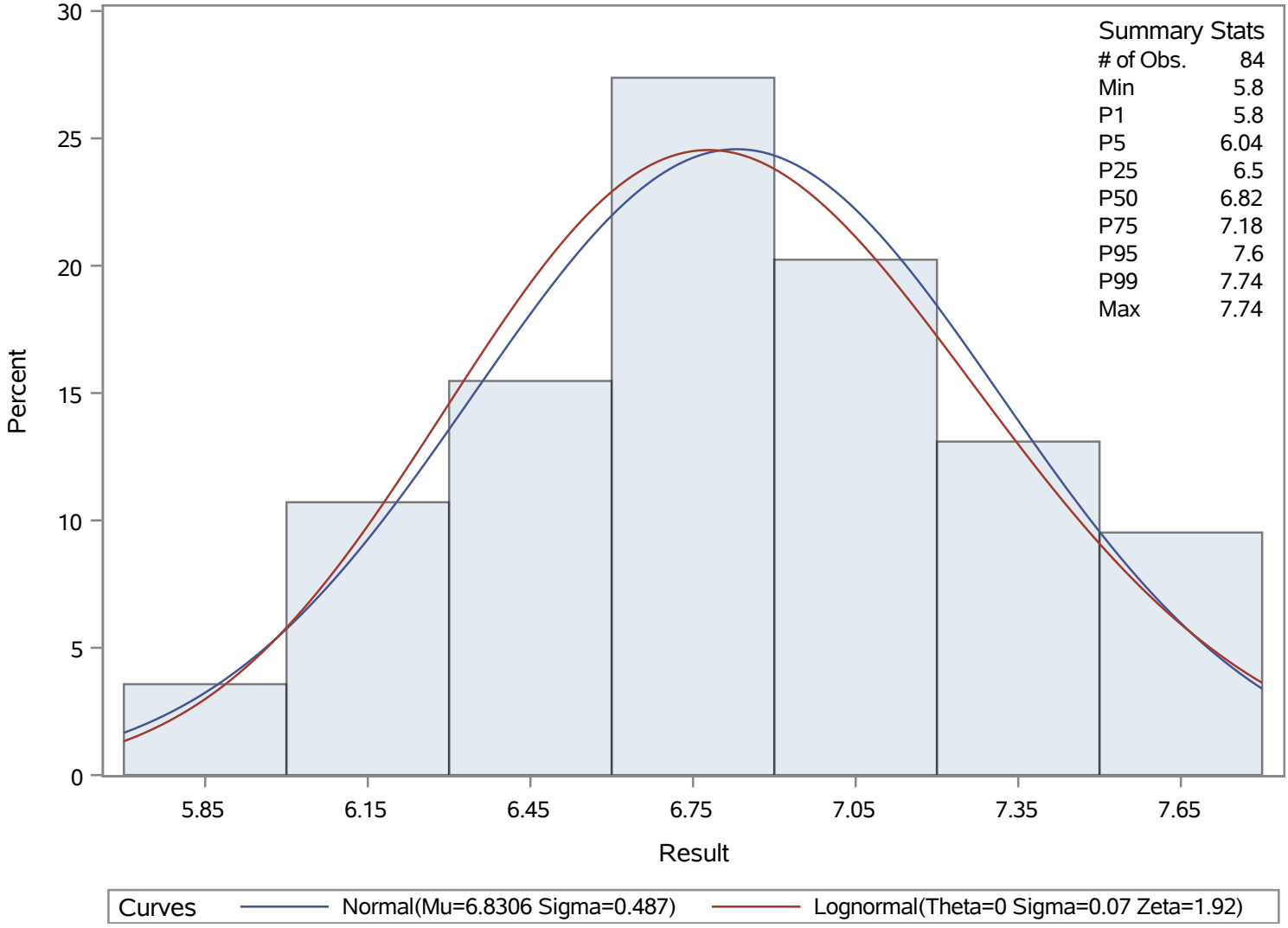
Distribution of Result



Little Manatee River
140
pH Top
Site ID = 140

The UNIVARIATE Procedure

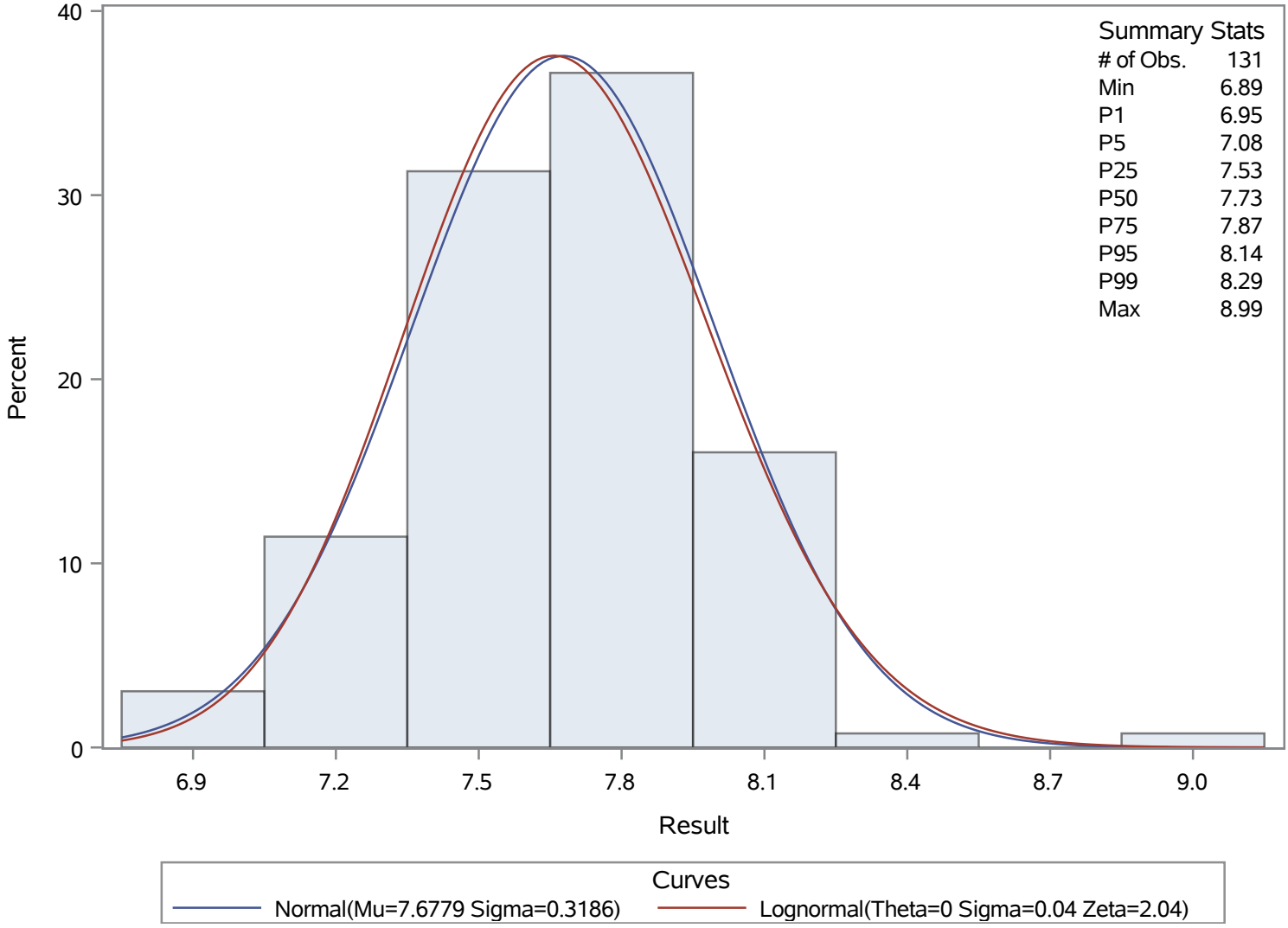
Distribution of Result



Little Manatee River
180
pH Top
Site ID = 180

The UNIVARIATE Procedure

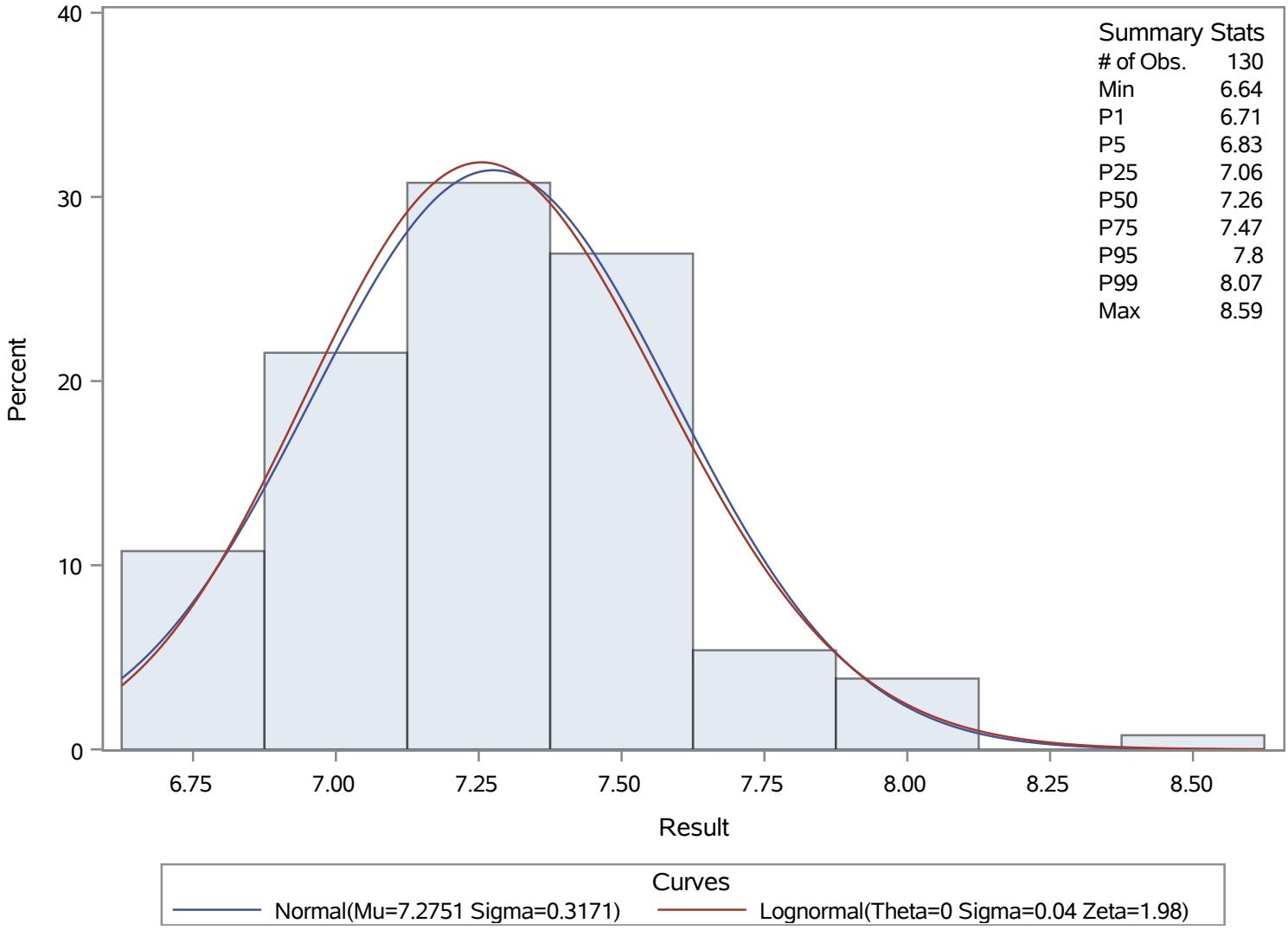
Distribution of Result



Little Manatee River
181
pH Top
Site ID = 181

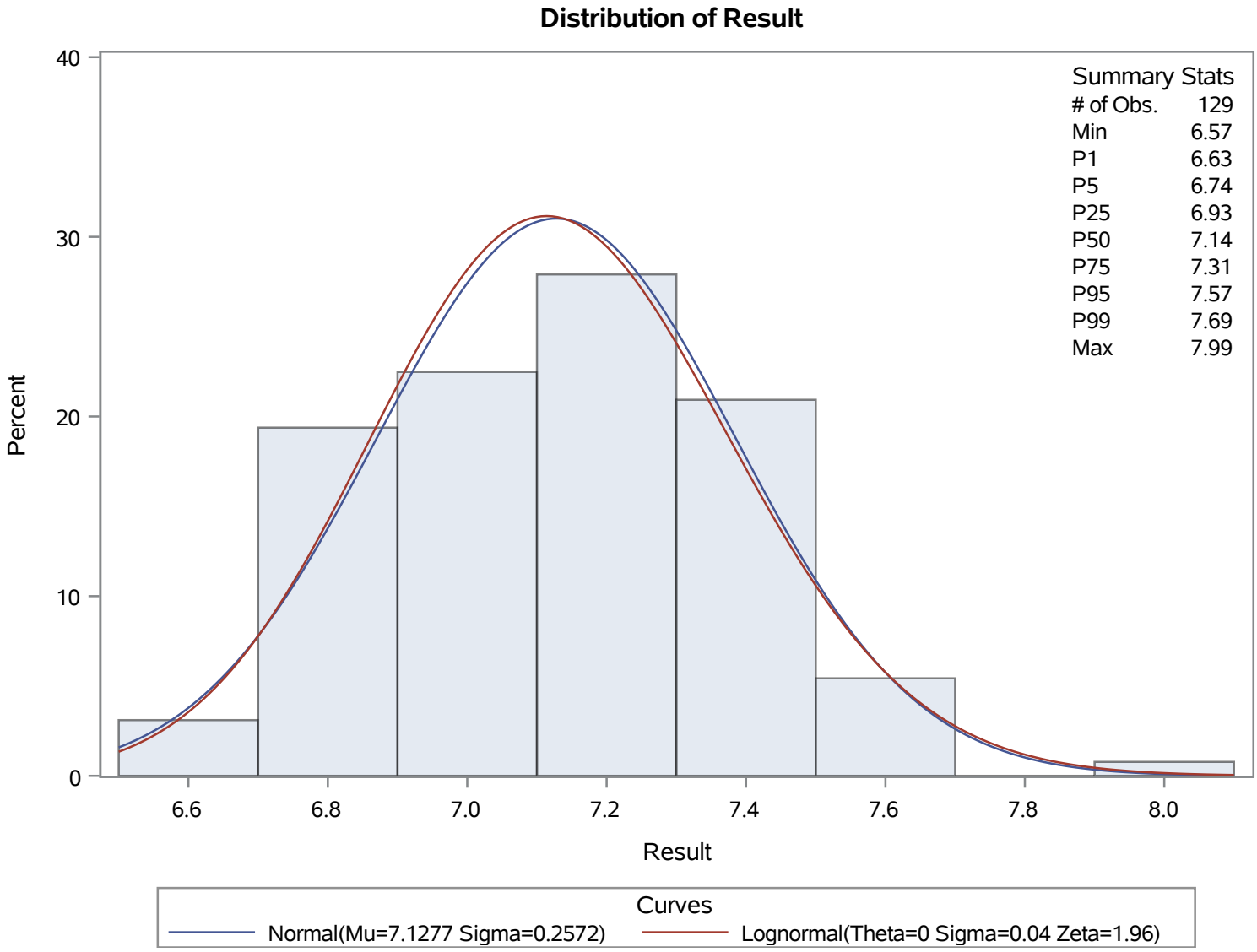
The UNIVARIATE Procedure

Distribution of Result



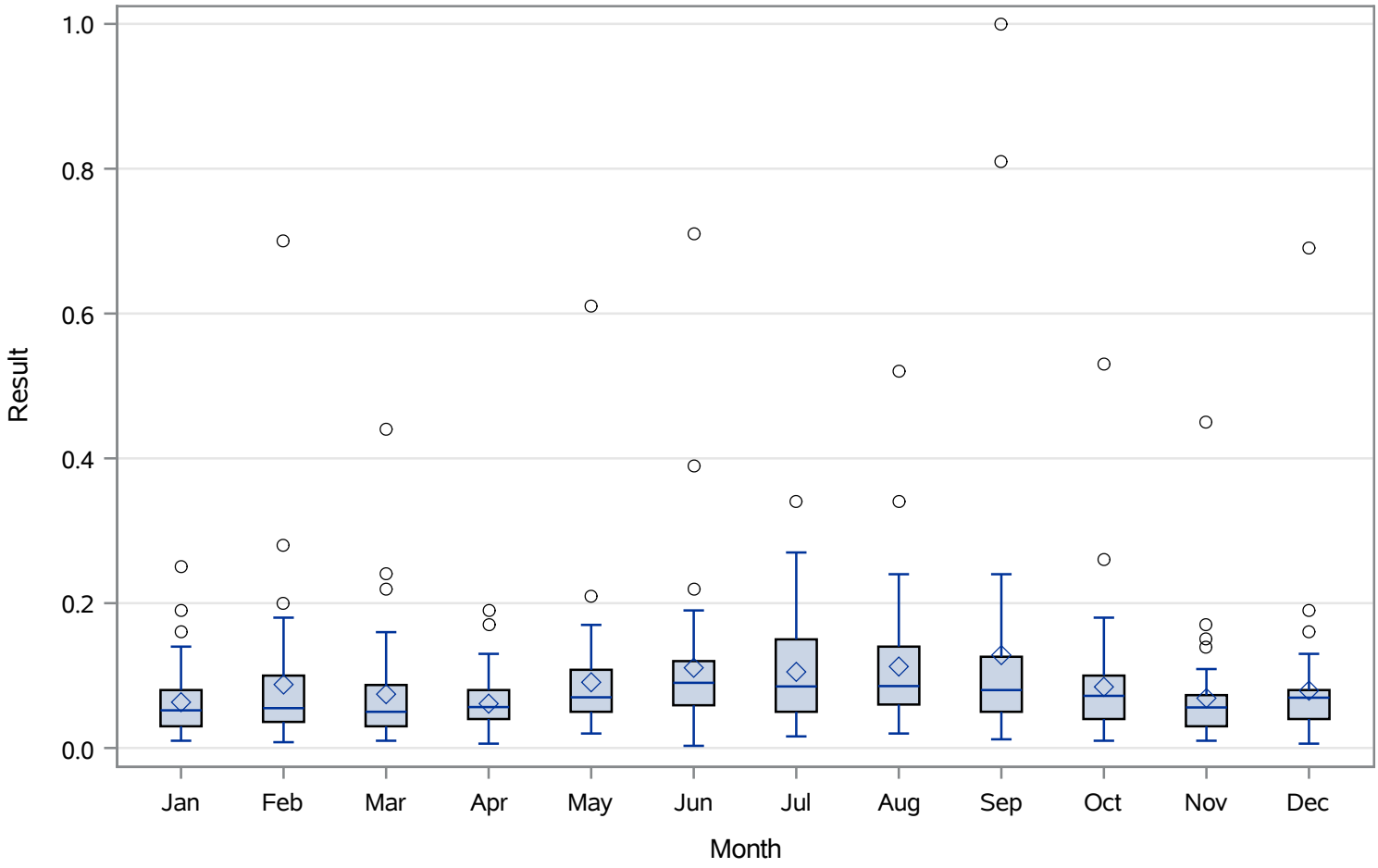
Little Manatee River
182
pH Top
Site ID = 182

The UNIVARIATE Procedure

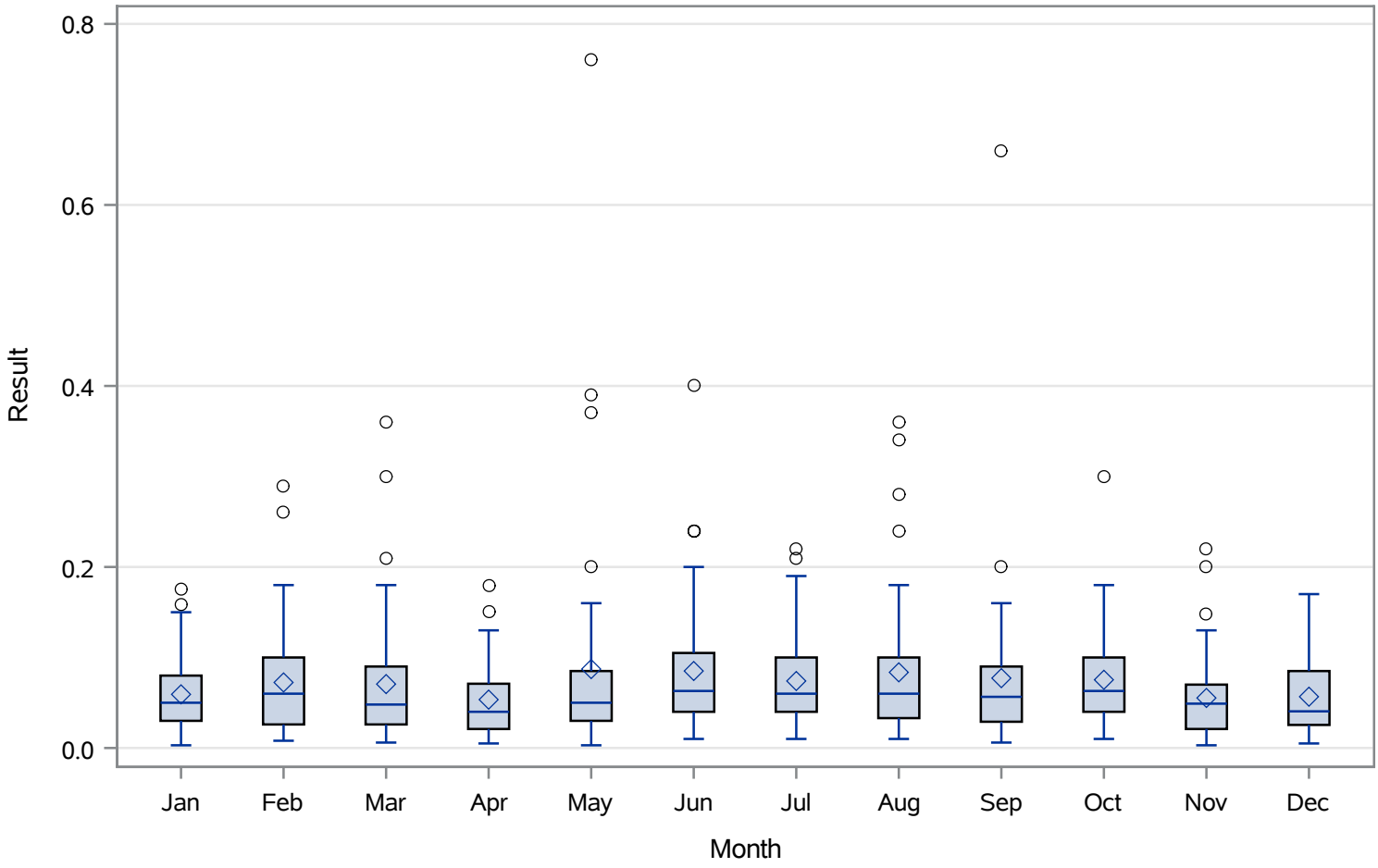


1c: EPC Seasonality Plots

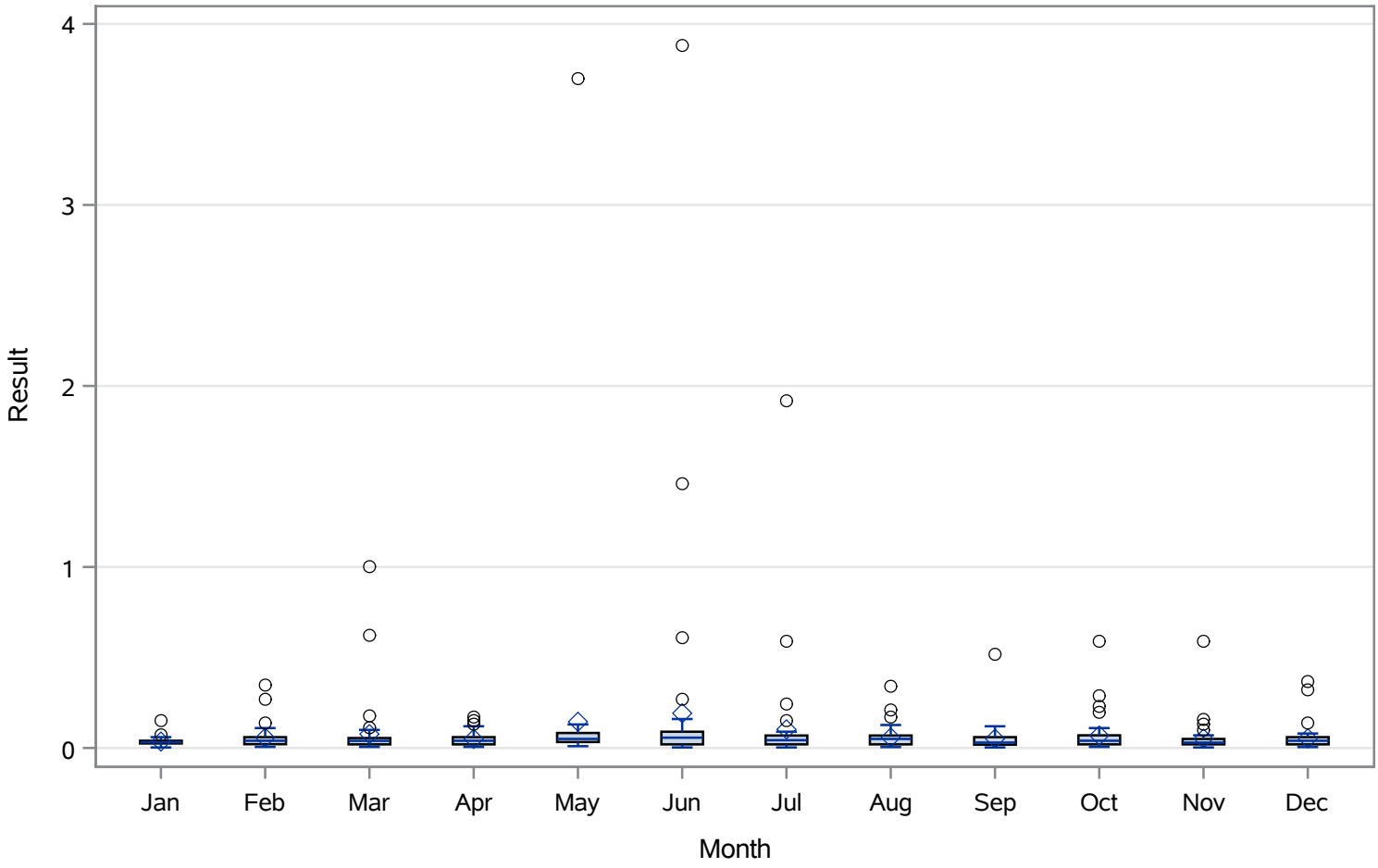
Little Manatee River
112
Ammonia (mg/l)
Site ID = 112



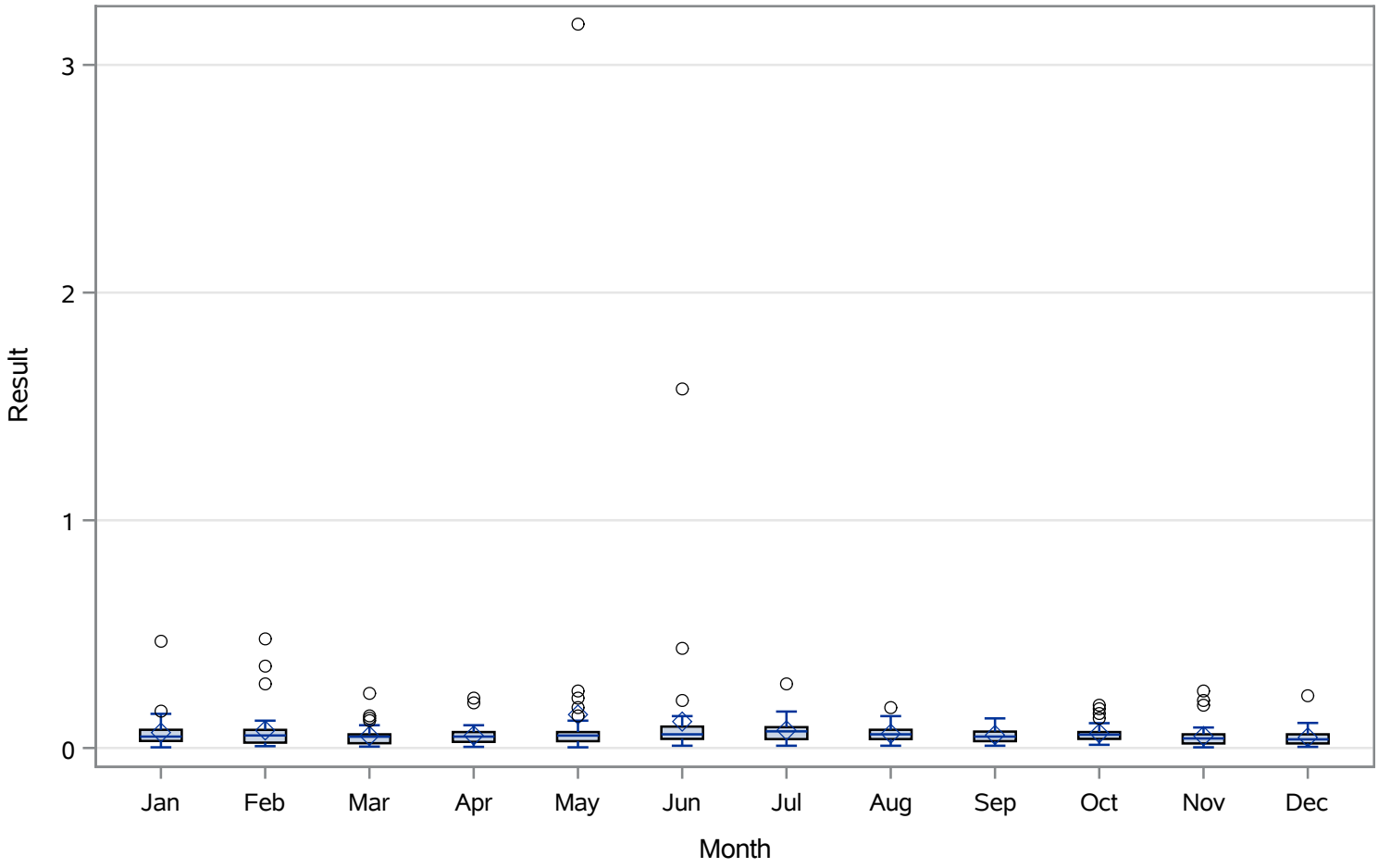
Little Manatee River
113
Ammonia (mg/l)
Site ID = 113



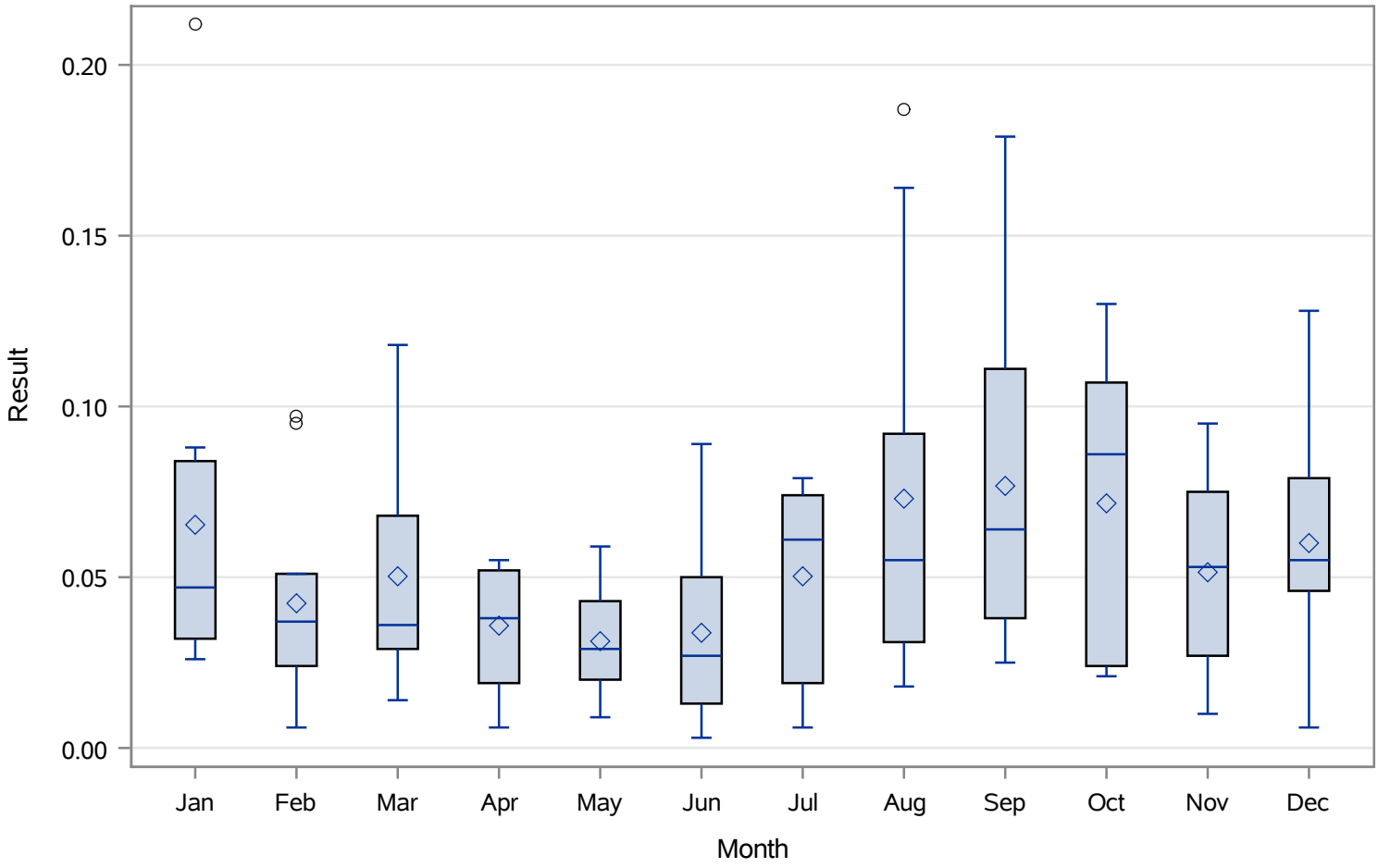
Little Manatee River
129
Ammonia (mg/l)
Site ID = 129



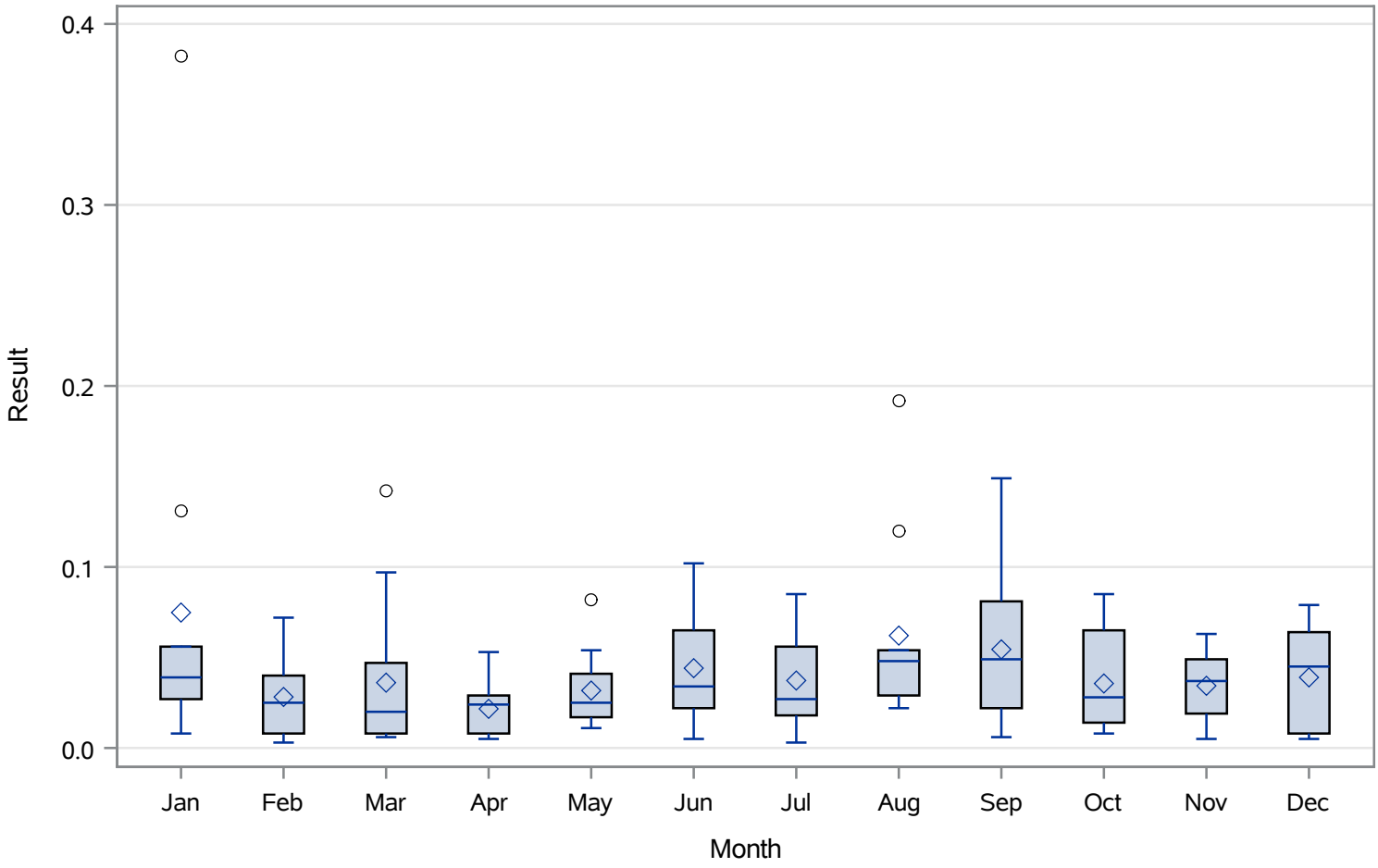
Little Manatee River
140
Ammonia (mg/l)
Site ID = 140



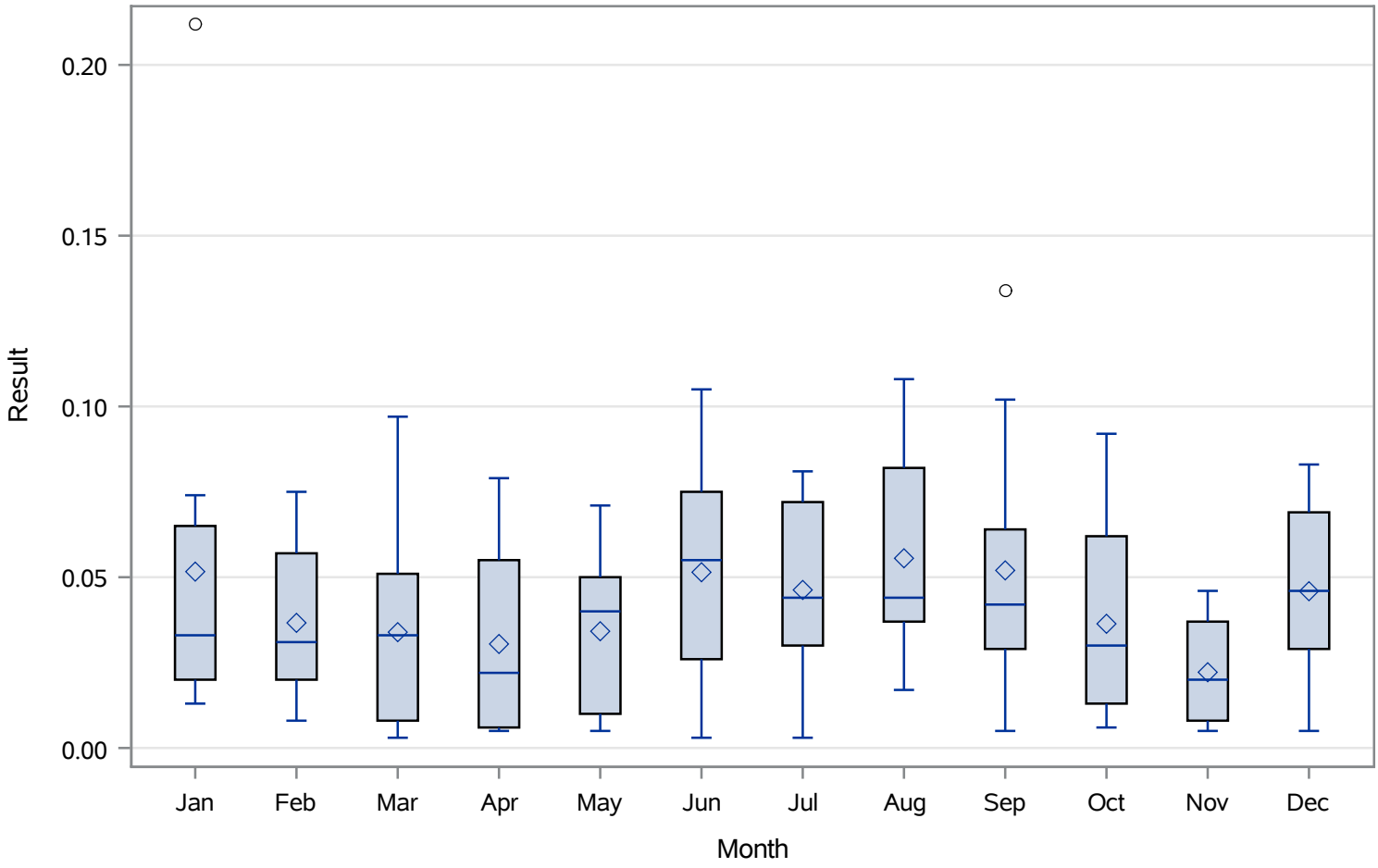
Little Manatee River
180
Ammonia (mg/l)
Site ID = 180



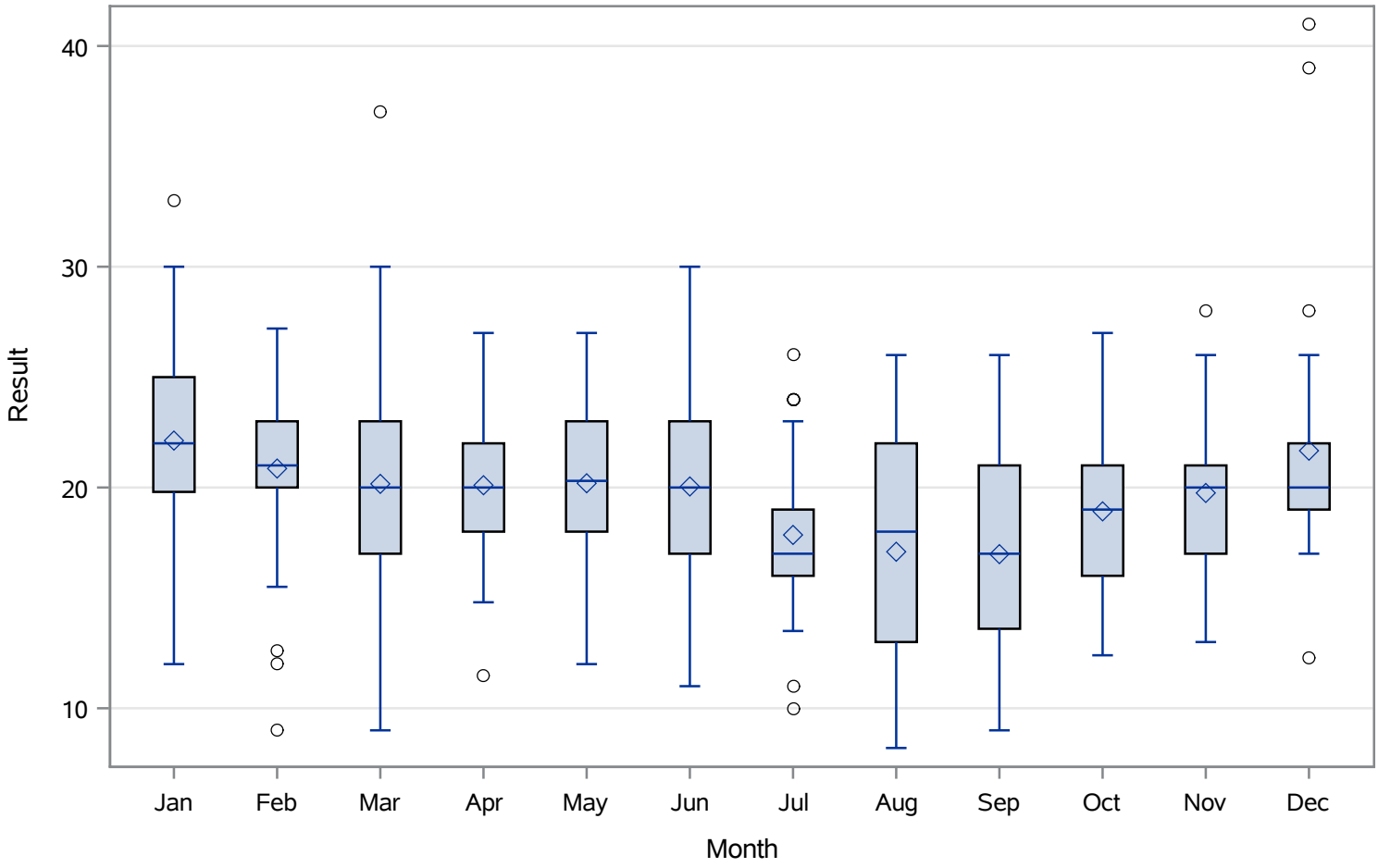
Little Manatee River
181
Ammonia (mg/l)
Site ID = 181



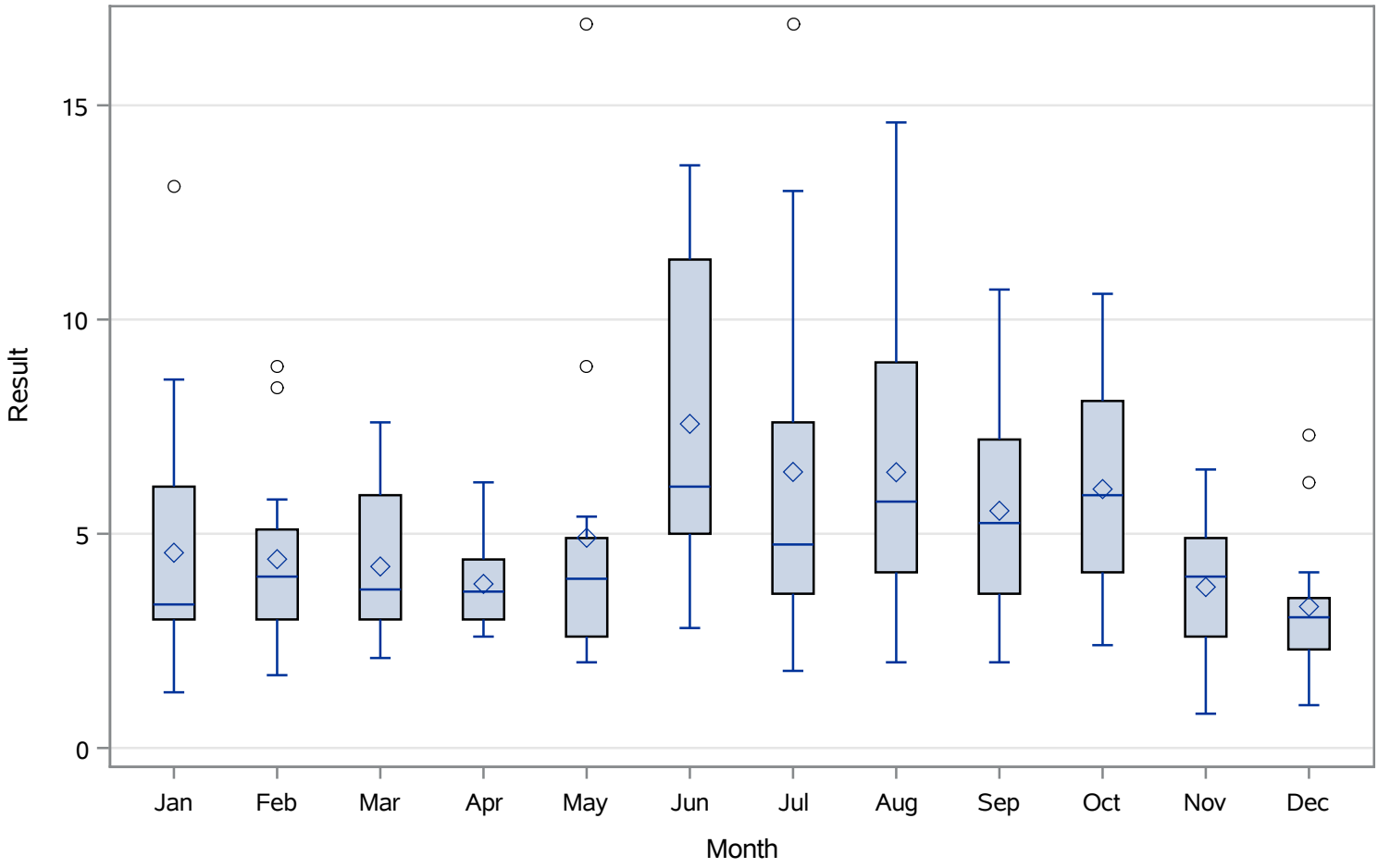
Little Manatee River
182
Ammonia (mg/l)
Site ID = 182



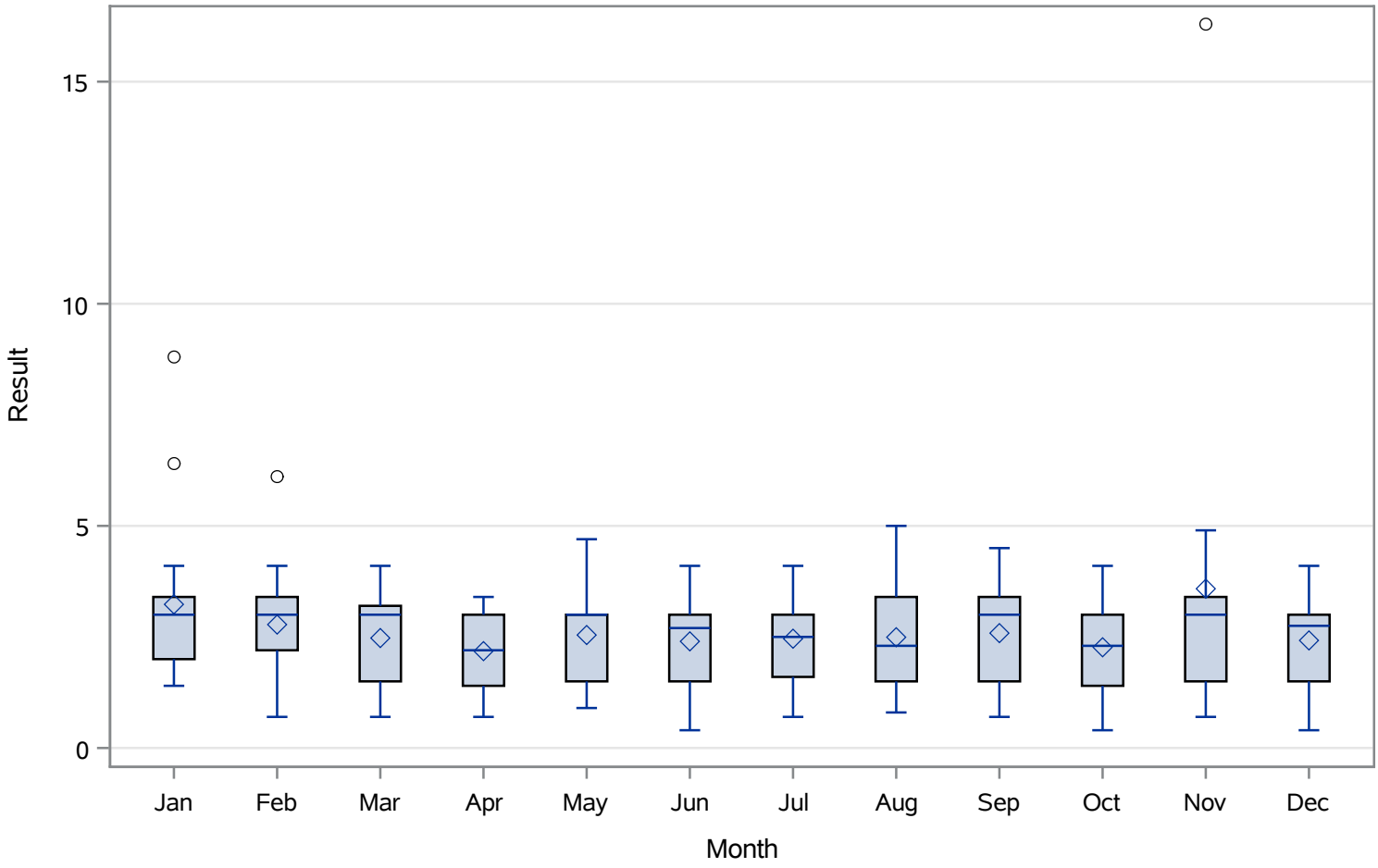
Little Manatee River
140
Chloride (mg/l)
Site ID = 140



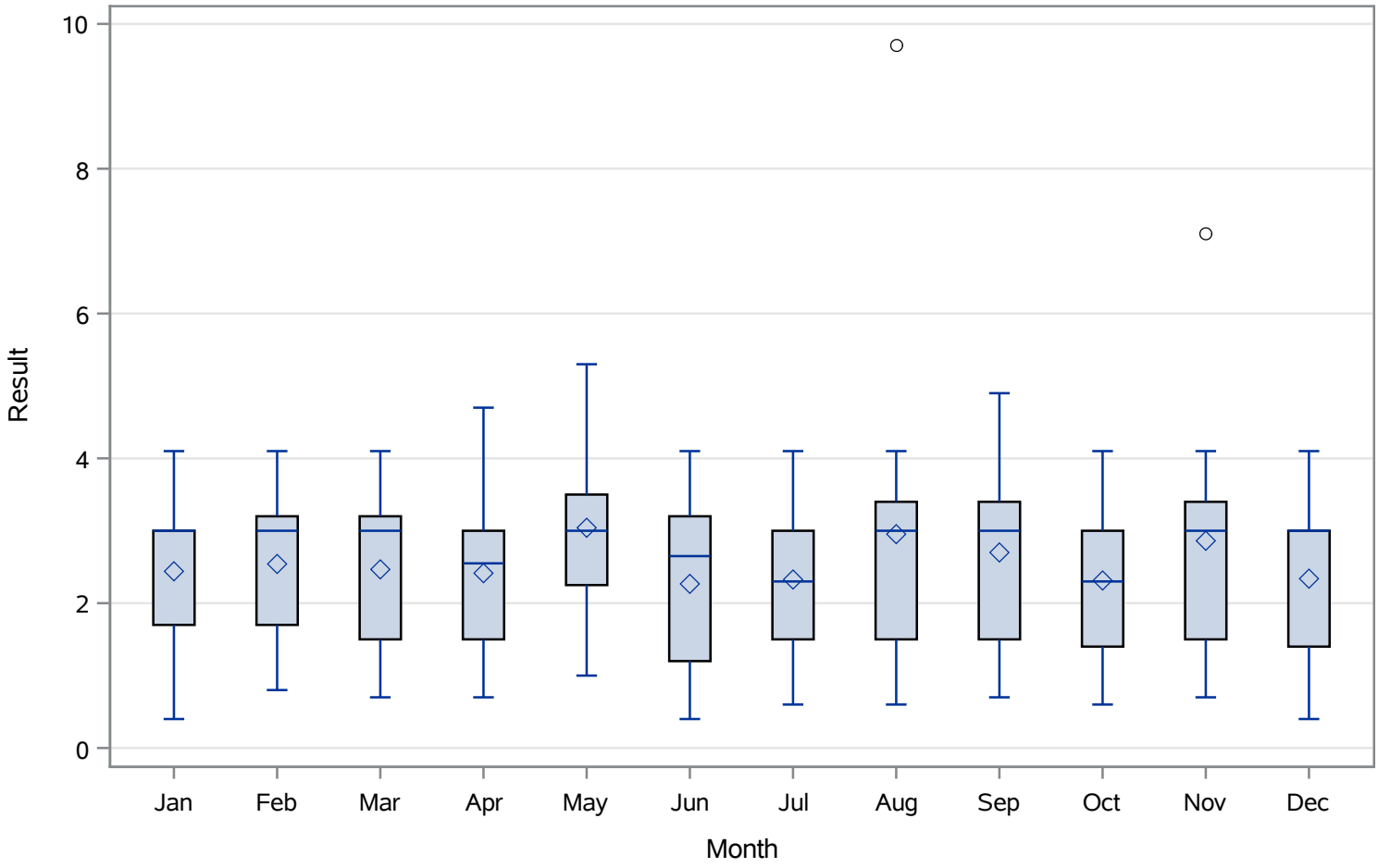
Little Manatee River
112
Chlorophyll a Corr (ug/l)
Site ID = 112



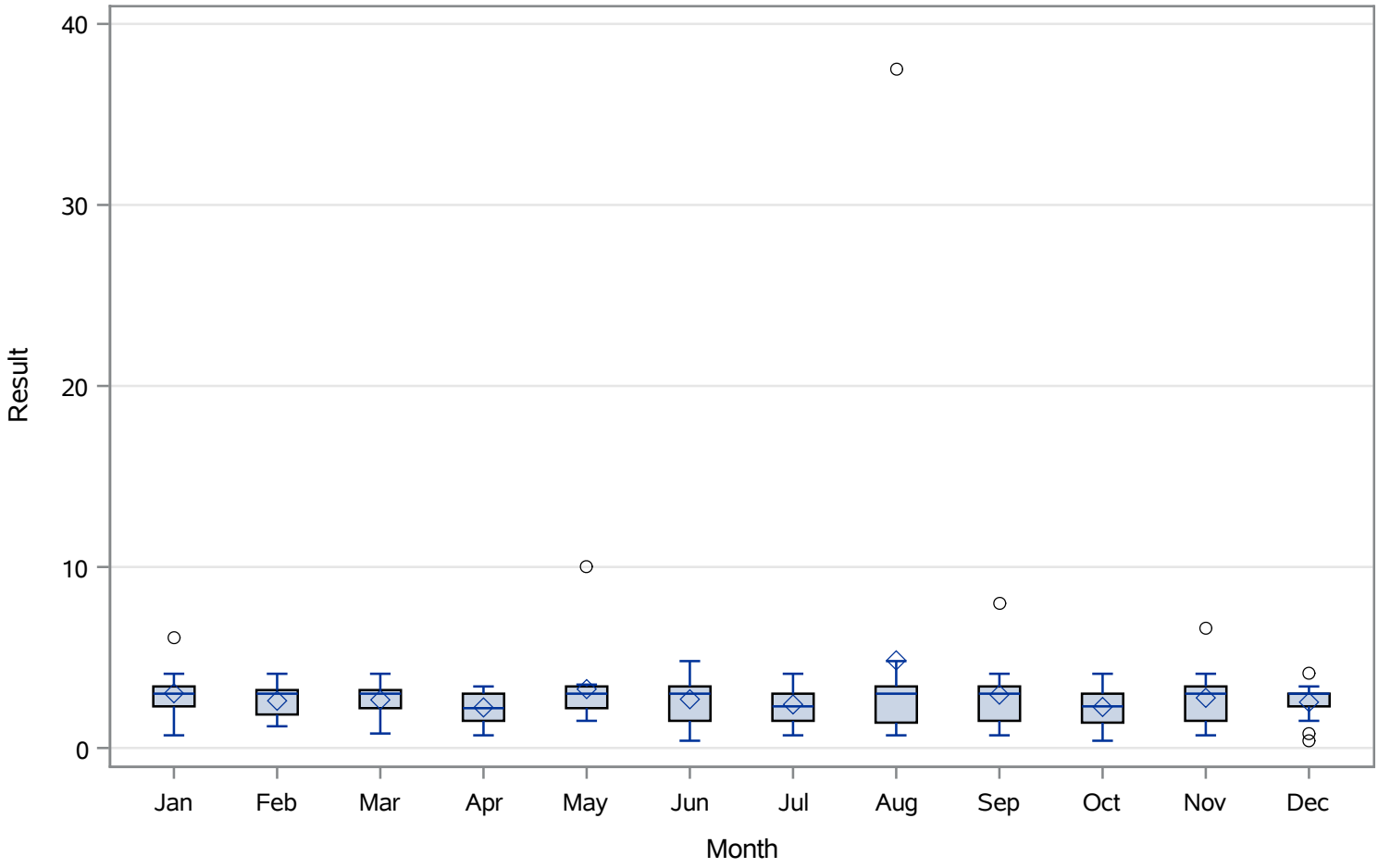
Little Manatee River
113
Chlorophyll a Corr (ug/l)
Site ID = 113



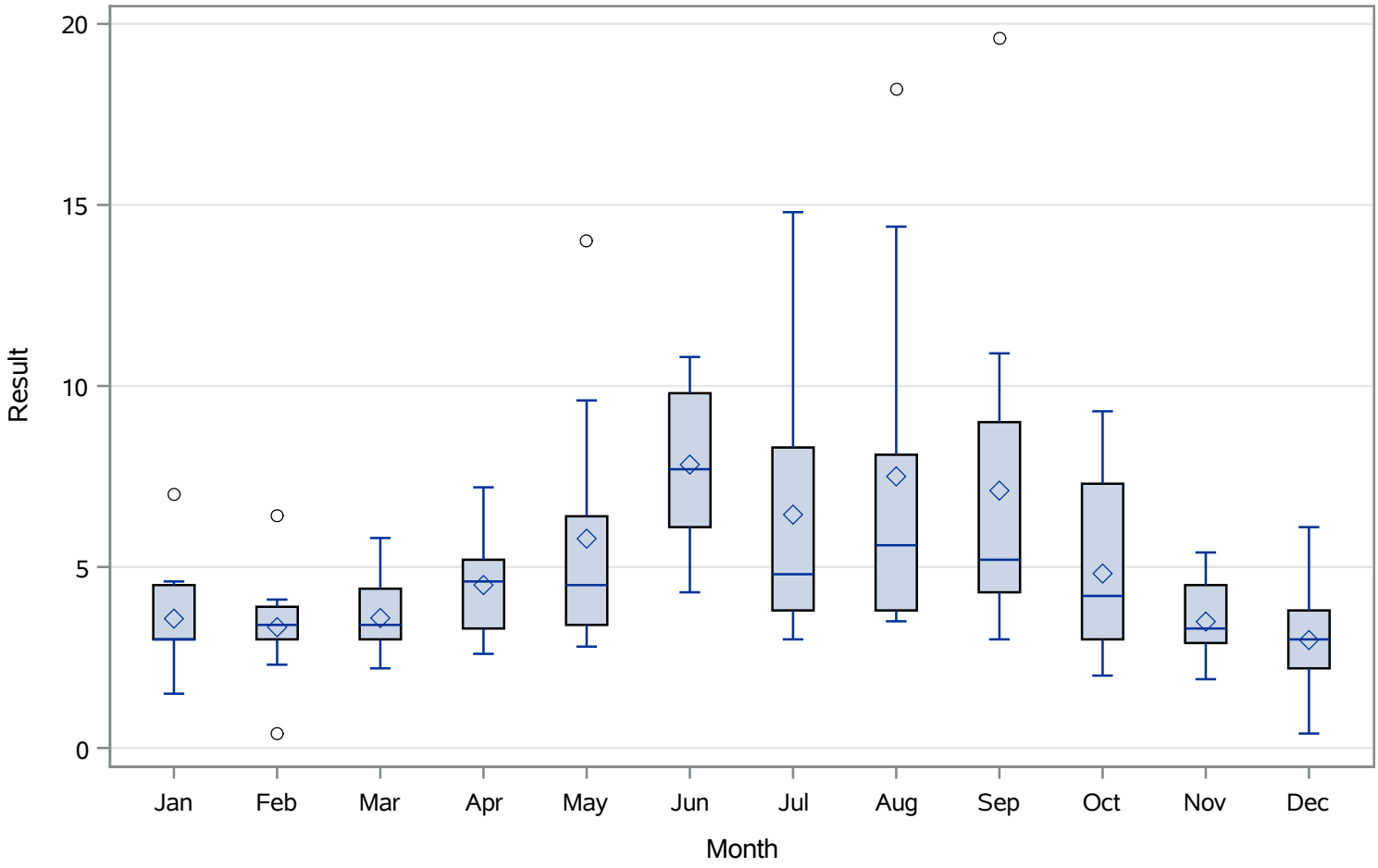
Little Manatee River
129
Chlorophyll a Corr (ug/l)
Site ID = 129



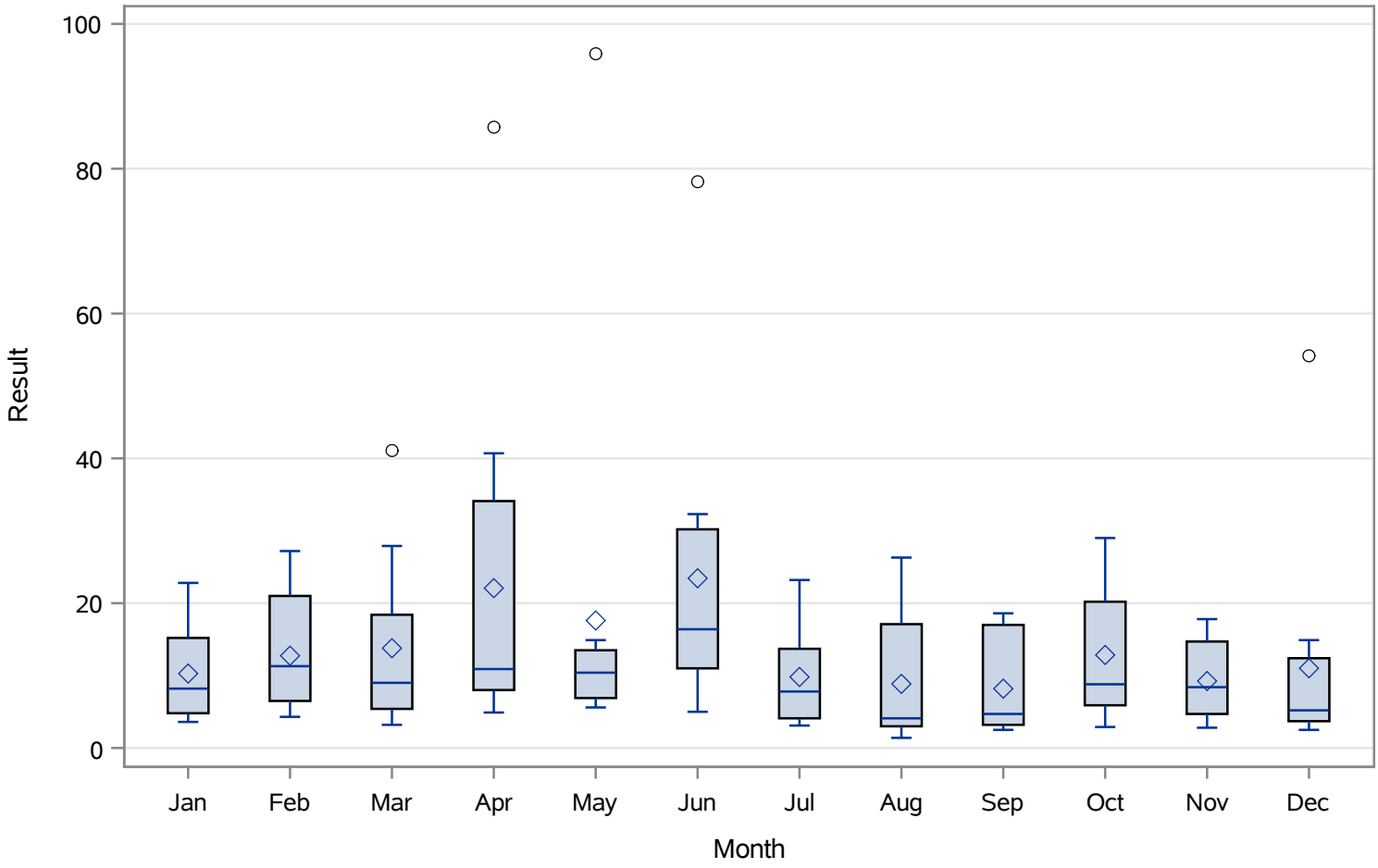
Little Manatee River
140
Chlorophyll a Corr (ug/l)
Site ID = 140



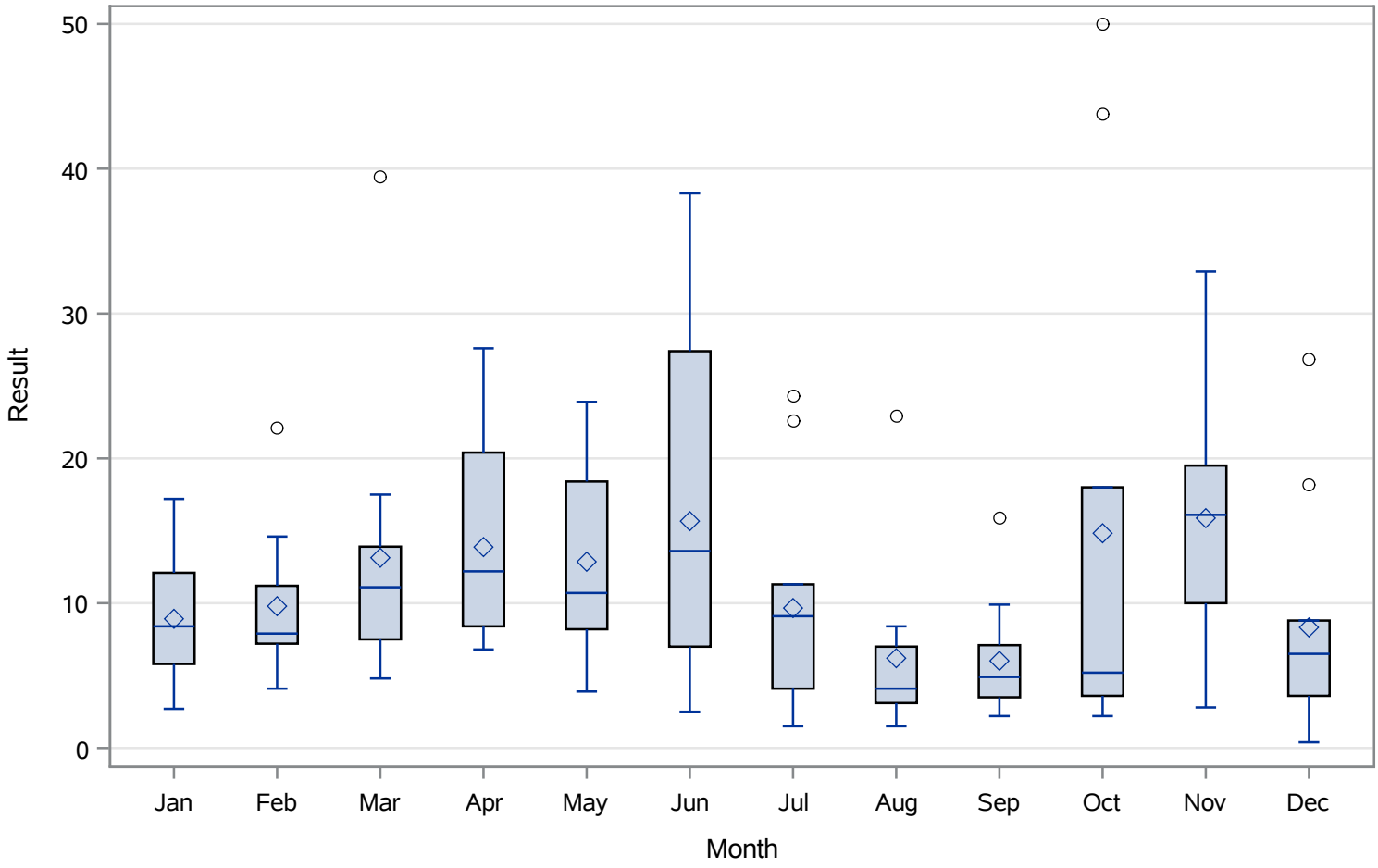
Little Manatee River
180
Chlorophyll a Corr (ug/l)
Site ID = 180



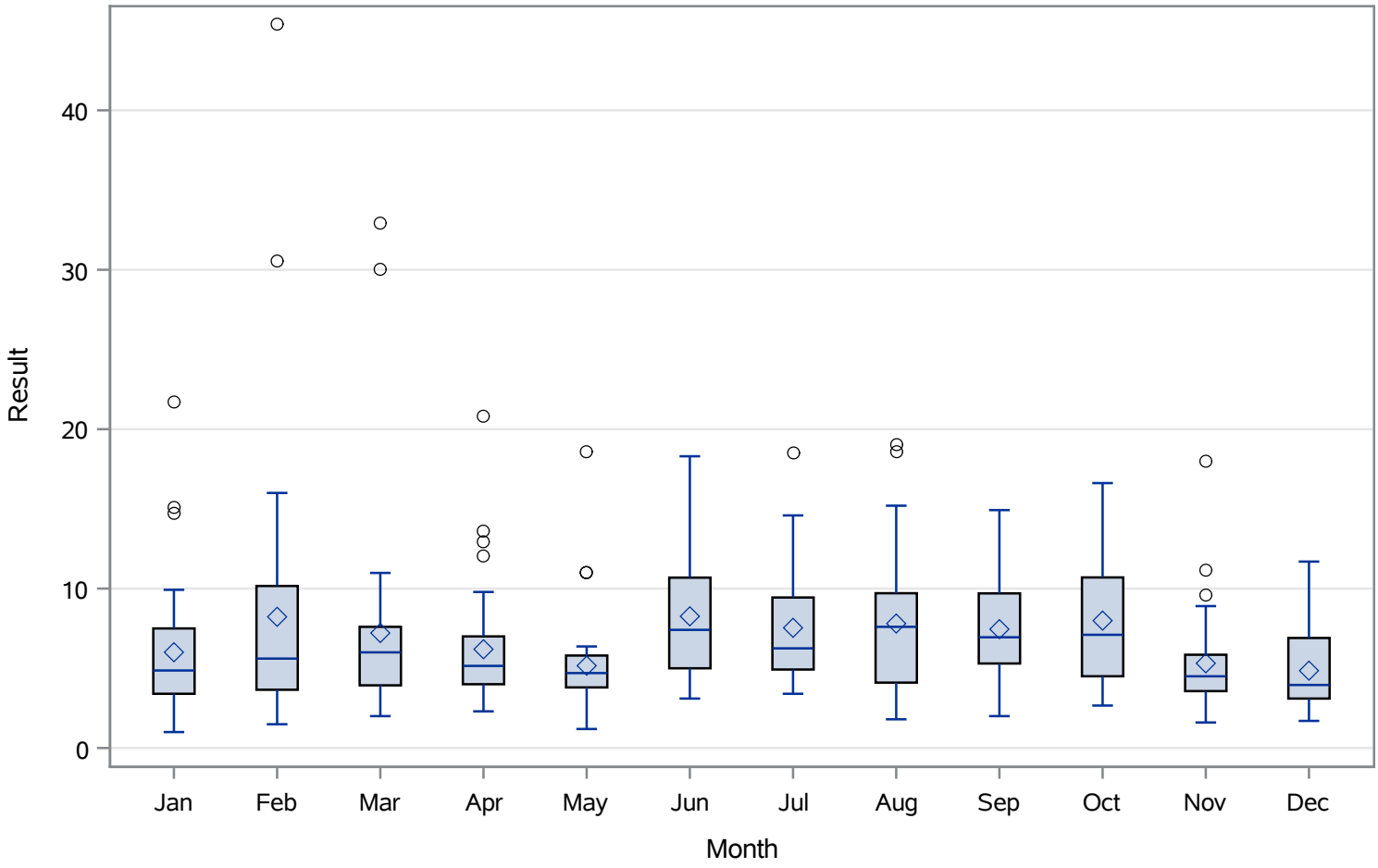
Little Manatee River
181
Chlorophyll a Corr (ug/l)
Site ID = 181



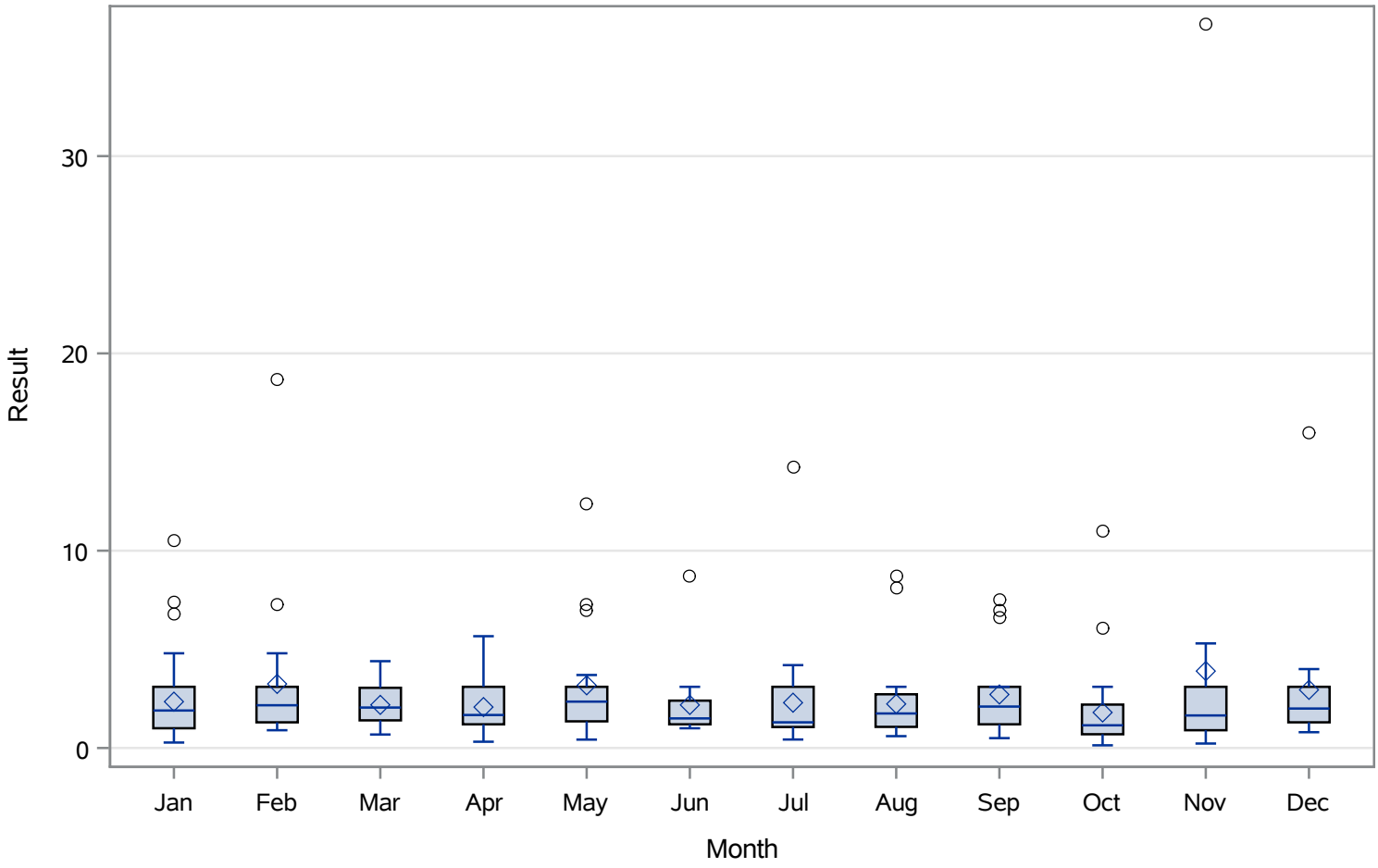
Little Manatee River
182
Chlorophyll a Corr (ug/l)
Site ID = 182



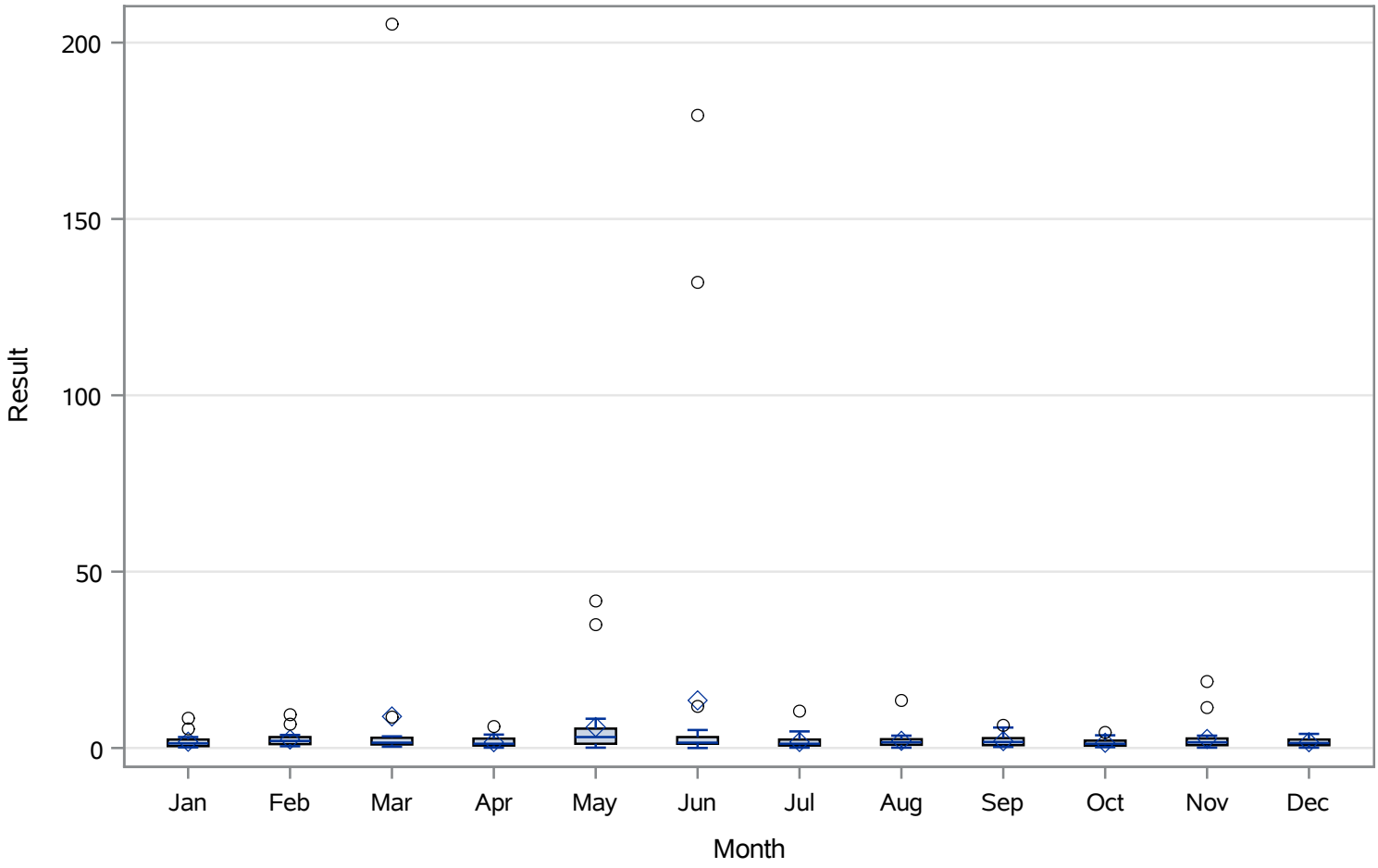
Little Manatee River
112
Chlorophyll a uncorr (ug/l)
Site ID = 112



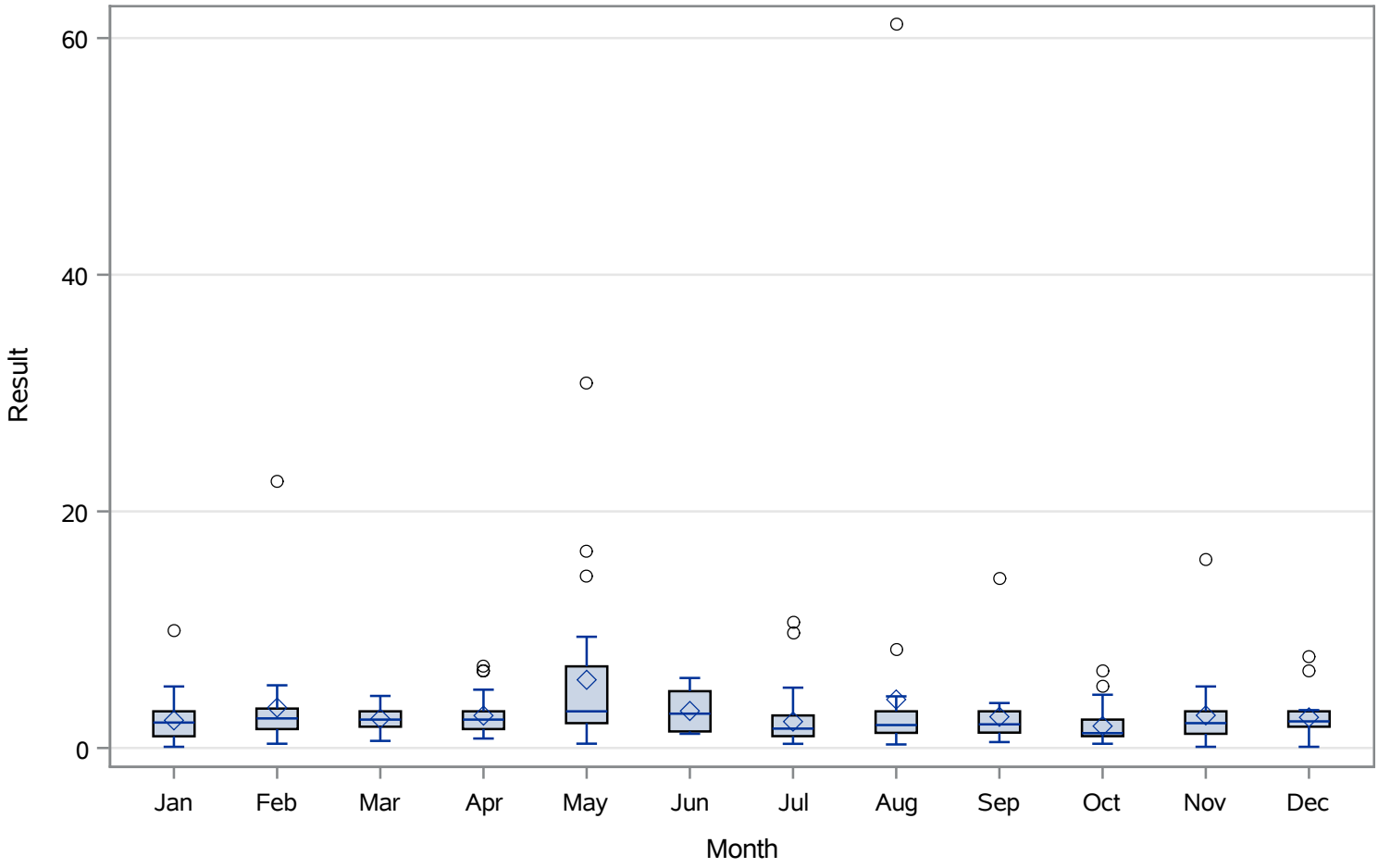
Little Manatee River
113
Chlorophyll a uncorr (ug/l)
Site ID = 113



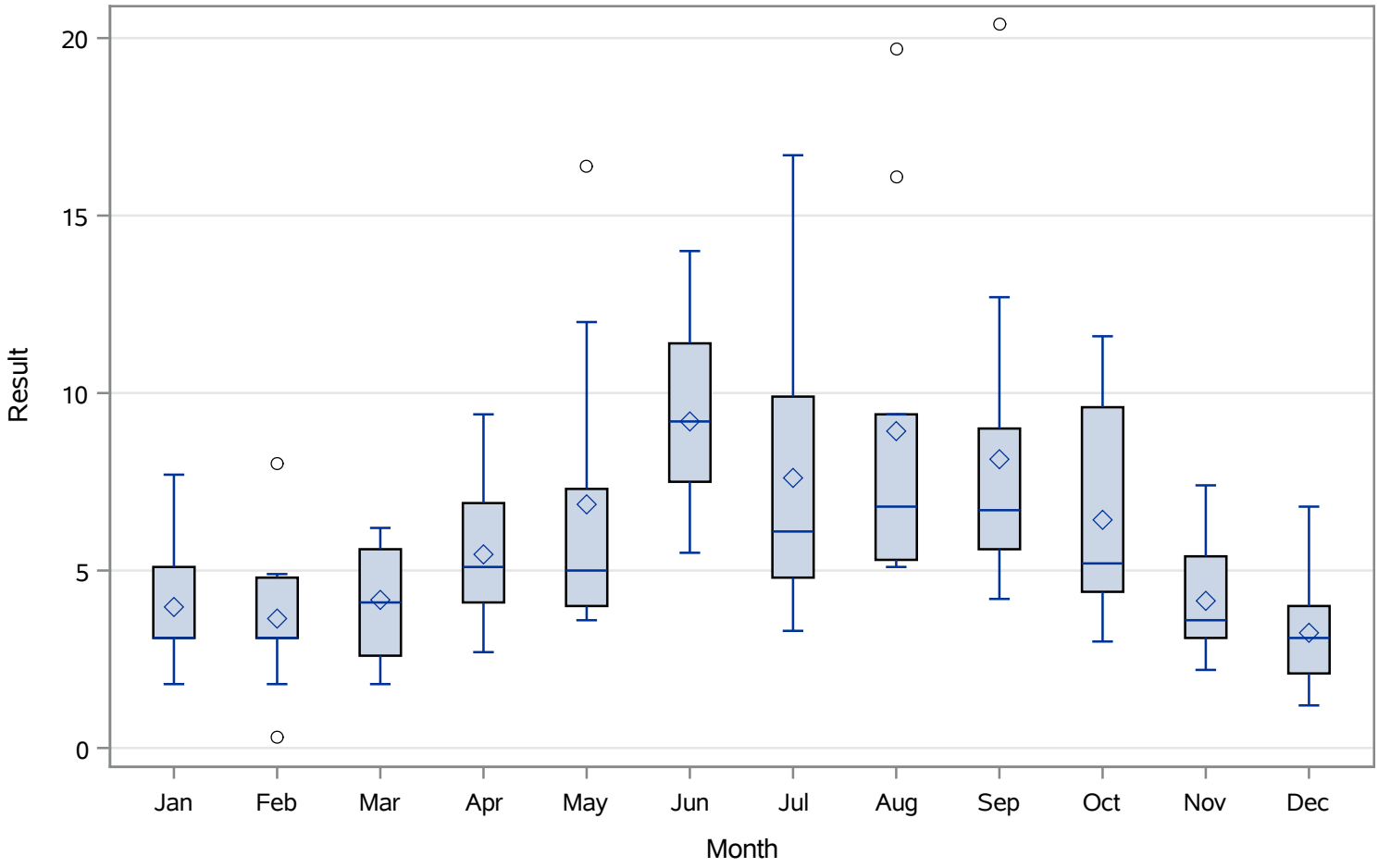
Little Manatee River
129
Chlorophyll a uncorr (ug/l)
Site ID = 129



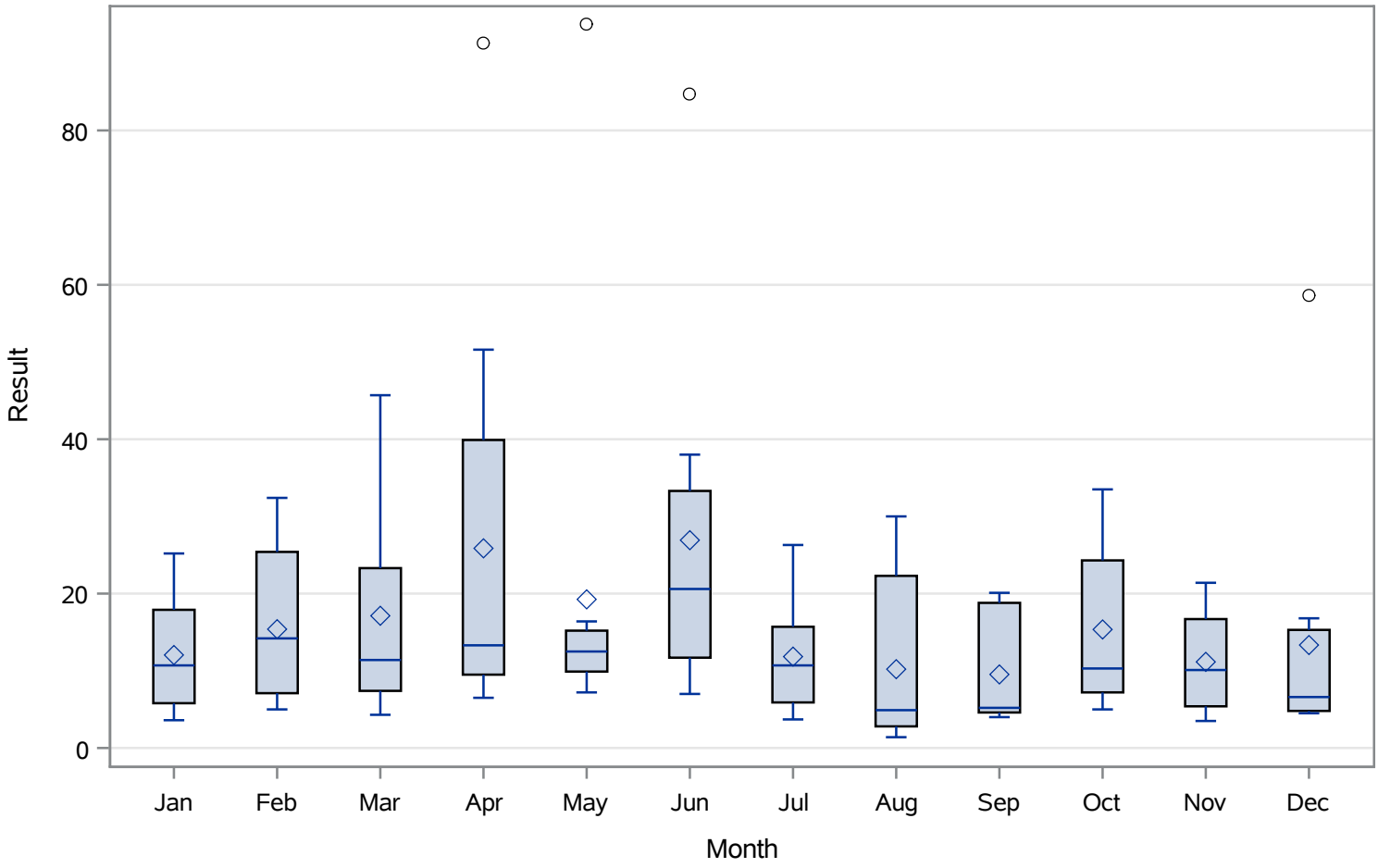
Little Manatee River
140
Chlorophyll a uncorr (ug/l)
Site ID = 140



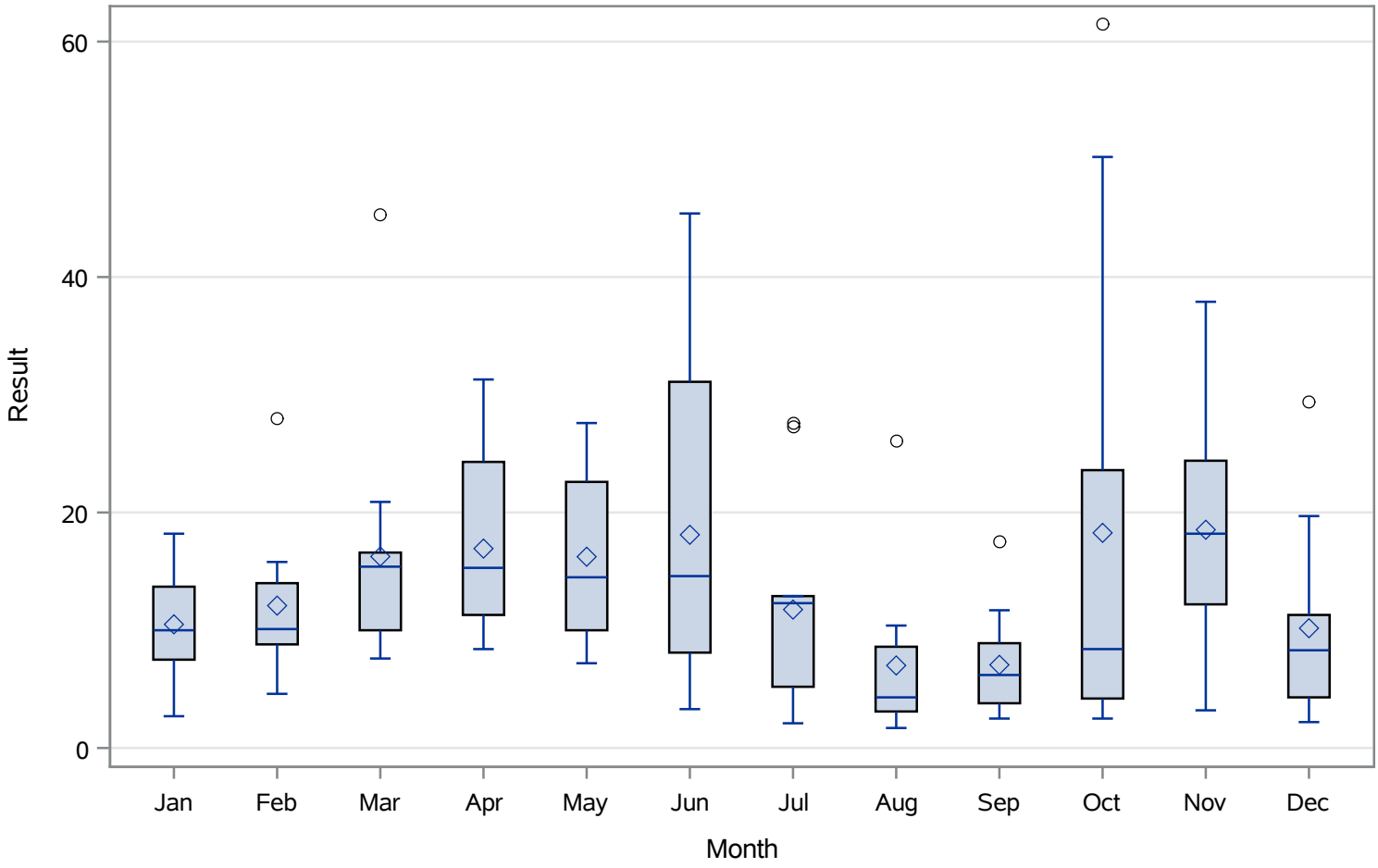
Little Manatee River
180
Chlorophyll a uncorr (ug/l)
Site ID = 180



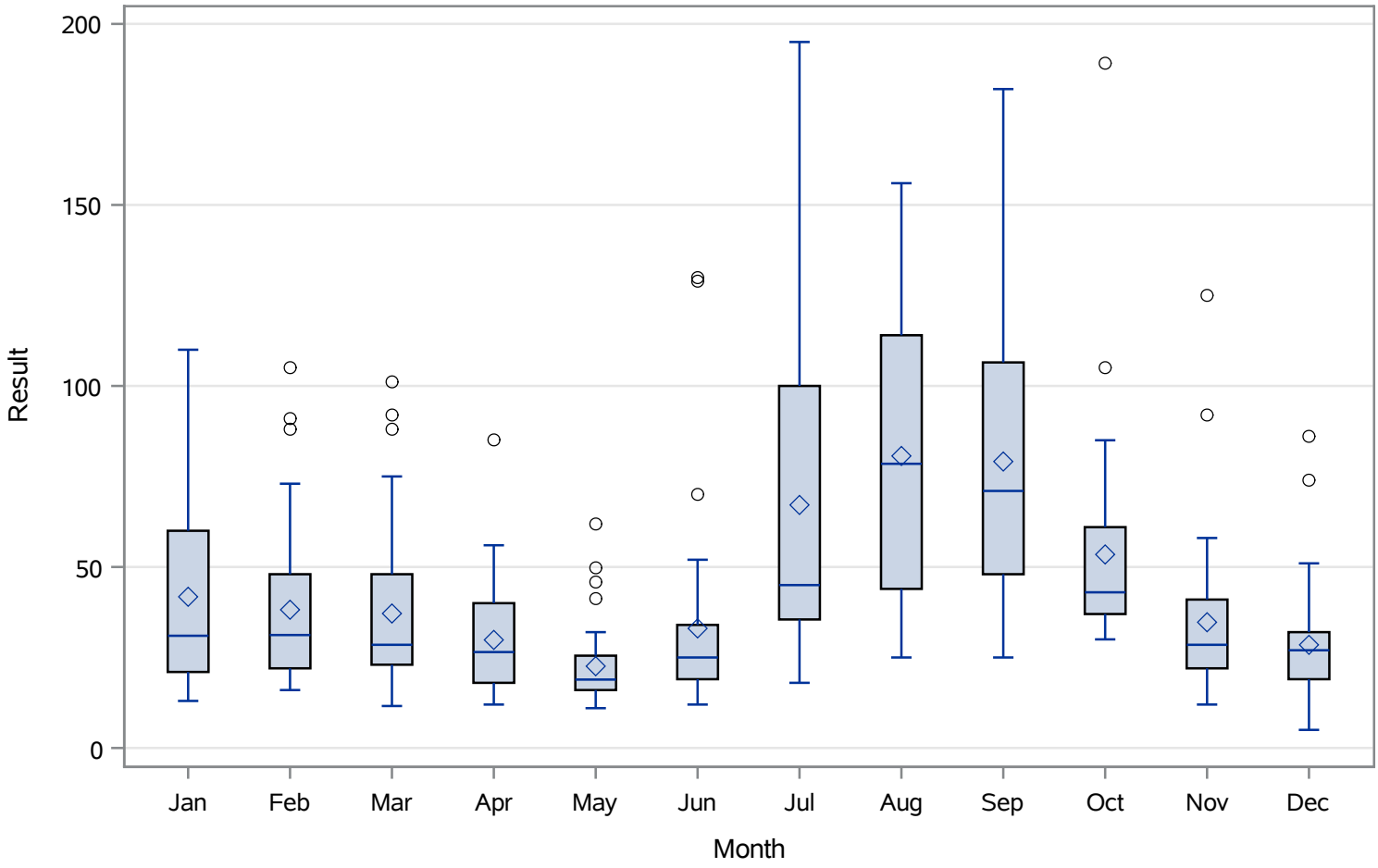
Little Manatee River
181
Chlorophyll a uncorr (ug/l)
Site ID = 181



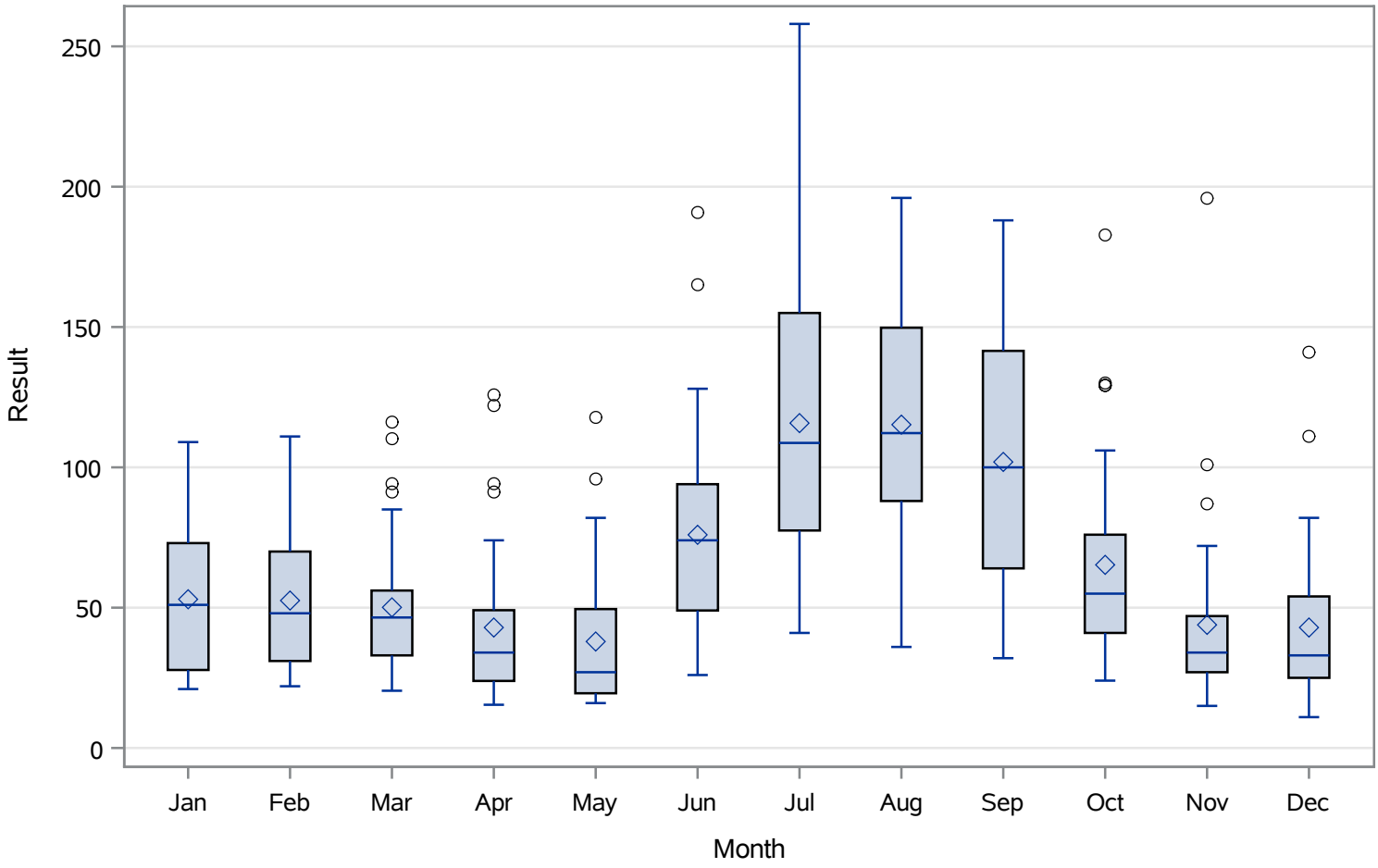
Little Manatee River
182
Chlorophyll a uncorr (ug/l)
Site ID = 182



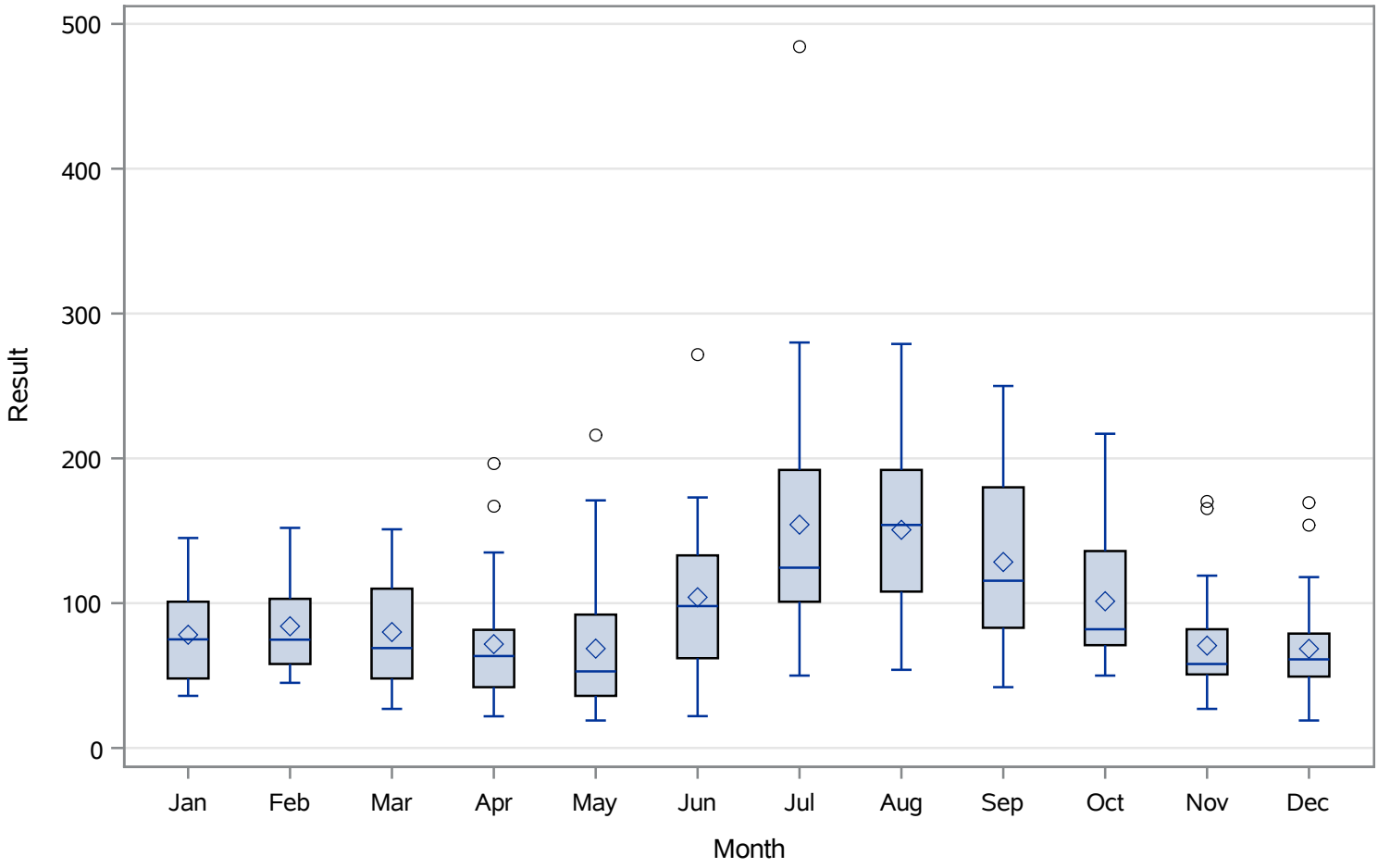
Little Manatee River
112
Color(345) C (PCU)
Site ID = 112



Little Manatee River
113
Color(345) C (PCU)
Site ID = 113



Little Manatee River
129
Color(345) C (PCU)
Site ID = 129



Little Manatee River
140
Color(345) C (PCU)
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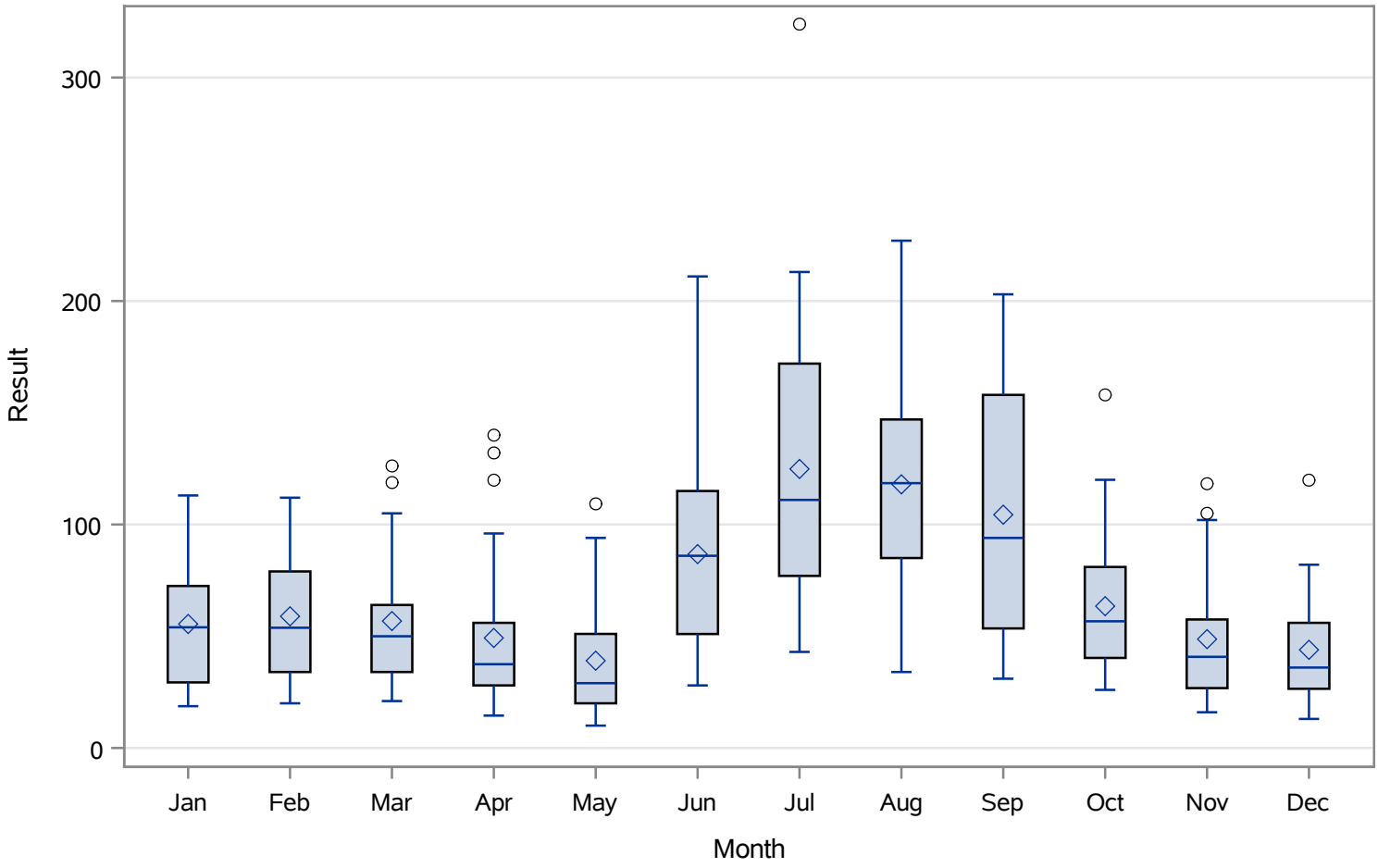
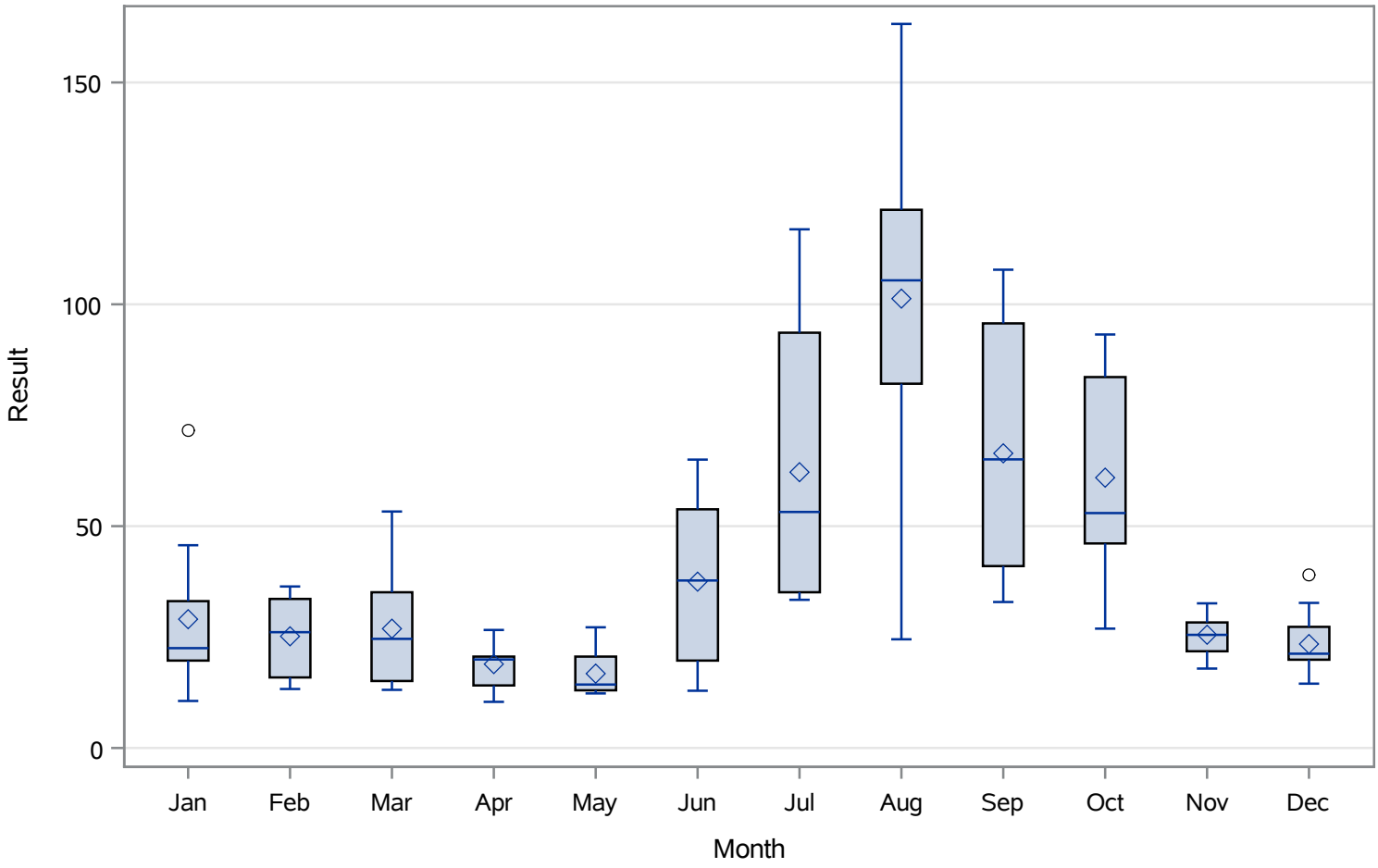
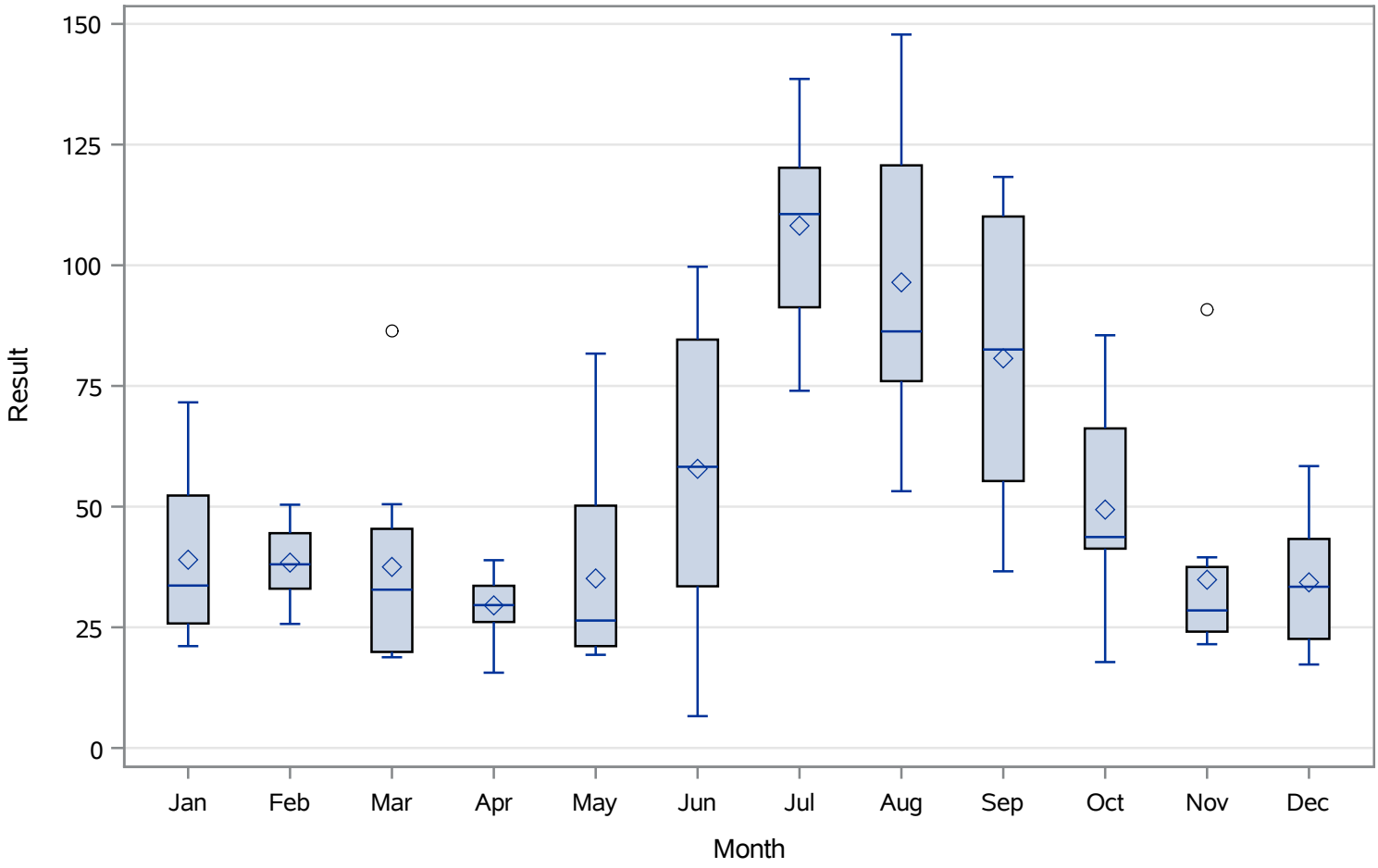


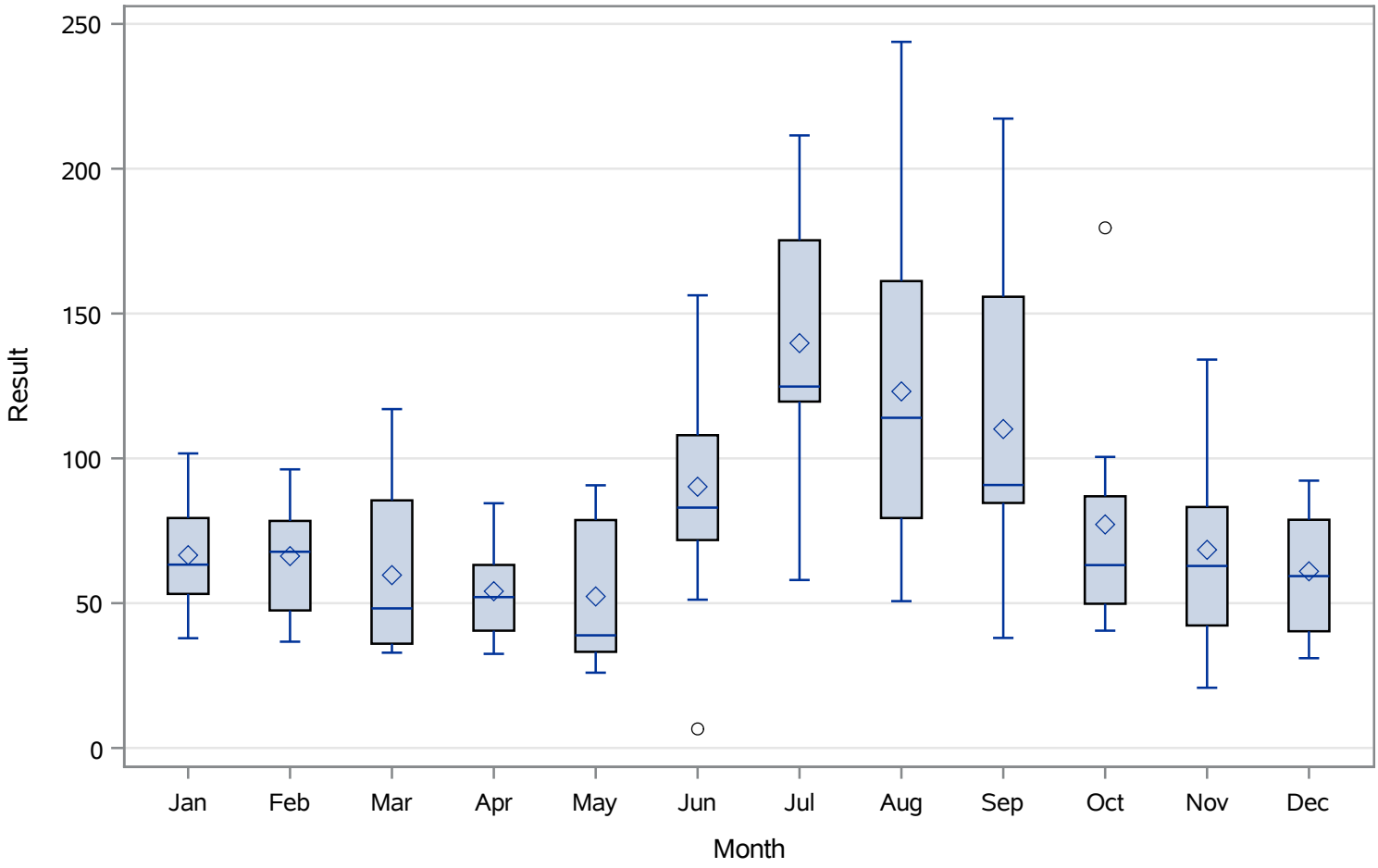
Little Manatee River
112
Color(345)F 45 (PCU)
Site ID = 112



Little Manatee River
113
Color(345)F 45 (PCU)
Site ID = 113



Little Manatee River
129
Color(345)F 45 (PCU)
Site ID = 129



Little Manatee River
140
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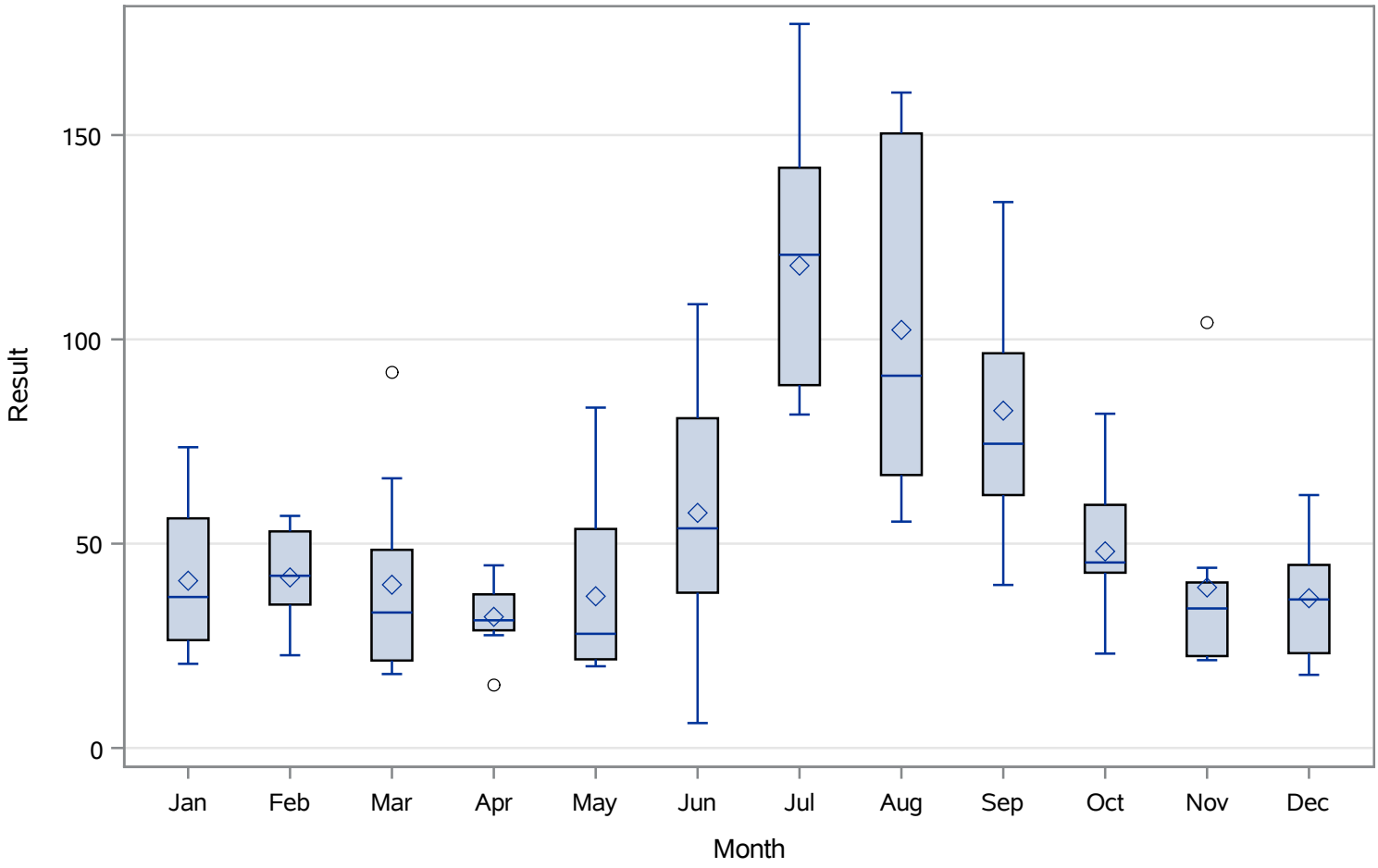

Little Manatee River
180
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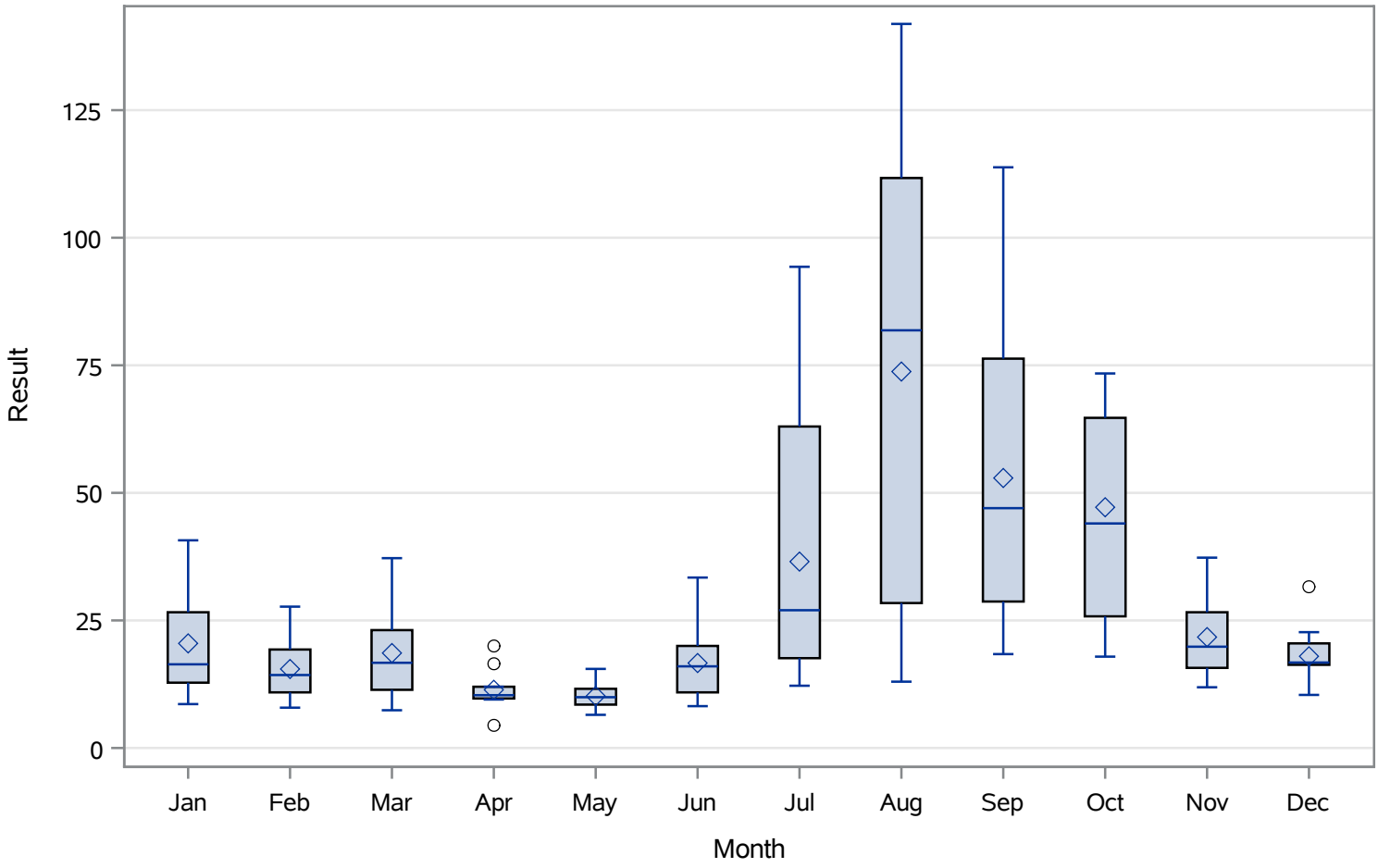
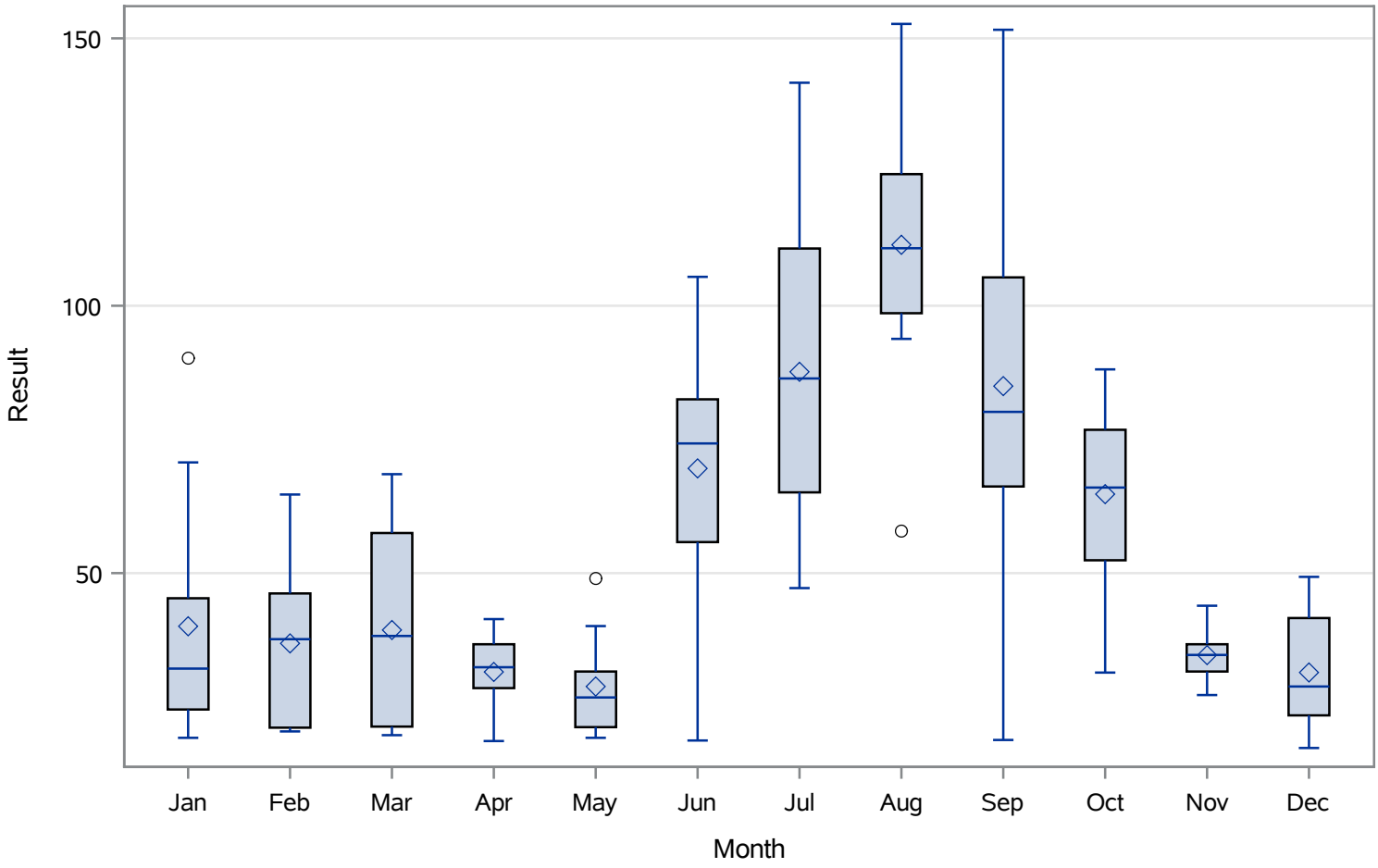


Little Manatee River
181
Color(345)F 45 (PCU)
Site ID = 181



Little Manatee River
182
Color(345)F 45 (PCU)
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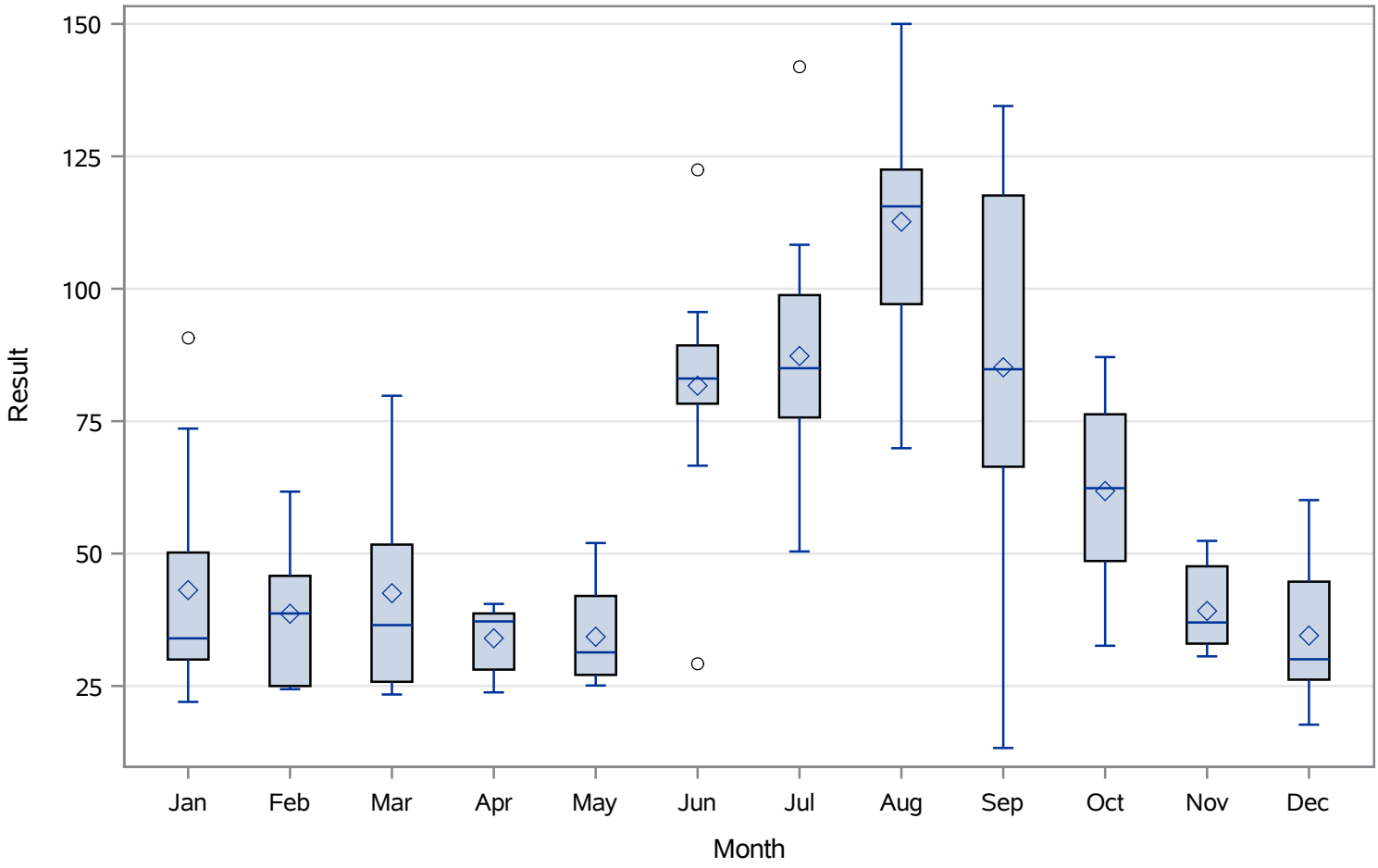
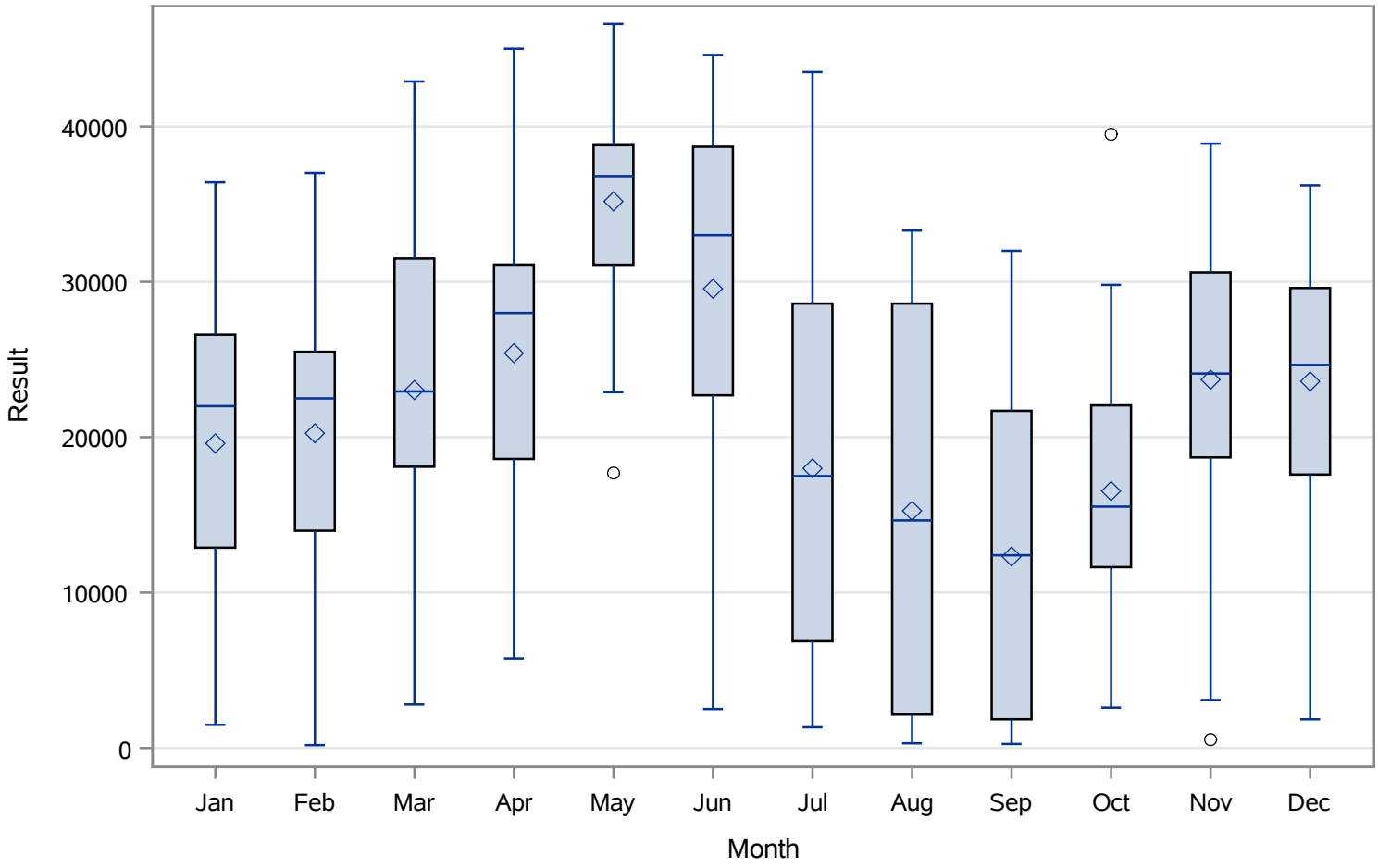
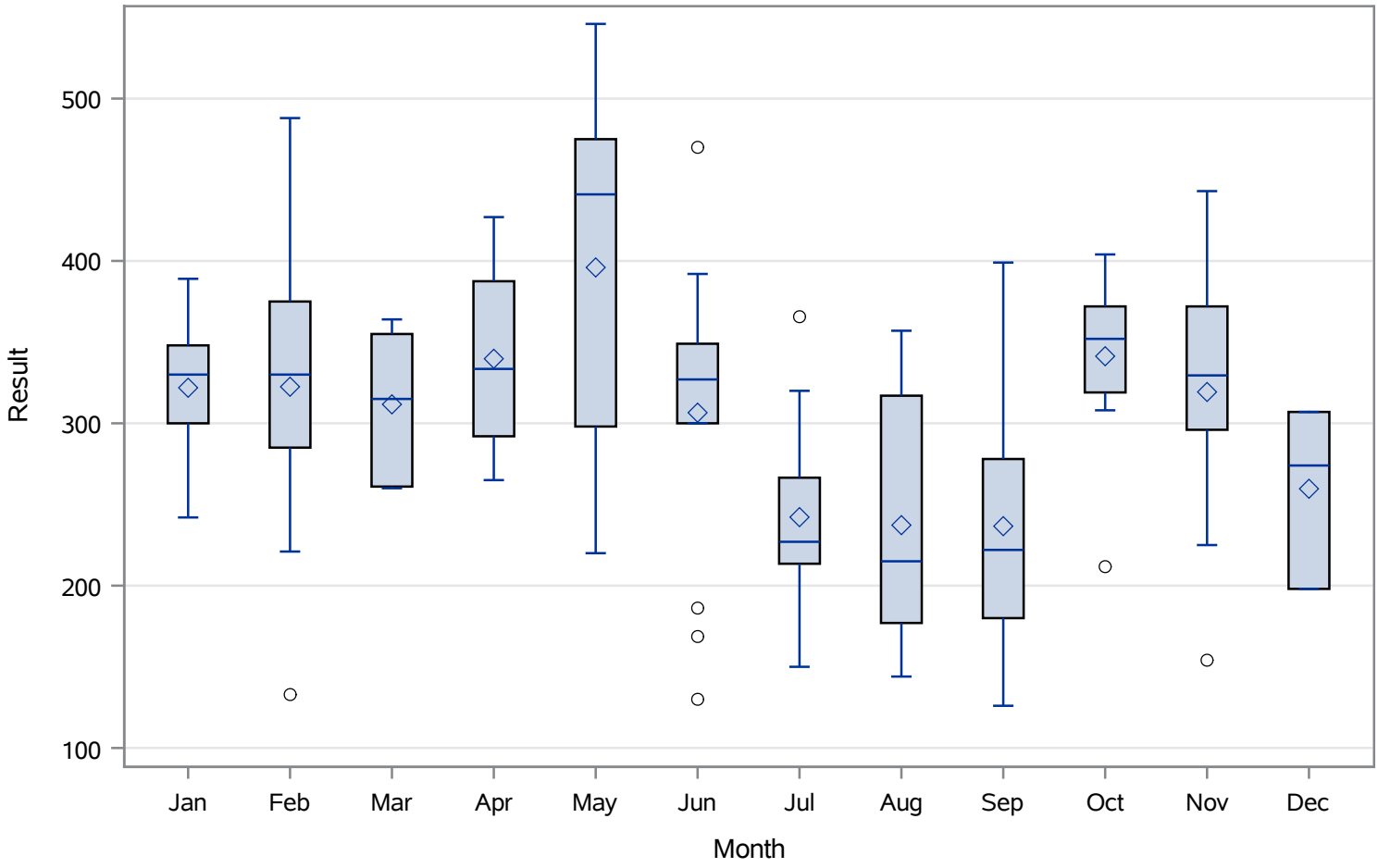


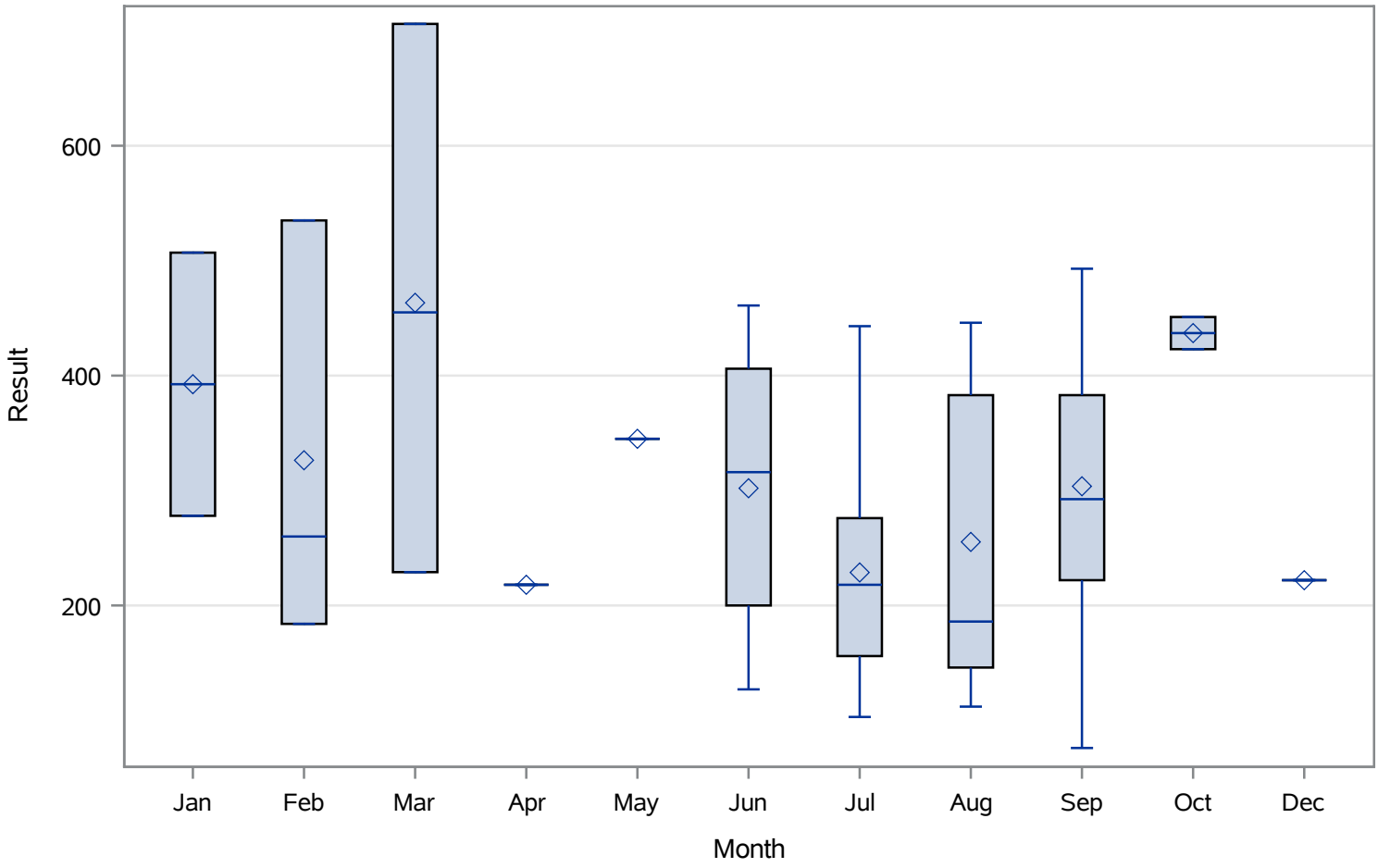
Little Manatee River
112
Cond Bottom (umho/cm)
Site ID = 112



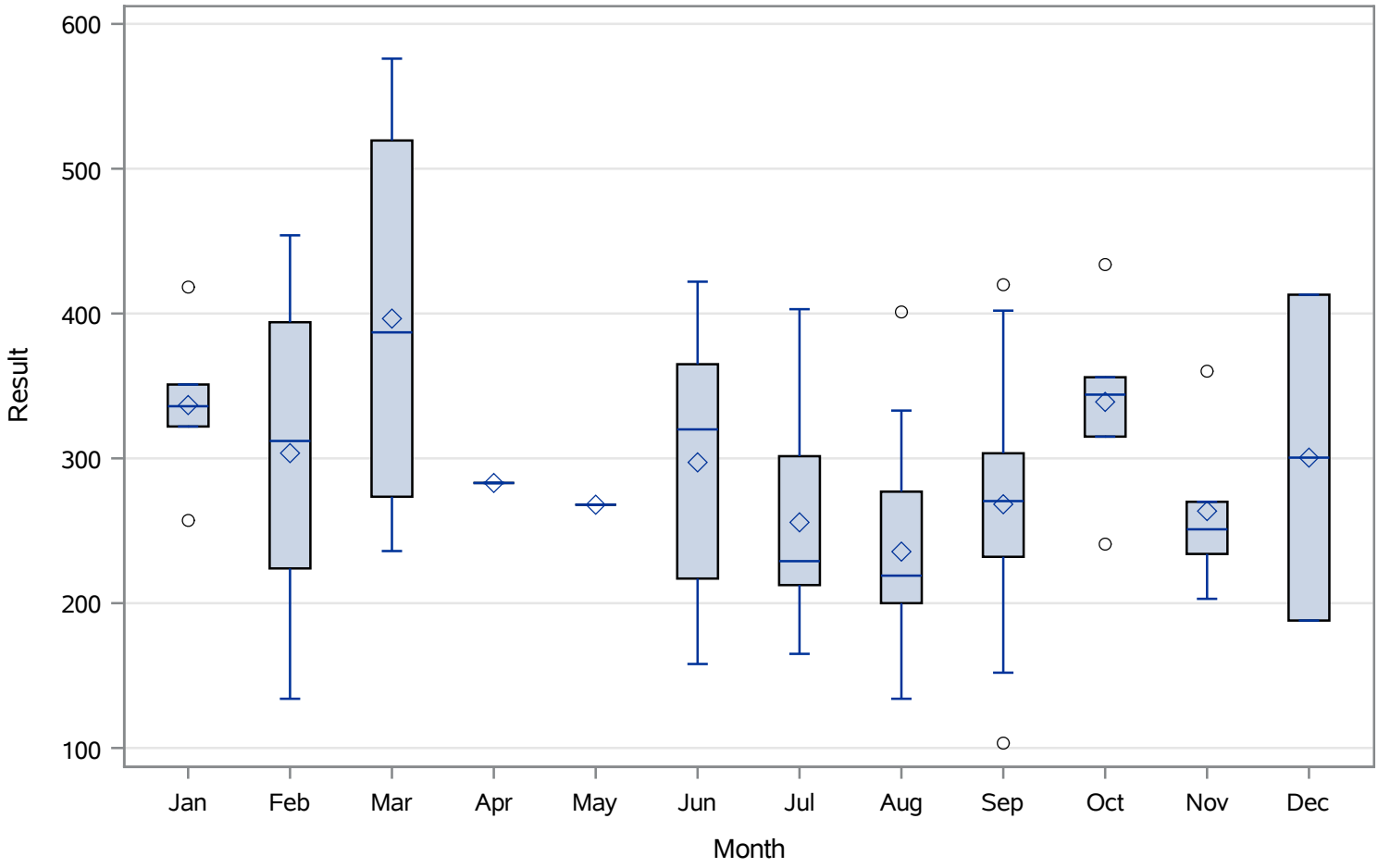
Little Manatee River
113
Cond Bottom (umho/cm)
Site ID = 113



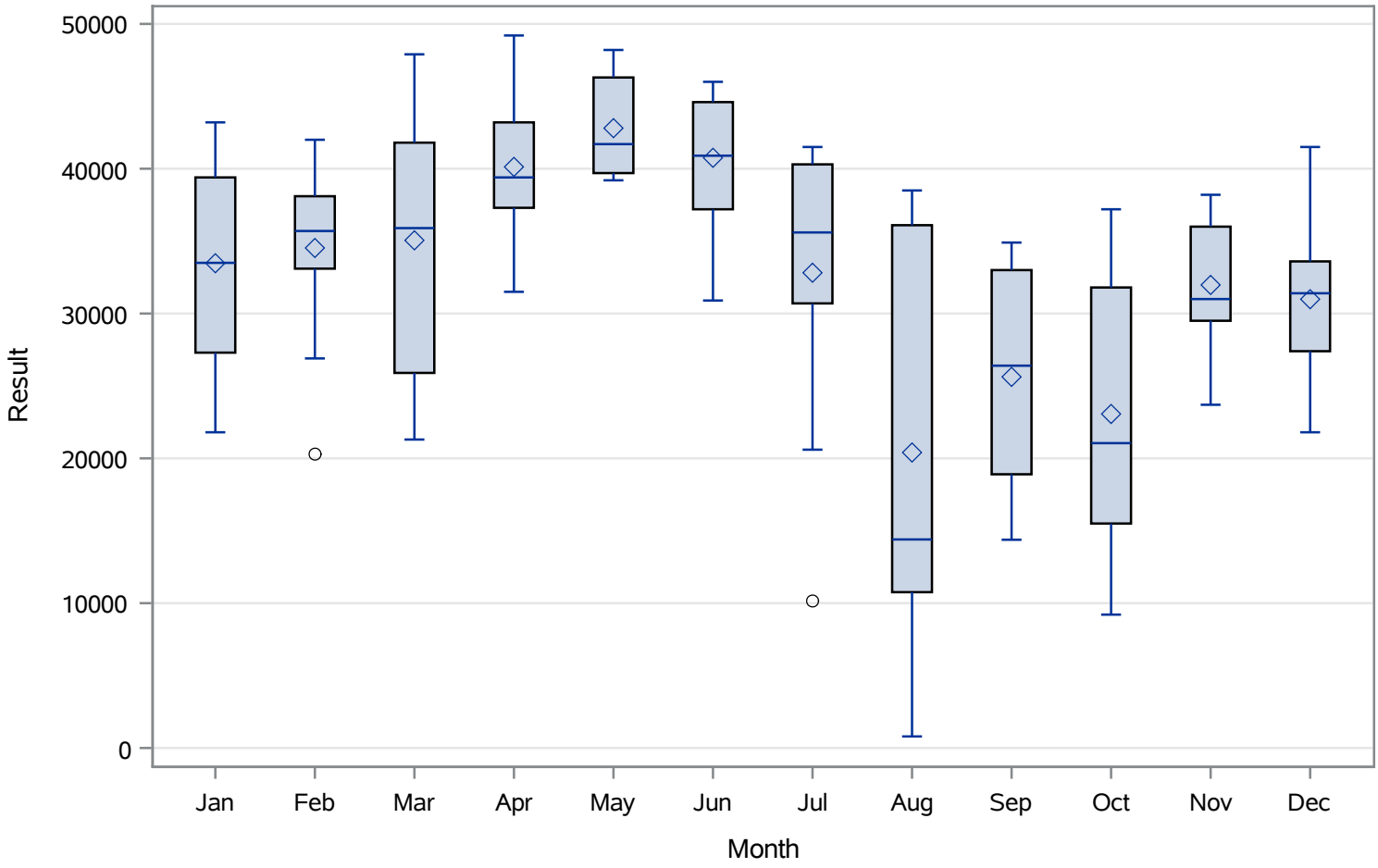
Little Manatee River
129
Cond Bottom (umho/cm)
Site ID = 129



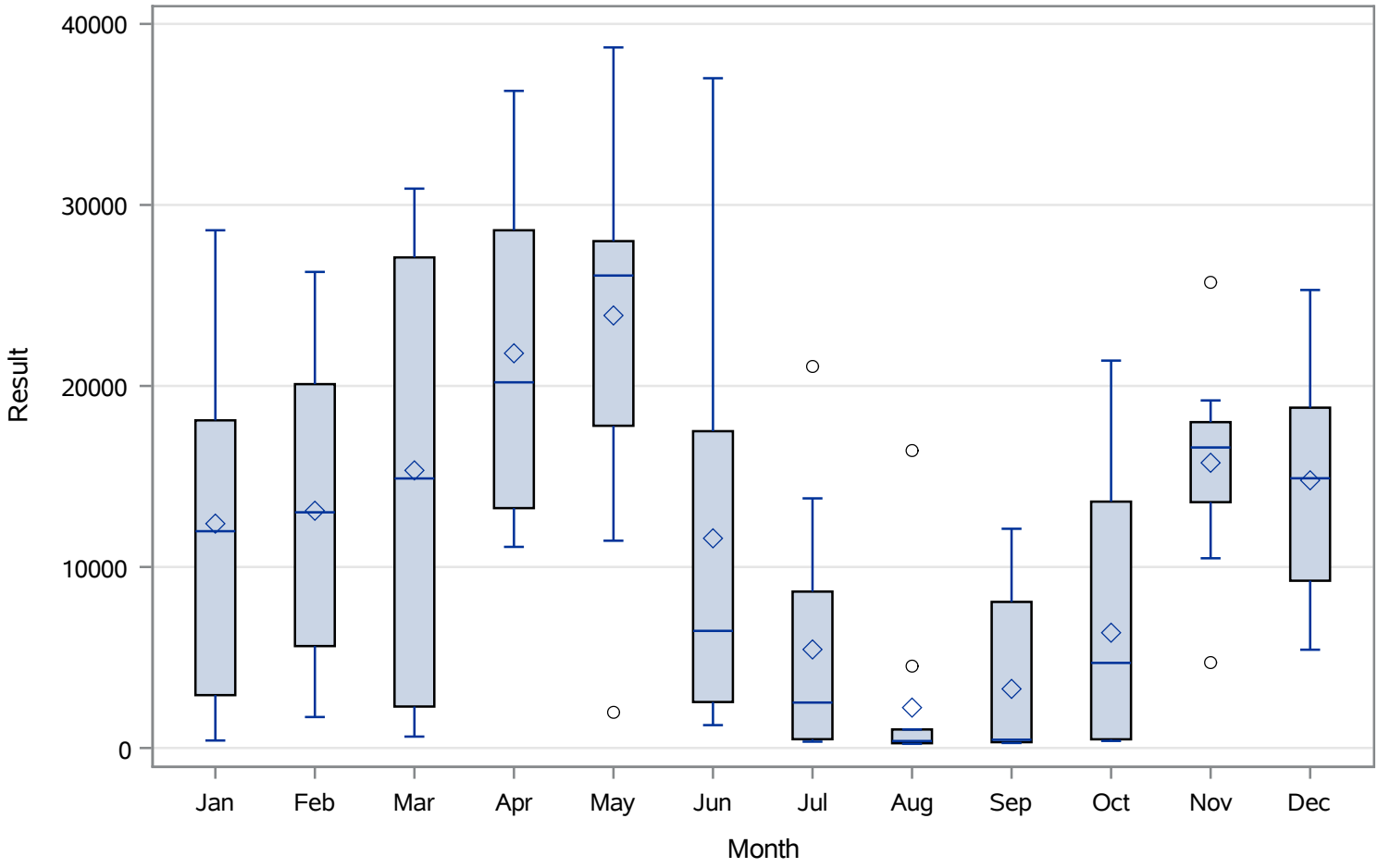
Little Manatee River
140
Cond Bottom (umho/cm)
Site ID = 140



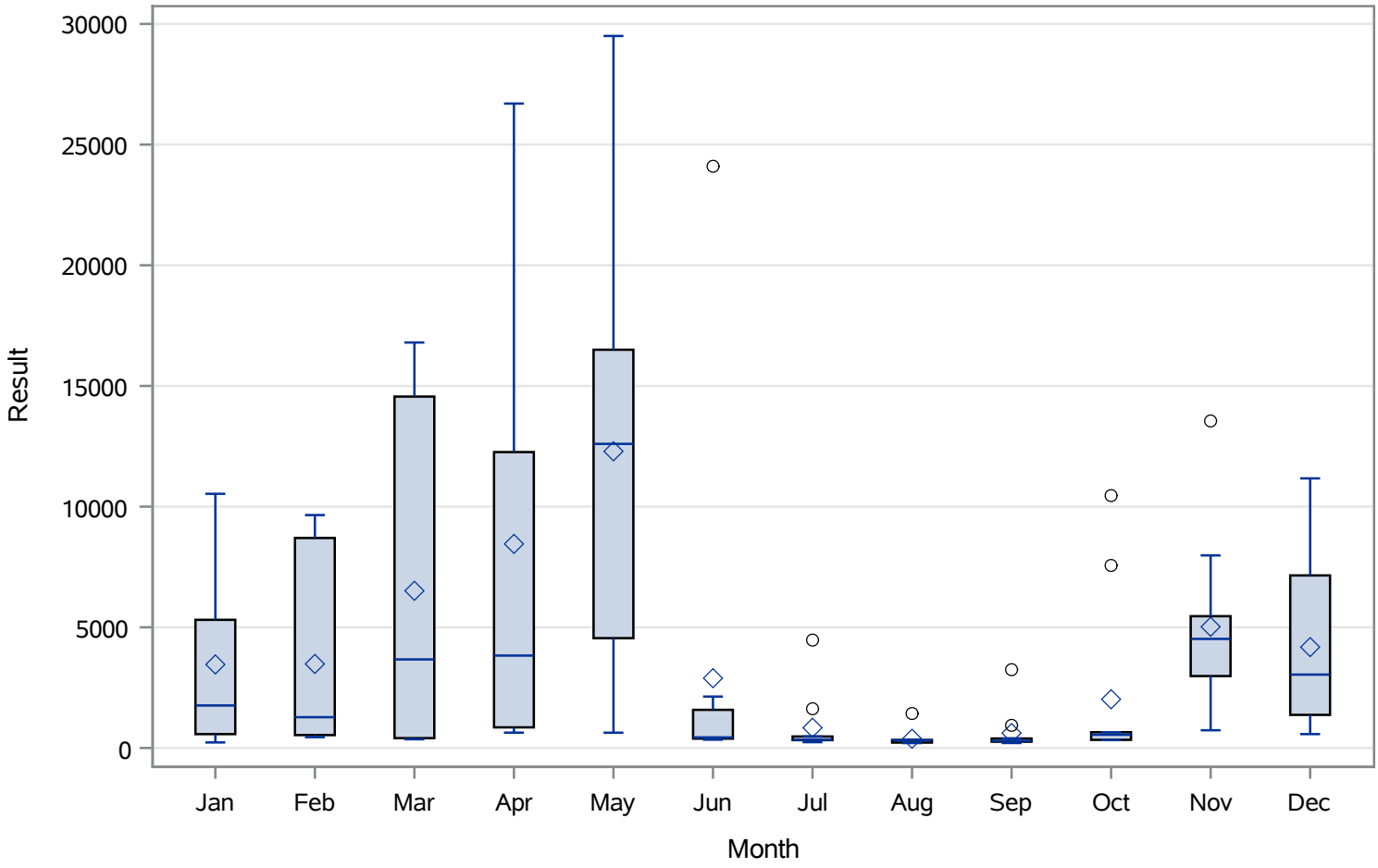
Little Manatee River
180
Cond Bottom (umho/cm)
Site ID = 180



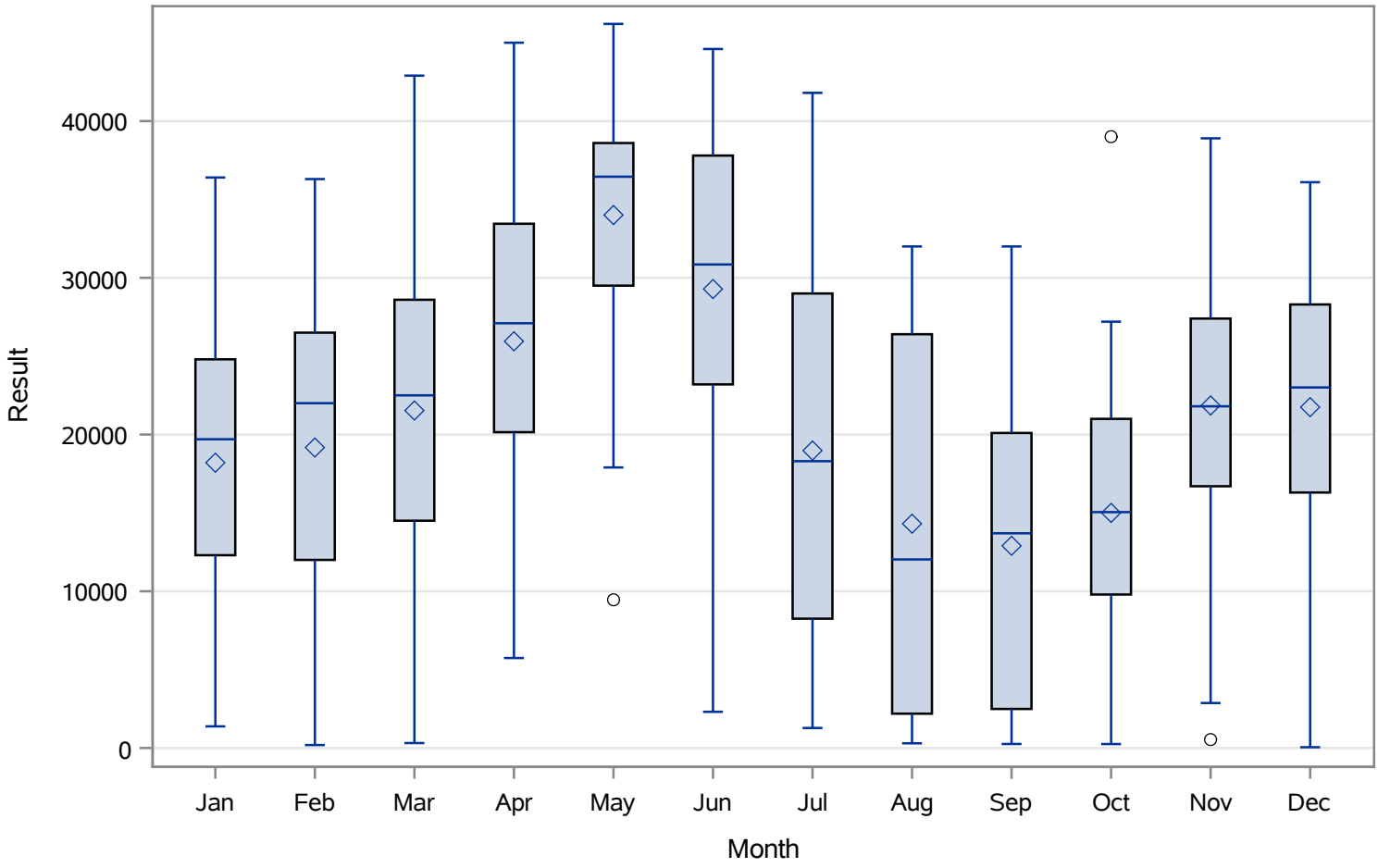
Little Manatee River
181
Cond Bottom (umho/cm)
Site ID = 181



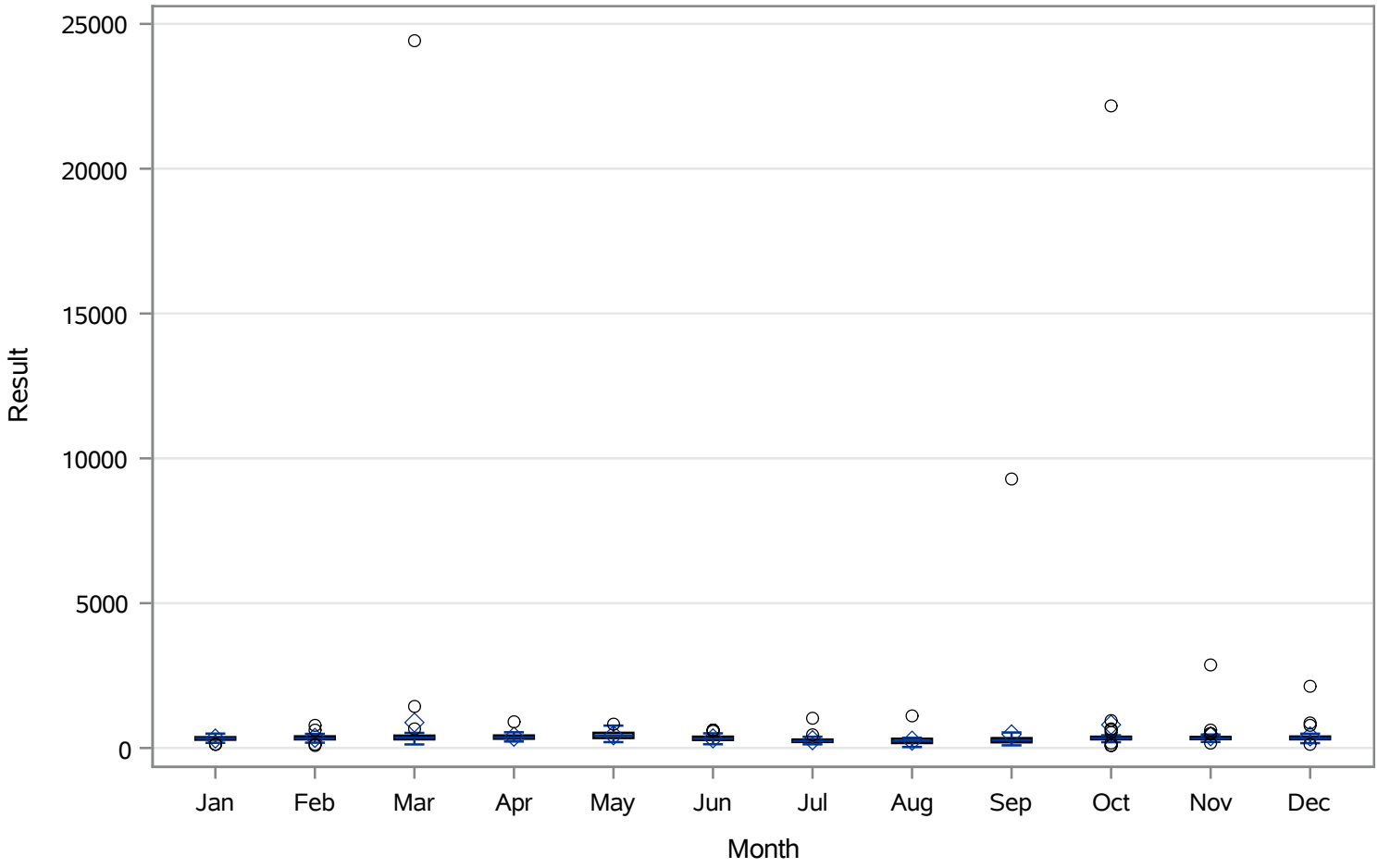
Little Manatee River
182
Cond Bottom (umho/cm)
Site ID = 182



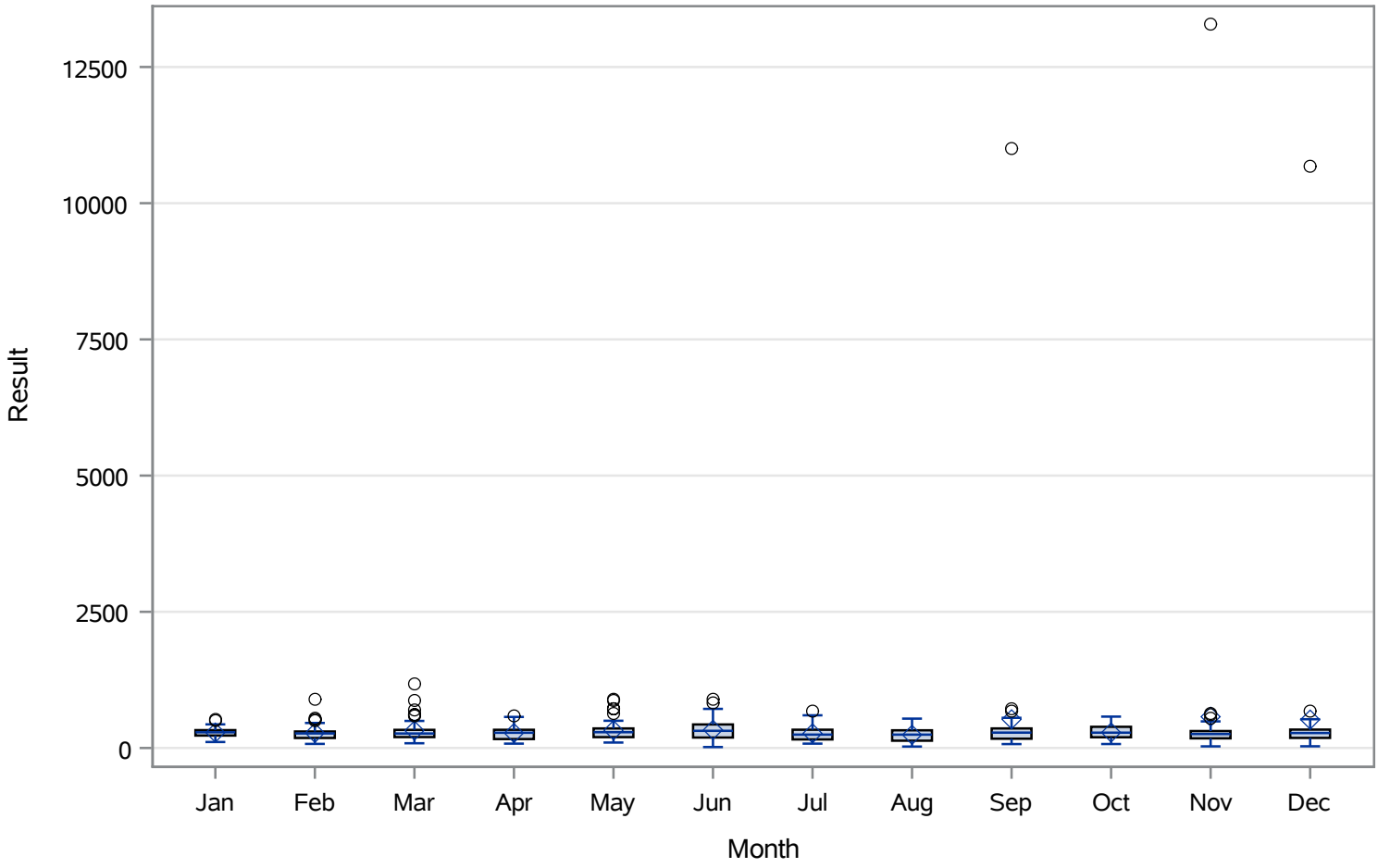
Little Manatee River
112
Cond Mid (umho/cm)
Site ID = 112



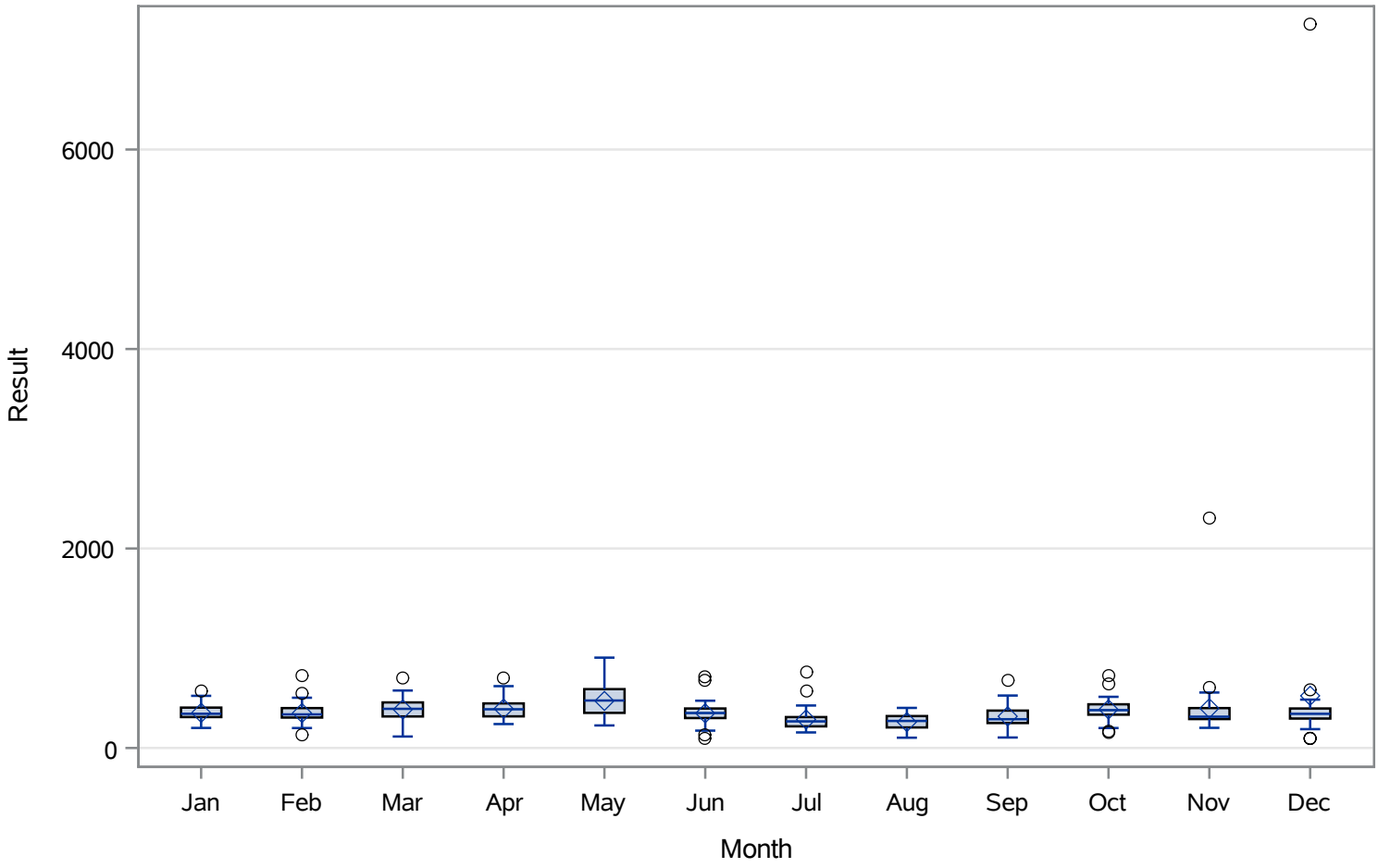
Little Manatee River
113
Cond Mid (umho/cm)
Site ID = 113



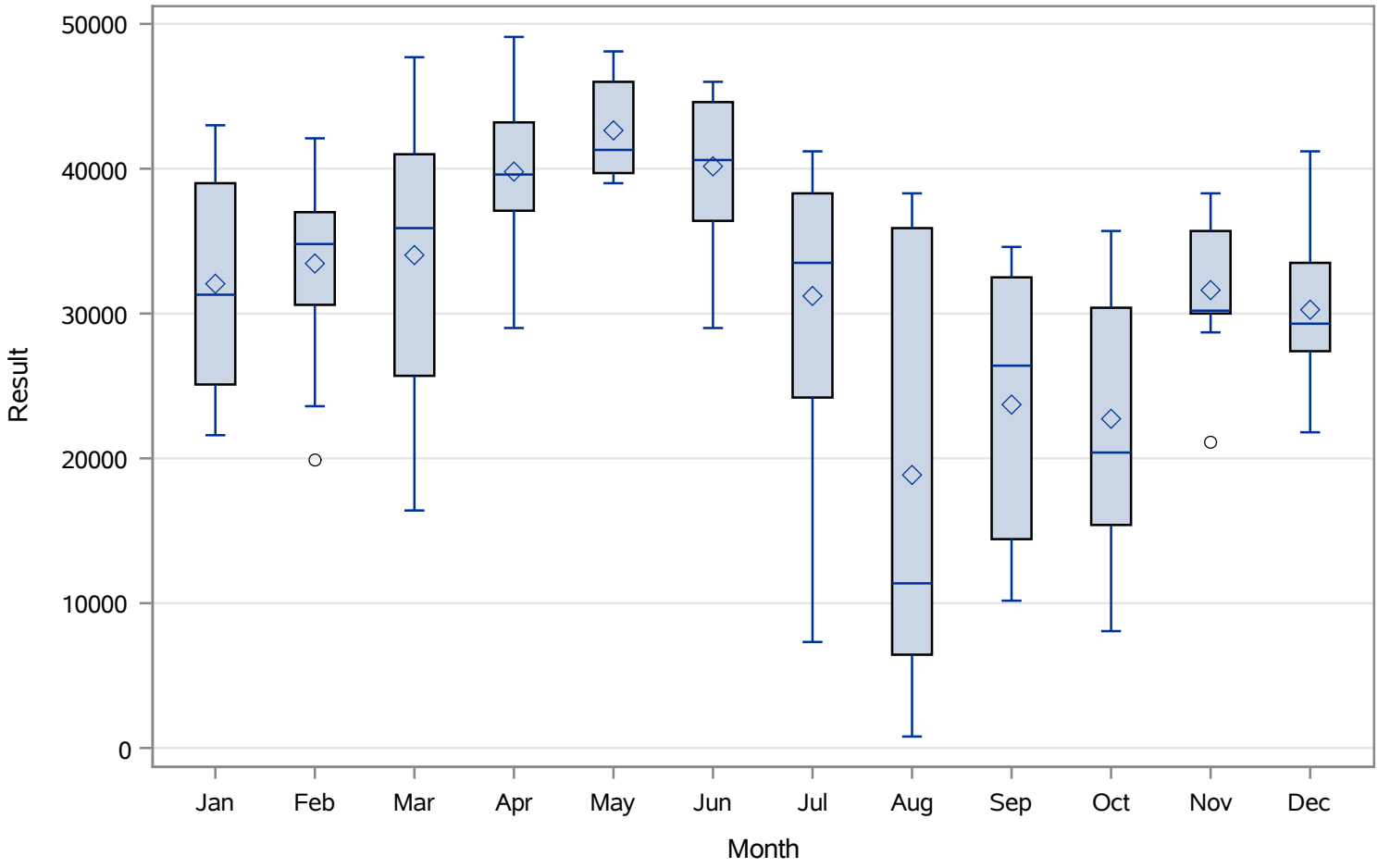
Little Manatee River
129
Cond Mid (umho/cm)
Site ID = 129



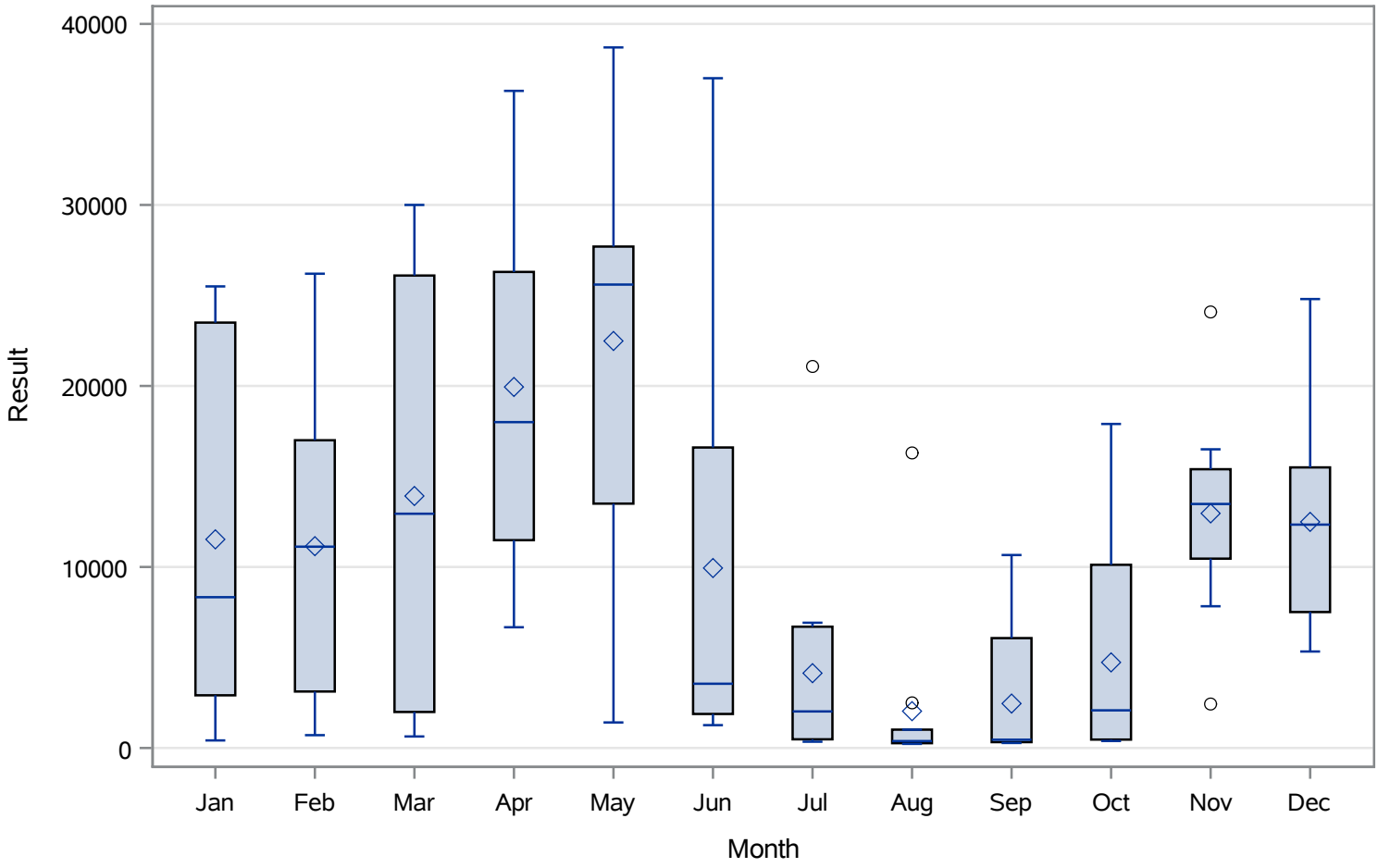
Little Manatee River
140
Cond Mid (umho/cm)
Site ID = 140



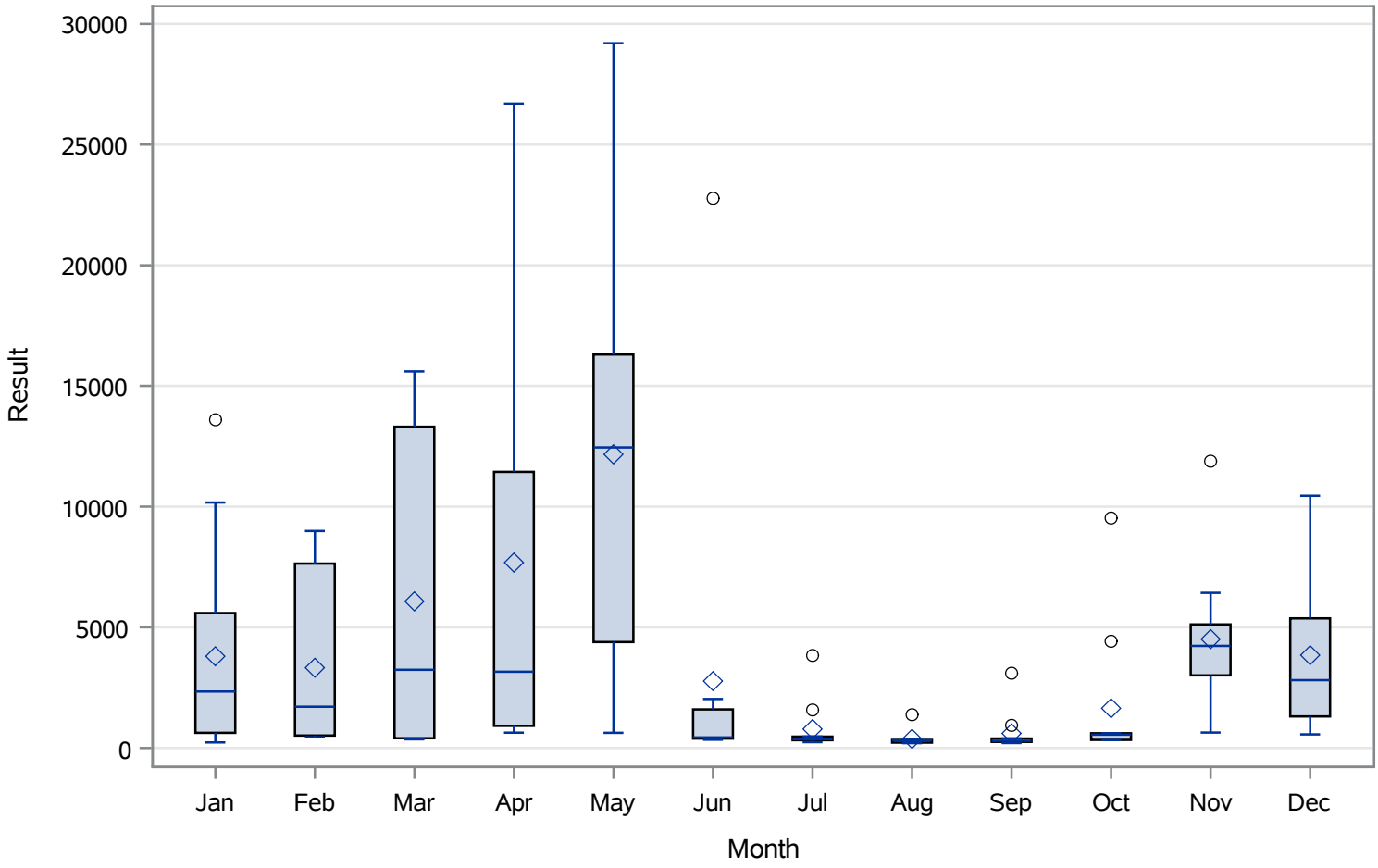
Little Manatee River
180
Cond Mid (umho/cm)
Site ID = 180



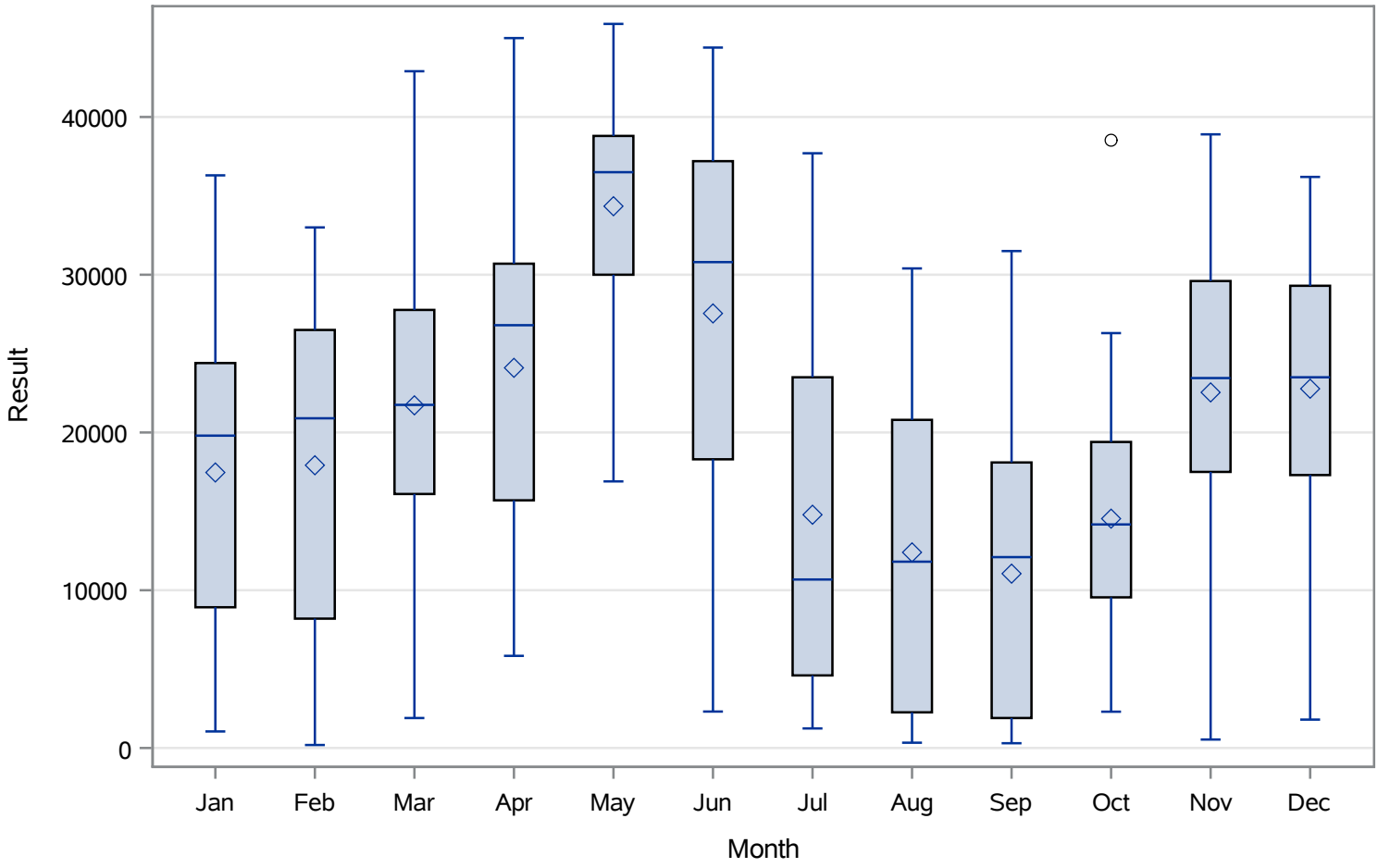
Little Manatee River
181
Cond Mid (umho/cm)
Site ID = 181



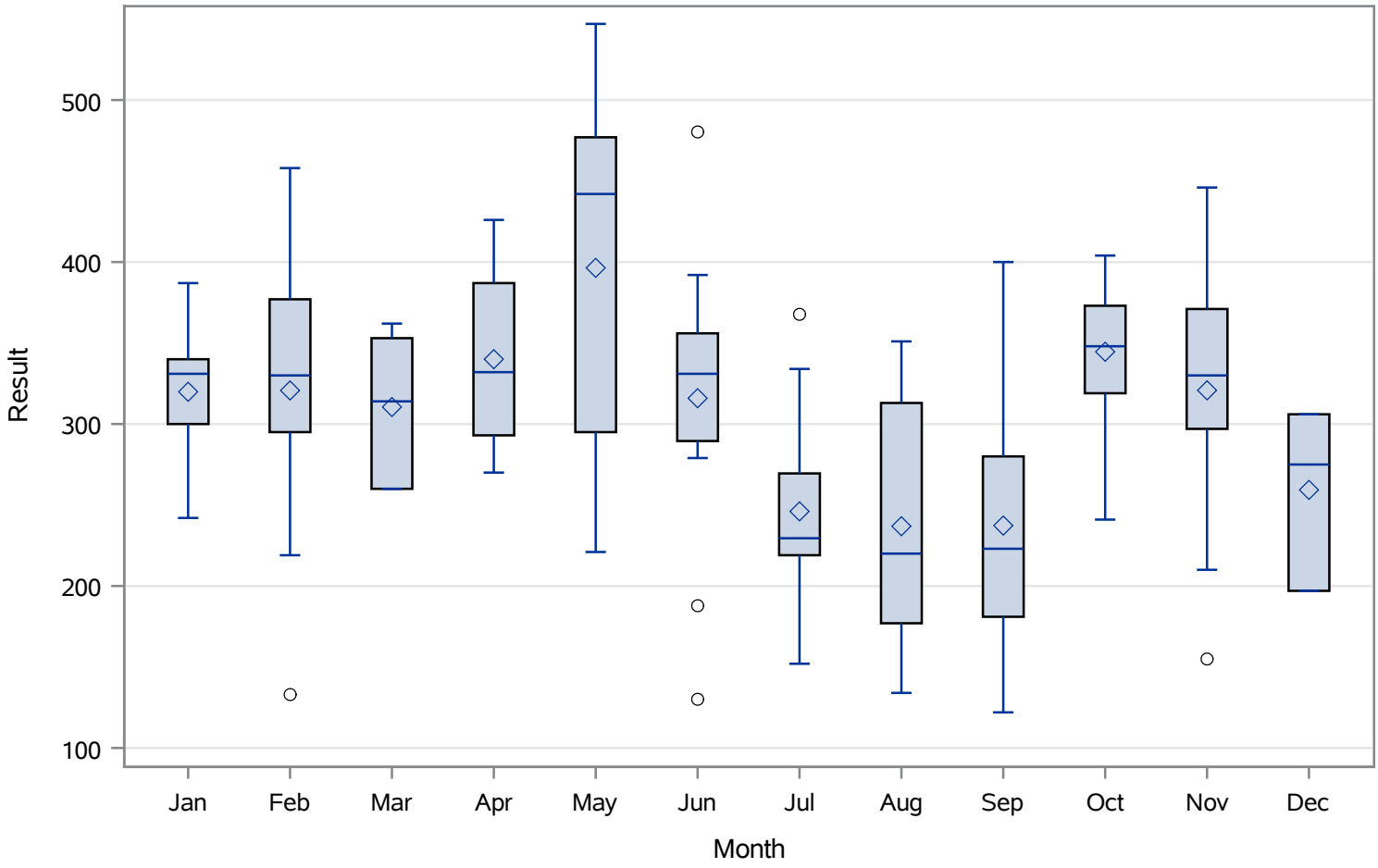
Little Manatee River
182
Cond Mid (umho/cm)
Site ID = 182



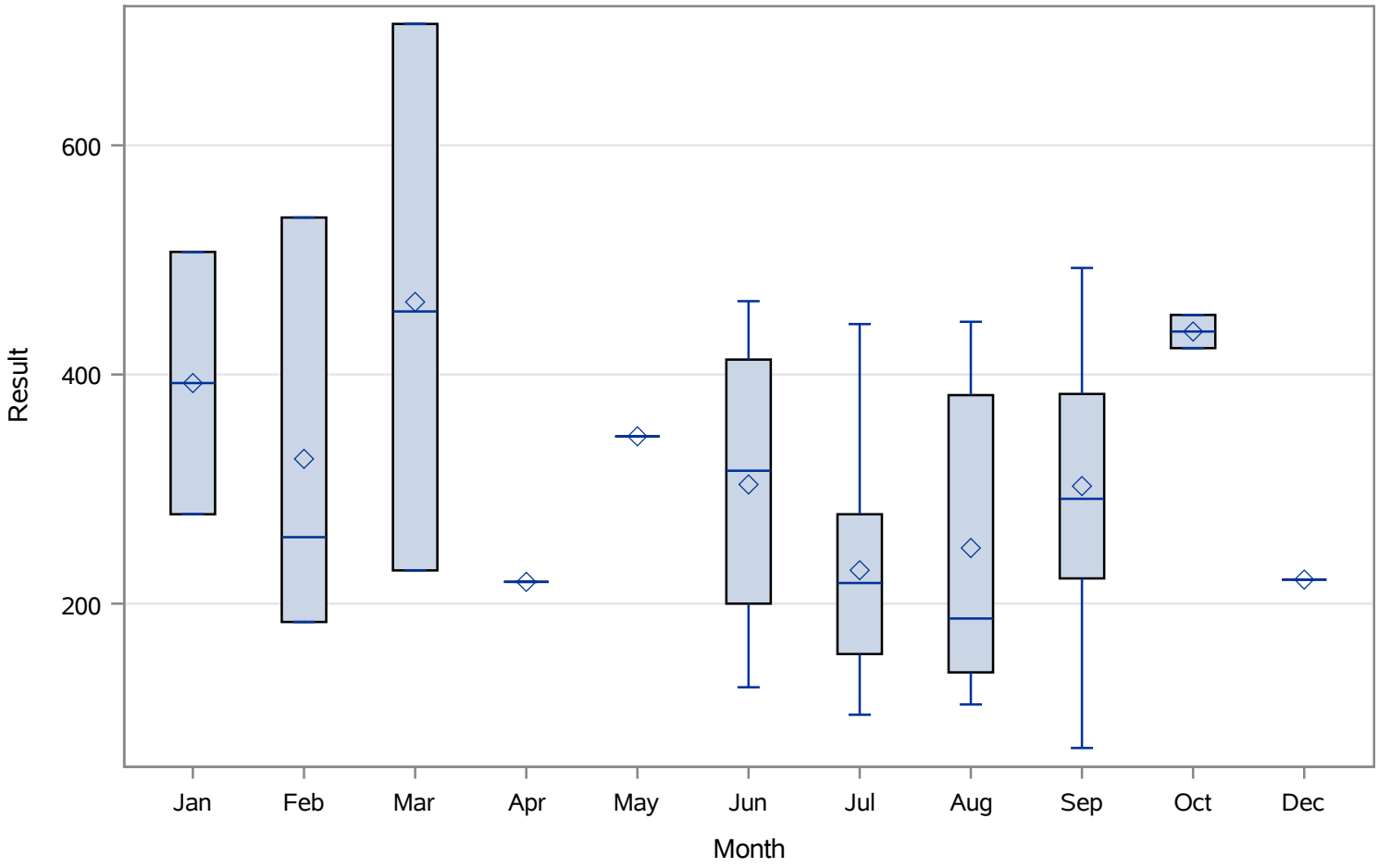
Little Manatee River
112
Cond Top (umho/cm)
Site ID = 112



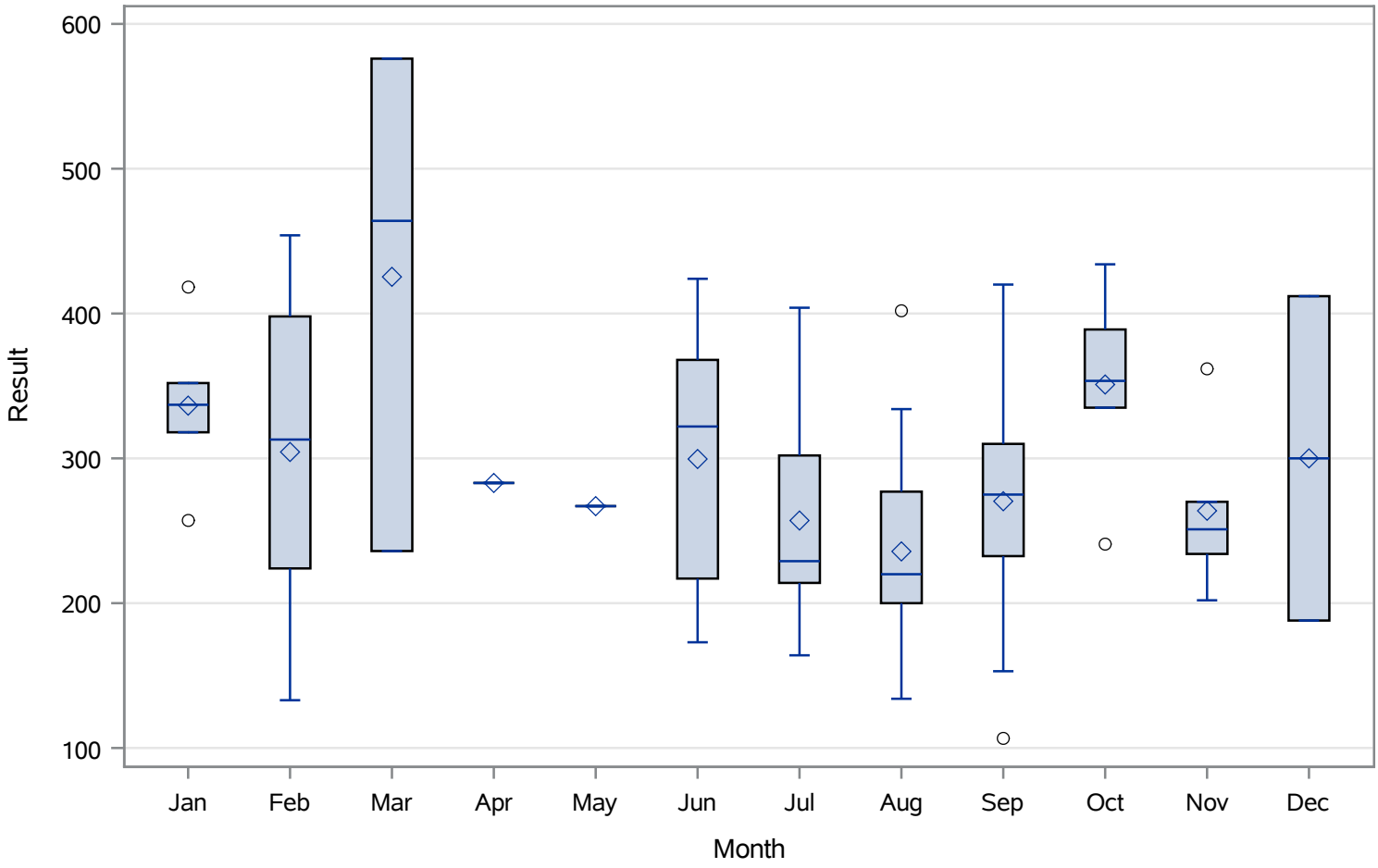
Little Manatee River
113
Cond Top (umho/cm)
Site ID = 113



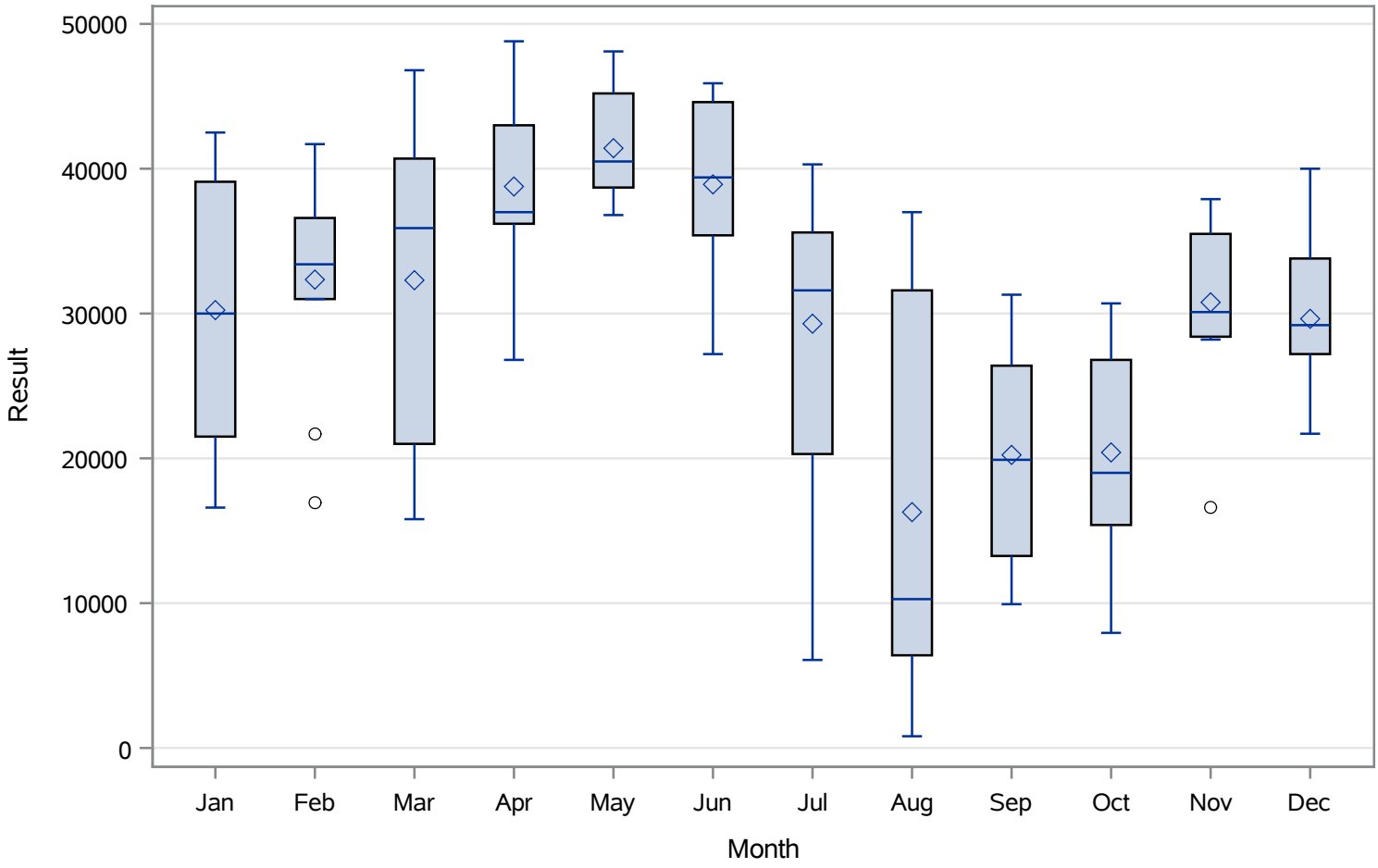
Little Manatee River
129
Cond Top (umho/cm)
Site ID = 129



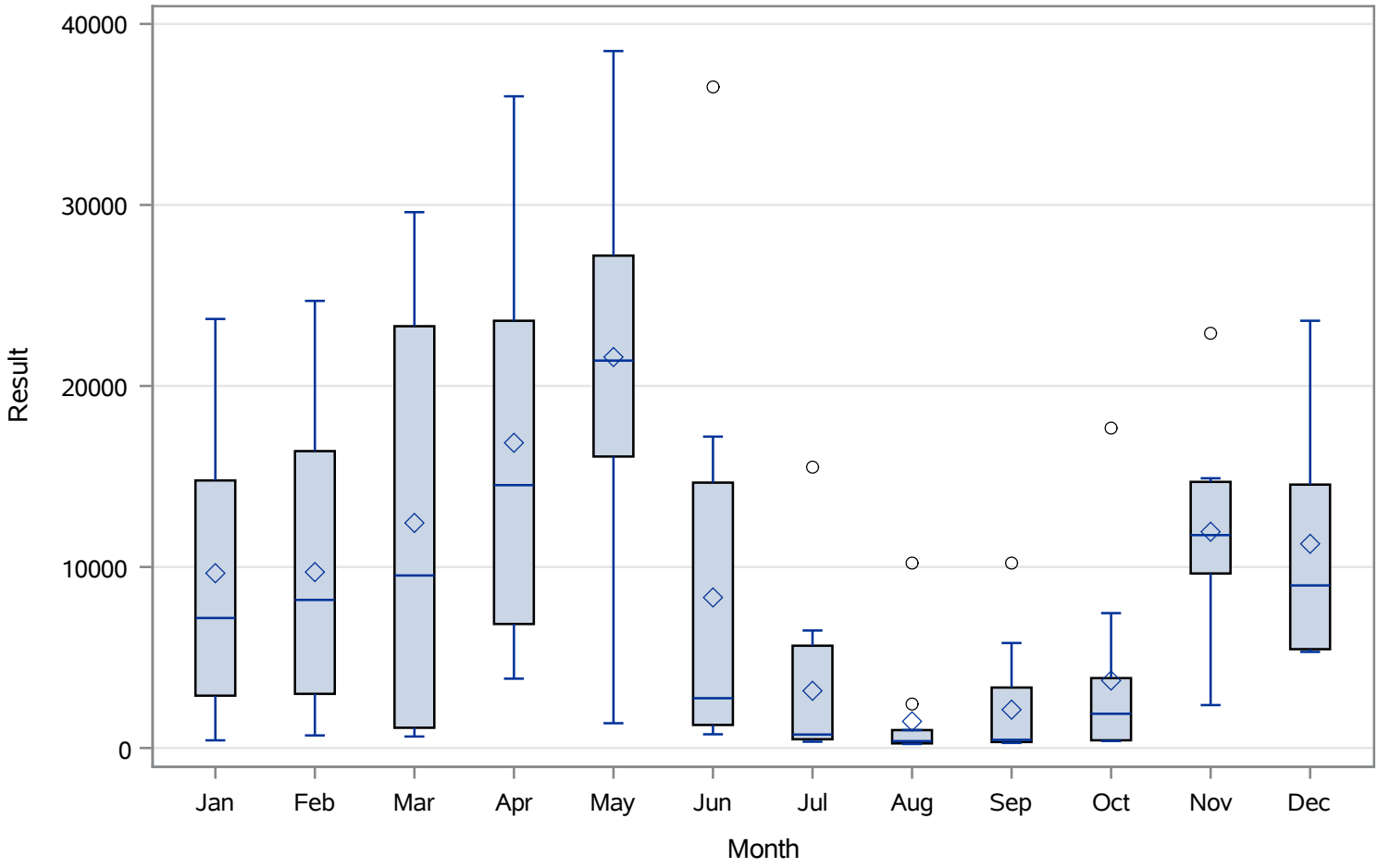
Little Manatee River
140
Cond Top (umho/cm)
Site ID = 140



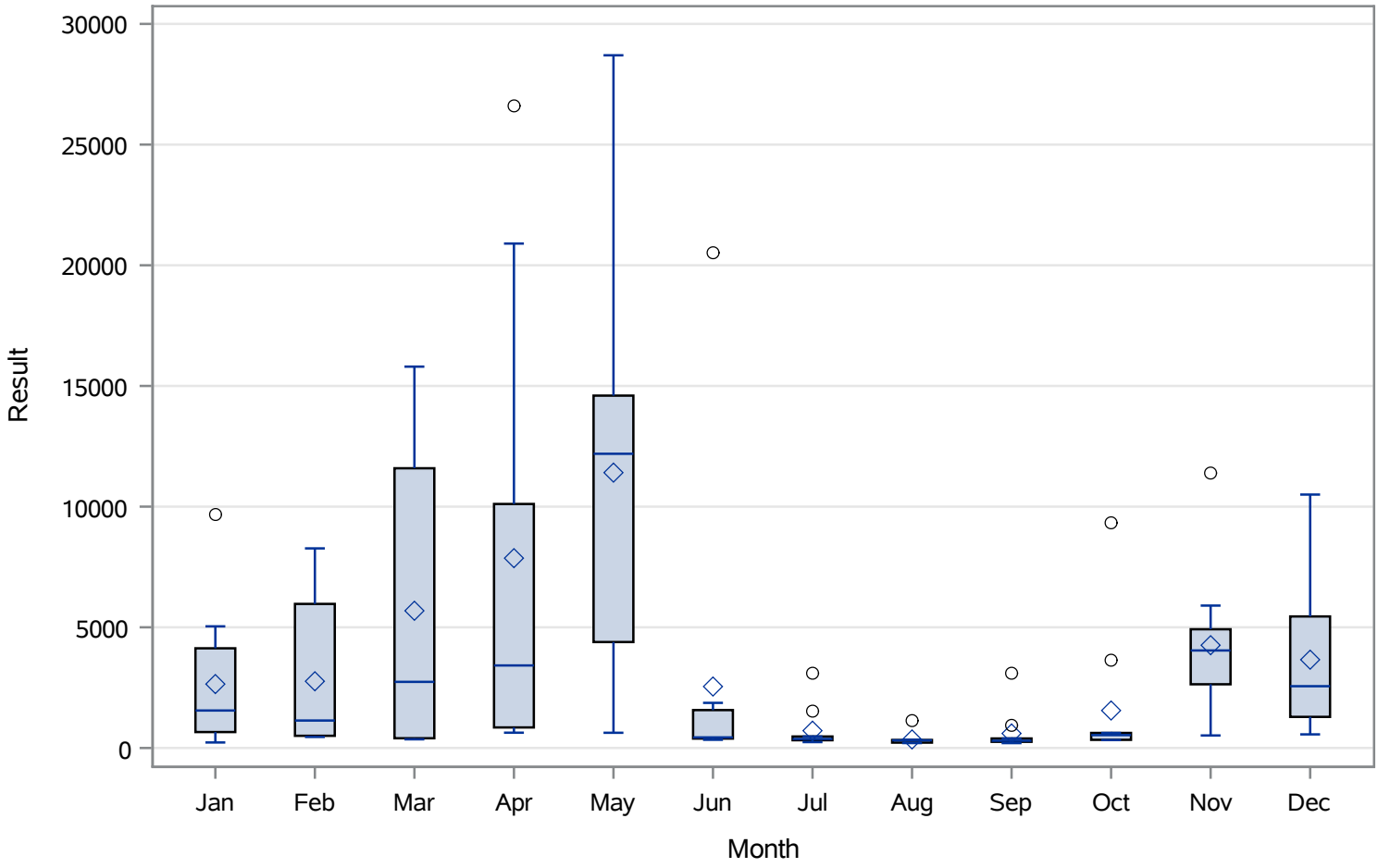
Little Manatee River
180
Cond Top (umho/cm)
Site ID = 180



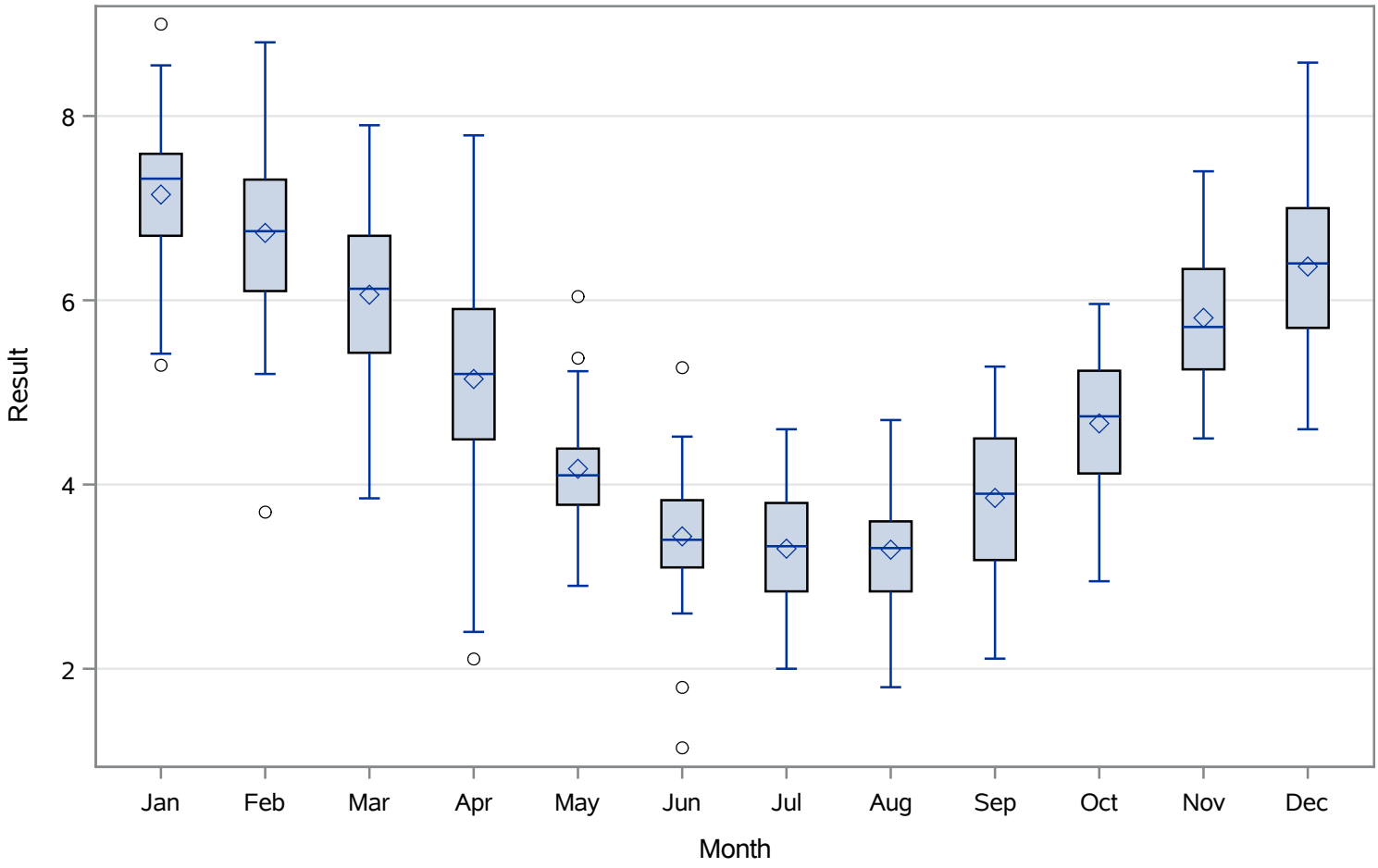
Little Manatee River
181
Cond Top (umho/cm)
Site ID = 181



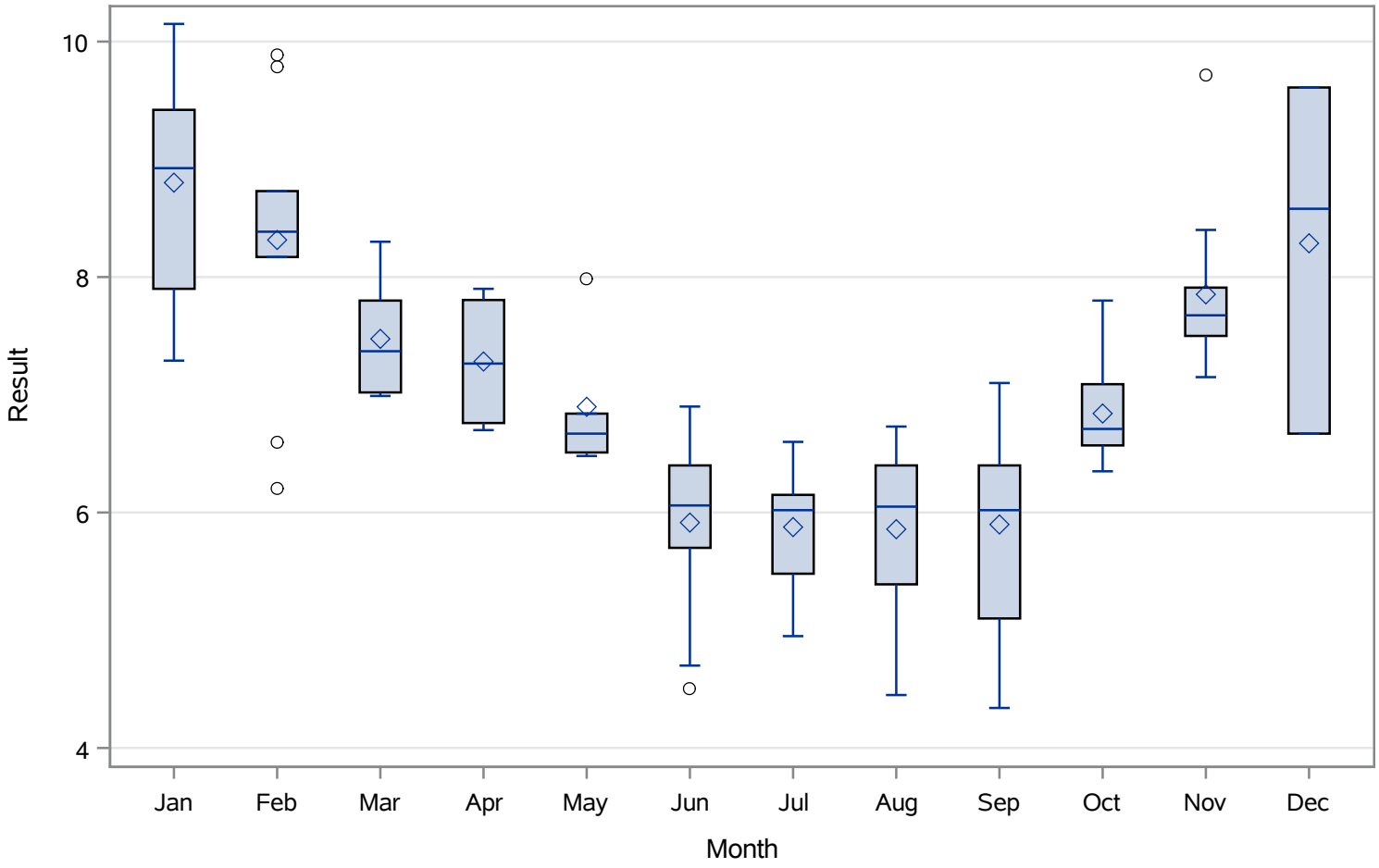
Little Manatee River
182
Cond Top (umho/cm)
Site ID = 182



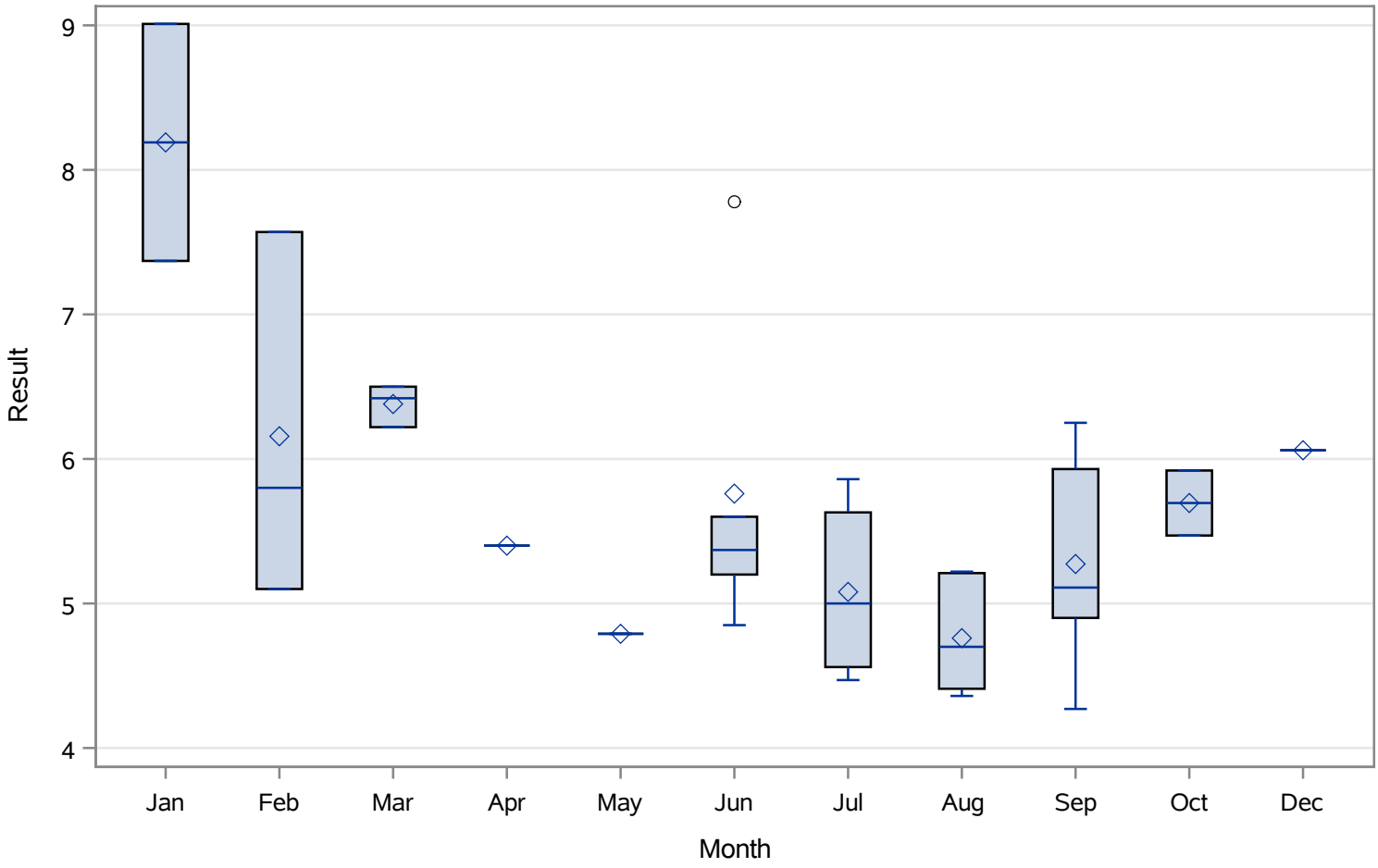
Little Manatee River
112
DO Bottom (mg/L)
Site ID = 112



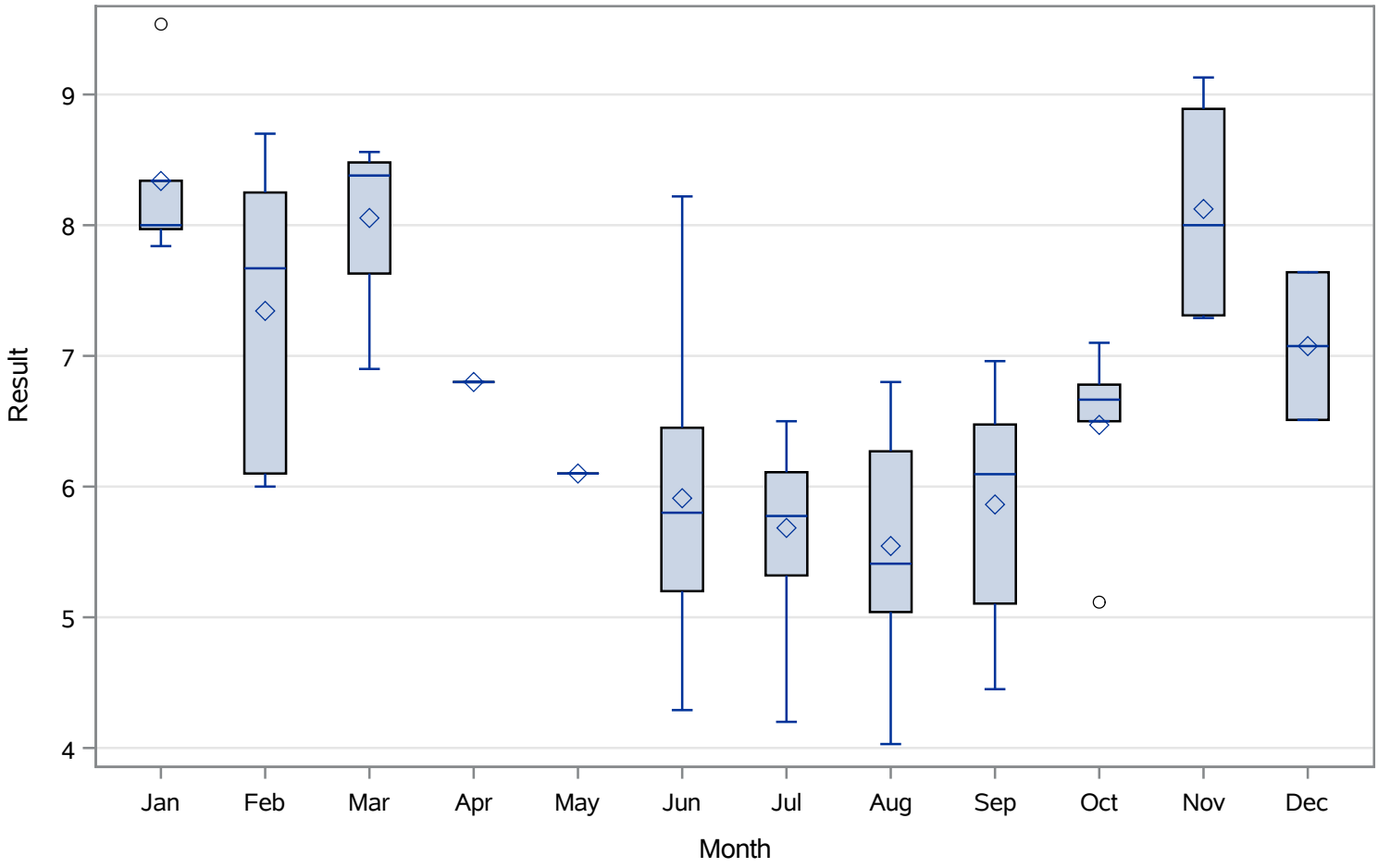
Little Manatee River
113
DO Bottom (mg/L)
Site ID = 113



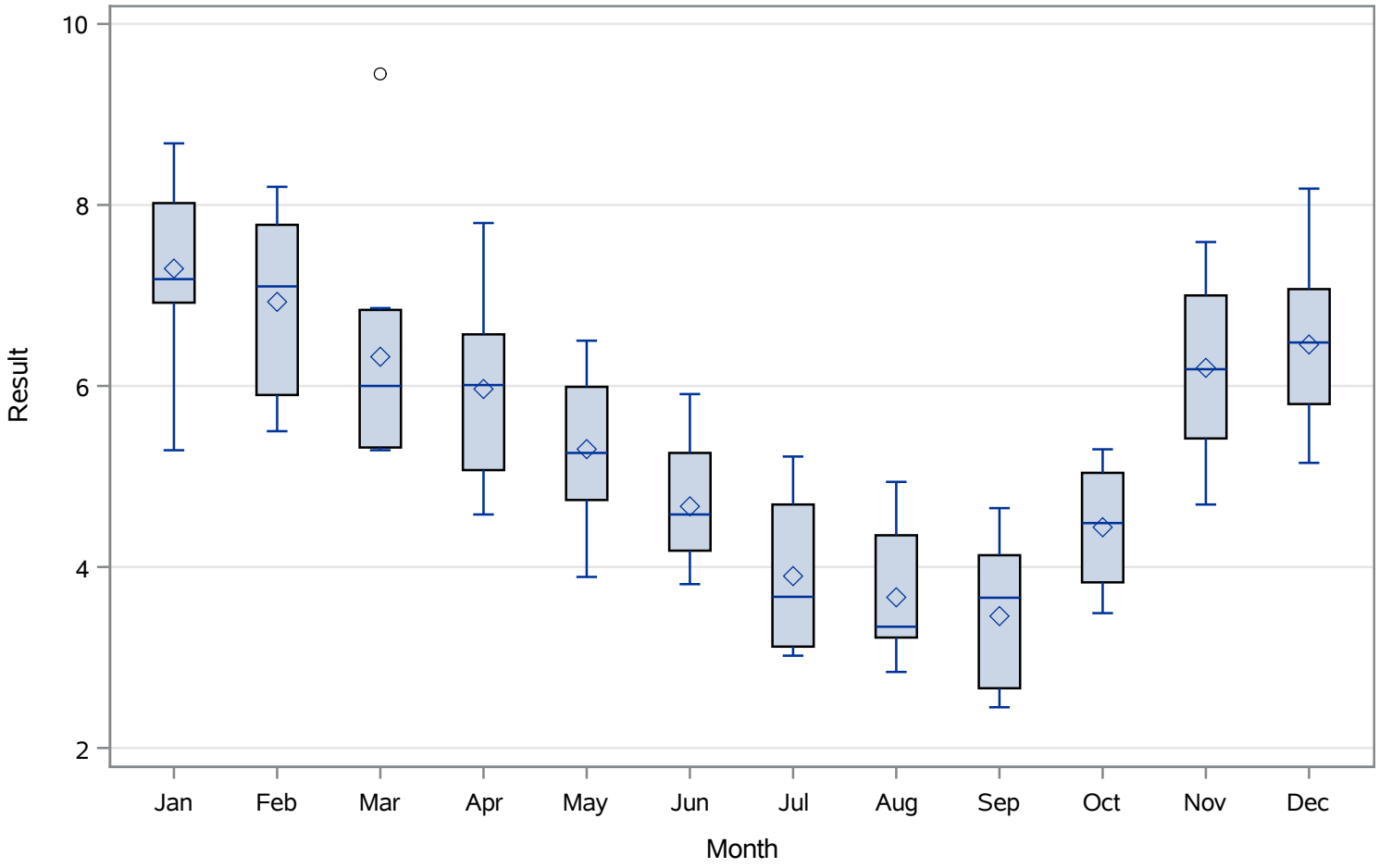
Little Manatee River
129
DO Bottom (mg/L)
Site ID = 129



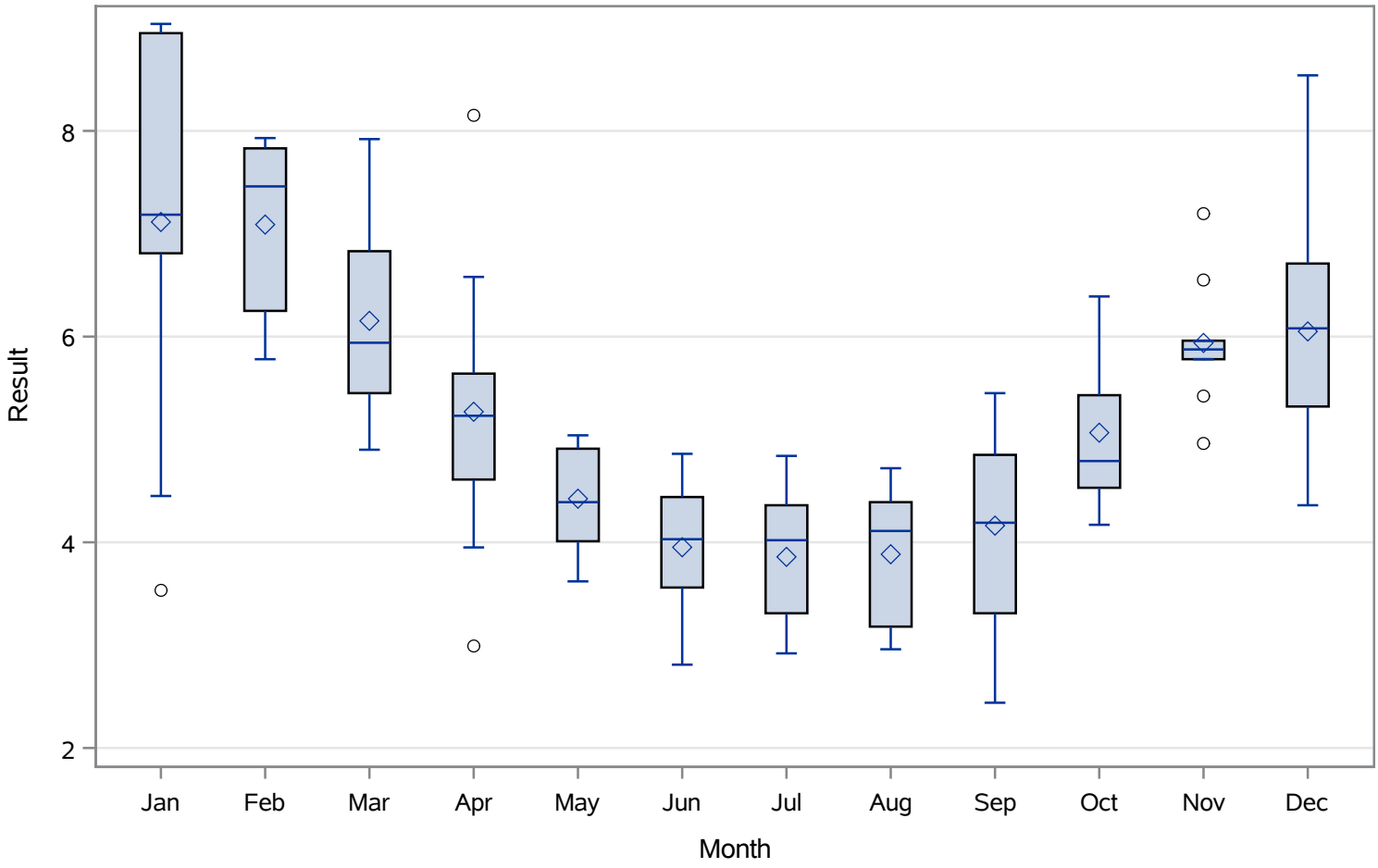
Little Manatee River
140
DO Bottom (mg/L)
Site ID = 140



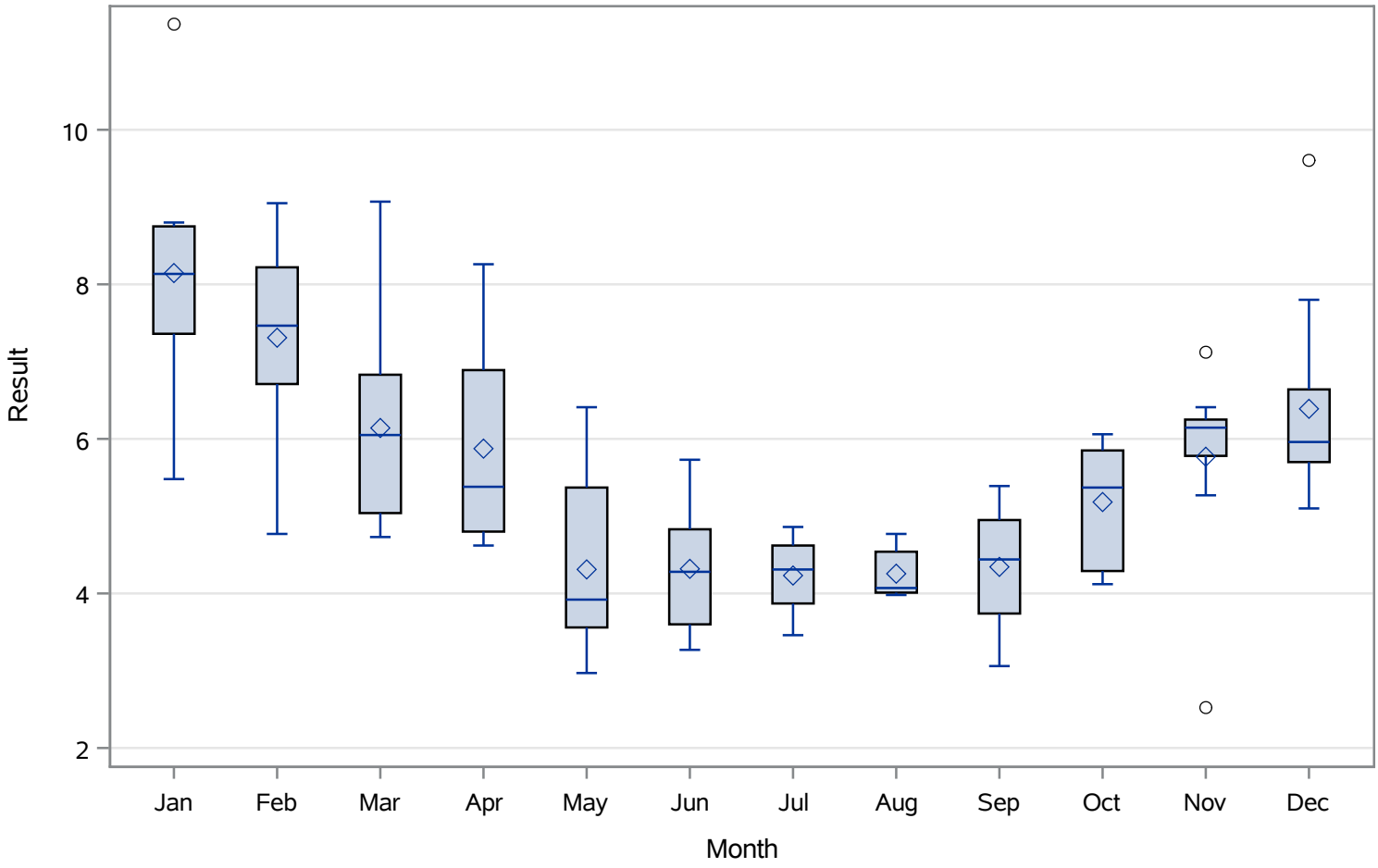
Little Manatee River
180
DO Bottom (mg/L)
Site ID = 180



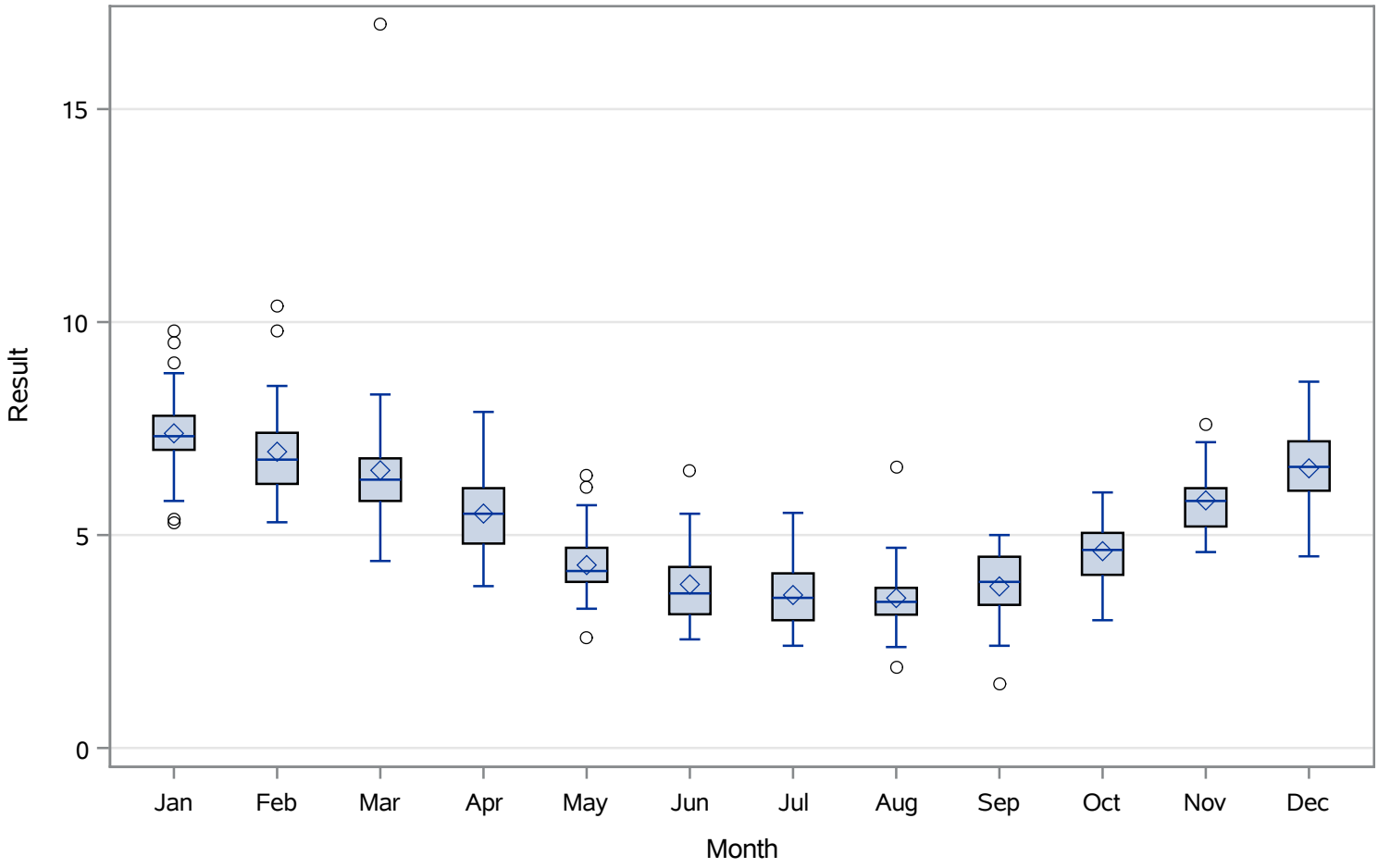
Little Manatee River
181
DO Bottom (mg/L)
Site ID = 181



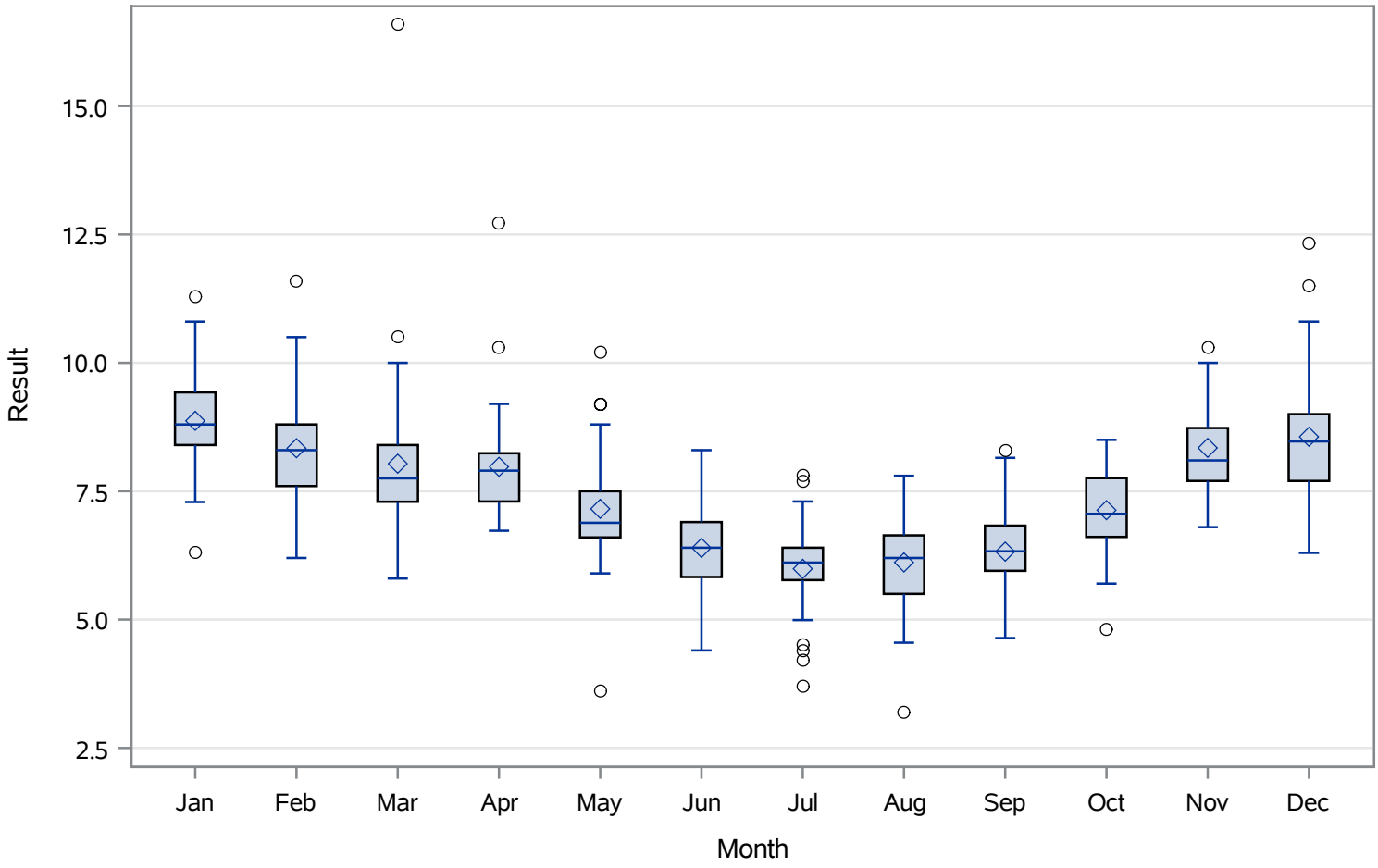
Little Manatee River
182
DO Bottom (mg/L)
Site ID = 182



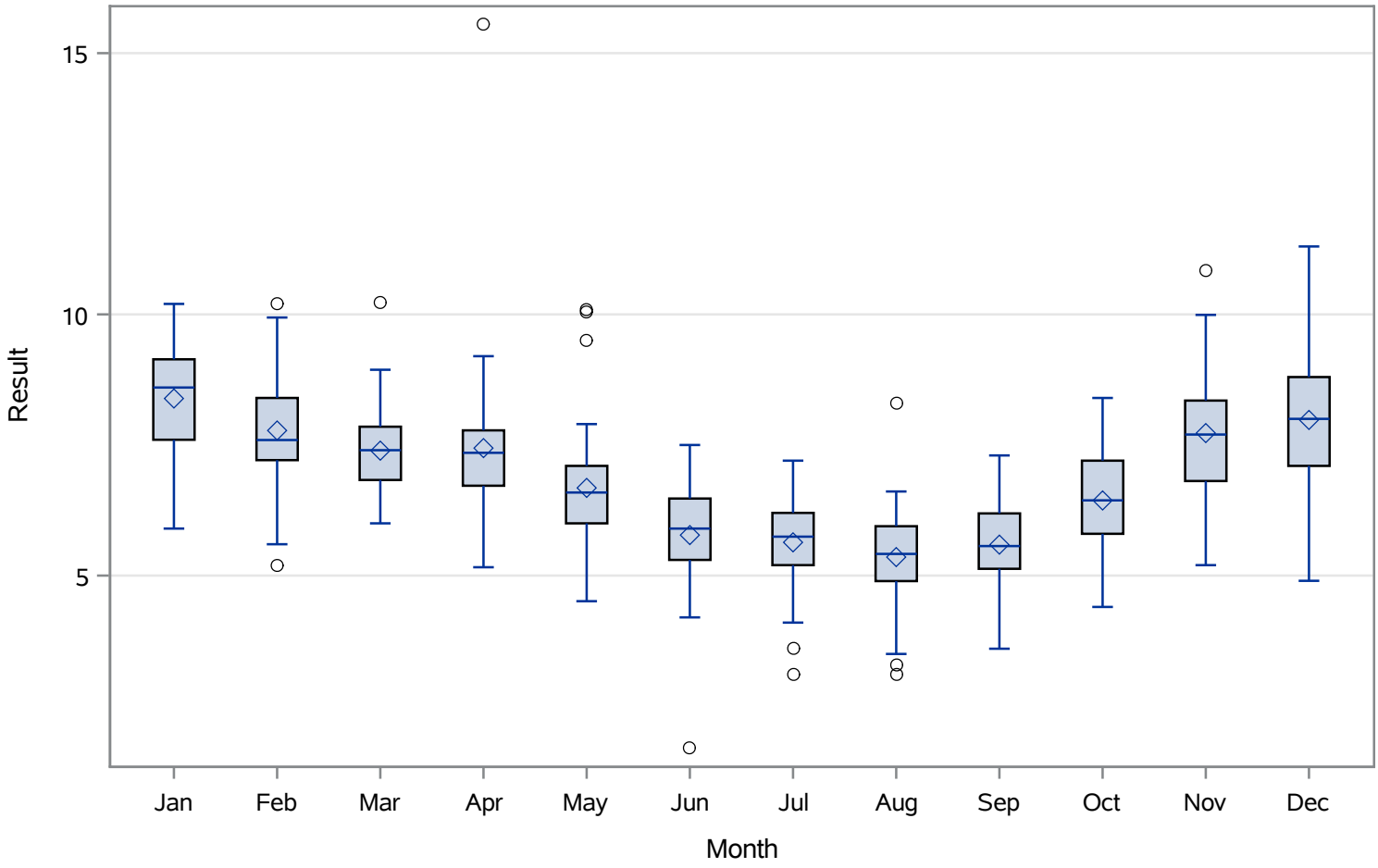
Little Manatee River
112
DO Mid (mg/L)
Site ID = 112



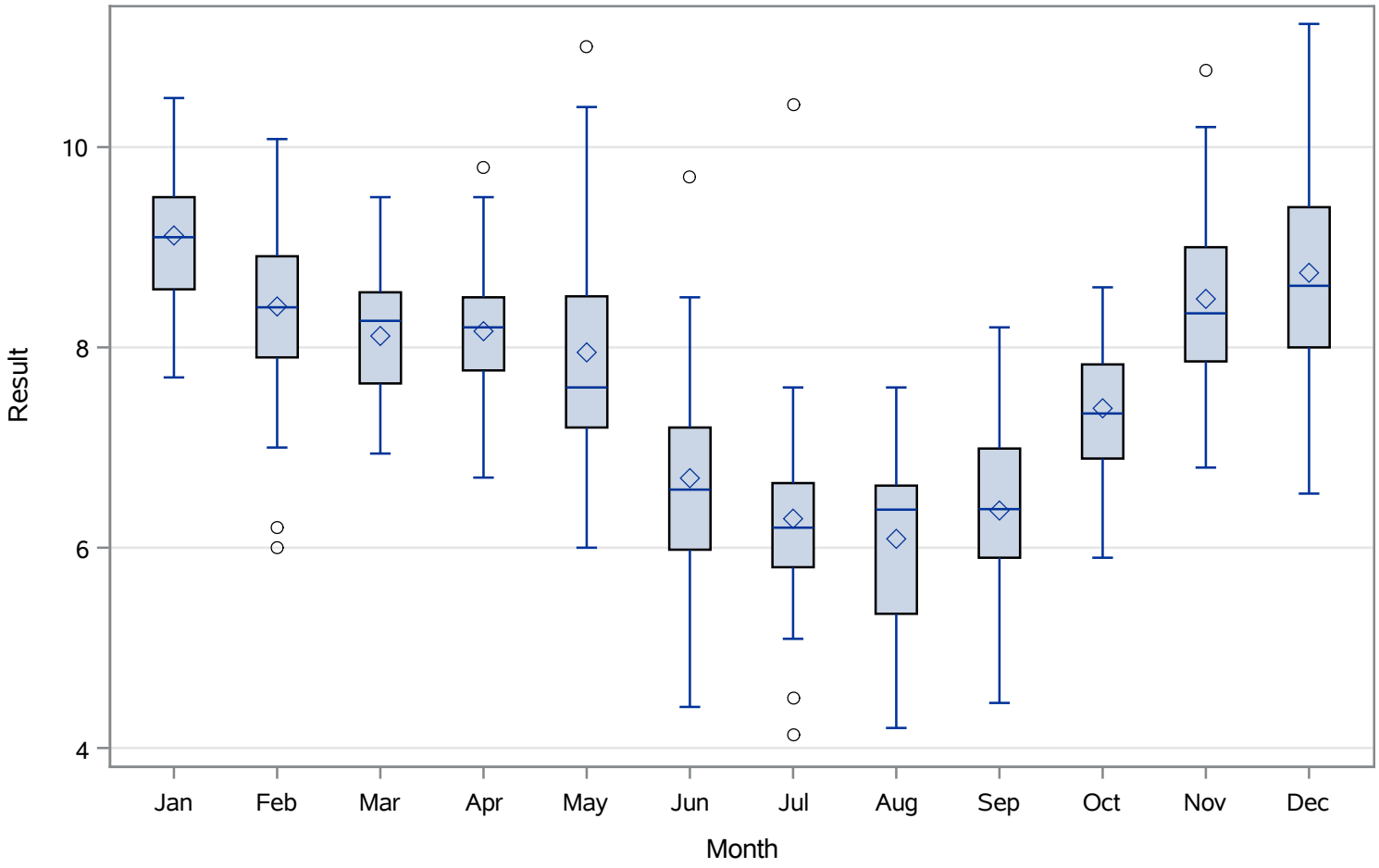
Little Manatee River
113
DO Mid (mg/L)
Site ID = 113



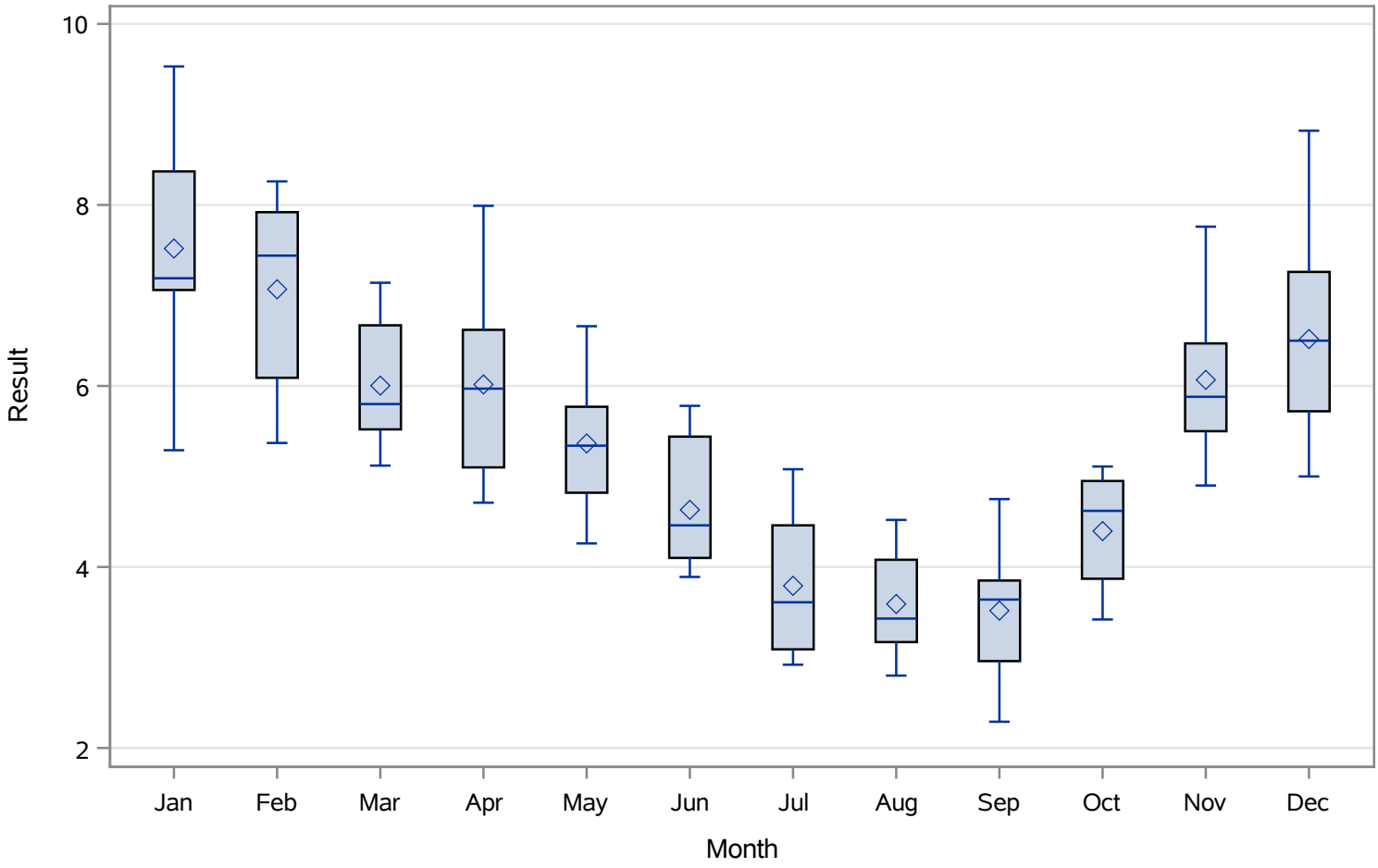
Little Manatee River
129
DO Mid (mg/L)
Site ID = 129



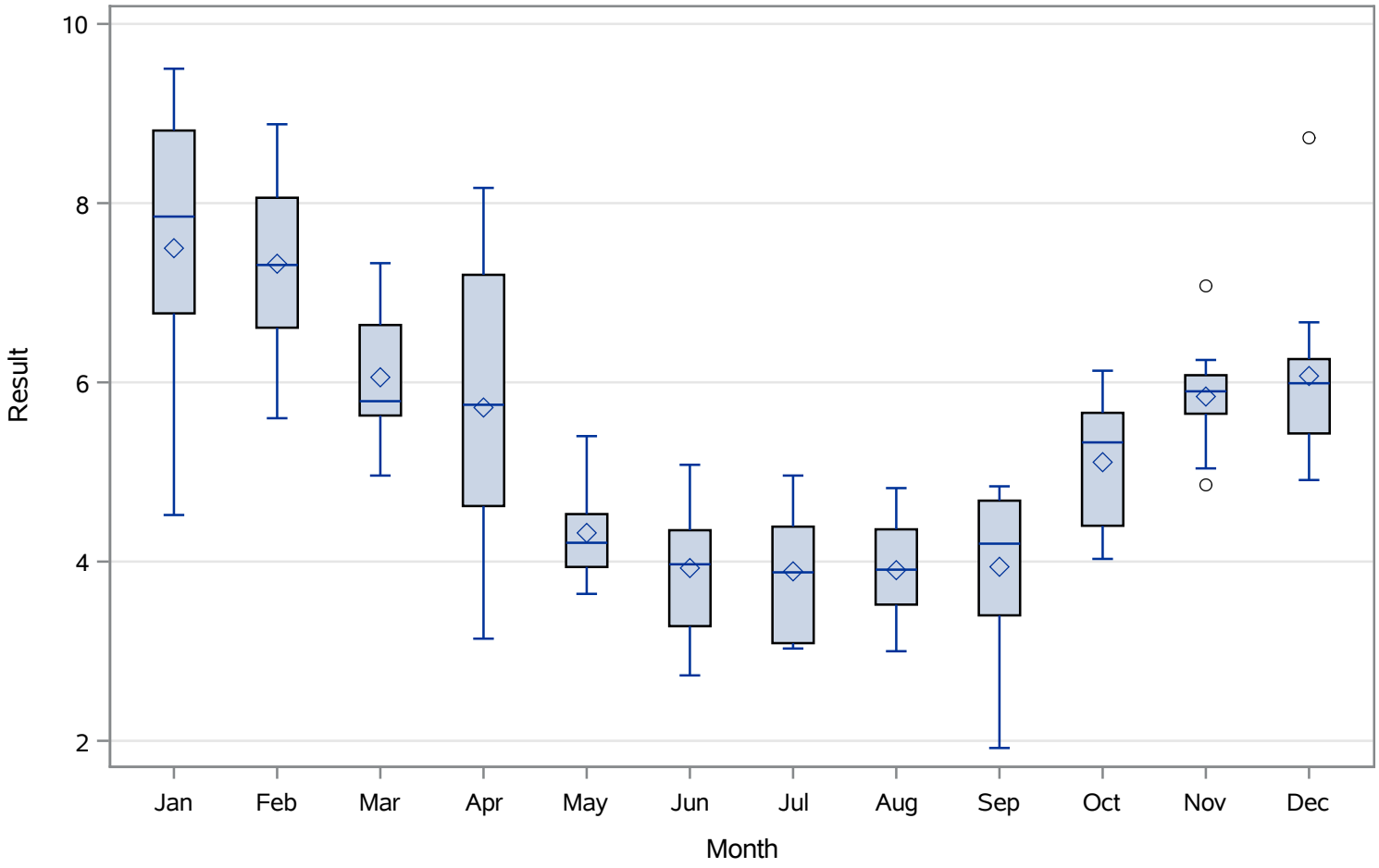
Little Manatee River
140
DO Mid (mg/L)
Site ID = 140



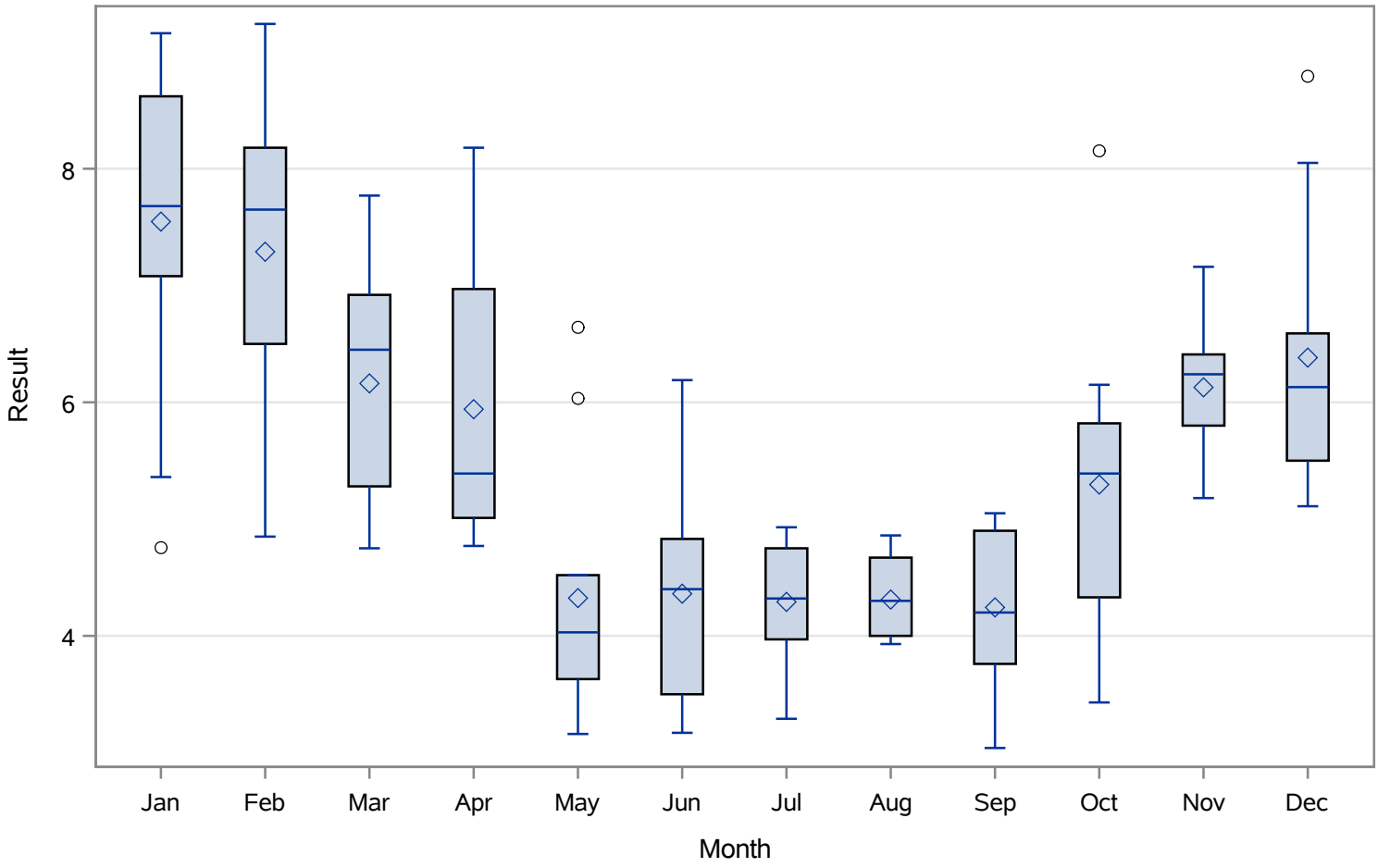
Little Manatee River
180
DO Mid (mg/L)
Site ID = 180



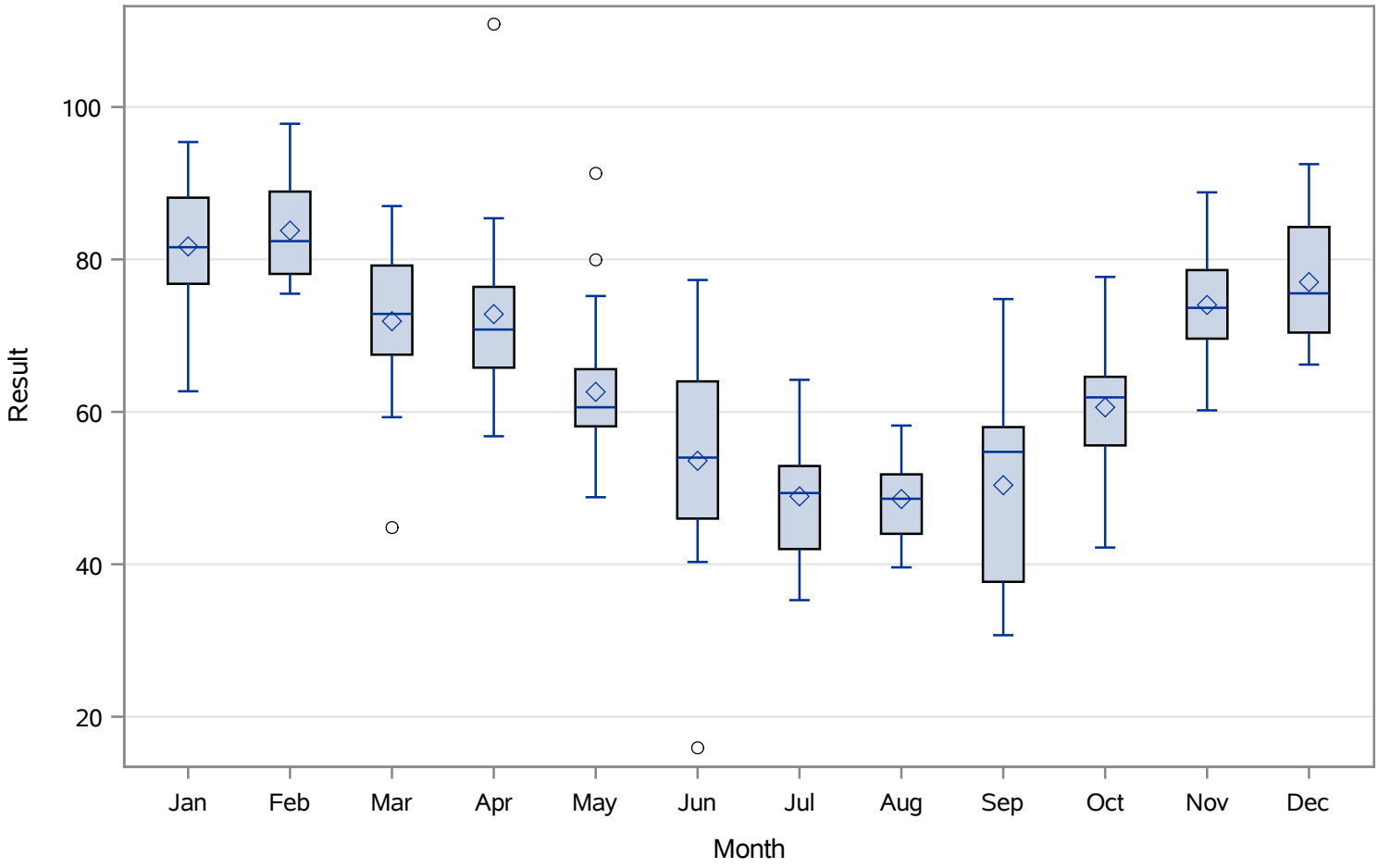
Little Manatee River
181
DO Mid (mg/L)
Site ID = 181



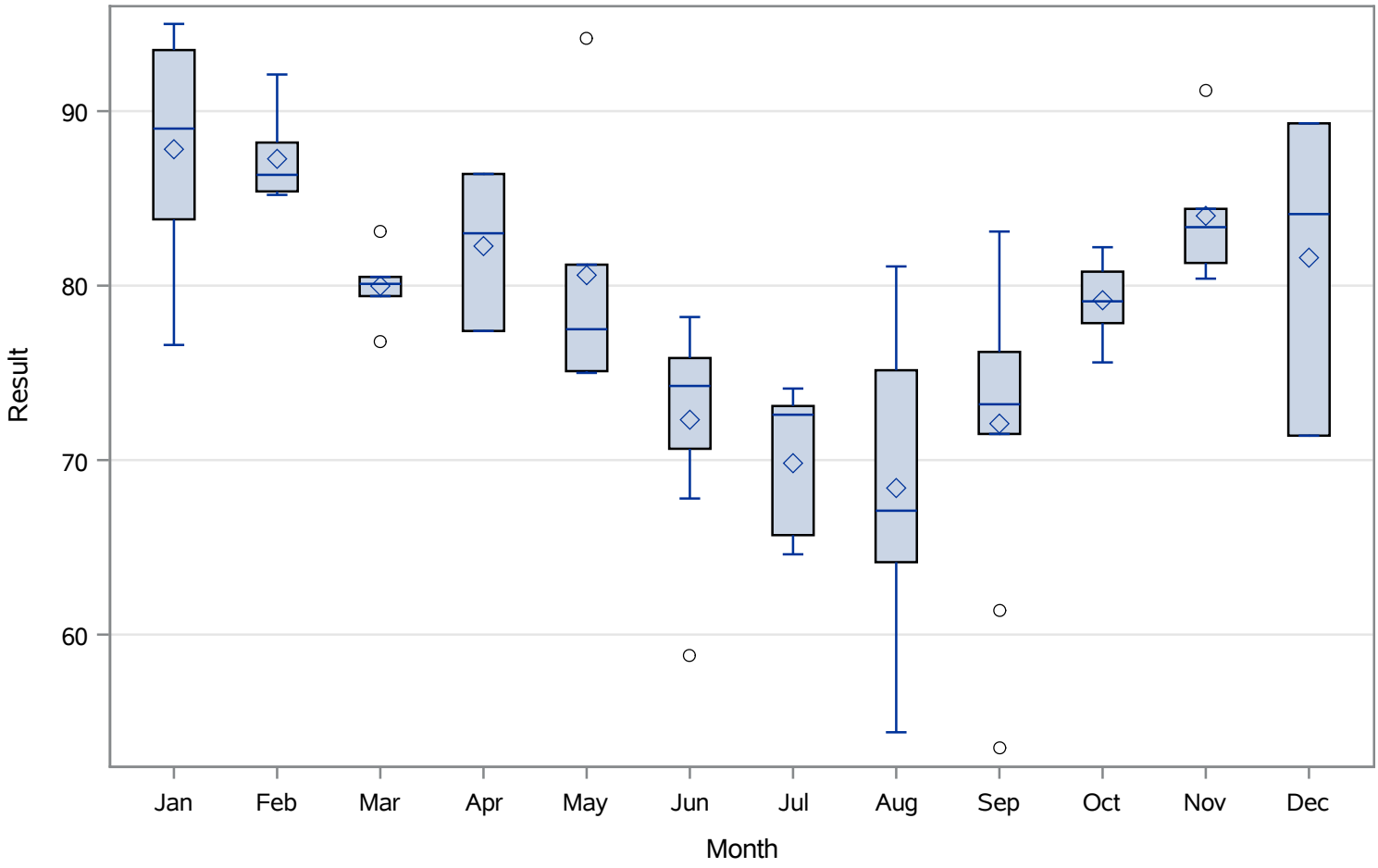
Little Manatee River
182
DO Mid (mg/L)
Site ID = 182



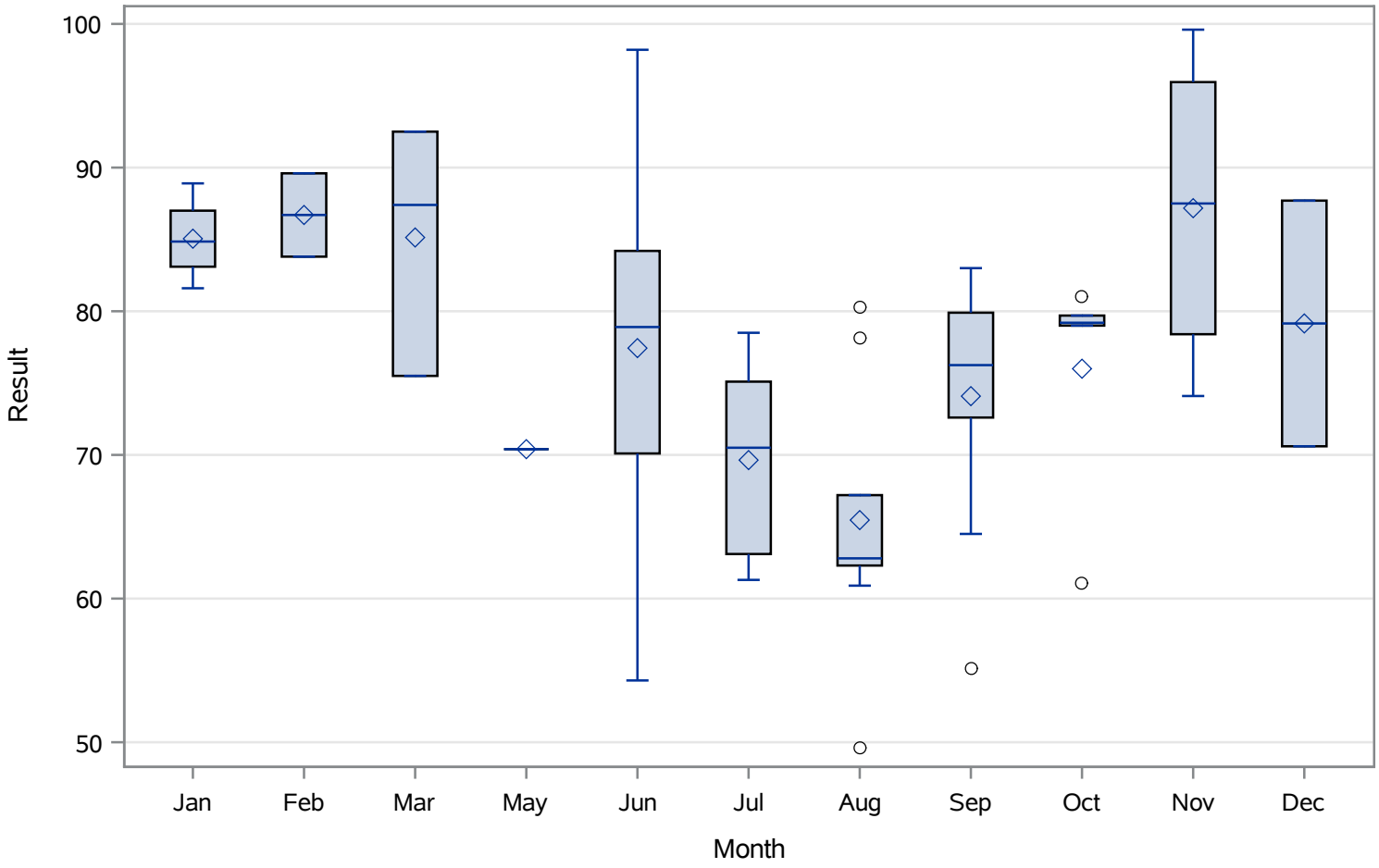
Little Manatee River
112
DO Sat Bottom (%)
Site ID = 112



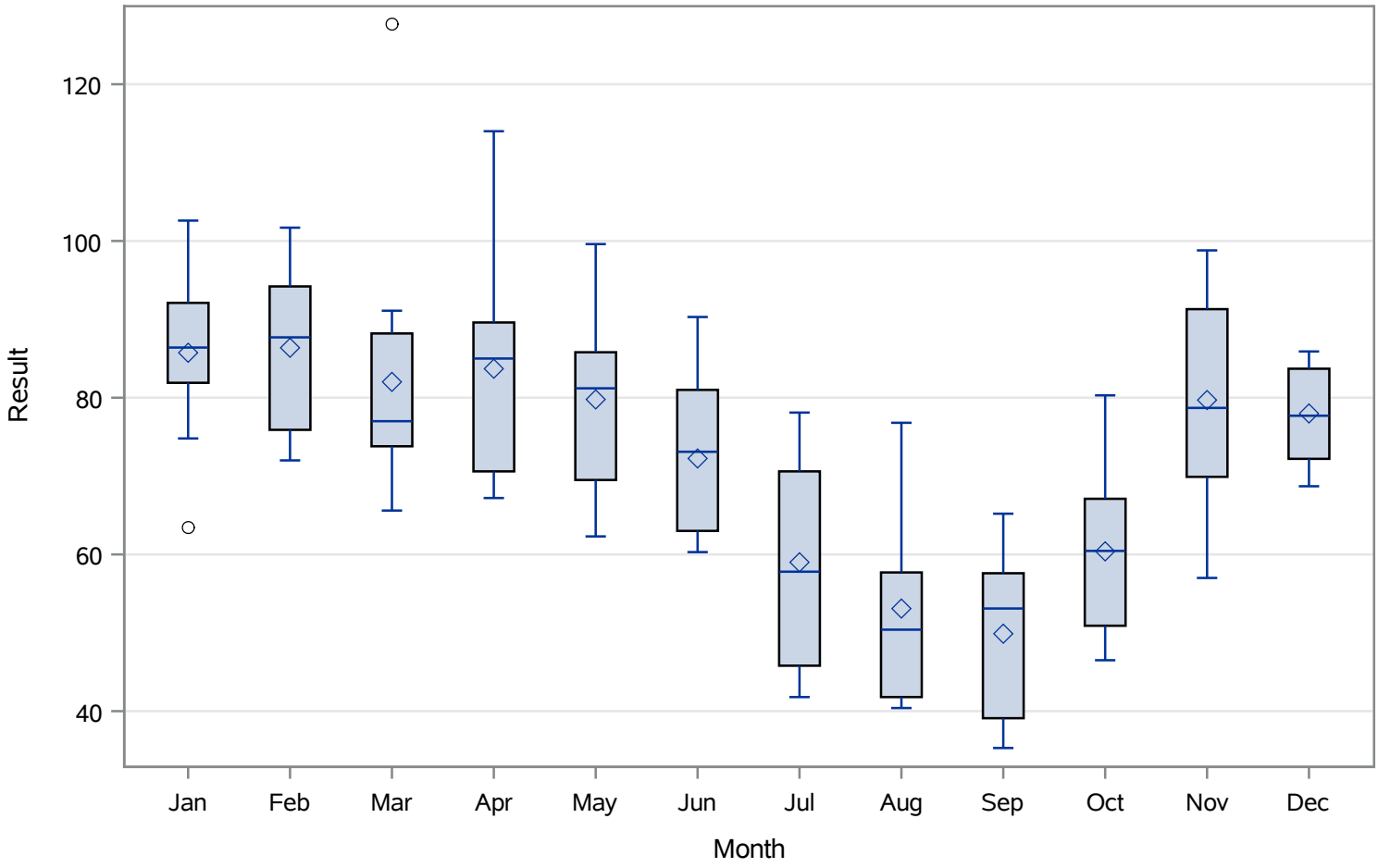
Little Manatee River
113
DO Sat Bottom (%)
Site ID = 113



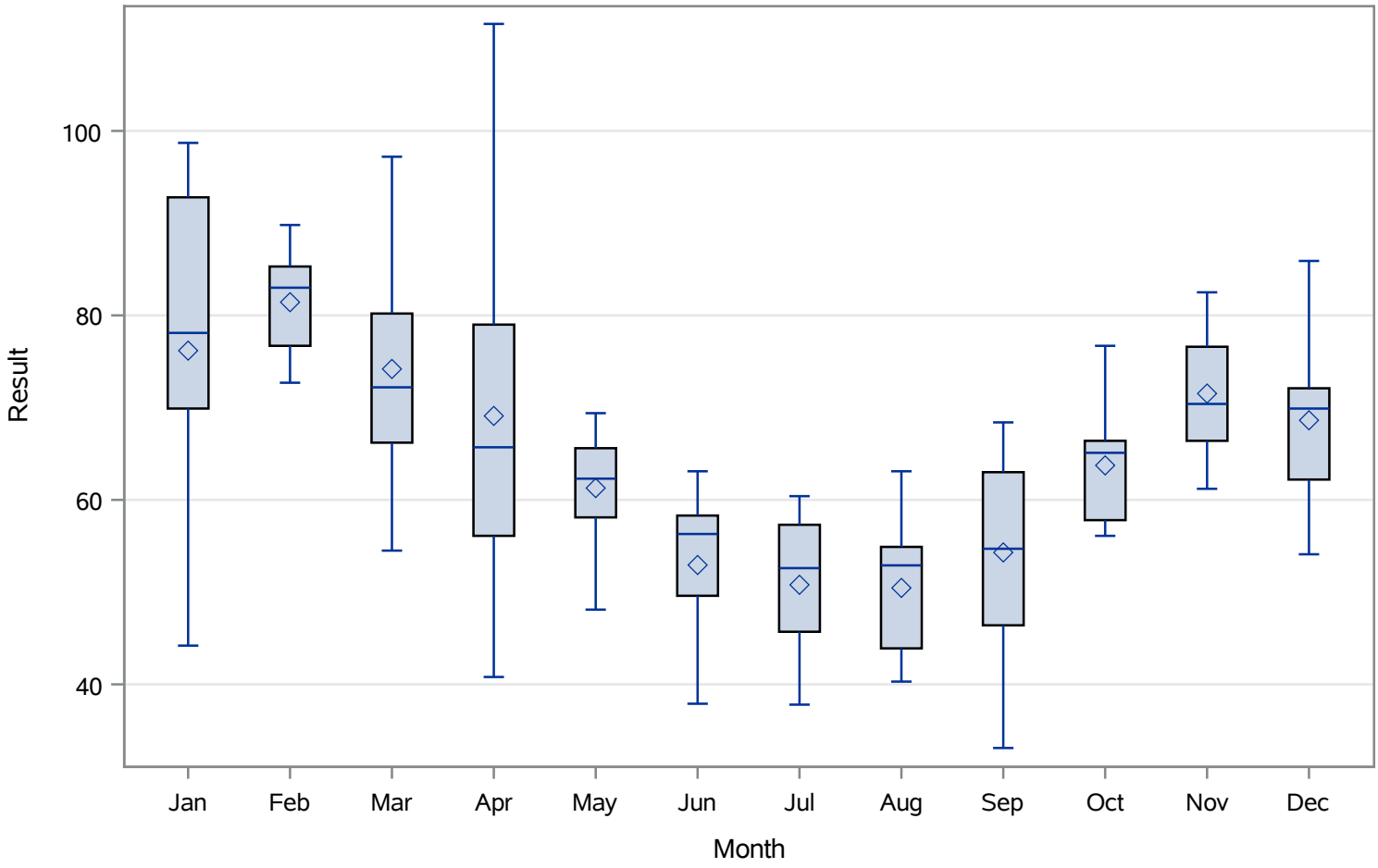
Little Manatee River
140
DO Sat Bottom (%)
Site ID = 140



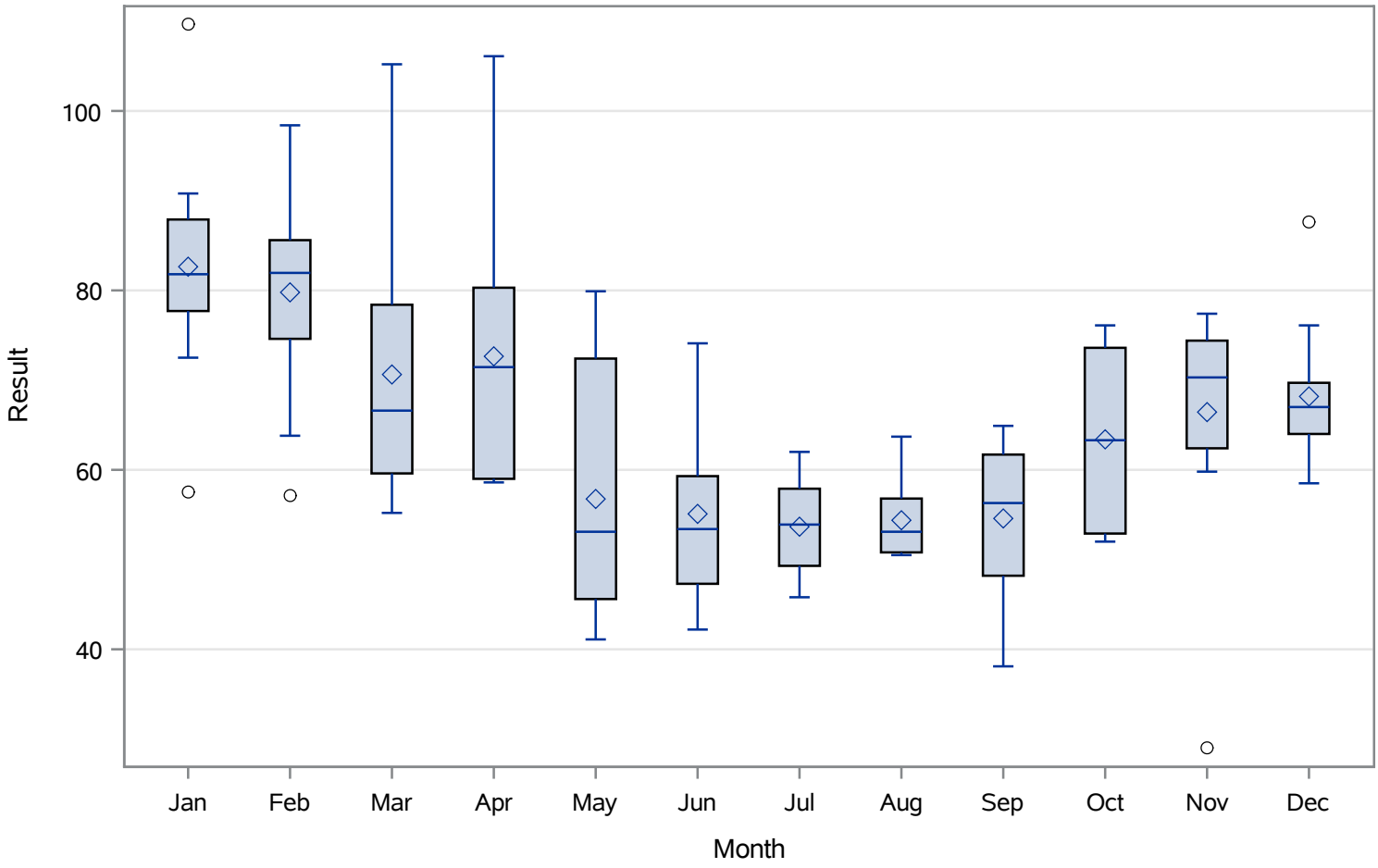
Little Manatee River
180
DO Sat Bottom (%)
Site ID = 180



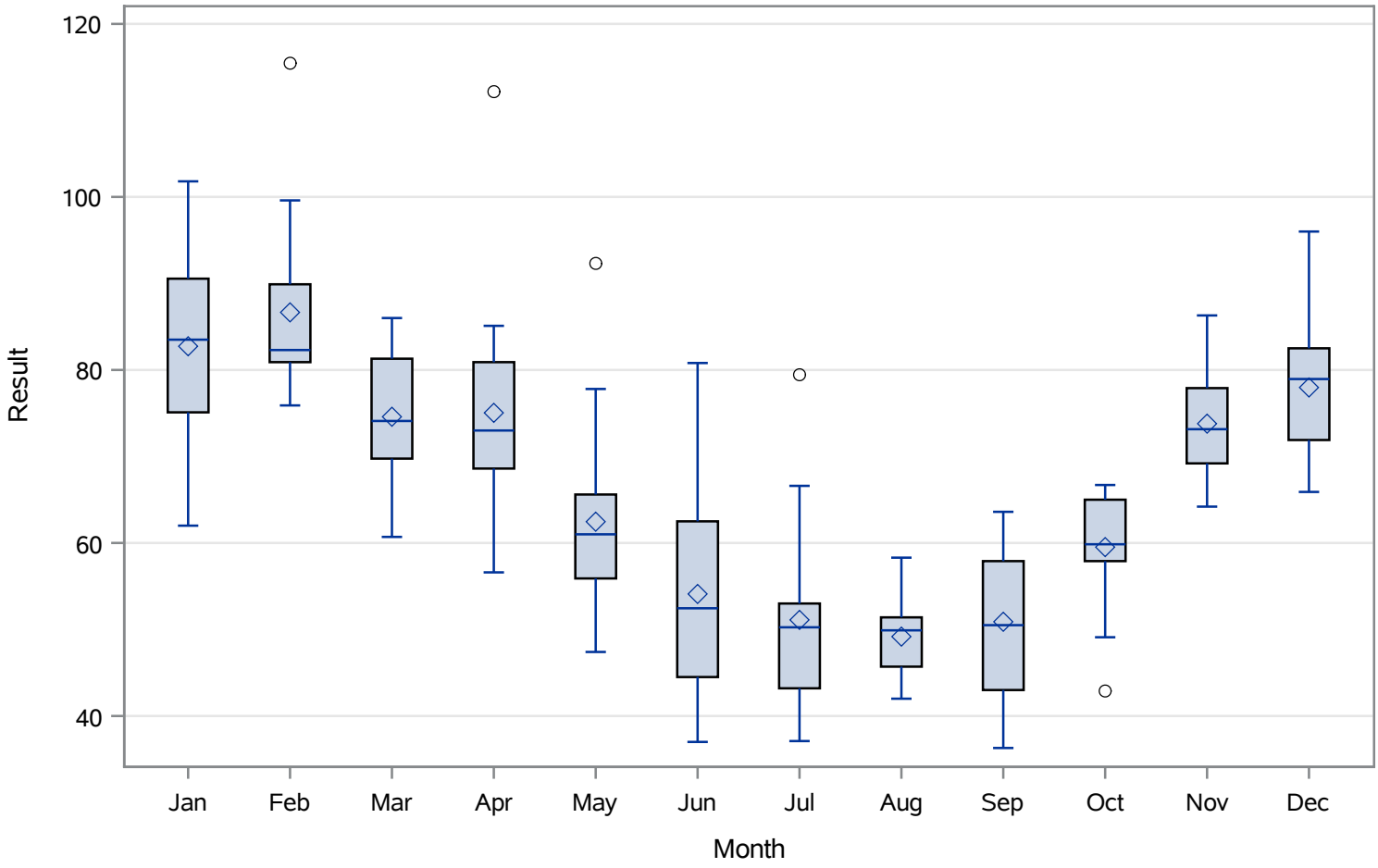
Little Manatee River
181
DO Sat Bottom (%)
Site ID = 181



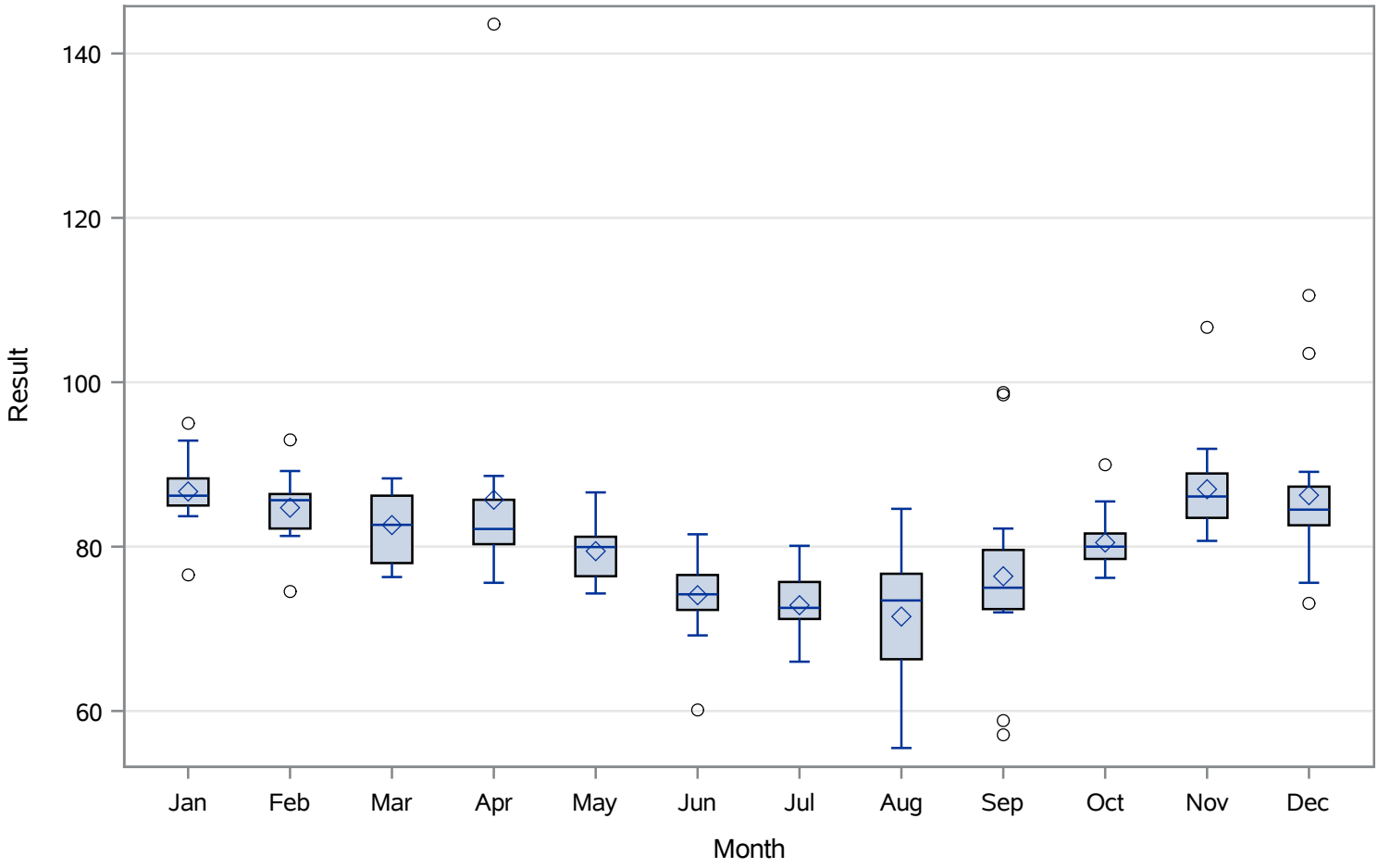
Little Manatee River
182
DO Sat Bottom (%)
Site ID = 182



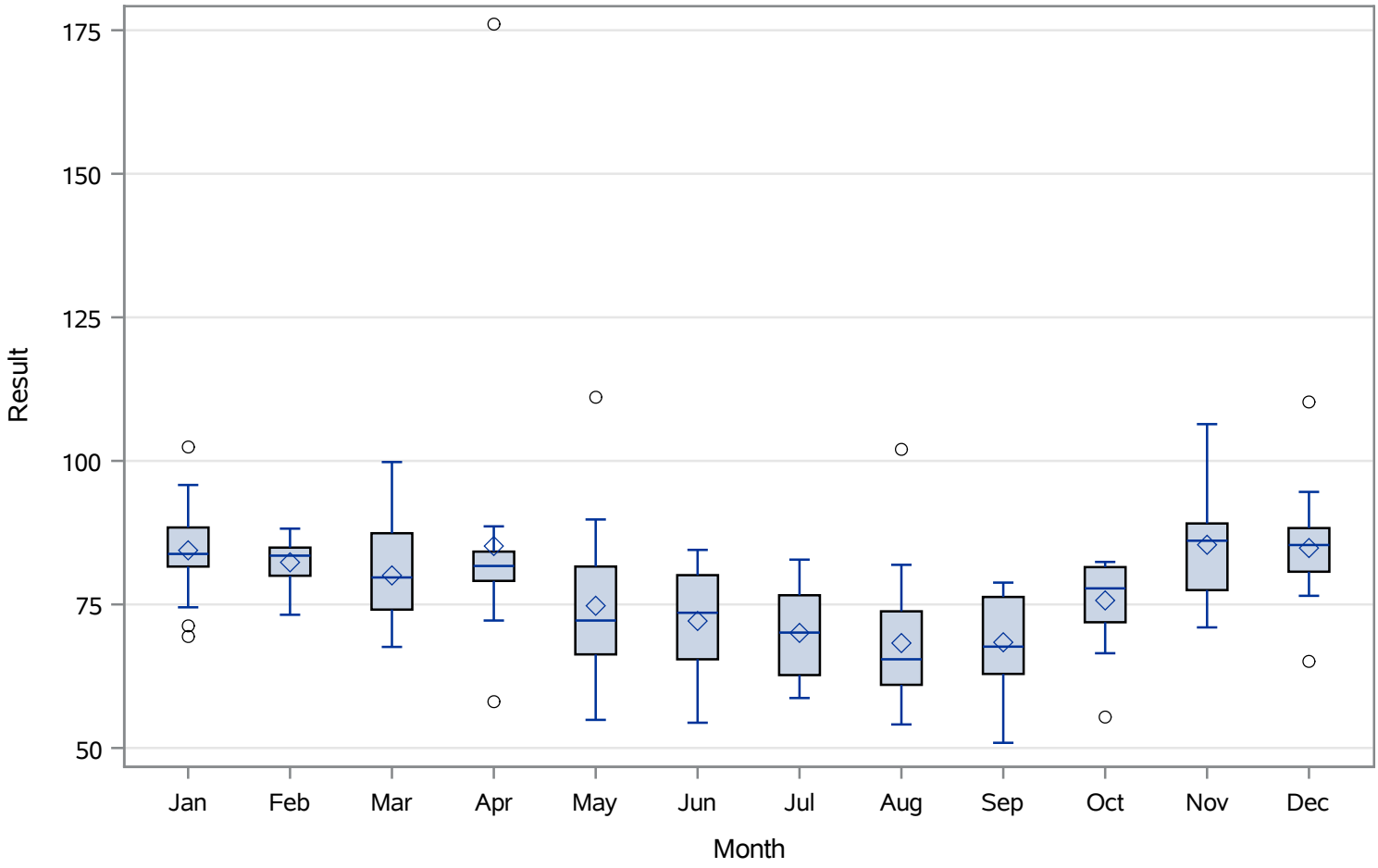
Little Manatee River
112
DO Sat Mid (%)
Site ID = 112



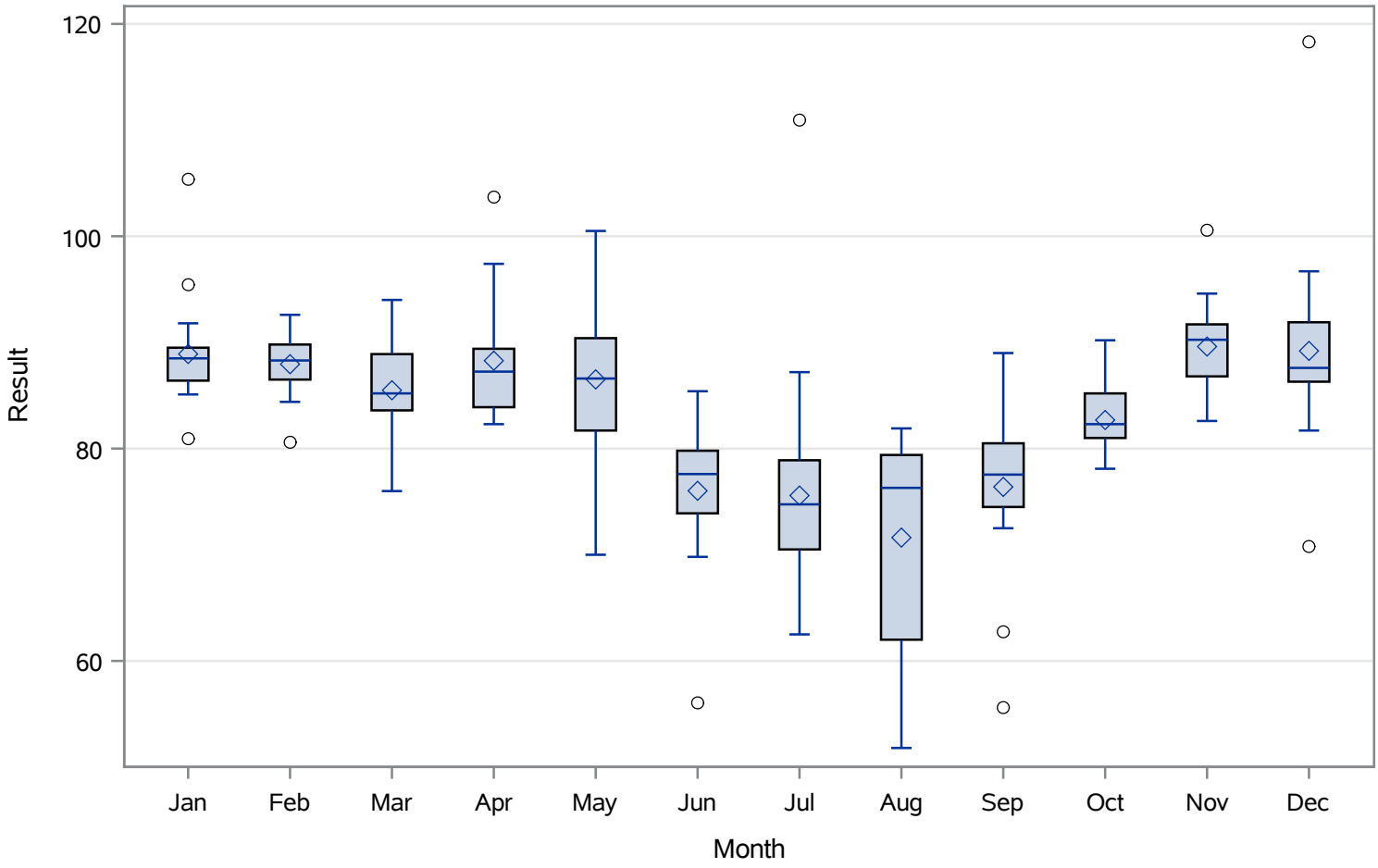
Little Manatee River
113
DO Sat Mid (%)
Site ID = 113



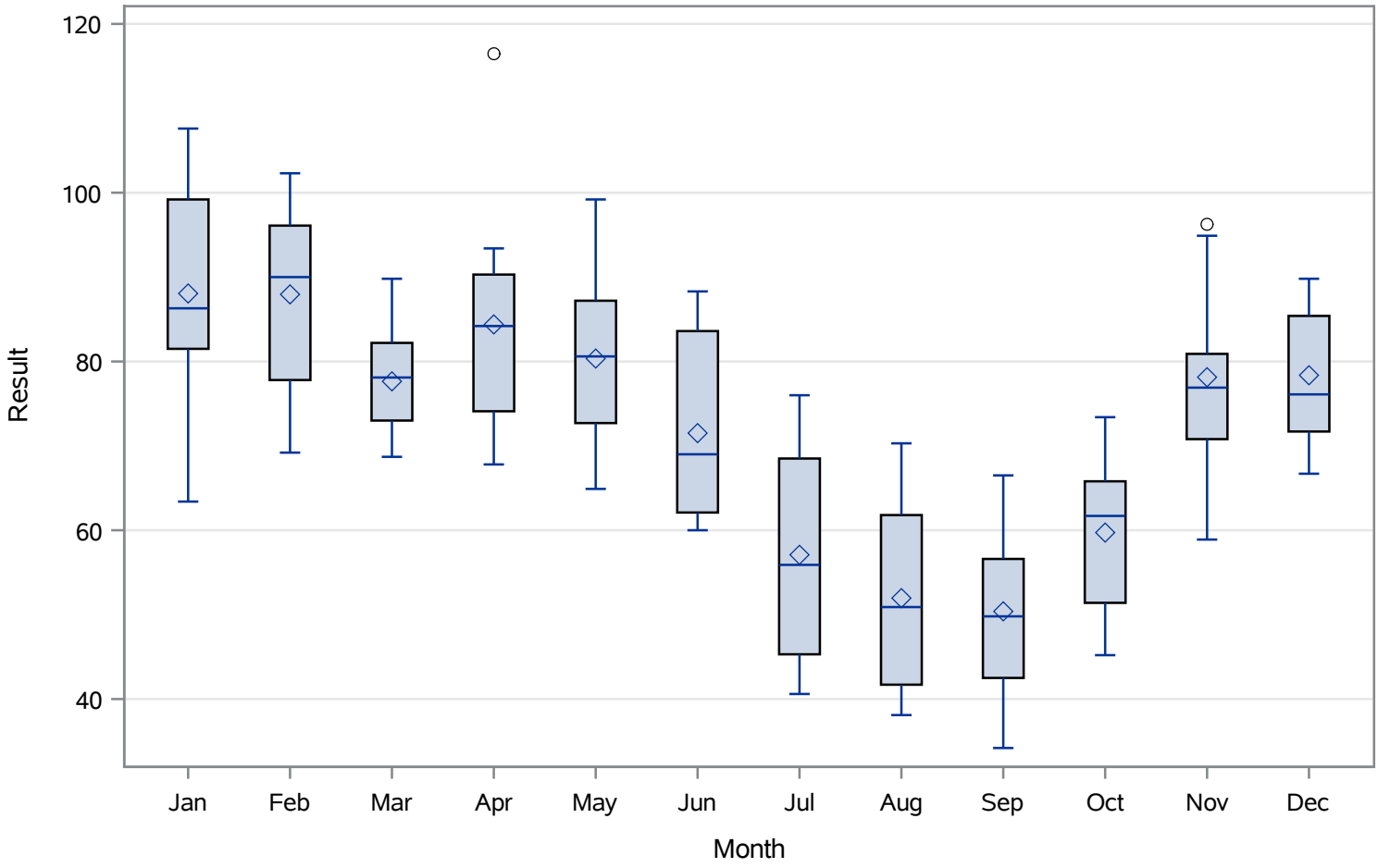
Little Manatee River
129
DO Sat Mid (%)
Site ID = 129



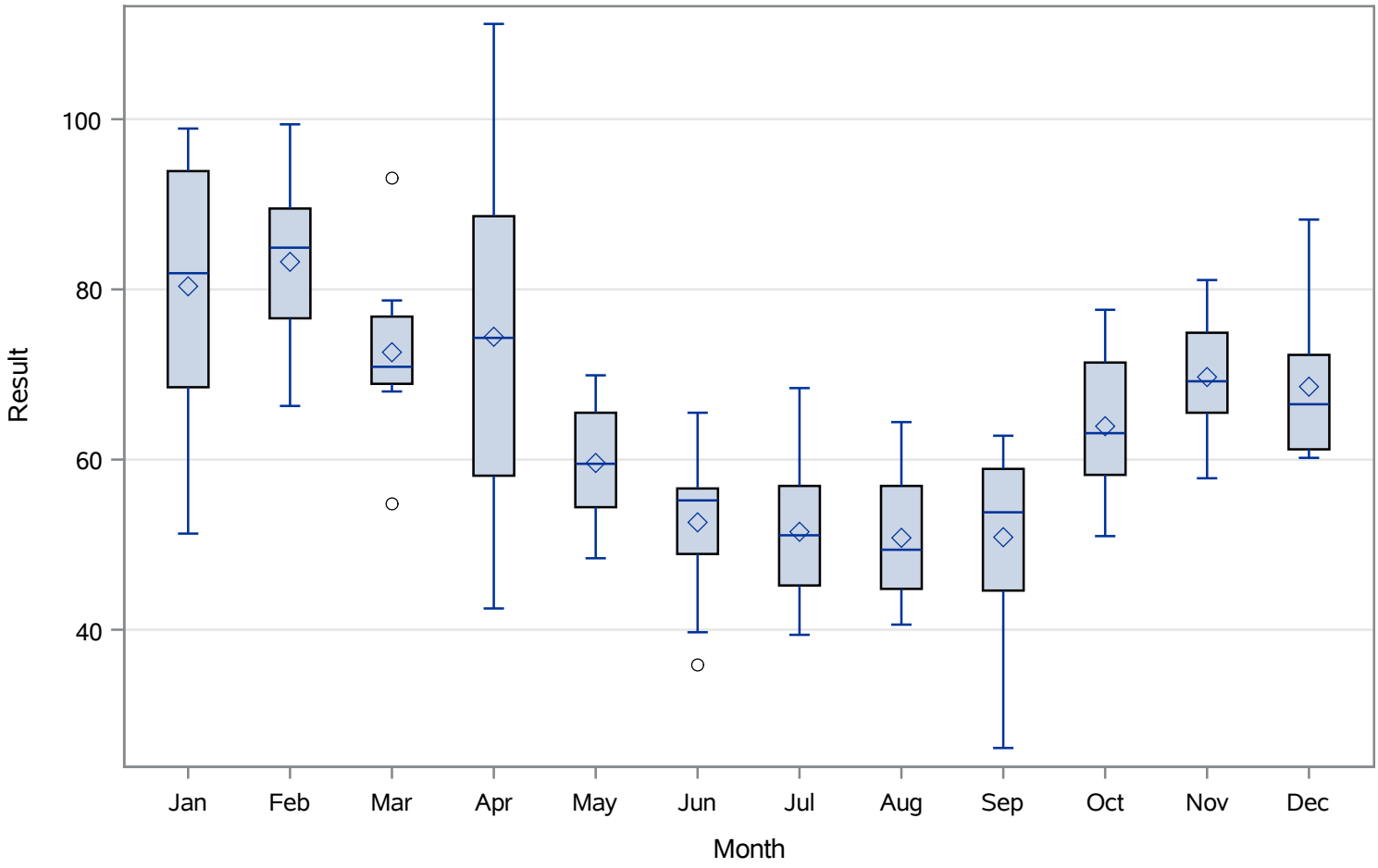
Little Manatee River
140
DO Sat Mid (%)
Site ID = 140



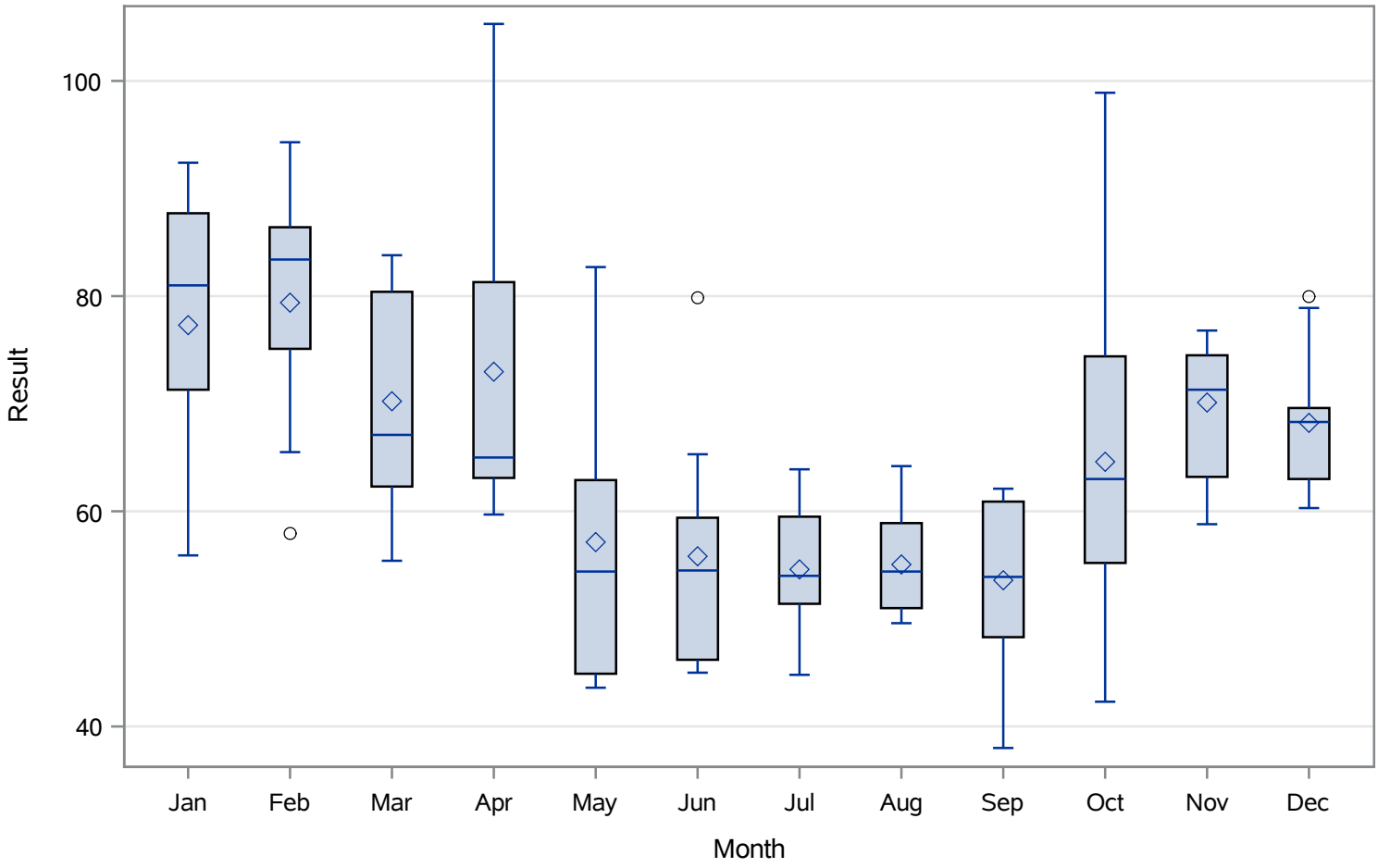
Little Manatee River
180
DO Sat Mid (%)
Site ID = 180



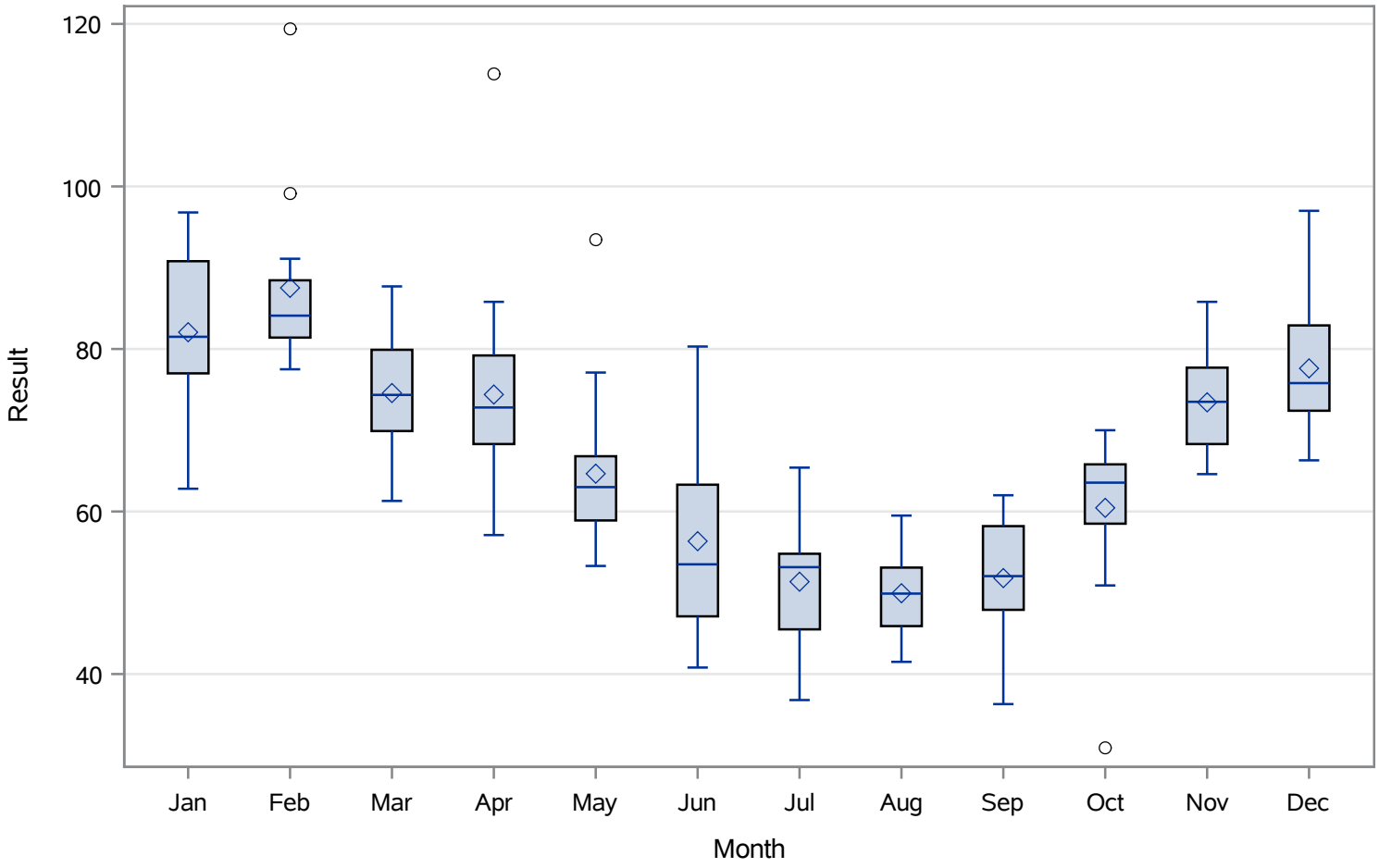
Little Manatee River
181
DO Sat Mid (%)
Site ID = 181



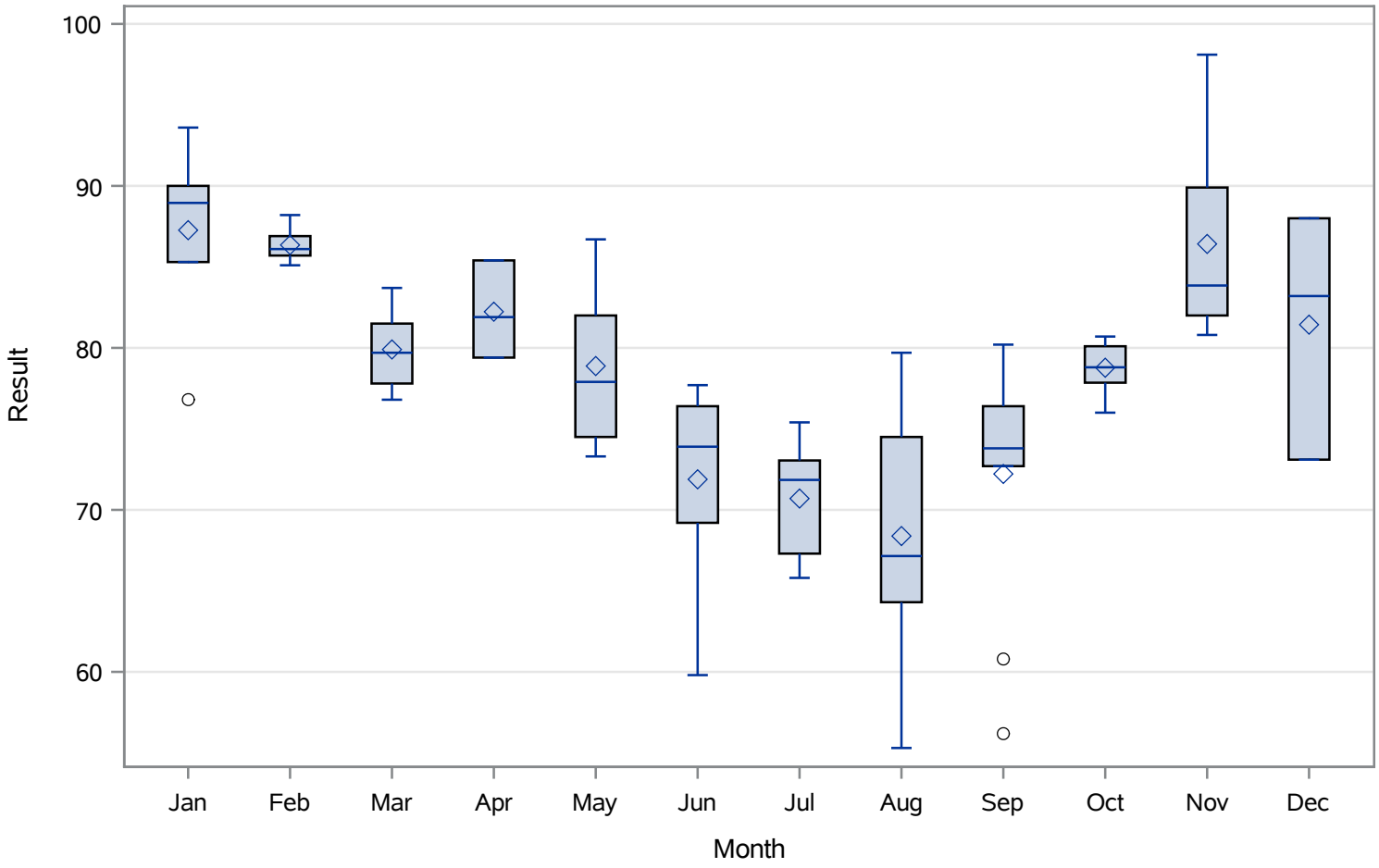
Little Manatee River
182
DO Sat Mid (%)
Site ID = 182



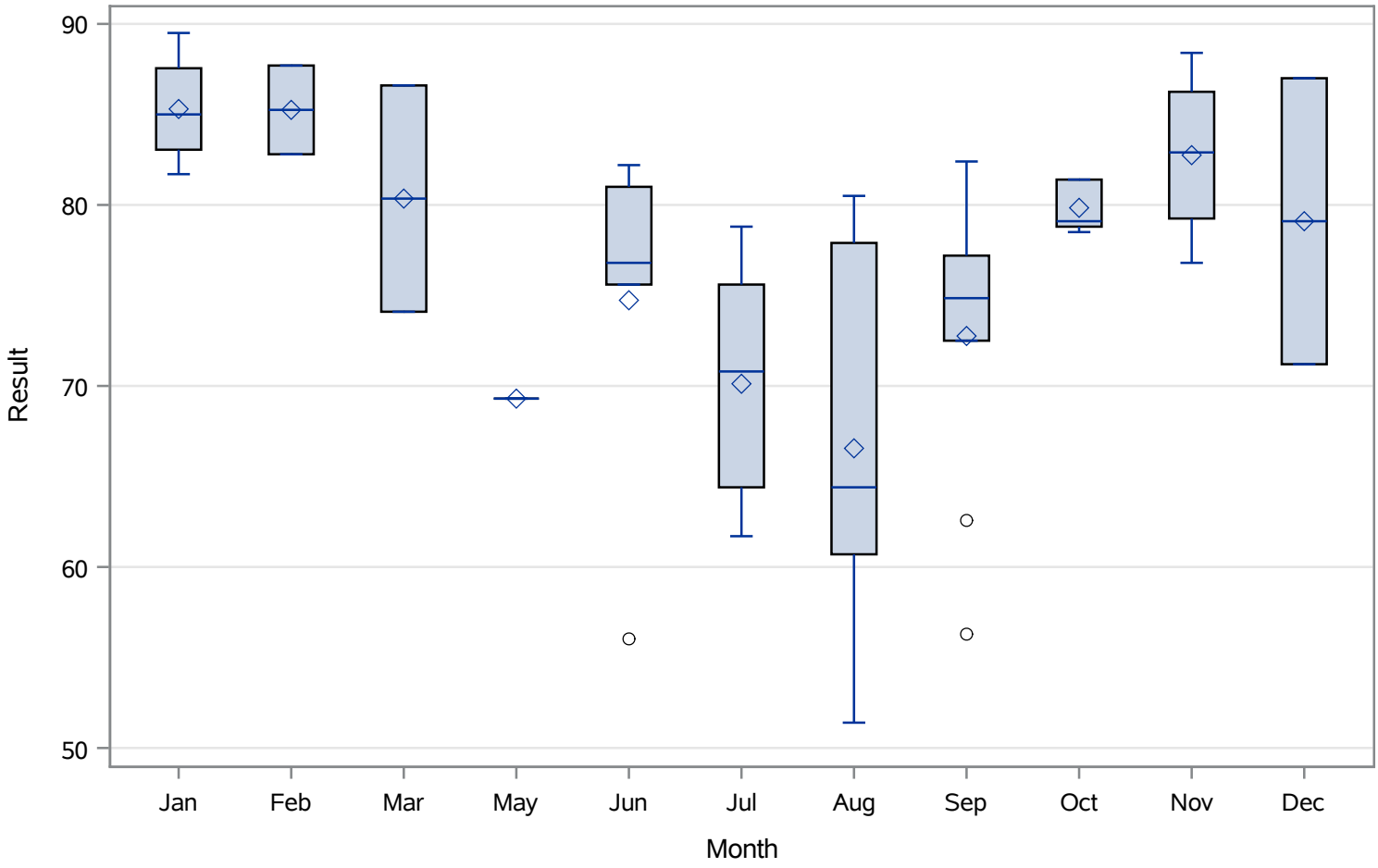
Little Manatee River
112
DO Sat Top (%)
Site ID = 112



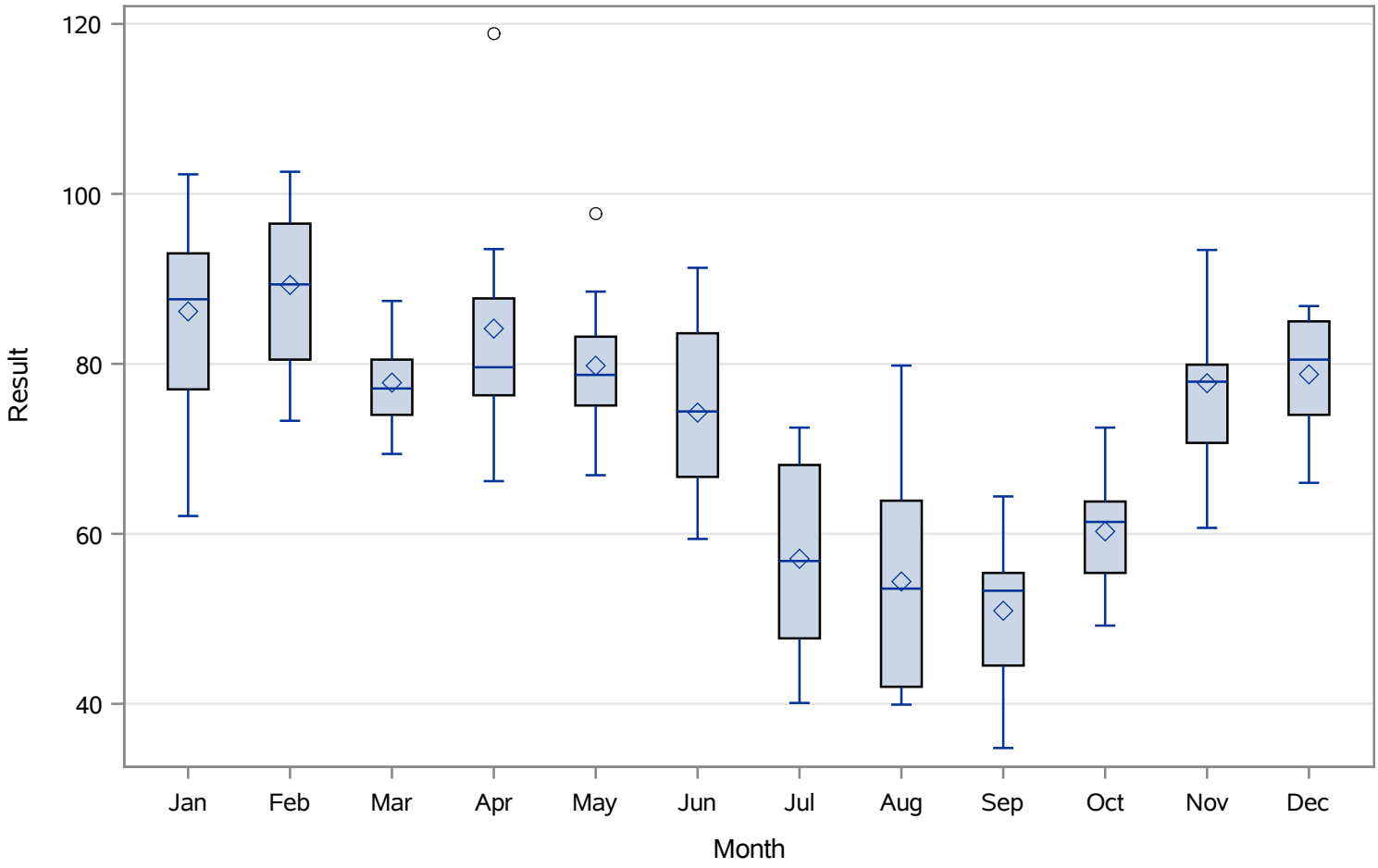
Little Manatee River
113
DO Sat Top (%)
Site ID = 113



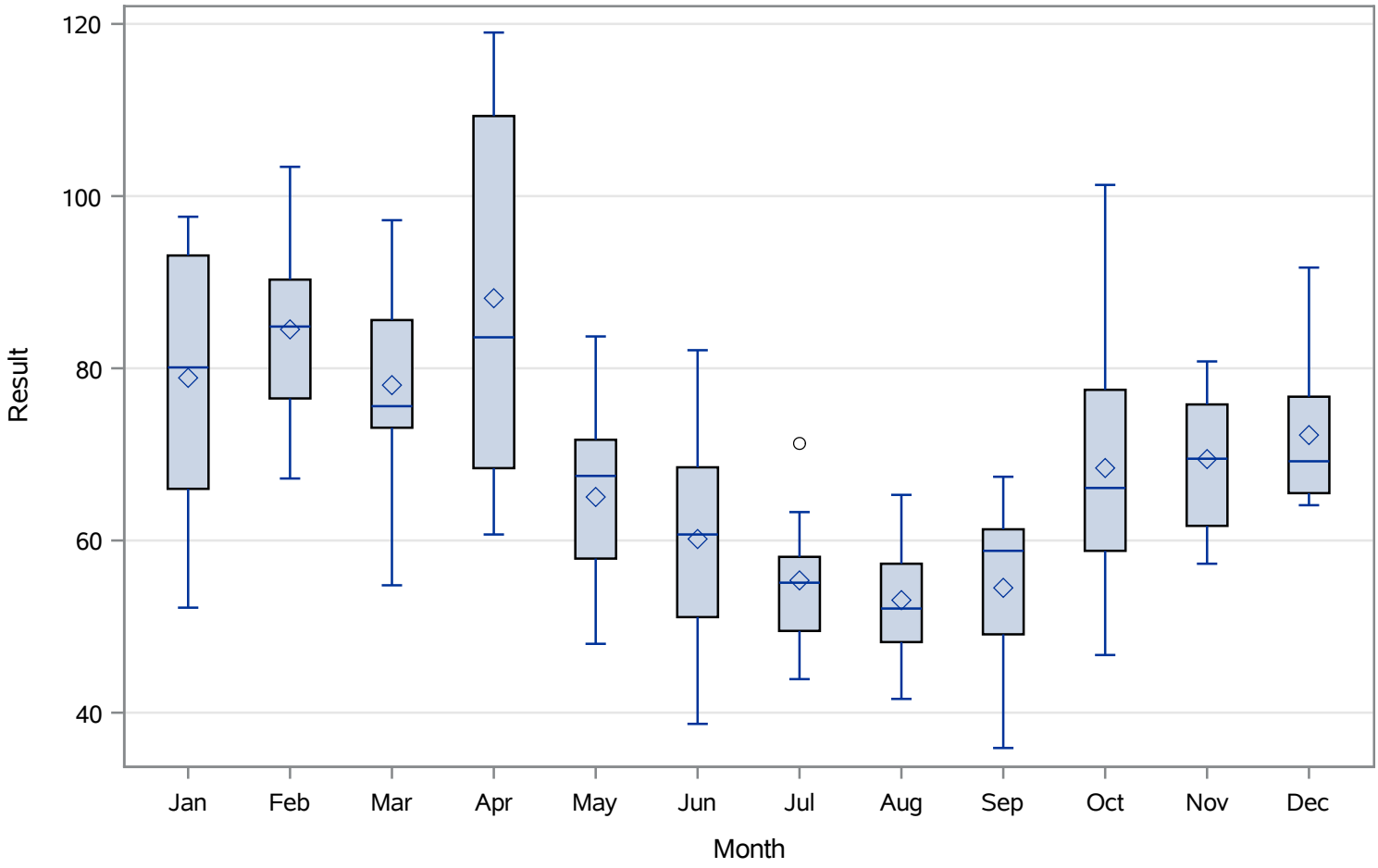
Little Manatee River
140
DO Sat Top (%)
Site ID = 140



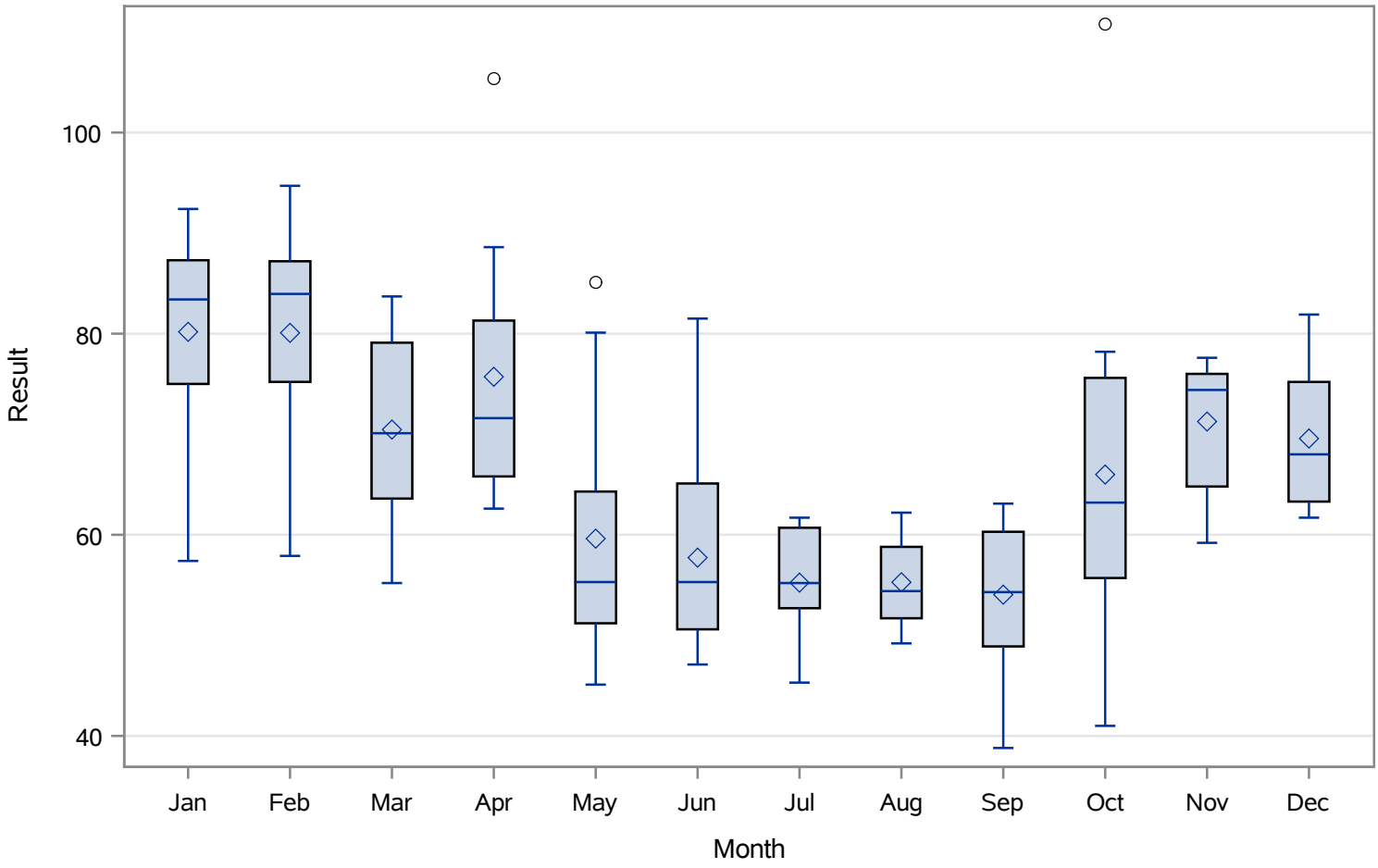
Little Manatee River
180
DO Sat Top (%)
Site ID = 180



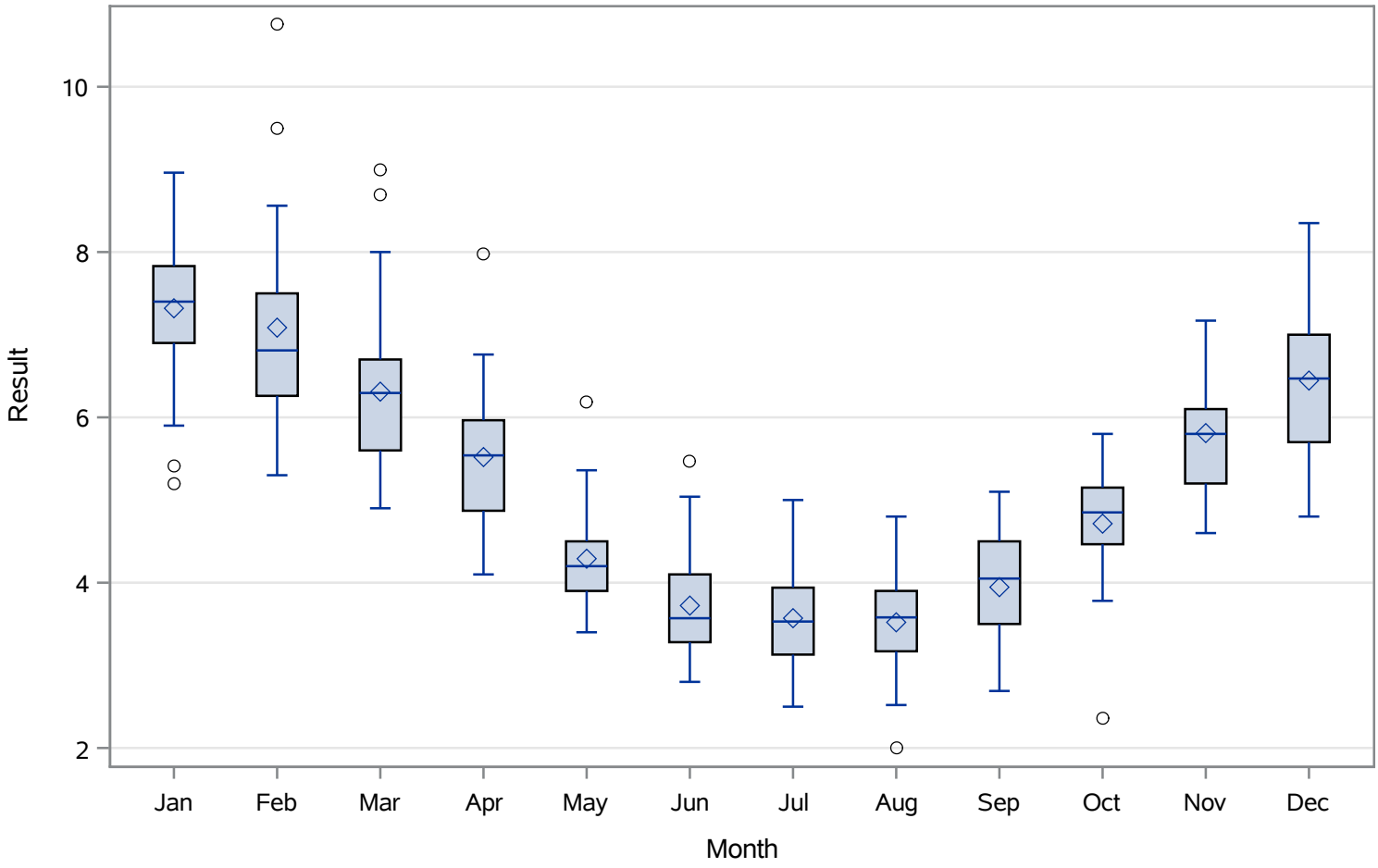
Little Manatee River
181
DO Sat Top (%)
Site ID = 181



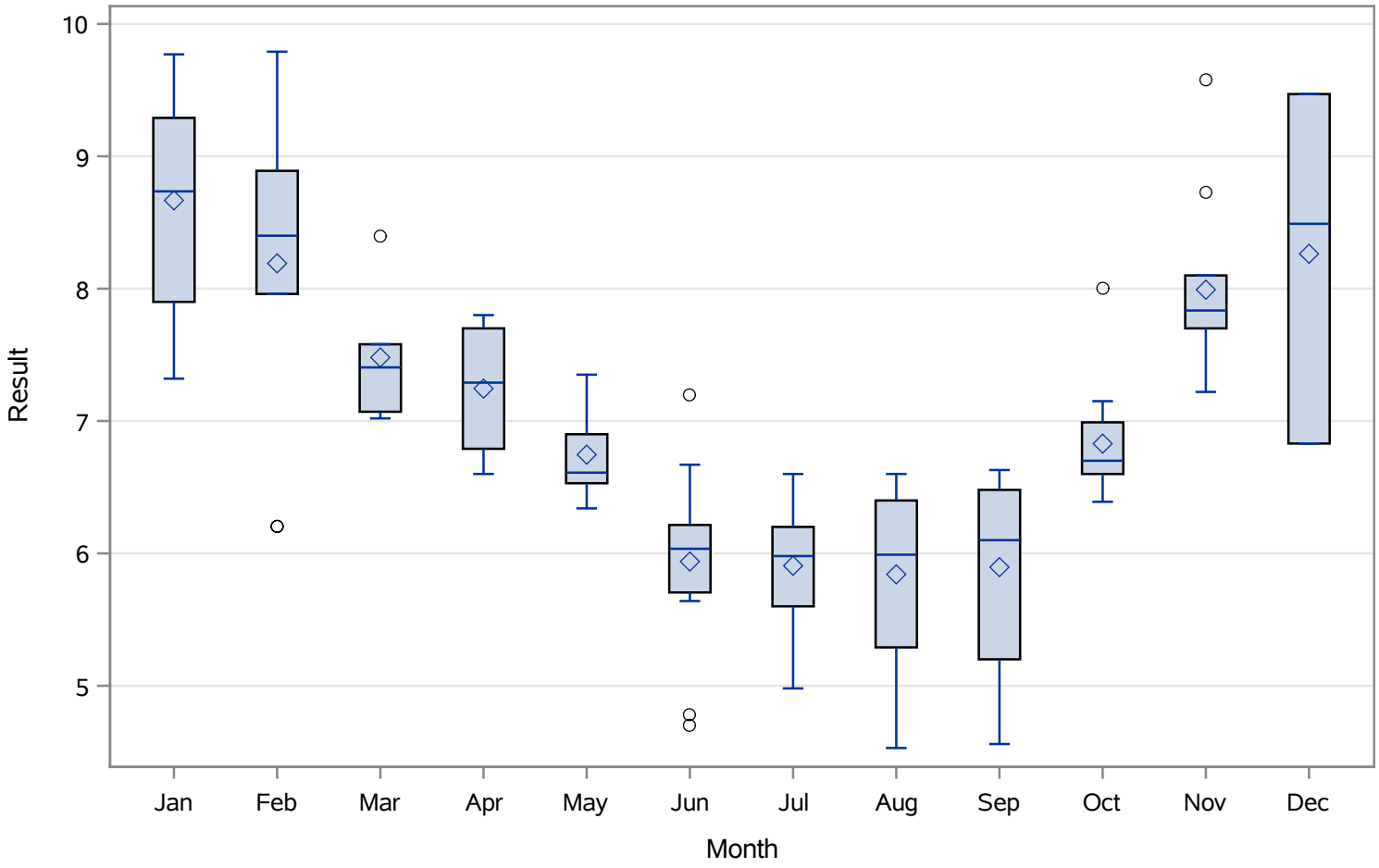
Little Manatee River
182
DO Sat Top (%)
Site ID = 182



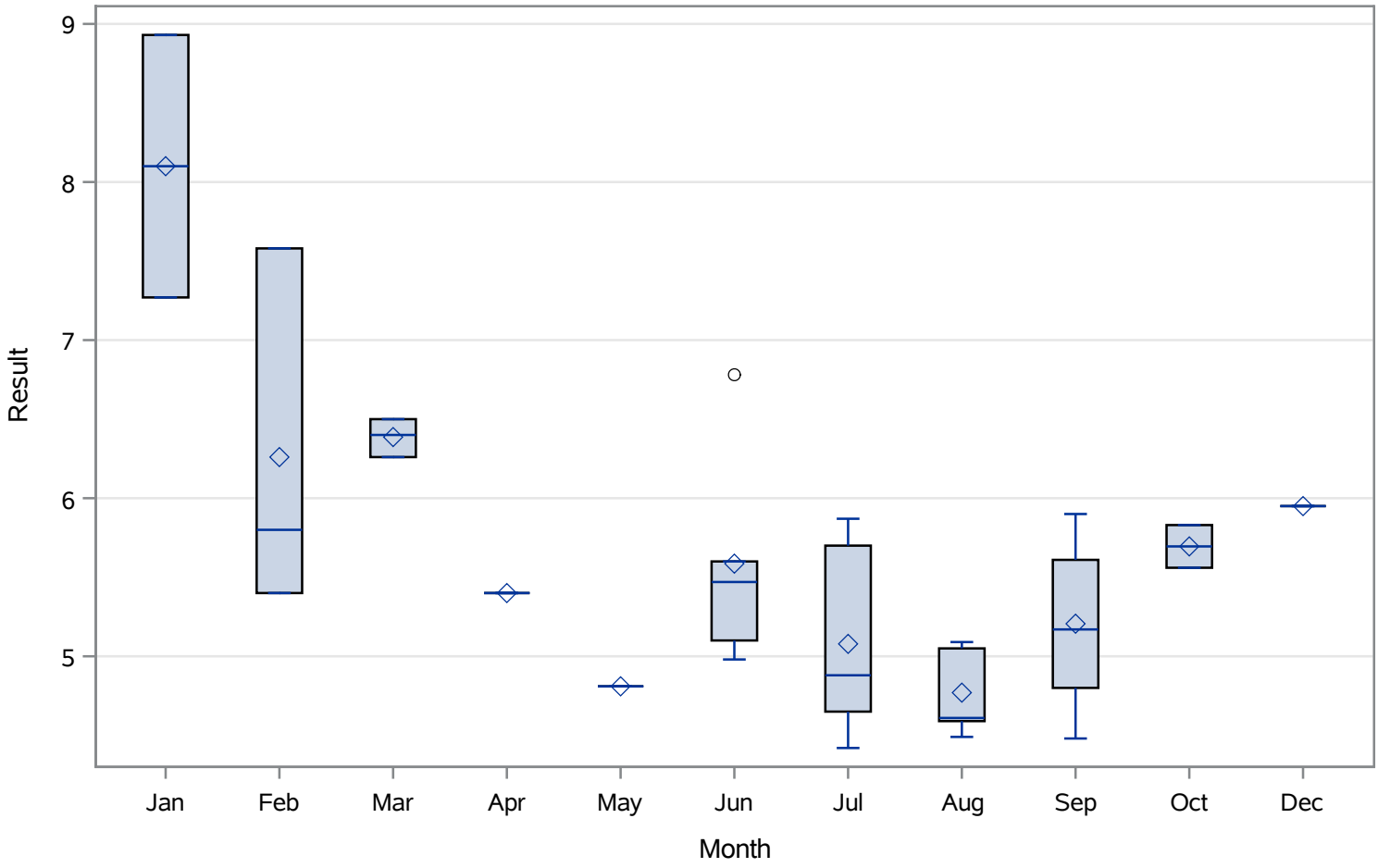
Little Manatee River
112
DO Top (mg/L)
Site ID = 112



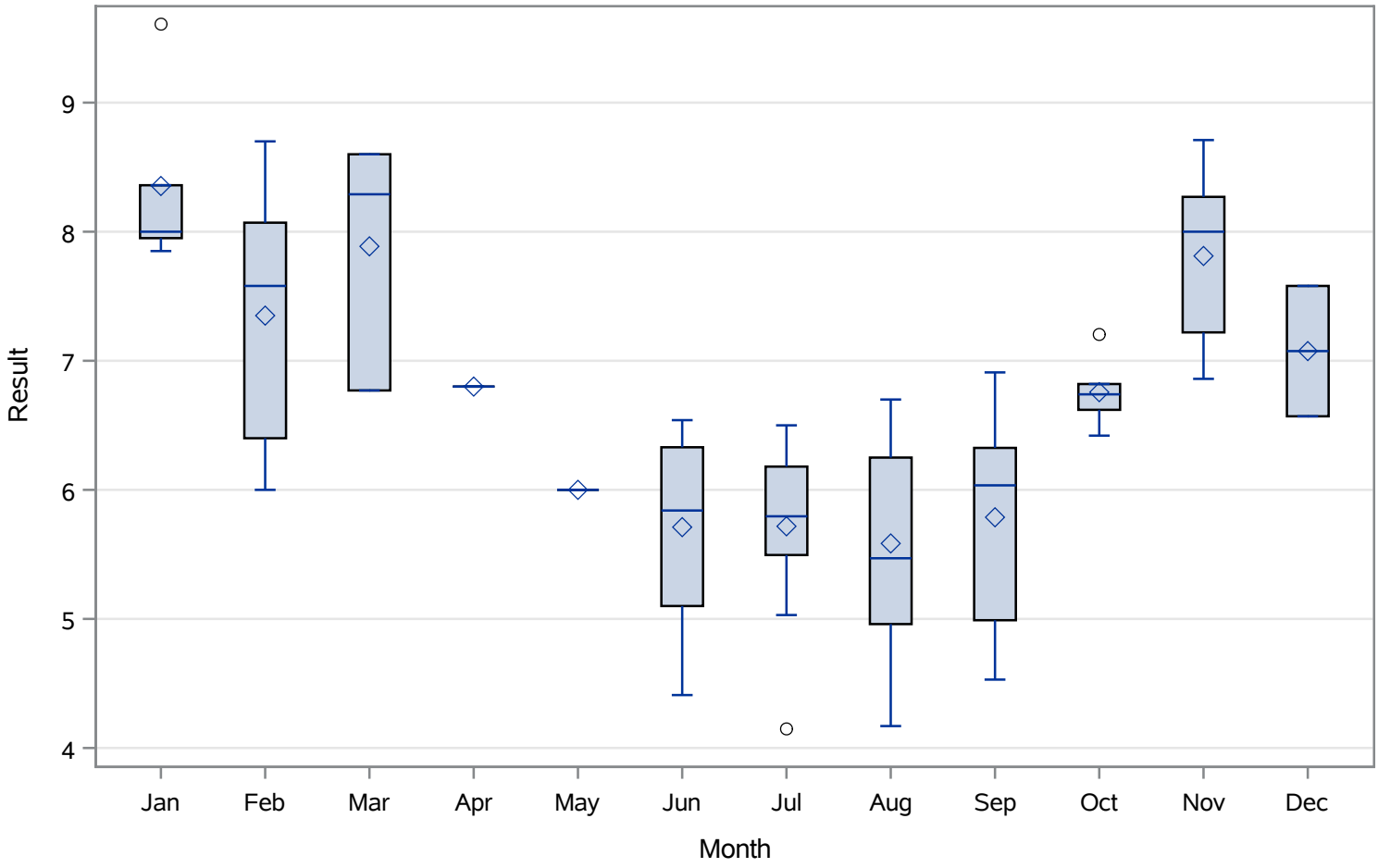
Little Manatee River
113
DO Top (mg/L)
Site ID = 113



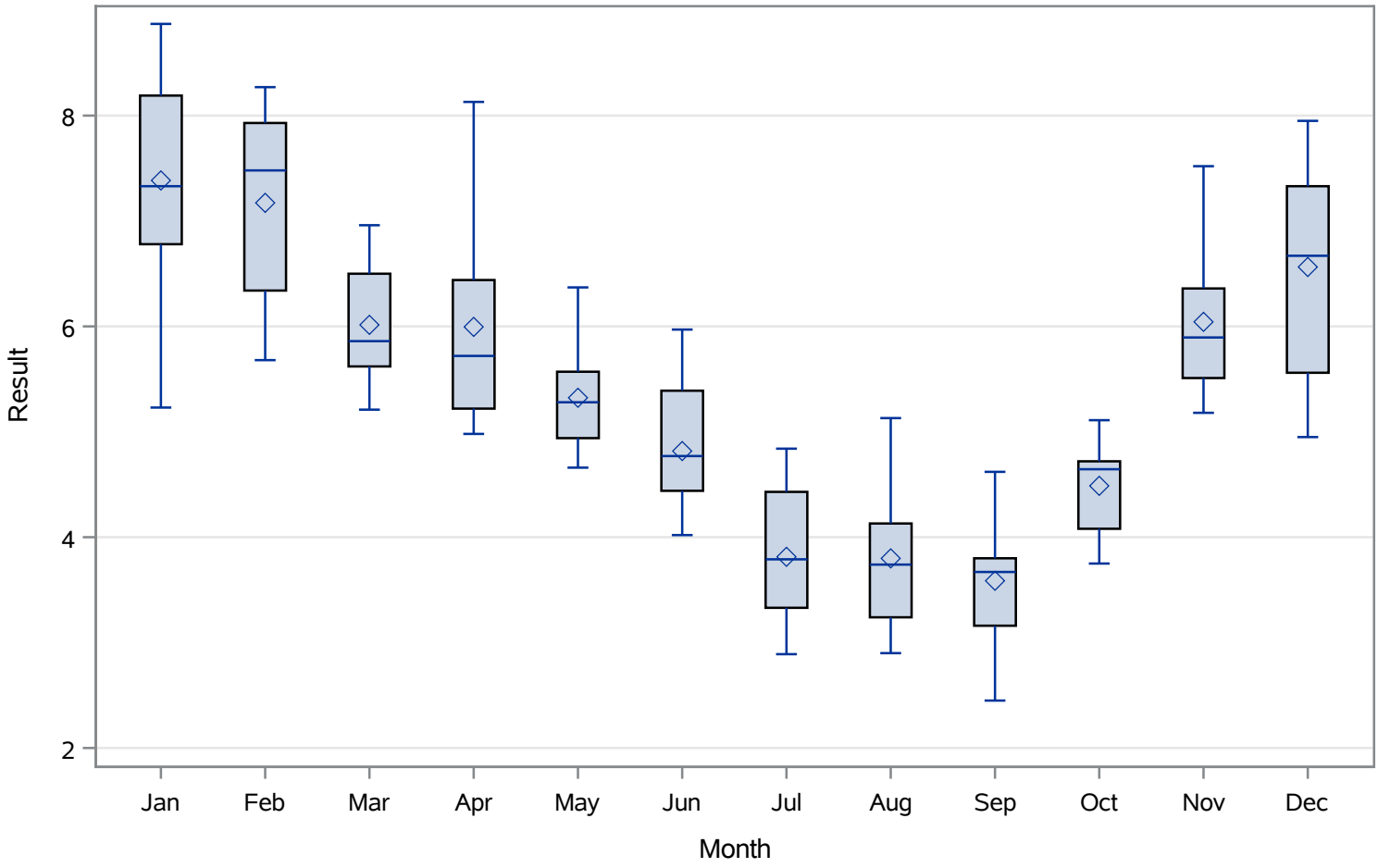
Little Manatee River
129
DO Top (mg/L)
Site ID = 129



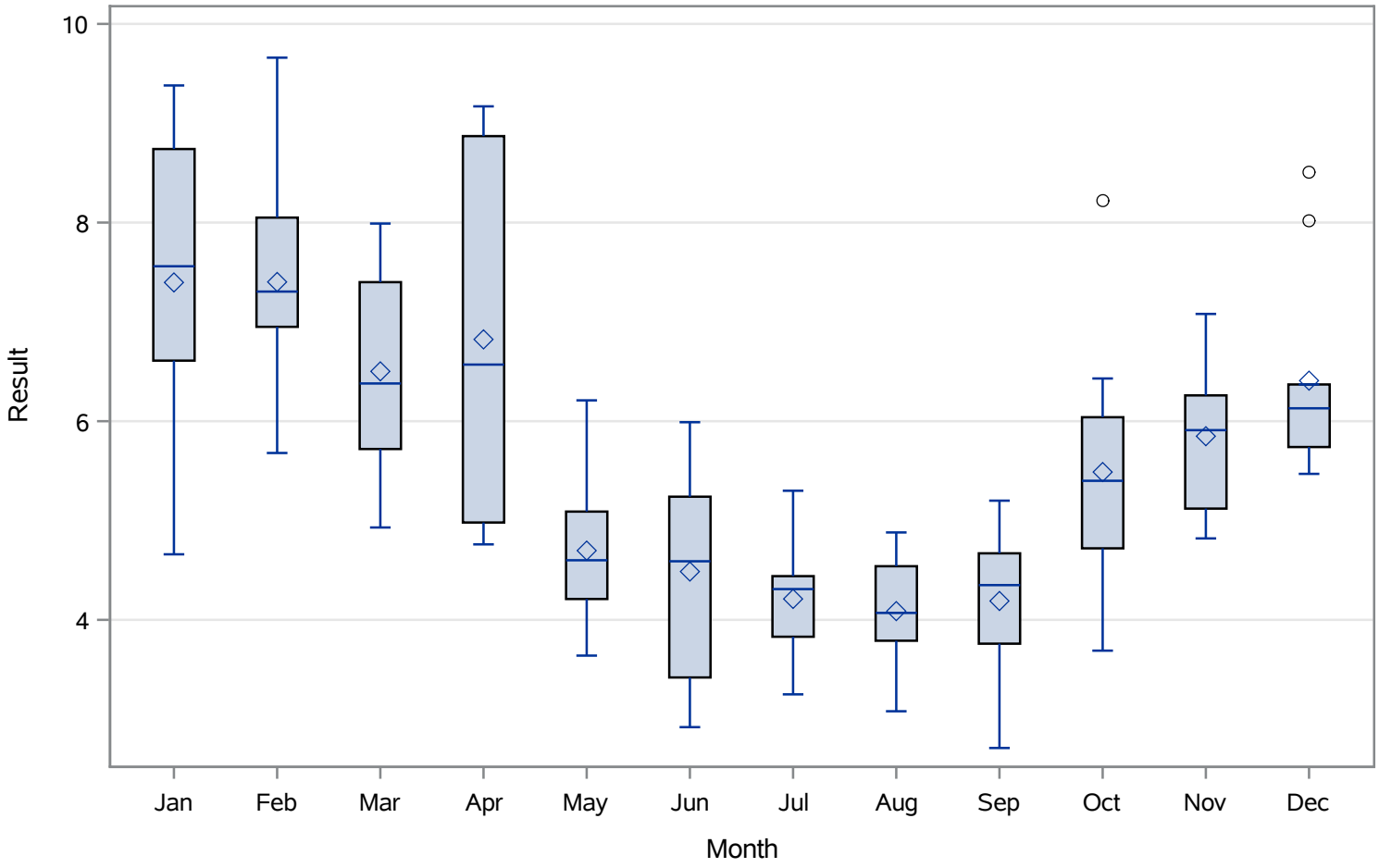
Little Manatee River
140
DO Top (mg/L)
Site ID = 140



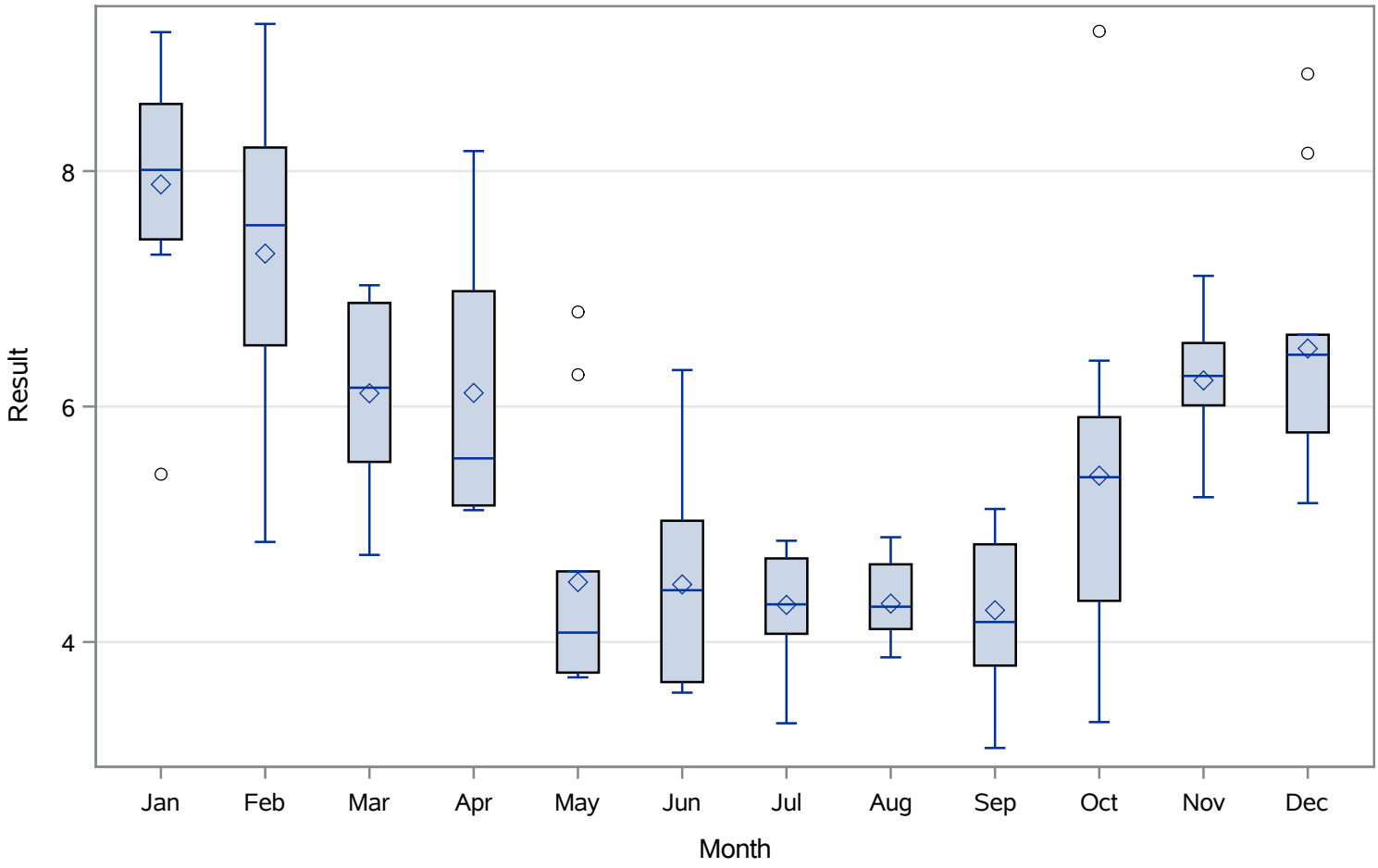
Little Manatee River
180
DO Top (mg/L)
Site ID = 180



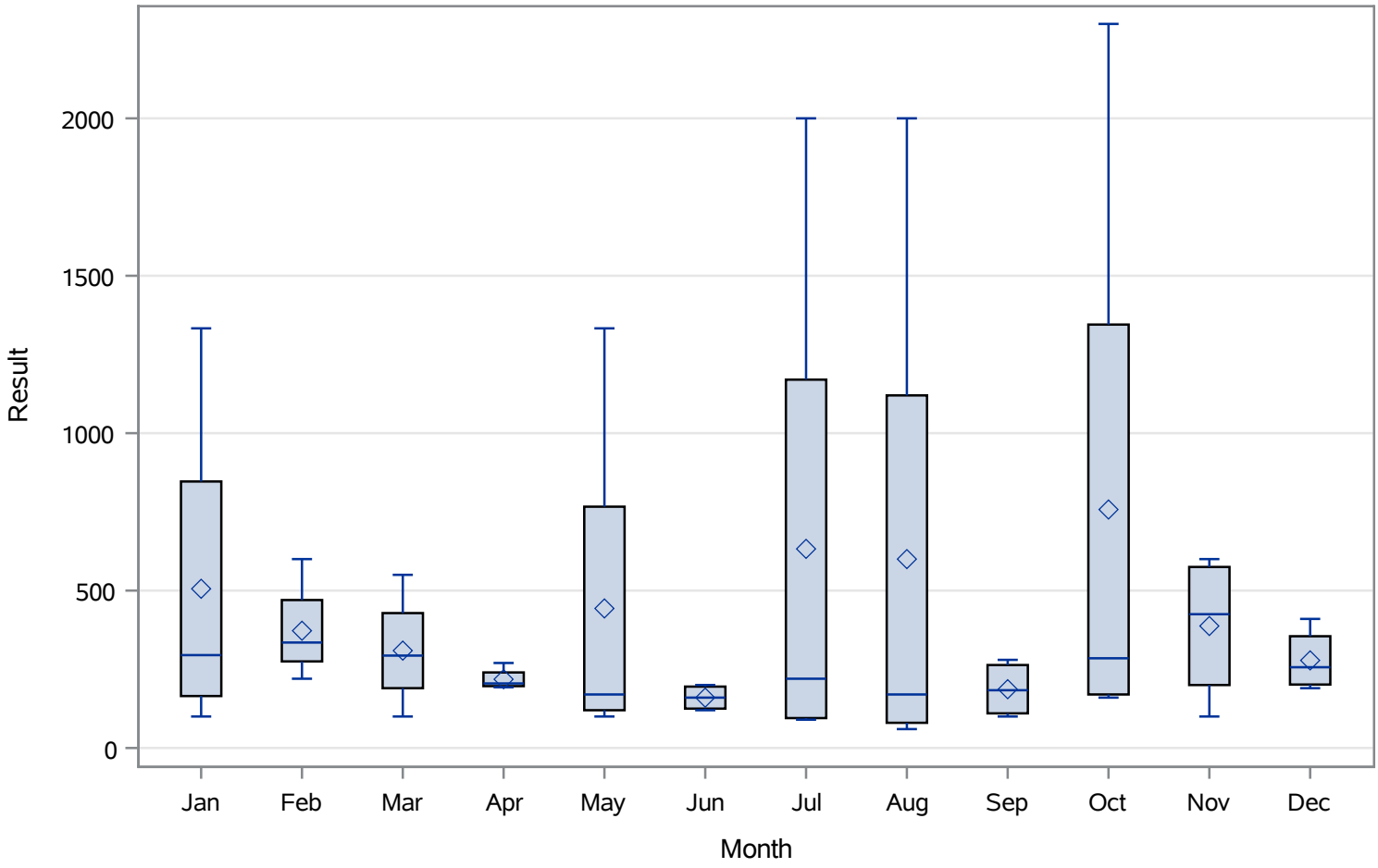
Little Manatee River
181
DO Top (mg/L)
Site ID = 181



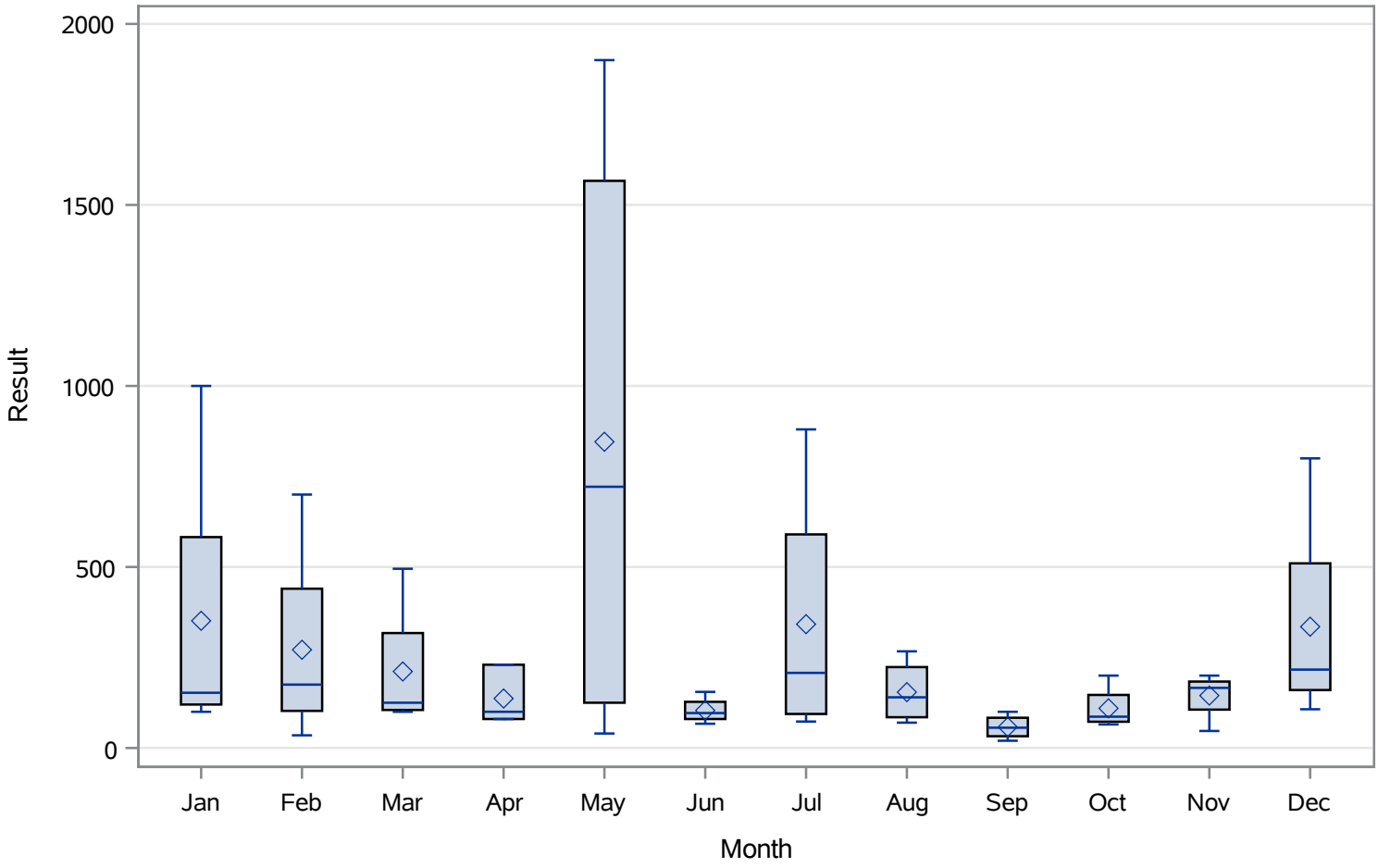
Little Manatee River
182
DO Top (mg/L)
Site ID = 182



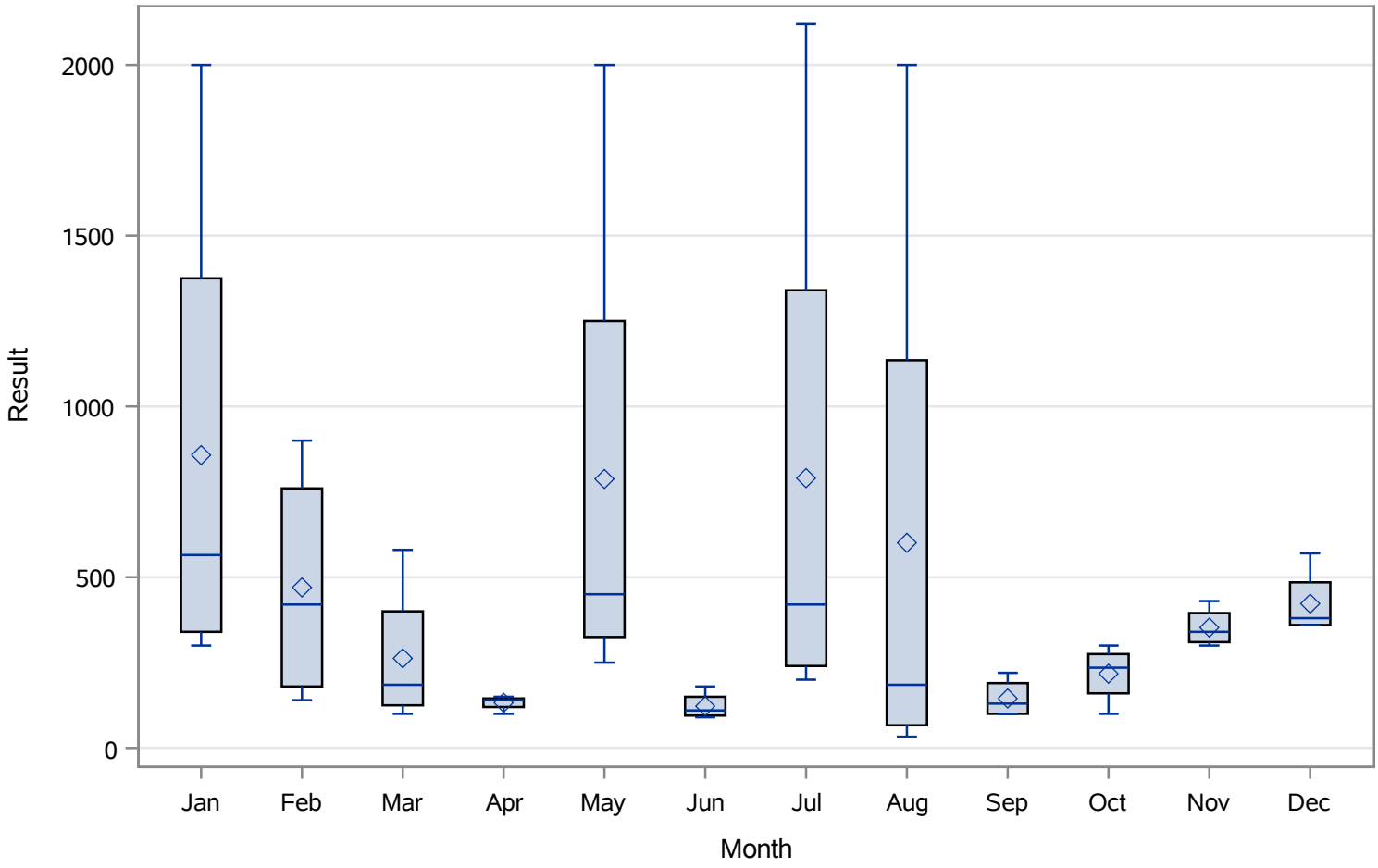
Little Manatee River
113
E_Coliform (n/100ml)
Site ID = 113



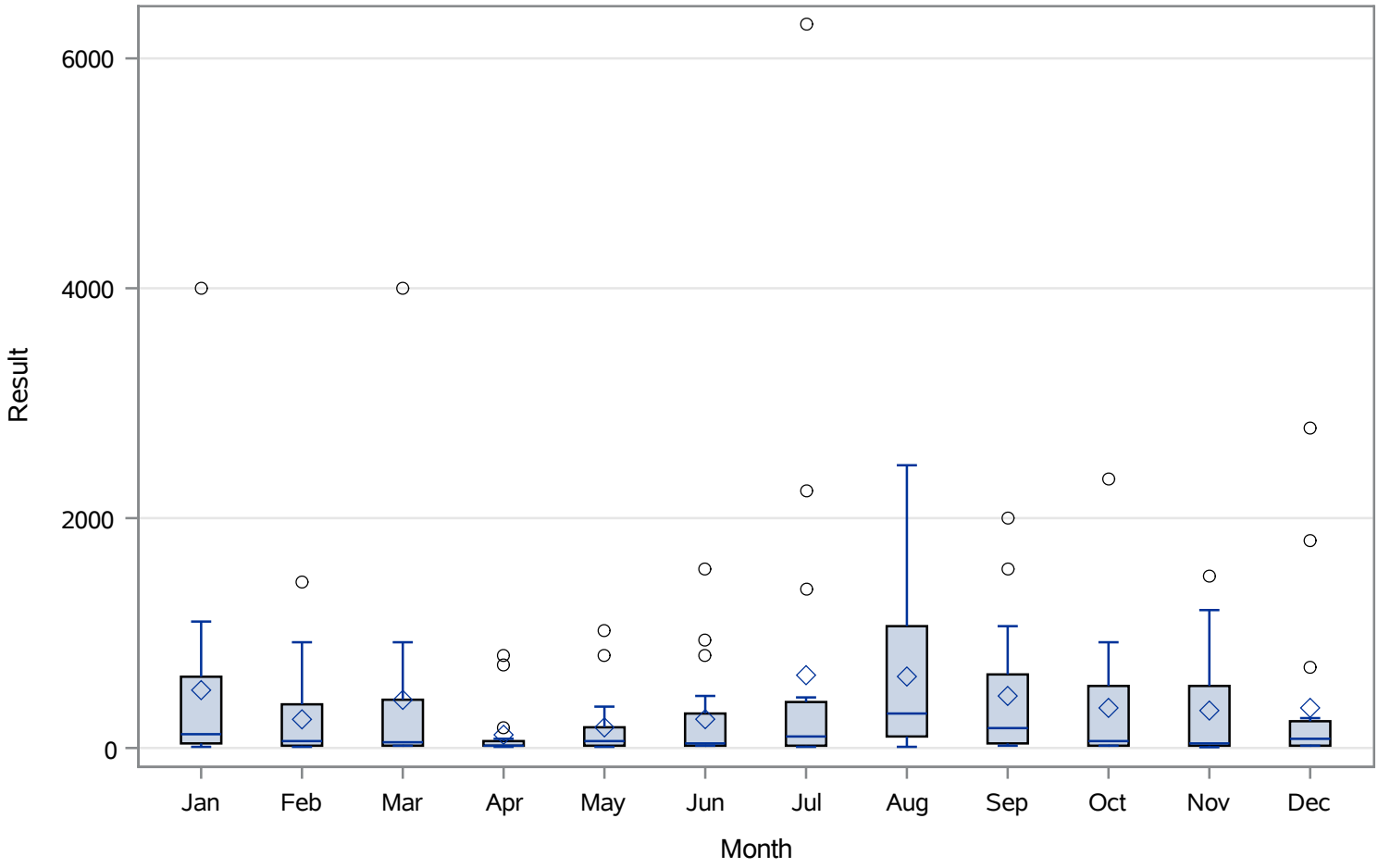
Little Manatee River
129
E_Coliform (n/100ml)
Site ID = 129



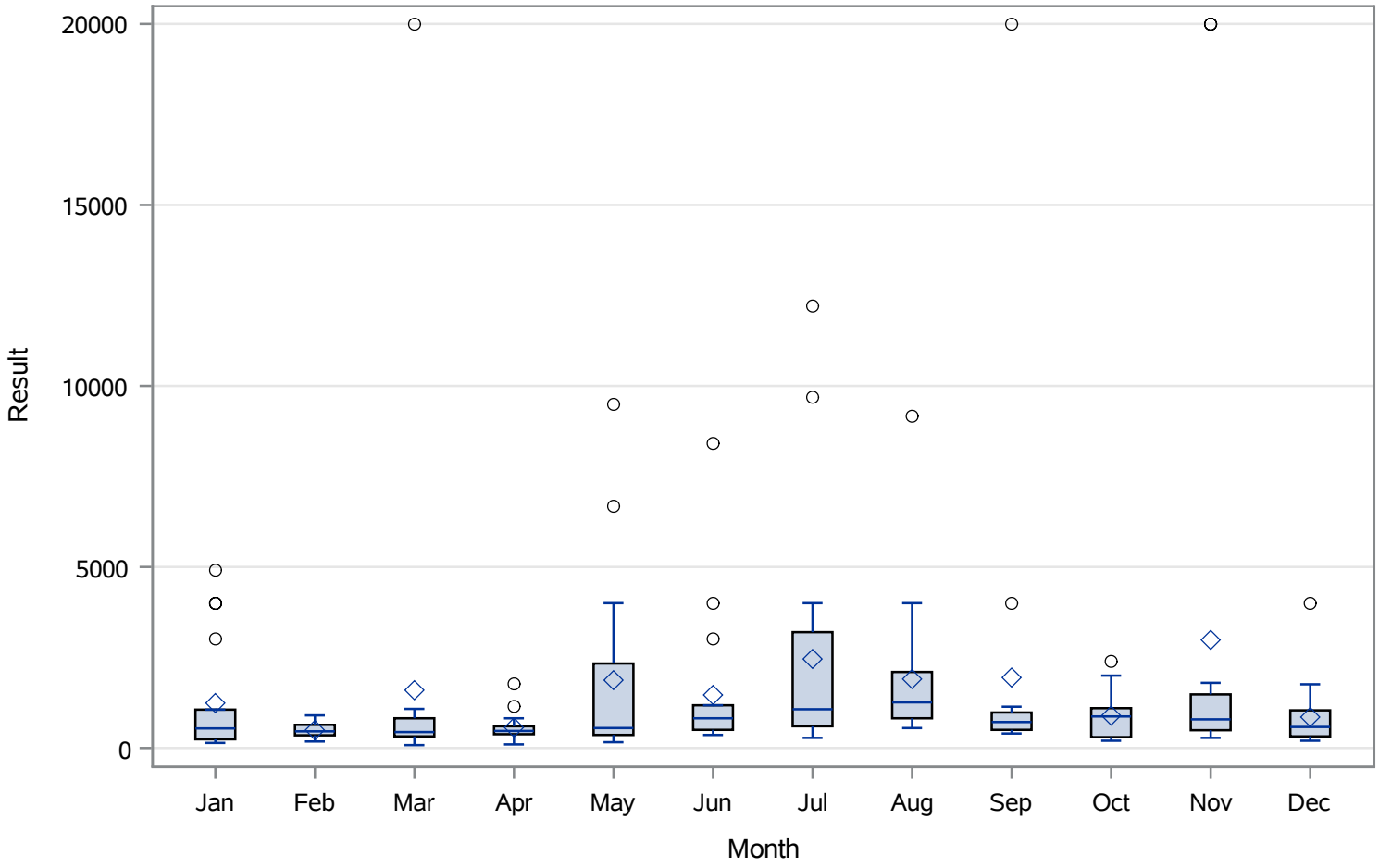
Little Manatee River
140
E_Coliform (n/100ml)
Site ID = 140



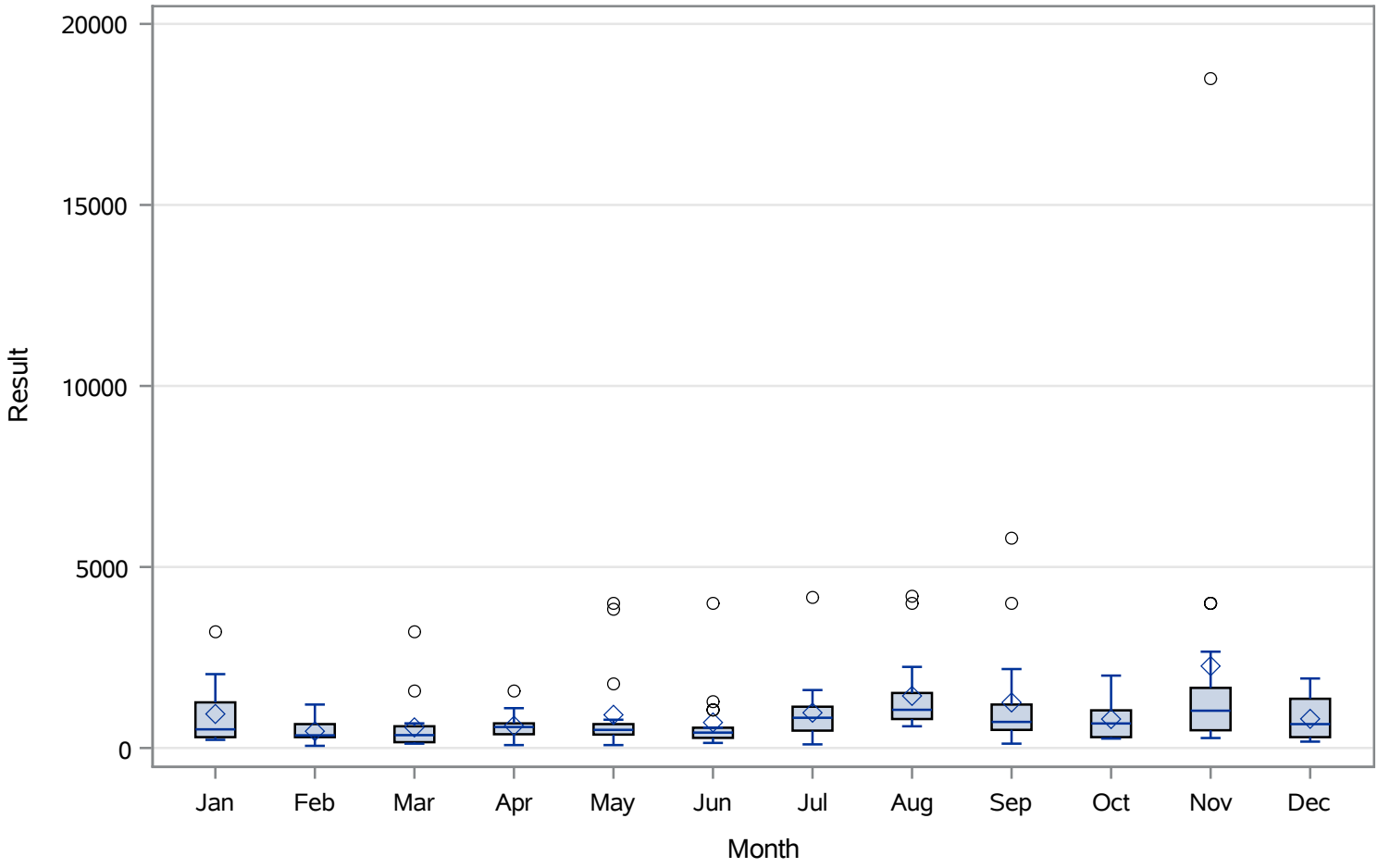
Little Manatee River
112
Enterococci (n/100ml)
Site ID = 112



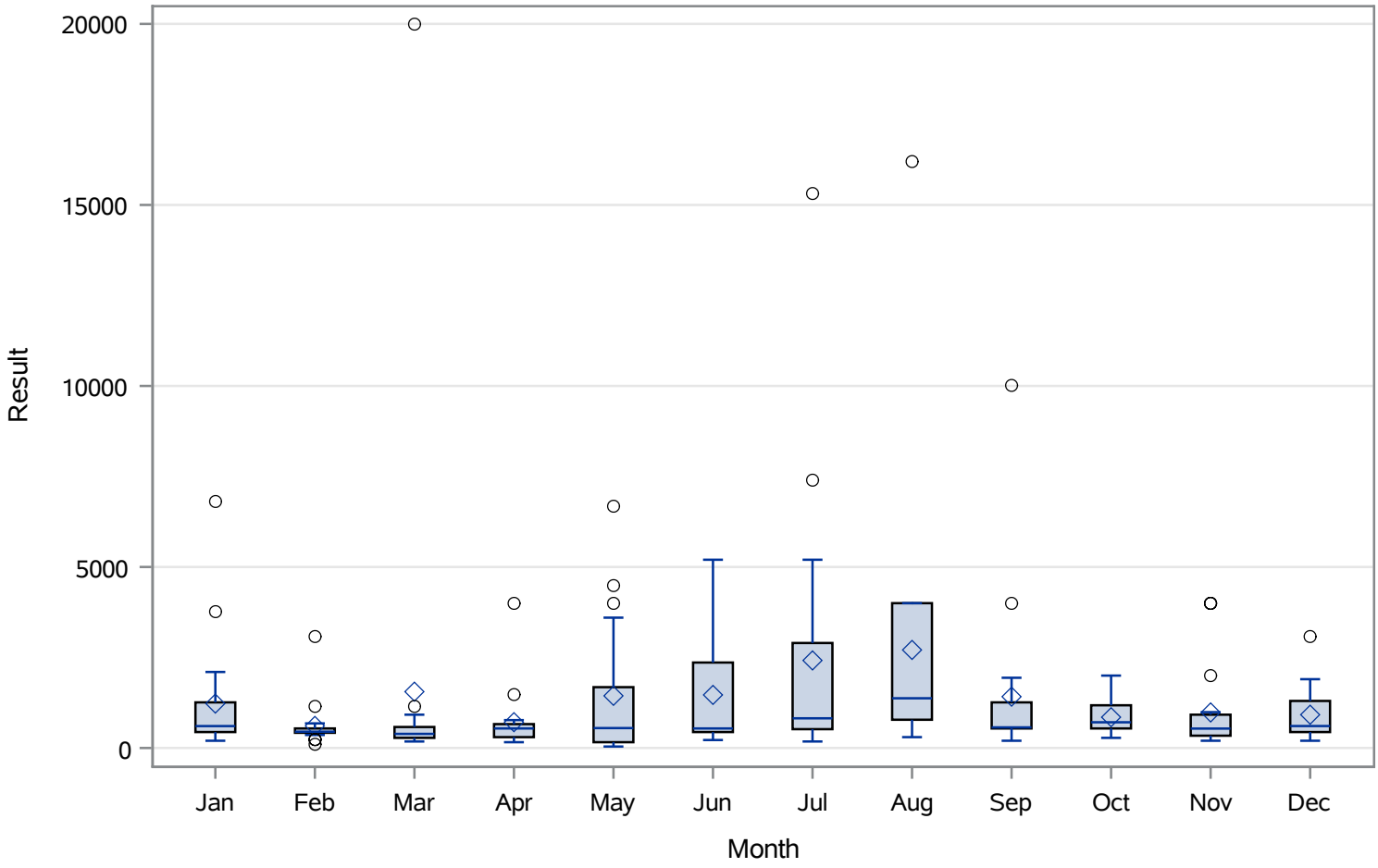
Little Manatee River
113
Enterococci (n/100ml)
Site ID = 113



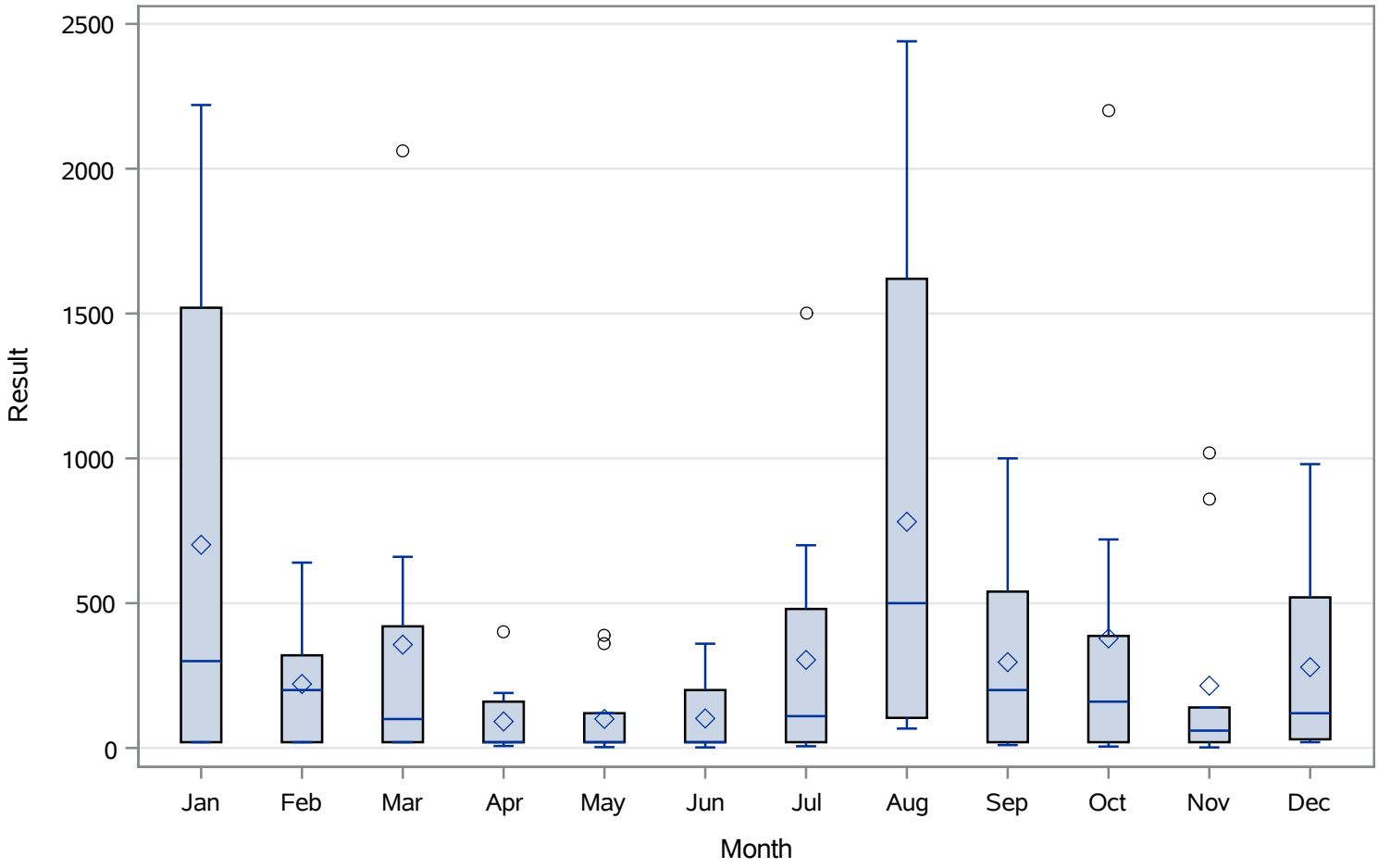
Little Manatee River
129
Enterococci (n/100ml)
Site ID = 129



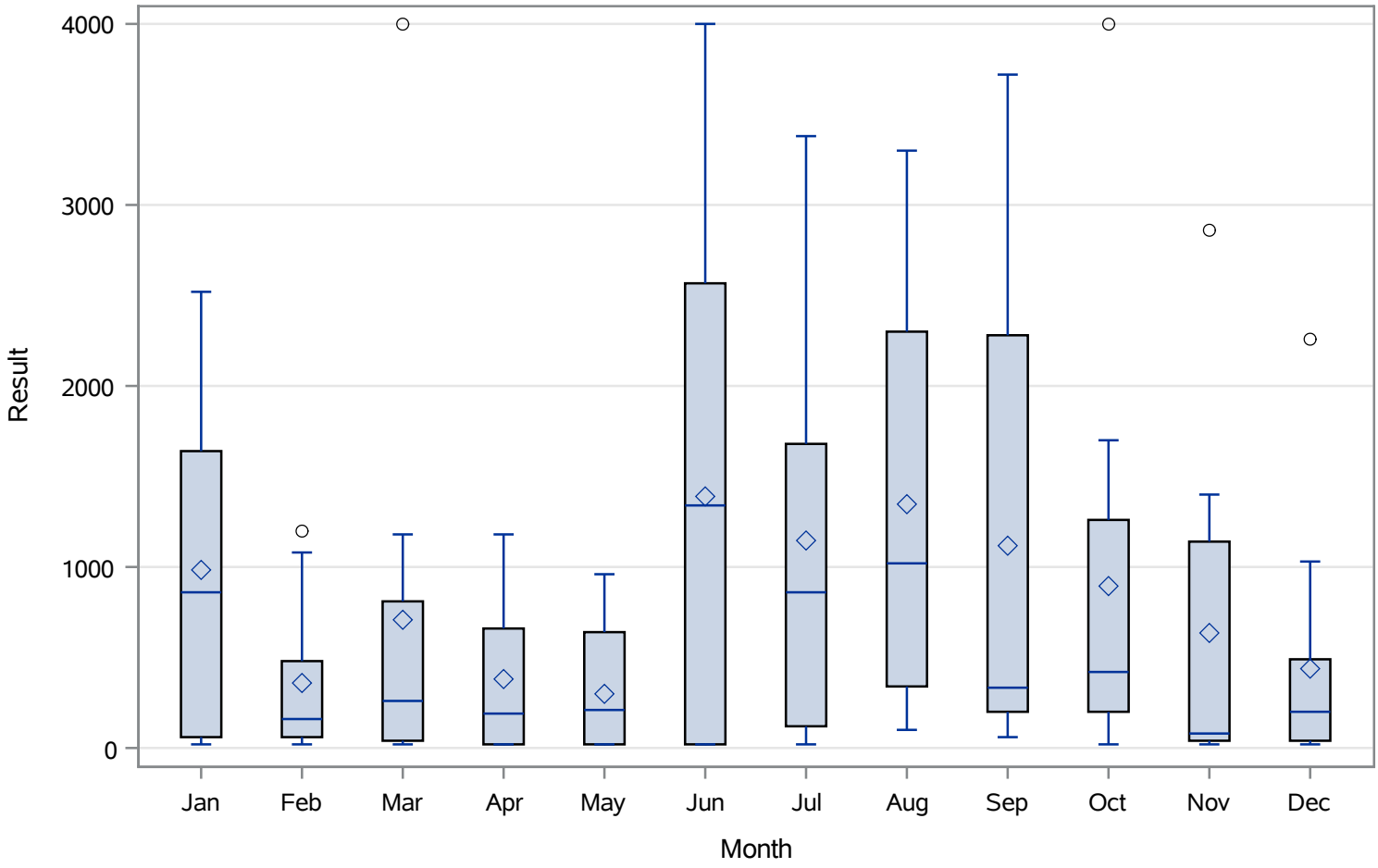
Little Manatee River
140
Enterococci (n/100ml)
Site ID = 140



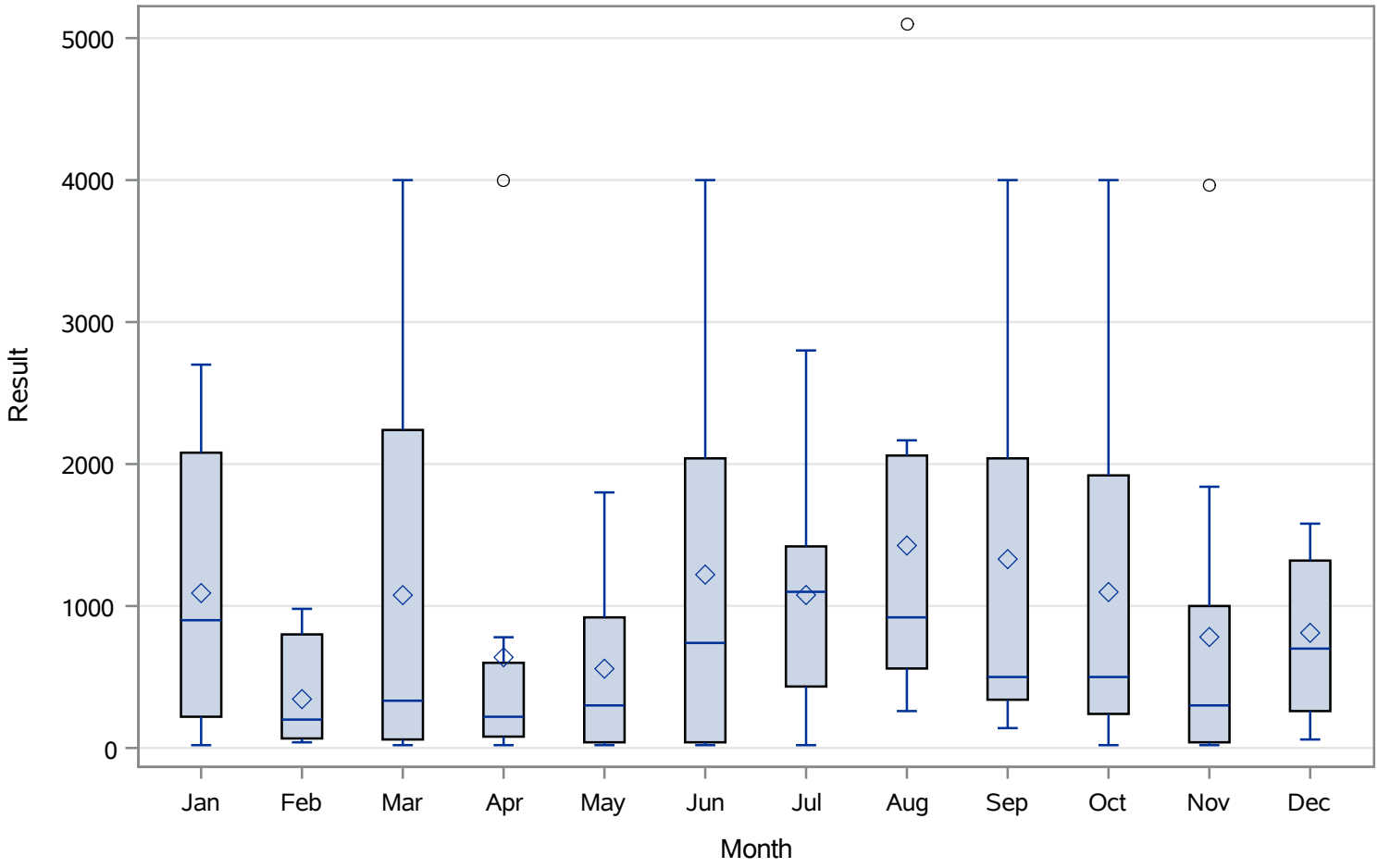
Little Manatee River
180
Enterococci (n/100ml)
Site ID = 180



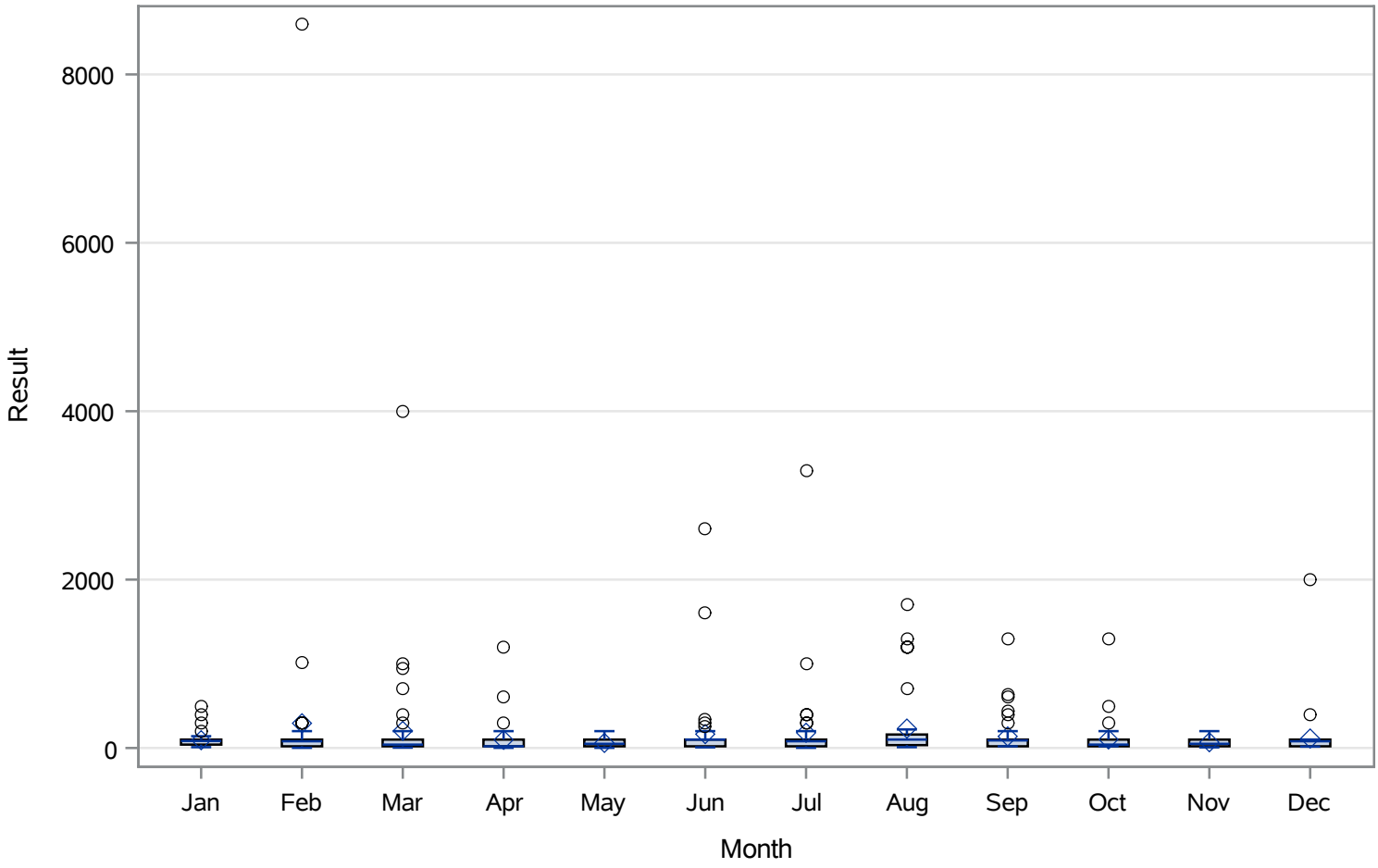
Little Manatee River
181
Enterococci (n/100ml)
Site ID = 181



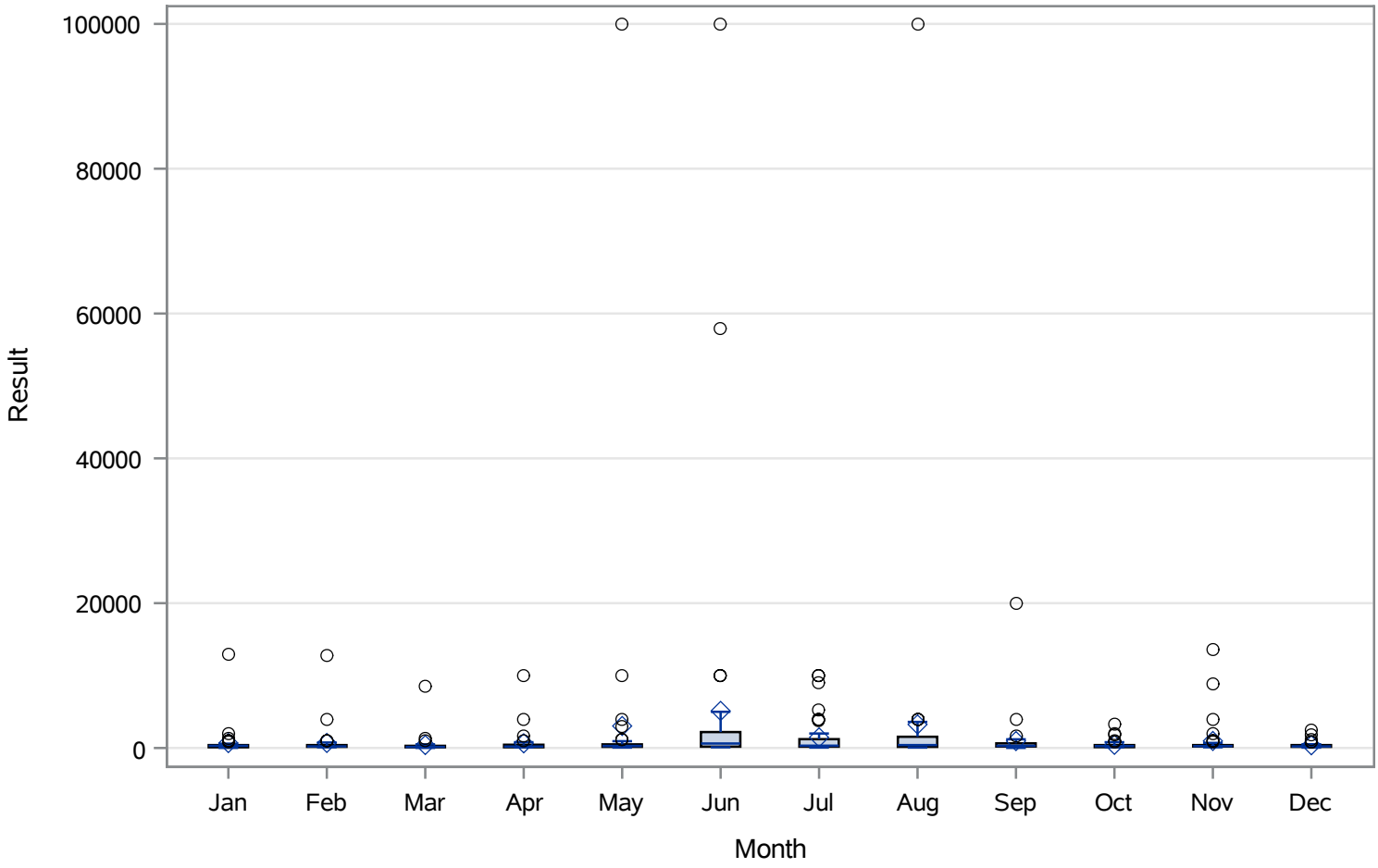
Little Manatee River
182
Enterococci (n/100ml)
Site ID = 182



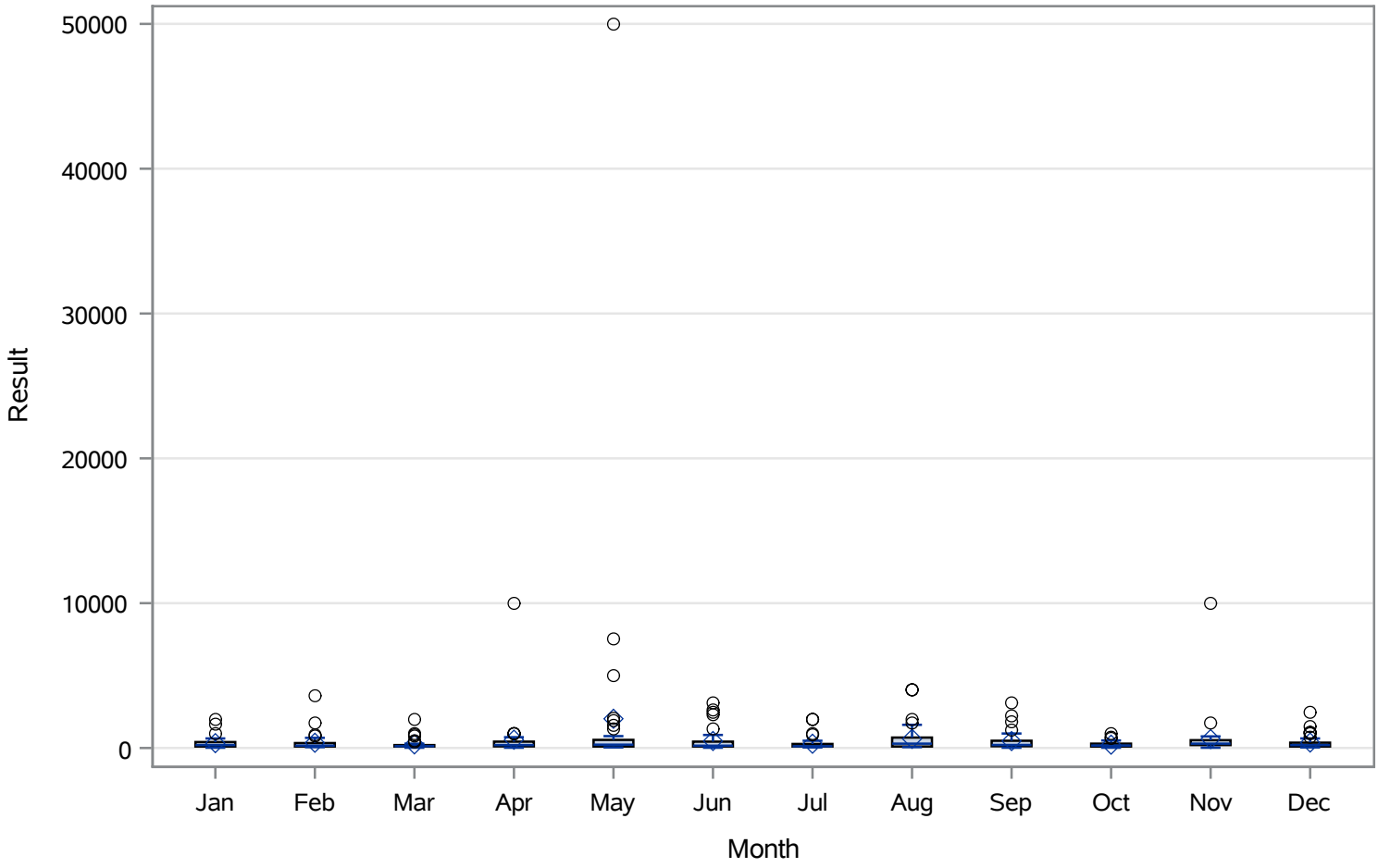
Little Manatee River
112
Fecal_Coliform (n/100ml)
Site ID = 112



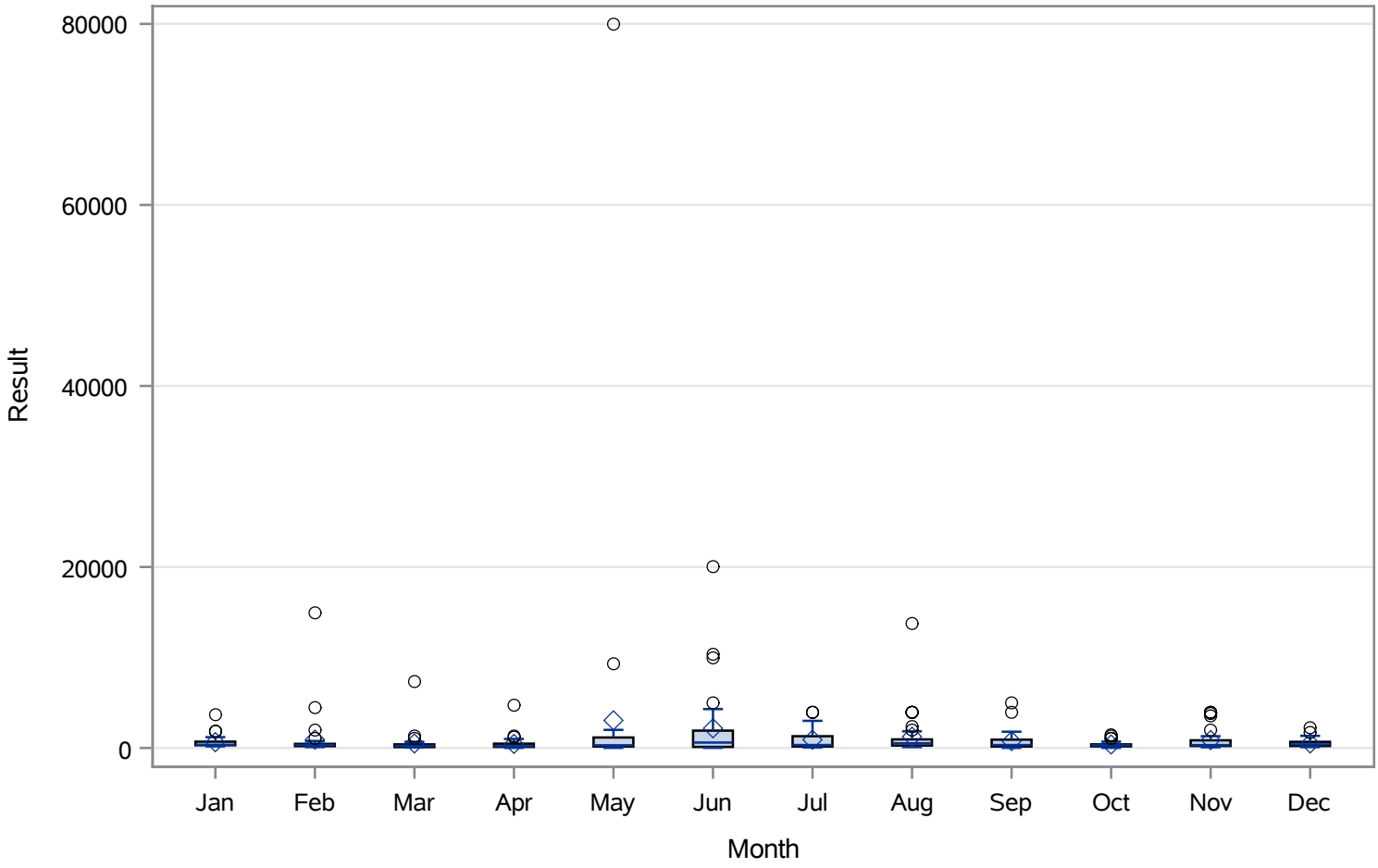
Little Manatee River
113
Fecal_Coliform (n/100ml)
Site ID = 113



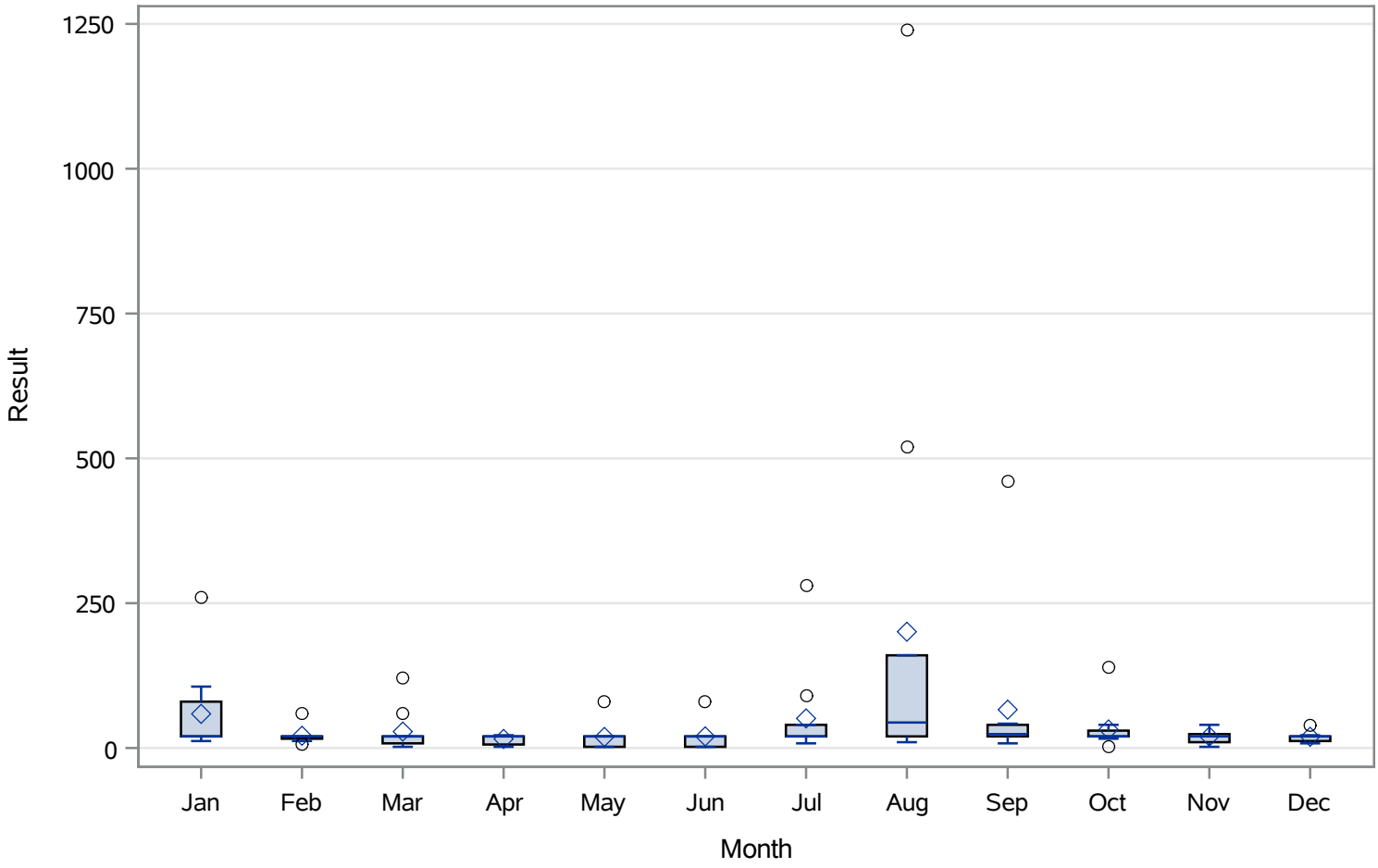
Little Manatee River
129
Fecal_Coliform (n/100ml)
Site ID = 129



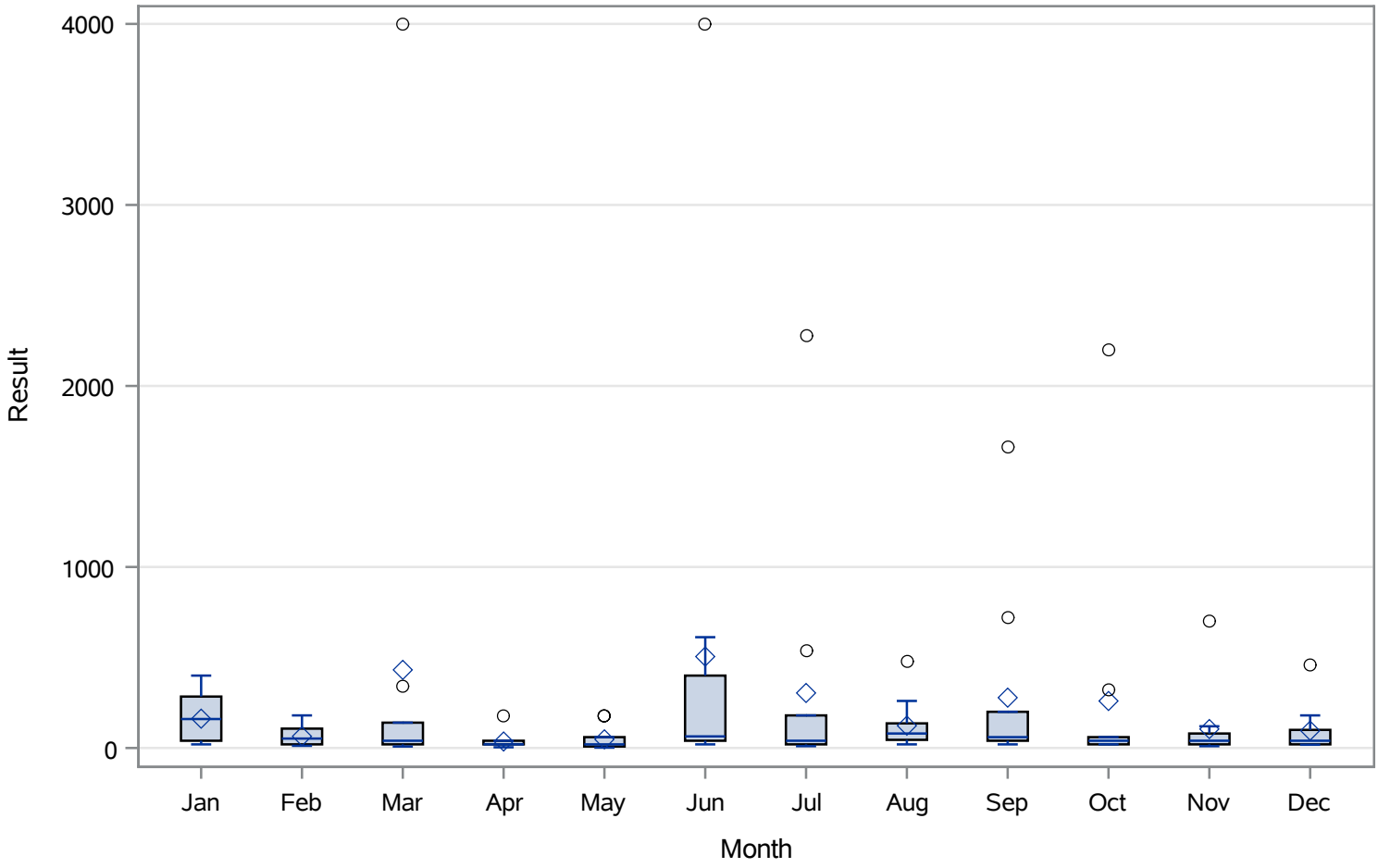
Little Manatee River
140
Fecal_Coliform (n/100ml)
Site ID = 140



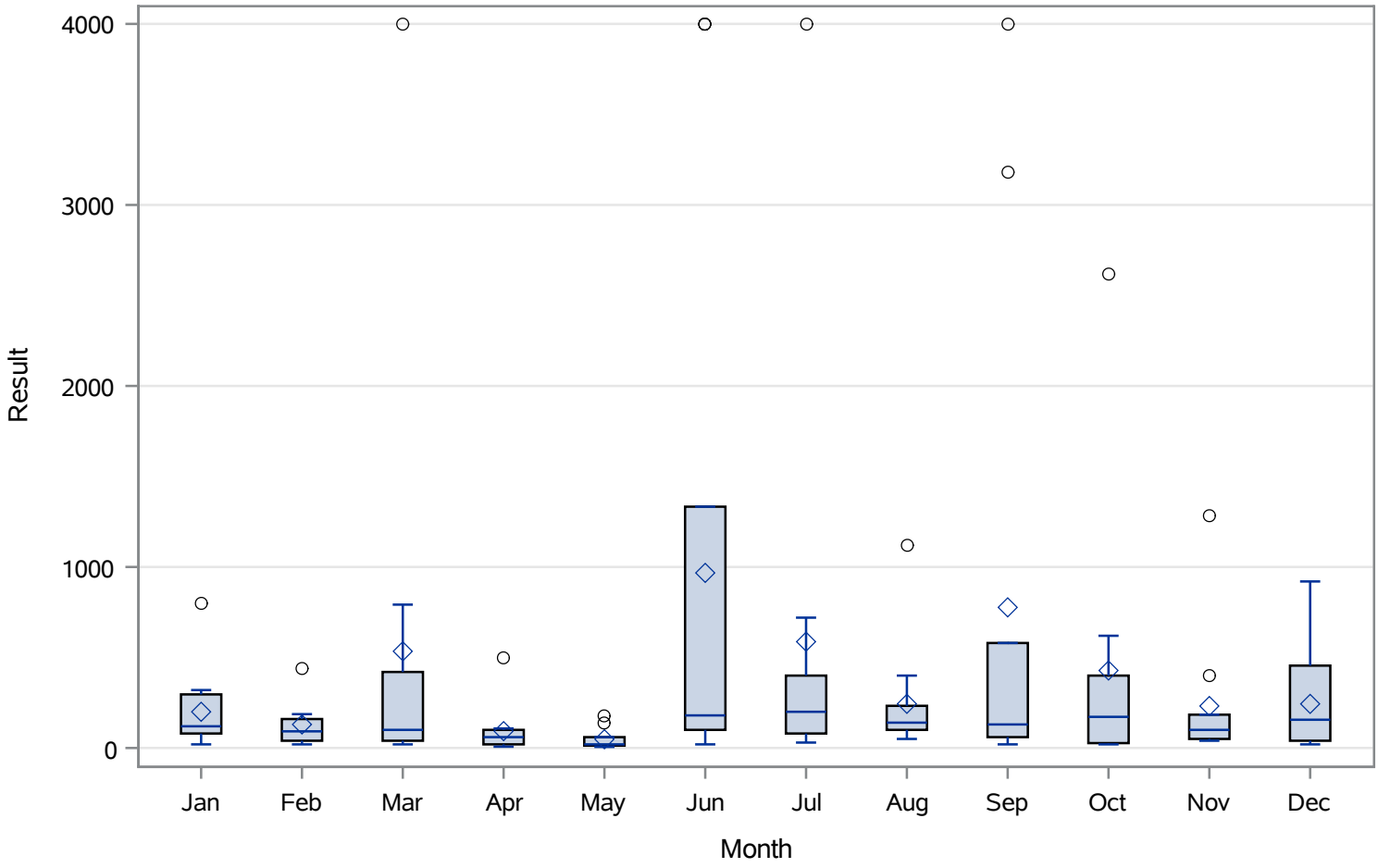
Little Manatee River
180
Fecal_Coliform (n/100ml)
Site ID = 180



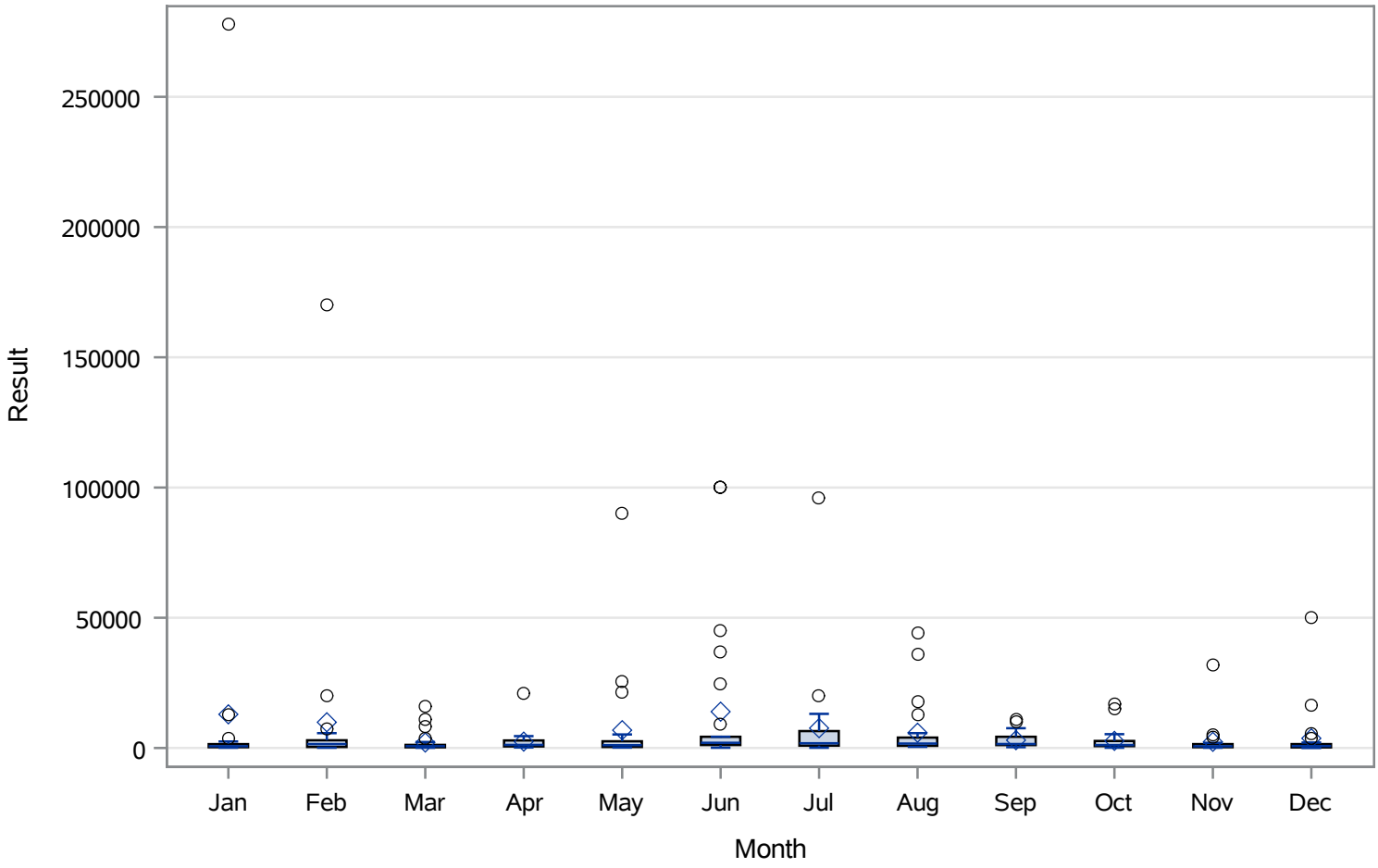
Little Manatee River
181
Fecal_Coliform (n/100ml)
Site ID = 181



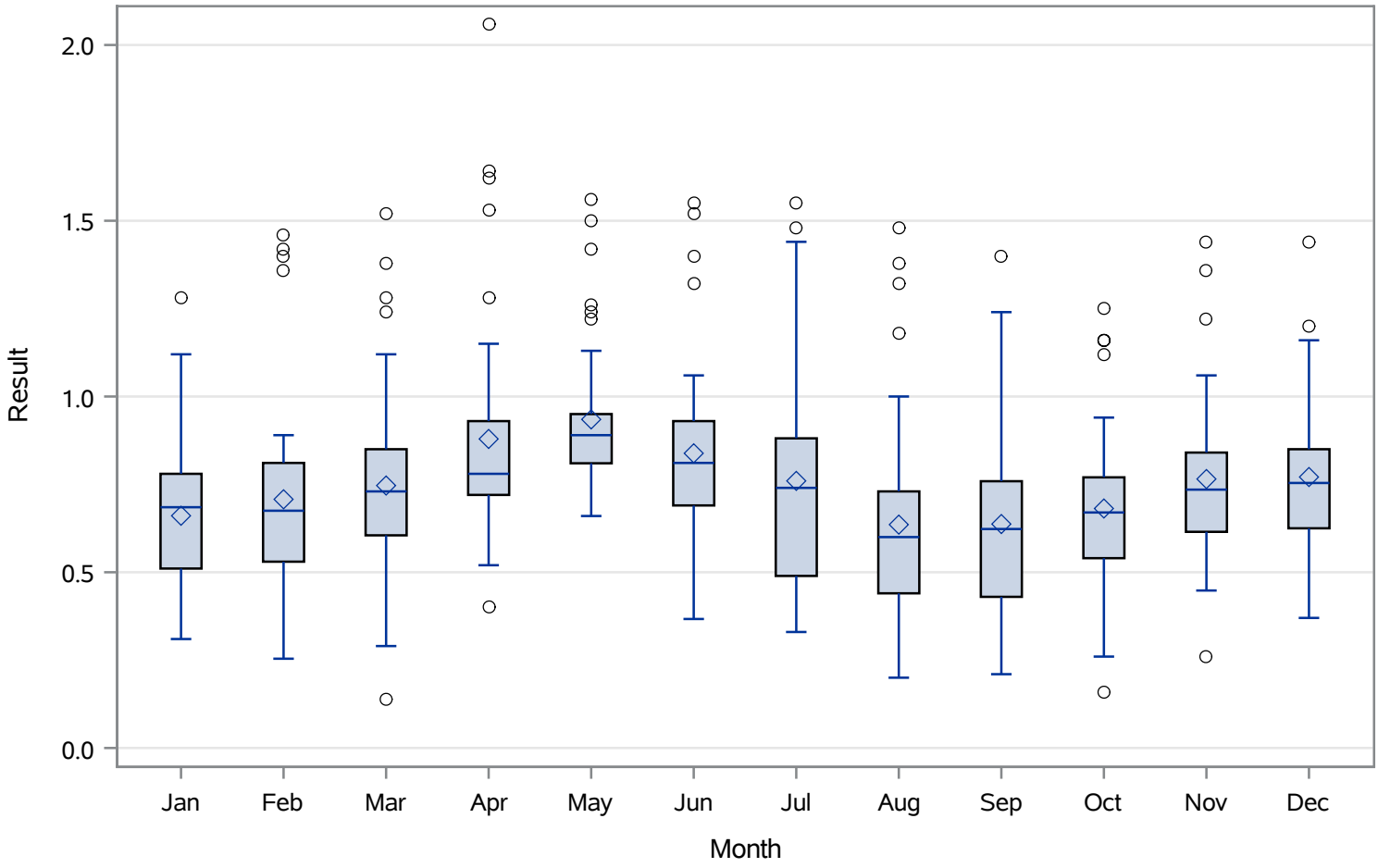
Little Manatee River
182
Fecal_Coliform (n/100ml)
Site ID = 182



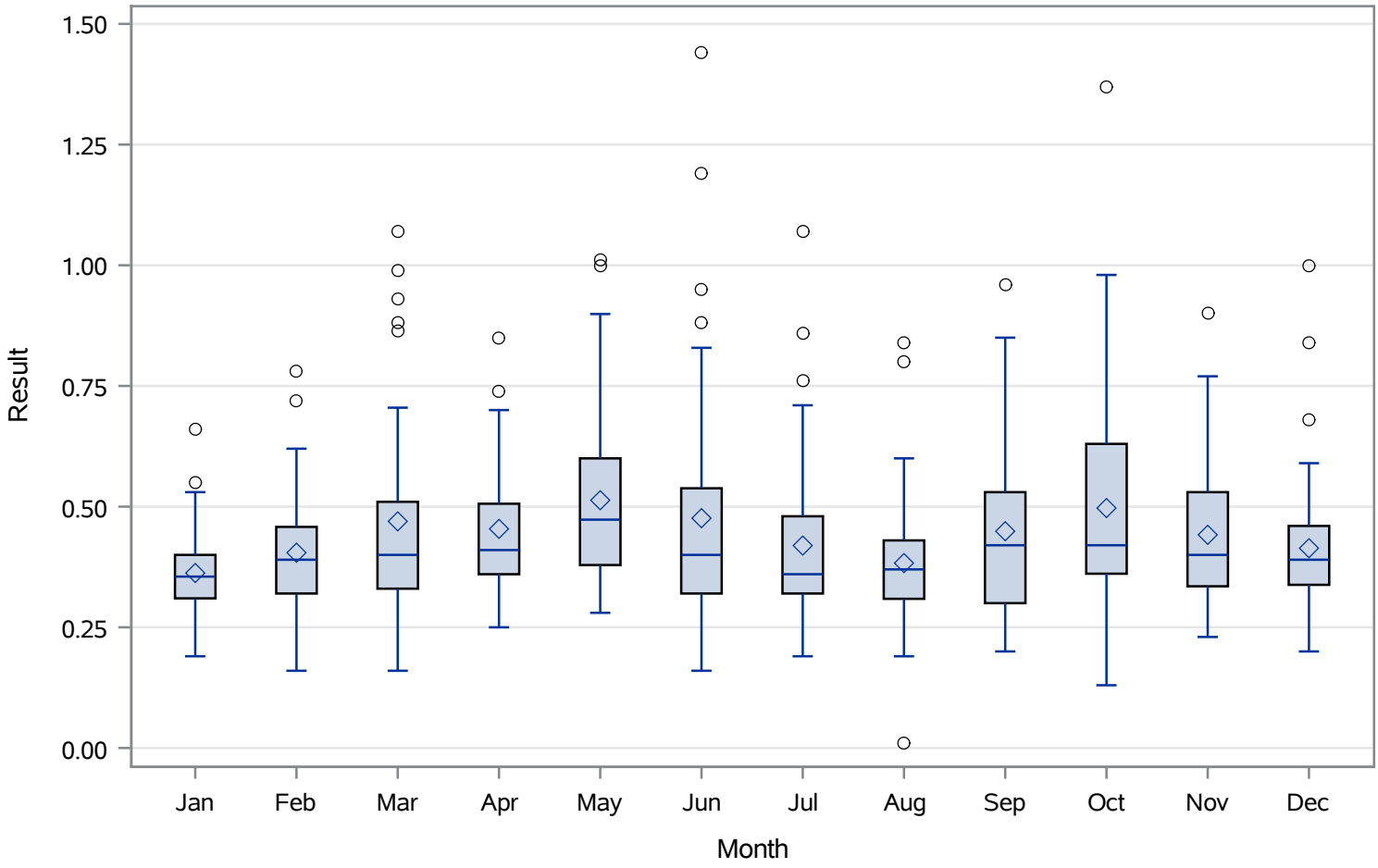
Little Manatee River
113
Fecal_Strep (n/100ml)
Site ID = 113



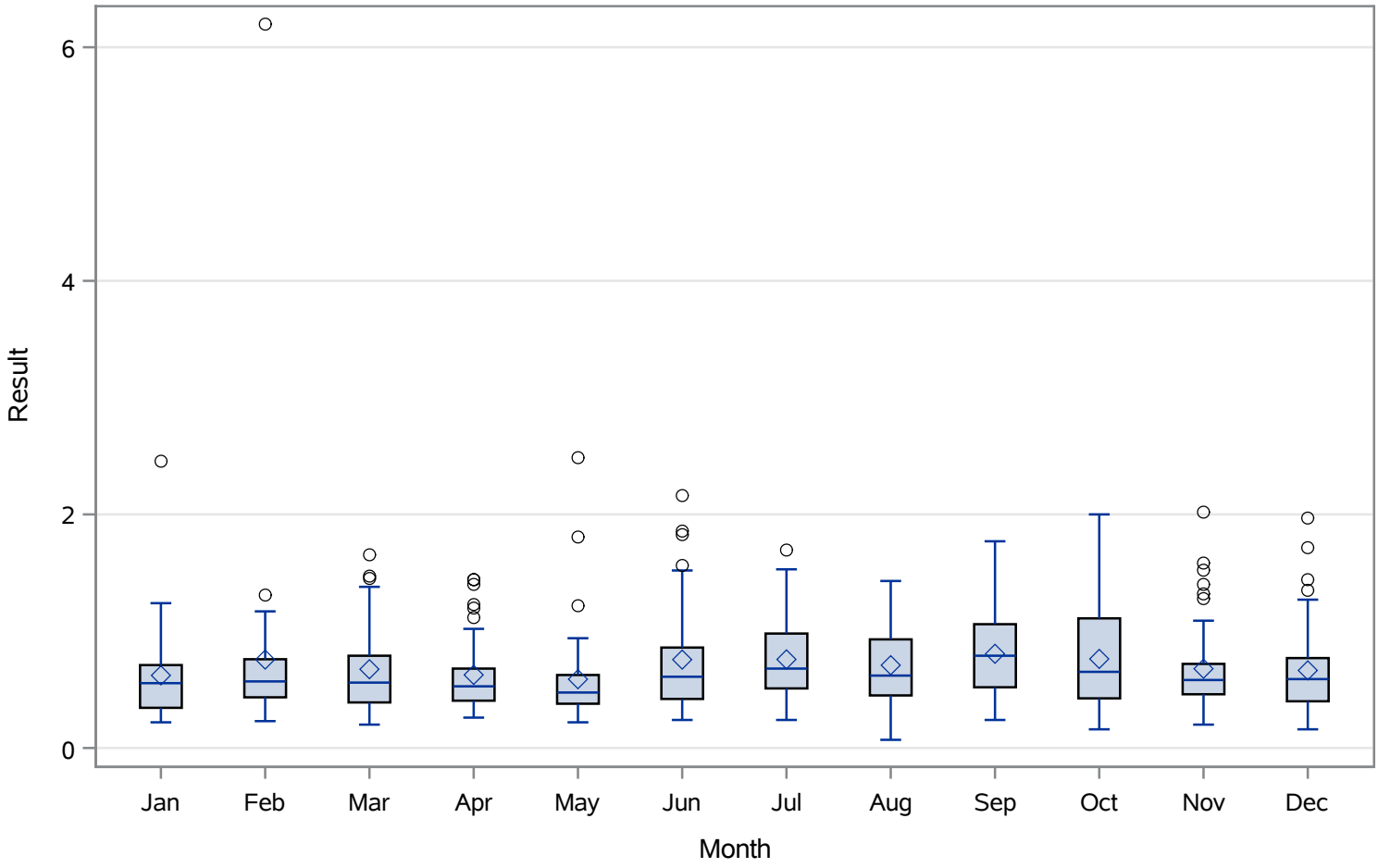
Little Manatee River
112
Fluoride (mg/l)
Site ID = 112



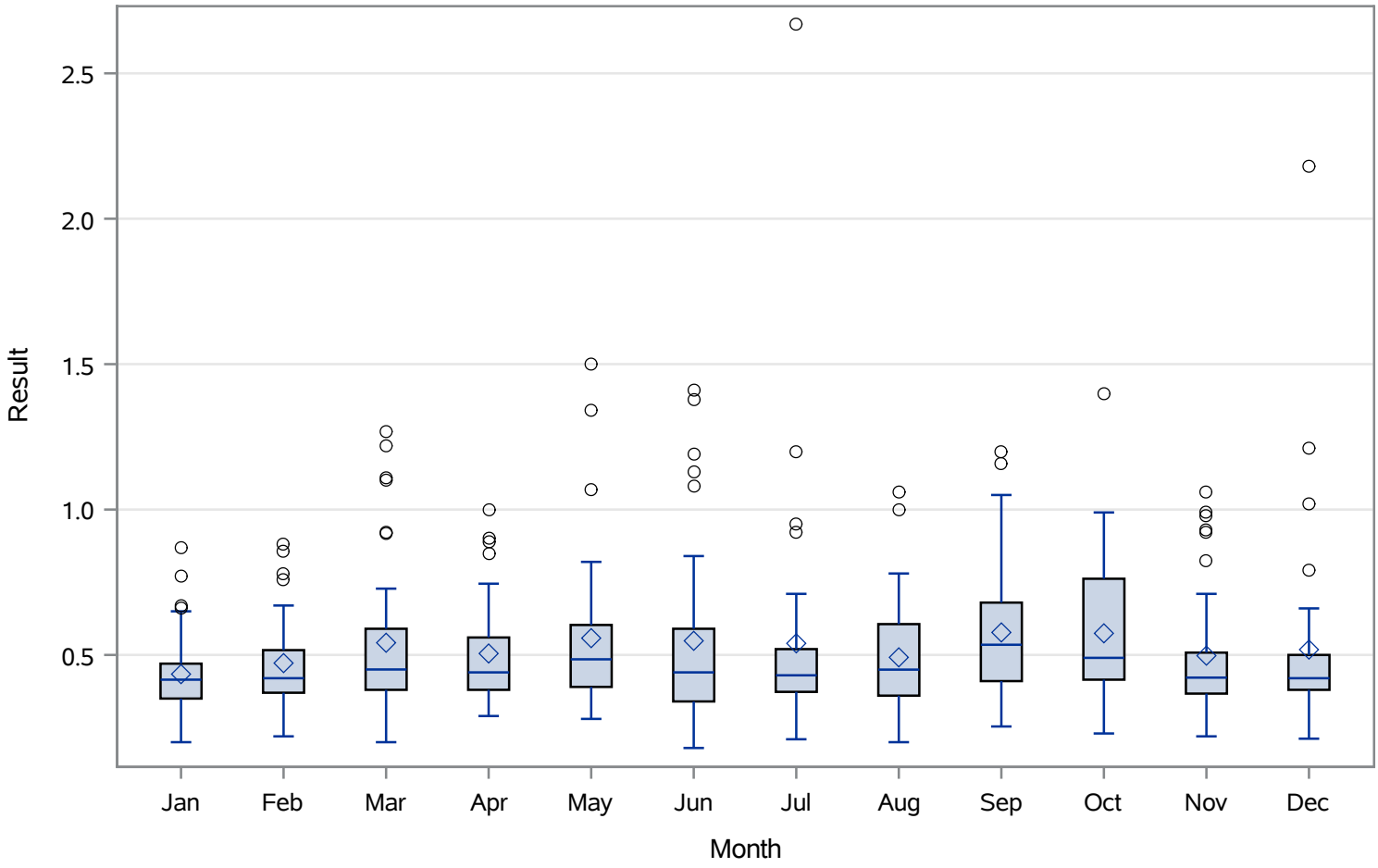
Little Manatee River
113
Fluoride (mg/l)
Site ID = 113



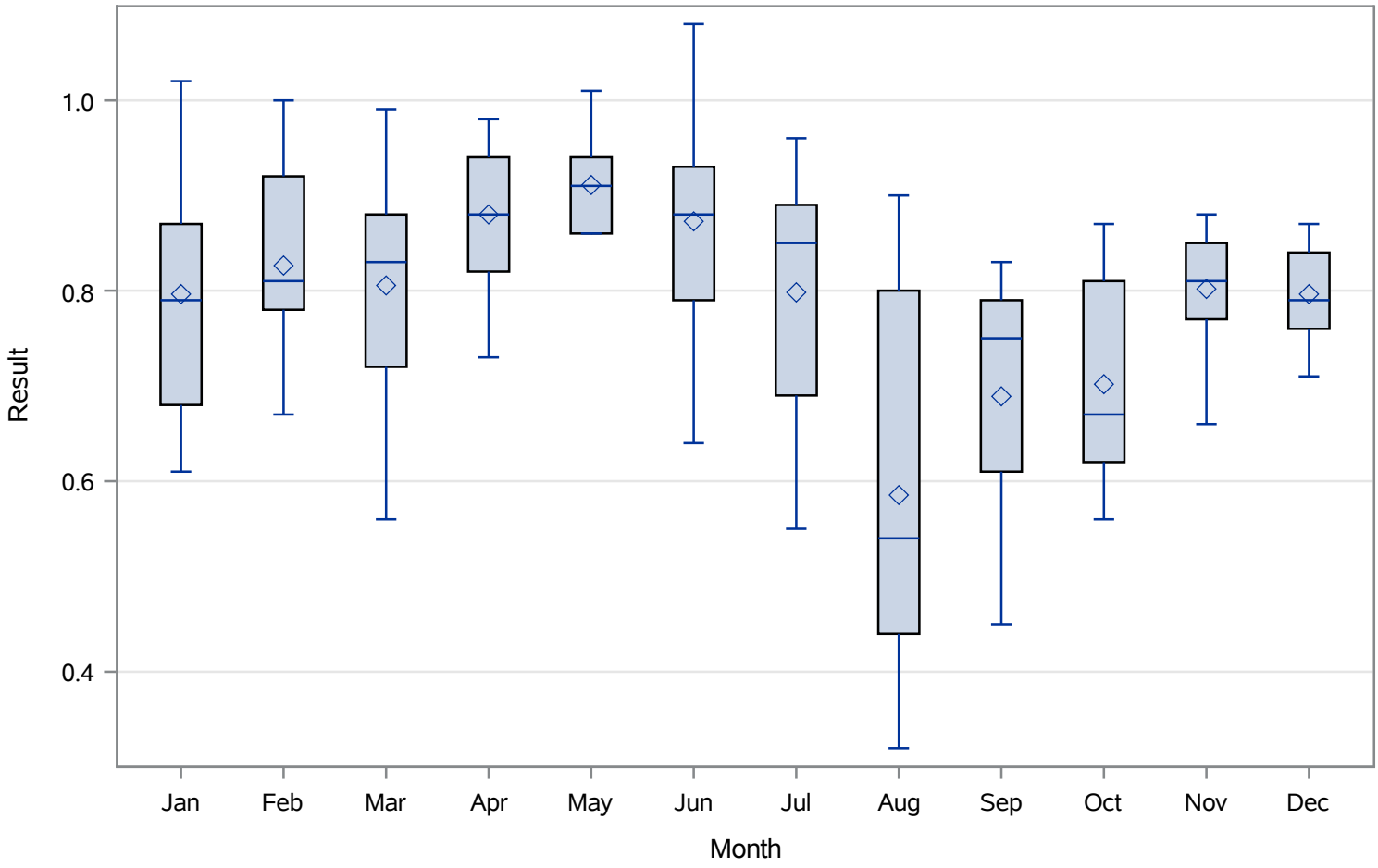
Little Manatee River
129
Fluoride (mg/l)
Site ID = 129



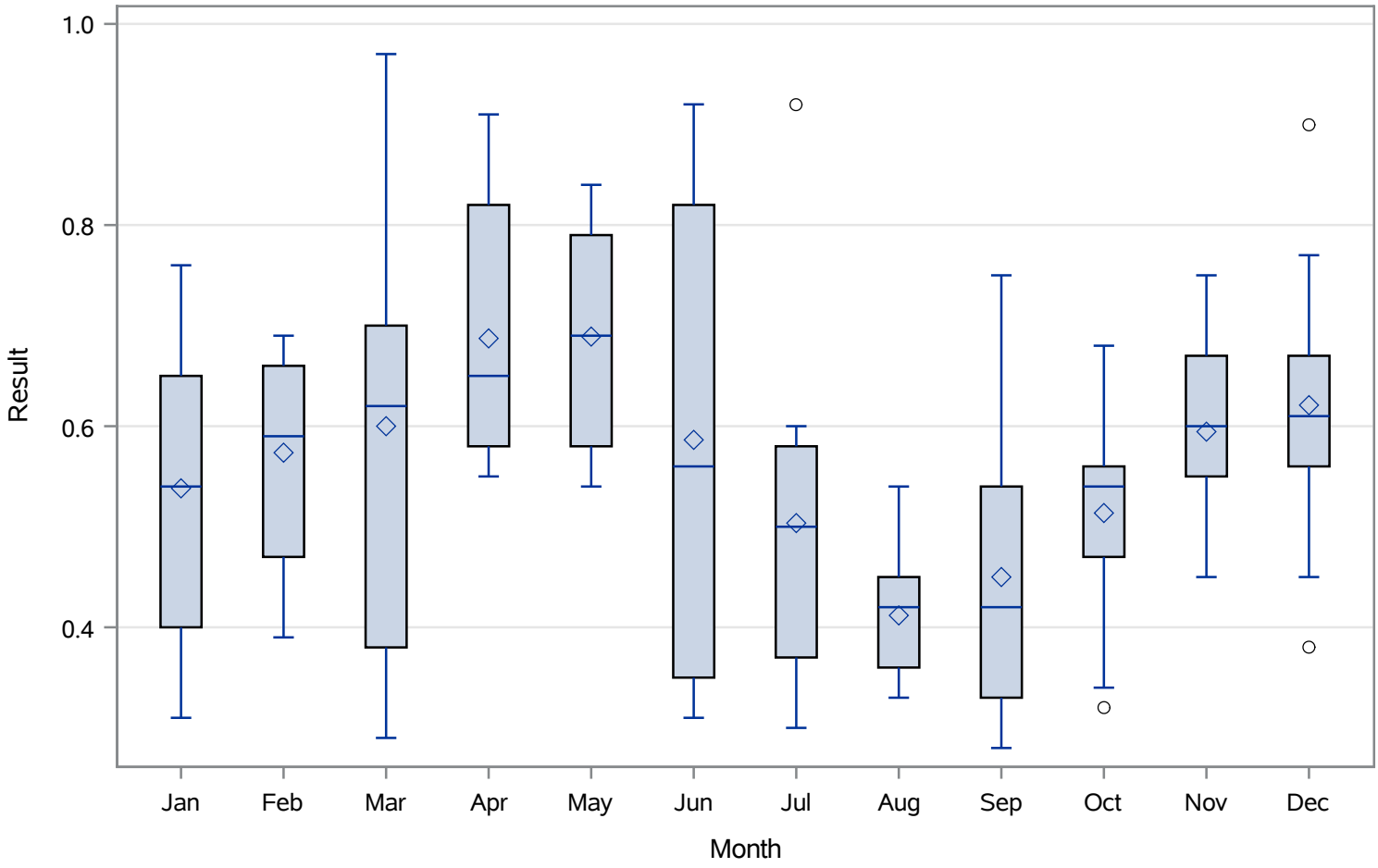
Little Manatee River
140
Fluoride (mg/l)
Site ID = 140



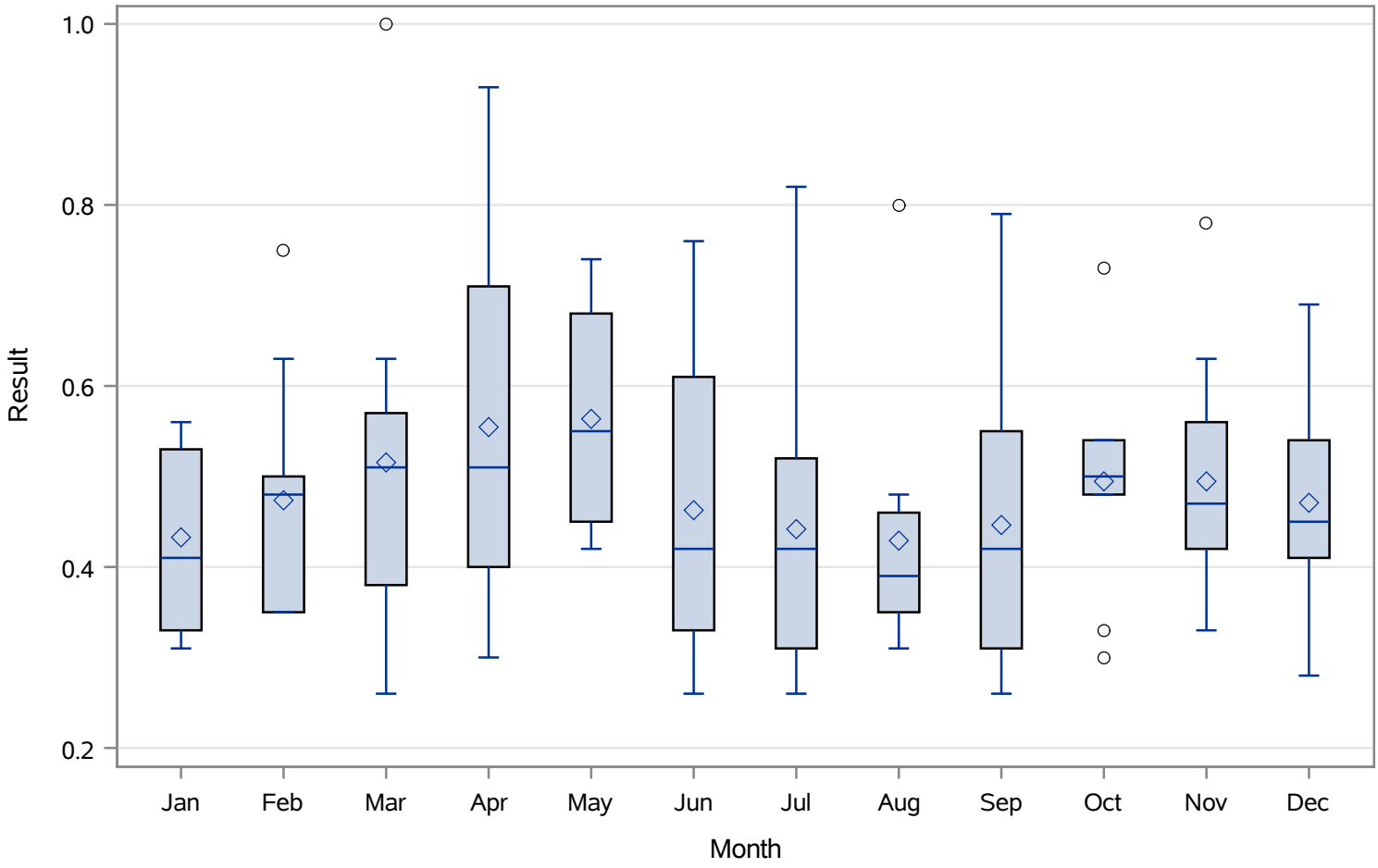
Little Manatee River
180
Fluoride (mg/l)
Site ID = 180



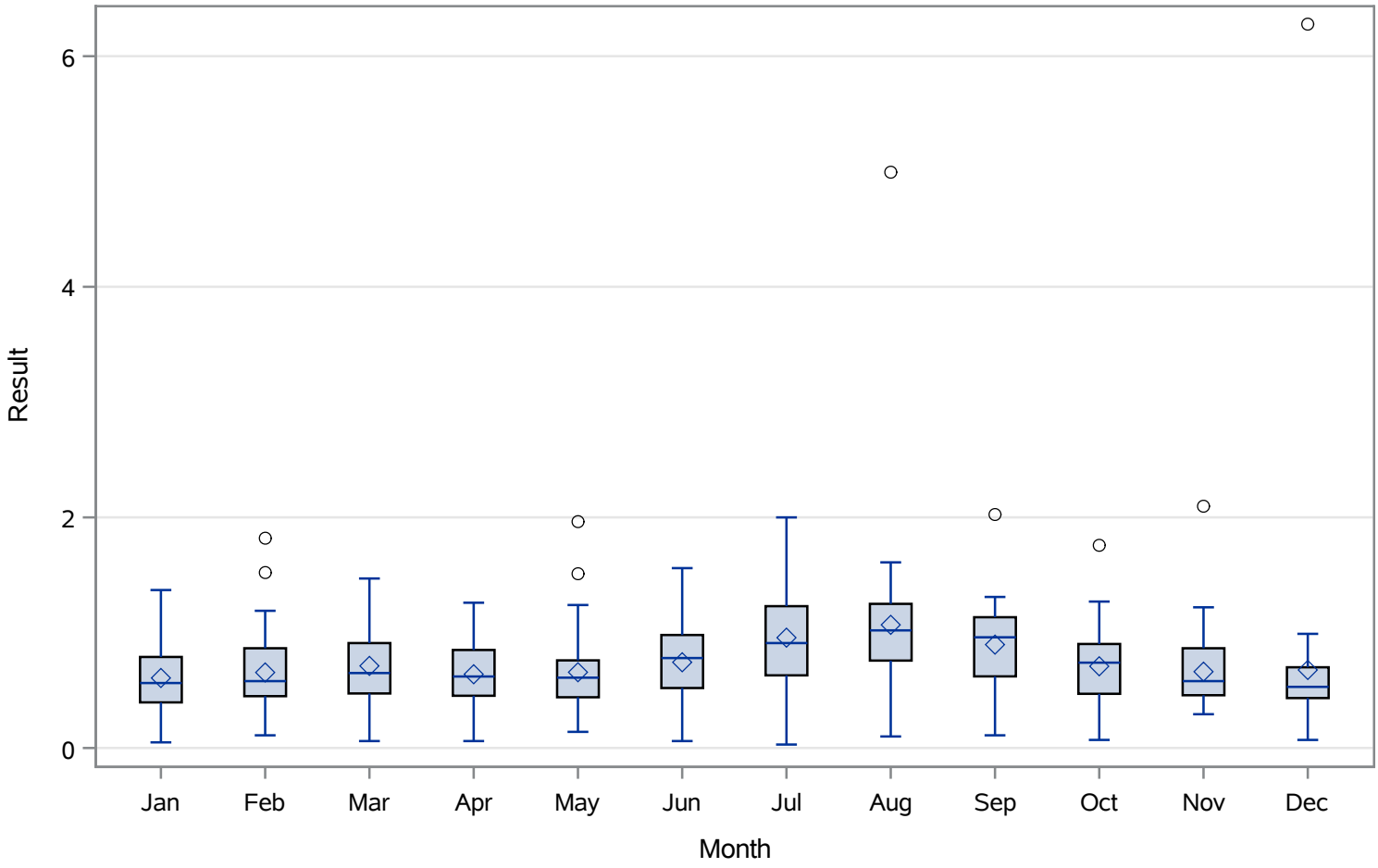
Little Manatee River
181
Fluoride (mg/l)
Site ID = 181



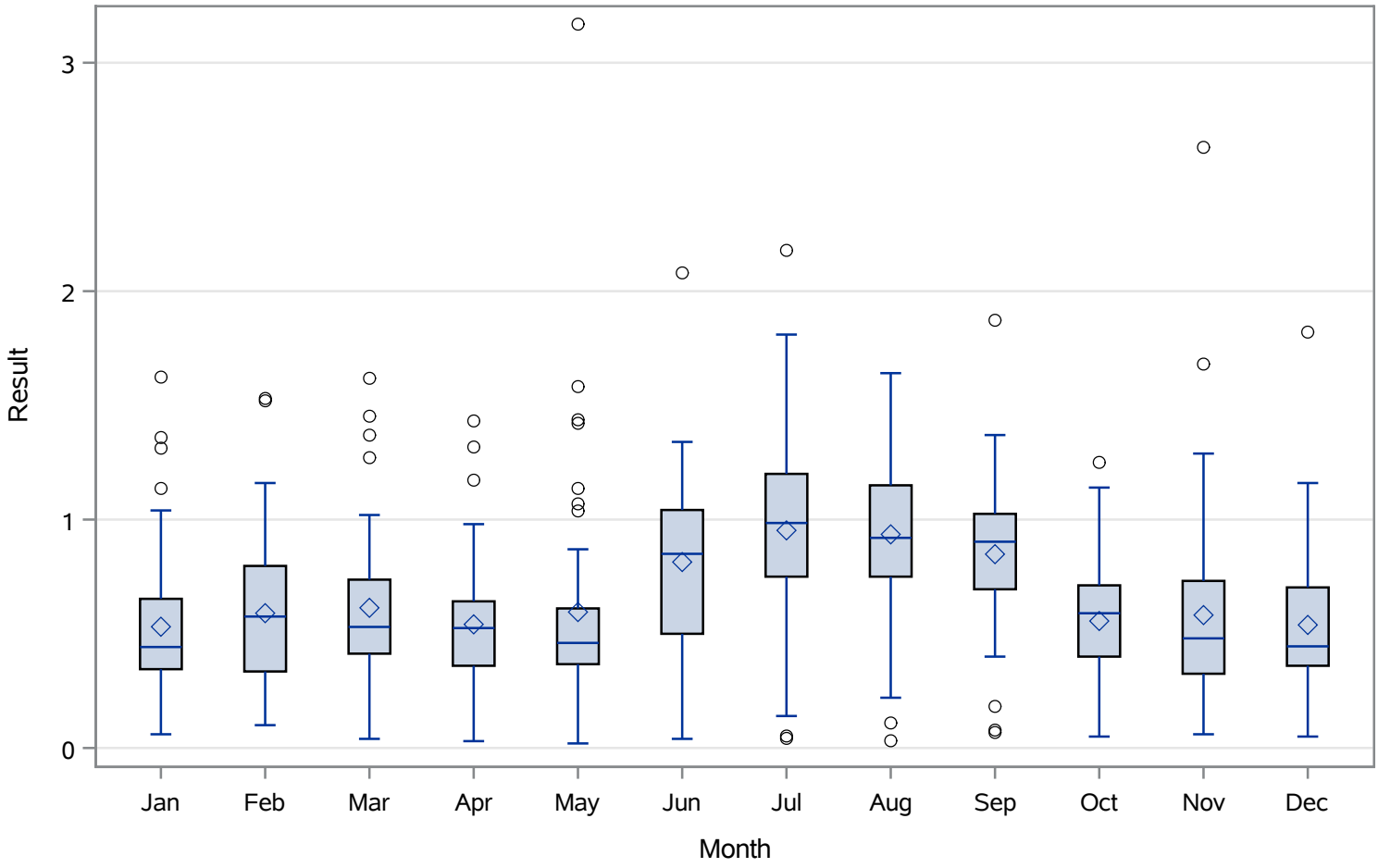
Little Manatee River
182
Fluoride (mg/l)
Site ID = 182



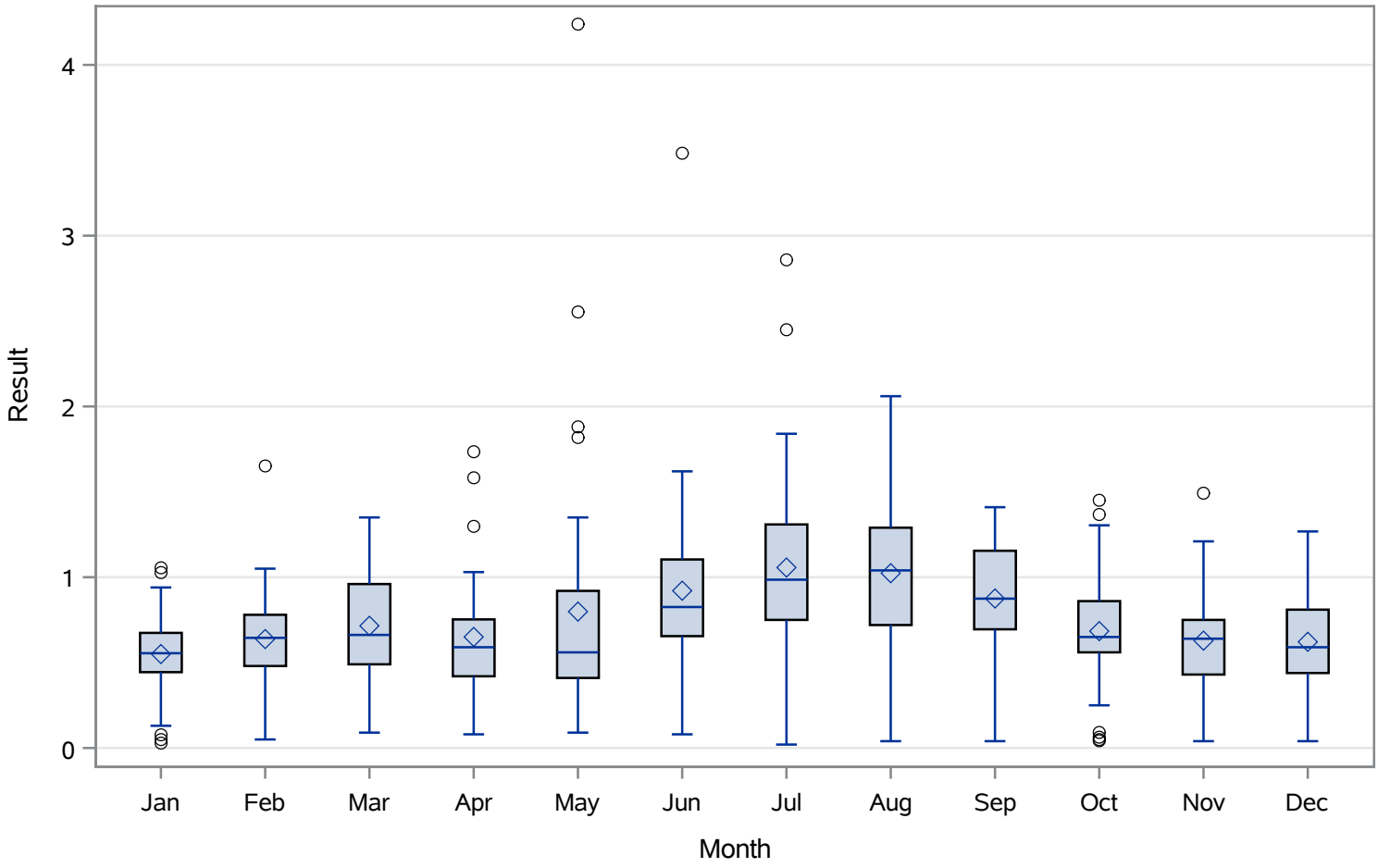
Little Manatee River
112
Kjeldahl Nitrogen (mg/l)
Site ID = 112



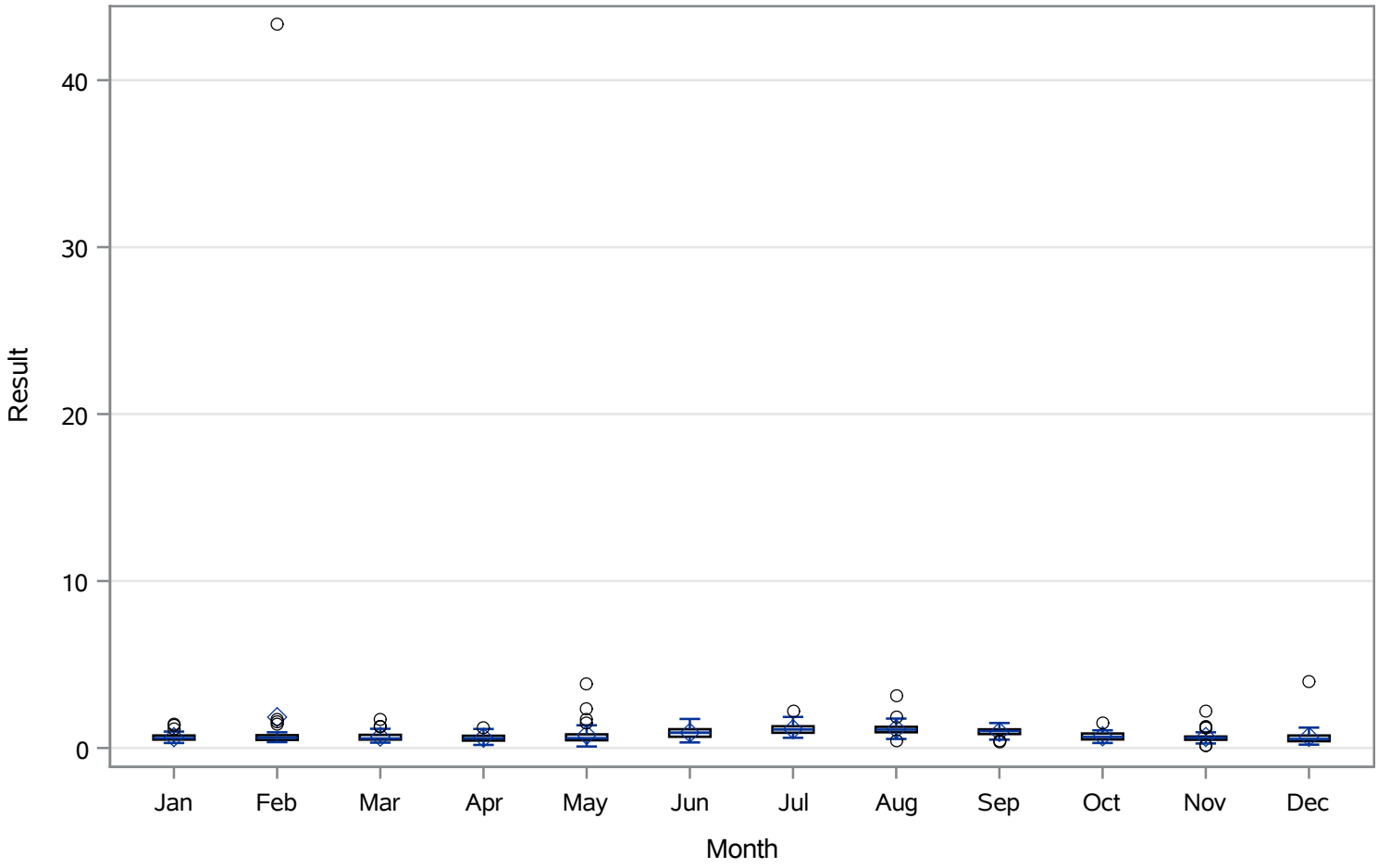
Little Manatee River
113
Kjeldahl Nitrogen (mg/l)
Site ID = 113



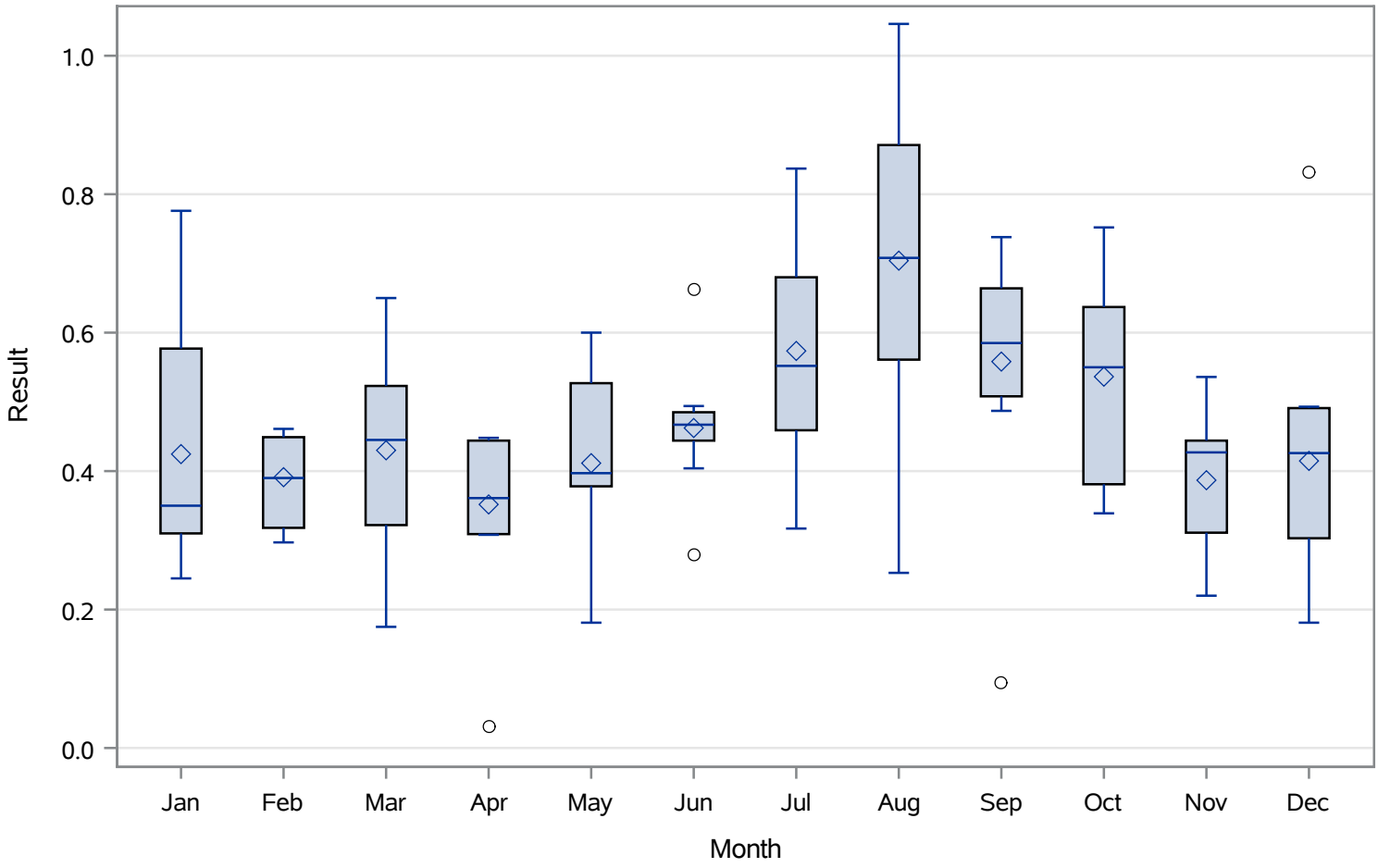
Little Manatee River
129
Kjeldahl Nitrogen (mg/l)
Site ID = 129



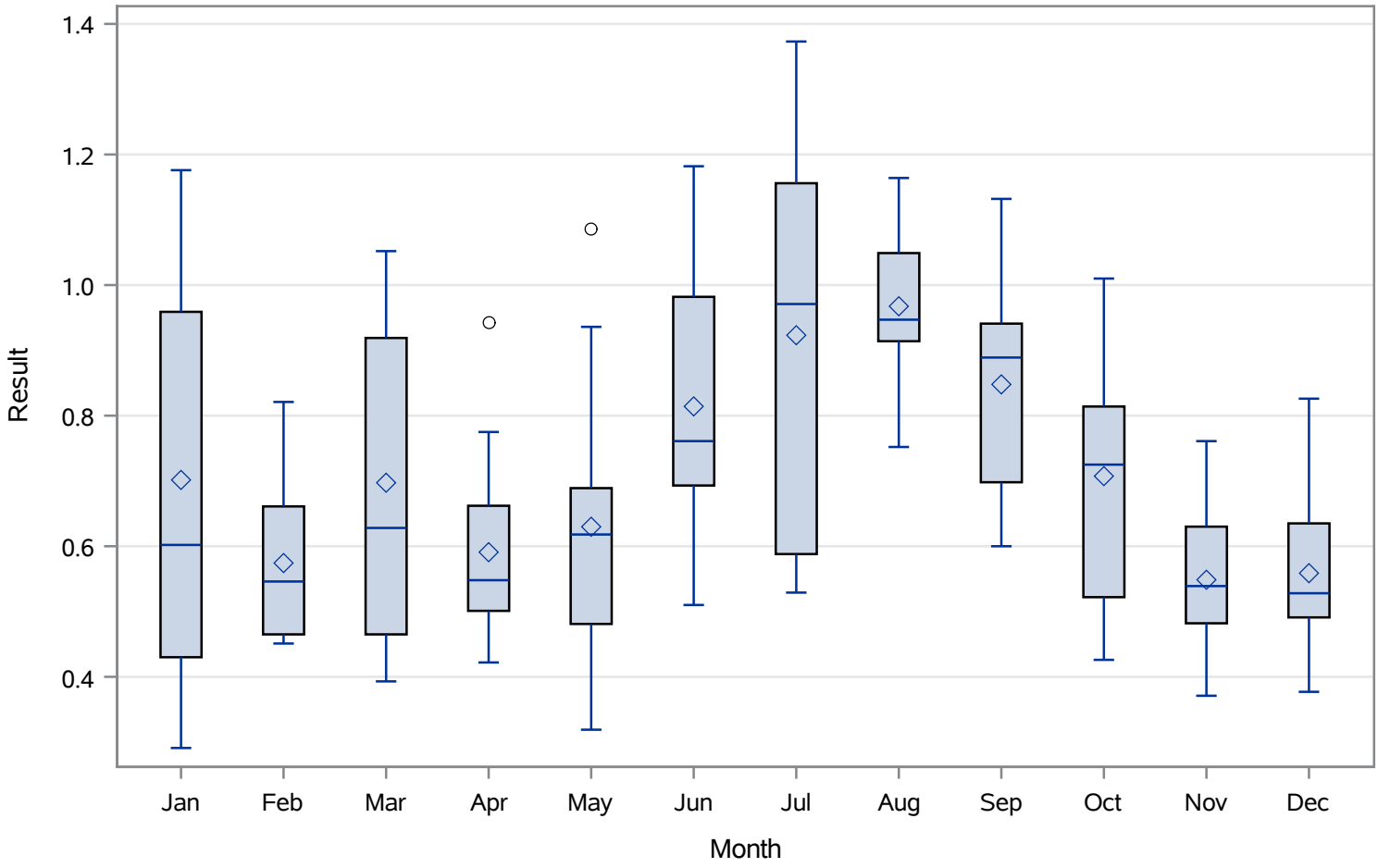
Little Manatee River
140
Kjeldahl Nitrogen (mg/l)
Site ID = 140



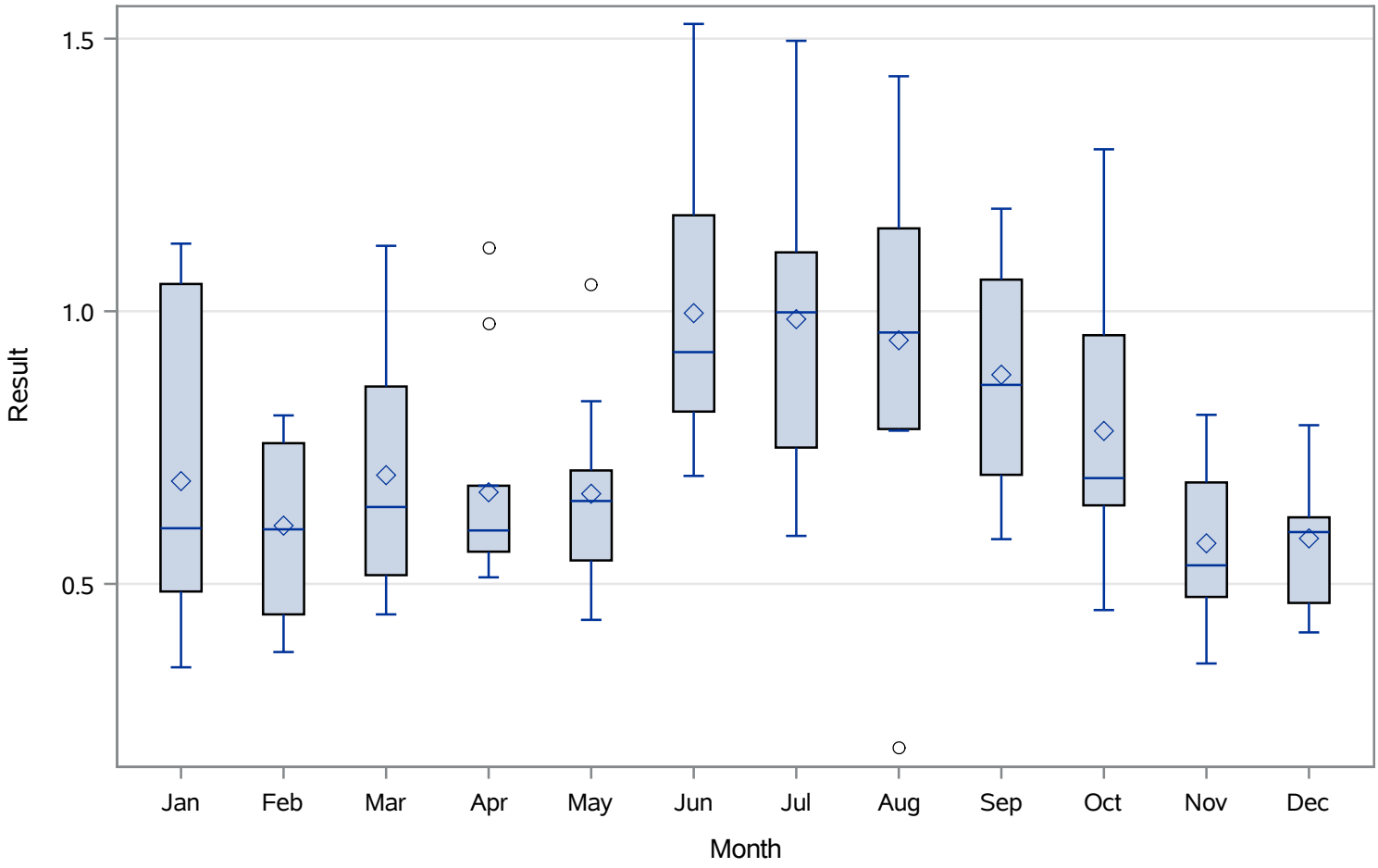
Little Manatee River
180
Kjeldahl Nitrogen (mg/l)
Site ID = 180



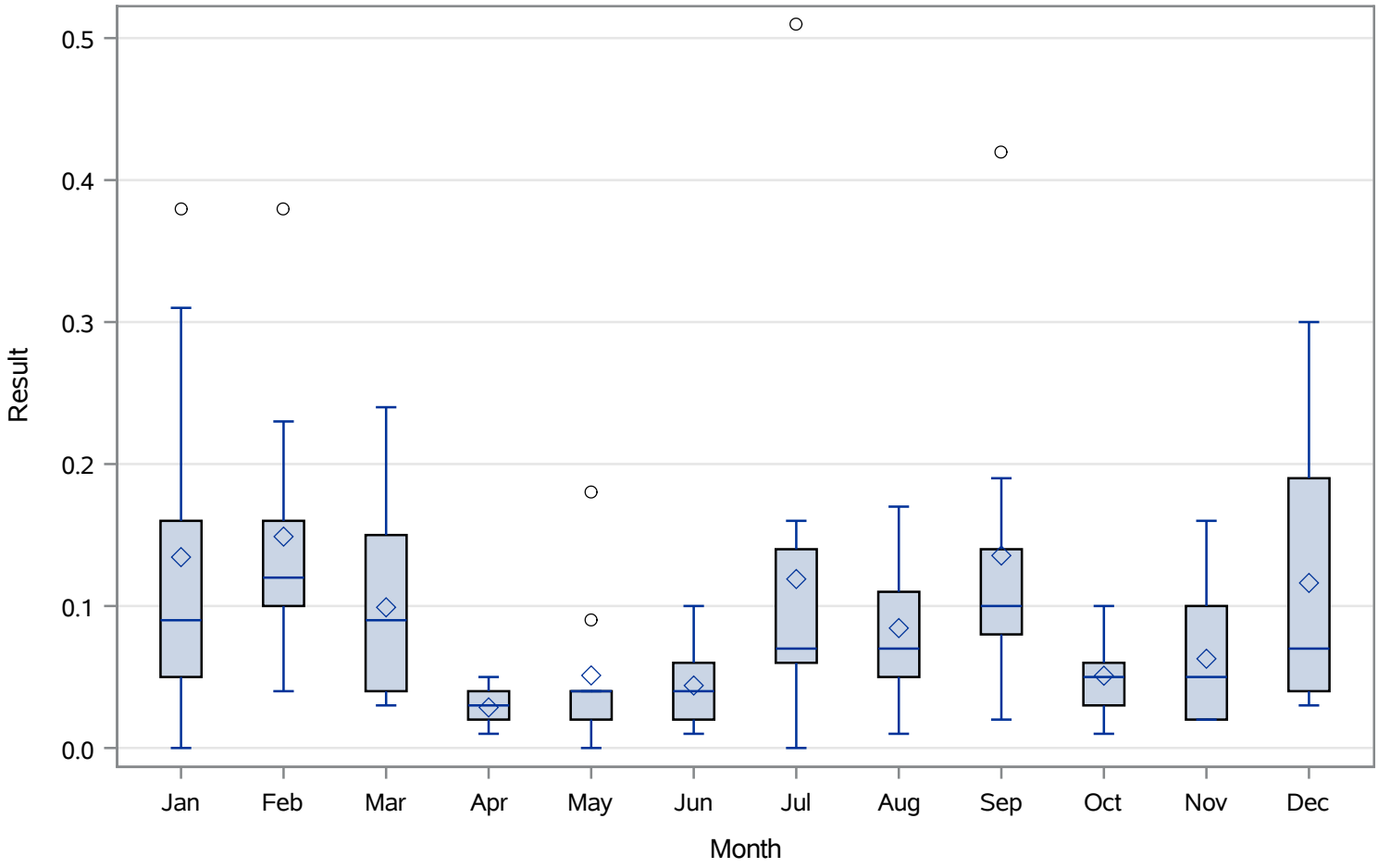
Little Manatee River
181
Kjeldahl Nitrogen (mg/l)
Site ID = 181



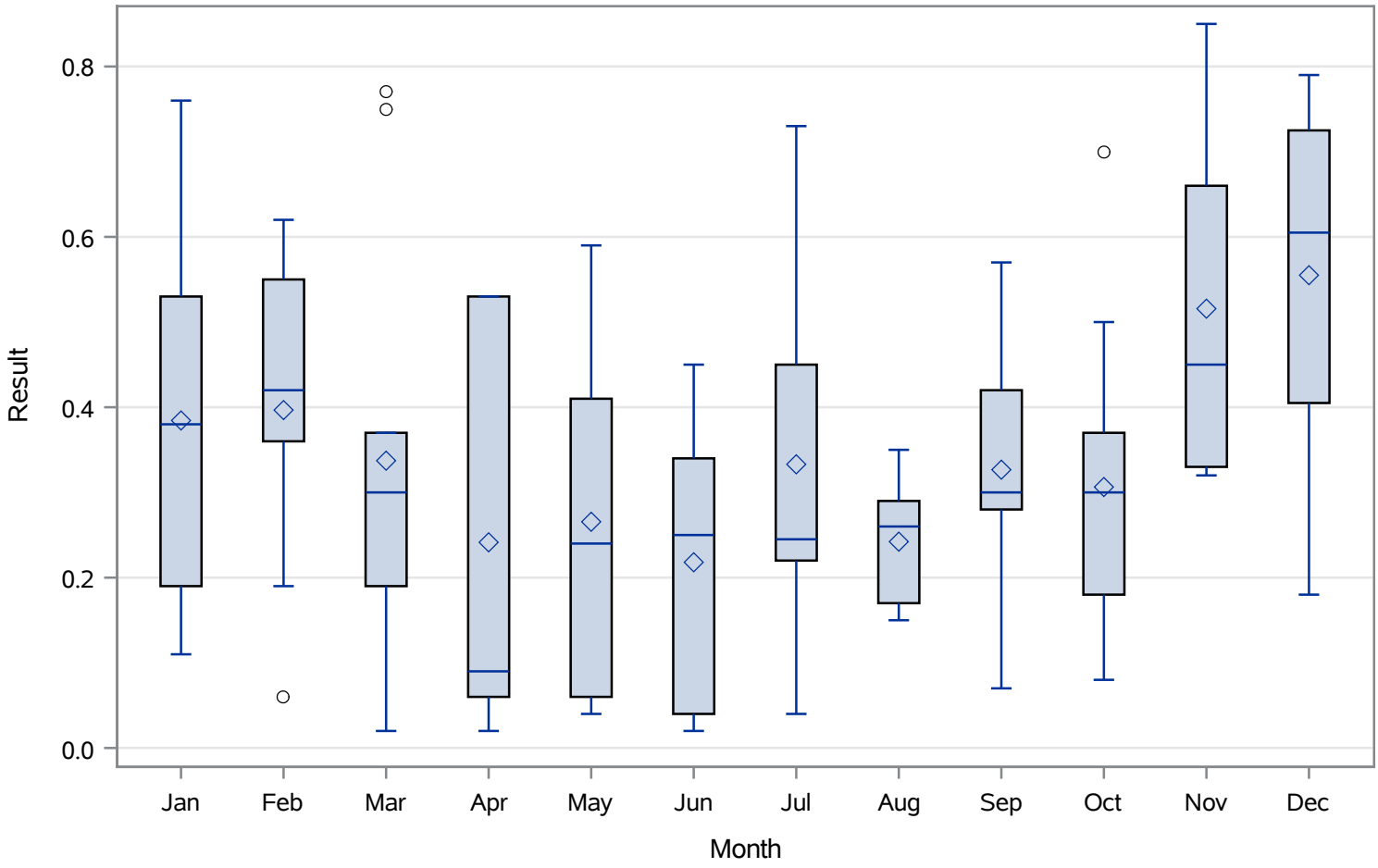
Little Manatee River
182
Kjeldahl Nitrogen (mg/l)
Site ID = 182



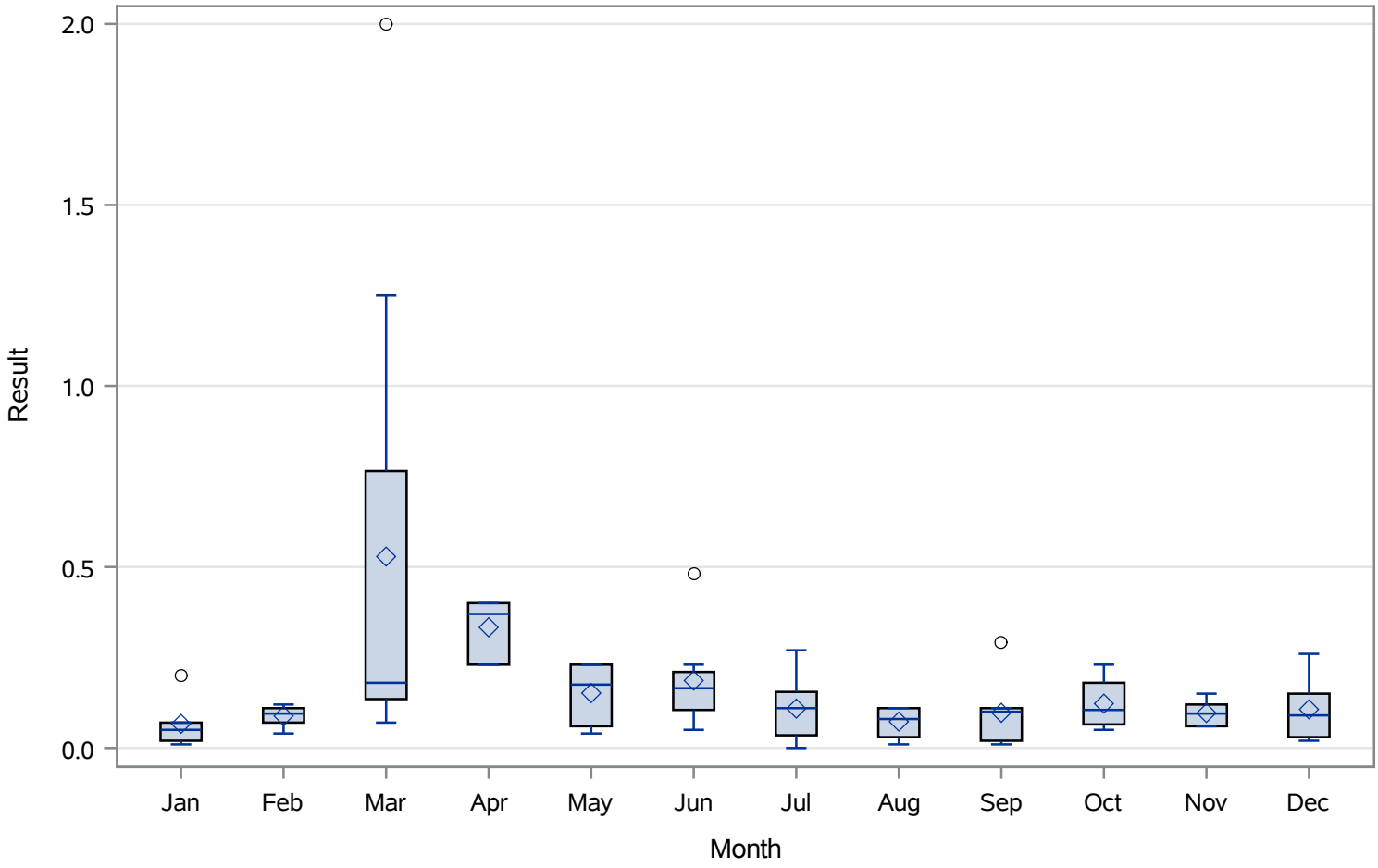
Little Manatee River
112
Nitrates
Site ID = 112



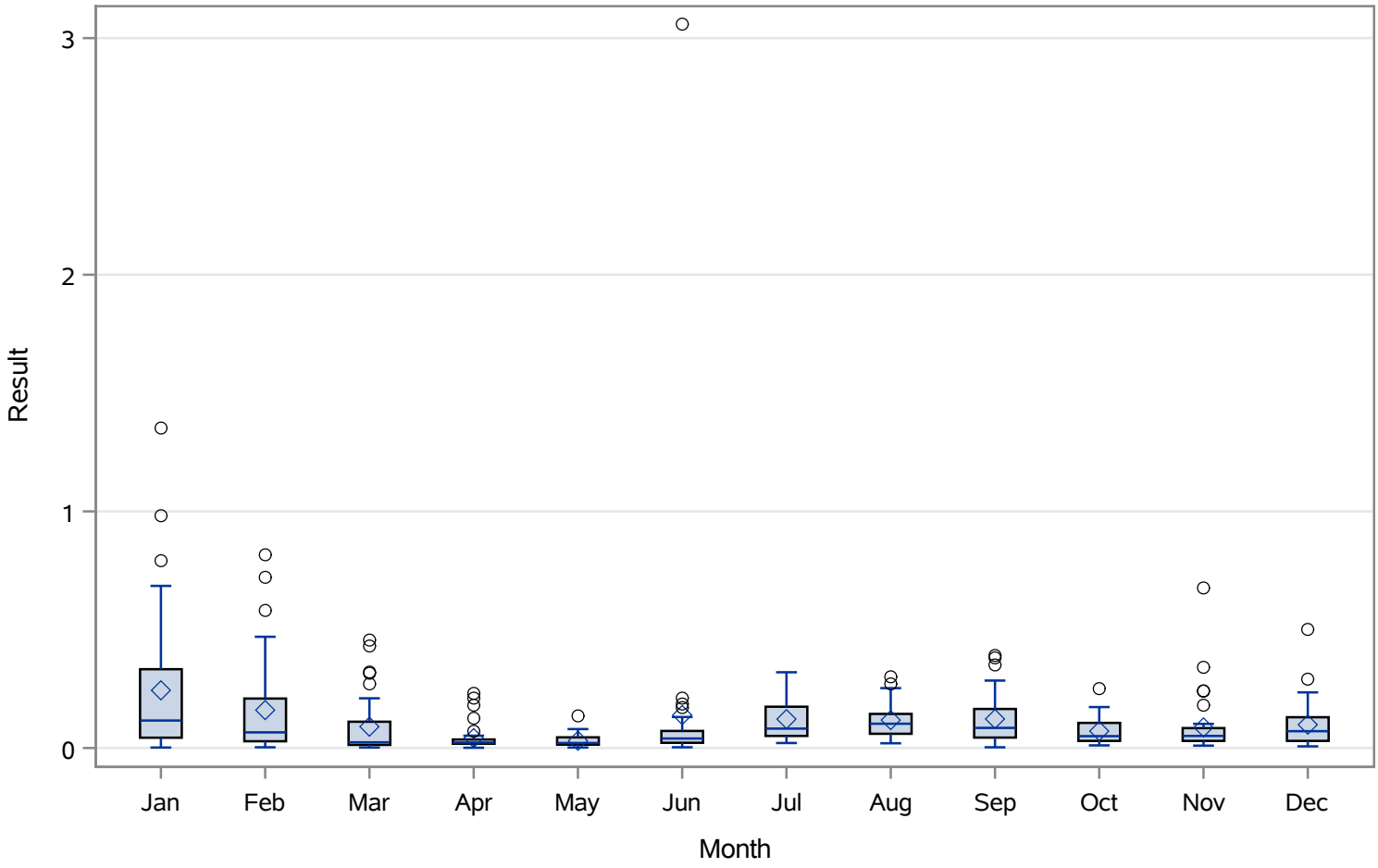
Little Manatee River
113
Nitrates
Site ID = 113



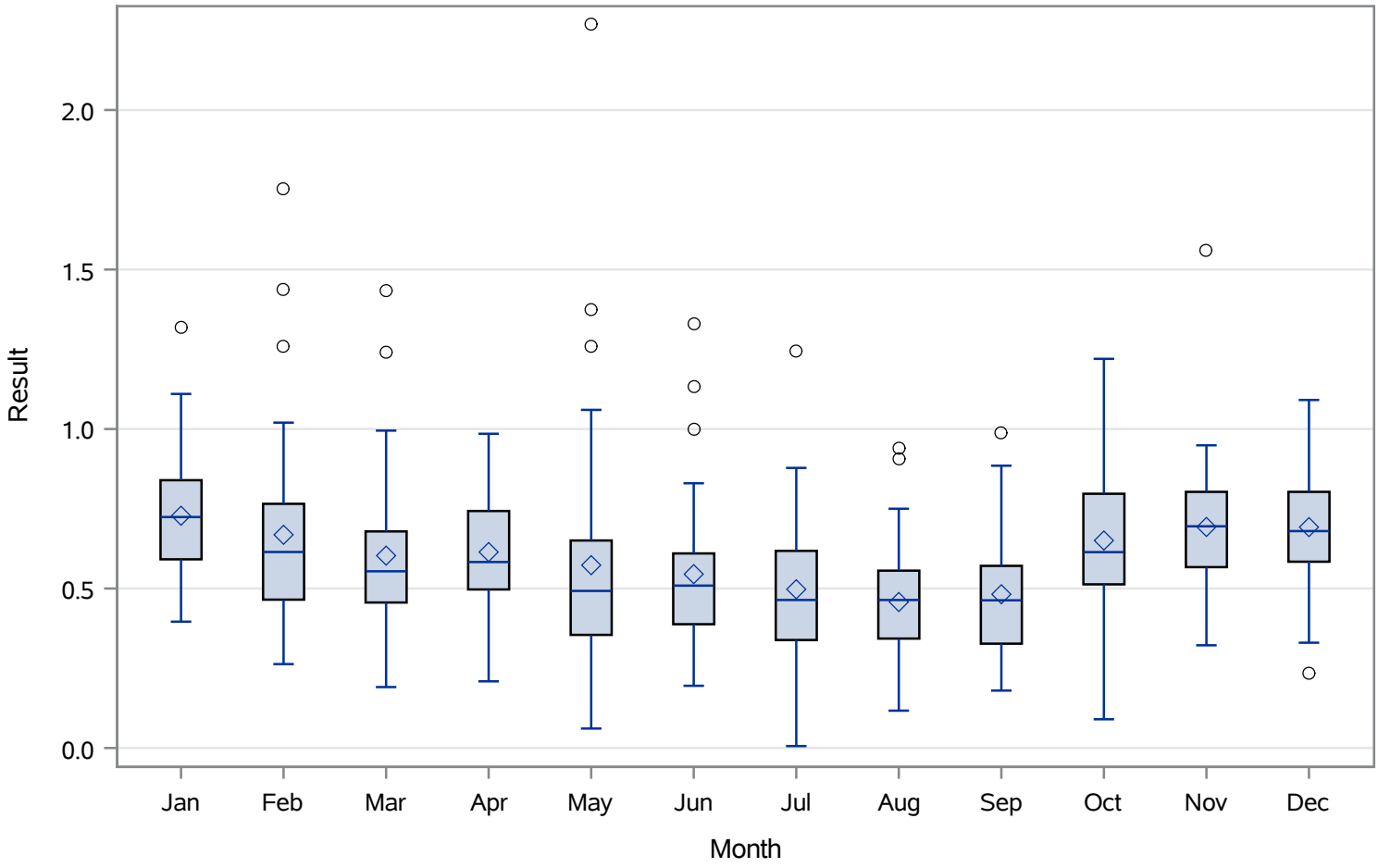
Little Manatee River
129
Nitrates
Site ID = 129



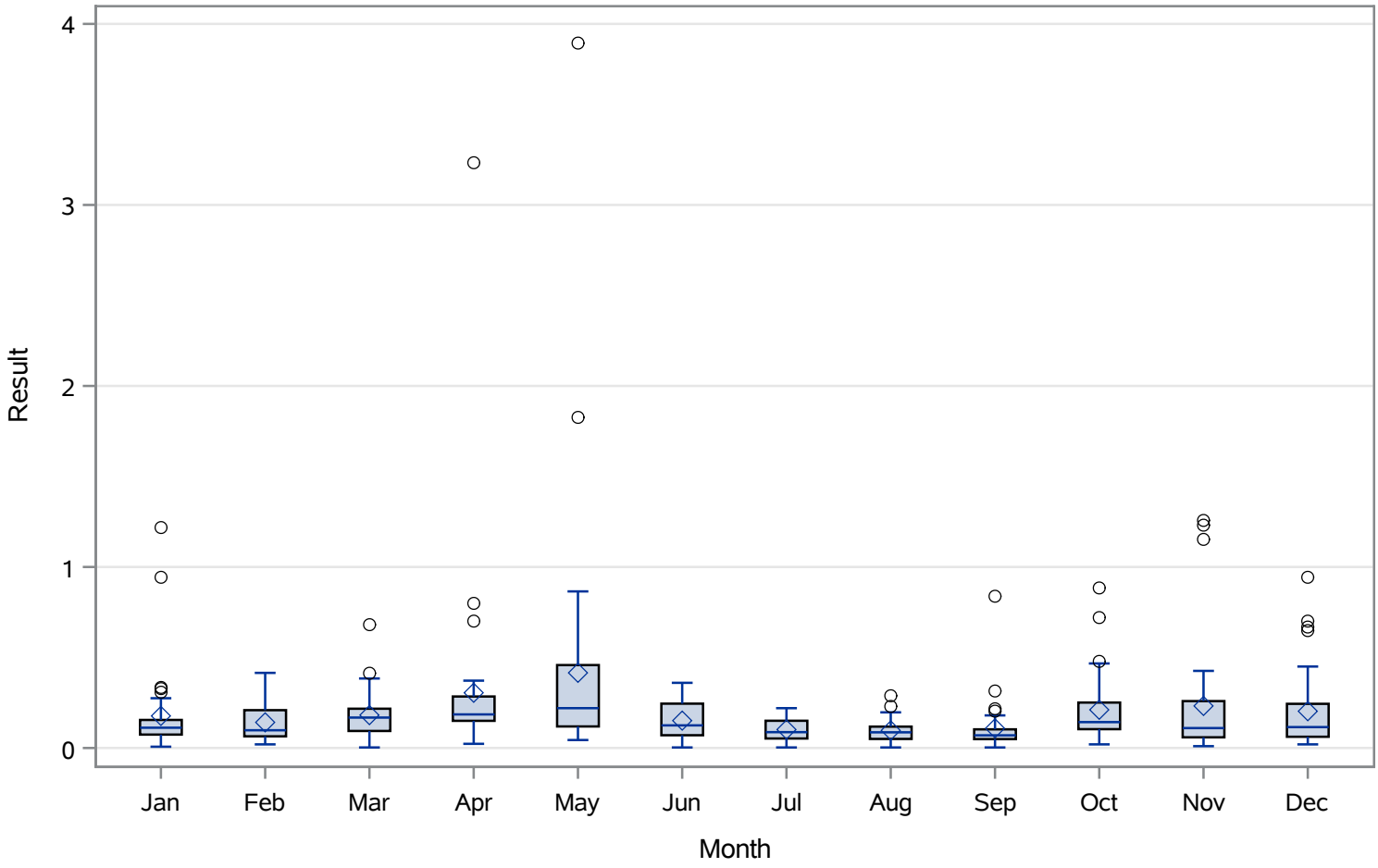
Little Manatee River
112
Nitrates/Nitrites (mg/l)
Site ID = 112



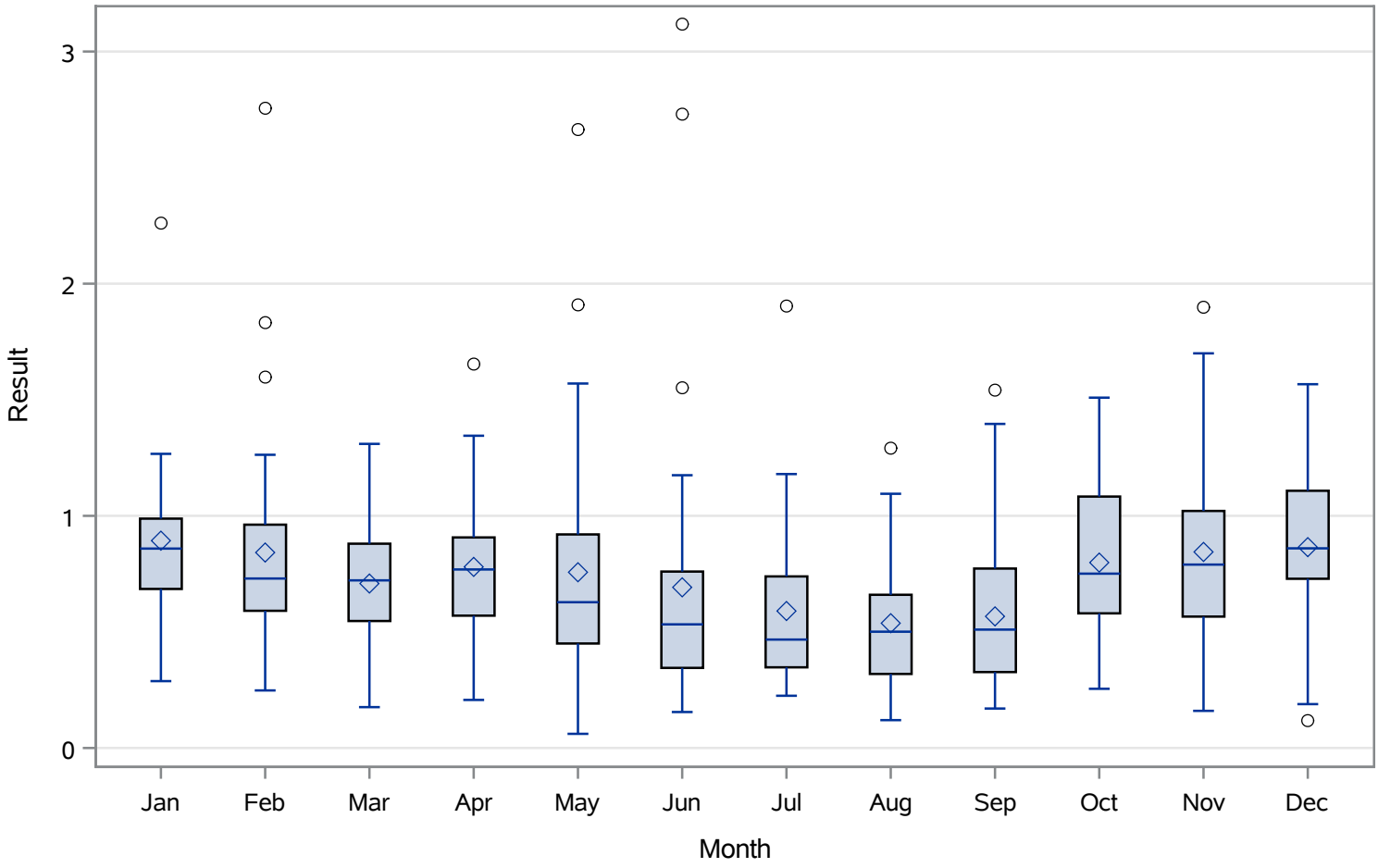
Little Manatee River
113
Nitrates/Nitrites (mg/l)
Site ID = 113



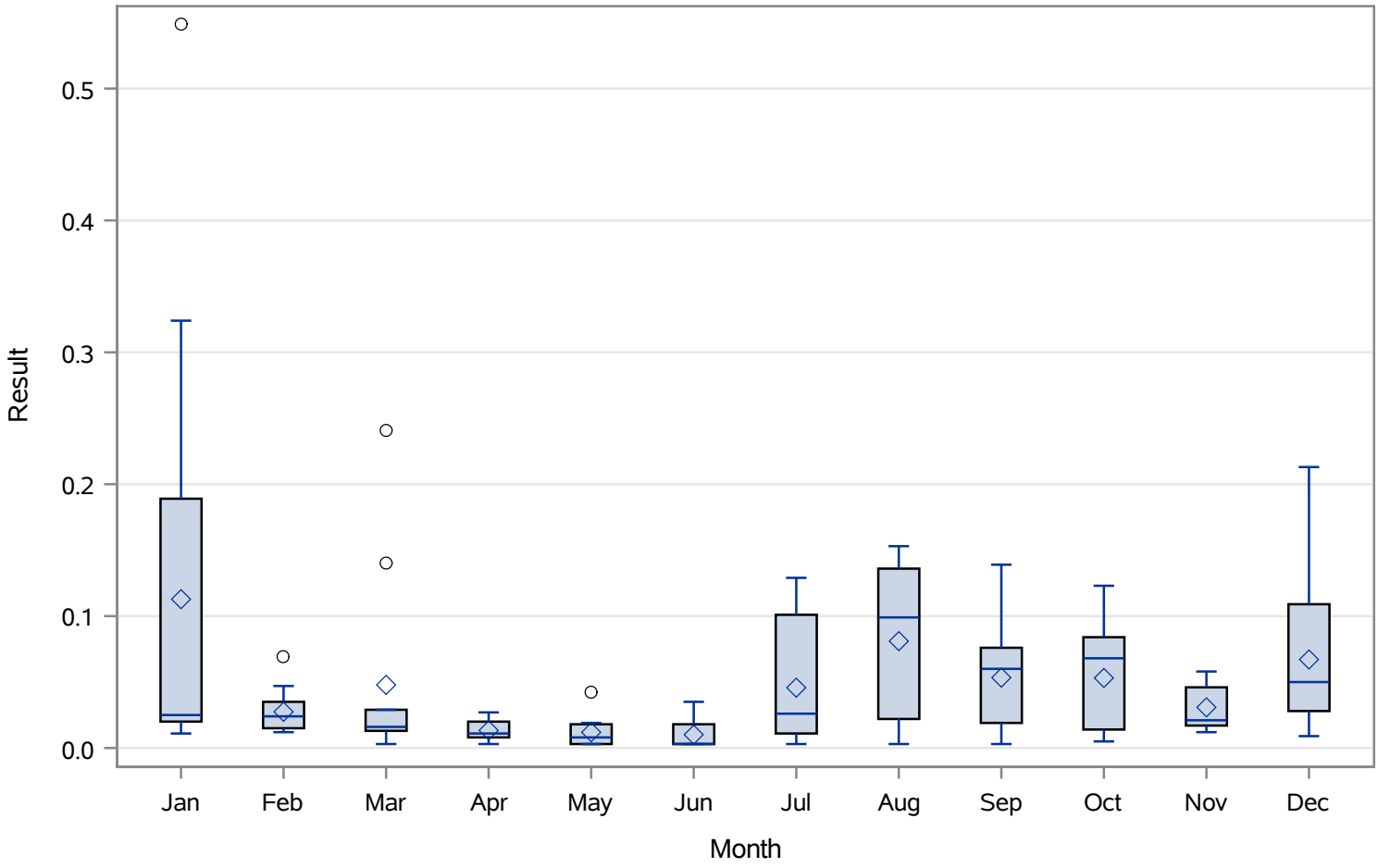
Little Manatee River
129
Nitrates/Nitrites (mg/l)
Site ID = 129



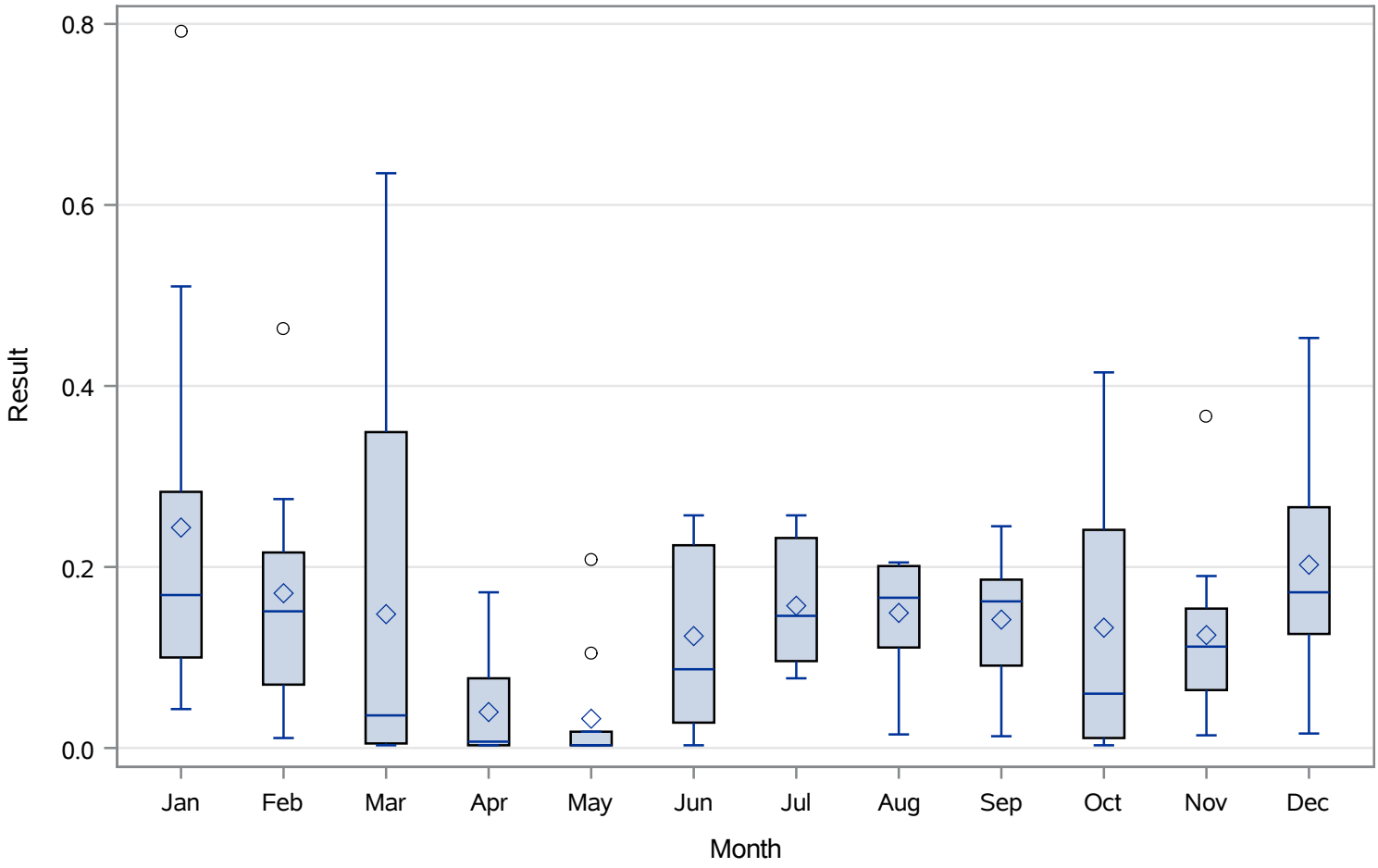
Little Manatee River
140
Nitrates/Nitrites (mg/l)
Site ID = 140



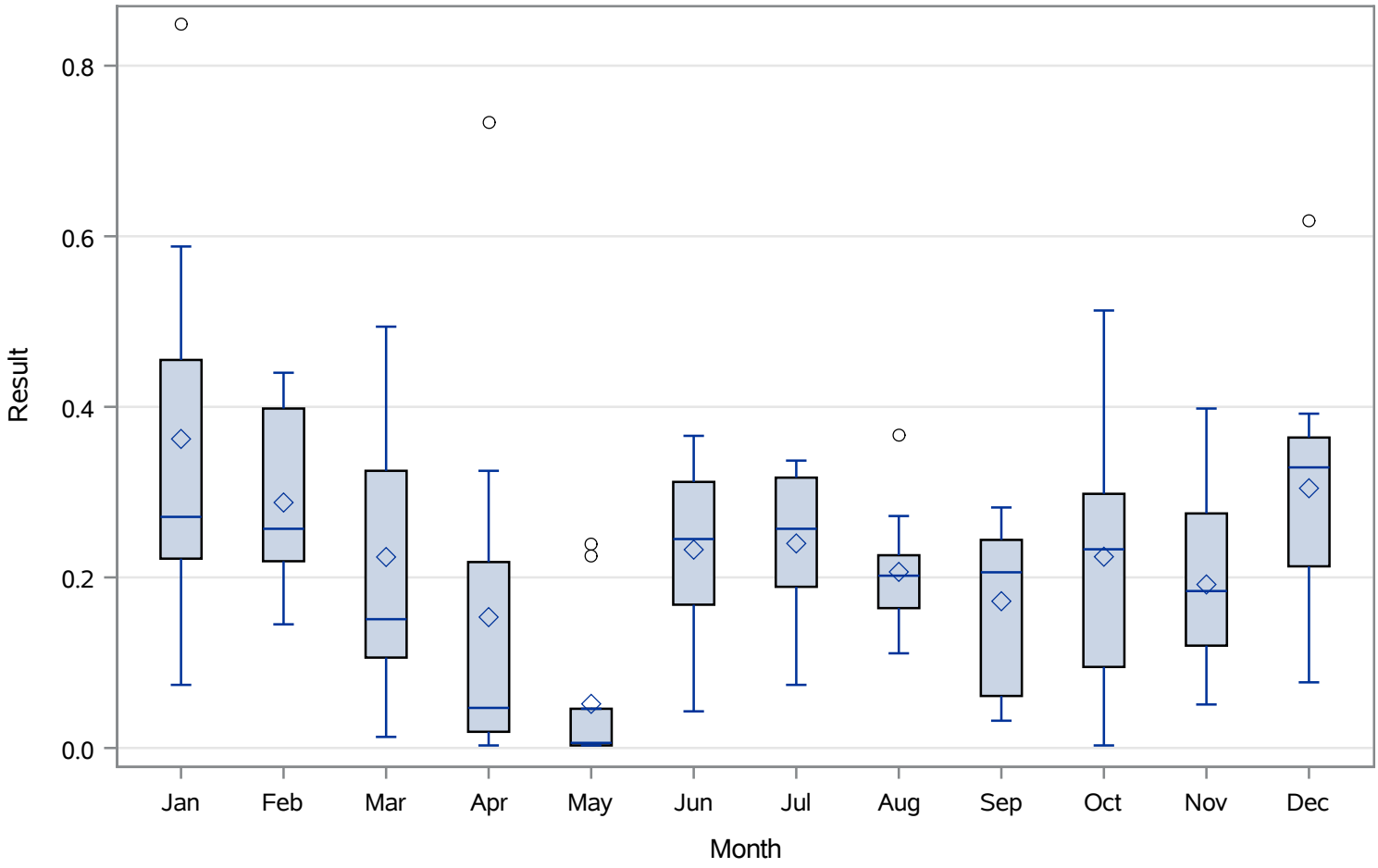
Little Manatee River
180
Nitrates/Nitrites (mg/l)
Site ID = 180



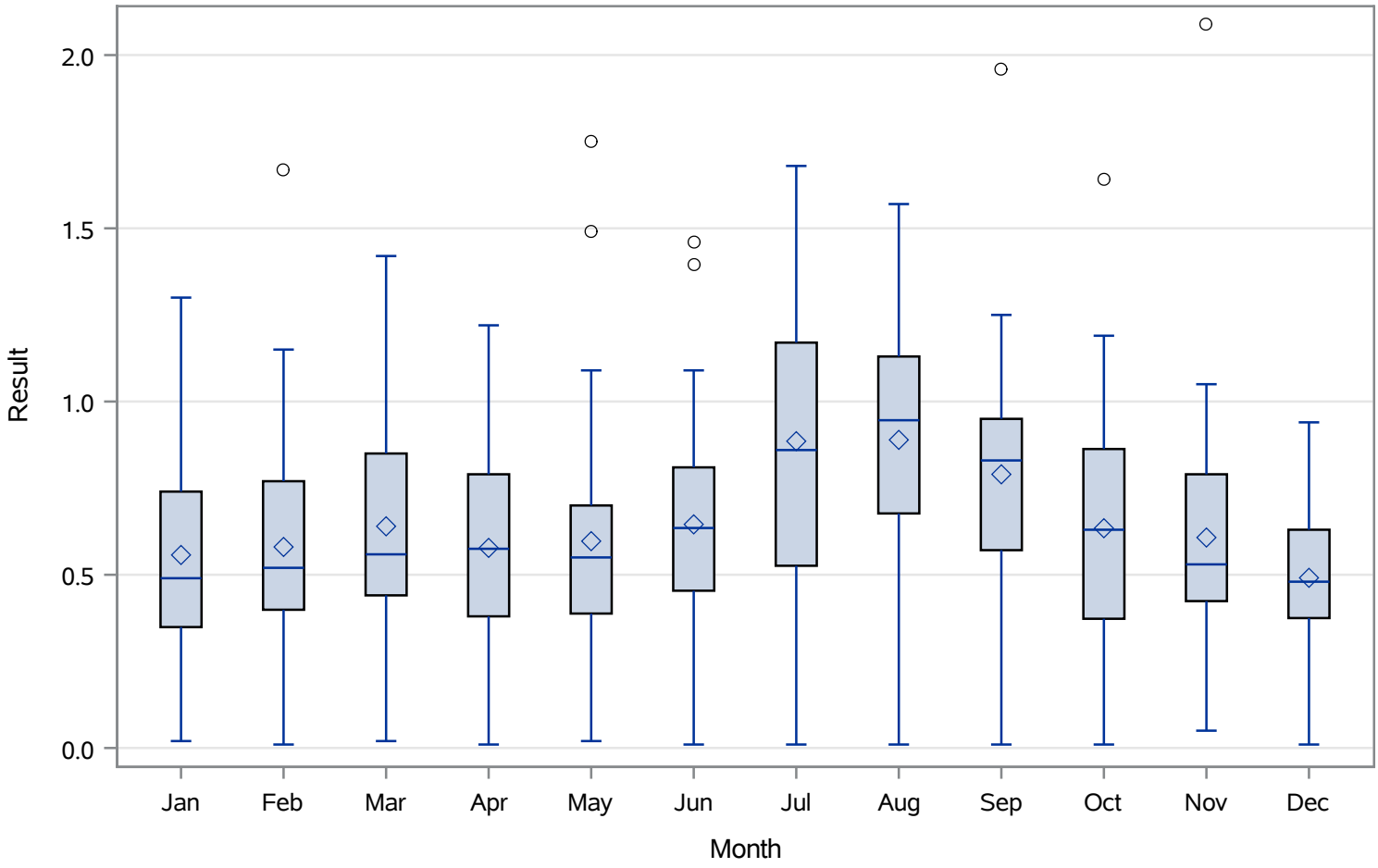
Little Manatee River
181
Nitrates/Nitrites (mg/l)
Site ID = 181



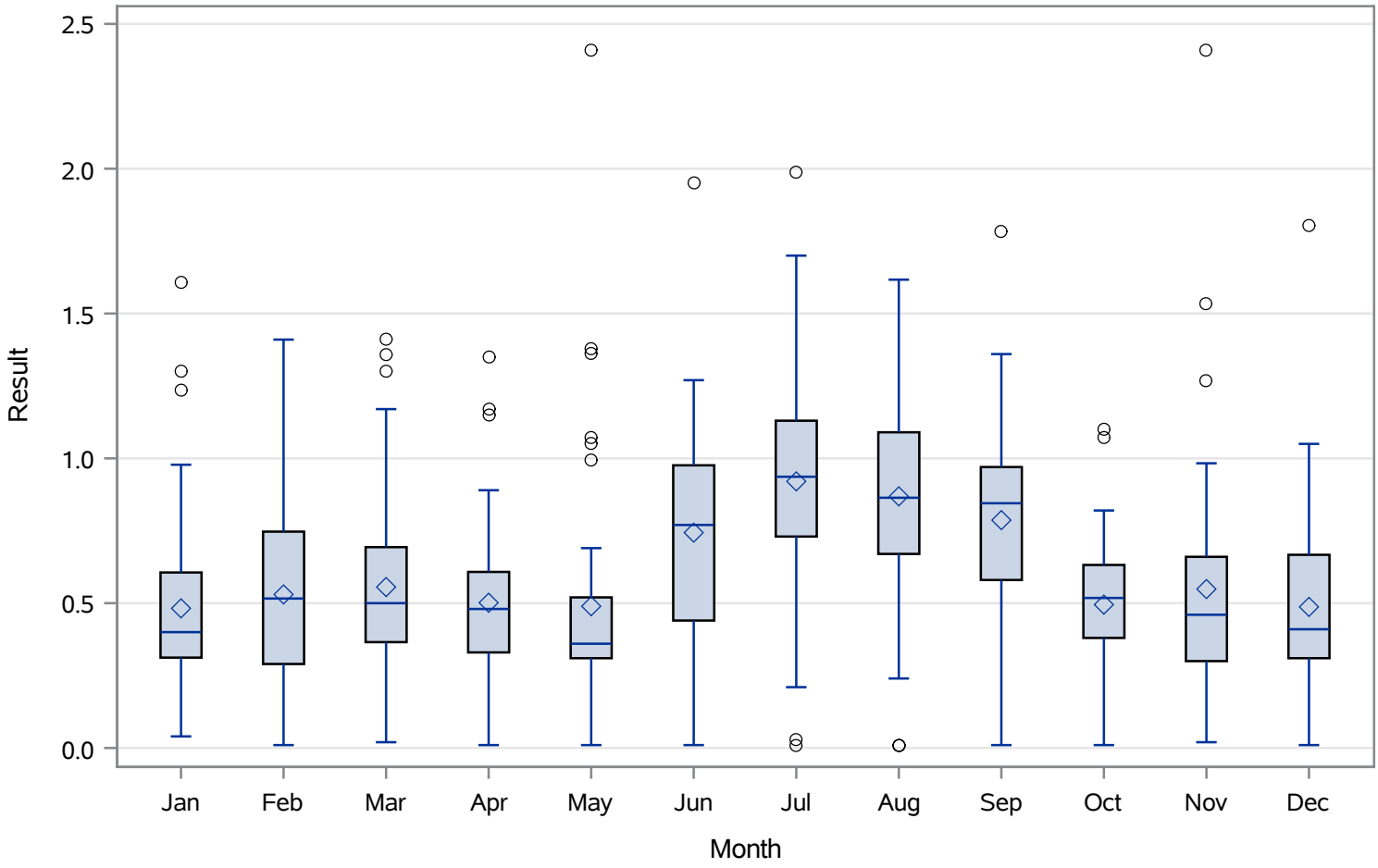
Little Manatee River
182
Nitrates/Nitrites (mg/l)
Site ID = 182



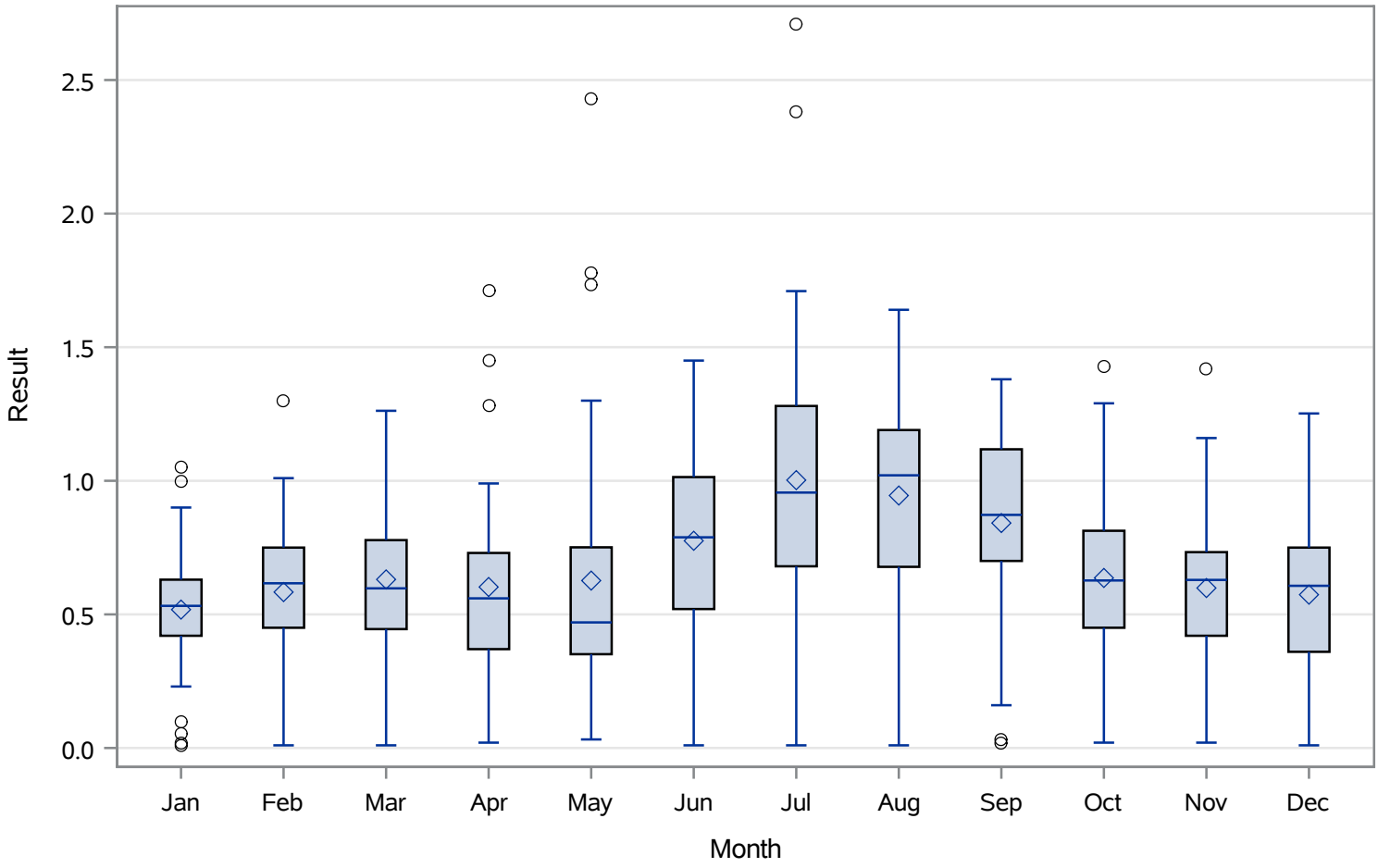
Little Manatee River
112
Organic Nitrogen (mg/l)
Site ID = 112



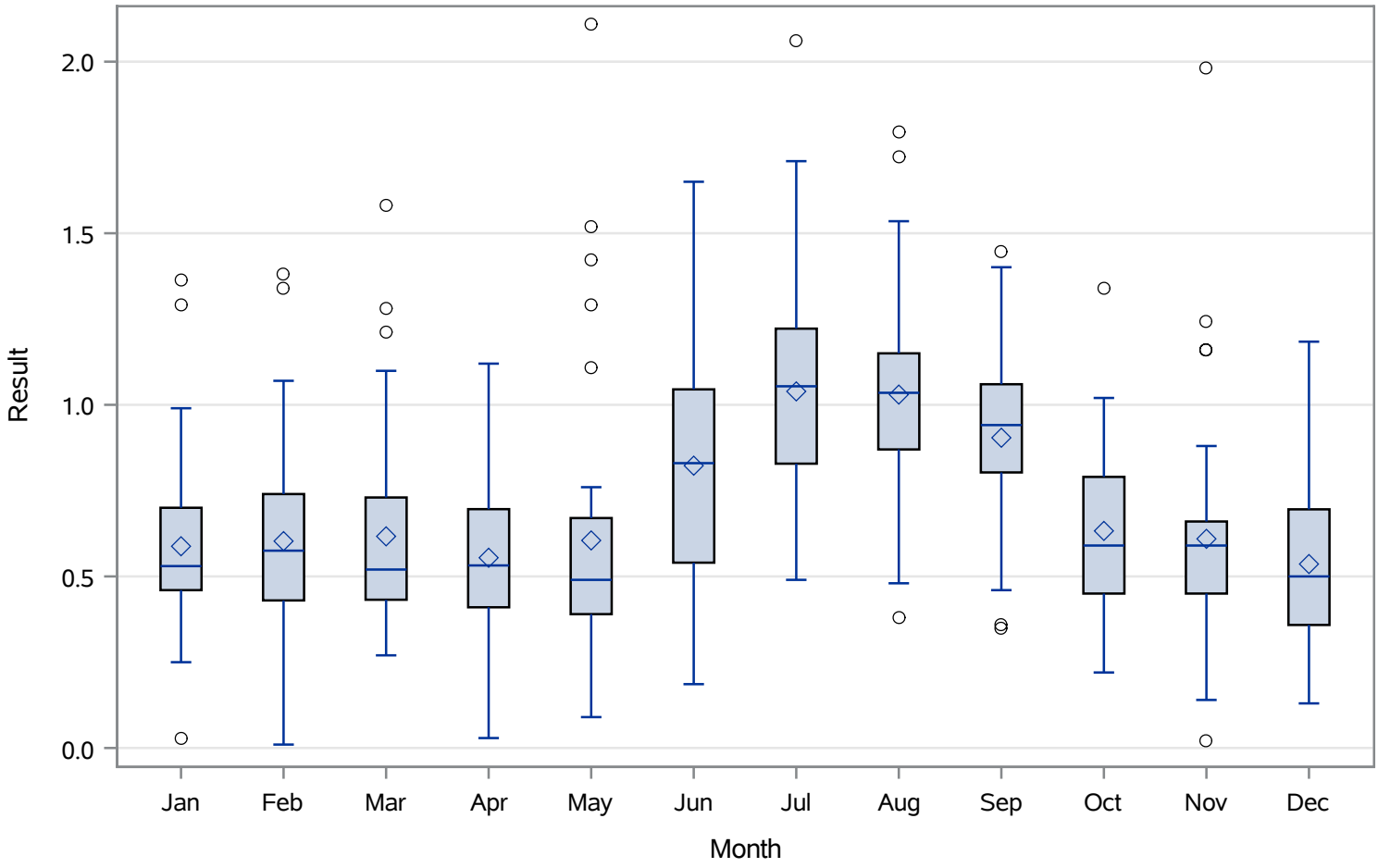
Little Manatee River
113
Organic Nitrogen (mg/l)
Site ID = 113



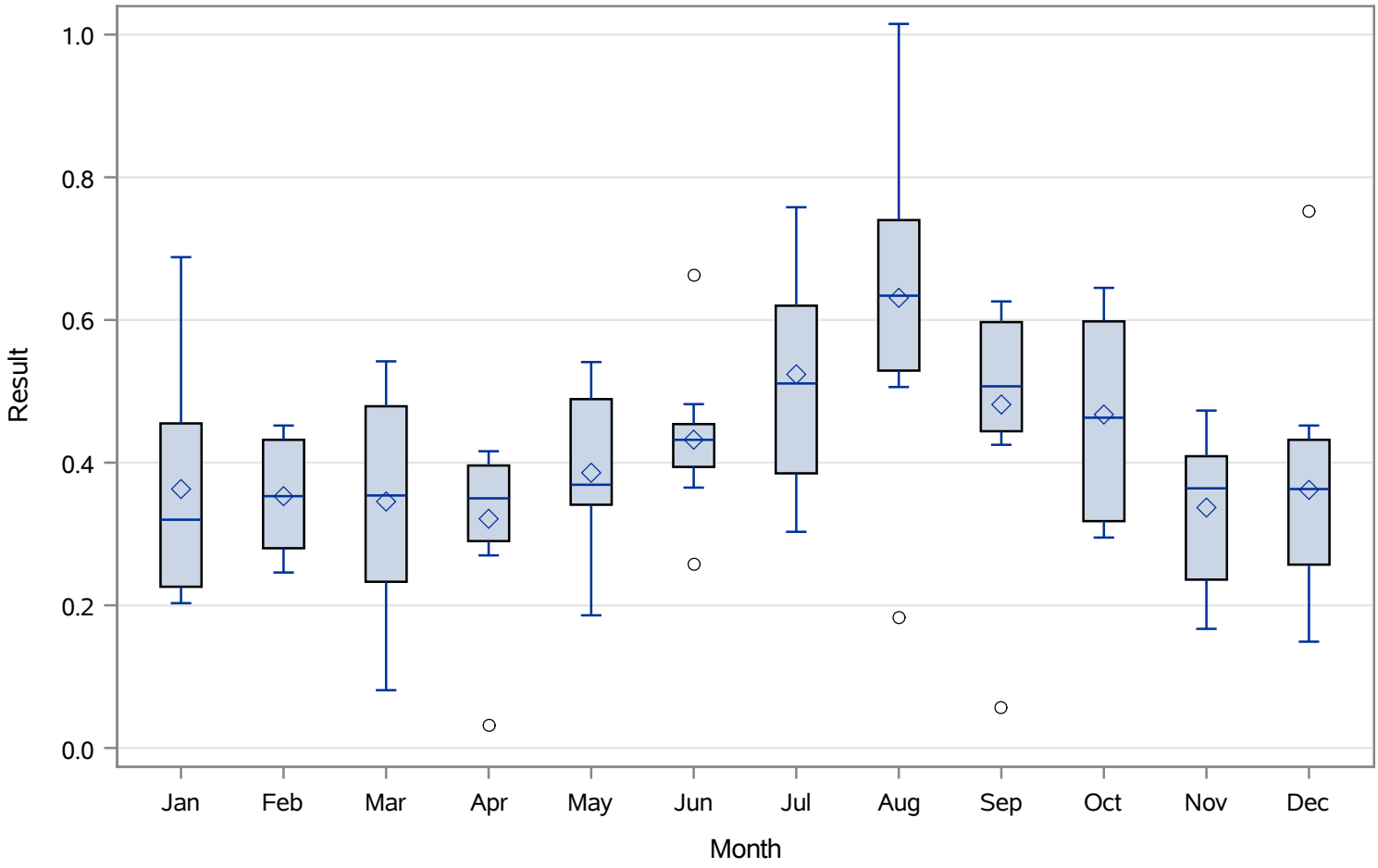
Little Manatee River
129
Organic Nitrogen (mg/l)
Site ID = 129



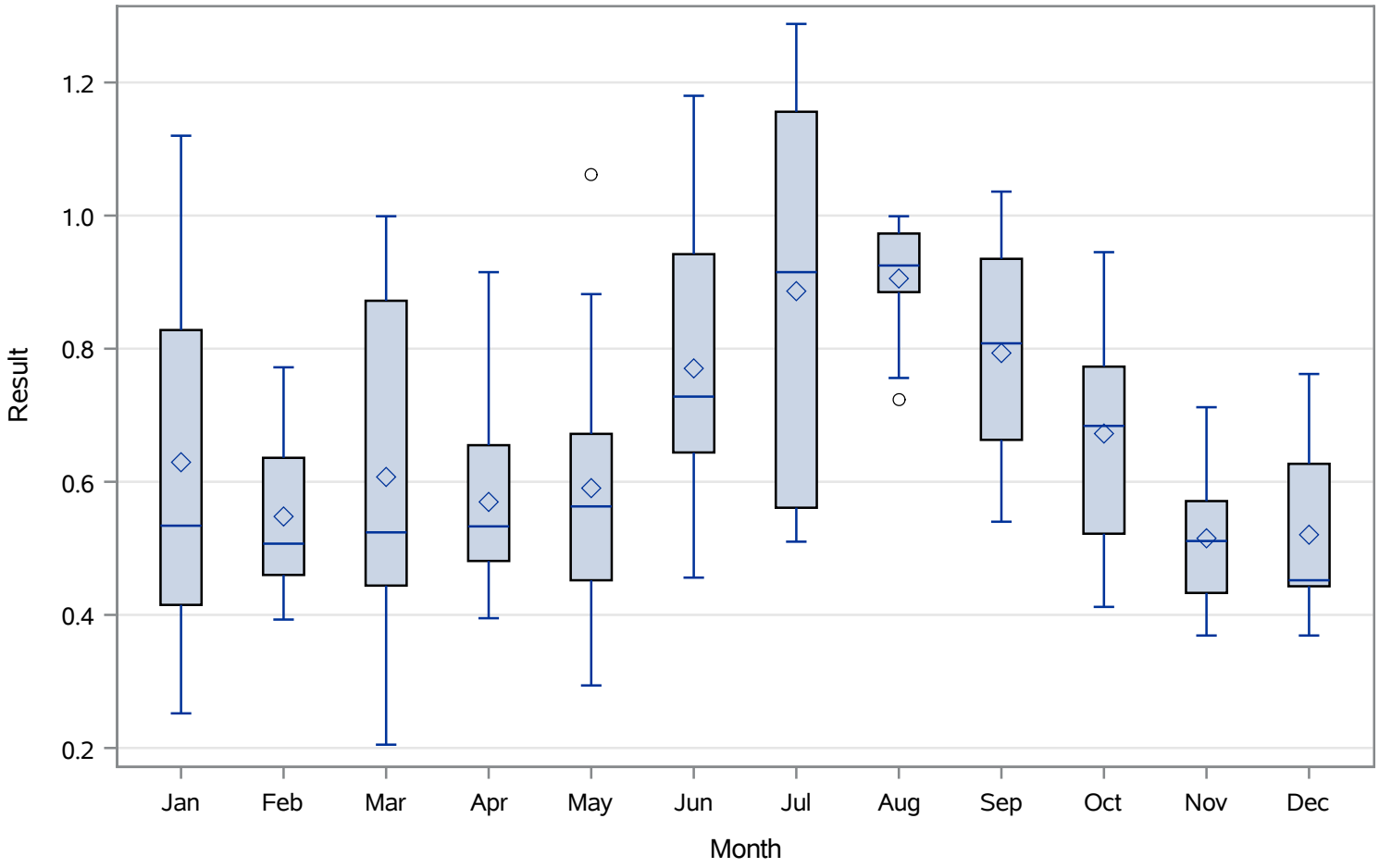
Little Manatee River
140
Organic Nitrogen (mg/l)
Site ID = 140



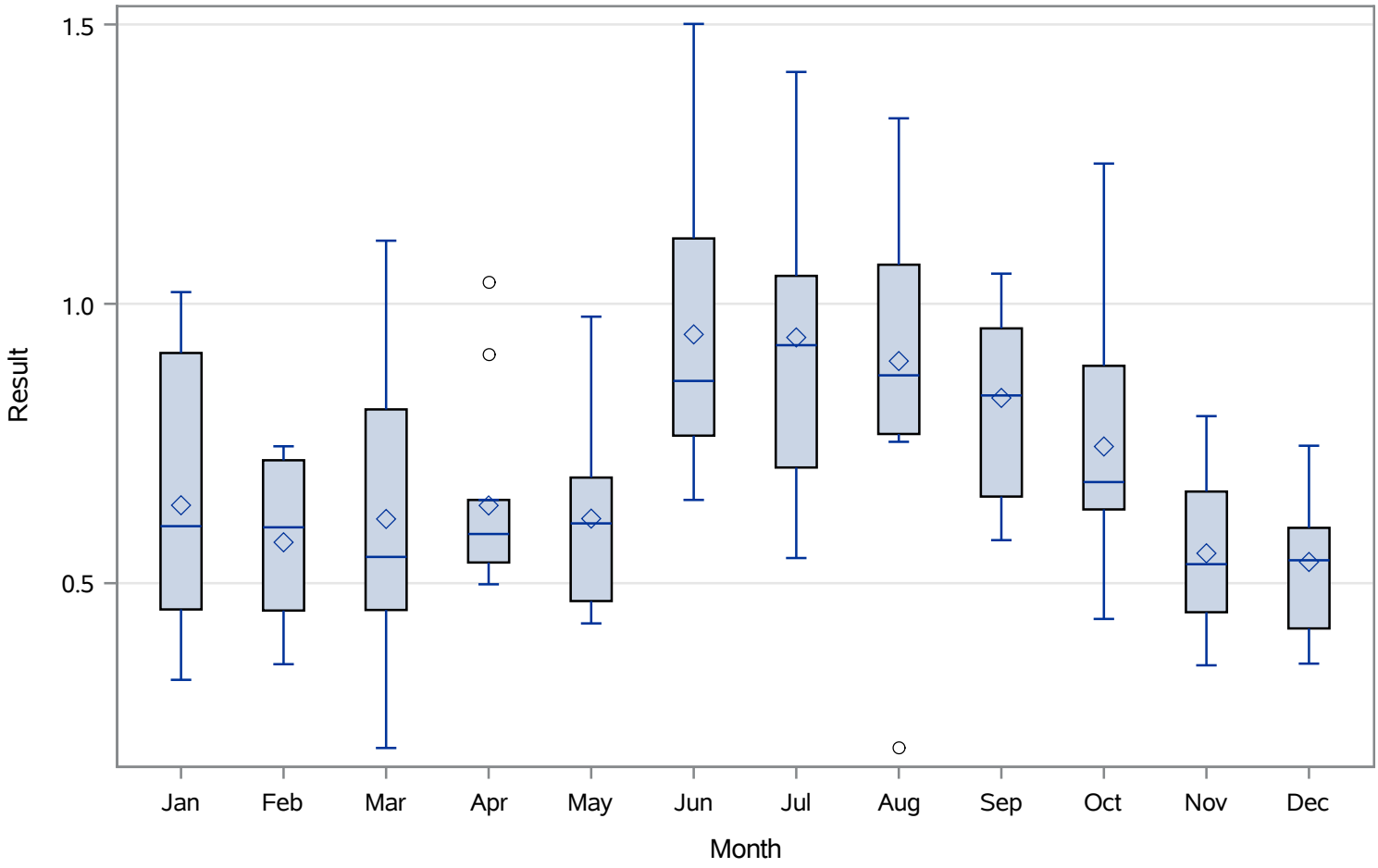
Little Manatee River
180
Organic Nitrogen (mg/l)
Site ID = 180



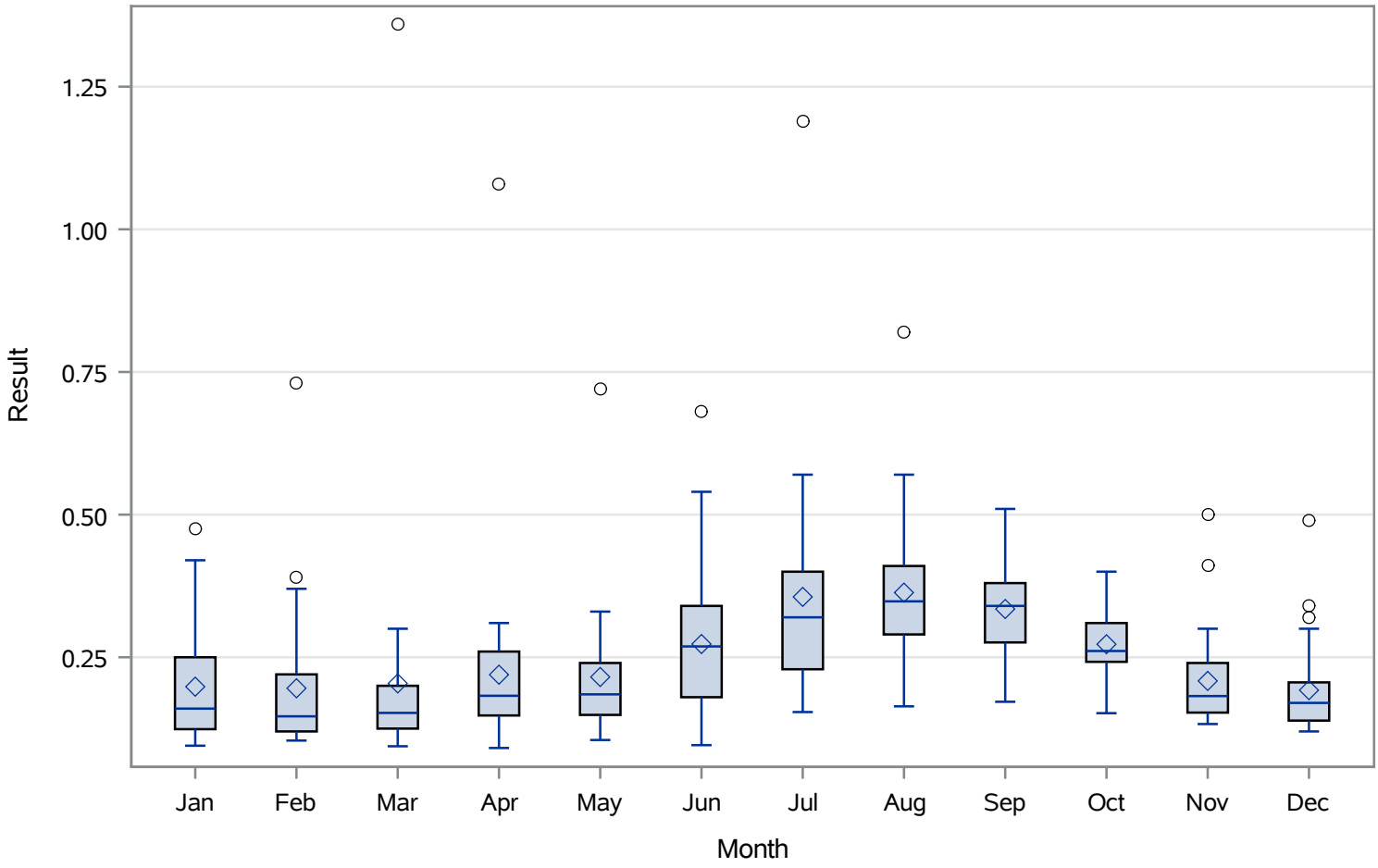
Little Manatee River
181
Organic Nitrogen (mg/l)
Site ID = 181



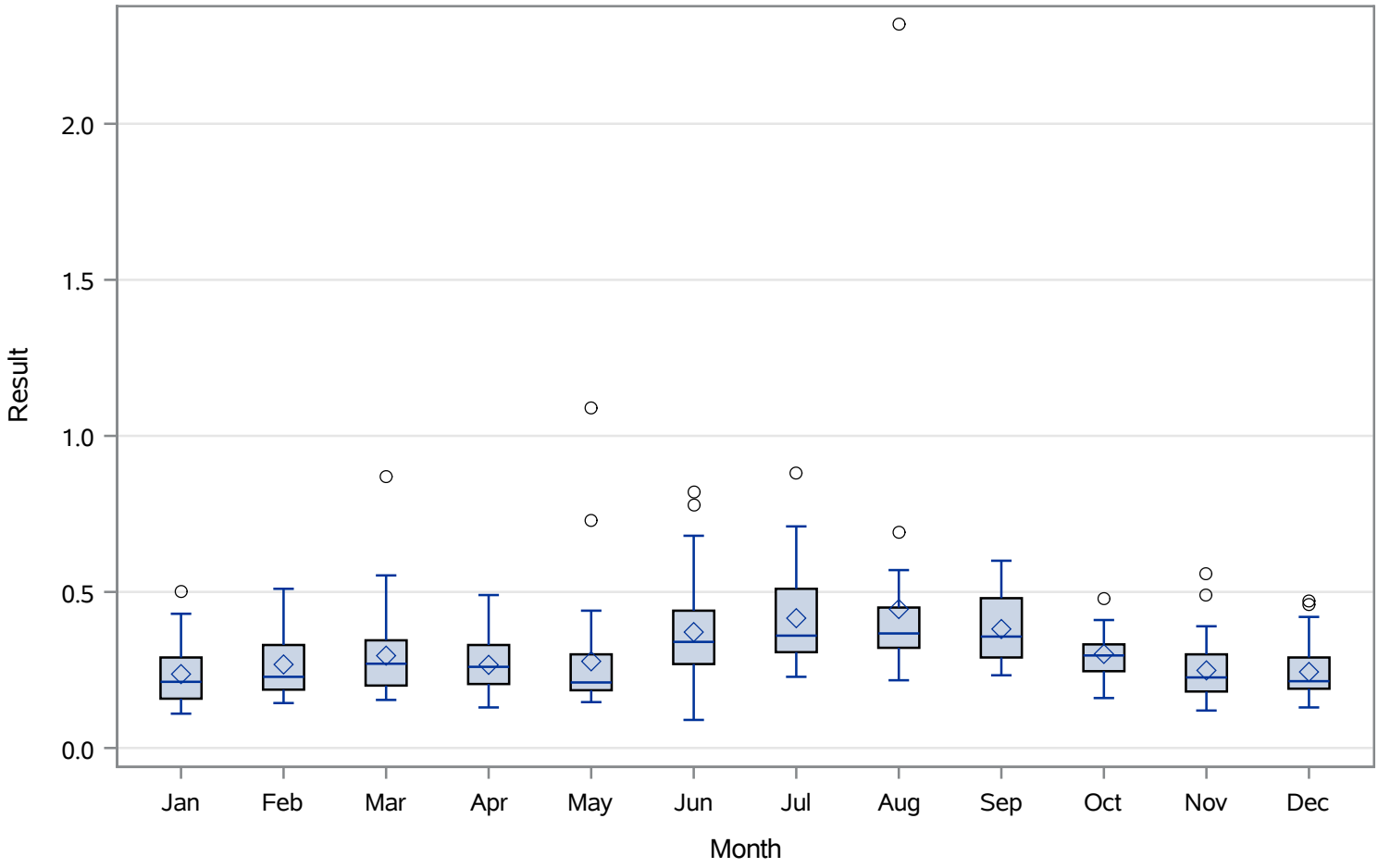
Little Manatee River
182
Organic Nitrogen (mg/l)
Site ID = 182



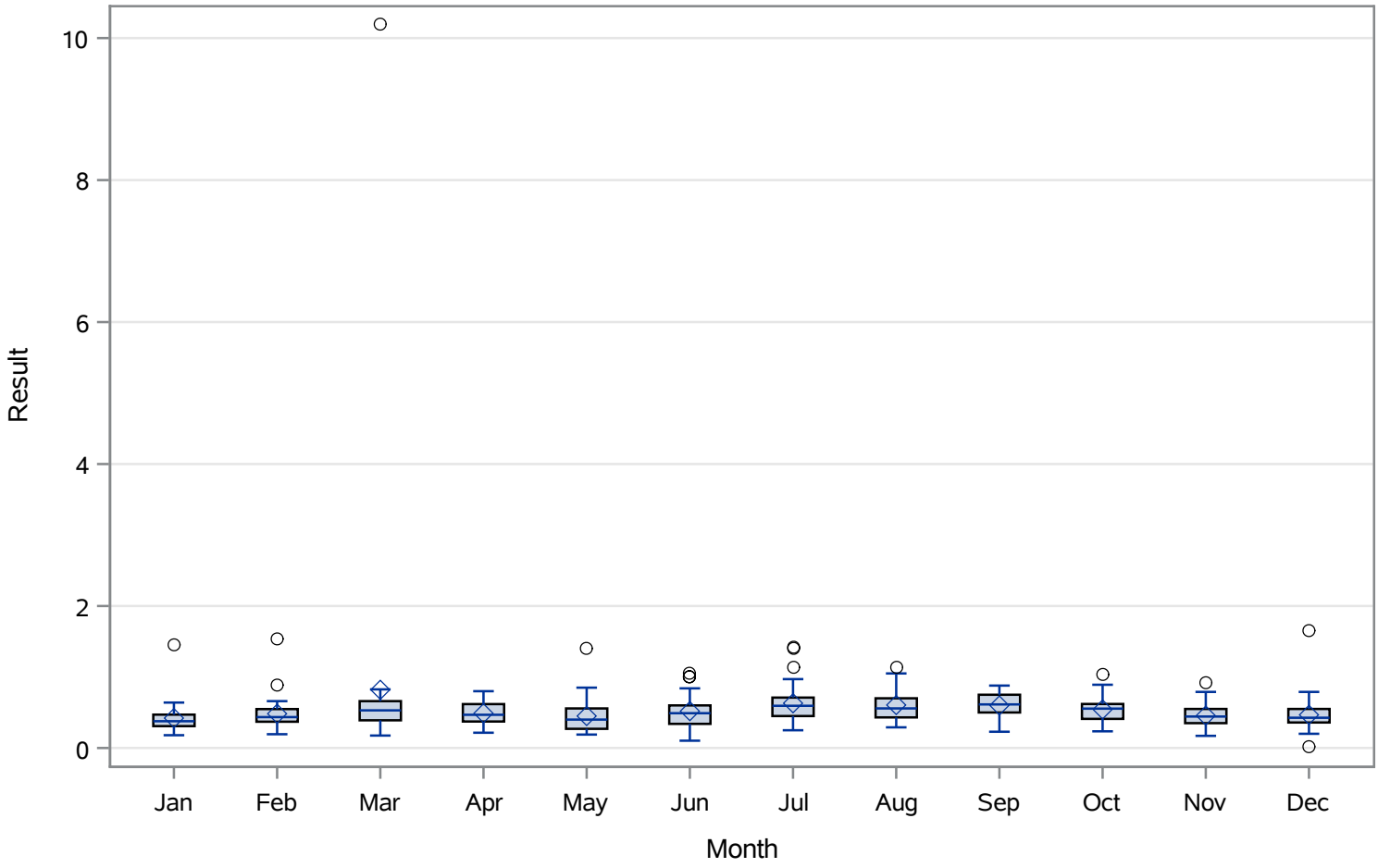
Little Manatee River
112
Ortho Phosphates (mg/l)
Site ID = 112



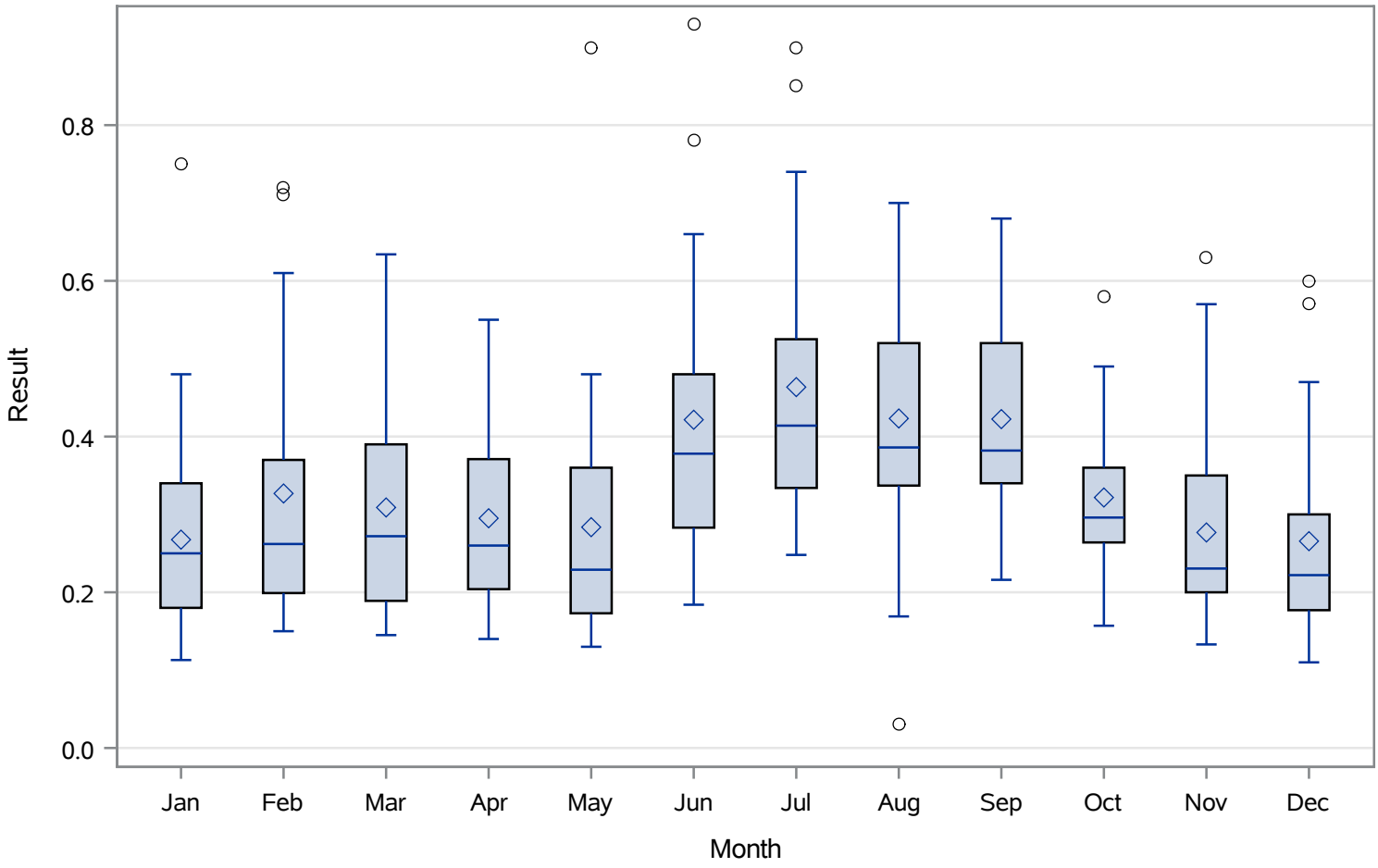
Little Manatee River
113
Ortho Phosphates (mg/l)
Site ID = 113



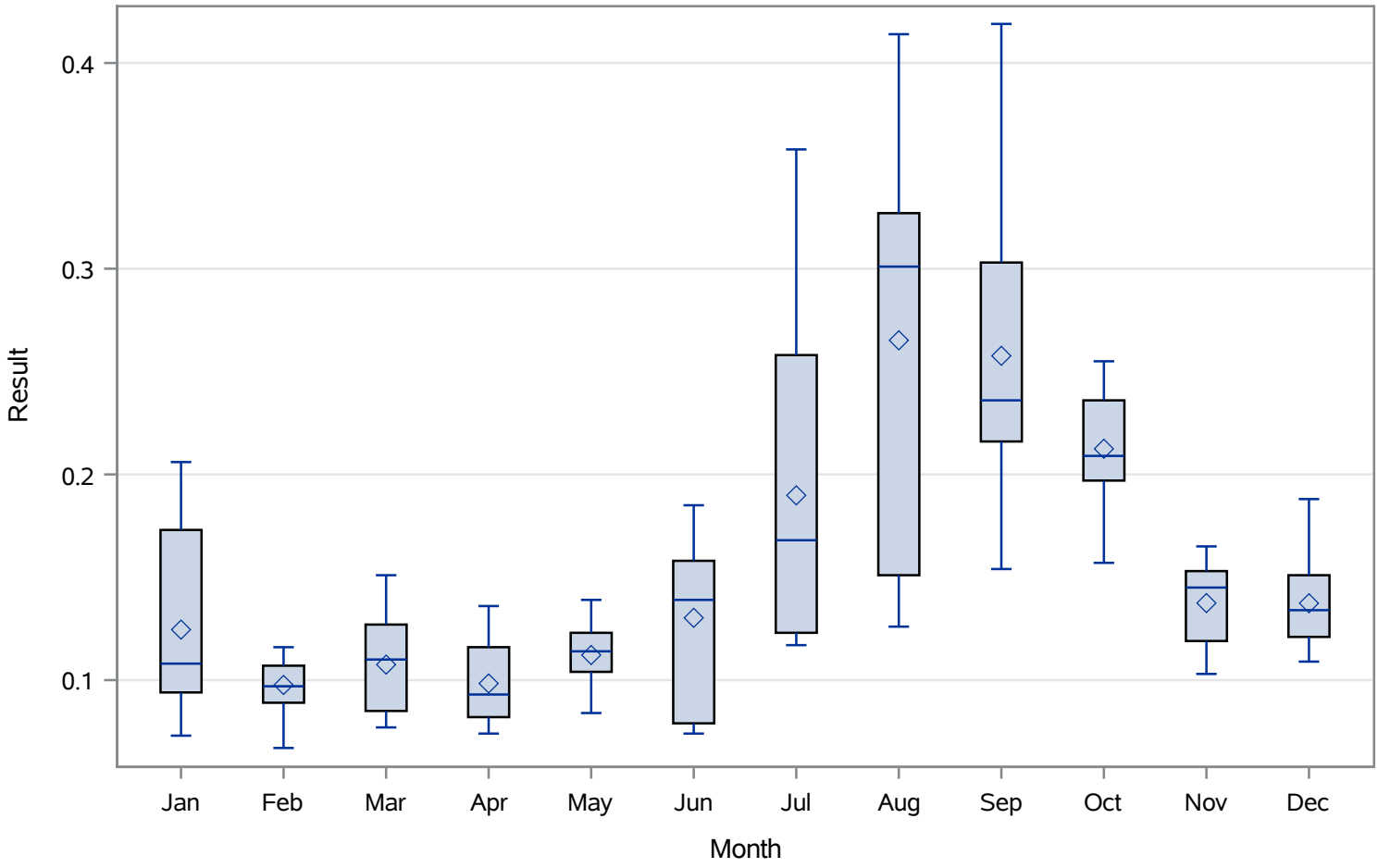
Little Manatee River
129
Ortho Phosphates (mg/l)
Site ID = 129



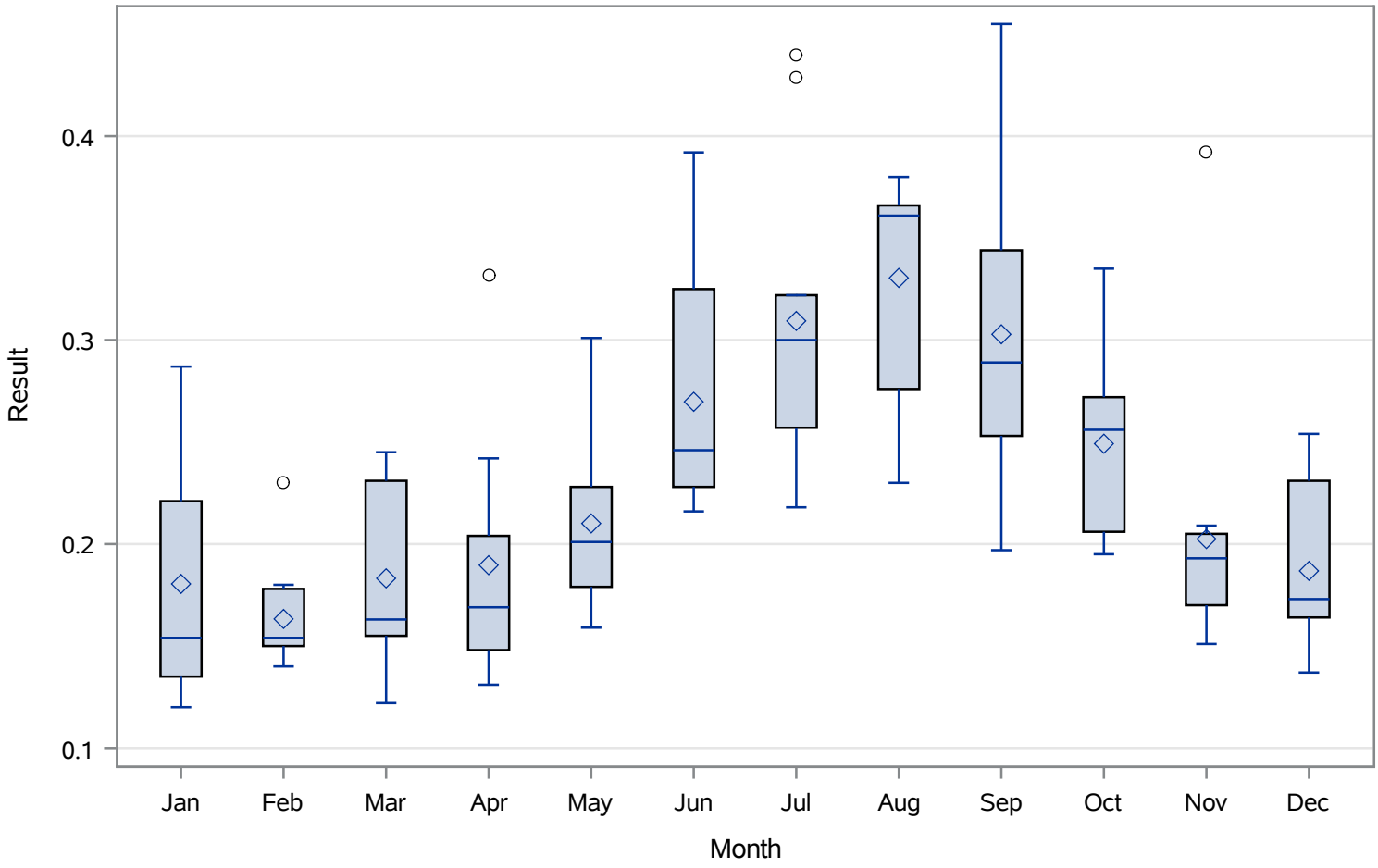
Little Manatee River
140
Ortho Phosphates (mg/l)
Site ID = 140



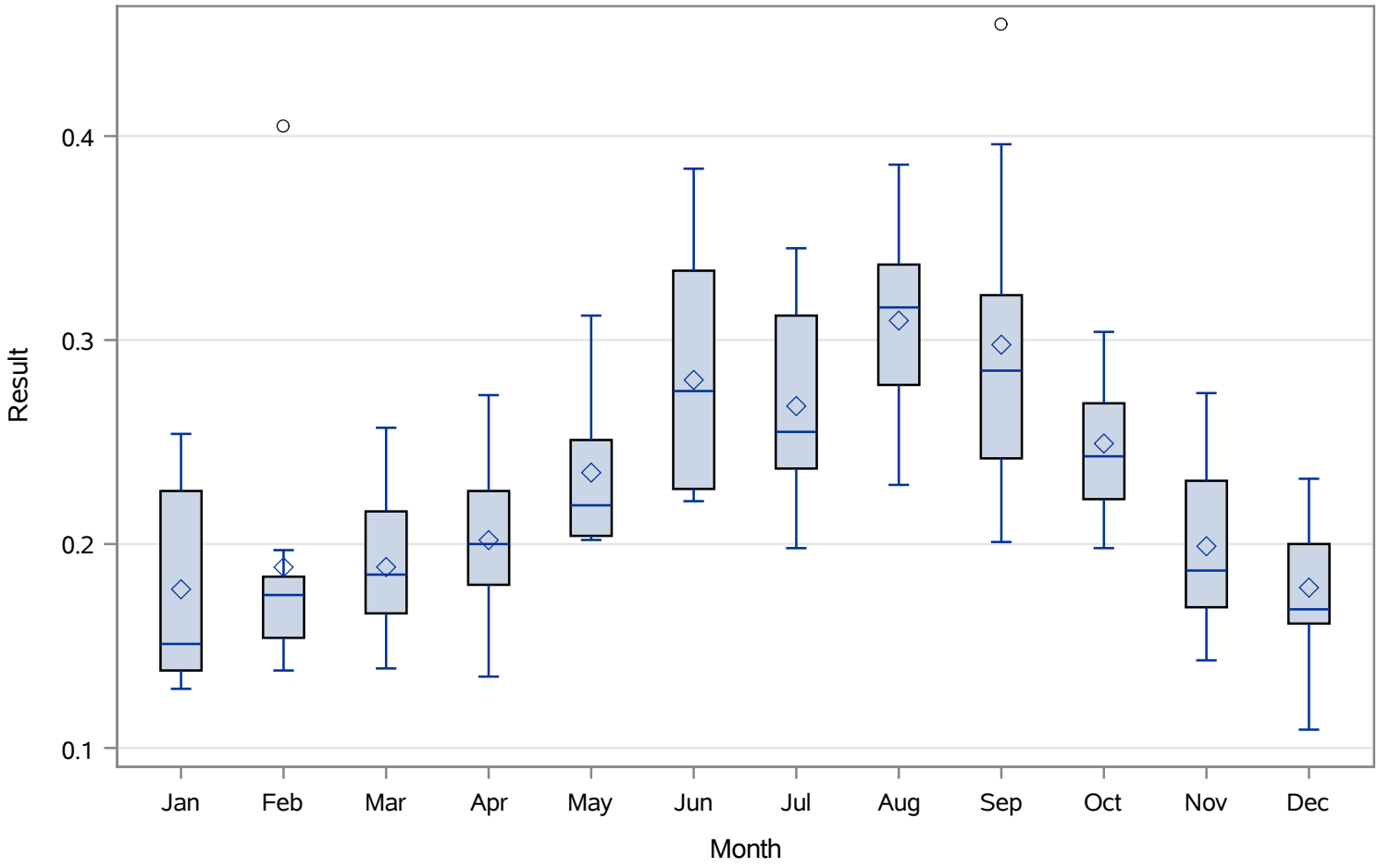
Little Manatee River
180
Ortho Phosphates (mg/l)
Site ID = 180



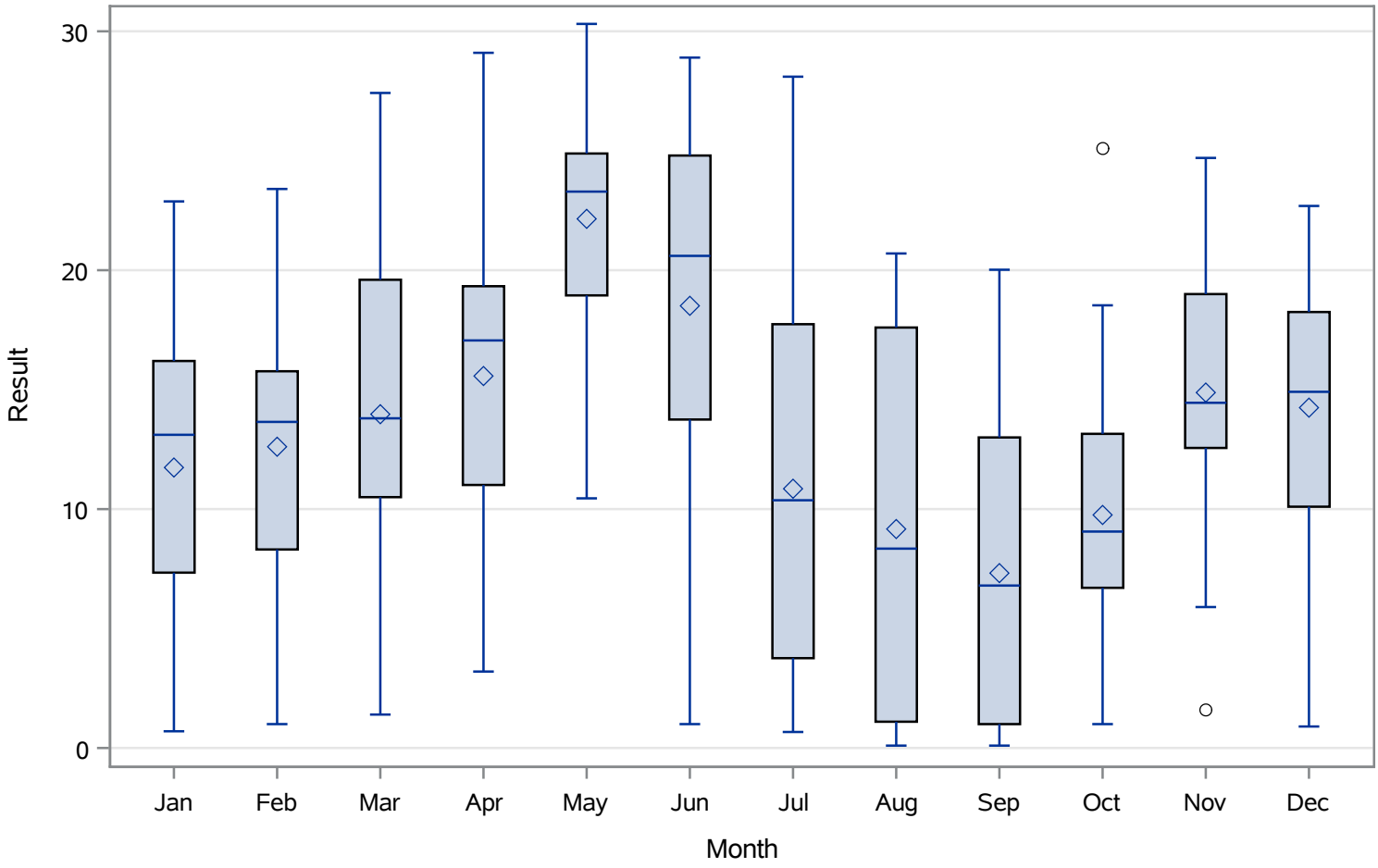
Little Manatee River
181
Ortho Phosphates (mg/l)
Site ID = 181



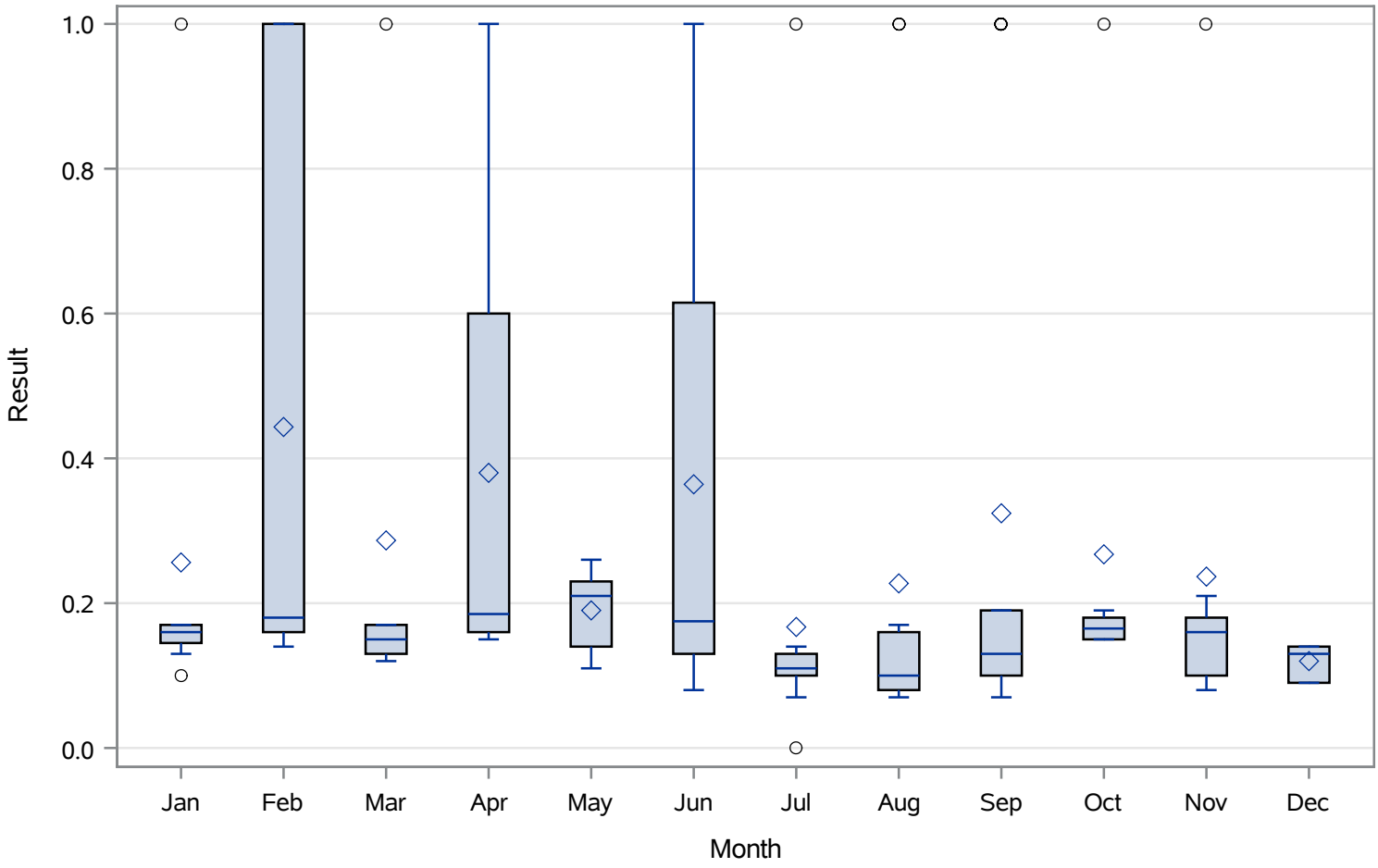
Little Manatee River
182
Ortho Phosphates (mg/l)
Site ID = 182



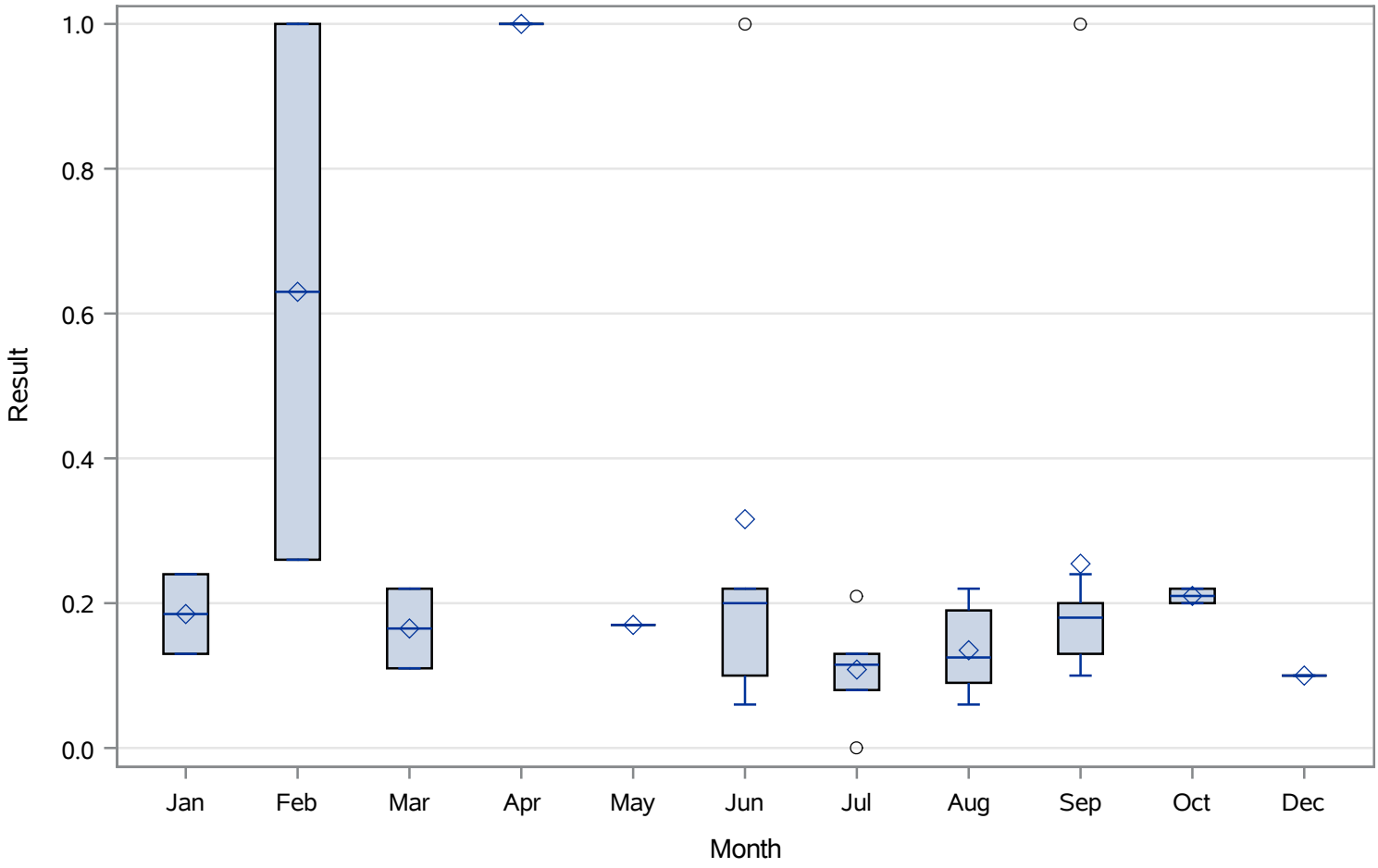
Little Manatee River
112
Sal Bottom (ppth)
Site ID = 112



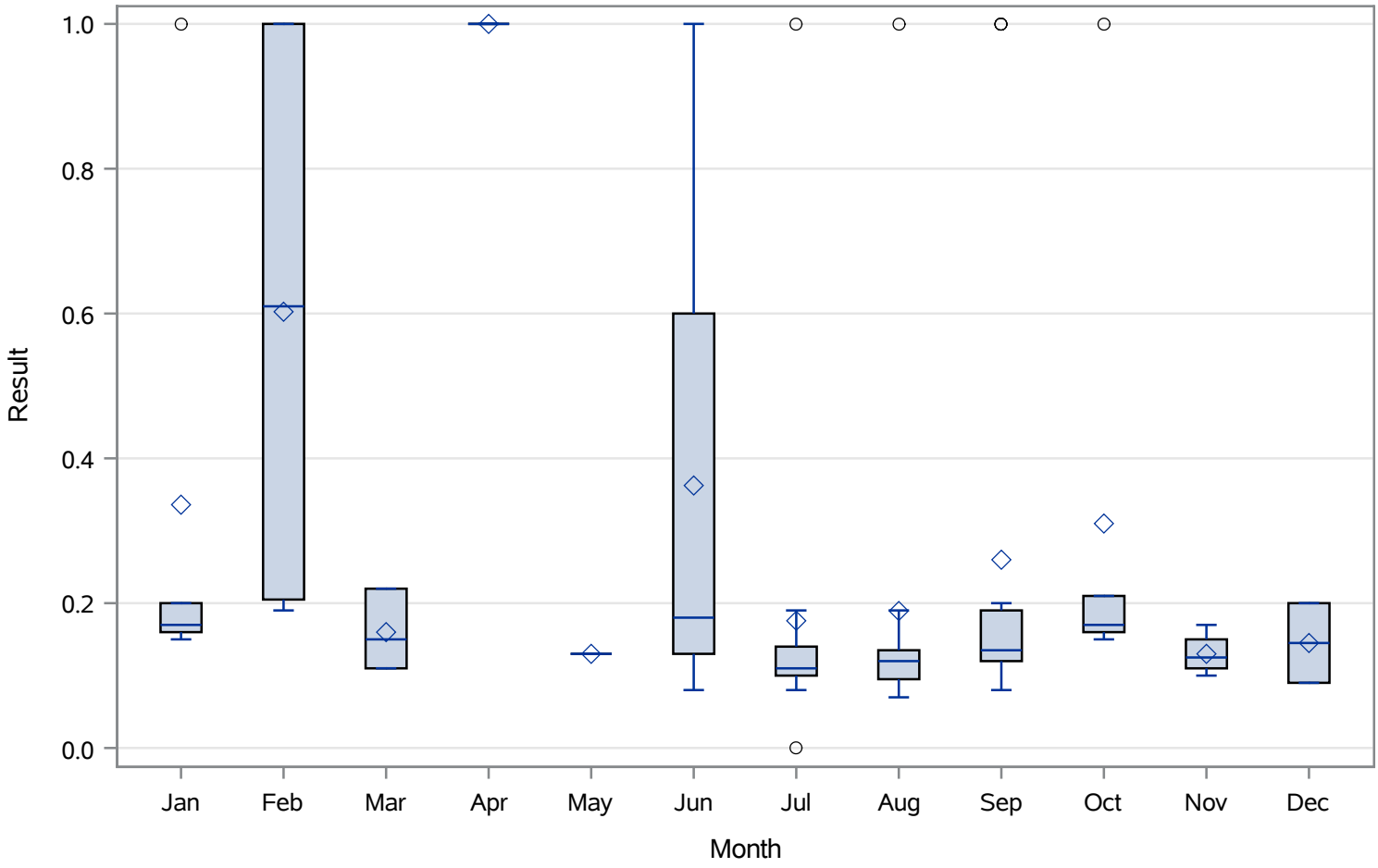
Little Manatee River
113
Sal Bottom (ppth)
Site ID = 113



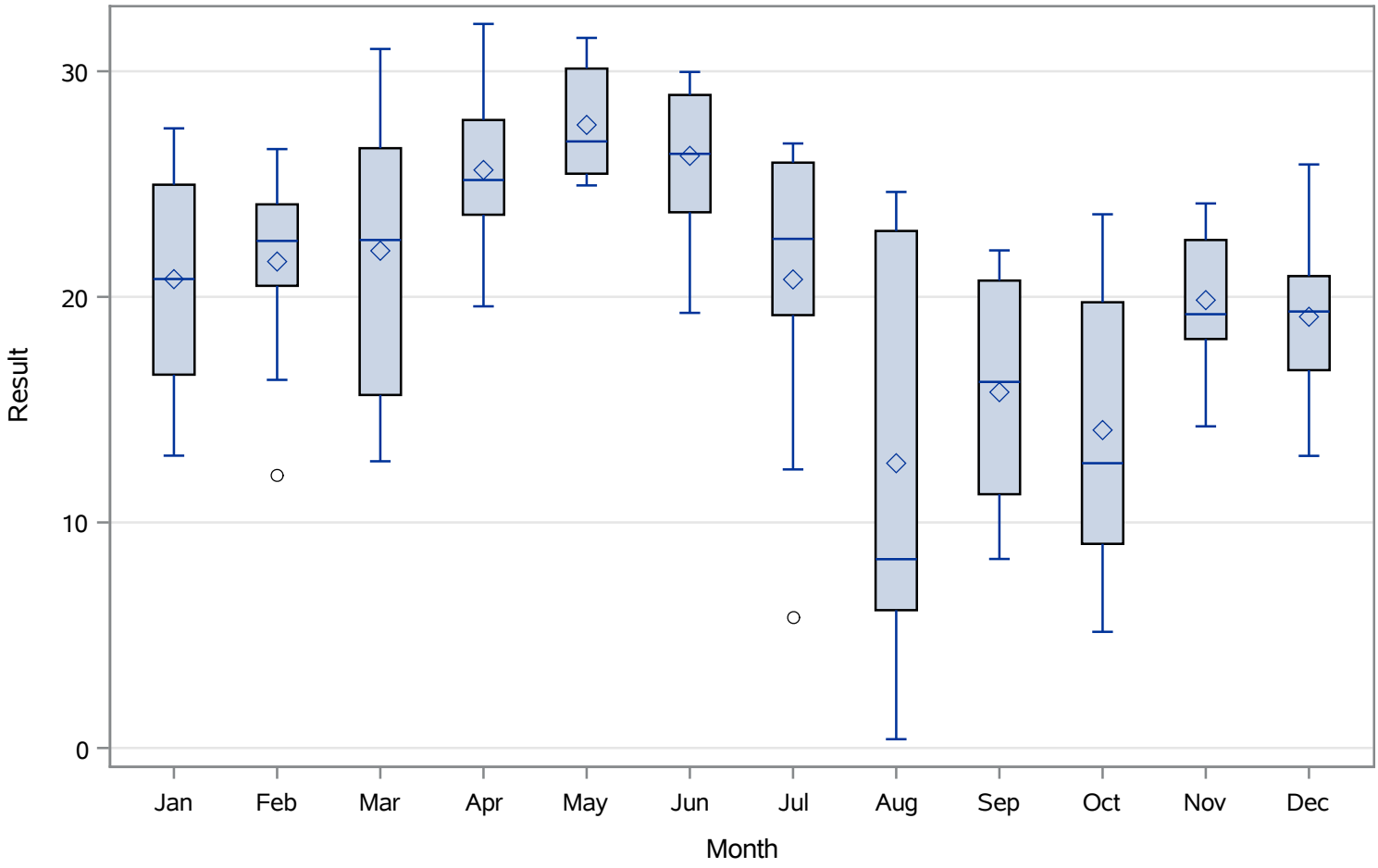
Little Manatee River
129
Sal Bottom (ppth)
Site ID = 129



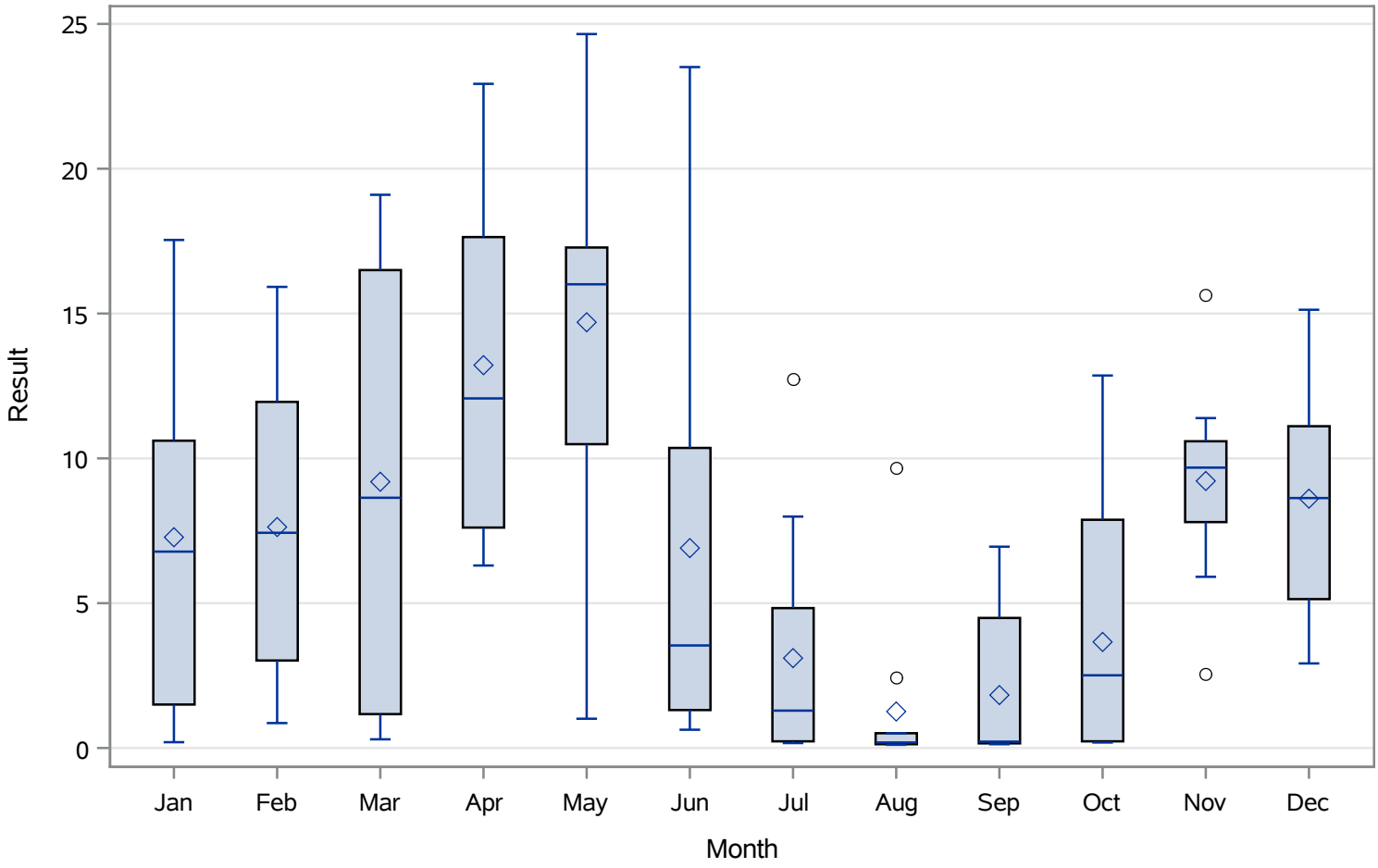
Little Manatee River
140
Sal Bottom (ppth)
Site ID = 140



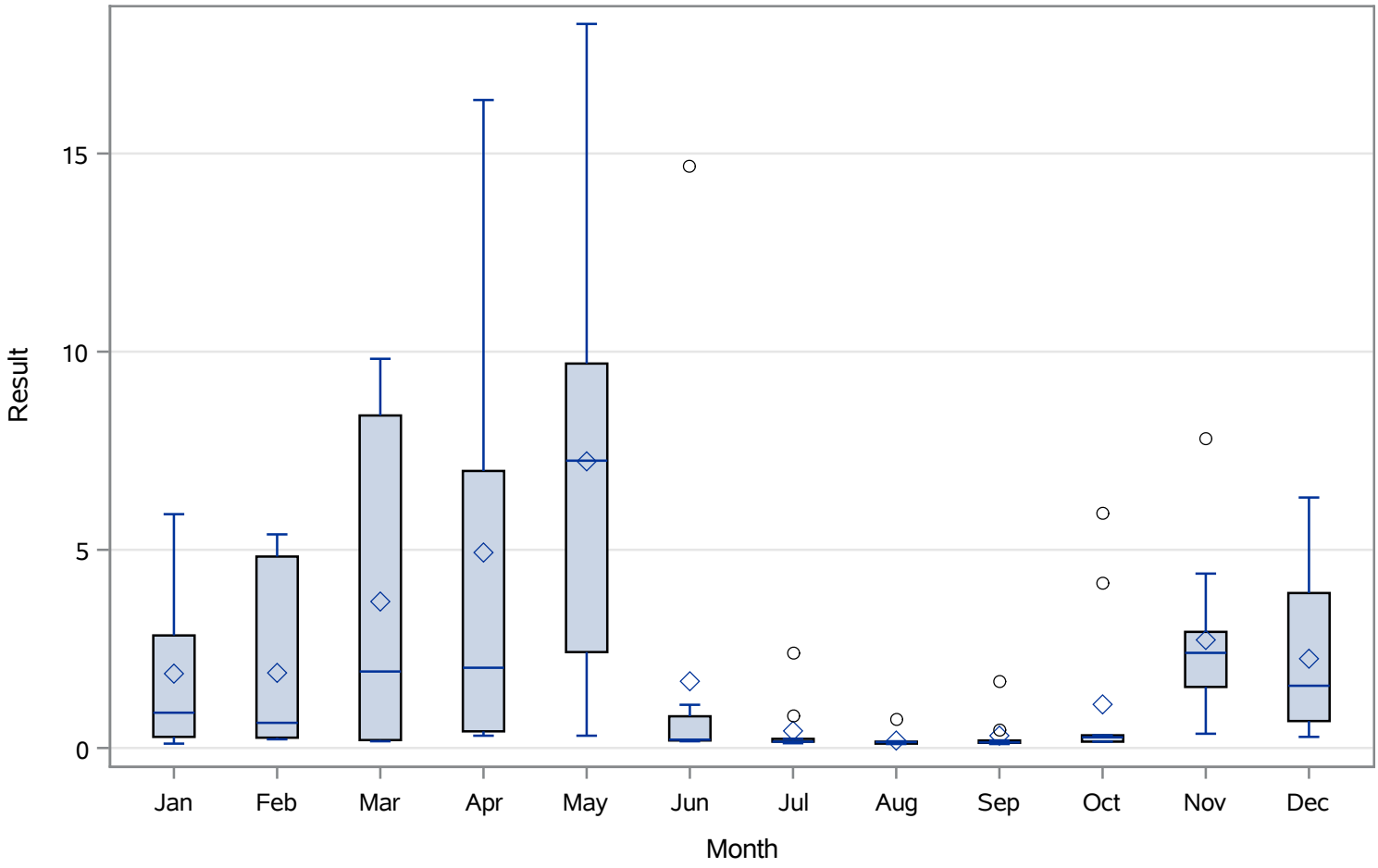
Little Manatee River
180
Sal Bottom (ppth)
Site ID = 180



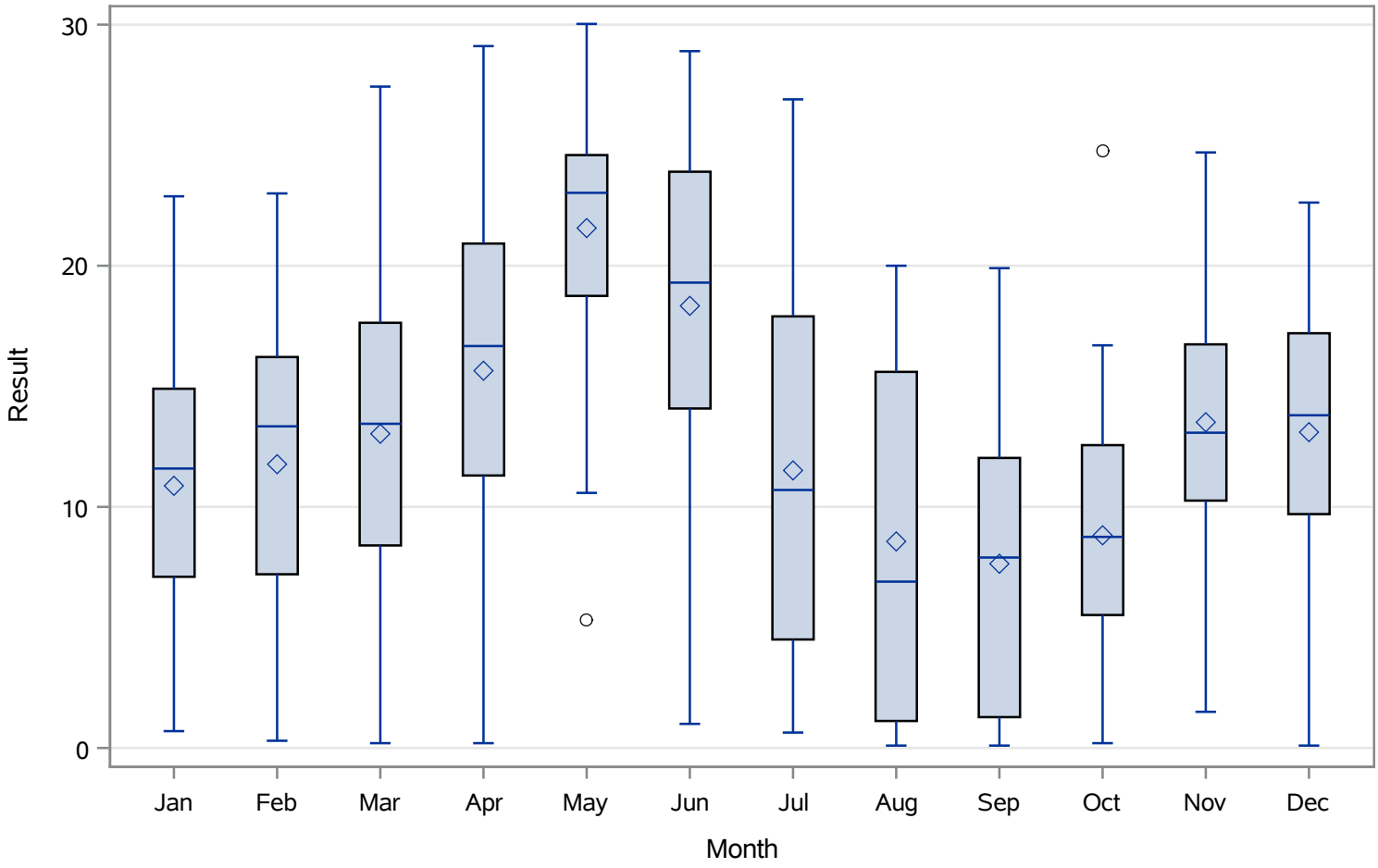
Little Manatee River
181
Sal Bottom (ppth)
Site ID = 181



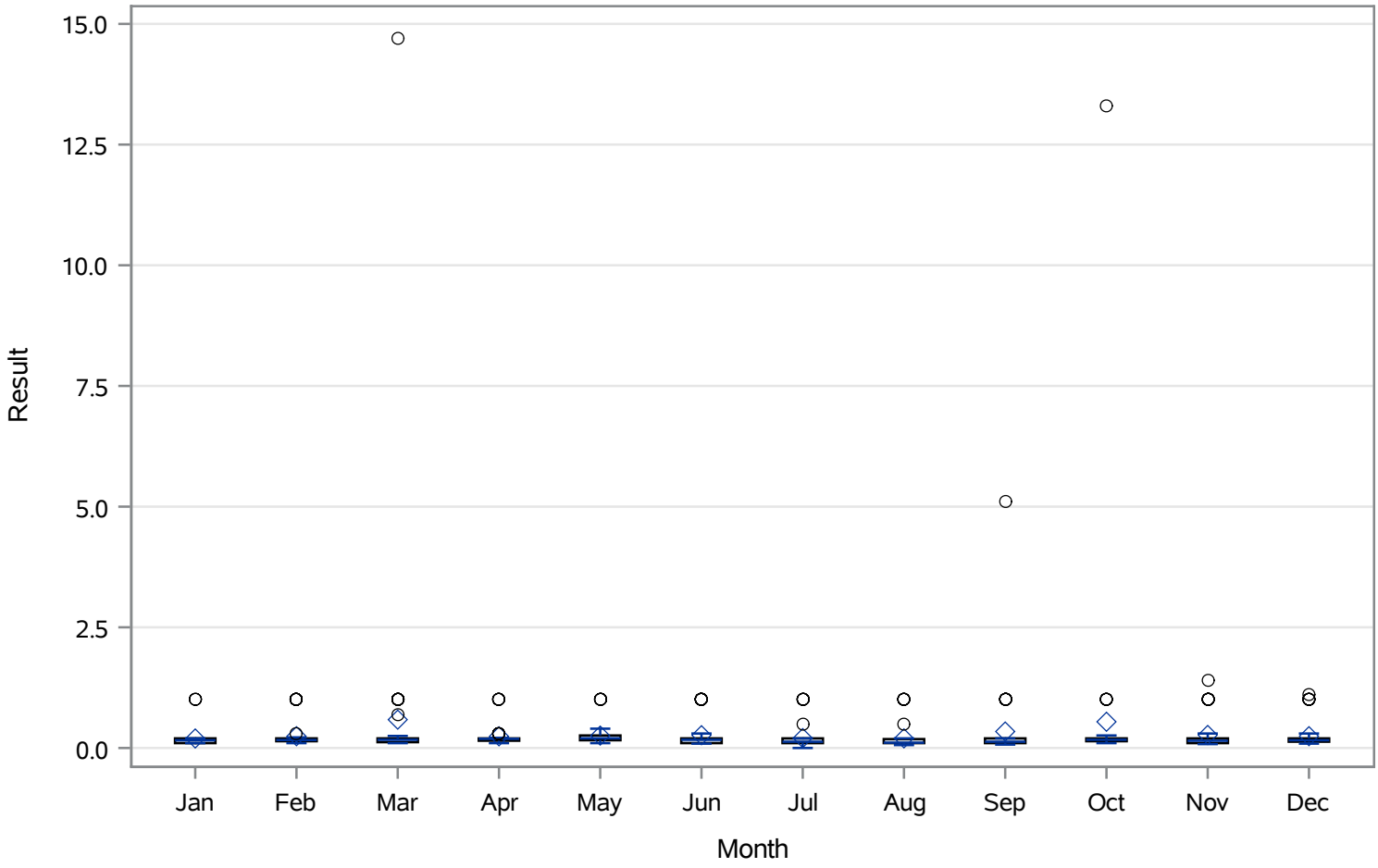
Little Manatee River
182
Sal Bottom (ppth)
Site ID = 182



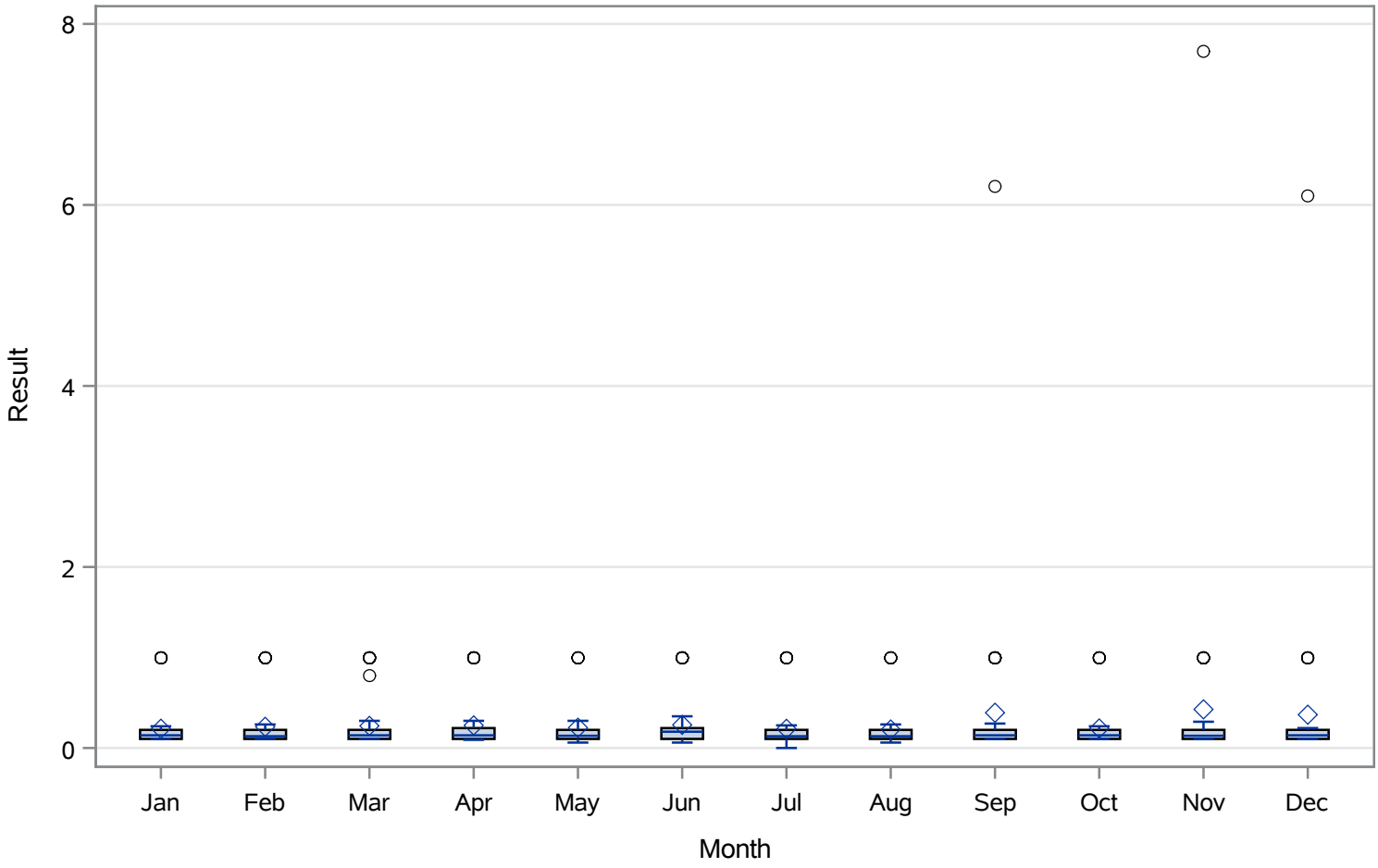
Little Manatee River
112
Sal Mid (ppth)
Site ID = 112



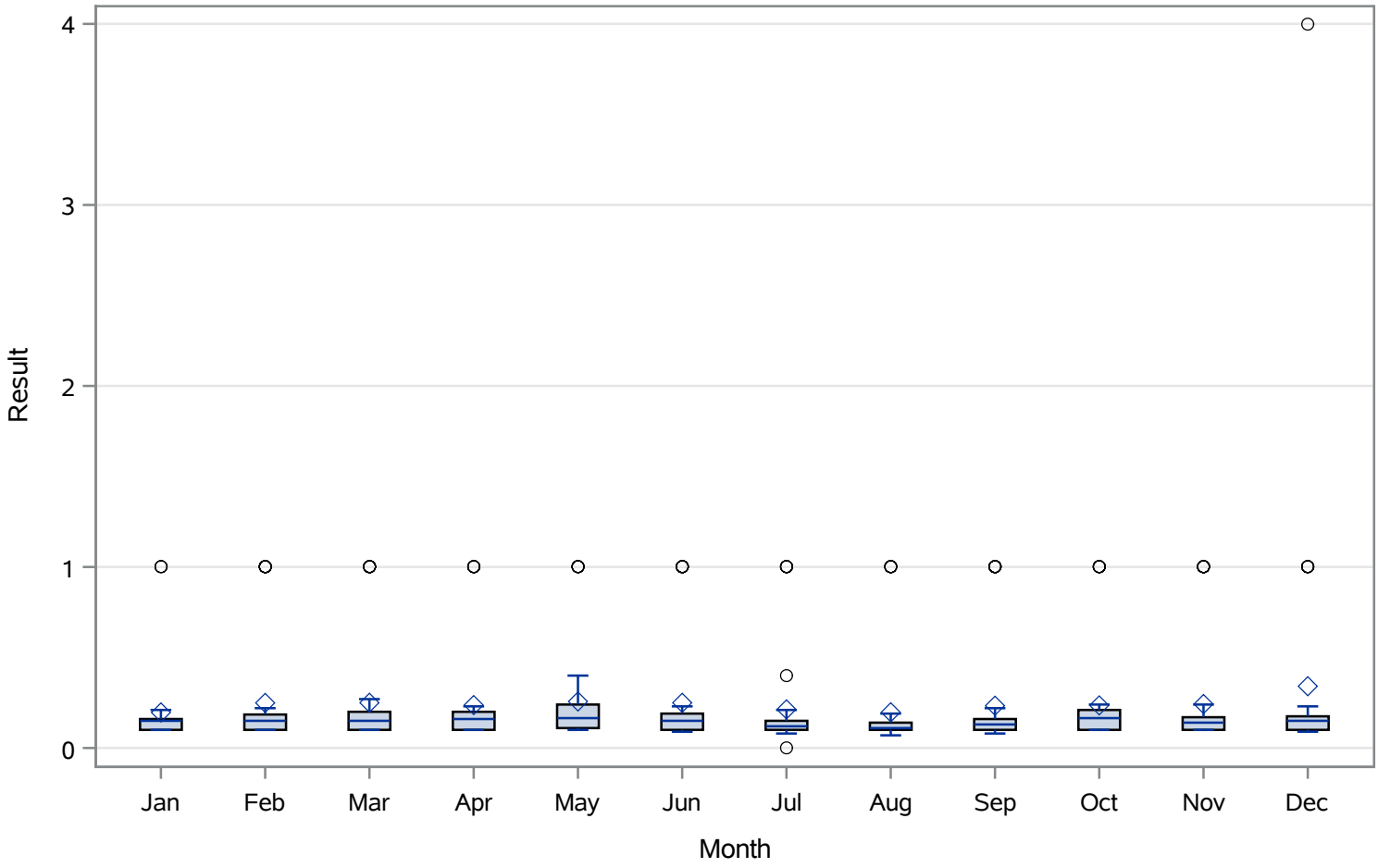
Little Manatee River
113
Sal Mid (ppth)
Site ID = 113



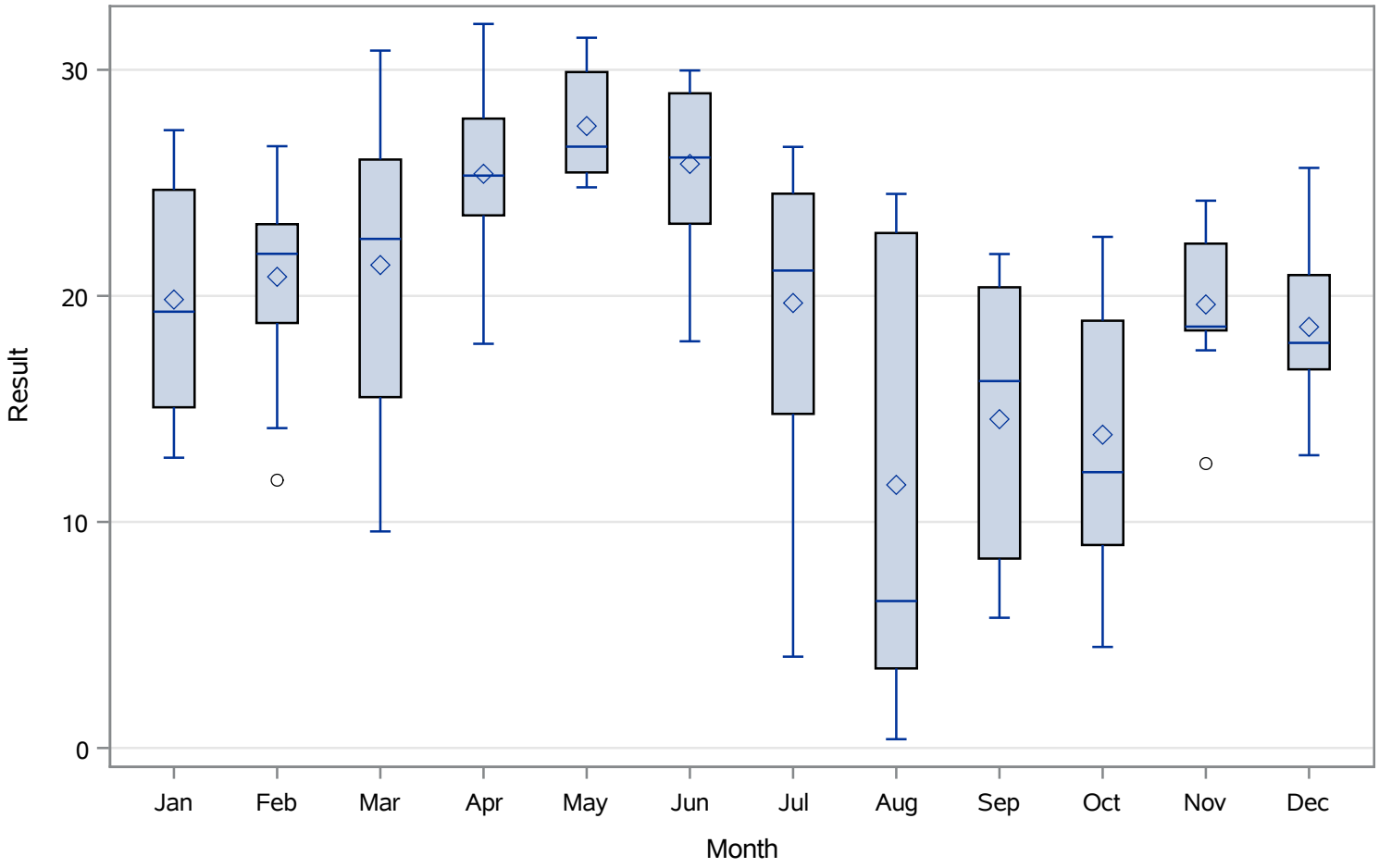
Little Manatee River
129
Sal Mid (ppth)
Site ID = 129



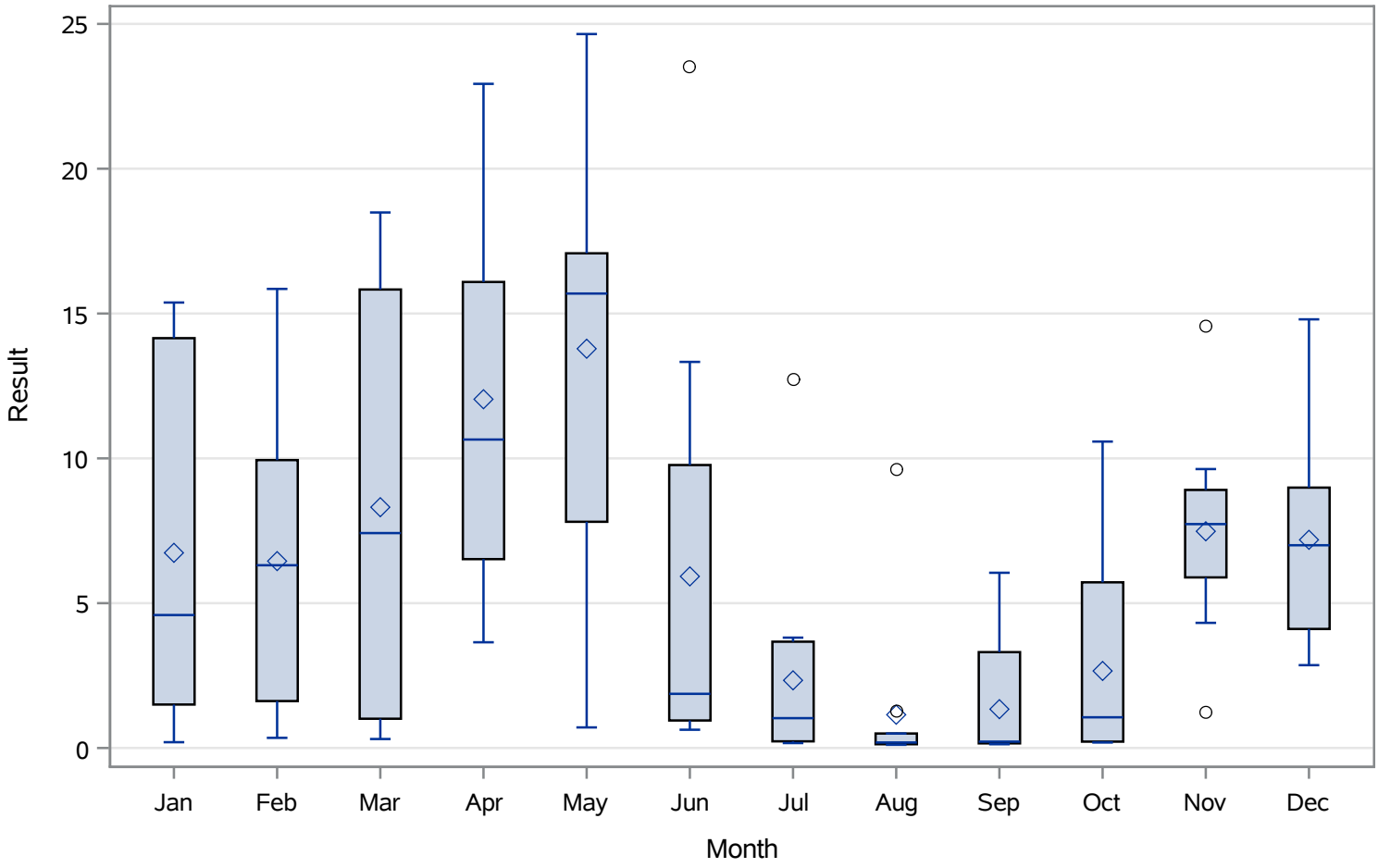
Little Manatee River
140
Sal Mid (ppth)
Site ID = 140



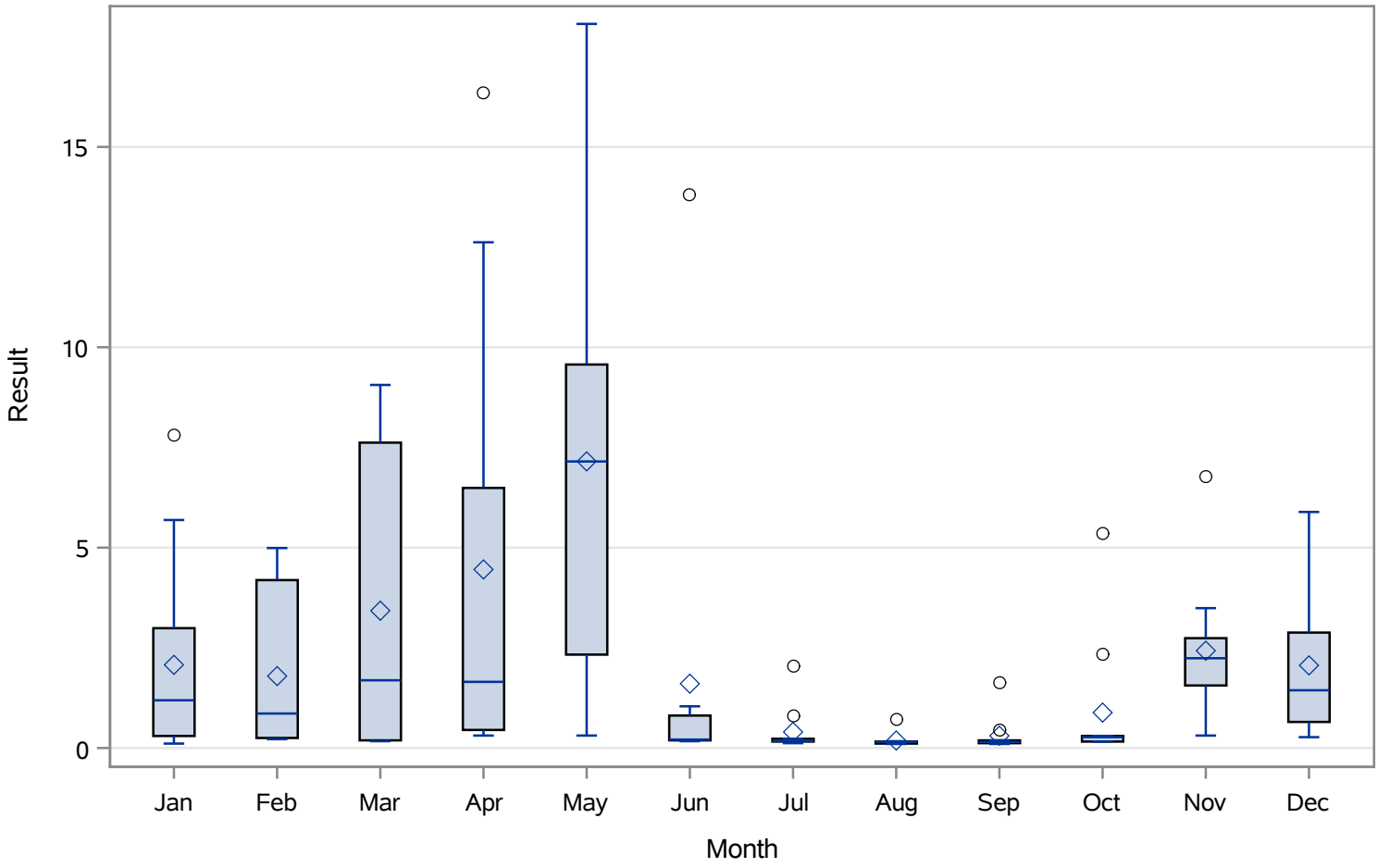
Little Manatee River
180
Sal Mid (ppth)
Site ID = 180



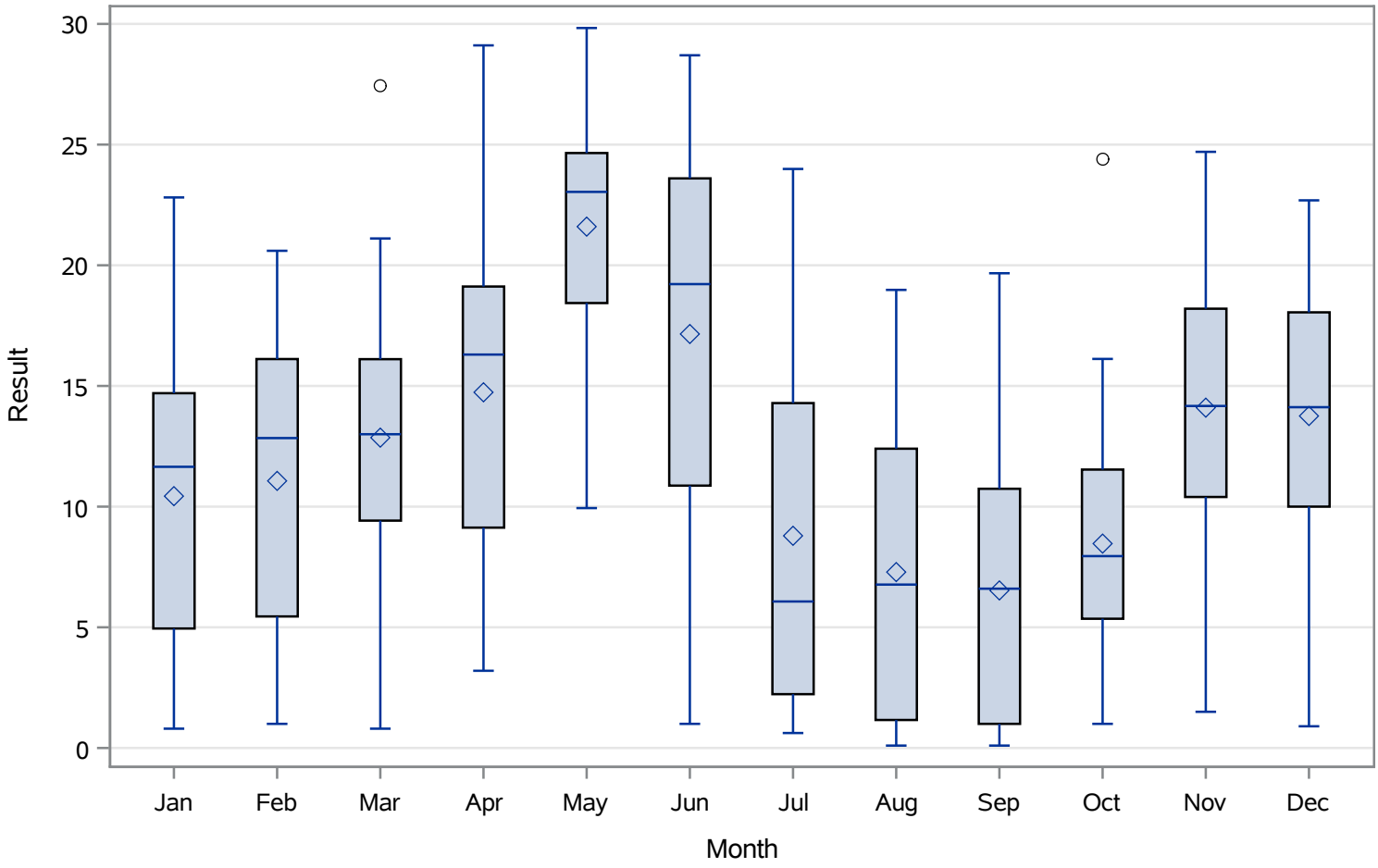
Little Manatee River
181
Sal Mid (ppth)
Site ID = 181



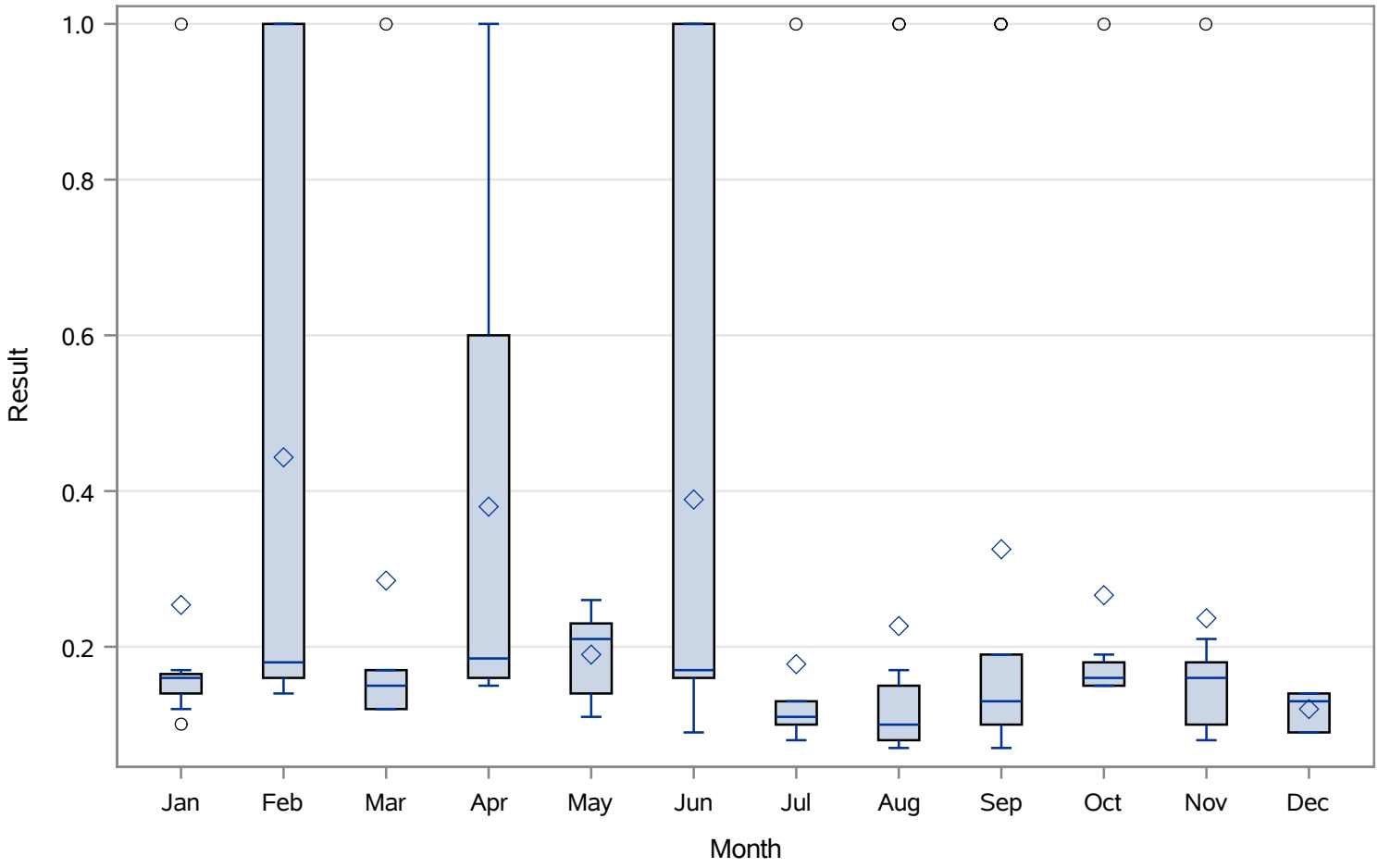
Little Manatee River
182
Sal Mid (ppth)
Site ID = 182



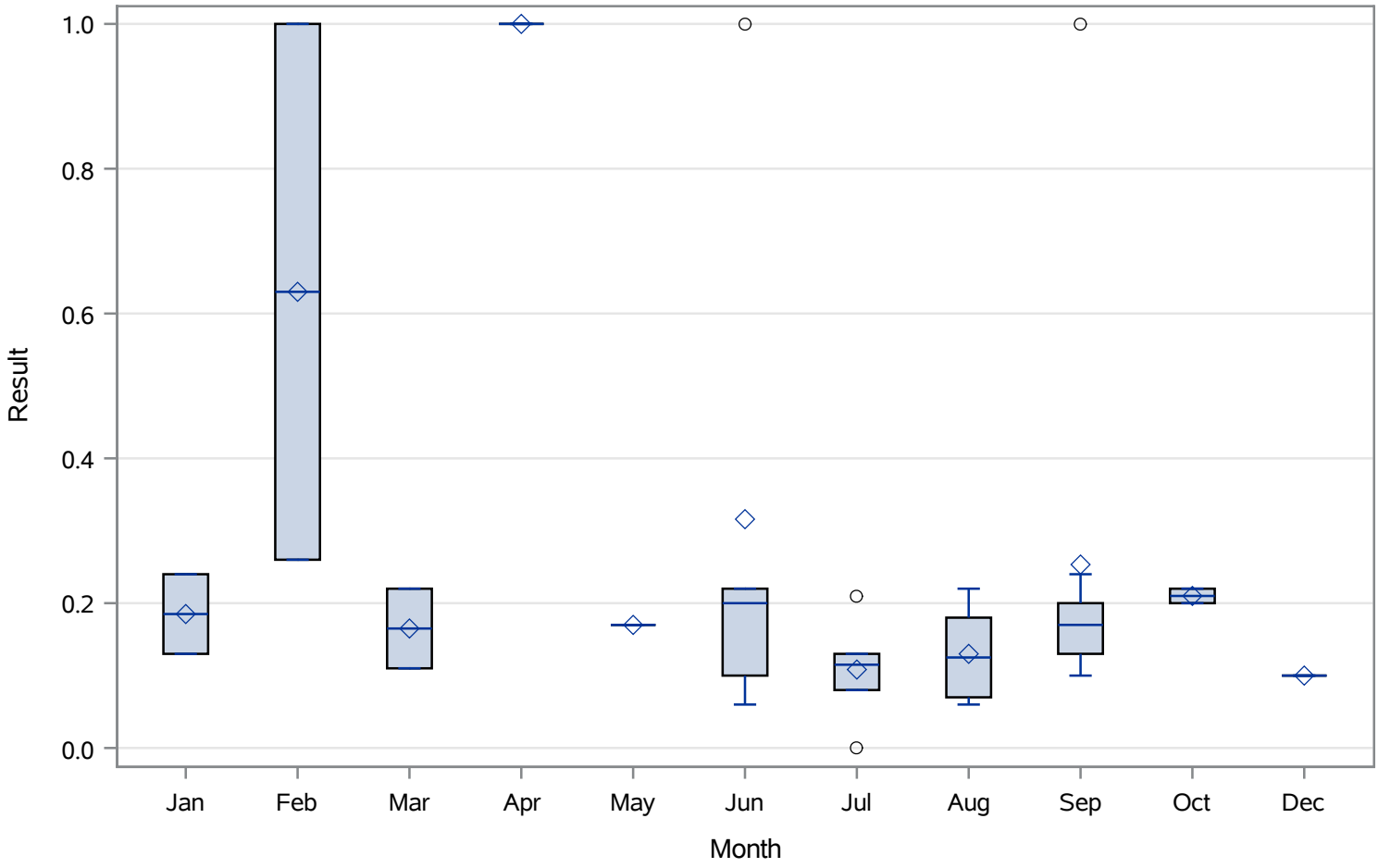
Little Manatee River
112
Sal Top (ppth)
Site ID = 112



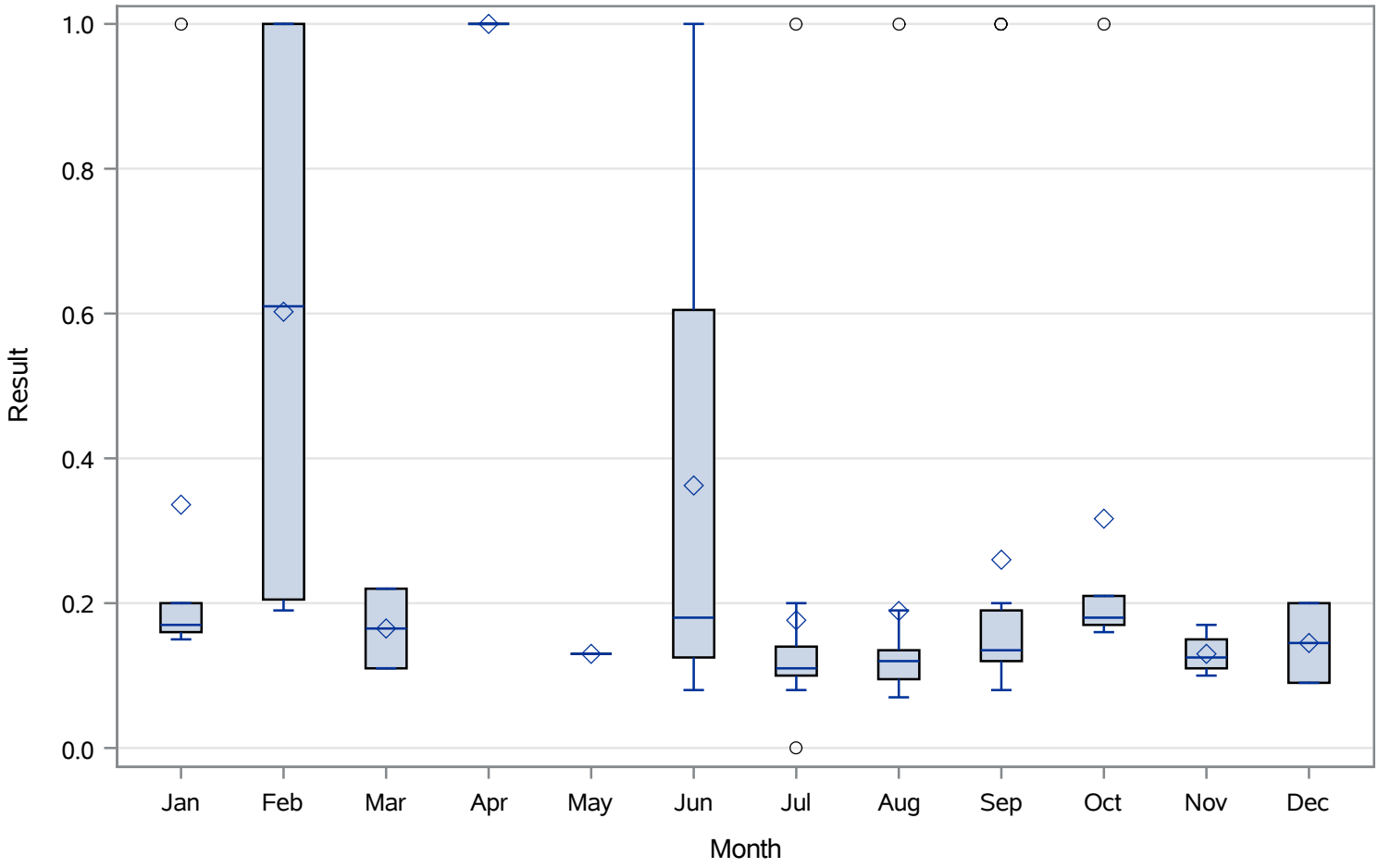
Little Manatee River
113
Sal Top (ppth)
Site ID = 113



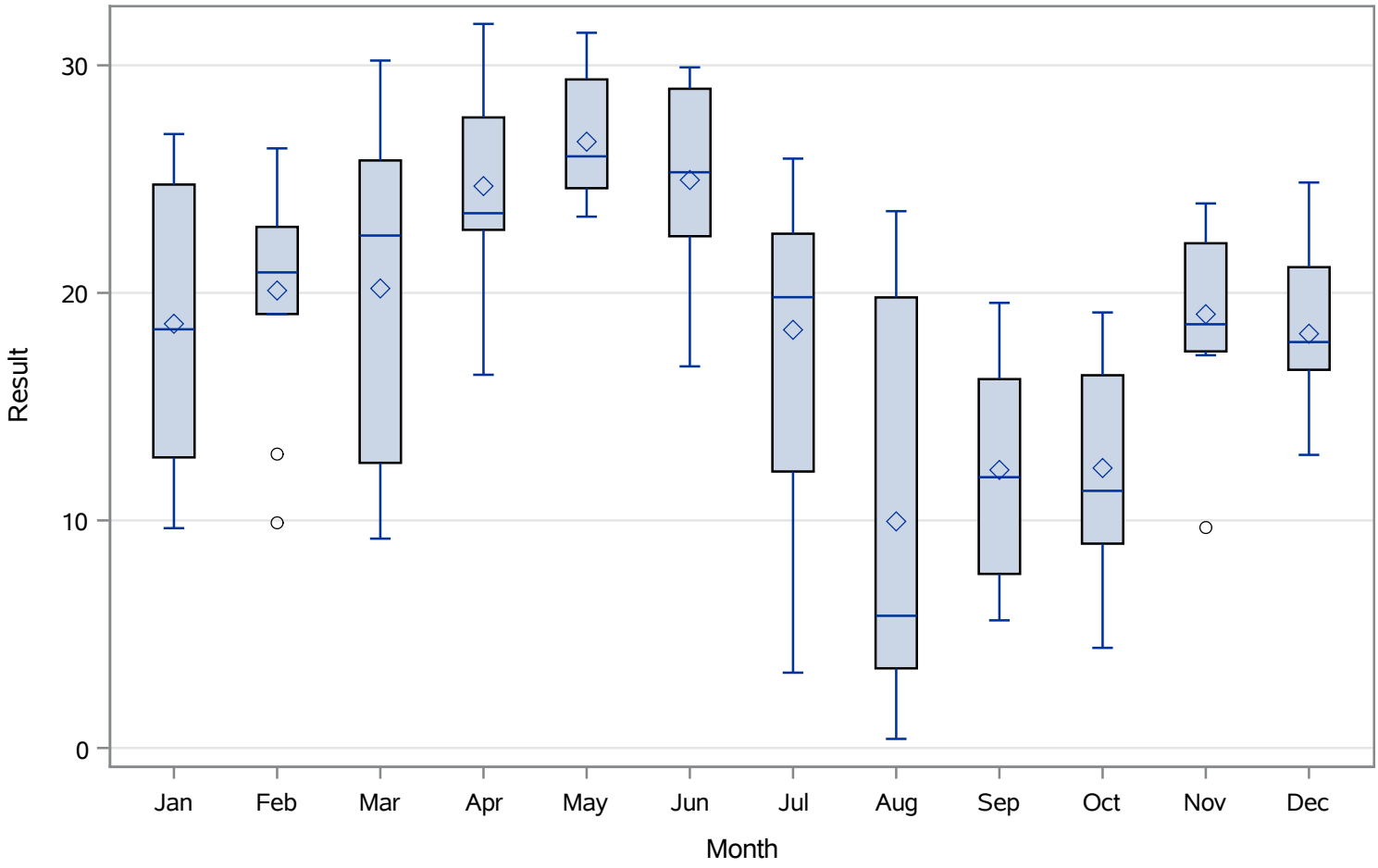
Little Manatee River
129
Sal Top (ppth)
Site ID = 129



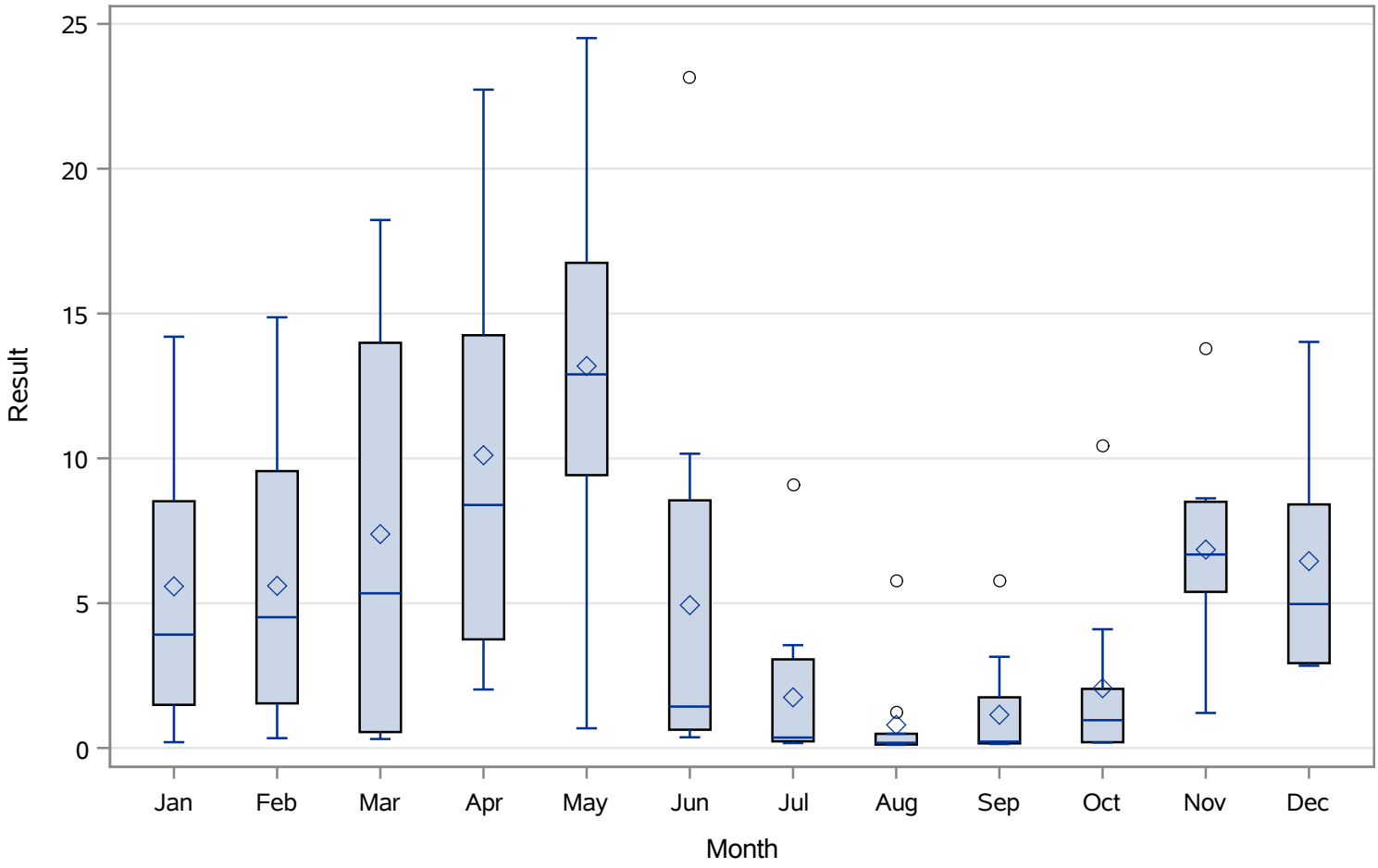
Little Manatee River
140
Sal Top (ppth)
Site ID = 140



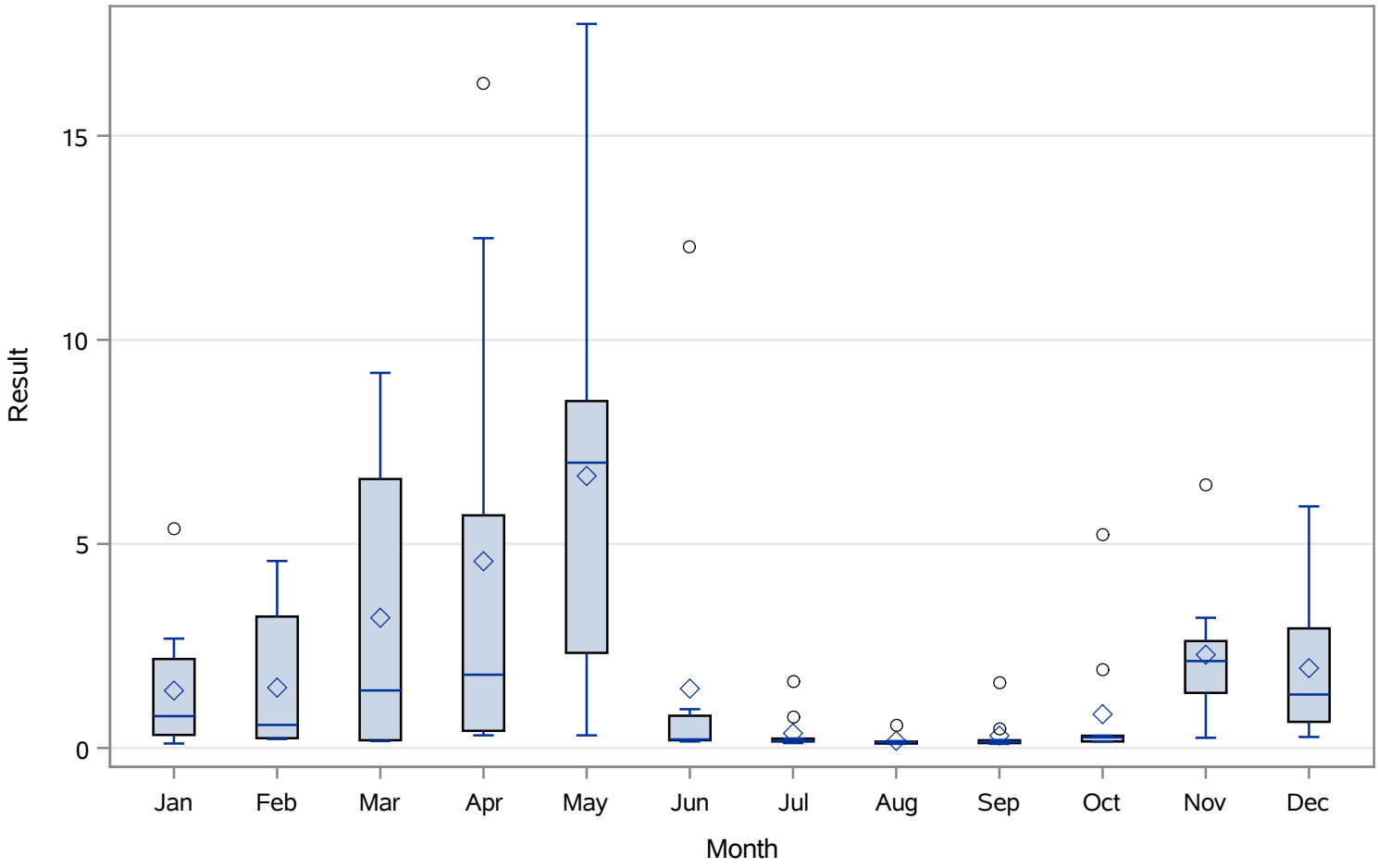
Little Manatee River
180
Sal Top (ppth)
Site ID = 180



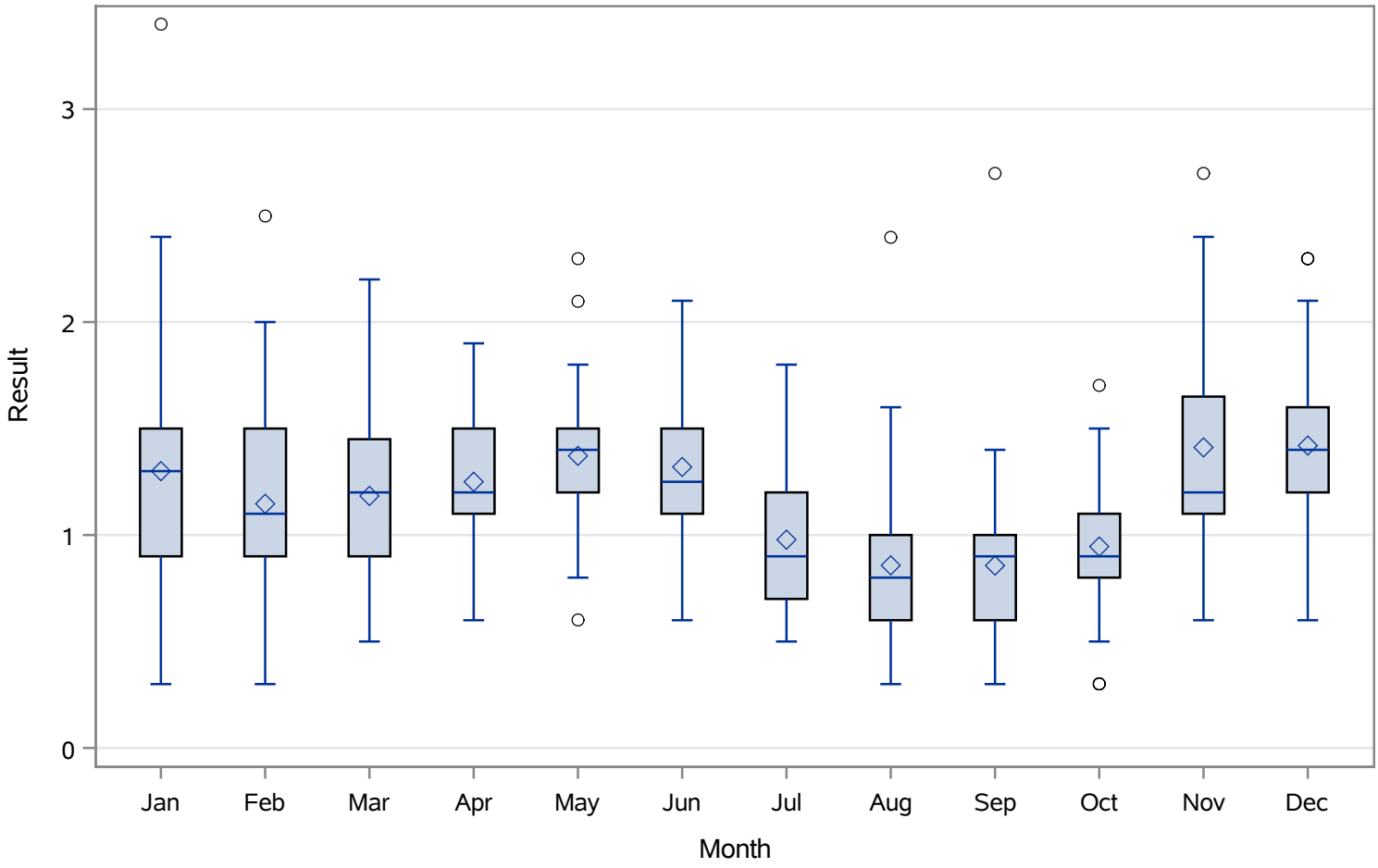
Little Manatee River
181
Sal Top (ppth)
Site ID = 181



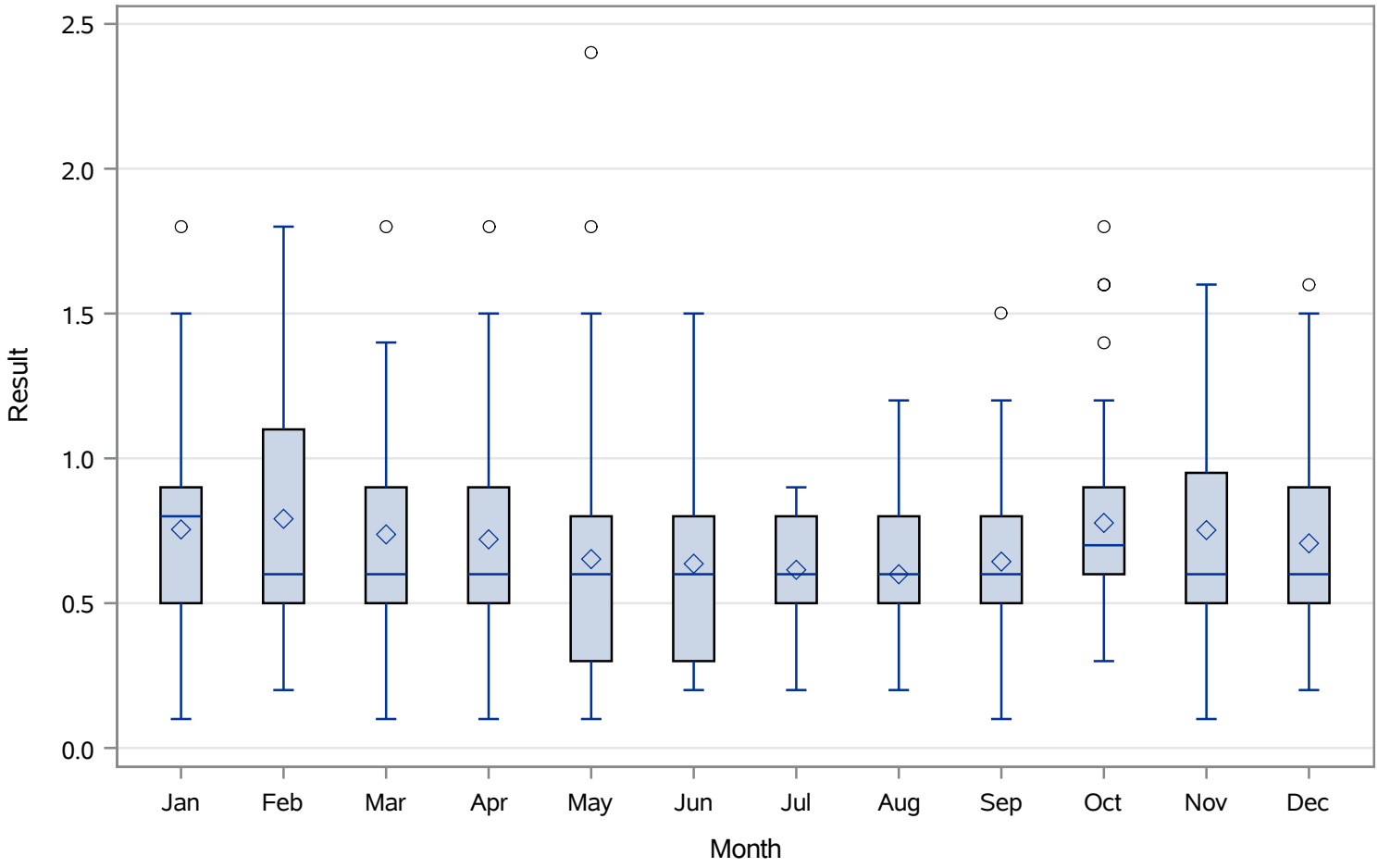
Little Manatee River
182
Sal Top (ppth)
Site ID = 182



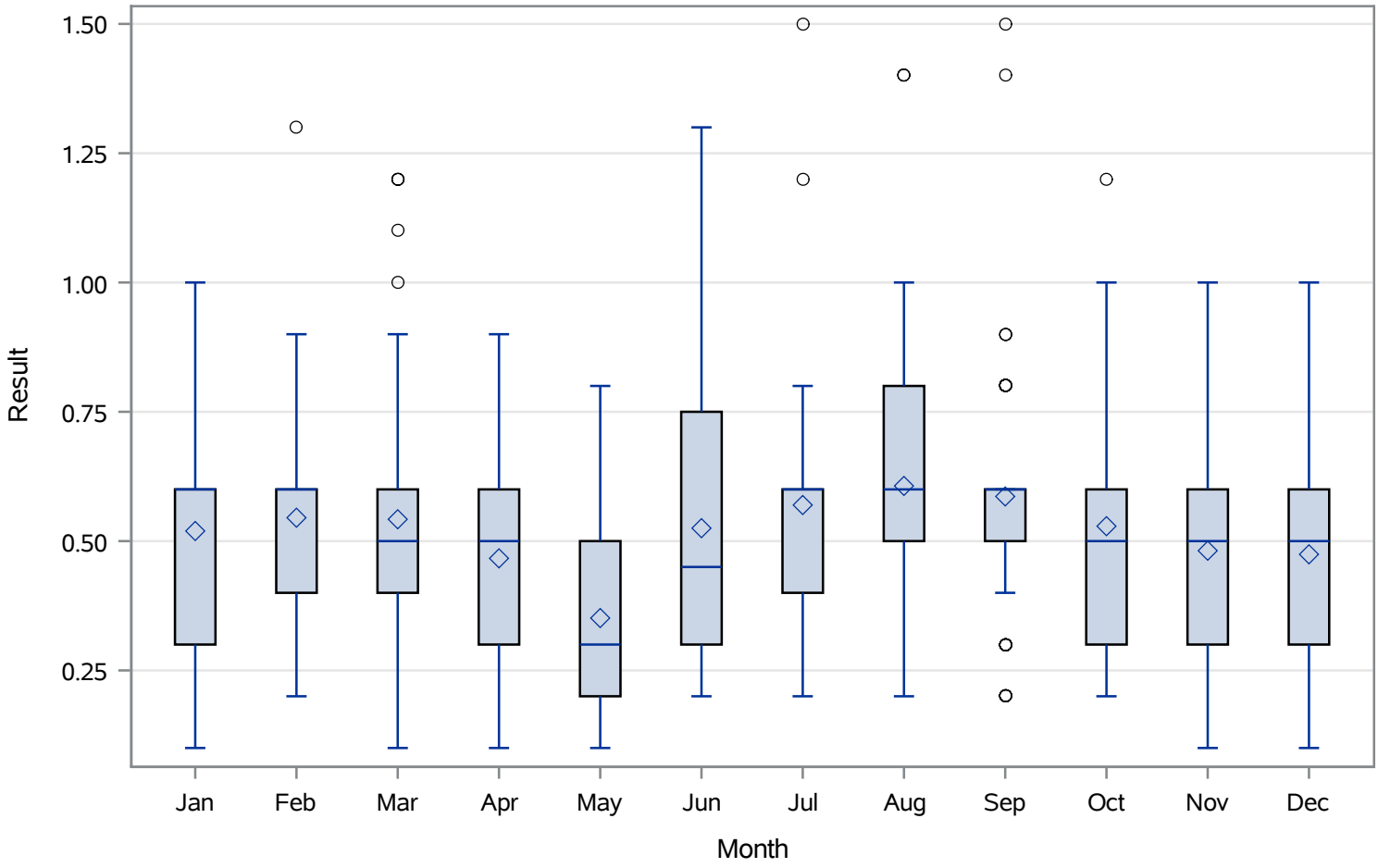
Little Manatee River
112
Secchi Depth (m)
Site ID = 112



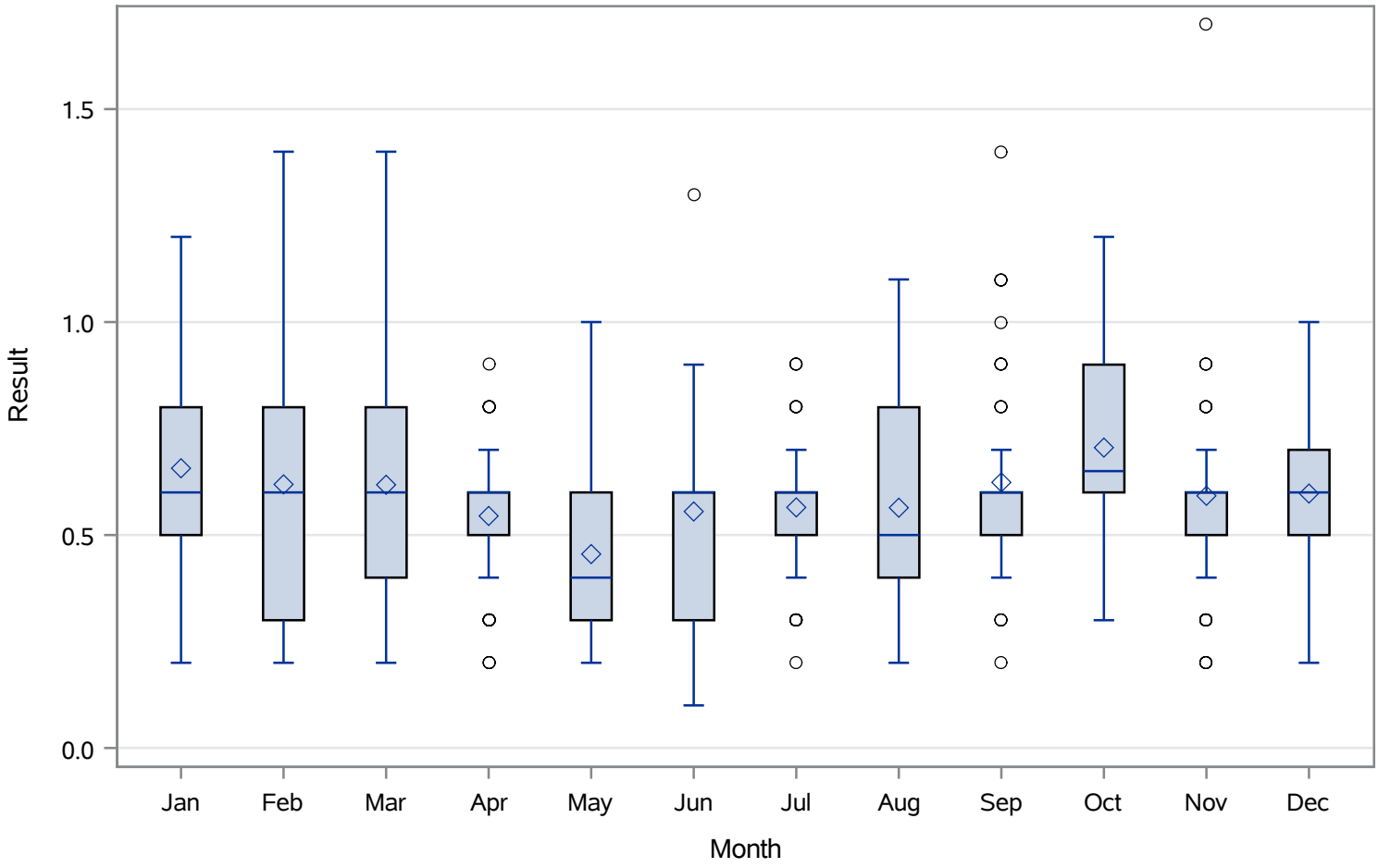
Little Manatee River
113
Secchi Depth (m)
Site ID = 113



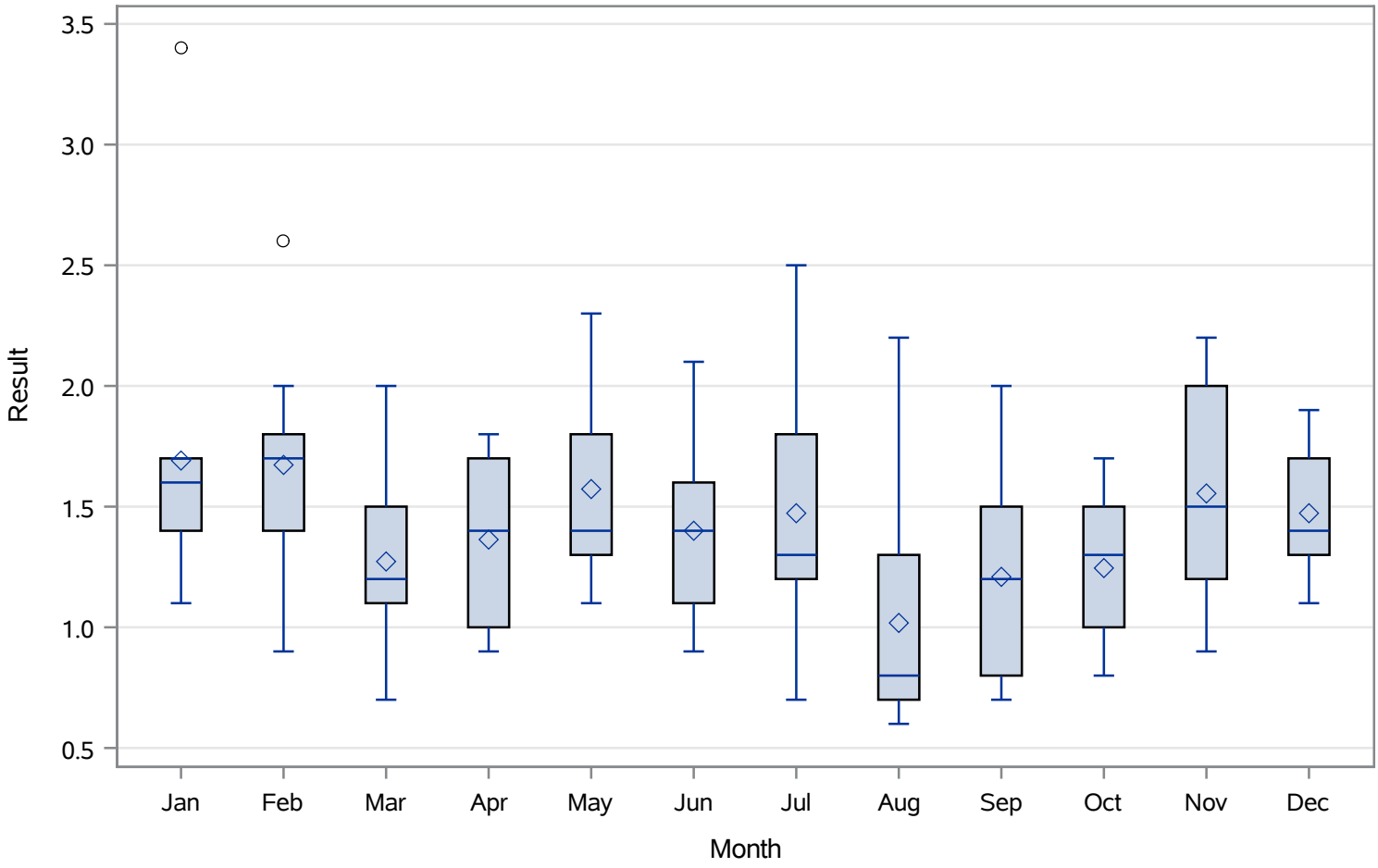
Little Manatee River
129
Secchi Depth (m)
Site ID = 129



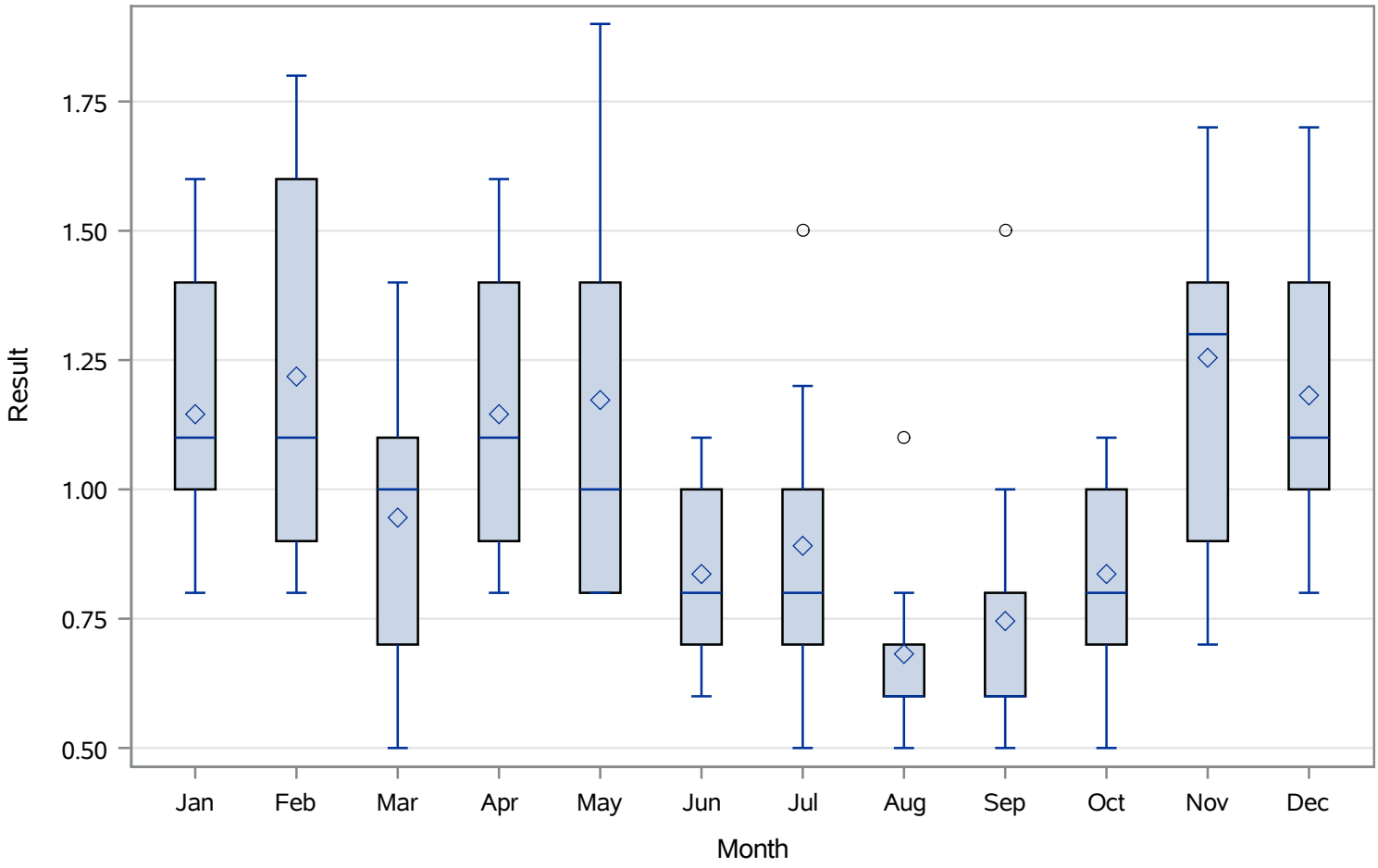
Little Manatee River
140
Secchi Depth (m)
Site ID = 140



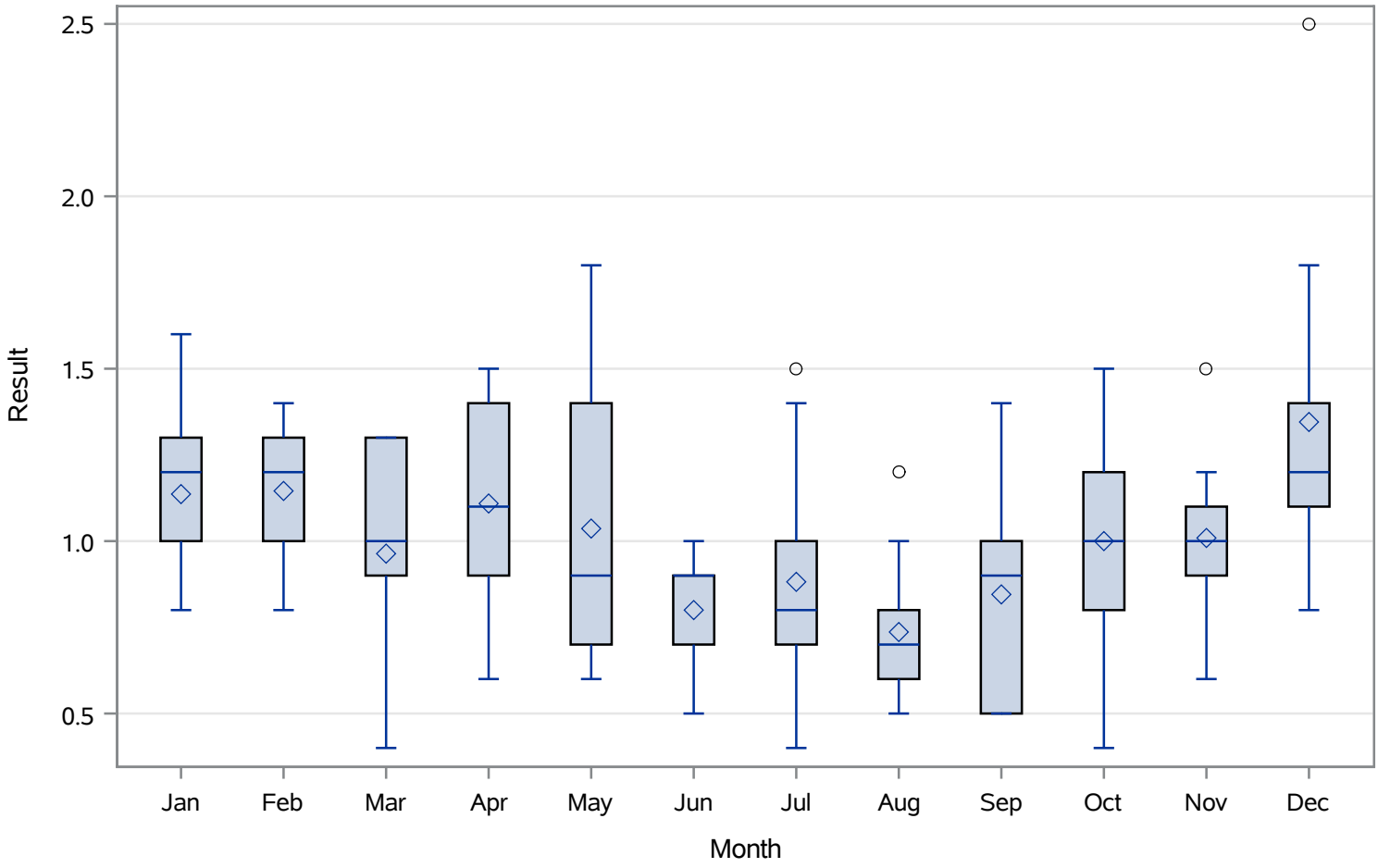
Little Manatee River
180
Secchi Depth (m)
Site ID = 180



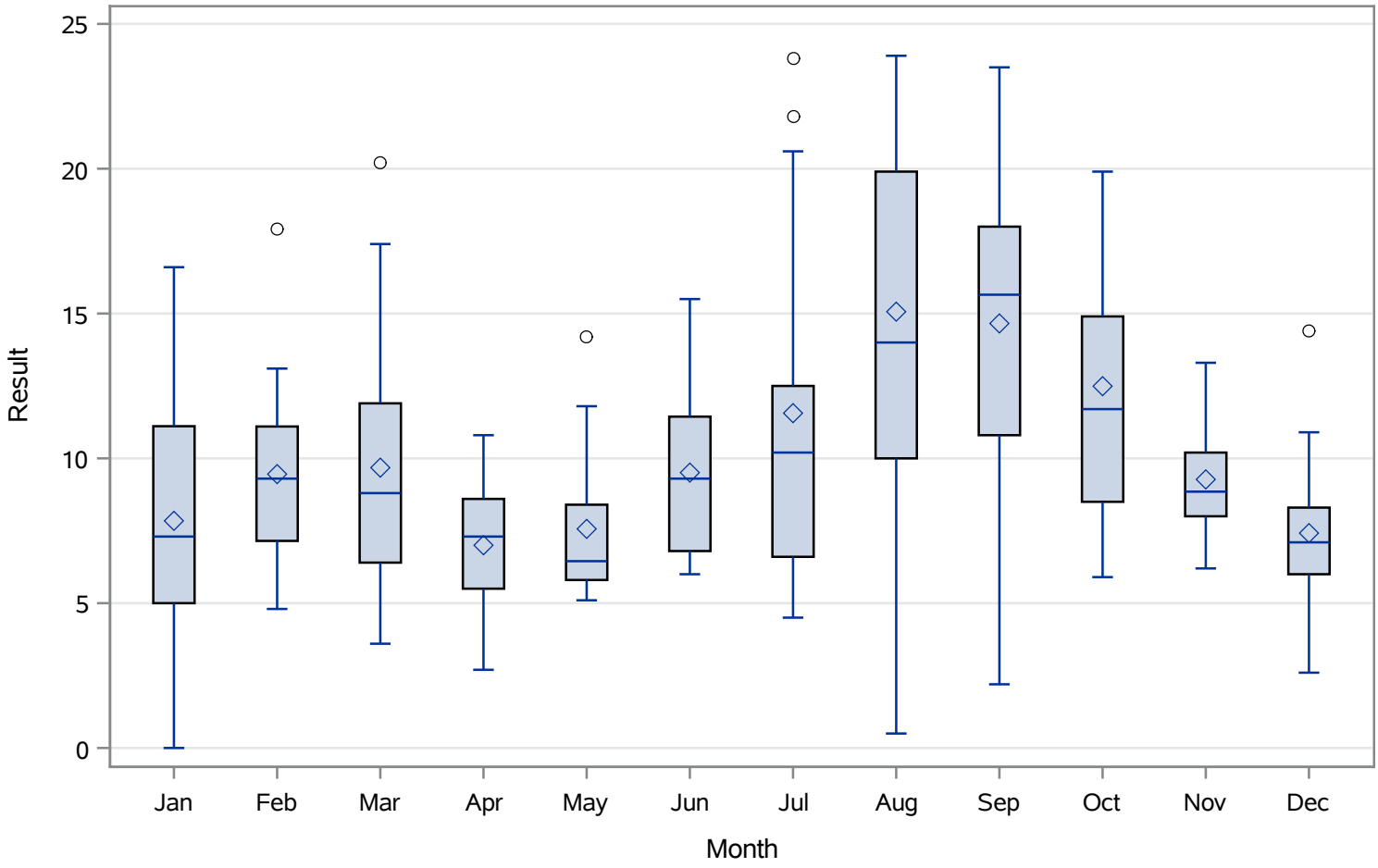
Little Manatee River
181
Secchi Depth (m)
Site ID = 181



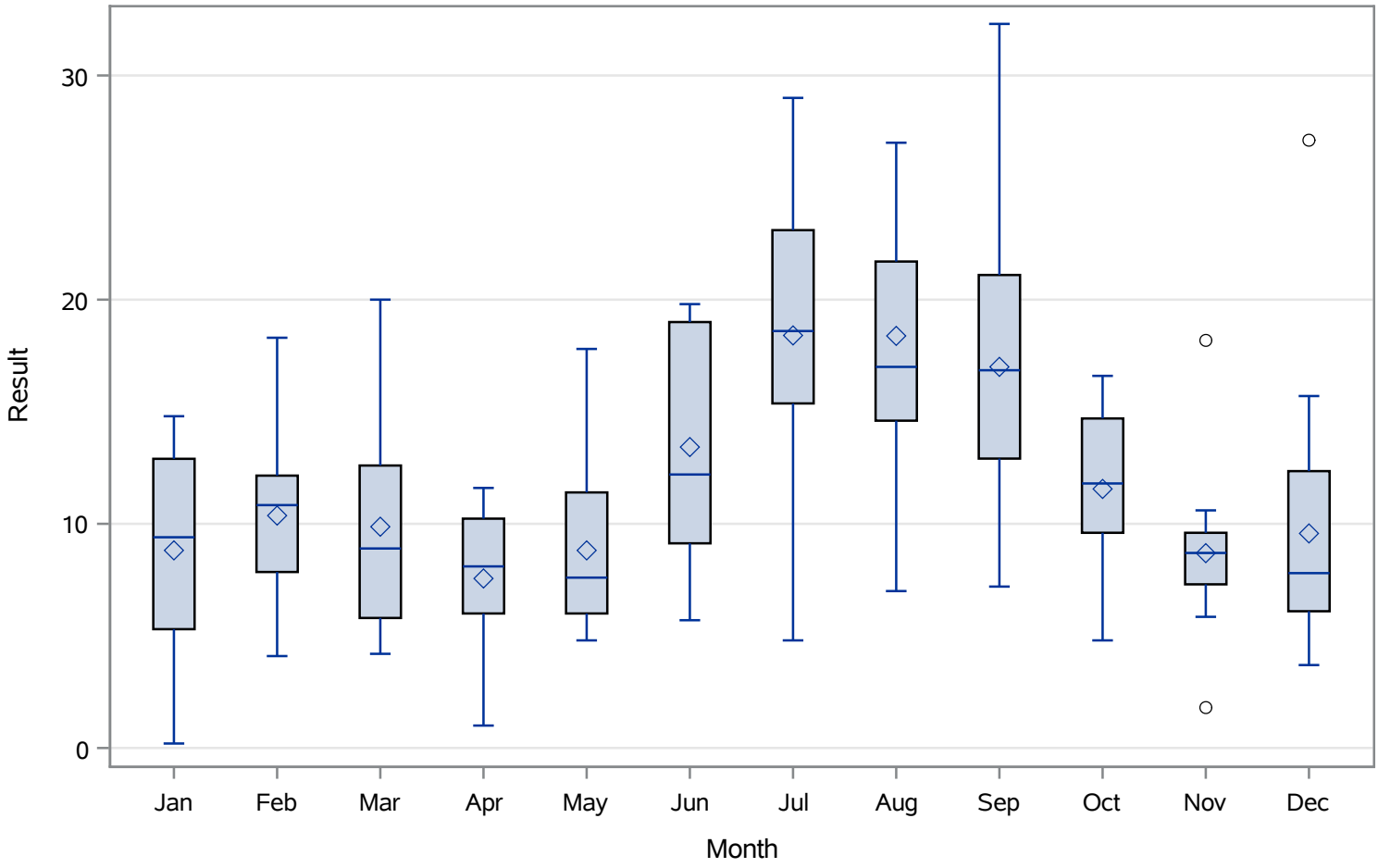
Little Manatee River
182
Secchi Depth (m)
Site ID = 182



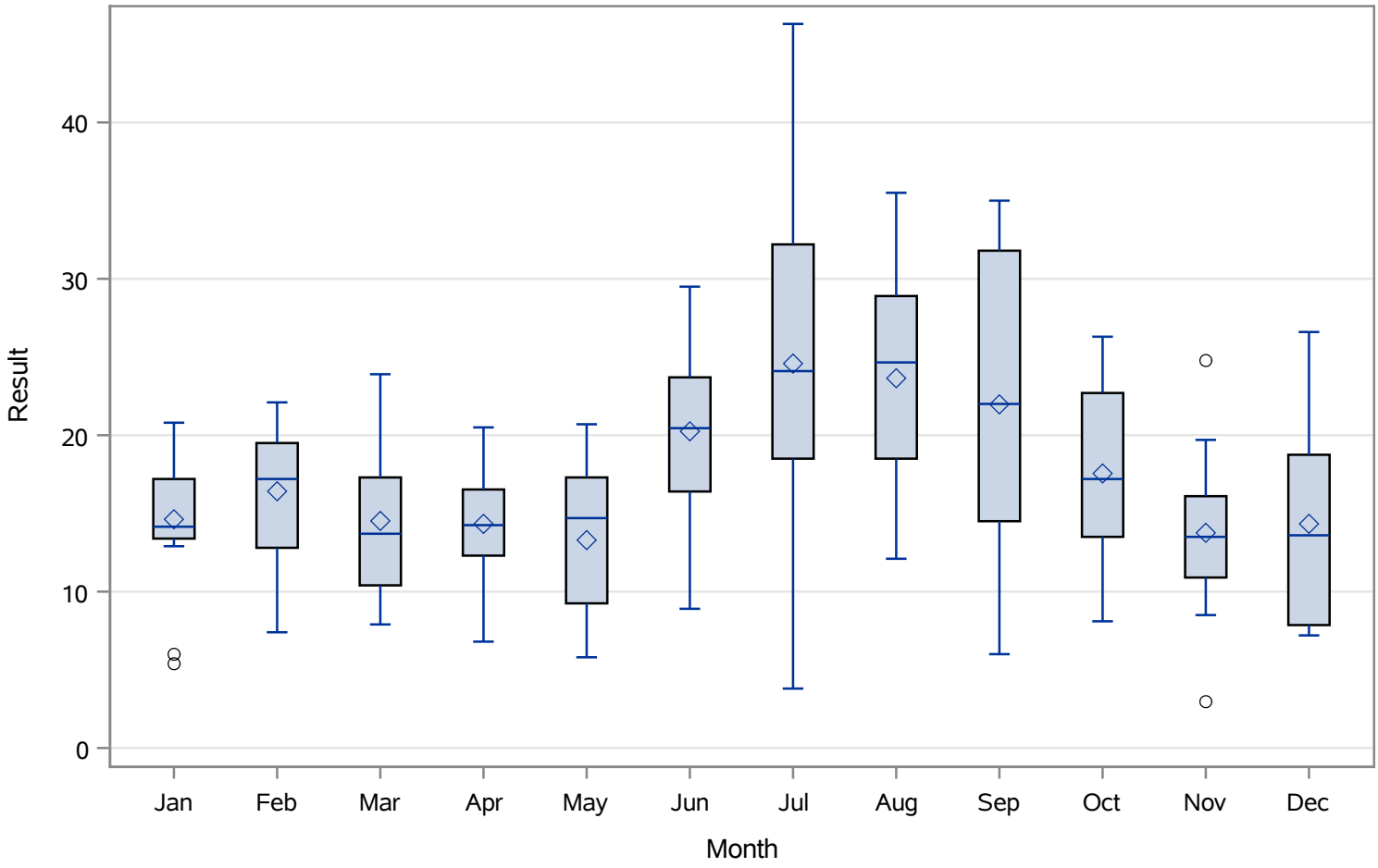
Little Manatee River
112
TOC (mg/l)
Site ID = 112



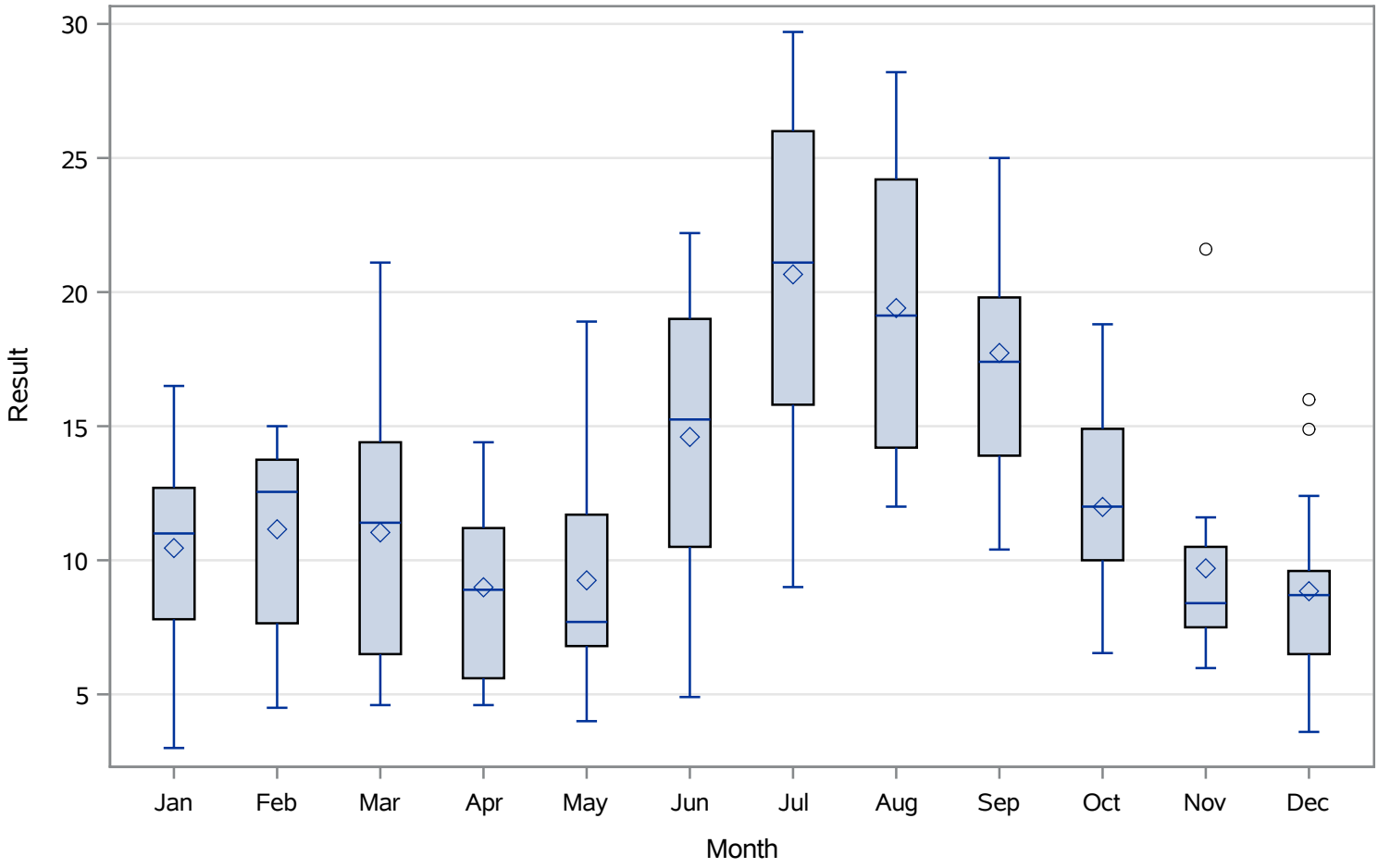
Little Manatee River
113
TOC (mg/l)
Site ID = 113



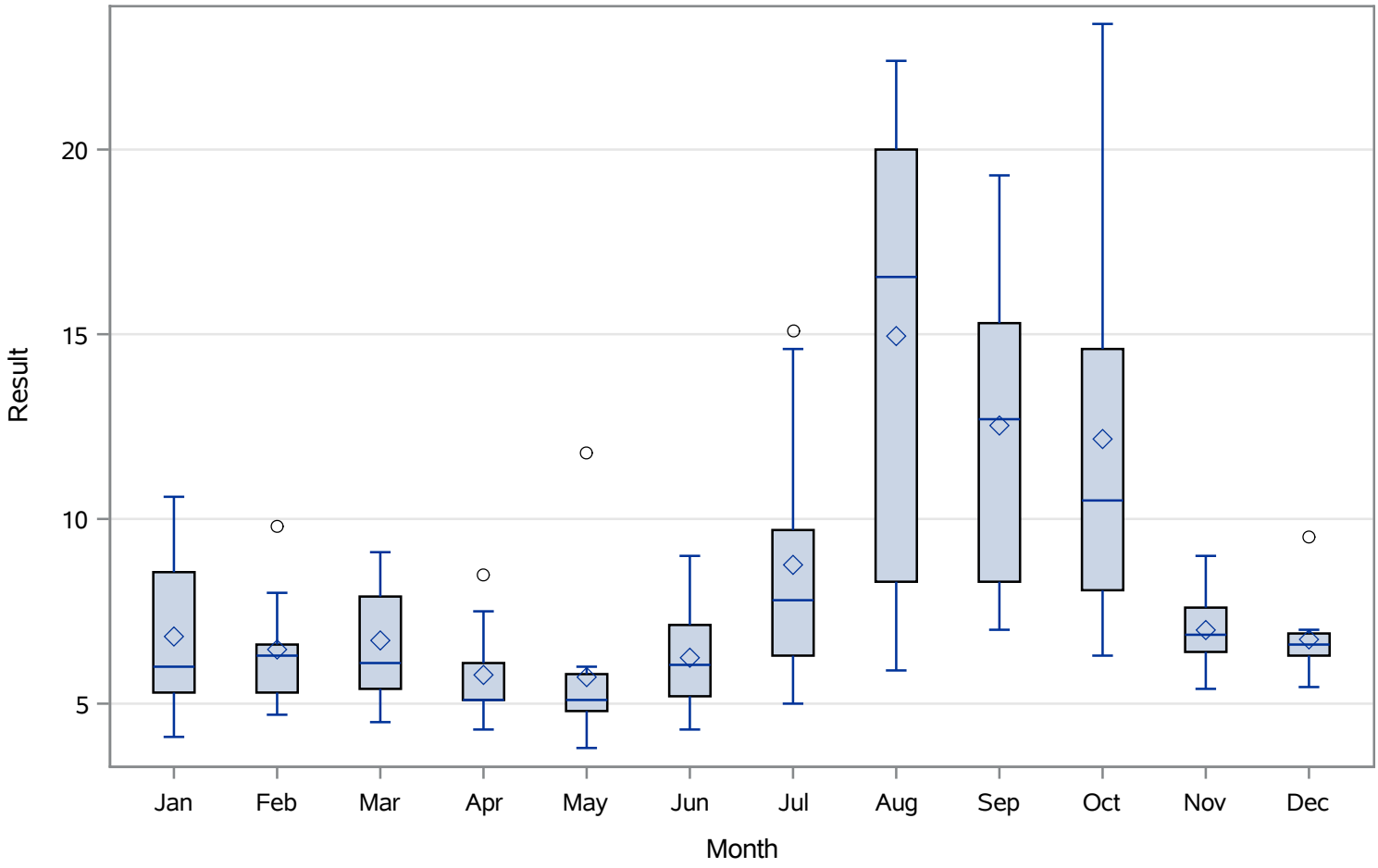
Little Manatee River
129
TOC (mg/l)
Site ID = 129



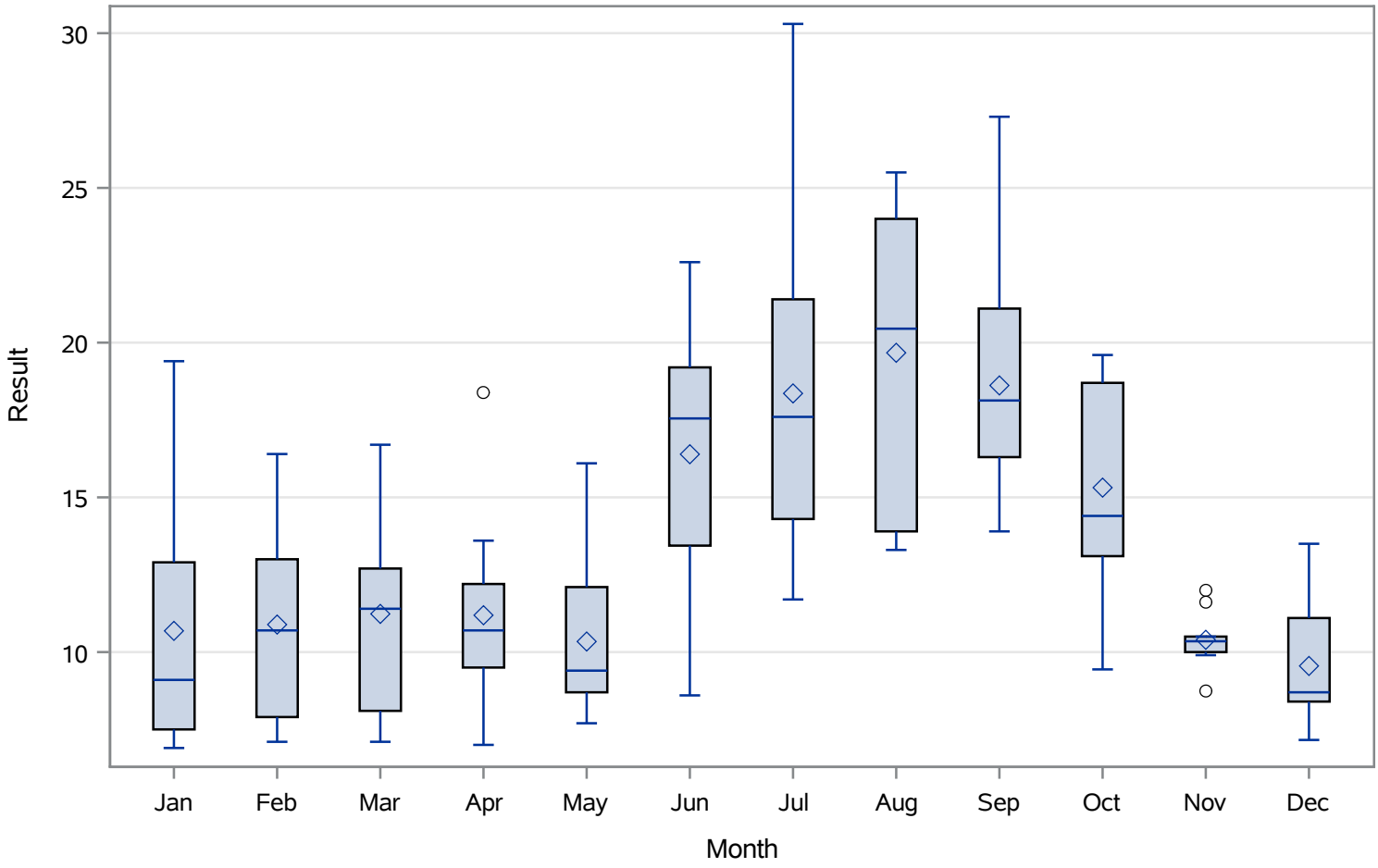
Little Manatee River
140
TOC (mg/l)
Site ID = 140



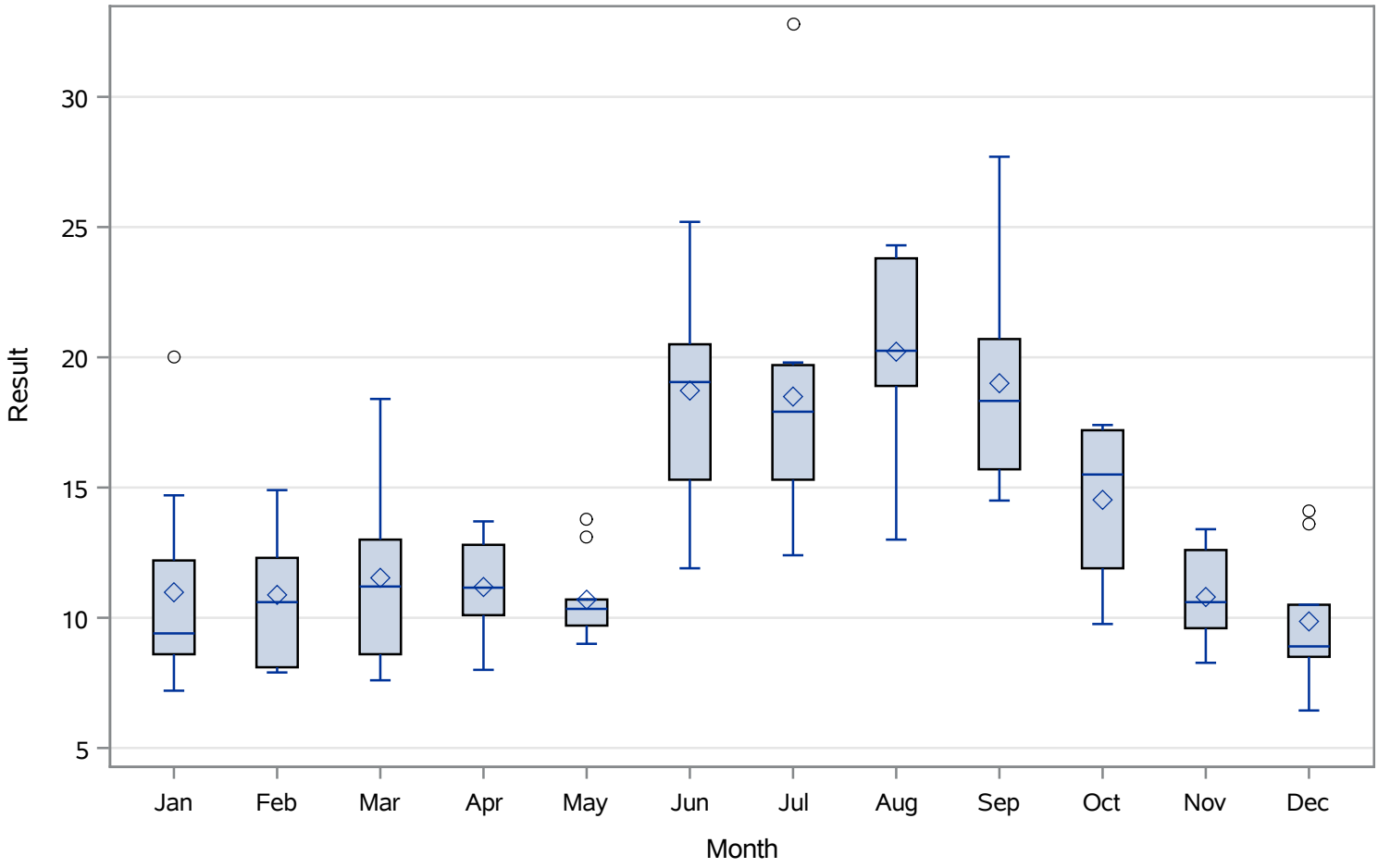
Little Manatee River
180
TOC (mg/l)
Site ID = 180



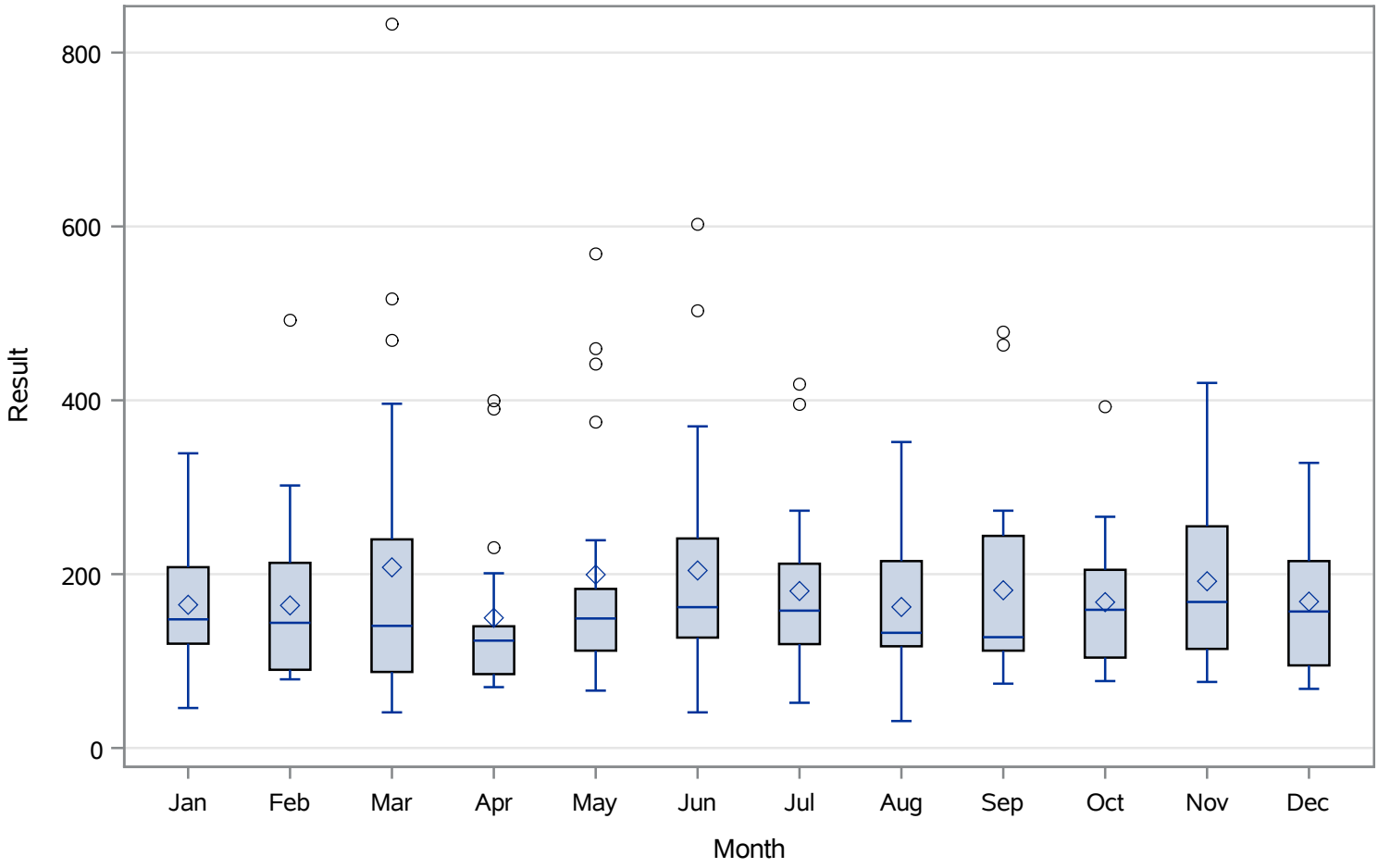
Little Manatee River
181
TOC (mg/l)
Site ID = 181



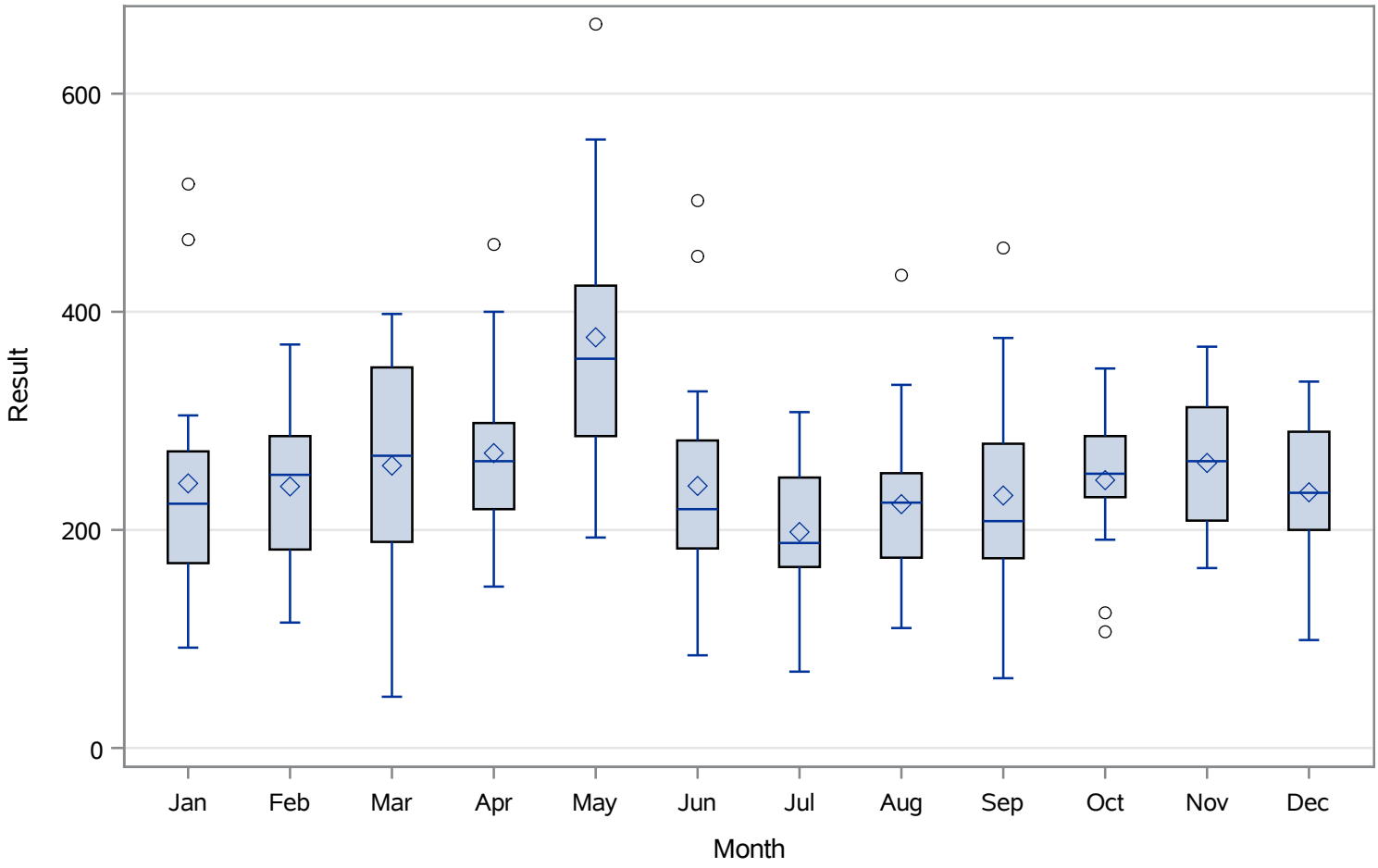
Little Manatee River
182
TOC (mg/l)
Site ID = 182



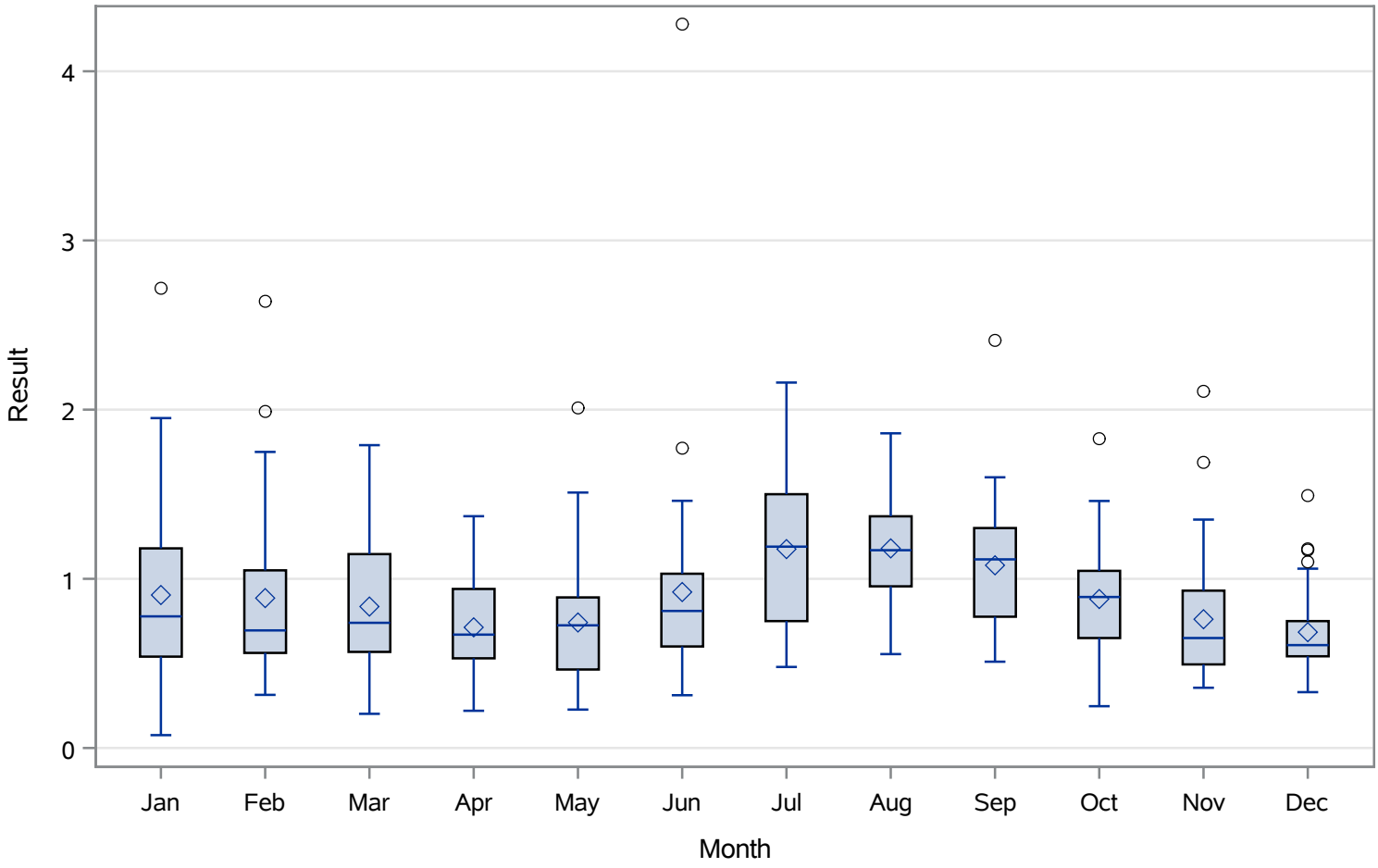
Little Manatee River
129
Total Dissolved Solids (mg/l)
Site ID = 129



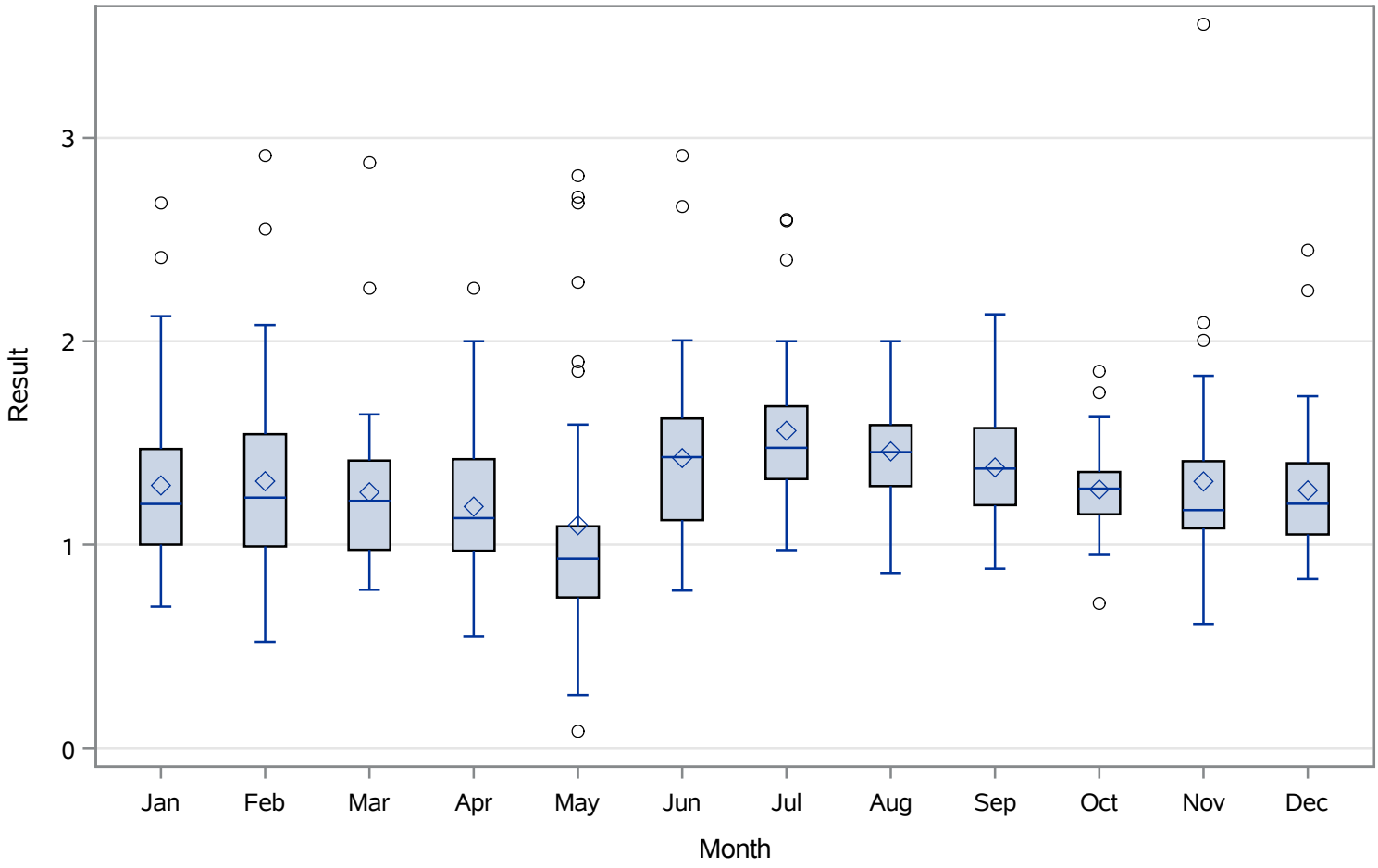
Little Manatee River
140
Total Dissolved Solids (mg/l)
Site ID = 140



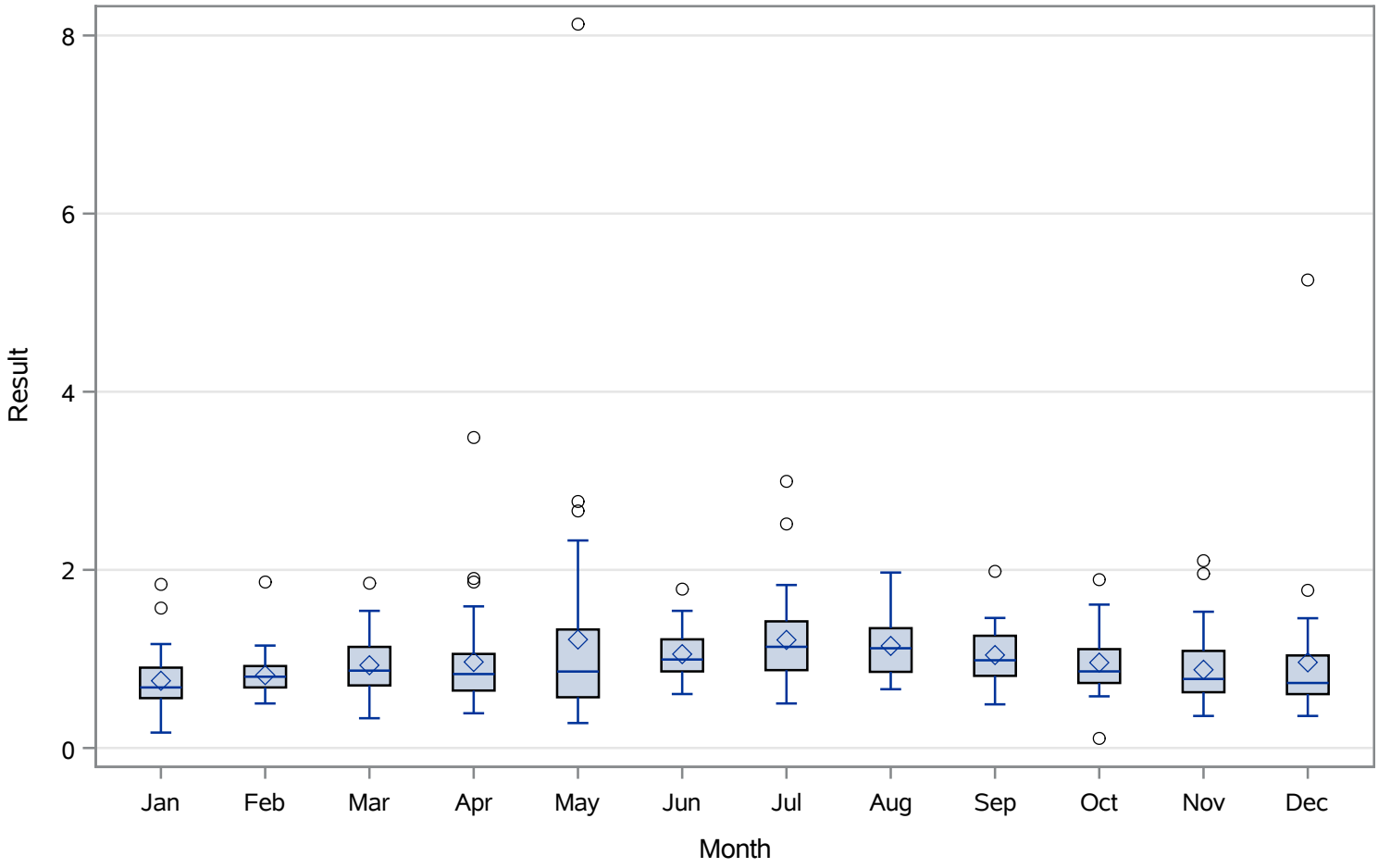
Little Manatee River
112
Total Nitrogen (mg/l)
Site ID = 112



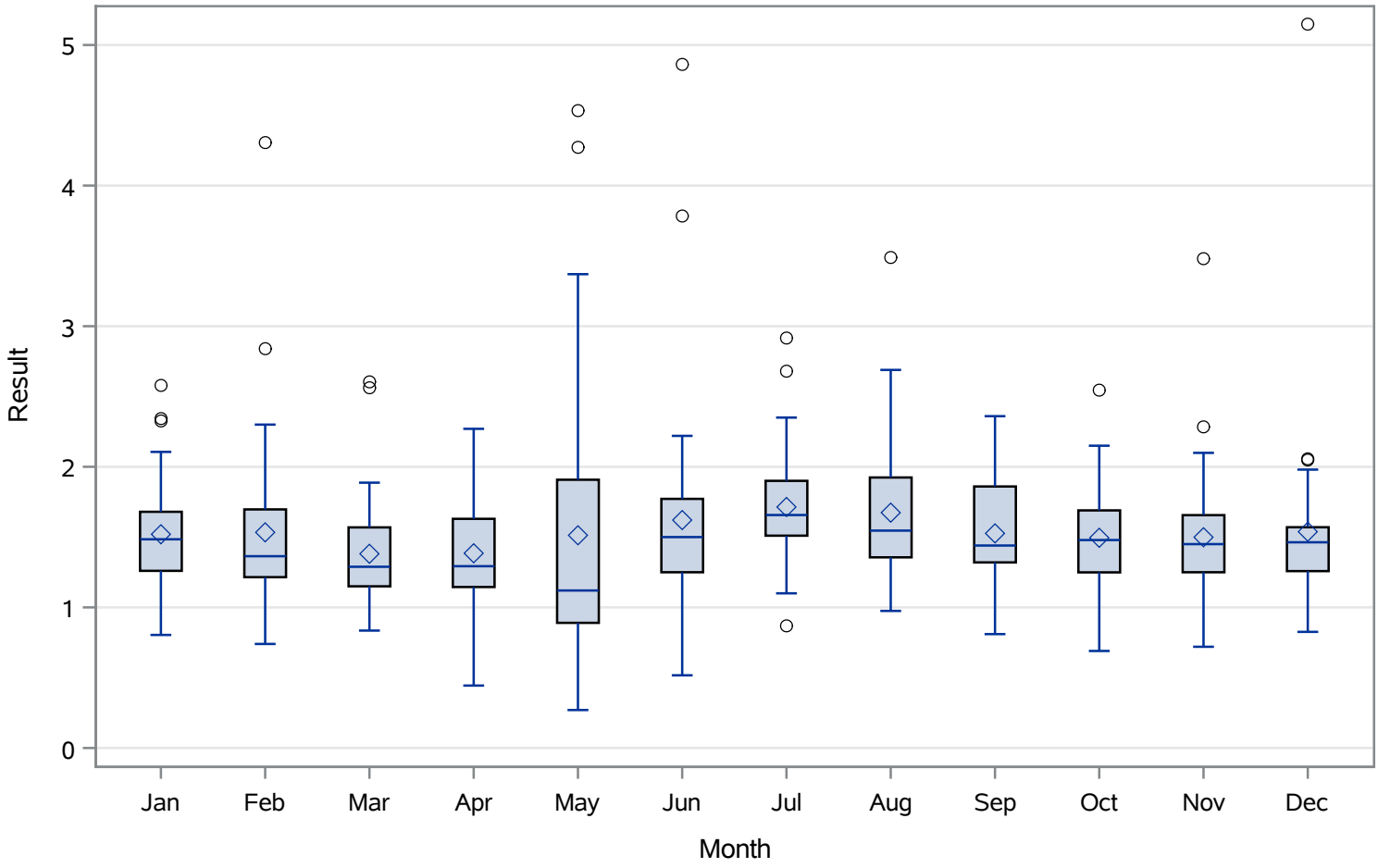
Little Manatee River
113
Total Nitrogen (mg/l)
Site ID = 113



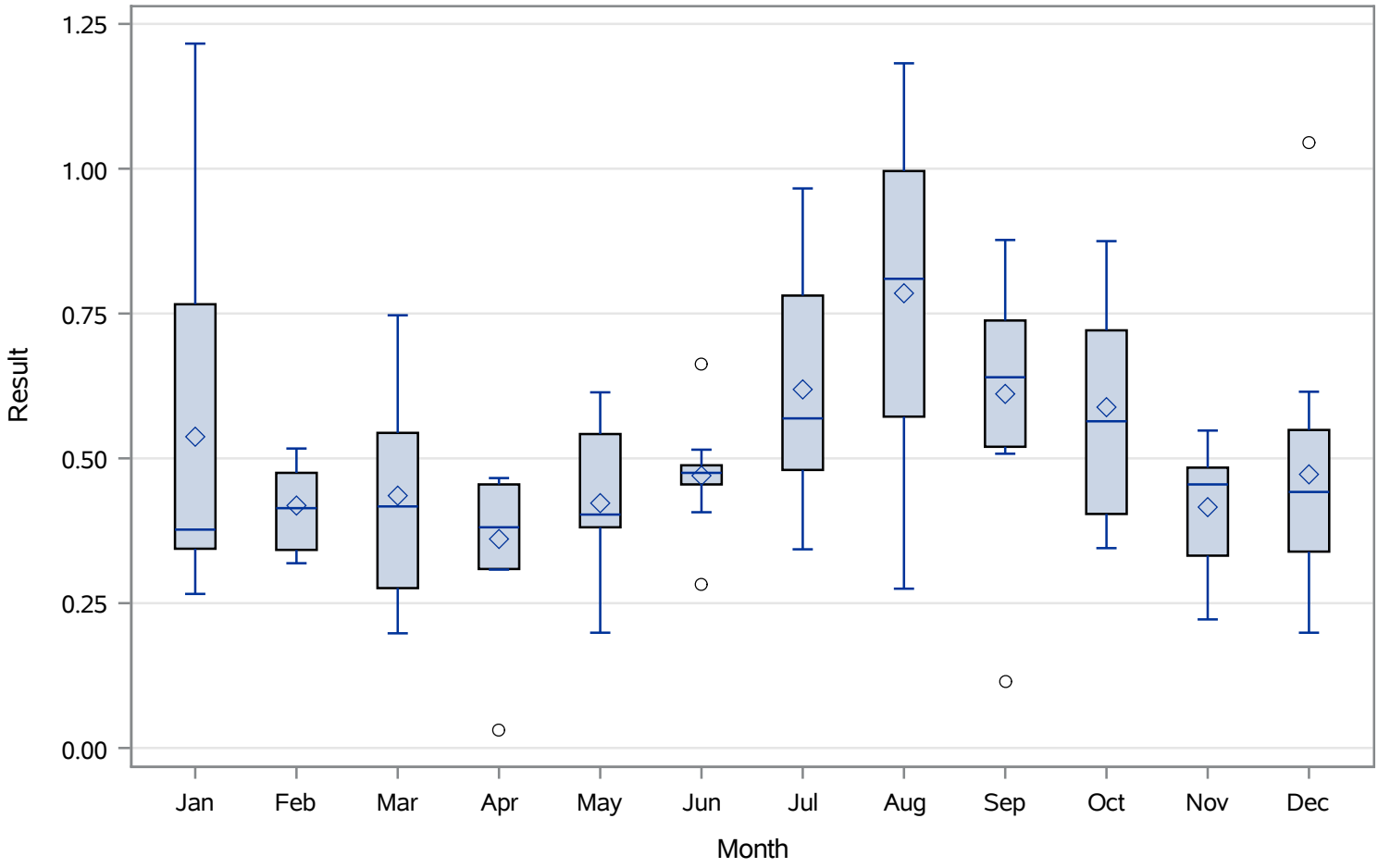
Little Manatee River
129
Total Nitrogen (mg/l)
Site ID = 129



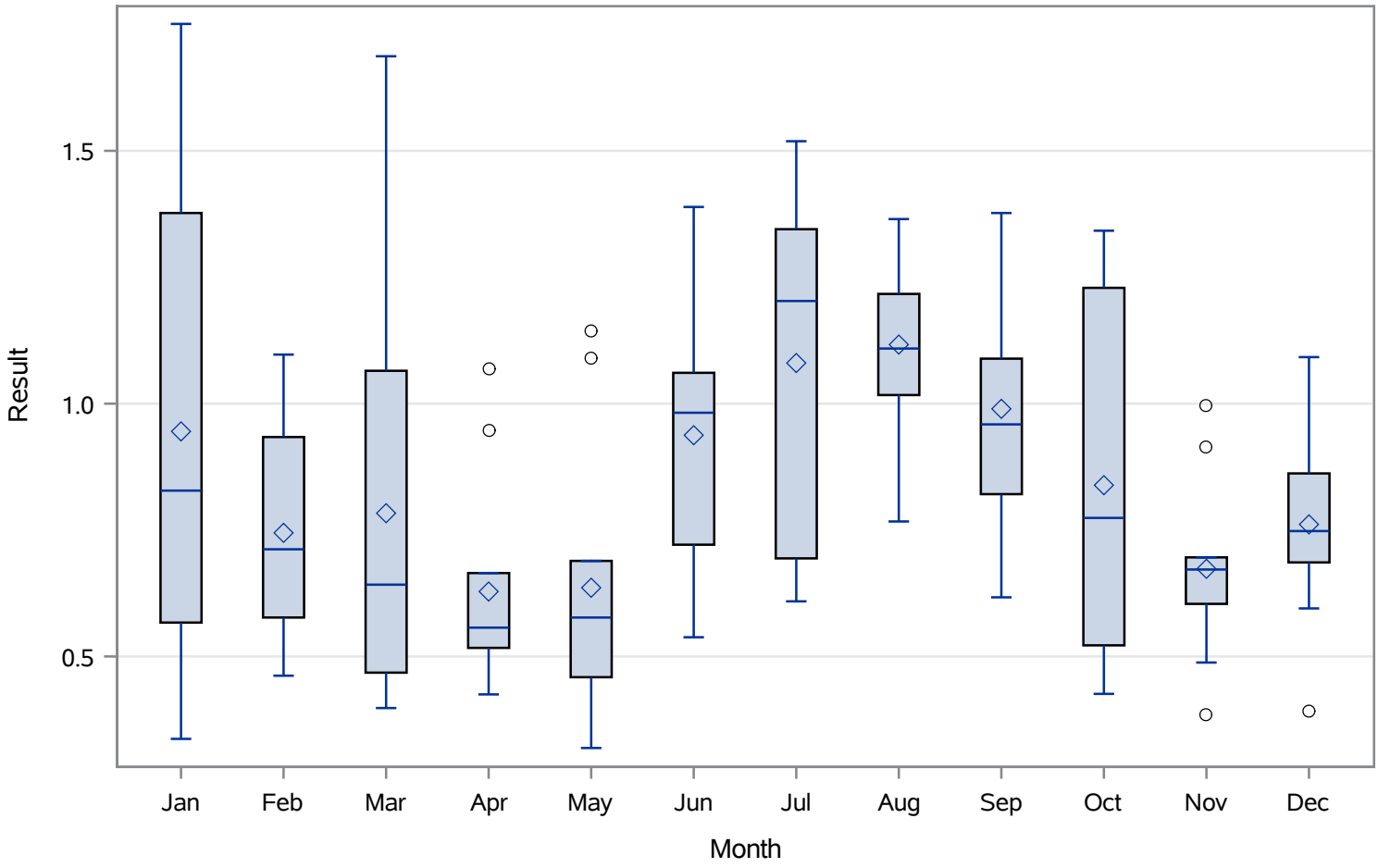
Little Manatee River
140
Total Nitrogen (mg/l)
Site ID = 140



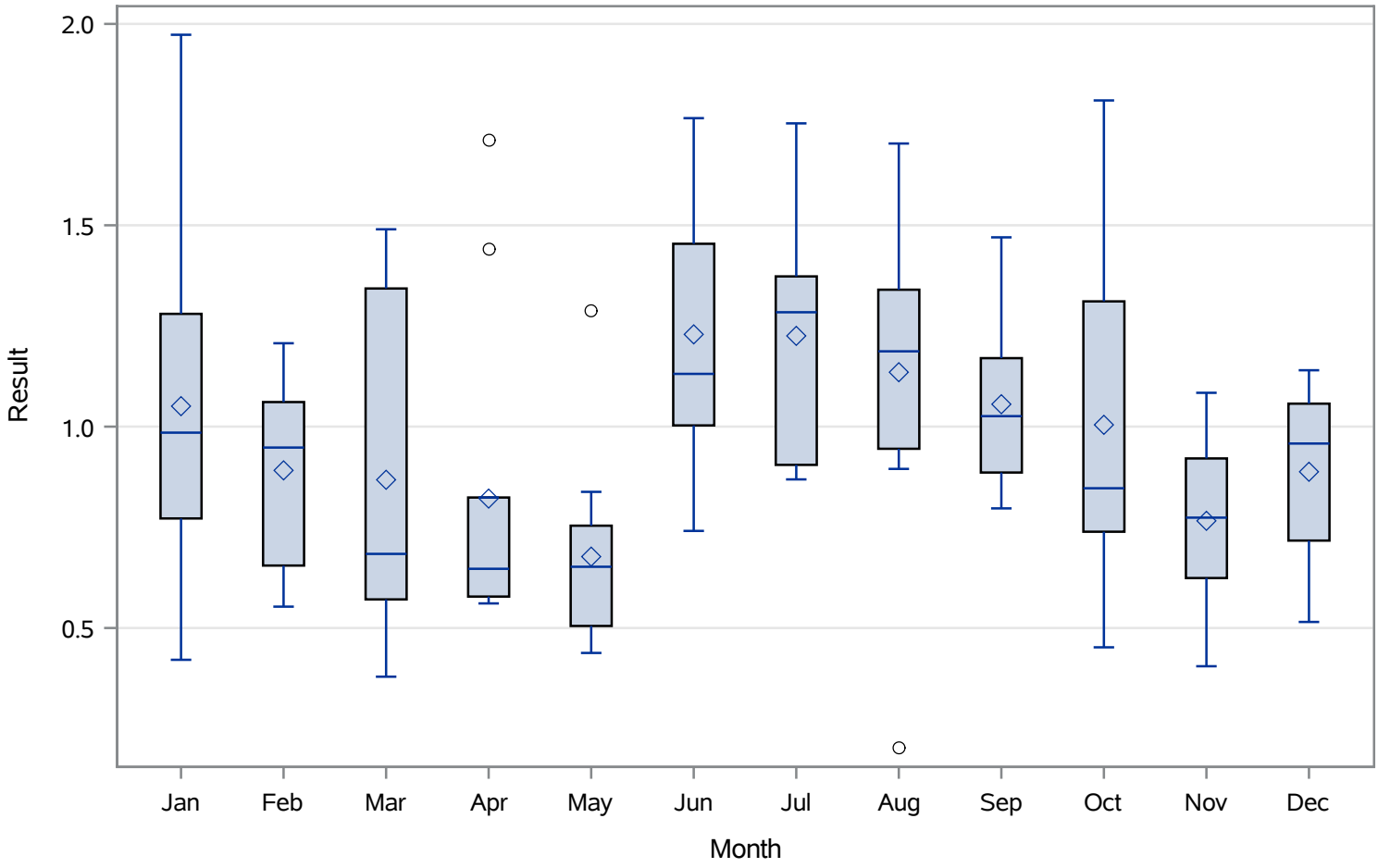
Little Manatee River
180
Total Nitrogen (mg/l)
Site ID = 180



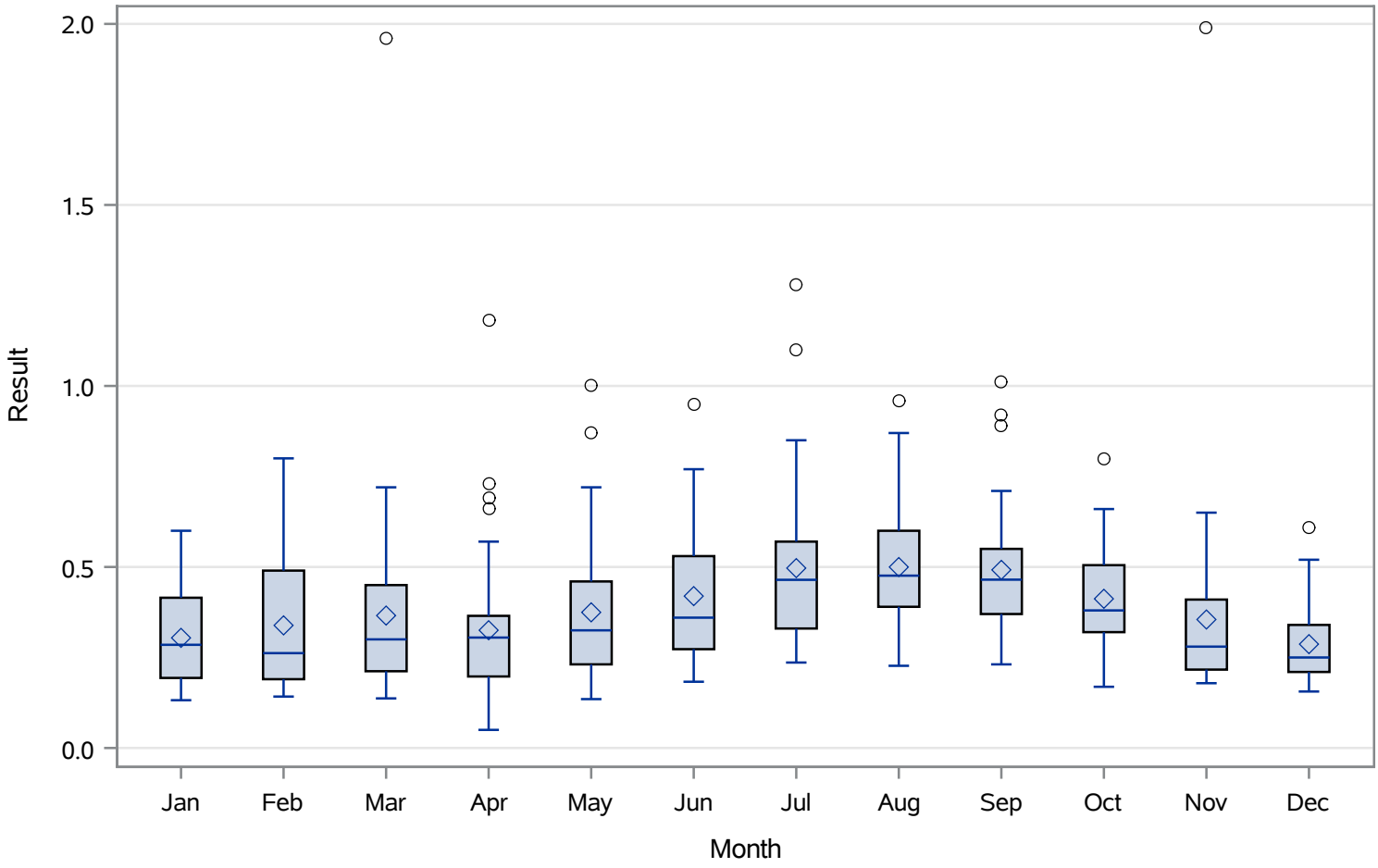
Little Manatee River
181
Total Nitrogen (mg/l)
Site ID = 181



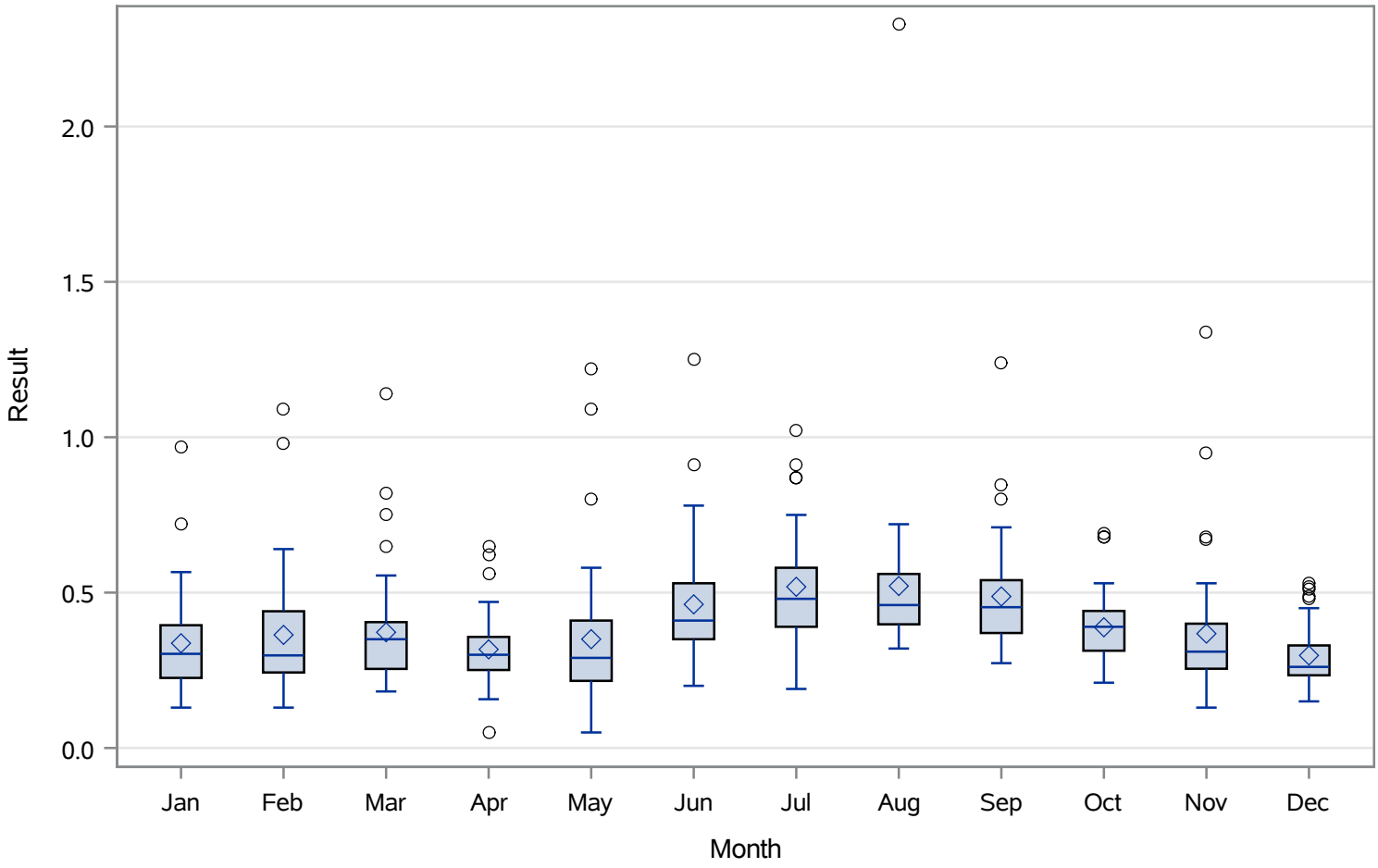
Little Manatee River
182
Total Nitrogen (mg/l)
Site ID = 182



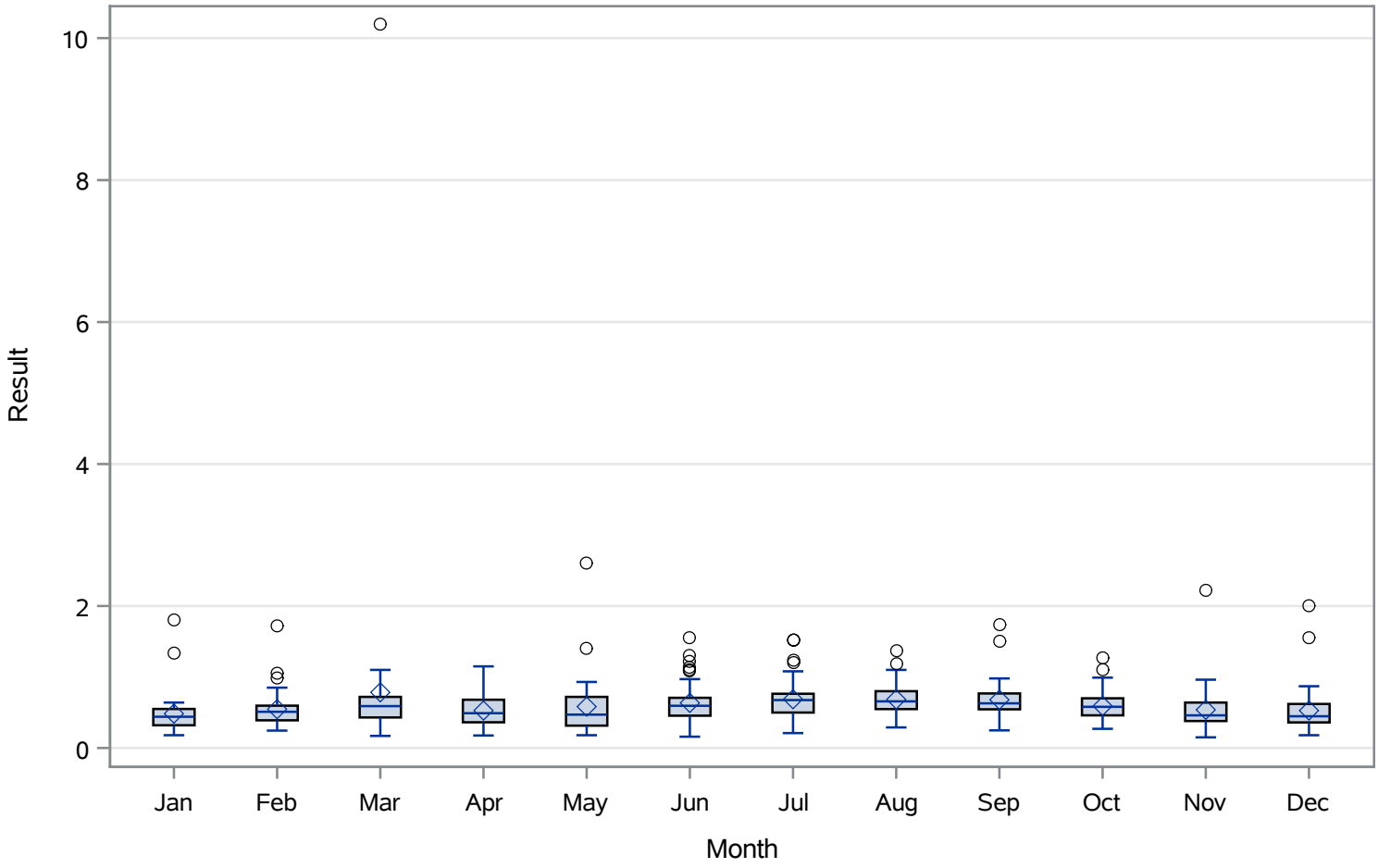
Little Manatee River
112
Total Phosphorus (mg/l)
Site ID = 112



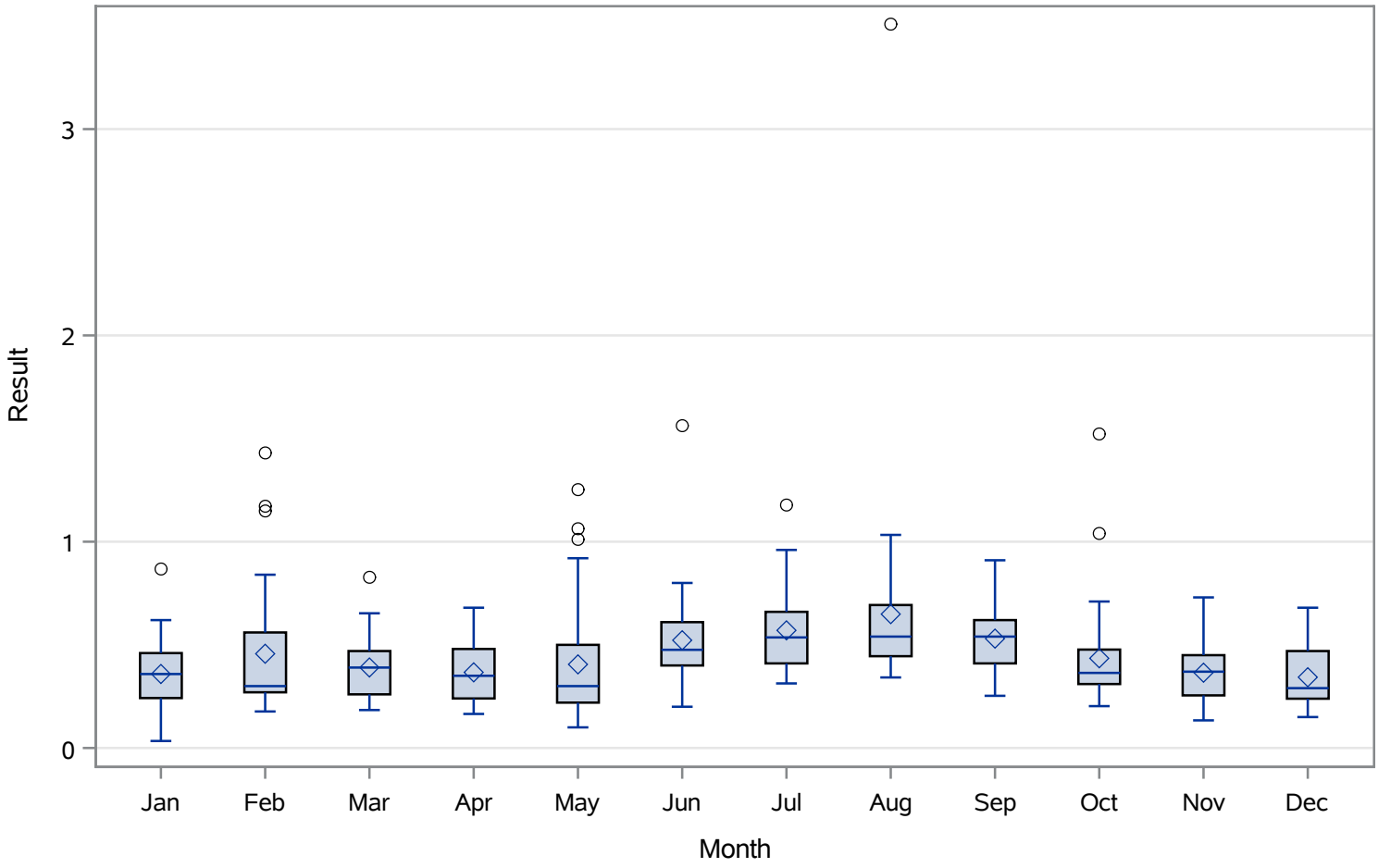
Little Manatee River
113
Total Phosphorus (mg/l)
Site ID = 113



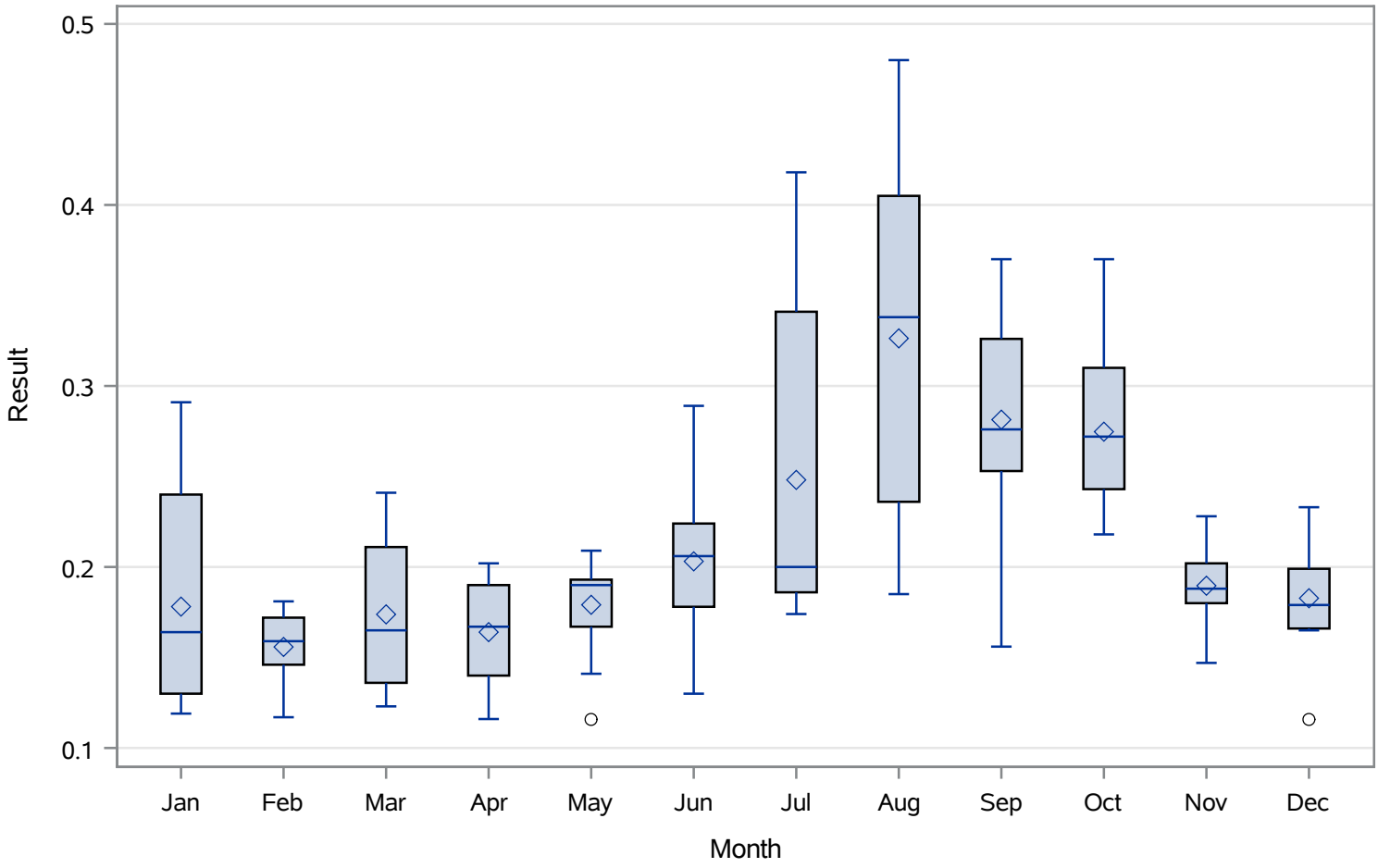
Little Manatee River
129
Total Phosphorus (mg/l)
Site ID = 129



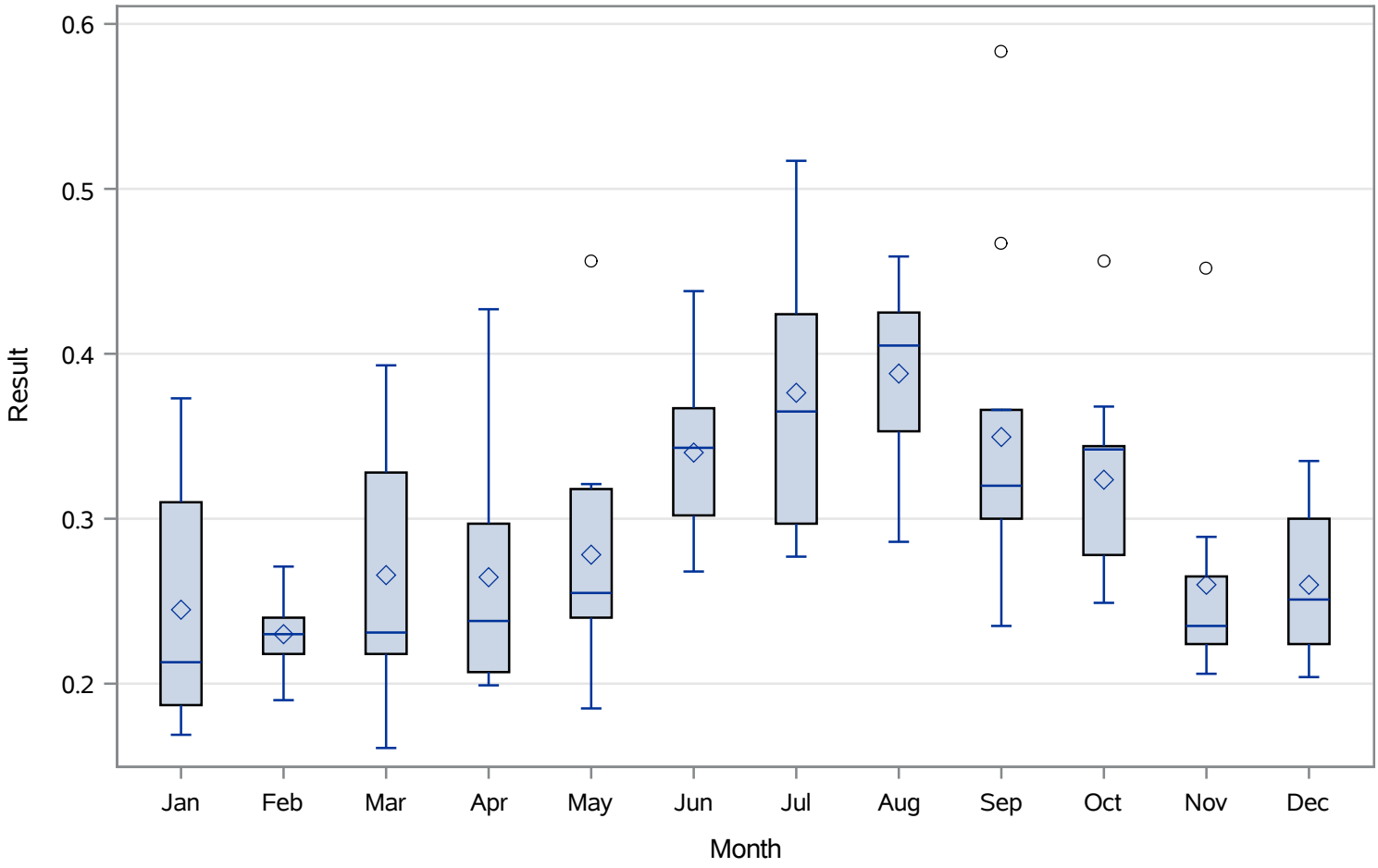
Little Manatee River
140
Total Phosphorus (mg/l)
Site ID = 140



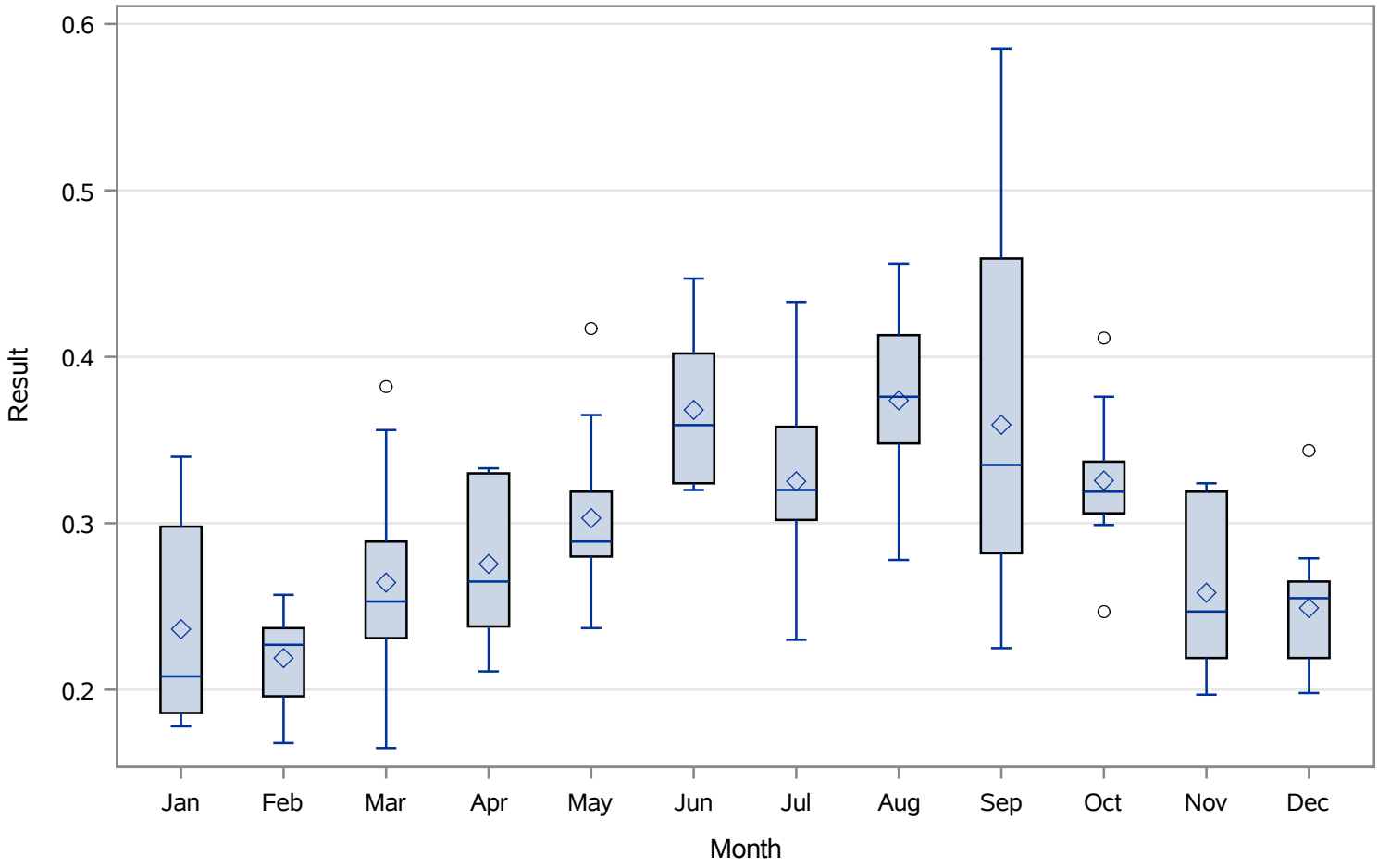
Little Manatee River
180
Total Phosphorus (mg/l)
Site ID = 180



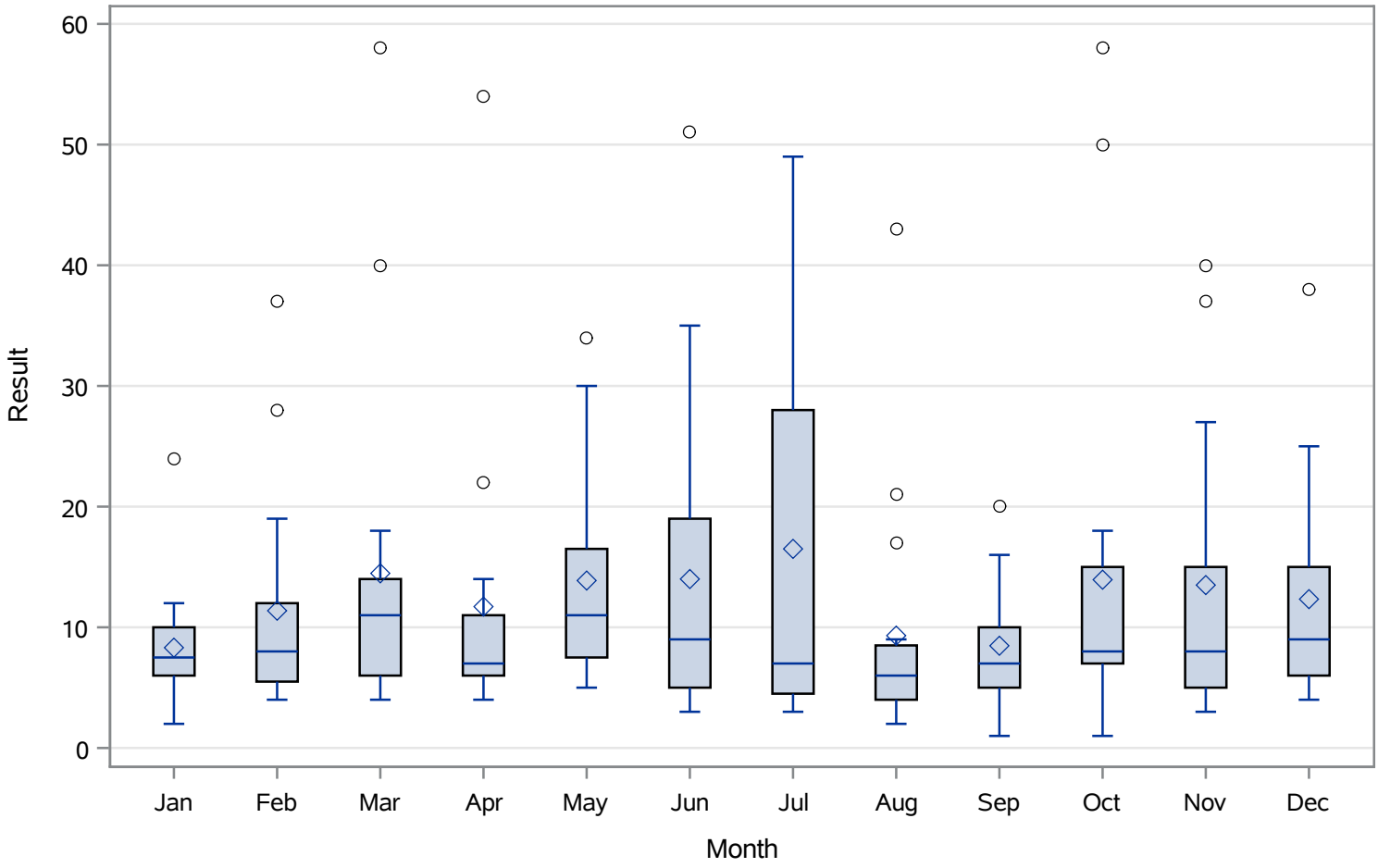
Little Manatee River
181
Total Phosphorus (mg/l)
Site ID = 181



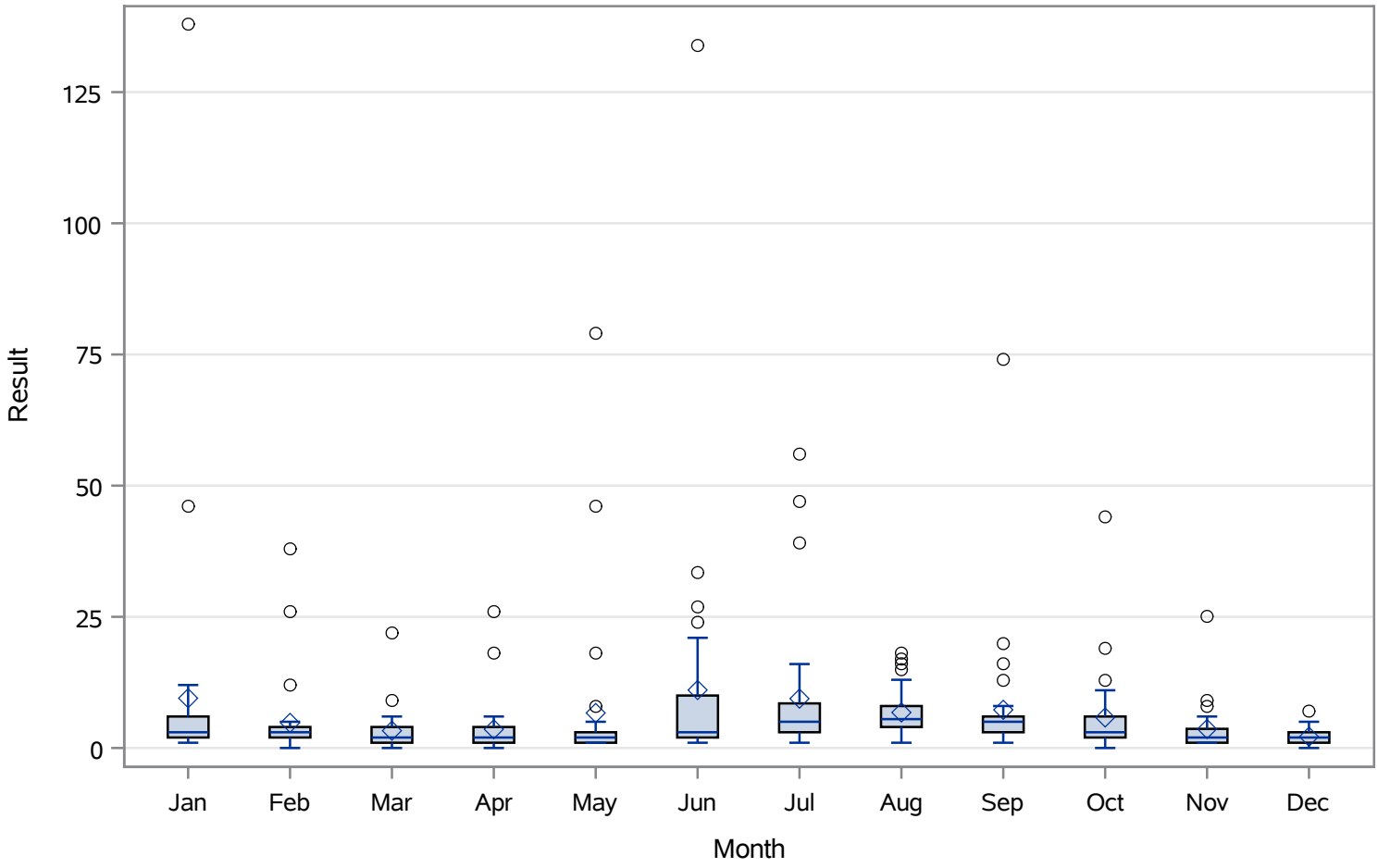
Little Manatee River
182
Total Phosphorus (mg/l)
Site ID = 182



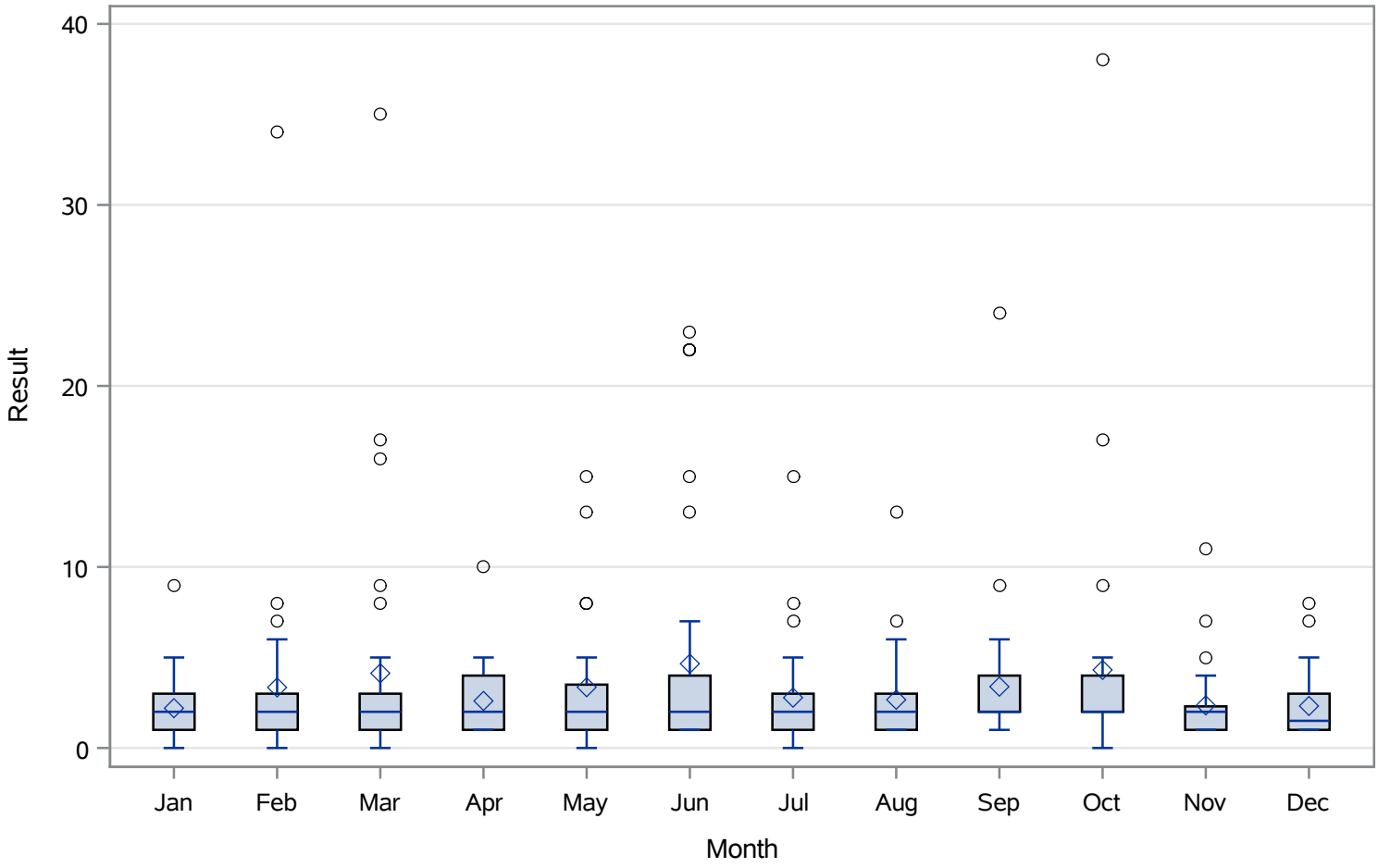
Little Manatee River
112
Total Suspended Solids (mg/l)
Site ID = 112



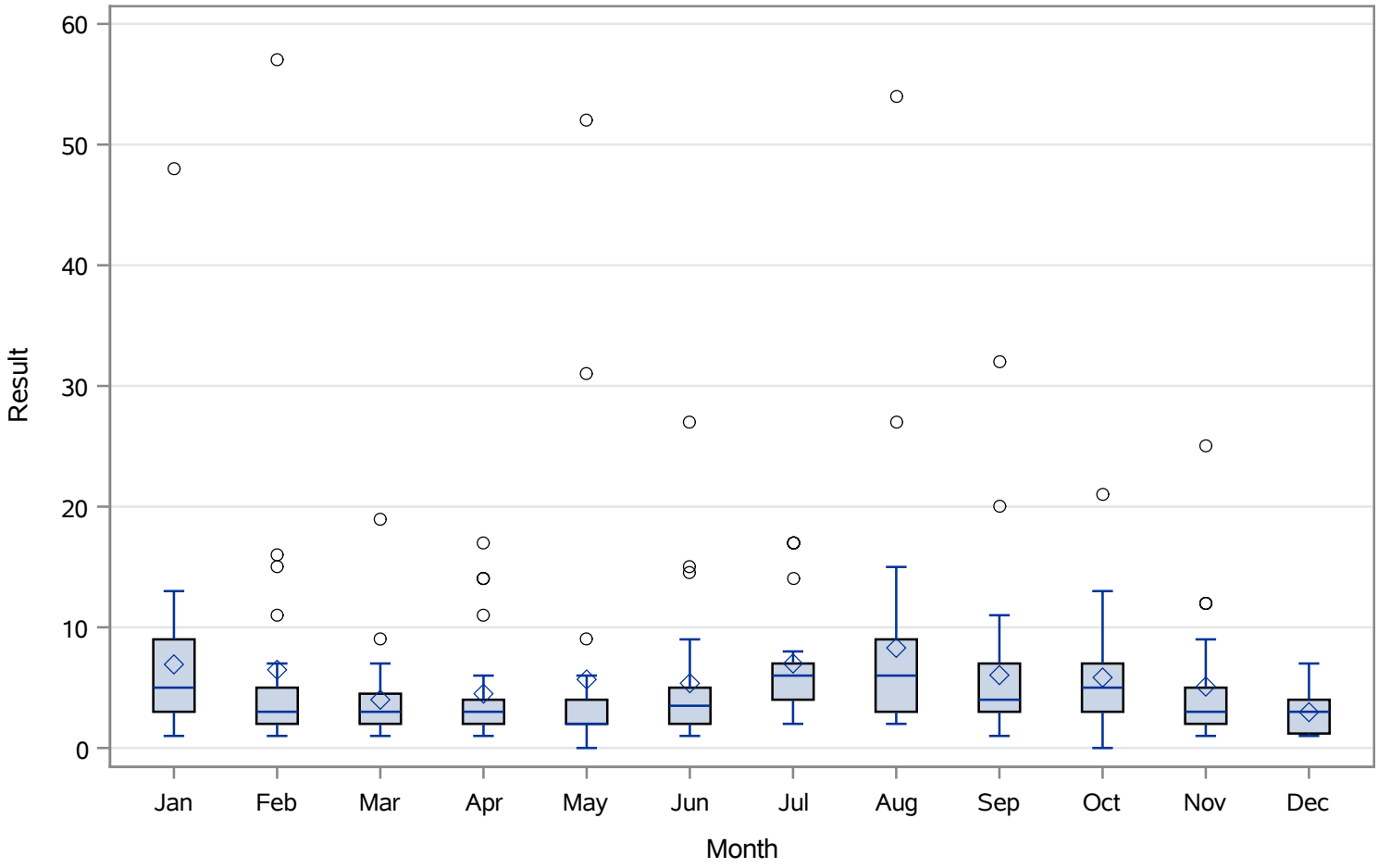
Little Manatee River
113
Total Suspended Solids (mg/l)
Site ID = 113



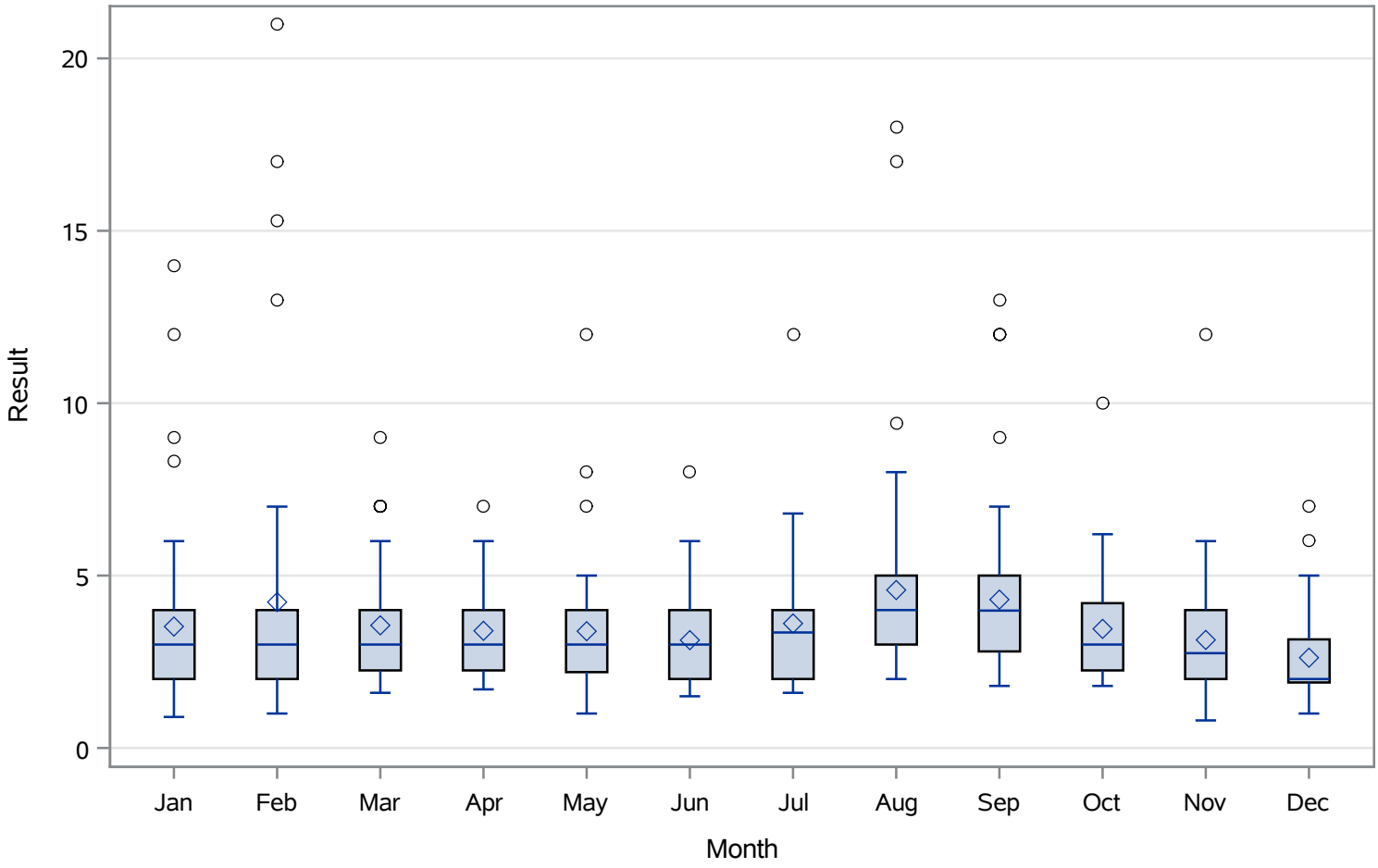
Little Manatee River
129
Total Suspended Solids (mg/l)
Site ID = 129



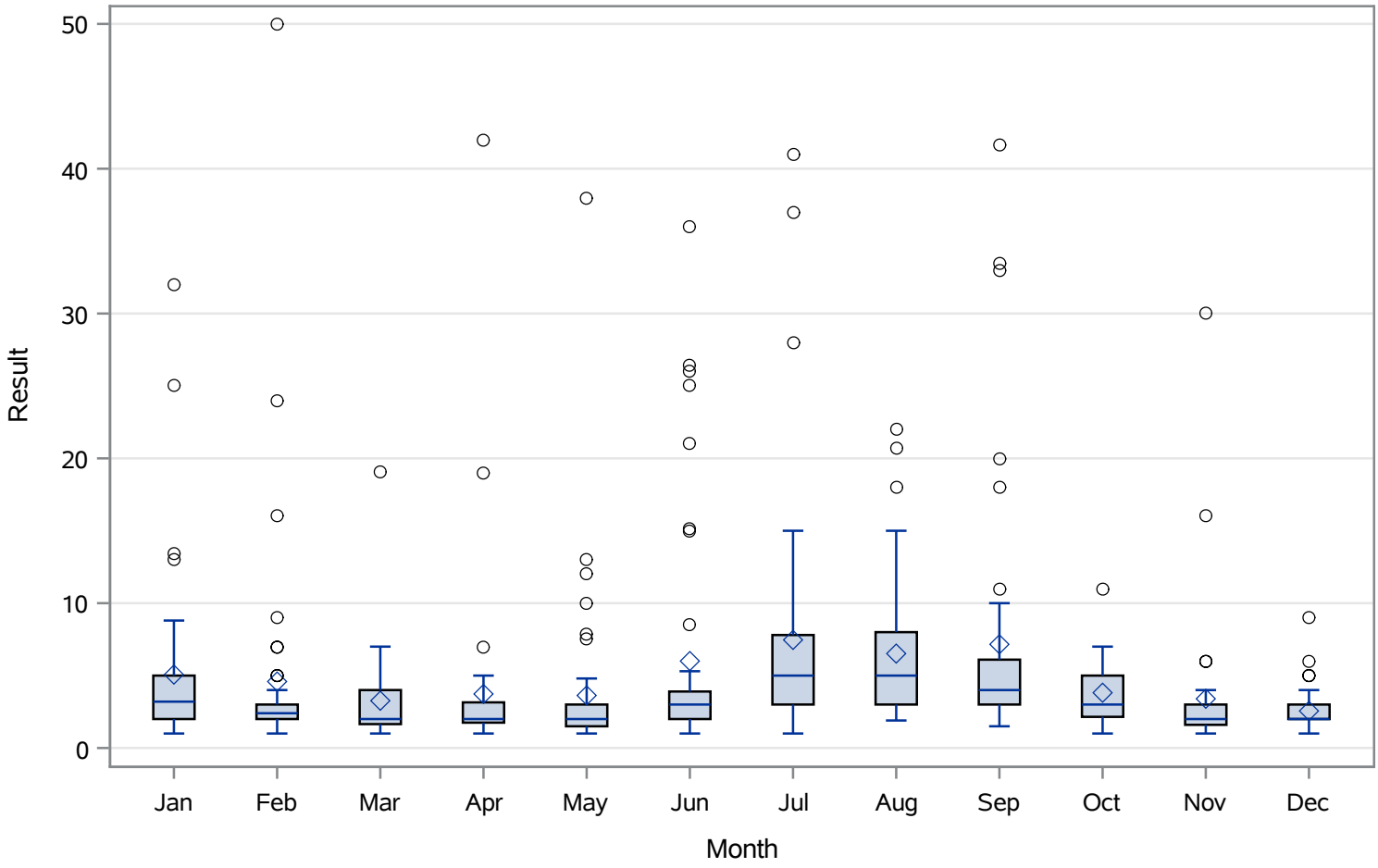
Little Manatee River
140
Total Suspended Solids (mg/l)
Site ID = 140



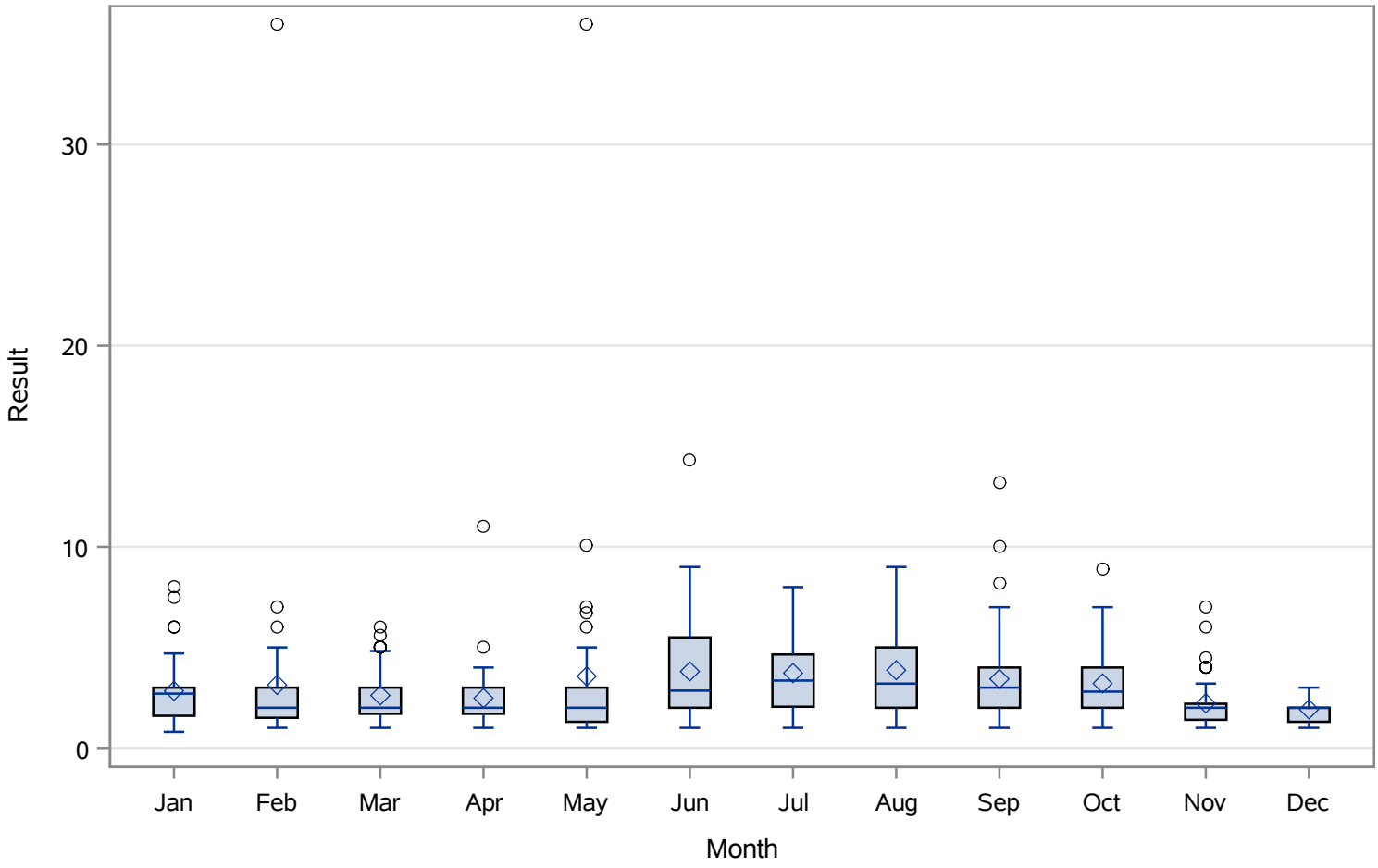
Little Manatee River
112
Turbidity (NTU)
Site ID = 112



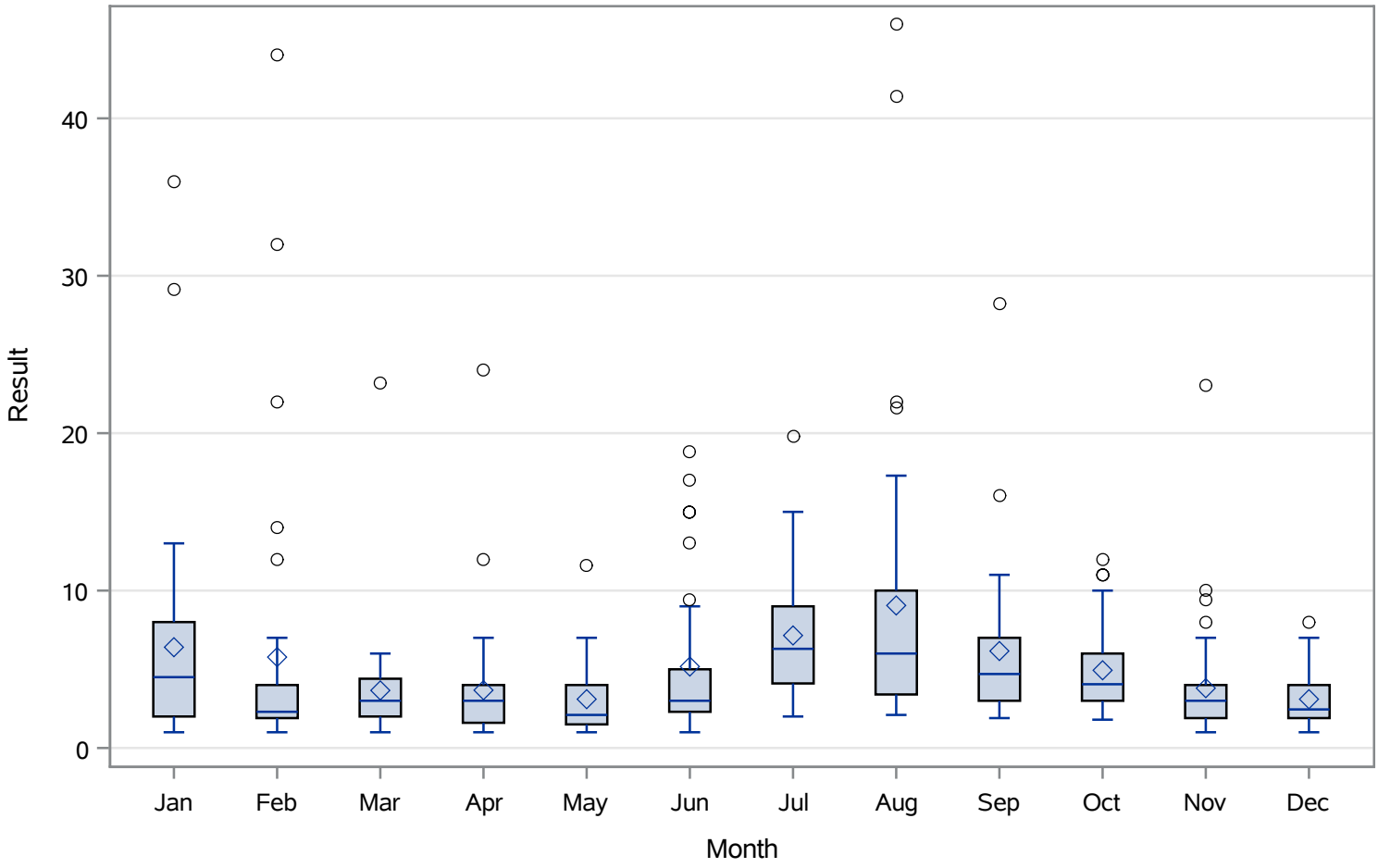
Little Manatee River
113
Turbidity (NTU)
Site ID = 113



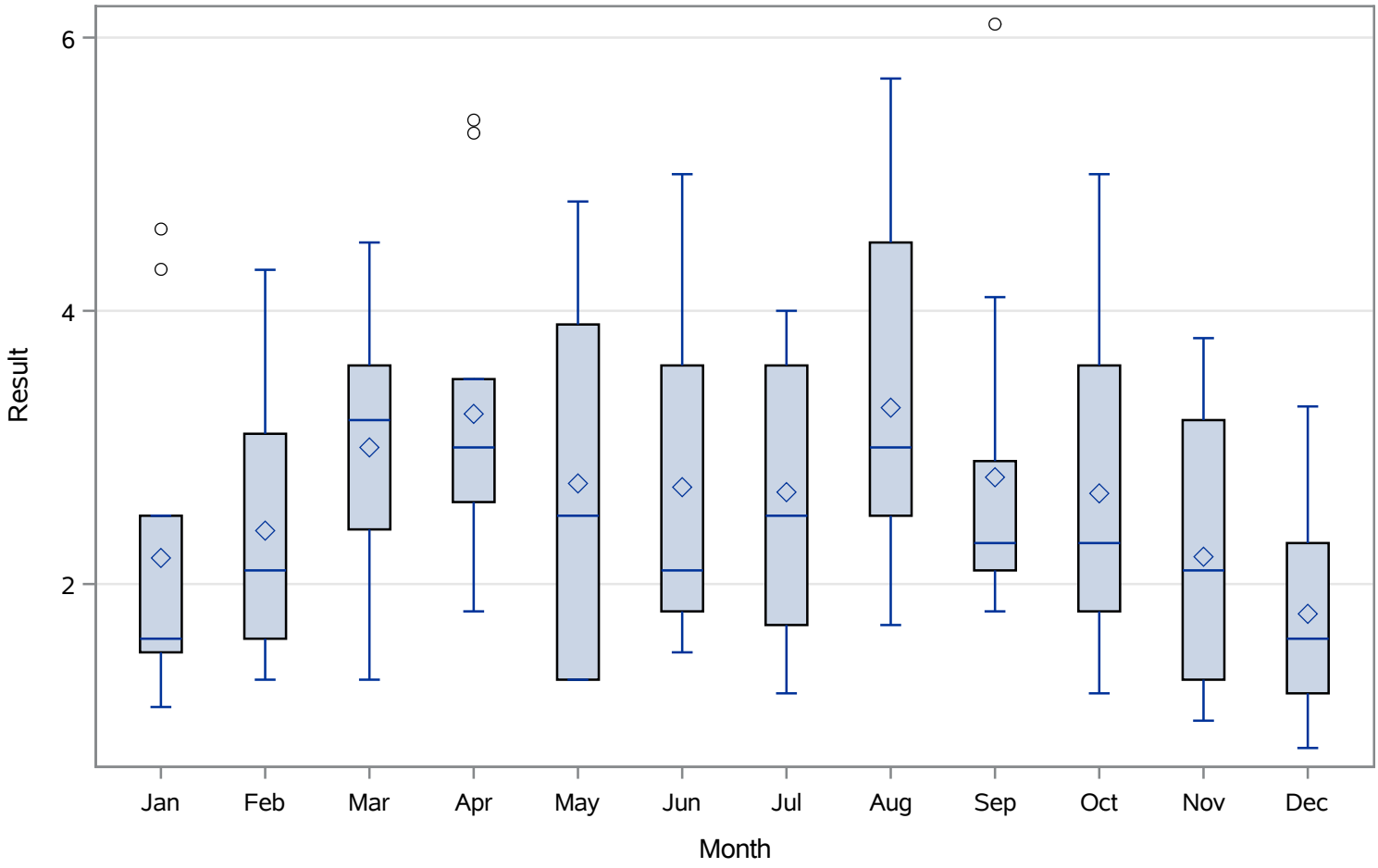
Little Manatee River
129
Turbidity (NTU)
Site ID = 129



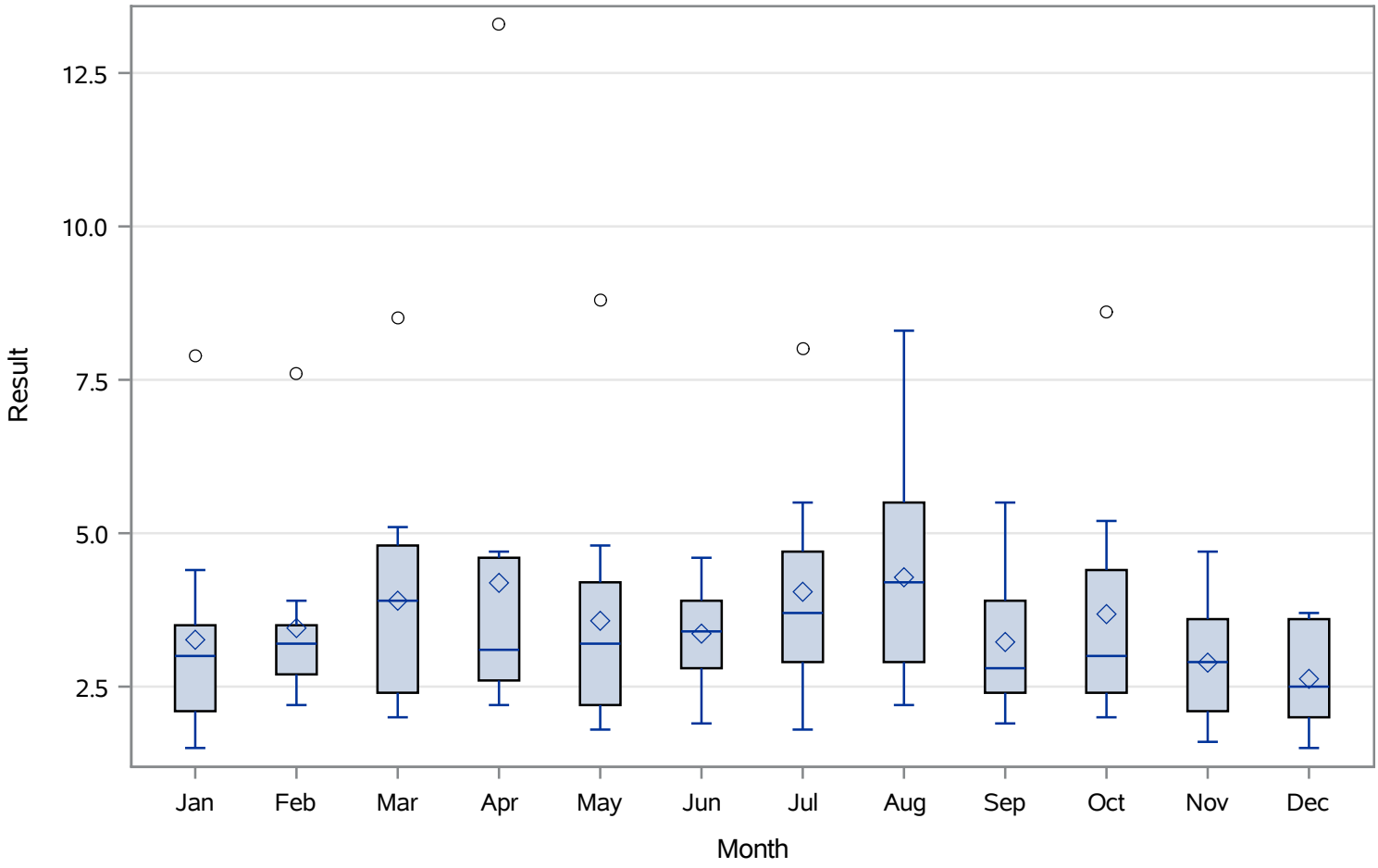
Little Manatee River
140
Turbidity (NTU)
Site ID = 140



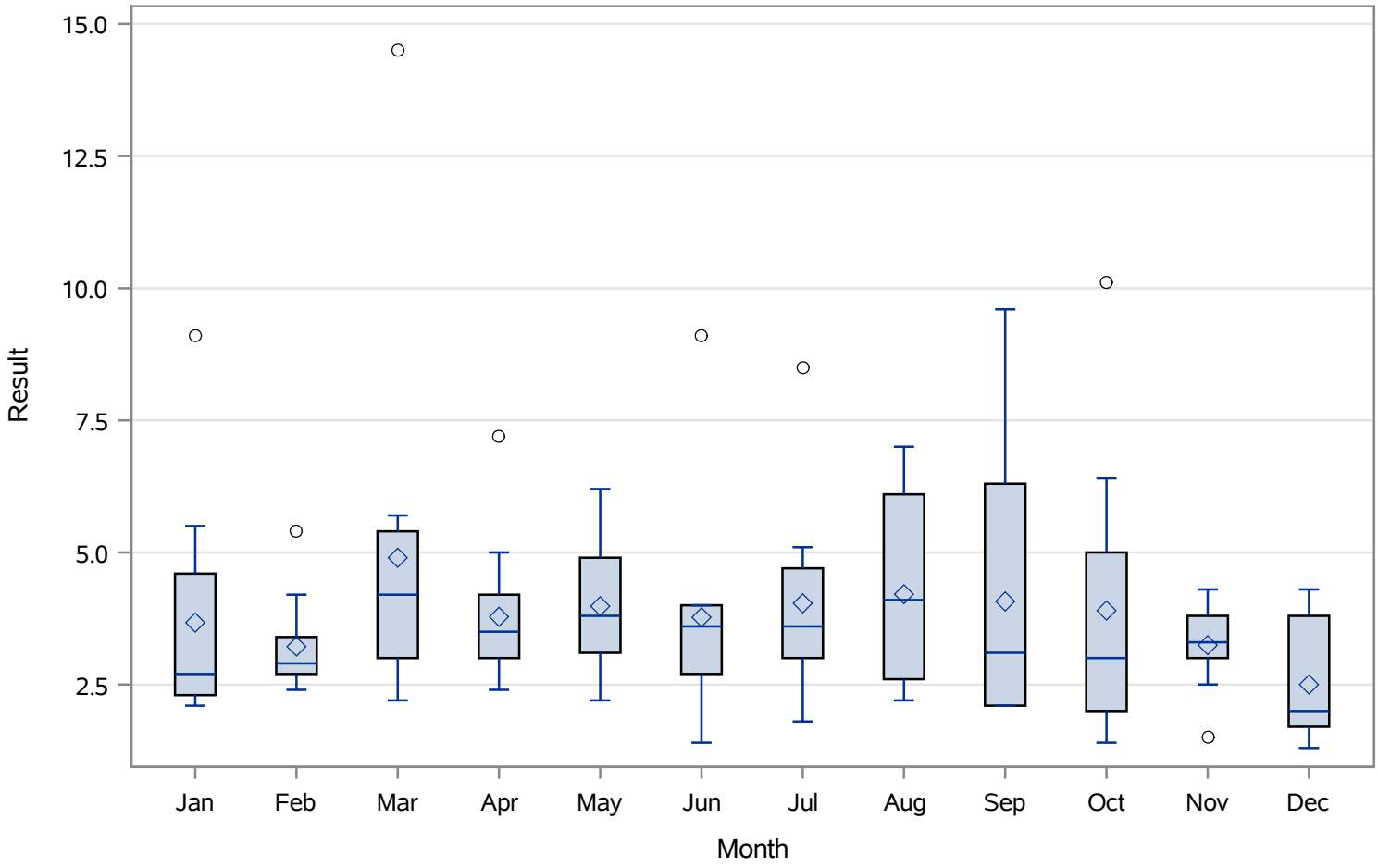
Little Manatee River
180
Turbidity (NTU)
Site ID = 180



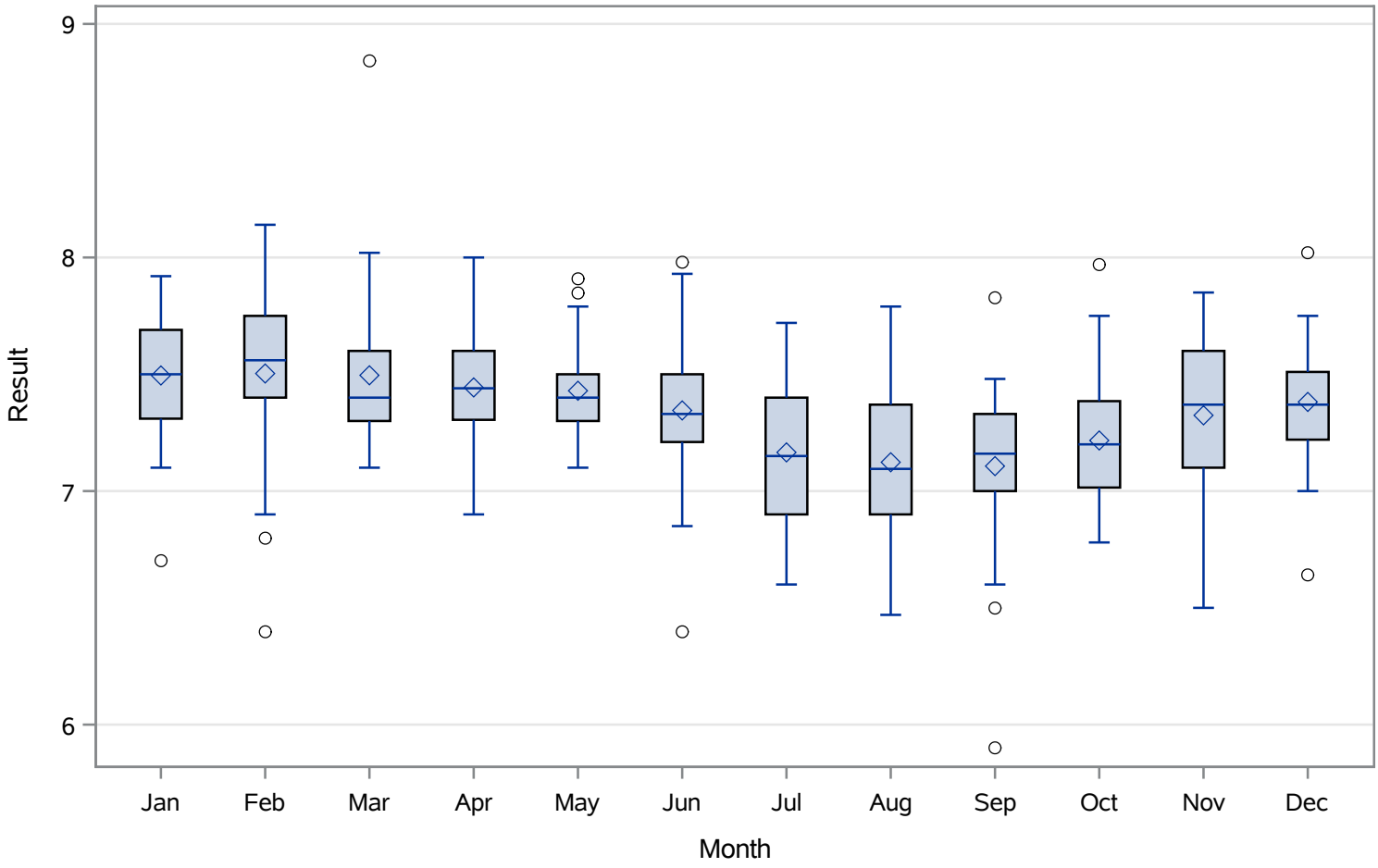
Little Manatee River
181
Turbidity (NTU)
Site ID = 181



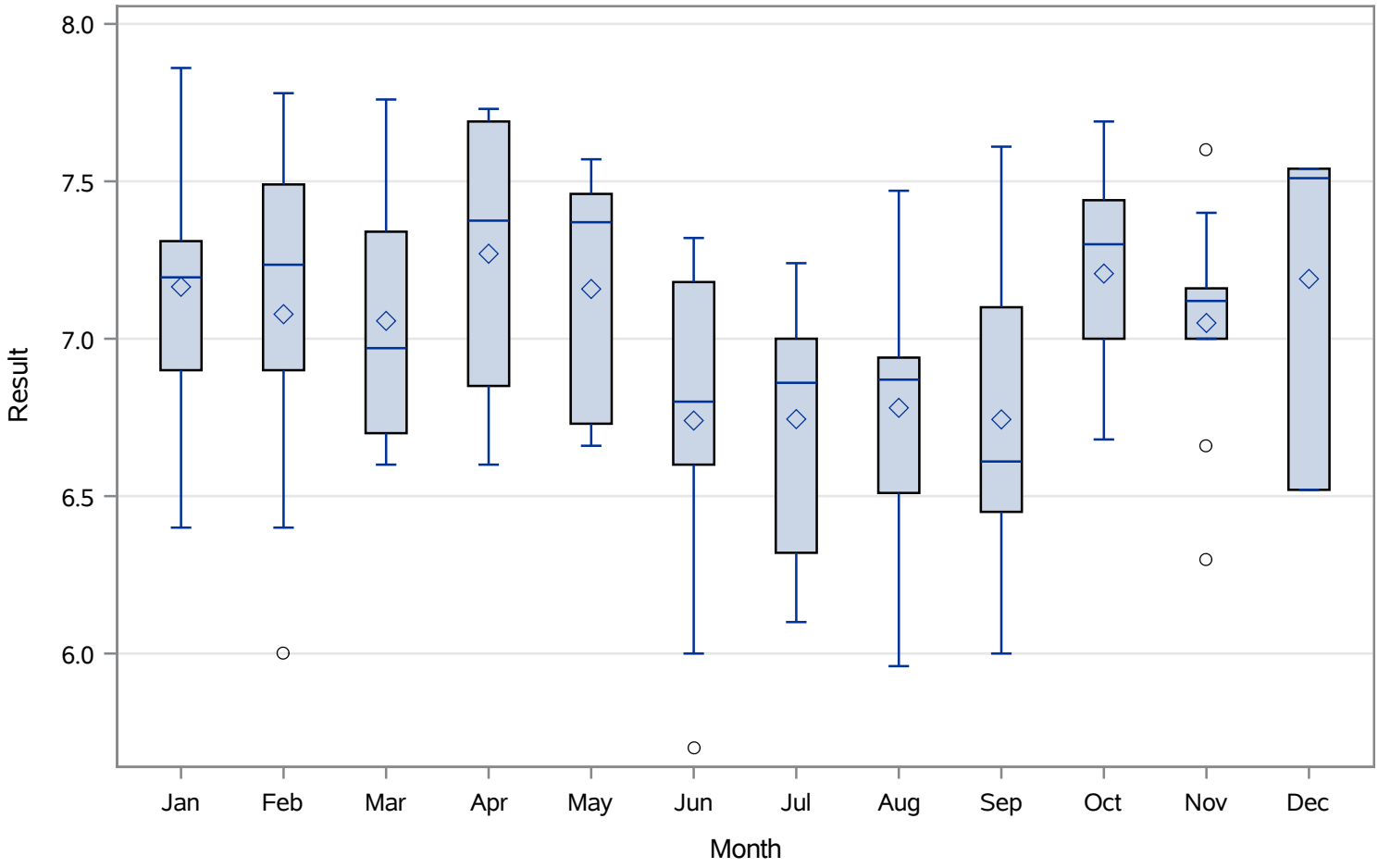
Little Manatee River
182
Turbidity (NTU)
Site ID = 182



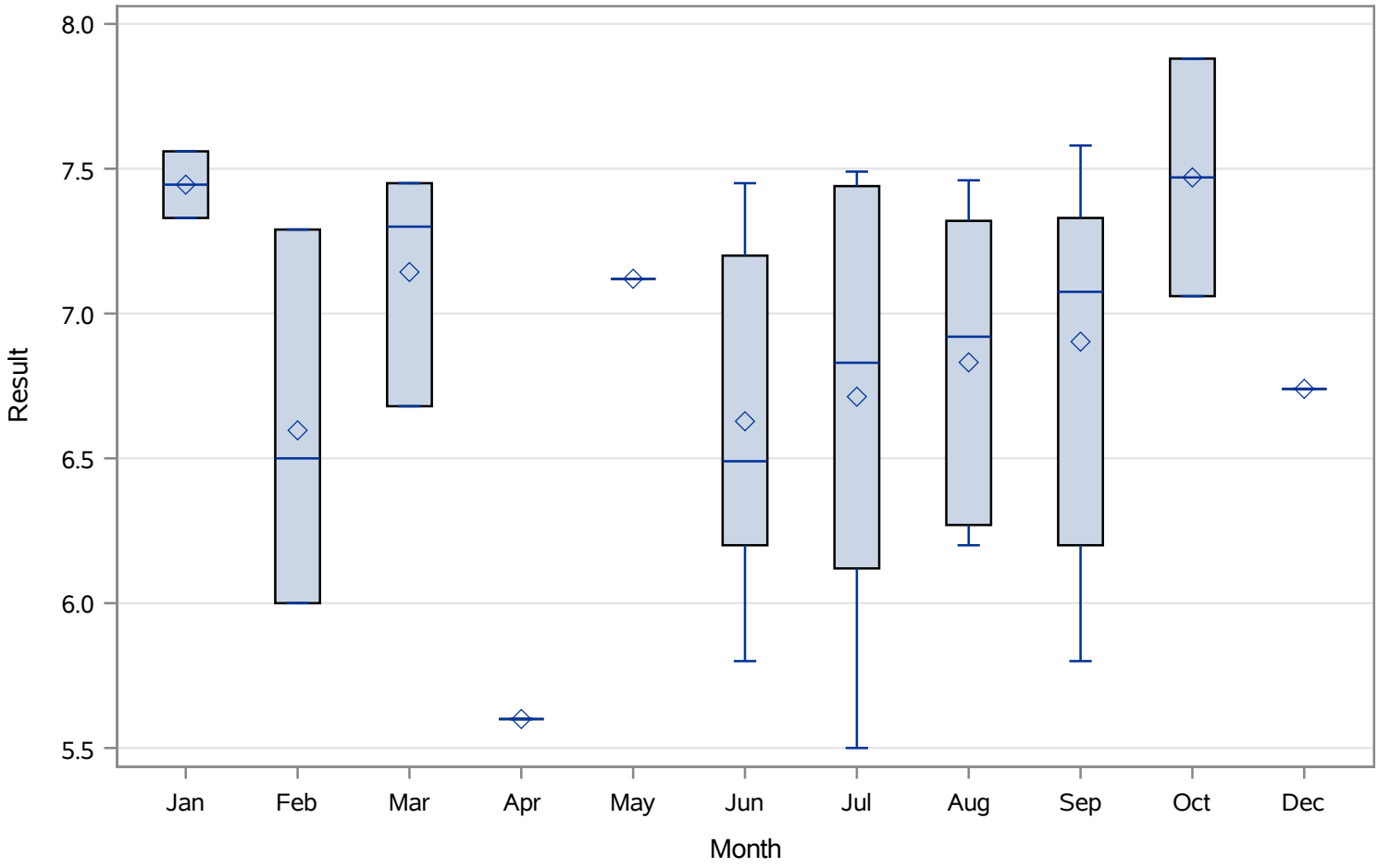
Little Manatee River
112
pH Bottom
Site ID = 112



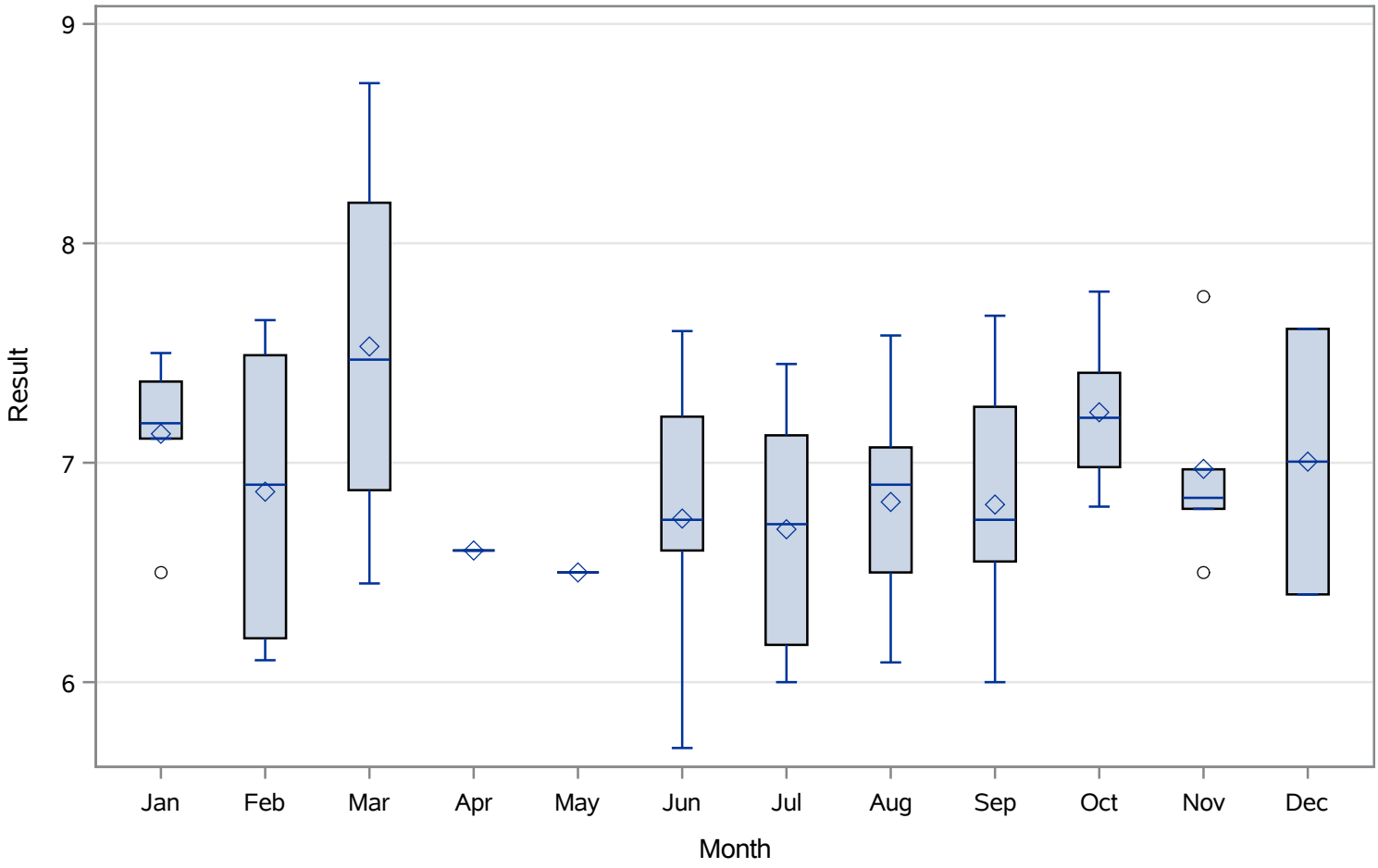
Little Manatee River
113
pH Bottom
Site ID = 113



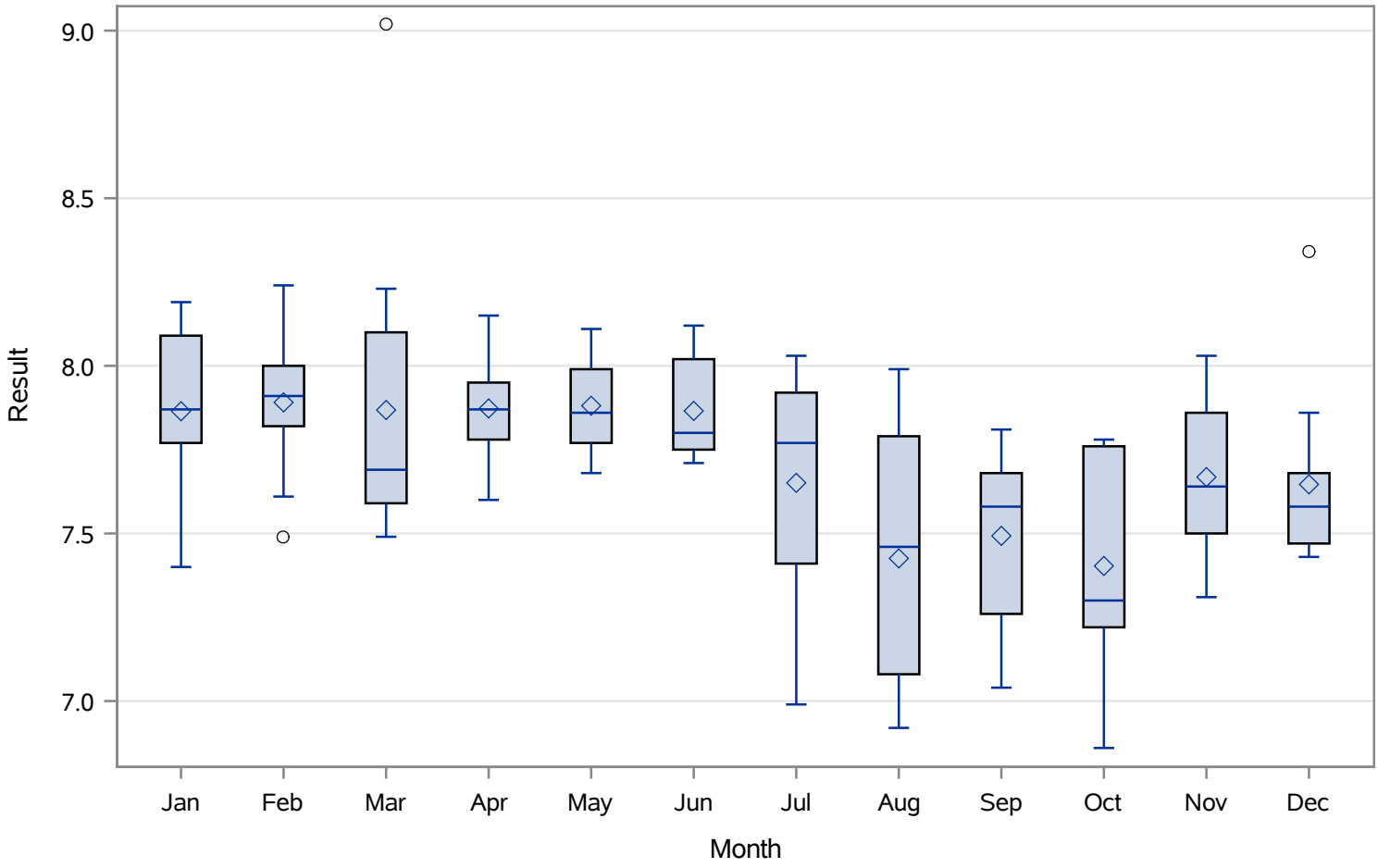
Little Manatee River
129
pH Bottom
Site ID = 129



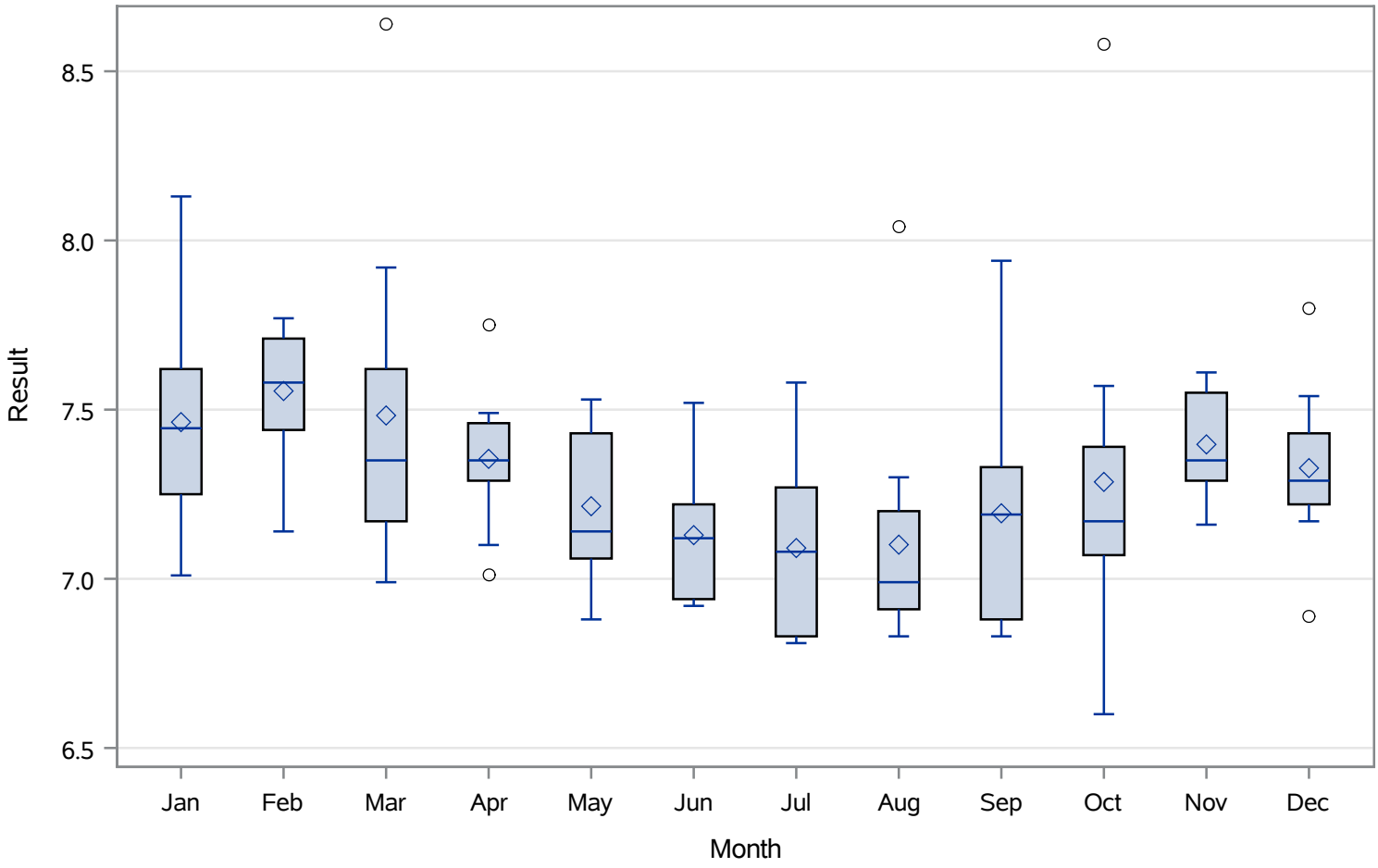
Little Manatee River
140
pH Bottom
Site ID = 140



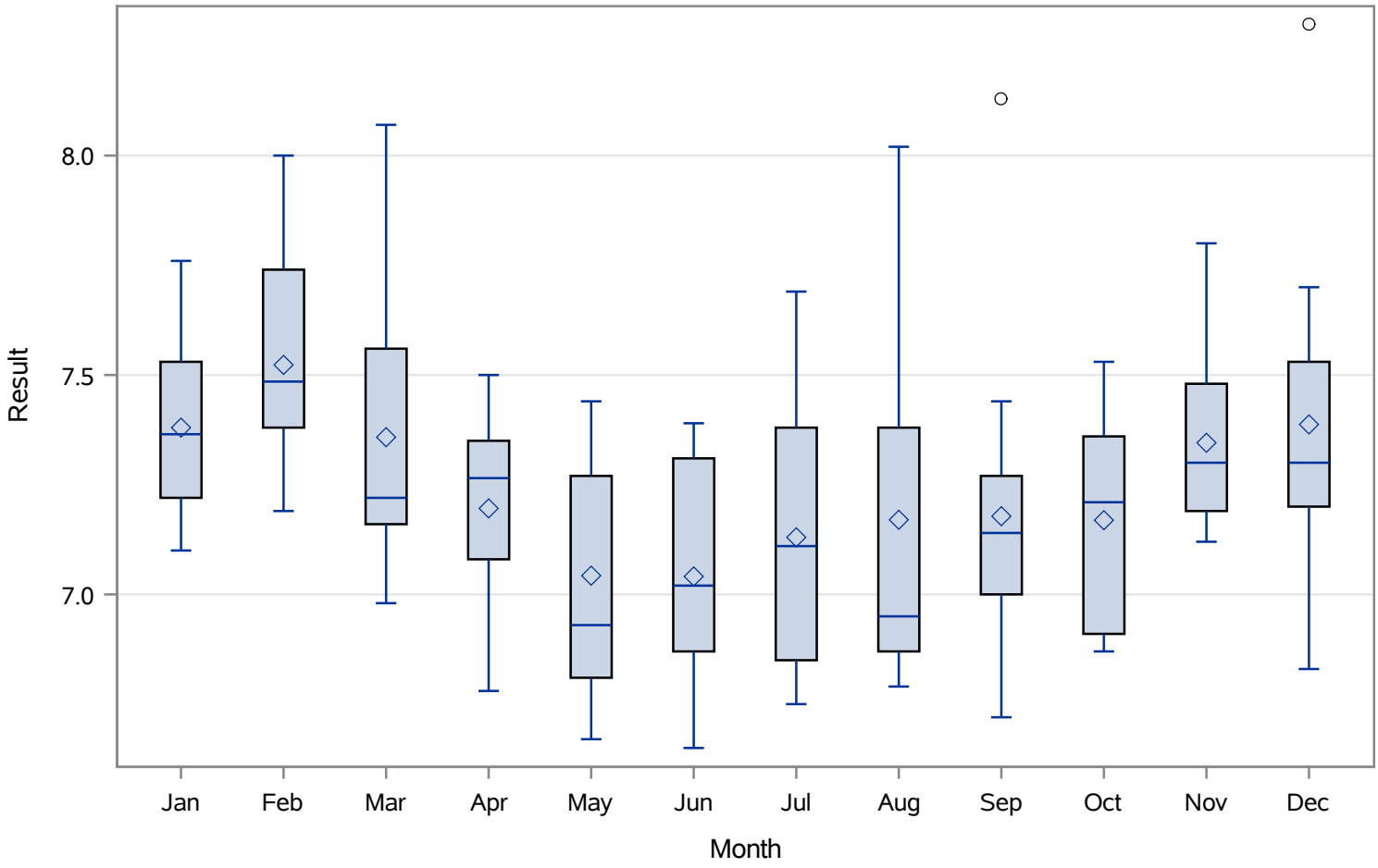
Little Manatee River
180
pH Bottom
Site ID = 180



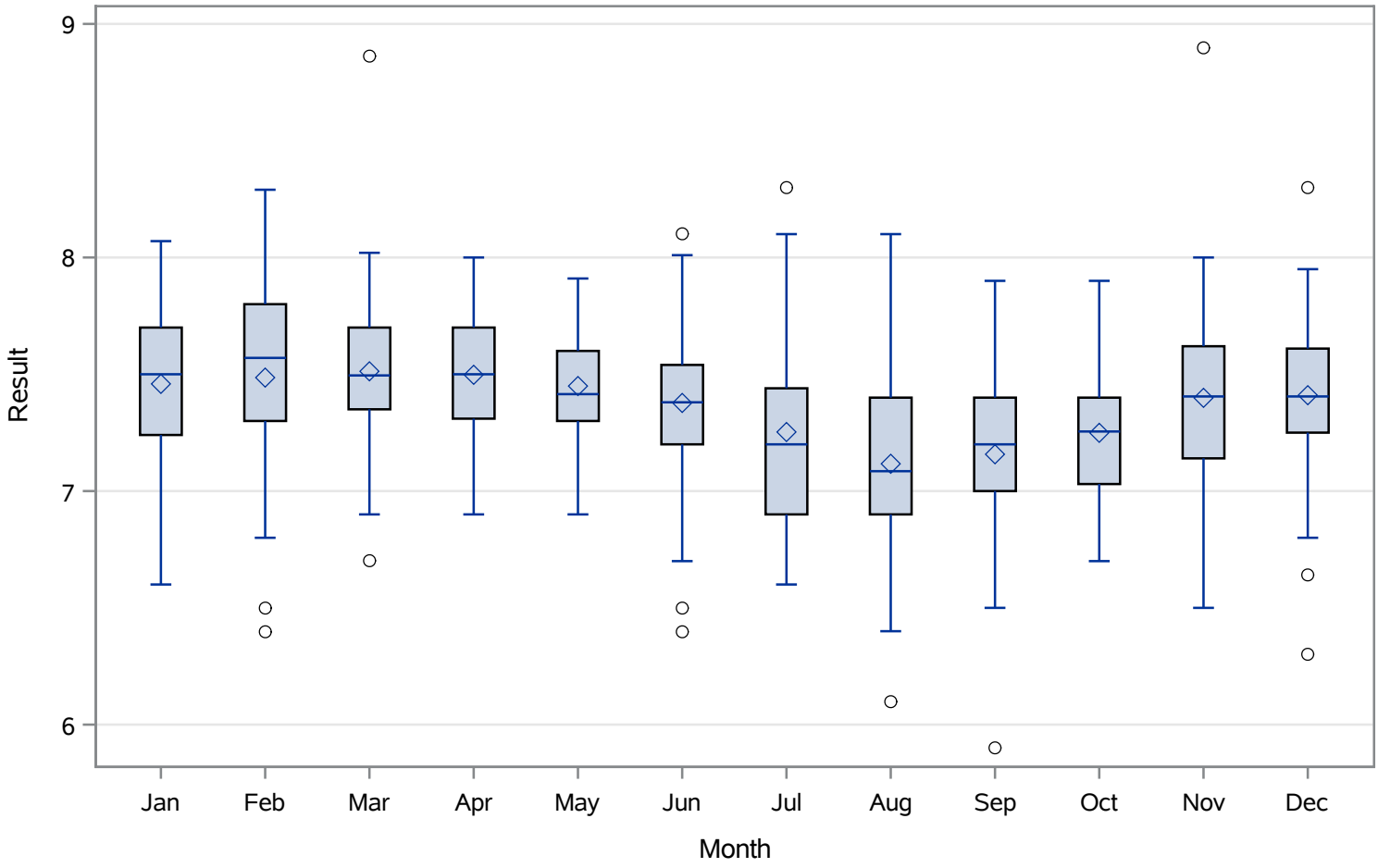
Little Manatee River
181
pH Bottom
Site ID = 181



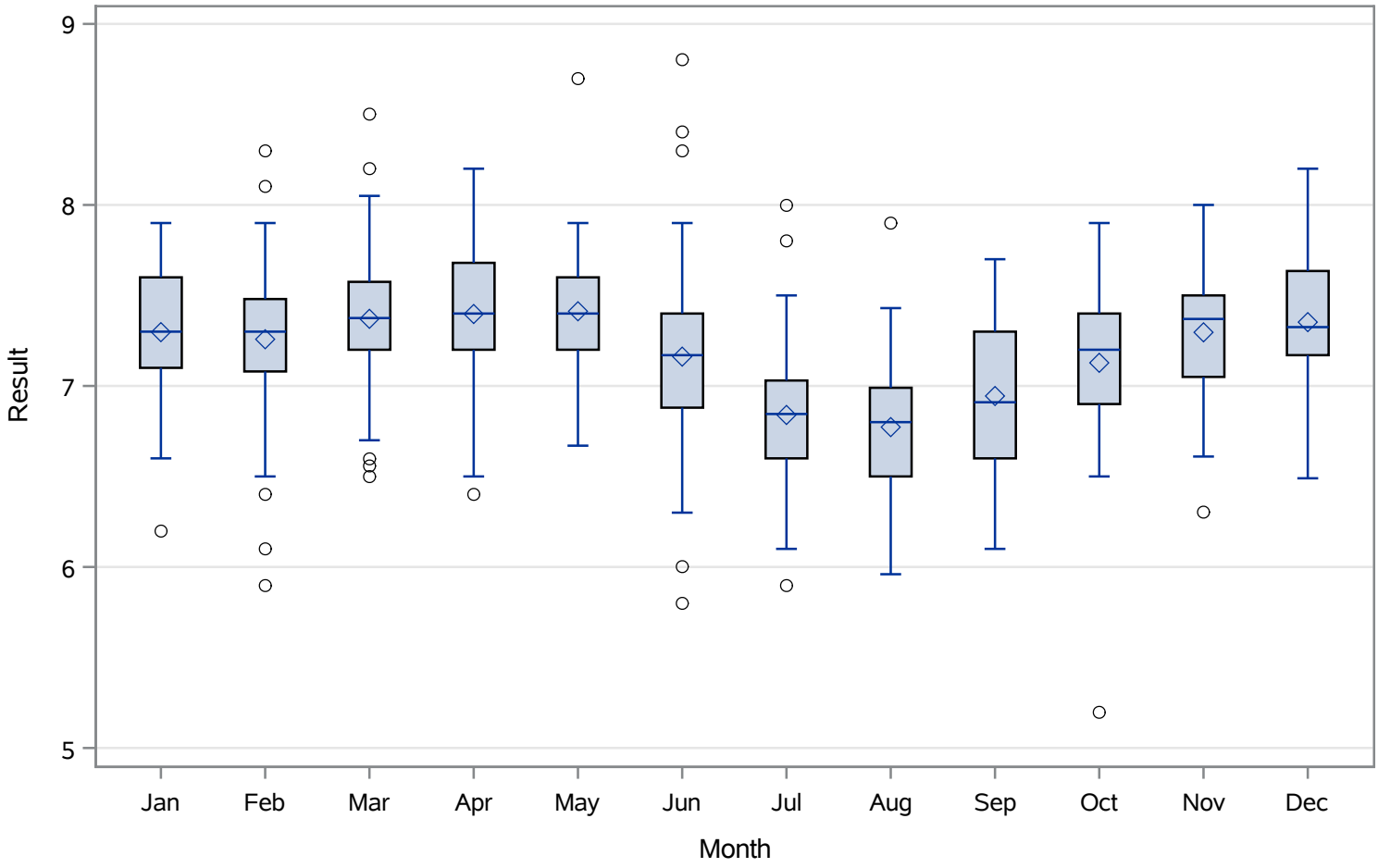
Little Manatee River
182
pH Bottom
Site ID = 182



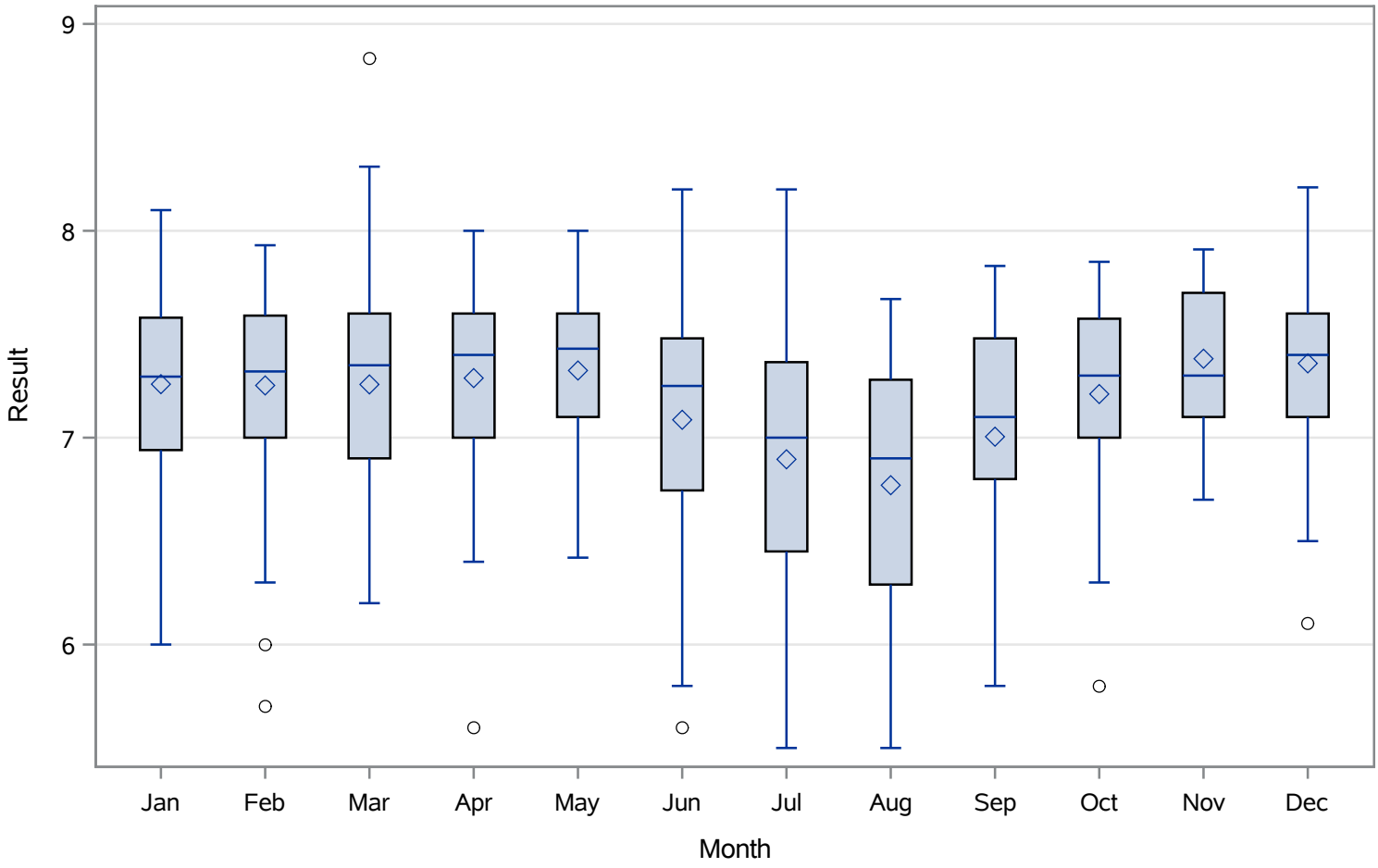
Little Manatee River
112
pH Mid
Site ID = 112



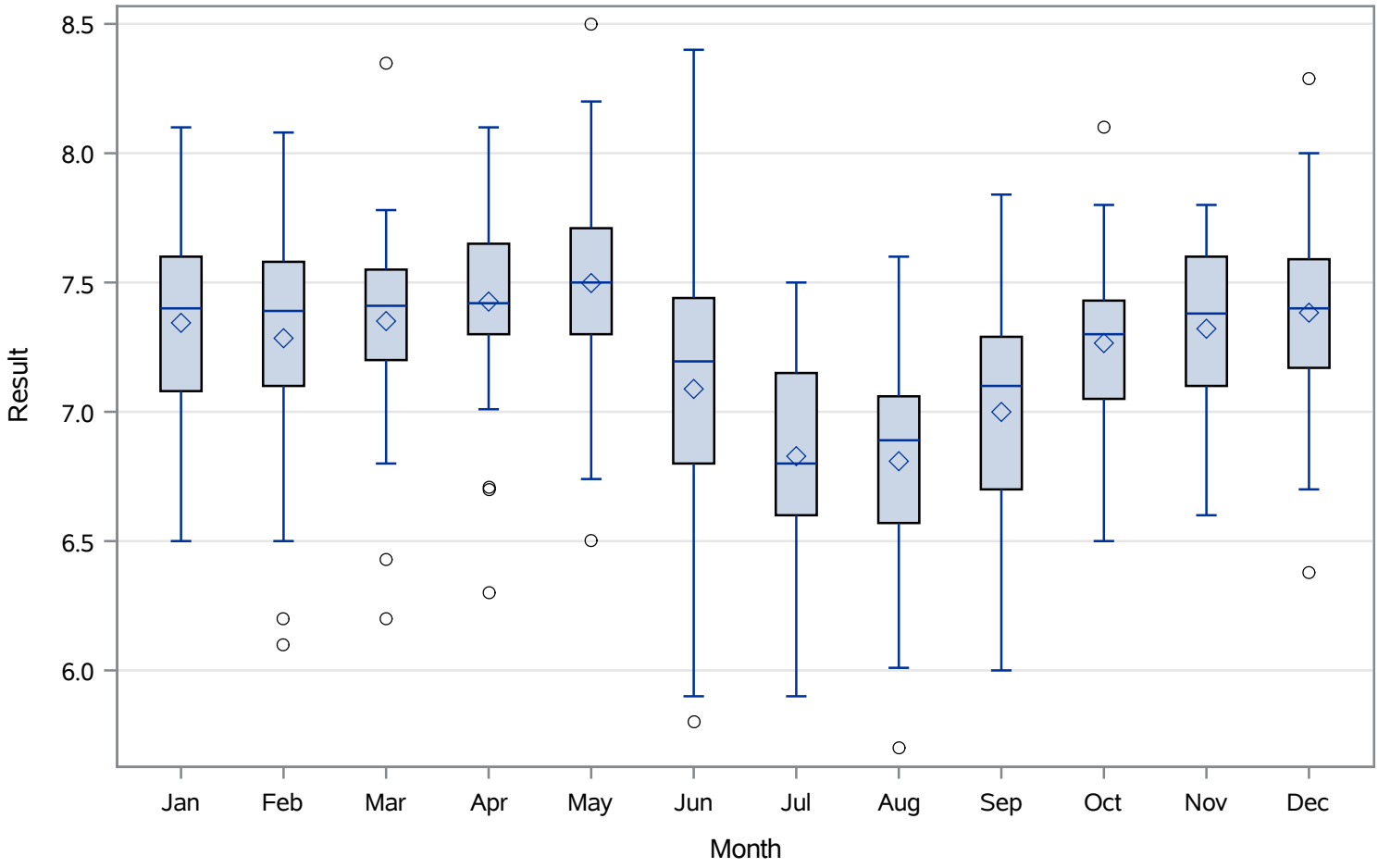
Little Manatee River
113
pH Mid
Site ID = 113



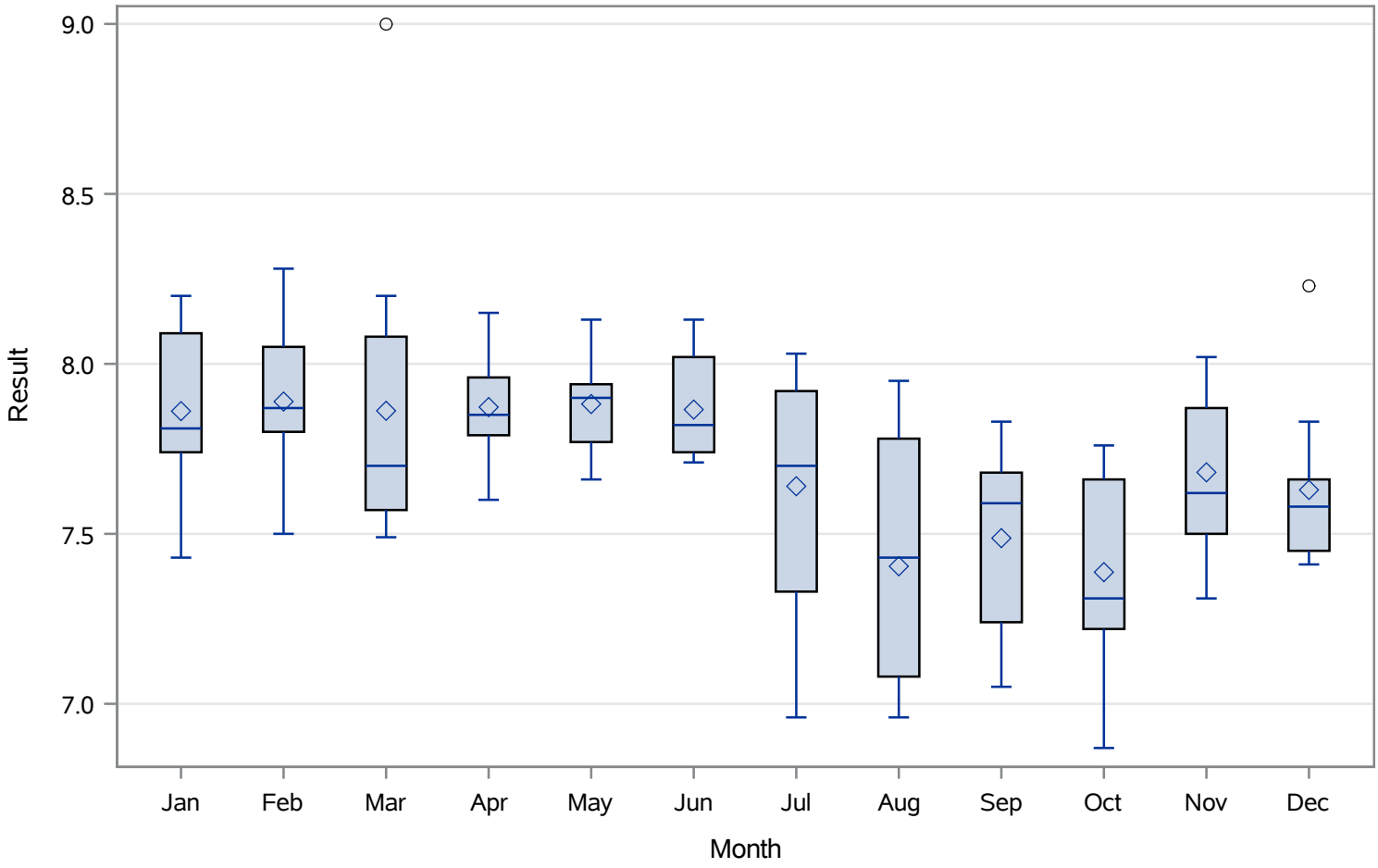
Little Manatee River
129
pH Mid
Site ID = 129



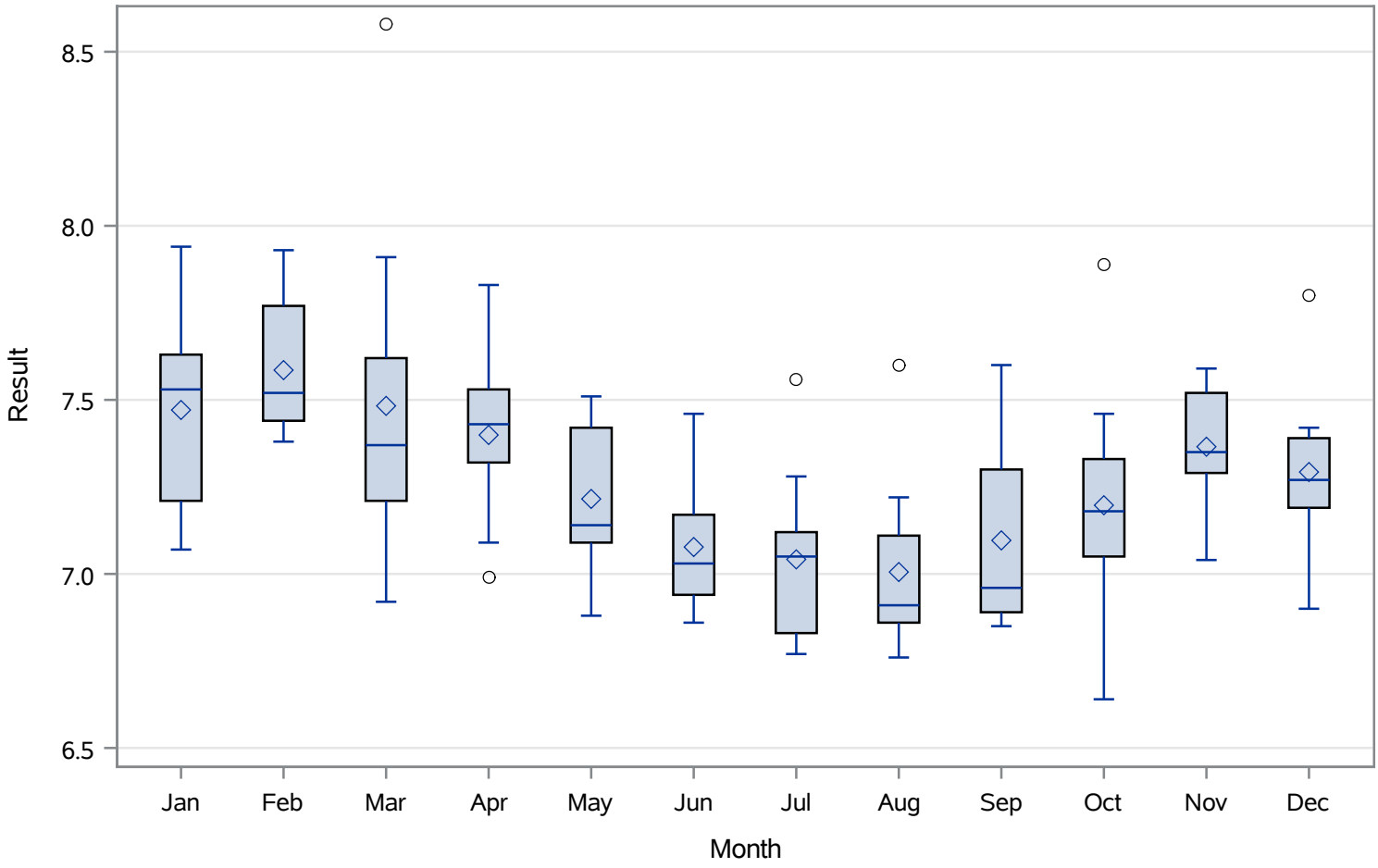
Little Manatee River
140
pH Mid
Site ID = 140



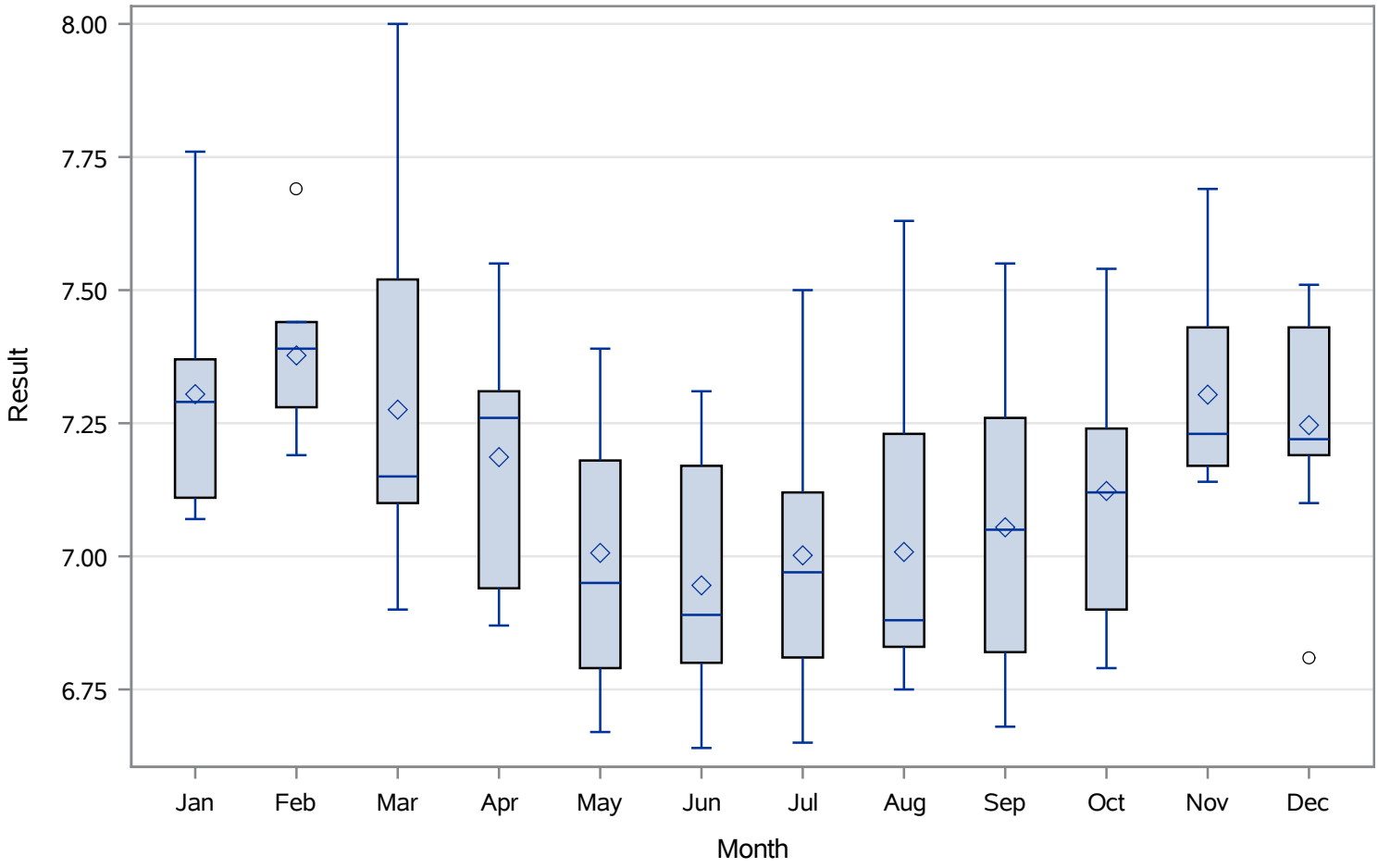
Little Manatee River
180
pH Mid
Site ID = 180



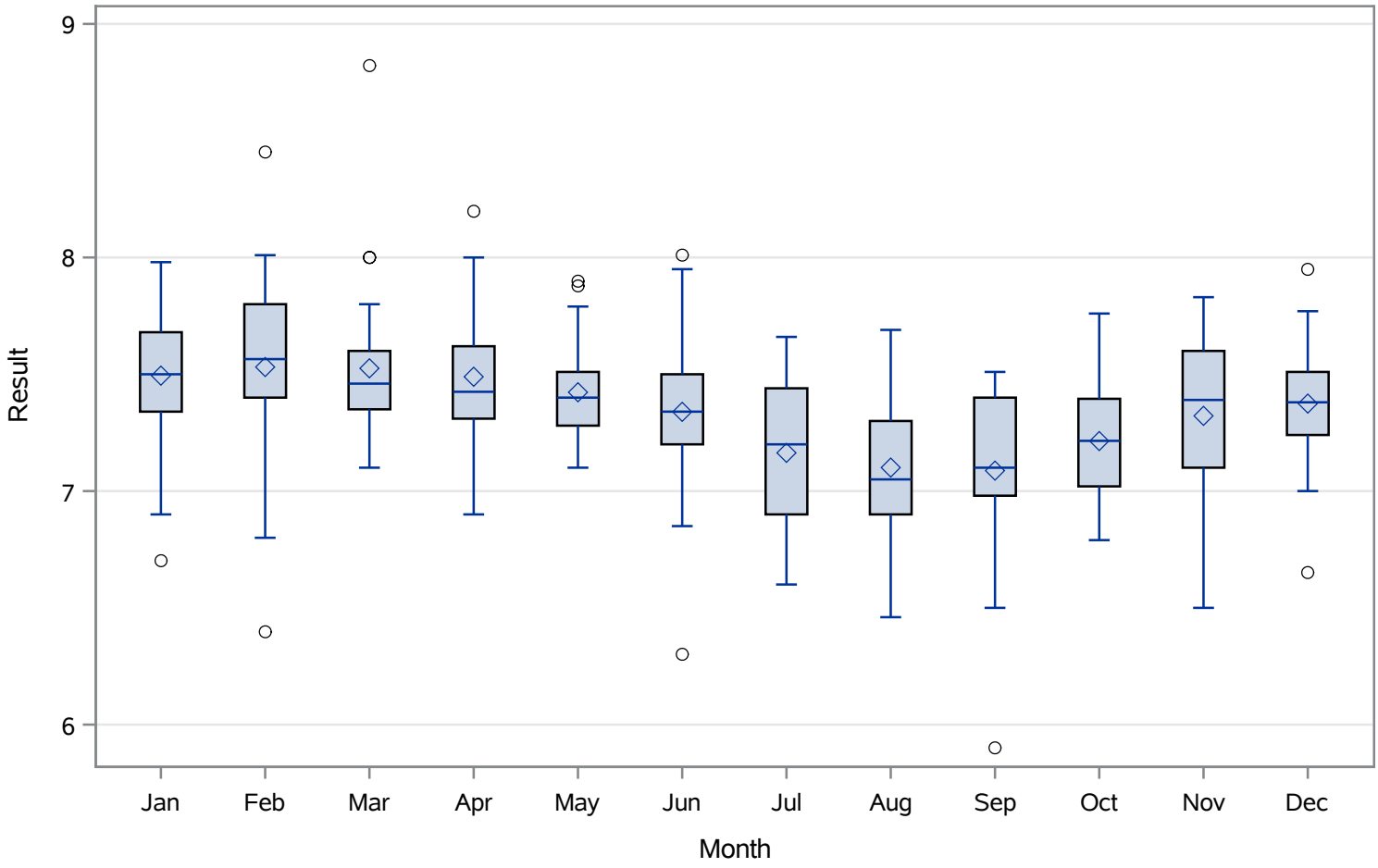
Little Manatee River
181
pH Mid
Site ID = 181



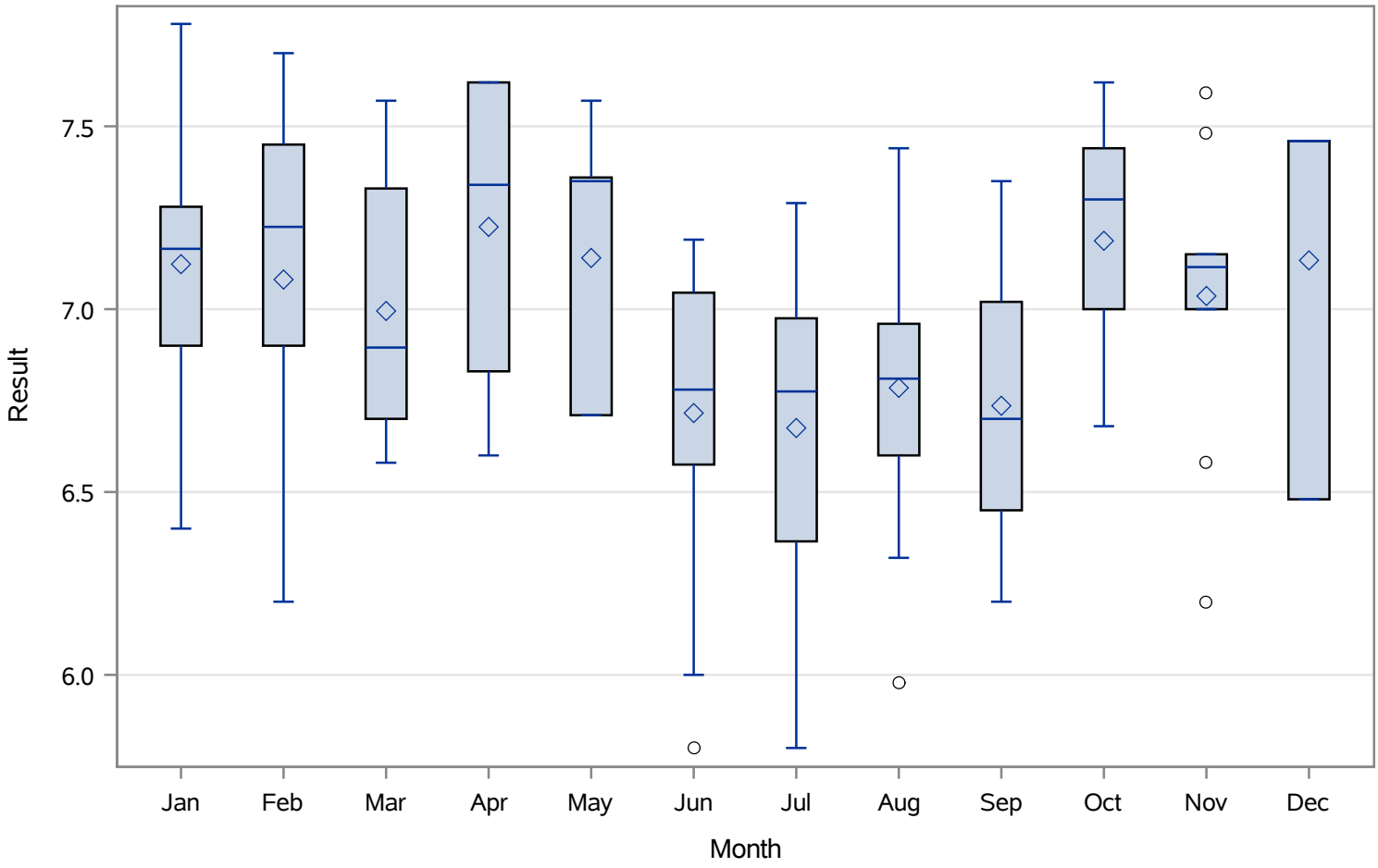
Little Manatee River
182
pH Mid
Site ID = 182



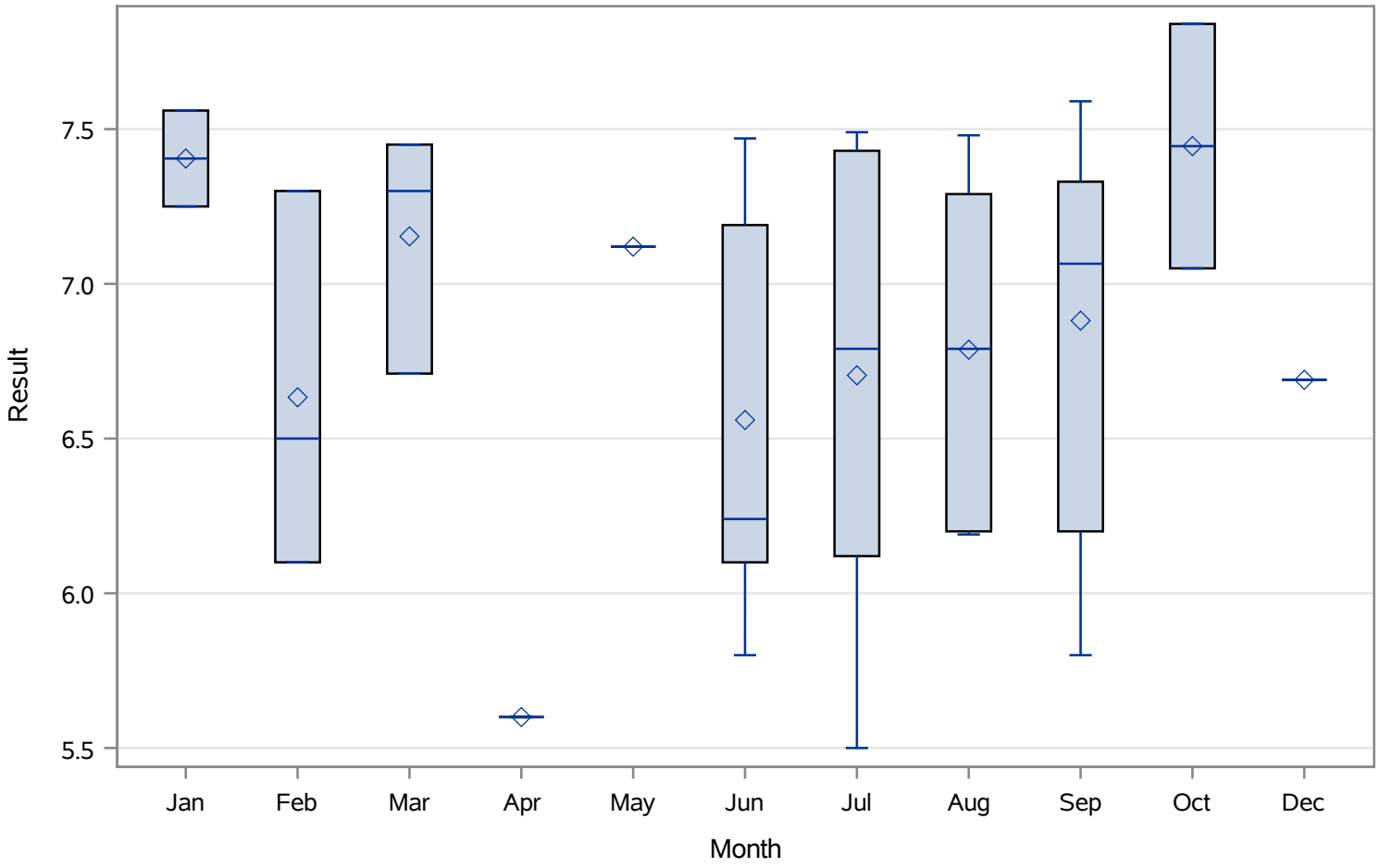
Little Manatee River
112
pH Top
Site ID = 112



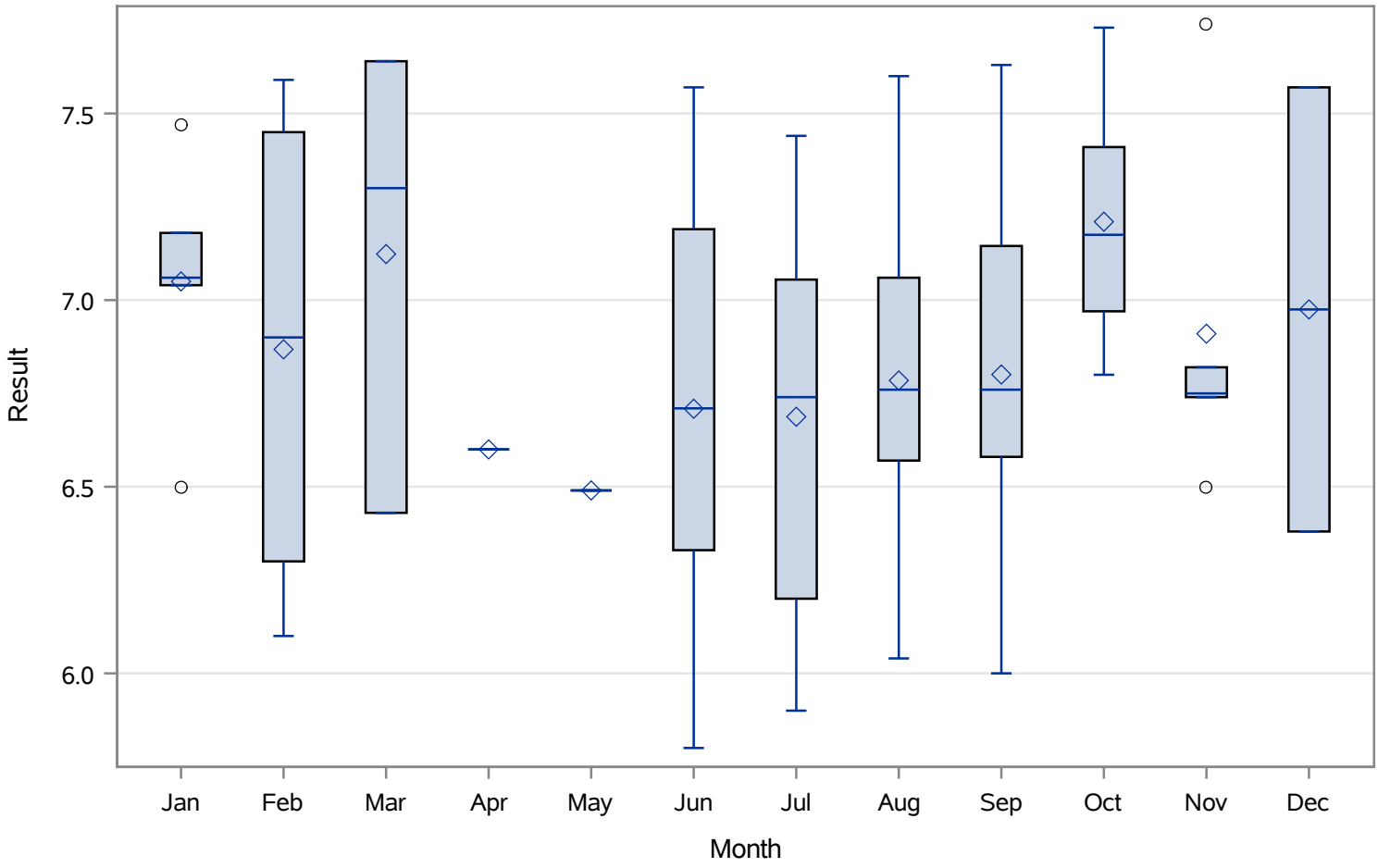
Little Manatee River
113
pH Top
Site ID = 113



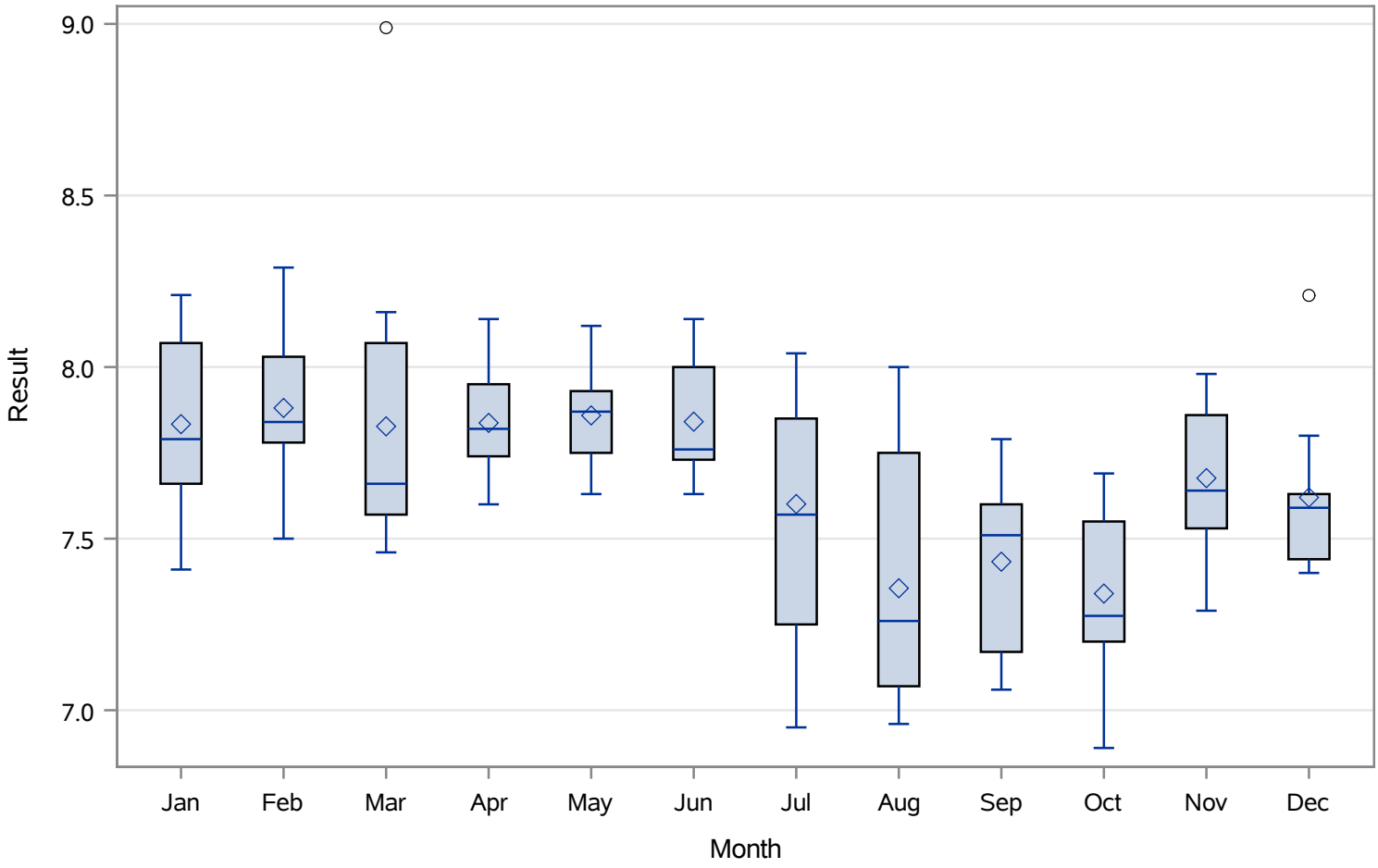
Little Manatee River
129
pH Top
Site ID = 129



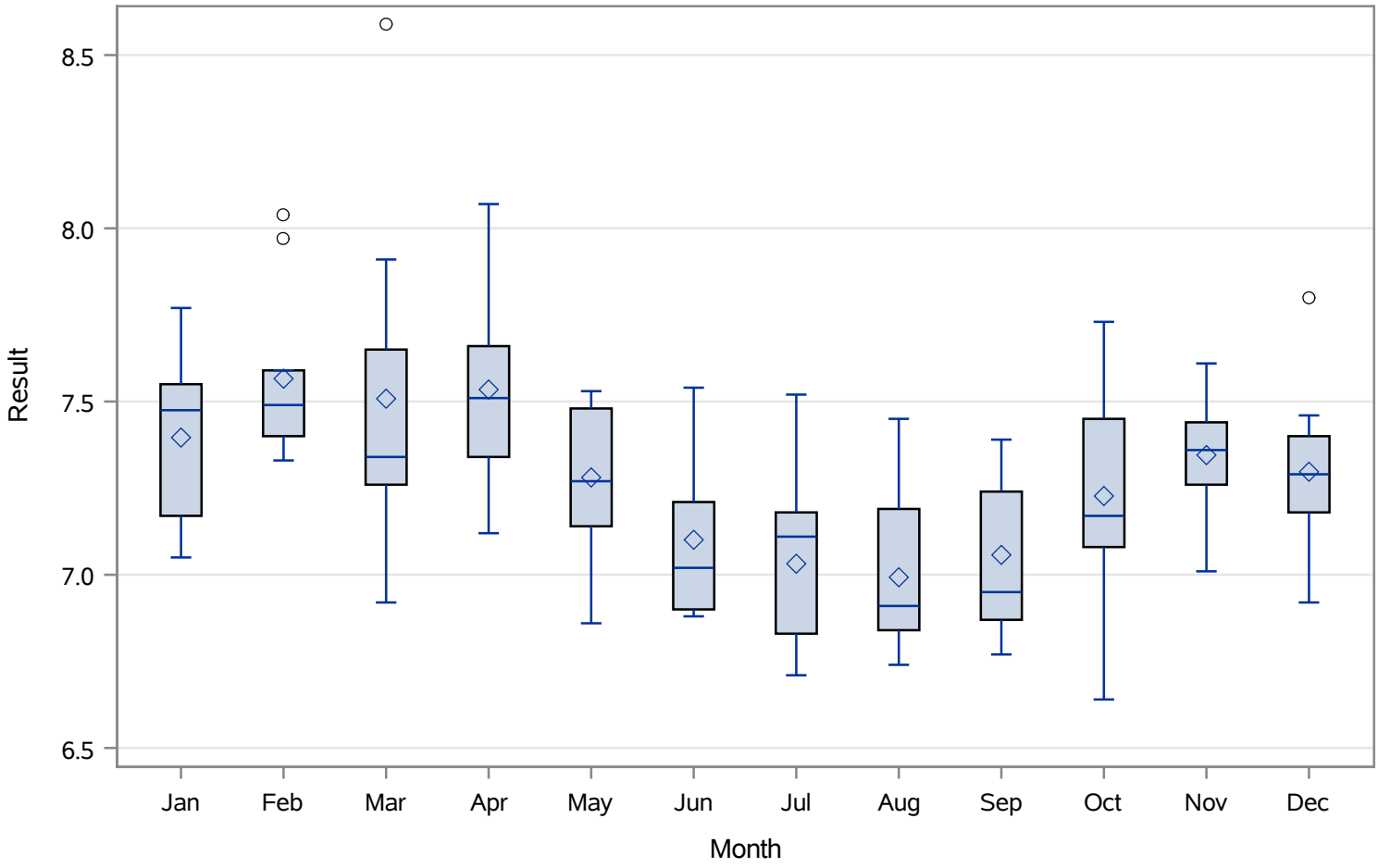
Little Manatee River
140
pH Top
Site ID = 140



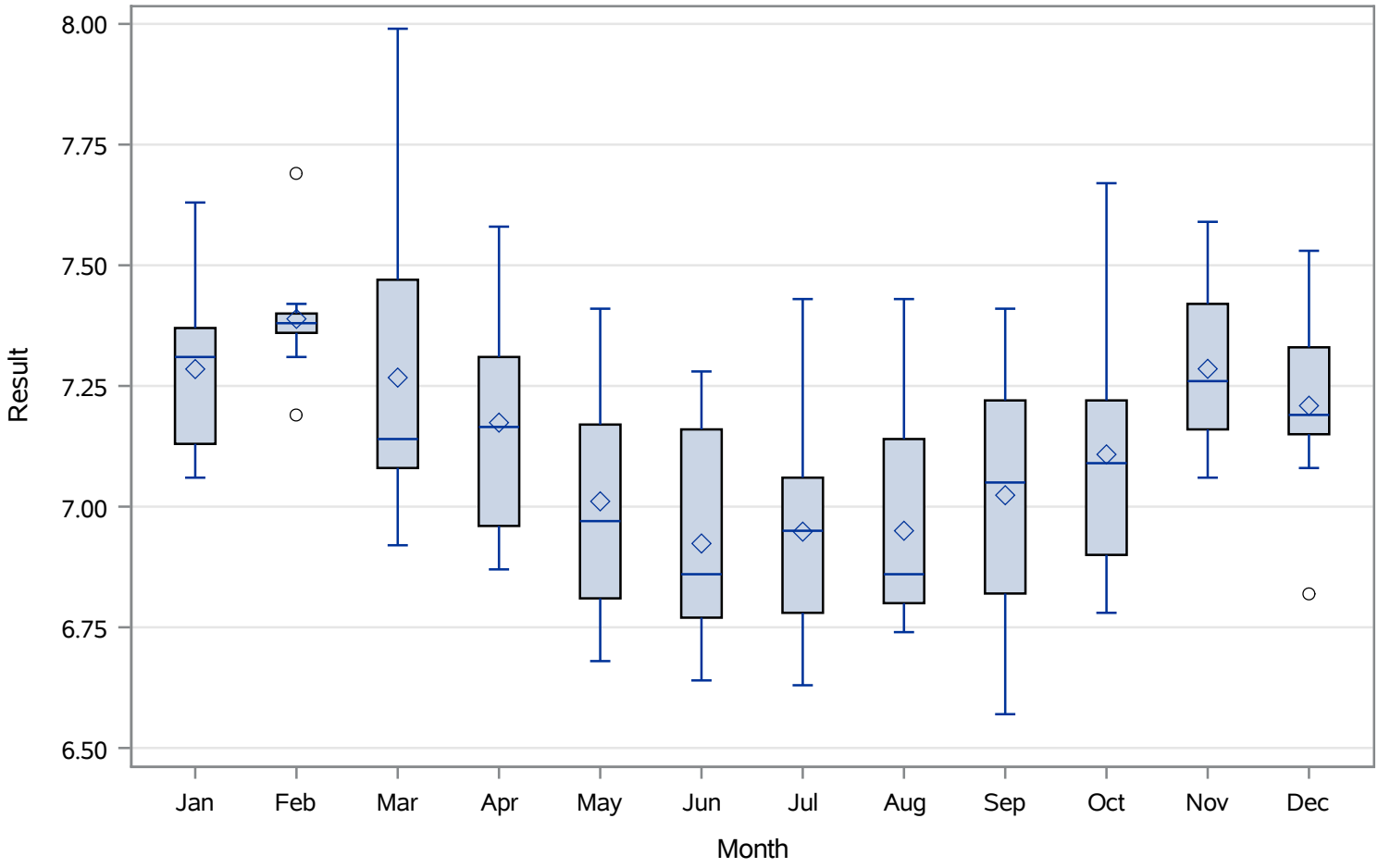
Little Manatee River
180
pH Top
Site ID = 180



Little Manatee River
181
pH Top
Site ID = 181

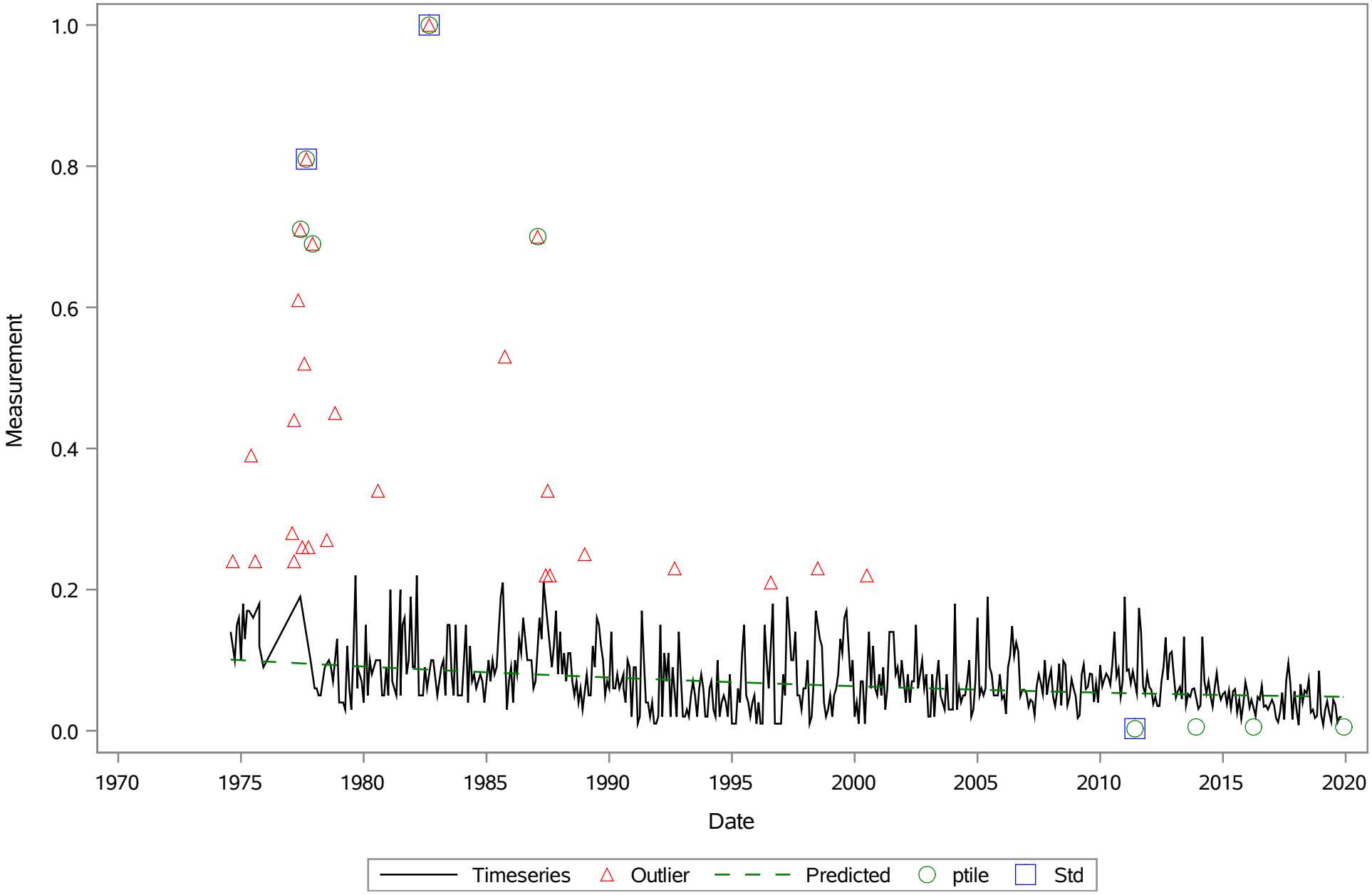


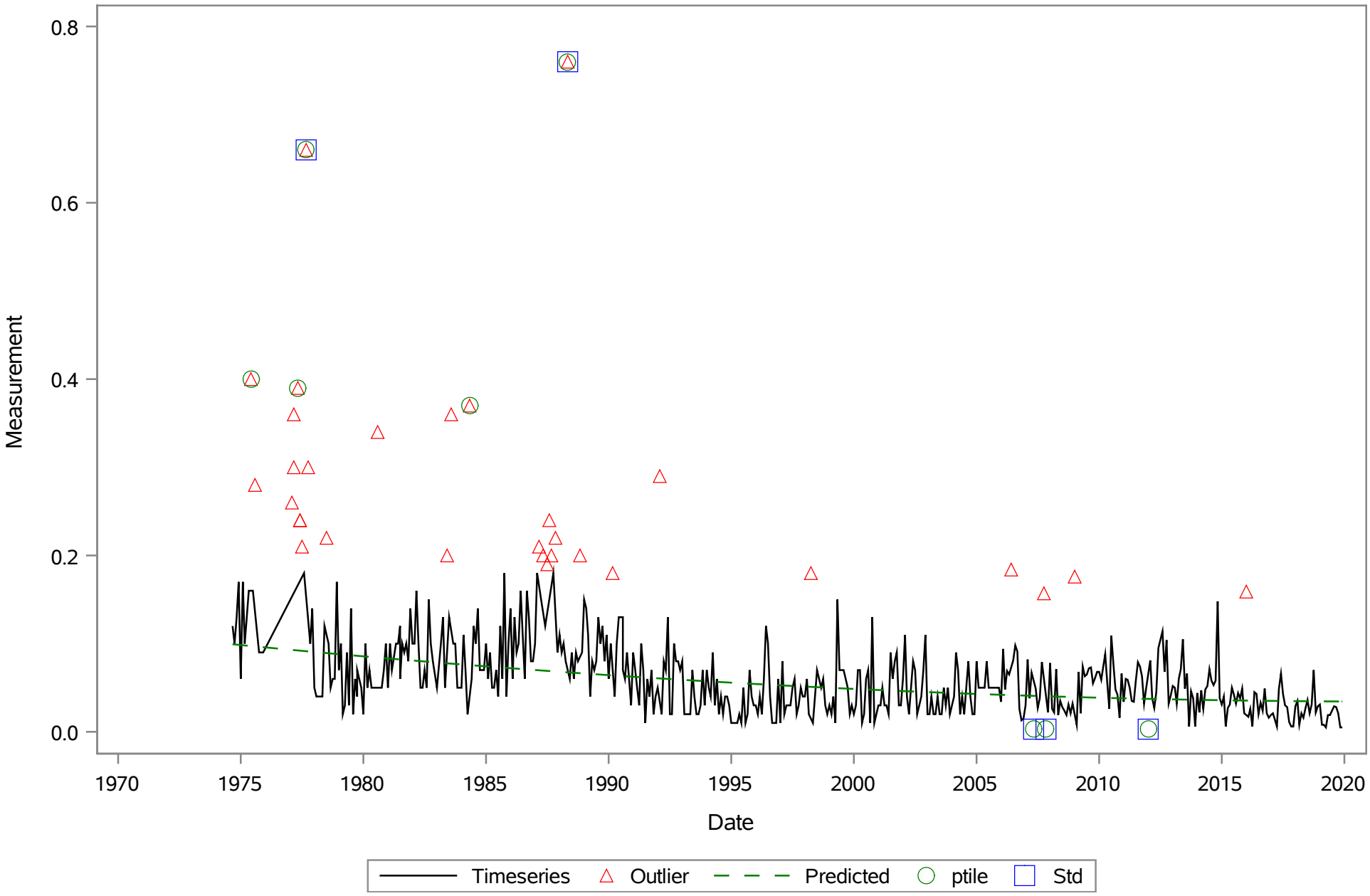
Little Manatee River
182
pH Top
Site ID = 182

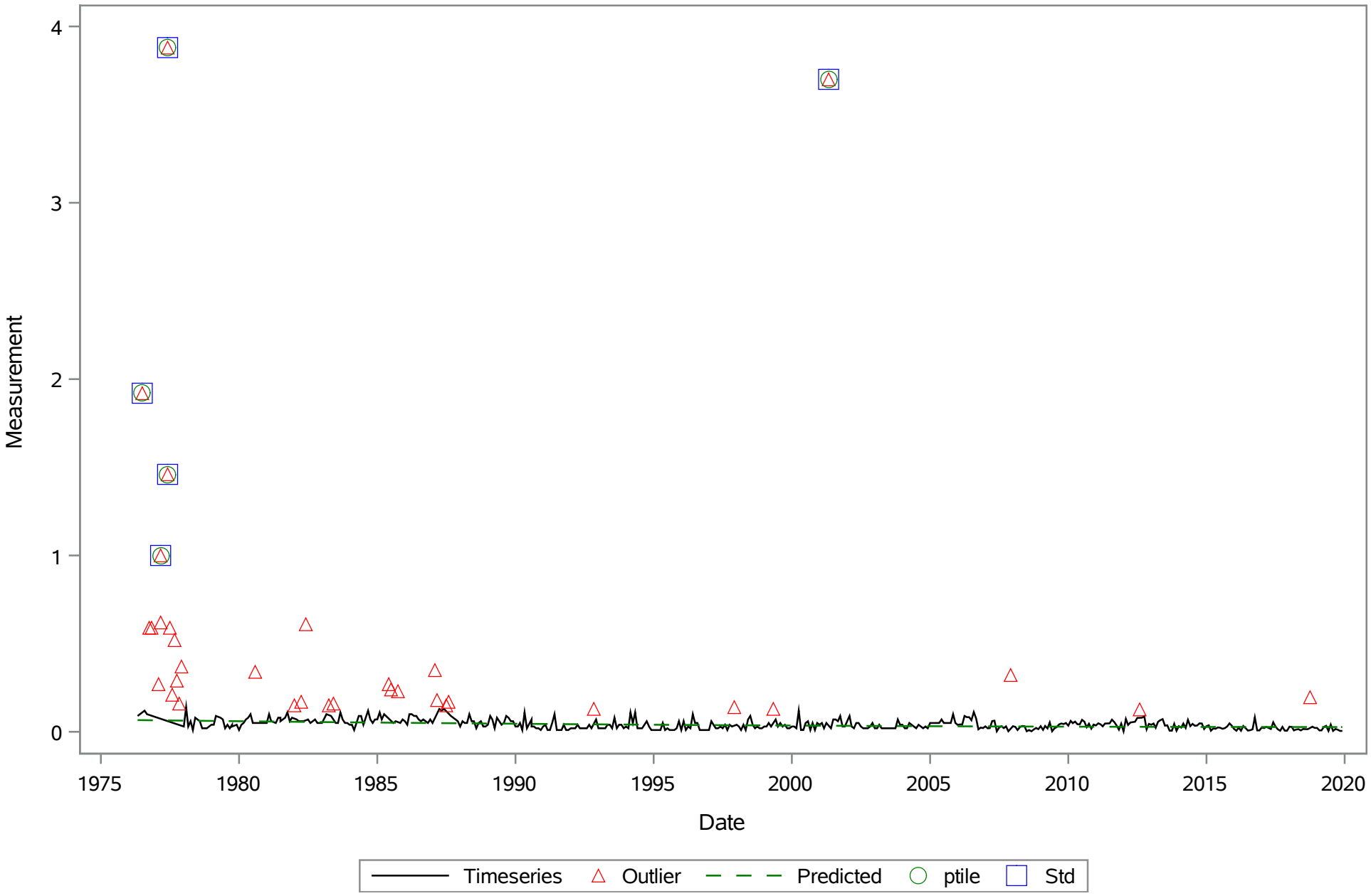


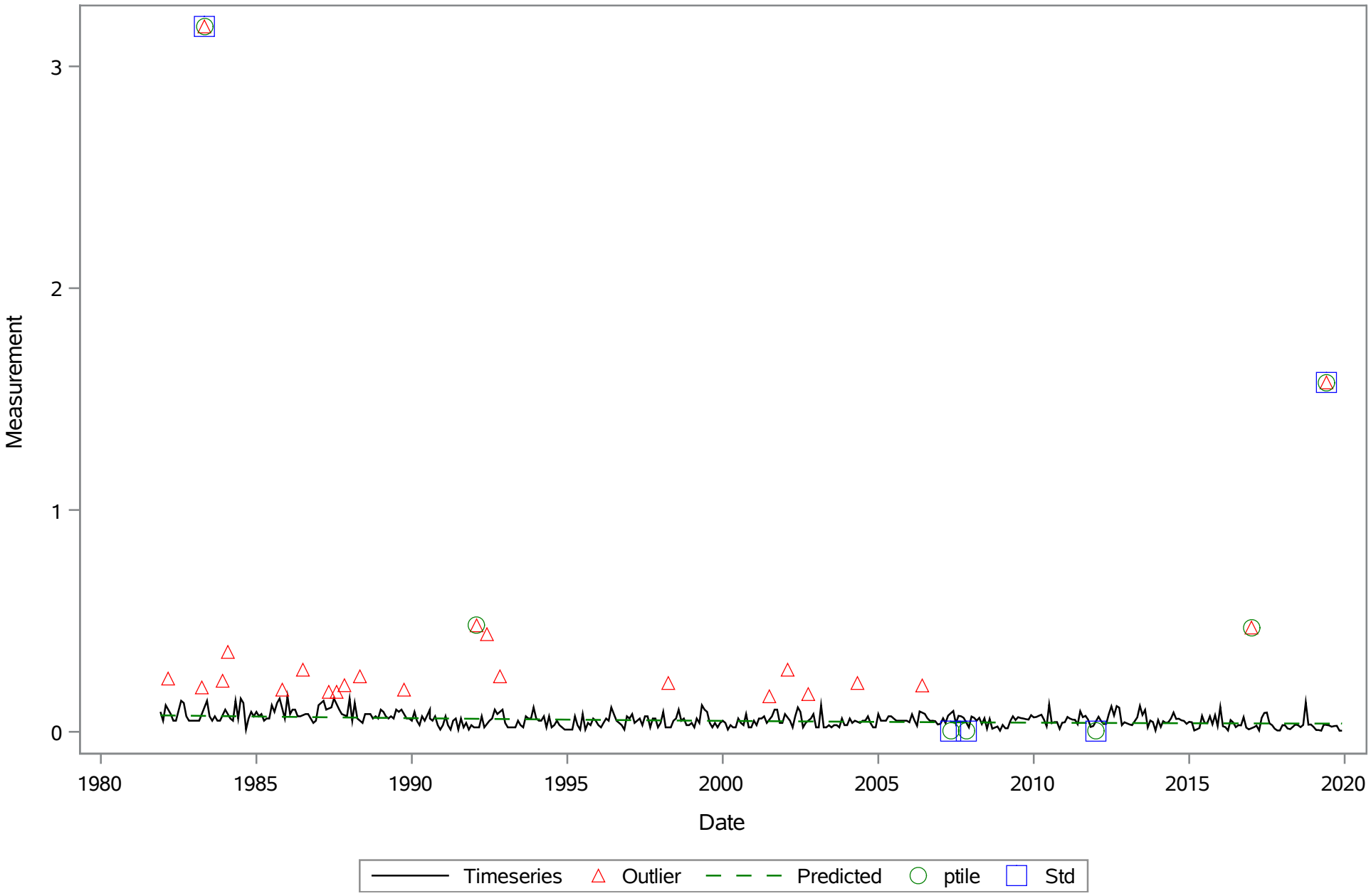
1d: EPC Time Series Plots

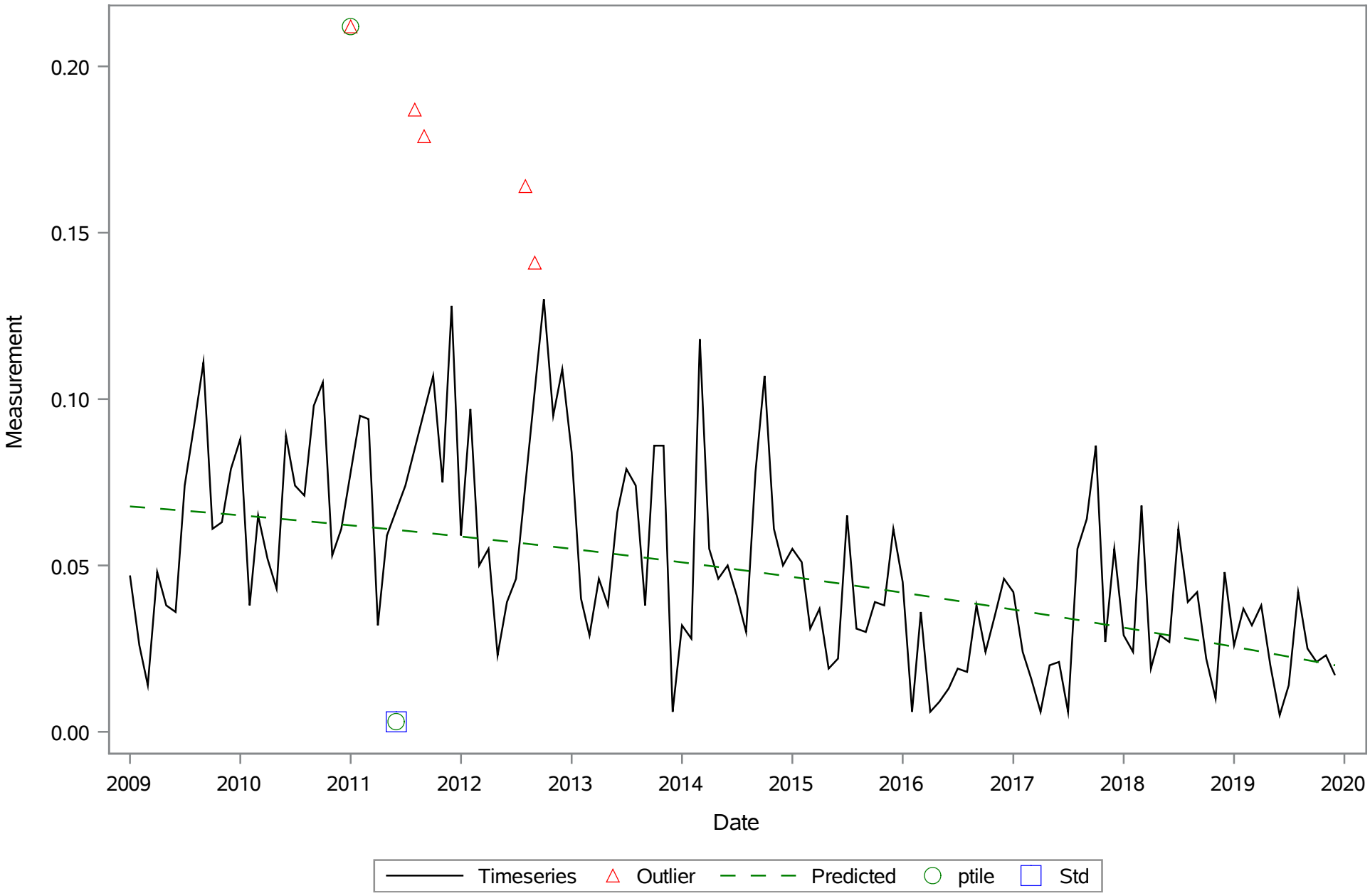
Little Manatee River
112
Ammonia (mg/l)
Site ID = 112

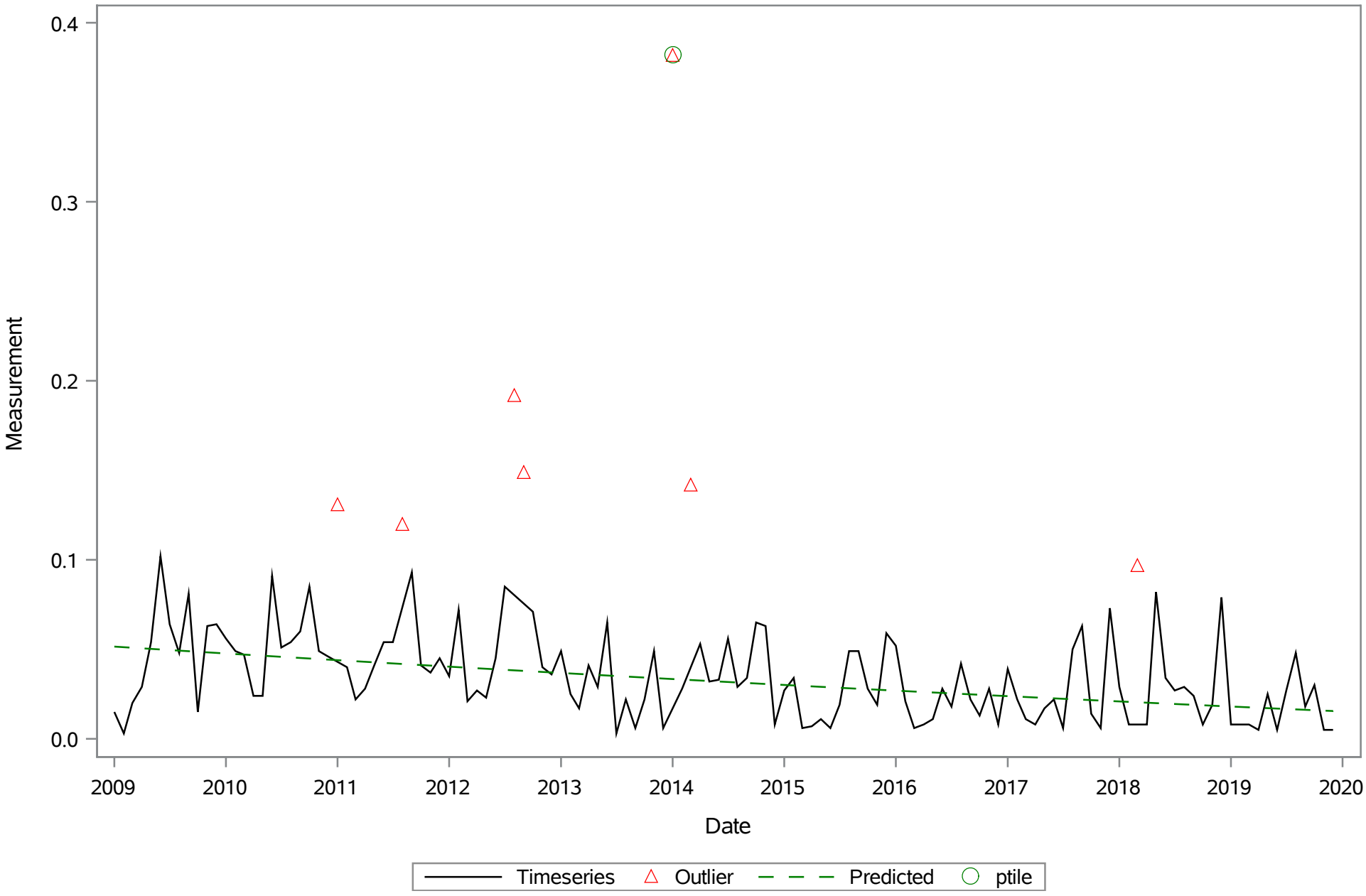


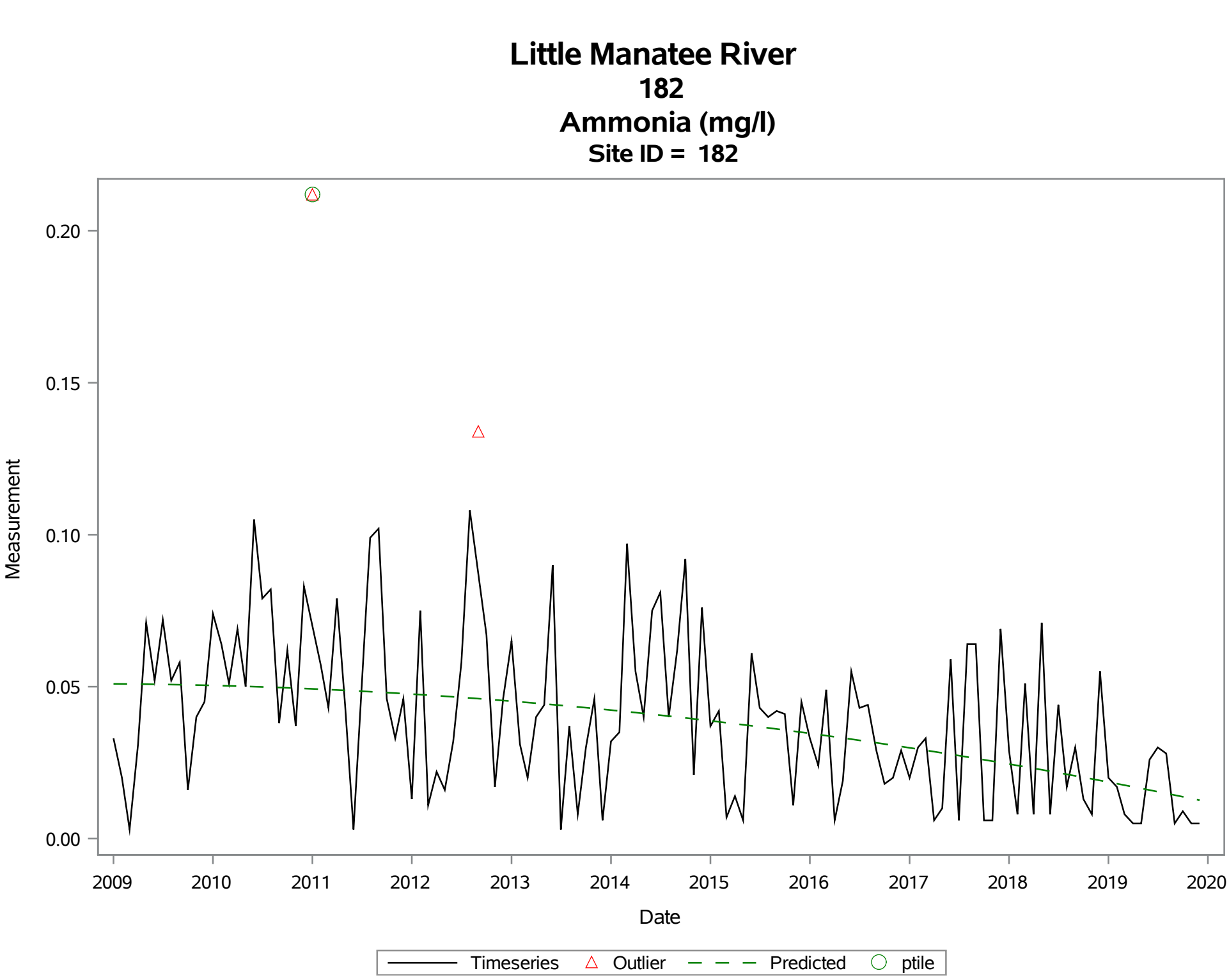

Little Manatee River
113
Ammonia (mg/l)
Site ID = 113
Measurement
0.8
0.6
0.4
0.2
0.0
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

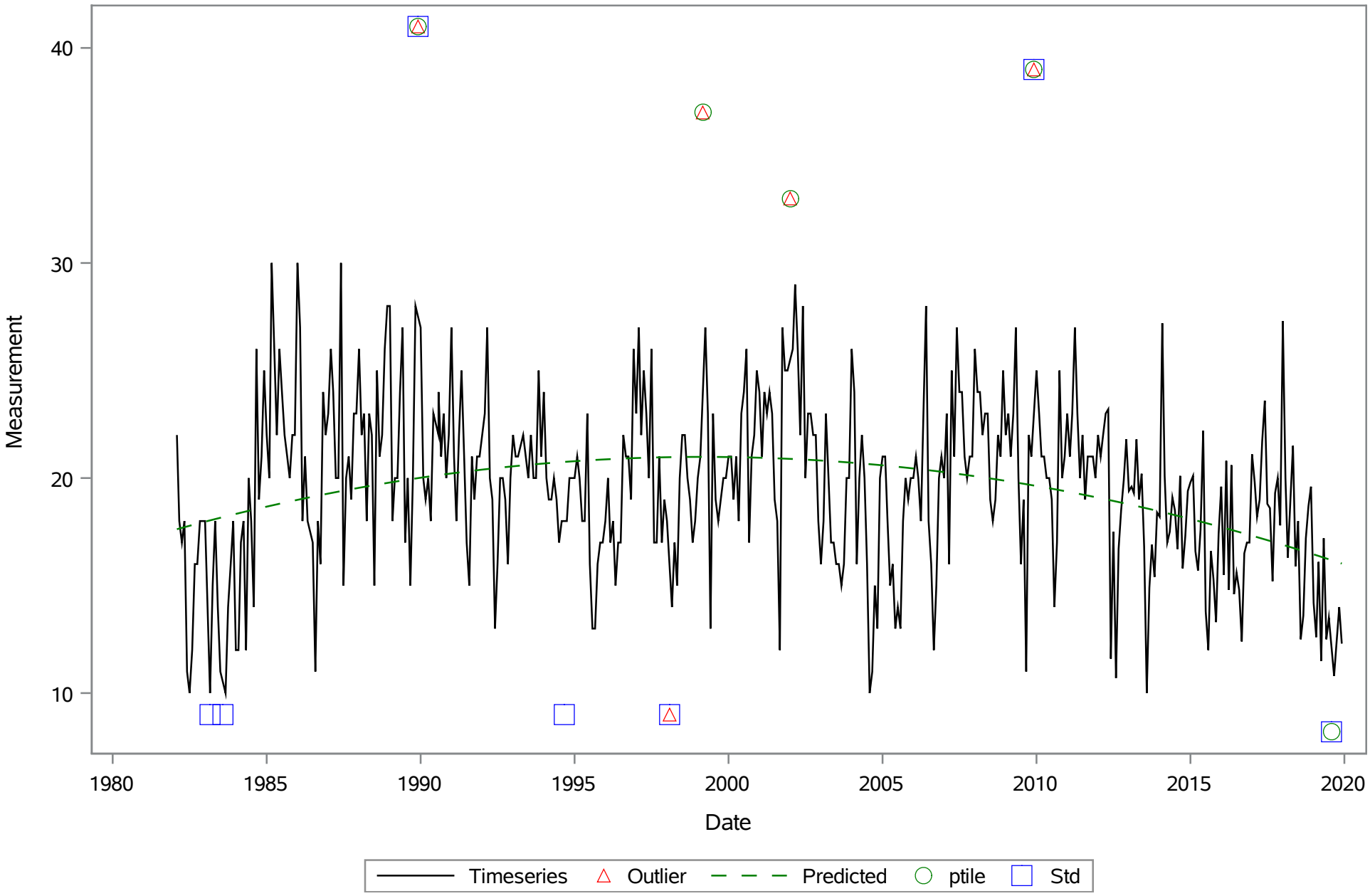

Little Manatee River
129
Ammonia (mg/l)
Site ID = 129
Measurement
0
1
2
3
4
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

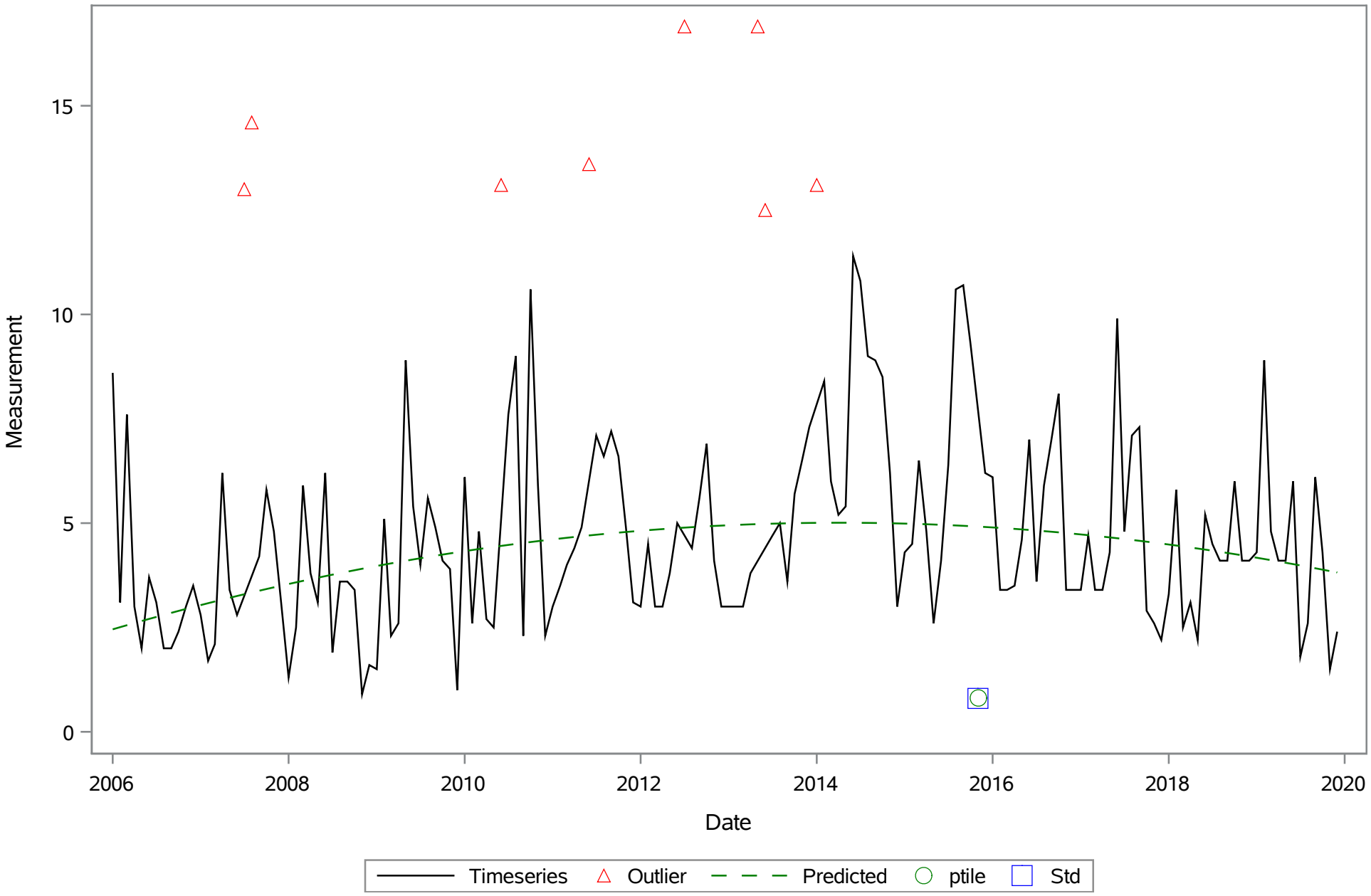

Little Manatee River
140
Ammonia (mg/l)
Site ID = 140
Measurement
0
1
2
3
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std


Little Manatee River
180
Ammonia (mg/l)
Site ID = 180
0.20
0.15
0.10
0.05
0.00
Measurement
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

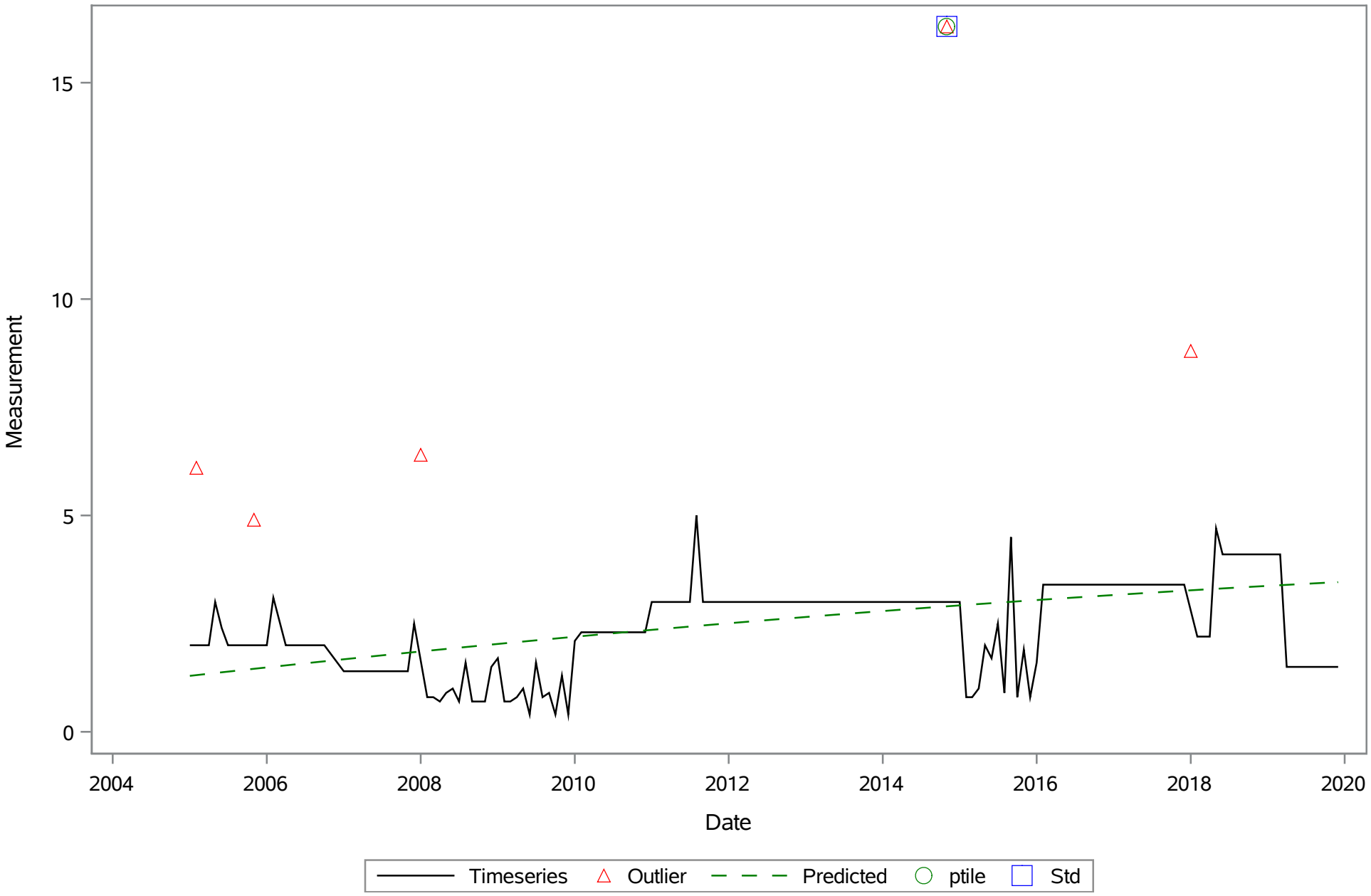

Little Manatee River
181
Ammonia (mg/l)
Site ID = 181
0.4
0.3
0.2
0.1
0.0
Measurement
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Outlier
Predicted
ptile

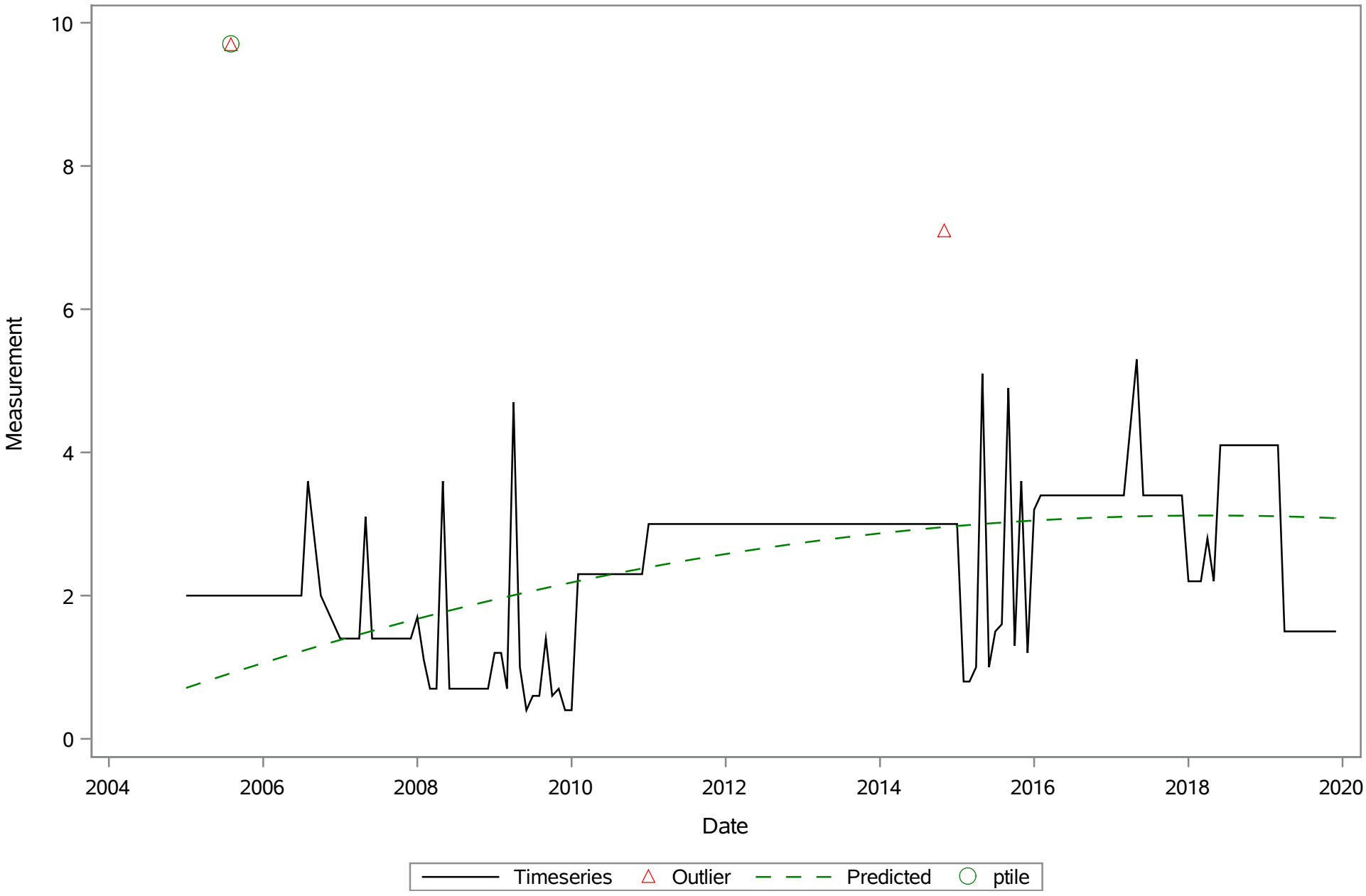

Little Manatee River
182
Ammonia (mg/l)
Site ID = 182
0.20
0.15
0.10
0.05
0.00
Measurement
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Outlier
Predicted
ptile


Little Manatee River
140
Chloride (mg/l)
Site ID = 140
Measurement
40
30
20
10
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

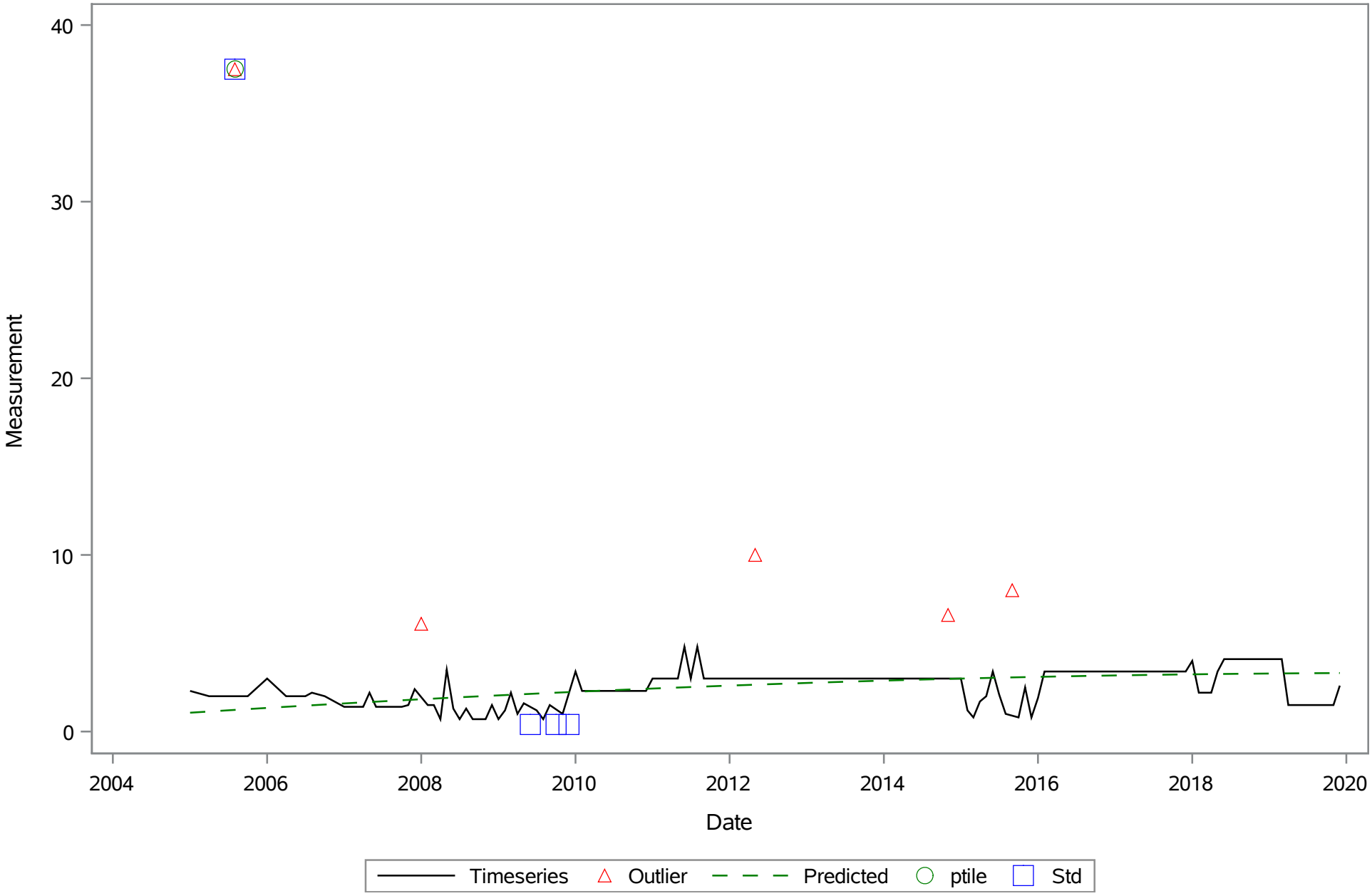

Little Manatee River
112
Chlorophyll a Corr (ug/l)
Site ID = 112
Measurement
0
5
10
15
2006
2008
2010
2012
2014
2016
2018
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

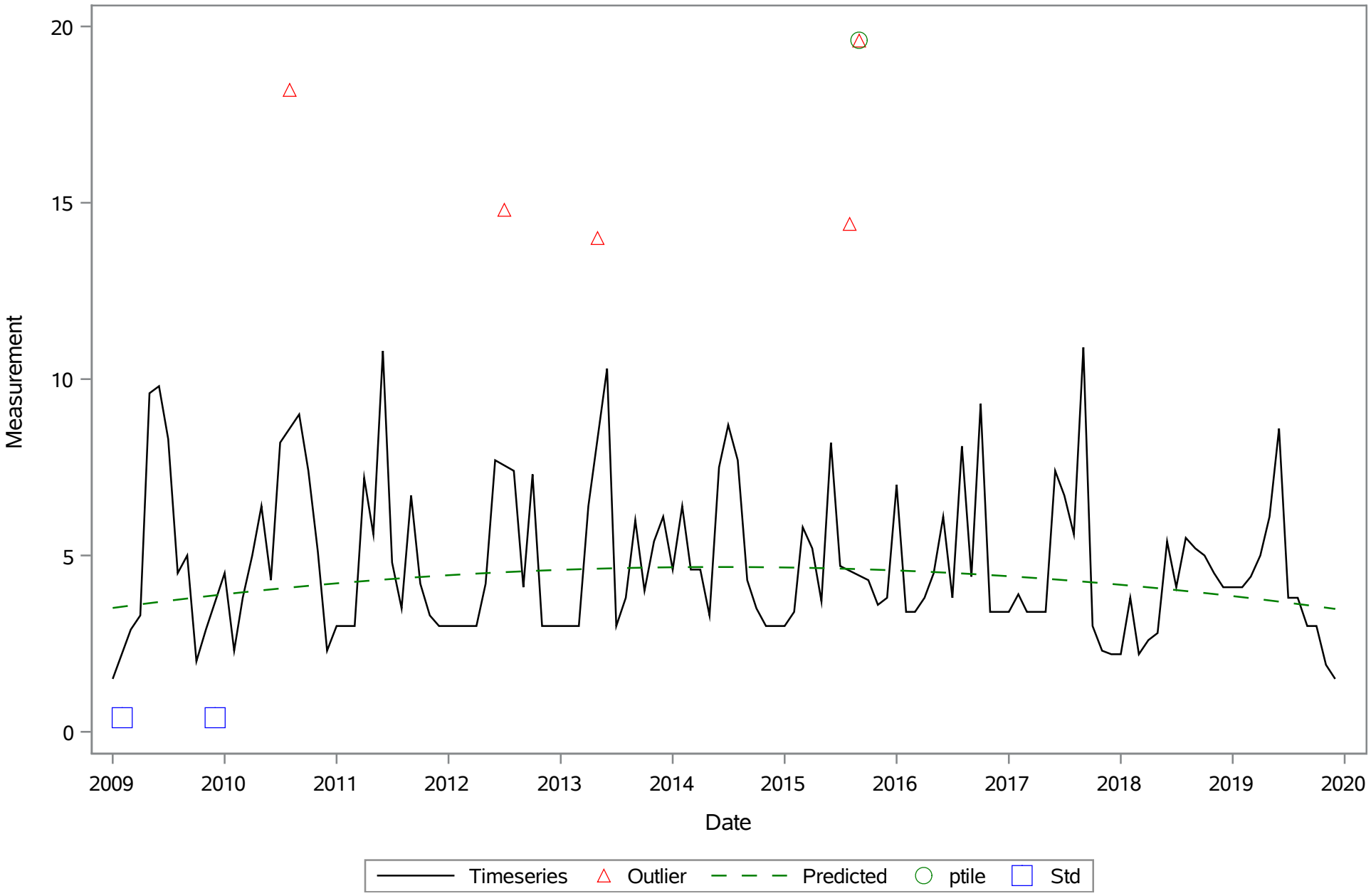
Little Manatee River
113
Chlorophyll a Corr (ug/l)
Site ID = 113

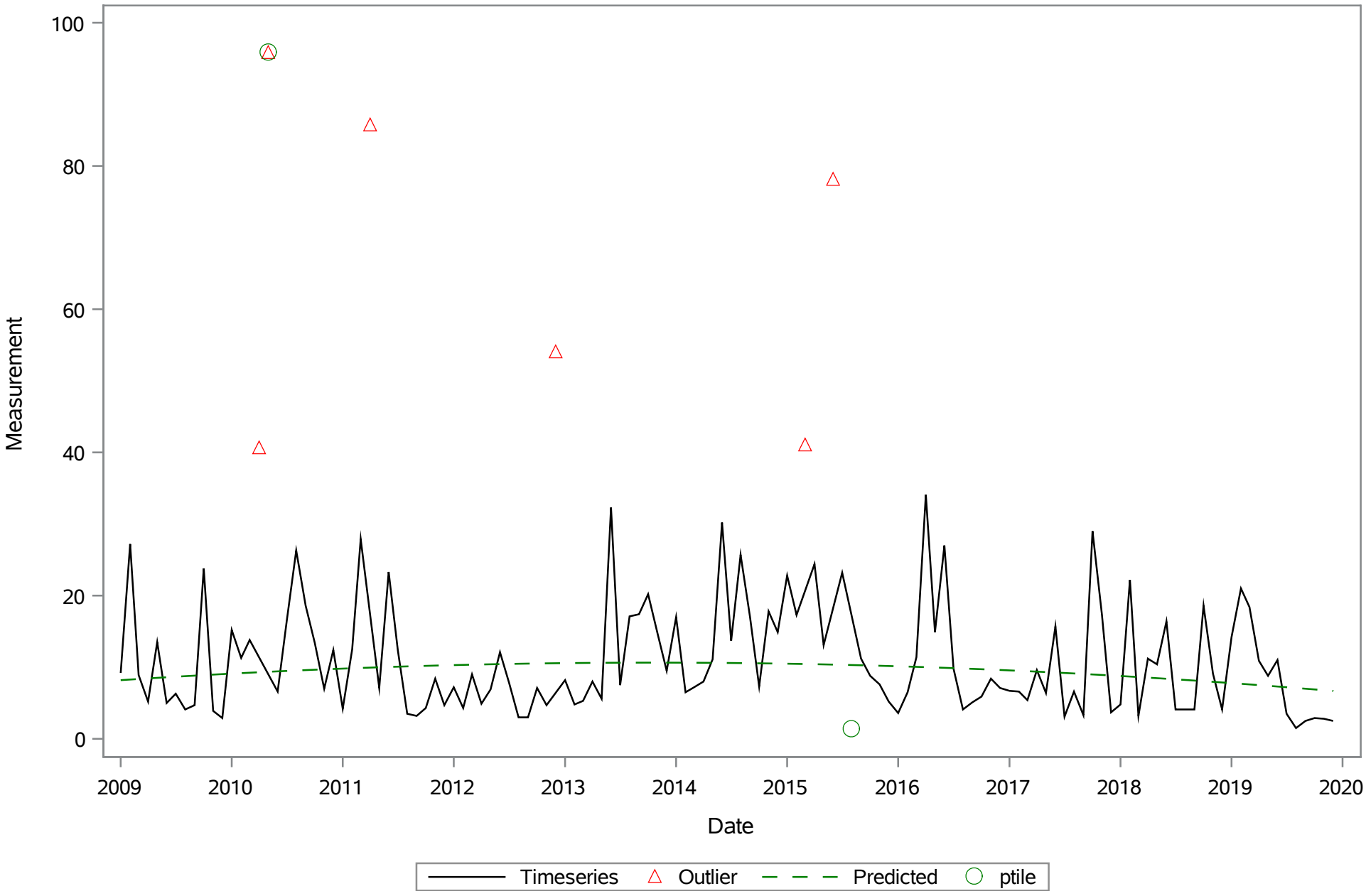


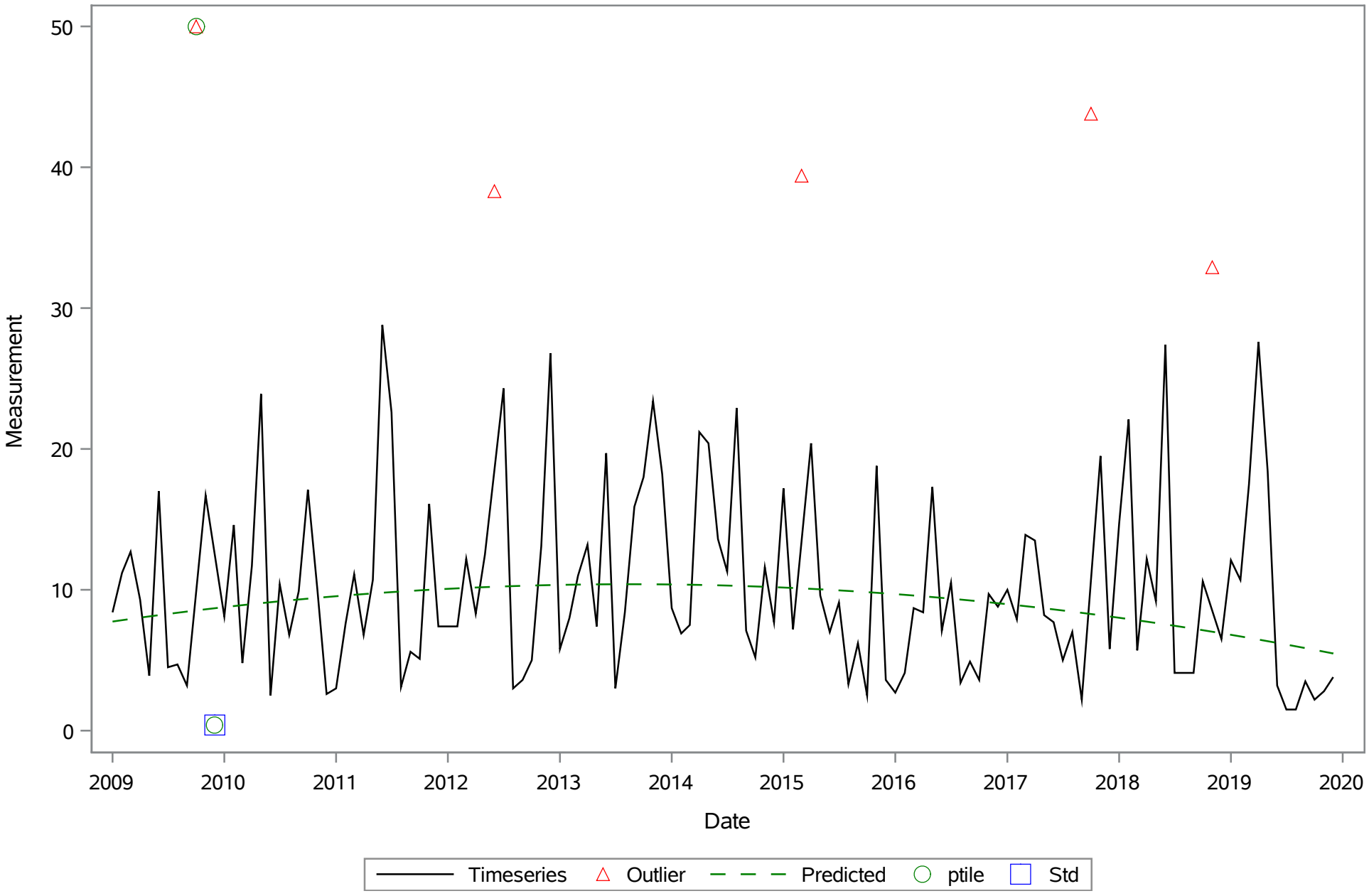

Little Manatee River
129
Chlorophyll a Corr (ug/l)
Site ID = 129
Measurement
10
8
6
4
2
0
2004
2006
2008
2010
2012
2014
2016
2018
2020
Date
Timeseries
Outlier
Predicted
ptile

Little Manatee River
140
Chlorophyll a Corr (ug/l)
Site ID = 140

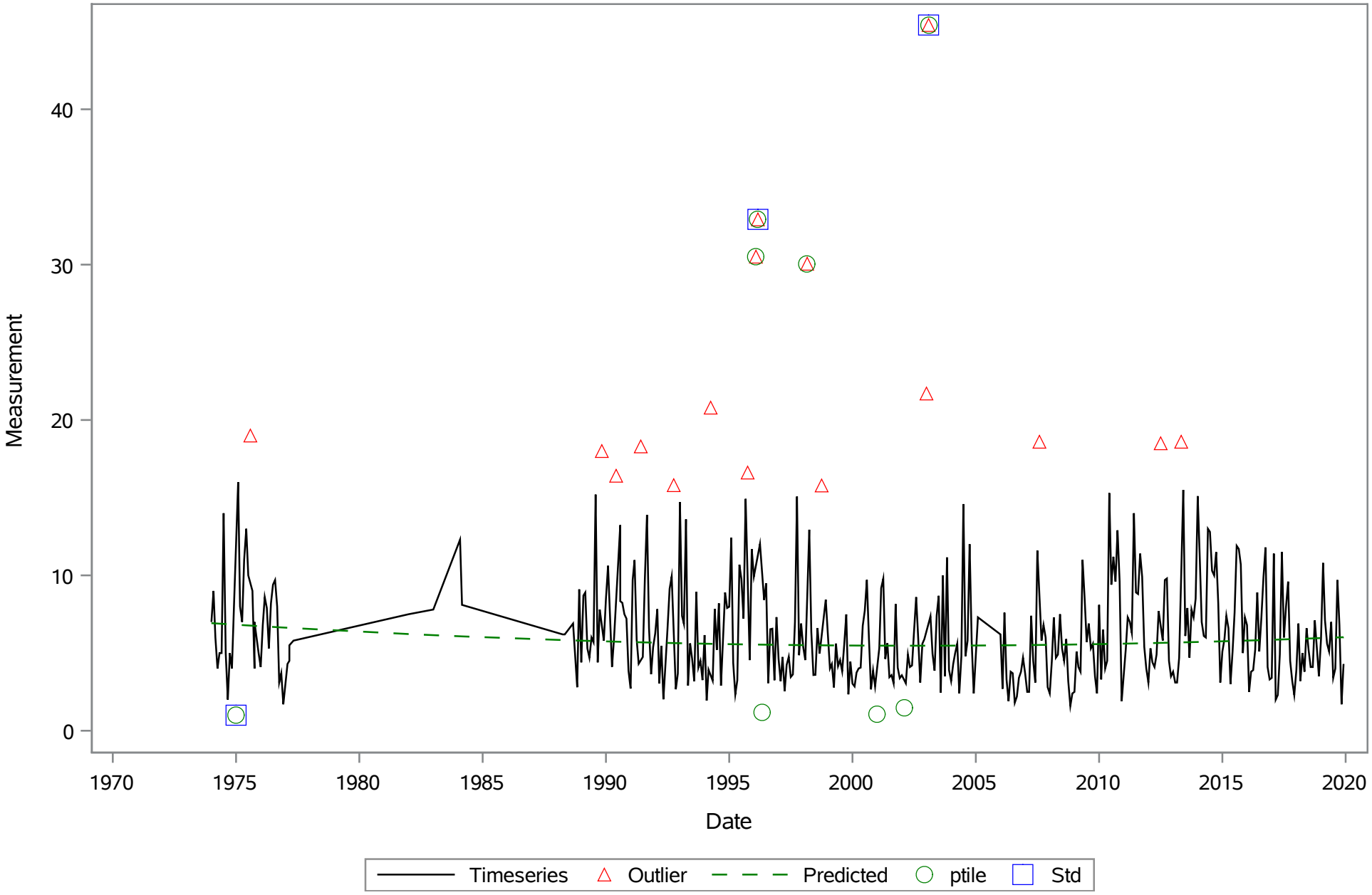


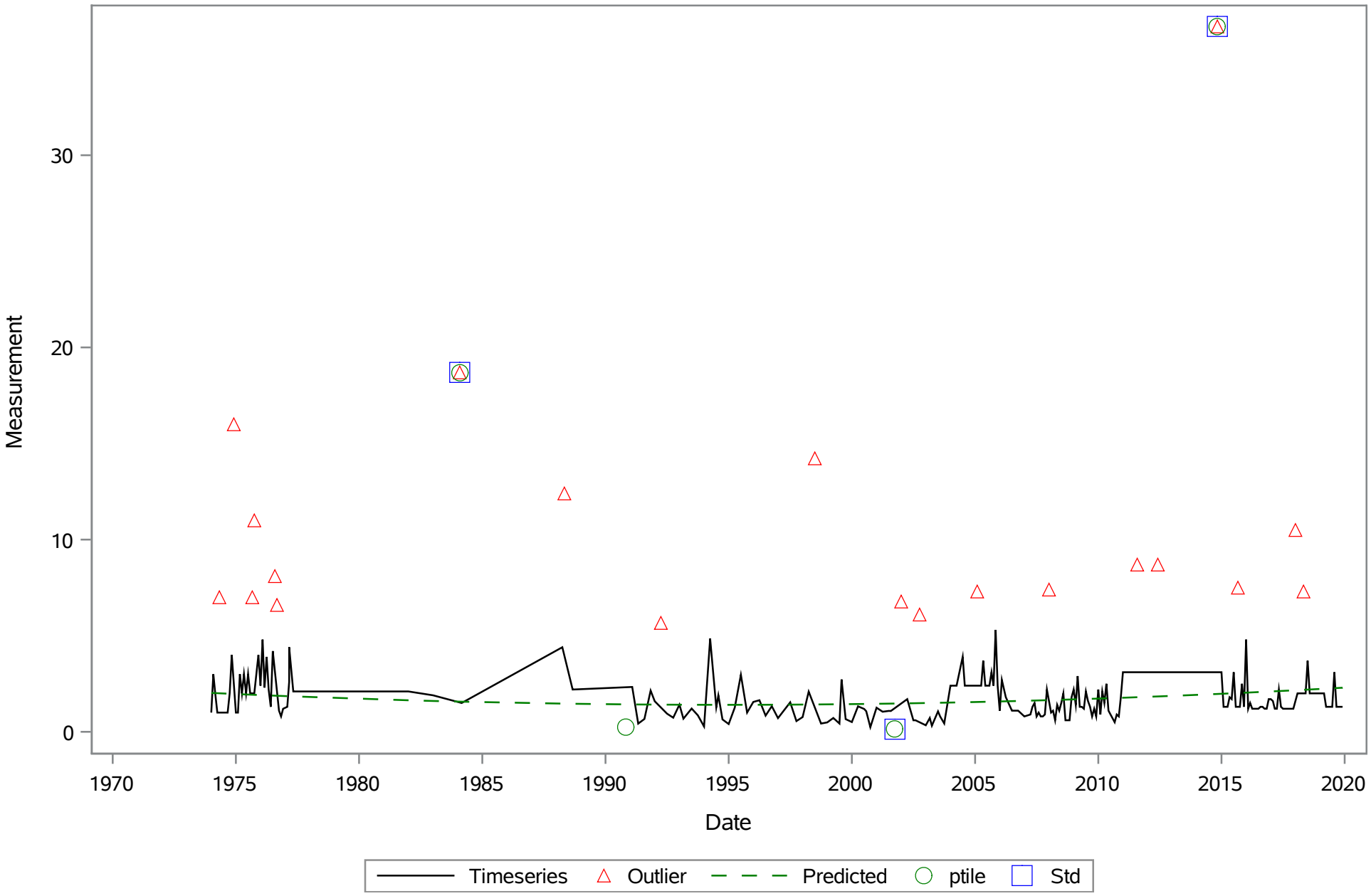

Little Manatee River
180
Chlorophyll a Corr (ug/l)
Site ID = 180
Measurement
20
15
10
5
0
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

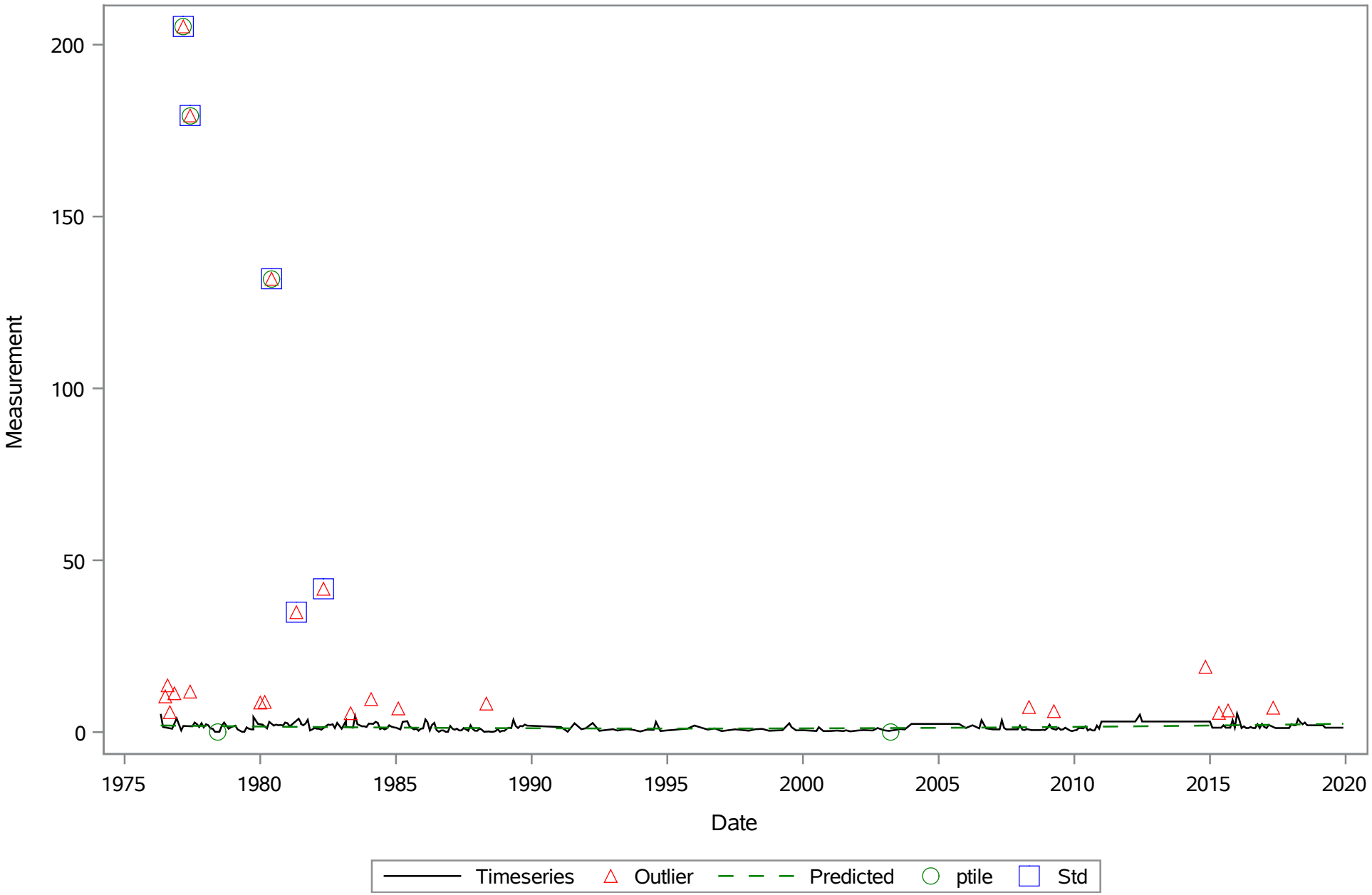

Little Manatee River
181
Chlorophyll a Corr (ug/l)
Site ID = 181
Measurement
100
80
60
40
20
0
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Outlier
Predicted
ptile

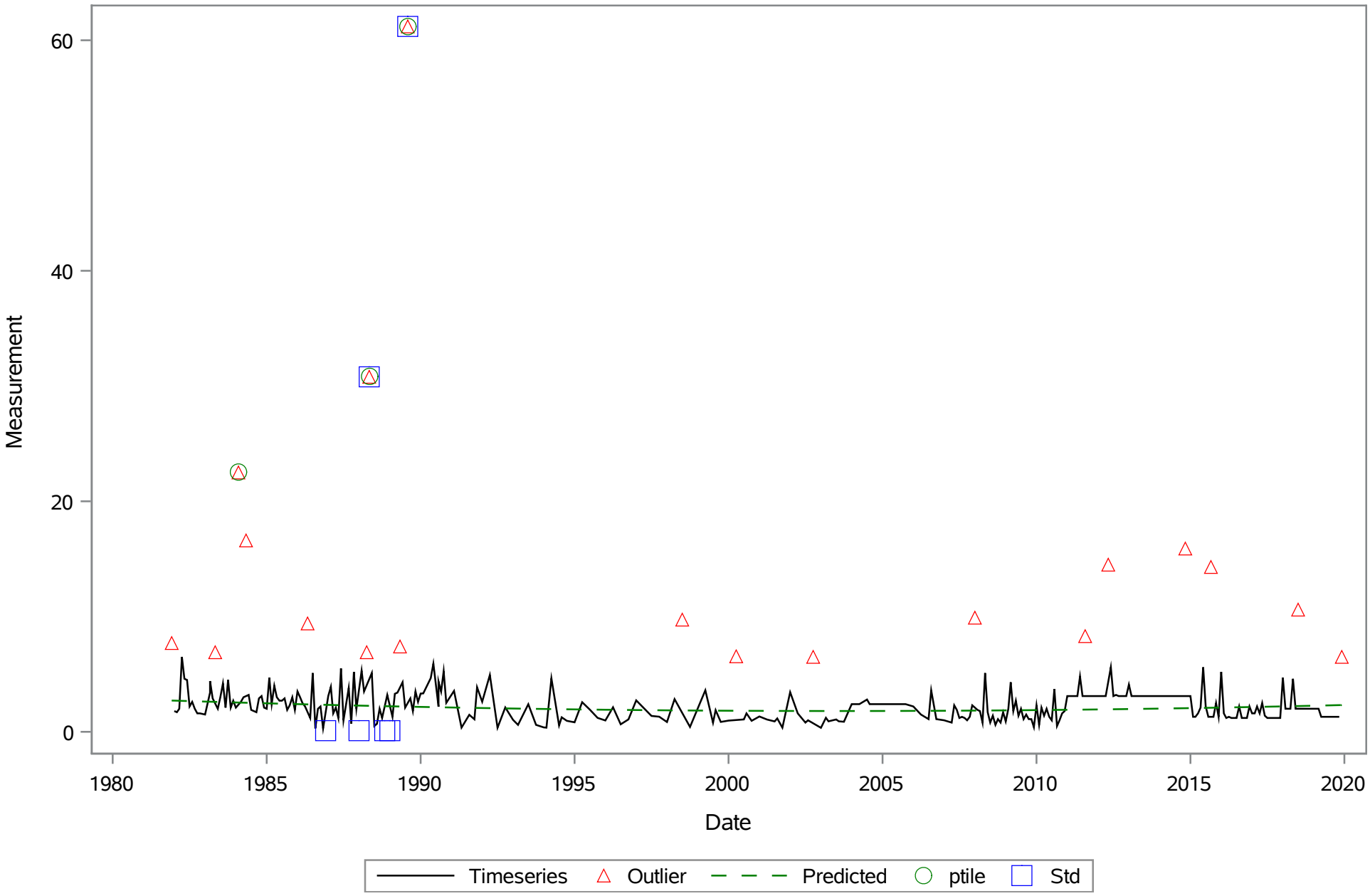

Little Manatee River
182
Chlorophyll a Corr (ug/l)
Site ID = 182
Measurement
50
40
30
20
10
0
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

Little Manatee River
112
Chlorophyll a uncorr (ug/l)
Site ID = 112

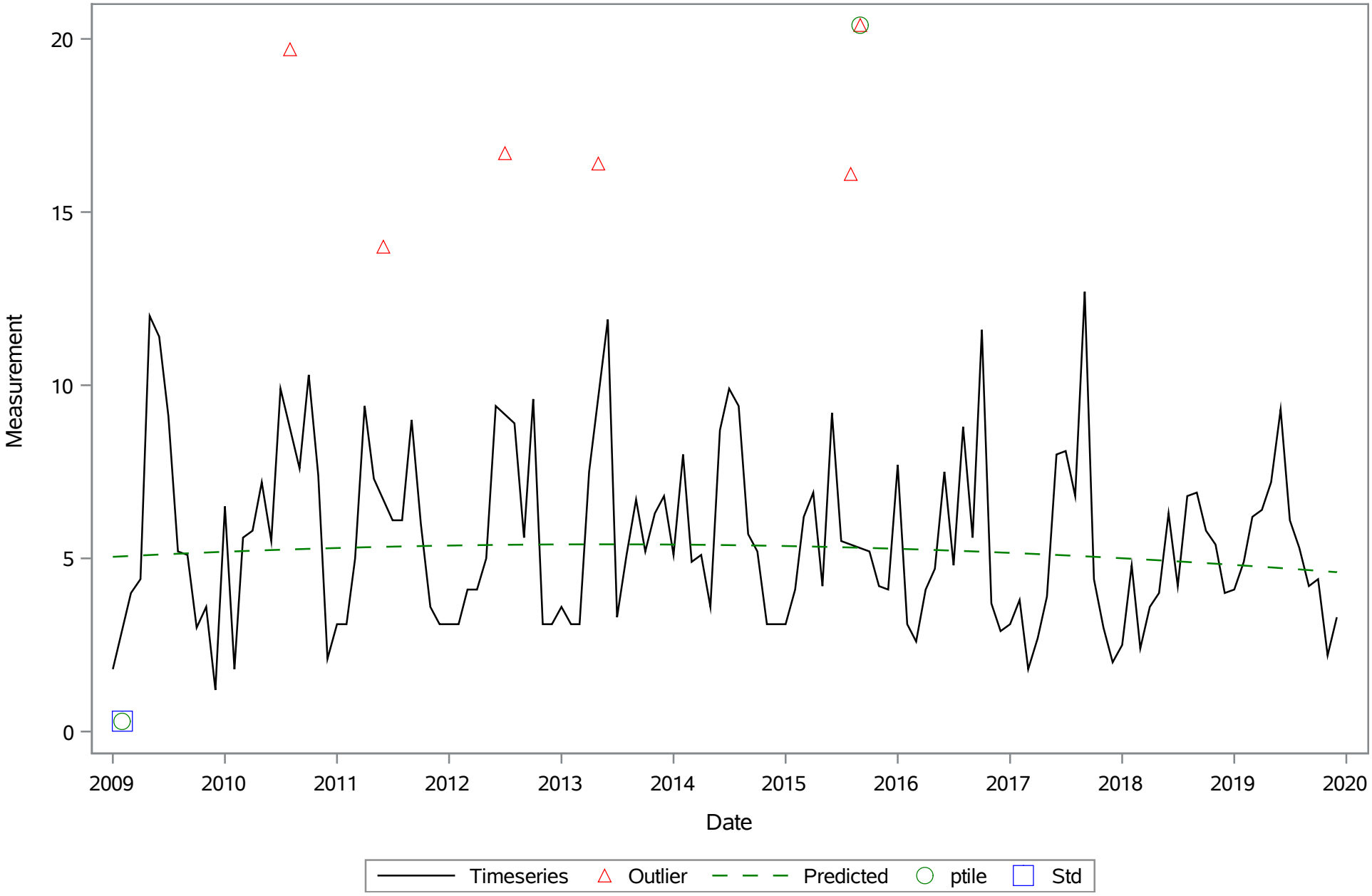


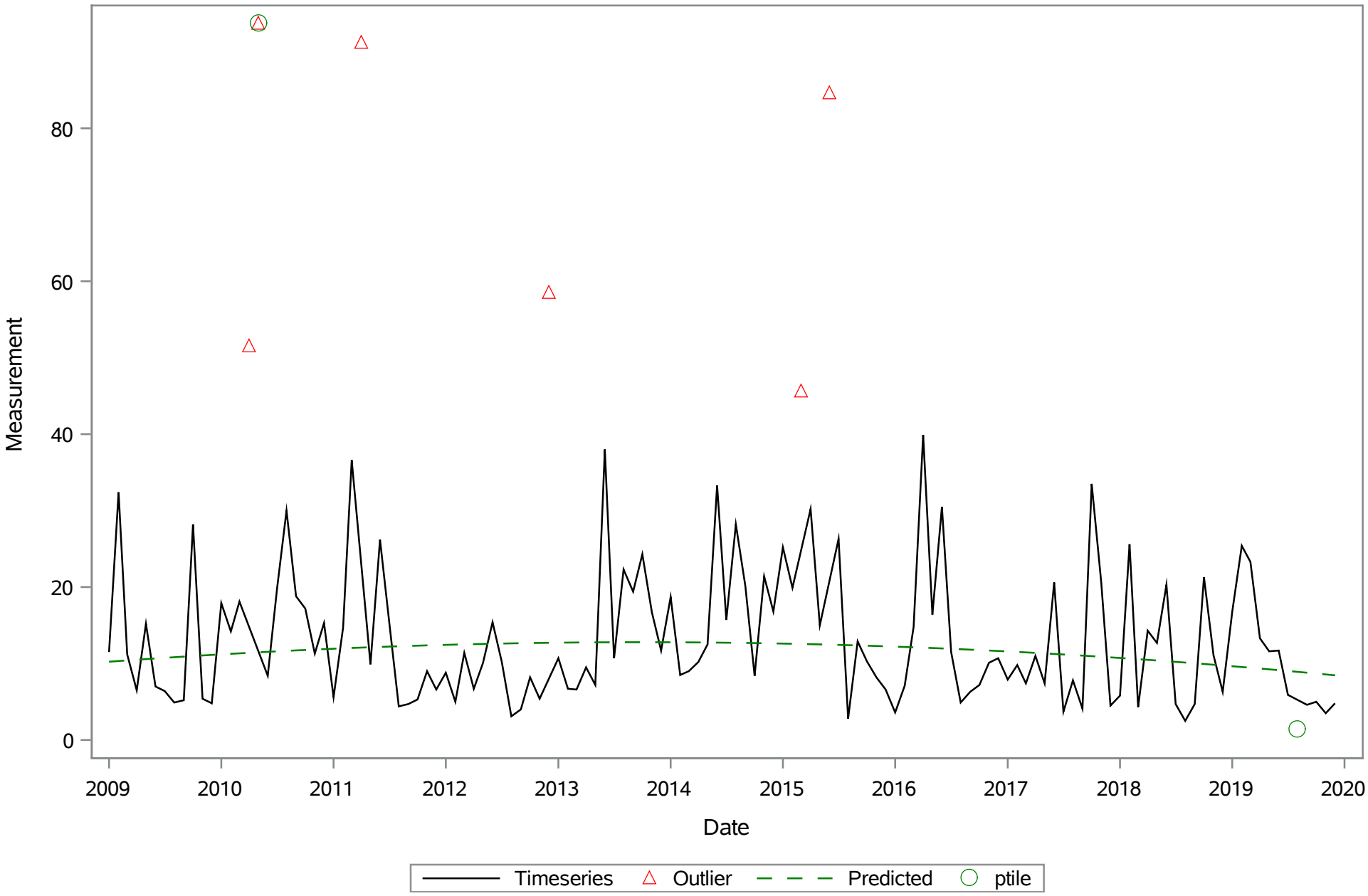

Little Manatee River
113
Chlorophyll a uncorr (ug/l)
Site ID = 113
Measurement
0
10
20
30
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std


Little Manatee River
129
Chlorophyll a uncorr (ug/l)
Site ID = 129
Measurement
200
150
100
50
0
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std


Little Manatee River
140
Chlorophyll a uncorr (ug/l)
Site ID = 140
Measurement
60
40
20
0
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

Little Manatee River
180
Chlorophyll a uncorr (ug/l)
Site ID = 180




Little Manatee River
181
Chlorophyll a uncorr (ug/l)
Site ID = 181
Measurement
0
20
40
60
80
2009
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2011
2012
2013
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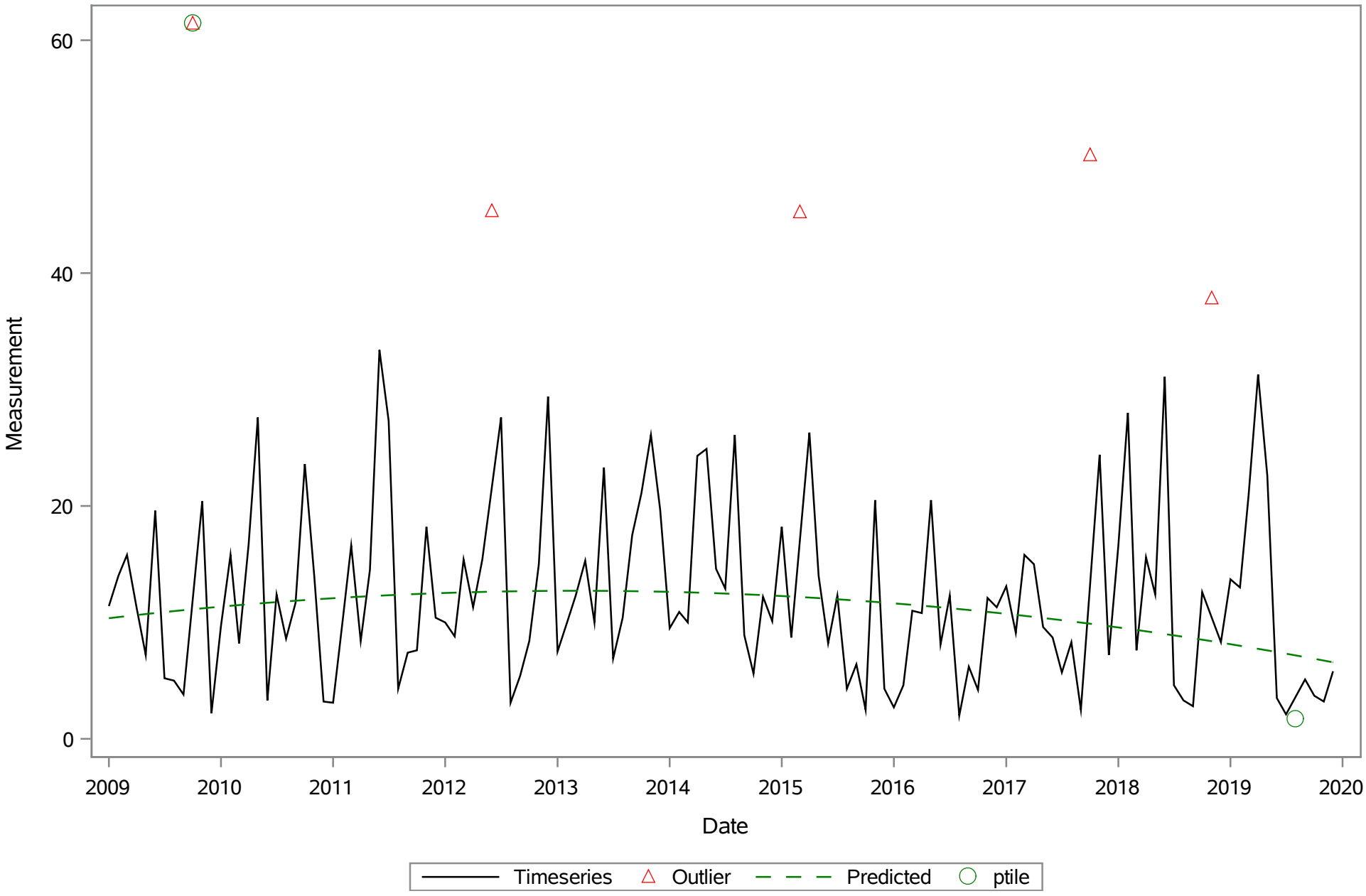
2017
2018
2019
2020
Date
Timeseries
Outlier
Predicted
ptile


Little Manatee River
182
Chlorophyll a uncorr (ug/l)
Site ID = 182
Measurement
60
40
20
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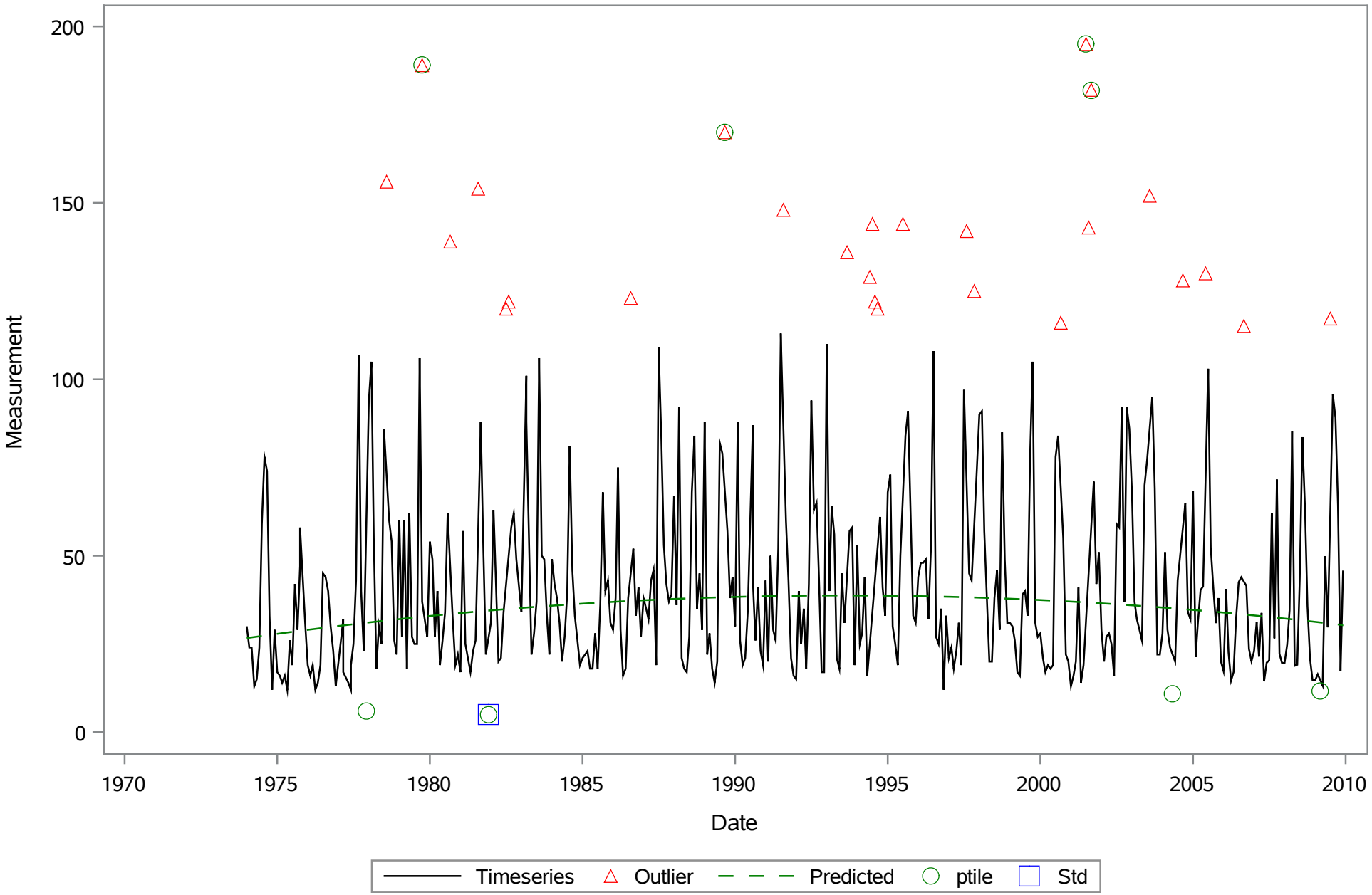
Date
Timeseries
Outlier
Predicted
ptile


Little Manatee River
112
Color(345) C (PCU)
Site ID = 112
Measurement
200
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1970
1975
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2000
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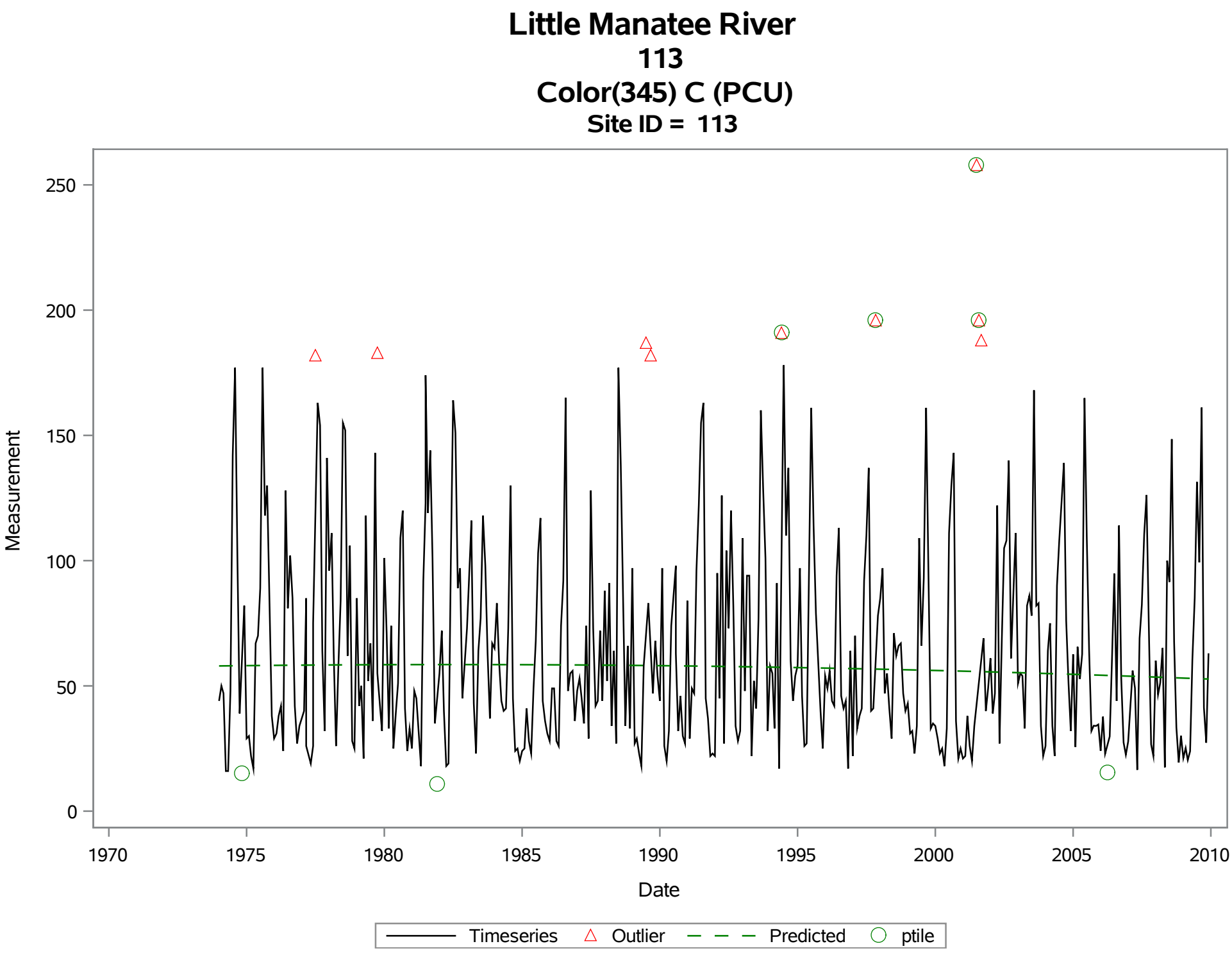
2010
Date
Timeseries
Outlier
Predicted
ptile
Std


Little Manatee River
113
Color(345) C (PCU)
Site ID = 113
Measurement
250
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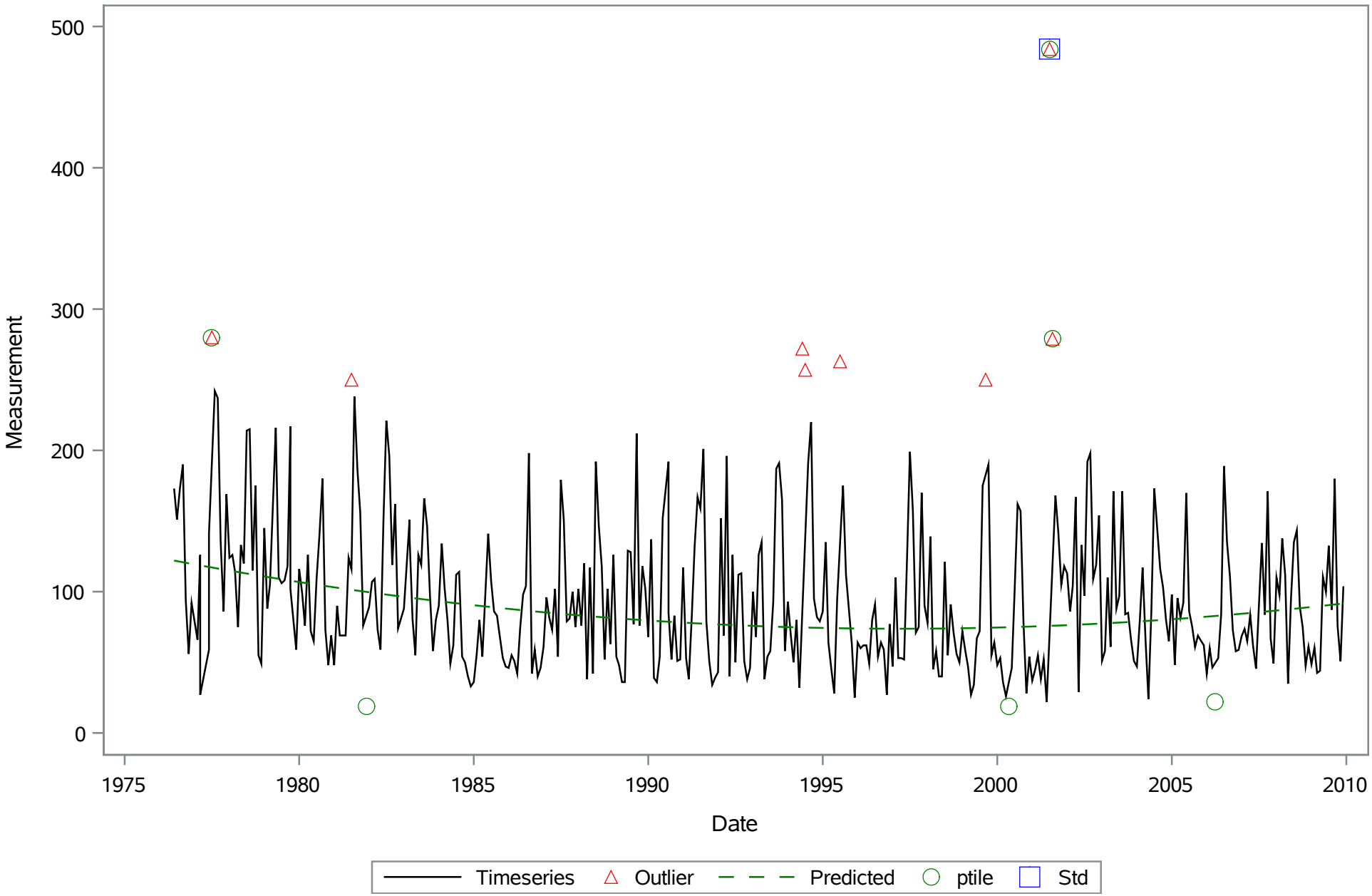
Date
Timeseries
Outlier
Predicted
ptile


Little Manatee River
129
Color(345) C (PCU)
Site ID = 129
Measurement
500
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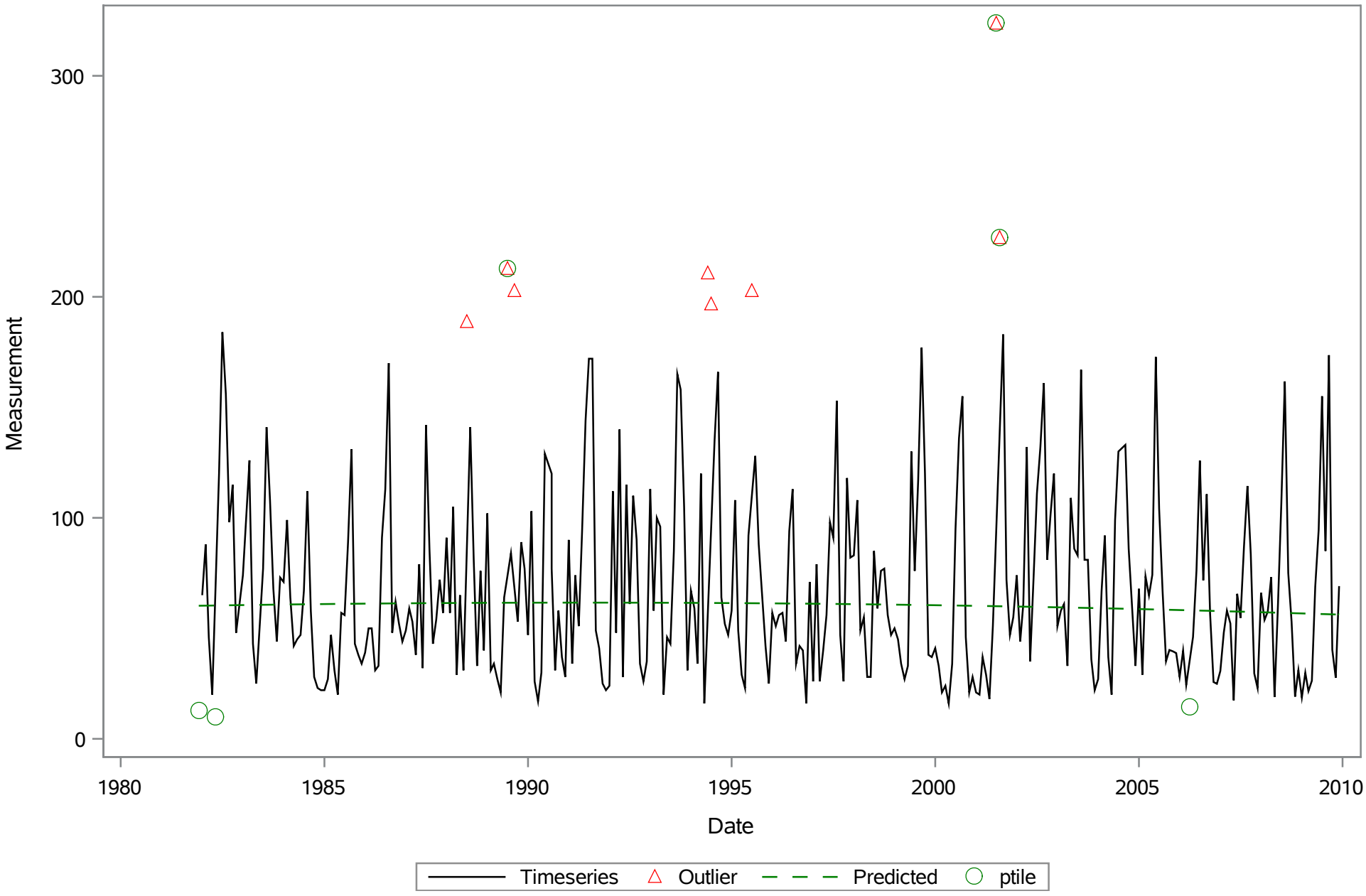
Date
Timeseries
Outlier
Predicted
ptile
Std


Little Manatee River
140
Color(345) C (PCU)
Site ID = 140
300
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0
Measurement
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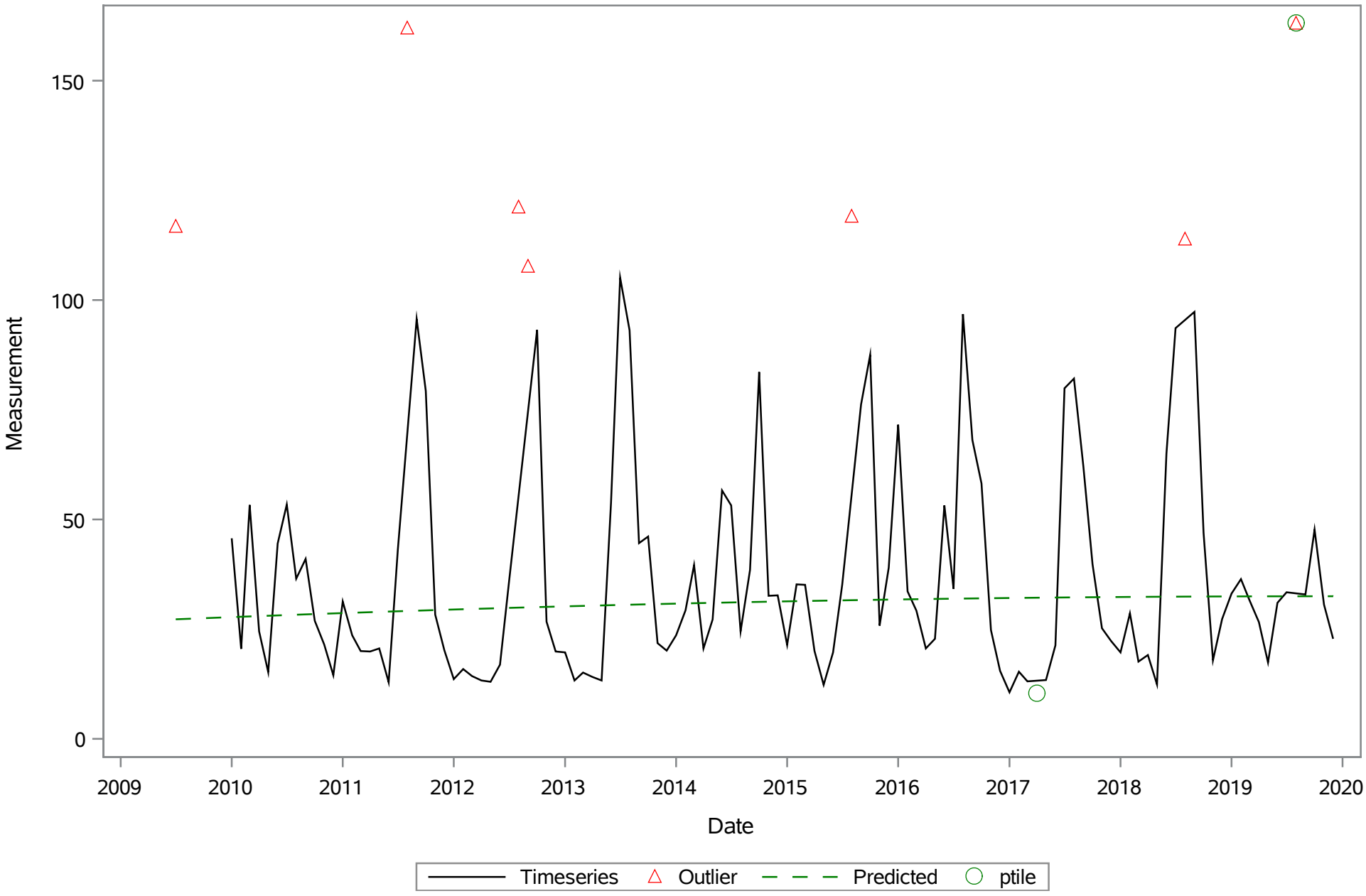
Date
Timeseries
Outlier
Predicted
ptile


Little Manatee River
112
Color(345)F 45 (PCU)
Site ID = 112
150
100
50
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Measurement
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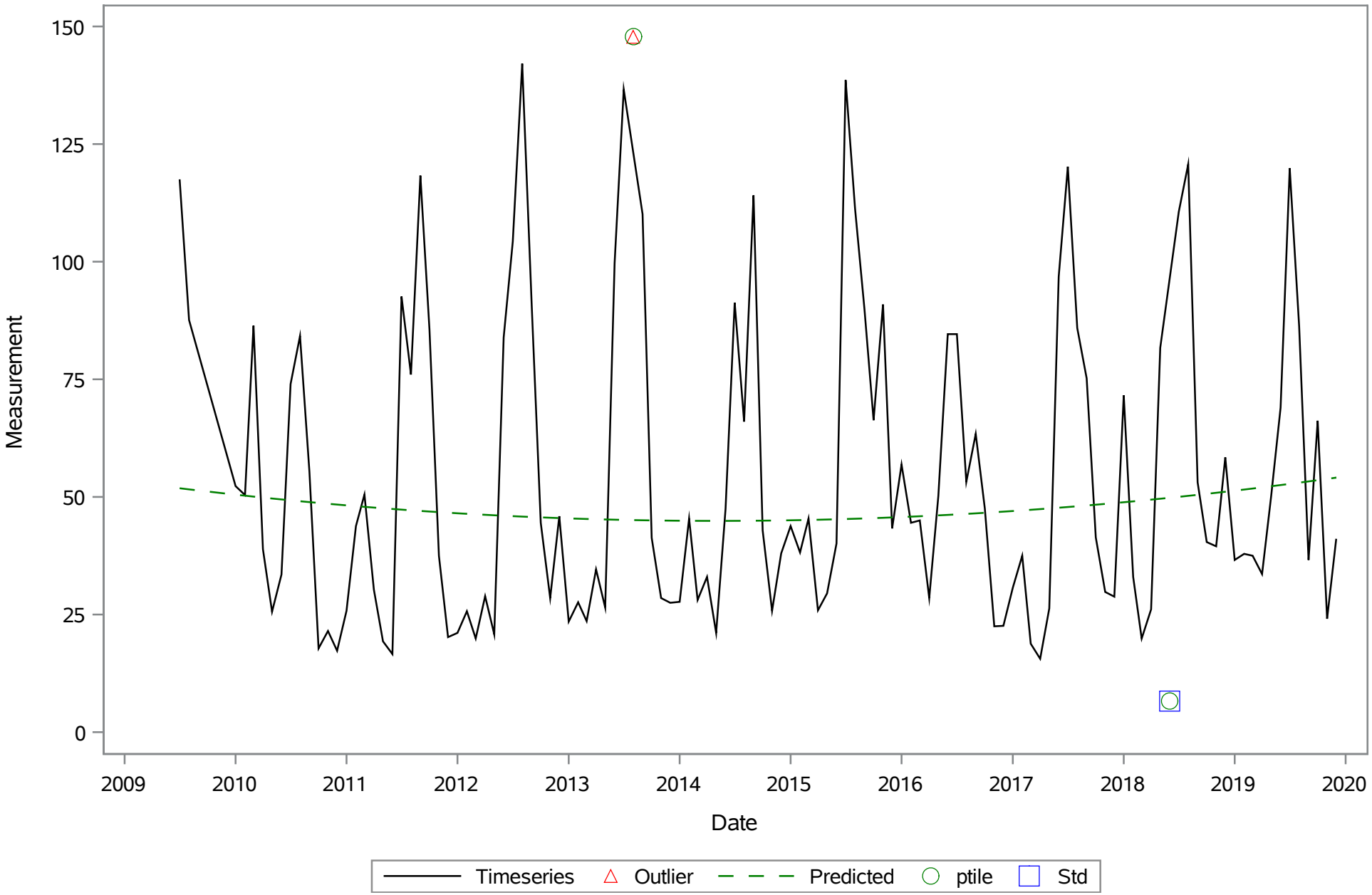
Date
Timeseries
Outlier
Predicted
ptile


Little Manatee River
113
Color(345)F 45 (PCU)
Site ID = 113
Measurement
150
125
100
75
50
25
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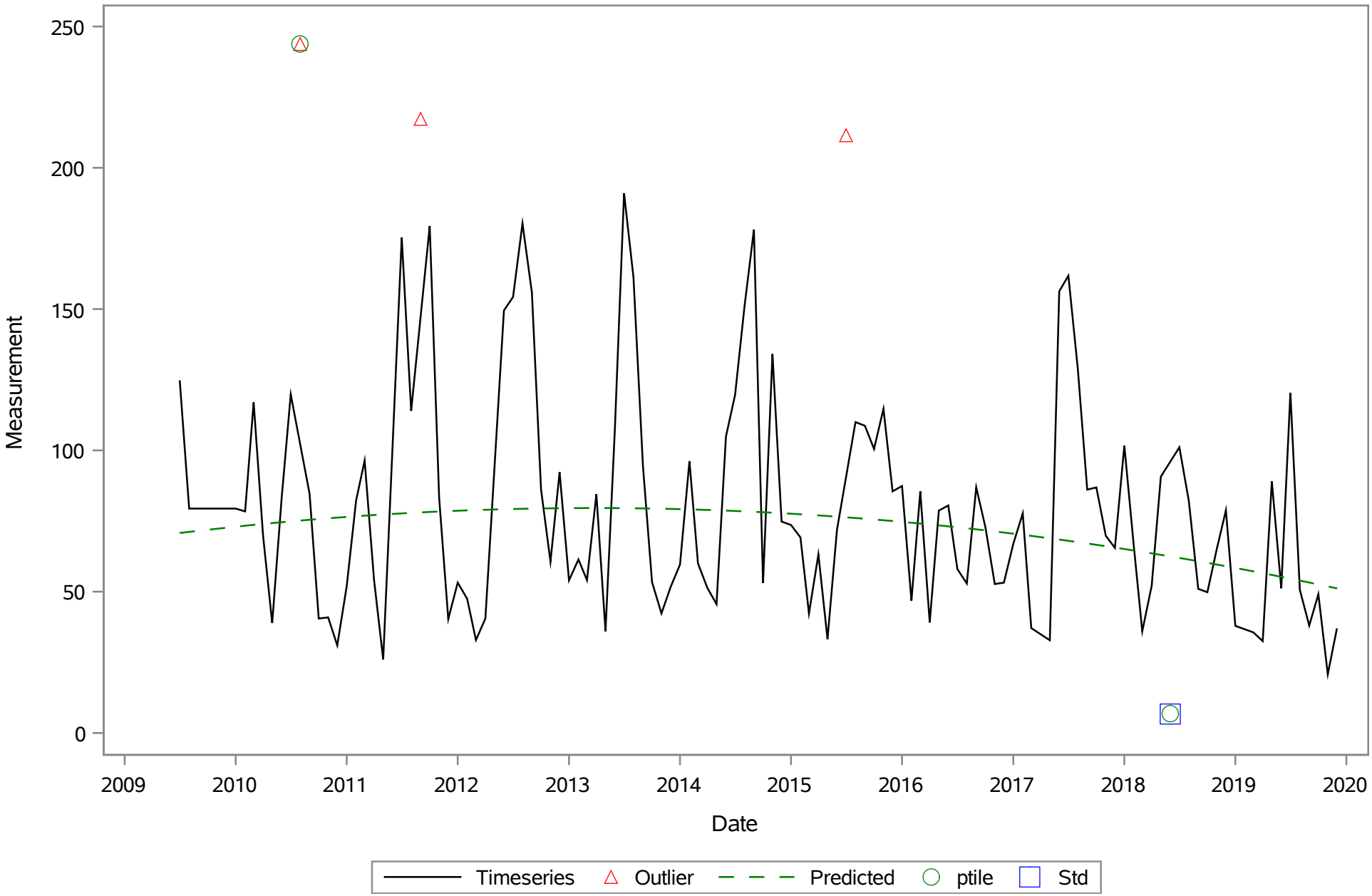
Date
Timeseries
Outlier
Predicted
ptile
Std


Little Manatee River
129
Color(345)F 45 (PCU)
Site ID = 129
250
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150
100
50
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Measurement
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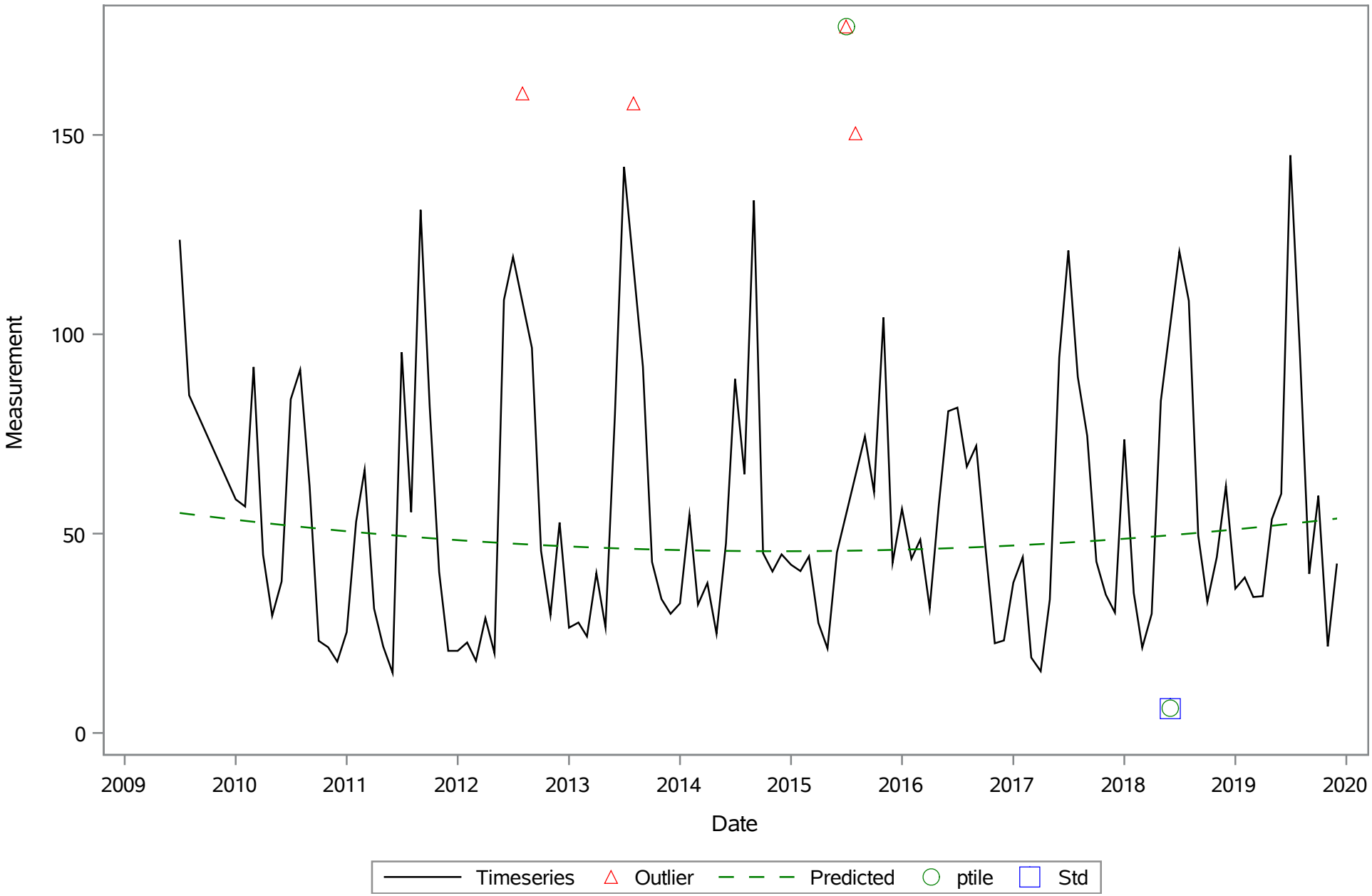
2020
Date
Timeseries
Outlier
Predicted
ptile
Std


Little Manatee River
140
Color(345)F 45 (PCU)
Site ID = 140
Measurement
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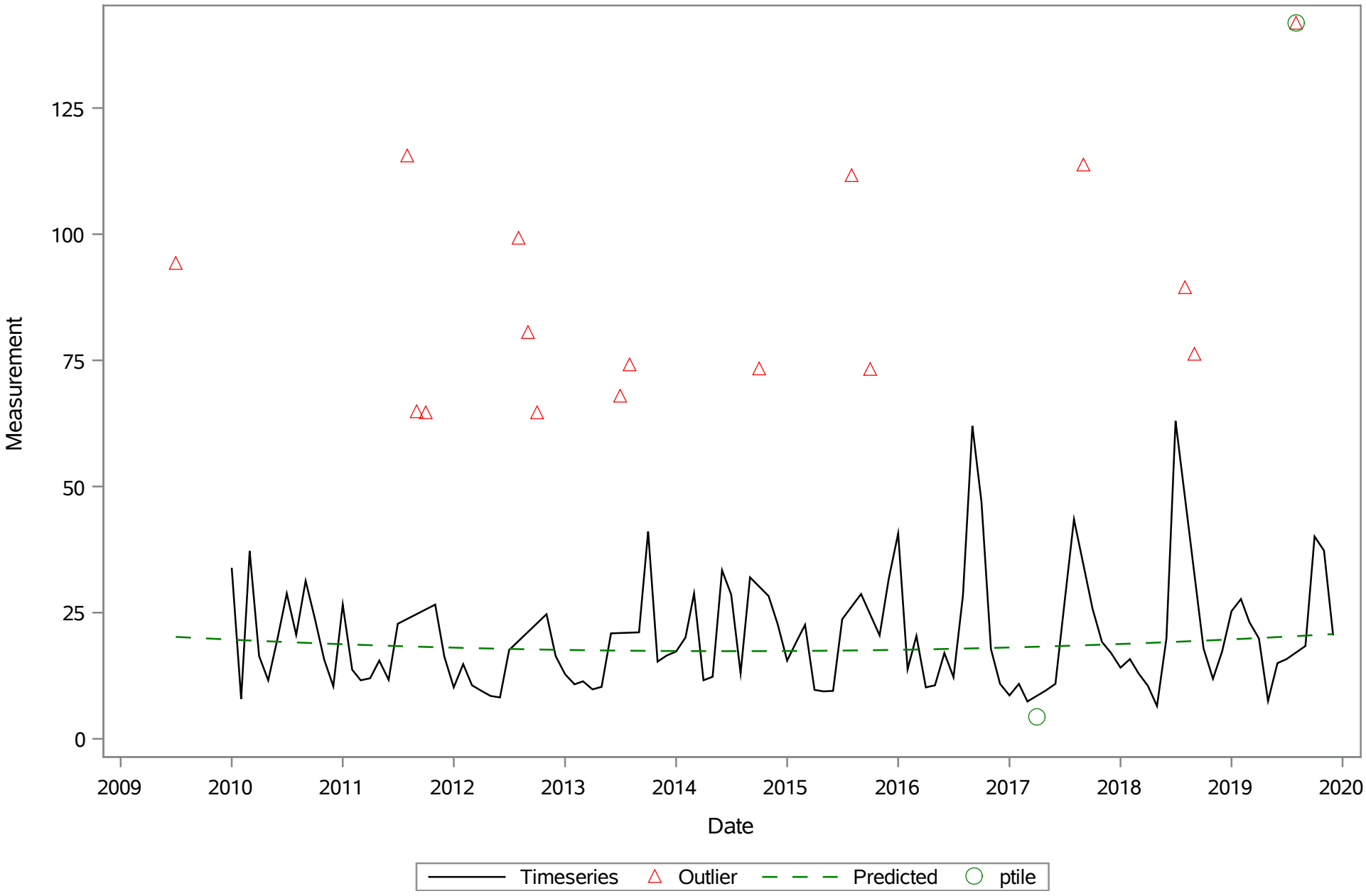
Date
Timeseries
Outlier
Predicted
ptile
Std


Little Manatee River
180
Color(345)F 45 (PCU)
Site ID = 180
Measurement
125
100
75
50
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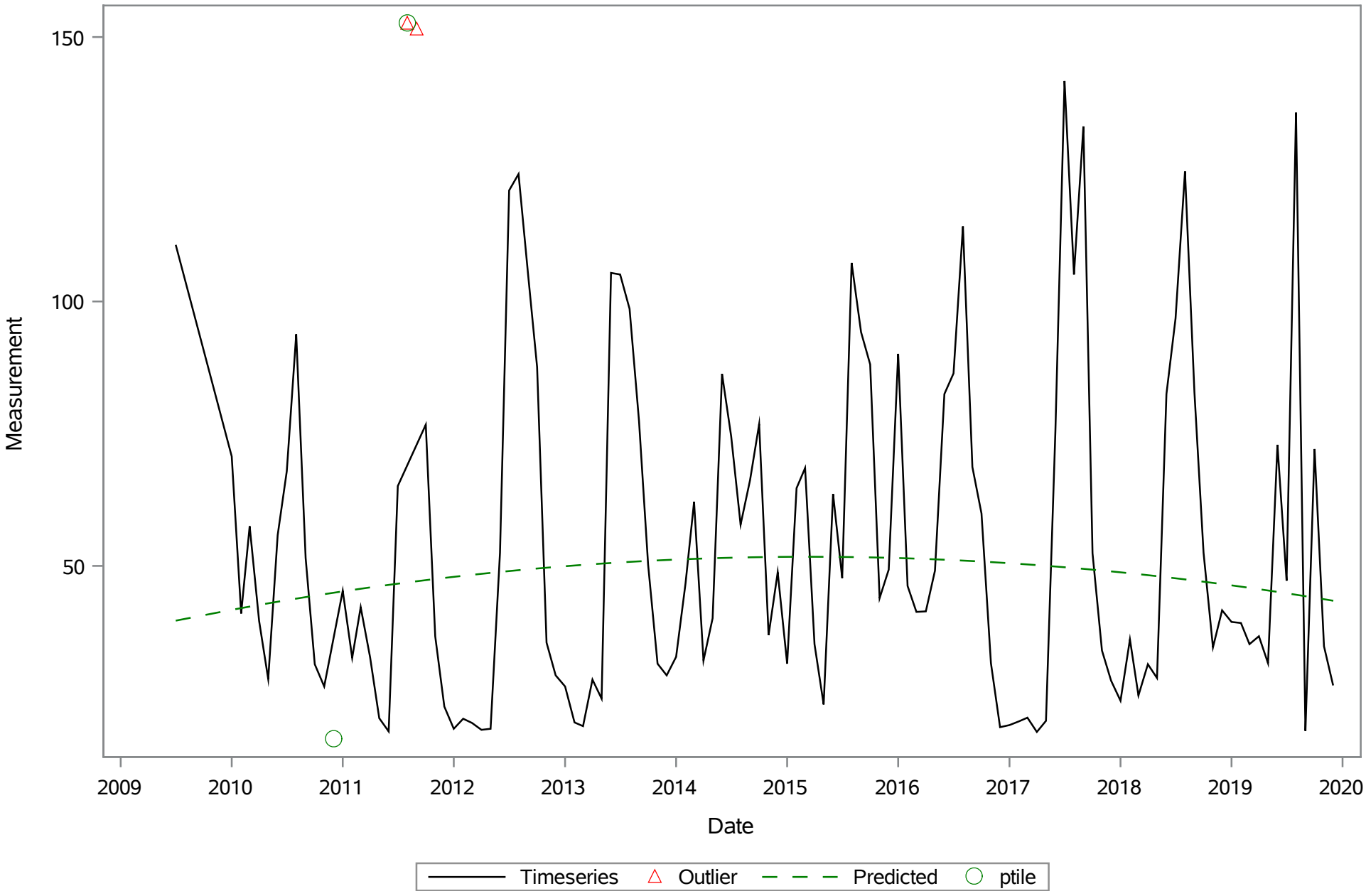
2019
2020
Date
Timeseries
Outlier
Predicted
ptile


Little Manatee River
181
Color(345)F 45 (PCU)
Site ID = 181
150
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Measurement
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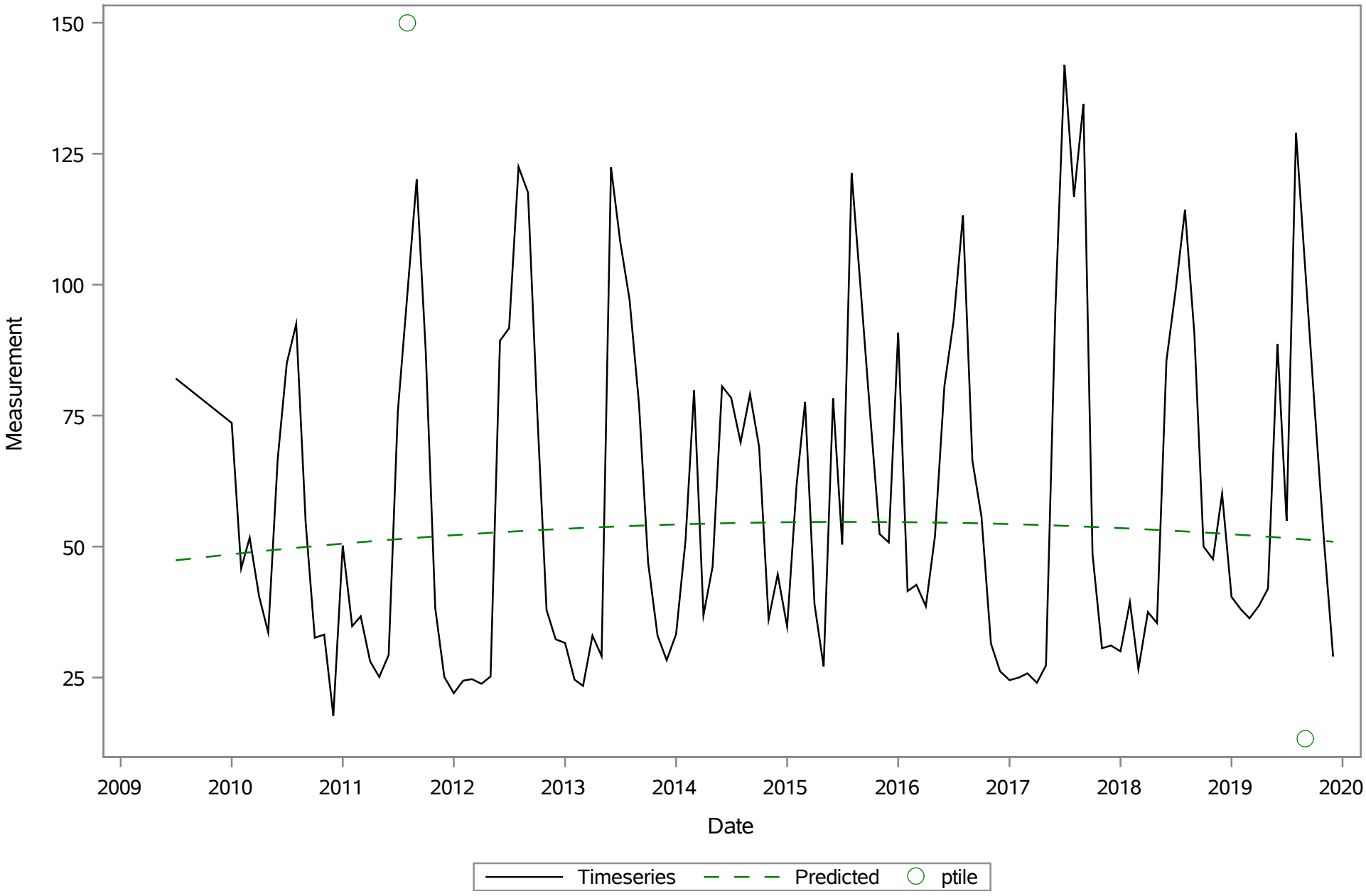
Timeseries
Outlier
Predicted
ptile


Little Manatee River
182
Color(345)F 45 (PCU)
Site ID = 182
150
125
100
75
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Measurement
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2010
2011
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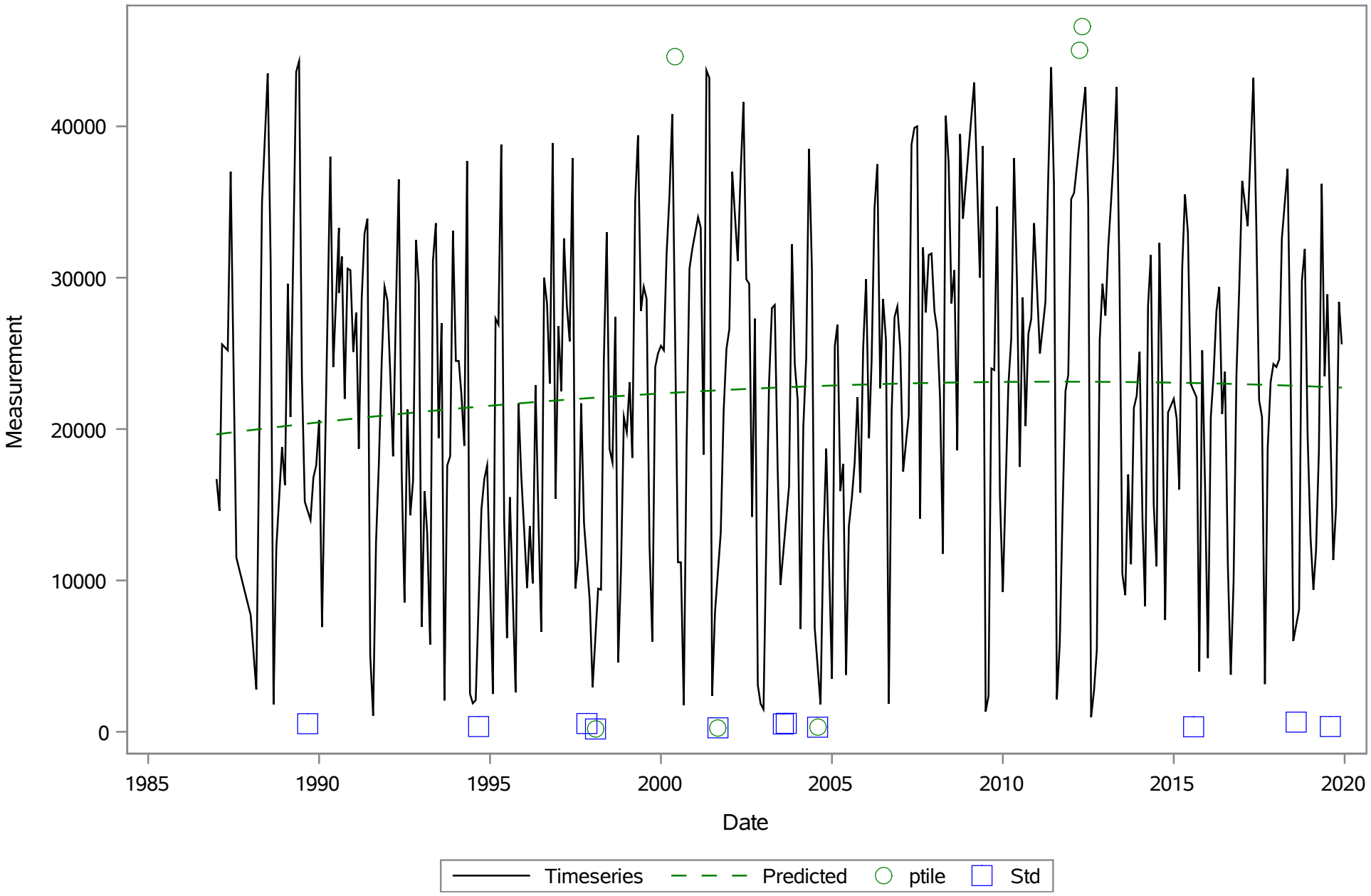
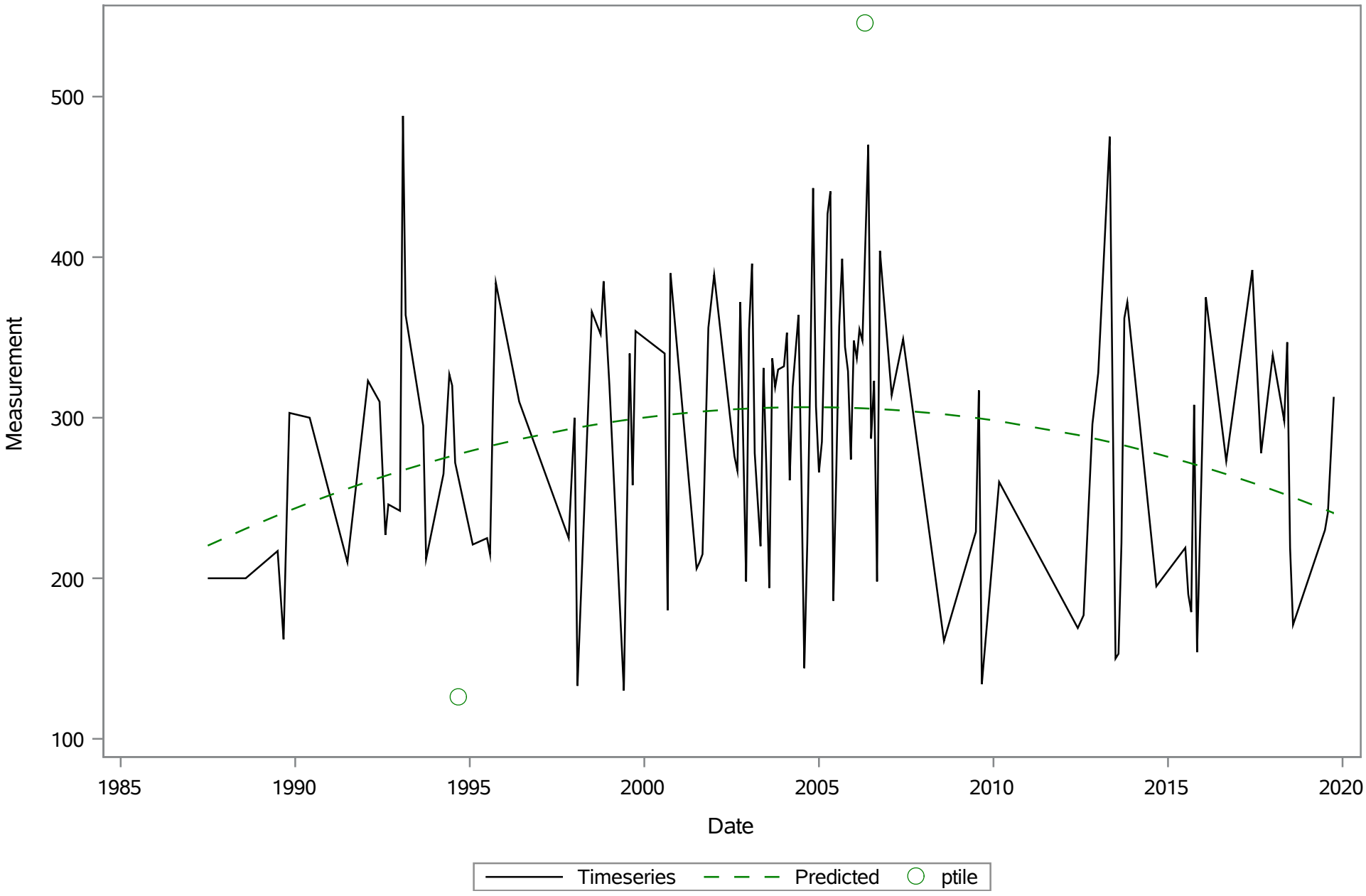
2020
Date
Timeseries
Predicted
ptile


Little Manatee River
112
Cond Bottom (umho/cm)
Site ID = 112
Measurement
40000
30000
20000
10000
0
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Predicted
ptile
Std


Little Manatee River
113
Cond Bottom (umho/cm)
Site ID = 113
Measurement
500
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1985
1990
1995
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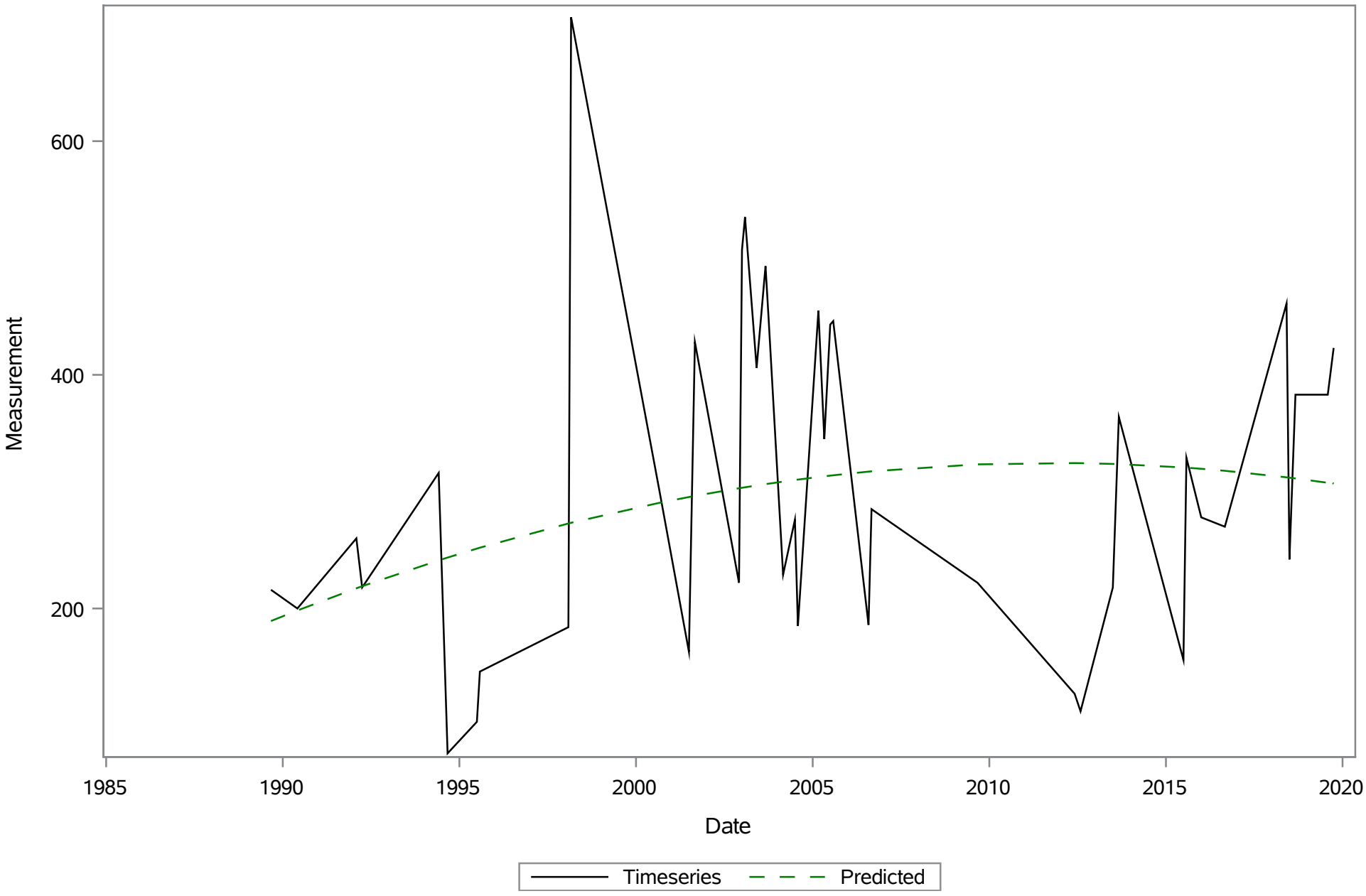
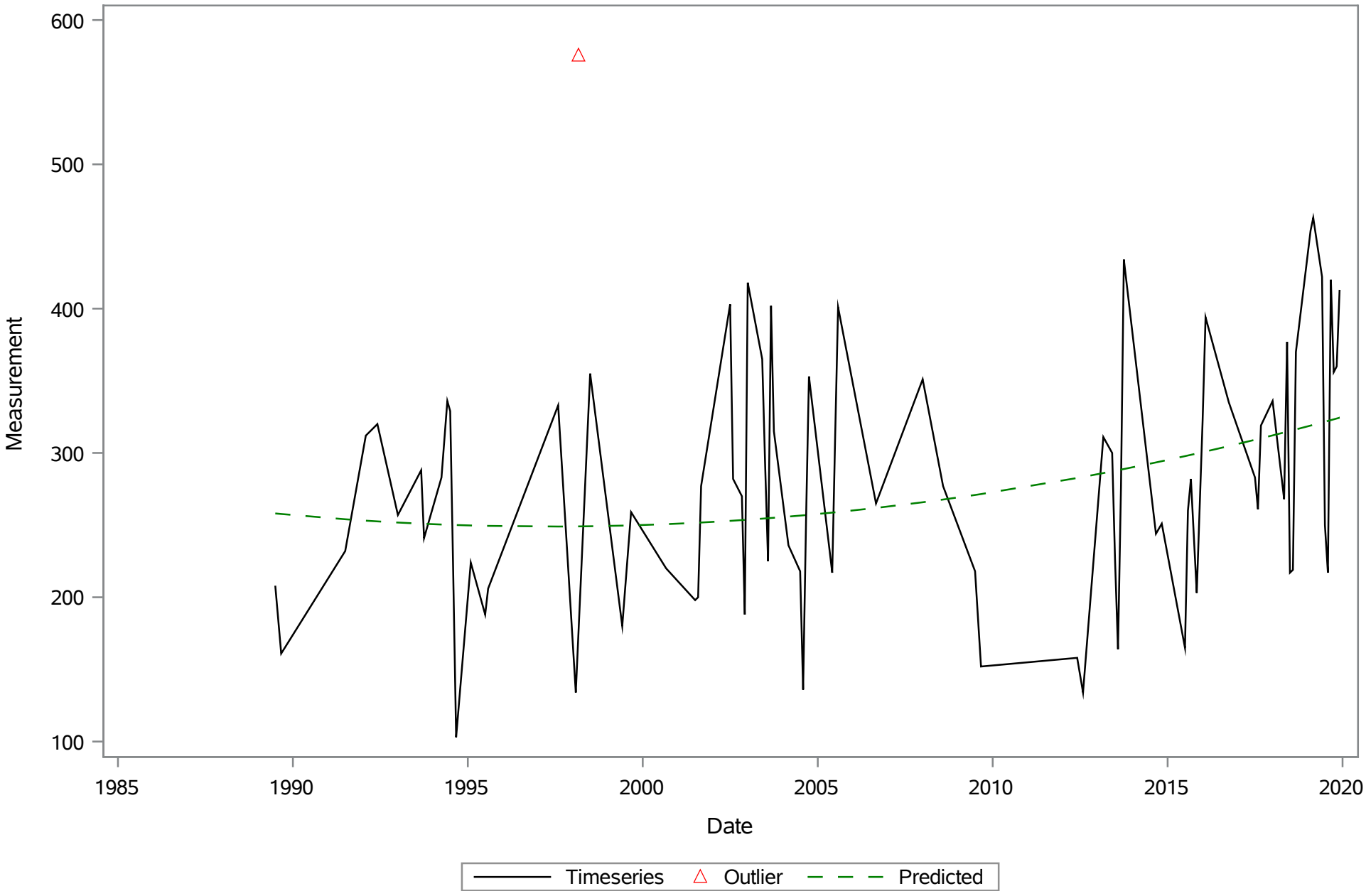
2010
2015
2020
Date
Timeseries
Predicted
ptile


Little Manatee River
129
Cond Bottom (umho/cm)
Site ID = 129
600
400
200
Measurement
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Predicted


Little Manatee River
140
Cond Bottom (umho/cm)
Site ID = 140
600
500
400
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200
100
Measurement
1985
1990
1995
2000
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2010
2015
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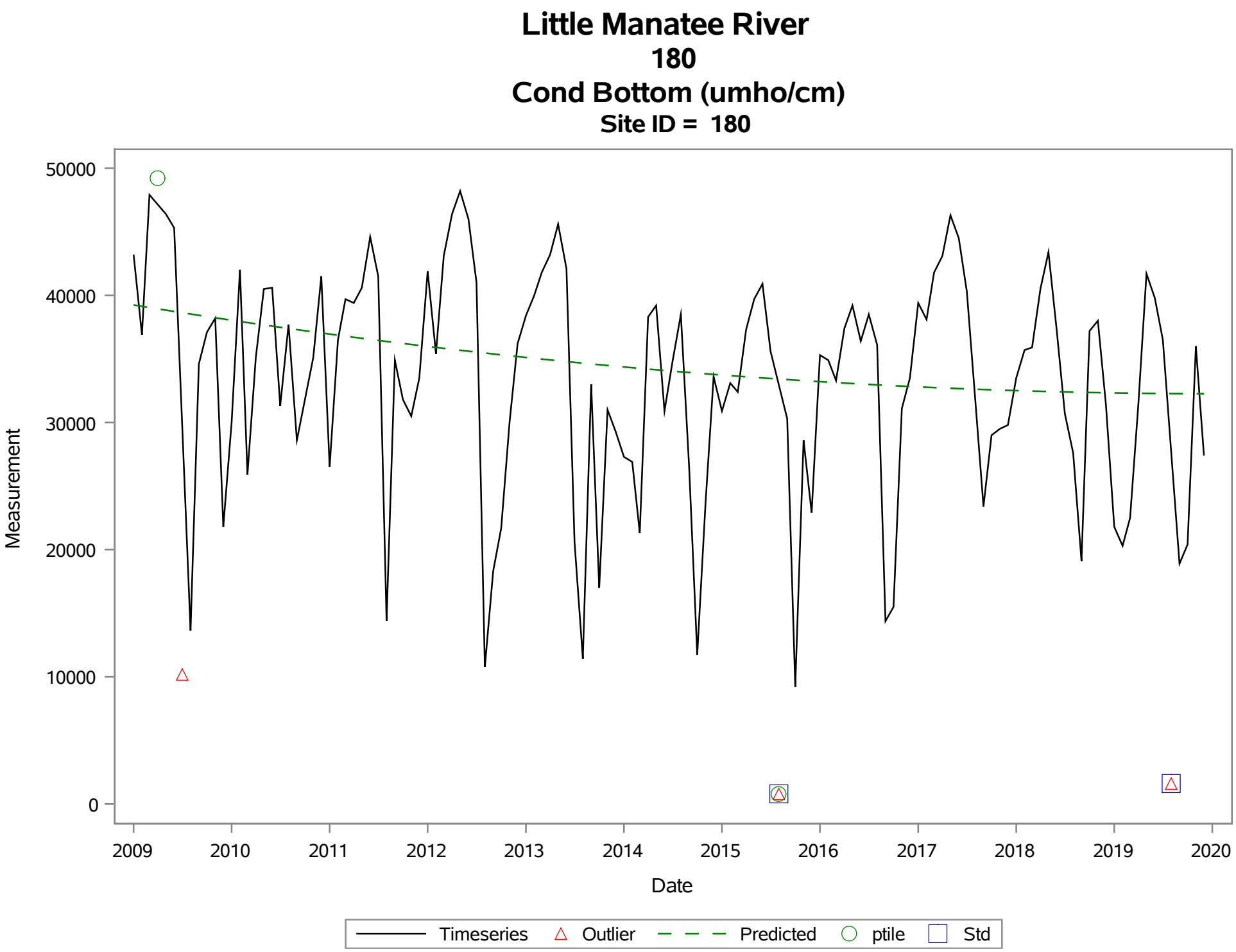
Date
Timeseries
Outlier
Predicted


Little Manatee River
180
Cond Bottom (umho/cm)
Site ID = 180
Measurement
50000
40000
30000
20000
10000
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2009
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2012
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2014
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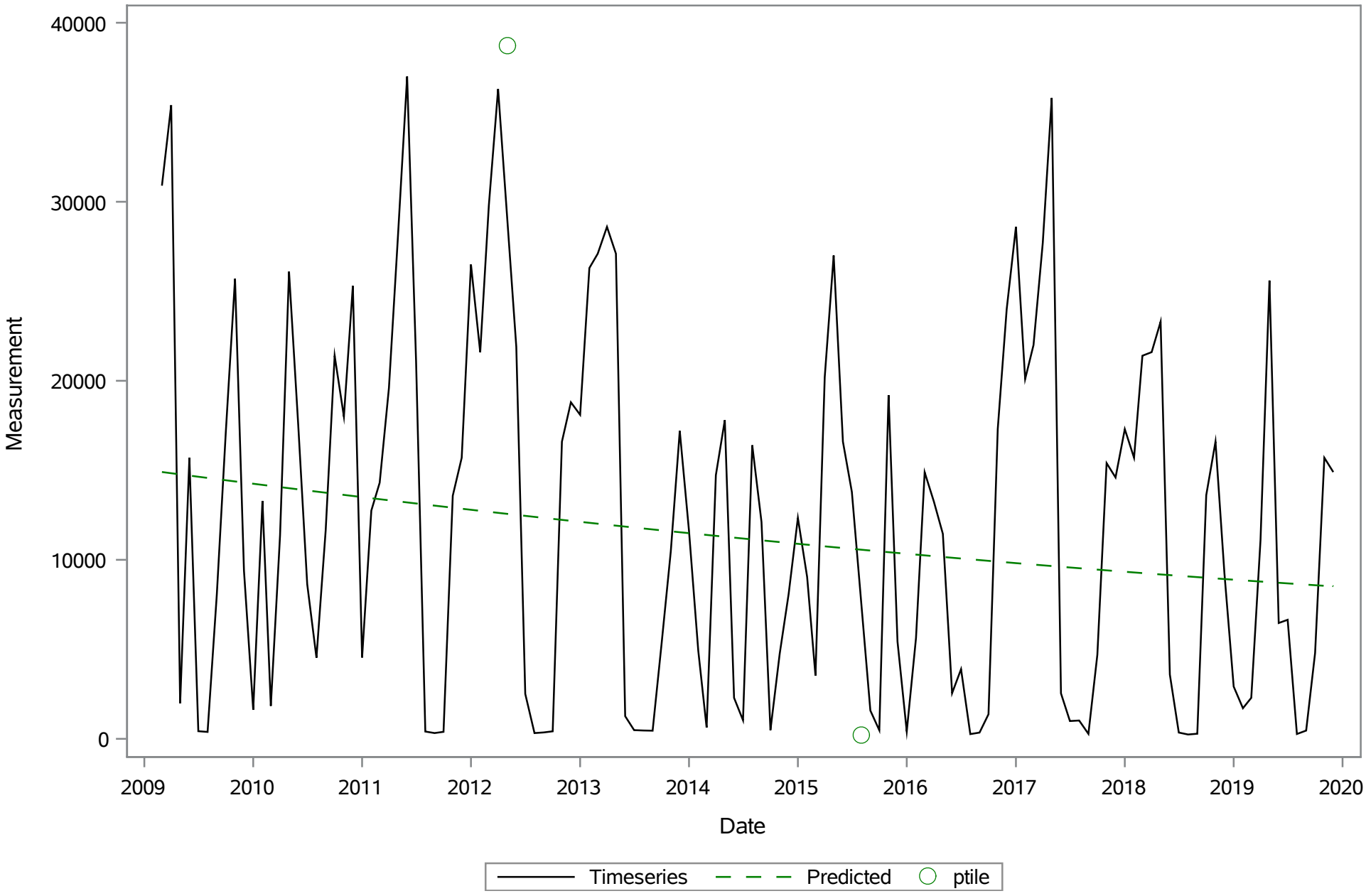
2016
2017
2018
2019
2020
Date
Timeseries
Outlier
Predicted
ptile
Std


Little Manatee River
181
Cond Bottom (umho/cm)
Site ID = 181
40000
30000
20000
10000
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Measurement
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2010
2011
2012
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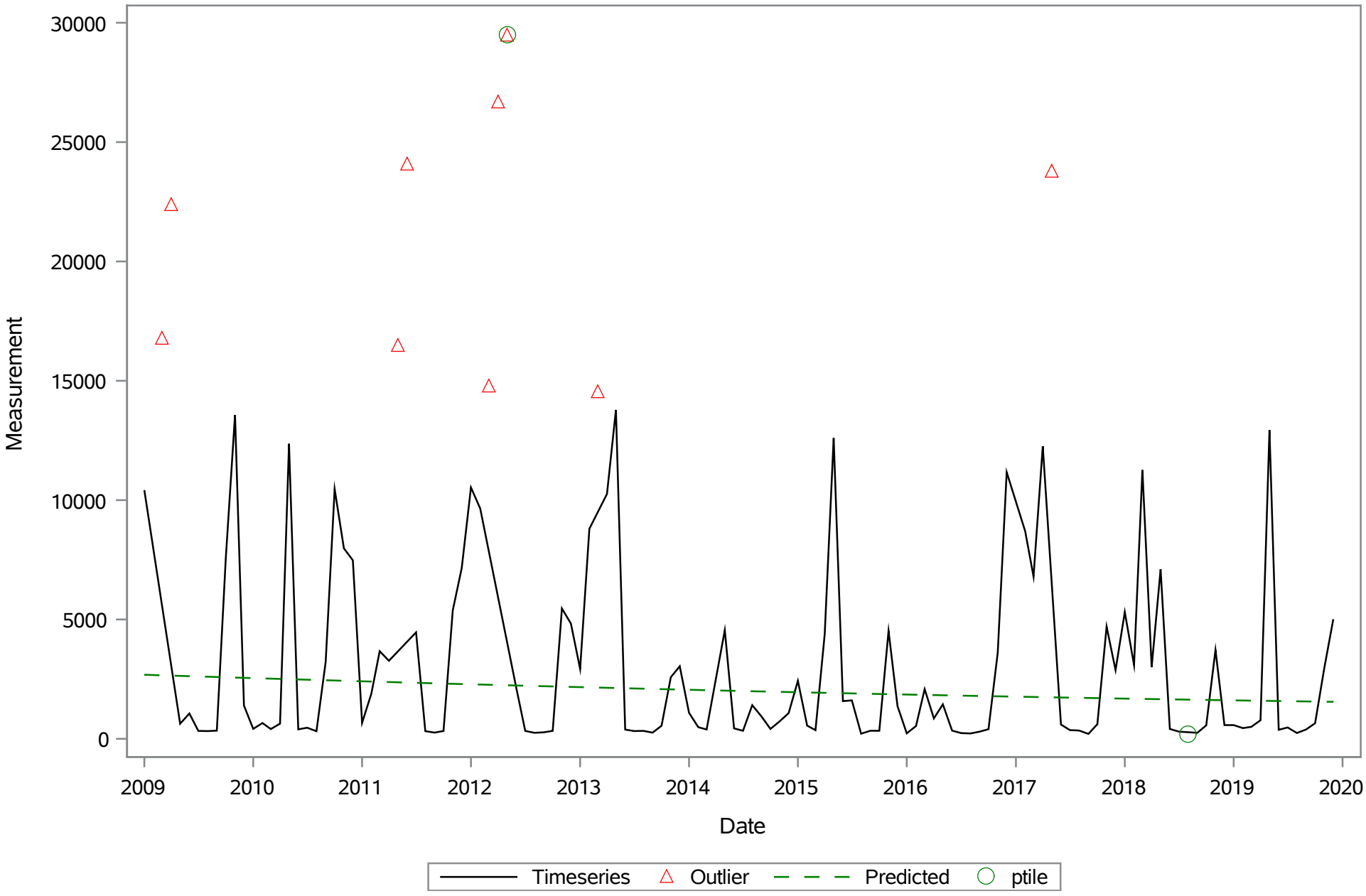
Timeseries
Predicted
ptile


Little Manatee River
182
Cond Bottom (umho/cm)
Site ID = 182
Measurement
30000
25000
20000
15000
10000
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2011
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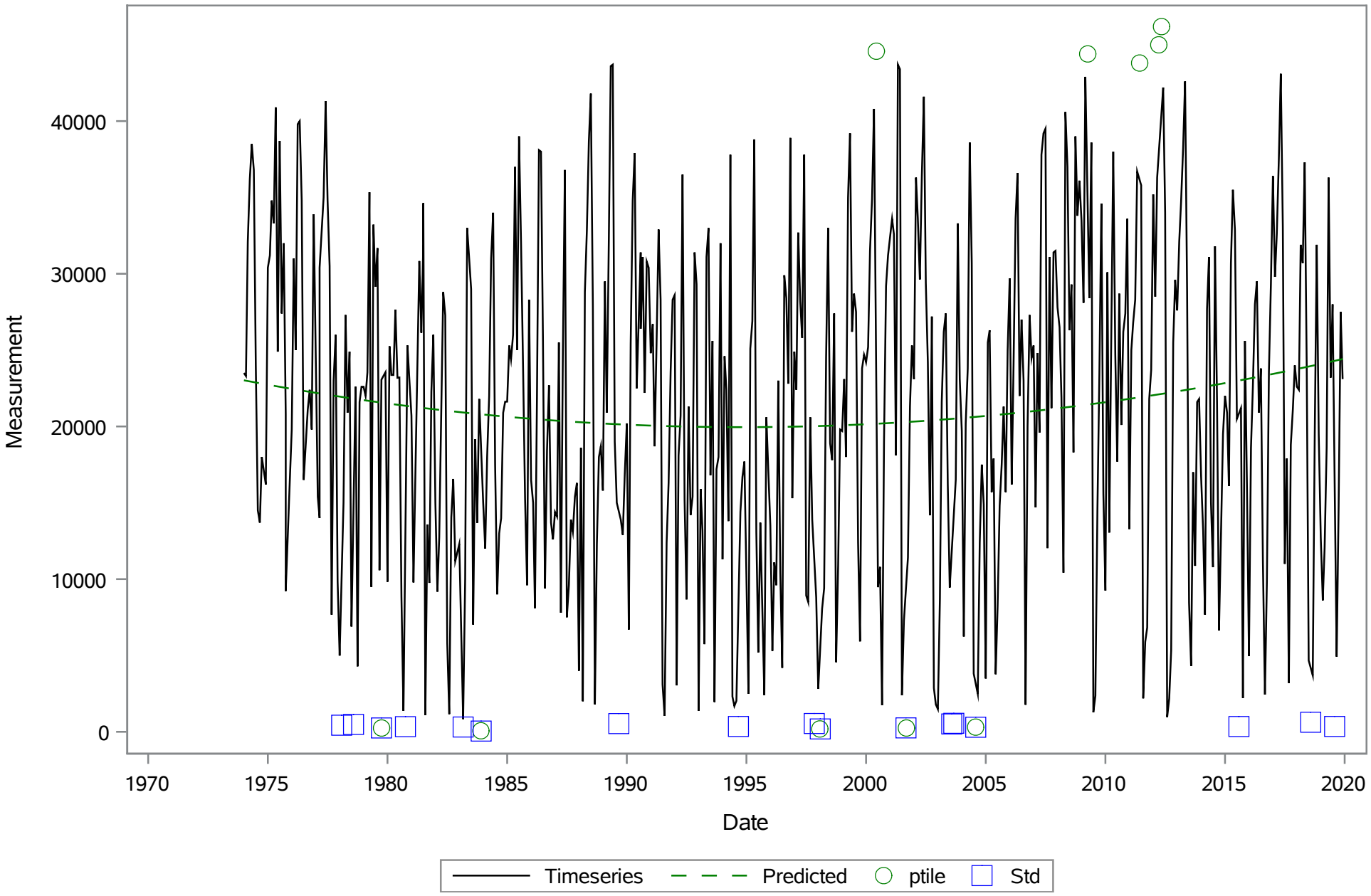
Date
Timeseries
Outlier
Predicted
ptile


Little Manatee River
112
Cond Mid (umho/cm)
Site ID = 112
Measurement
40000
30000
20000
10000
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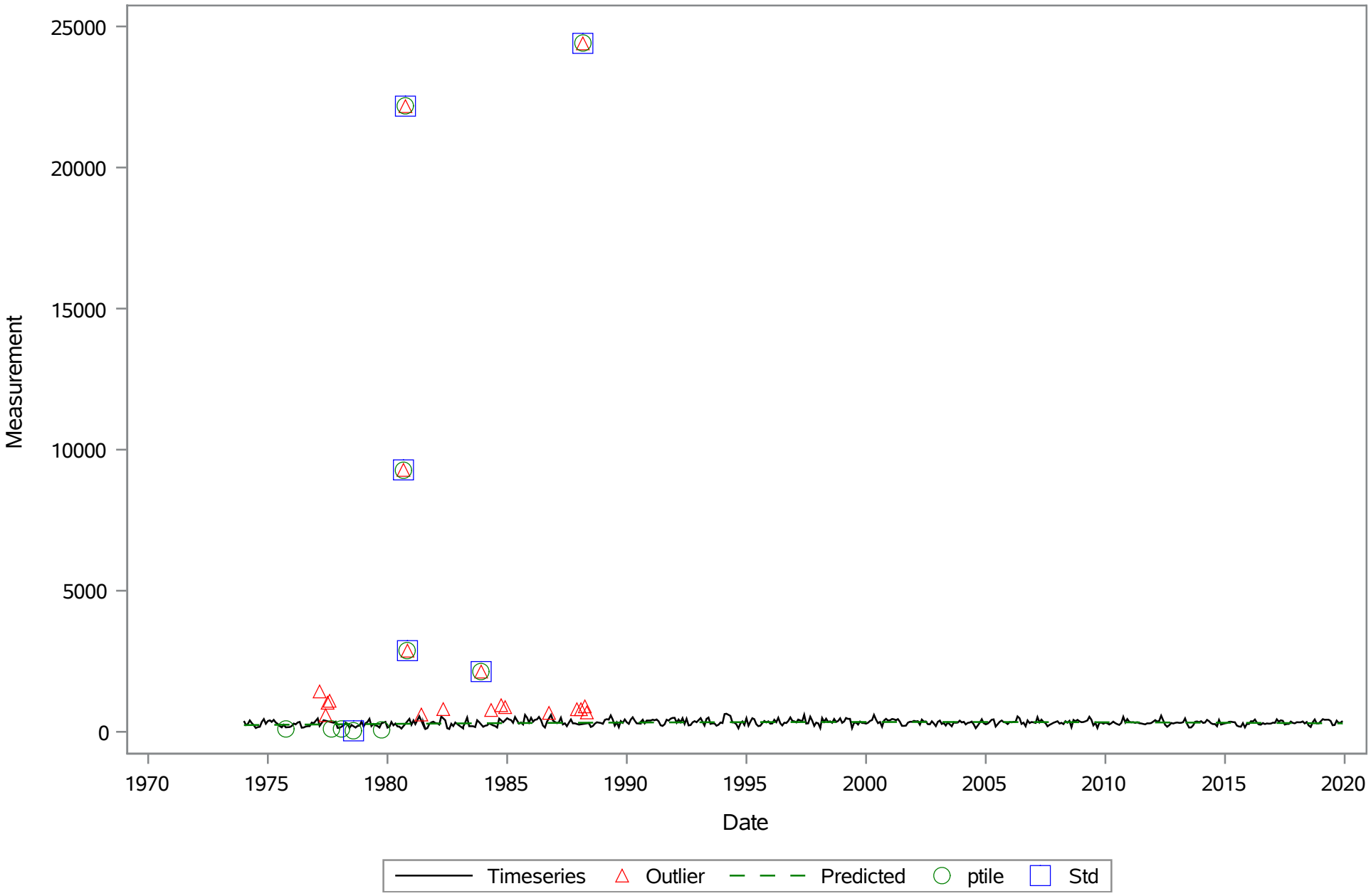
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Predicted
ptile
Std


Little Manatee River
113
Cond Mid (umho/cm)
Site ID = 113
25000
20000
15000
10000
5000
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Measurement
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1980
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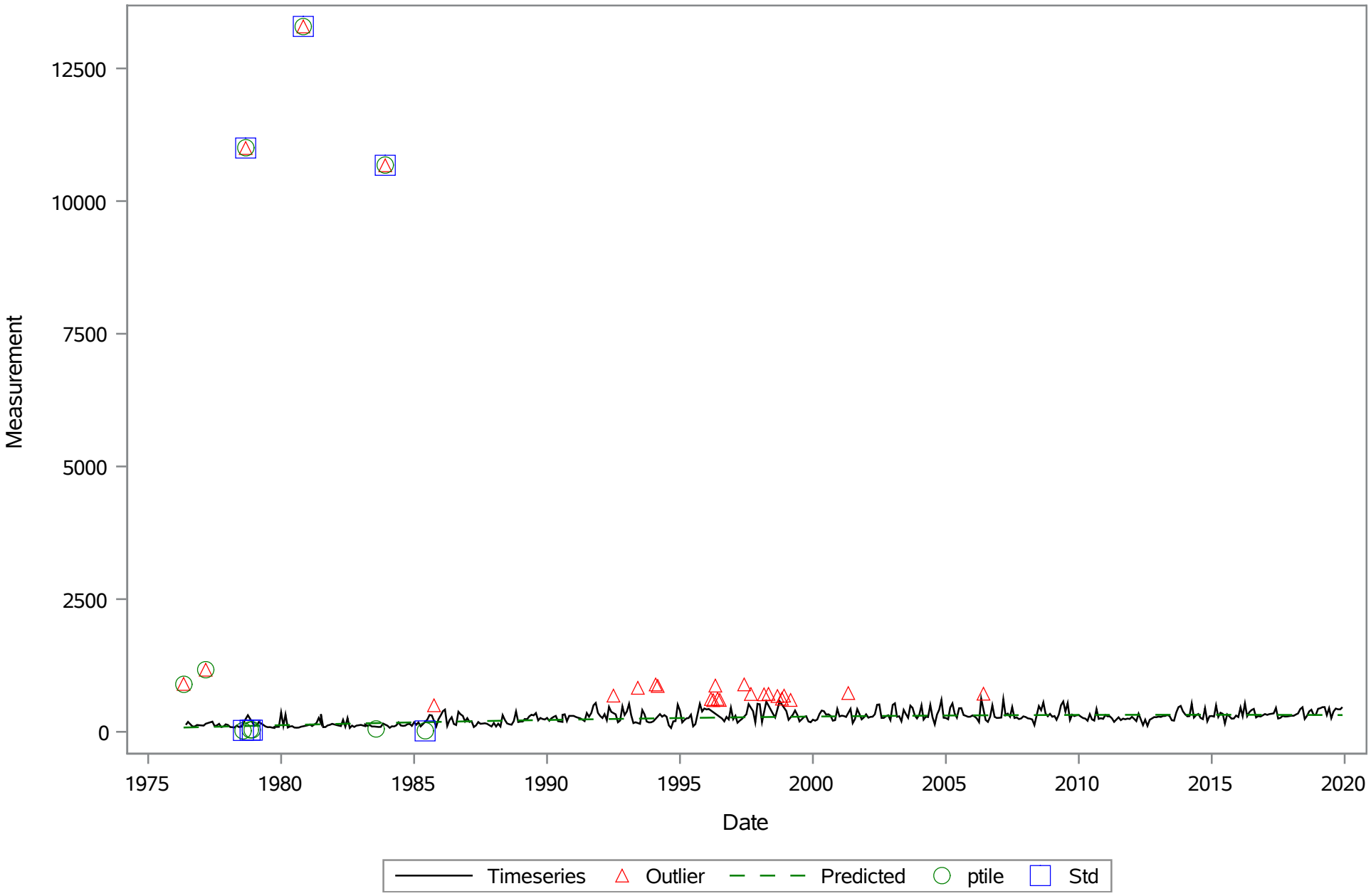
Date
Timeseries
Outlier
Predicted
ptile
Std


Little Manatee River
129
Cond Mid (umho/cm)
Site ID = 129
Measurement
12500
10000
7500
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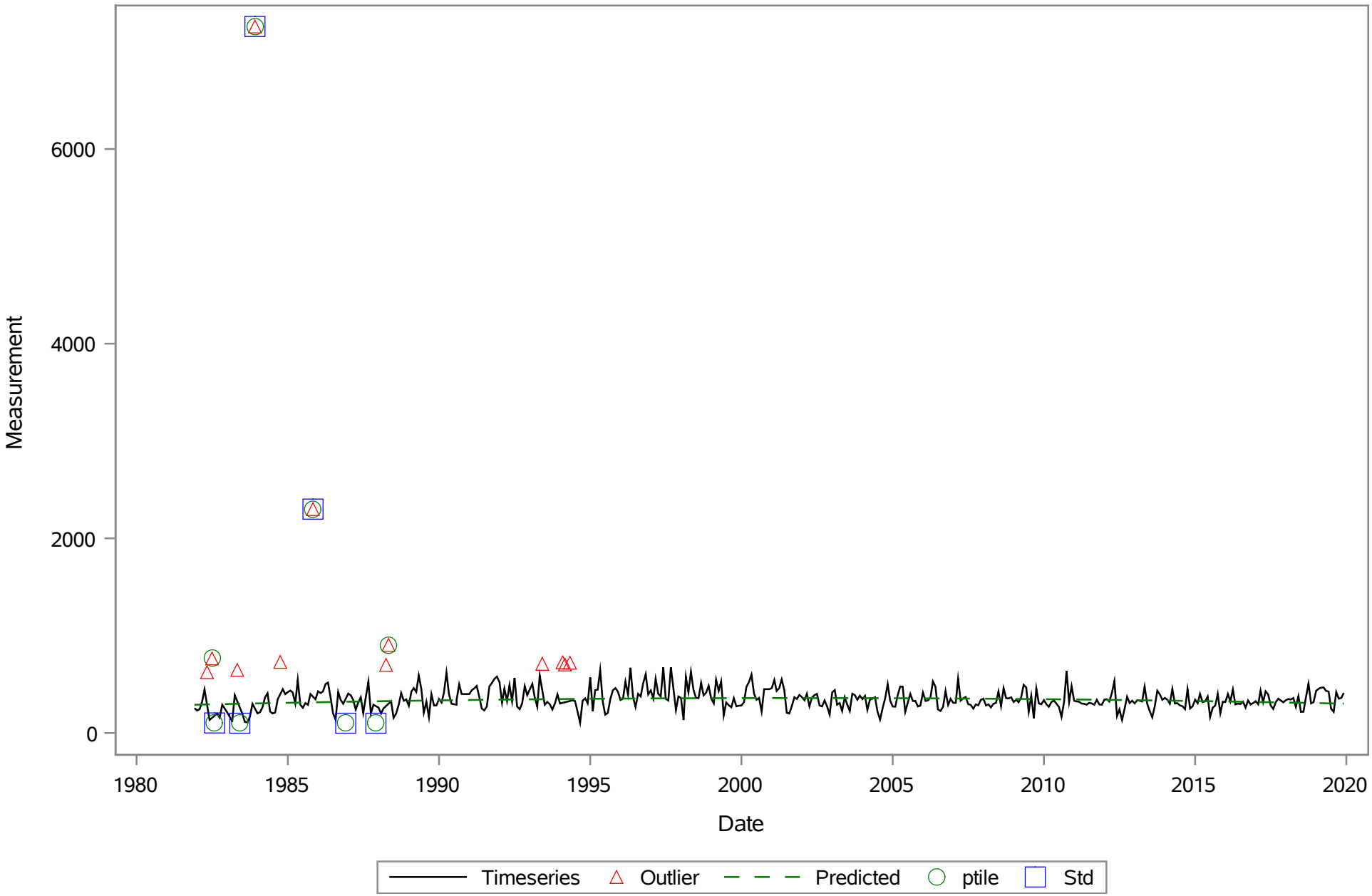
Date
Timeseries
Outlier
Predicted
ptile
Std


Little Manatee River
140
Cond Mid (umho/cm)
Site ID = 140
Measurement
6000
4000
2000
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1980
1985
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2010
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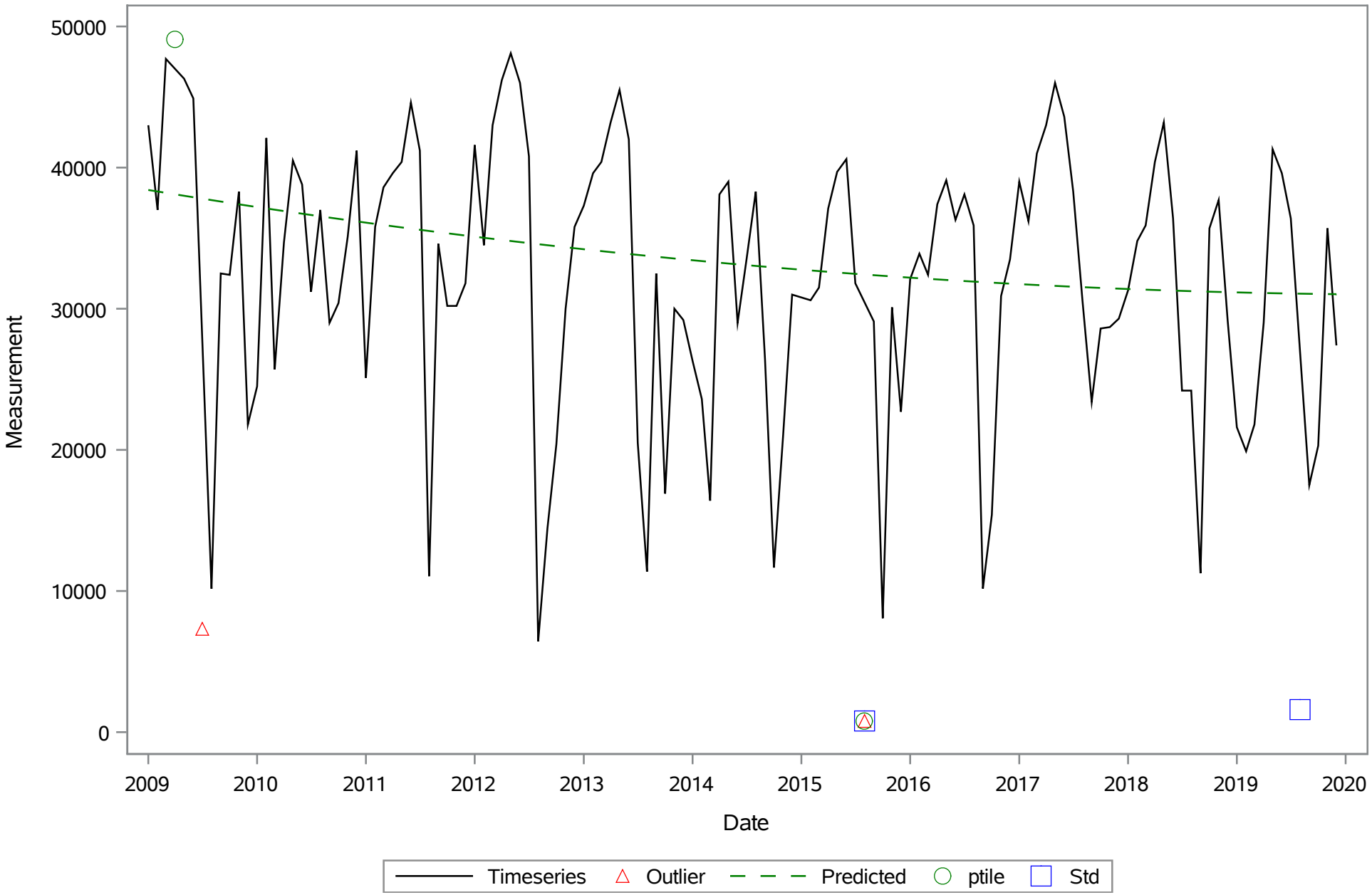
2020
Date
Timeseries
Outlier
Predicted
ptile
Std


Little Manatee River
180
Cond Mid (umho/cm)
Site ID = 180
Measurement
50000
40000
30000
20000
10000
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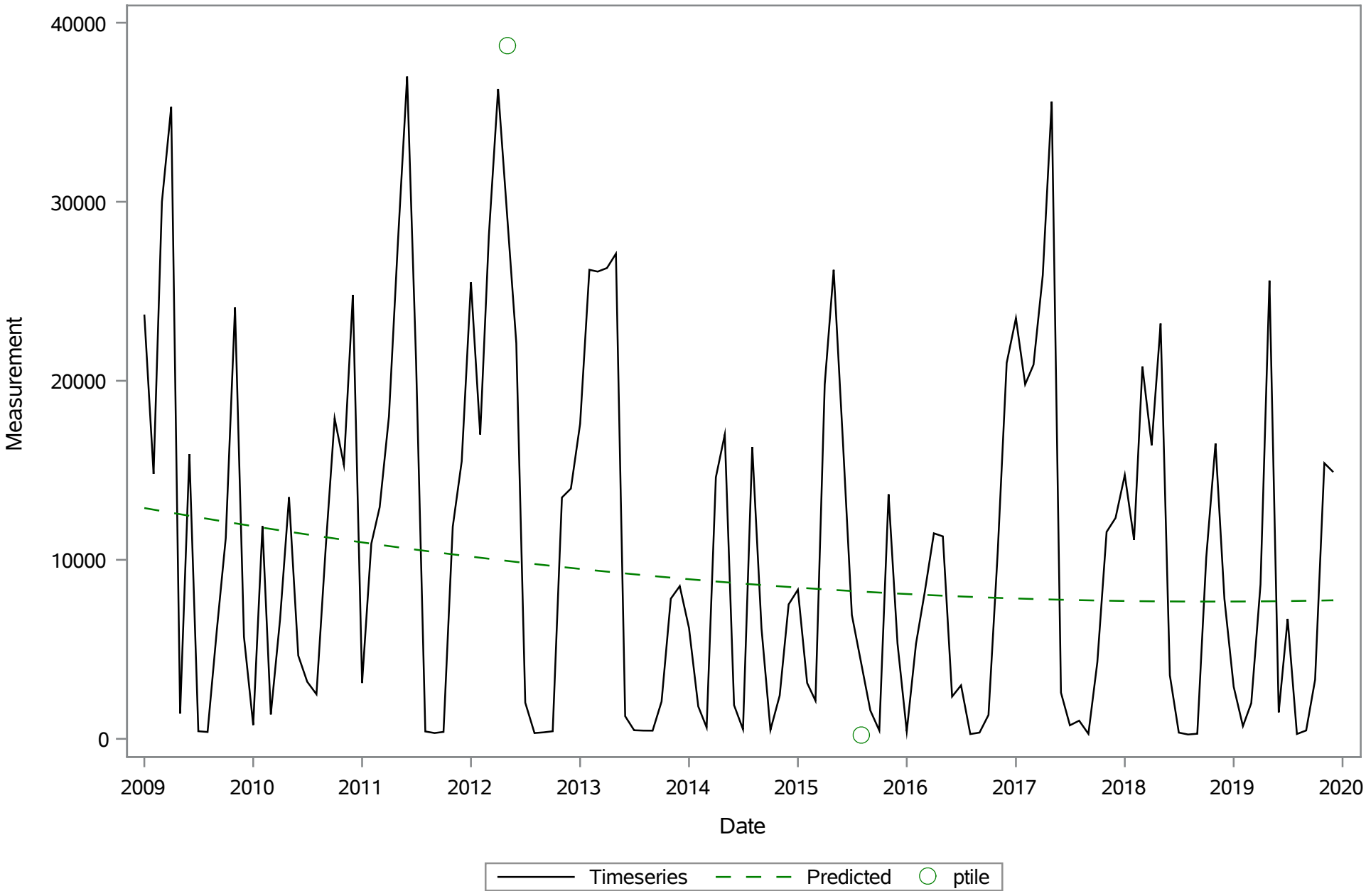
Date
Timeseries
Outlier
Predicted
ptile
Std


Little Manatee River
181
Cond Mid (umho/cm)
Site ID = 181
40000
30000
20000
10000
0
Measurement
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2010
2011
2012
2013
2014
2015
2016
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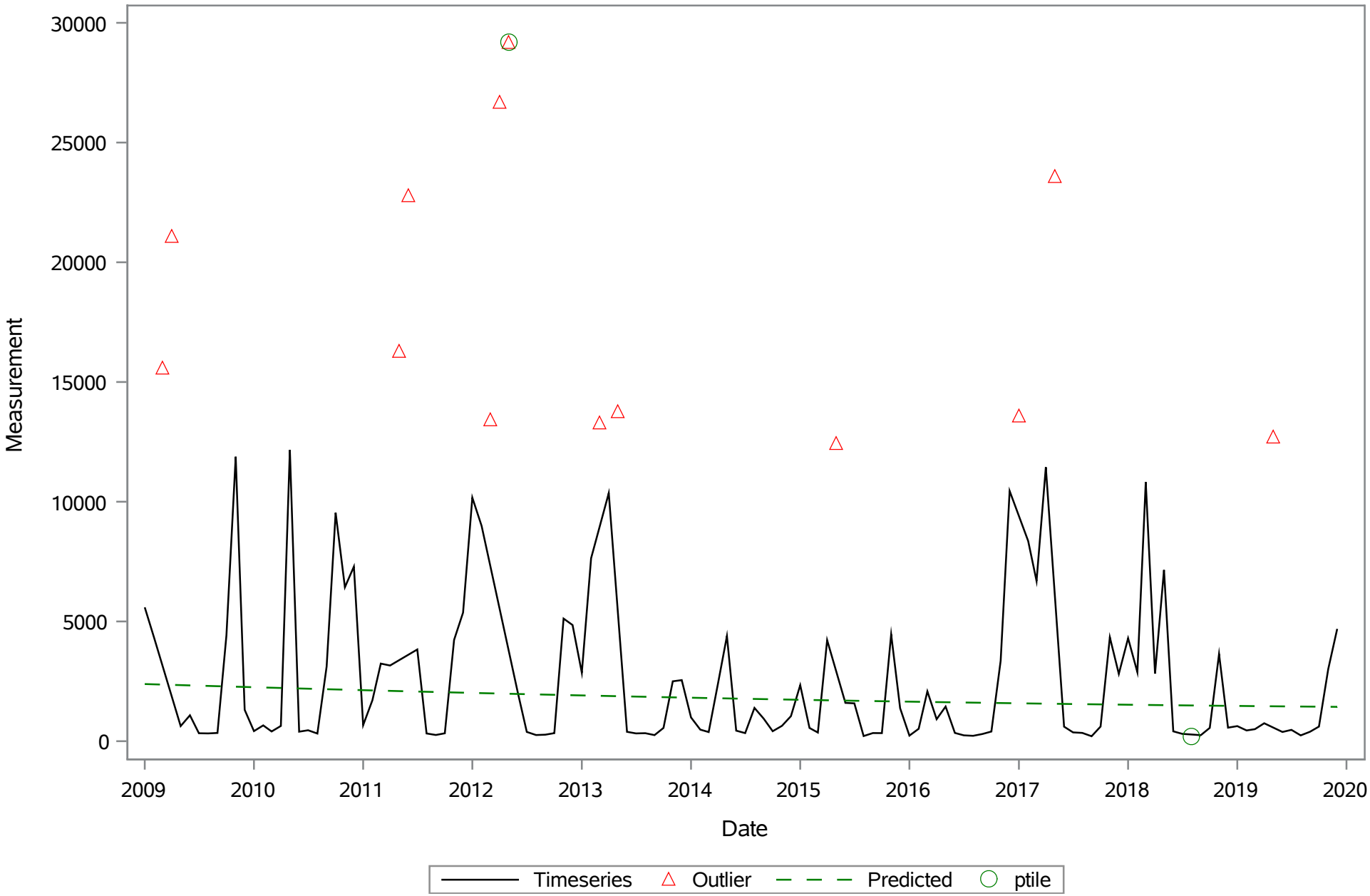
2018
2019
2020
Date
Timeseries
Predicted
ptile


Little Manatee River
182
Cond Mid (umho/cm)
Site ID = 182
Measurement
30000
25000
20000
15000
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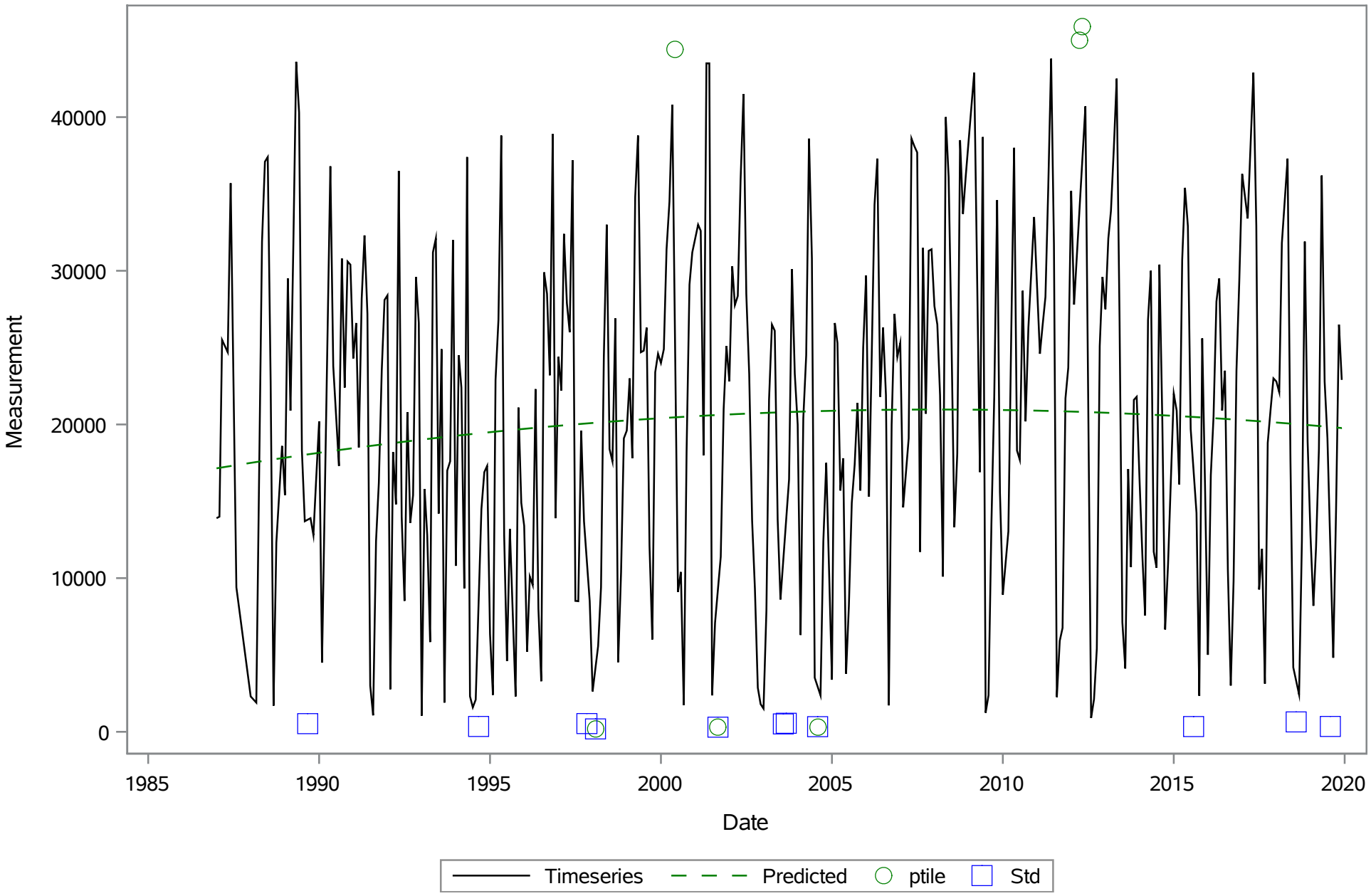
Timeseries
Outlier
Predicted
ptile


Little Manatee River
112
Cond Top (umho/cm)
Site ID = 112
Measurement
40000
30000
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2000
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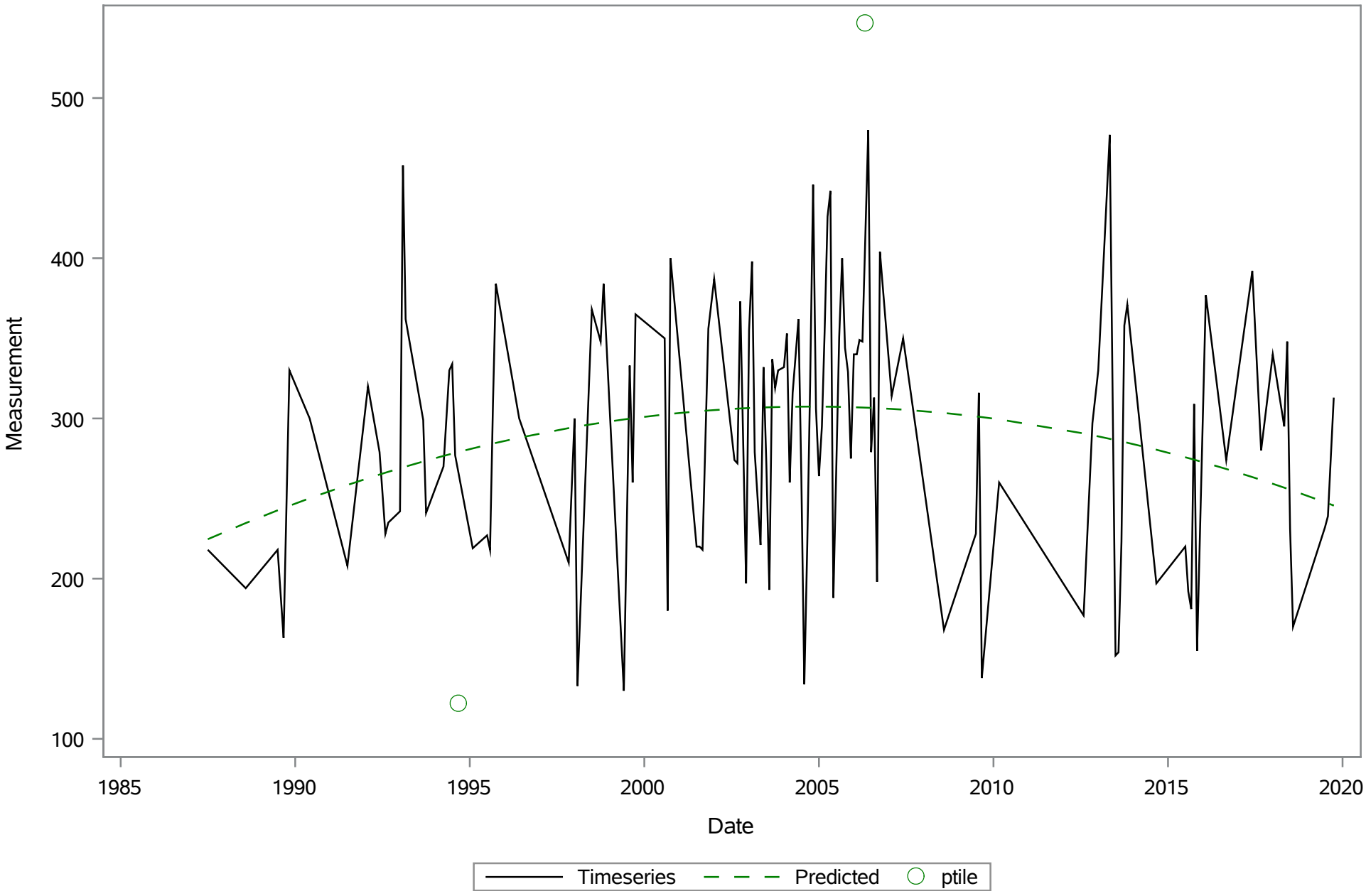
2020
Date
Timeseries
Predicted
ptile
Std


Little Manatee River
113
Cond Top (umho/cm)
Site ID = 113
Measurement
500
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300
200
100
1985
1990
1995
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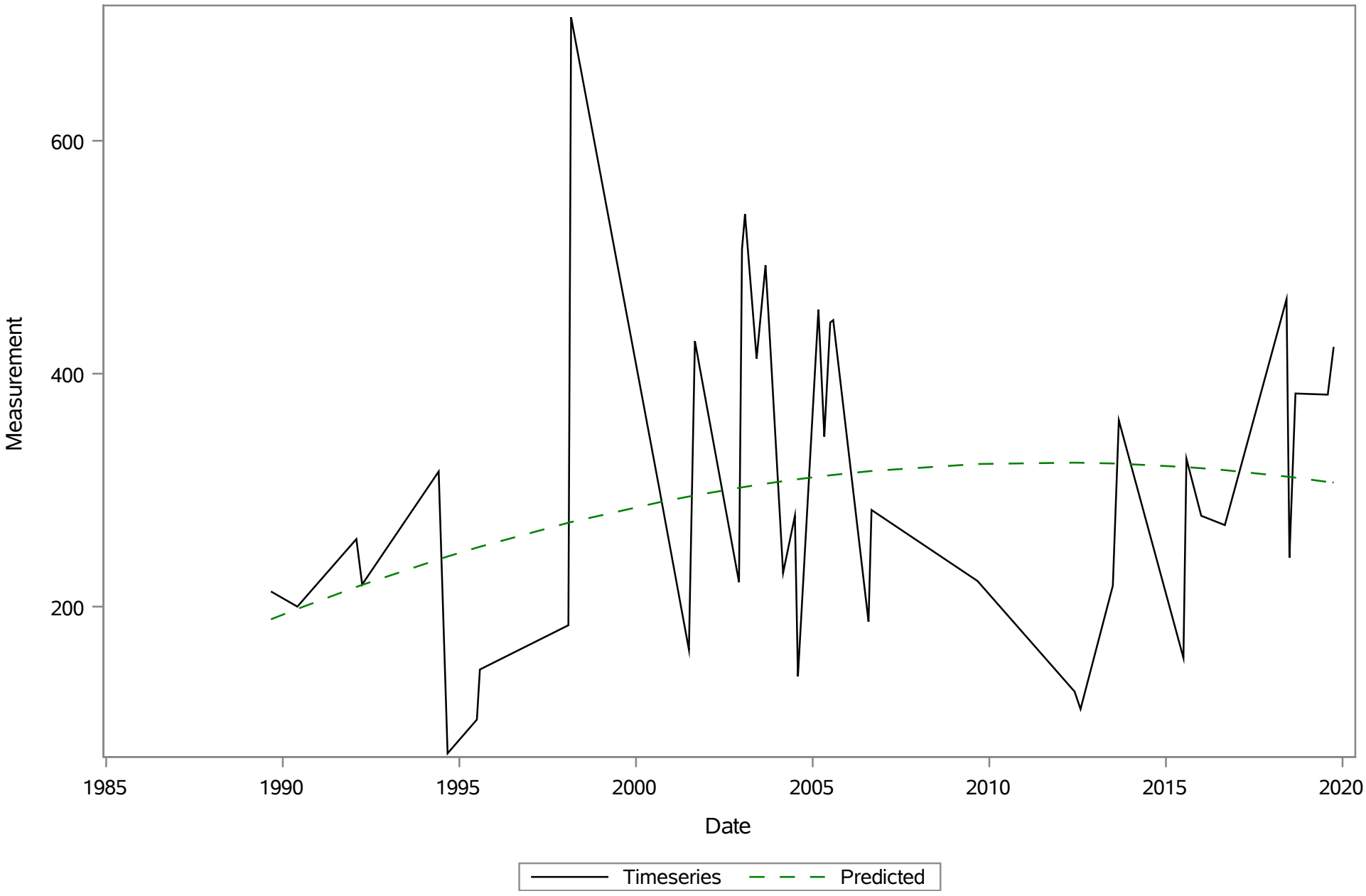
2010
2015
2020
Date
Timeseries
Predicted
ptile


Little Manatee River
129
Cond Top (umho/cm)
Site ID = 129
600
400
200
Measurement
1985
1990
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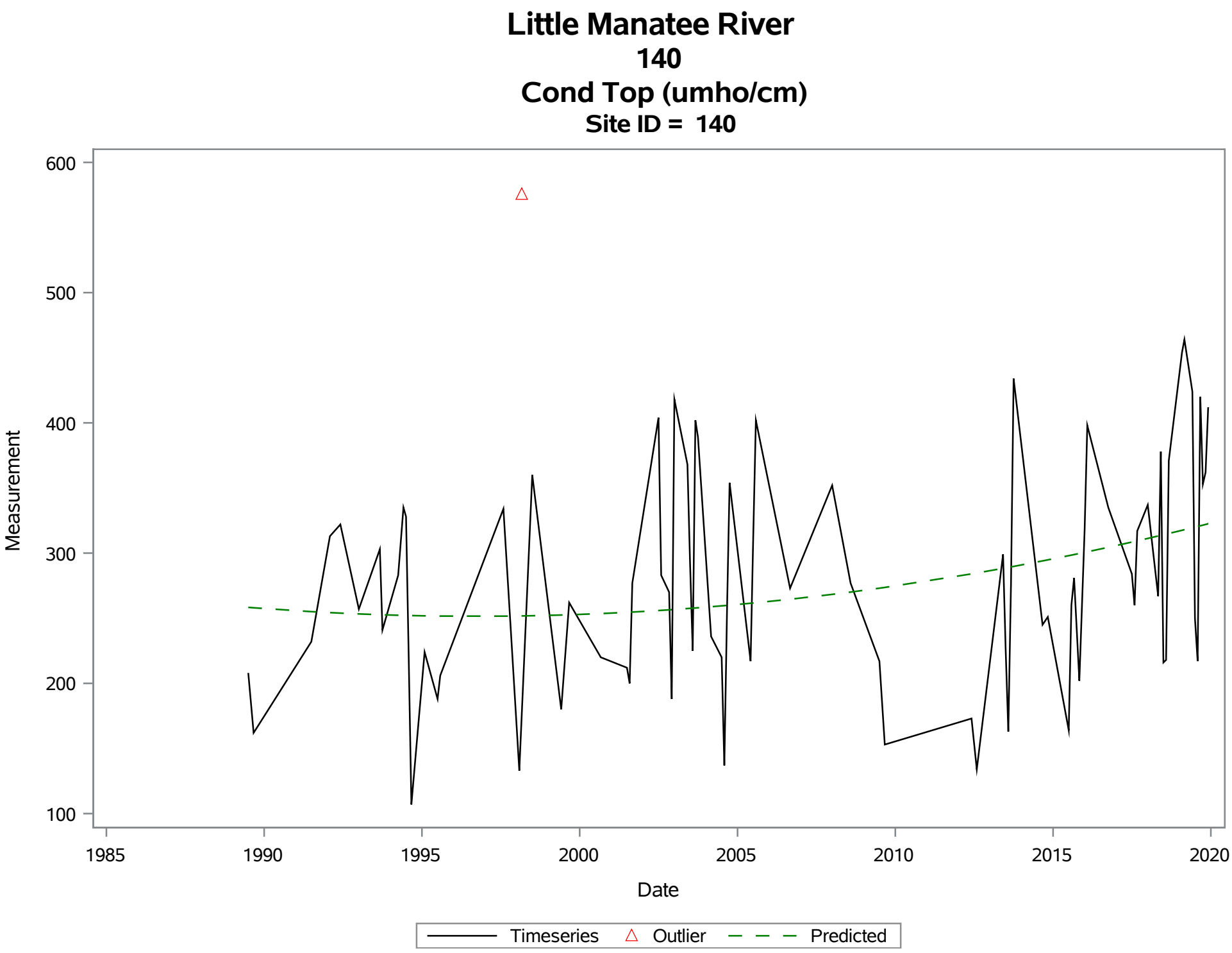
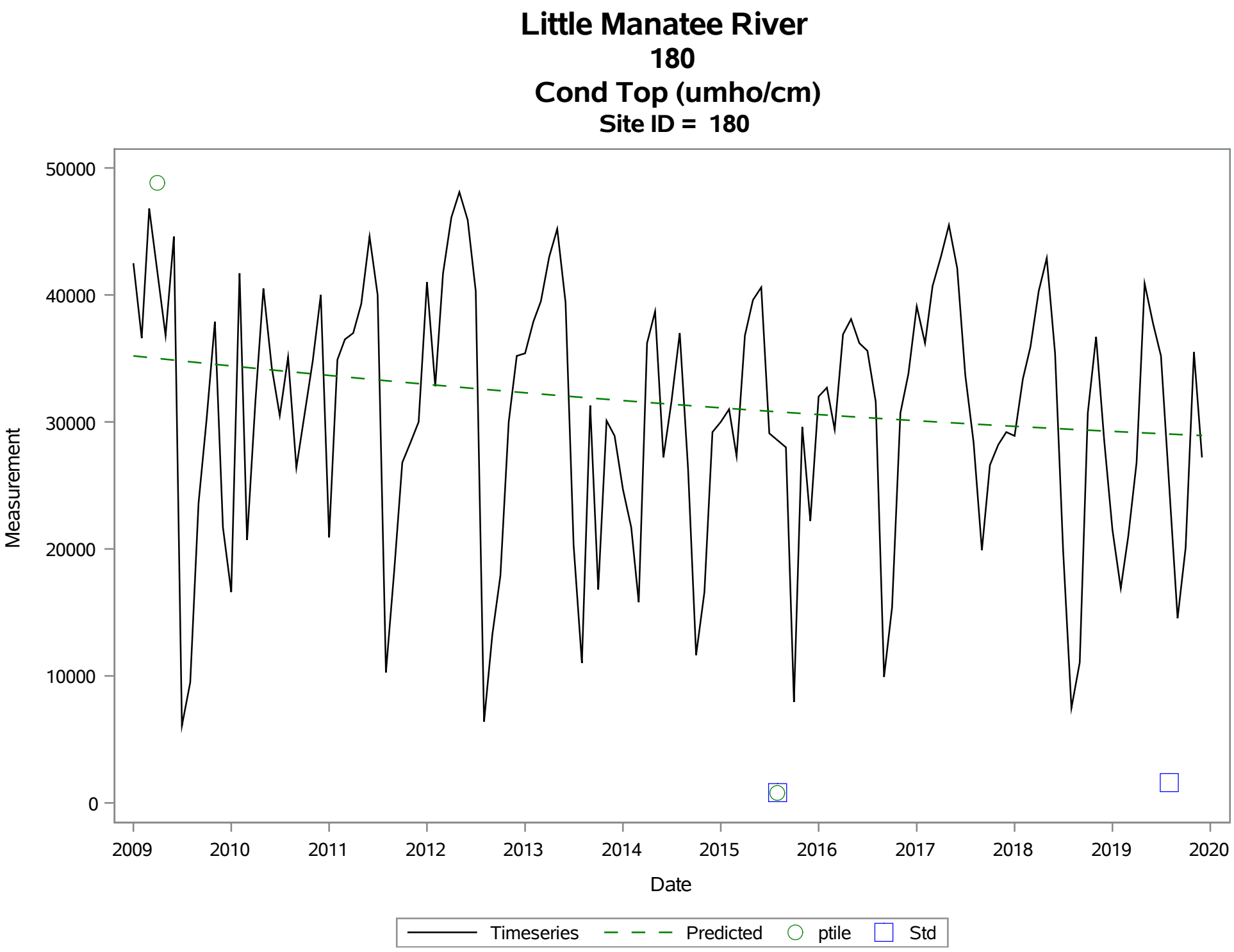
2005
2010
2015
2020
Date
Timeseries
Predicted


Little Manatee River
140
Cond Top (umho/cm)
Site ID = 140
600
500
400
300
200
100
Measurement
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted


Little Manatee River
180
Cond Top (umho/cm)
Site ID = 180
Measurement
50000
40000
30000
20000
10000
0
2009
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2011
2012
2013
2014
2015
2016
2017
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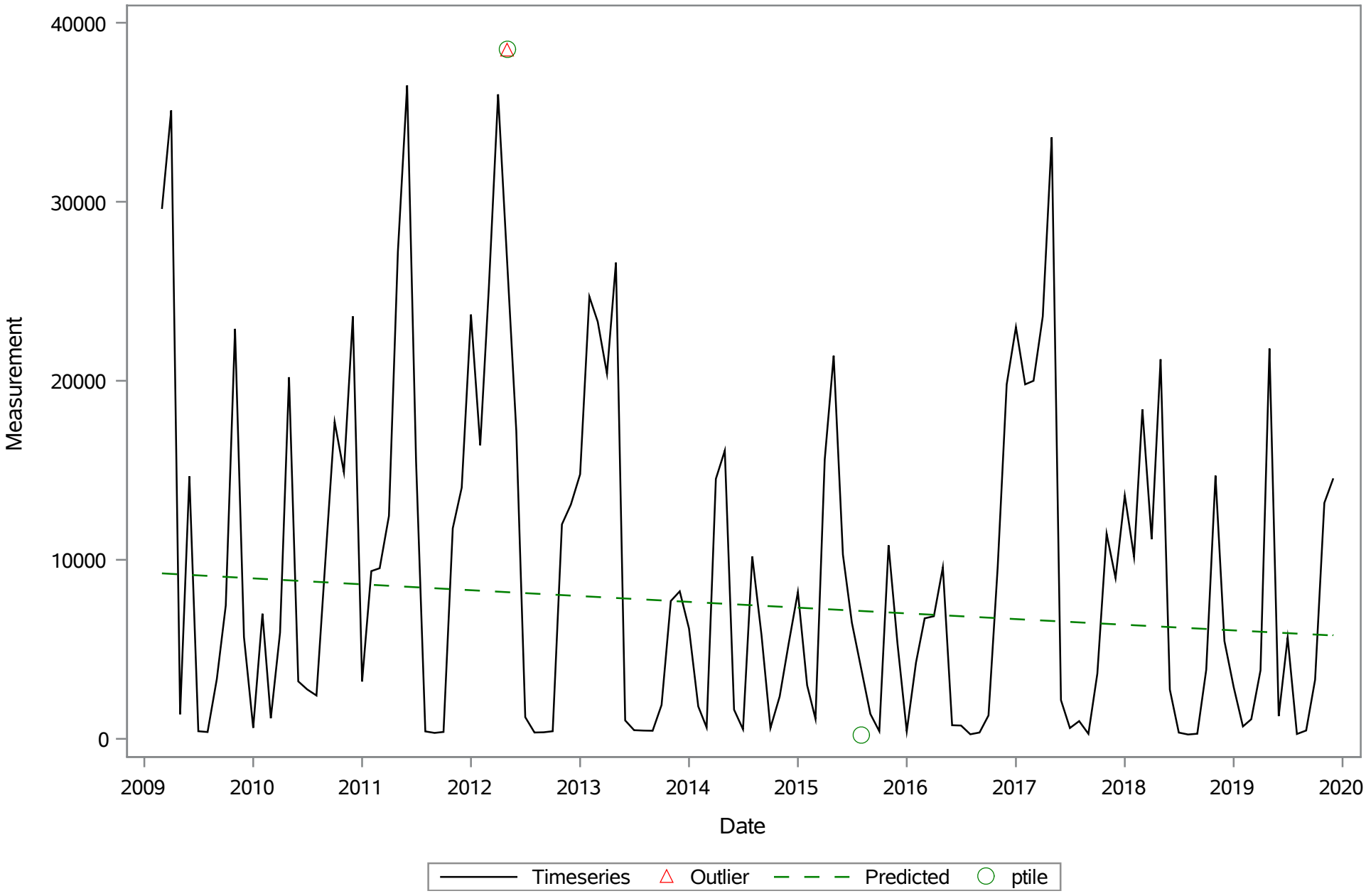
2019
2020
Date
Timeseries
Predicted
ptile
Std


Little Manatee River
181
Cond Top (umho/cm)
Site ID = 181
40000
30000
20000
10000
0
Measurement
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2012
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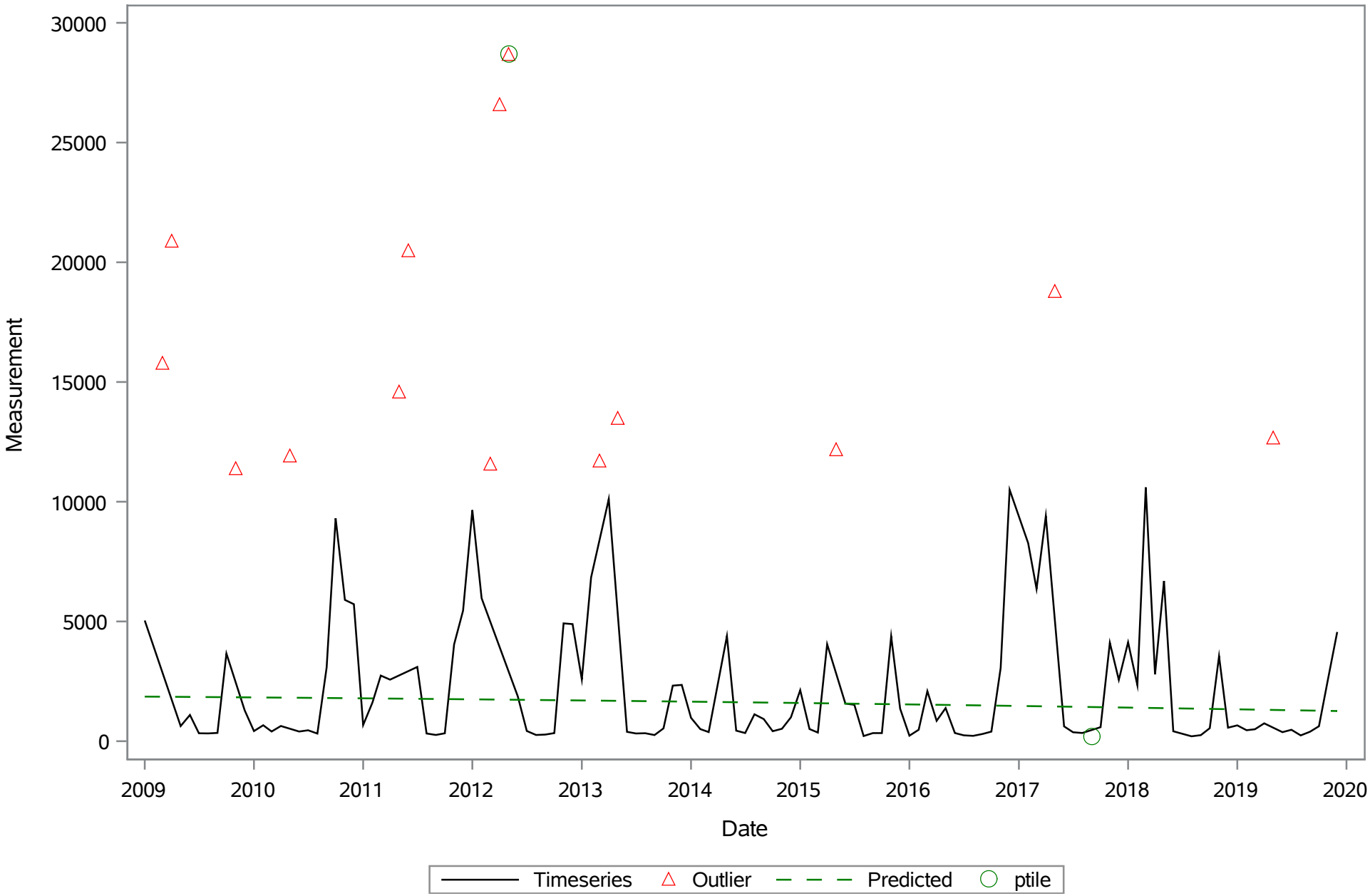
2020
Date
Timeseries
Outlier
Predicted
ptile


Little Manatee River
182
Cond Top (umho/cm)
Site ID = 182
Measurement
30000
25000
20000
15000
10000
5000
0
2009
2010
2011
2012
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2014
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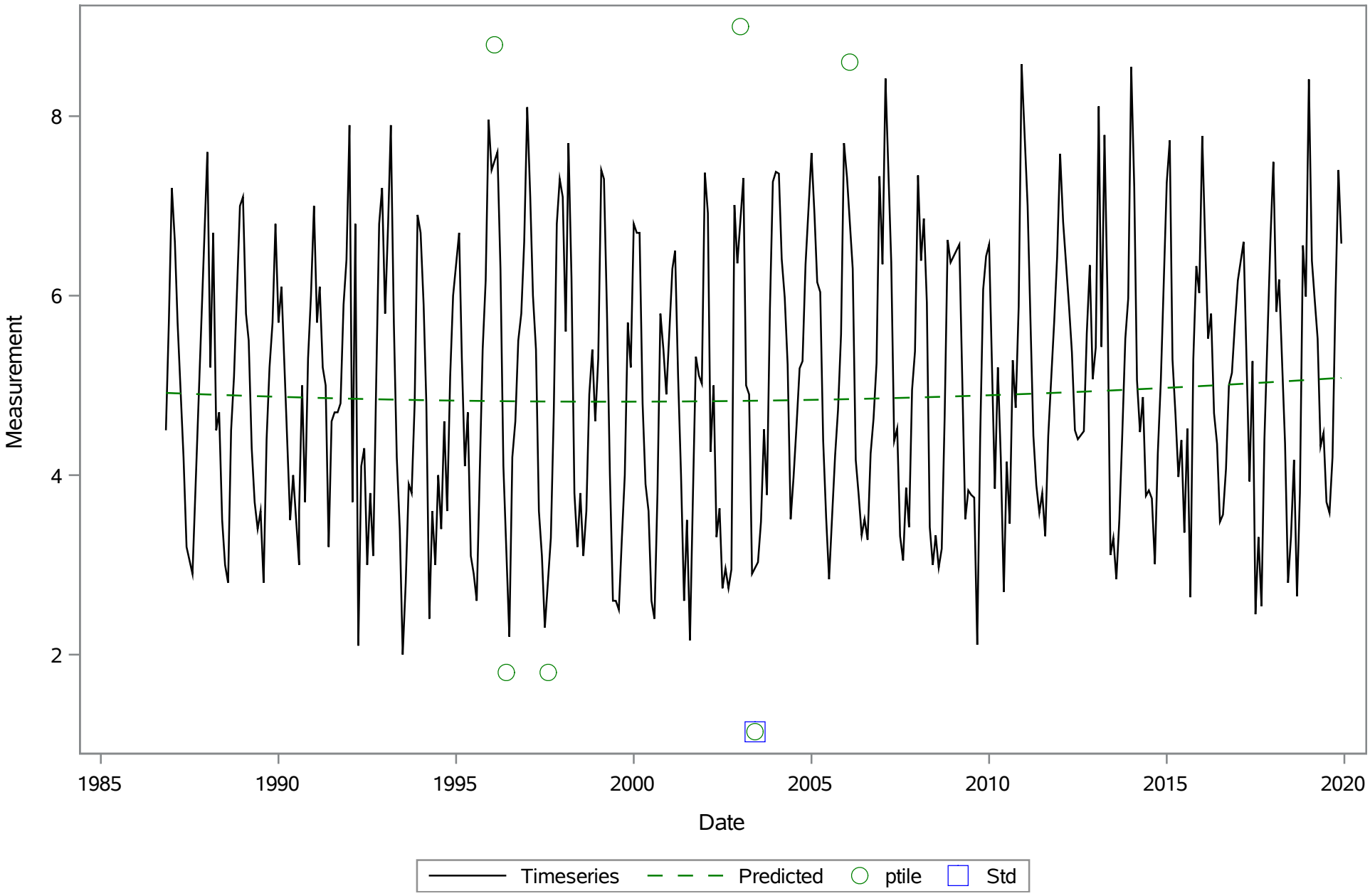
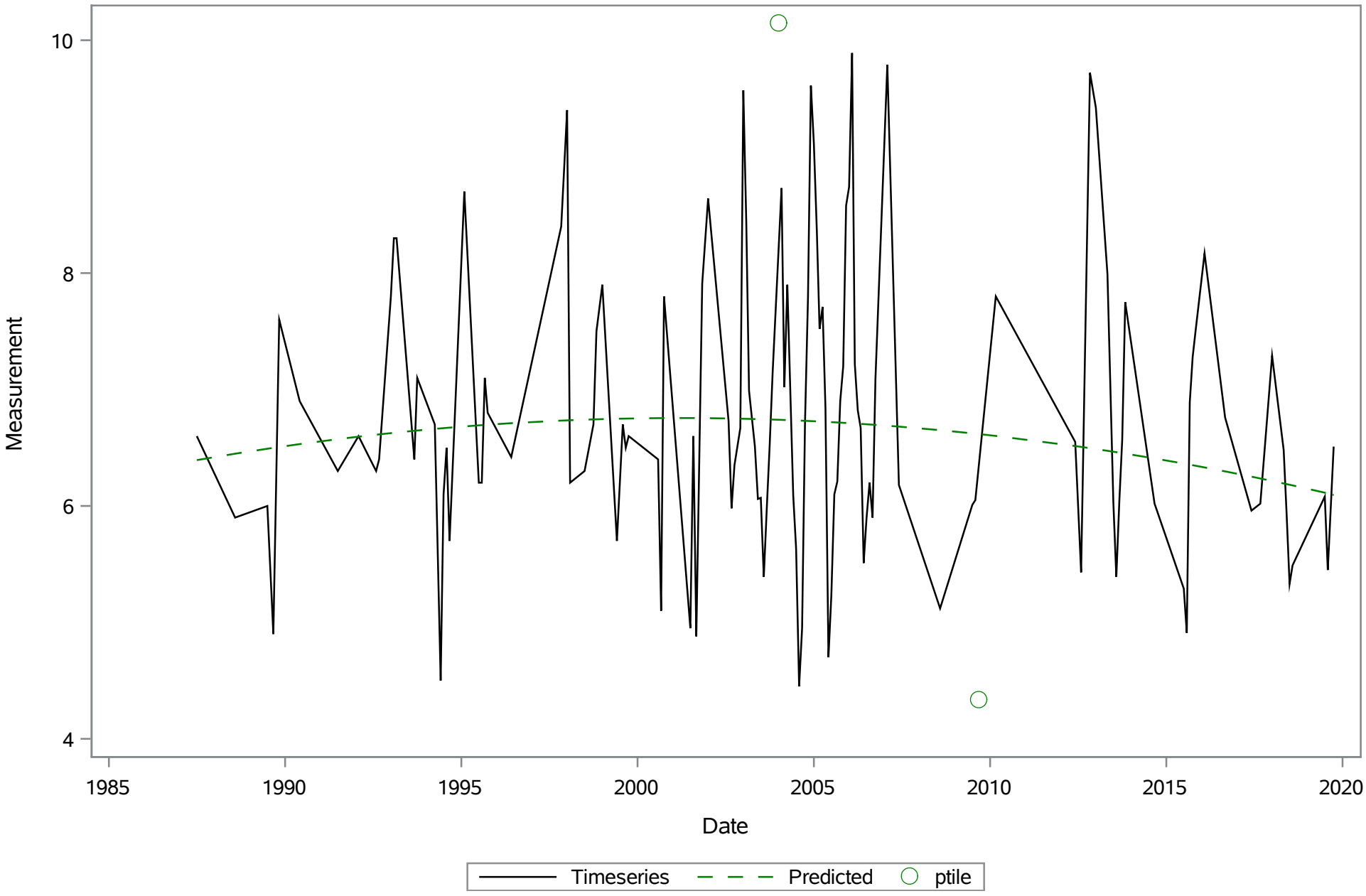
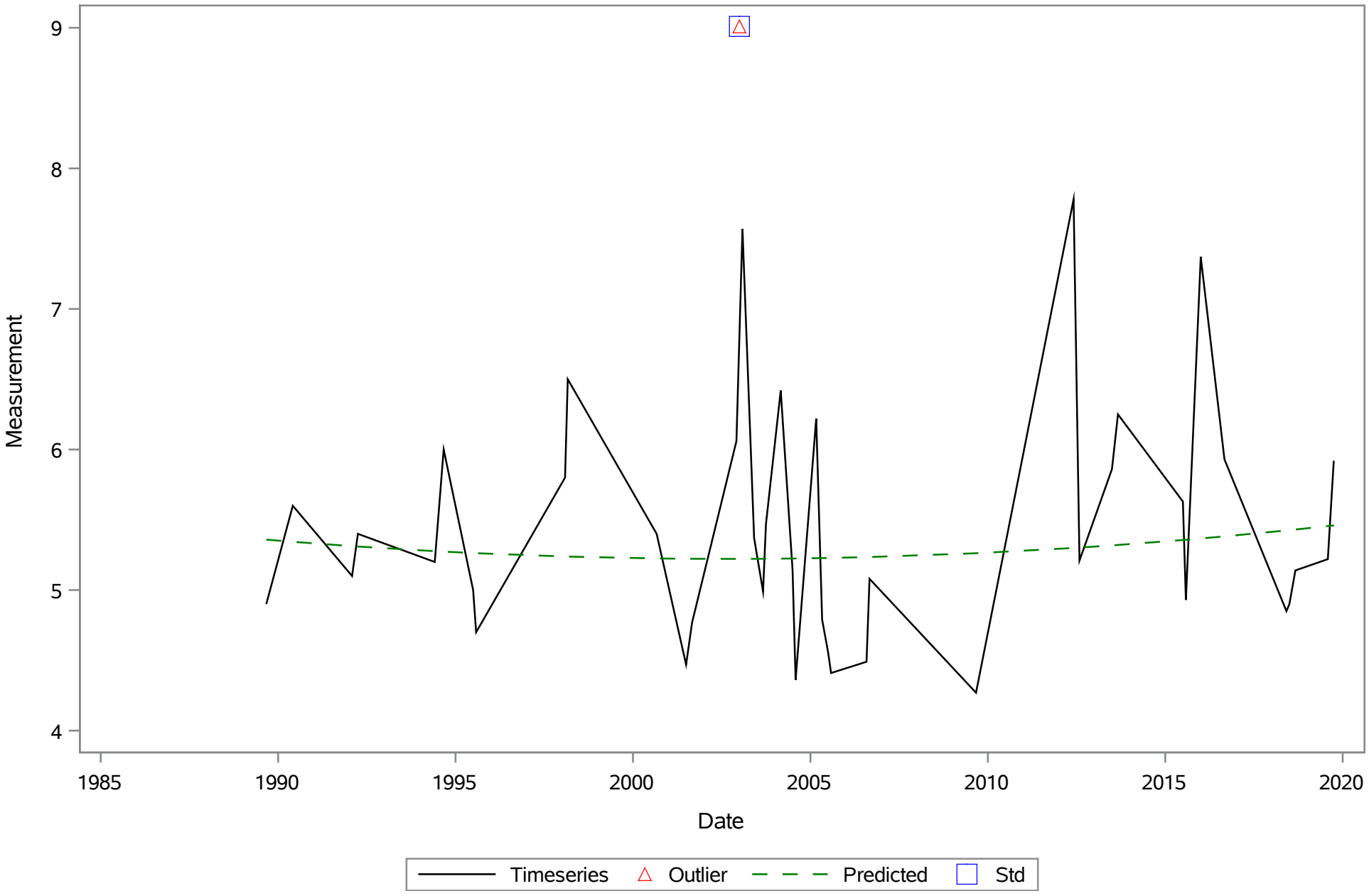
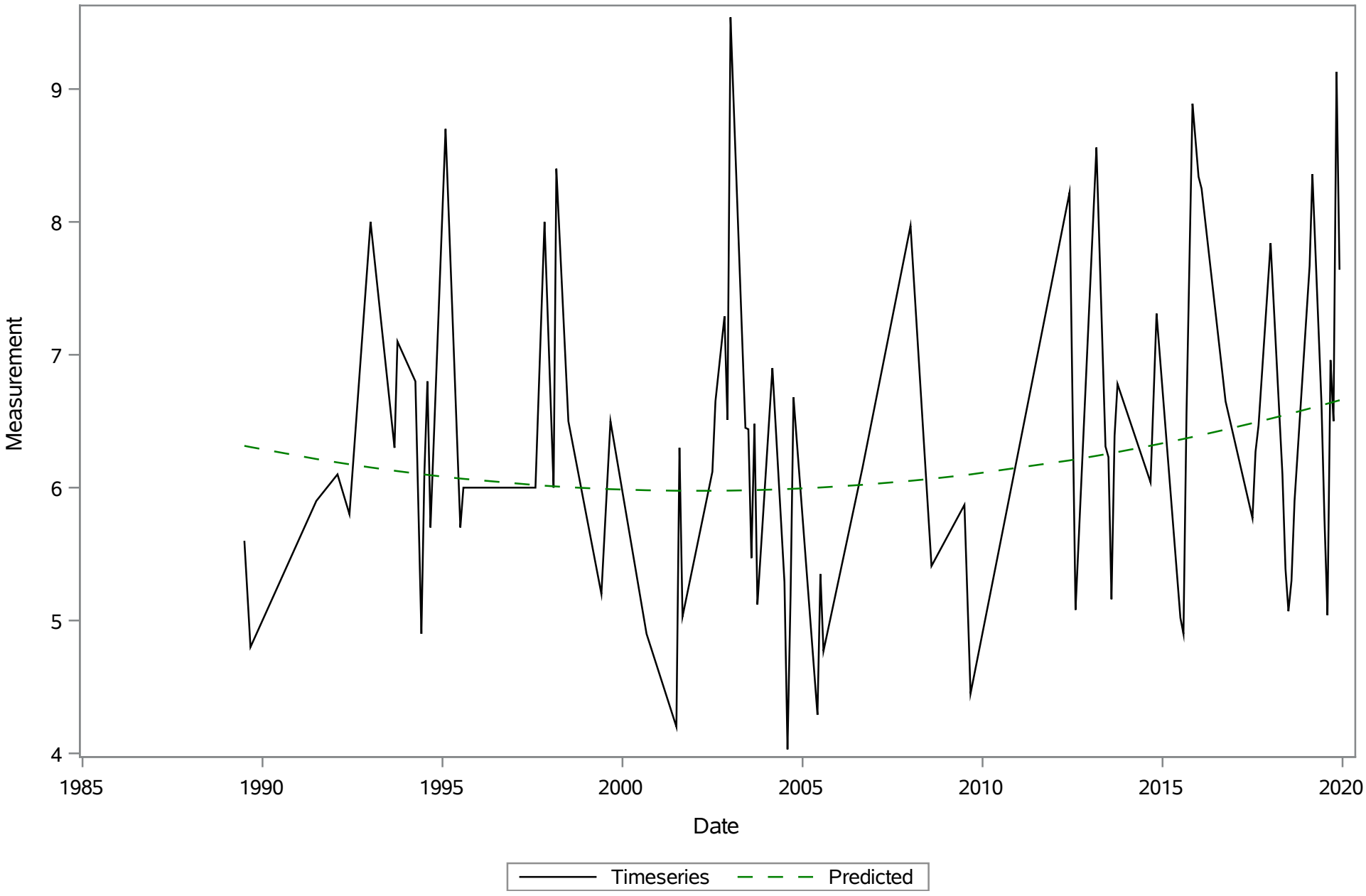
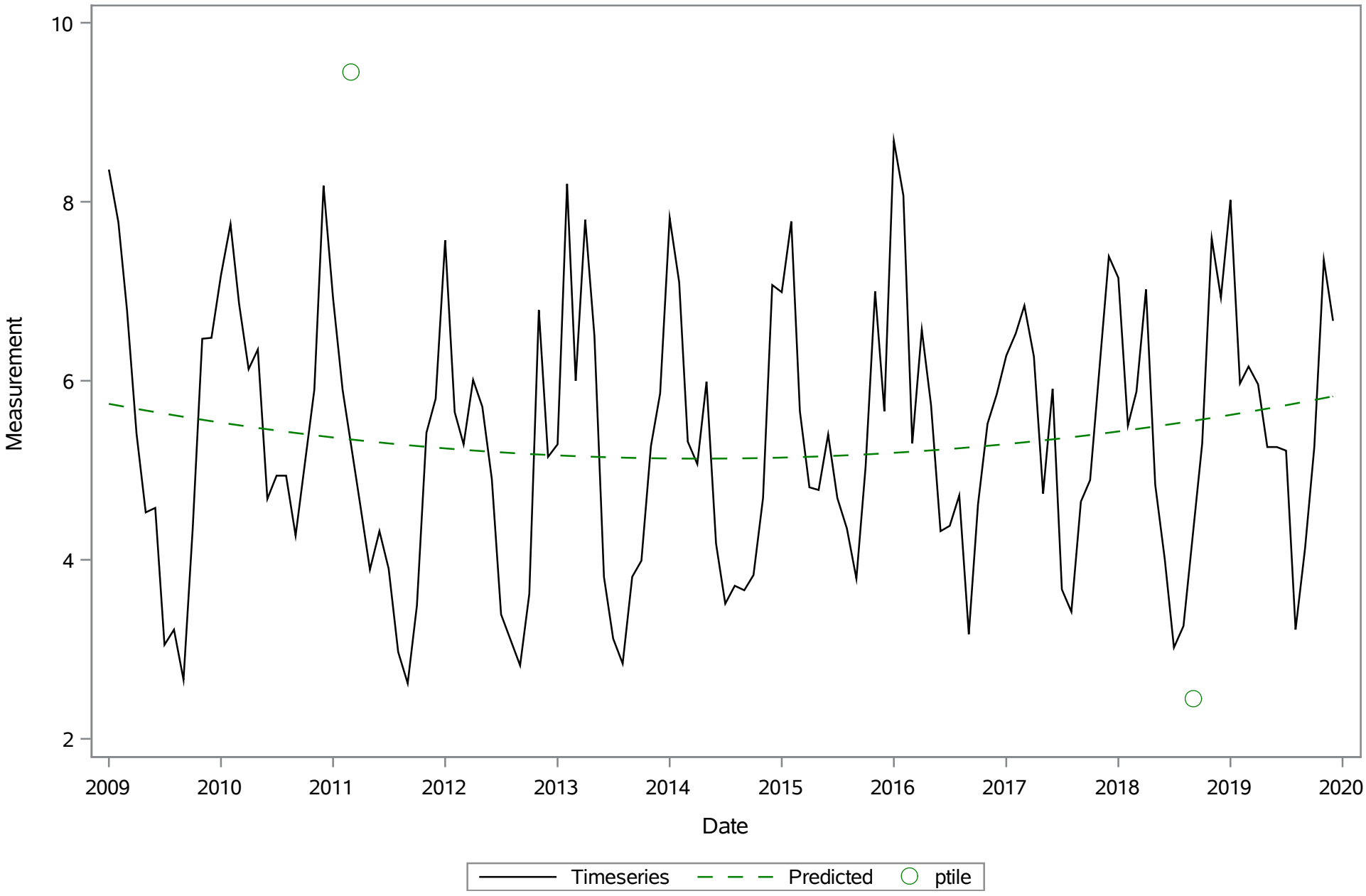
2018
2019
2020
Date
Timeseries
Outlier
Predicted
ptile

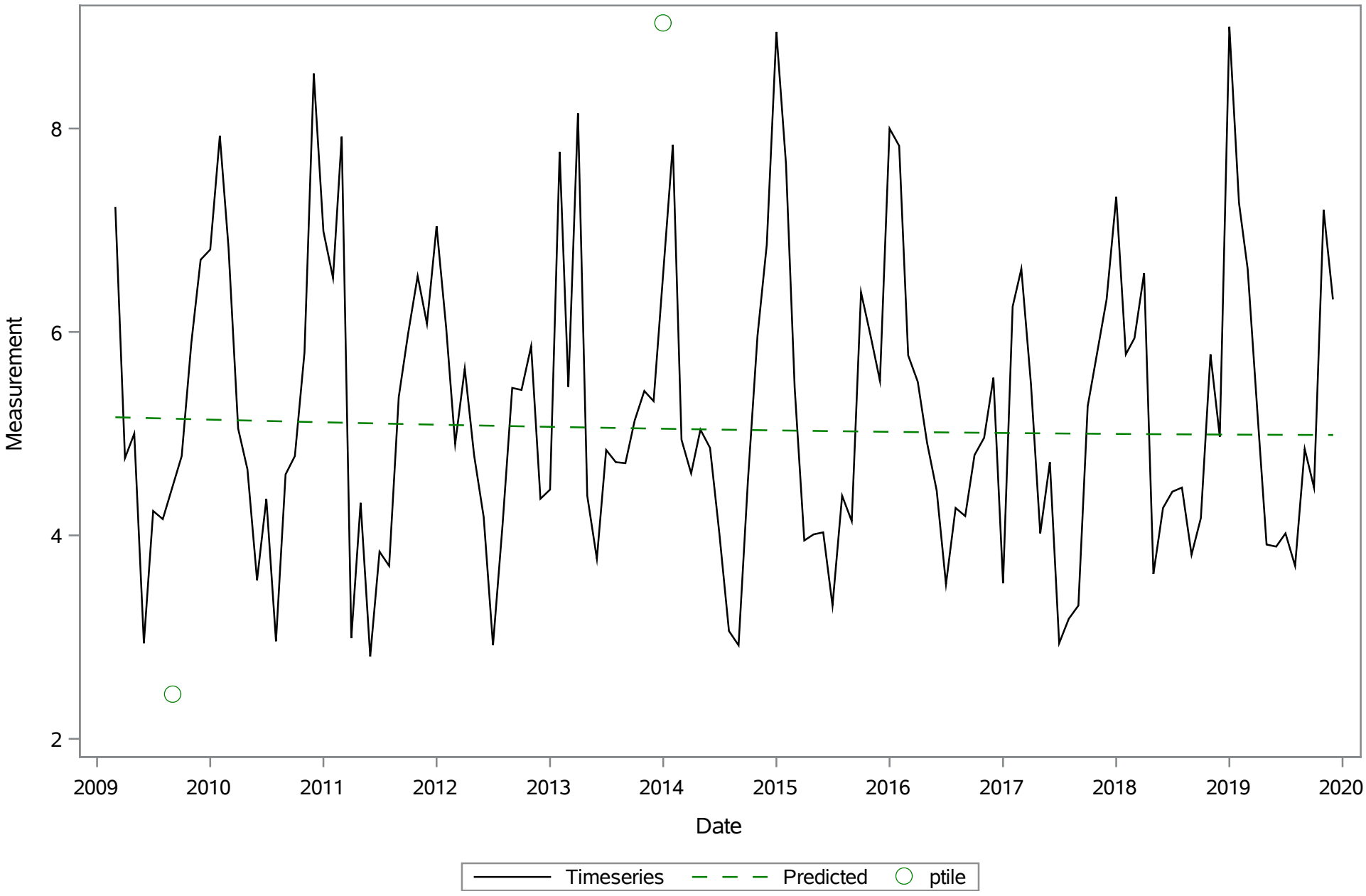

Little Manatee River
112
DO Bottom (mg/L)
Site ID = 112
Measurement
8
6
4
2
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Predicted
ptile
Std

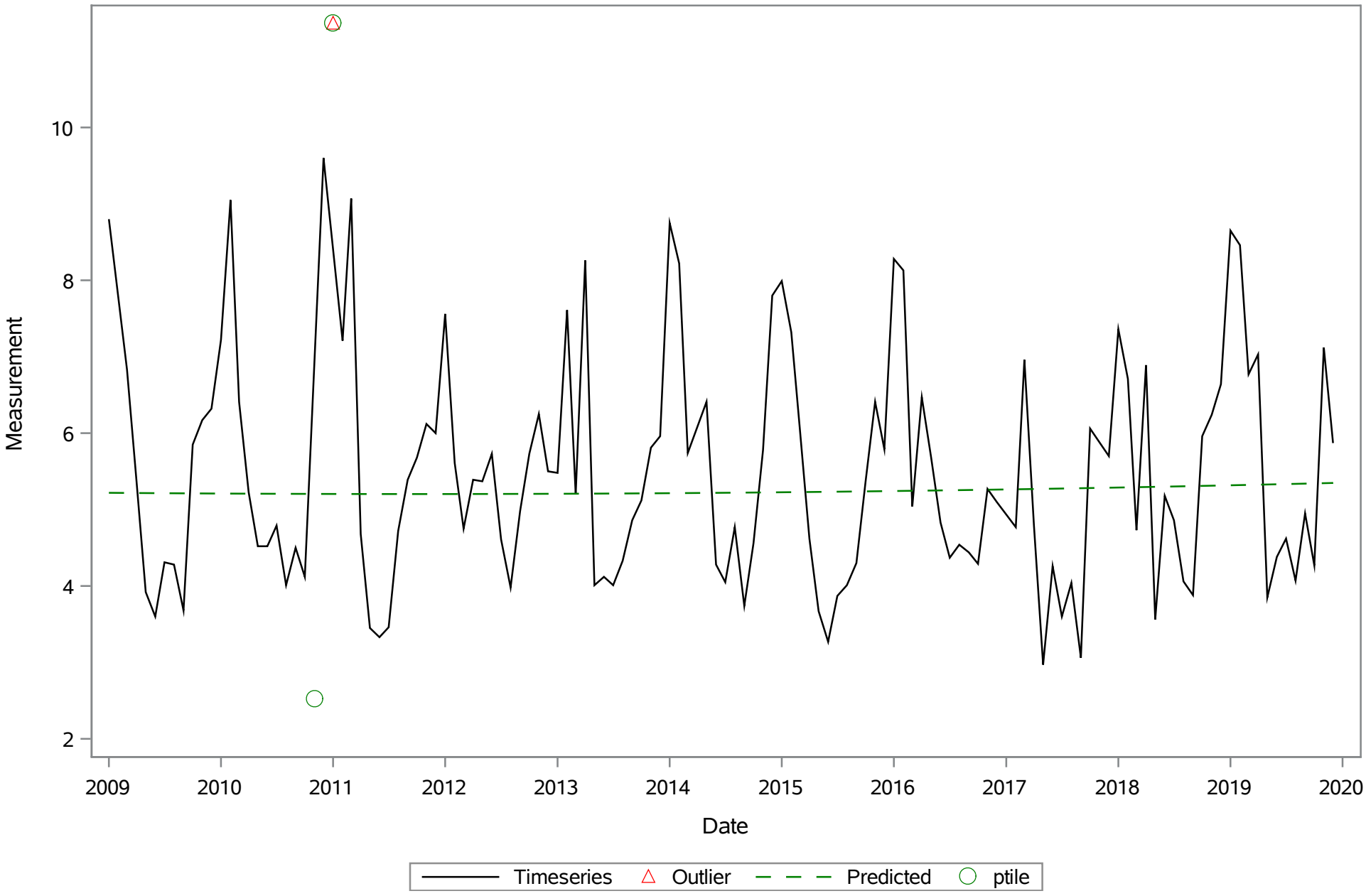

Little Manatee River
113
DO Bottom (mg/L)
Site ID = 113
10
8
6
4
Measurement
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Predicted
ptile

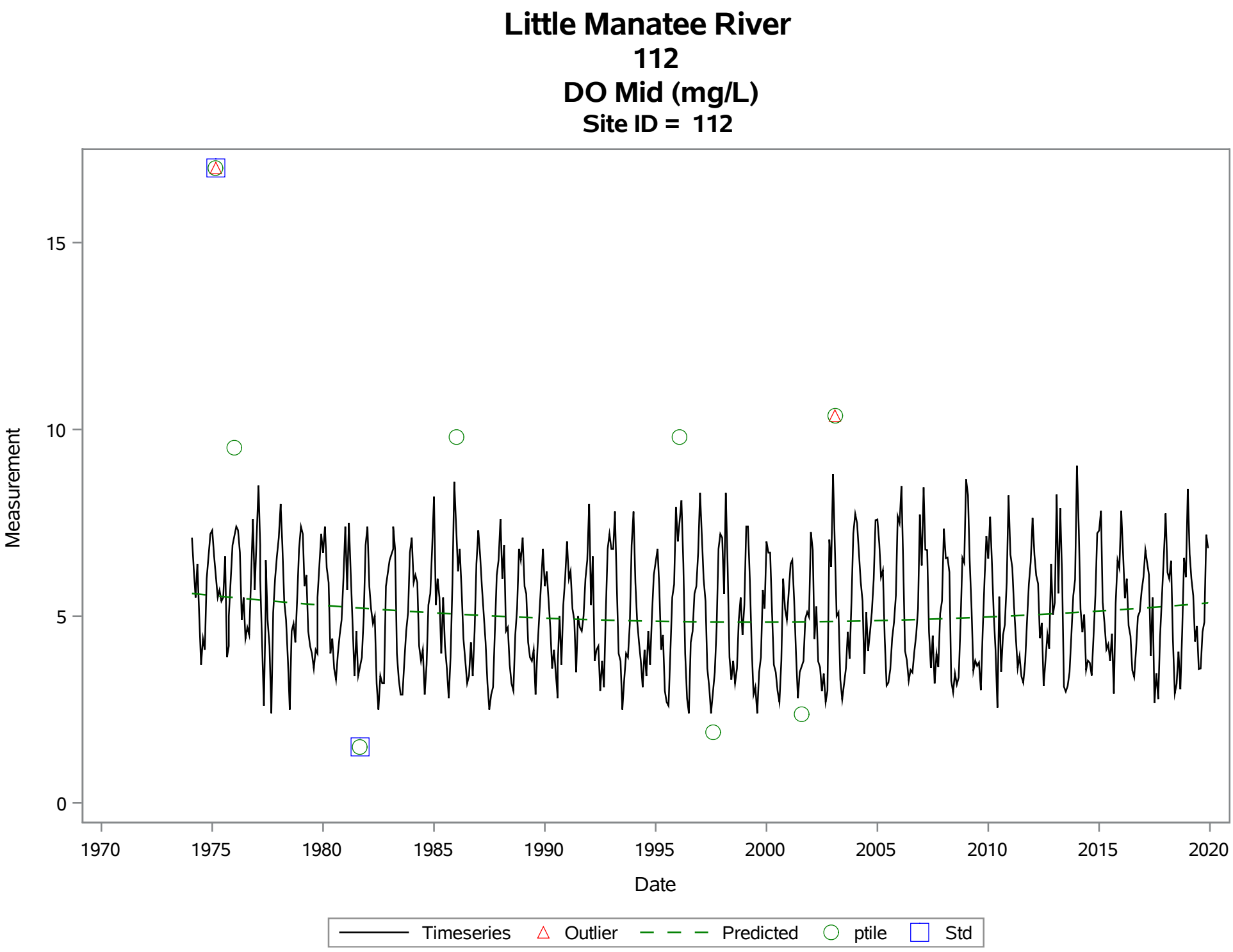

Little Manatee River
129
DO Bottom (mg/L)
Site ID = 129
Measurement
9
8
7
6
5
4
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
Std

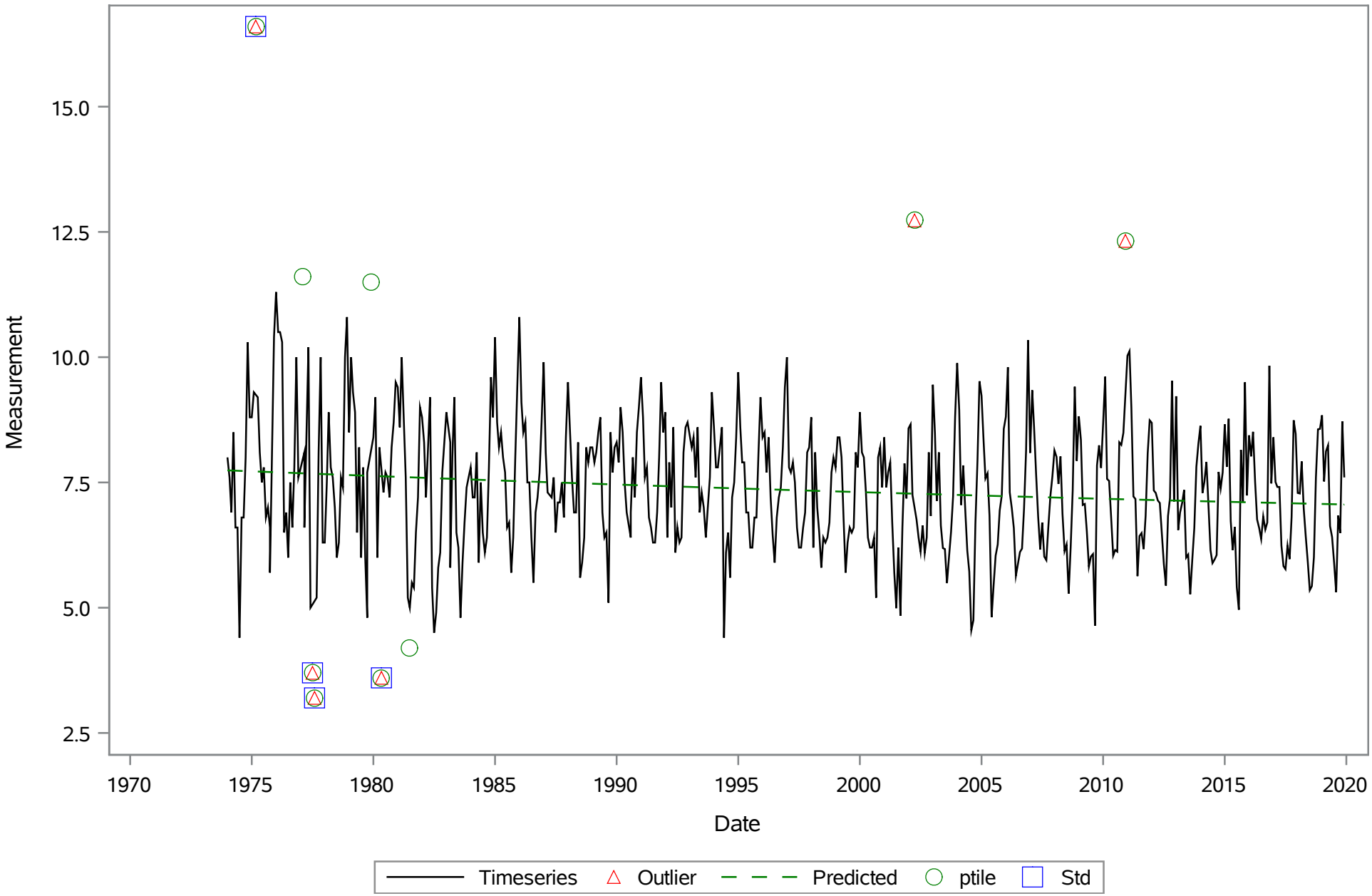

Little Manatee River
140
DO Bottom (mg/L)
Site ID = 140
Measurement
9
8
7
6
5
4
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Predicted

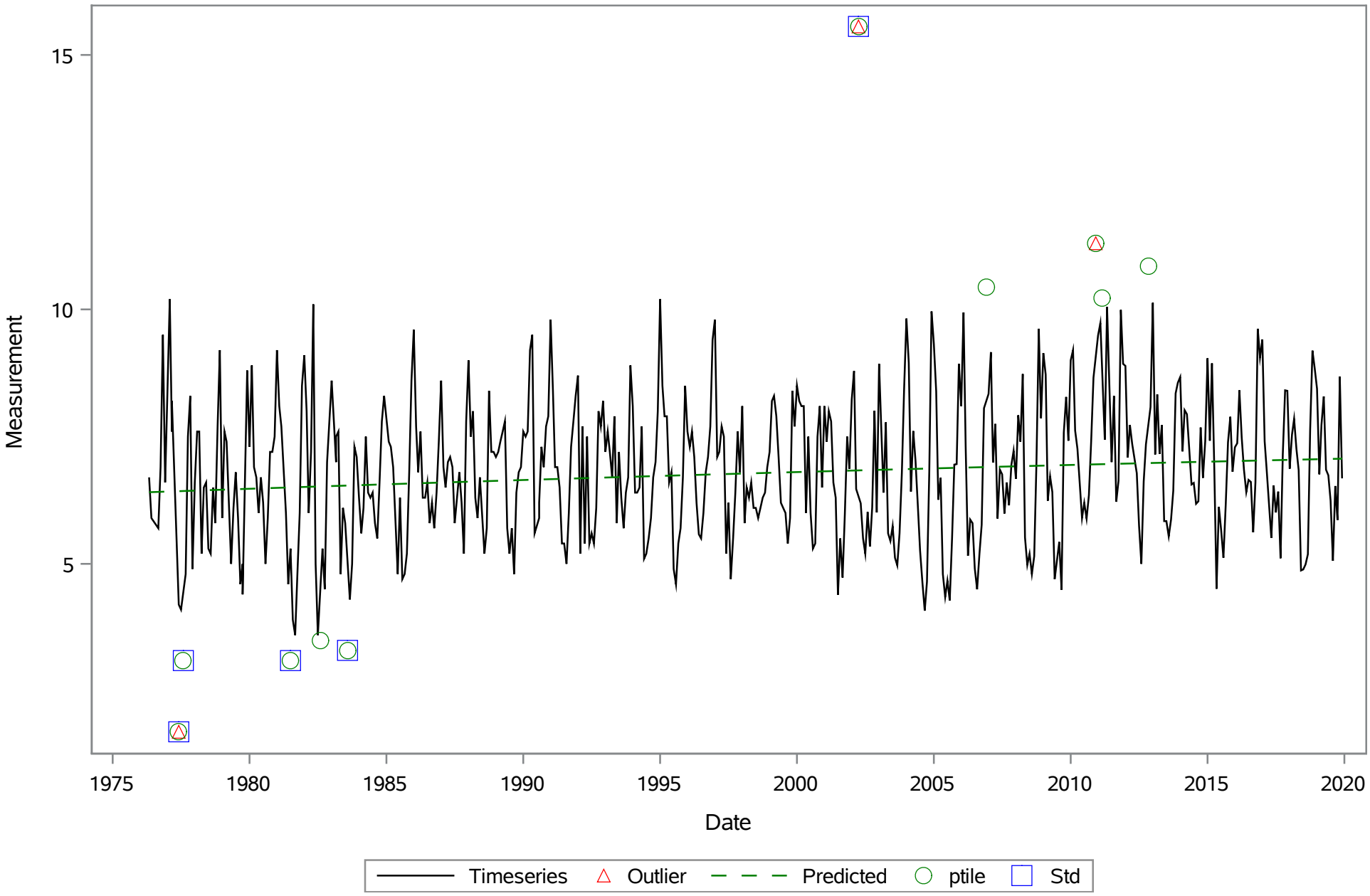

Little Manatee River
180
DO Bottom (mg/L)
Site ID = 180
10
8
6
4
2
Measurement
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Predicted
ptile

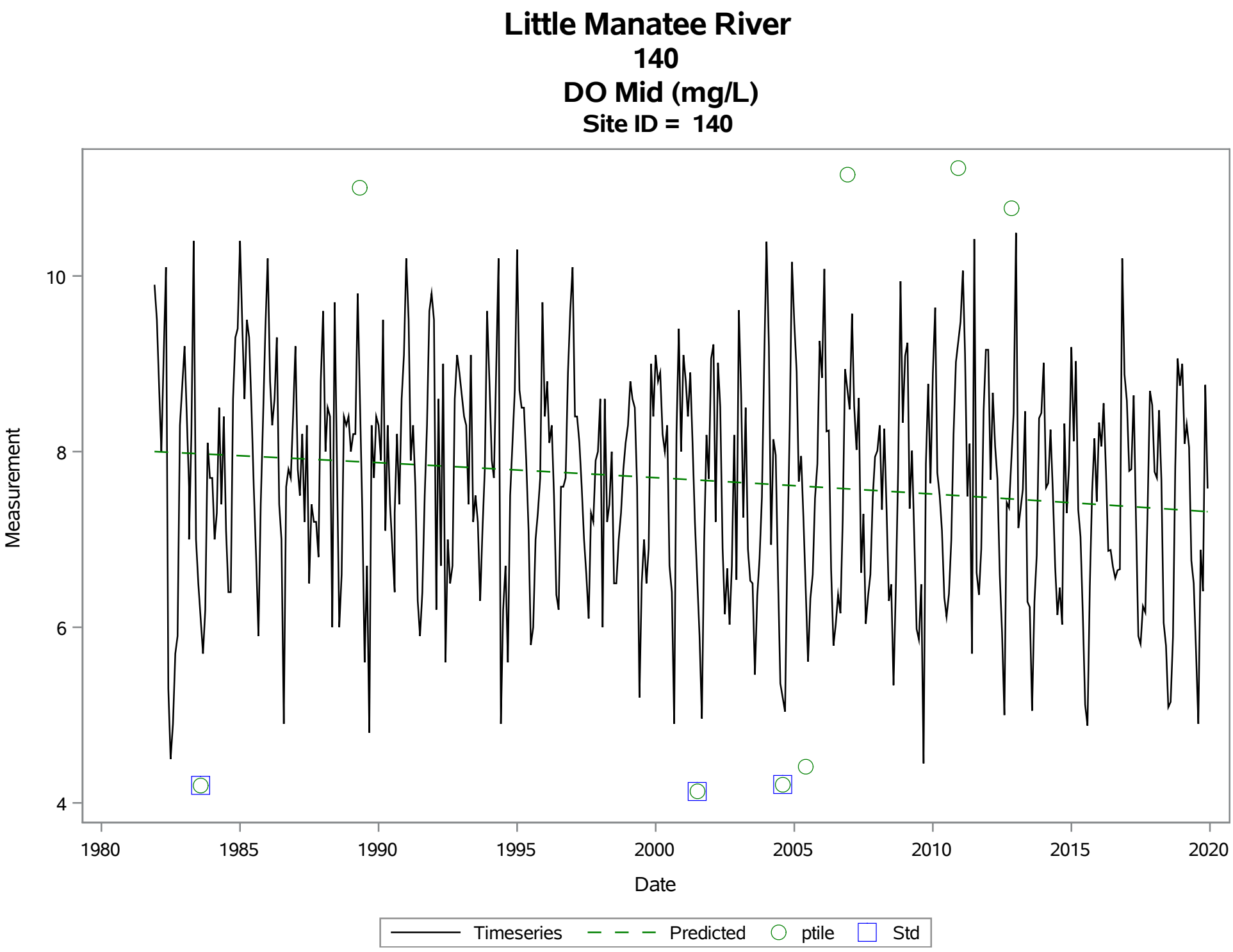

Little Manatee River
181
DO Bottom (mg/L)
Site ID = 181
Measurement
8
6
4
2
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Predicted
ptile


Little Manatee River
182
DO Bottom (mg/L)
Site ID = 182
Measurement
10
8
6
4
2
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Outlier
Predicted
ptile


Little Manatee River
112
DO Mid (mg/L)
Site ID = 112
Measurement
15
10
5
0
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std


Little Manatee River
113
DO Mid (mg/L)
Site ID = 113
Measurement
15.0
12.5
10.0
7.5
5.0
2.5
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std


Little Manatee River
129
DO Mid (mg/L)
Site ID = 129
Measurement
15
10
5
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std


Little Manatee River
140
DO Mid (mg/L)
Site ID = 140
Measurement
10
8
6
4
1980
1985
1990
1995
2000
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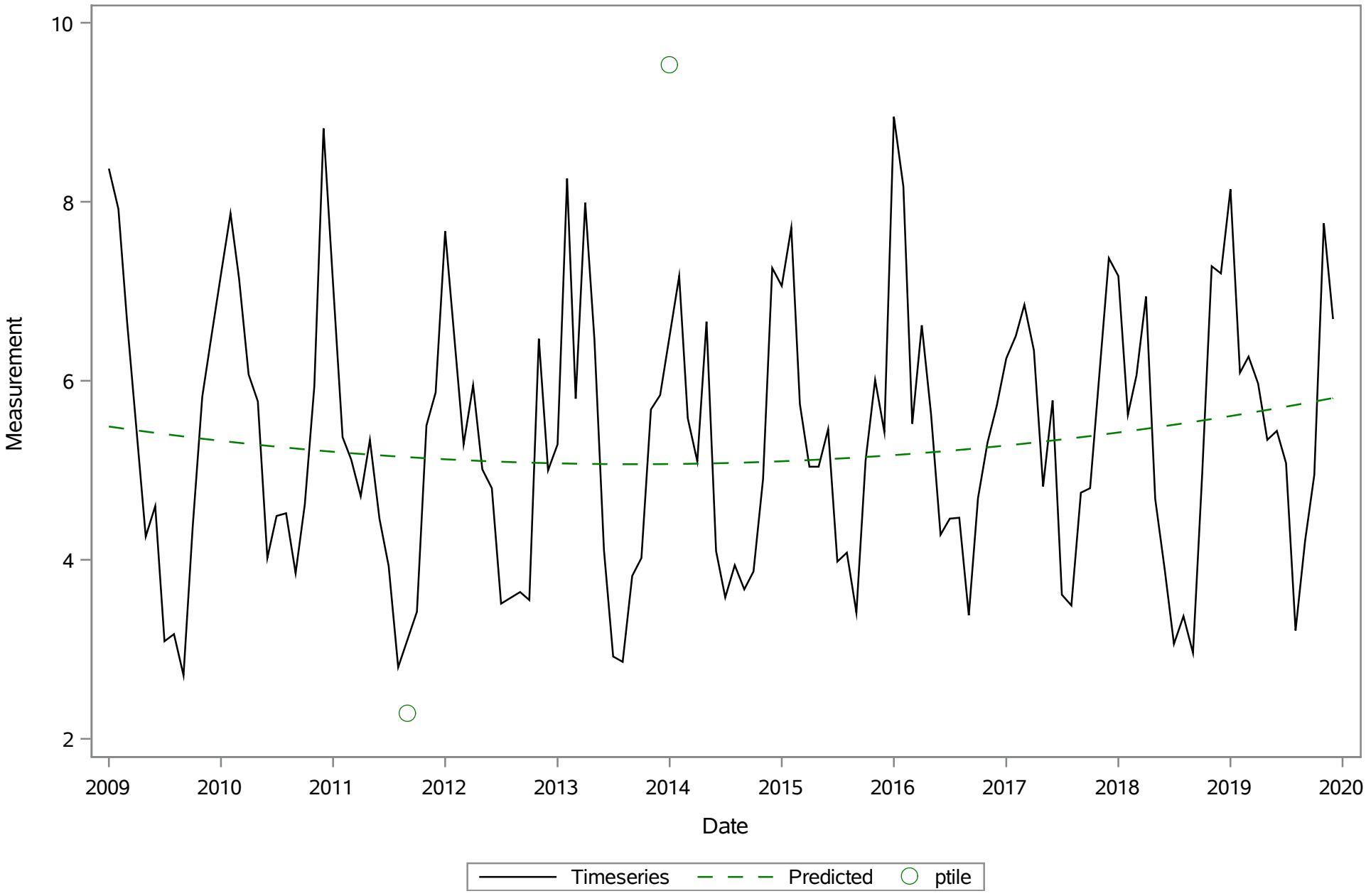
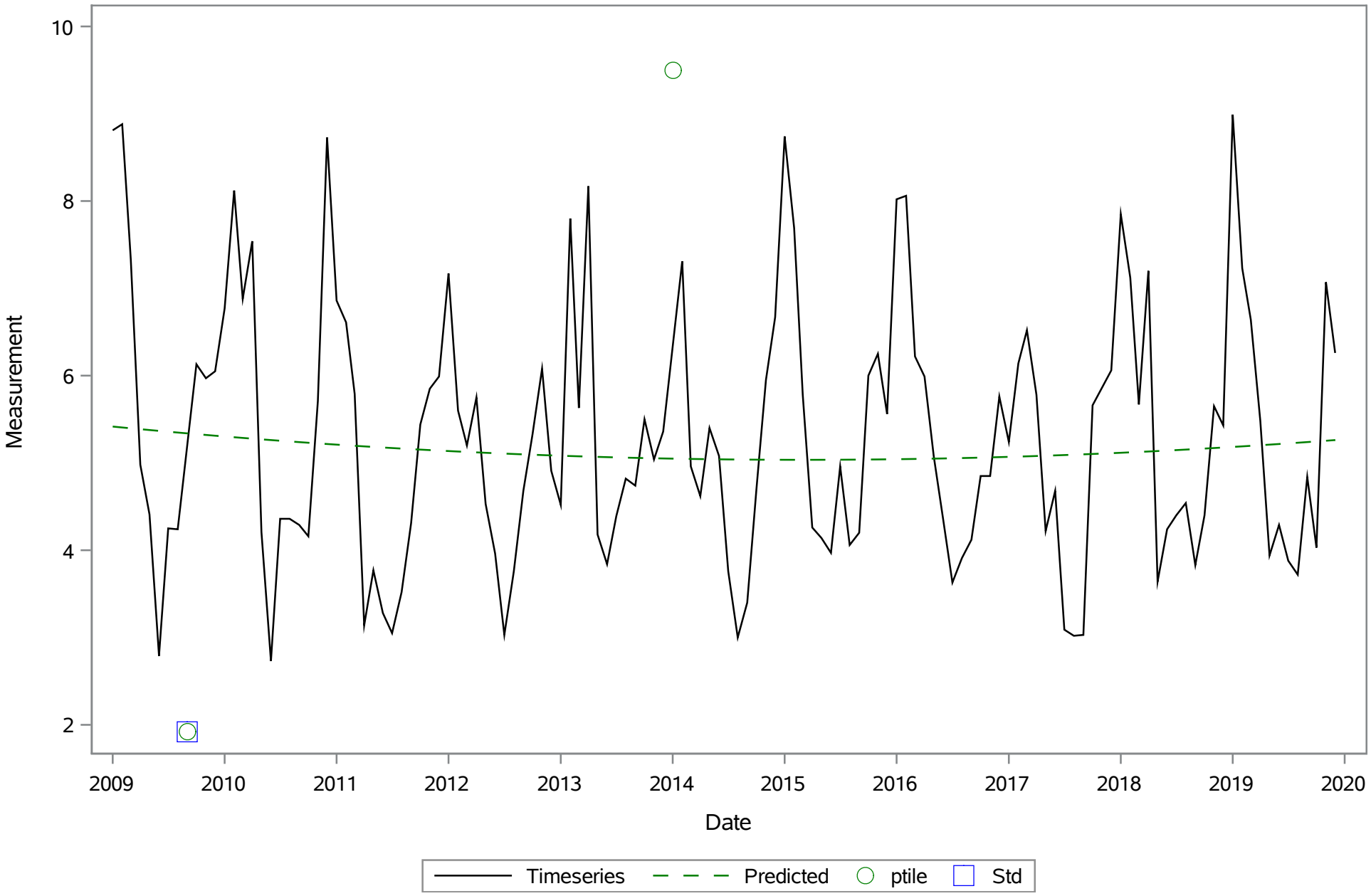
Date
Timeseries
Predicted
ptile
Std


Little Manatee River
180
DO Mid (mg/L)
Site ID = 180
Measurement
10
8
6
4
2
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Predicted
ptile


Little Manatee River
181
DO Mid (mg/L)
Site ID = 181
Measurement
10
8
6
4
2
2009
2010
2011
2012
2013
2014
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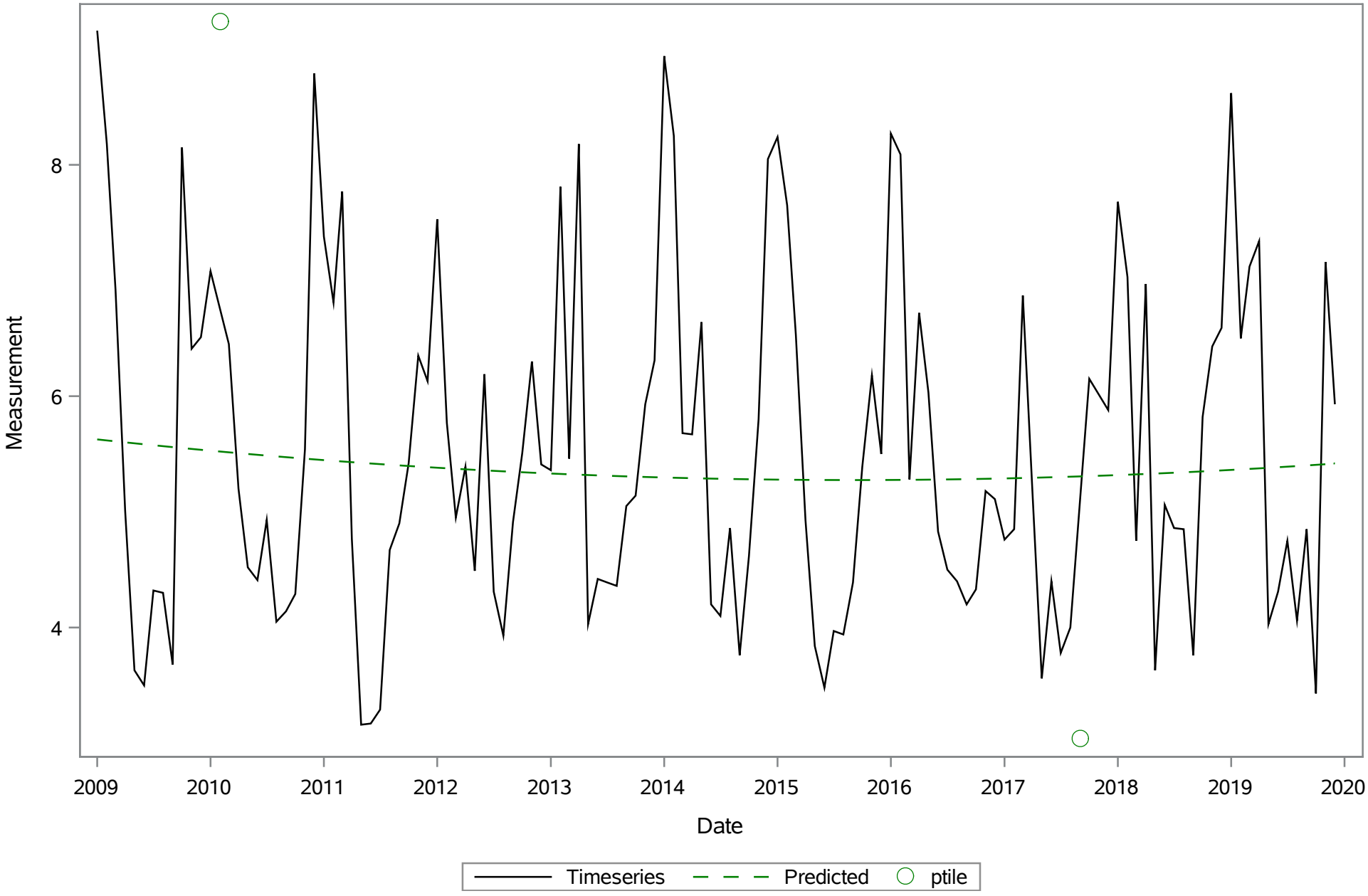
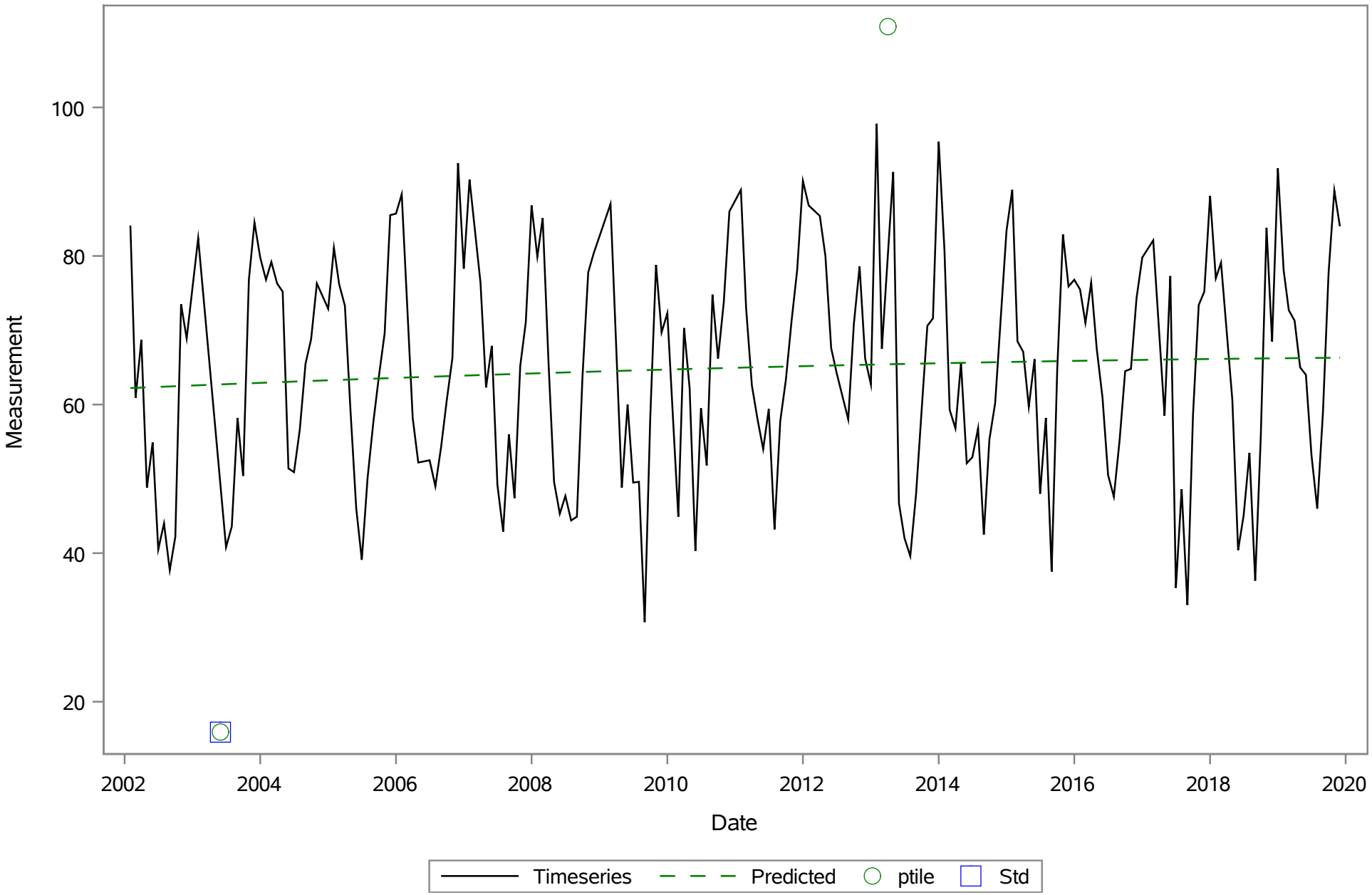
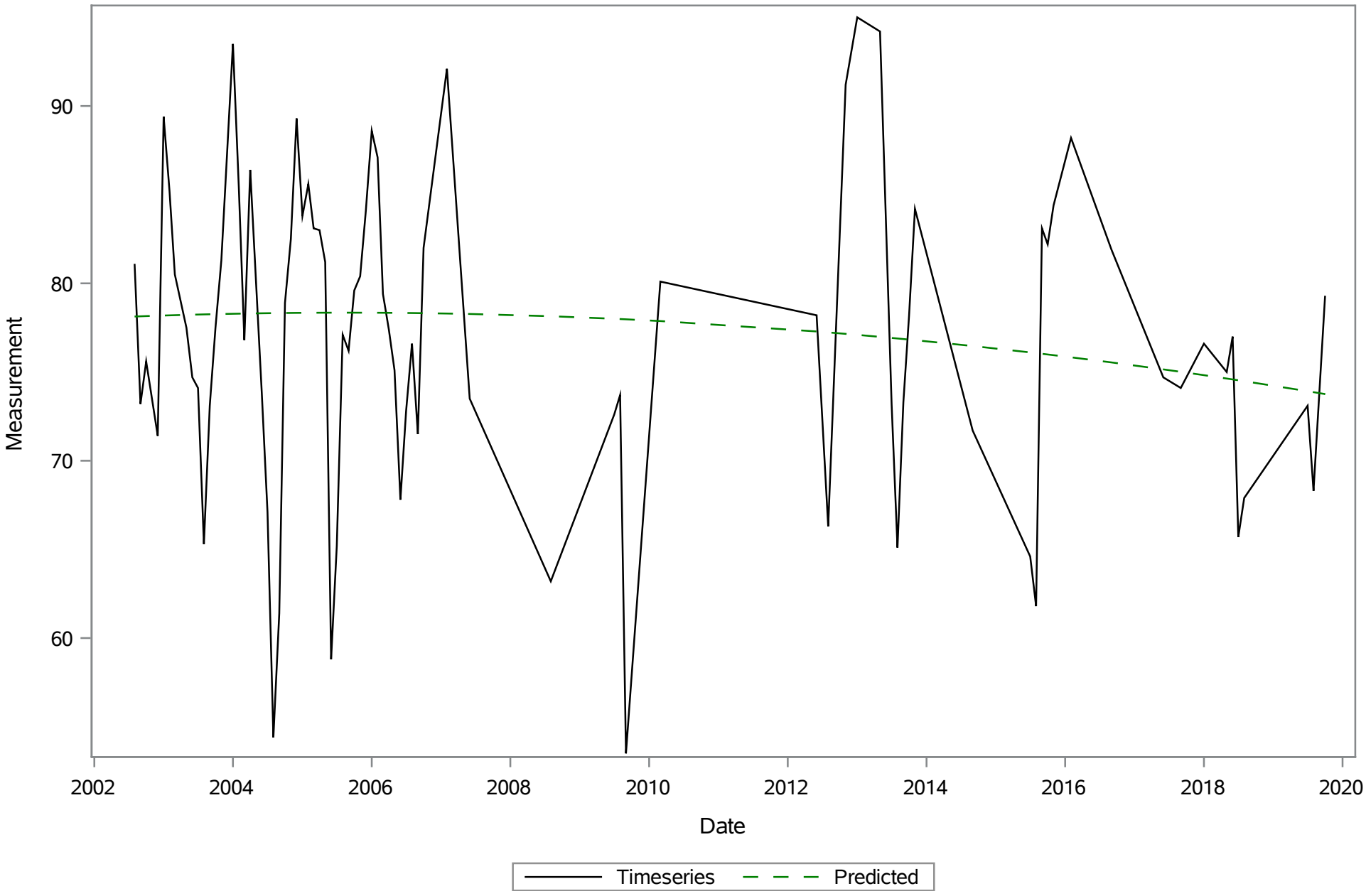
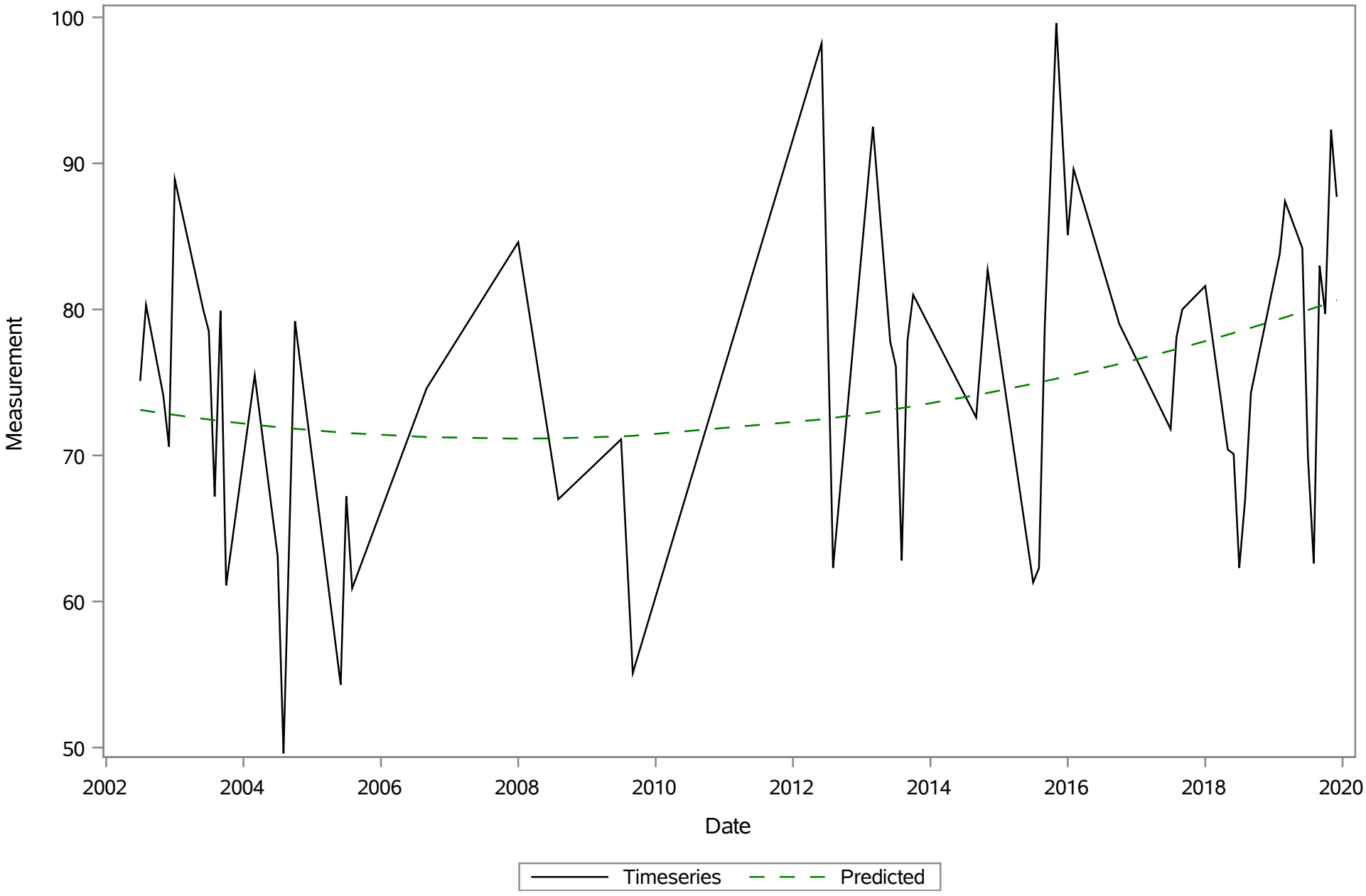
2020
Date
Timeseries
Predicted
ptile
Std

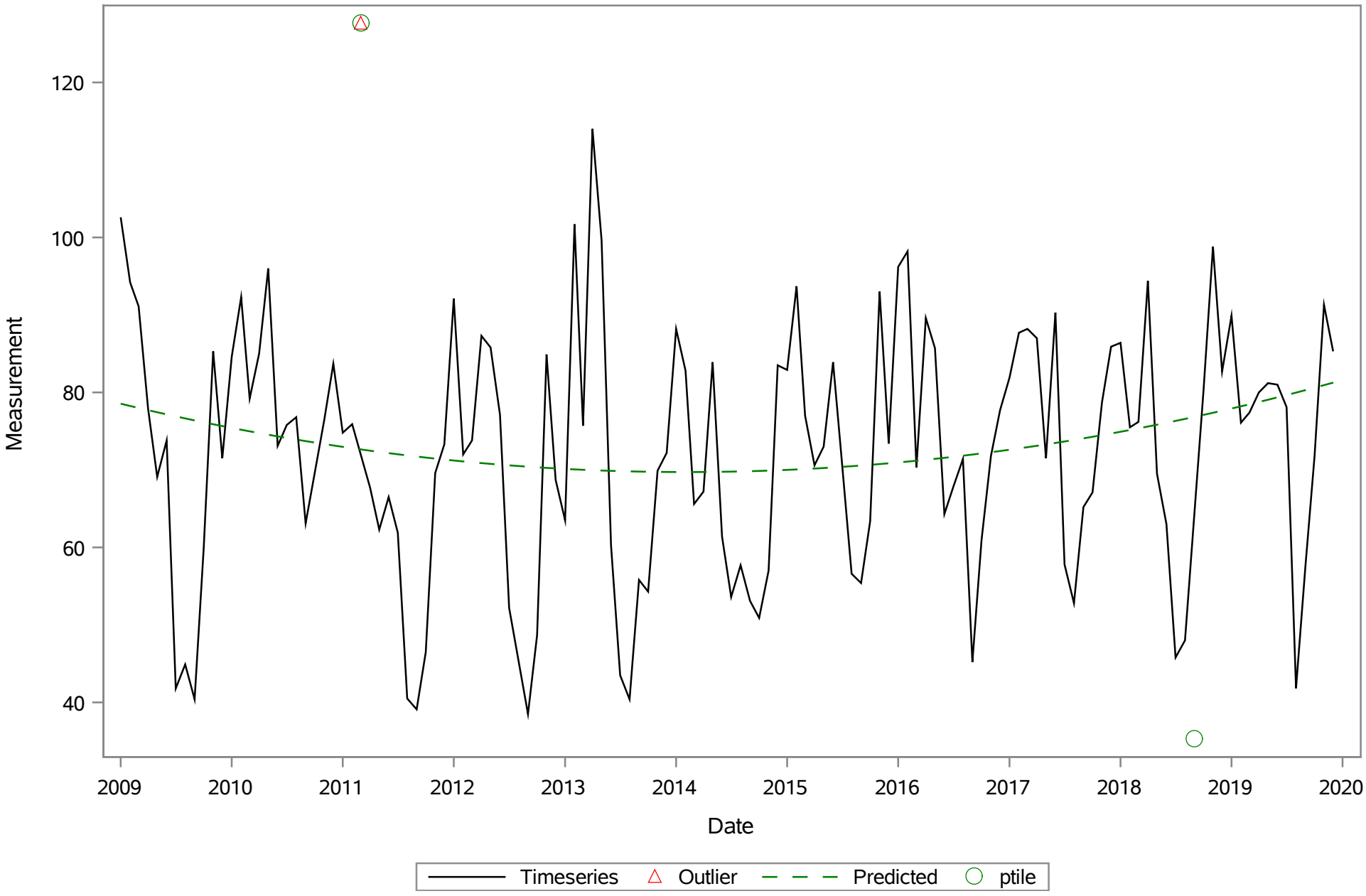
Little Manatee River
182
DO Mid (mg/L)
Site ID = 182

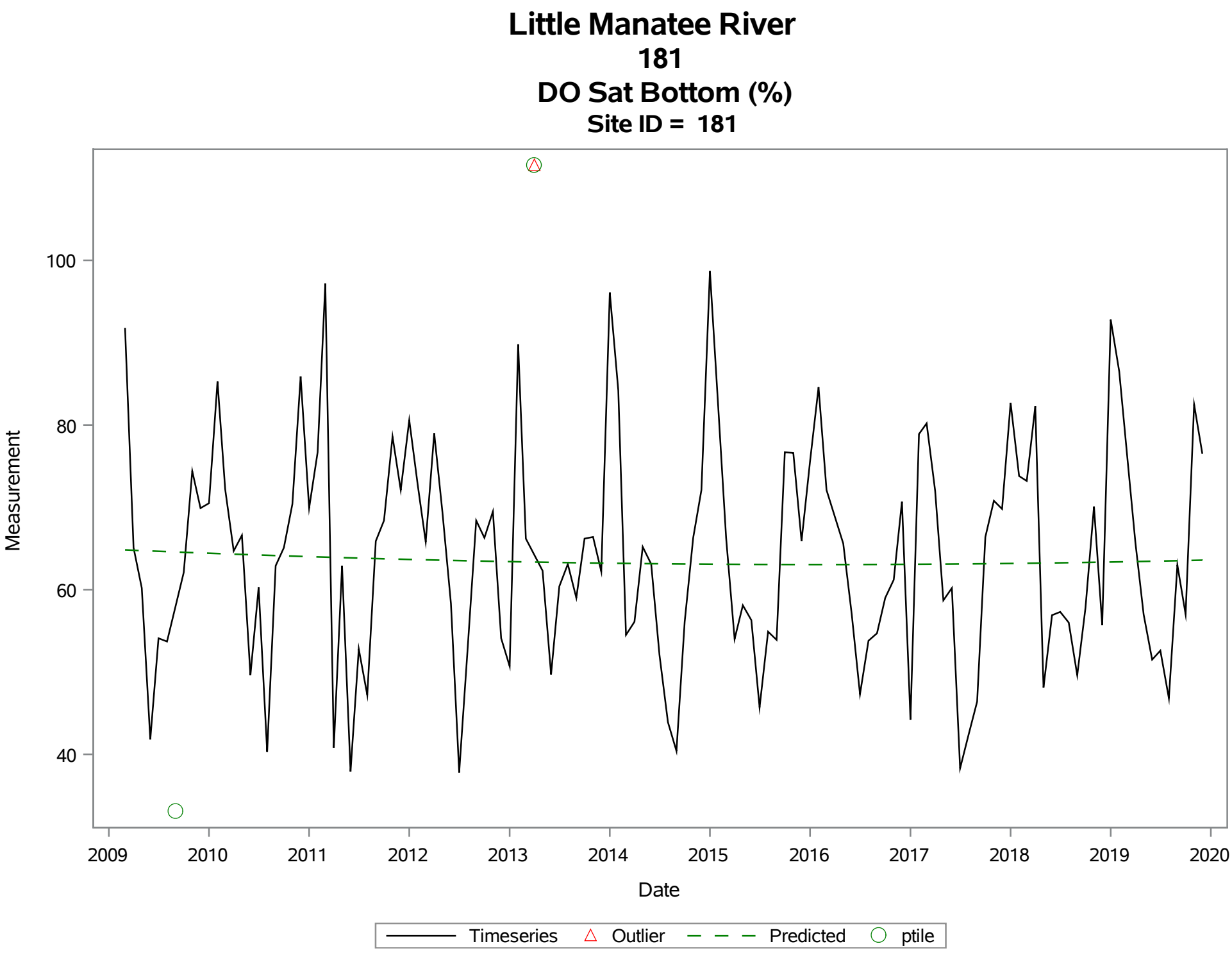


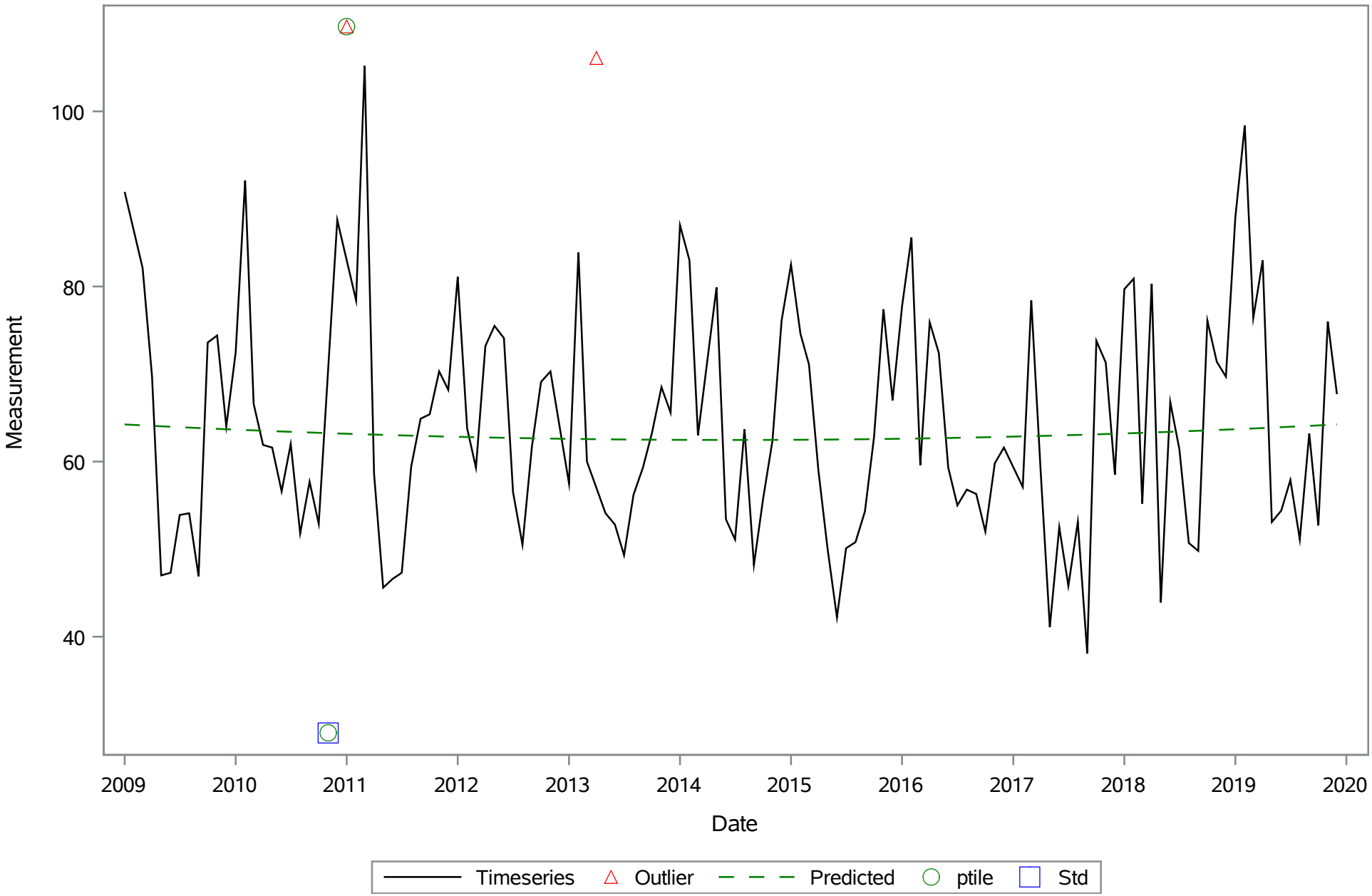

Little Manatee River
112
DO Sat Bottom (%)
Site ID = 112
Measurement
100
80
60
40
20
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
Date
Timeseries
Predicted
ptile
Std


Little Manatee River
113
DO Sat Bottom (%)
Site ID = 113
Measurement
90
80
70
60
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
Date
Timeseries
Predicted


Little Manatee River
140
DO Sat Bottom (%)
Site ID = 140
100
90
80
70
60
50
Measurement
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
Date
Timeseries
Predicted


Little Manatee River
180
DO Sat Bottom (%)
Site ID = 180
120
100
80
60
40
Measurement
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Outlier
Predicted
ptile


Little Manatee River
181
DO Sat Bottom (%)
Site ID = 181
Measurement
100
80
60
40
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Outlier
Predicted
ptile


Little Manatee River
182
DO Sat Bottom (%)
Site ID = 182
Measurement
100
80
60
40
2009
2010
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2012
2013
2014
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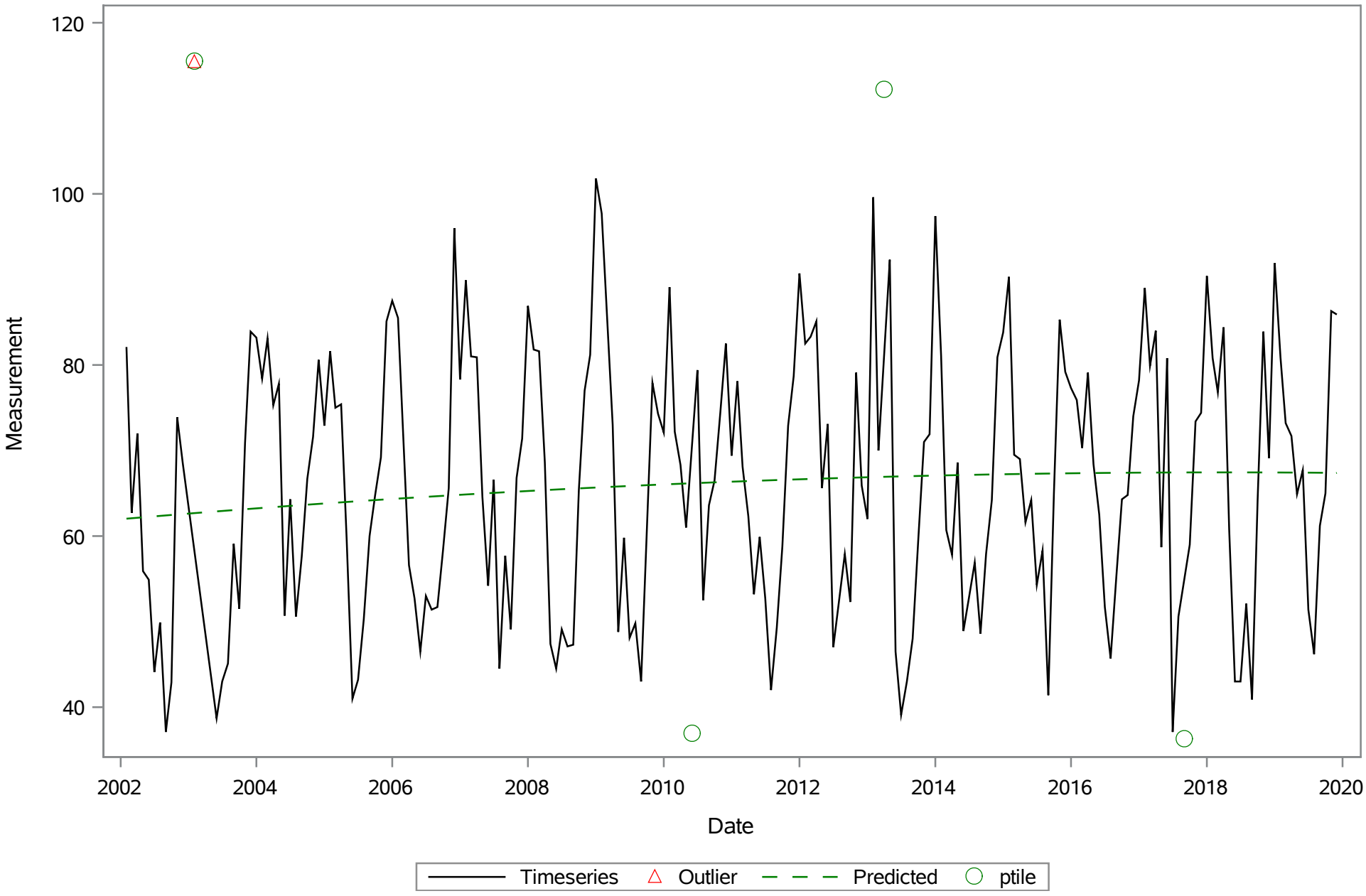
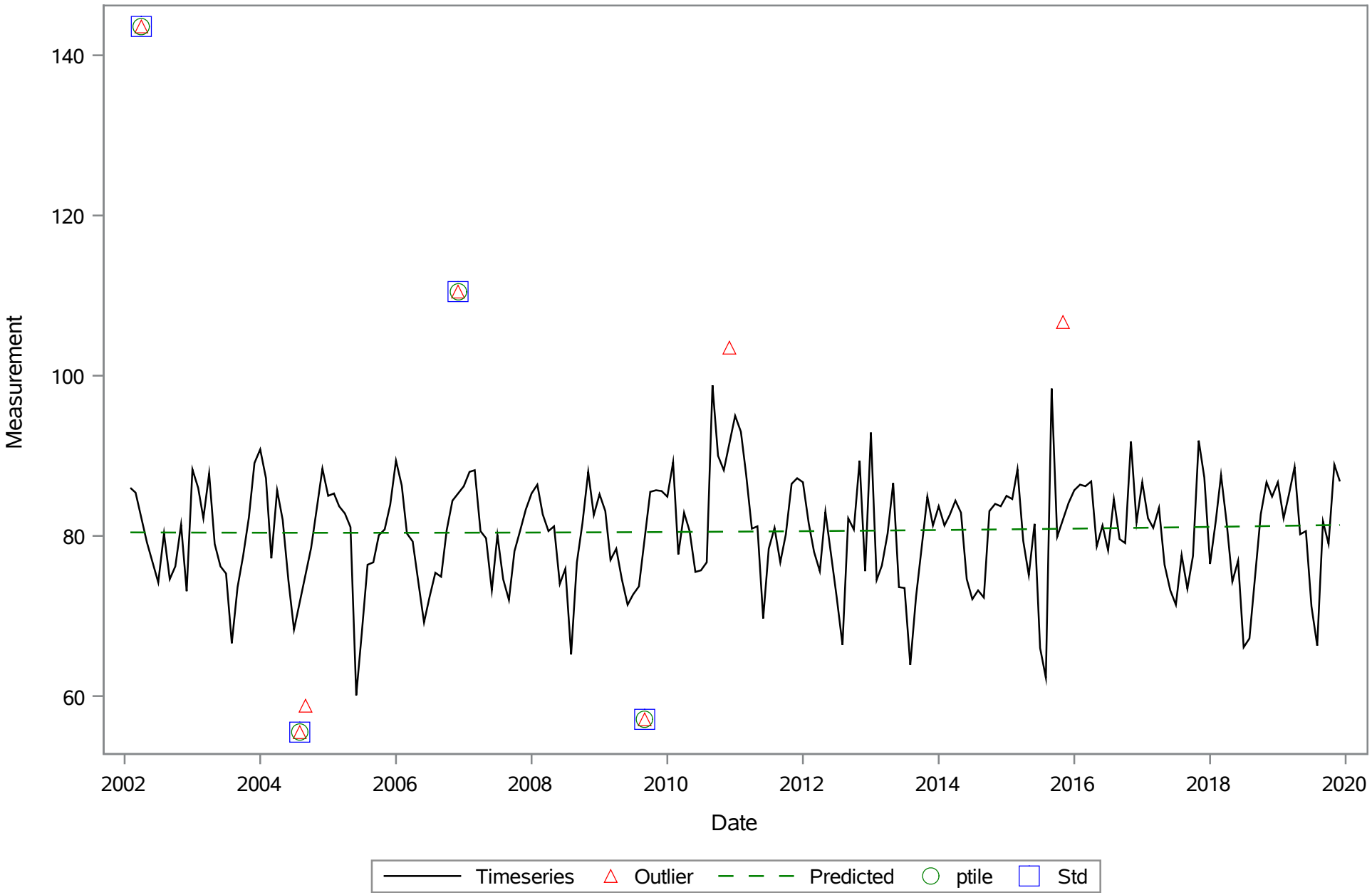
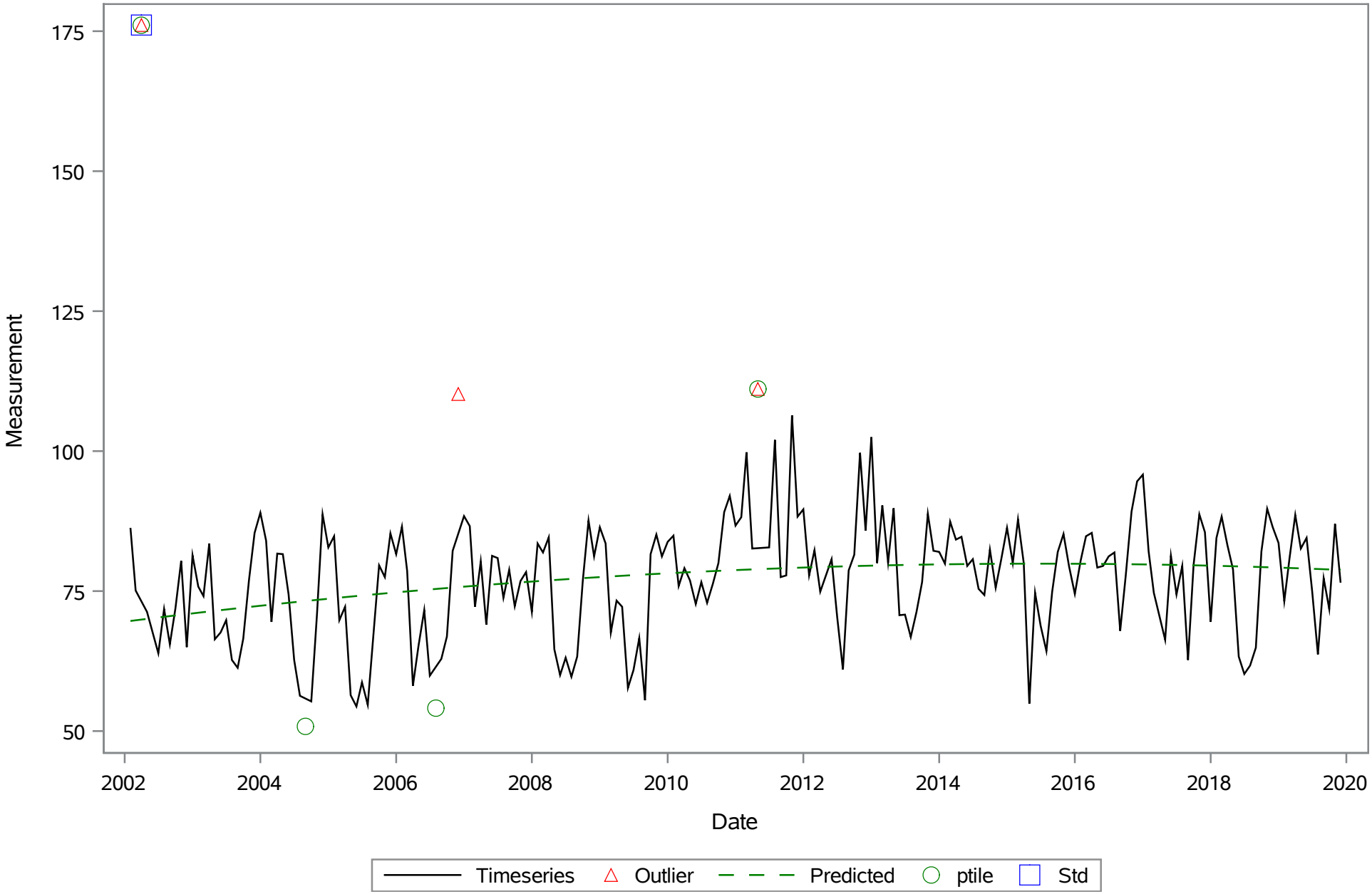
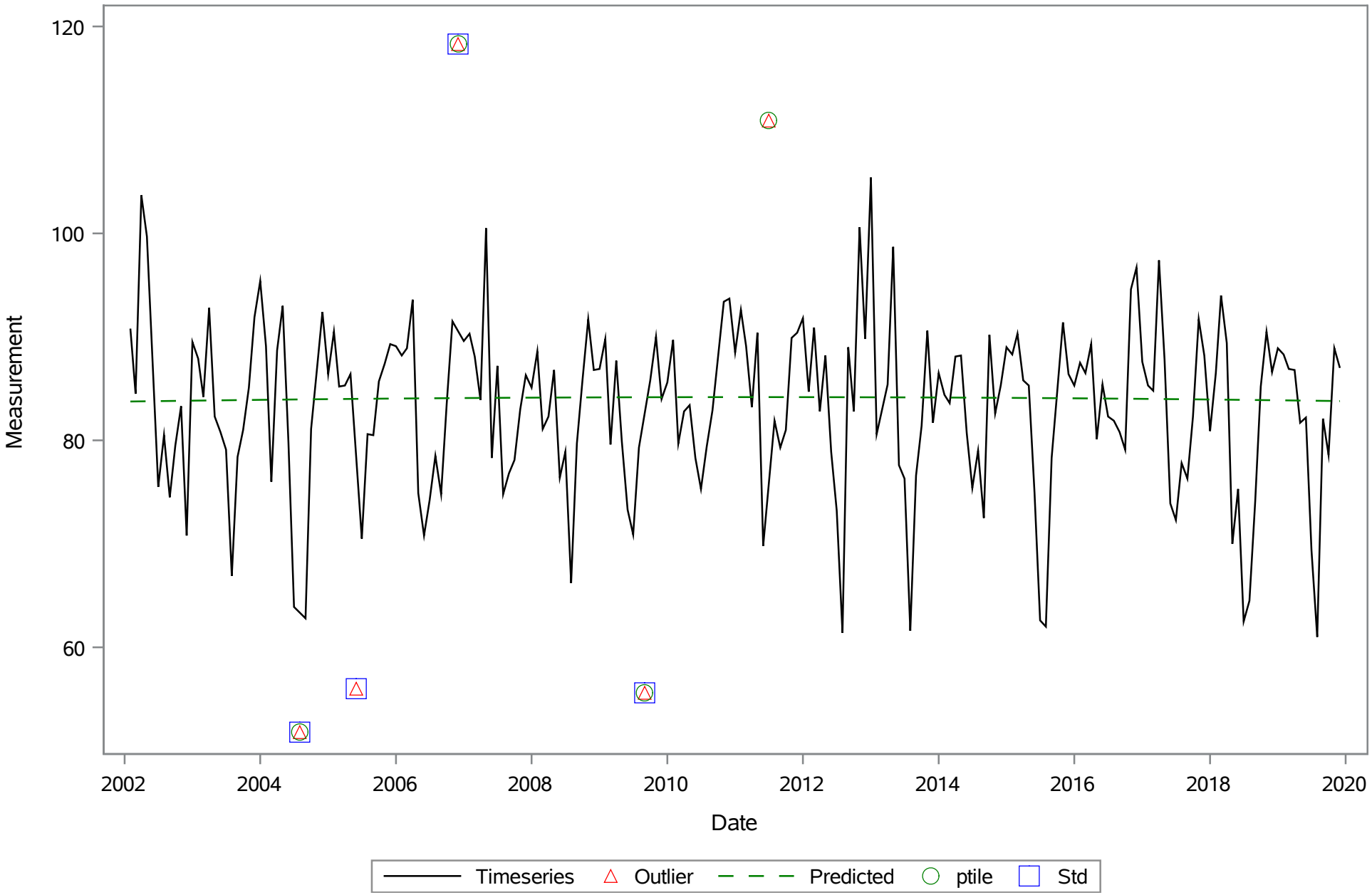
2016
2017
2018
2019
2020
Date
Timeseries
Outlier
Predicted
ptile
Std


Little Manatee River
112
DO Sat Mid (%)
Site ID = 112
120
100
80
60
40
Measurement
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
Date
Timeseries
Outlier
Predicted
ptile


Little Manatee River
113
DO Sat Mid (%)
Site ID = 113
Measurement
140
120
100
80
60
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

Little Manatee River
129
DO Sat Mid (%)
Site ID = 129




Little Manatee River
140
DO Sat Mid (%)
Site ID = 140
120
100
80
60
Measurement
2002
2004
2006
2008
2010
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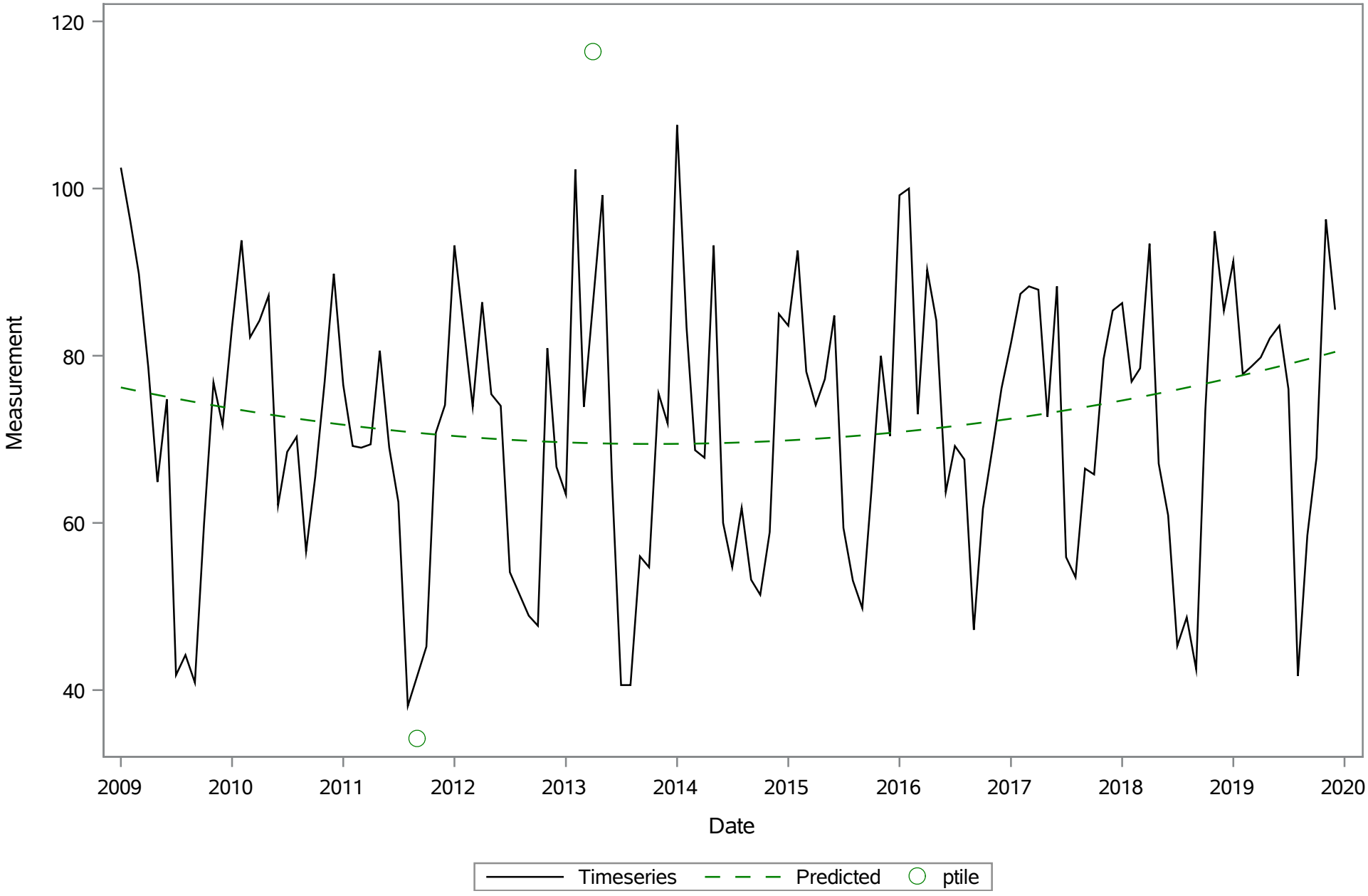
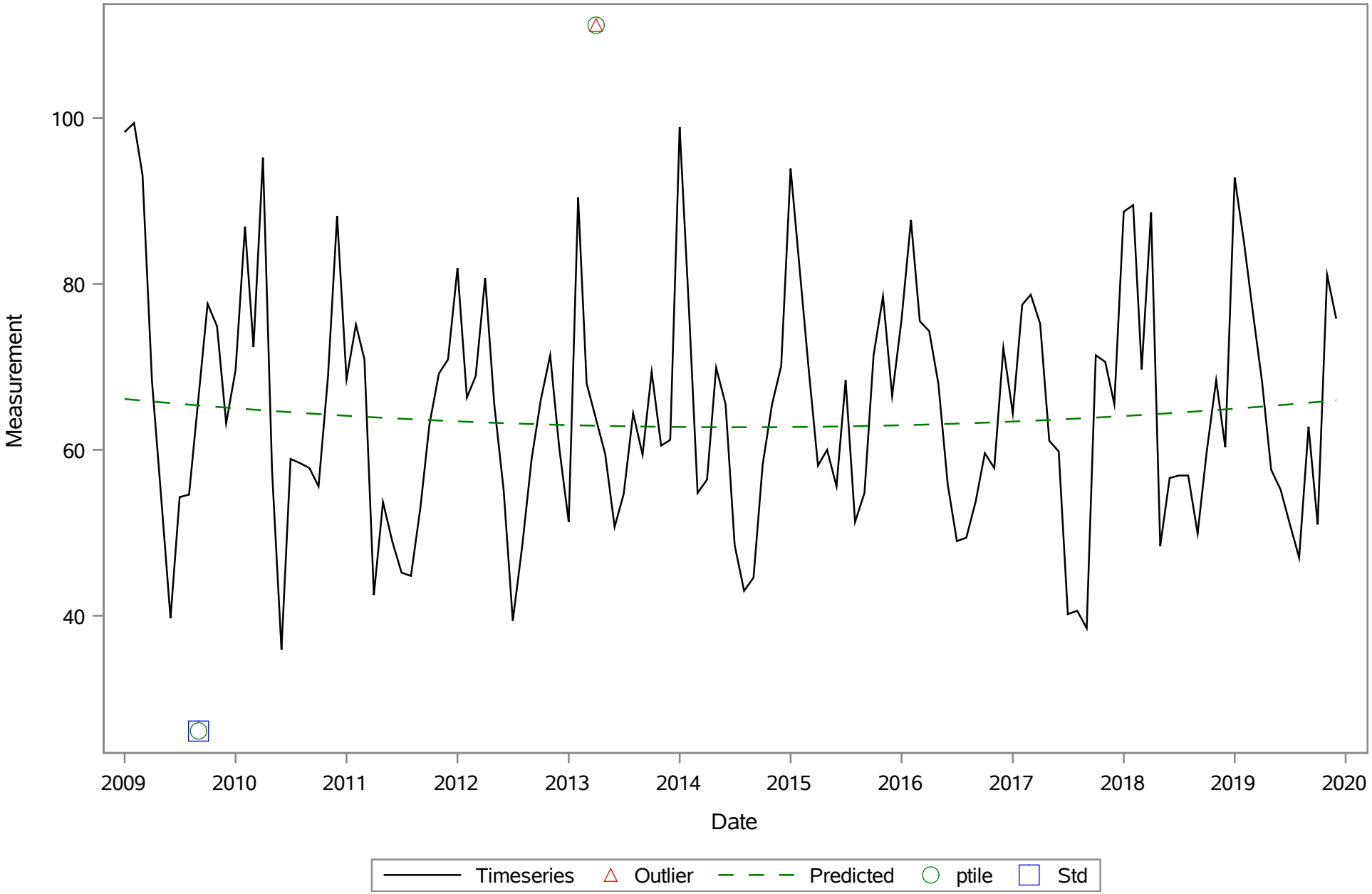
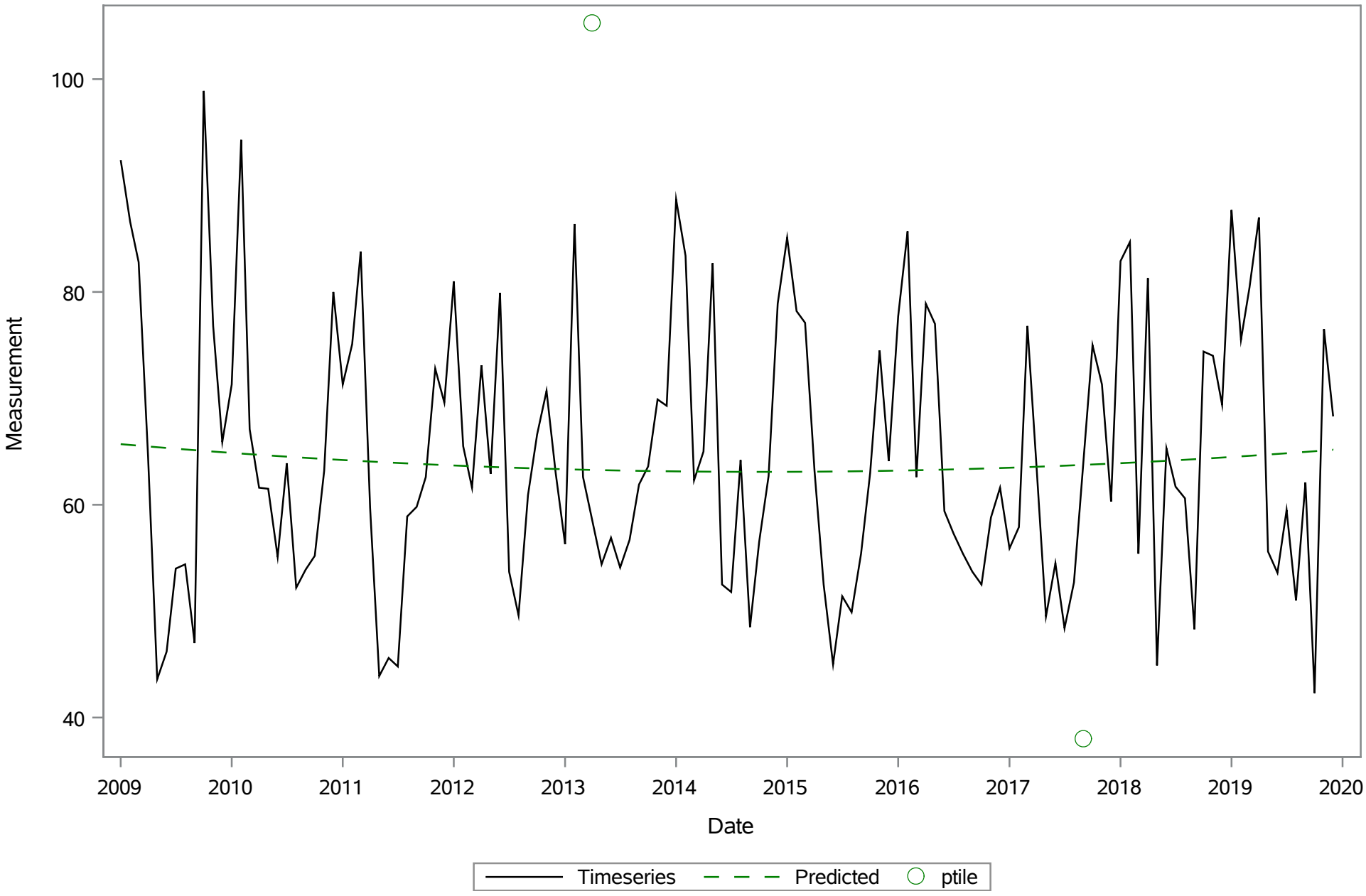
2014
2016
2018
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

Little Manatee River
180
DO Sat Mid (%)
Site ID = 180

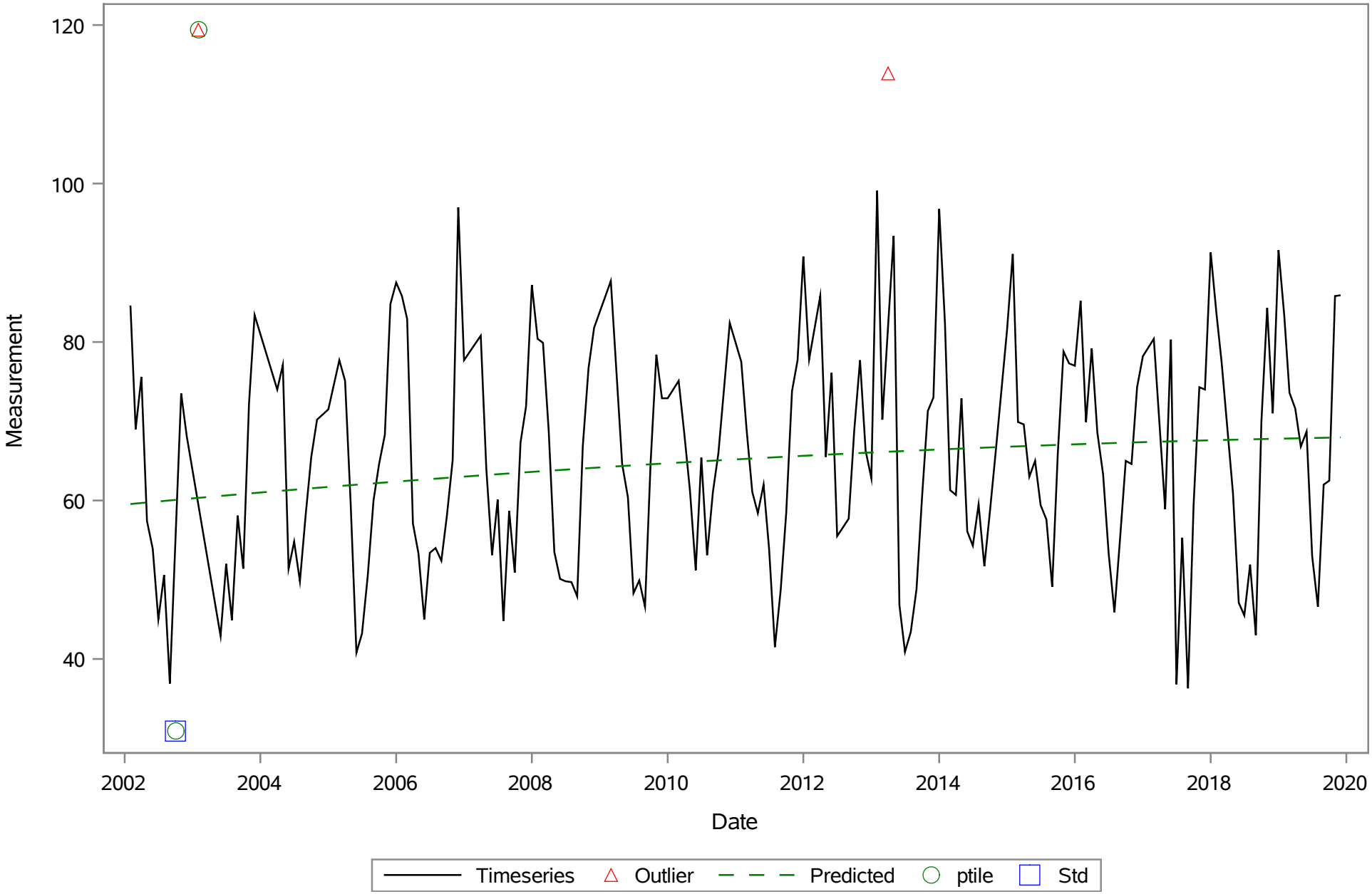


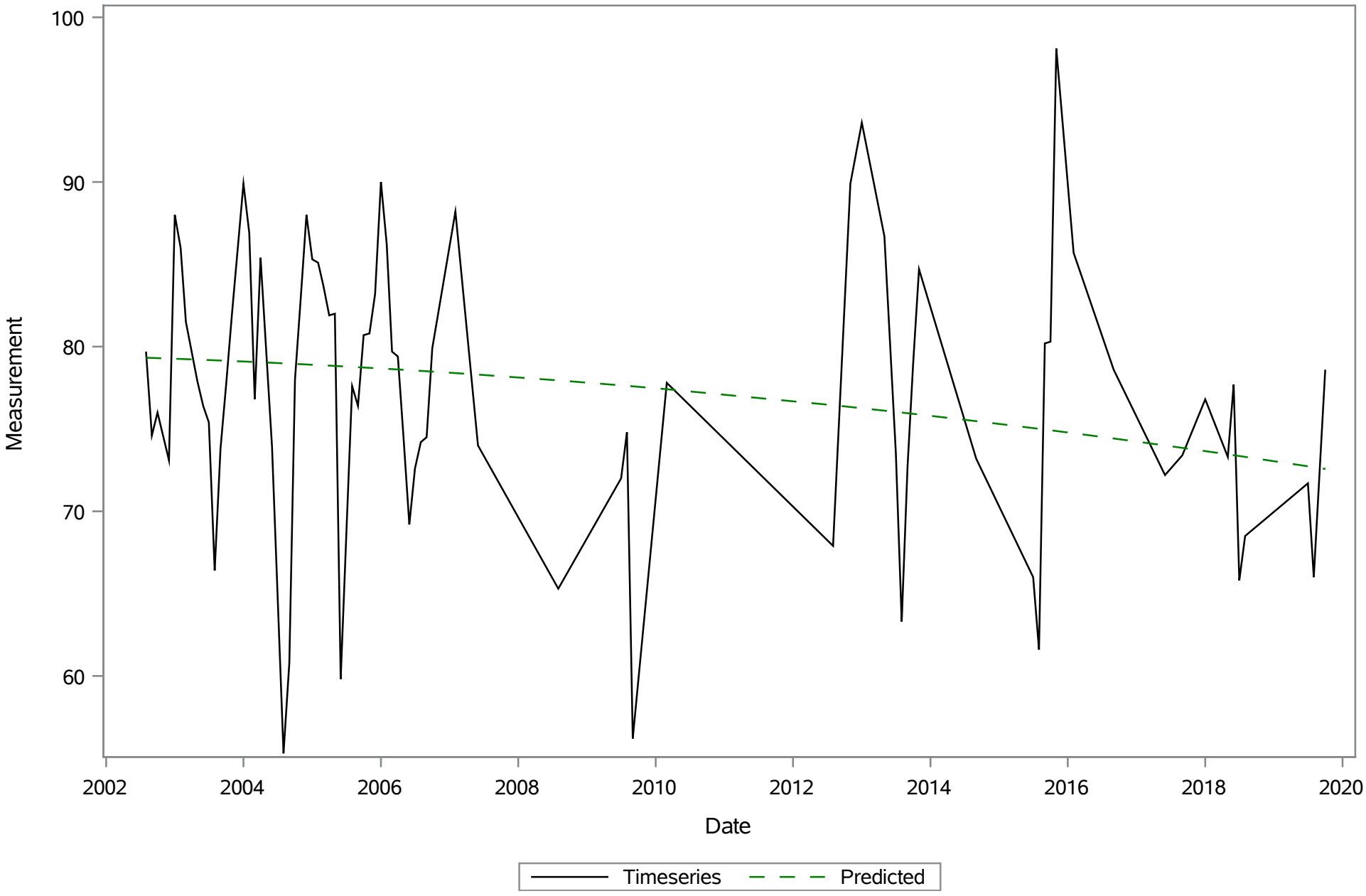
Little Manatee River
181
DO Sat Mid (%)
Site ID = 181



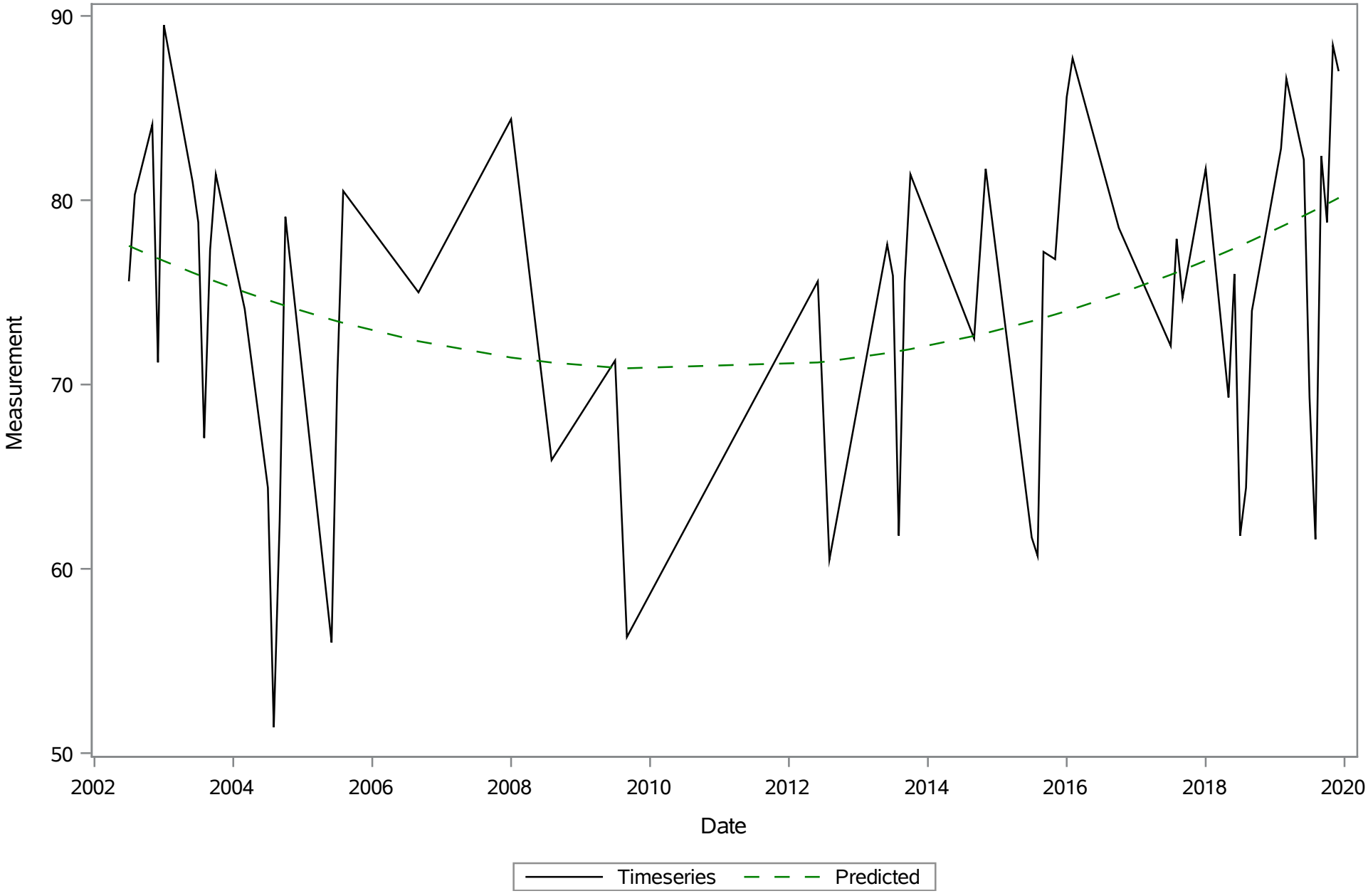

Little Manatee River
182
DO Sat Mid (%)
Site ID = 182
100
80
60
40
Measurement
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Predicted
ptile

Little Manatee River
112
DO Sat Top (%)
Site ID = 112

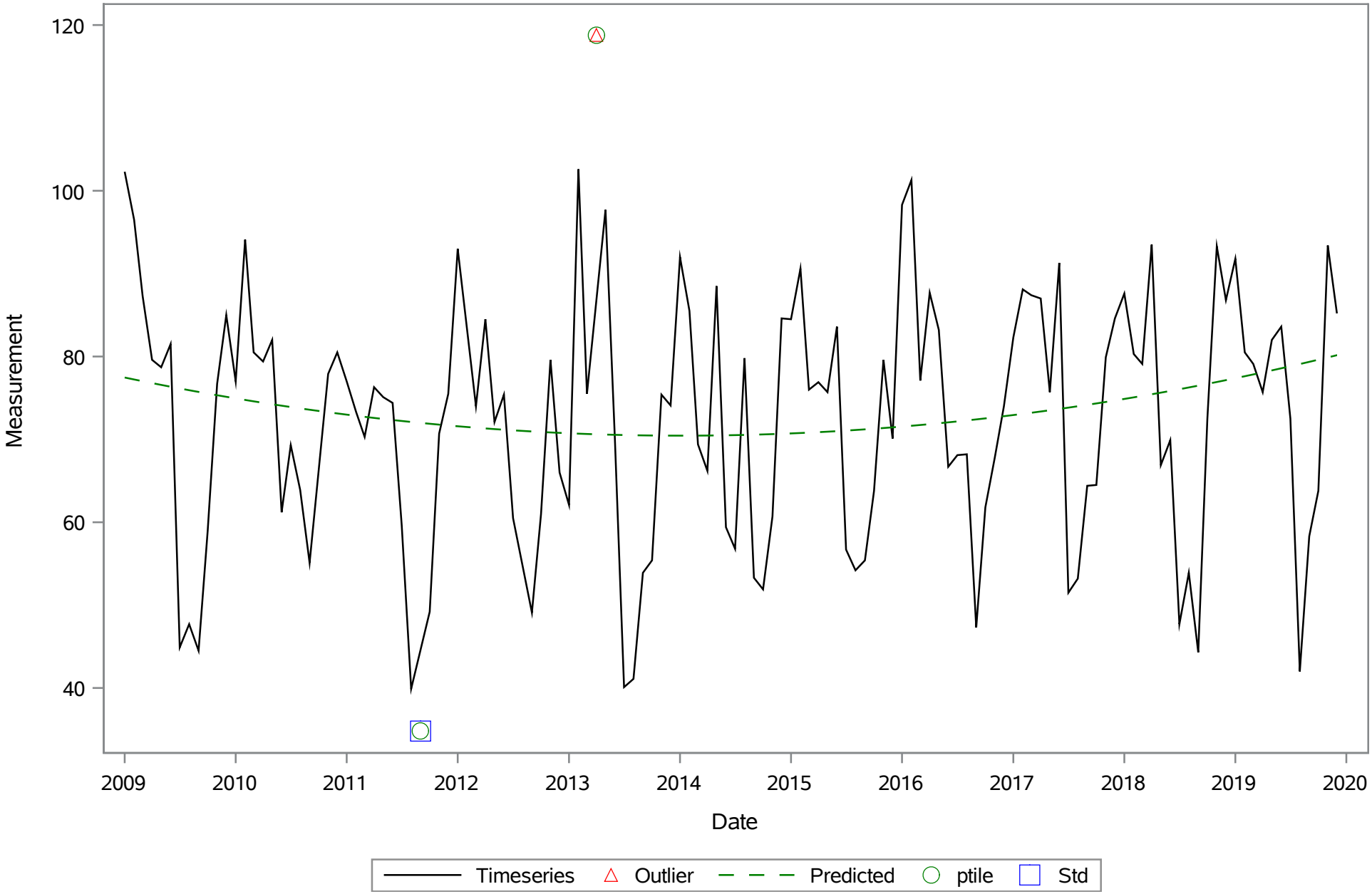


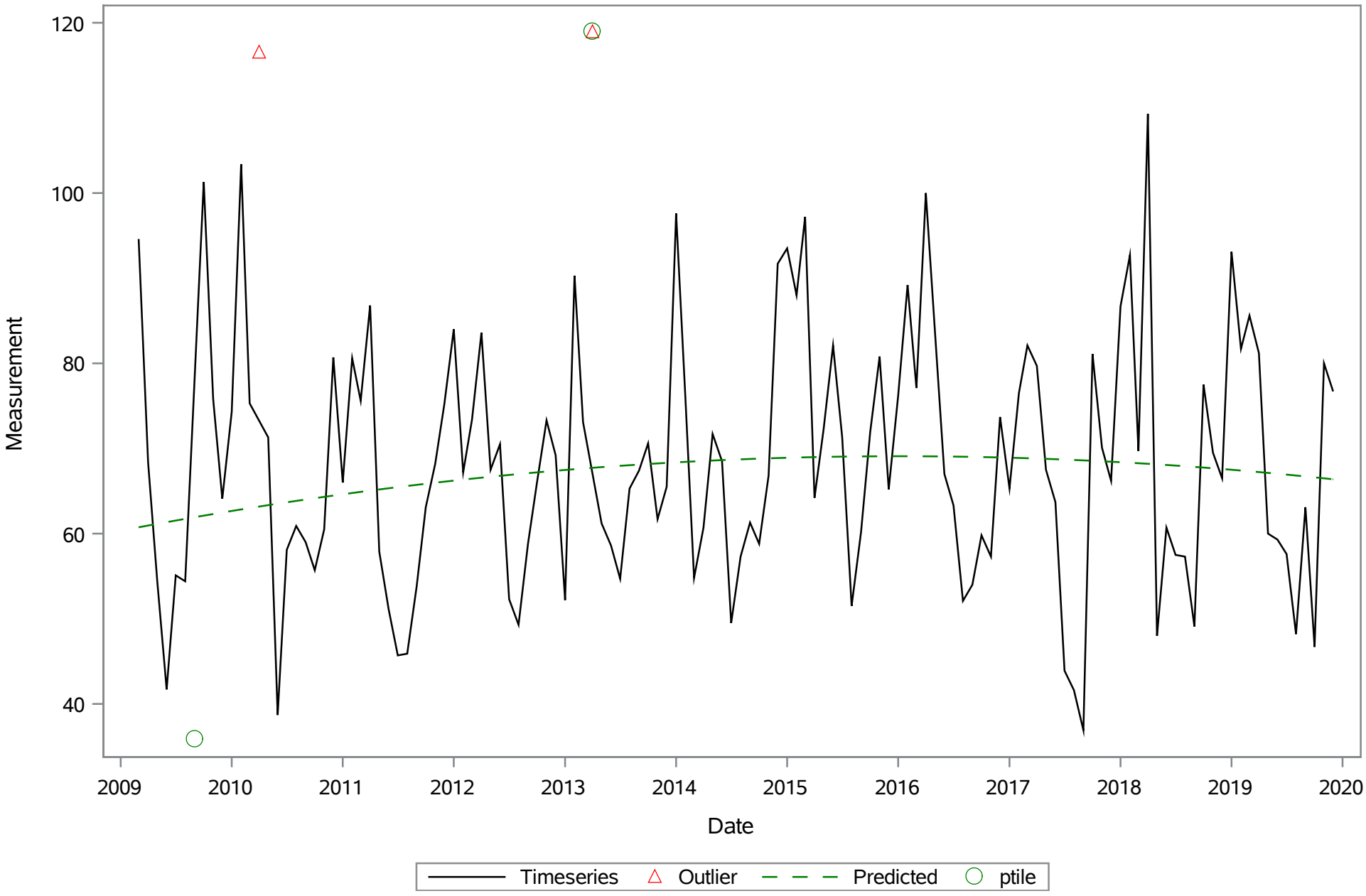

Little Manatee River
113
DO Sat Top (%)
Site ID = 113
100
90
80
70
60
Measurement
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
Date
Timeseries
Predicted

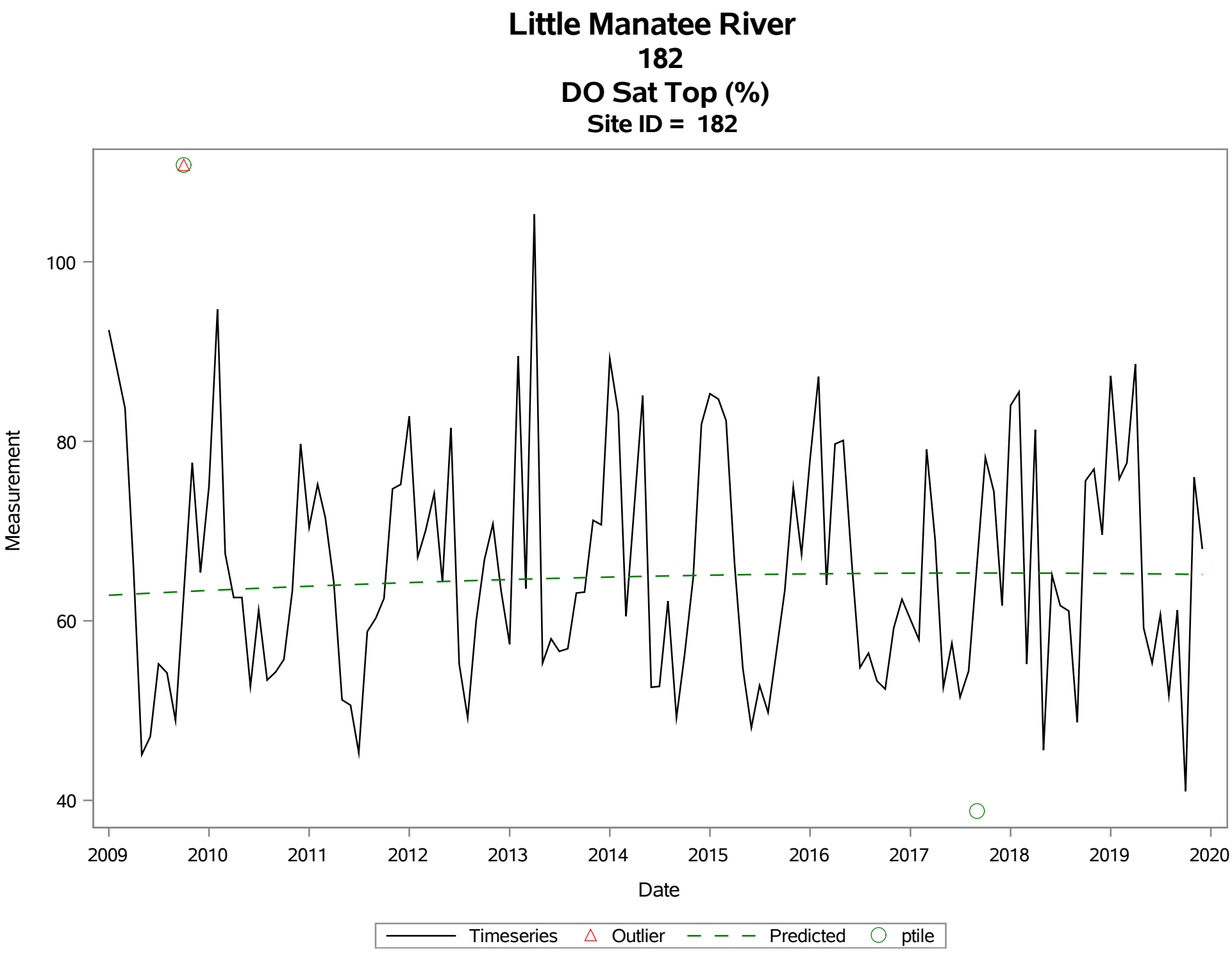
Little Manatee River
140
DO Sat Top (%)
Site ID = 140

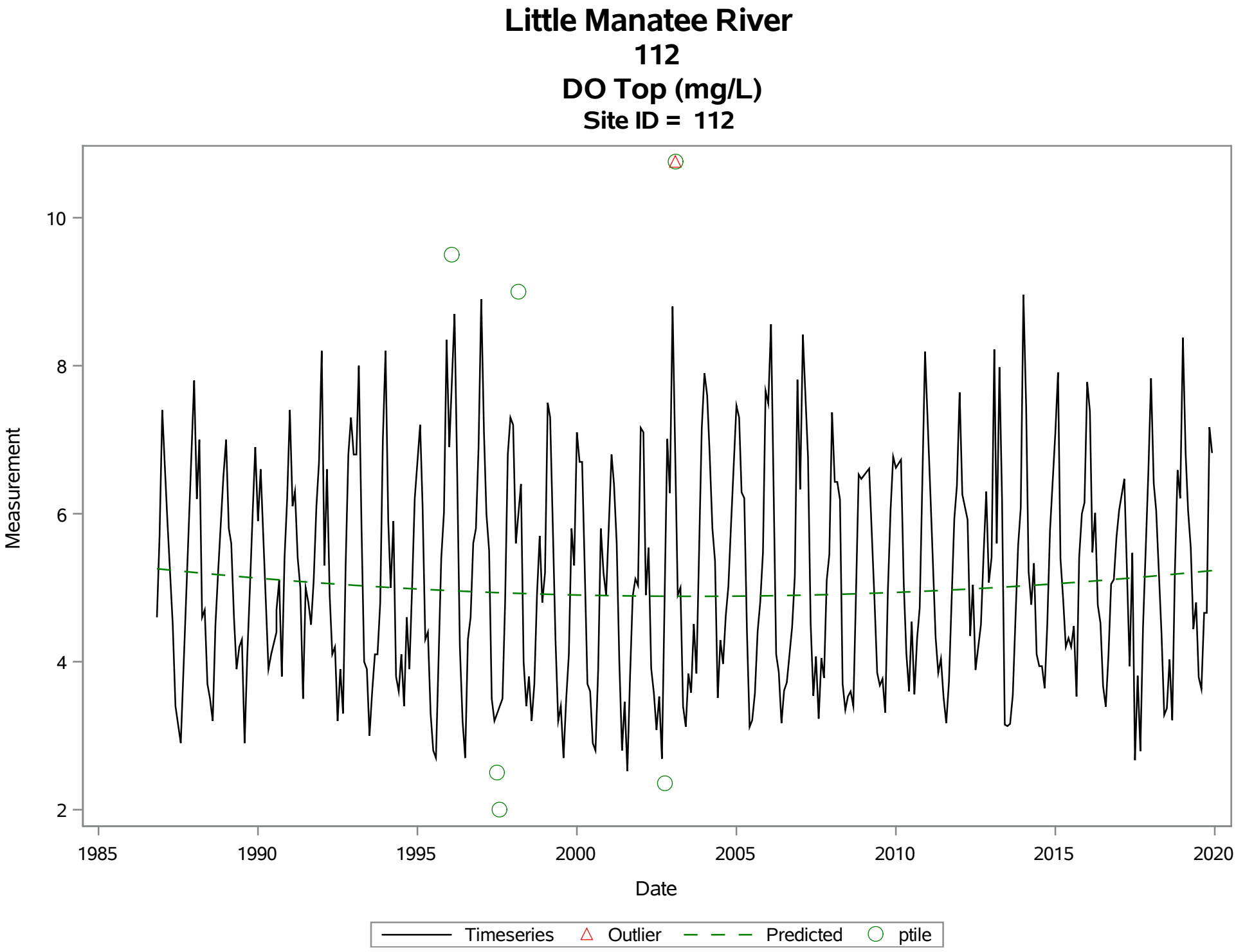


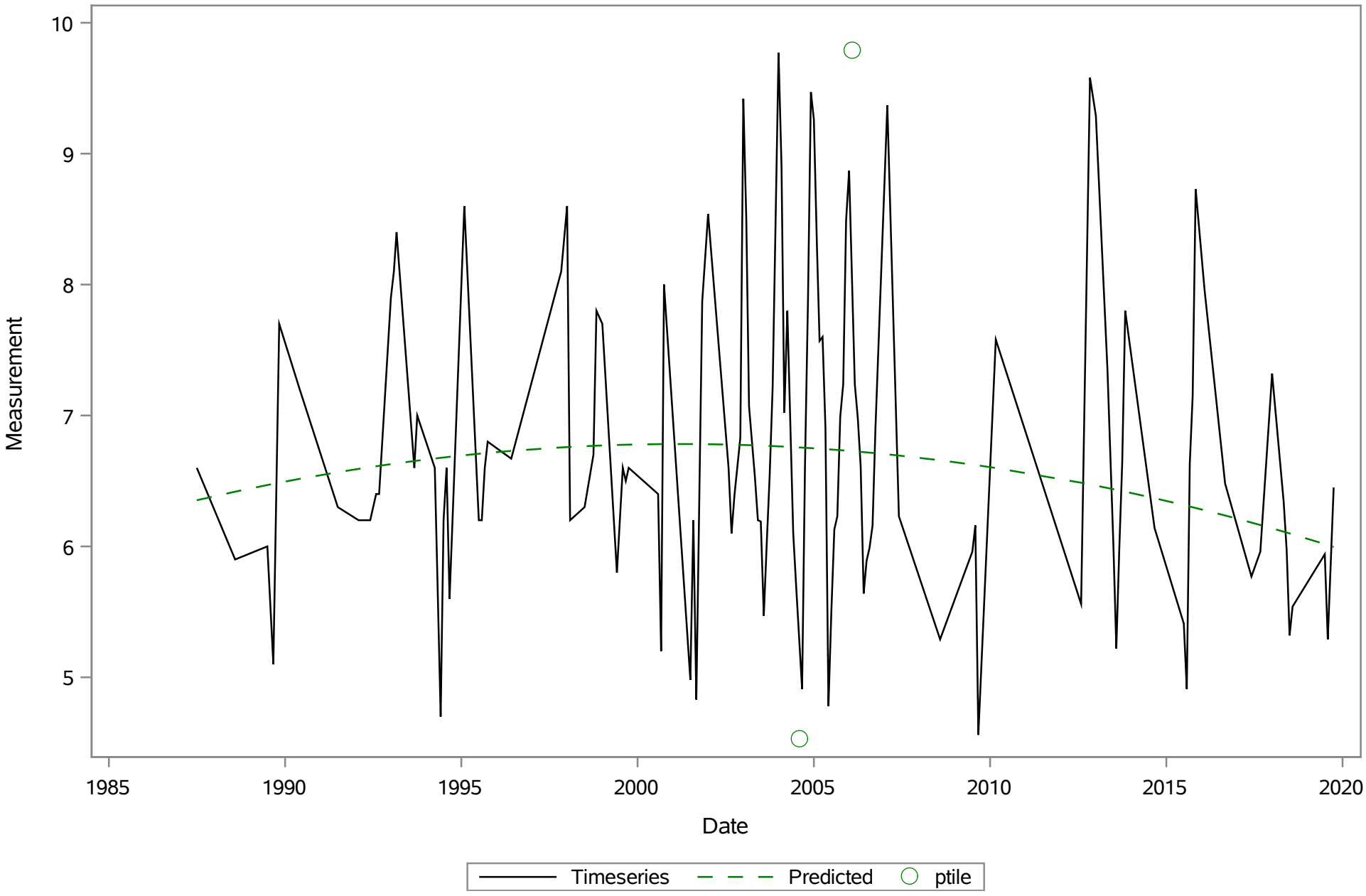
Little Manatee River
180
DO Sat Top (%)
Site ID = 180

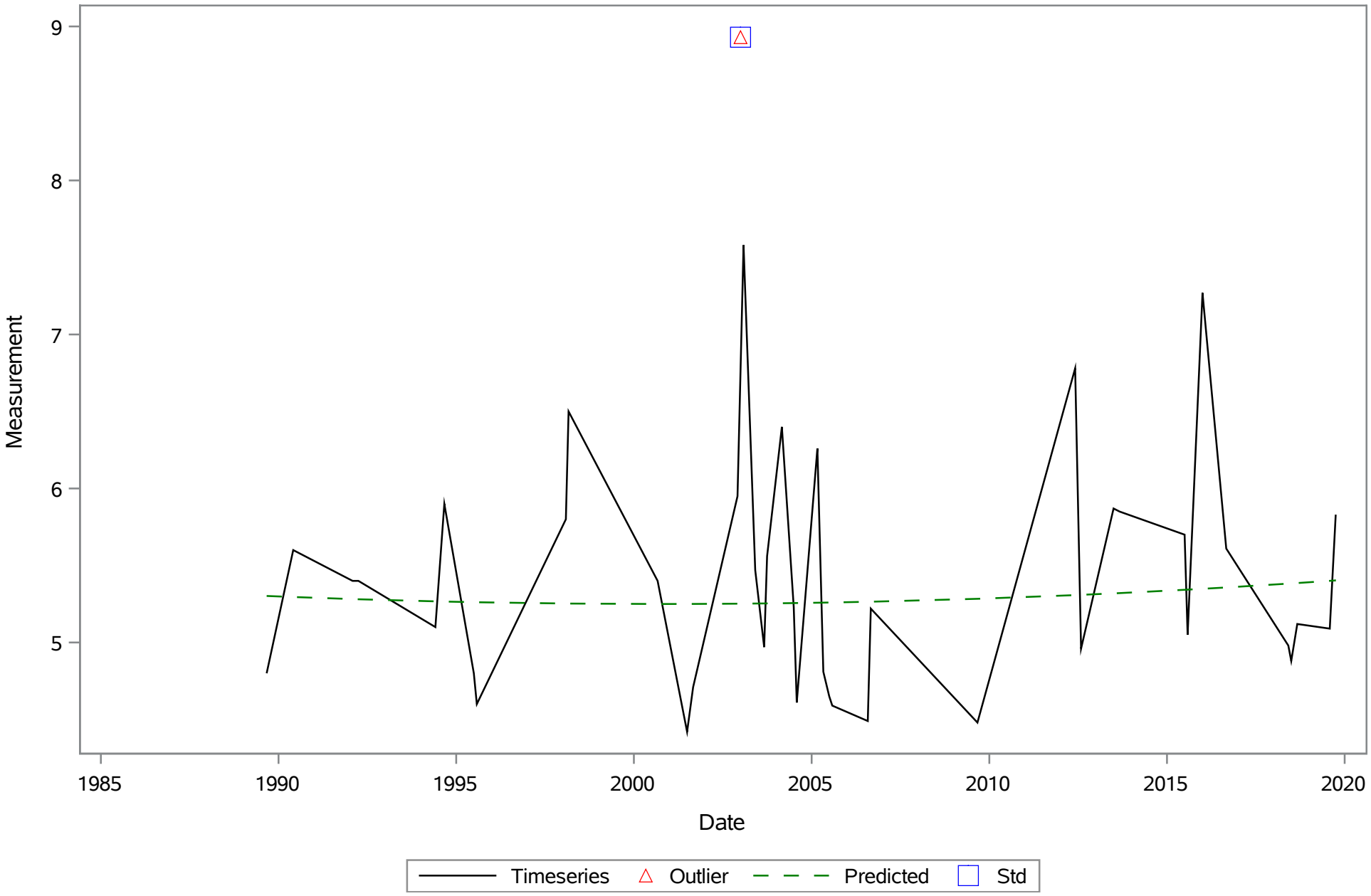


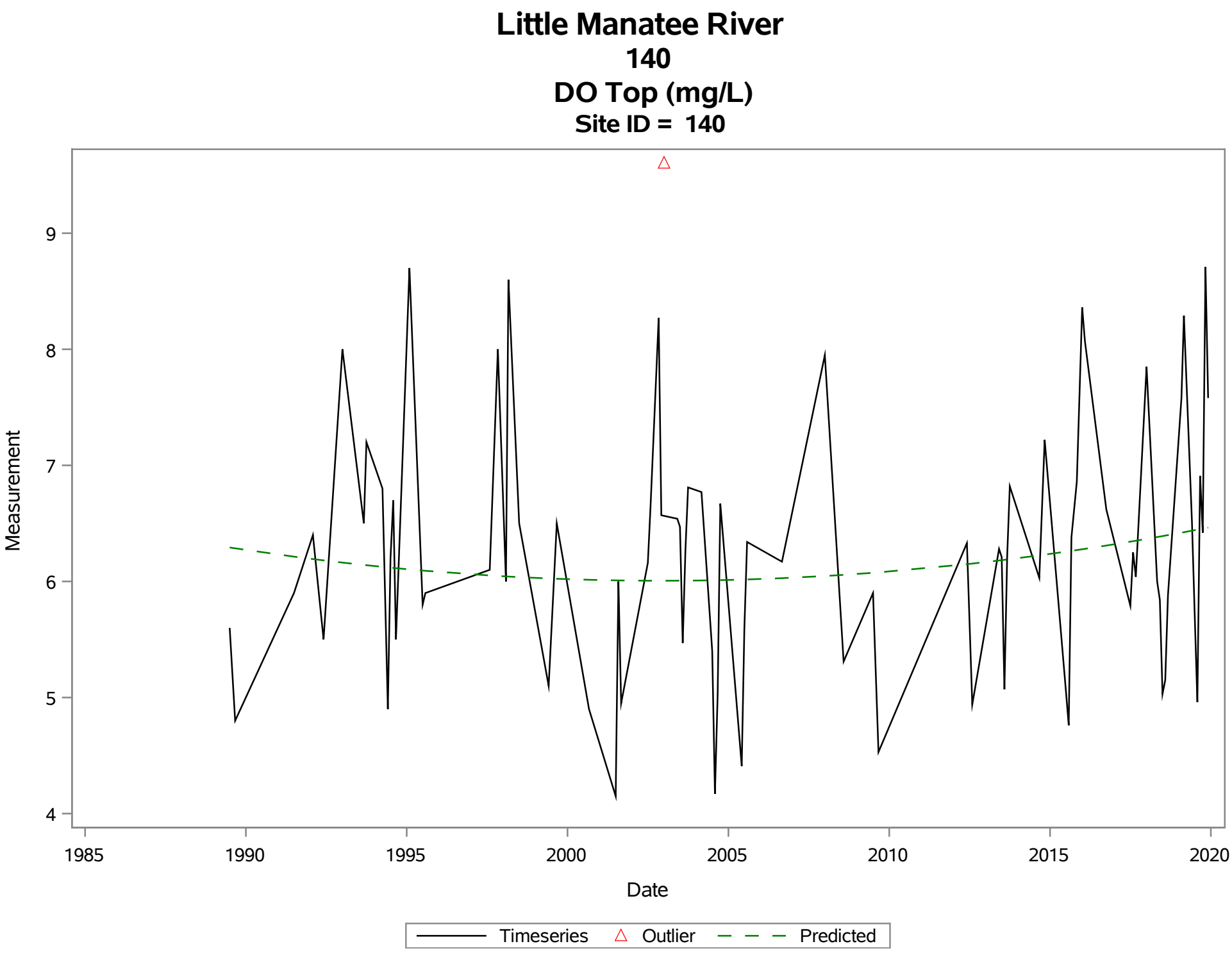

Little Manatee River
181
DO Sat Top (%)
Site ID = 181
120
100
80
60
40
Measurement
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Outlier
Predicted
ptile

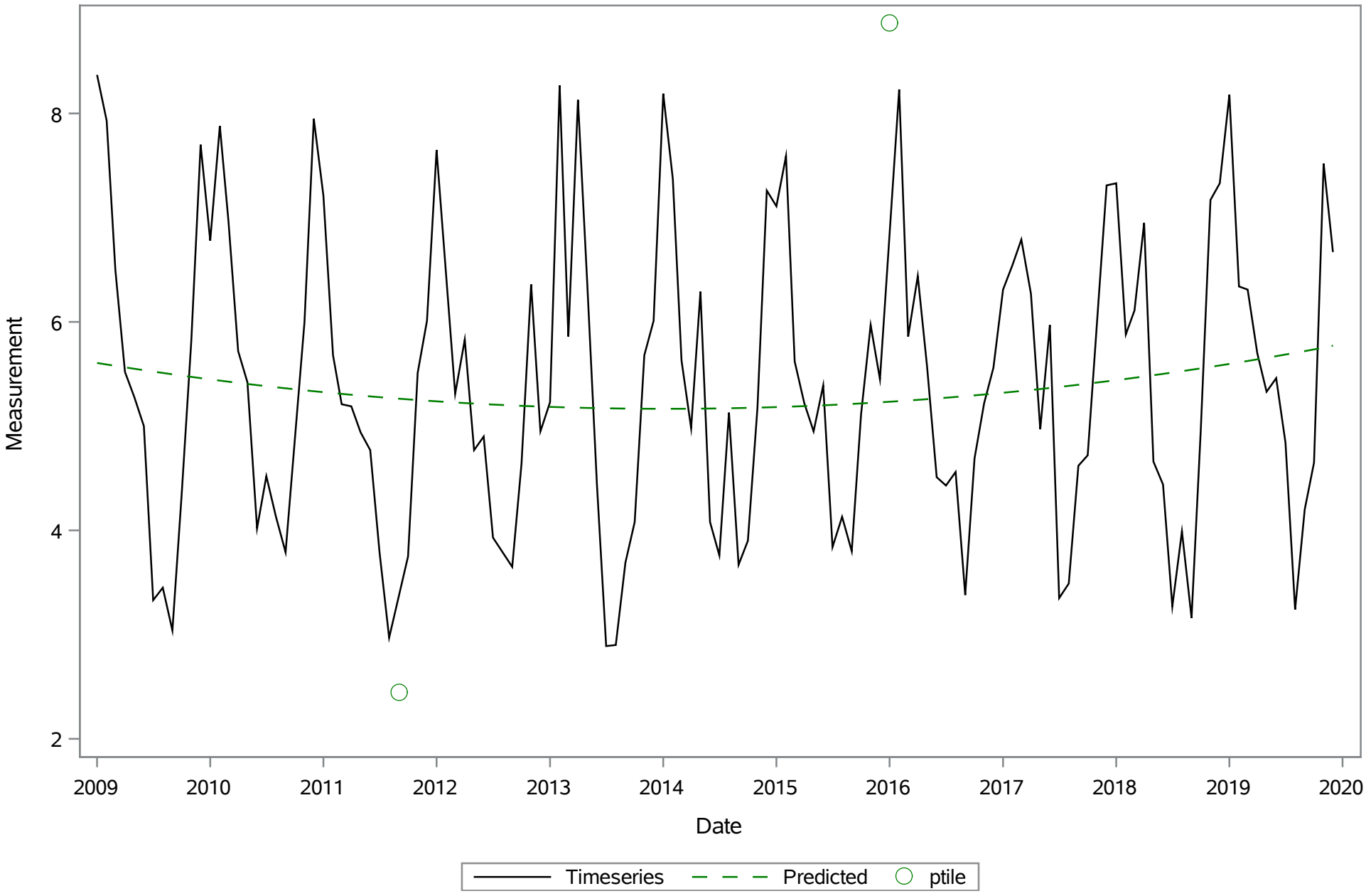

Little Manatee River
182
DO Sat Top (%)
Site ID = 182
Measurement
100
80
60
40
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Outlier
Predicted
ptile

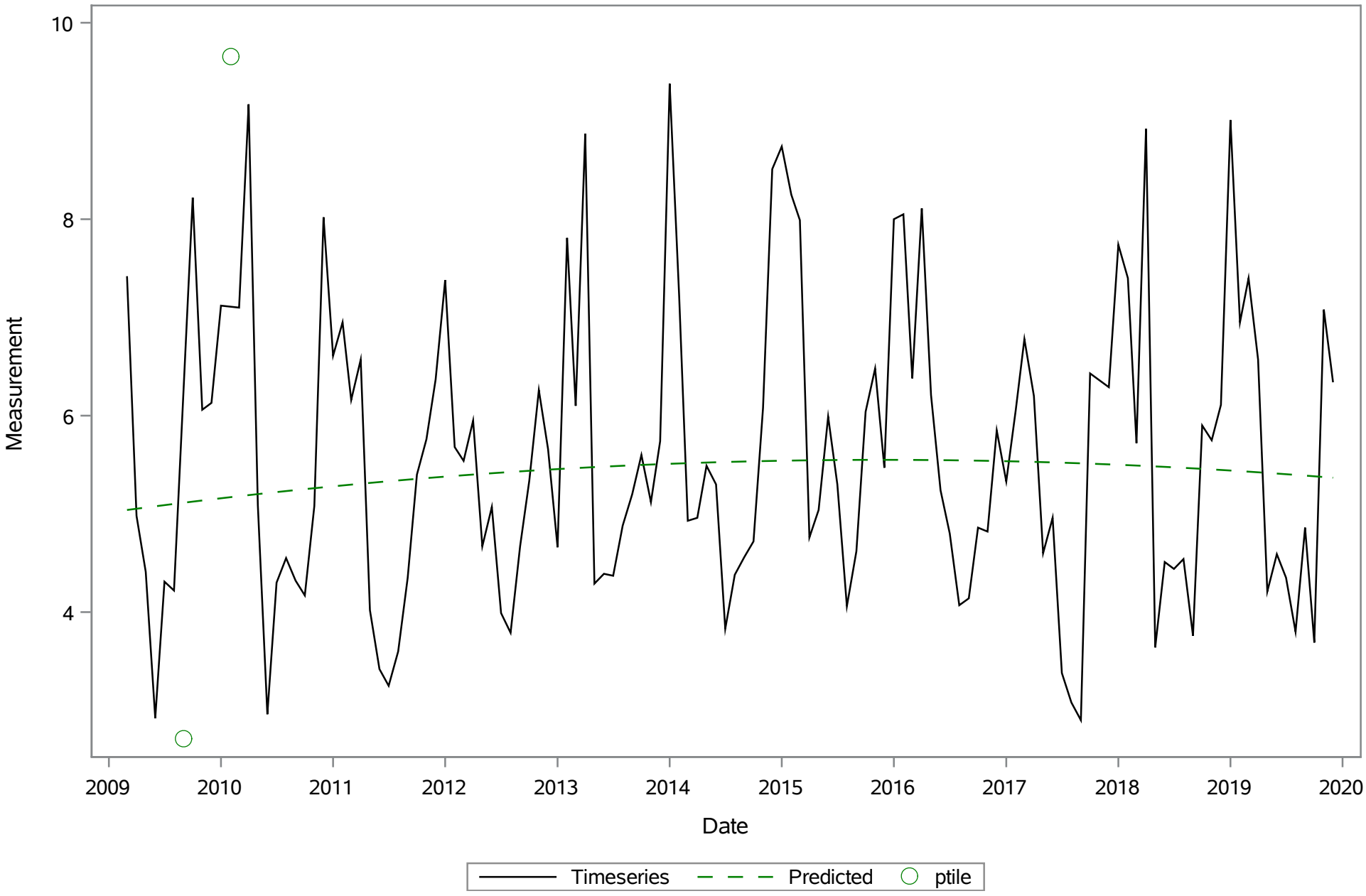

Little Manatee River
112
DO Top (mg/L)
Site ID = 112
Measurement
10
8
6
4
2
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile

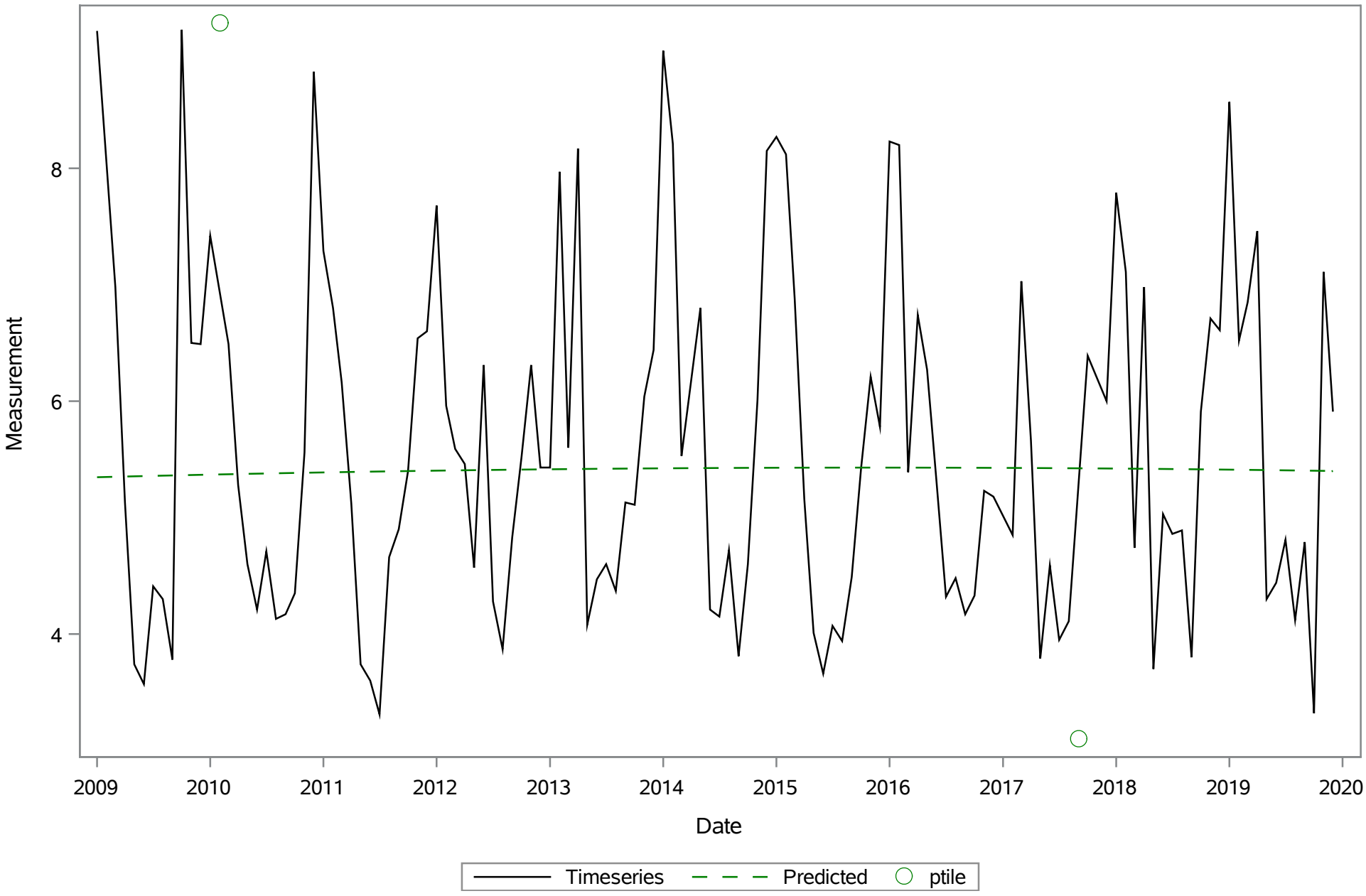

Little Manatee River
113
DO Top (mg/L)
Site ID = 113
Measurement
10
9
8
7
6
5
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Predicted
ptile


Little Manatee River
129
DO Top (mg/L)
Site ID = 129
Measurement
9
8
7
6
5
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
Std

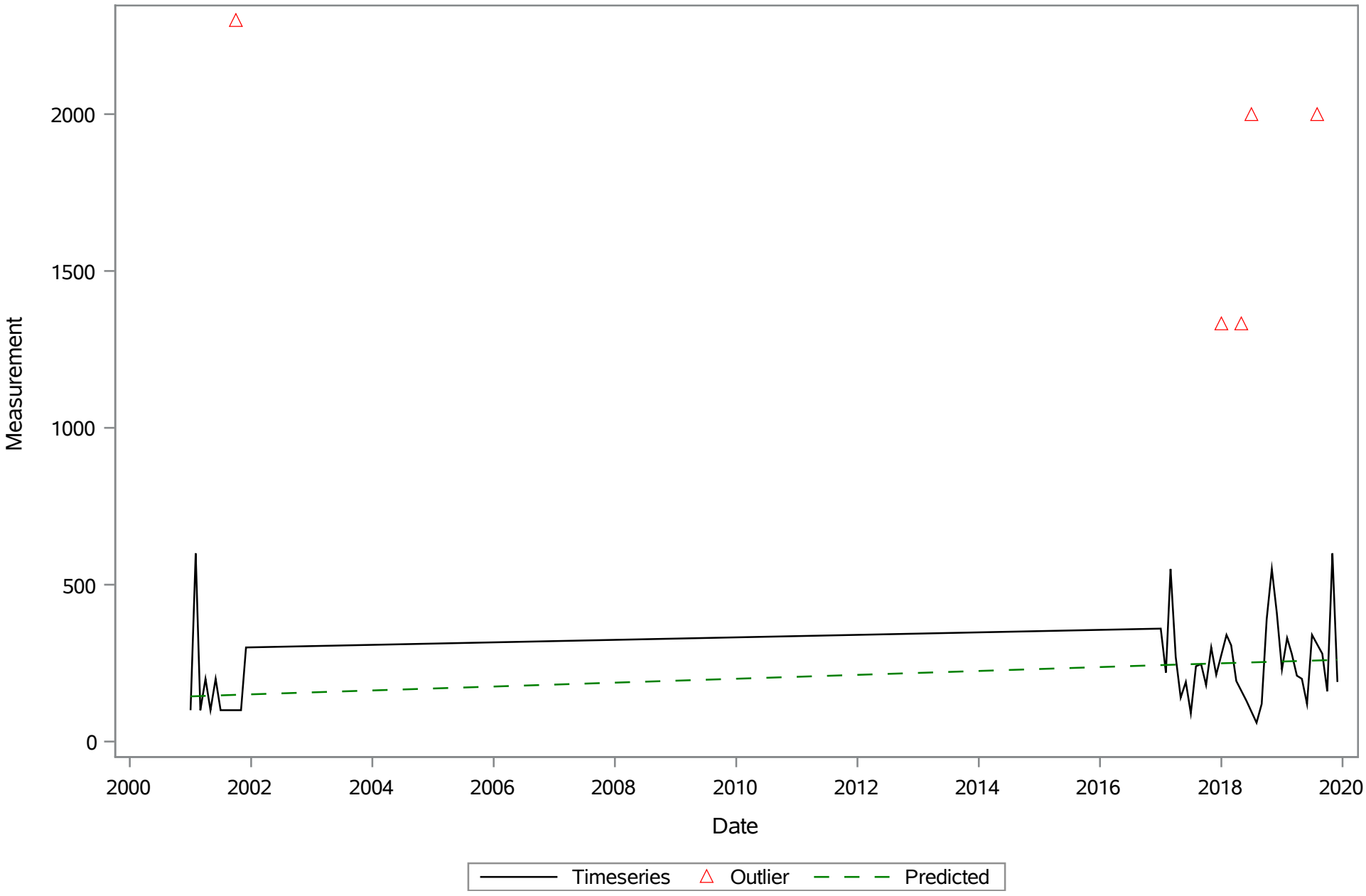

Little Manatee River
140
DO Top (mg/L)
Site ID = 140
Measurement
9
8
7
6
5
4
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted

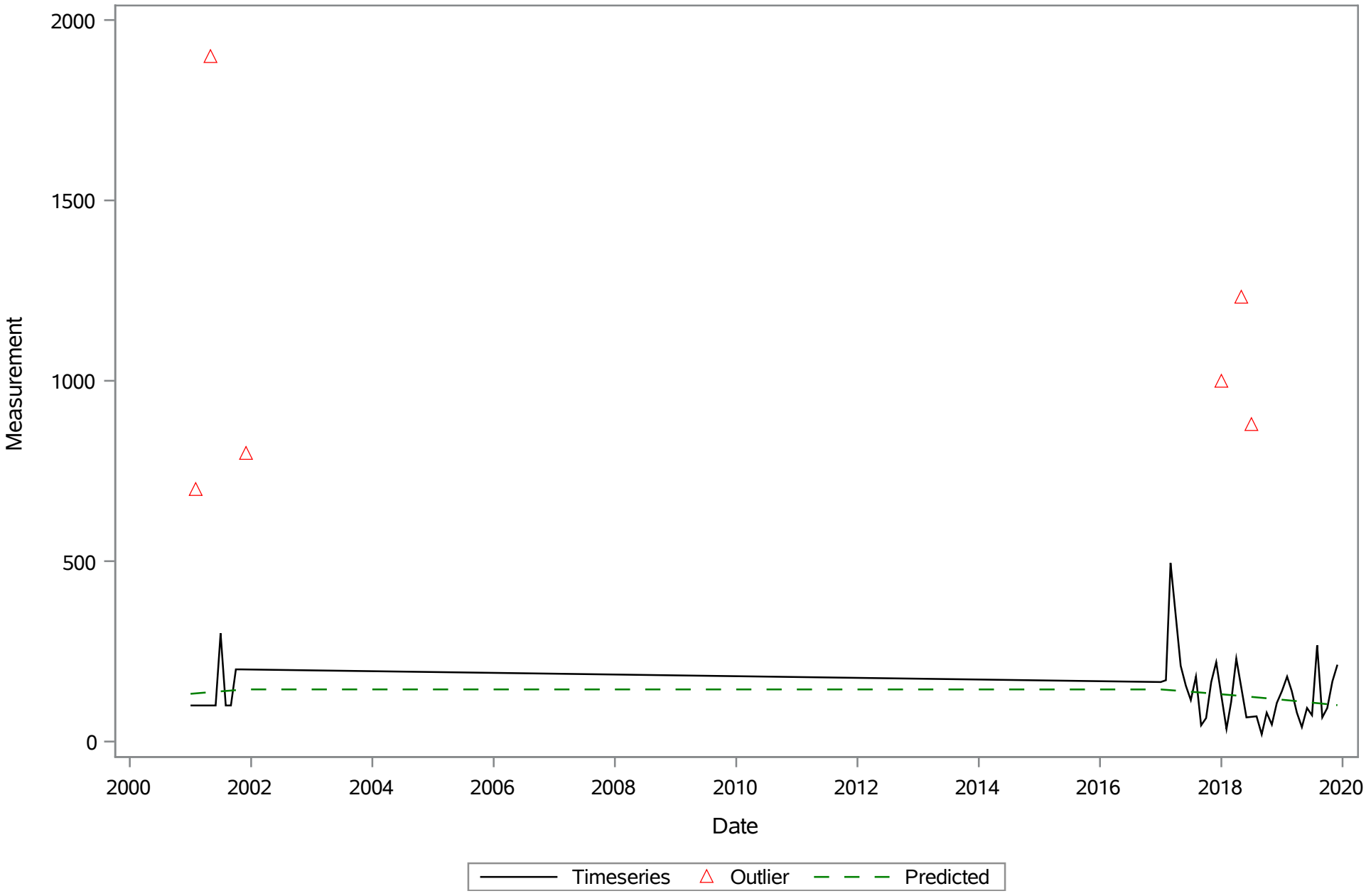

Little Manatee River
180
DO Top (mg/L)
Site ID = 180
Measurement
8
6
4
2
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Predicted
ptile


Little Manatee River
181
DO Top (mg/L)
Site ID = 181
10
8
6
4
Measurement
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Predicted
ptile

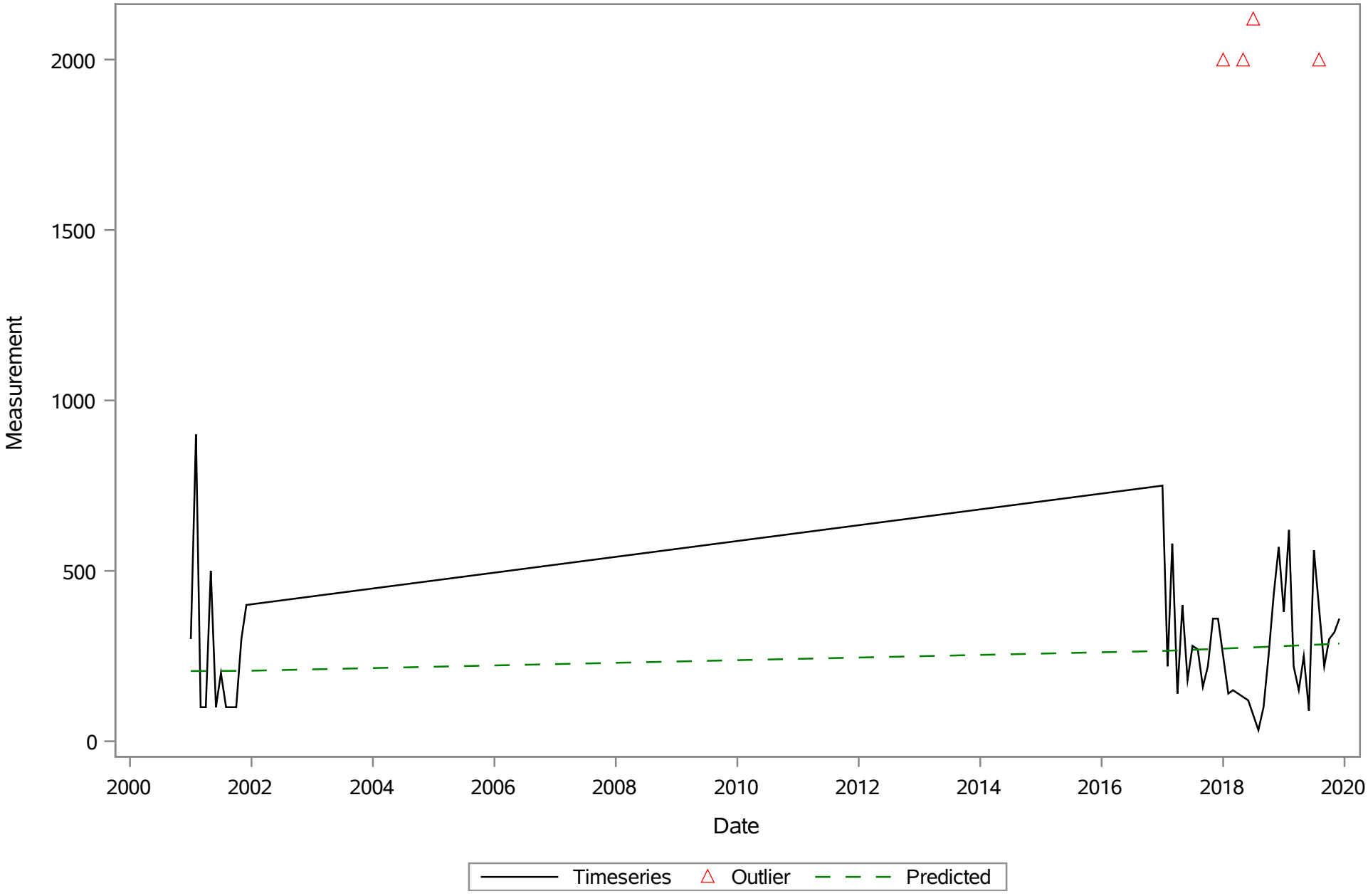

Little Manatee River
182
DO Top (mg/L)
Site ID = 182
Measurement
8
6
4
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Predicted
ptile

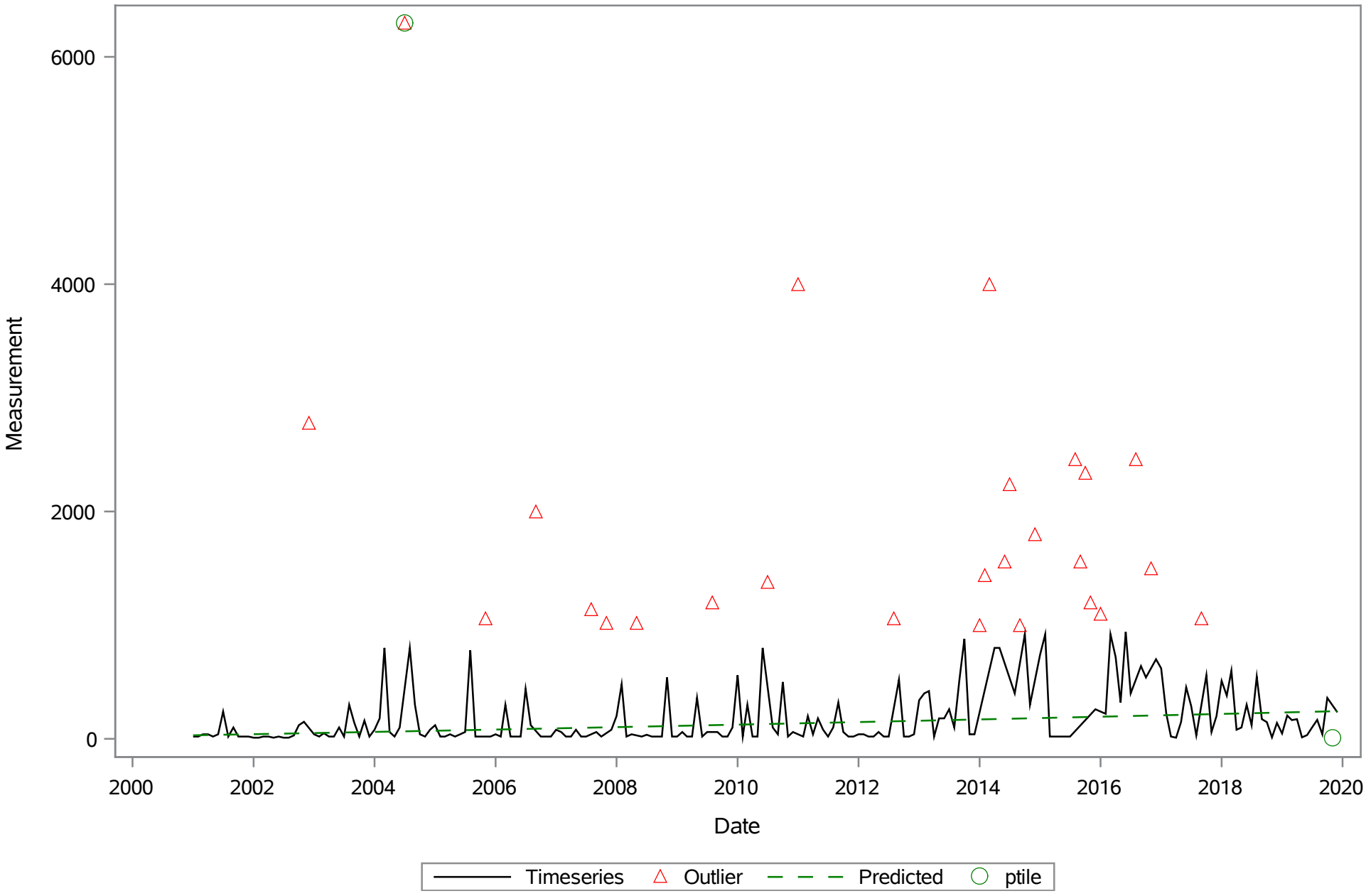
Little Manatee River
113
E_Coliform (n/100ml)
Site ID = 113

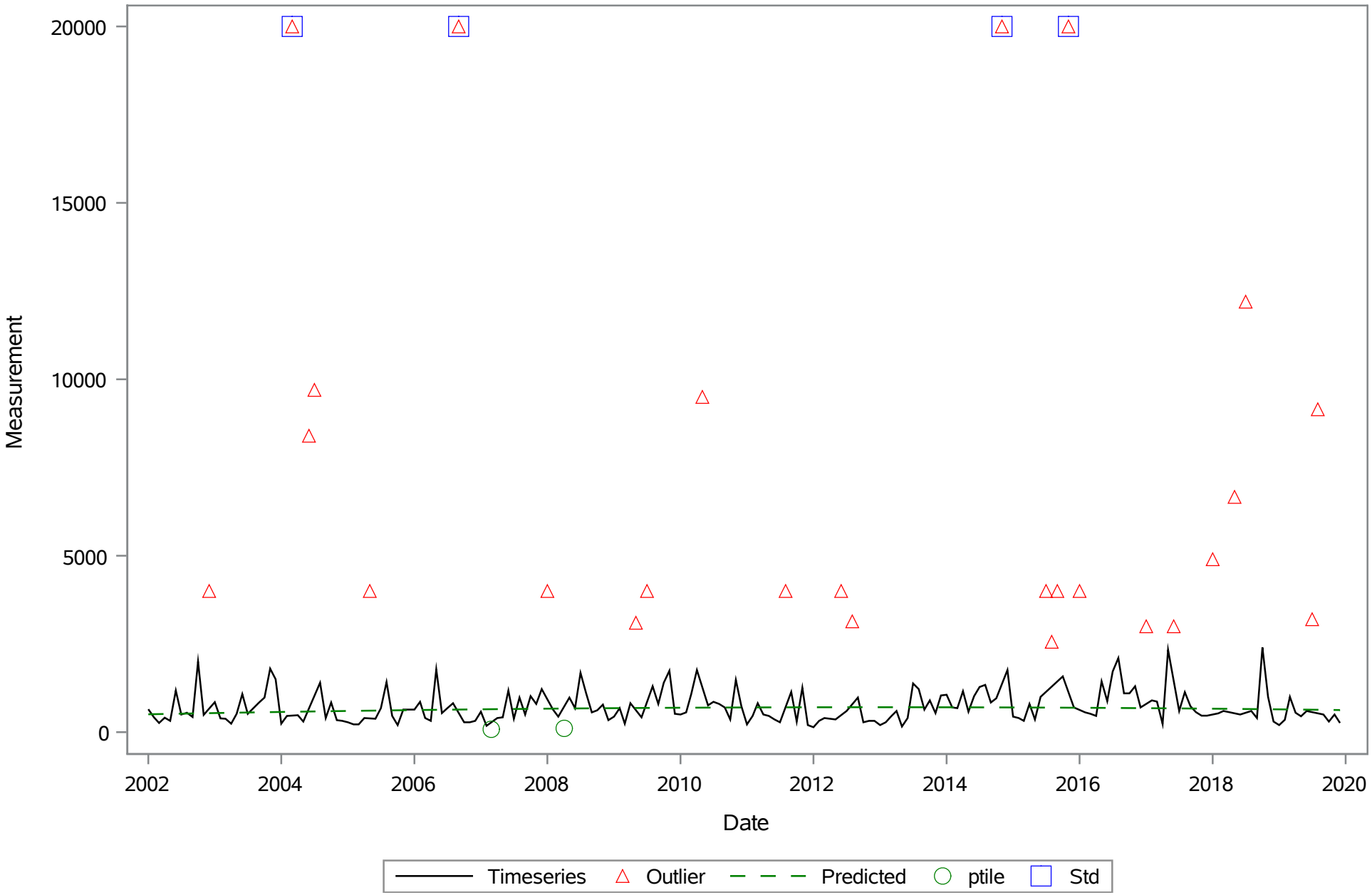


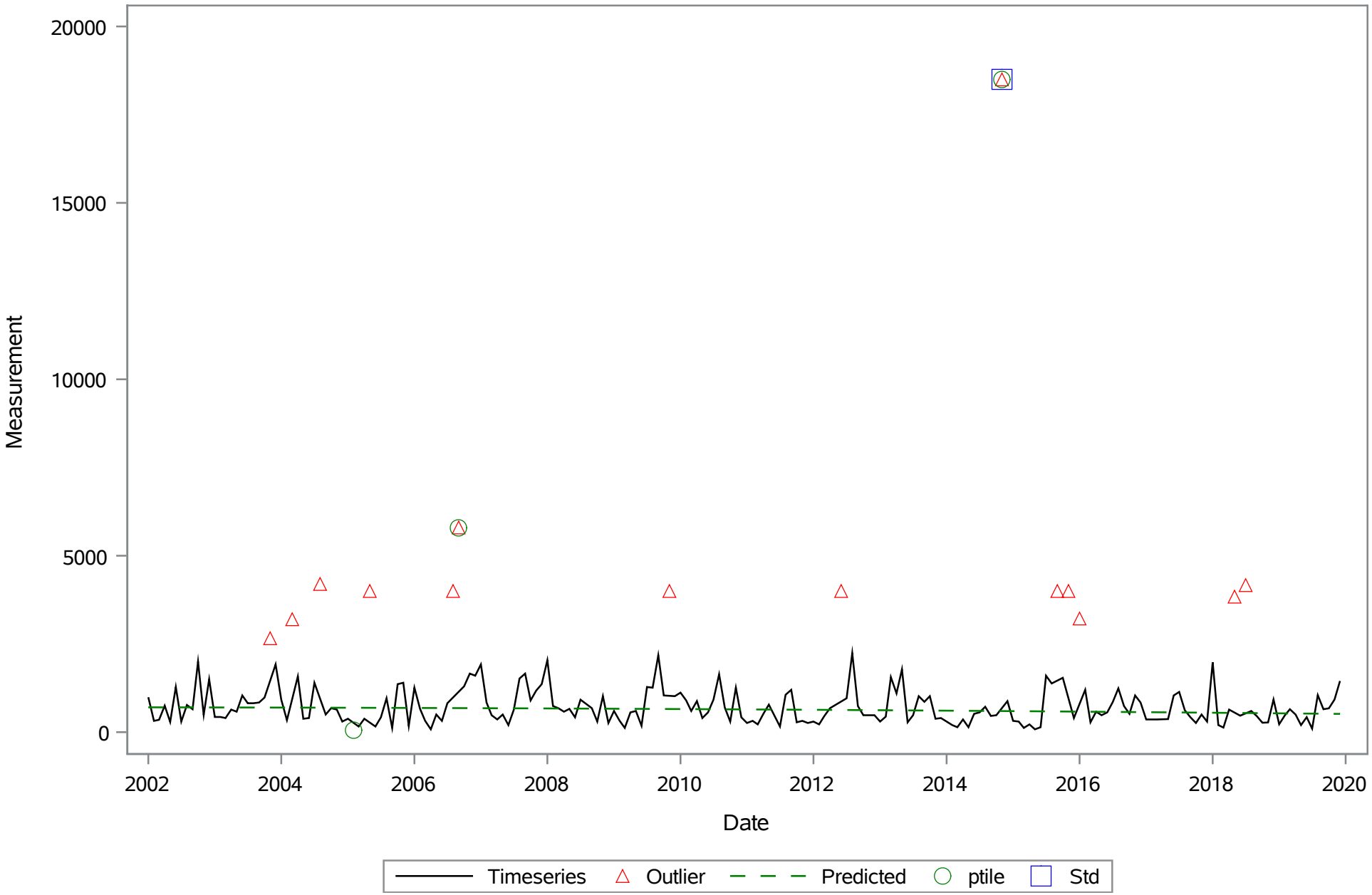

Little Manatee River
129
E_Coliform (n/100ml)
Site ID = 129
Measurement
2000
1500
1000
500
0
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
Date
Timeseries
Outlier
Predicted

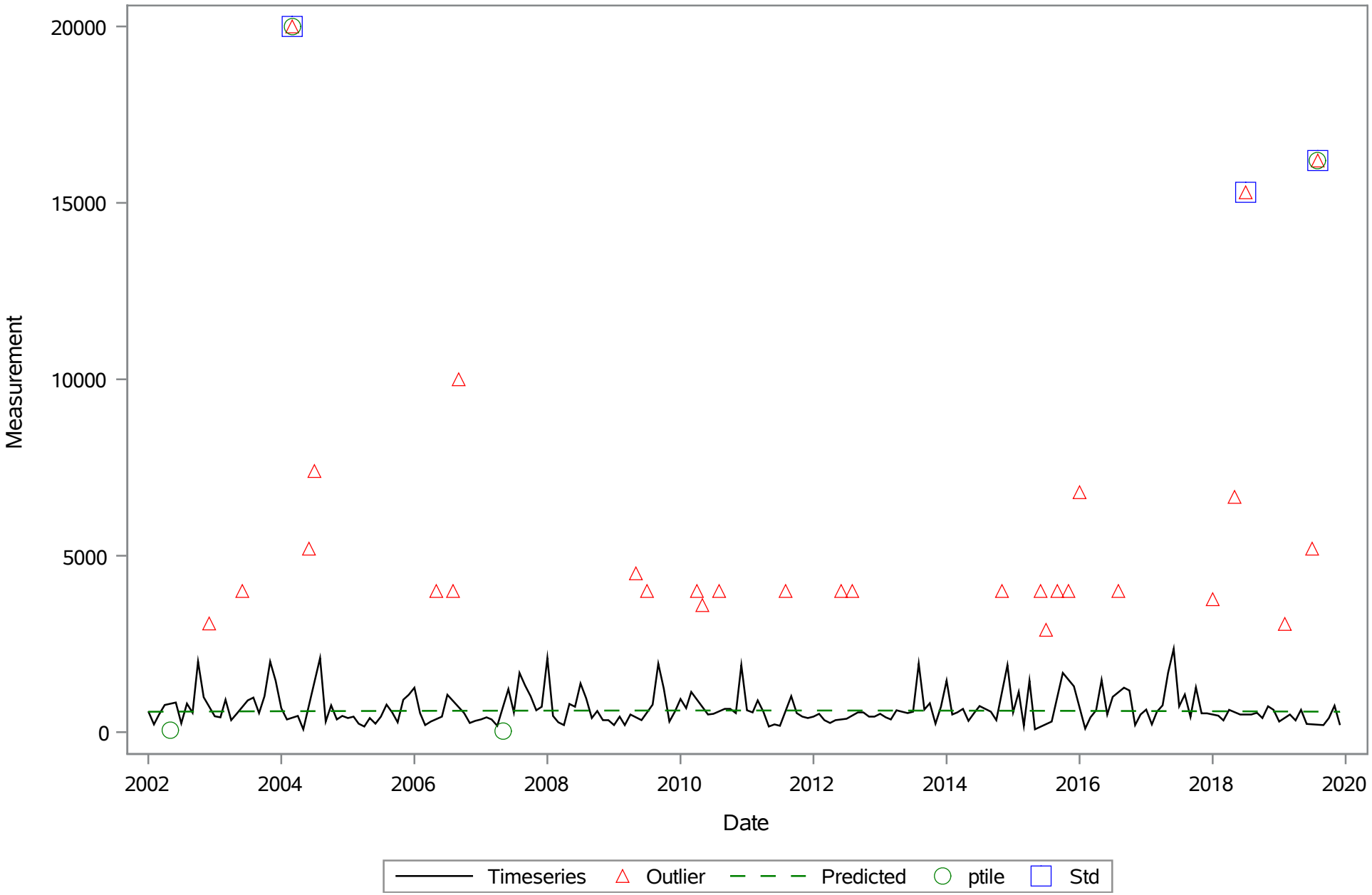
Little Manatee River
140
E_Coliform (n/100ml)
Site ID = 140



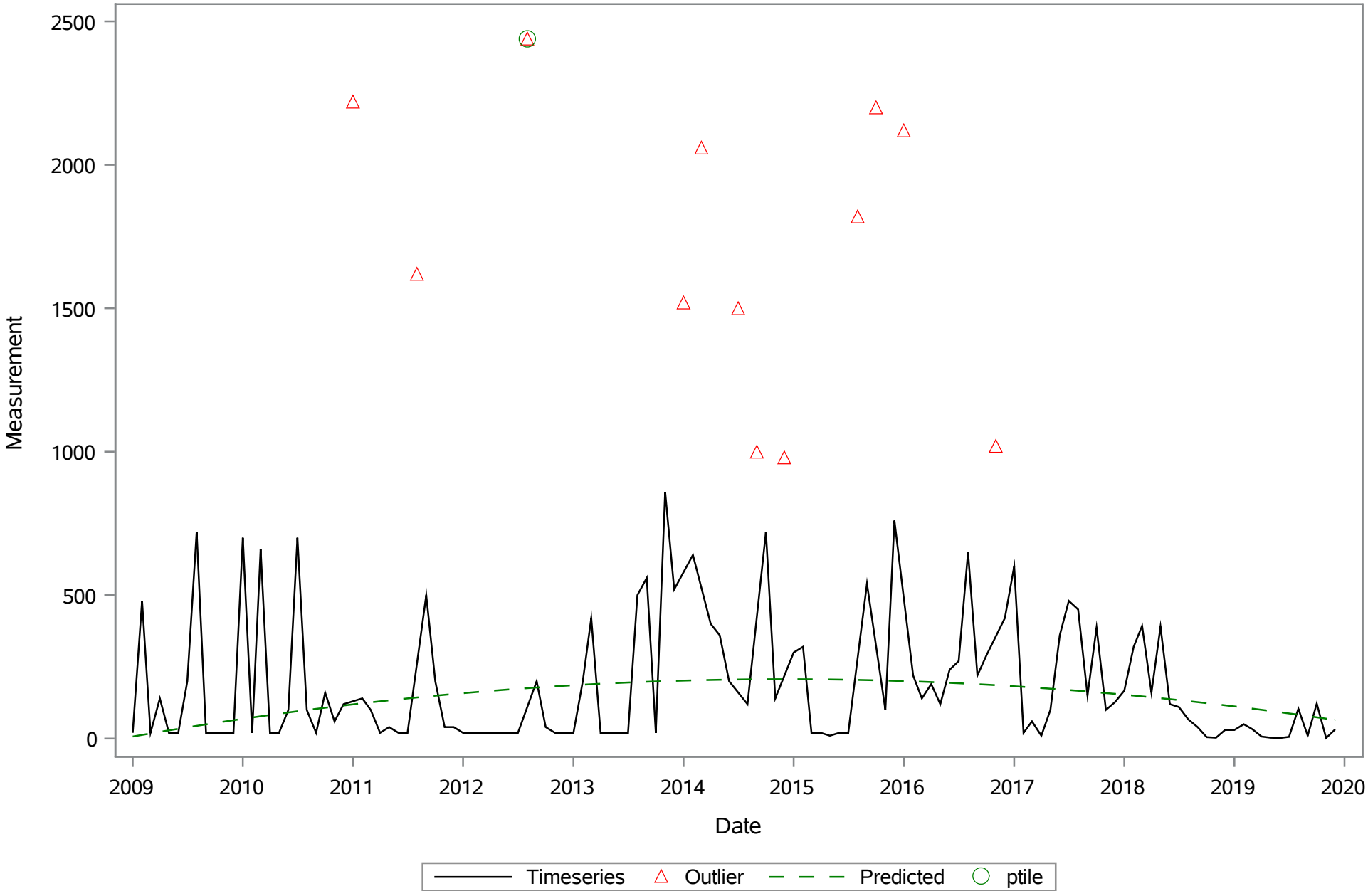

Little Manatee River
112
Enterococci (n/100ml)
Site ID = 112
6000
4000
2000
0
Measurement
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
Date
Timeseries
Outlier
Predicted
ptile

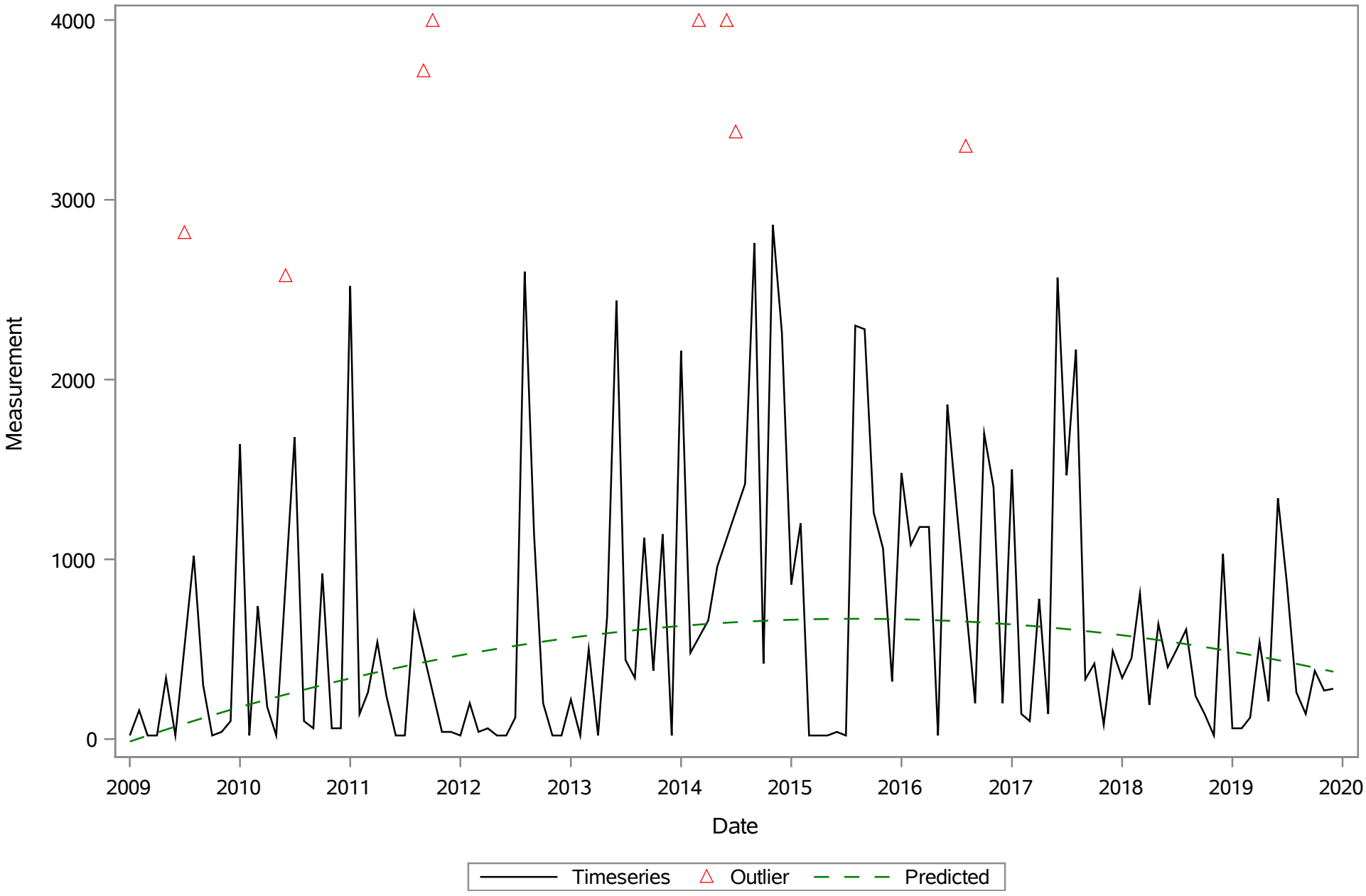

Little Manatee River
113
Enterococci (n/100ml)
Site ID = 113
Measurement
20000
15000
10000
5000
0
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

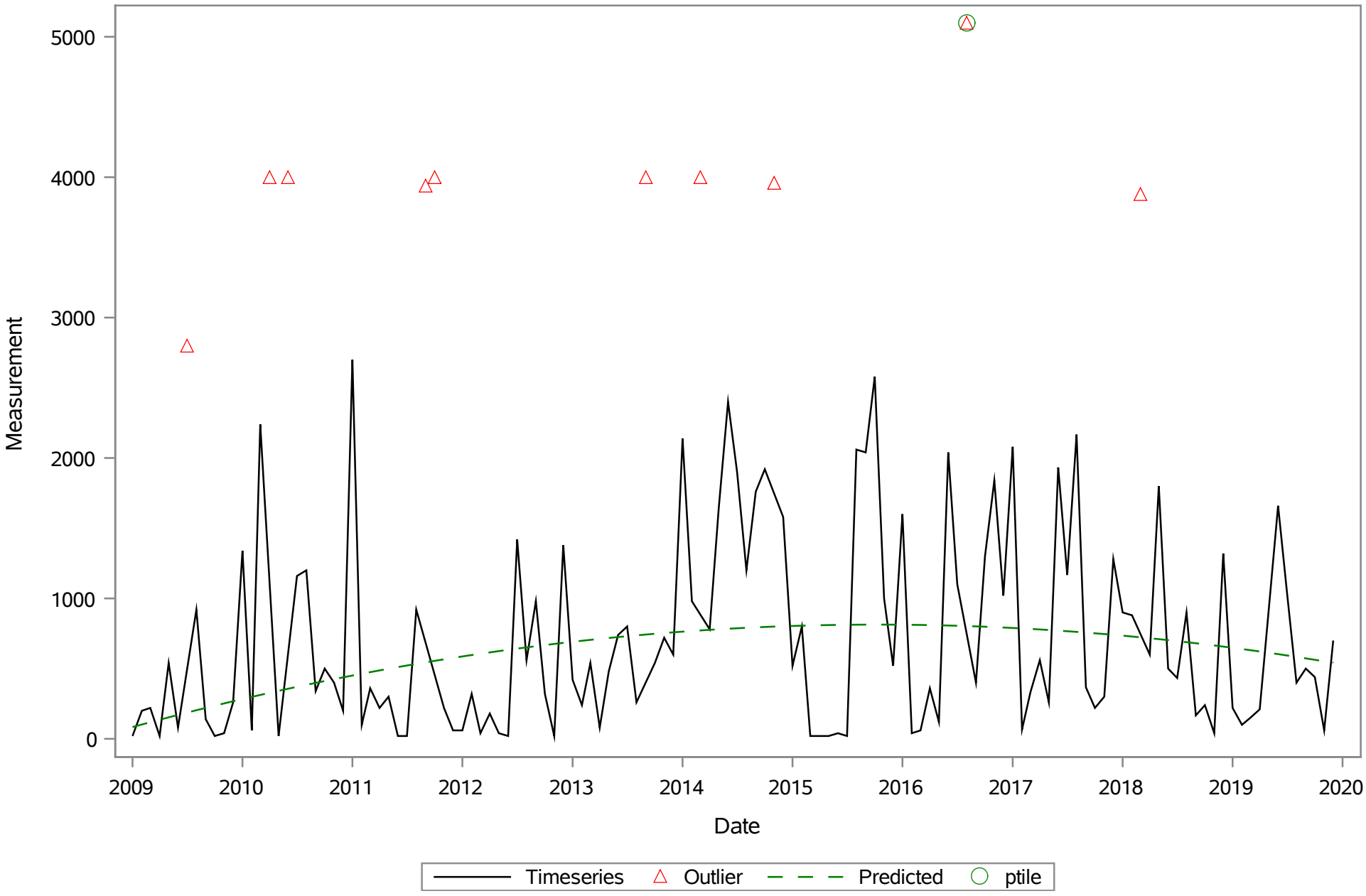

Little Manatee River
129
Enterococci (n/100ml)
Site ID = 129
20000
15000
10000
5000
0
Measurement
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

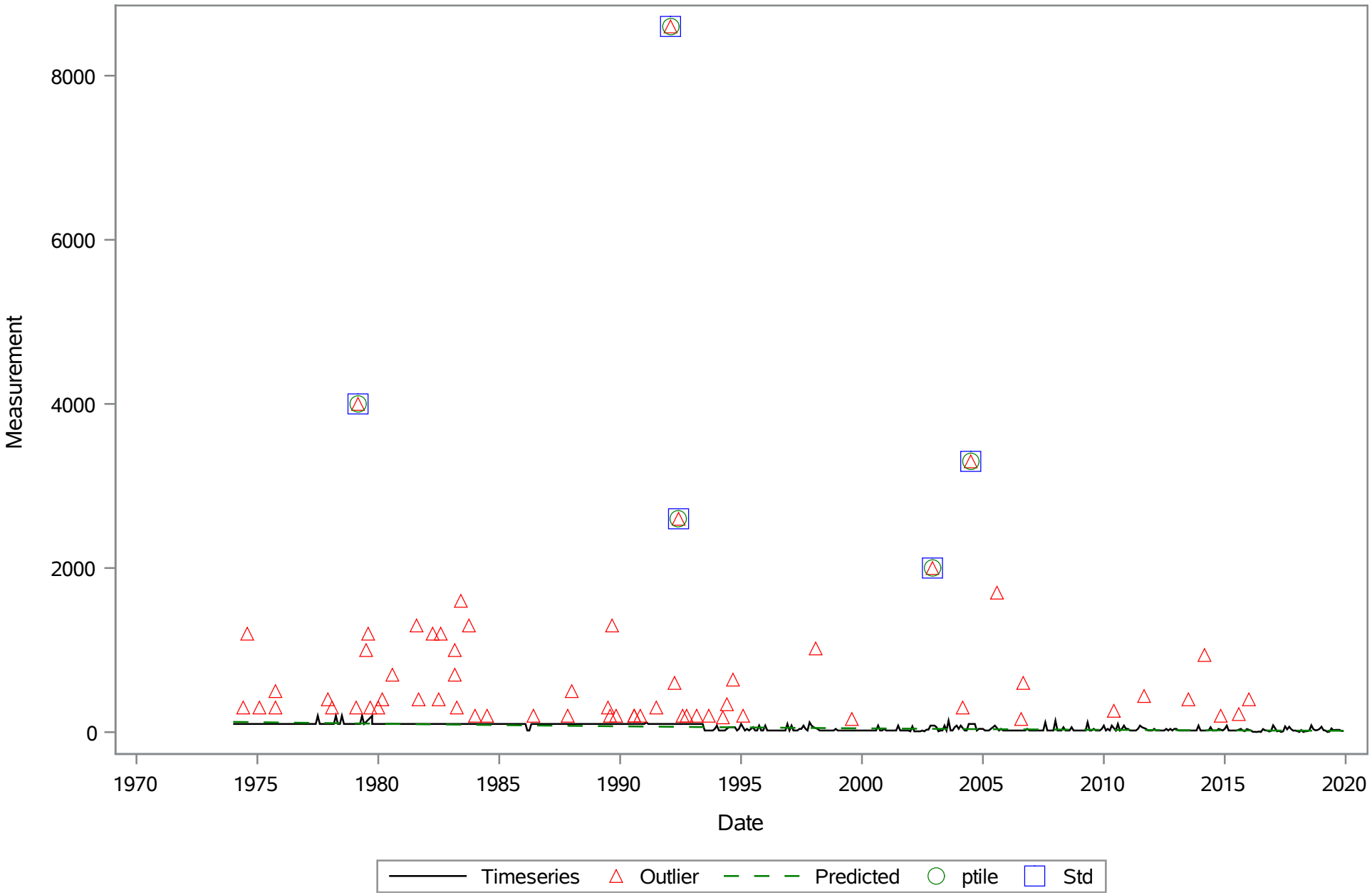

Little Manatee River
140
Enterococci (n/100ml)
Site ID = 140
Measurement
20000
15000
10000
5000
0
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

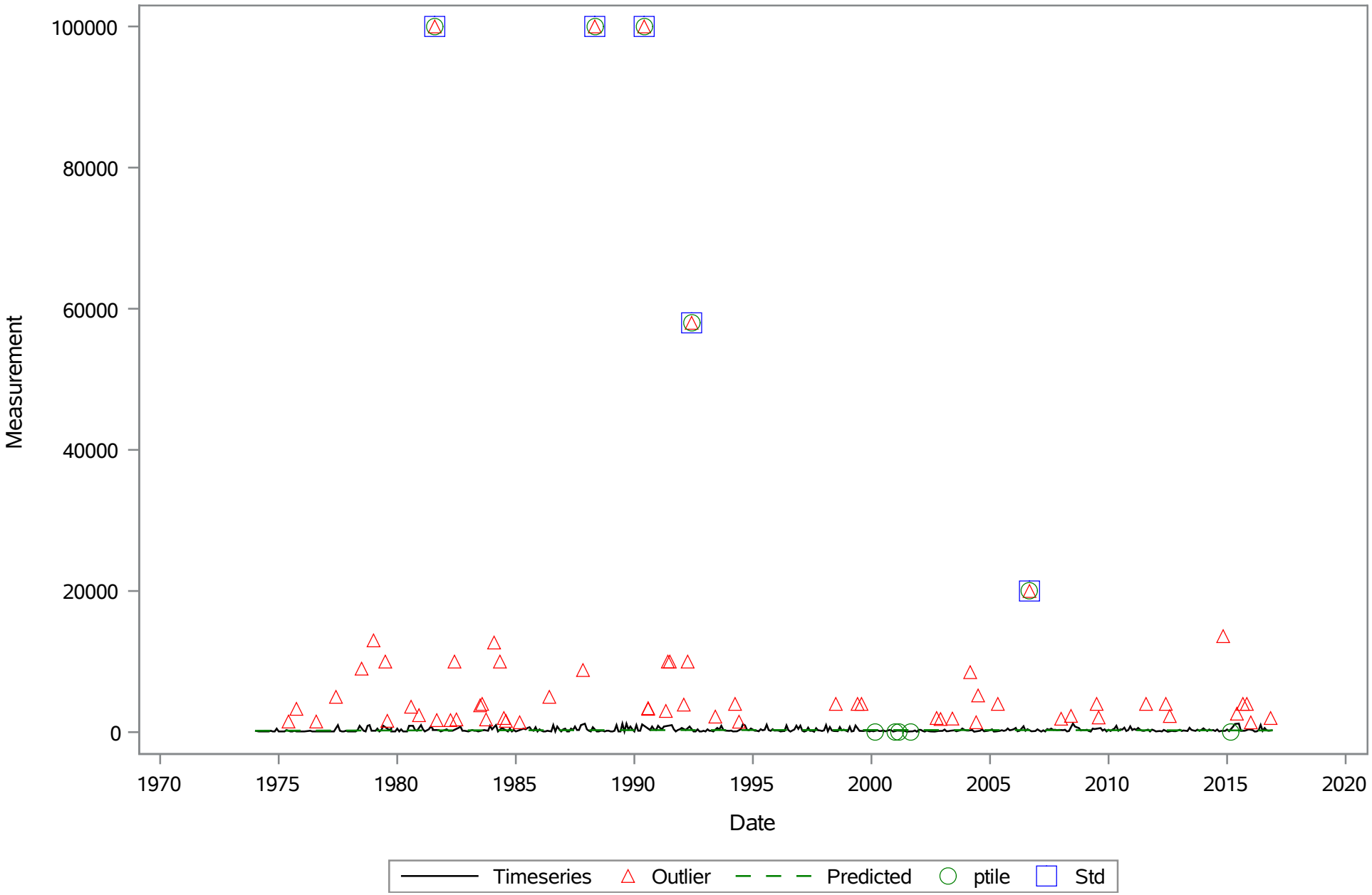
Little Manatee River
180
Enterococci (n/100ml)
Site ID = 180

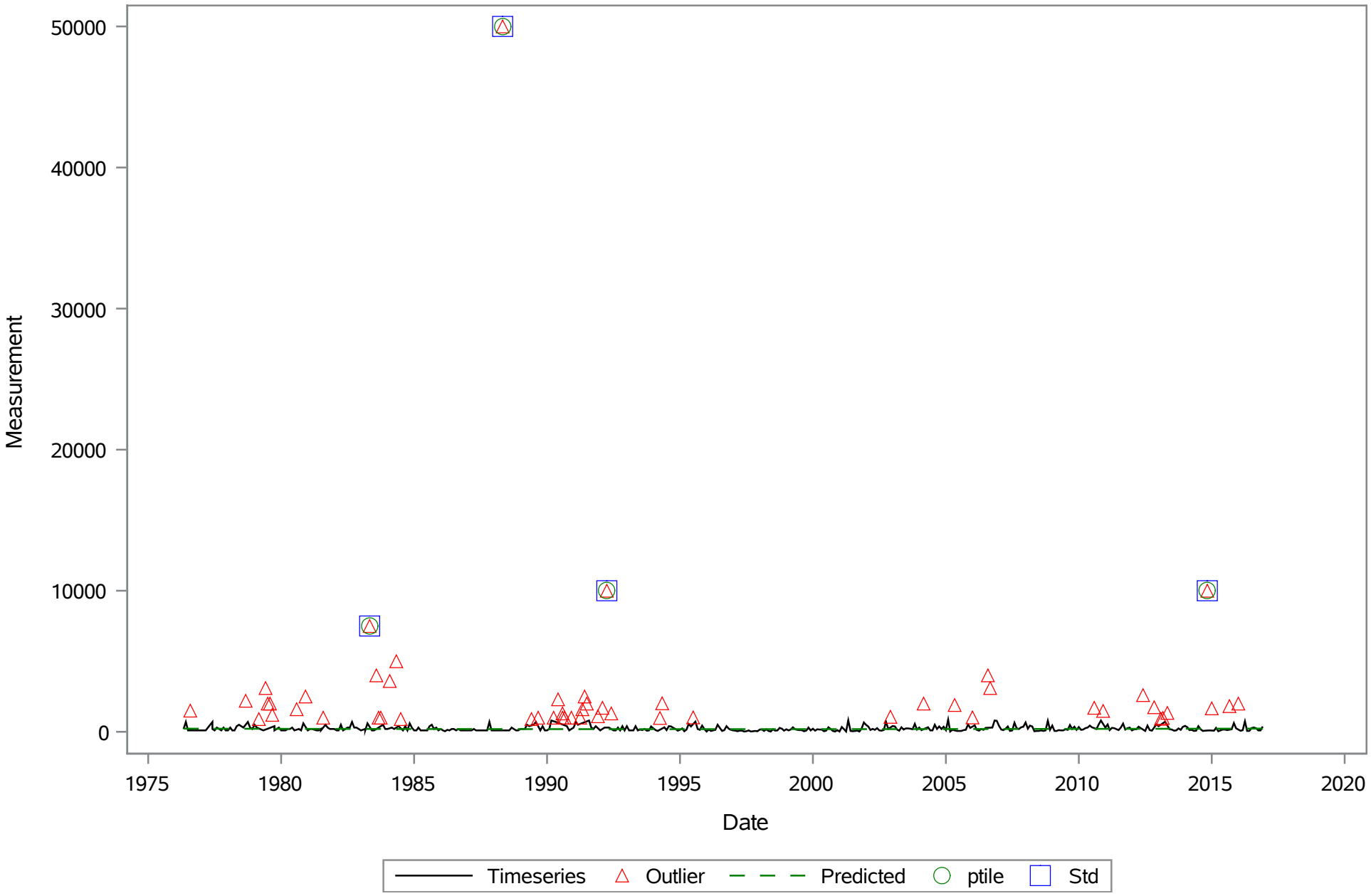


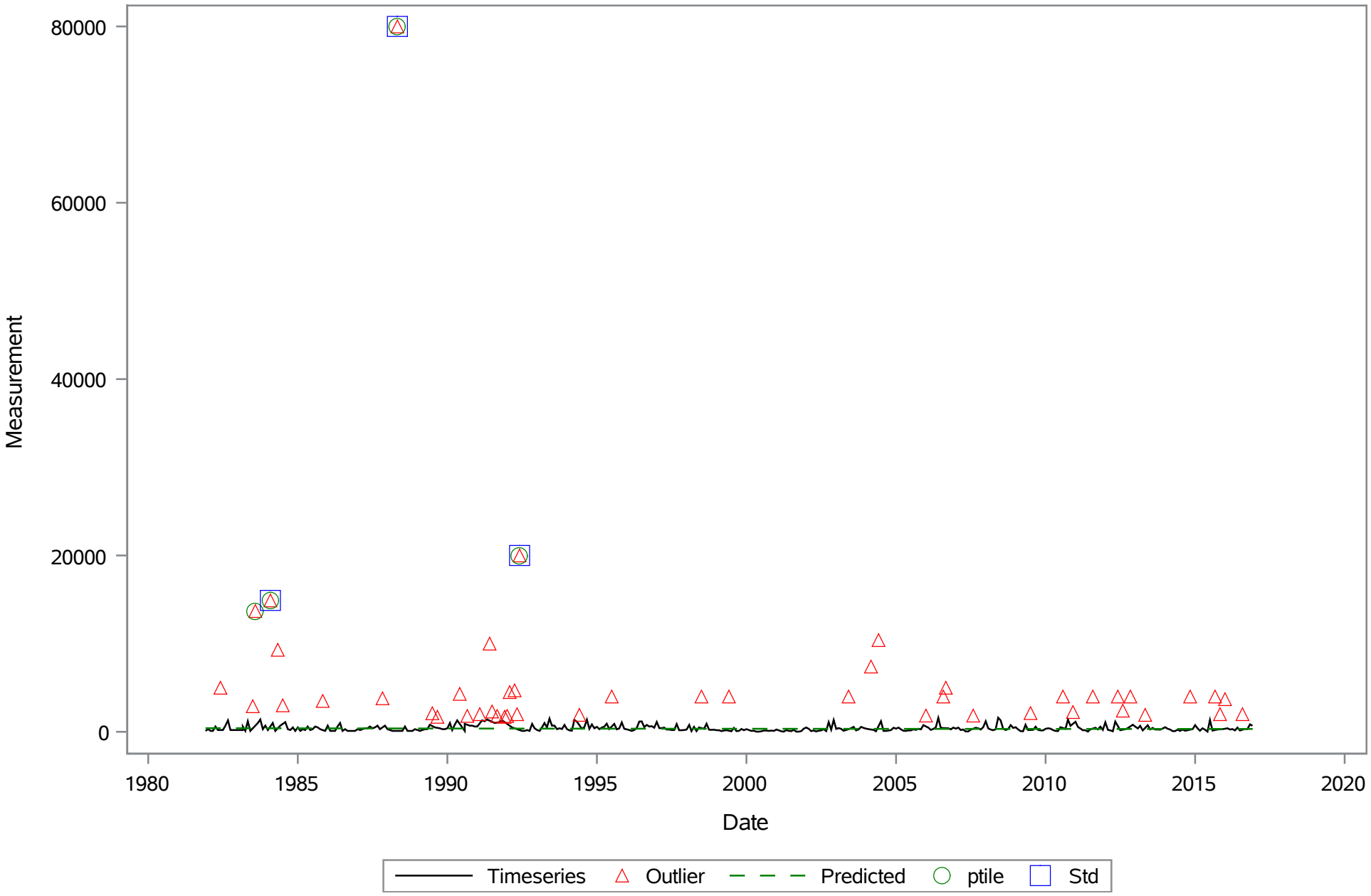

Little Manatee River
181
Enterococci (n/100ml)
Site ID = 181
4000
3000
2000
1000
0
Measurement
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Outlier
Predicted

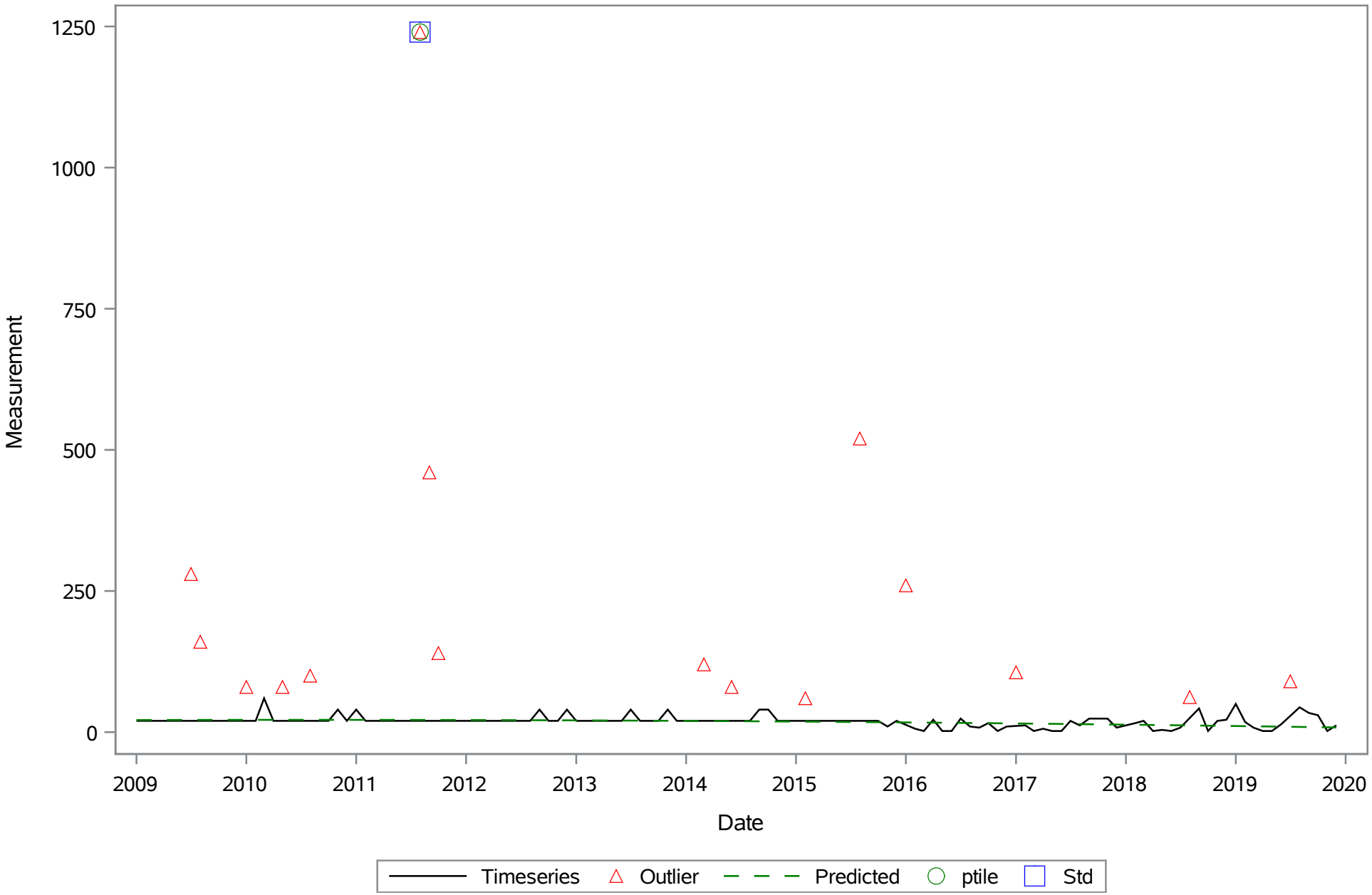

Little Manatee River
182
Enterococci (n/100ml)
Site ID = 182
Measurement
5000
4000
3000
2000
1000
0
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Outlier
Predicted
ptile

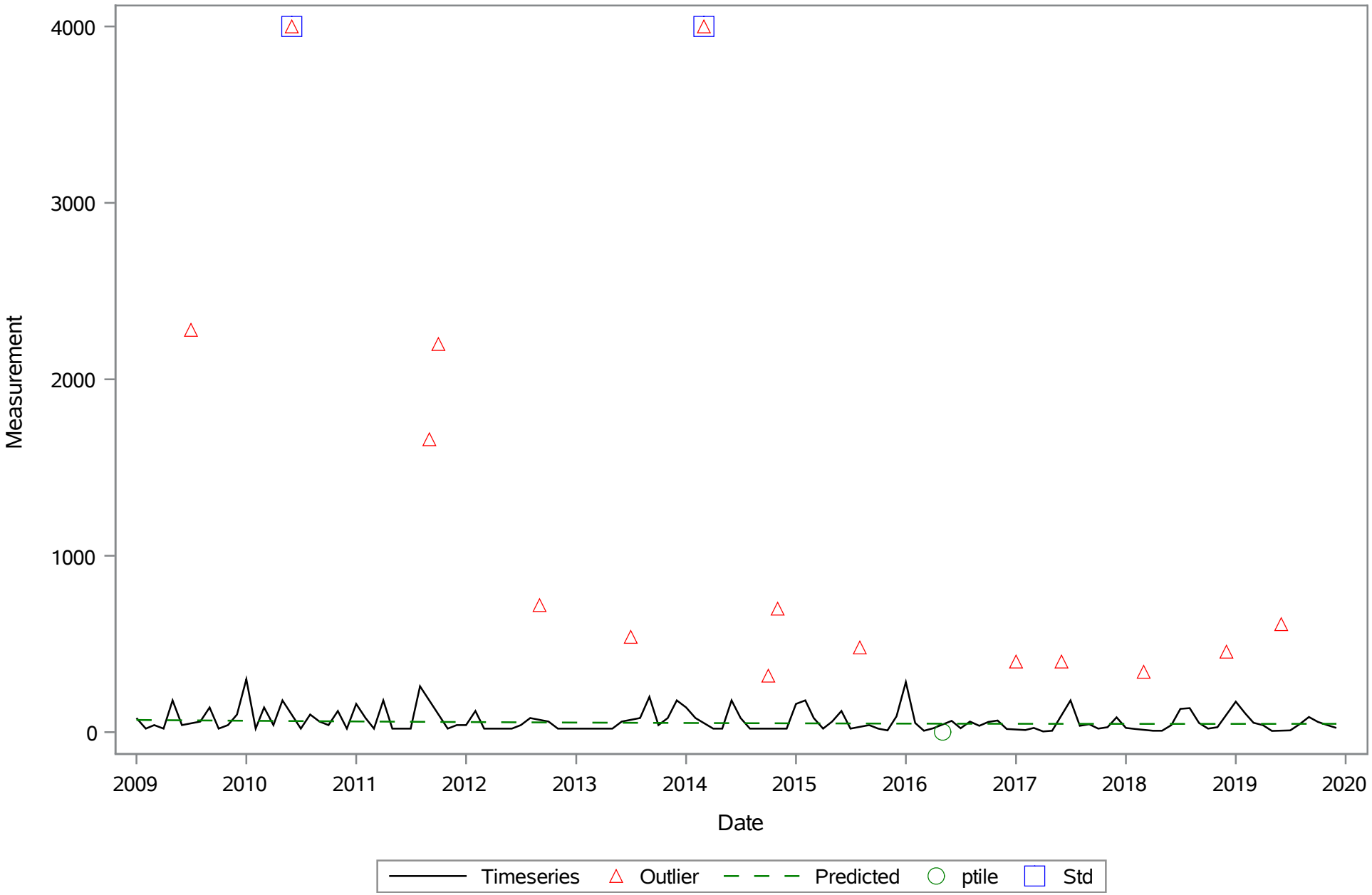

Little Manatee River
112
Fecal_Coliform (n/100ml)
Site ID = 112
Measurement
8000
6000
4000
2000
0
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

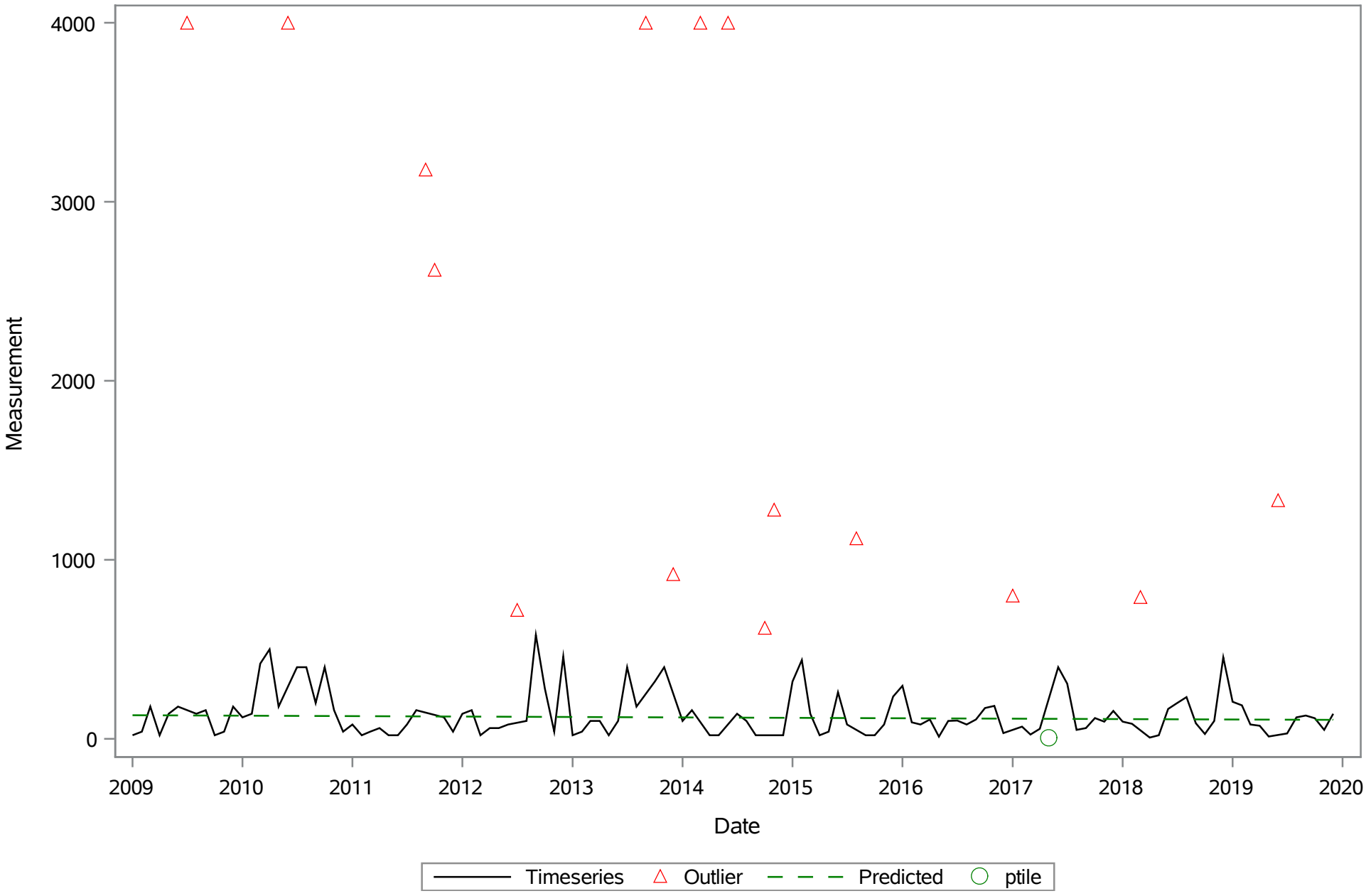

Little Manatee River
113
Fecal_Coliform (n/100ml)
Site ID = 113
Measurement
100000
80000
60000
40000
20000
0
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

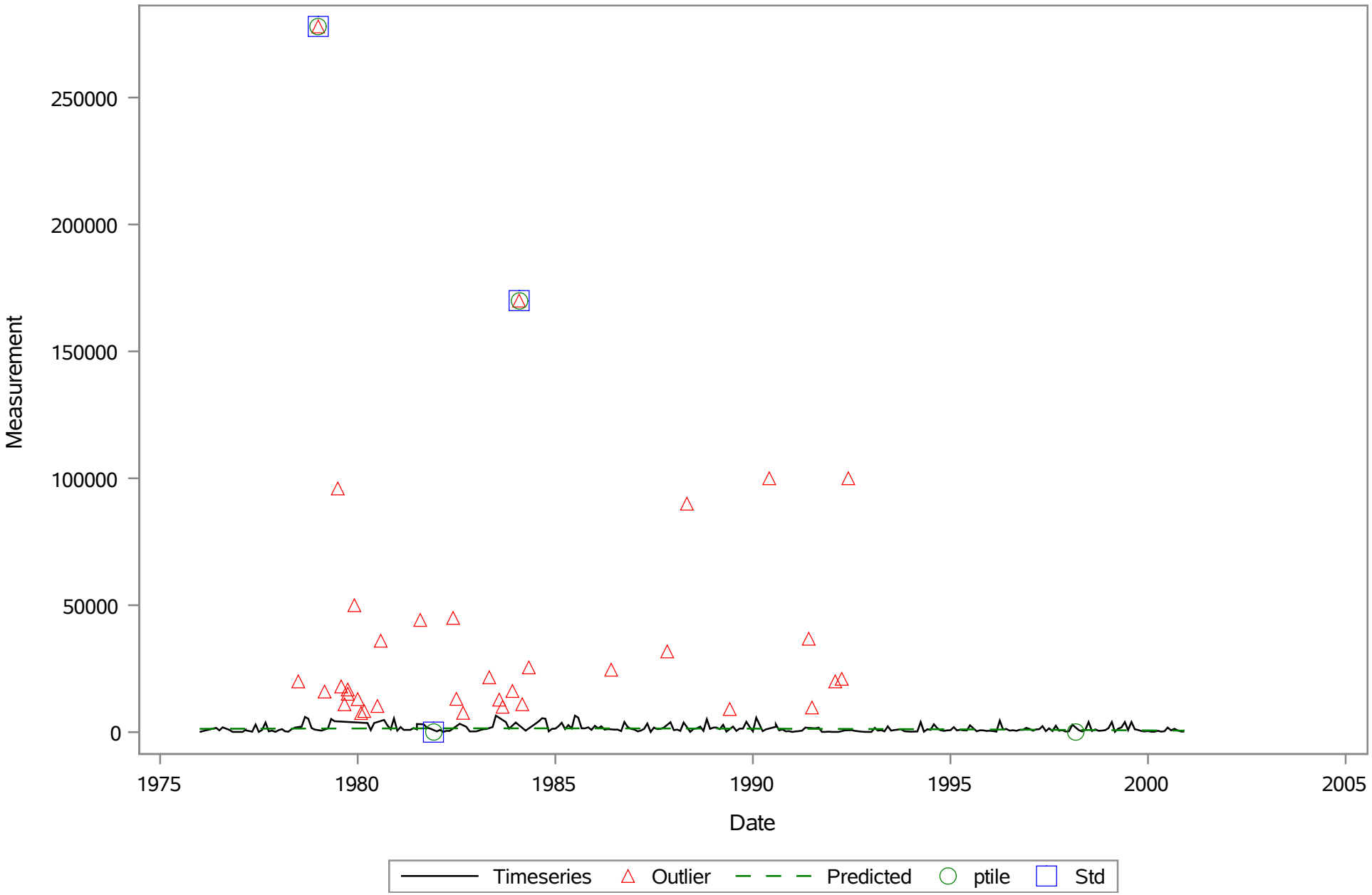

Little Manatee River
129
Fecal_Coliform (n/100ml)
Site ID = 129
50000
40000
30000
20000
10000
0
Measurement
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

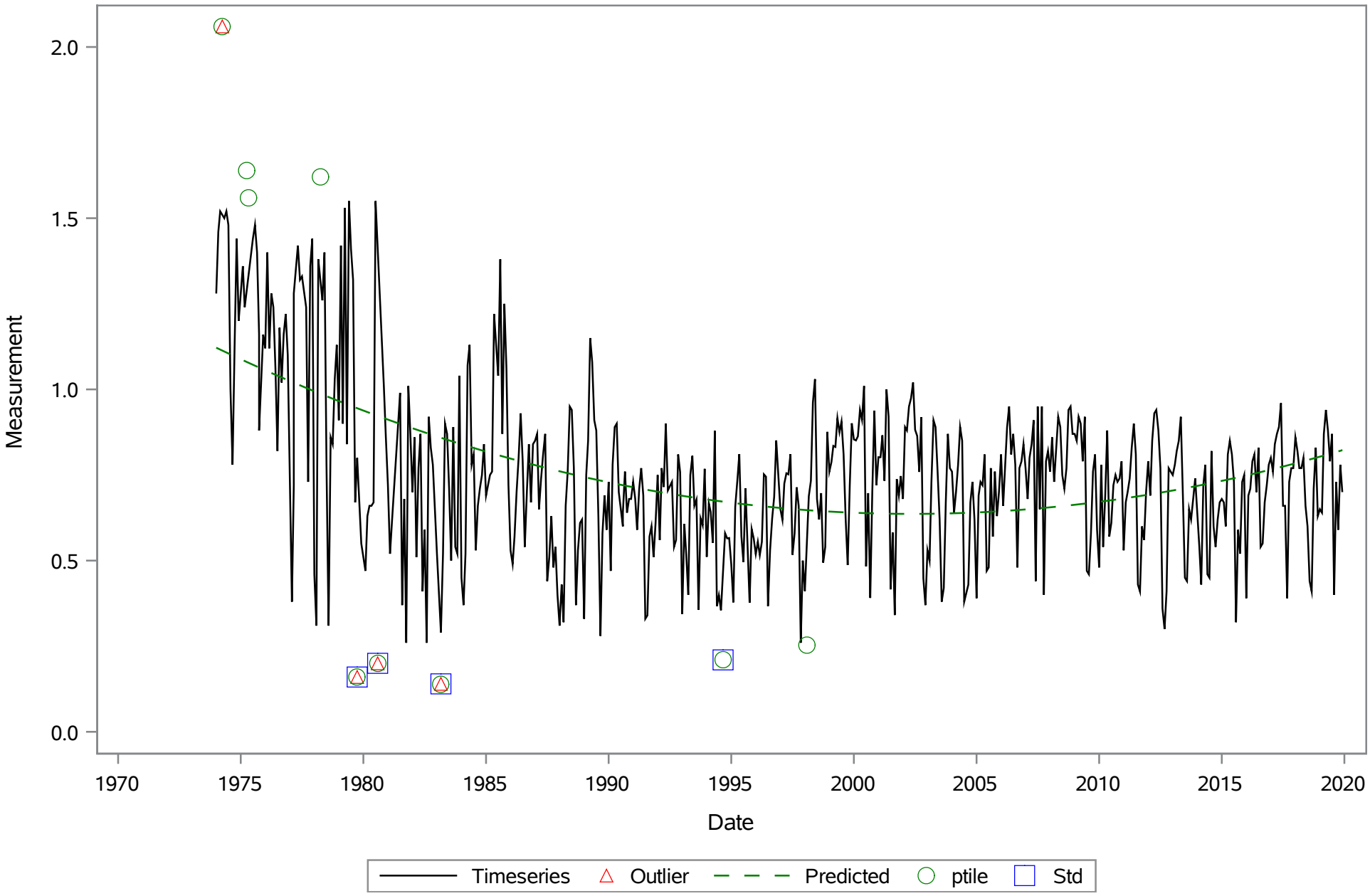

Little Manatee River
140
Fecal_Coliform (n/100ml)
Site ID = 140
80000
60000
40000
20000
0
Measurement
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std


Little Manatee River
180
Fecal_Coliform (n/100ml)
Site ID = 180
1250
1000
750
500
250
0
Measurement
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

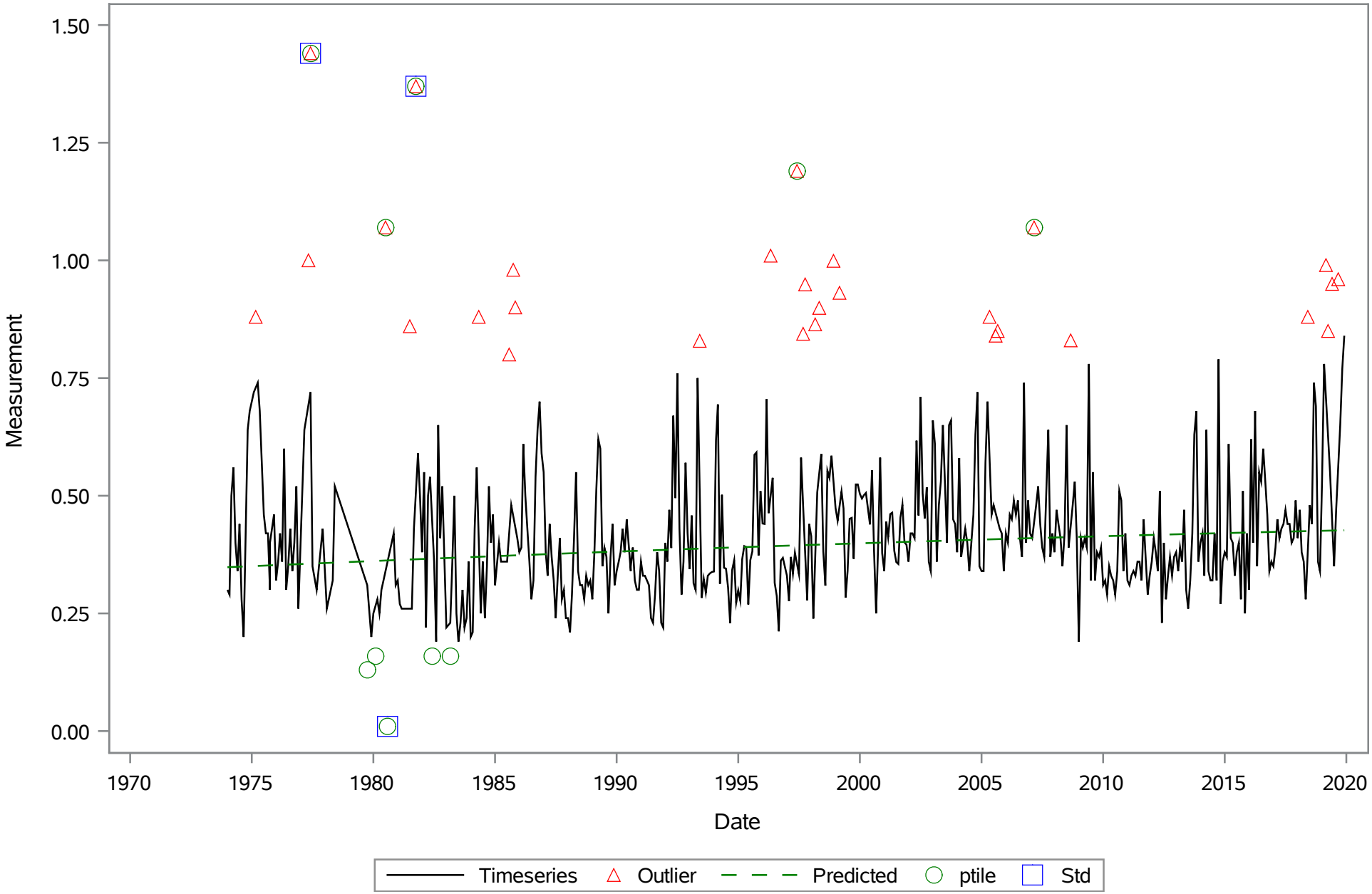

Little Manatee River
181
Fecal_Coliform (n/100ml)
Site ID = 181
Measurement
4000
3000
2000
1000
0
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

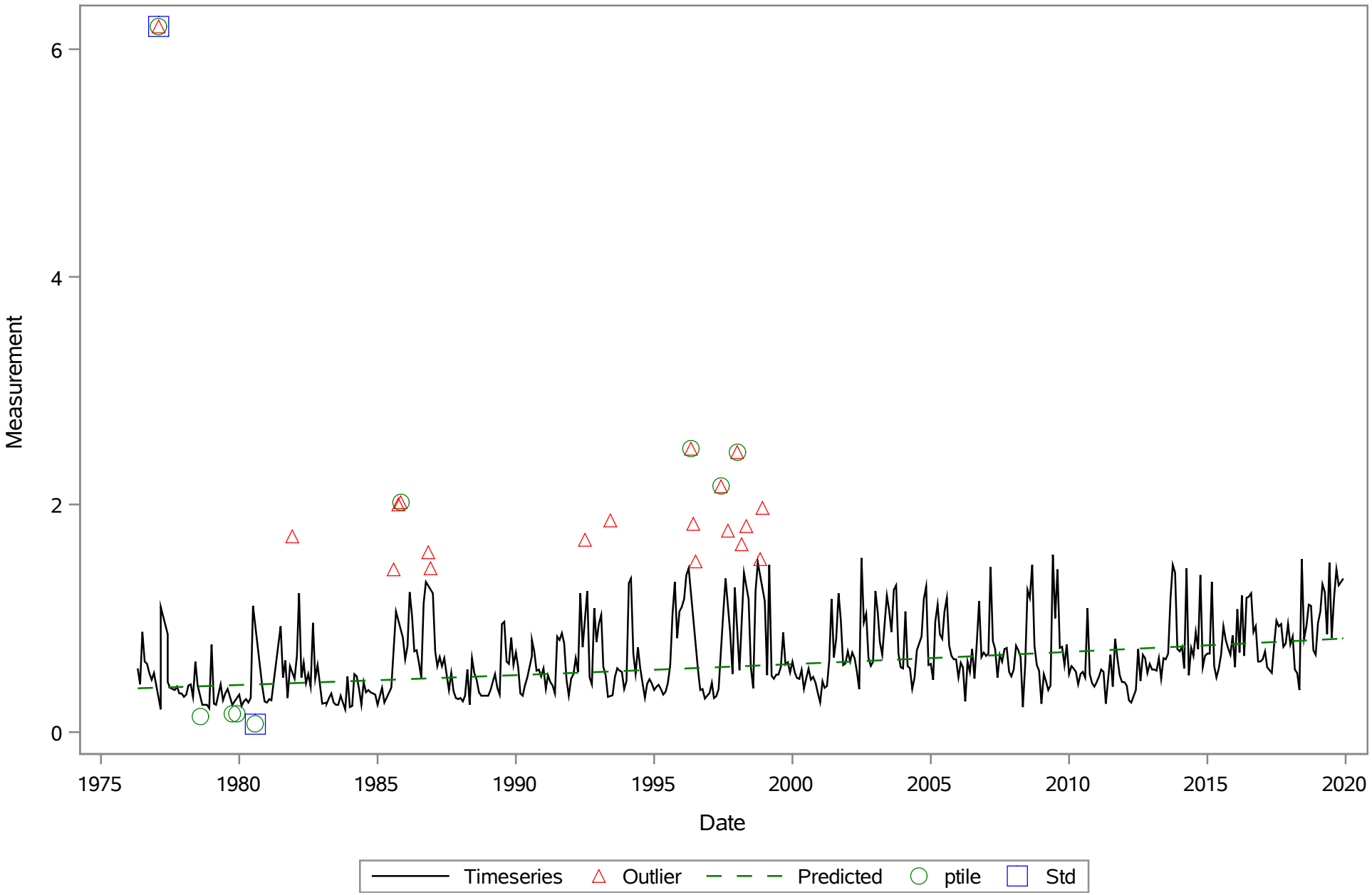

Little Manatee River
182
Fecal_Coliform (n/100ml)
Site ID = 182
Measurement
4000
3000
2000
1000
0
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Outlier
Predicted
ptile

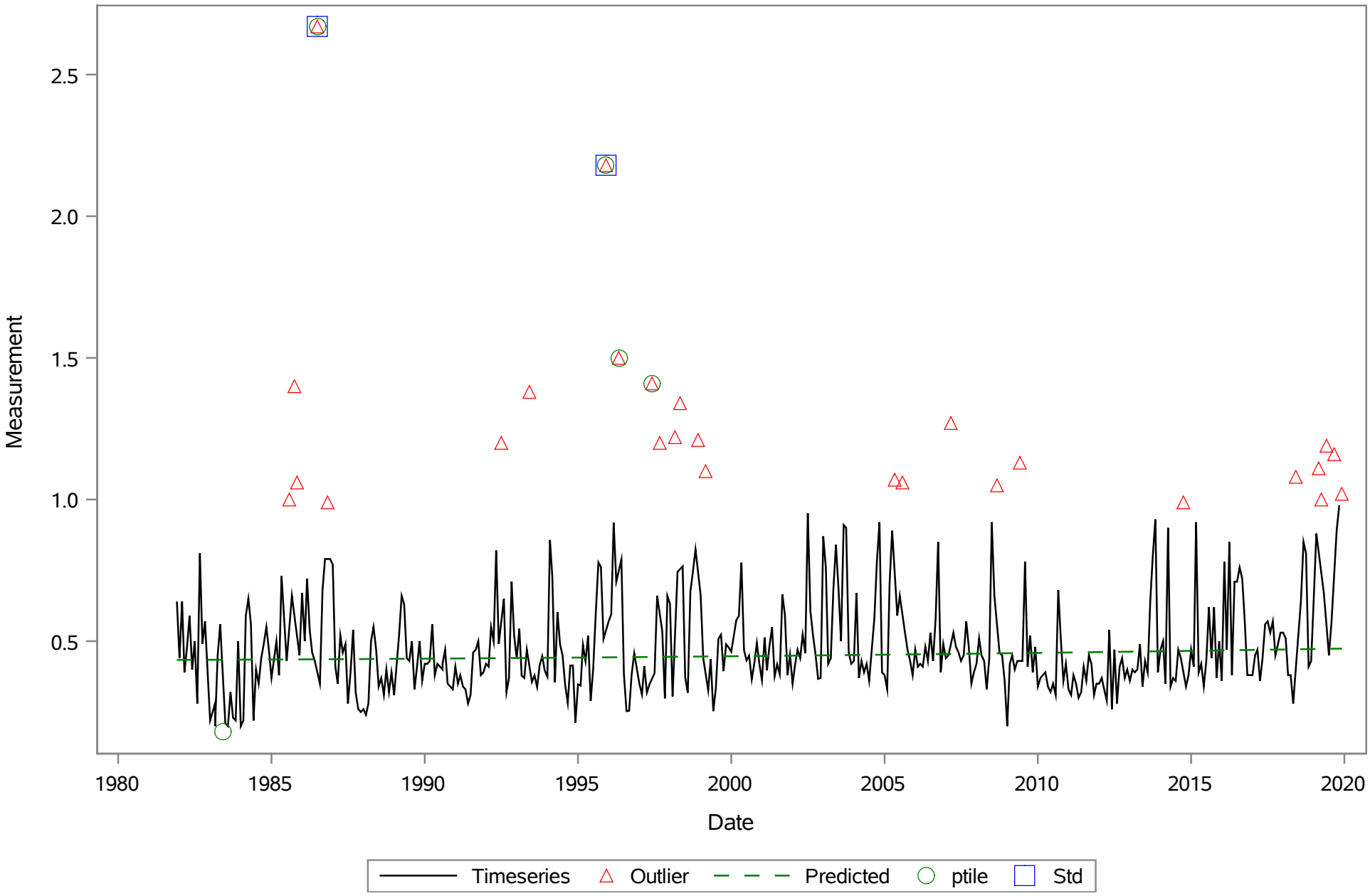

Little Manatee River
113
Fecal_Strep (n/100ml)
Site ID = 113
Measurement
250000
200000
150000
100000
50000
0
1975
1980
1985
1990
1995
2000
2005
Date
Timeseries
Outlier
Predicted
ptile
Std


Little Manatee River
112
Fluoride (mg/l)
Site ID = 112
Measurement
2.0
1.5
1.0
0.5
0.0
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

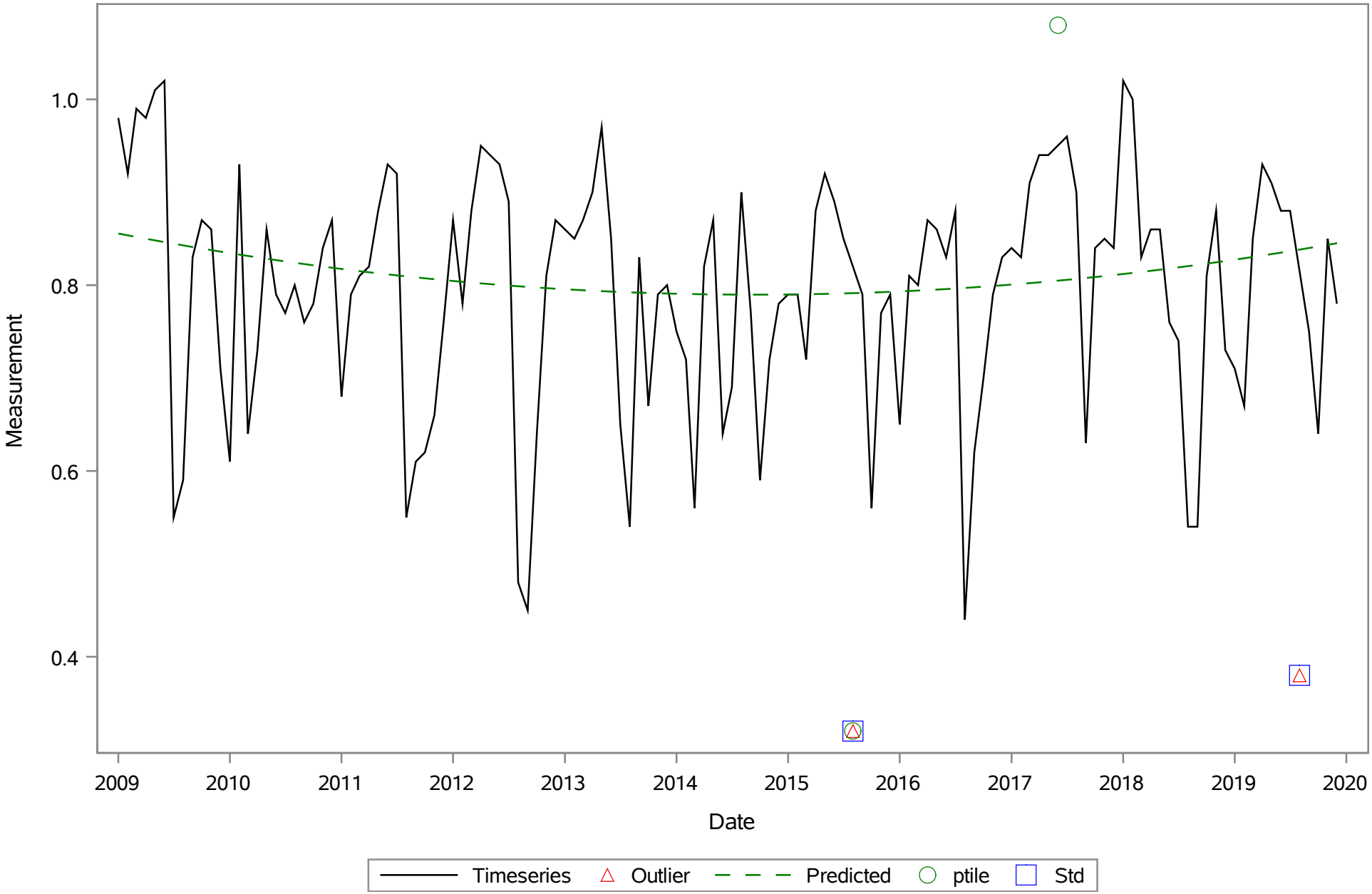
Little Manatee River
113
Fluoride (mg/l)
Site ID = 113



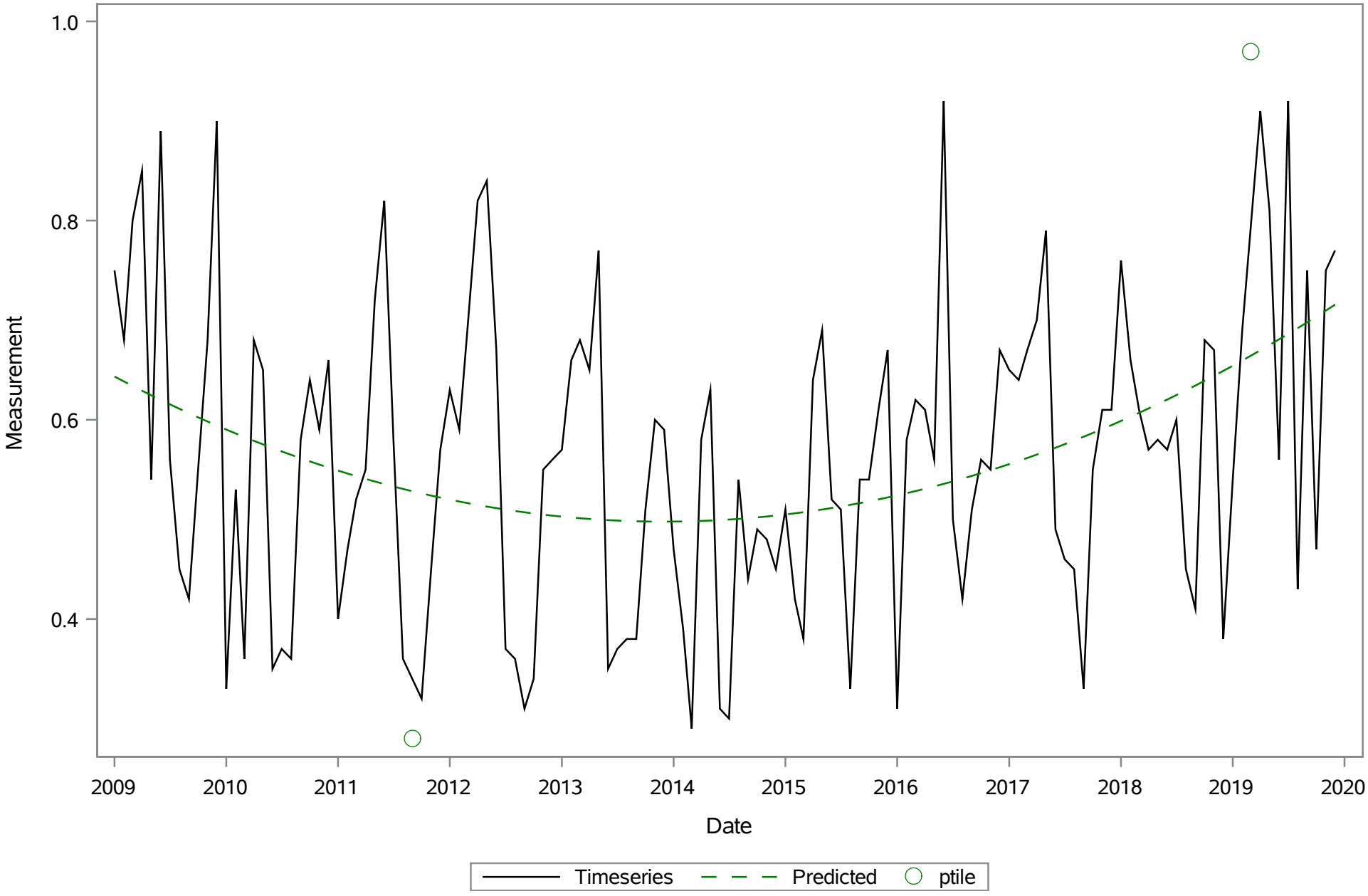

Little Manatee River
129
Fluoride (mg/l)
Site ID = 129
Measurement
0
2
4
6
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

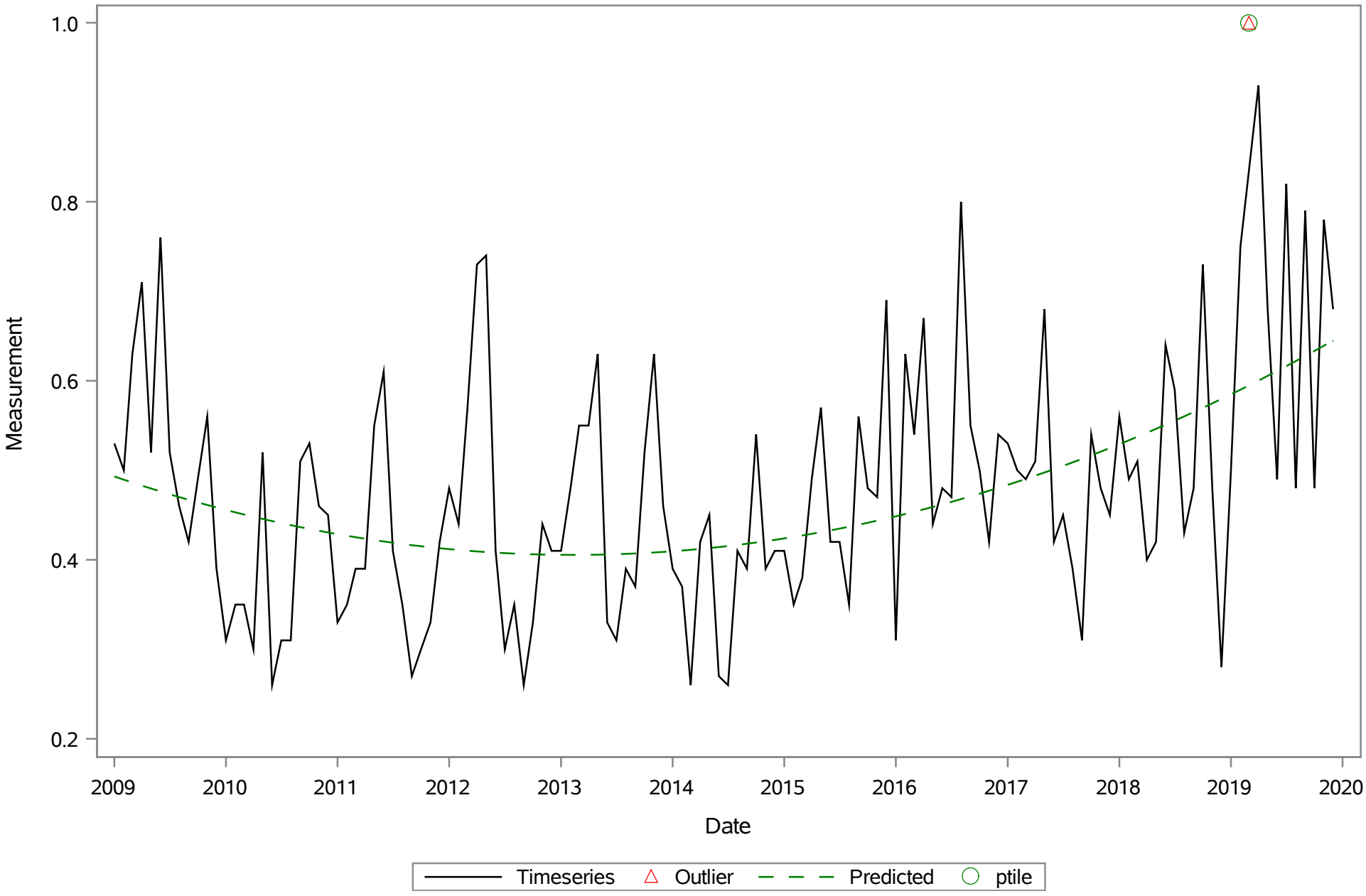

Little Manatee River
140
Fluoride (mg/l)
Site ID = 140
Measurement
2.5
2.0
1.5
1.0
0.5
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

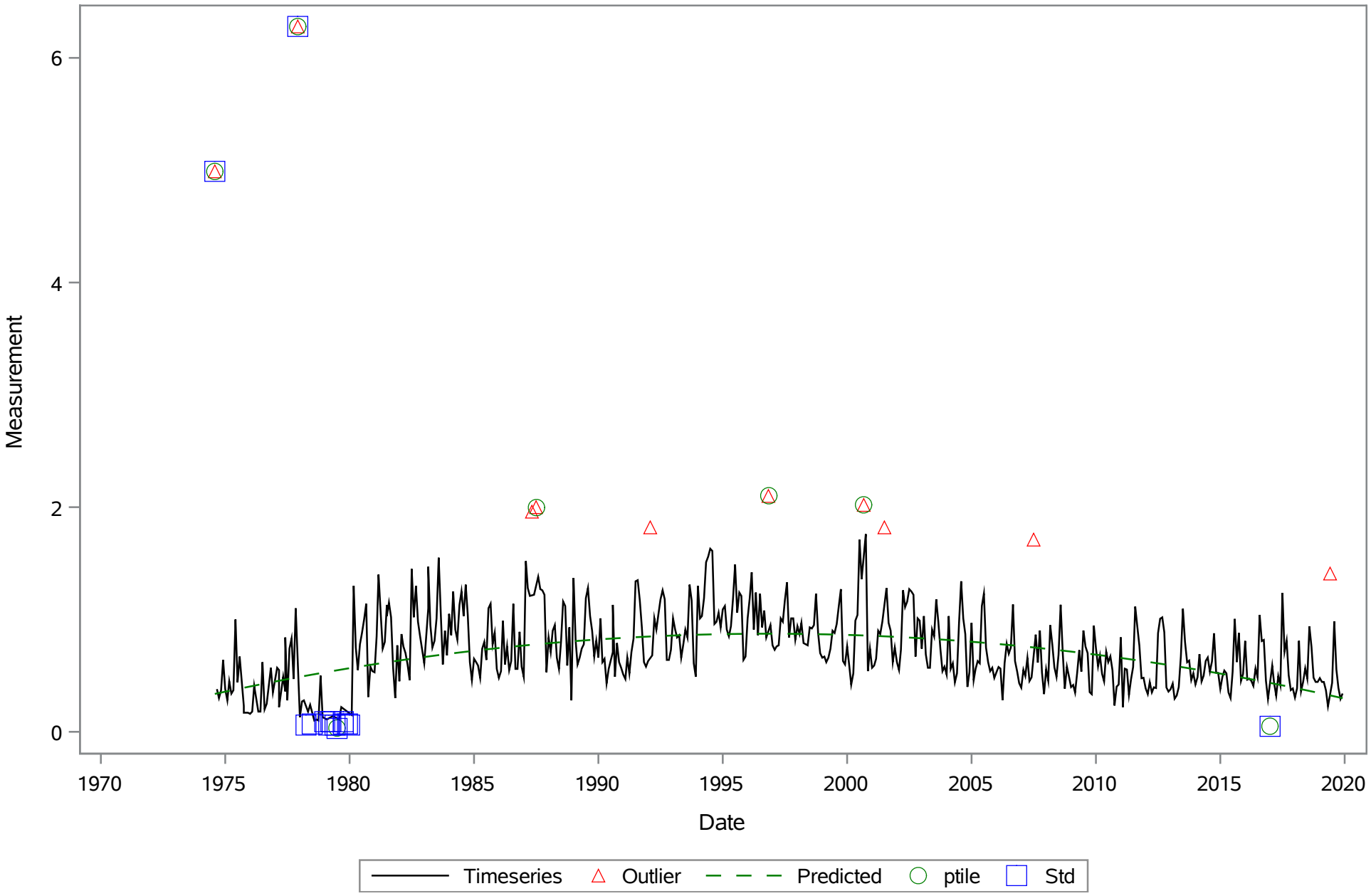
Little Manatee River
180
Fluoride (mg/l)
Site ID = 180



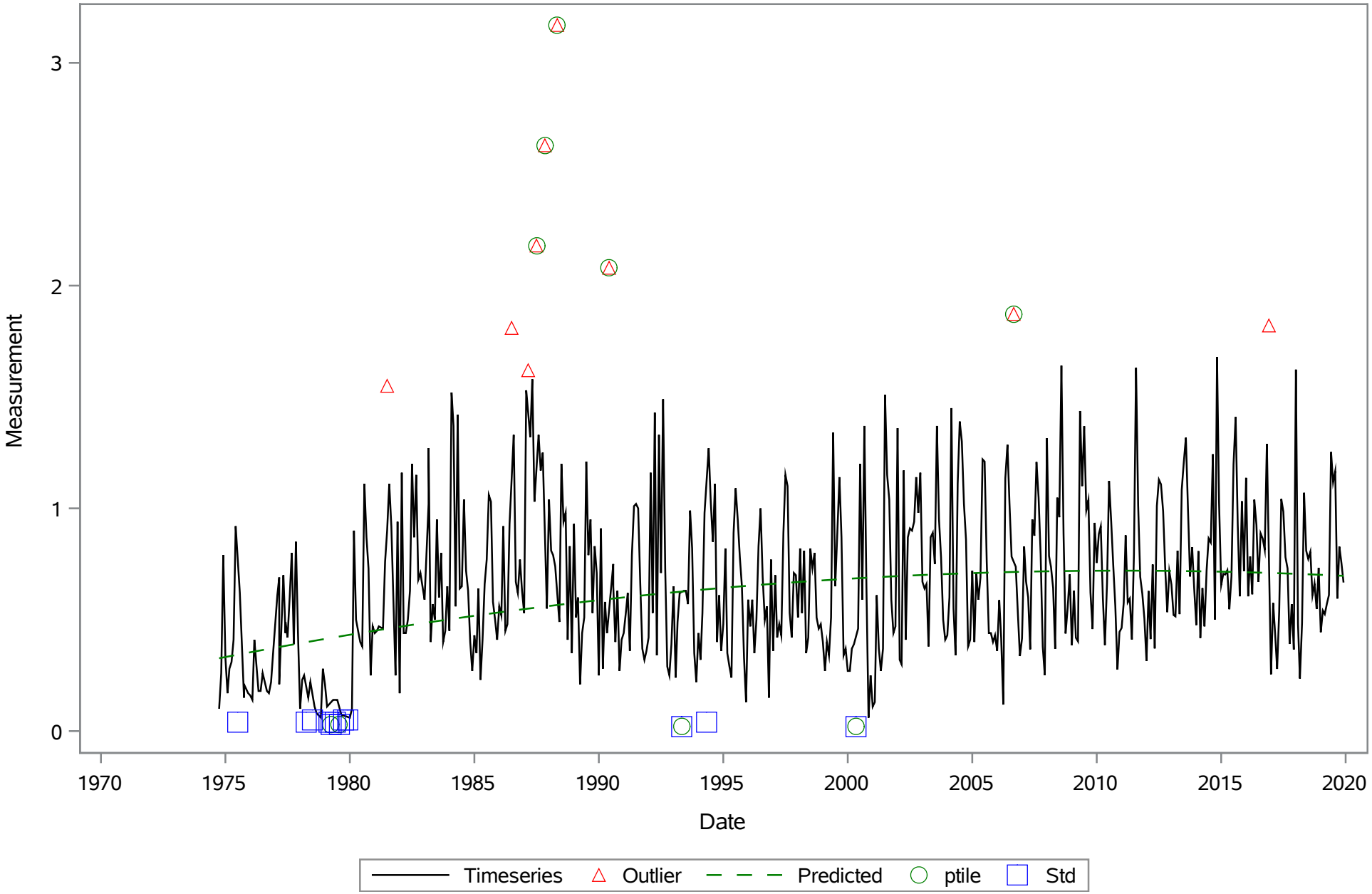
Little Manatee River
181
Fluoride (mg/l)
Site ID = 181

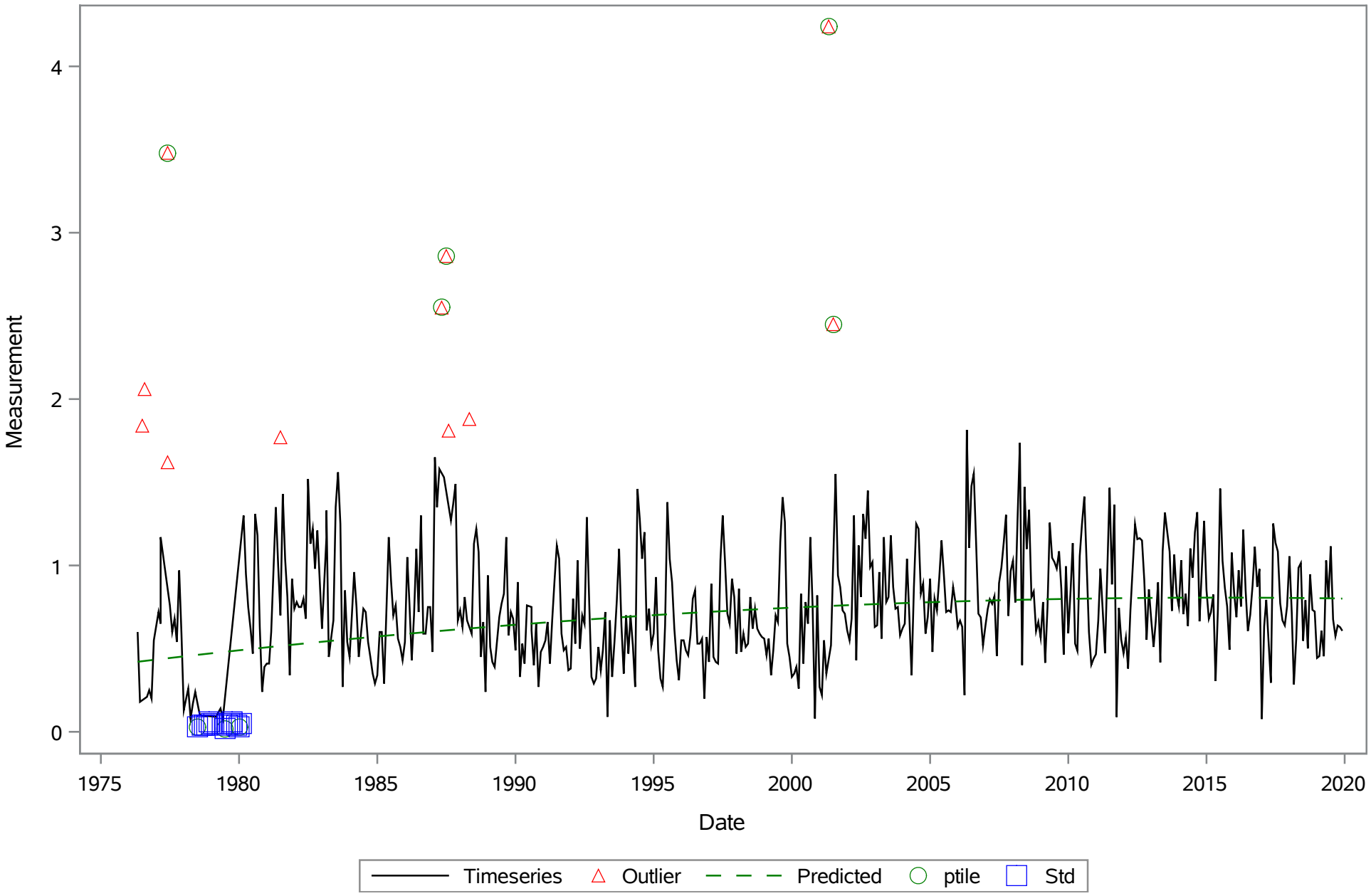



Little Manatee River
182
Fluoride (mg/l)
Site ID = 182
1.0
0.8
0.6
0.4
0.2
Measurement
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Outlier
Predicted
ptile

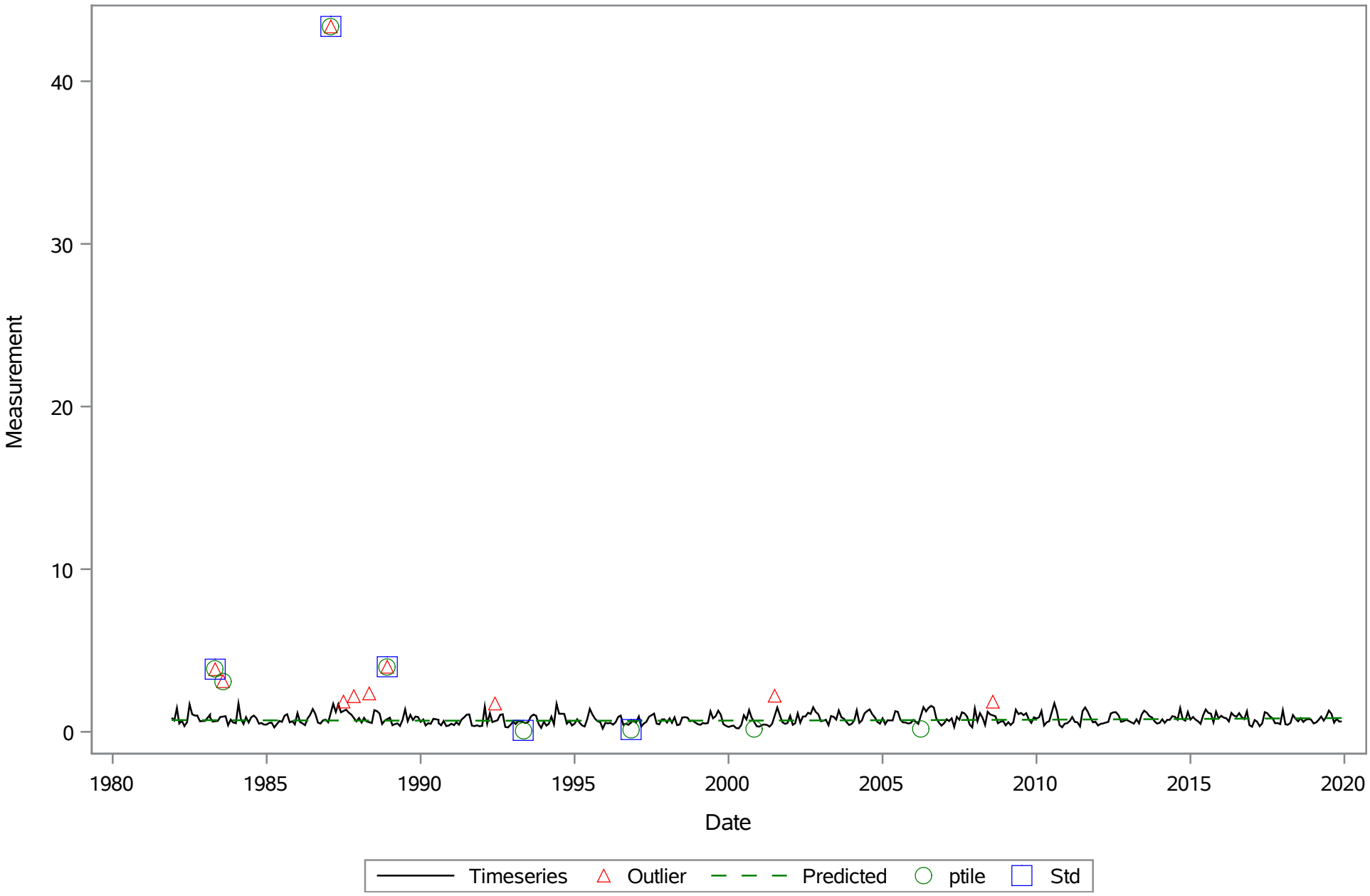

Little Manatee River
112
Kjeldahl Nitrogen (mg/l)
Site ID = 112
Measurement
0
2
4
6
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

Little Manatee River
113
Kjeldahl Nitrogen (mg/l)
Site ID = 113

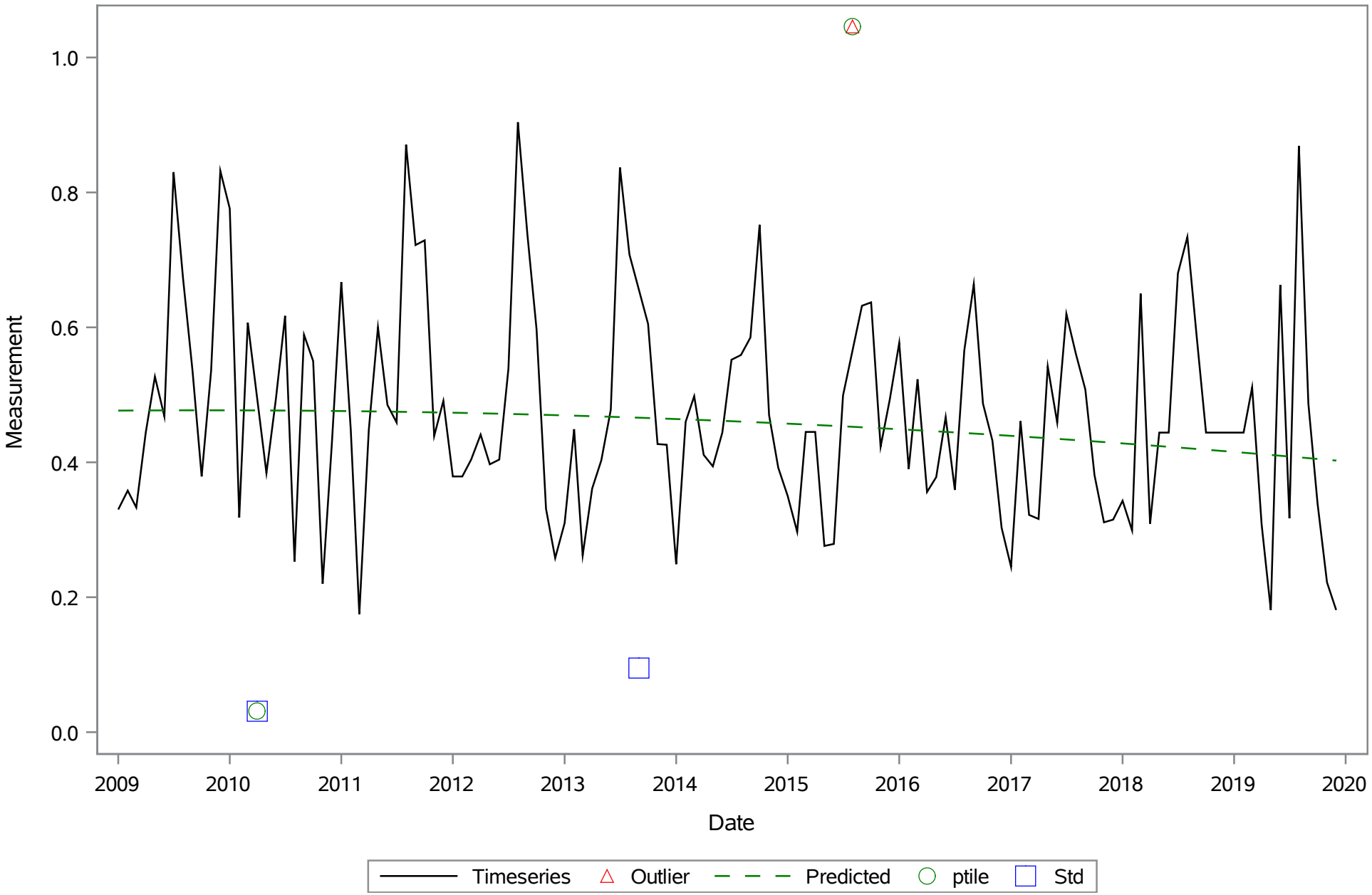


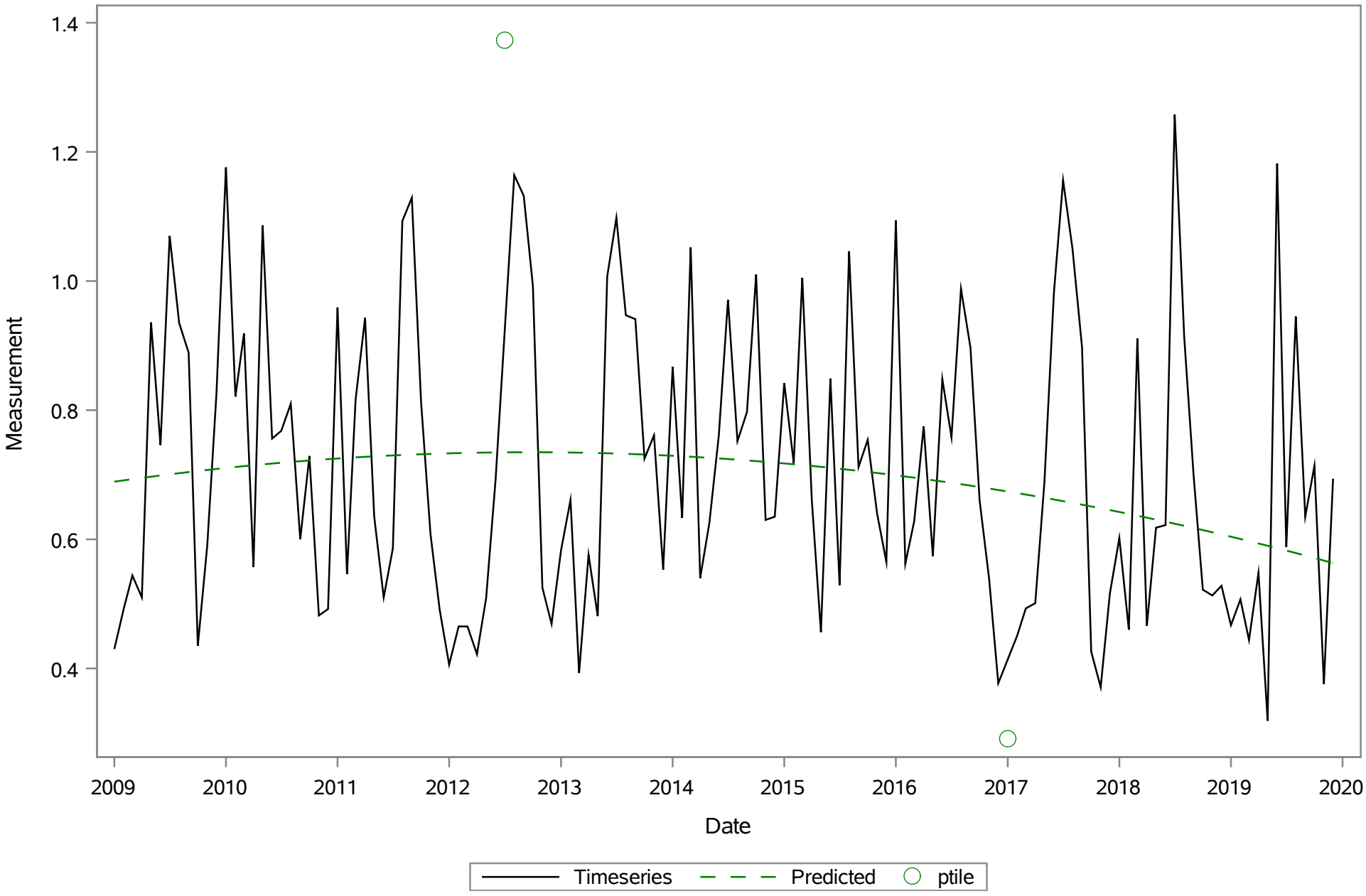

Little Manatee River
129
Kjeldahl Nitrogen (mg/l)
Site ID = 129
Measurement
0
1
2
3
4
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

Little Manatee River
140
Kjeldahl Nitrogen (mg/l)
Site ID = 140

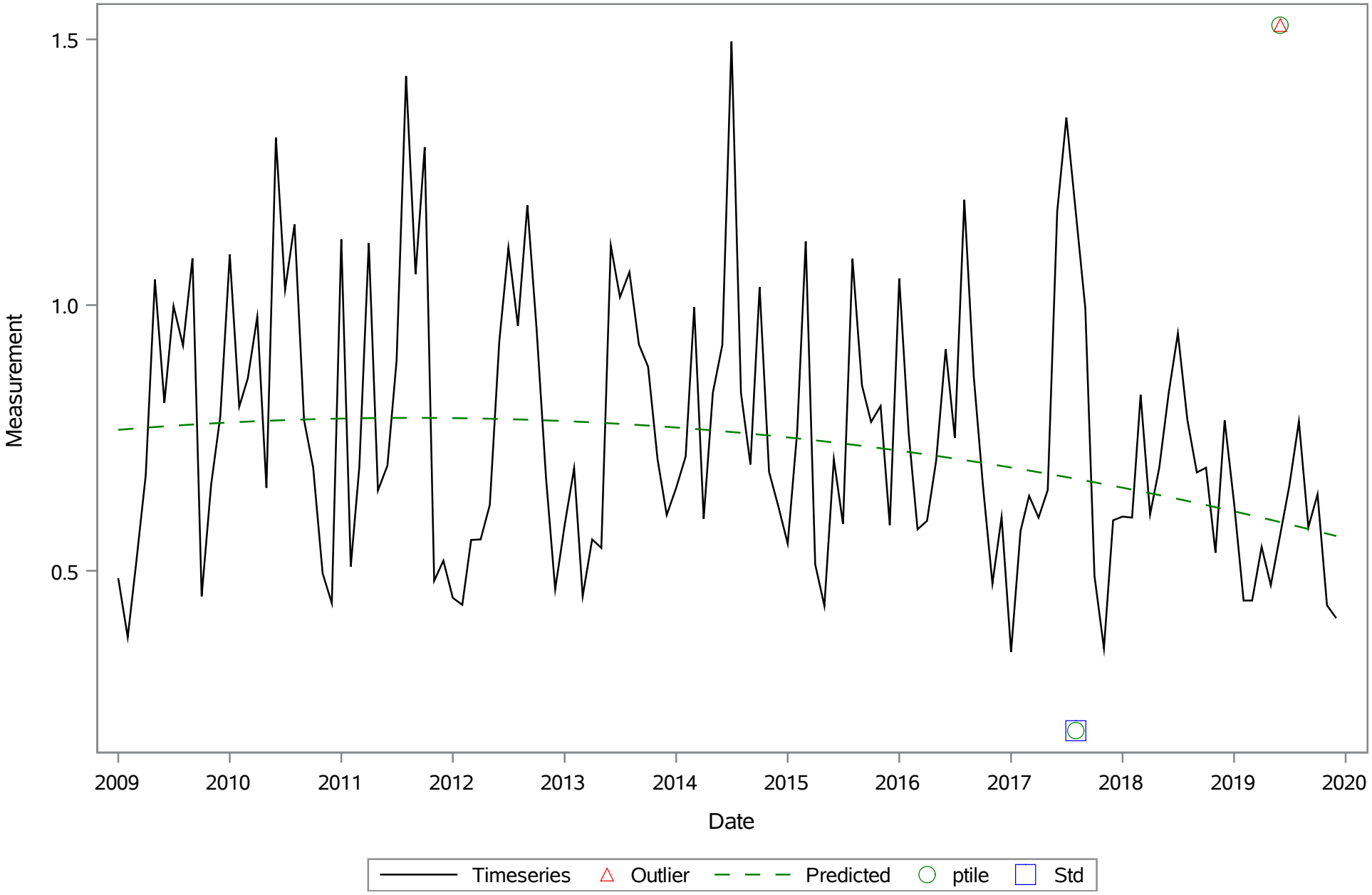


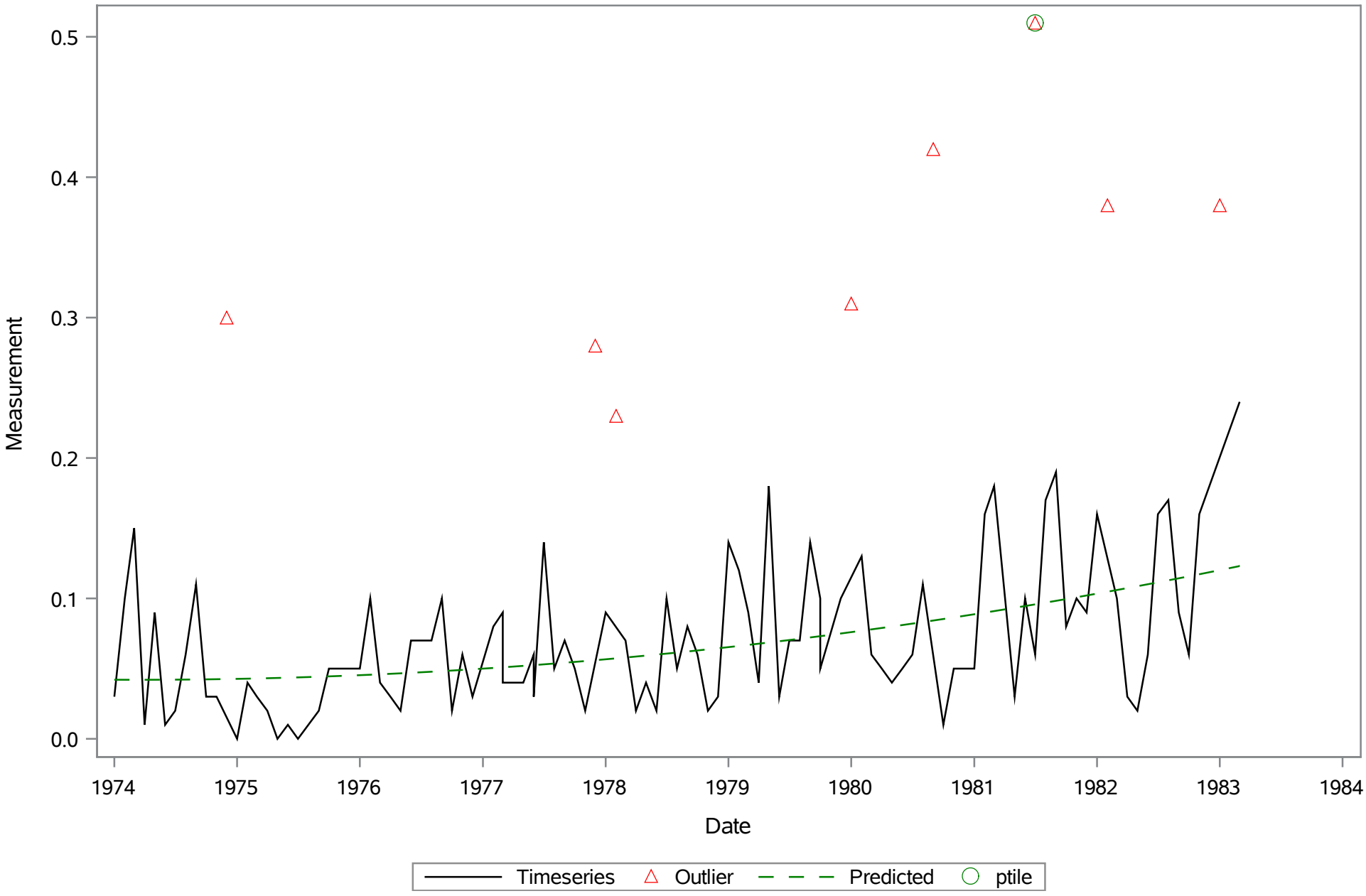
Little Manatee River
180
Kjeldahl Nitrogen (mg/l)
Site ID = 180

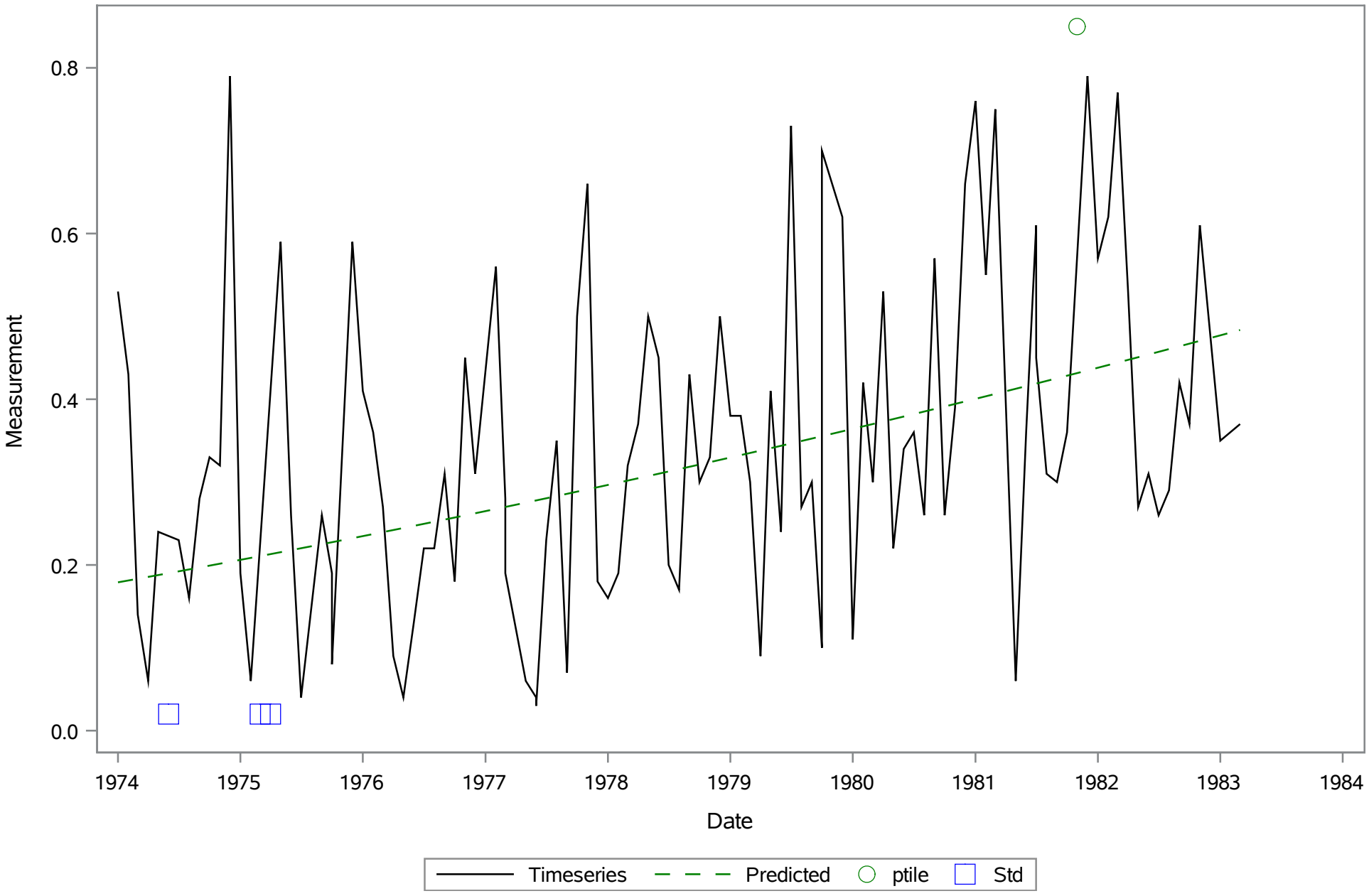



Little Manatee River
181
Kjeldahl Nitrogen (mg/l)
Site ID = 181
Measurement
1.4
1.2
1.0
0.8
0.6
0.4
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Predicted
ptile

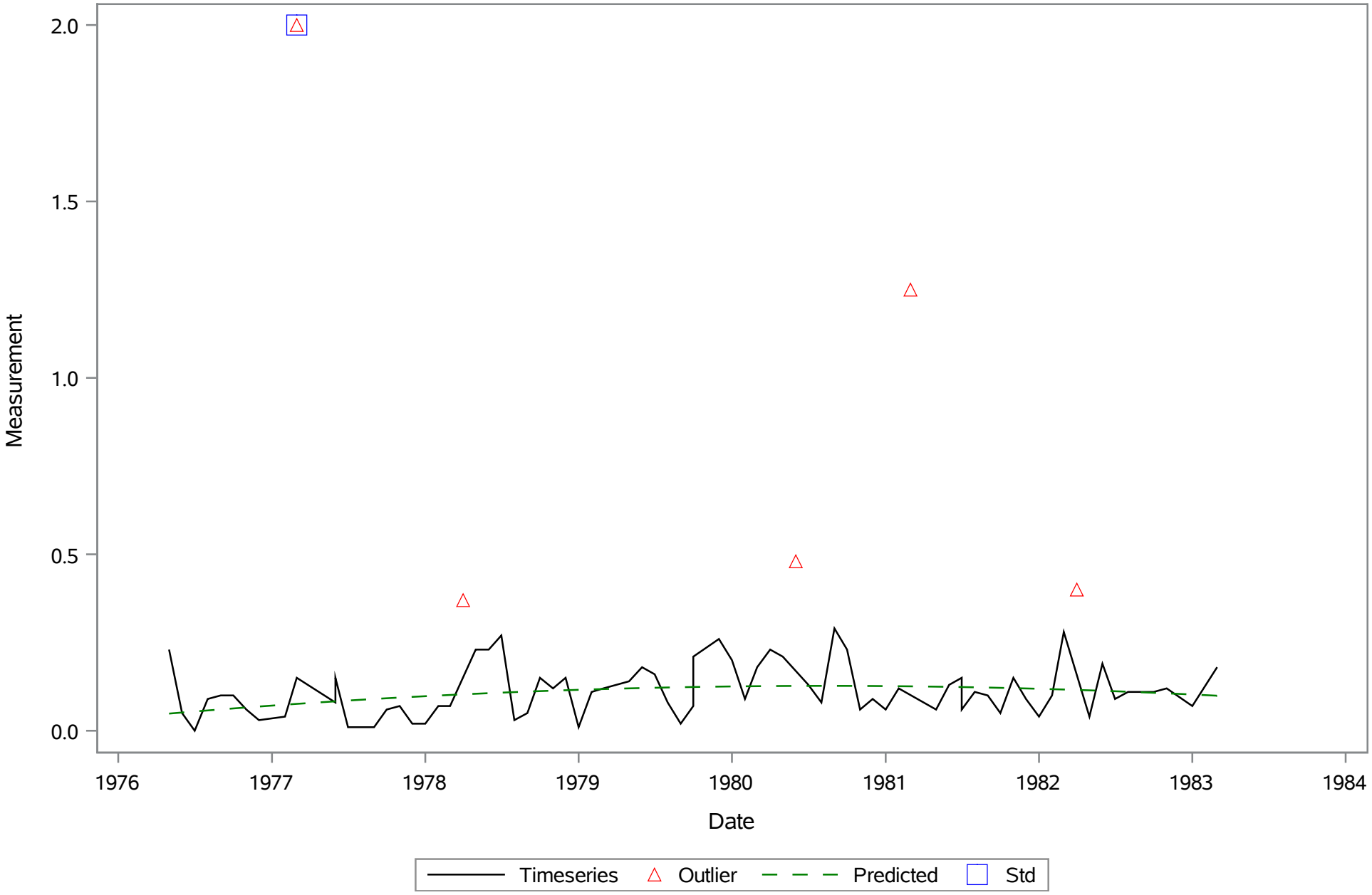
Little Manatee River
182
Kjeldahl Nitrogen (mg/l)
Site ID = 182

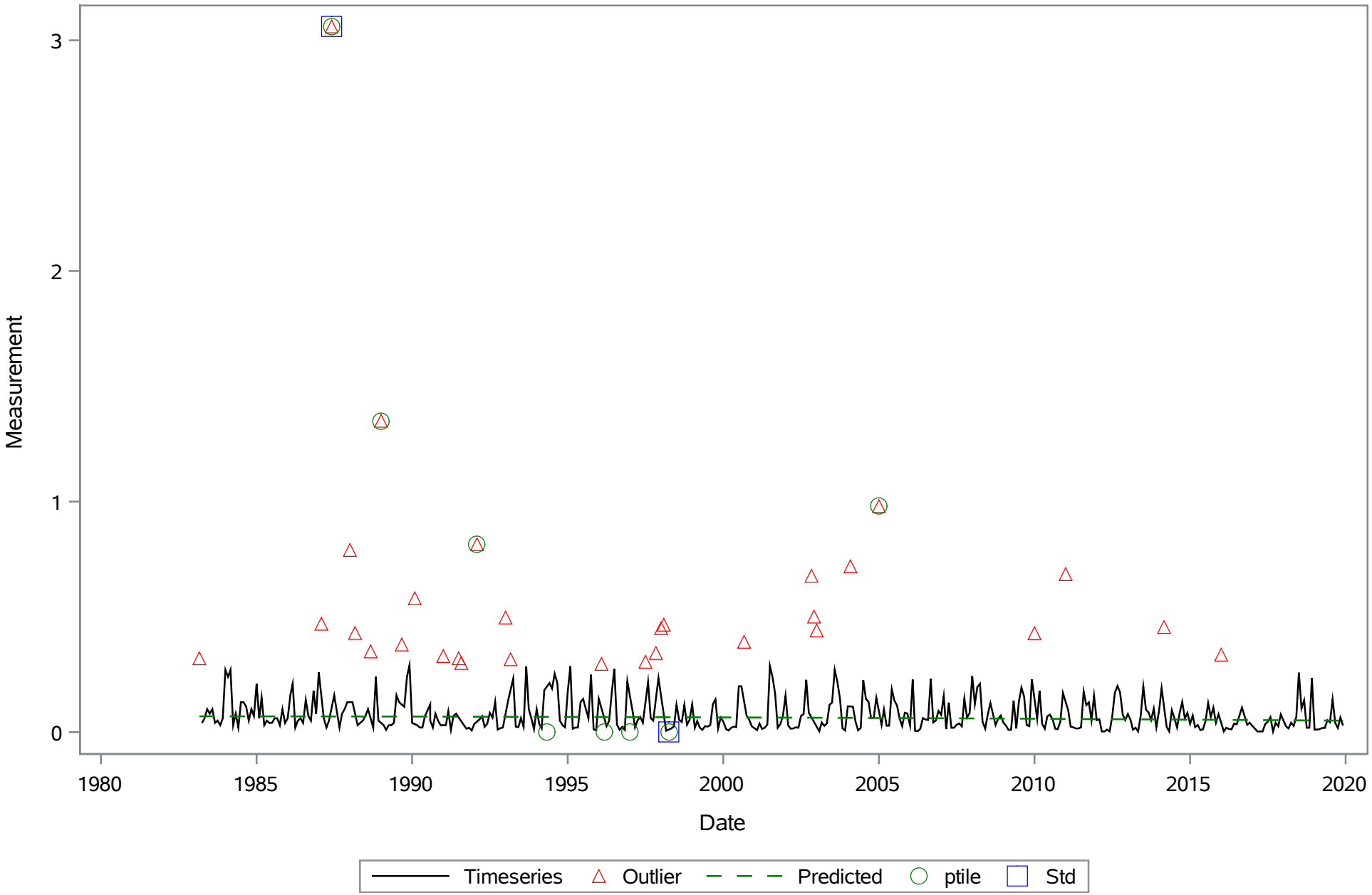


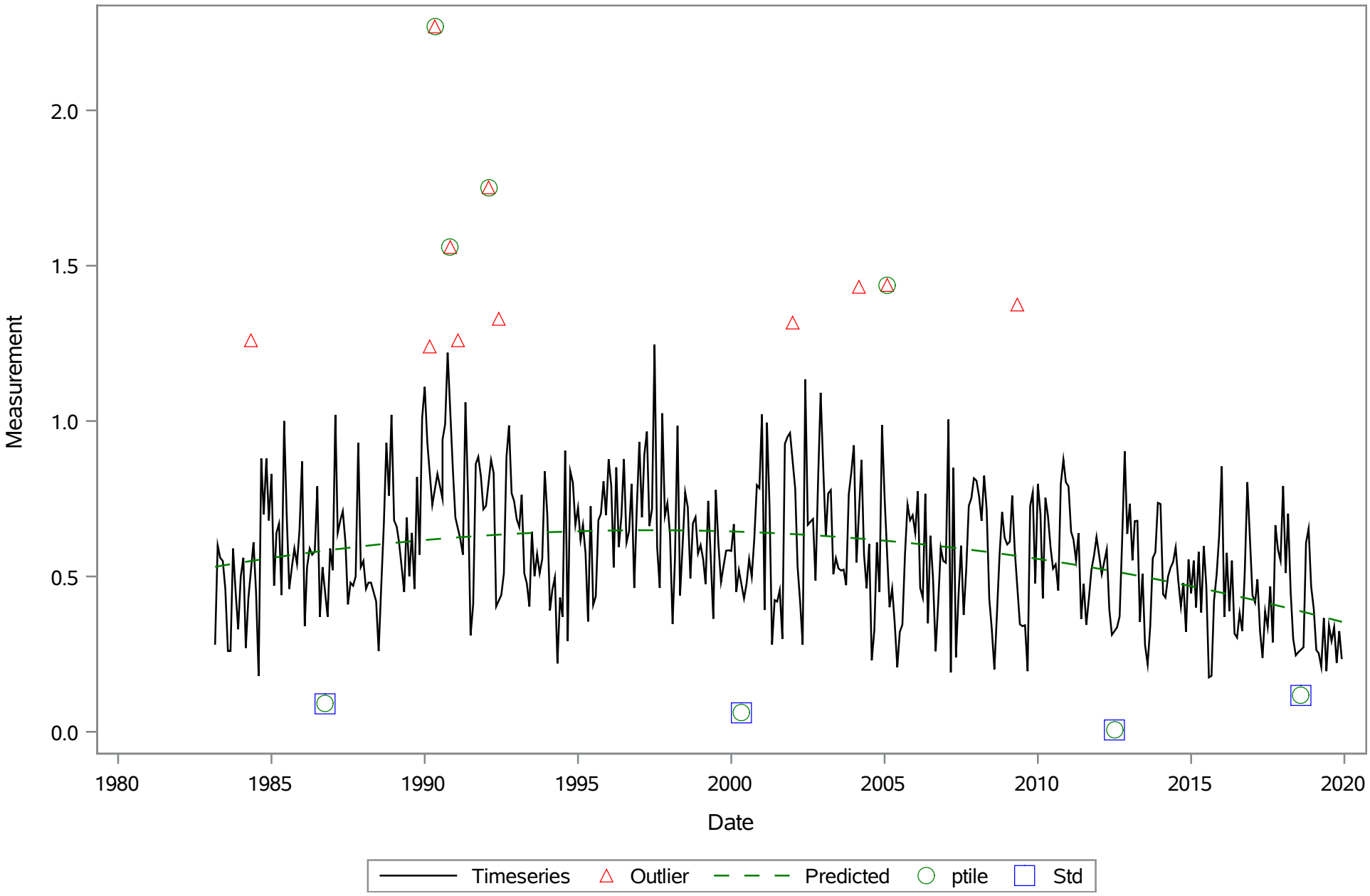

Little Manatee River
112
Nitrates
Site ID = 112
Measurement
0.0
0.1
0.2
0.3
0.4
0.5
1974
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
Date
Timeseries
Outlier
Predicted
ptile

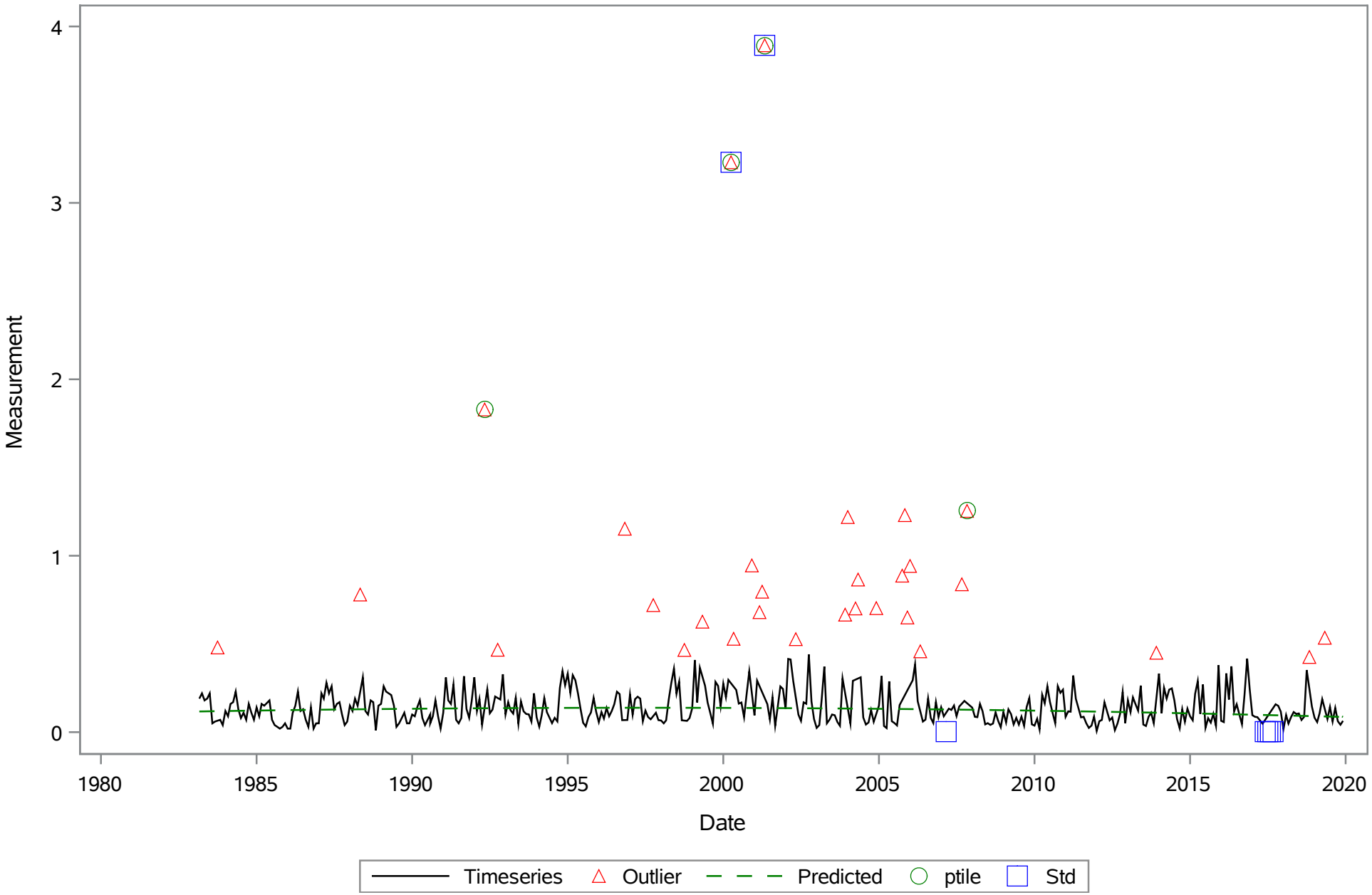

Little Manatee River
113
Nitrates
Site ID = 113
Measurement
0.0
0.2
0.4
0.6
0.8
1974
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
Date
Timeseries
Predicted
ptile
Std

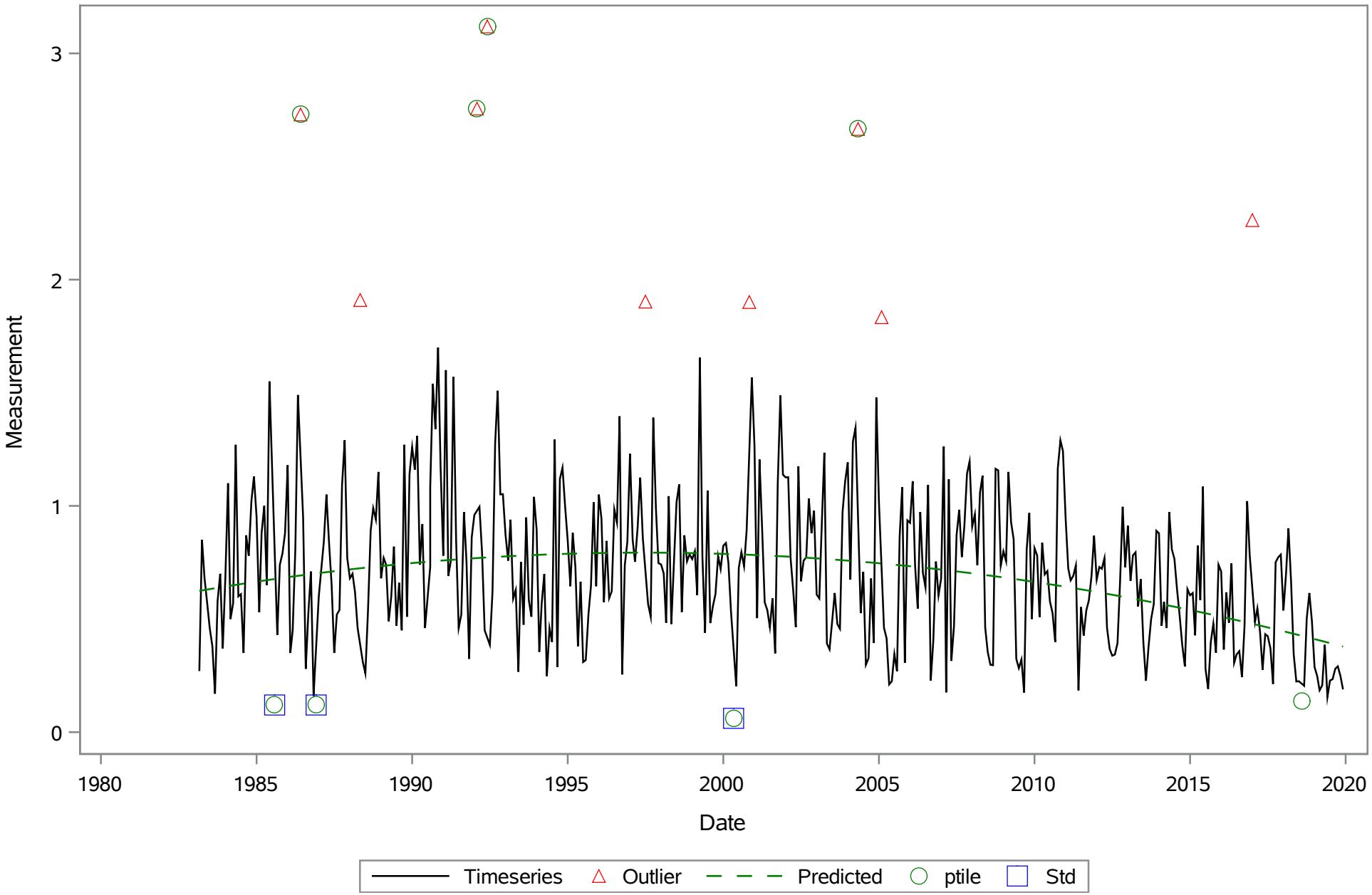
Little Manatee River
129
Nitrates
Site ID = 129



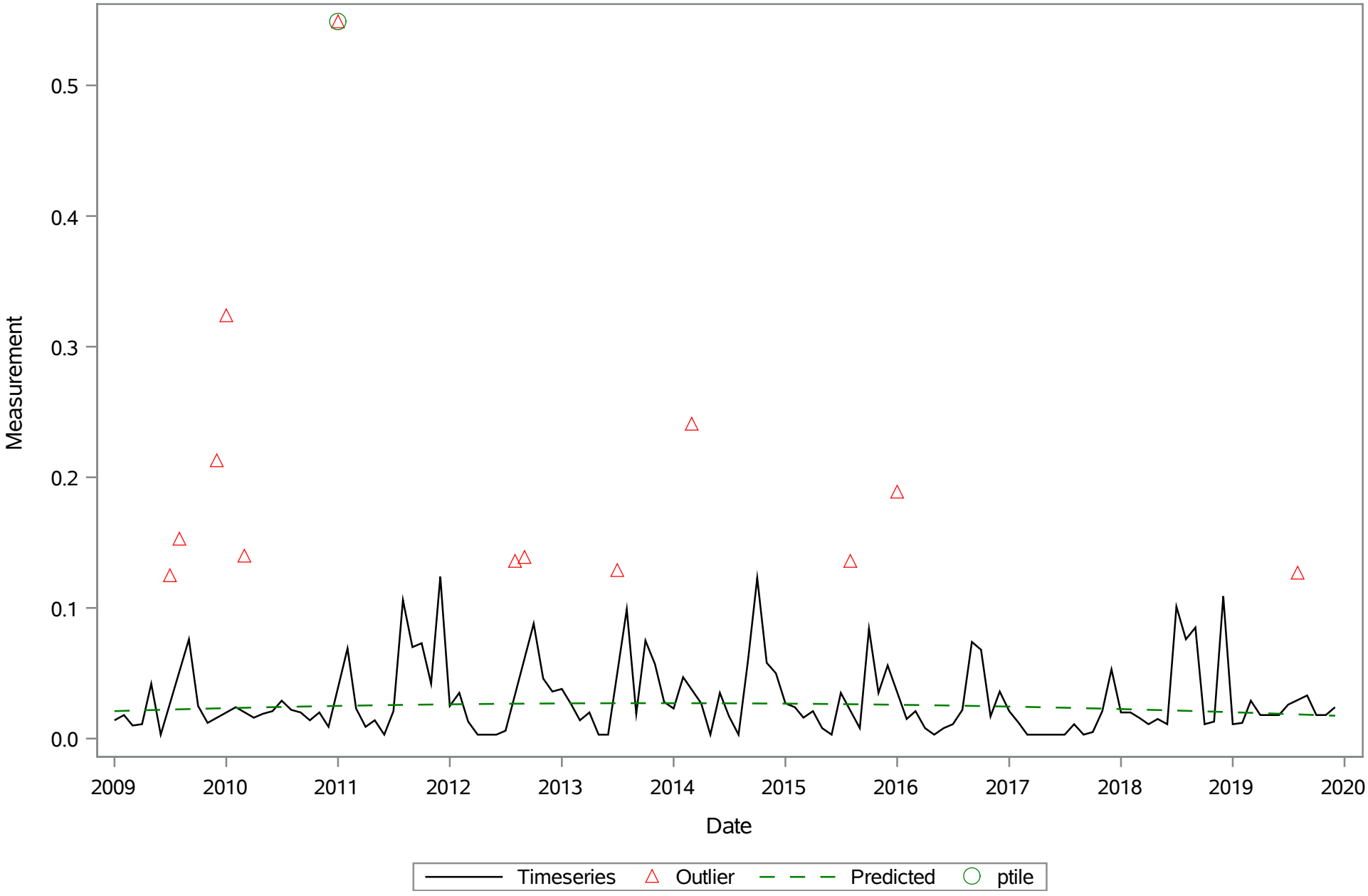

Little Manatee River
112
Nitrates/Nitrites (mg/l)
Site ID = 112
Measurement
3
2
1
0
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

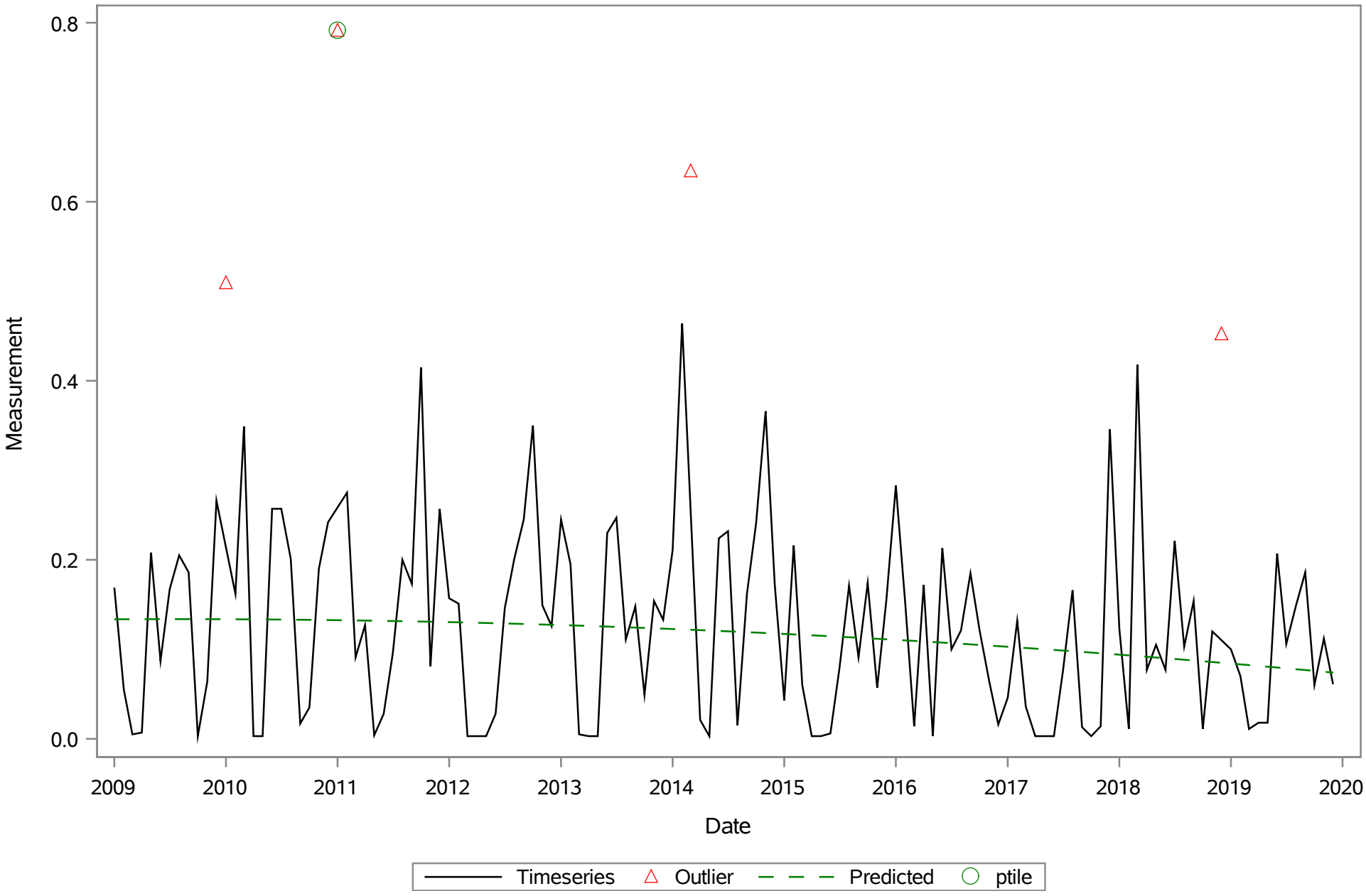

Little Manatee River
113
Nitrates/Nitrites (mg/l)
Site ID = 113
Measurement
2.0
1.5
1.0
0.5
0.0
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

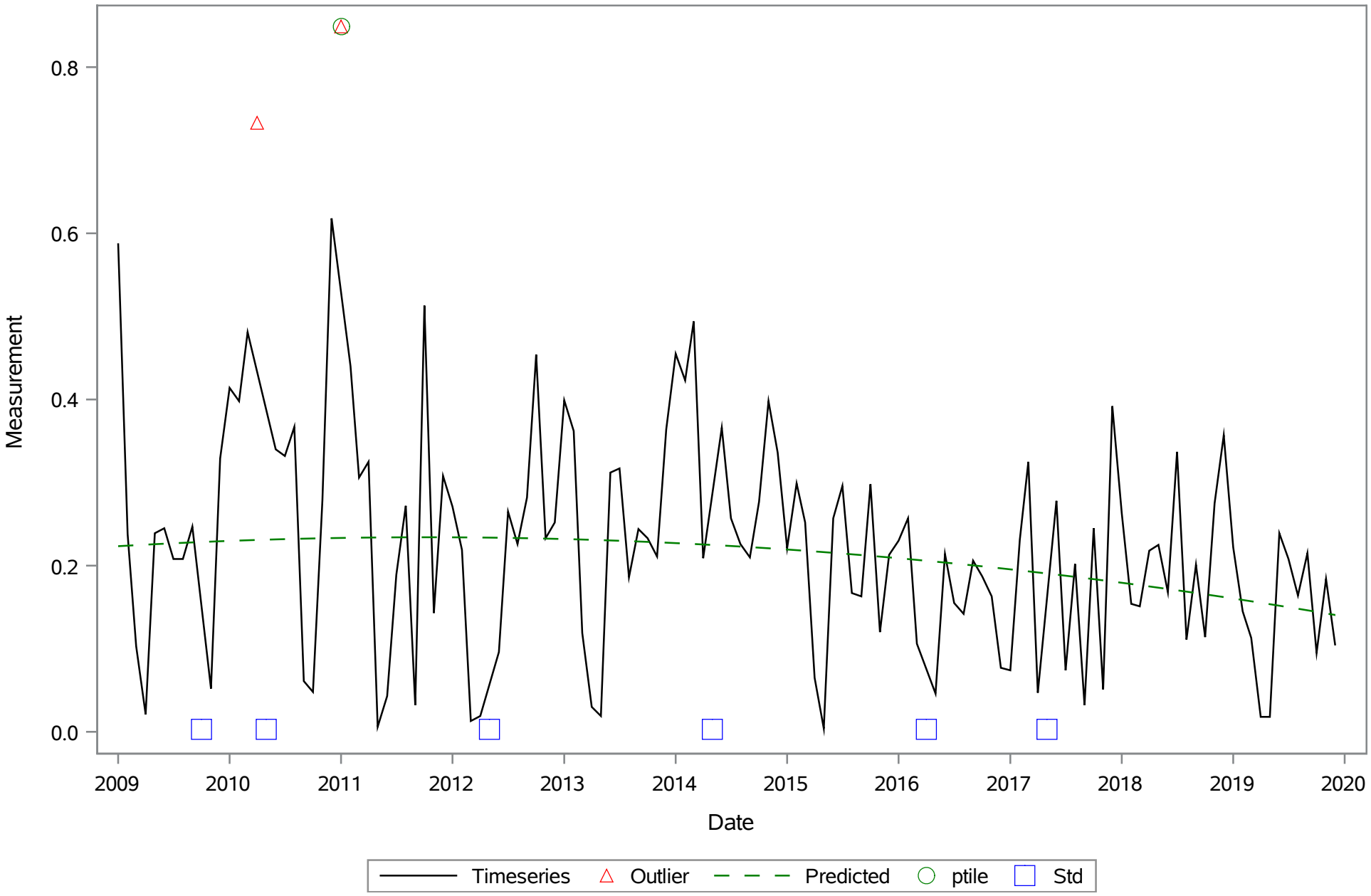

Little Manatee River
129
Nitrates/Nitrites (mg/l)
Site ID = 129
Measurement
0
1
2
3
4
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

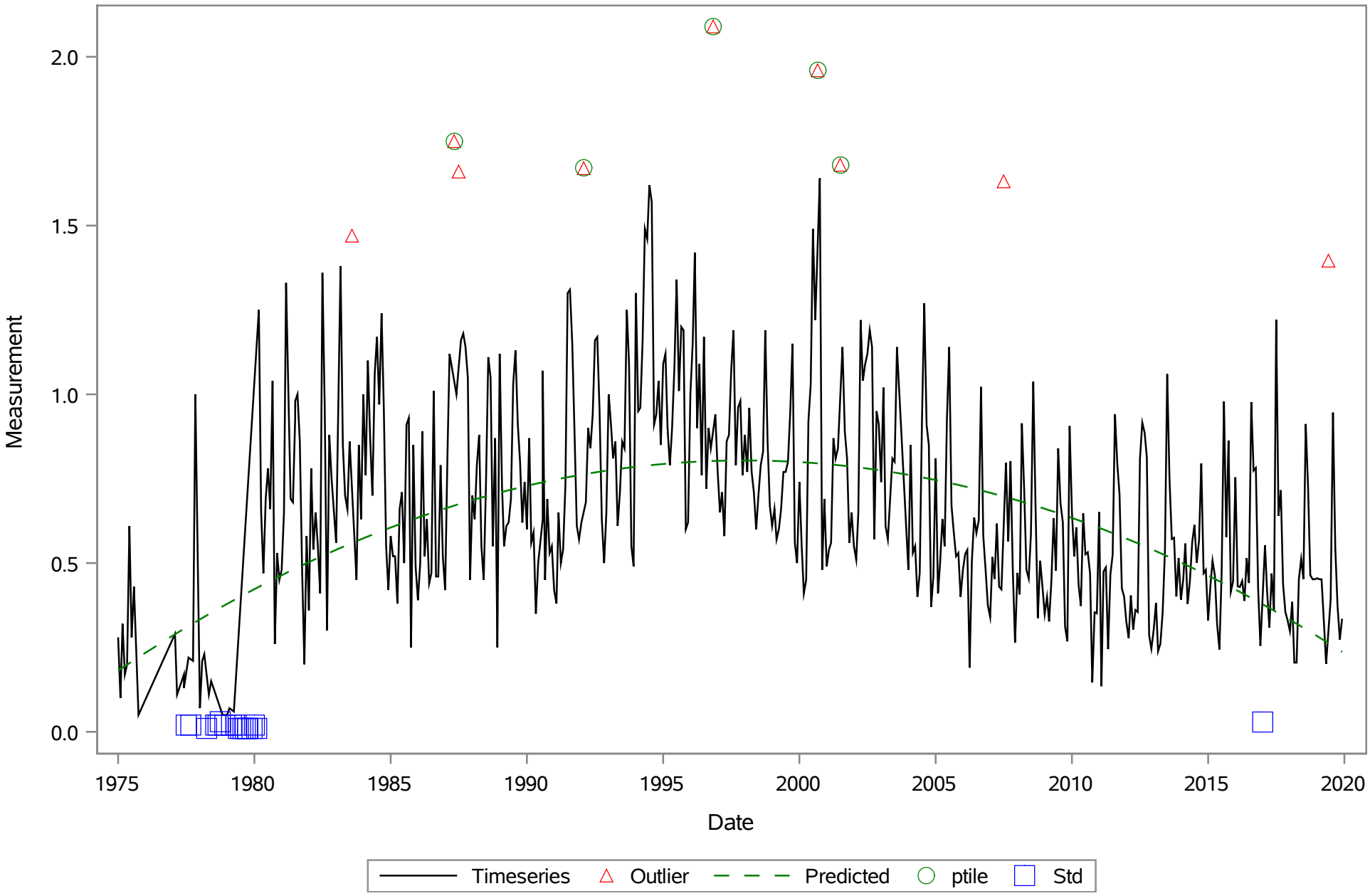

Little Manatee River
140
Nitrates/Nitrites (mg/l)
Site ID = 140
Measurement
0
1
2
3
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

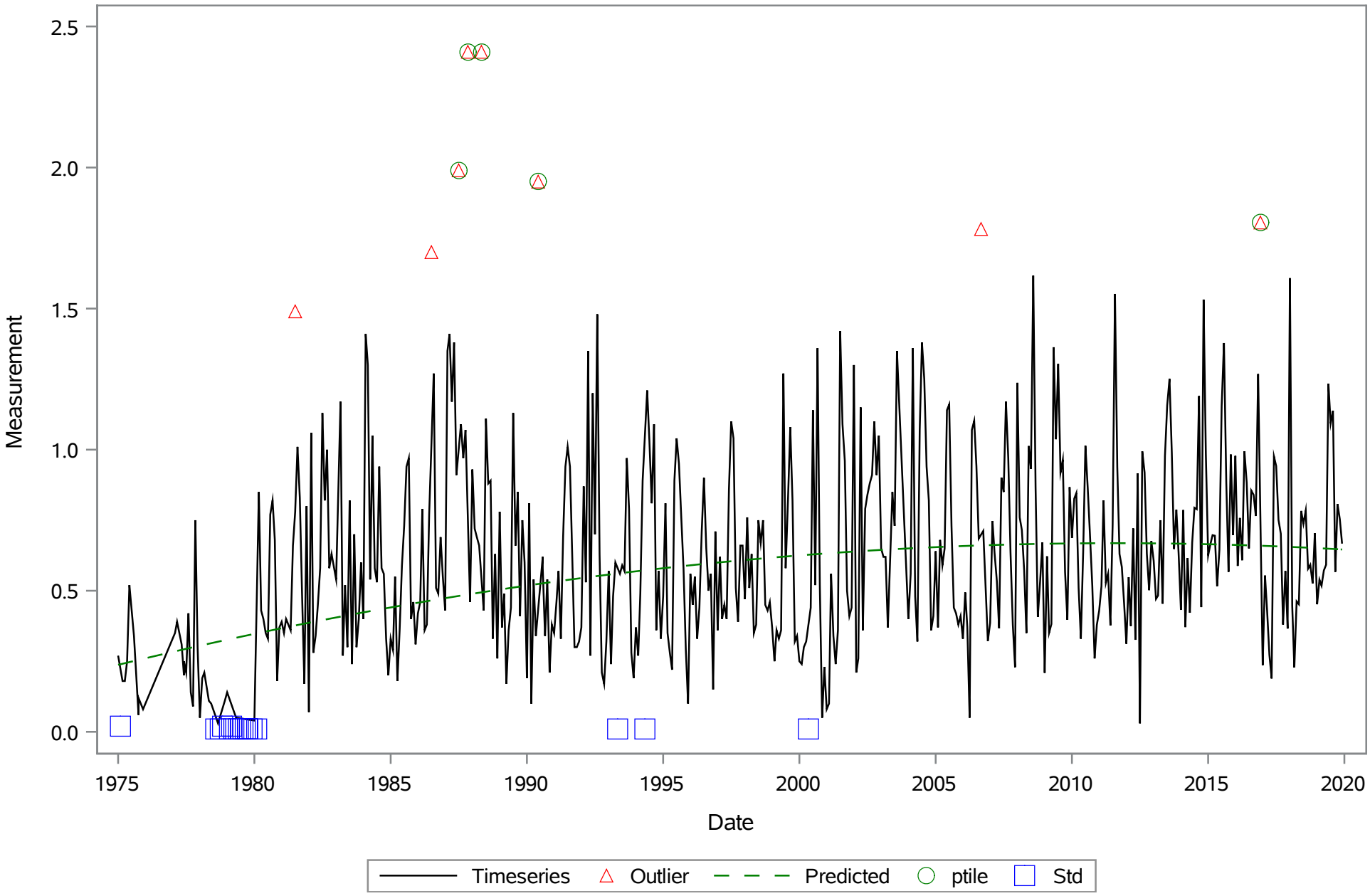
Little Manatee River
180
Nitrates/Nitrites (mg/l)
Site ID = 180



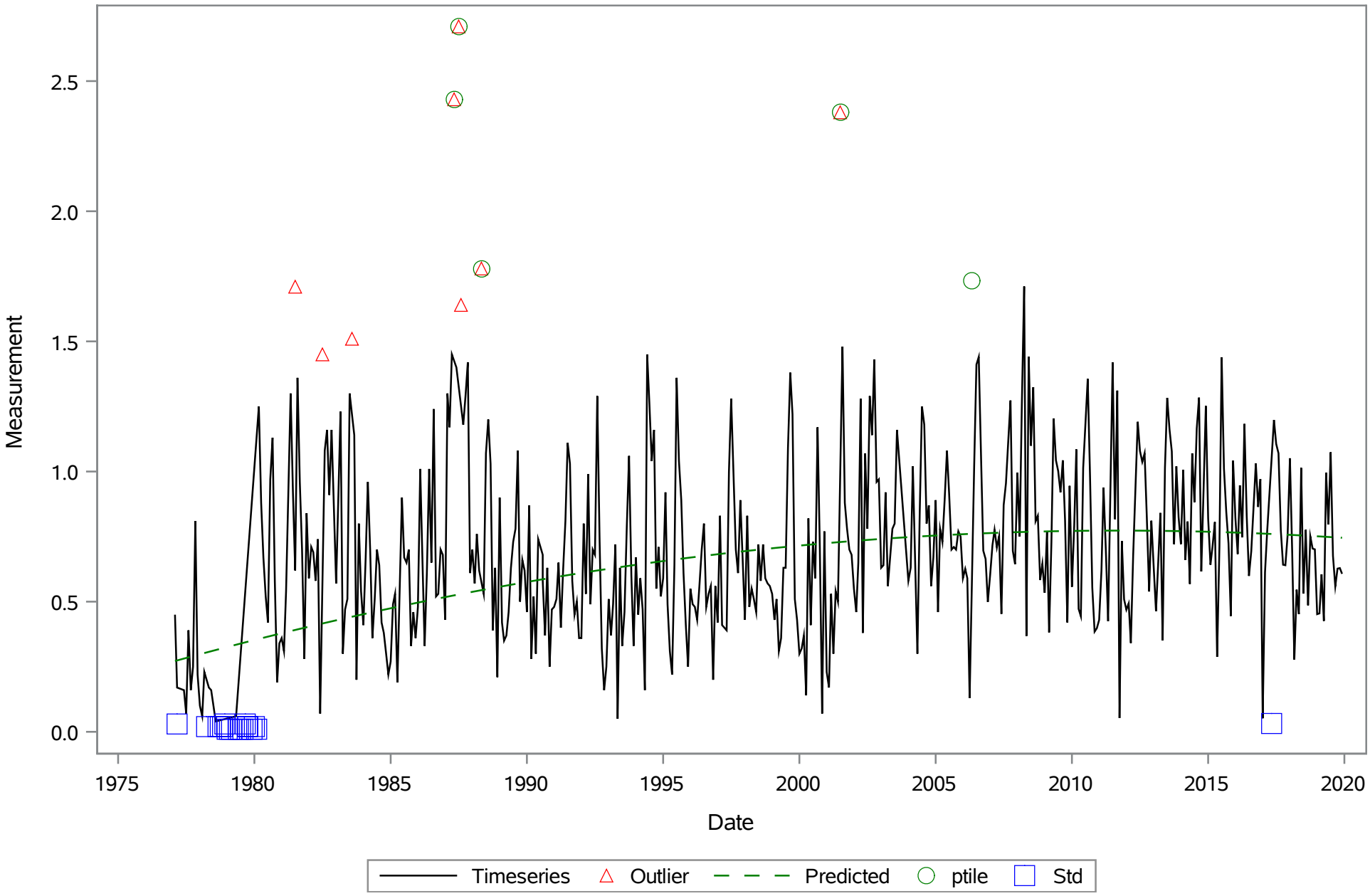

Little Manatee River
181
Nitrates/Nitrites (mg/l)
Site ID = 181
Measurement
0.0
0.2
0.4
0.6
0.8
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Outlier
Predicted
ptile

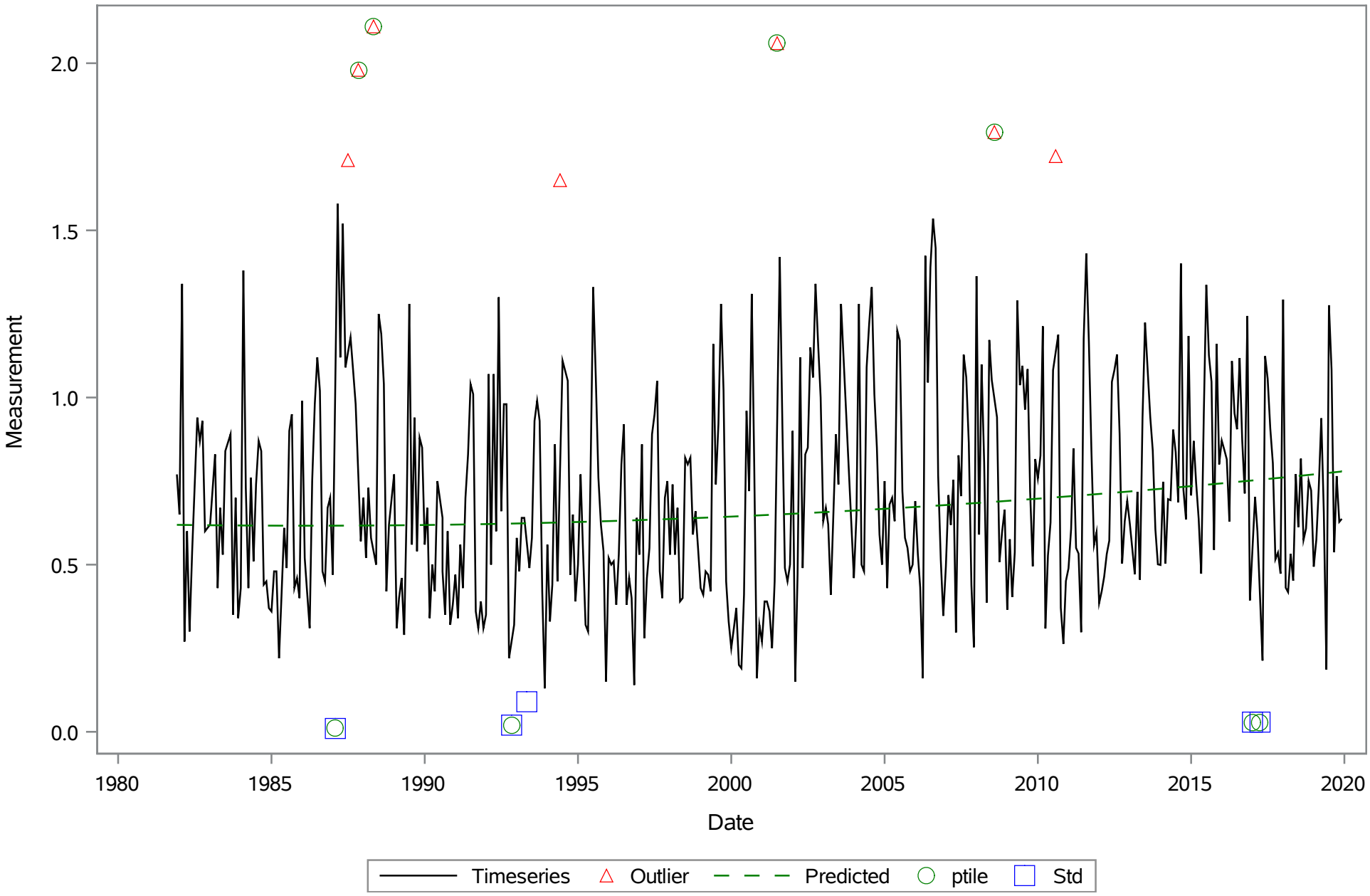

Little Manatee River
182
Nitrates/Nitrites (mg/l)
Site ID = 182
Measurement
0.0
0.2
0.4
0.6
0.8
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Outlier
Predicted
ptile
Std


Little Manatee River
112
Organic Nitrogen (mg/l)
Site ID = 112
Measurement
2.0
1.5
1.0
0.5
0.0
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

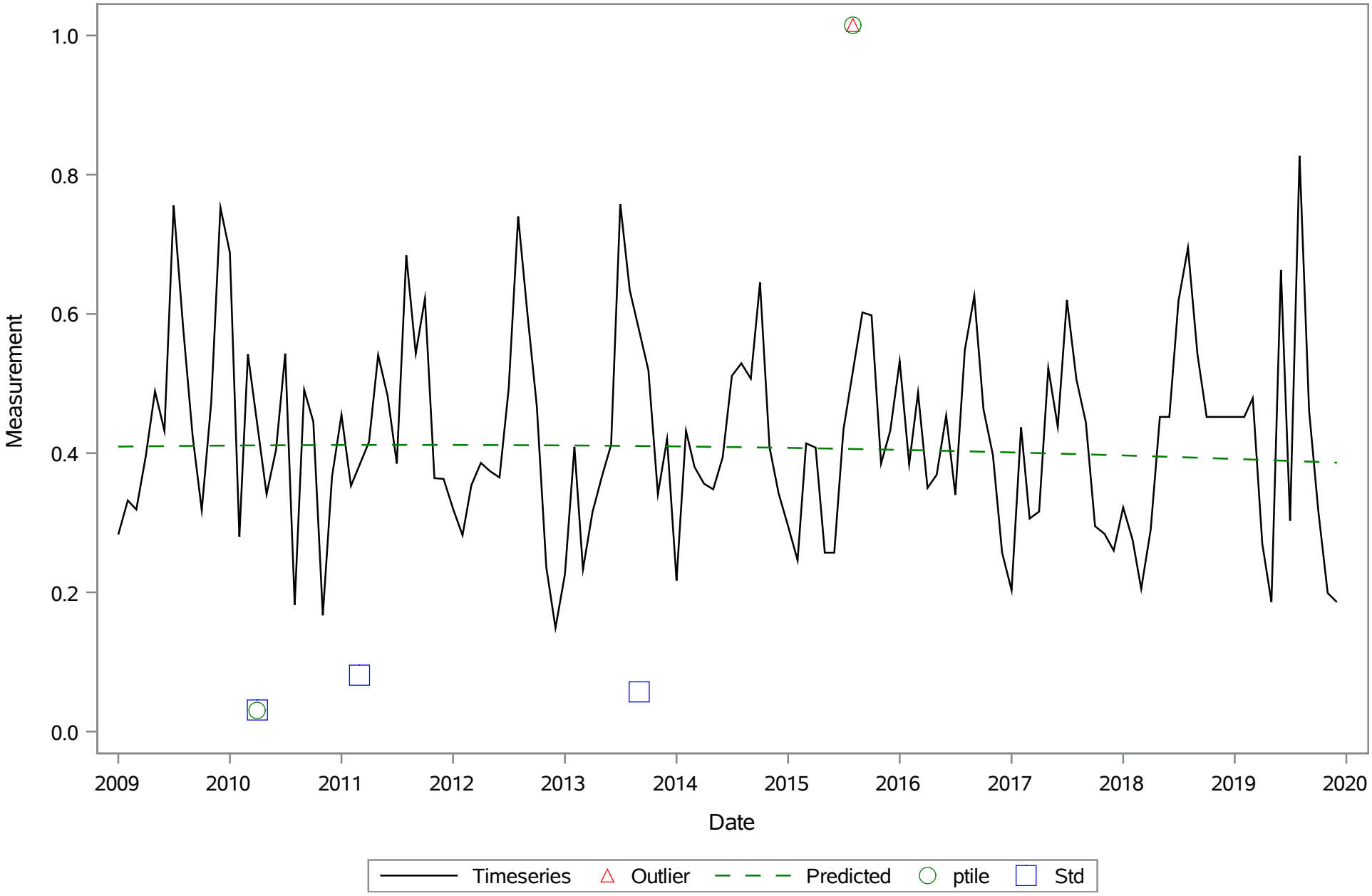

Little Manatee River
113
Organic Nitrogen (mg/l)
Site ID = 113
Measurement
2.5
2.0
1.5
1.0
0.5
0.0
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

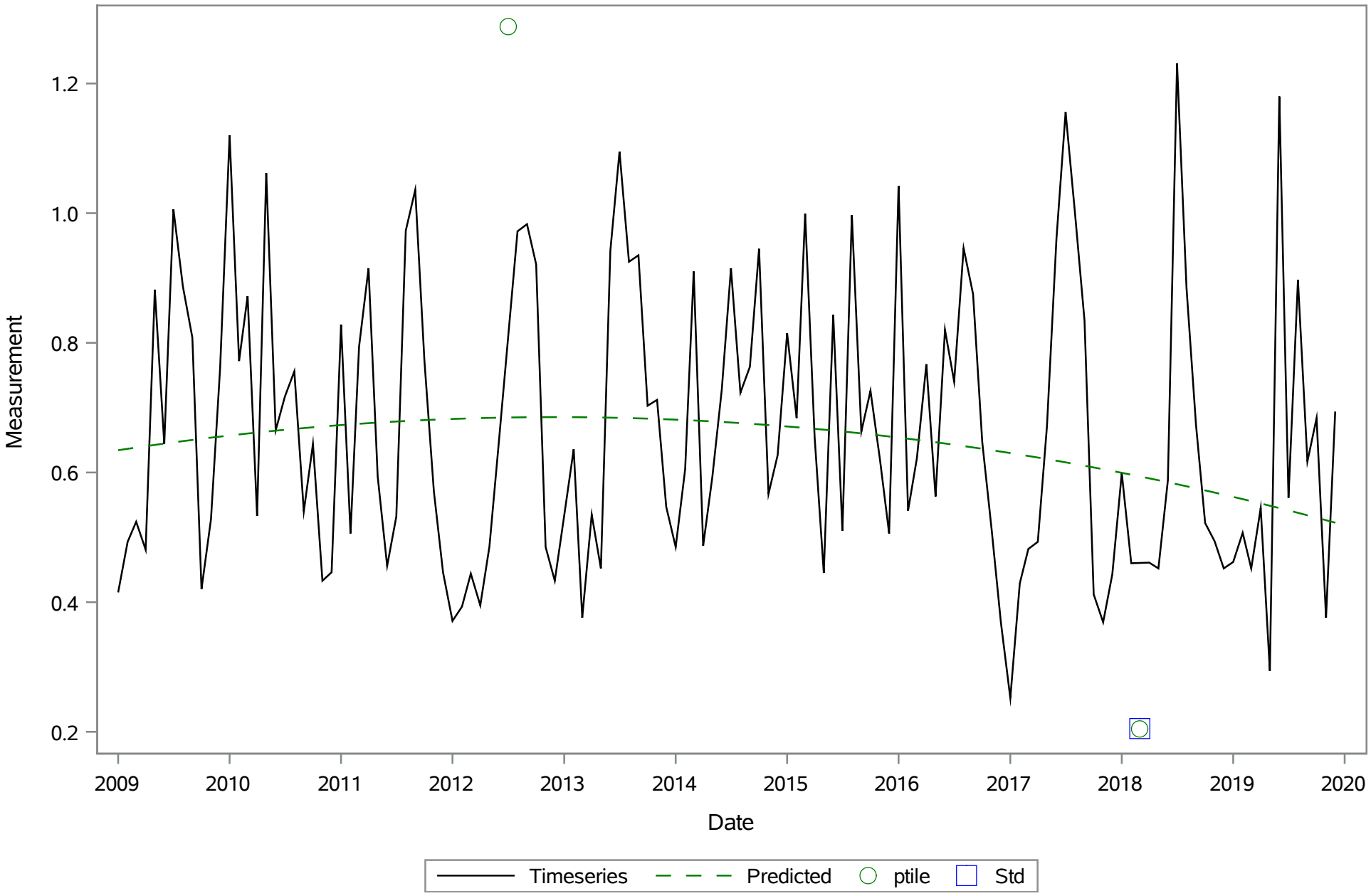
Little Manatee River
129
Organic Nitrogen (mg/l)
Site ID = 129



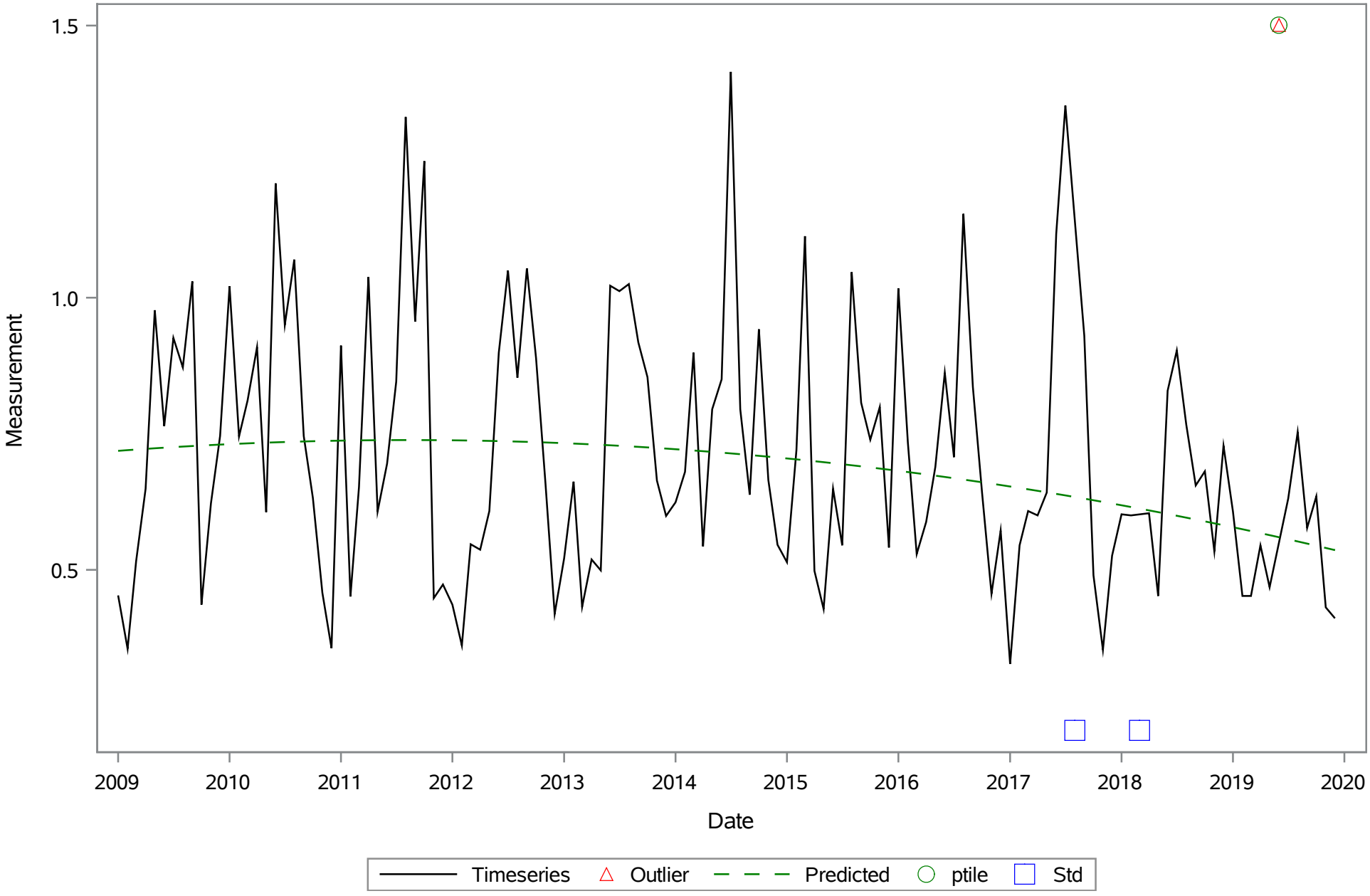

Little Manatee River
140
Organic Nitrogen (mg/l)
Site ID = 140
Measurement
2.0
1.5
1.0
0.5
0.0
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

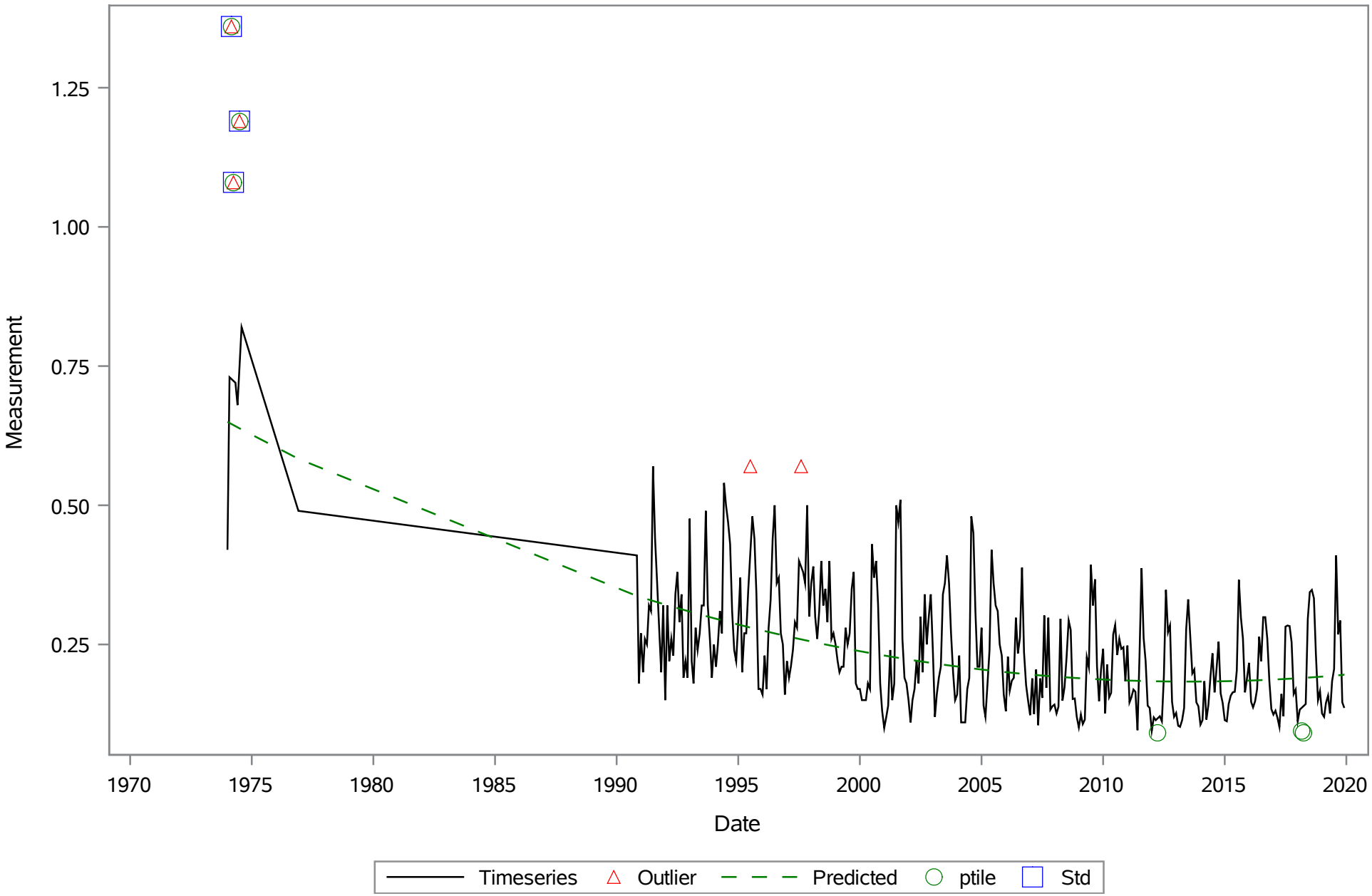
Little Manatee River
180
Organic Nitrogen (mg/l)
Site ID = 180



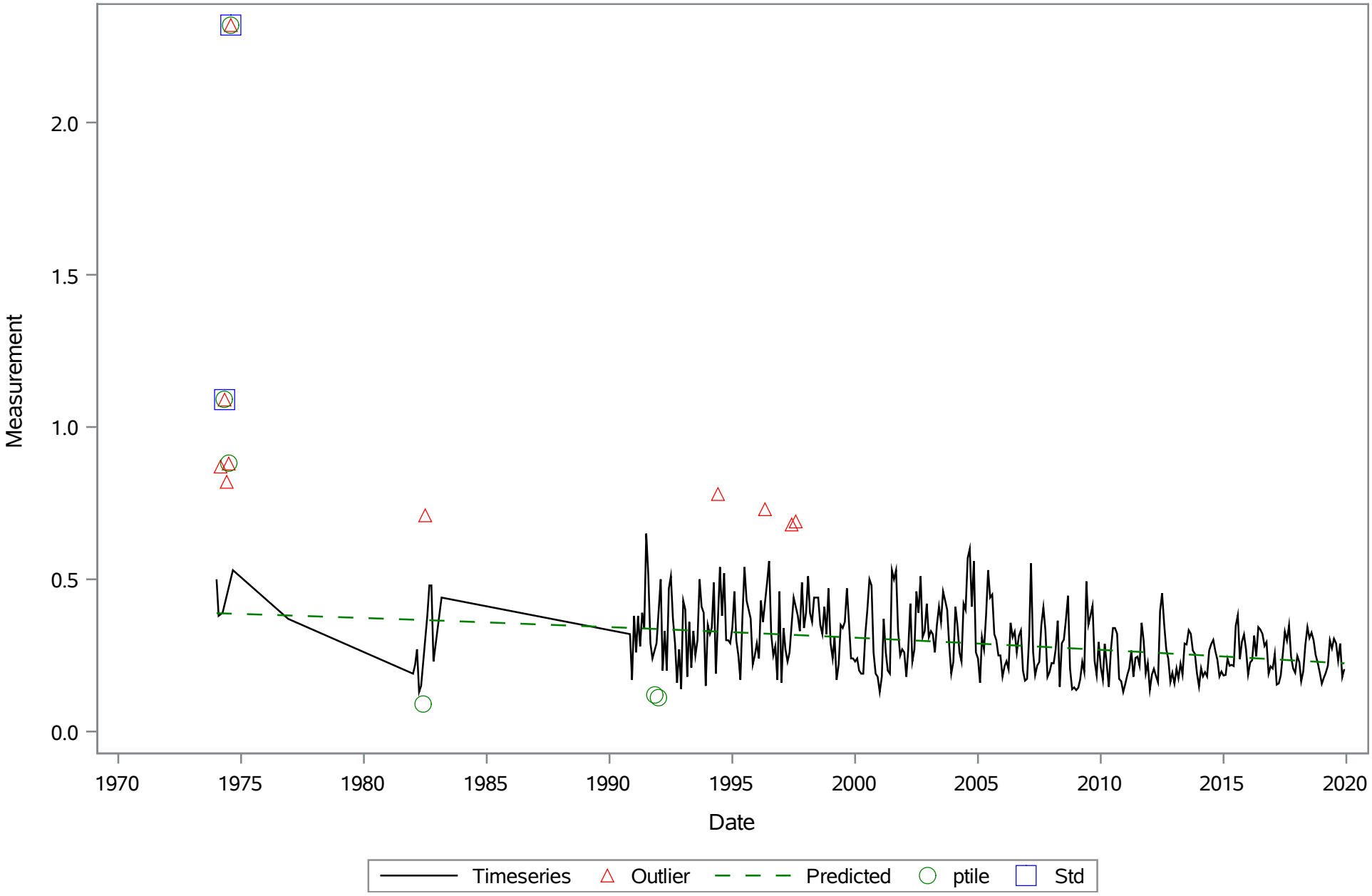

Little Manatee River
181
Organic Nitrogen (mg/l)
Site ID = 181
Measurement
1.2
1.0
0.8
0.6
0.4
0.2
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Predicted
ptile
Std

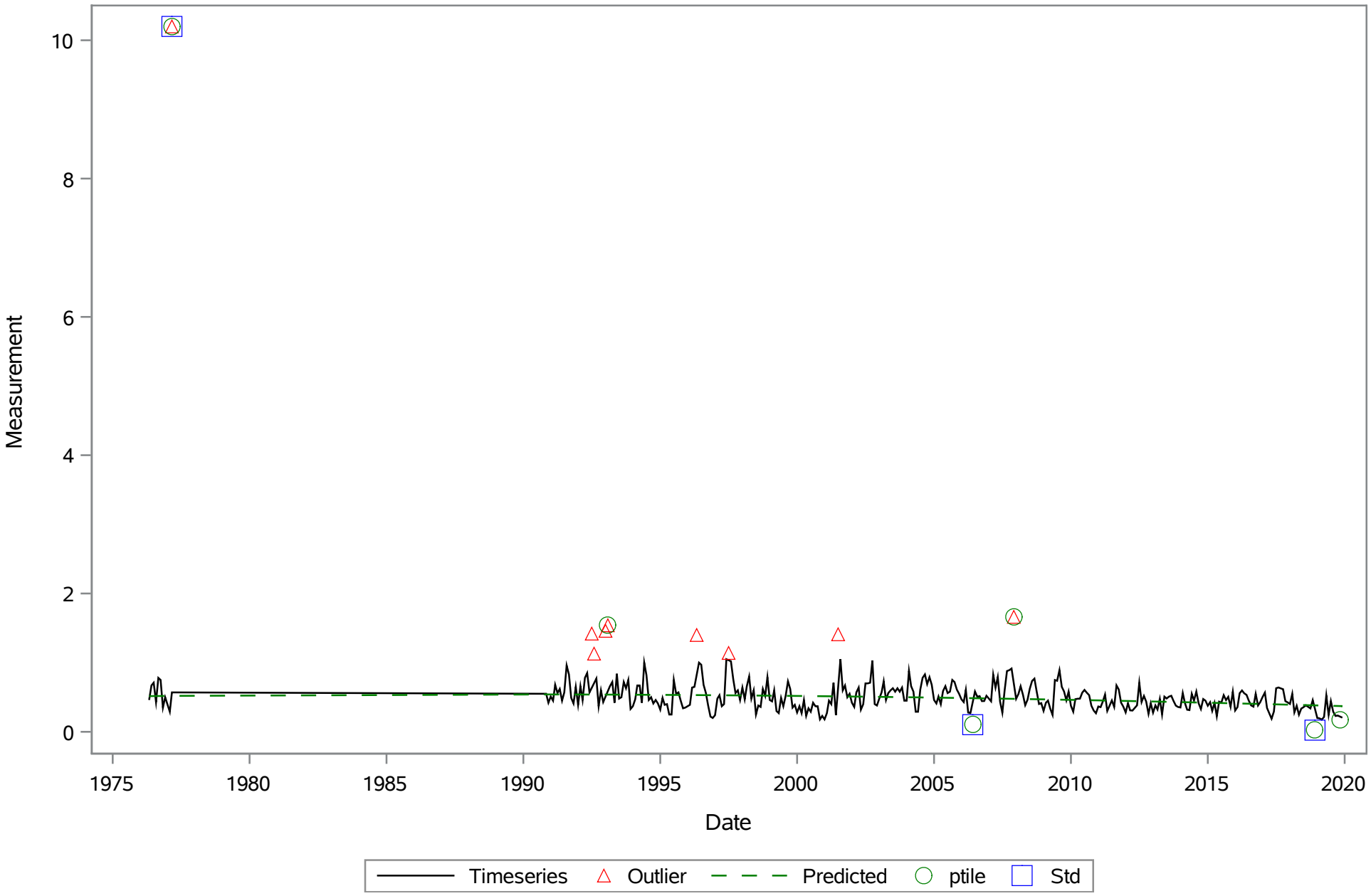
Little Manatee River
182
Organic Nitrogen (mg/l)
Site ID = 182



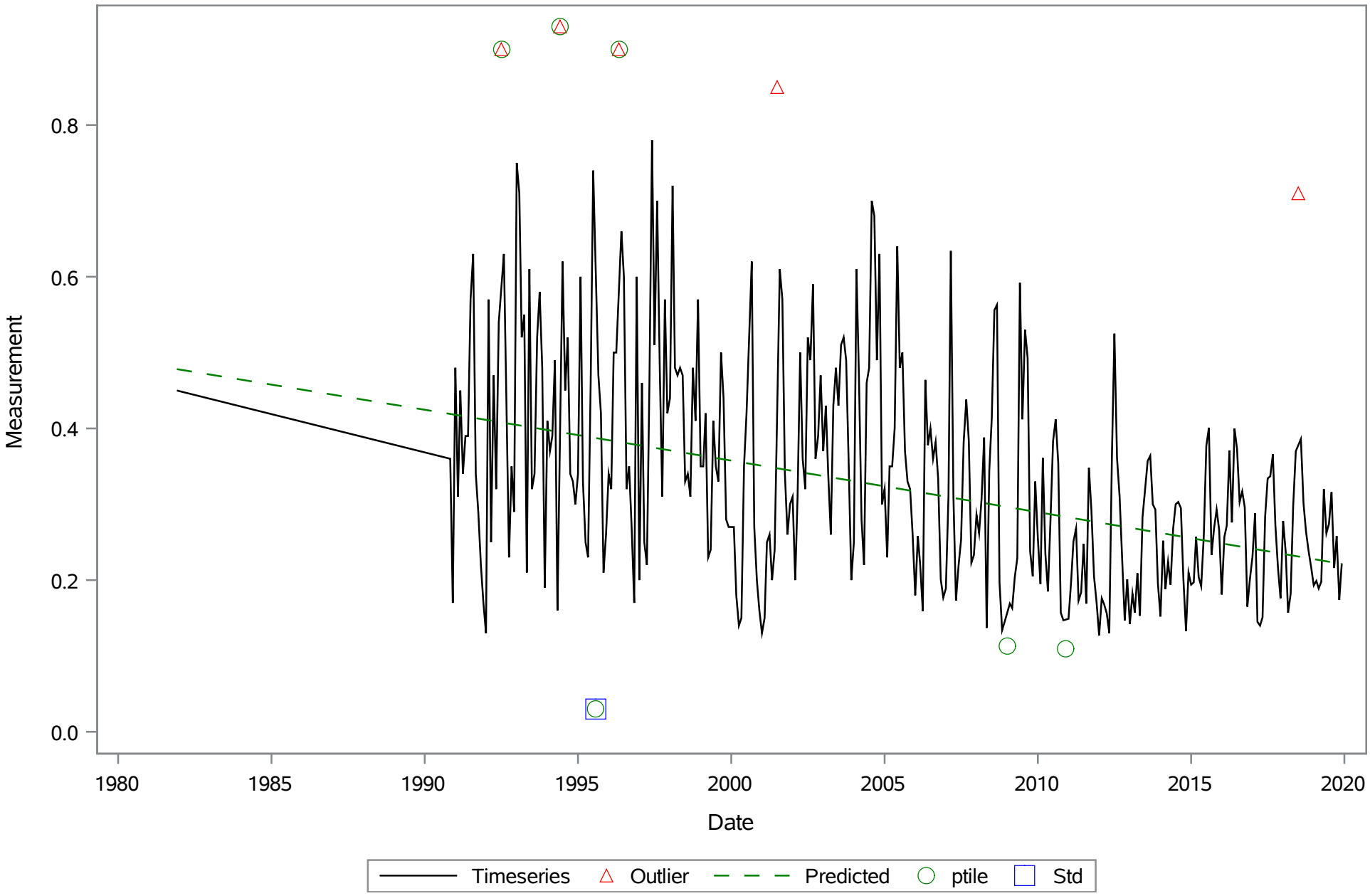

Little Manatee River
112
Ortho Phosphates (mg/l)
Site ID = 112
Measurement
1.25
1.00
0.75
0.50
0.25
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

Little Manatee River
113
Ortho Phosphates (mg/l)
Site ID = 113

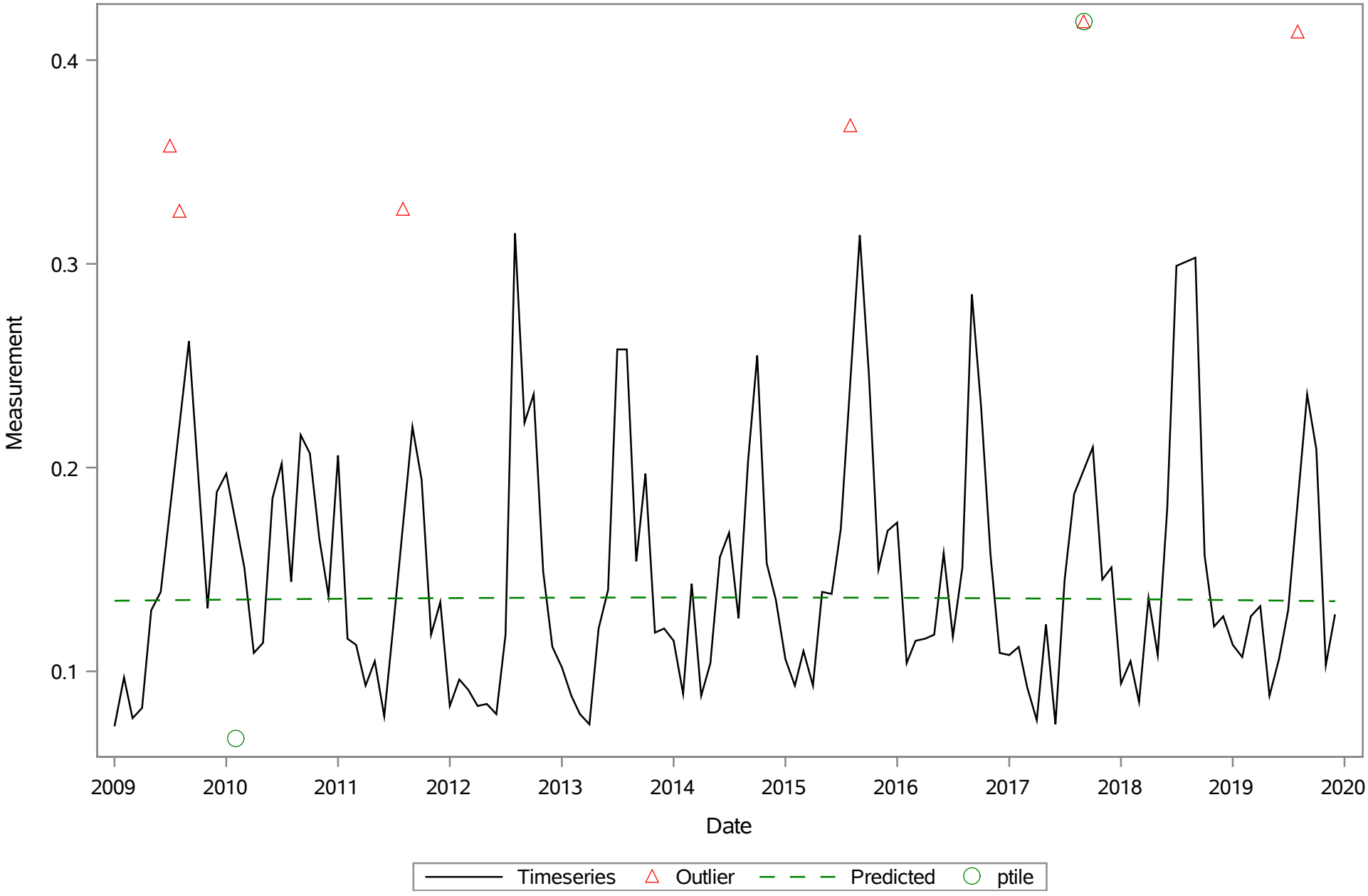


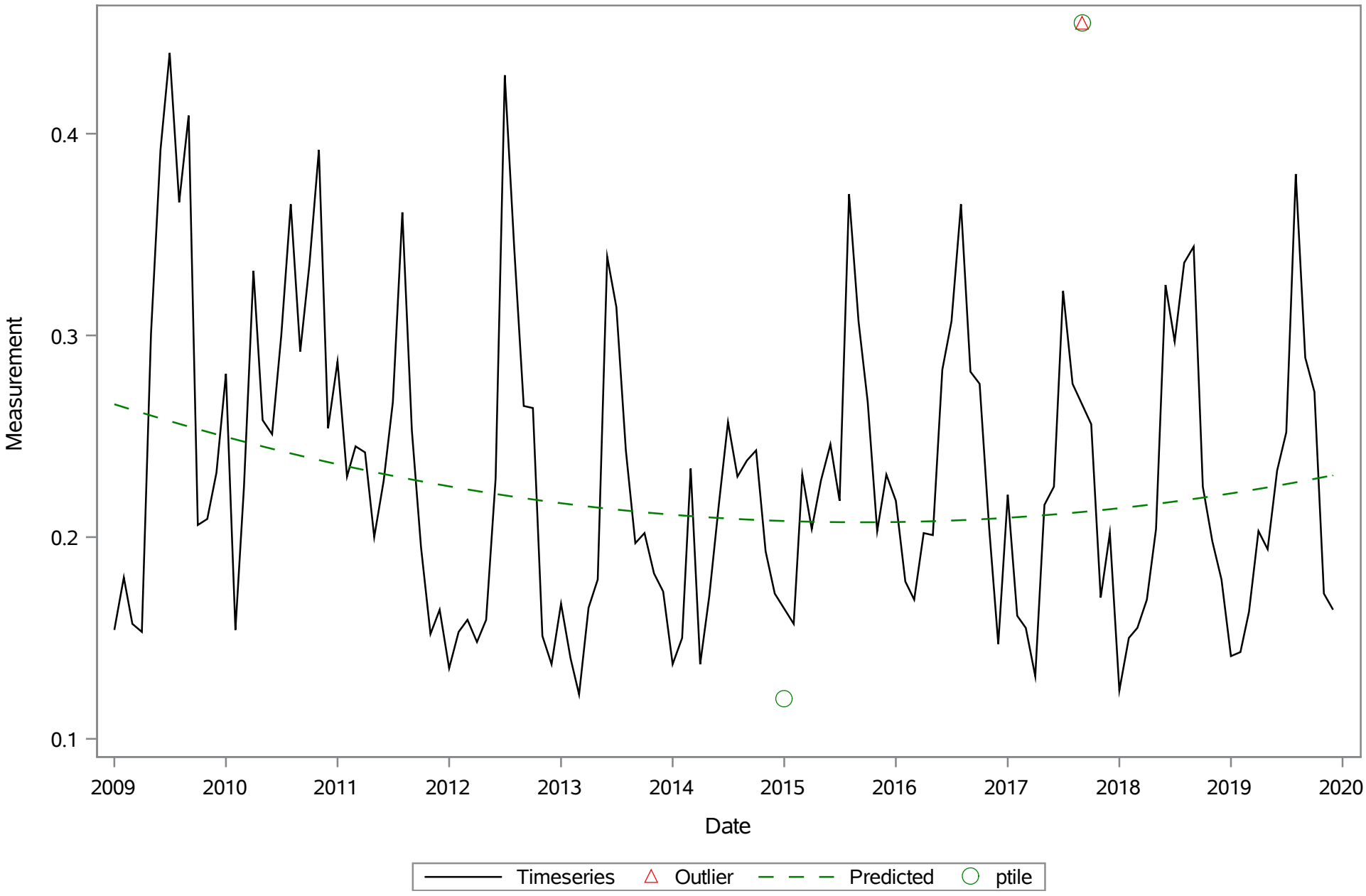

Little Manatee River
129
Ortho Phosphates (mg/l)
Site ID = 129
Measurement
10
8
6
4
2
0
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

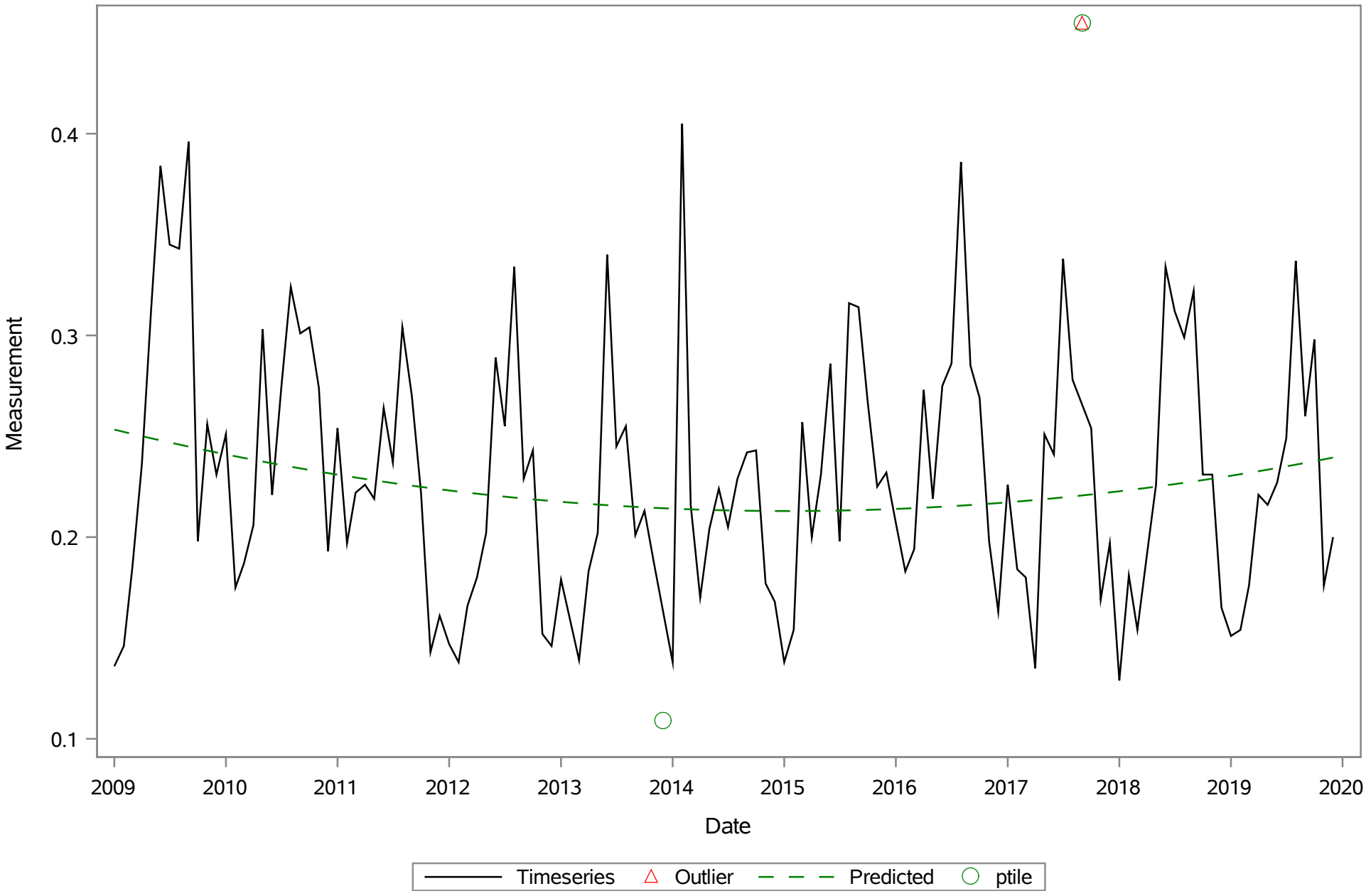
Little Manatee River
140
Ortho Phosphates (mg/l)
Site ID = 140

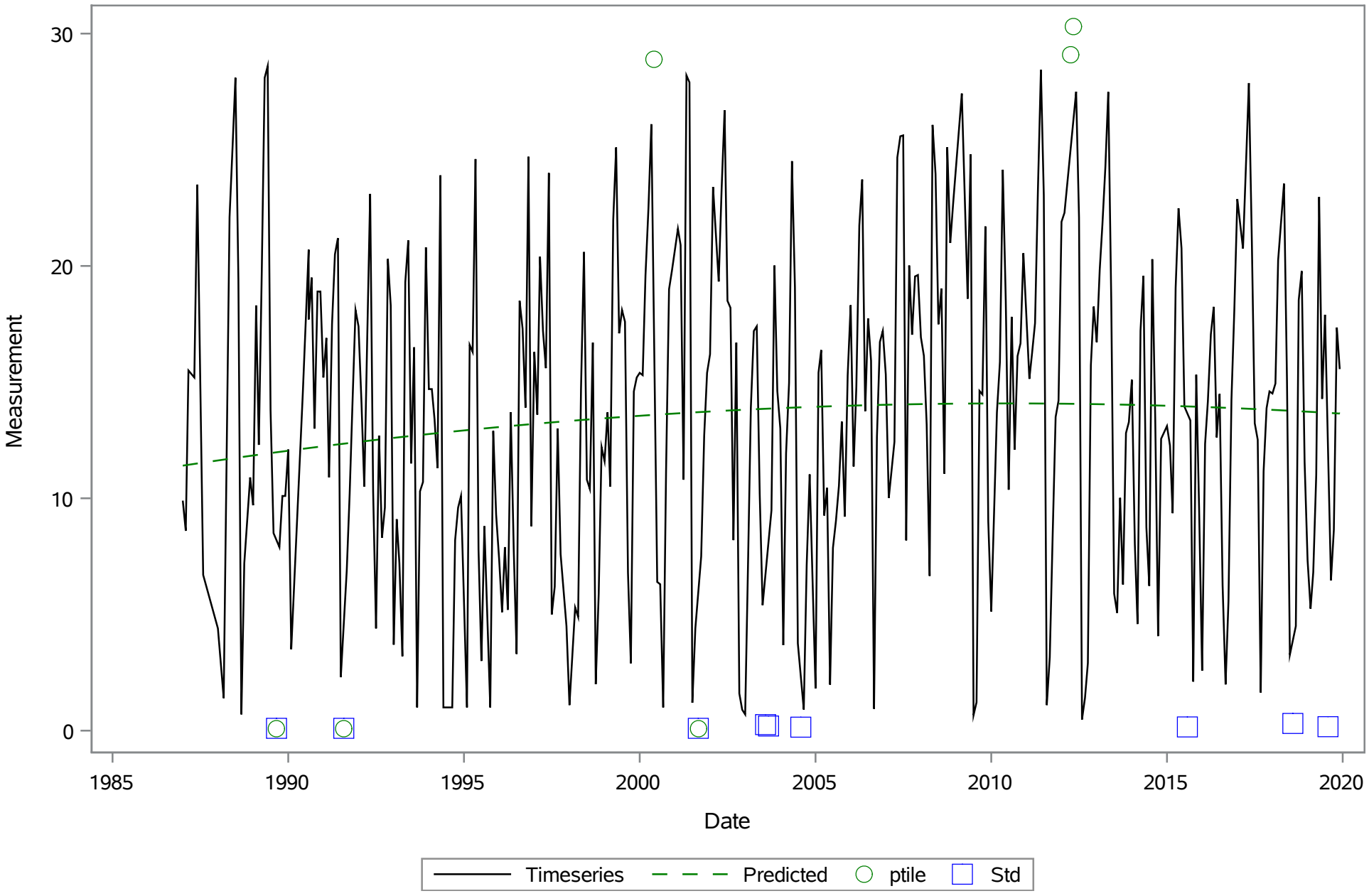


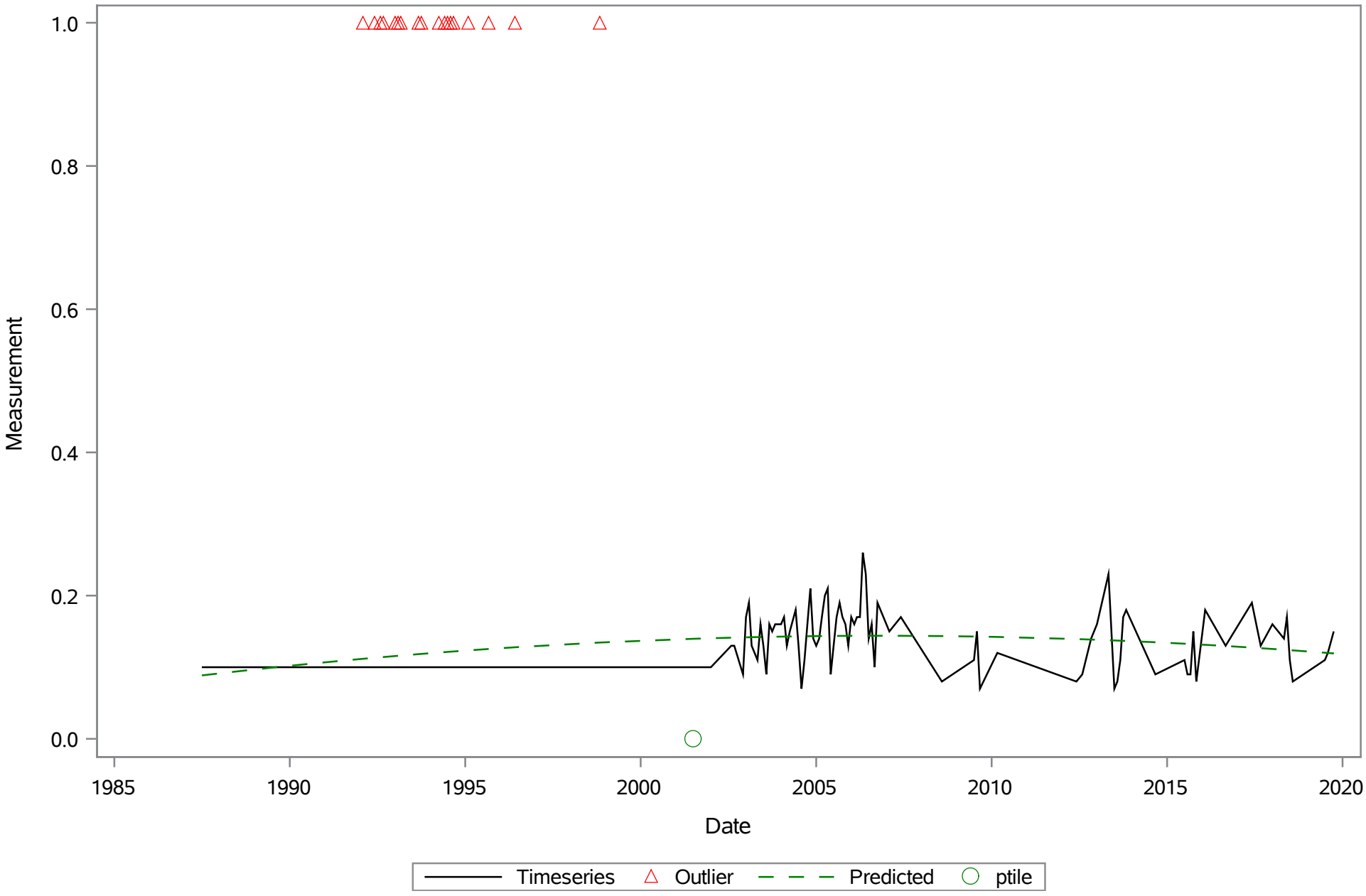
Little Manatee River
180
Ortho Phosphates (mg/l)
Site ID = 180

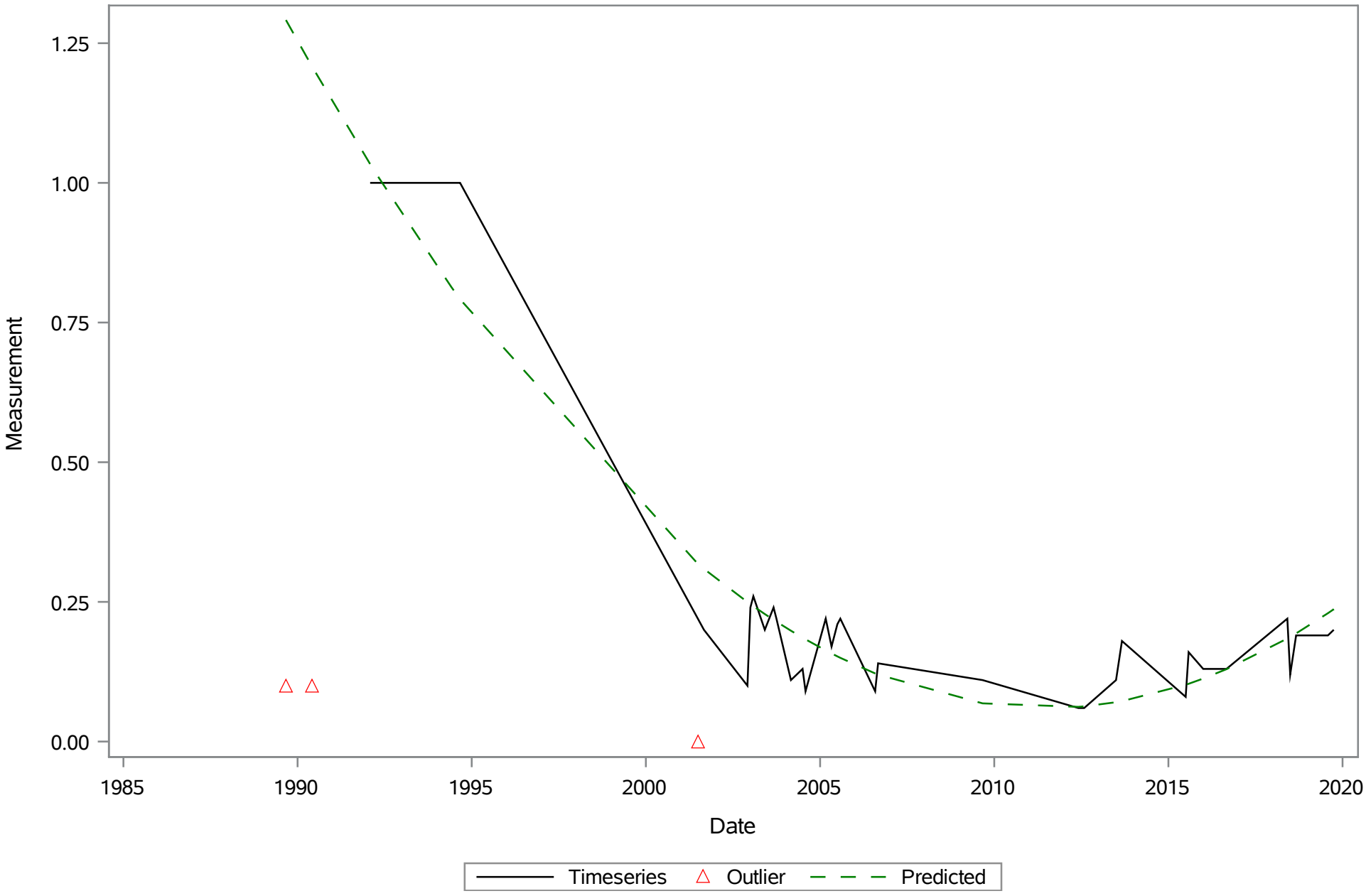



Little Manatee River
181
Ortho Phosphates (mg/l)
Site ID = 181
Measurement
0.4
0.3
0.2
0.1
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Outlier
Predicted
ptile

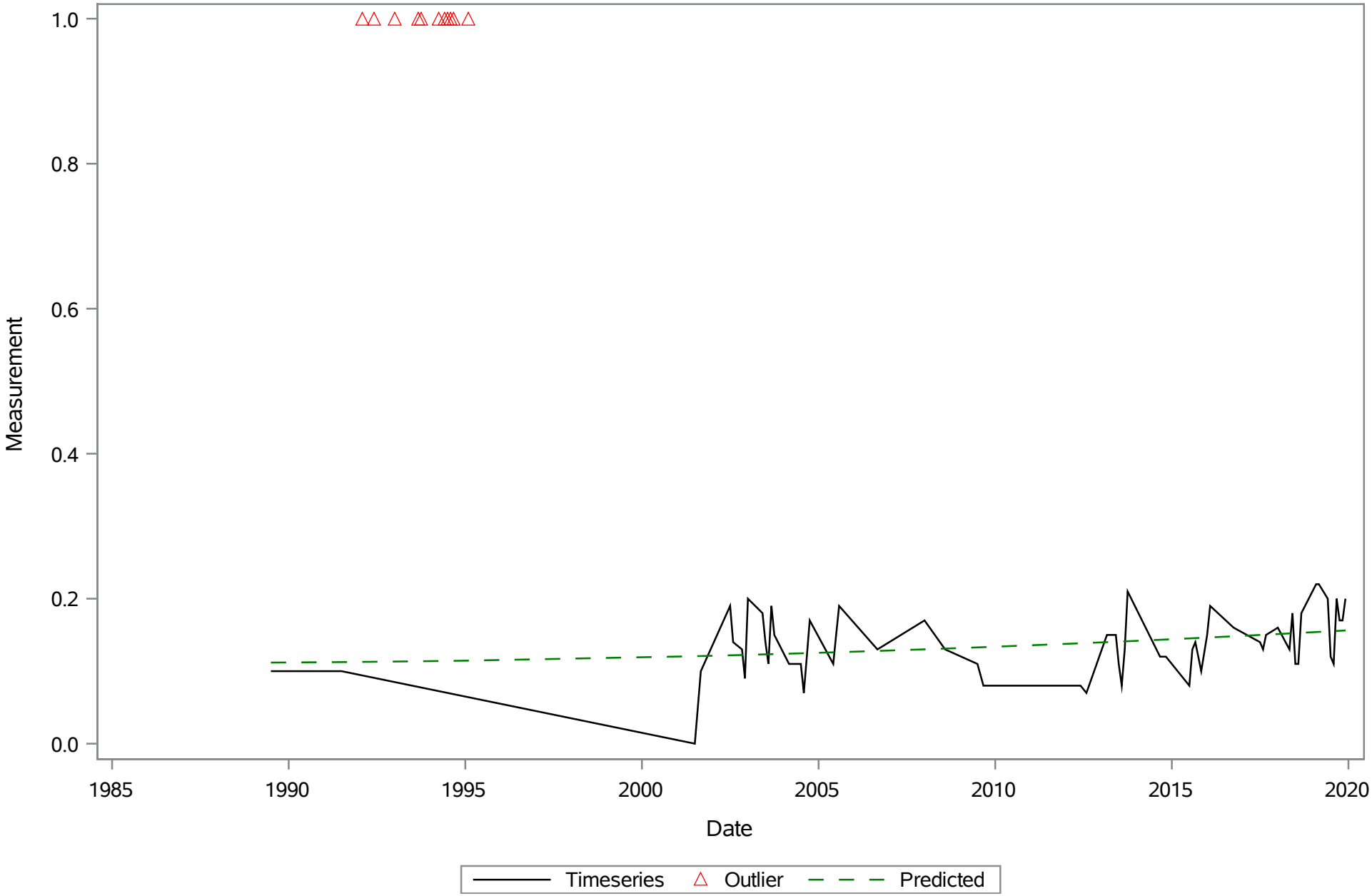

Little Manatee River
182
Ortho Phosphates (mg/l)
Site ID = 182
Measurement
0.4
0.3
0.2
0.1
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Outlier
Predicted
ptile

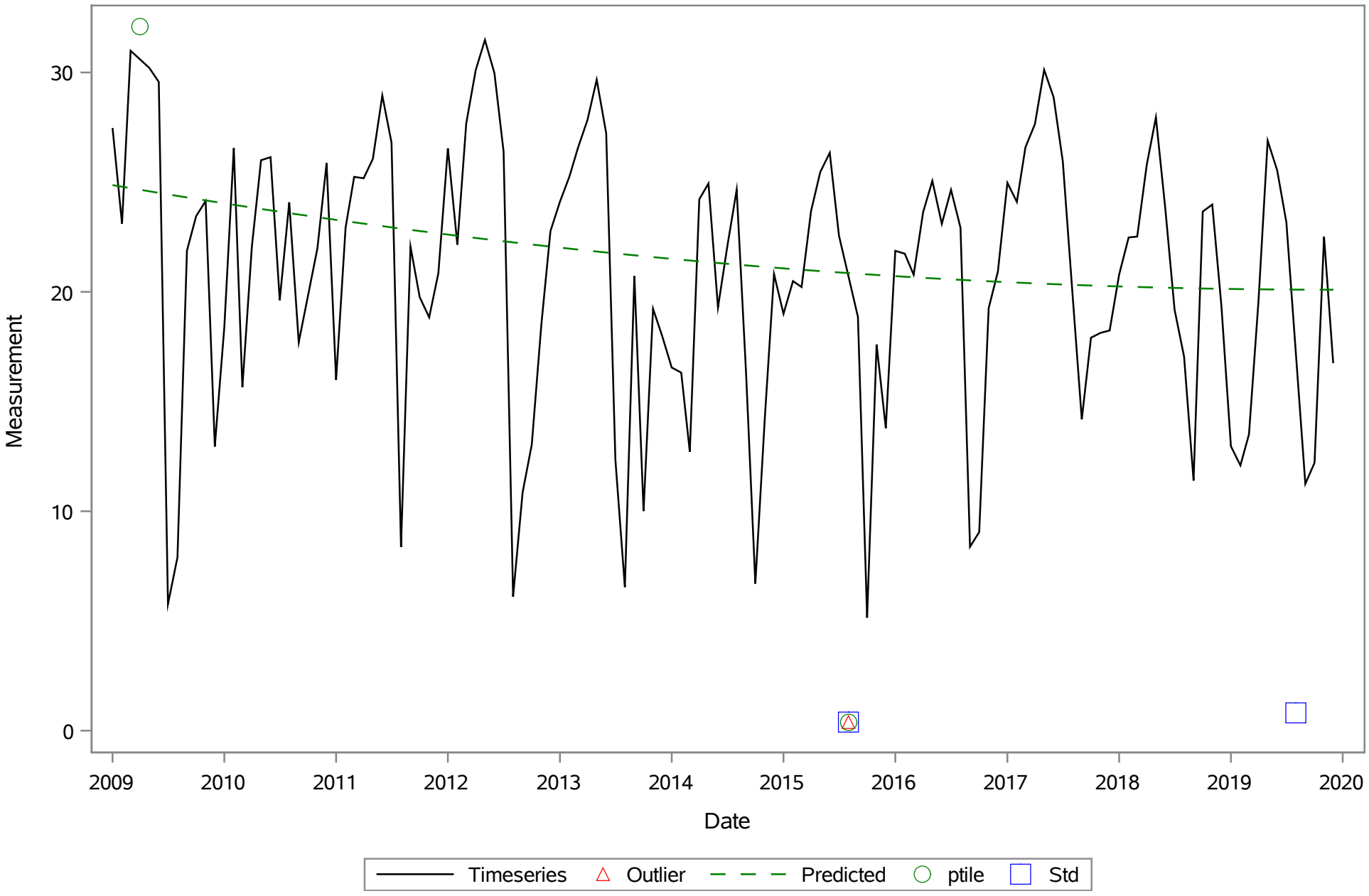

Little Manatee River
112
Sal Bottom (ppth)
Site ID = 112
Measurement
30
20
10
0
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Predicted
ptile
Std


Little Manatee River
113
Sal Bottom (ppth)
Site ID = 113
Measurement
1.0
0.8
0.6
0.4
0.2
0.0
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile

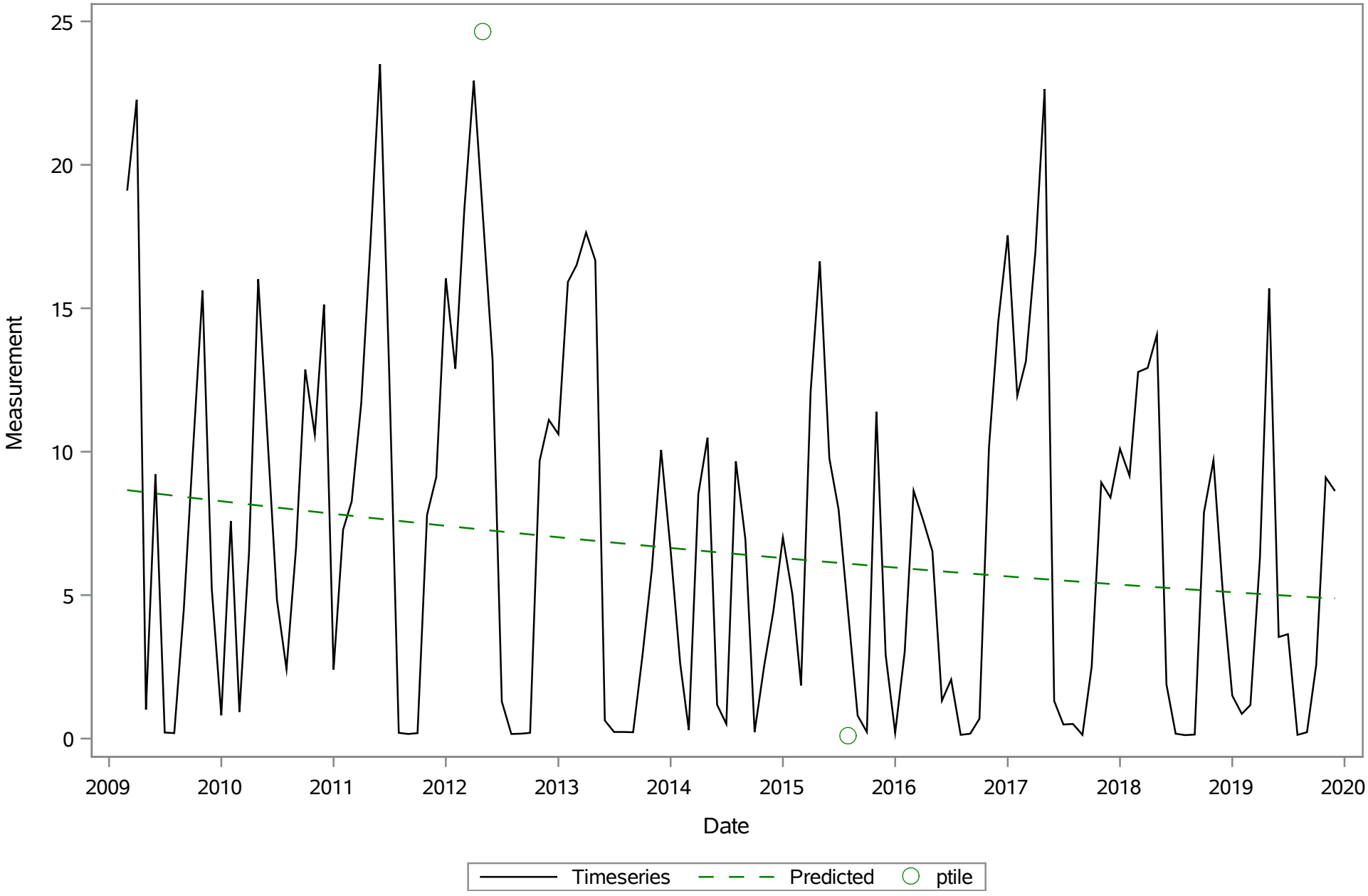

Little Manatee River
129
Sal Bottom (ppth)
Site ID = 129
Measurement
1.25
1.00
0.75
0.50
0.25
0.00
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted

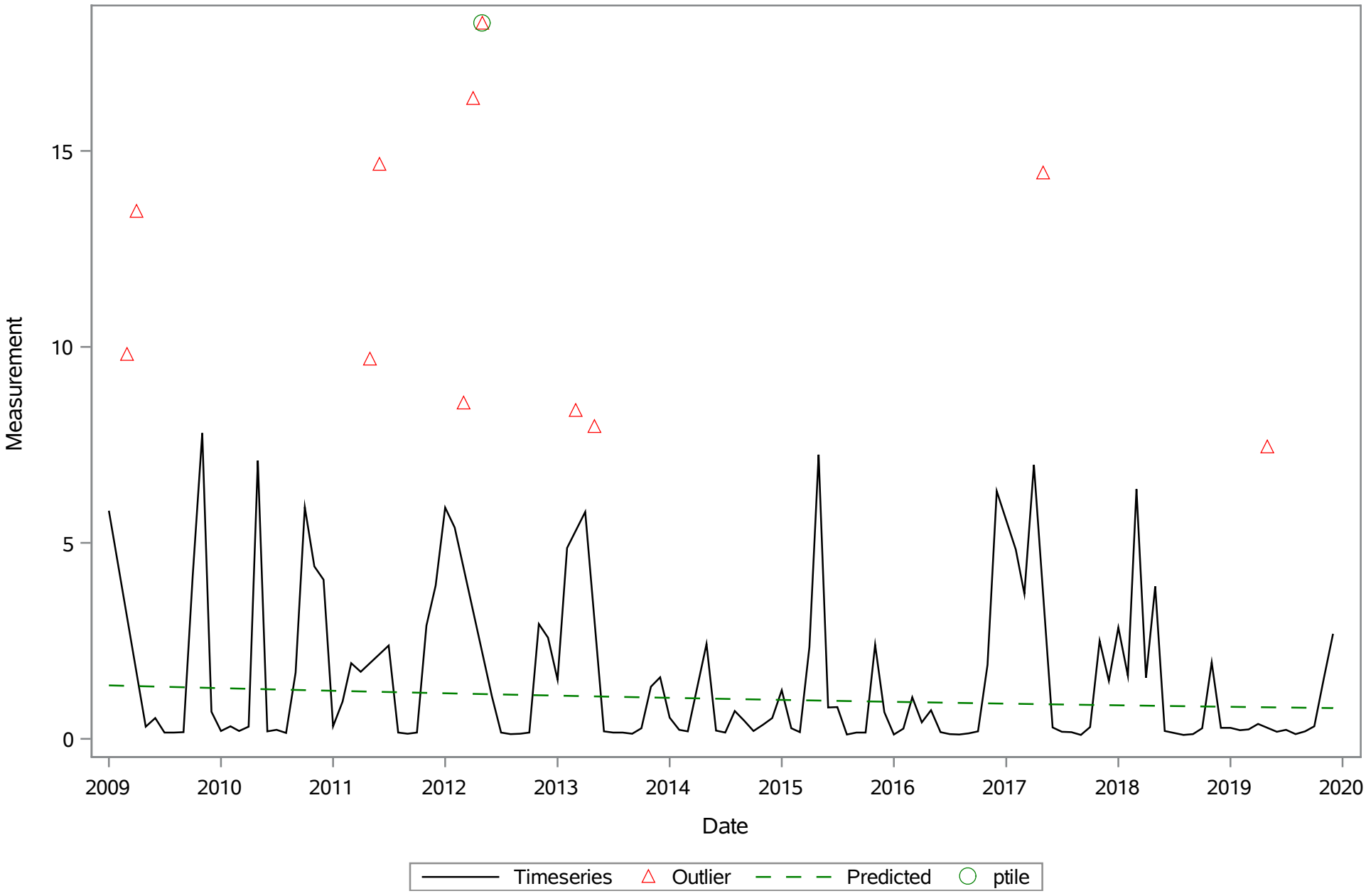
Little Manatee River
140
Sal Bottom (ppth)
Site ID = 140

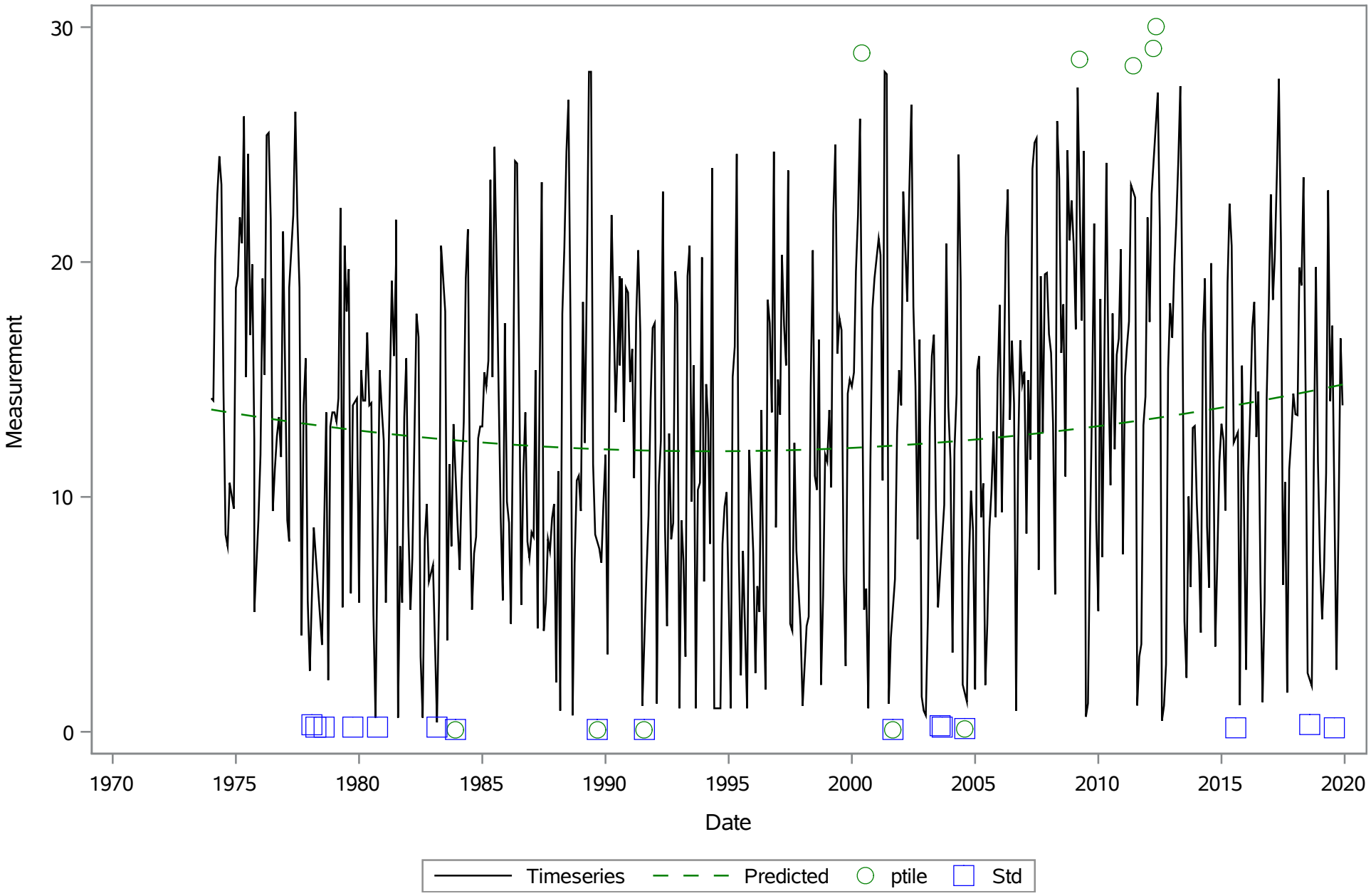


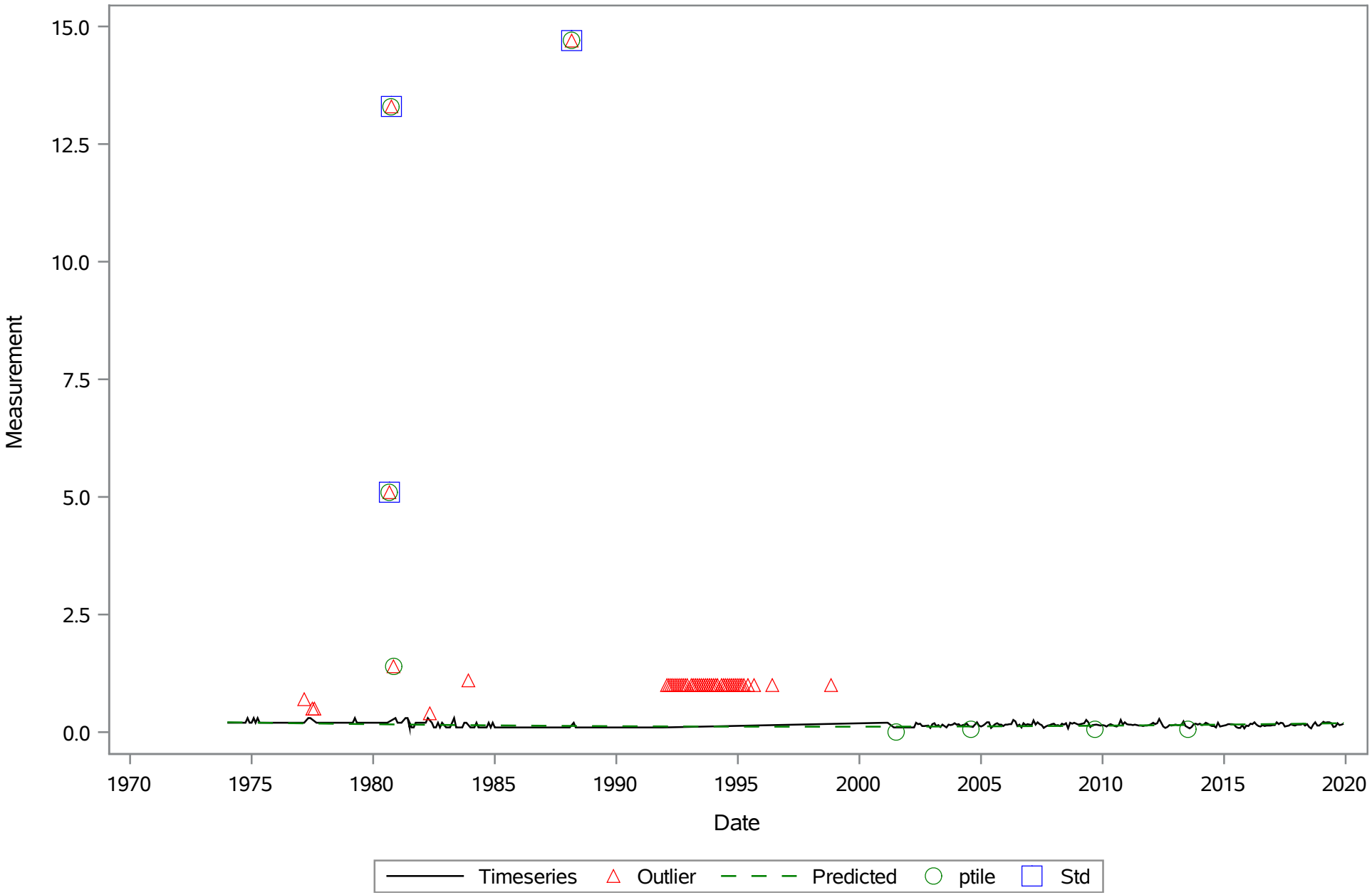

Little Manatee River
180
Sal Bottom (ppth)
Site ID = 180
Measurement
30
20
10
0
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

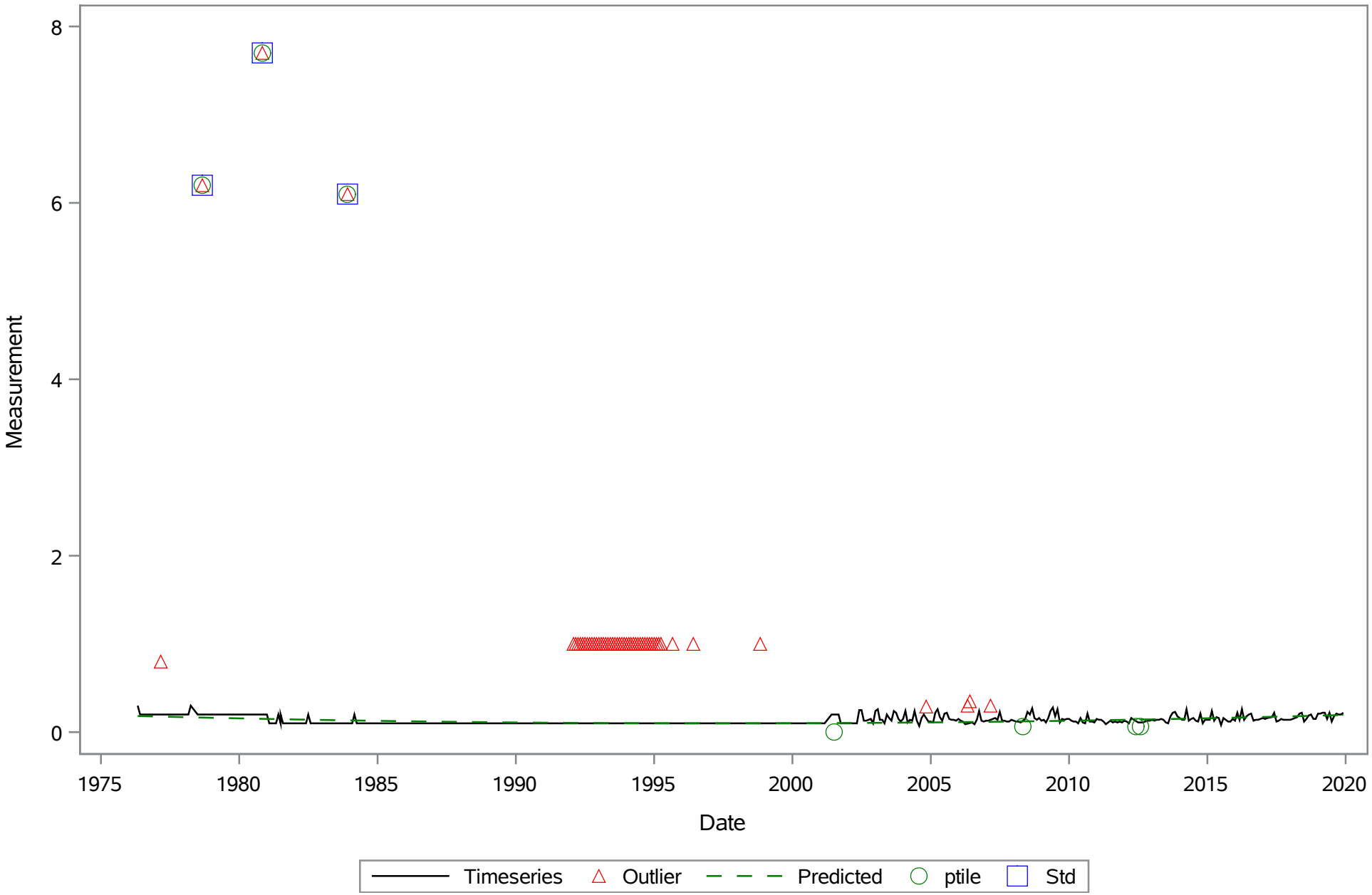
Little Manatee River
181
Sal Bottom (ppth)
Site ID = 181



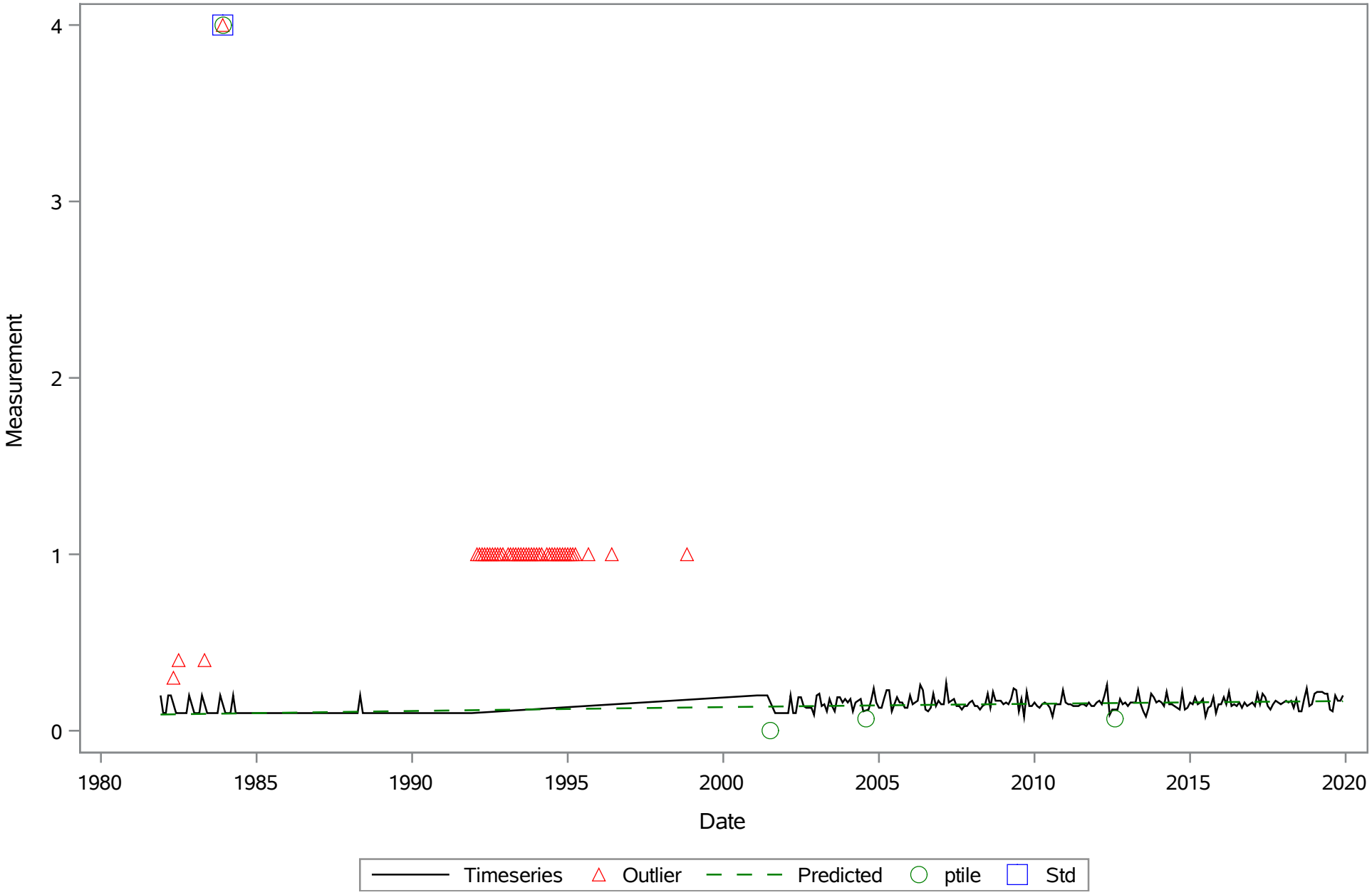

Little Manatee River
182
Sal Bottom (ppth)
Site ID = 182
Measurement
0
5
10
15
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Outlier
Predicted
ptile

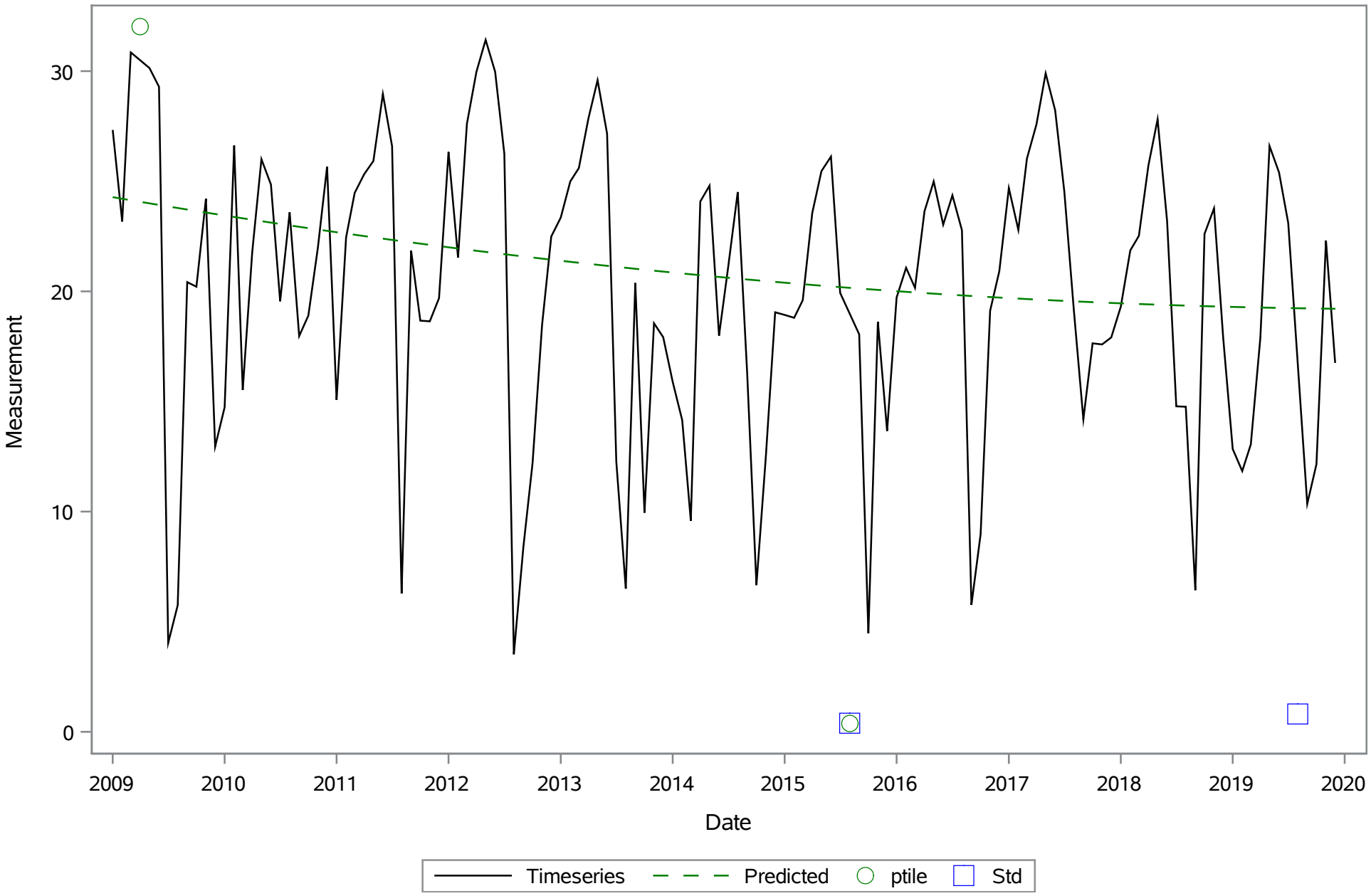

Little Manatee River
112
Sal Mid (ppth)
Site ID = 112
Measurement
30
20
10
0
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Predicted
ptile
Std

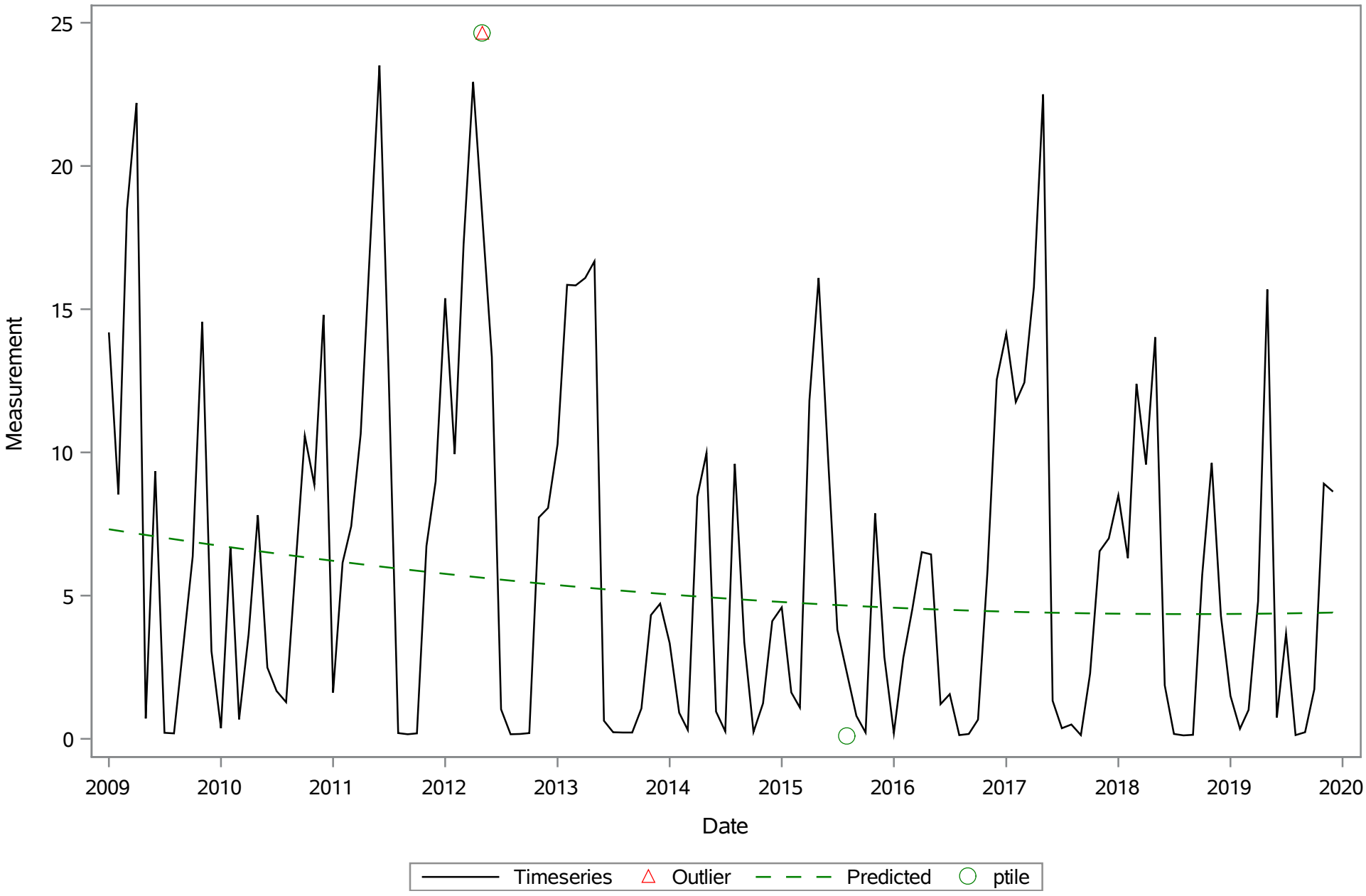

Little Manatee River
113
Sal Mid (ppth)
Site ID = 113
15.0
12.5
10.0
7.5
5.0
2.5
0.0
Measurement
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

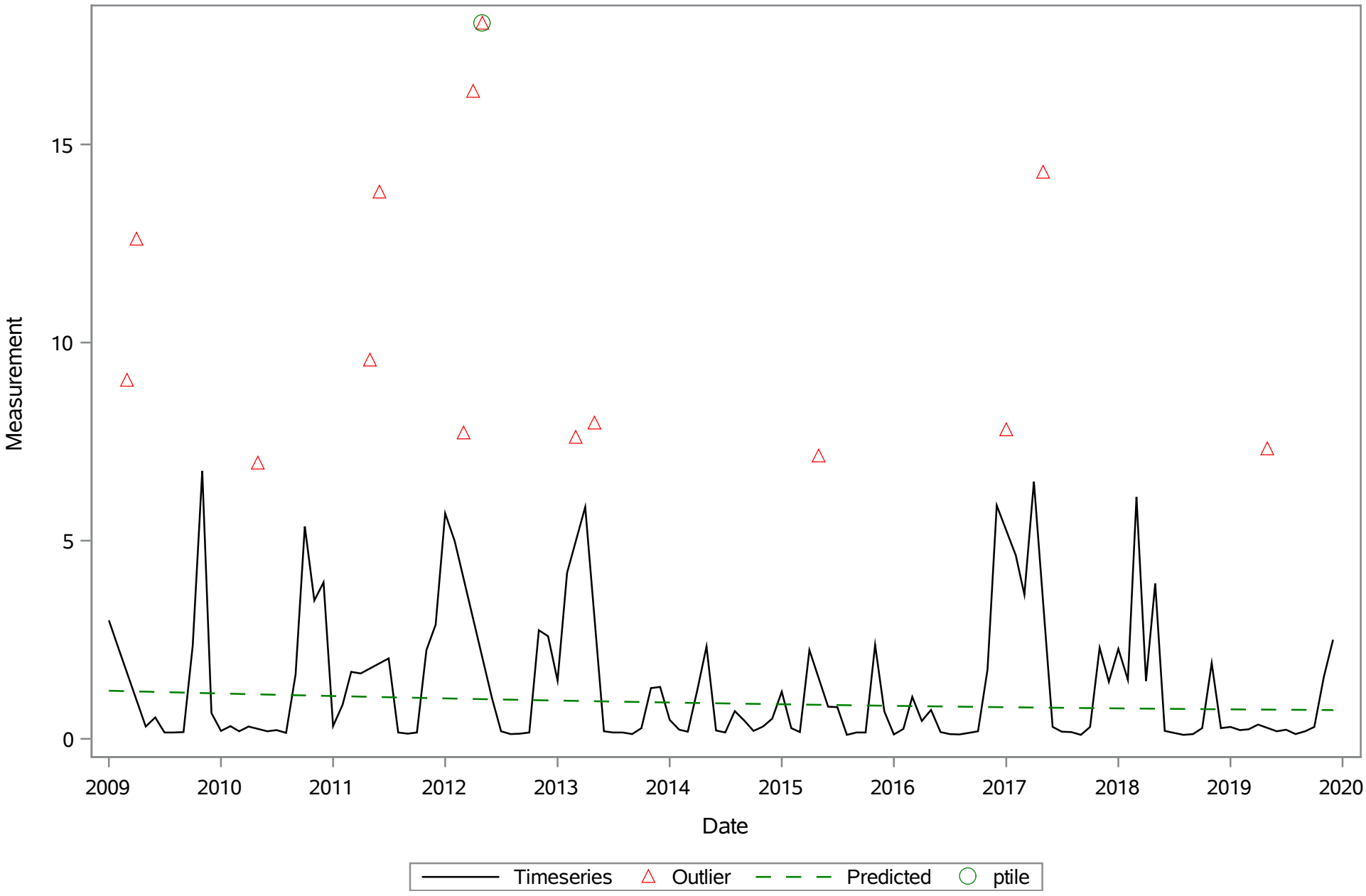

Little Manatee River
129
Sal Mid (ppth)
Site ID = 129
Measurement
8
6
4
2
0
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

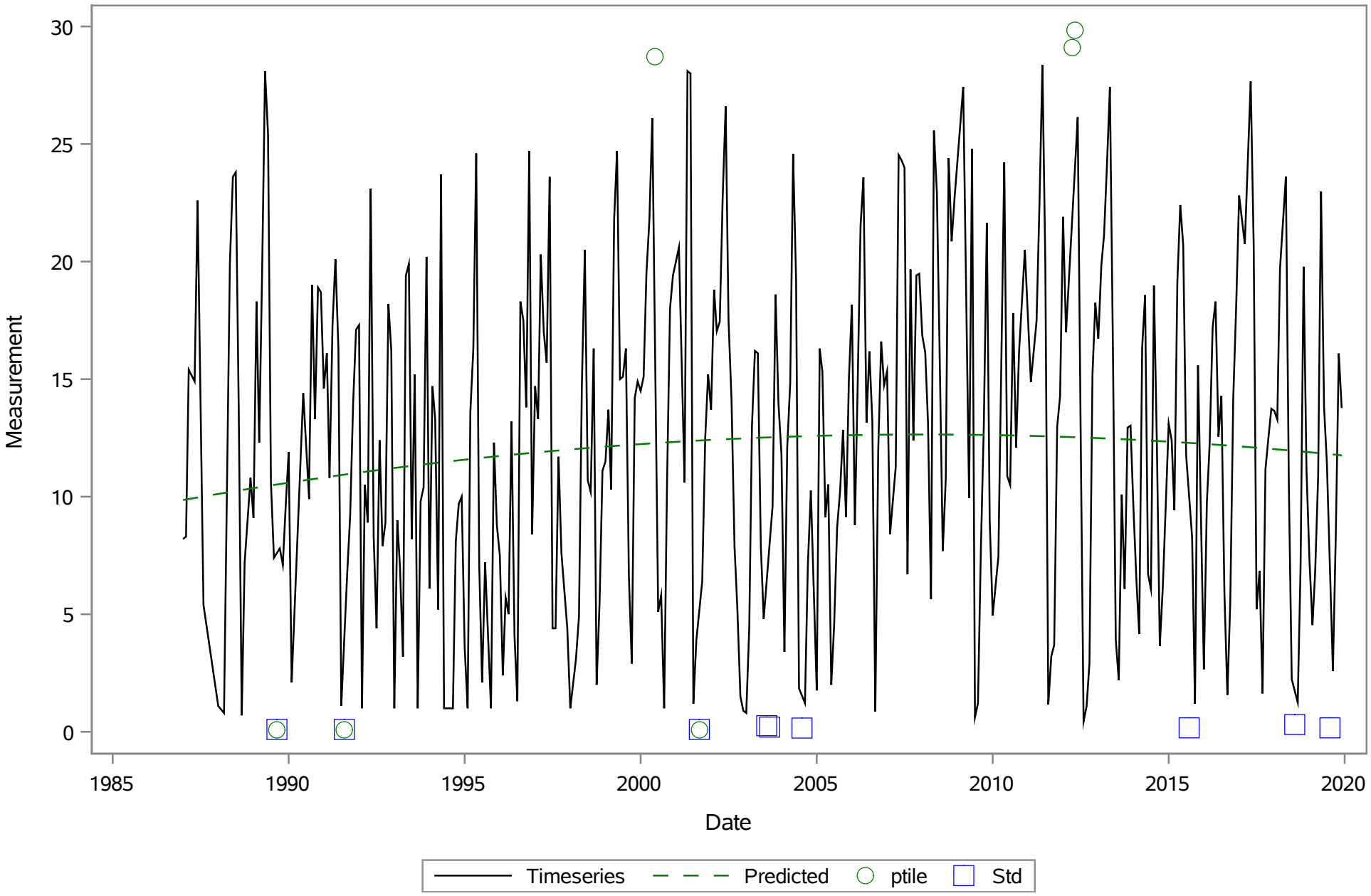
Little Manatee River
140
Sal Mid (ppth)
Site ID = 140

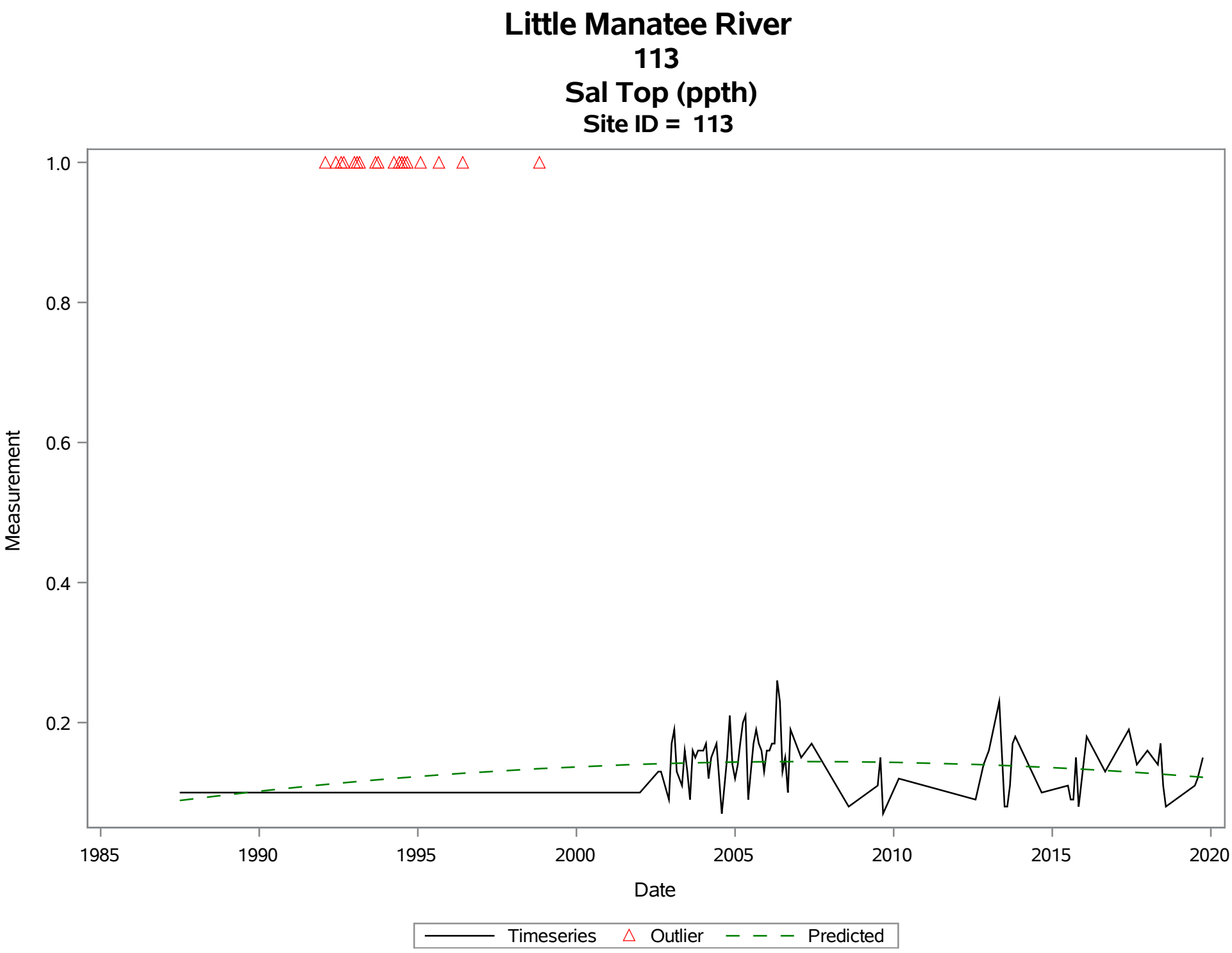


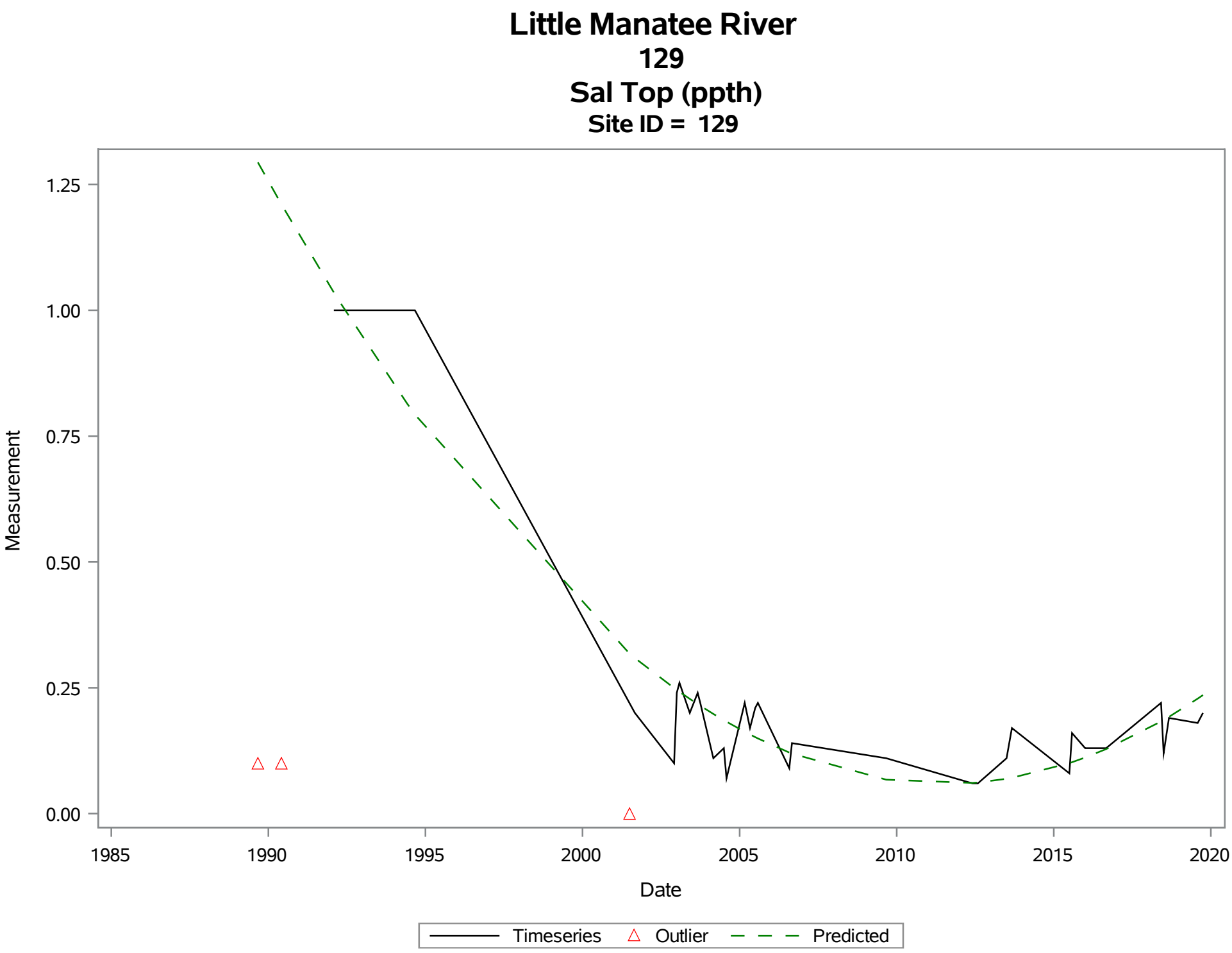

Little Manatee River
180
Sal Mid (ppth)
Site ID = 180
Measurement
30
20
10
0
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Predicted
ptile
Std

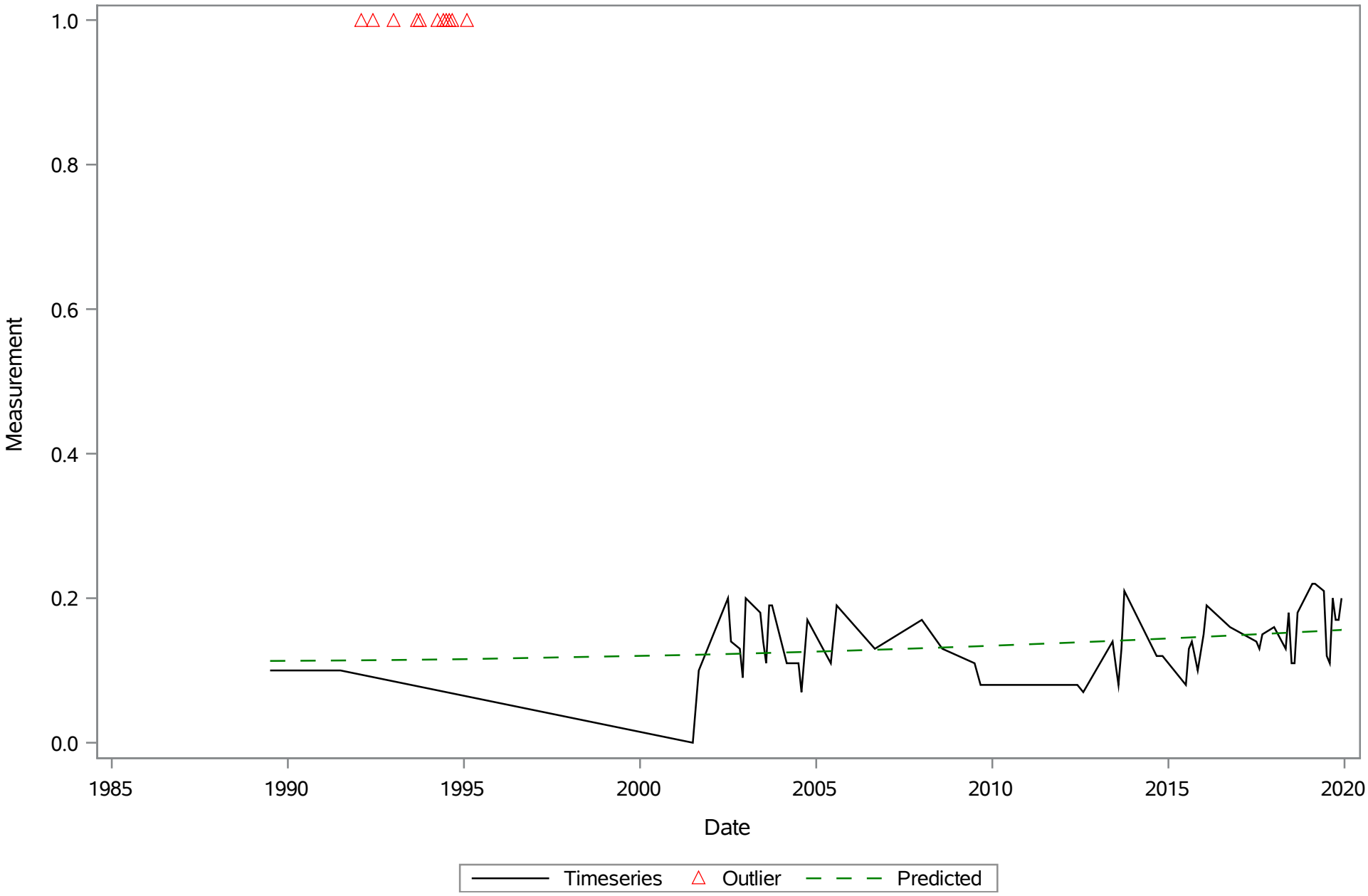

Little Manatee River
181
Sal Mid (ppth)
Site ID = 181
Measurement
25
20
15
10
5
0
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Outlier
Predicted
ptile

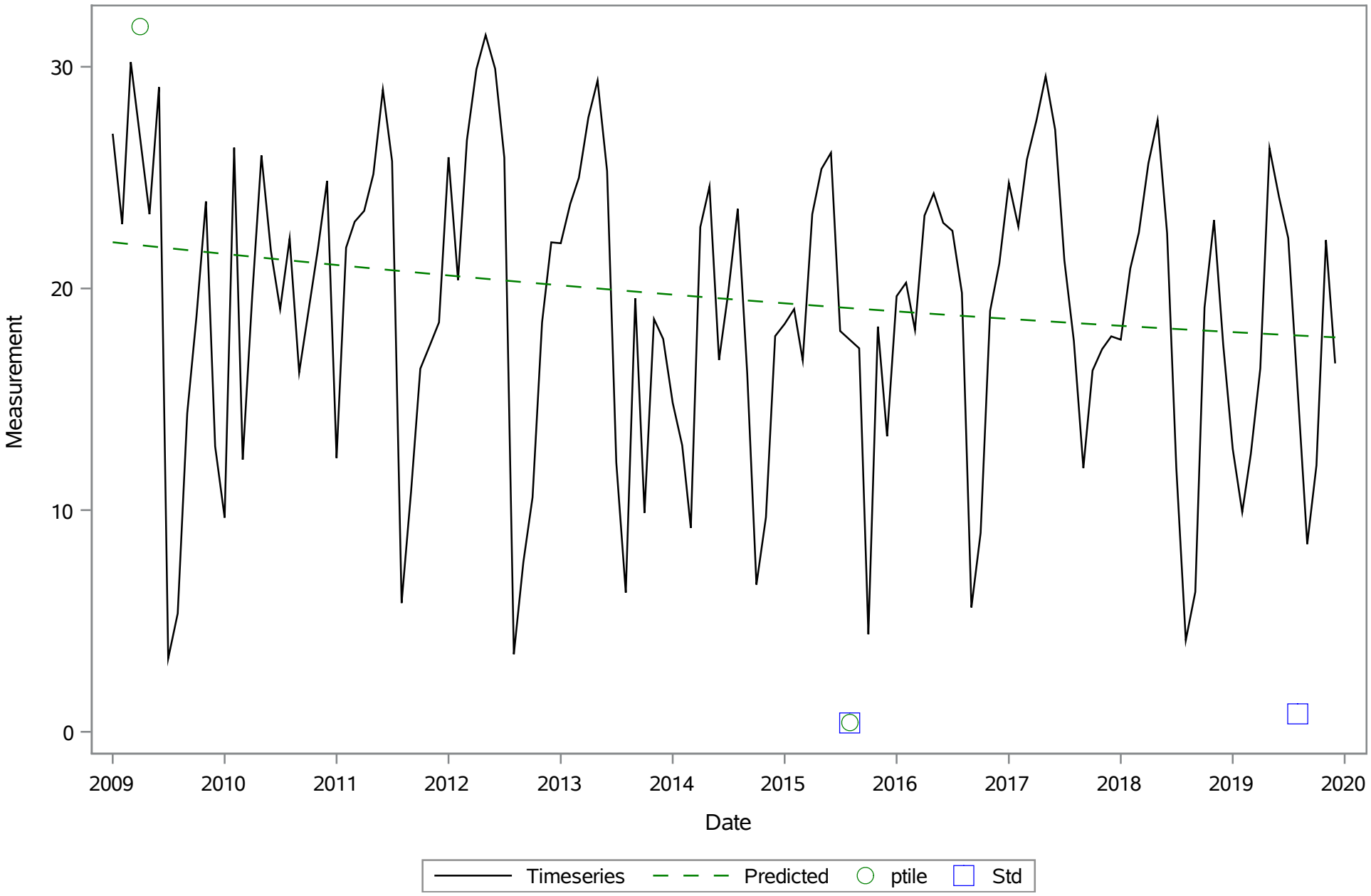

Little Manatee River
182
Sal Mid (ppth)
Site ID = 182
Measurement
0
5
10
15
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Outlier
Predicted
ptile

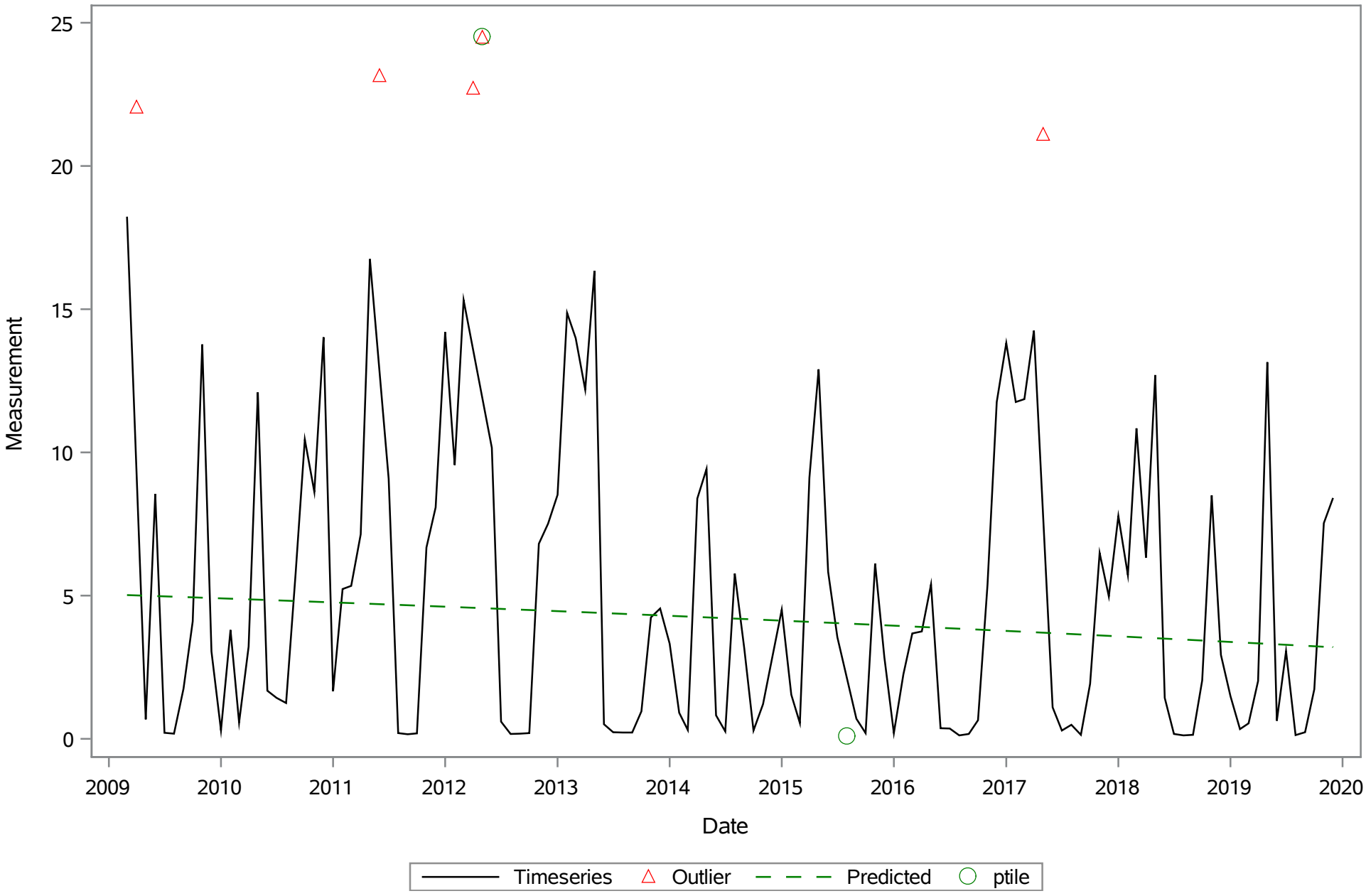

Little Manatee River
112
Sal Top (ppth)
Site ID = 112
Measurement
30
25
20
15
10
5
0
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Predicted
ptile
Std

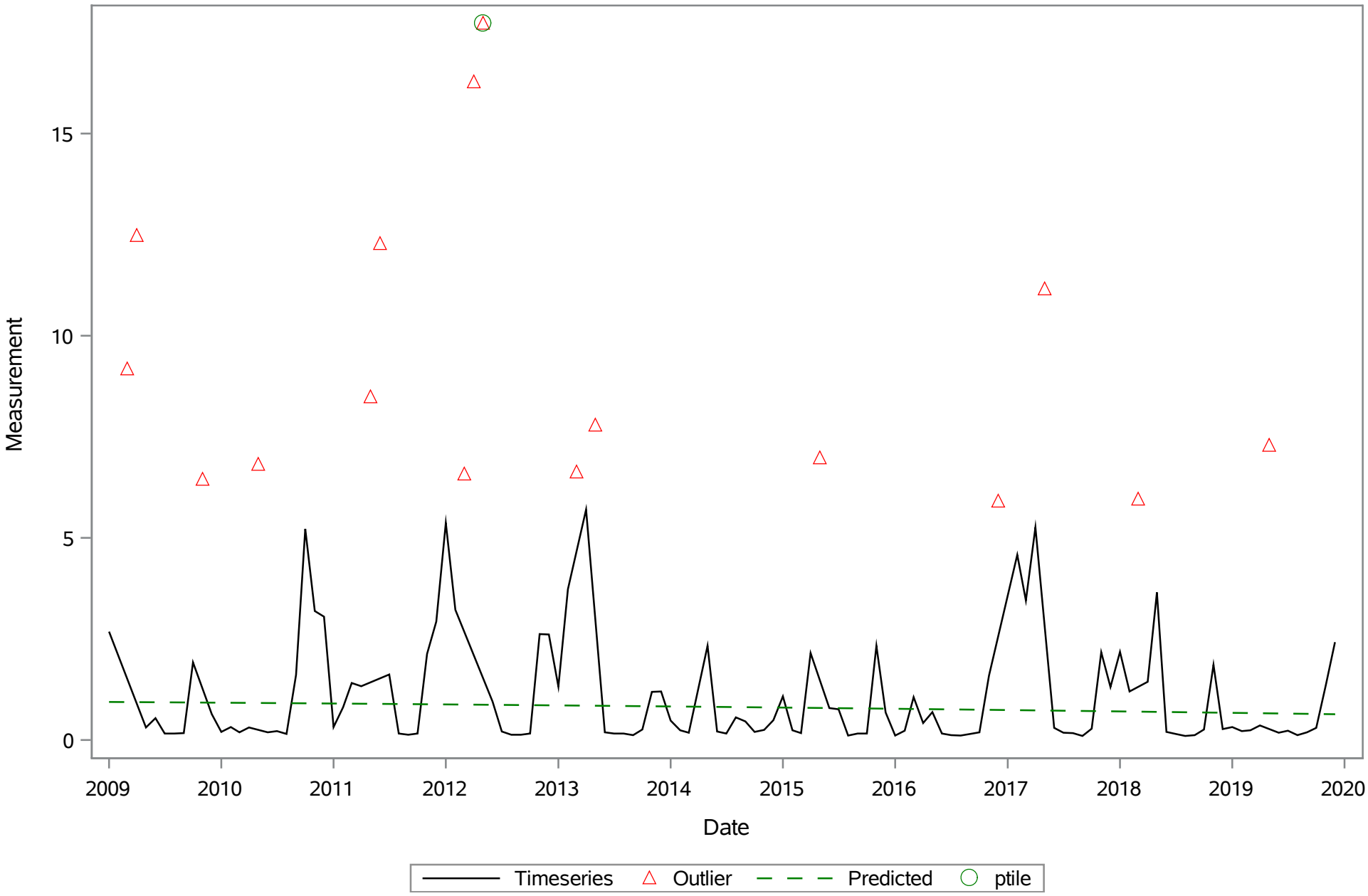

Little Manatee River
113
Sal Top (ppth)
Site ID = 113
1.0
0.8
0.6
0.4
0.2
Measurement
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted

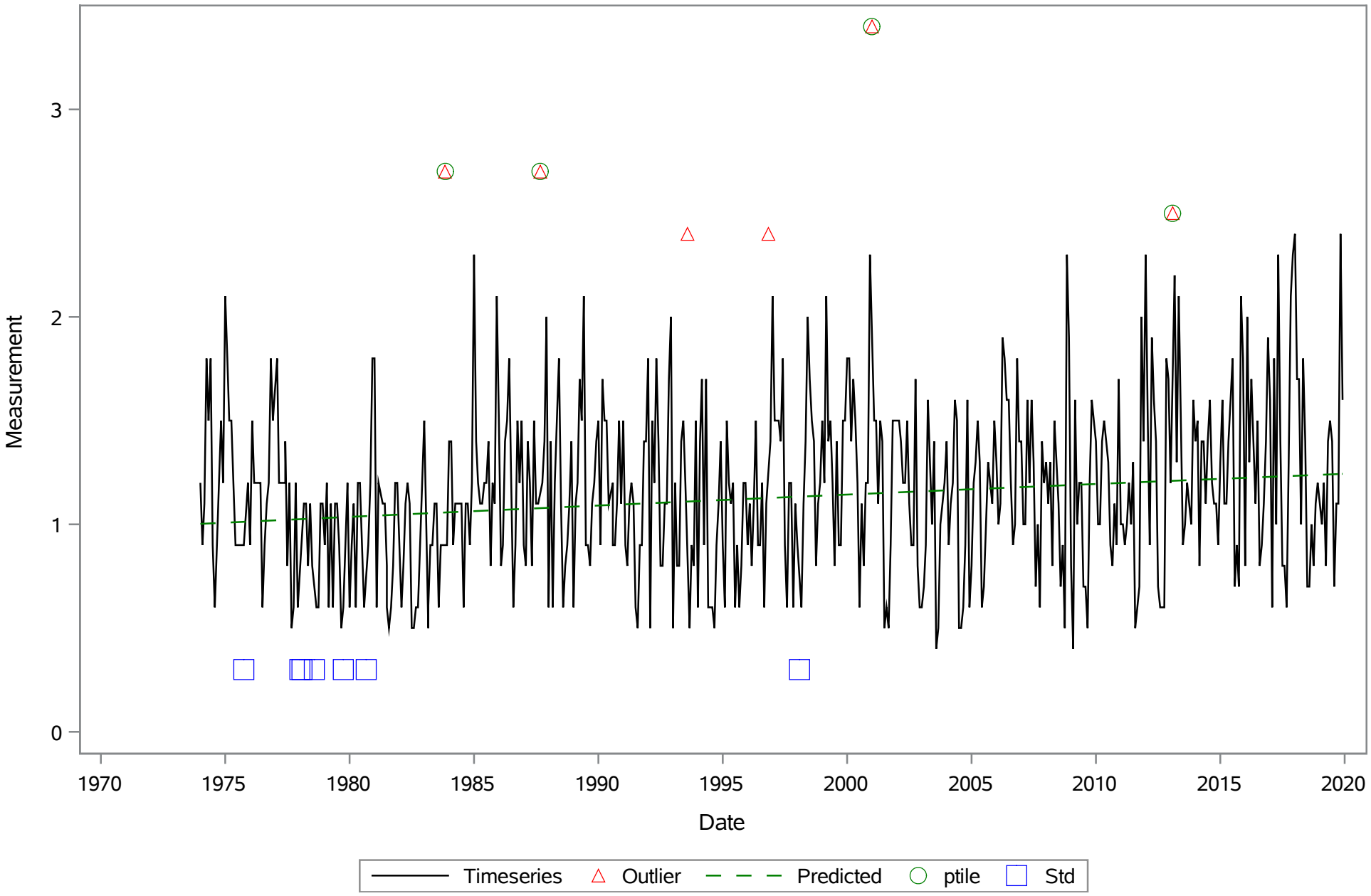

Little Manatee River
129
Sal Top (ppth)
Site ID = 129
Measurement
1.25
1.00
0.75
0.50
0.25
0.00
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted

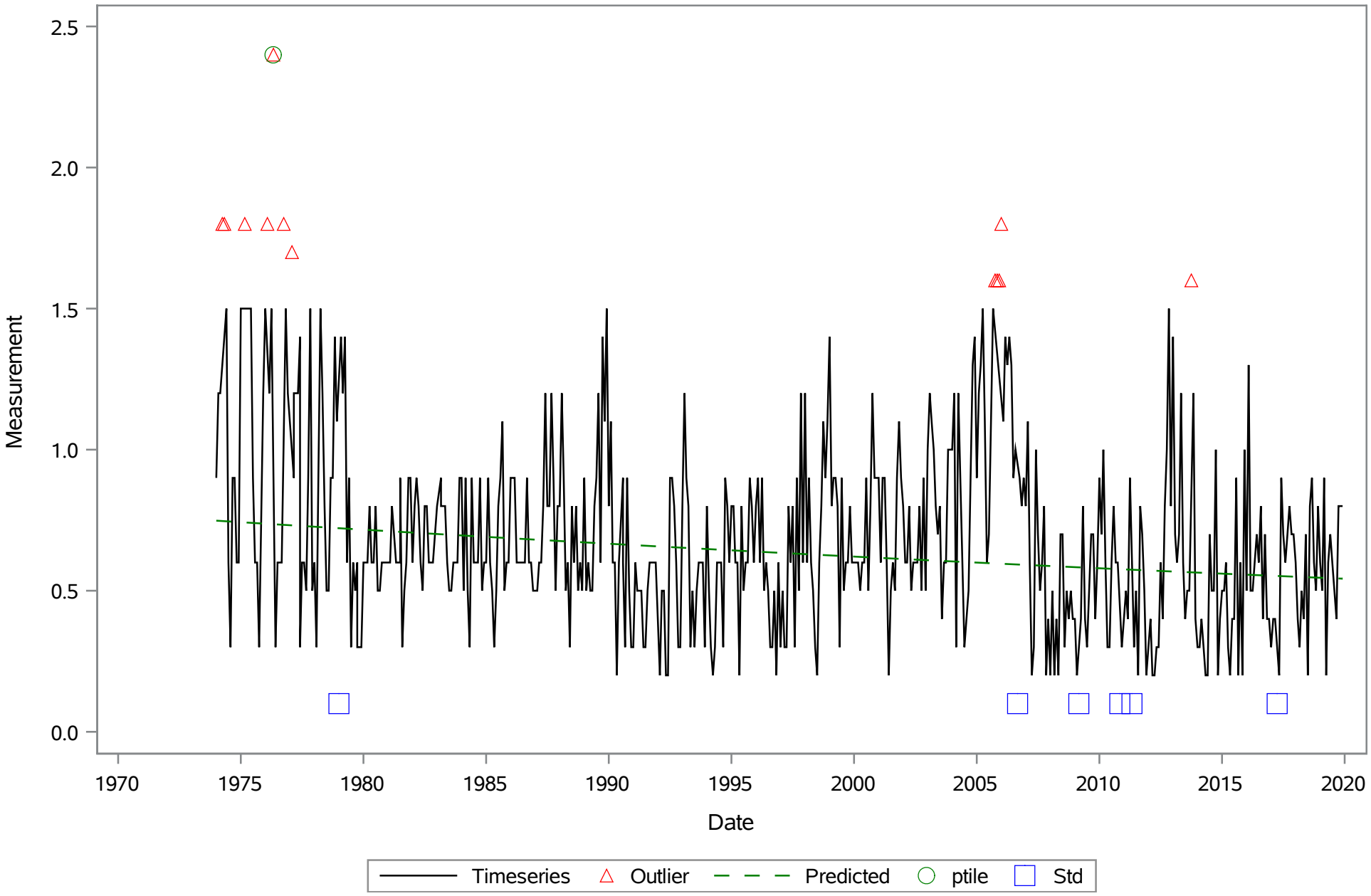

Little Manatee River
140
Sal Top (ppth)
Site ID = 140
Measurement
1.0
0.8
0.6
0.4
0.2
0.0
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted

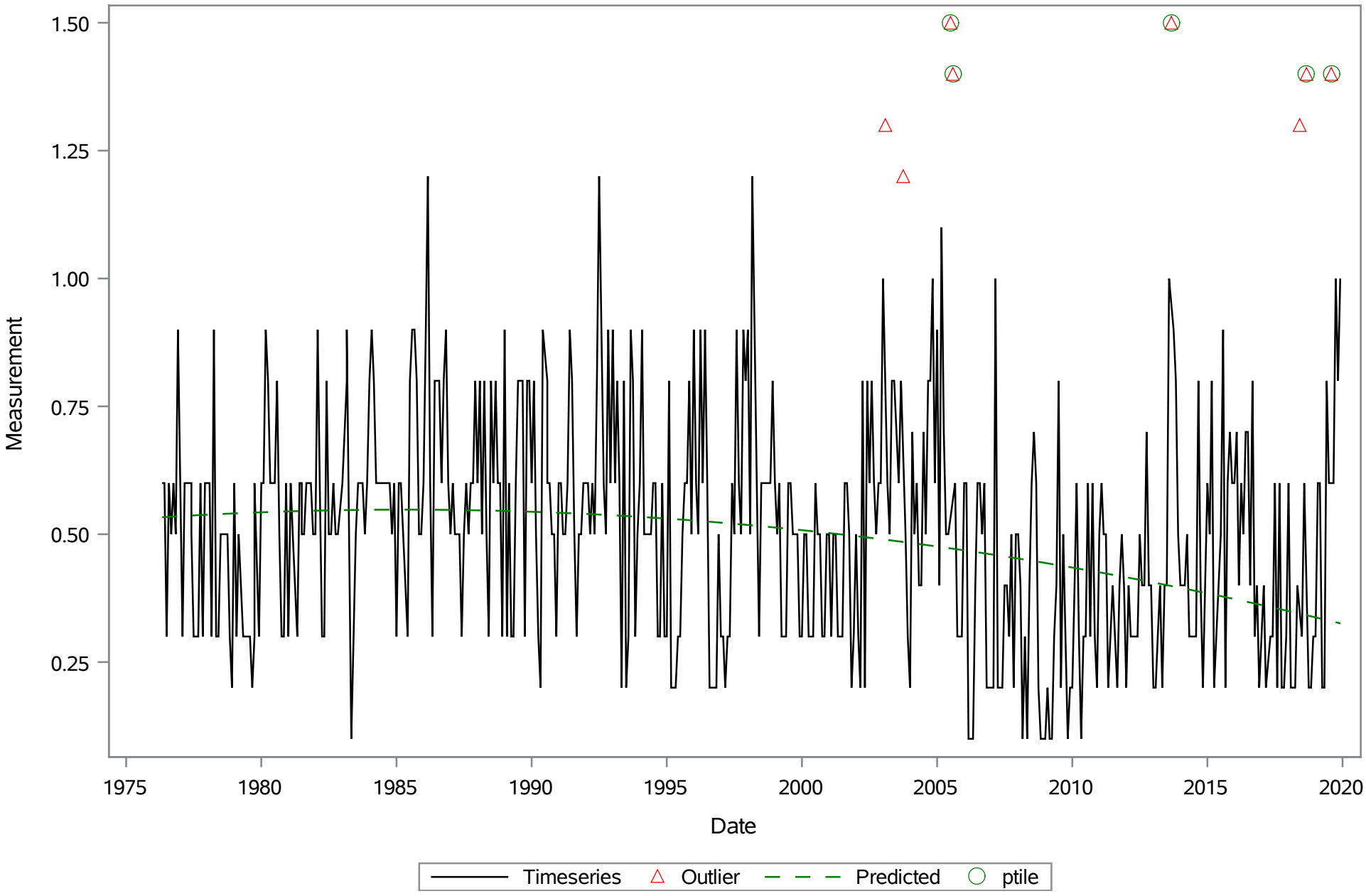

Little Manatee River
180
Sal Top (ppth)
Site ID = 180
Measurement
30
20
10
0
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Predicted
ptile
Std

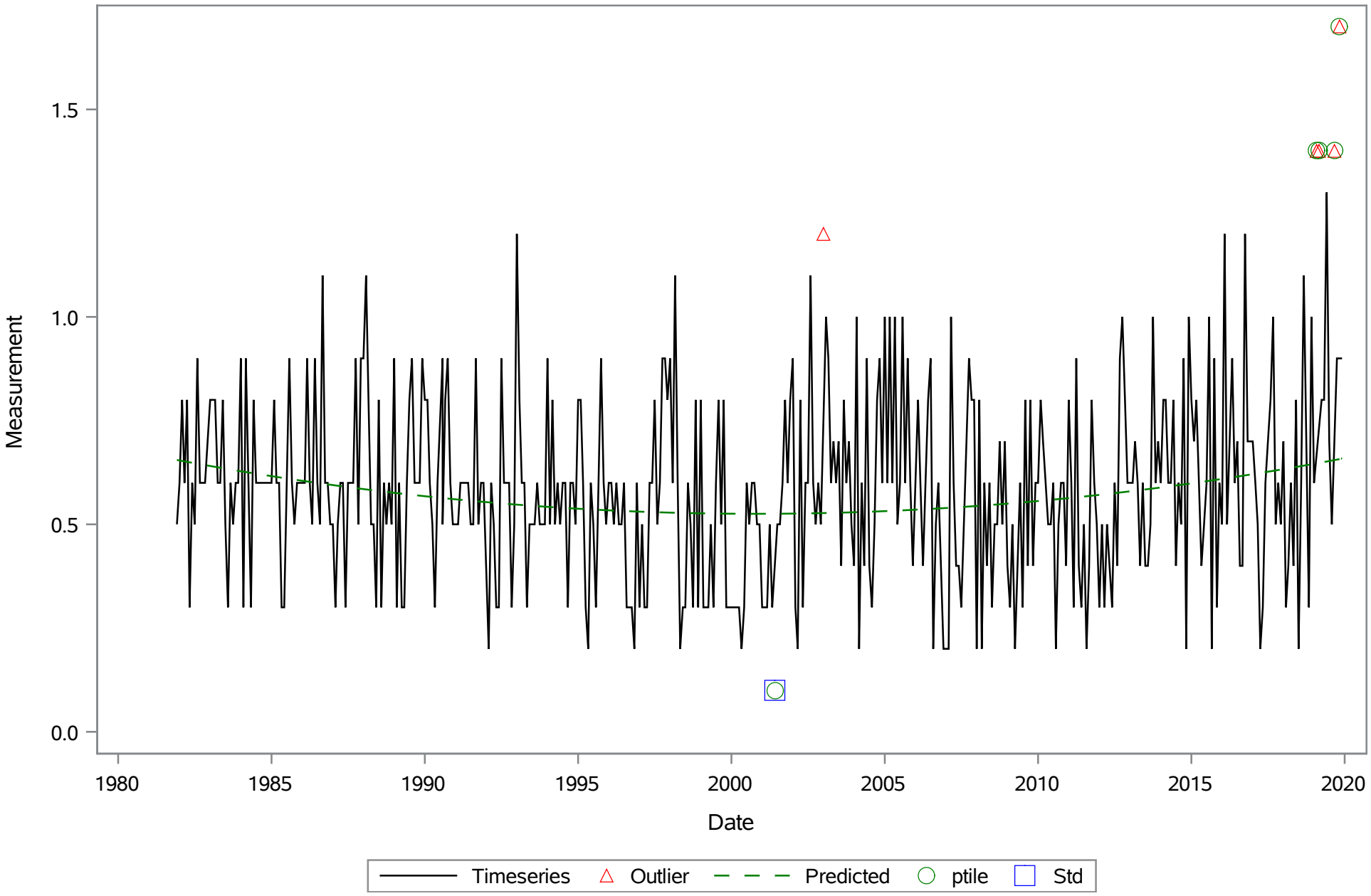

Little Manatee River
181
Sal Top (ppth)
Site ID = 181
Measurement
25
20
15
10
5
0
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Outlier
Predicted
ptile

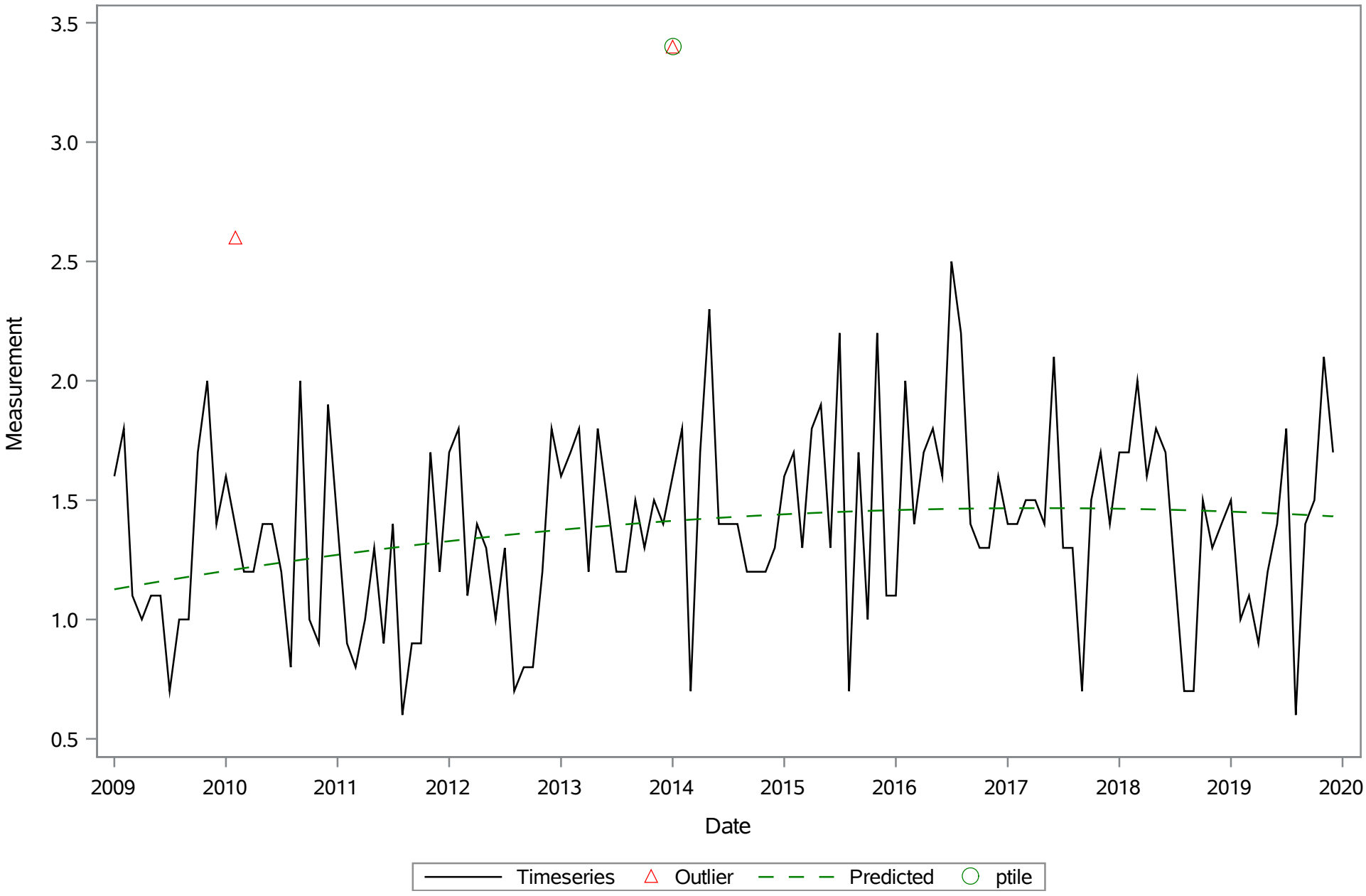

Little Manatee River
182
Sal Top (ppth)
Site ID = 182
Measurement
0
5
10
15
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Outlier
Predicted
ptile

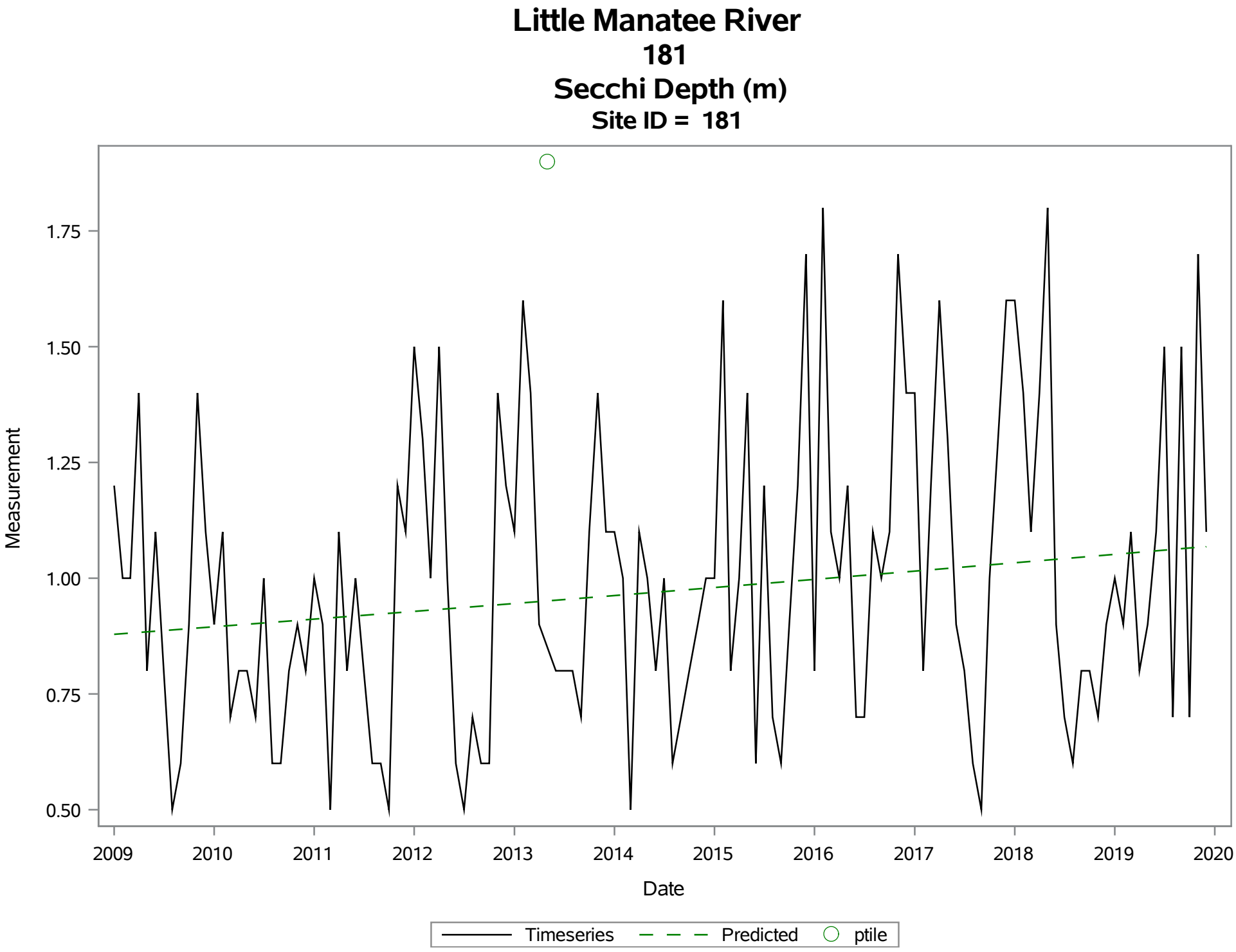

Little Manatee River
112
Secchi Depth (m)
Site ID = 112
Measurement
0
1
2
3
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std


Little Manatee River
113
Secchi Depth (m)
Site ID = 113
Measurement
2.5
2.0
1.5
1.0
0.5
0.0
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

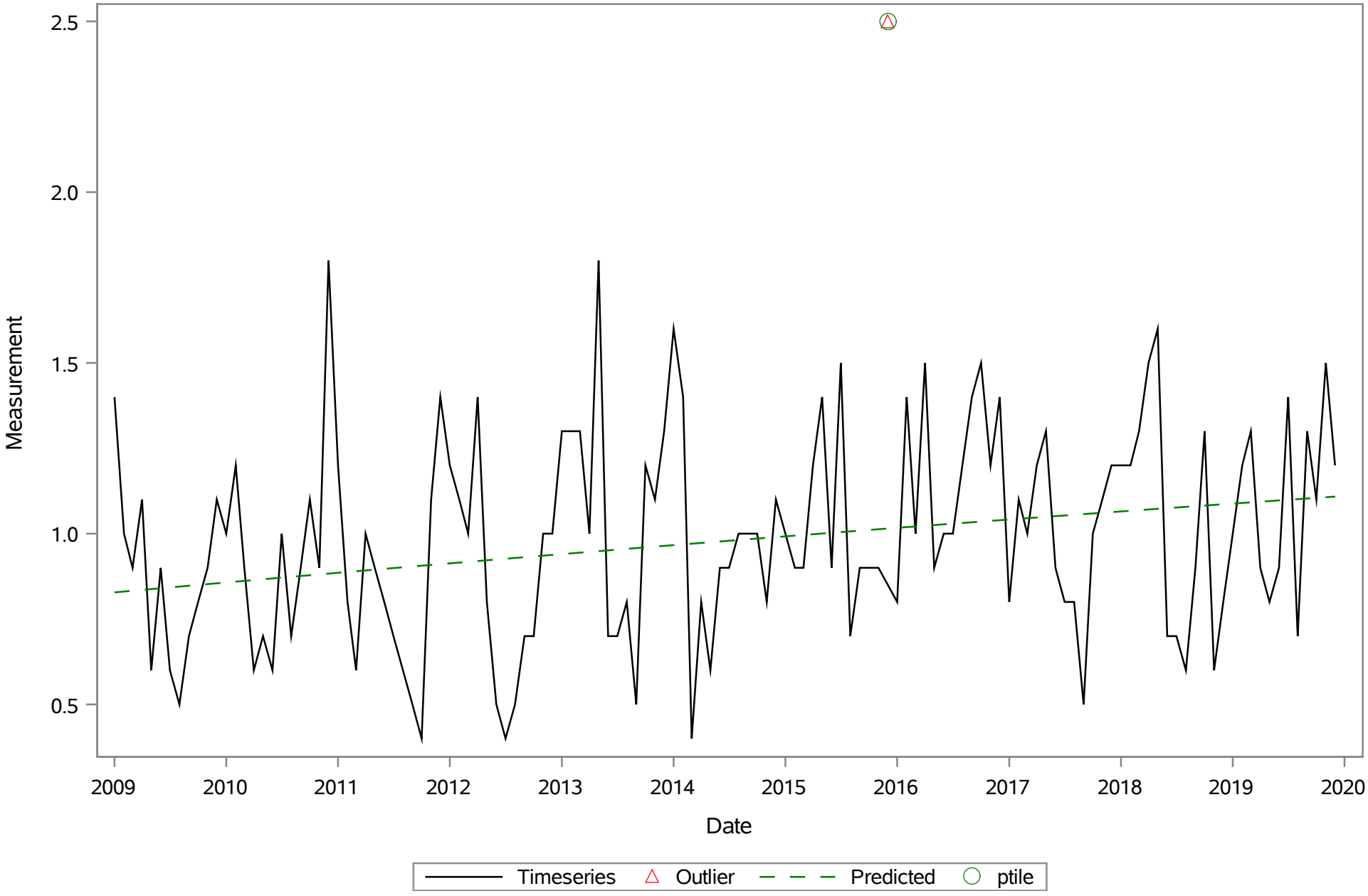

Little Manatee River
129
Secchi Depth (m)
Site ID = 129
1.50
1.25
1.00
0.75
0.50
0.25
Measurement
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile

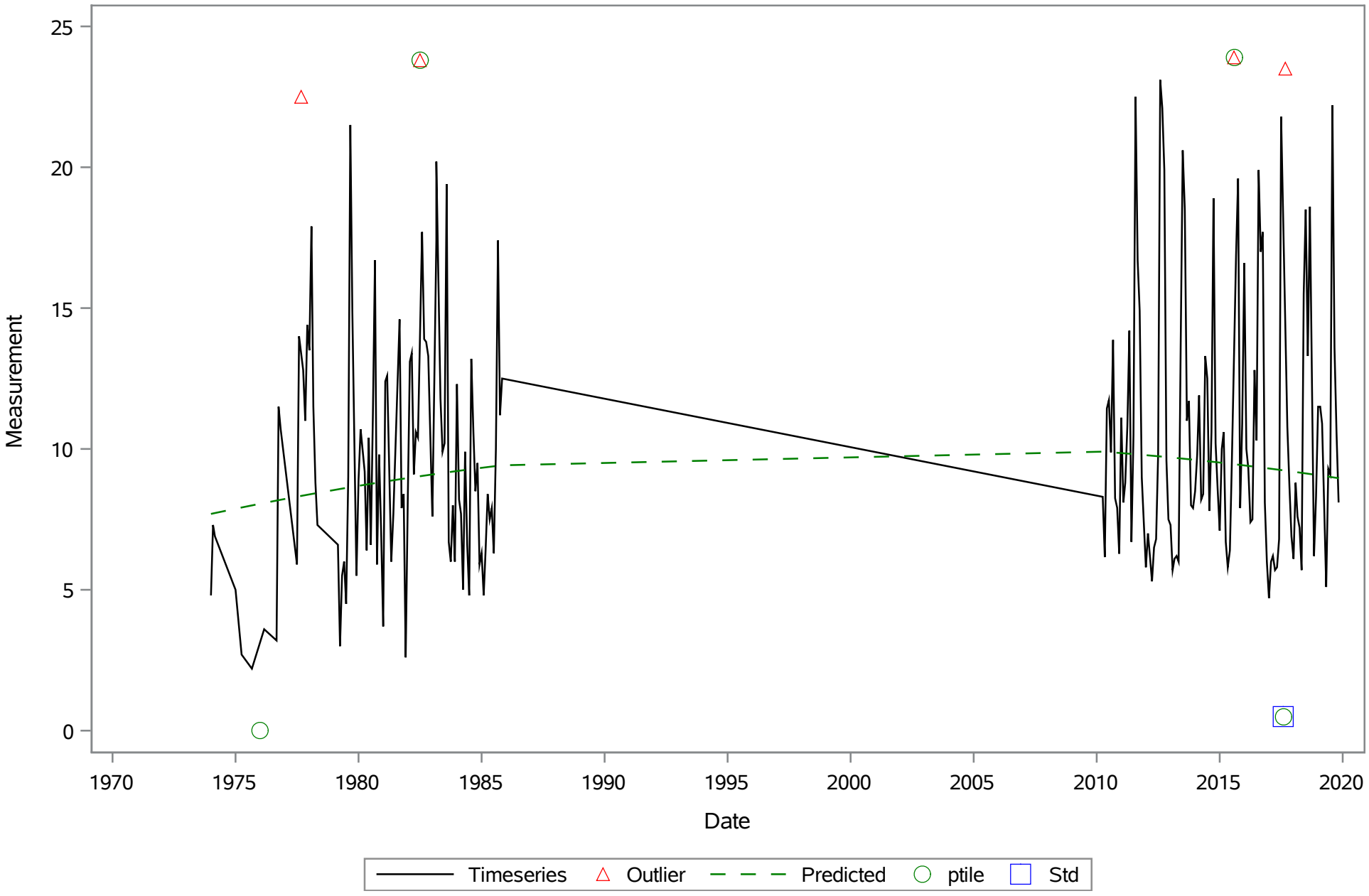

Little Manatee River
140
Secchi Depth (m)
Site ID = 140
Measurement
1.5
1.0
0.5
0.0
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

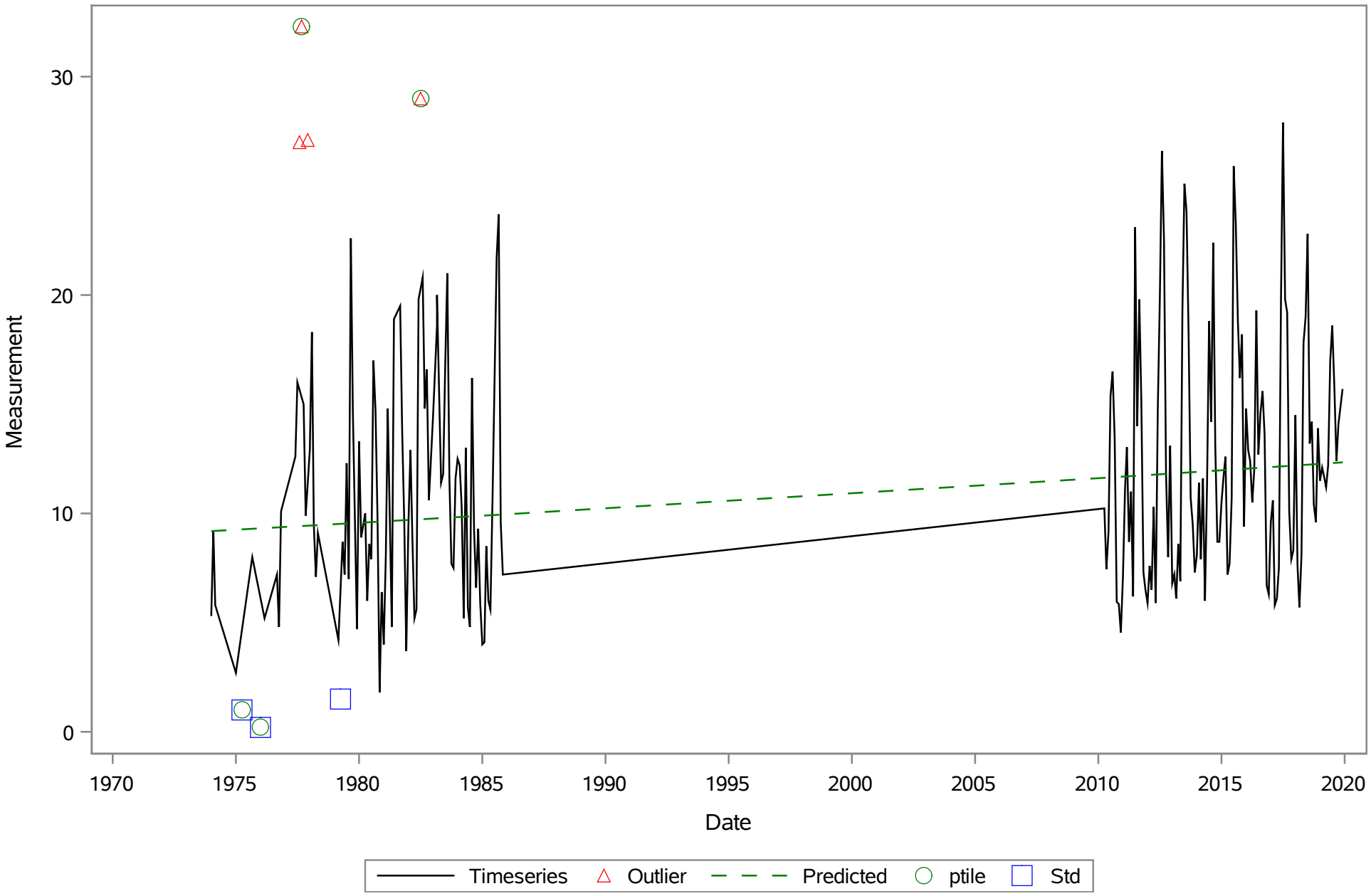

Little Manatee River
180
Secchi Depth (m)
Site ID = 180
Measurement
3.5
3.0
2.5
2.0
1.5
1.0
0.5
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Outlier
Predicted
ptile

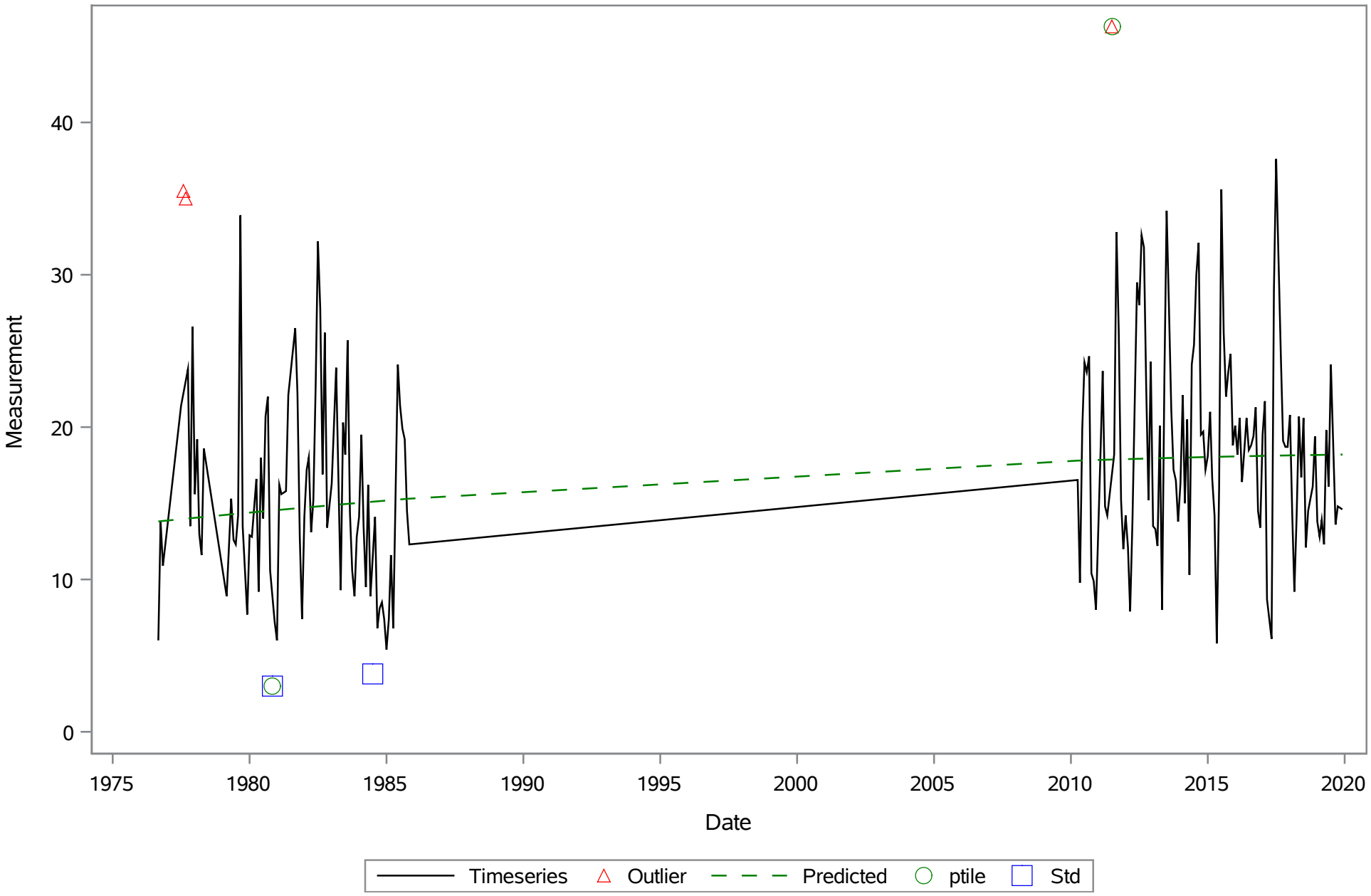

Little Manatee River
181
Secchi Depth (m)
Site ID = 181
Measurement
1.75
1.50
1.25
1.00
0.75
0.50
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Predicted
ptile

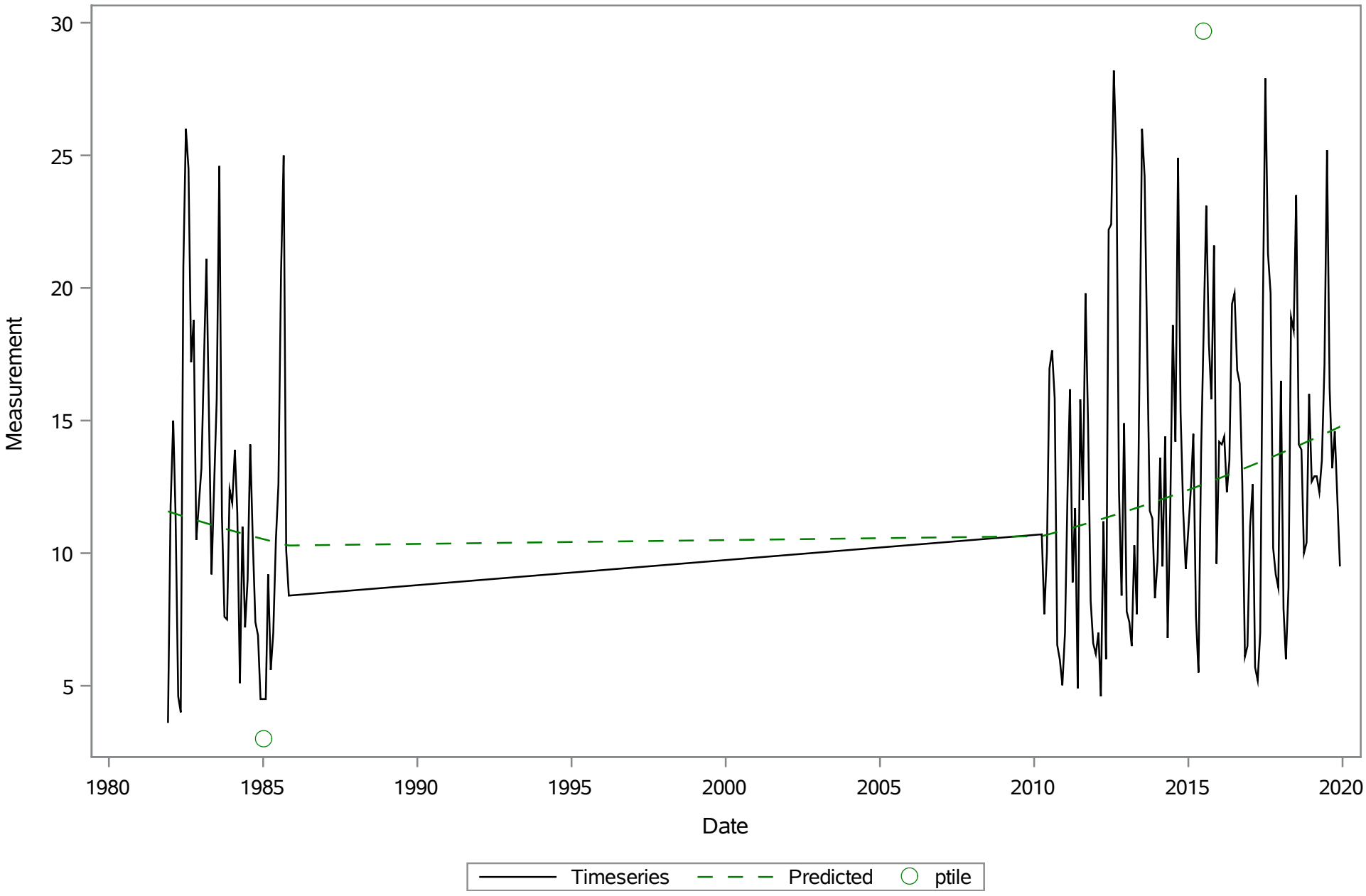
Little Manatee River
182
Secchi Depth (m)
Site ID = 182

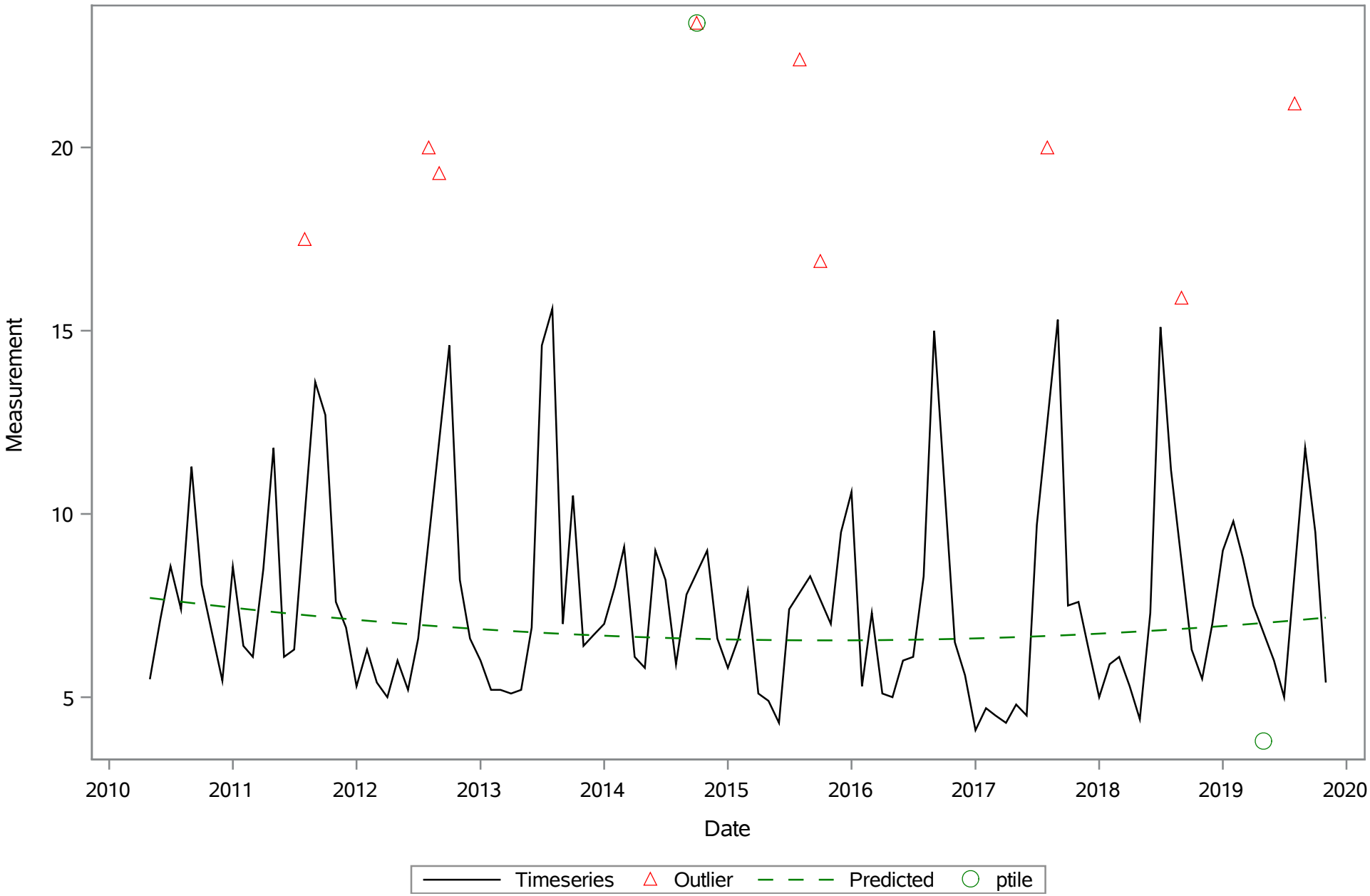



Little Manatee River
112
TOC (mg/l)
Site ID = 112
Measurement
25
20
15
10
5
0
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

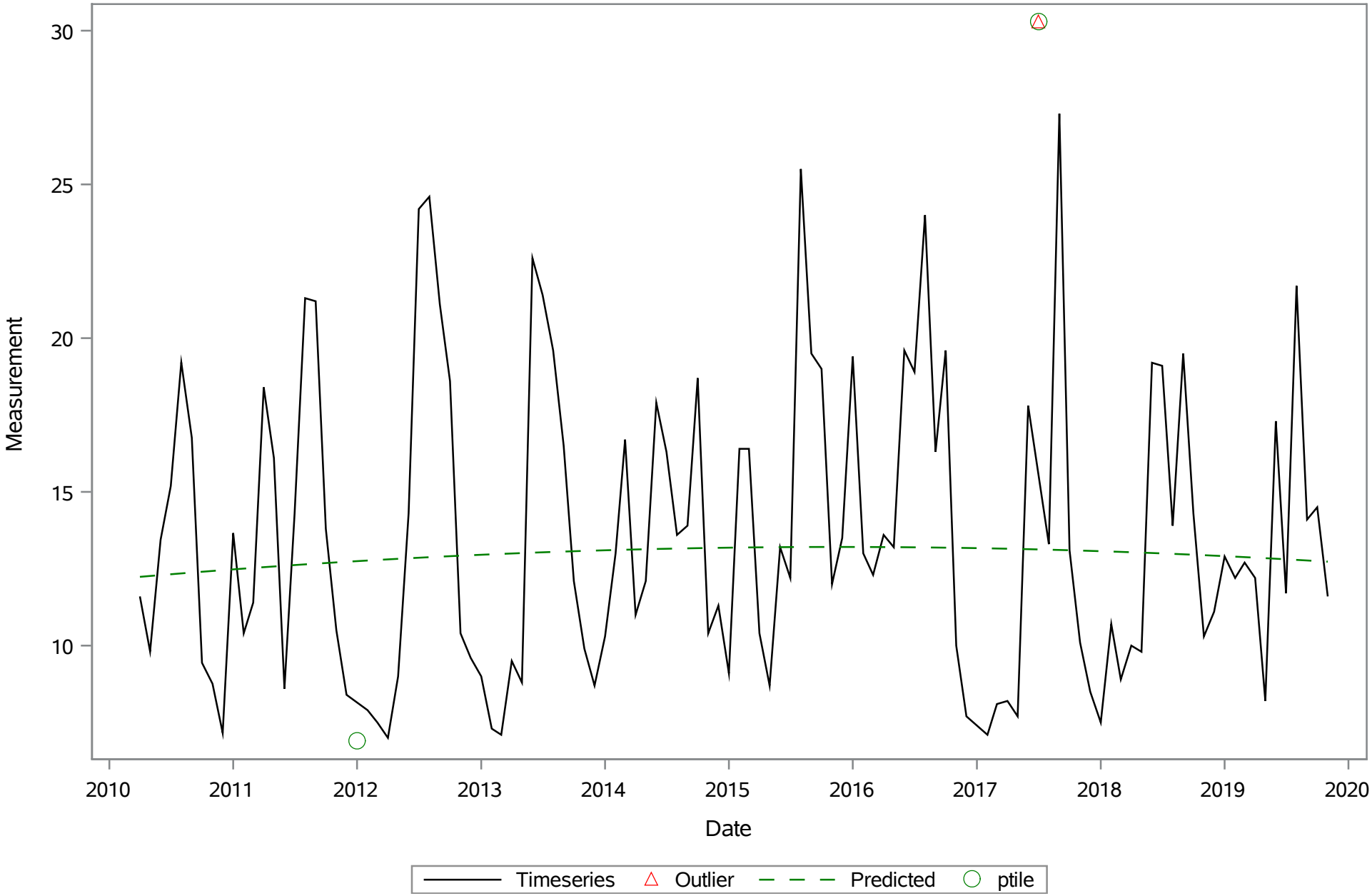

Little Manatee River
113
TOC (mg/l)
Site ID = 113
Measurement
30
20
10
0
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

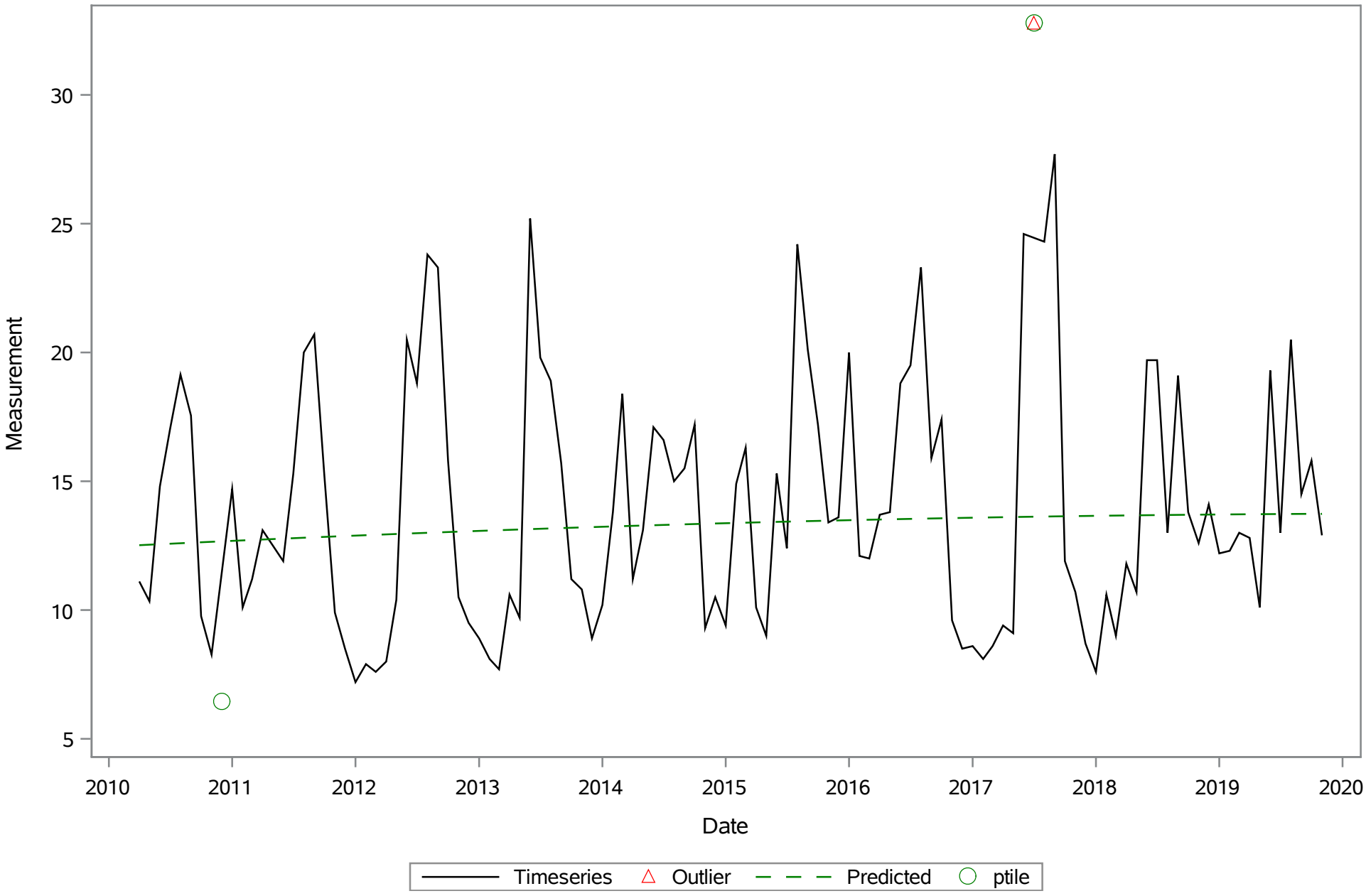

Little Manatee River
129
TOC (mg/l)
Site ID = 129
Measurement
0
10
20
30
40
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

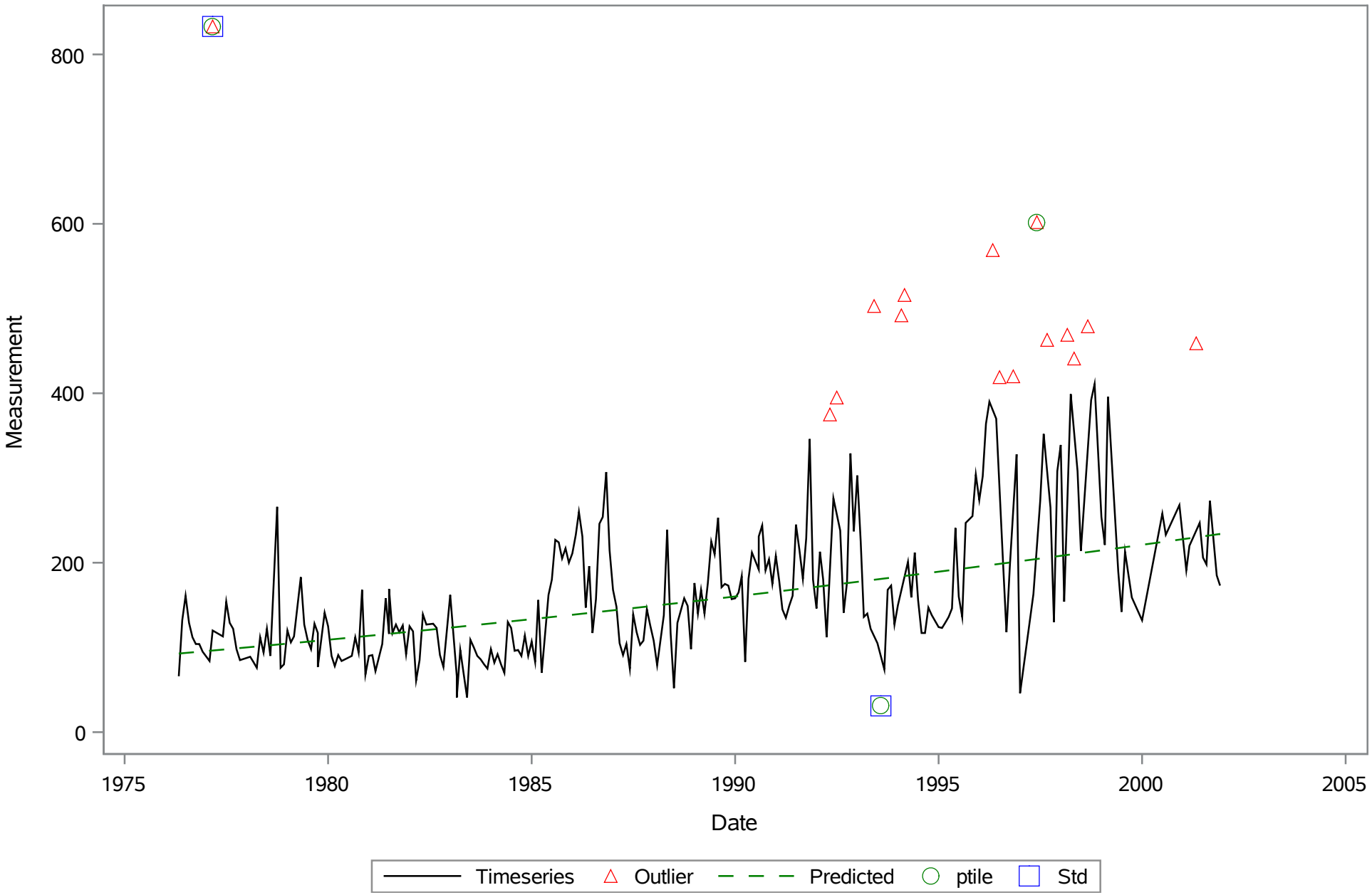

Little Manatee River
140
TOC (mg/l)
Site ID = 140
Measurement
30
25
20
15
10
5
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Predicted
ptile


Little Manatee River
180
TOC (mg/l)
Site ID = 180
Measurement
20
15
10
5
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Outlier
Predicted
ptile

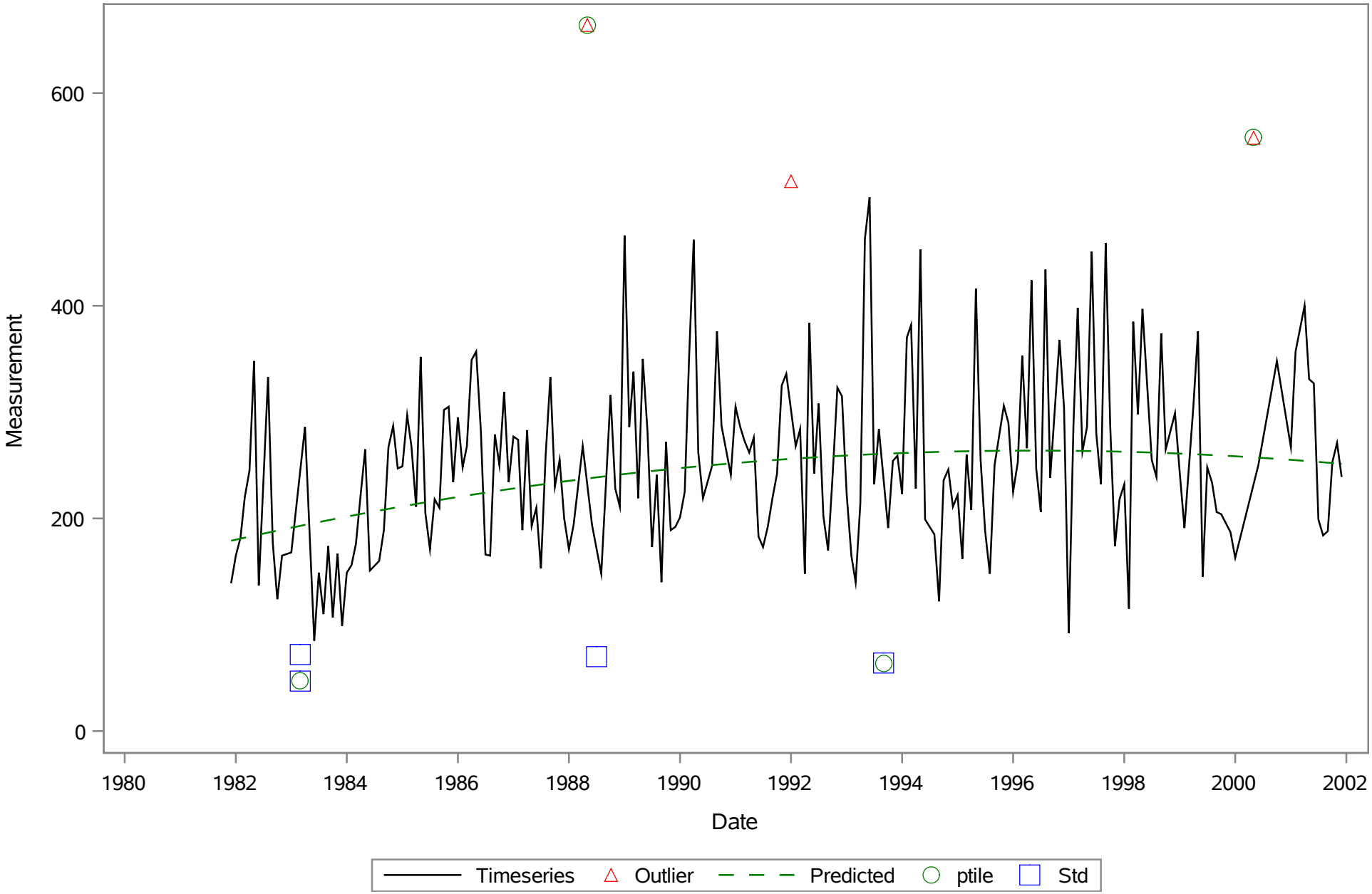
Little Manatee River
181
TOC (mg/l)
Site ID = 181

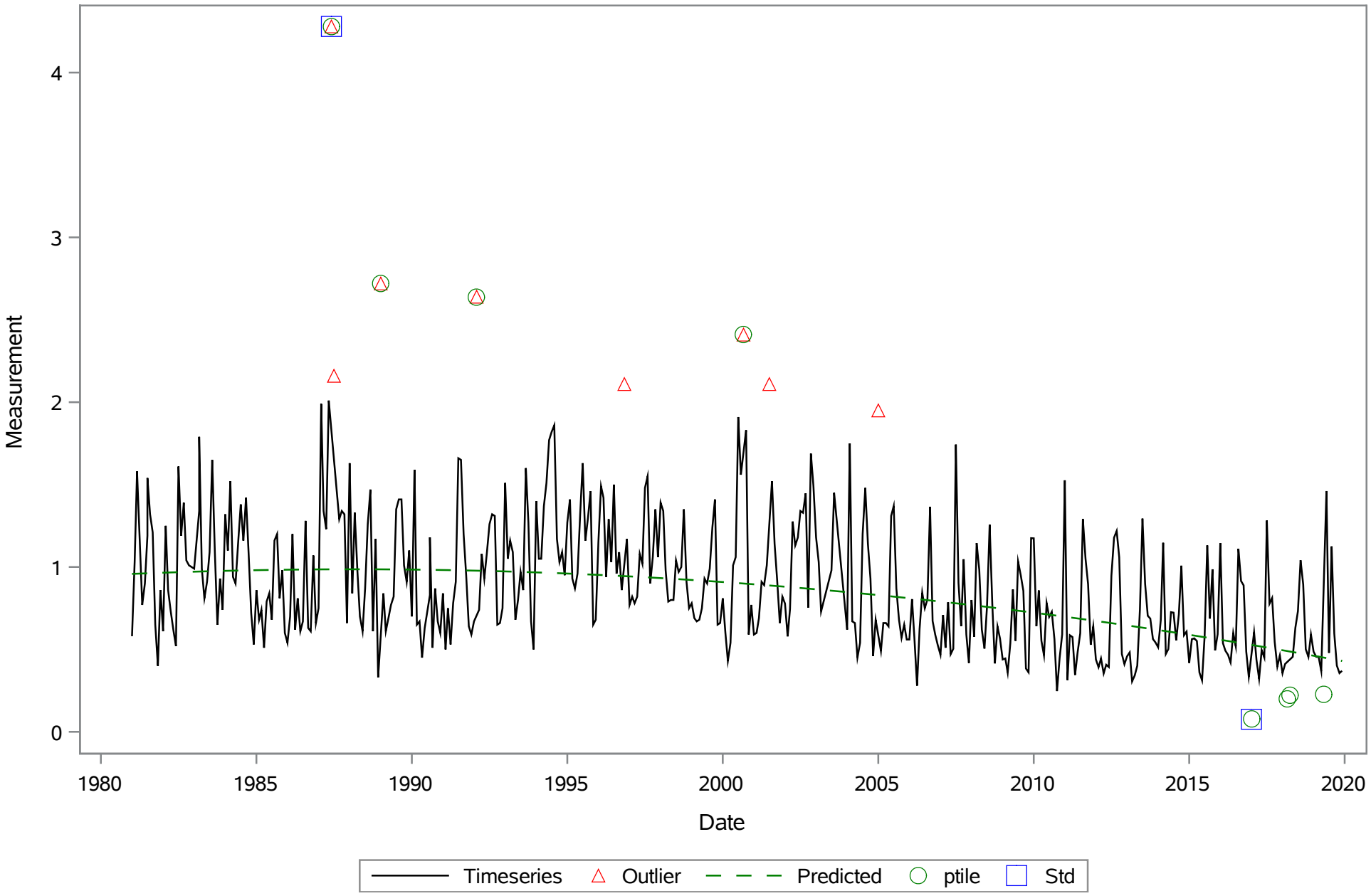


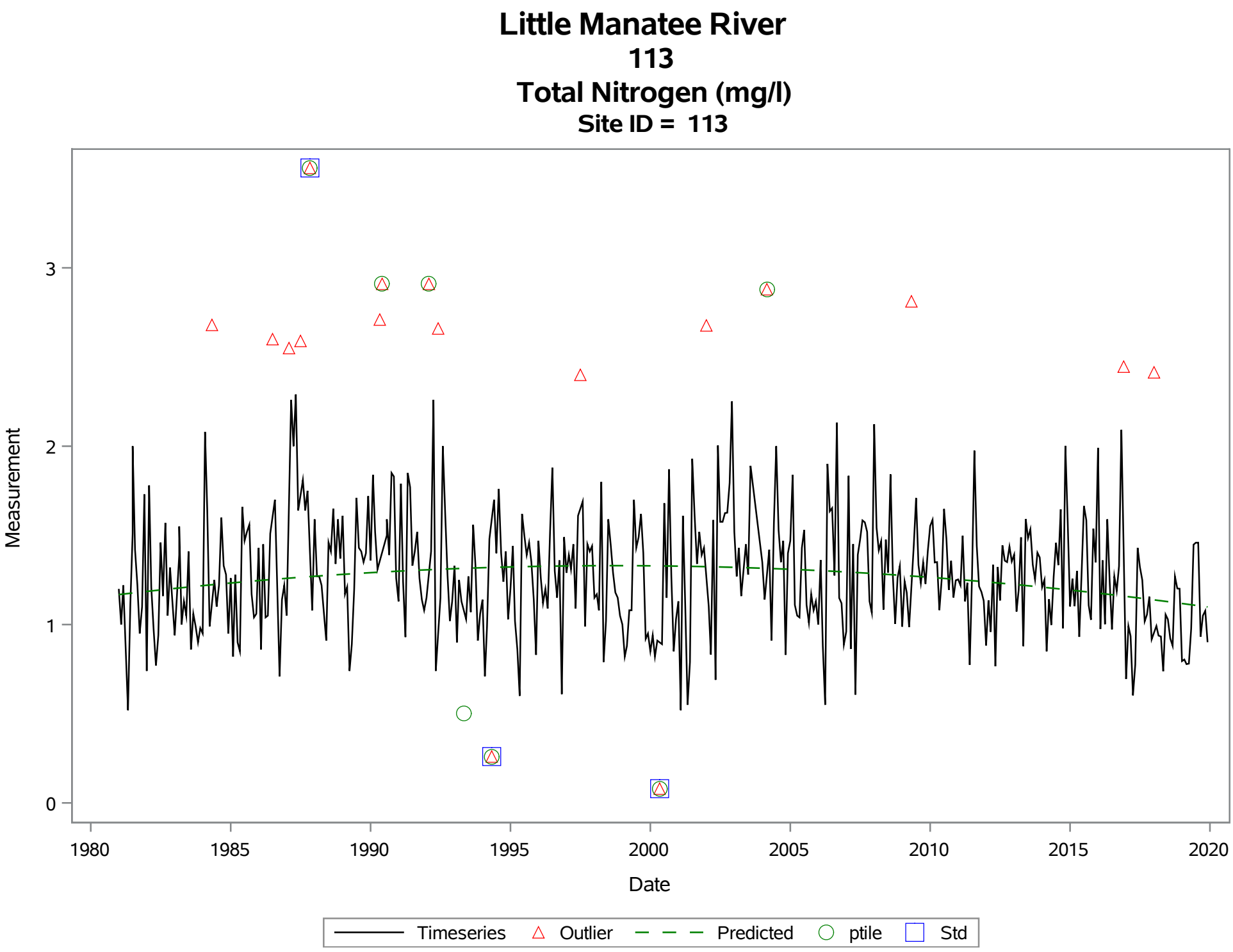

Little Manatee River
182
TOC (mg/l)
Site ID = 182
Measurement
30
25
20
15
10
5
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Outlier
Predicted
ptile

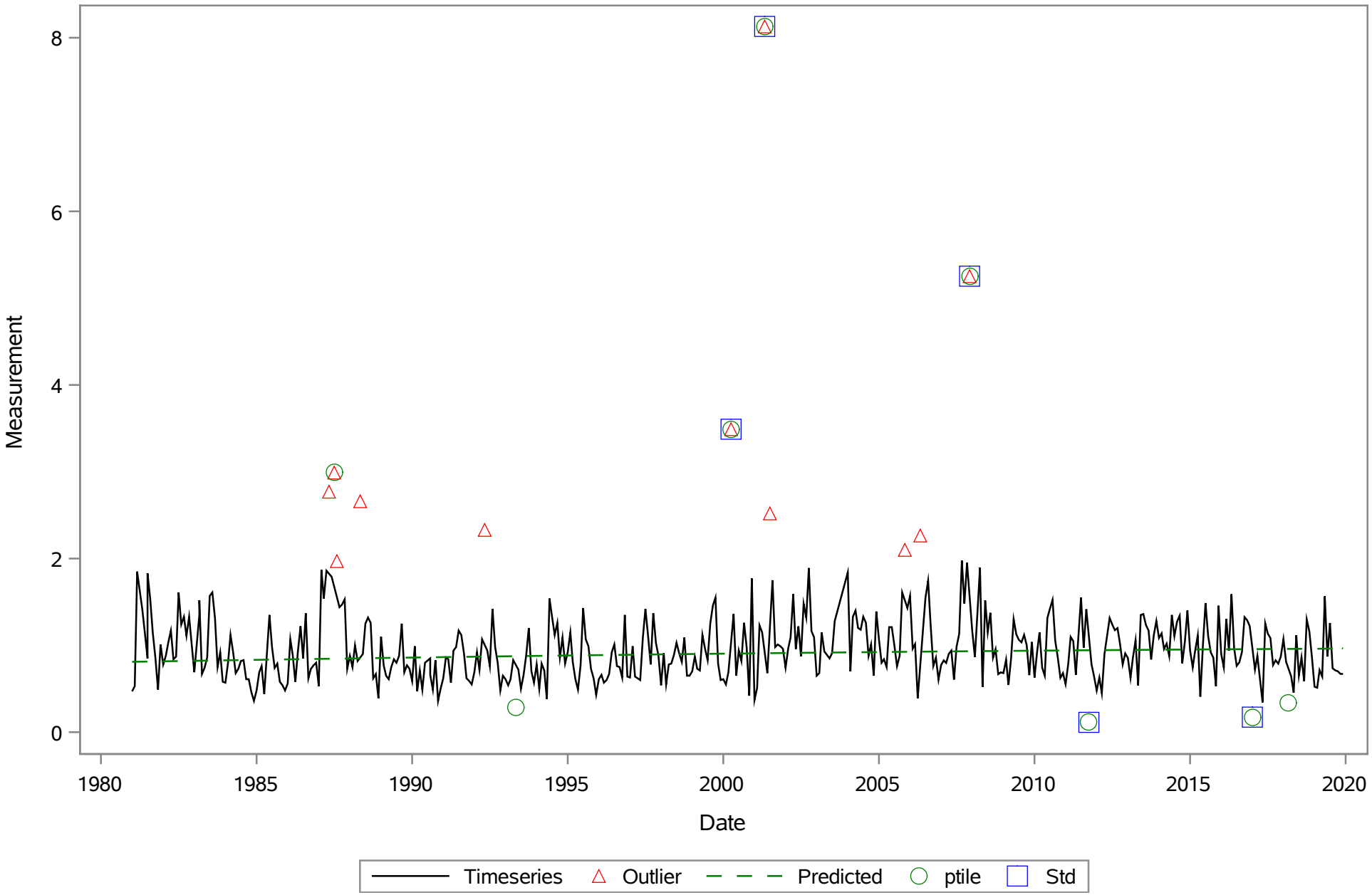

Little Manatee River
129
Total Dissolved Solids (mg/l)
Site ID = 129
Measurement
800
600
400
200
0
1975
1980
1985
1990
1995
2000
2005
Date
Timeseries
Outlier
Predicted
ptile
Std

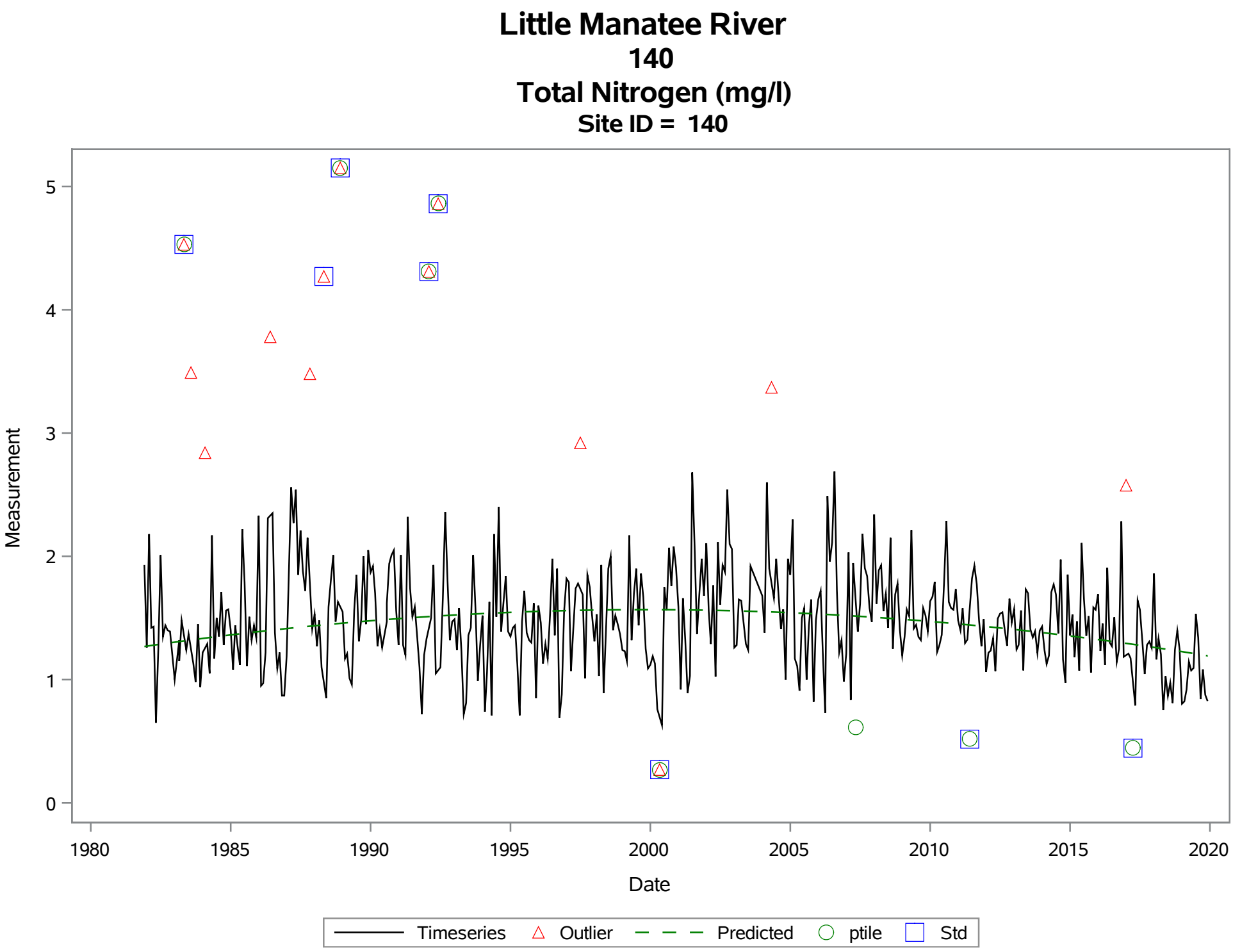
Little Manatee River
140
Total Dissolved Solids (mg/l)
Site ID = 140



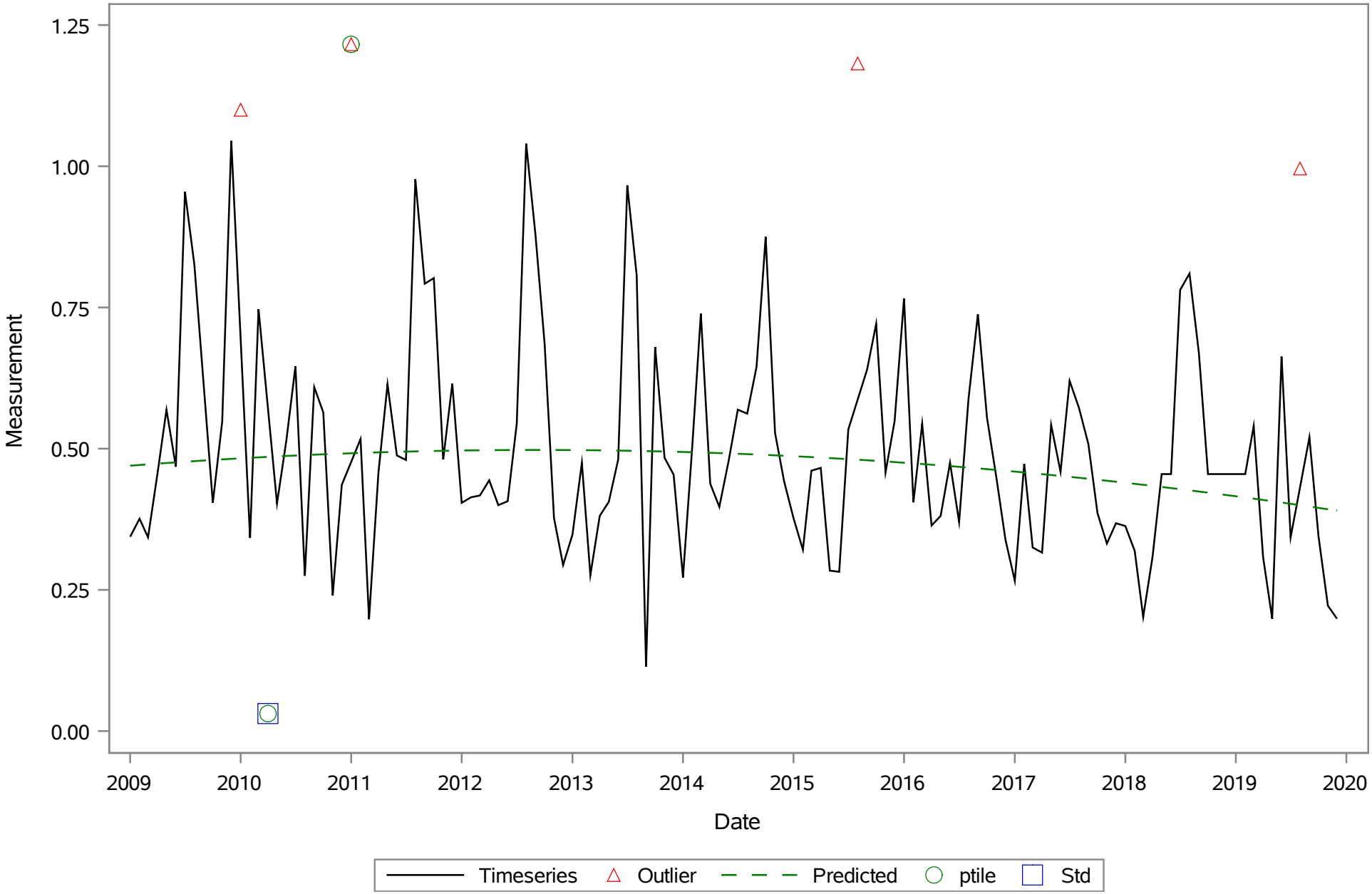

Little Manatee River
112
Total Nitrogen (mg/l)
Site ID = 112
Measurement
0
1
2
3
4
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

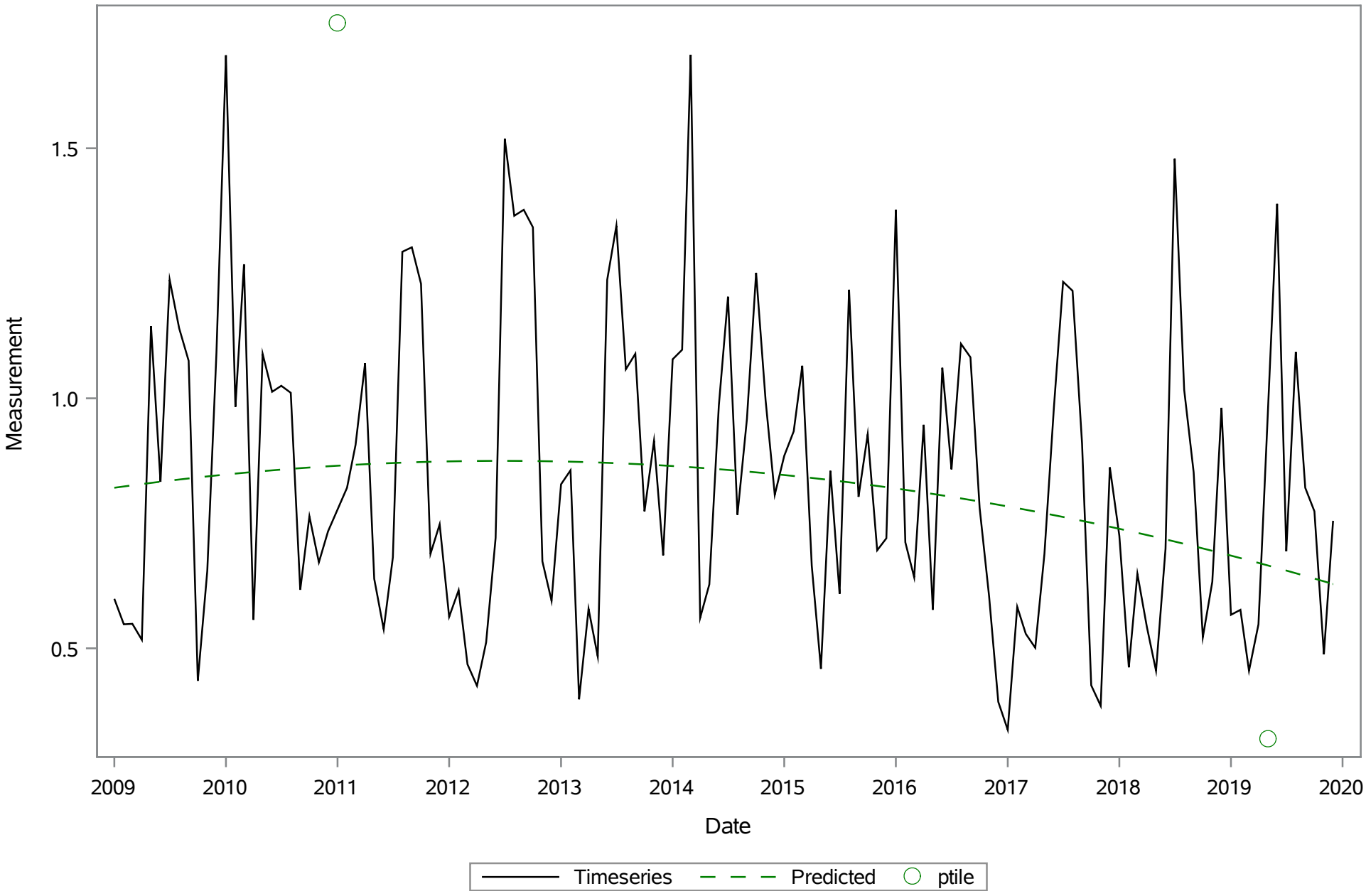

Little Manatee River
113
Total Nitrogen (mg/l)
Site ID = 113
Measurement
0
1
2
3
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std


Little Manatee River
129
Total Nitrogen (mg/l)
Site ID = 129
Measurement
0
2
4
6
8
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

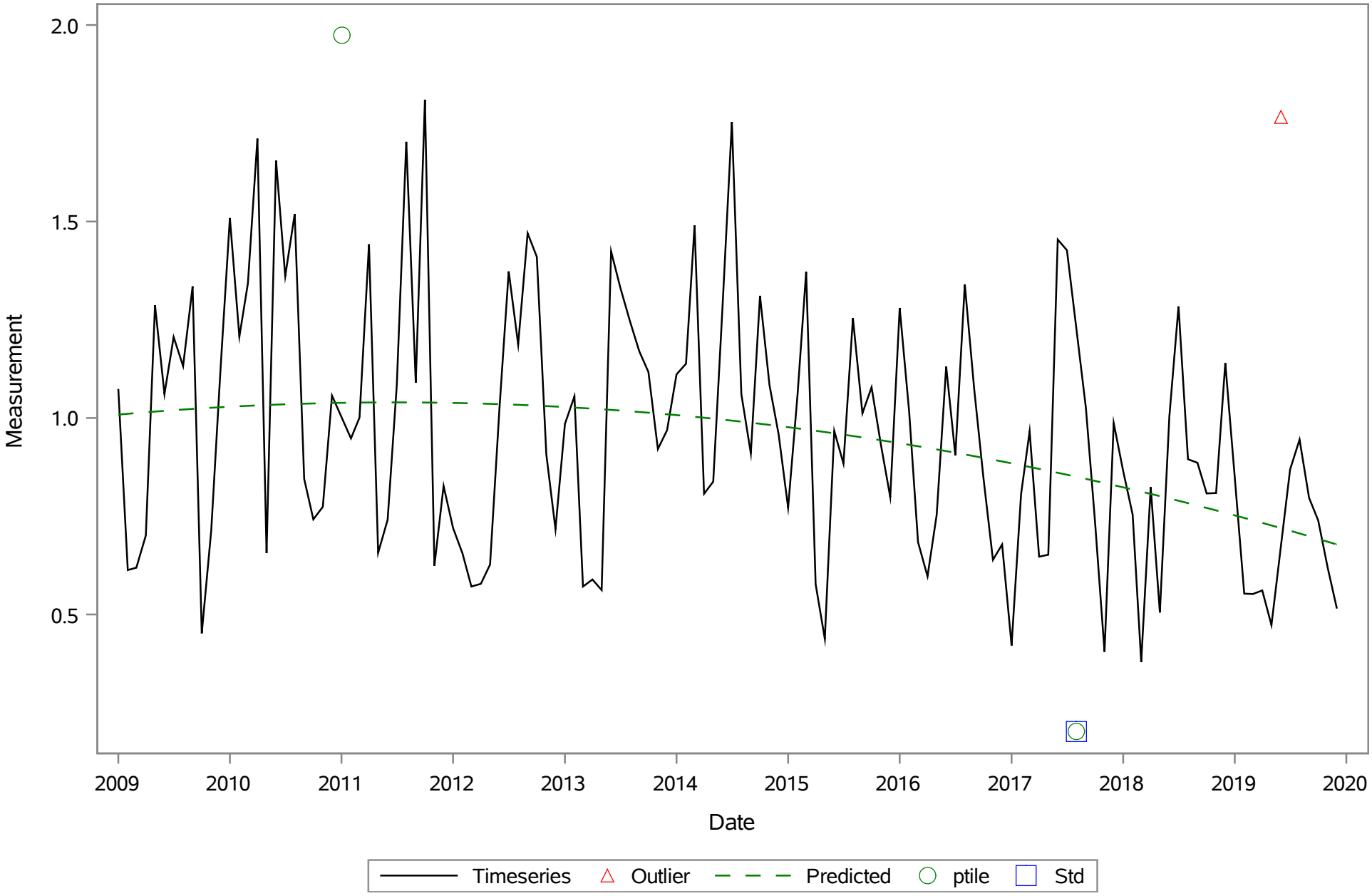

Little Manatee River
140
Total Nitrogen (mg/l)
Site ID = 140
Measurement
0
1
2
3
4
5
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

Little Manatee River
180
Total Nitrogen (mg/l)
Site ID = 180

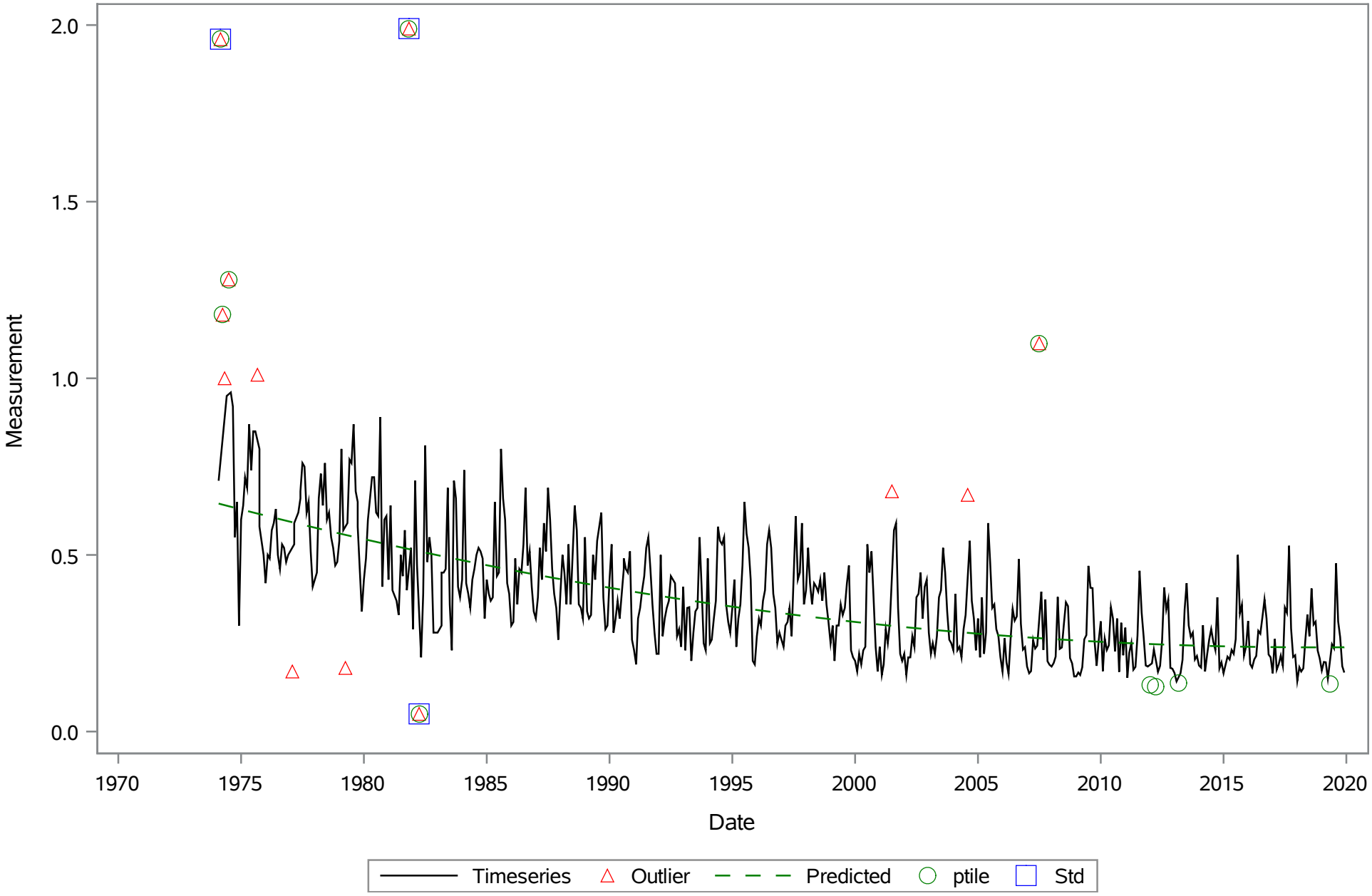


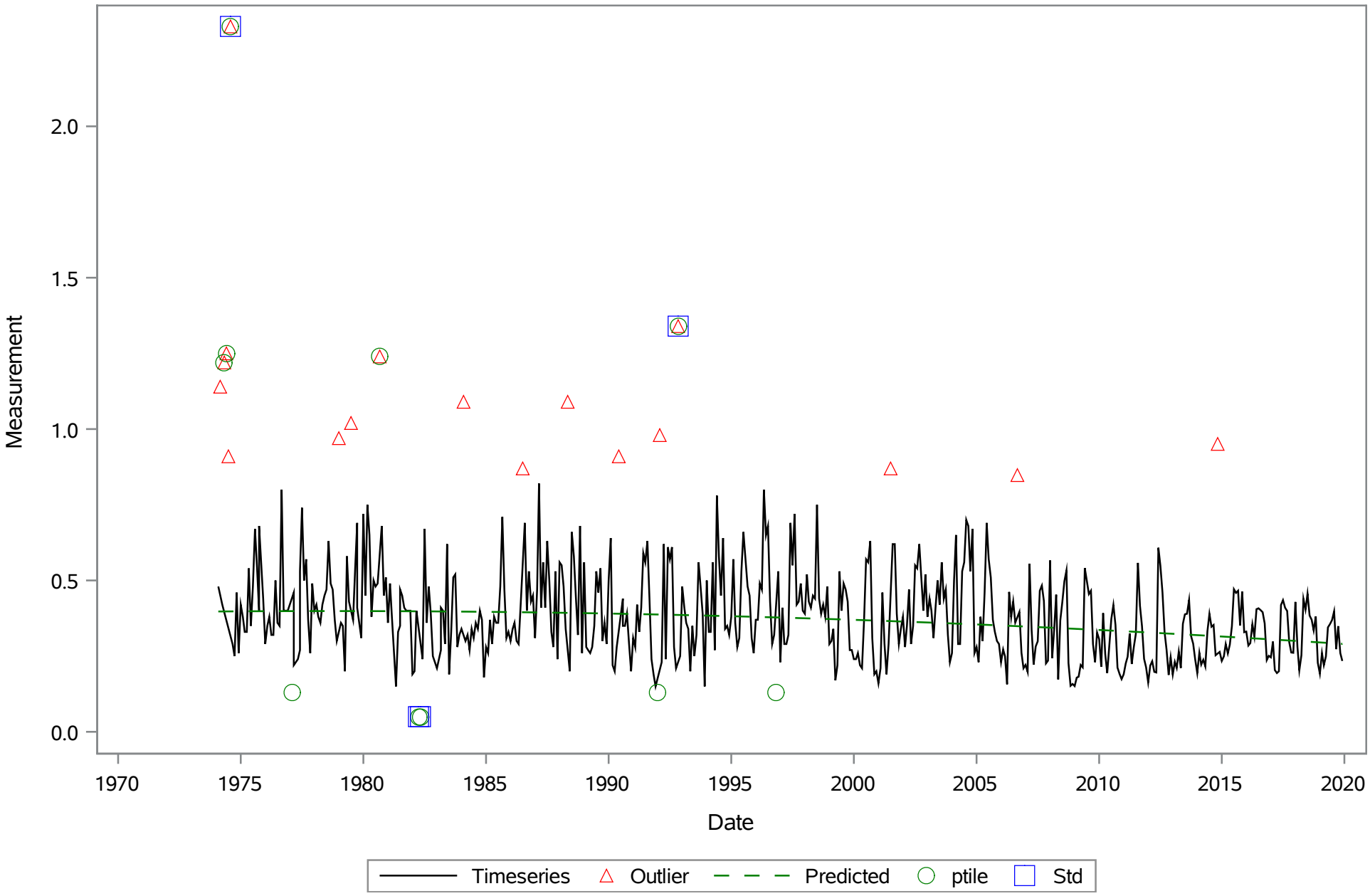

Little Manatee River
181
Total Nitrogen (mg/l)
Site ID = 181
Measurement
1.5
1.0
0.5
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Predicted
ptile

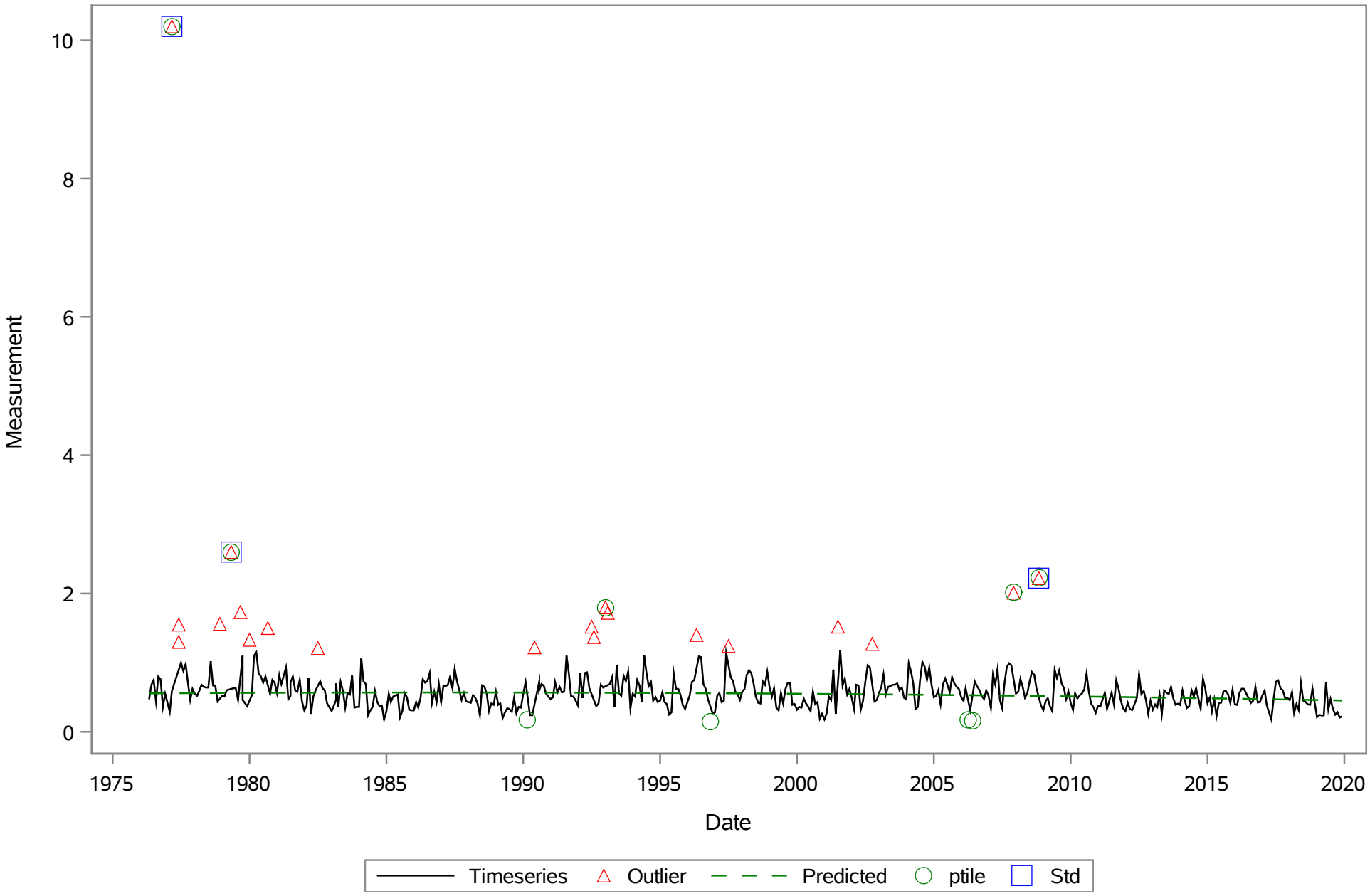
Little Manatee River
182
Total Nitrogen (mg/l)
Site ID = 182

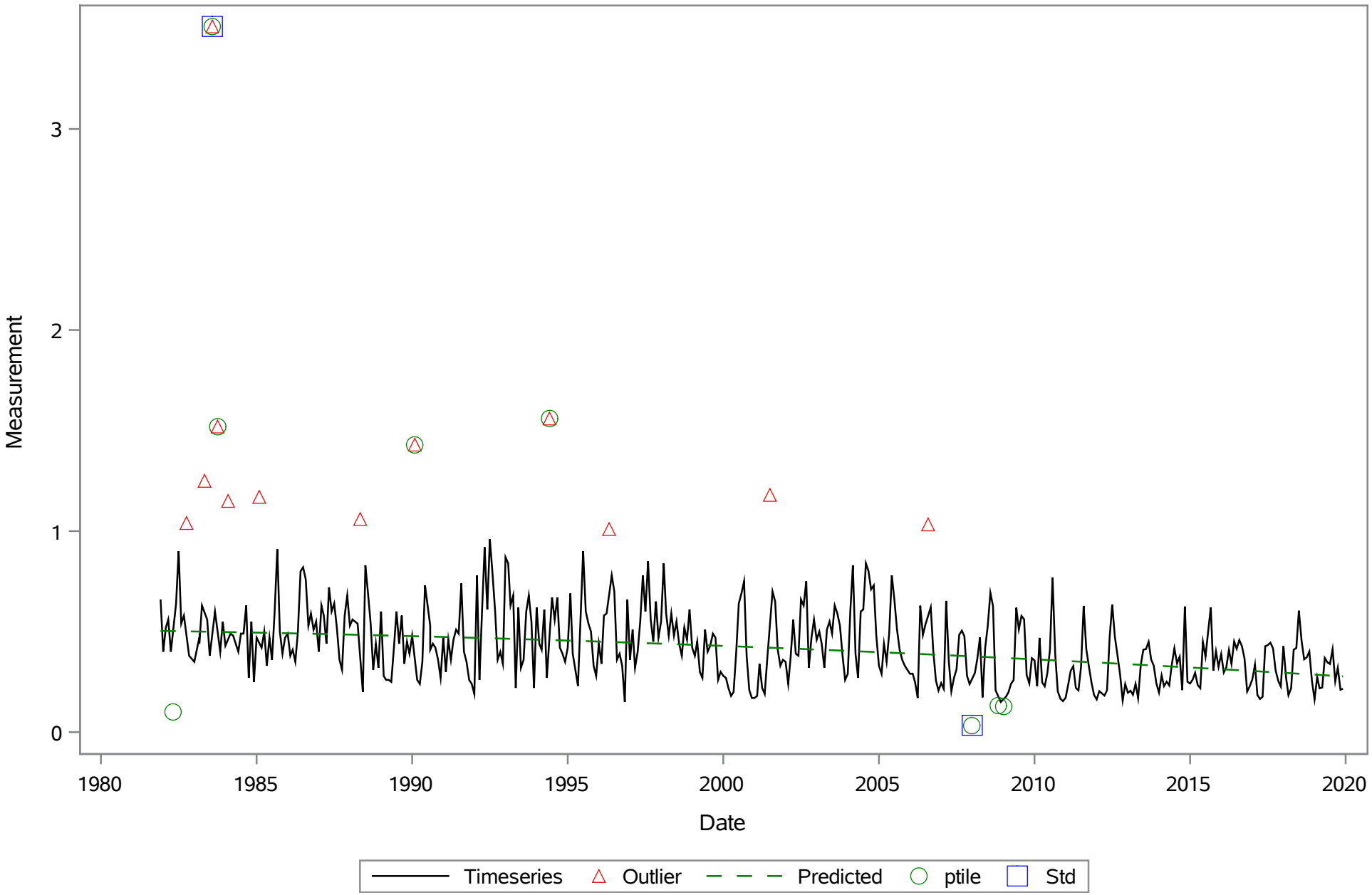


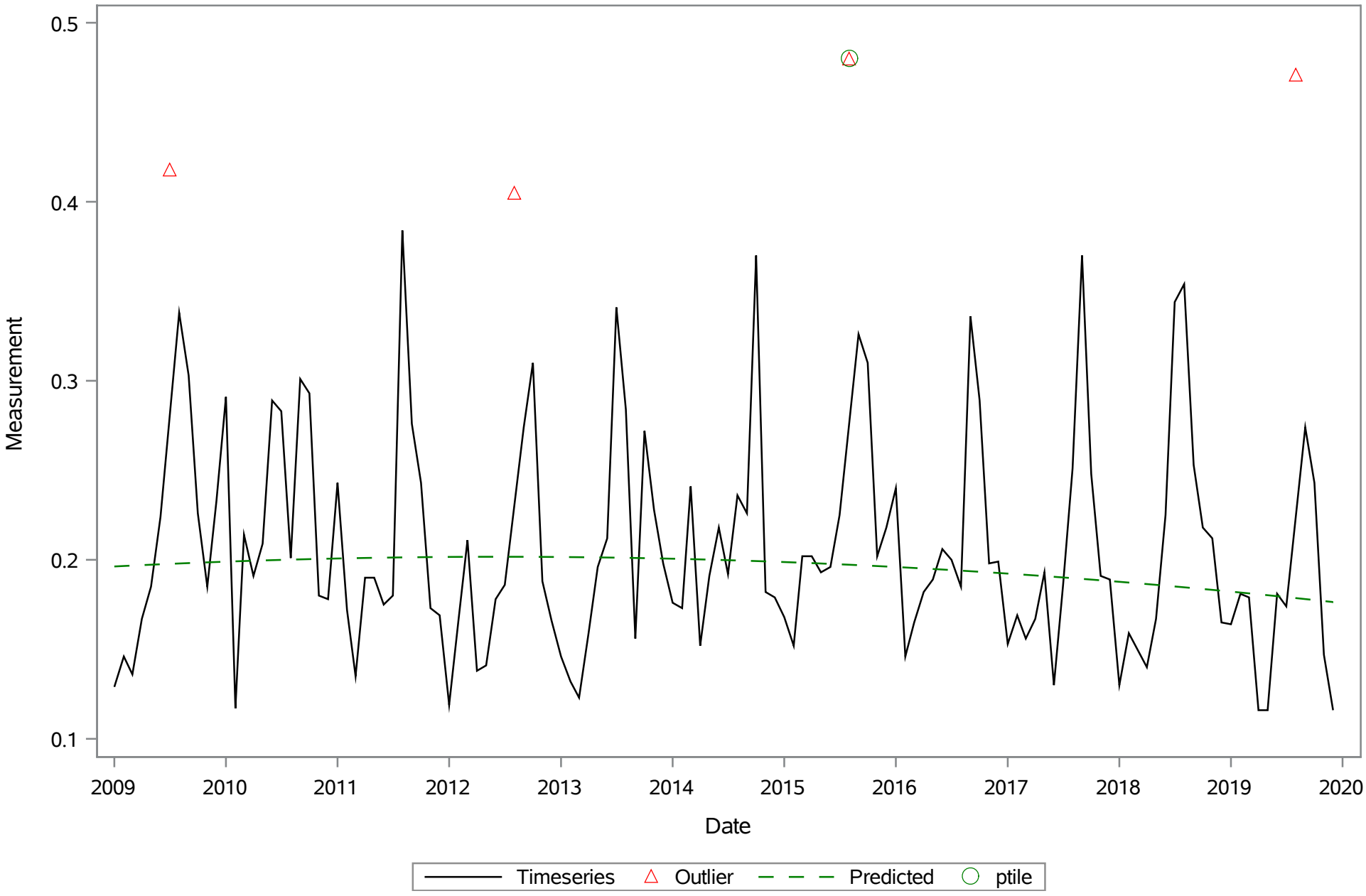
Little Manatee River
112
Total Phosphorus (mg/l)
Site ID = 112

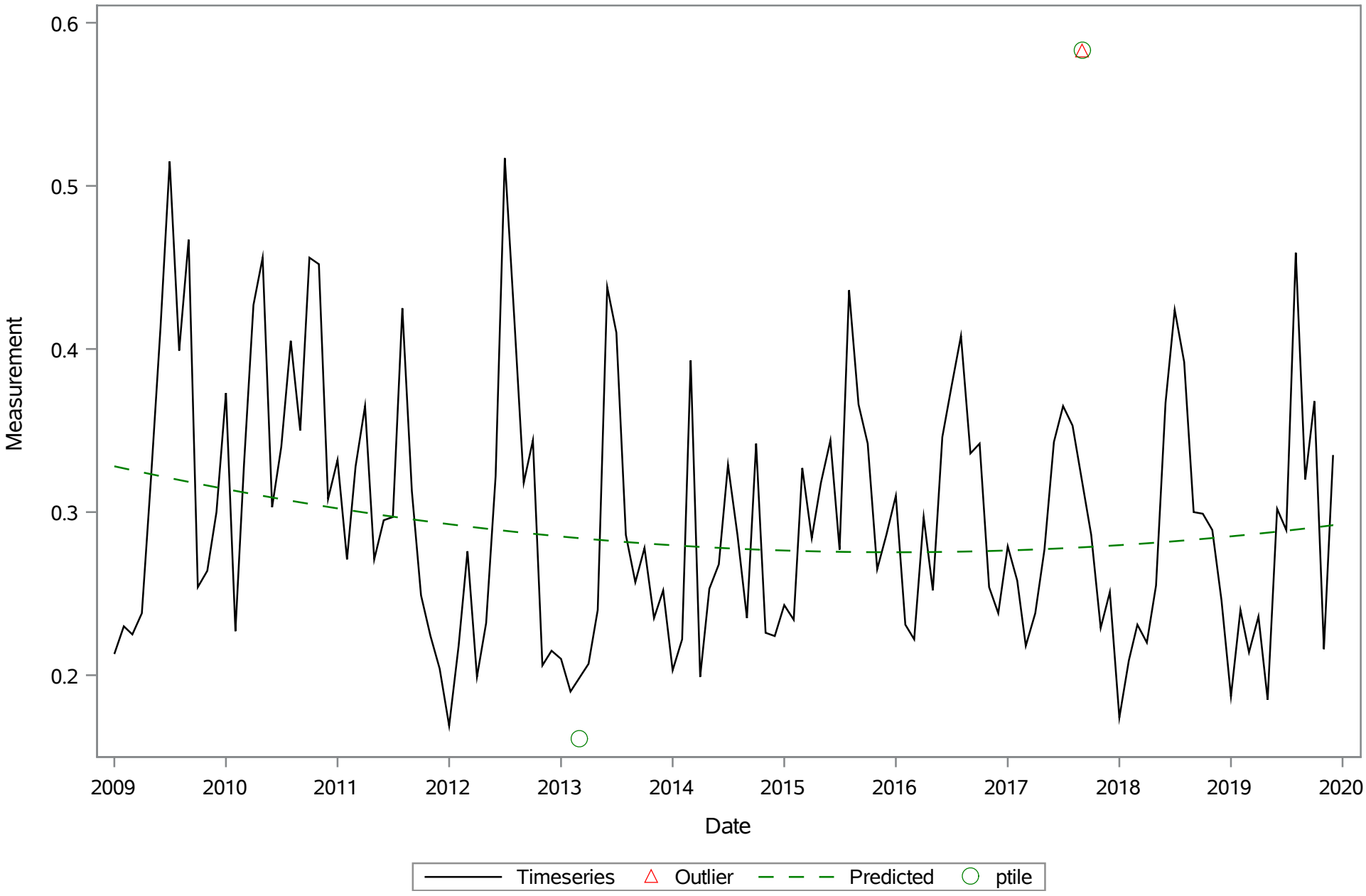


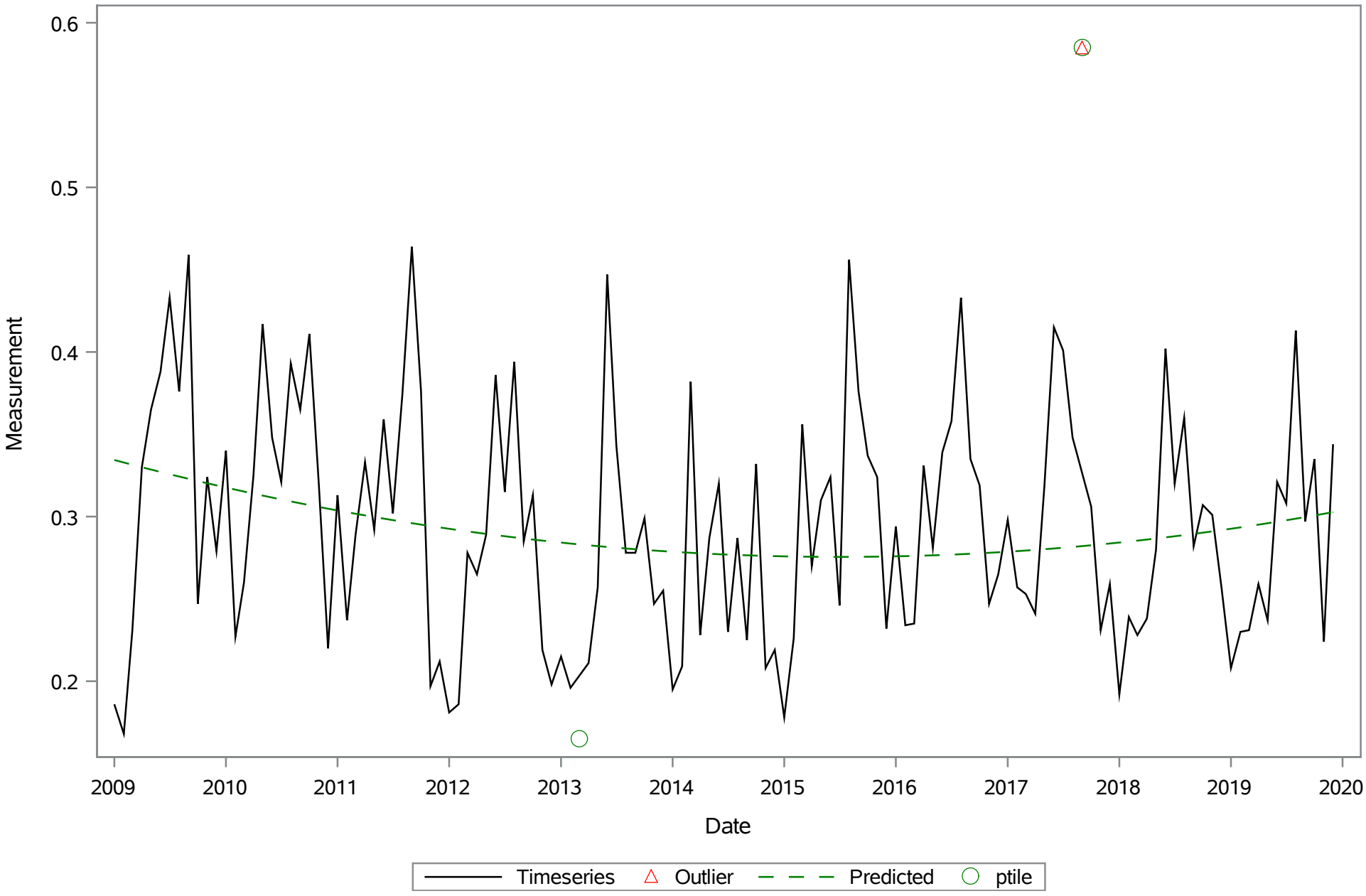

Little Manatee River
113
Total Phosphorus (mg/l)
Site ID = 113
Measurement
2.0
1.5
1.0
0.5
0.0
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std


Little Manatee River
129
Total Phosphorus (mg/l)
Site ID = 129
Measurement
10
8
6
4
2
0
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

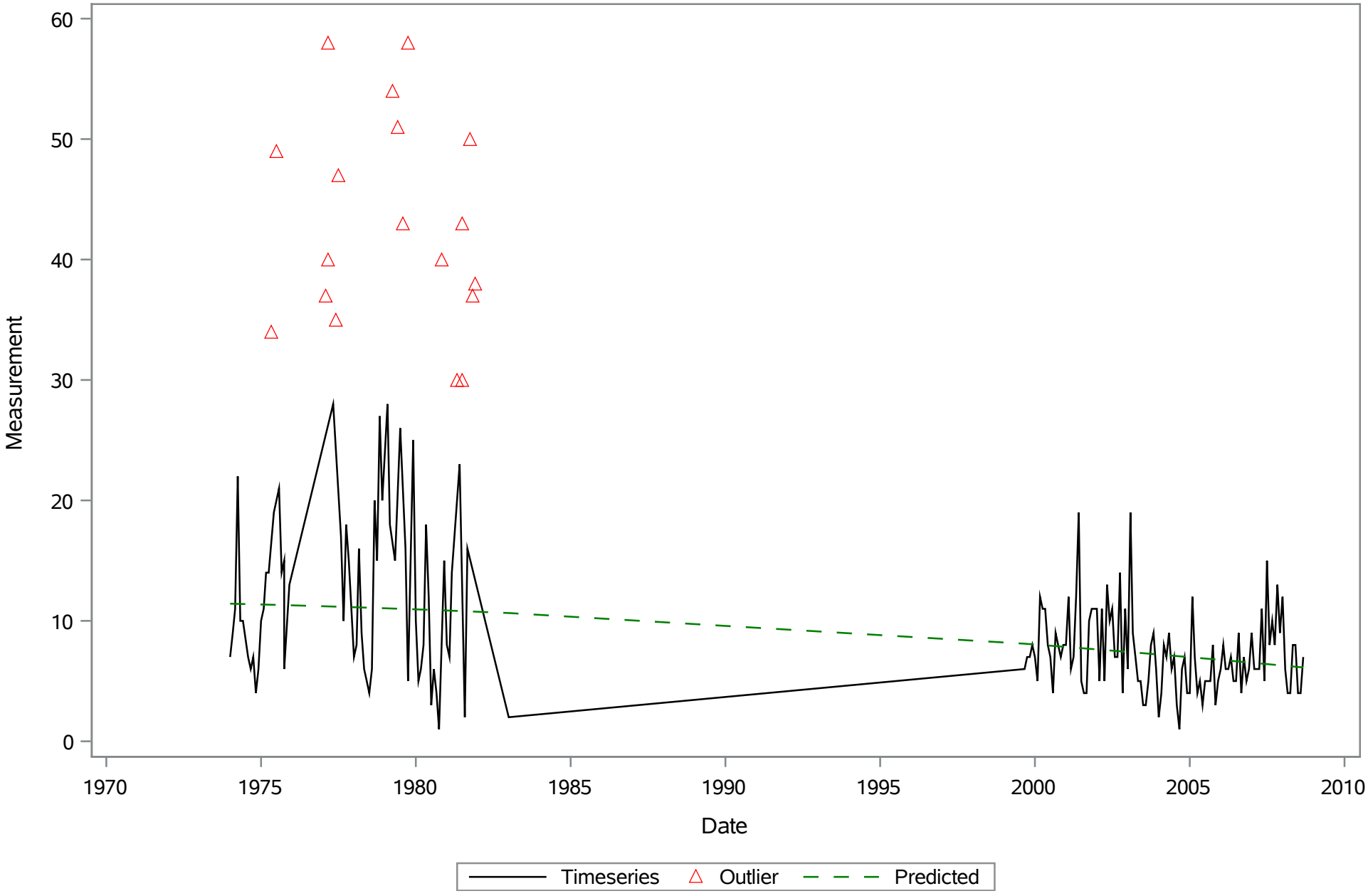

Little Manatee River
140
Total Phosphorus (mg/l)
Site ID = 140
Measurement
0
1
2
3
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std


Little Manatee River
180
Total Phosphorus (mg/l)
Site ID = 180
0.5
0.4
0.3
0.2
0.1
Measurement
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Outlier
Predicted
ptile

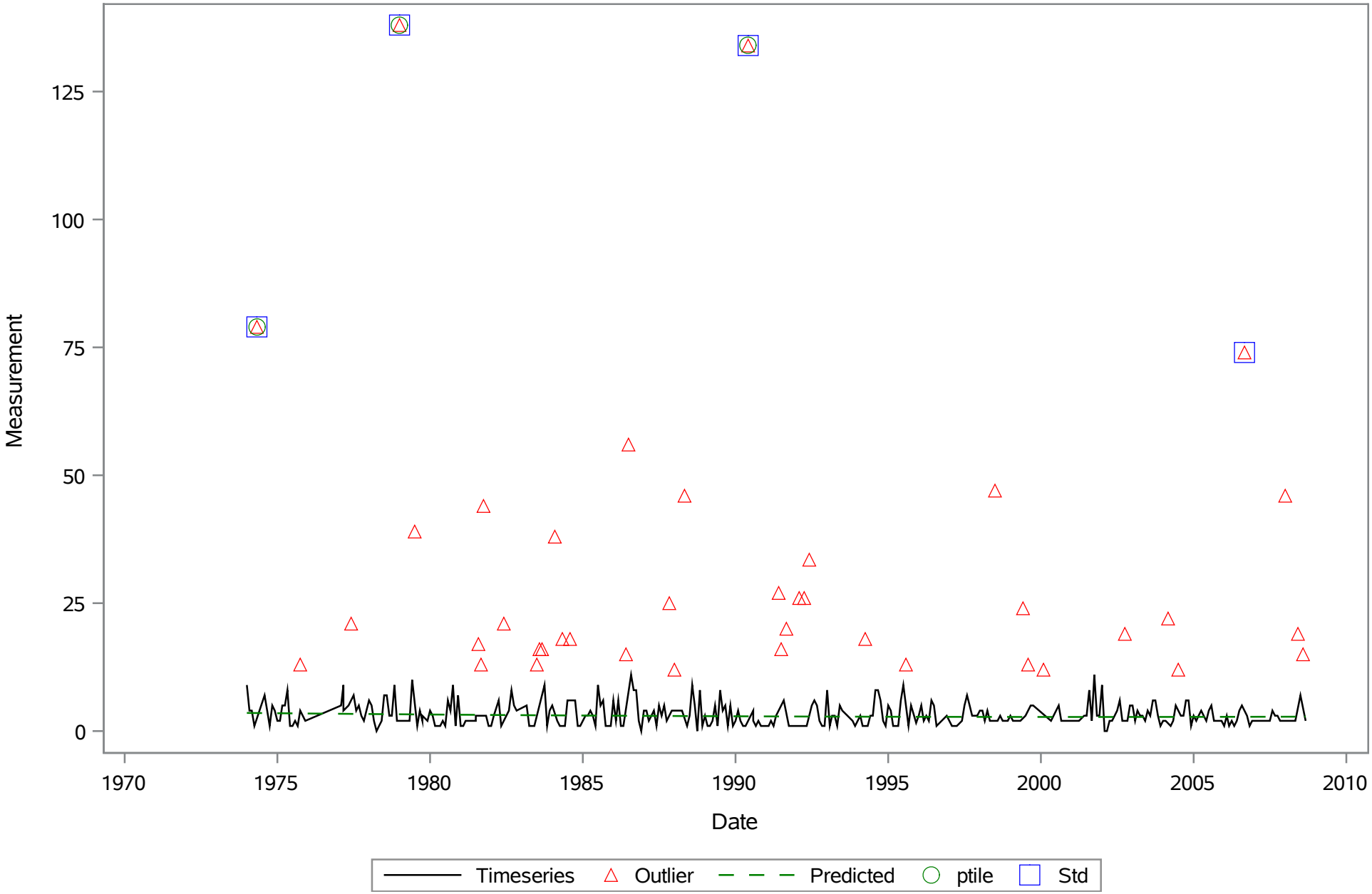

Little Manatee River
181
Total Phosphorus (mg/l)
Site ID = 181
Measurement
0.6
0.5
0.4
0.3
0.2
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Outlier
Predicted
ptile


Little Manatee River
182
Total Phosphorus (mg/l)
Site ID = 182
Measurement
0.6
0.5
0.4
0.3
0.2
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Outlier
Predicted
ptile

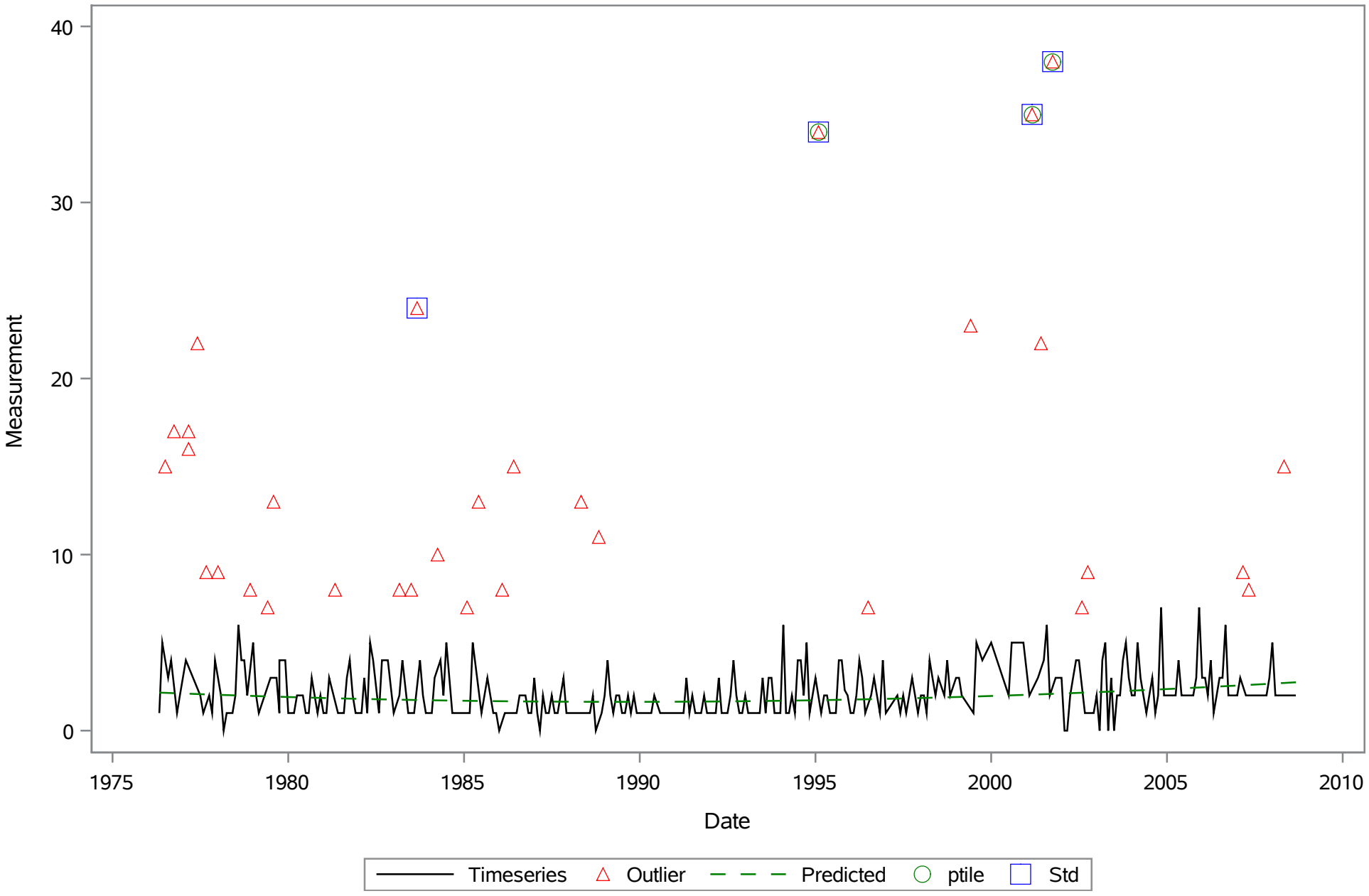
Little Manatee River
112
Total Suspended Solids (mg/l)
Site ID = 112

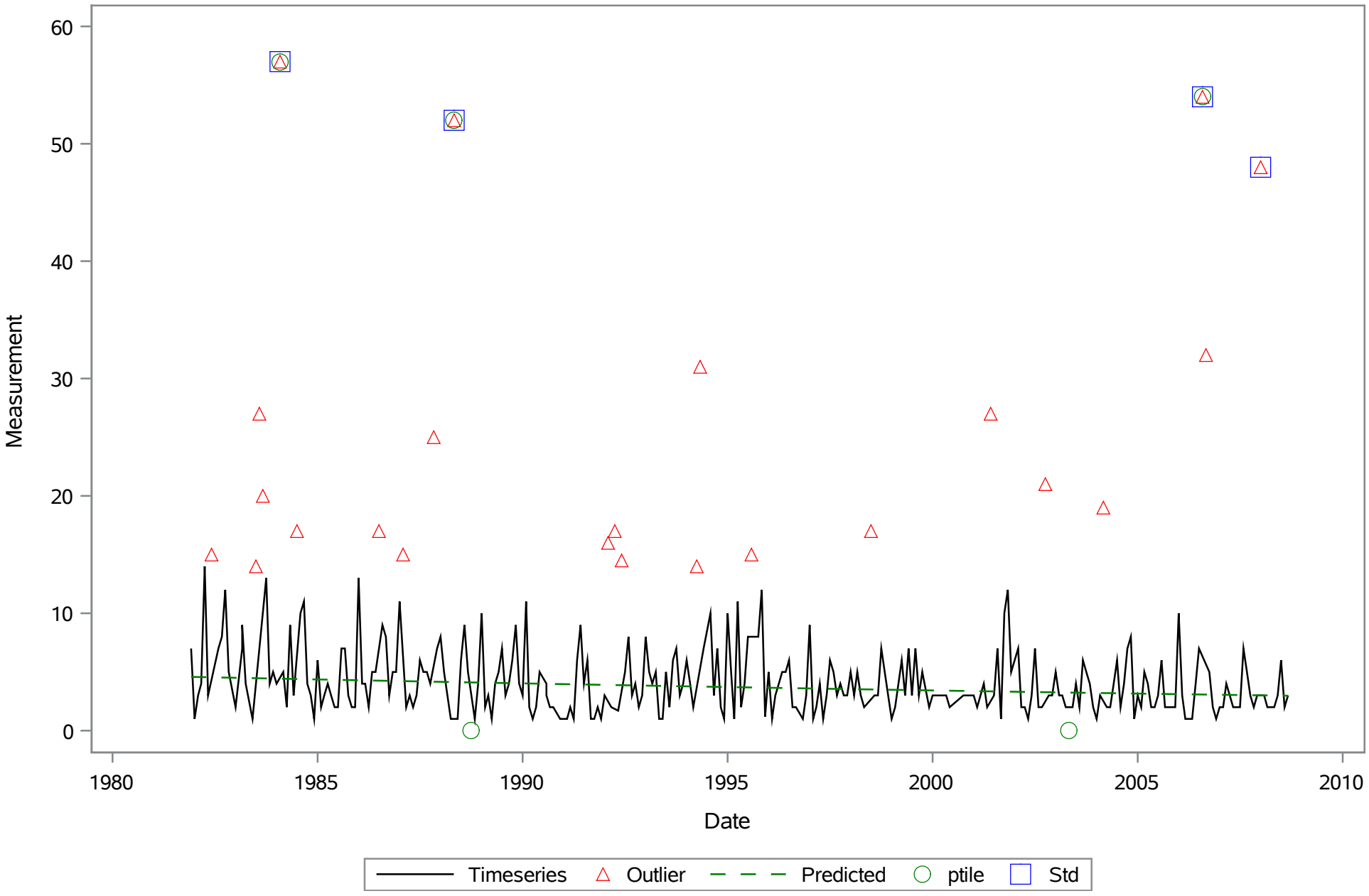


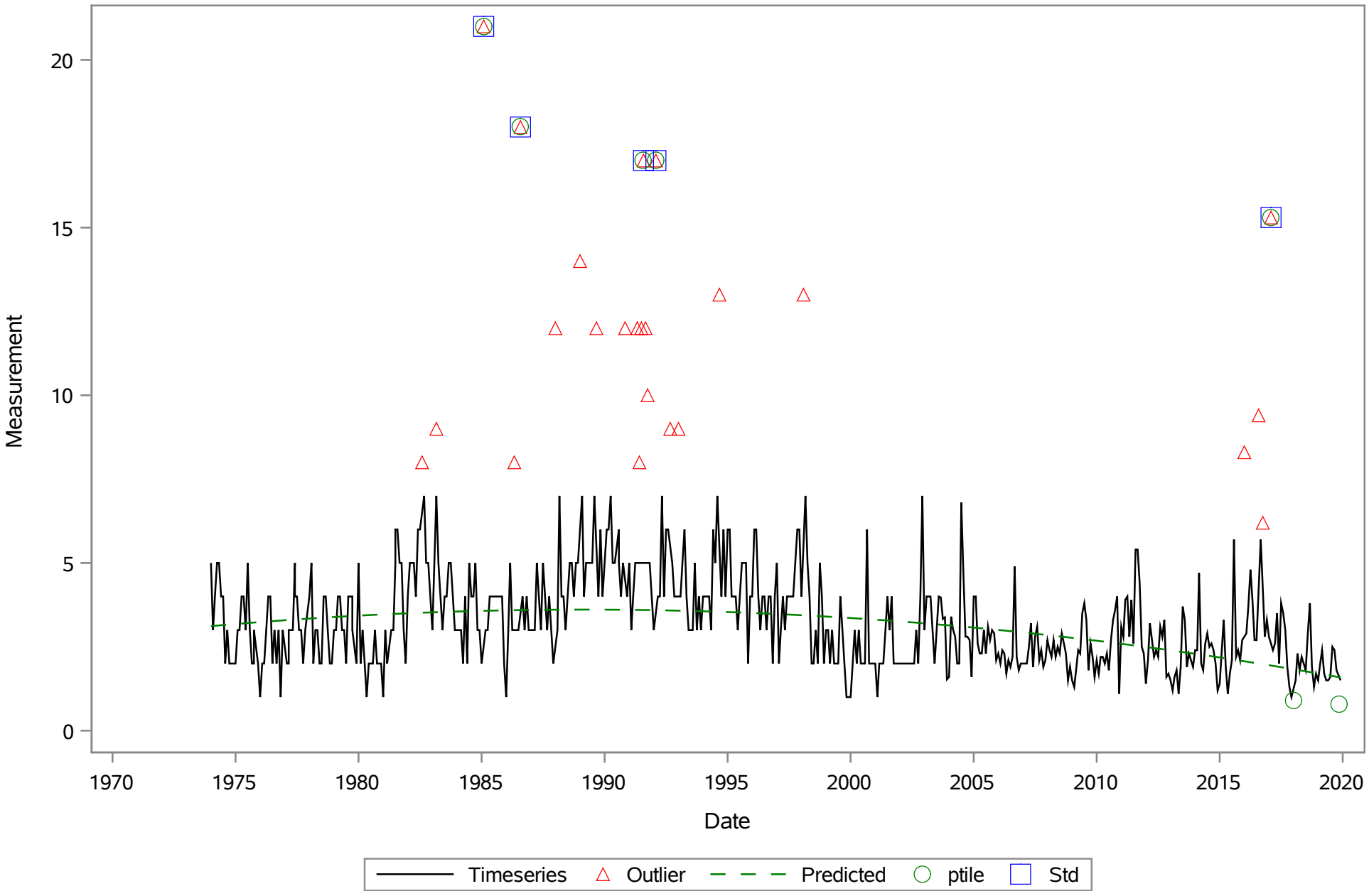
Little Manatee River
113
Total Suspended Solids (mg/l)
Site ID = 113

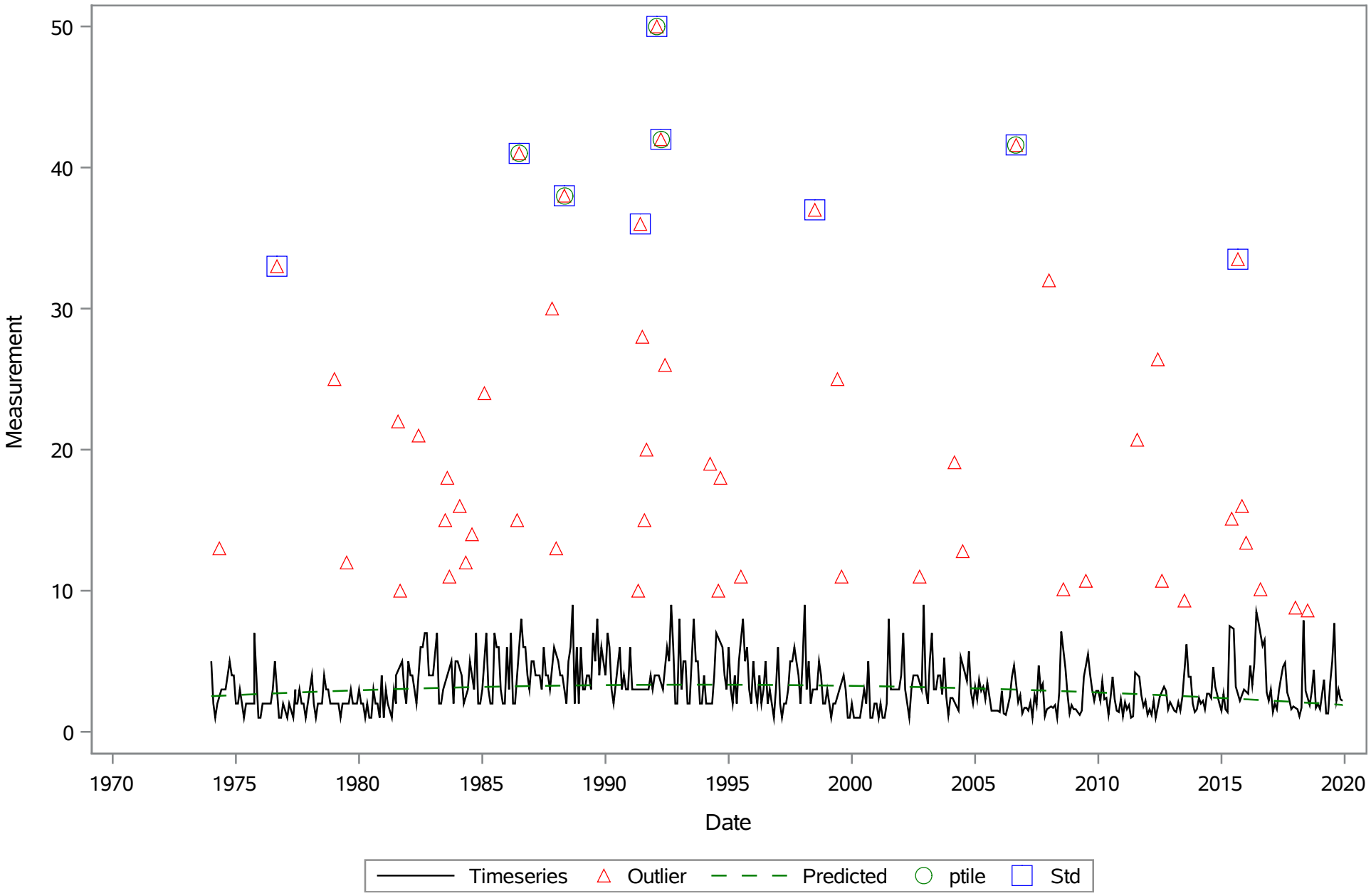


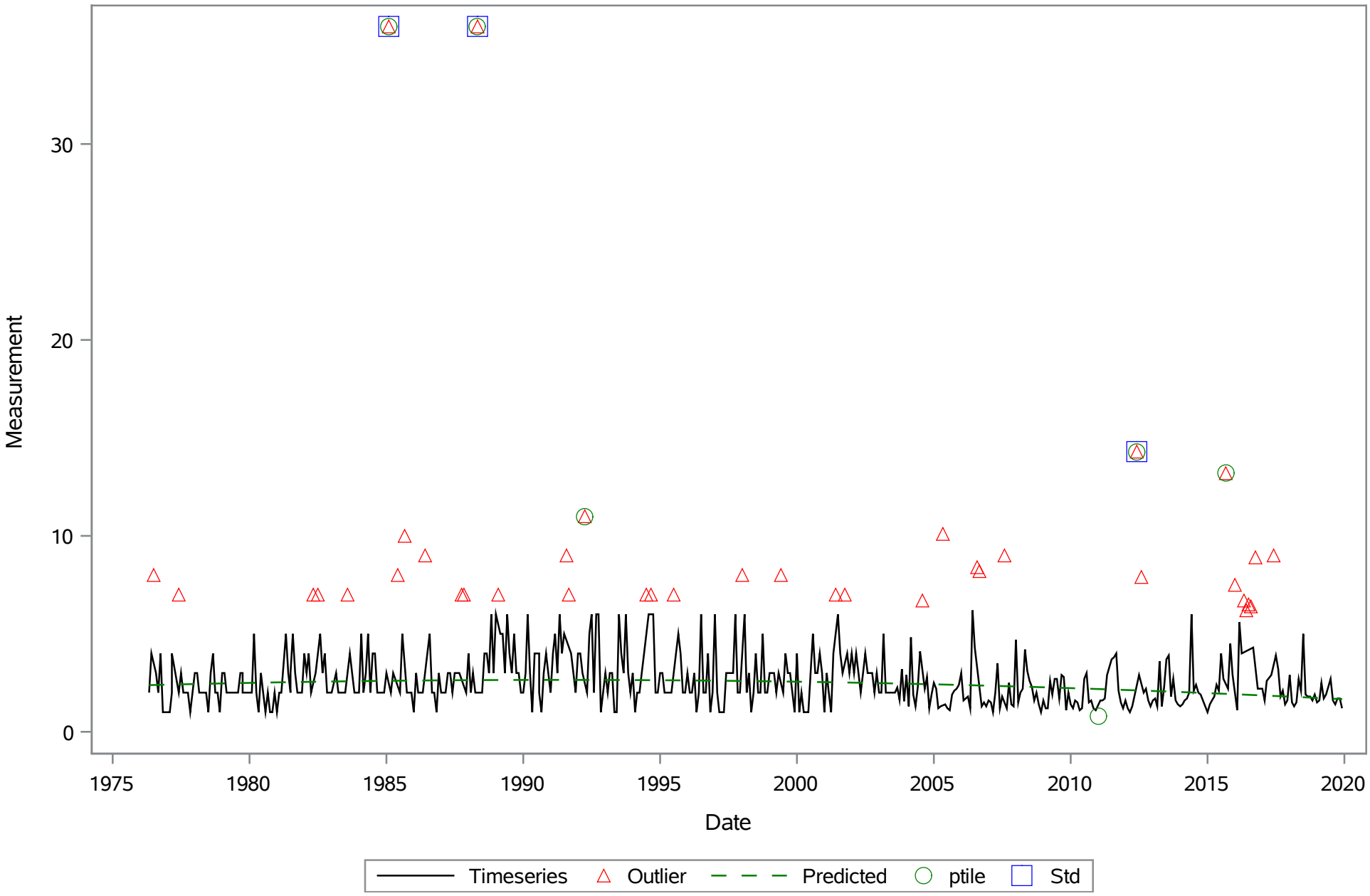
Little Manatee River
129
Total Suspended Solids (mg/l)
Site ID = 129

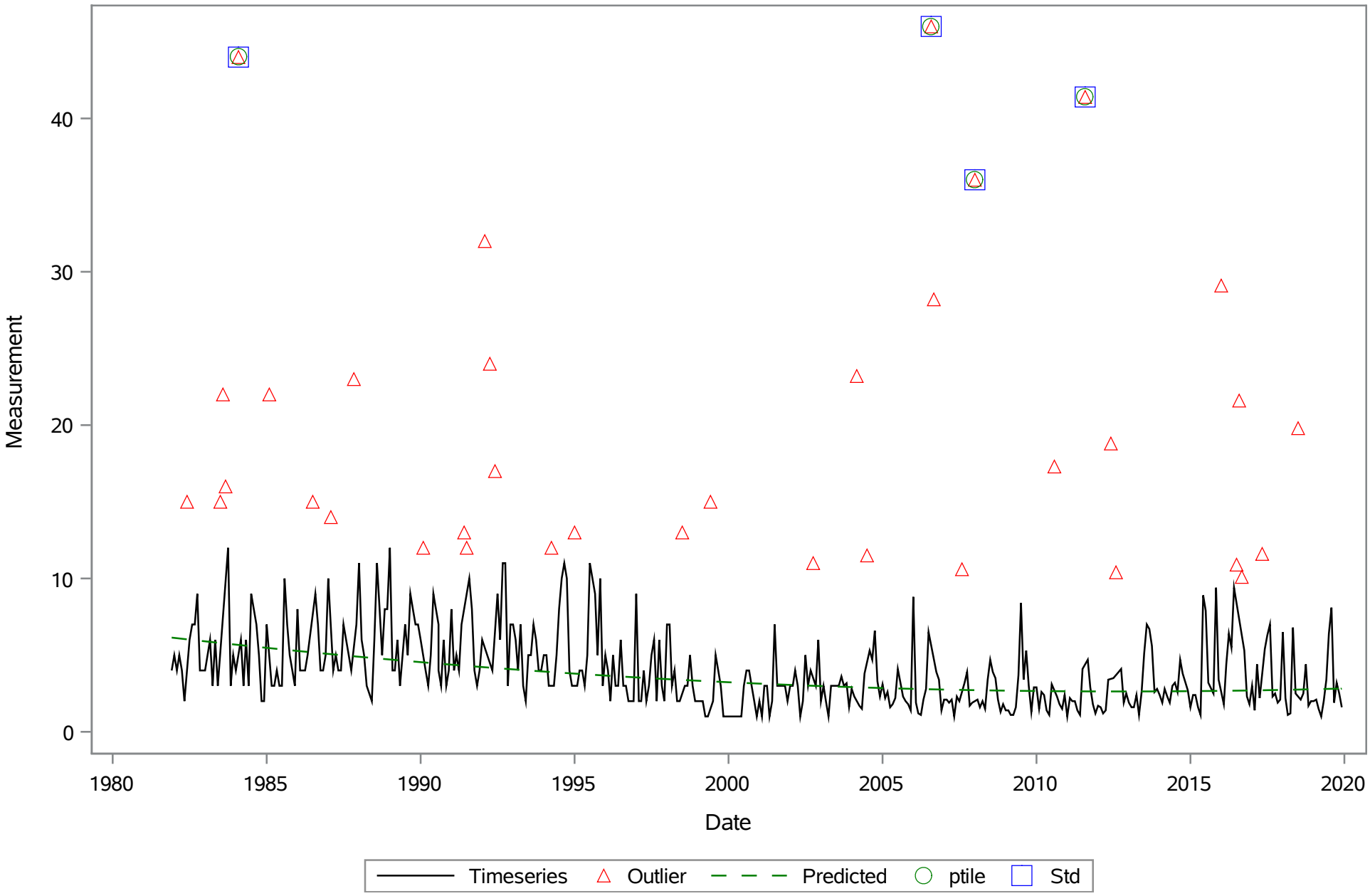


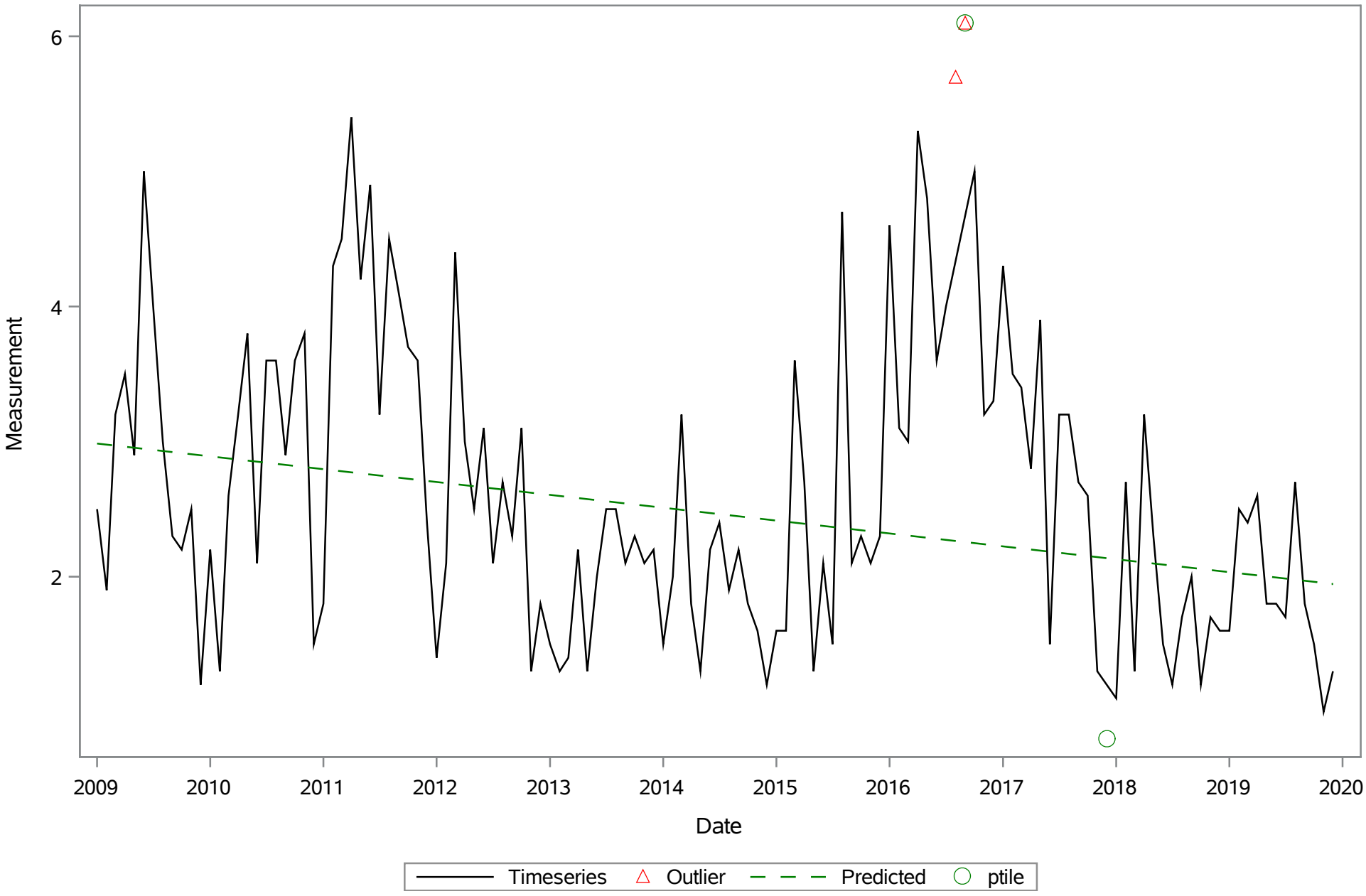

Little Manatee River
140
Total Suspended Solids (mg/l)
Site ID = 140
Measurement
60
50
40
30
20
10
0
1980
1985
1990
1995
2000
2005
2010
Date
Timeseries
Outlier
Predicted
ptile
Std

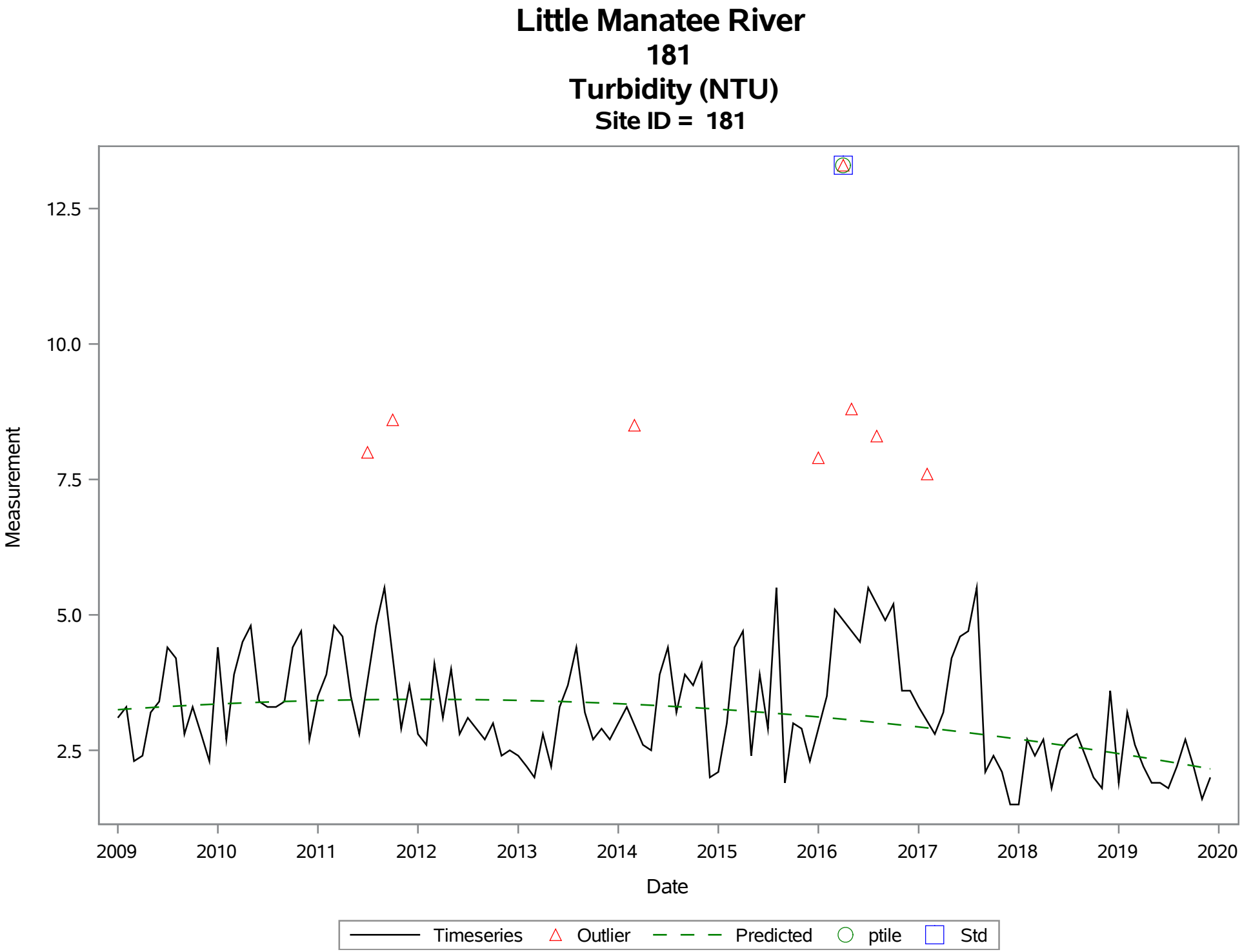

Little Manatee River
112
Turbidity (NTU)
Site ID = 112
Measurement
0
5
10
15
20
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

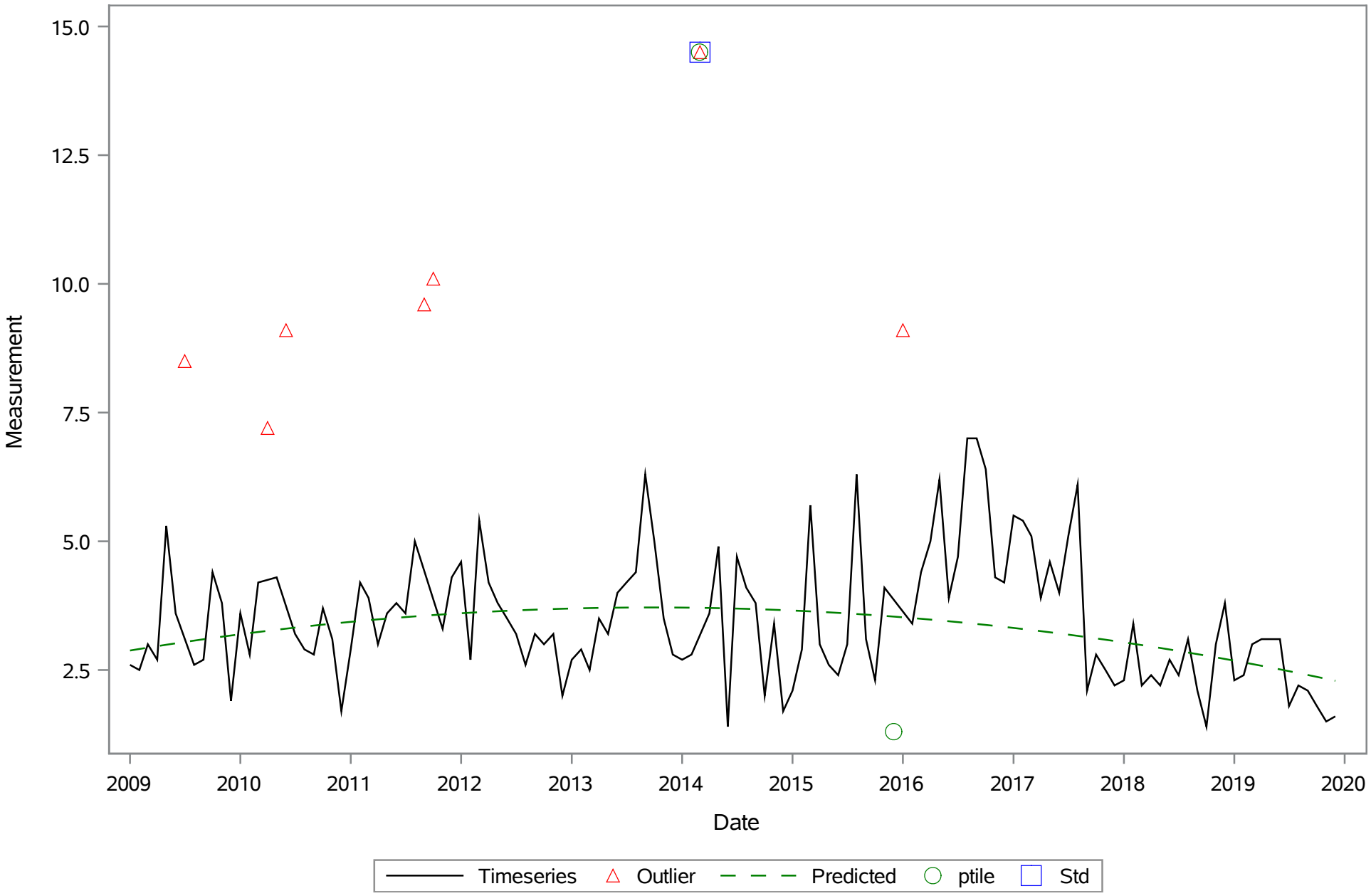

Little Manatee River
113
Turbidity (NTU)
Site ID = 113
Measurement
50
40
30
20
10
0
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std


Little Manatee River
129
Turbidity (NTU)
Site ID = 129
Measurement
0
10
20
30
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

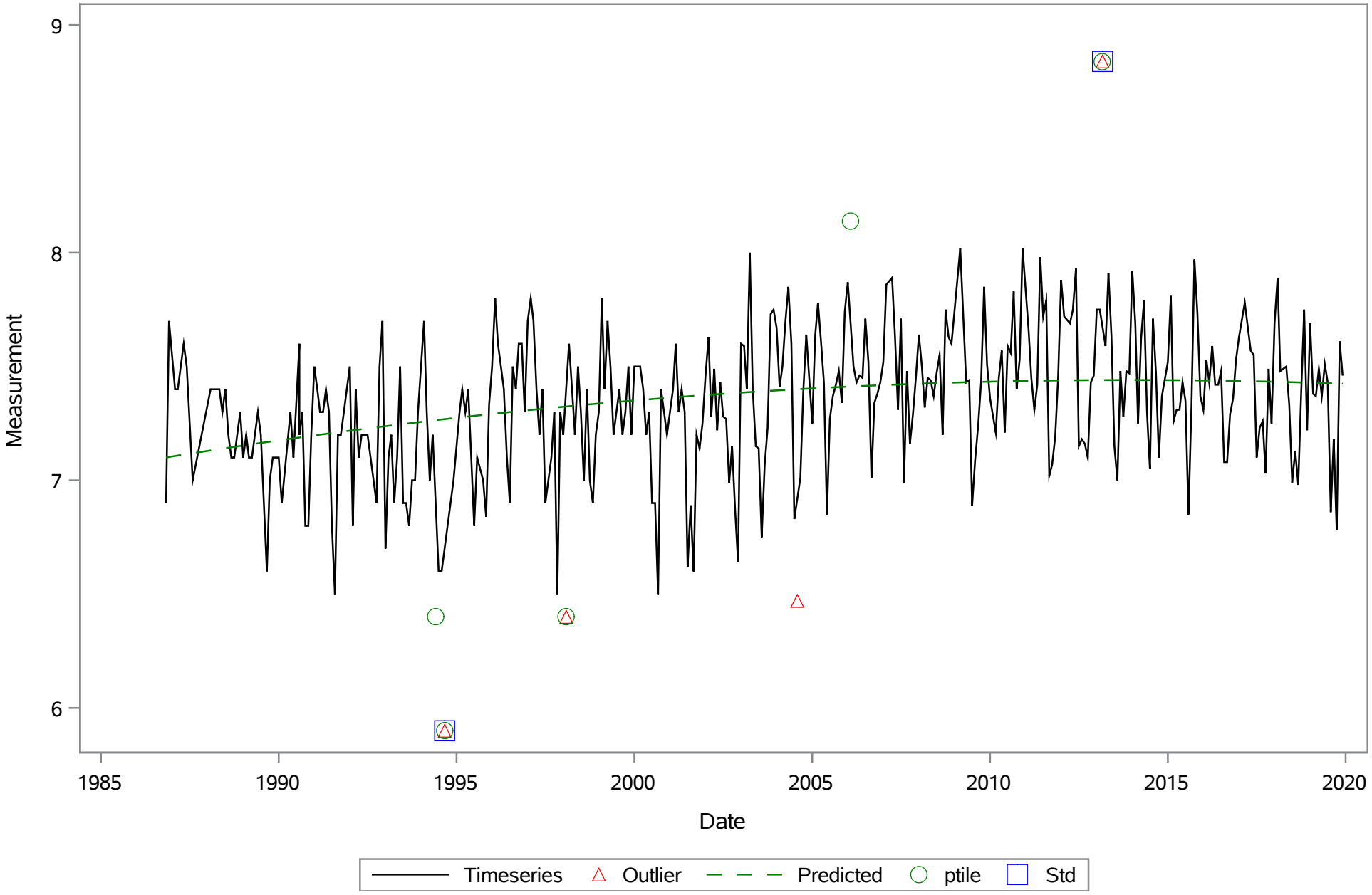

Little Manatee River
140
Turbidity (NTU)
Site ID = 140
Measurement
0
10
20
30
40
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std


Little Manatee River
180
Turbidity (NTU)
Site ID = 180
Measurement
6
4
2
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Outlier
Predicted
ptile

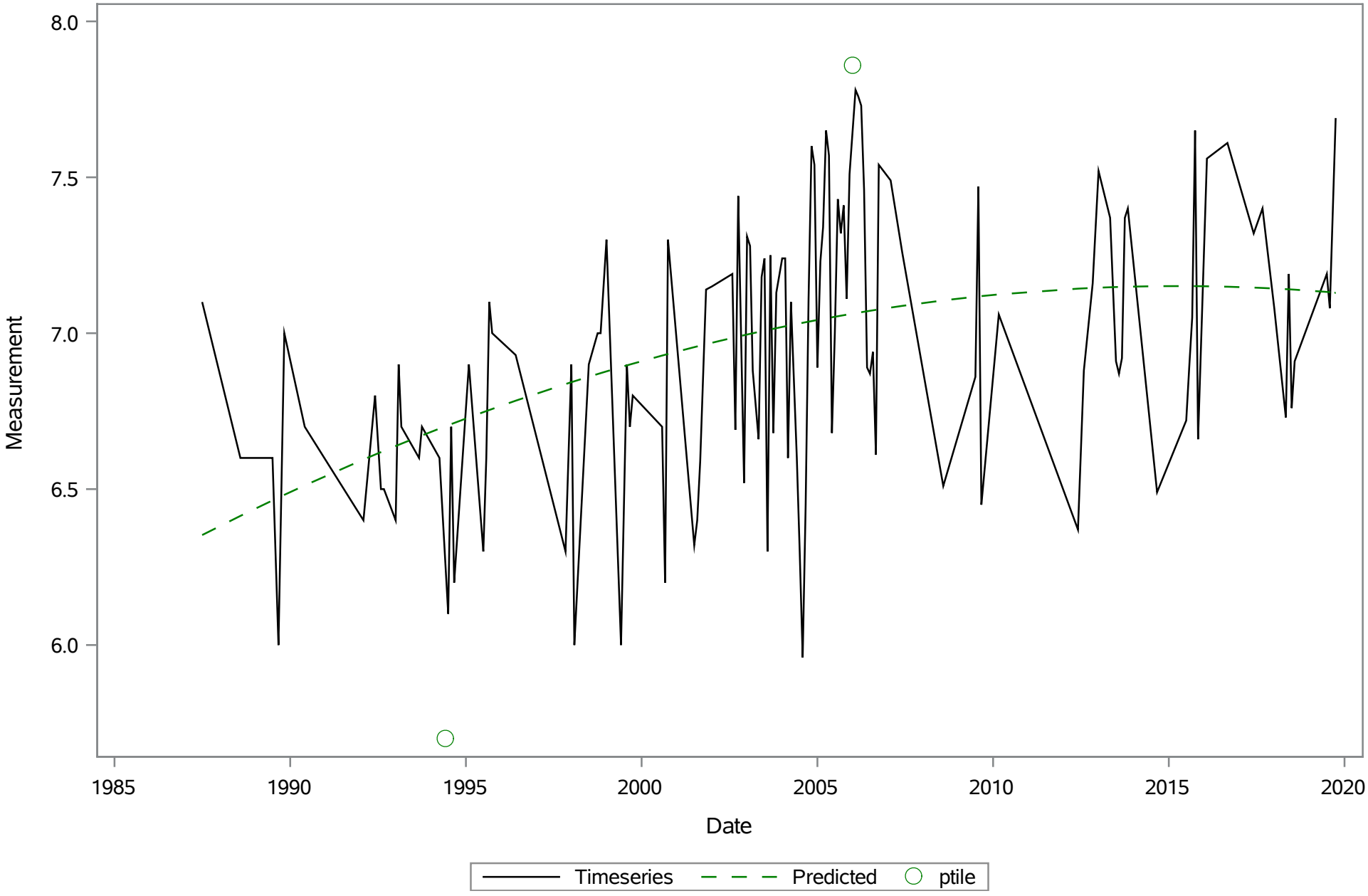

Little Manatee River
181
Turbidity (NTU)
Site ID = 181
Measurement
12.5
10.0
7.5
5.0
2.5
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

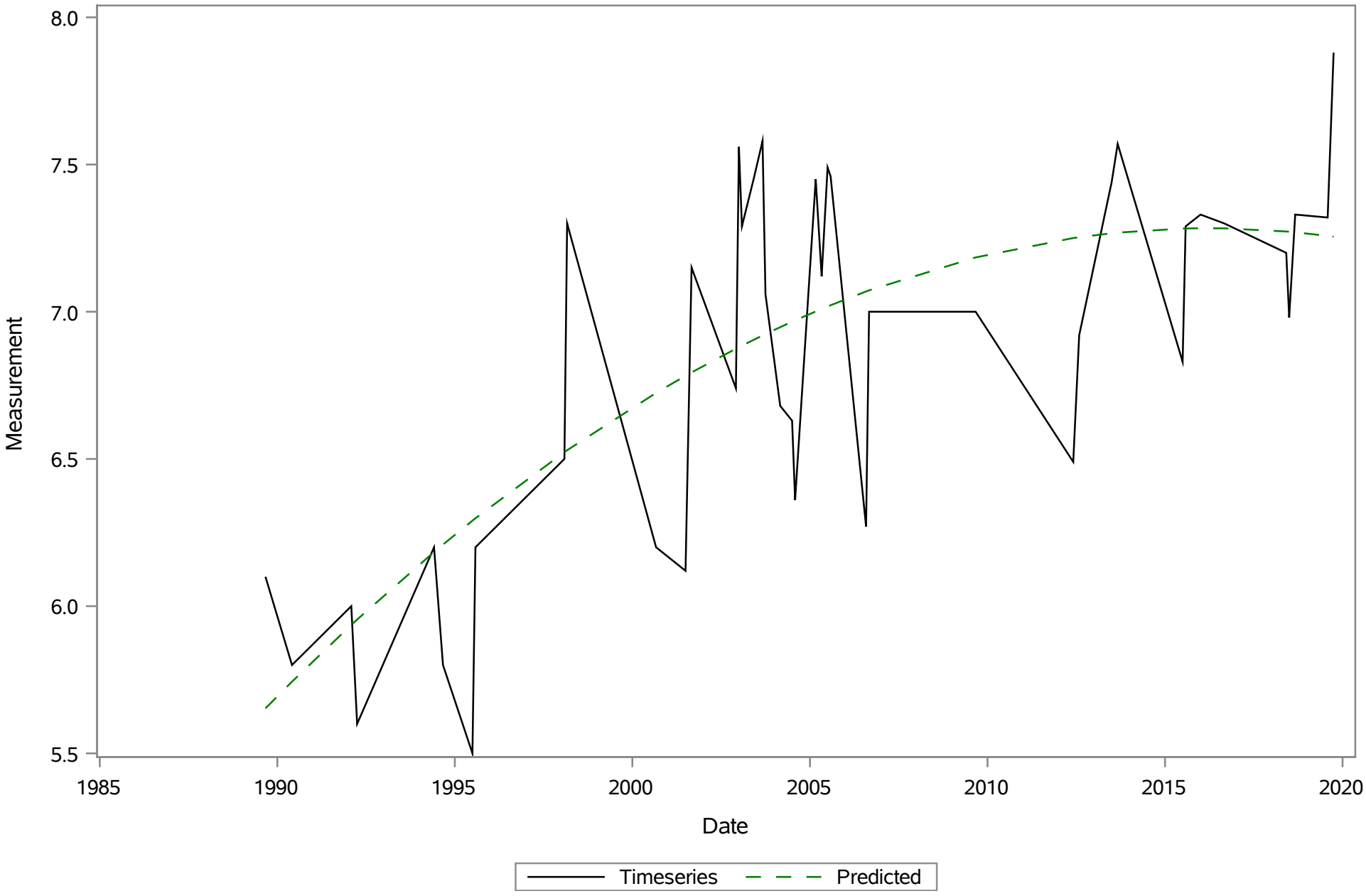

Little Manatee River
182
Turbidity (NTU)
Site ID = 182
Measurement
15.0
12.5
10.0
7.5
5.0
2.5
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

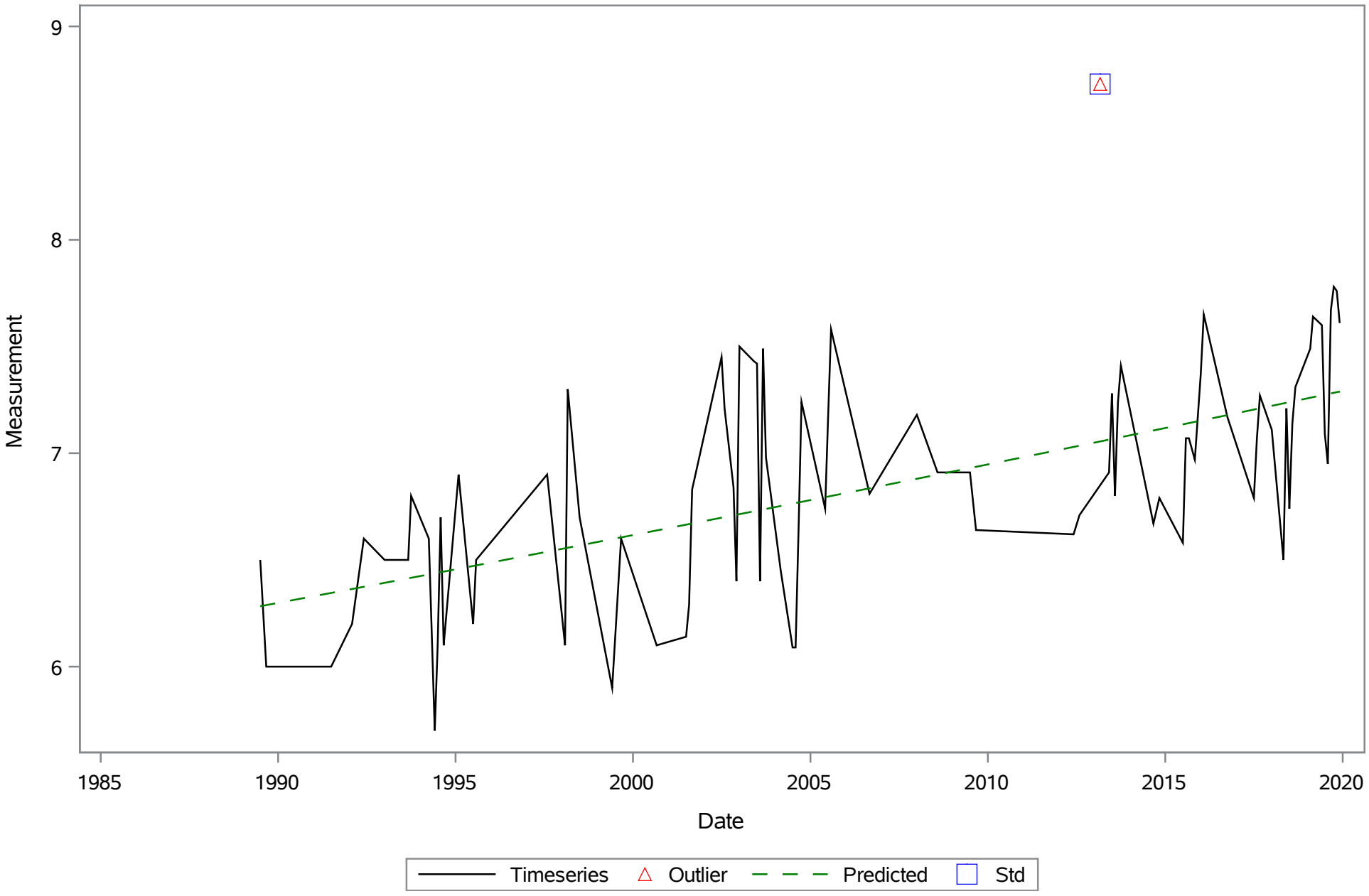
Little Manatee River
112
pH Bottom
Site ID = 112



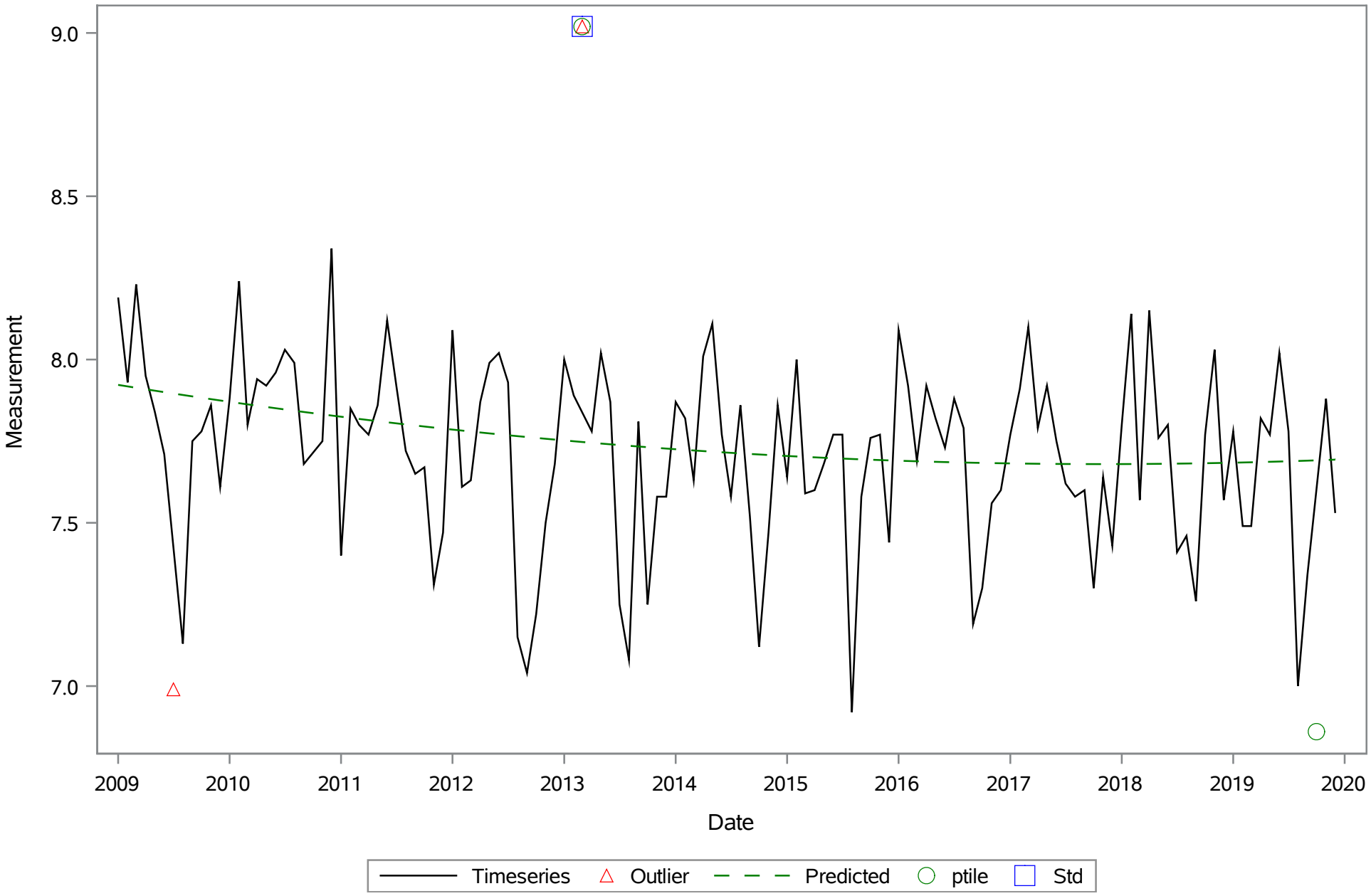
Little Manatee River
113
pH Bottom
Site ID = 113



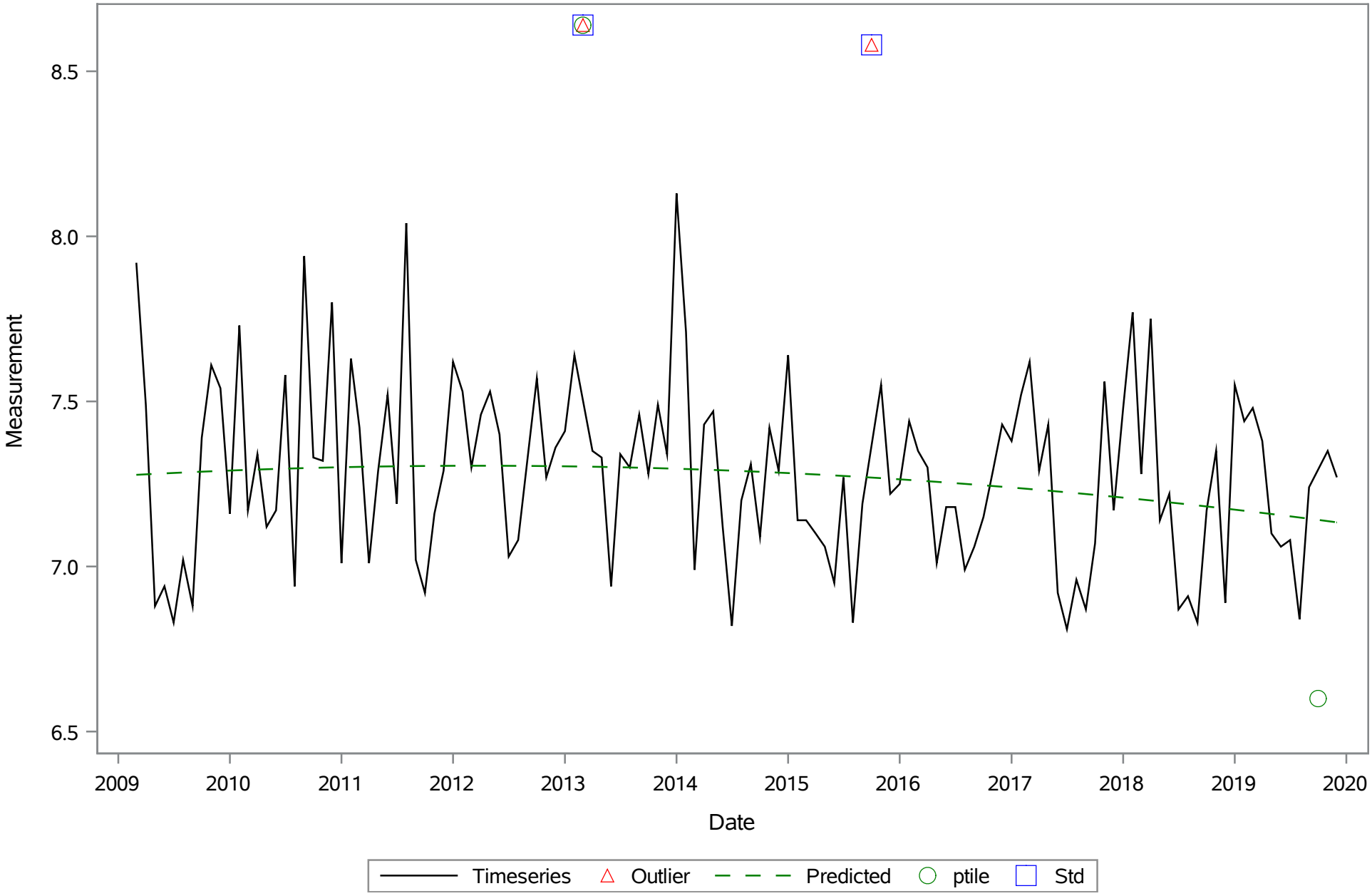

Little Manatee River
129
pH Bottom
Site ID = 129
8.0
7.5
7.0
6.5
6.0
5.5
Measurement
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Predicted


Little Manatee River
140
pH Bottom
Site ID = 140
Measurement
9
8
7
6
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
Std

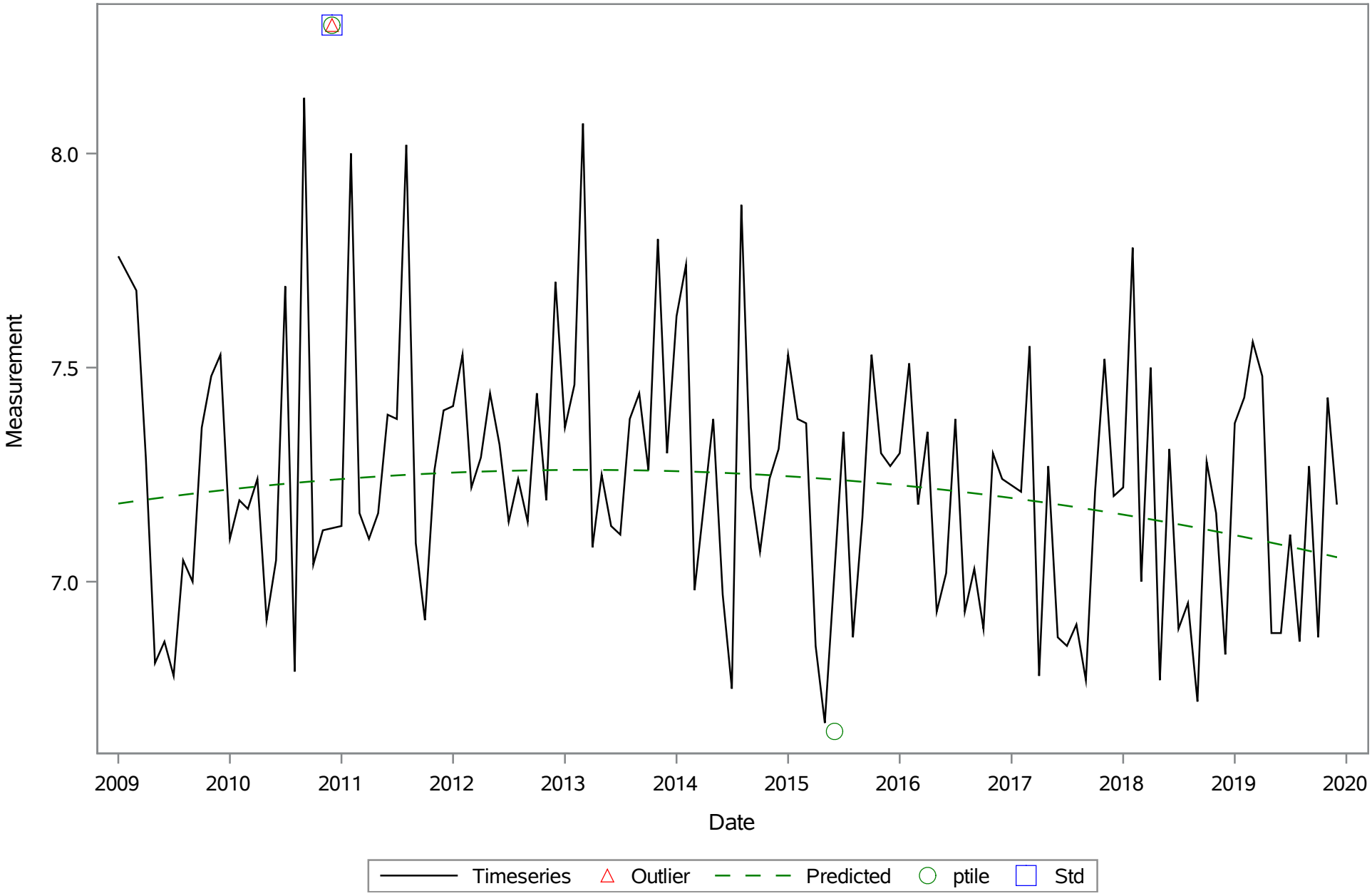
Little Manatee River
180
pH Bottom
Site ID = 180

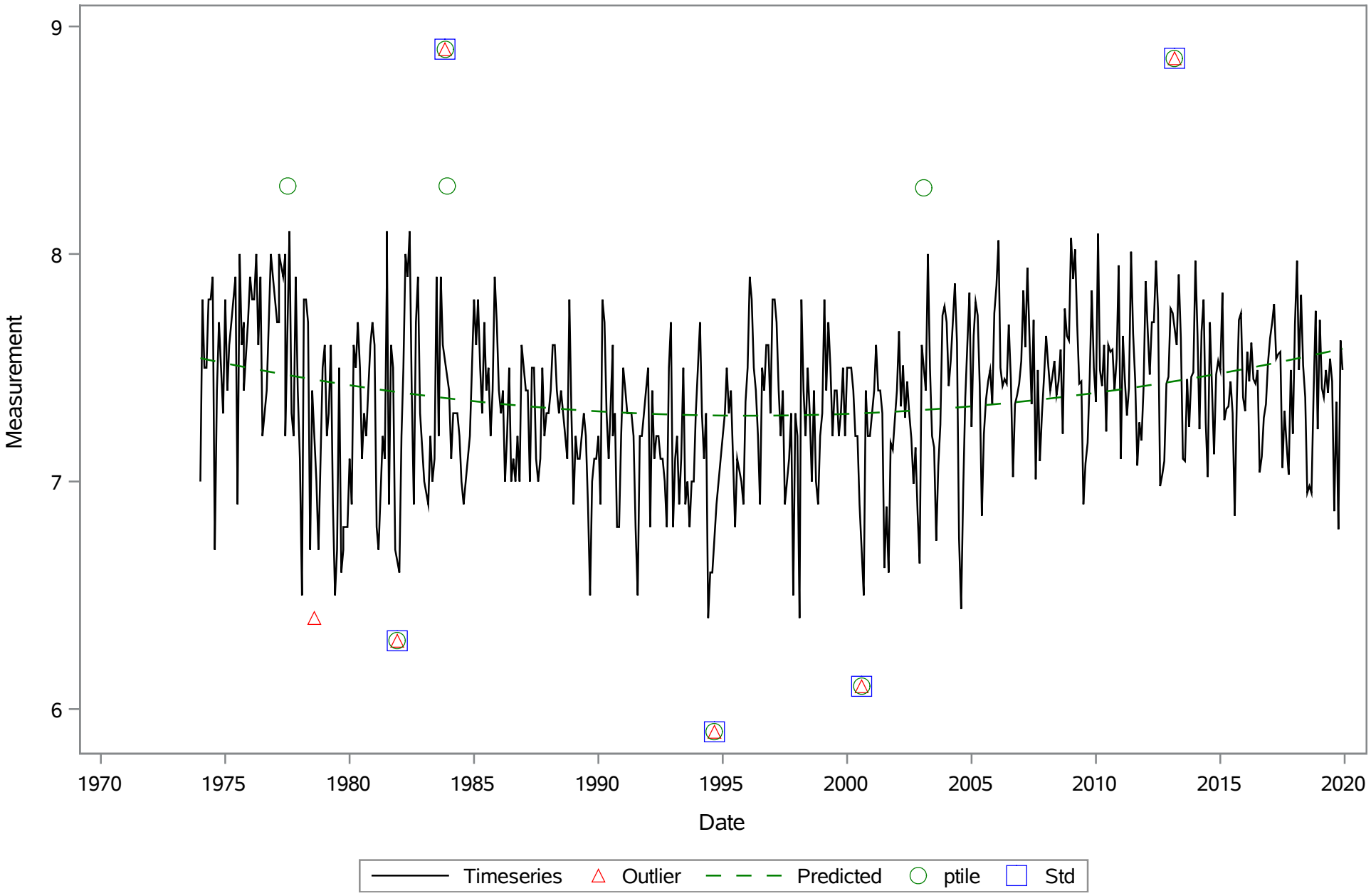


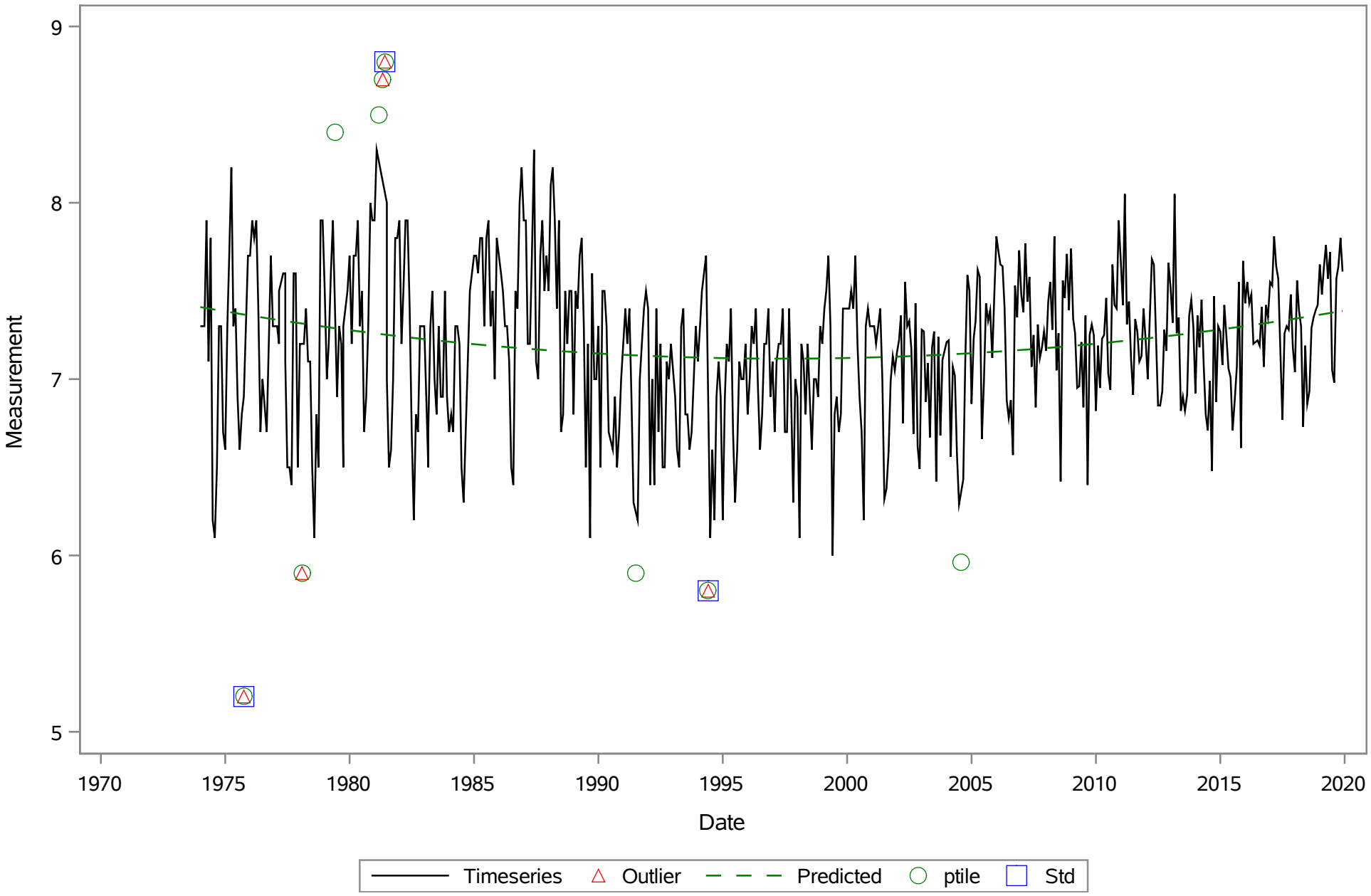
Little Manatee River
181
pH Bottom
Site ID = 181

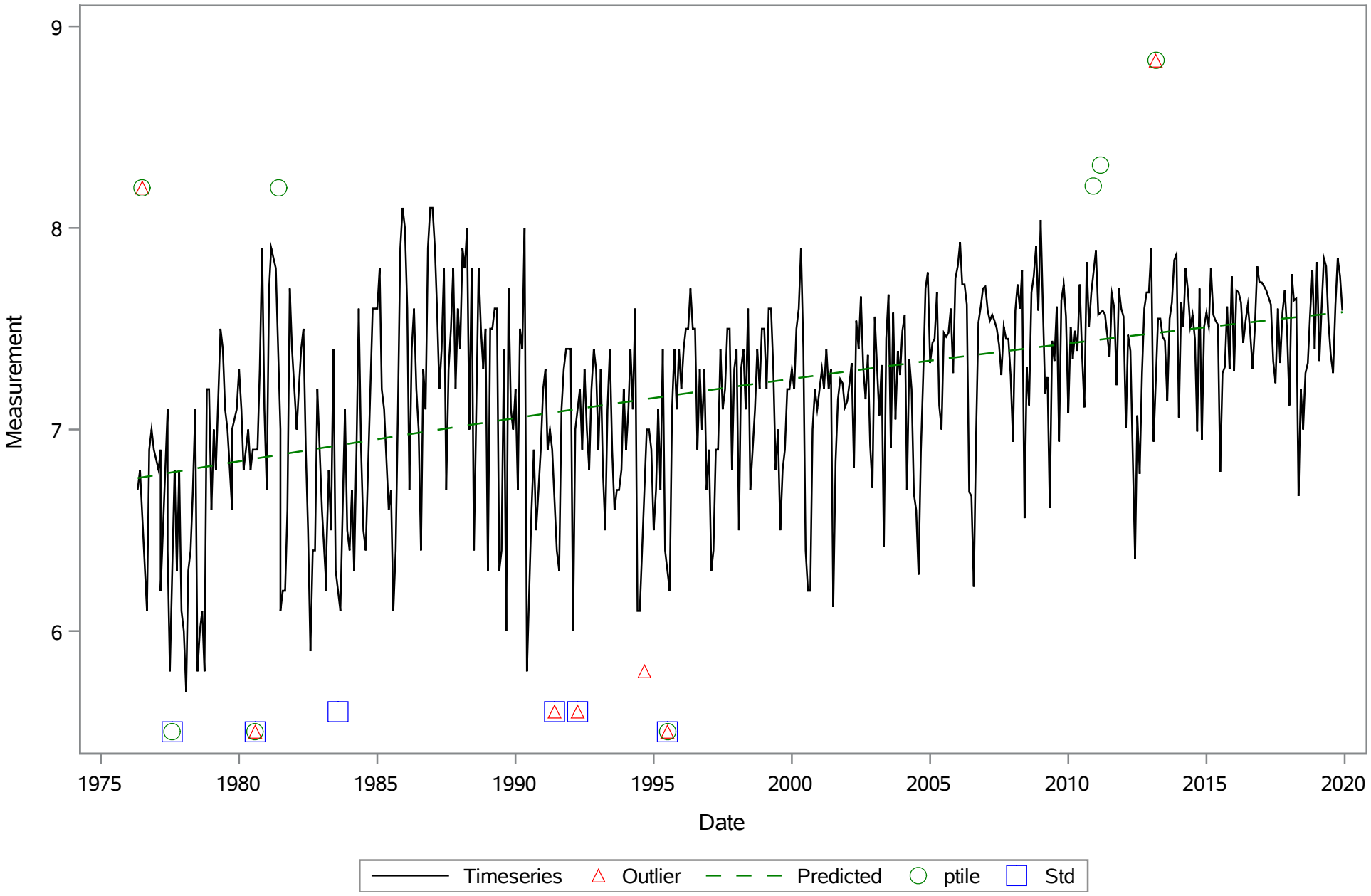


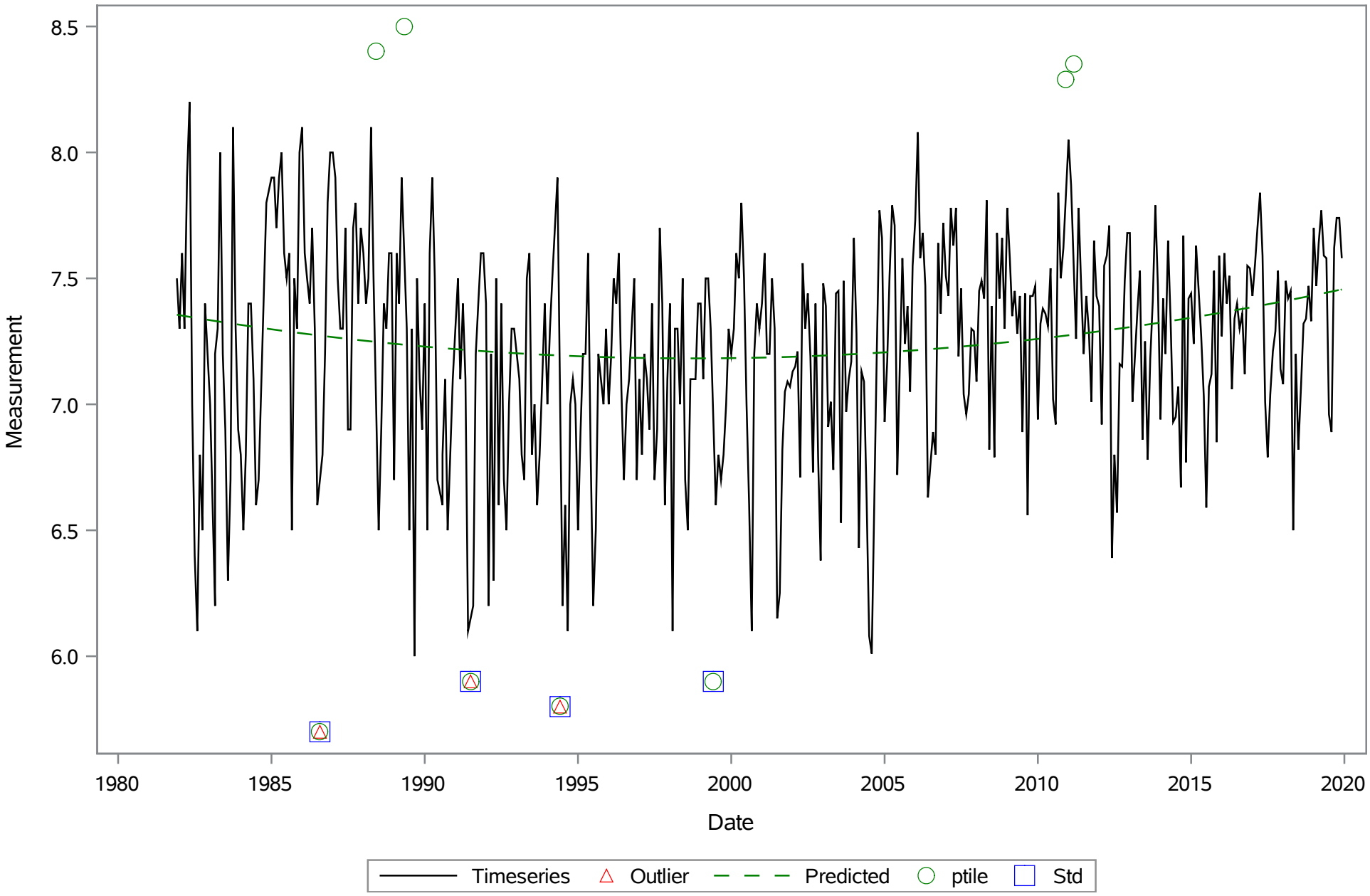
Little Manatee River
182
pH Bottom
Site ID = 182



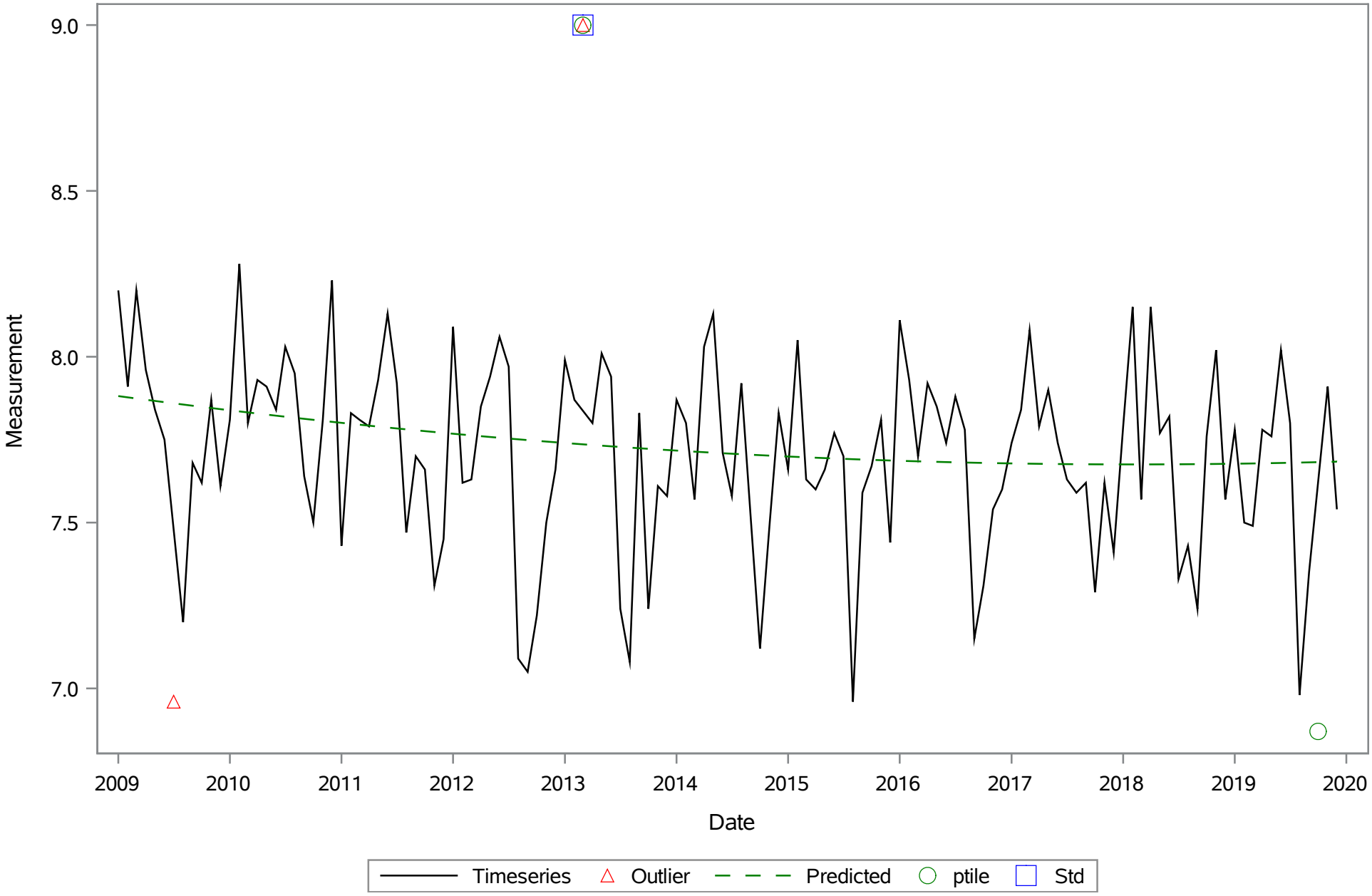

Little Manatee River
112
pH Mid
Site ID = 112
Measurement
9
8
7
6
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std


Little Manatee River
113
pH Mid
Site ID = 113
Measurement
9
8
7
6
5
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

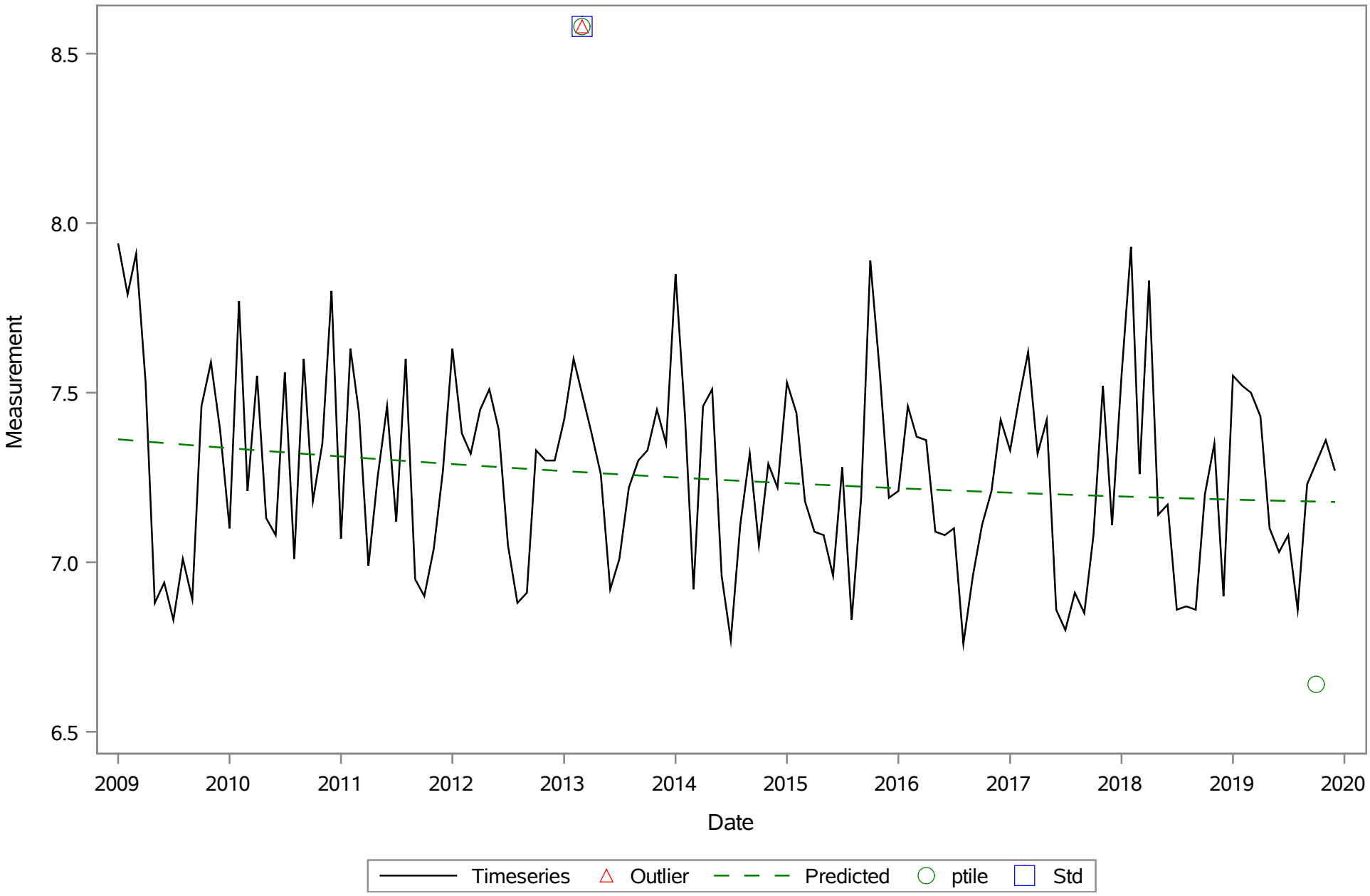

Little Manatee River
129
pH Mid
Site ID = 129
Measurement
9
8
7
6
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

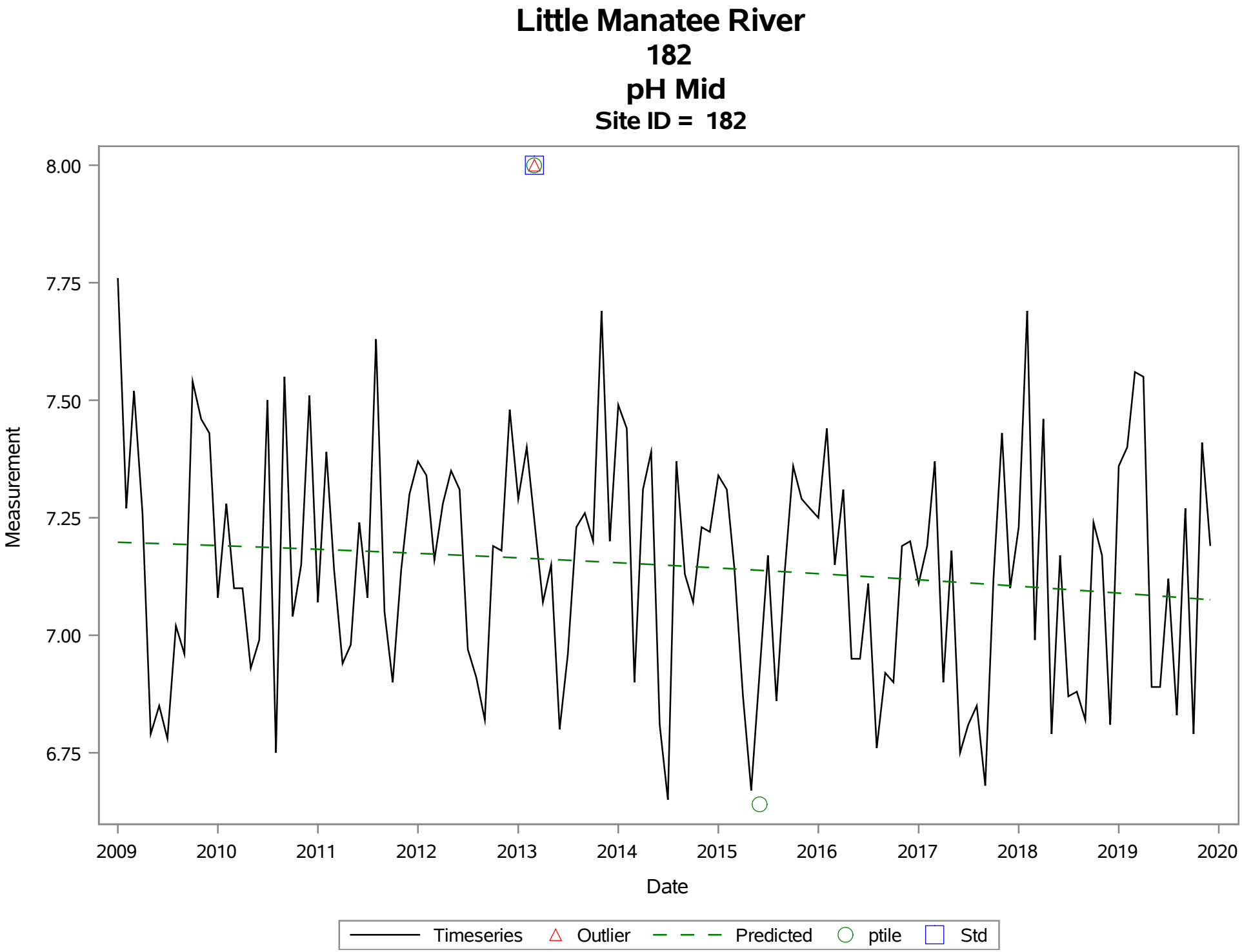

Little Manatee River
140
pH Mid
Site ID = 140
Measurement
8.5
8.0
7.5
7.0
6.5
6.0
1980
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

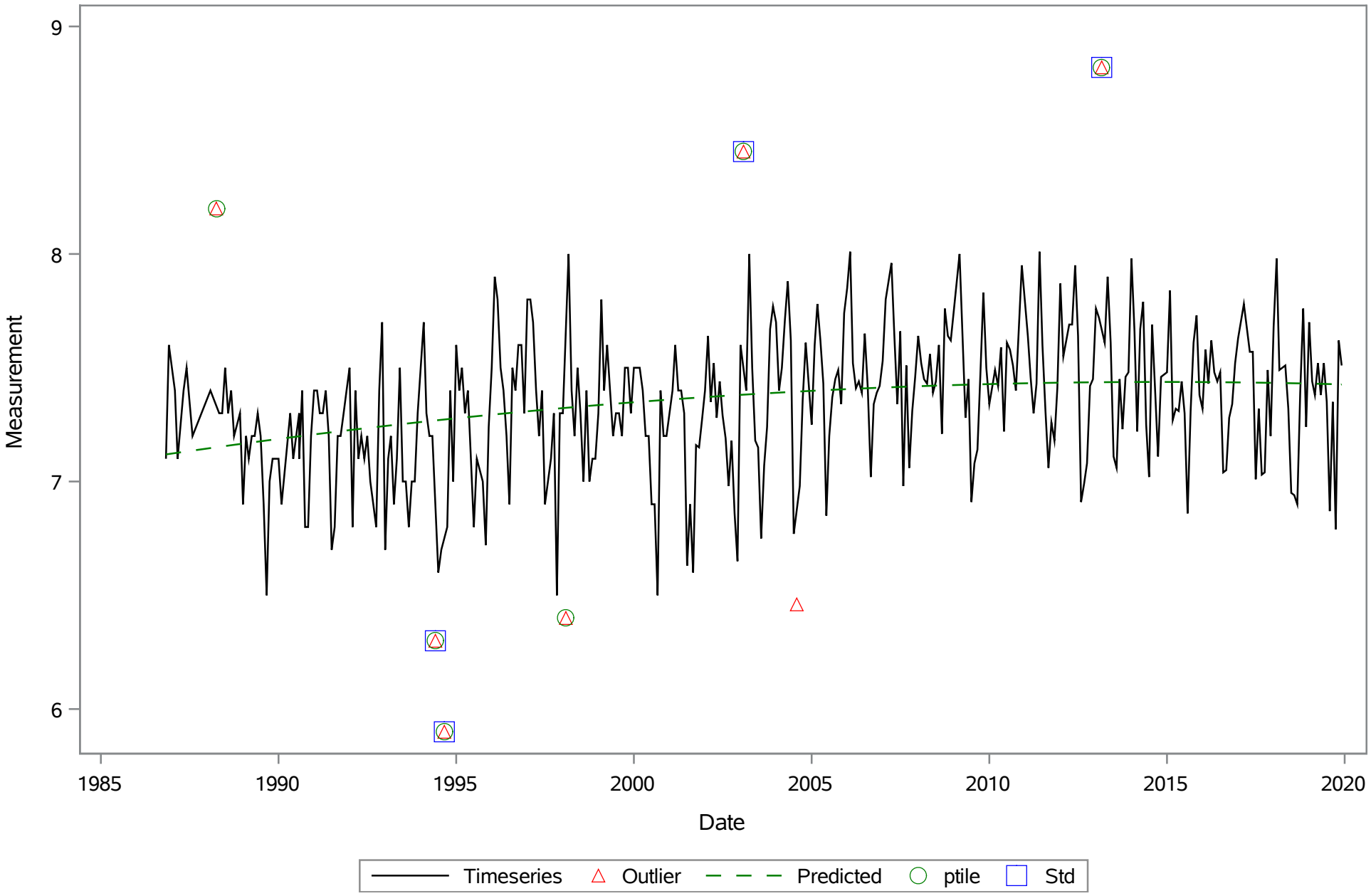
Little Manatee River
180
pH Mid
Site ID = 180

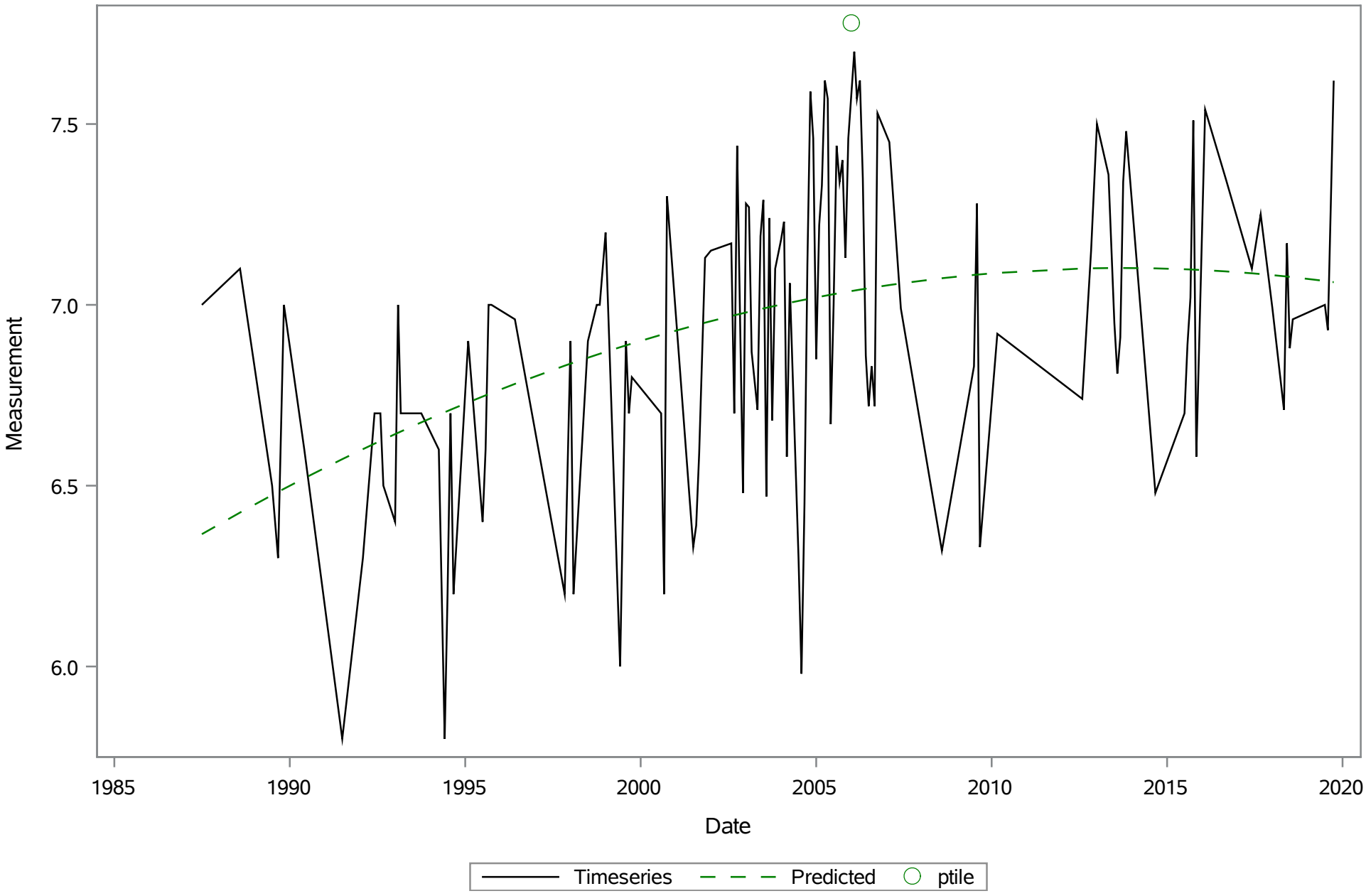


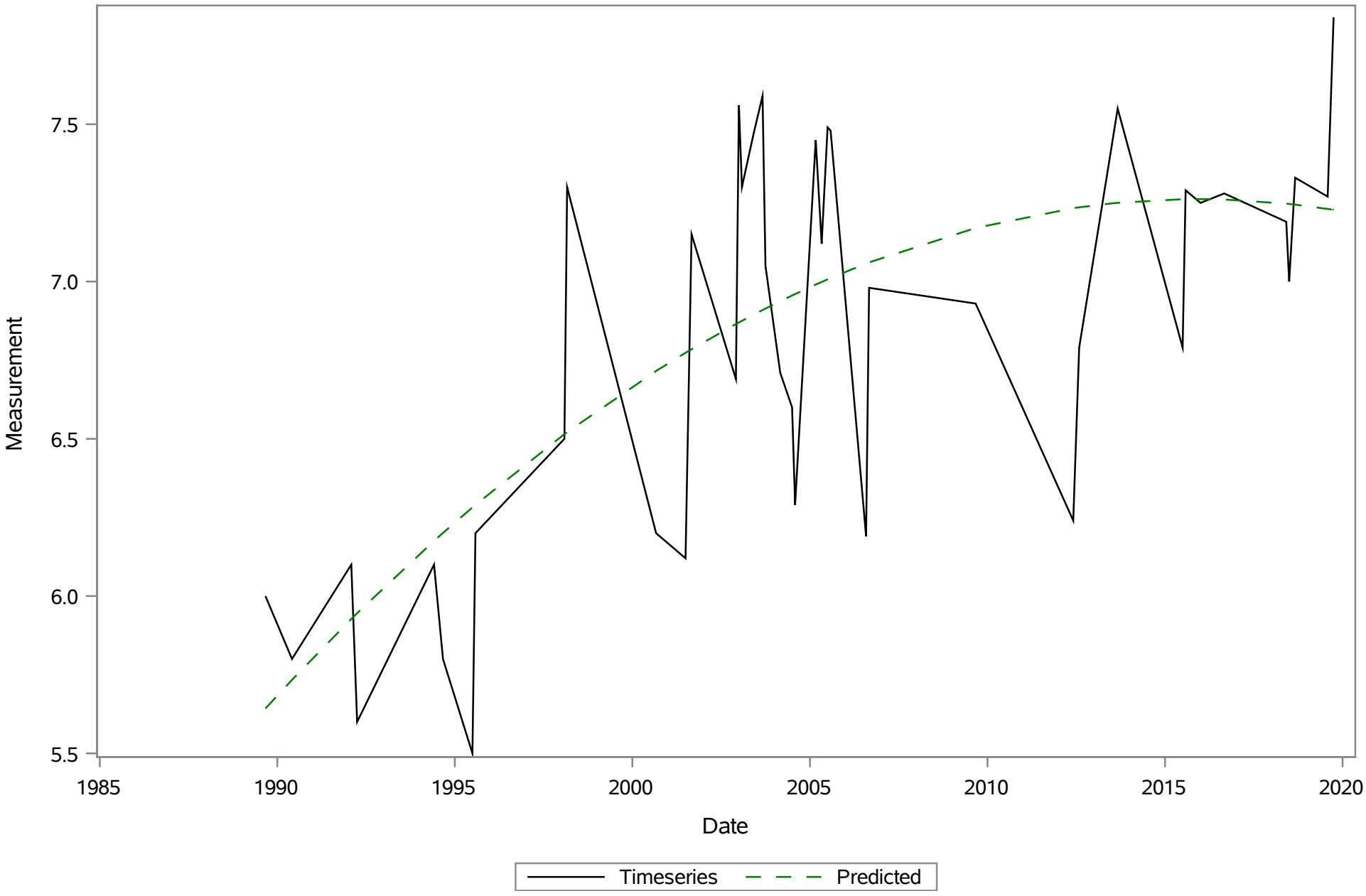
Little Manatee River
181
pH Mid
Site ID = 181

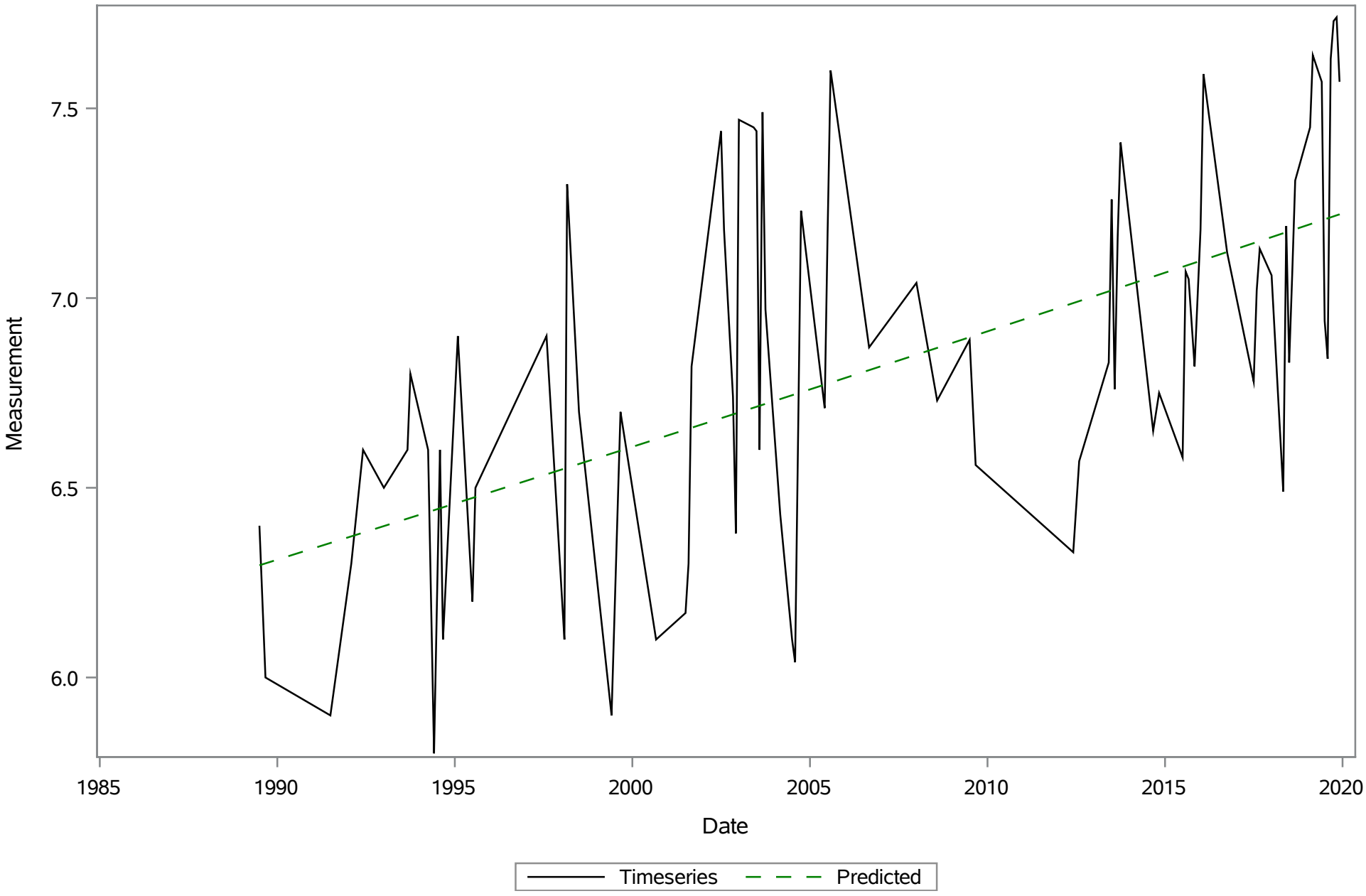



Little Manatee River
182
pH Mid
Site ID = 182
8.00
7.75
7.50
7.25
7.00
6.75
Measurement
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

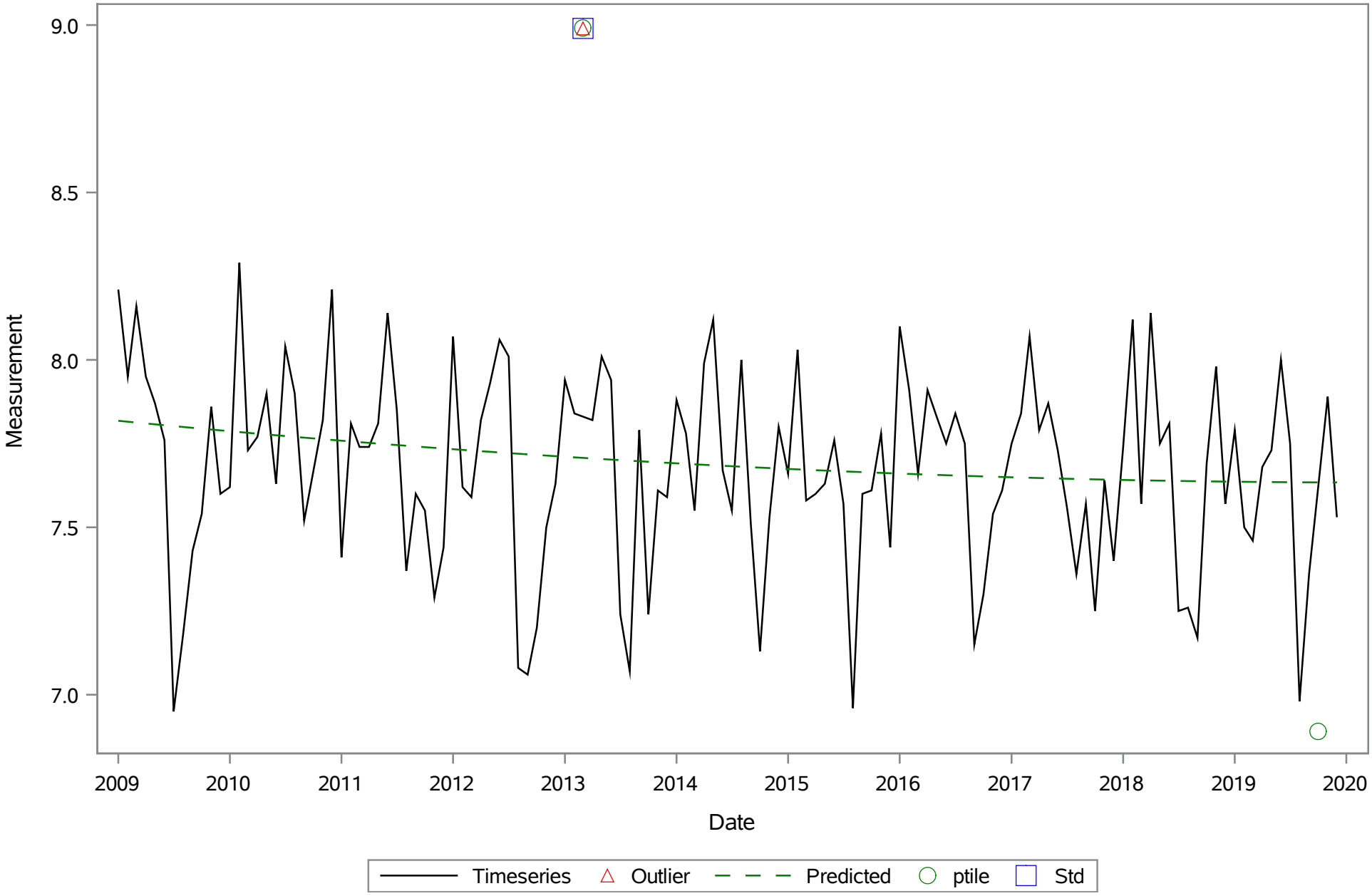

Little Manatee River
112
pH Top
Site ID = 112
9
8
7
6
Measurement
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

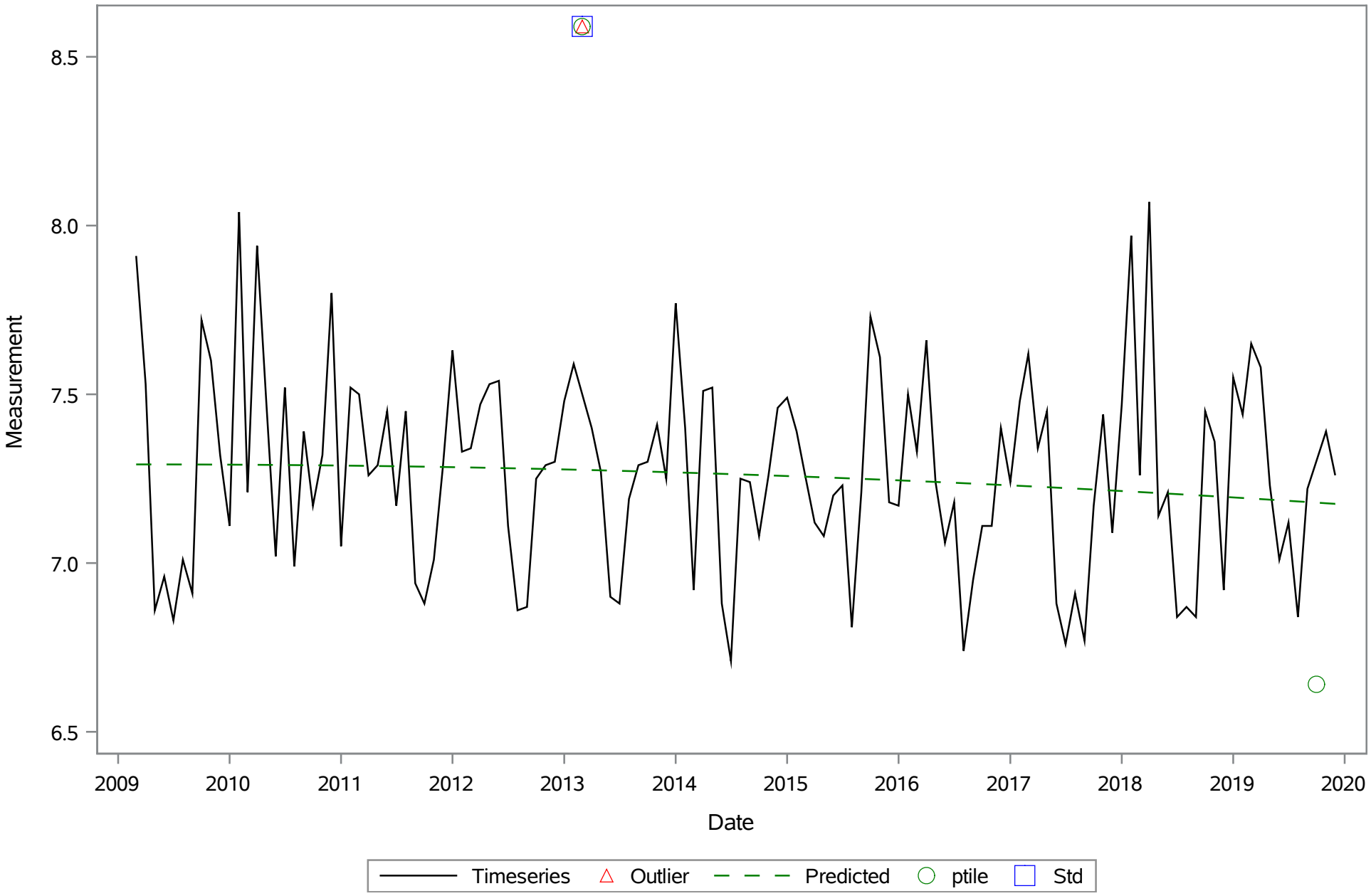

Little Manatee River
113
pH Top
Site ID = 113
Measurement
7.5
7.0
6.5
6.0
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Predicted
ptile

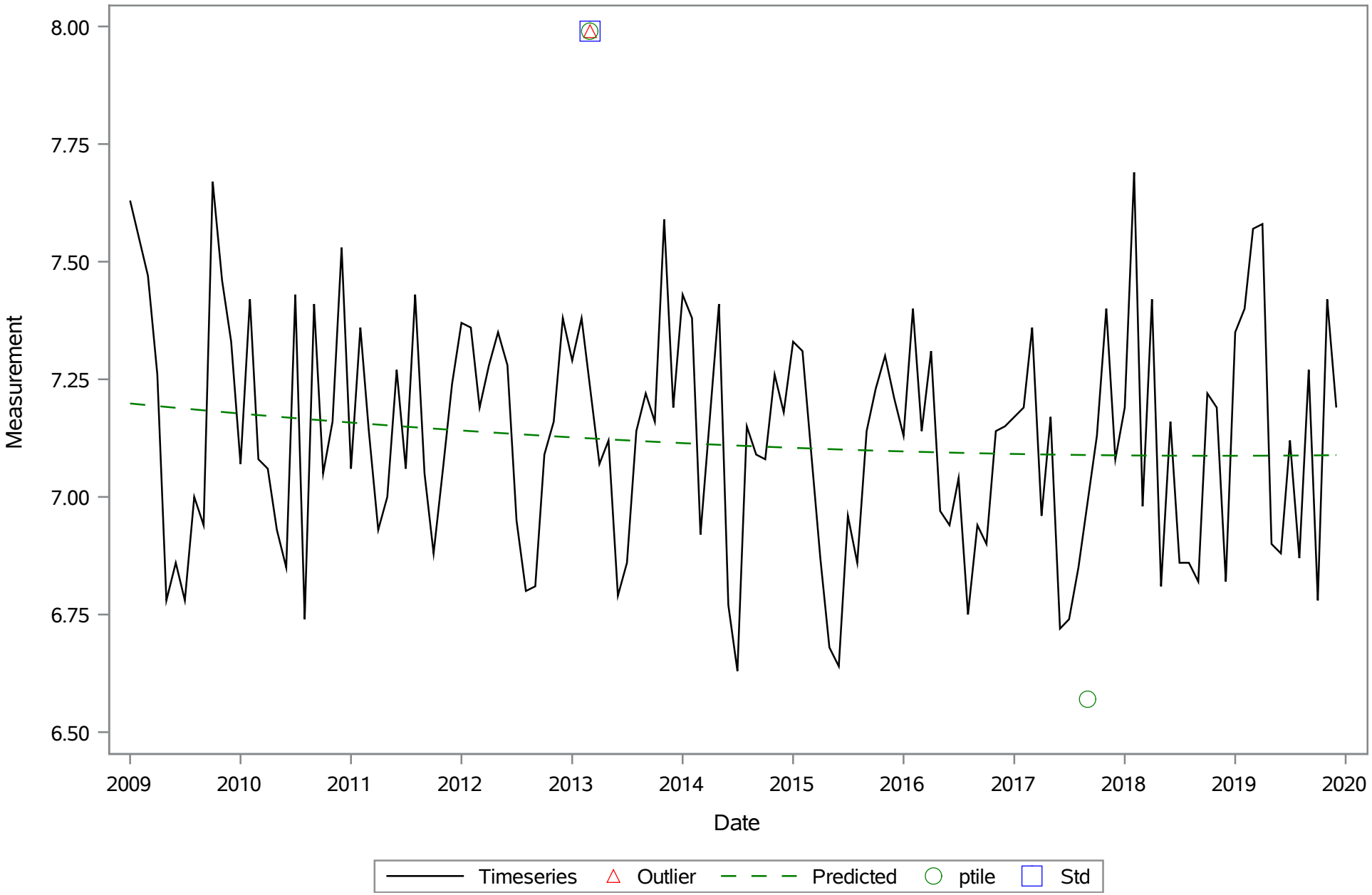

Little Manatee River
129
pH Top
Site ID = 129
Measurement
7.5
7.0
6.5
6.0
5.5
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Predicted


Little Manatee River
140
pH Top
Site ID = 140
Measurement
7.5
7.0
6.5
6.0
1985
1990
1995
2000
2005
2010
2015
2020
Date
Timeseries
Predicted

Little Manatee River
180
pH Top
Site ID = 180




Little Manatee River
181
pH Top
Site ID = 181
Measurement
8.5
8.0
7.5
7.0
6.5
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Outlier
Predicted
ptile
Std


Little Manatee River
182
pH Top
Site ID = 182
8.00
7.75
7.50
7.25
7.00
6.75
6.50
Measurement
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Date
Timeseries
Outlier
Predicted
ptile
Std

1e: EPC Downstream log log linear regression

Linear Regression Results for EPC stations from US301 to the Mouth

Parameter	Station	Nobs	Month Pval	Flow Slope	Flow Pval	R2	Result
Ammonia (mg/l)	112	530	0.0003	-0.008341	0.8371	0.071883	0
Ammonia (mg/l)	113	528	0.1211	0.043633	0.3065	0.041175	0
Ammonia (mg/l)	180	132	0.0513	-0.002435	0.9775	0.158694	0
Ammonia (mg/l)	181	132	0.4896	0.097877	0.3473	0.120561	0
Ammonia (mg/l)	182	132	0.7415	0.130540	0.2139	0.111450	0
Chlorophyll a Corr (ug/l)	112	168	0.0359	0.069773	0.2004	0.192391	0
Chlorophyll a Corr (ug/l)	113	171	0.8365	0.064872	0.2339	0.045053	0
Chlorophyll a Corr (ug/l)	180	132	<.0001	0.116285	0.0328	0.374033	1
Chlorophyll a Corr (ug/l)	181	132	0.0639	-0.117150	0.1860	0.175793	0
Chlorophyll a Corr (ug/l)	182	132	0.0903	-0.293017	0.0004	0.279403	-1
Chlorophyll a uncorr (ug/l)	112	406	0.0128	0.087829	0.0040	0.118179	1
Chlorophyll a uncorr (ug/l)	113	282	0.0249	0.141696	0.0051	0.084968	1
Chlorophyll a uncorr (ug/l)	180	132	<.0001	0.127885	0.0157	0.435046	1
Chlorophyll a uncorr (ug/l)	181	132	0.0377	-0.134862	0.1041	0.199944	0
Chlorophyll a uncorr (ug/l)	182	132	0.0701	-0.292595	0.0001	0.322622	-1
Color(345) C (PCU)	112	429	<.0001	0.402743	<.0001	0.676255	1
Color(345) C (PCU)	113	429	<.0001	0.397682	<.0001	0.727115	1
Color(345)F 45 (PCU)	112	121	<.0001	0.354613	<.0001	0.766436	1
Color(345)F 45 (PCU)	113	122	<.0001	0.301635	<.0001	0.702561	1
Color(345)F 45 (PCU)	180	121	<.0001	0.329987	<.0001	0.676332	1
Color(345)F 45 (PCU)	181	121	<.0001	0.316077	<.0001	0.755499	1
Color(345)F 45 (PCU)	182	121	<.0001	0.266280	<.0001	0.721707	1
Cond Bottom (umho/cm)	112	370	<.0001	-0.658343	<.0001	0.532398	-1
Cond Bottom (umho/cm)	113	128	0.1397	-0.201501	<.0001	0.619842	-1
Cond Bottom (umho/cm)	180	131	<.0001	-0.171102	0.0008	0.416151	-1
Cond Bottom (umho/cm)	181	130	<.0001	-1.044794	<.0001	0.761922	-1
Cond Bottom (umho/cm)	182	129	0.1510	-1.128222	<.0001	0.804694	-1
Cond Mid (umho/cm)	112	546	<.0001	-0.645679	<.0001	0.485995	-1
Cond Mid (umho/cm)	113	547	0.0115	-0.139264	<.0001	0.185021	-1
Cond Mid (umho/cm)	180	132	<.0001	-0.196251	0.0002	0.442614	-1
Cond Mid (umho/cm)	181	132	0.0002	-1.090641	<.0001	0.779520	-1
Cond Mid (umho/cm)	182	132	0.1215	-1.098386	<.0001	0.800209	-1
Cond Top (umho/cm)	112	370	<.0001	-0.732959	<.0001	0.603389	-1
Cond Top (umho/cm)	113	127	0.1167	-0.198609	<.0001	0.618976	-1
Cond Top (umho/cm)	180	131	<.0001	-0.239918	<.0001	0.520345	-1
Cond Top (umho/cm)	181	130	0.0009	-1.101888	<.0001	0.793432	-1
Cond Top (umho/cm)	182	129	0.0553	-1.062260	<.0001	0.807785	-1

Linear Regression Results for EPC stations from US301 to the Mouth

Parameter	Station	Nobs	Month Pval	Flow Slope	Flow Pval	R2	Result
DO Bottom (mg/L)	112	372	<.0001	-0.006275	0.6014	0.682357	0
DO Bottom (mg/L)	113	128	<.0001	-0.063986	<.0001	0.770520	-1
DO Bottom (mg/L)	180	129	<.0001	-0.020327	0.2956	0.716069	0
DO Bottom (mg/L)	181	129	<.0001	0.019926	0.3597	0.600178	0
DO Bottom (mg/L)	182	128	<.0001	0.035876	0.0925	0.608058	0
DO Mid (mg/L)	112	543	<.0001	-0.026164	0.0025	0.702857	-1
DO Mid (mg/L)	113	546	<.0001	-0.053286	<.0001	0.587828	-1
DO Mid (mg/L)	180	129	<.0001	-0.014312	0.4274	0.746404	0
DO Mid (mg/L)	181	131	<.0001	0.012982	0.5336	0.655255	0
DO Mid (mg/L)	182	131	<.0001	0.018479	0.3497	0.621622	0
DO Sat Bottom (%)	112	196	<.0001	-0.044579	0.0062	0.593518	-1
DO Sat Bottom (%)	113	82	0.0003	-0.045611	<.0001	0.677014	-1
DO Sat Bottom (%)	180	130	<.0001	-0.042226	0.0285	0.610147	-1
DO Sat Bottom (%)	181	130	<.0001	-0.025277	0.1865	0.510688	0
DO Sat Bottom (%)	182	129	<.0001	0.001659	0.9333	0.440116	0
DO Sat Mid (%)	112	209	<.0001	-0.045384	0.0003	0.692855	-1
DO Sat Mid (%)	113	213	<.0001	-0.022055	0.0013	0.456039	-1
DO Sat Mid (%)	180	130	<.0001	-0.037483	0.0322	0.659983	-1
DO Sat Mid (%)	181	132	<.0001	-0.031020	0.1041	0.557702	0
DO Sat Mid (%)	182	132	<.0001	-0.013307	0.4488	0.476034	0
DO Sat Top (%)	112	192	<.0001	-0.036682	0.0045	0.668135	-1
DO Sat Top (%)	113	80	<.0001	-0.041558	<.0001	0.703263	-1
DO Sat Top (%)	180	129	<.0001	-0.028035	0.0880	0.671673	0
DO Sat Top (%)	181	130	<.0001	-0.027548	0.1663	0.509140	0
DO Sat Top (%)	182	129	<.0001	-0.018600	0.2818	0.491610	0
DO Top (mg/L)	112	371	<.0001	0.010884	0.2470	0.755910	0
DO Top (mg/L)	113	127	<.0001	-0.062753	<.0001	0.788723	-1
DO Top (mg/L)	180	128	<.0001	-0.002450	0.8814	0.767619	0
DO Top (mg/L)	181	129	<.0001	0.012916	0.5413	0.611717	0
DO Top (mg/L)	182	128	<.0001	0.012700	0.5016	0.644902	0
E_Coliform (n/100ml)	113	48	0.9203	0.184608	0.2896	0.128471	0
Enterococci (n/100ml)	112	228	0.7406	0.565310	<.0001	0.150407	1
Enterococci (n/100ml)	113	216	0.0286	0.457722	<.0001	0.289285	1
Enterococci (n/100ml)	180	132	0.1046	0.268137	0.1470	0.177257	0
Enterococci (n/100ml)	181	132	0.9901	0.867209	<.0001	0.275759	1
Enterococci (n/100ml)	182	132	0.7431	0.848625	<.0001	0.288328	1
Fecal_Coliform (n/100ml)	112	546	0.8858	0.331233	<.0001	0.101271	1

Linear Regression Results for EPC stations from US301 to the Mouth

Parameter	Station	Nobs	Month Pval	Flow Slope	Flow Pval	R2	Result
Fecal_Coliform (n/100ml)	113	510	<.0001	0.506022	<.0001	0.223310	1
Fecal_Coliform (n/100ml)	180	132	0.0855	0.214815	0.0726	0.222787	0
Fecal_Coliform (n/100ml)	181	132	0.1568	0.903376	<.0001	0.419865	1
Fecal_Coliform (n/100ml)	182	132	0.2771	0.802140	<.0001	0.393673	1
Fecal_Strep (n/100ml)	113	292	0.0125	0.572344	<.0001	0.213355	1
Fluoride (mg/l)	112	536	<.0001	-0.227193	<.0001	0.431850	-1
Fluoride (mg/l)	113	515	0.0173	-0.070498	0.0002	0.085696	-1
Fluoride (mg/l)	180	132	<.0001	-0.094072	<.0001	0.539342	-1
Fluoride (mg/l)	181	132	0.4385	-0.141806	<.0001	0.417426	-1
Fluoride (mg/l)	182	132	0.9504	-0.082259	0.0106	0.146137	-1
Kjeldahl Nitrogen (mg/l)	112	541	0.0742	0.184313	<.0001	0.147027	1
Kjeldahl Nitrogen (mg/l)	113	540	0.0801	0.315704	<.0001	0.252302	1
Kjeldahl Nitrogen (mg/l)	180	132	0.1226	0.046849	0.3111	0.225700	0
Kjeldahl Nitrogen (mg/l)	181	132	0.0915	0.161782	<.0001	0.475840	1
Kjeldahl Nitrogen (mg/l)	182	132	0.0500	0.169733	<.0001	0.441909	1
Nitrates	112	106	0.0004	0.359732	<.0001	0.454699	1
Nitrates	113	109	0.0237	0.145738	0.0704	0.219294	0
Nitrates/Nitrites (mg/l)	112	442	<.0001	0.641082	<.0001	0.382642	1
Nitrates/Nitrites (mg/l)	113	441	<.0001	-0.085771	0.0008	0.156411	-1
Nitrates/Nitrites (mg/l)	180	132	<.0001	0.512106	<.0001	0.424204	1
Nitrates/Nitrites (mg/l)	181	132	<.0001	0.791907	<.0001	0.541558	1
Nitrates/Nitrites (mg/l)	182	132	<.0001	0.504530	<.0001	0.545344	1
Organic Nitrogen (mg/l)	112	515	0.4869	0.204680	<.0001	0.076869	1
Organic Nitrogen (mg/l)	113	516	0.2293	0.342683	<.0001	0.174655	1
Organic Nitrogen (mg/l)	180	132	0.1771	0.057252	0.2559	0.208593	0
Organic Nitrogen (mg/l)	181	132	0.1234	0.148618	<.0001	0.431189	1
Organic Nitrogen (mg/l)	182	132	0.0408	0.153902	<.0001	0.418233	1
Ortho Phosphates (mg/l)	112	359	<.0001	0.100198	<.0001	0.341072	1
Ortho Phosphates (mg/l)	113	372	<.0001	0.129058	<.0001	0.334840	1
Ortho Phosphates (mg/l)	180	132	<.0001	0.123838	<.0001	0.685295	1
Ortho Phosphates (mg/l)	181	132	<.0001	0.089565	0.0003	0.603442	1
Ortho Phosphates (mg/l)	182	132	<.0001	0.049889	0.0304	0.540173	1
Sal Bottom (ppth)	112	367	<.0001	-0.654339	<.0001	0.504800	-1
Sal Bottom (ppth)	113	109	0.5661	0.003493	0.9682	0.096781	0
Sal Bottom (ppth)	180	131	<.0001	-0.186206	0.0007	0.418173	-1
Sal Bottom (ppth)	181	130	<.0001	-1.109526	<.0001	0.762619	-1
Sal Bottom (ppth)	182	129	0.1729	-1.179027	<.0001	0.800245	-1

Linear Regression Results for EPC stations from US301 to the Mouth

Parameter	Station	Nobs	Month Pval	Flow Slope	Flow Pval	R2	Result
Sal Mid (ppth)	112	541	<.0001	-0.649819	<.0001	0.464079	-1
Sal Mid (ppth)	113	473	0.7073	-0.016356	0.6627	0.023382	0
Sal Mid (ppth)	180	132	<.0001	-0.213374	0.0002	0.444291	-1
Sal Mid (ppth)	181	132	0.0003	-1.155466	<.0001	0.779775	-1
Sal Mid (ppth)	182	132	0.1391	-1.150016	<.0001	0.796016	-1
Sal Top (ppth)	112	366	<.0001	-0.743341	<.0001	0.579691	-1
Sal Top (ppth)	113	108	0.4388	0.029812	0.7379	0.108499	0
Sal Top (ppth)	180	131	<.0001	-0.261000	<.0001	0.522619	-1
Sal Top (ppth)	181	130	0.0013	-1.165692	<.0001	0.793261	-1
Sal Top (ppth)	182	129	0.0655	-1.111127	<.0001	0.803099	-1
Secchi Depth (m)	112	550	<.0001	-0.171084	<.0001	0.373787	-1
Secchi Depth (m)	113	550	0.0967	-0.063034	0.0122	0.041246	-1
Secchi Depth (m)	180	132	0.0153	-0.065325	0.0488	0.259633	-1
Secchi Depth (m)	181	132	0.0006	-0.069835	0.0216	0.411925	-1
Secchi Depth (m)	182	132	0.0393	-0.117658	0.0005	0.322592	-1
TOC (mg/l)	112	210	0.1115	0.280046	<.0001	0.376729	1
TOC (mg/l)	113	213	0.0029	0.343128	<.0001	0.531278	1
TOC (mg/l)	180	114	<.0001	0.156419	<.0001	0.587551	1
TOC (mg/l)	181	116	0.0002	0.196158	<.0001	0.693930	1
TOC (mg/l)	182	115	<.0001	0.171554	<.0001	0.730026	1
Total Nitrogen (mg/l)	112	460	0.0733	0.205399	<.0001	0.290141	1
Total Nitrogen (mg/l)	113	461	0.0285	0.121585	<.0001	0.227856	1
Total Nitrogen (mg/l)	180	132	0.1272	0.062337	0.2059	0.234148	0
Total Nitrogen (mg/l)	181	132	0.8182	0.203656	<.0001	0.449568	1
Total Nitrogen (mg/l)	182	132	0.4878	0.172650	<.0001	0.355406	1
Total Phosphorus (mg/l)	112	550	<.0001	0.025685	0.2128	0.188844	0
Total Phosphorus (mg/l)	113	550	<.0001	0.166953	<.0001	0.326974	1
Total Phosphorus (mg/l)	180	132	<.0001	0.071614	0.0039	0.565497	1
Total Phosphorus (mg/l)	181	132	0.0001	0.077538	0.0010	0.474419	1
Total Phosphorus (mg/l)	182	132	<.0001	0.073800	0.0003	0.547763	1
Total Suspended Solids (mg/l)	112	191	0.7309	-0.303822	<.0001	0.181535	-1
Total Suspended Solids (mg/l)	113	373	0.0427	0.396546	<.0001	0.251045	1
Turbidity (NTU)	112	550	0.0250	0.156747	<.0001	0.145566	1
Turbidity (NTU)	113	548	0.0830	0.409499	<.0001	0.389321	1
Turbidity (NTU)	180	132	0.0168	-0.037480	0.4269	0.171524	0
Turbidity (NTU)	181	132	0.3836	0.040030	0.3689	0.107498	0
Turbidity (NTU)	182	132	0.1267	0.097604	0.0417	0.149021	1

Linear Regression Results for EPC stations from US301 to the Mouth

Parameter	Station	Nobs	Month Pval	Flow Slope	Flow Pval	R2	Result
pH Bottom	112	370	<.0001	-0.023597	<.0001	0.385877	-1
pH Bottom	113	127	0.9715	-0.042559	<.0001	0.533572	-1
pH Bottom	180	131	0.0004	-0.009511	0.0180	0.365117	-1
pH Bottom	181	130	0.0192	-0.021191	<.0001	0.363248	-1
pH Bottom	182	129	0.0014	-0.017355	0.0001	0.307506	-1
pH Mid	112	541	0.0019	-0.019921	<.0001	0.247247	-1
pH Mid	113	543	0.0003	-0.032160	<.0001	0.403919	-1
pH Mid	180	132	<.0001	-0.009126	0.0189	0.388508	-1
pH Mid	181	132	0.0001	-0.020158	<.0001	0.508296	-1
pH Mid	182	132	0.0002	-0.013250	0.0002	0.381390	-1
pH Top	112	372	<.0001	-0.022770	<.0001	0.392544	-1
pH Top	113	127	0.8339	-0.041110	<.0001	0.546842	-1
pH Top	180	131	<.0001	-0.010080	0.0099	0.417895	-1
pH Top	181	130	0.0016	-0.018337	<.0001	0.481806	-1
pH Top	182	129	<.0001	-0.012980	0.0001	0.429098	-1

1f: EPC Upstream log log linear regression

Linear Regression Results for EPC stations upstream of US301

Parameter	Station	Nobs	Month Pval	Flow Slope	Flow Pval	R2	Result
Ammonia (mg/l)	129	512	0.1594	-0.113025	0.0002	0.053829	-1
Ammonia (mg/l)	140	451	0.0048	-0.007044	0.8016	0.060034	0
Chloride (mg/l)	140	450	<.0001	-0.070880	<.0001	0.305320	-1
Chlorophyll a Corr (ug/l)	129	161	0.9570	-0.005330	0.8853	0.028984	0
Chlorophyll a Corr (ug/l)	140	163	0.8256	0.006637	0.8478	0.042417	0
Chlorophyll a uncorr (ug/l)	129	378	0.2189	-0.124360	0.0011	0.065947	-1
Chlorophyll a uncorr (ug/l)	140	331	0.0299	-0.064288	0.0449	0.092679	-1
Color(345) C (PCU)	129	395	<.0001	0.177349	<.0001	0.497732	1
Color(345) C (PCU)	140	332	<.0001	0.262969	<.0001	0.691666	1
Color(345)F 45 (PCU)	129	119	0.0011	0.005823	0.8678	0.312695	0
Color(345)F 45 (PCU)	140	121	<.0001	0.160538	<.0001	0.628303	1
Cond Bottom (umho/cm)	129	42	0.8817	-0.310178	0.0129	0.358177	-1
Cond Bottom (umho/cm)	140	85	0.4258	-0.093030	0.0126	0.245491	-1
Cond Mid (umho/cm)	129	514	0.2403	0.052284	0.0103	0.031085	1
Cond Mid (umho/cm)	140	451	<.0001	-0.051314	<.0001	0.187548	-1
Cond Top (umho/cm)	129	42	0.8815	-0.334904	0.0078	0.379107	-1
Cond Top (umho/cm)	140	84	0.2013	-0.113832	0.0042	0.278550	-1
DO Bottom (mg/L)	129	42	0.0038	-0.018698	0.5516	0.594063	0
DO Bottom (mg/L)	140	85	<.0001	-0.047315	0.0026	0.610484	-1
DO Mid (mg/L)	129	511	<.0001	-0.038513	<.0001	0.562551	-1
DO Mid (mg/L)	140	450	<.0001	-0.042107	<.0001	0.676049	-1
DO Sat Bottom (%)	140	58	0.0056	-0.052766	0.0020	0.529540	-1
DO Sat Mid (%)	129	211	<.0001	-0.028522	<.0001	0.381303	-1
DO Sat Mid (%)	140	211	<.0001	-0.022296	<.0001	0.538322	-1
DO Sat Top (%)	140	57	0.0012	-0.063358	<.0001	0.613541	-1
DO Top (mg/L)	129	42	0.0002	-0.015138	0.5551	0.682472	0
DO Top (mg/L)	140	84	<.0001	-0.055478	0.0002	0.660056	-1
E_Coliform (n/100ml)	129	47	0.2671	0.063711	0.5378	0.296459	0
E_Coliform (n/100ml)	140	47	0.0317	0.120451	0.1753	0.433645	0
Enterococci (n/100ml)	129	213	0.0004	0.212441	<.0001	0.276738	1
Enterococci (n/100ml)	140	215	0.4060	0.197957	<.0001	0.189421	1
Fecal_Coliform (n/100ml)	129	478	0.0054	0.090944	0.0100	0.062256	1
Fecal_Coliform (n/100ml)	140	419	0.0386	0.169215	<.0001	0.092373	1
Fluoride (mg/l)	129	505	0.7802	0.106609	<.0001	0.108611	1
Fluoride (mg/l)	140	450	0.0108	0.076396	<.0001	0.105275	1
Kjeldahl Nitrogen (mg/l)	129	515	0.0029	0.088523	<.0001	0.109008	1
Kjeldahl Nitrogen (mg/l)	140	454	<.0001	0.123304	<.0001	0.311100	1

Linear Regression Results for EPC stations upstream of US301

Parameter	Station	Nobs	Month Pval	Flow Slope	Flow Pval	R2	Result
Nitrates	129	76	0.0347	-0.101372	0.1859	0.338345	0
Nitrates/Nitrites (mg/l)	129	437	0.0621	-0.206691	<.0001	0.212700	-1
Nitrates/Nitrites (mg/l)	140	438	<.0001	-0.130579	<.0001	0.234490	-1
Organic Nitrogen (mg/l)	129	499	0.1392	0.122308	<.0001	0.093279	1
Organic Nitrogen (mg/l)	140	445	<.0001	0.132973	<.0001	0.313748	1
Ortho Phosphates (mg/l)	129	358	0.0286	0.052798	0.0025	0.118099	1
Ortho Phosphates (mg/l)	140	350	0.0002	0.150898	<.0001	0.409768	1
Sal Bottom (ppth)	129	36	0.1905	-0.043859	0.8200	0.388740	0
Sal Bottom (ppth)	140	73	0.1095	-0.035451	0.7139	0.242418	0
Sal Mid (ppth)	129	439	0.8465	0.079474	0.0019	0.030061	1
Sal Mid (ppth)	140	377	0.5315	0.048985	0.0639	0.027409	0
Sal Top (ppth)	129	36	0.1785	-0.061971	0.7494	0.394410	0
Sal Top (ppth)	140	72	0.1257	-0.036700	0.7280	0.243493	0
Secchi Depth (m)	129	513	0.7334	0.177721	<.0001	0.303817	1
Secchi Depth (m)	140	453	0.0053	0.068192	<.0001	0.113136	1
TOC (mg/l)	129	196	0.0226	0.121245	<.0001	0.357815	1
TOC (mg/l)	140	159	<.0001	0.174746	<.0001	0.673053	1
Total Dissolved Solids (mg/l)	129	272	0.6226	0.082078	0.0005	0.064140	1
Total Dissolved Solids (mg/l)	140	217	0.0714	-0.076137	<.0001	0.224402	-1
Total Nitrogen (mg/l)	129	457	<.0001	0.045568	0.0010	0.129417	1
Total Nitrogen (mg/l)	140	447	0.1421	0.002973	0.7895	0.045645	0
Total Phosphorus (mg/l)	129	515	0.0222	0.069674	<.0001	0.125814	1
Total Phosphorus (mg/l)	140	454	<.0001	0.141927	<.0001	0.355558	1
Total Suspended Solids (mg/l)	129	350	0.4466	-0.013935	0.6501	0.031832	0
Total Suspended Solids (mg/l)	140	299	0.1329	0.189913	<.0001	0.186106	1
Turbidity (NTU)	129	513	<.0001	0.080502	<.0001	0.154334	1
Turbidity (NTU)	140	450	<.0001	0.186289	<.0001	0.301078	1
pH Bottom	129	42	0.5568	-0.049279	0.0337	0.359171	-1
pH Bottom	140	85	0.5025	-0.022898	0.0110	0.225021	-1
pH Mid	129	511	0.0007	-0.014708	<.0001	0.195612	-1
pH Mid	140	448	<.0001	-0.015113	<.0001	0.337617	-1
pH Top	129	42	0.6007	-0.051449	0.0284	0.361420	-1
pH Top	140	84	0.7252	-0.017137	0.0651	0.149071	0

2a: IWR Summary Table

Little Manatee River
112WRD 02300100
LITTLE MANATEE RIVER NEAR FT. LONESOME FL

Parameter	Number of Samples	Average Value	First Sample	Most Recent Sample	Percent Robust Regression Outlier	Percent Outside the 1st and 99th Percentile	Percent Greater/Less than 3 Lognormal Standard Deviations
Dissolved Oxygen (Percent Saturation)	243	80.96	APR1968	AUG2011	1.6%	1.6%	1.2%
Dissolved Oxygen (mg/L)	248	6.81	APR1968	AUG2011	1.6%	1.6%	1.2%
Nitrate (mg/L)	169	0.19	MAY1966	AUG2011	6.5%	0.6%	3.0%
Nitrite Nitrogen as N (mg/L)	165	0.01	JUN1970	AUG2011	5.5%	0.6%	1.2%
Nitrogen Kjeldahl as N (mg/L)	119	0.86	AUG1982	JUN2004	4.2%	1.7%	1.7%
Nitrogen Organic as N (mg/L)	164	0.74	JUN1970	AUG2011	1.8%	1.2%	1.2%
Nitrogen Total as N (mg/L)	162	1.00	AUG1982	AUG2011	3.7%	1.2%	2.5%
Nutrients (Nitrate-Nitrite)	163	0.20	AUG1982	AUG2011	7.4%	0.6%	3.1%
Phosphorus Total as P (mg/L)	165	0.63	APR1968	AUG2011	1.8%	1.2%	1.2%
Phosphorus in Total Orthophosphate as P (mg/L)	119	0.52	AUG1982	JUN2004	0.8%	0.8%	0.8%
Salinity	254	0.12	MAY1967	AUG2011	5.9%	1.6%	0.4%
Specific Conductance (µmhos/cm)	260	225.9	MAY1966	AUG2011	5.8%	1.5%	0.4%
Temperature (C°)	257	21.86	MAY1967	AUG2011	0.4%	1.6%	1.2%
Total Ammonia as N (mg/L)	163	0.04	AUG1982	AUG2011	5.5%	0.6%	1.2%
Un-ionized Ammonia (mg/L)	157	0.00	AUG1982	AUG2011	11.5%	0.6%	0.0%
pH (SU)	221	6.81	MAY1966	AUG2011	0.9%	1.8%	0.9%

Little Manatee River
112WRD 02300200
SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL

Parameter	Number of Samples	Average Value	First Sample	Most Recent Sample	Percent Robust Regression Outlier	Percent Outside the 1st and 99th Percentile	Percent Greater/Less than 3 Lognormal Standard Deviations
Color (PCU)	61	123.3	FEB1962	APR2011	1.6%	0.0%	0.0%
Dissolved Oxygen (Percent Saturation)	229	64.22	APR1968	AUG2011	2.6%	1.3%	1.3%
Dissolved Oxygen (mg/L)	238	5.42	APR1968	AUG2011	2.9%	1.7%	1.7%
Hardness (mg/L)	63	73.18	FEB1962	APR2011	3.2%	0.0%	0.0%
Nitrate (mg/L)	187	0.27	FEB1962	AUG2011	12.3%	0.5%	0.5%
Nitrite Nitrogen as N (mg/L)	183	0.01	JUN1970	AUG2011	4.9%	0.5%	1.1%
Nitrogen Kjeldahl as N (mg/L)	136	0.82	MAR1978	JUN2004	1.5%	0.7%	0.7%
Nitrogen Organic as N (mg/L)	182	0.77	JUN1970	AUG2011	1.1%	0.5%	1.1%
Nitrogen Total as N (mg/L)	180	1.09	AUG1976	AUG2011	2.2%	0.6%	2.2%
Nutrients (Nitrate-Nitrite)	180	0.27	MAR1978	AUG2011	12.8%	1.1%	0.6%
Phosphorus Total as P (mg/L)	184	0.55	APR1968	AUG2011	2.2%	1.1%	1.1%
Phosphorus in Total Orthophosphate as P (mg/L)	138	0.50	AUG1976	JUN2004	0.7%	1.4%	1.4%
Salinity	243	0.10	MAY1967	AUG2011	2.9%	0.8%	0.0%
Specific Conductance (µmhos/cm)	251	194.0	FEB1962	AUG2011	2.4%	1.6%	0.4%
Temperature (C°)	252	22.04	MAY1967	AUG2011	0.8%	1.6%	1.6%
Total Ammonia as N (mg/L)	182	0.05	AUG1976	AUG2011	6.0%	0.5%	2.7%
Un-ionized Ammonia (mg/L)	176	0.00	MAR1978	AUG2011	9.7%	0.6%	0.6%
pH (SU)	211	6.63	FEB1962	AUG2011	0.9%	1.4%	1.4%

Little Manatee River
112WRD 02300500
LITTLE MANATEE RIVER NEAR WIMAUMA FL

Parameter	Number of Samples	Average Value	First Sample	Most Recent Sample	Percent Robust Regression Outlier	Percent Outside the 1st and 99th Percentile	Percent Greater/Less than 3 Lognormal Standard Deviations
Color (PCU)	144	103.1	OCT1956	SEP1999	0.0%	1.4%	0.7%
Dissolved Oxygen (Percent Saturation)	131	88.09	MAY1967	SEP1999	1.5%	0.8%	1.5%
Dissolved Oxygen (mg/L)	134	7.37	MAY1967	SEP1999	0.0%	0.7%	2.2%
Hardness (mg/L)	144	45.17	OCT1956	SEP1999	9.0%	1.4%	0.7%
Nitrate (mg/L)	251	0.25	OCT1956	SEP1999	1.2%	0.8%	0.0%
Nitrite Nitrogen as N (mg/L)	167	0.02	MAY1968	SEP1999	6.0%	0.6%	1.2%
Nitrogen Kjeldahl as N (mg/L)	107	0.77	AUG1974	SEP1999	2.8%	1.9%	1.9%
Nitrogen Organic as N (mg/L)	125	0.69	JUN1970	SEP1999	2.4%	1.6%	1.6%
Nitrogen Total as N (mg/L)	123	1.17	JAN1972	SEP1999	4.1%	1.6%	0.8%
Nutrients (Nitrate-Nitrite)	107	0.45	AUG1974	SEP1999	0.9%	0.9%	2.8%
Phosphorus Total as P (mg/L)	168	0.48	NOV1957	SEP1999	3.0%	1.2%	2.4%
Phosphorus in Total Orthophosphate as P (mg/L)	125	0.46	OCT1971	SEP1999	3.2%	1.6%	2.4%
Salinity	172	0.11	MAY1967	SEP1999	1.7%	1.2%	0.6%
Specific Conductance (µmhos/cm)	257	169.1	OCT1956	SEP1999	4.7%	1.6%	0.4%
Temperature (C°)	181	22.97	MAY1967	SEP1999	0.6%	1.1%	0.6%
Total Ammonia as N (mg/L)	125	0.06	OCT1971	SEP1999	4.0%	1.6%	1.6%
Un-ionized Ammonia (mg/L)	105	0.00	APR1972	SEP1999	11.4%	1.0%	1.0%
pH (SU)	219	6.70	OCT1956	SEP1999	1.4%	1.4%	0.5%

Little Manatee River
21FLA 24010100
L MANATEE R BR US 301

Parameter	Number of Samples	Average Value	First Sample	Most Recent Sample	Percent Robust Regression Outlier	Percent Outside the 1st and 99th Percentile	Percent Greater/Less than 3 Lognormal Standard Deviations
BOD 5-Day (mg/L)	111	1.33	JUN1971	MAY1987	4.5%	0.9%	2.7%
Color (PCU)	118	72.78	JAN1973	MAY1987	0.8%	1.7%	0.0%
Dissolved Oxygen (Percent Saturation)	119	87.59	JUN1971	MAY1987	0.8%	1.7%	1.7%
Dissolved Oxygen (mg/L)	122	7.73	JUN1971	MAY1987	0.8%	1.6%	0.8%
Nitrate (mg/L)	96	0.28	JAN1973	MAR1983	0.0%	0.0%	0.0%
Nitrogen Kjeldahl as N (mg/L)	93	0.50	JAN1973	MAY1987	1.1%	0.0%	0.0%
Nitrogen Organic as N (mg/L)	77	0.37	DEC1974	MAY1987	1.3%	0.0%	1.3%
Nitrogen Total as N (mg/L)	101	0.80	JAN1973	MAY1987	2.0%	2.0%	1.0%
Phosphorus Total as P (mg/L)	106	0.48	FEB1974	MAY1987	7.5%	1.9%	0.9%
Specific Conductance (µmhos/cm)	115	415.2	JUL1973	MAY1987	6.1%	1.7%	2.6%
Temperature (C°)	120	22.60	JUN1971	MAY1987	0.0%	0.8%	0.0%
Total Ammonia as N (mg/L)	78	0.13	SEP1974	MAY1987	7.7%	0.0%	0.0%
Total Organic Carbon as C (mg/L)	68	11.34	APR1973	FEB1984	1.5%	0.0%	1.5%
Total Suspended Solids (TSS), mg/L	96	8.34	JAN1973	MAY1987	8.3%	0.0%	1.0%
Turbidity (NTU)	86	4.63	JAN1976	MAY1987	11.6%	0.0%	0.0%
Un-ionized Ammonia (mg/L)	87	0.00	AUG1974	MAY1987	10.3%	0.0%	1.1%
pH (SU)	122	7.21	JUN1971	MAY1987	0.8%	1.6%	1.6%

Little Manatee River
21FLGW 3555
LITTLE MANATEE RIVER AT US HWY 301

Parameter	Number of Samples	Average Value	First Sample	Most Recent Sample	Percent Robust Regression Outlier	Percent Outside the 1st and 99th Percentile	Percent Greater/Less than 3 Lognormal Standard Deviations
Color (PCU)	248	96.75	OCT1998	FEB2020	2.8%	1.6%	0.4%
Corr. Chlorophyll-a (µg/L)	240	1.23	NOV1999	FEB2020	8.3%	0.8%	2.5%
Dissolved Oxygen (Percent Saturation)	249	90.72	OCT1998	FEB2020	0.0%	1.6%	0.4%
Dissolved Oxygen (mg/L)	243	7.67	OCT1998	FEB2020	0.4%	1.6%	0.4%
Fluoride (mg/L)	250	0.43	OCT1998	FEB2020	6.0%	1.2%	0.8%
Hardness (mg/L)	250	126.8	OCT1998	FEB2020	0.8%	1.6%	0.4%
Nitrogen Kjeldahl as N (mg/L)	244	0.69	OCT1998	FEB2020	0.4%	1.6%	0.0%
Nitrogen Total as N (mg/L)	252	1.22	OCT1998	FEB2020	0.8%	1.6%	1.2%
Nutrients (Nitrate-Nitrite)	245	0.53	OCT1998	FEB2020	0.8%	1.6%	1.6%
Phosphorus Total as P (mg/L)	244	0.38	OCT1998	FEB2020	1.2%	1.2%	0.0%
Phosphorus, Dissolved Orthophosphate as P (mg/L)	113	0.34	OCT1998	SEP2008	0.9%	1.8%	0.9%
Salinity	253	0.17	OCT1998	FEB2020	0.8%	1.6%	0.4%
Specific Conductance (µmhos/cm)	251	333.6	NOV1998	FEB2020	0.0%	1.6%	0.4%
Temperature (C°)	252	21.58	OCT1998	FEB2020	0.0%	1.6%	2.0%
Total Ammonia as N (mg/L)	252	0.04	OCT1998	FEB2020	4.0%	0.8%	0.8%
Total Organic Carbon as C (mg/L)	249	13.20	OCT1998	FEB2020	0.0%	1.6%	0.0%
Total Suspended Solids (TSS), mg/L	250	6.06	OCT1998	FEB2020	11.2%	0.8%	2.4%
Turbidity (NTU)	247	3.64	OCT1998	FEB2020	6.9%	1.2%	0.8%
Un-ionized Ammonia (mg/L)	250	0.00	OCT1998	FEB2020	5.6%	0.8%	0.8%
Uncorr. Chlorophyll-a (µg/L)	147	1.68	SEP2007	FEB2020	6.8%	0.7%	1.4%
pH (SU)	251	7.07	NOV1998	FEB2020	1.2%	1.6%	0.4%

Little Manatee River
21FLHILL113
Little Manatee River at US 301 bridge

Parameter	Number of Samples	Average Value	First Sample	Most Recent Sample	Percent Robust Regression Outlier	Percent Outside the 1st and 99th Percentile	Percent Greater/Less than 3 Lognormal Standard Deviations
BOD 5-Day (mg/L)	115	1.03	JAN1999	SEP2008	2.6%	1.7%	2.6%
Color (PCU)	247	59.48	JAN1999	JAN2020	3.6%	1.6%	0.4%
Corr. Chlorophyll-a (µg/L)	168	2.61	JAN2005	JAN2020	3.0%	0.6%	2.4%
Dissolved Oxygen (Percent Saturation)	238	82.35	JAN1999	JAN2020	1.3%	1.7%	0.8%
Dissolved Oxygen (mg/L)	238	7.24	JAN1999	JAN2020	0.8%	1.7%	0.8%
Nitrogen Kjeldahl as N (mg/L)	241	0.73	JAN1999	JAN2020	0.8%	1.7%	1.7%
Nitrogen Organic as N (mg/L)	221	0.69	JAN1999	JUN2017	0.9%	1.8%	1.8%
Nitrogen Total as N (mg/L)	252	1.26	JAN1999	JAN2020	2.8%	1.6%	0.4%
Phosphorus Total as P (mg/L)	248	0.35	JAN1999	JAN2020	1.2%	1.6%	0.0%
Salinity	252	0.17	JAN1999	JAN2020	0.8%	1.2%	0.4%
Specific Conductance (µmhos/cm)	249	330.1	JAN1999	JAN2020	1.6%	1.6%	0.8%
Temperature (C°)	250	21.32	JAN1999	JAN2020	0.0%	1.6%	0.8%
Total Ammonia as N (mg/L)	246	0.10	JAN1999	JAN2020	2.4%	0.8%	0.4%
Total Organic Carbon as C (mg/L)	115	12.47	APR2010	JAN2020	0.9%	1.7%	0.0%
Total Suspended Solids (TSS), mg/L	67	5.63	JAN2002	SEP2008	10.4%	0.0%	3.0%
Turbidity (NTU)	251	4.29	JAN1999	JAN2020	10.4%	0.8%	1.6%
Un-ionized Ammonia (mg/L)	101	0.00	JAN1999	DEC2019	5.0%	1.0%	0.0%
Uncorr. Chlorophyll-a (µg/L)	197	3.79	JAN1999	JAN2020	7.1%	1.0%	1.5%
pH (SU)	243	7.21	JAN1999	JAN2020	0.8%	1.6%	0.8%

Little Manatee River
21FLHILL129
Little Manatee River at SR 674

Parameter	Number of Samples	Average Value	First Sample	Most Recent Sample	Percent Robust Regression Outlier	Percent Outside the 1st and 99th Percentile	Percent Greater/Less than 3 Lognormal Standard Deviations
BOD 5-Day (mg/L)	115	1.08	JAN1999	SEP2008	2.6%	0.9%	4.3%
Color (PCU)	244	87.74	JAN1999	JAN2020	2.9%	1.6%	0.8%
Corr. Chlorophyll-a (µg/L)	155	2.58	JAN2005	JAN2020	1.3%	0.6%	1.9%
Dissolved Oxygen (Percent Saturation)	236	78.83	JAN1999	JAN2020	0.0%	1.7%	0.0%
Dissolved Oxygen (mg/L)	236	7.01	JAN1999	JAN2020	0.0%	1.7%	0.0%
Nitrogen Kjeldahl as N (mg/L)	244	0.83	JAN1999	JAN2020	1.2%	1.6%	1.6%
Nitrogen Organic as N (mg/L)	218	0.79	JAN1999	JUN2017	0.9%	1.8%	1.8%
Nitrogen Total as N (mg/L)	249	1.03	JAN1999	JAN2020	2.0%	1.6%	2.0%
Phosphorus Total as P (mg/L)	244	0.54	JAN1999	JAN2020	2.0%	1.6%	0.8%
Salinity	249	0.17	JAN1999	JAN2020	3.2%	1.6%	0.4%
Specific Conductance (µmhos/cm)	245	327.1	JAN1999	JAN2020	3.7%	1.6%	0.4%
Temperature (C°)	247	20.88	JAN1999	JAN2020	0.0%	1.6%	0.8%
Total Ammonia as N (mg/L)	243	0.05	JAN1999	JAN2020	3.7%	0.8%	0.4%
Total Organic Carbon as C (mg/L)	111	18.98	APR2010	JAN2020	0.9%	1.8%	0.0%
Total Suspended Solids (TSS), mg/L	67	3.06	JAN2002	SEP2008	10.4%	0.0%	1.5%
Turbidity (NTU)	246	2.98	JAN1999	JAN2020	8.9%	1.2%	0.8%
Un-ionized Ammonia (mg/L)	120	0.00	JAN1999	SEP2019	3.3%	0.8%	0.0%
Uncorr. Chlorophyll-a (µg/L)	184	3.42	APR1999	JAN2020	6.0%	1.1%	0.5%
pH (SU)	239	7.38	JAN1999	JAN2020	3.8%	1.3%	2.1%

Little Manatee River
21FLHILL140
Little Manatee River at CR 579

Parameter	Number of Samples	Average Value	First Sample	Most Recent Sample	Percent Robust Regression Outlier	Percent Outside the 1st and 99th Percentile	Percent Greater/Less than 3 Lognormal Standard Deviations
BOD 5-Day (mg/L)	115	1.08	JAN1999	SEP2008	3.5%	0.9%	1.7%
Color (PCU)	247	63.79	JAN1999	JAN2020	3.6%	1.6%	0.8%
Corr. Chlorophyll-a (µg/L)	161	2.86	JAN2005	JAN2020	3.1%	0.6%	2.5%
Dissolved Oxygen (Percent Saturation)	239	85.45	JAN1999	JAN2020	1.7%	1.7%	1.3%
Dissolved Oxygen (mg/L)	239	7.54	JAN1999	JAN2020	0.0%	1.7%	0.8%
Nitrogen Kjeldahl as N (mg/L)	234	0.80	JAN1999	JAN2020	0.4%	1.7%	0.9%
Nitrogen Organic as N (mg/L)	221	0.75	JAN1999	JUN2017	0.5%	1.8%	0.9%
Nitrogen Total as N (mg/L)	252	1.45	JAN1999	JAN2020	1.6%	1.6%	1.2%
Phosphorus Total as P (mg/L)	248	0.37	JAN1999	JAN2020	0.8%	1.6%	0.4%
Salinity	252	0.18	JAN1999	JAN2020	1.6%	0.4%	0.4%
Specific Conductance (µmhos/cm)	249	340.6	JAN1999	JAN2020	0.4%	1.6%	0.8%
Temperature (C°)	250	21.27	JAN1999	JAN2020	0.0%	1.6%	0.8%
Total Ammonia as N (mg/L)	247	0.05	JAN1999	JAN2020	3.6%	0.8%	2.0%
Total Organic Carbon as C (mg/L)	114	13.24	APR2010	JAN2020	0.0%	1.8%	0.0%
Total Suspended Solids (TSS), mg/L	69	5.54	JAN2002	SEP2008	7.2%	0.0%	2.9%
Turbidity (NTU)	248	4.62	JAN1999	JAN2020	10.1%	0.8%	2.0%
Un-ionized Ammonia (mg/L)	110	0.00	JAN1999	DEC2018	4.5%	0.9%	0.9%
Uncorr. Chlorophyll-a (µg/L)	183	3.67	APR1999	JAN2020	7.1%	0.5%	1.1%
pH (SU)	243	7.26	JAN1999	JAN2020	1.2%	1.6%	1.6%

Little Manatee River
21FLHILL24010013
LITTLE MANATEE R AT CR579

Parameter	Number of Samples	Average Value	First Sample	Most Recent Sample	Percent Robust Regression Outlier	Percent Outside the 1st and 99th Percentile	Percent Greater/Less than 3 Lognormal Standard Deviations
BOD 5-Day (mg/L)	200	1.29	JAN1982	DEC1998	2.5%	1.5%	0.5%
Color (PCU)	202	71.66	JAN1982	DEC1998	3.0%	1.5%	0.0%
Dissolved Oxygen (Percent Saturation)	194	88.73	JAN1982	DEC1998	1.5%	1.0%	1.0%
Dissolved Oxygen (mg/L)	195	7.77	JAN1982	DEC1998	0.0%	1.0%	1.0%
Nitrogen Kjeldahl as N (mg/L)	203	1.01	JAN1982	DEC1998	4.9%	2.0%	1.0%
Nitrogen Organic as N (mg/L)	201	0.70	JAN1982	DEC1998	3.5%	2.0%	1.0%
Nitrogen Total as N (mg/L)	202	2.05	JAN1982	DEC1998	5.0%	2.0%	0.5%
Nutrients (Nitrate-Nitrite)	189	1.09	MAR1983	DEC1998	3.2%	0.5%	0.5%
Phosphorus Total as P (mg/L)	202	0.55	JAN1982	DEC1998	4.0%	2.0%	1.0%
Phosphorus, Dissolved Orthophosphate as P (mg/L)	95	0.44	JAN1991	DEC1998	1.1%	0.0%	0.0%
Salinity	116	0.37	JAN1982	DEC1998	20.7%	1.7%	0.9%
Specific Conductance (µmhos/cm)	203	414.2	JAN1982	DEC1998	2.5%	1.0%	1.0%
Temperature (C°)	202	23.55	JAN1982	DEC1998	1.0%	2.0%	1.0%
Total Ammonia as N (mg/L)	121	0.52	JAN1982	SEP1998	8.3%	0.8%	1.7%
Total Suspended Solids (TSS), mg/L	188	9.53	JAN1982	DEC1998	7.4%	0.5%	1.6%
Turbidity (NTU)	202	6.71	JAN1982	DEC1998	6.4%	1.0%	1.0%
Un-ionized Ammonia (mg/L)	197	0.01	JAN1982	DEC1998	9.1%	1.0%	2.0%
Uncorr. Chlorophyll-a (µg/L)	126	4.83	JAN1982	OCT1998	7.1%	0.8%	1.6%
pH (SU)	200	7.16	JAN1982	DEC1998	0.5%	2.0%	0.5%

Little Manatee River
21FLHILL24010100
L MANATEE R BR US 301

Parameter	Number of Samples	Average Value	First Sample	Most Recent Sample	Percent Robust Regression Outlier	Percent Outside the 1st and 99th Percentile	Percent Greater/Less than 3 Lognormal Standard Deviations
BOD 5-Day (mg/L)	290	1.38	JAN1974	DEC1998	4.8%	0.7%	2.1%
Color (PCU)	299	68.05	JAN1974	DEC1998	1.3%	1.3%	0.0%
Dissolved Oxygen (Percent Saturation)	266	85.16	JAN1975	DEC1998	1.9%	1.5%	1.5%
Dissolved Oxygen (mg/L)	291	7.57	JAN1974	DEC1998	0.7%	1.4%	1.4%
Nitrate (mg/L)	97	0.34	JAN1975	MAR1983	0.0%	0.0%	2.1%
Nitrogen Kjeldahl as N (mg/L)	280	0.63	NOV1974	DEC1998	1.8%	1.1%	1.1%
Nitrogen Organic as N (mg/L)	269	0.55	JAN1975	DEC1998	2.2%	1.5%	5.2%
Nitrogen Total as N (mg/L)	288	1.21	OCT1974	DEC1998	4.2%	1.4%	1.7%
Nutrients (Nitrate-Nitrite)	202	0.69	JAN1974	DEC1998	3.0%	2.0%	2.0%
Phosphorus Total as P (mg/L)	295	0.45	FEB1974	DEC1998	4.7%	1.4%	0.3%
Phosphorus, Dissolved Orthophosphate as P (mg/L)	96	0.36	JAN1991	DEC1998	1.0%	0.0%	0.0%
Salinity	152	0.55	JAN1974	DEC1998	19.7%	0.7%	2.0%
Specific Conductance (µmhos/cm)	298	606.1	JAN1974	DEC1998	5.4%	1.3%	2.0%
Temperature (C°)	298	22.41	JAN1974	DEC1998	0.3%	1.0%	1.0%
Total Ammonia as N (mg/L)	196	0.12	SEP1974	SEP1998	6.1%	0.5%	1.0%
Total Organic Carbon as C (mg/L)	97	11.08	JAN1974	NOV1985	1.0%	0.0%	1.0%
Total Suspended Solids (TSS), mg/L	246	7.28	JAN1974	DEC1998	10.2%	1.2%	1.2%
Turbidity (NTU)	298	5.86	JAN1974	DEC1998	10.1%	0.7%	0.7%
Un-ionized Ammonia (mg/L)	269	0.00	JAN1975	DEC1998	13.0%	1.5%	1.5%
Uncorr. Chlorophyll-a (µg/L)	65	3.38	JAN1974	OCT1998	7.7%	0.0%	0.0%
pH (SU)	294	7.17	JAN1974	DEC1998	0.7%	1.4%	0.3%

Little Manatee River
21FLHILL24010110
LITTLE MANATEE R AT SR #674

Parameter	Number of Samples	Average Value	First Sample	Most Recent Sample	Percent Robust Regression Outlier	Percent Outside the 1st and 99th Percentile	Percent Greater/Less than 3 Lognormal Standard Deviations
BOD 5-Day (mg/L)	265	1.23	MAY1976	DEC1998	3.8%	1.1%	3.0%
Color (PCU)	267	99.80	JUN1976	DEC1998	1.5%	1.5%	0.0%
Dissolved Oxygen (Percent Saturation)	257	73.97	MAY1976	DEC1998	2.7%	1.6%	2.7%
Dissolved Oxygen (mg/L)	258	6.62	MAY1976	DEC1998	0.4%	1.2%	1.2%
Nitrate (mg/L)	75	0.17	MAY1976	MAR1983	5.3%	0.0%	1.3%
Nitrogen Kjeldahl as N (mg/L)	267	0.71	MAY1976	DEC1998	3.0%	1.1%	3.0%
Nitrogen Organic as N (mg/L)	257	0.62	FEB1977	DEC1998	1.6%	0.8%	3.1%
Nitrogen Total as N (mg/L)	267	0.86	MAY1976	DEC1998	3.7%	1.5%	1.1%
Nutrients (Nitrate-Nitrite)	188	0.16	MAR1983	DEC1998	3.7%	0.5%	1.1%
Phosphorus Total as P (mg/L)	267	0.67	MAY1976	DEC1998	4.9%	1.5%	0.7%
Phosphorus, Dissolved Orthophosphate as P (mg/L)	96	0.60	JAN1991	DEC1998	4.2%	0.0%	0.0%
Salinity	139	0.44	MAY1976	DEC1998	18.7%	0.7%	2.2%
Specific Conductance (µmhos/cm)	267	379.1	MAY1976	DEC1998	4.1%	1.5%	1.5%
Temperature (C°)	267	21.77	MAY1976	DEC1998	0.0%	1.5%	0.7%
Total Ammonia as N (mg/L)	160	0.15	JUL1976	AUG1998	11.9%	1.3%	1.9%
Total Organic Carbon as C (mg/L)	85	15.59	SEP1976	NOV1985	0.0%	0.0%	1.2%
Total Suspended Solids (TSS), mg/L	215	8.89	MAY1976	NOV1998	11.2%	1.4%	1.9%
Turbidity (NTU)	267	3.41	MAY1976	DEC1998	3.7%	0.7%	0.7%
Un-ionized Ammonia (mg/L)	260	0.00	MAY1976	DEC1998	13.5%	1.5%	2.3%
Uncorr. Chlorophyll-a (µg/L)	174	5.81	MAY1976	OCT1998	10.3%	0.6%	2.3%
pH (SU)	264	6.96	MAY1976	DEC1998	0.8%	0.8%	0.8%

Little Manatee River
21FLIMCALM674
Little Manatee R. at SR674

Parameter	Number of Samples	Average Value	First Sample	Most Recent Sample	Percent Robust Regression Outlier	Percent Outside the 1st and 99th Percentile	Percent Greater/Less than 3 Lognormal Standard Deviations
Dissolved Oxygen (Percent Saturation)	74	73.96	FEB1995	DEC2001	0.0%	0.0%	0.0%
Dissolved Oxygen (mg/L)	75	6.06	JAN1995	DEC2001	0.0%	0.0%	0.0%
Nitrogen Kjeldahl as N (mg/L)	74	0.90	MAR1995	DEC2001	0.0%	0.0%	0.0%
Nitrogen Total as N (mg/L)	73	1.05	MAR1995	DEC2001	0.0%	0.0%	0.0%
Nutrients (Nitrate-Nitrite)	73	0.15	MAR1995	DEC2001	4.1%	0.0%	0.0%
Phosphorus Total as P (mg/L)	74	0.63	MAR1995	DEC2001	2.7%	0.0%	0.0%
Salinity	77	0.20	JAN1995	DEC2001	0.0%	0.0%	1.3%
Specific Conductance (µmhos/cm)	77	396.8	JAN1995	DEC2001	0.0%	0.0%	1.3%
Temperature (C°)	77	22.84	JAN1995	DEC2001	0.0%	0.0%	1.3%
Total Suspended Solids (TSS), mg/L	74	2.05	MAR1995	DEC2001	4.1%	0.0%	2.7%
Turbidity (NTU)	76	3.60	JAN1995	DEC2001	9.2%	0.0%	2.6%
pH (SU)	77	6.82	JAN1995	DEC2001	0.0%	0.0%	1.3%

Little Manatee River
21FLMANAD1
D1

Parameter	Number of Samples	Average Value	First Sample	Most Recent Sample	Percent Robust Regression Outlier	Percent Outside the 1st and 99th Percentile	Percent Greater/Less than 3 Lognormal Standard Deviations
BOD 5-Day (mg/L)	89	1.92	JAN2000	MAY2008	6.7%	0.0%	2.2%
Color (PCU)	199	106.4	JAN2000	DEC2017	6.5%	0.5%	1.5%
Corr. Chlorophyll-a (µg/L)	190	1.83	JAN2000	DEC2017	14.7%	1.1%	2.1%
Dissolved Oxygen (Percent Saturation)	197	92.02	JAN2000	DEC2017	1.5%	1.0%	0.5%
Dissolved Oxygen (mg/L)	200	7.82	JAN2000	DEC2017	0.5%	1.0%	0.0%
Fluoride (mg/L)	136	0.31	JAN2000	NOV2011	5.1%	0.7%	2.2%
Nitrate (mg/L)	153	0.66	JAN2000	AUG2013	2.0%	1.3%	1.3%
Nitrogen Kjeldahl as N (mg/L)	173	0.70	JAN2000	DEC2017	1.7%	0.6%	1.7%
Nitrogen Total as N (mg/L)	188	1.40	JAN2000	DEC2017	3.7%	1.1%	1.1%
Nutrients (Nitrate-Nitrite)	188	0.66	FEB2000	DEC2017	3.2%	1.1%	1.6%
Phosphorus Total as P (mg/L)	189	0.29	JAN2000	NOV2017	3.7%	0.5%	0.0%
Phosphorus in Total Orthophosphate as P (mg/L)	173	0.23	JAN2000	DEC2015	2.9%	0.6%	6.4%
Salinity	197	0.22	JAN2000	DEC2017	7.1%	0.5%	2.0%
Specific Conductance (µmhos/cm)	198	345.2	JAN2000	DEC2017	5.1%	1.0%	1.5%
Temperature (C°)	197	21.73	JAN2000	DEC2017	0.0%	0.5%	2.0%
Total Ammonia as N (mg/L)	184	0.05	JAN2000	DEC2017	2.7%	1.1%	0.5%
Total Suspended Solids (TSS), mg/L	191	5.98	JAN2000	DEC2017	8.4%	1.0%	1.0%
Turbidity (NTU)	199	4.70	JAN2000	DEC2017	9.0%	1.0%	2.0%
Un-ionized Ammonia (mg/L)	179	0.00	JAN2000	DEC2017	11.2%	0.6%	0.6%
pH (SU)	200	7.05	JAN2000	DEC2017	1.0%	2.0%	0.5%

Little Manatee River
21FLMANAD3
D3

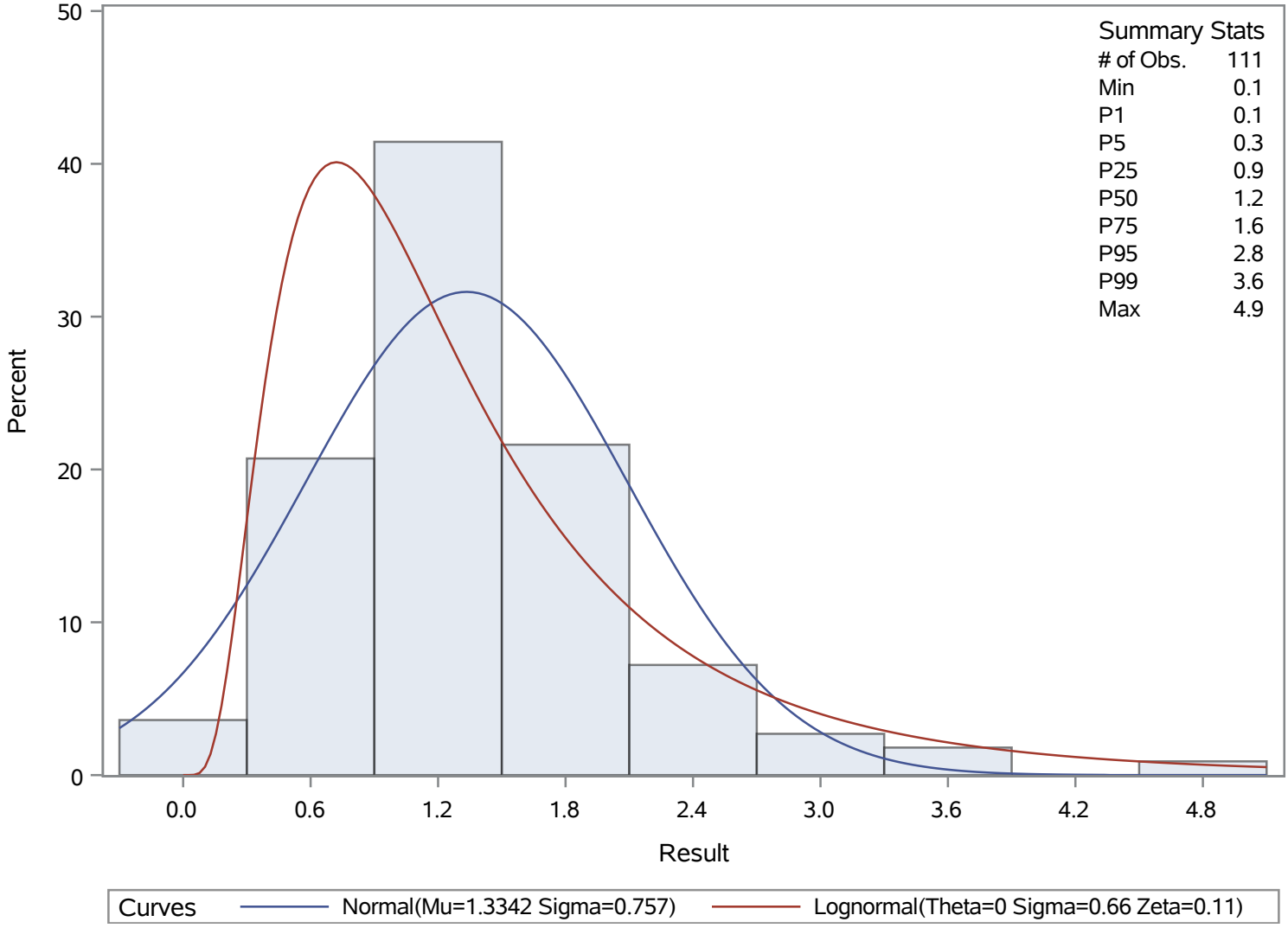
Parameter	Number of Samples	Average Value	First Sample	Most Recent Sample	Percent Robust Regression Outlier	Percent Outside the 1st and 99th Percentile	Percent Greater/Less than 3 Lognormal Standard Deviations
BOD 5-Day (mg/L)	92	1.86	JAN2000	MAY2008	4.3%	0.0%	3.3%
Color (PCU)	206	120.8	JAN2000	DEC2017	4.4%	1.5%	0.5%
Corr. Chlorophyll-a (µg/L)	198	1.32	JAN2000	DEC2017	9.1%	1.0%	3.0%
Dissolved Oxygen (Percent Saturation)	201	85.10	JAN2000	DEC2017	1.5%	2.0%	1.0%
Dissolved Oxygen (mg/L)	204	7.25	JAN2000	DEC2017	0.0%	2.0%	0.5%
Fluoride (mg/L)	137	0.28	JAN2000	NOV2011	3.6%	1.5%	1.5%
Nitrate (mg/L)	155	0.30	JAN2000	AUG2013	2.6%	0.6%	5.2%
Nitrogen Kjeldahl as N (mg/L)	183	0.76	FEB2000	DEC2017	1.1%	1.1%	1.6%
Nitrogen Total as N (mg/L)	195	1.08	FEB2000	DEC2017	1.5%	1.0%	0.5%
Nutrients (Nitrate-Nitrite)	196	0.30	JAN2000	DEC2017	3.1%	0.5%	2.6%
Phosphorus Total as P (mg/L)	193	0.39	JAN2000	NOV2017	4.1%	1.0%	1.0%
Phosphorus in Total Orthophosphate as P (mg/L)	179	0.36	JAN2000	DEC2015	4.5%	1.1%	2.2%
Salinity	202	0.24	JAN2000	DEC2017	8.9%	1.0%	1.5%
Specific Conductance (µmhos/cm)	204	313.2	JAN2000	DEC2017	4.4%	2.0%	1.5%
Temperature (C°)	203	21.86	JAN2000	DEC2017	0.0%	2.0%	1.5%
Total Ammonia as N (mg/L)	190	0.04	JAN2000	DEC2017	4.2%	0.5%	0.5%
Total Suspended Solids (TSS), mg/L	200	2.82	JAN2000	DEC2017	8.5%	1.0%	1.0%
Turbidity (NTU)	206	2.59	JAN2000	DEC2017	8.3%	1.9%	1.5%
Un-ionized Ammonia (mg/L)	185	0.00	JAN2000	DEC2017	9.2%	0.5%	1.1%
pH (SU)	206	7.00	JAN2000	DEC2017	0.0%	1.9%	0.5%

2b: IWR Univariate Histograms

Little Manatee River
L MANATEE R BR US 301
BOD 5-Day (mg/L) mg/L
Site ID = 21FLA 24010100

The UNIVARIATE Procedure

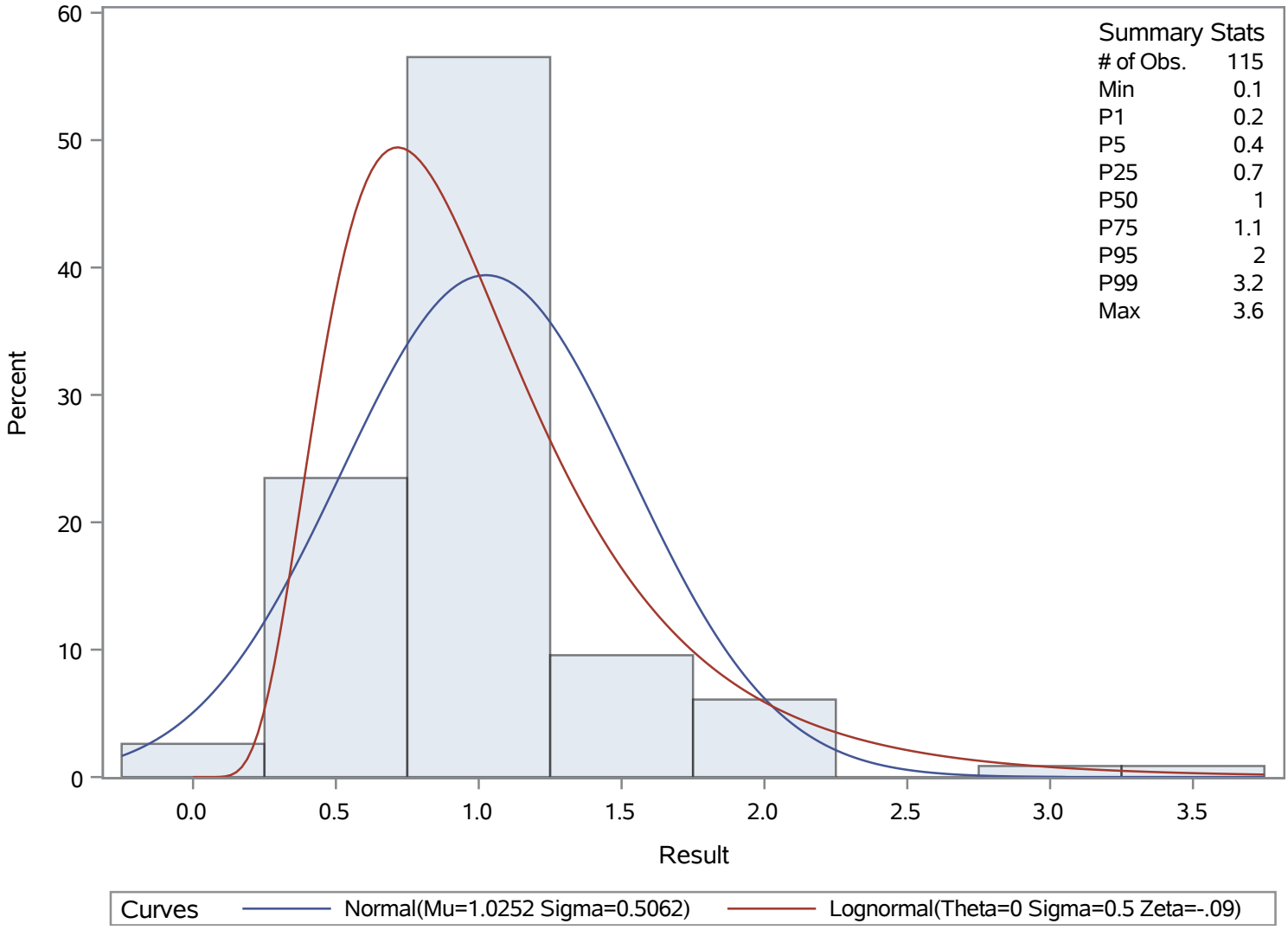
Distribution of result



Little Manatee River
Little Manatee River at US 301 bridge
BOD 5-Day (mg/L) mg/L
Site ID = 21FLHILL113

The UNIVARIATE Procedure

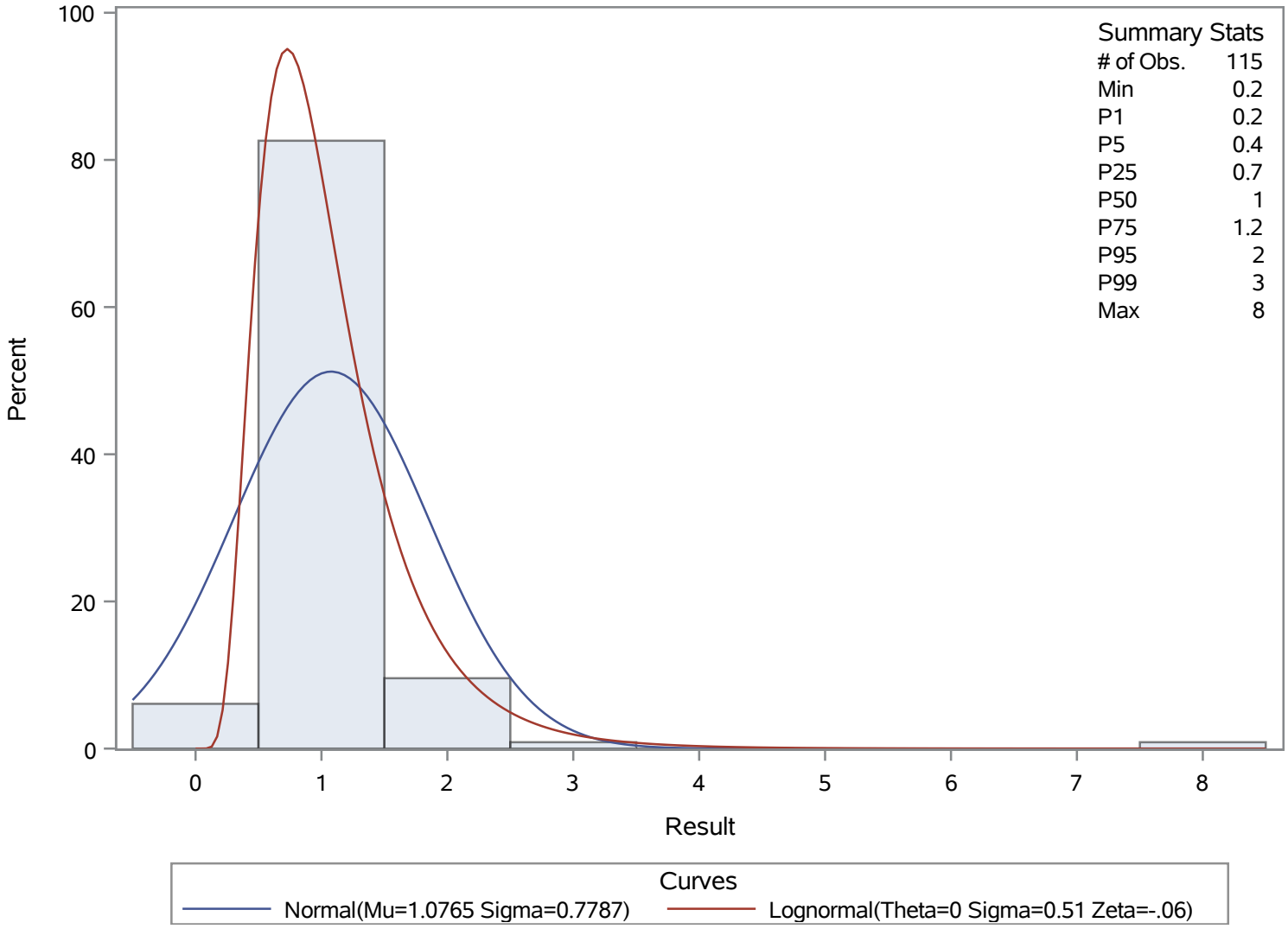
Distribution of result



Little Manatee River
Little Manatee River at SR 674
BOD 5-Day (mg/L) mg/L
Site ID = 21FLHILL129

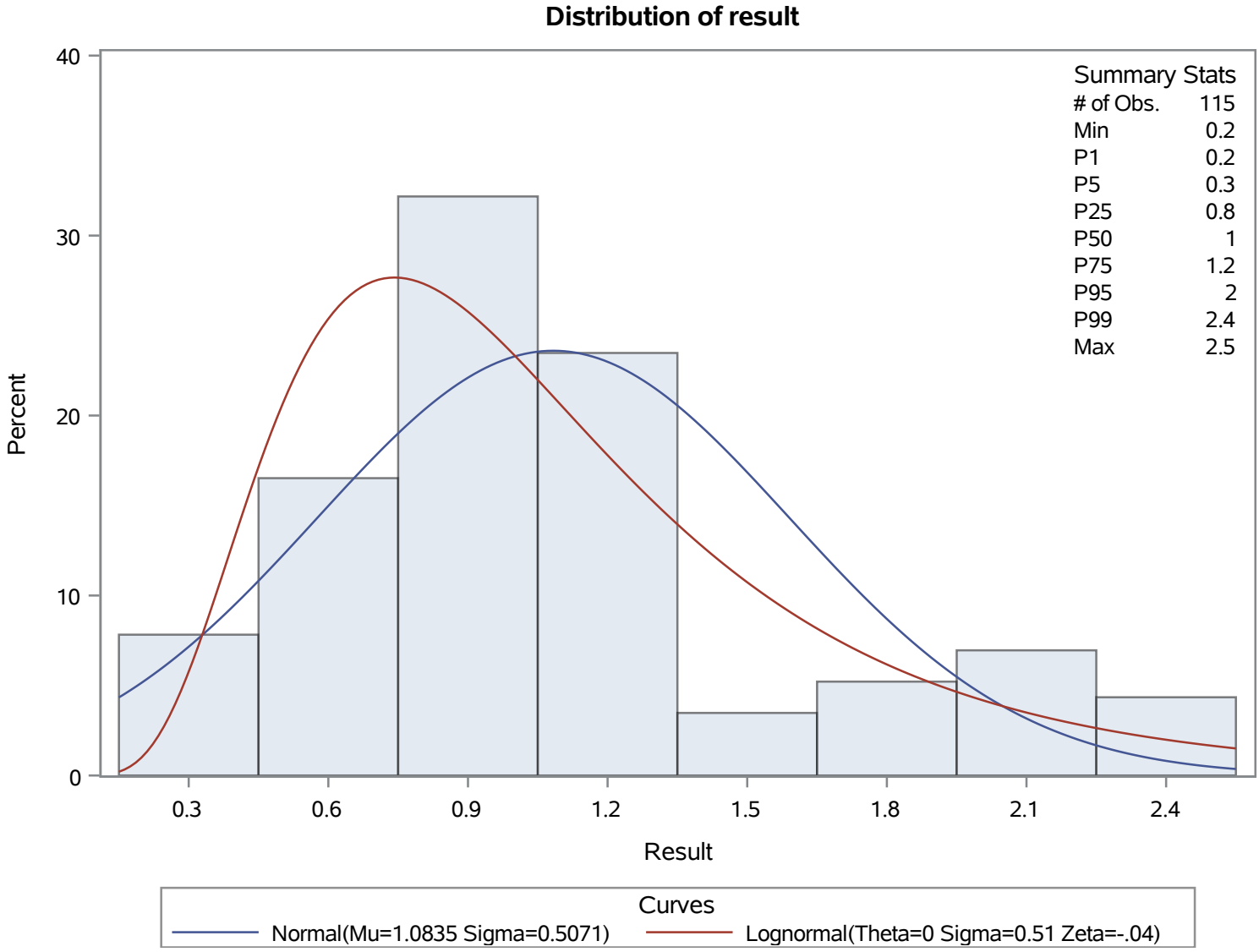
The UNIVARIATE Procedure

Distribution of result



Little Manatee River
Little Manatee River at CR 579
BOD 5-Day (mg/L) mg/L
Site ID = 21FLHILL140

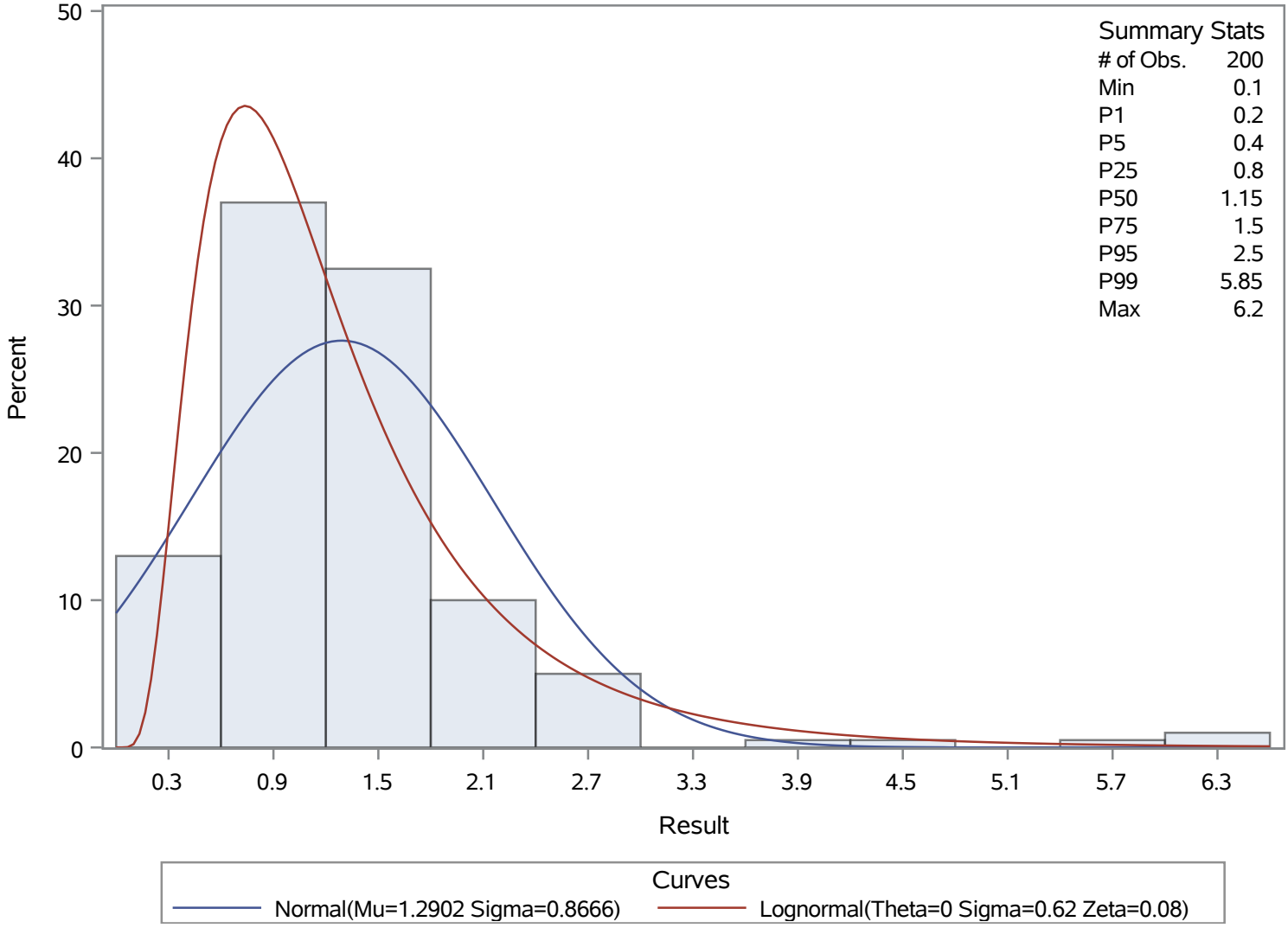
The UNIVARIATE Procedure



Little Manatee River
LITTLE MANATEE R AT CR579
BOD 5-Day (mg/L) mg/L
Site ID = 21FLHILL24010013

The UNIVARIATE Procedure

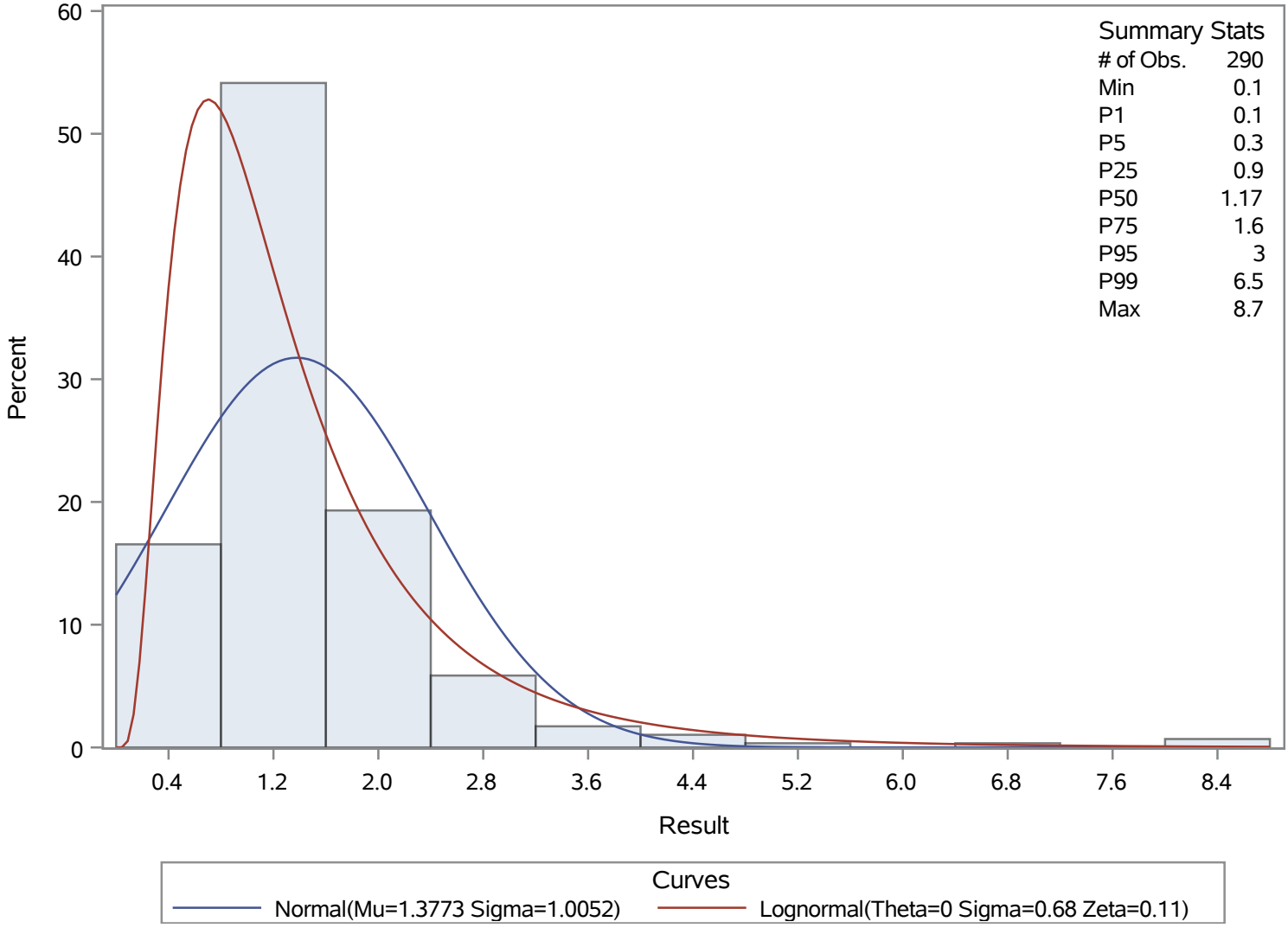
Distribution of result



Little Manatee River
L MANATEE R BR US 301
BOD 5-Day (mg/L) mg/L
Site ID = 21FLHILL24010100

The UNIVARIATE Procedure

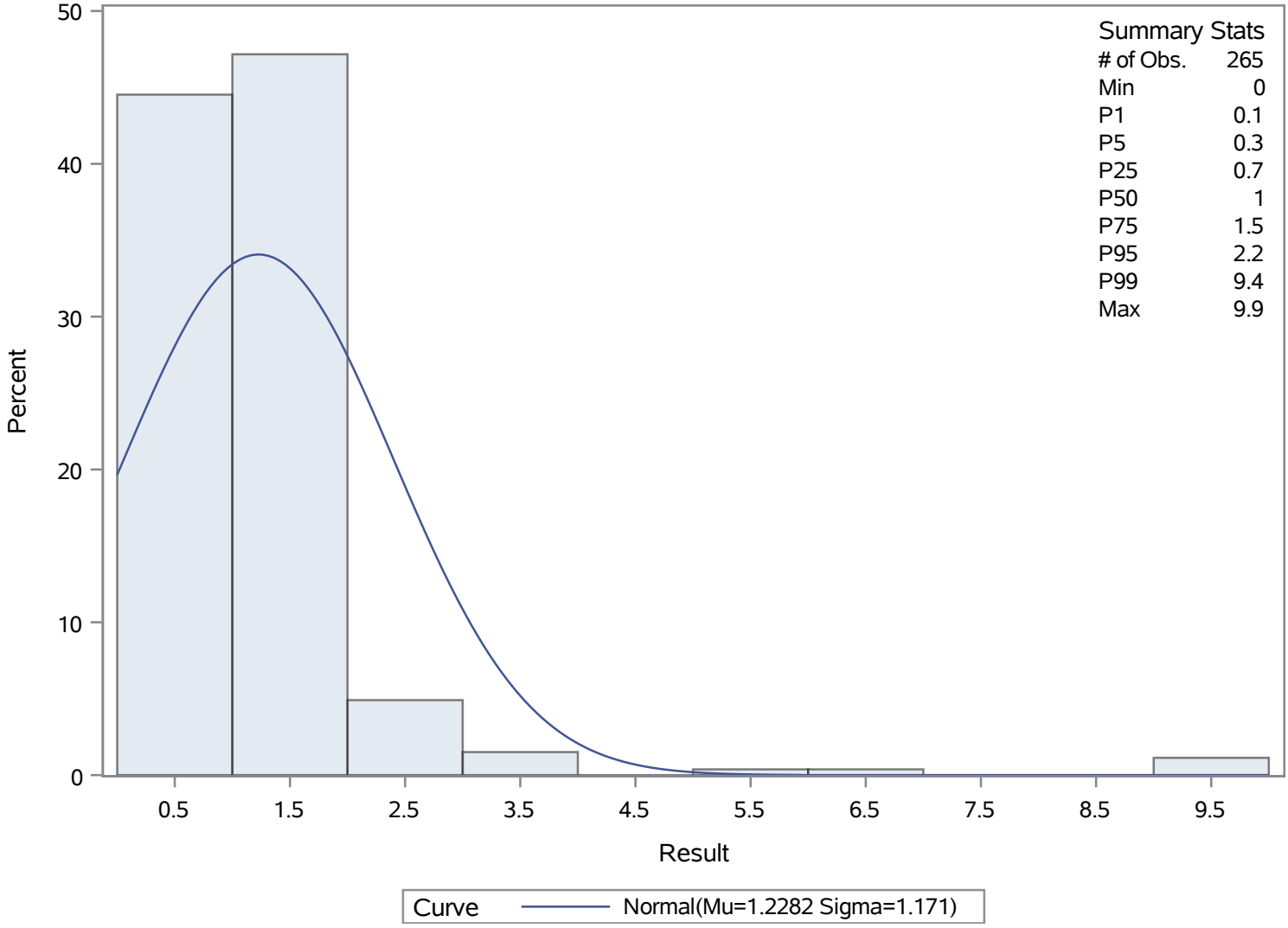
Distribution of result



Little Manatee River
LITTLE MANATEE R AT SR #674
BOD 5-Day (mg/L) mg/L
Site ID = 21FLHILL24010110

The UNIVARIATE Procedure

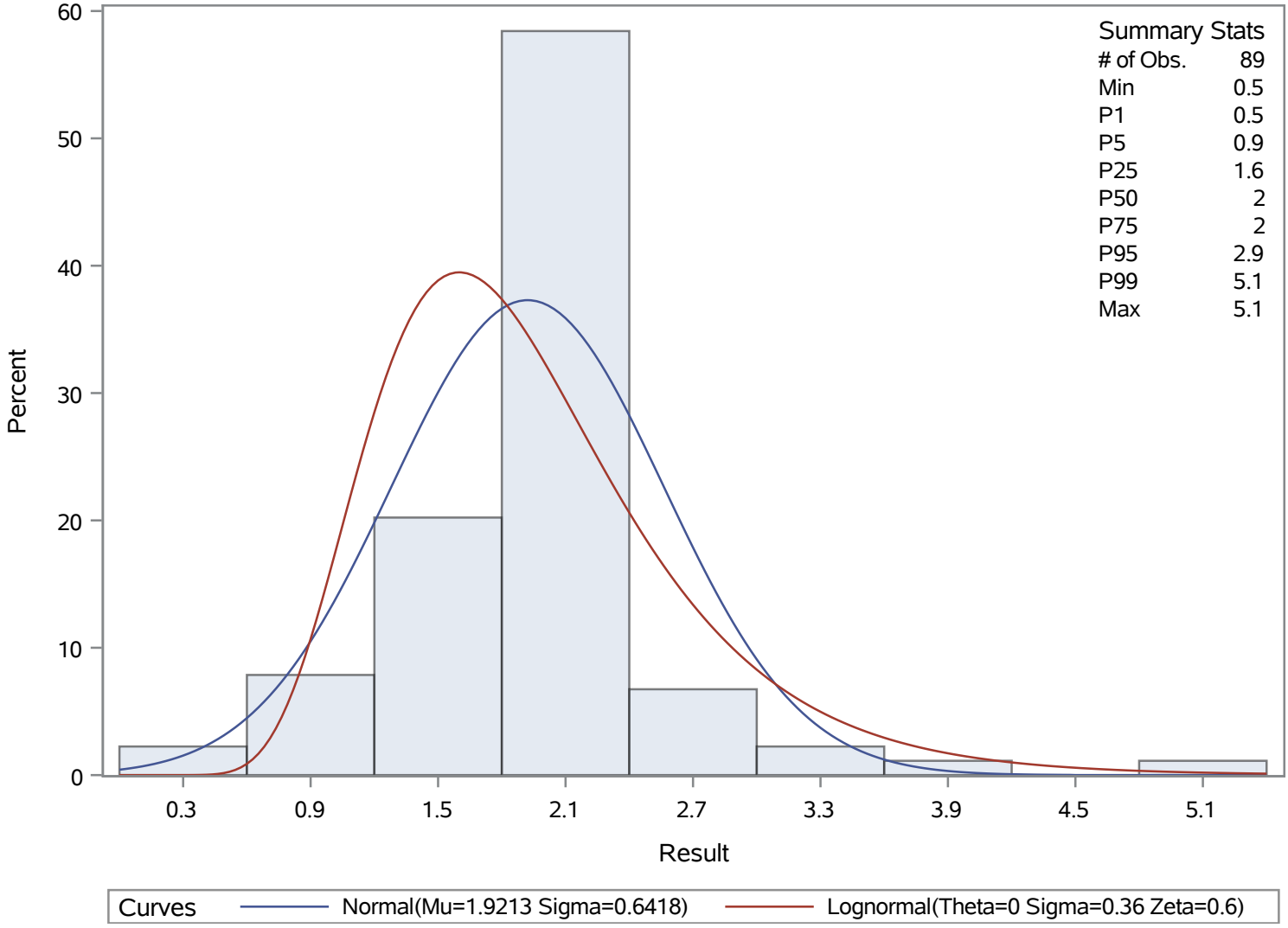
Distribution of result



Little Manatee River
D1
BOD 5-Day (mg/L) mg/L
Site ID = 21FLMANAD1

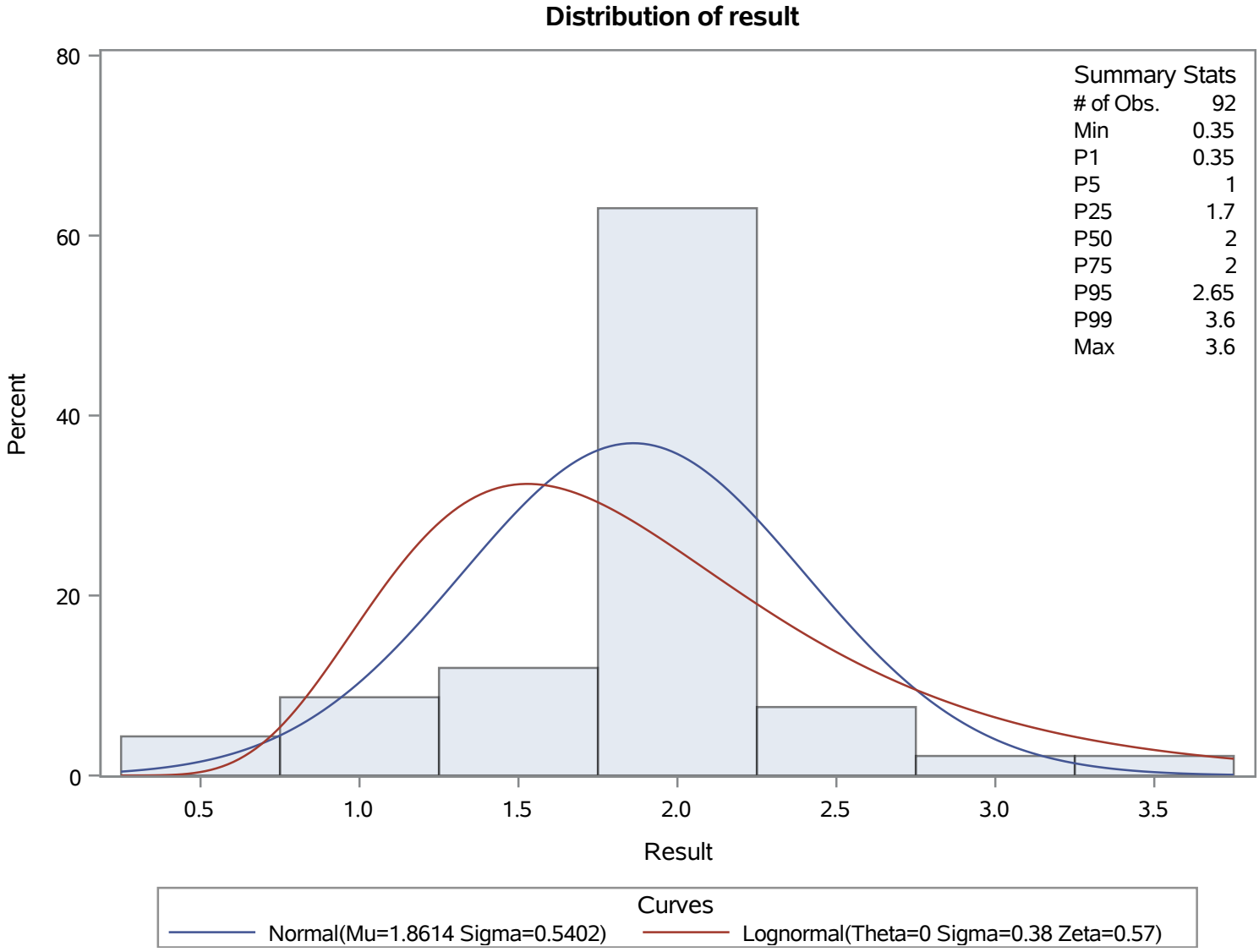
The UNIVARIATE Procedure

Distribution of result



Little Manatee River
D3
BOD 5-Day (mg/L) mg/L
Site ID = 21FLMANAD3

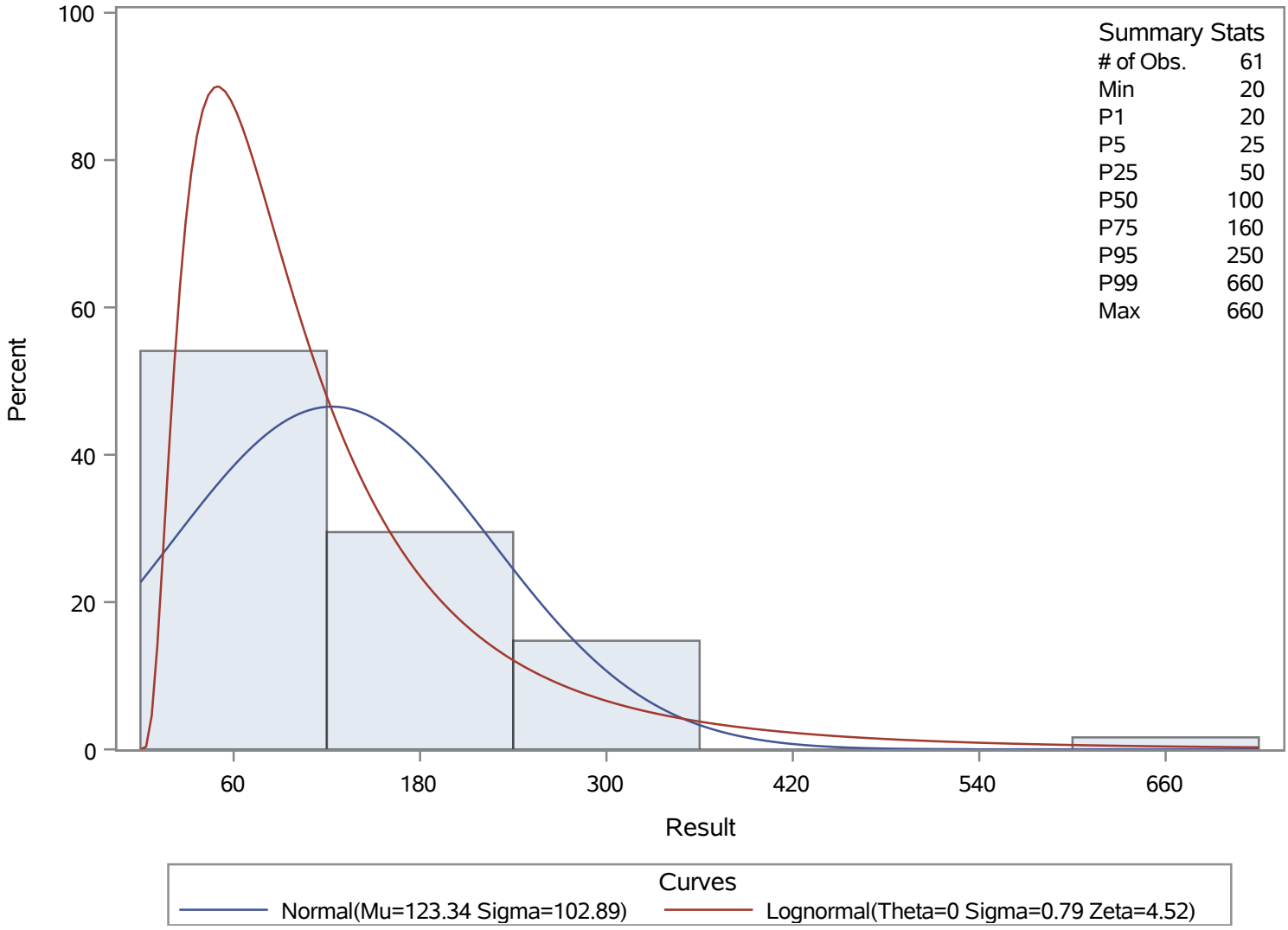
The UNIVARIATE Procedure



Little Manatee River
SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL
Color (PCU) PCU
Site ID = 112WRD 02300200

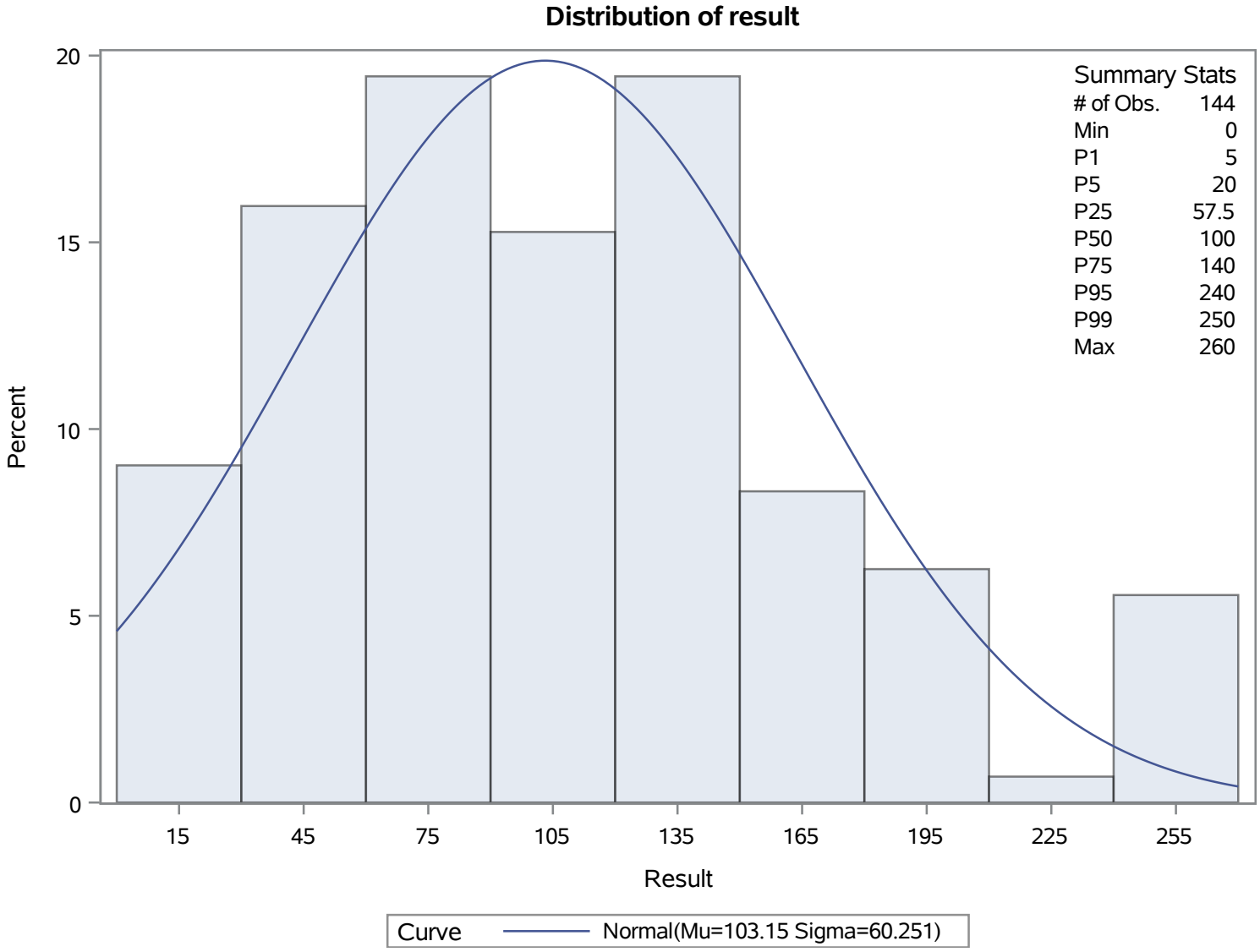
The UNIVARIATE Procedure

Distribution of result



Little Manatee River
LITTLE MANATEE RIVER NEAR WIMAUMA FL
Color (PCU) PCU
Site ID = 112WRD 02300500

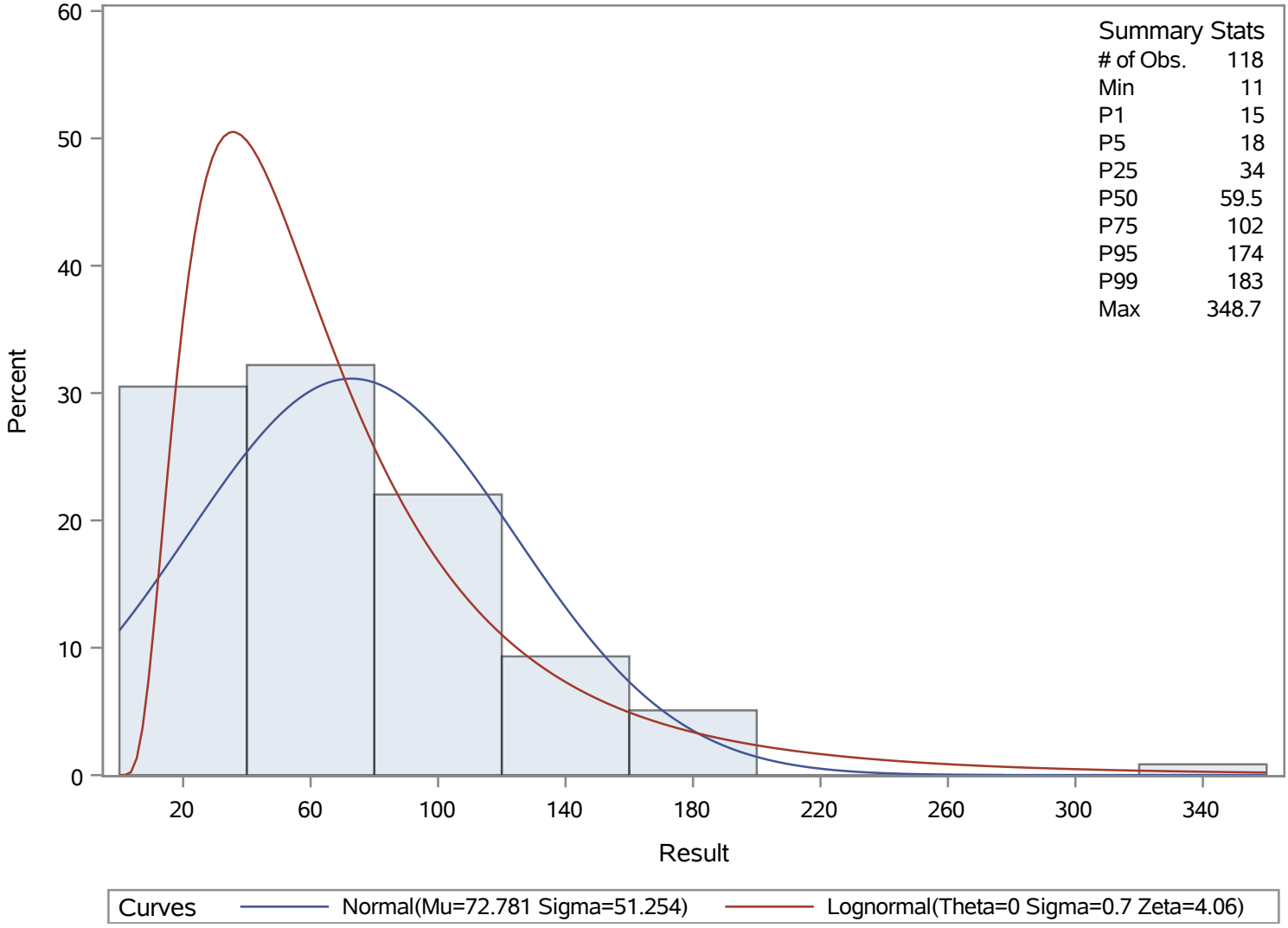
The UNIVARIATE Procedure



Little Manatee River
L MANATEE R BR US 301
Color (PCU) PCU
Site ID = 21FLA 24010100

The UNIVARIATE Procedure

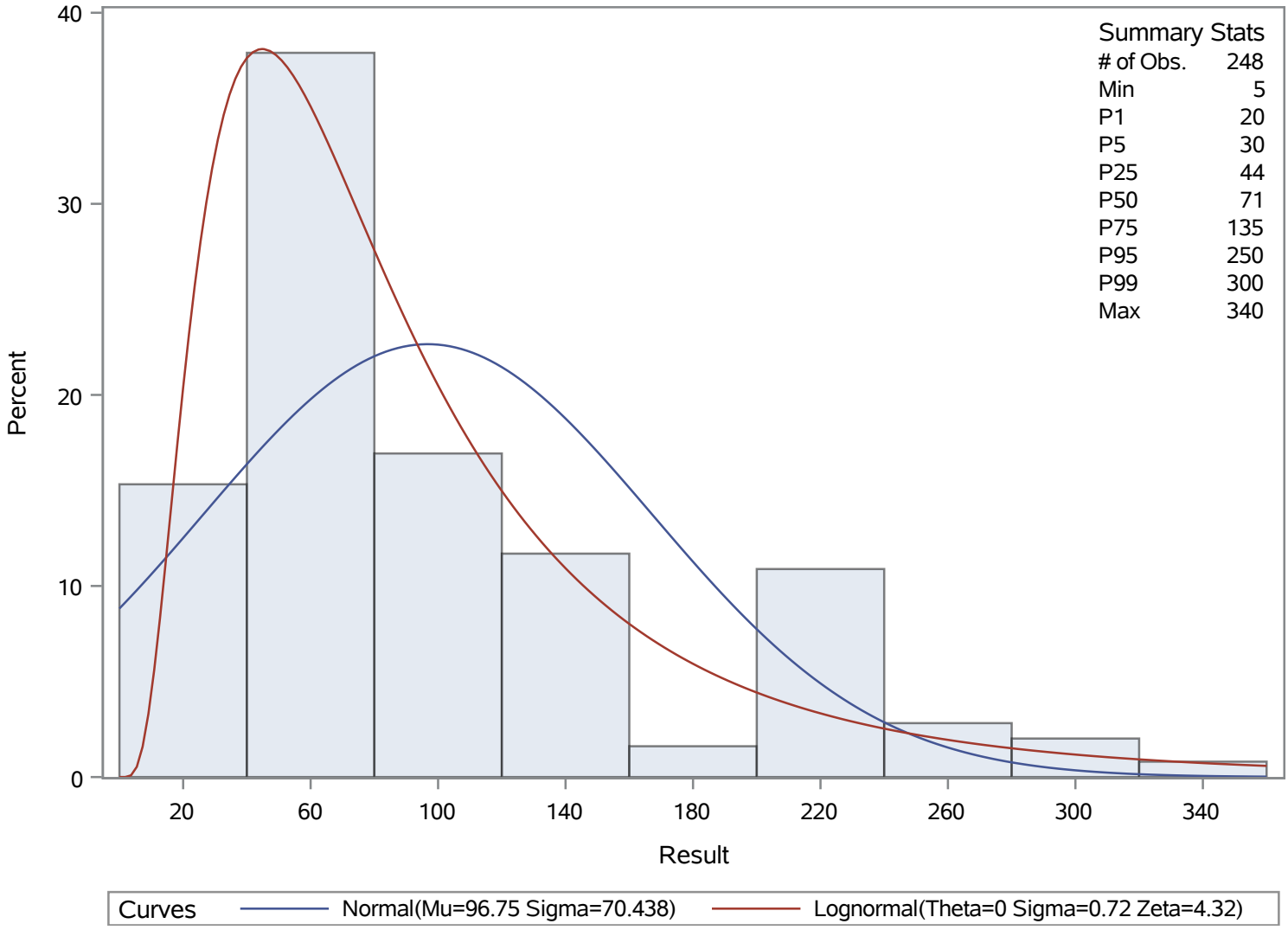
Distribution of result



Little Manatee River
LITTLE MANATEE RIVER AT US HWY 301
Color (PCU) PCU
Site ID = 21FLGW 3555

The UNIVARIATE Procedure

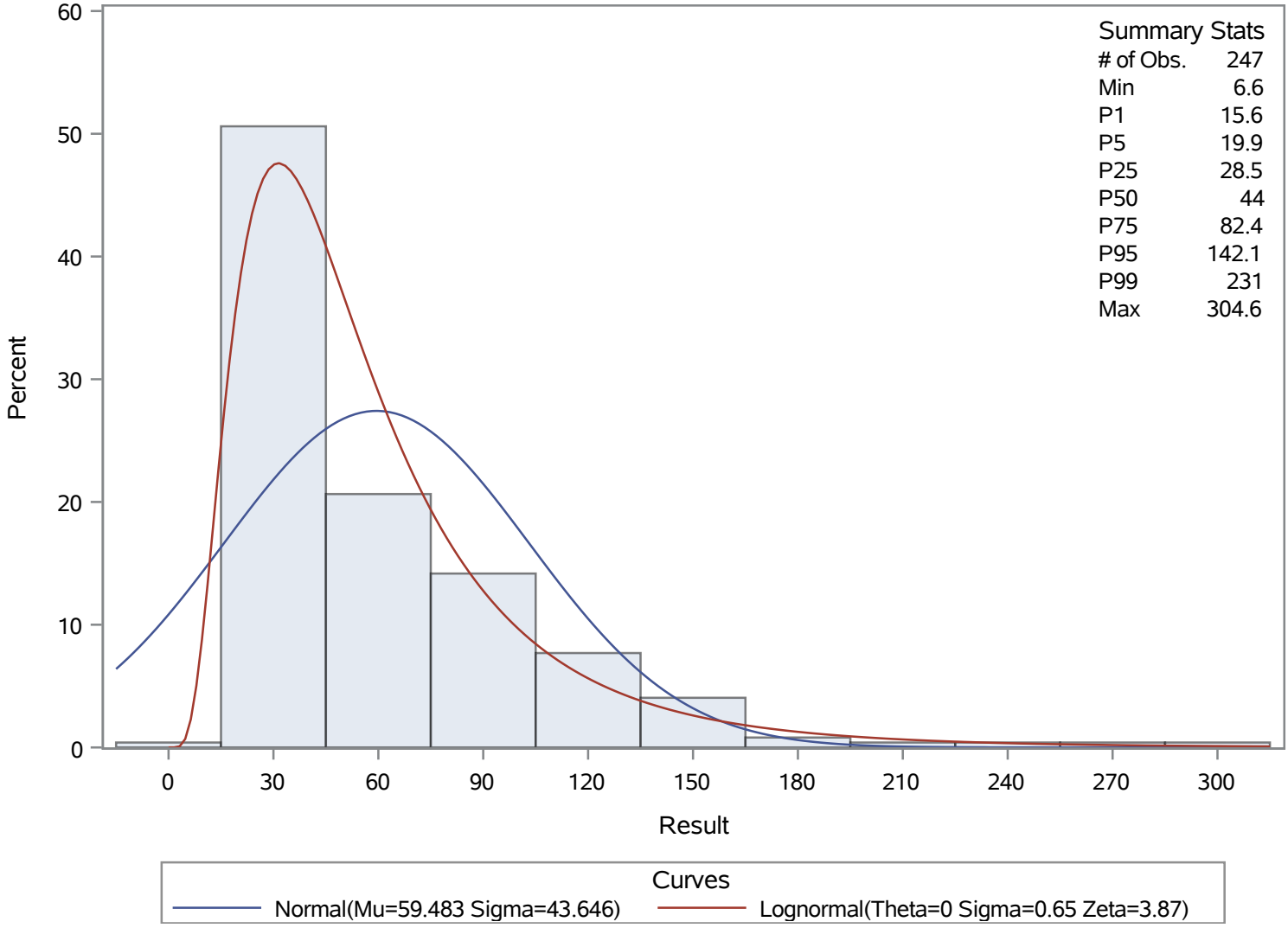
Distribution of result



Little Manatee River
Little Manatee River at US 301 bridge
Color (PCU) PCU
Site ID = 21FLHILL113

The UNIVARIATE Procedure

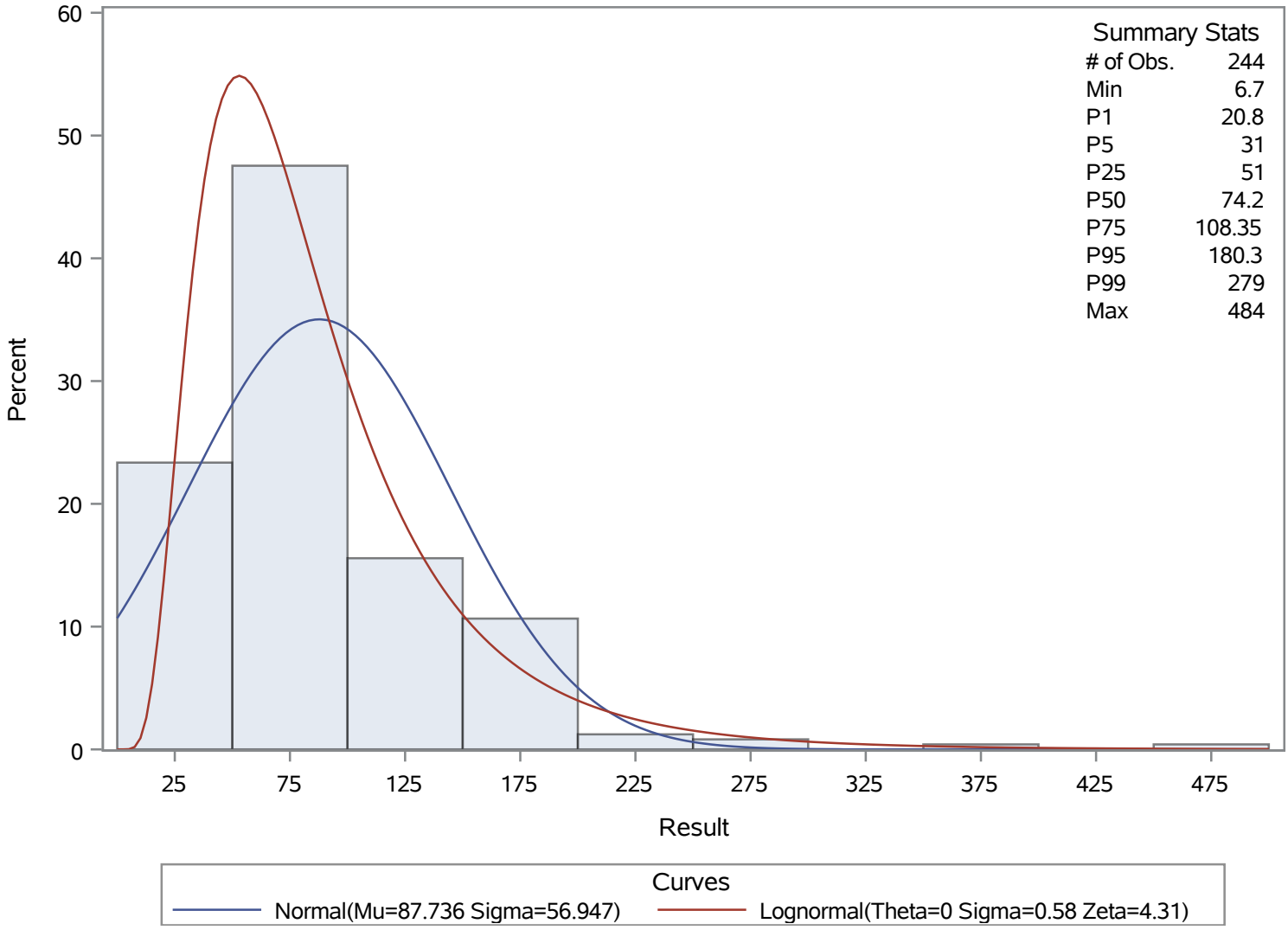
Distribution of result



Little Manatee River
Little Manatee River at SR 674
Color (PCU) PCU
Site ID = 21FLHILL129

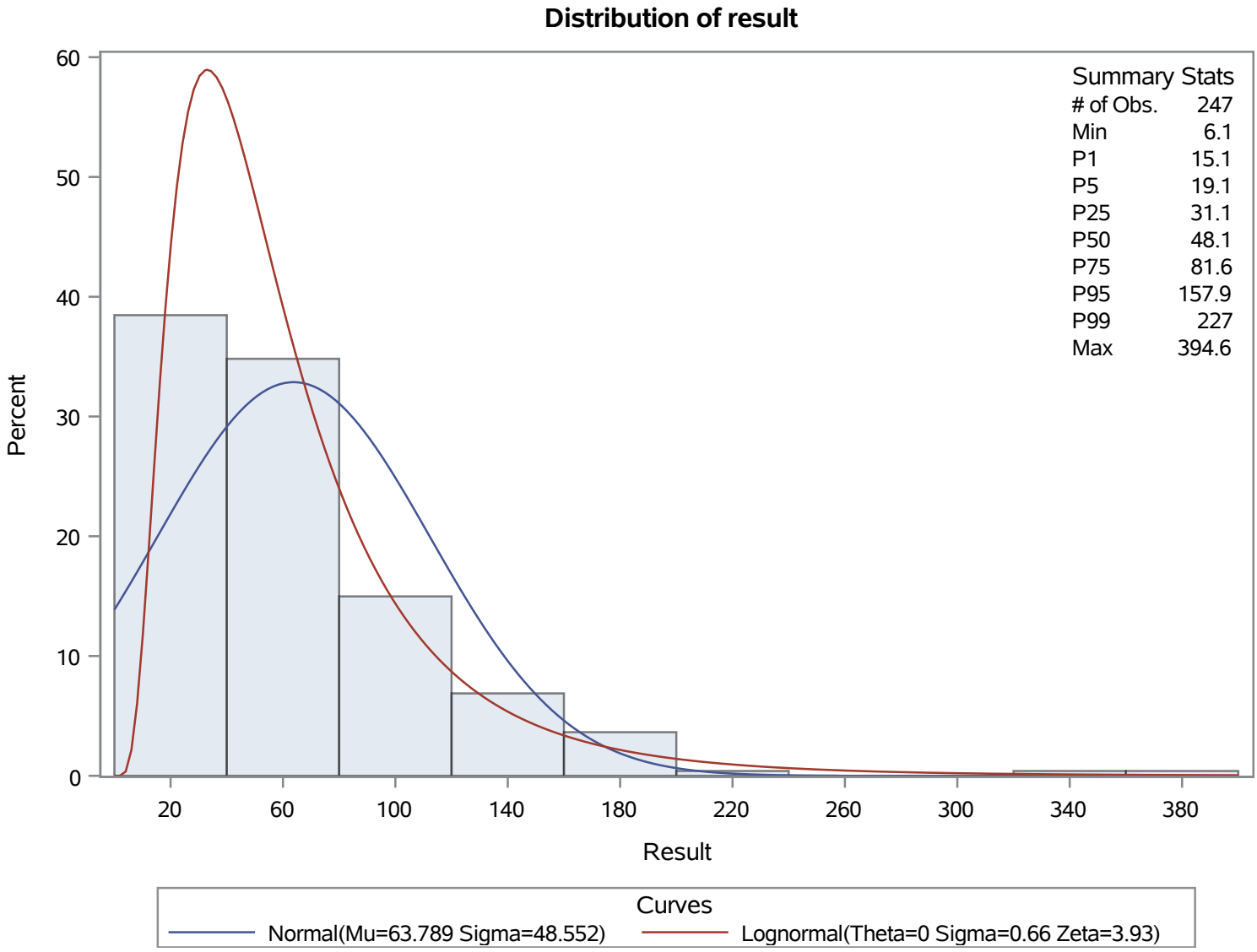
The UNIVARIATE Procedure

Distribution of result



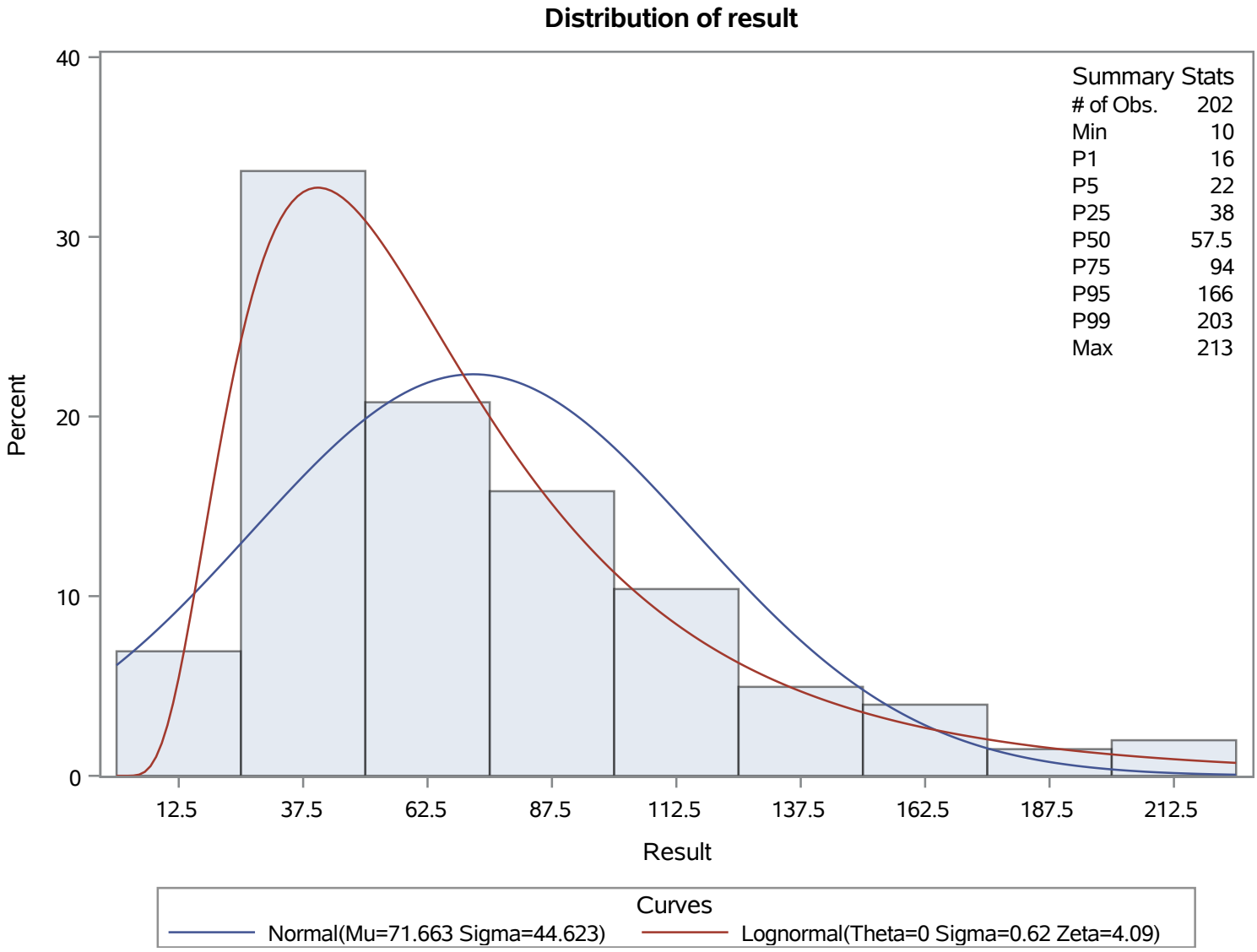
Little Manatee River
Little Manatee River at CR 579
Color (PCU) PCU
Site ID = 21FLHILL140

The UNIVARIATE Procedure



Little Manatee River
LITTLE MANATEE R AT CR579
Color (PCU) PCU
Site ID = 21FLHILL24010013

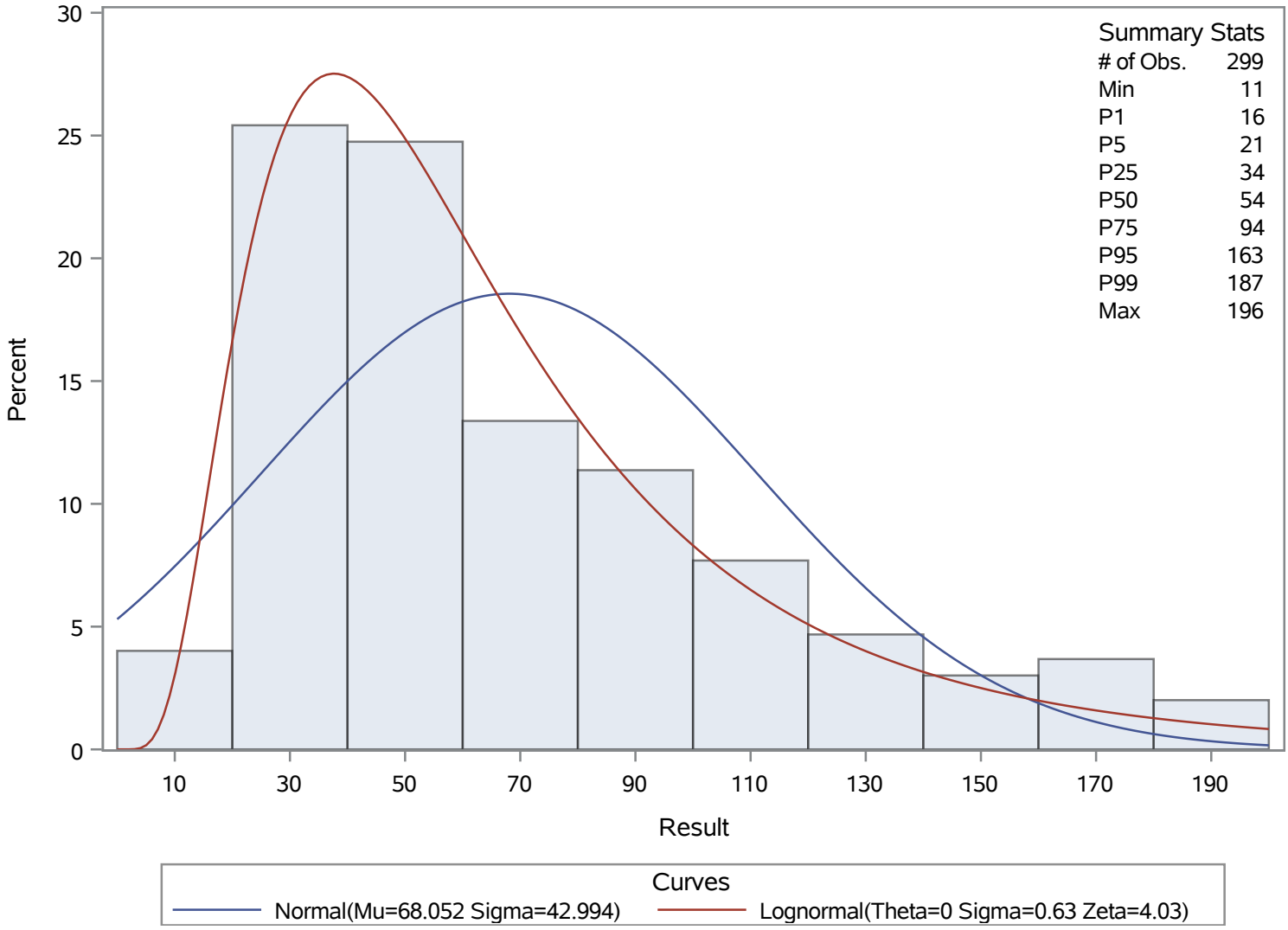
The UNIVARIATE Procedure



Little Manatee River
L MANATEE R BR US 301
Color (PCU) PCU
Site ID = 21FLHILL24010100

The UNIVARIATE Procedure

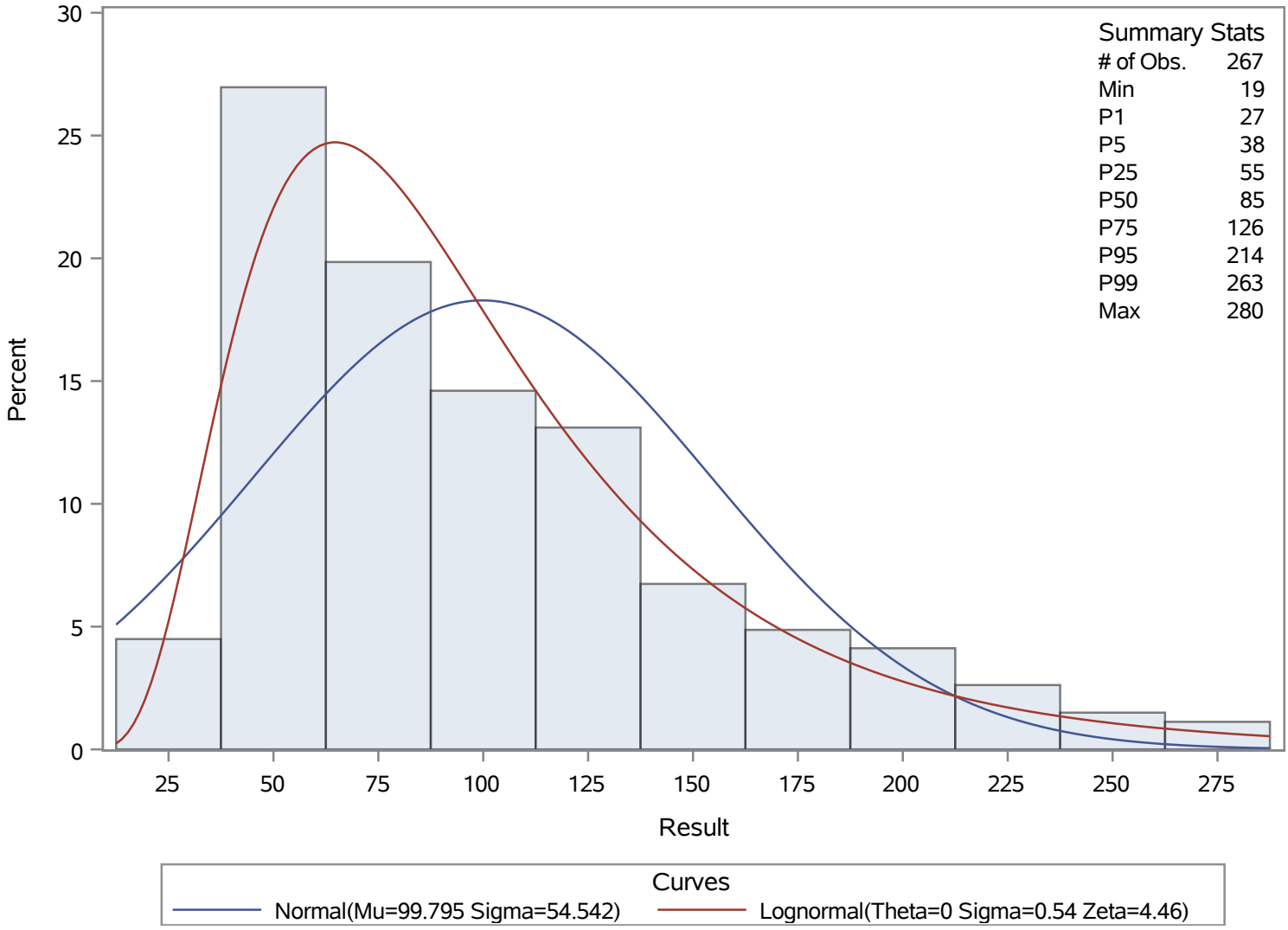
Distribution of result



Little Manatee River
LITTLE MANATEE R AT SR #674
Color (PCU) PCU
Site ID = 21FLHILL24010110

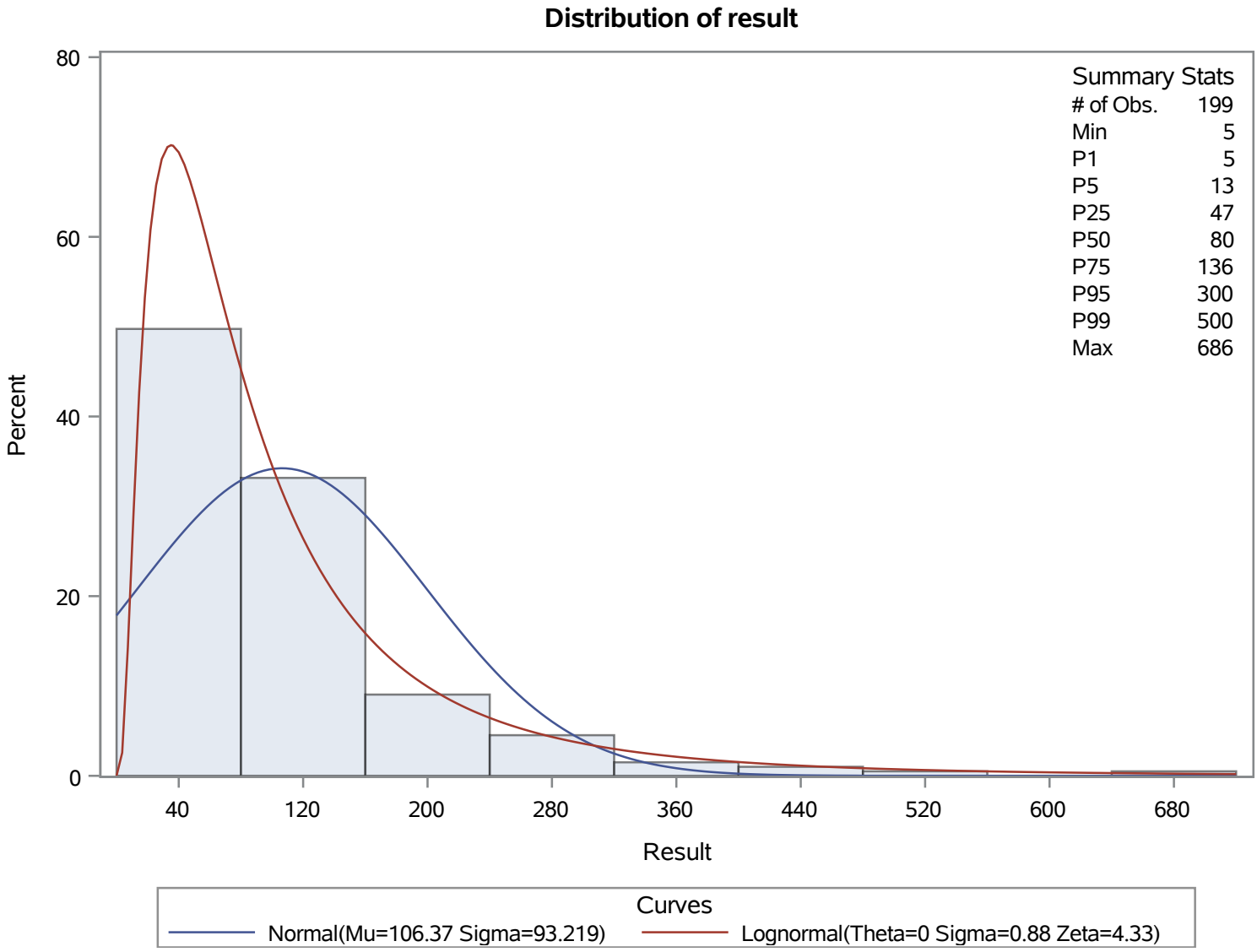
The UNIVARIATE Procedure

Distribution of result



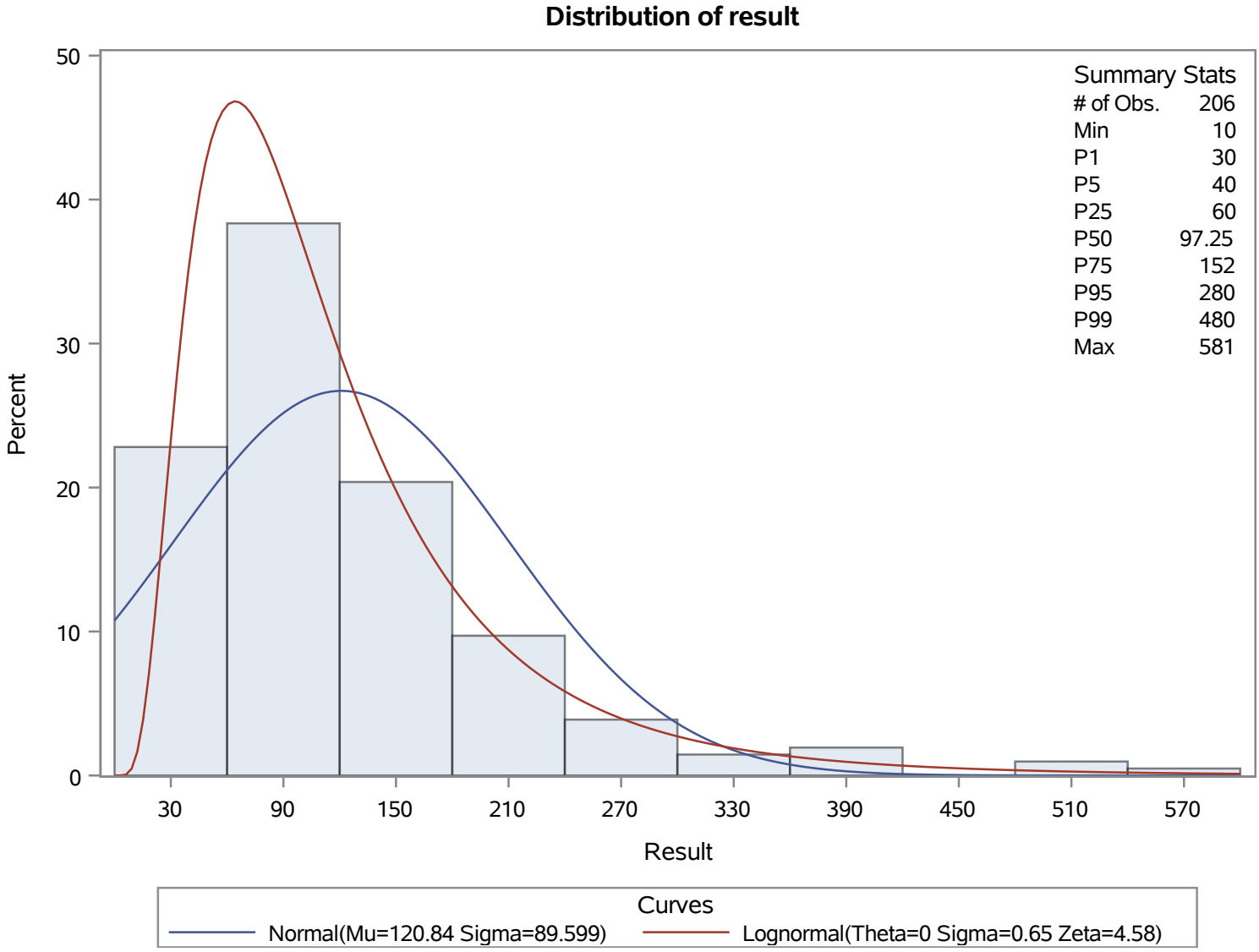
Little Manatee River
D1
Color (PCU) PCU
Site ID = 21FLMANAD1

The UNIVARIATE Procedure



Little Manatee River
D3
Color (PCU) PCU
Site ID = 21FLMANAD3

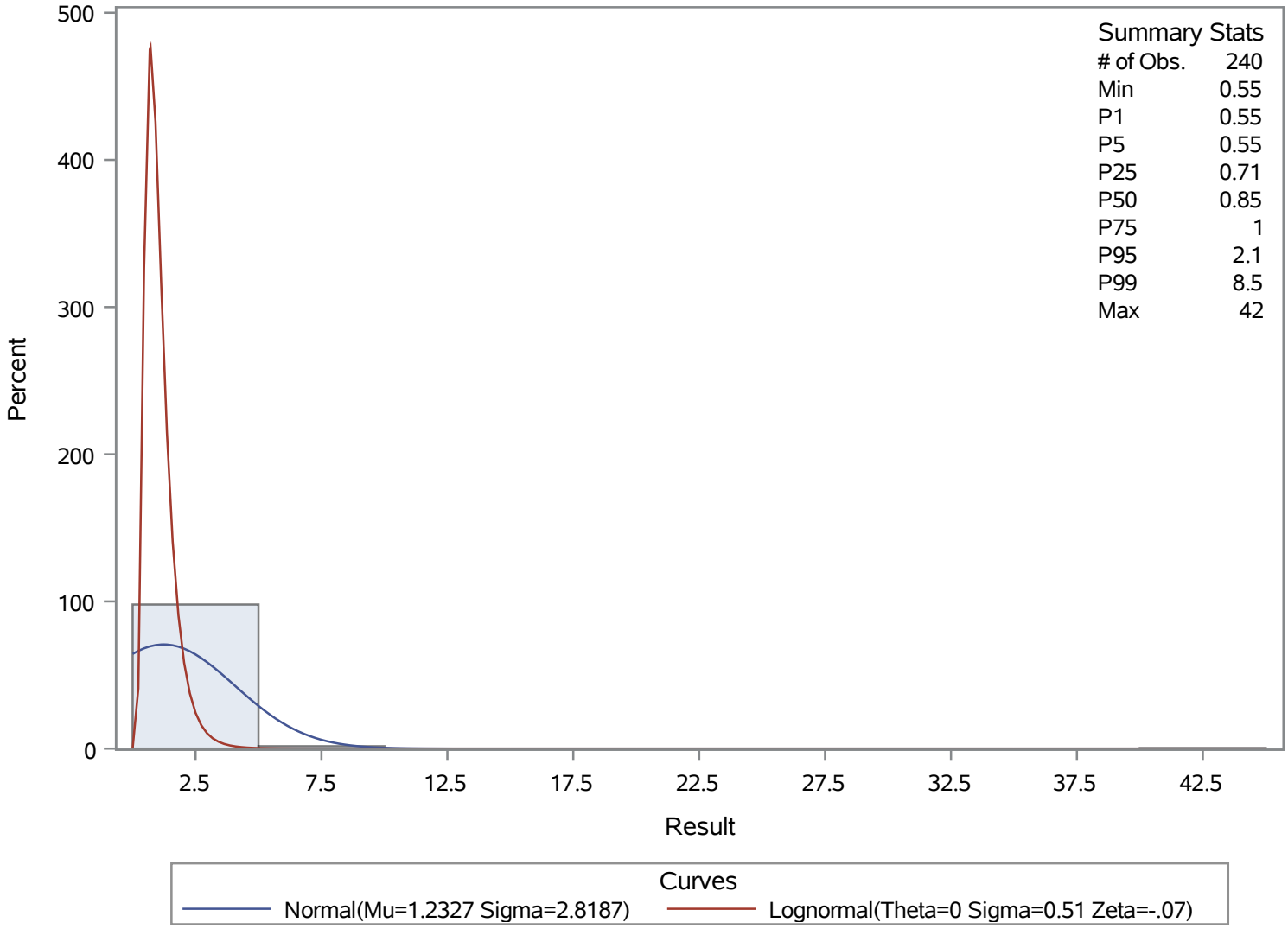
The UNIVARIATE Procedure



Little Manatee River
LITTLE MANATEE RIVER AT US HWY 301
Corr. Chlorophyll-a (µg/L) µg/L
Site ID = 21FLGW 3555

The UNIVARIATE Procedure

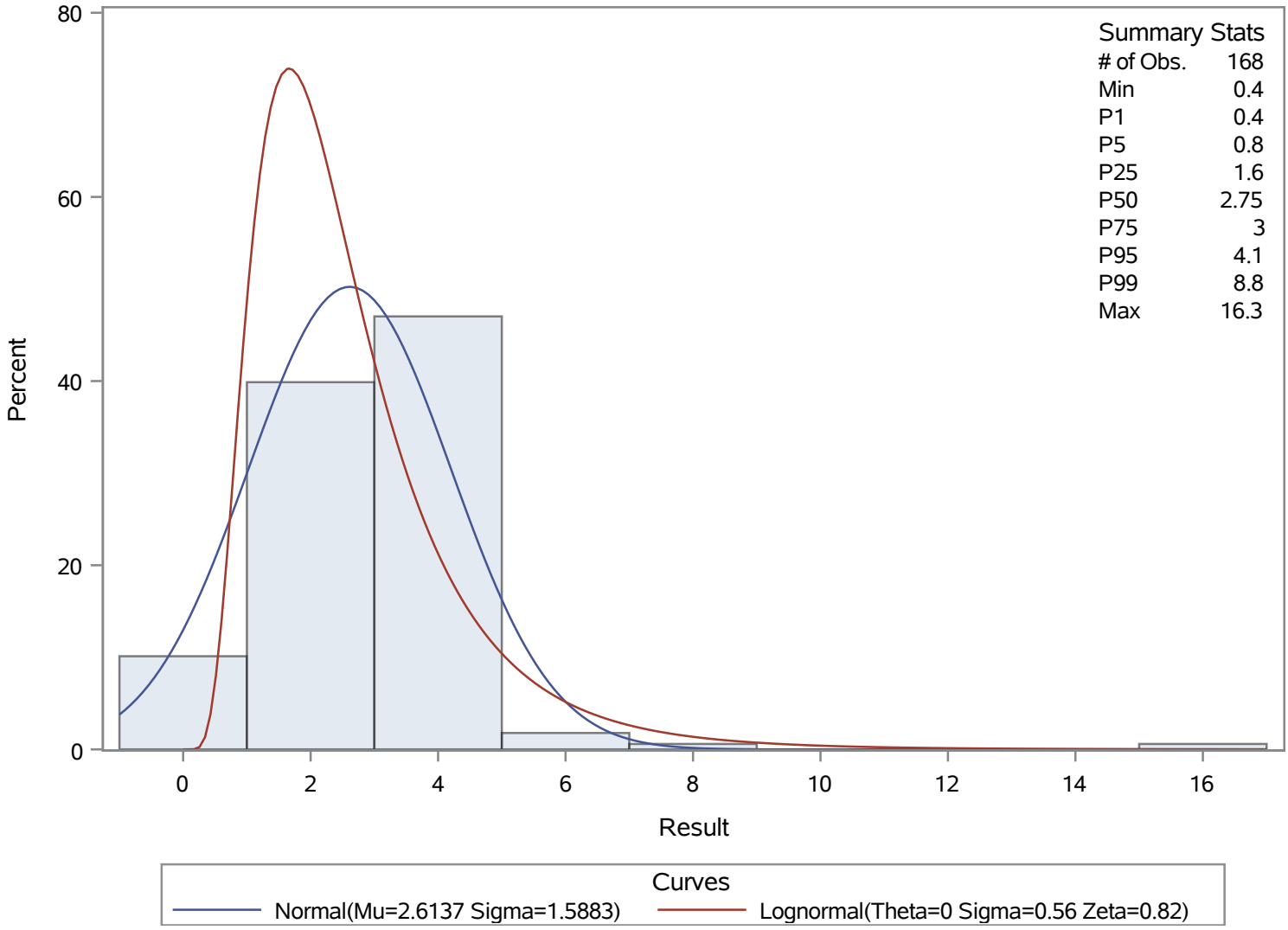
Distribution of result



Little Manatee River
Little Manatee River at US 301 bridge
Corr. Chlorophyll-a (µg/L) µg/L
Site ID = 21FLHILL113

The UNIVARIATE Procedure

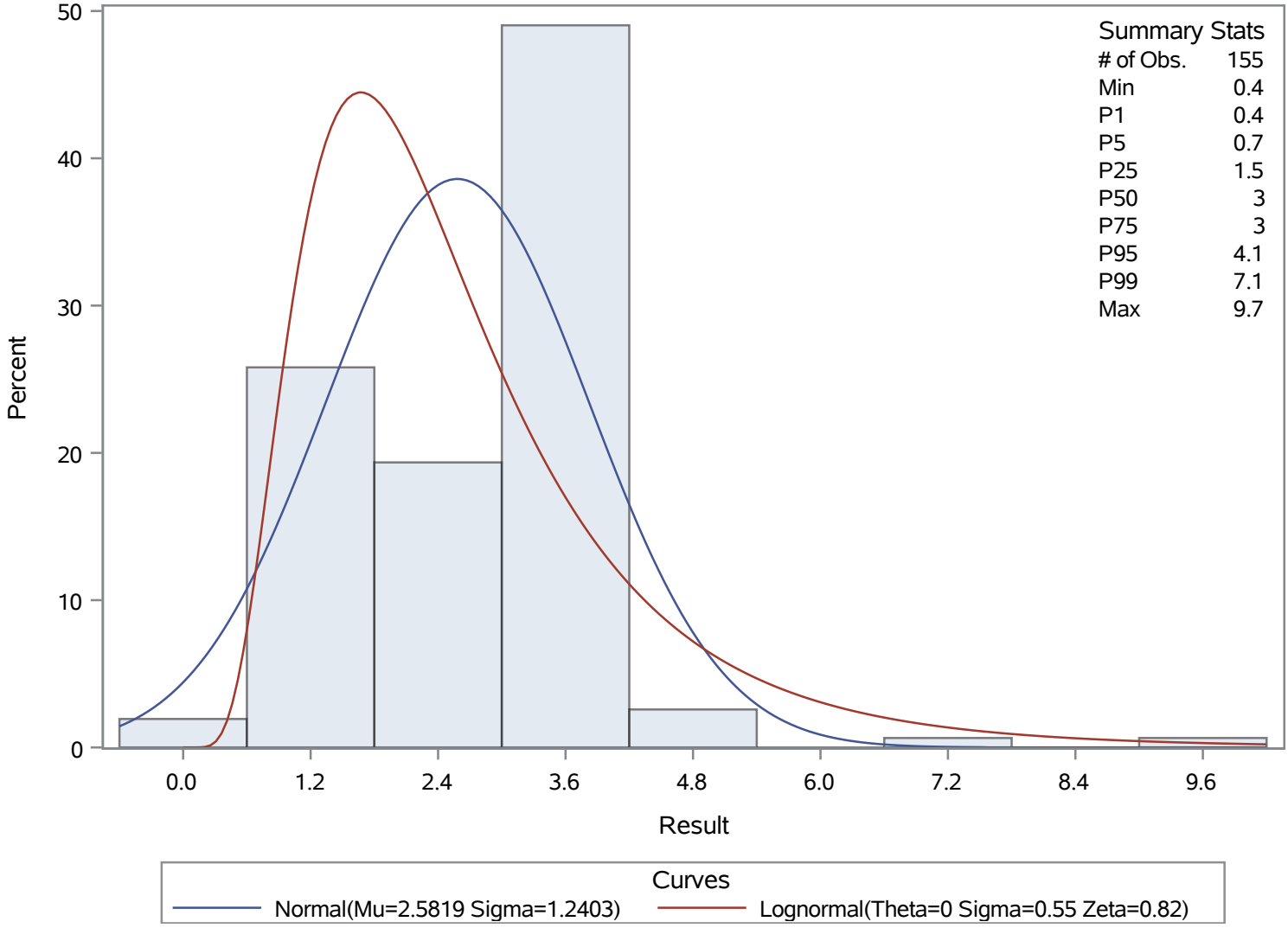
Distribution of result



Little Manatee River
Little Manatee River at SR 674
Corr. Chlorophyll-a (µg/L) µg/L
Site ID = 21FLHILL129

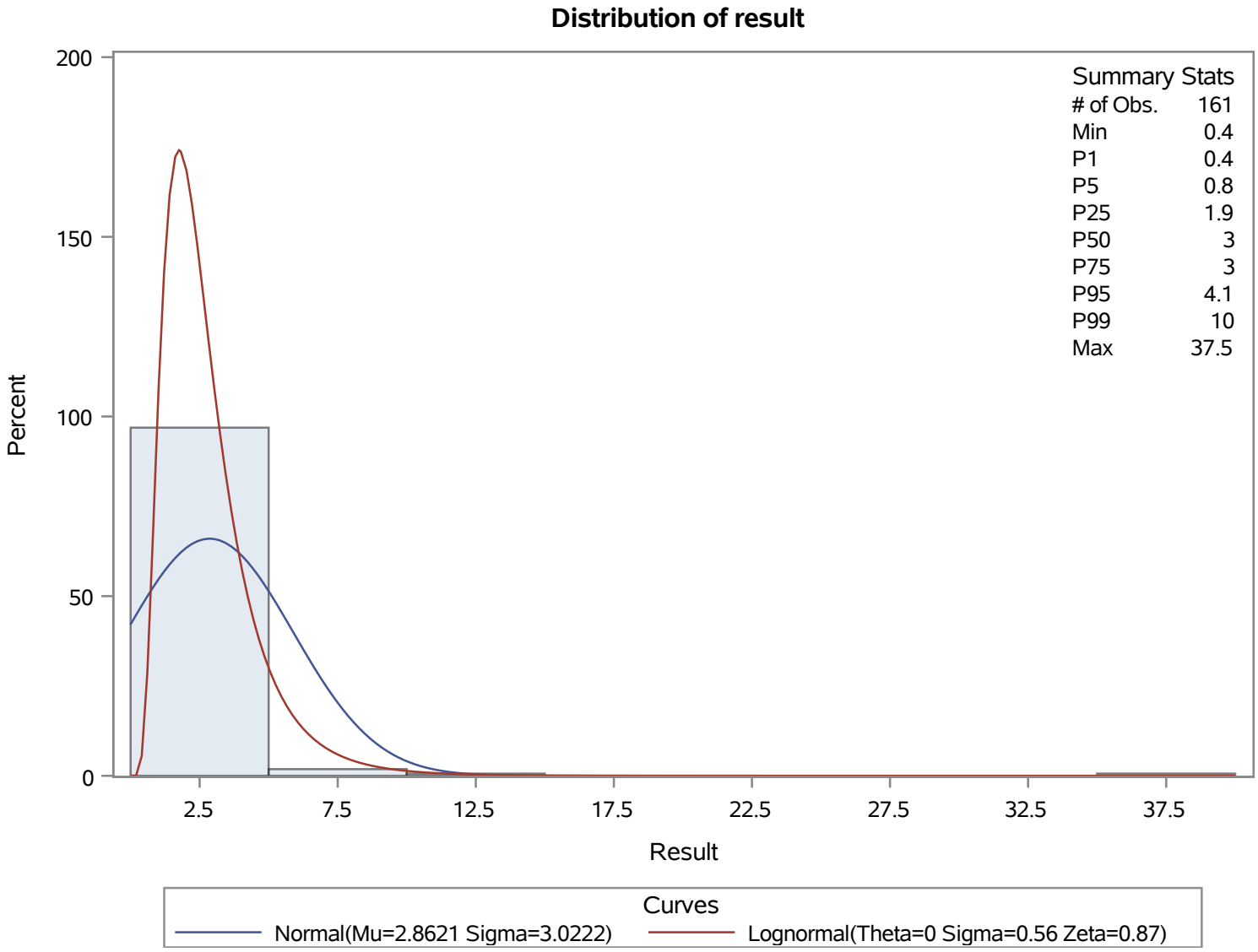
The UNIVARIATE Procedure

Distribution of result



Little Manatee River
Little Manatee River at CR 579
Corr. Chlorophyll-a (µg/L) µg/L
Site ID = 21FLHILL140

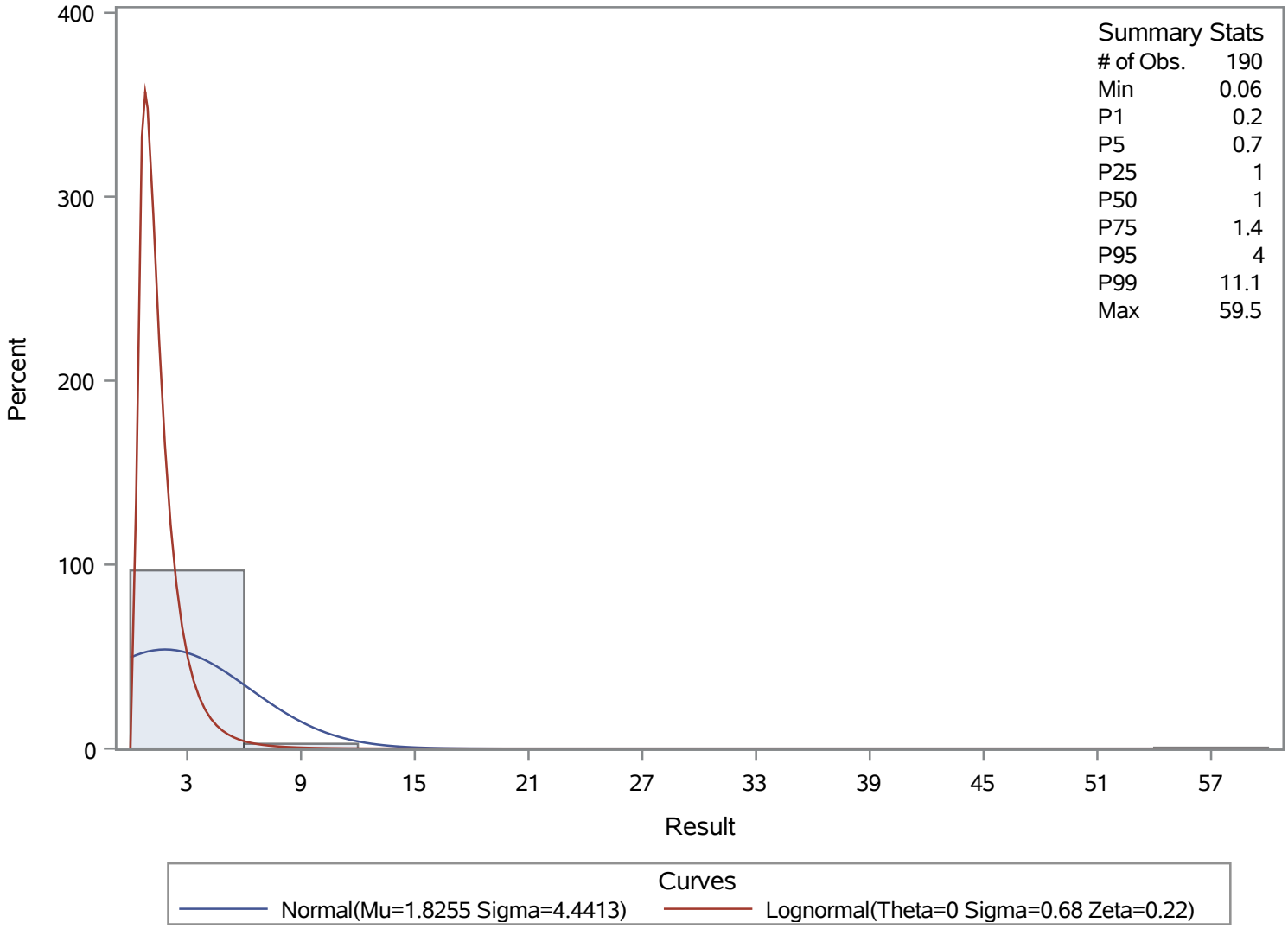
The UNIVARIATE Procedure



Little Manatee River
D1
Corr. Chlorophyll-a (µg/L) µg/L
Site ID = 21FLMANAD1

The UNIVARIATE Procedure

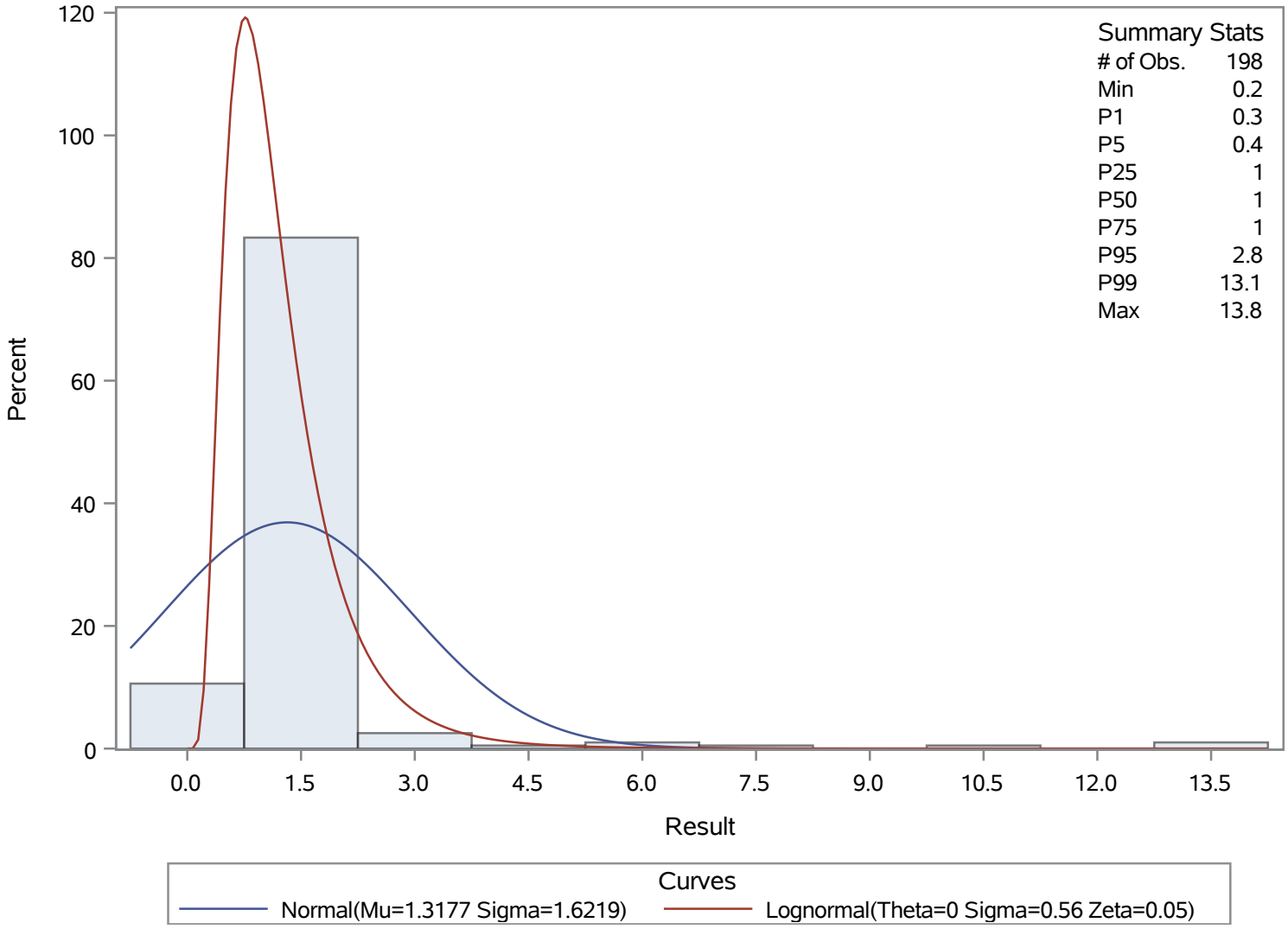
Distribution of result



Little Manatee River
D3
Corr. Chlorophyll-a (µg/L) µg/L
Site ID = 21FLMANAD3

The UNIVARIATE Procedure

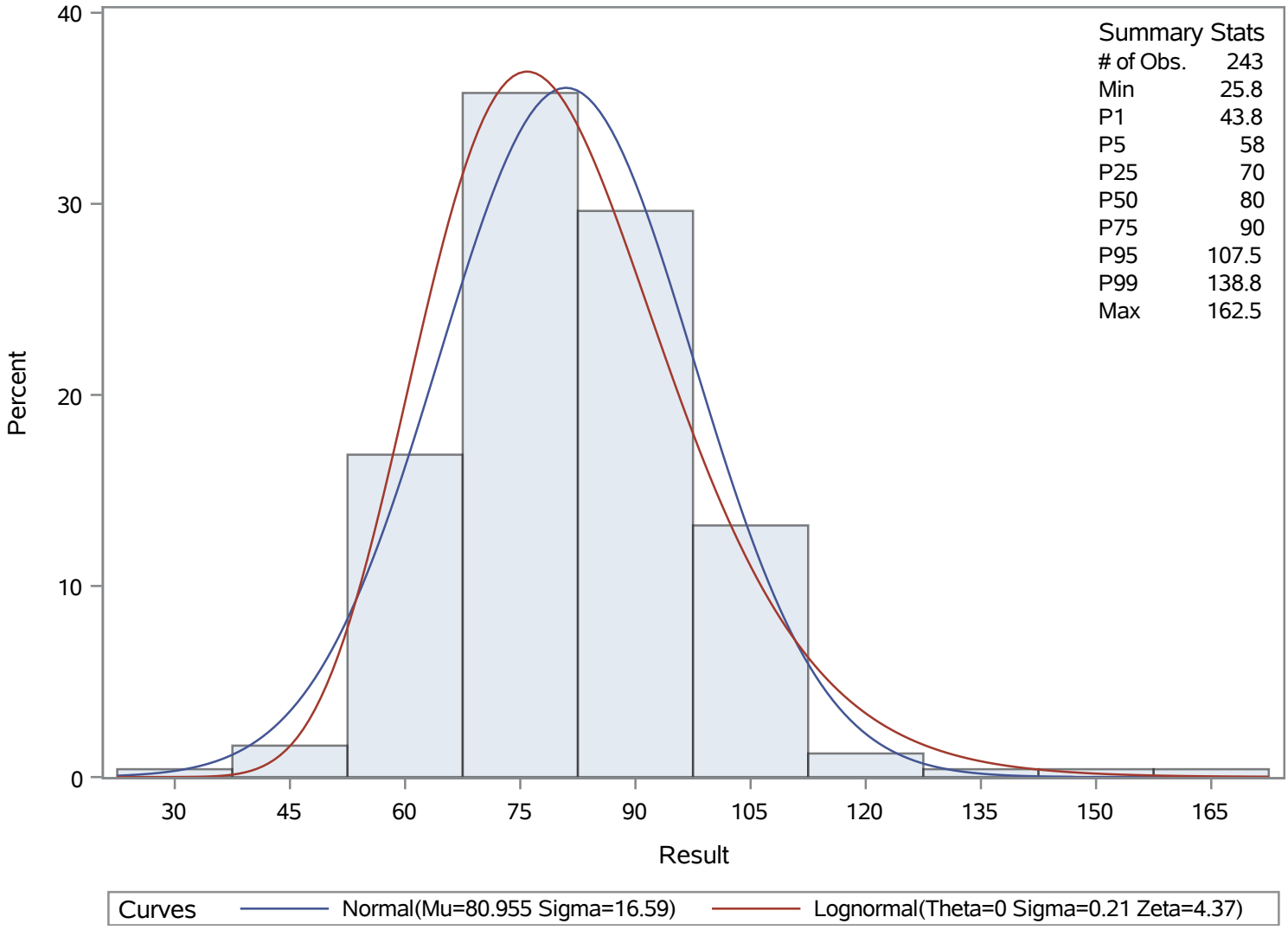
Distribution of result



Little Manatee River
LITTLE MANATEE RIVER NEAR FT. LONESOME FL
Dissolved Oxygen (Percent Saturation) %
Site ID = 112WRD 02300100

The UNIVARIATE Procedure

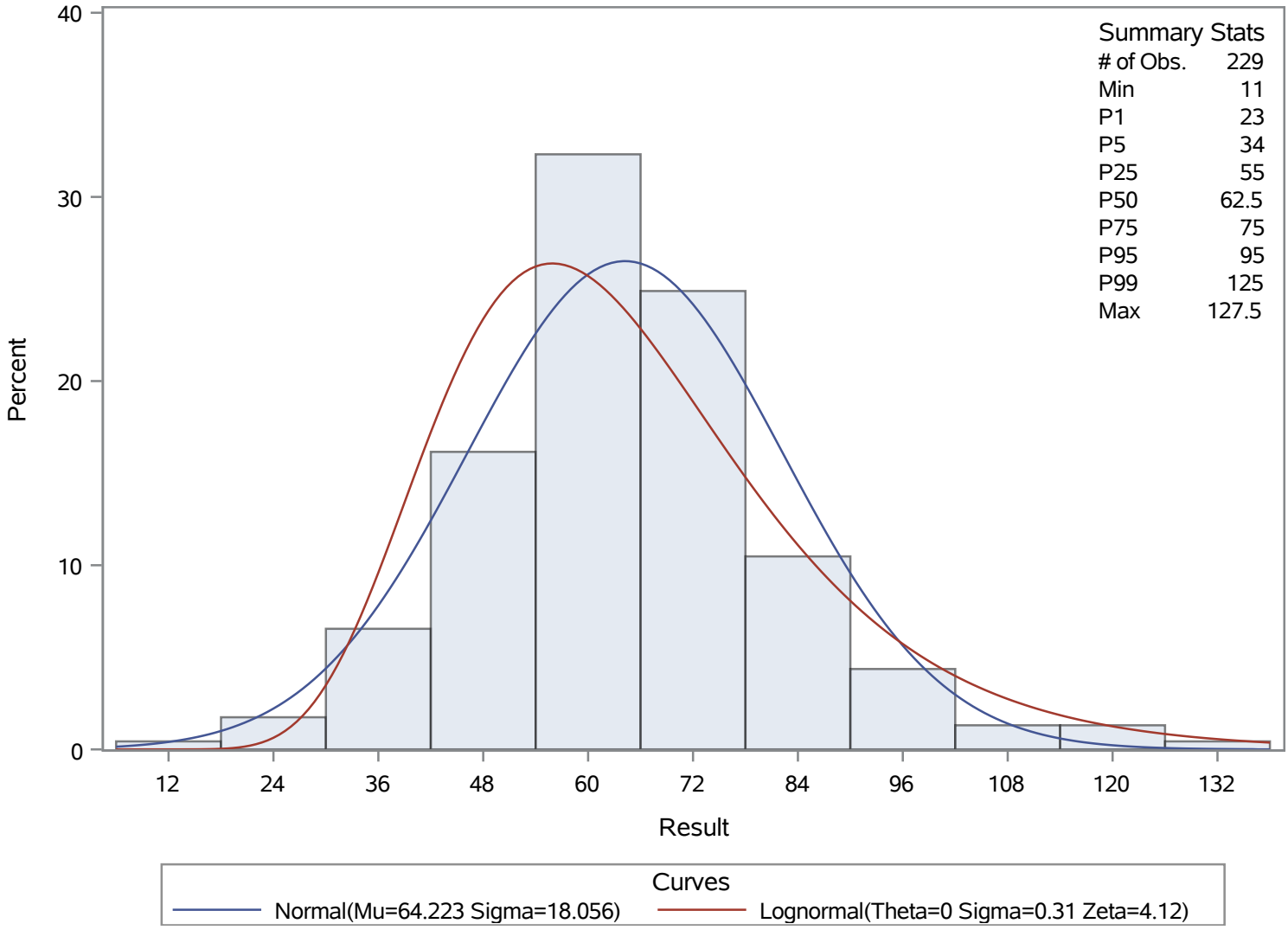
Distribution of result



Little Manatee River
SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL
Dissolved Oxygen (Percent Saturation) %
Site ID = 112WRD 02300200

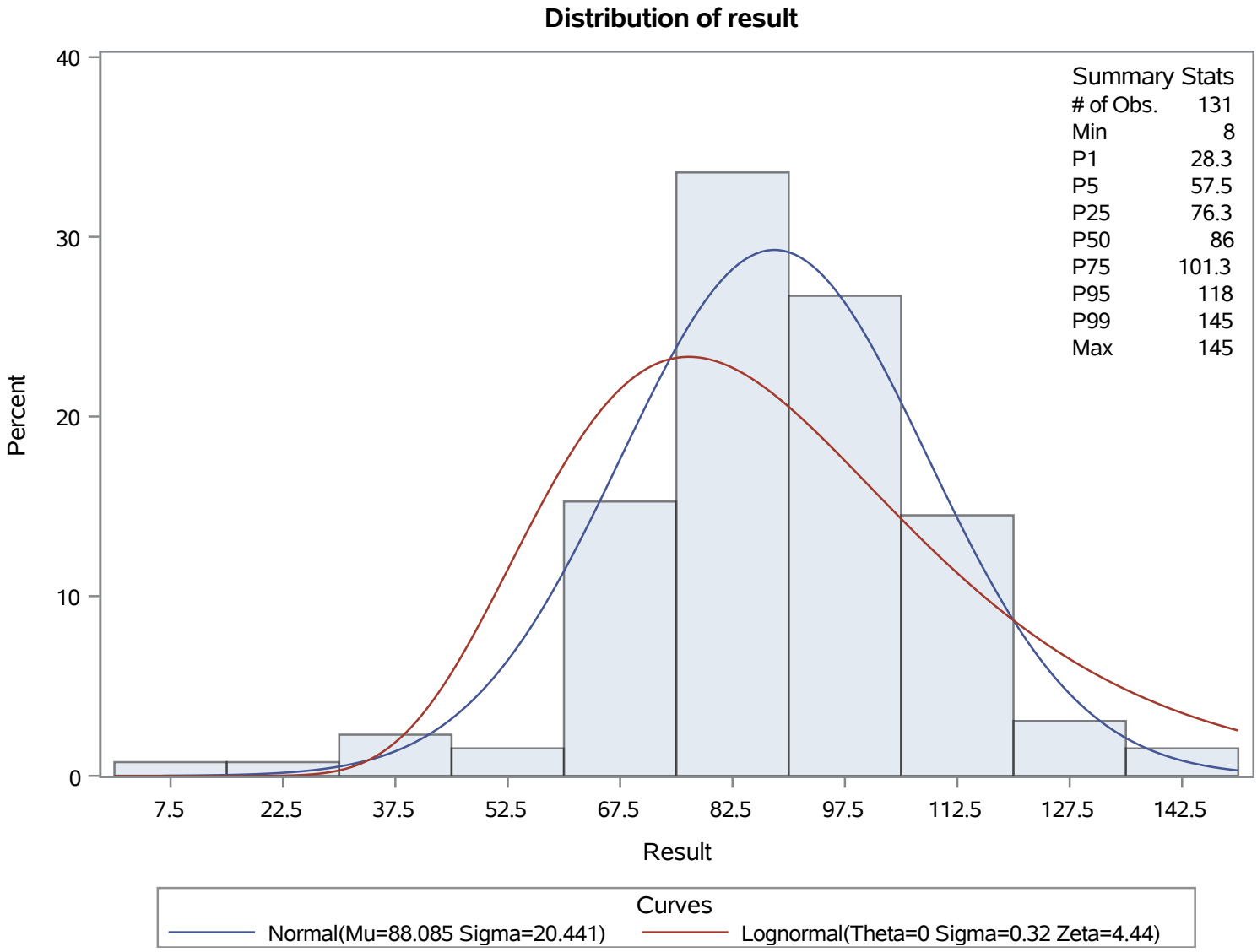
The UNIVARIATE Procedure

Distribution of result



Little Manatee River
LITTLE MANATEE RIVER NEAR WIMAUMA FL
Dissolved Oxygen (Percent Saturation) %
Site ID = 112WRD 02300500

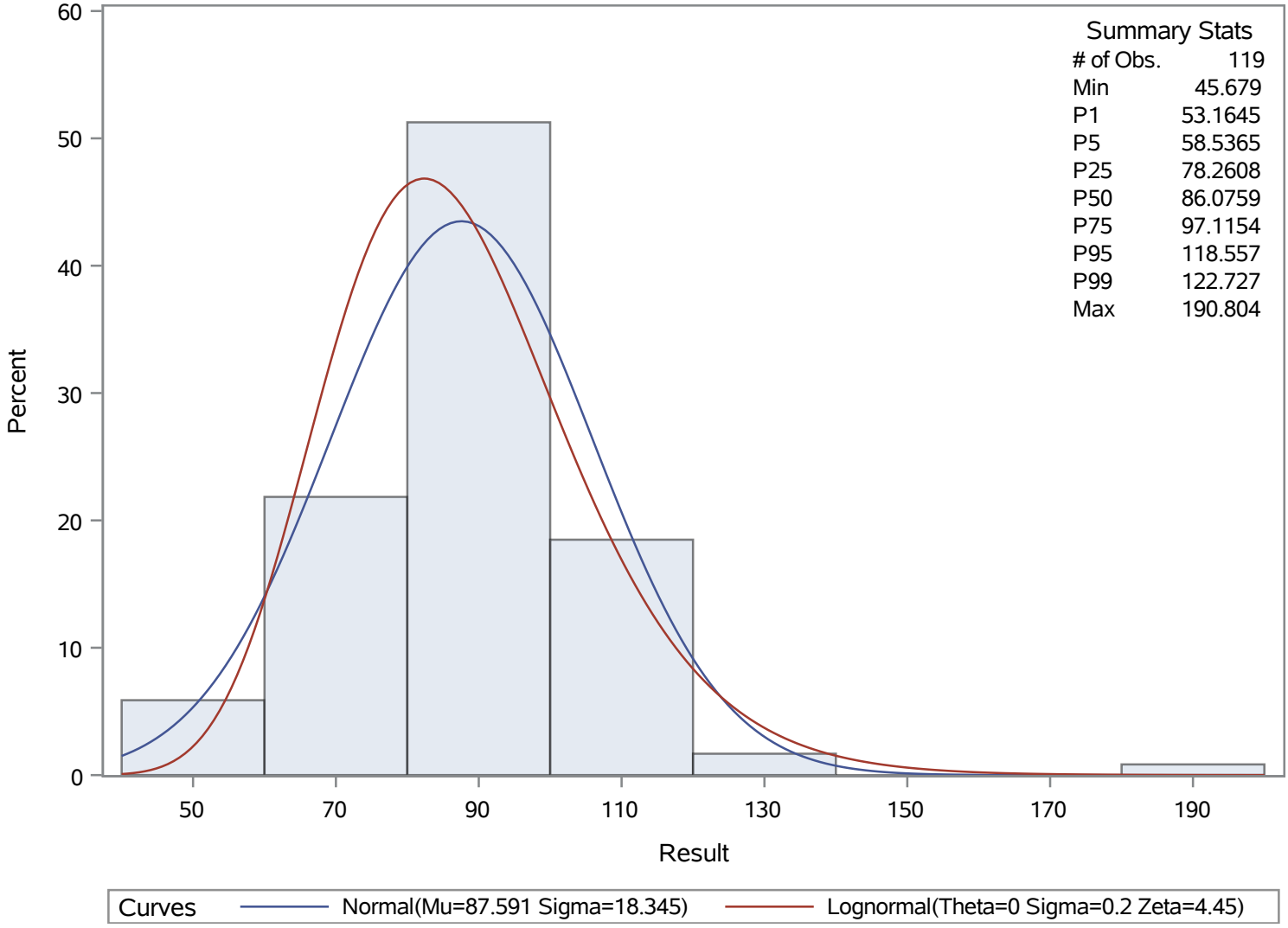
The UNIVARIATE Procedure



Little Manatee River
L MANATEE R BR US 301
Dissolved Oxygen (Percent Saturation) %
Site ID = 21FLA 24010100

The UNIVARIATE Procedure

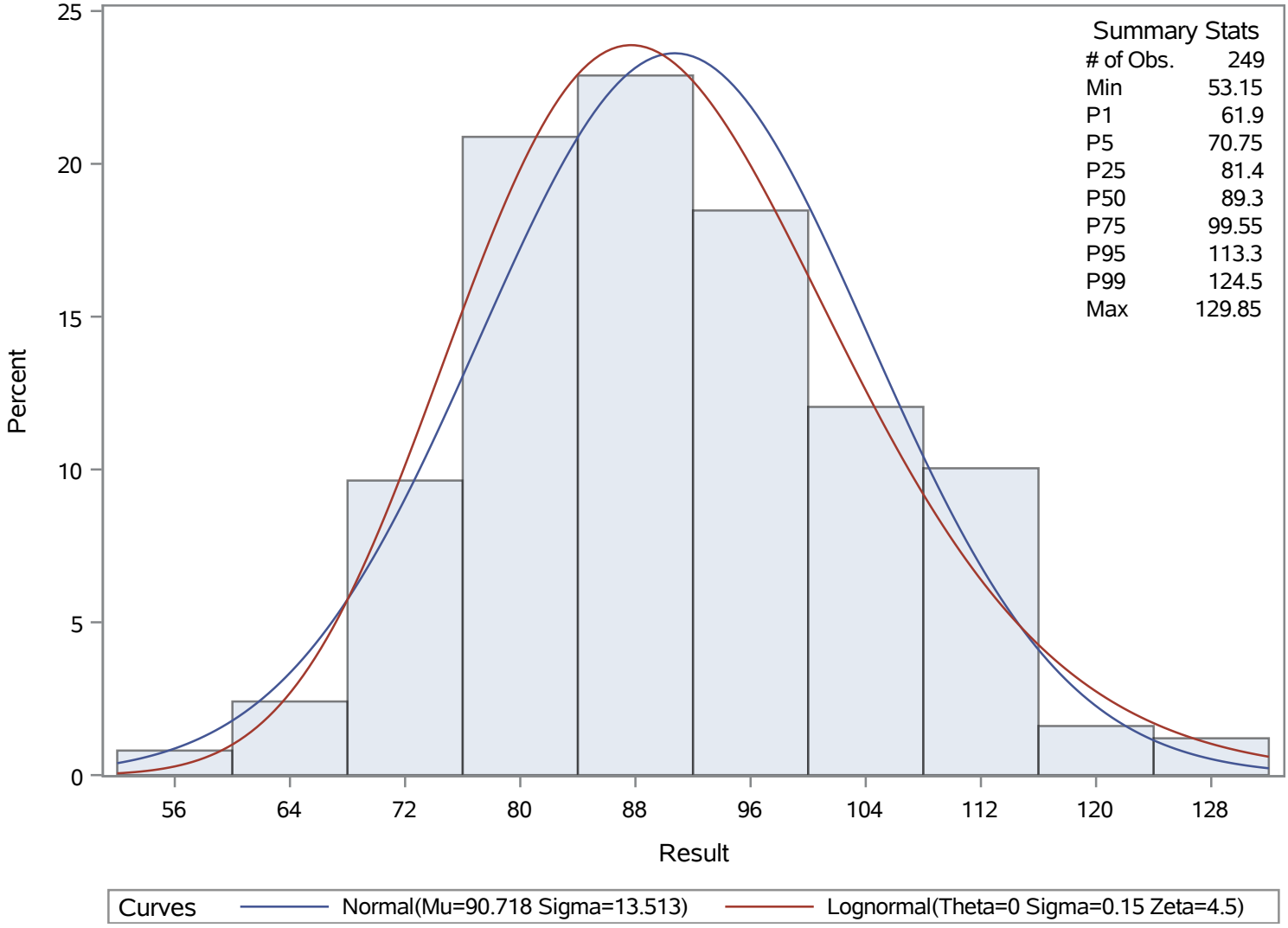
Distribution of result



Little Manatee River
LITTLE MANATEE RIVER AT US HWY 301
Dissolved Oxygen (Percent Saturation) %
Site ID = 21FLGW 3555

The UNIVARIATE Procedure

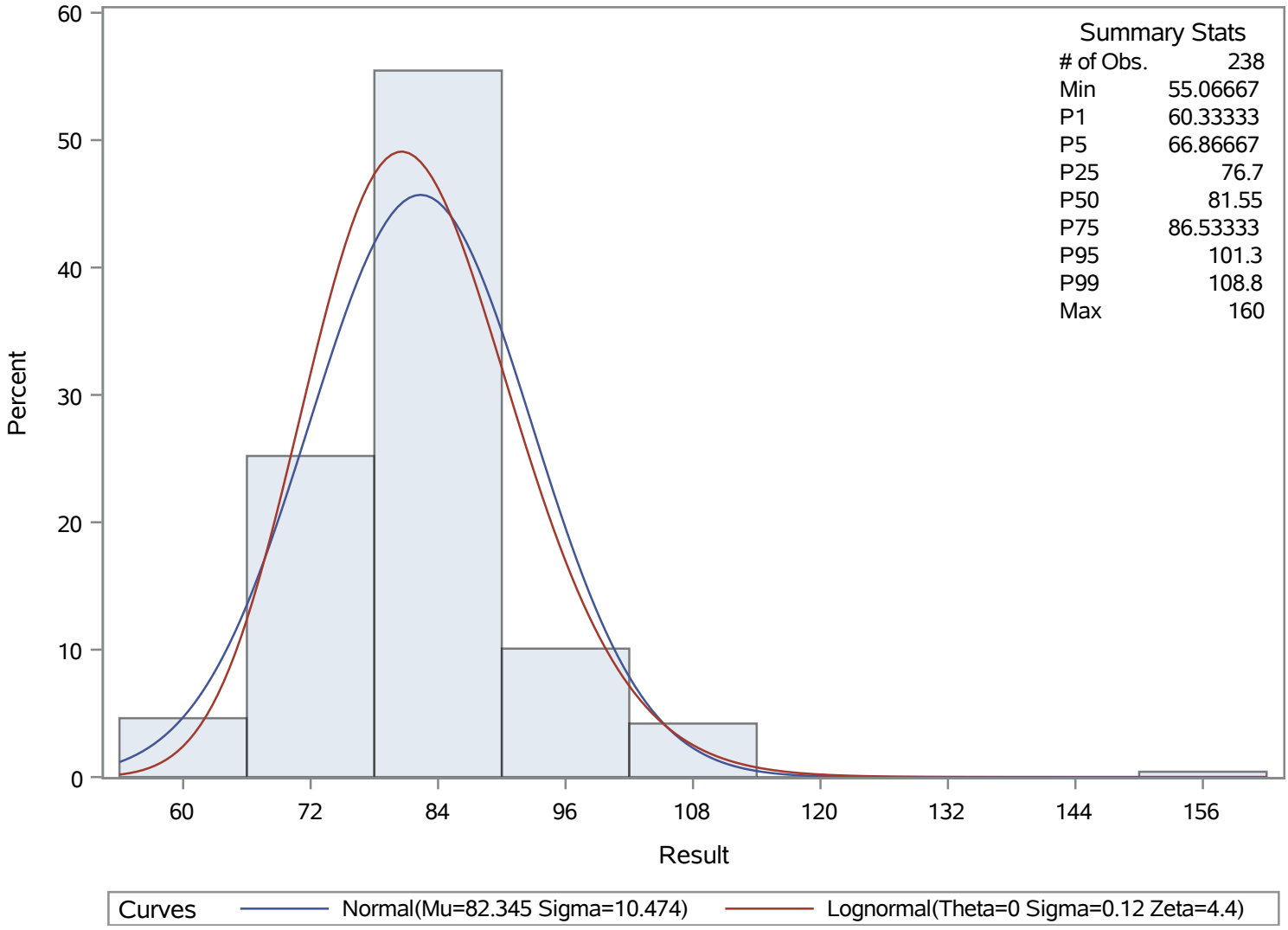
Distribution of result



Little Manatee River
Little Manatee River at US 301 bridge
Dissolved Oxygen (Percent Saturation) %
Site ID = 21FLHILL113

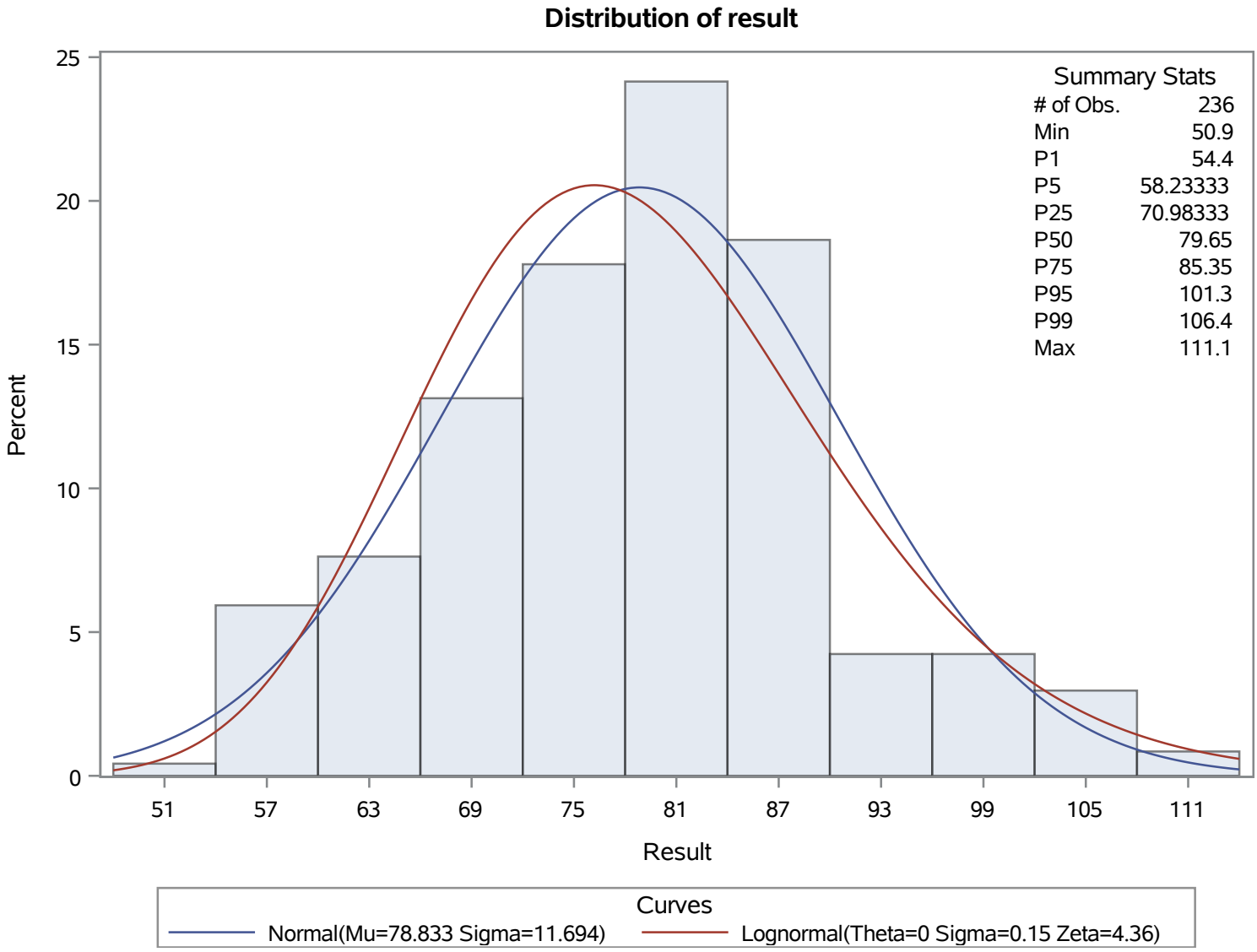
The UNIVARIATE Procedure

Distribution of result



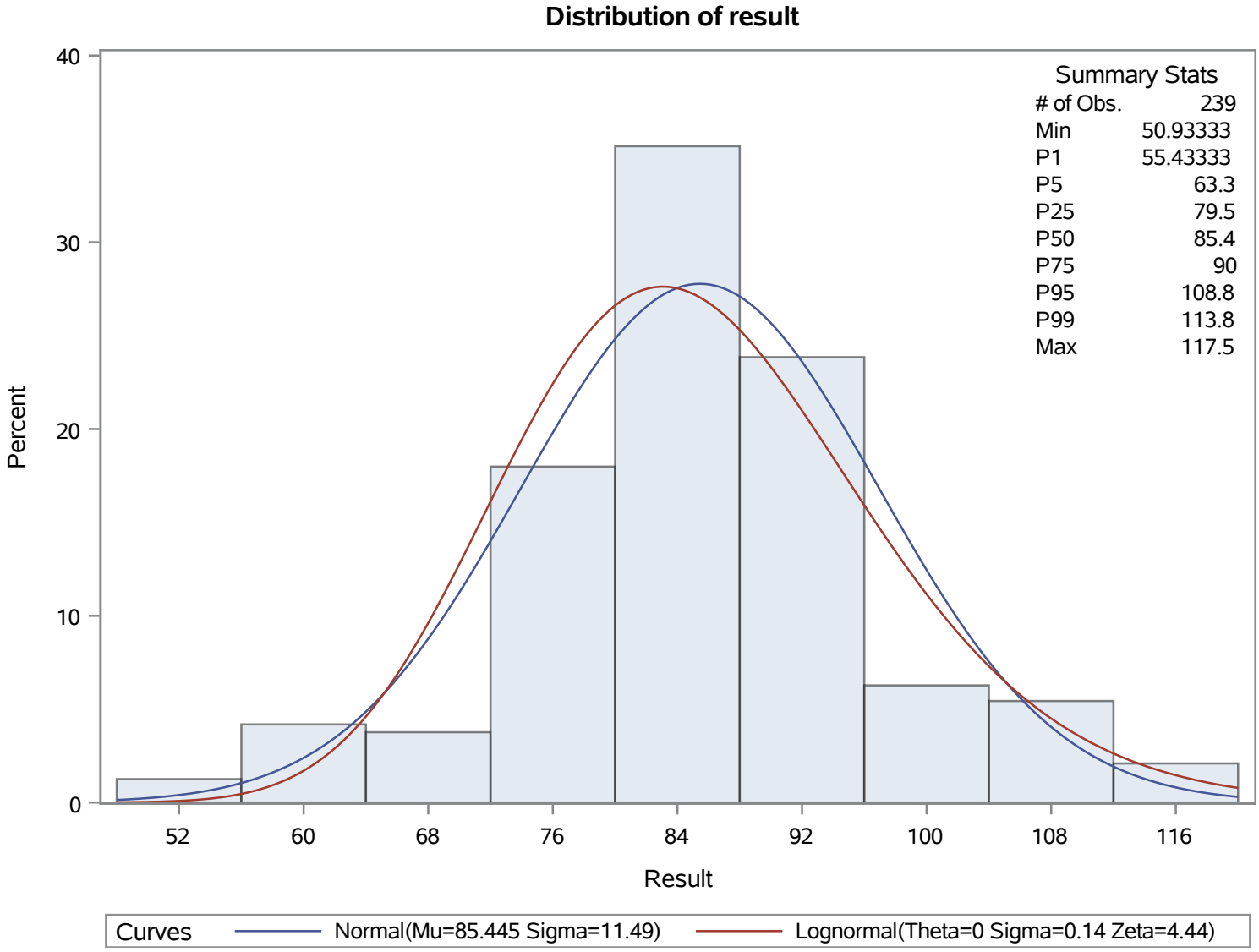
Little Manatee River
Little Manatee River at SR 674
Dissolved Oxygen (Percent Saturation) %
Site ID = 21FLHILL129

The UNIVARIATE Procedure



Little Manatee River
Little Manatee River at CR 579
Dissolved Oxygen (Percent Saturation) %
Site ID = 21FLHILL140

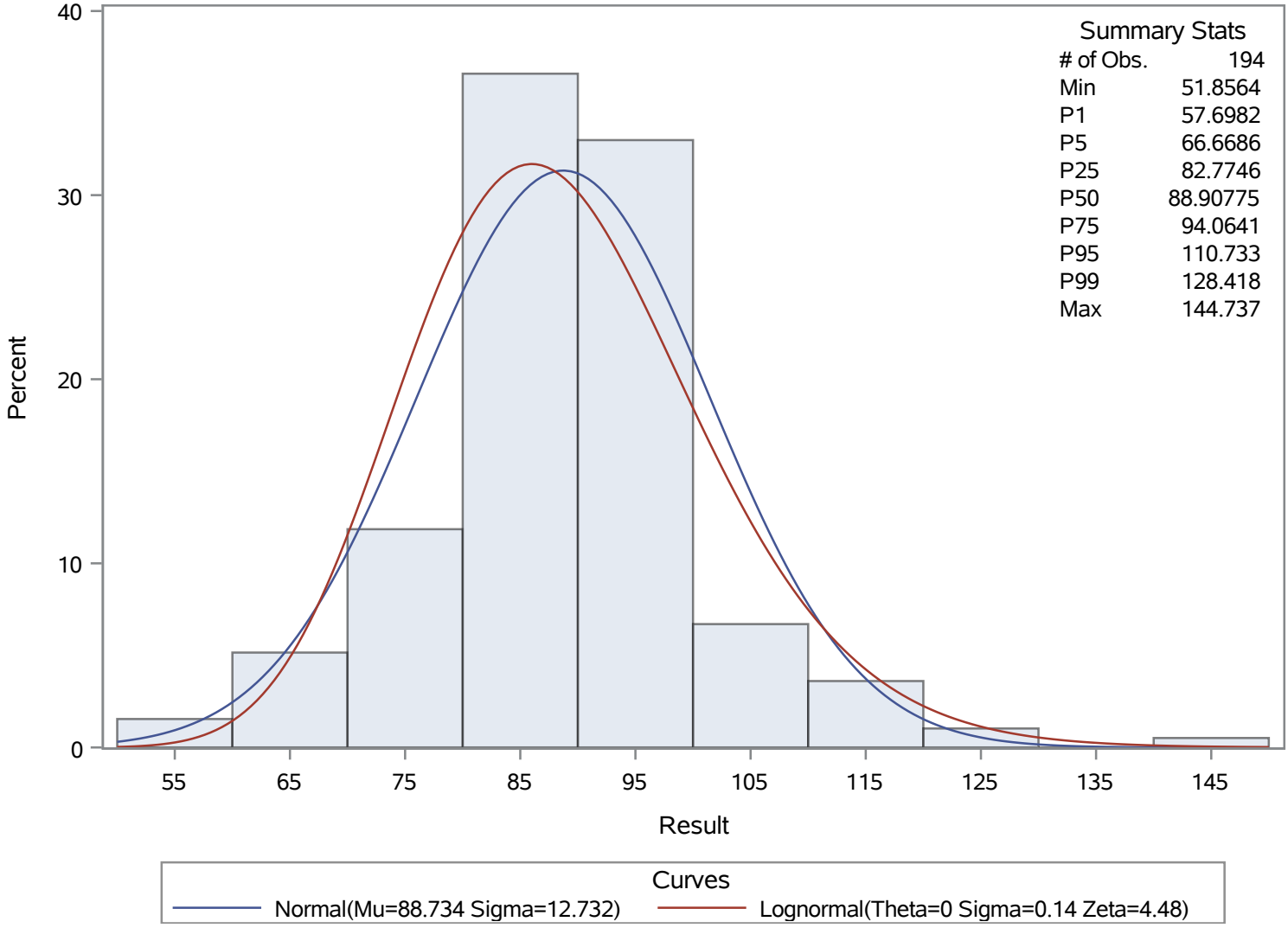
The UNIVARIATE Procedure



Little Manatee River
LITTLE MANATEE R AT CR579
Dissolved Oxygen (Percent Saturation) %
Site ID = 21FLHILL24010013

The UNIVARIATE Procedure

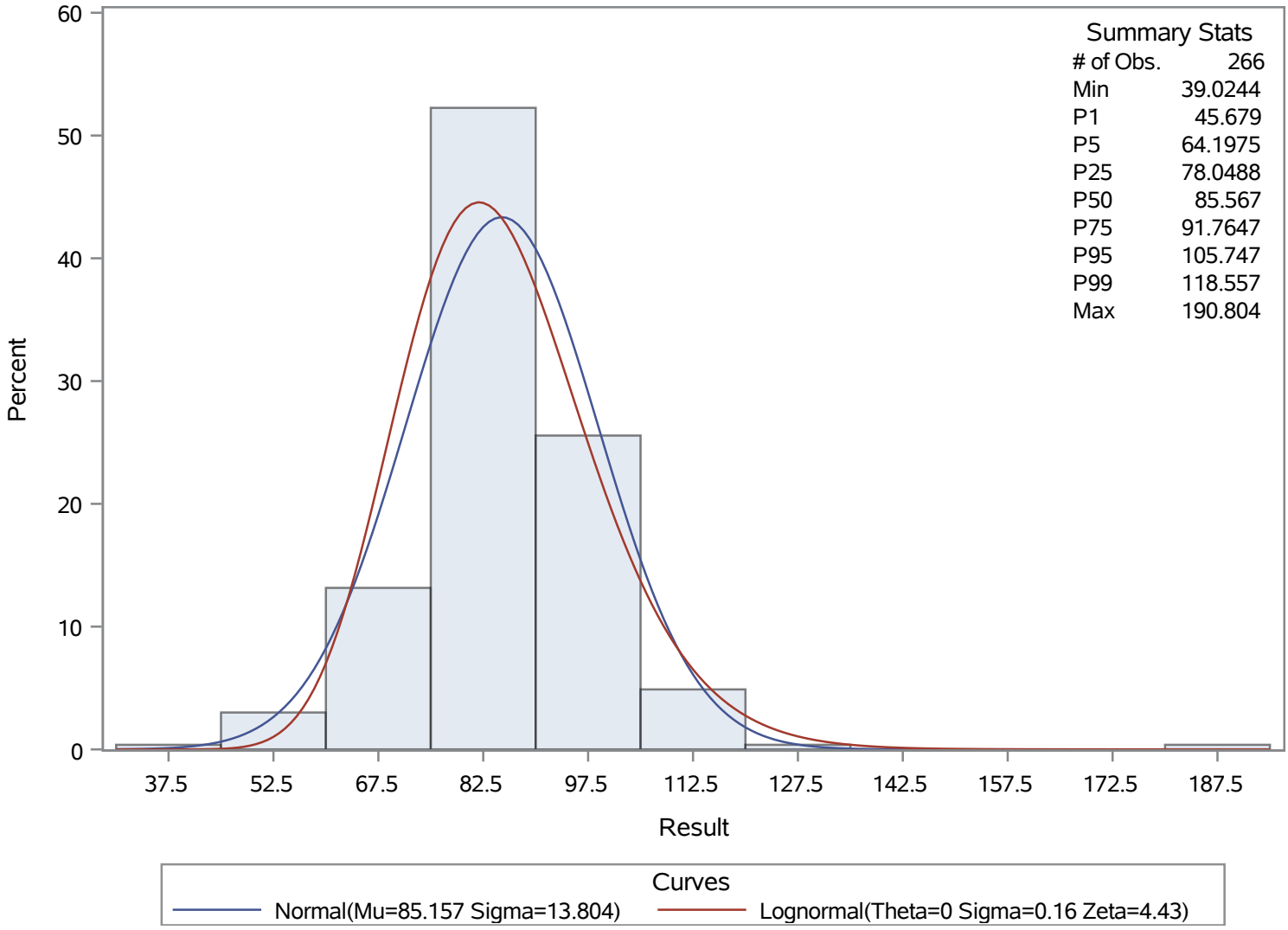
Distribution of result



Little Manatee River
L MANATEE R BR US 301
Dissolved Oxygen (Percent Saturation) %
Site ID = 21FLHILL24010100

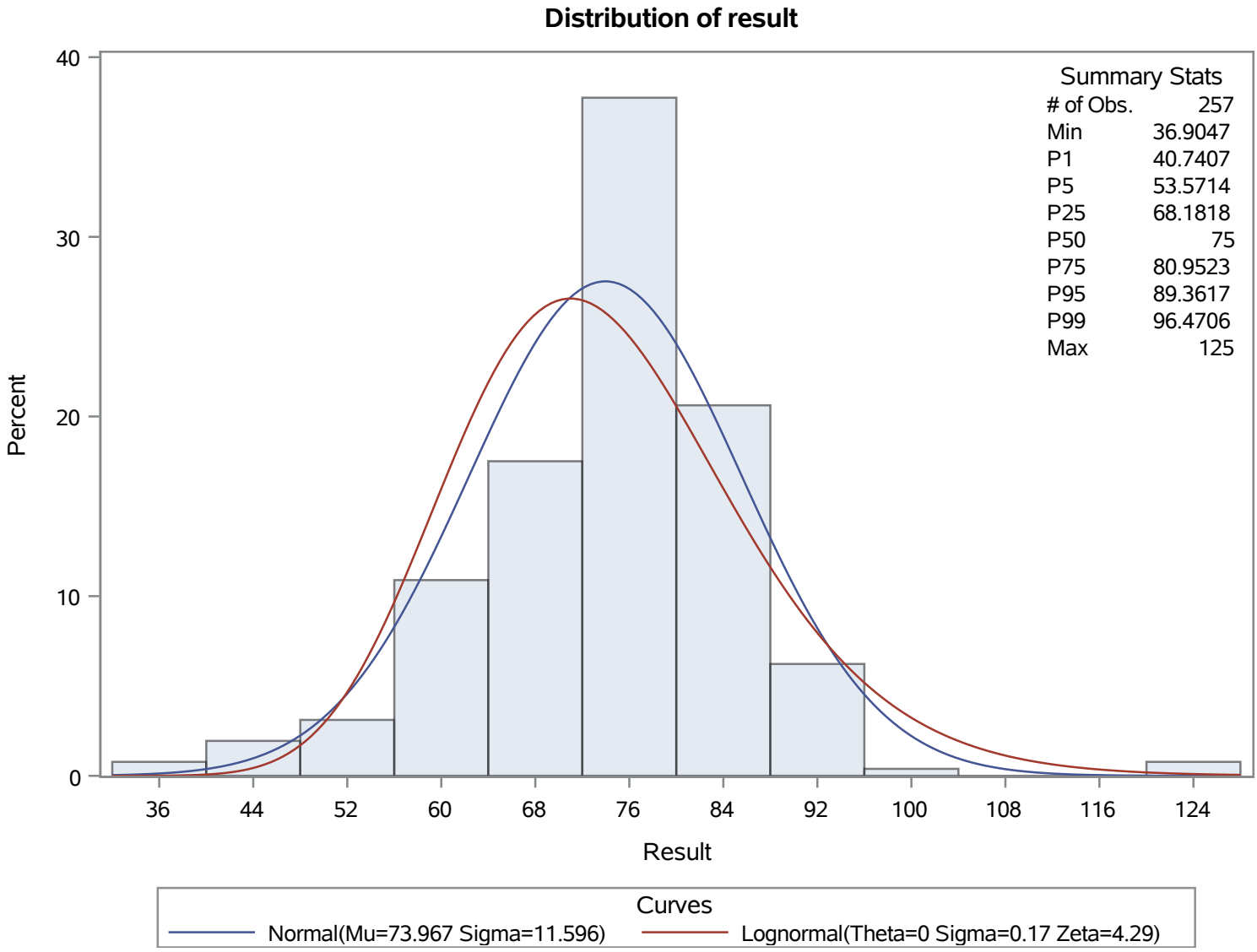
The UNIVARIATE Procedure

Distribution of result



Little Manatee River
LITTLE MANATEE R AT SR #674
Dissolved Oxygen (Percent Saturation) %
Site ID = 21FLHILL24010110

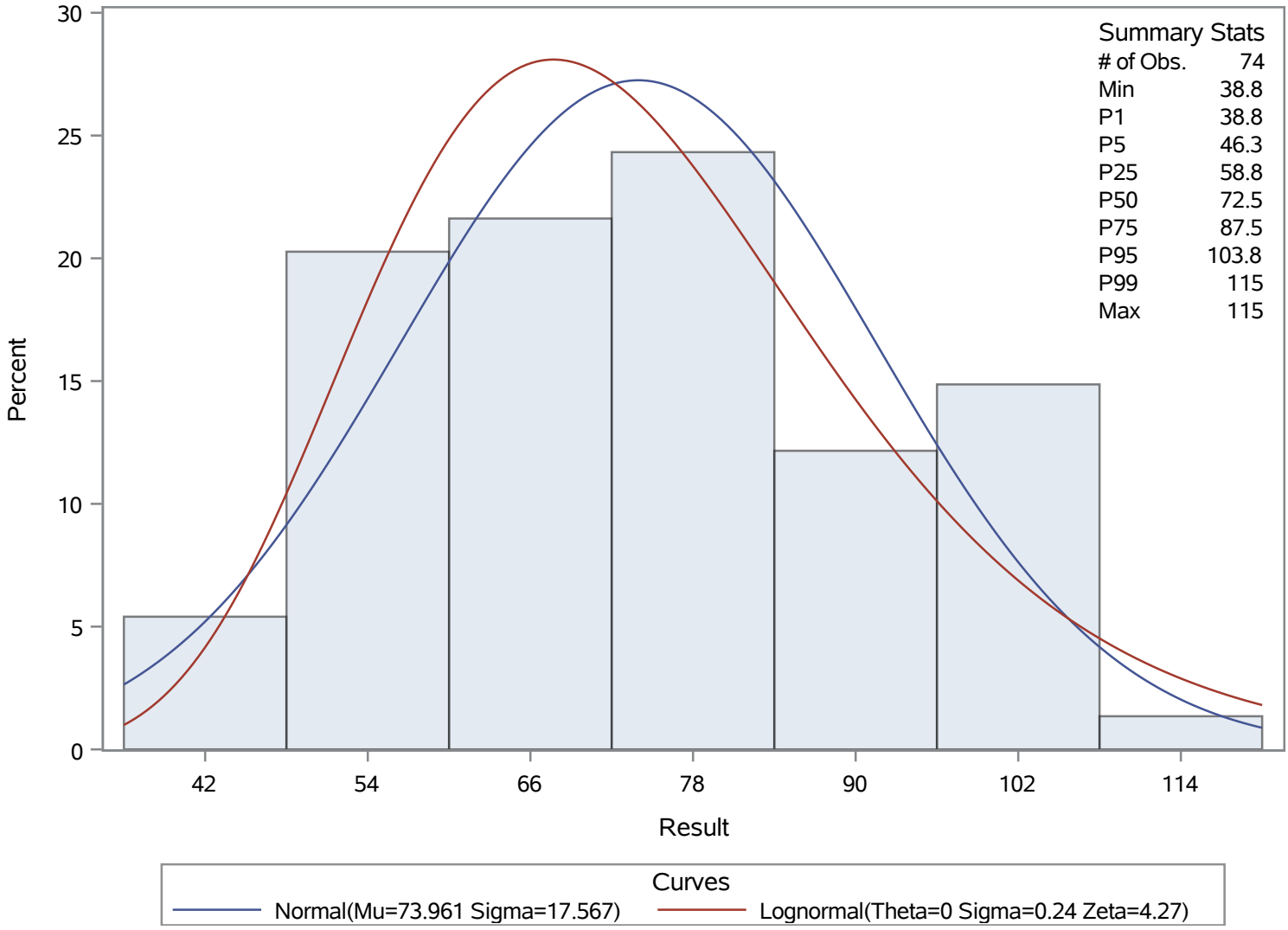
The UNIVARIATE Procedure



Little Manatee River
Little Manatee R. at SR674
Dissolved Oxygen (Percent Saturation) %
Site ID = 21FLIMCALM674

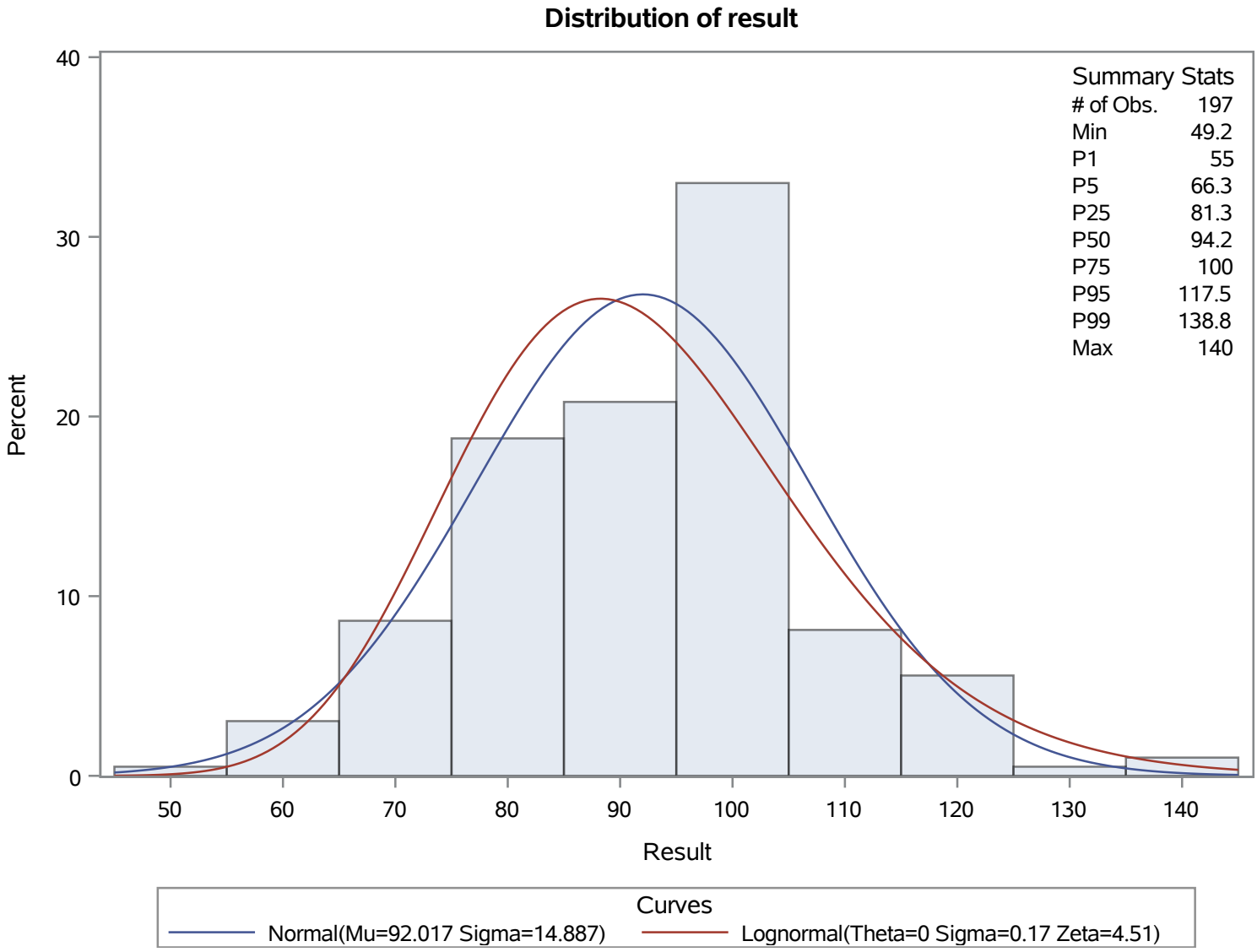
The UNIVARIATE Procedure

Distribution of result



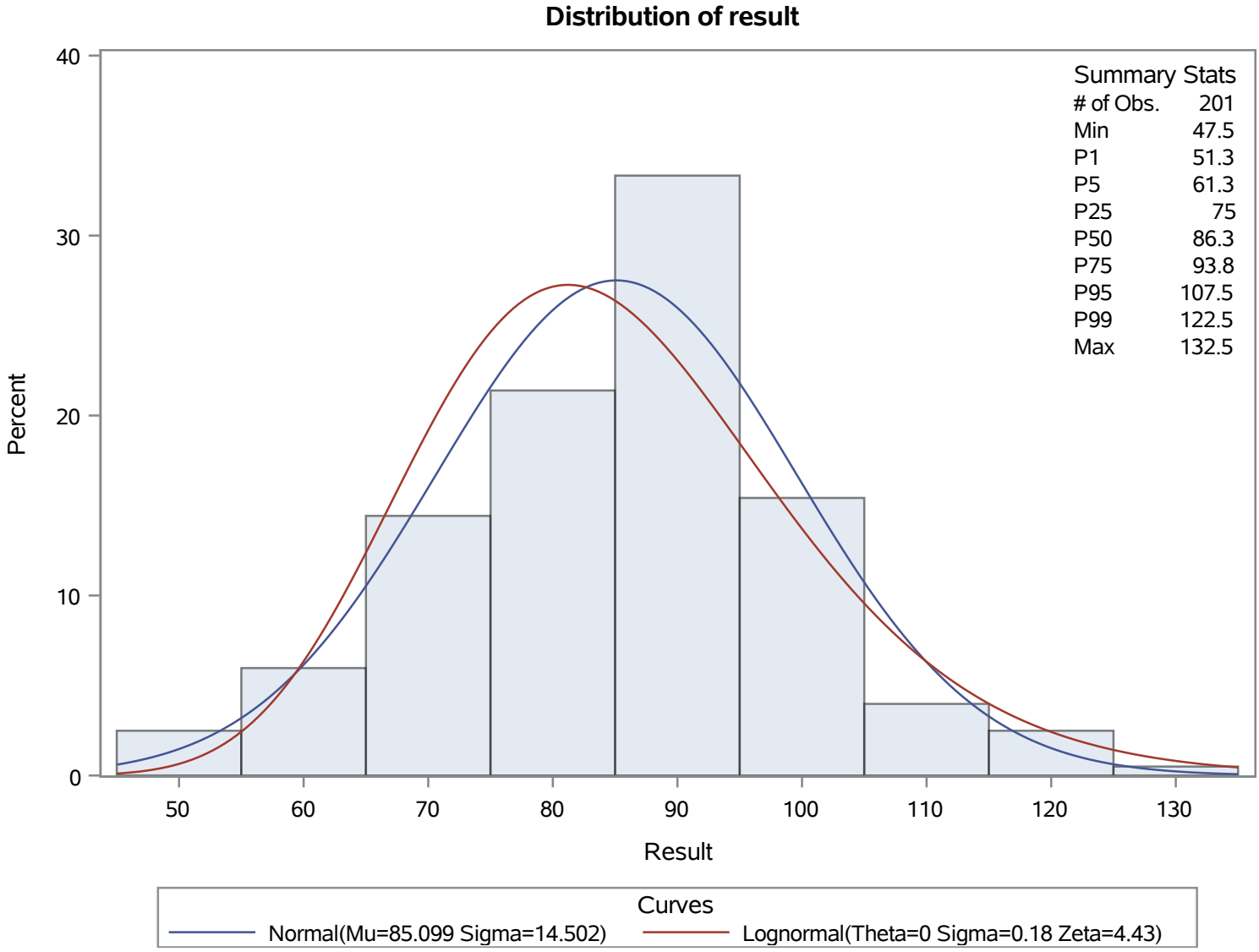
Little Manatee River
D1
Dissolved Oxygen (Percent Saturation) %
Site ID = 21FLMANAD1

The UNIVARIATE Procedure



Little Manatee River
D3
Dissolved Oxygen (Percent Saturation) %
Site ID = 21FLMANAD3

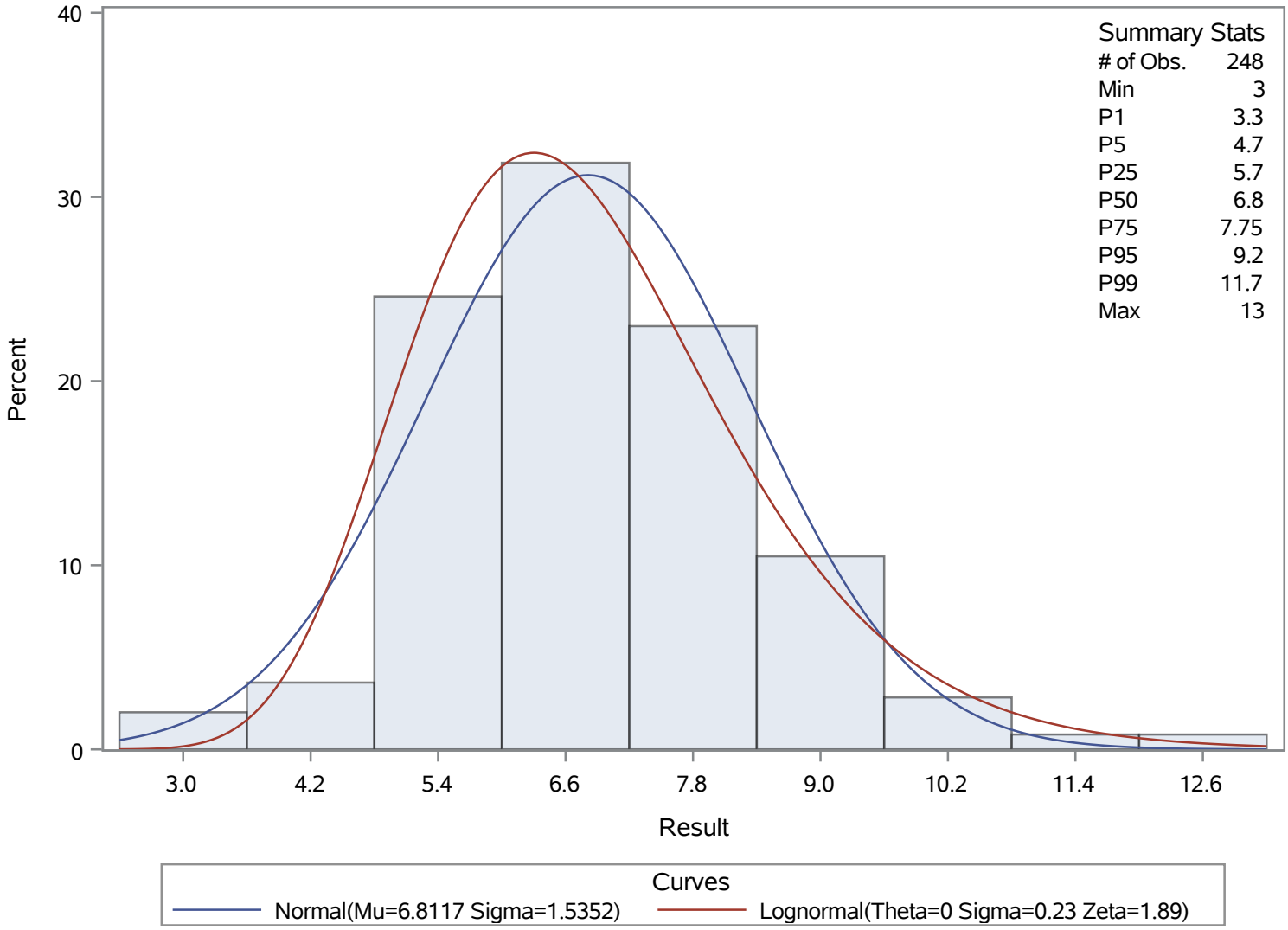
The UNIVARIATE Procedure



Little Manatee River
LITTLE MANATEE RIVER NEAR FT. LONESOME FL
Dissolved Oxygen (mg/L) mg/L
Site ID = 112WRD 02300100

The UNIVARIATE Procedure

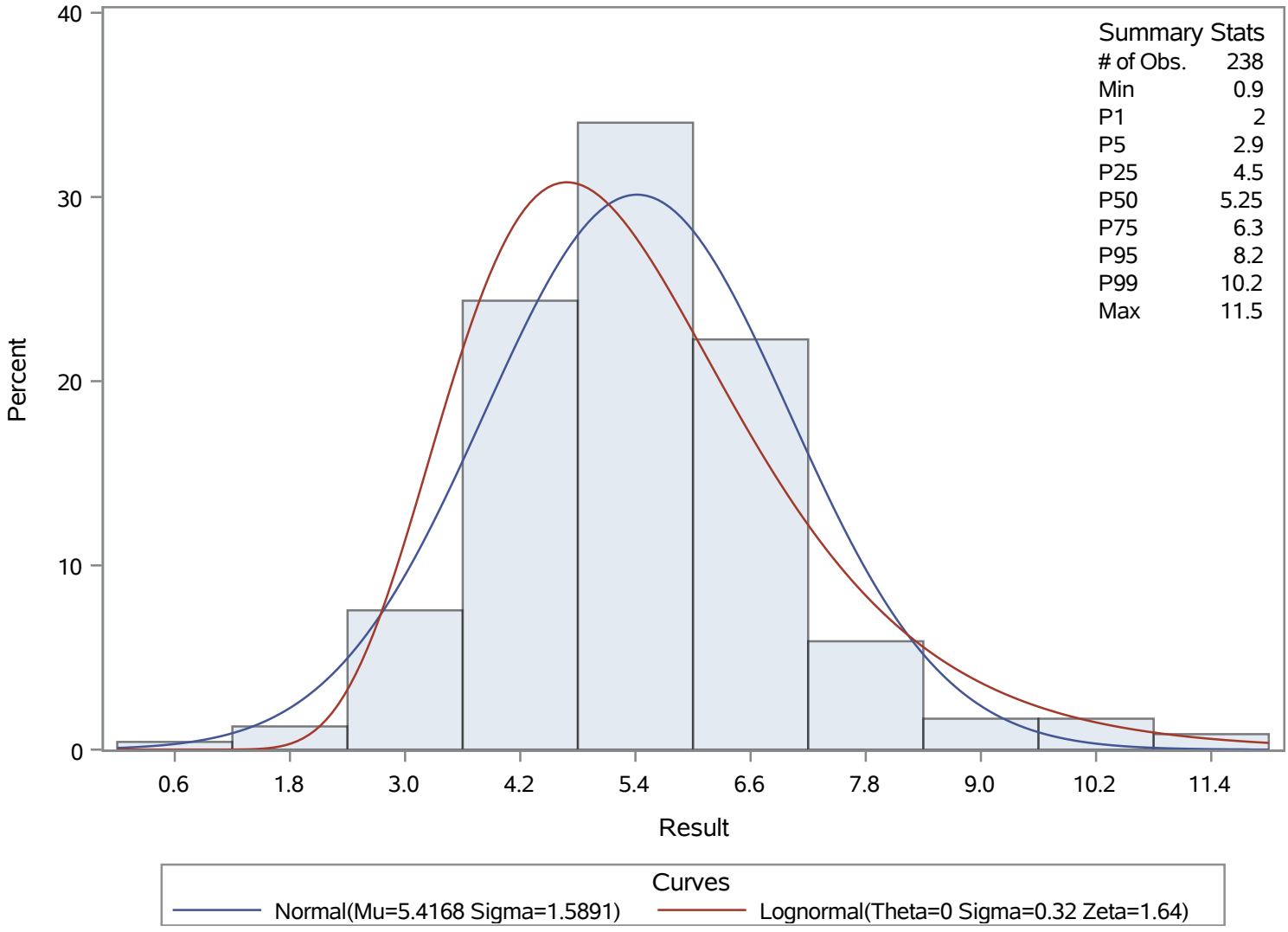
Distribution of result



Little Manatee River
SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL
Dissolved Oxygen (mg/L) mg/L
Site ID = 112WRD 02300200

The UNIVARIATE Procedure

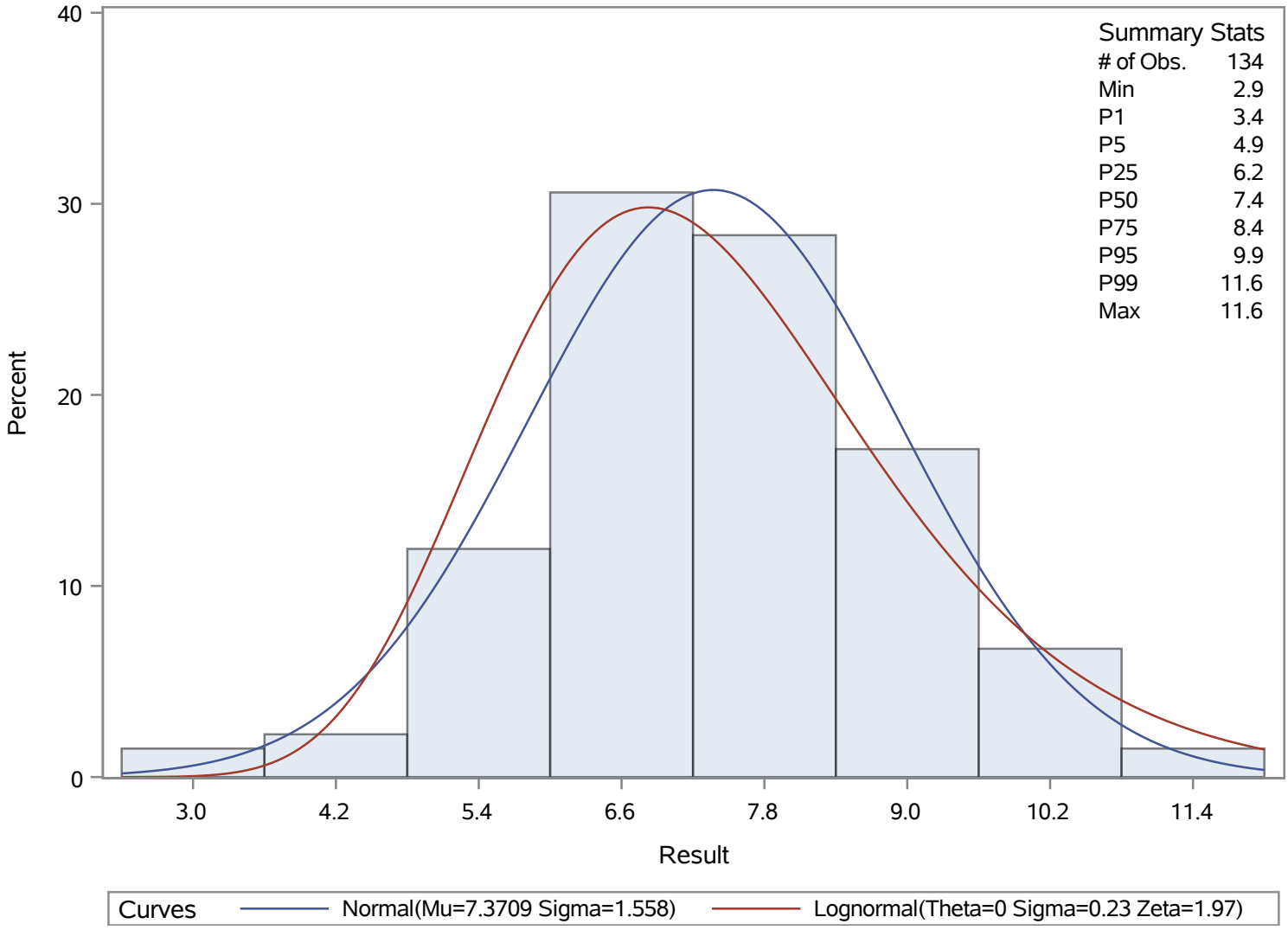
Distribution of result



Little Manatee River
LITTLE MANATEE RIVER NEAR WIMAUMA FL
Dissolved Oxygen (mg/L) mg/L
Site ID = 112WRD 02300500

The UNIVARIATE Procedure

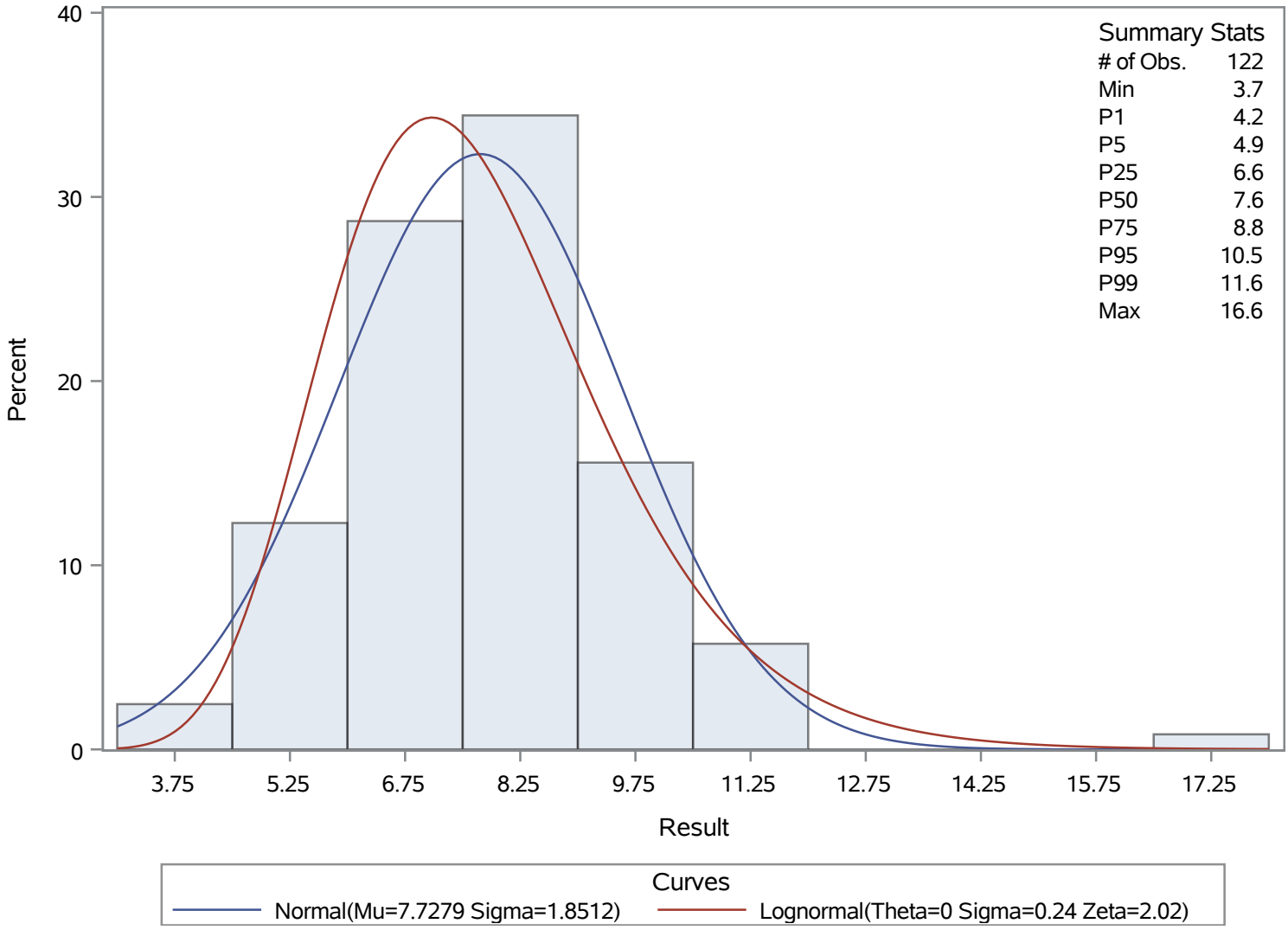
Distribution of result



Little Manatee River
L MANATEE R BR US 301
Dissolved Oxygen (mg/L) mg/L
Site ID = 21FLA 24010100

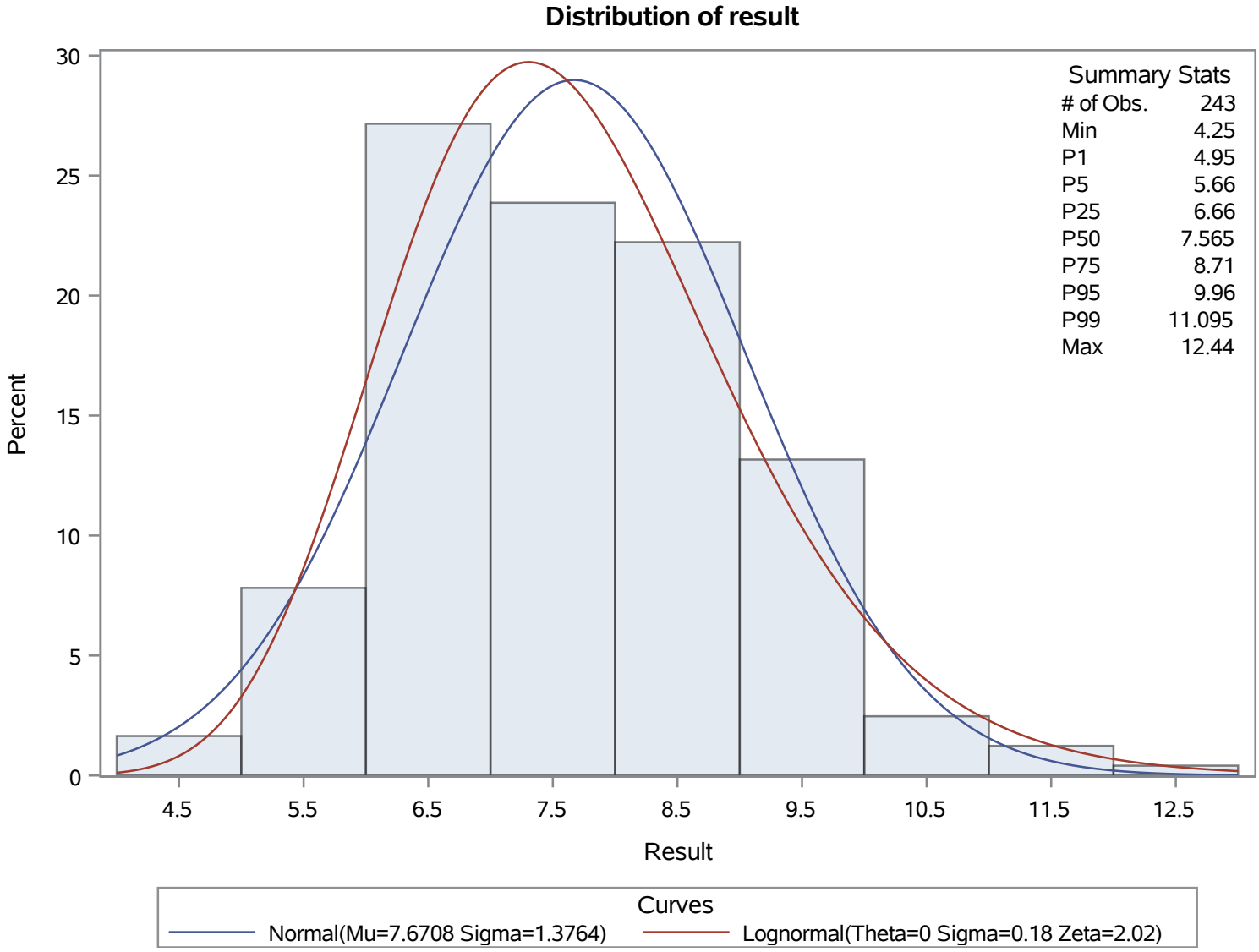
The UNIVARIATE Procedure

Distribution of result



Little Manatee River
LITTLE MANATEE RIVER AT US HWY 301
Dissolved Oxygen (mg/L) mg/L
Site ID = 21FLGW 3555

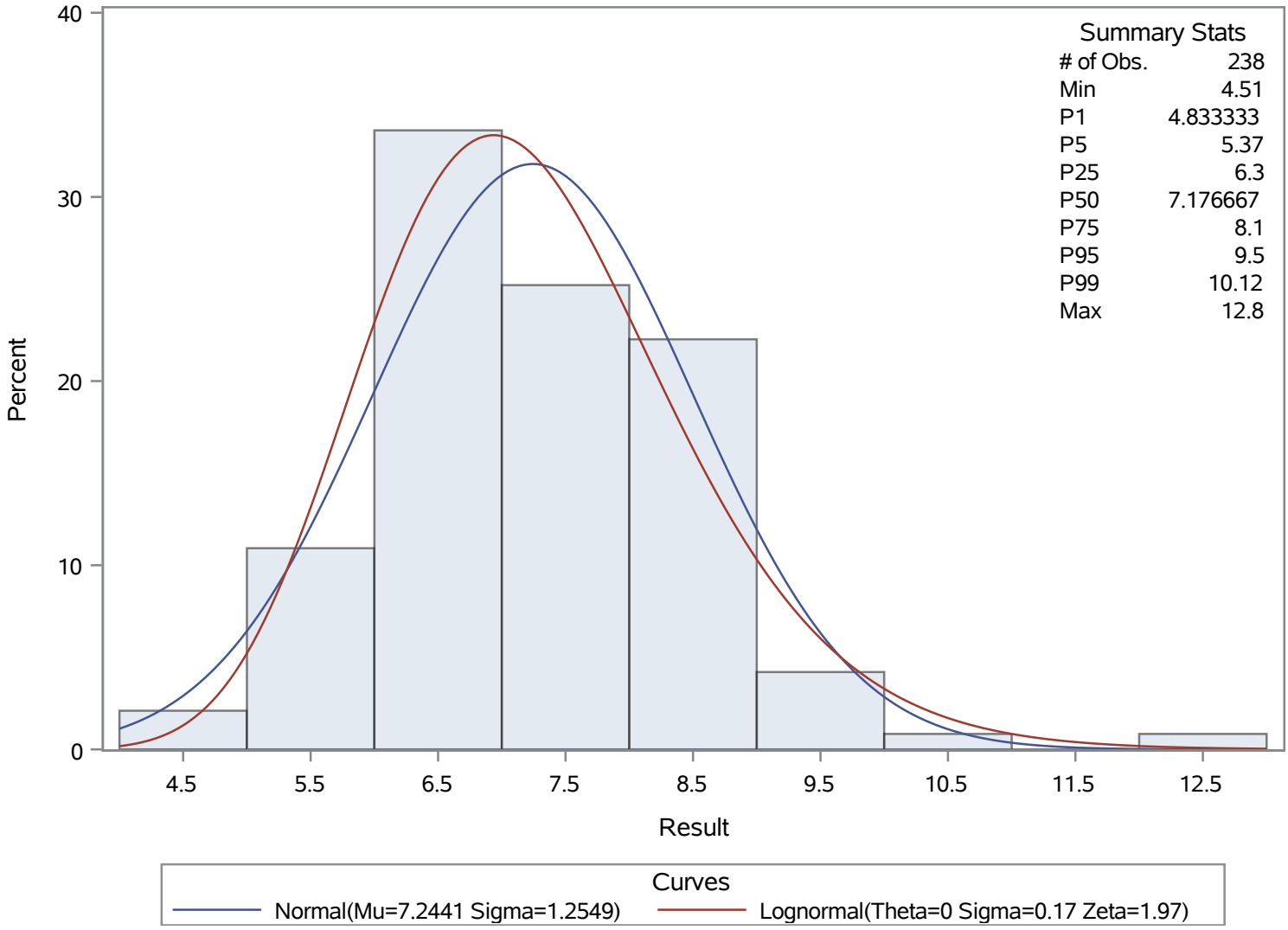
The UNIVARIATE Procedure



Little Manatee River
Little Manatee River at US 301 bridge
Dissolved Oxygen (mg/L) mg/L
Site ID = 21FLHILL113

The UNIVARIATE Procedure

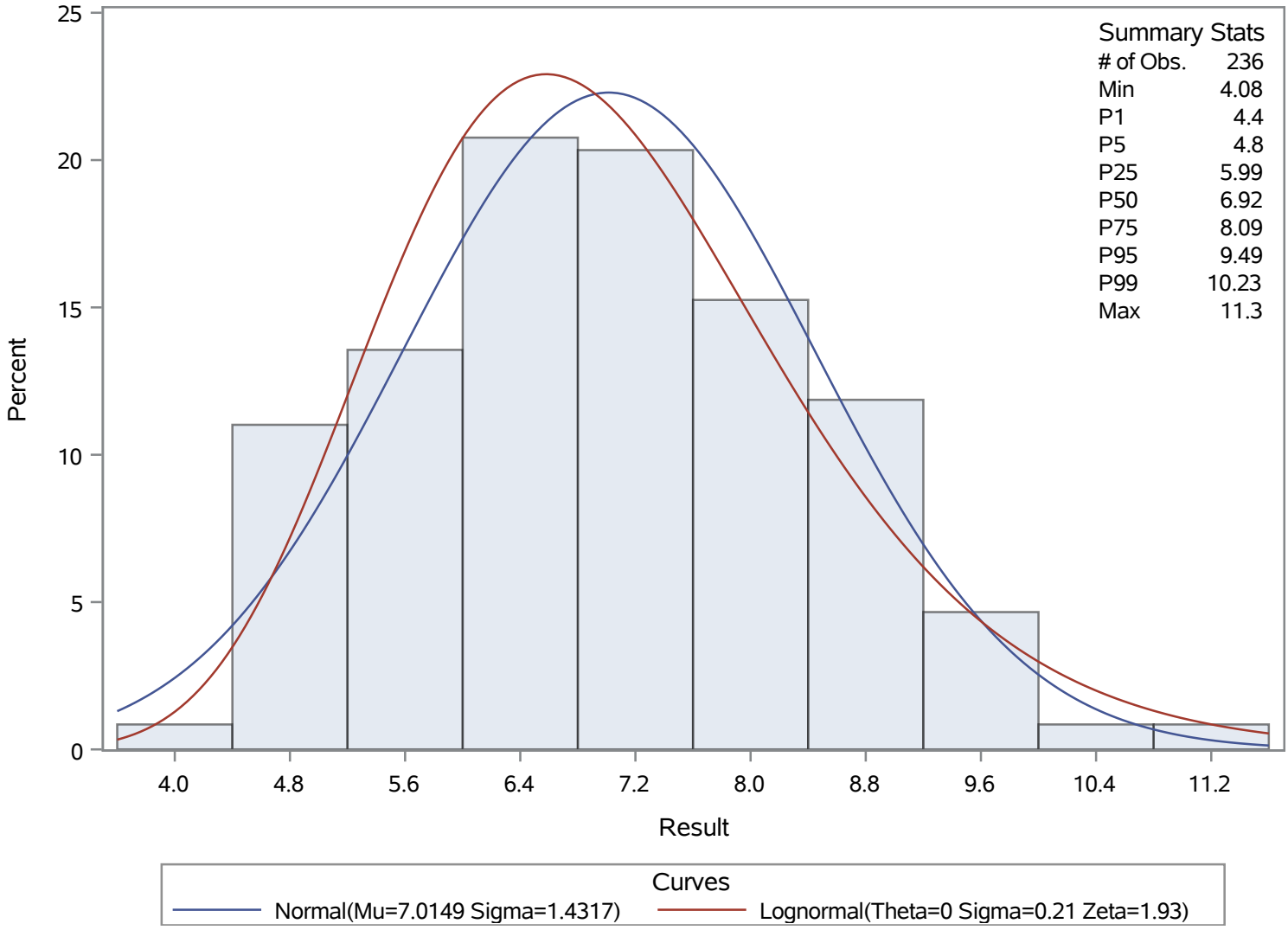
Distribution of result



Little Manatee River
Little Manatee River at SR 674
Dissolved Oxygen (mg/L) mg/L
Site ID = 21FLHILL129

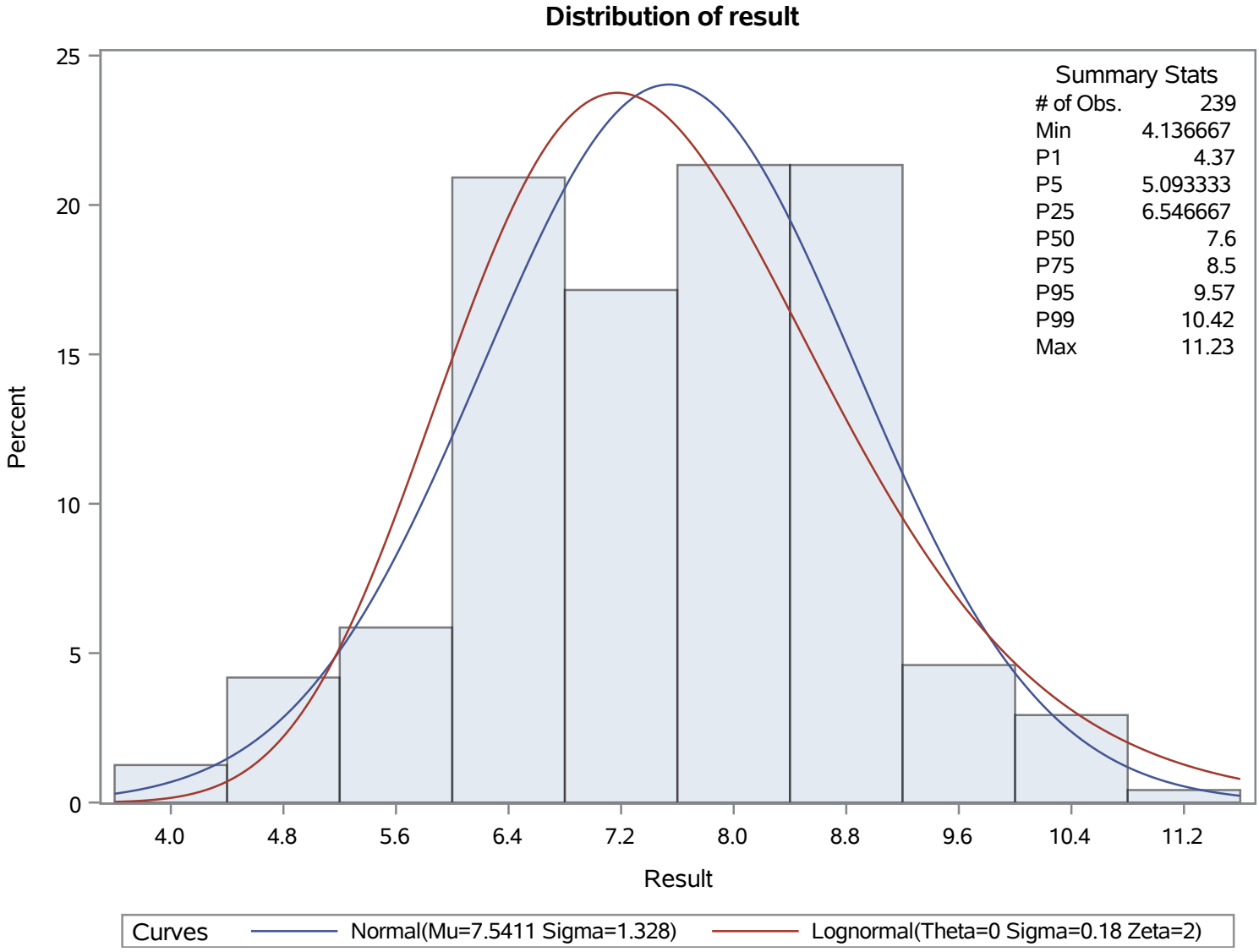
The UNIVARIATE Procedure

Distribution of result



Little Manatee River
Little Manatee River at CR 579
Dissolved Oxygen (mg/L) mg/L
Site ID = 21FLHILL140

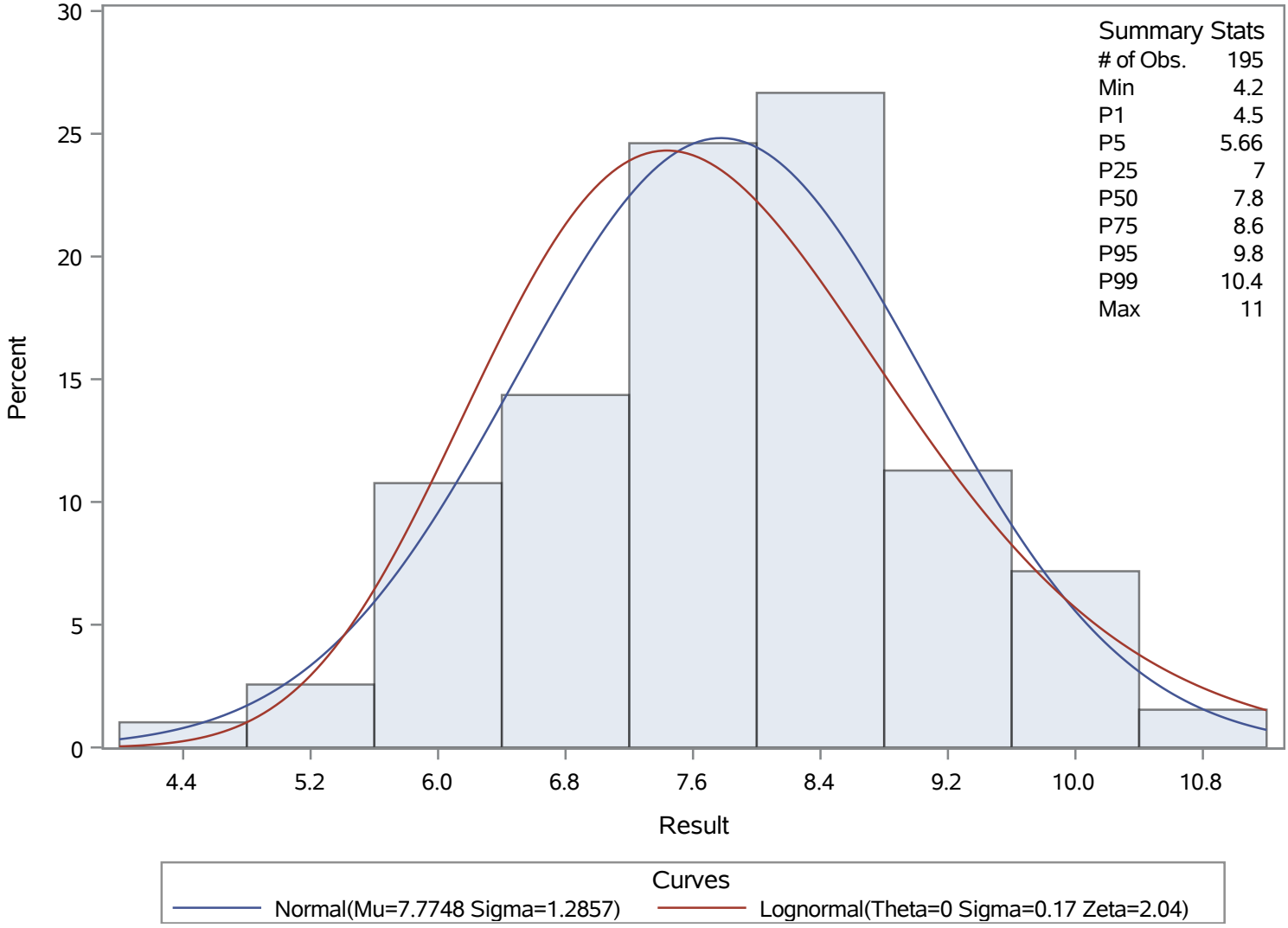
The UNIVARIATE Procedure



Little Manatee River
LITTLE MANATEE R AT CR579
Dissolved Oxygen (mg/L) mg/L
Site ID = 21FLHILL24010013

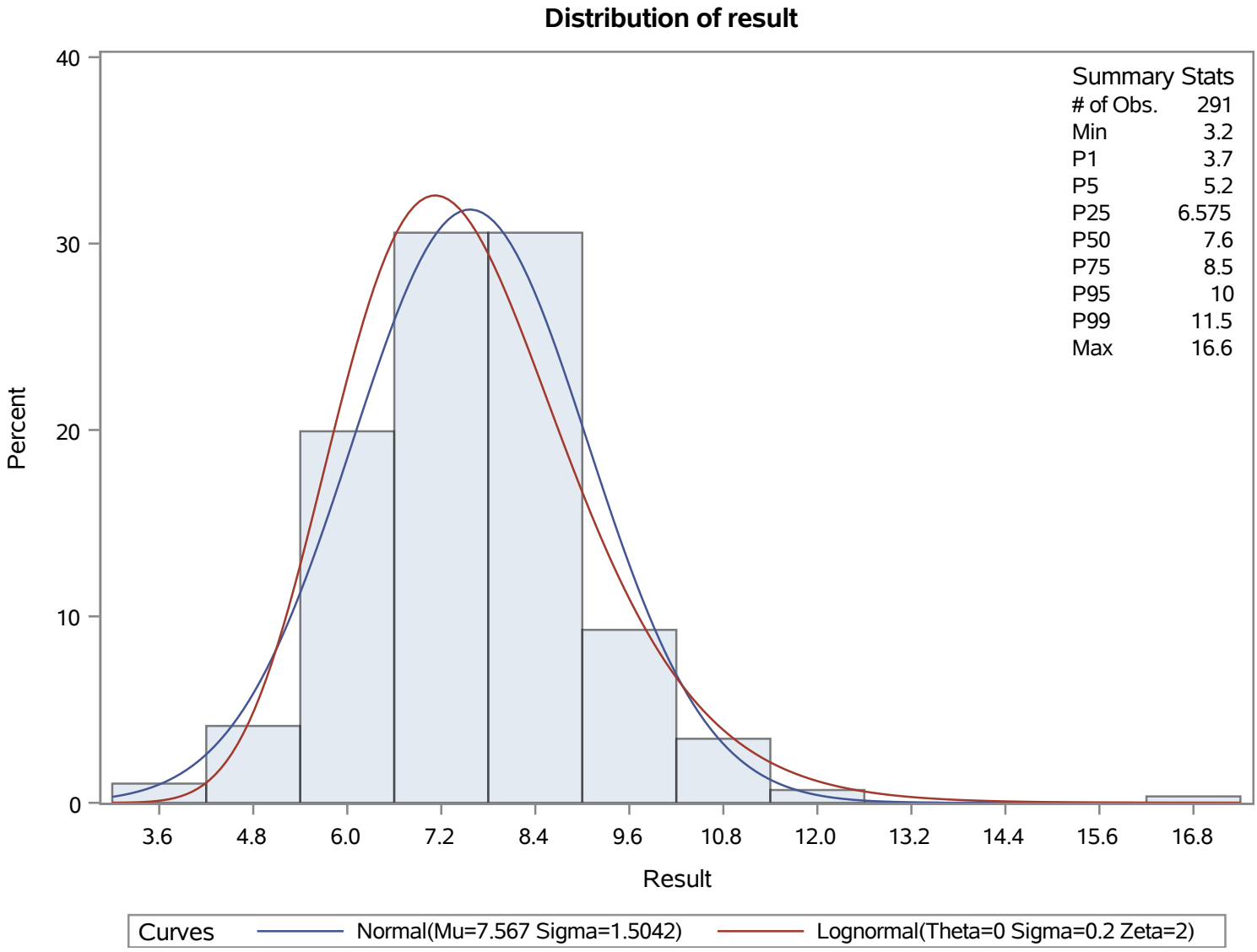
The UNIVARIATE Procedure

Distribution of result



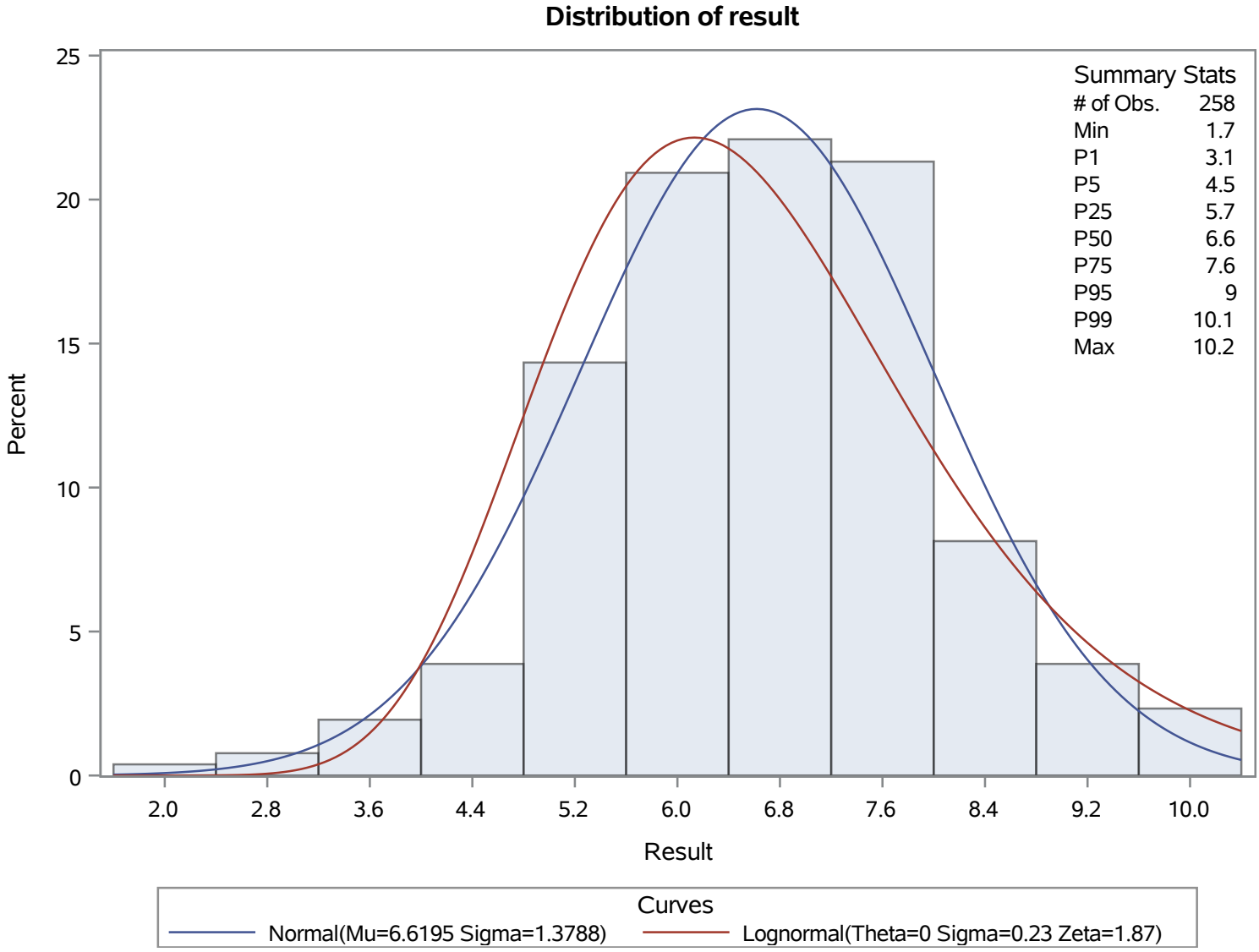
Little Manatee River
L MANATEE R BR US 301
Dissolved Oxygen (mg/L) mg/L
Site ID = 21FLHILL24010100

The UNIVARIATE Procedure



Little Manatee River
LITTLE MANATEE R AT SR #674
Dissolved Oxygen (mg/L) mg/L
Site ID = 21FLHILL24010110

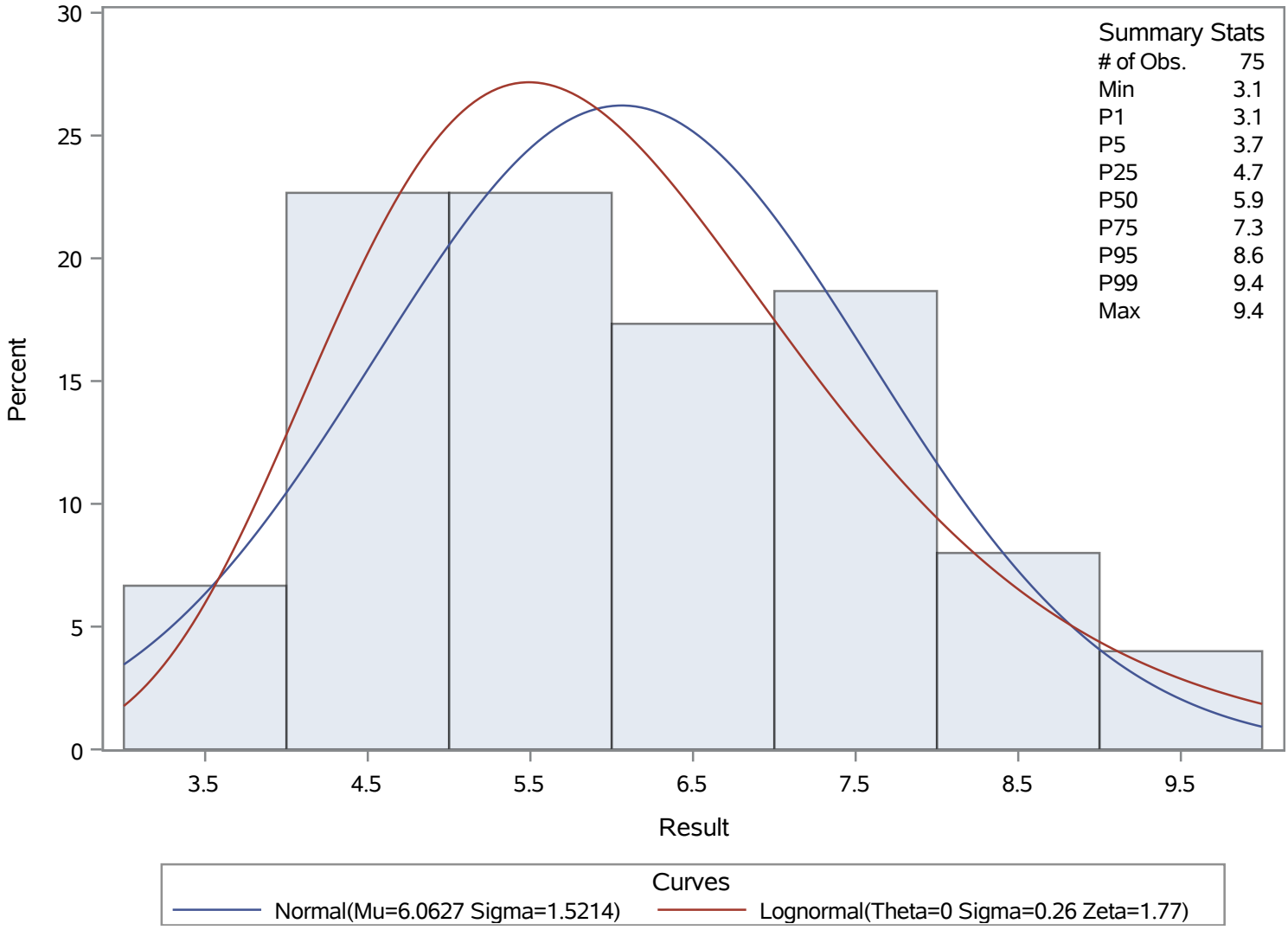
The UNIVARIATE Procedure



Little Manatee River
Little Manatee R. at SR674
Dissolved Oxygen (mg/L) mg/L
Site ID = 21FLIMCALM674

The UNIVARIATE Procedure

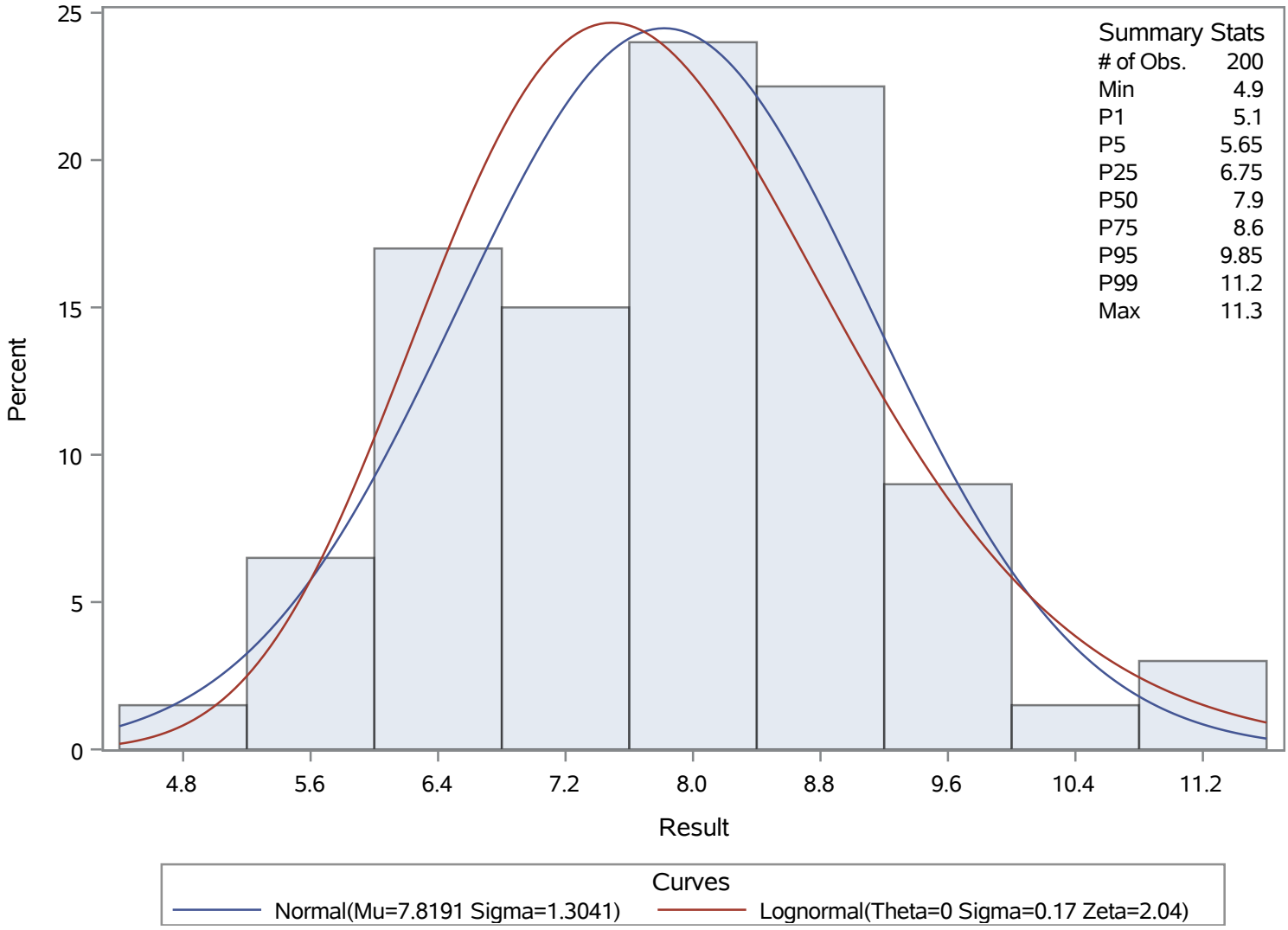
Distribution of result



Little Manatee River
D1
Dissolved Oxygen (mg/L) mg/L
Site ID = 21FLMANAD1

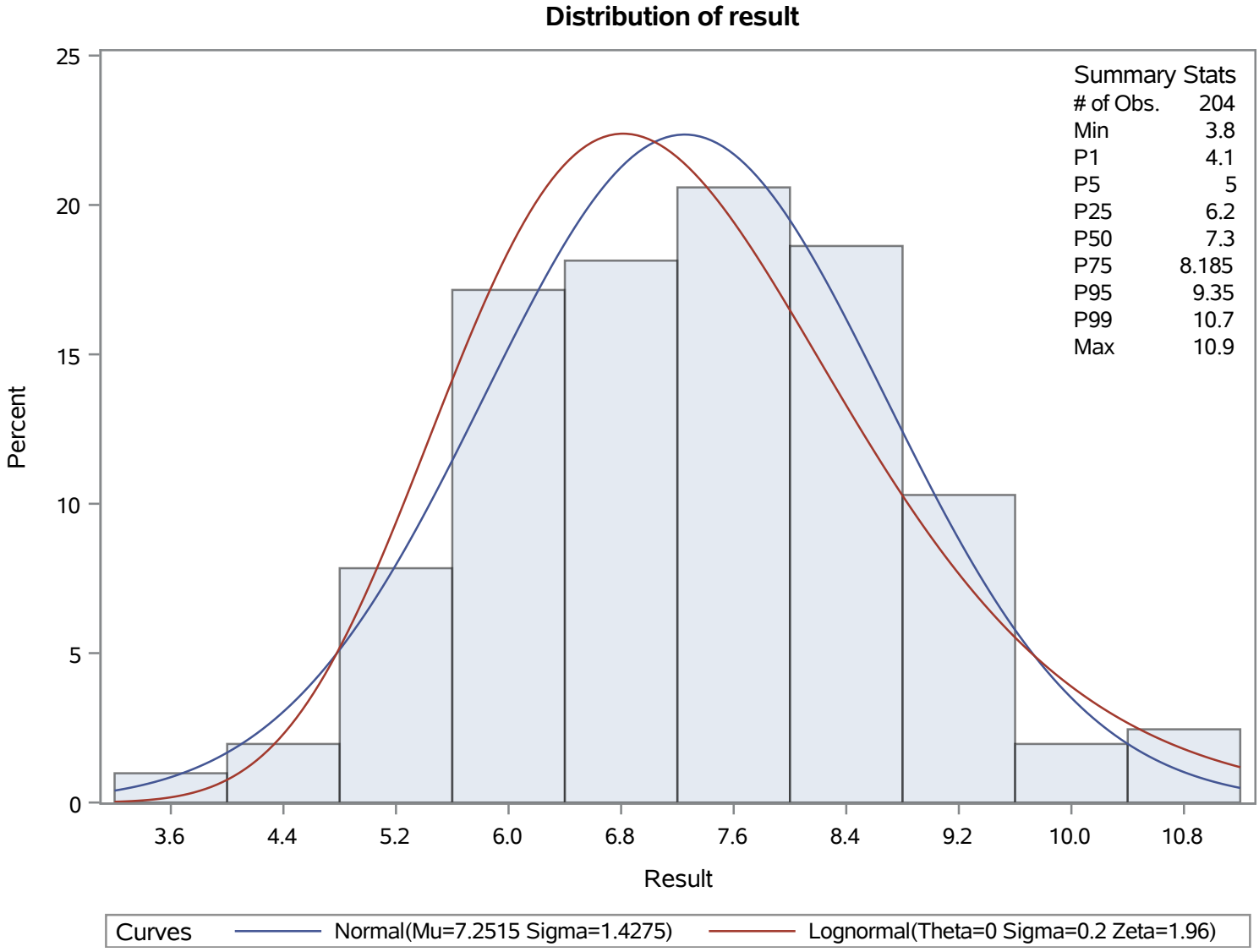
The UNIVARIATE Procedure

Distribution of result



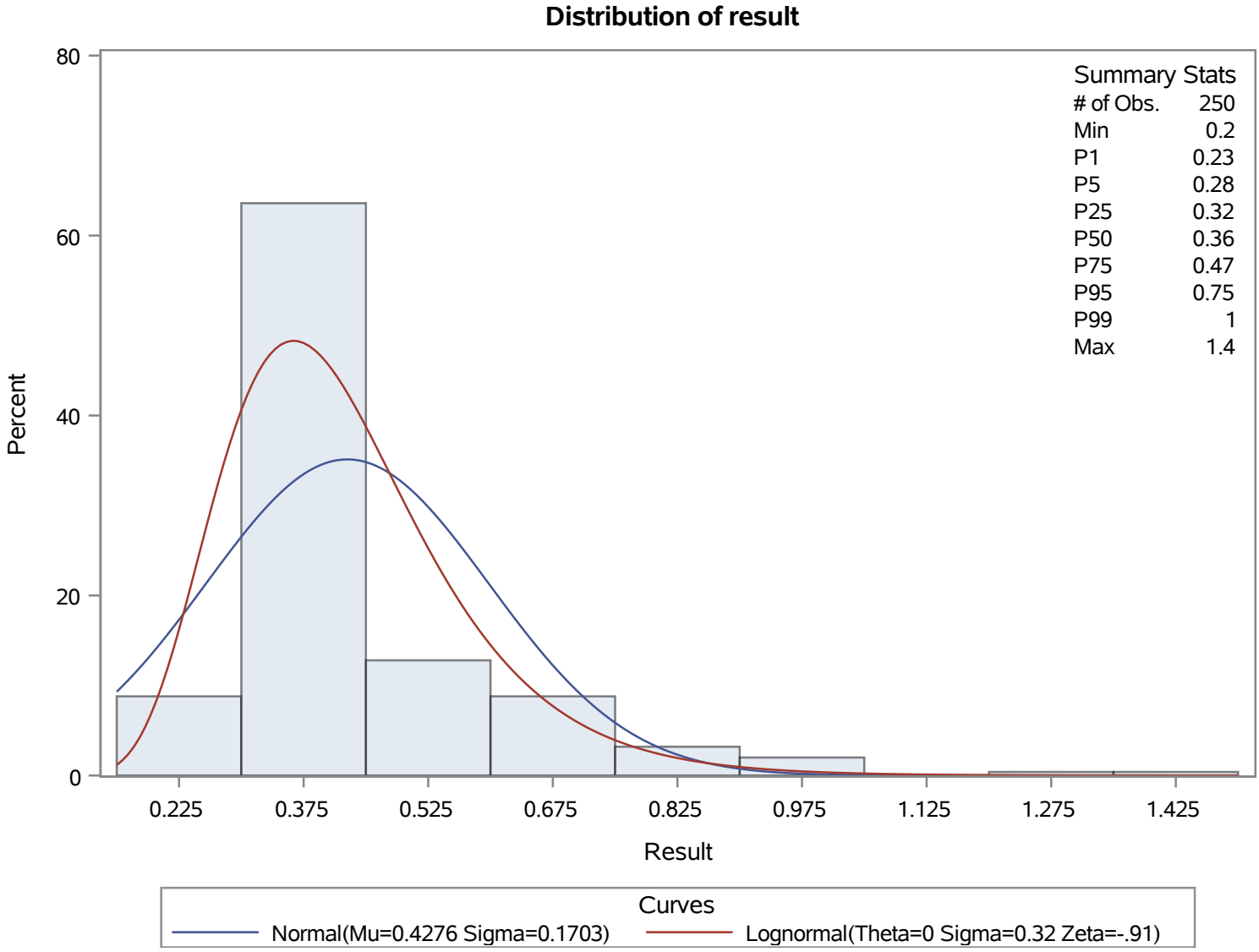
Little Manatee River
D3
Dissolved Oxygen (mg/L) mg/L
Site ID = 21FLMANAD3

The UNIVARIATE Procedure



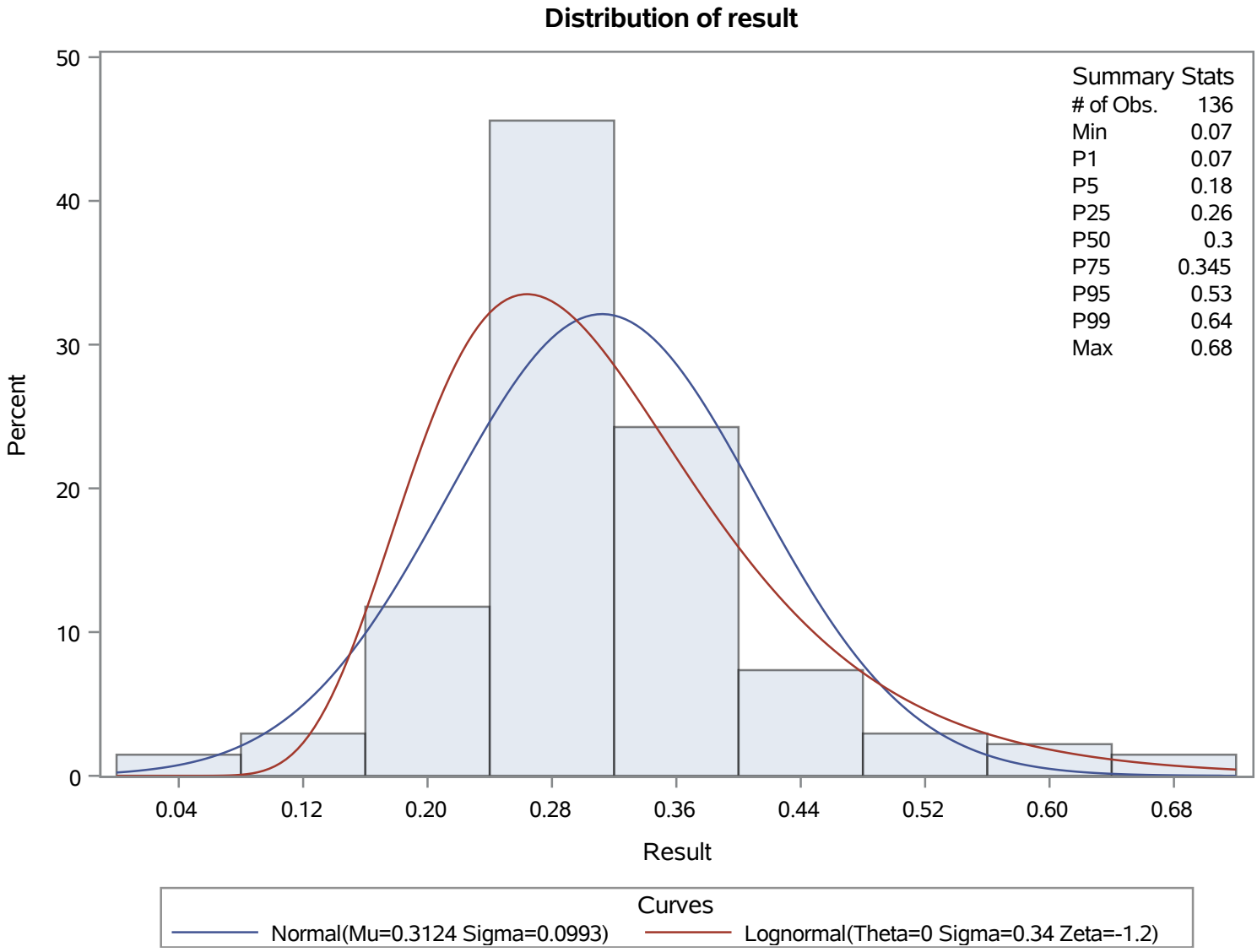
Little Manatee River
LITTLE MANATEE RIVER AT US HWY 301
Fluoride (mg/L) mg/L
Site ID = 21FLGW 3555

The UNIVARIATE Procedure



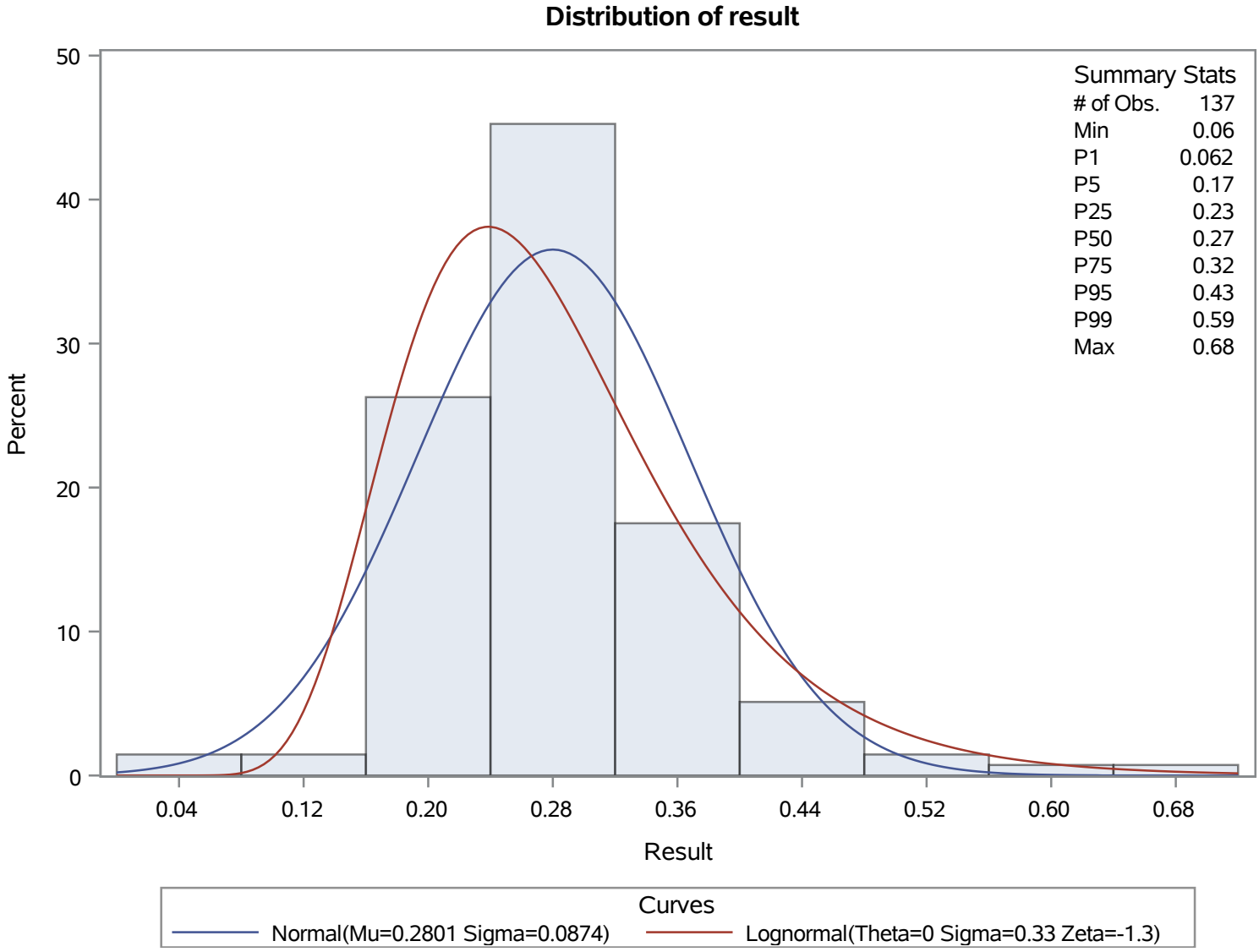
Little Manatee River
D1
Fluoride (mg/L) mg/L
Site ID = 21FLMANAD1

The UNIVARIATE Procedure



Little Manatee River
D3
Fluoride (mg/L) mg/L
Site ID = 21FLMANAD3

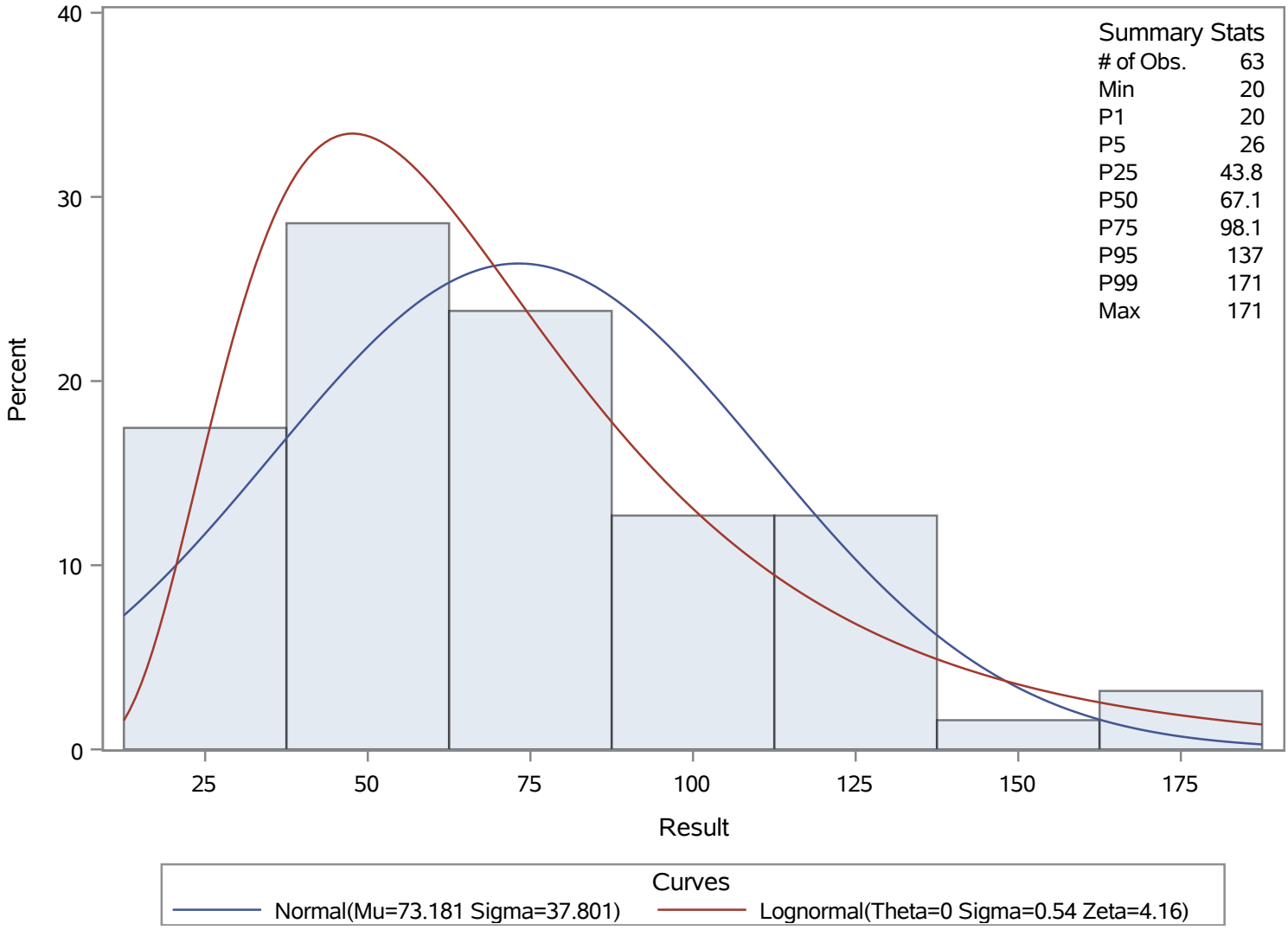
The UNIVARIATE Procedure



Little Manatee River
SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL
Hardness (mg/L) mg/L
Site ID = 112WRD 02300200

The UNIVARIATE Procedure

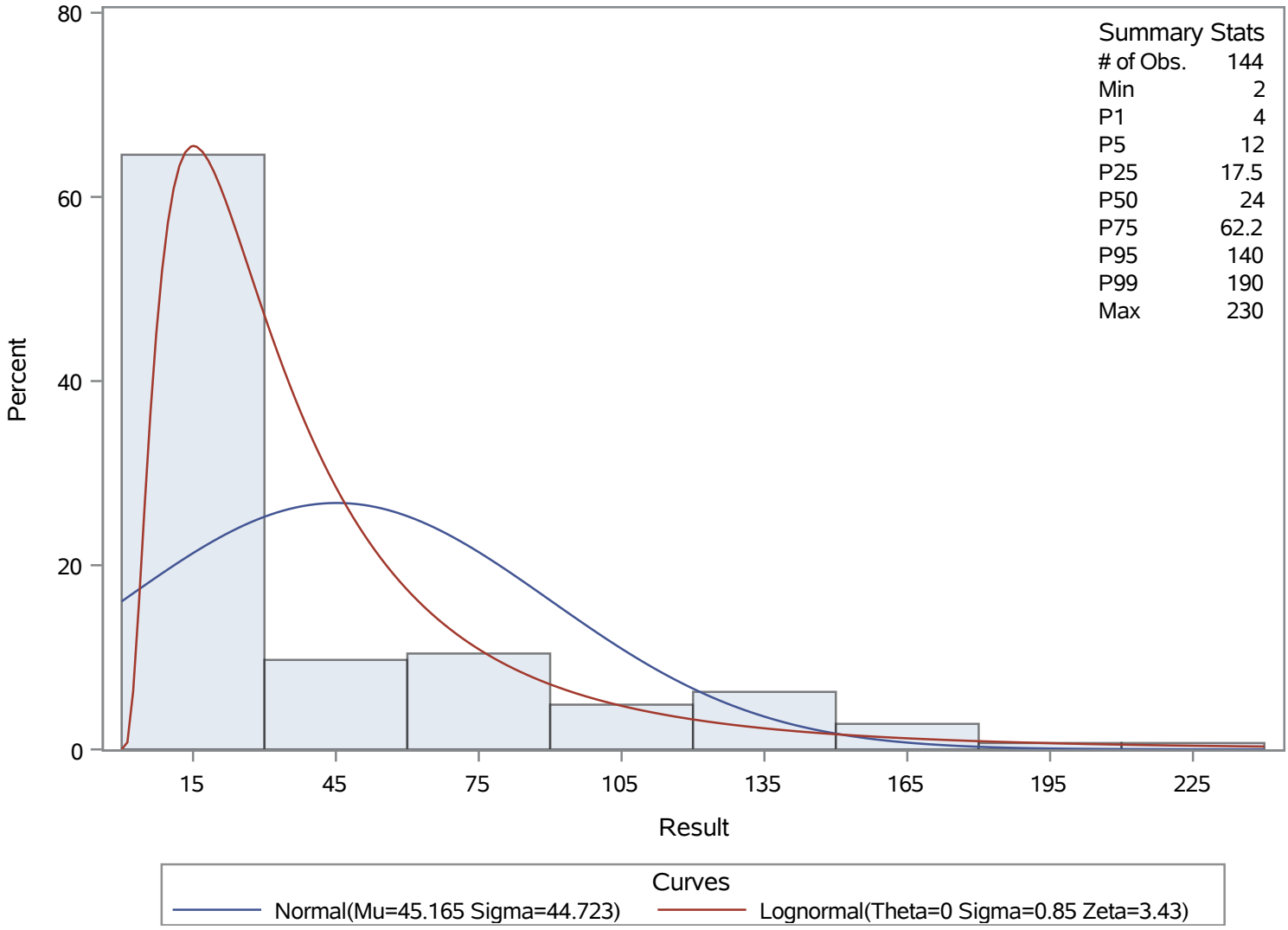
Distribution of result



Little Manatee River
LITTLE MANATEE RIVER NEAR WIMAUMA FL
Hardness (mg/L) mg/L
Site ID = 112WRD 02300500

The UNIVARIATE Procedure

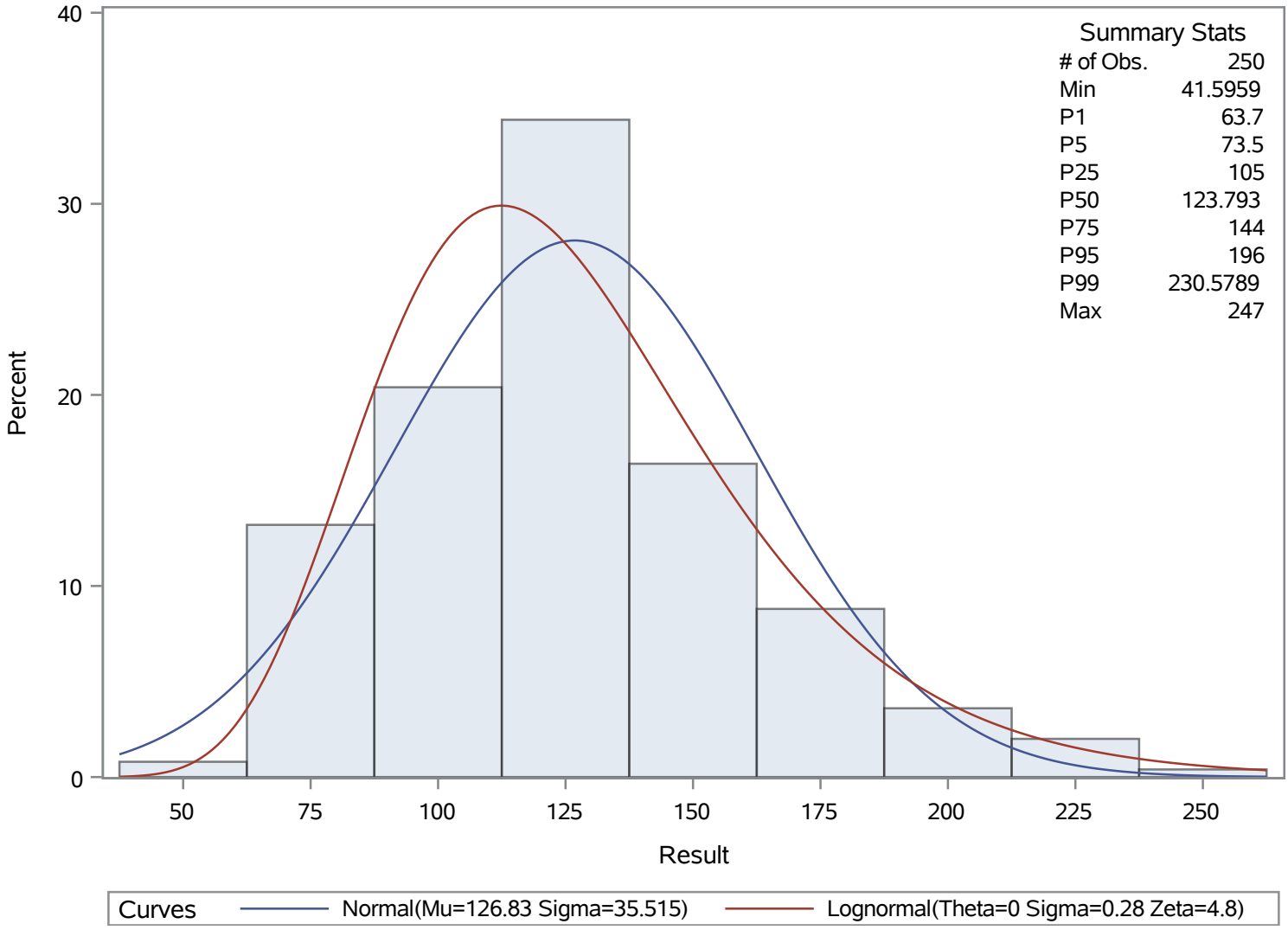
Distribution of result



Little Manatee River
LITTLE MANATEE RIVER AT US HWY 301
Hardness (mg/L) mg/L
Site ID = 21FLGW 3555

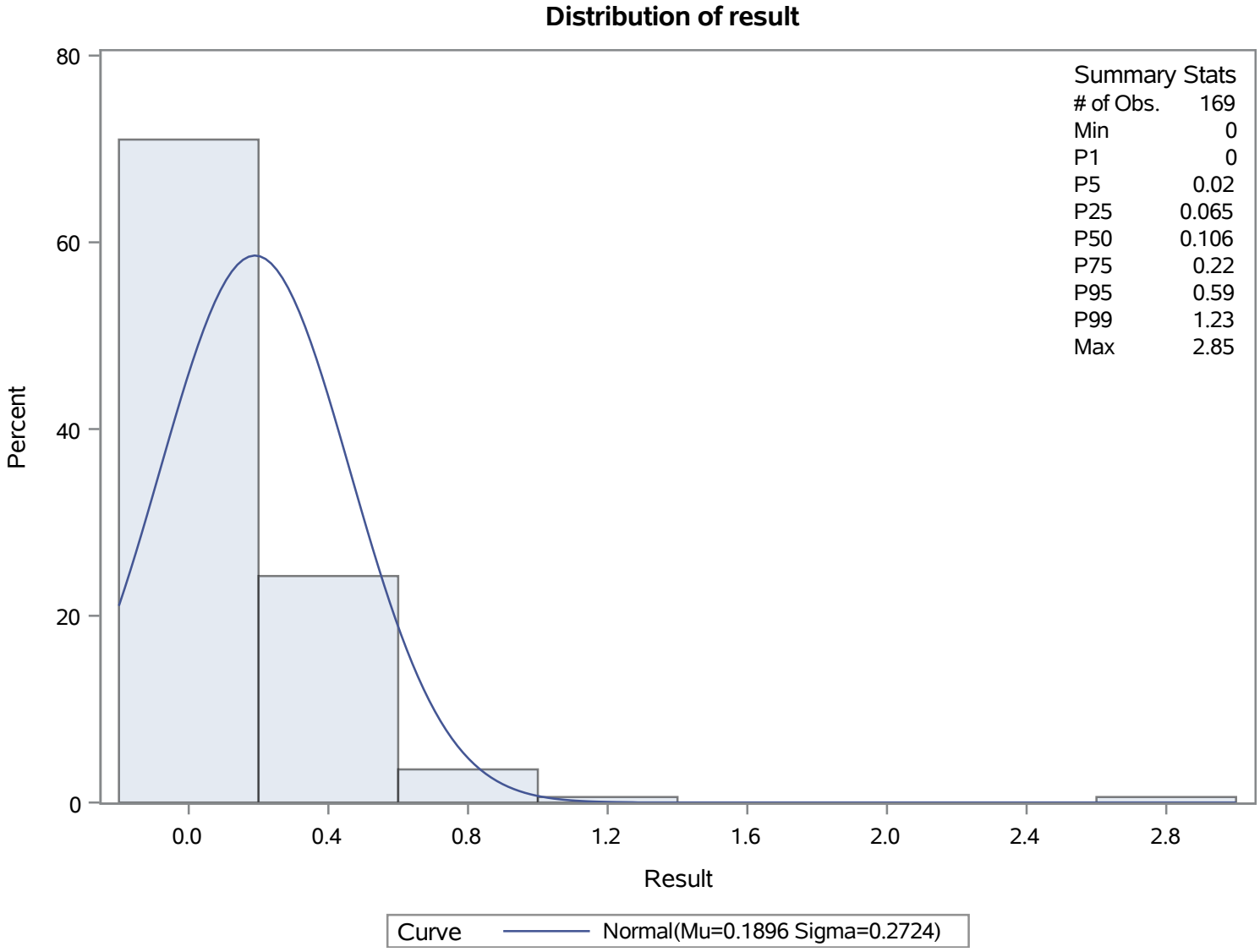
The UNIVARIATE Procedure

Distribution of result



Little Manatee River
LITTLE MANATEE RIVER NEAR FT. LONESOME FL
Nitrate (mg/L) mg/L
Site ID = 112WRD 02300100

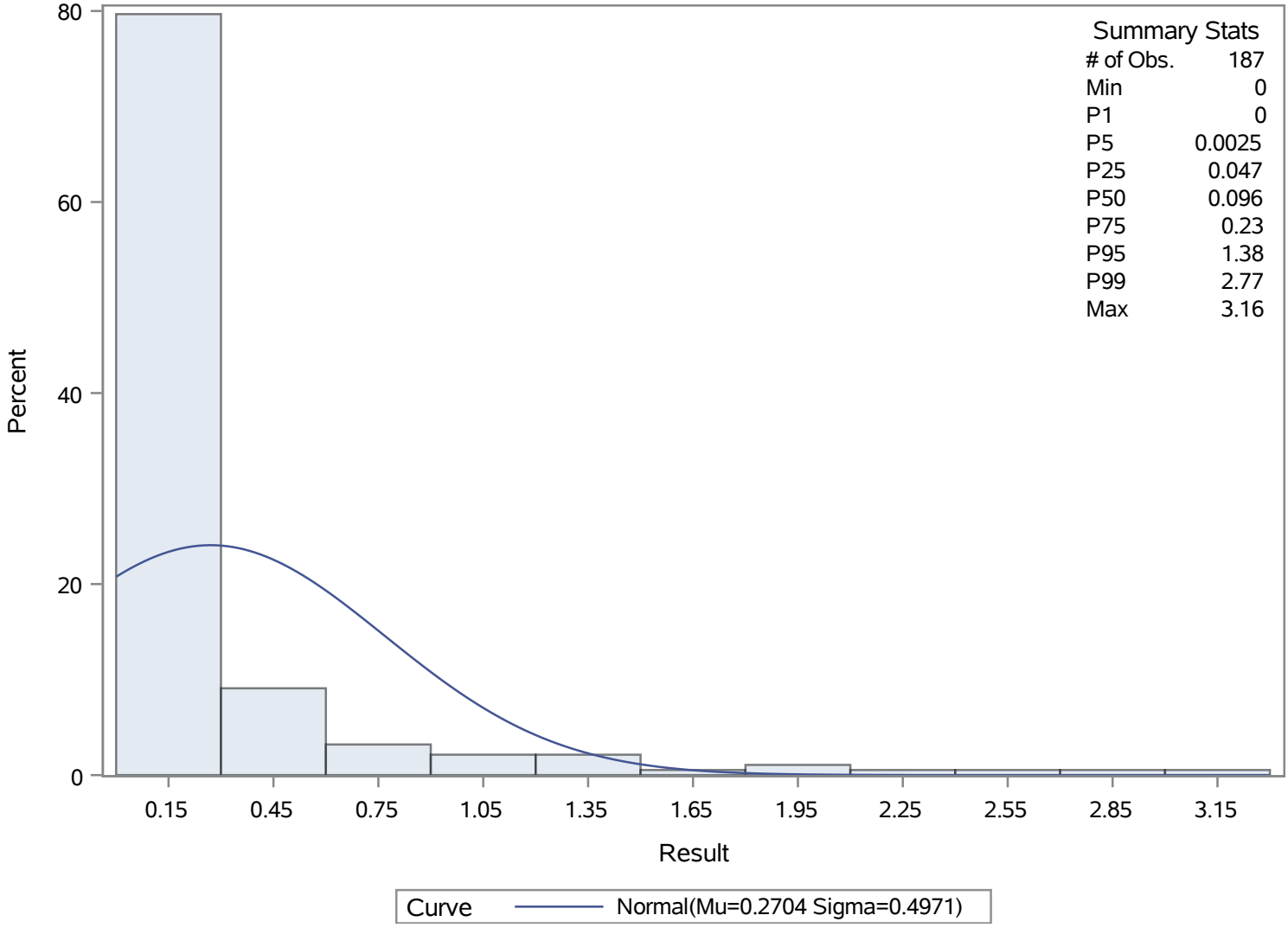
The UNIVARIATE Procedure



Little Manatee River
SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL
Nitrate (mg/L) mg/L
Site ID = 112WRD 02300200

The UNIVARIATE Procedure

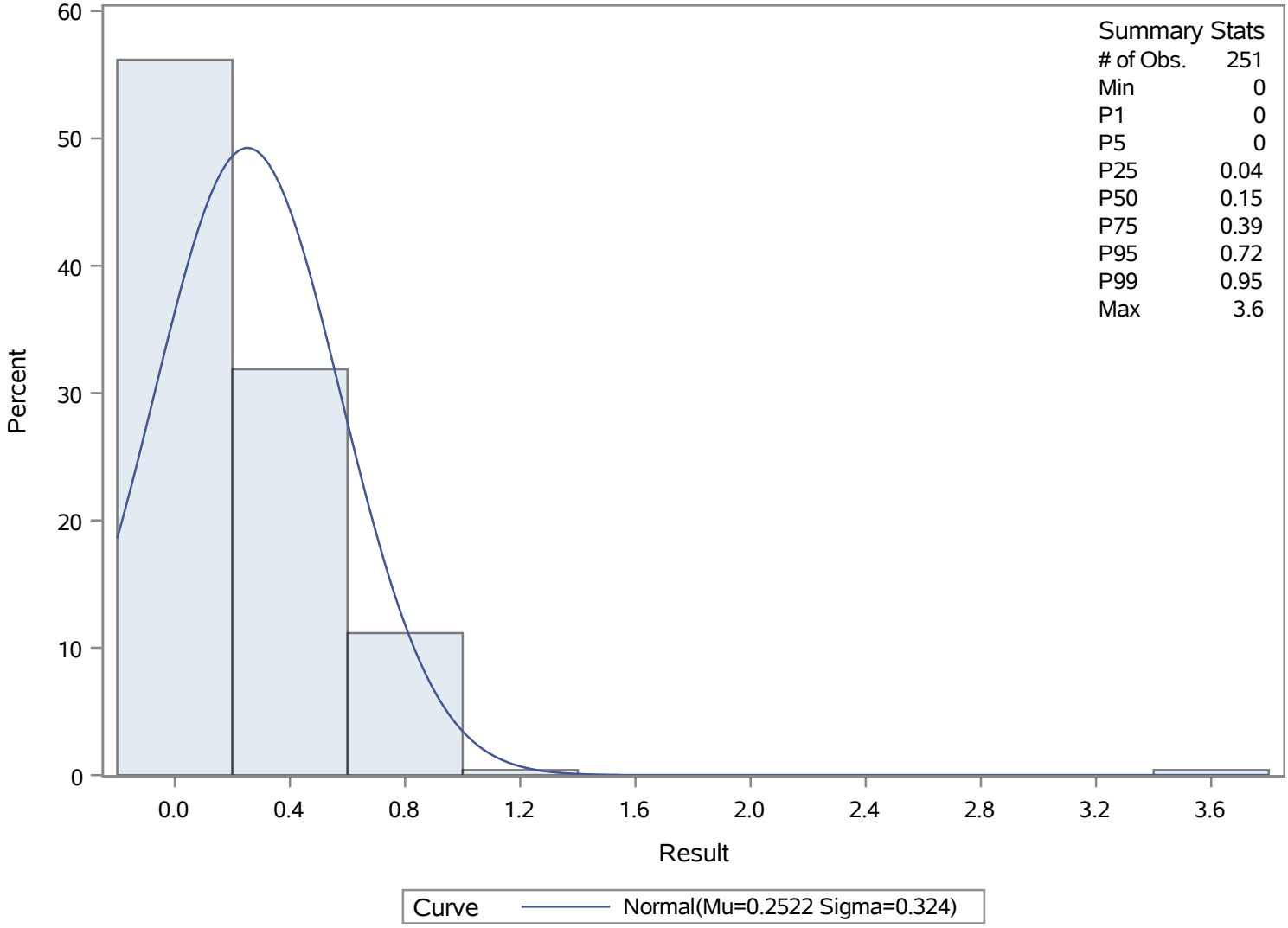
Distribution of result



Little Manatee River
LITTLE MANATEE RIVER NEAR WIMAUMA FL
Nitrate (mg/L) mg/L
Site ID = 112WRD 02300500

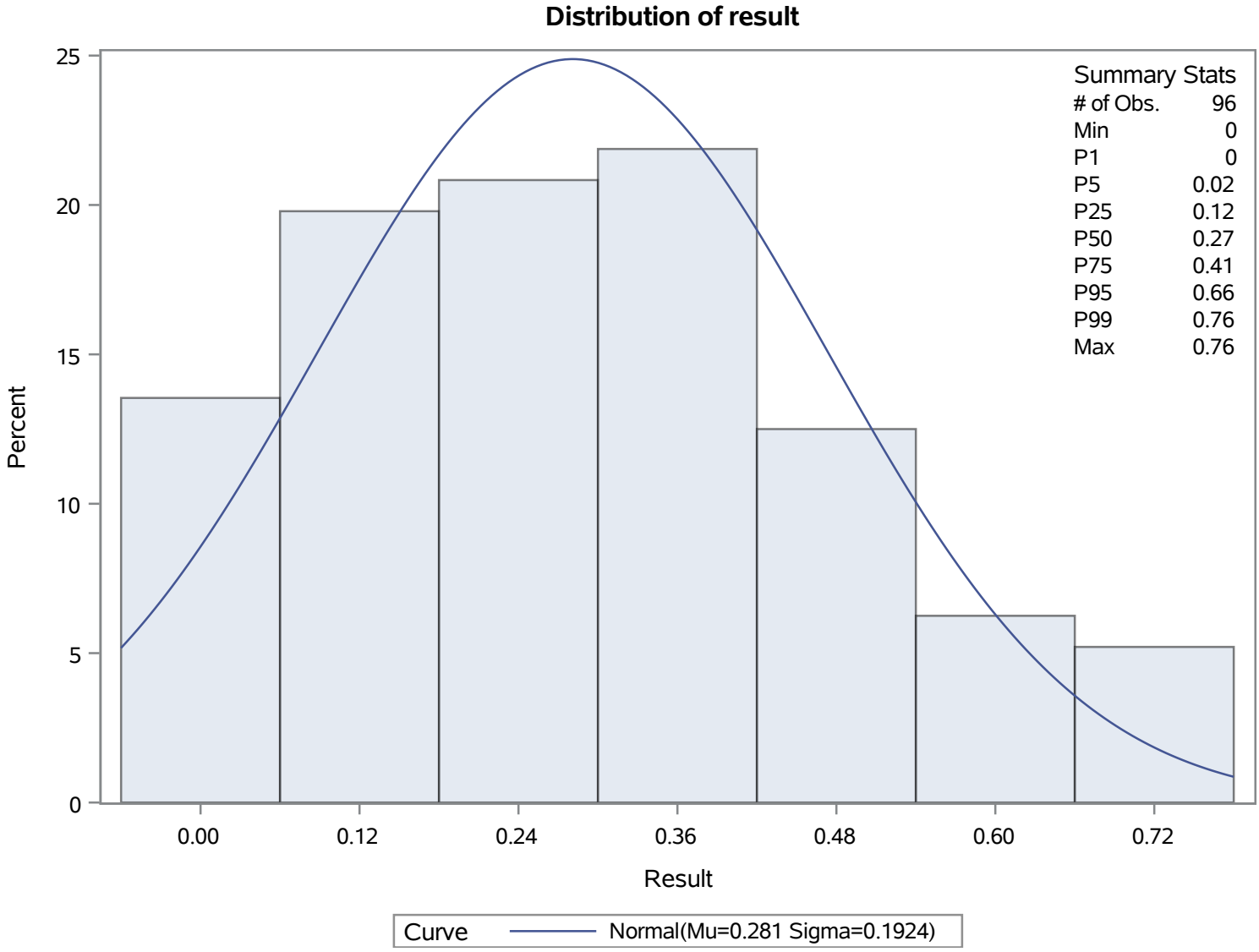
The UNIVARIATE Procedure

Distribution of result



Little Manatee River
L MANATEE R BR US 301
Nitrate (mg/L) mg/L
Site ID = 21FLA 24010100

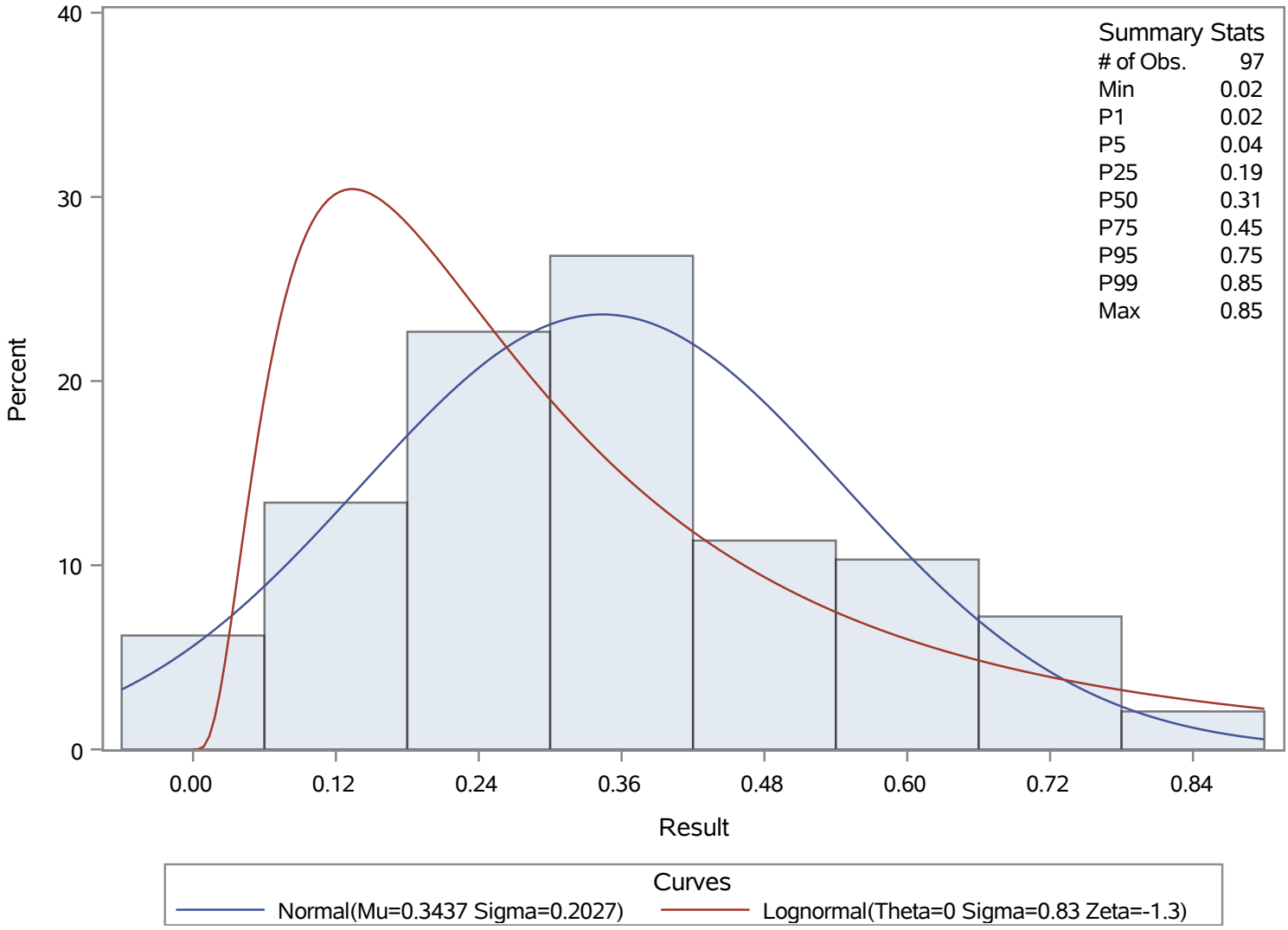
The UNIVARIATE Procedure



Little Manatee River
L MANATEE R BR US 301
Nitrate (mg/L) mg/L
Site ID = 21FLHILL24010100

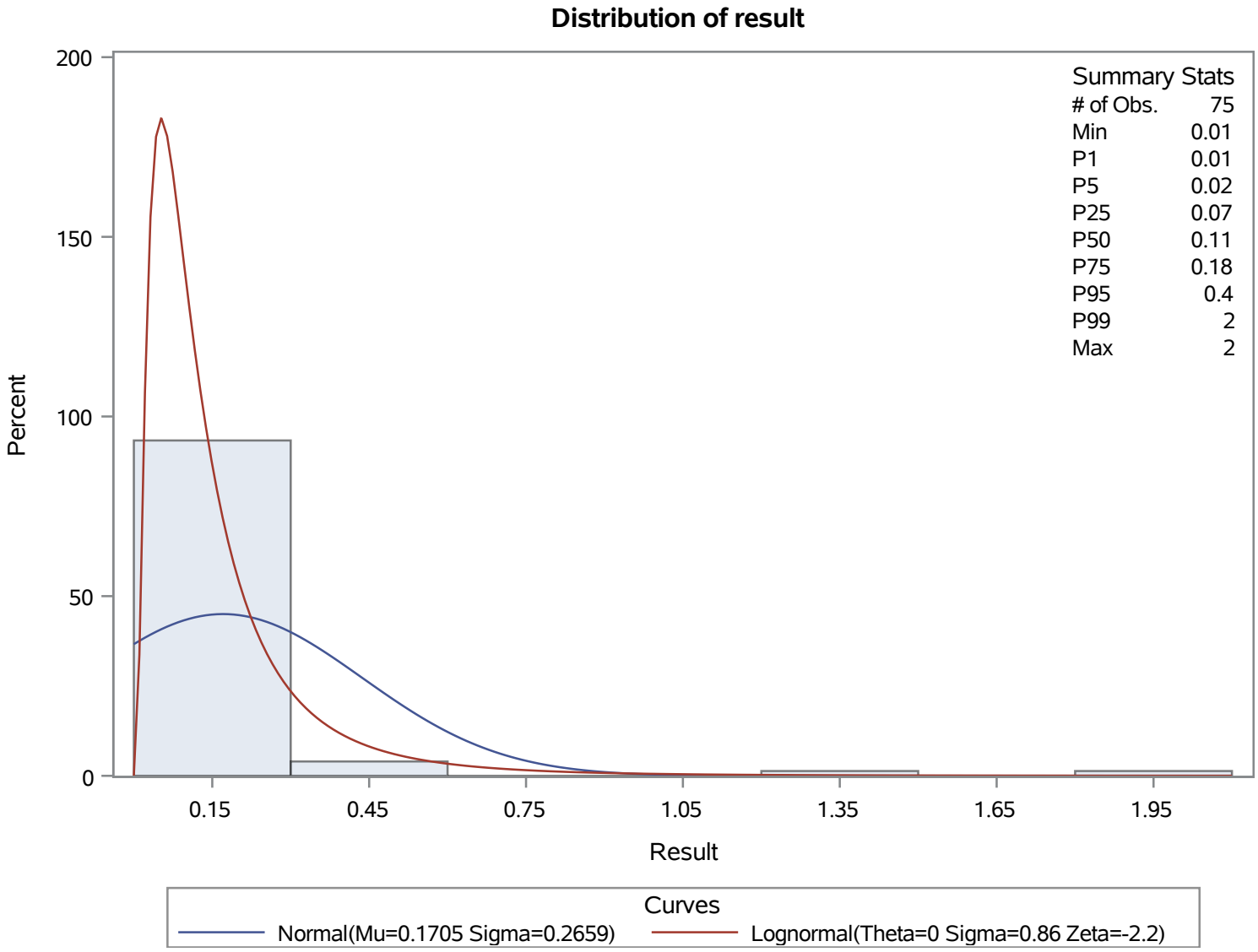
The UNIVARIATE Procedure

Distribution of result



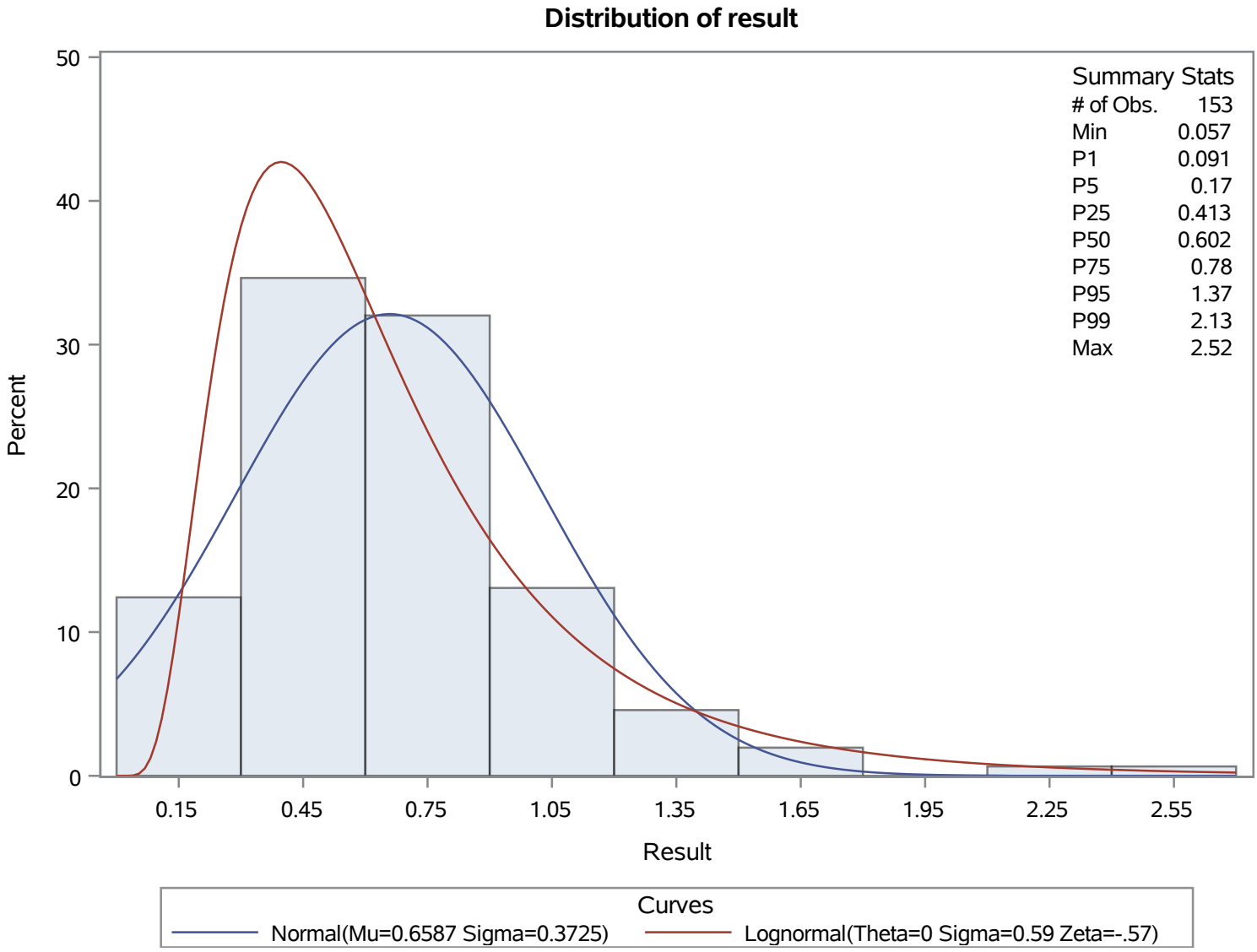
Little Manatee River
LITTLE MANATEE R AT SR #674
Nitrate (mg/L) mg/L
Site ID = 21FLHILL24010110

The UNIVARIATE Procedure



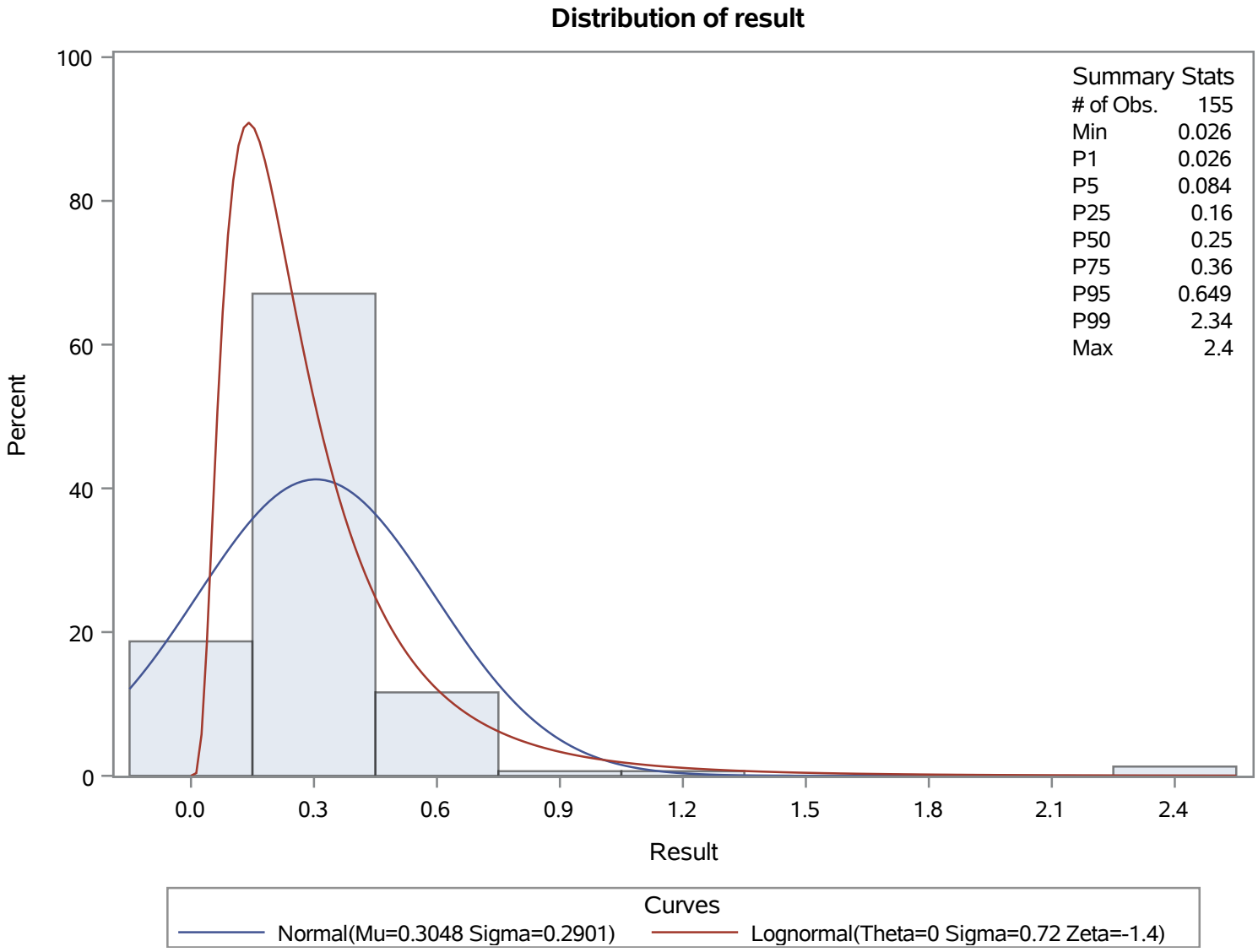
Little Manatee River
D1
Nitrate (mg/L) mg/L
Site ID = 21FLMANAD1

The UNIVARIATE Procedure



Little Manatee River
D3
Nitrate (mg/L) mg/L
Site ID = 21FLMANAD3

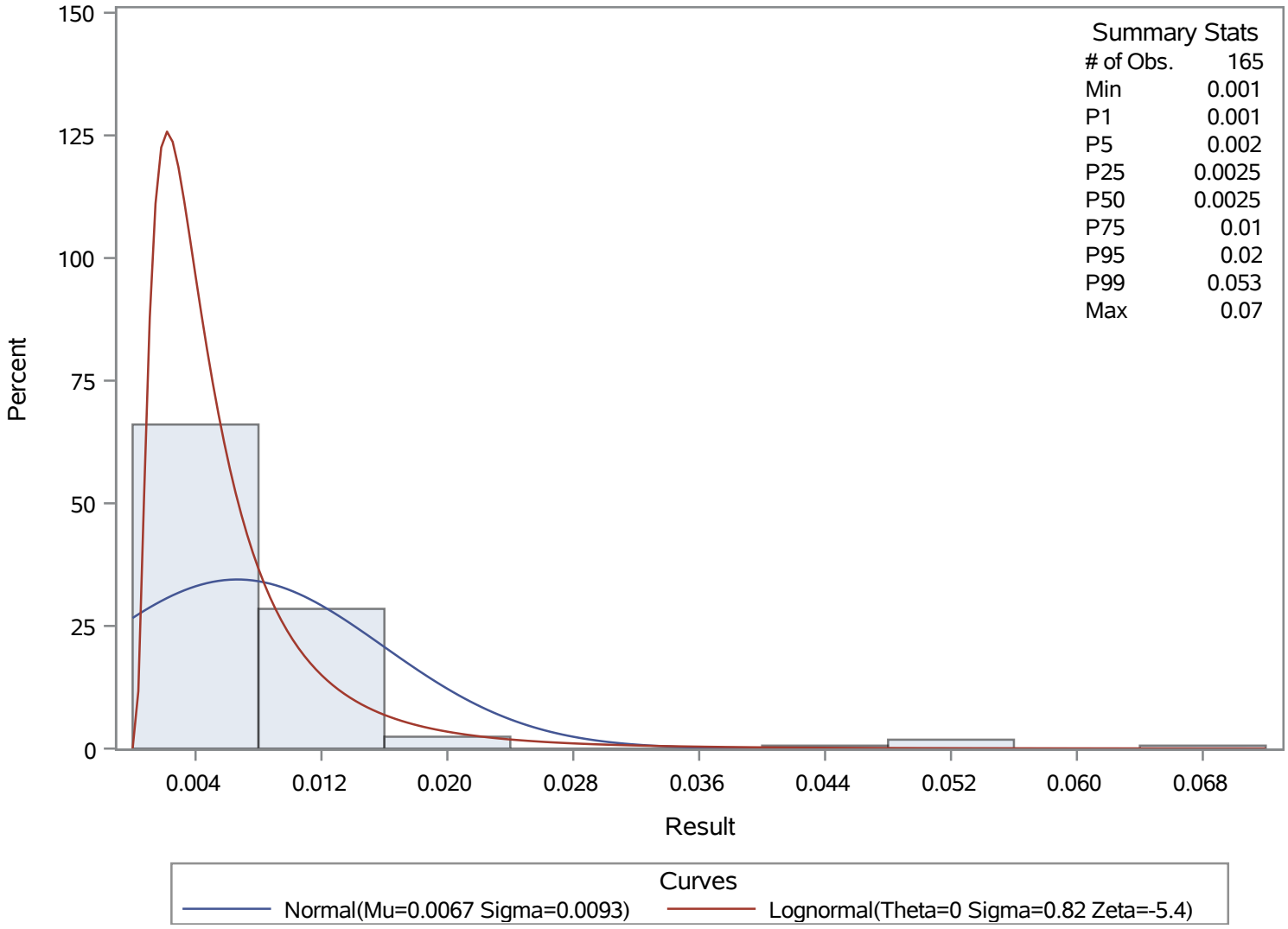
The UNIVARIATE Procedure



Little Manatee River
LITTLE MANATEE RIVER NEAR FT. LONESOME FL
Nitrite Nitrogen as N (mg/L) mg/L
Site ID = 112WRD 02300100

The UNIVARIATE Procedure

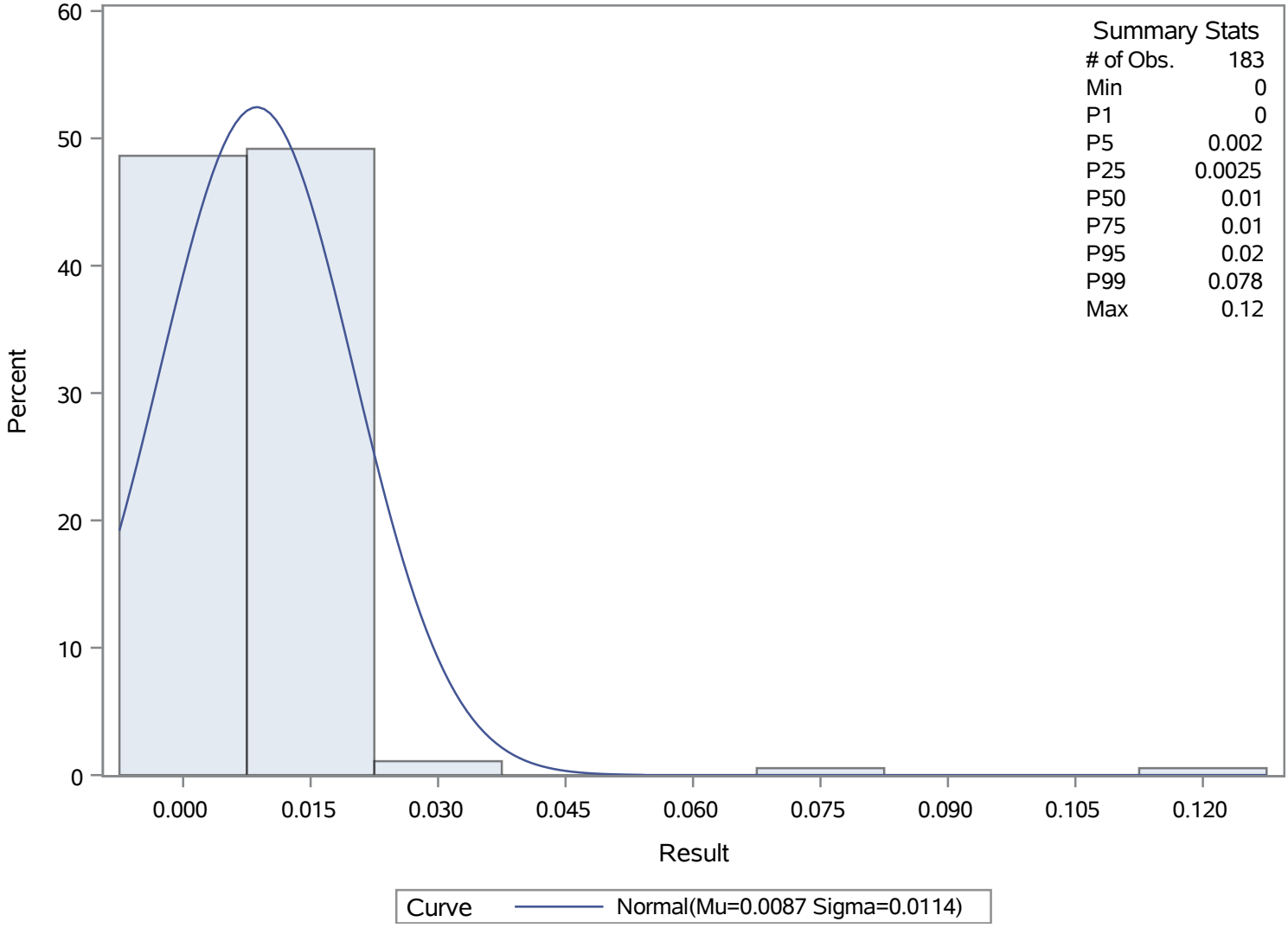
Distribution of result



Little Manatee River
SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL
Nitrite Nitrogen as N (mg/L) mg/L
Site ID = 112WRD 02300200

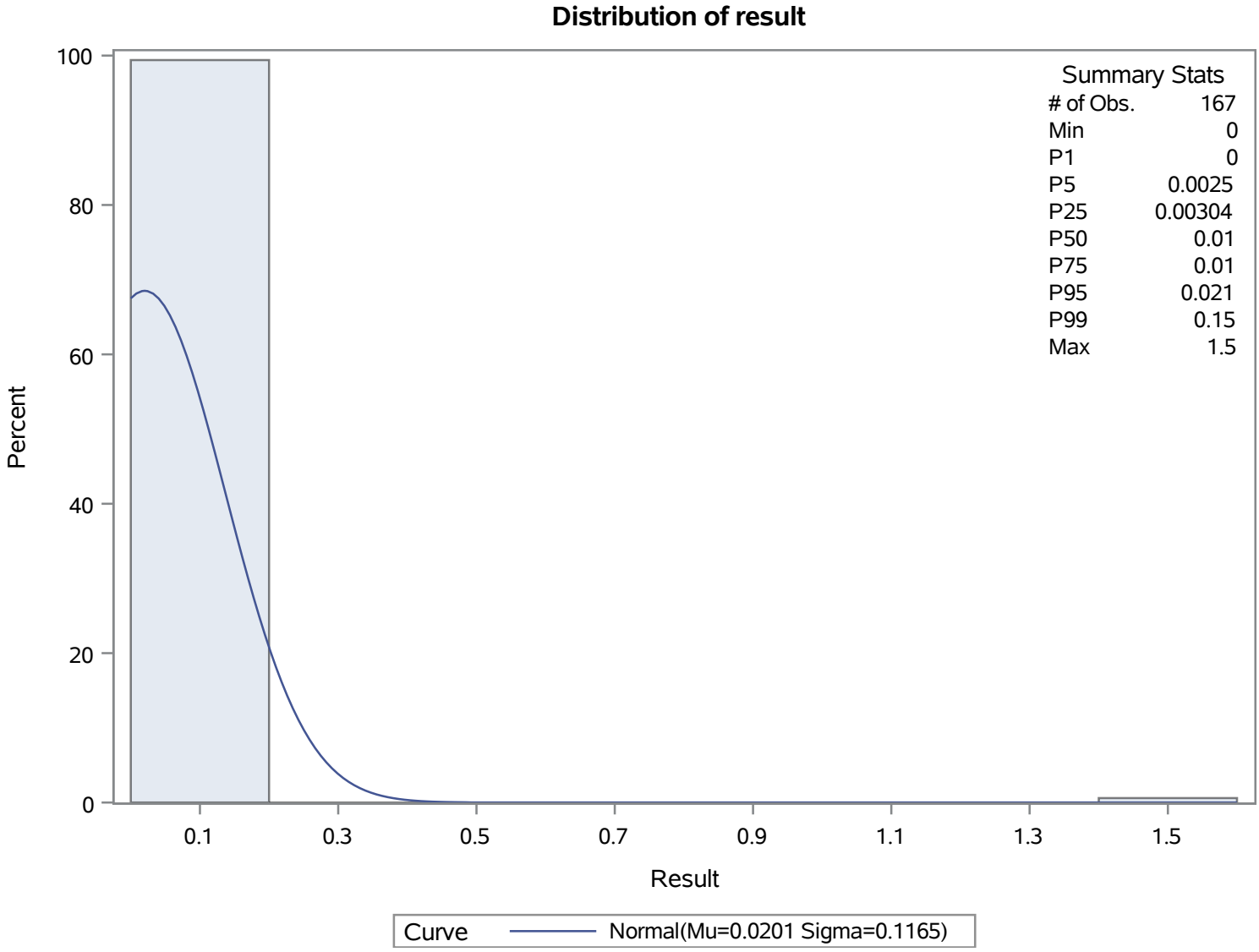
The UNIVARIATE Procedure

Distribution of result



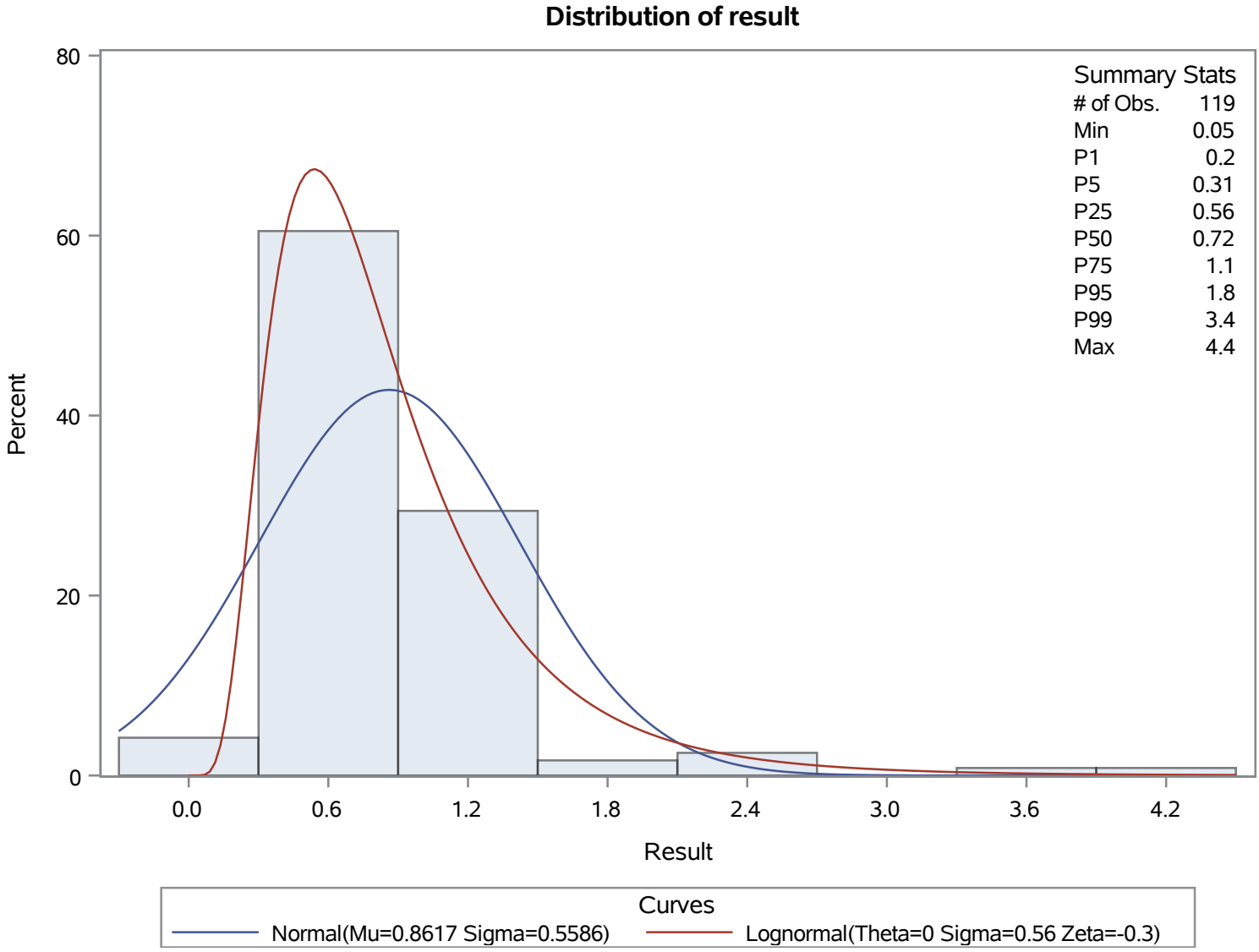
Little Manatee River
LITTLE MANATEE RIVER NEAR WIMAUMA FL
Nitrite Nitrogen as N (mg/L) mg/L
Site ID = 112WRD 02300500

The UNIVARIATE Procedure



Little Manatee River
LITTLE MANATEE RIVER NEAR FT. LONESOME FL
Nitrogen Kjeldahl as N (mg/L) mg/L
Site ID = 112WRD 02300100

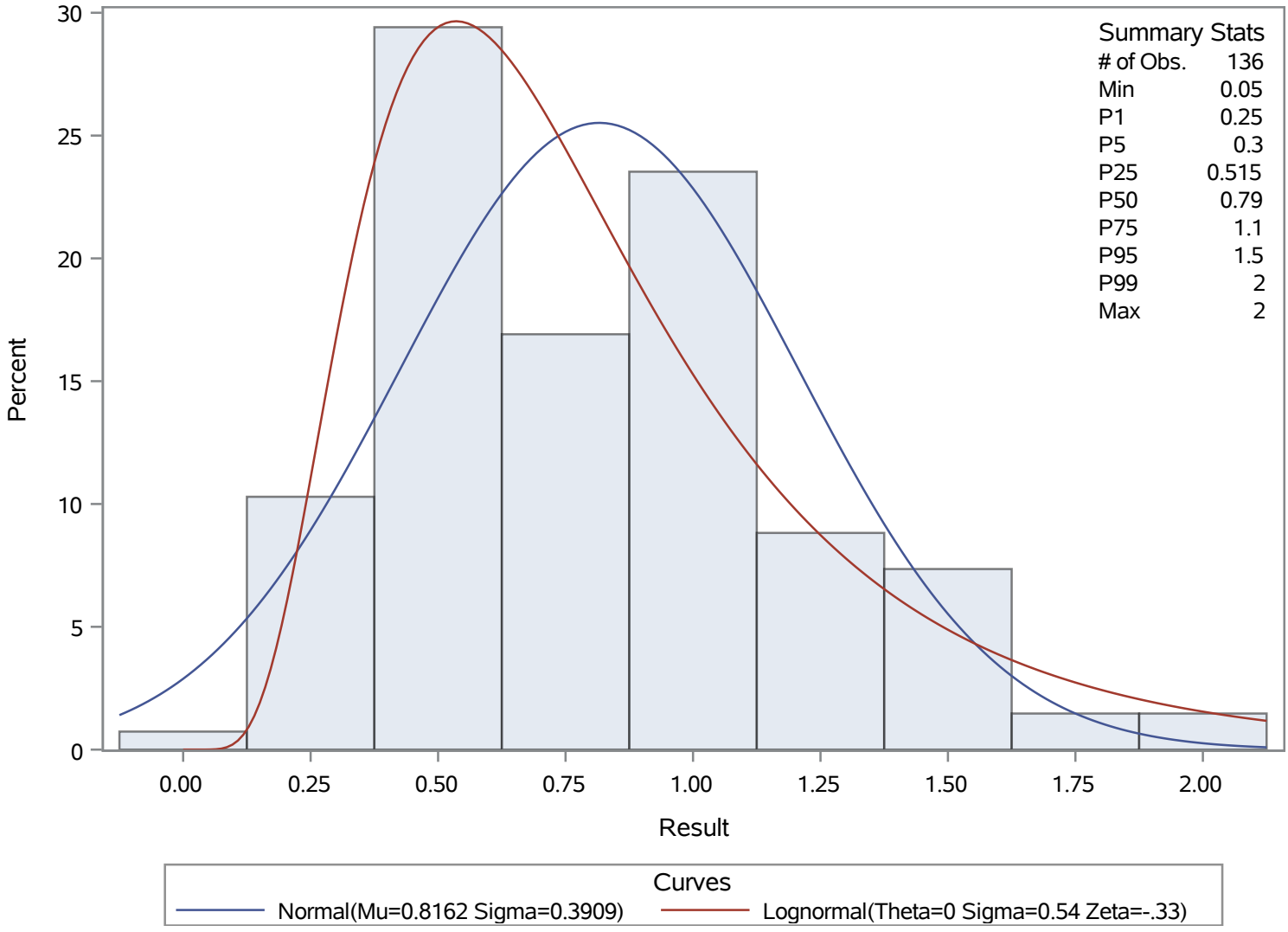
The UNIVARIATE Procedure



Little Manatee River
SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL
Nitrogen Kjeldahl as N (mg/L) mg/L
Site ID = 112WRD 02300200

The UNIVARIATE Procedure

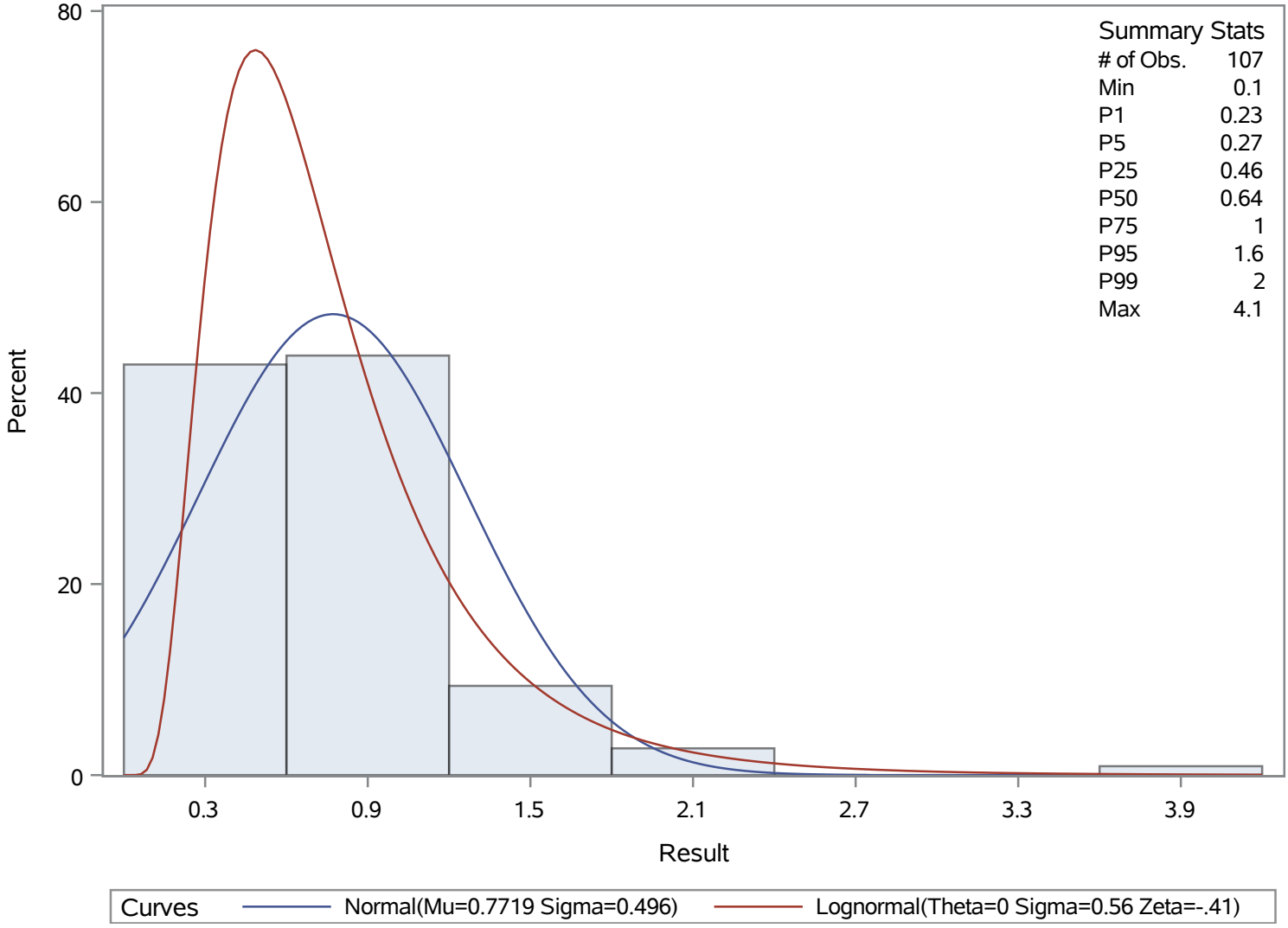
Distribution of result



Little Manatee River
LITTLE MANATEE RIVER NEAR WIMAUMA FL
Nitrogen Kjeldahl as N (mg/L) mg/L
Site ID = 112WRD 02300500

The UNIVARIATE Procedure

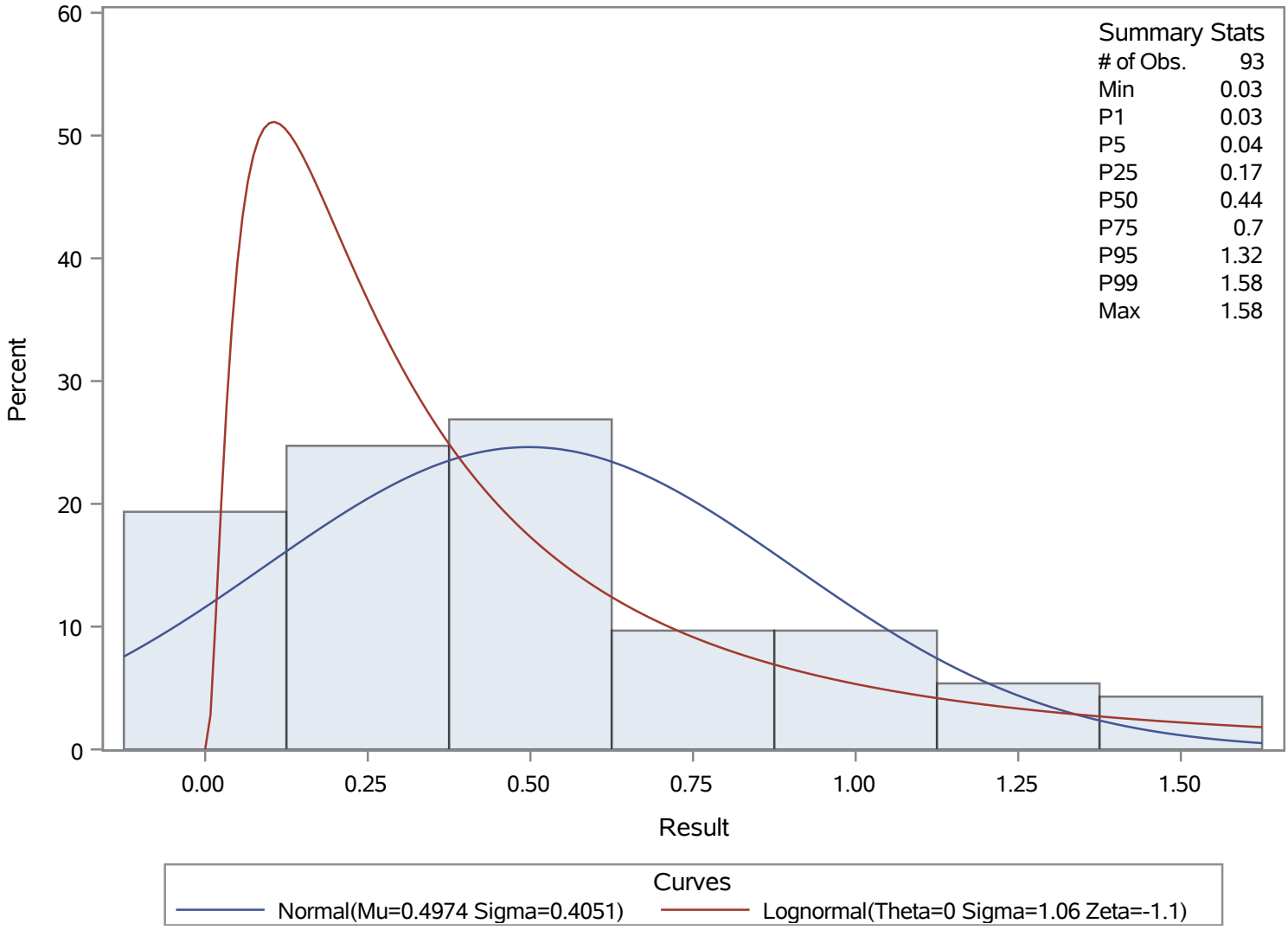
Distribution of result



Little Manatee River
L MANATEE R BR US 301
Nitrogen Kjeldahl as N (mg/L) mg/L
Site ID = 21FLA 24010100

The UNIVARIATE Procedure

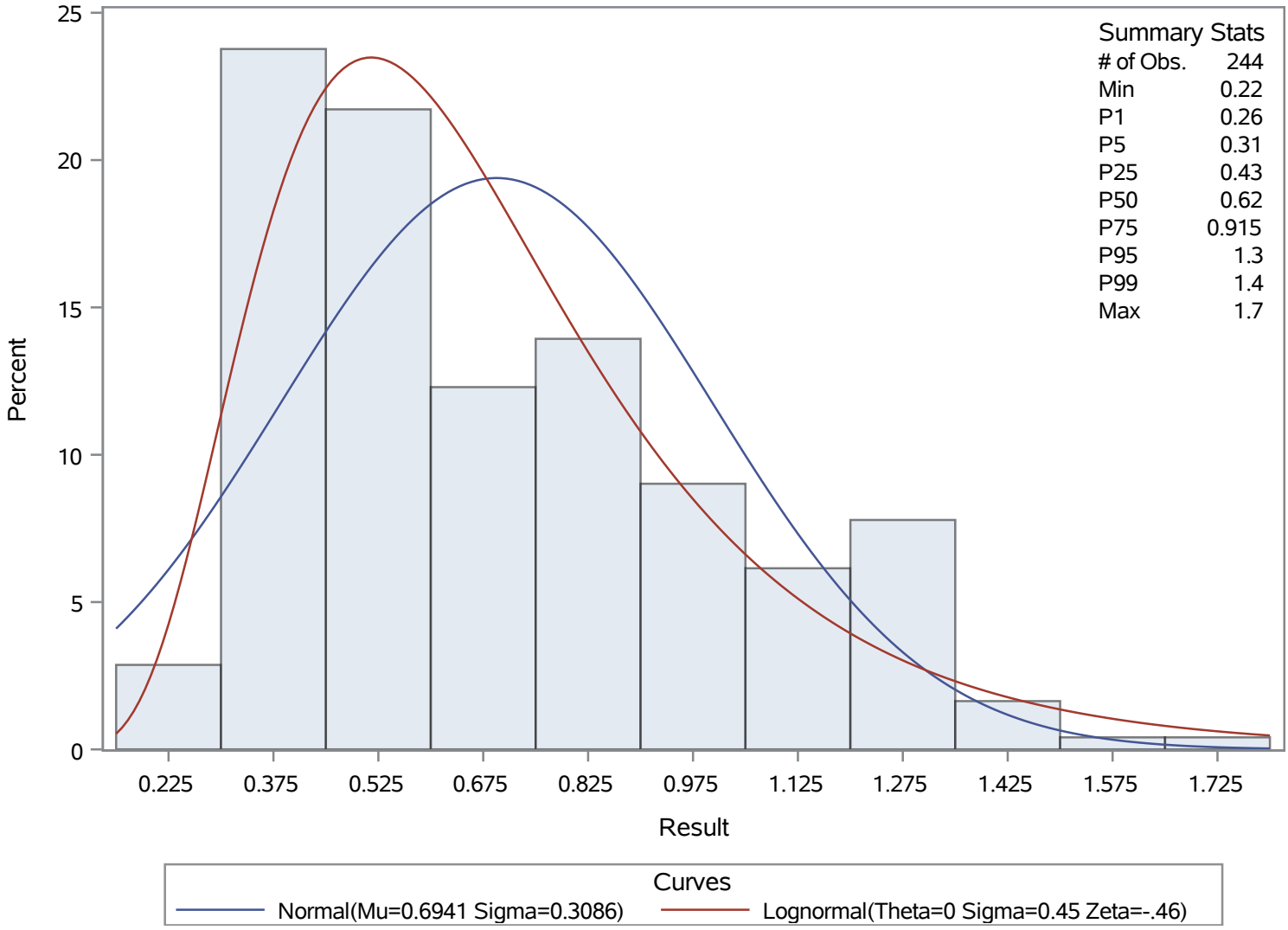
Distribution of result



Little Manatee River
LITTLE MANATEE RIVER AT US HWY 301
Nitrogen Kjeldahl as N (mg/L) mg/L
Site ID = 21FLGW 3555

The UNIVARIATE Procedure

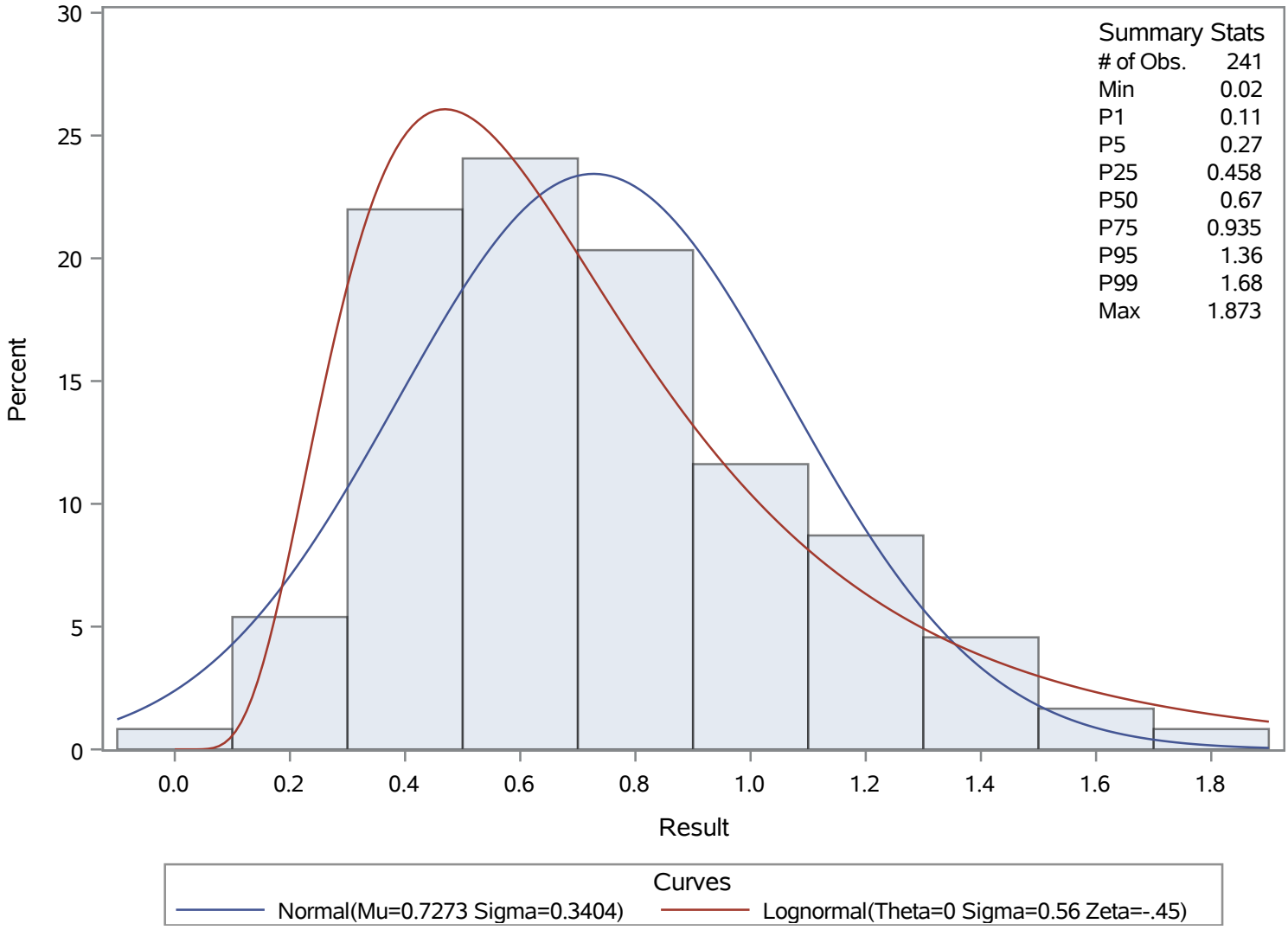
Distribution of result



Little Manatee River
Little Manatee River at US 301 bridge
Nitrogen Kjeldahl as N (mg/L) mg/L
Site ID = 21FLHILL113

The UNIVARIATE Procedure

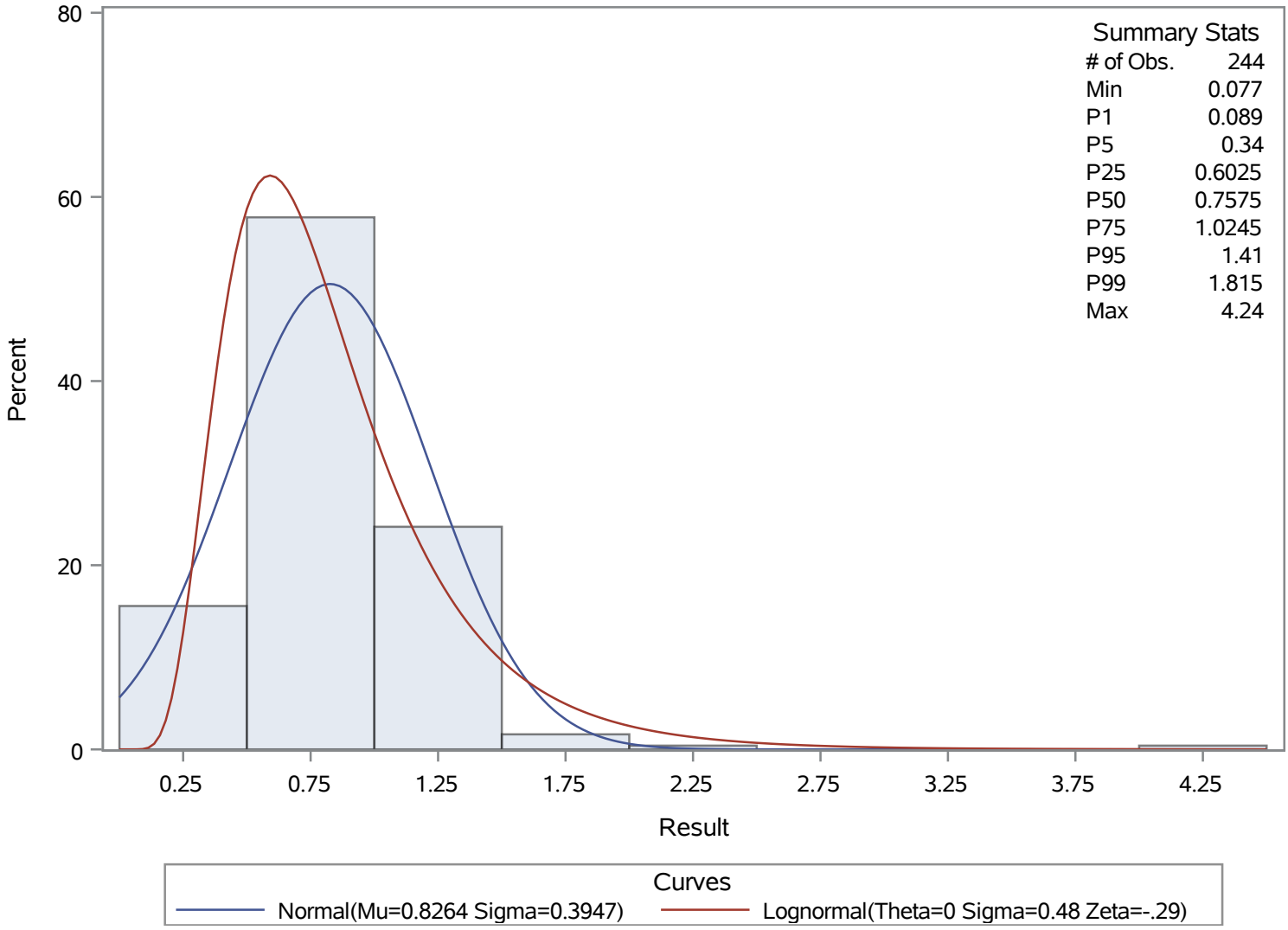
Distribution of result



Little Manatee River
Little Manatee River at SR 674
Nitrogen Kjeldahl as N (mg/L) mg/L
Site ID = 21FLHILL129

The UNIVARIATE Procedure

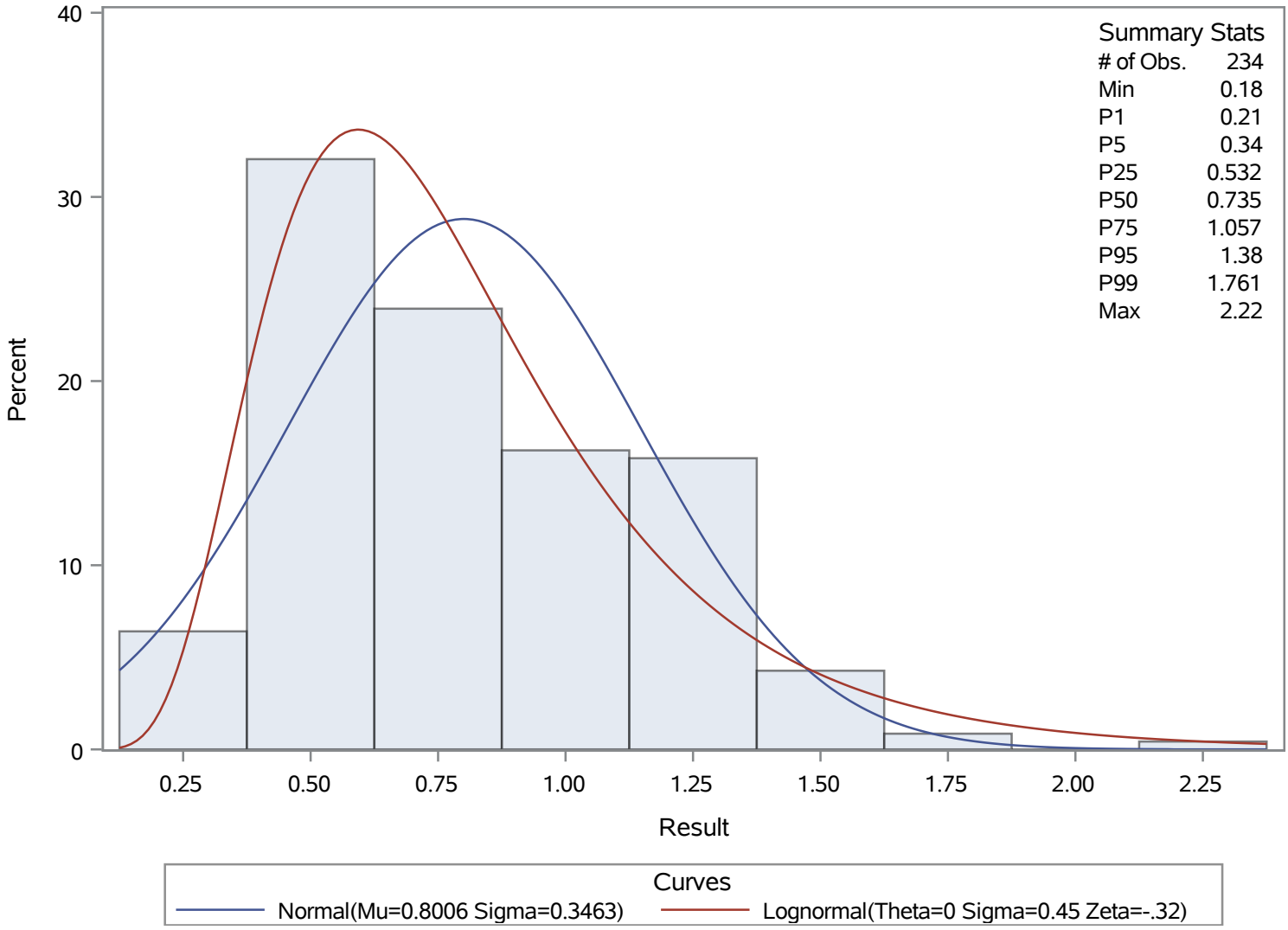
Distribution of result



Little Manatee River
Little Manatee River at CR 579
Nitrogen Kjeldahl as N (mg/L) mg/L
Site ID = 21FLHILL140

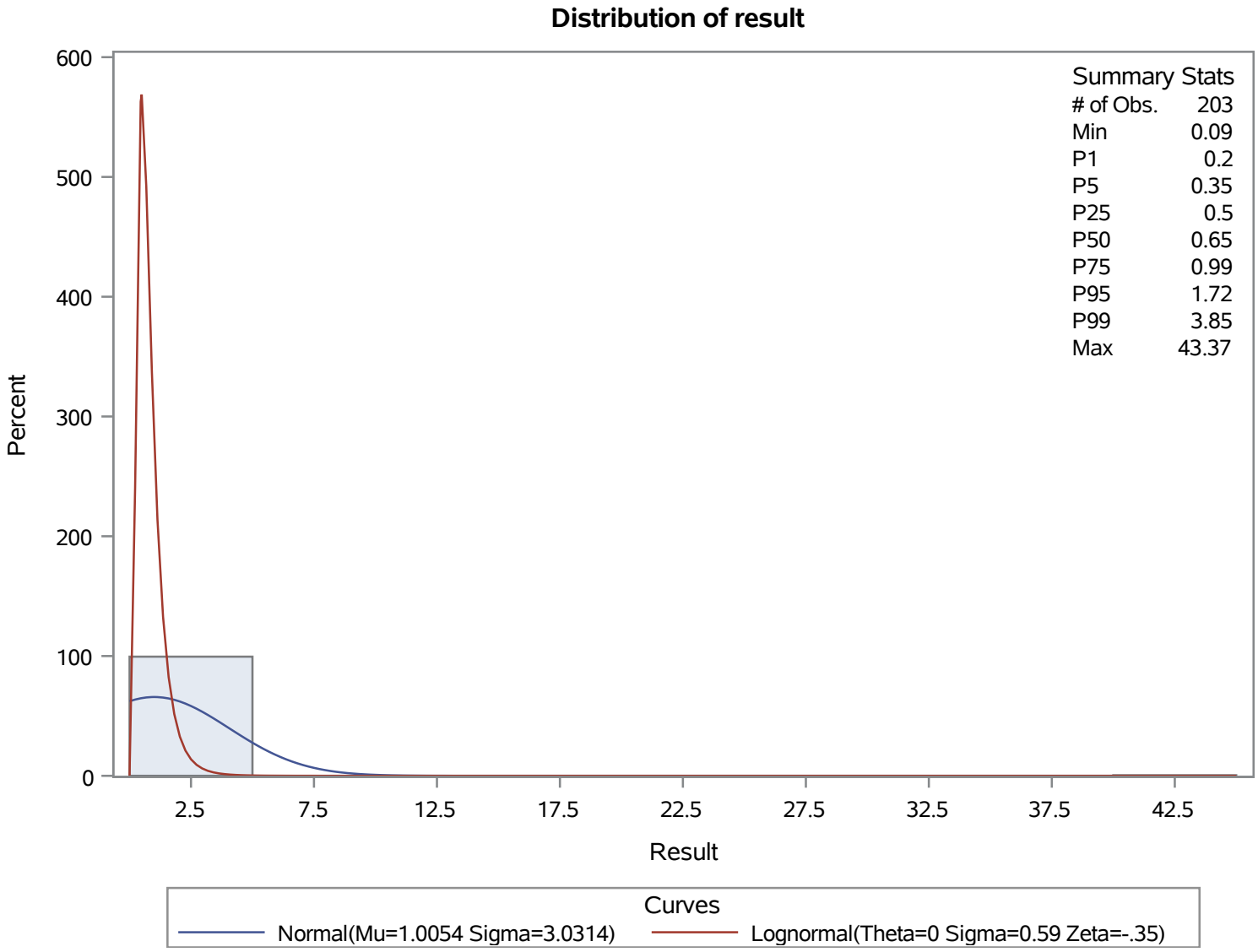
The UNIVARIATE Procedure

Distribution of result



Little Manatee River
LITTLE MANATEE R AT CR579
Nitrogen Kjeldahl as N (mg/L) mg/L
Site ID = 21FLHILL24010013

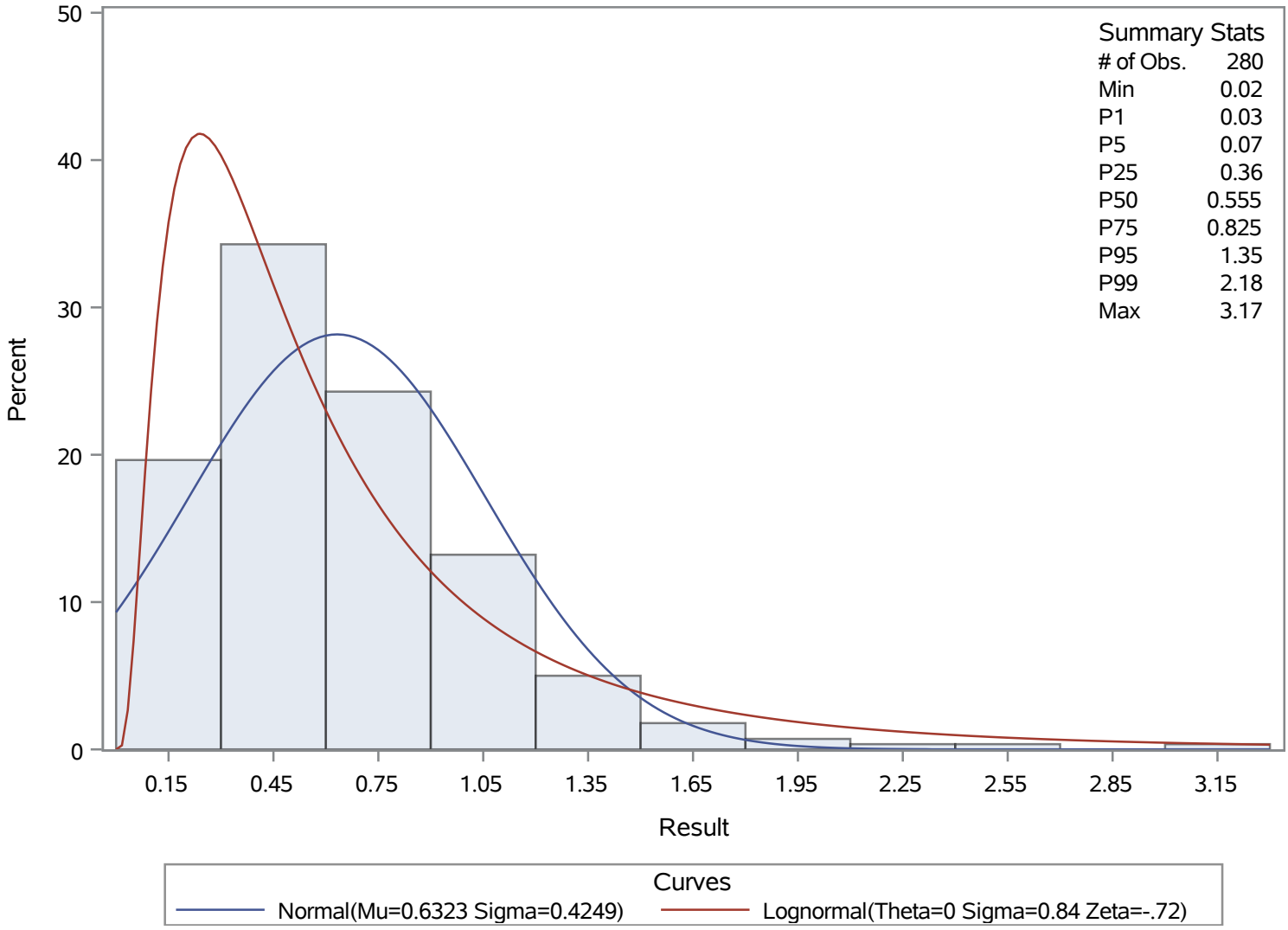
The UNIVARIATE Procedure



Little Manatee River
L MANATEE R BR US 301
Nitrogen Kjeldahl as N (mg/L) mg/L
Site ID = 21FLHILL24010100

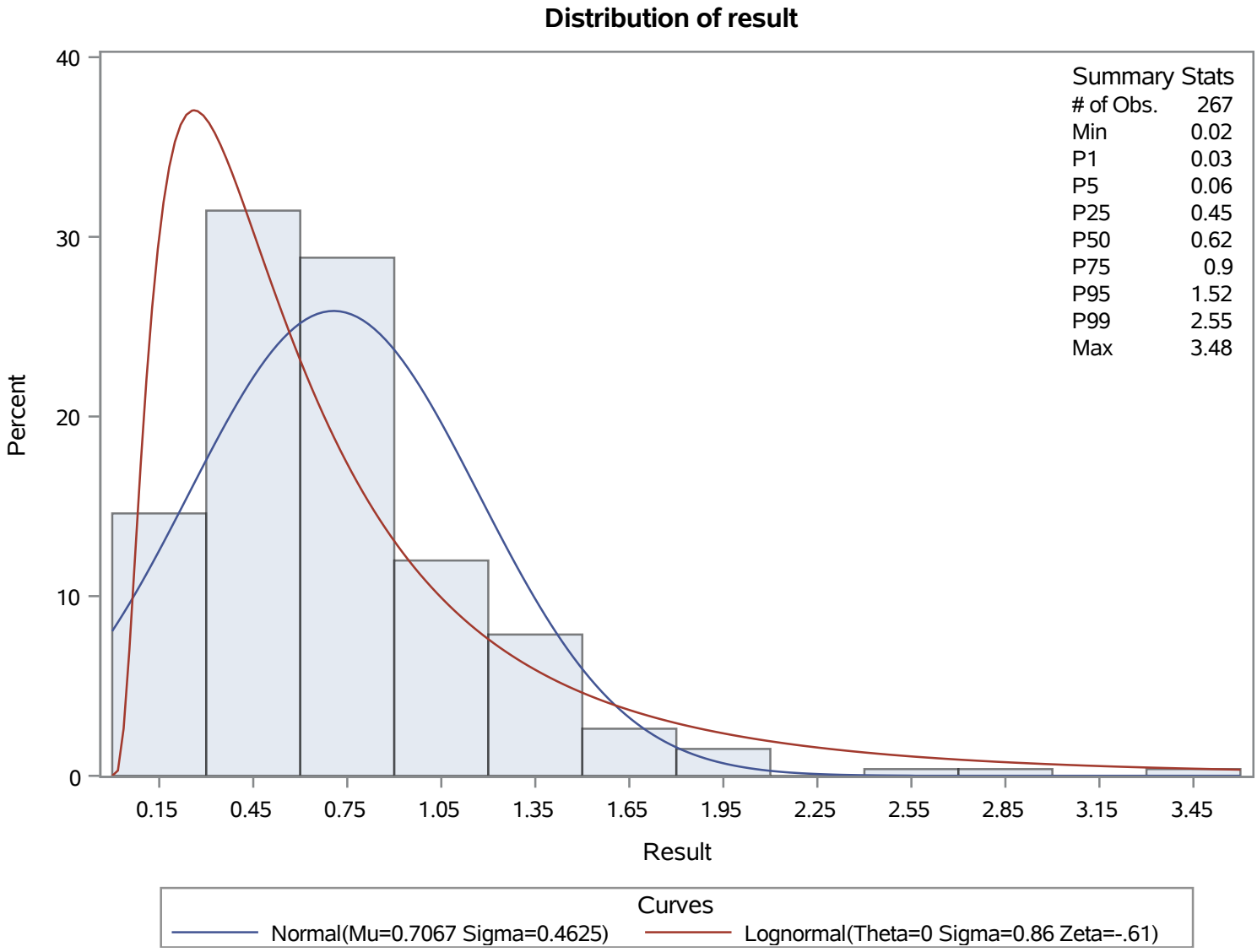
The UNIVARIATE Procedure

Distribution of result



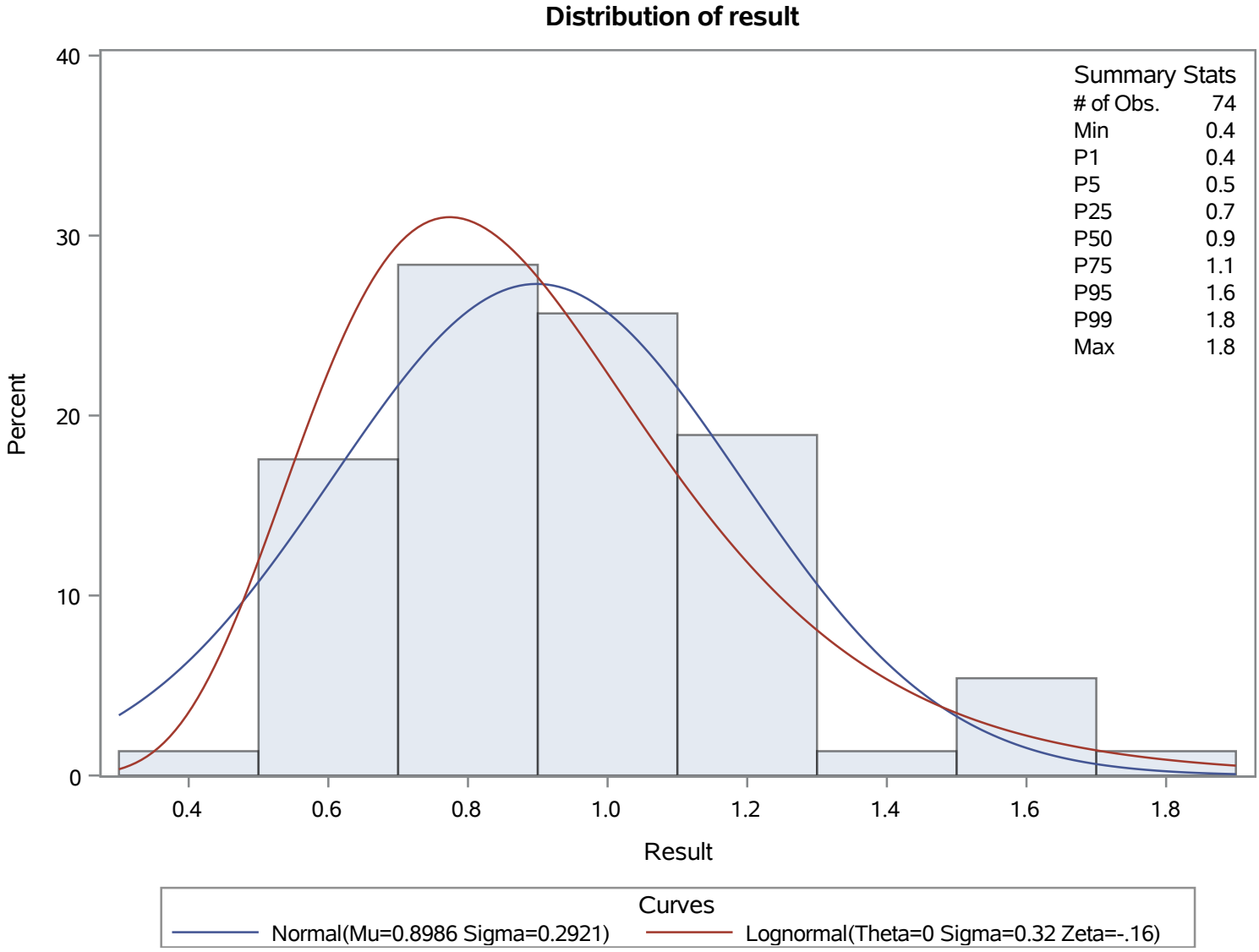
Little Manatee River
LITTLE MANATEE R AT SR #674
Nitrogen Kjeldahl as N (mg/L) mg/L
Site ID = 21FLHILL24010110

The UNIVARIATE Procedure



Little Manatee River
Little Manatee R. at SR674
Nitrogen Kjeldahl as N (mg/L) mg/L
Site ID = 21FLIMCALM674

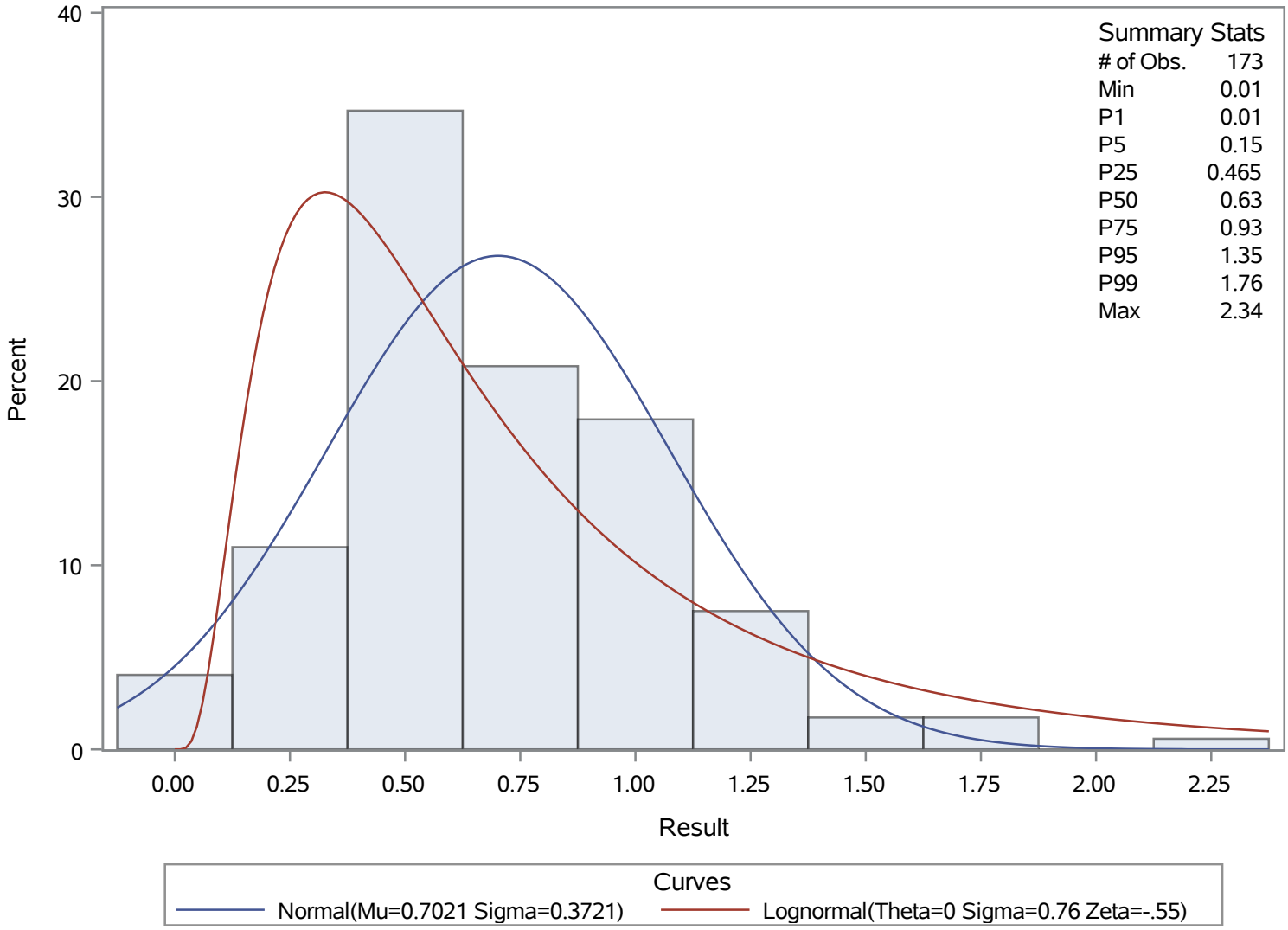
The UNIVARIATE Procedure



Little Manatee River
D1
Nitrogen Kjeldahl as N (mg/L) mg/L
Site ID = 21FLMANAD1

The UNIVARIATE Procedure

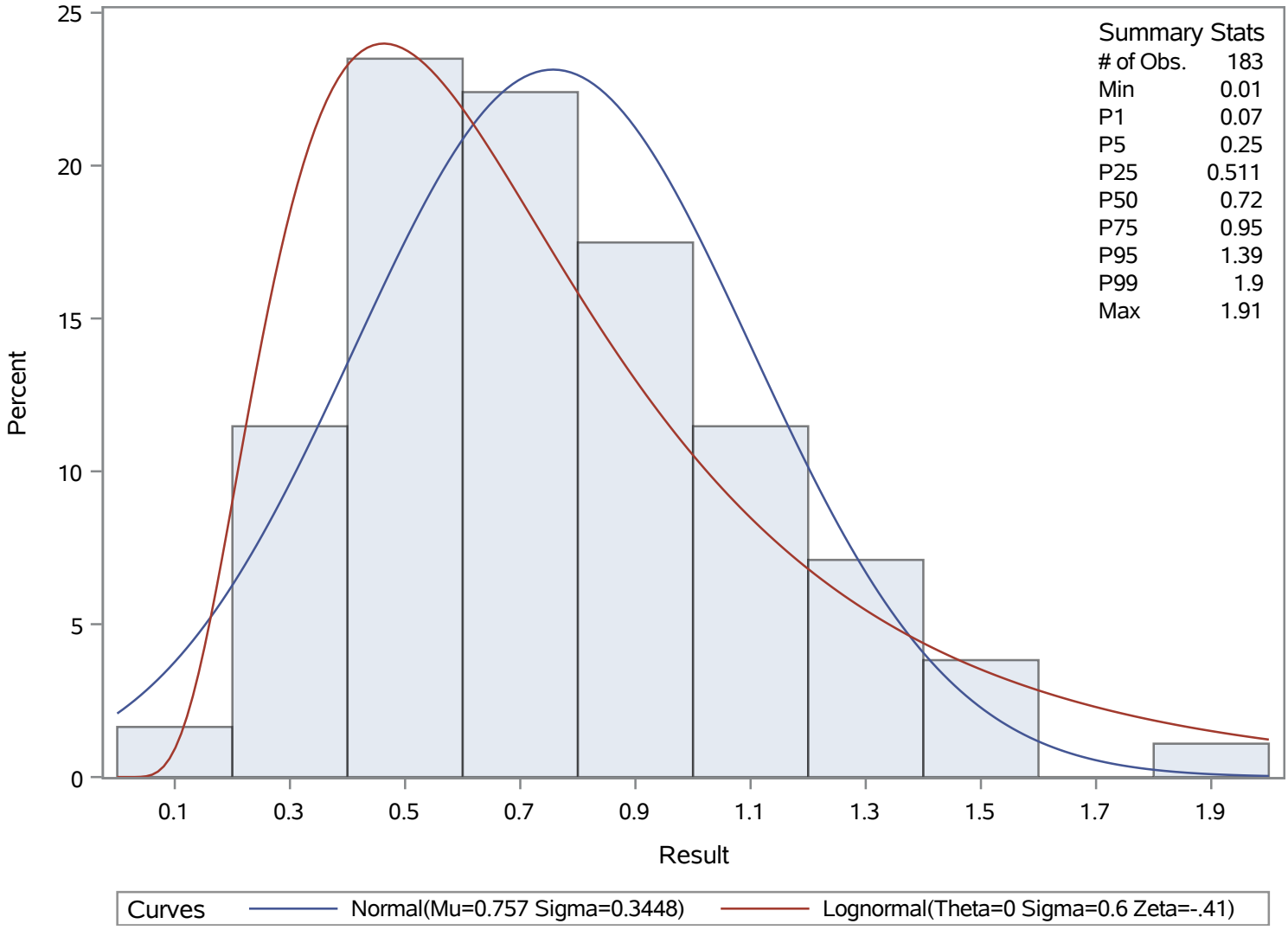
Distribution of result



Little Manatee River
D3
Nitrogen Kjeldahl as N (mg/L) mg/L
Site ID = 21FLMANAD3

The UNIVARIATE Procedure

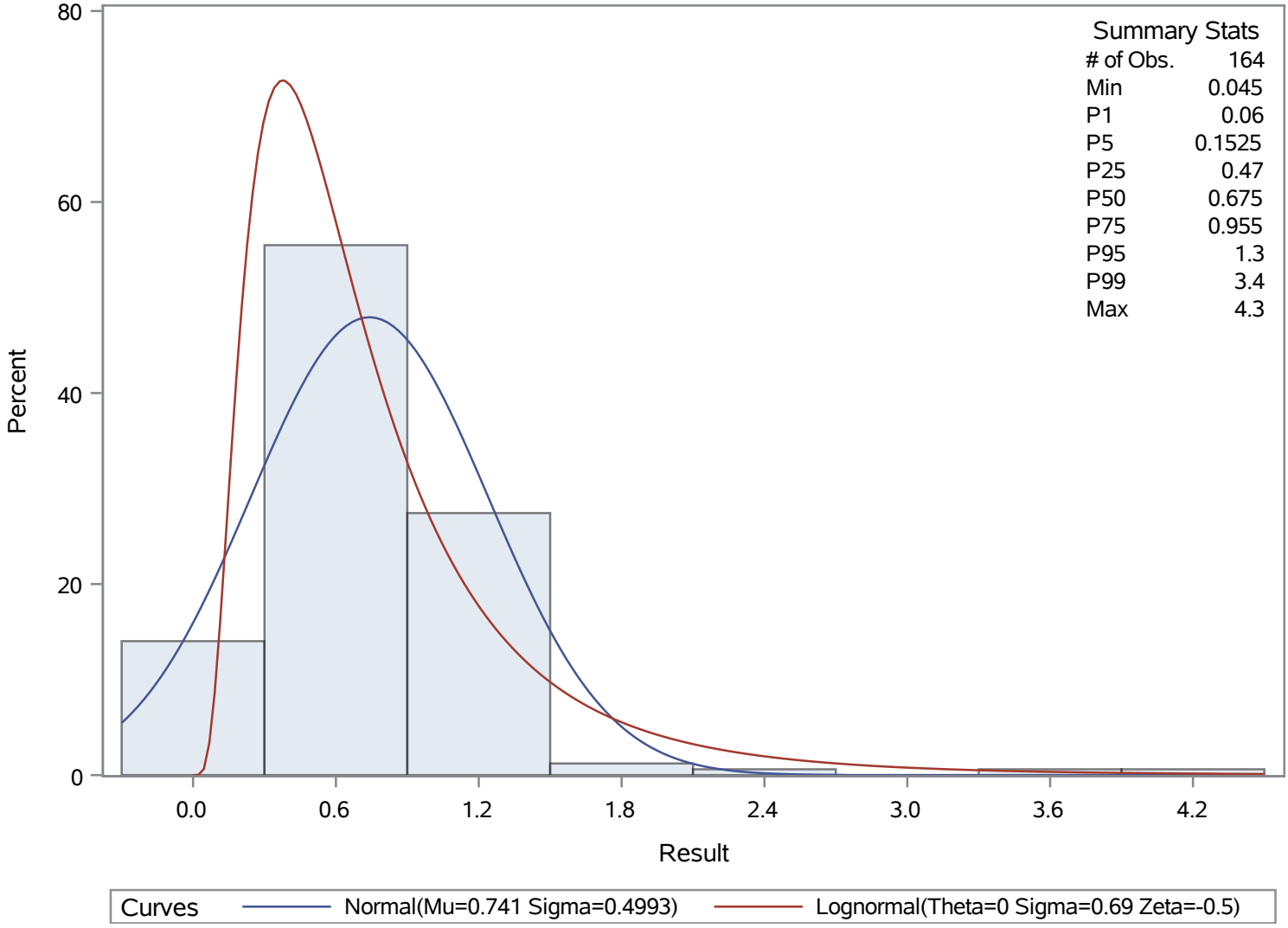
Distribution of result



Little Manatee River
LITTLE MANATEE RIVER NEAR FT. LONESOME FL
Nitrogen Organic as N (mg/L) mg/L
Site ID = 112WRD 02300100

The UNIVARIATE Procedure

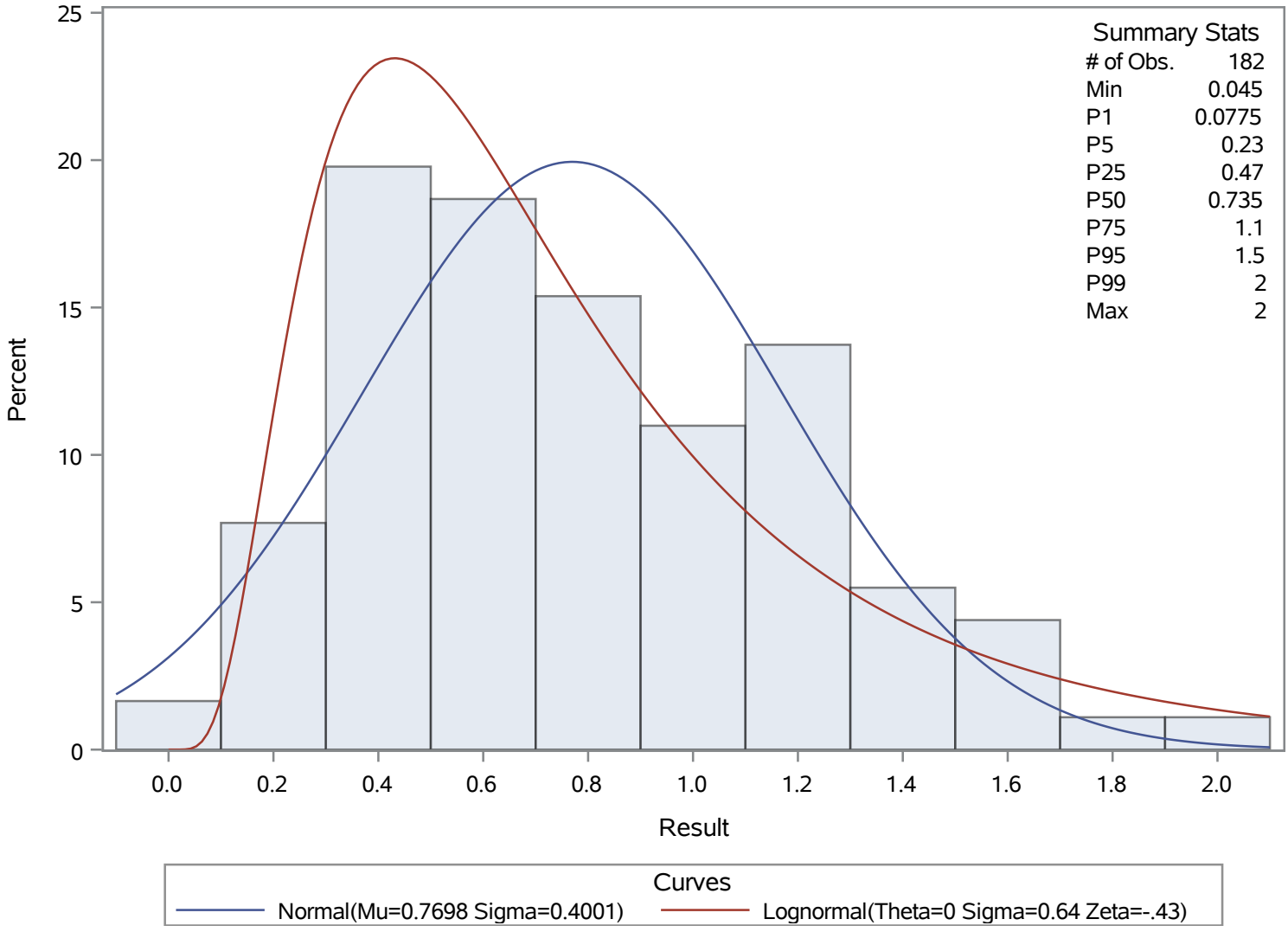
Distribution of result



Little Manatee River
SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL
Nitrogen Organic as N (mg/L) mg/L
Site ID = 112WRD 02300200

The UNIVARIATE Procedure

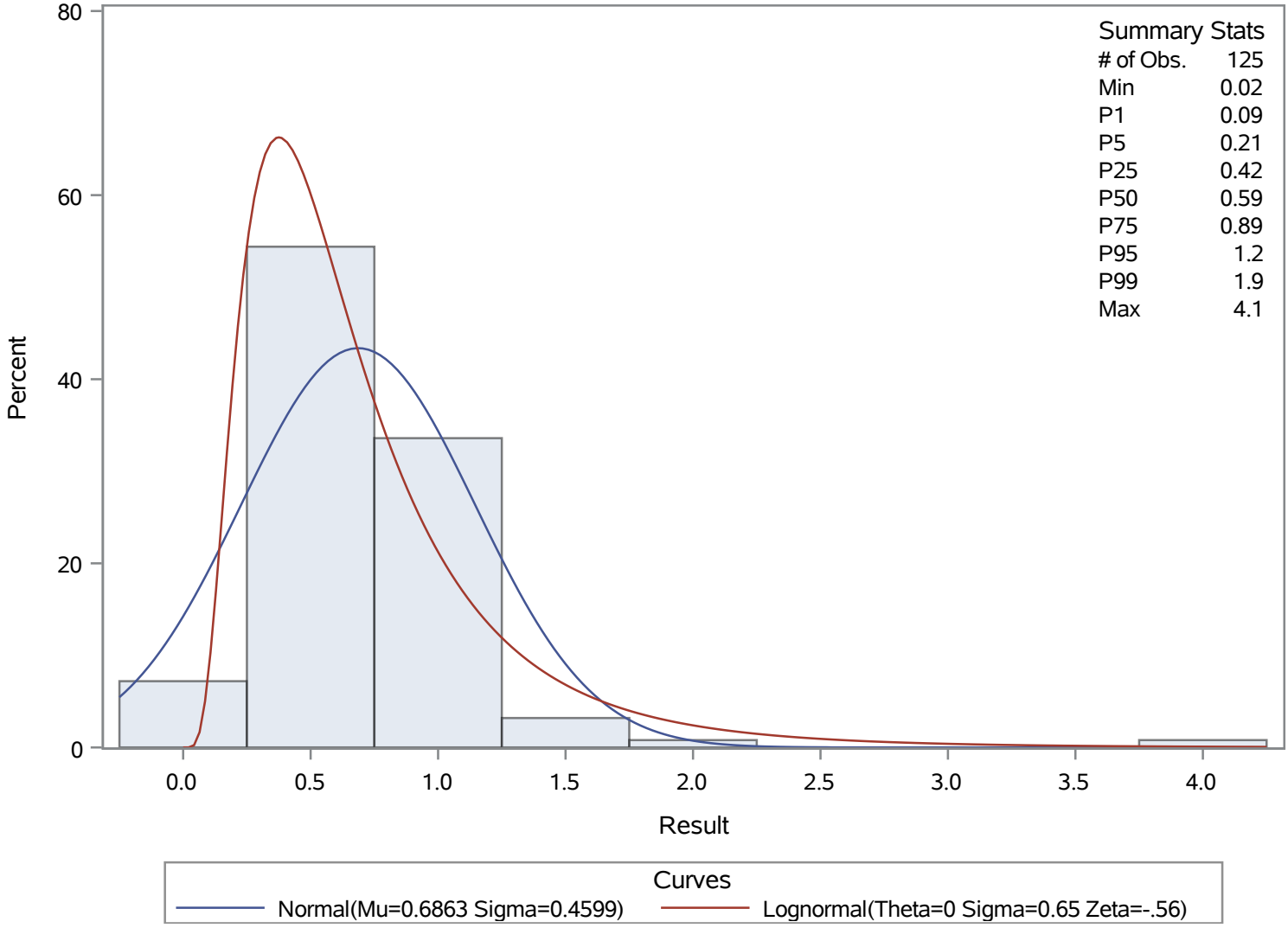
Distribution of result



Little Manatee River
LITTLE MANATEE RIVER NEAR WIMAUMA FL
Nitrogen Organic as N (mg/L) mg/L
Site ID = 112WRD 02300500

The UNIVARIATE Procedure

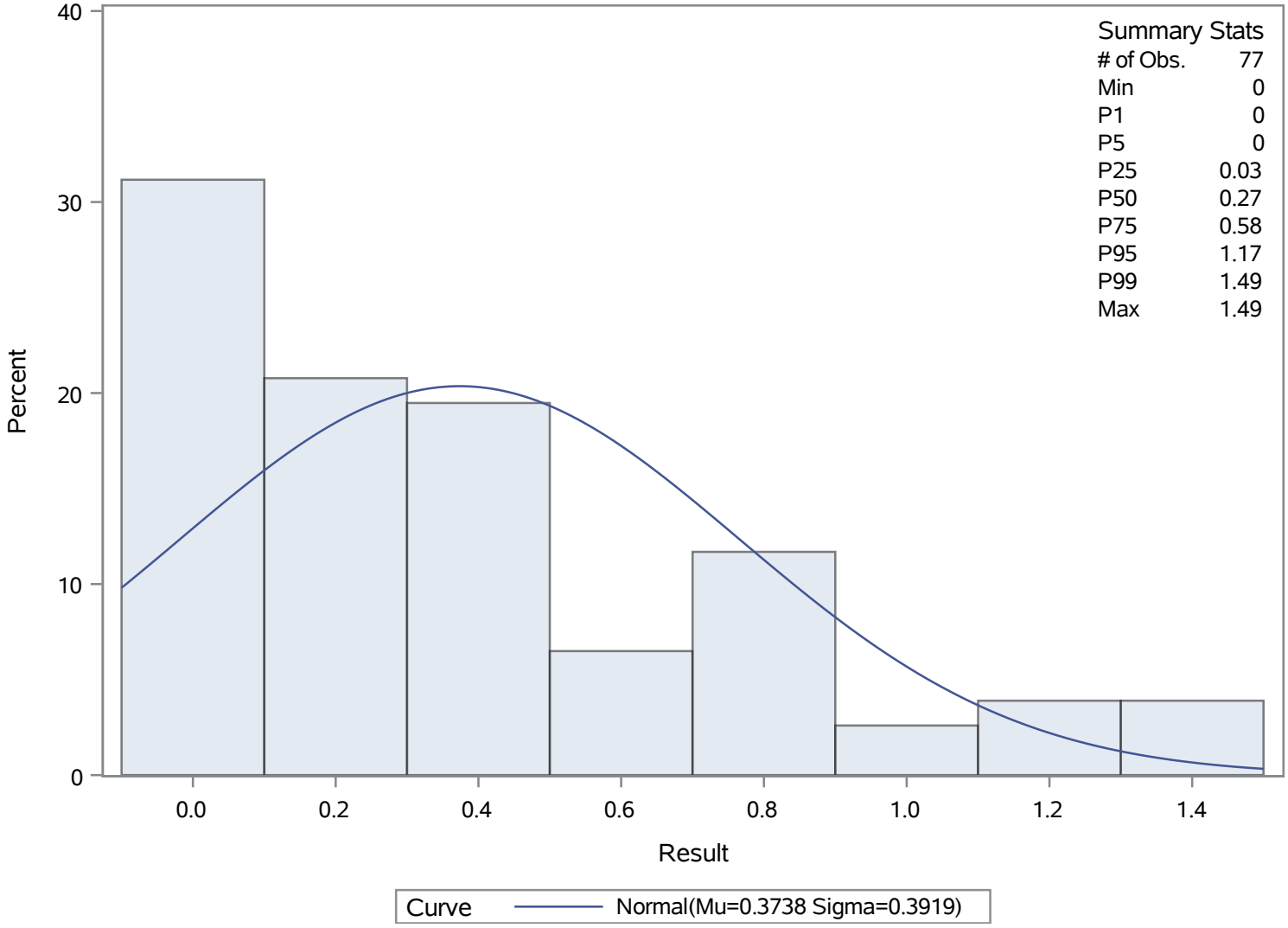
Distribution of result



Little Manatee River
L MANATEE R BR US 301
Nitrogen Organic as N (mg/L) mg/L
Site ID = 21FLA 24010100

The UNIVARIATE Procedure

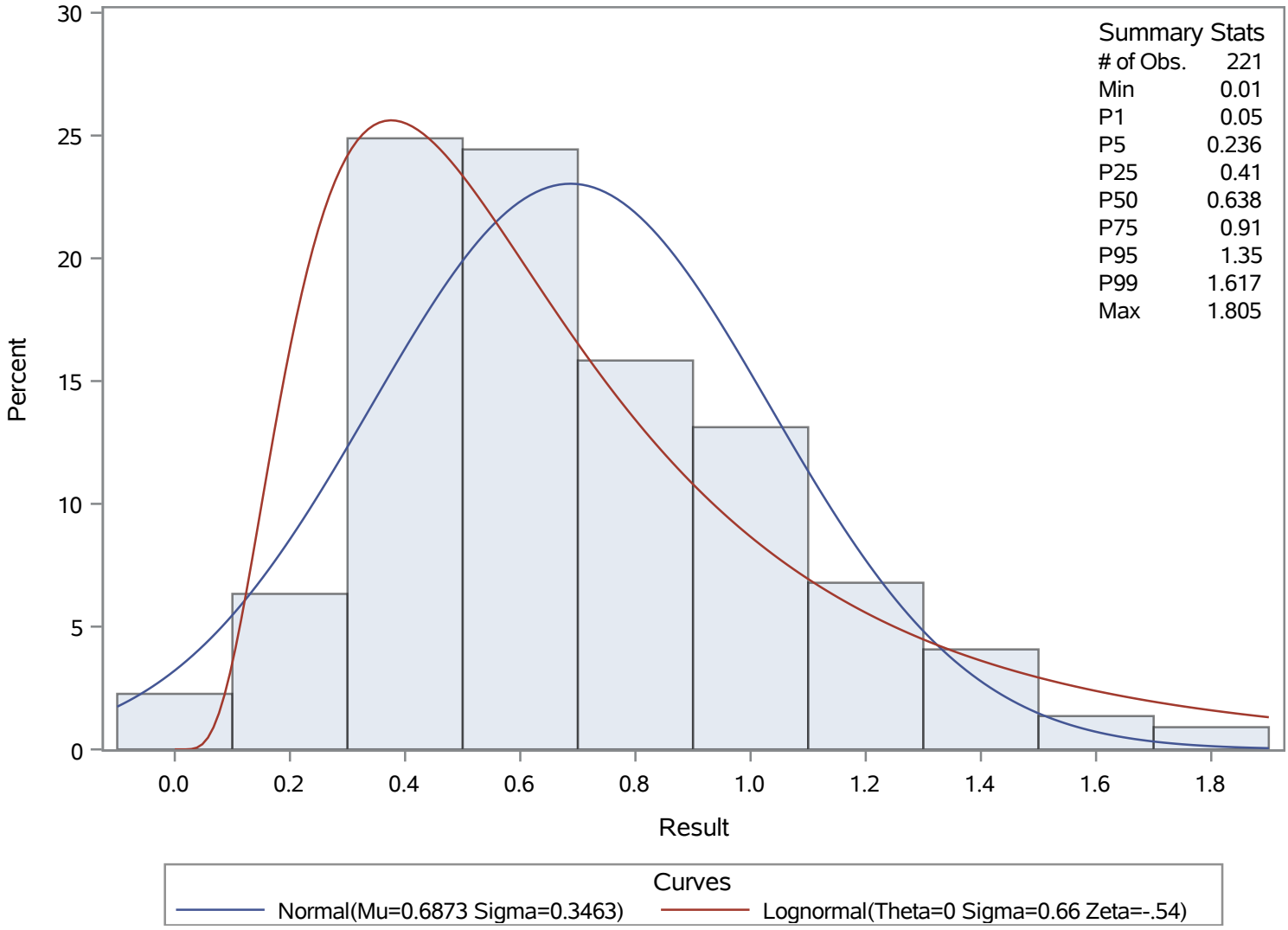
Distribution of result



Little Manatee River
Little Manatee River at US 301 bridge
Nitrogen Organic as N (mg/L) mg/L
Site ID = 21FLHILL113

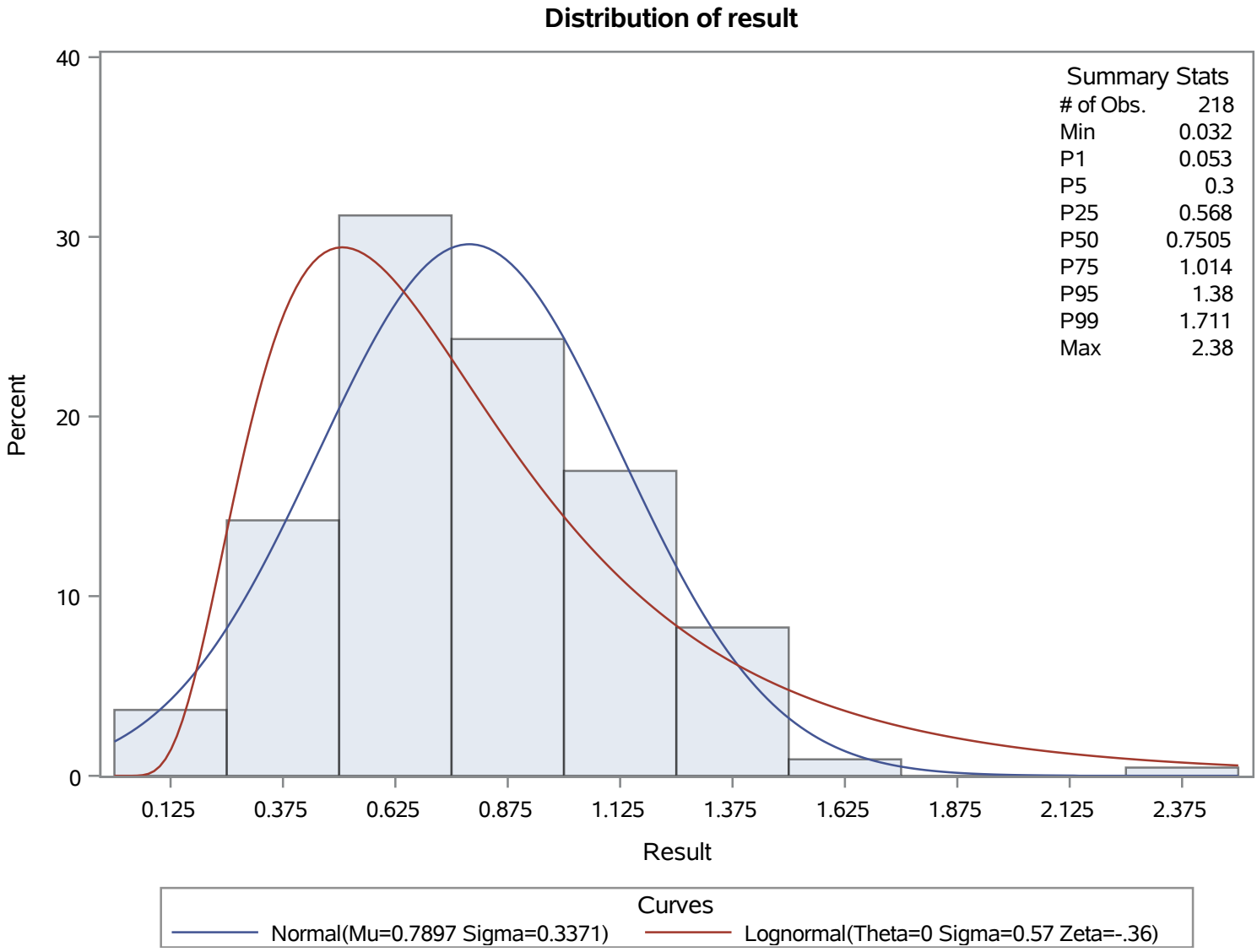
The UNIVARIATE Procedure

Distribution of result



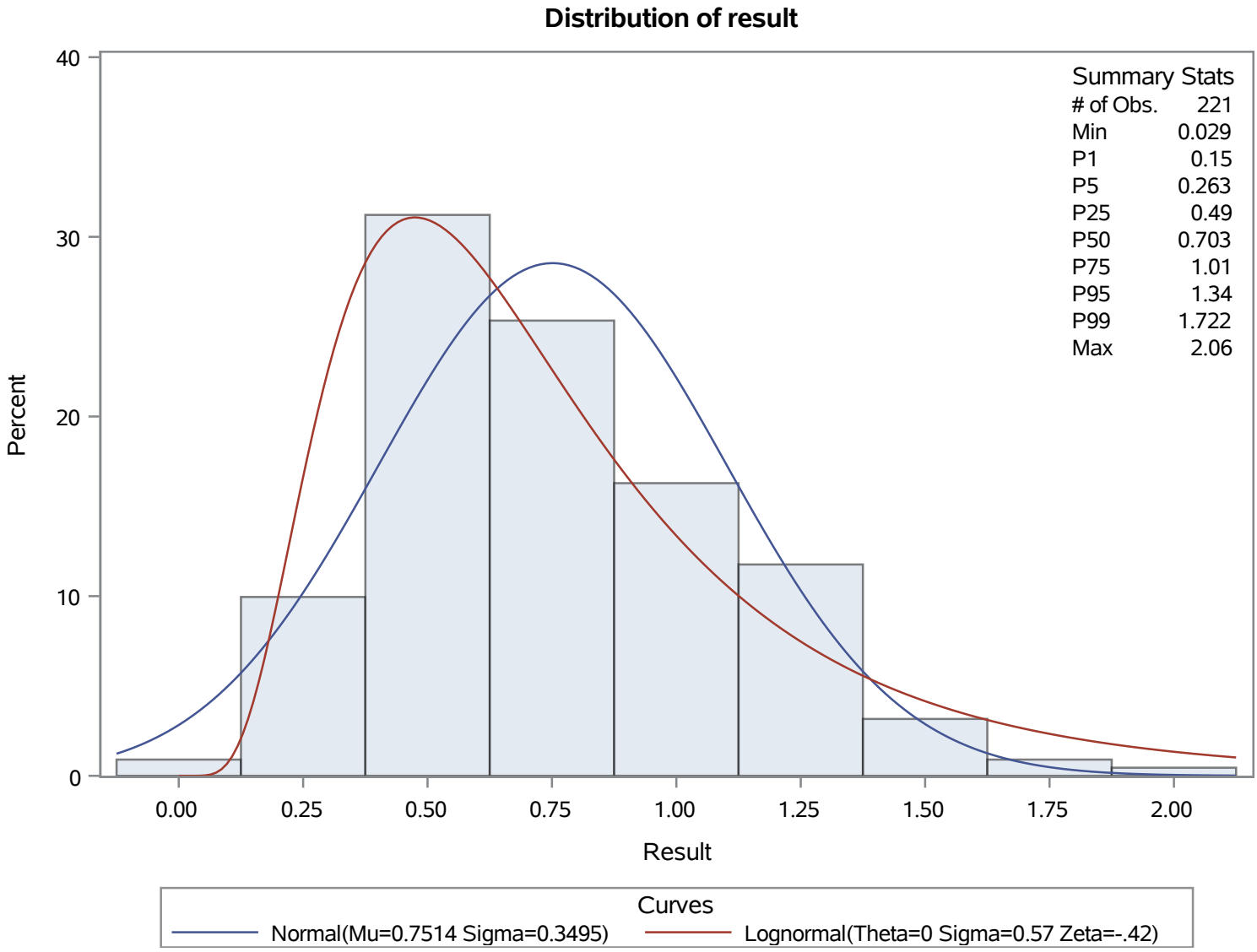
Little Manatee River
Little Manatee River at SR 674
Nitrogen Organic as N (mg/L) mg/L
Site ID = 21FLHILL129

The UNIVARIATE Procedure



Little Manatee River
Little Manatee River at CR 579
Nitrogen Organic as N (mg/L) mg/L
Site ID = 21FLHILL140

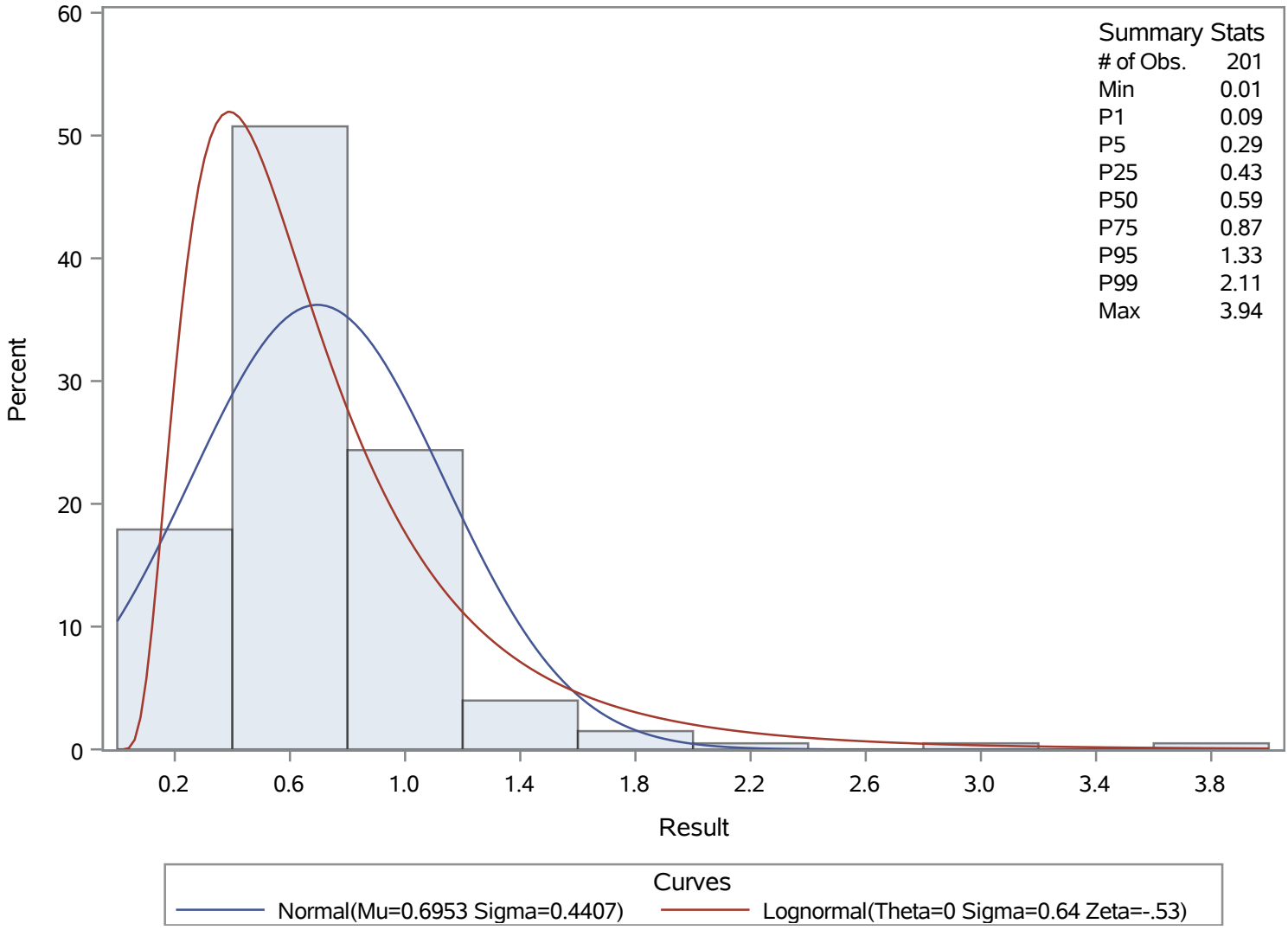
The UNIVARIATE Procedure



Little Manatee River
LITTLE MANATEE R AT CR579
Nitrogen Organic as N (mg/L) mg/L
Site ID = 21FLHILL24010013

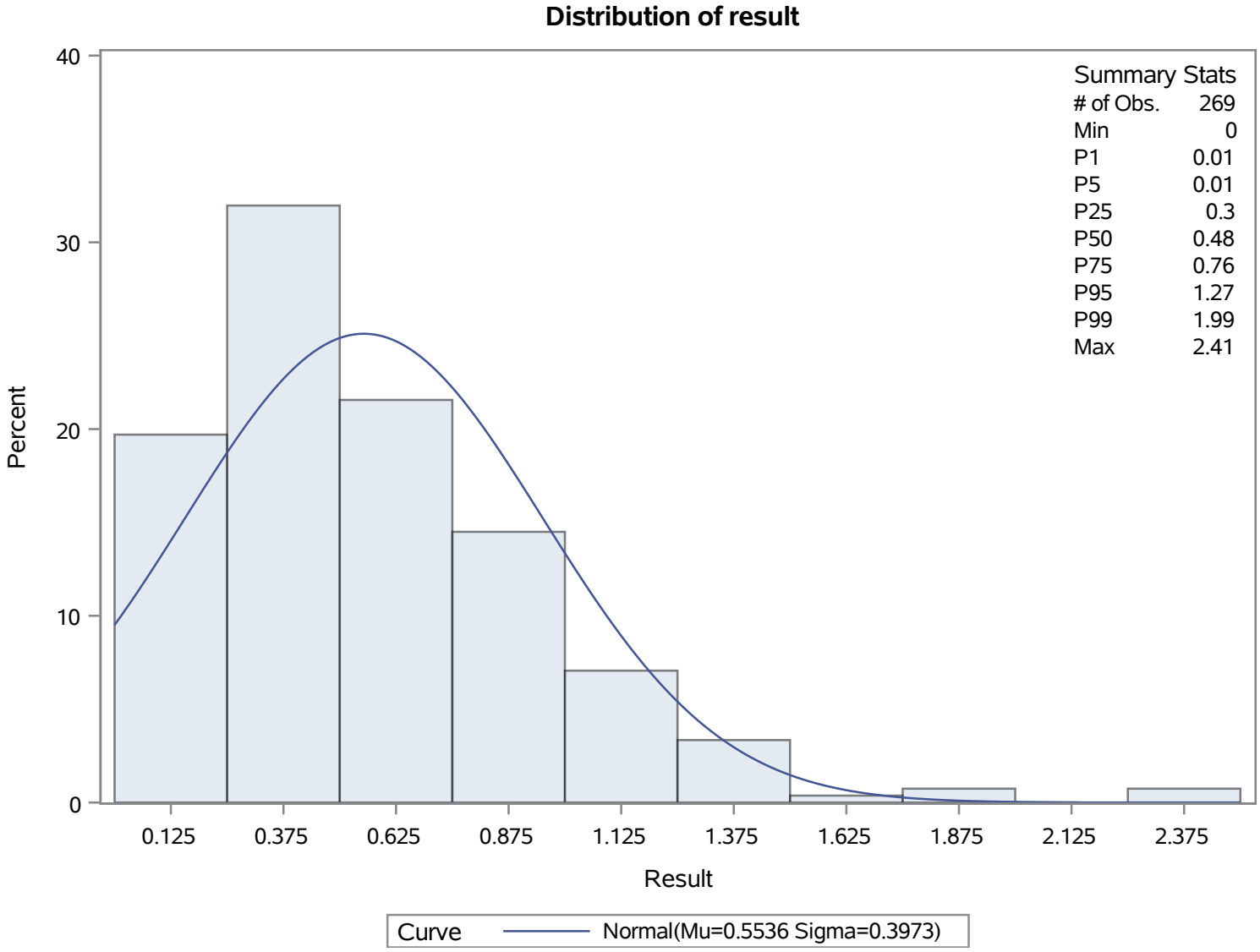
The UNIVARIATE Procedure

Distribution of result



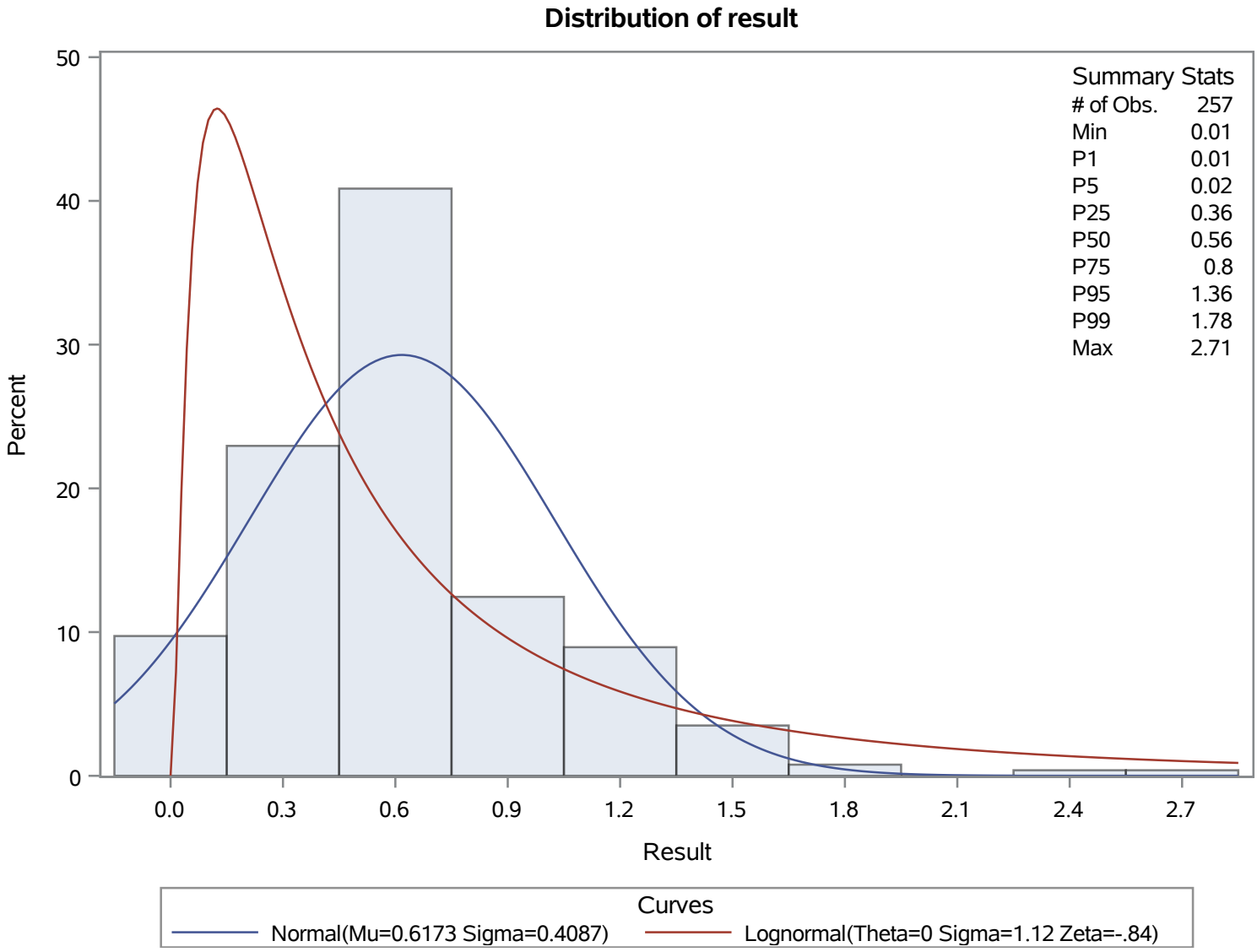
Little Manatee River
L MANATEE R BR US 301
Nitrogen Organic as N (mg/L) mg/L
Site ID = 21FLHILL24010100

The UNIVARIATE Procedure



Little Manatee River
LITTLE MANATEE R AT SR #674
Nitrogen Organic as N (mg/L) mg/L
Site ID = 21FLHILL24010110

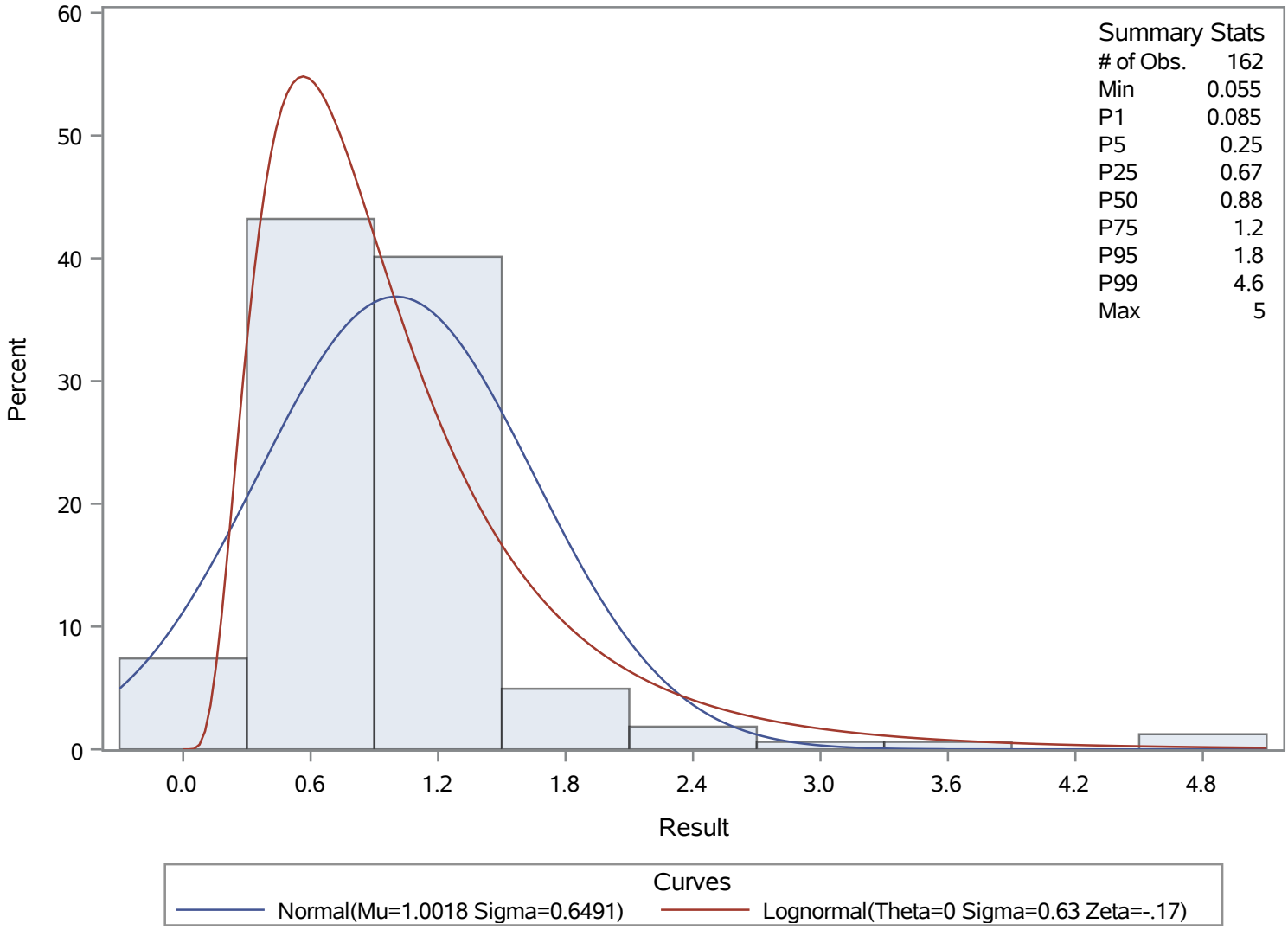
The UNIVARIATE Procedure



Little Manatee River
LITTLE MANATEE RIVER NEAR FT. LONESOME FL
Nitrogen Total as N (mg/L) mg/L
Site ID = 112WRD 02300100

The UNIVARIATE Procedure

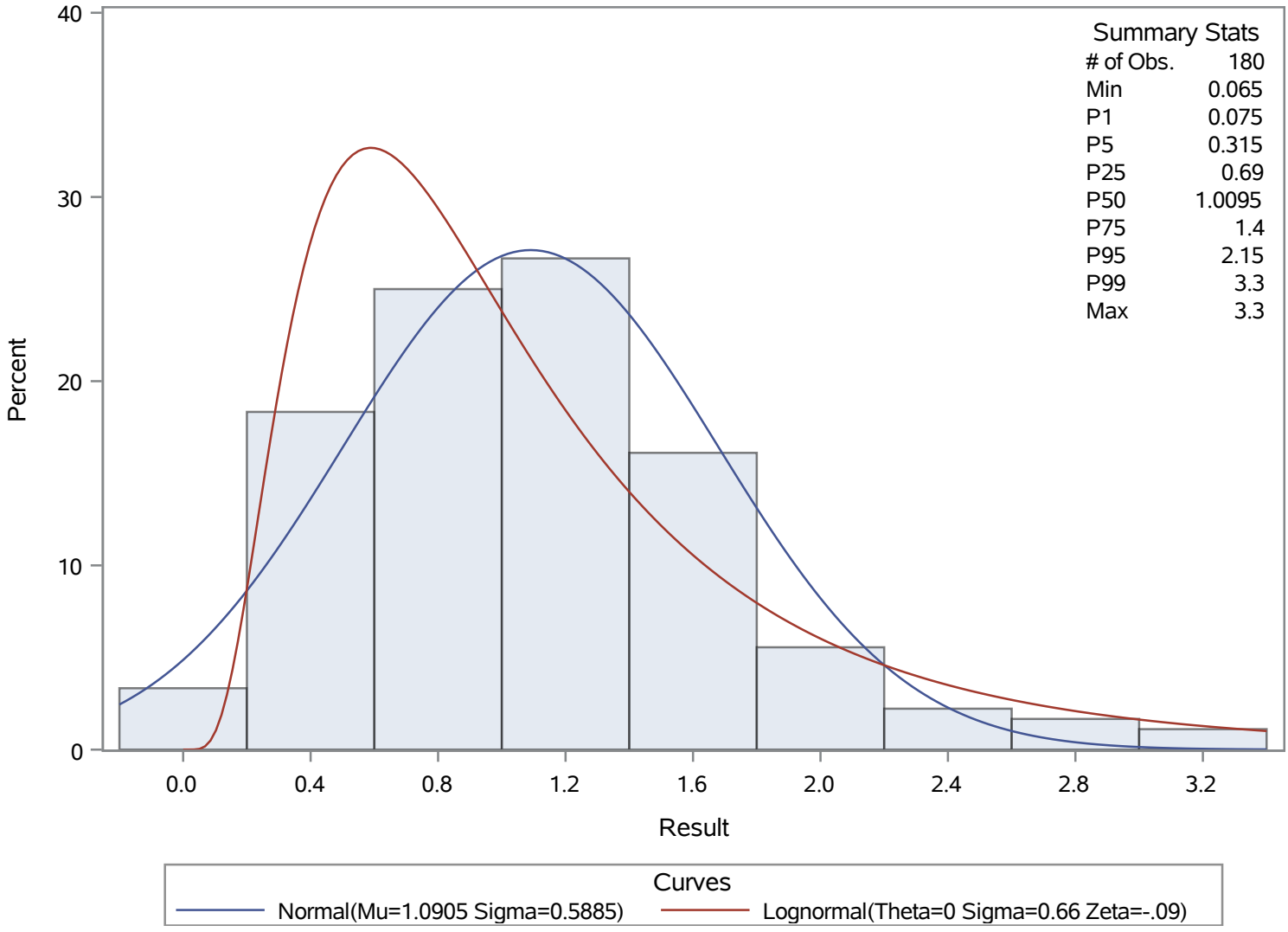
Distribution of result



Little Manatee River
SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL
Nitrogen Total as N (mg/L) mg/L
Site ID = 112WRD 02300200

The UNIVARIATE Procedure

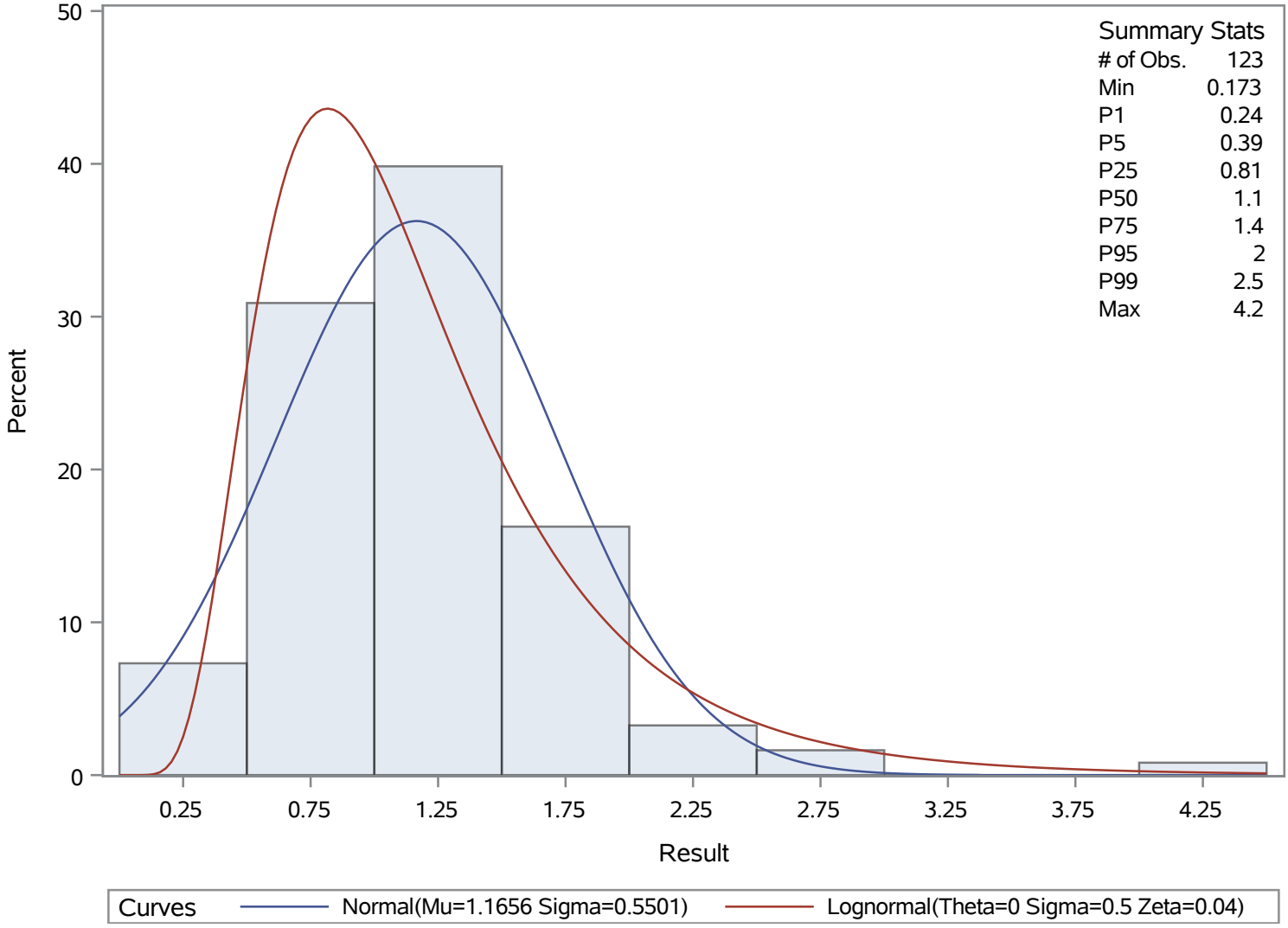
Distribution of result



Little Manatee River
LITTLE MANATEE RIVER NEAR WIMAUMA FL
Nitrogen Total as N (mg/L) mg/L
Site ID = 112WRD 02300500

The UNIVARIATE Procedure

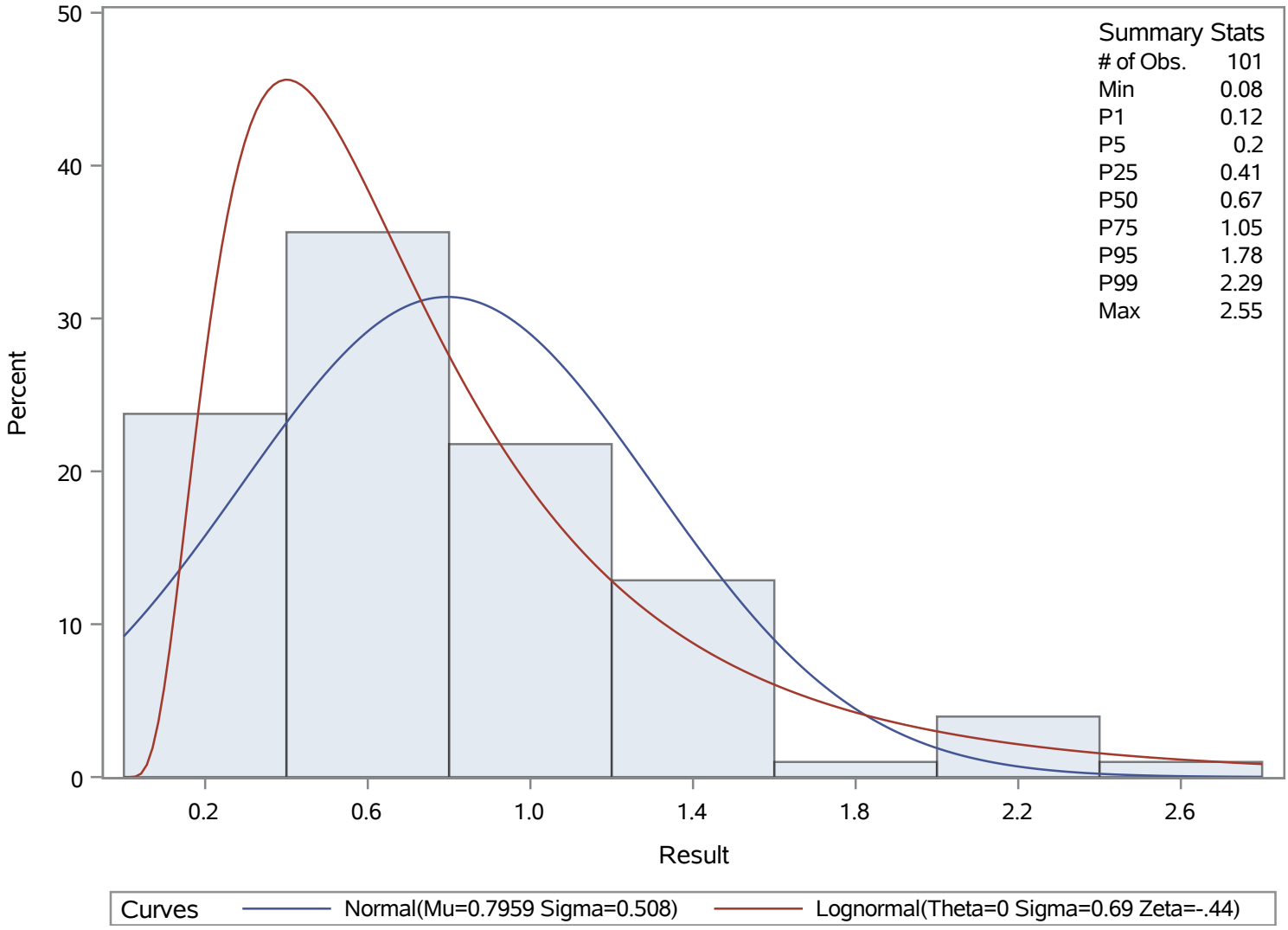
Distribution of result



Little Manatee River
L MANATEE R BR US 301
Nitrogen Total as N (mg/L) mg/L
Site ID = 21FLA 24010100

The UNIVARIATE Procedure

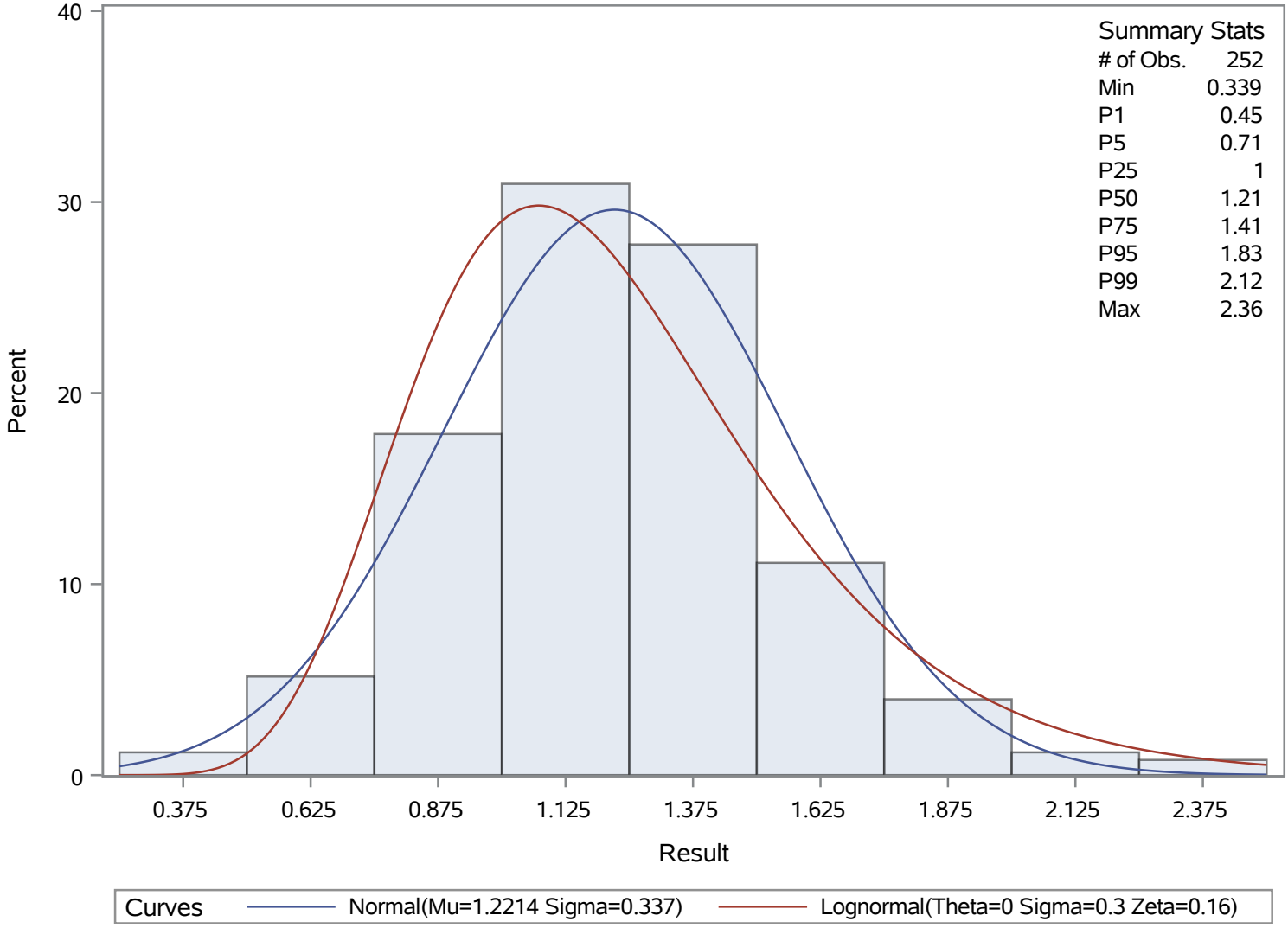
Distribution of result



Little Manatee River
LITTLE MANATEE RIVER AT US HWY 301
Nitrogen Total as N (mg/L) mg/L
Site ID = 21FLGW 3555

The UNIVARIATE Procedure

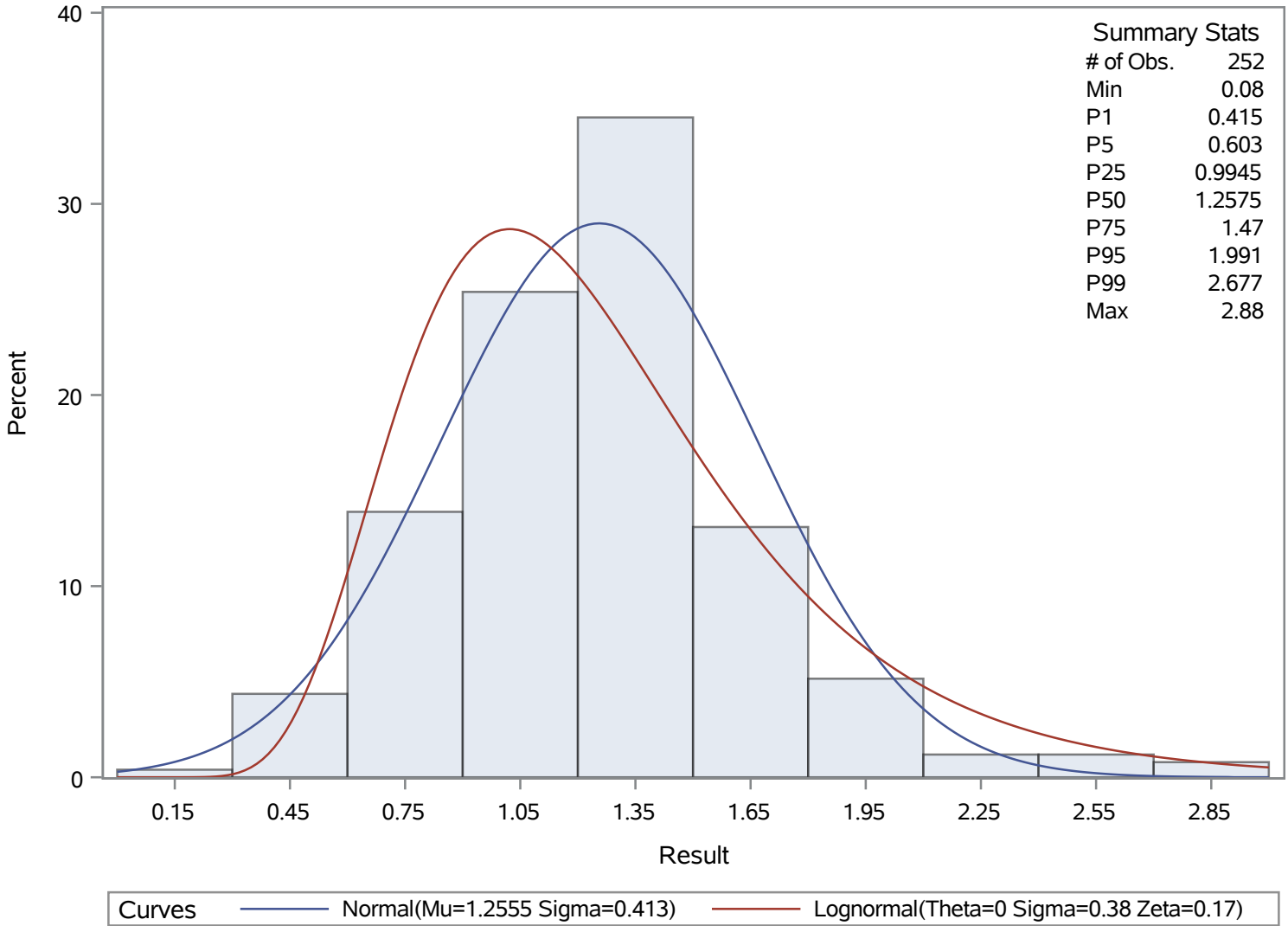
Distribution of result



Little Manatee River
Little Manatee River at US 301 bridge
Nitrogen Total as N (mg/L) mg/L
Site ID = 21FLHILL113

The UNIVARIATE Procedure

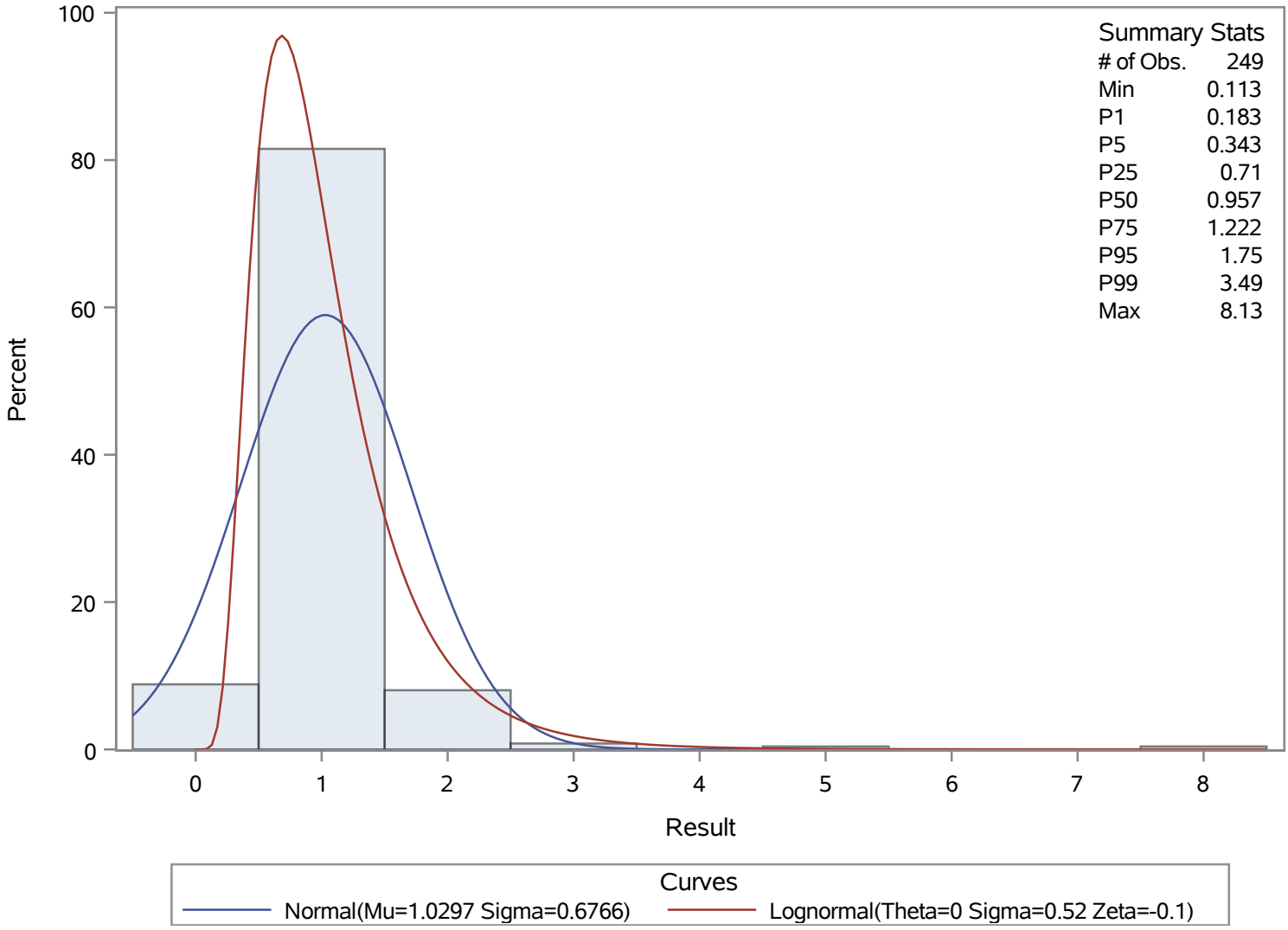
Distribution of result



Little Manatee River
Little Manatee River at SR 674
Nitrogen Total as N (mg/L) mg/L
Site ID = 21FLHILL129

The UNIVARIATE Procedure

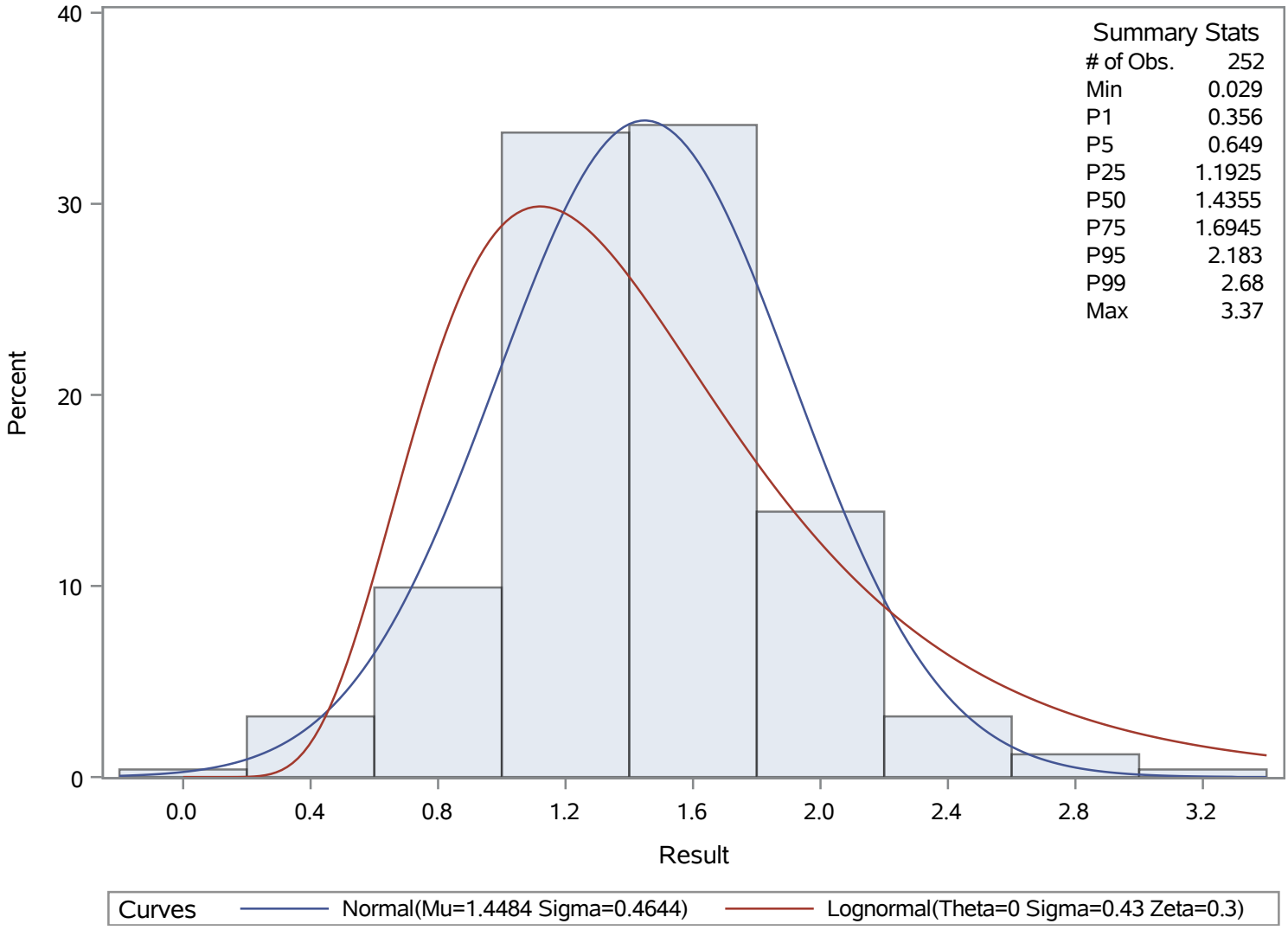
Distribution of result



Little Manatee River
Little Manatee River at CR 579
Nitrogen Total as N (mg/L) mg/L
Site ID = 21FLHILL140

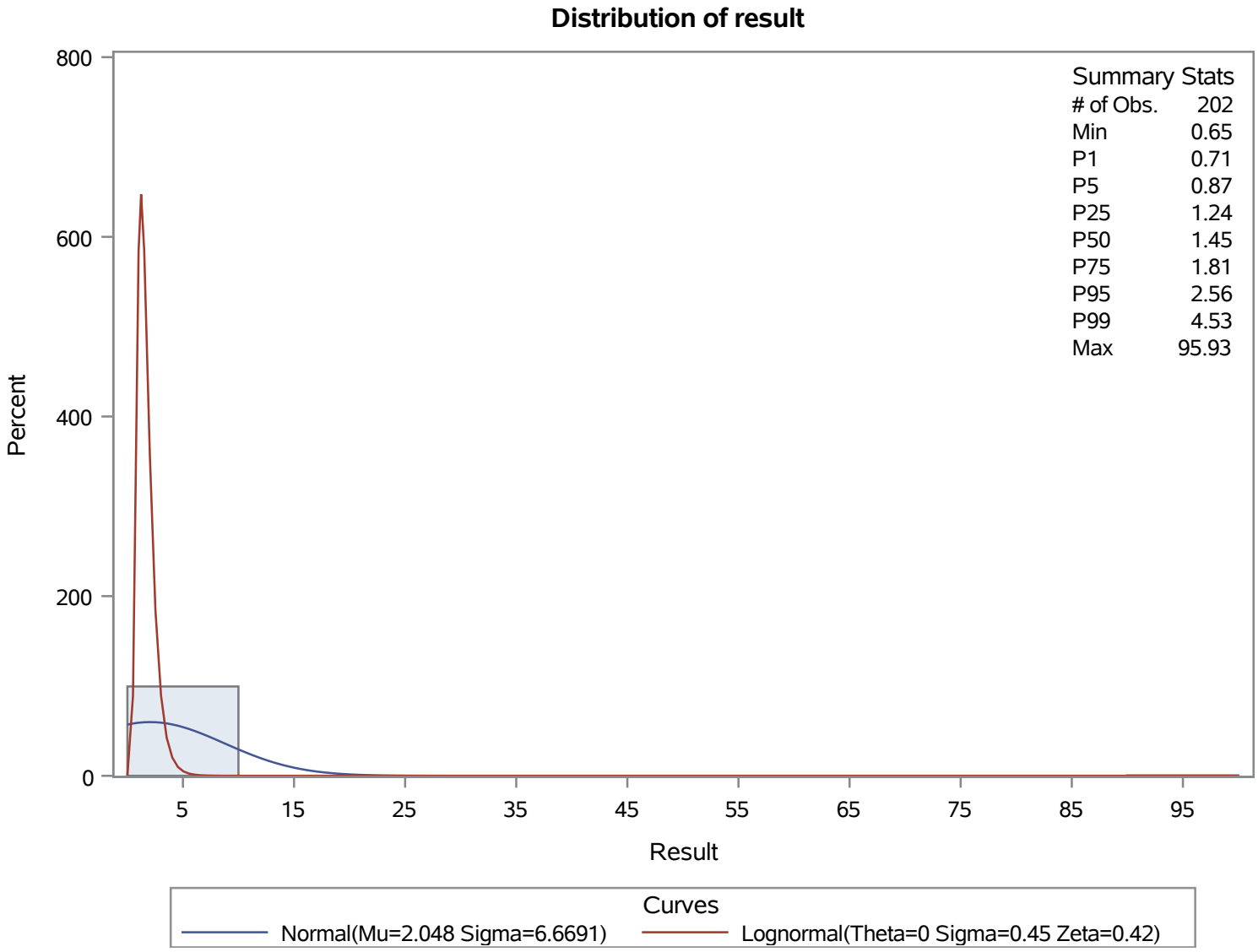
The UNIVARIATE Procedure

Distribution of result



Little Manatee River
LITTLE MANATEE R AT CR579
Nitrogen Total as N (mg/L) mg/L
Site ID = 21FLHILL24010013

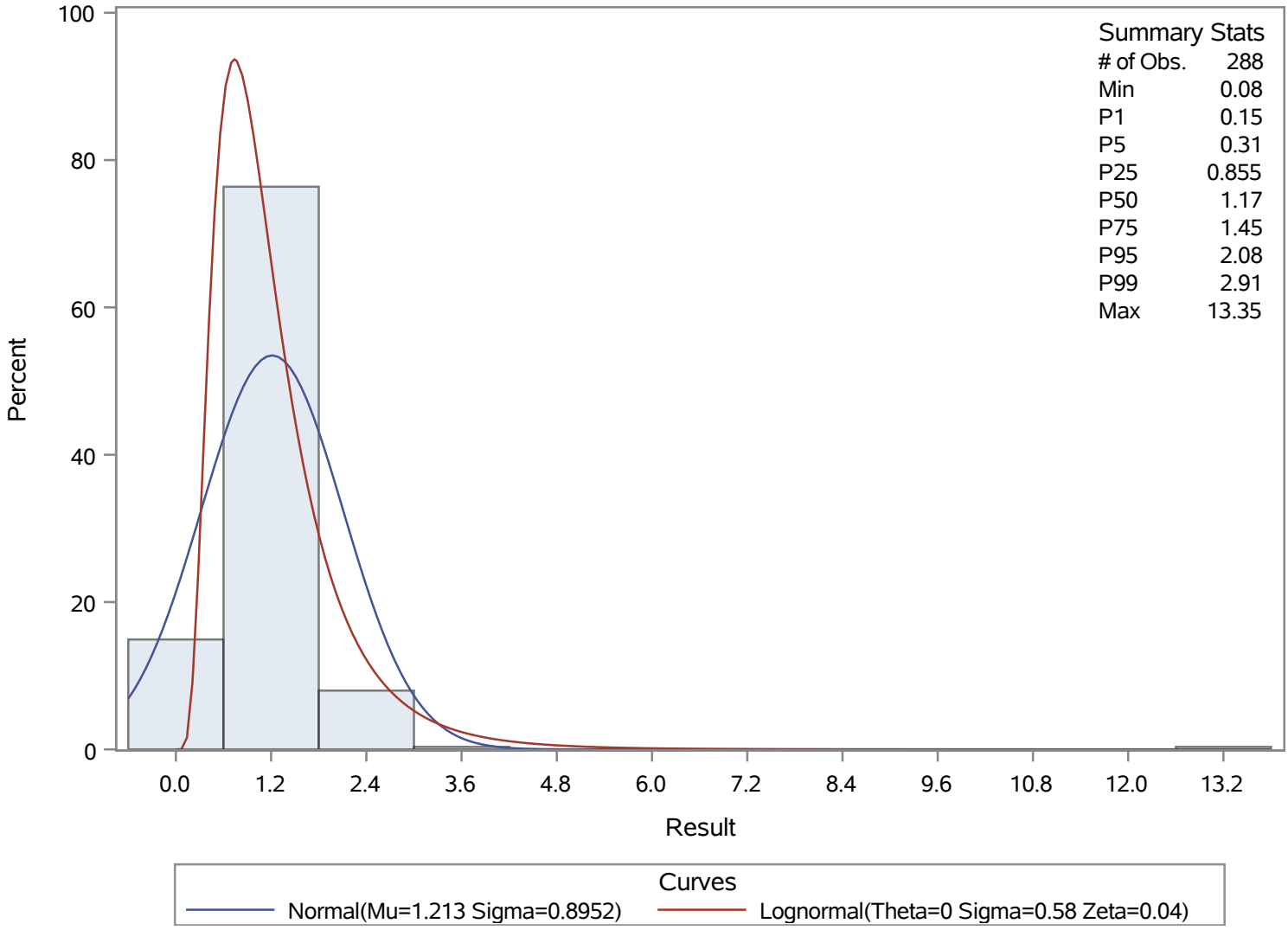
The UNIVARIATE Procedure



Little Manatee River
L MANATEE R BR US 301
Nitrogen Total as N (mg/L) mg/L
Site ID = 21FLHILL24010100

The UNIVARIATE Procedure

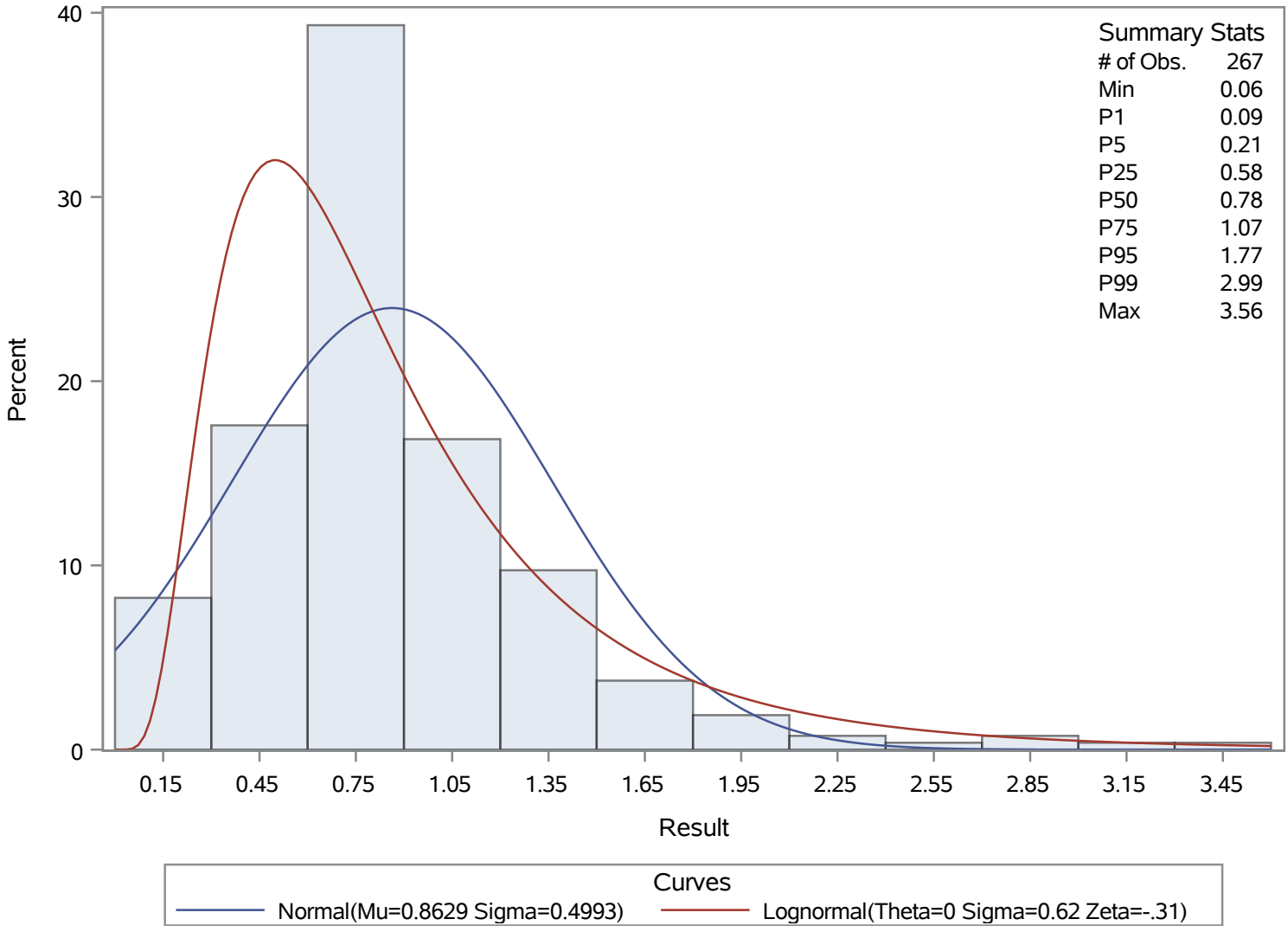
Distribution of result



Little Manatee River
LITTLE MANATEE R AT SR #674
Nitrogen Total as N (mg/L) mg/L
Site ID = 21FLHILL24010110

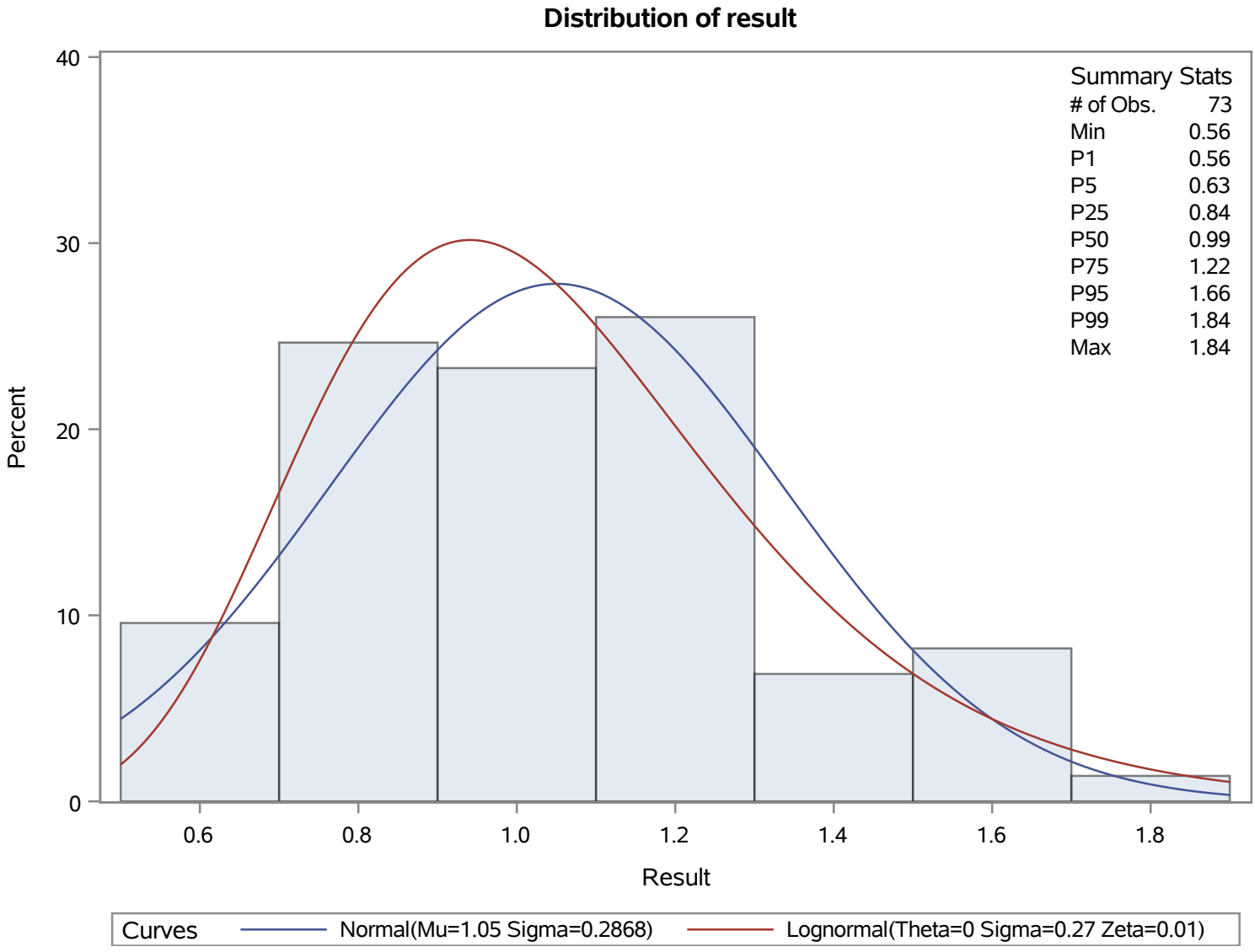
The UNIVARIATE Procedure

Distribution of result



Little Manatee River
Little Manatee R. at SR674
Nitrogen Total as N (mg/L) mg/L
Site ID = 21FLIMCALM674

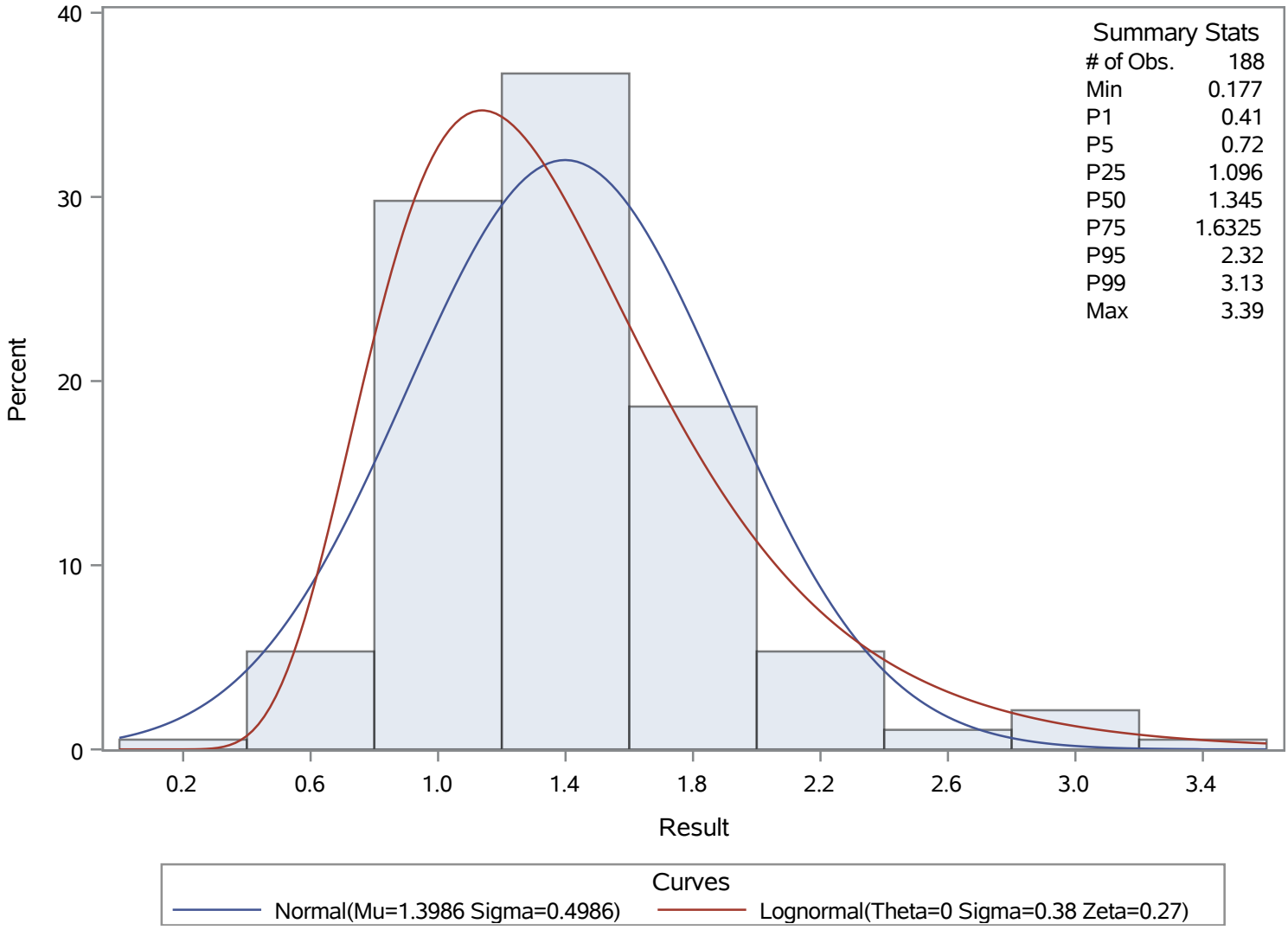
The UNIVARIATE Procedure



Little Manatee River
D1
Nitrogen Total as N (mg/L) mg/L
Site ID = 21FLMANAD1

The UNIVARIATE Procedure

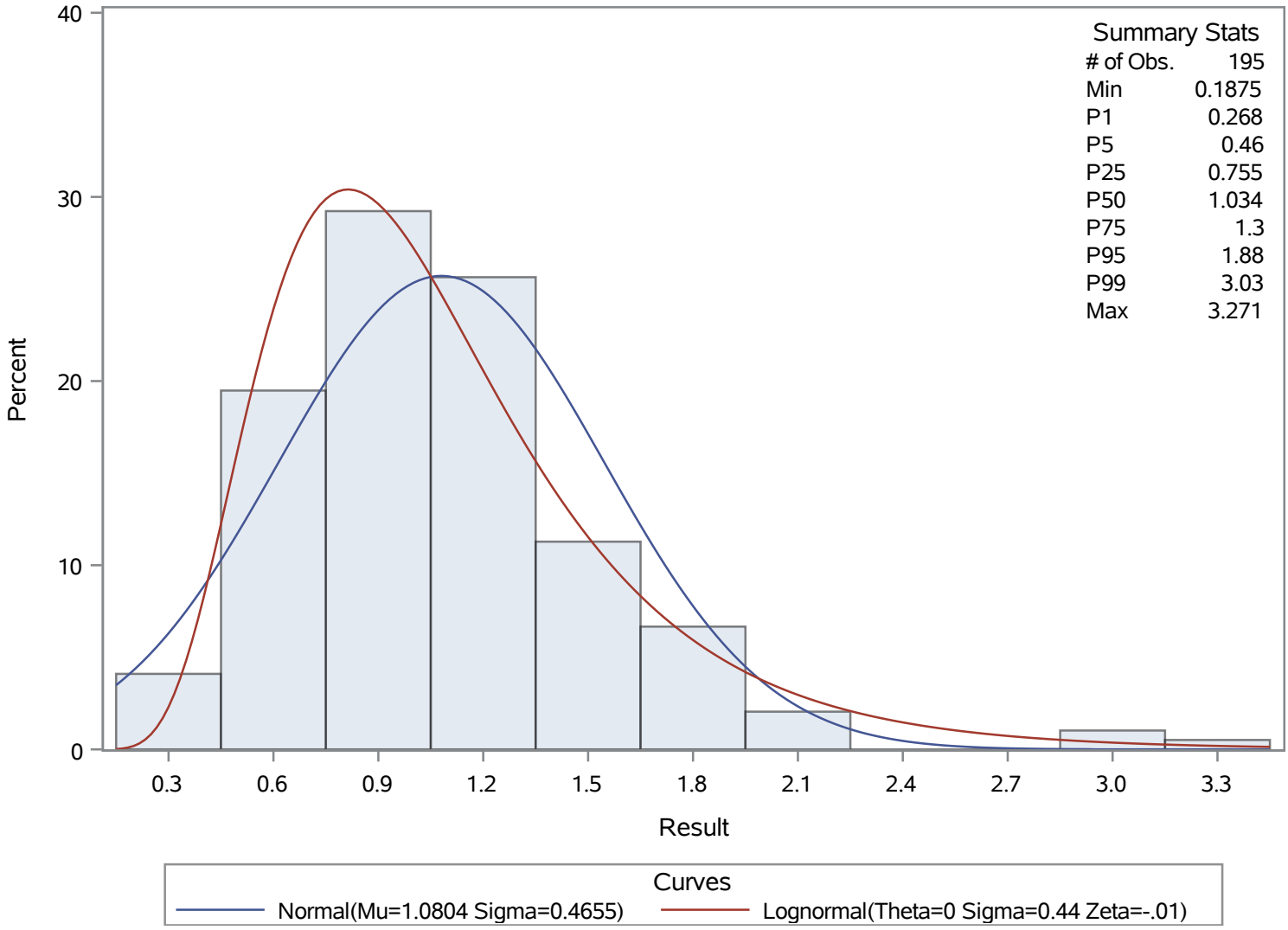
Distribution of result



Little Manatee River
D3
Nitrogen Total as N (mg/L) mg/L
Site ID = 21FLMANAD3

The UNIVARIATE Procedure

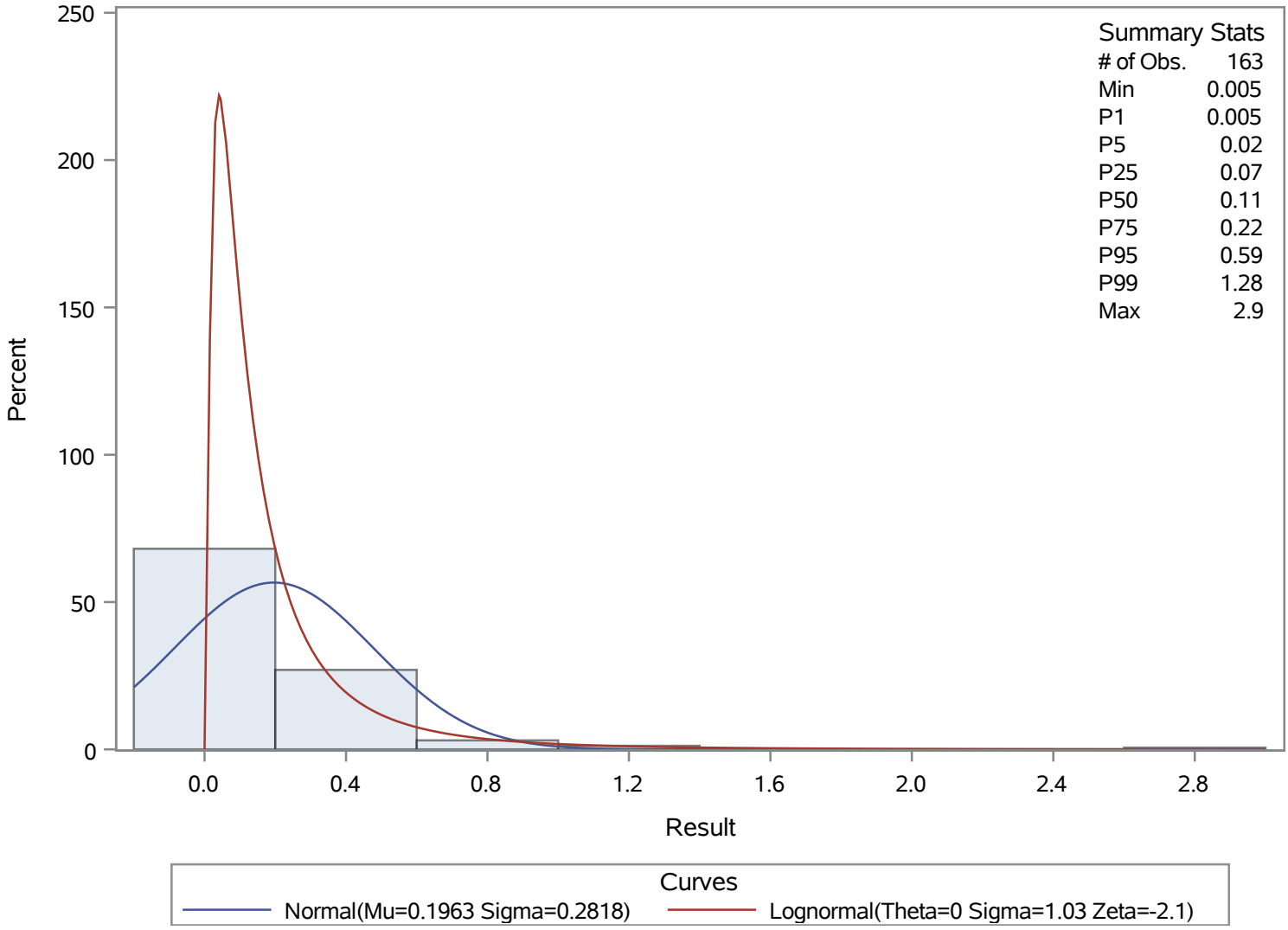
Distribution of result



Little Manatee River
LITTLE MANATEE RIVER NEAR FT. LONESOME FL
Nutrients (Nitrate-Nitrite) mg/L
Site ID = 112WRD 02300100

The UNIVARIATE Procedure

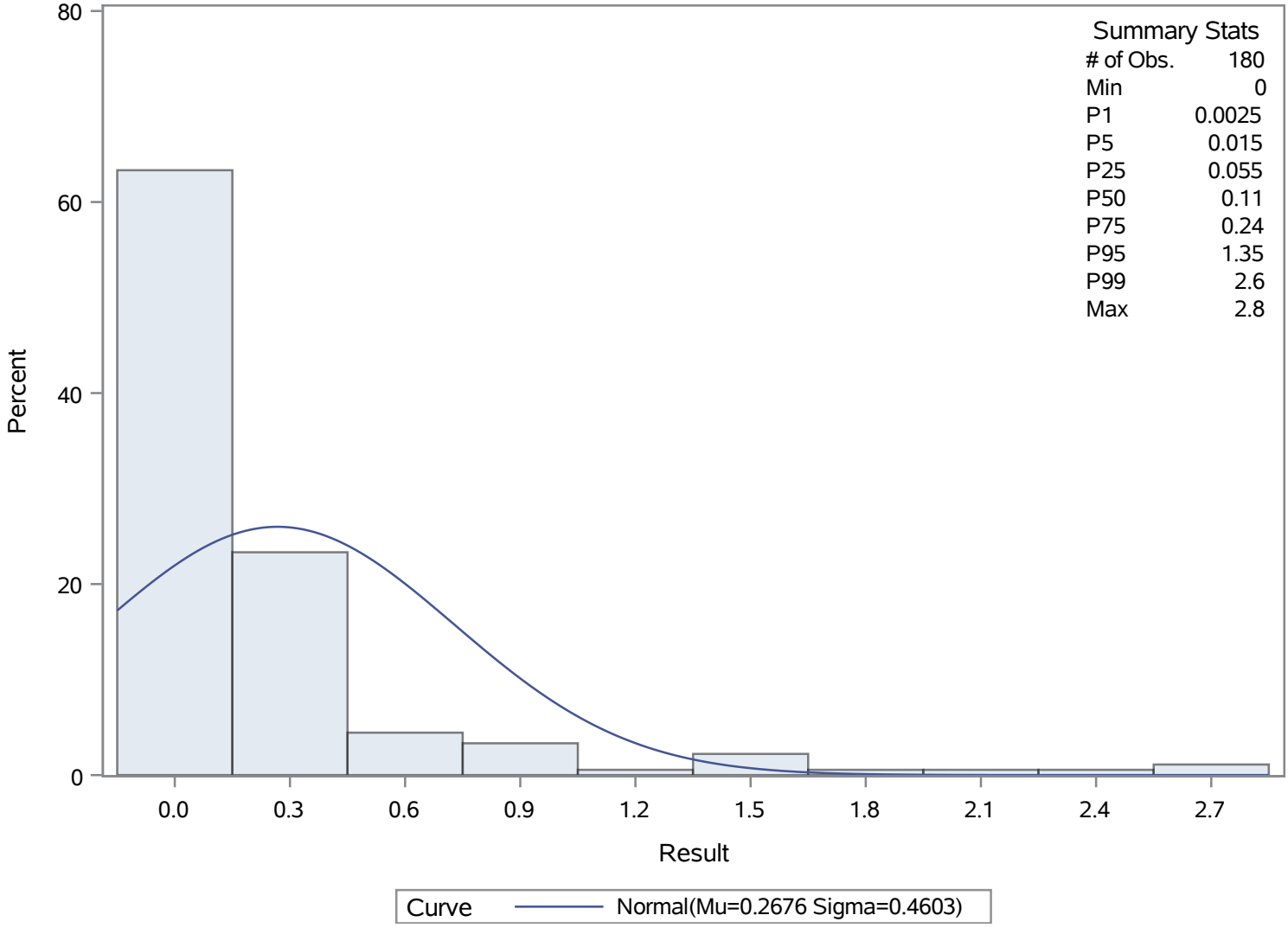
Distribution of result



Little Manatee River
SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL
Nutrients (Nitrate-Nitrite) mg/L
Site ID = 112WRD 02300200

The UNIVARIATE Procedure

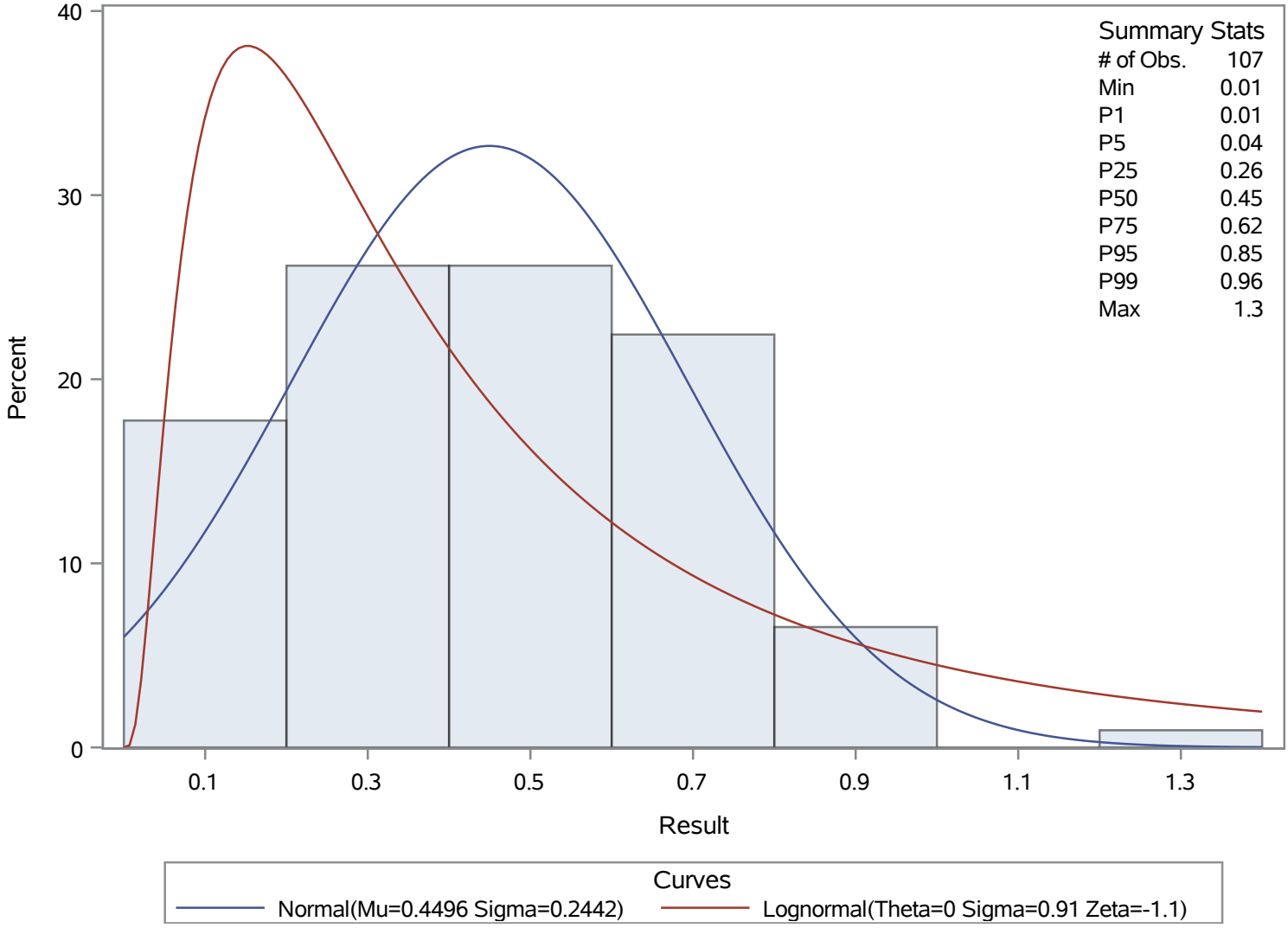
Distribution of result



Little Manatee River
LITTLE MANATEE RIVER NEAR WIMAUMA FL
Nutrients (Nitrate-Nitrite) mg/L
Site ID = 112WRD 02300500

The UNIVARIATE Procedure

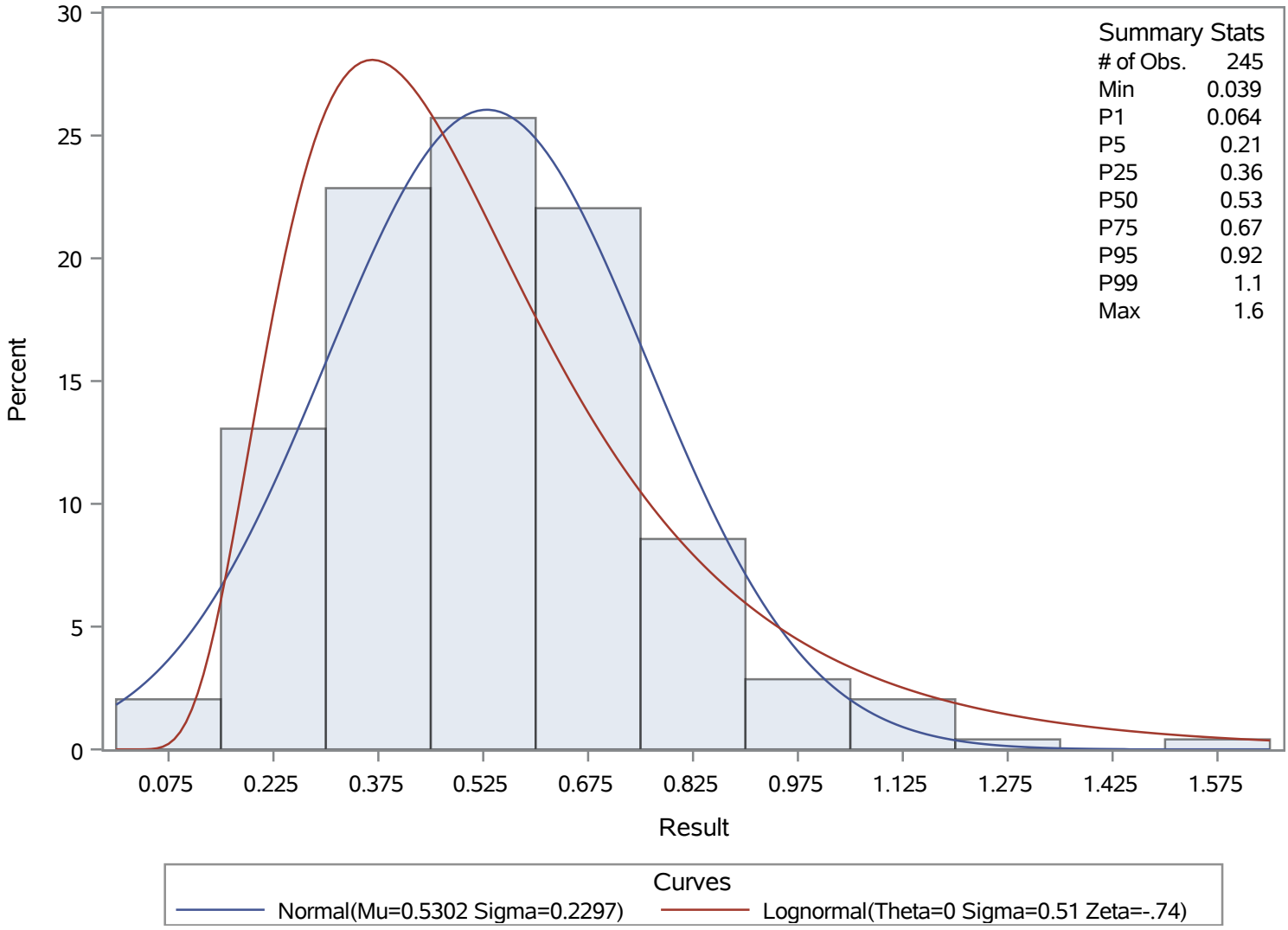
Distribution of result



Little Manatee River
LITTLE MANATEE RIVER AT US HWY 301
Nutrients (Nitrate-Nitrite) mg/L
Site ID = 21FLGW 3555

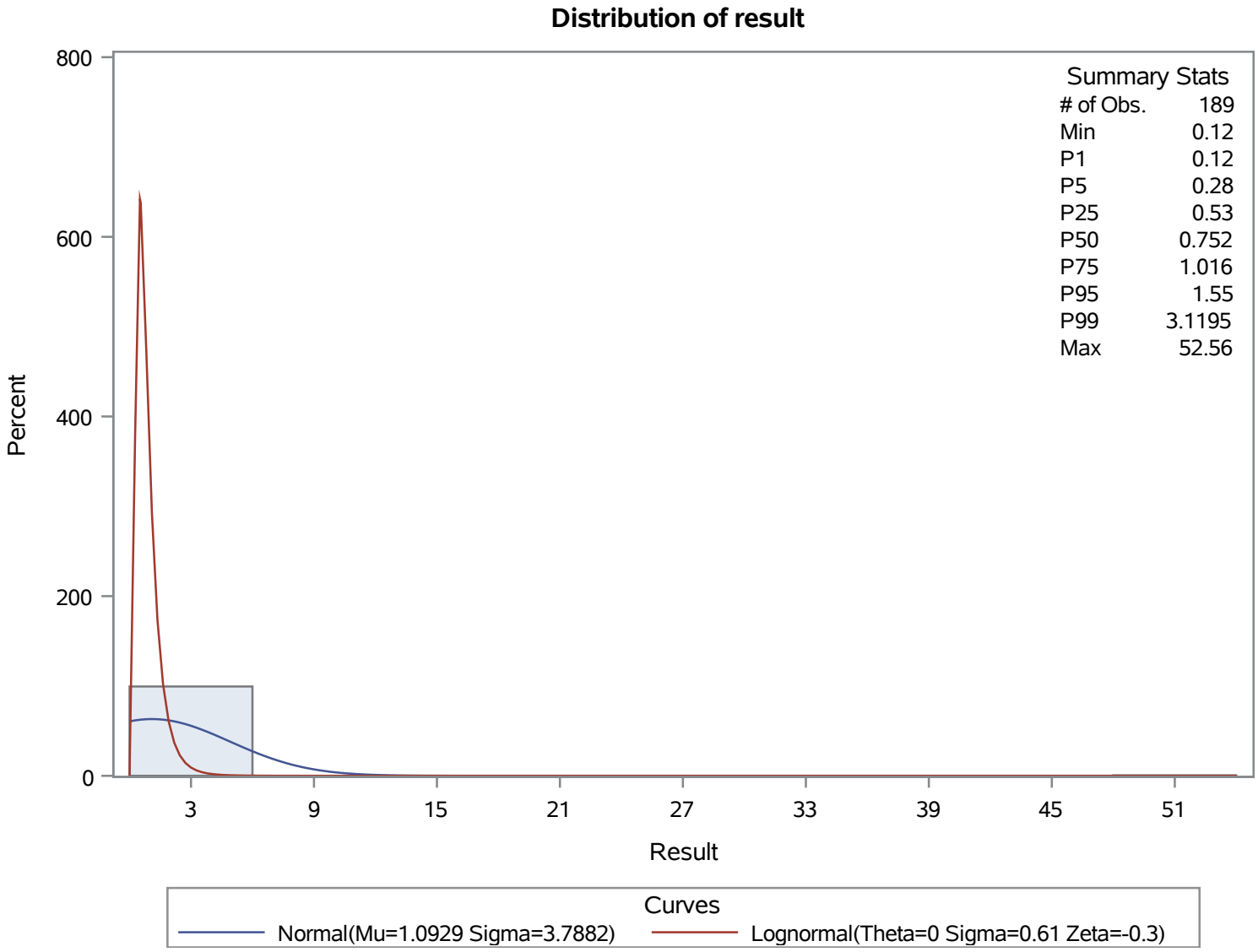
The UNIVARIATE Procedure

Distribution of result



Little Manatee River
LITTLE MANATEE R AT CR579
Nutrients (Nitrate-Nitrite) mg/L
Site ID = 21FLHILL24010013

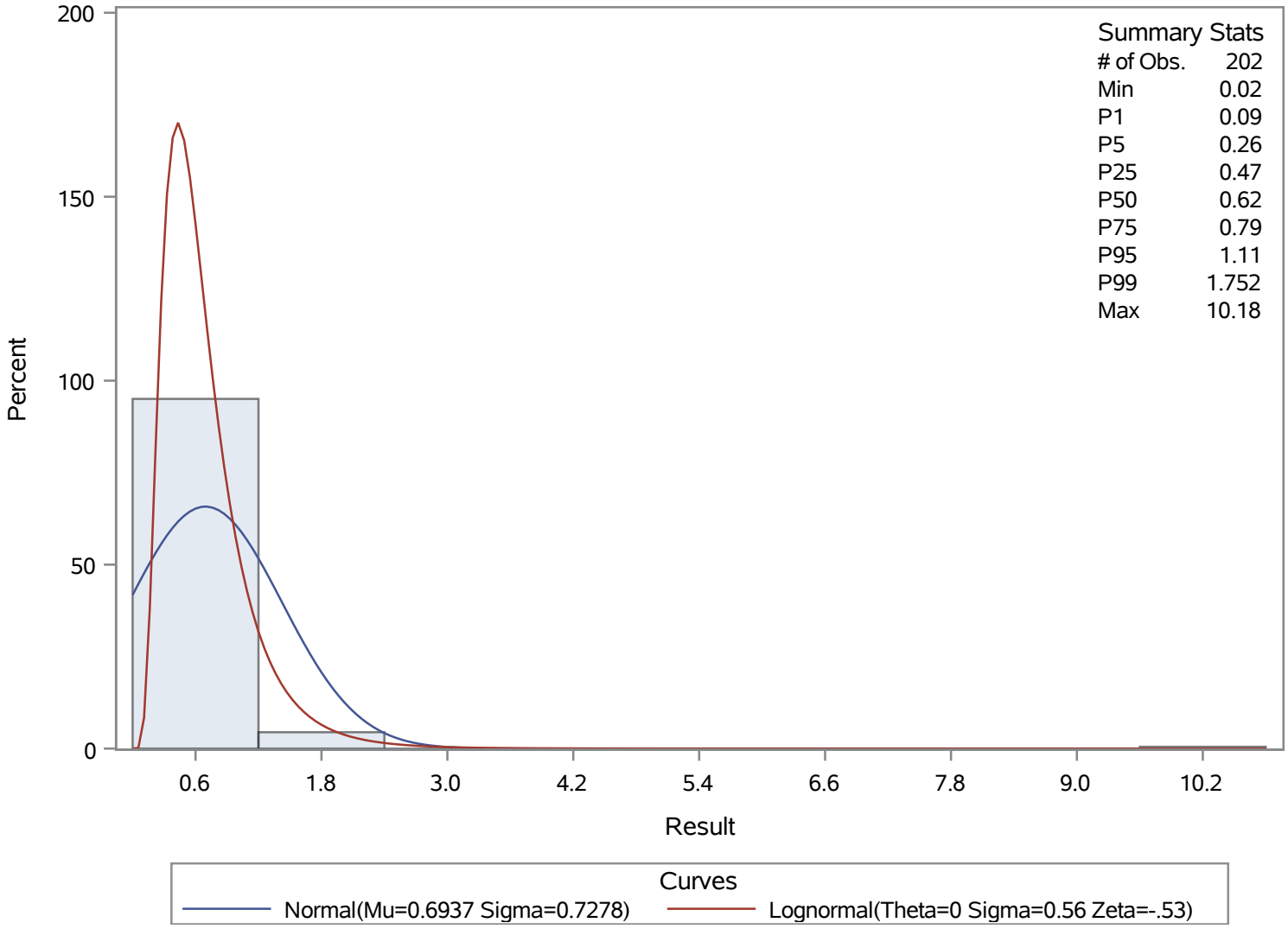
The UNIVARIATE Procedure



Little Manatee River
L MANATEE R BR US 301
Nutrients (Nitrate-Nitrite) mg/L
Site ID = 21FLHILL24010100

The UNIVARIATE Procedure

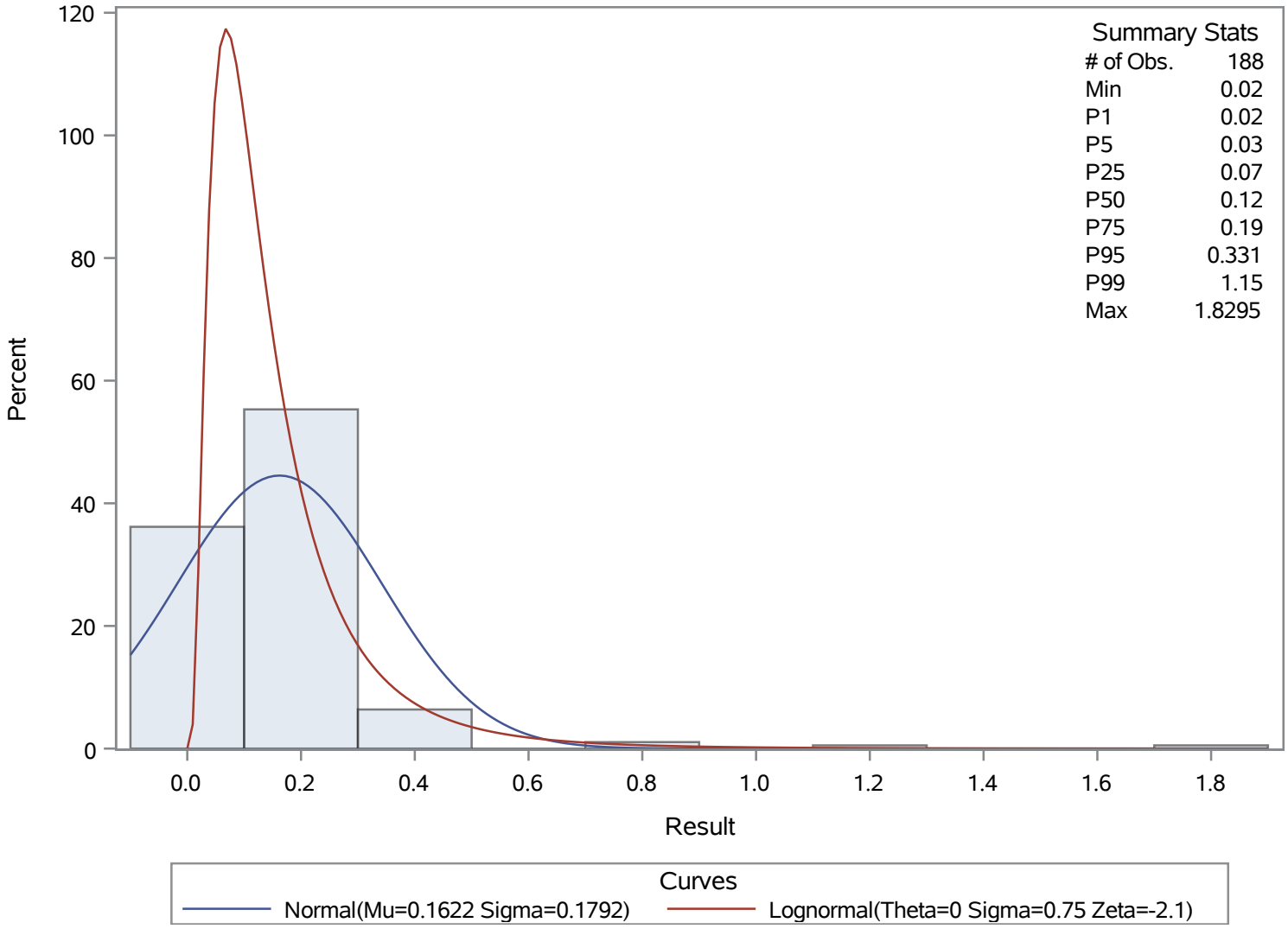
Distribution of result



Little Manatee River
LITTLE MANATEE R AT SR #674
Nutrients (Nitrate-Nitrite) mg/L
Site ID = 21FLHILL24010110

The UNIVARIATE Procedure

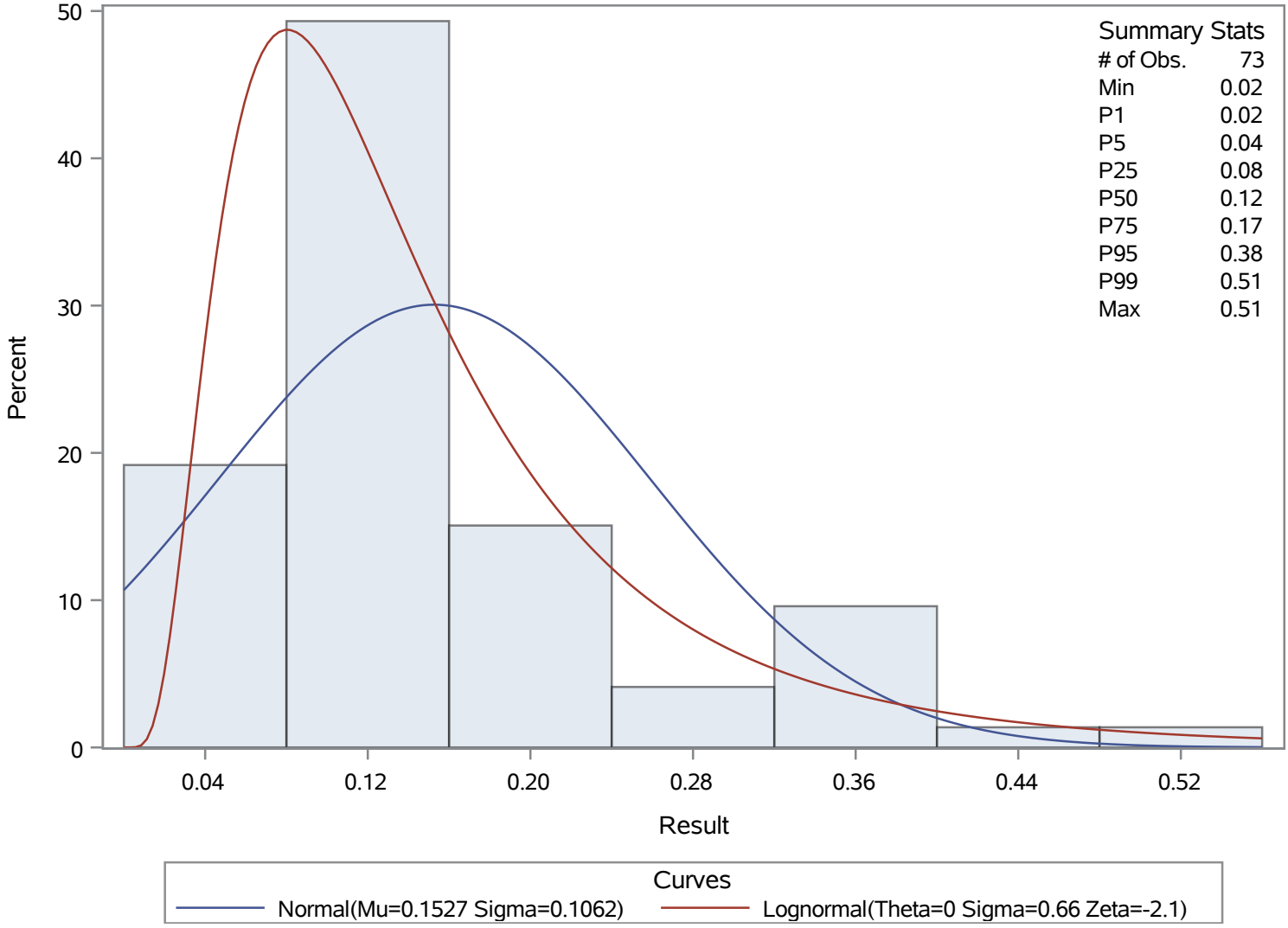
Distribution of result



Little Manatee River
Little Manatee R. at SR674
Nutrients (Nitrate-Nitrite) mg/L
Site ID = 21FLIMCALM674

The UNIVARIATE Procedure

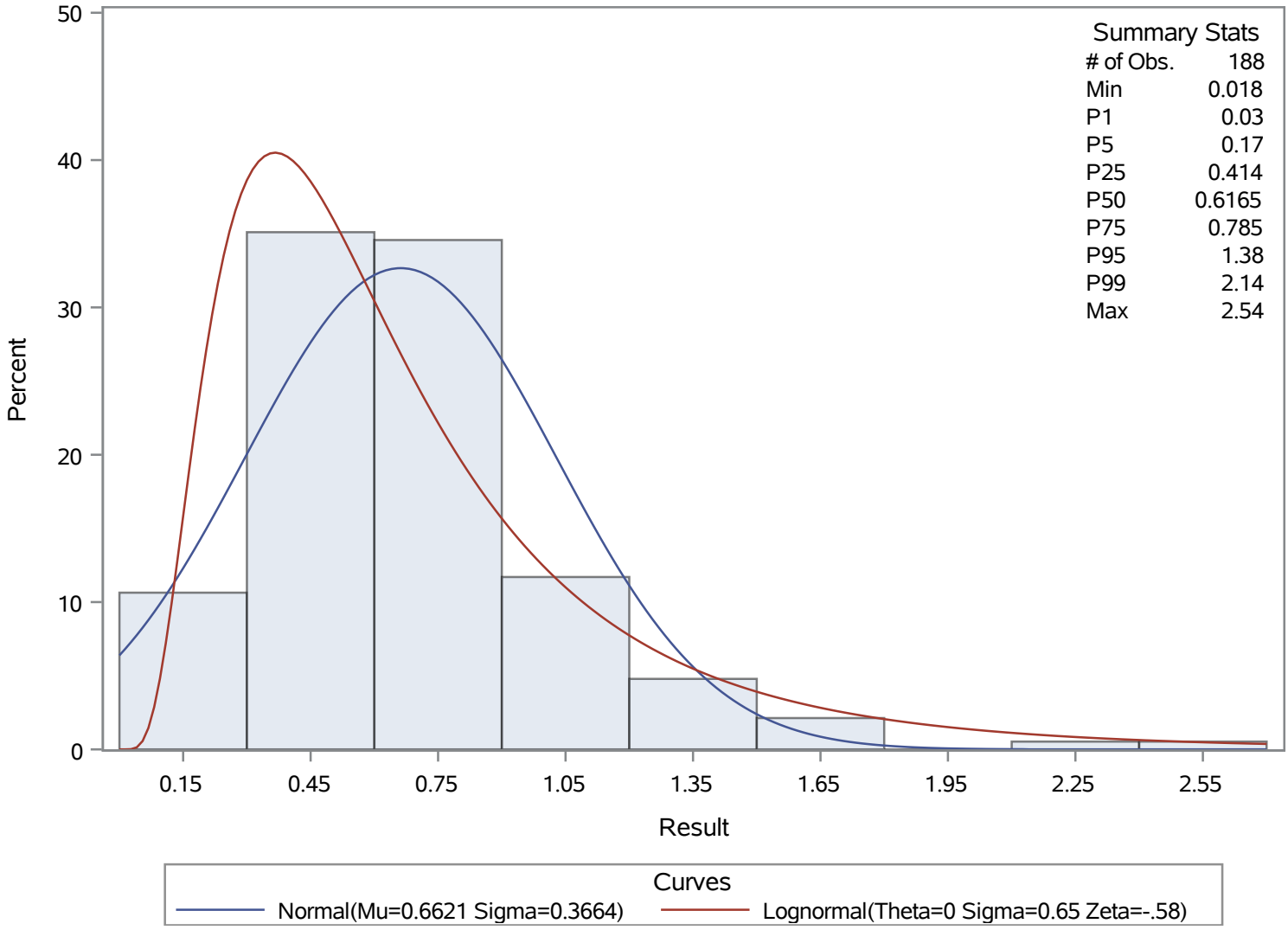
Distribution of result



Little Manatee River
D1
Nutrients (Nitrate-Nitrite) mg/L
Site ID = 21FLMANAD1

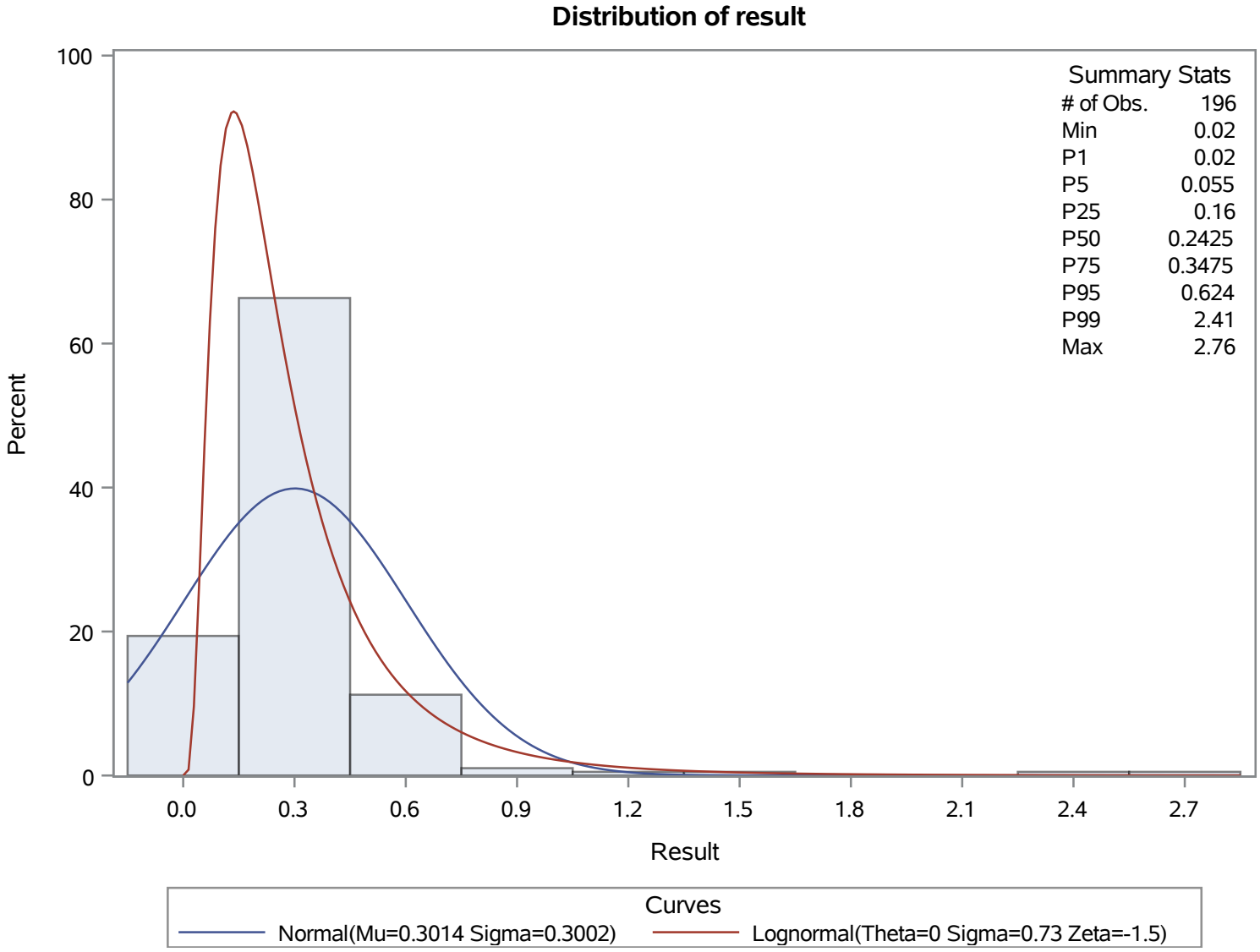
The UNIVARIATE Procedure

Distribution of result



Little Manatee River
D3
Nutrients (Nitrate-Nitrite) mg/L
Site ID = 21FLMANAD3

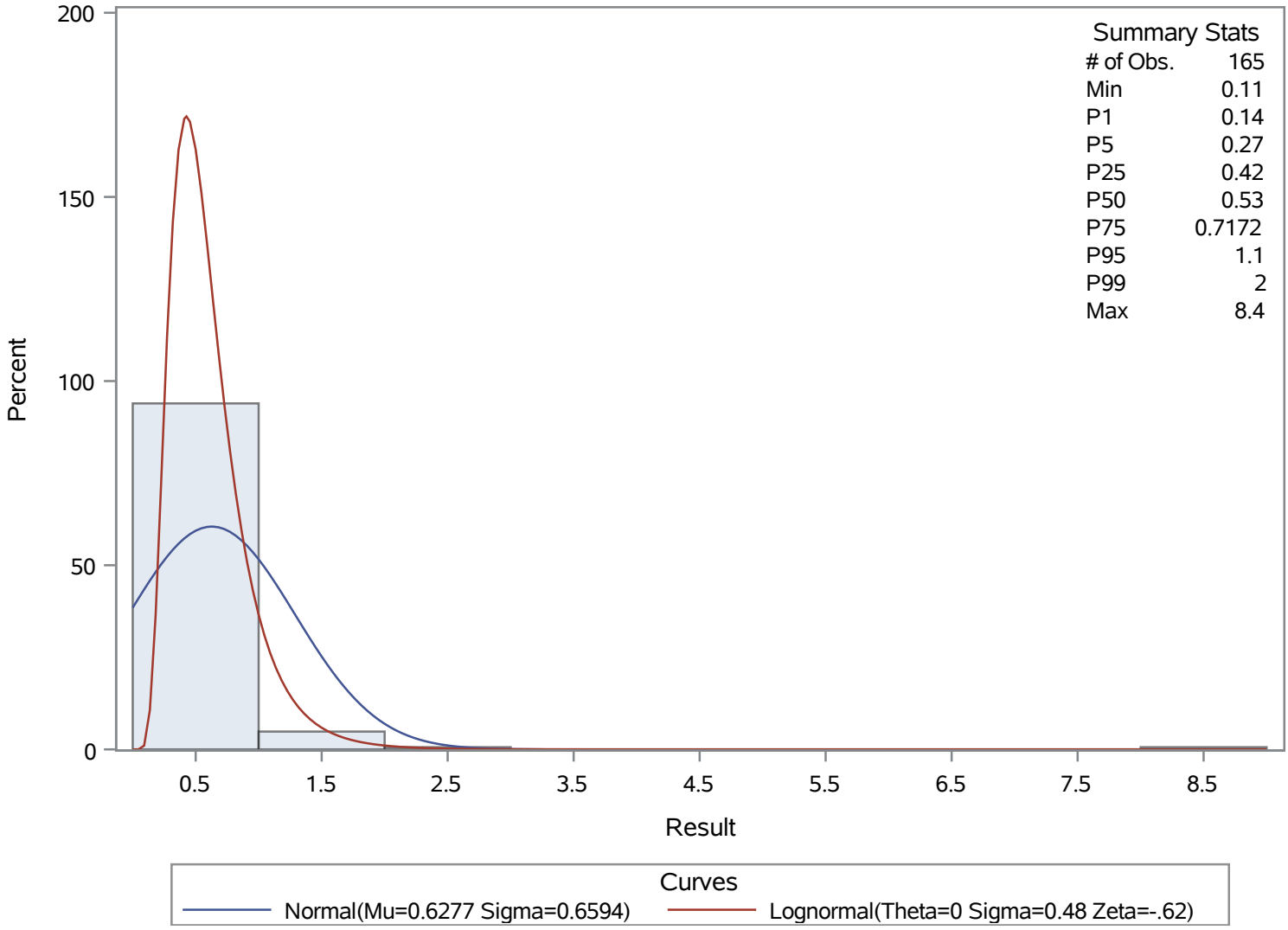
The UNIVARIATE Procedure



Little Manatee River
LITTLE MANATEE RIVER NEAR FT. LONESOME FL
Phosphorus Total as P (mg/L) mg/L
Site ID = 112WRD 02300100

The UNIVARIATE Procedure

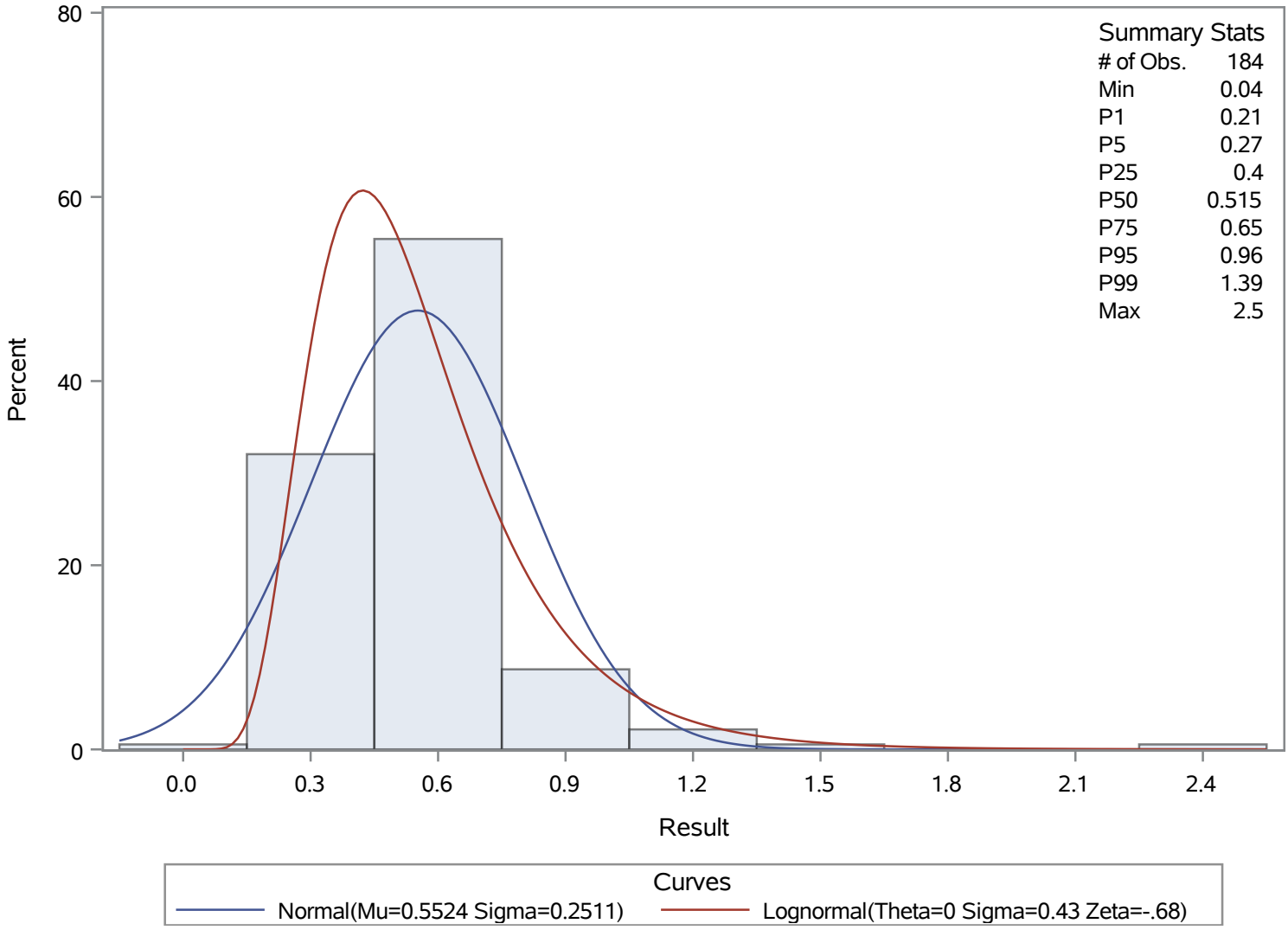
Distribution of result



Little Manatee River
SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL
Phosphorus Total as P (mg/L) mg/L
Site ID = 112WRD 02300200

The UNIVARIATE Procedure

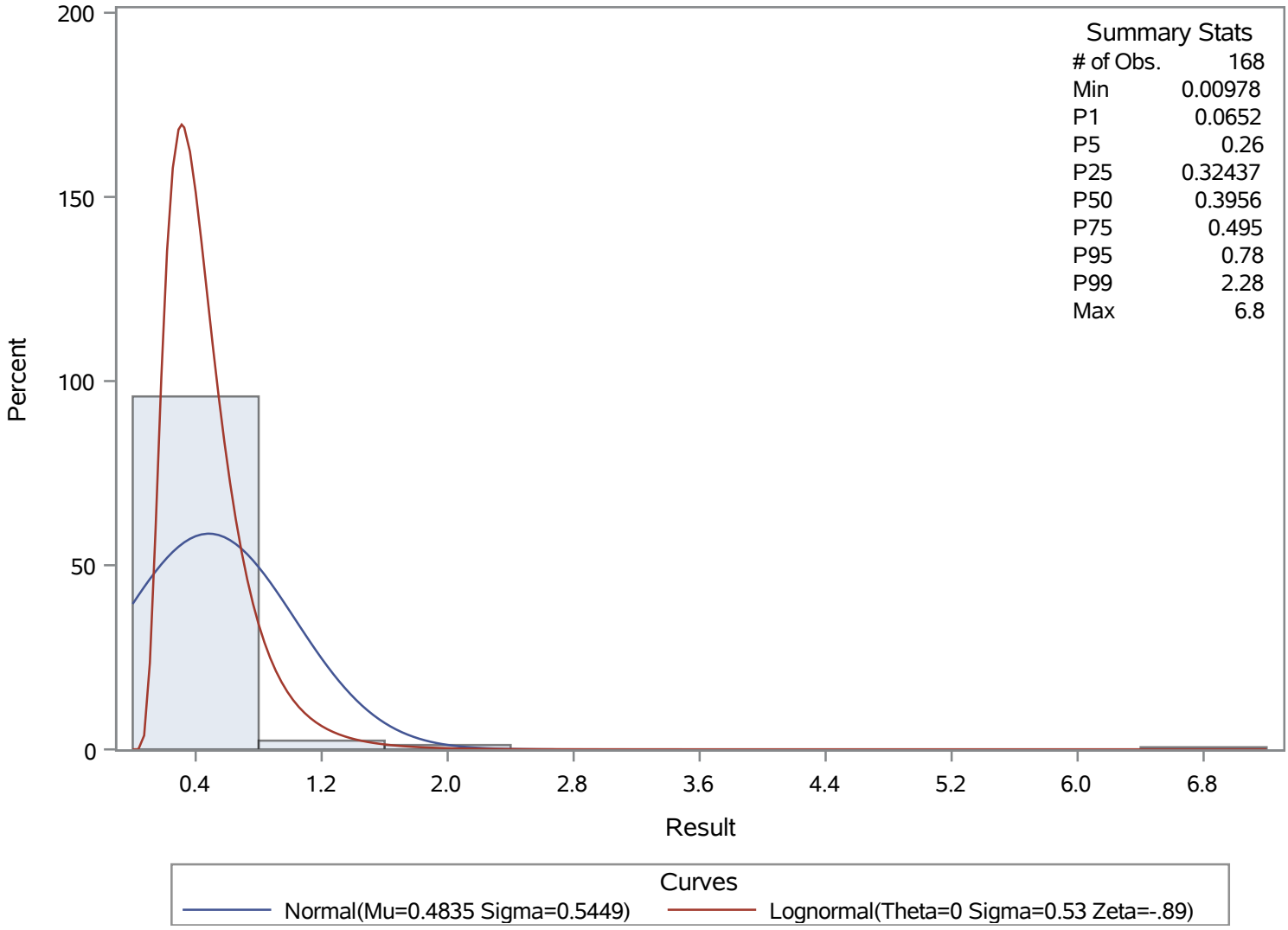
Distribution of result



Little Manatee River
LITTLE MANATEE RIVER NEAR WIMAUMA FL
Phosphorus Total as P (mg/L) mg/L
Site ID = 112WRD 02300500

The UNIVARIATE Procedure

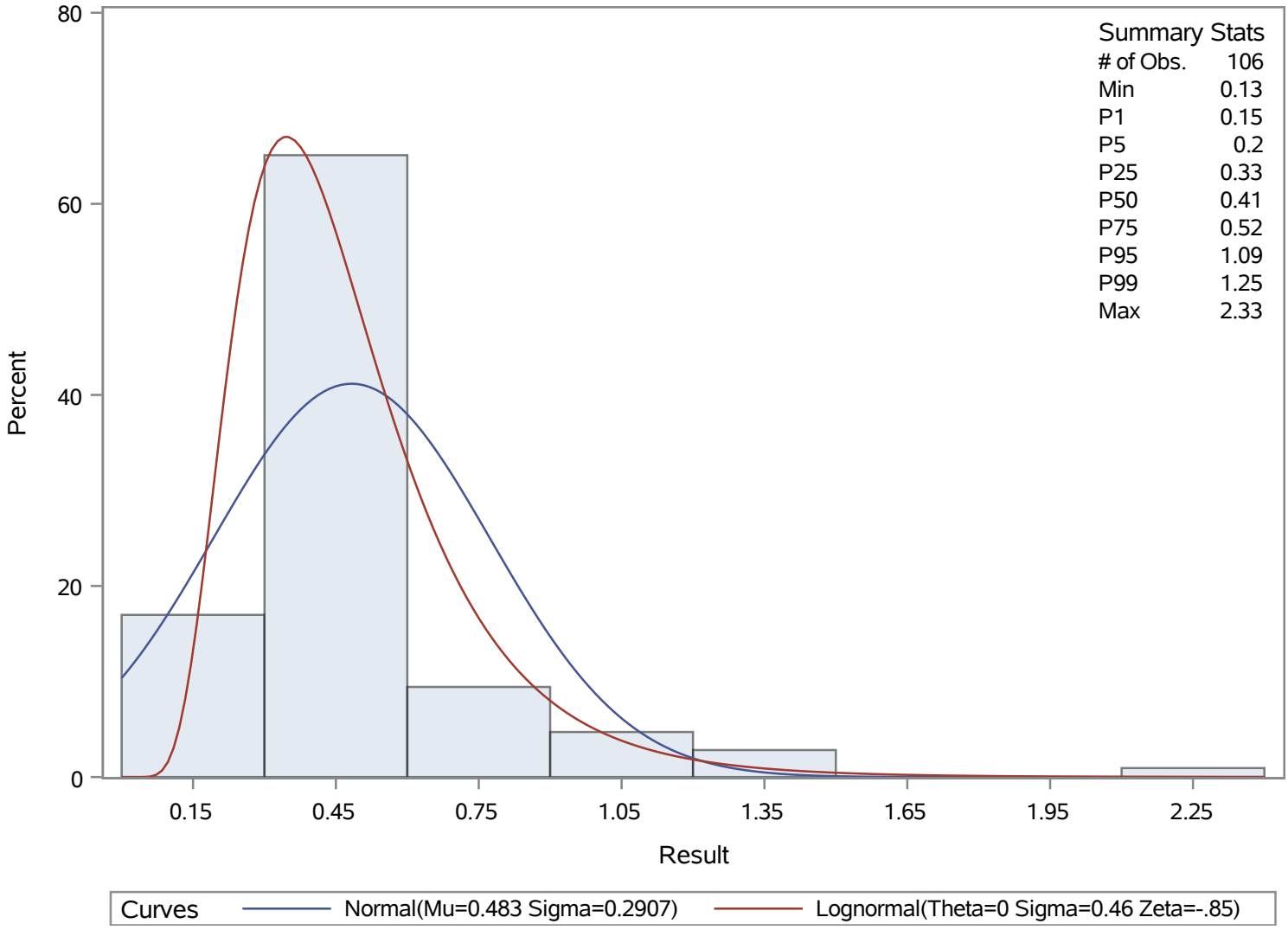
Distribution of result



Little Manatee River
L MANATEE R BR US 301
Phosphorus Total as P (mg/L) mg/L
Site ID = 21FLA 24010100

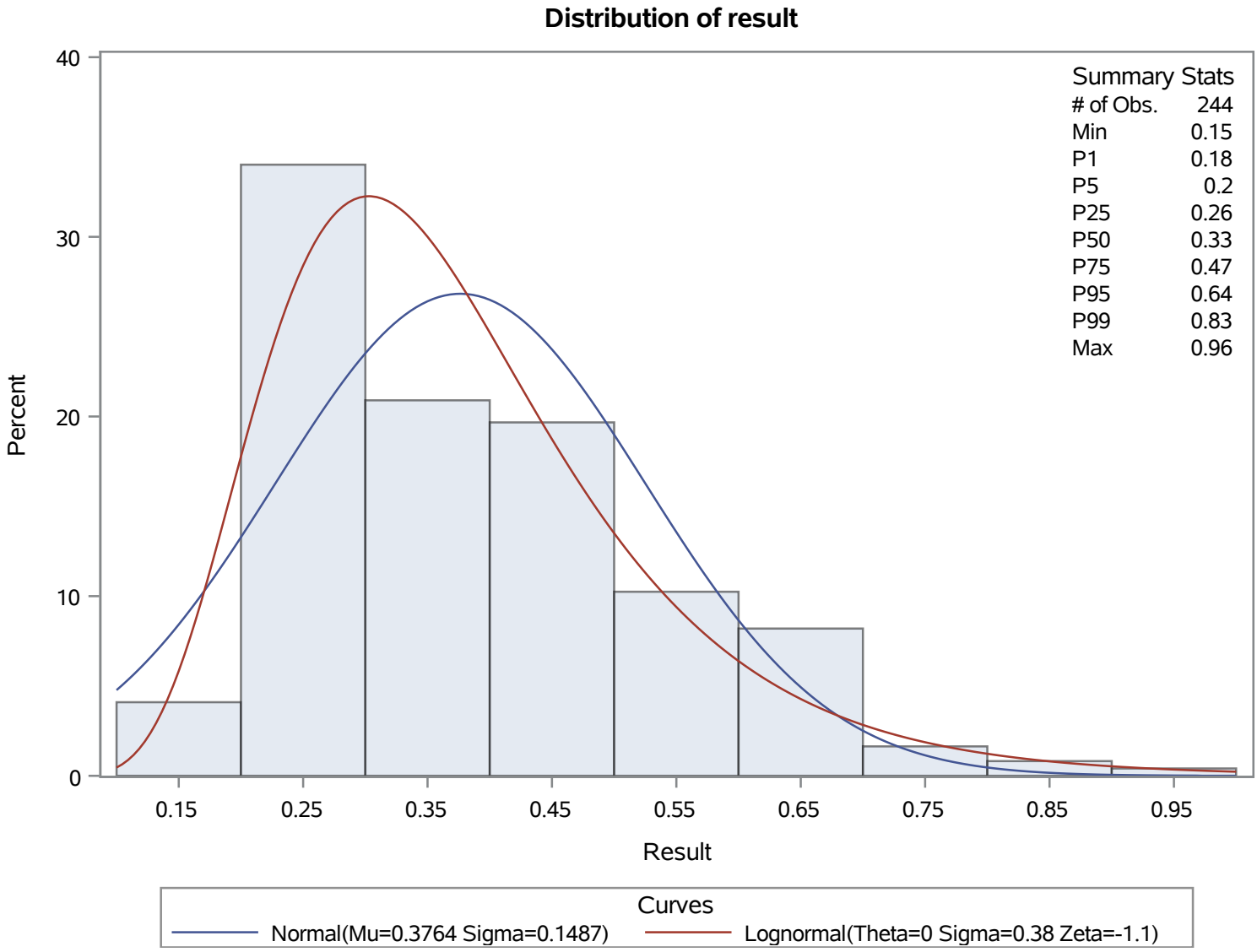
The UNIVARIATE Procedure

Distribution of result



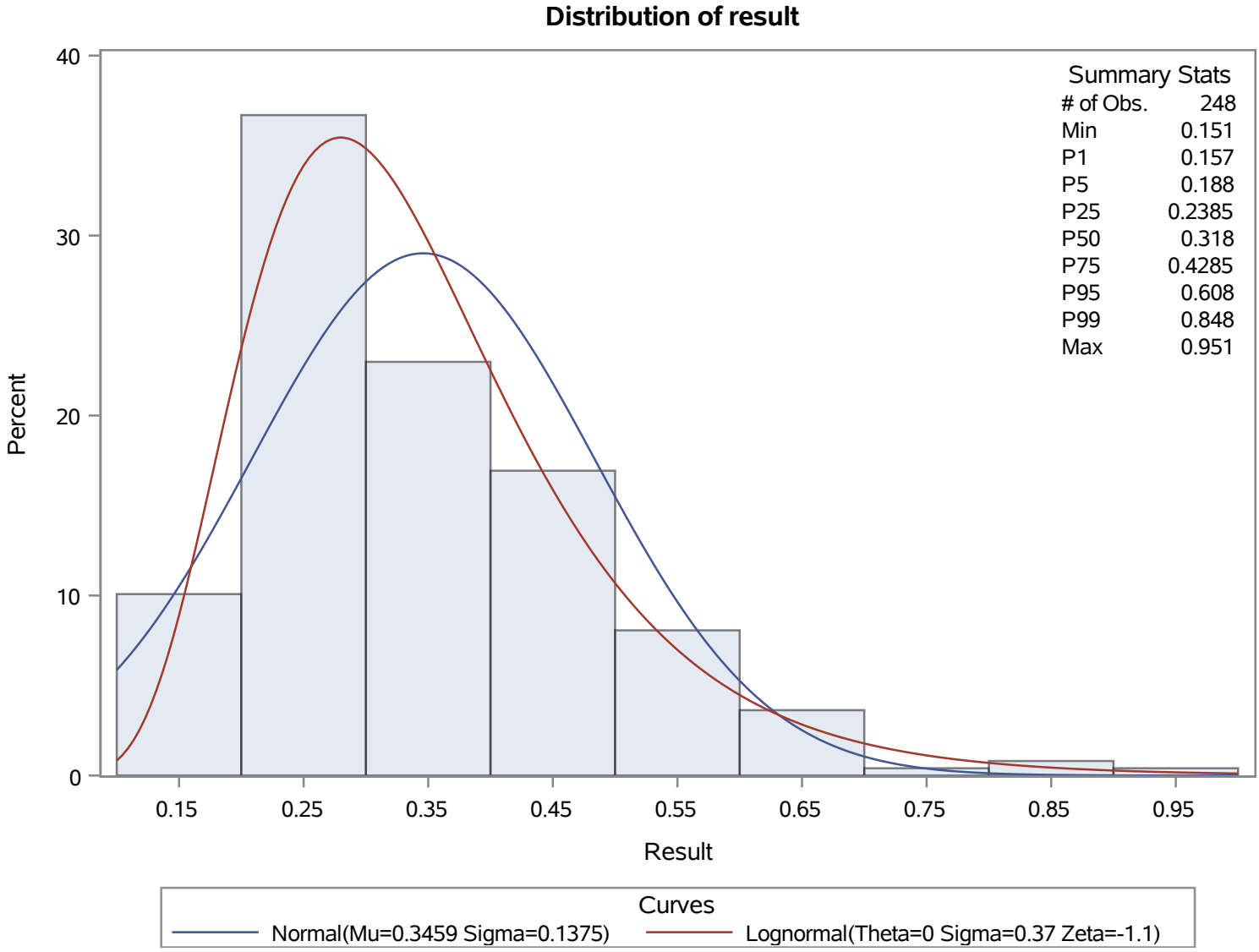
Little Manatee River
LITTLE MANATEE RIVER AT US HWY 301
Phosphorus Total as P (mg/L) mg/L
Site ID = 21FLGW 3555

The UNIVARIATE Procedure



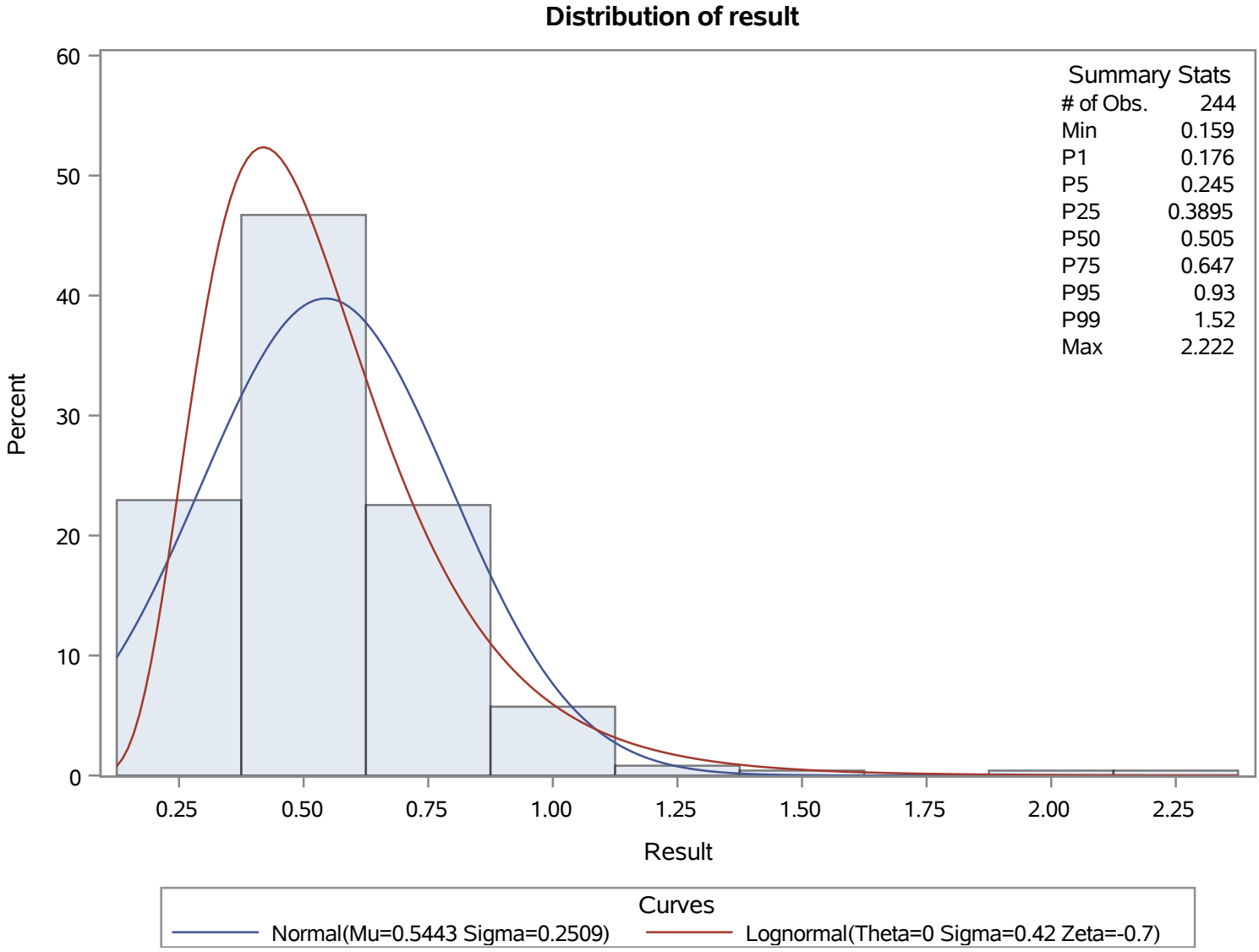
Little Manatee River
Little Manatee River at US 301 bridge
Phosphorus Total as P (mg/L) mg/L
Site ID = 21FLHILL113

The UNIVARIATE Procedure



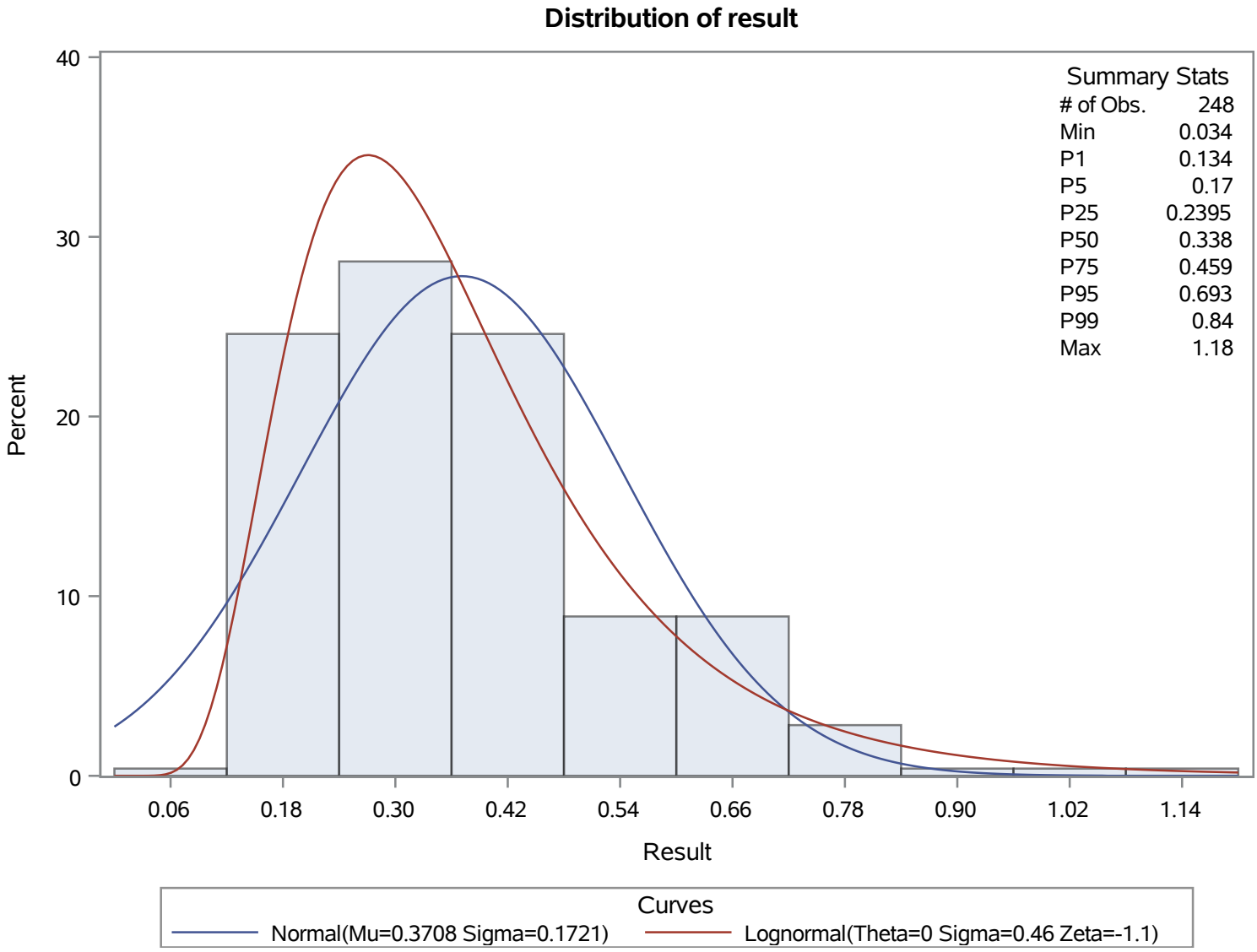
Little Manatee River
Little Manatee River at SR 674
Phosphorus Total as P (mg/L) mg/L
Site ID = 21FLHILL129

The UNIVARIATE Procedure



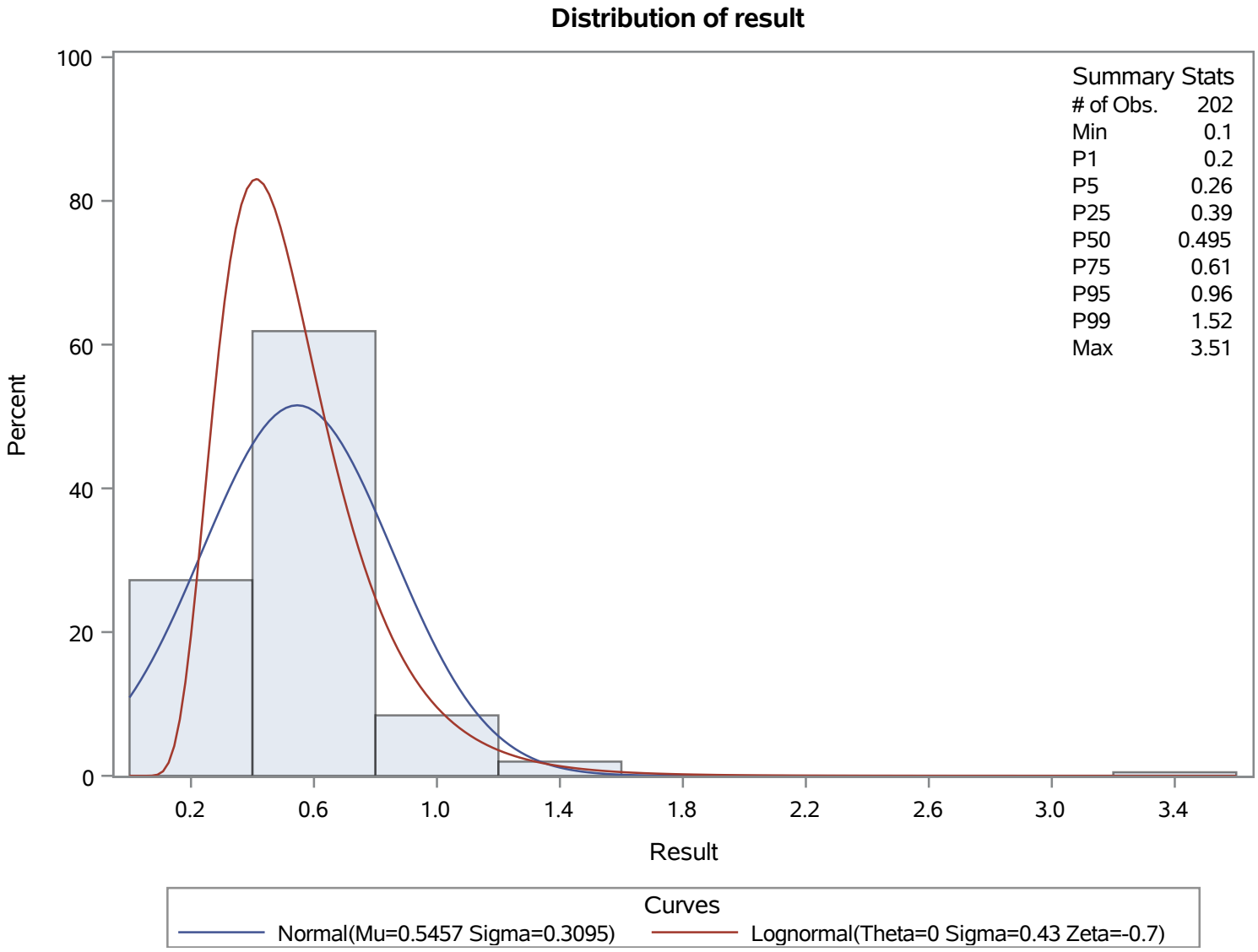
Little Manatee River
Little Manatee River at CR 579
Phosphorus Total as P (mg/L) mg/L
Site ID = 21FLHILL140

The UNIVARIATE Procedure



Little Manatee River
LITTLE MANATEE R AT CR579
Phosphorus Total as P (mg/L) mg/L
Site ID = 21FLHILL24010013

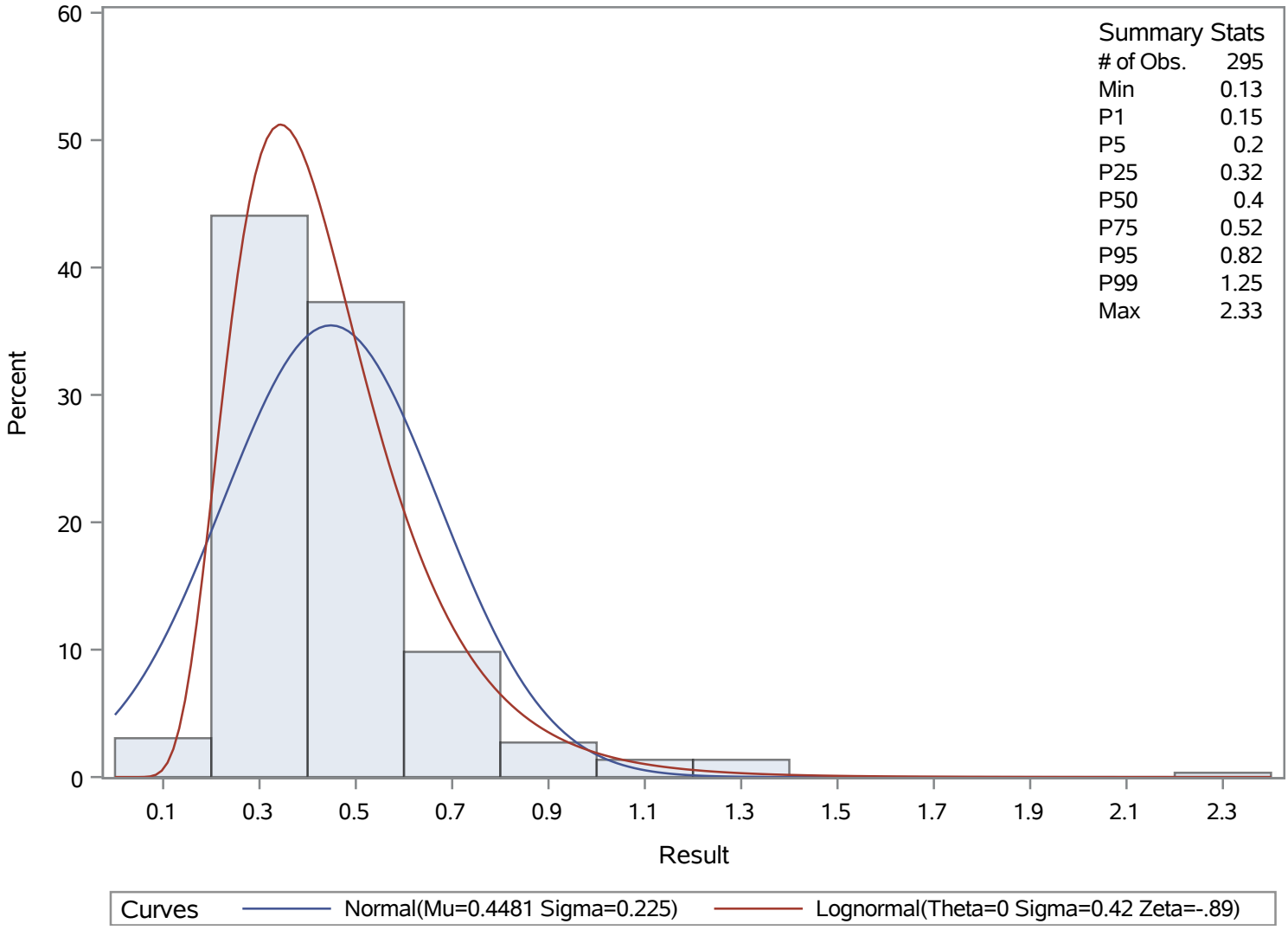
The UNIVARIATE Procedure



Little Manatee River
L MANATEE R BR US 301
Phosphorus Total as P (mg/L) mg/L
Site ID = 21FLHILL24010100

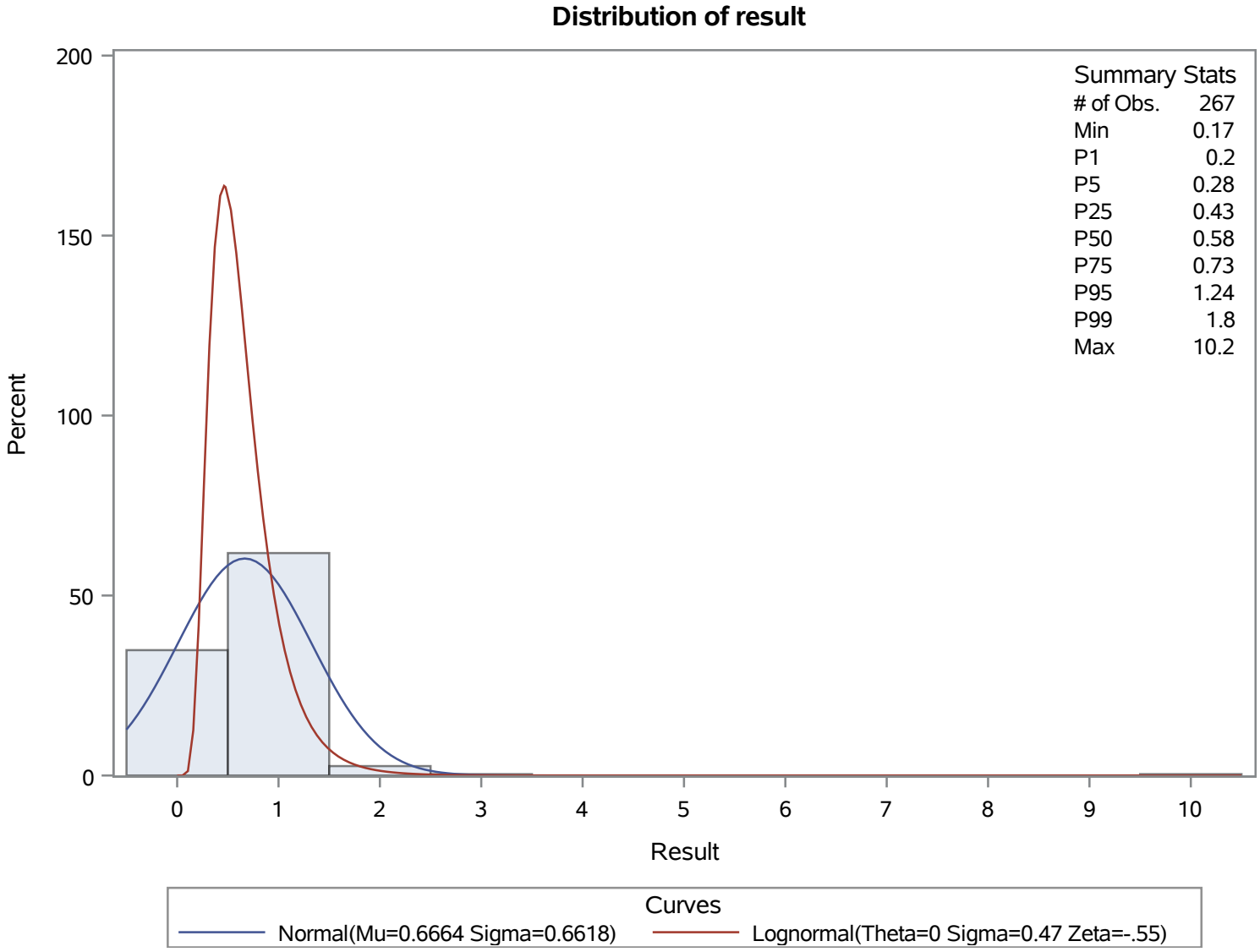
The UNIVARIATE Procedure

Distribution of result



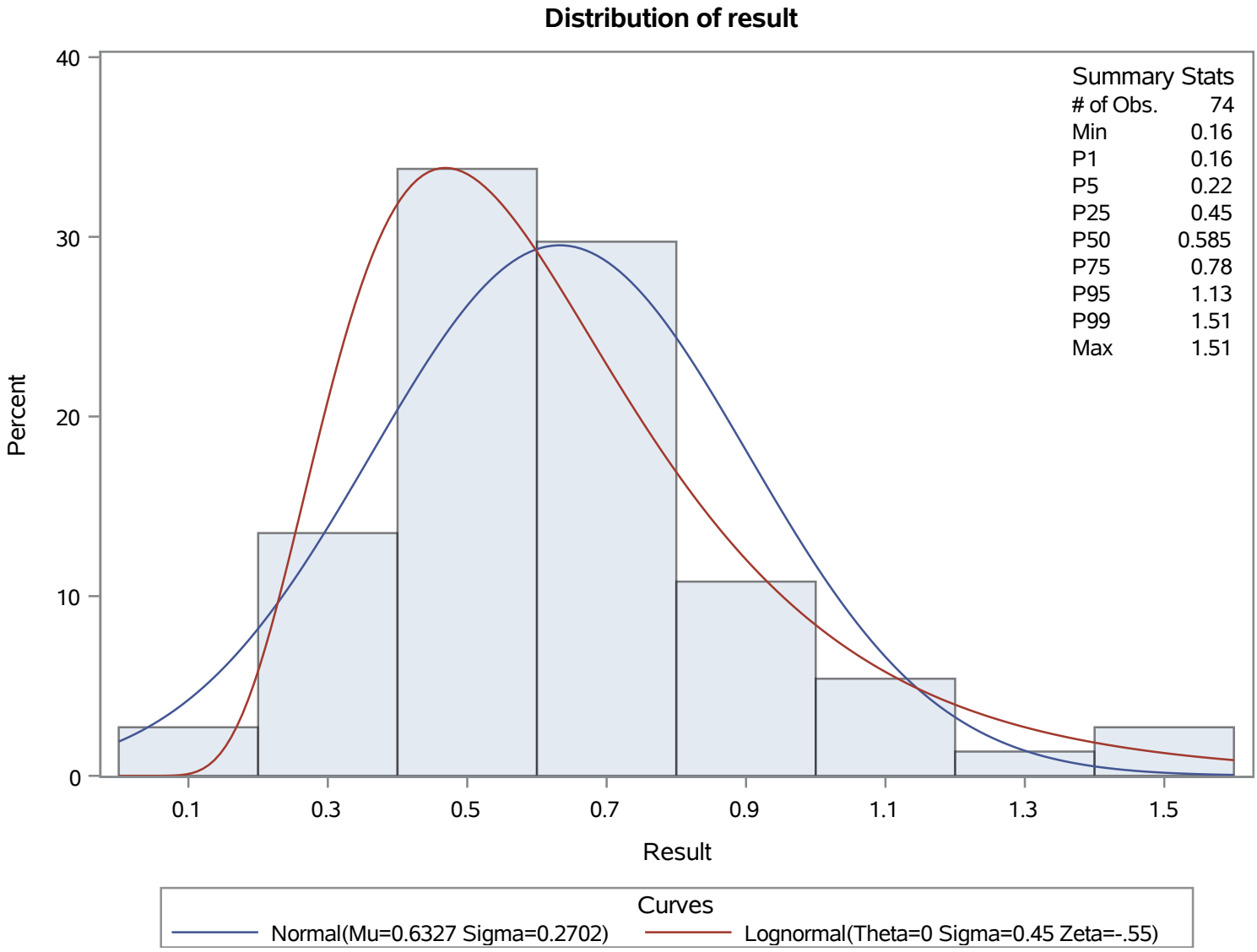
Little Manatee River
LITTLE MANATEE R AT SR #674
Phosphorus Total as P (mg/L) mg/L
Site ID = 21FLHILL24010110

The UNIVARIATE Procedure



Little Manatee River
Little Manatee R. at SR674
Phosphorus Total as P (mg/L) mg/L
Site ID = 21FLIMCALM674

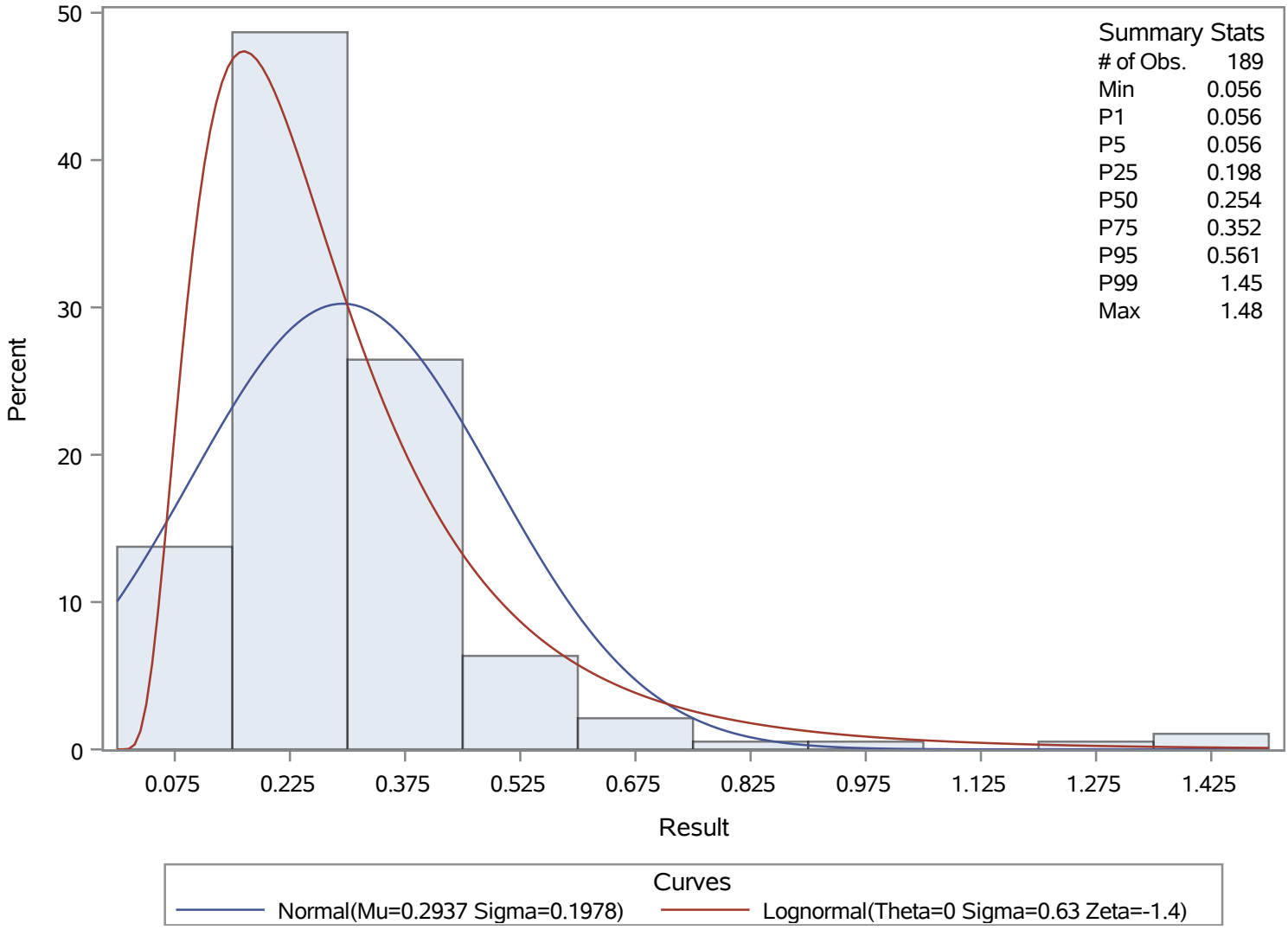
The UNIVARIATE Procedure



Little Manatee River
D1
Phosphorus Total as P (mg/L) mg/L
Site ID = 21FLMANAD1

The UNIVARIATE Procedure

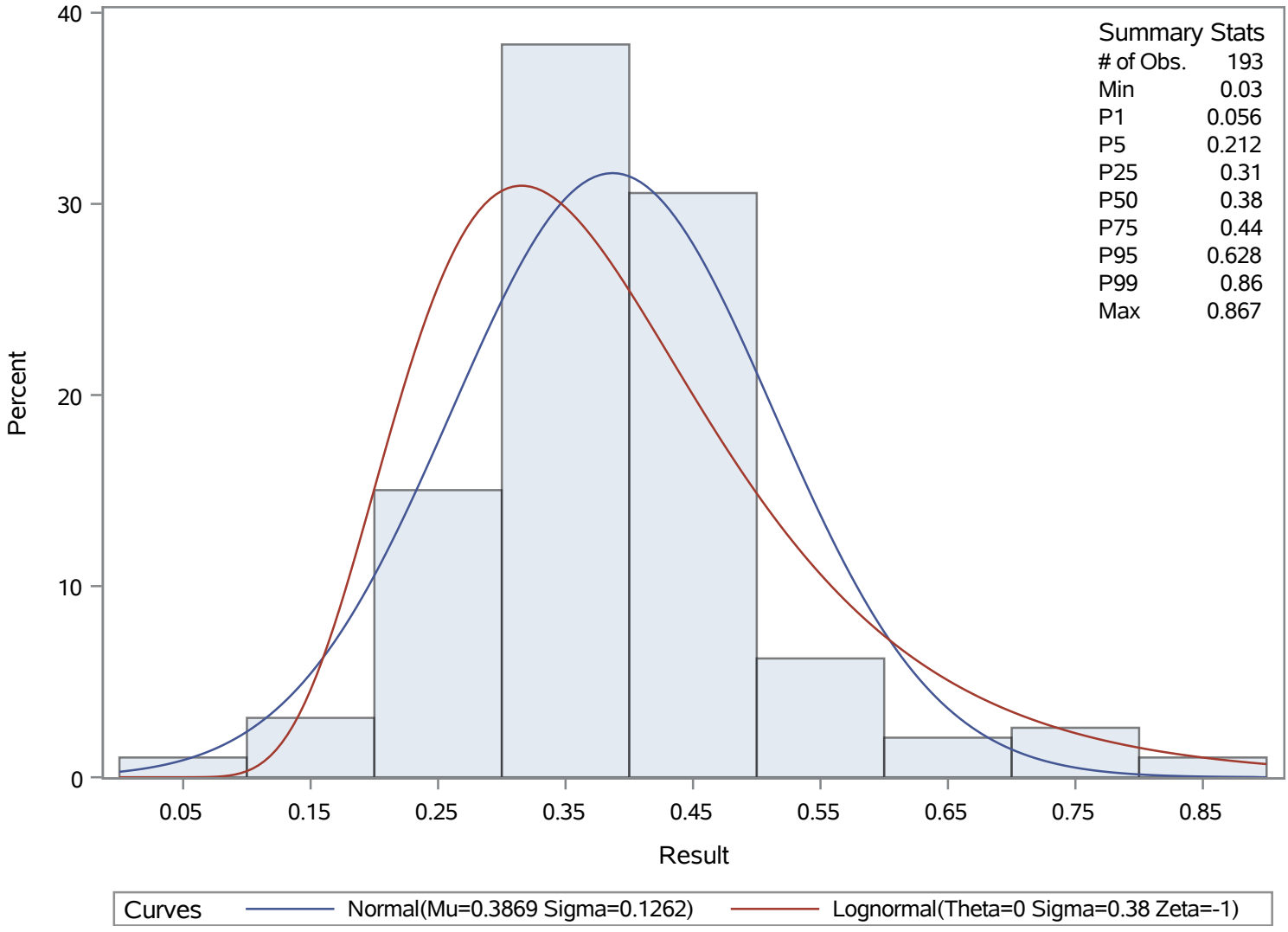
Distribution of result



Little Manatee River
D3
Phosphorus Total as P (mg/L) mg/L
Site ID = 21FLMANAD3

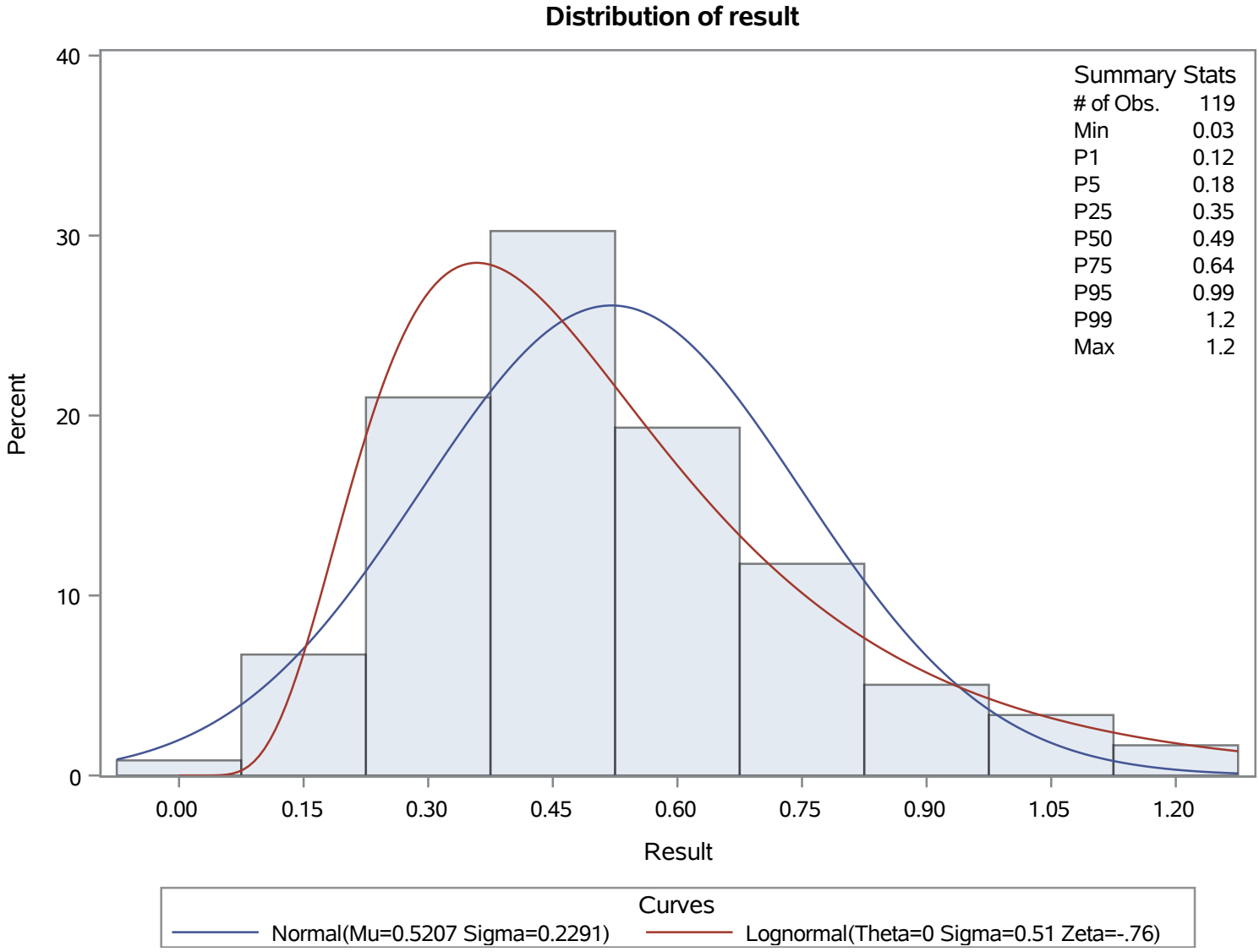
The UNIVARIATE Procedure

Distribution of result



Little Manatee River
LITTLE MANATEE RIVER NEAR FT. LONESOME FL
Phosphorus in Total Orthophosphate as P (mg/L) mg/L
Site ID = 112WRD 02300100

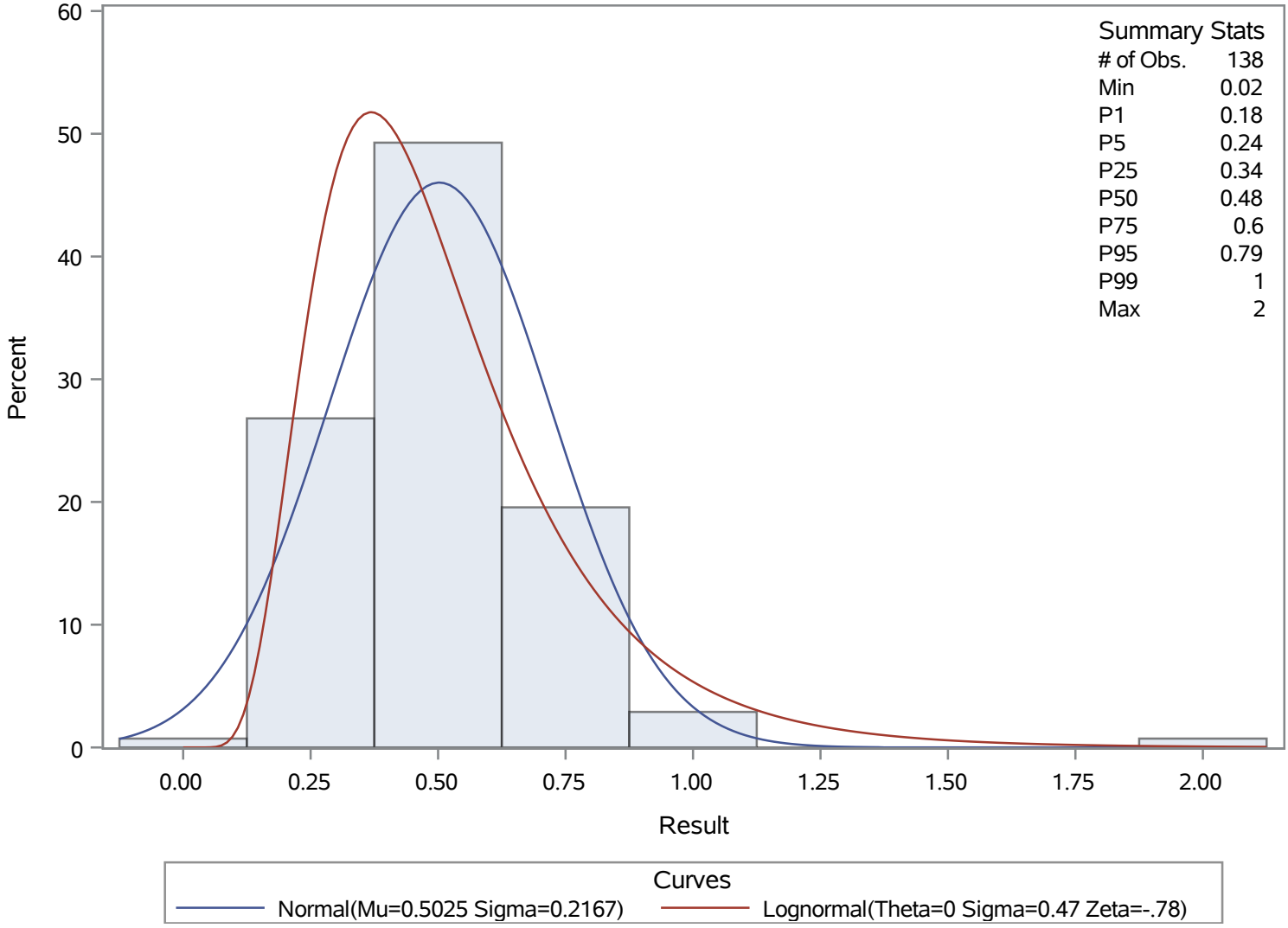
The UNIVARIATE Procedure



Little Manatee River
SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL
Phosphorus in Total Orthophosphate as P (mg/L) mg/L
Site ID = 112WRD 02300200

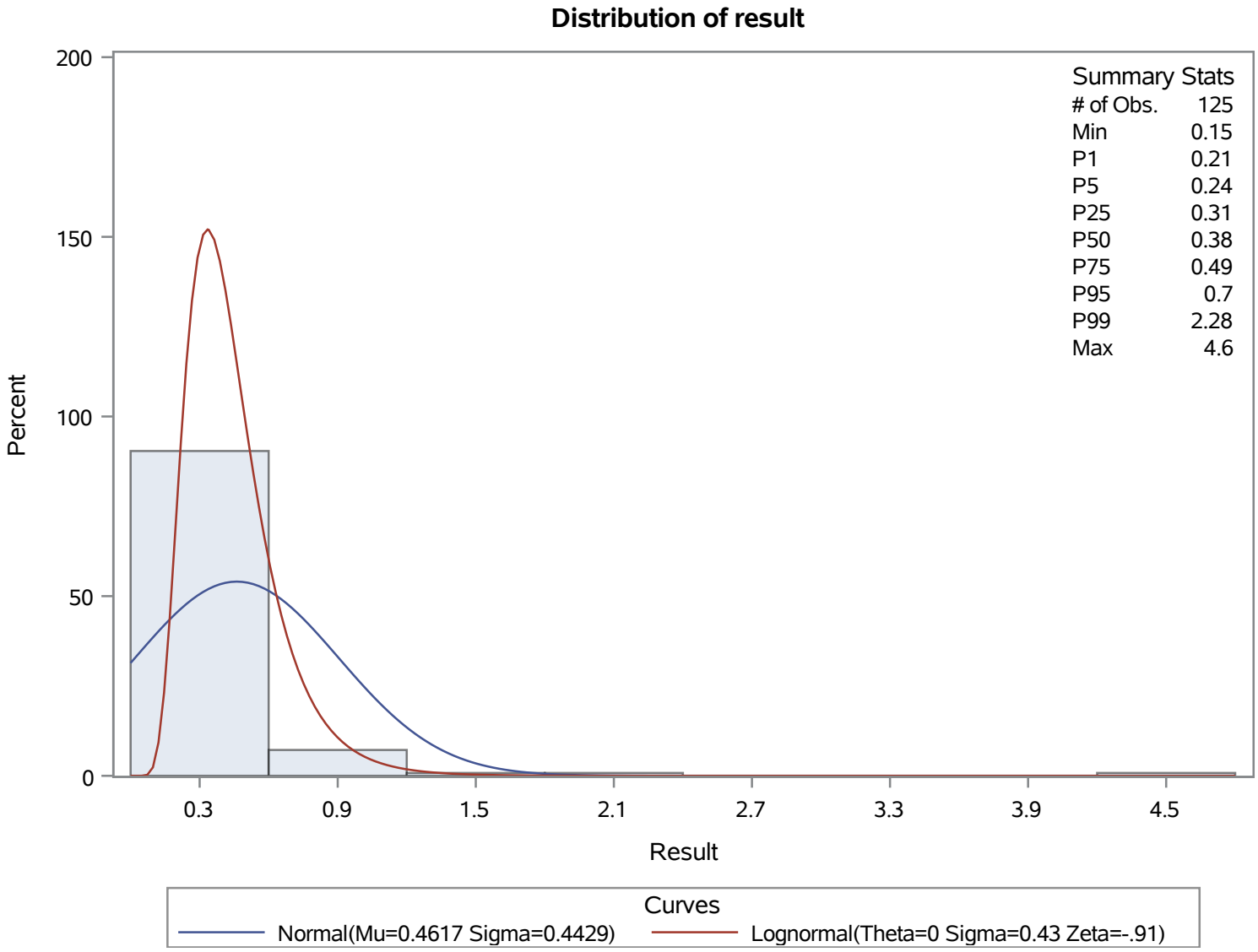
The UNIVARIATE Procedure

Distribution of result



Little Manatee River
LITTLE MANATEE RIVER NEAR WIMAUMA FL
Phosphorus in Total Orthophosphate as P (mg/L) mg/L
Site ID = 112WRD 02300500

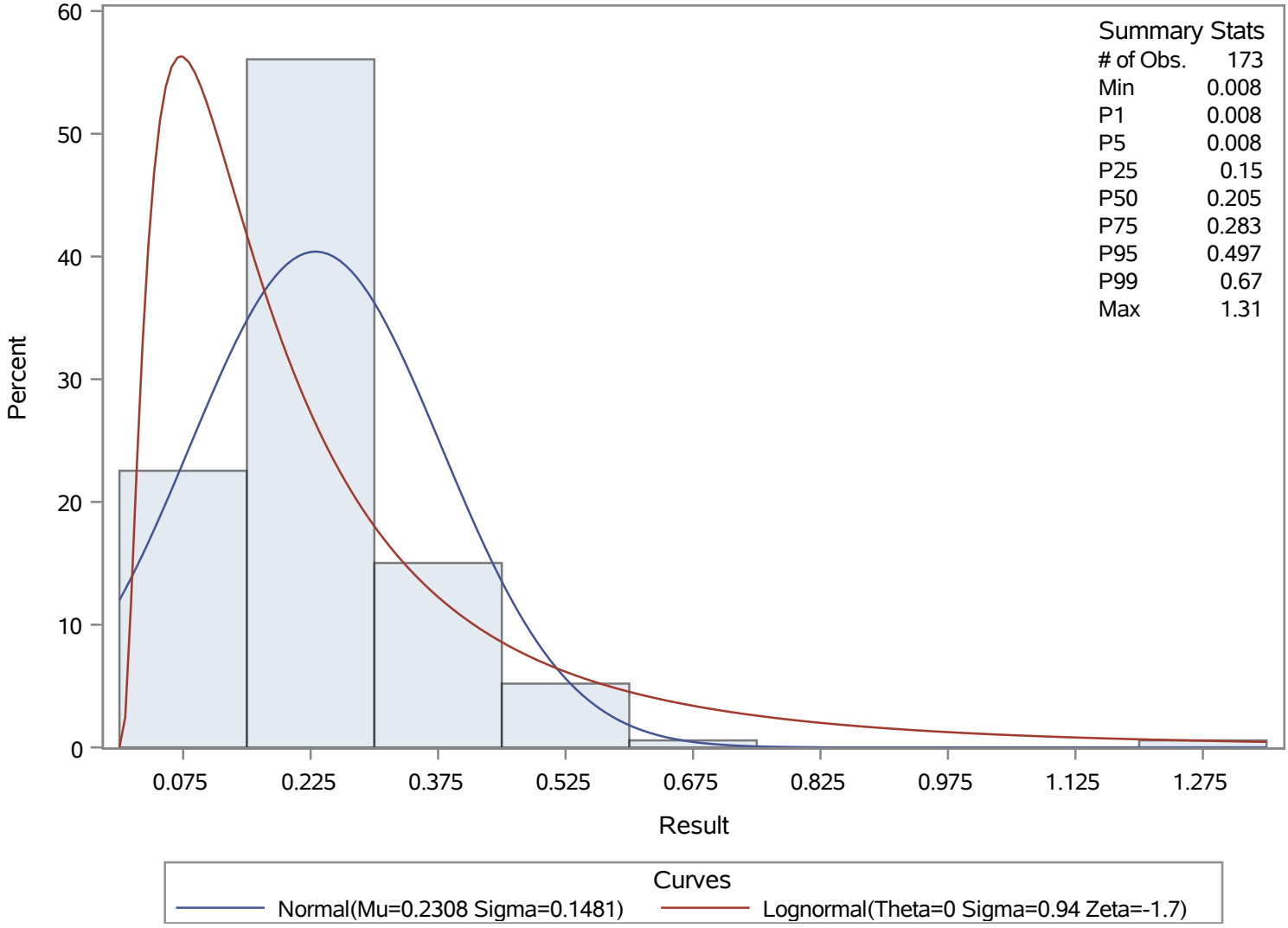
The UNIVARIATE Procedure



Little Manatee River
D1
Phosphorus in Total Orthophosphate as P (mg/L) mg/L
Site ID = 21FLMANAD1

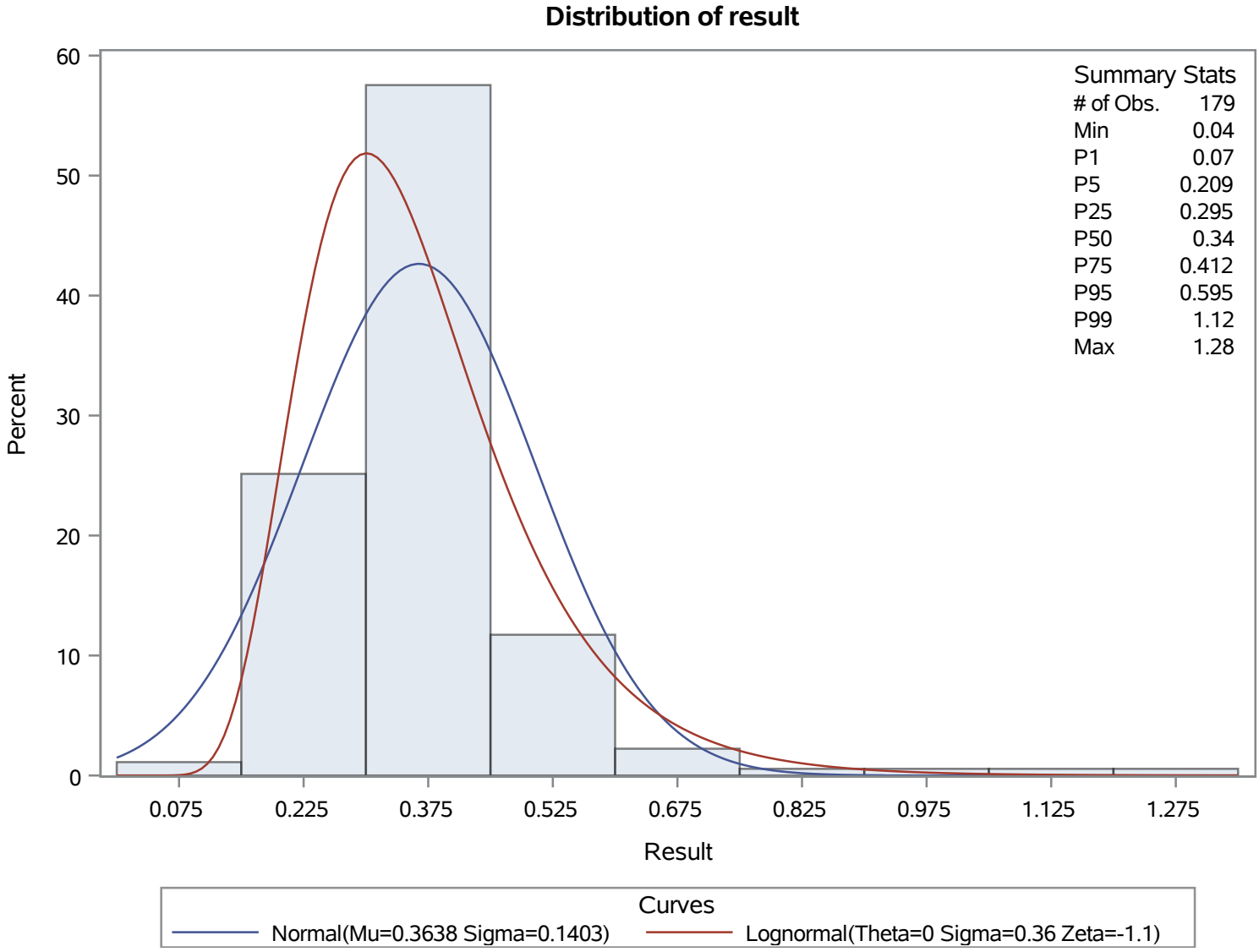
The UNIVARIATE Procedure

Distribution of result



Little Manatee River
D3
Phosphorus in Total Orthophosphate as P (mg/L) mg/L
Site ID = 21FLMANAD3

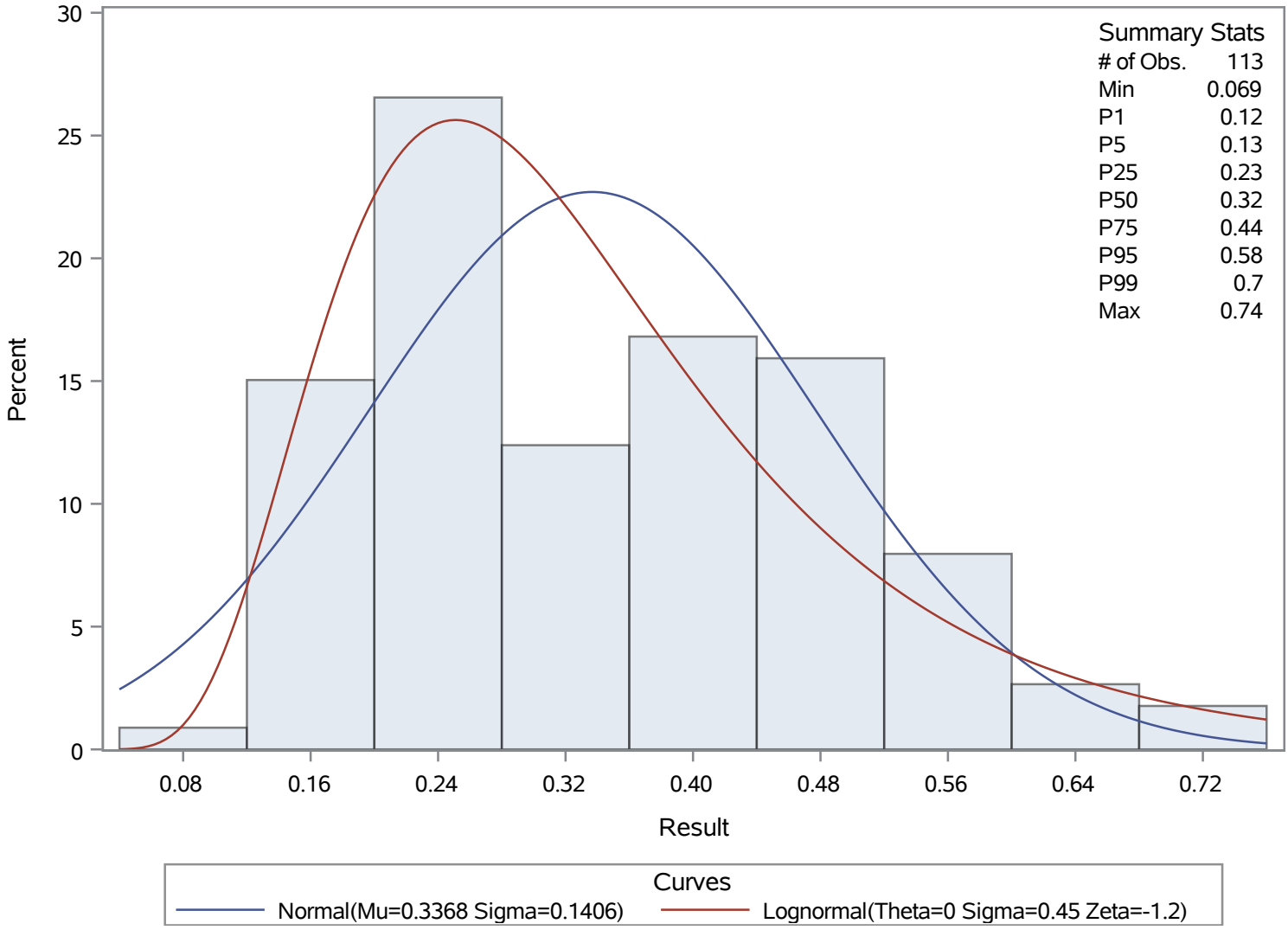
The UNIVARIATE Procedure



Little Manatee River
LITTLE MANATEE RIVER AT US HWY 301
Phosphorus, Dissolved Orthophosphate as P (mg/L) mg/L
Site ID = 21FLGW 3555

The UNIVARIATE Procedure

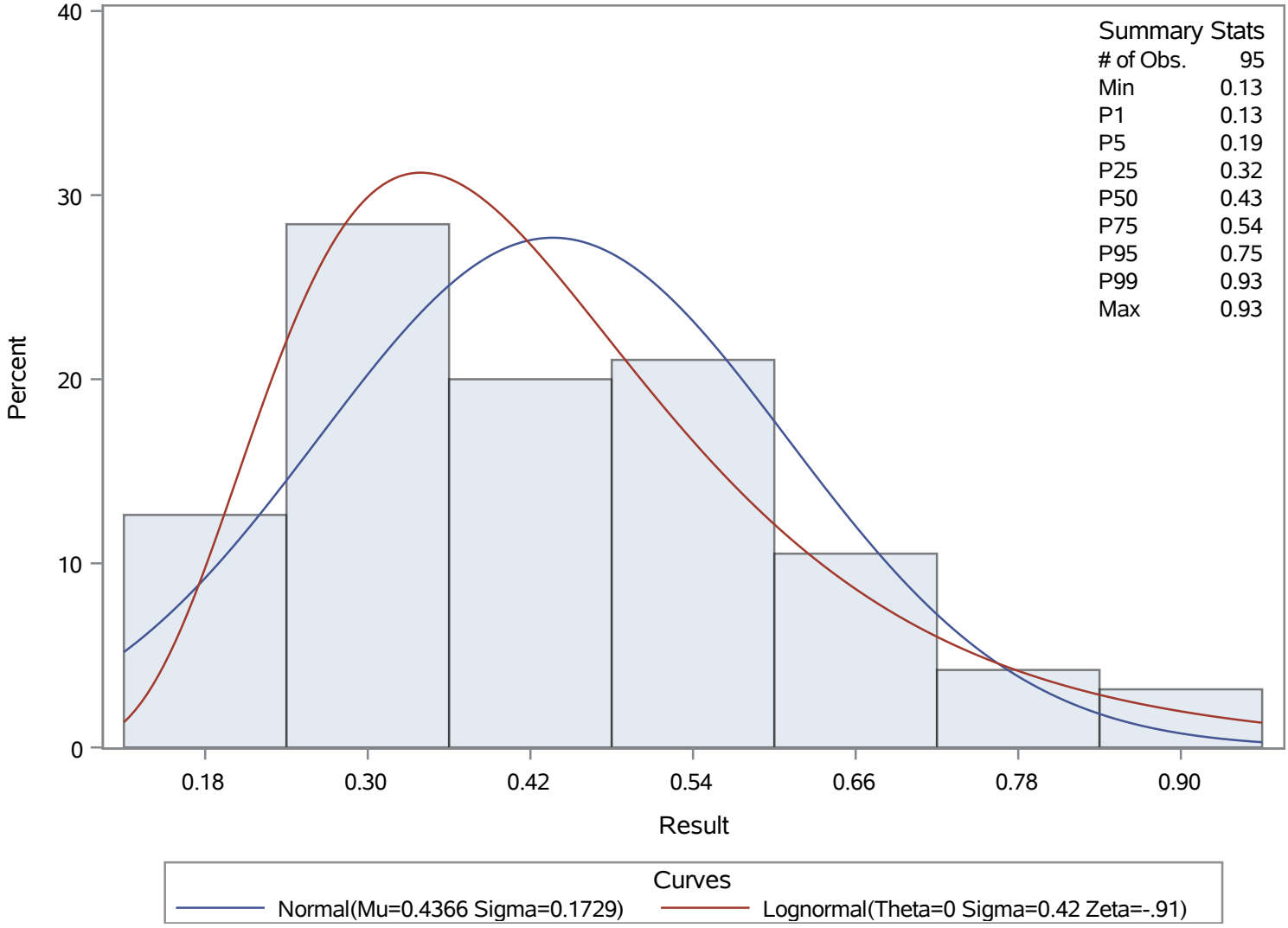
Distribution of result



Little Manatee River
LITTLE MANATEE R AT CR579
Phosphorus, Dissolved Orthophosphate as P (mg/L) mg/L
Site ID = 21FLHILL24010013

The UNIVARIATE Procedure

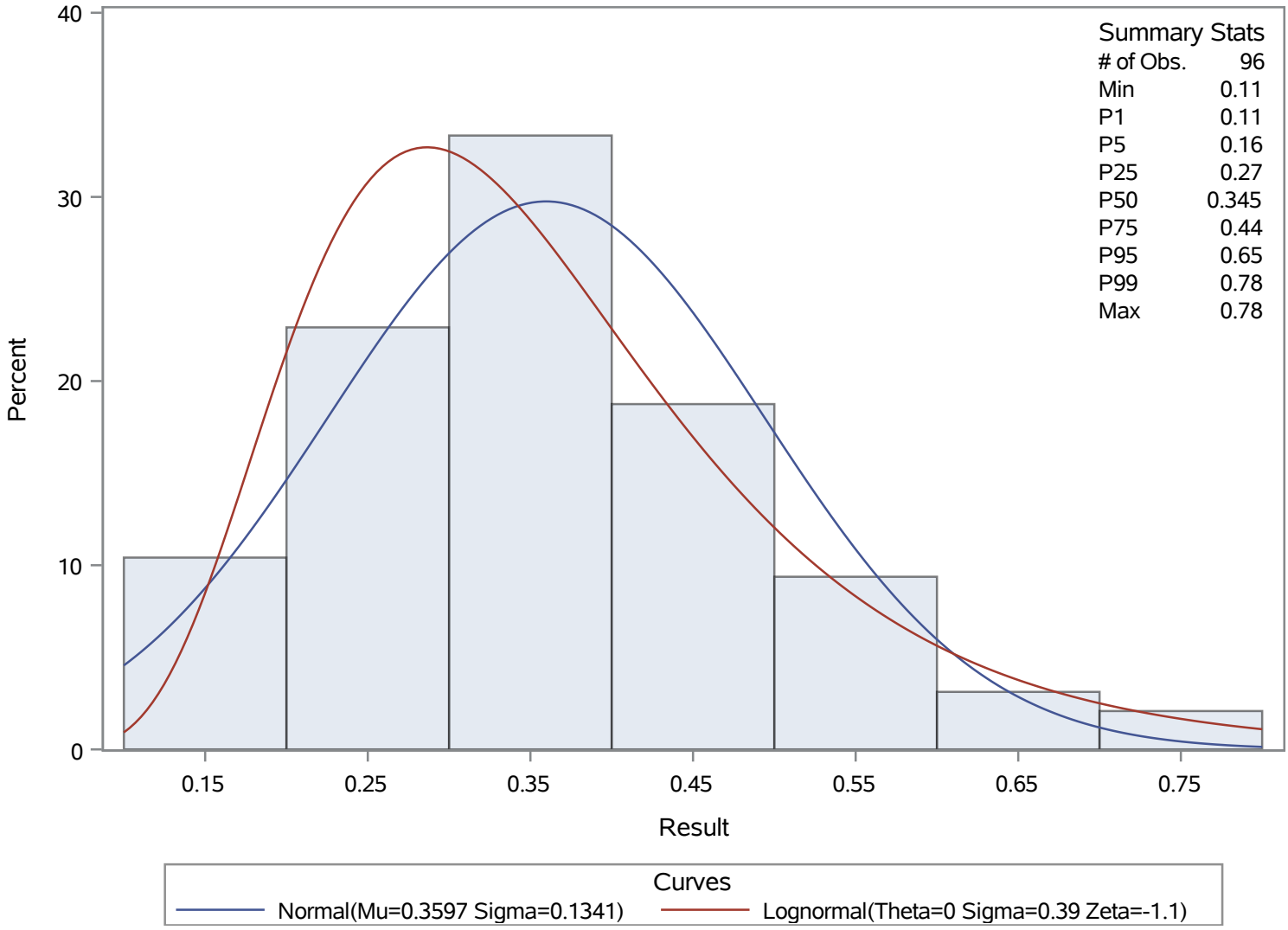
Distribution of result



Little Manatee River
L MANATEE R BR US 301
Phosphorus, Dissolved Orthophosphate as P (mg/L) mg/L
Site ID = 21FLHILL24010100

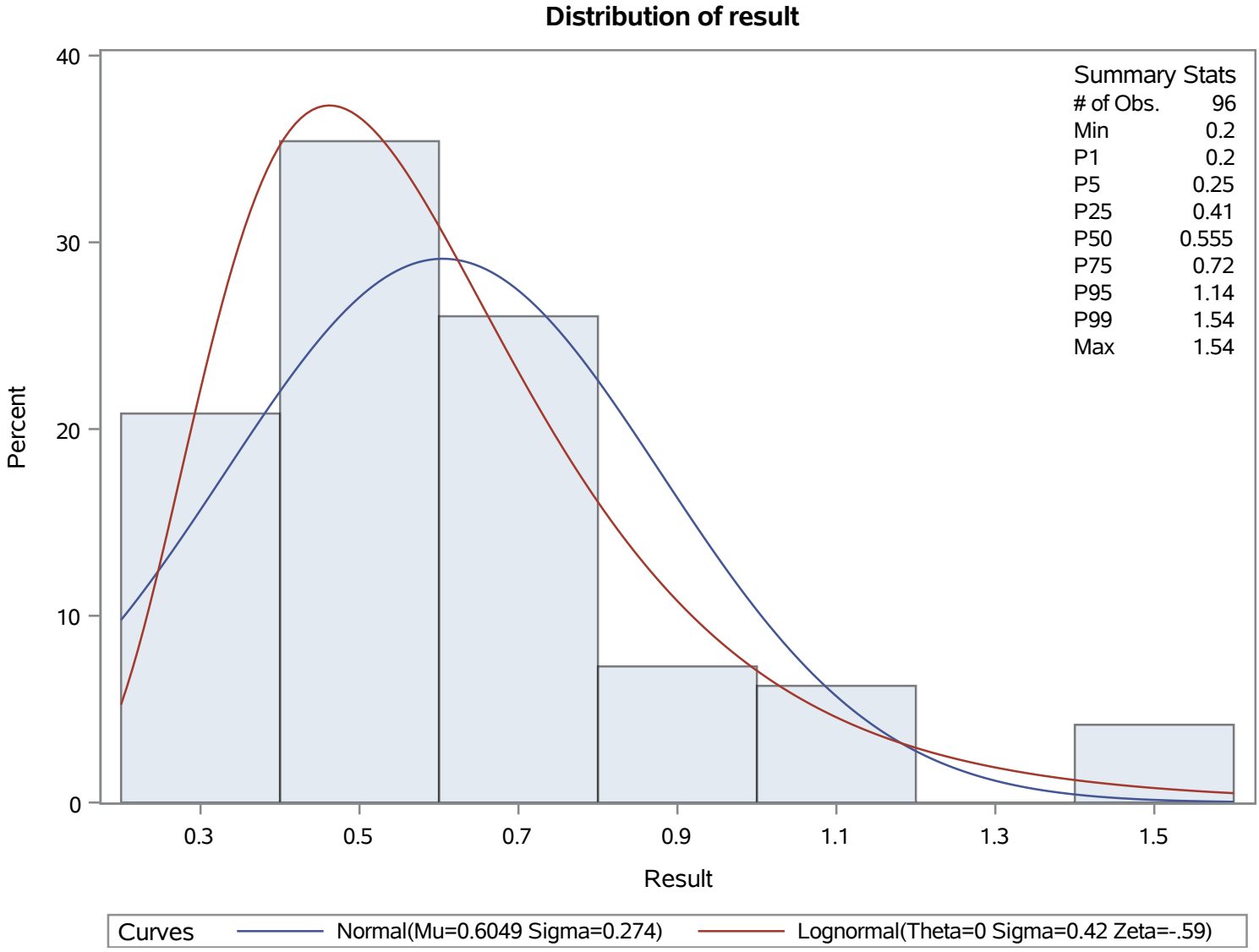
The UNIVARIATE Procedure

Distribution of result



Little Manatee River
LITTLE MANATEE R AT SR #674
Phosphorus, Dissolved Orthophosphate as P (mg/L) mg/L
Site ID = 21FLHILL24010110

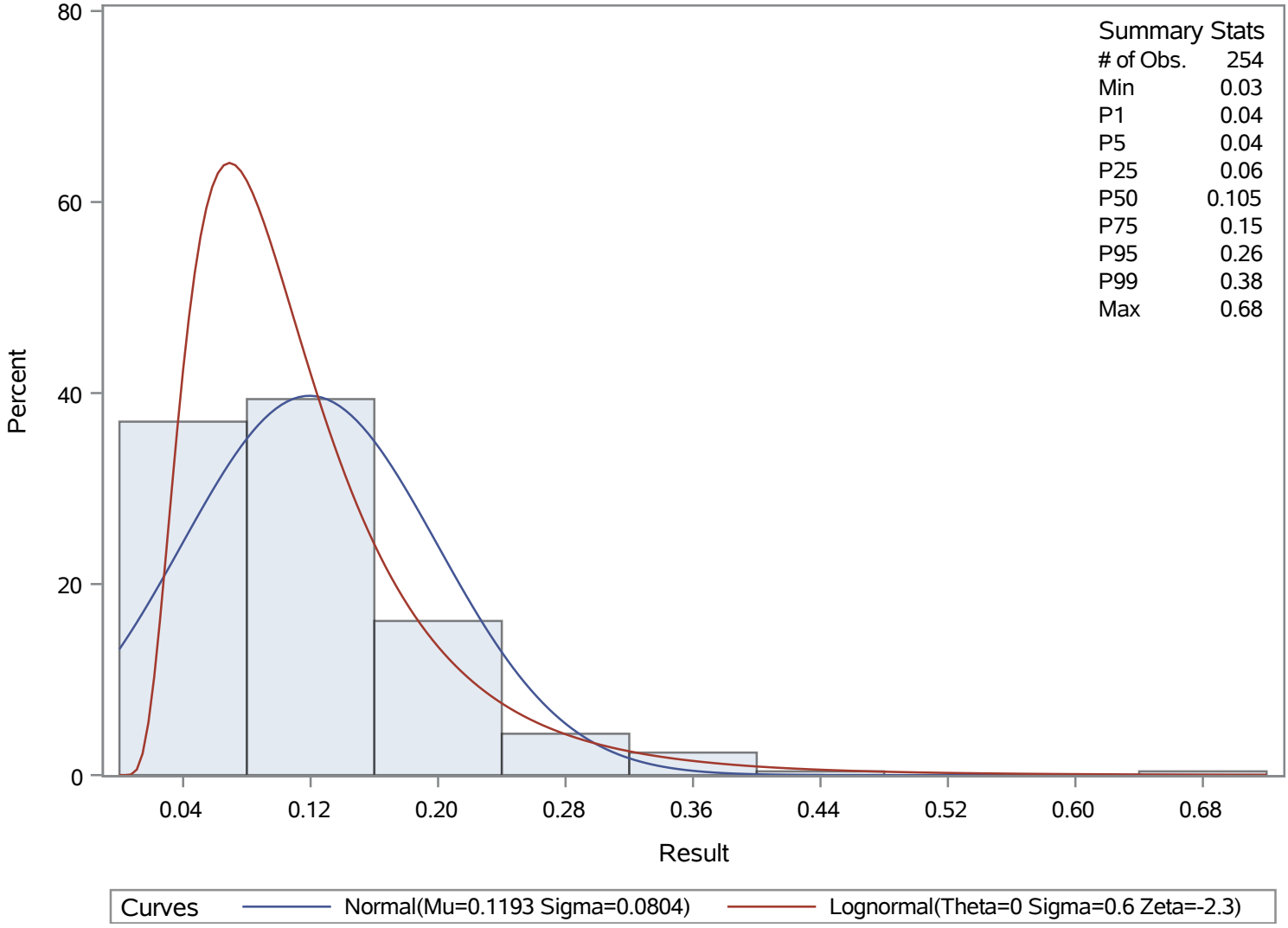
The UNIVARIATE Procedure



Little Manatee River
LITTLE MANATEE RIVER NEAR FT. LONESOME FL
Salinity ppt
Site ID = 112WRD 02300100

The UNIVARIATE Procedure

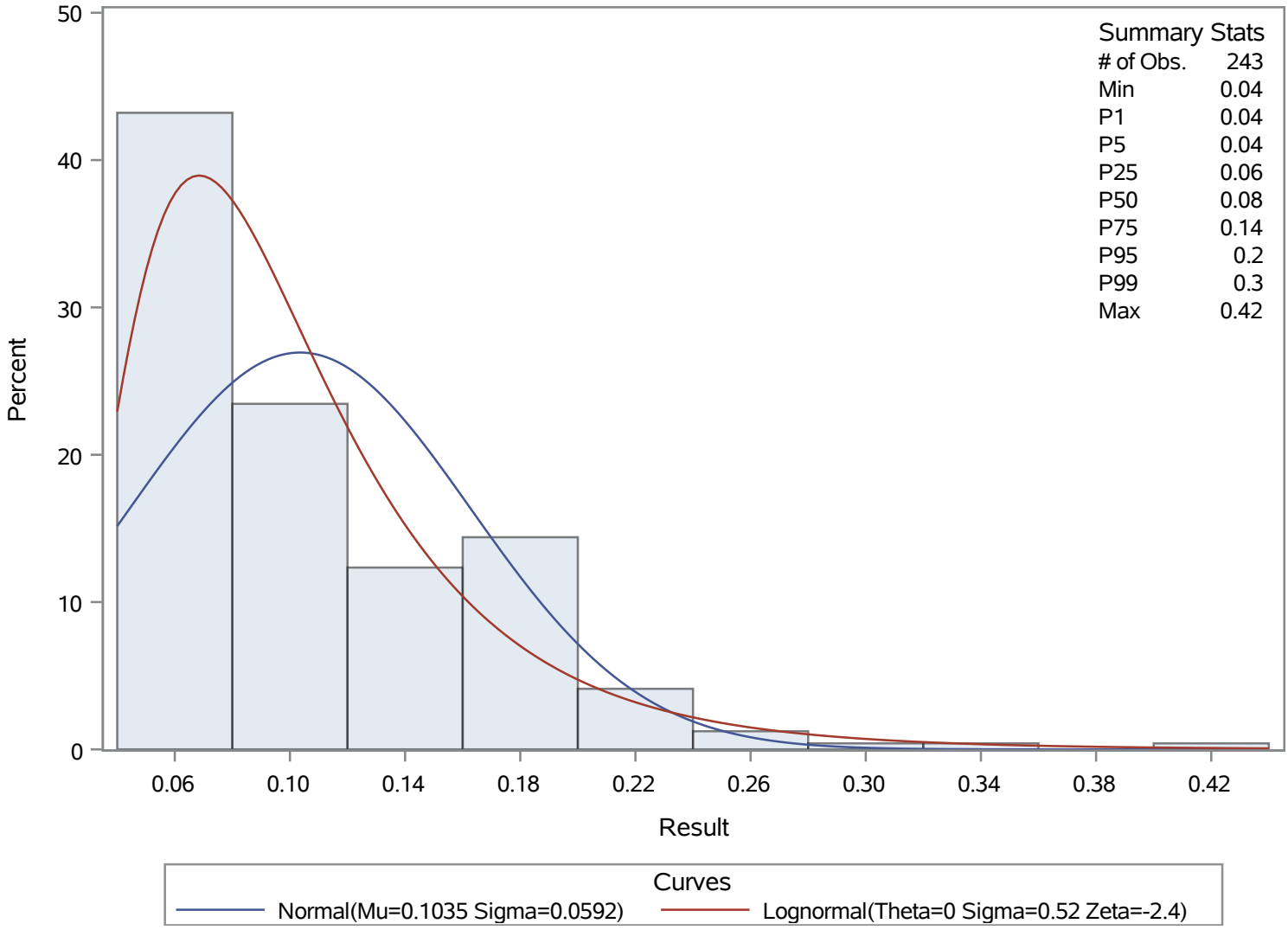
Distribution of result



Little Manatee River
SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL
Salinity ppt
Site ID = 112WRD 02300200

The UNIVARIATE Procedure

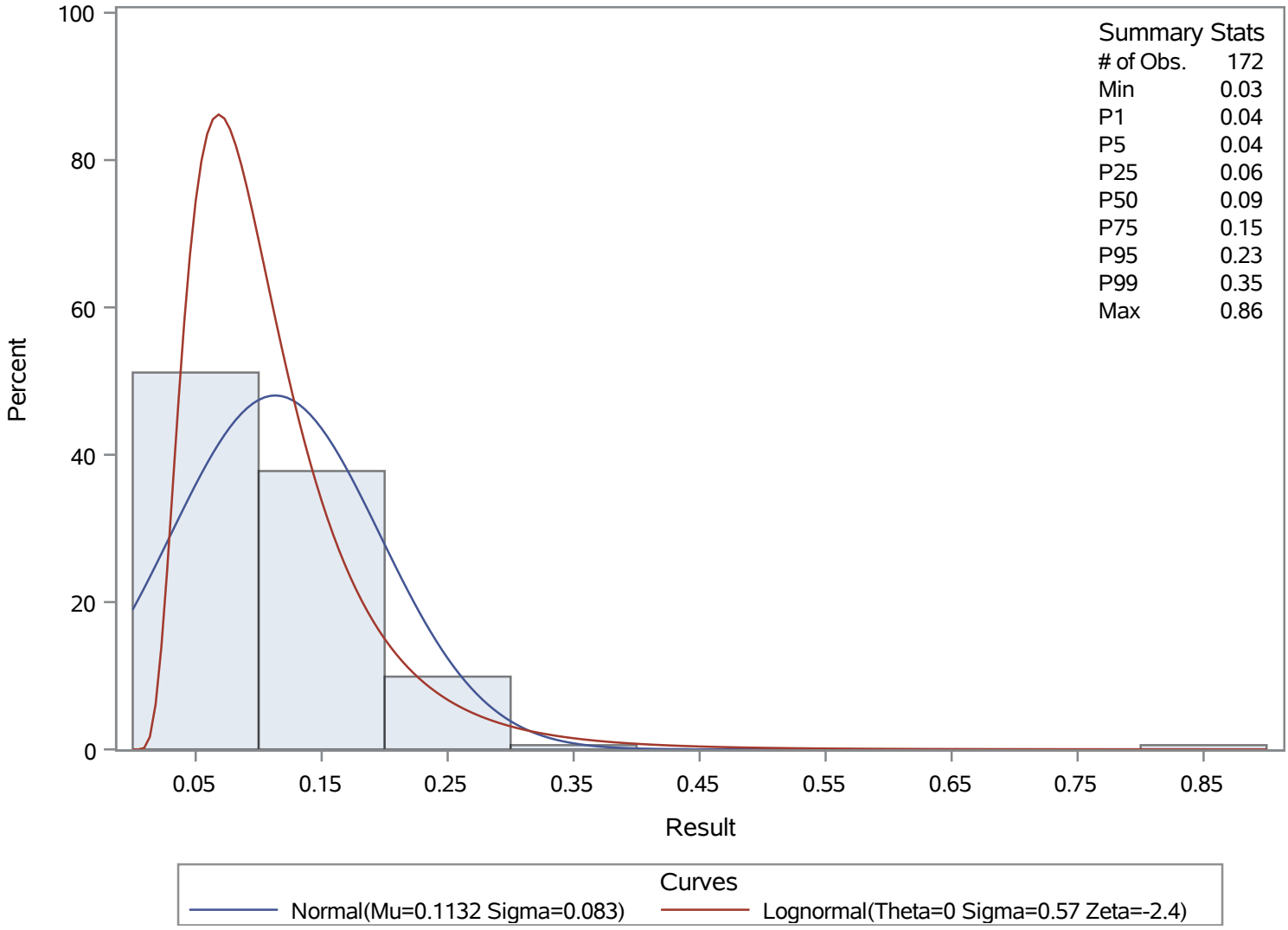
Distribution of result



Little Manatee River
LITTLE MANATEE RIVER NEAR WIMAUMA FL
Salinity ppt
Site ID = 112WRD 02300500

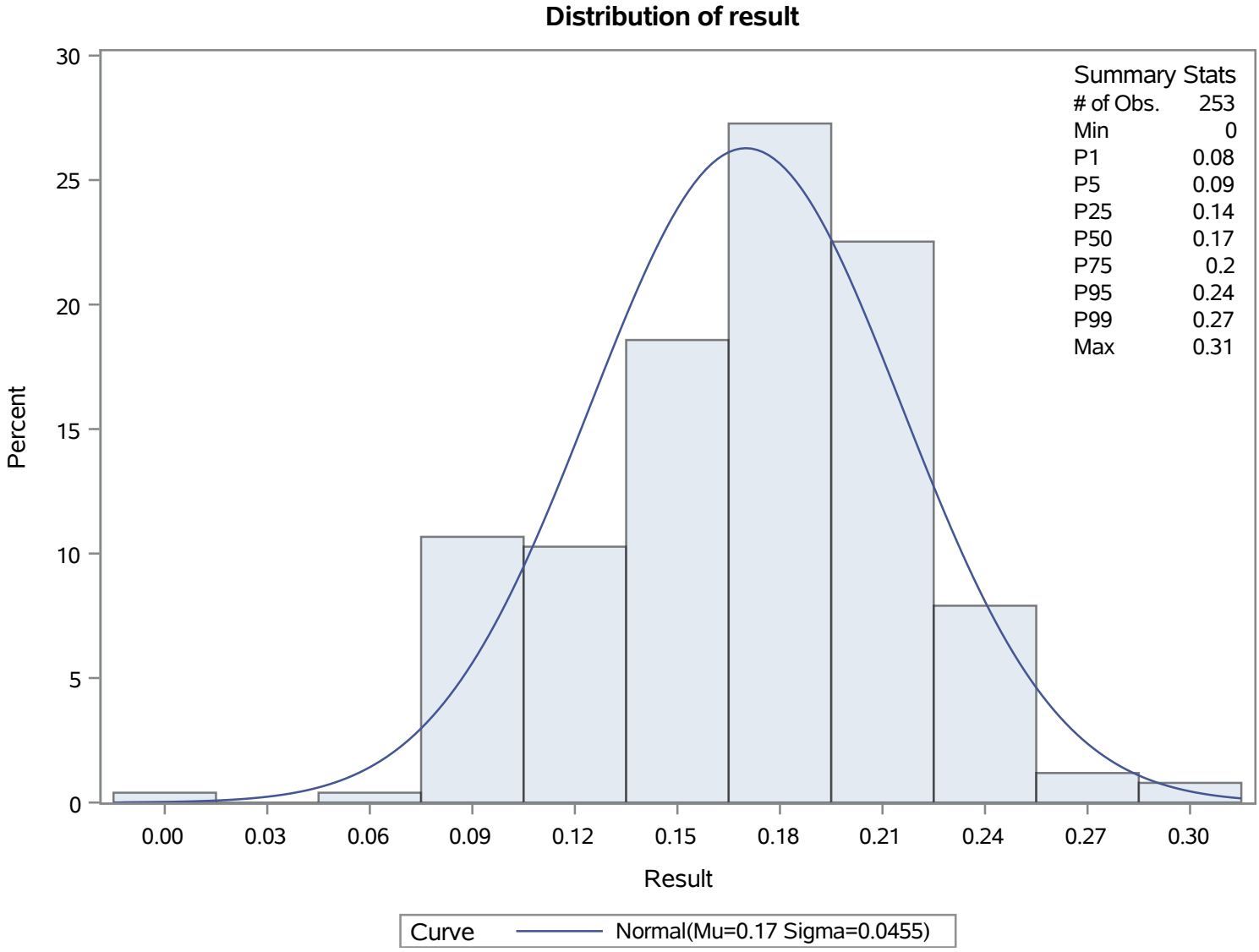
The UNIVARIATE Procedure

Distribution of result



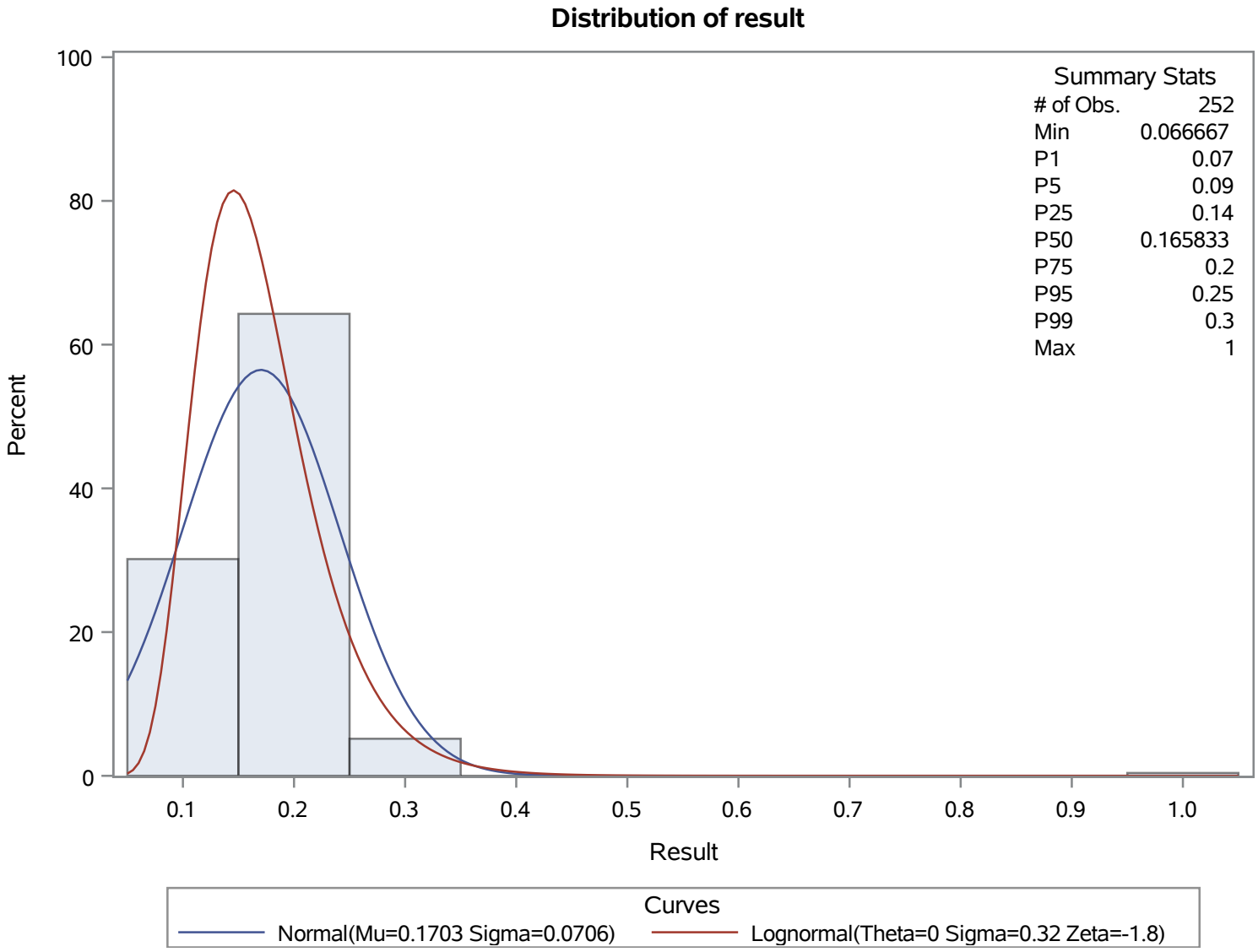
Little Manatee River
LITTLE MANATEE RIVER AT US HWY 301
Salinity ppt
Site ID = 21FLGW 3555

The UNIVARIATE Procedure



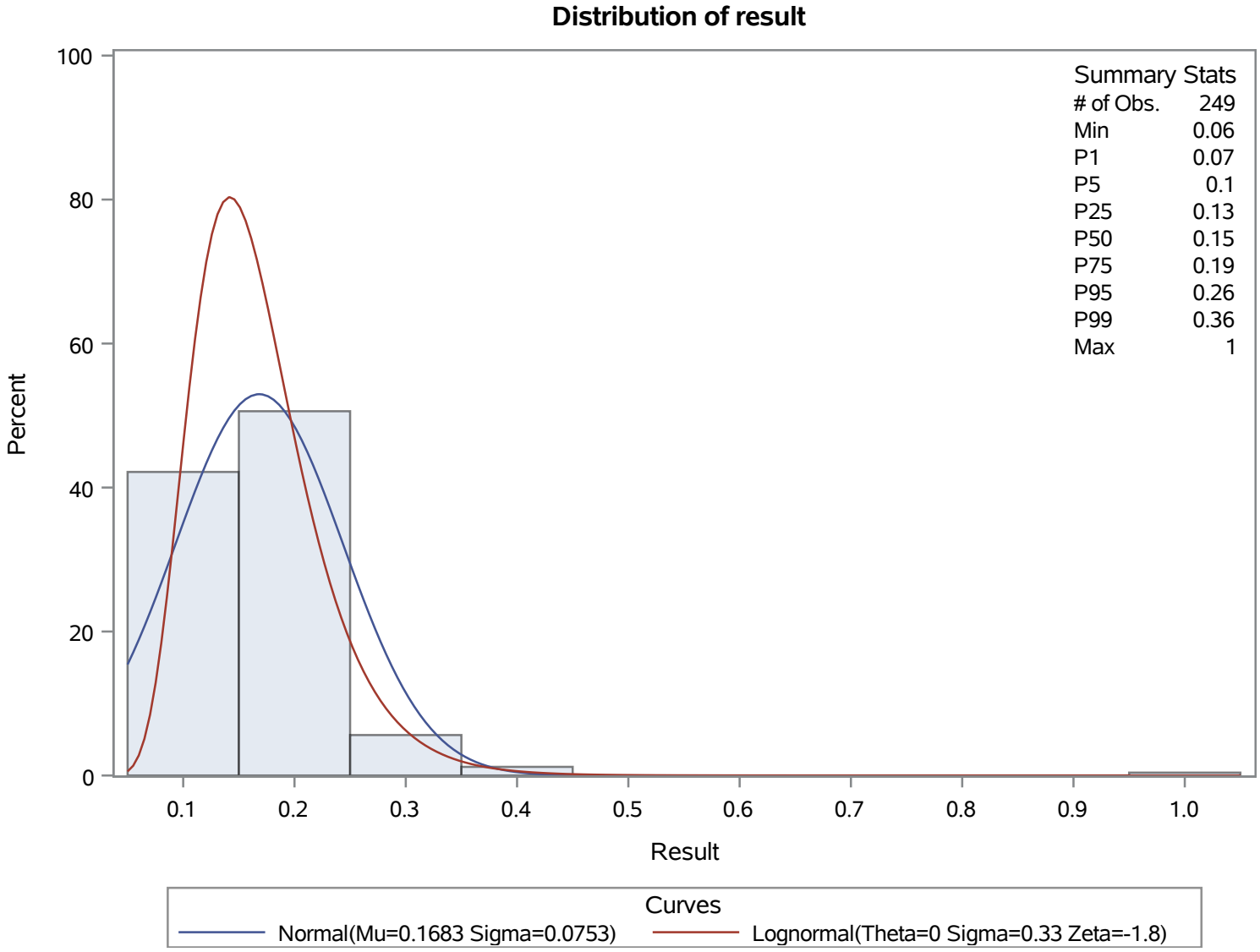
Little Manatee River
Little Manatee River at US 301 bridge
Salinity ppt
Site ID = 21FLHILL113

The UNIVARIATE Procedure



Little Manatee River
Little Manatee River at SR 674
Salinity ppt
Site ID = 21FLHILL129

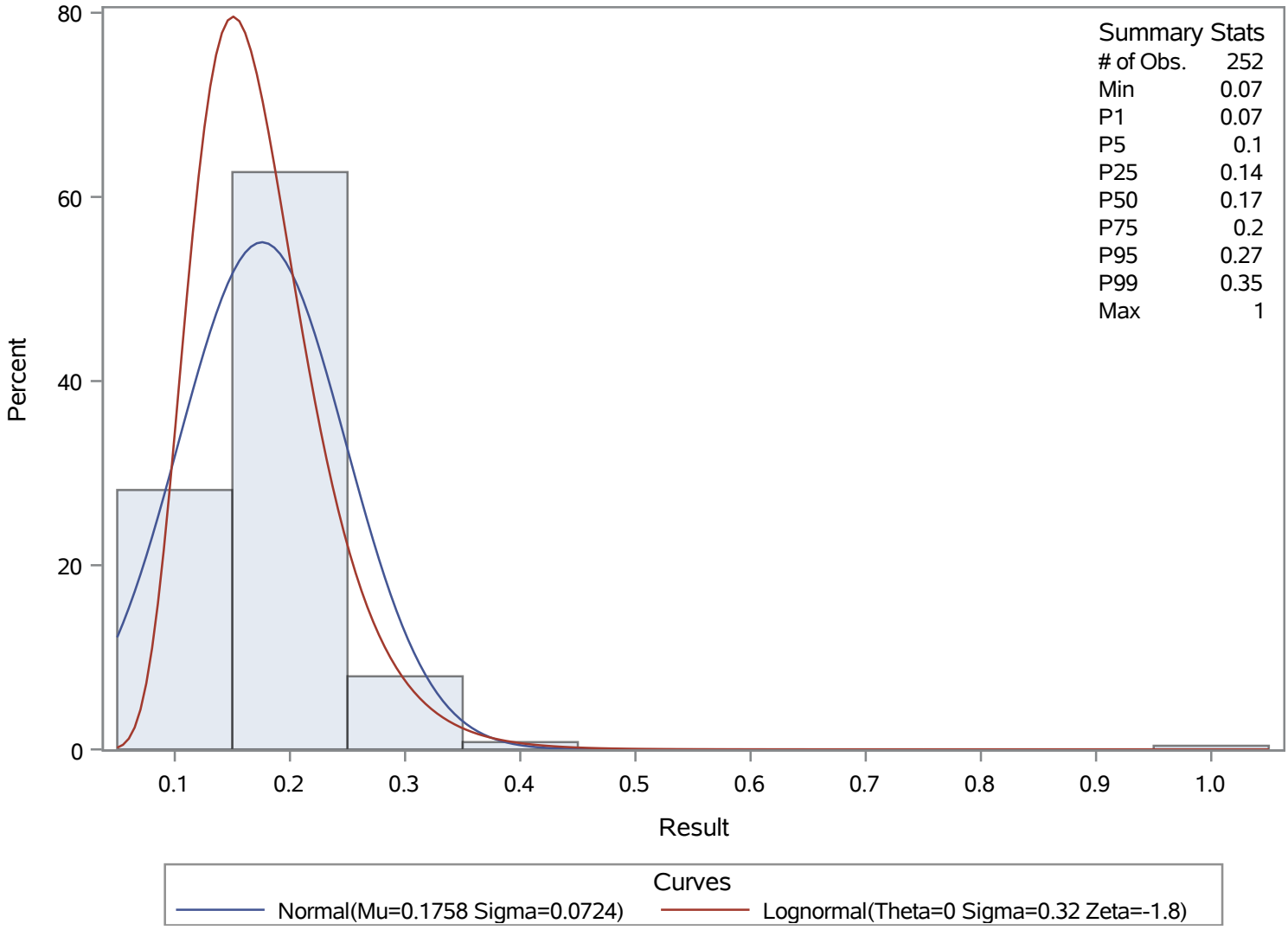
The UNIVARIATE Procedure



Little Manatee River
Little Manatee River at CR 579
Salinity ppt
Site ID = 21FLHILL140

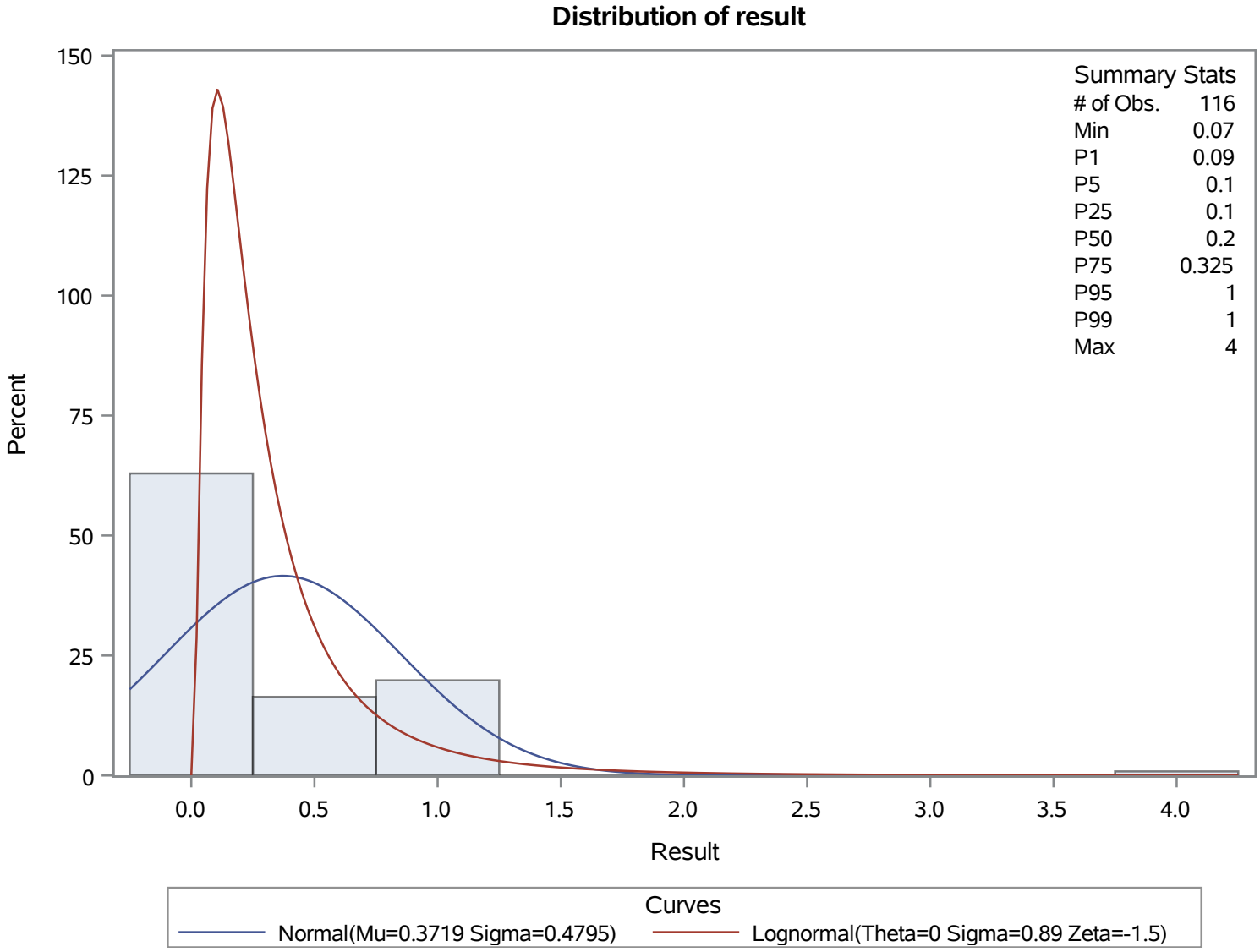
The UNIVARIATE Procedure

Distribution of result



Little Manatee River
LITTLE MANATEE R AT CR579
Salinity ppt
Site ID = 21FLHILL24010013

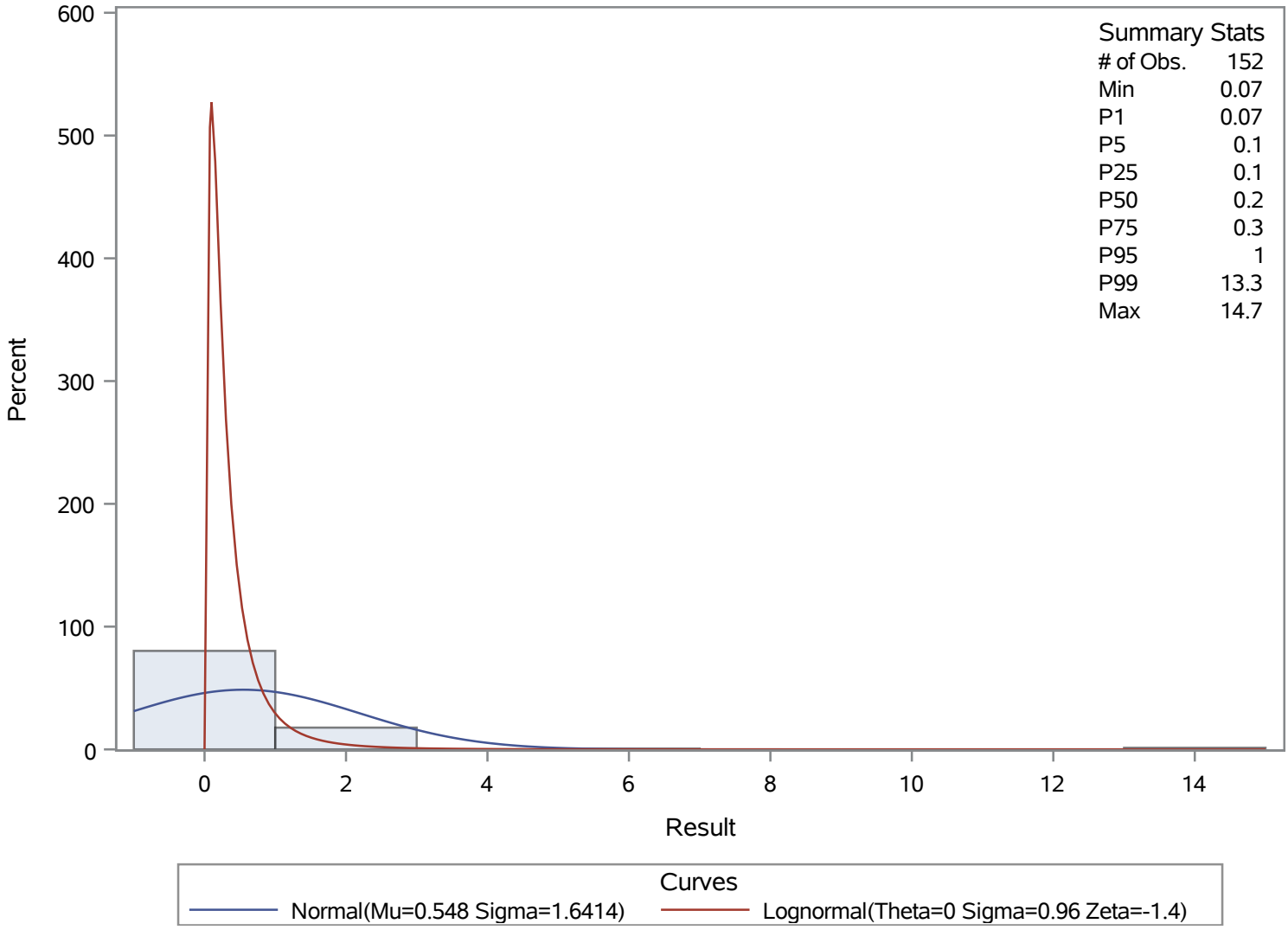
The UNIVARIATE Procedure



Little Manatee River
L MANATEE R BR US 301
Salinity ppt
Site ID = 21FLHILL24010100

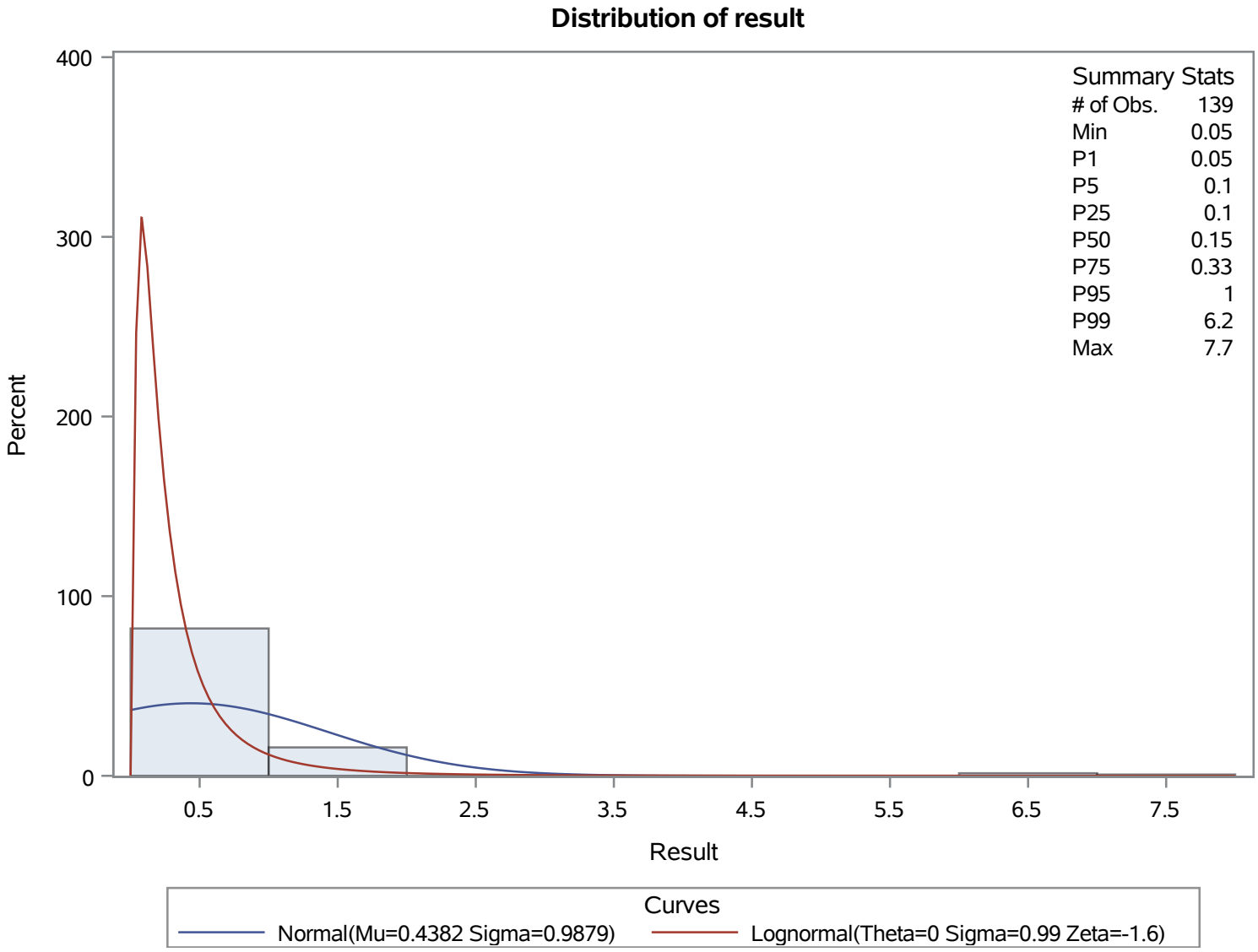
The UNIVARIATE Procedure

Distribution of result



Little Manatee River
LITTLE MANATEE R AT SR #674
Salinity ppt
Site ID = 21FLHILL24010110

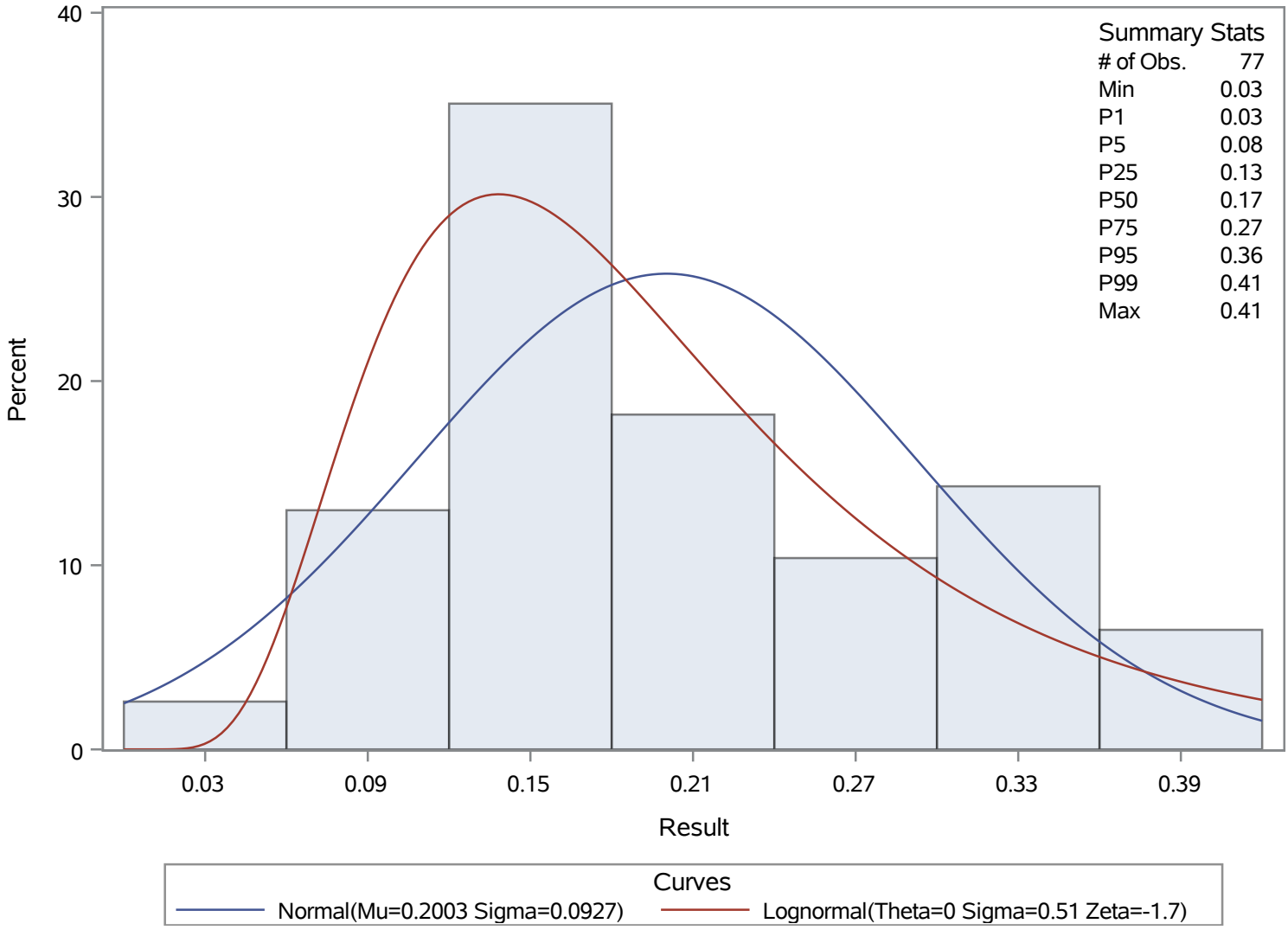
The UNIVARIATE Procedure



Little Manatee River
Little Manatee R. at SR674
Salinity ppt
Site ID = 21FLIMCALM674

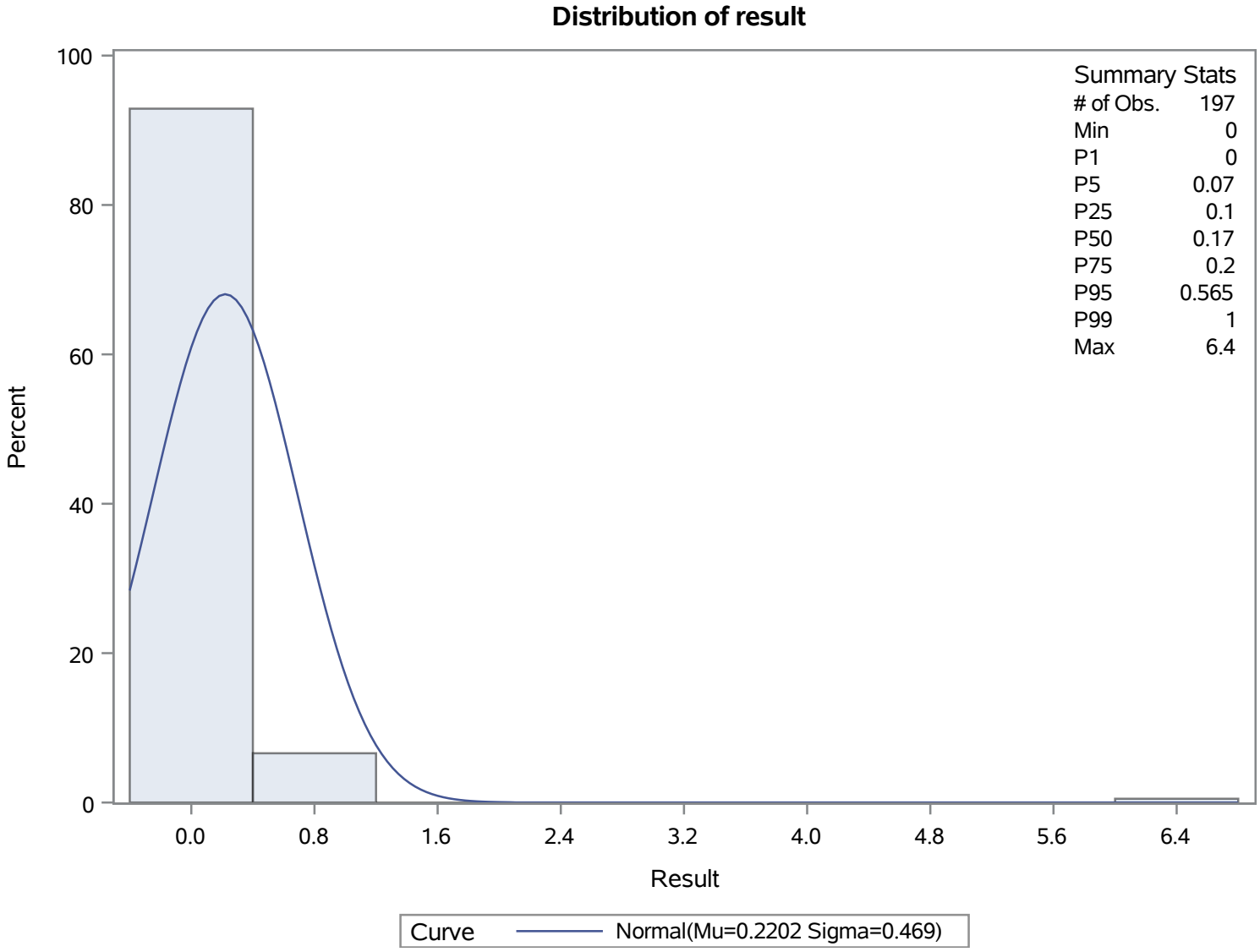
The UNIVARIATE Procedure

Distribution of result



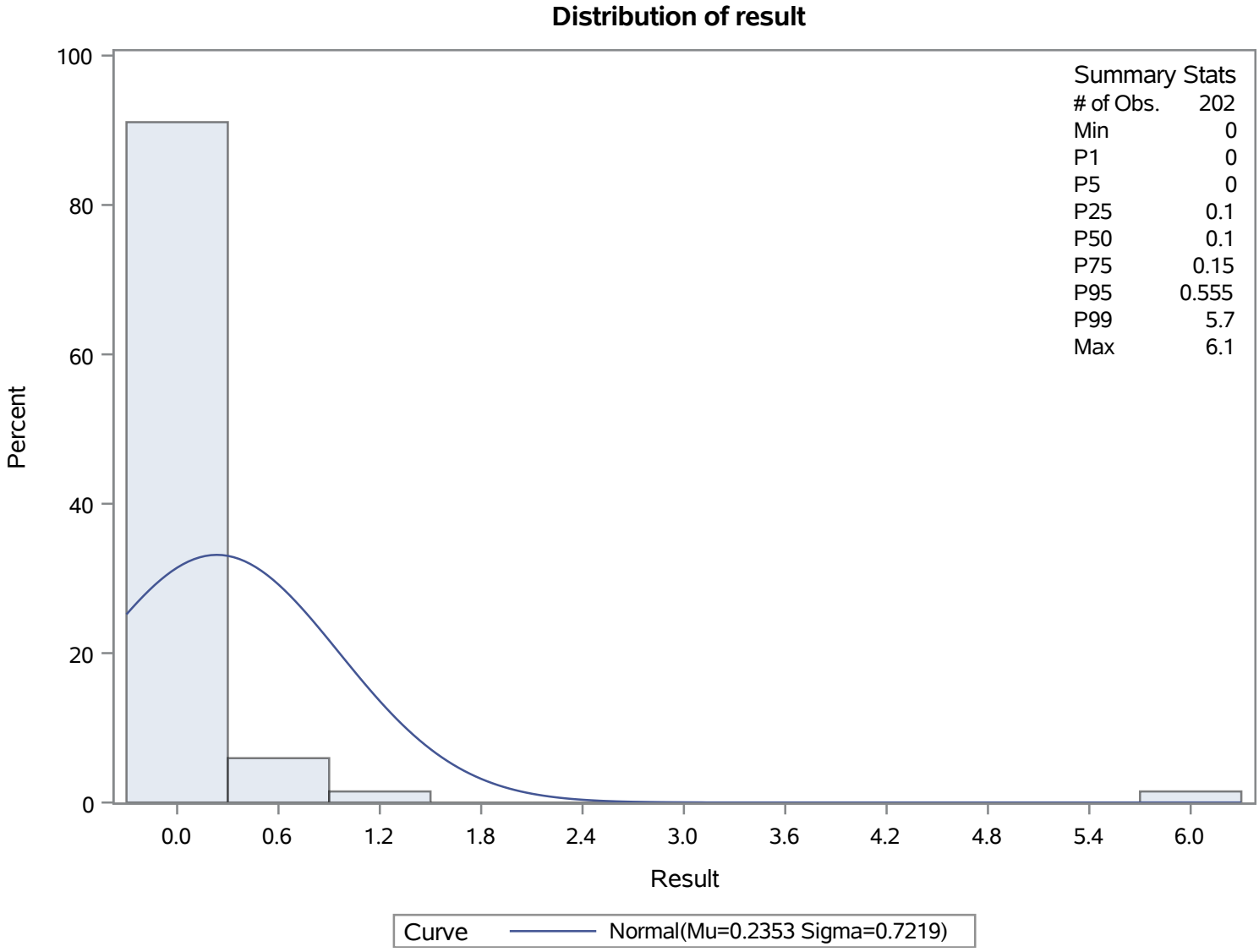
Little Manatee River
D1
Salinity ppt
Site ID = 21FLMANAD1

The UNIVARIATE Procedure



Little Manatee River
D3
Salinity ppt
Site ID = 21FLMANAD3

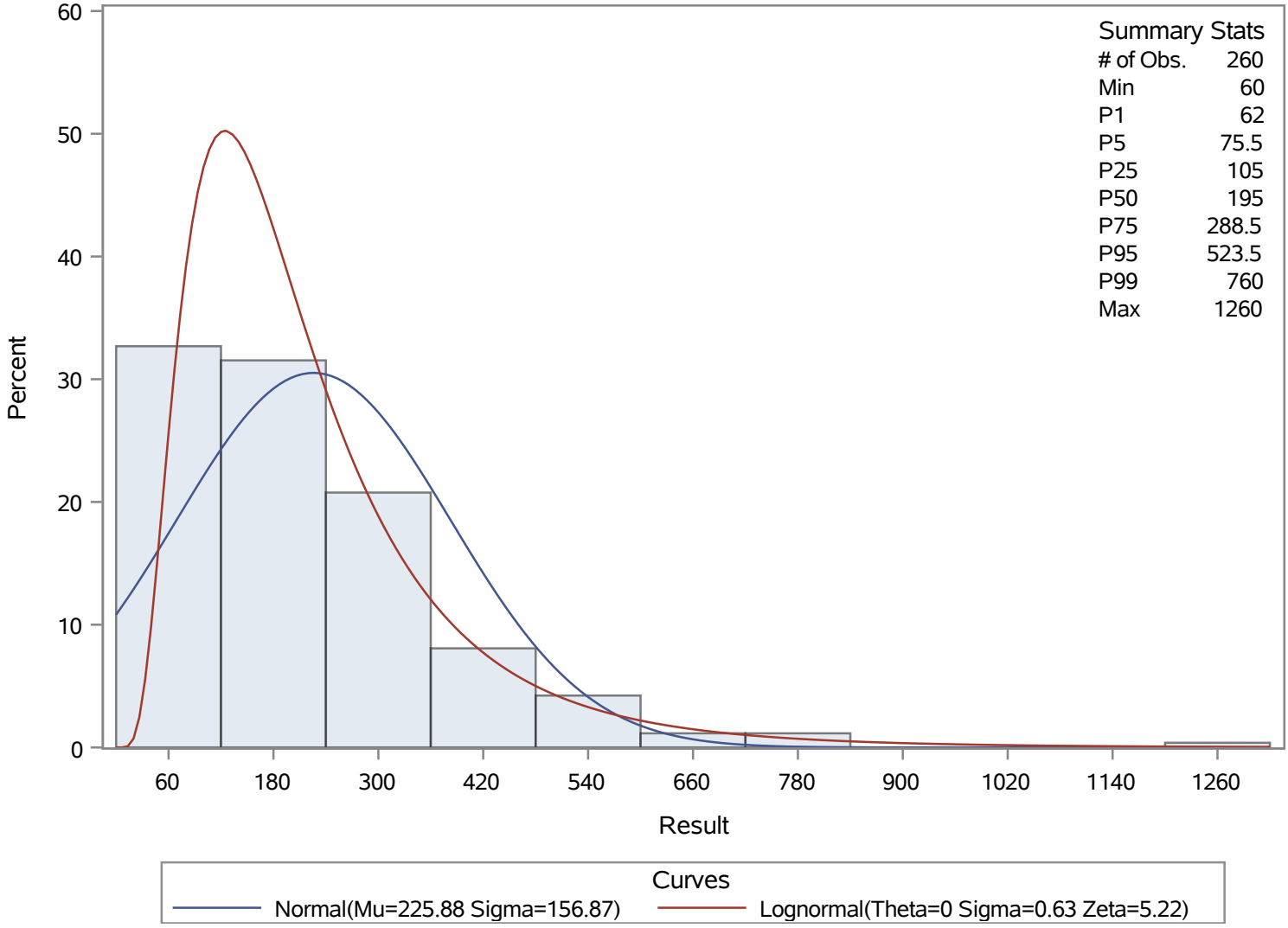
The UNIVARIATE Procedure



Little Manatee River
LITTLE MANATEE RIVER NEAR FT. LONESOME FL
Specific Conductance (µmhos/cm) µmhos/cm
Site ID = 112WRD 02300100

The UNIVARIATE Procedure

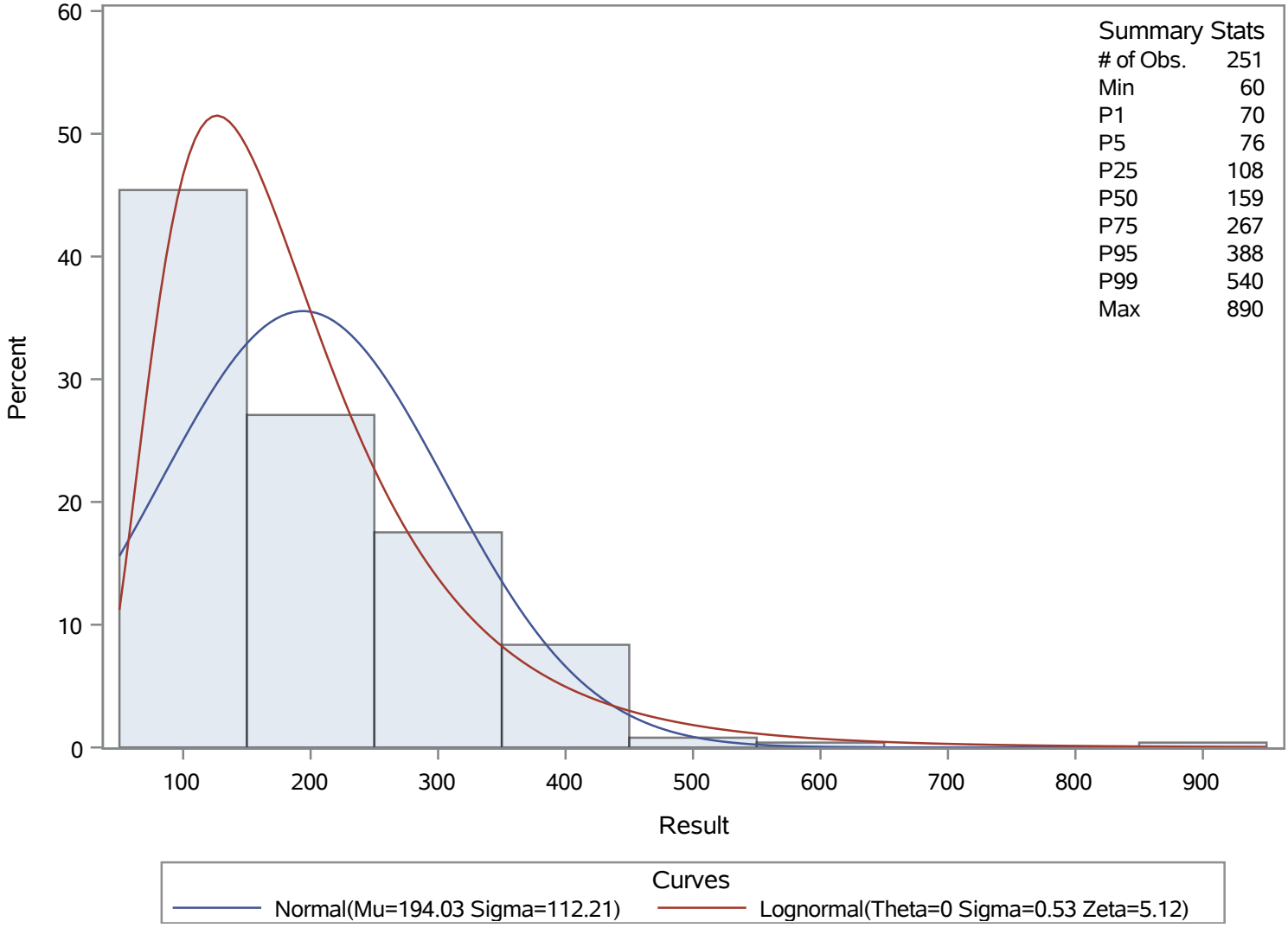
Distribution of result



Little Manatee River
SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL
Specific Conductance (µmhos/cm) µmhos/cm
Site ID = 112WRD 02300200

The UNIVARIATE Procedure

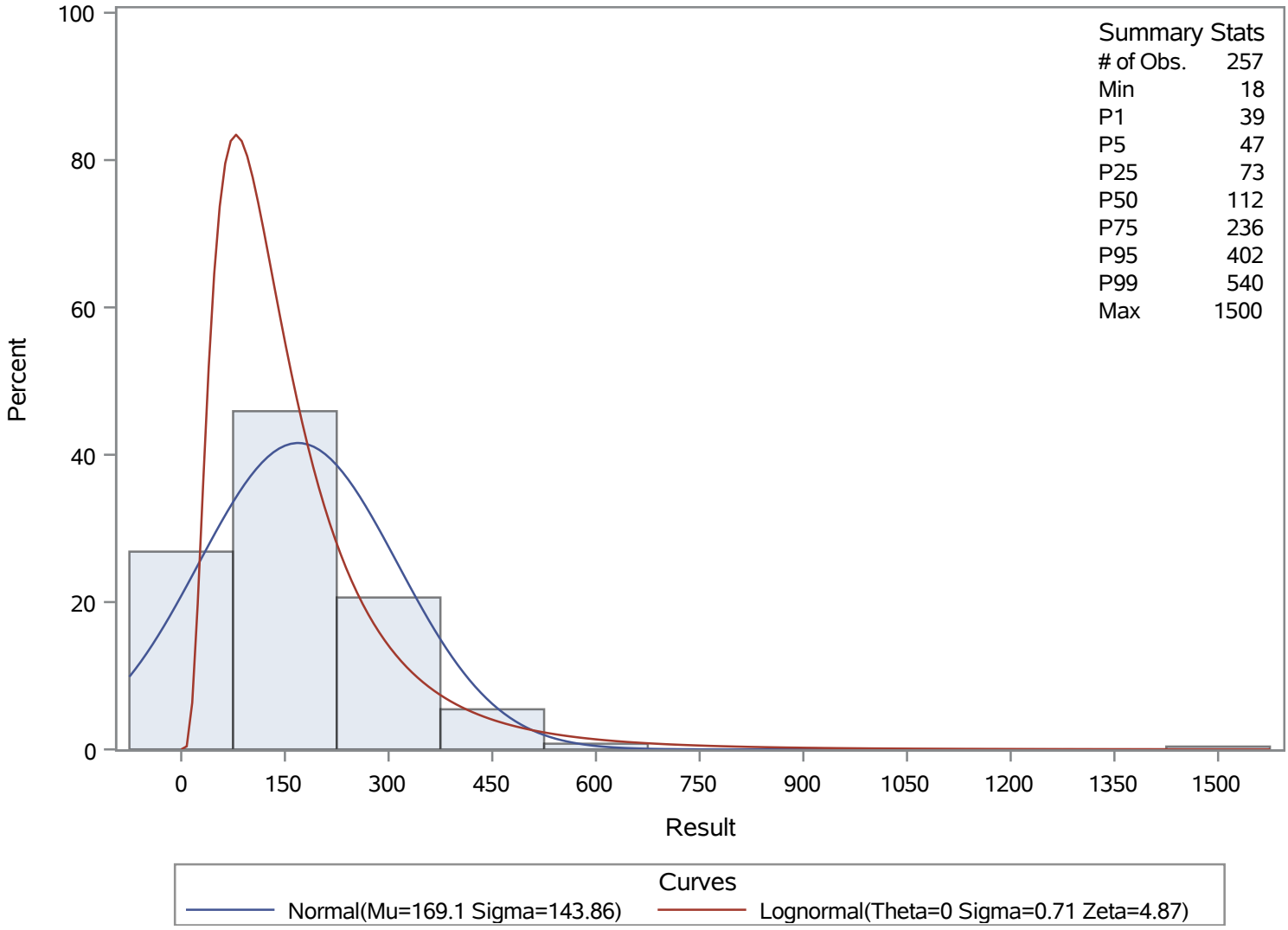
Distribution of result



Little Manatee River
LITTLE MANATEE RIVER NEAR WIMAUMA FL
Specific Conductance (µmhos/cm) µmhos/cm
Site ID = 112WRD 02300500

The UNIVARIATE Procedure

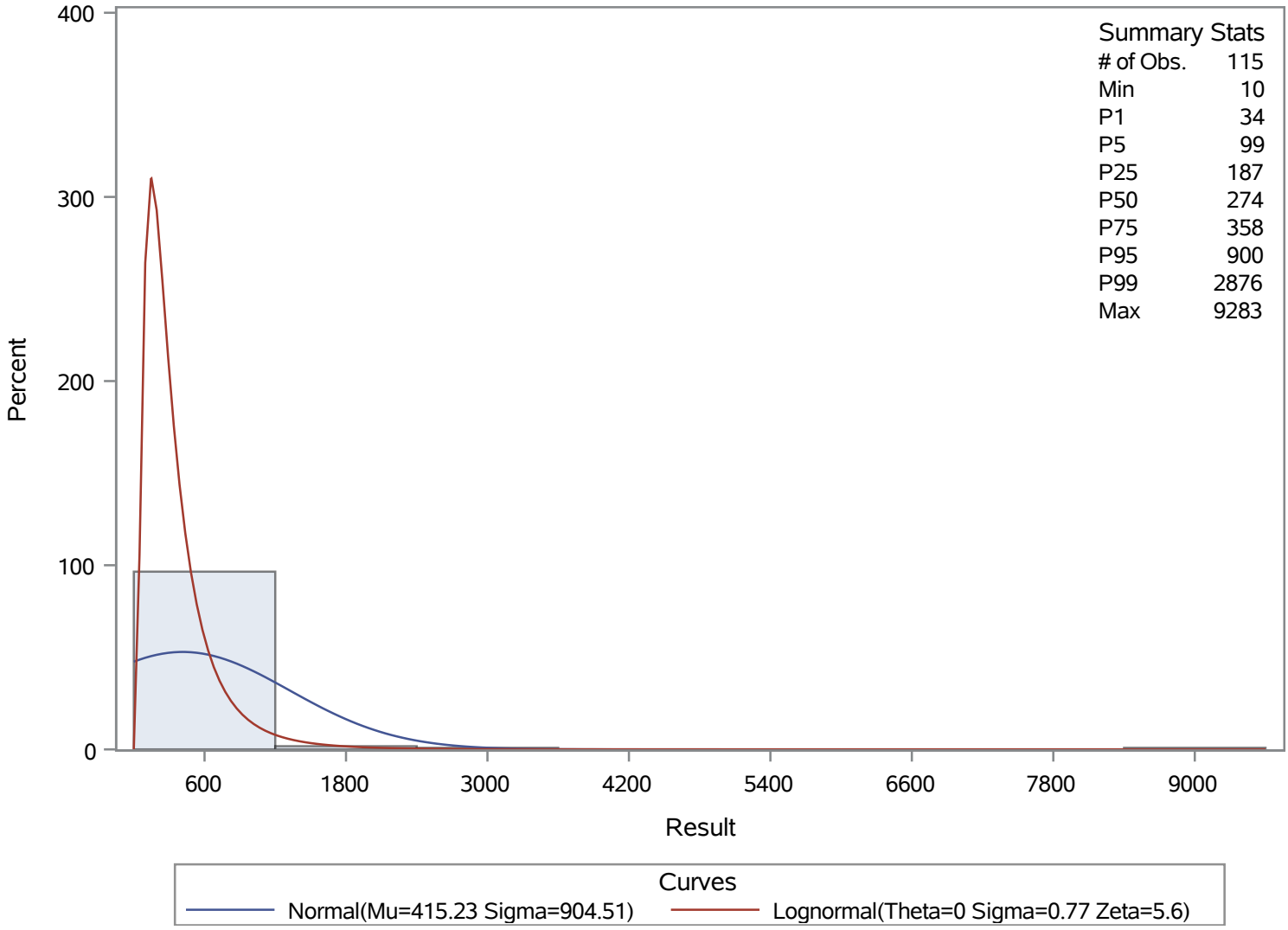
Distribution of result



Little Manatee River
L MANATEE R BR US 301
Specific Conductance (µmhos/cm) µmhos/cm
Site ID = 21FLA 24010100

The UNIVARIATE Procedure

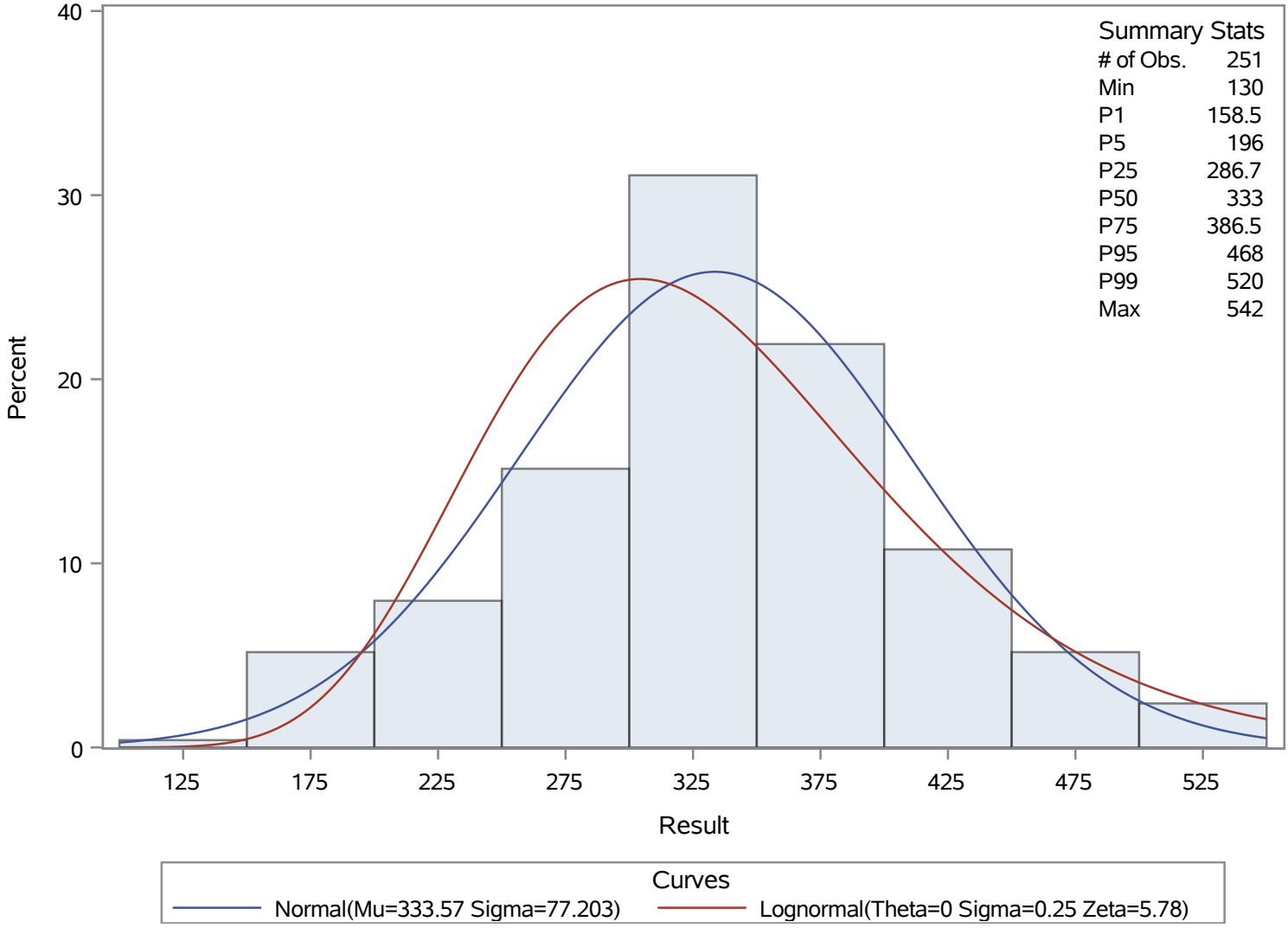
Distribution of result



Little Manatee River
LITTLE MANATEE RIVER AT US HWY 301
Specific Conductance (µmhos/cm) µmhos/cm
Site ID = 21FLGW 3555

The UNIVARIATE Procedure

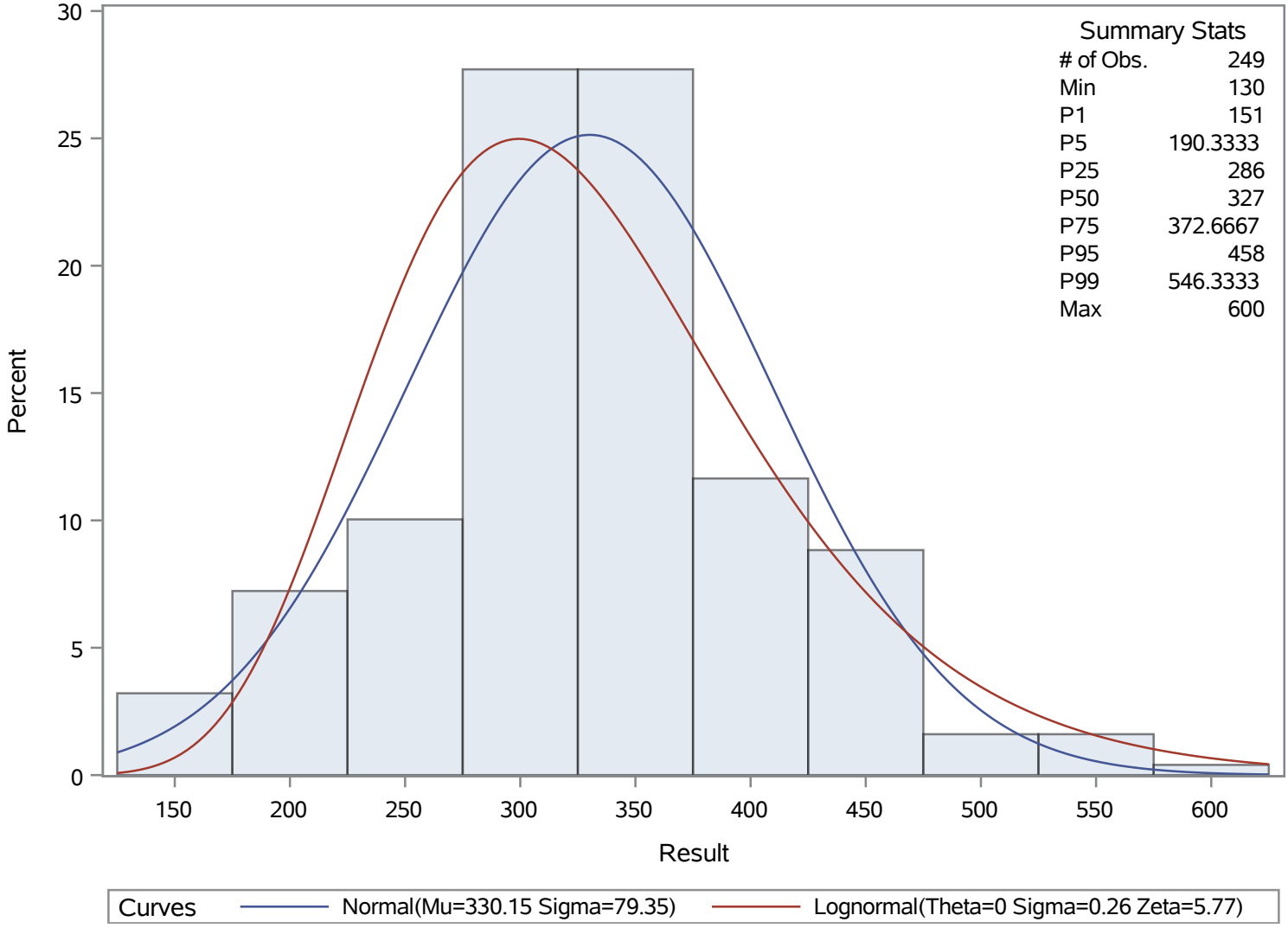
Distribution of result



Little Manatee River
Little Manatee River at US 301 bridge
Specific Conductance (µmhos/cm) µmhos/cm
Site ID = 21FLHILL113

The UNIVARIATE Procedure

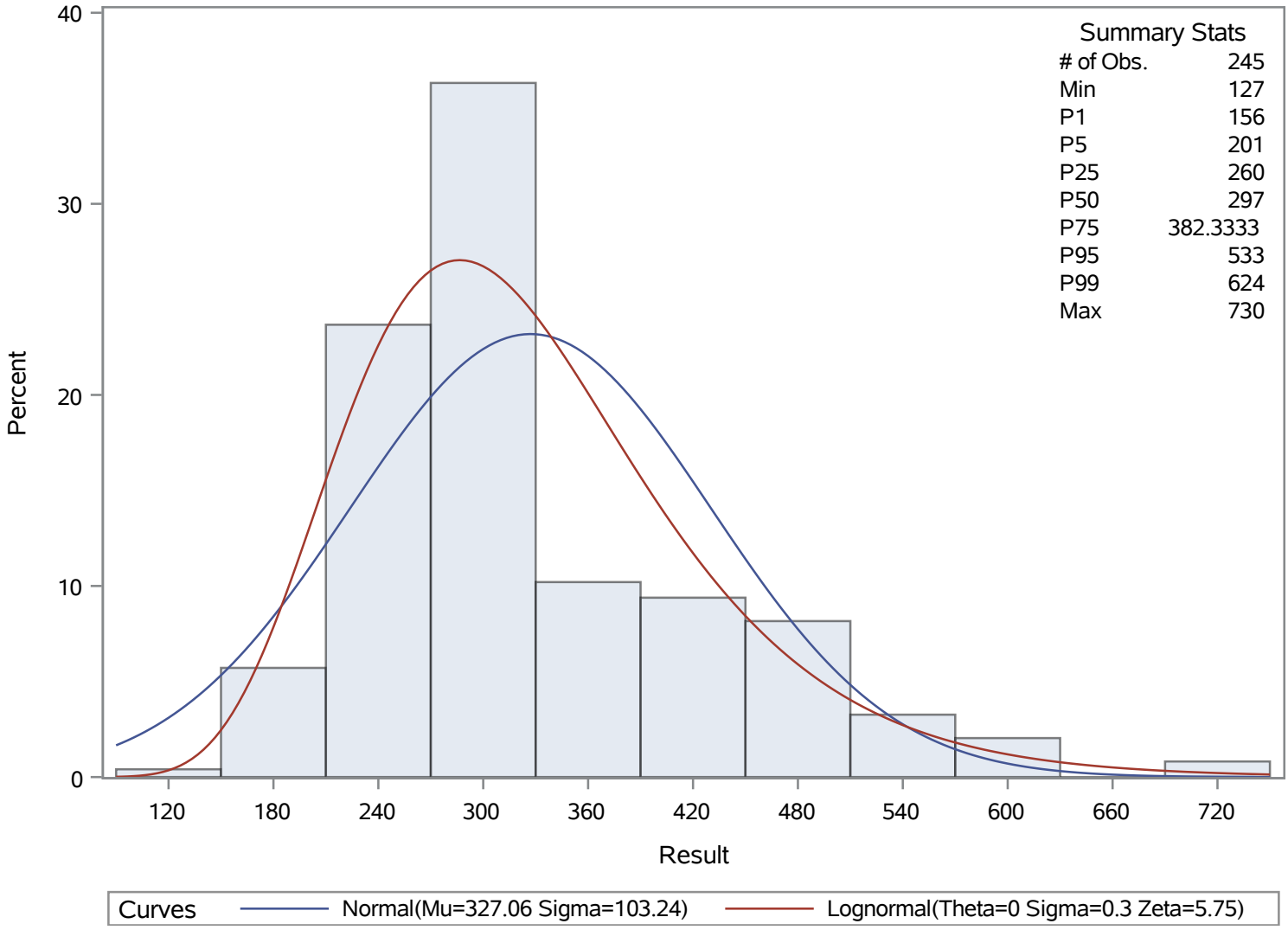
Distribution of result



Little Manatee River
Little Manatee River at SR 674
Specific Conductance (µmhos/cm) µmhos/cm
Site ID = 21FLHILL129

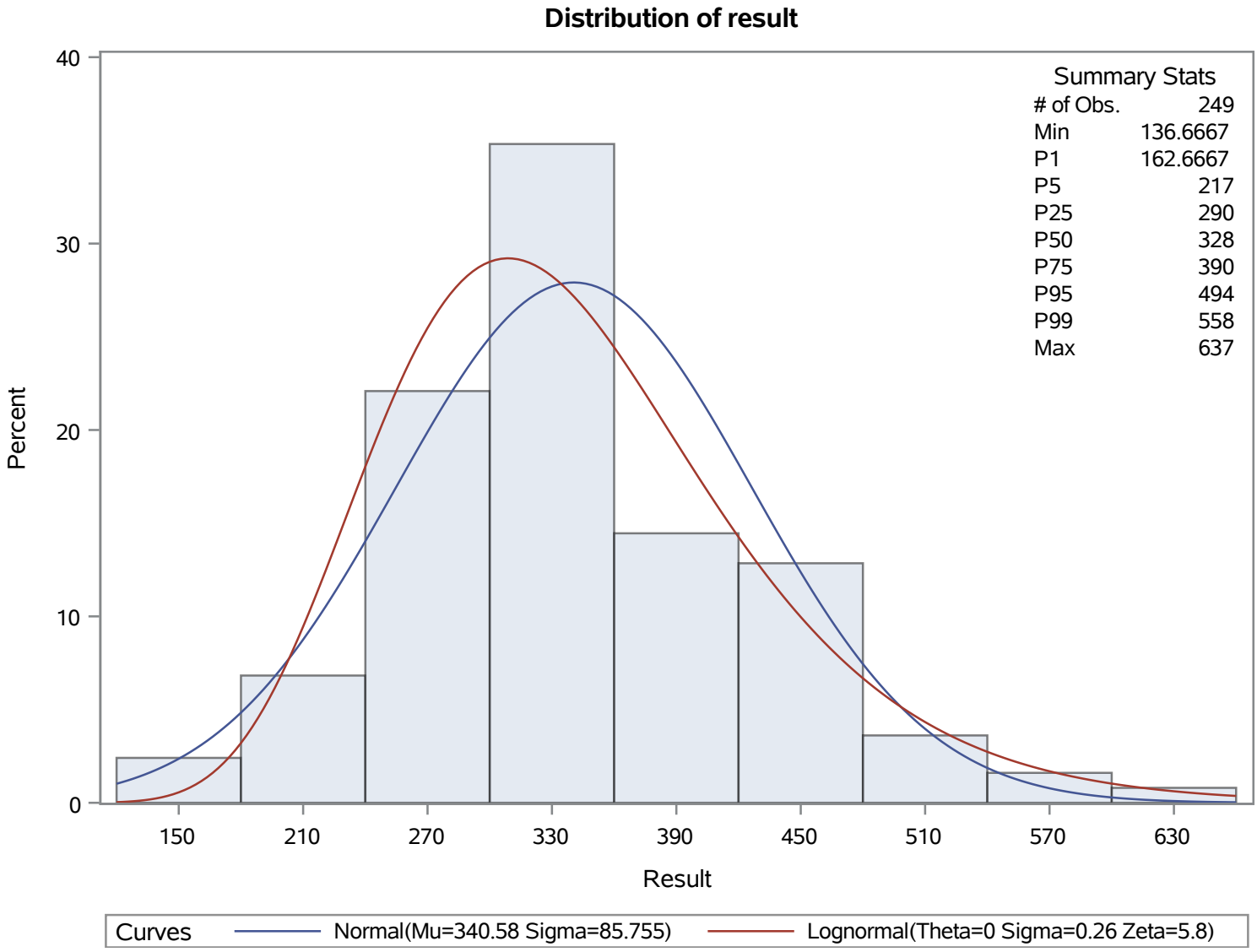
The UNIVARIATE Procedure

Distribution of result



Little Manatee River
Little Manatee River at CR 579
Specific Conductance (µmhos/cm) µmhos/cm
Site ID = 21FLHILL140

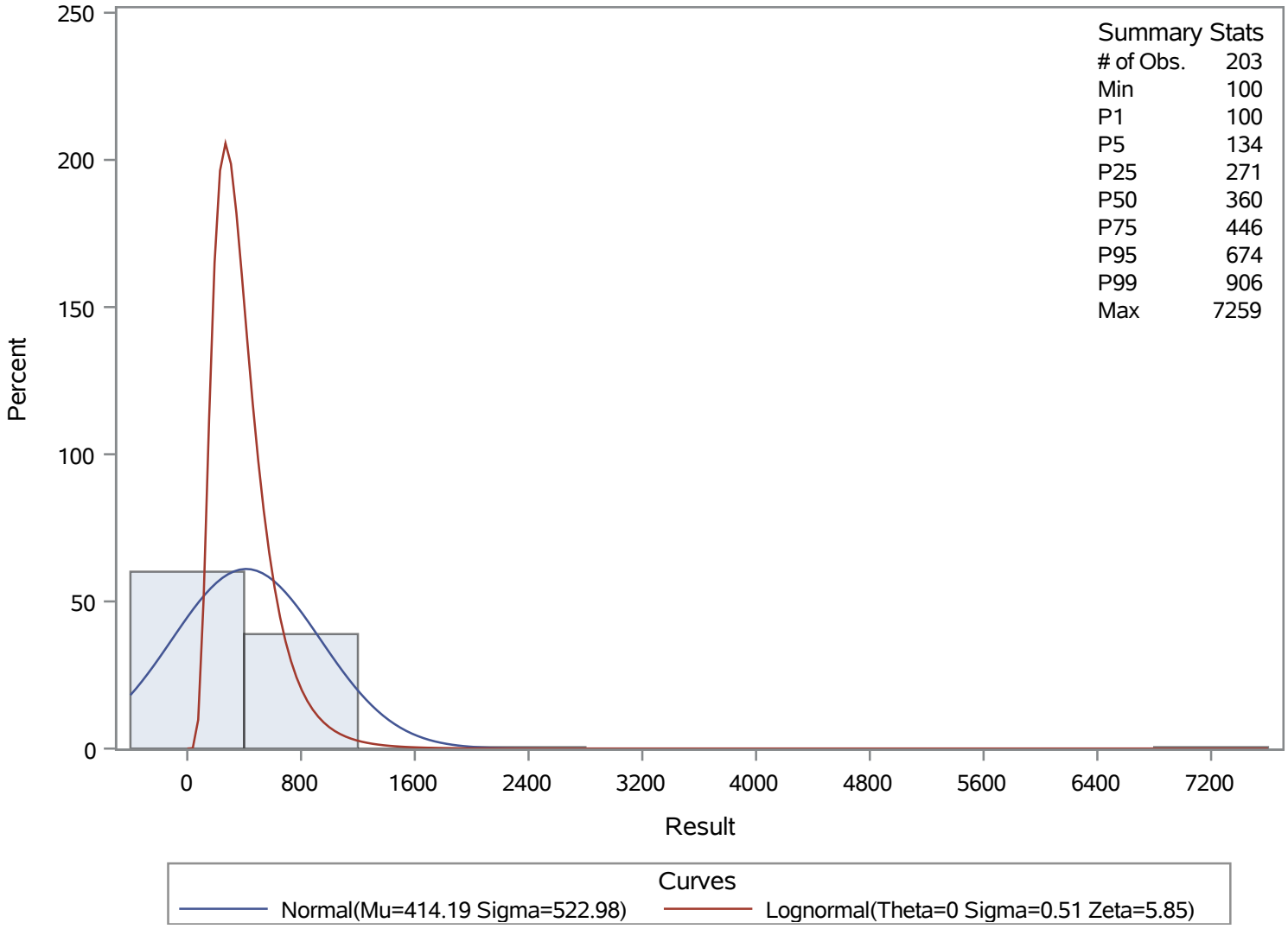
The UNIVARIATE Procedure



Little Manatee River
LITTLE MANATEE R AT CR579
Specific Conductance (µmhos/cm) µmhos/cm
Site ID = 21FLHILL24010013

The UNIVARIATE Procedure

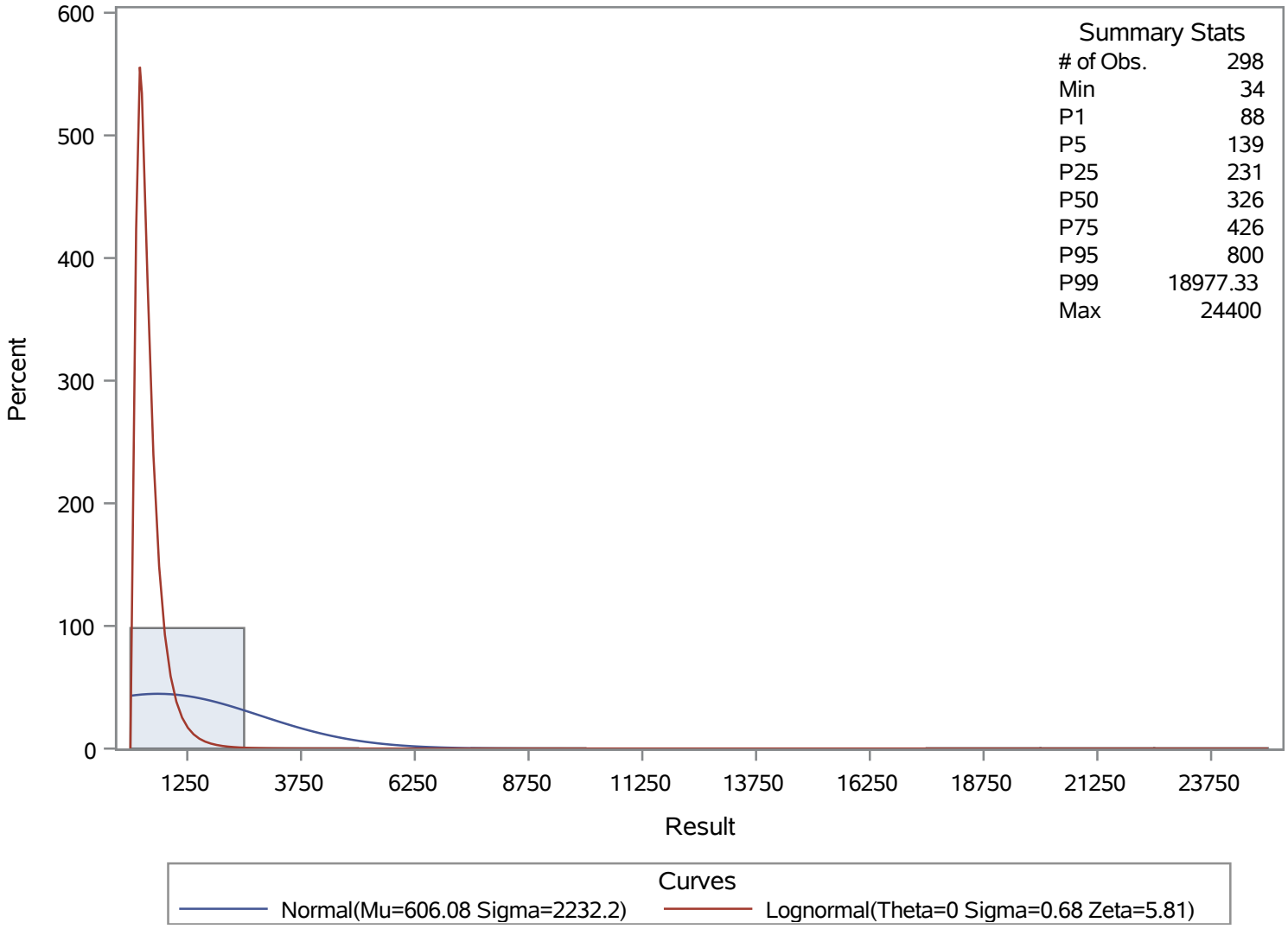
Distribution of result



Little Manatee River
L MANATEE R BR US 301
Specific Conductance (µmhos/cm) µmhos/cm
Site ID = 21FLHILL24010100

The UNIVARIATE Procedure

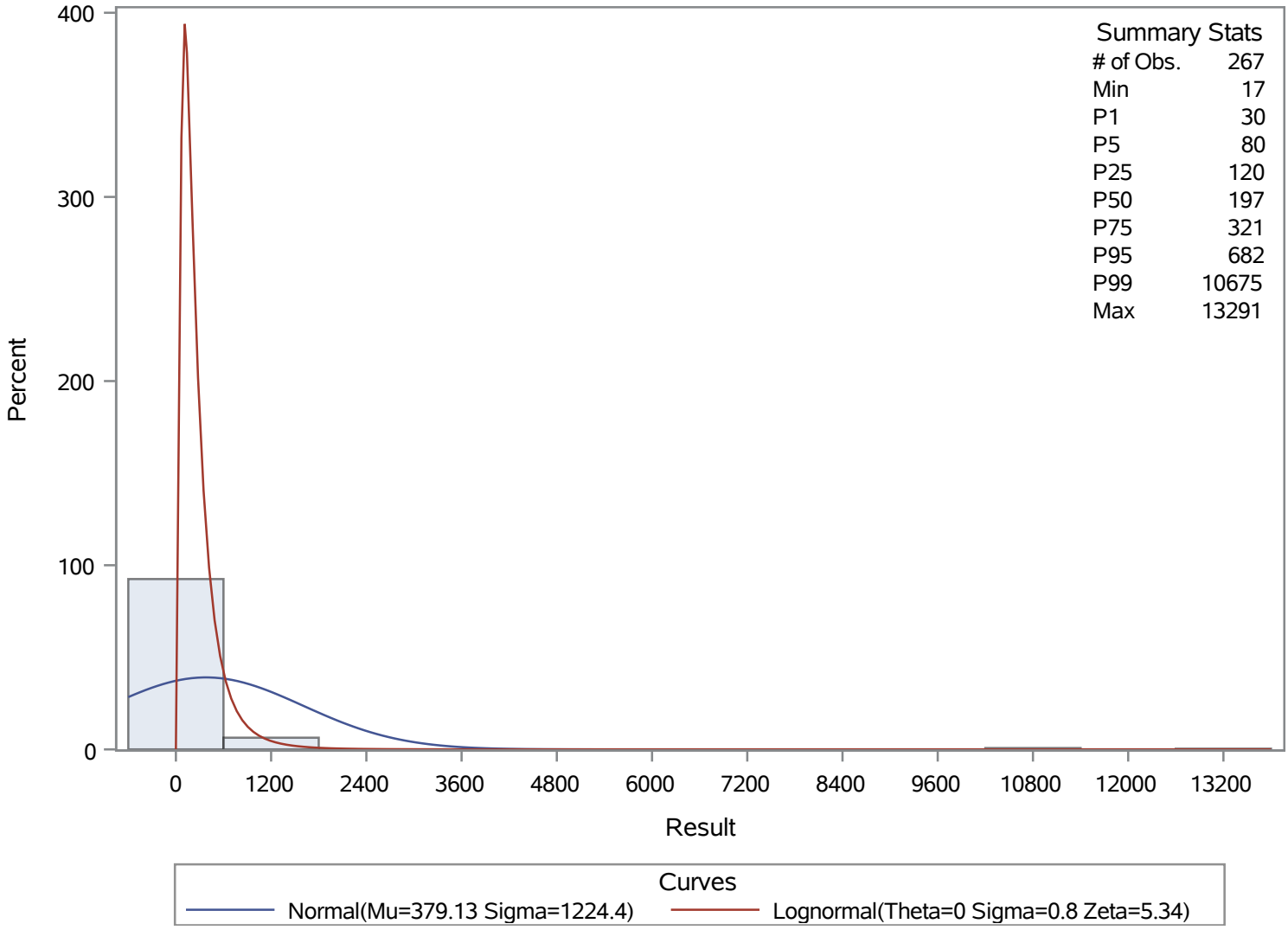
Distribution of result



Little Manatee River
LITTLE MANATEE R AT SR #674
Specific Conductance (µmhos/cm) µmhos/cm
Site ID = 21FLHILL24010110

The UNIVARIATE Procedure

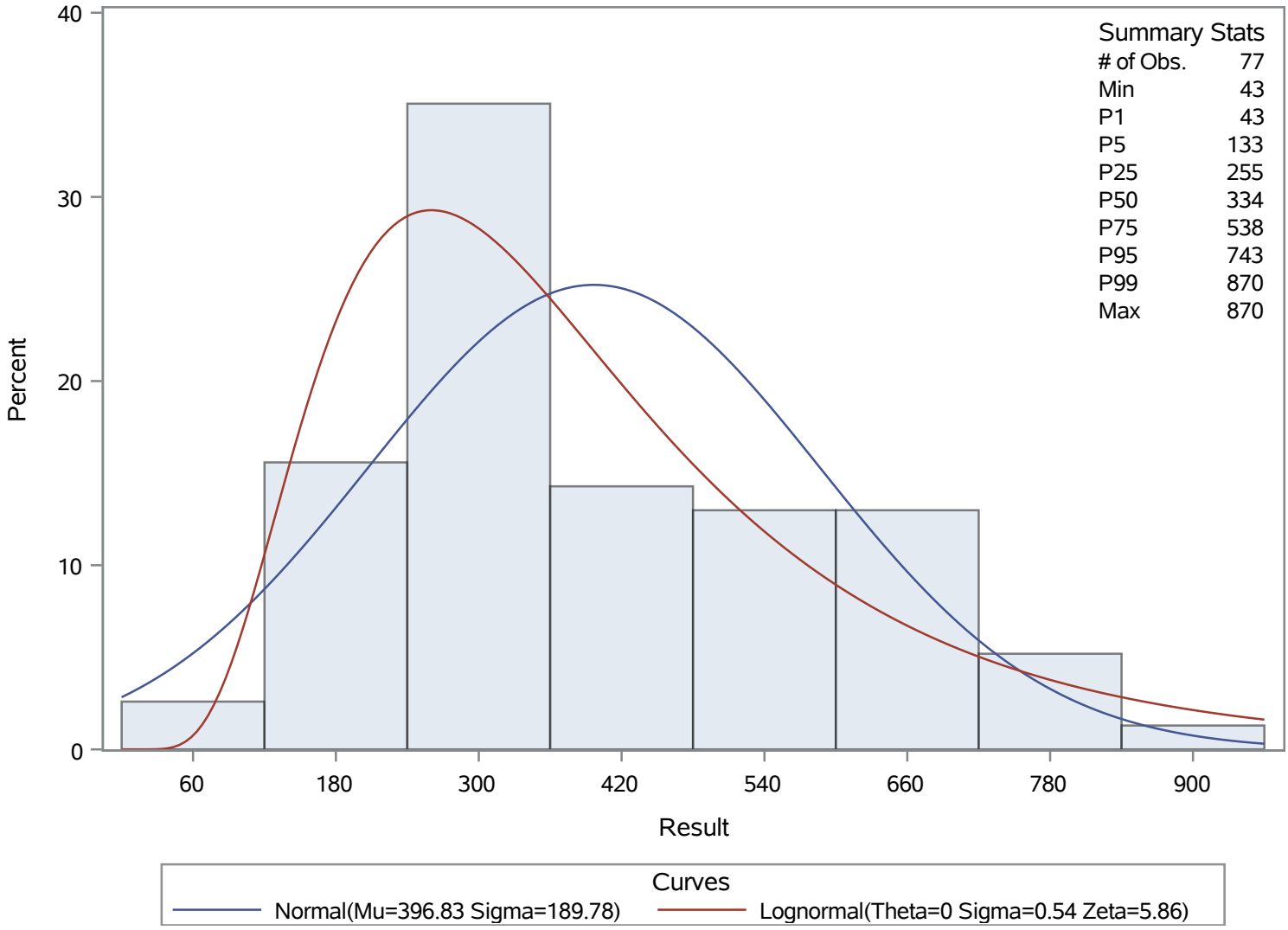
Distribution of result



Little Manatee River
Little Manatee R. at SR674
Specific Conductance (µmhos/cm) µmhos/cm
Site ID = 21FLIMCALM674

The UNIVARIATE Procedure

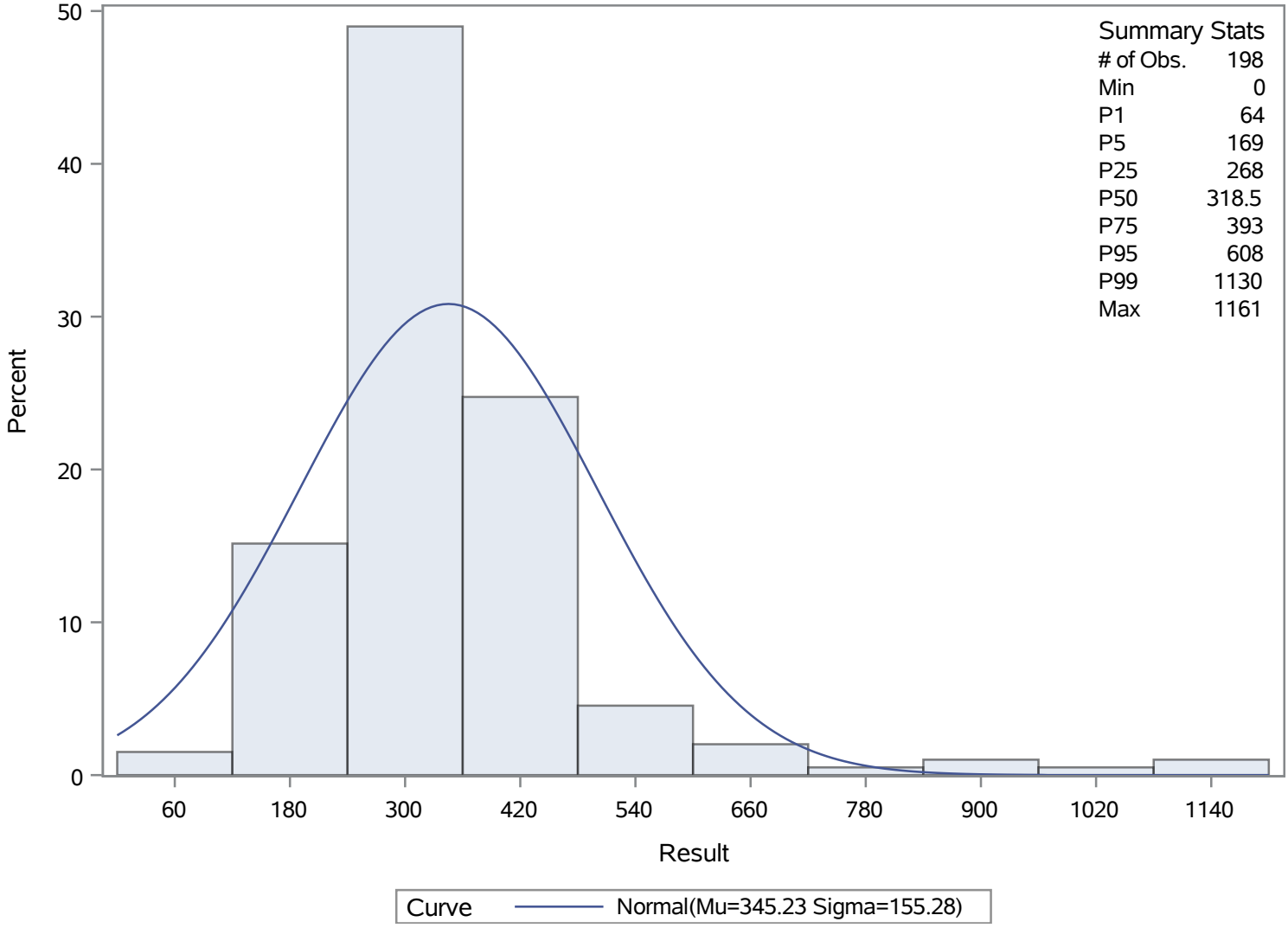
Distribution of result



Little Manatee River
D1
Specific Conductance (µmhos/cm) µmhos/cm
Site ID = 21FLMANAD1

The UNIVARIATE Procedure

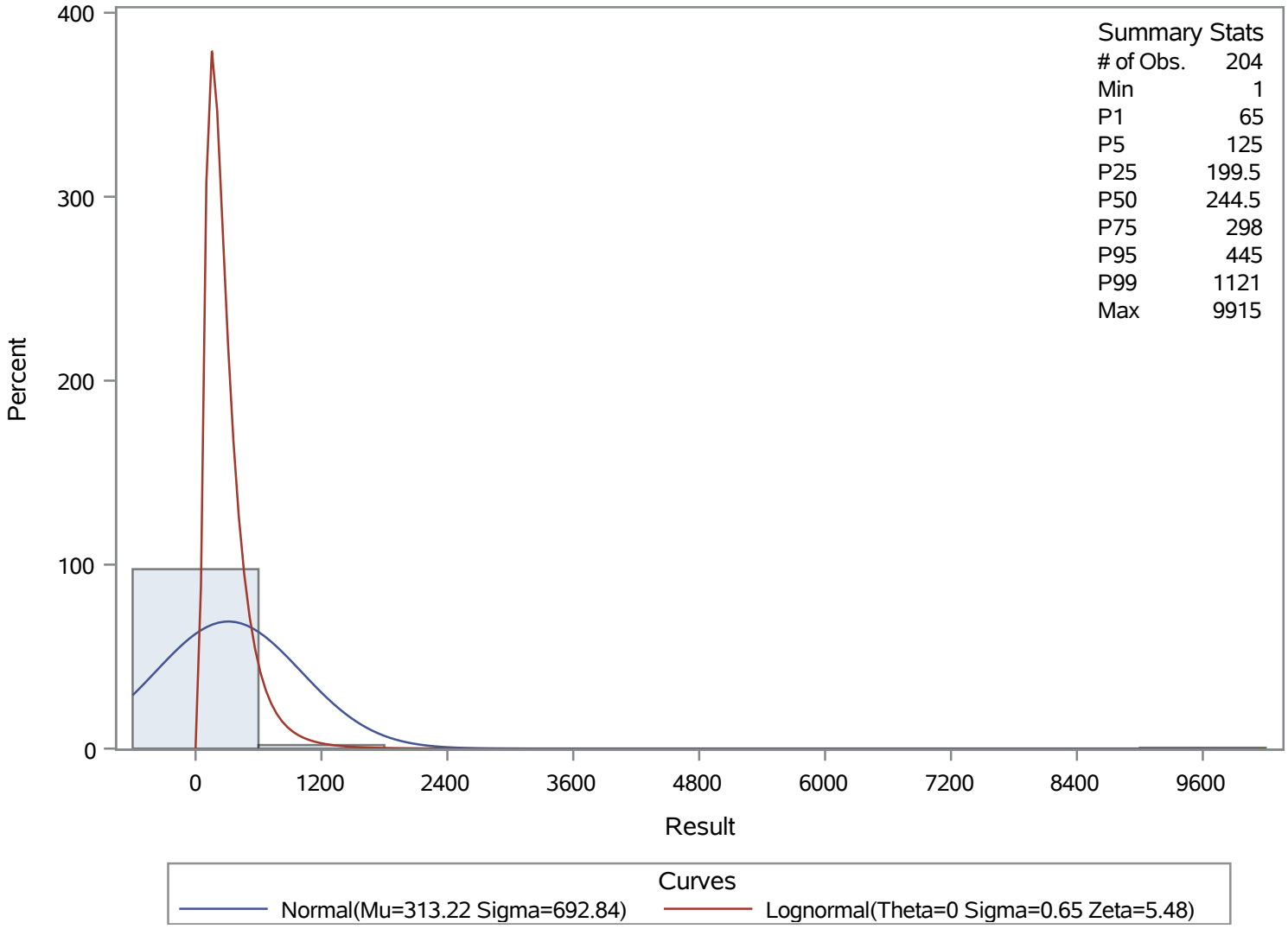
Distribution of result



Little Manatee River
D3
Specific Conductance (µmhos/cm) µmhos/cm
Site ID = 21FLMANAD3

The UNIVARIATE Procedure

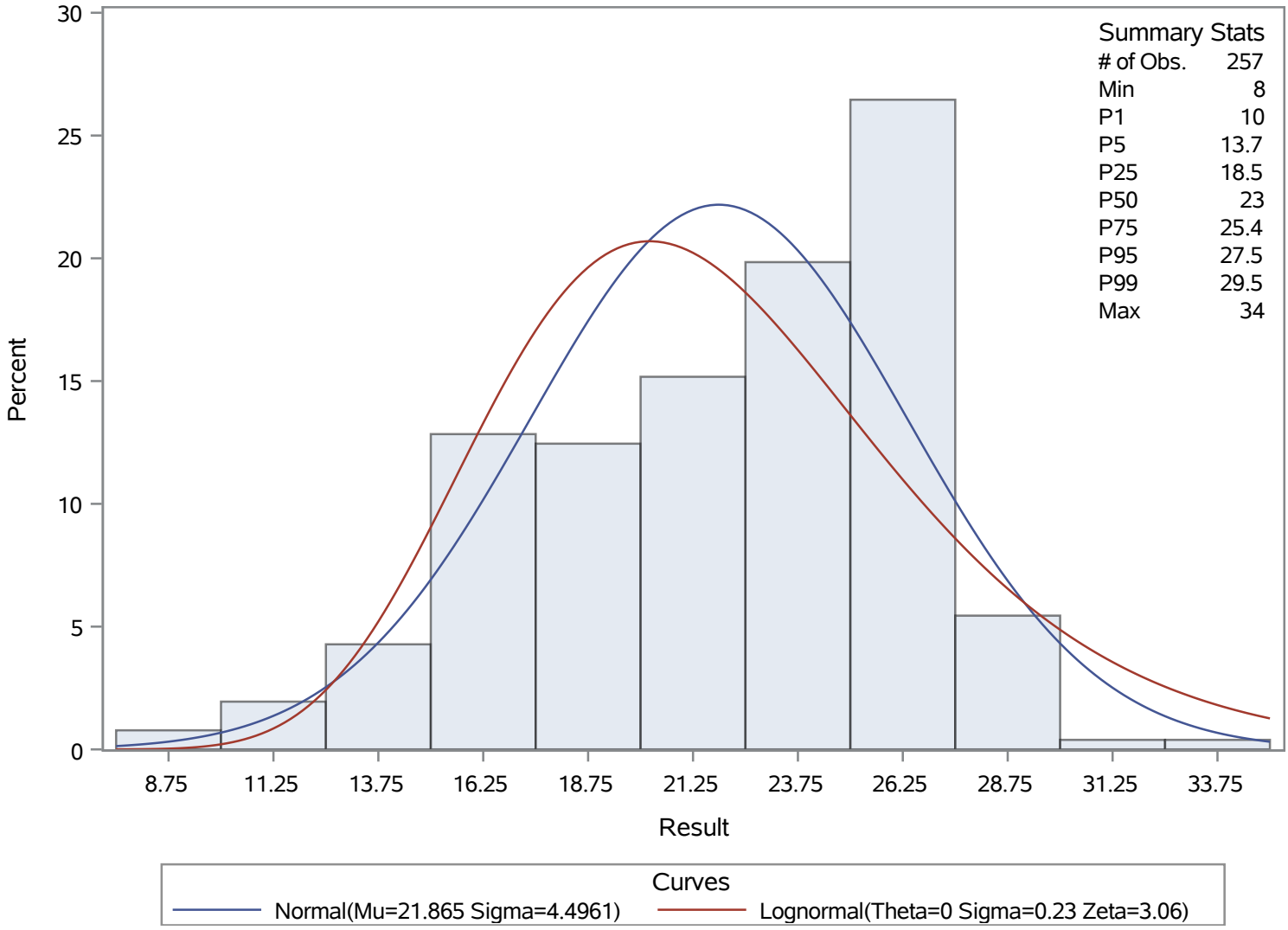
Distribution of result



Little Manatee River
LITTLE MANATEE RIVER NEAR FT. LONESOME FL
Temperature (C°) deg C
Site ID = 112WRD 02300100

The UNIVARIATE Procedure

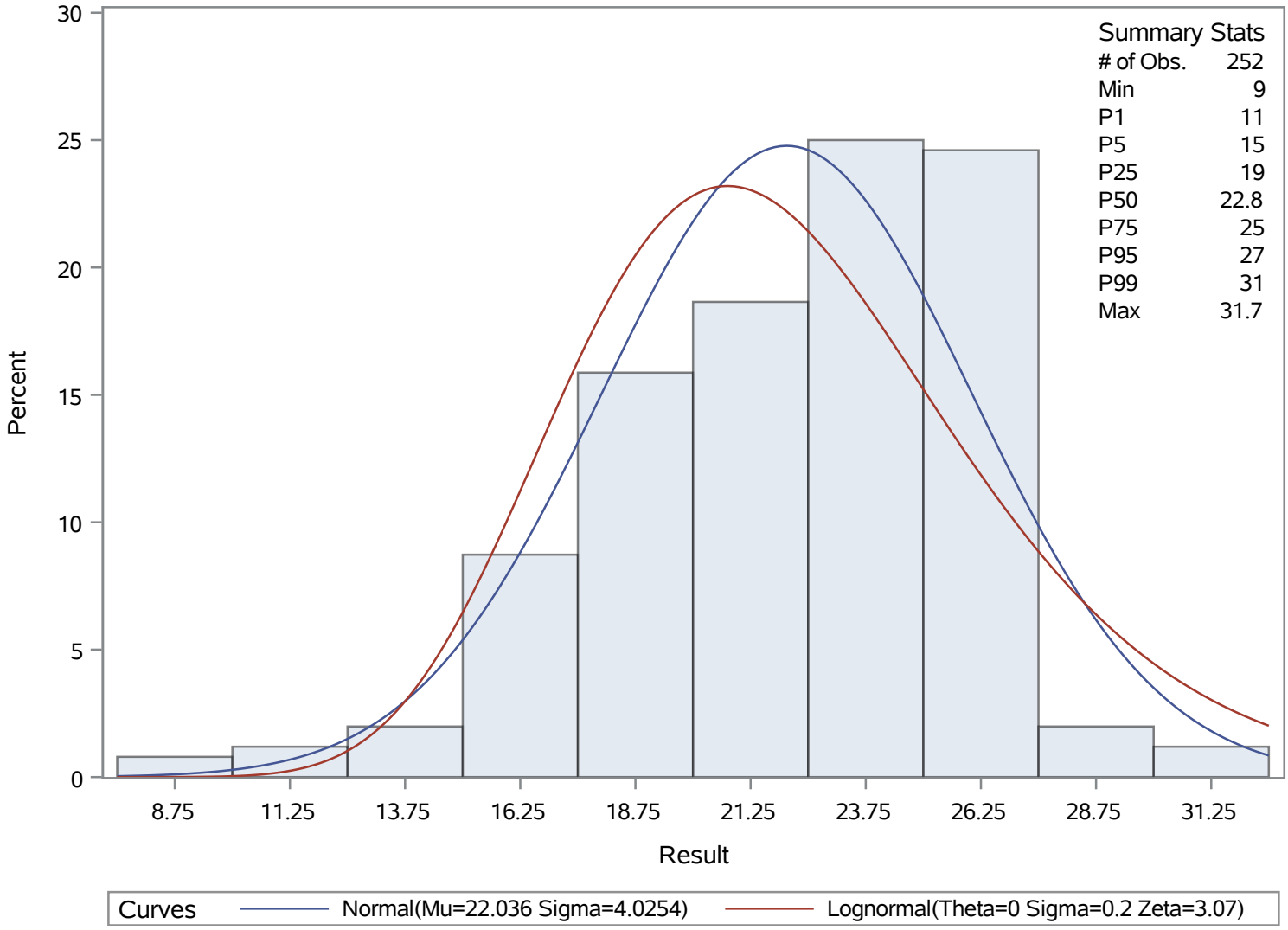
Distribution of result



Little Manatee River
SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL
Temperature (C°) deg C
Site ID = 112WRD 02300200

The UNIVARIATE Procedure

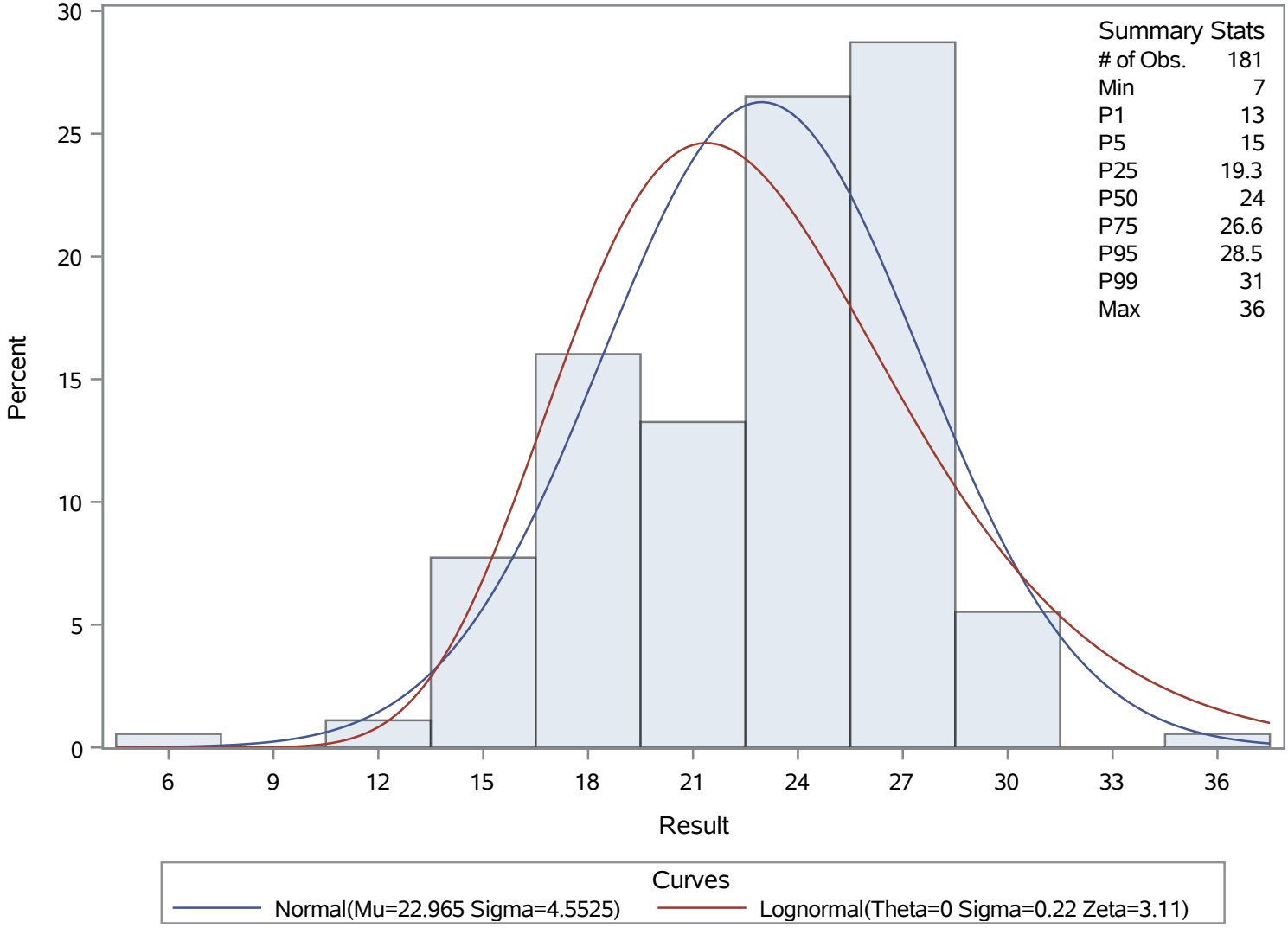
Distribution of result



Little Manatee River
LITTLE MANATEE RIVER NEAR WIMAUMA FL
Temperature (C°) deg C
Site ID = 112WRD 02300500

The UNIVARIATE Procedure

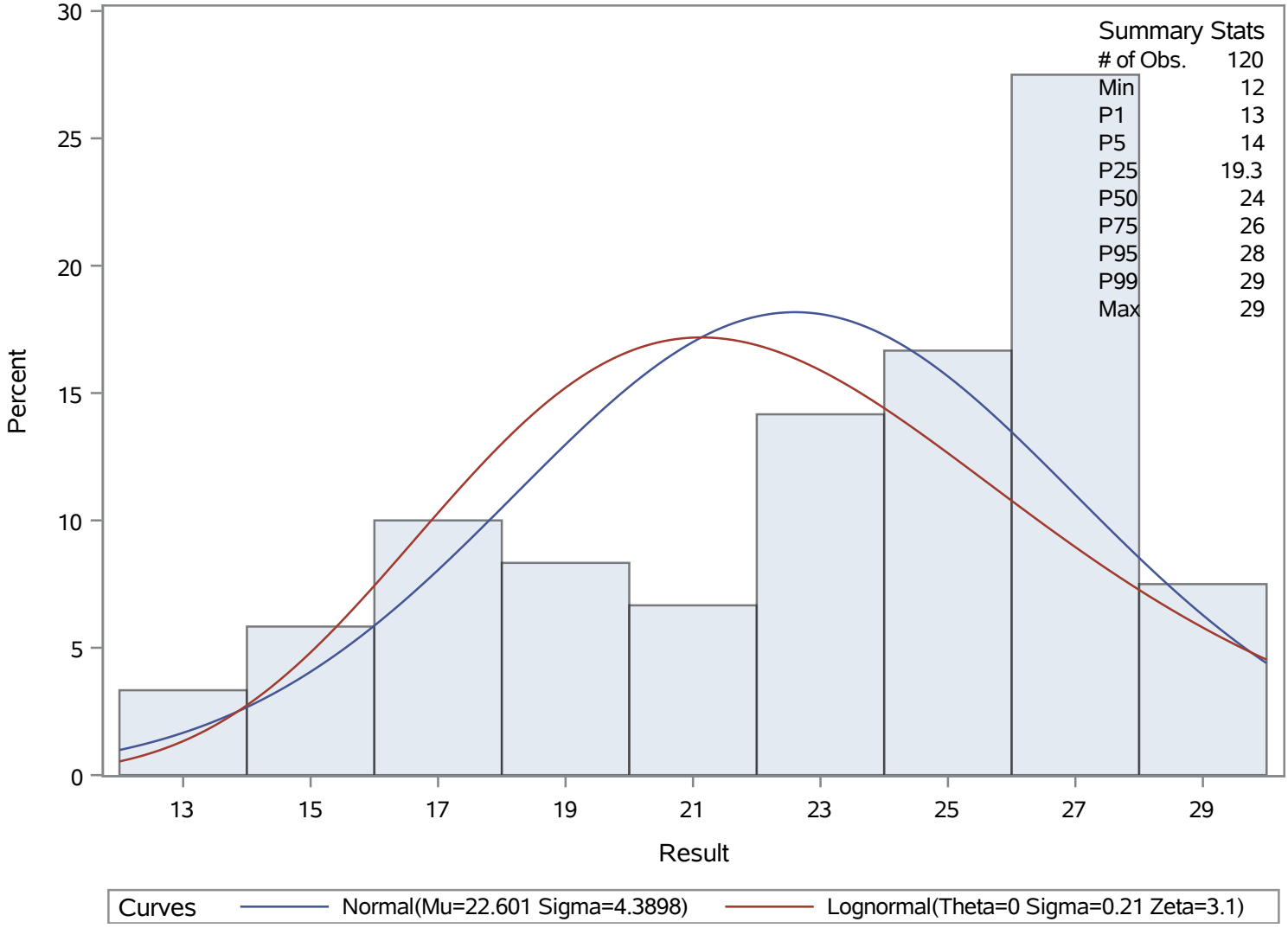
Distribution of result



Little Manatee River
L MANATEE R BR US 301
Temperature (C°) deg C
Site ID = 21FLA 24010100

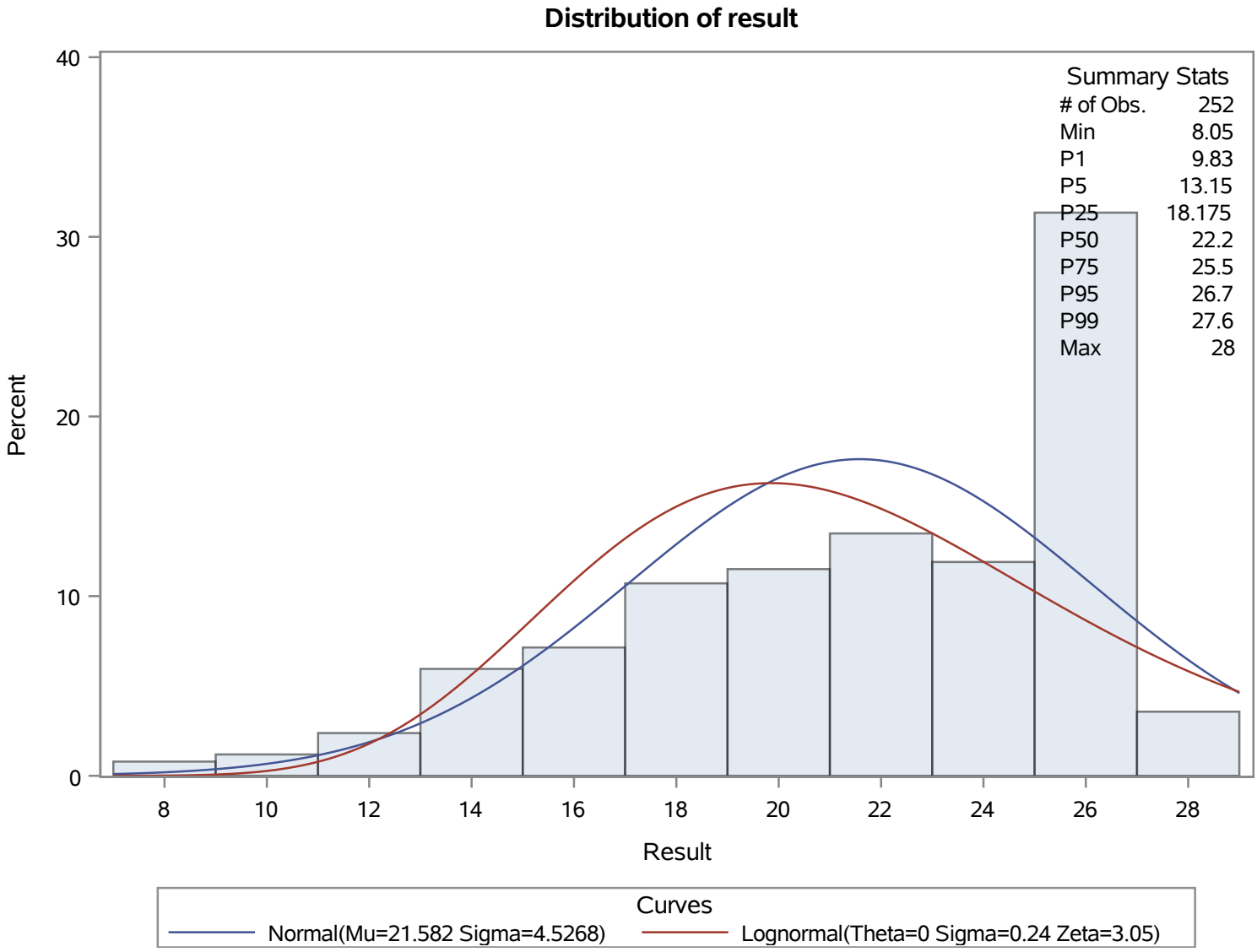
The UNIVARIATE Procedure

Distribution of result



Little Manatee River
LITTLE MANATEE RIVER AT US HWY 301
Temperature (C°) deg C
Site ID = 21FLGW 3555

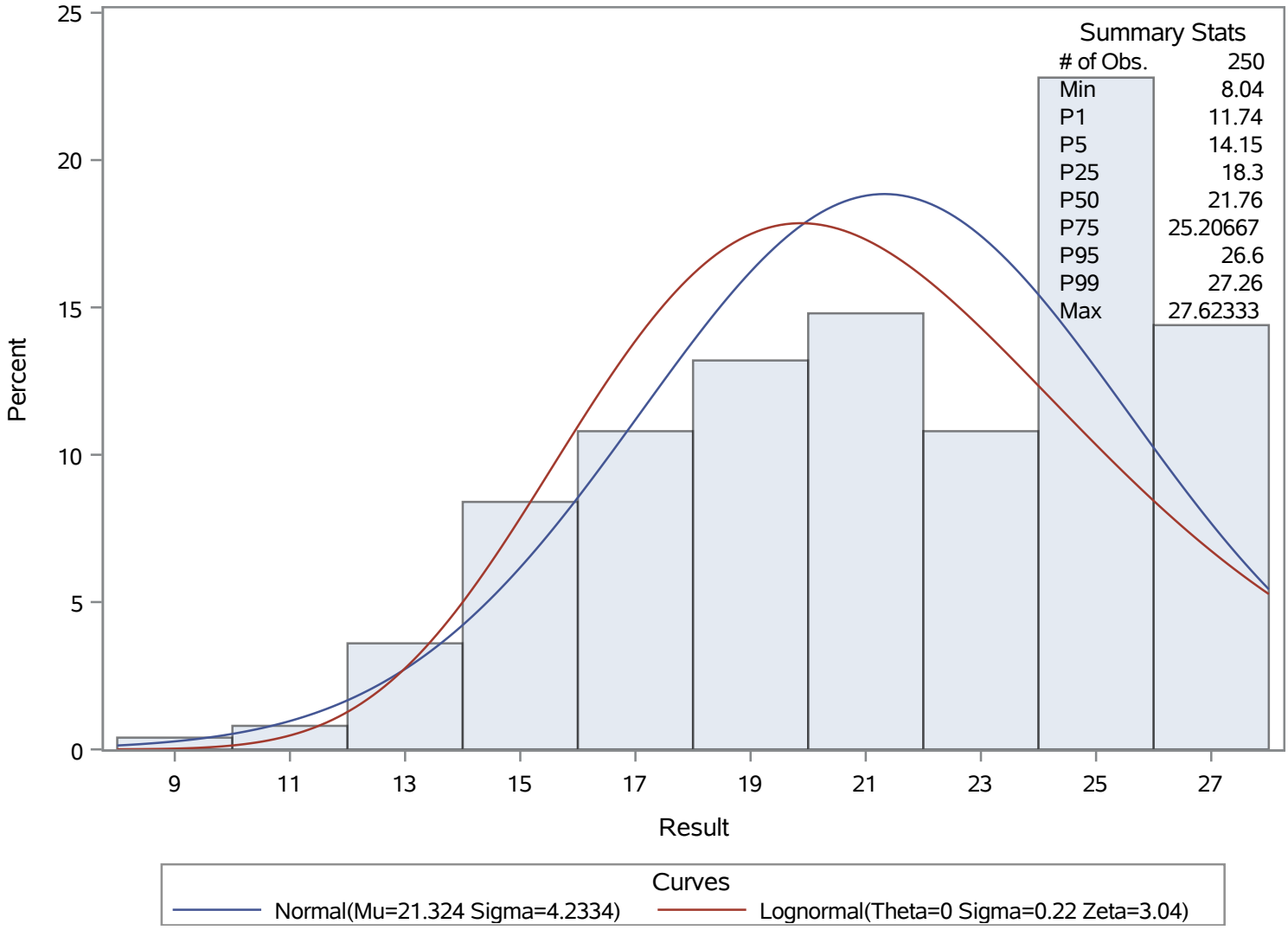
The UNIVARIATE Procedure



Little Manatee River
Little Manatee River at US 301 bridge
Temperature (C°) deg C
Site ID = 21FLHILL113

The UNIVARIATE Procedure

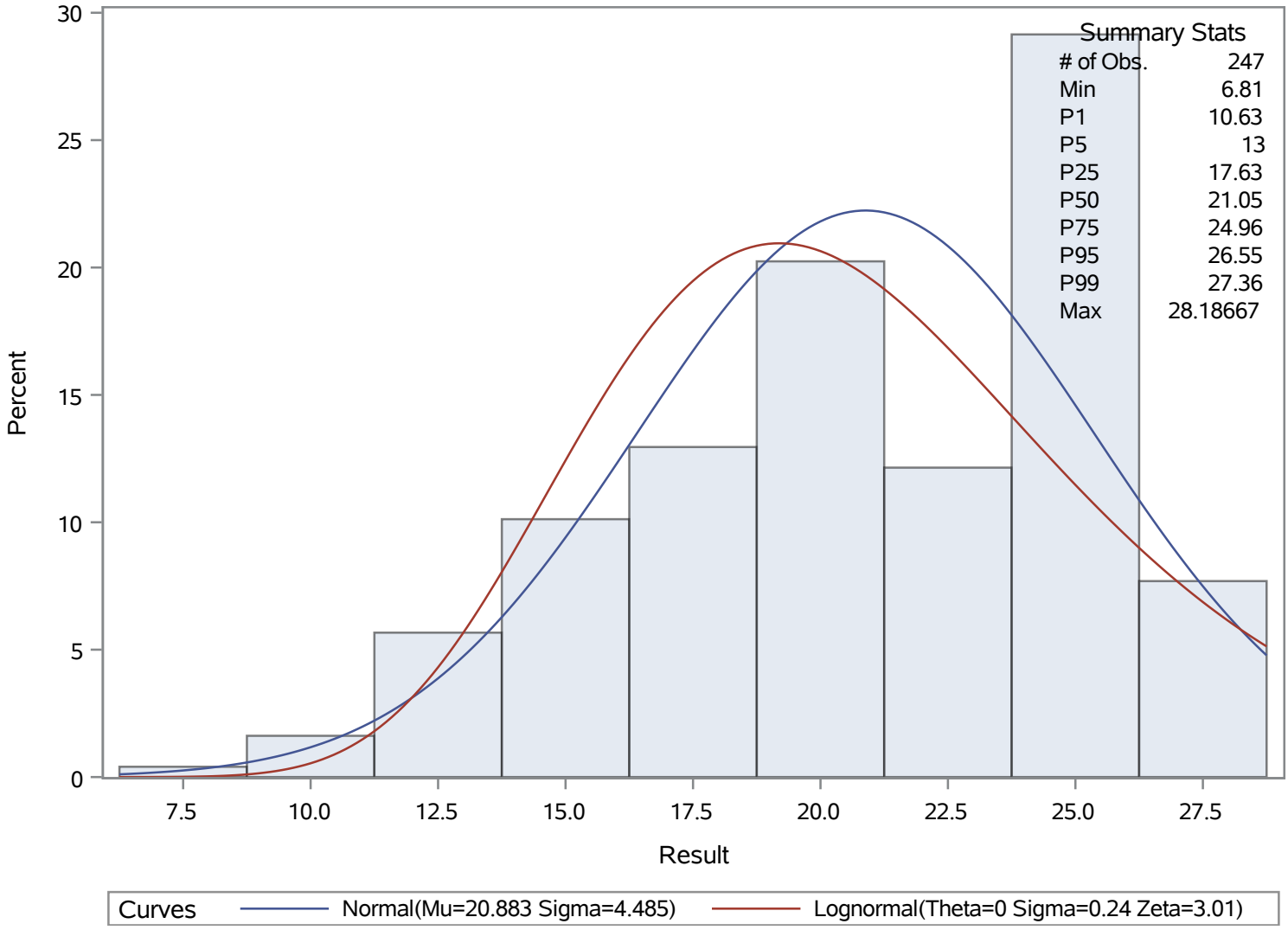
Distribution of result



Little Manatee River
Little Manatee River at SR 674
Temperature (C°) deg C
Site ID = 21FLHILL129

The UNIVARIATE Procedure

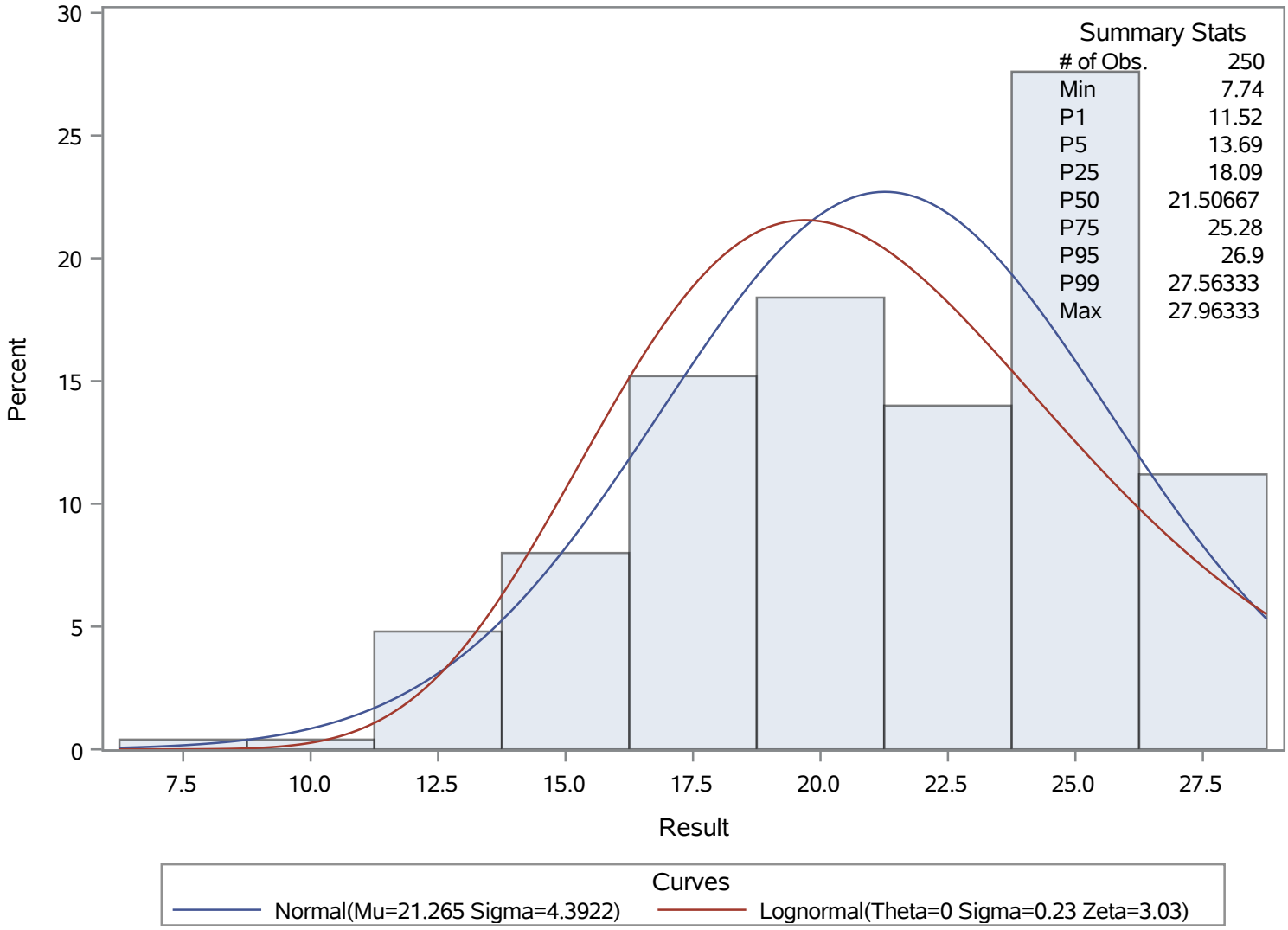
Distribution of result



Little Manatee River
Little Manatee River at CR 579
Temperature (C°) deg C
Site ID = 21FLHILL140

The UNIVARIATE Procedure

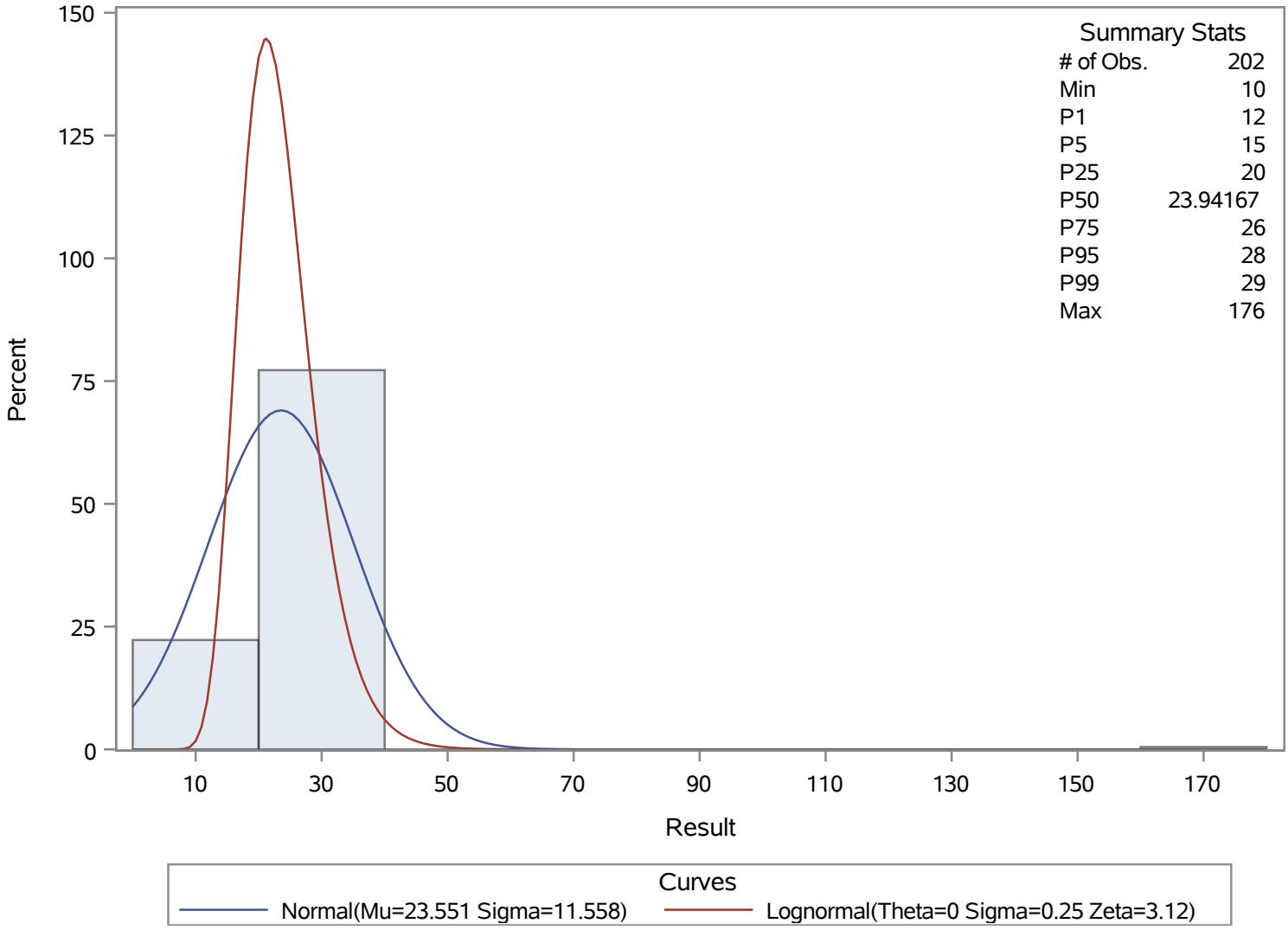
Distribution of result



Little Manatee River
LITTLE MANATEE R AT CR579
Temperature (C°) deg C
Site ID = 21FLHILL24010013

The UNIVARIATE Procedure

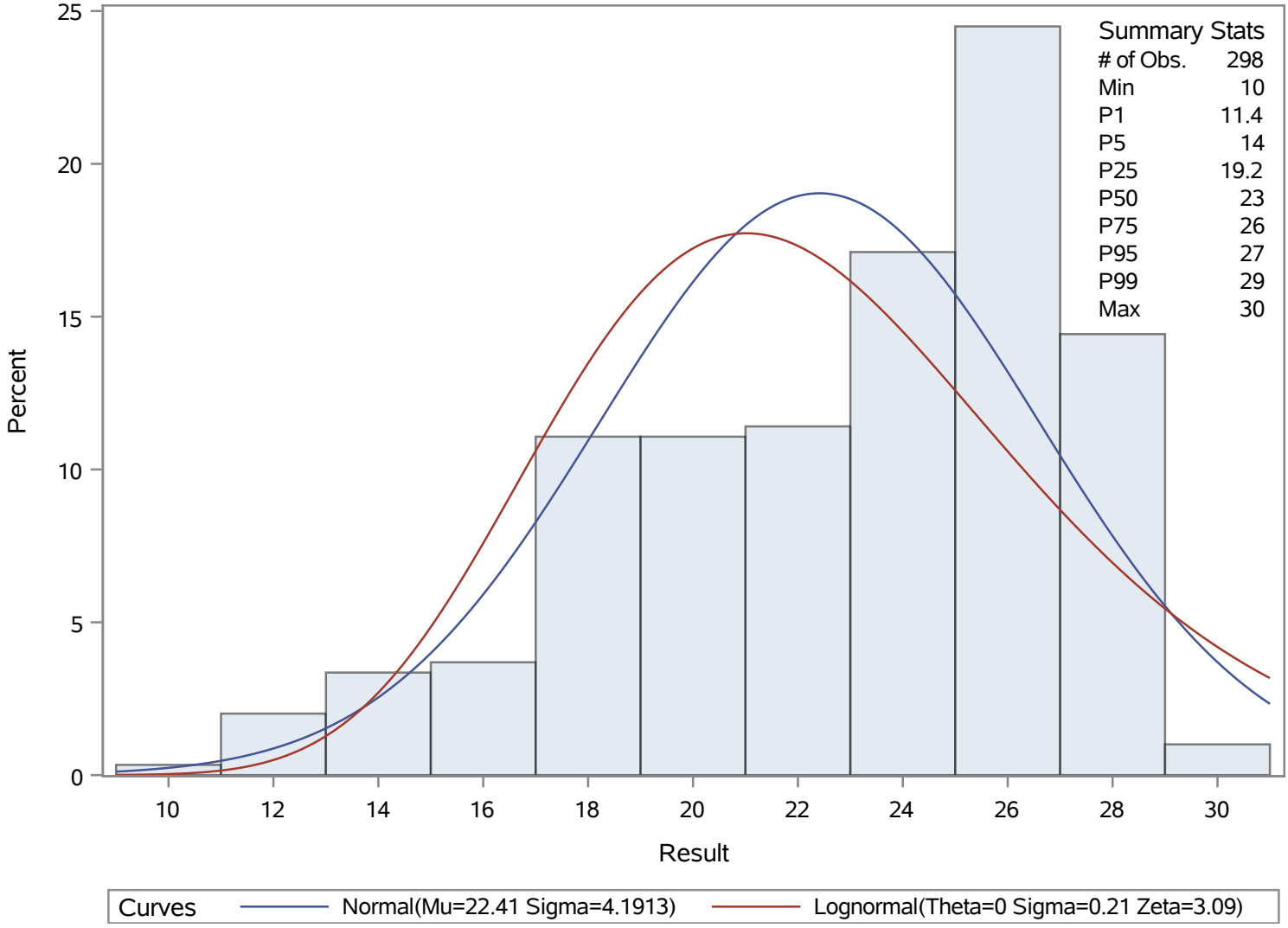
Distribution of result



Little Manatee River
L MANATEE R BR US 301
Temperature (C°) deg C
Site ID = 21FLHILL24010100

The UNIVARIATE Procedure

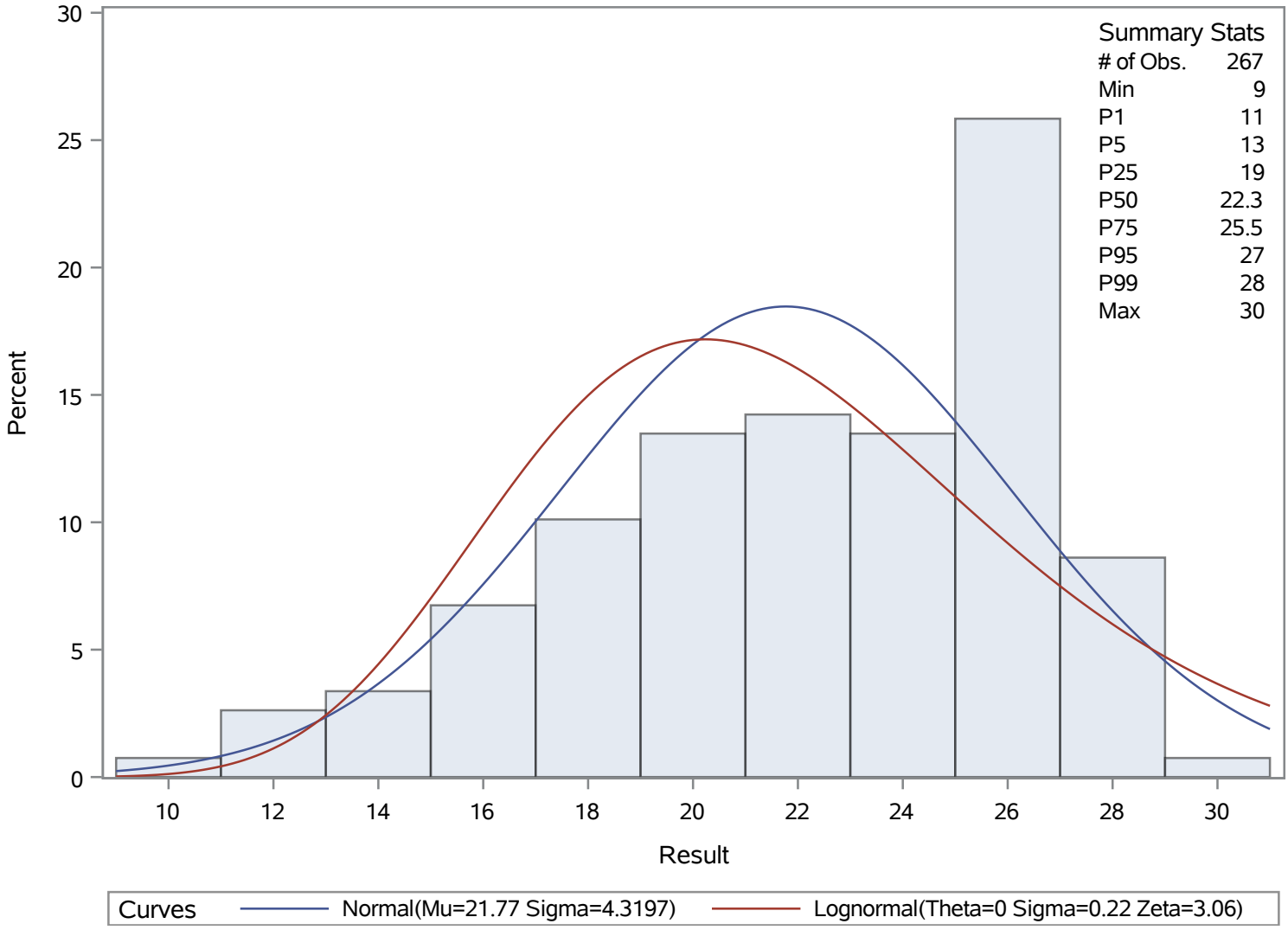
Distribution of result



Little Manatee River
LITTLE MANATEE R AT SR #674
Temperature (C°) deg C
Site ID = 21FLHILL24010110

The UNIVARIATE Procedure

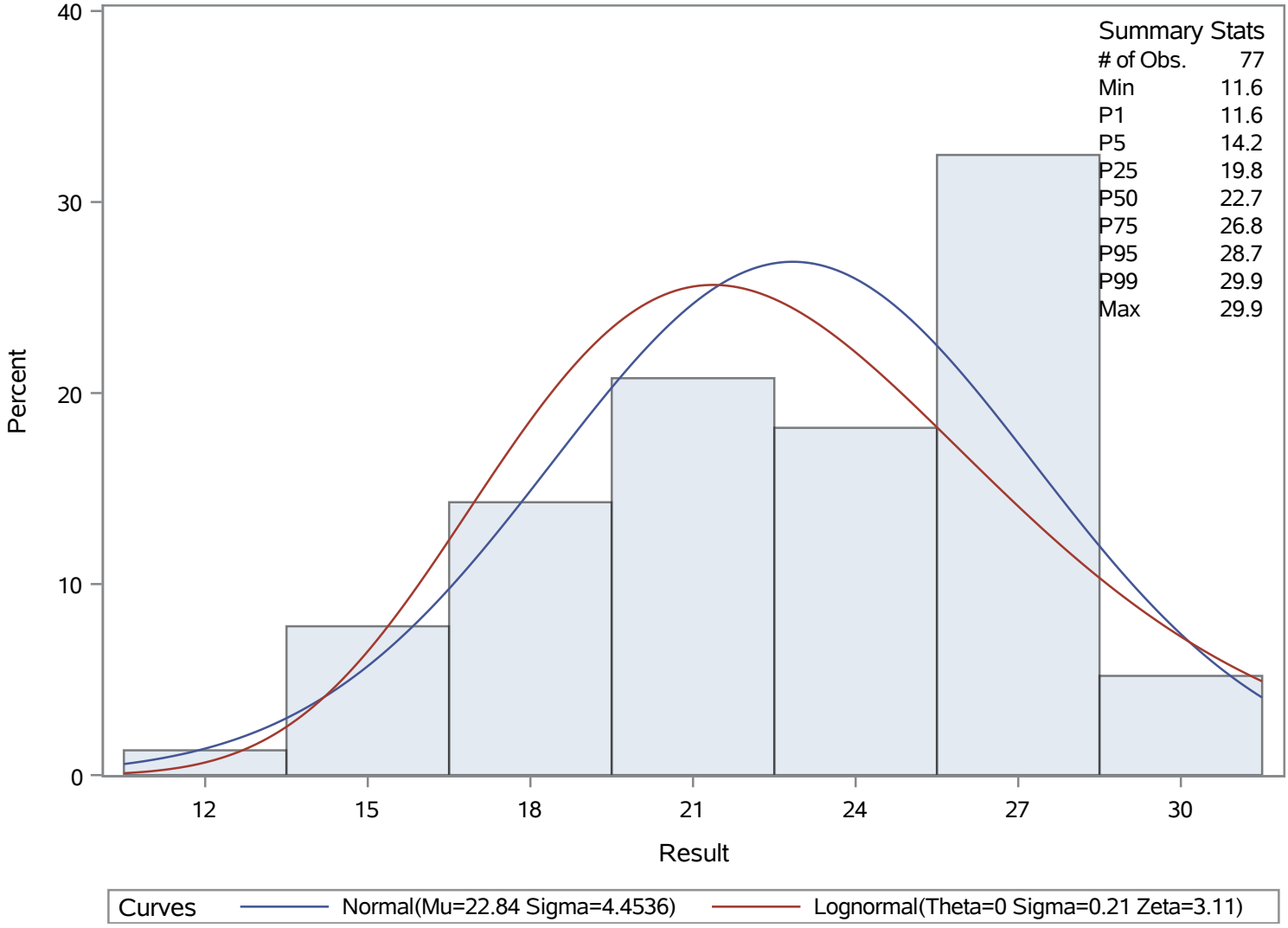
Distribution of result



Little Manatee River
Little Manatee R. at SR674
Temperature (C°) deg C
Site ID = 21FLIMCALM674

The UNIVARIATE Procedure

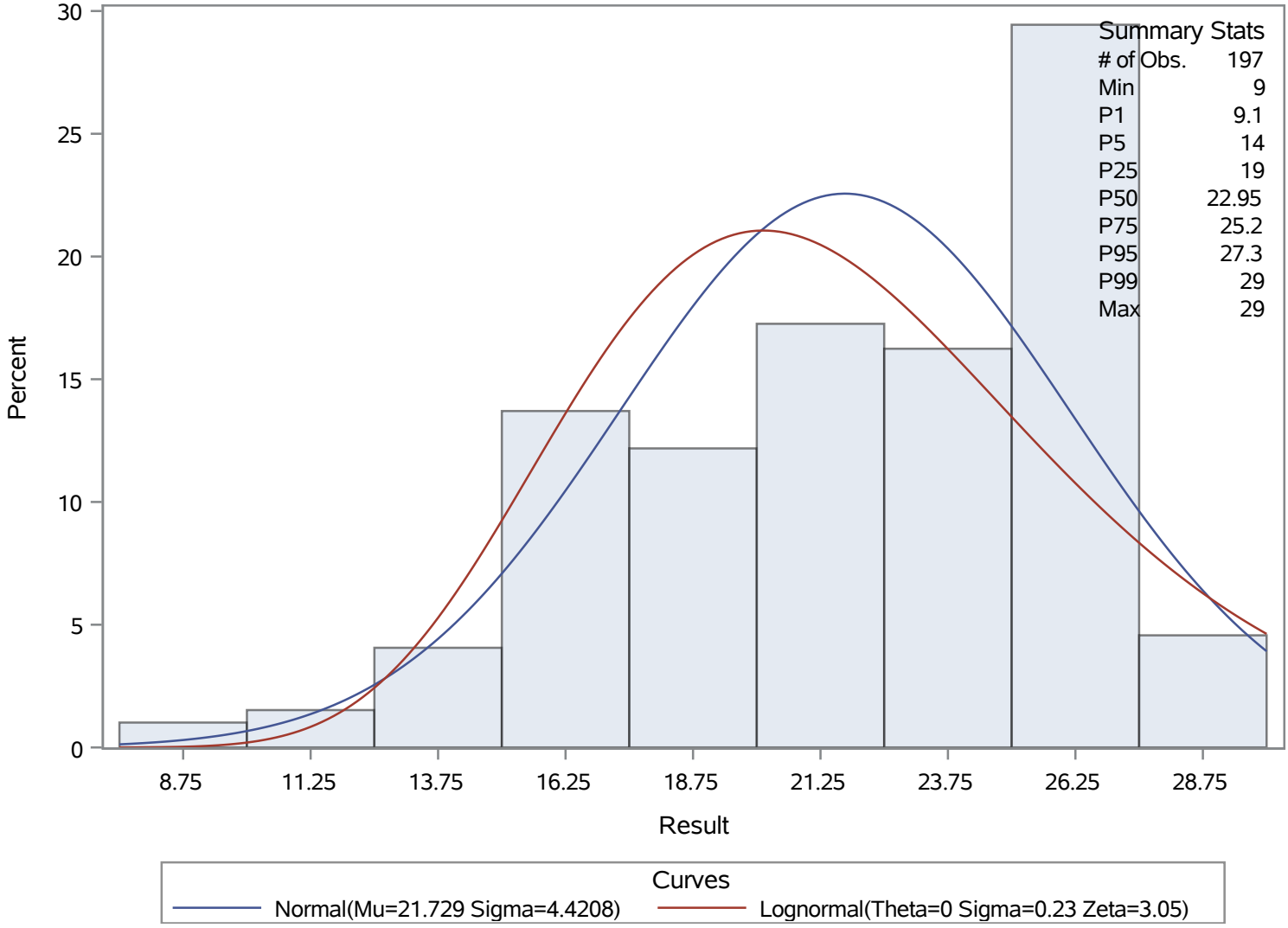
Distribution of result



Little Manatee River
D1
Temperature (C°) deg C
Site ID = 21FLMANAD1

The UNIVARIATE Procedure

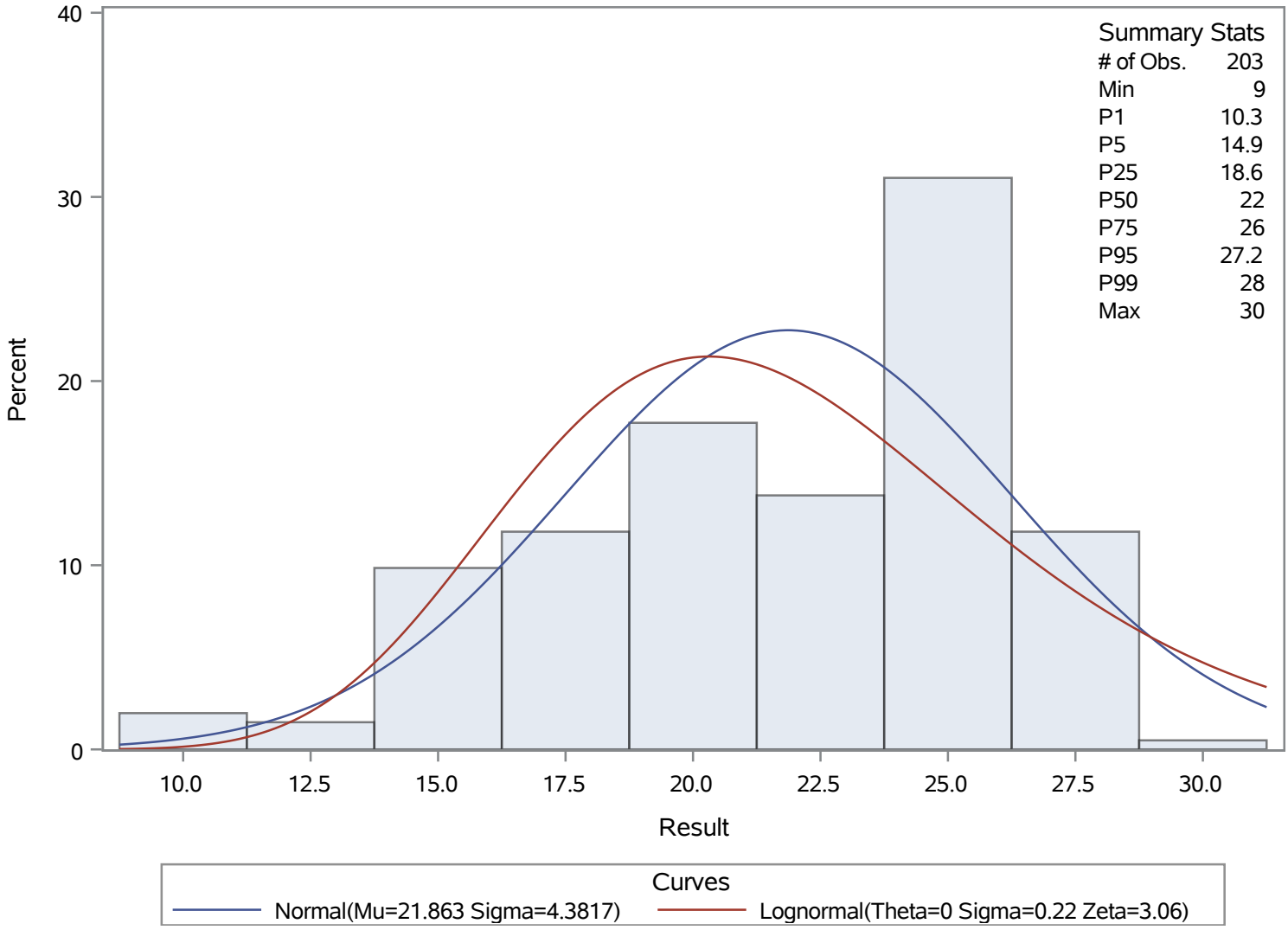
Distribution of result



Little Manatee River
D3
Temperature (C°) deg C
Site ID = 21FLMANAD3

The UNIVARIATE Procedure

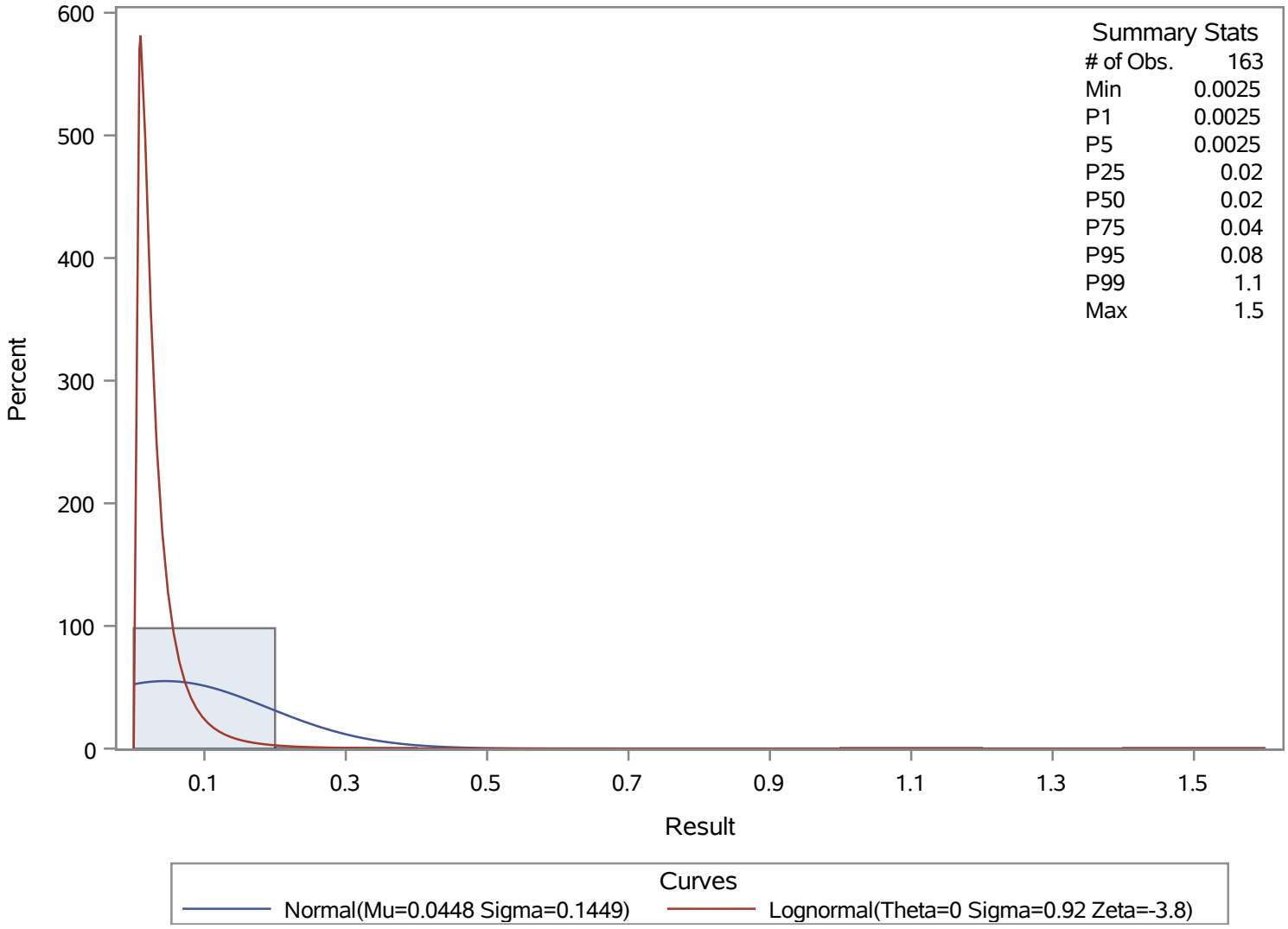
Distribution of result



Little Manatee River
LITTLE MANATEE RIVER NEAR FT. LONESOME FL
Total Ammonia as N (mg/L) mg/L
Site ID = 112WRD 02300100

The UNIVARIATE Procedure

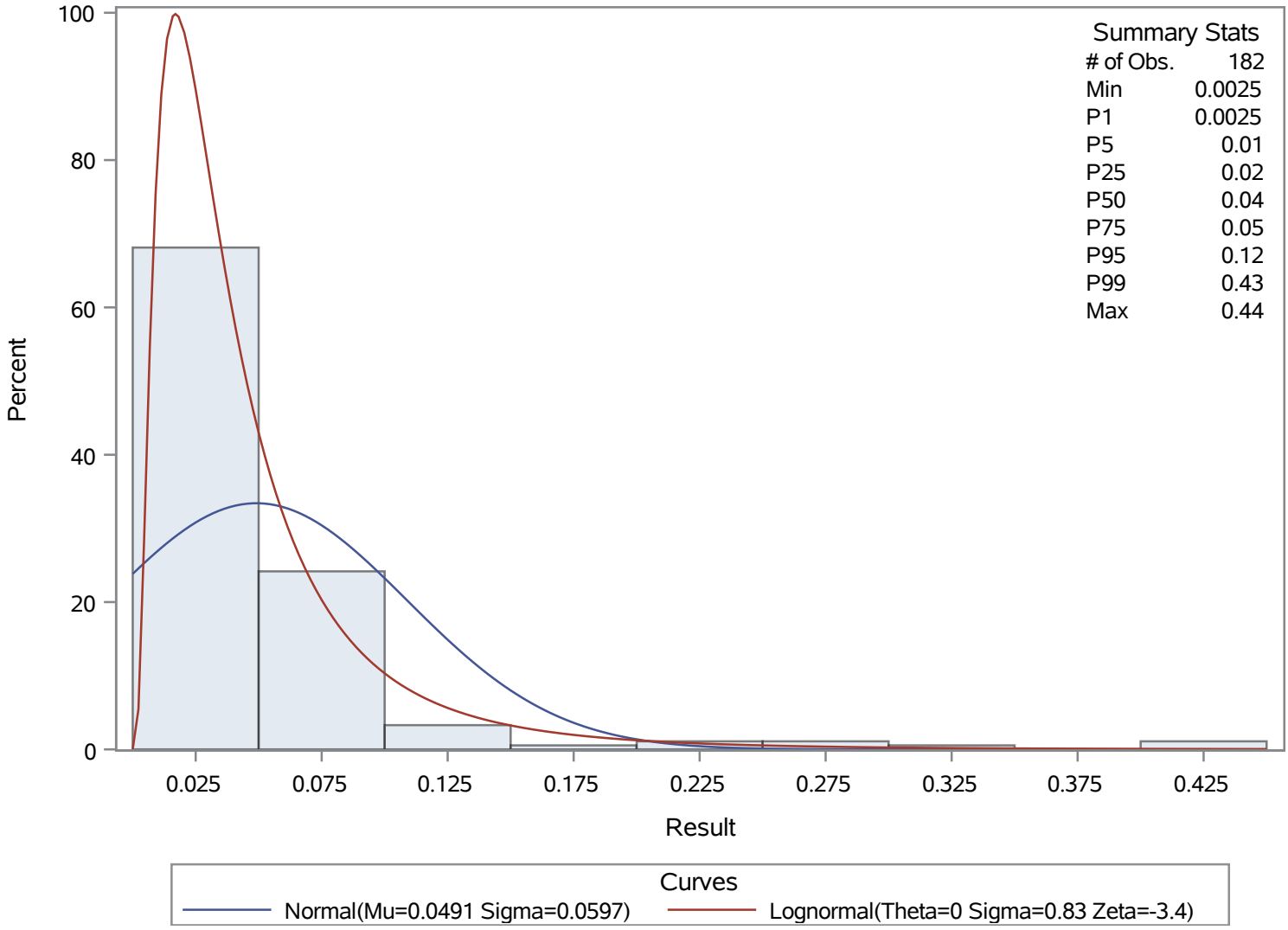
Distribution of result



Little Manatee River
SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL
Total Ammonia as N (mg/L) mg/L
Site ID = 112WRD 02300200

The UNIVARIATE Procedure

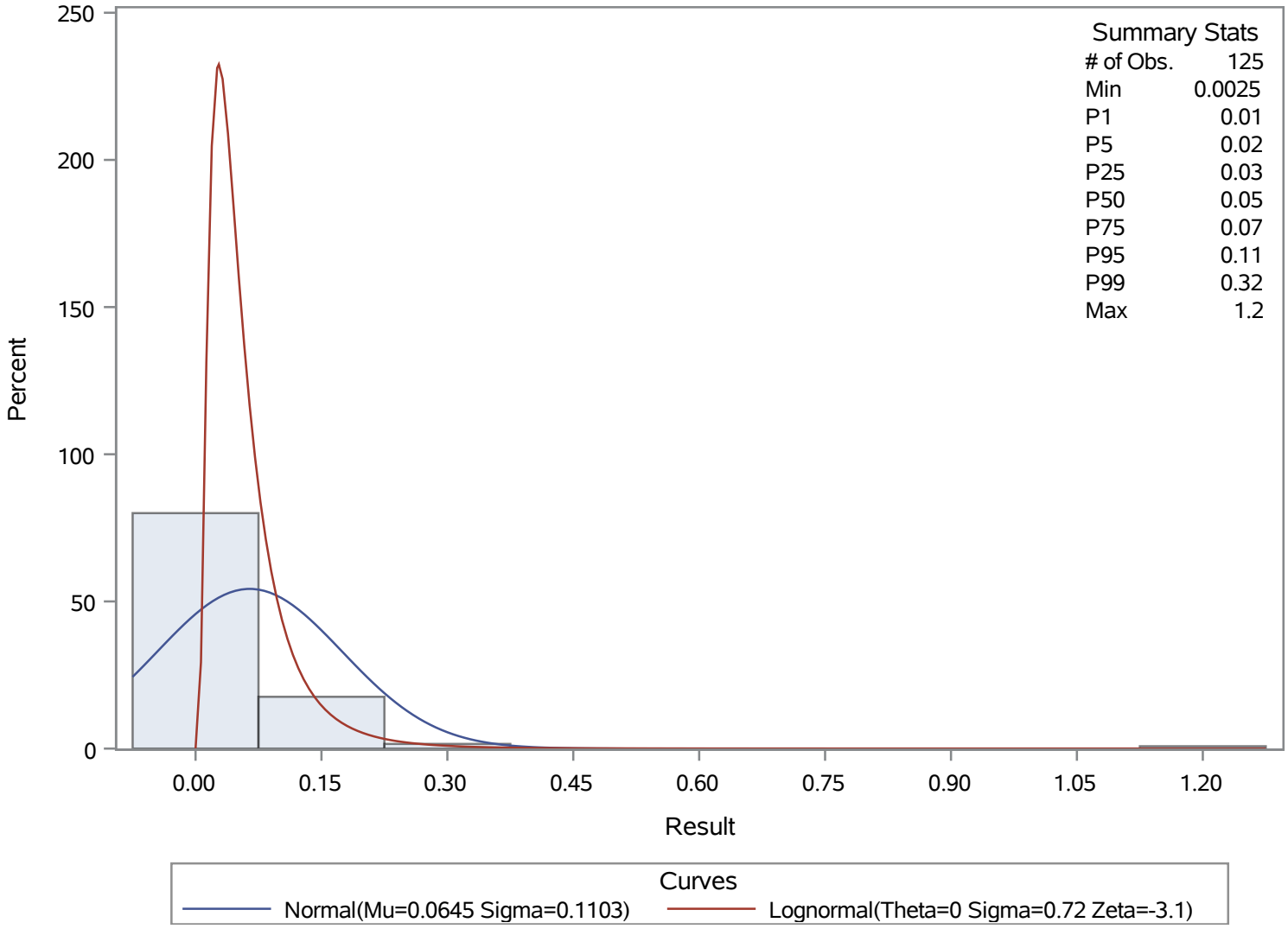
Distribution of result



Little Manatee River
LITTLE MANATEE RIVER NEAR WIMAUMA FL
Total Ammonia as N (mg/L) mg/L
Site ID = 112WRD 02300500

The UNIVARIATE Procedure

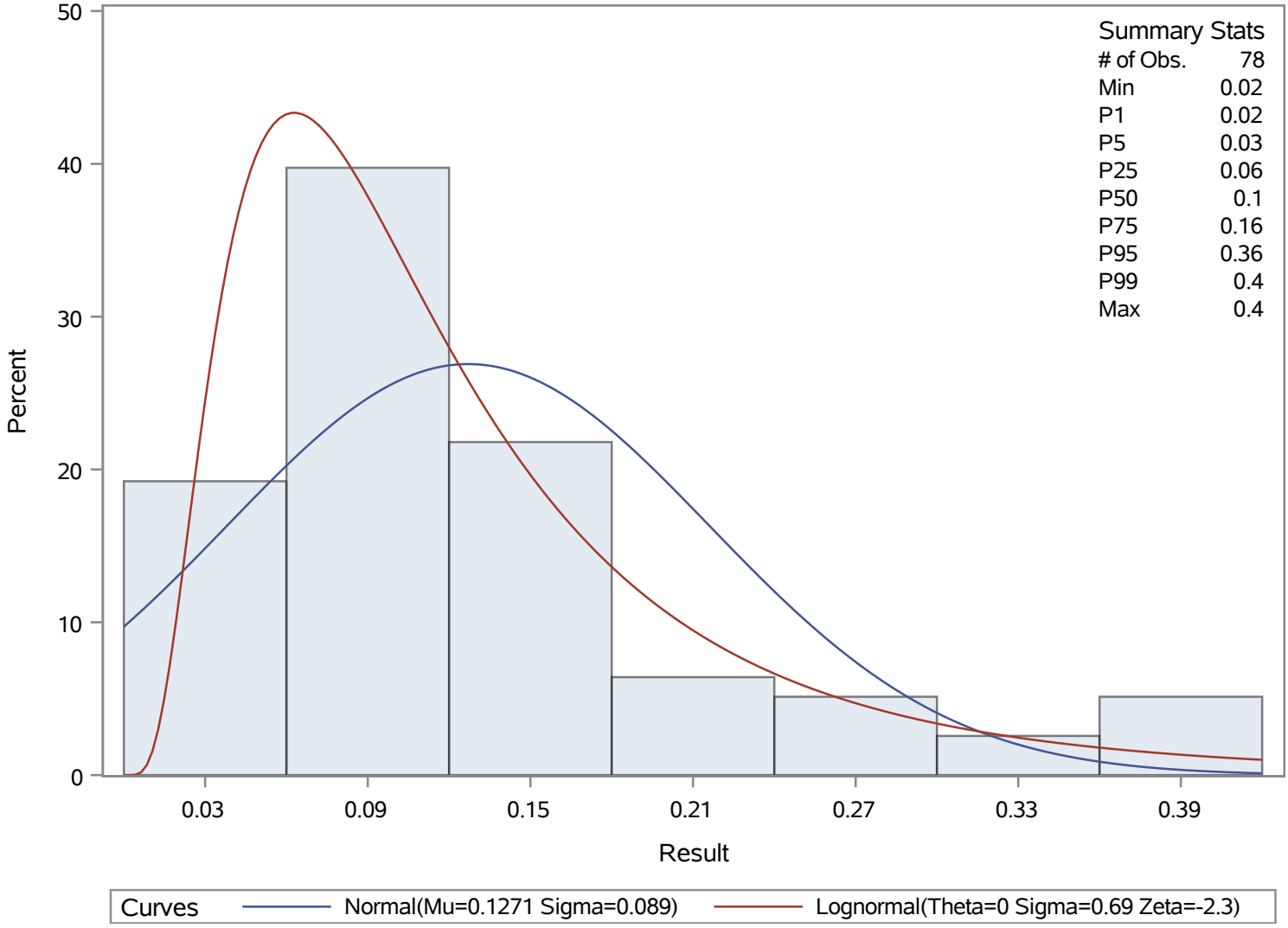
Distribution of result



Little Manatee River
L MANATEE R BR US 301
Total Ammonia as N (mg/L) mg/L
Site ID = 21FLA 24010100

The UNIVARIATE Procedure

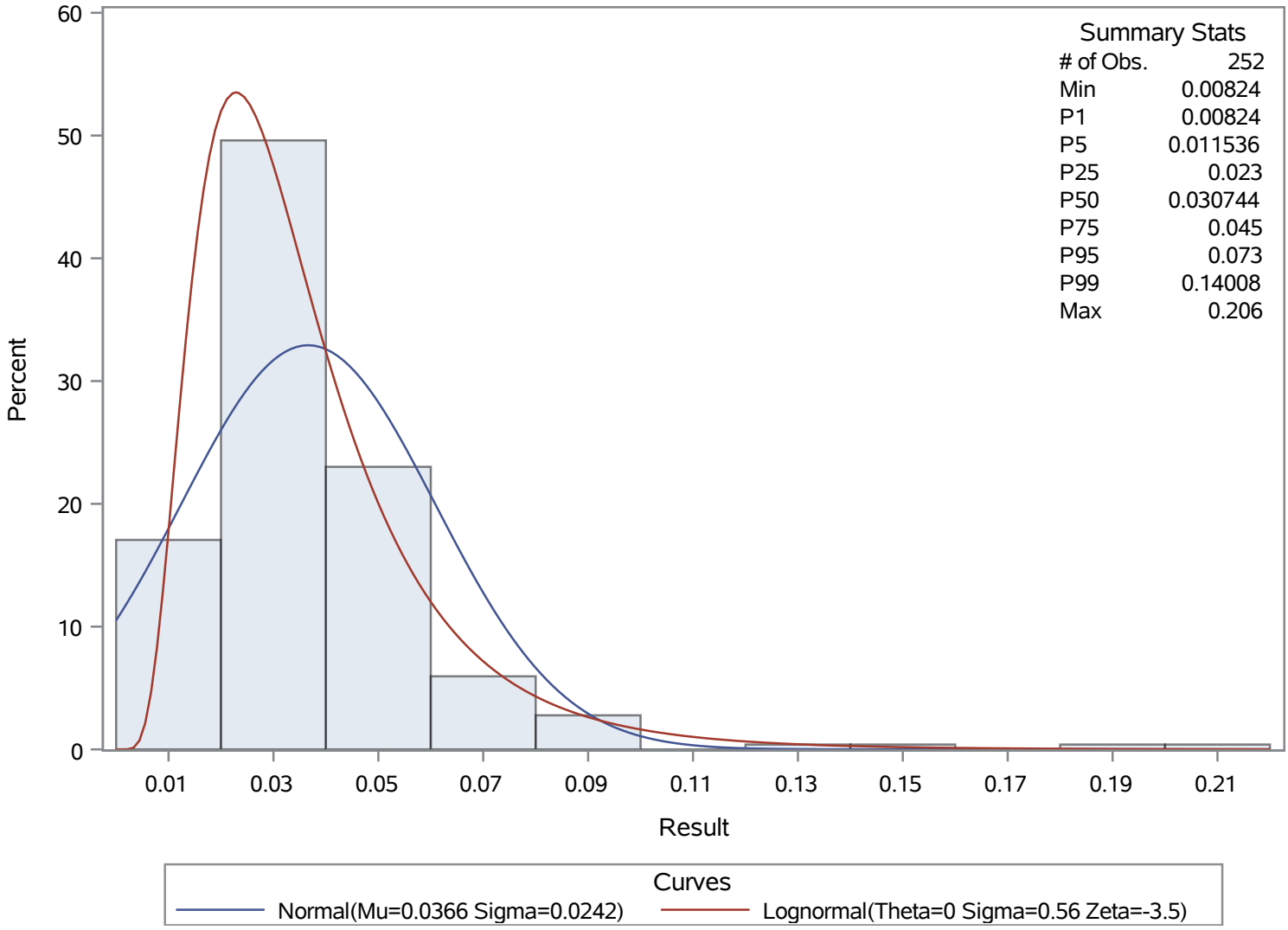
Distribution of result



Little Manatee River
LITTLE MANATEE RIVER AT US HWY 301
Total Ammonia as N (mg/L) mg/L
Site ID = 21FLGW 3555

The UNIVARIATE Procedure

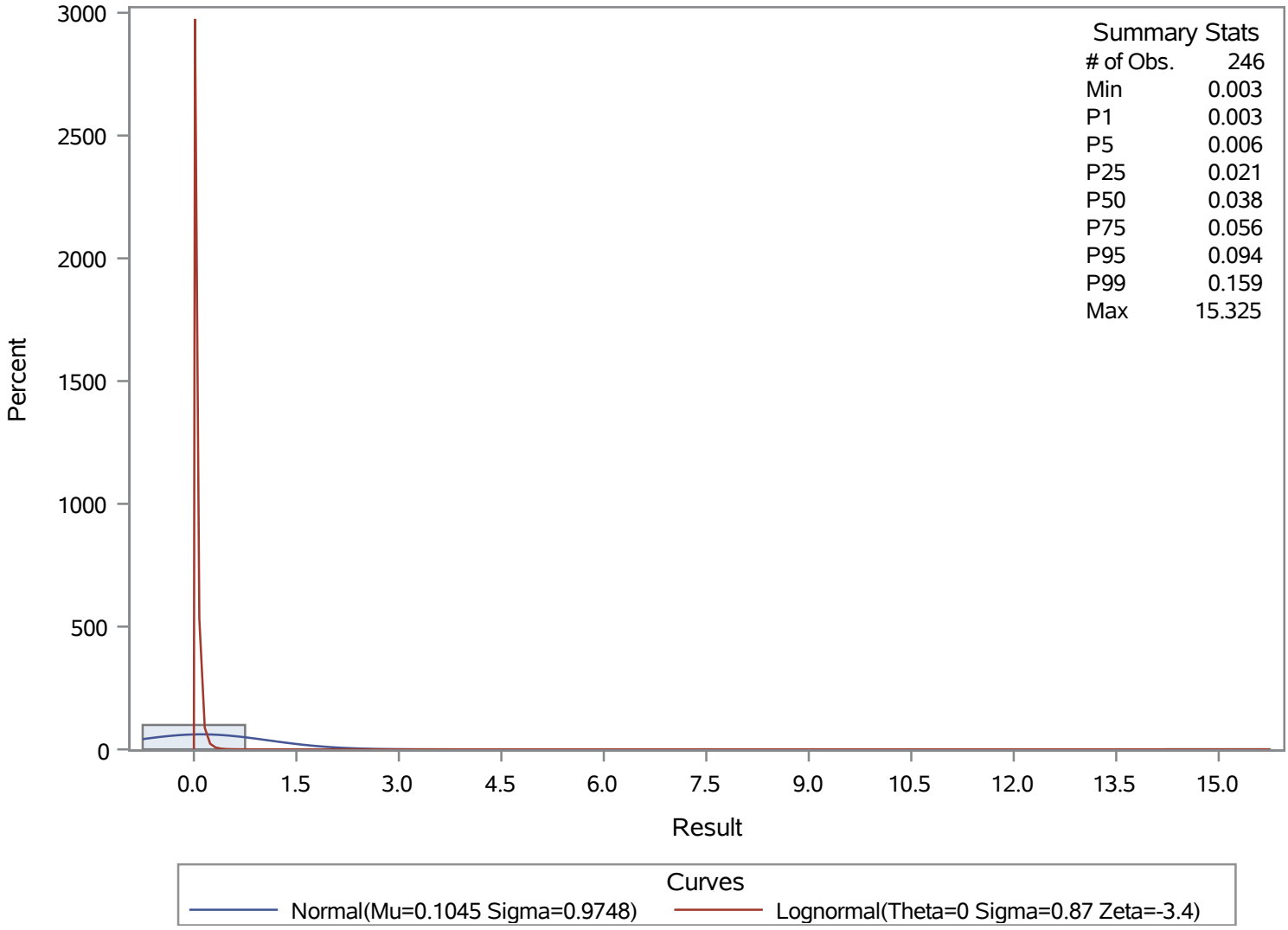
Distribution of result



Little Manatee River
Little Manatee River at US 301 bridge
Total Ammonia as N (mg/L) mg/L
Site ID = 21FLHILL113

The UNIVARIATE Procedure

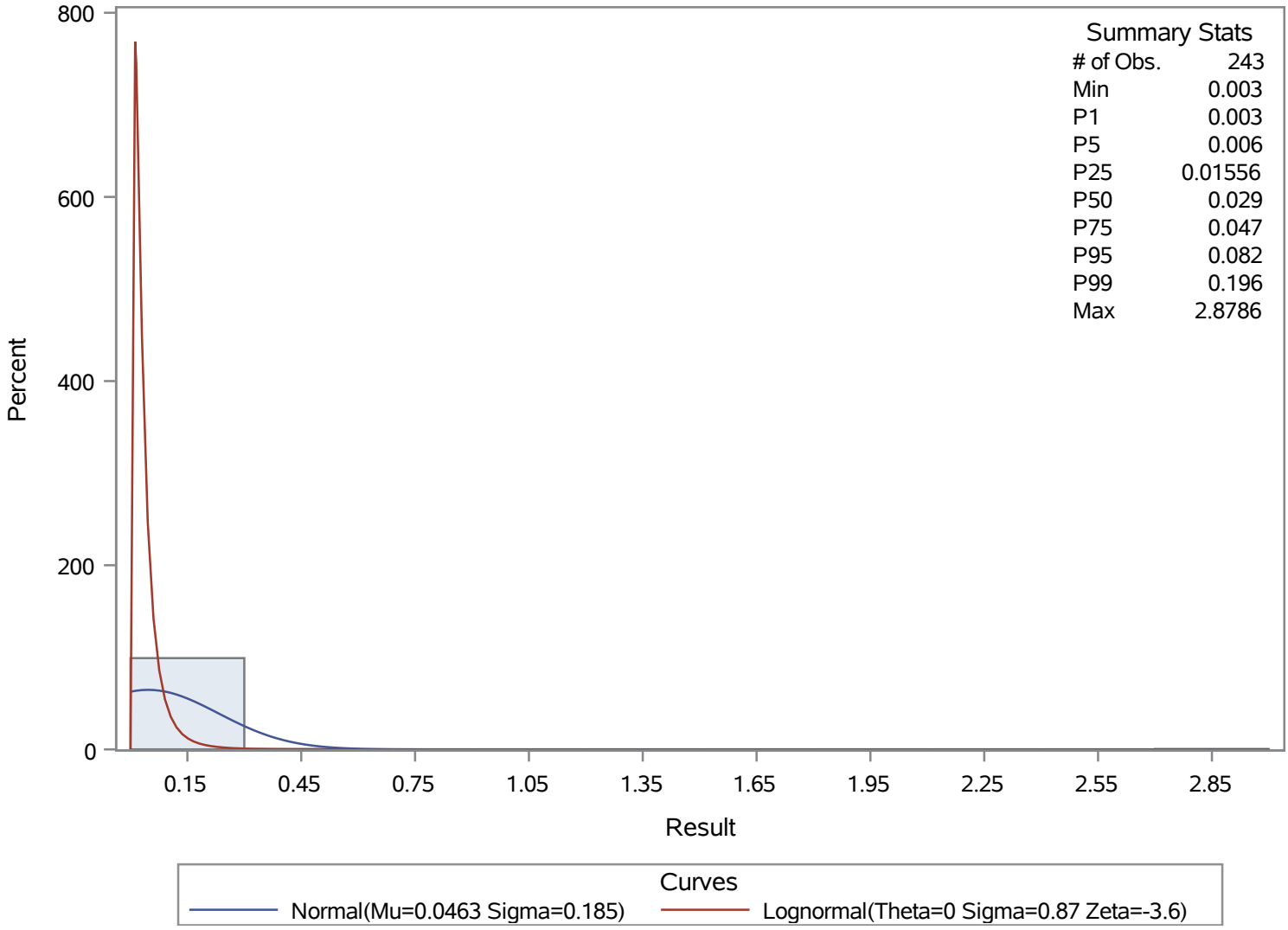
Distribution of result



Little Manatee River
Little Manatee River at SR 674
Total Ammonia as N (mg/L) mg/L
Site ID = 21FLHILL129

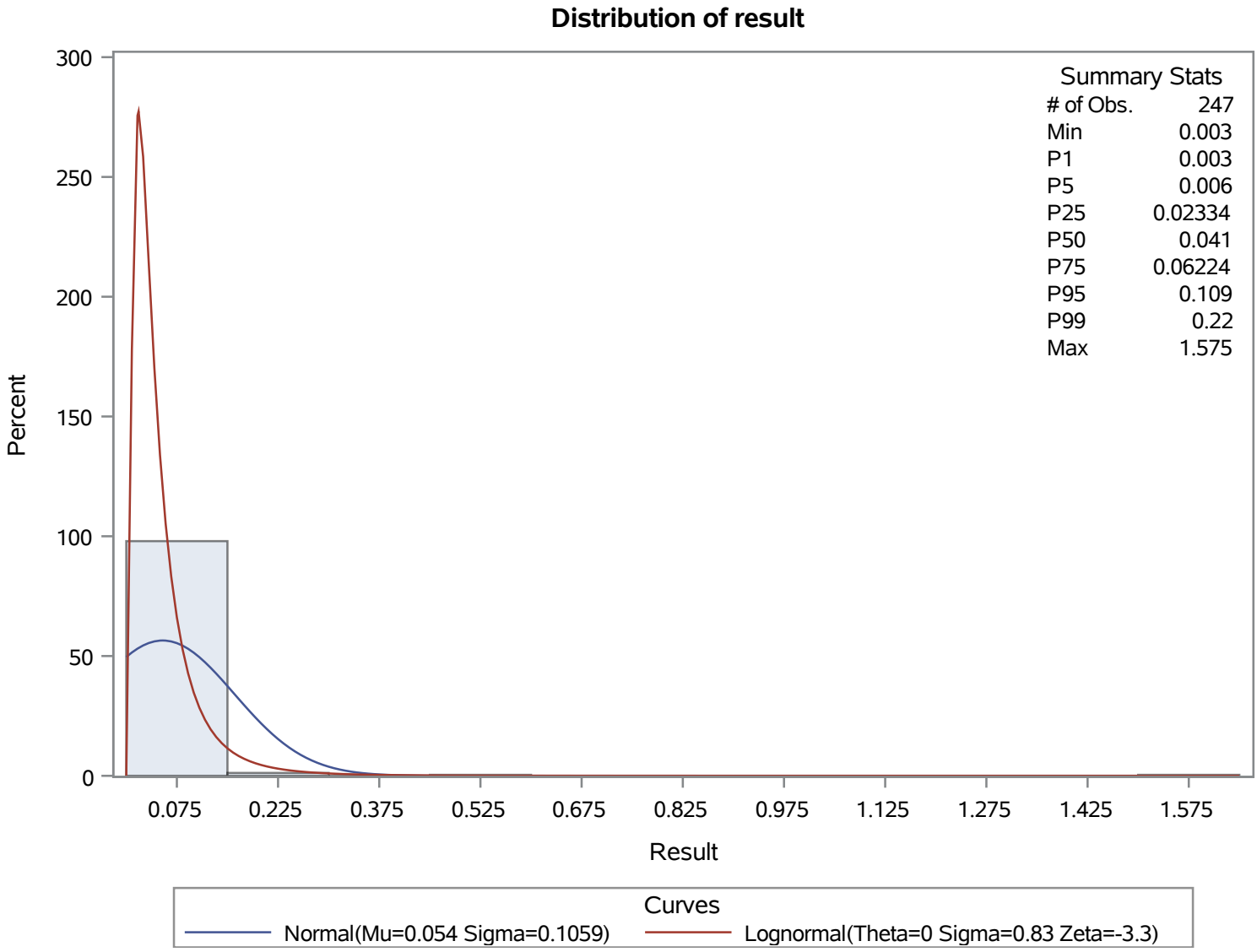
The UNIVARIATE Procedure

Distribution of result



Little Manatee River
Little Manatee River at CR 579
Total Ammonia as N (mg/L) mg/L
Site ID = 21FLHILL140

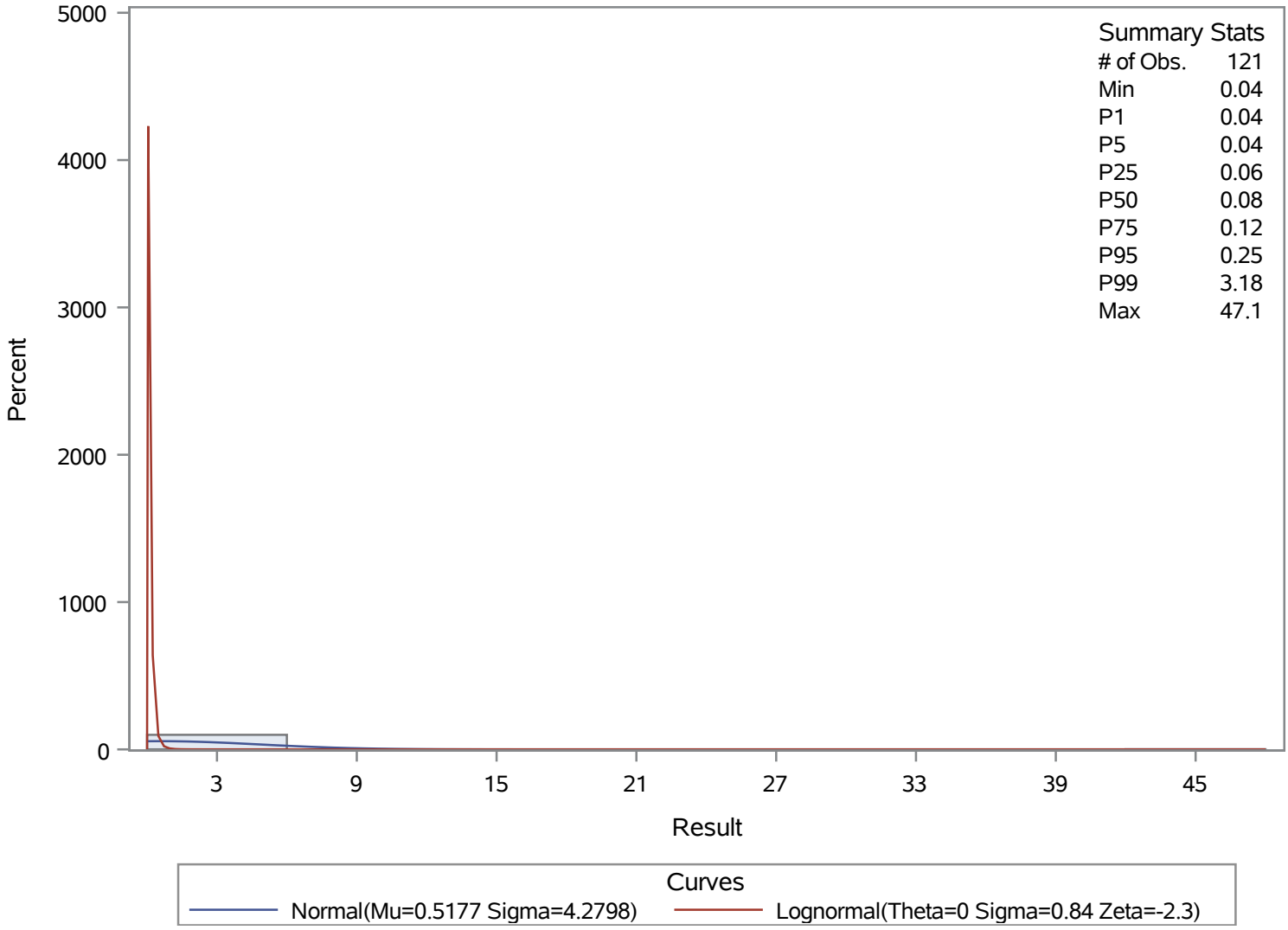
The UNIVARIATE Procedure



Little Manatee River
LITTLE MANATEE R AT CR579
Total Ammonia as N (mg/L) mg/L
Site ID = 21FLHILL24010013

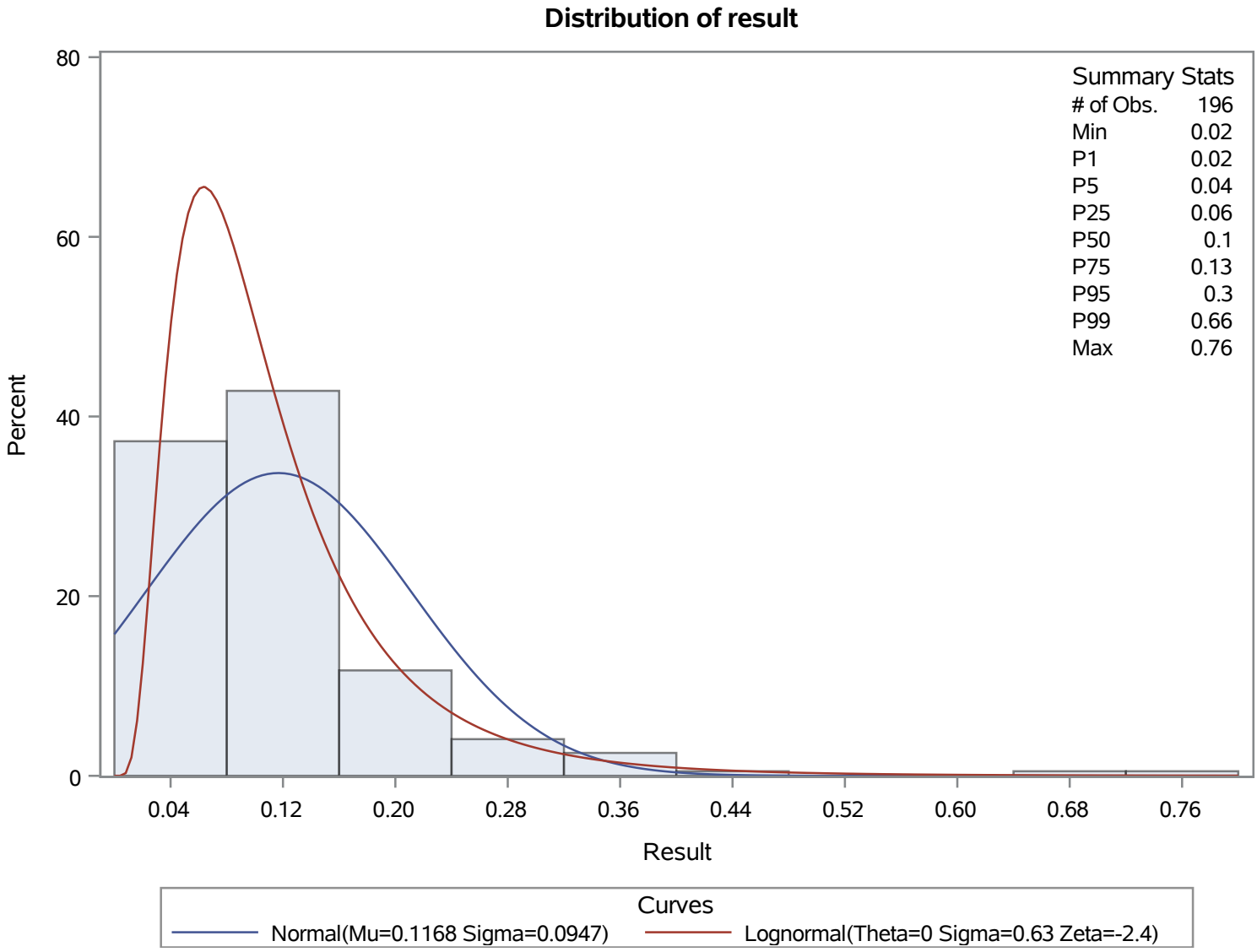
The UNIVARIATE Procedure

Distribution of result



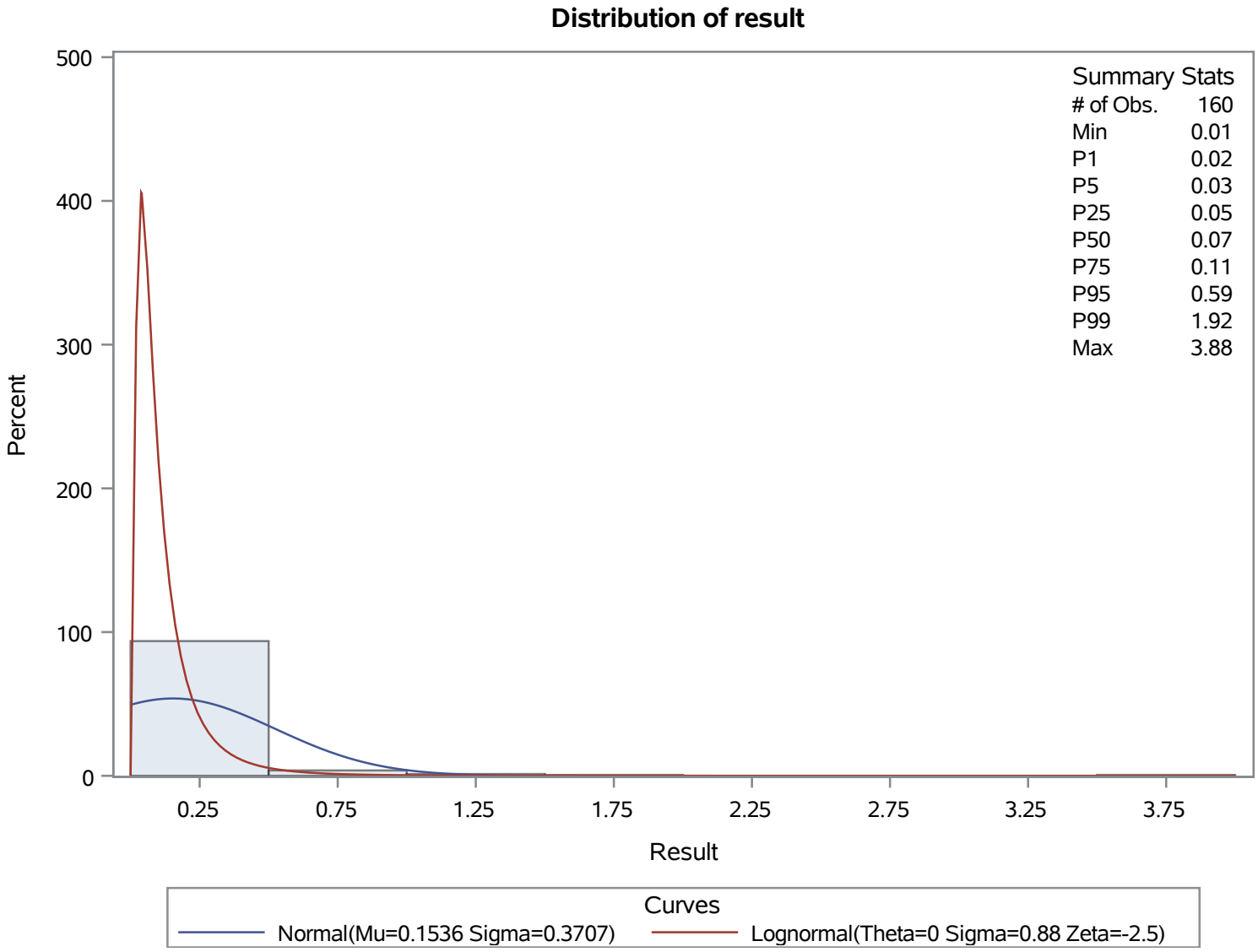
Little Manatee River
L MANATEE R BR US 301
Total Ammonia as N (mg/L) mg/L
Site ID = 21FLHILL24010100

The UNIVARIATE Procedure



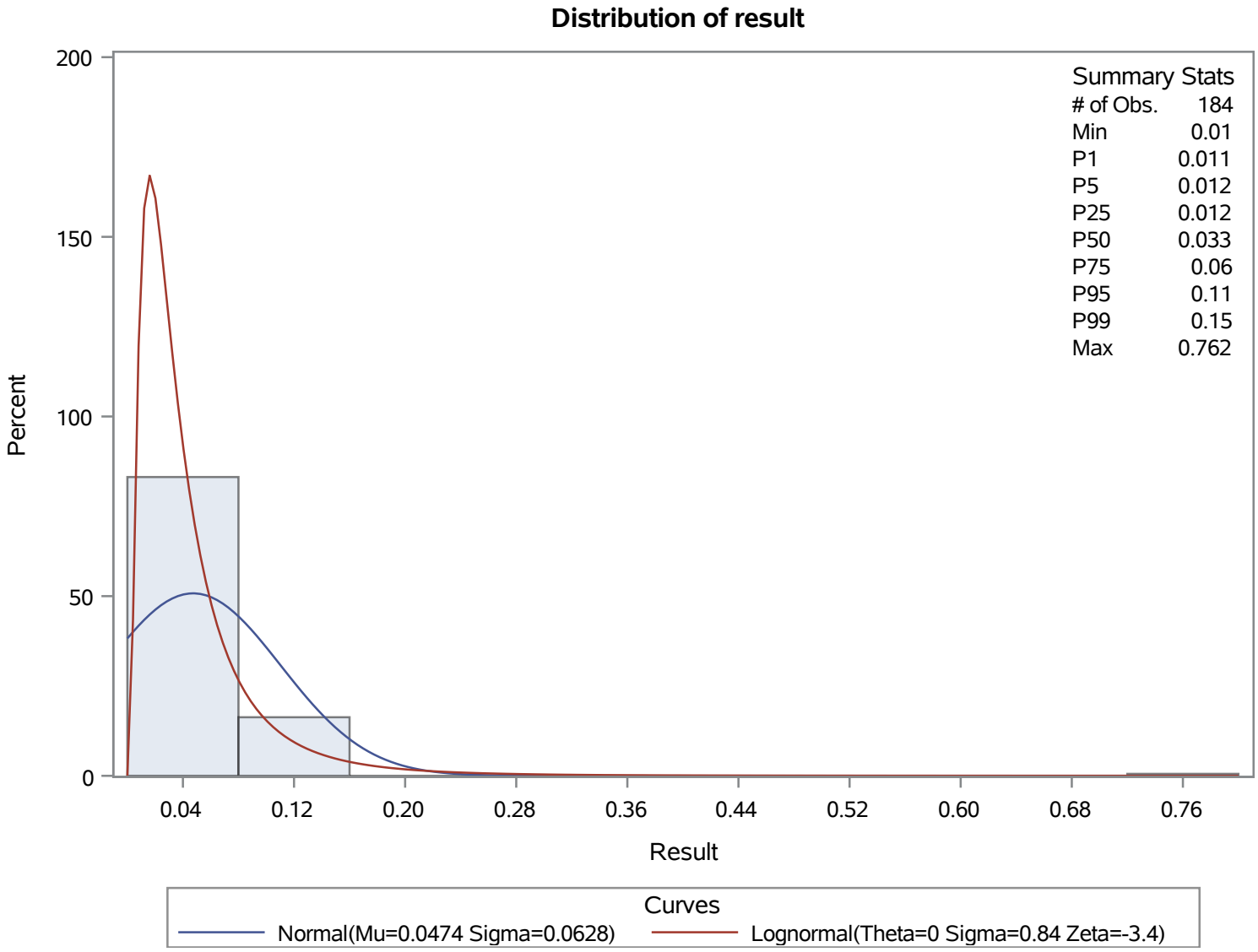
Little Manatee River
LITTLE MANATEE R AT SR #674
Total Ammonia as N (mg/L) mg/L
Site ID = 21FLHILL24010110

The UNIVARIATE Procedure



Little Manatee River
D1
Total Ammonia as N (mg/L) mg/L
Site ID = 21FLMANAD1

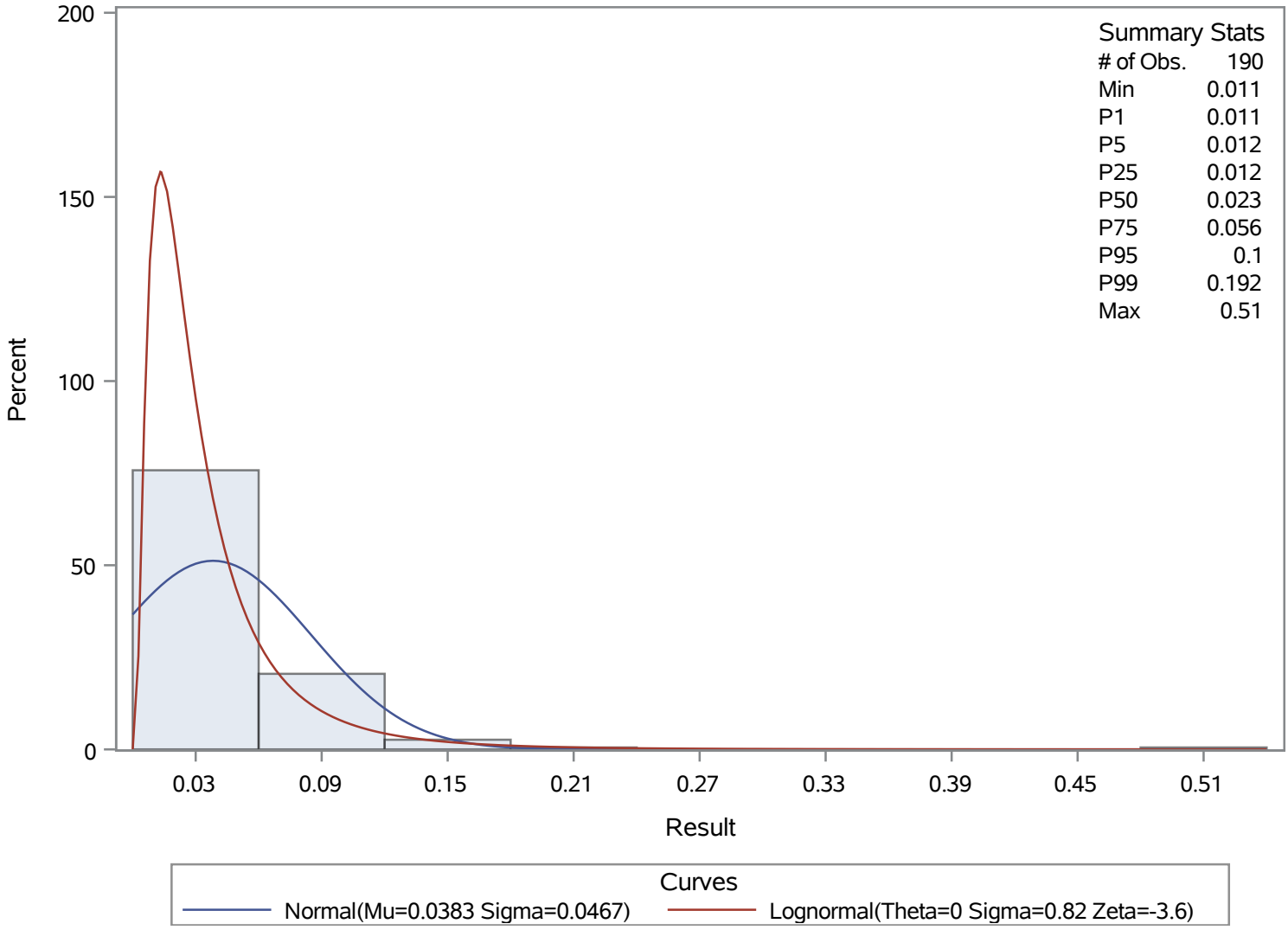
The UNIVARIATE Procedure



Little Manatee River
D3
Total Ammonia as N (mg/L) mg/L
Site ID = 21FLMANAD3

The UNIVARIATE Procedure

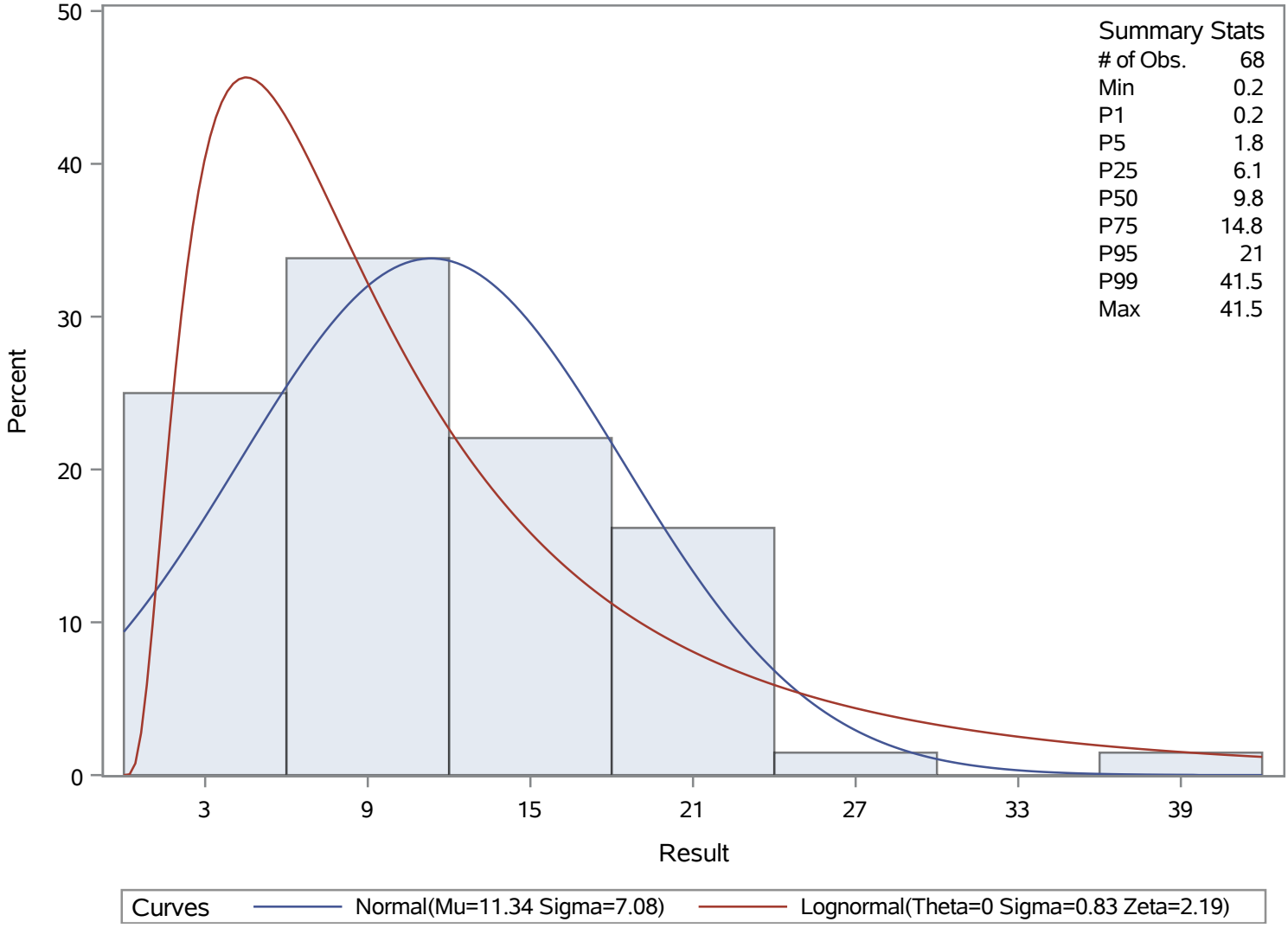
Distribution of result



Little Manatee River
L MANATEE R BR US 301
Total Organic Carbon as C (mg/L) mg/L
Site ID = 21FLA 24010100

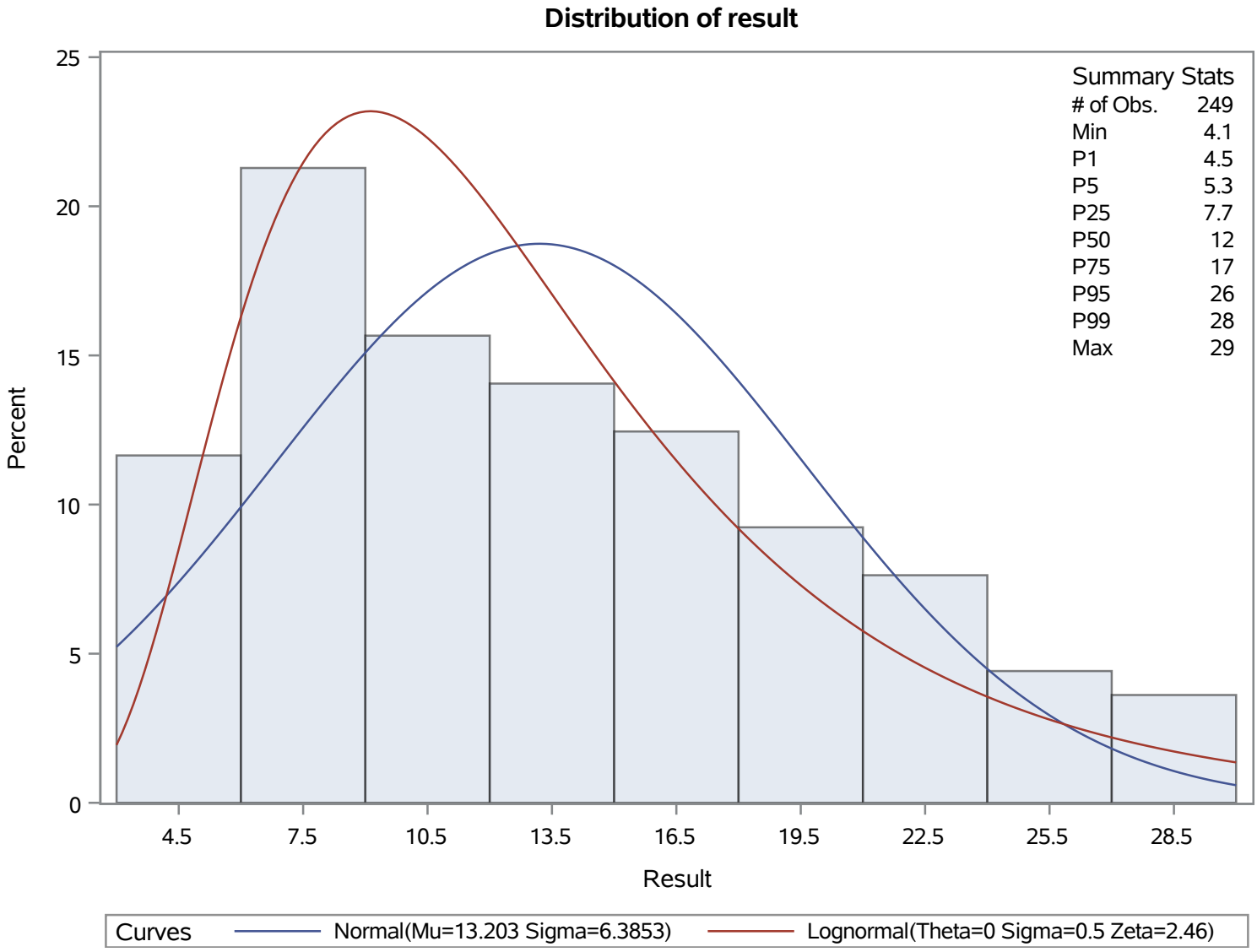
The UNIVARIATE Procedure

Distribution of result



Little Manatee River
LITTLE MANATEE RIVER AT US HWY 301
Total Organic Carbon as C (mg/L) mg/L
Site ID = 21FLGW 3555

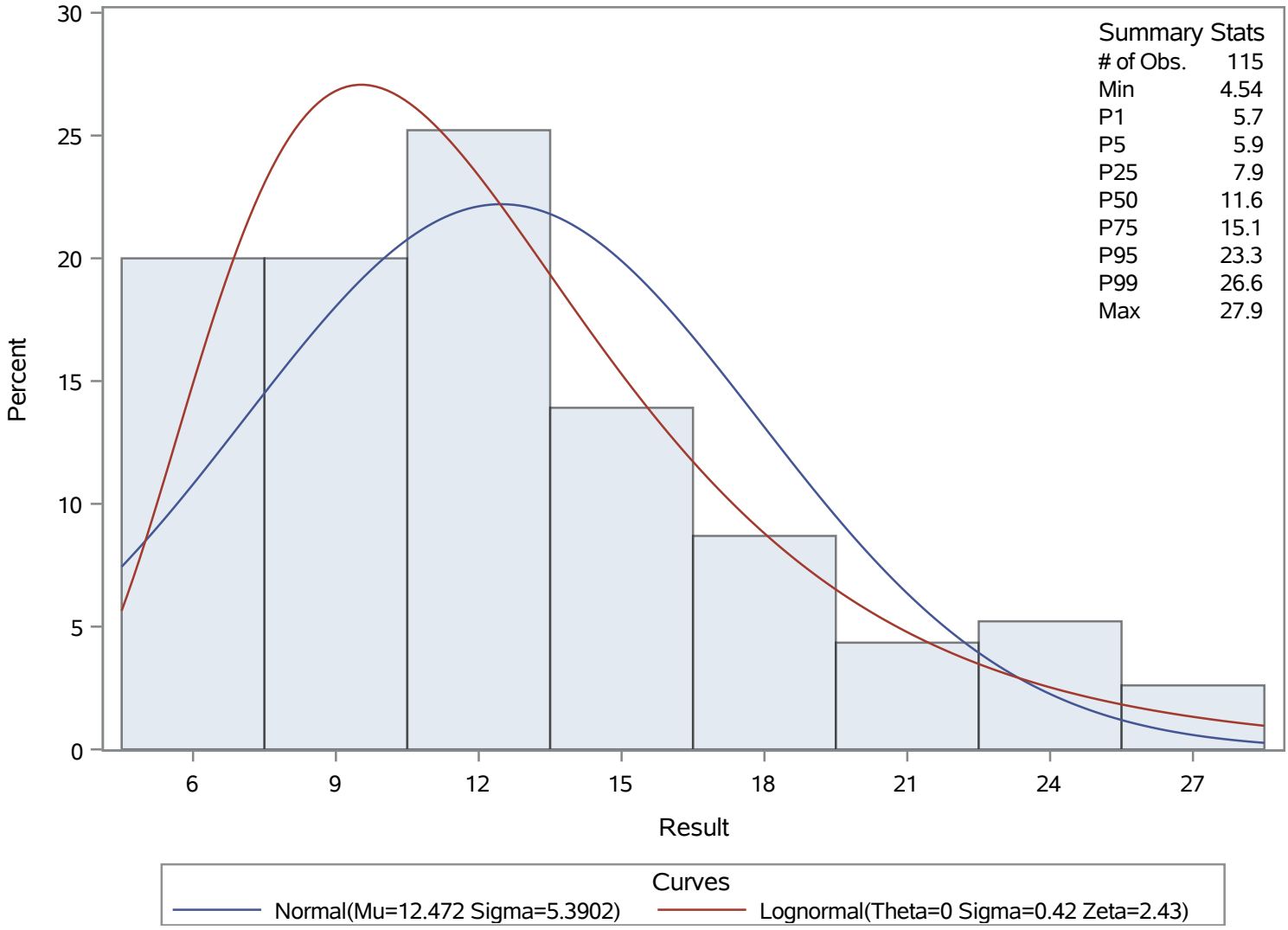
The UNIVARIATE Procedure



Little Manatee River
Little Manatee River at US 301 bridge
Total Organic Carbon as C (mg/L) mg/L
Site ID = 21FLHILL113

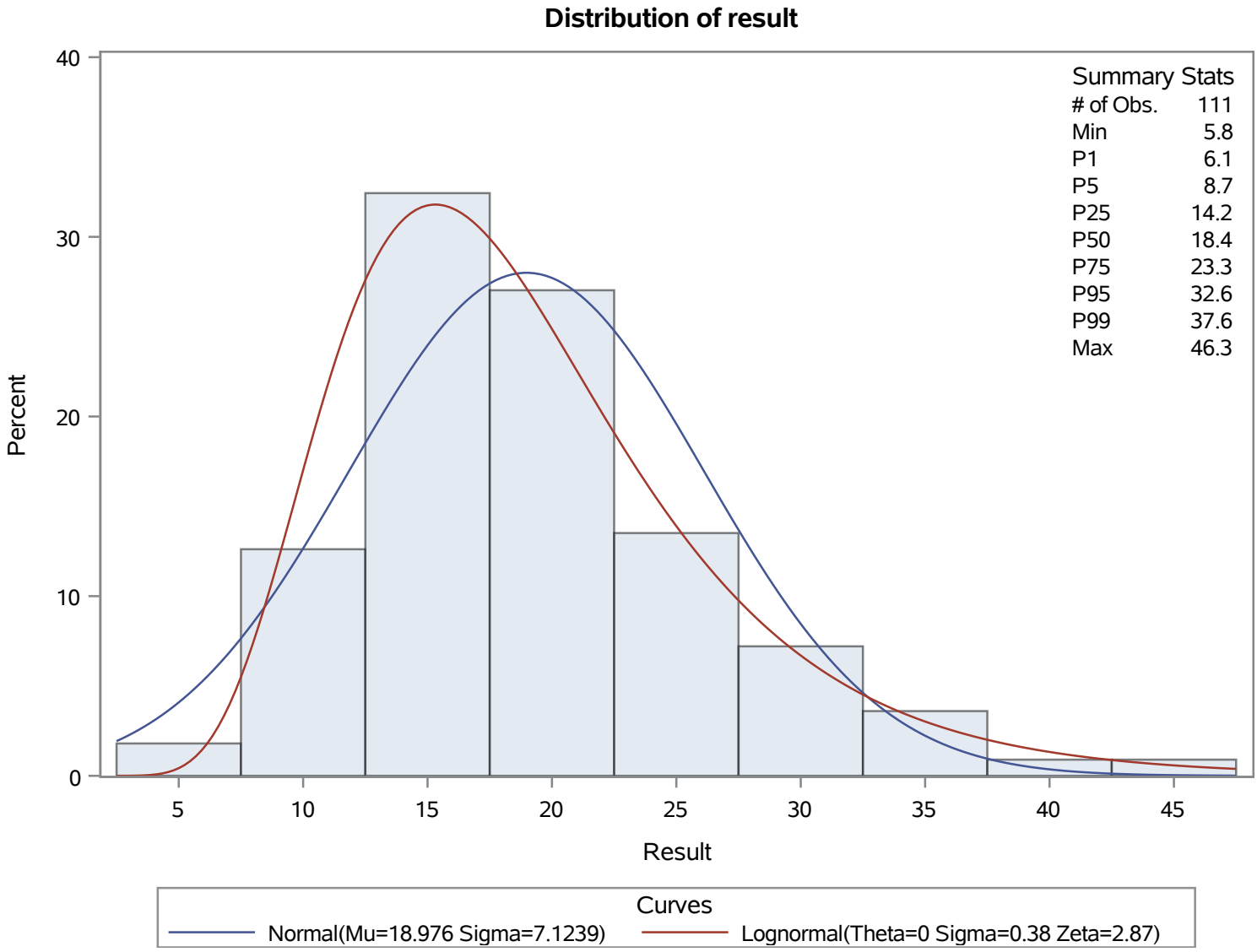
The UNIVARIATE Procedure

Distribution of result



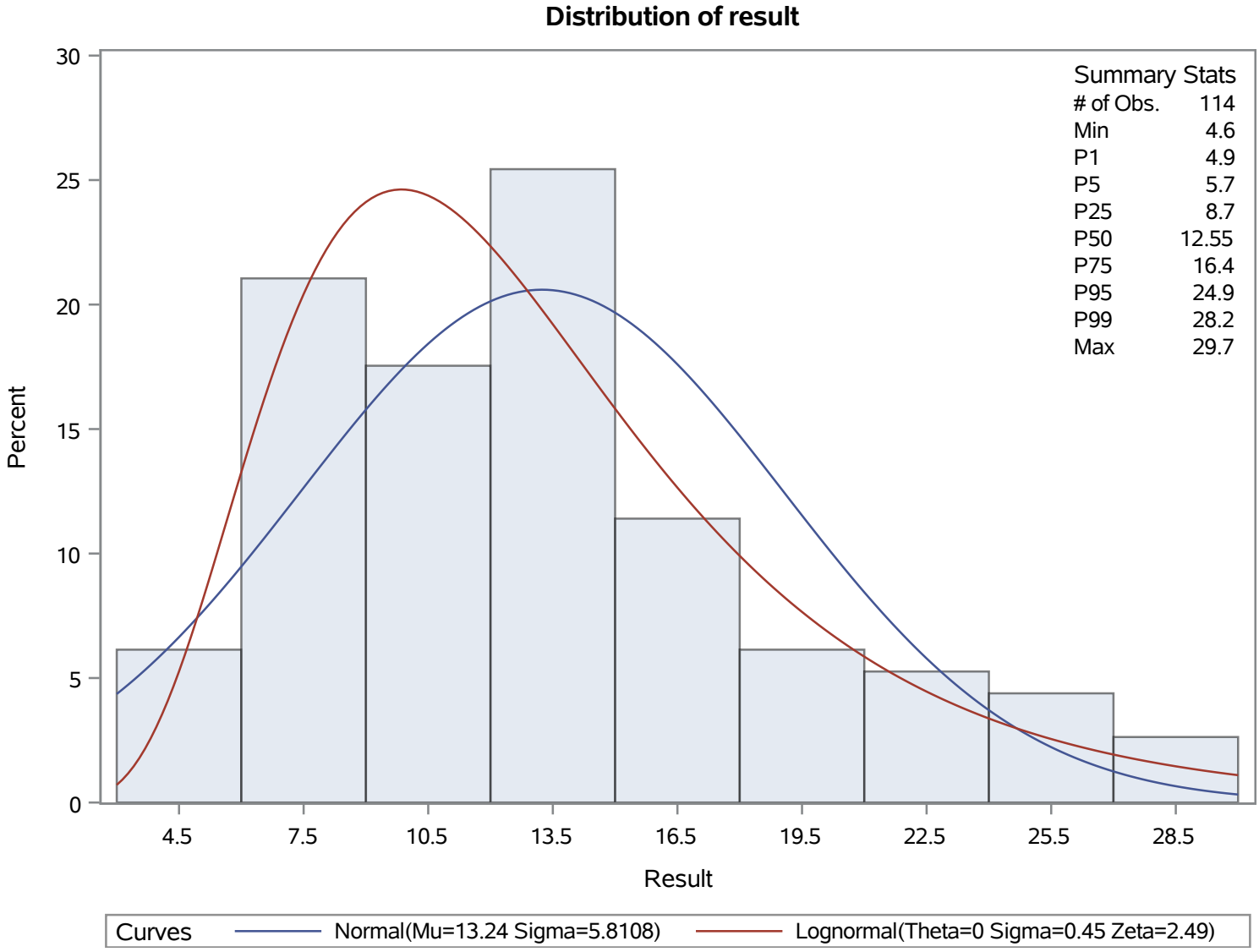
Little Manatee River
Little Manatee River at SR 674
Total Organic Carbon as C (mg/L) mg/L
Site ID = 21FLHILL129

The UNIVARIATE Procedure



Little Manatee River
Little Manatee River at CR 579
Total Organic Carbon as C (mg/L) mg/L
Site ID = 21FLHILL140

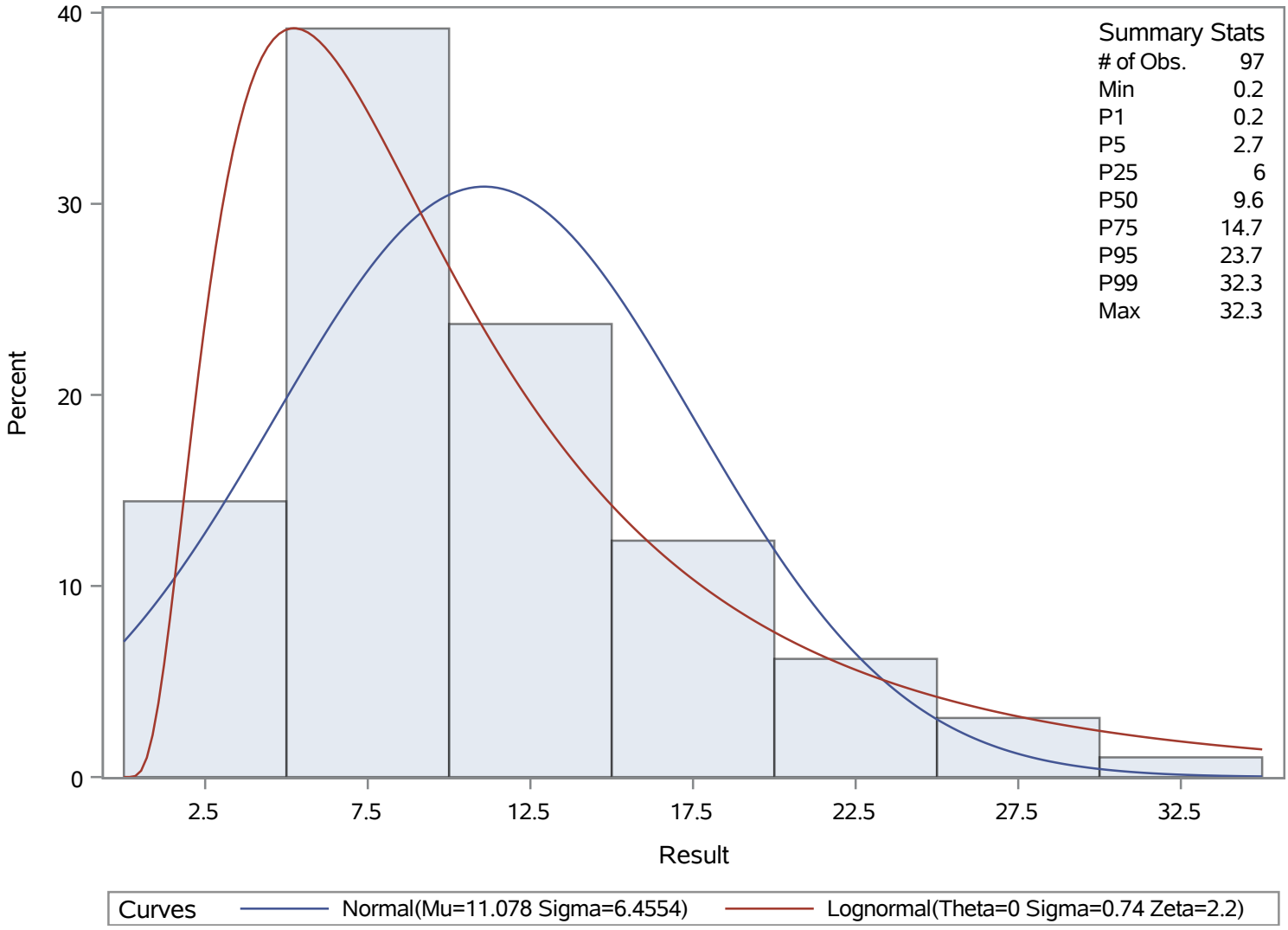
The UNIVARIATE Procedure



Little Manatee River
L MANATEE R BR US 301
Total Organic Carbon as C (mg/L) mg/L
Site ID = 21FLHILL24010100

The UNIVARIATE Procedure

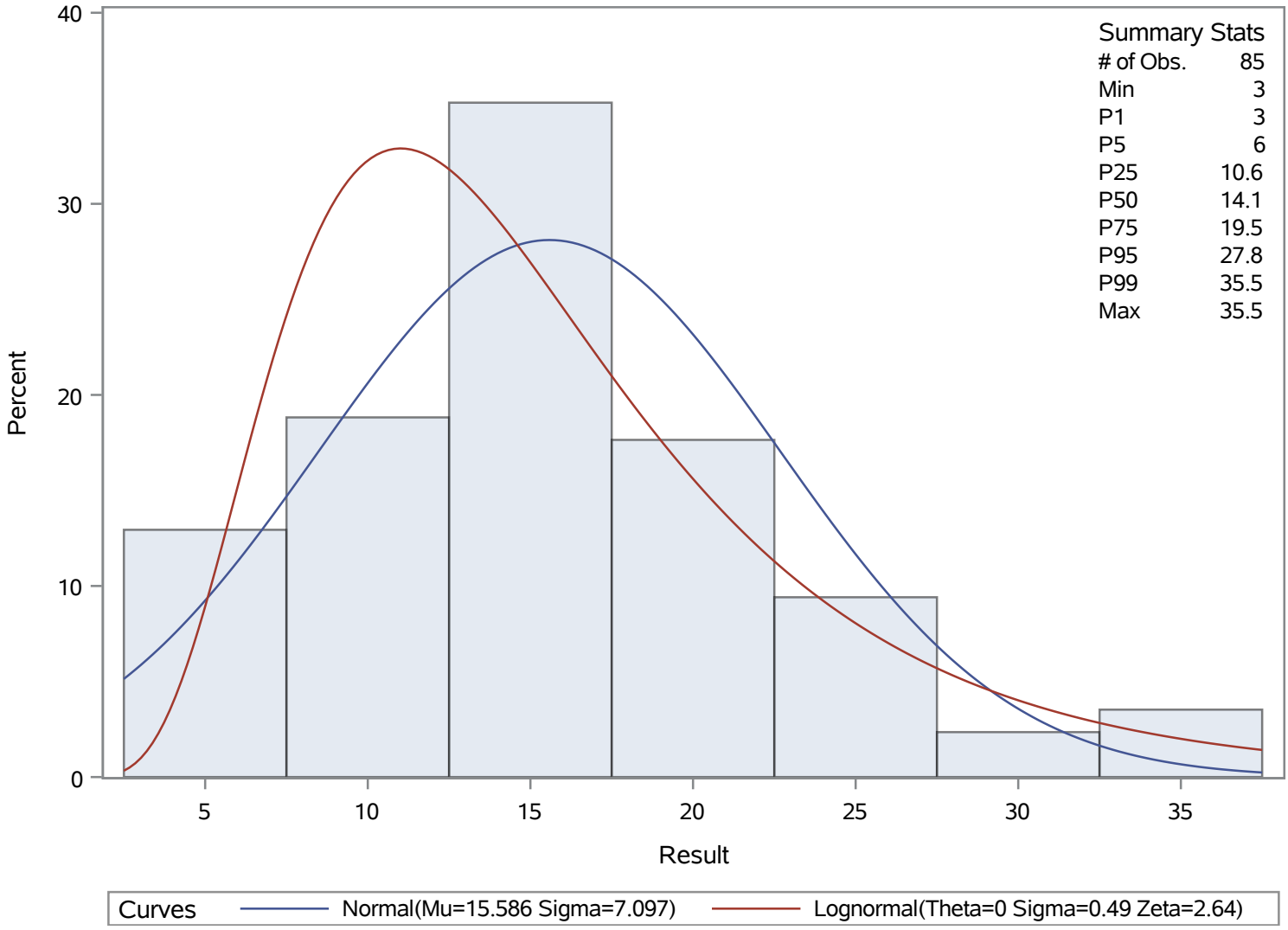
Distribution of result



Little Manatee River
LITTLE MANATEE R AT SR #674
Total Organic Carbon as C (mg/L) mg/L
Site ID = 21FLHILL24010110

The UNIVARIATE Procedure

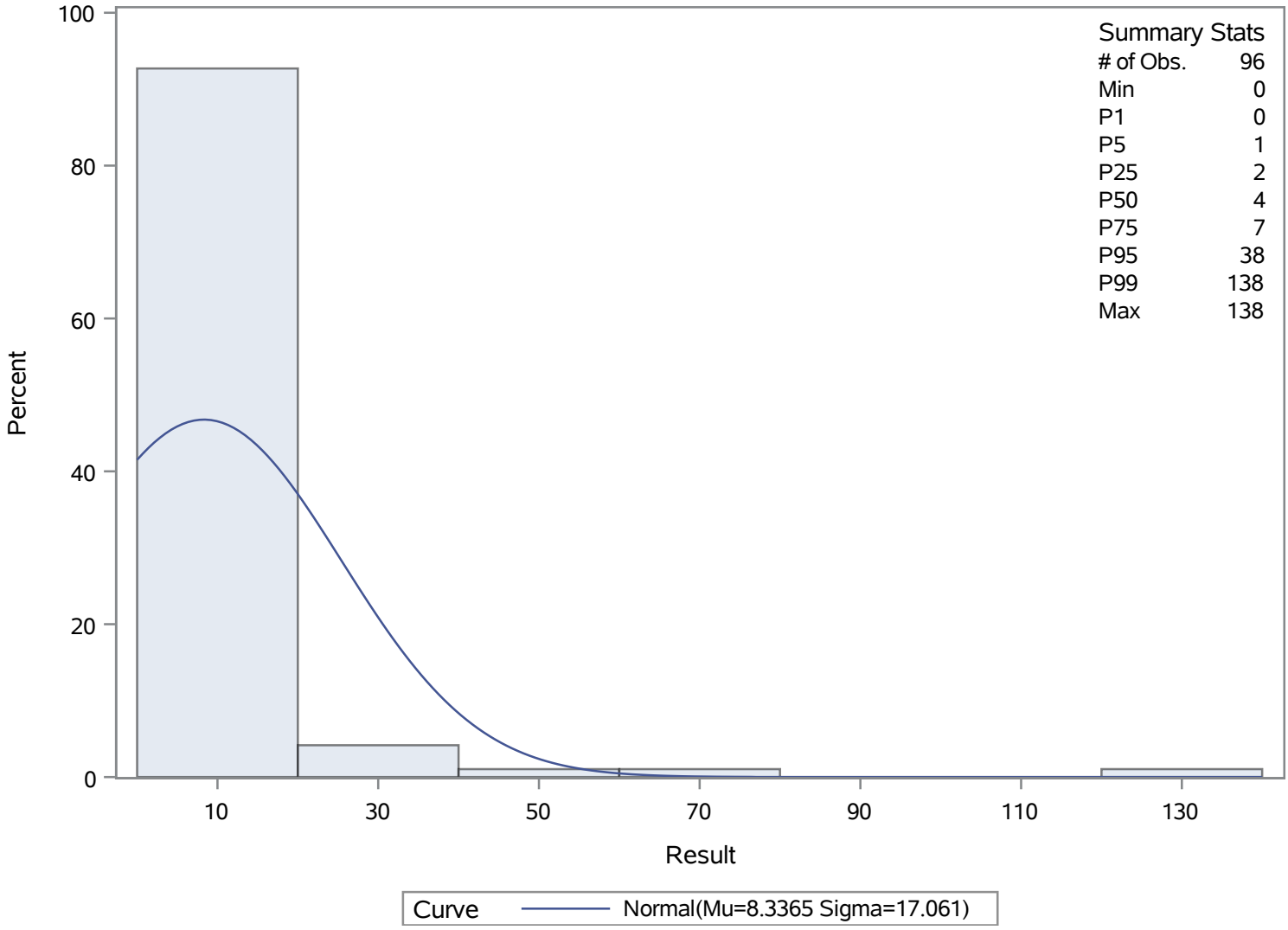
Distribution of result



Little Manatee River
L MANATEE R BR US 301
Total Suspended Solids (TSS), mg/L mg/L
Site ID = 21FLA 24010100

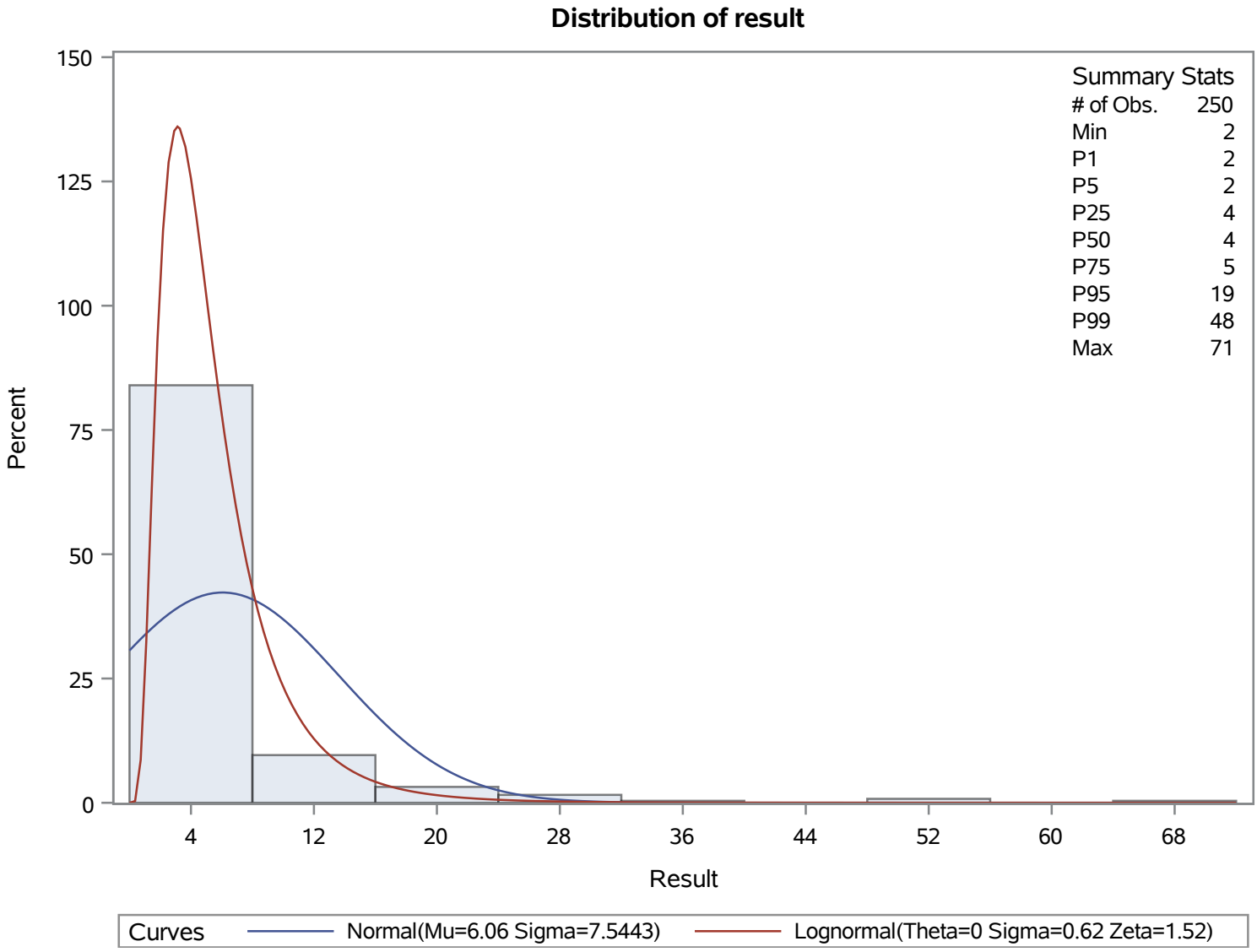
The UNIVARIATE Procedure

Distribution of result



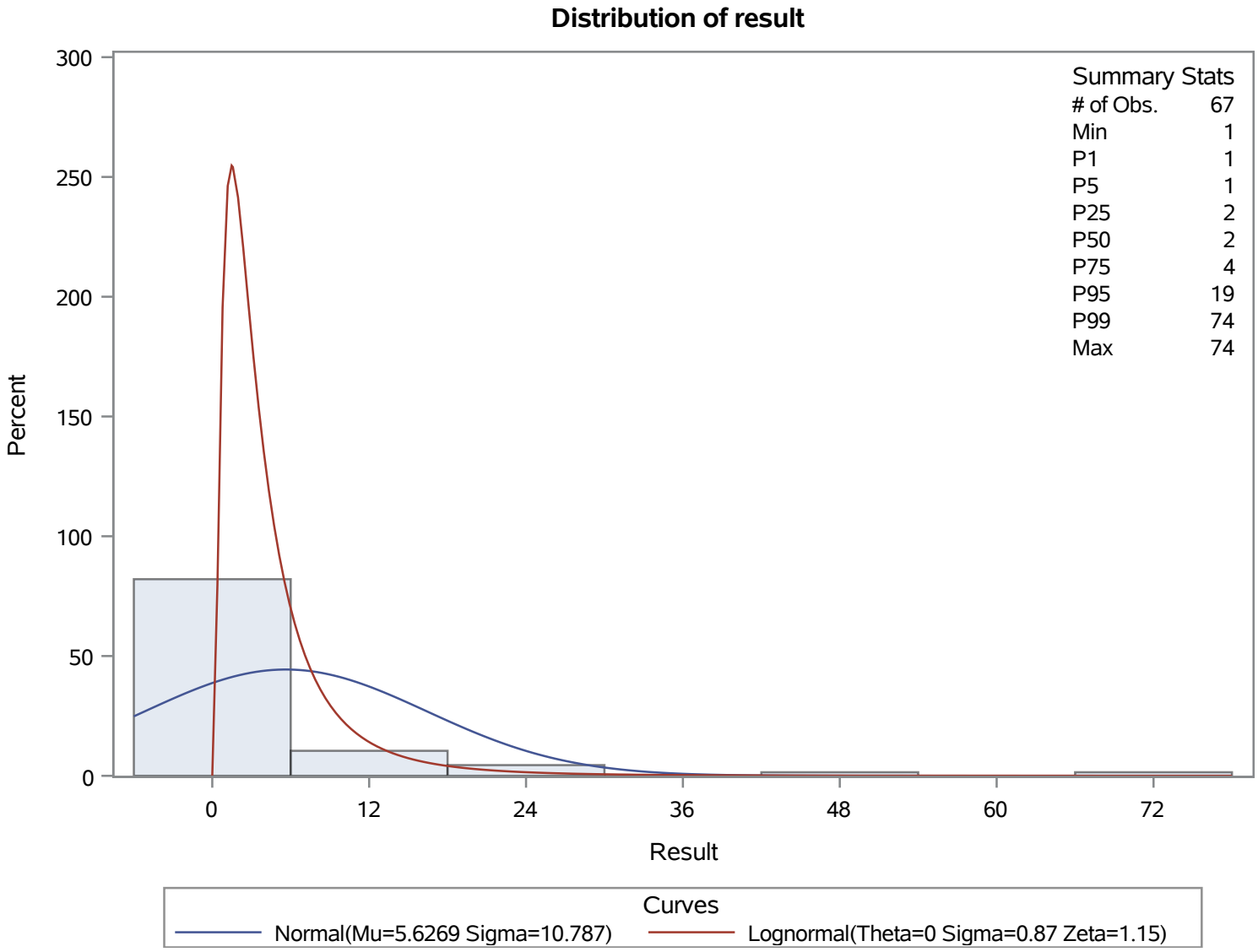
Little Manatee River
LITTLE MANATEE RIVER AT US HWY 301
Total Suspended Solids (TSS), mg/L mg/L
Site ID = 21FLGW 3555

The UNIVARIATE Procedure



Little Manatee River
Little Manatee River at US 301 bridge
Total Suspended Solids (TSS), mg/L mg/L
Site ID = 21FLHILL113

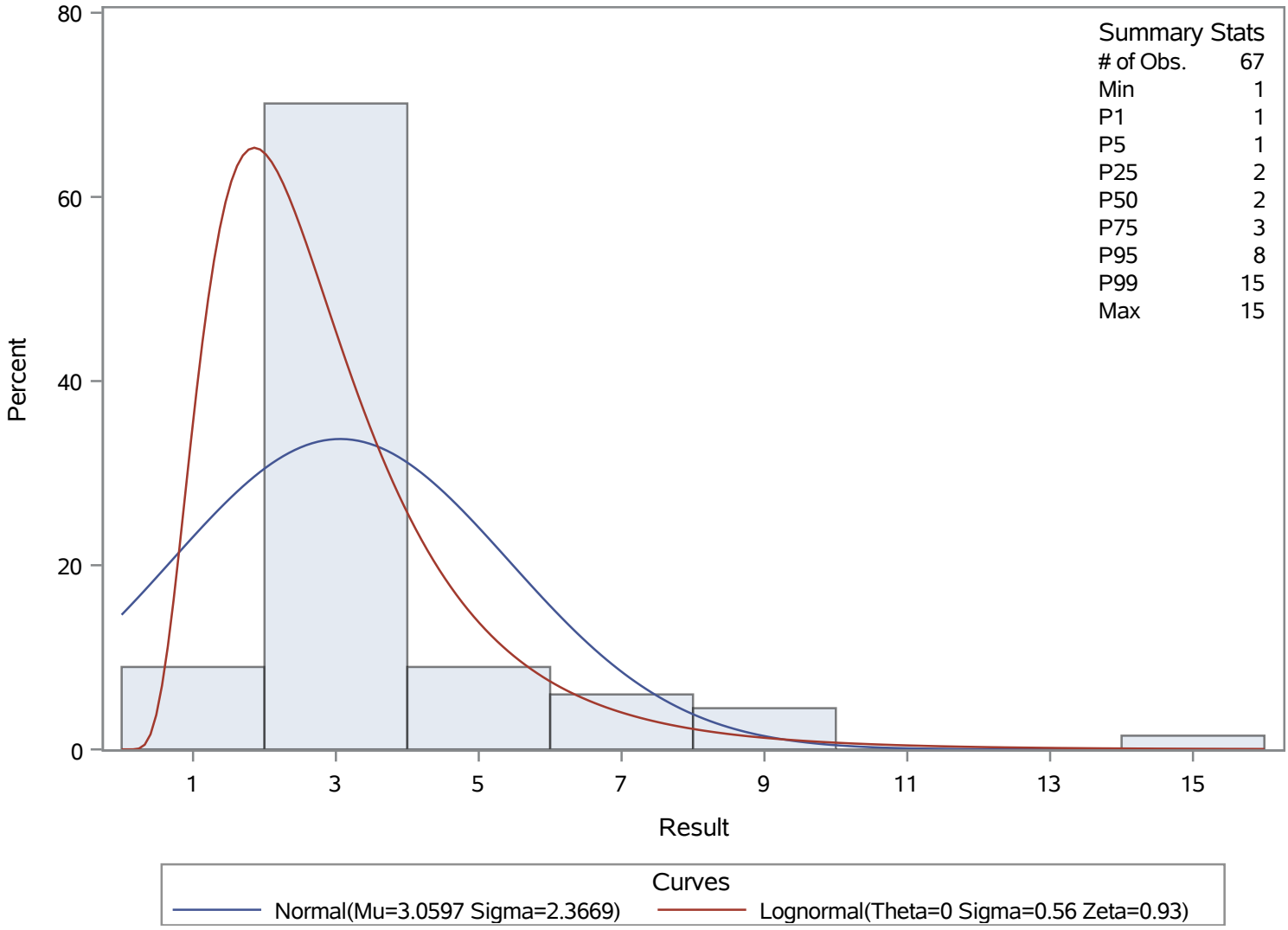
The UNIVARIATE Procedure



Little Manatee River
Little Manatee River at SR 674
Total Suspended Solids (TSS), mg/L mg/L
Site ID = 21FLHILL129

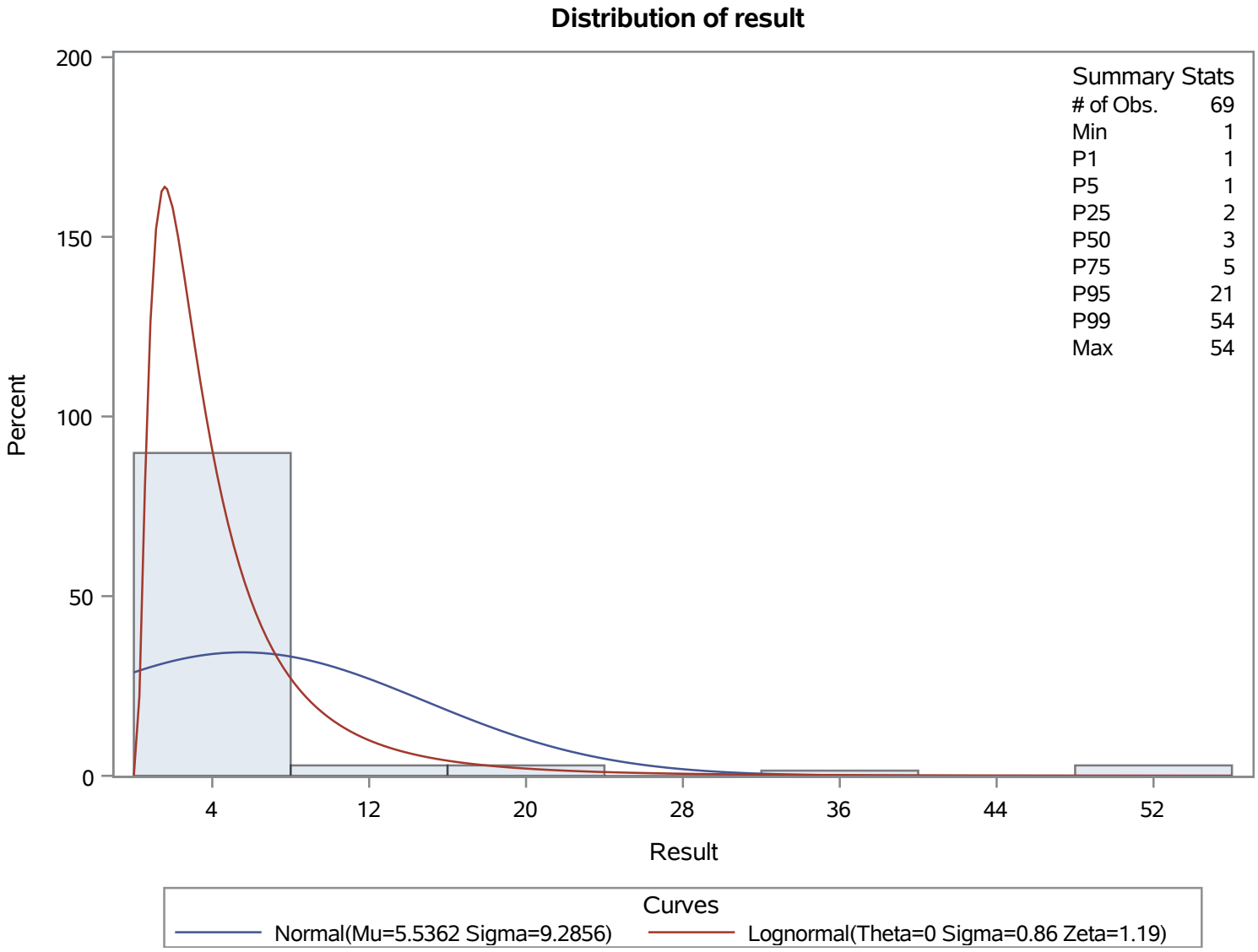
The UNIVARIATE Procedure

Distribution of result



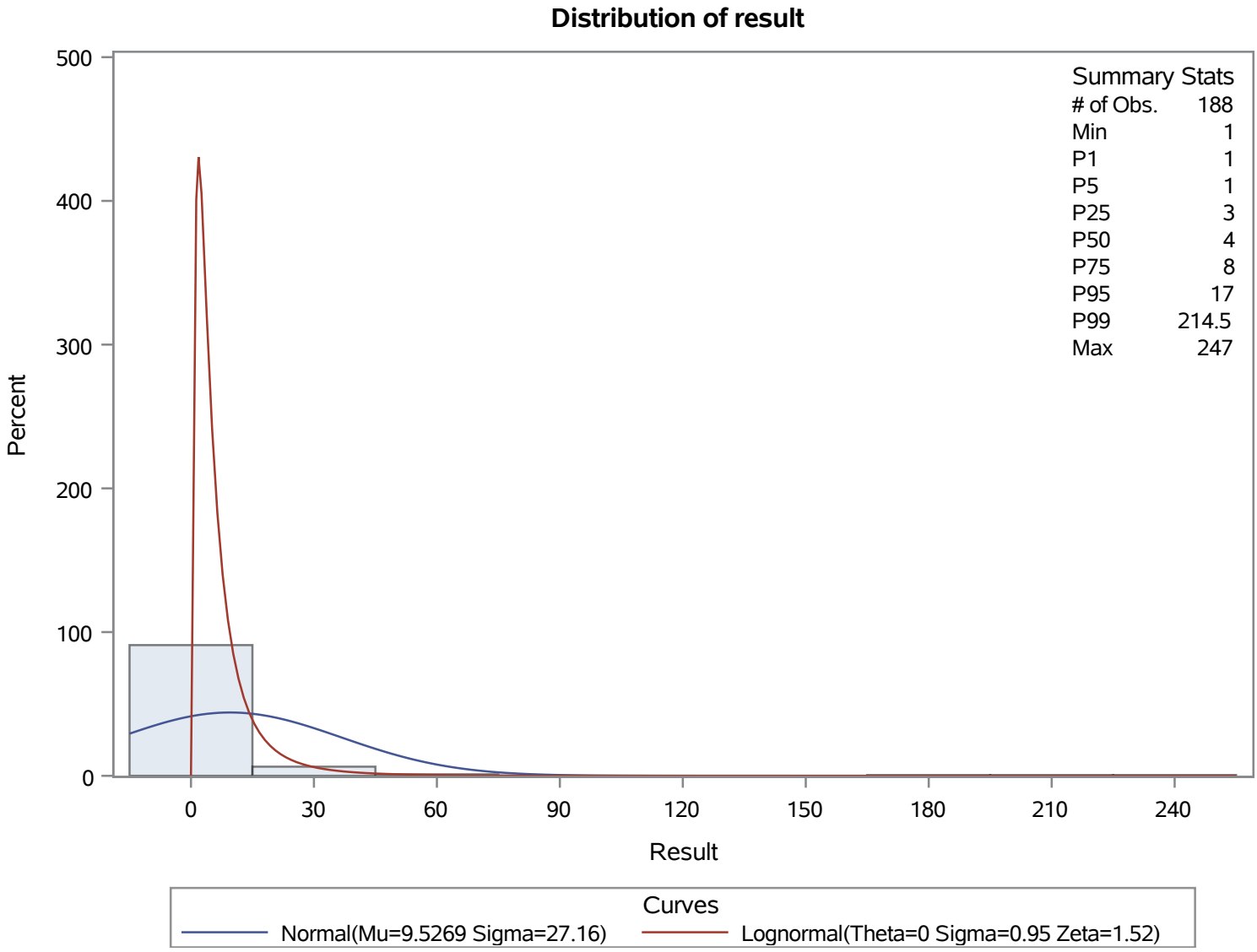
Little Manatee River
Little Manatee River at CR 579
Total Suspended Solids (TSS), mg/L mg/L
Site ID = 21FLHILL140

The UNIVARIATE Procedure



Little Manatee River
LITTLE MANATEE R AT CR579
Total Suspended Solids (TSS), mg/L mg/L
Site ID = 21FLHILL24010013

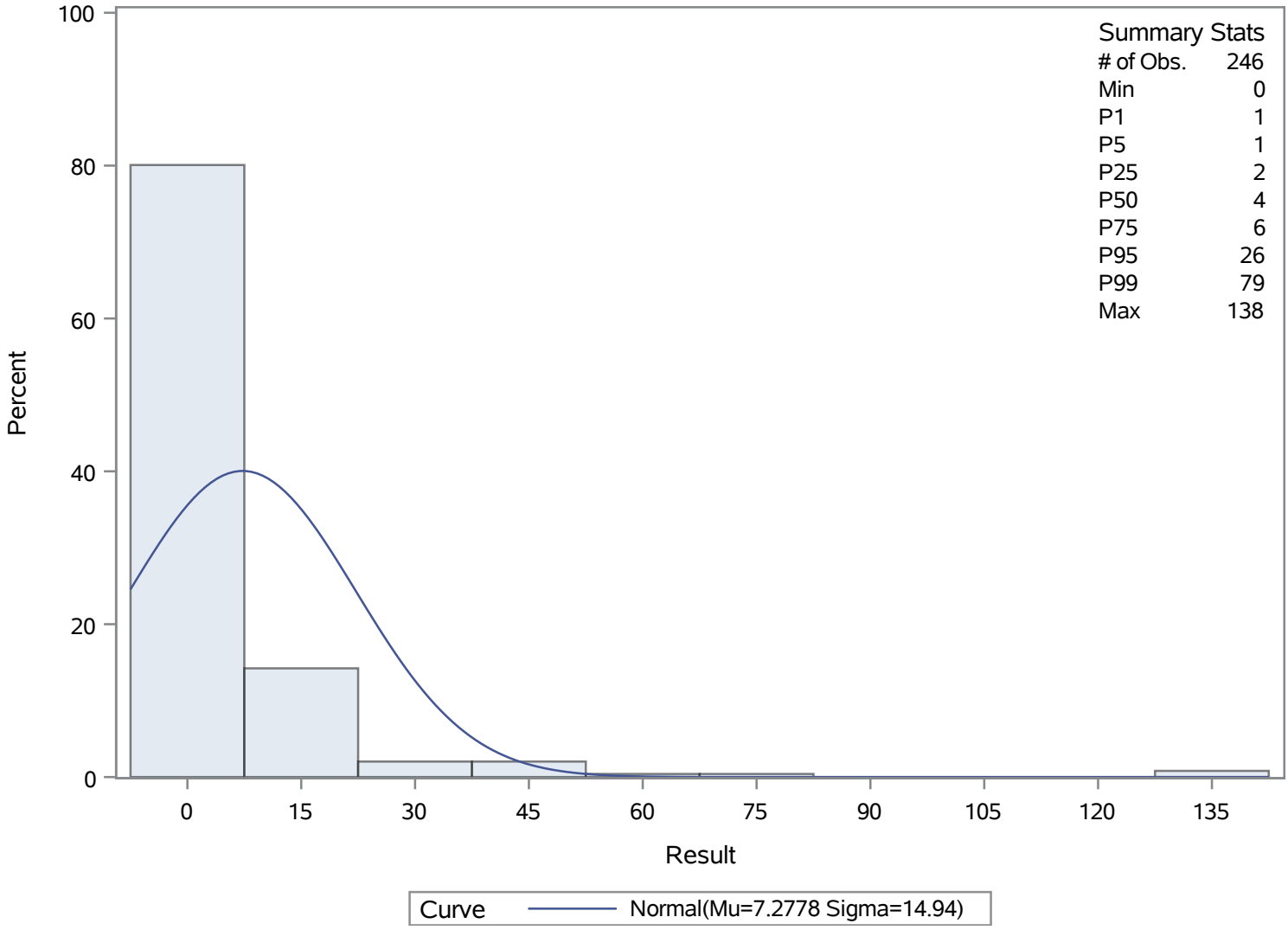
The UNIVARIATE Procedure



Little Manatee River
L MANATEE R BR US 301
Total Suspended Solids (TSS), mg/L mg/L
Site ID = 21FLHILL24010100

The UNIVARIATE Procedure

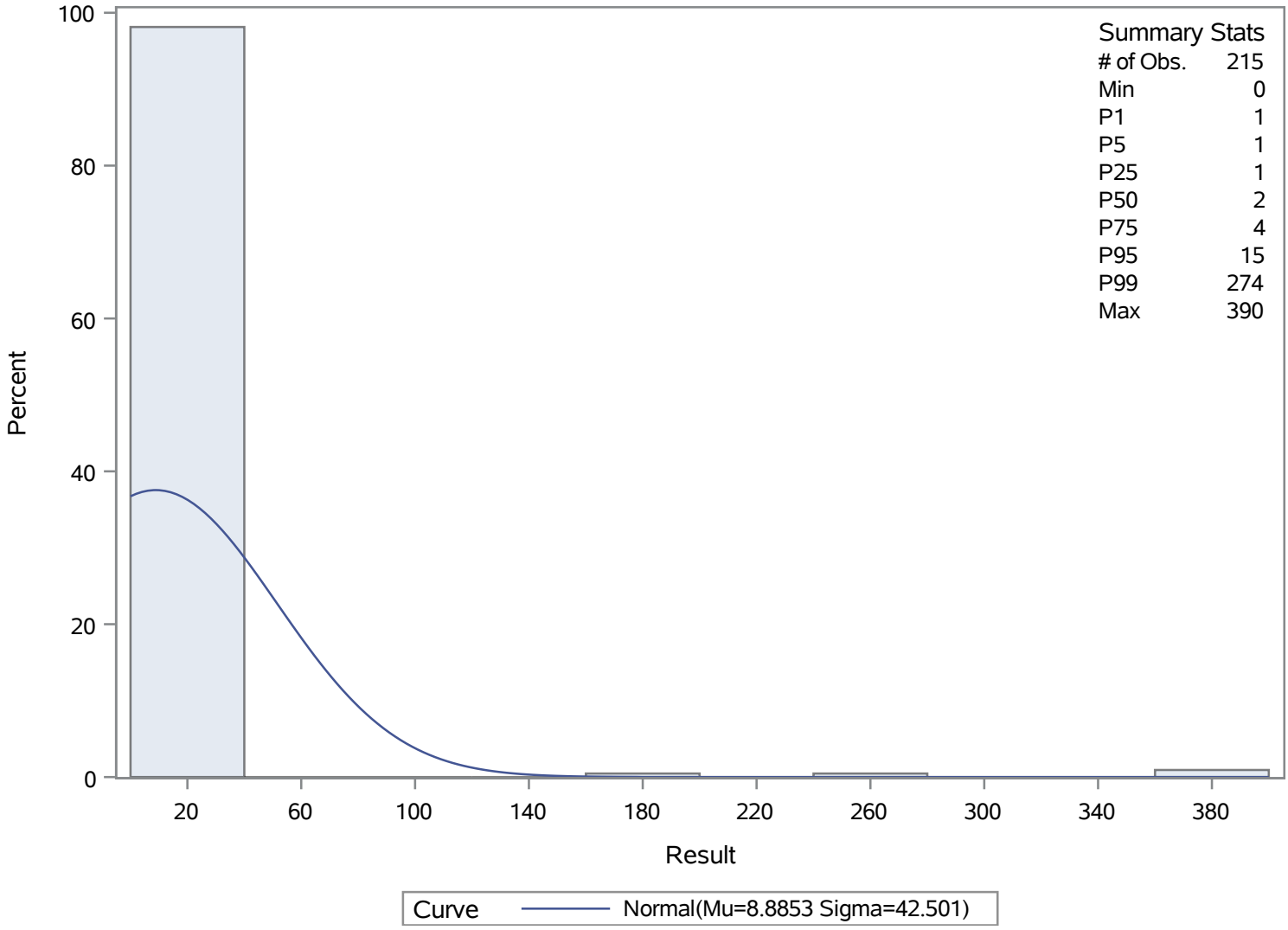
Distribution of result



Little Manatee River
LITTLE MANATEE R AT SR #674
Total Suspended Solids (TSS), mg/L mg/L
Site ID = 21FLHILL24010110

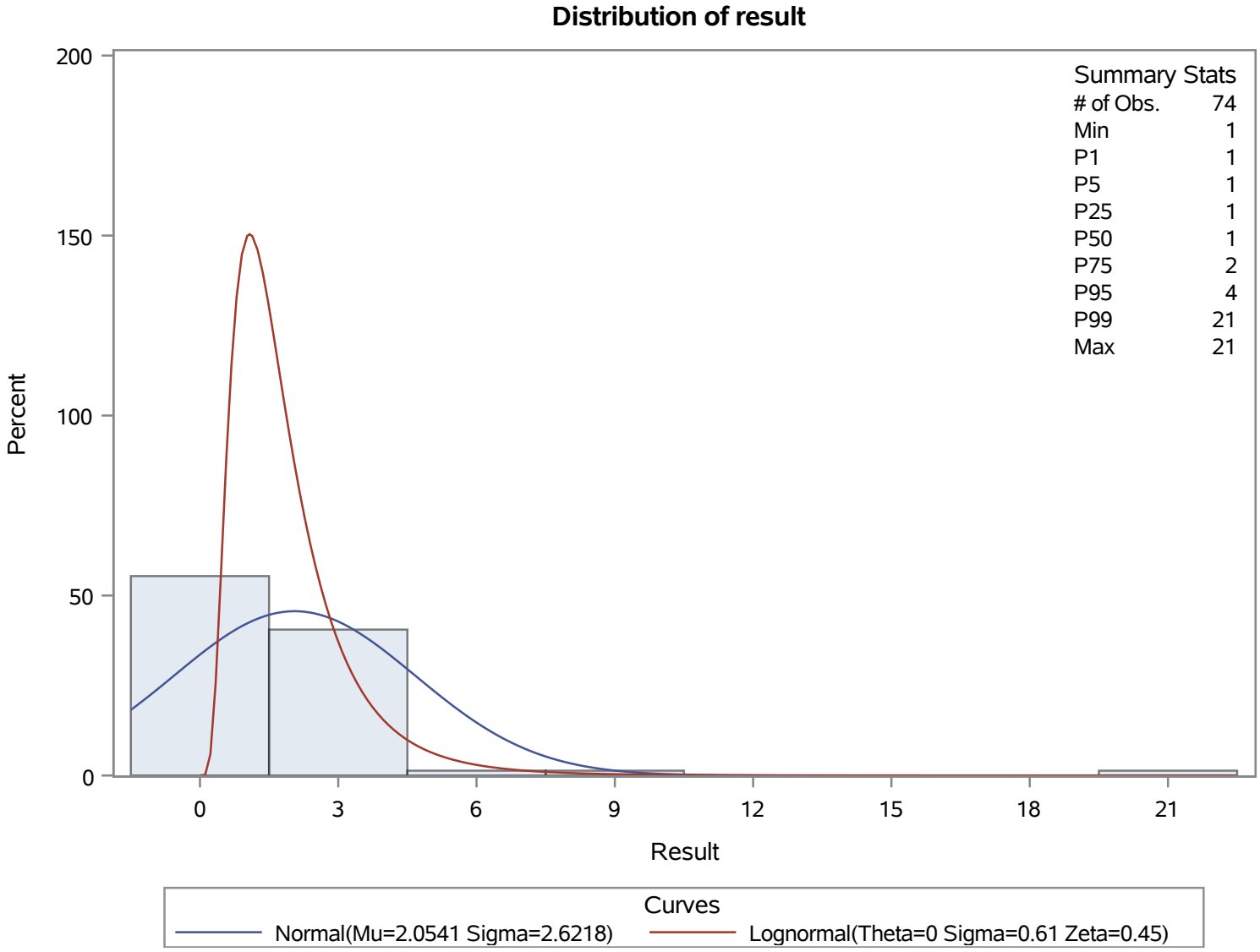
The UNIVARIATE Procedure

Distribution of result



Little Manatee River
Little Manatee R. at SR674
Total Suspended Solids (TSS), mg/L mg/L
Site ID = 21FLIMCALM674

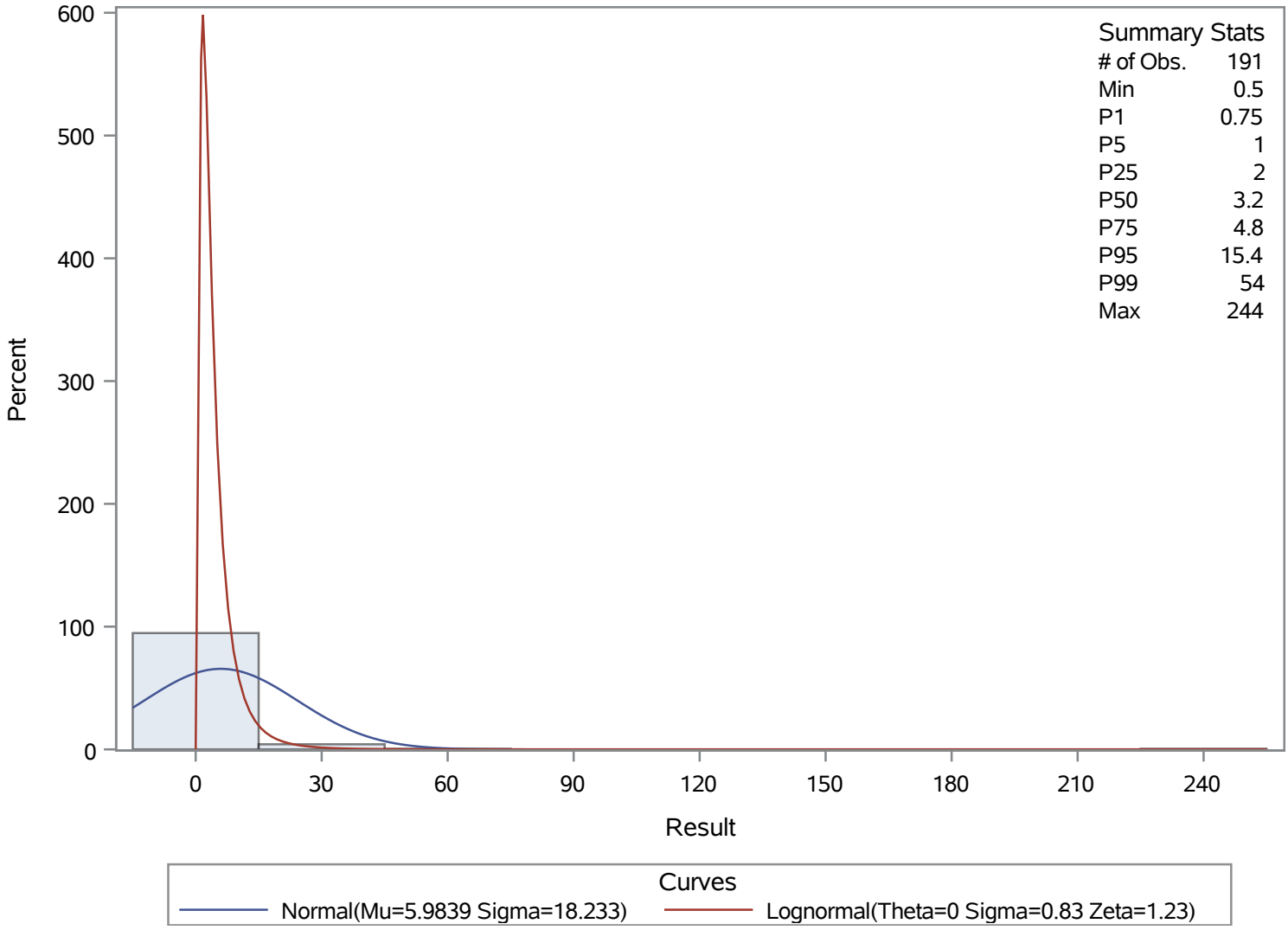
The UNIVARIATE Procedure



Little Manatee River
D1
Total Suspended Solids (TSS), mg/L mg/L
Site ID = 21FLMANAD1

The UNIVARIATE Procedure

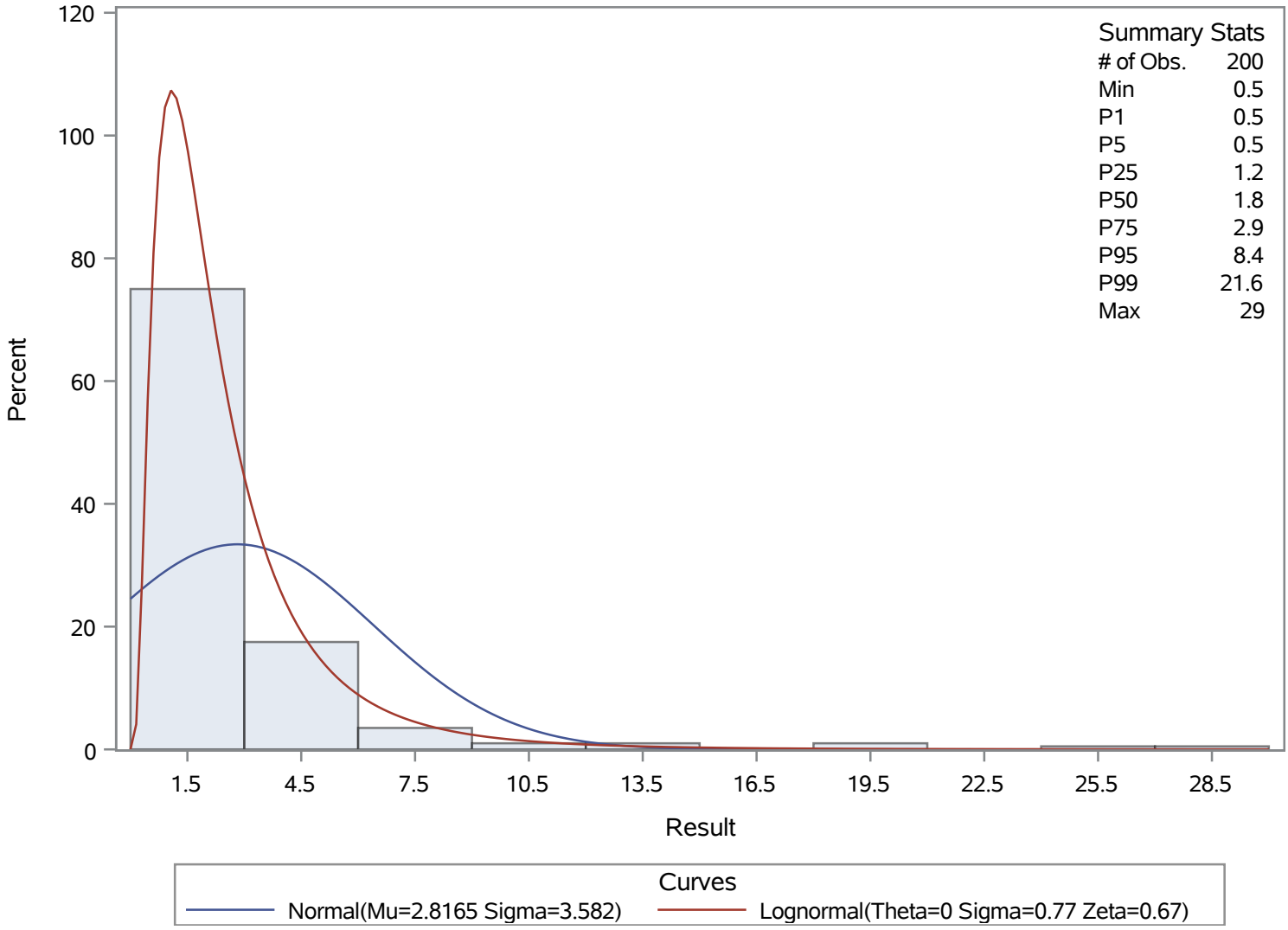
Distribution of result



Little Manatee River
D3
Total Suspended Solids (TSS), mg/L mg/L
Site ID = 21FLMANAD3

The UNIVARIATE Procedure

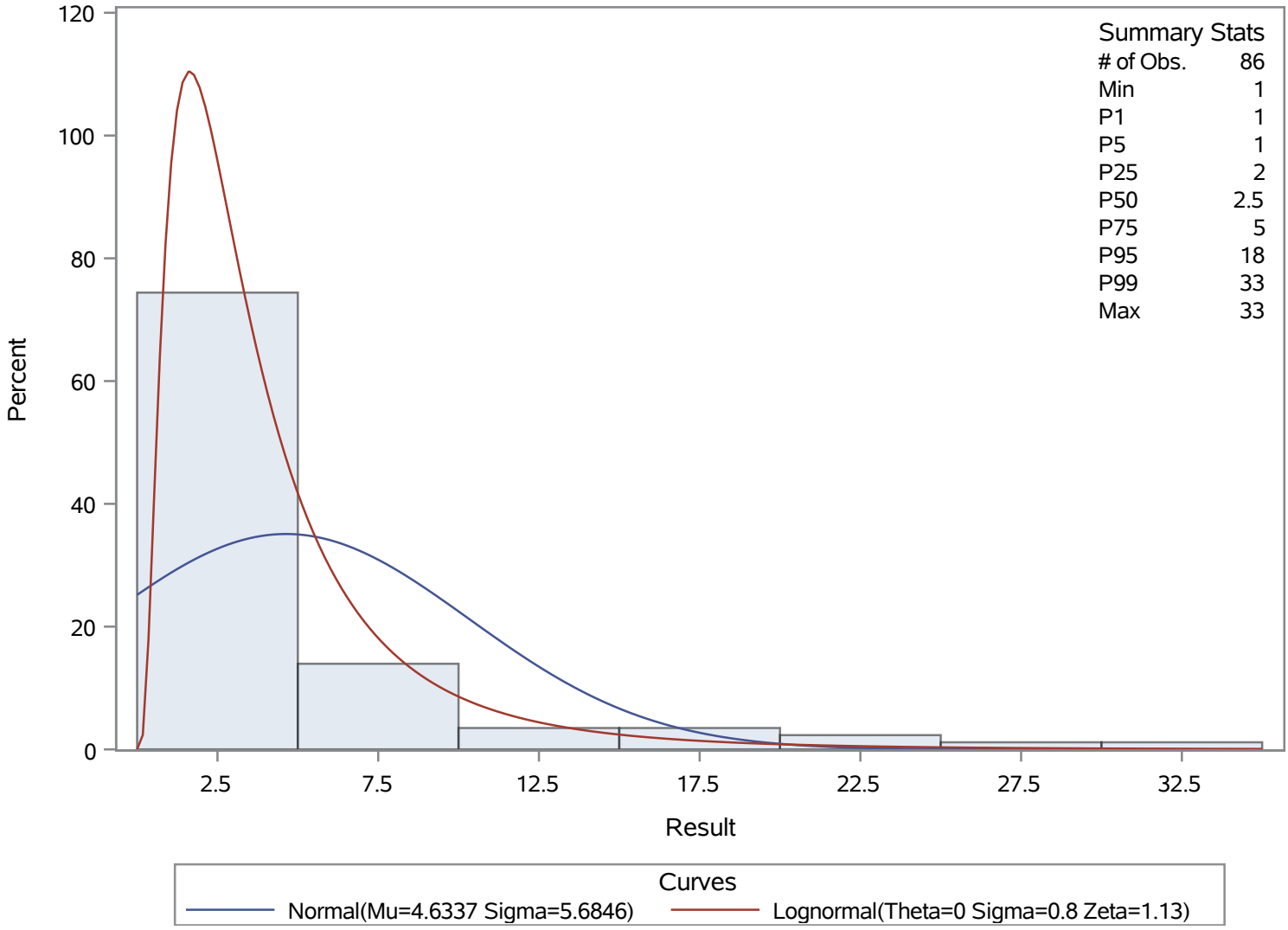
Distribution of result



Little Manatee River
L MANATEE R BR US 301
Turbidity (NTU) NTU
Site ID = 21FLA 24010100

The UNIVARIATE Procedure

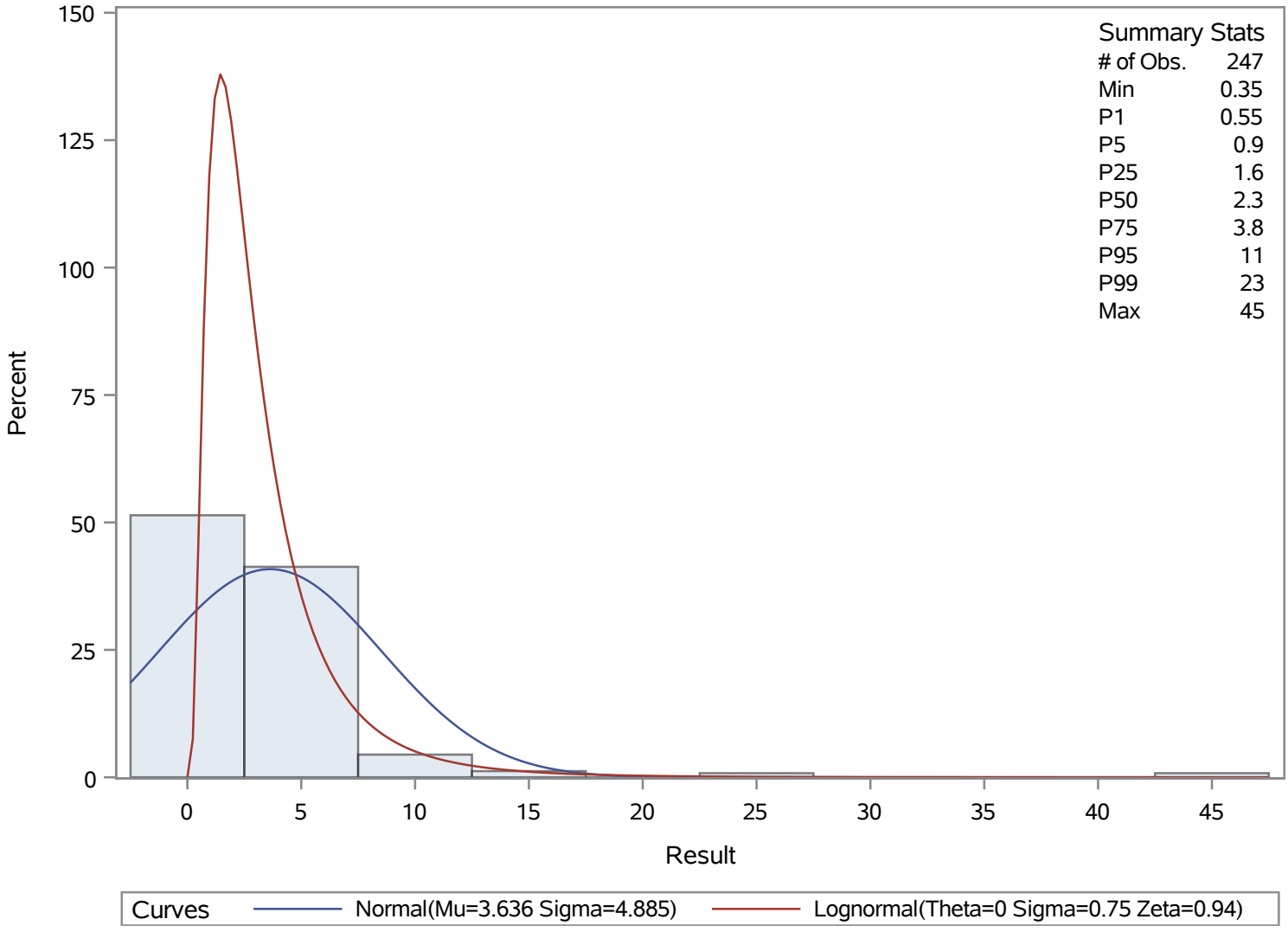
Distribution of result



Little Manatee River
LITTLE MANATEE RIVER AT US HWY 301
Turbidity (NTU) NTU
Site ID = 21FLGW 3555

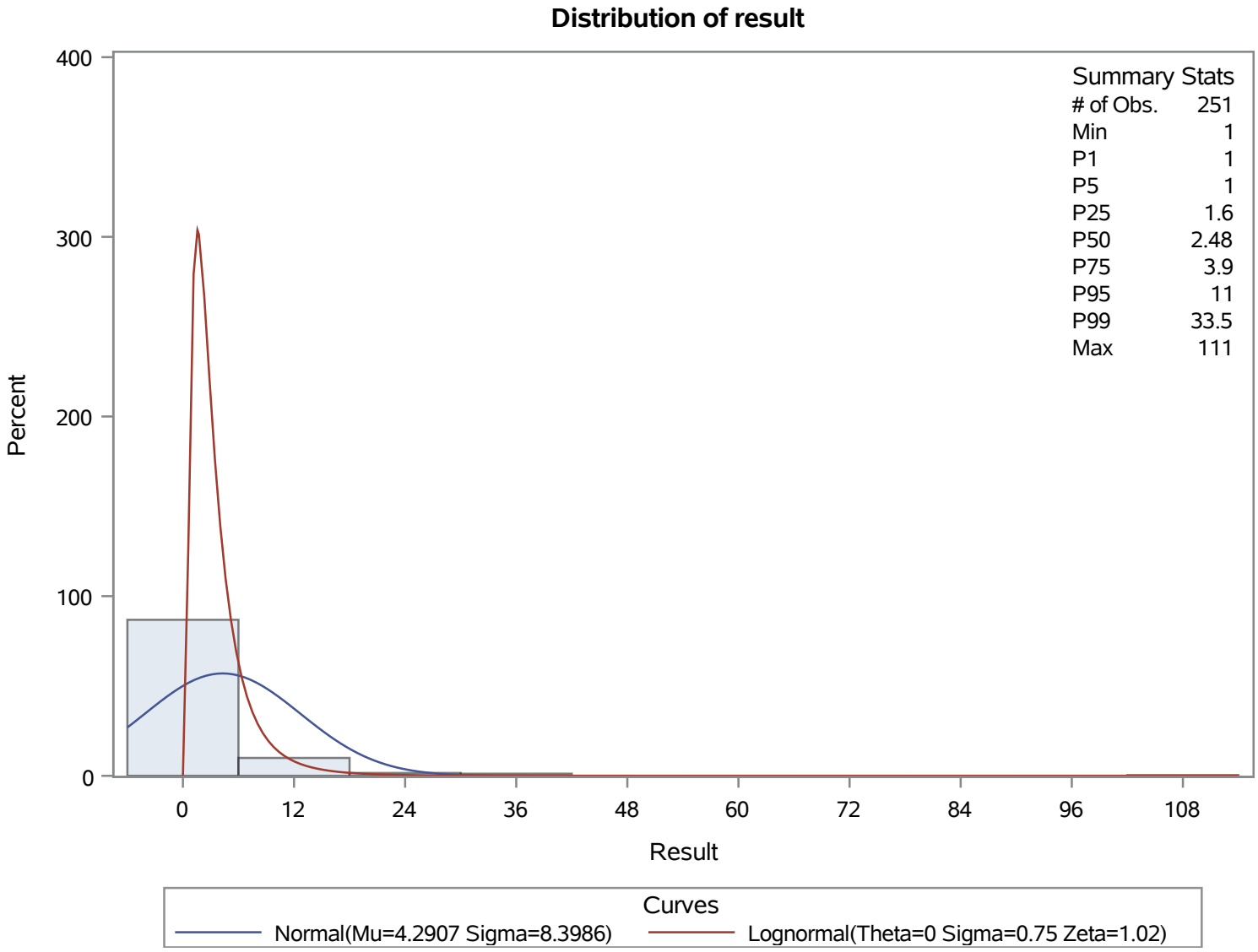
The UNIVARIATE Procedure

Distribution of result



Little Manatee River
Little Manatee River at US 301 bridge
Turbidity (NTU) NTU
Site ID = 21FLHILL113

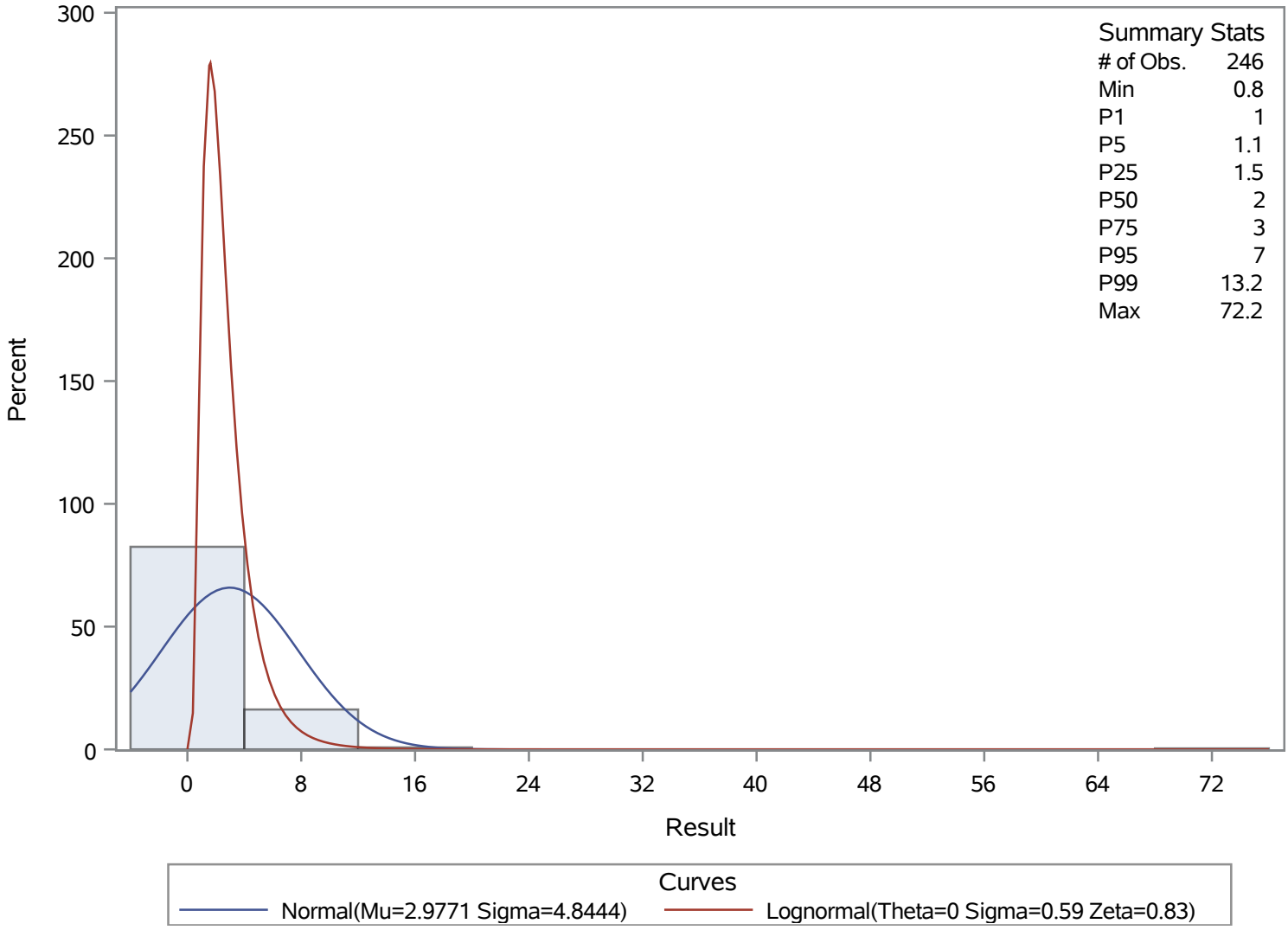
The UNIVARIATE Procedure



Little Manatee River
Little Manatee River at SR 674
Turbidity (NTU) NTU
Site ID = 21FLHILL129

The UNIVARIATE Procedure

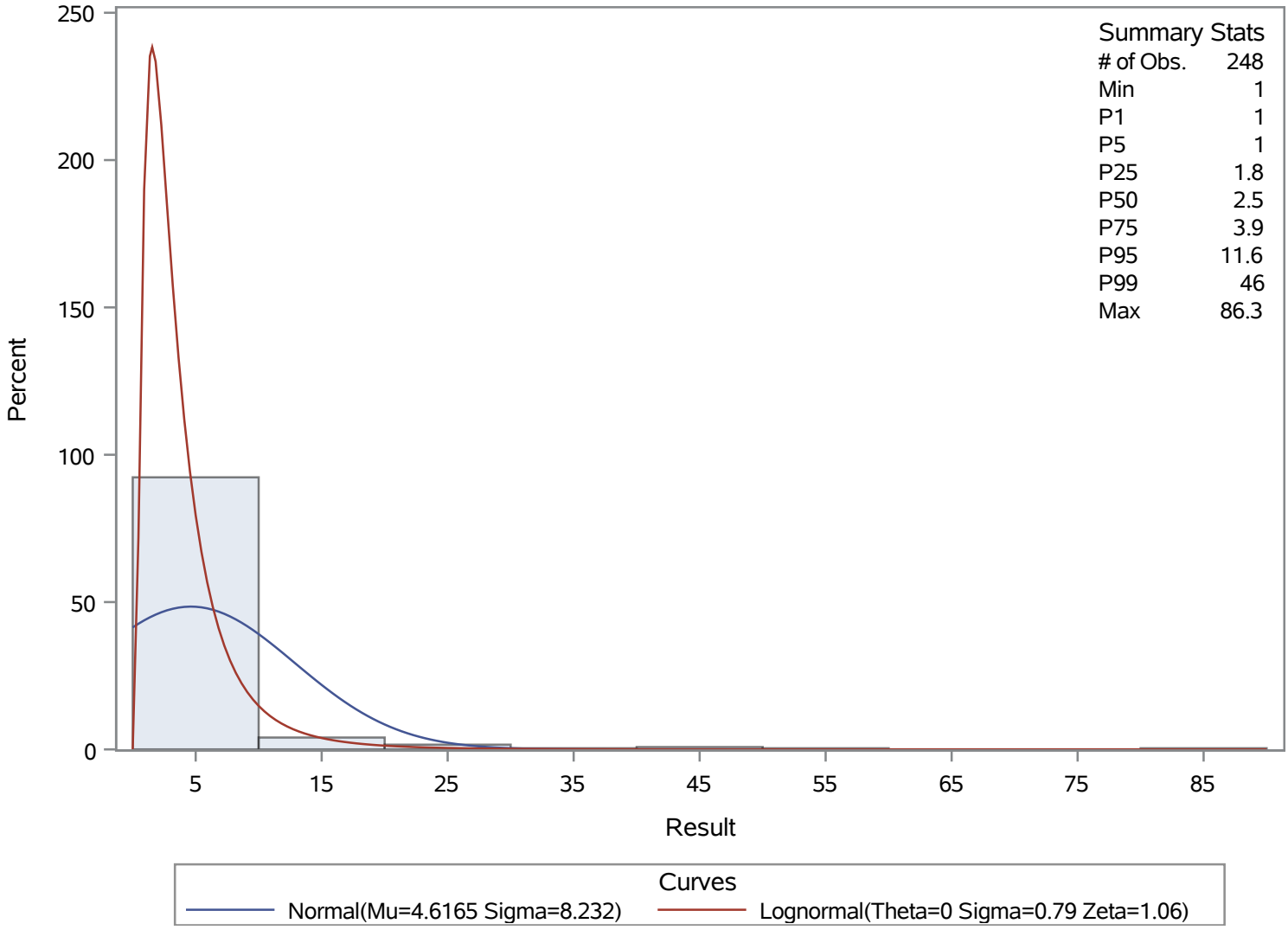
Distribution of result



Little Manatee River
Little Manatee River at CR 579
Turbidity (NTU) NTU
Site ID = 21FLHILL140

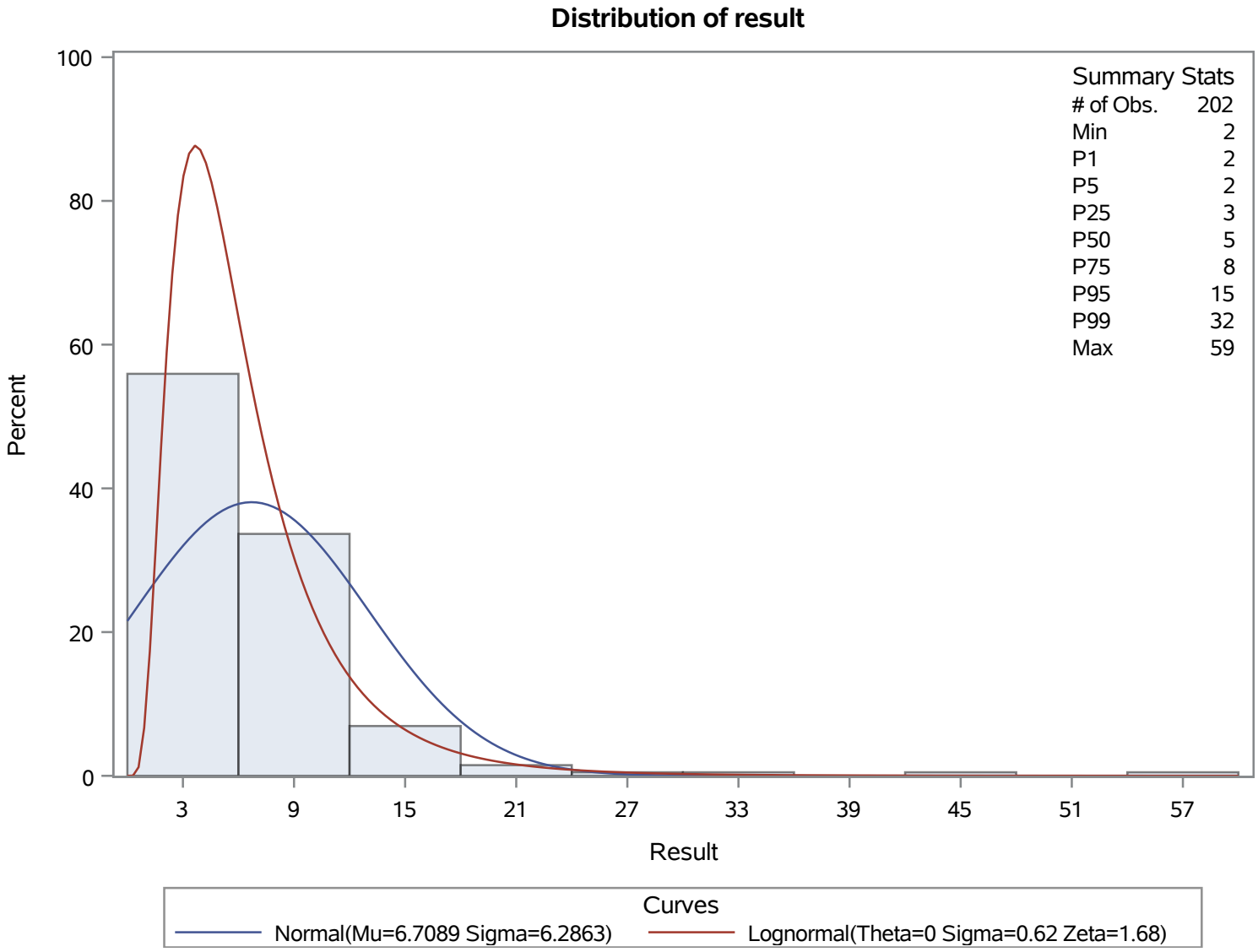
The UNIVARIATE Procedure

Distribution of result



Little Manatee River
LITTLE MANATEE R AT CR579
Turbidity (NTU) NTU
Site ID = 21FLHILL24010013

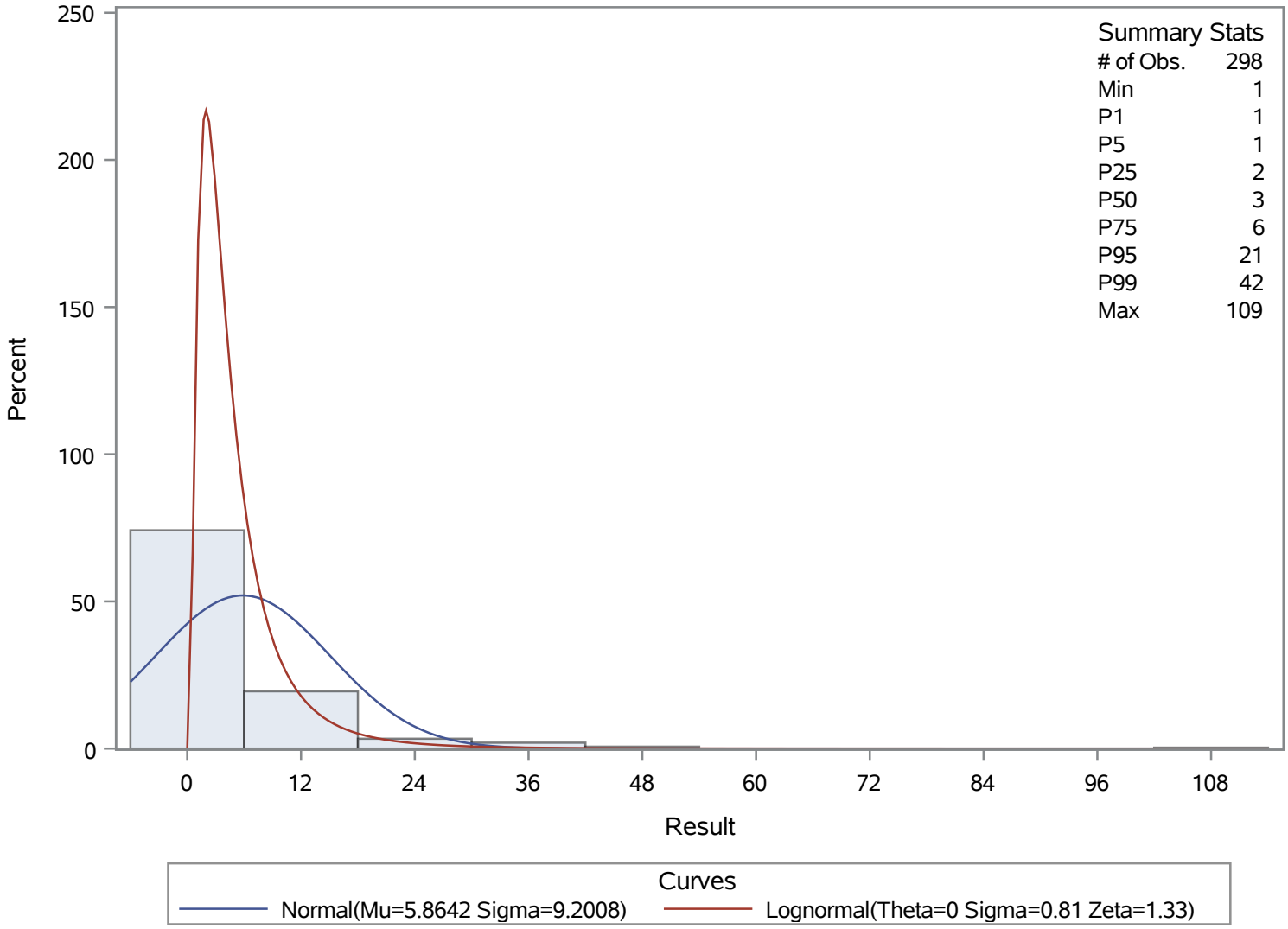
The UNIVARIATE Procedure



Little Manatee River
L MANATEE R BR US 301
Turbidity (NTU) NTU
Site ID = 21FLHILL24010100

The UNIVARIATE Procedure

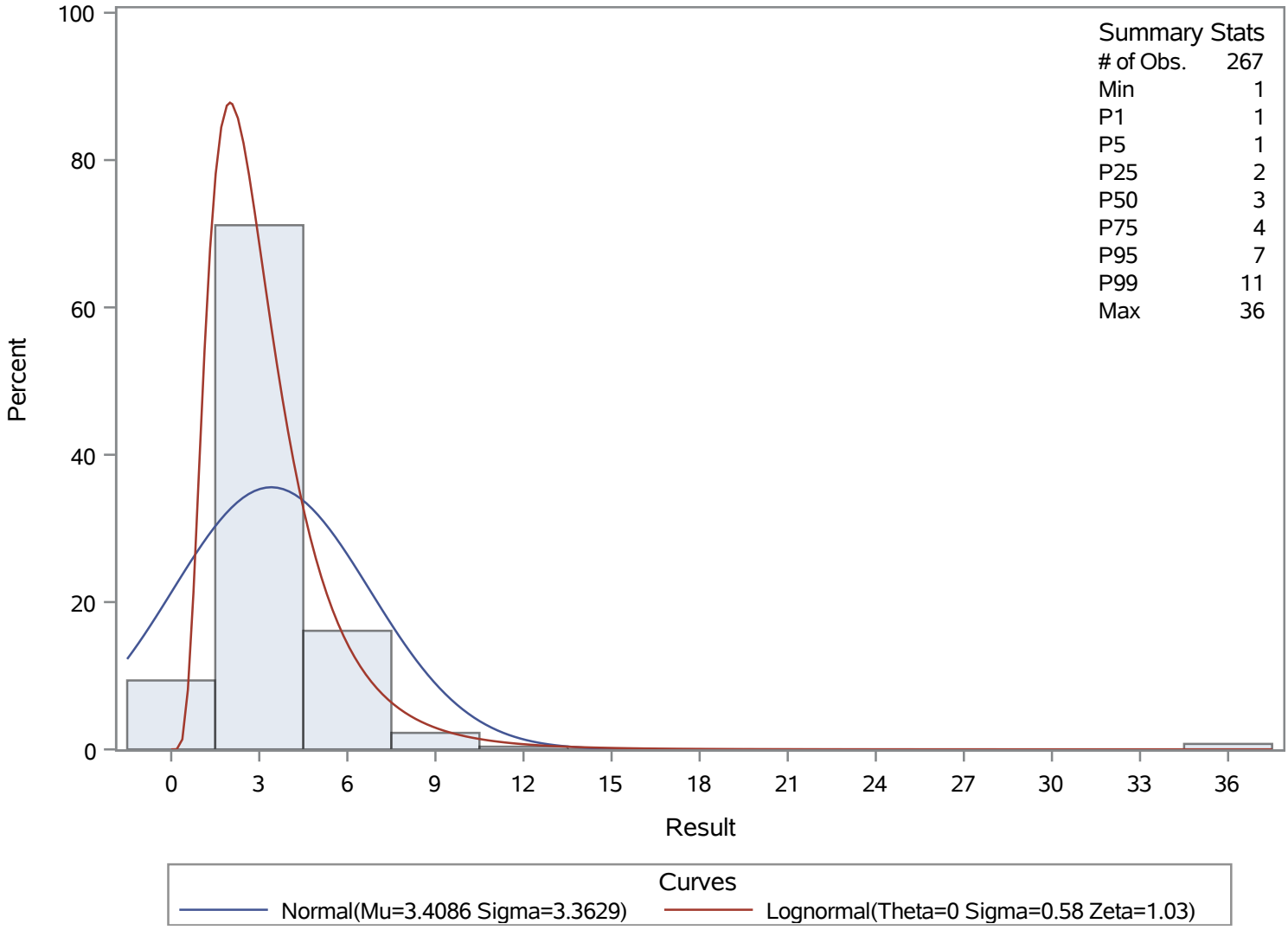
Distribution of result



Little Manatee River
LITTLE MANATEE R AT SR #674
Turbidity (NTU) NTU
Site ID = 21FLHILL24010110

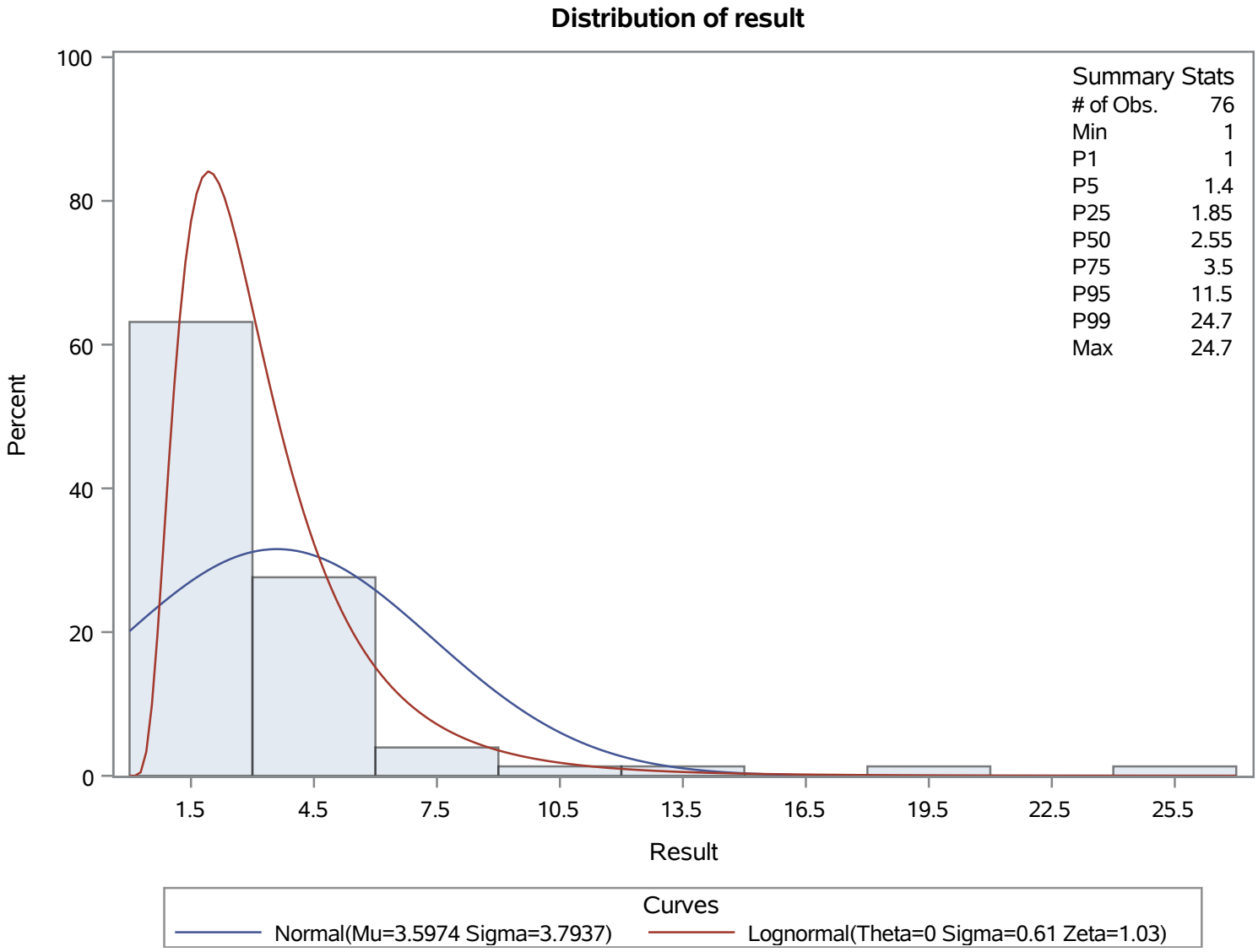
The UNIVARIATE Procedure

Distribution of result



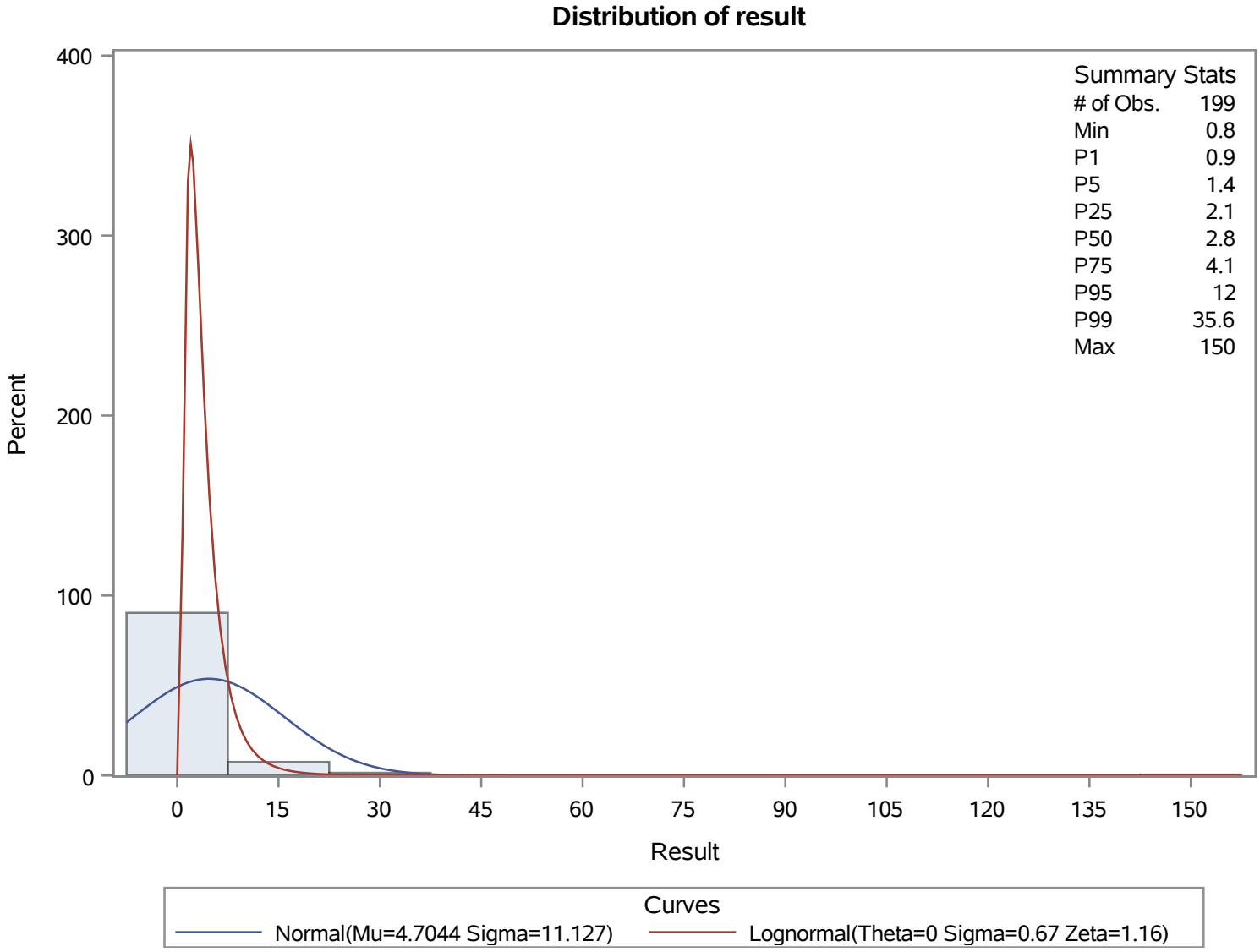
Little Manatee River
Little Manatee R. at SR674
Turbidity (NTU) NTU
Site ID = 21FLIMCALM674

The UNIVARIATE Procedure



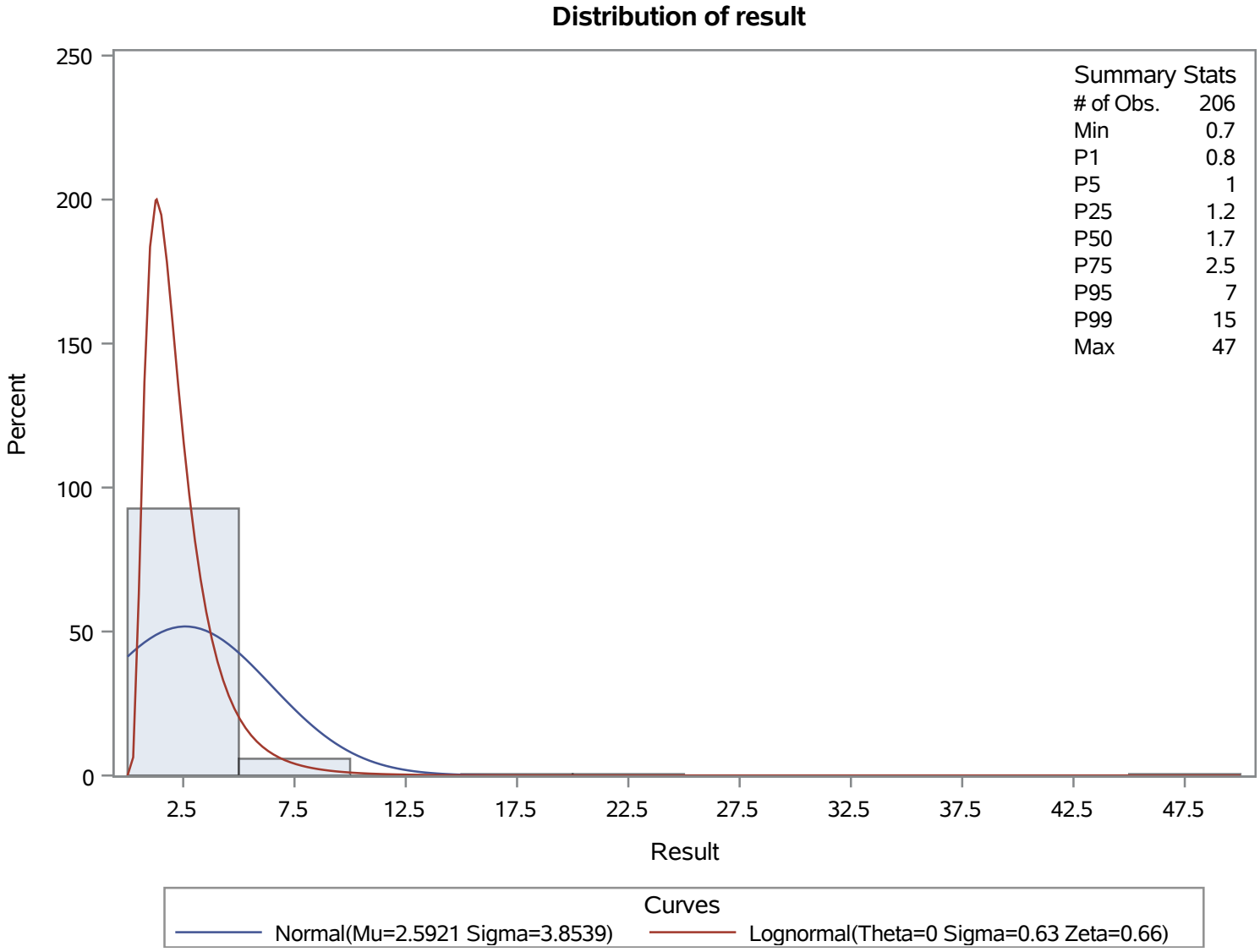
Little Manatee River
D1
Turbidity (NTU) NTU
Site ID = 21FLMANAD1

The UNIVARIATE Procedure



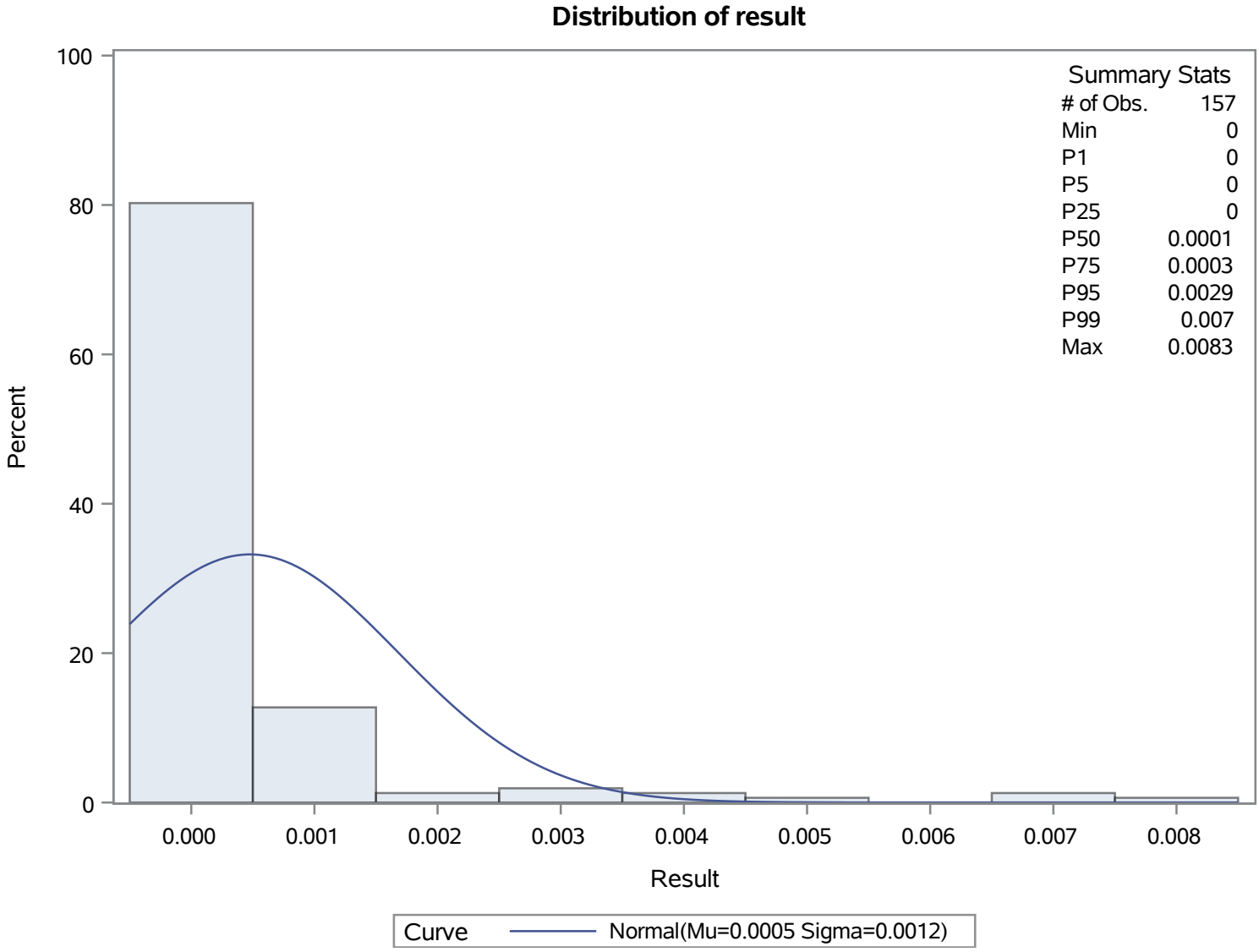
Little Manatee River
D3
Turbidity (NTU) NTU
Site ID = 21FLMANAD3

The UNIVARIATE Procedure



Little Manatee River
LITTLE MANATEE RIVER NEAR FT. LONESOME FL
Un-ionized Ammonia (mg/L) mg/L
Site ID = 112WRD 02300100

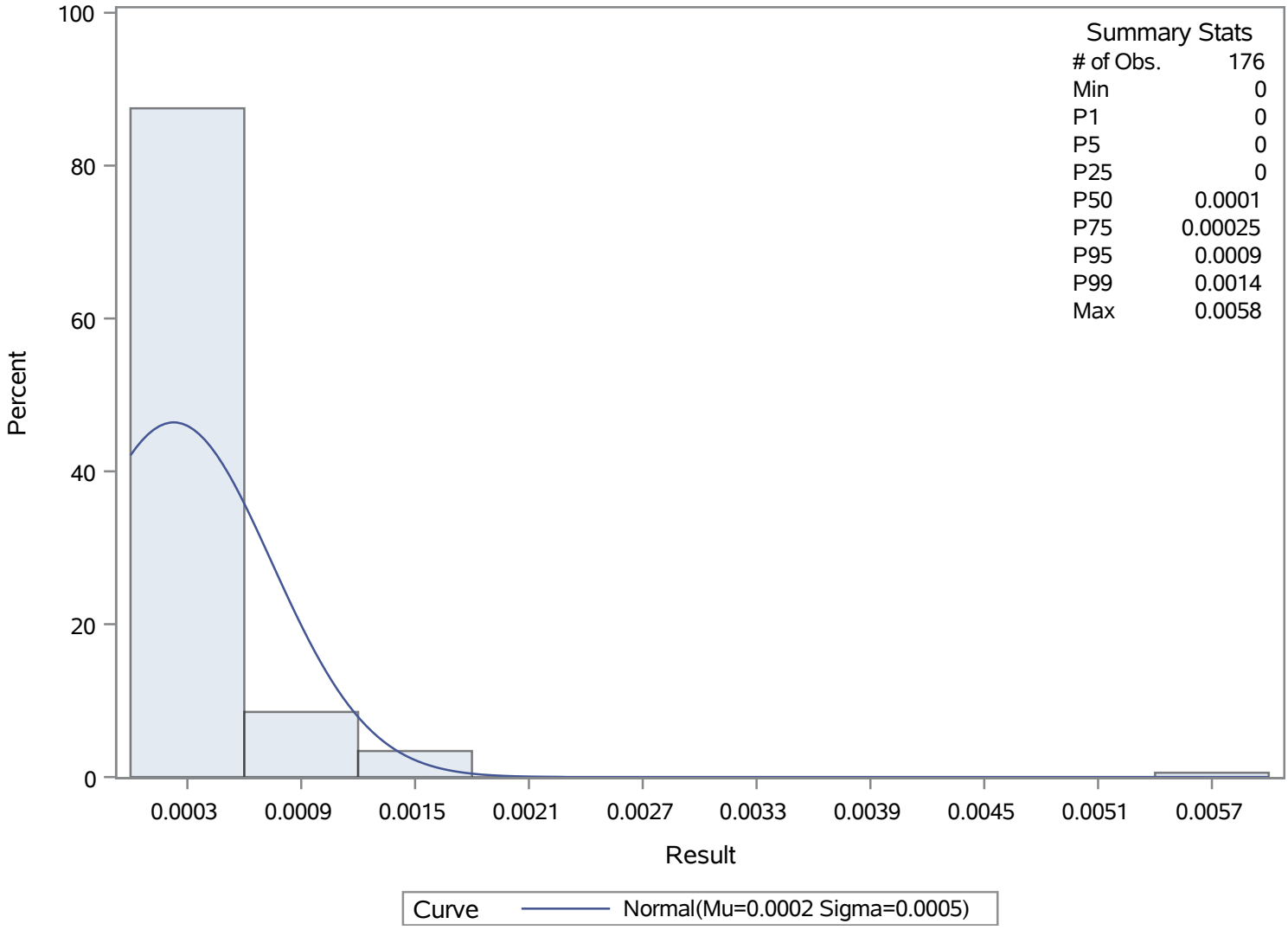
The UNIVARIATE Procedure



Little Manatee River
SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL
Un-ionized Ammonia (mg/L) mg/L
Site ID = 112WRD 02300200

The UNIVARIATE Procedure

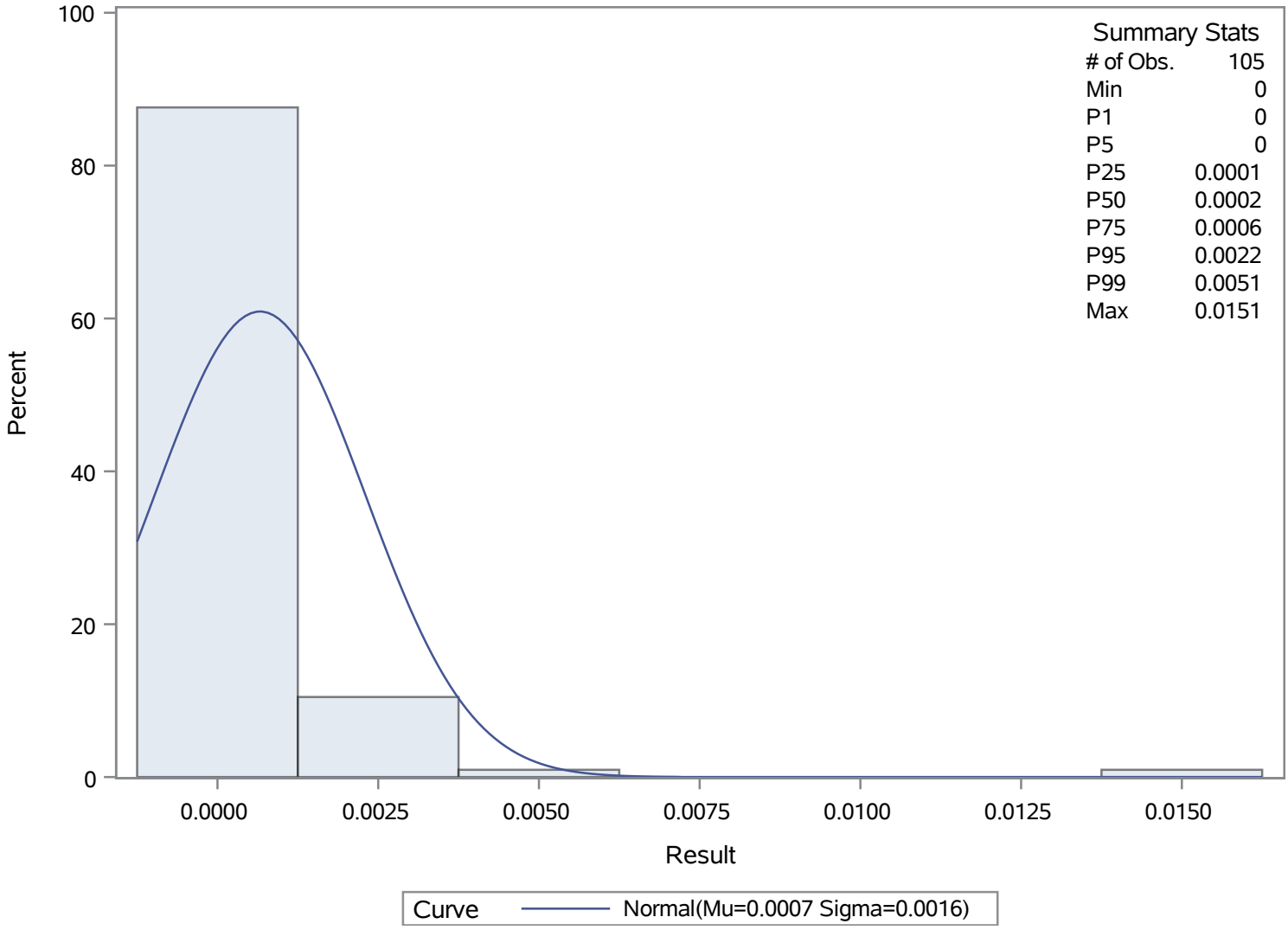
Distribution of result



Little Manatee River
LITTLE MANATEE RIVER NEAR WIMAUMA FL
Un-ionized Ammonia (mg/L) mg/L
Site ID = 112WRD 02300500

The UNIVARIATE Procedure

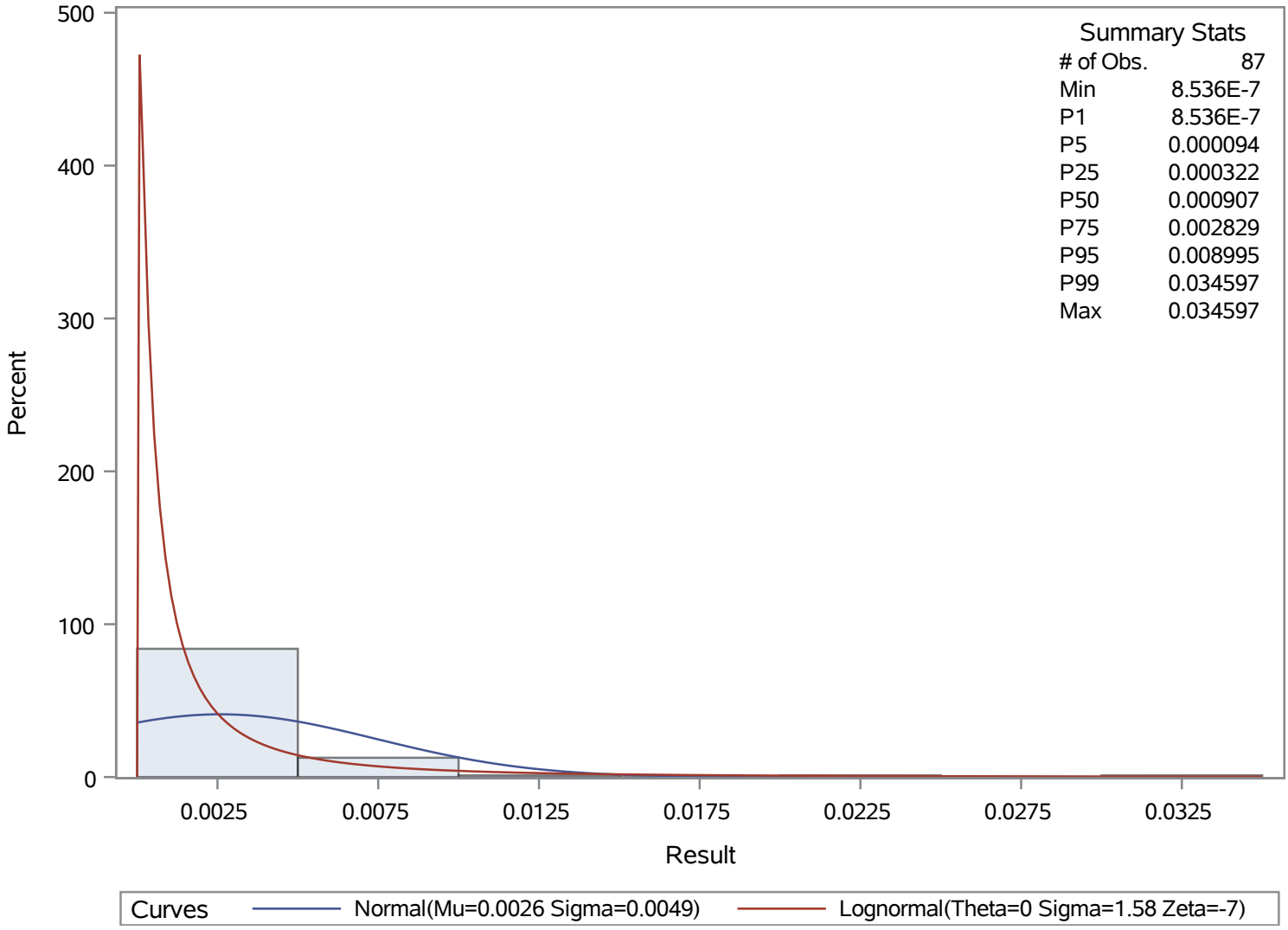
Distribution of result



Little Manatee River
L MANATEE R BR US 301
Un-ionized Ammonia (mg/L) mg/L
Site ID = 21FLA 24010100

The UNIVARIATE Procedure

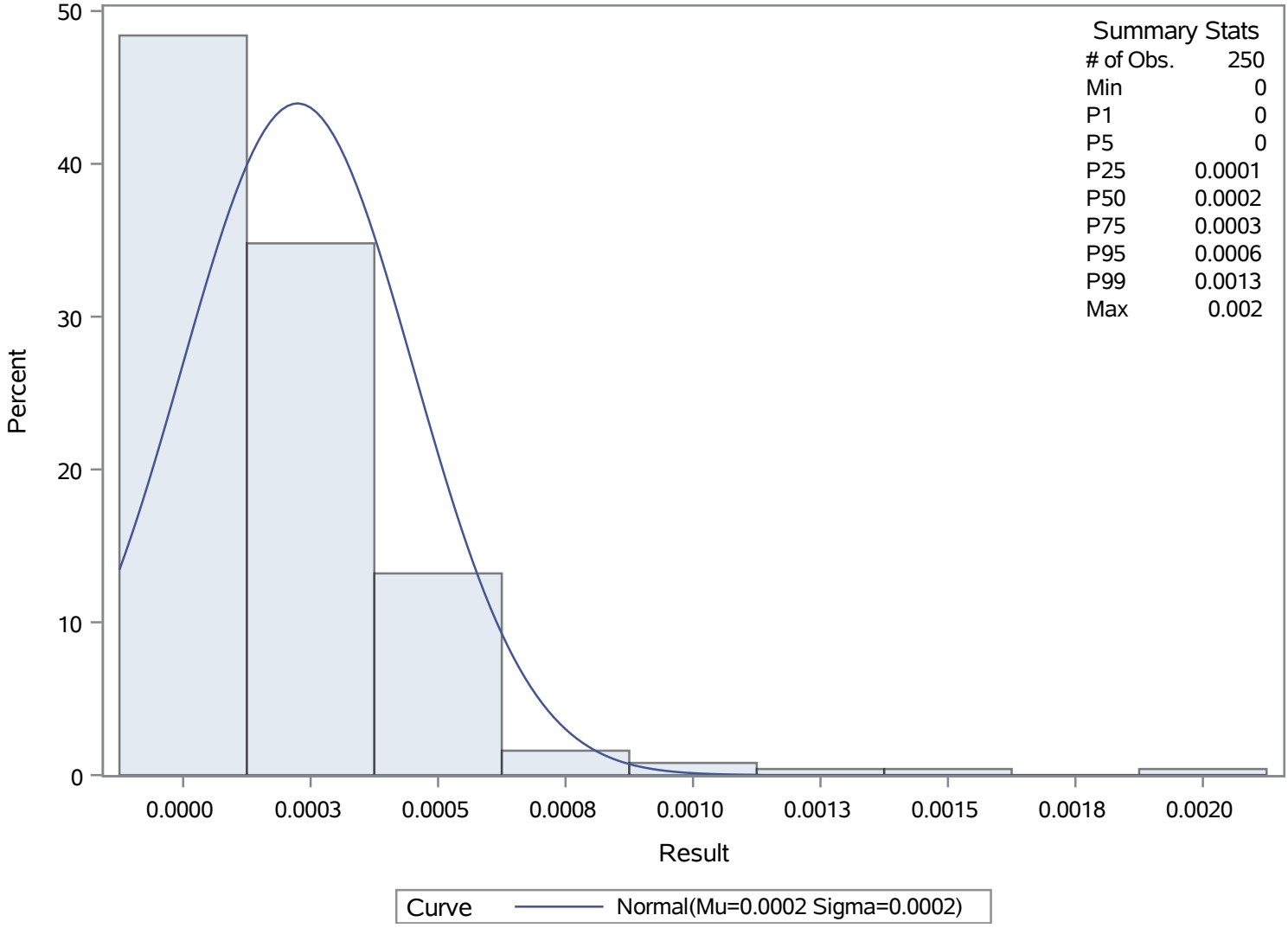
Distribution of result



Little Manatee River
LITTLE MANATEE RIVER AT US HWY 301
Un-ionized Ammonia (mg/L) mg/L
Site ID = 21FLGW 3555

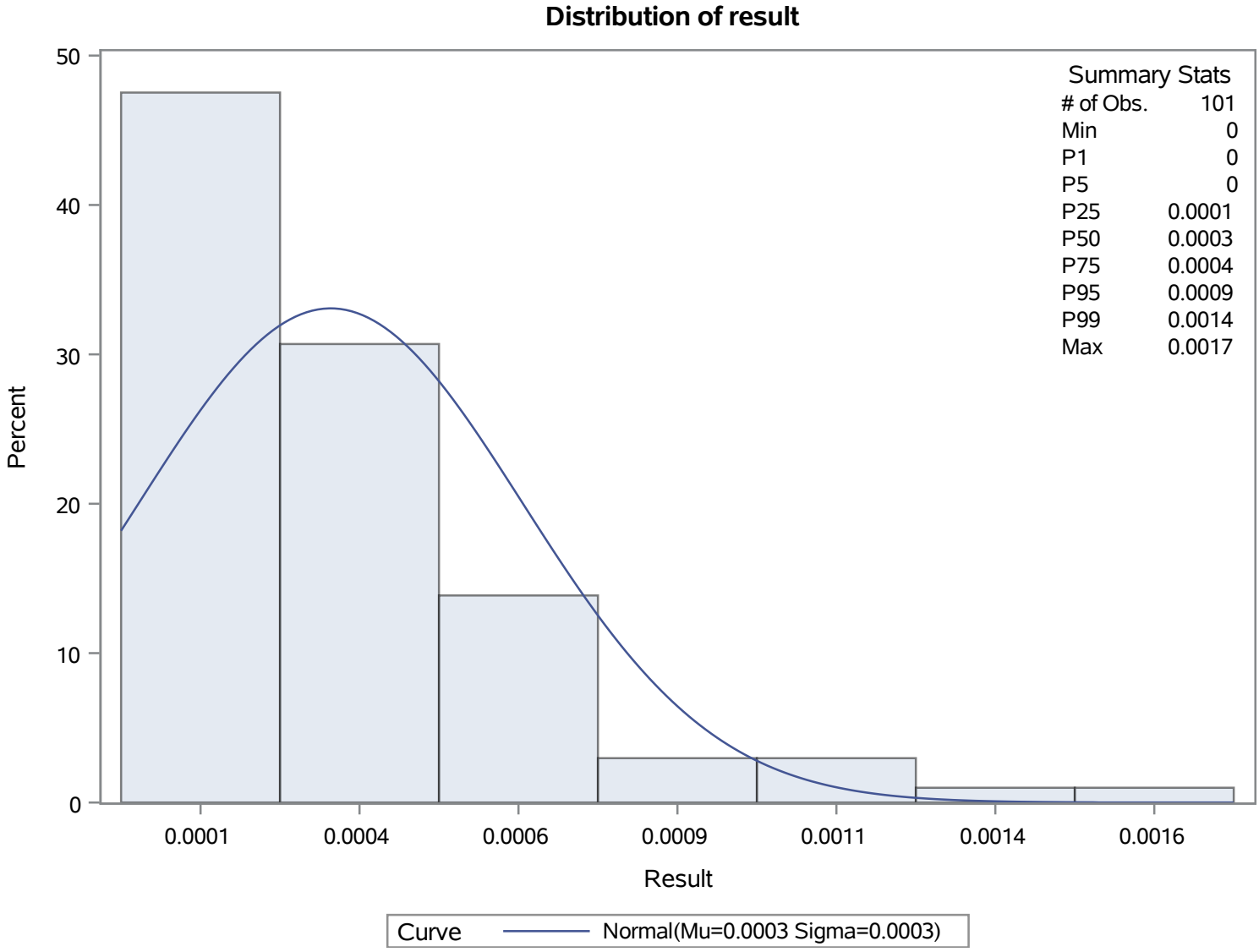
The UNIVARIATE Procedure

Distribution of result



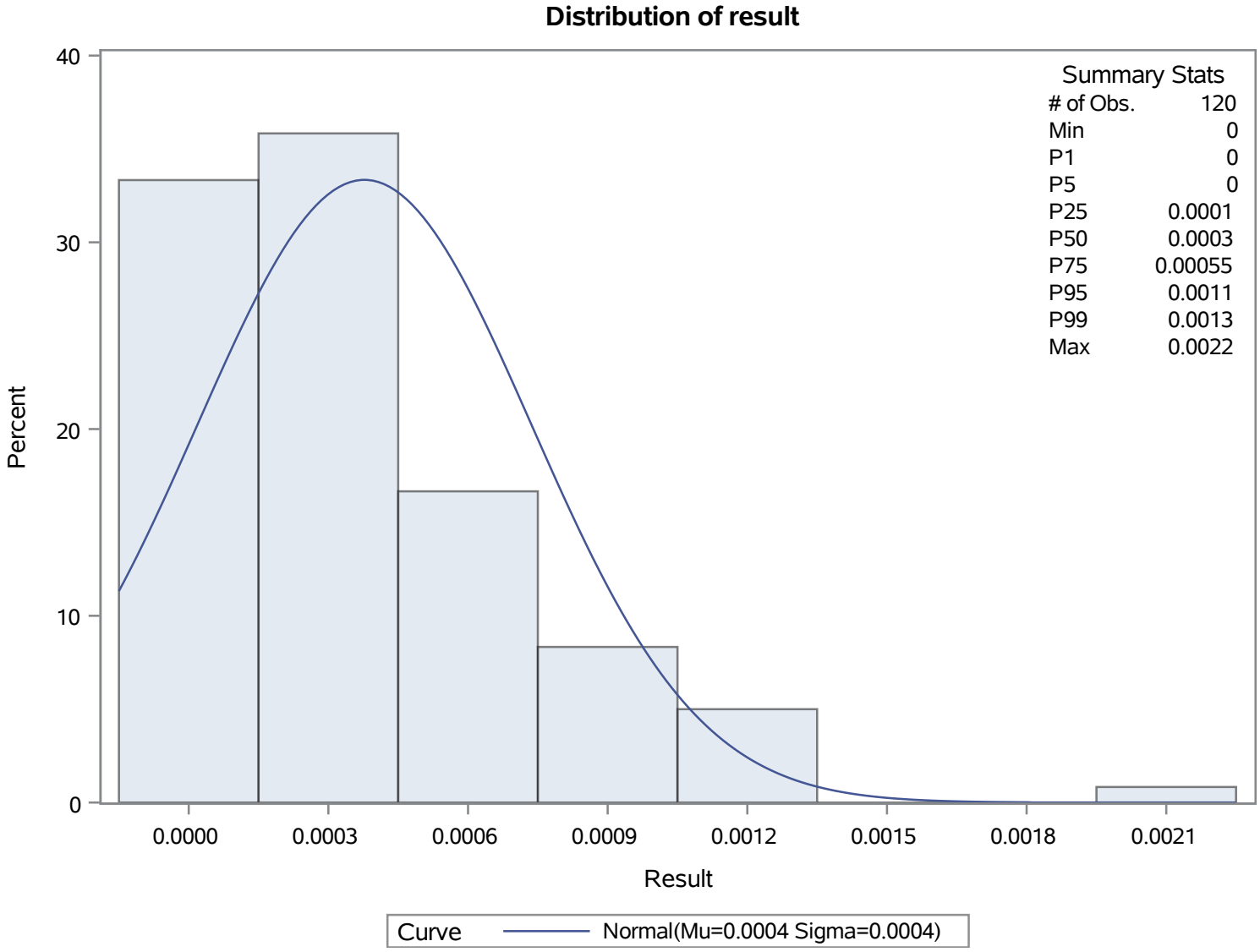
Little Manatee River
Little Manatee River at US 301 bridge
Un-ionized Ammonia (mg/L) mg/L
Site ID = 21FLHILL113

The UNIVARIATE Procedure



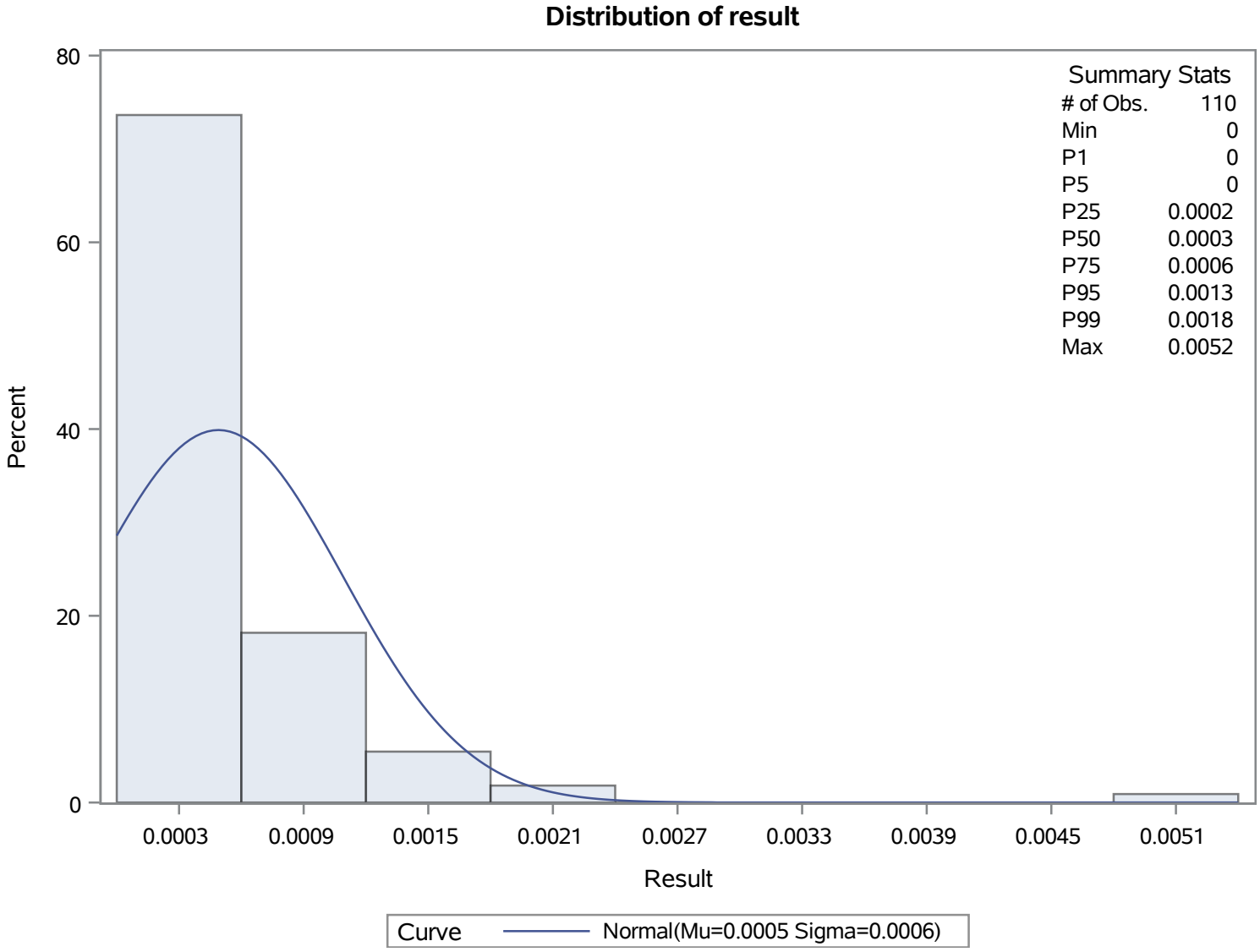
Little Manatee River
Little Manatee River at SR 674
Un-ionized Ammonia (mg/L) mg/L
Site ID = 21FLHILL129

The UNIVARIATE Procedure



Little Manatee River
Little Manatee River at CR 579
Un-ionized Ammonia (mg/L) mg/L
Site ID = 21FLHILL140

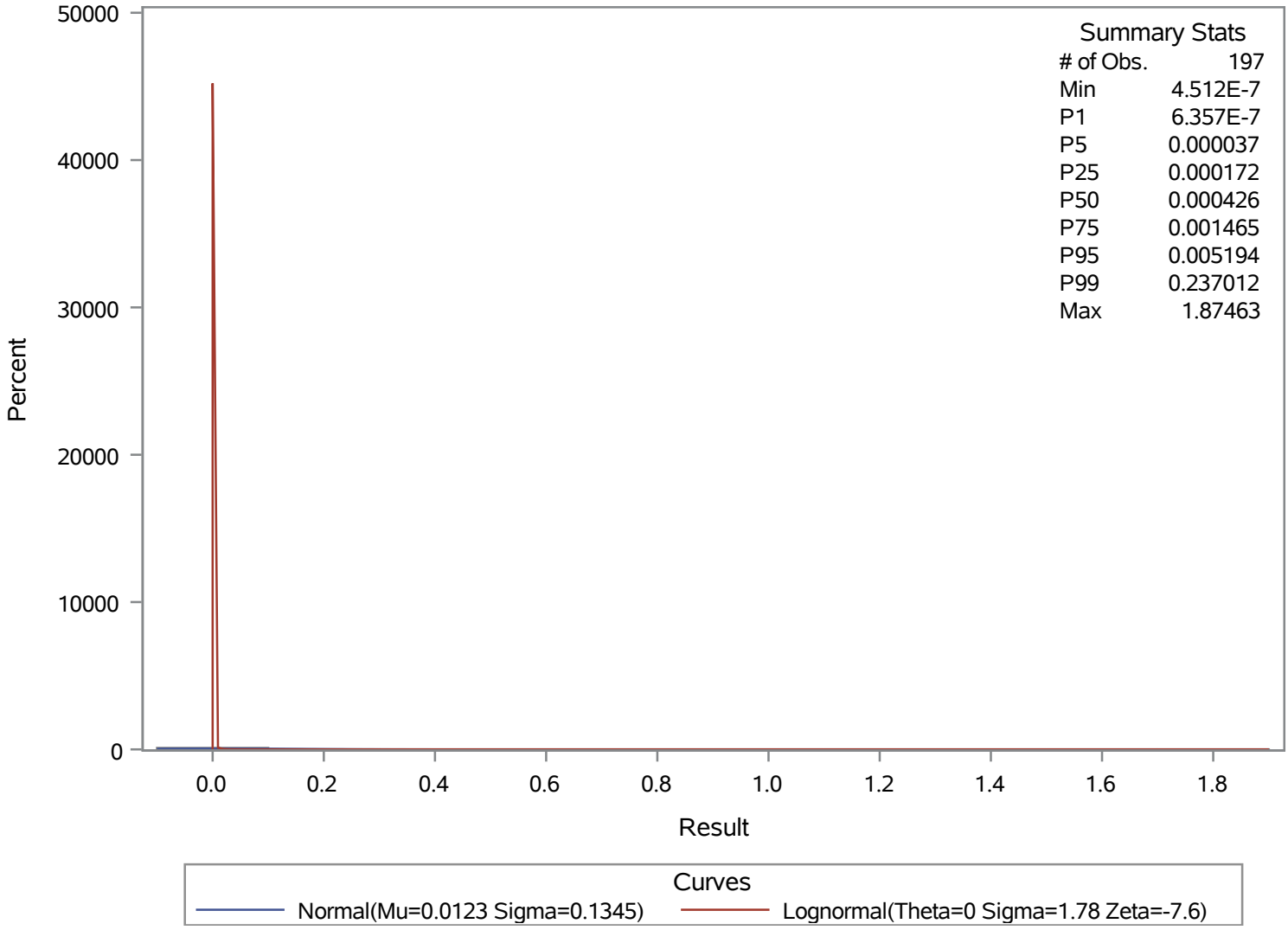
The UNIVARIATE Procedure



Little Manatee River
LITTLE MANATEE R AT CR579
Un-ionized Ammonia (mg/L) mg/L
Site ID = 21FLHILL24010013

The UNIVARIATE Procedure

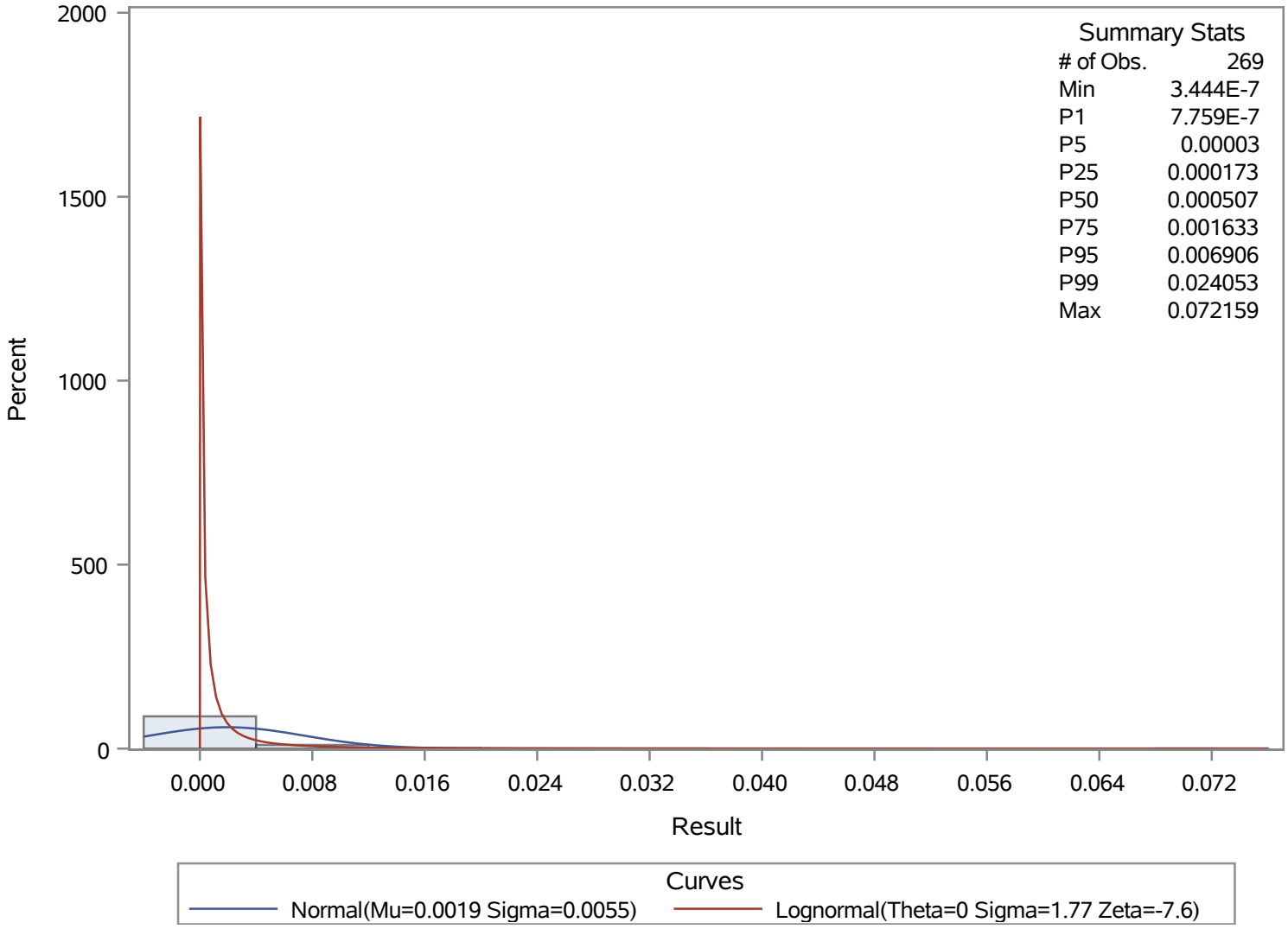
Distribution of result



Little Manatee River
L MANATEE R BR US 301
Un-ionized Ammonia (mg/L) mg/L
Site ID = 21FLHILL24010100

The UNIVARIATE Procedure

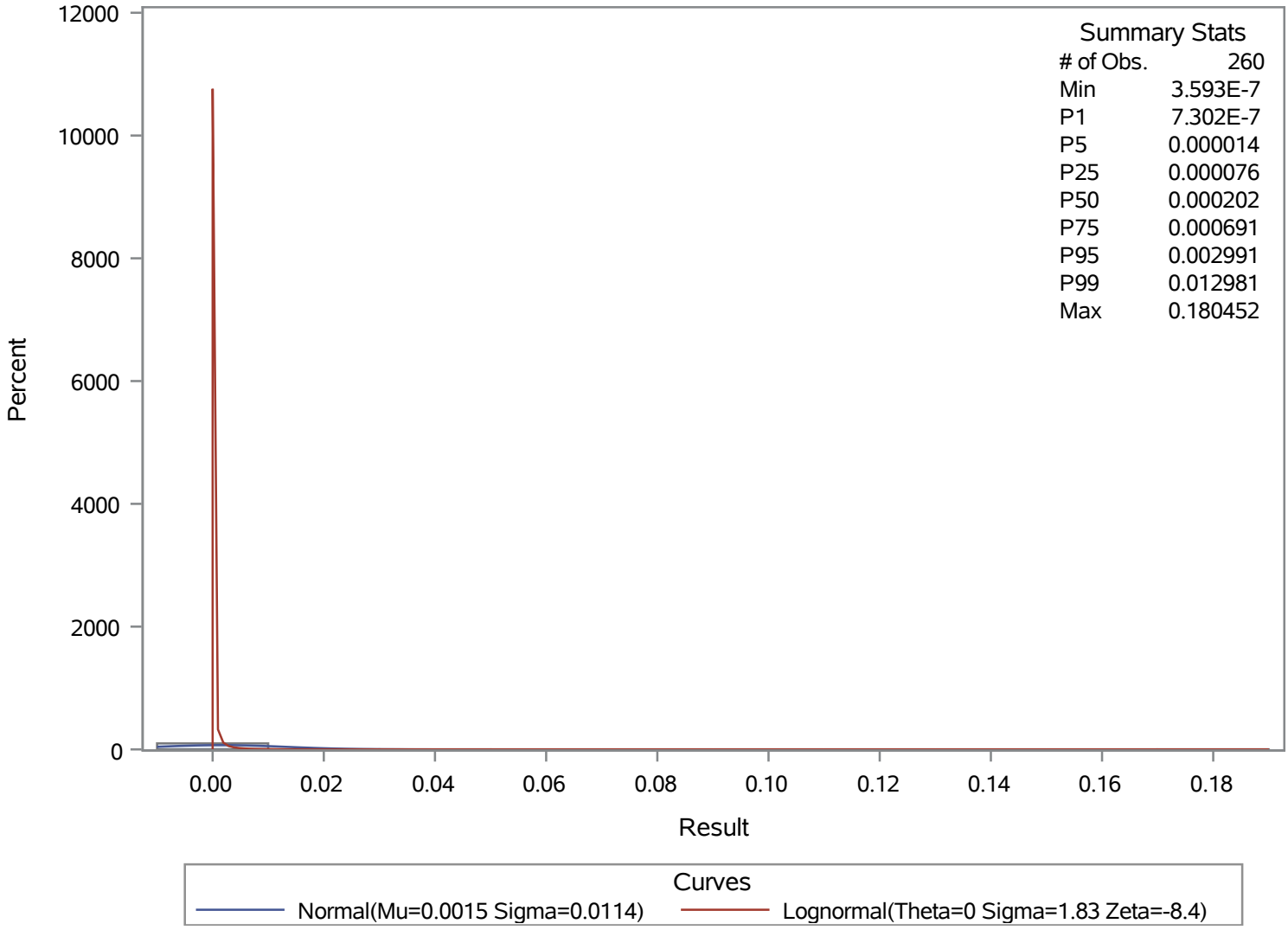
Distribution of result



Little Manatee River
LITTLE MANATEE R AT SR #674
Un-ionized Ammonia (mg/L) mg/L
Site ID = 21FLHILL24010110

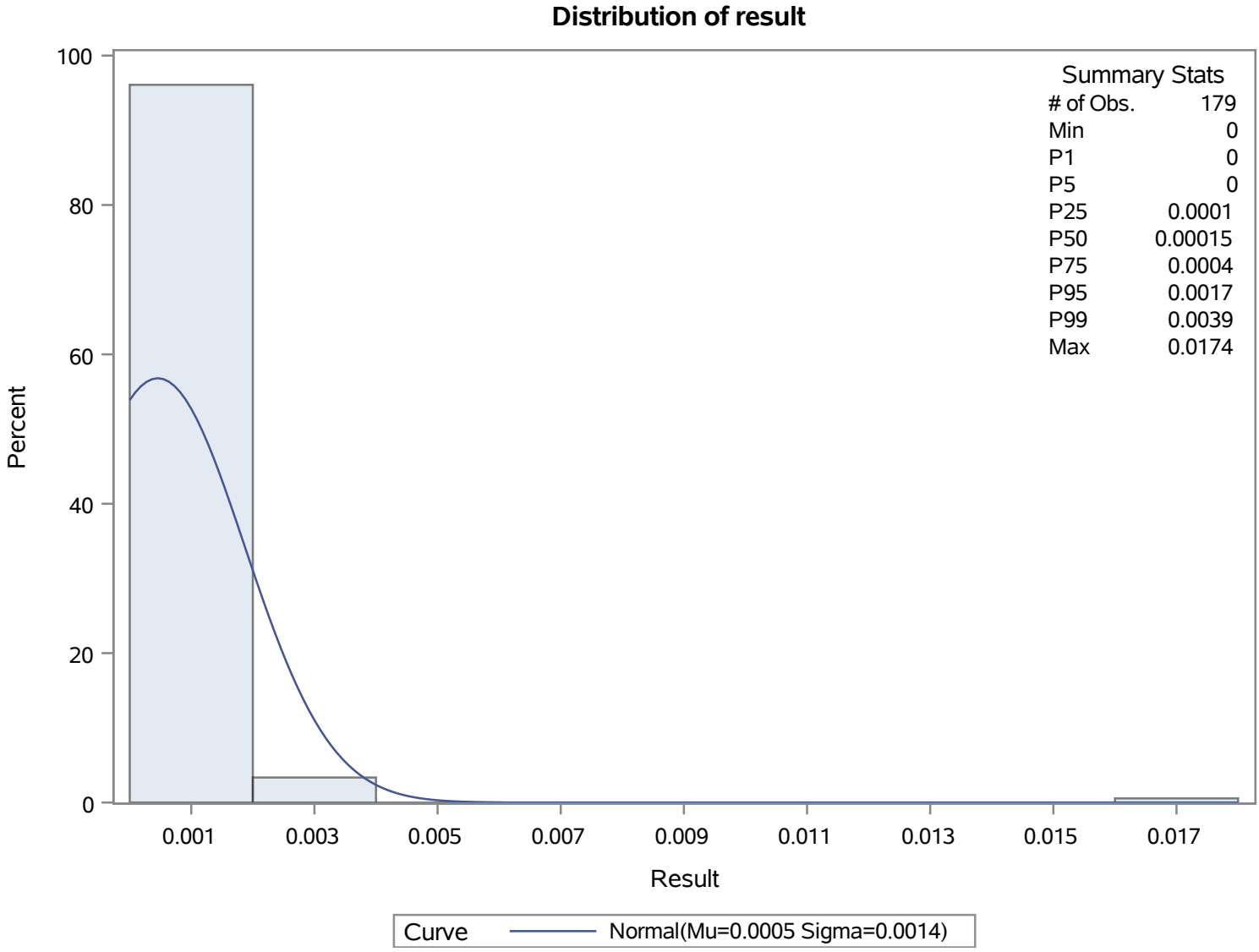
The UNIVARIATE Procedure

Distribution of result



Little Manatee River
D1
Un-ionized Ammonia (mg/L) mg/L
Site ID = 21FLMANAD1

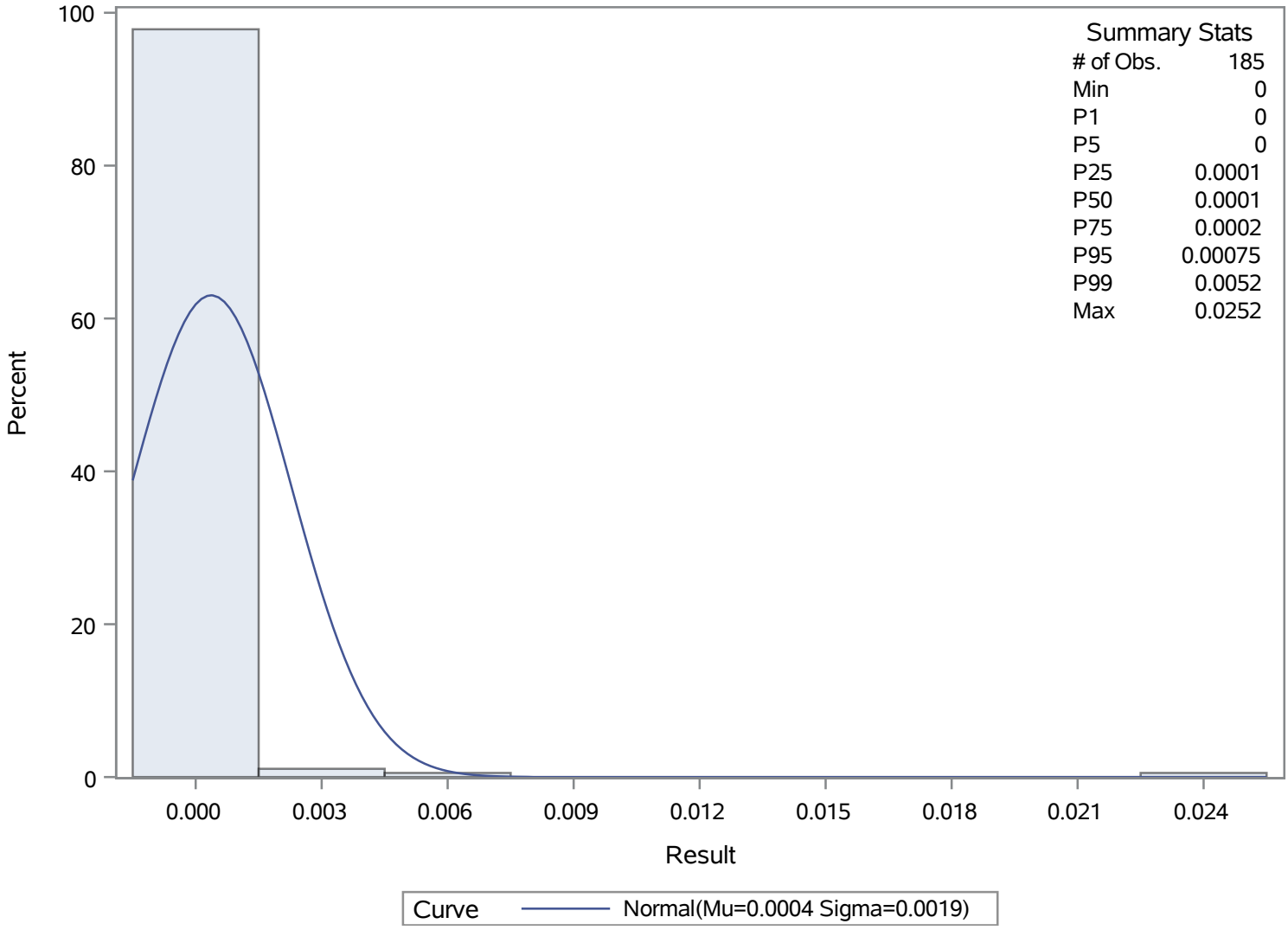
The UNIVARIATE Procedure



Little Manatee River
D3
Un-ionized Ammonia (mg/L) mg/L
Site ID = 21FLMANAD3

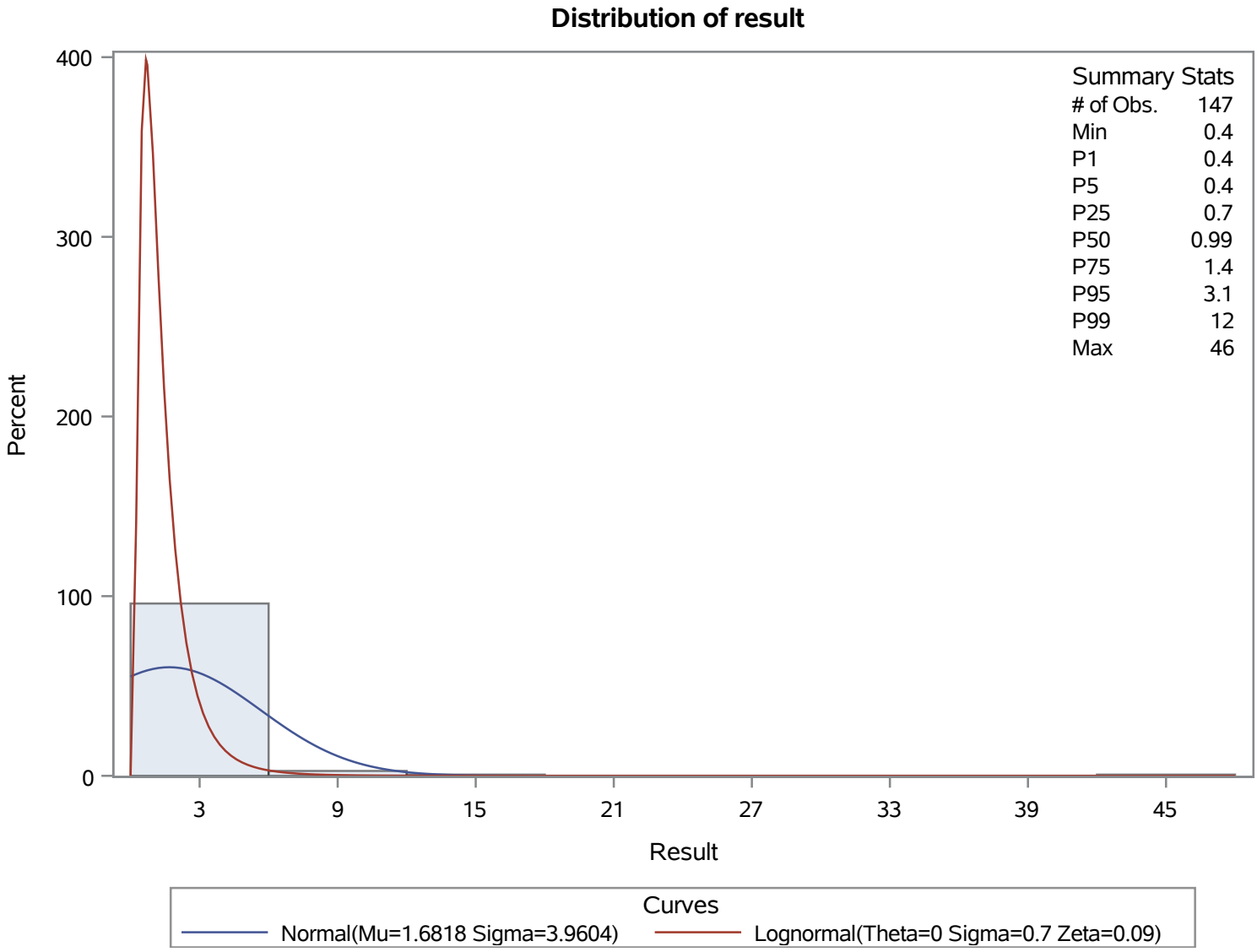
The UNIVARIATE Procedure

Distribution of result



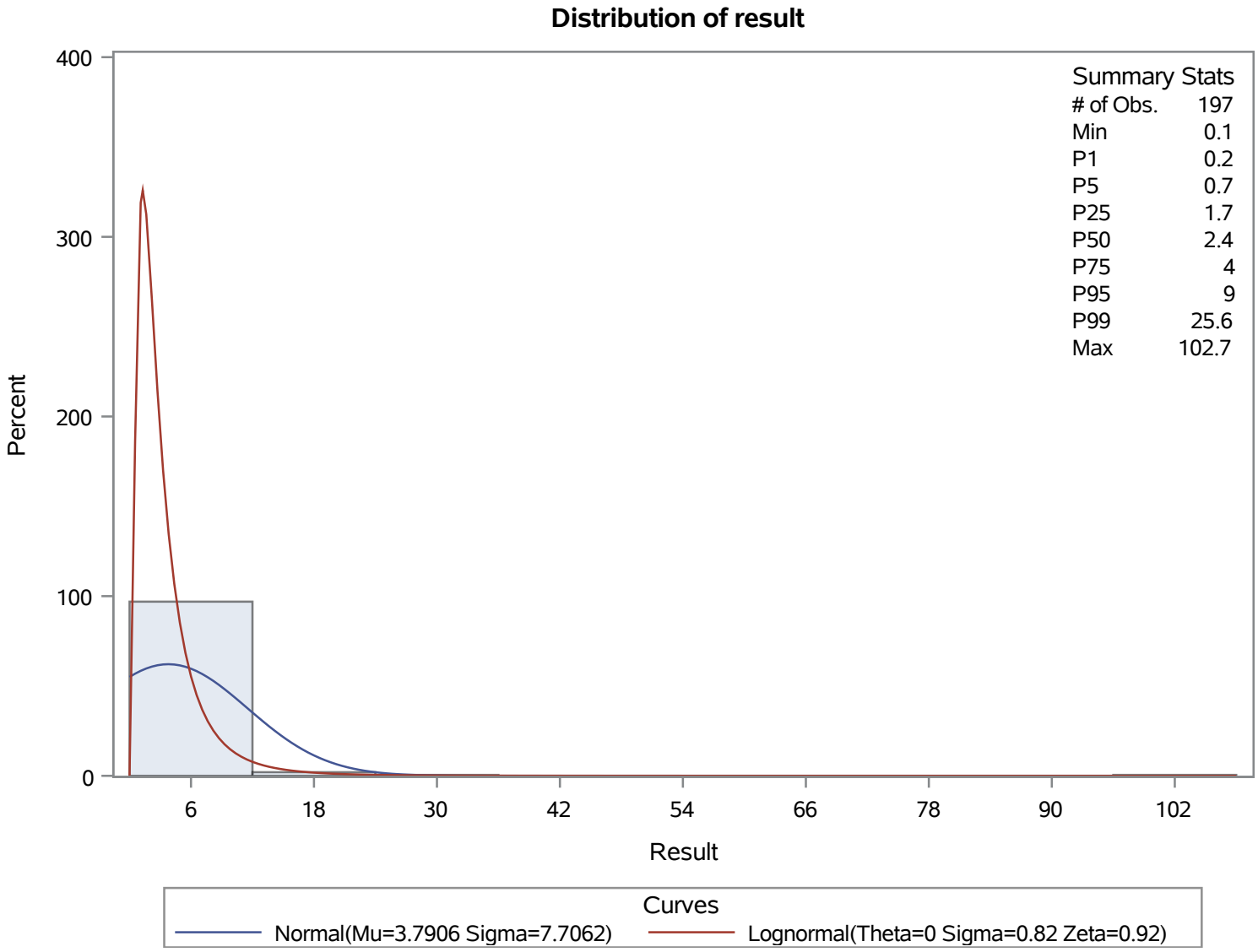
Little Manatee River
LITTLE MANATEE RIVER AT US HWY 301
Uncorr. Chlorophyll-a (µg/L) µg/L
Site ID = 21FLGW 3555

The UNIVARIATE Procedure



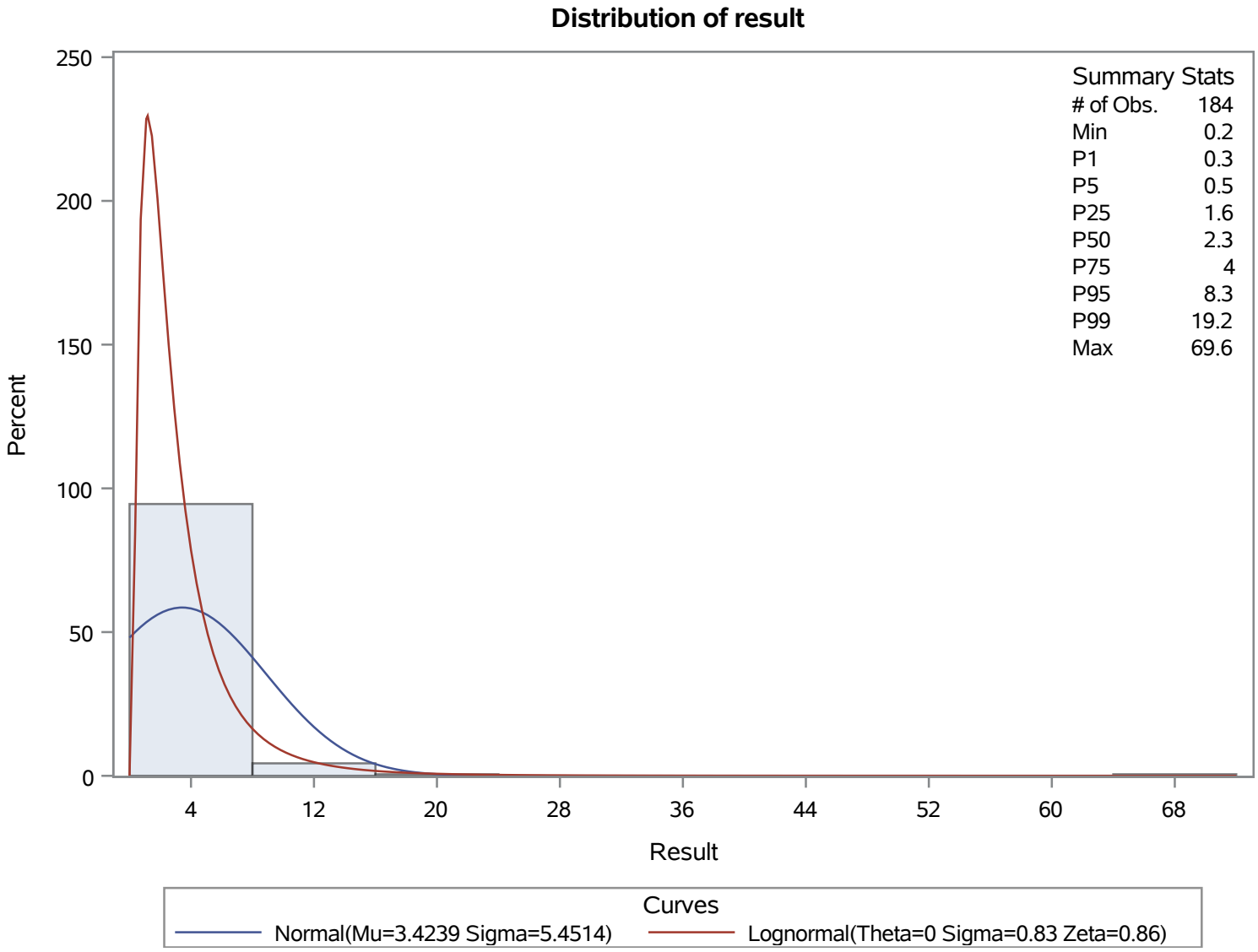
Little Manatee River
Little Manatee River at US 301 bridge
Uncorr. Chlorophyll-a (µg/L) µg/L
Site ID = 21FLHILL113

The UNIVARIATE Procedure



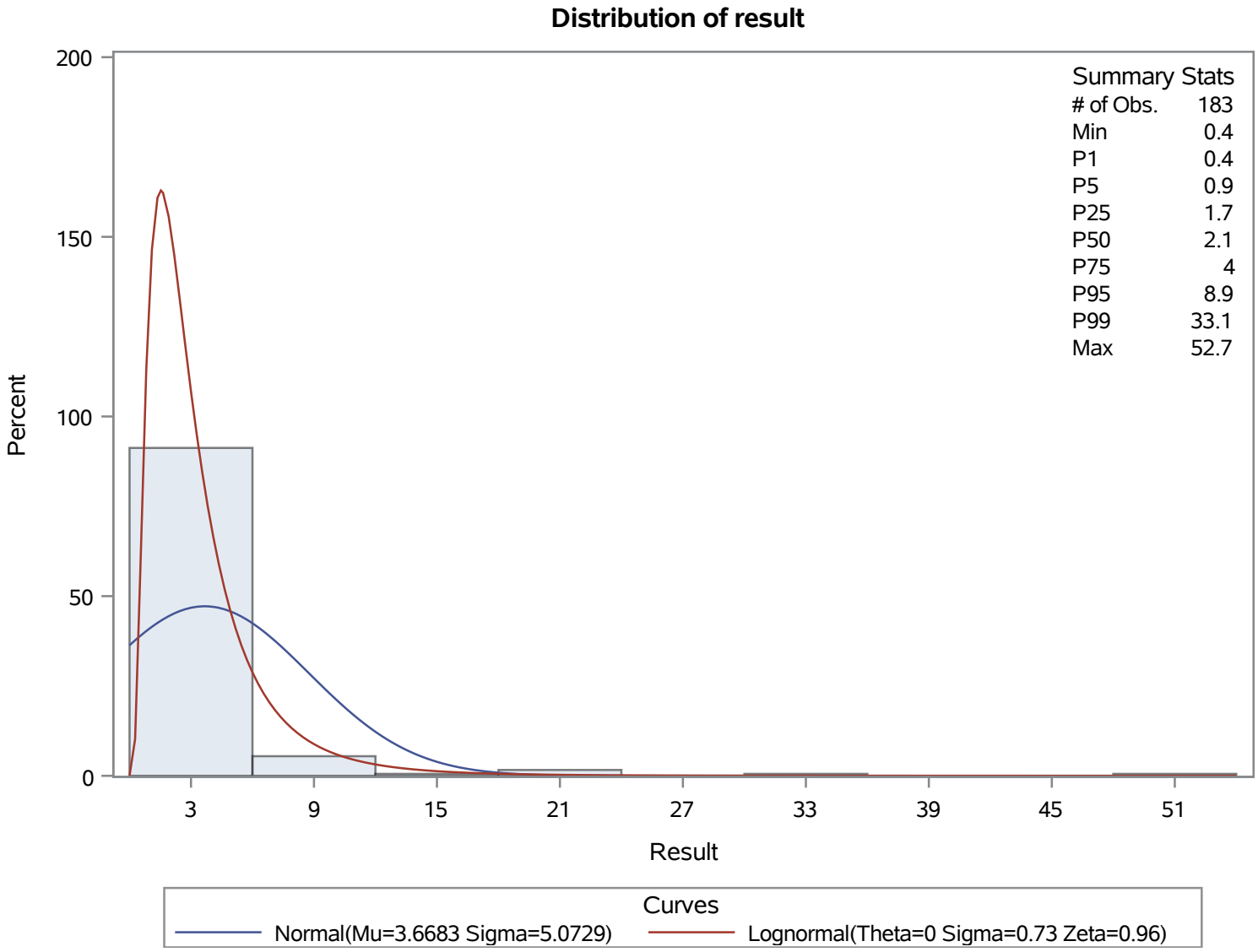
Little Manatee River
Little Manatee River at SR 674
Uncorr. Chlorophyll-a (µg/L) µg/L
Site ID = 21FLHILL129

The UNIVARIATE Procedure



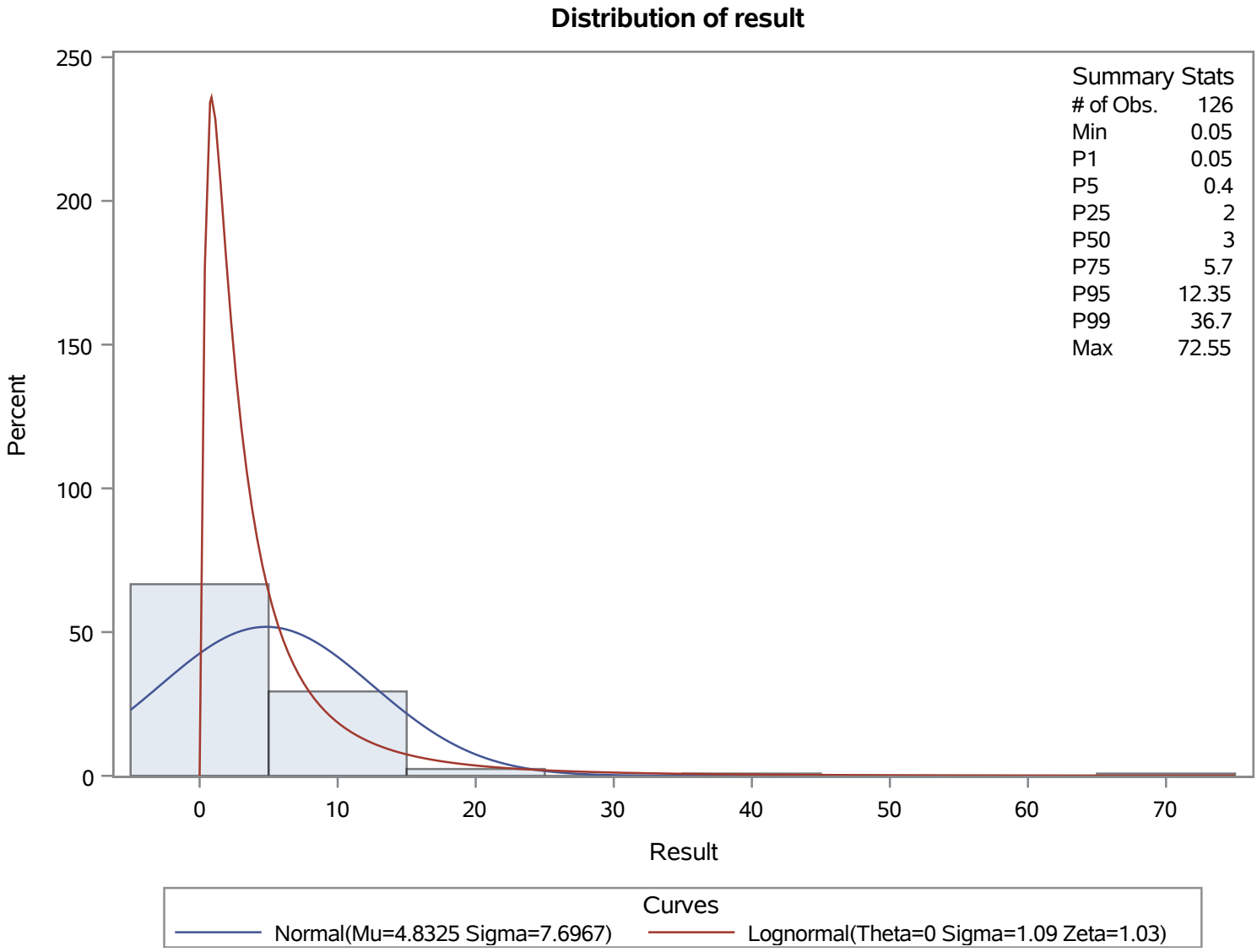
Little Manatee River
Little Manatee River at CR 579
Uncorr. Chlorophyll-a (µg/L) µg/L
Site ID = 21FLHILL140

The UNIVARIATE Procedure



Little Manatee River
LITTLE MANATEE R AT CR579
Uncorr. Chlorophyll-a (µg/L) µg/L
Site ID = 21FLHILL24010013

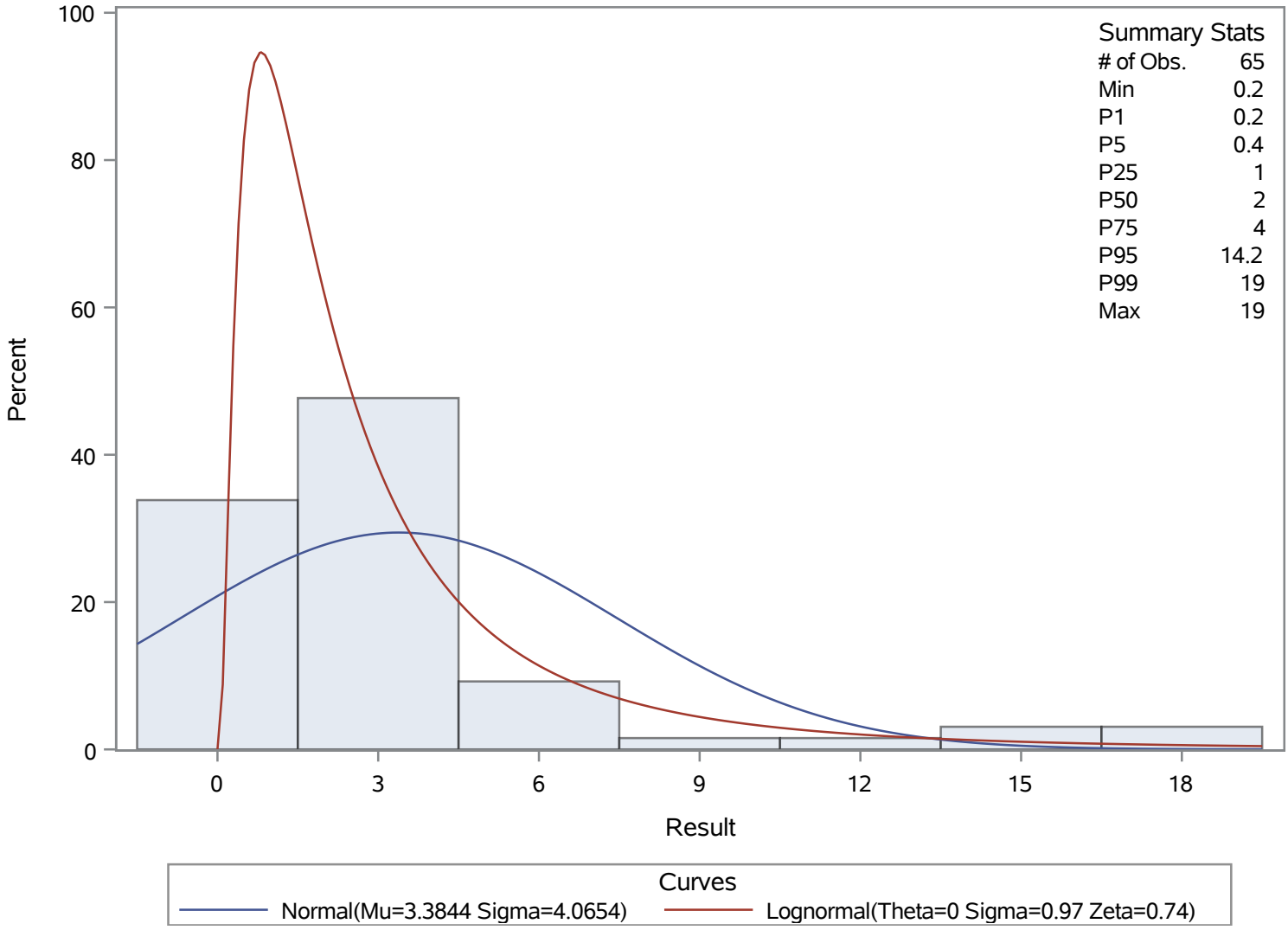
The UNIVARIATE Procedure



Little Manatee River
L MANATEE R BR US 301
Uncorr. Chlorophyll-a (µg/L) µg/L
Site ID = 21FLHILL24010100

The UNIVARIATE Procedure

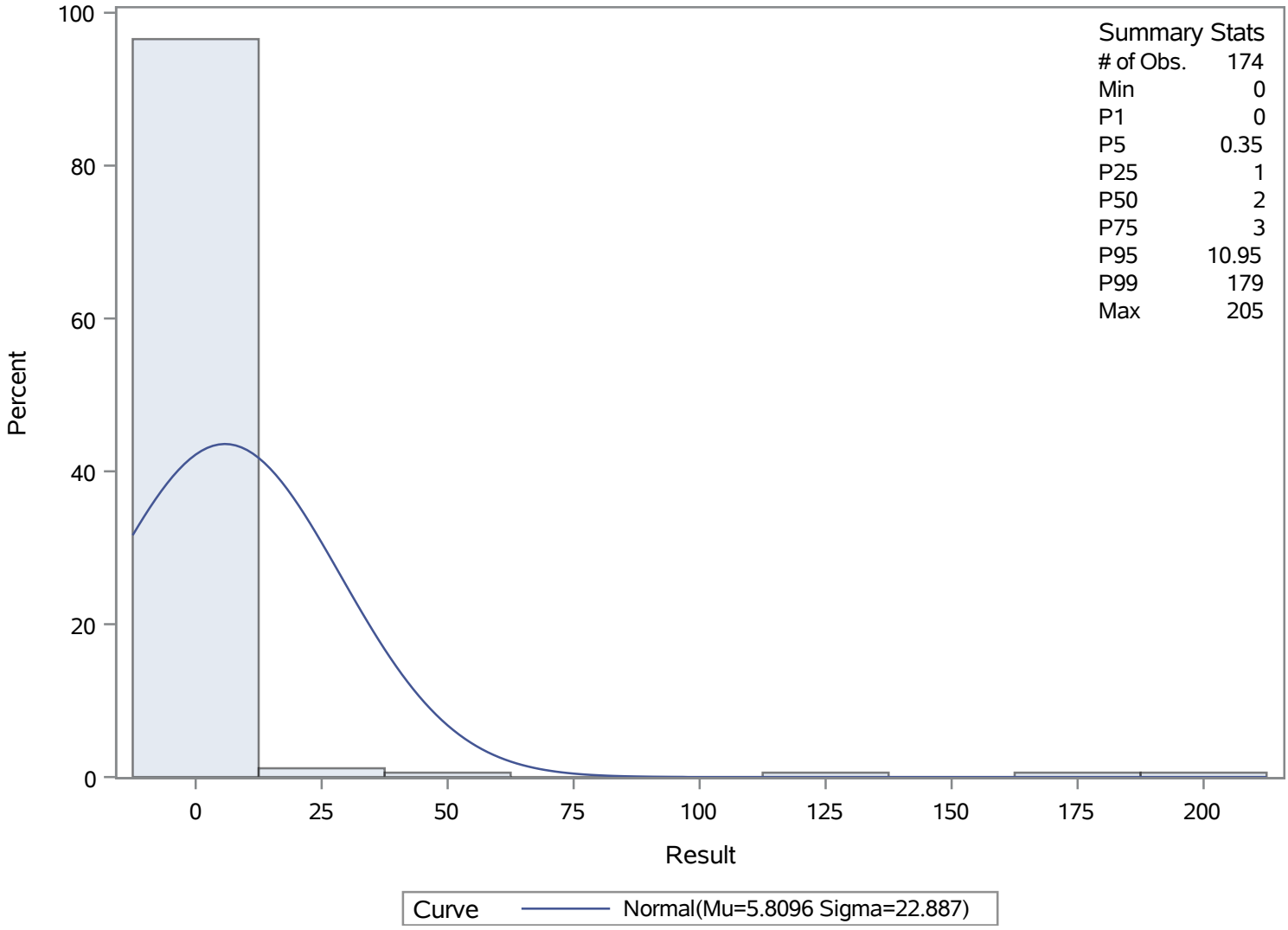
Distribution of result



Little Manatee River
LITTLE MANATEE R AT SR #674
Uncorr. Chlorophyll-a (µg/L) µg/L
Site ID = 21FLHILL24010110

The UNIVARIATE Procedure

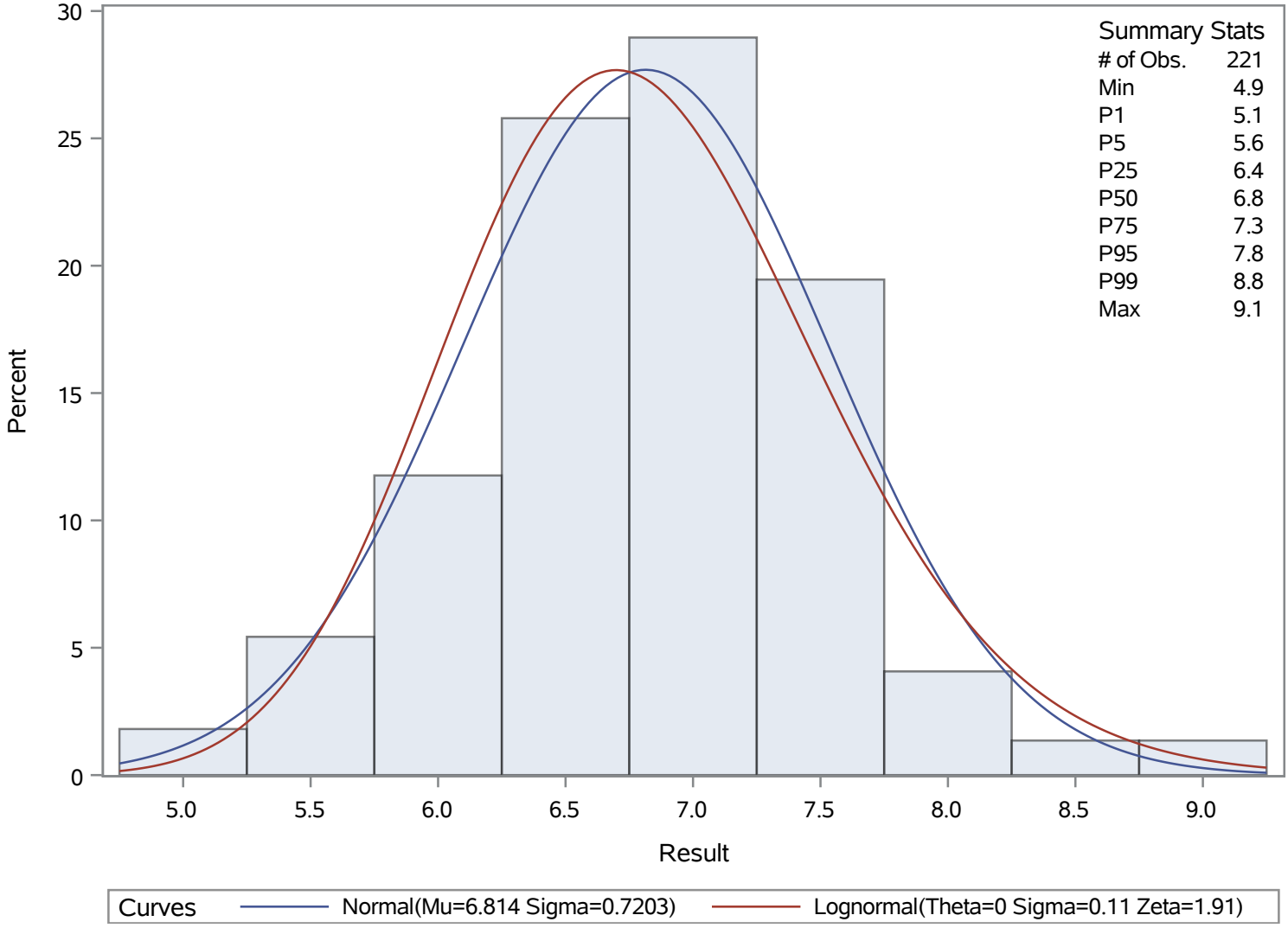
Distribution of result



Little Manatee River
LITTLE MANATEE RIVER NEAR FT. LONESOME FL
pH (SU) SU
Site ID = 112WRD 02300100

The UNIVARIATE Procedure

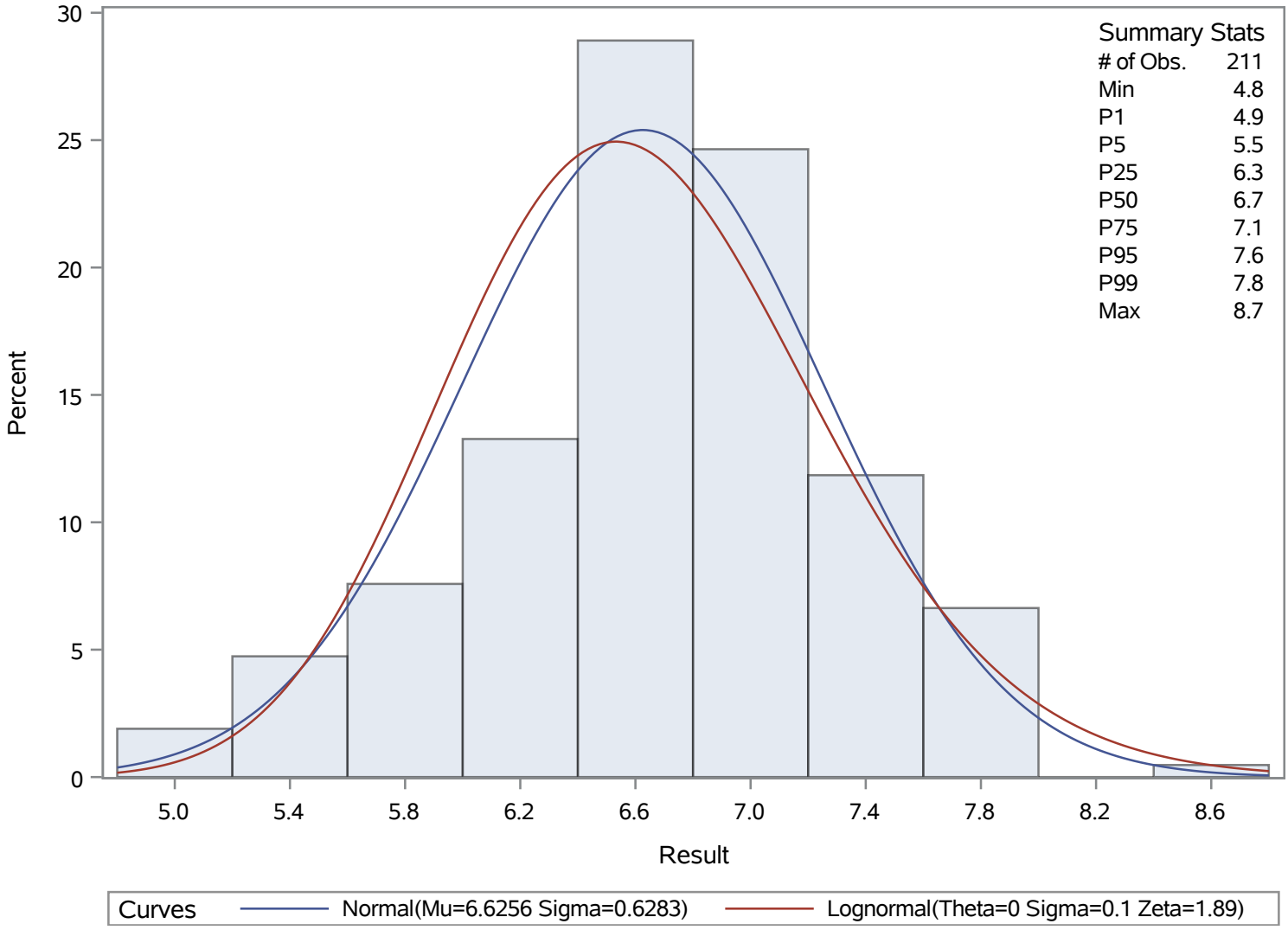
Distribution of result



Little Manatee River
SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL
pH (SU) SU
Site ID = 112WRD 02300200

The UNIVARIATE Procedure

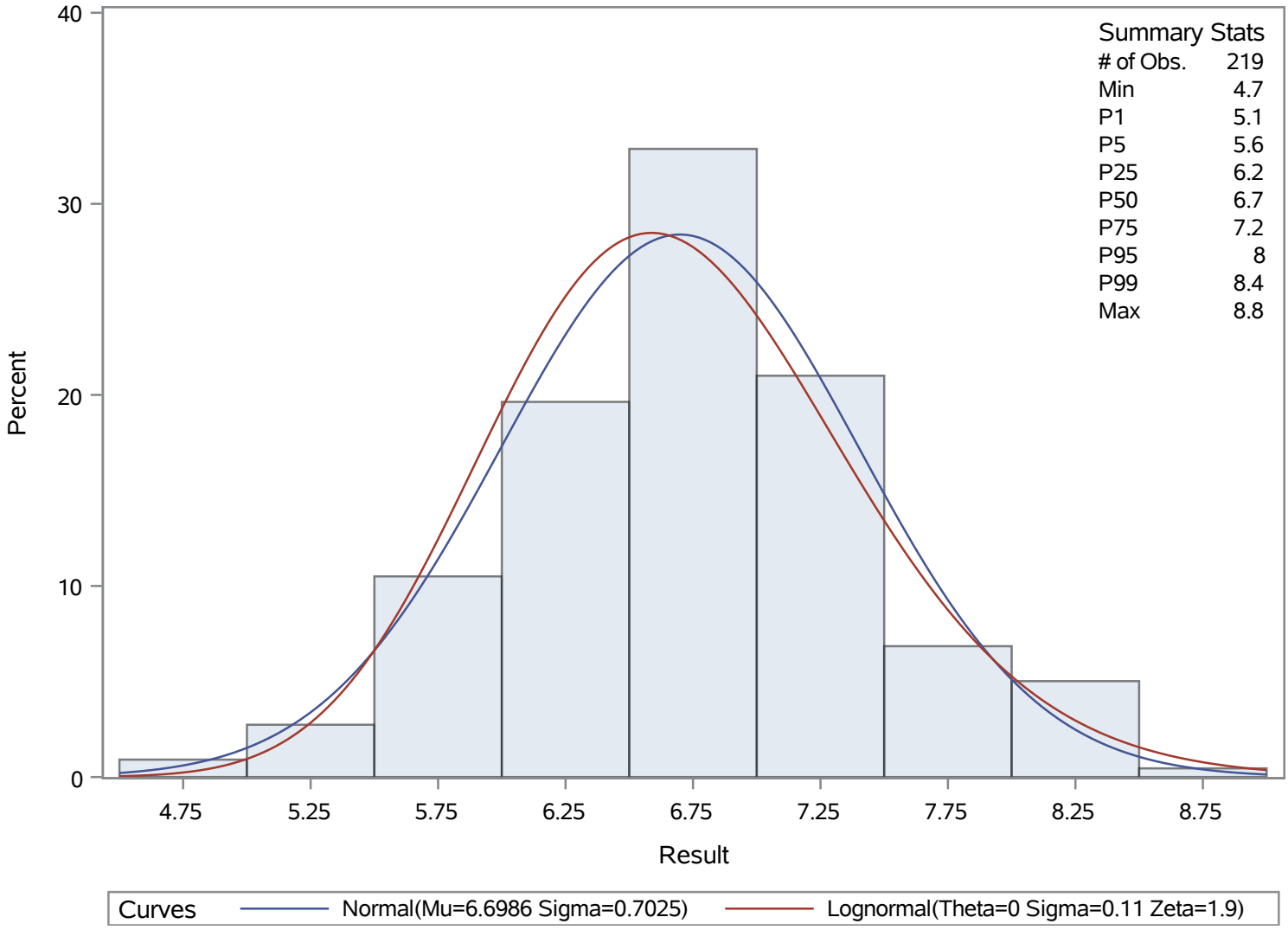
Distribution of result



Little Manatee River
LITTLE MANATEE RIVER NEAR WIMAUMA FL
pH (SU) SU
Site ID = 112WRD 02300500

The UNIVARIATE Procedure

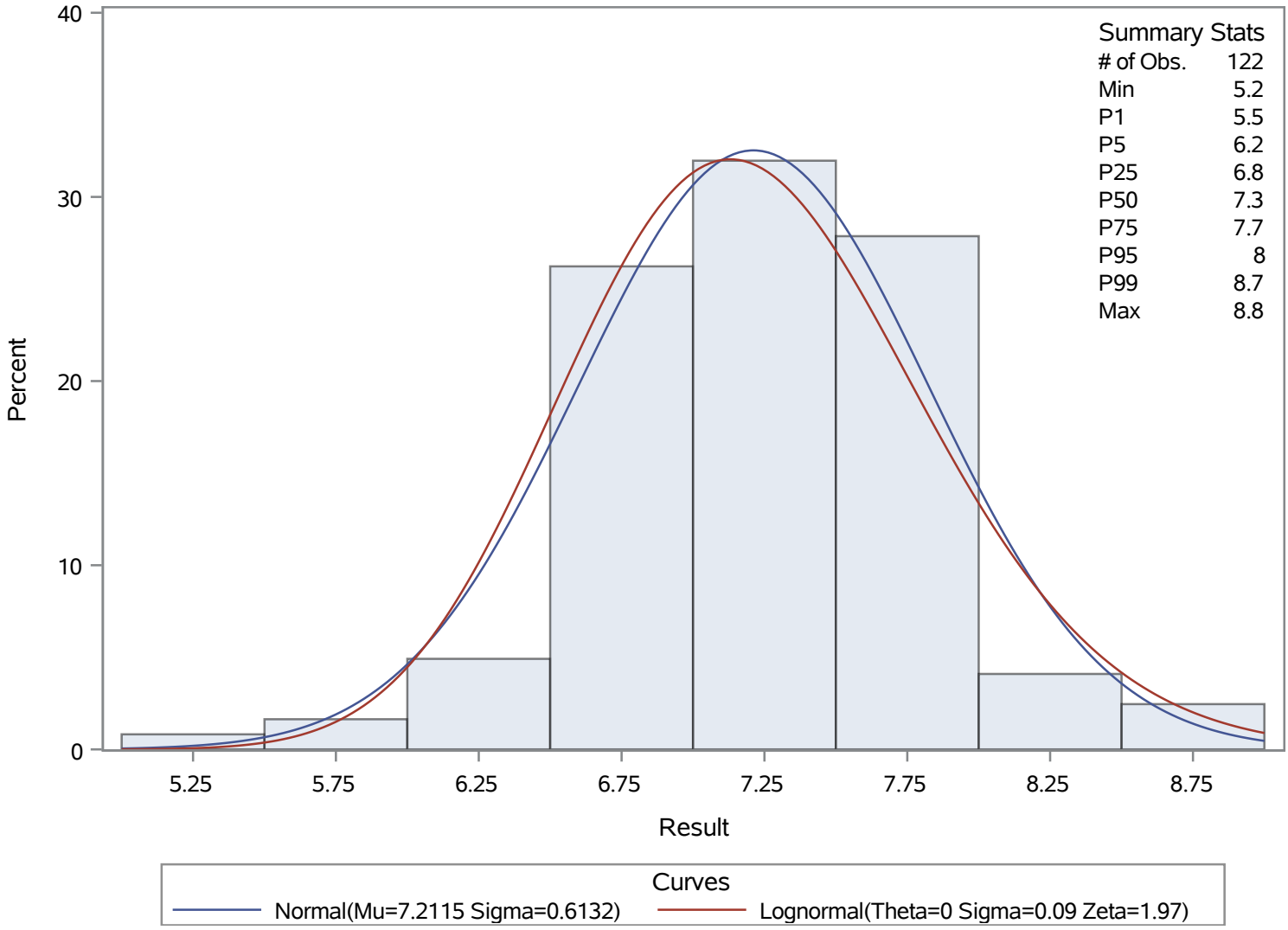
Distribution of result



Little Manatee River
L MANATEE R BR US 301
pH (SU) SU
Site ID = 21FLA 24010100

The UNIVARIATE Procedure

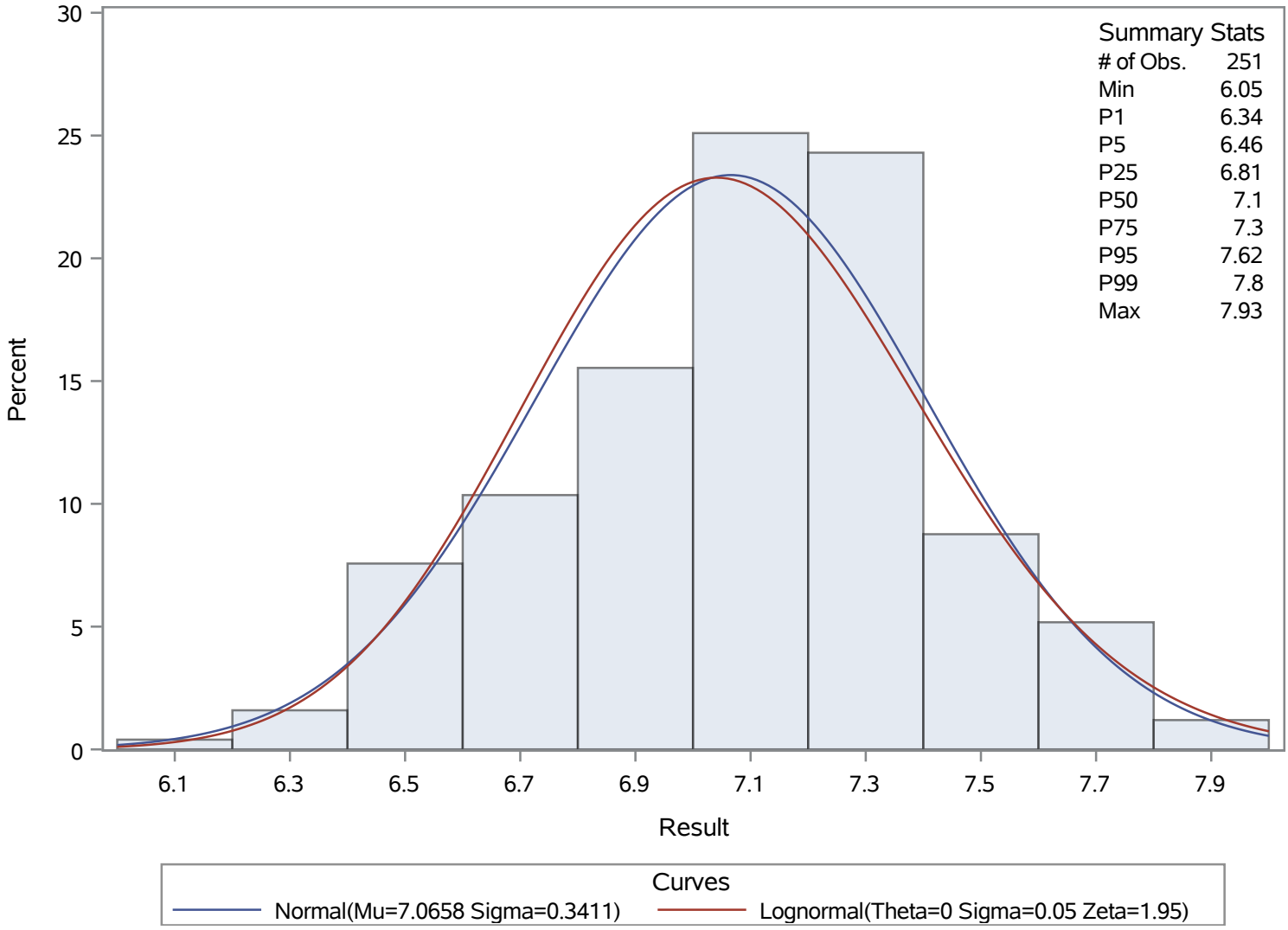
Distribution of result



Little Manatee River
LITTLE MANATEE RIVER AT US HWY 301
pH (SU) SU
Site ID = 21FLGW 3555

The UNIVARIATE Procedure

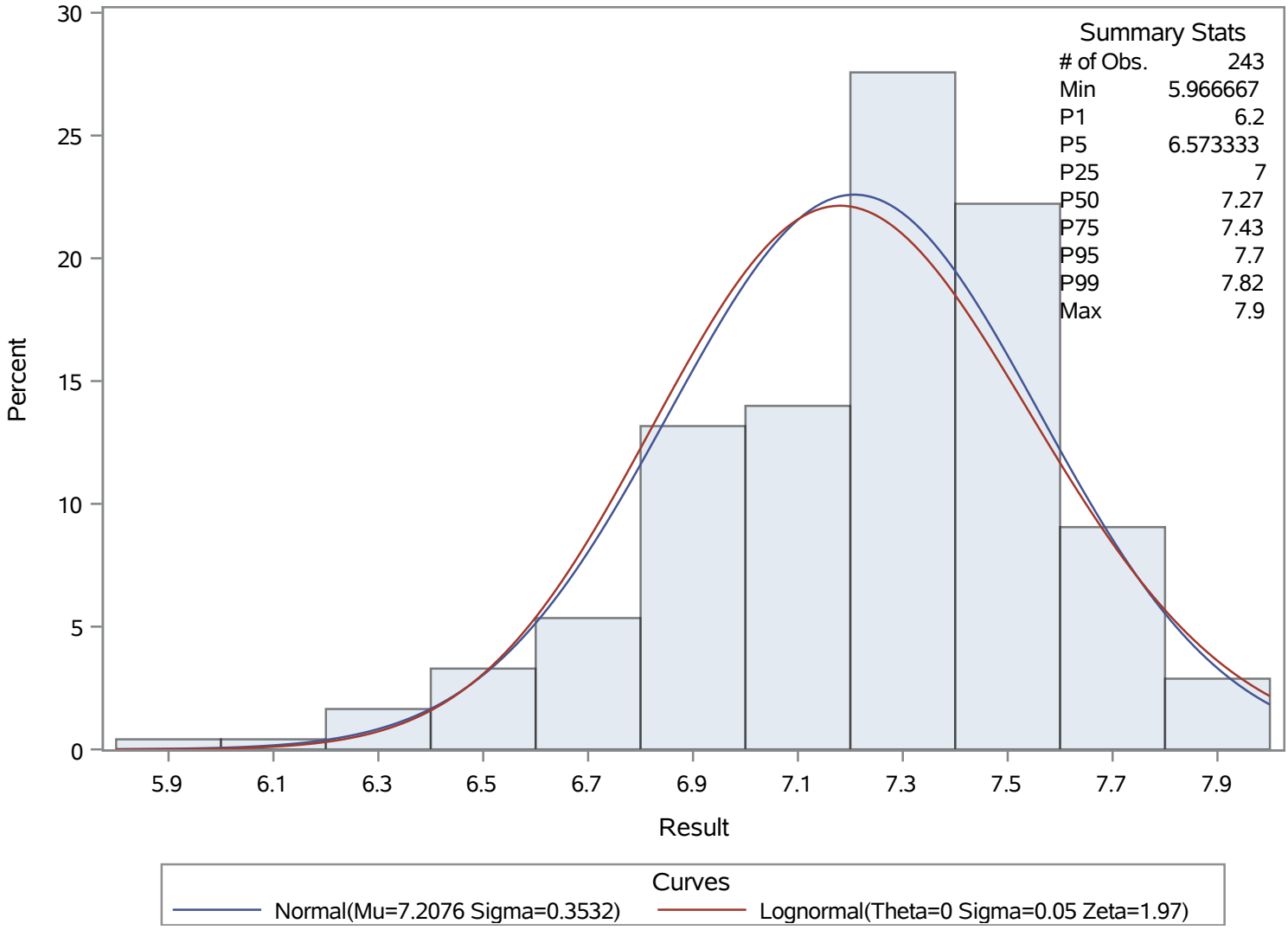
Distribution of result



Little Manatee River
Little Manatee River at US 301 bridge
pH (SU) SU
Site ID = 21FLHILL113

The UNIVARIATE Procedure

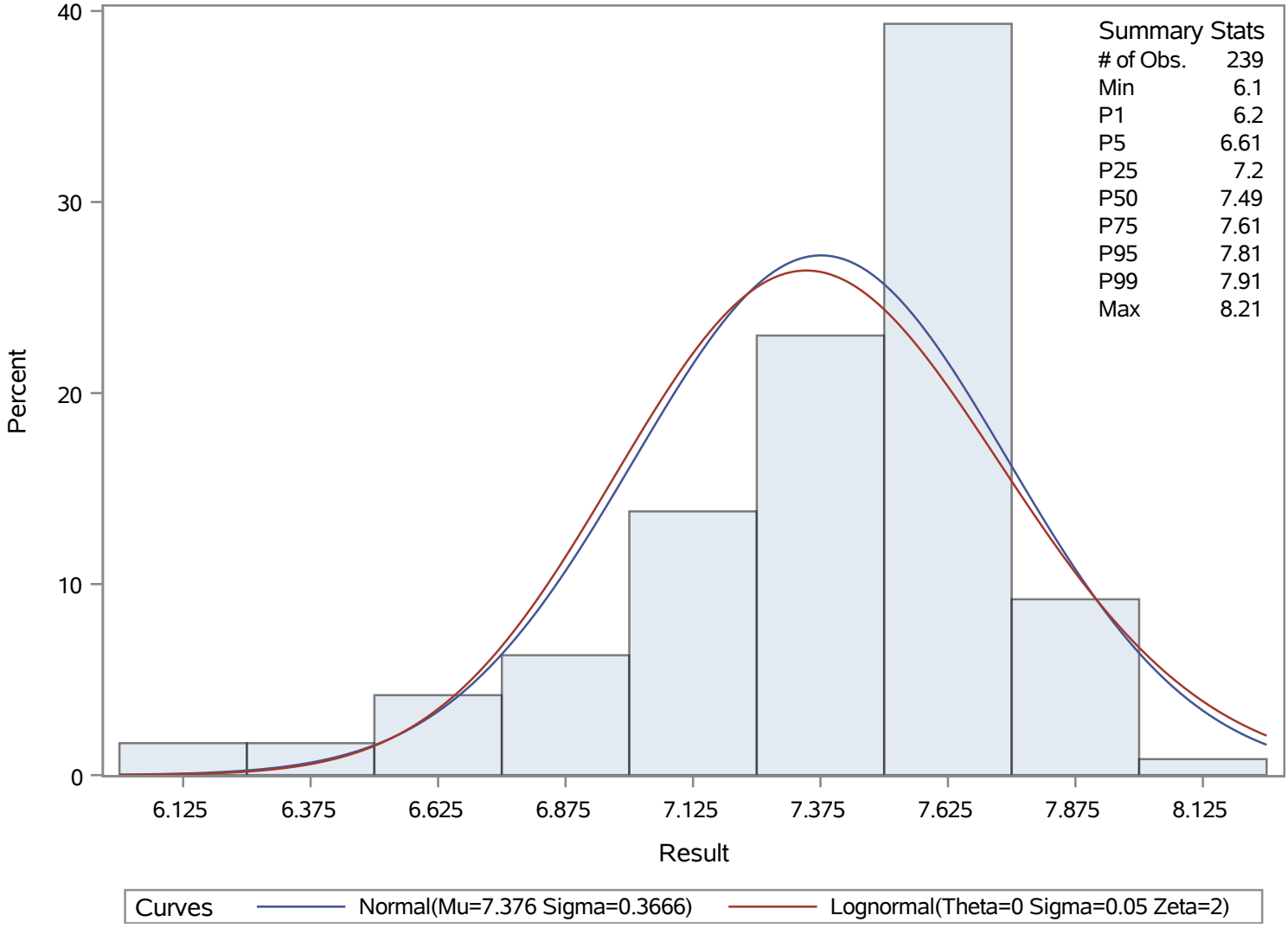
Distribution of result



Little Manatee River
Little Manatee River at SR 674
pH (SU) SU
Site ID = 21FLHILL129

The UNIVARIATE Procedure

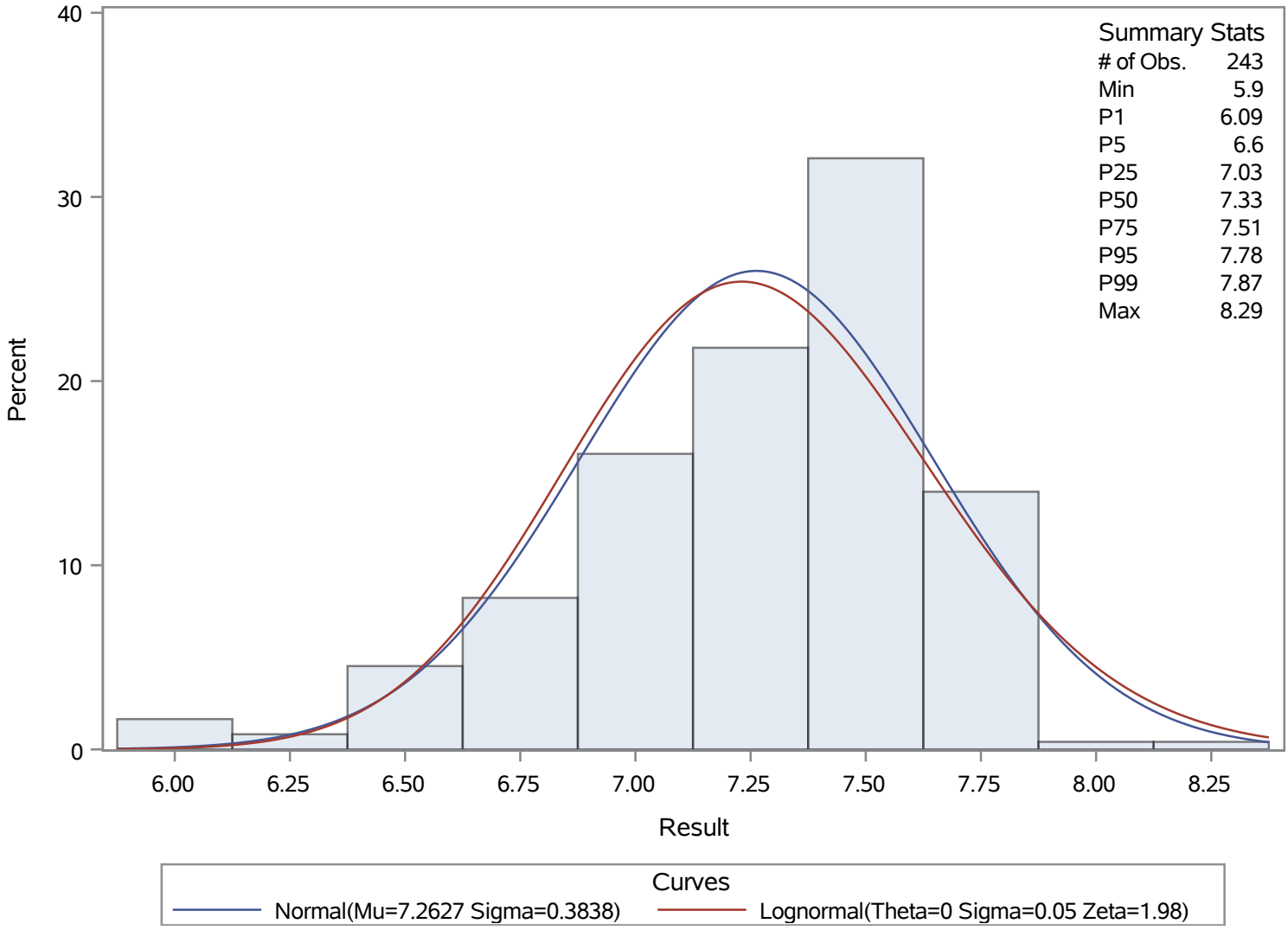
Distribution of result



Little Manatee River
Little Manatee River at CR 579
pH (SU) SU
Site ID = 21FLHILL140

The UNIVARIATE Procedure

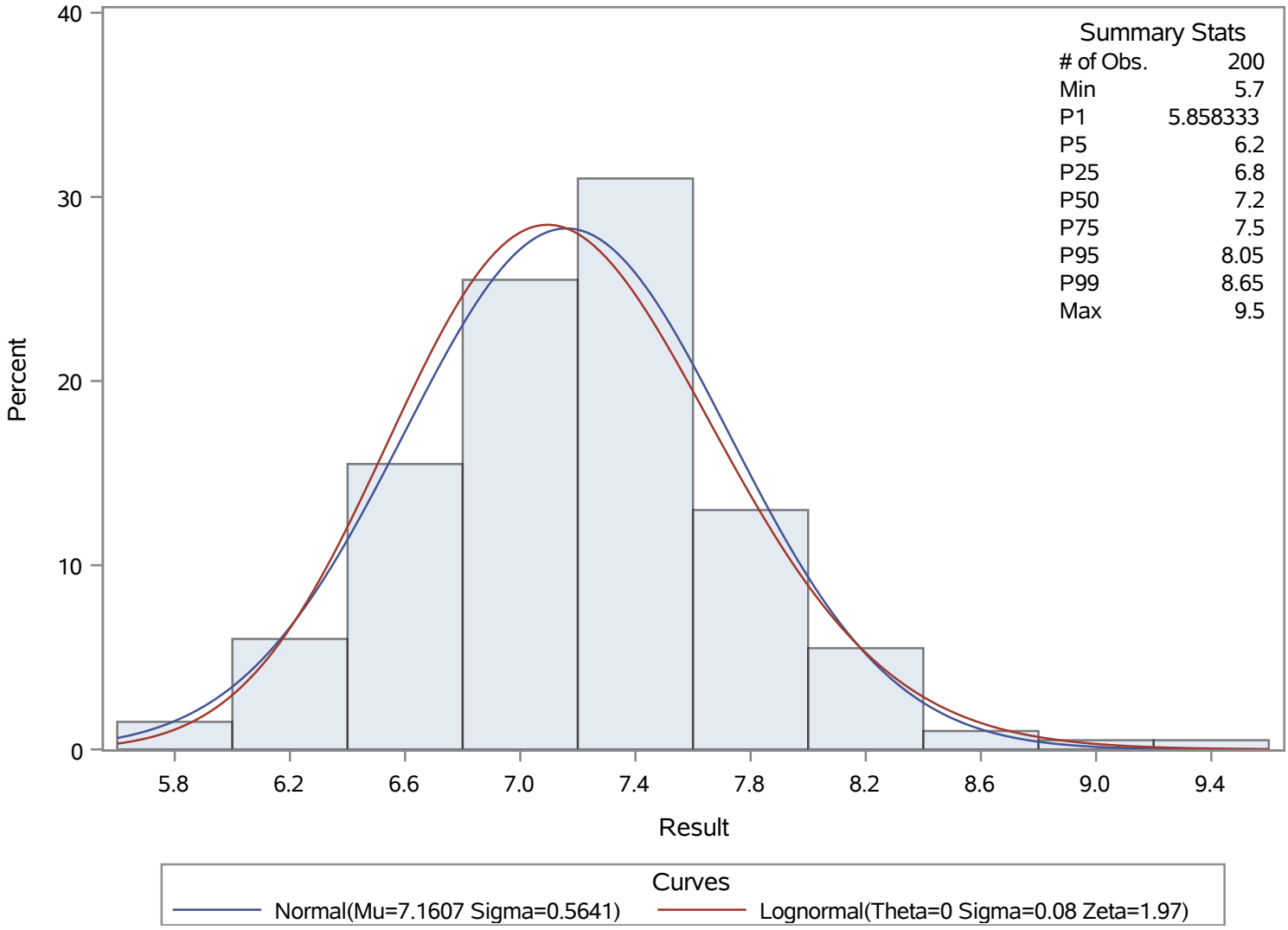
Distribution of result



Little Manatee River
LITTLE MANATEE R AT CR579
pH (SU) SU
Site ID = 21FLHILL24010013

The UNIVARIATE Procedure

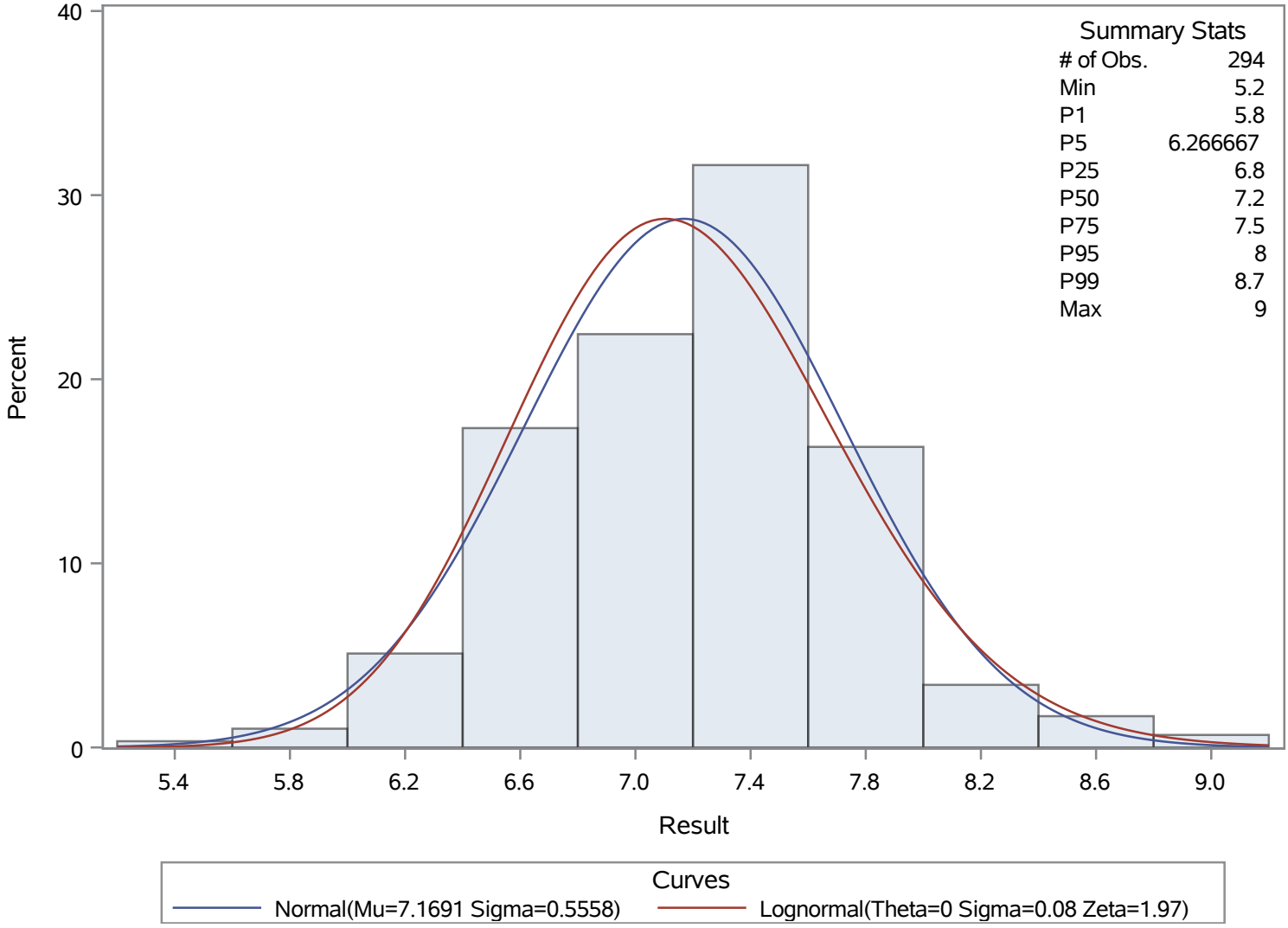
Distribution of result



Little Manatee River
L MANATEE R BR US 301
pH (SU) SU
Site ID = 21FLHILL24010100

The UNIVARIATE Procedure

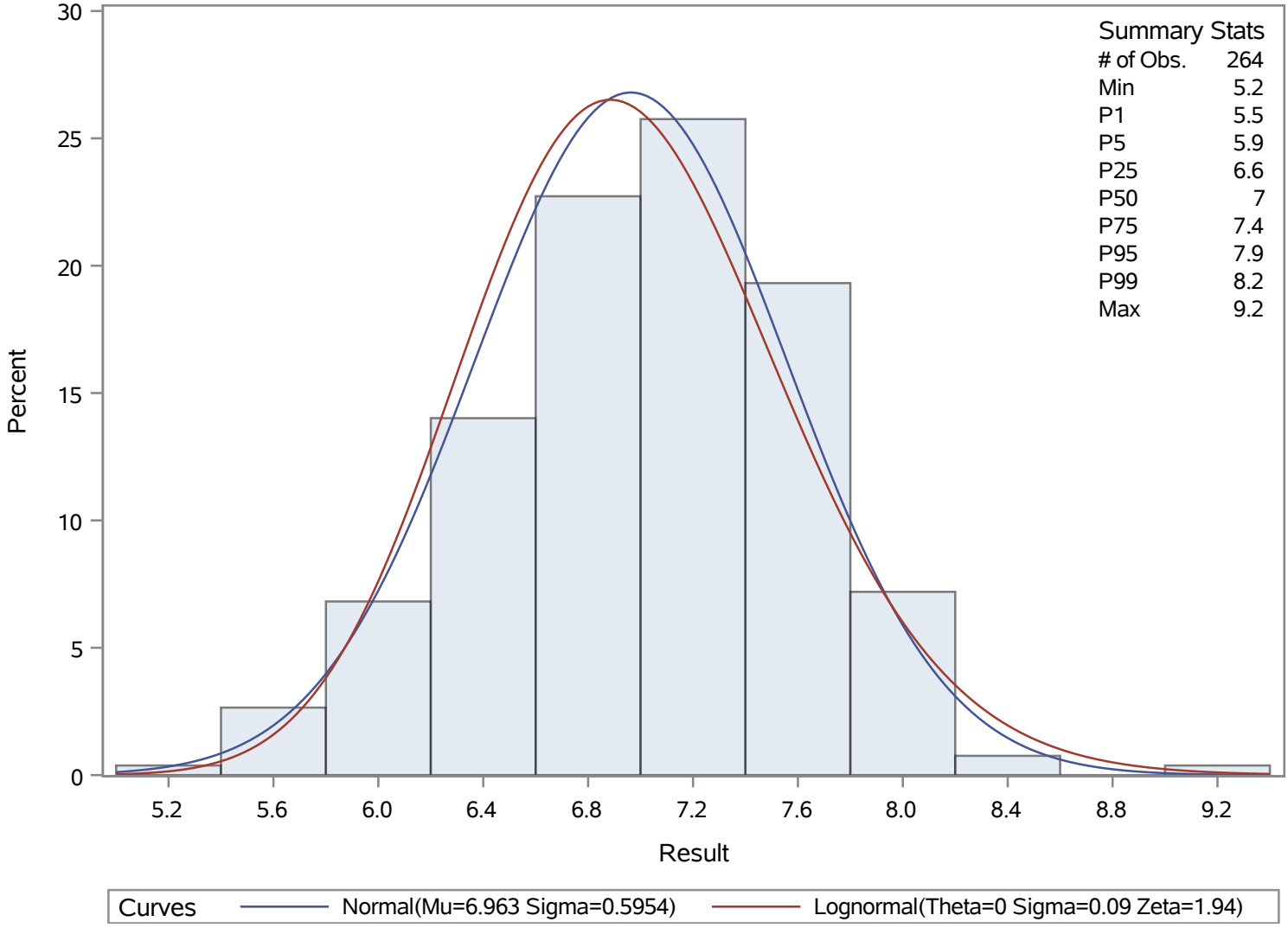
Distribution of result



Little Manatee River
LITTLE MANATEE R AT SR #674
pH (SU) SU
Site ID = 21FLHILL24010110

The UNIVARIATE Procedure

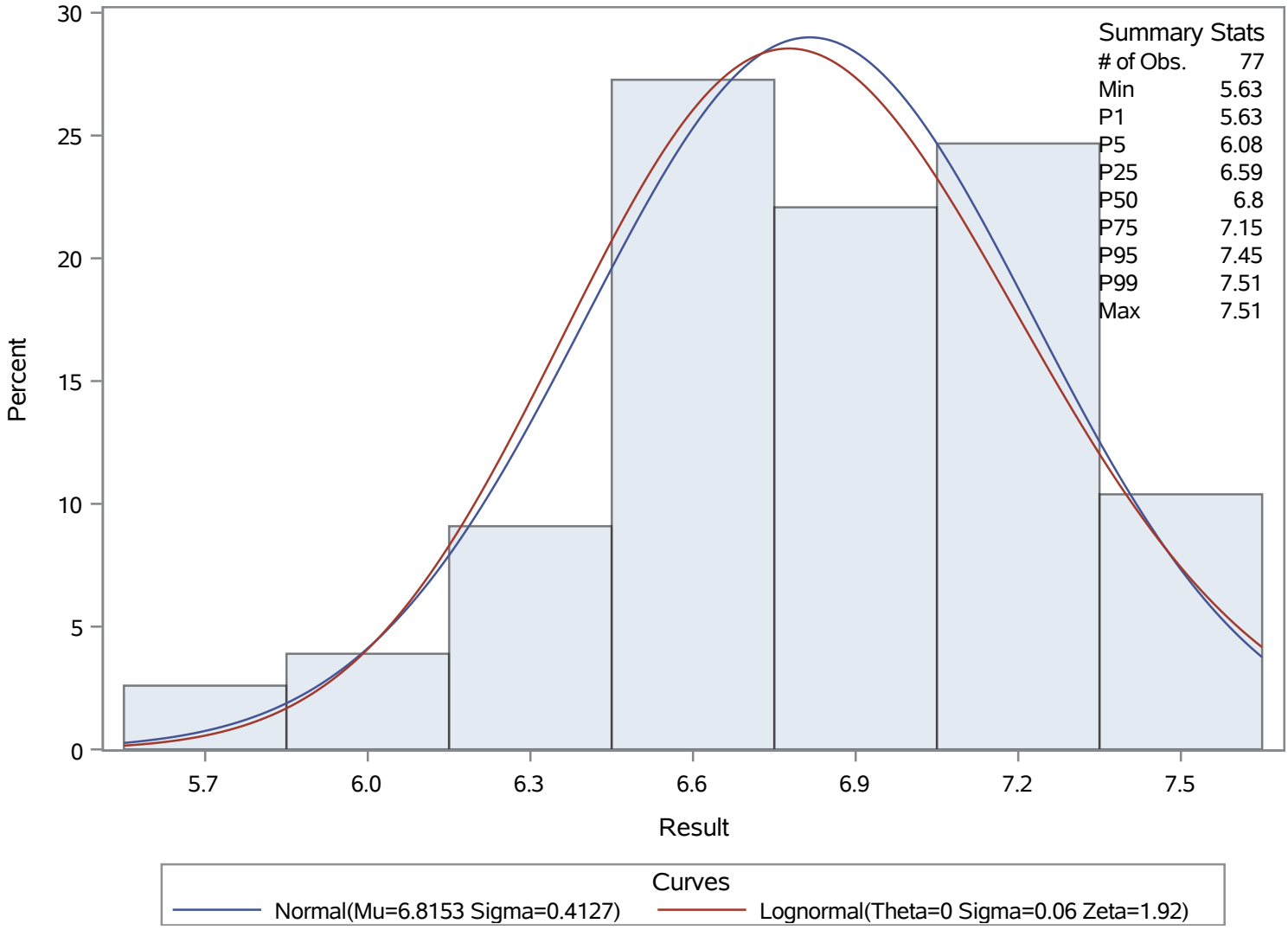
Distribution of result



Little Manatee River
Little Manatee R. at SR674
pH (SU) SU
Site ID = 21FLIMCALM674

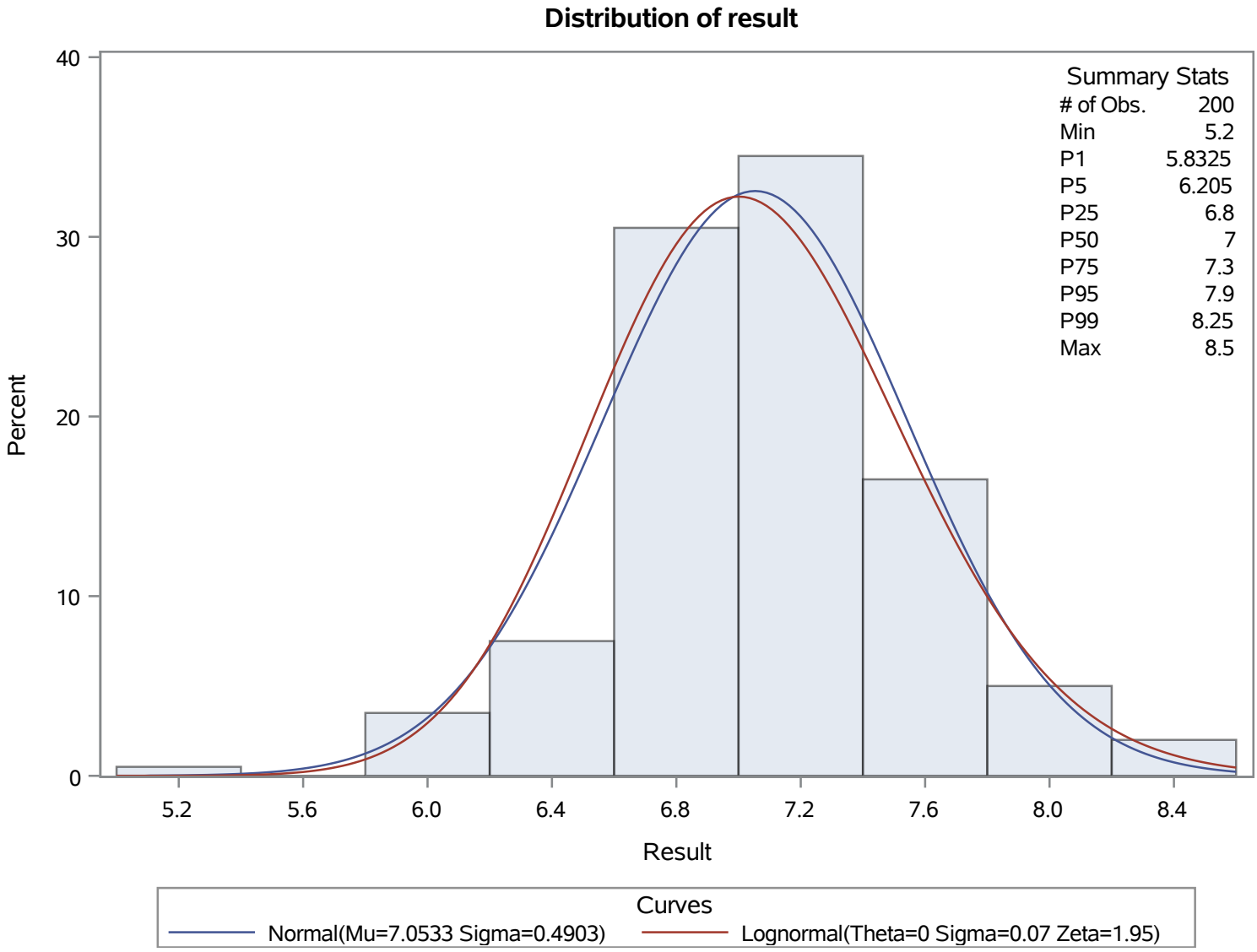
The UNIVARIATE Procedure

Distribution of result



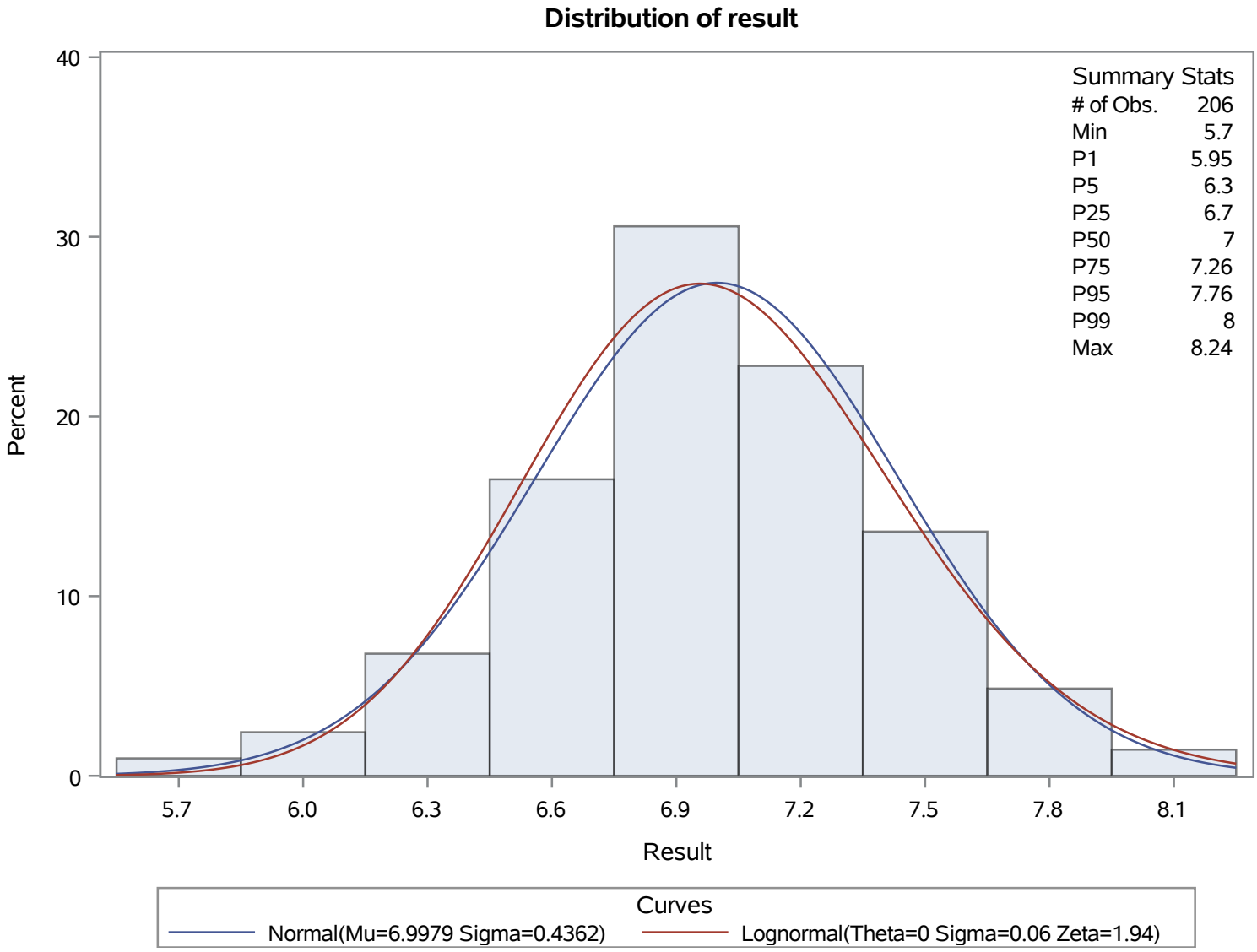
Little Manatee River
D1
pH (SU) SU
Site ID = 21FLMANAD1

The UNIVARIATE Procedure



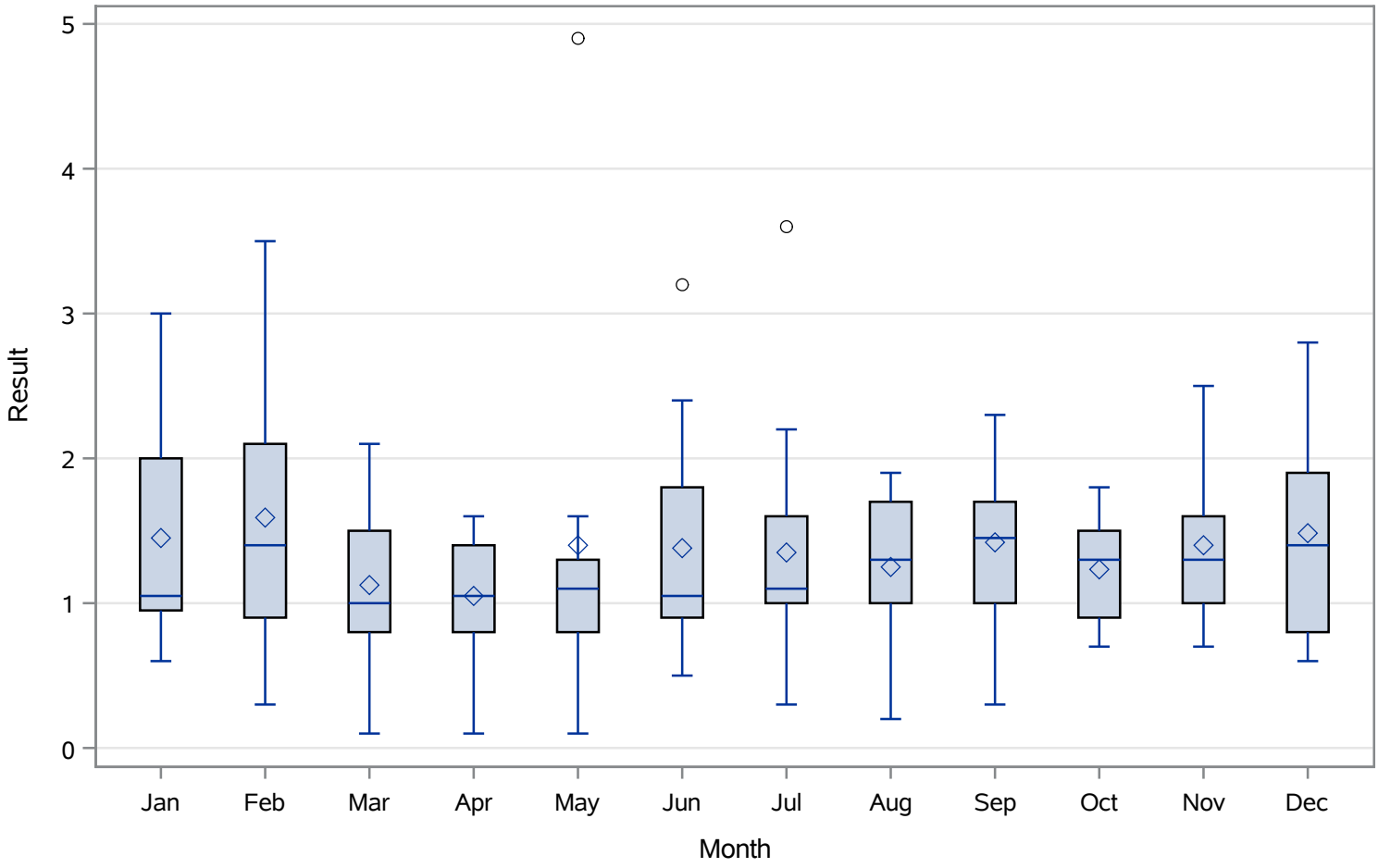
Little Manatee River
D3
pH (SU) SU
Site ID = 21FLMANAD3

The UNIVARIATE Procedure



2c: IWR Seasonality Plots

Little Manatee River
L MANATEE R BR US 301
BOD 5-Day (mg/L) mg/L
Site ID = 21FLA 24010100

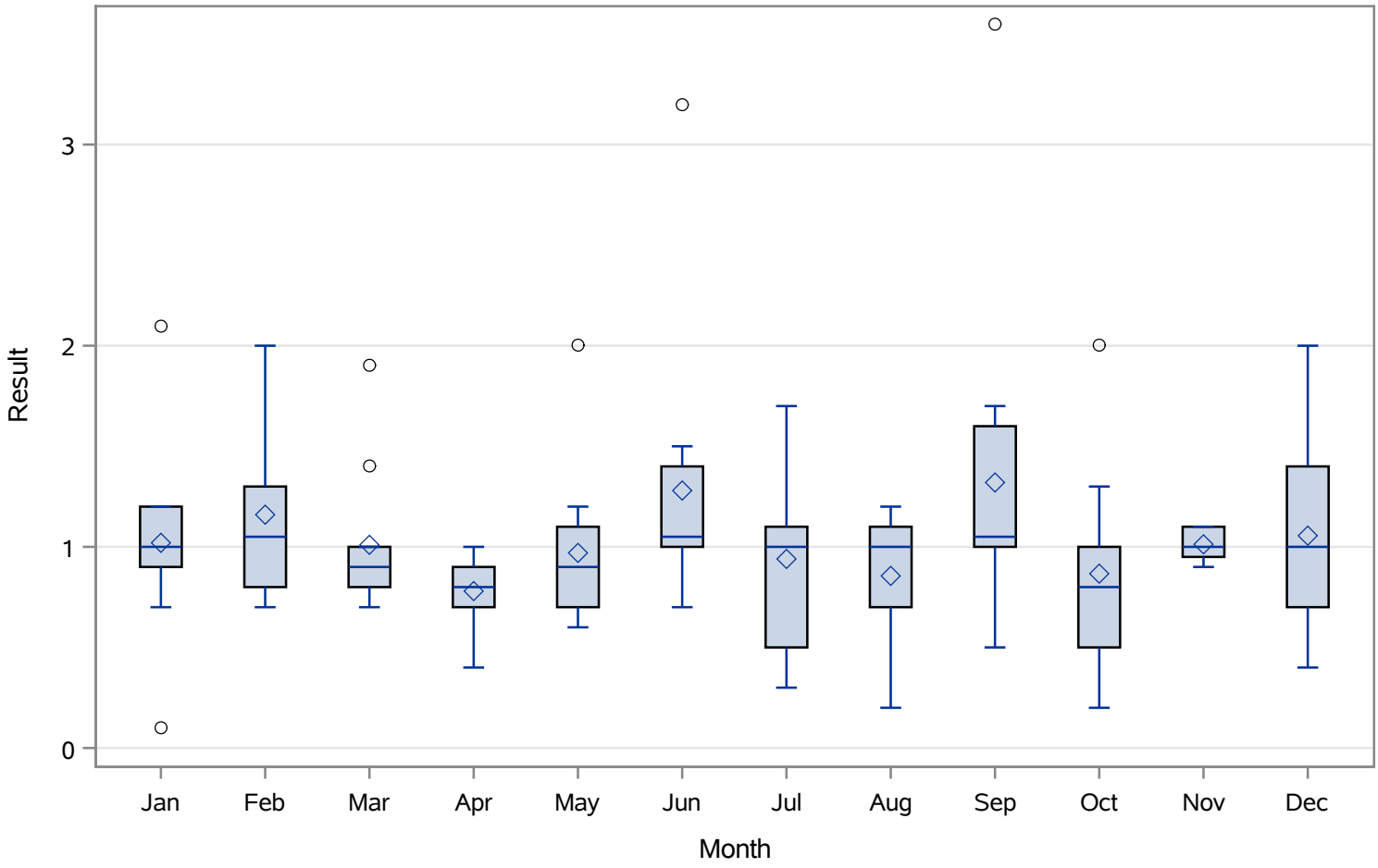


Little Manatee River

Little Manatee River at US 301 bridge

BOD 5-Day (mg/L) mg/L

Site ID = 21FLHILL113

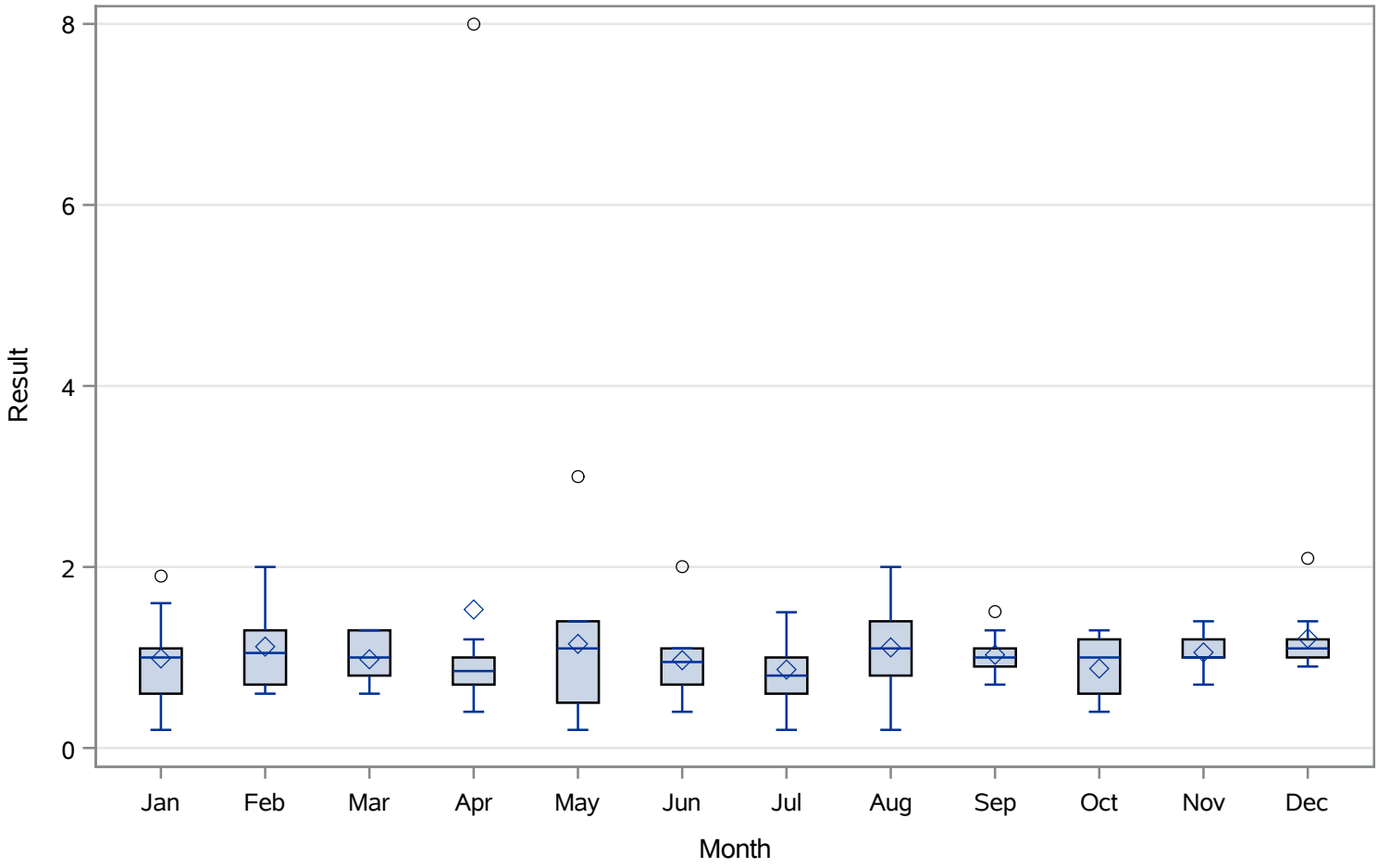


Little Manatee River

Little Manatee River at SR 674

BOD 5-Day (mg/L) mg/L

Site ID = 21FLHILL129

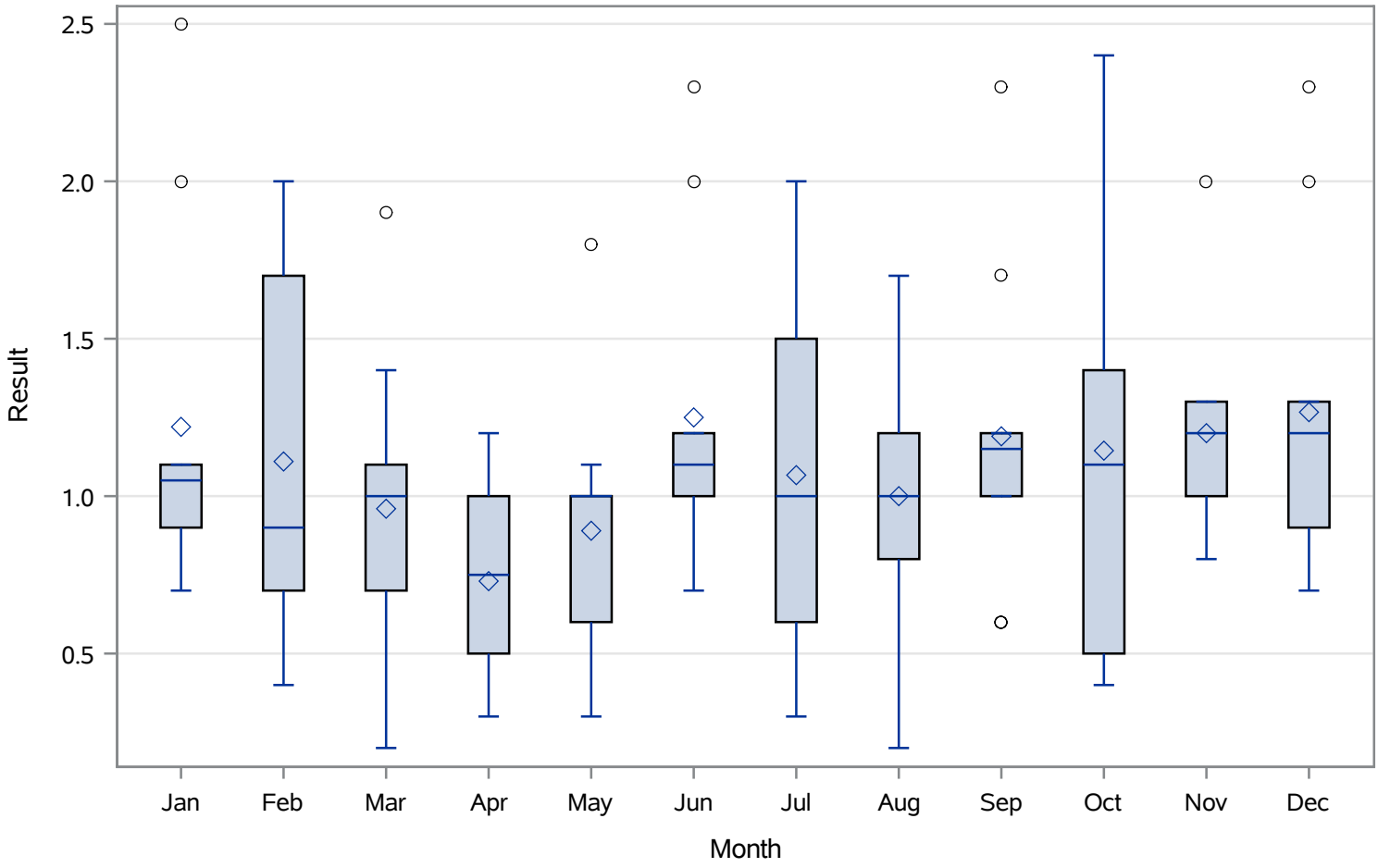


Little Manatee River

Little Manatee River at CR 579

BOD 5-Day (mg/L) mg/L

Site ID = 21FLHILL140

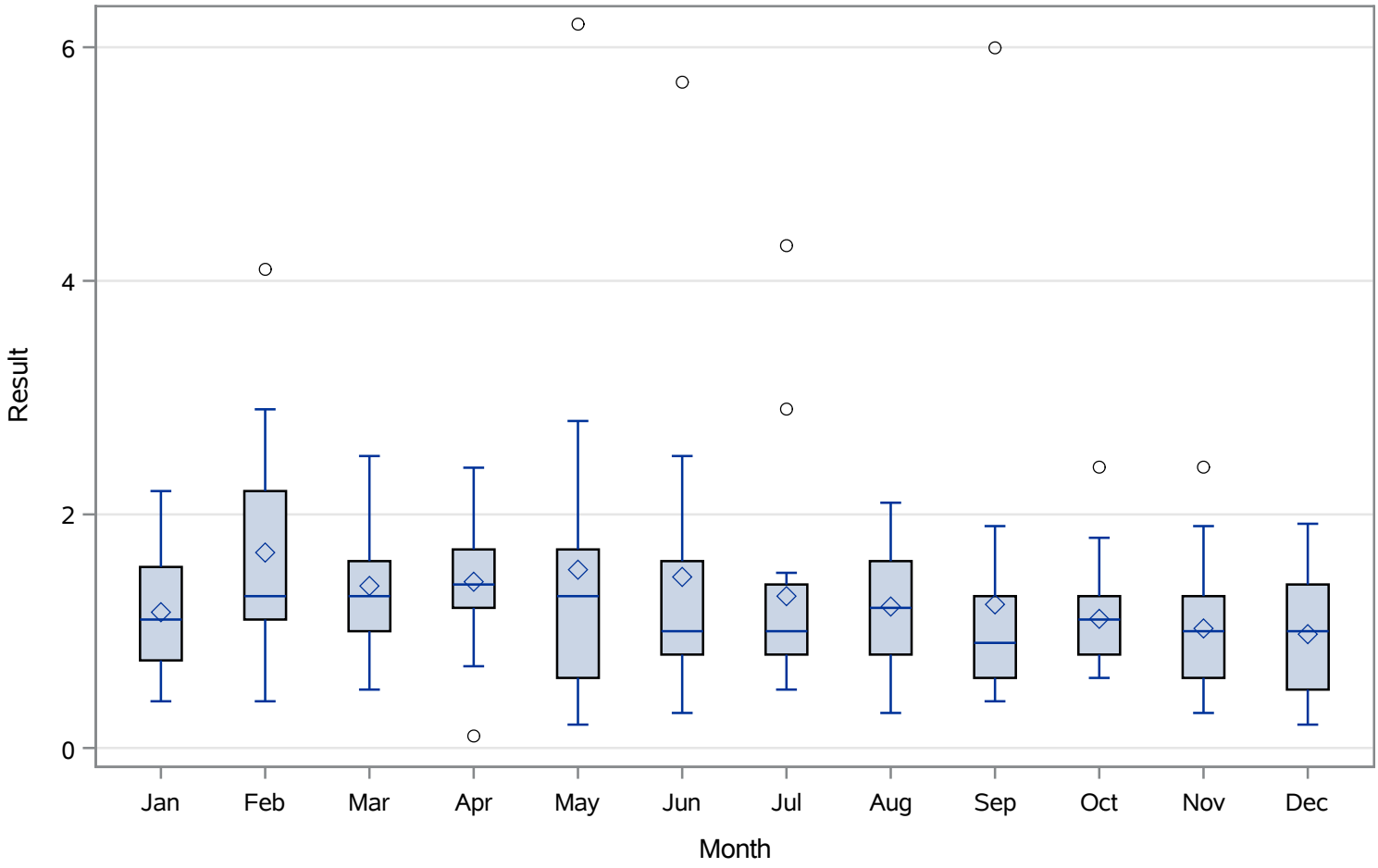


Little Manatee River

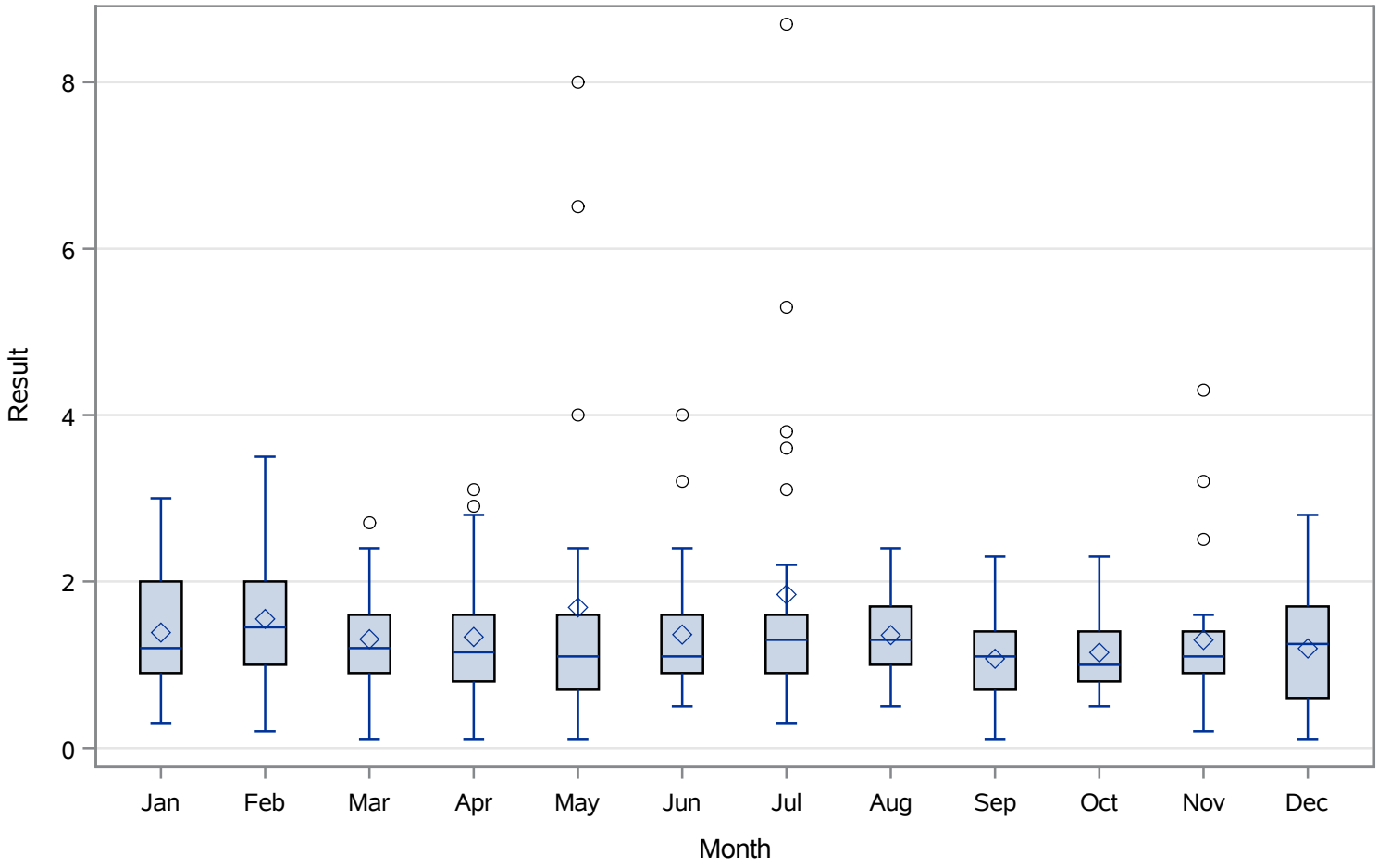
LITTLE MANATEE R AT CR579

BOD 5-Day (mg/L) mg/L

Site ID = 21FLHILL24010013



Little Manatee River
L MANATEE R BR US 301
BOD 5-Day (mg/L) mg/L
Site ID = 21FLHILL24010100

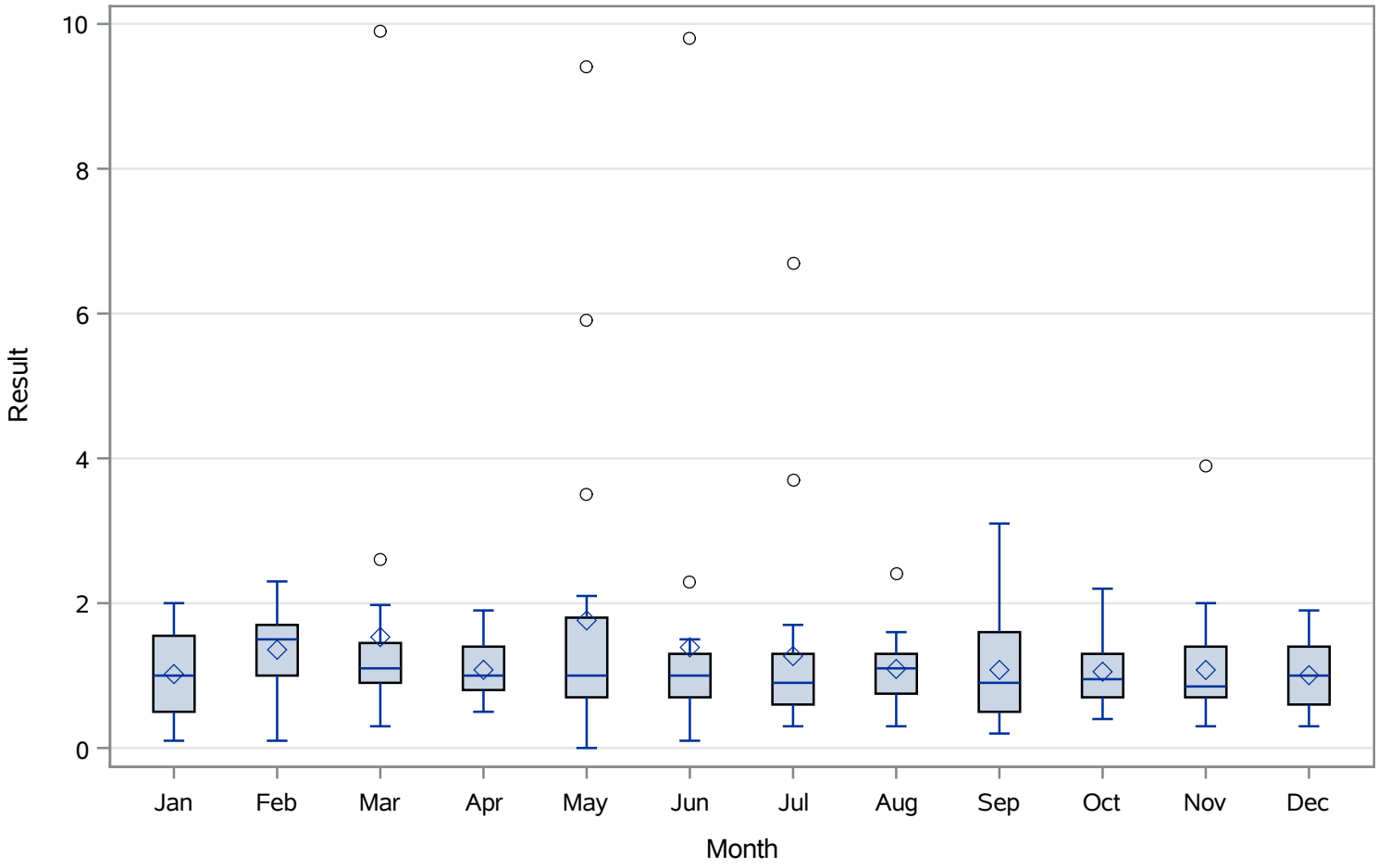


Little Manatee River

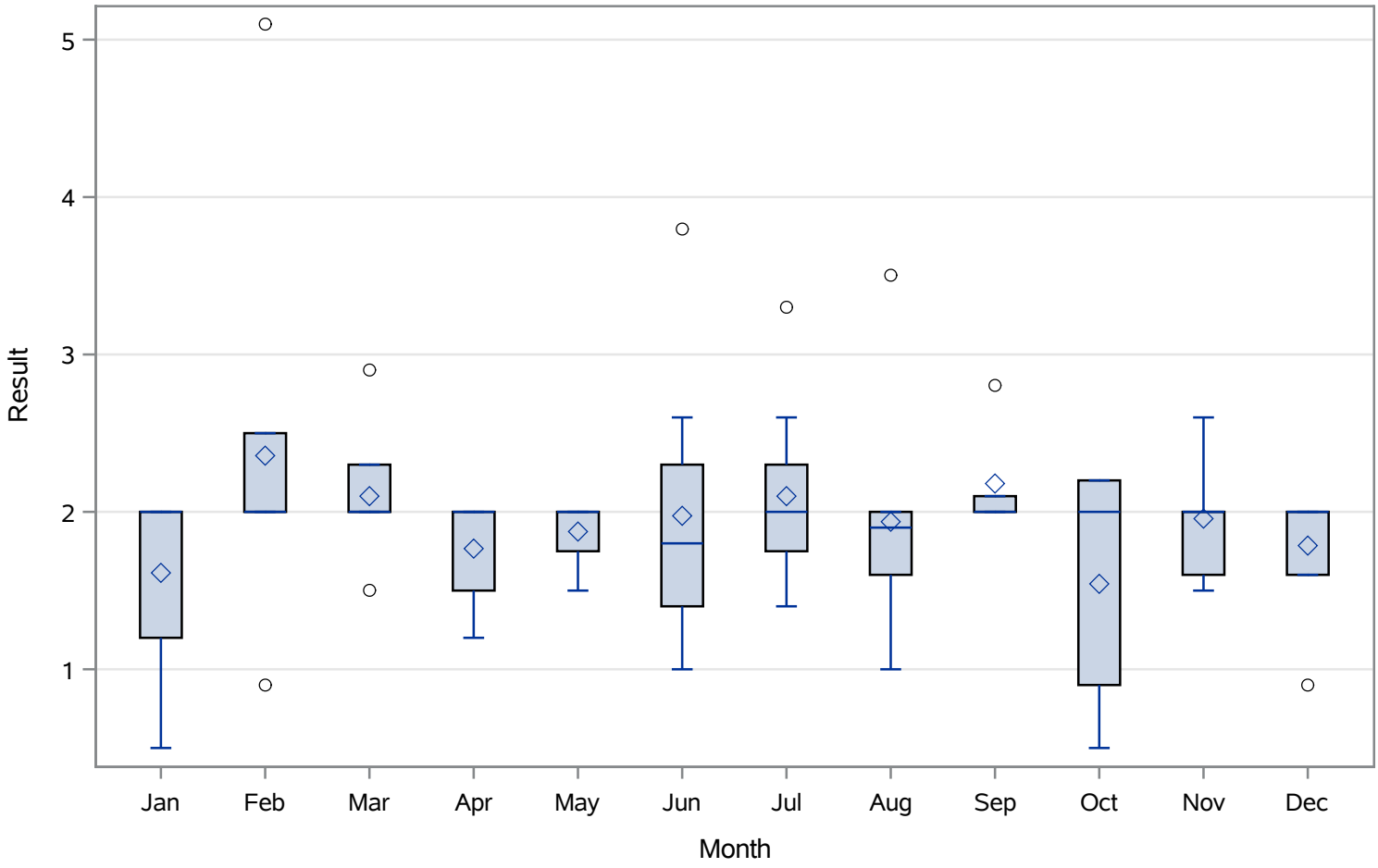
LITTLE MANATEE R AT SR #674

BOD 5-Day (mg/L) mg/L

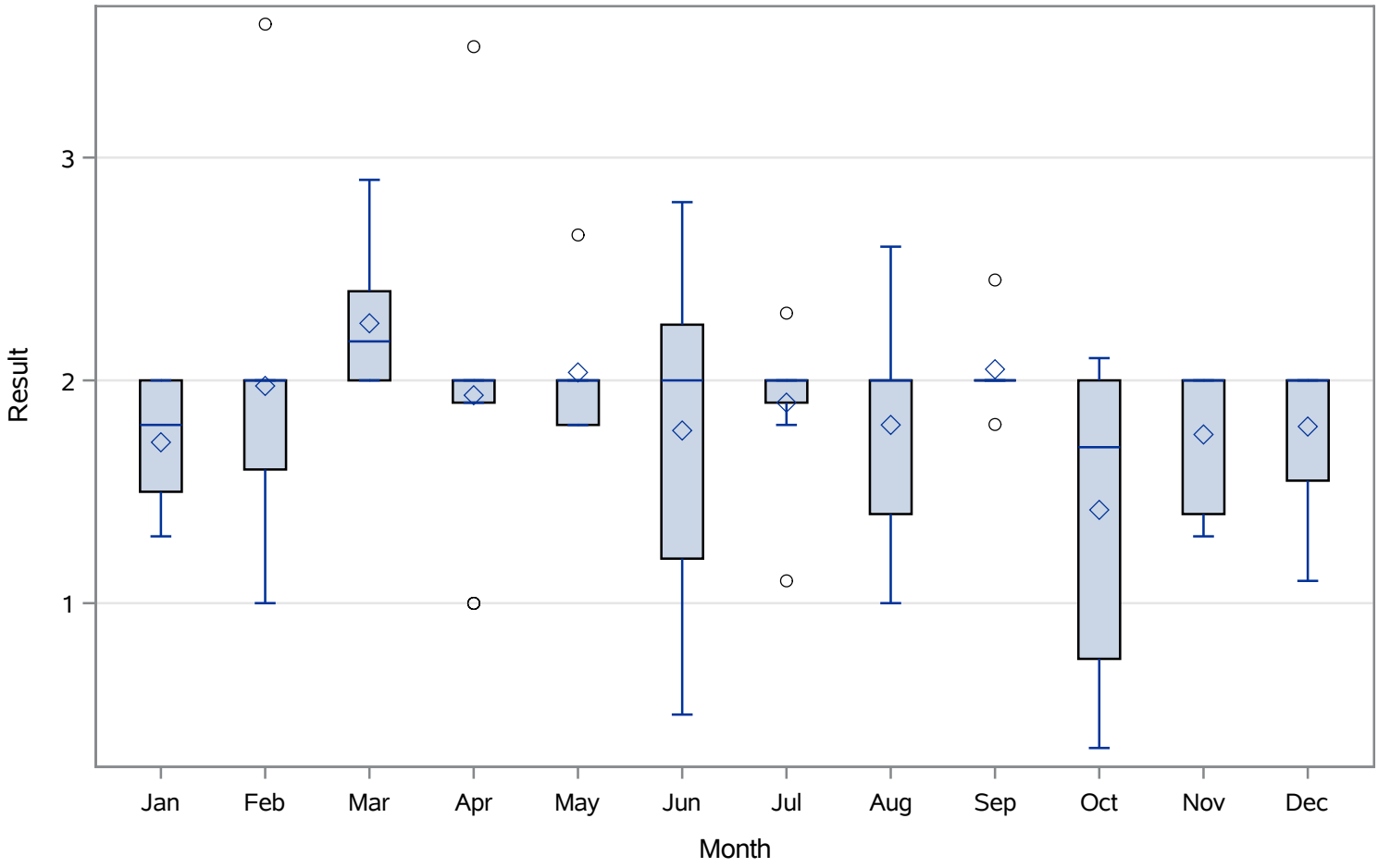
Site ID = 21FLHILL24010110



Little Manatee River
D1
BOD 5-Day (mg/L) mg/L
Site ID = 21FLMANAD1



Little Manatee River
D3
BOD 5-Day (mg/L) mg/L
Site ID = 21FLMANAD3

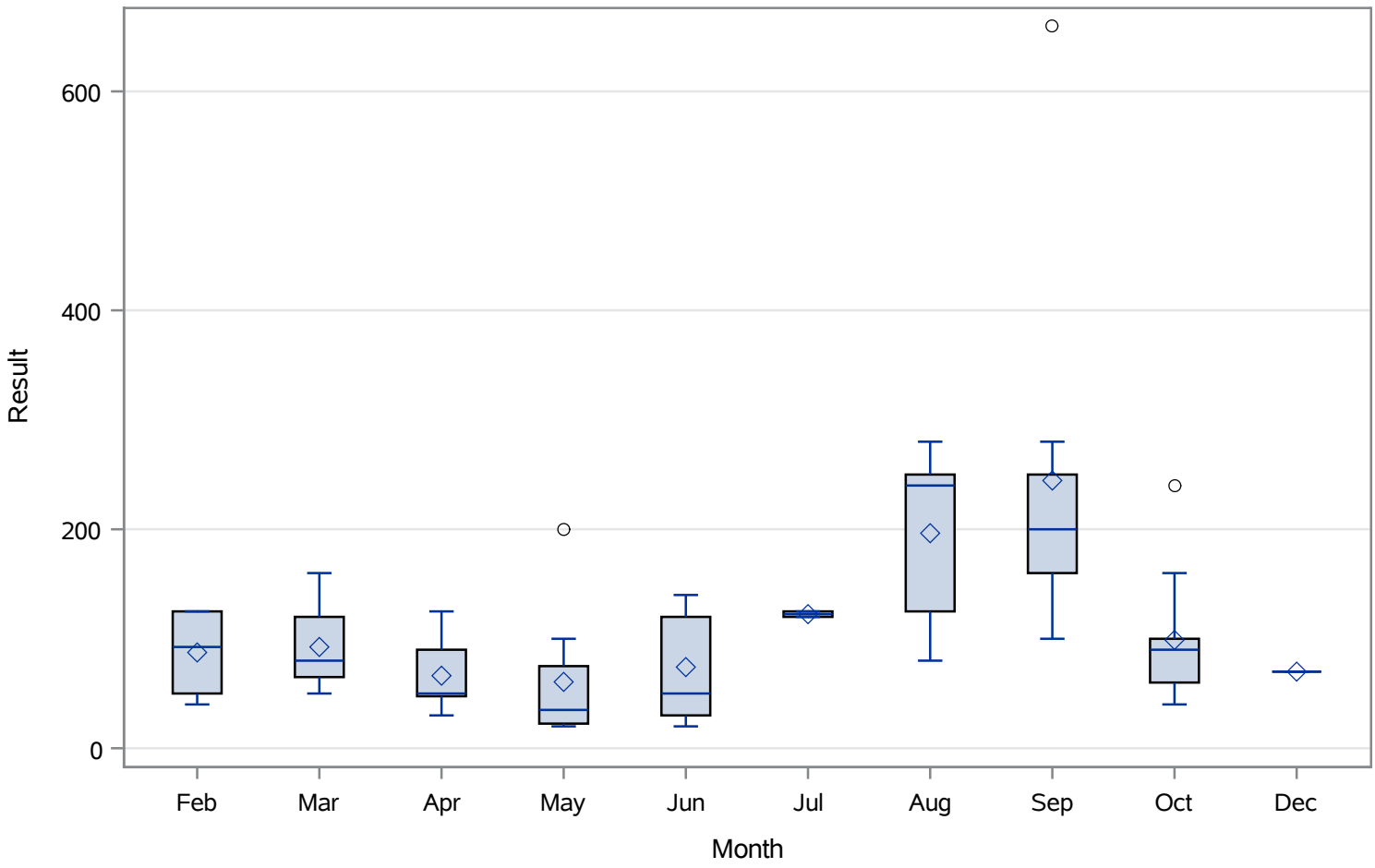


Little Manatee River

SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL

Color (PCU) PCU

Site ID = 112WRD 02300200

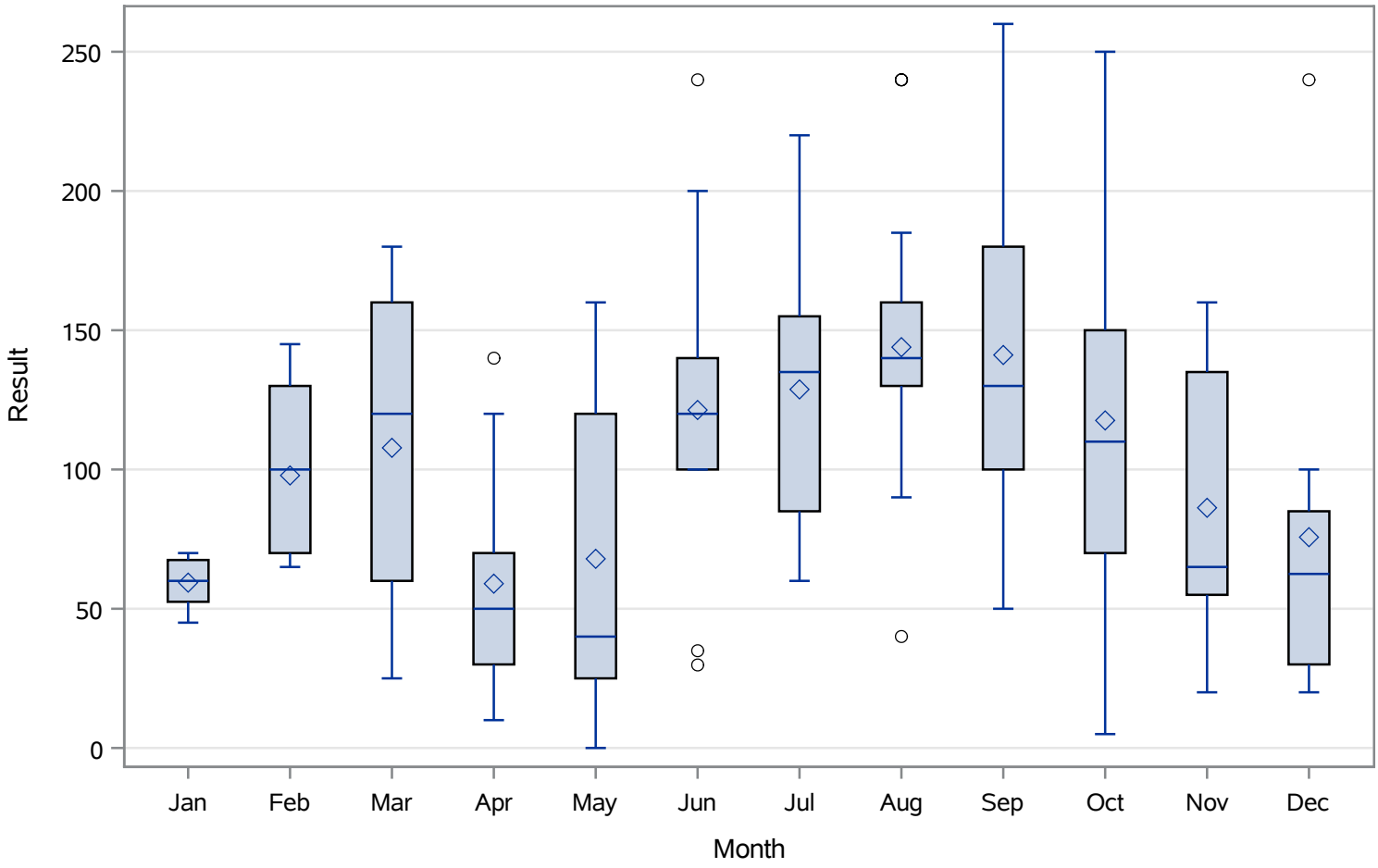


Little Manatee River

LITTLE MANATEE RIVER NEAR WIMAUMA FL

Color (PCU) PCU

Site ID = 112WRD 02300500

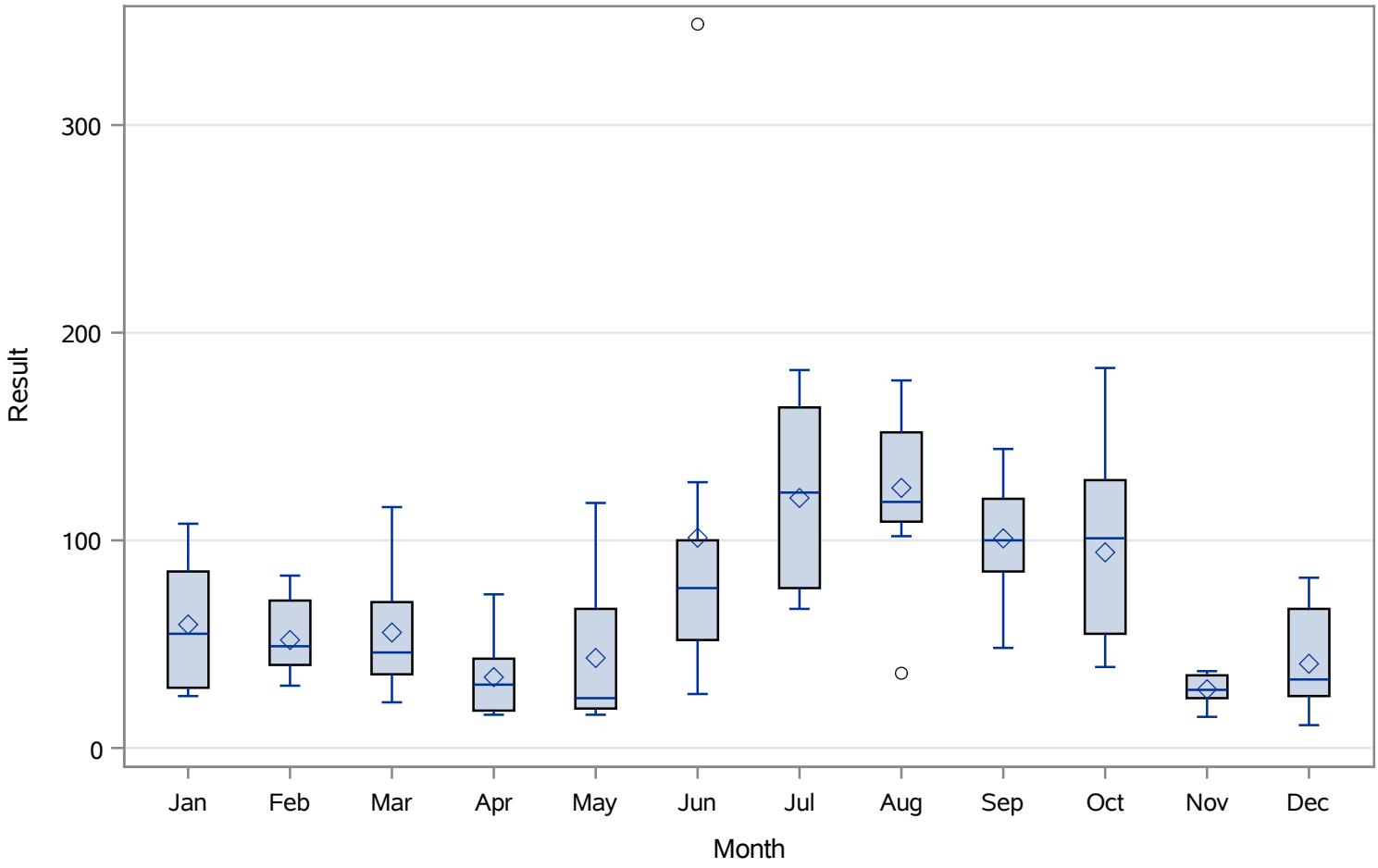


Little Manatee River

L MANATEE R BR US 301

Color (PCU) PCU

Site ID = 21FLA 24010100

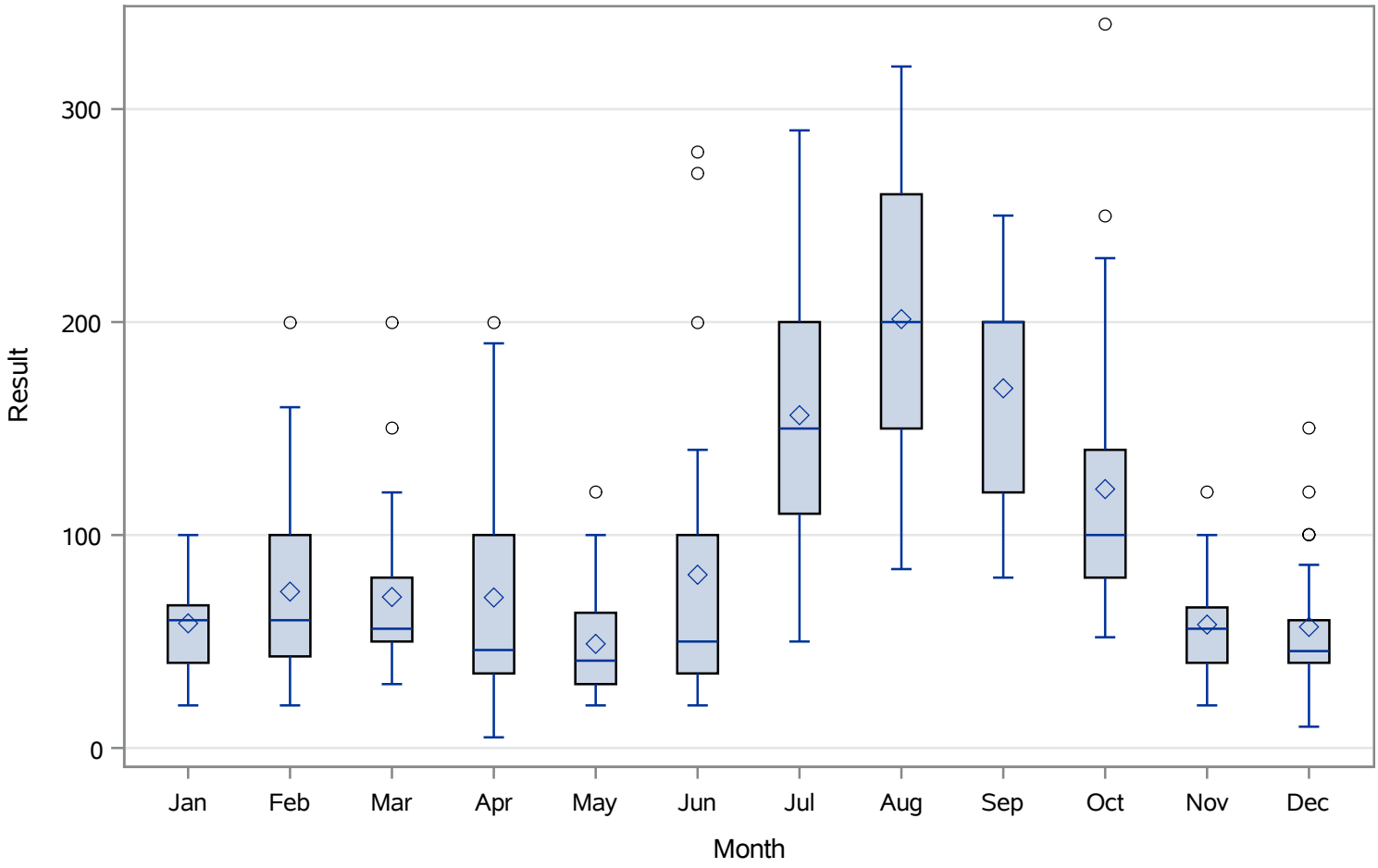


Little Manatee River

LITTLE MANATEE RIVER AT US HWY 301

Color (PCU) PCU

Site ID = 21FLGW 3555

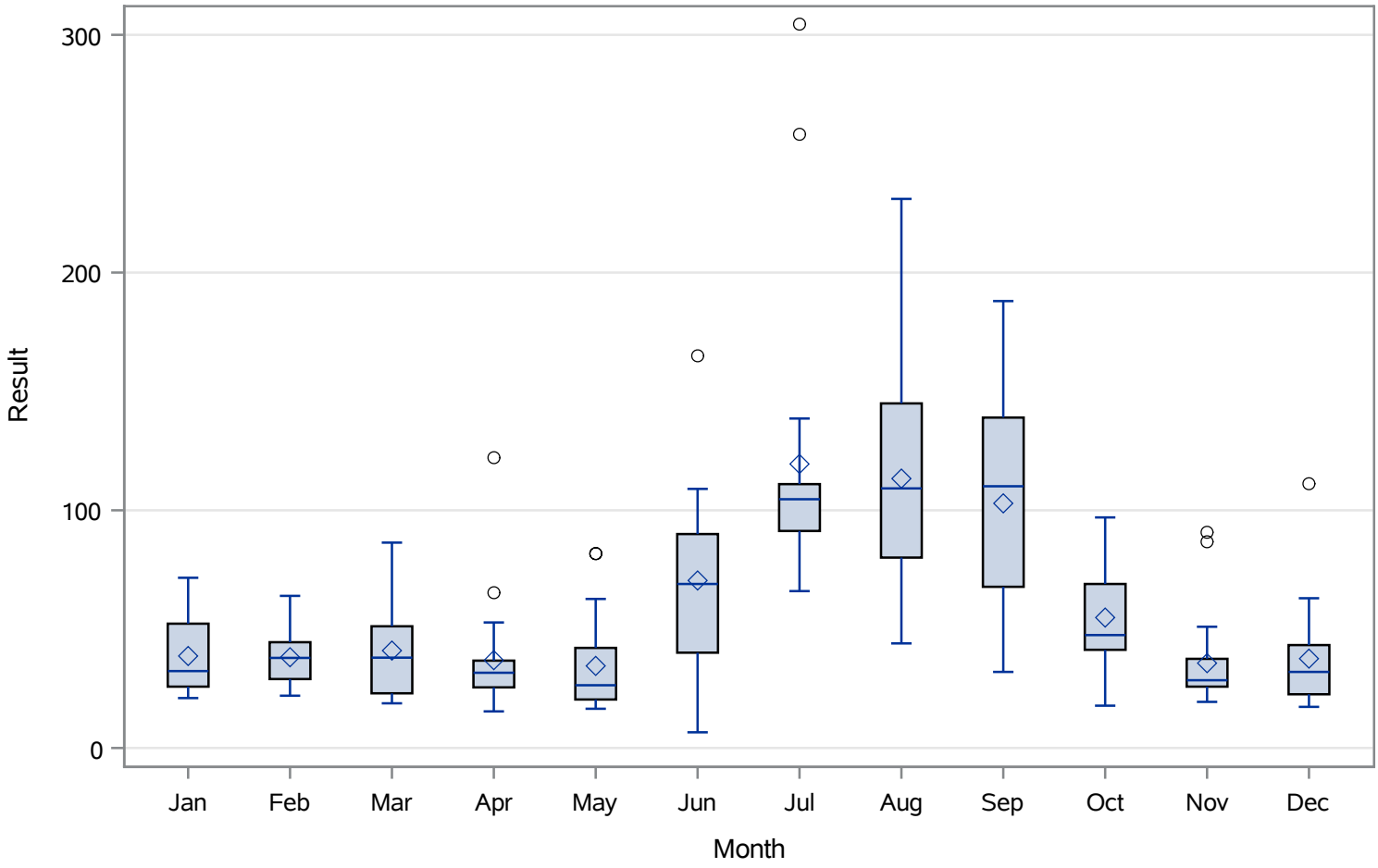


Little Manatee River

Little Manatee River at US 301 bridge

Color (PCU) PCU

Site ID = 21FLHILL113

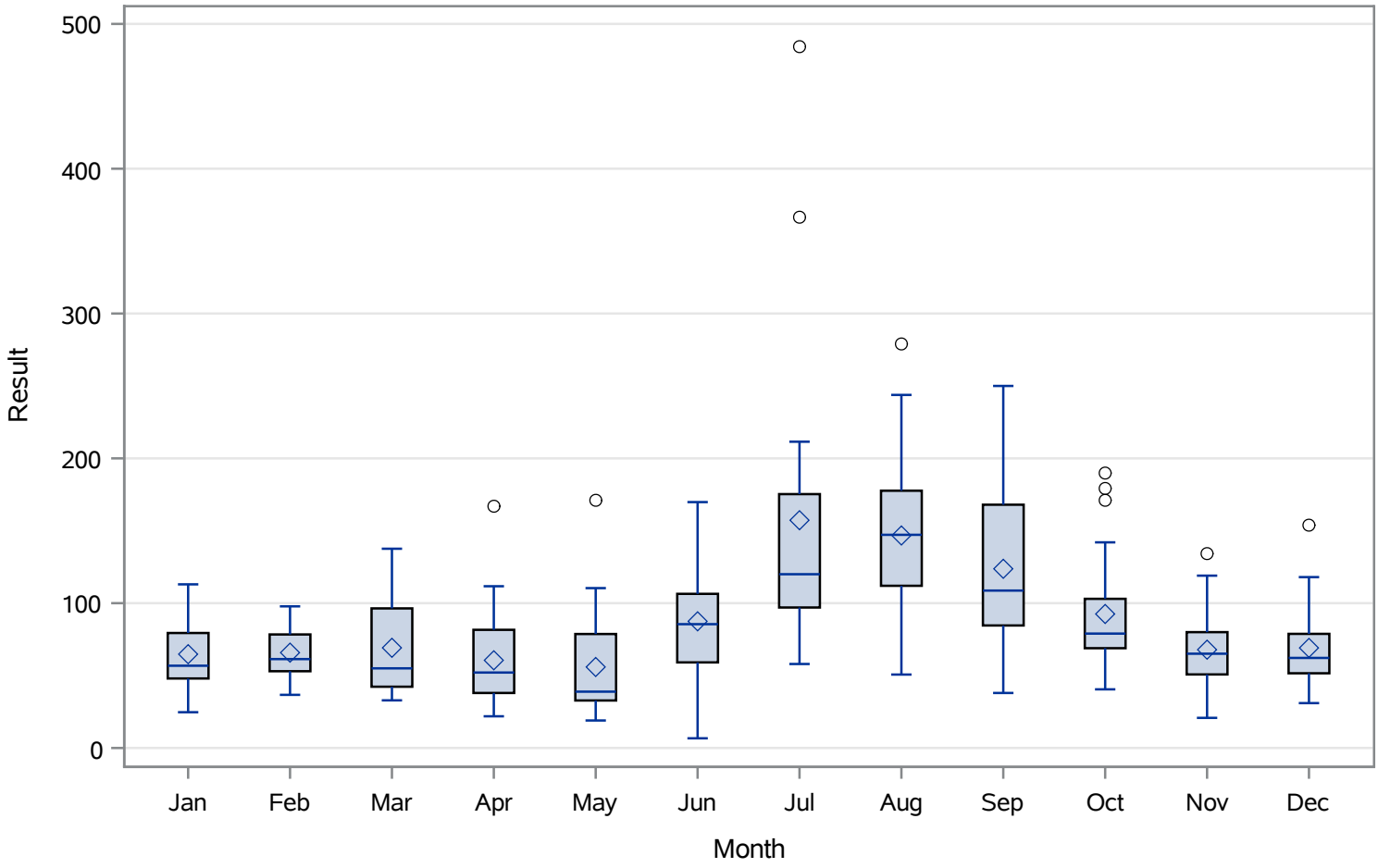


Little Manatee River

Little Manatee River at SR 674

Color (PCU) PCU

Site ID = 21FLHILL129

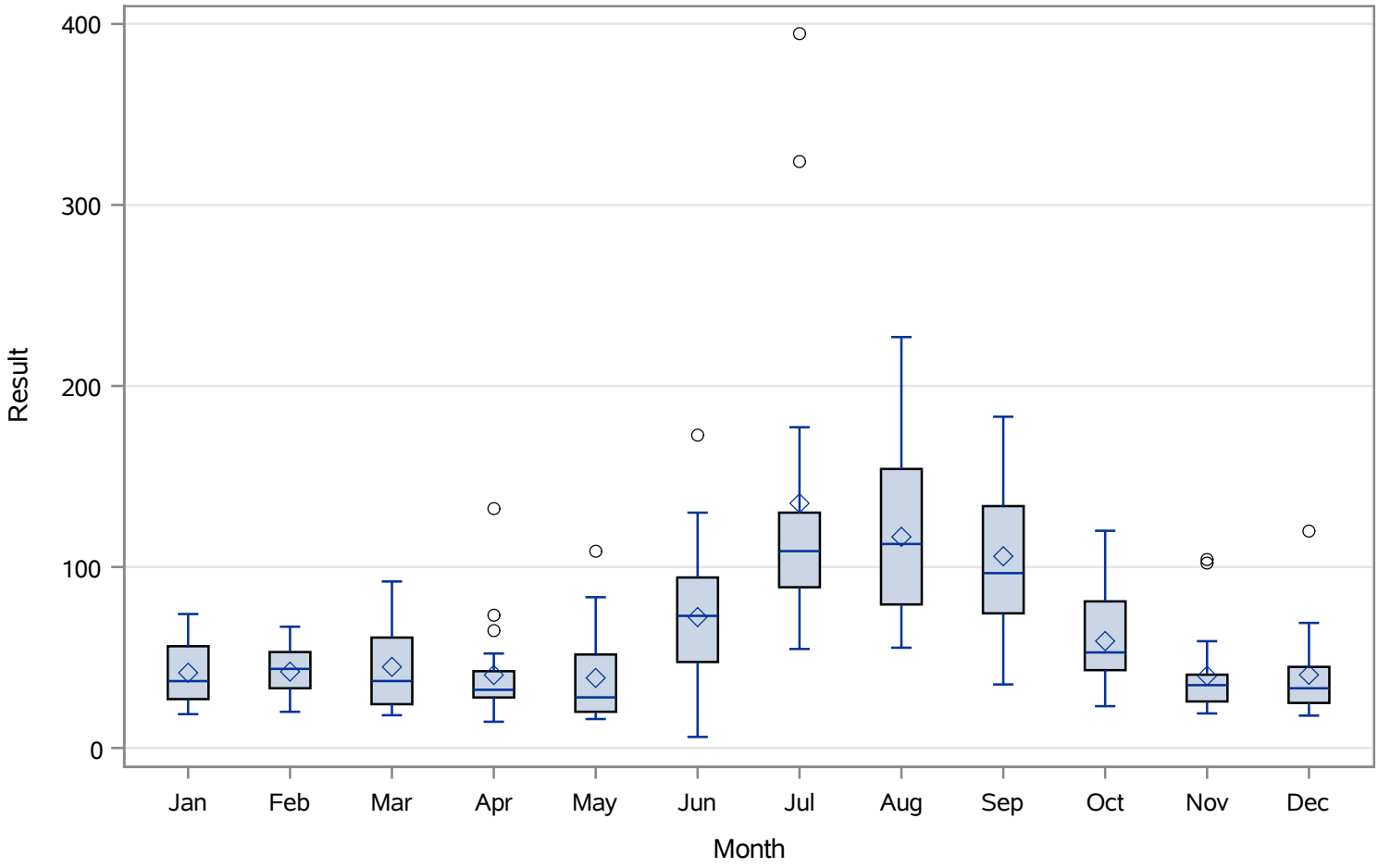


Little Manatee River

Little Manatee River at CR 579

Color (PCU) PCU

Site ID = 21FLHILL140

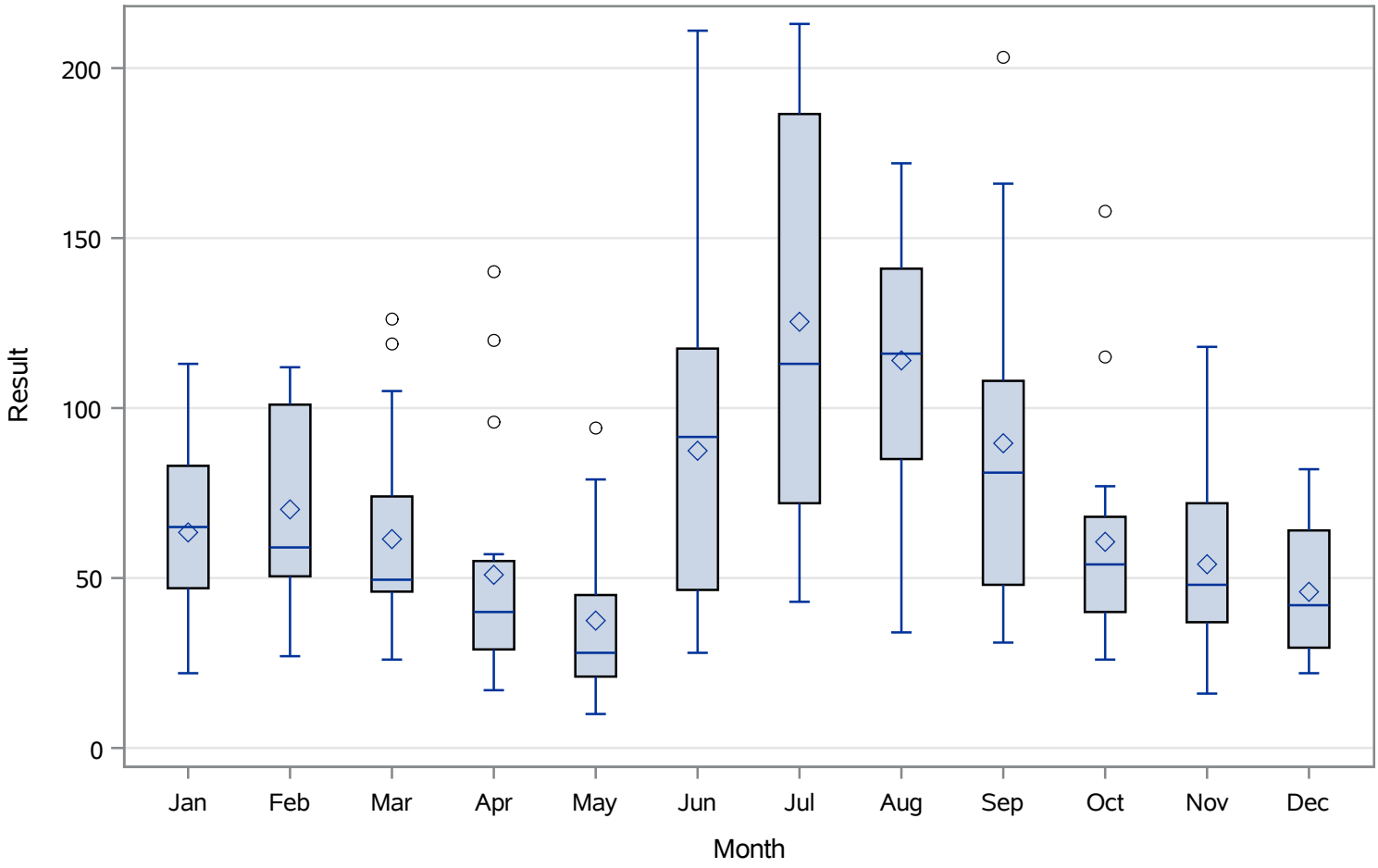


Little Manatee River

LITTLE MANATEE R AT CR579

Color (PCU) PCU

Site ID = 21FLHILL24010013

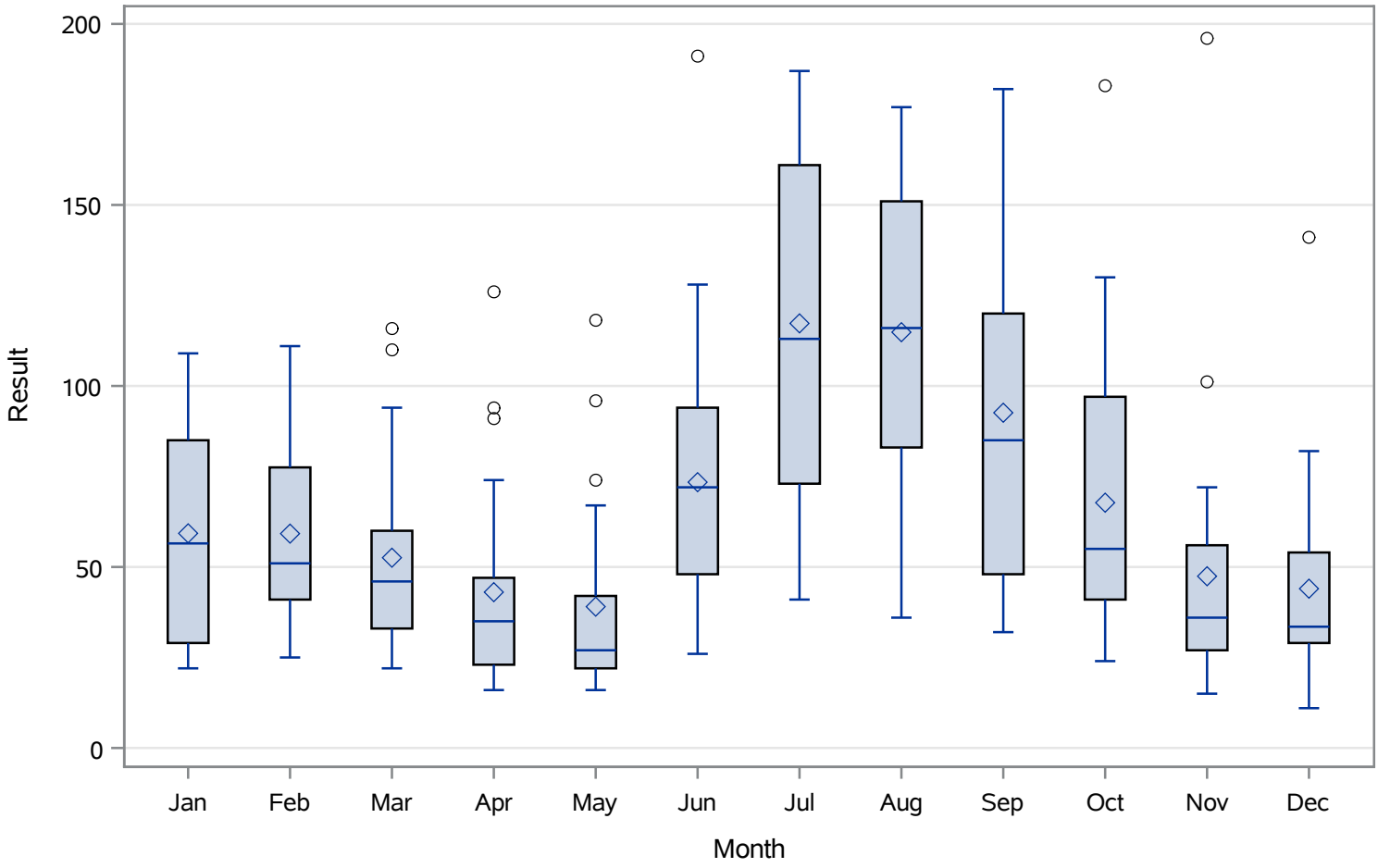


Little Manatee River

L MANATEE R BR US 301

Color (PCU) PCU

Site ID = 21FLHILL24010100

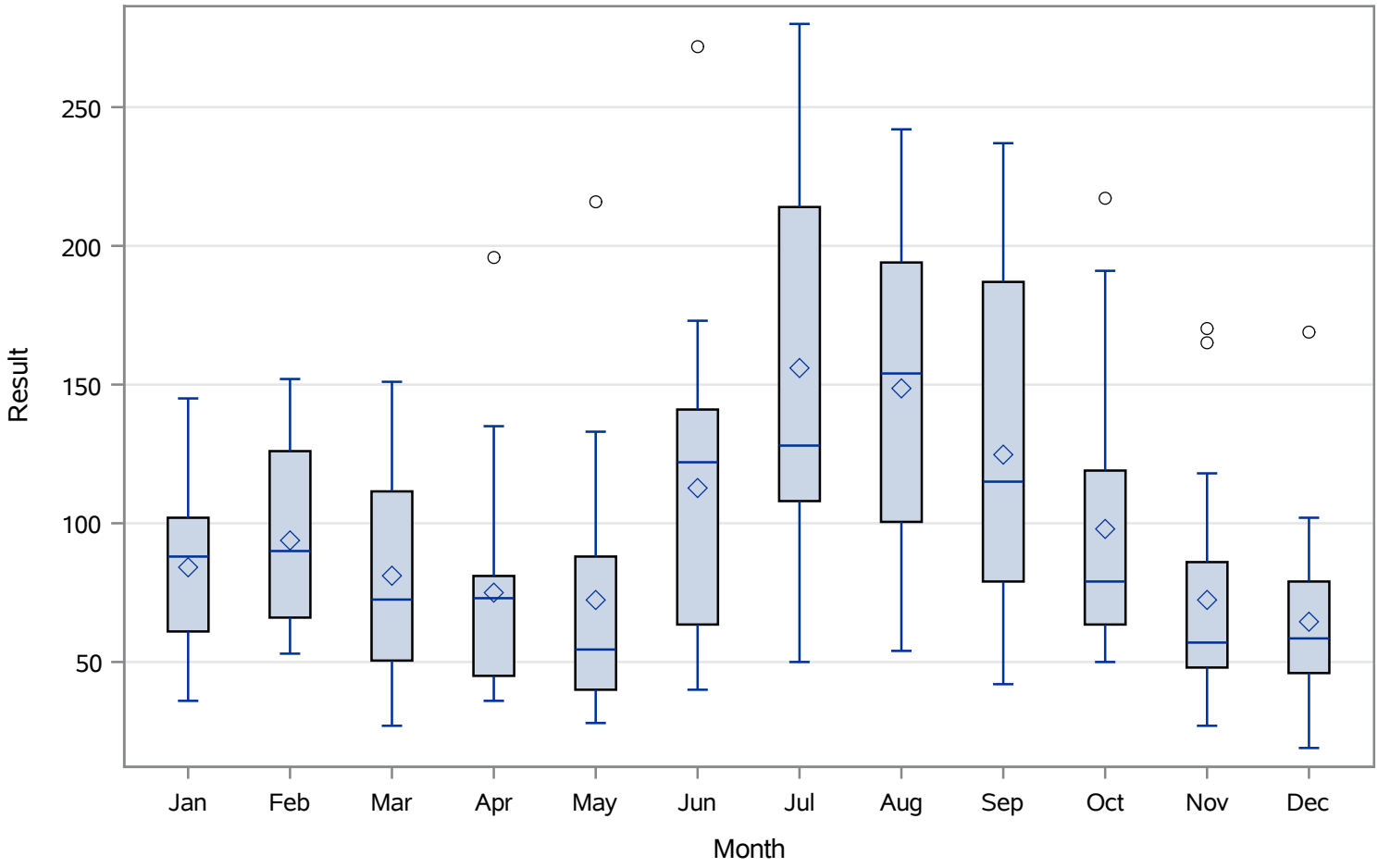


Little Manatee River

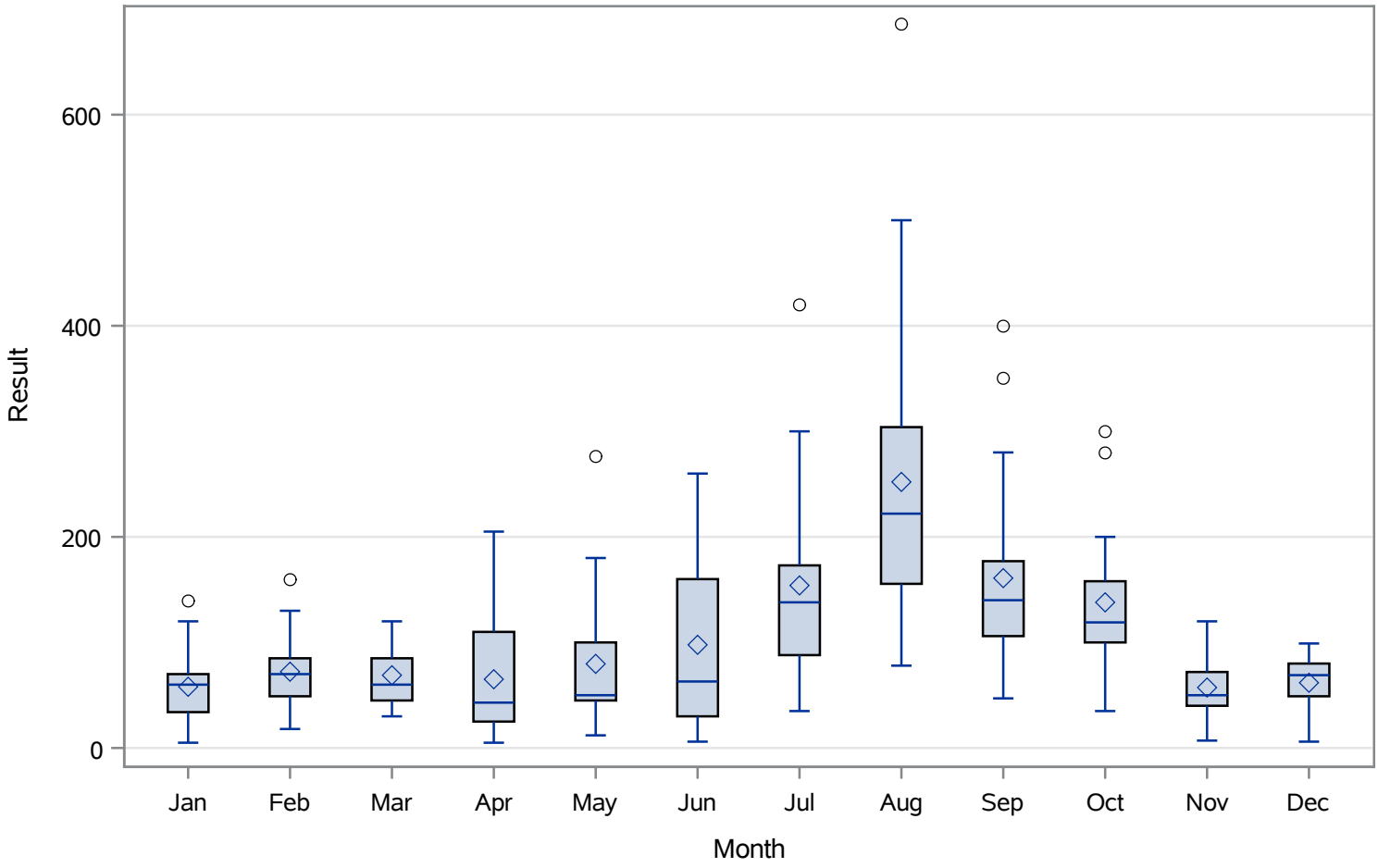
LITTLE MANATEE R AT SR #674

Color (PCU) PCU

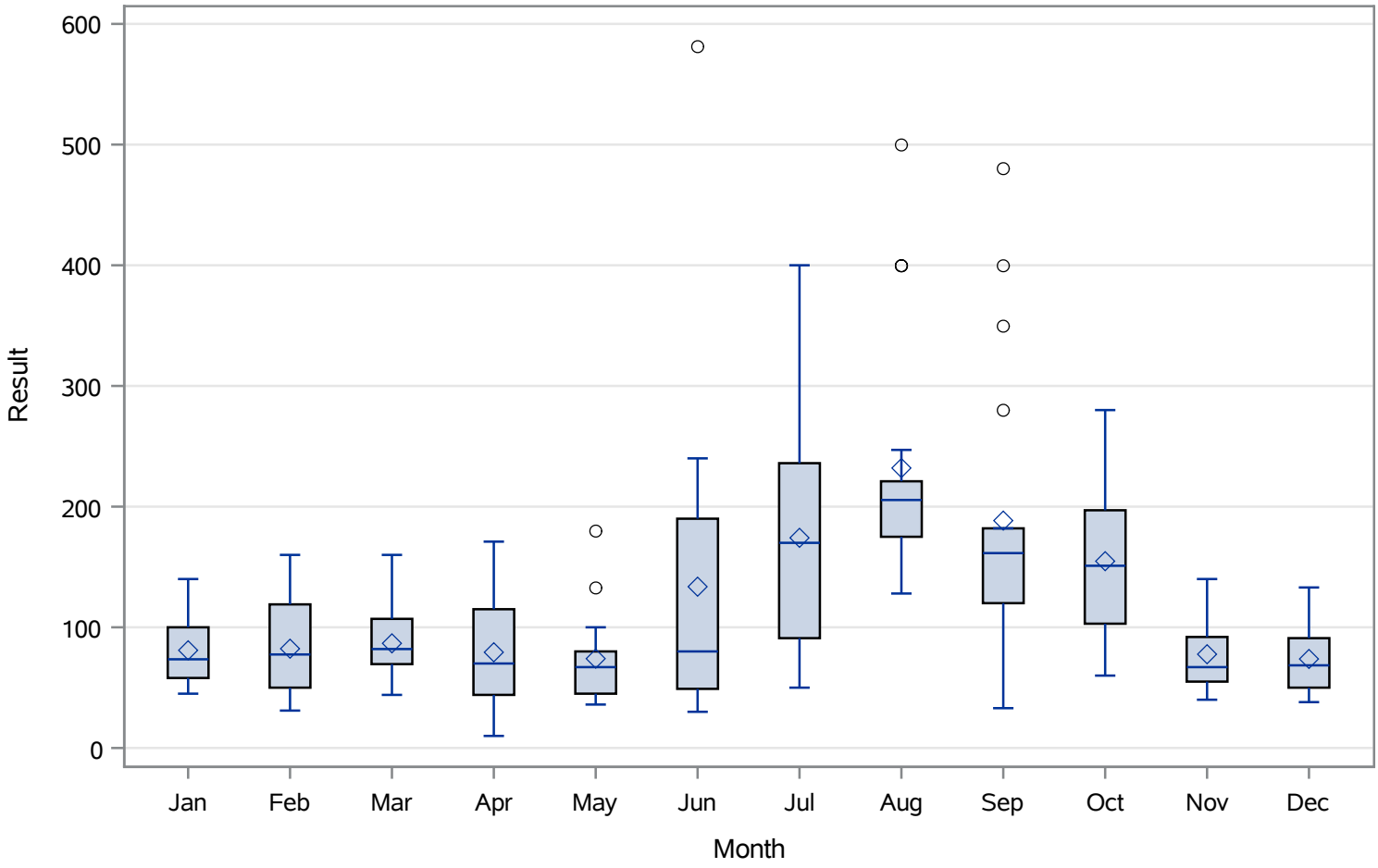
Site ID = 21FLHILL24010110



Little Manatee River
D1
Color (PCU) PCU
Site ID = 21FLMANAD1



Little Manatee River
D3
Color (PCU) PCU
Site ID = 21FLMANAD3

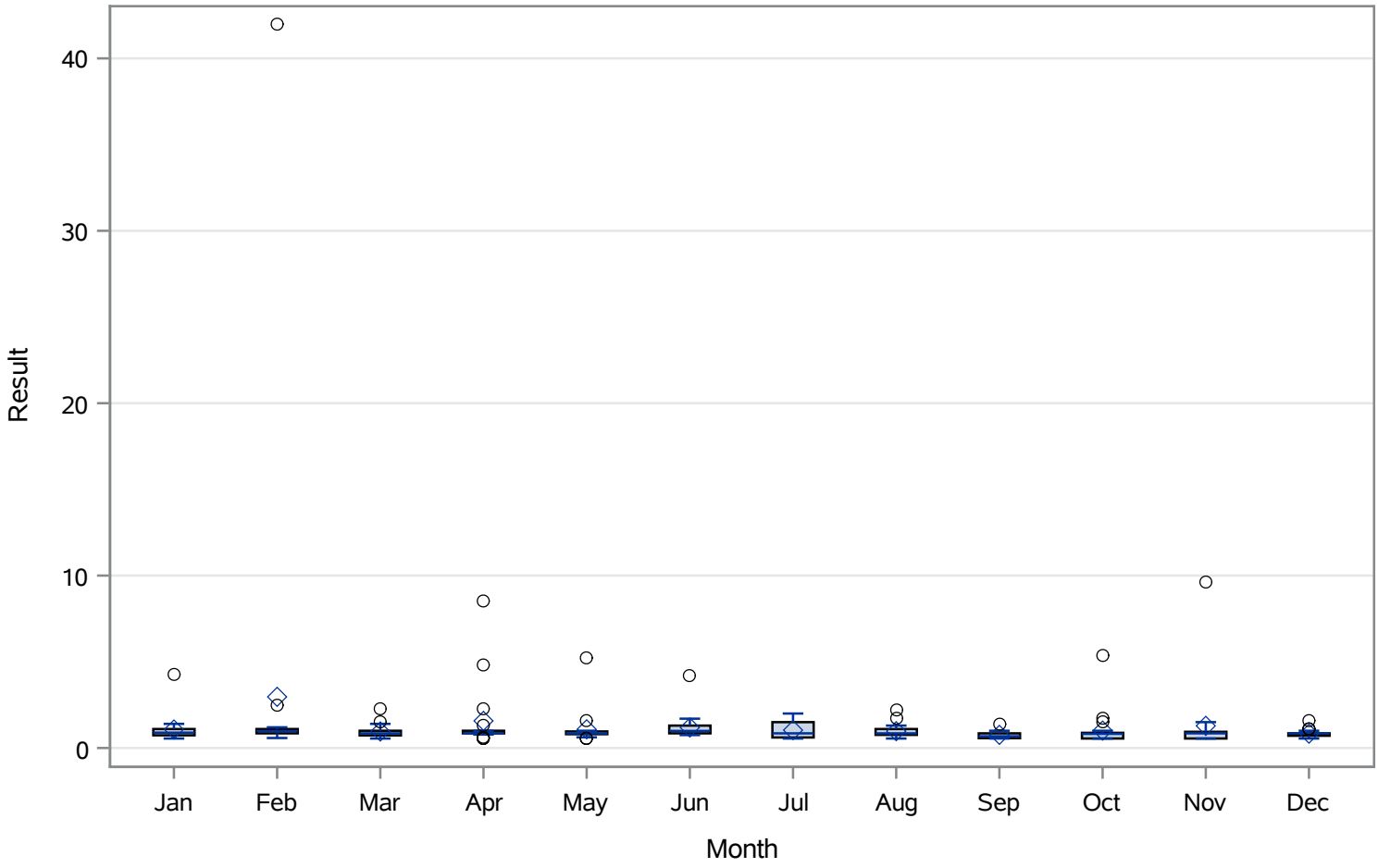


Little Manatee River

LITTLE MANATEE RIVER AT US HWY 301

Corr. Chlorophyll-a (µg/L) µg/L

Site ID = 21FLGW 3555

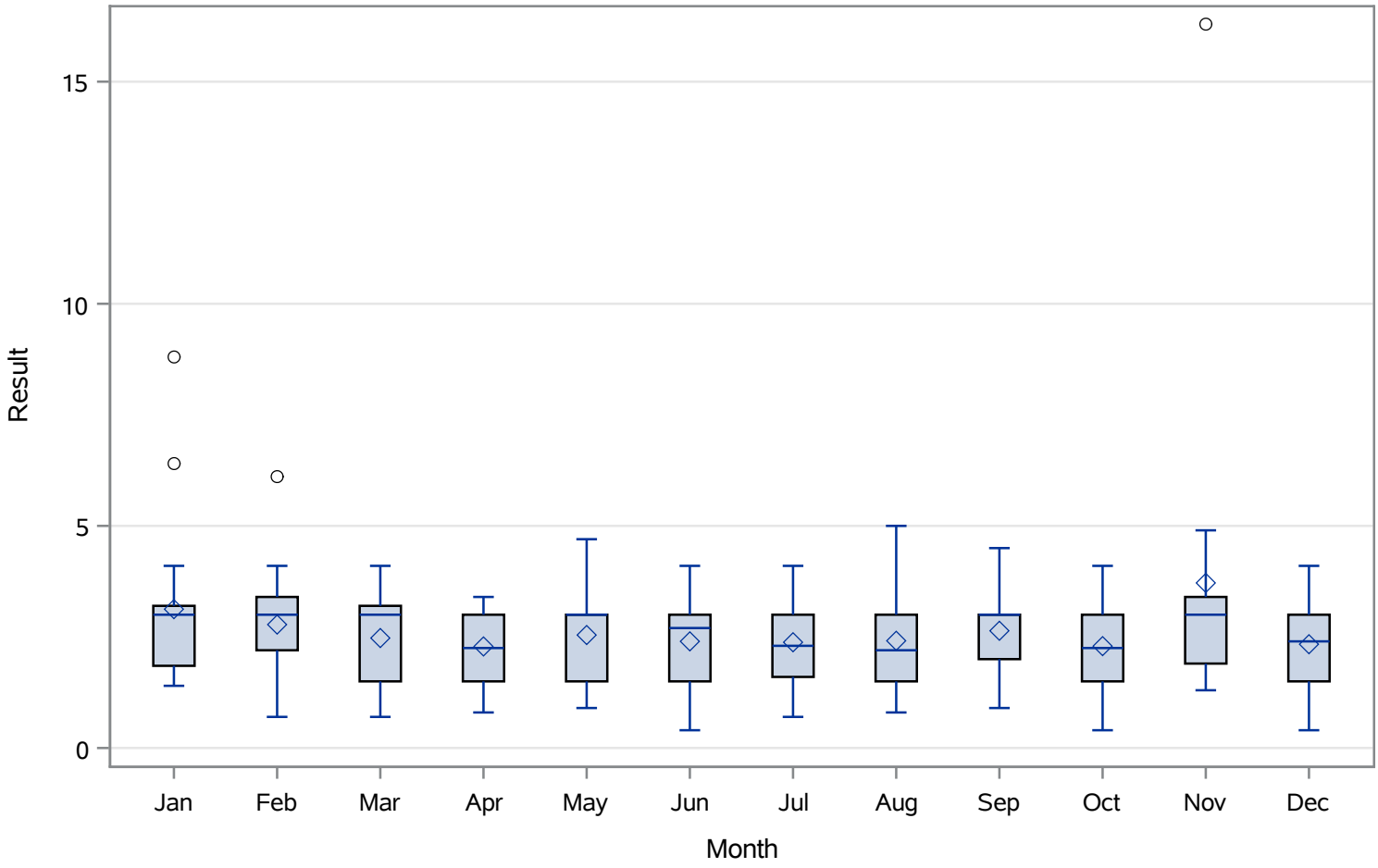


Little Manatee River

Little Manatee River at US 301 bridge

Corr. Chlorophyll-a (µg/L) µg/L

Site ID = 21FLHILL113

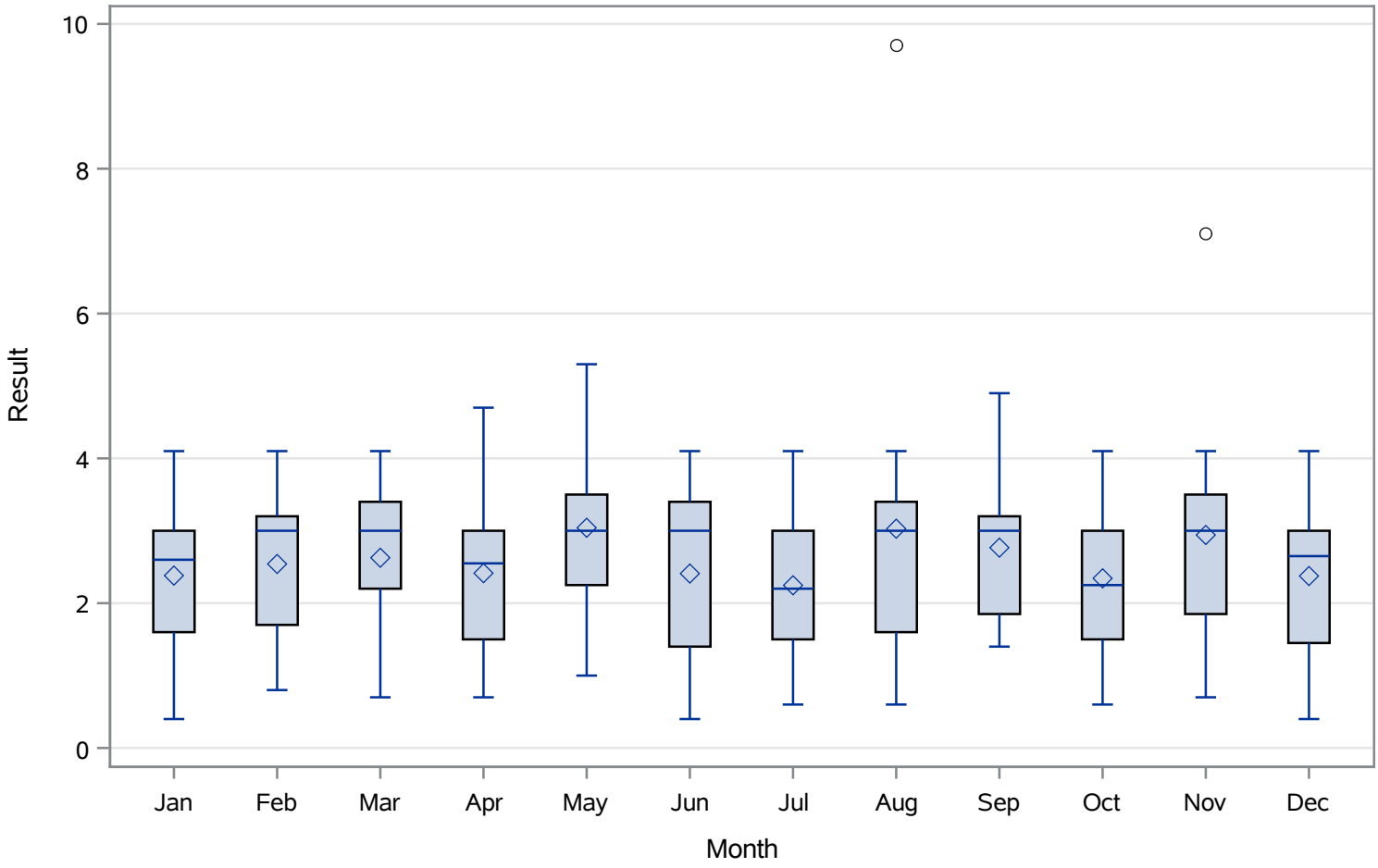


Little Manatee River

Little Manatee River at SR 674

Corr. Chlorophyll-a (µg/L) µg/L

Site ID = 21FLHILL129

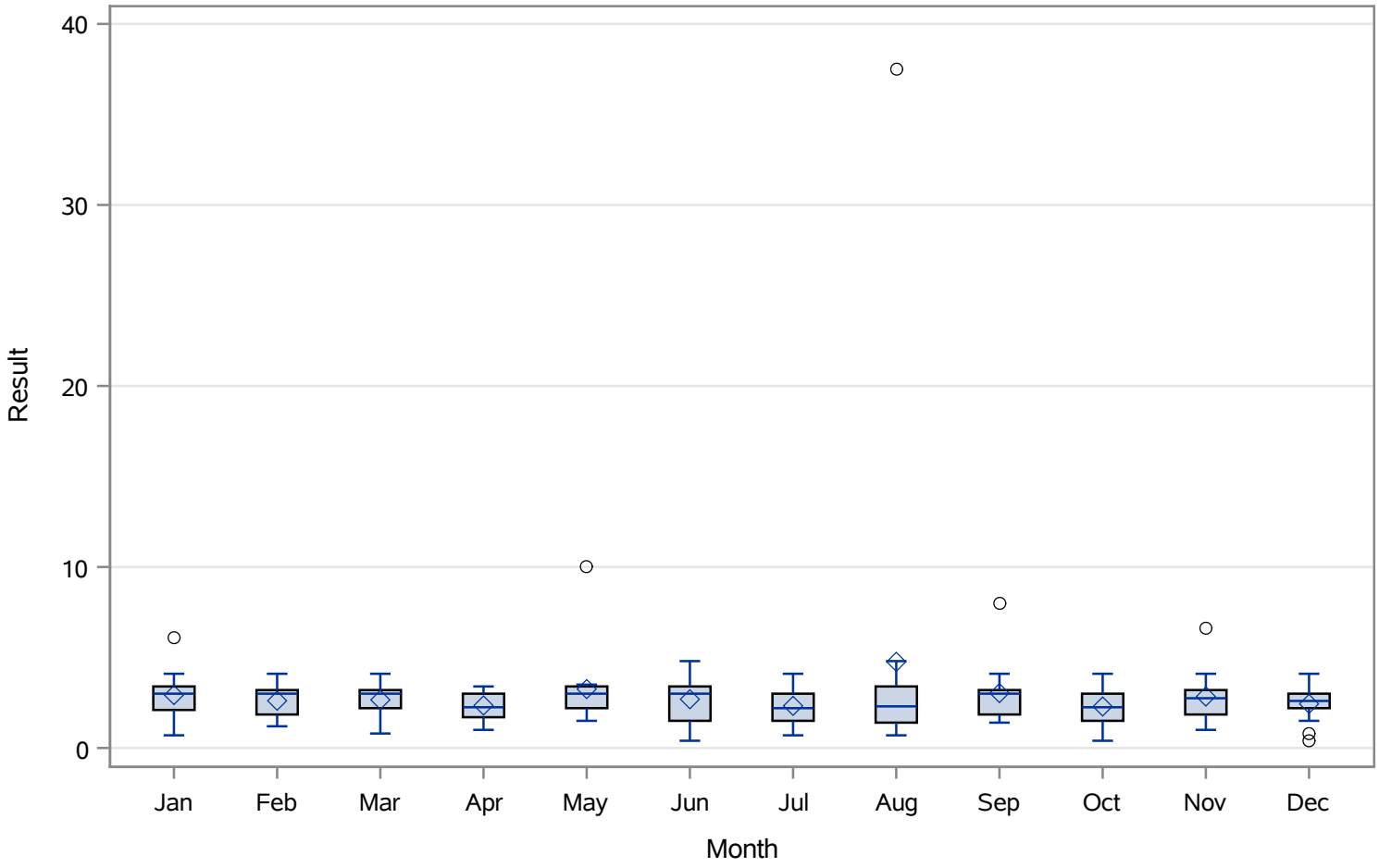


Little Manatee River

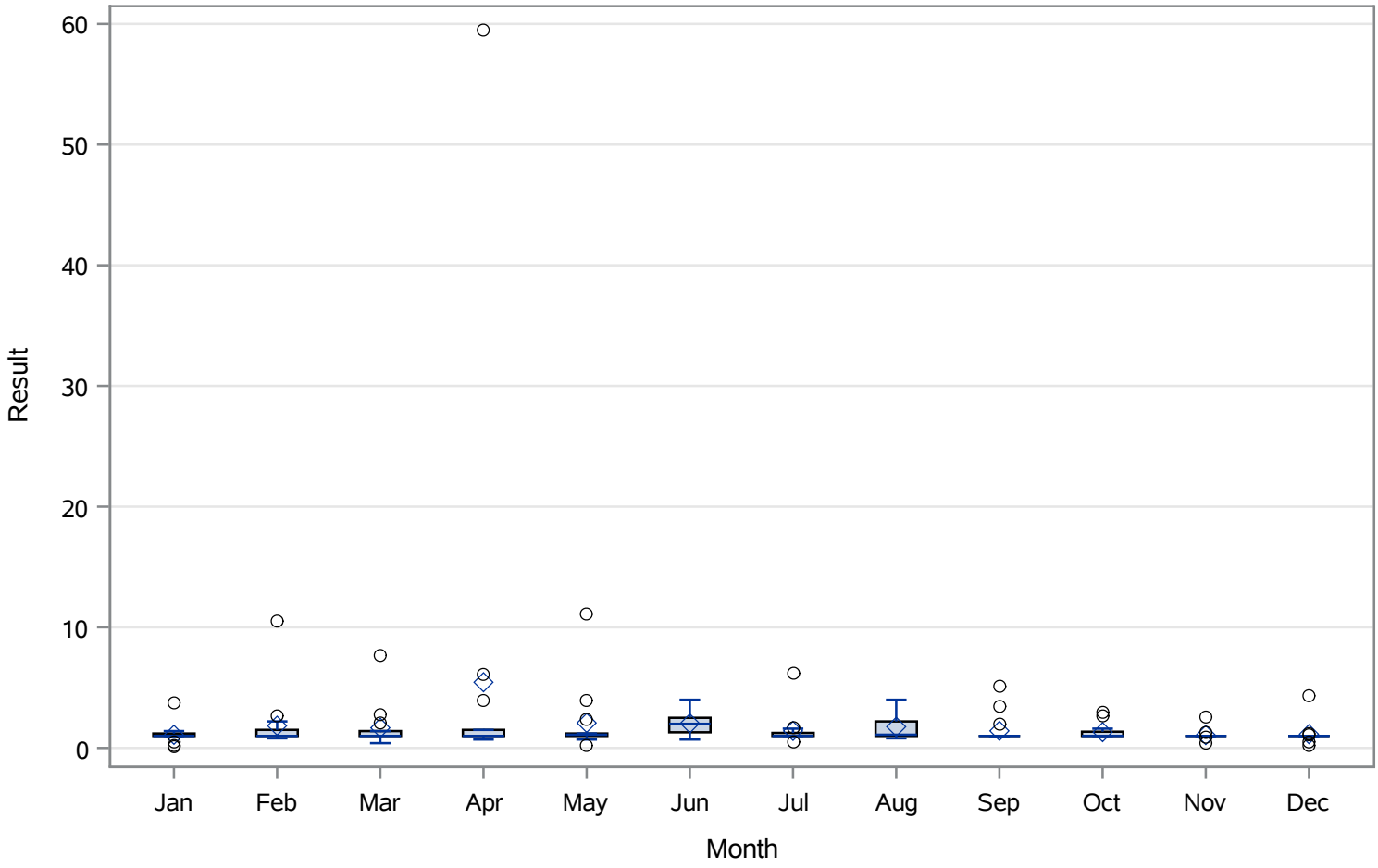
Little Manatee River at CR 579

Corr. Chlorophyll-a (µg/L) µg/L

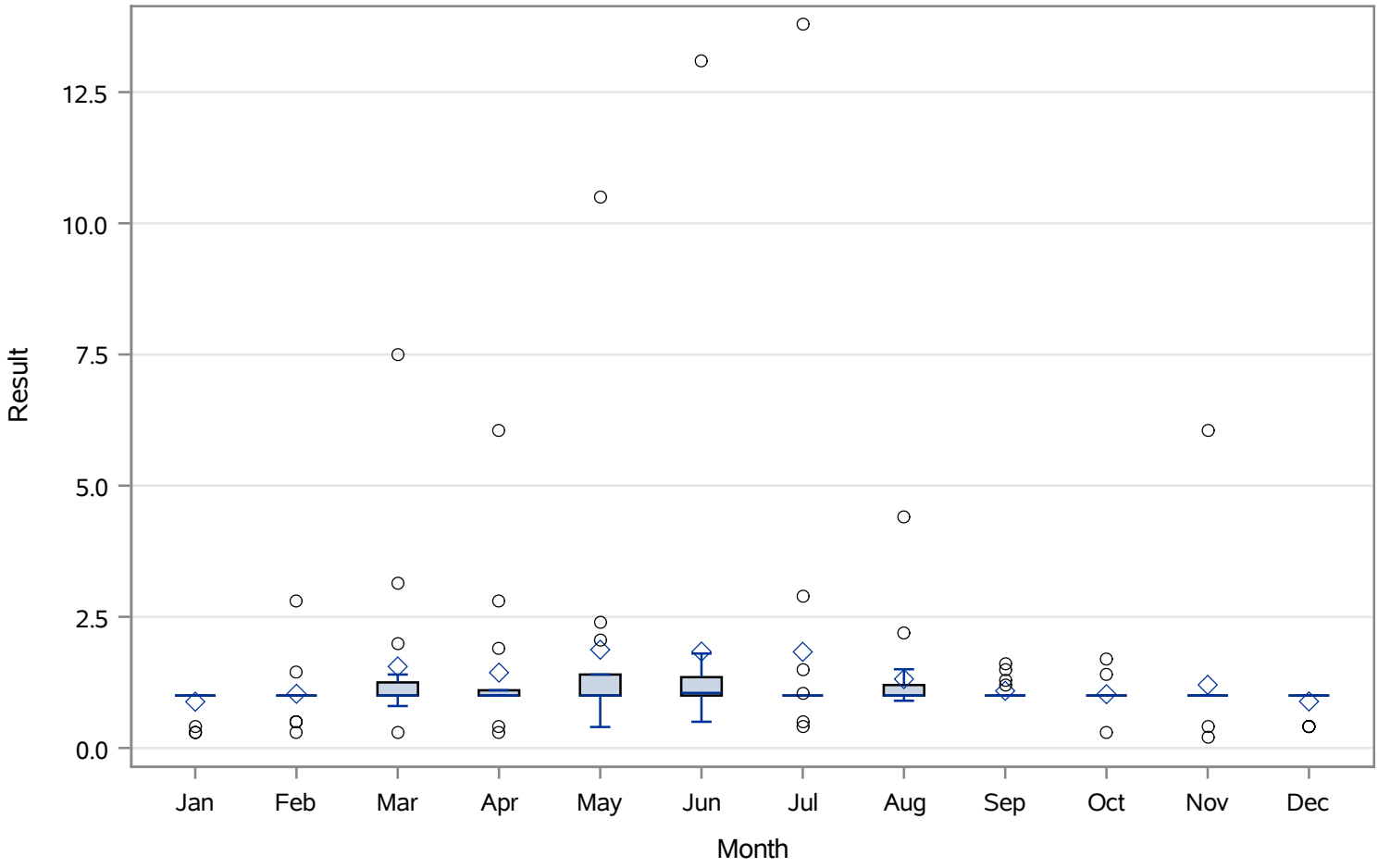
Site ID = 21FLHILL140



Little Manatee River
D1
Corr. Chlorophyll-a (µg/L) µg/L
Site ID = 21FLMANAD1



Little Manatee River
D3
Corr. Chlorophyll-a (µg/L) µg/L
Site ID = 21FLMANAD3

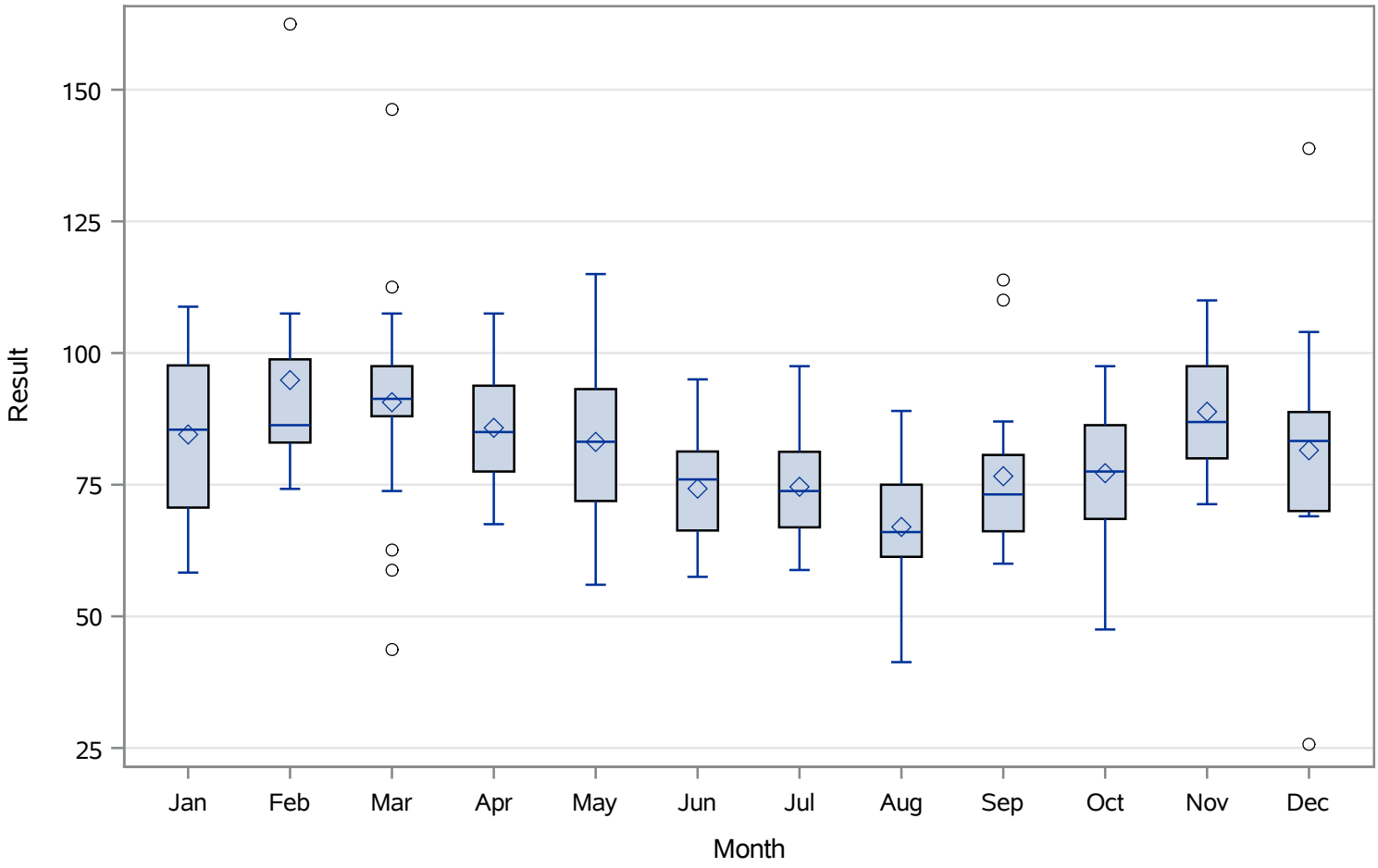


Little Manatee River

LITTLE MANATEE RIVER NEAR FT. LONESOME FL

Dissolved Oxygen (Percent Saturation) %

Site ID = 112WRD 02300100

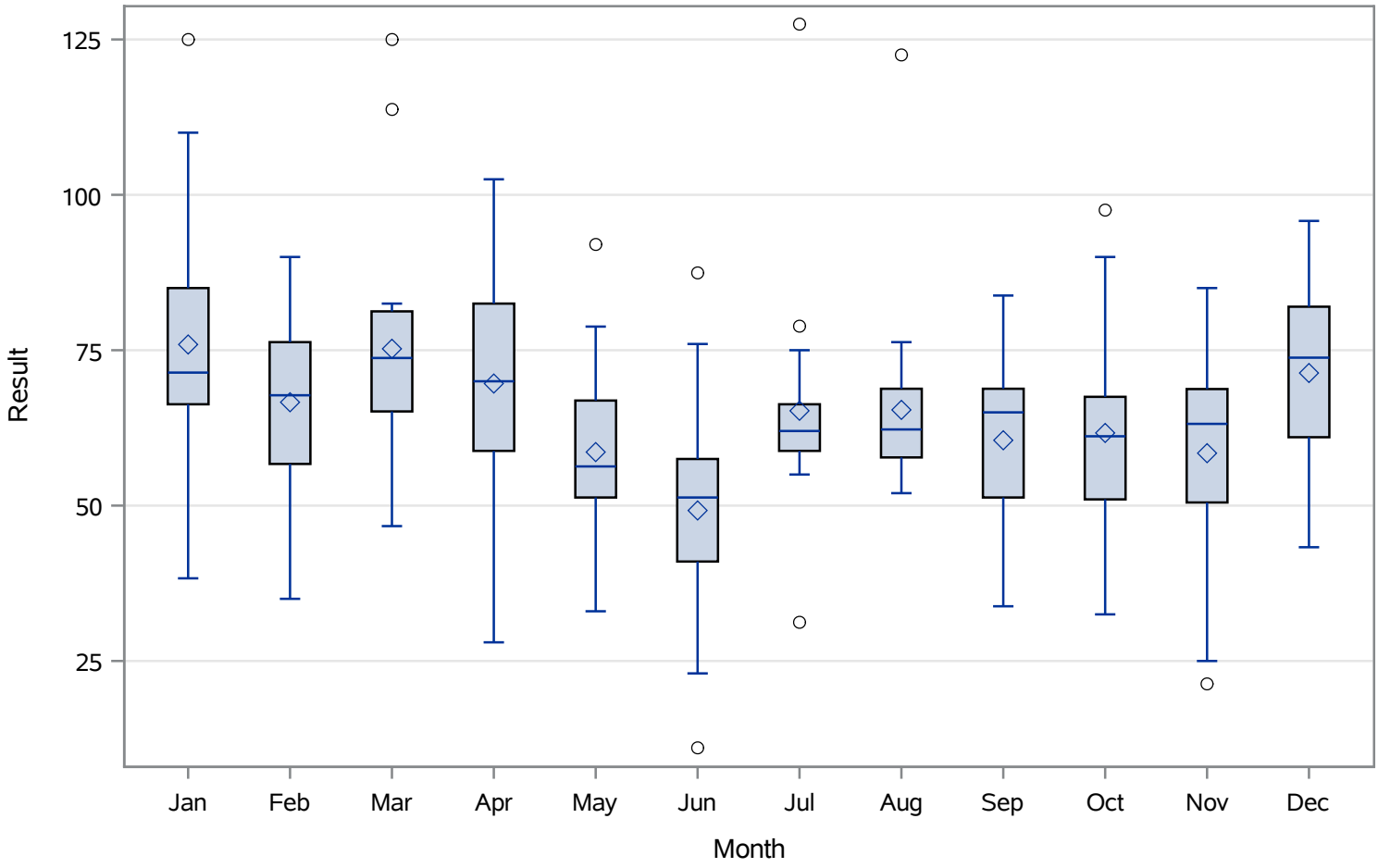


Little Manatee River

SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL

Dissolved Oxygen (Percent Saturation) %

Site ID = 112WRD 02300200

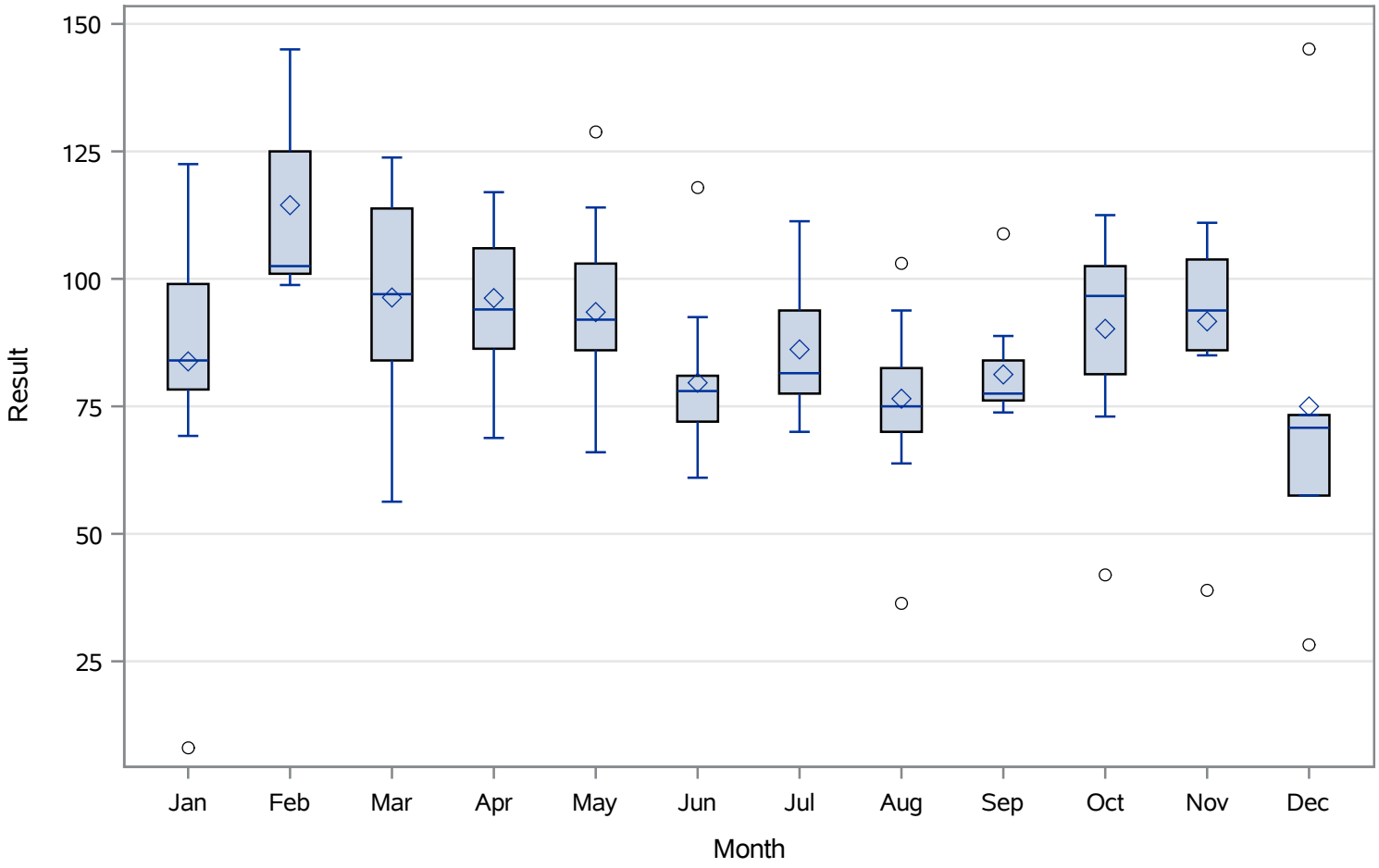


Little Manatee River

LITTLE MANATEE RIVER NEAR WIMAUMA FL

Dissolved Oxygen (Percent Saturation) %

Site ID = 112WRD 02300500

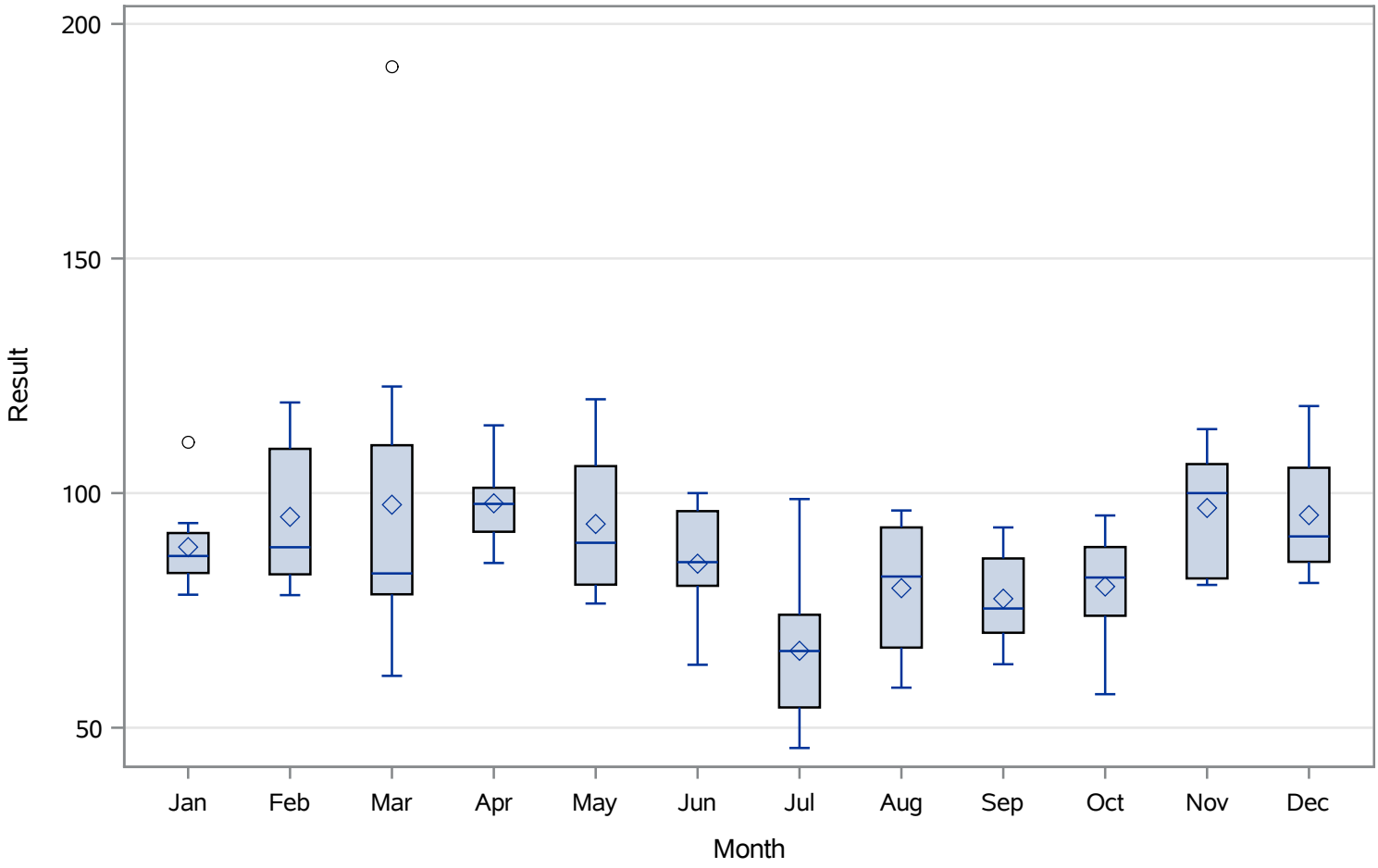


Little Manatee River

L MANATEE R BR US 301

Dissolved Oxygen (Percent Saturation) %

Site ID = 21FLA 24010100

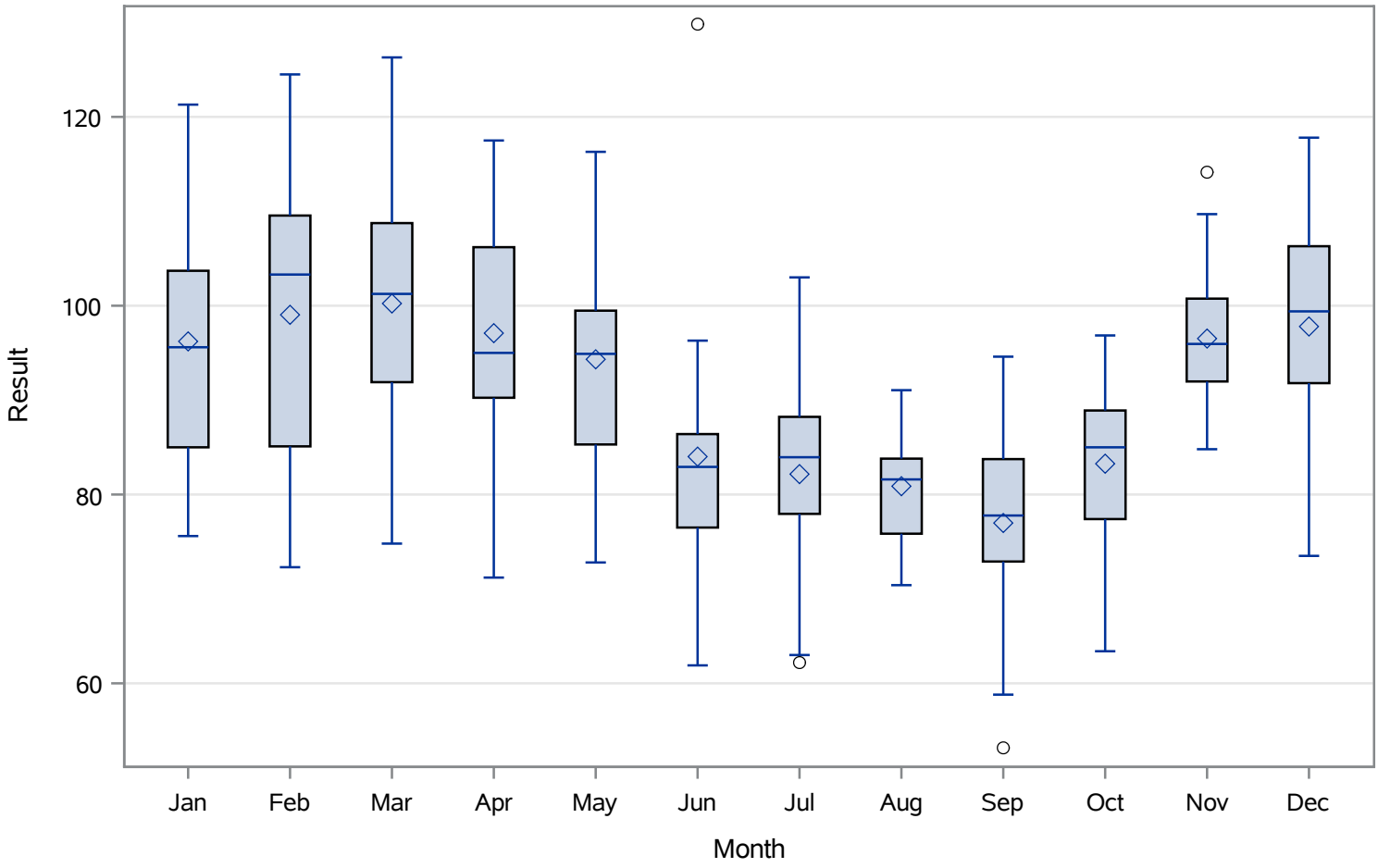


Little Manatee River

LITTLE MANATEE RIVER AT US HWY 301

Dissolved Oxygen (Percent Saturation) %

Site ID = 21FLGW 3555

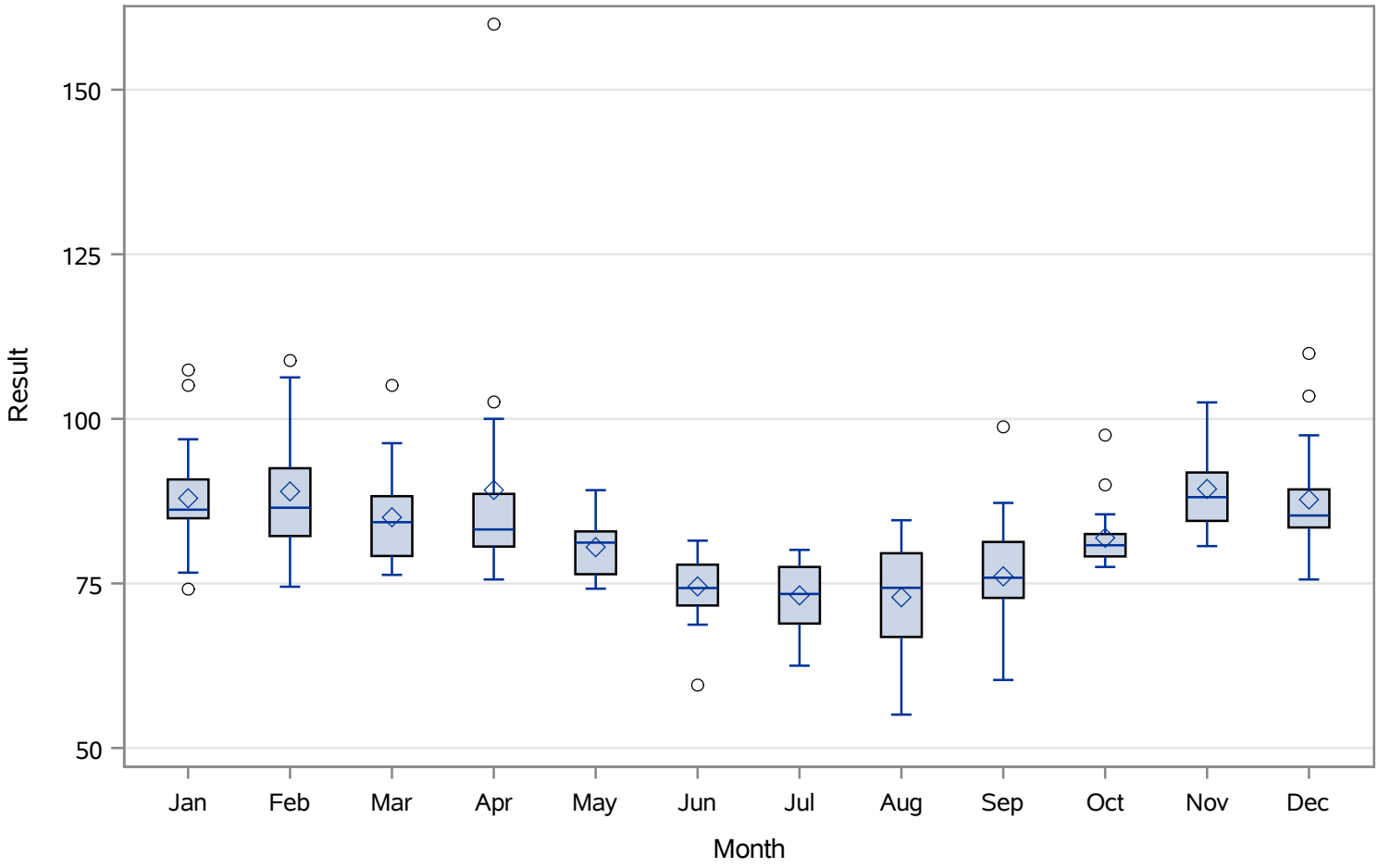


Little Manatee River

Little Manatee River at US 301 bridge

Dissolved Oxygen (Percent Saturation) %

Site ID = 21FLHILL113

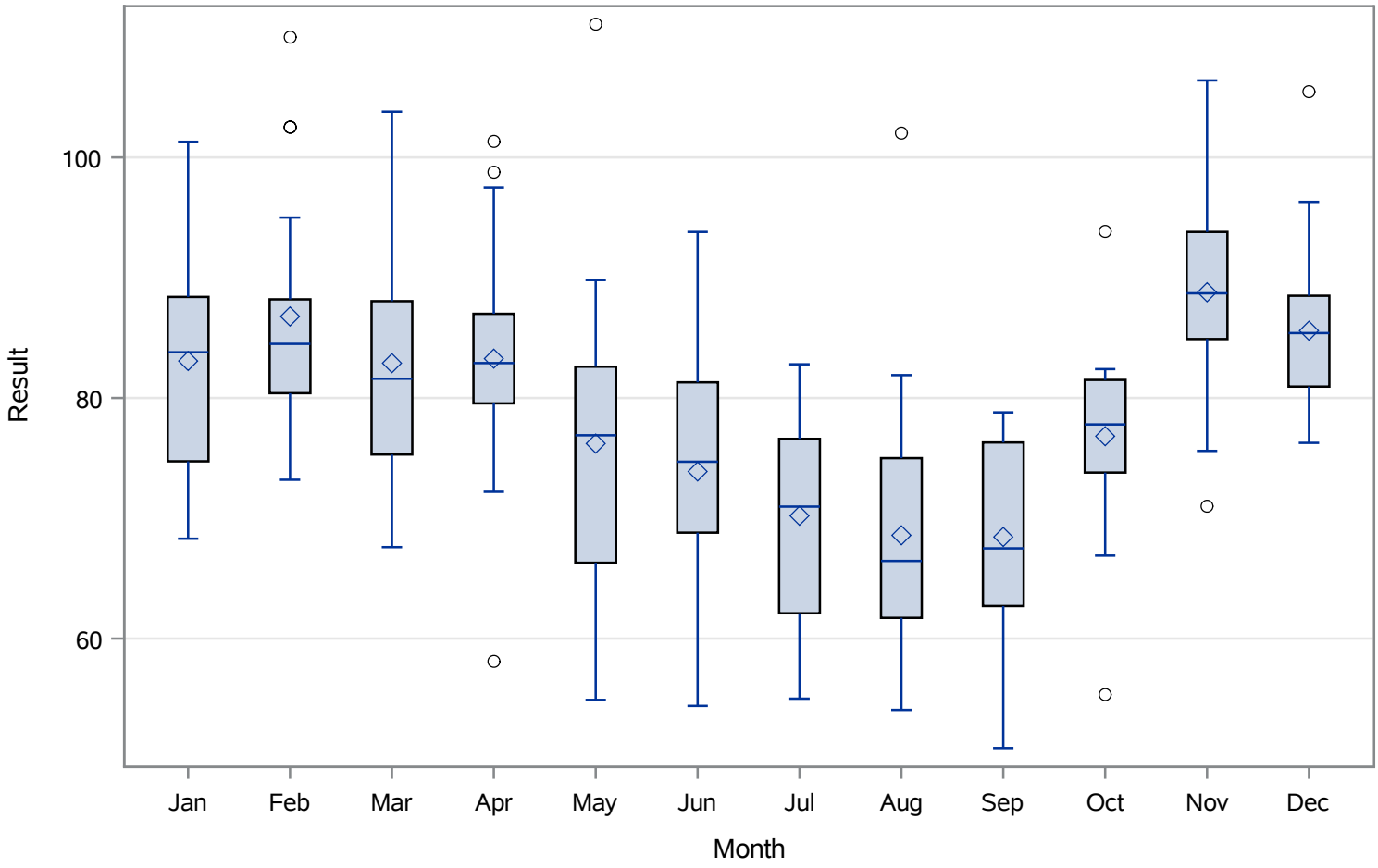


Little Manatee River

Little Manatee River at SR 674

Dissolved Oxygen (Percent Saturation) %

Site ID = 21FLHILL129

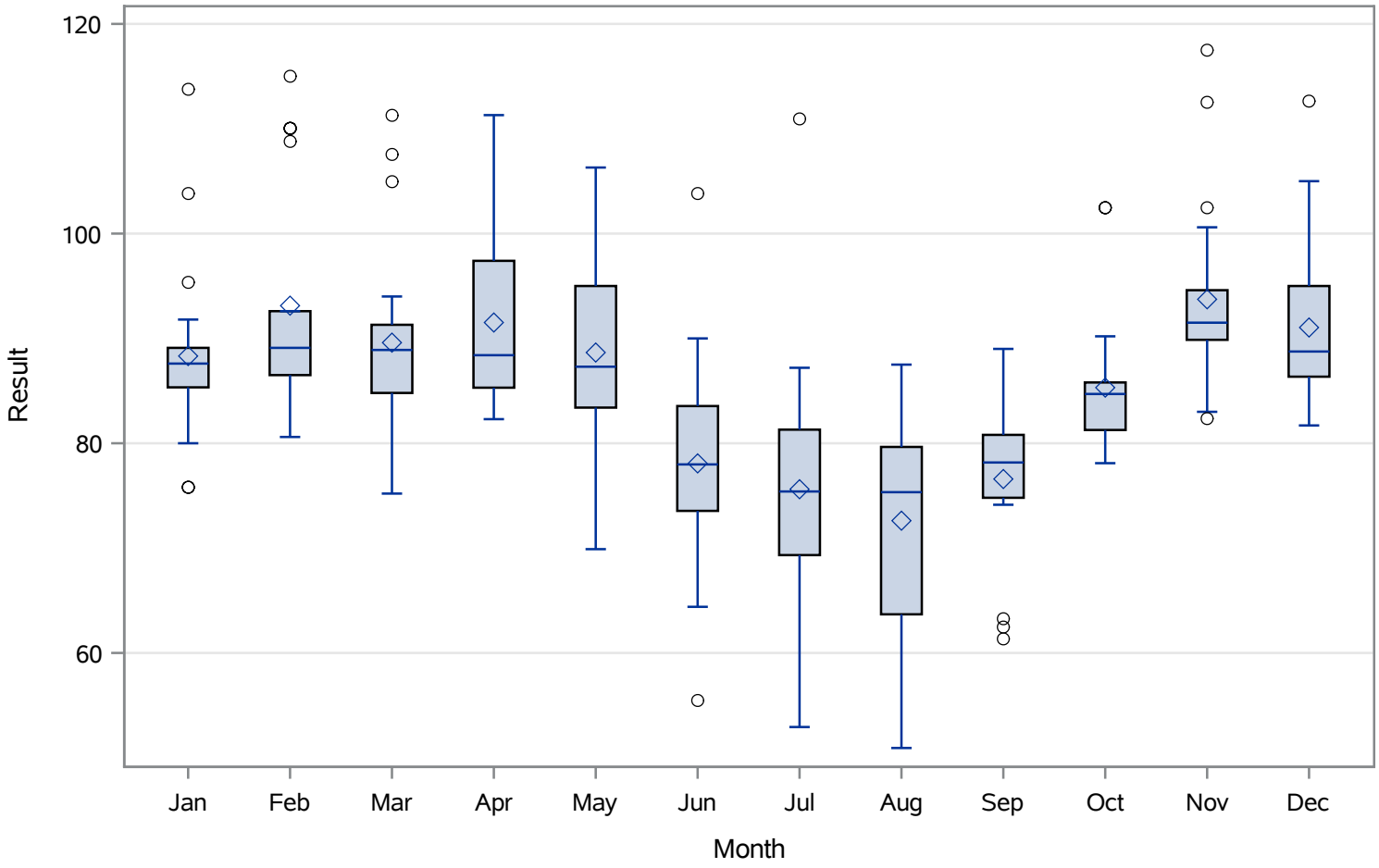


Little Manatee River

Little Manatee River at CR 579

Dissolved Oxygen (Percent Saturation) %

Site ID = 21FLHILL140

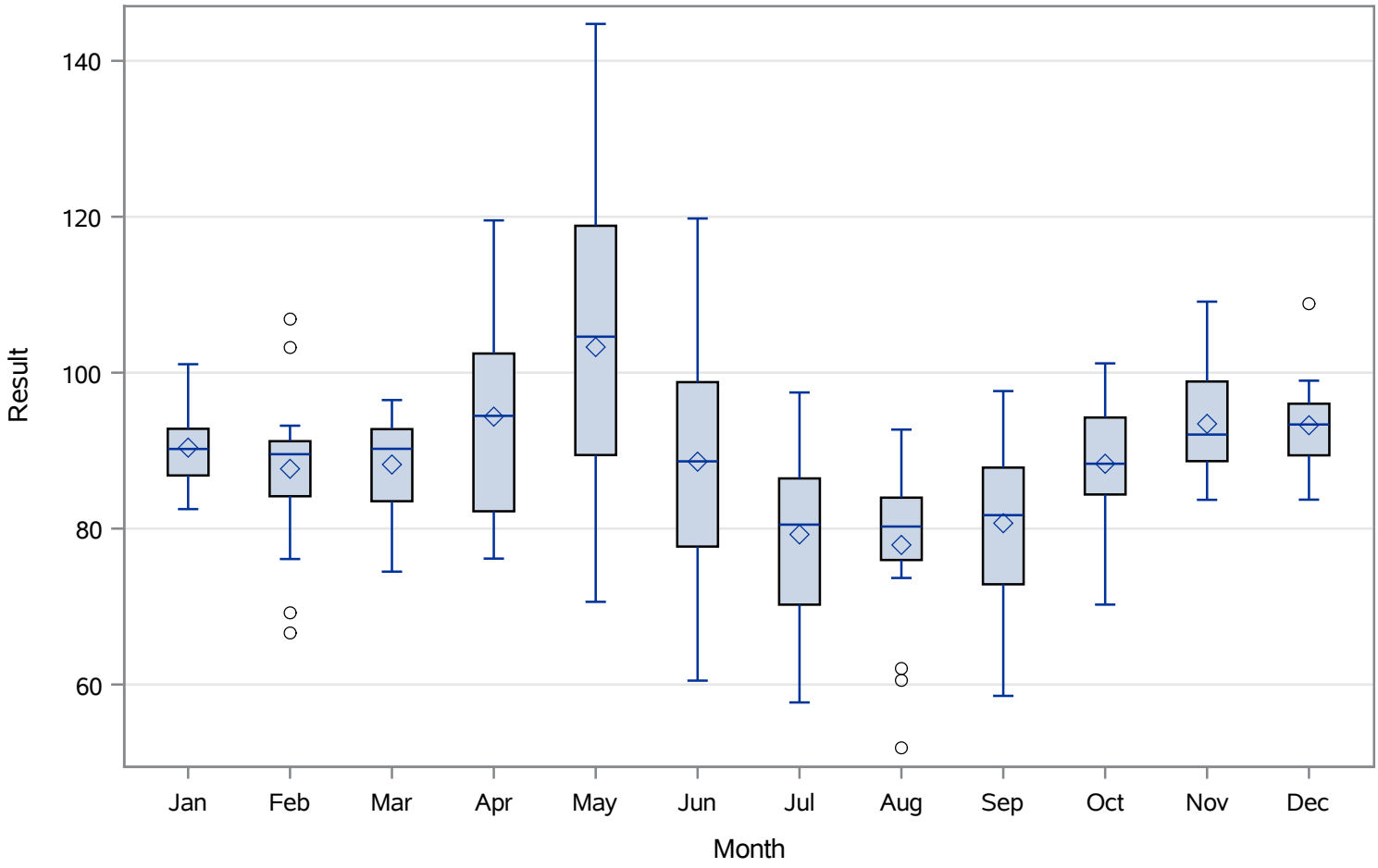


Little Manatee River

LITTLE MANATEE R AT CR579

Dissolved Oxygen (Percent Saturation) %

Site ID = 21FLHILL24010013

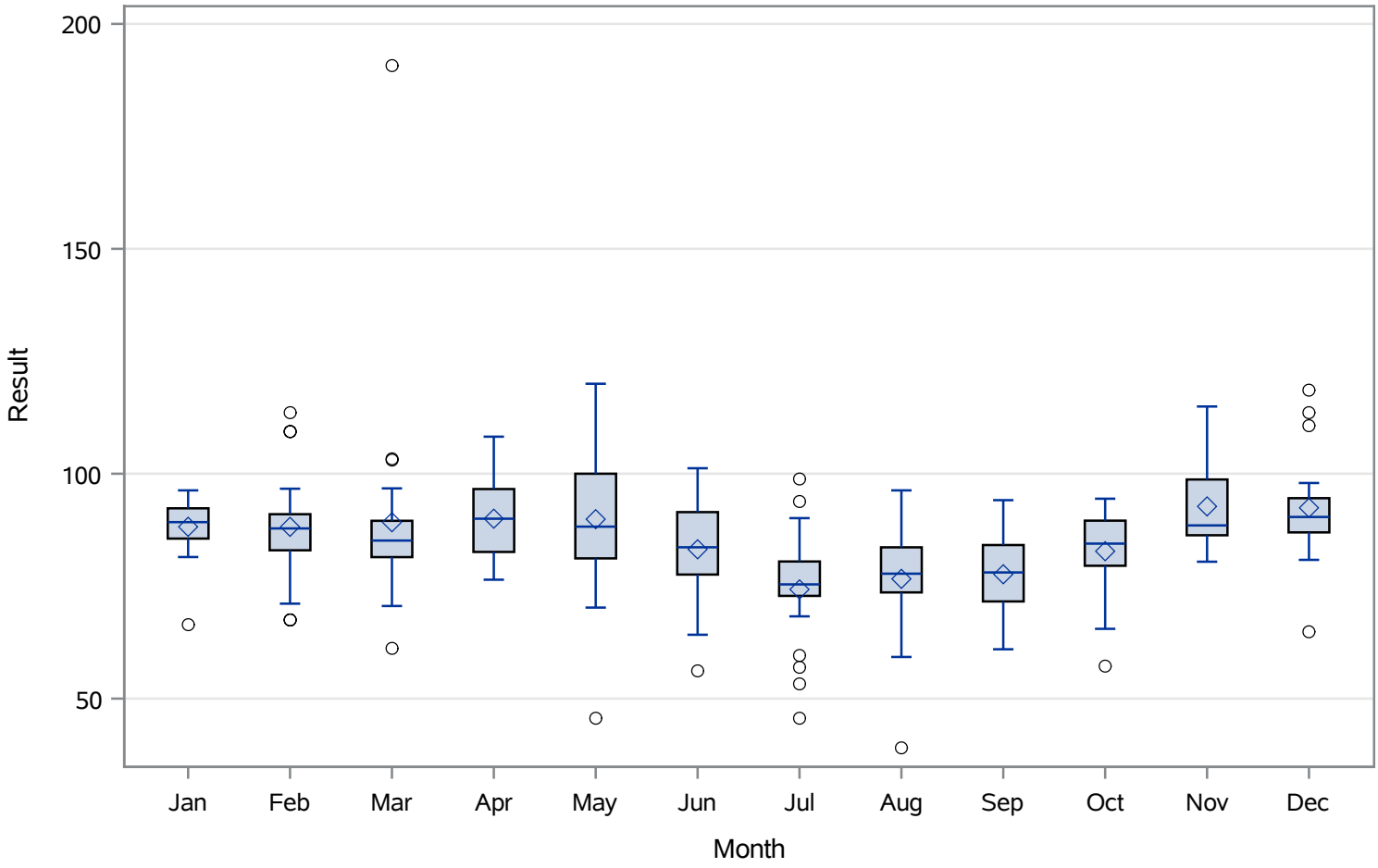


Little Manatee River

L MANATEE R BR US 301

Dissolved Oxygen (Percent Saturation) %

Site ID = 21FLHILL24010100

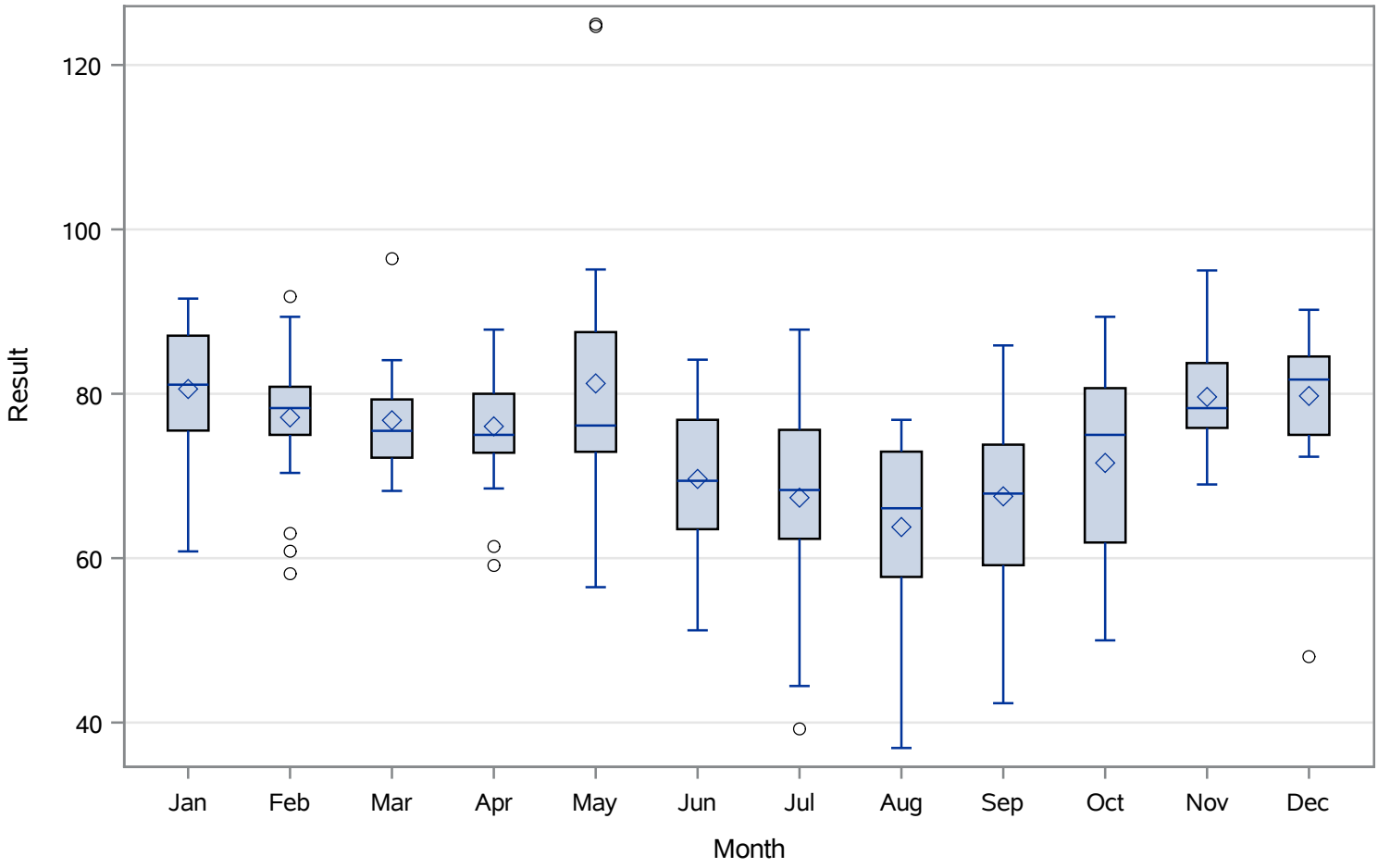


Little Manatee River

LITTLE MANATEE R AT SR #674

Dissolved Oxygen (Percent Saturation) %

Site ID = 21FLHILL24010110

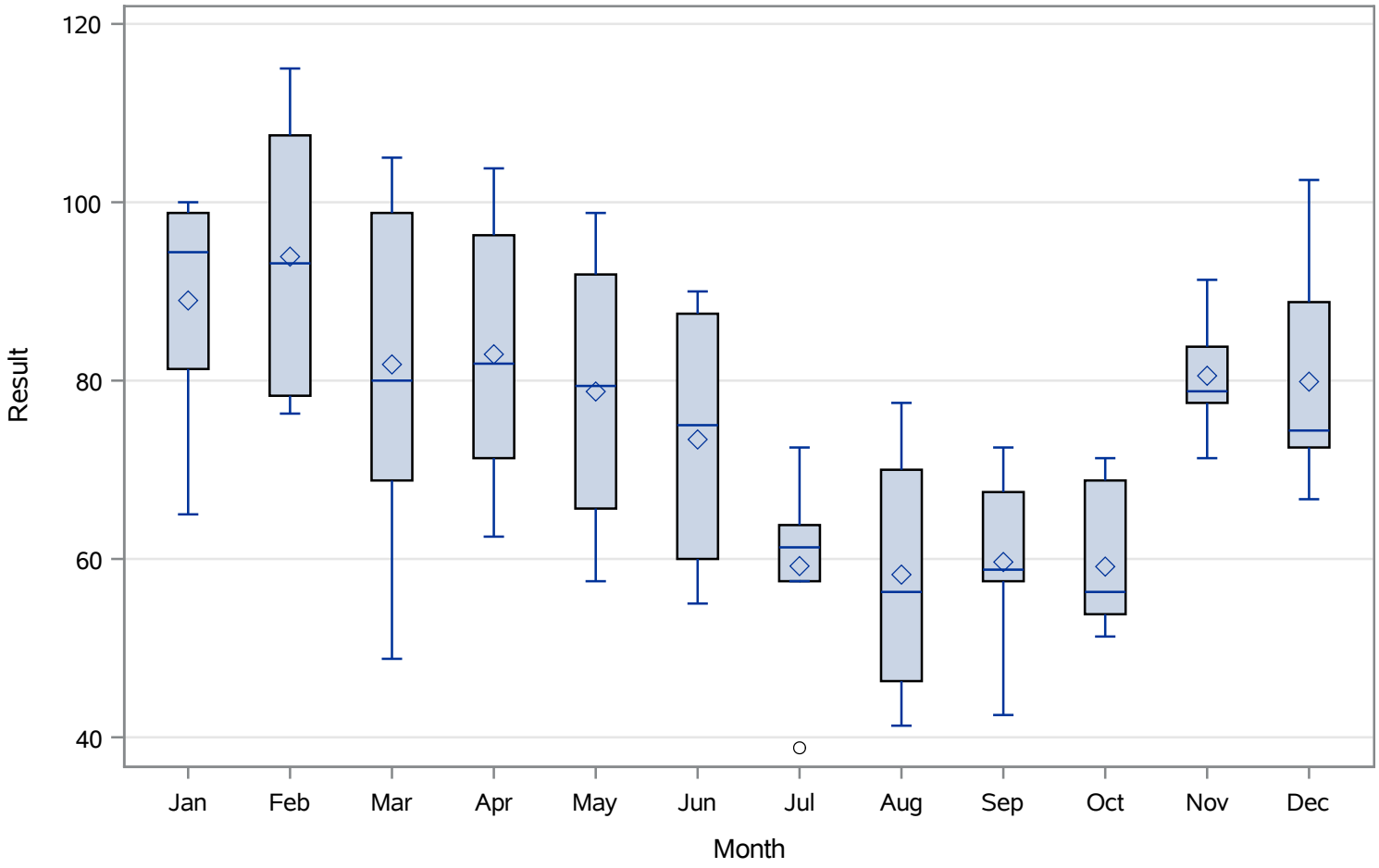


Little Manatee River

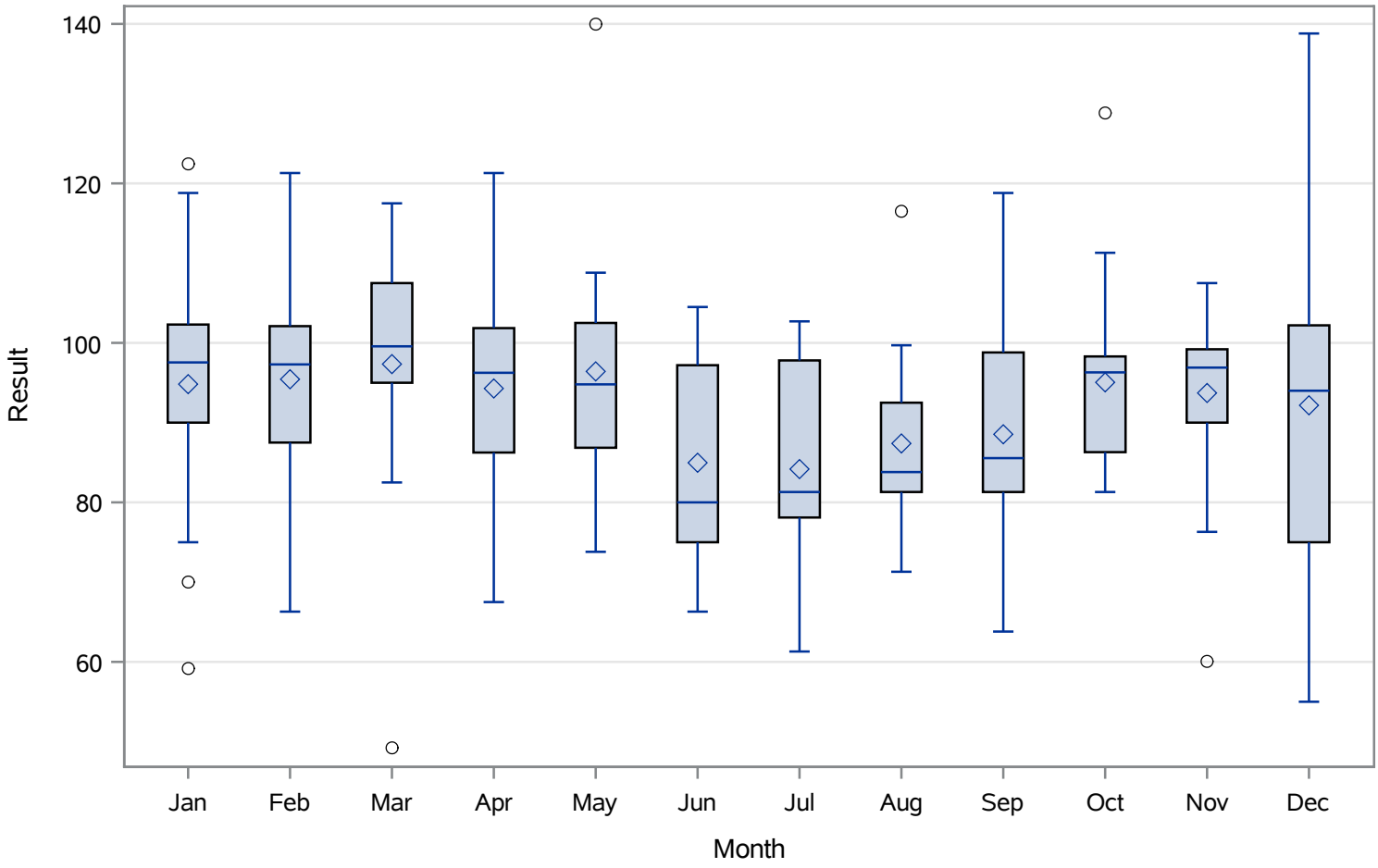
Little Manatee R. at SR674

Dissolved Oxygen (Percent Saturation) %

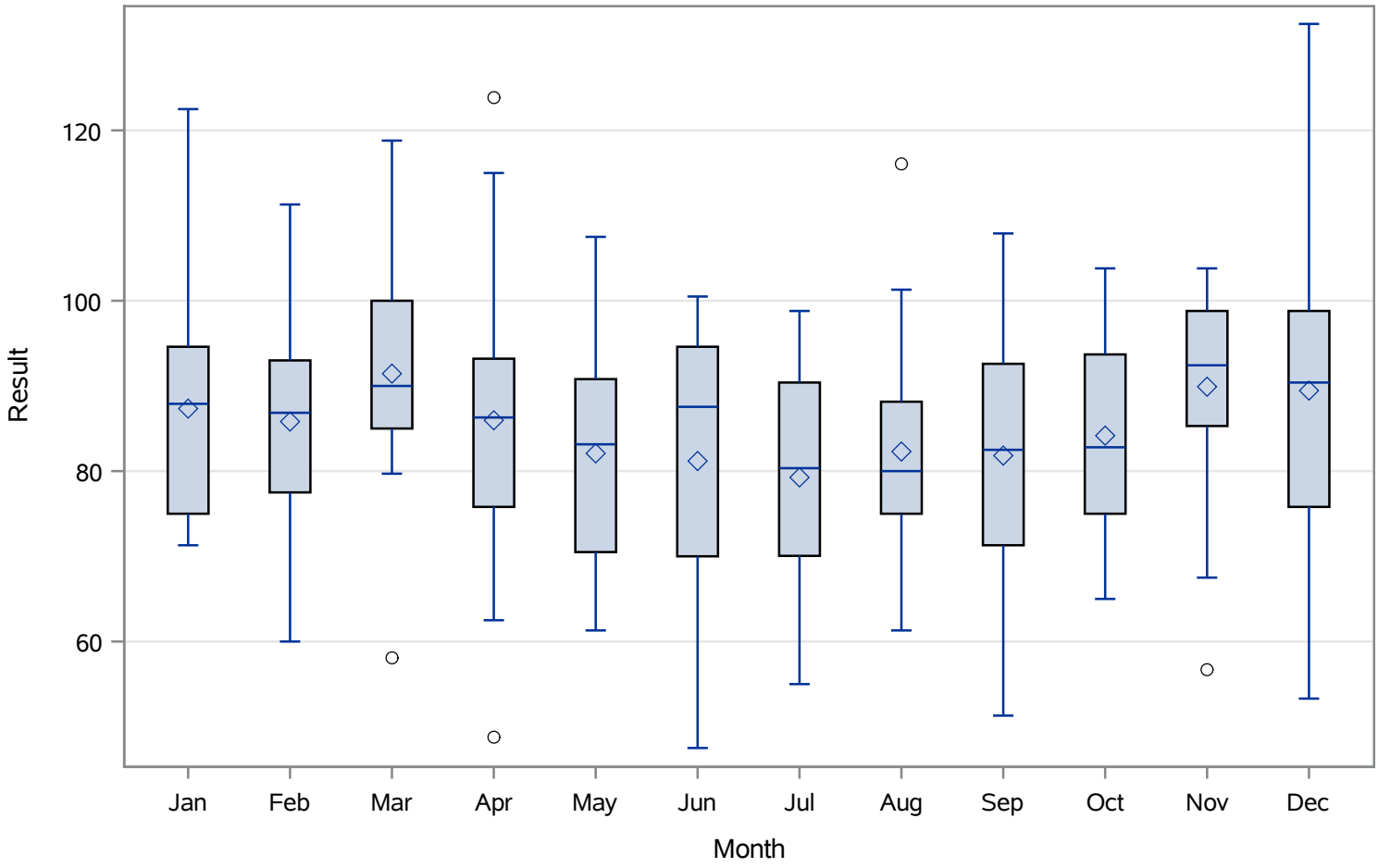
Site ID = 21FLIMCALM674



Little Manatee River
D1
Dissolved Oxygen (Percent Saturation) %
Site ID = 21FLMANAD1



Little Manatee River
D3
Dissolved Oxygen (Percent Saturation) %
Site ID = 21FLMANAD3

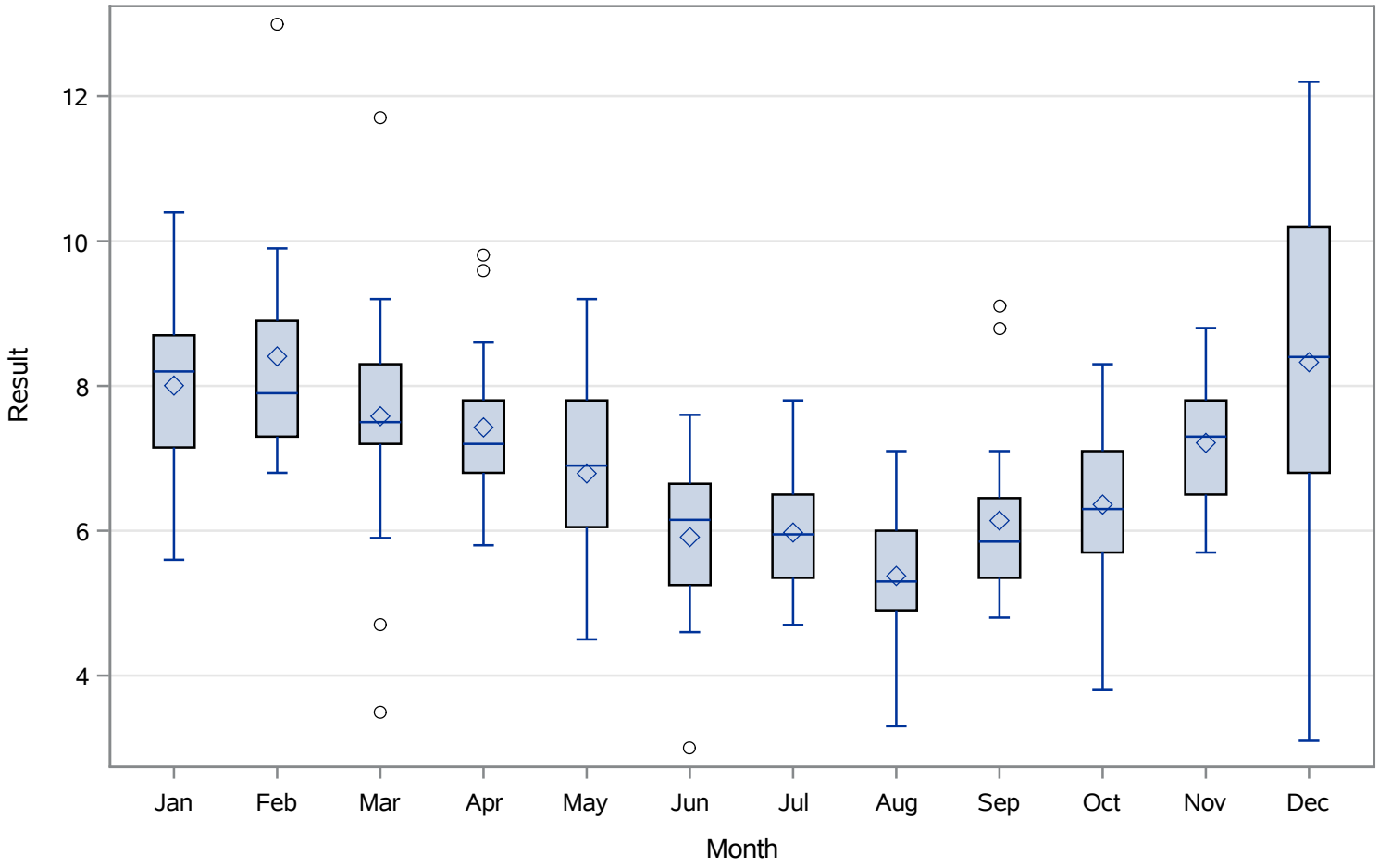


Little Manatee River

LITTLE MANATEE RIVER NEAR FT. LONESOME FL

Dissolved Oxygen (mg/L) mg/L

Site ID = 112WRD 02300100

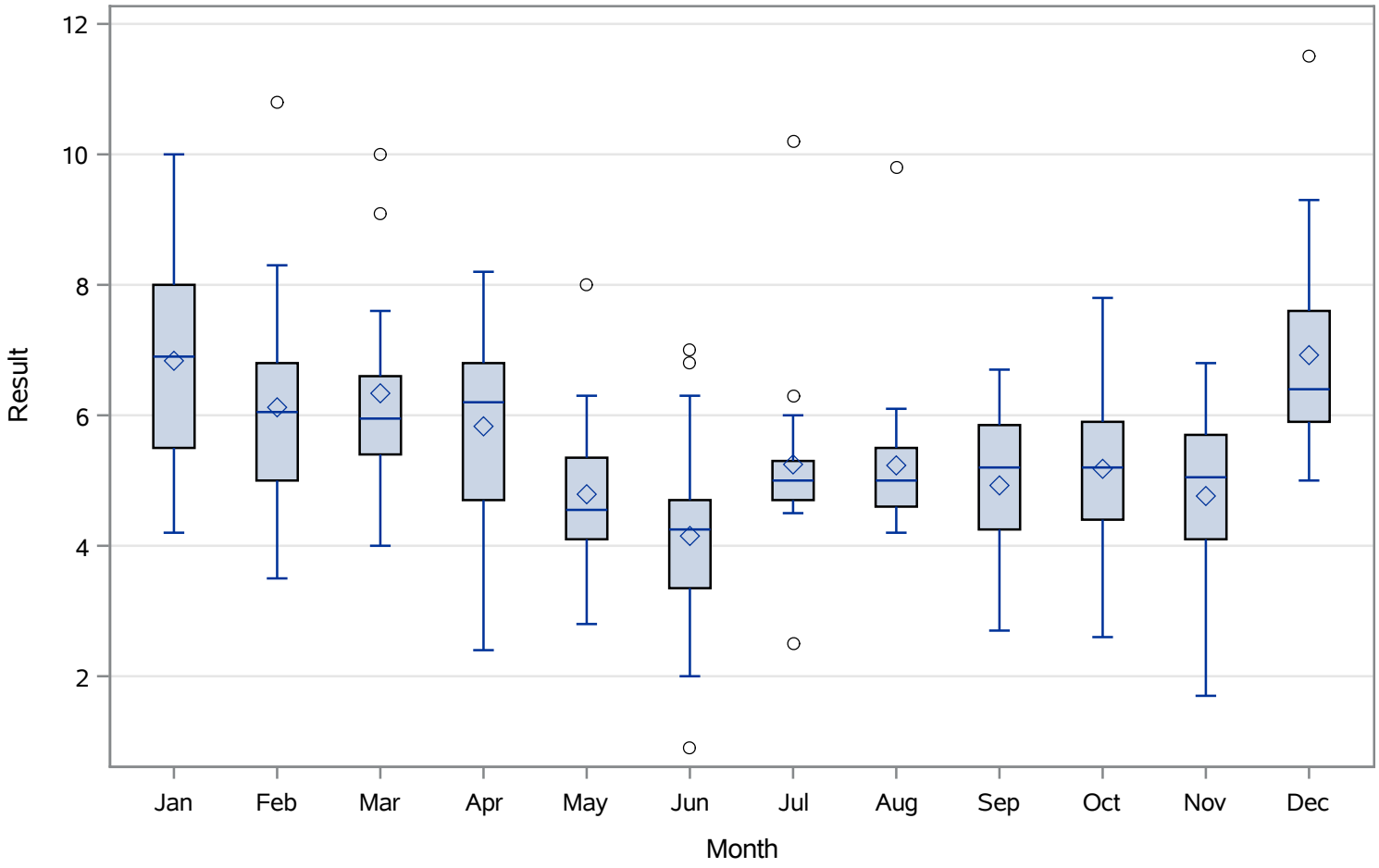


Little Manatee River

SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL

Dissolved Oxygen (mg/L) mg/L

Site ID = 112WRD 02300200

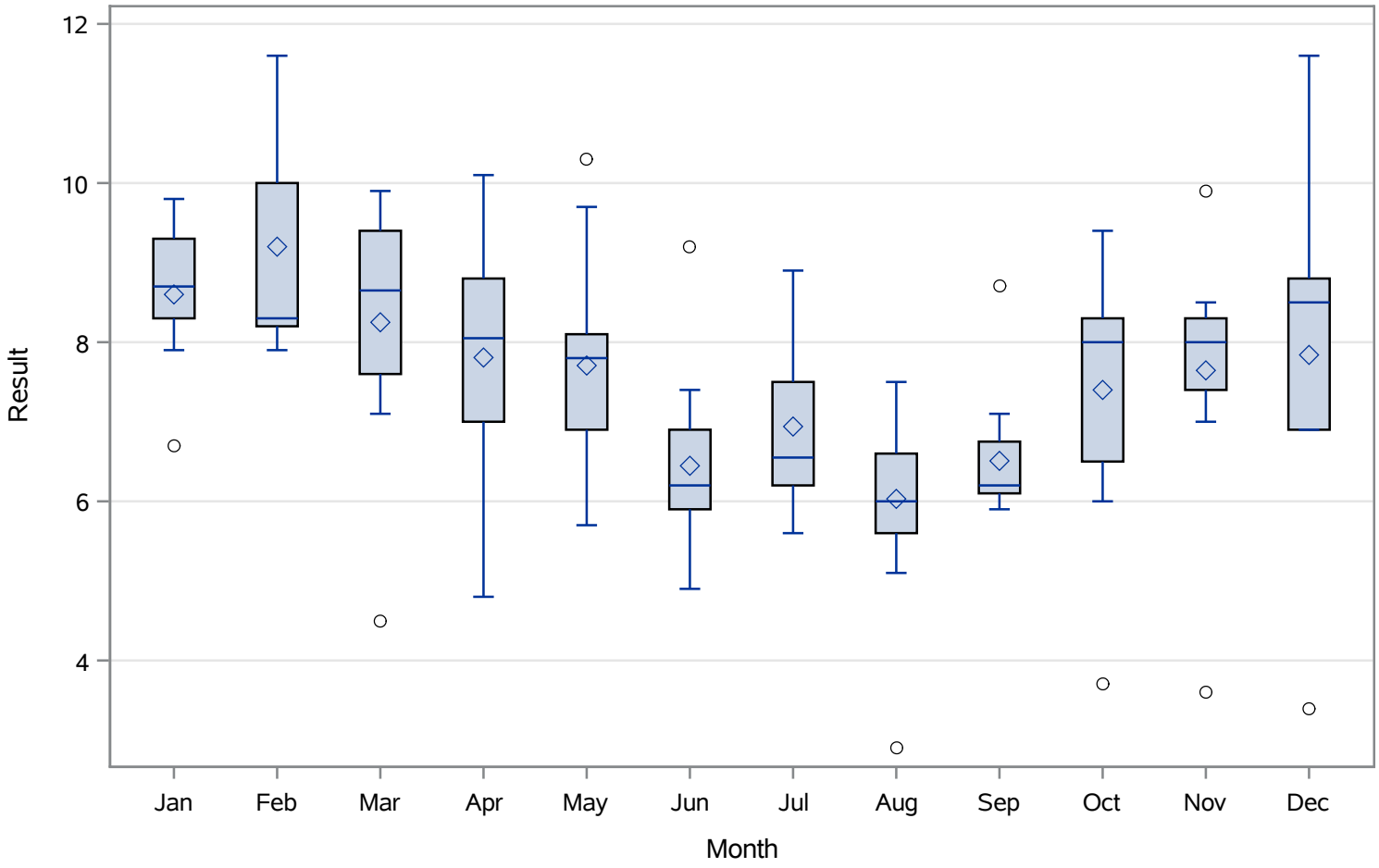


Little Manatee River

LITTLE MANATEE RIVER NEAR WIMAUMA FL

Dissolved Oxygen (mg/L) mg/L

Site ID = 112WRD 02300500

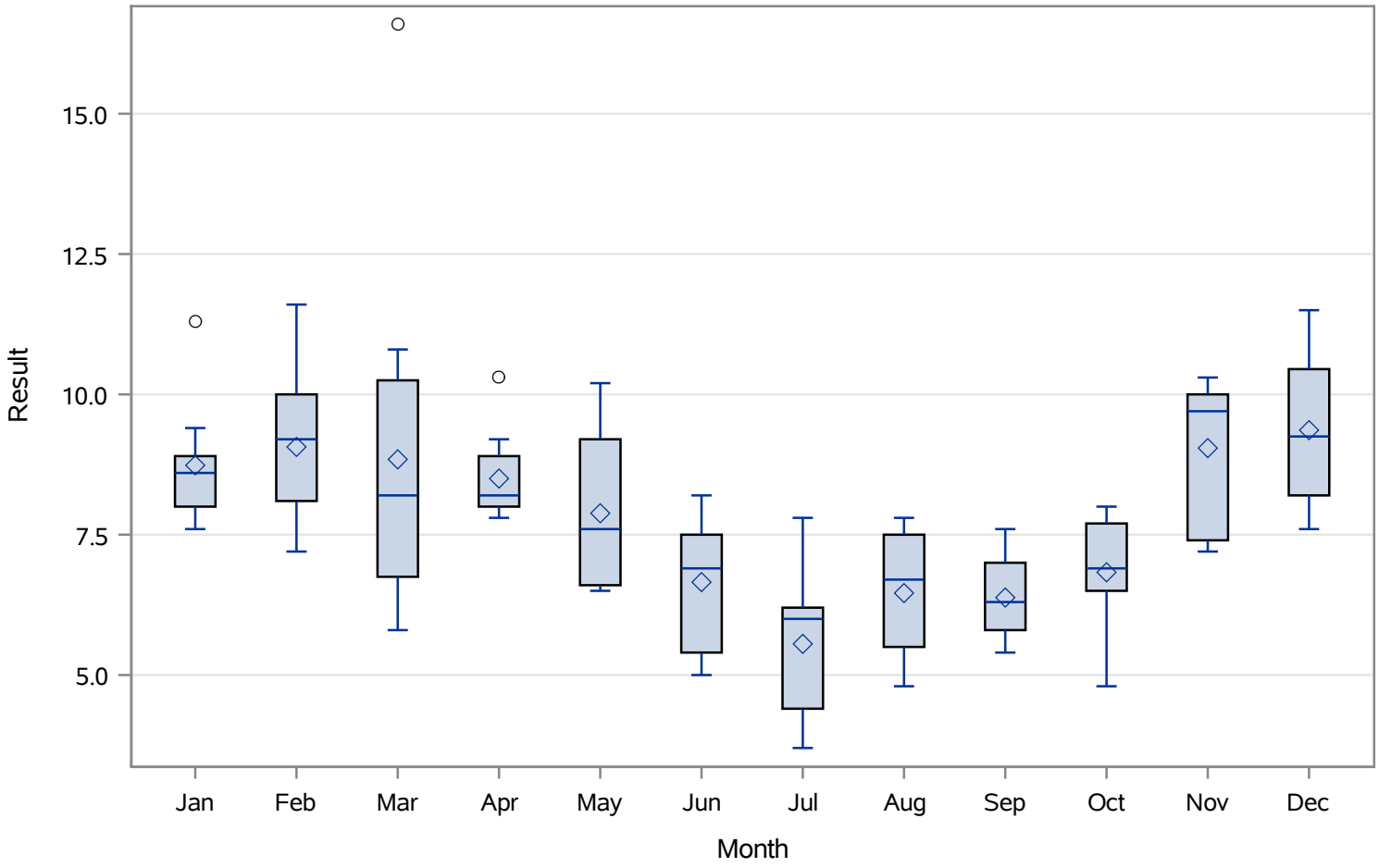


Little Manatee River

L MANATEE R BR US 301

Dissolved Oxygen (mg/L) mg/L

Site ID = 21FLA 24010100

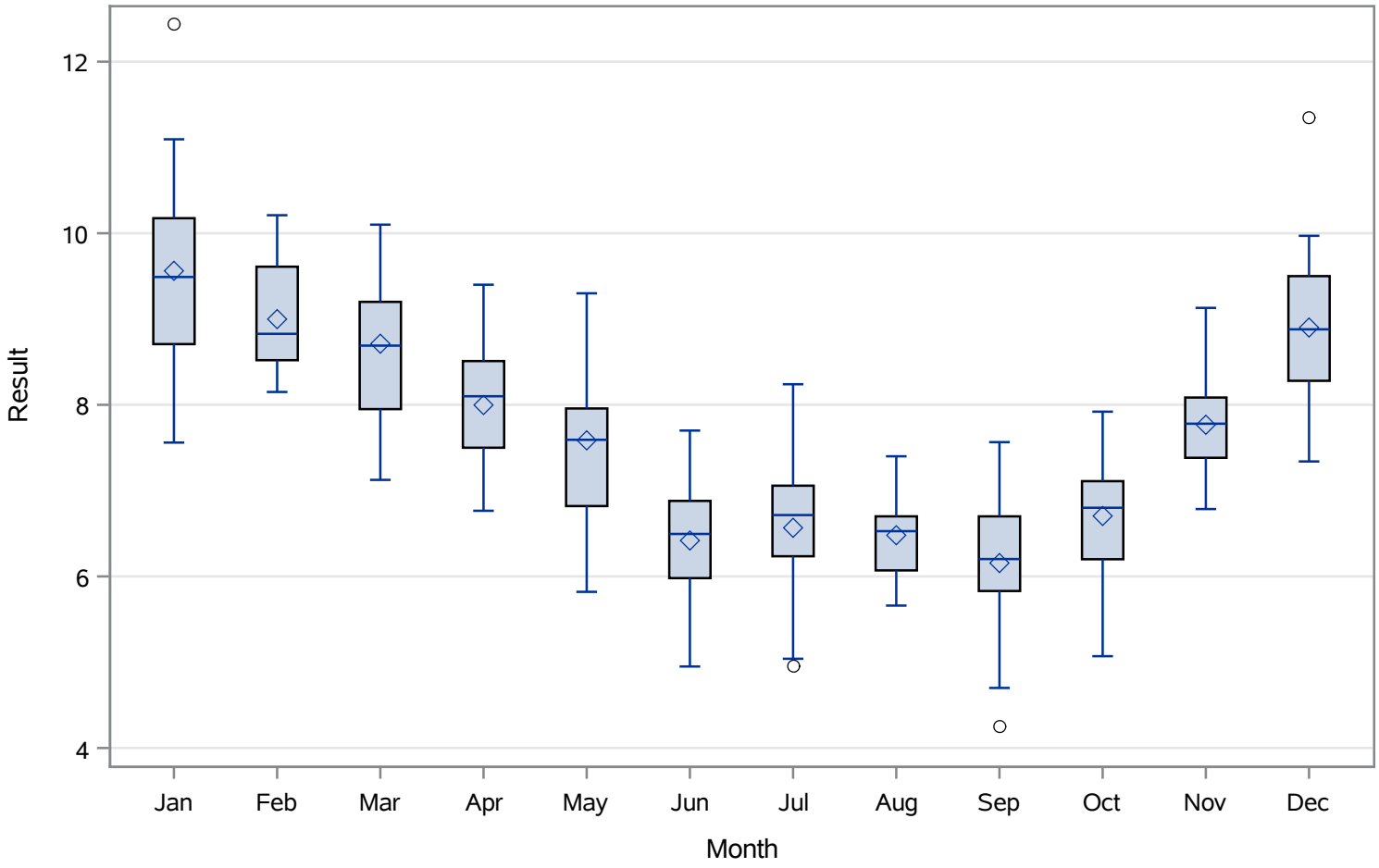


Little Manatee River

LITTLE MANATEE RIVER AT US HWY 301

Dissolved Oxygen (mg/L) mg/L

Site ID = 21FLGW 3555

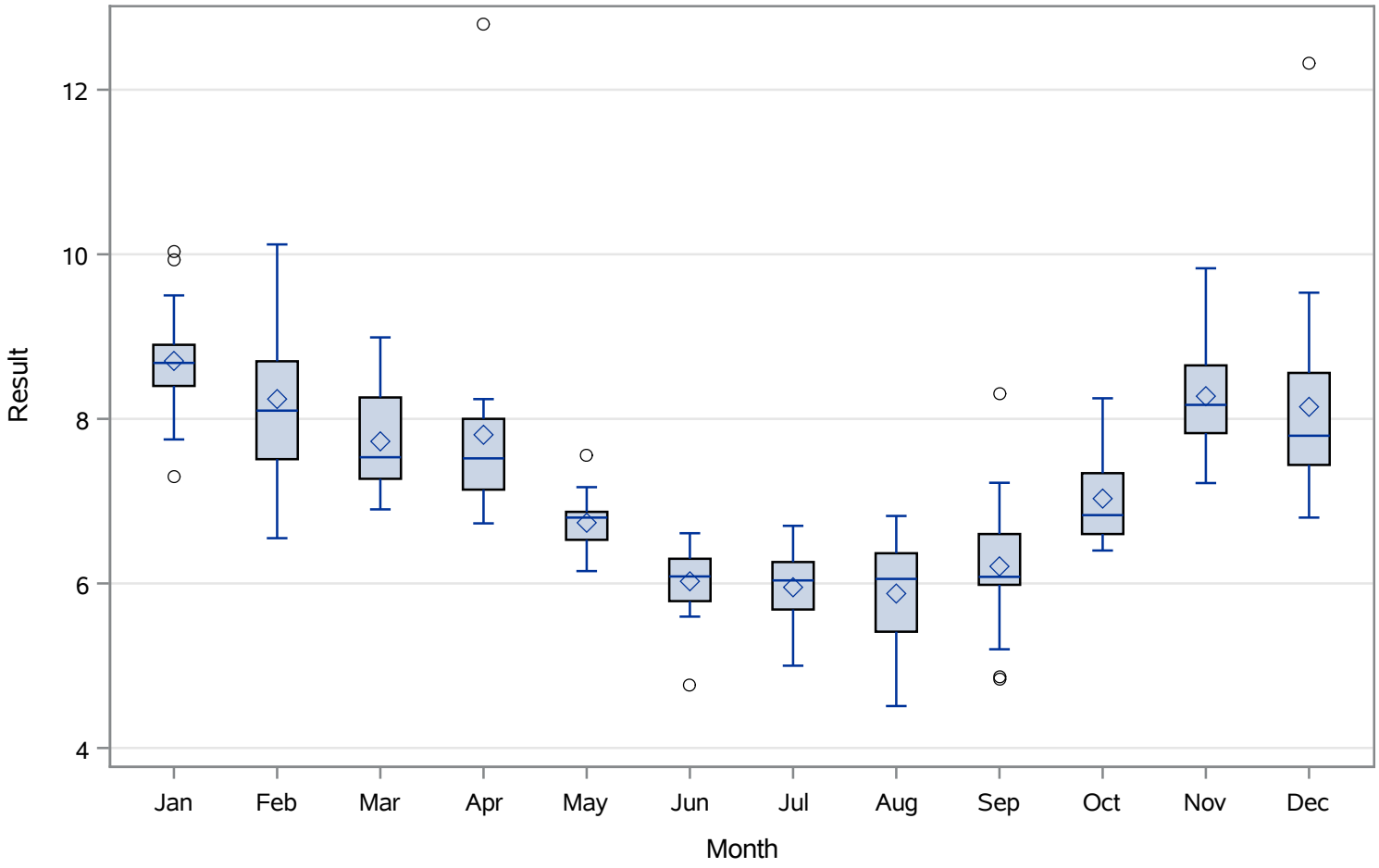


Little Manatee River

Little Manatee River at US 301 bridge

Dissolved Oxygen (mg/L) mg/L

Site ID = 21FLHILL113

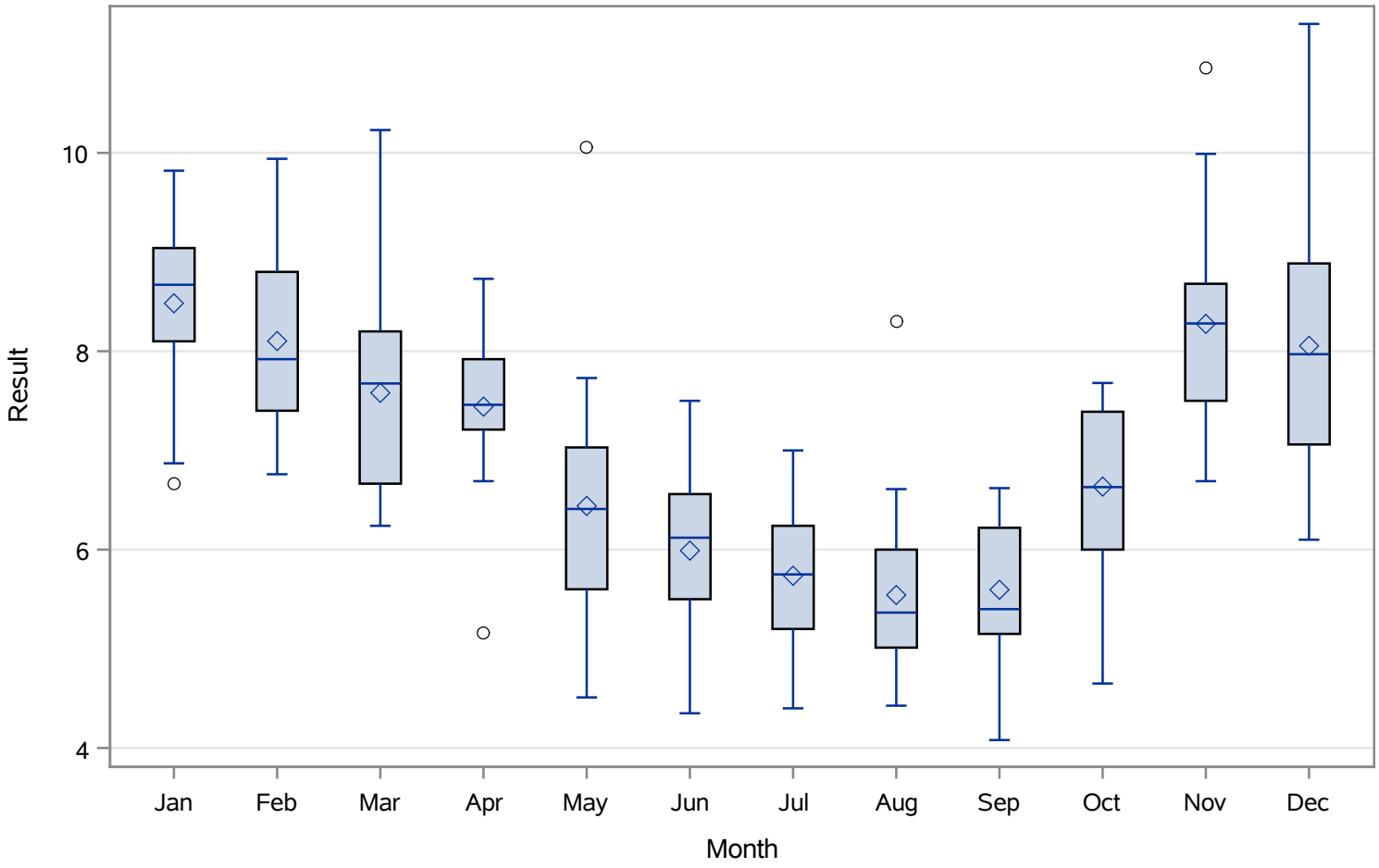


Little Manatee River

Little Manatee River at SR 674

Dissolved Oxygen (mg/L) mg/L

Site ID = 21FLHILL129

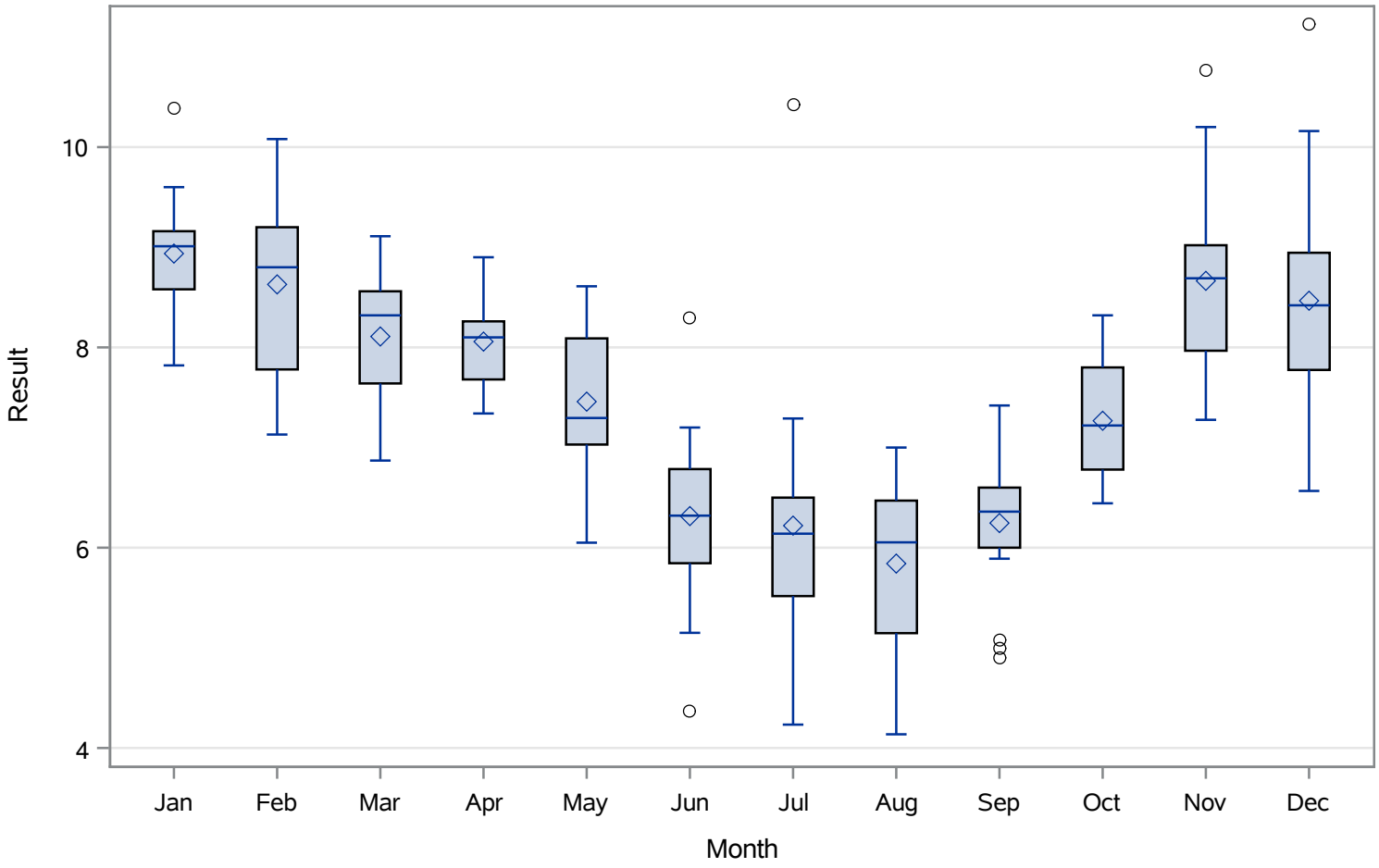


Little Manatee River

Little Manatee River at CR 579

Dissolved Oxygen (mg/L) mg/L

Site ID = 21FLHILL140

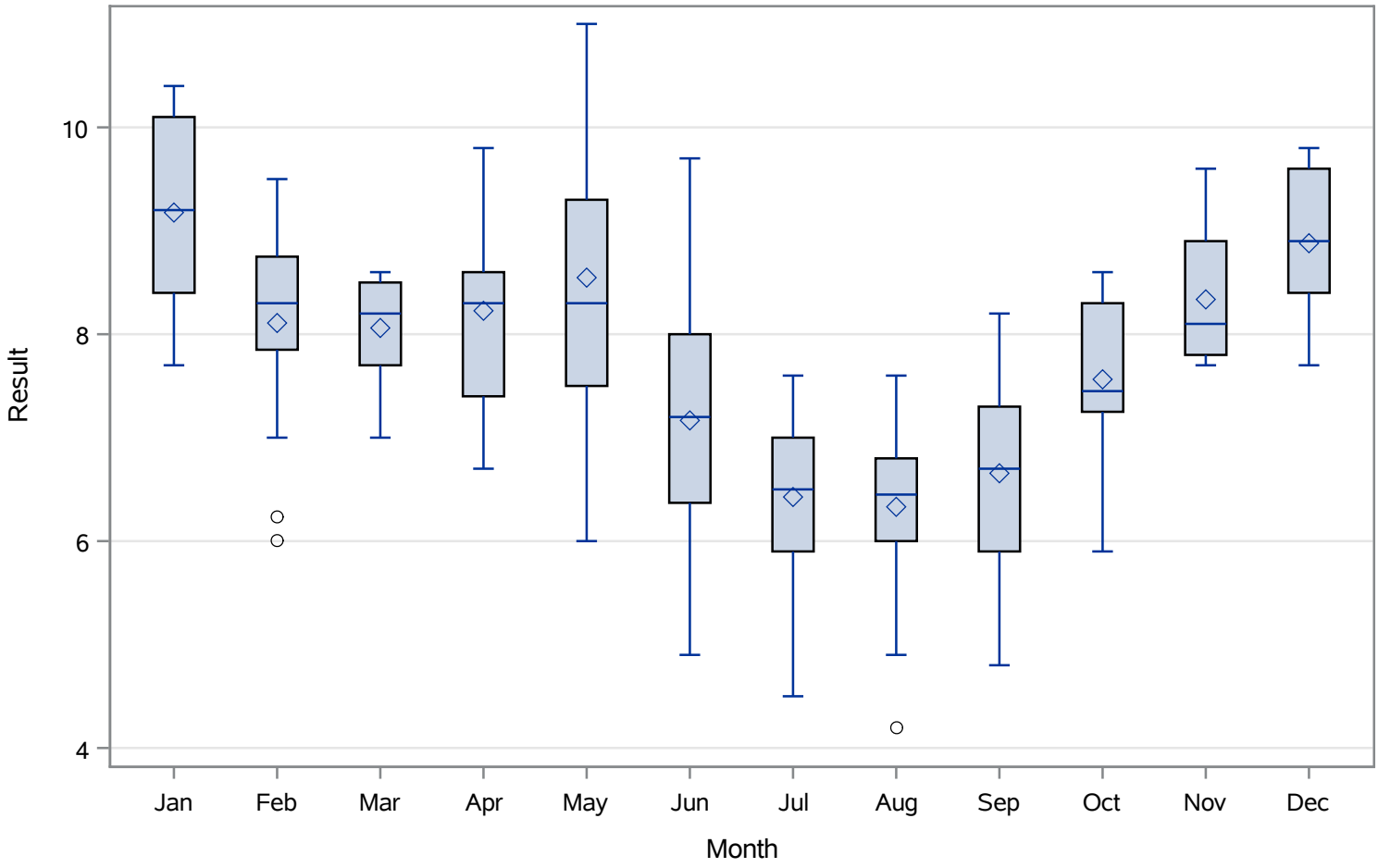


Little Manatee River

LITTLE MANATEE R AT CR579

Dissolved Oxygen (mg/L) mg/L

Site ID = 21FLHILL24010013

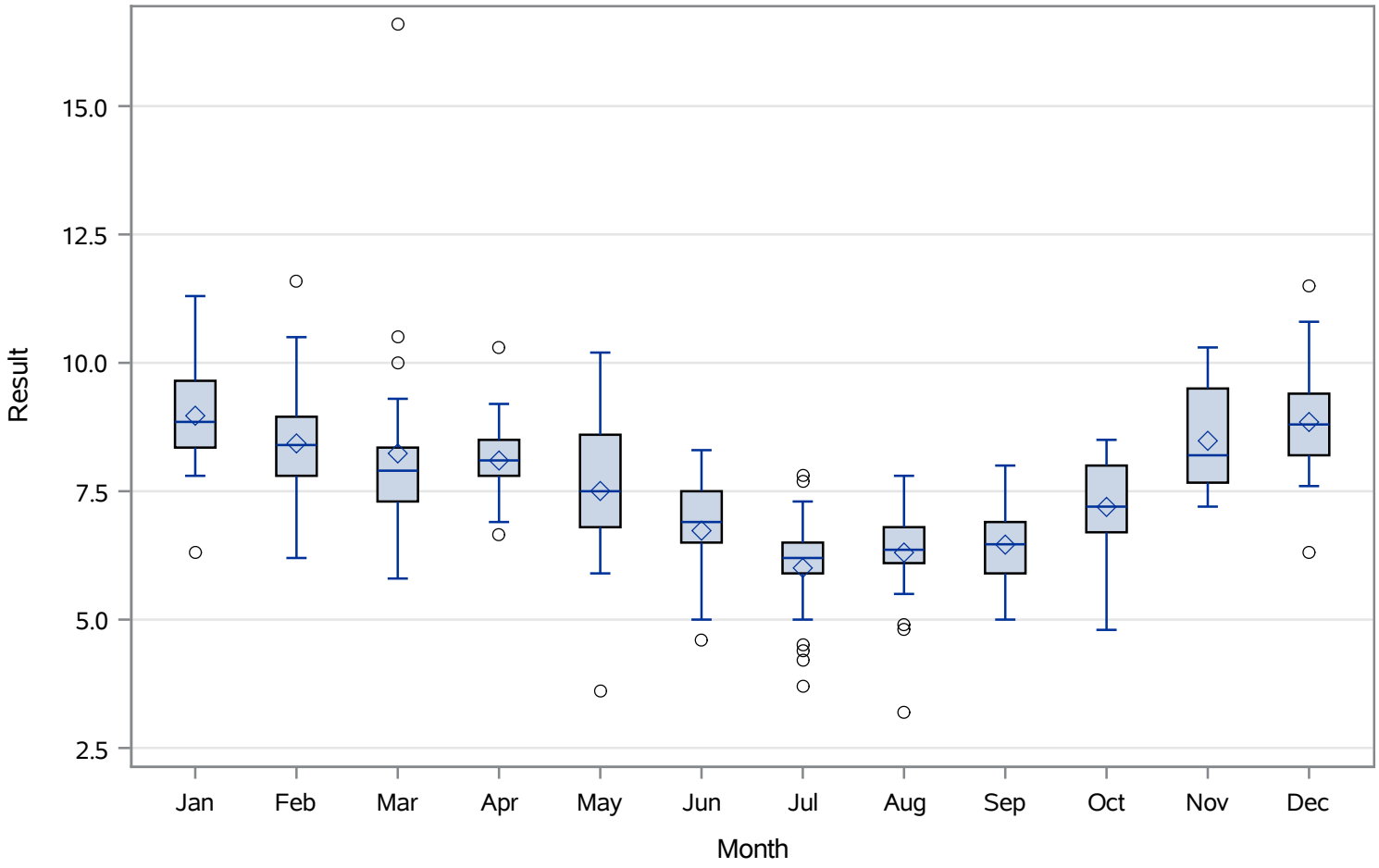


Little Manatee River

L MANATEE R BR US 301

Dissolved Oxygen (mg/L) mg/L

Site ID = 21FLHILL24010100

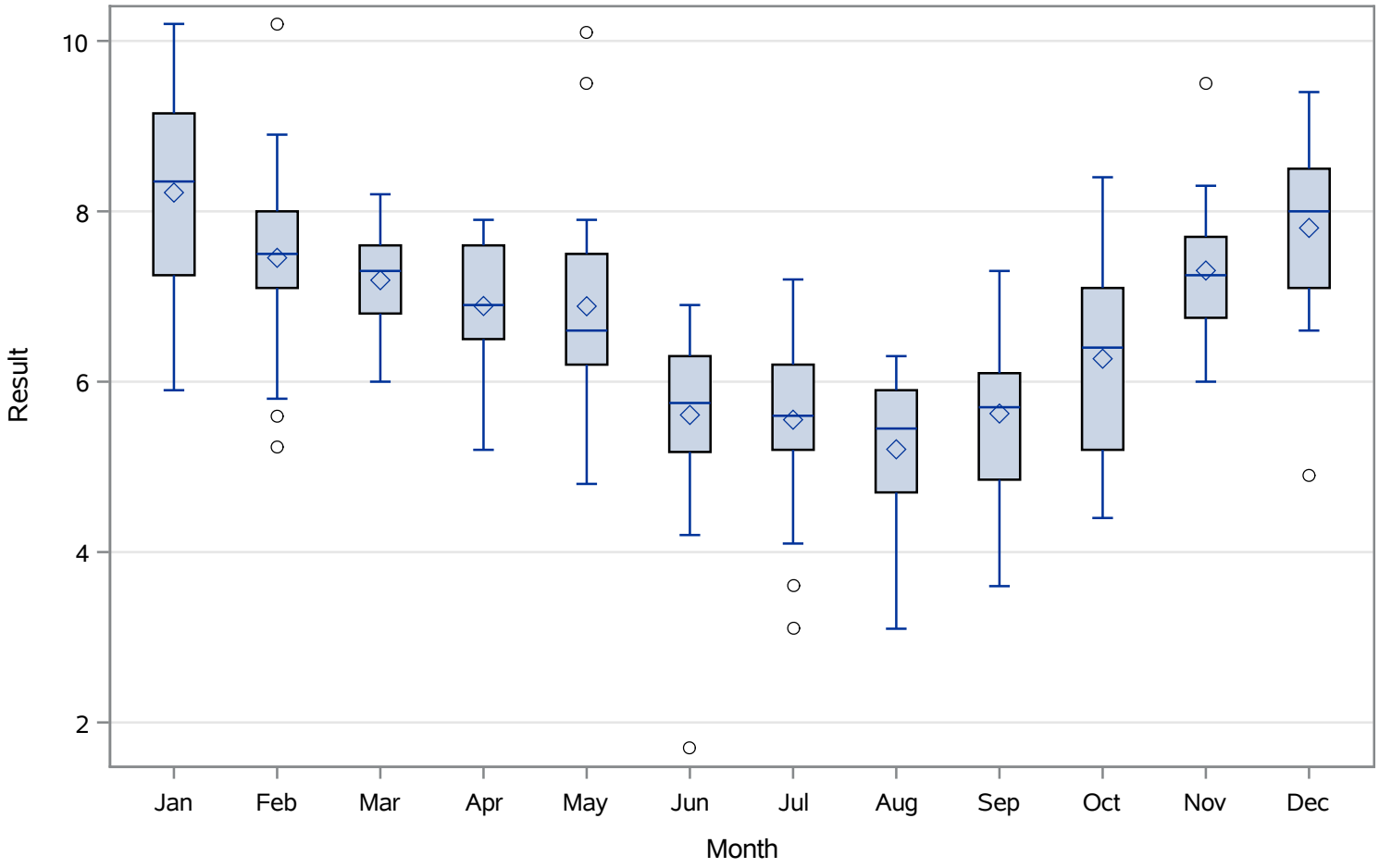


Little Manatee River

LITTLE MANATEE R AT SR #674

Dissolved Oxygen (mg/L) mg/L

Site ID = 21FLHILL24010110

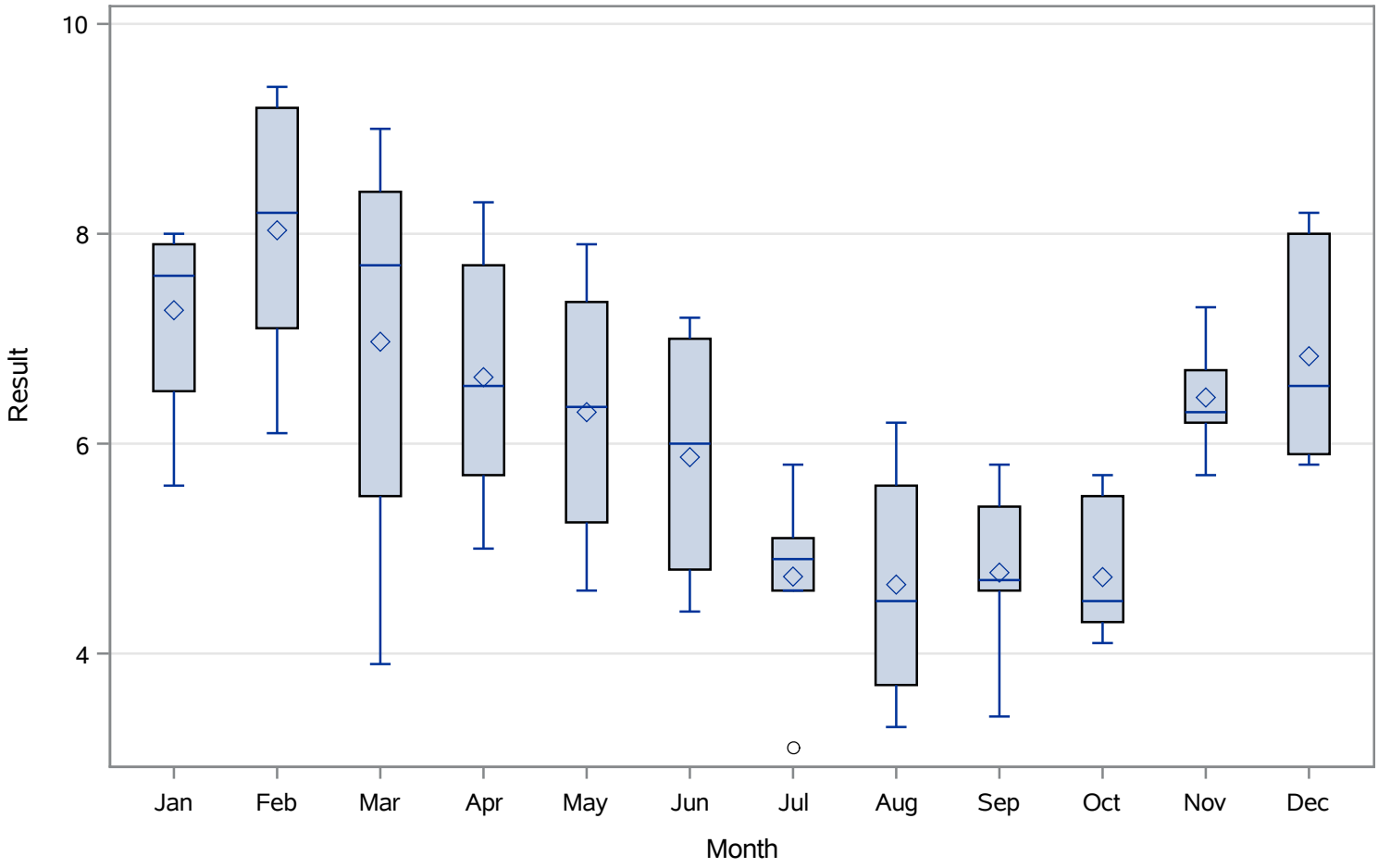


Little Manatee River

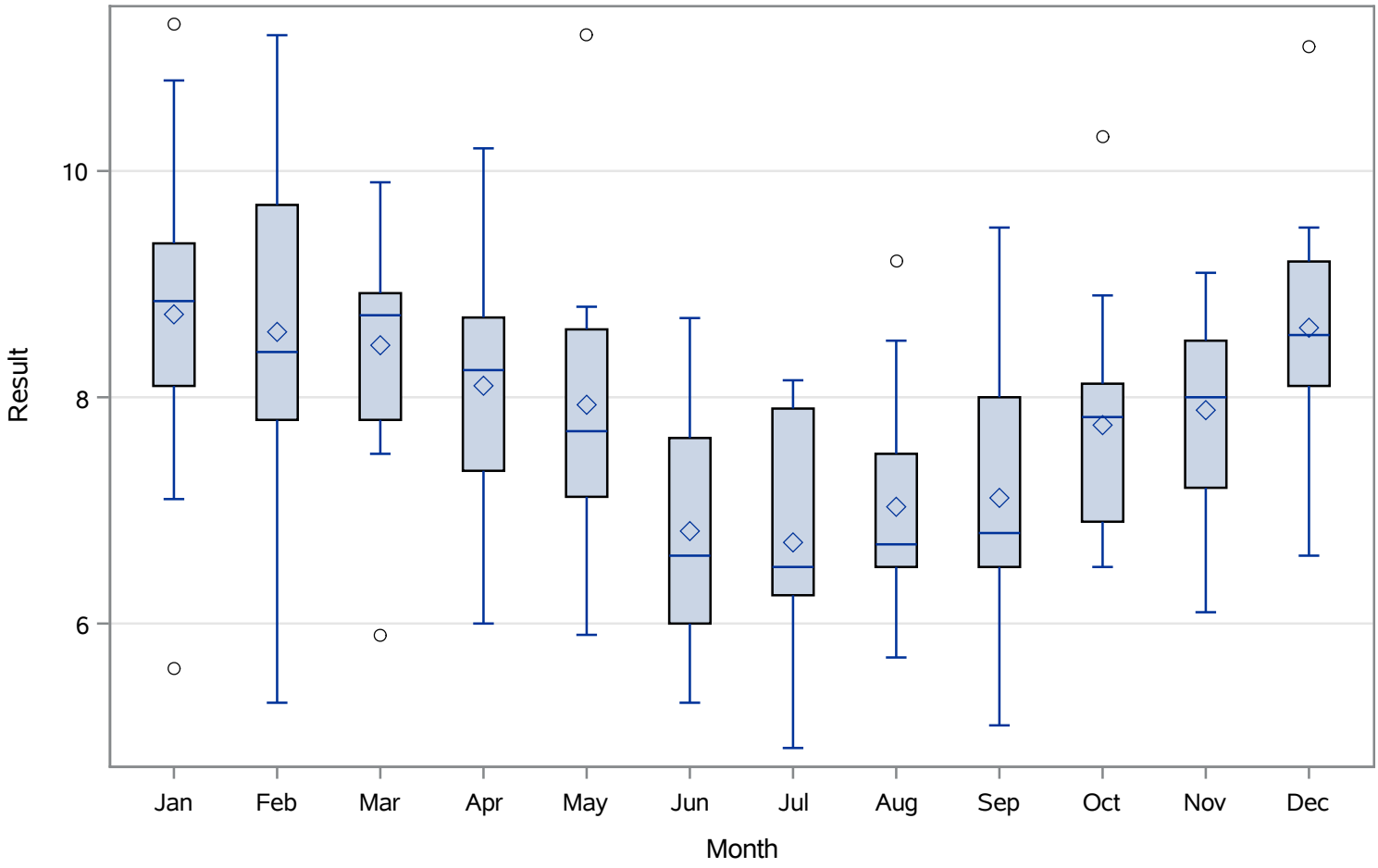
Little Manatee R. at SR674

Dissolved Oxygen (mg/L) mg/L

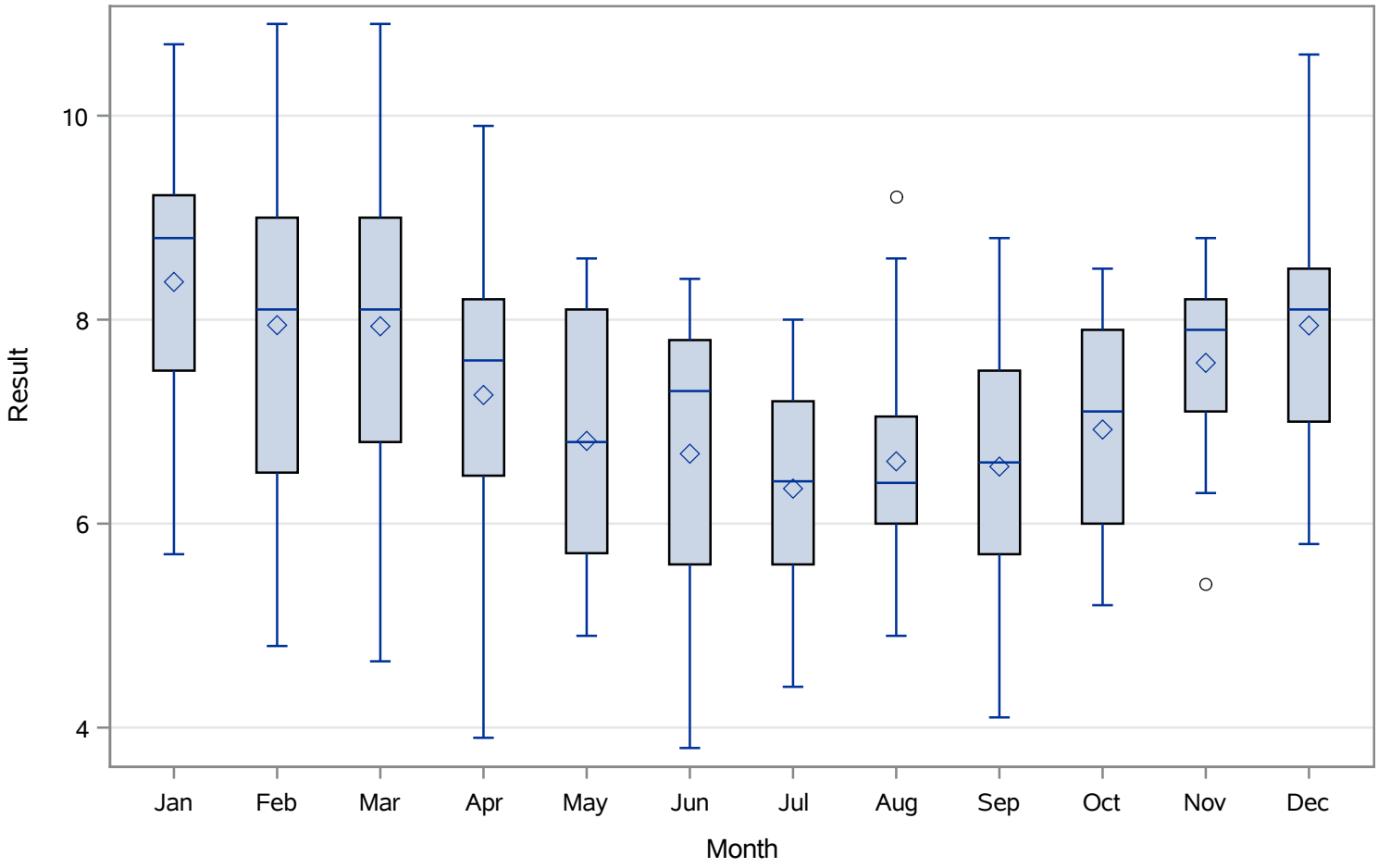
Site ID = 21FLIMCALM674



Little Manatee River
D1
Dissolved Oxygen (mg/L) mg/L
Site ID = 21FLMANAD1



Little Manatee River
D3
Dissolved Oxygen (mg/L) mg/L
Site ID = 21FLMANAD3

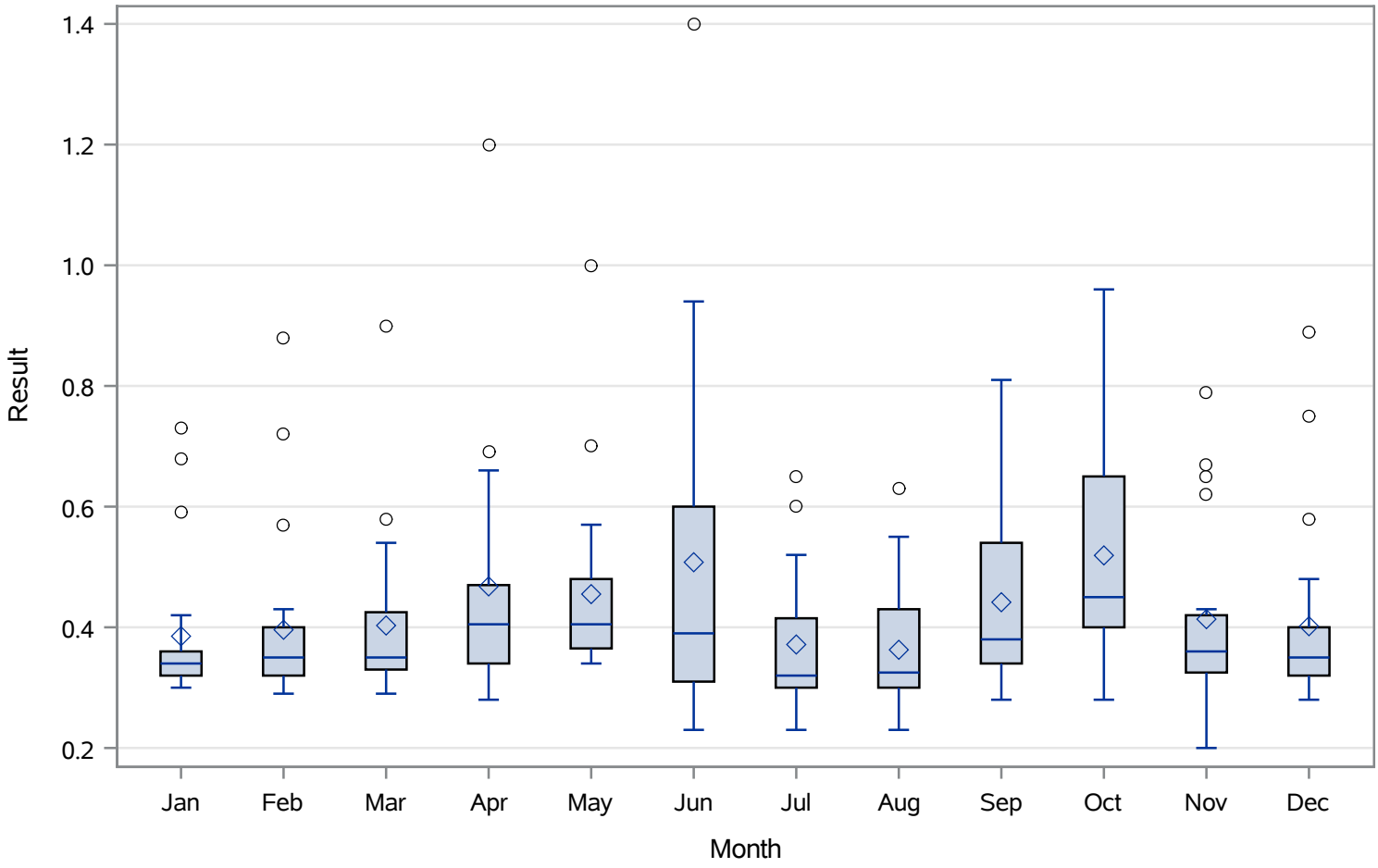


Little Manatee River

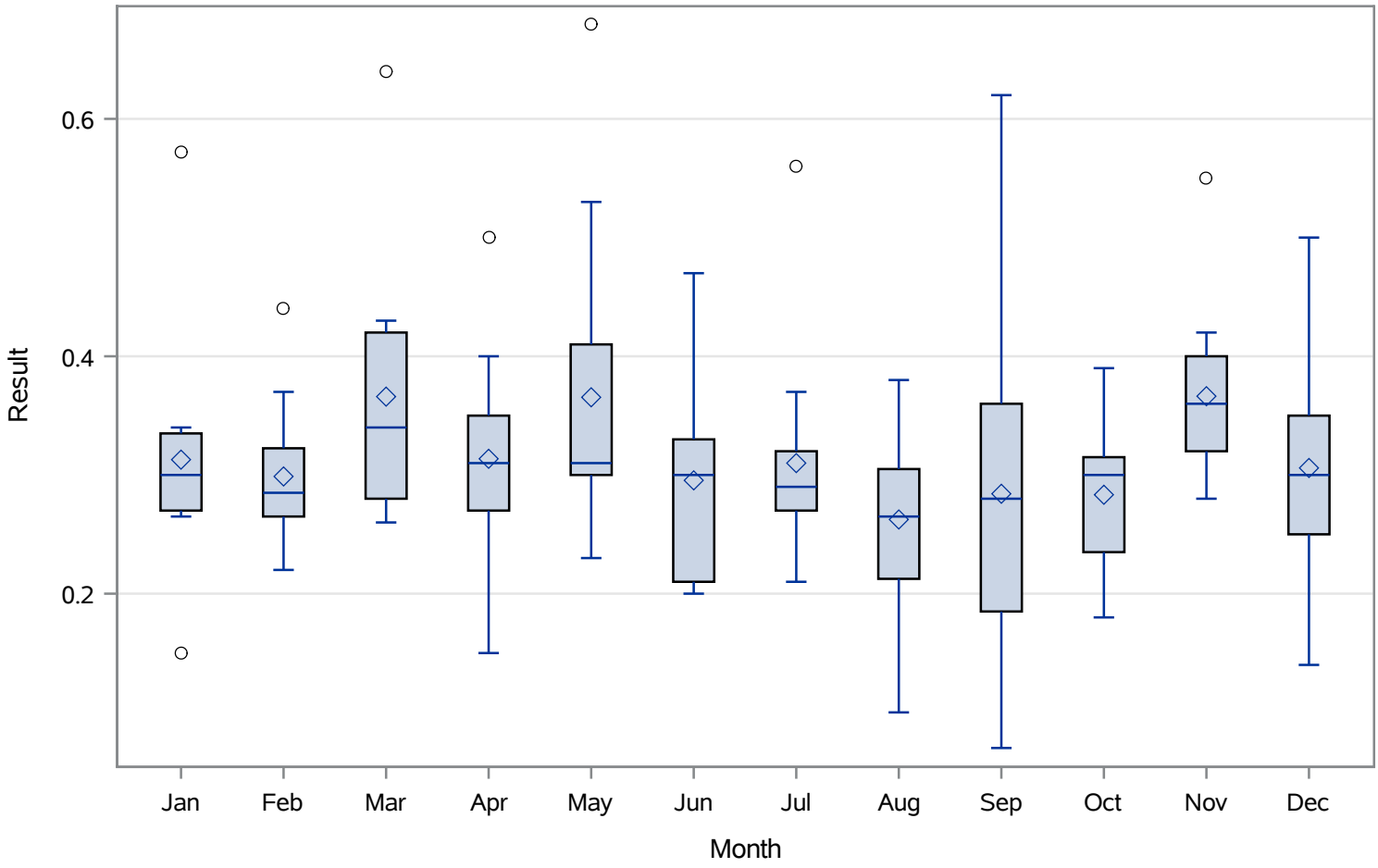
LITTLE MANATEE RIVER AT US HWY 301

Fluoride (mg/L) mg/L

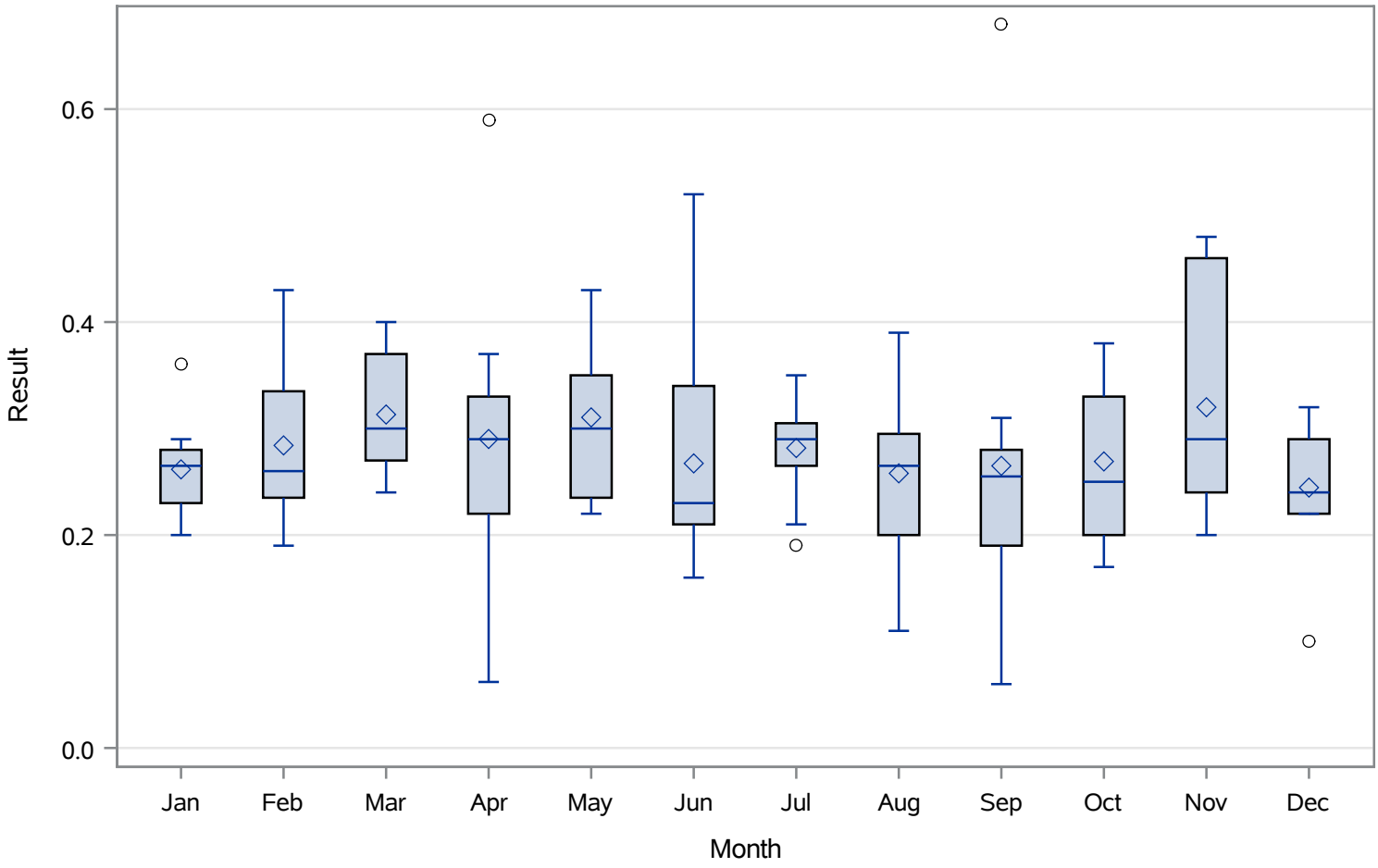
Site ID = 21FLGW 3555



Little Manatee River
D1
Fluoride (mg/L) mg/L
Site ID = 21FLMANAD1



Little Manatee River
D3
Fluoride (mg/L) mg/L
Site ID = 21FLMANAD3

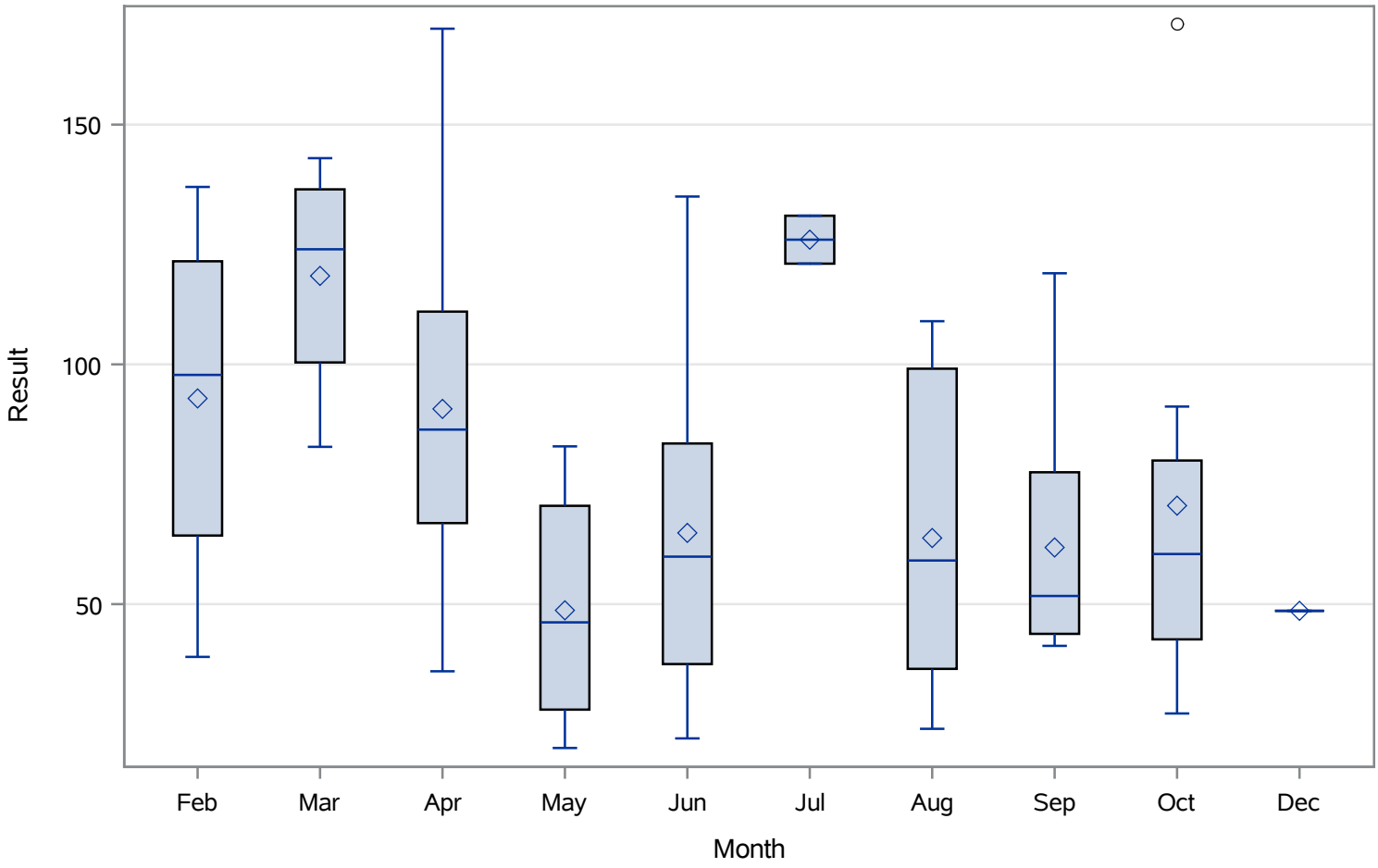


Little Manatee River

SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL

Hardness (mg/L) mg/L

Site ID = 112WRD 02300200

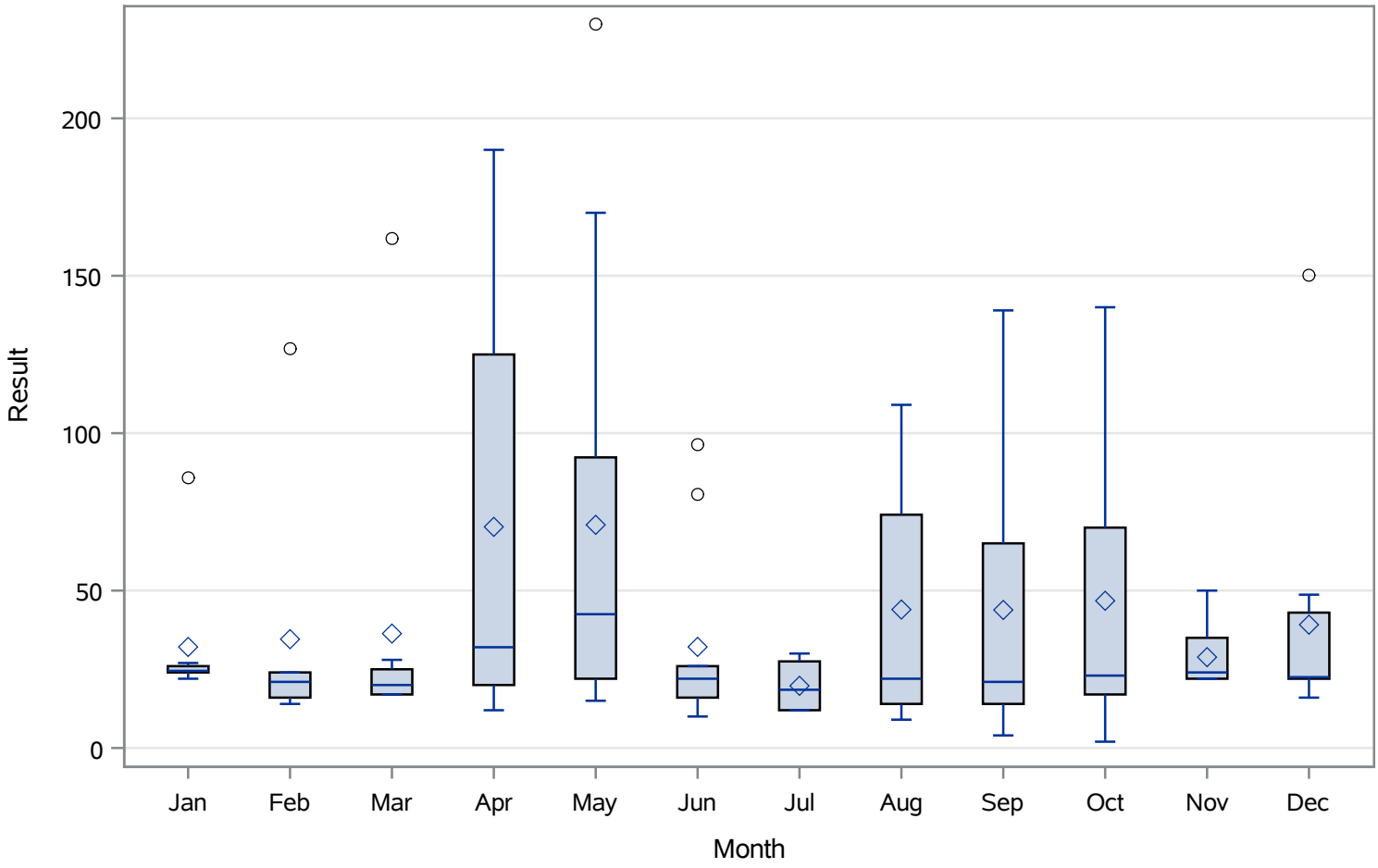


Little Manatee River

LITTLE MANATEE RIVER NEAR WIMAUMA FL

Hardness (mg/L) mg/L

Site ID = 112WRD 02300500

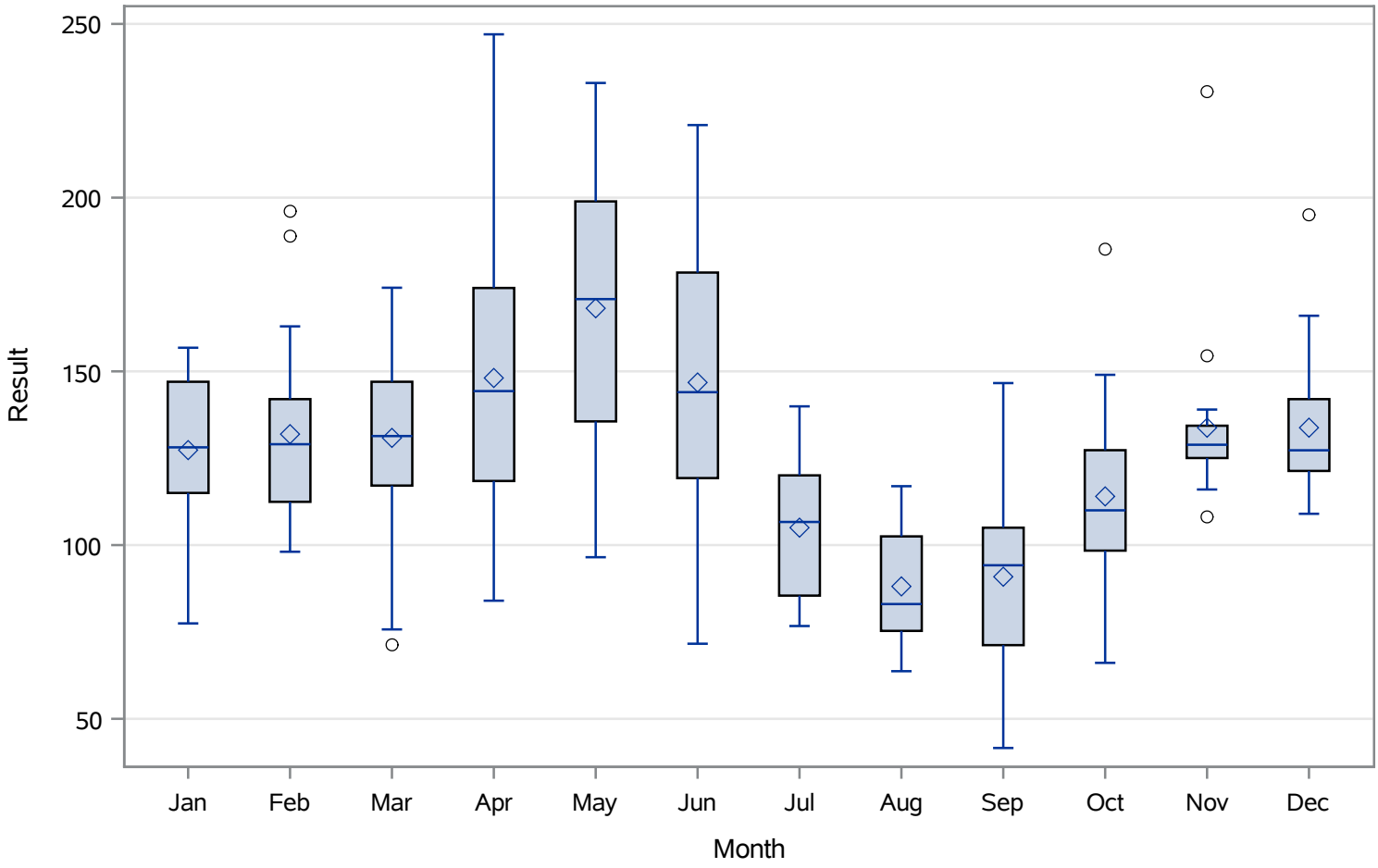


Little Manatee River

LITTLE MANATEE RIVER AT US HWY 301

Hardness (mg/L) mg/L

Site ID = 21FLGW 3555

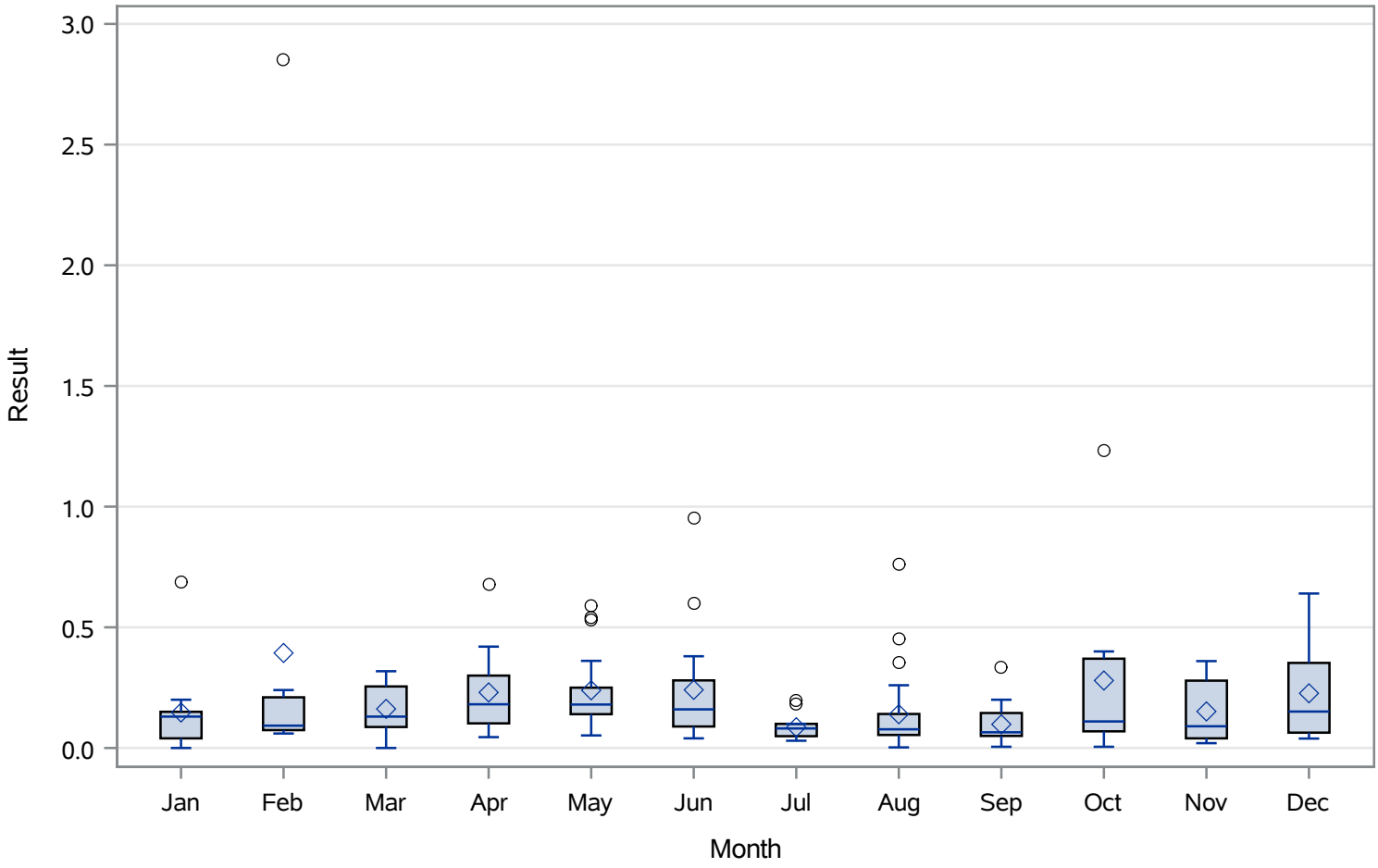


Little Manatee River

LITTLE MANATEE RIVER NEAR FT. LONESOME FL

Nitrate (mg/L) mg/L

Site ID = 112WRD 02300100

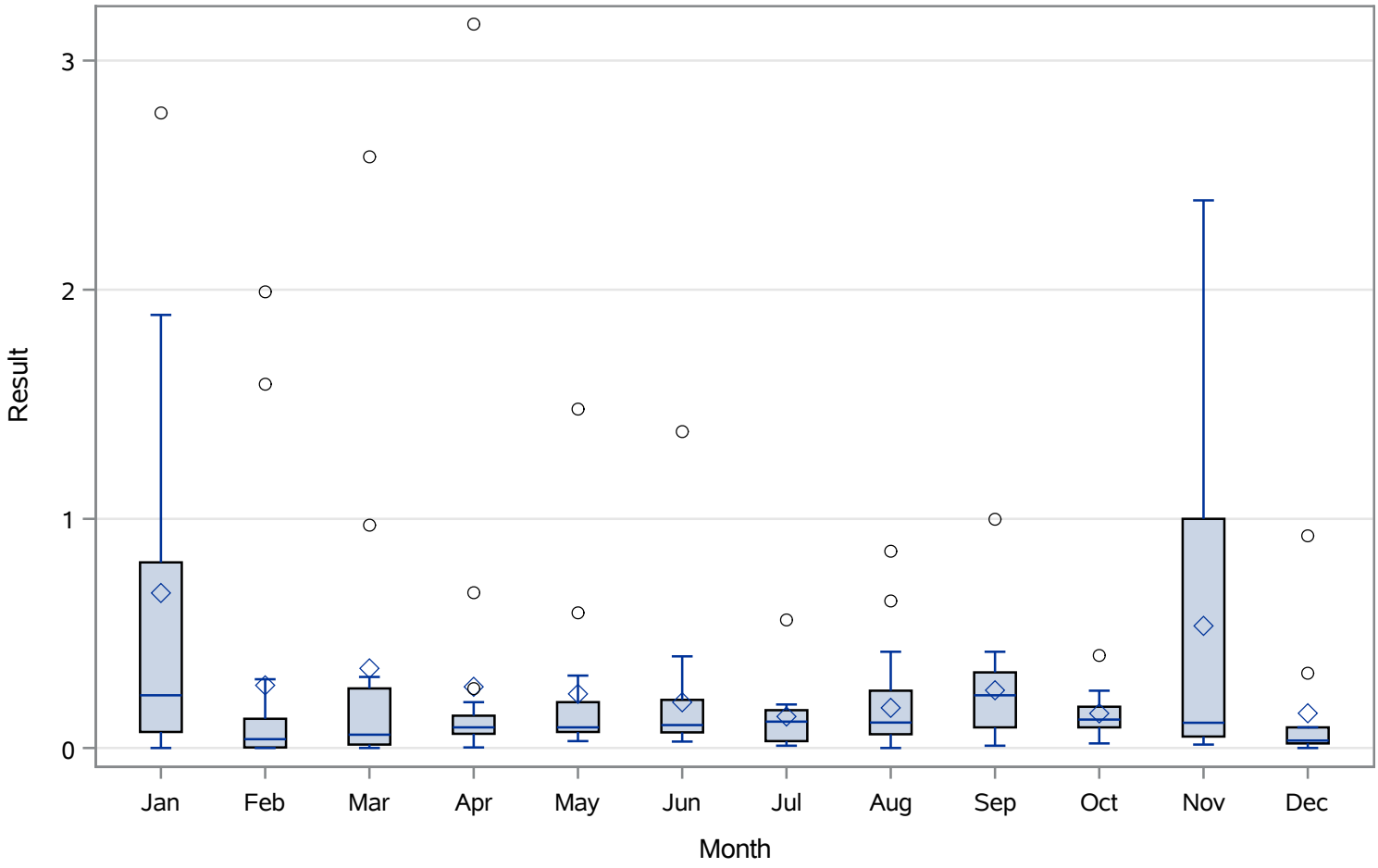


Little Manatee River

SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL

Nitrate (mg/L) mg/L

Site ID = 112WRD 02300200

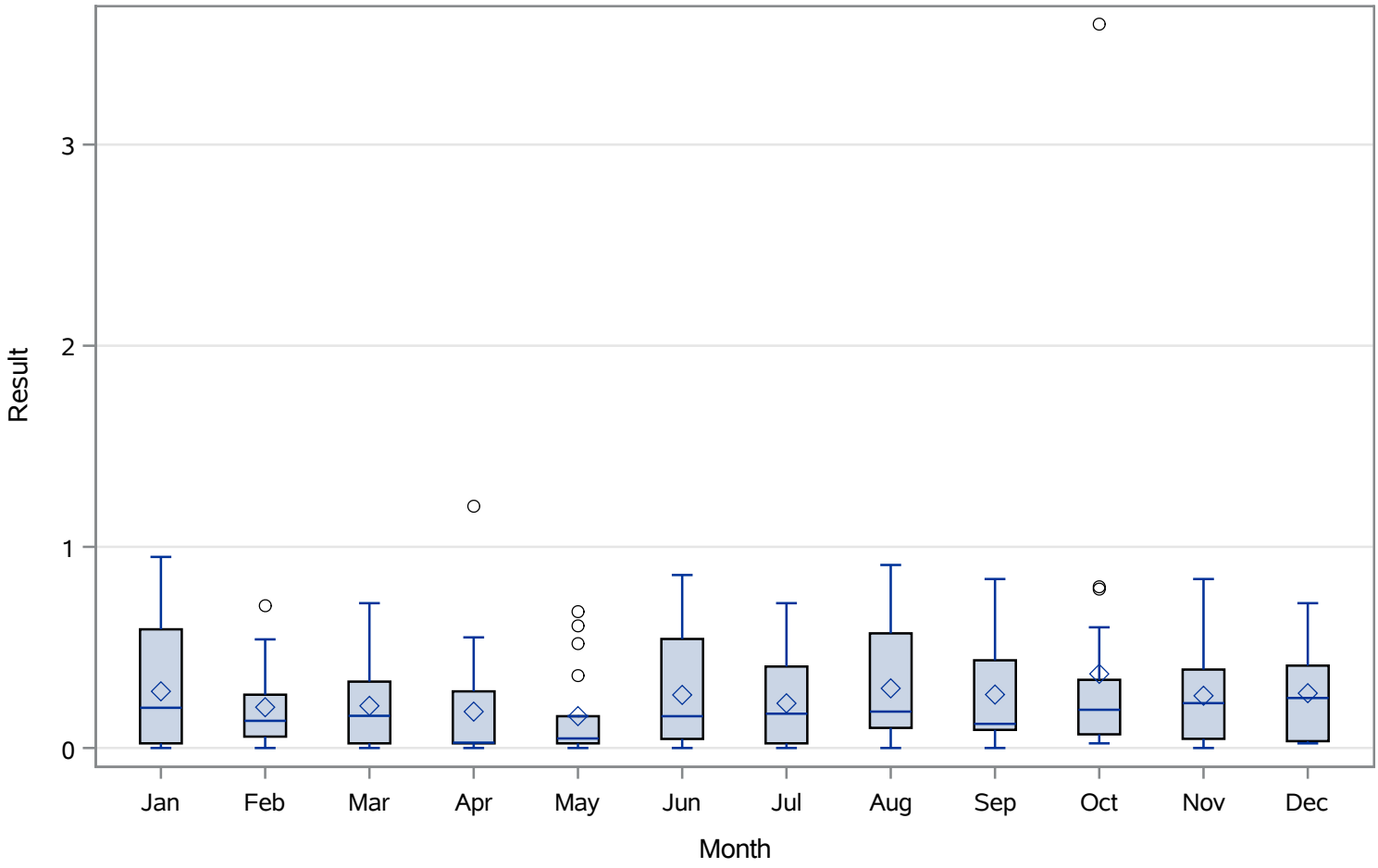


Little Manatee River

LITTLE MANATEE RIVER NEAR WIMAUMA FL

Nitrate (mg/L) mg/L

Site ID = 112WRD 02300500

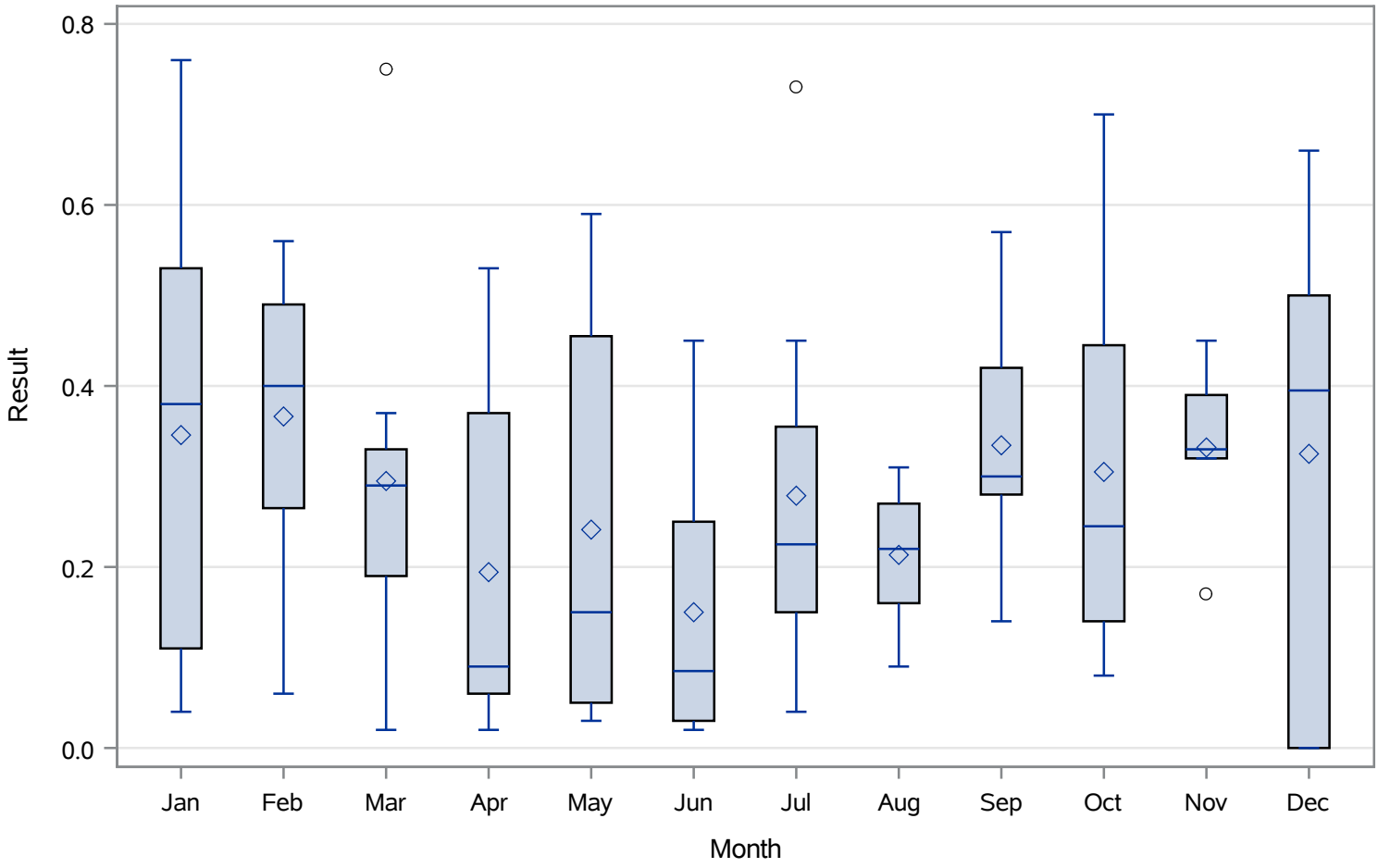


Little Manatee River

L MANATEE R BR US 301

Nitrate (mg/L) mg/L

Site ID = 21FLA 24010100

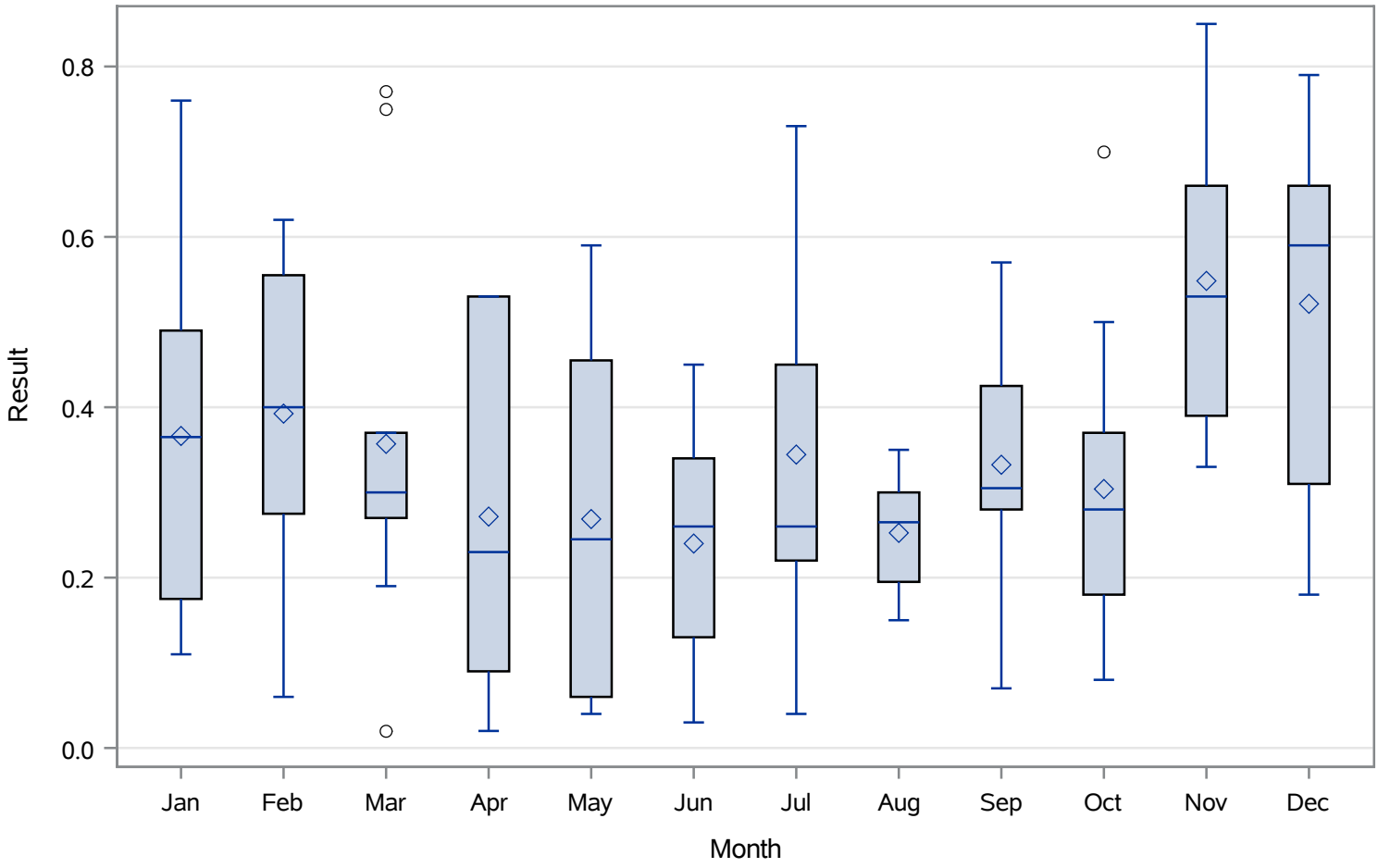


Little Manatee River

L MANATEE R BR US 301

Nitrate (mg/L) mg/L

Site ID = 21FLHILL24010100

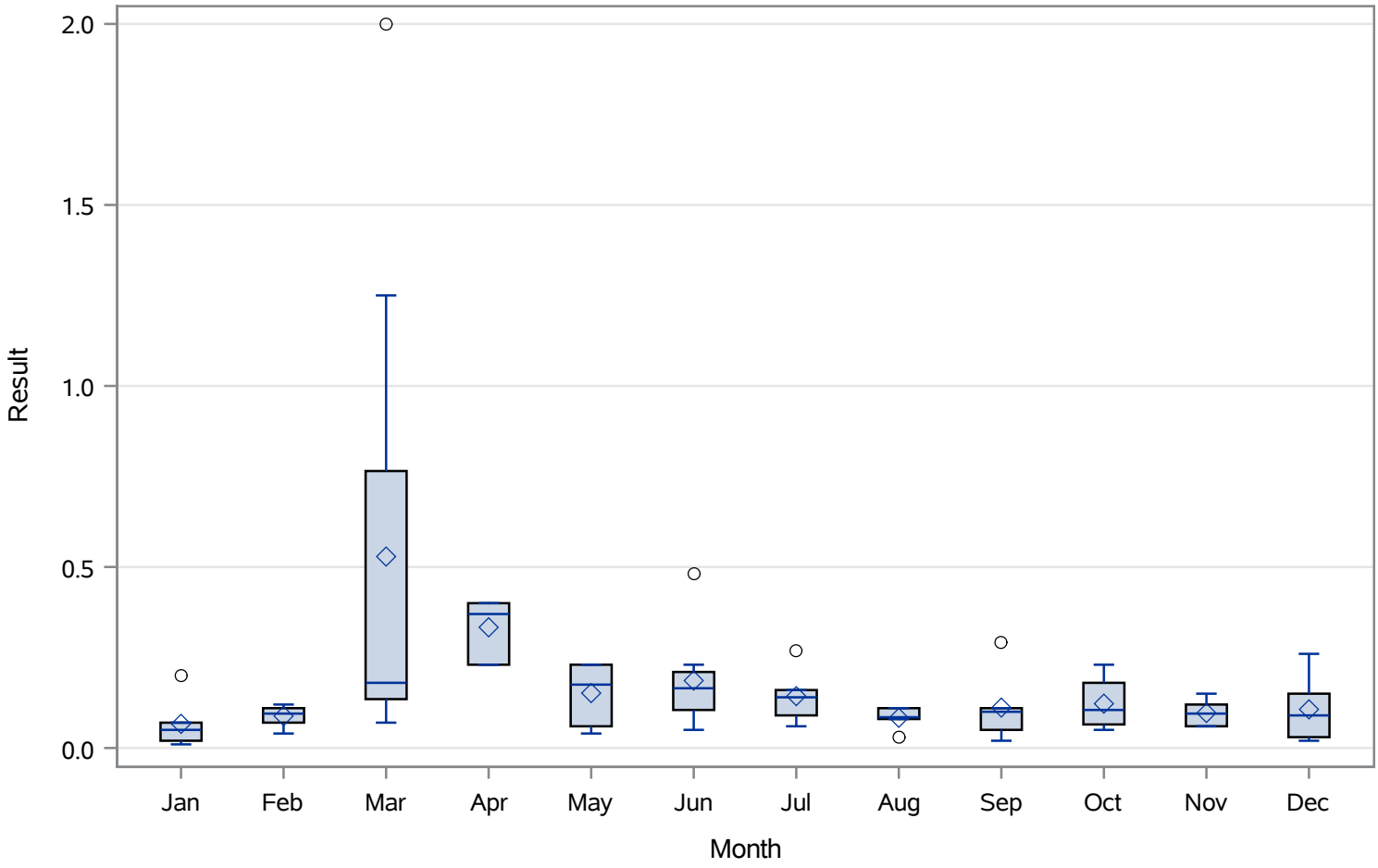


Little Manatee River

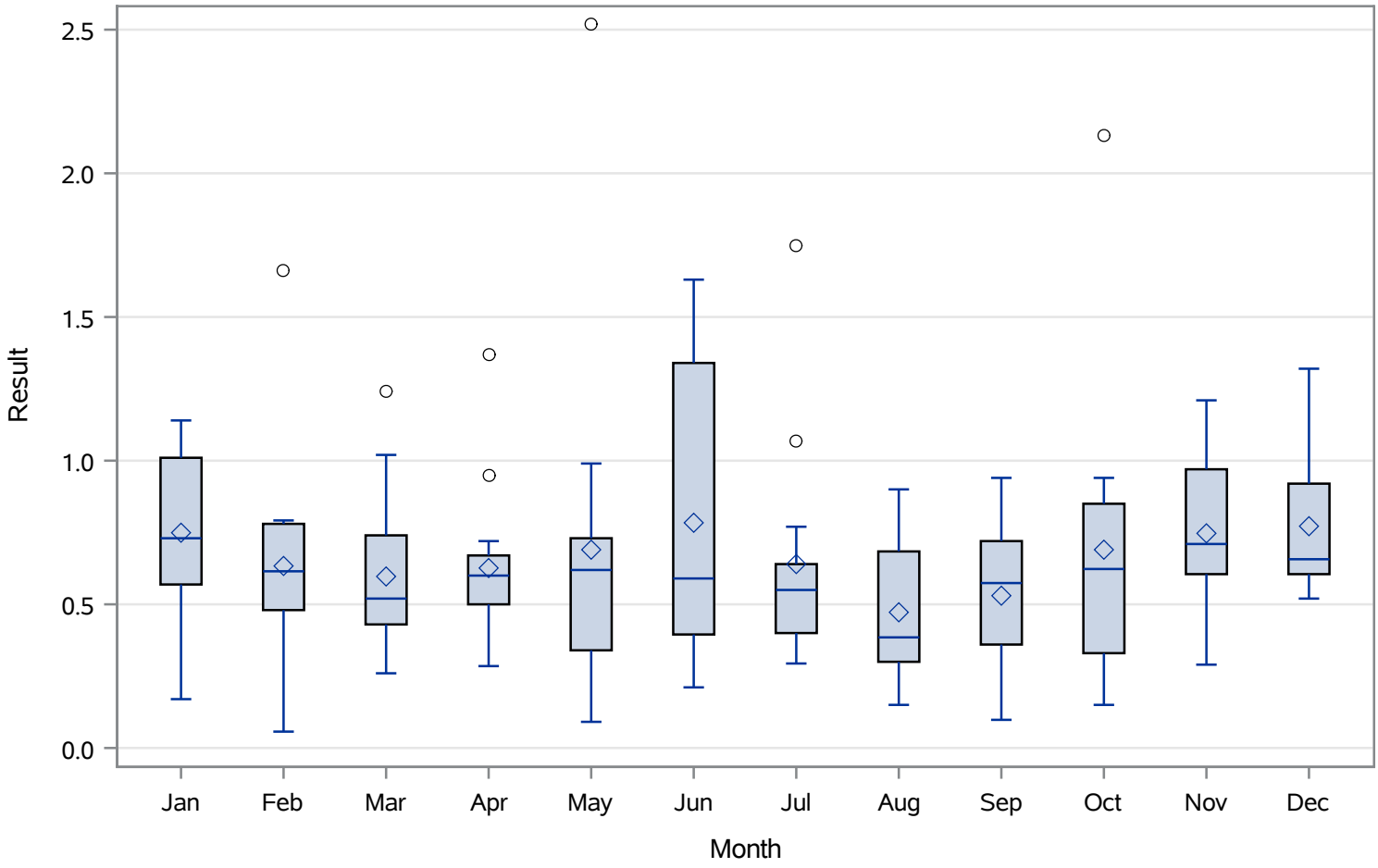
LITTLE MANATEE R AT SR #674

Nitrate (mg/L) mg/L

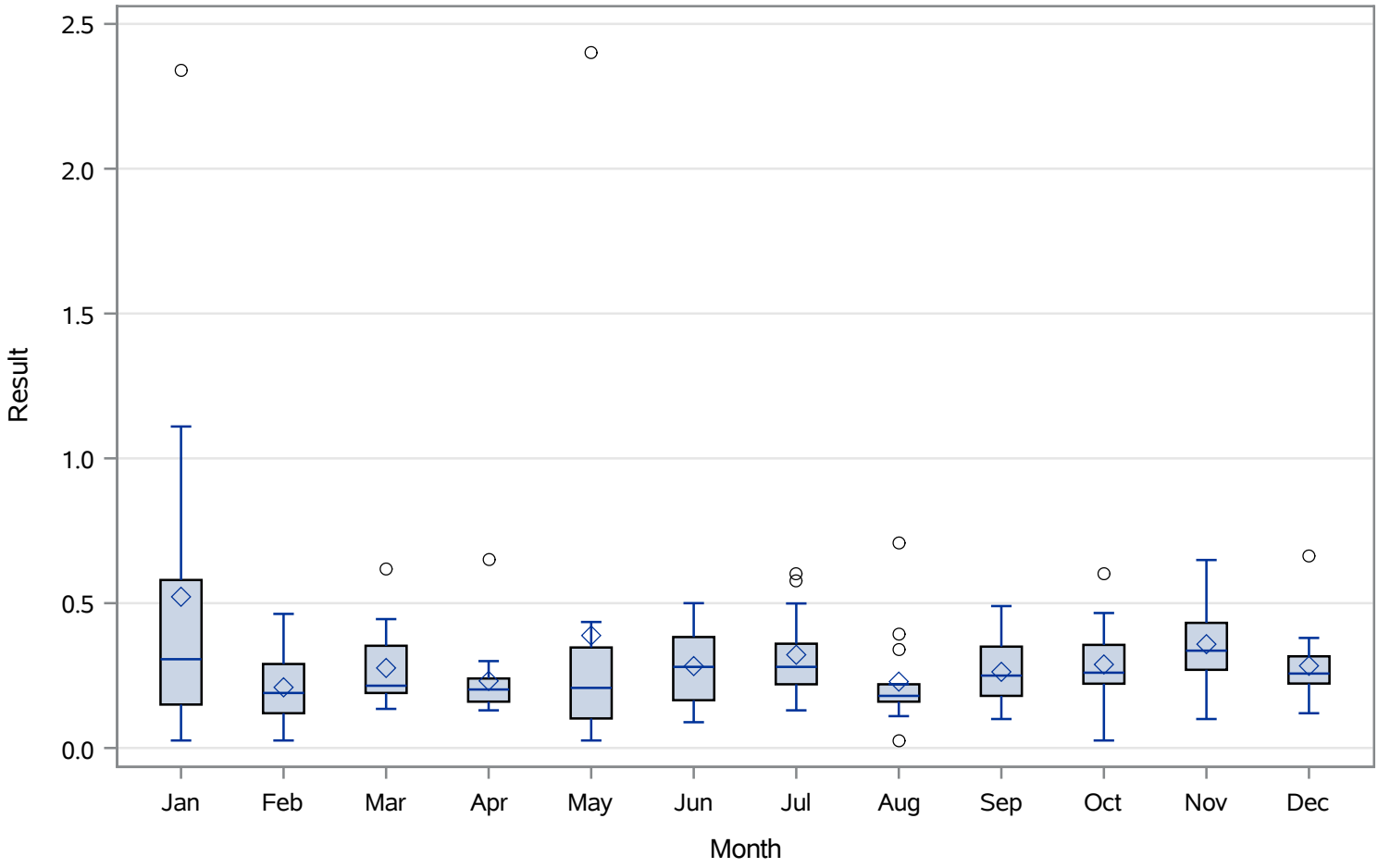
Site ID = 21FLHILL24010110



Little Manatee River
D1
Nitrate (mg/L) mg/L
Site ID = 21FLMANAD1



Little Manatee River
D3
Nitrate (mg/L) mg/L
Site ID = 21FLMANAD3

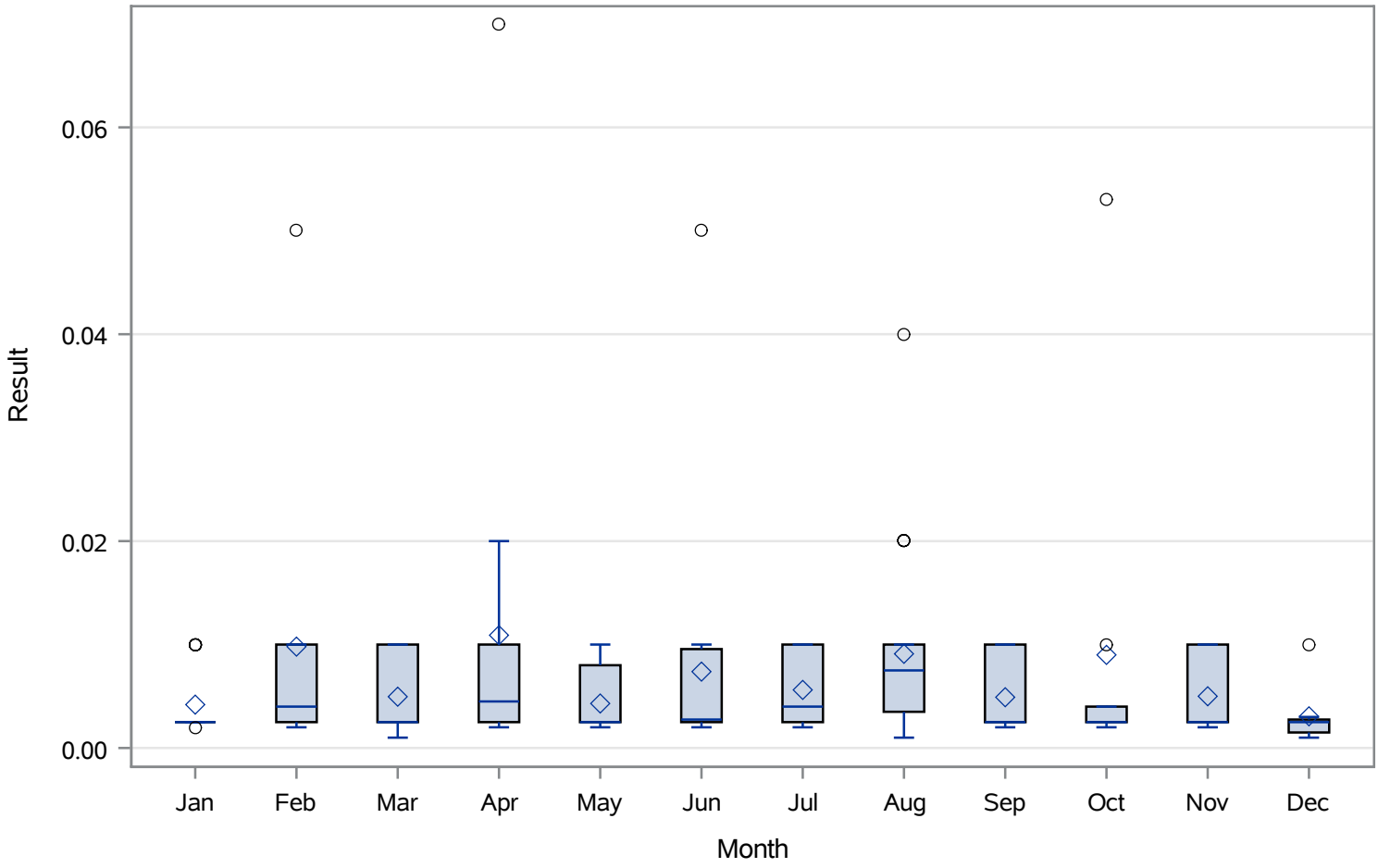


Little Manatee River

LITTLE MANATEE RIVER NEAR FT. LONESOME FL

Nitrite Nitrogen as N (mg/L) mg/L

Site ID = 112WRD 02300100

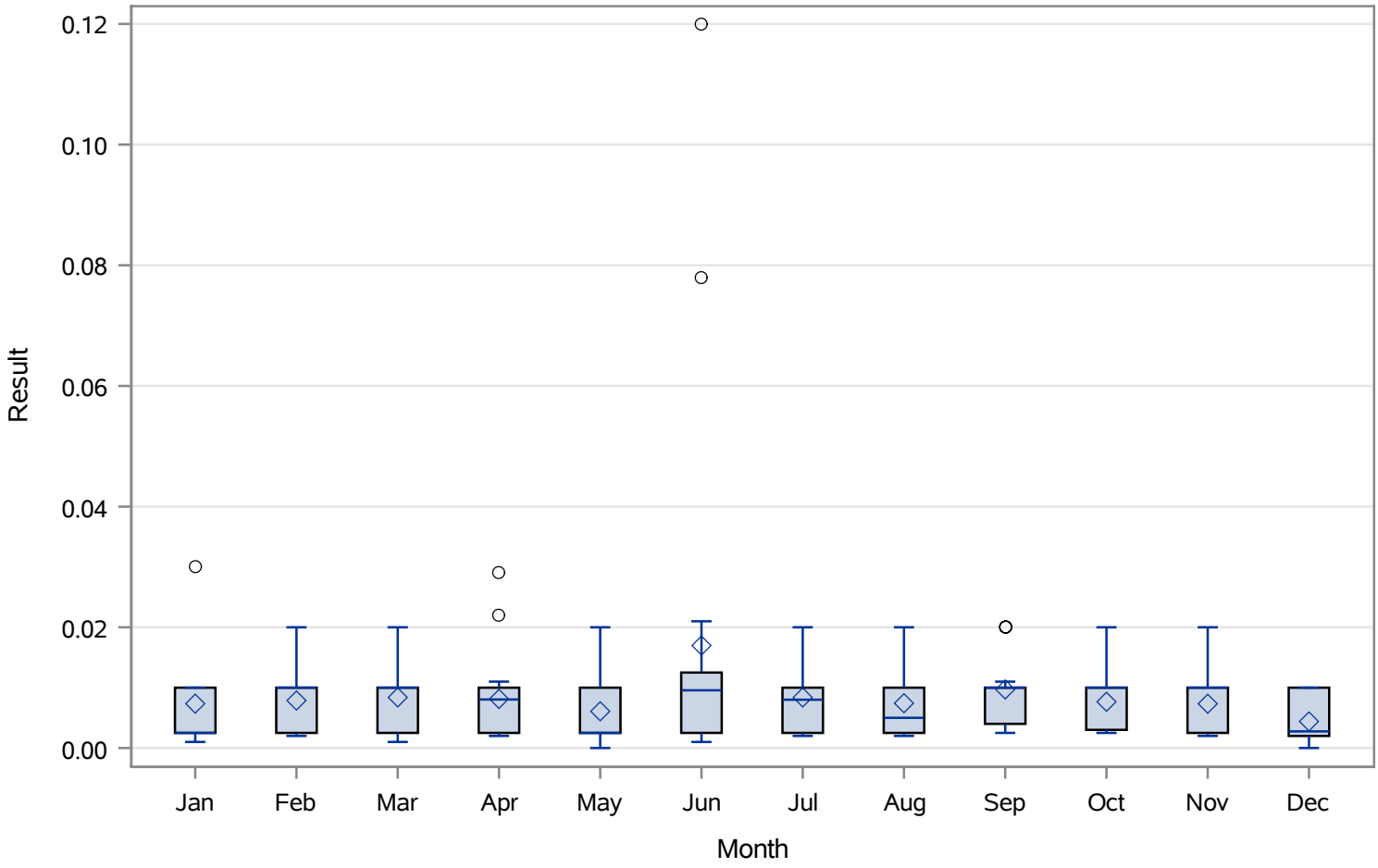


Little Manatee River

SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL

Nitrite Nitrogen as N (mg/L) mg/L

Site ID = 112WRD 02300200

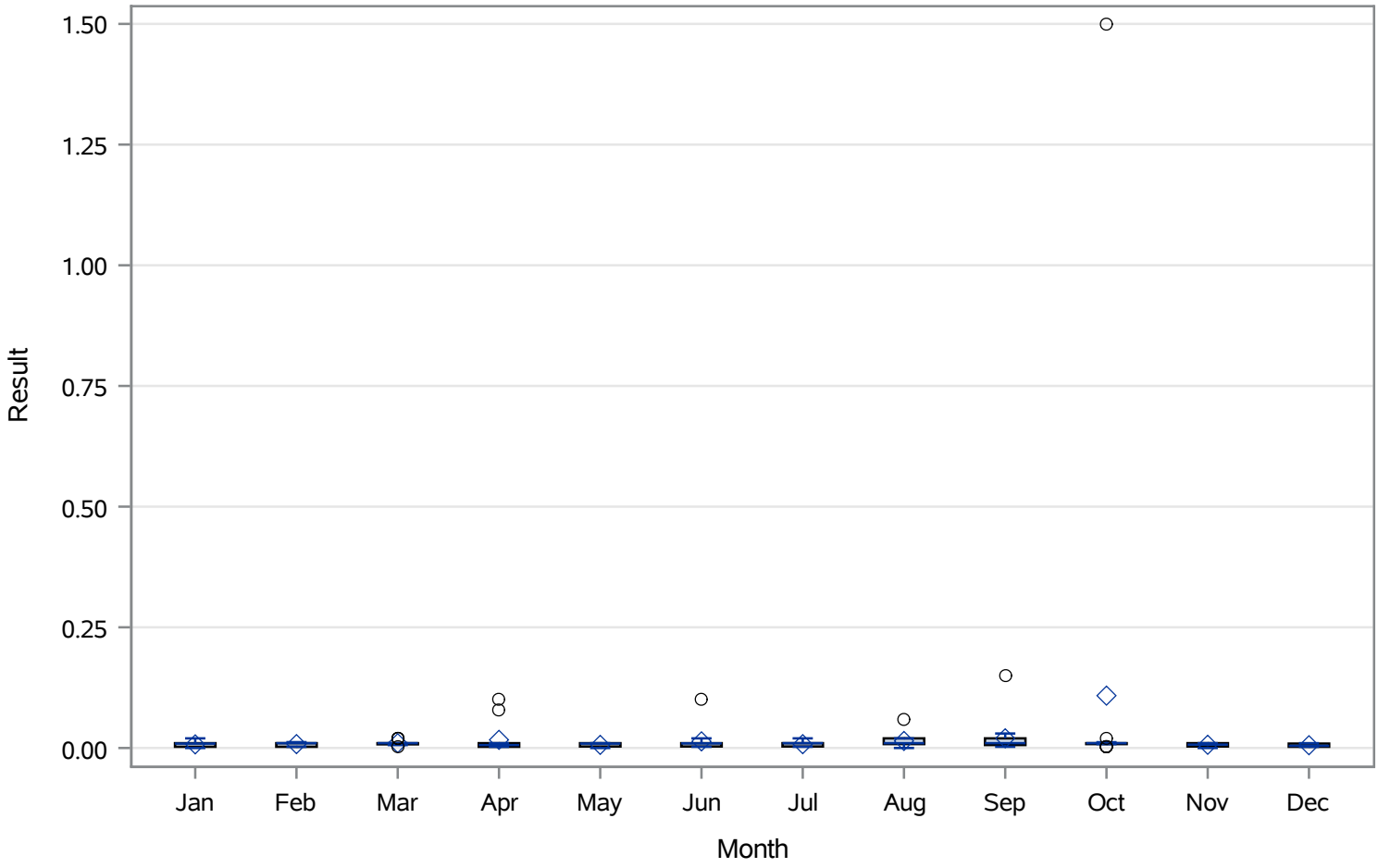


Little Manatee River

LITTLE MANATEE RIVER NEAR WIMAUMA FL

Nitrite Nitrogen as N (mg/L) mg/L

Site ID = 112WRD 02300500

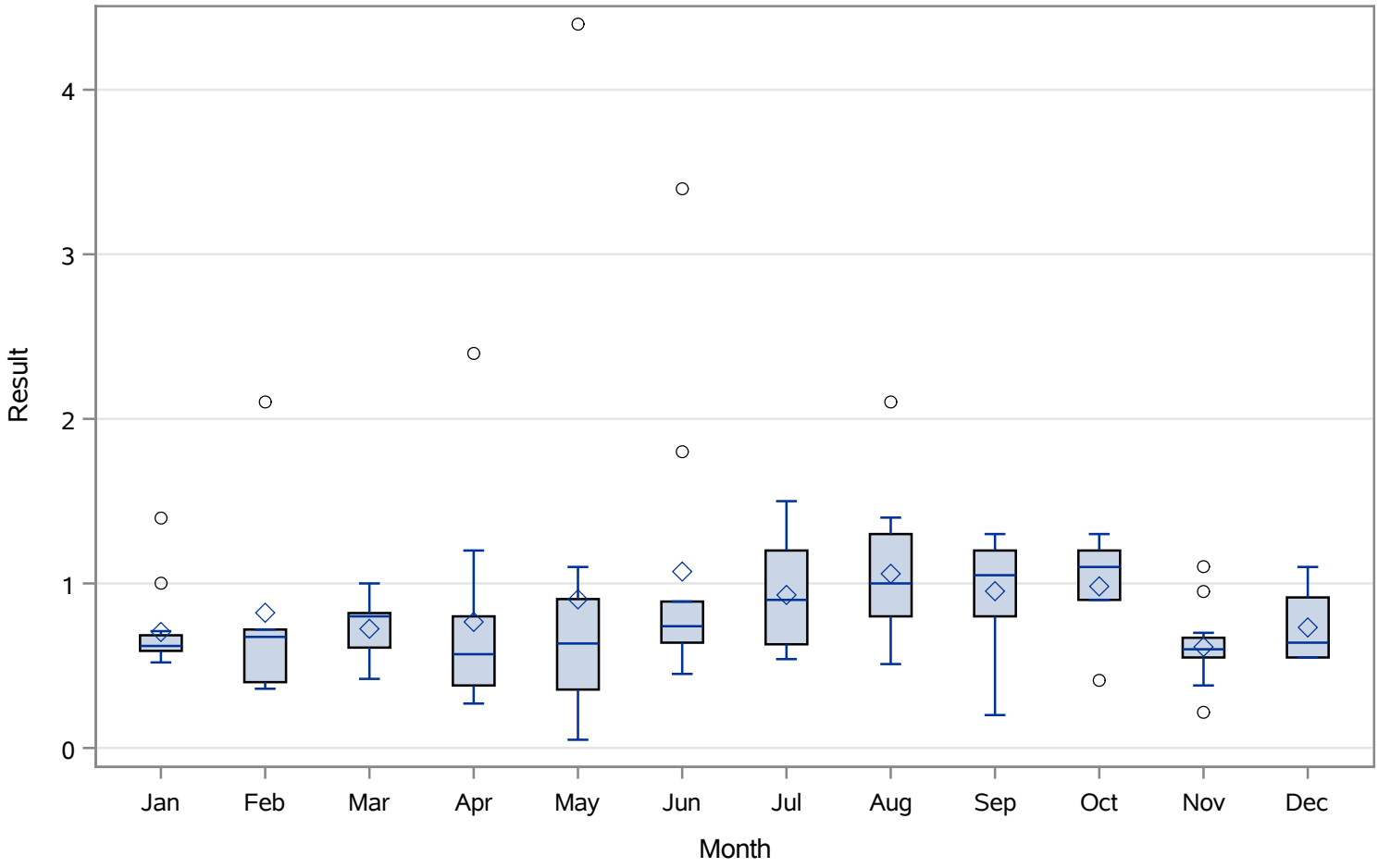


Little Manatee River

LITTLE MANATEE RIVER NEAR FT. LONESOME FL

Nitrogen Kjeldahl as N (mg/L) mg/L

Site ID = 112WRD 02300100

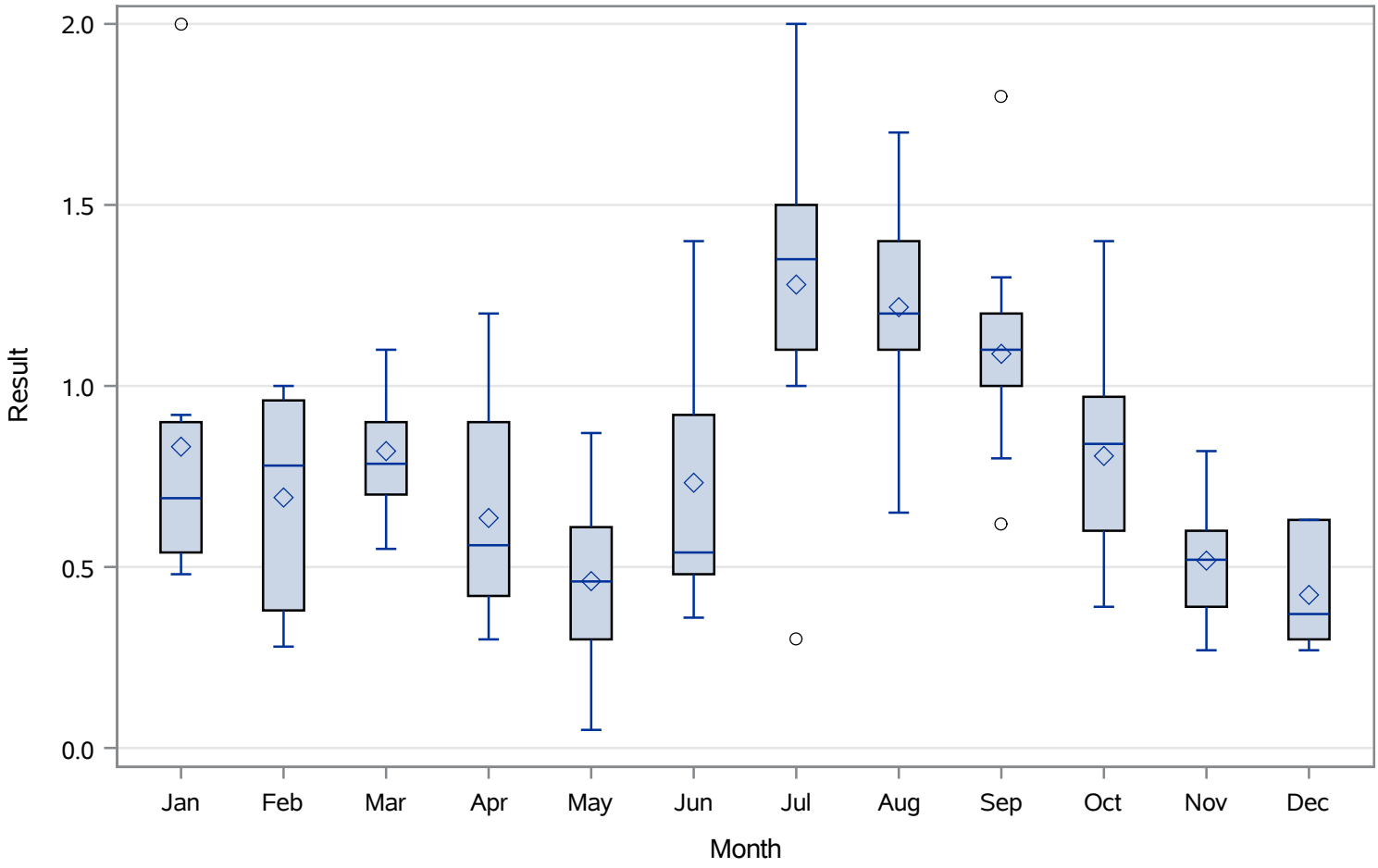


Little Manatee River

SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL

Nitrogen Kjeldahl as N (mg/L) mg/L

Site ID = 112WRD 02300200

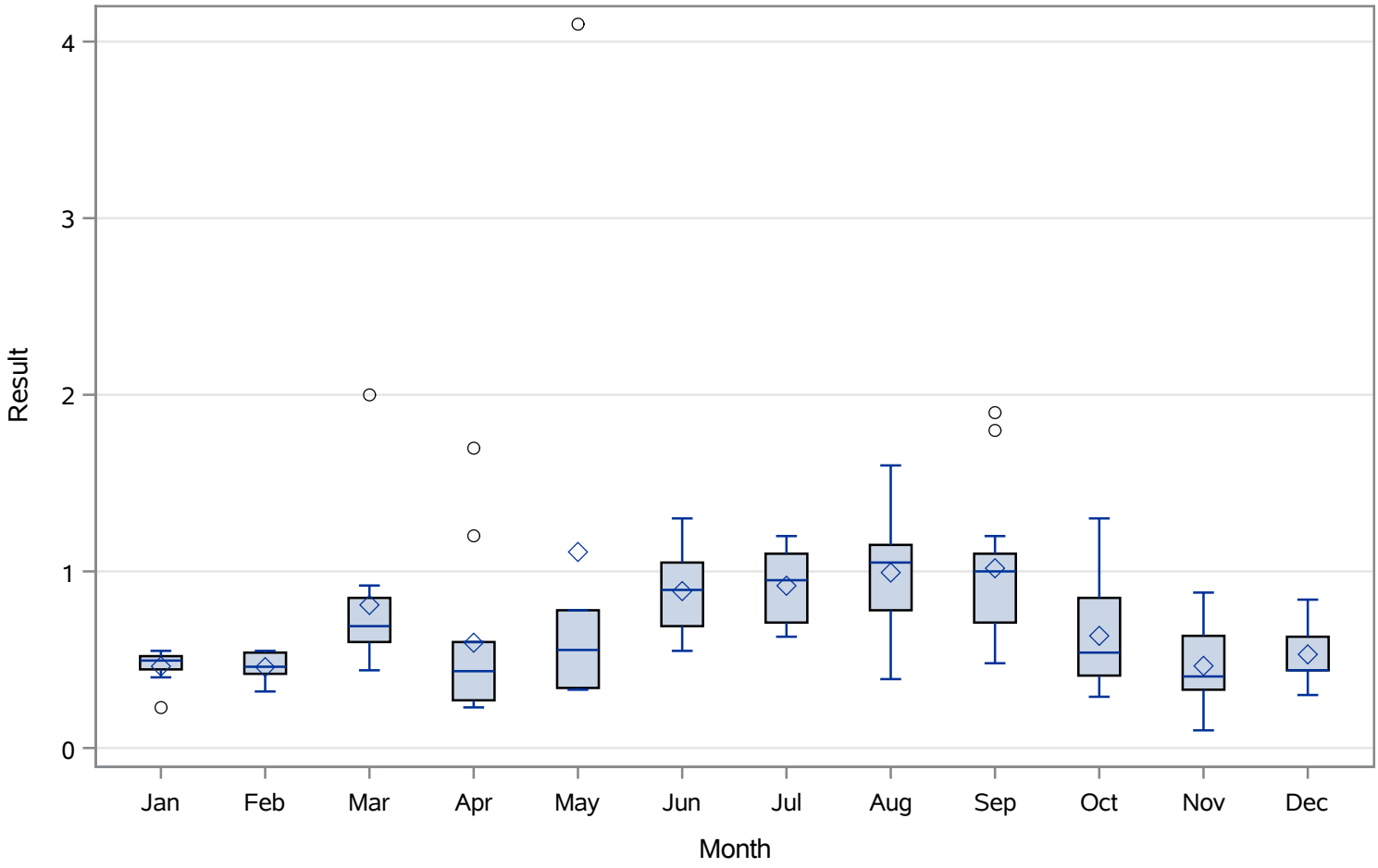


Little Manatee River

LITTLE MANATEE RIVER NEAR WIMAUMA FL

Nitrogen Kjeldahl as N (mg/L) mg/L

Site ID = 112WRD 02300500

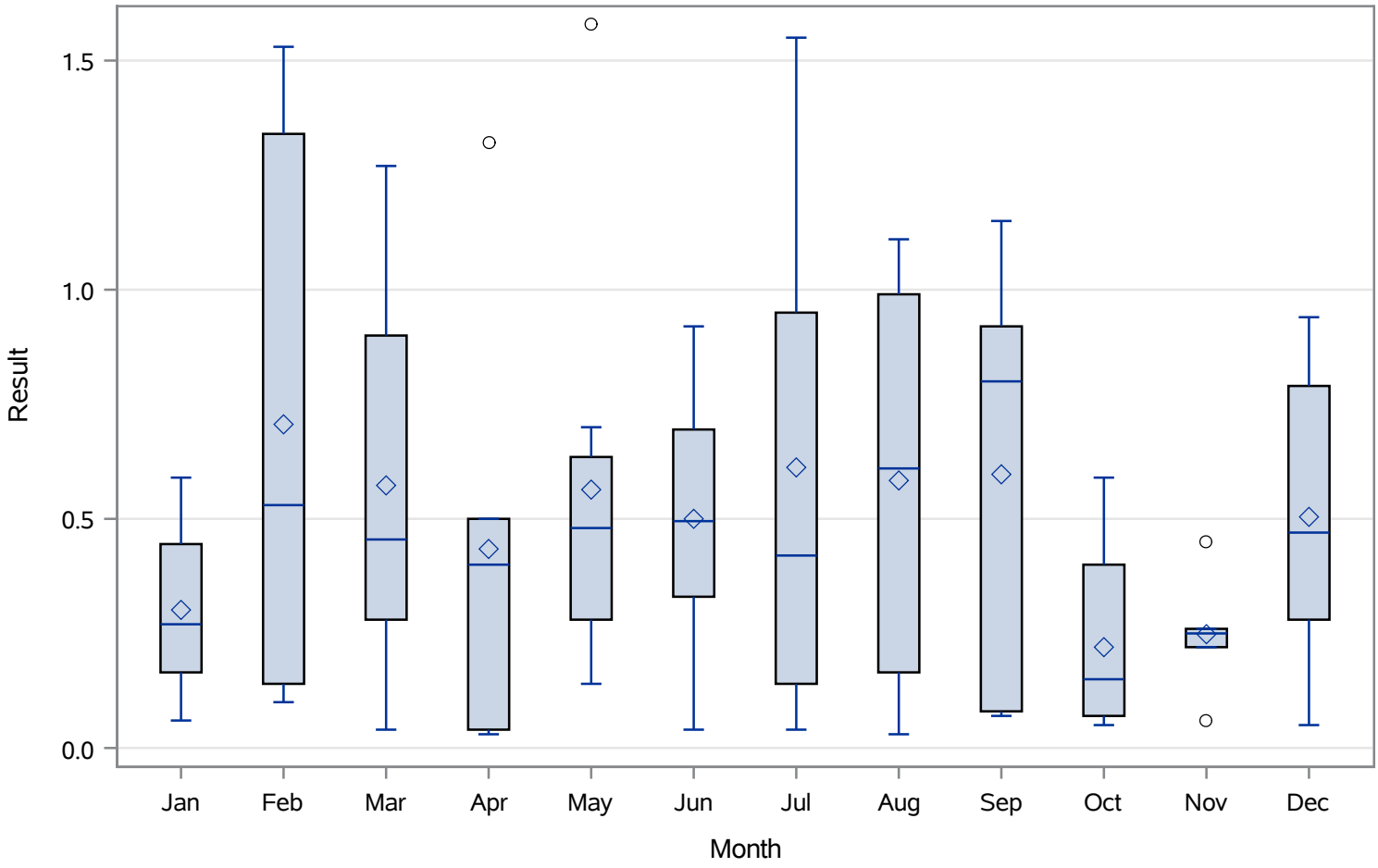


Little Manatee River

L MANATEE R BR US 301

Nitrogen Kjeldahl as N (mg/L) mg/L

Site ID = 21FLA 24010100

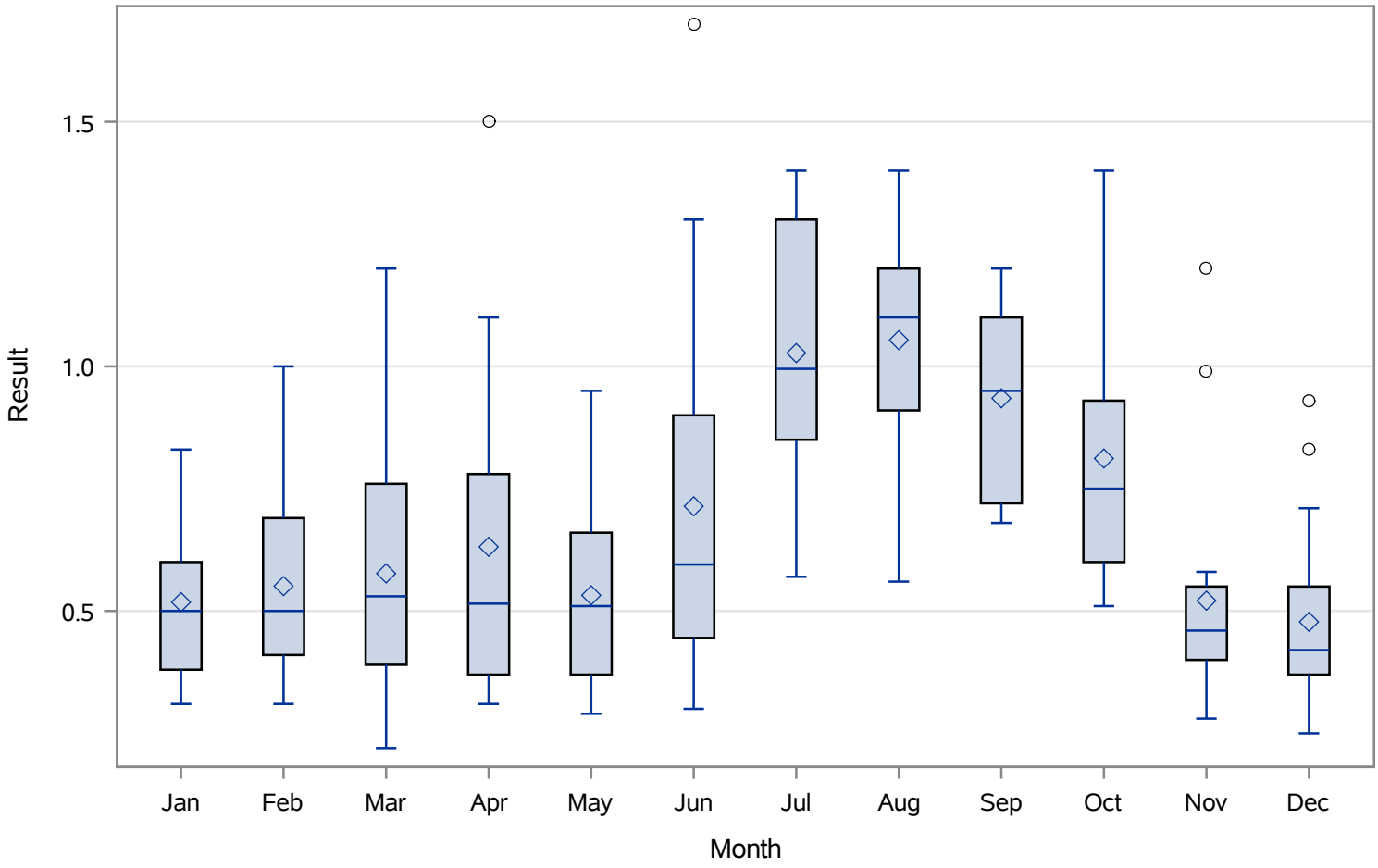


Little Manatee River

LITTLE MANATEE RIVER AT US HWY 301

Nitrogen Kjeldahl as N (mg/L) mg/L

Site ID = 21FLGW 3555

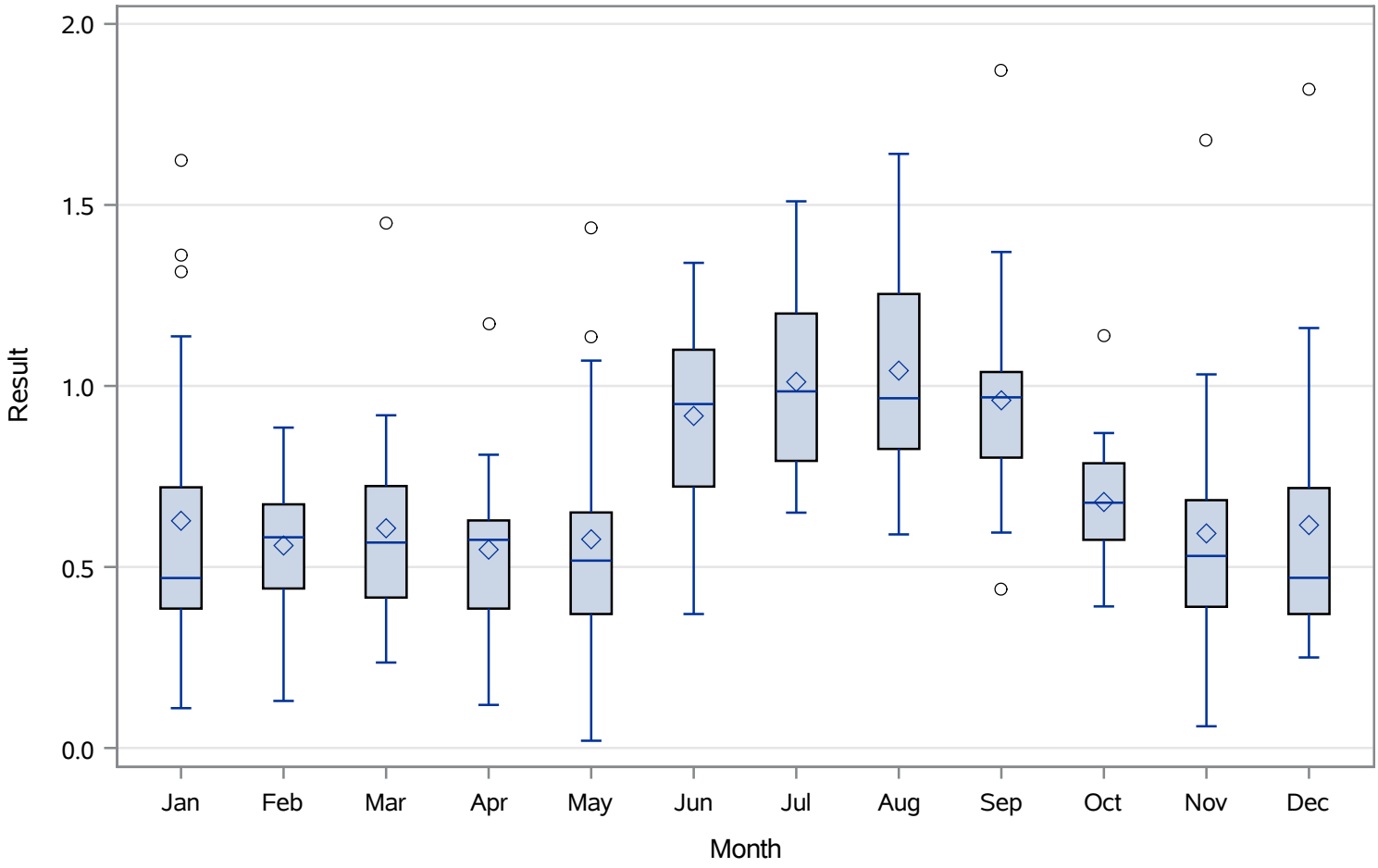


Little Manatee River

Little Manatee River at US 301 bridge

Nitrogen Kjeldahl as N (mg/L) mg/L

Site ID = 21FLHILL113

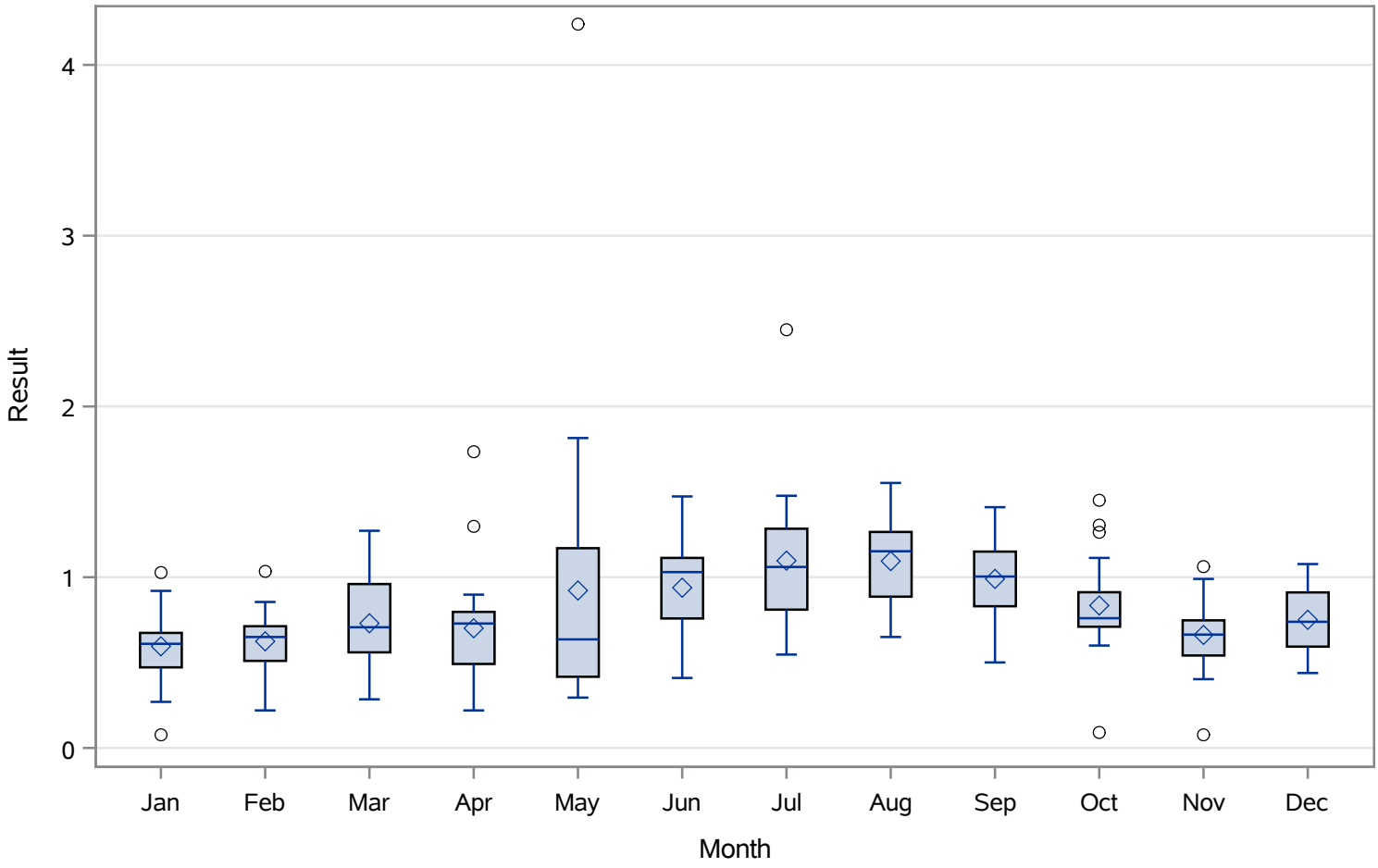


Little Manatee River

Little Manatee River at SR 674

Nitrogen Kjeldahl as N (mg/L) mg/L

Site ID = 21FLHILL129

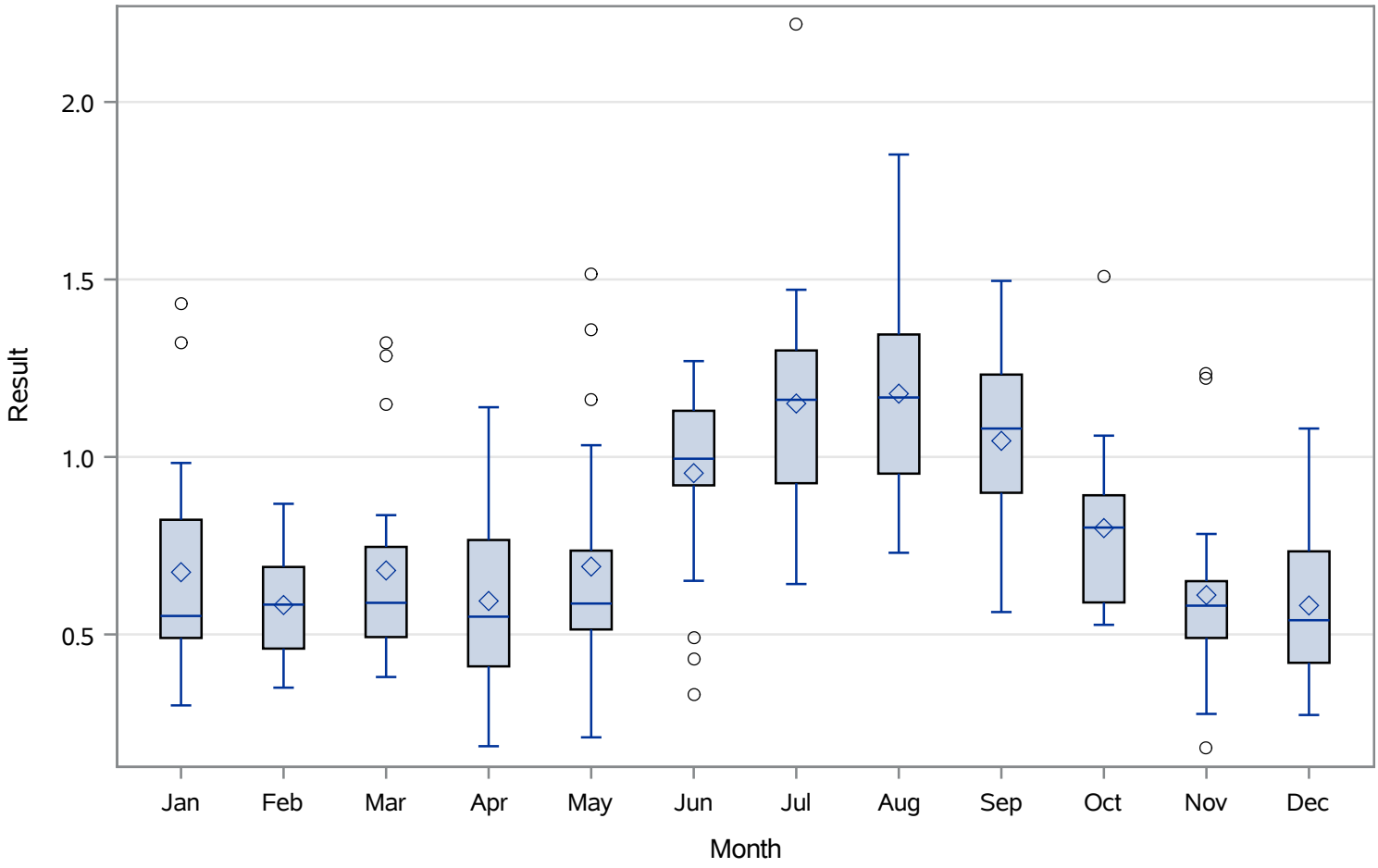


Little Manatee River

Little Manatee River at CR 579

Nitrogen Kjeldahl as N (mg/L) mg/L

Site ID = 21FLHILL140

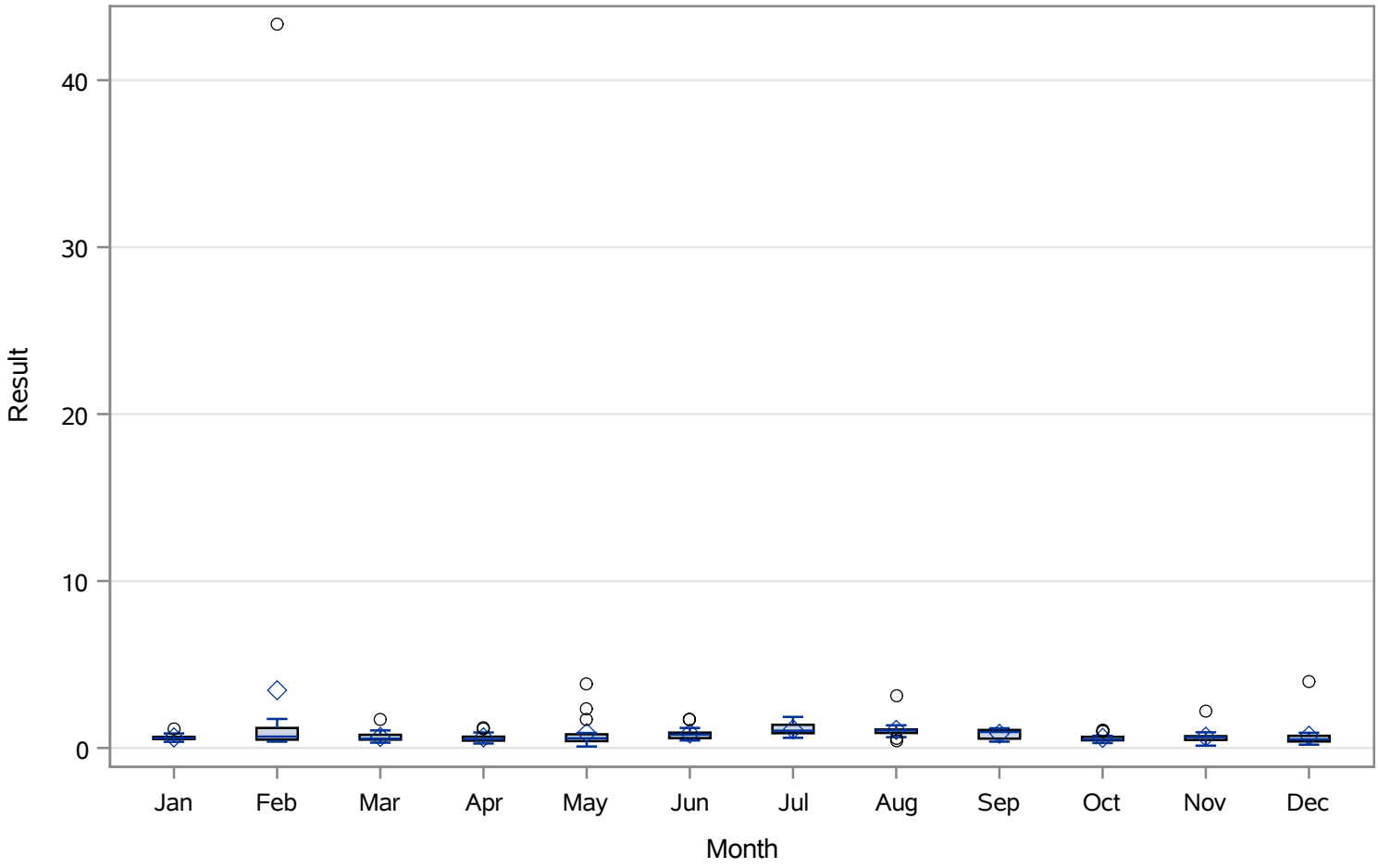


Little Manatee River

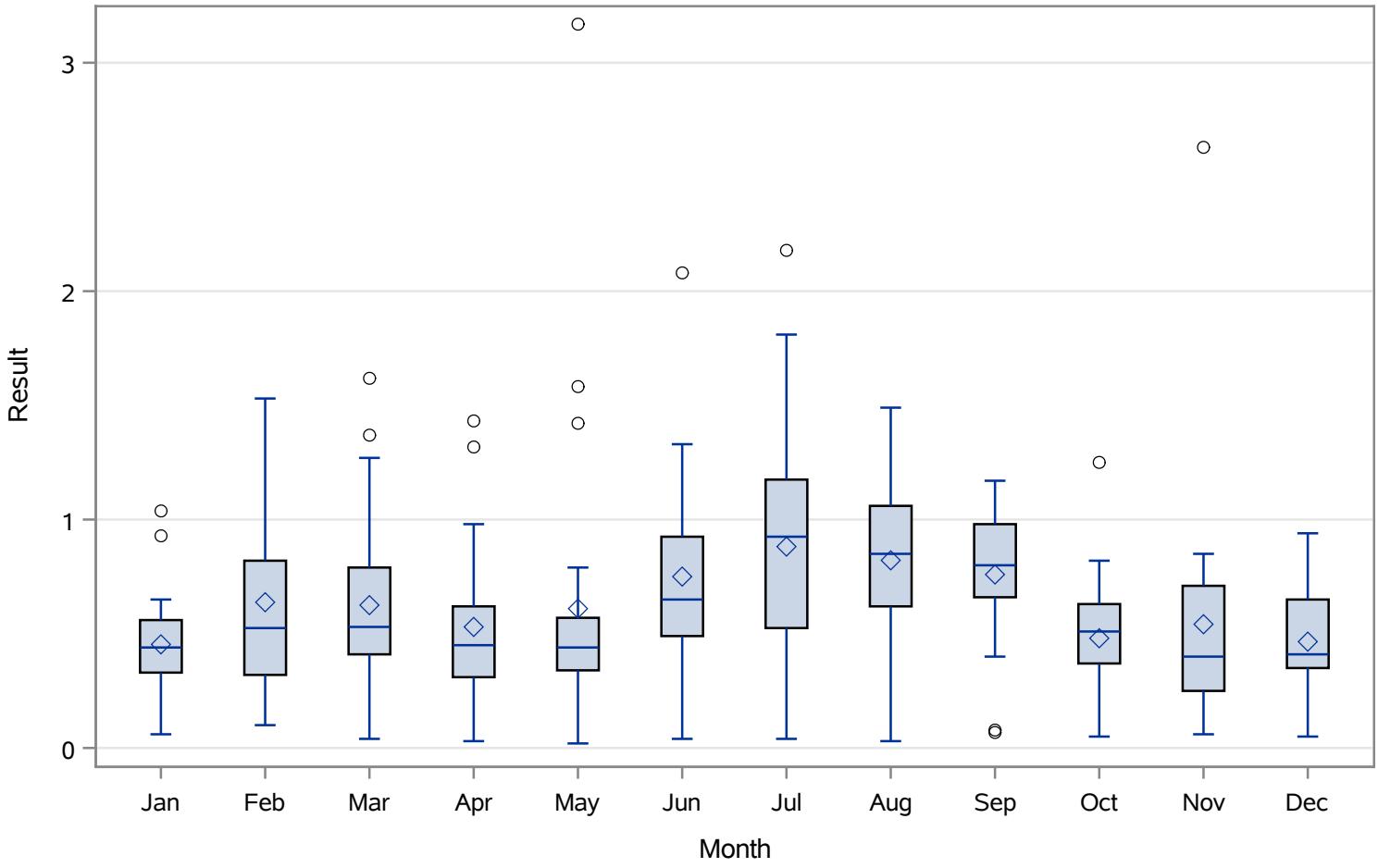
LITTLE MANATEE R AT CR579

Nitrogen Kjeldahl as N (mg/L) mg/L

Site ID = 21FLHILL24010013



Little Manatee River
L MANATEE R BR US 301
Nitrogen Kjeldahl as N (mg/L) mg/L
Site ID = 21FLHILL24010100

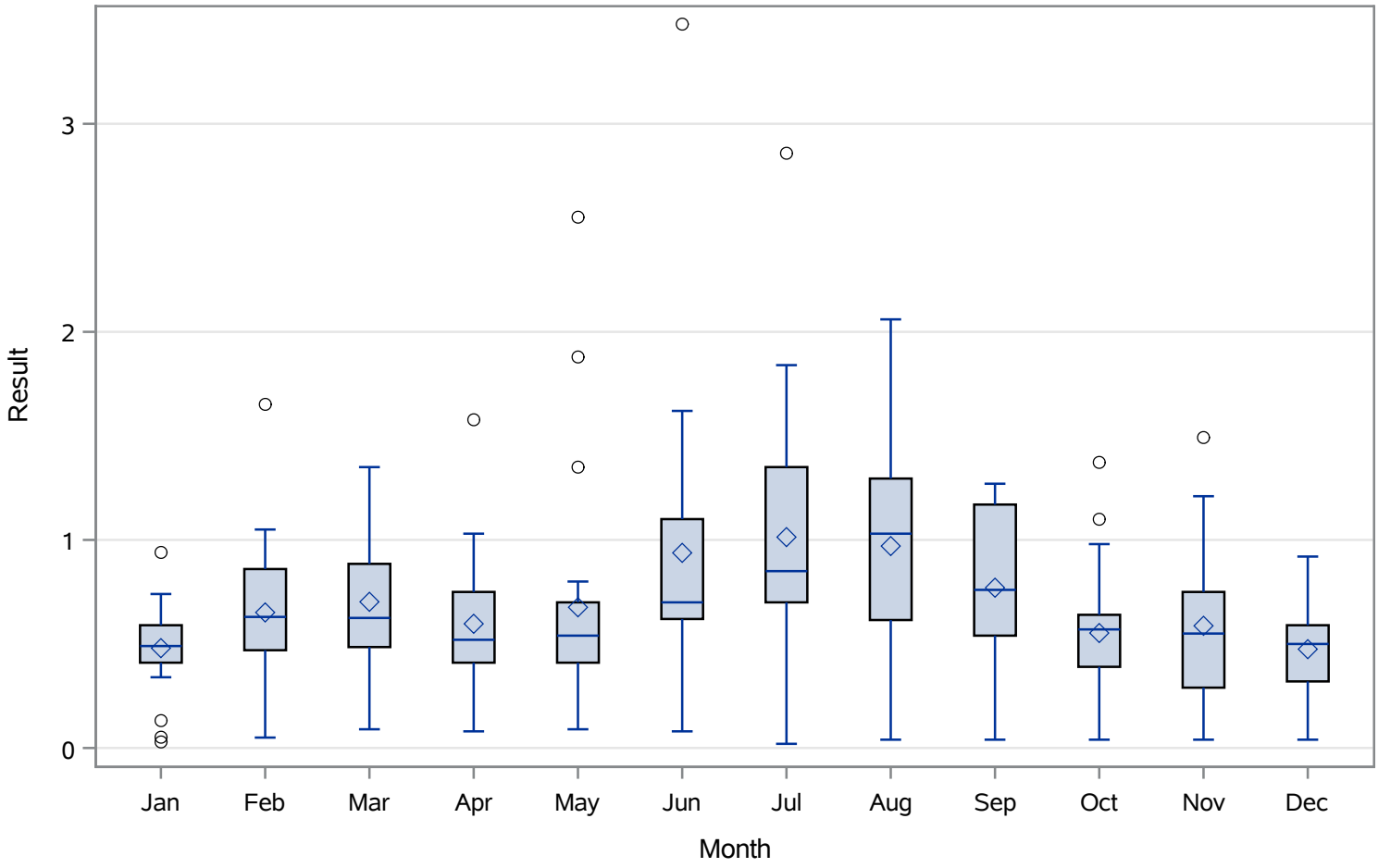


Little Manatee River

LITTLE MANATEE R AT SR #674

Nitrogen Kjeldahl as N (mg/L) mg/L

Site ID = 21FLHILL24010110

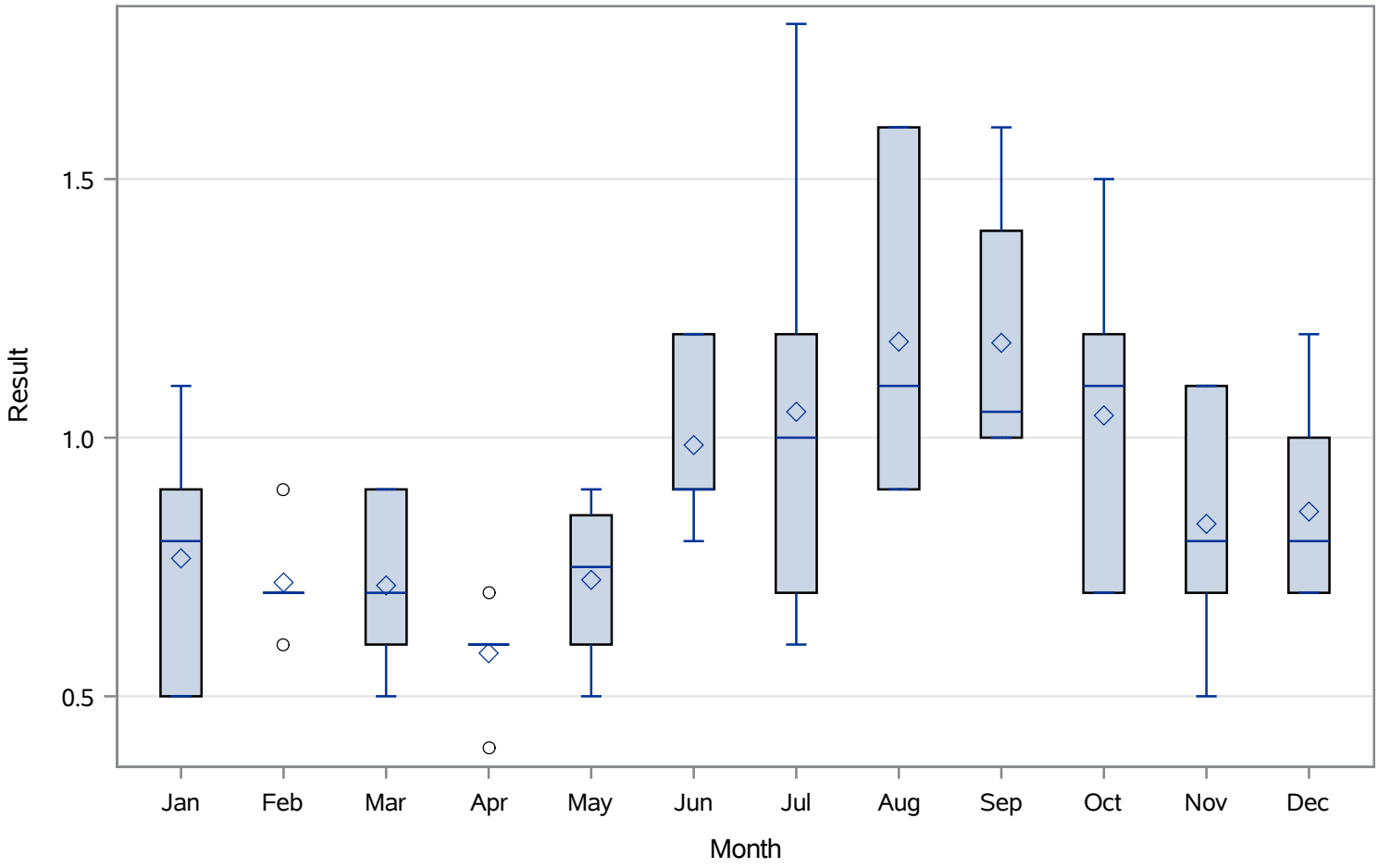


Little Manatee River

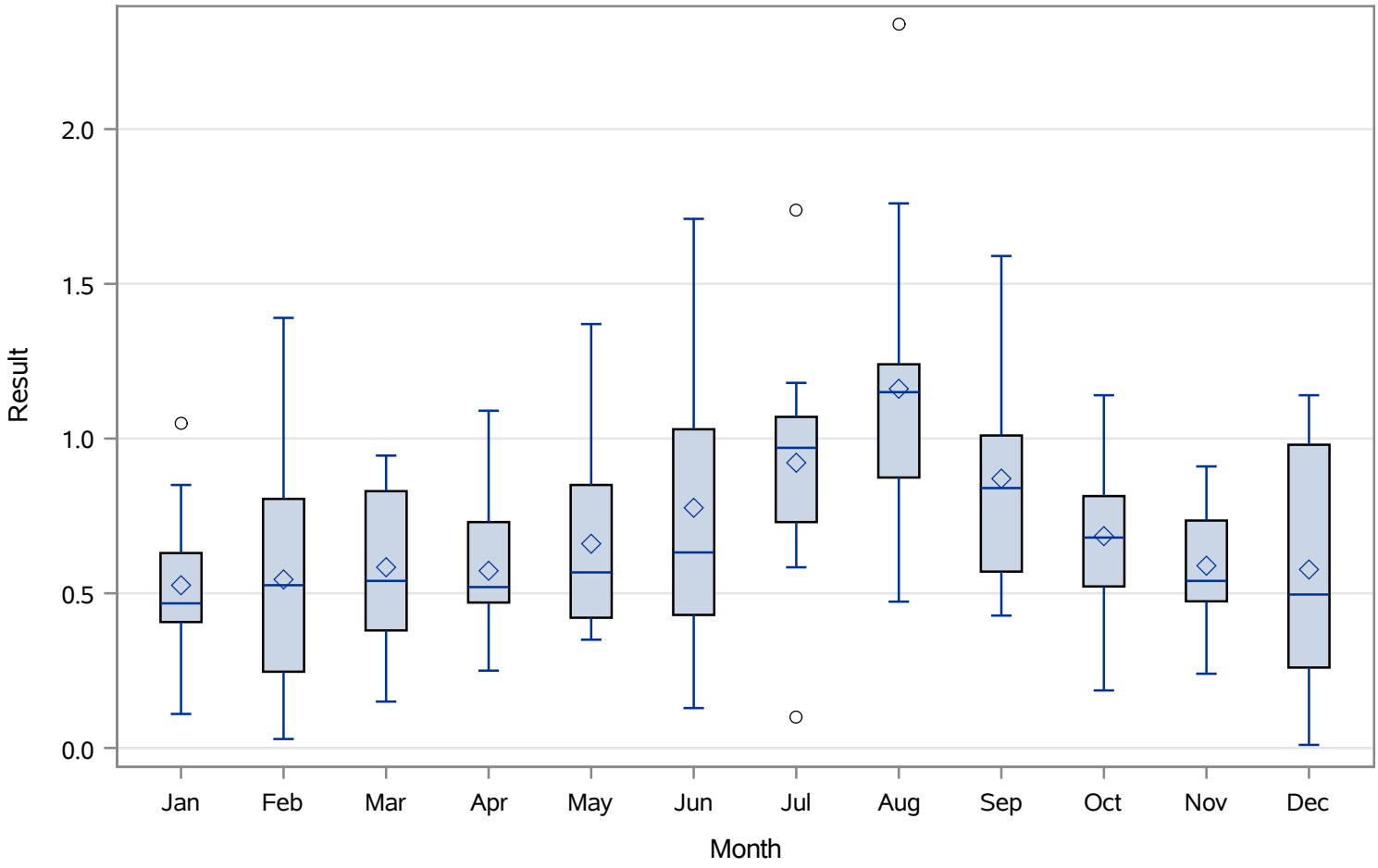
Little Manatee R. at SR674

Nitrogen Kjeldahl as N (mg/L) mg/L

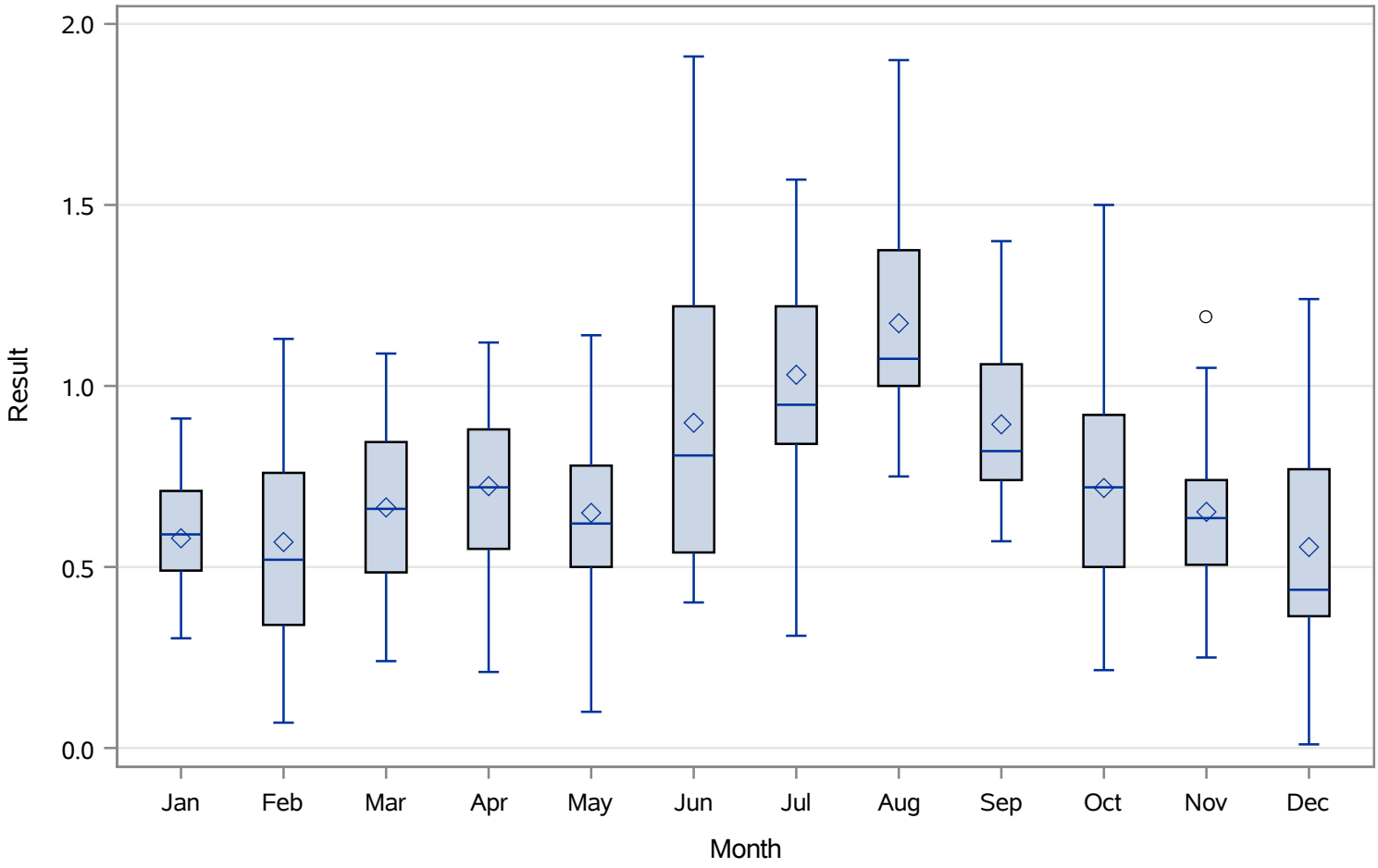
Site ID = 21FLIMCALM674



Little Manatee River
D1
Nitrogen Kjeldahl as N (mg/L) mg/L
Site ID = 21FLMANAD1



Little Manatee River
D3
Nitrogen Kjeldahl as N (mg/L) mg/L
Site ID = 21FLMANAD3

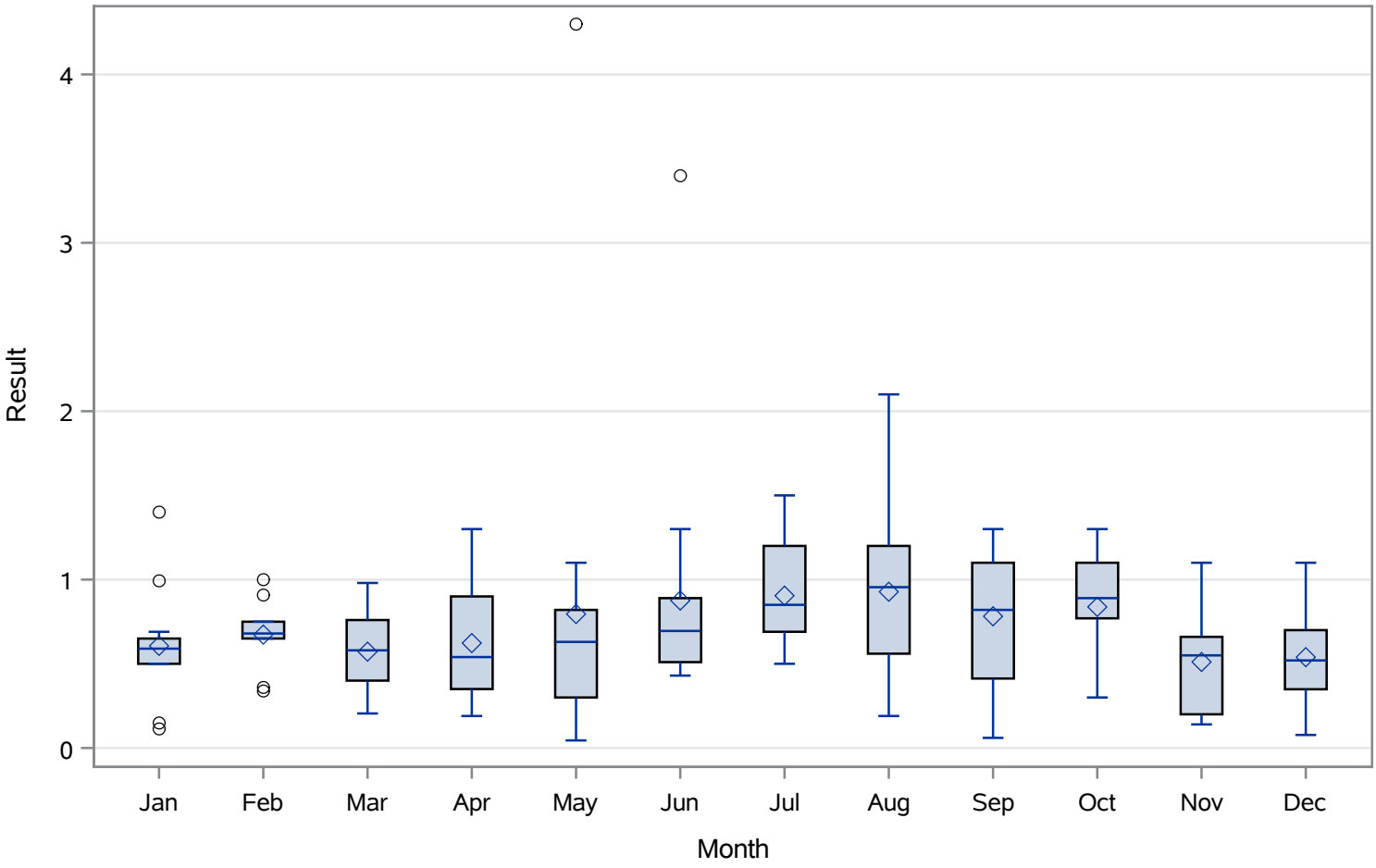


Little Manatee River

LITTLE MANATEE RIVER NEAR FT. LONESOME FL

Nitrogen Organic as N (mg/L) mg/L

Site ID = 112WRD 02300100

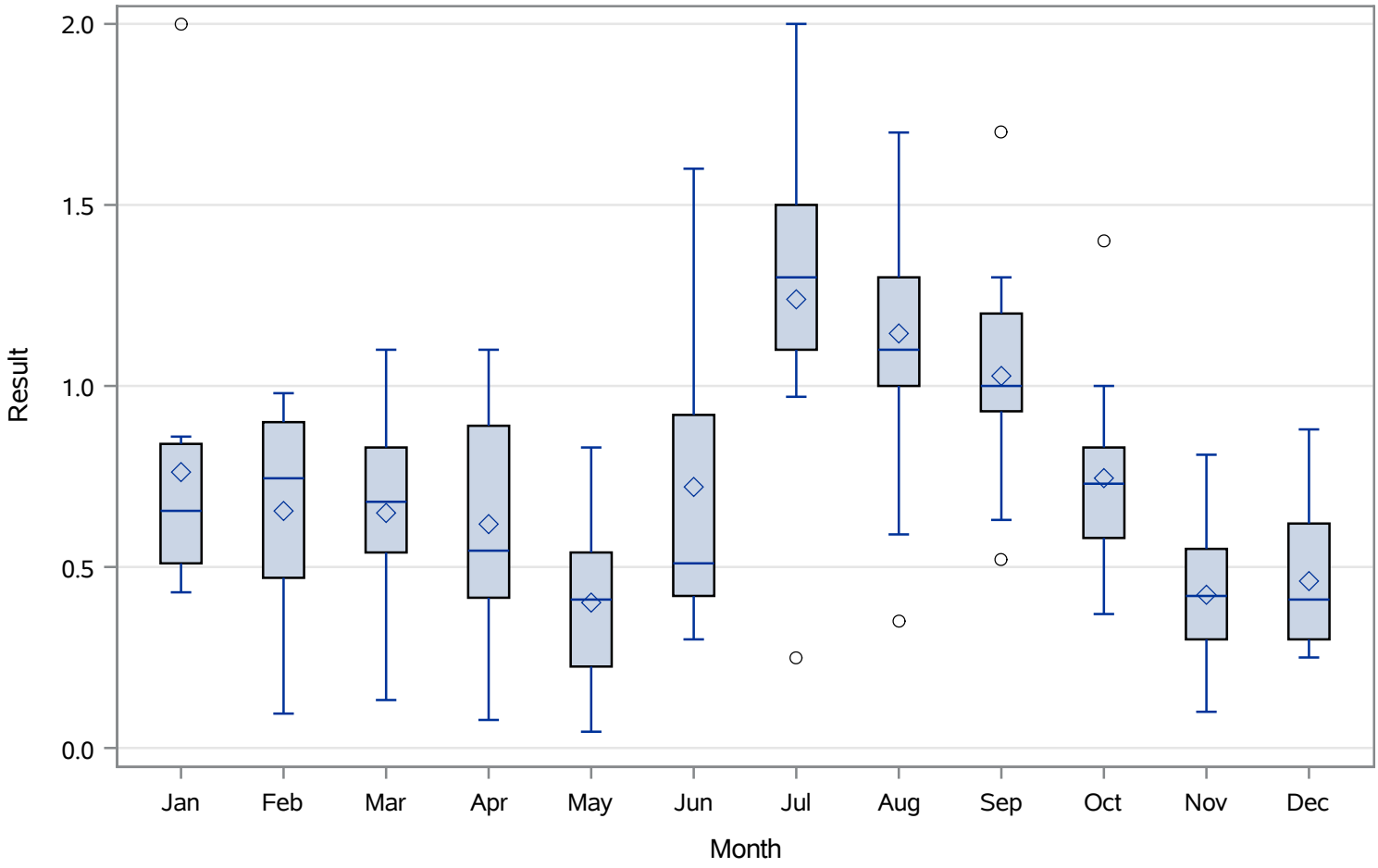


Little Manatee River

SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL

Nitrogen Organic as N (mg/L) mg/L

Site ID = 112WRD 02300200

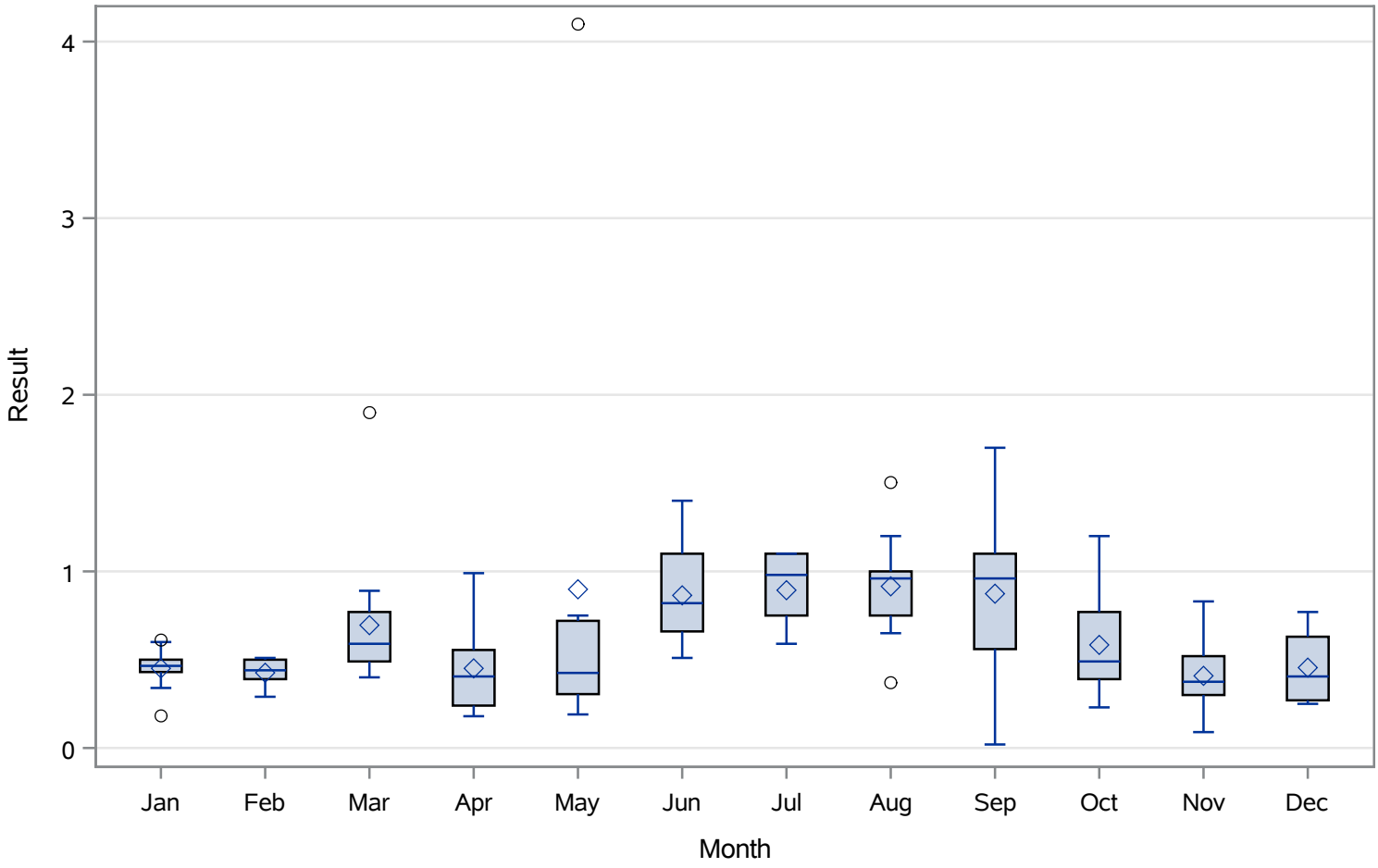


Little Manatee River

LITTLE MANATEE RIVER NEAR WIMAUMA FL

Nitrogen Organic as N (mg/L) mg/L

Site ID = 112WRD 02300500

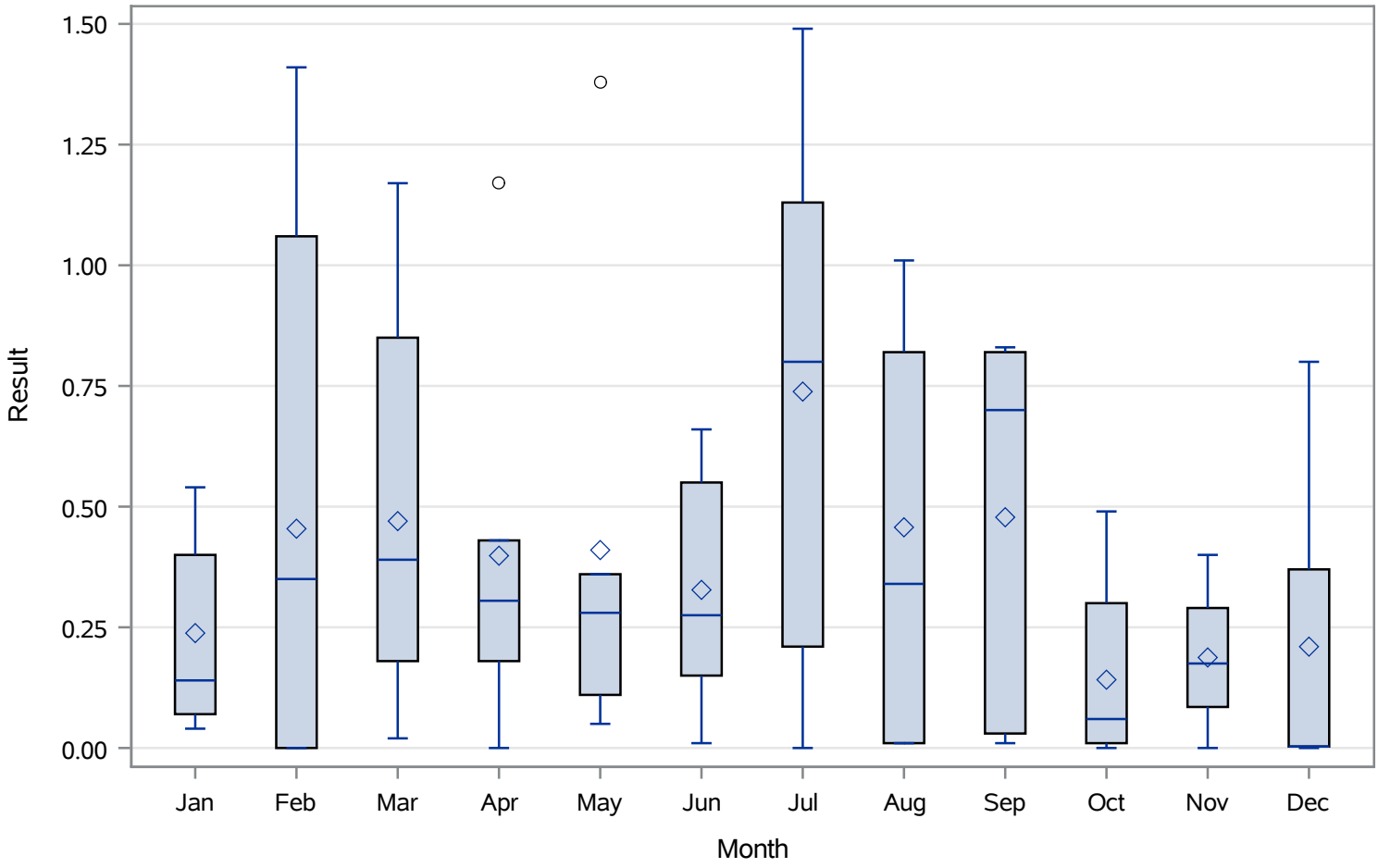


Little Manatee River

L MANATEE R BR US 301

Nitrogen Organic as N (mg/L) mg/L

Site ID = 21FLA 24010100

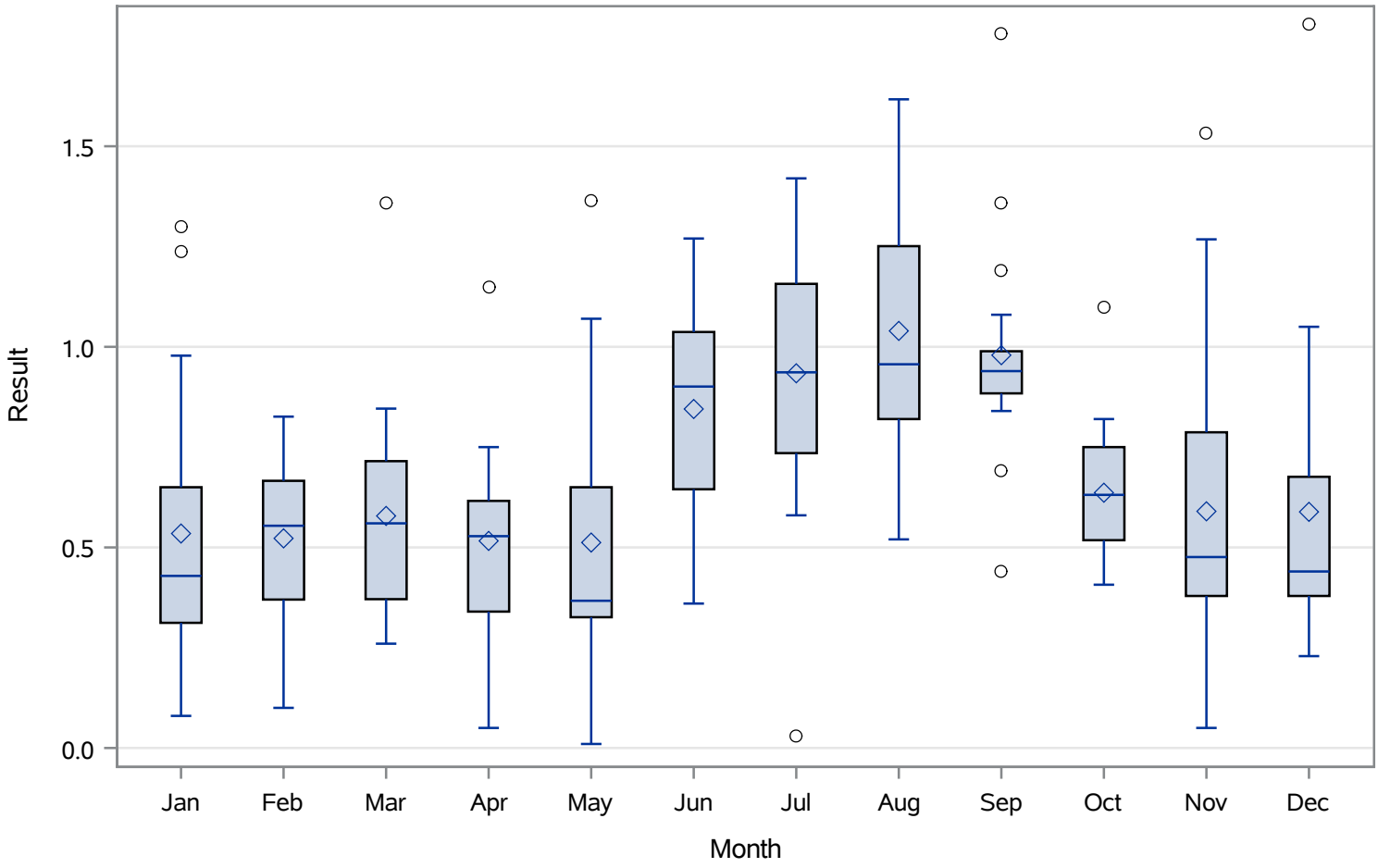


Little Manatee River

Little Manatee River at US 301 bridge

Nitrogen Organic as N (mg/L) mg/L

Site ID = 21FLHILL113

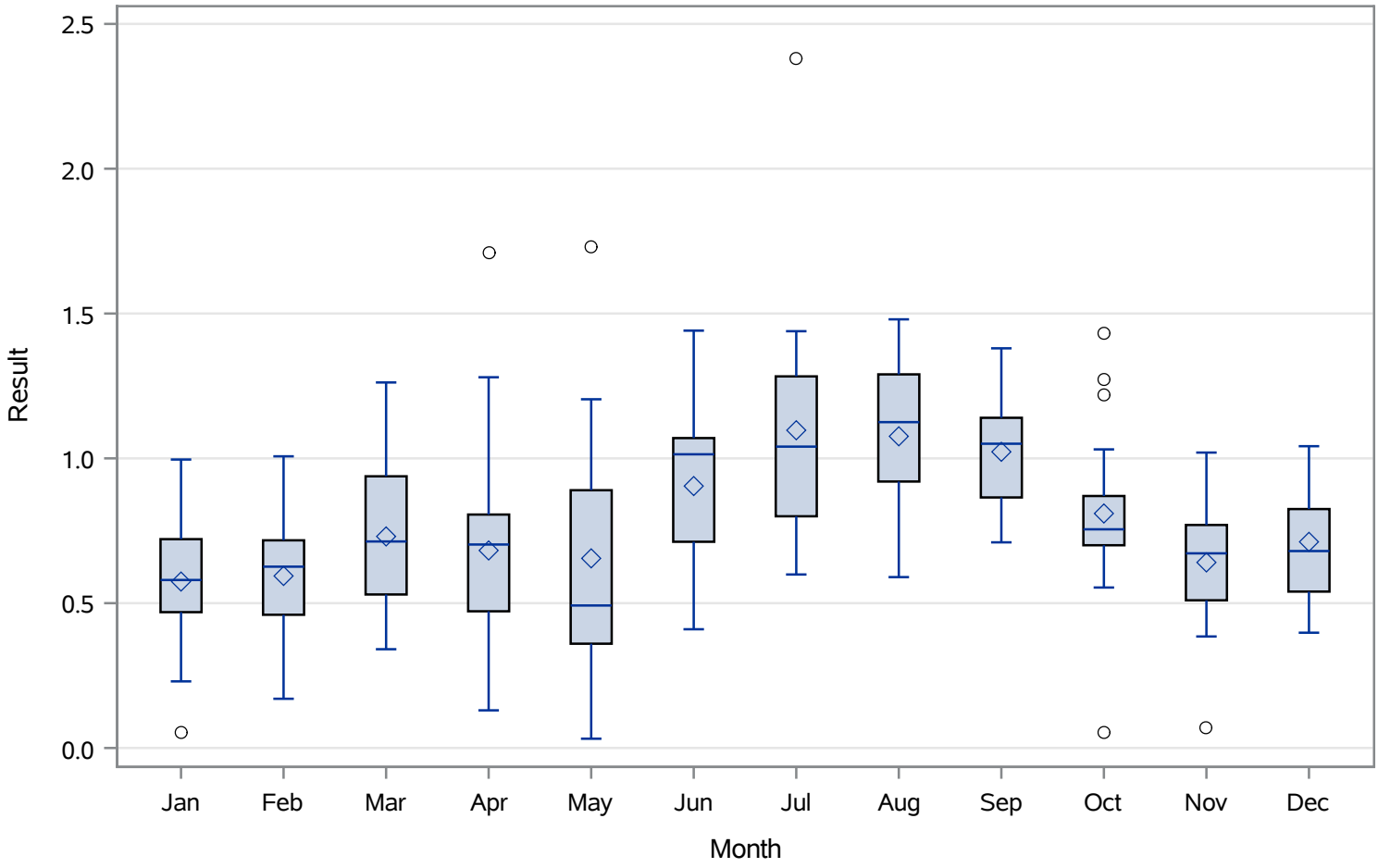


Little Manatee River

Little Manatee River at SR 674

Nitrogen Organic as N (mg/L) mg/L

Site ID = 21FLHILL129

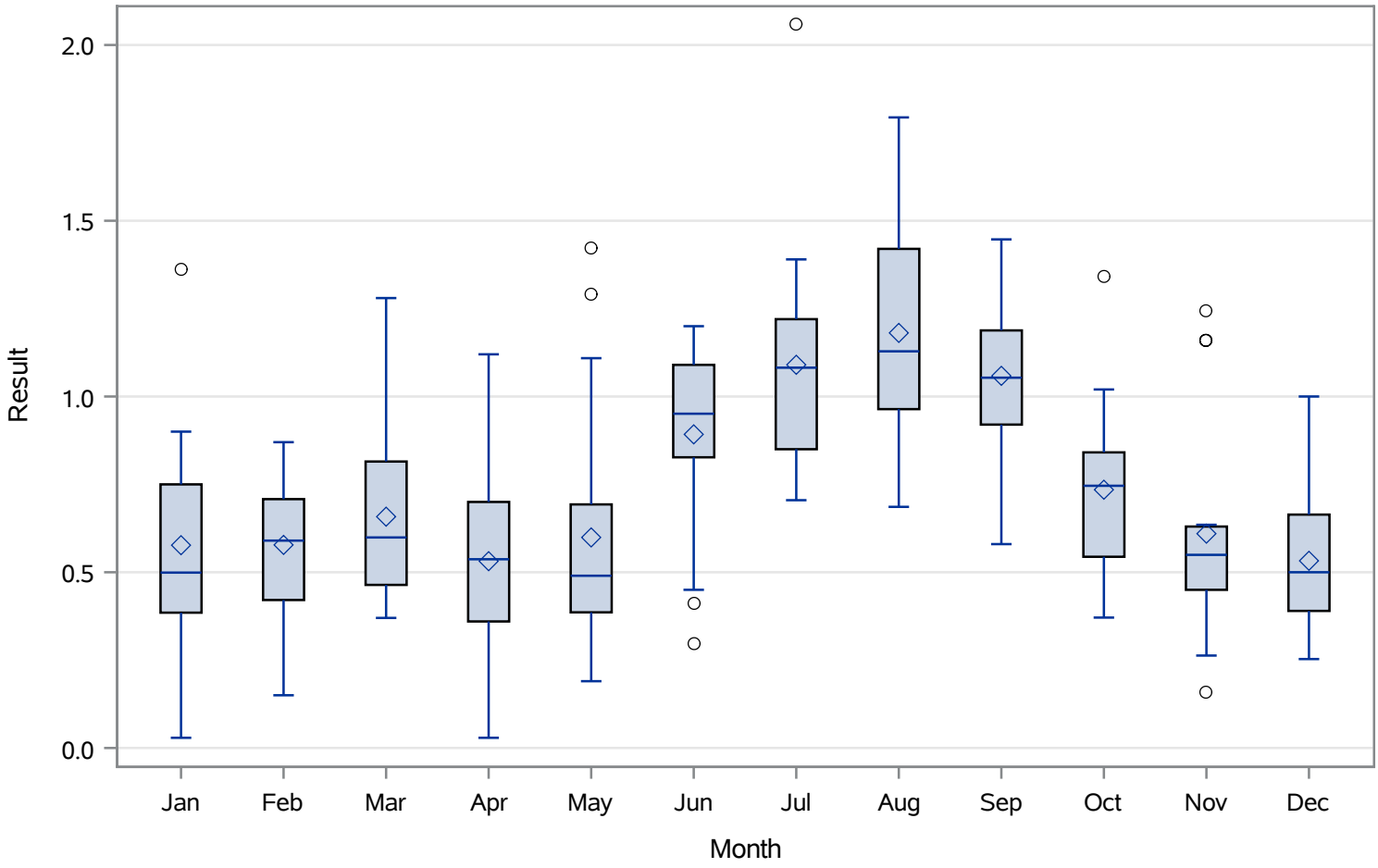


Little Manatee River

Little Manatee River at CR 579

Nitrogen Organic as N (mg/L) mg/L

Site ID = 21FLHILL140

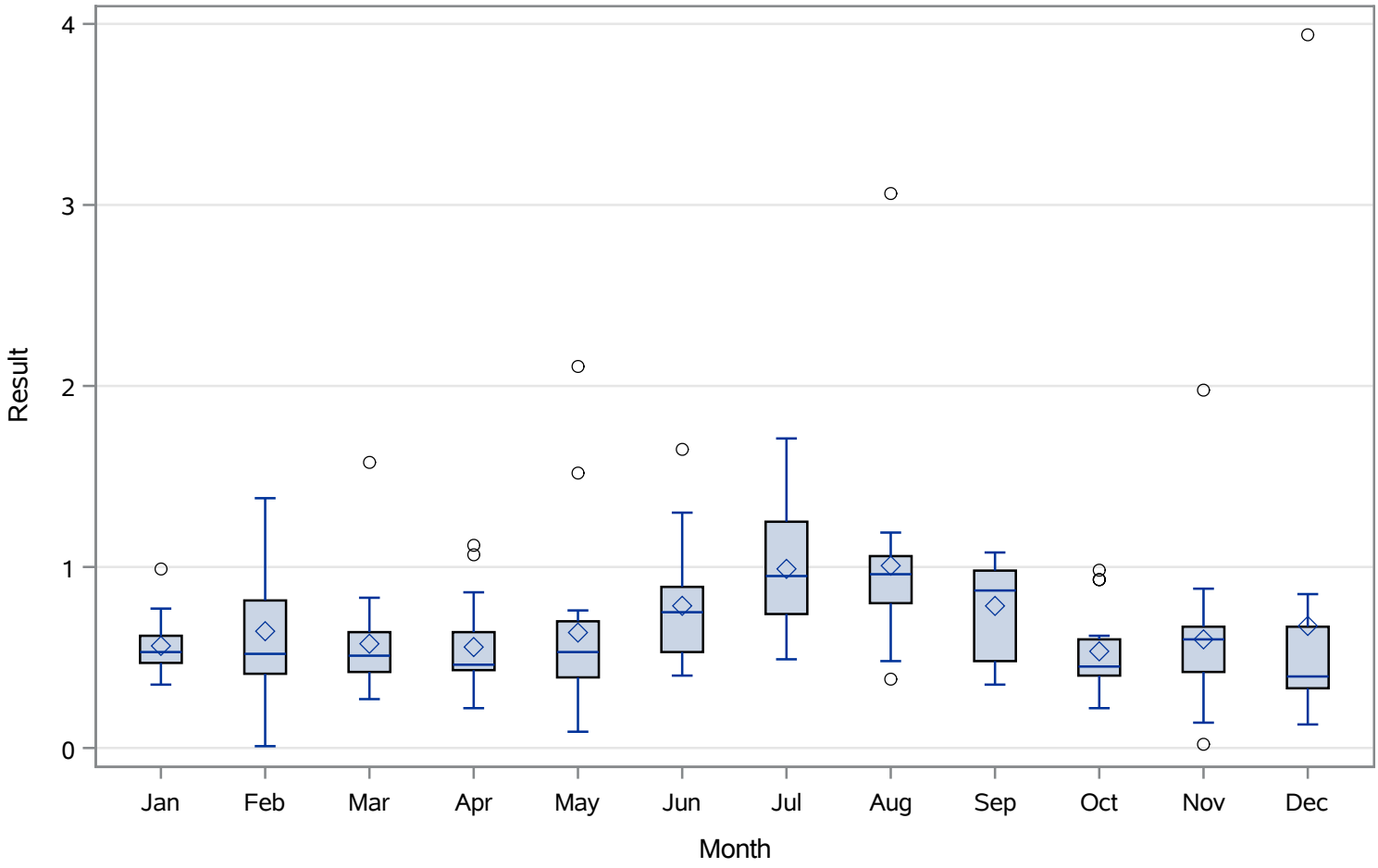


Little Manatee River

LITTLE MANATEE R AT CR579

Nitrogen Organic as N (mg/L) mg/L

Site ID = 21FLHILL24010013

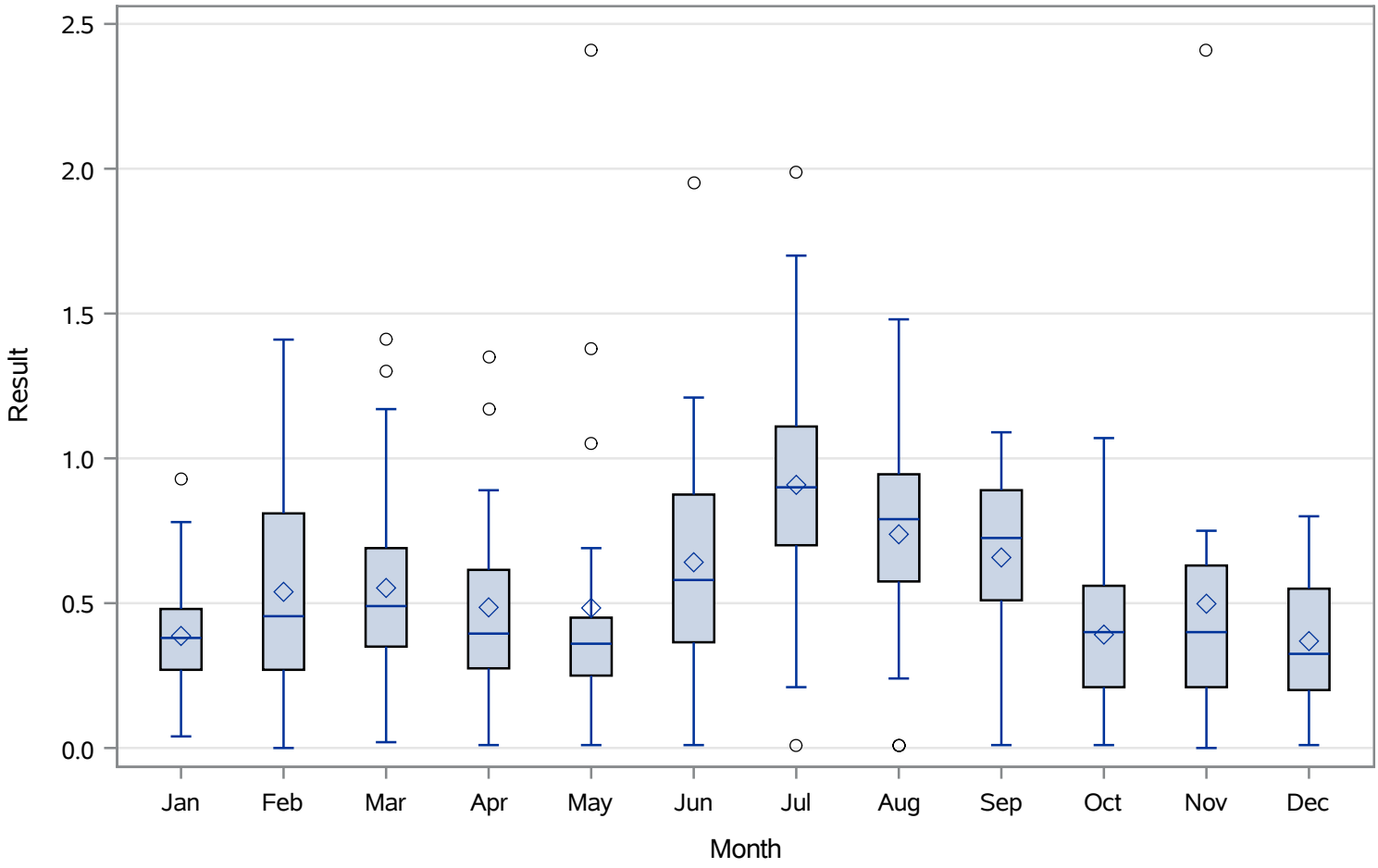


Little Manatee River

L MANATEE R BR US 301

Nitrogen Organic as N (mg/L) mg/L

Site ID = 21FLHILL24010100

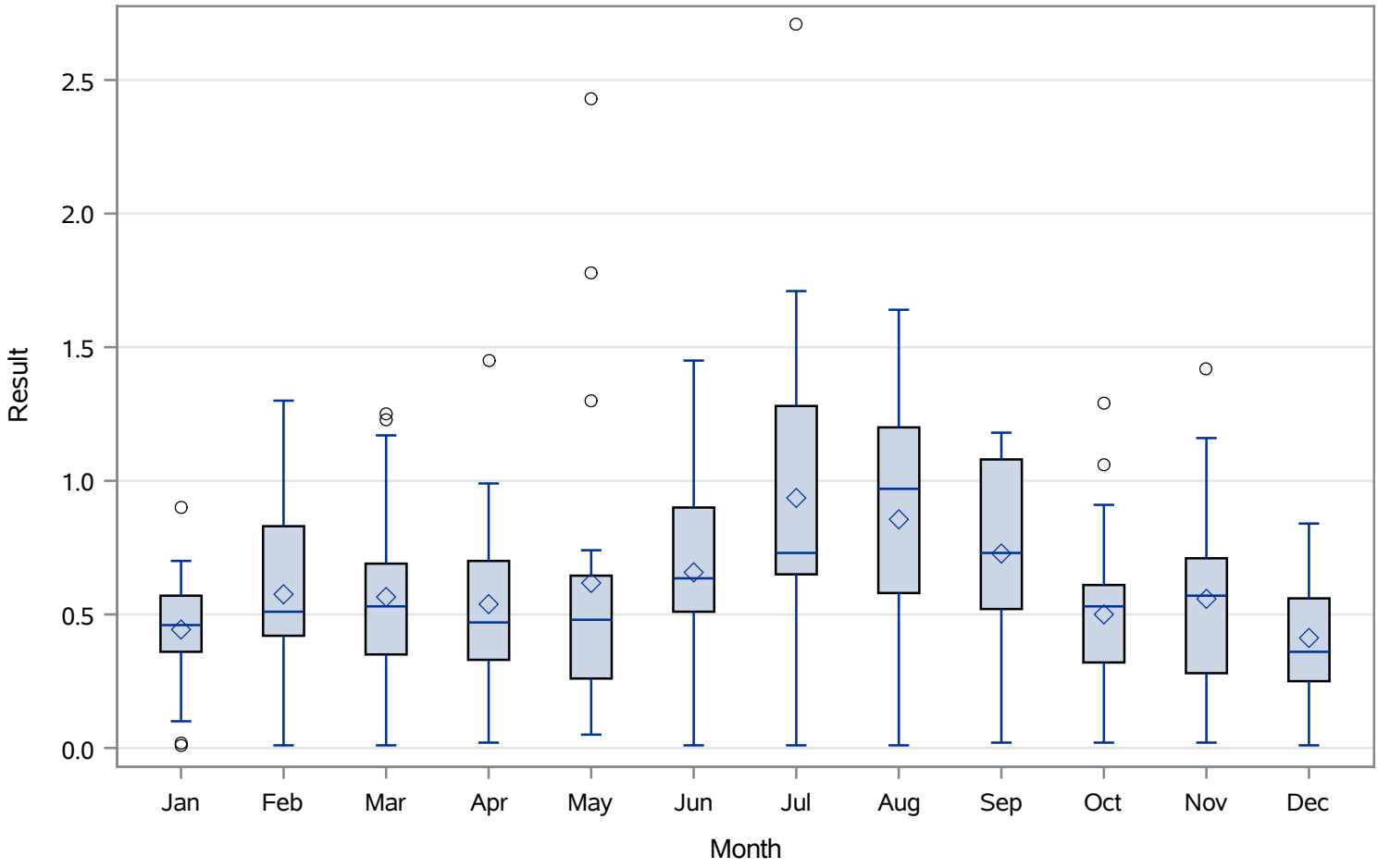


Little Manatee River

LITTLE MANATEE R AT SR #674

Nitrogen Organic as N (mg/L) mg/L

Site ID = 21FLHILL24010110

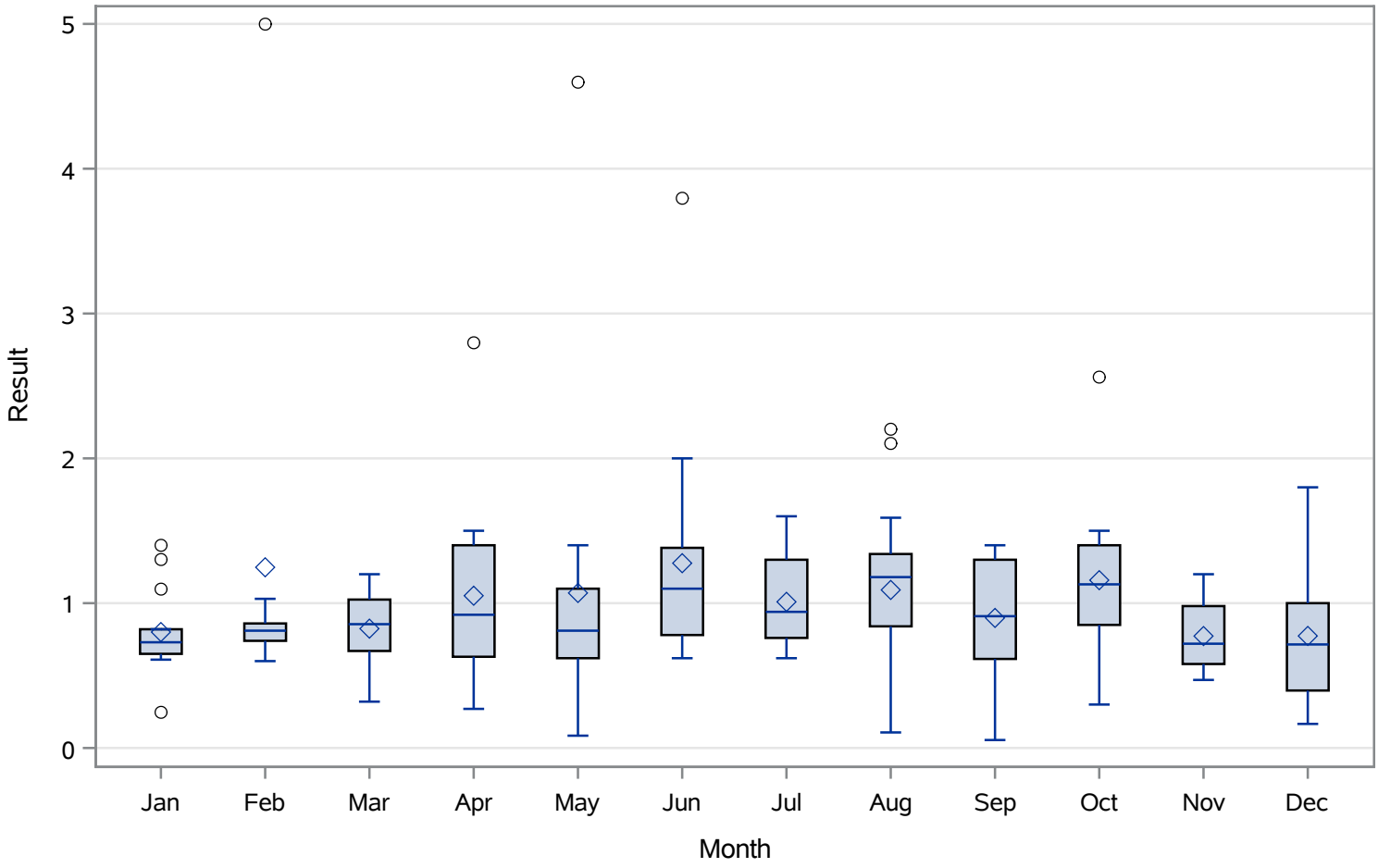


Little Manatee River

LITTLE MANATEE RIVER NEAR FT. LONESOME FL

Nitrogen Total as N (mg/L) mg/L

Site ID = 112WRD 02300100

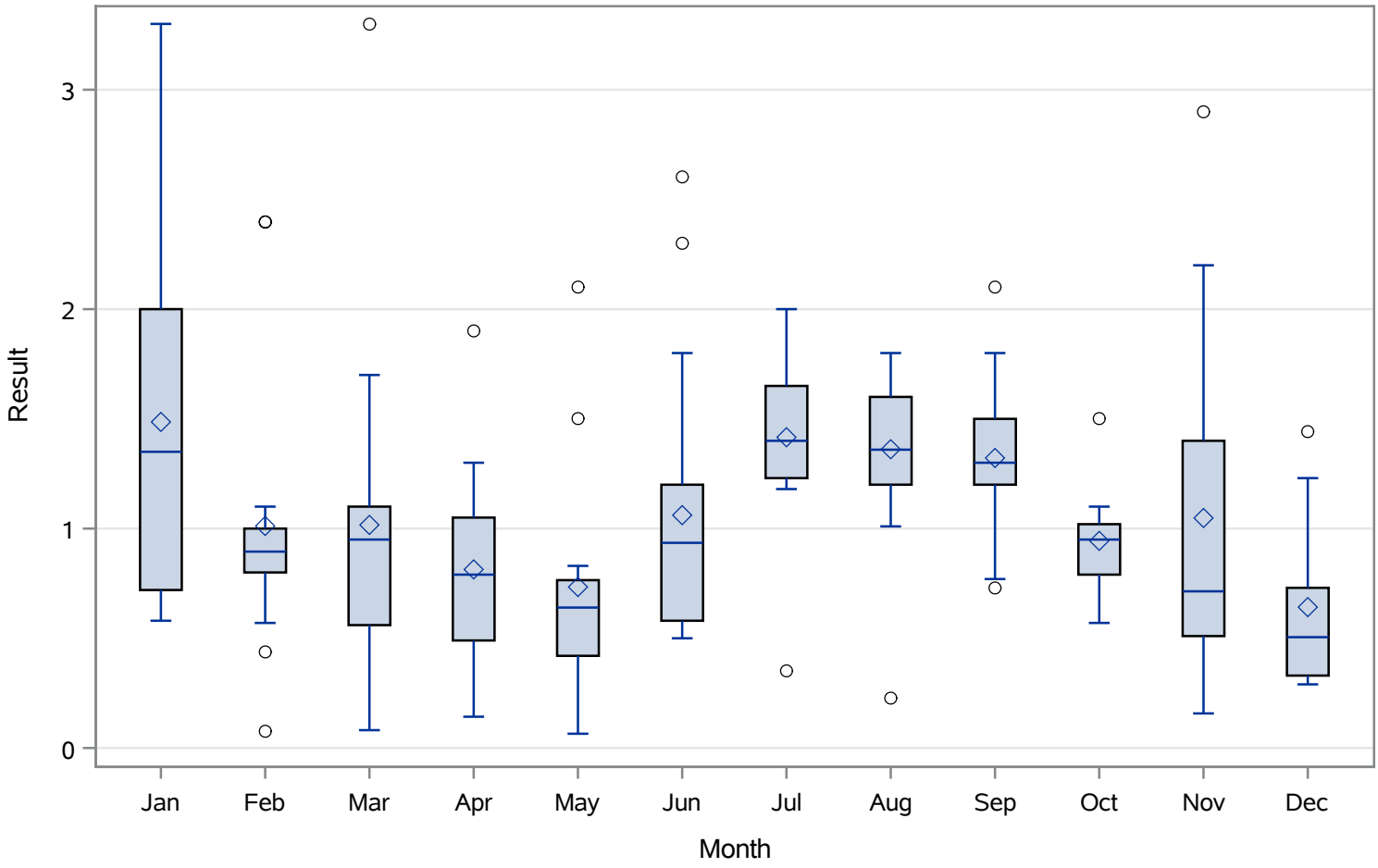


Little Manatee River

SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL

Nitrogen Total as N (mg/L) mg/L

Site ID = 112WRD 02300200

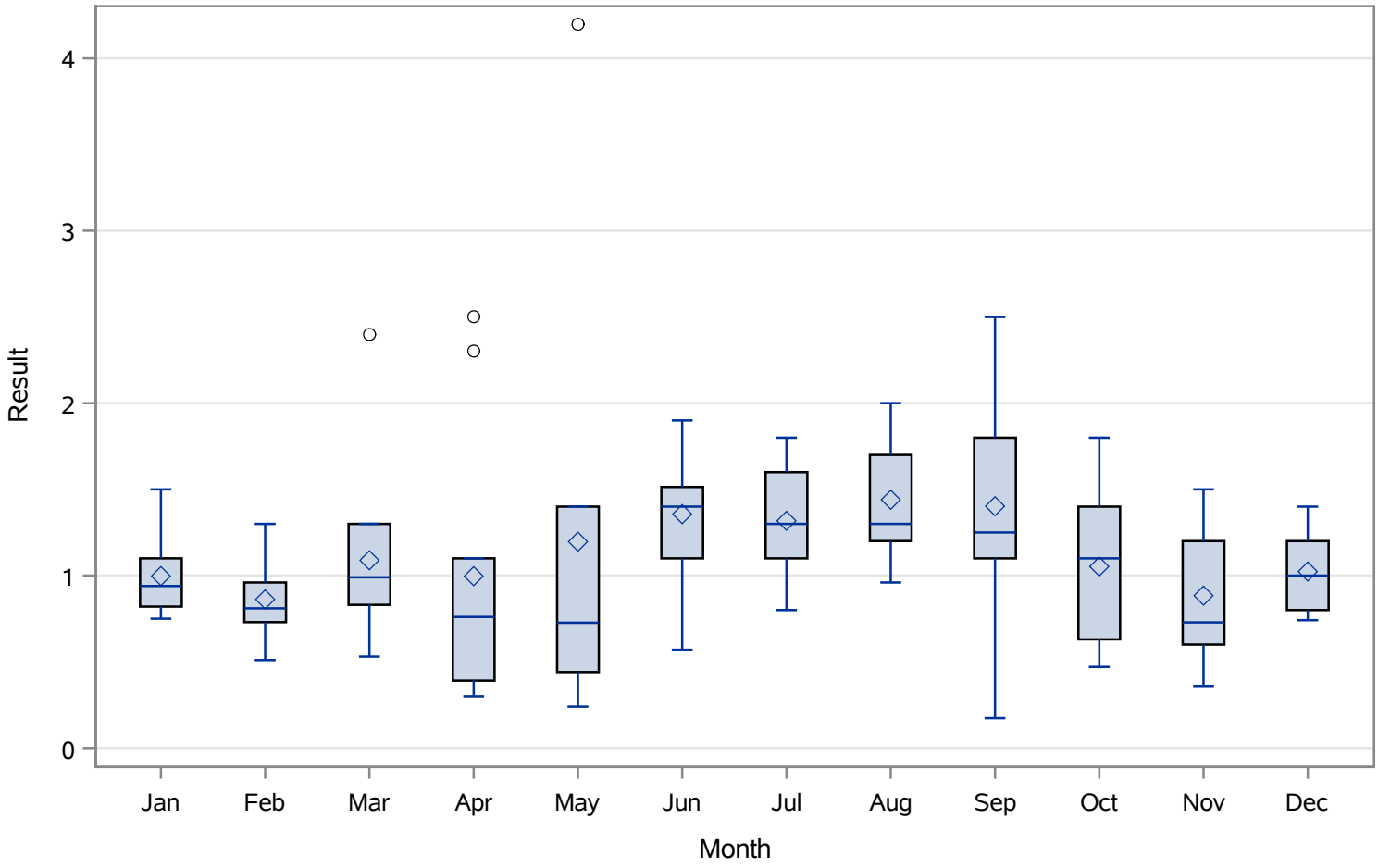


Little Manatee River

LITTLE MANATEE RIVER NEAR WIMAUMA FL

Nitrogen Total as N (mg/L) mg/L

Site ID = 112WRD 02300500

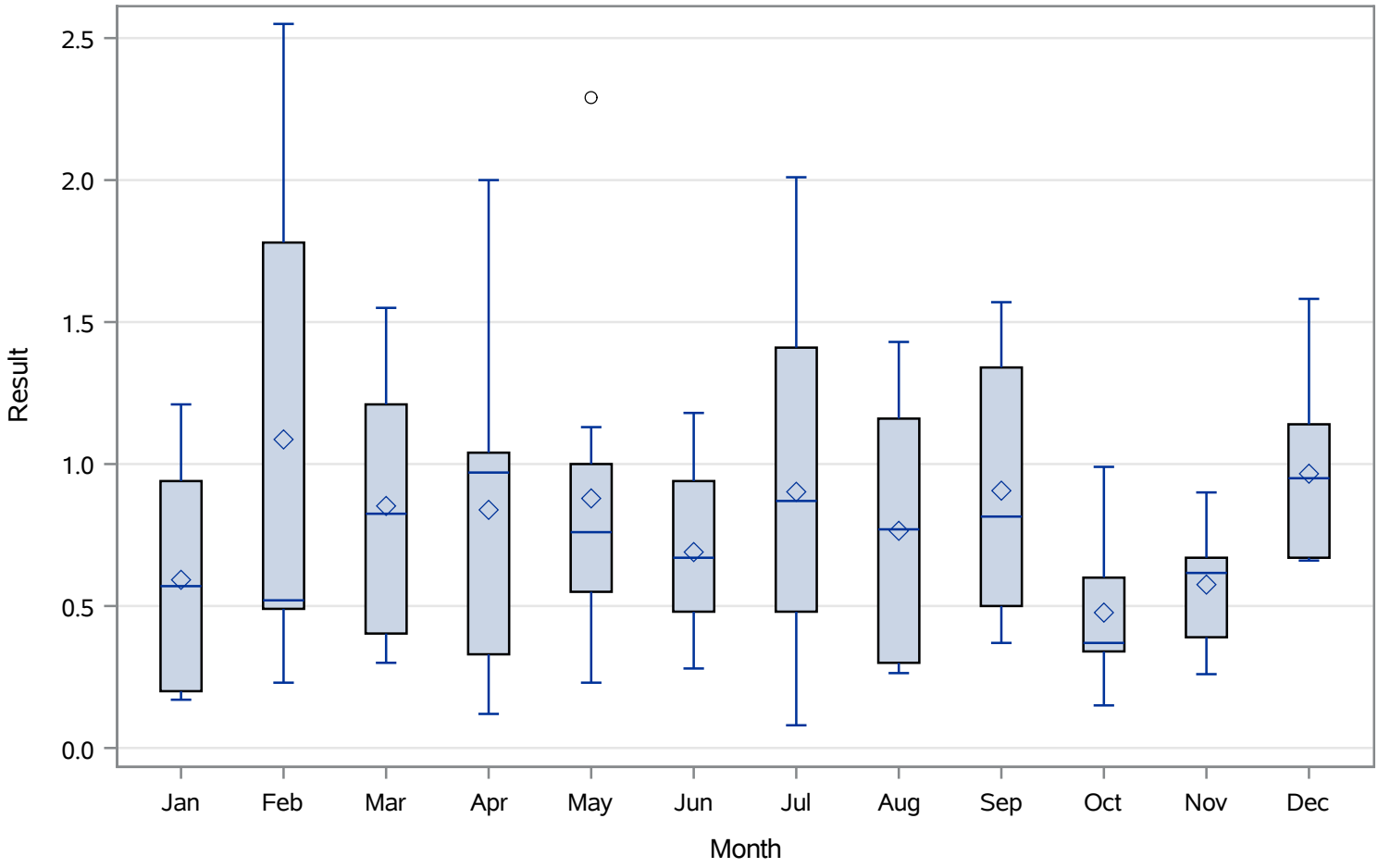


Little Manatee River

L MANATEE R BR US 301

Nitrogen Total as N (mg/L) mg/L

Site ID = 21FLA 24010100

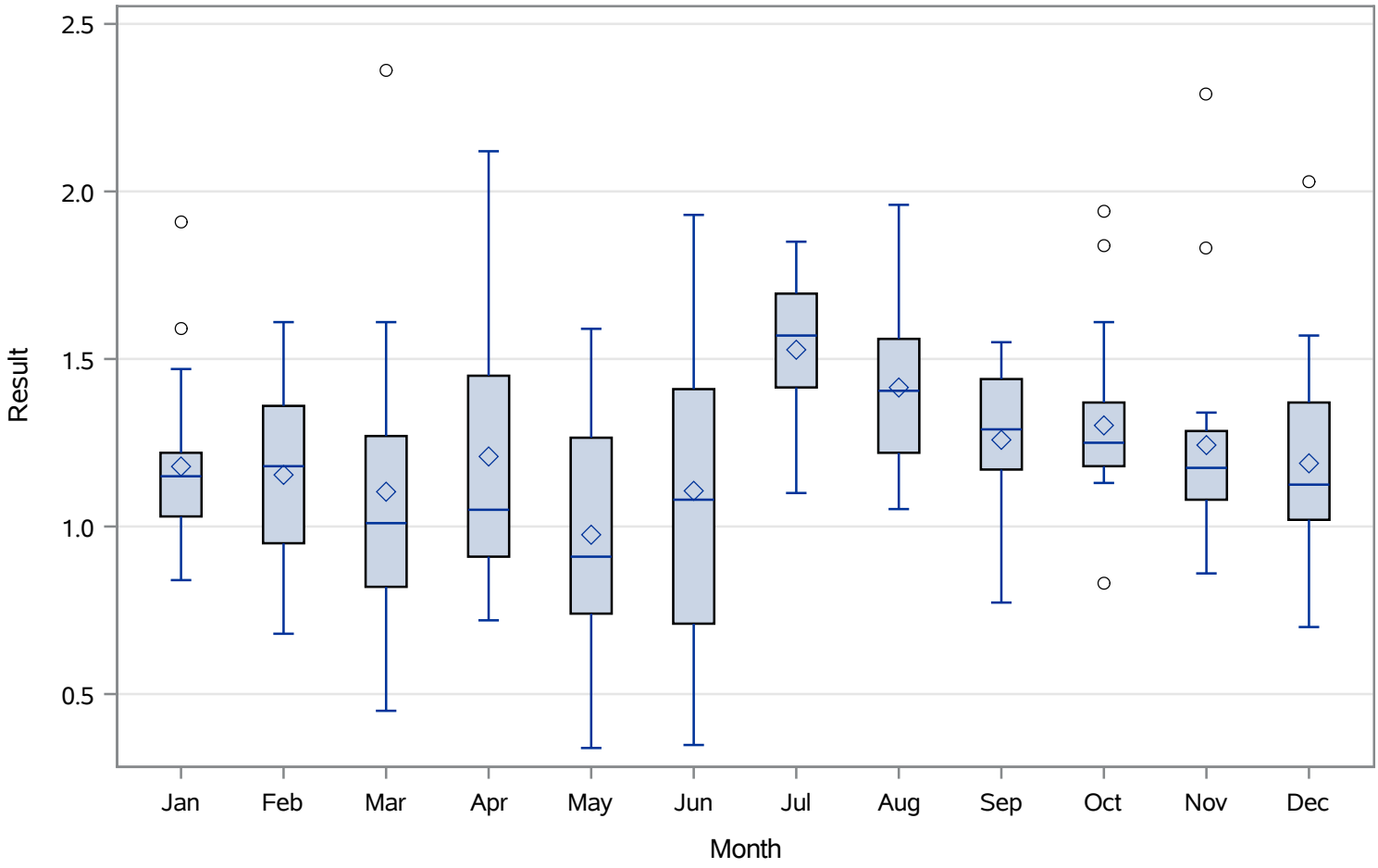


Little Manatee River

LITTLE MANATEE RIVER AT US HWY 301

Nitrogen Total as N (mg/L) mg/L

Site ID = 21FLGW 3555

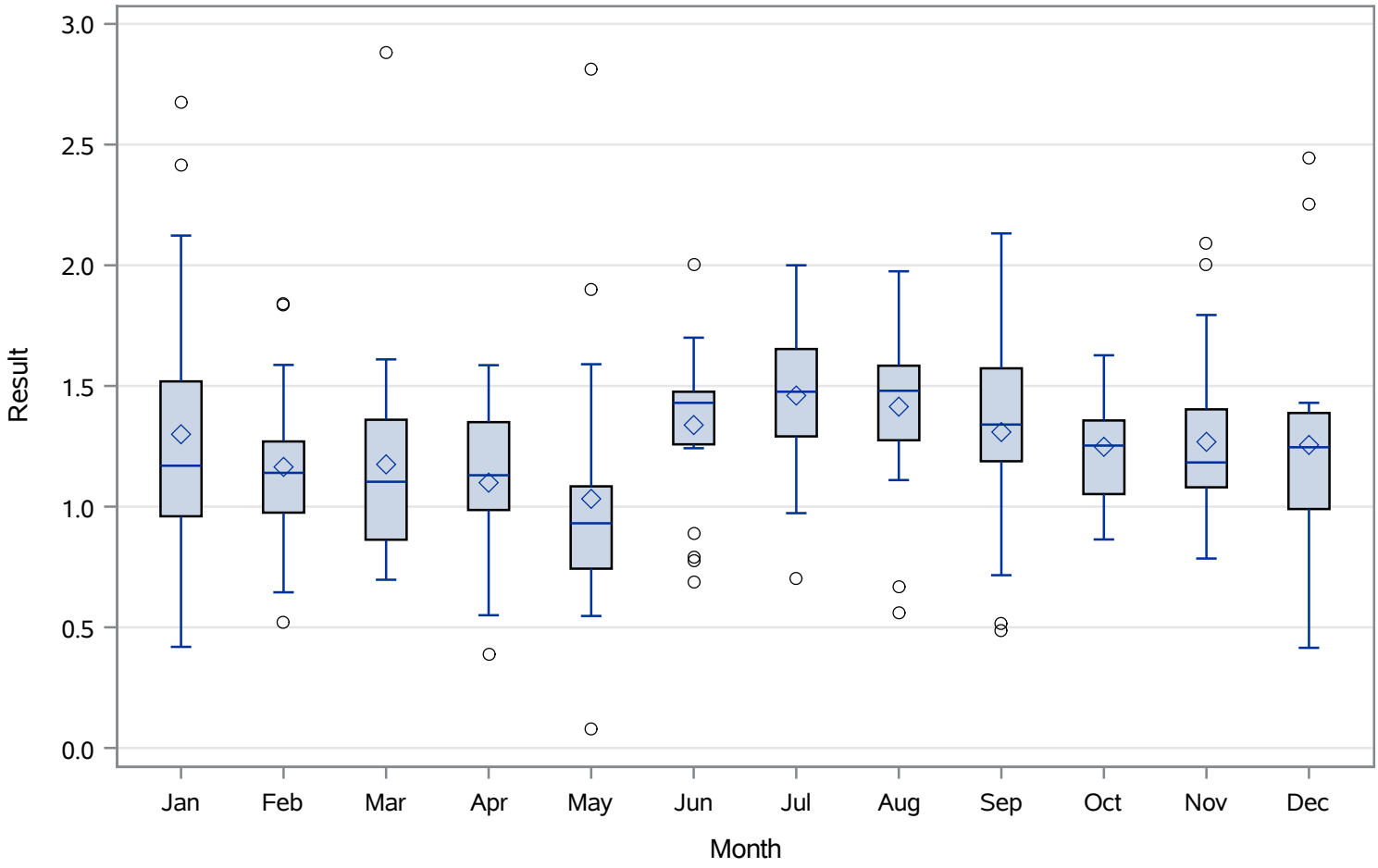


Little Manatee River

Little Manatee River at US 301 bridge

Nitrogen Total as N (mg/L) mg/L

Site ID = 21FLHILL113

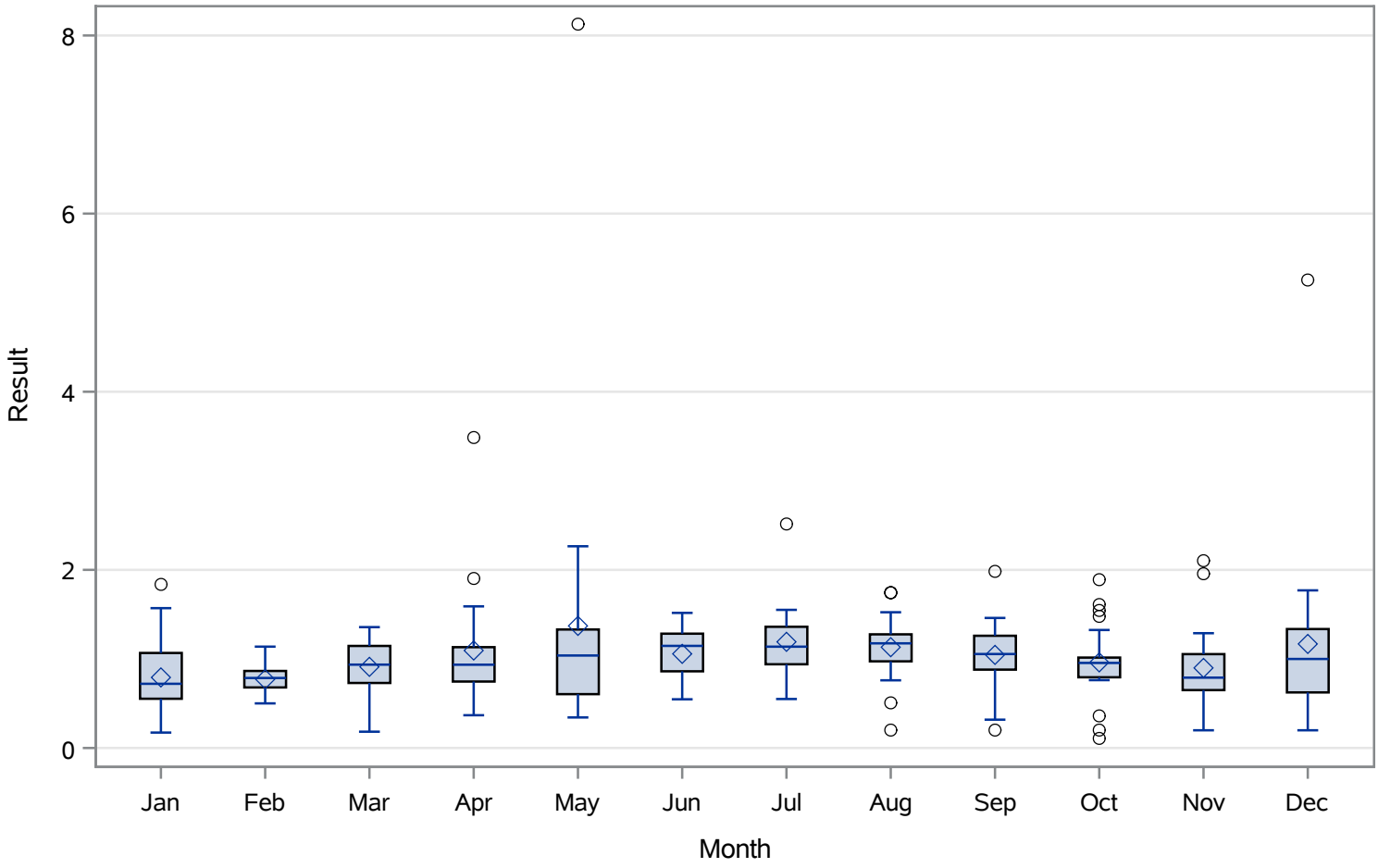


Little Manatee River

Little Manatee River at SR 674

Nitrogen Total as N (mg/L) mg/L

Site ID = 21FLHILL129

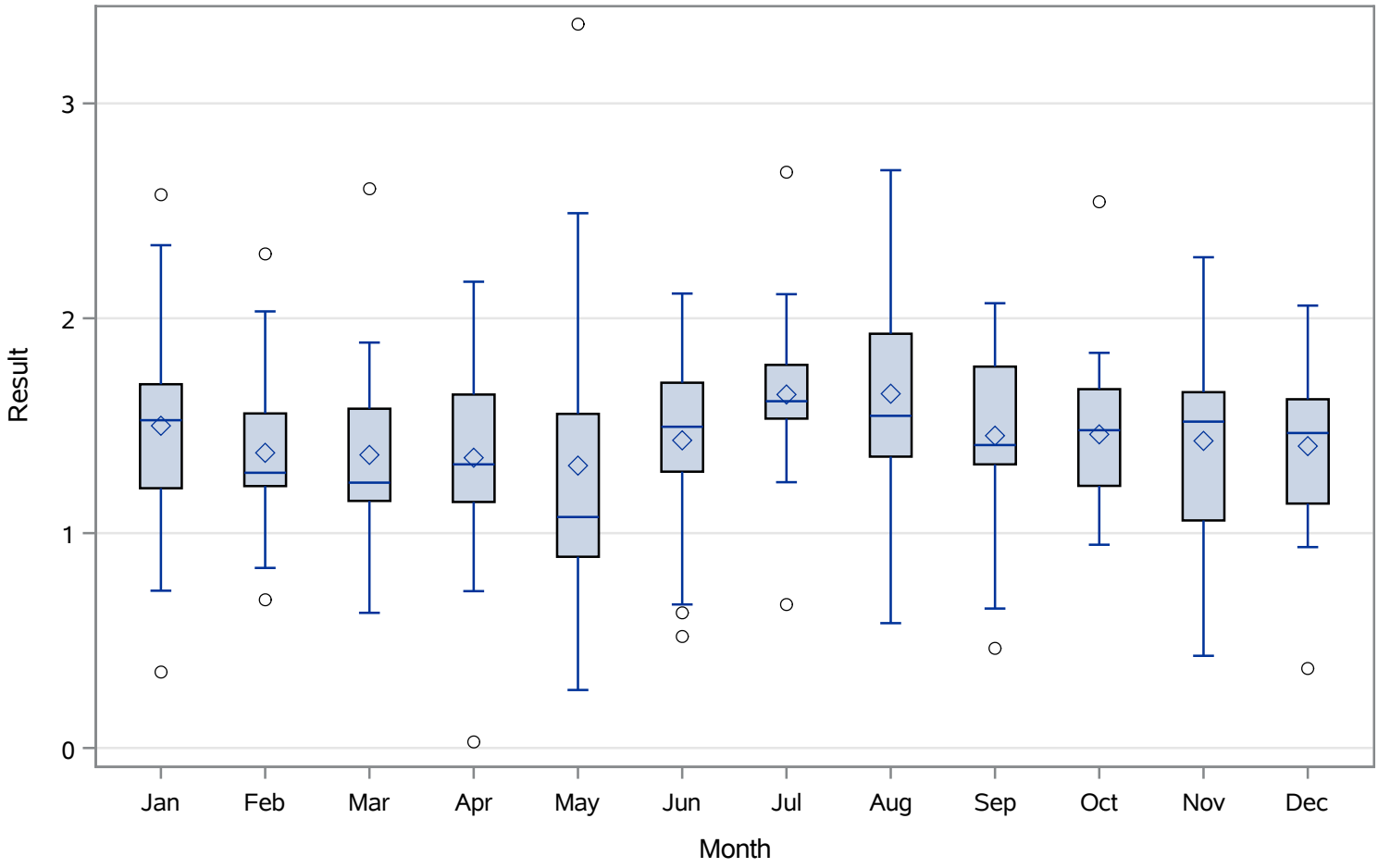


Little Manatee River

Little Manatee River at CR 579

Nitrogen Total as N (mg/L) mg/L

Site ID = 21FLHILL140

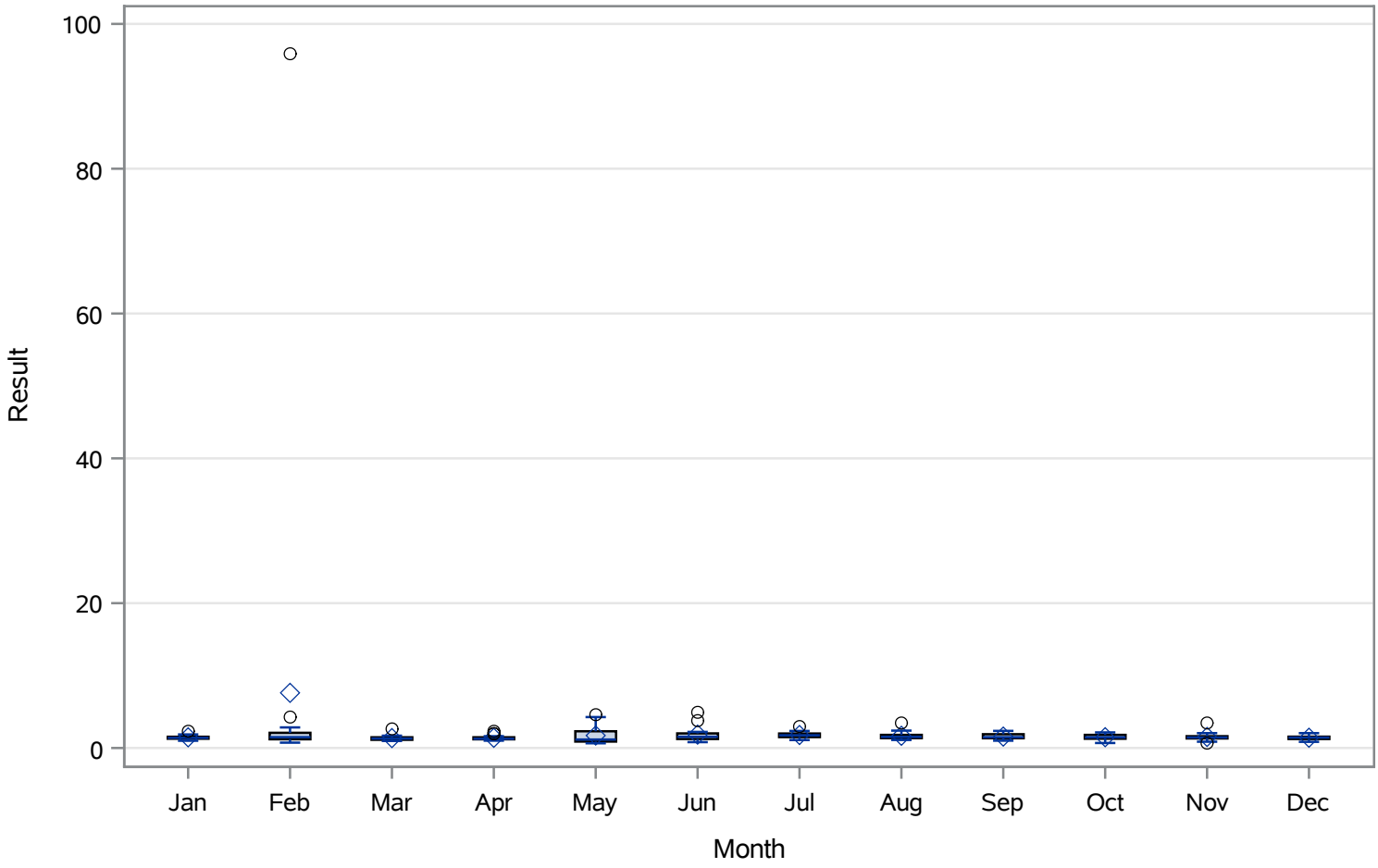


Little Manatee River

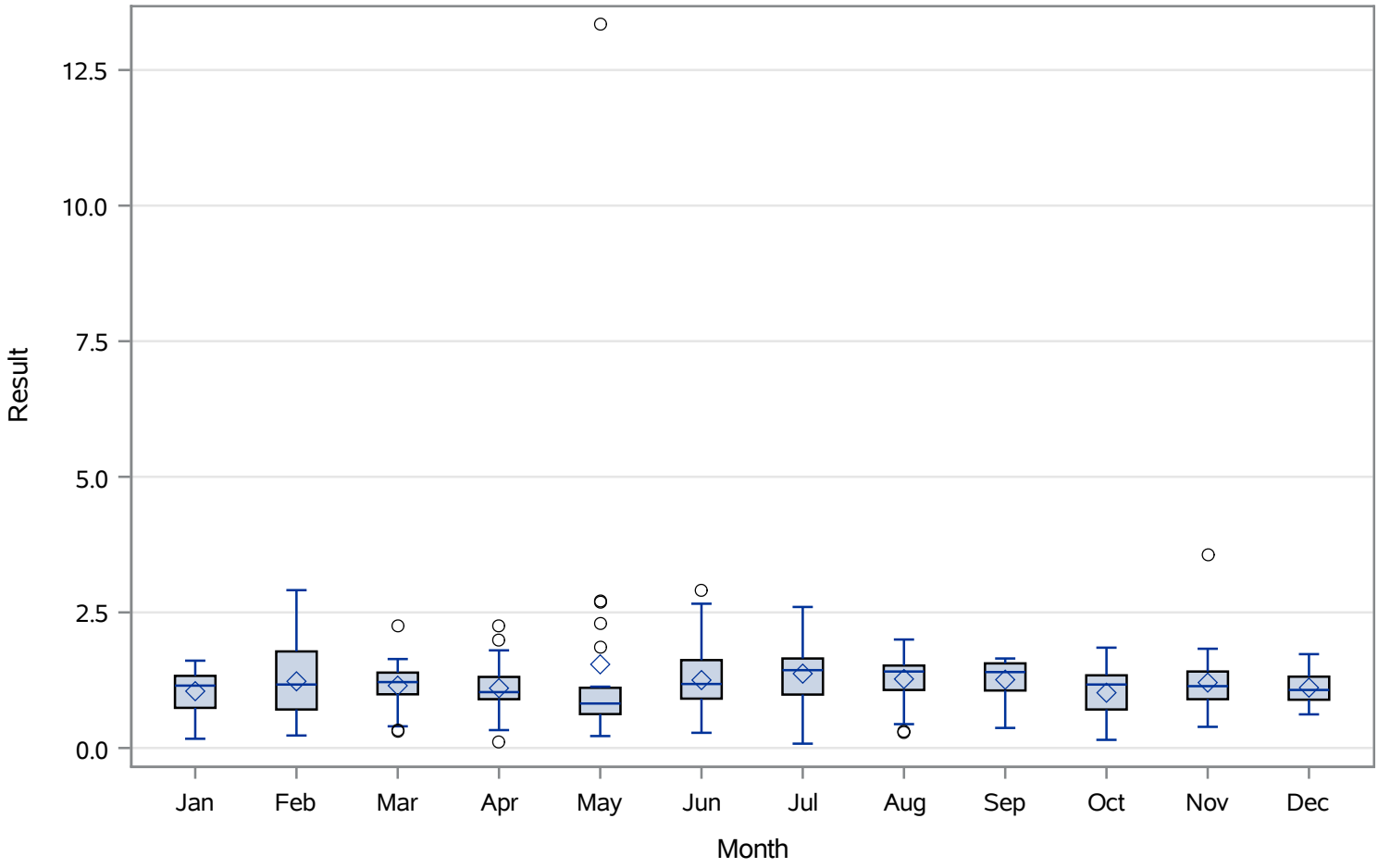
LITTLE MANATEE R AT CR579

Nitrogen Total as N (mg/L) mg/L

Site ID = 21FLHILL24010013



Little Manatee River
L MANATEE R BR US 301
Nitrogen Total as N (mg/L) mg/L
Site ID = 21FLHILL24010100

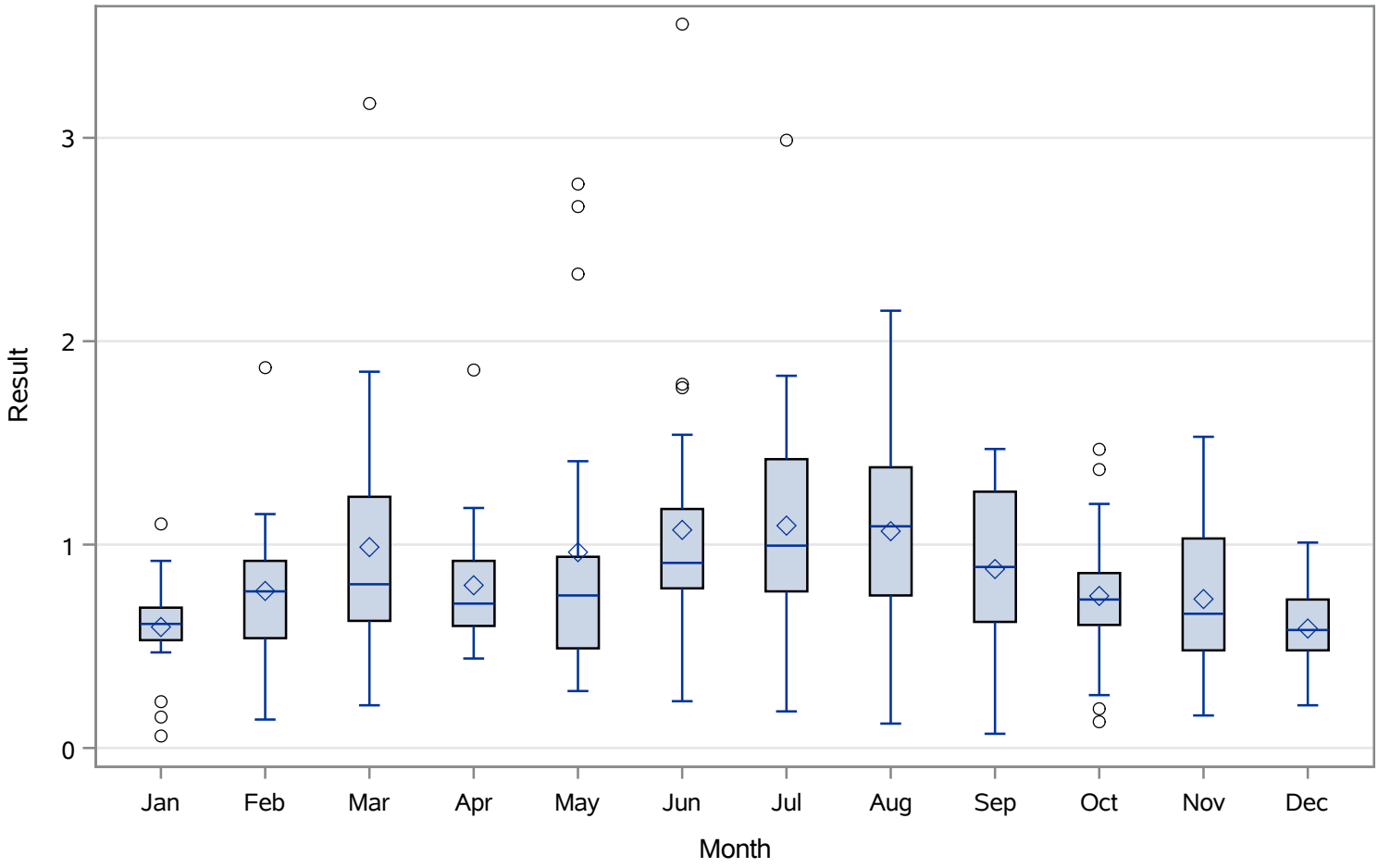


Little Manatee River

LITTLE MANATEE R AT SR #674

Nitrogen Total as N (mg/L) mg/L

Site ID = 21FLHILL24010110

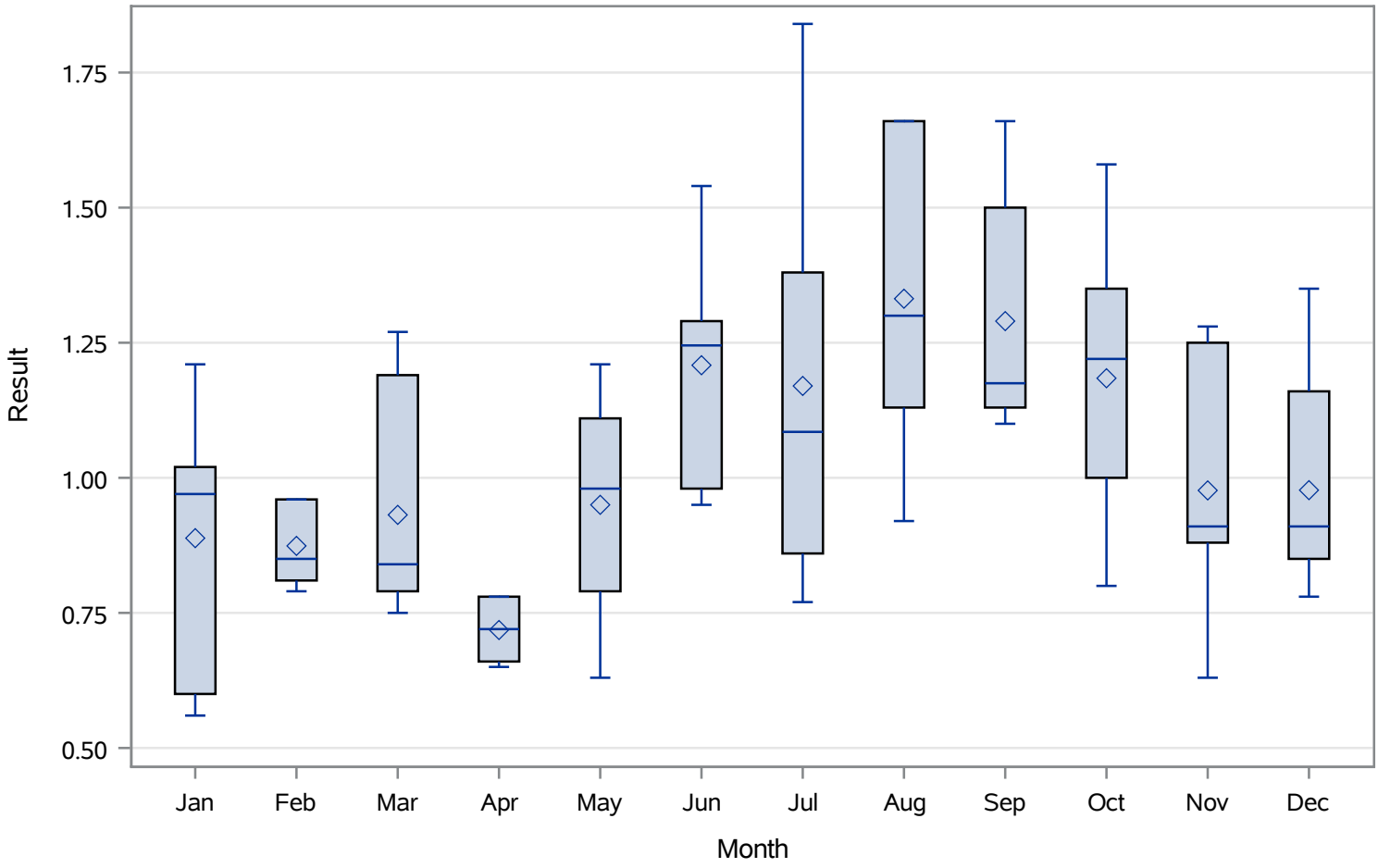


Little Manatee River

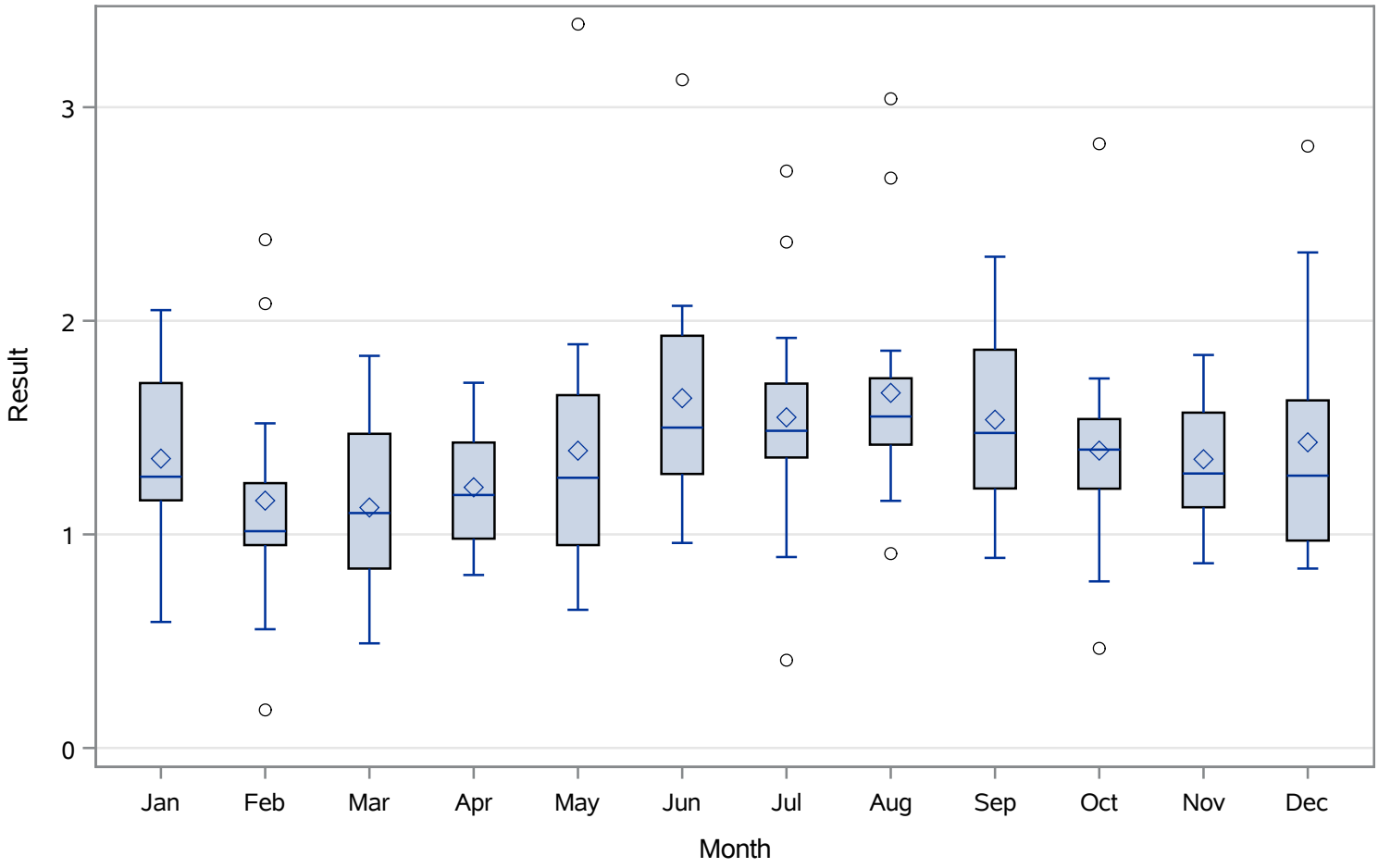
Little Manatee R. at SR674

Nitrogen Total as N (mg/L) mg/L

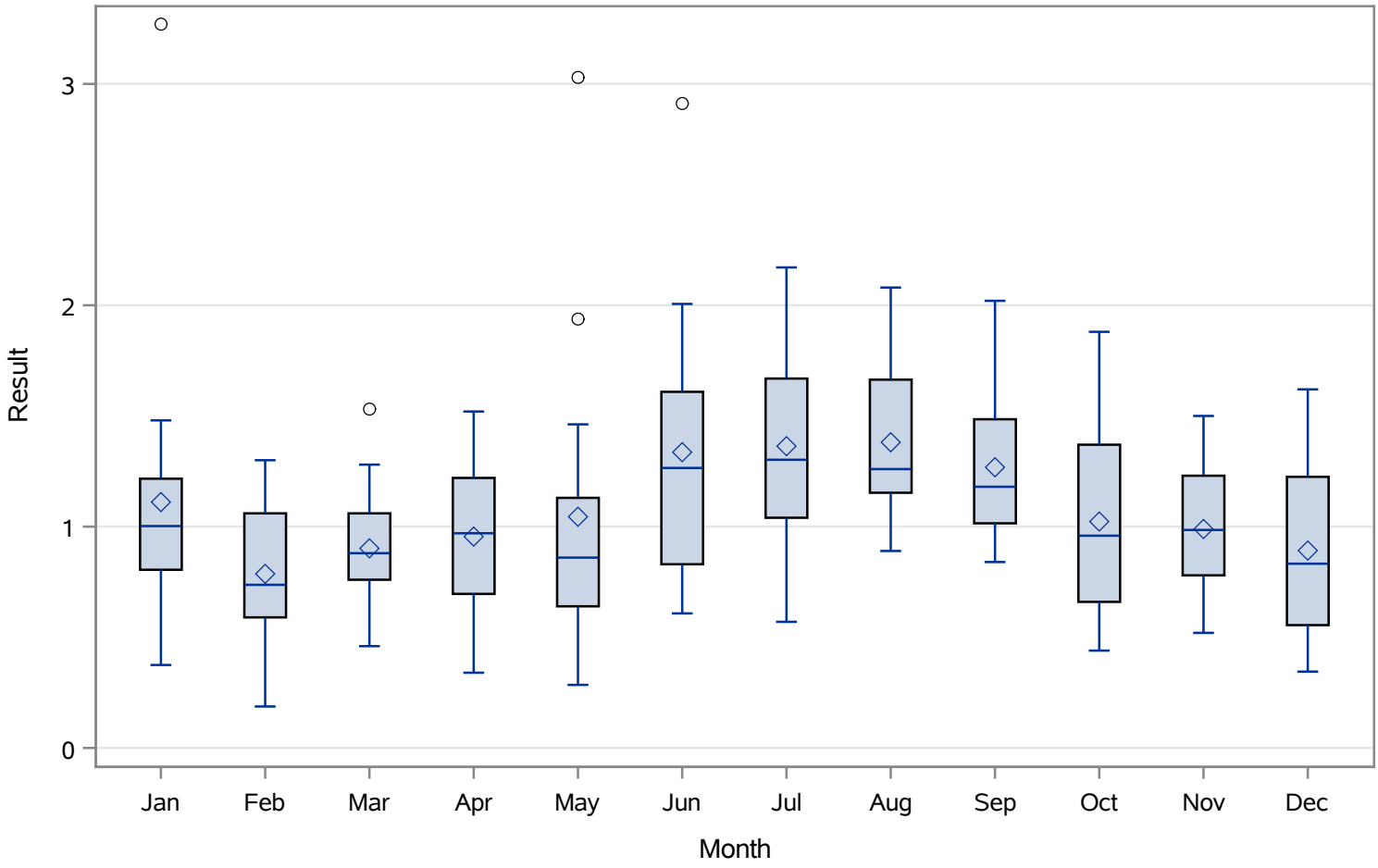
Site ID = 21FLIMCALM674



Little Manatee River
D1
Nitrogen Total as N (mg/L) mg/L
Site ID = 21FLMANAD1



Little Manatee River
D3
Nitrogen Total as N (mg/L) mg/L
Site ID = 21FLMANAD3

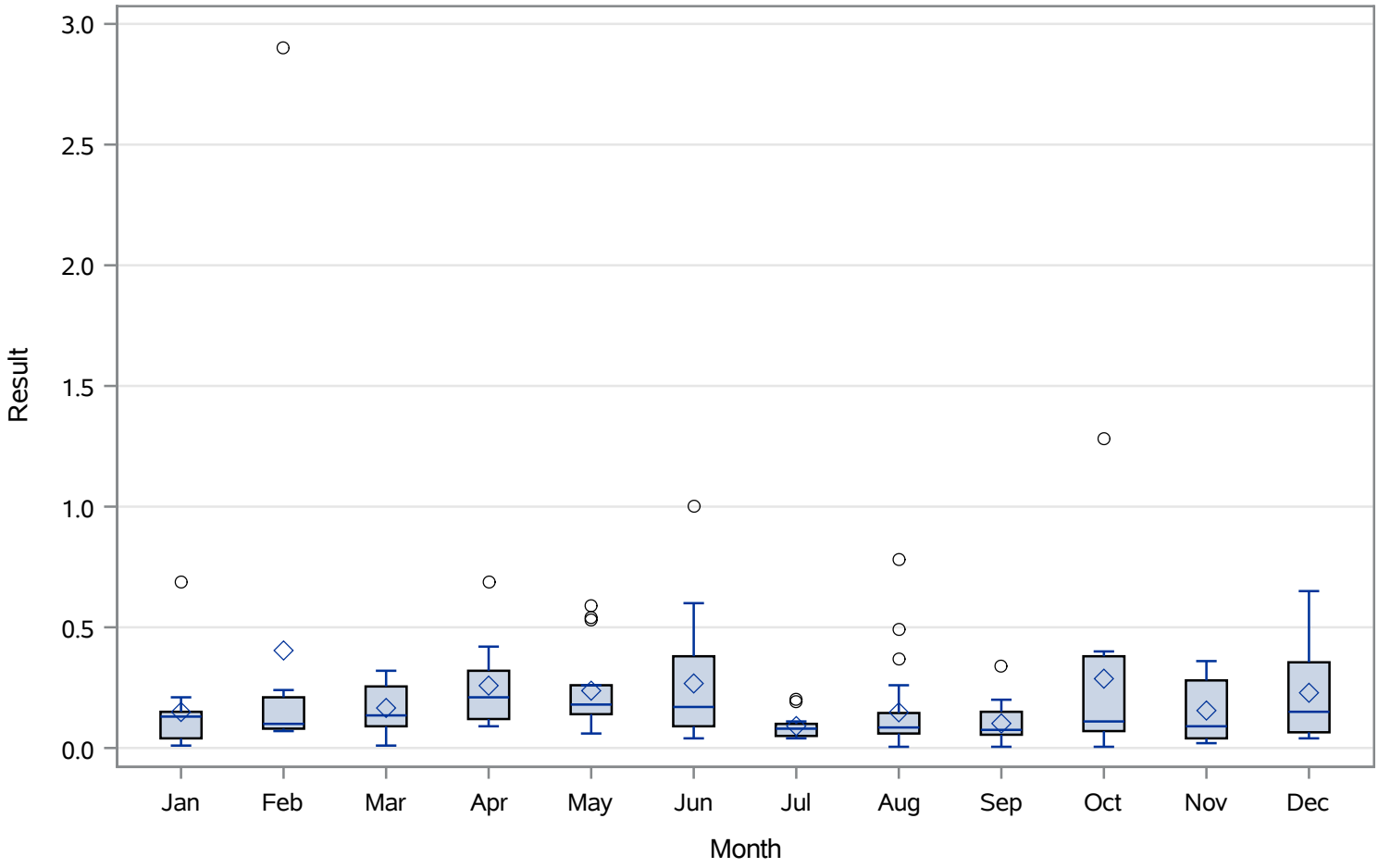


Little Manatee River

LITTLE MANATEE RIVER NEAR FT. LONESOME FL

Nutrients (Nitrate-Nitrite) mg/L

Site ID = 112WRD 02300100

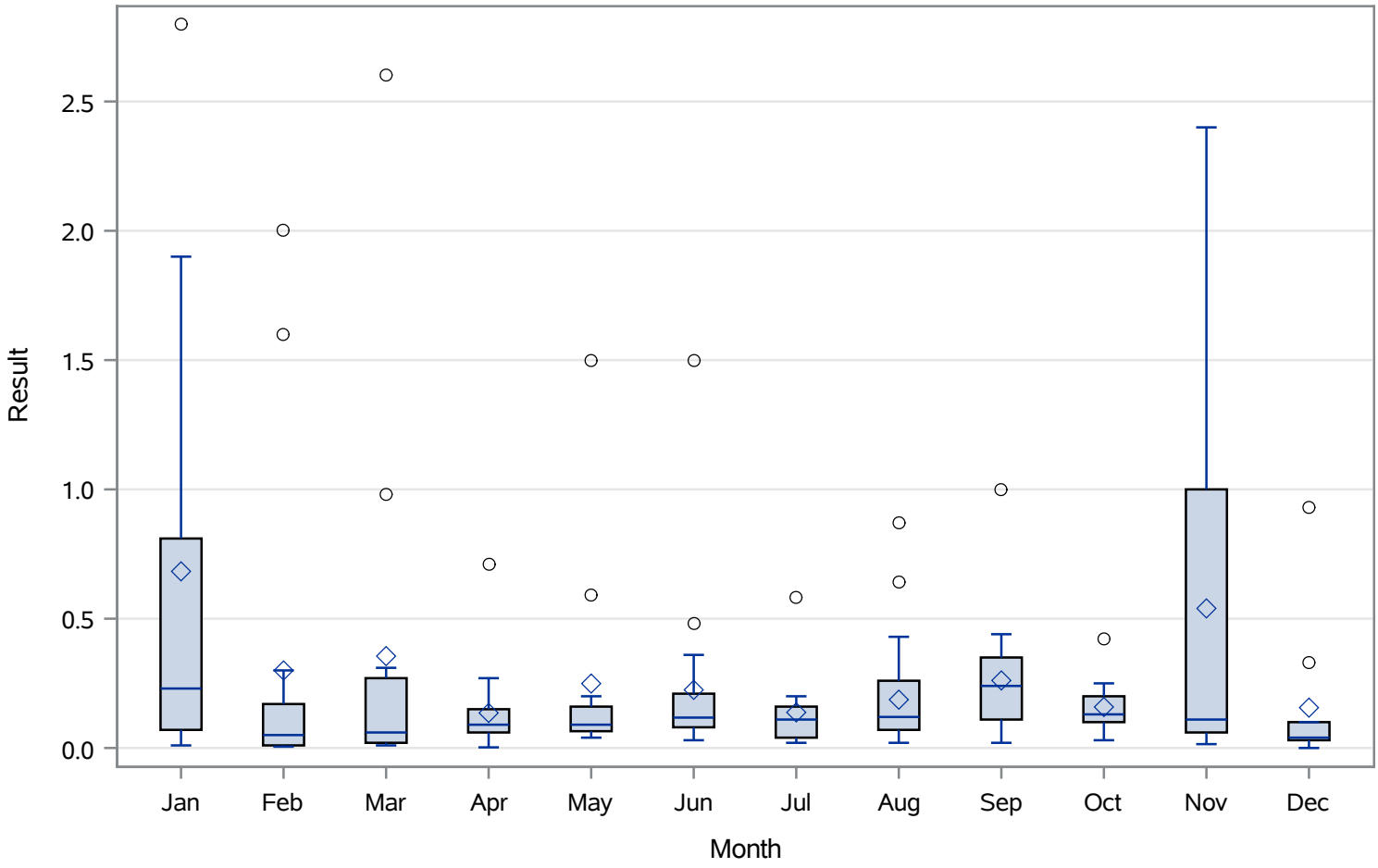


Little Manatee River

SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL

Nutrients (Nitrate-Nitrite) mg/L

Site ID = 112WRD 02300200

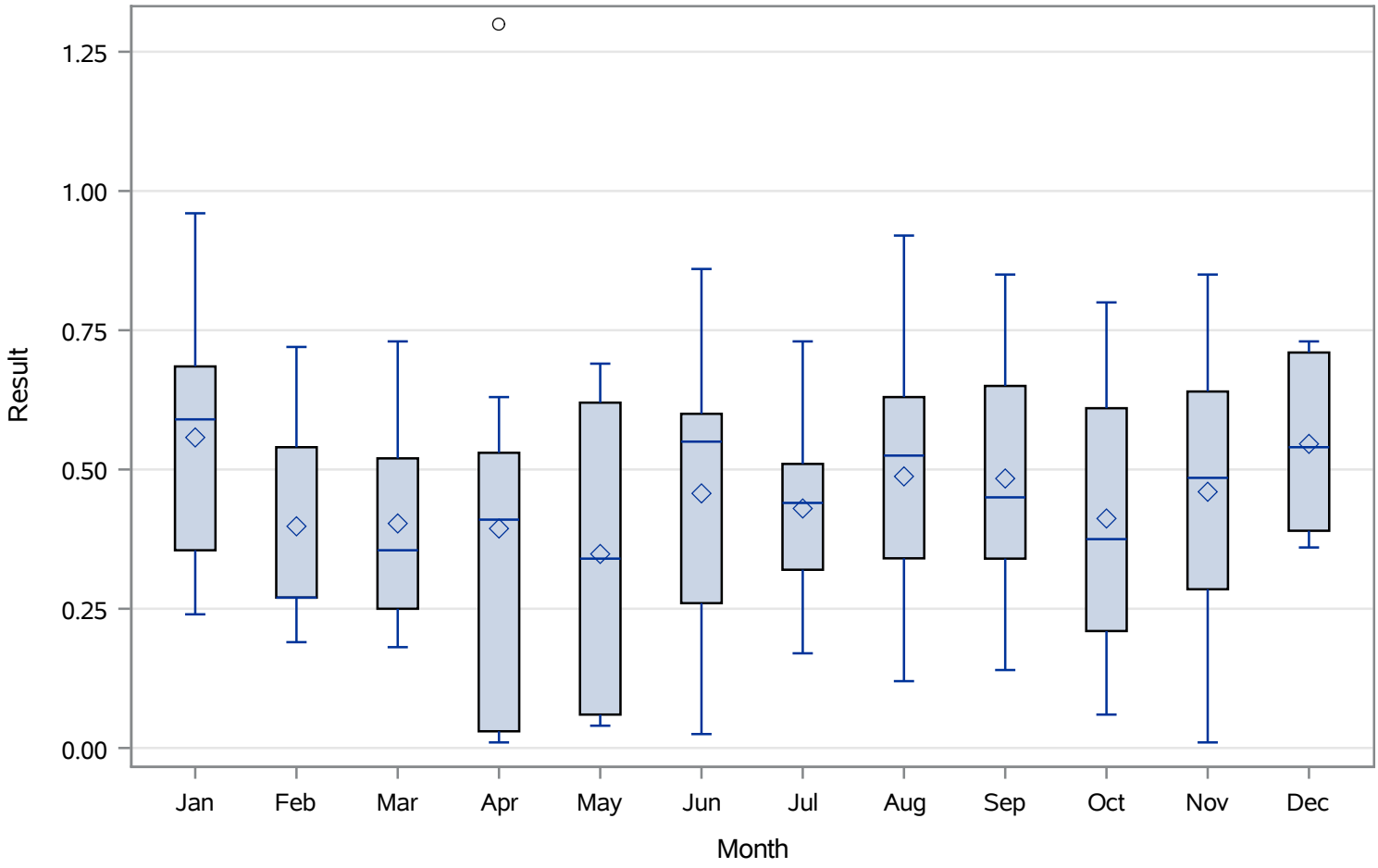


Little Manatee River

LITTLE MANATEE RIVER NEAR WIMAUMA FL

Nutrients (Nitrate-Nitrite) mg/L

Site ID = 112WRD 02300500

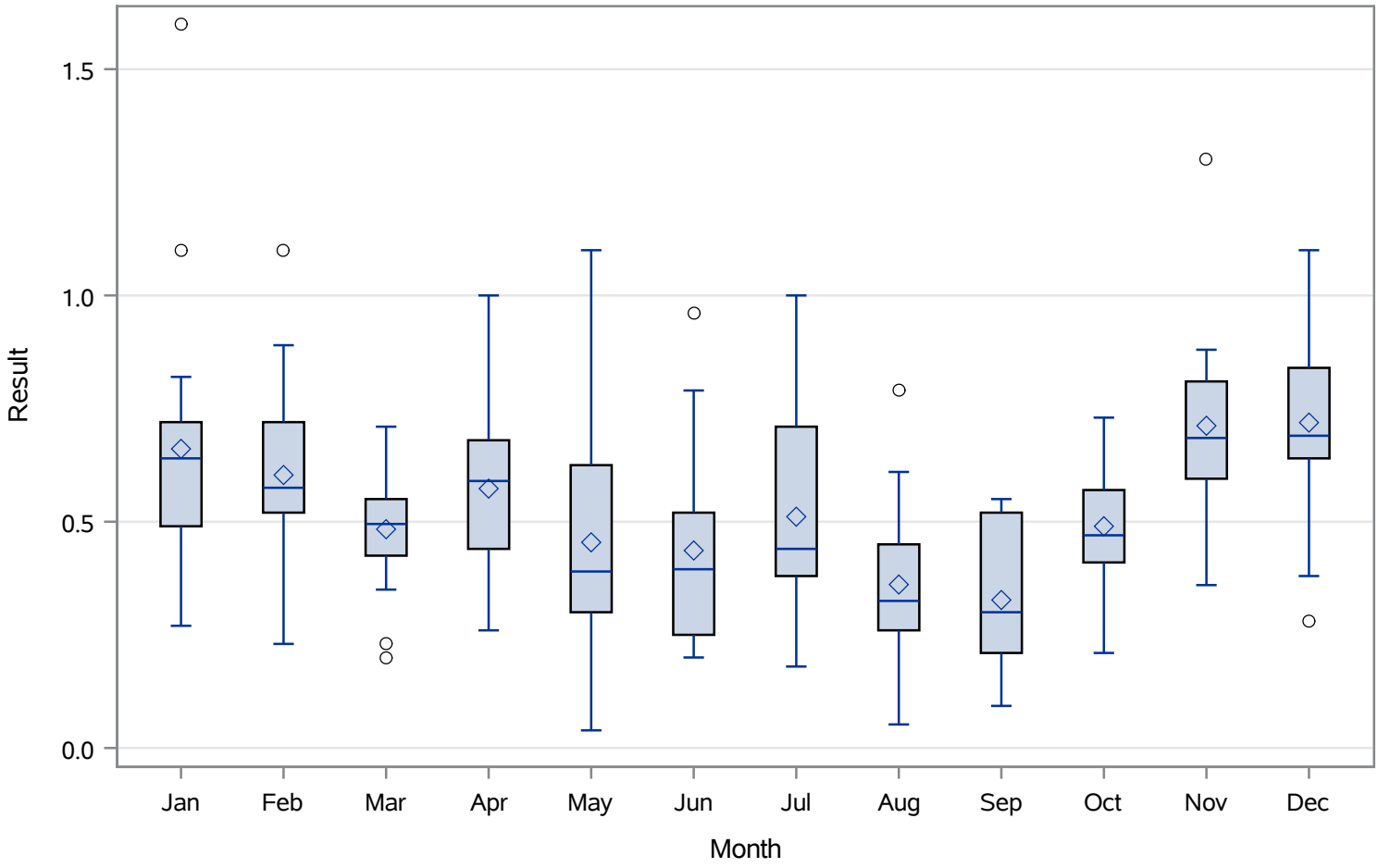


Little Manatee River

LITTLE MANATEE RIVER AT US HWY 301

Nutrients (Nitrate-Nitrite) mg/L

Site ID = 21FLGW 3555

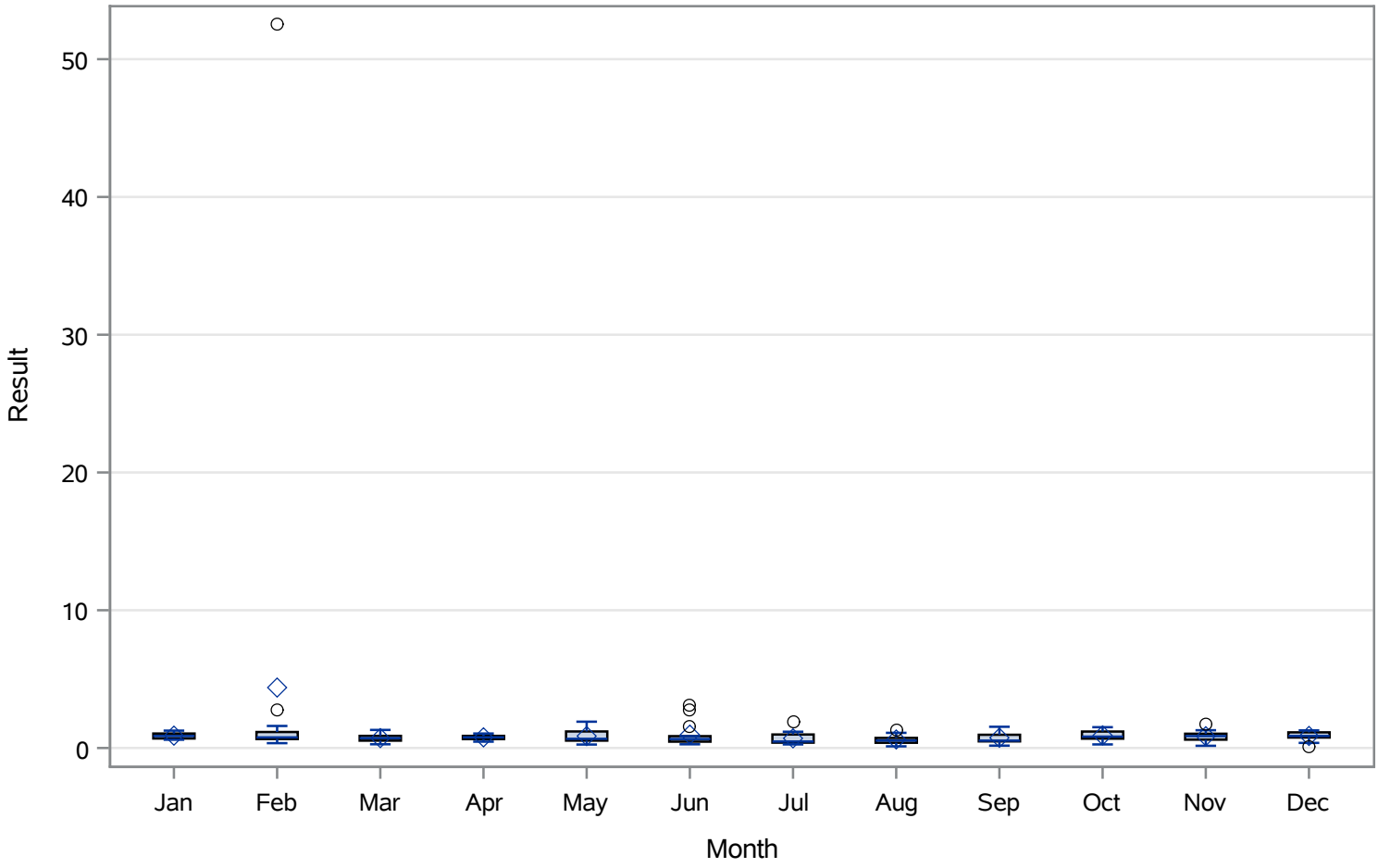


Little Manatee River

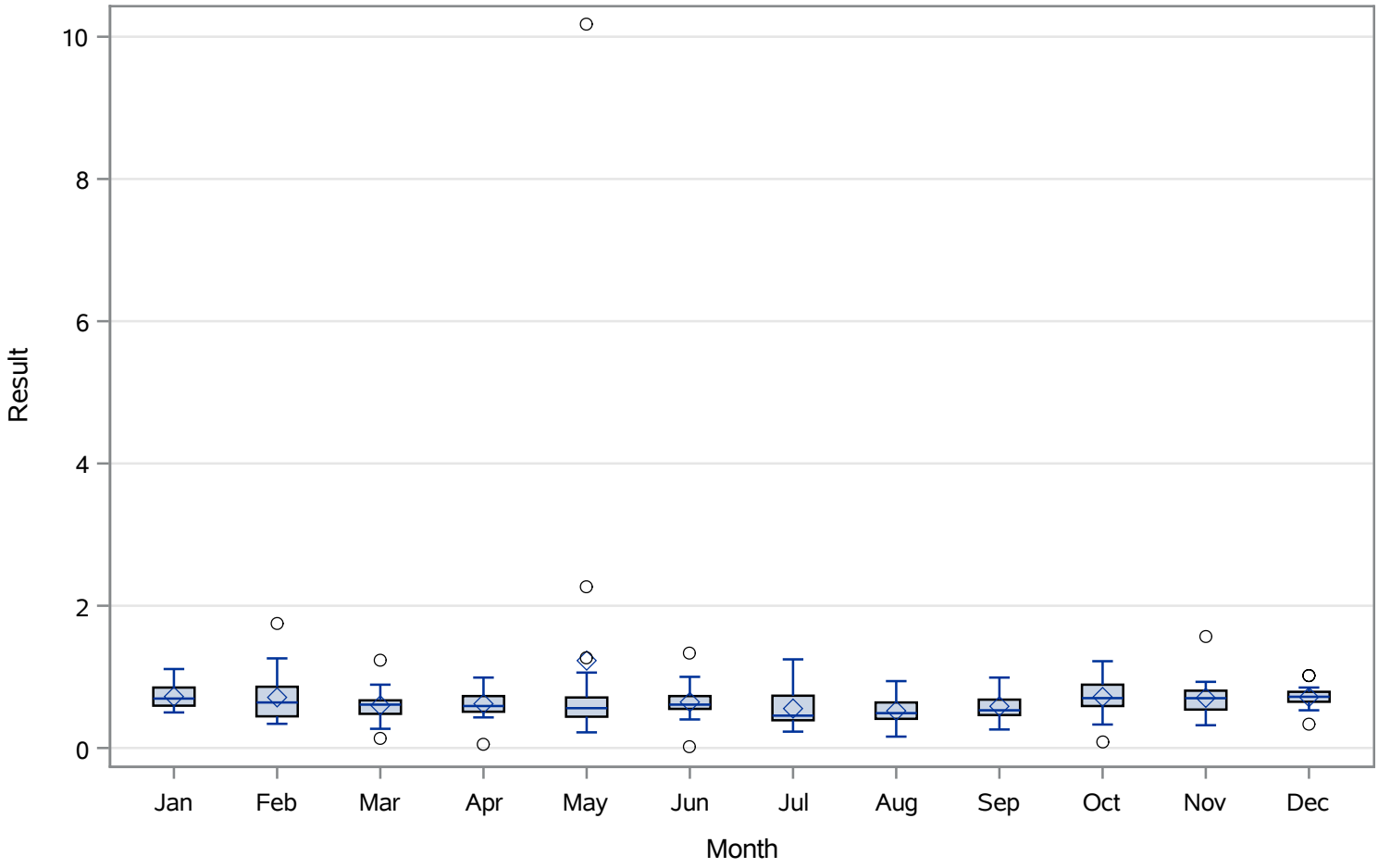
LITTLE MANATEE R AT CR579

Nutrients (Nitrate-Nitrite) mg/L

Site ID = 21FLHILL24010013



Little Manatee River
L MANATEE R BR US 301
Nutrients (Nitrate-Nitrite) mg/L
Site ID = 21FLHILL24010100

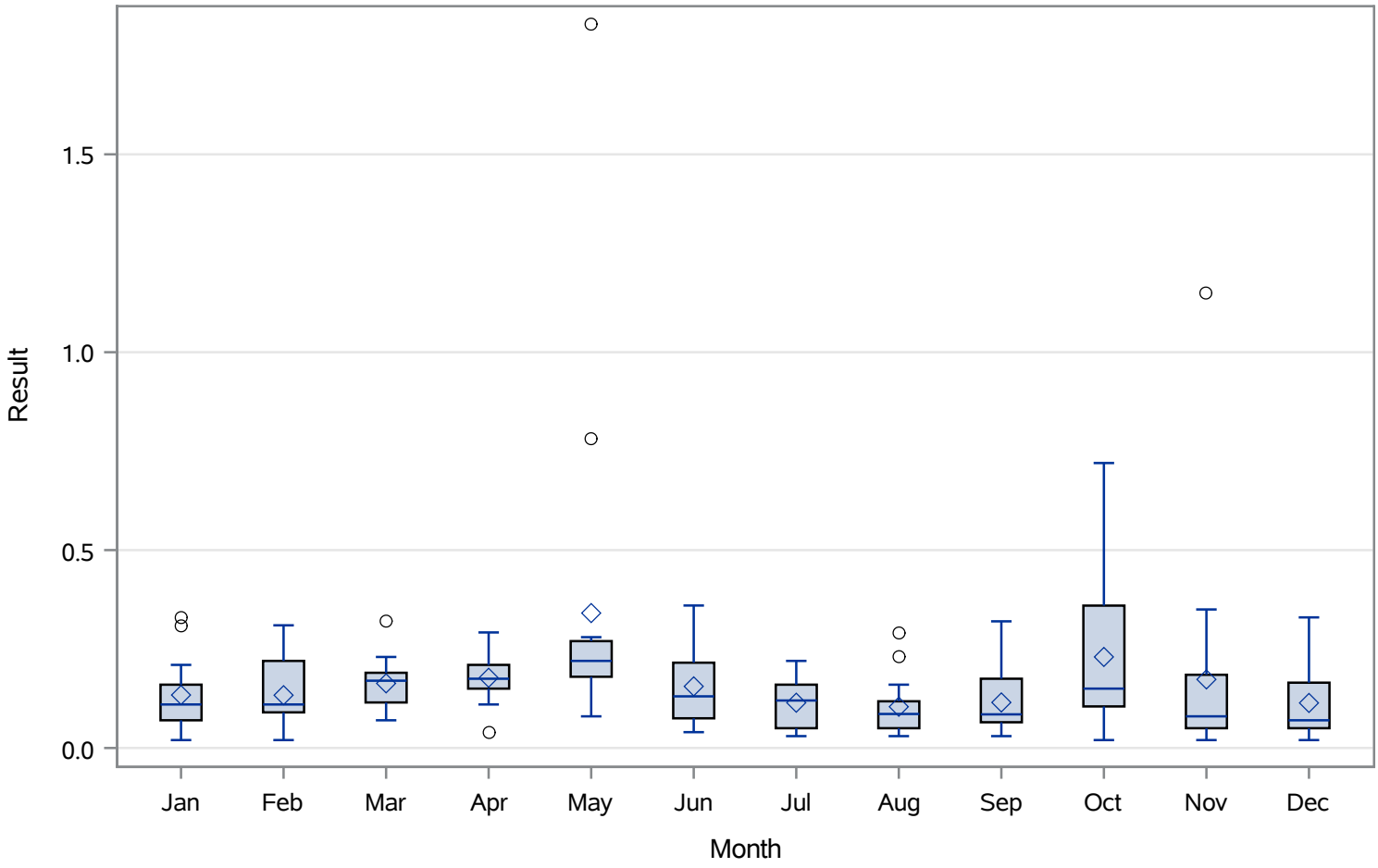


Little Manatee River

LITTLE MANATEE R AT SR #674

Nutrients (Nitrate-Nitrite) mg/L

Site ID = 21FLHILL24010110

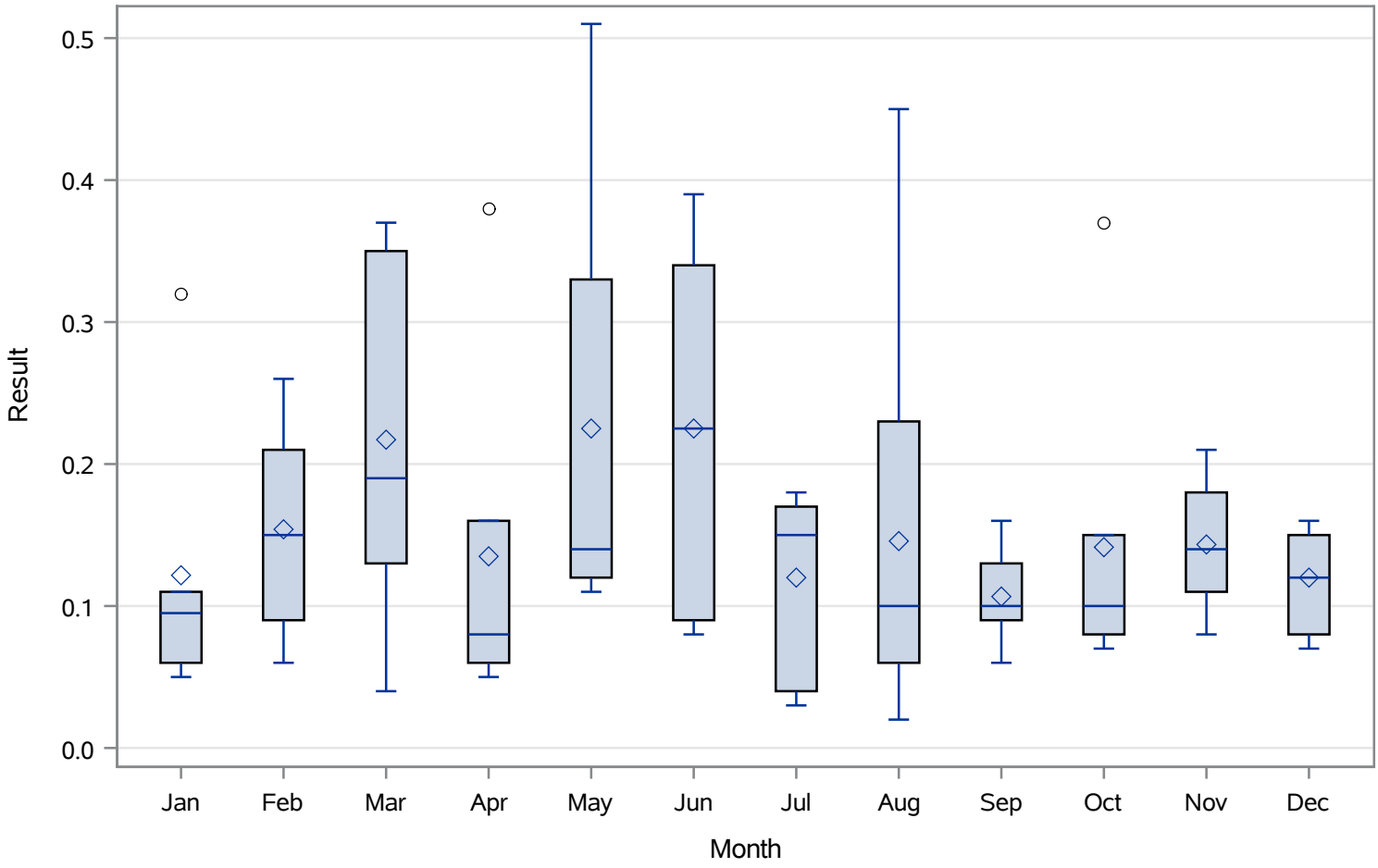


Little Manatee River

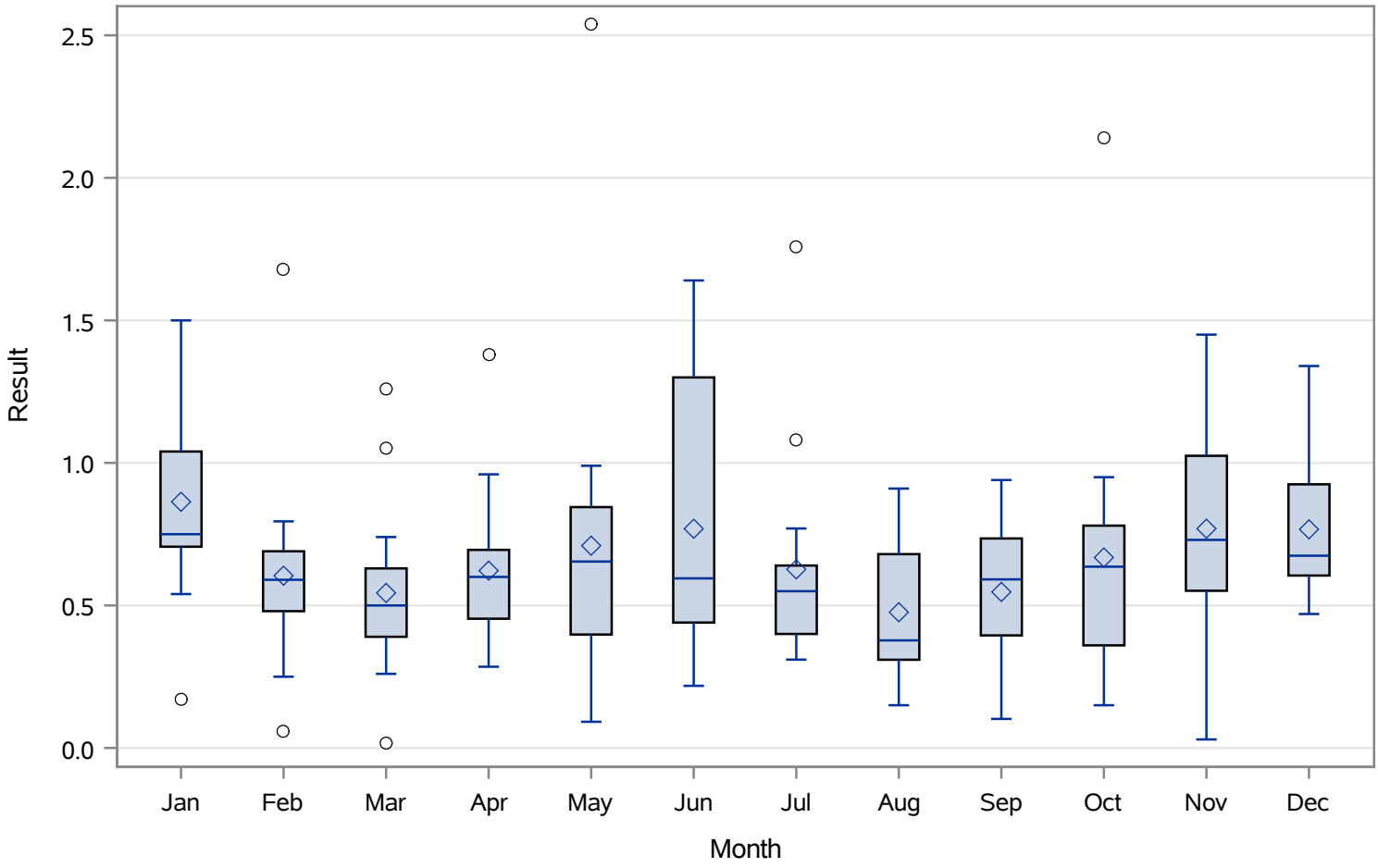
Little Manatee R. at SR674

Nutrients (Nitrate-Nitrite) mg/L

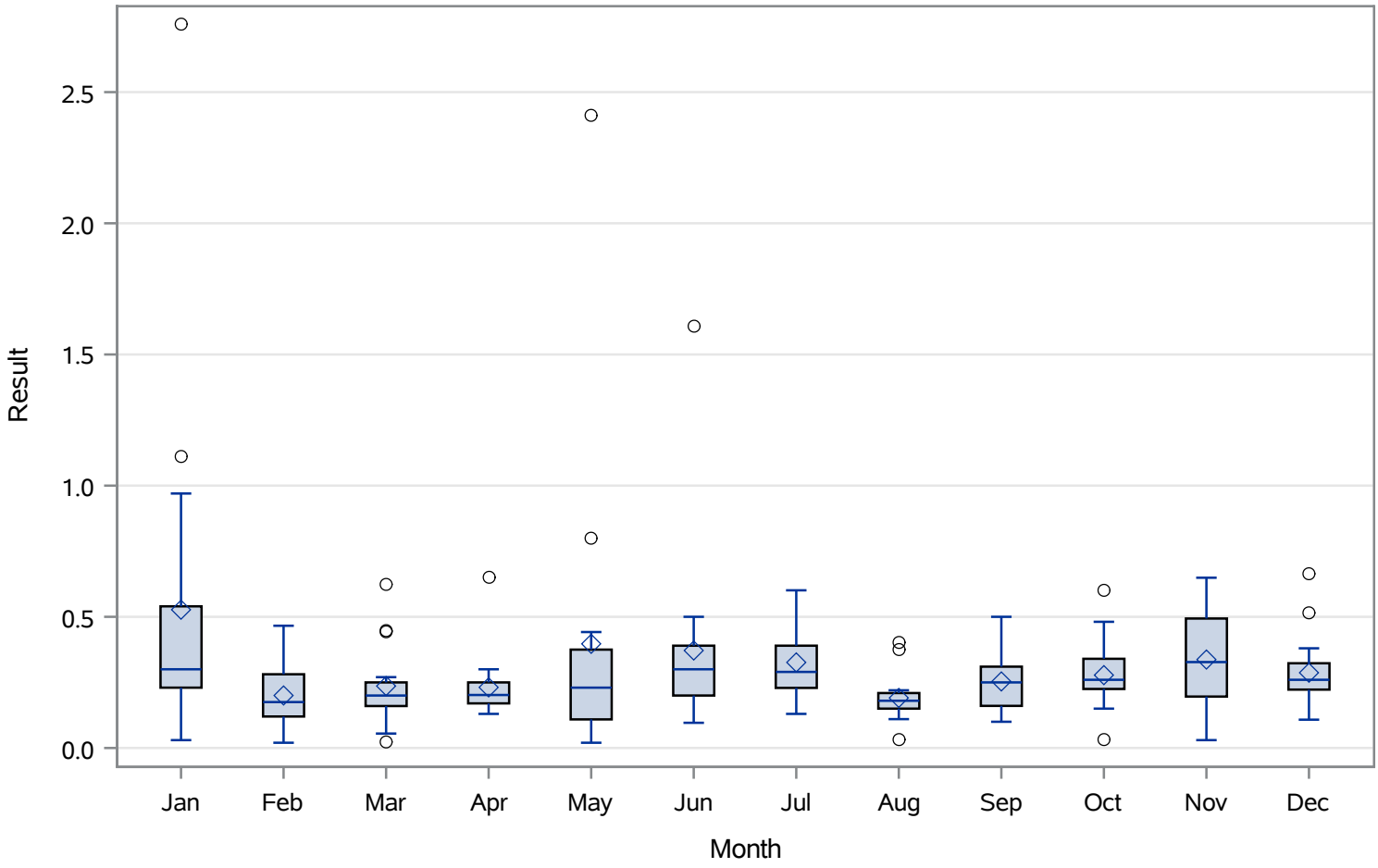
Site ID = 21FLIMCALM674



Little Manatee River
D1
Nutrients (Nitrate-Nitrite) mg/L
Site ID = 21FLMANAD1



Little Manatee River
D3
Nutrients (Nitrate-Nitrite) mg/L
Site ID = 21FLMANAD3

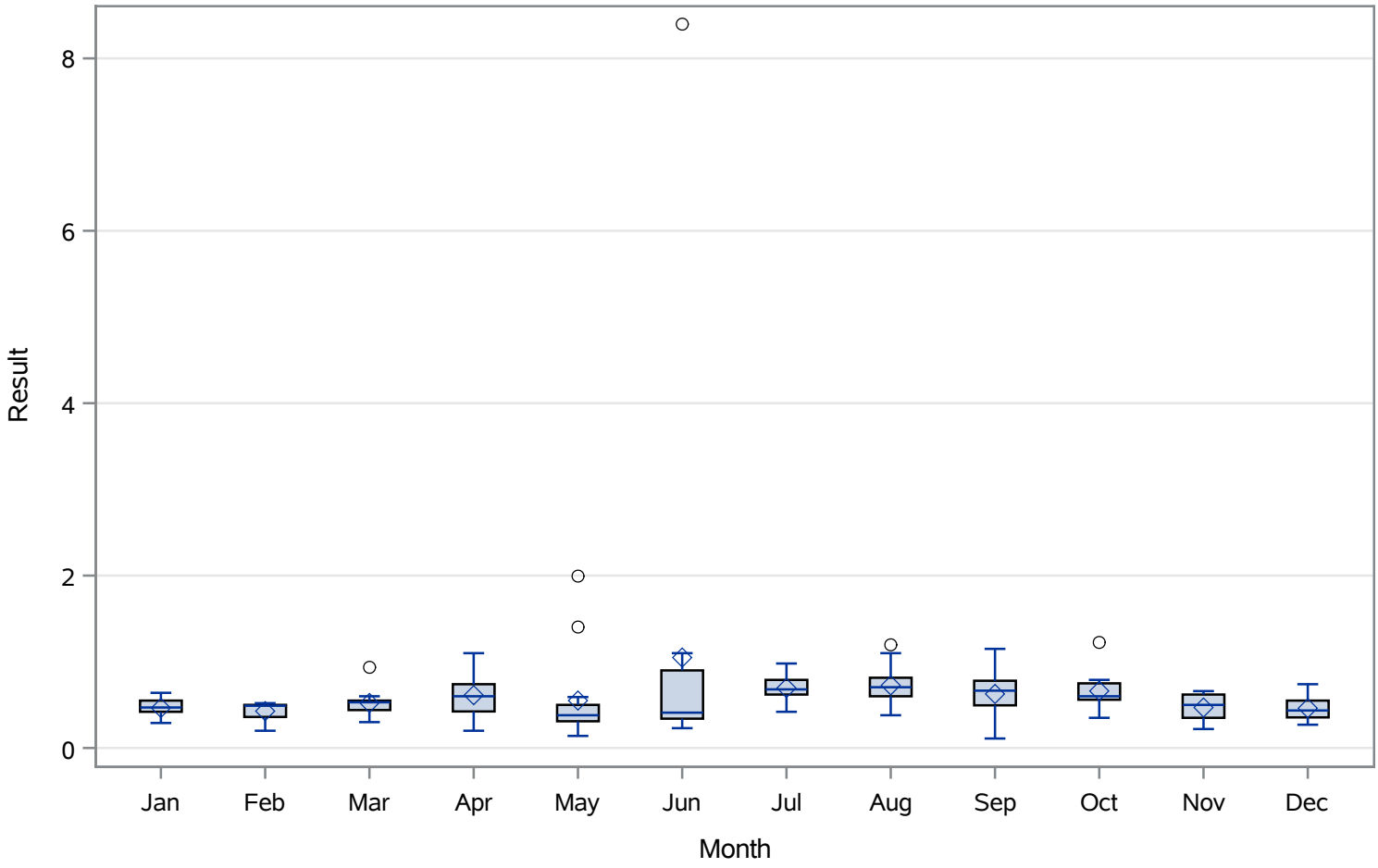


Little Manatee River

LITTLE MANATEE RIVER NEAR FT. LONESOME FL

Phosphorus Total as P (mg/L) mg/L

Site ID = 112WRD 02300100

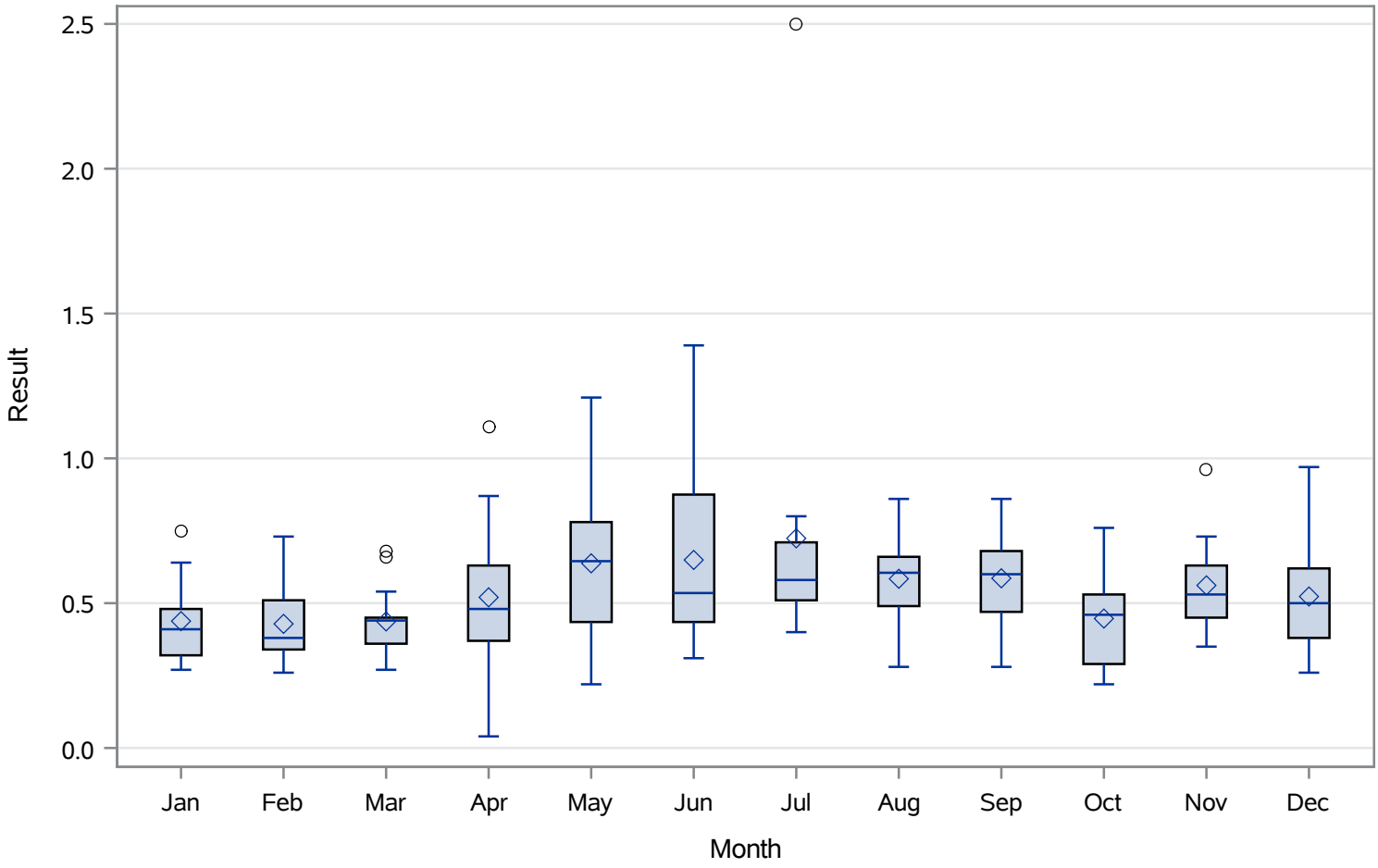


Little Manatee River

SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL

Phosphorus Total as P (mg/L) mg/L

Site ID = 112WRD 02300200

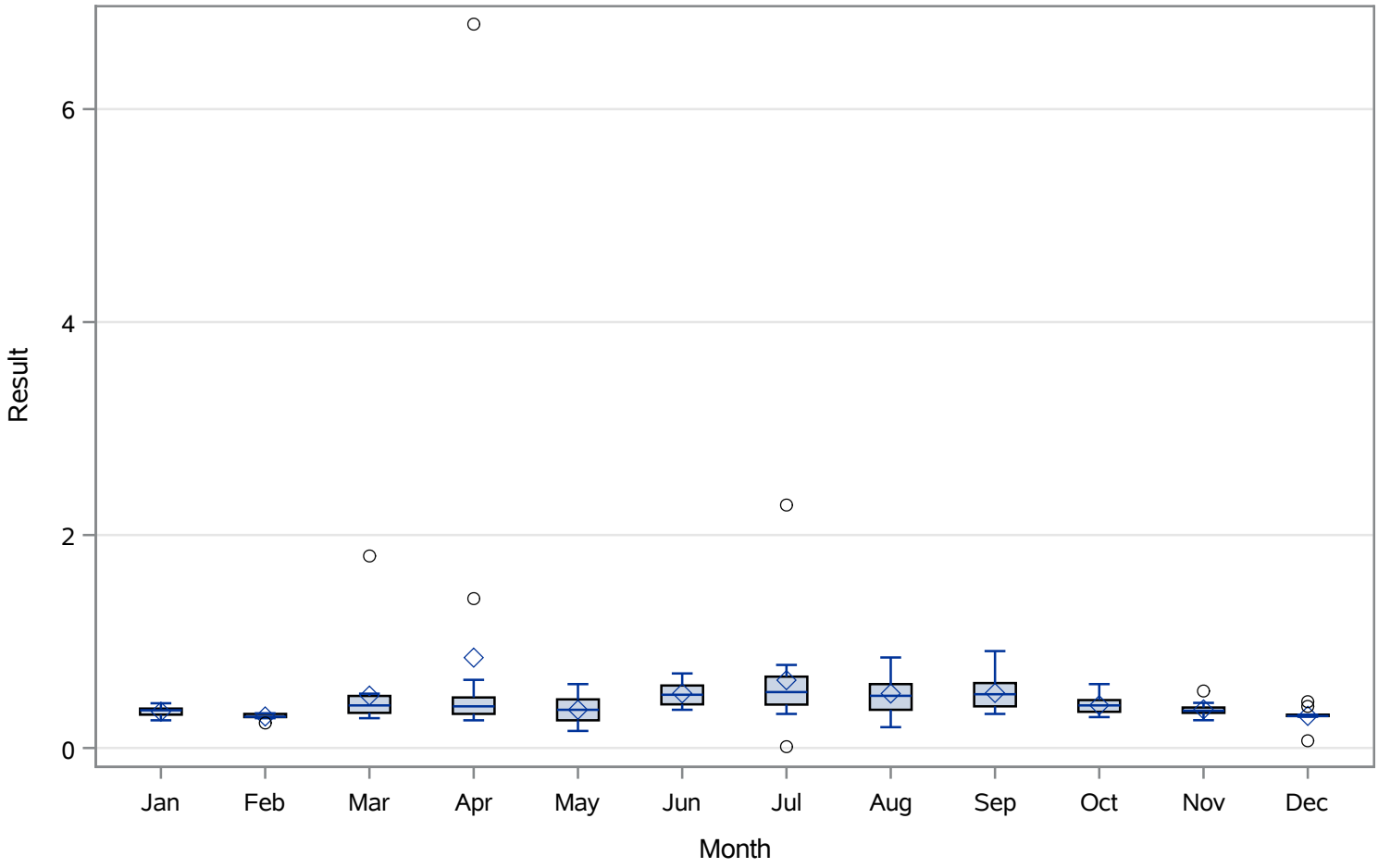


Little Manatee River

LITTLE MANATEE RIVER NEAR WIMAUMA FL

Phosphorus Total as P (mg/L) mg/L

Site ID = 112WRD 02300500

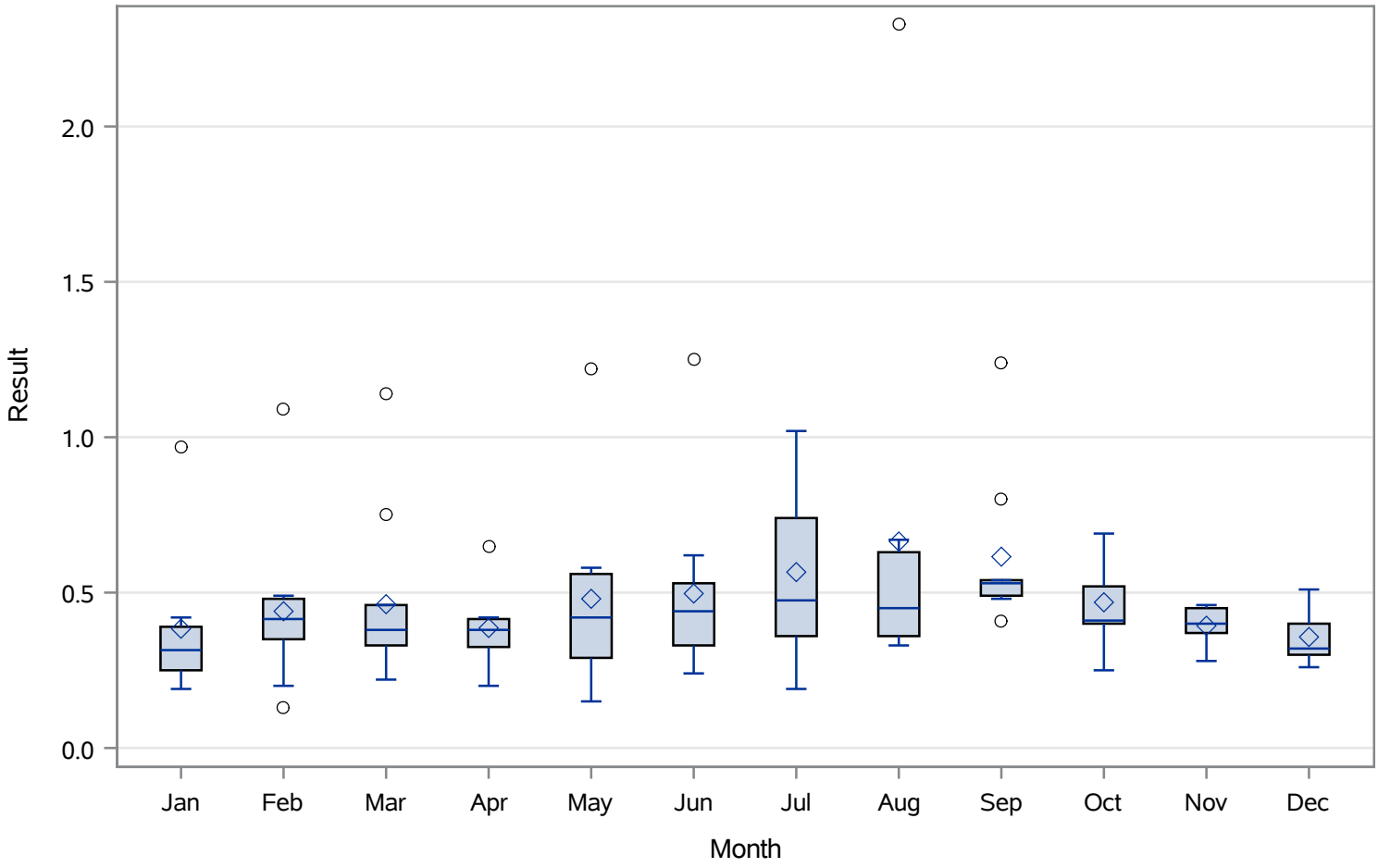


Little Manatee River

L MANATEE R BR US 301

Phosphorus Total as P (mg/L) mg/L

Site ID = 21FLA 24010100

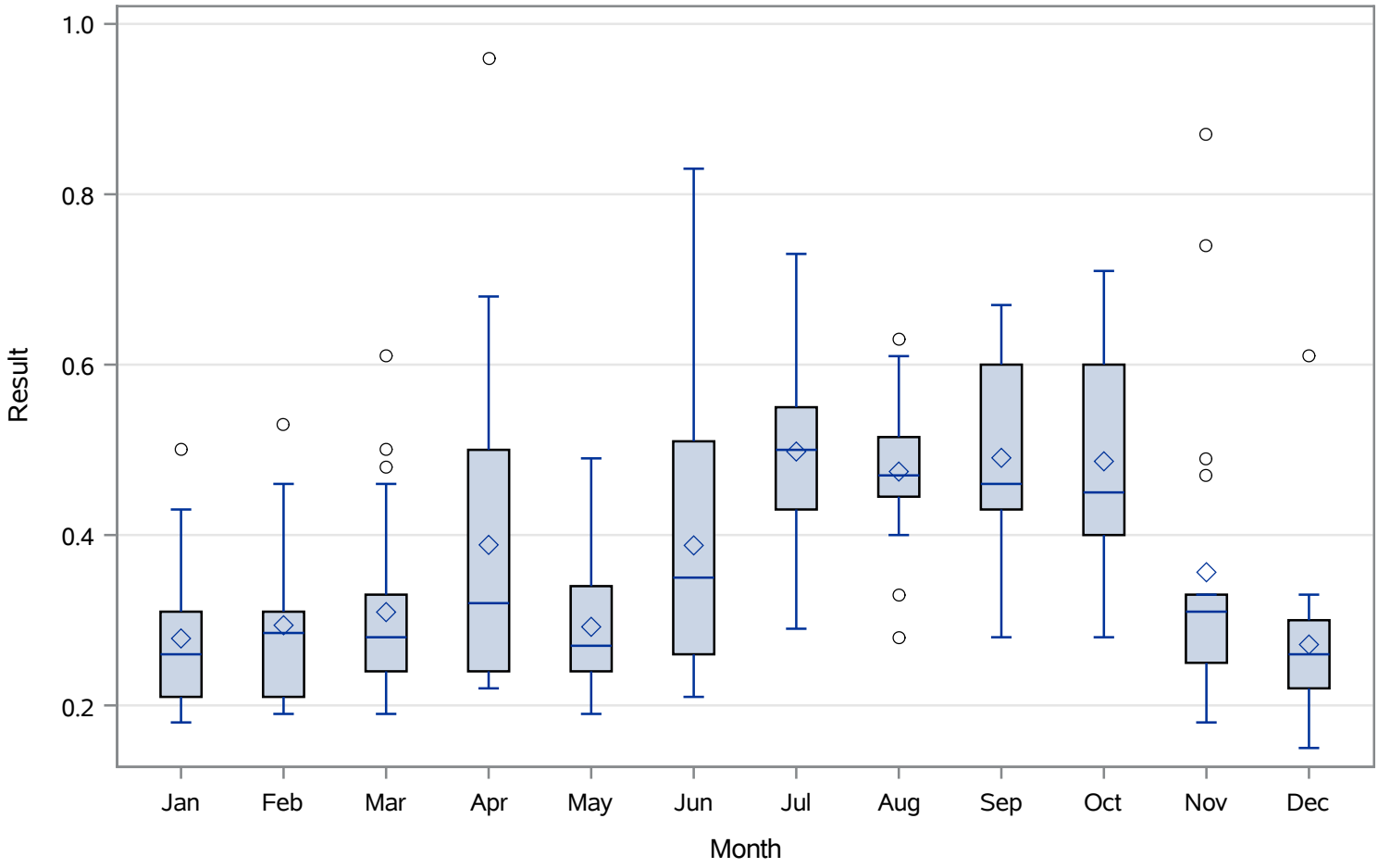


Little Manatee River

LITTLE MANATEE RIVER AT US HWY 301

Phosphorus Total as P (mg/L) mg/L

Site ID = 21FLGW 3555

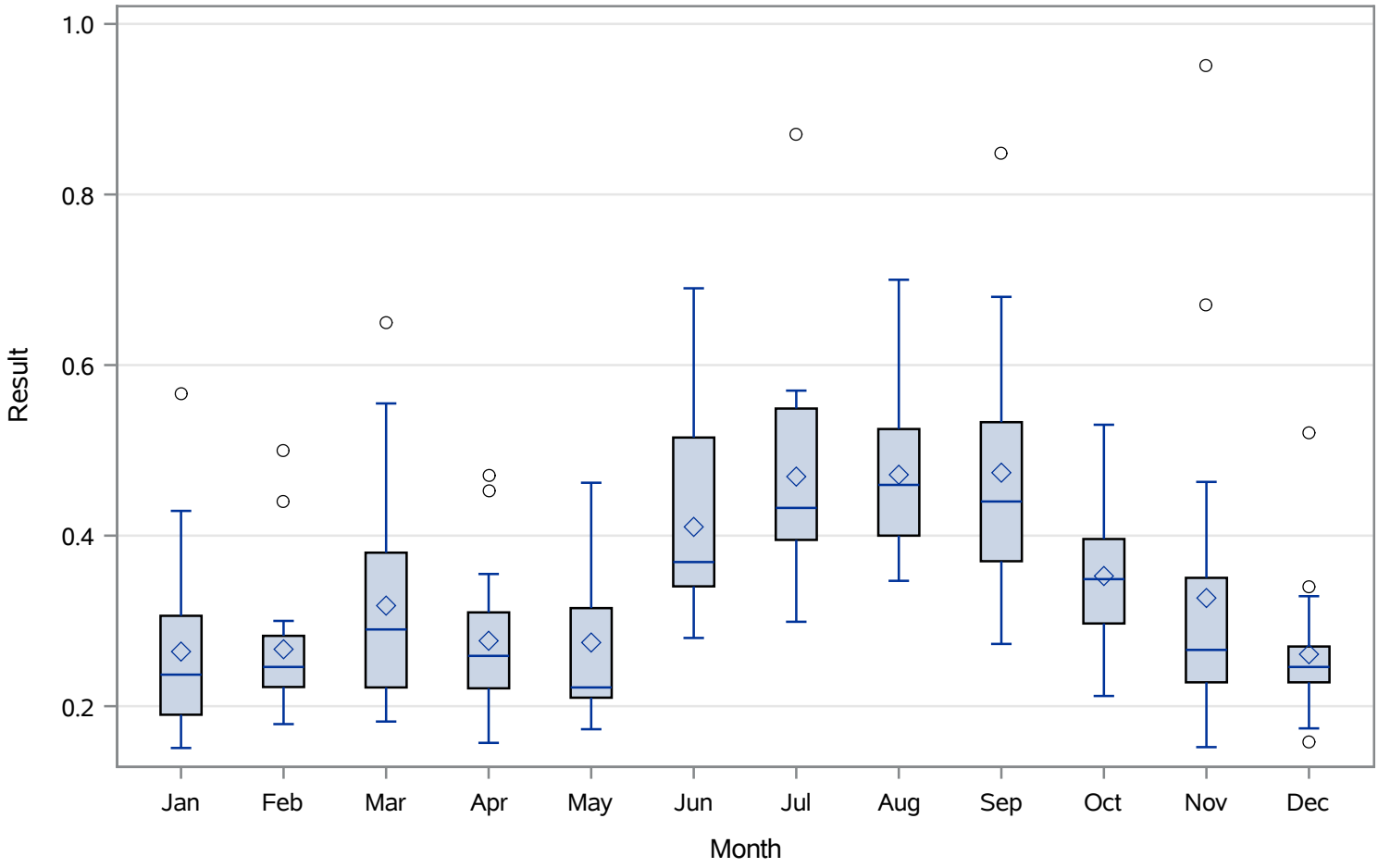


Little Manatee River

Little Manatee River at US 301 bridge

Phosphorus Total as P (mg/L) mg/L

Site ID = 21FLHILL113

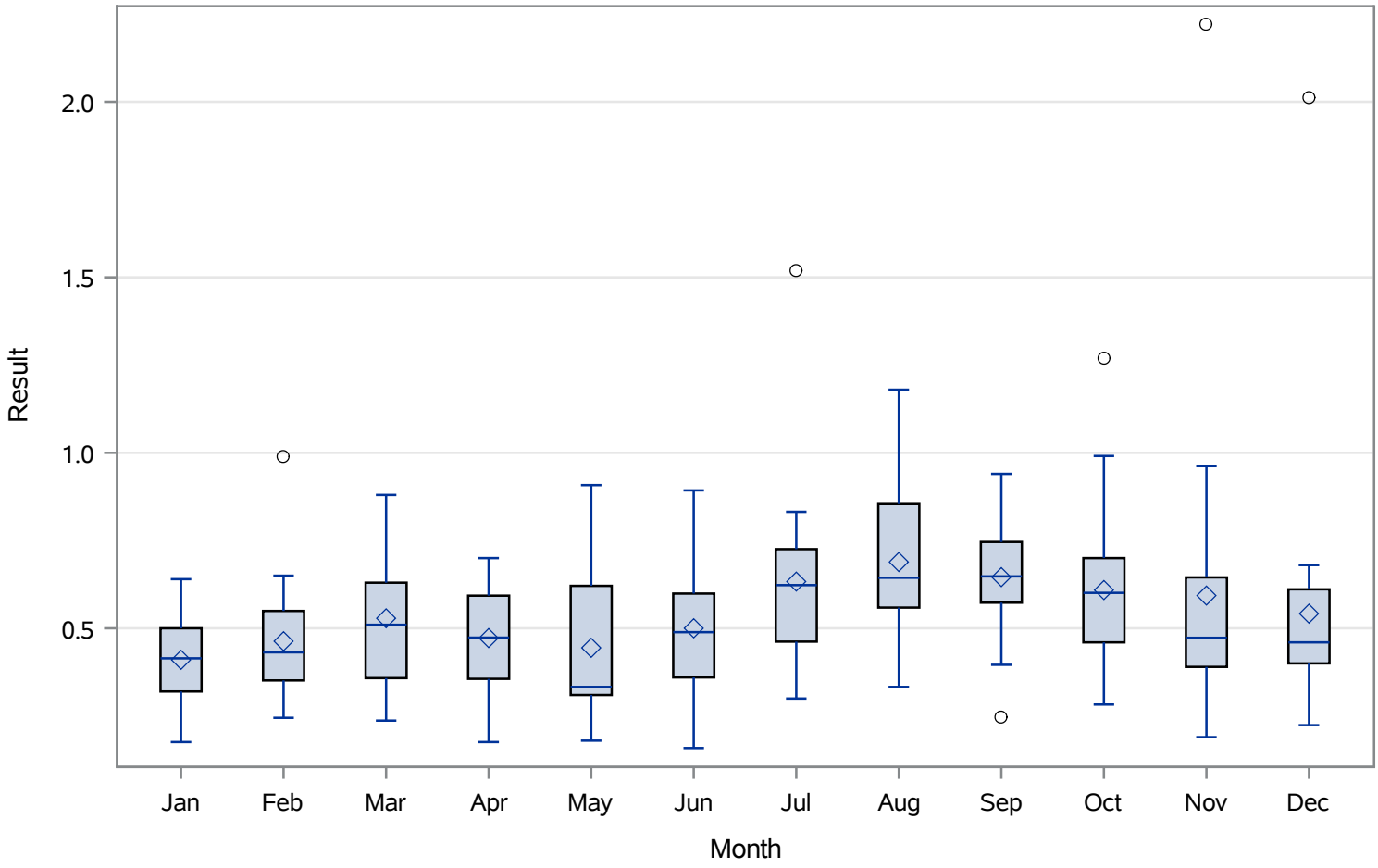


Little Manatee River

Little Manatee River at SR 674

Phosphorus Total as P (mg/L) mg/L

Site ID = 21FLHILL129

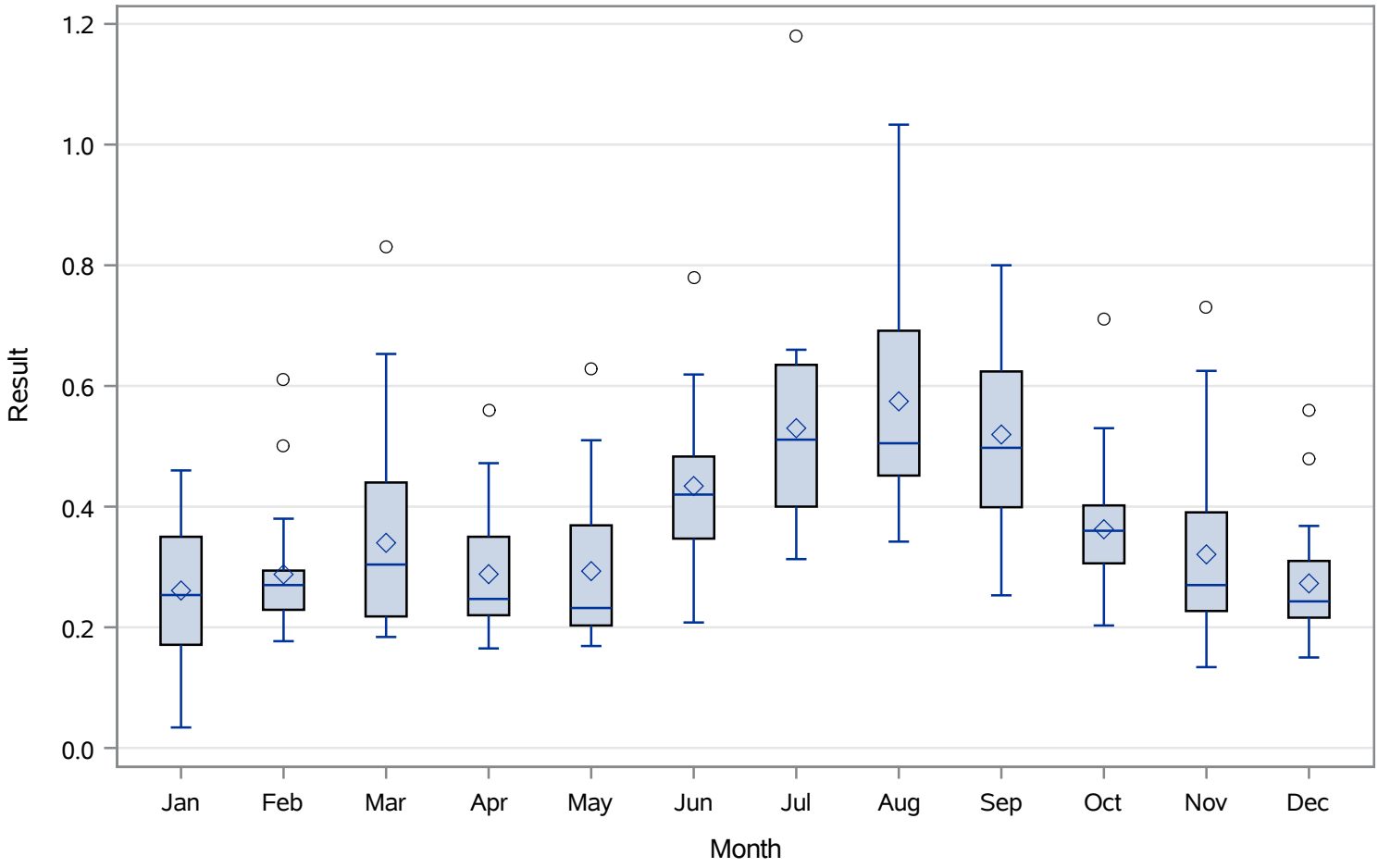


Little Manatee River

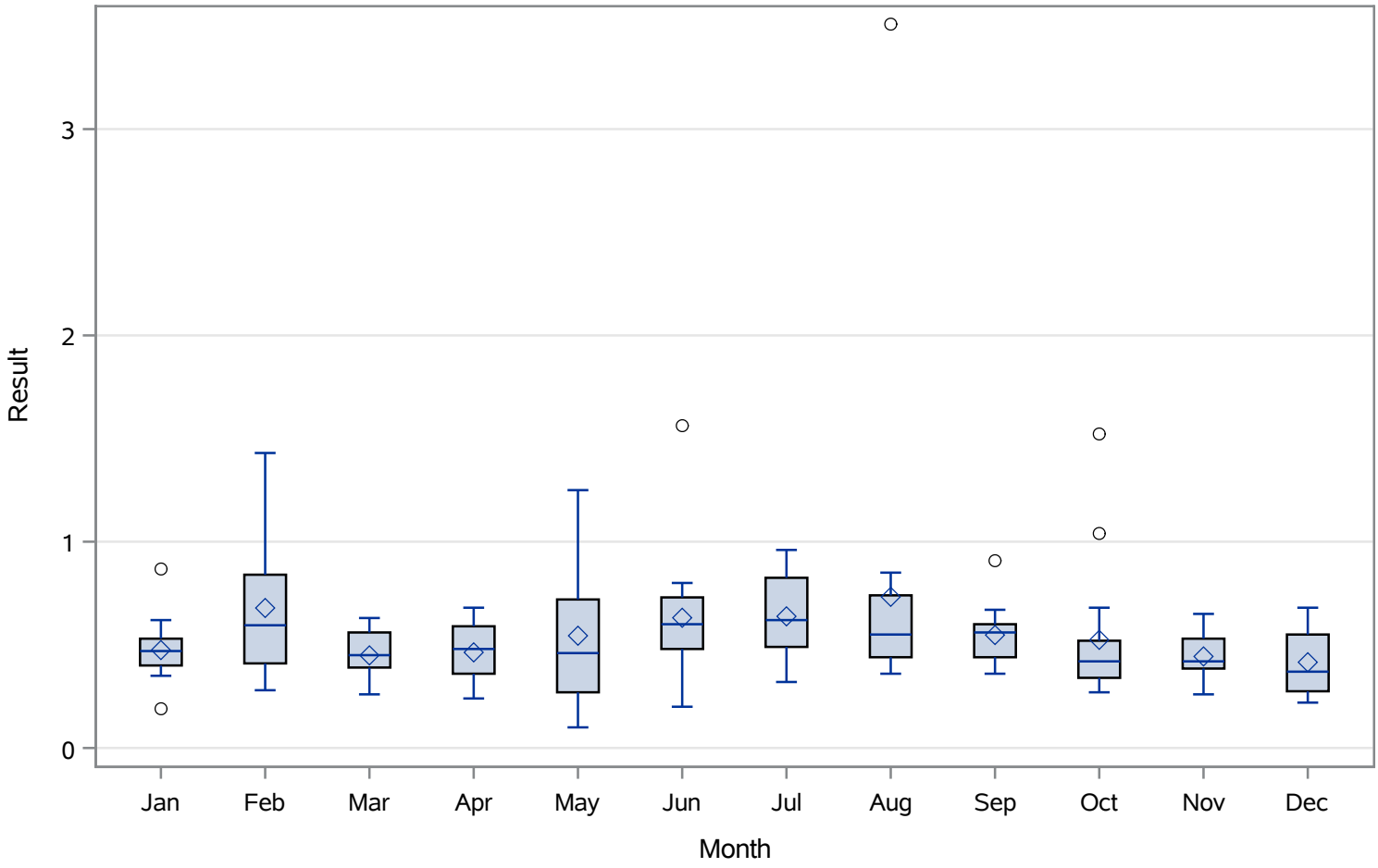
Little Manatee River at CR 579

Phosphorus Total as P (mg/L) mg/L

Site ID = 21FLHILL140



Little Manatee River
LITTLE MANATEE R AT CR579
Phosphorus Total as P (mg/L) mg/L
Site ID = 21FLHILL24010013

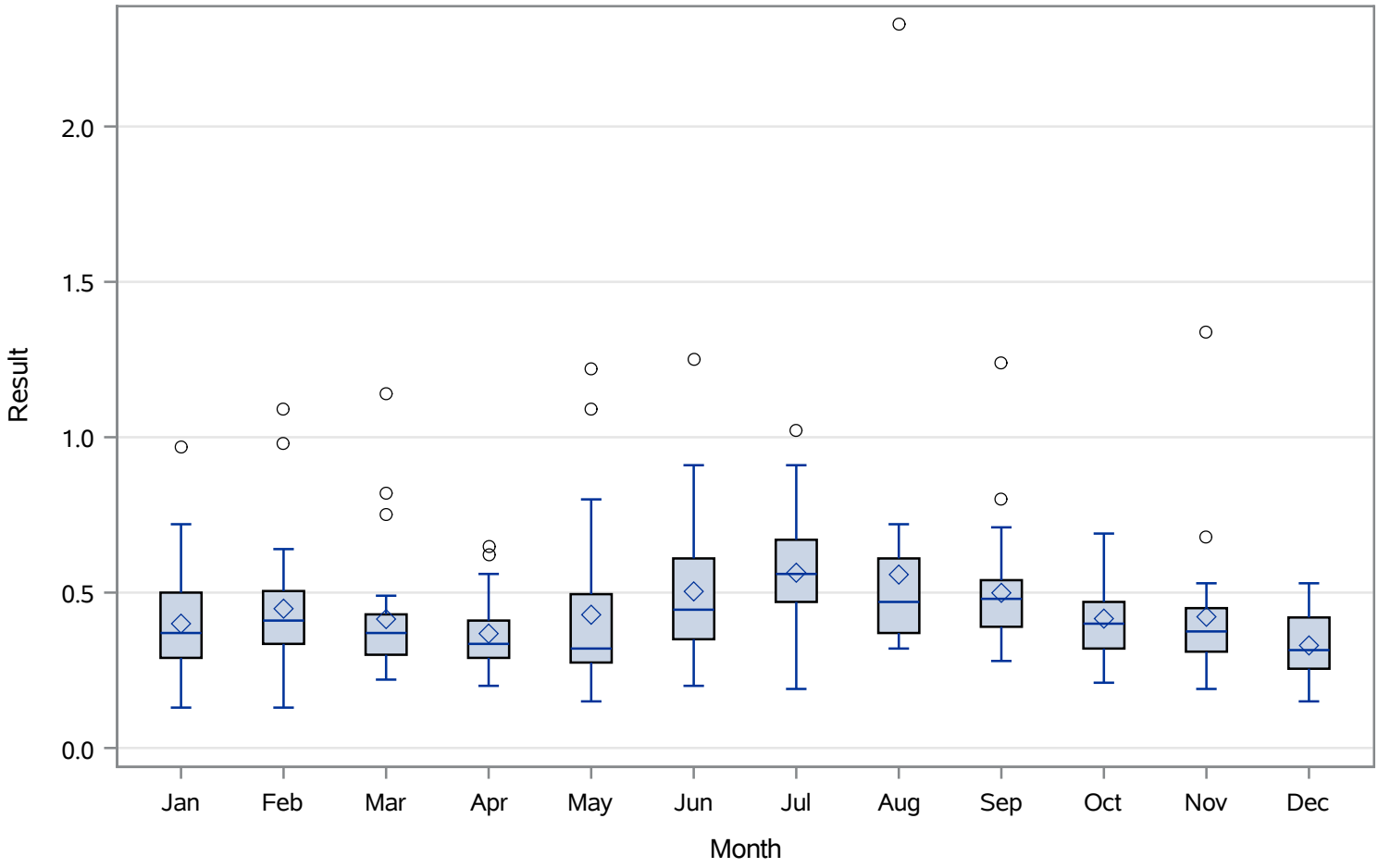


Little Manatee River

L MANATEE R BR US 301

Phosphorus Total as P (mg/L) mg/L

Site ID = 21FLHILL24010100

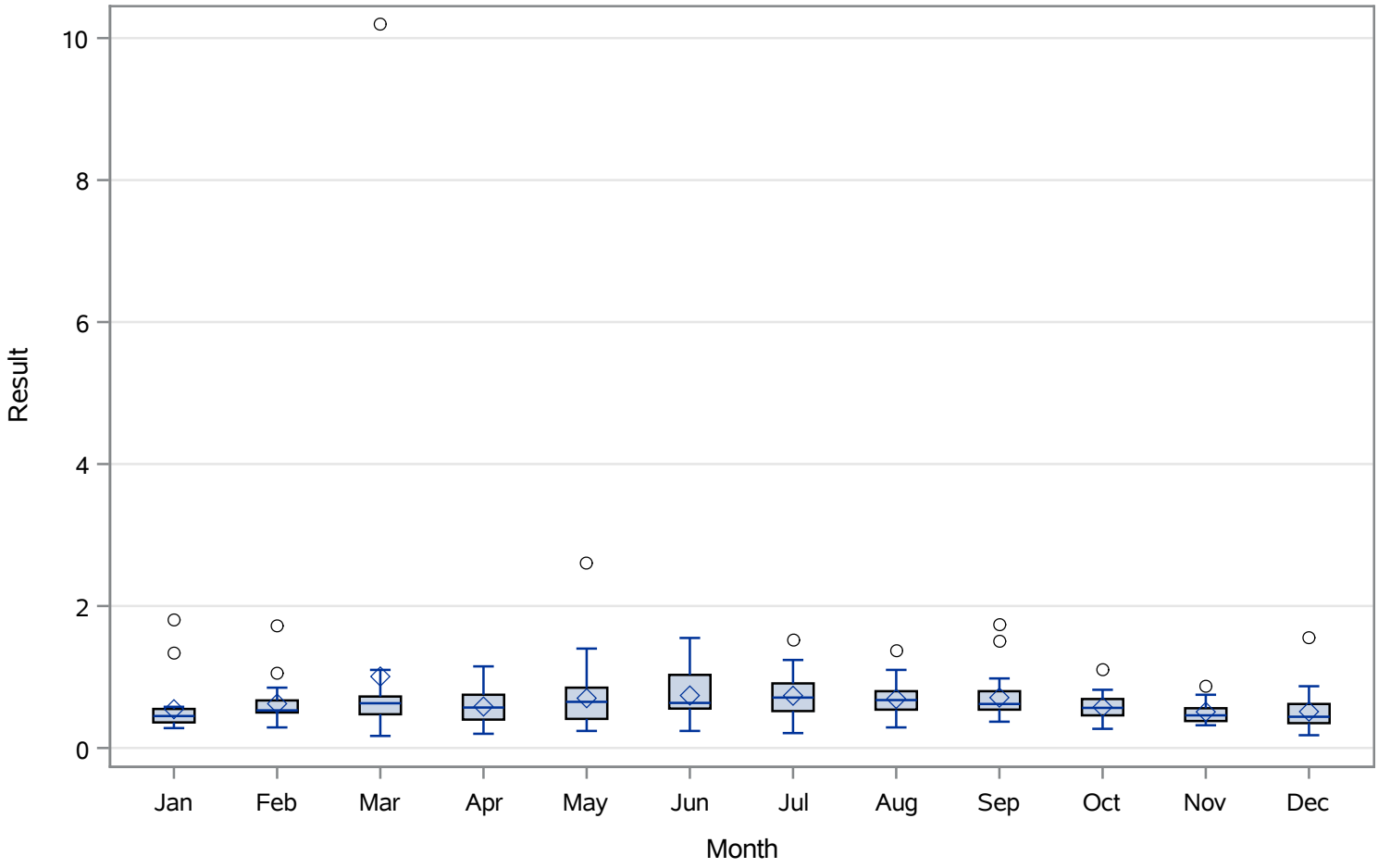


Little Manatee River

LITTLE MANATEE R AT SR #674

Phosphorus Total as P (mg/L) mg/L

Site ID = 21FLHILL24010110

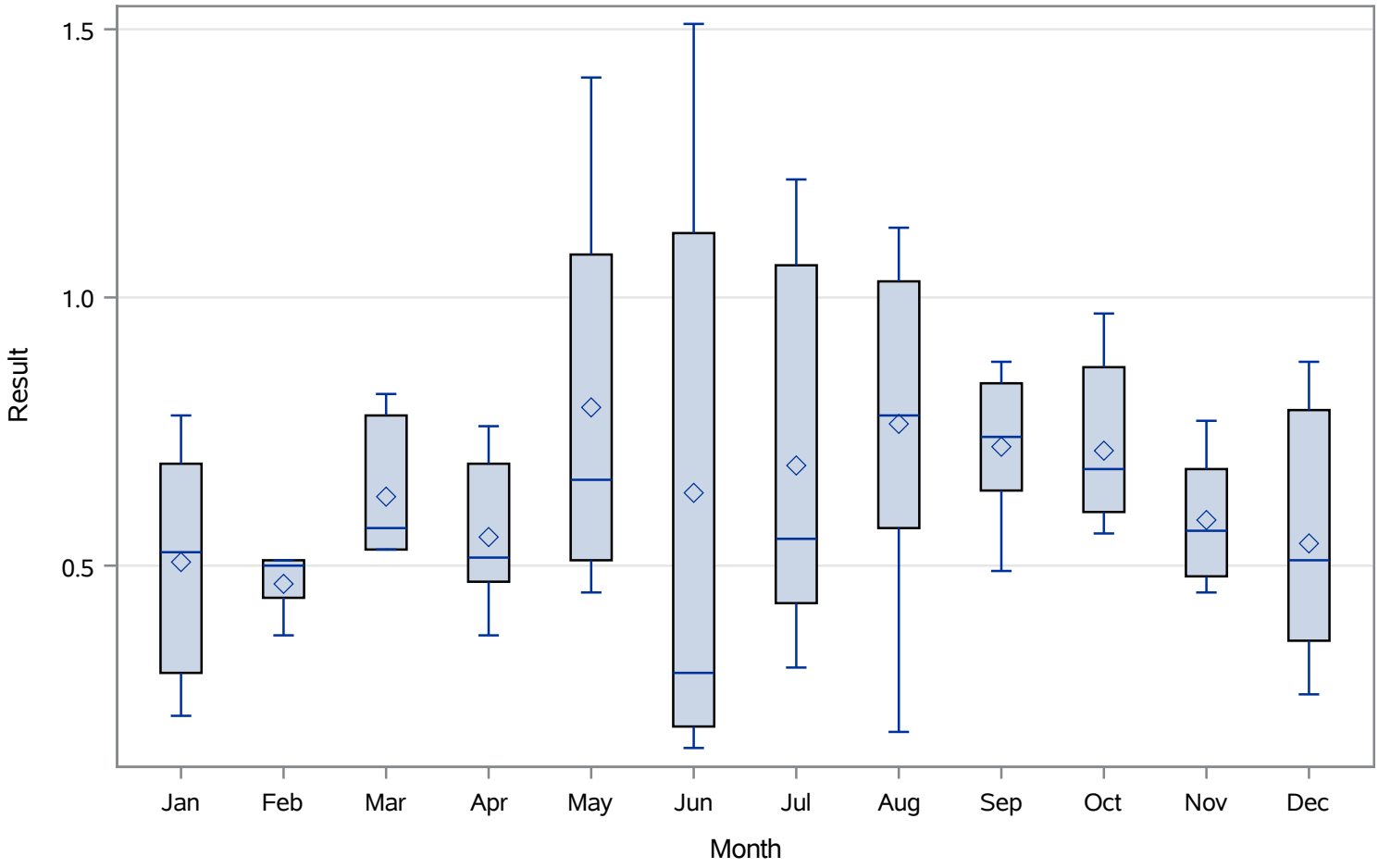


Little Manatee River

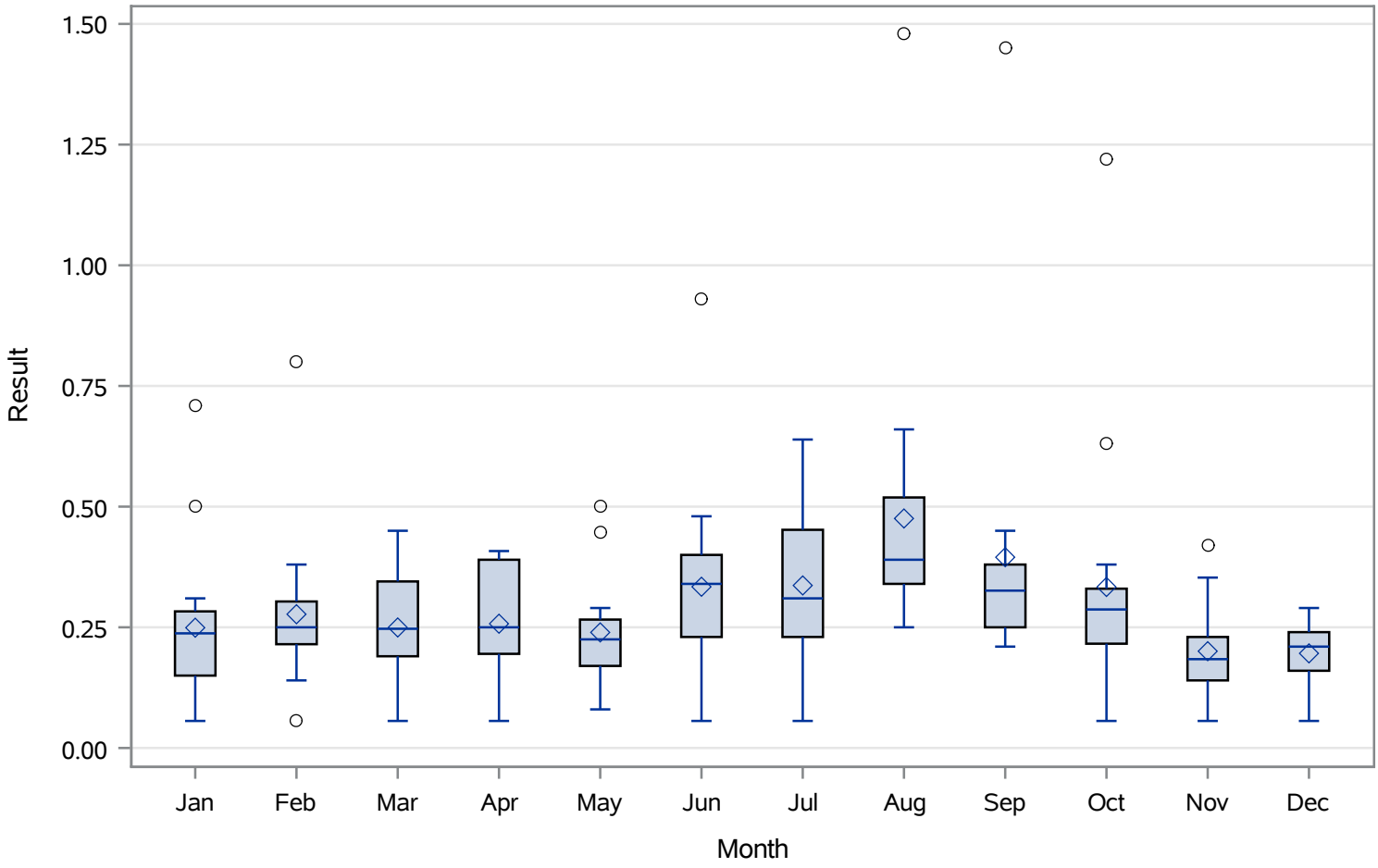
Little Manatee R. at SR674

Phosphorus Total as P (mg/L) mg/L

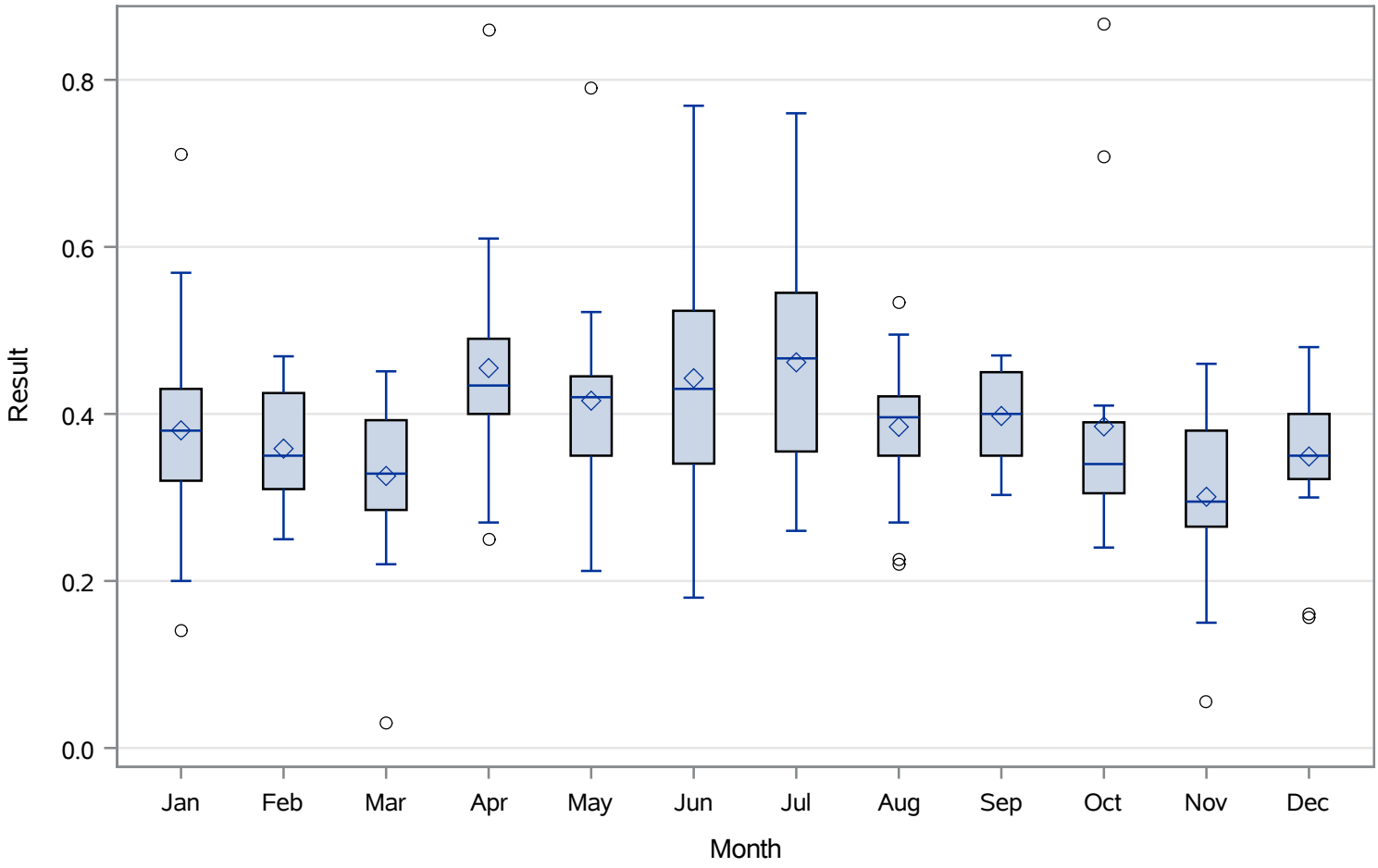
Site ID = 21FLIMCALM674



Little Manatee River
D1
Phosphorus Total as P (mg/L) mg/L
Site ID = 21FLMANAD1



Little Manatee River
D3
Phosphorus Total as P (mg/L) mg/L
Site ID = 21FLMANAD3

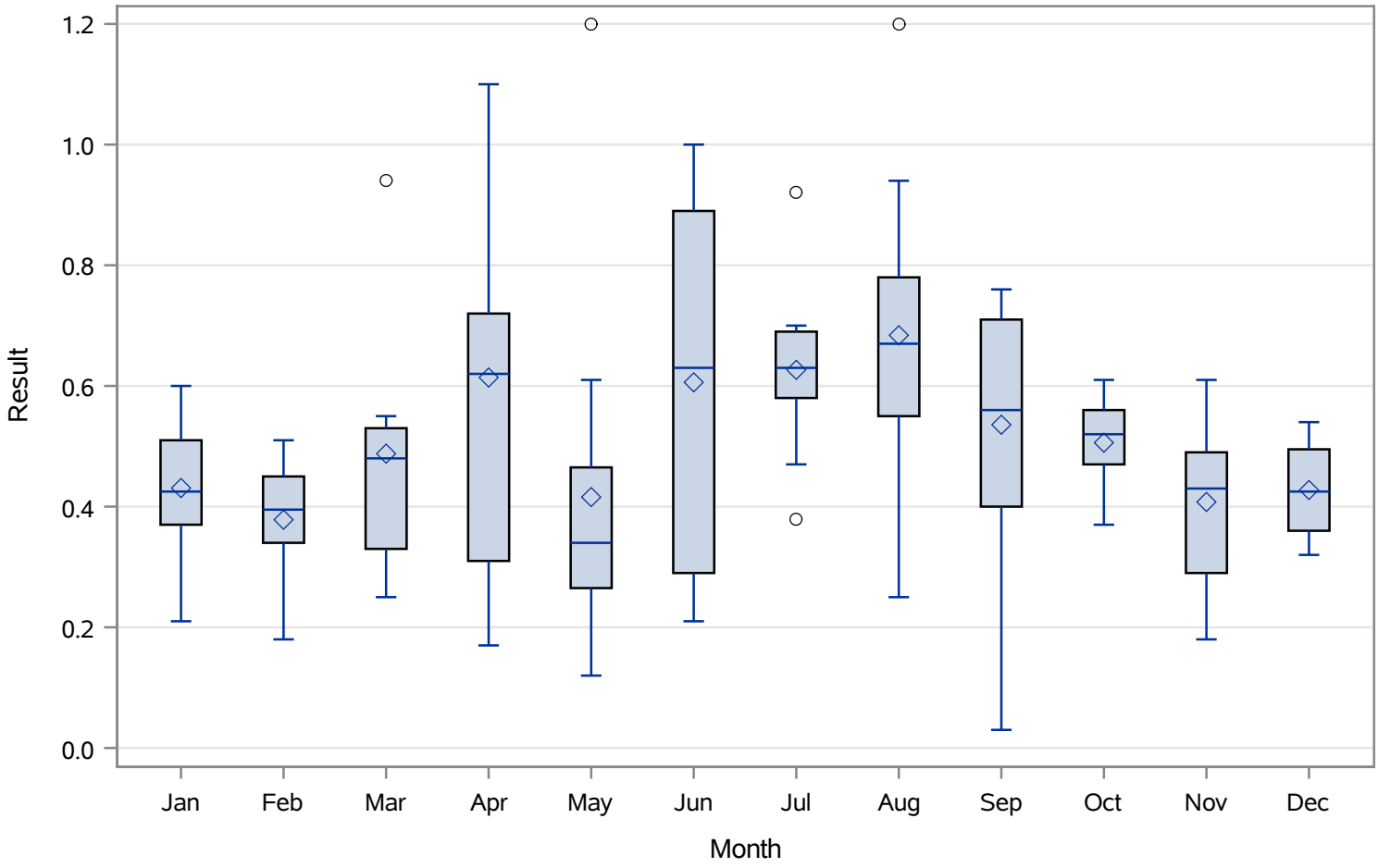


Little Manatee River

LITTLE MANATEE RIVER NEAR FT. LONESOME FL

Phosphorus in Total Orthophosphate as P (mg/L) mg/L

Site ID = 112WRD 02300100

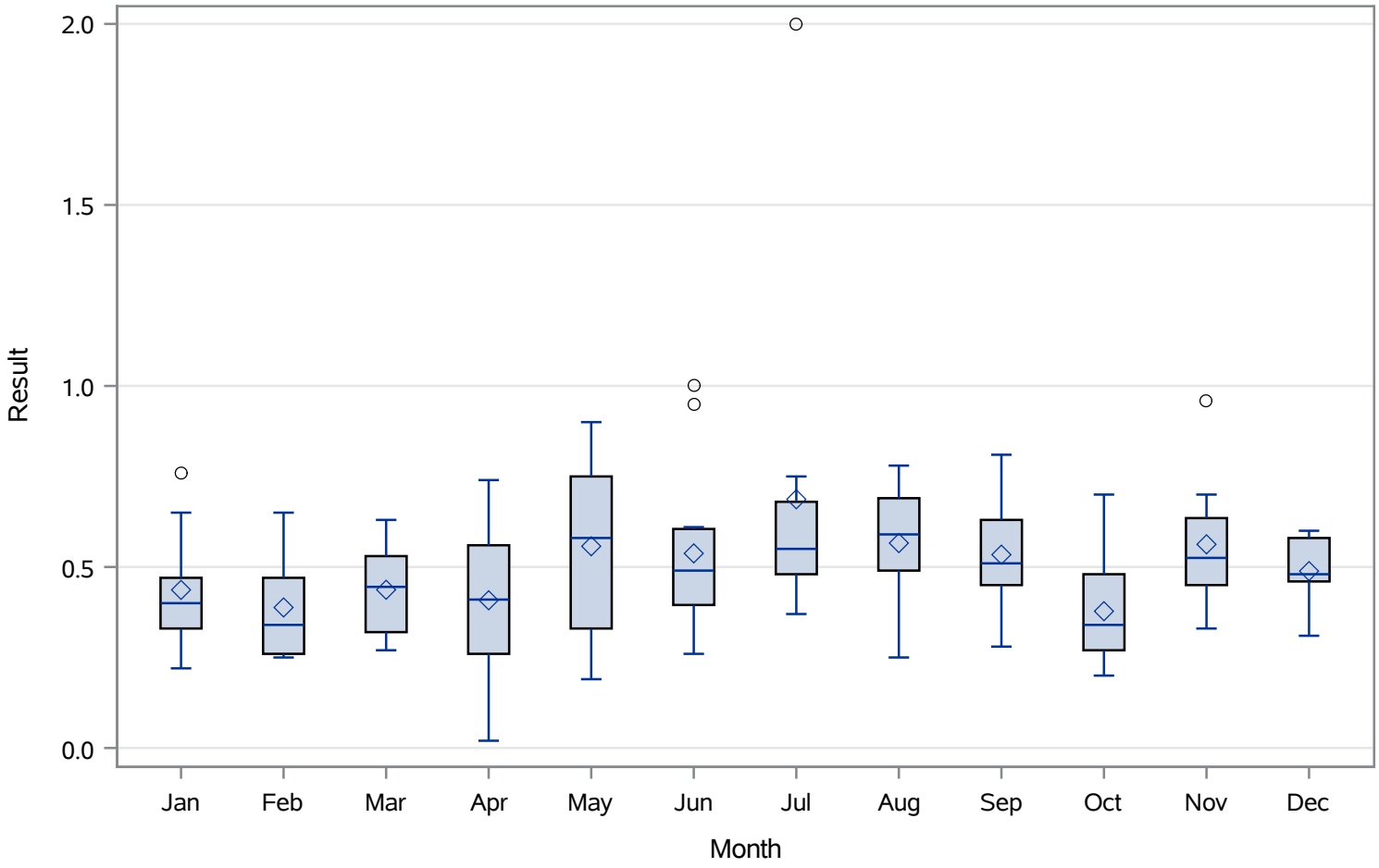


Little Manatee River

SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL

Phosphorus in Total Orthophosphate as P (mg/L) mg/L

Site ID = 112WRD 02300200

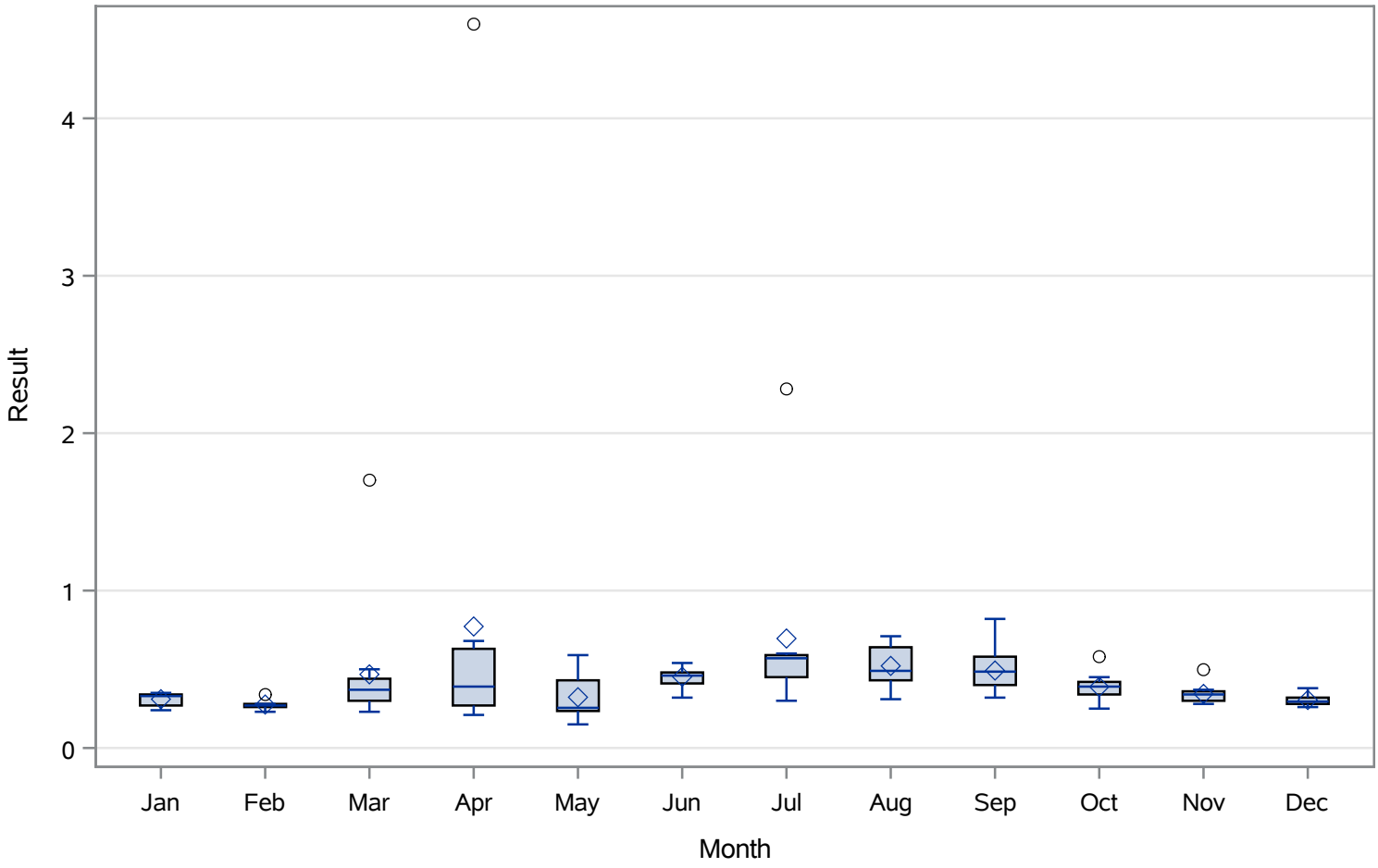


Little Manatee River

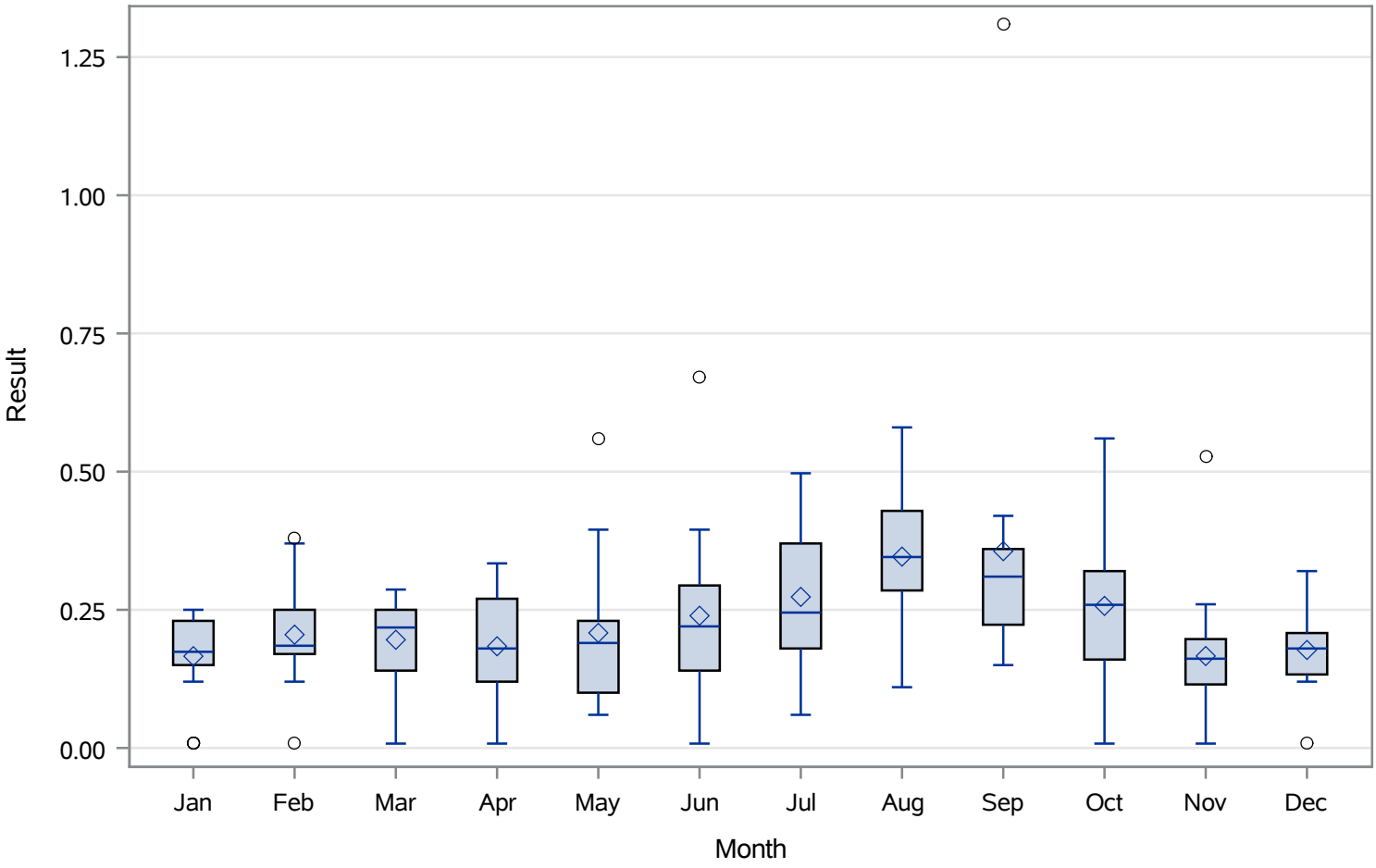
LITTLE MANATEE RIVER NEAR WIMAUMA FL

Phosphorus in Total Orthophosphate as P (mg/L) mg/L

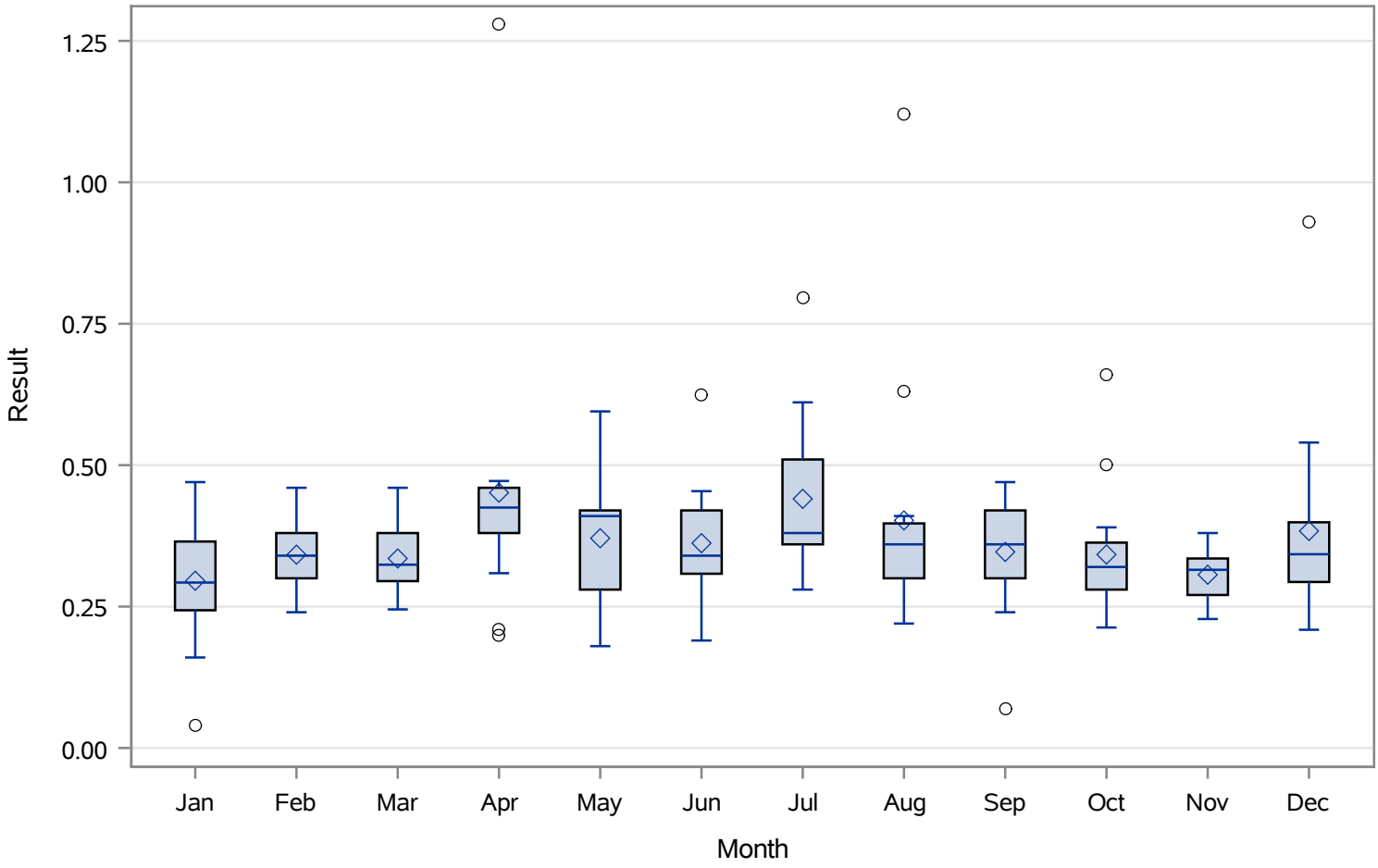
Site ID = 112WRD 02300500



Little Manatee River
D1
Phosphorus in Total Orthophosphate as P (mg/L) mg/L
Site ID = 21FLMANAD1



Little Manatee River
D3
Phosphorus in Total Orthophosphate as P (mg/L) mg/L
Site ID = 21FLMANAD3

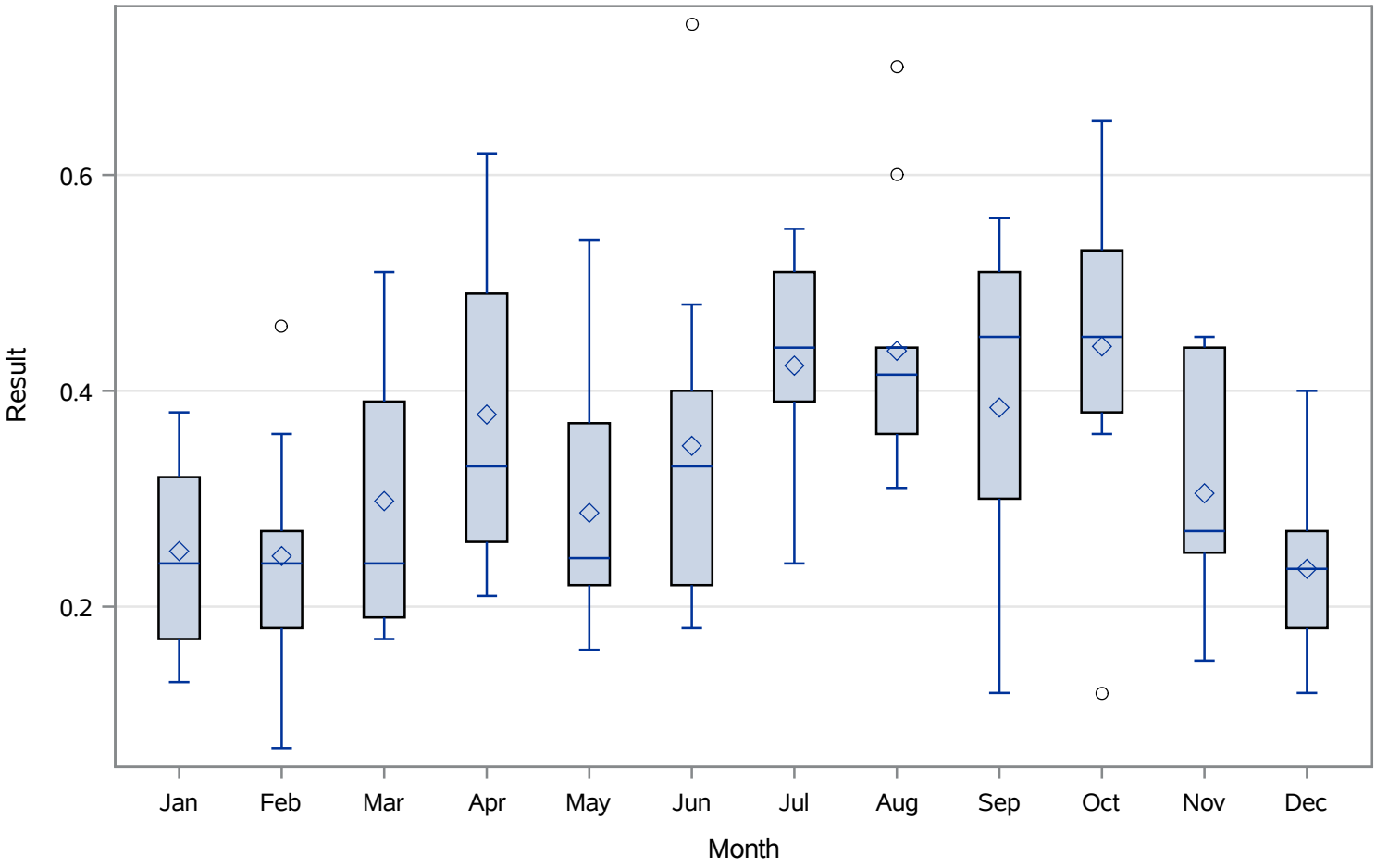


Little Manatee River

LITTLE MANATEE RIVER AT US HWY 301

Phosphorus, Dissolved Orthophosphate as P (mg/L) mg/L

Site ID = 21FLGW 3555

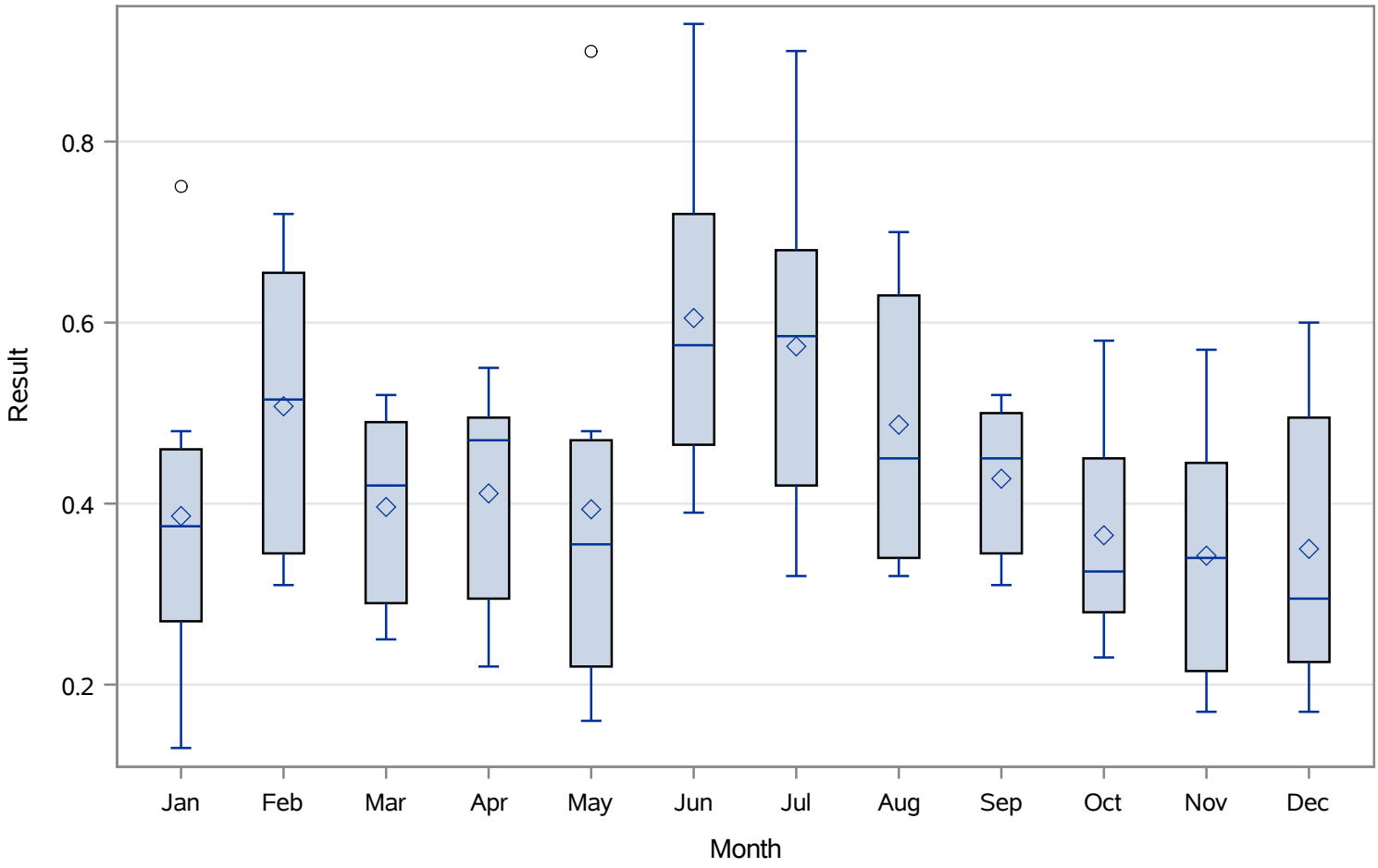


Little Manatee River

LITTLE MANATEE R AT CR579

Phosphorus, Dissolved Orthophosphate as P (mg/L) mg/L

Site ID = 21FLHILL24010013

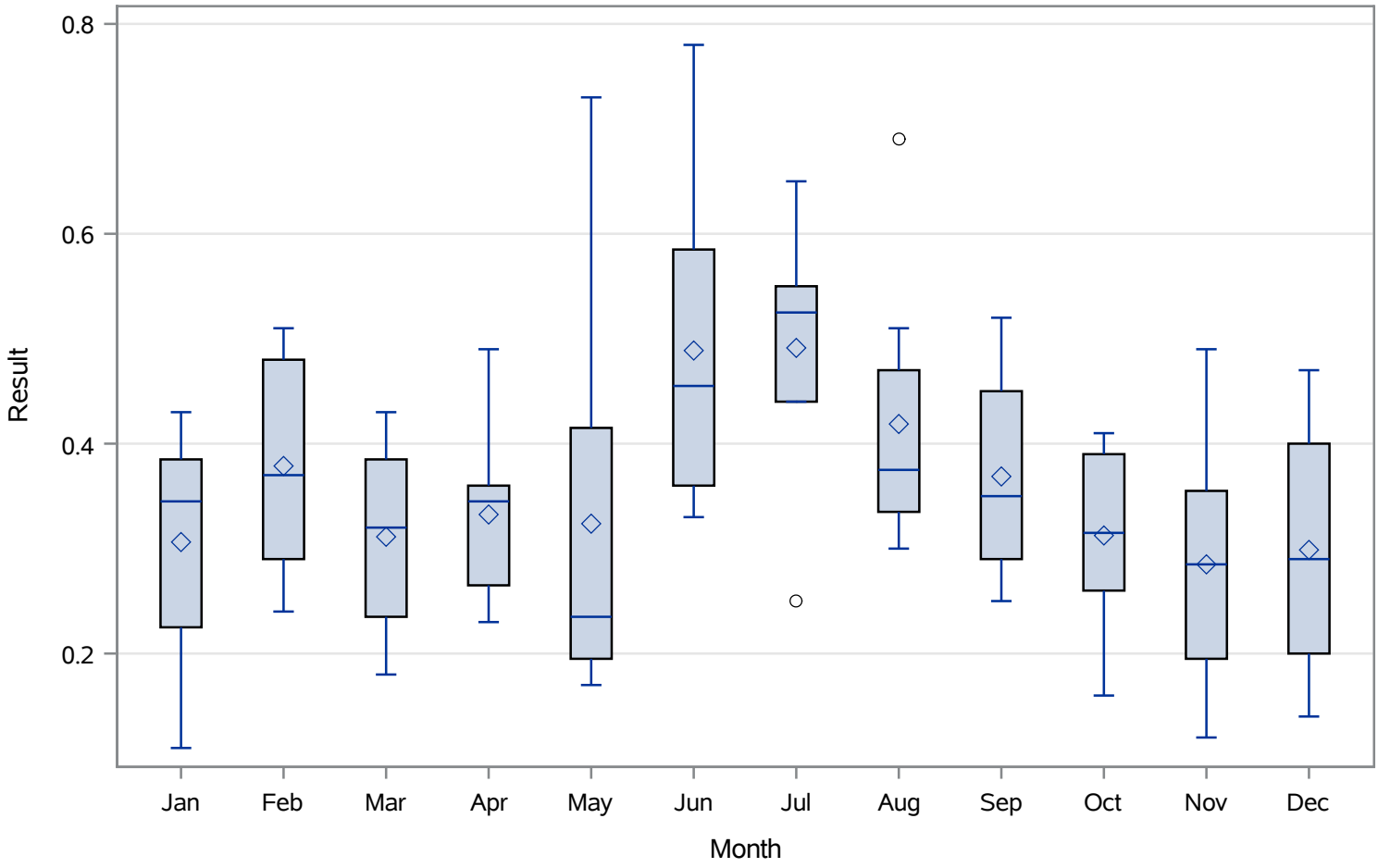


Little Manatee River

L MANATEE R BR US 301

Phosphorus, Dissolved Orthophosphate as P (mg/L) mg/L

Site ID = 21FLHILL24010100

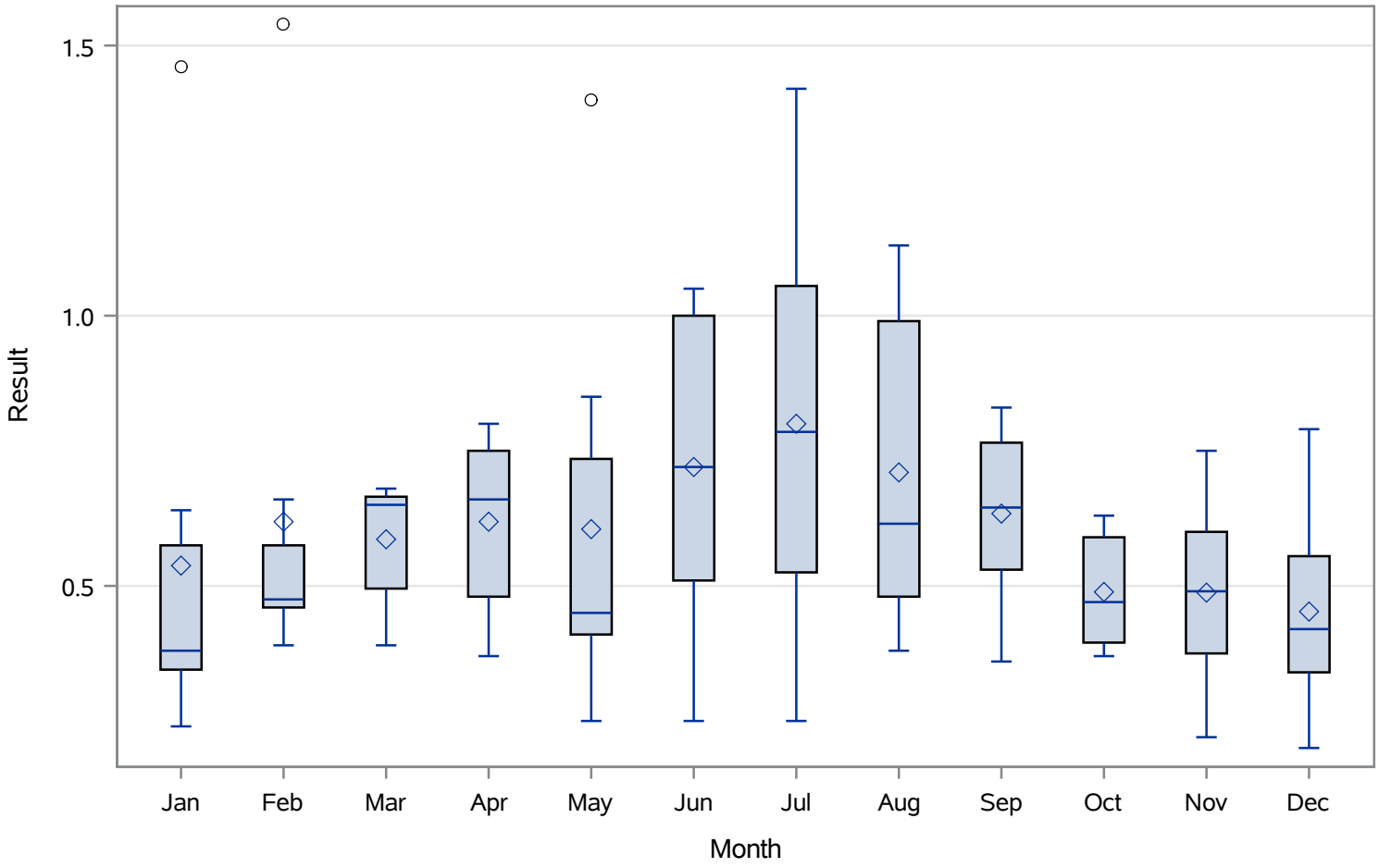


Little Manatee River

LITTLE MANATEE R AT SR #674

Phosphorus, Dissolved Orthophosphate as P (mg/L) mg/L

Site ID = 21FLHILL24010110

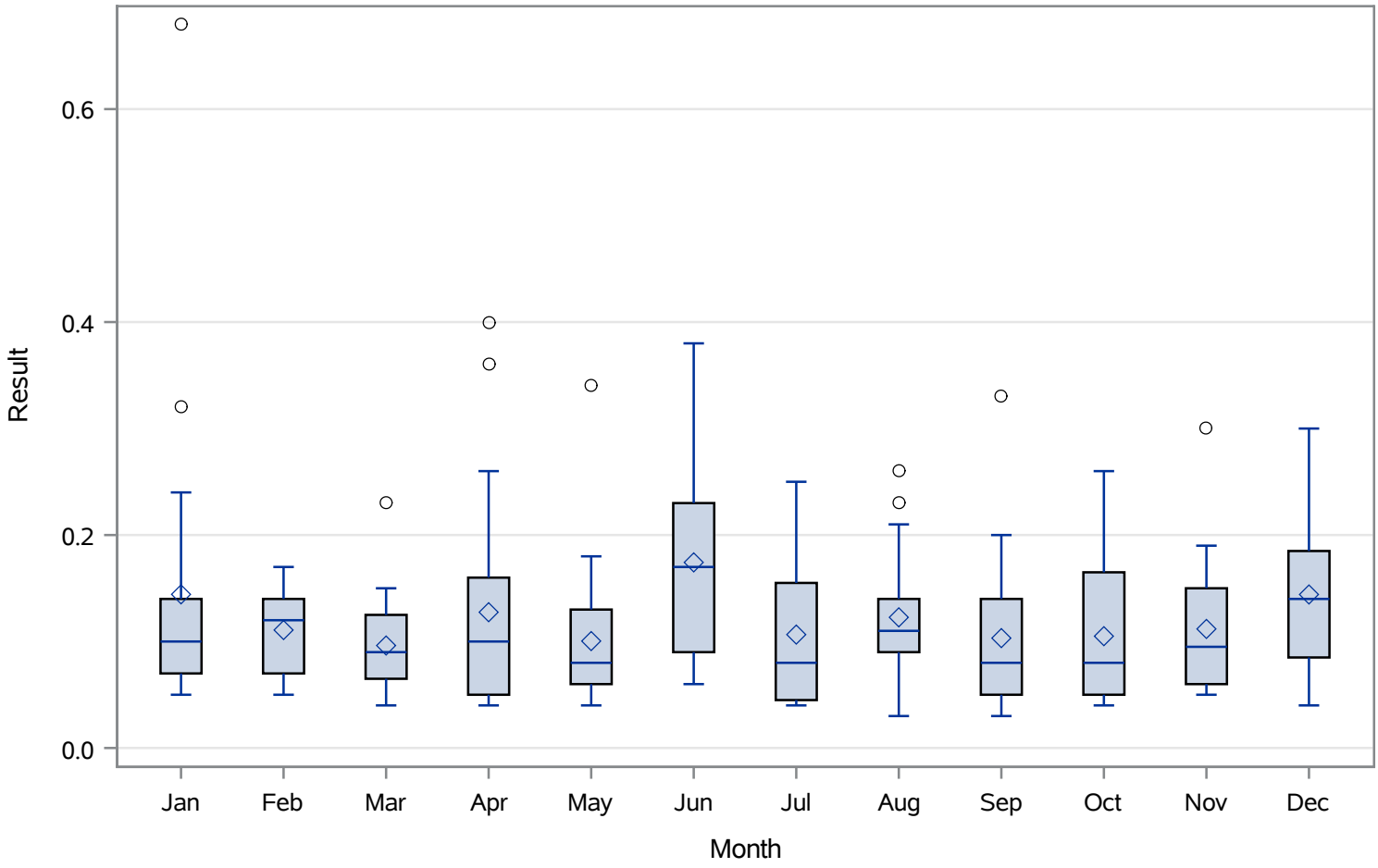


Little Manatee River

LITTLE MANATEE RIVER NEAR FT. LONESOME FL

Salinity ppt

Site ID = 112WRD 02300100

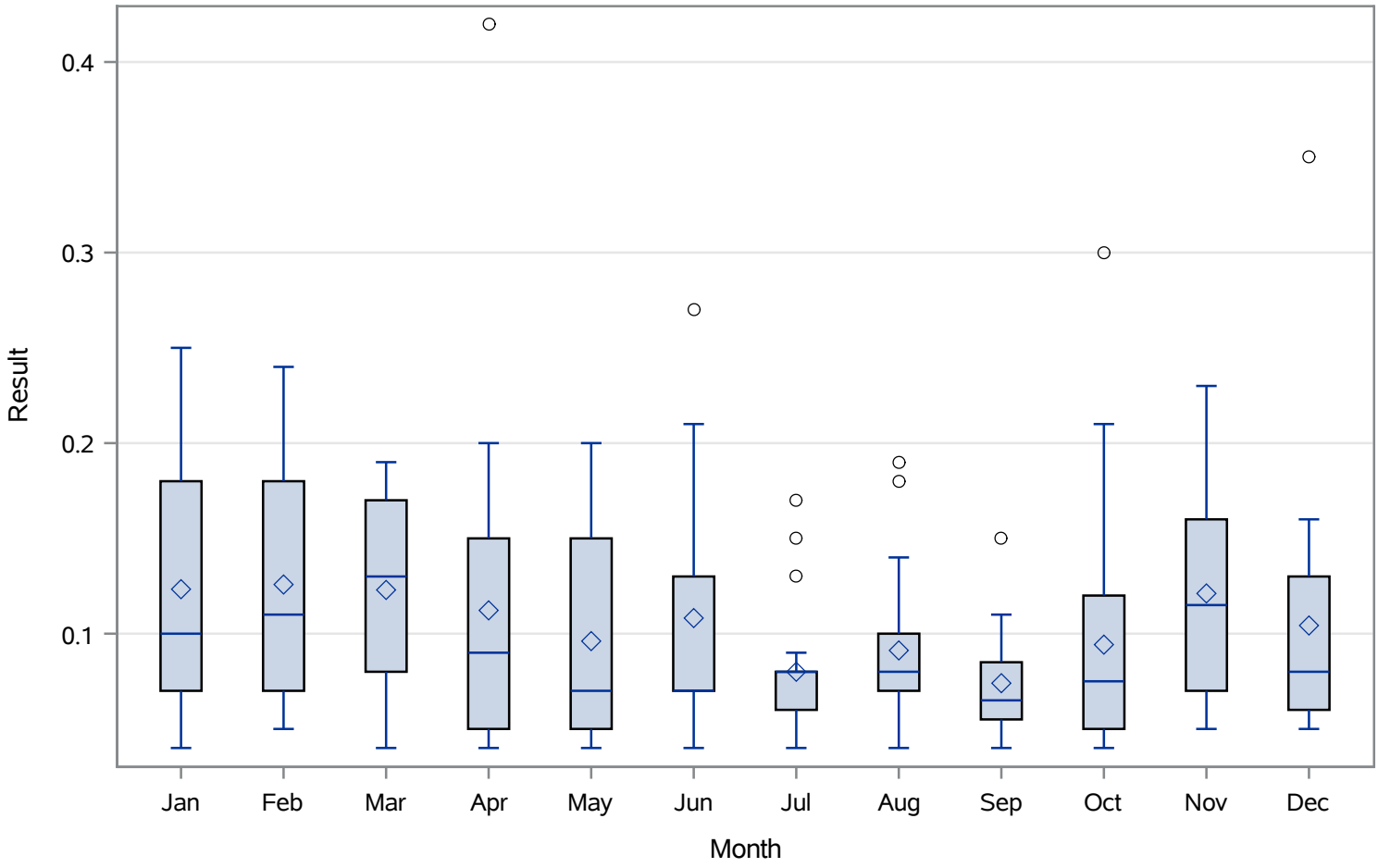


Little Manatee River

SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL

Salinity ppt

Site ID = 112WRD 02300200

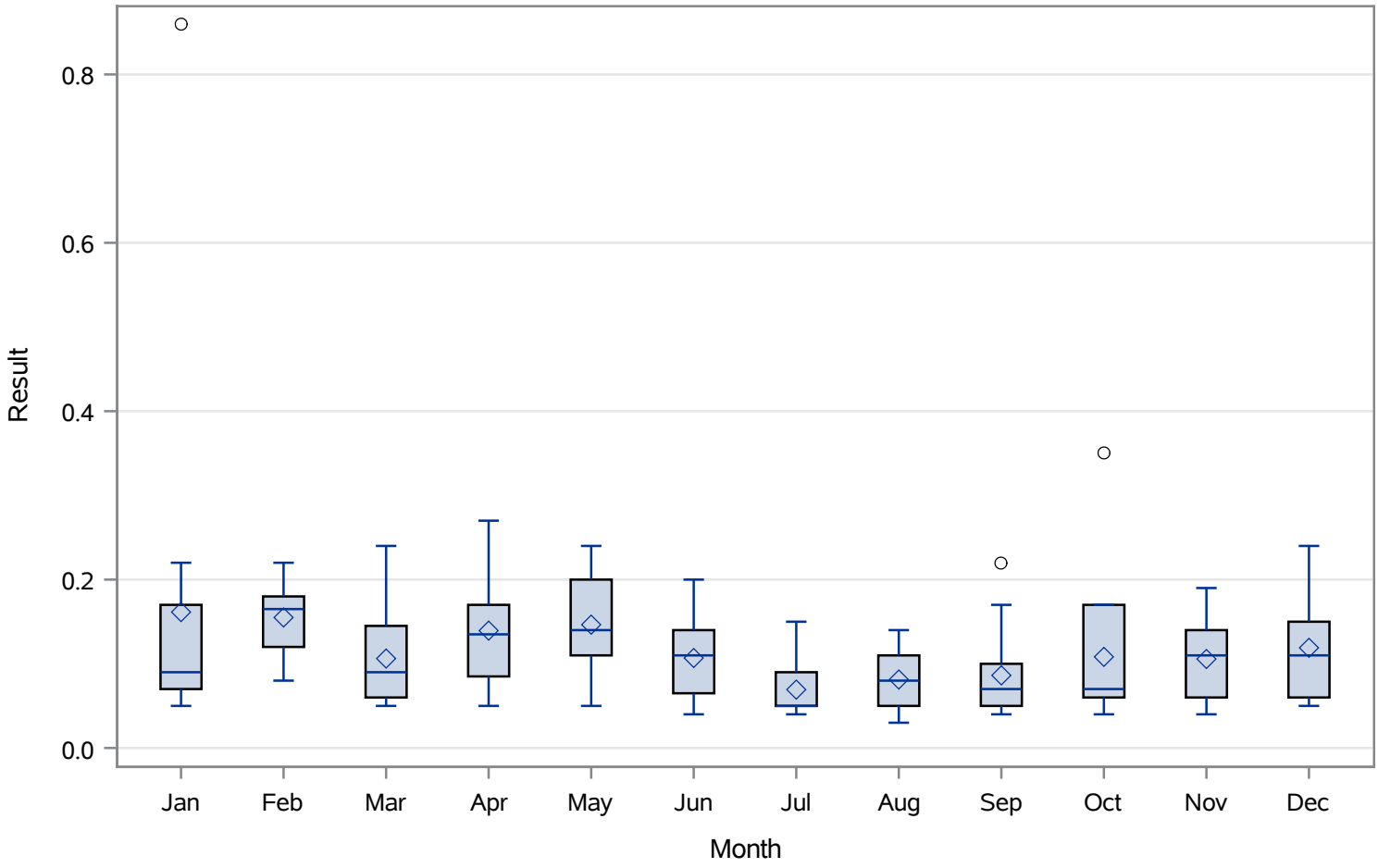


Little Manatee River

LITTLE MANATEE RIVER NEAR WIMAUMA FL

Salinity ppt

Site ID = 112WRD 02300500

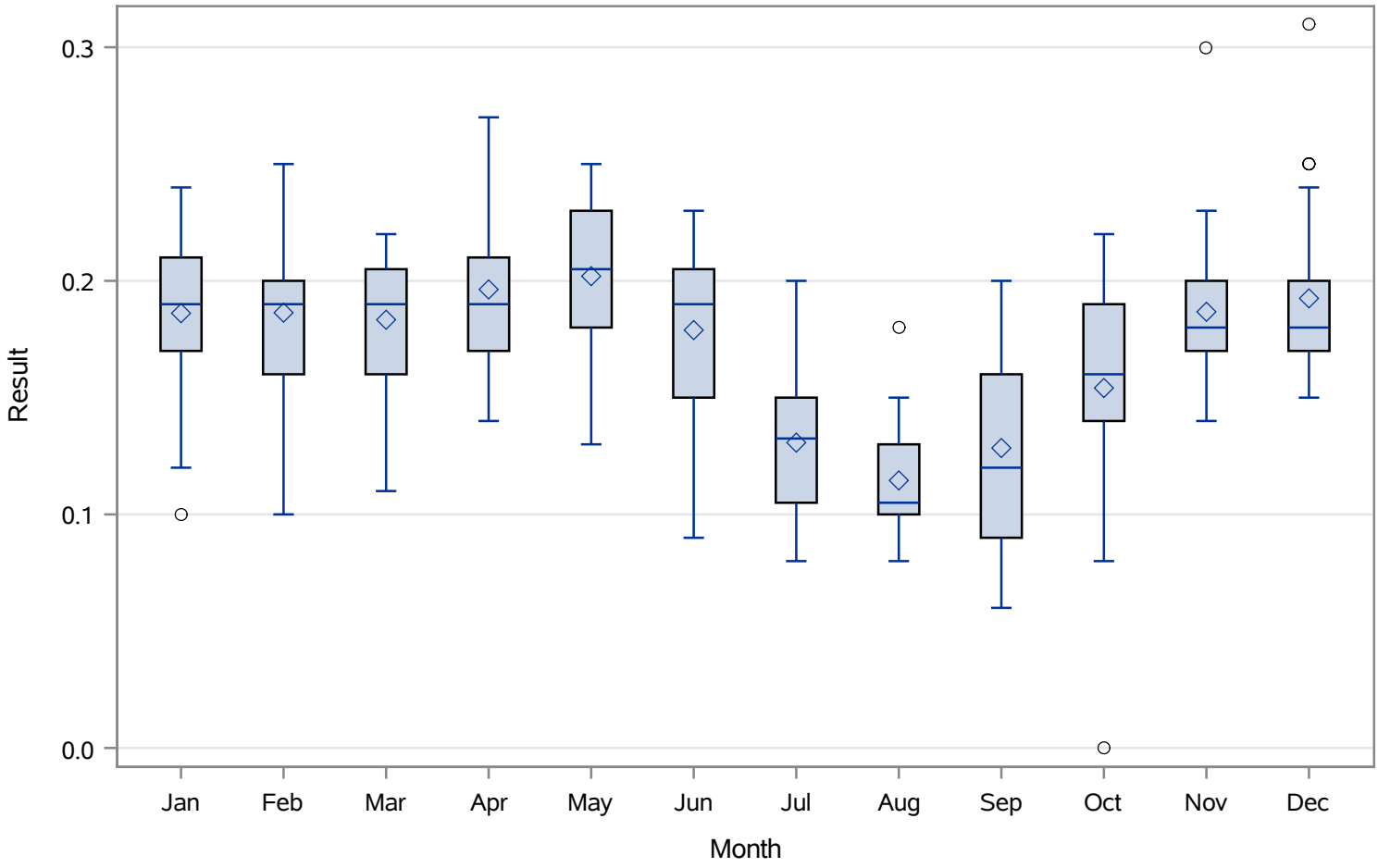


Little Manatee River

LITTLE MANATEE RIVER AT US HWY 301

Salinity ppt

Site ID = 21FLGW 3555

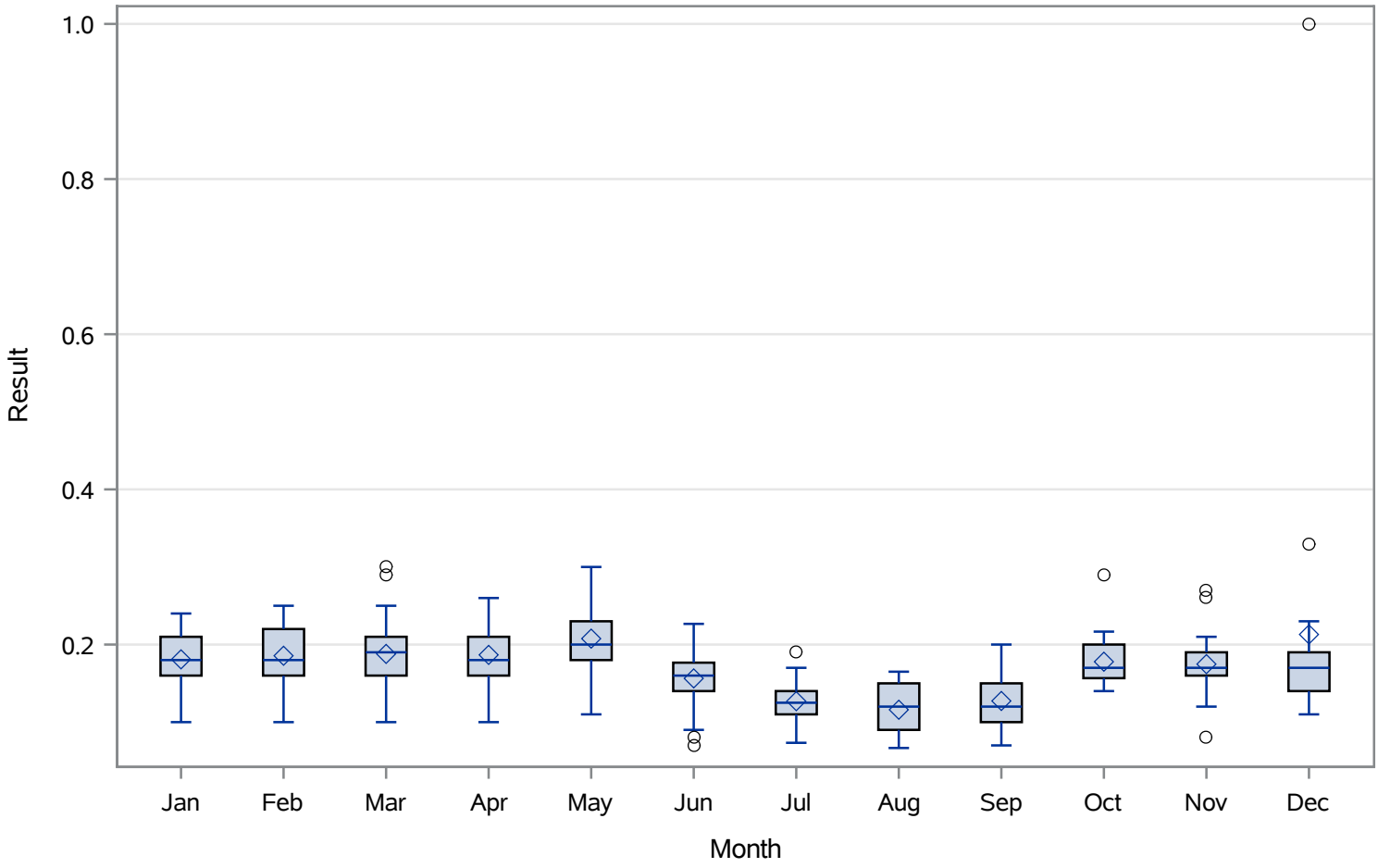


Little Manatee River

Little Manatee River at US 301 bridge

Salinity ppt

Site ID = 21FLHILL113

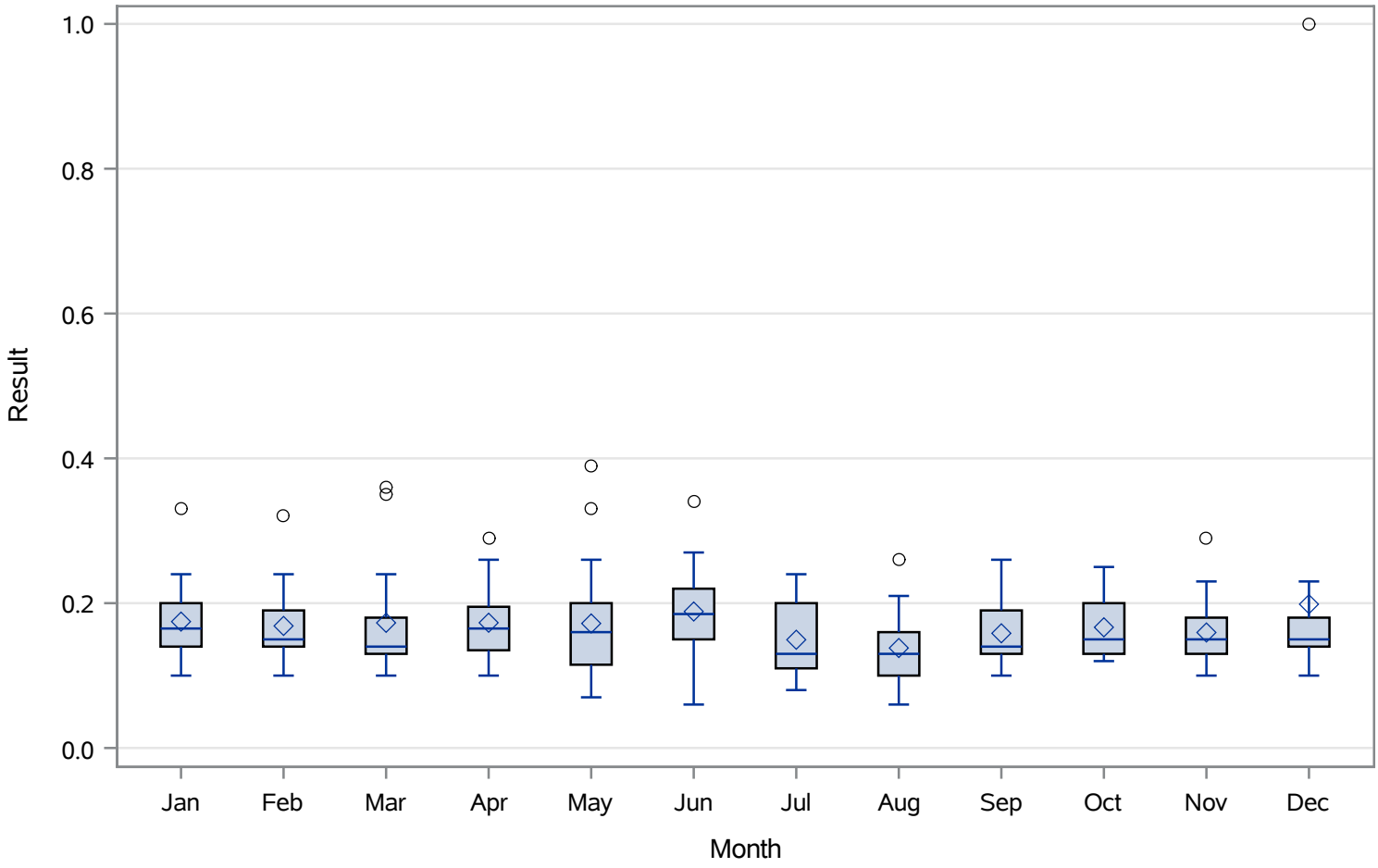


Little Manatee River

Little Manatee River at SR 674

Salinity ppt

Site ID = 21FLHILL129

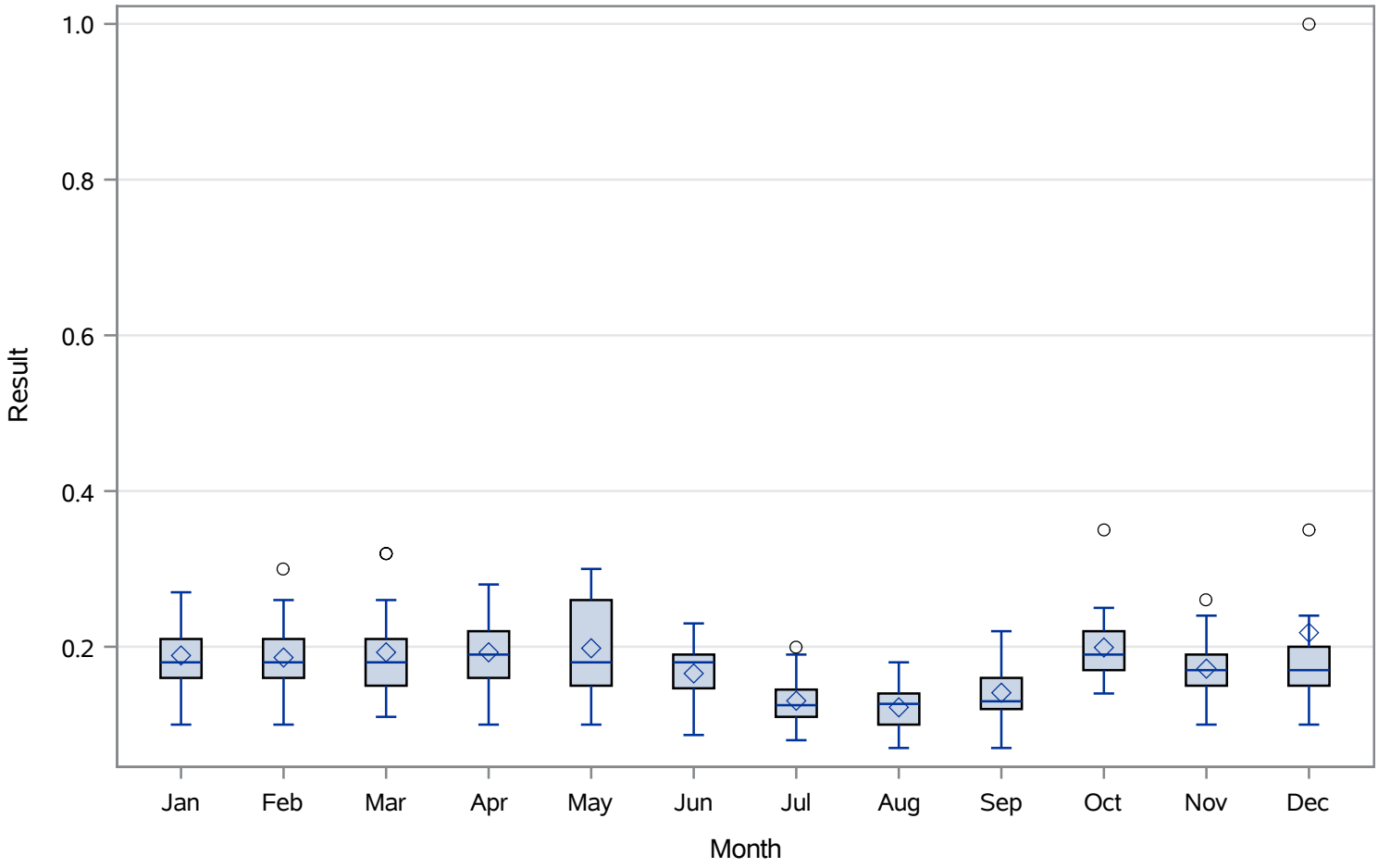


Little Manatee River

Little Manatee River at CR 579

Salinity ppt

Site ID = 21FLHILL140

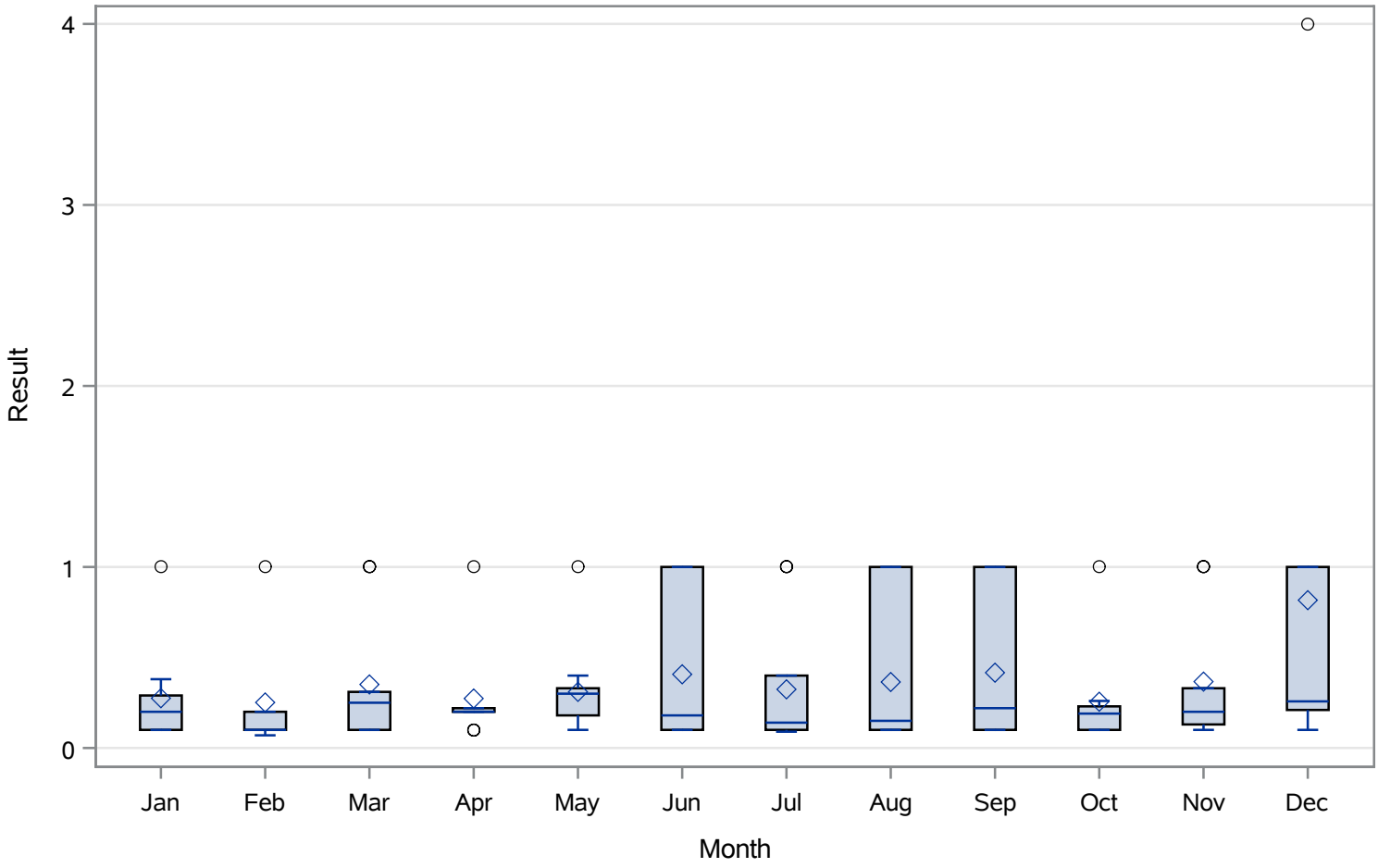


Little Manatee River

LITTLE MANATEE R AT CR579

Salinity ppt

Site ID = 21FLHILL24010013

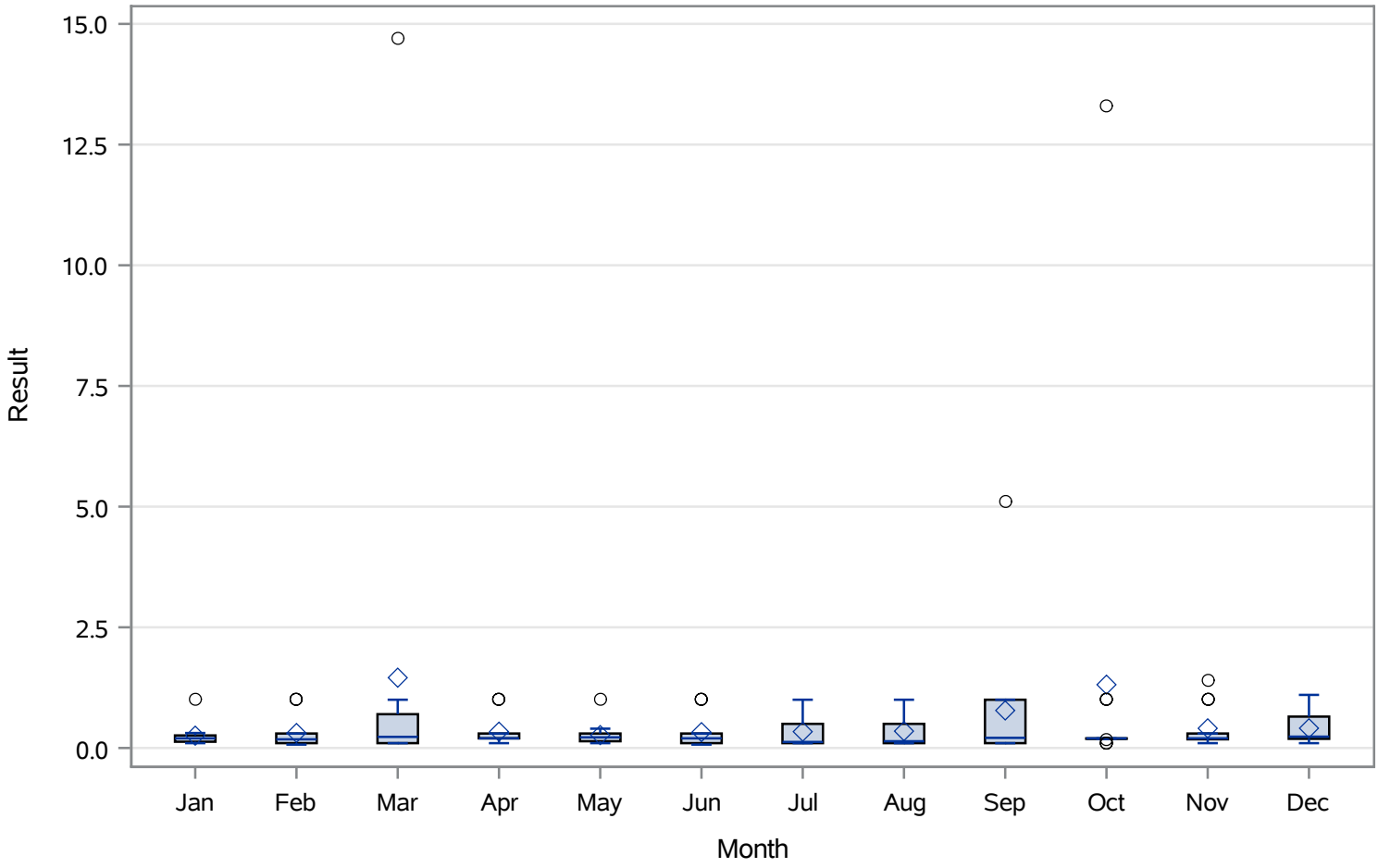


Little Manatee River

L MANATEE R BR US 301

Salinity ppt

Site ID = 21FLHILL24010100

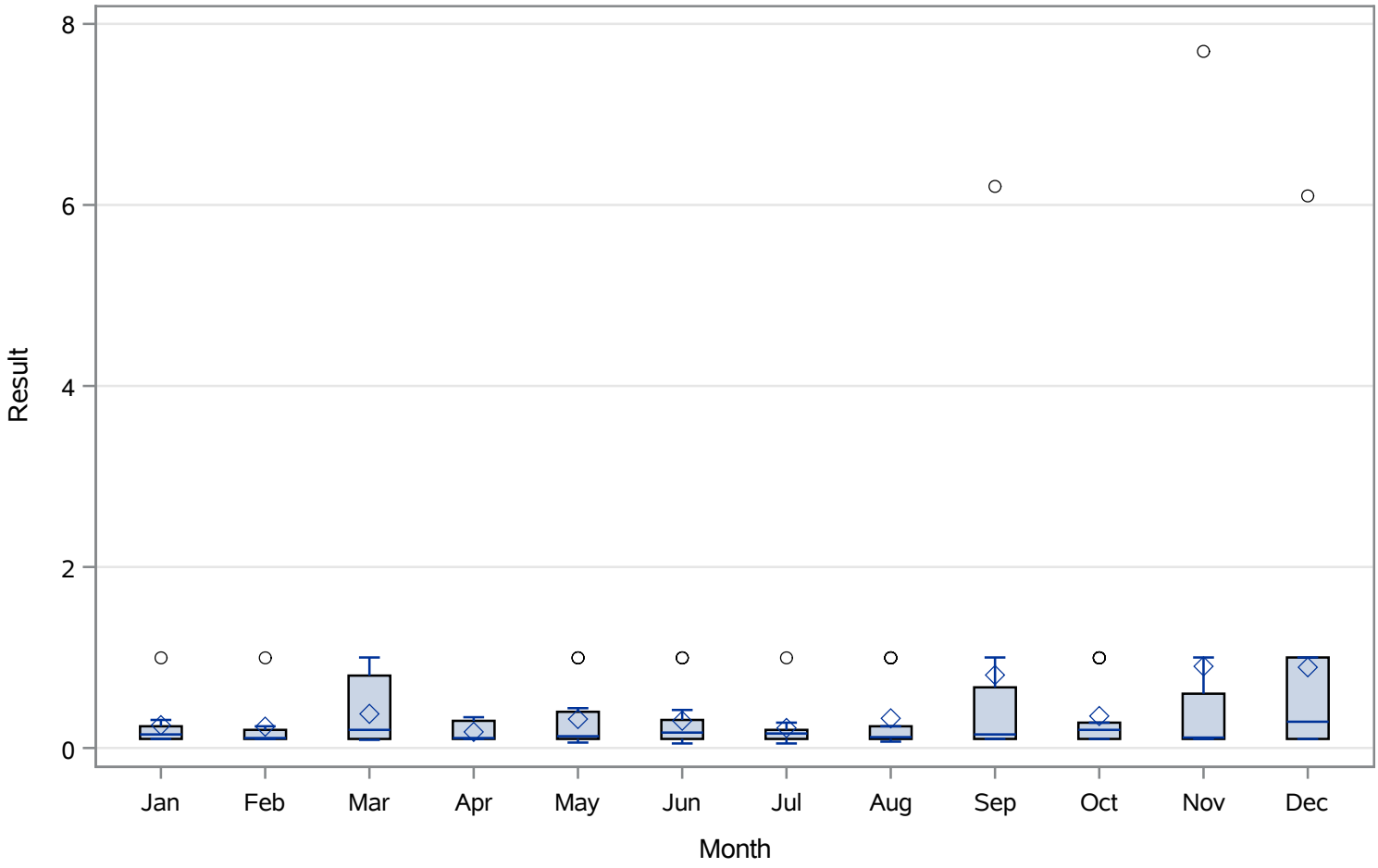


Little Manatee River

LITTLE MANATEE R AT SR #674

Salinity ppt

Site ID = 21FLHILL24010110

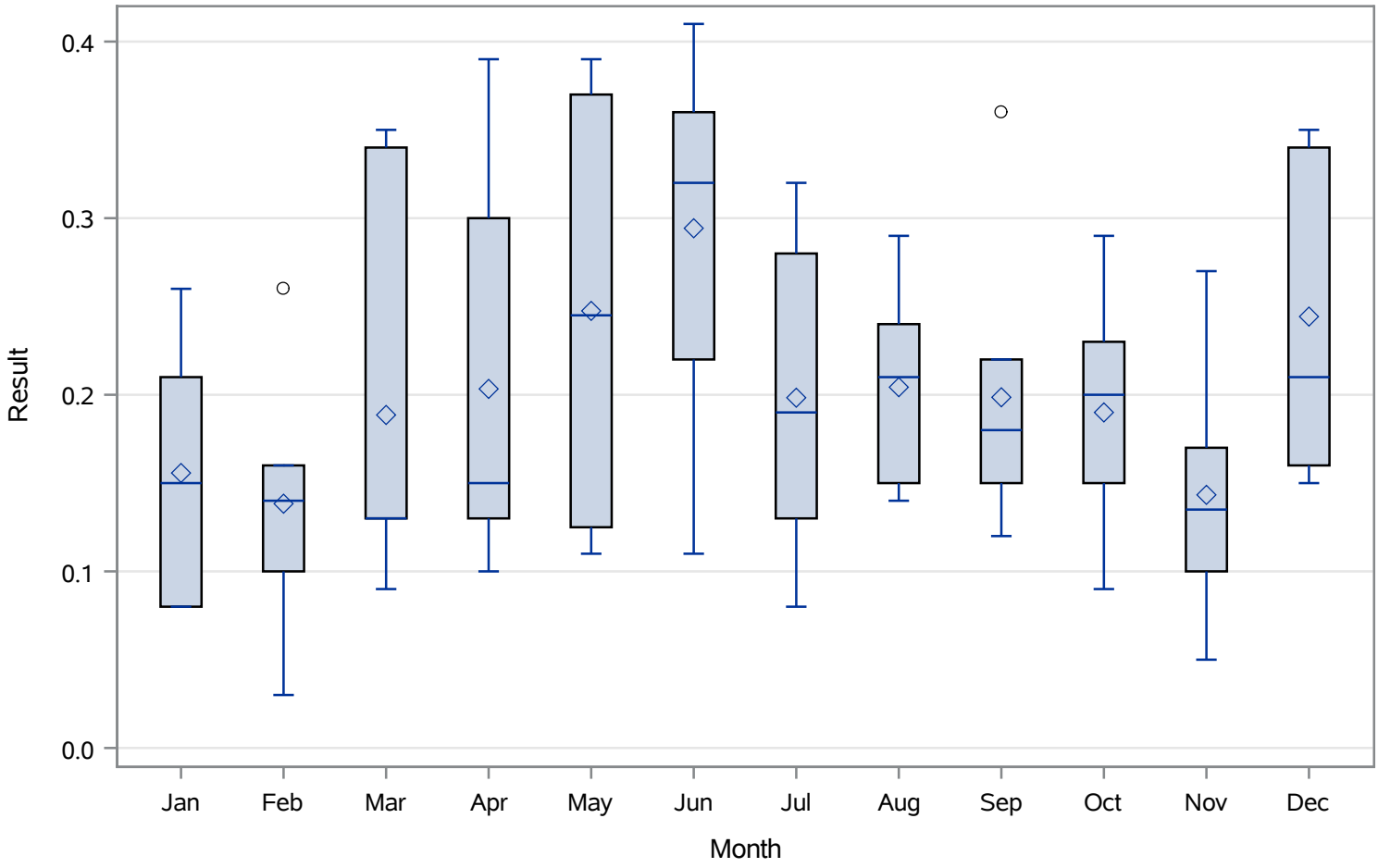


Little Manatee River

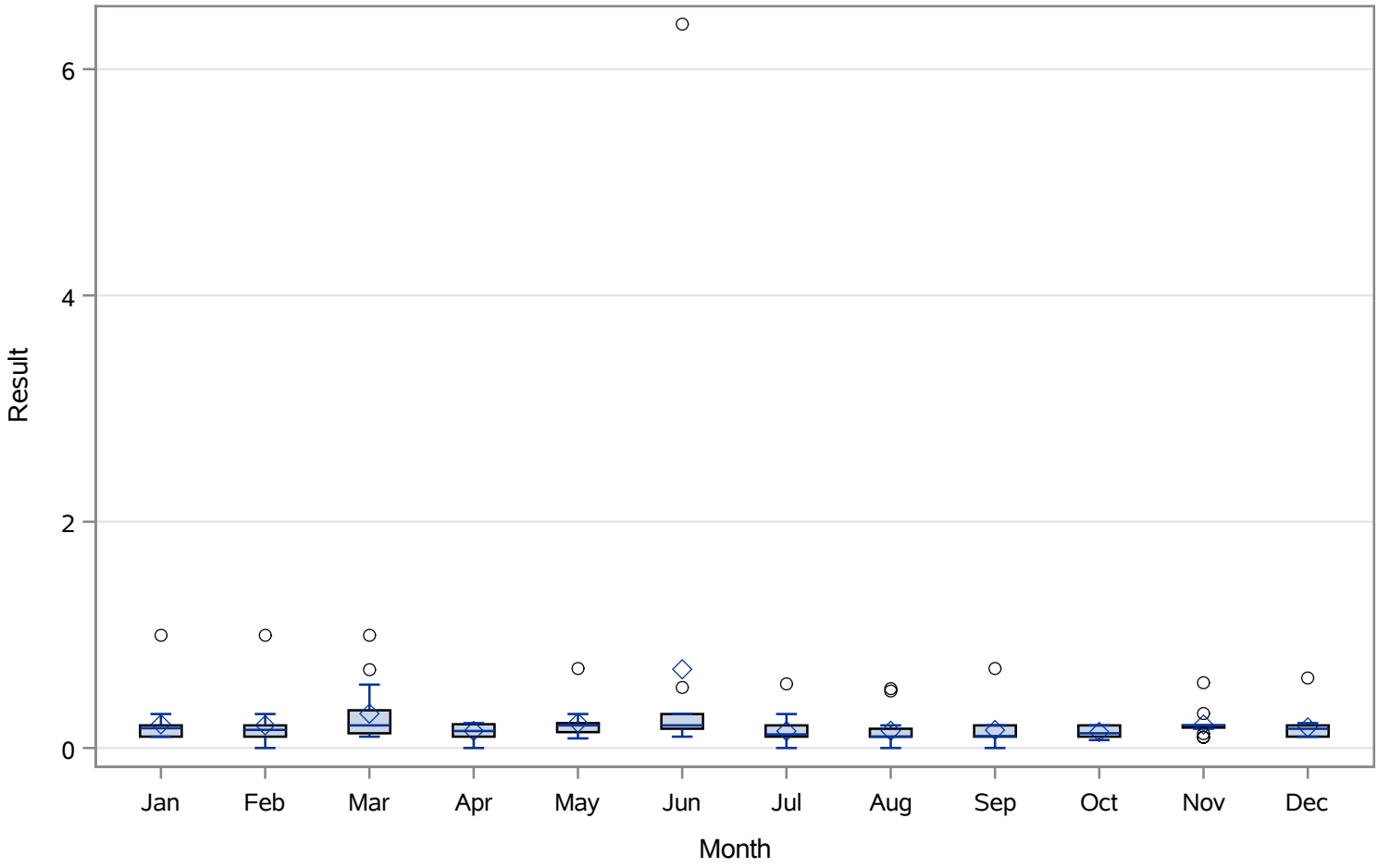
Little Manatee R. at SR674

Salinity ppt

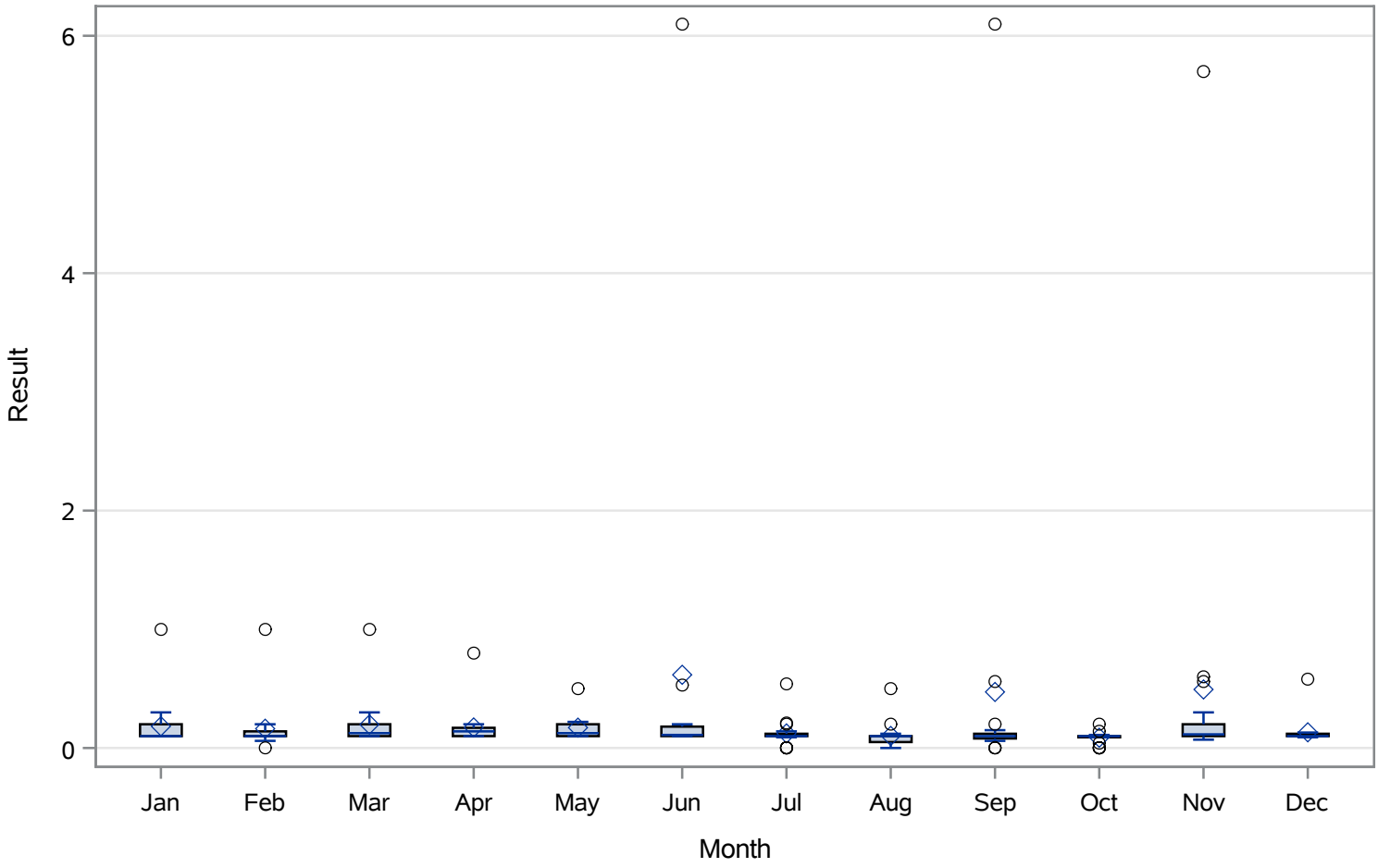
Site ID = 21FLIMCALM674



Little Manatee River
D1
Salinity ppt
Site ID = 21FLMANAD1



Little Manatee River
D3
Salinity ppt
Site ID = 21FLMANAD3

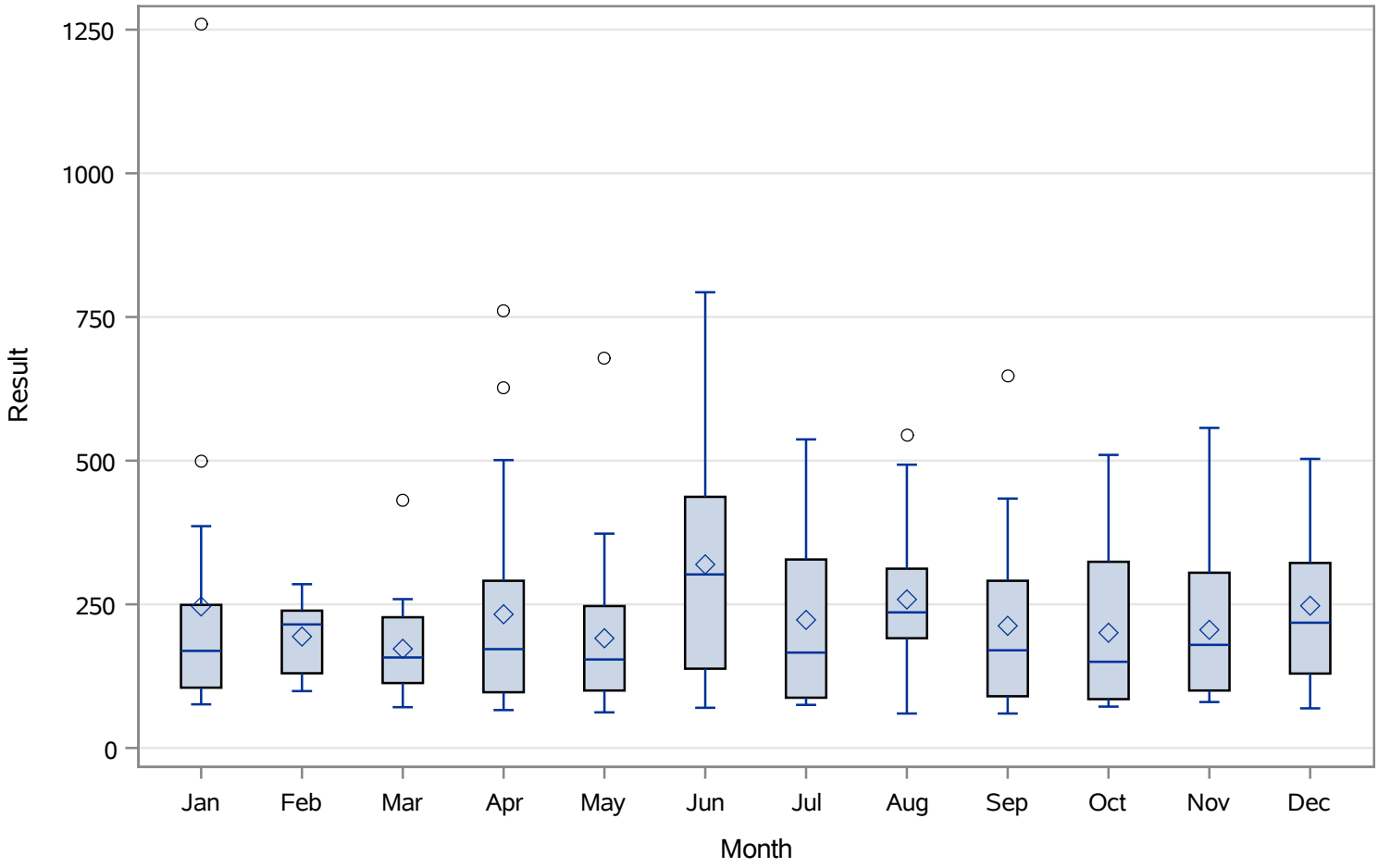


Little Manatee River

LITTLE MANATEE RIVER NEAR FT. LONESOME FL

Specific Conductance (µmhos/cm) µmhos/cm

Site ID = 112WRD 02300100

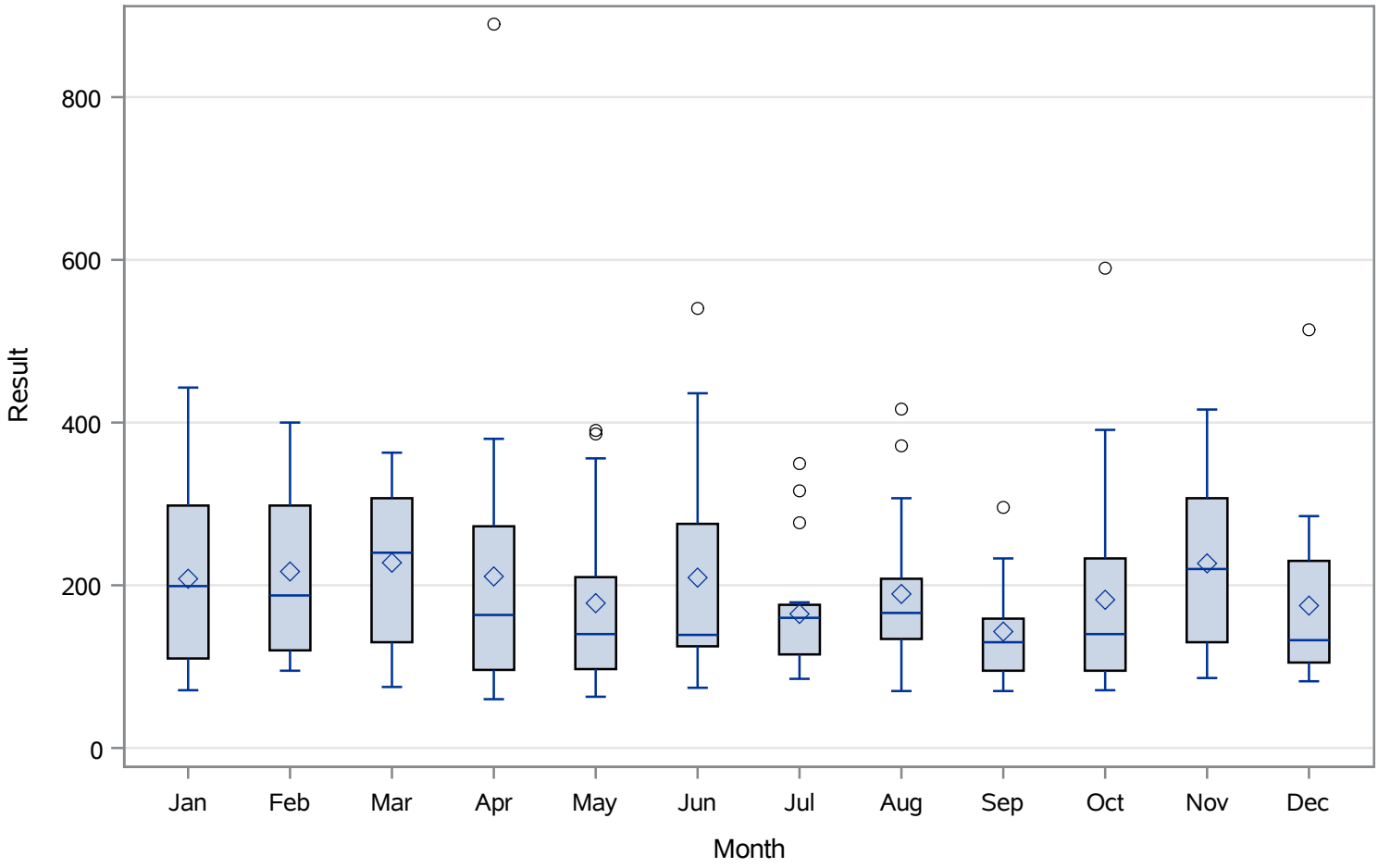


Little Manatee River

SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL

Specific Conductance (µmhos/cm) µmhos/cm

Site ID = 112WRD 02300200

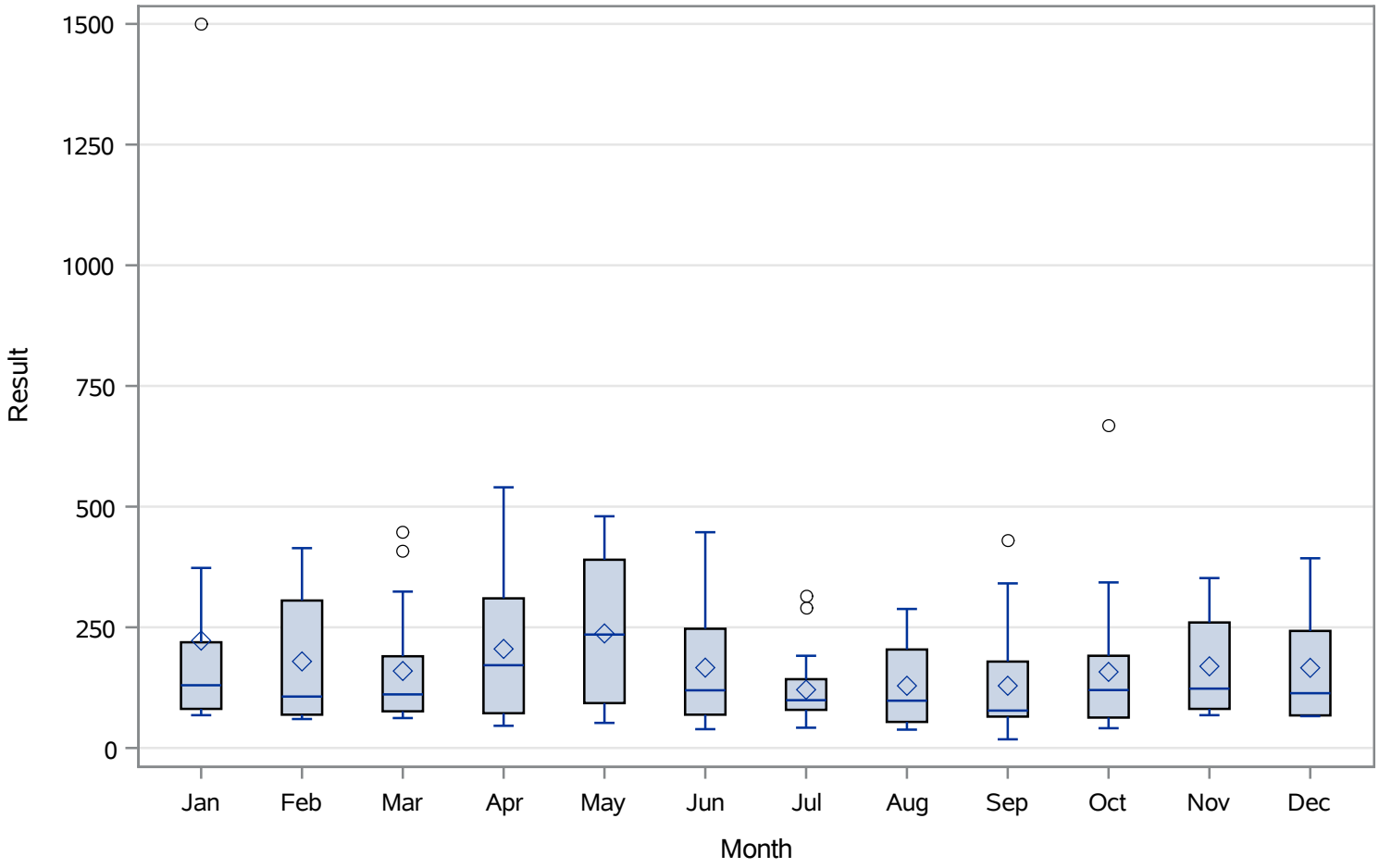


Little Manatee River

LITTLE MANATEE RIVER NEAR WIMAUMA FL

Specific Conductance (µmhos/cm) µmhos/cm

Site ID = 112WRD 02300500

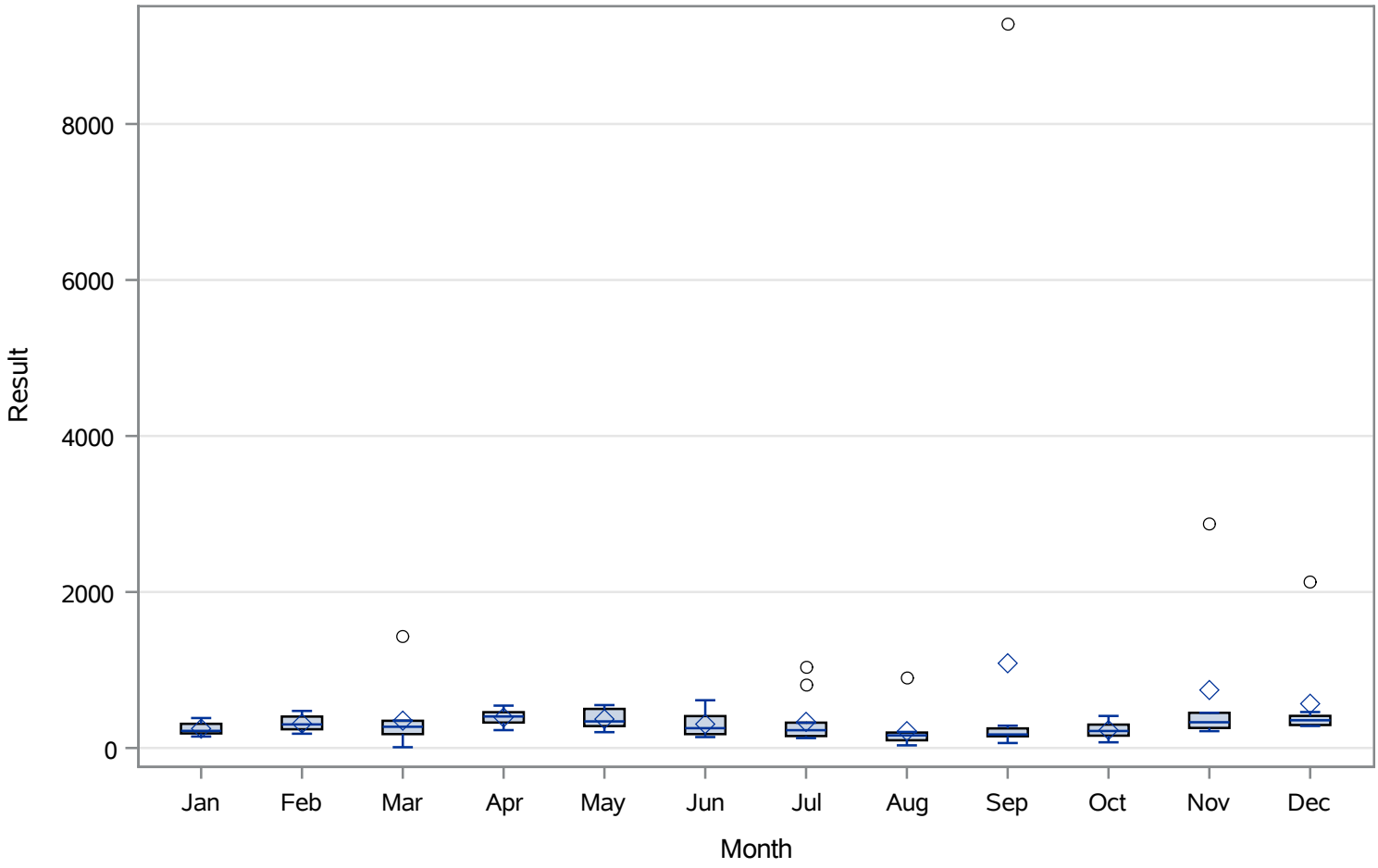


Little Manatee River

L MANATEE R BR US 301

Specific Conductance (µmhos/cm) µmhos/cm

Site ID = 21FLA 24010100

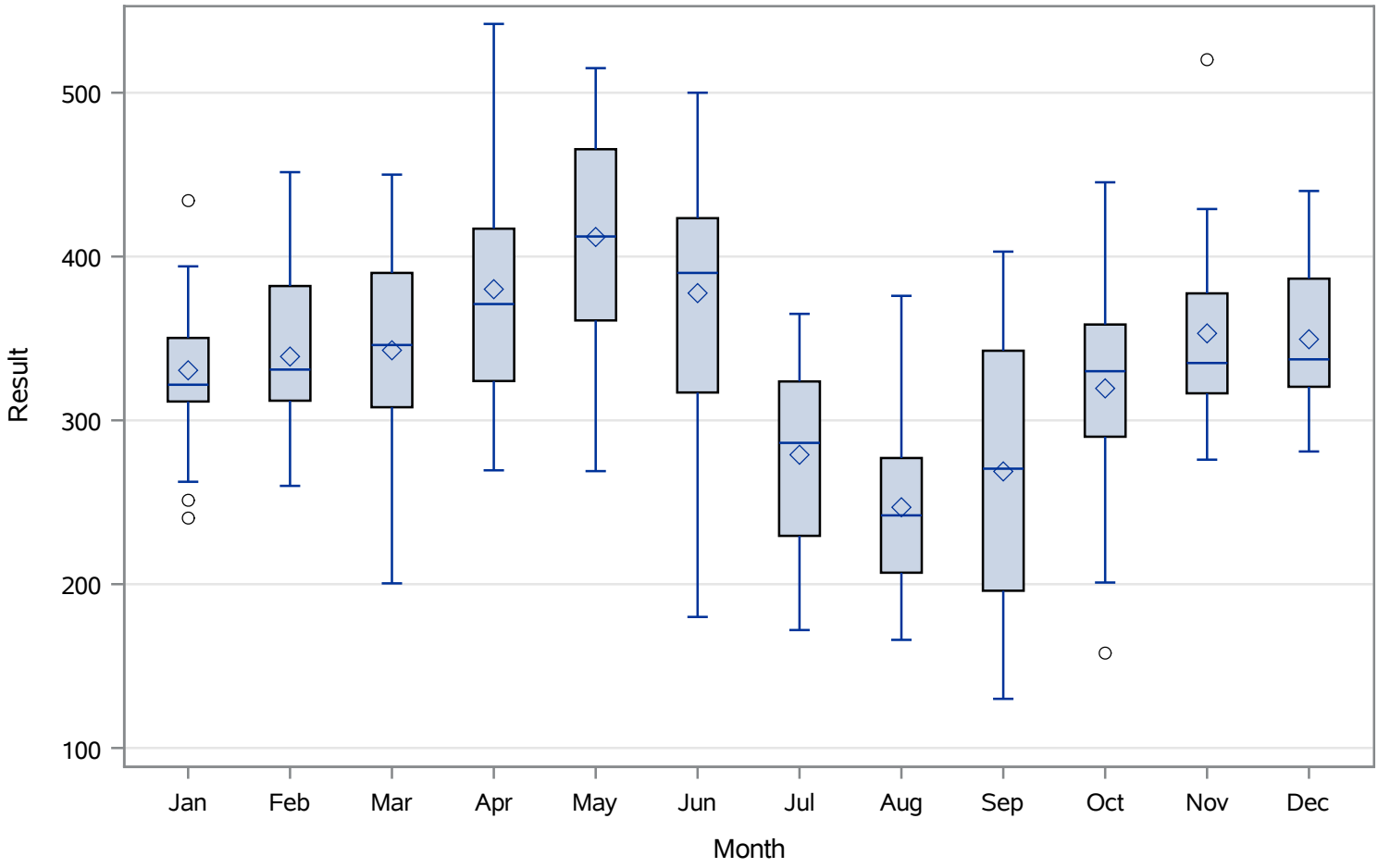


Little Manatee River

LITTLE MANATEE RIVER AT US HWY 301

Specific Conductance (µmhos/cm) µmhos/cm

Site ID = 21FLGW 3555

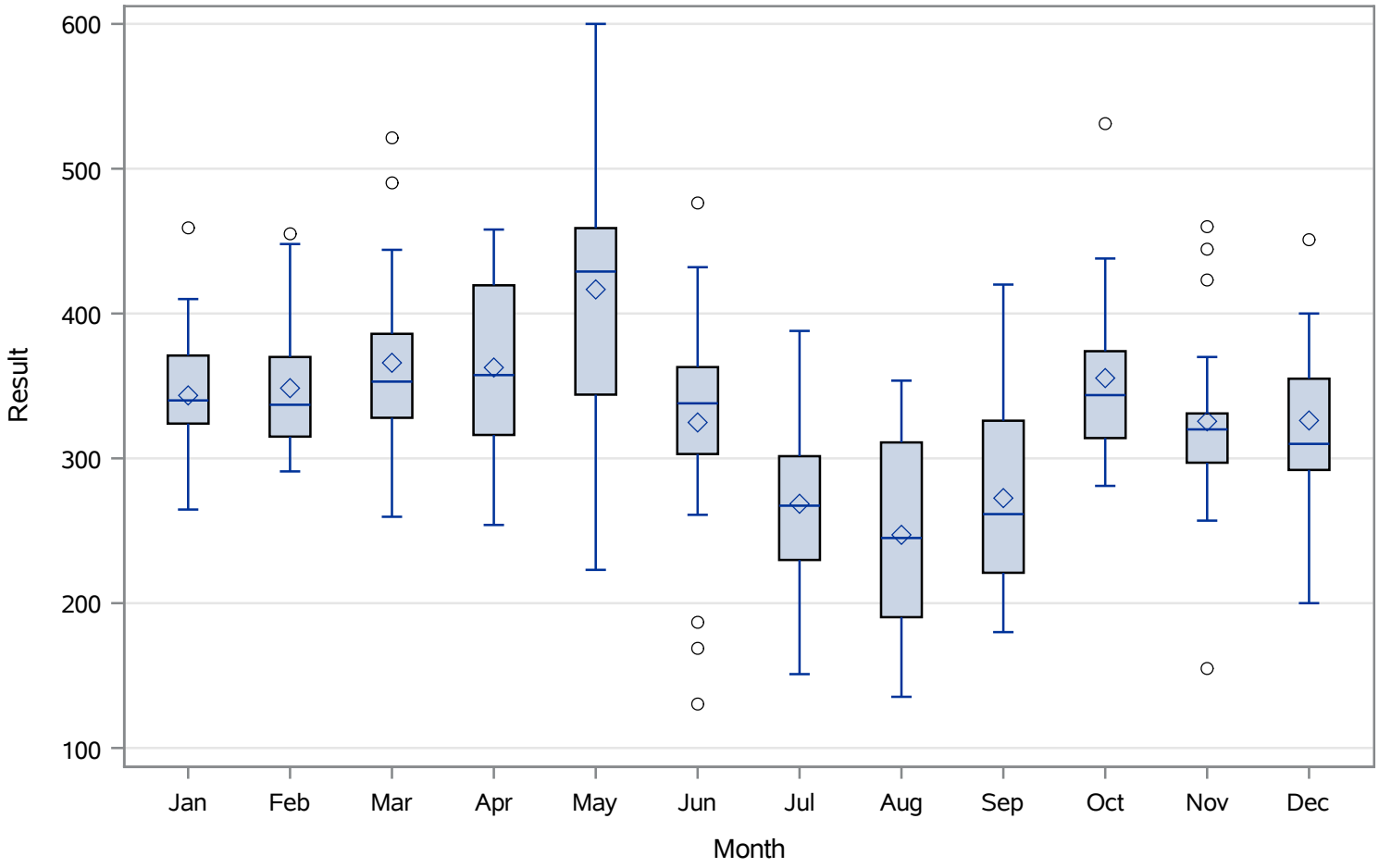


Little Manatee River

Little Manatee River at US 301 bridge

Specific Conductance (µmhos/cm) µmhos/cm

Site ID = 21FLHILL113

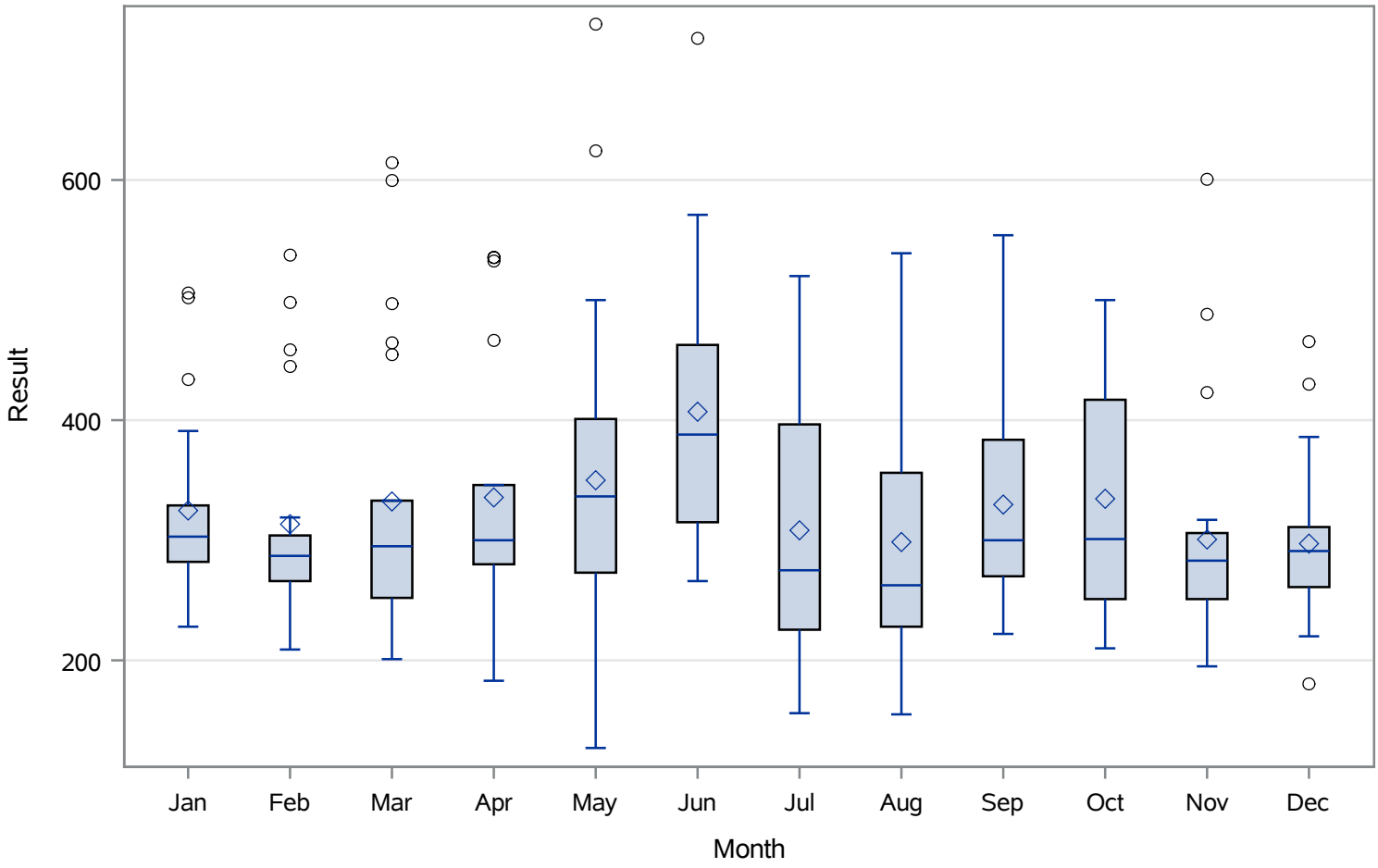


Little Manatee River

Little Manatee River at SR 674

Specific Conductance (µmhos/cm) µmhos/cm

Site ID = 21FLHILL129

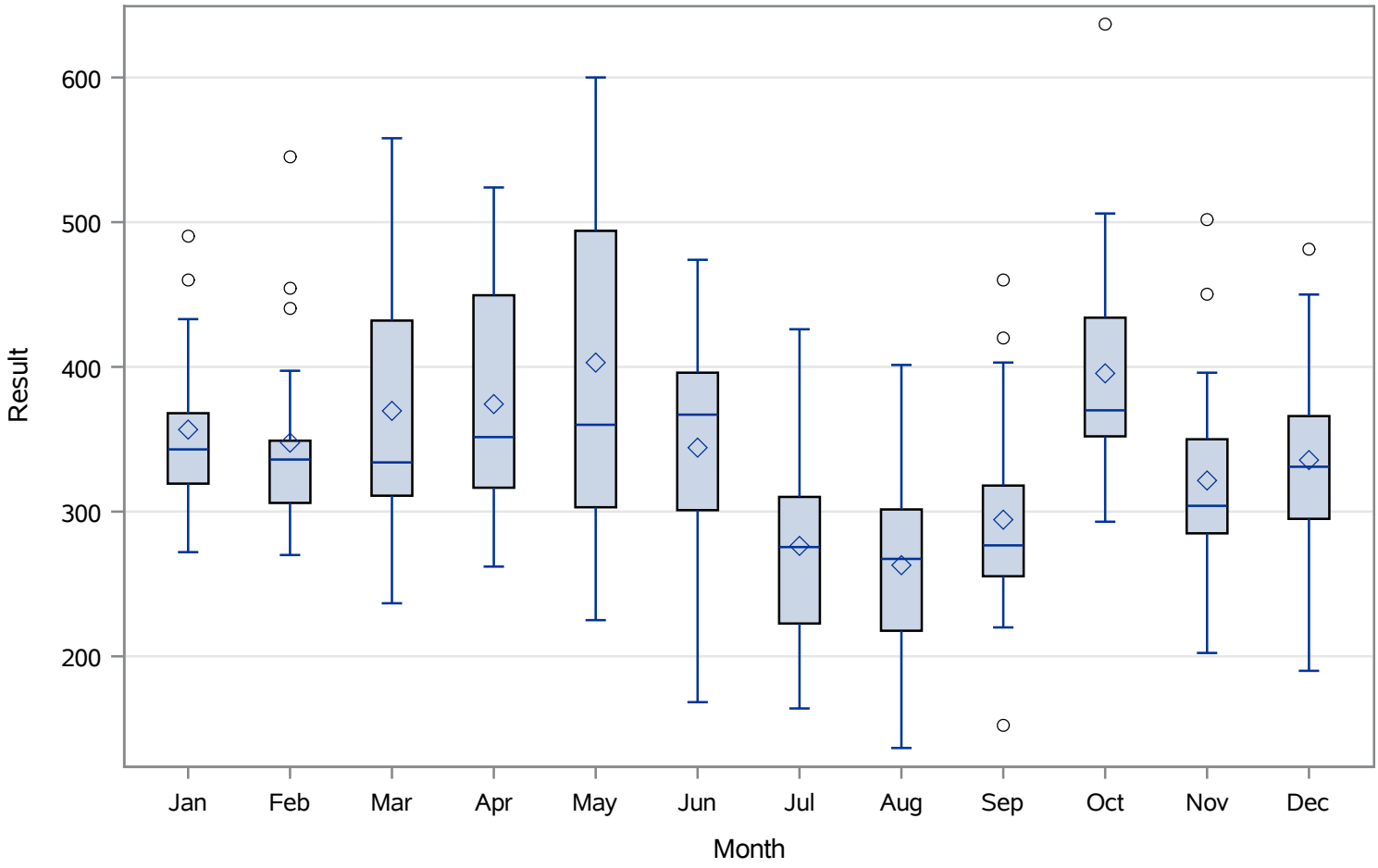


Little Manatee River

Little Manatee River at CR 579

Specific Conductance (µmhos/cm) µmhos/cm

Site ID = 21FLHILL140

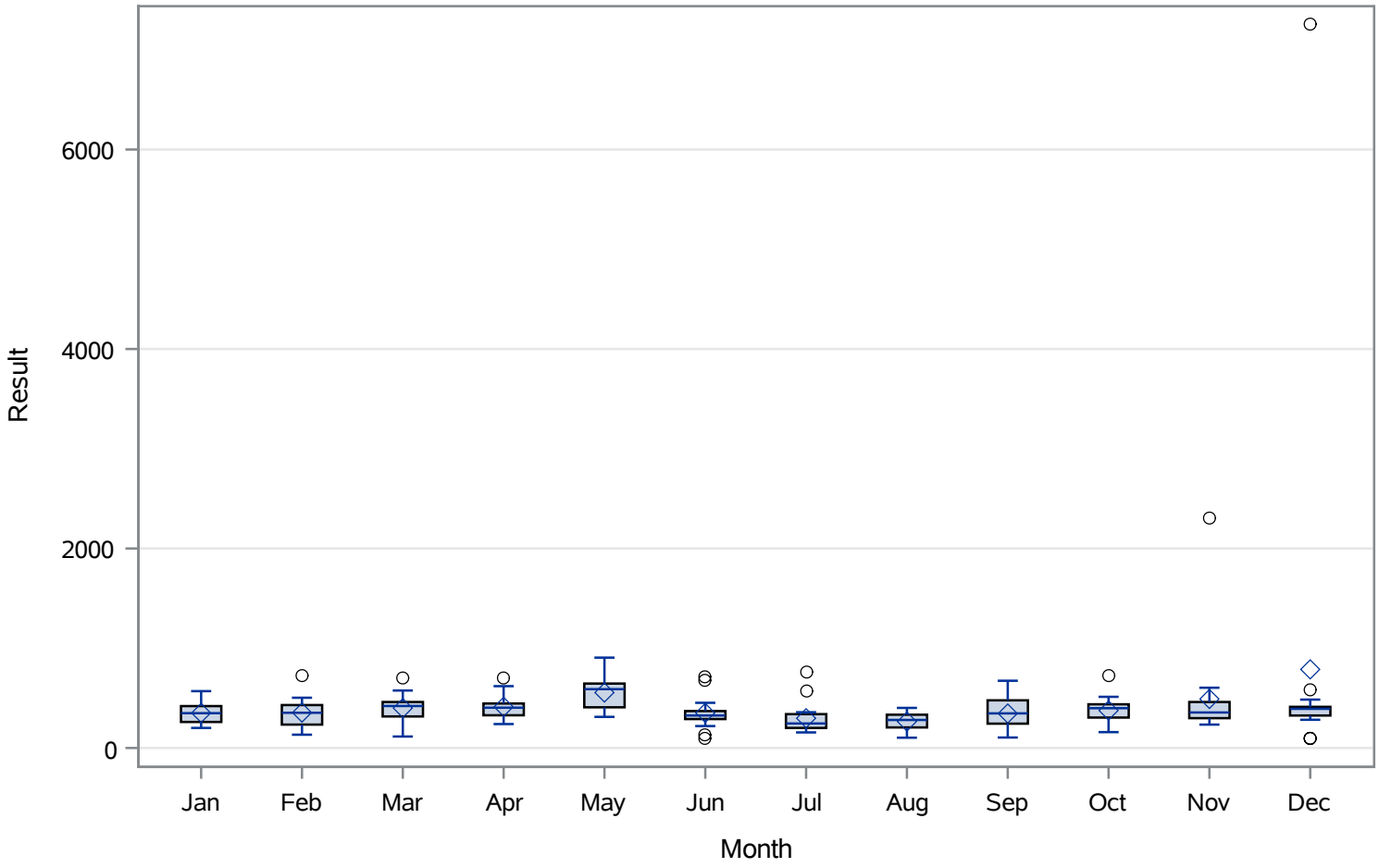


Little Manatee River

LITTLE MANATEE R AT CR579

Specific Conductance (µmhos/cm) µmhos/cm

Site ID = 21FLHILL24010013

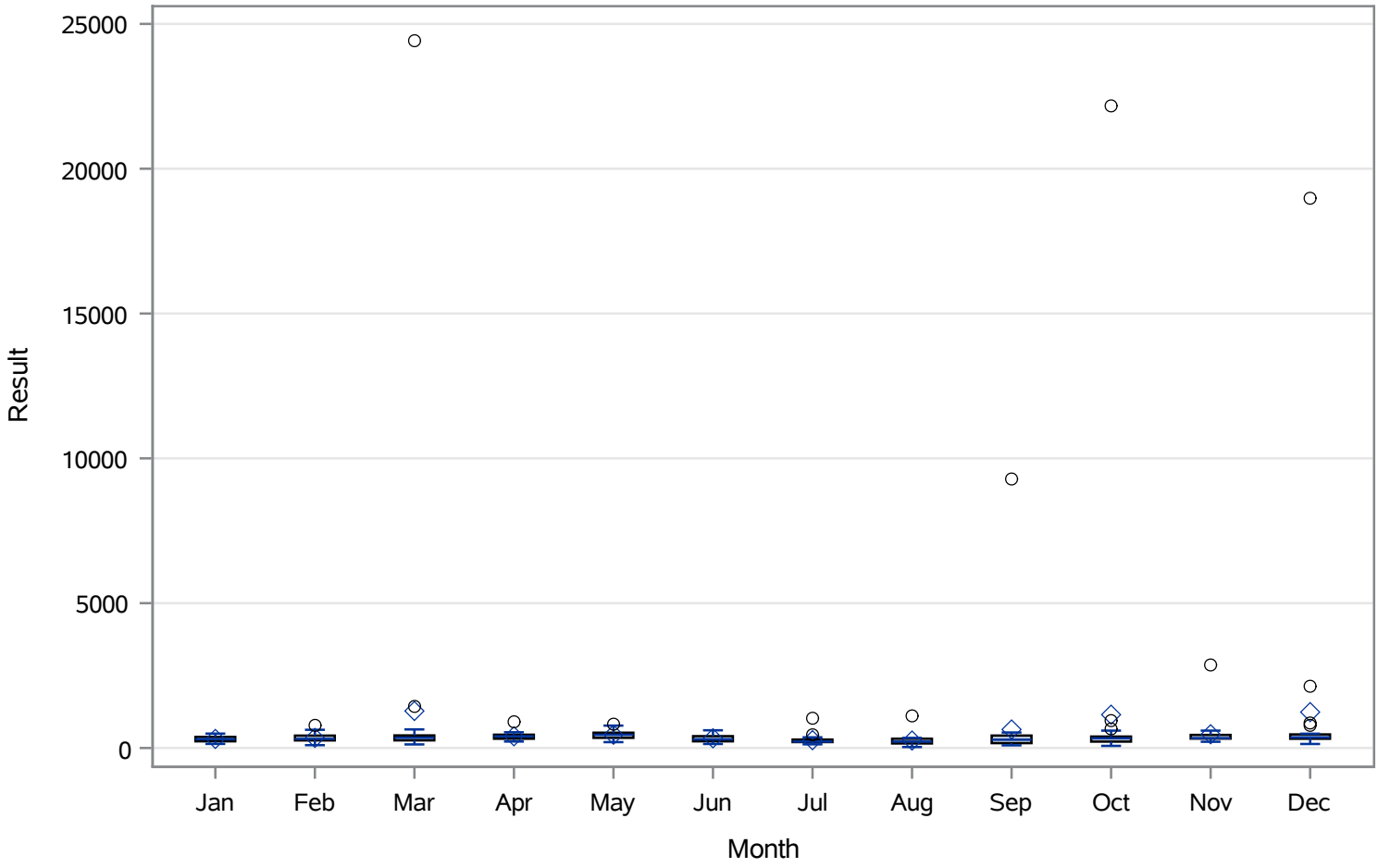


Little Manatee River

L MANATEE R BR US 301

Specific Conductance (µmhos/cm) µmhos/cm

Site ID = 21FLHILL24010100

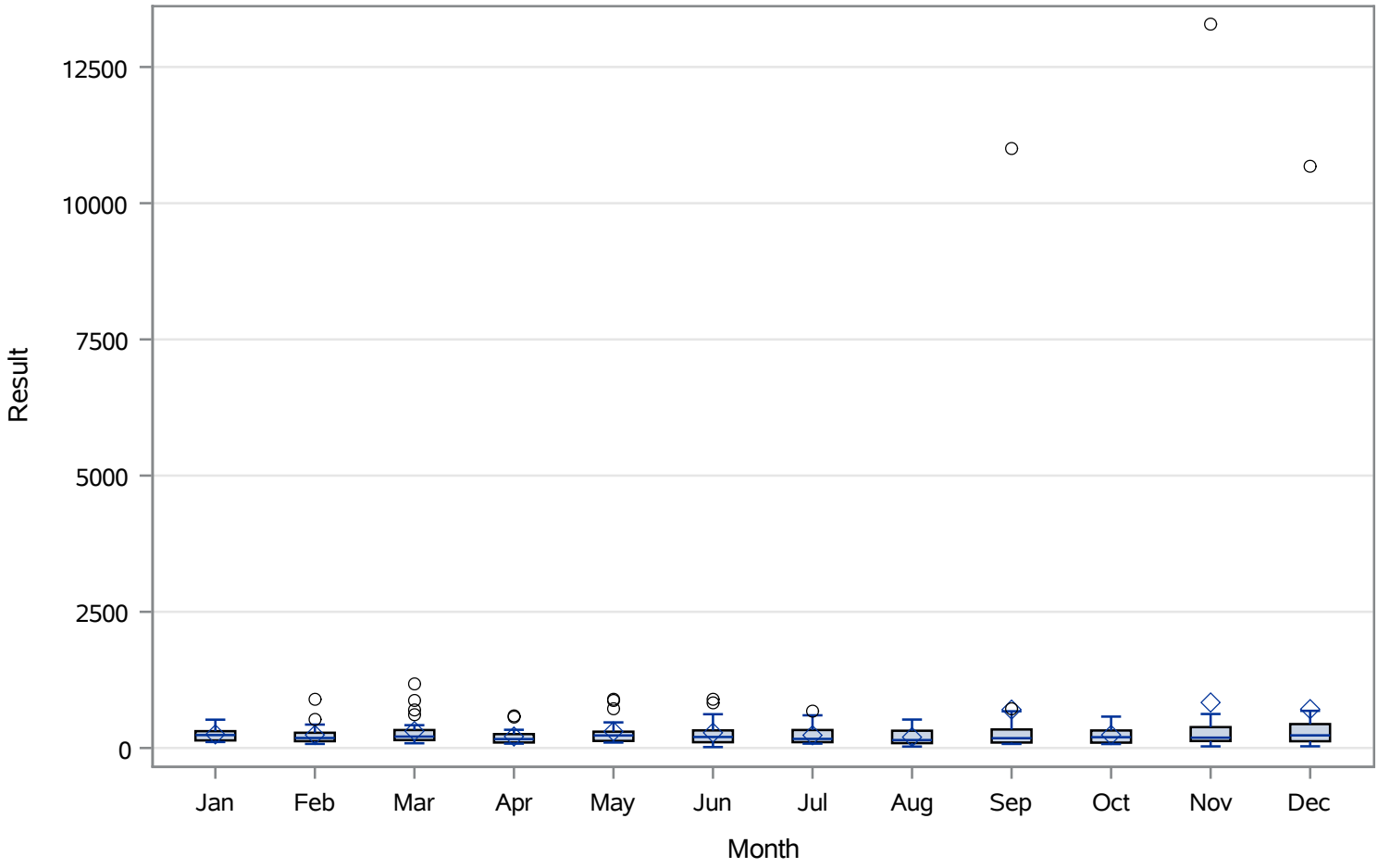


Little Manatee River

LITTLE MANATEE R AT SR #674

Specific Conductance (µmhos/cm) µmhos/cm

Site ID = 21FLHILL24010110

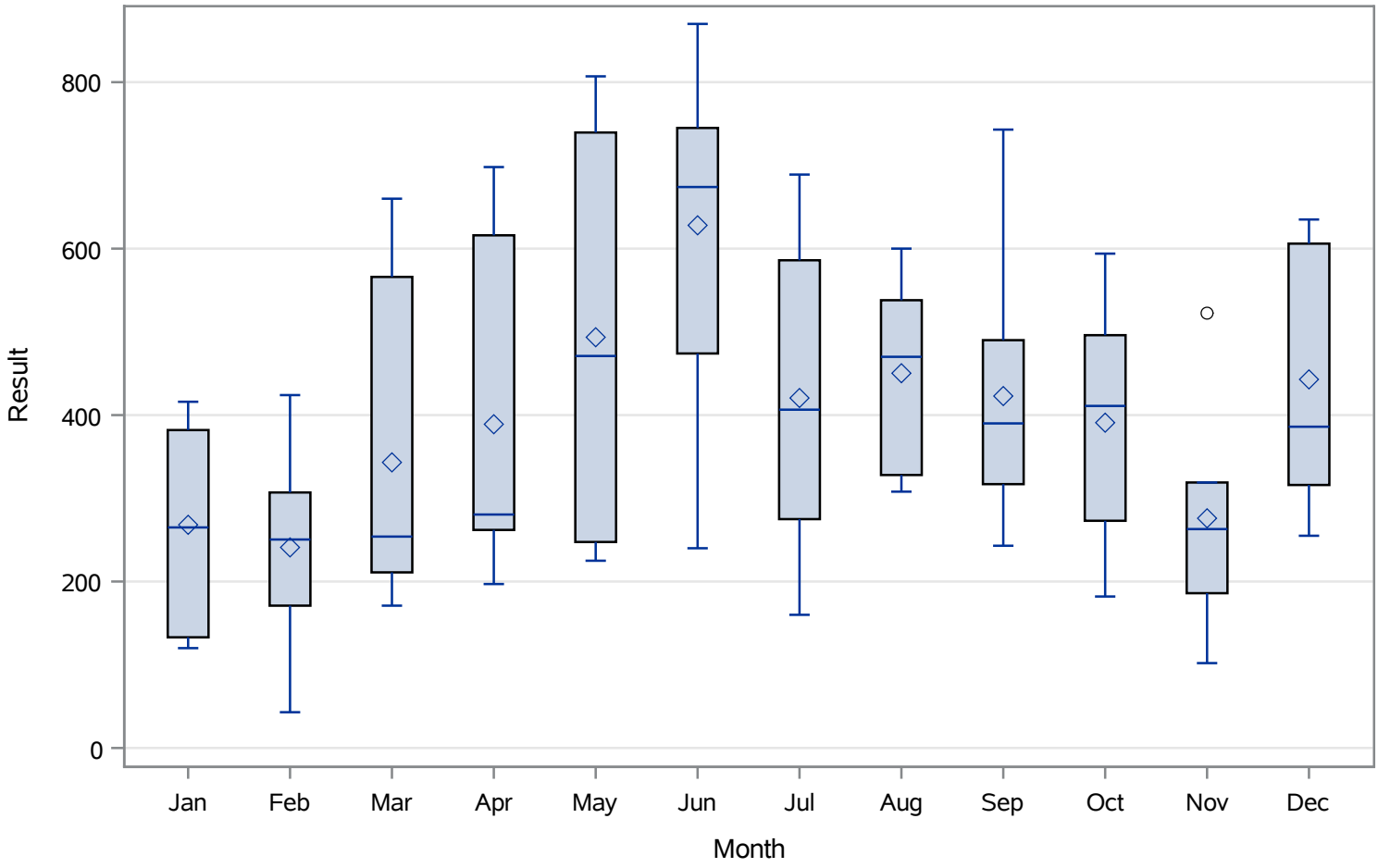


Little Manatee River

Little Manatee R. at SR674

Specific Conductance (µmhos/cm) µmhos/cm

Site ID = 21FLIMCALM674

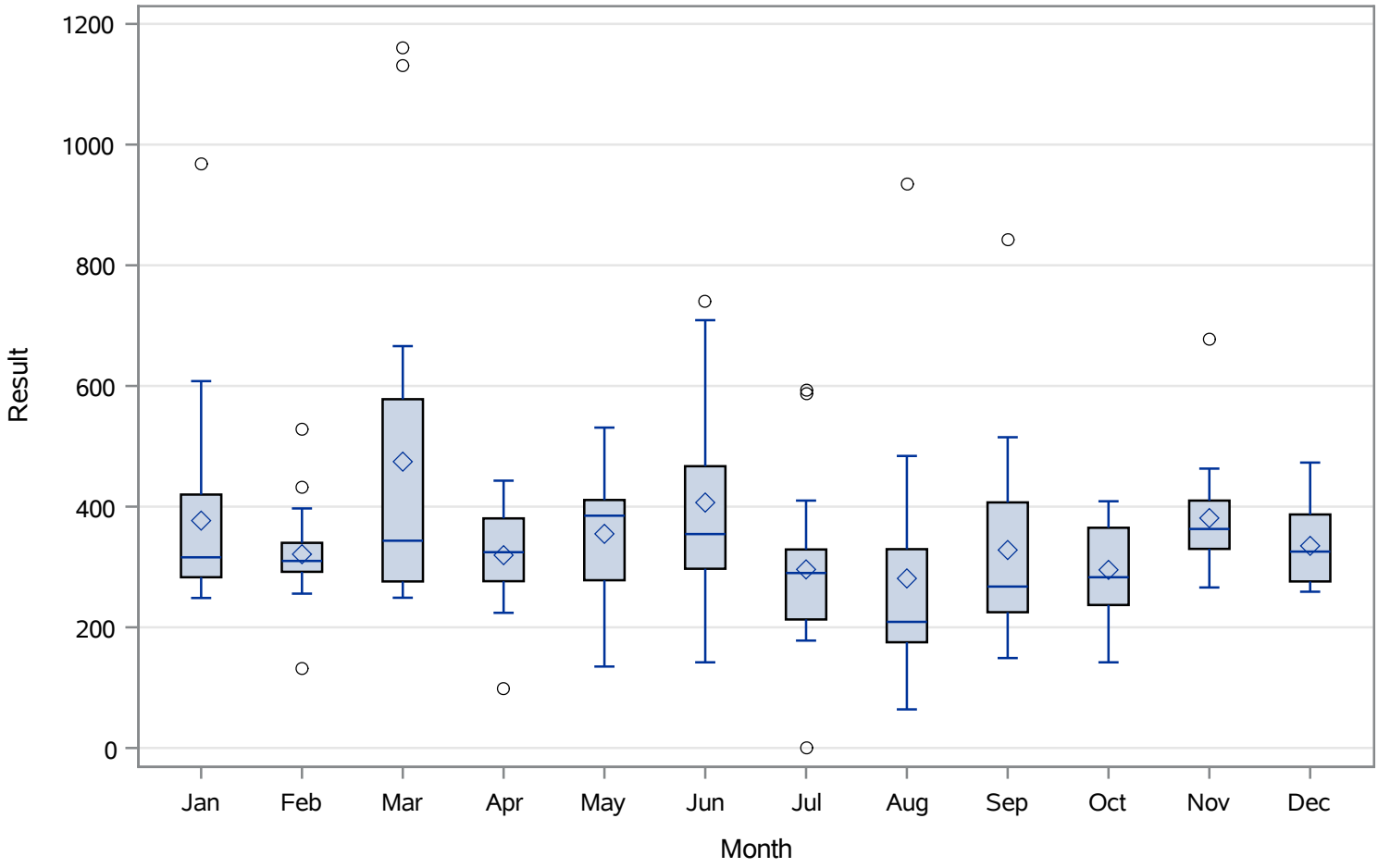


Little Manatee River

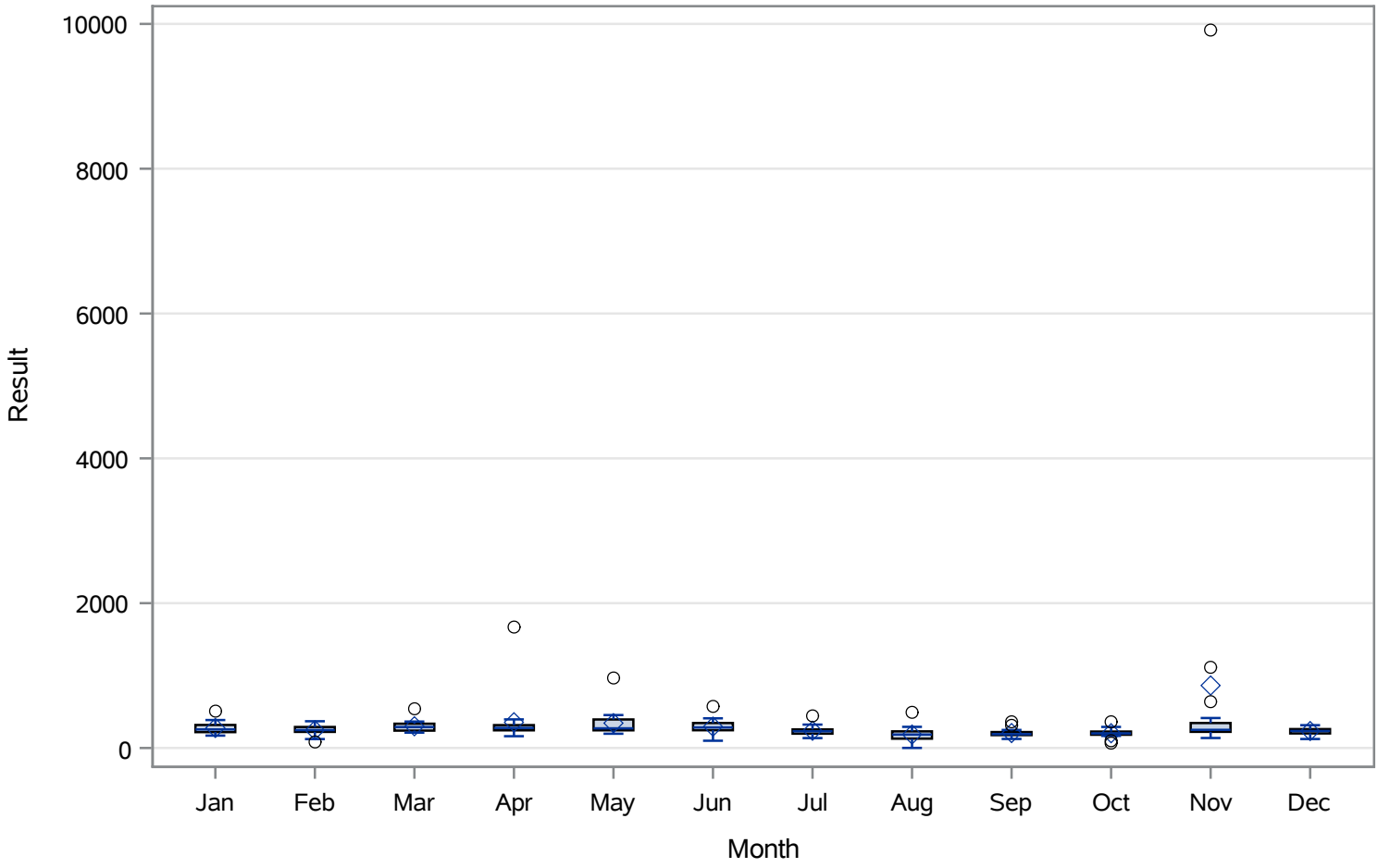
D1

Specific Conductance (µmhos/cm) µmhos/cm

Site ID = 21FLMANAD1



Little Manatee River
D3
Specific Conductance (µmhos/cm) µmhos/cm
Site ID = 21FLMANAD3

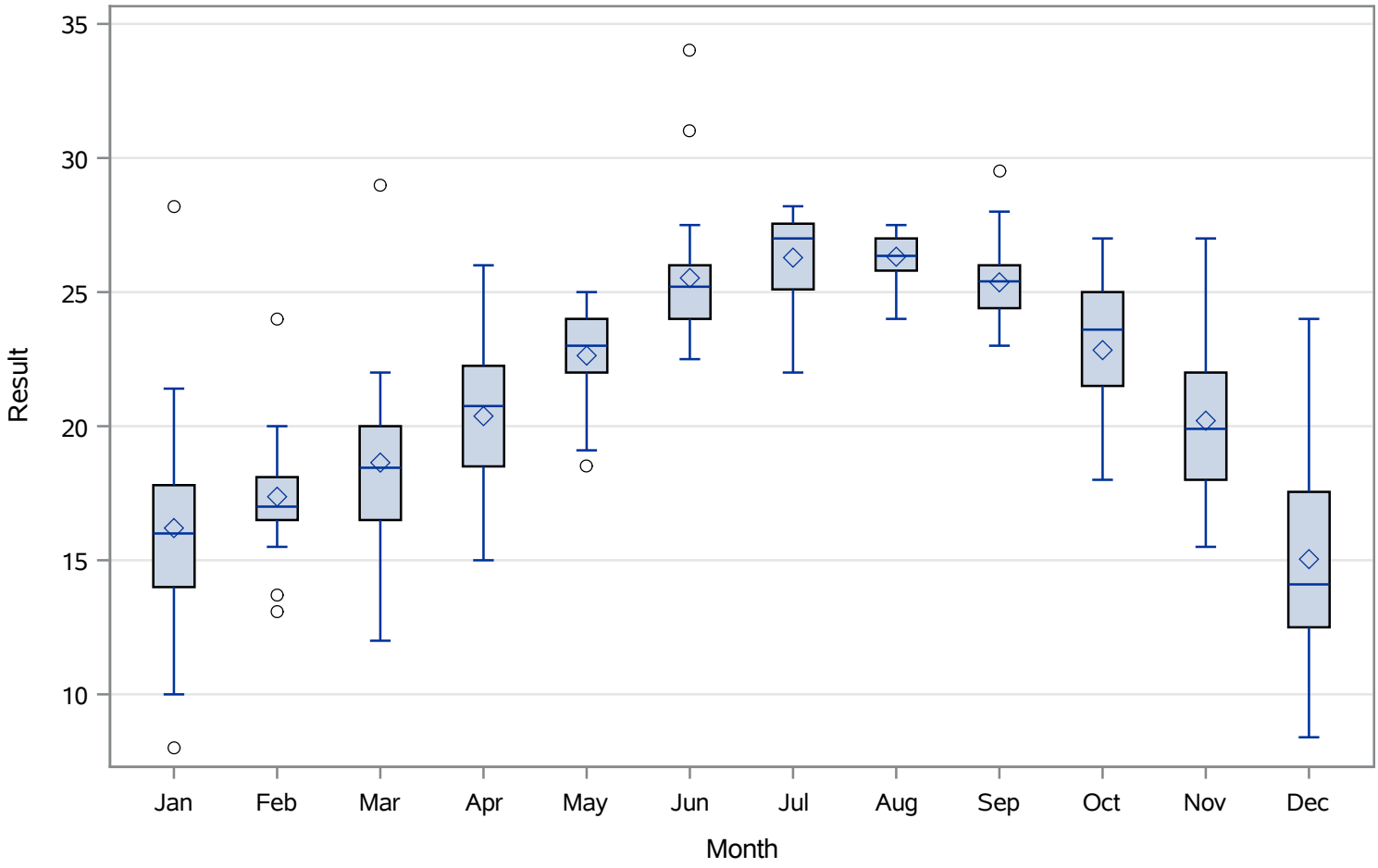


Little Manatee River

LITTLE MANATEE RIVER NEAR FT. LONESOME FL

Temperature (C°) deg C

Site ID = 112WRD 02300100

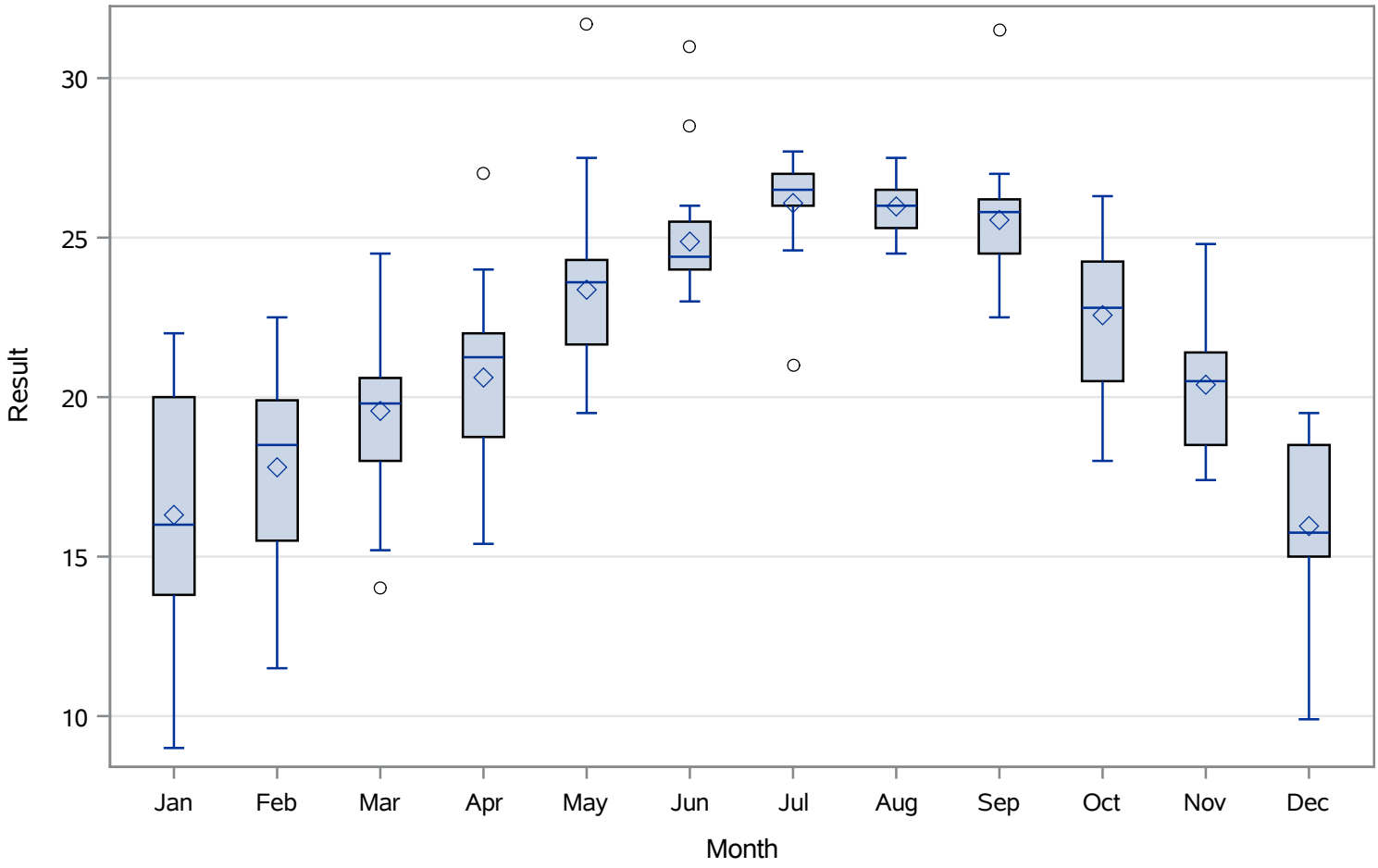


Little Manatee River

SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL

Temperature (C°) deg C

Site ID = 112WRD 02300200

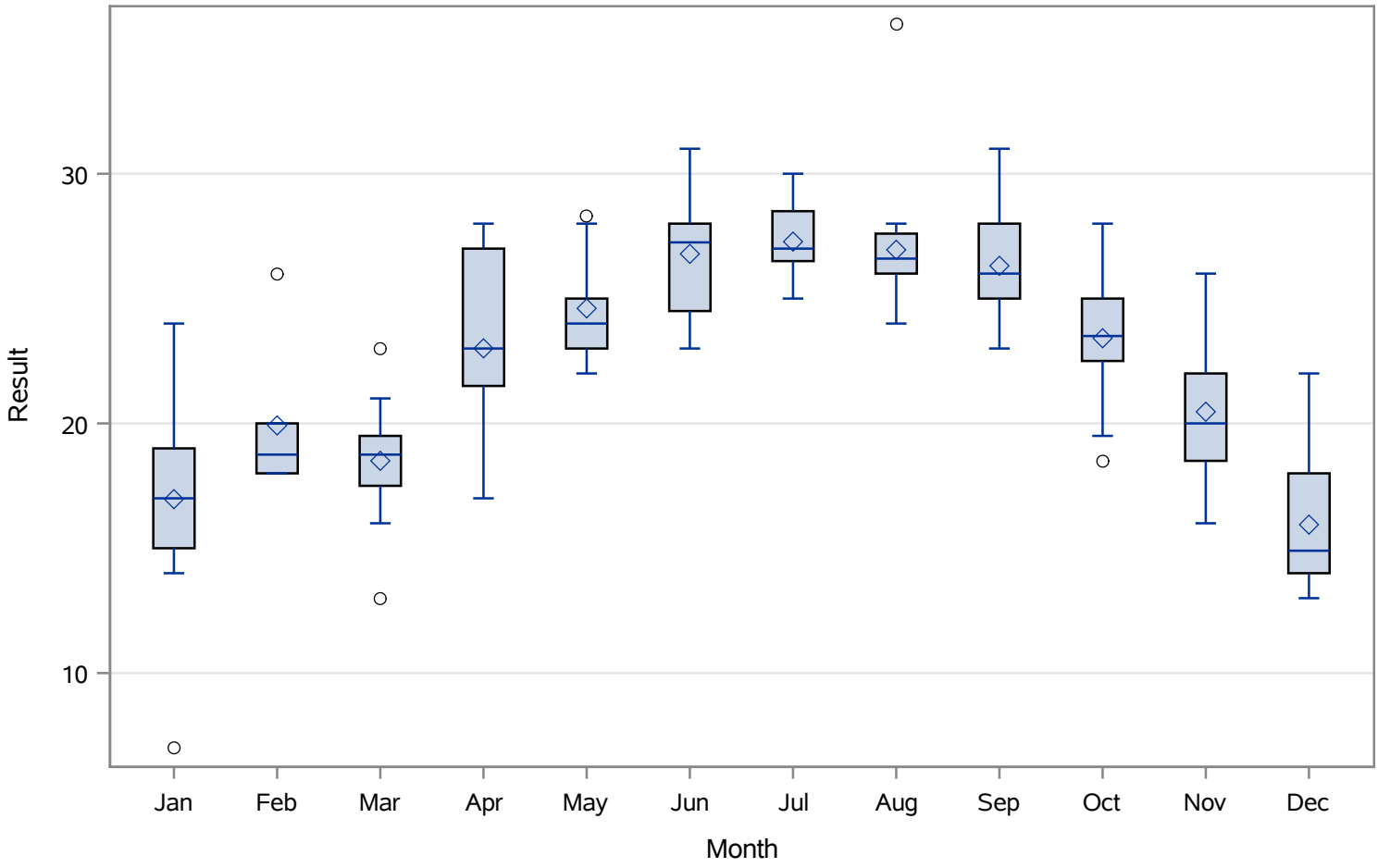


Little Manatee River

LITTLE MANATEE RIVER NEAR WIMAUMA FL

Temperature (C°) deg C

Site ID = 112WRD 02300500

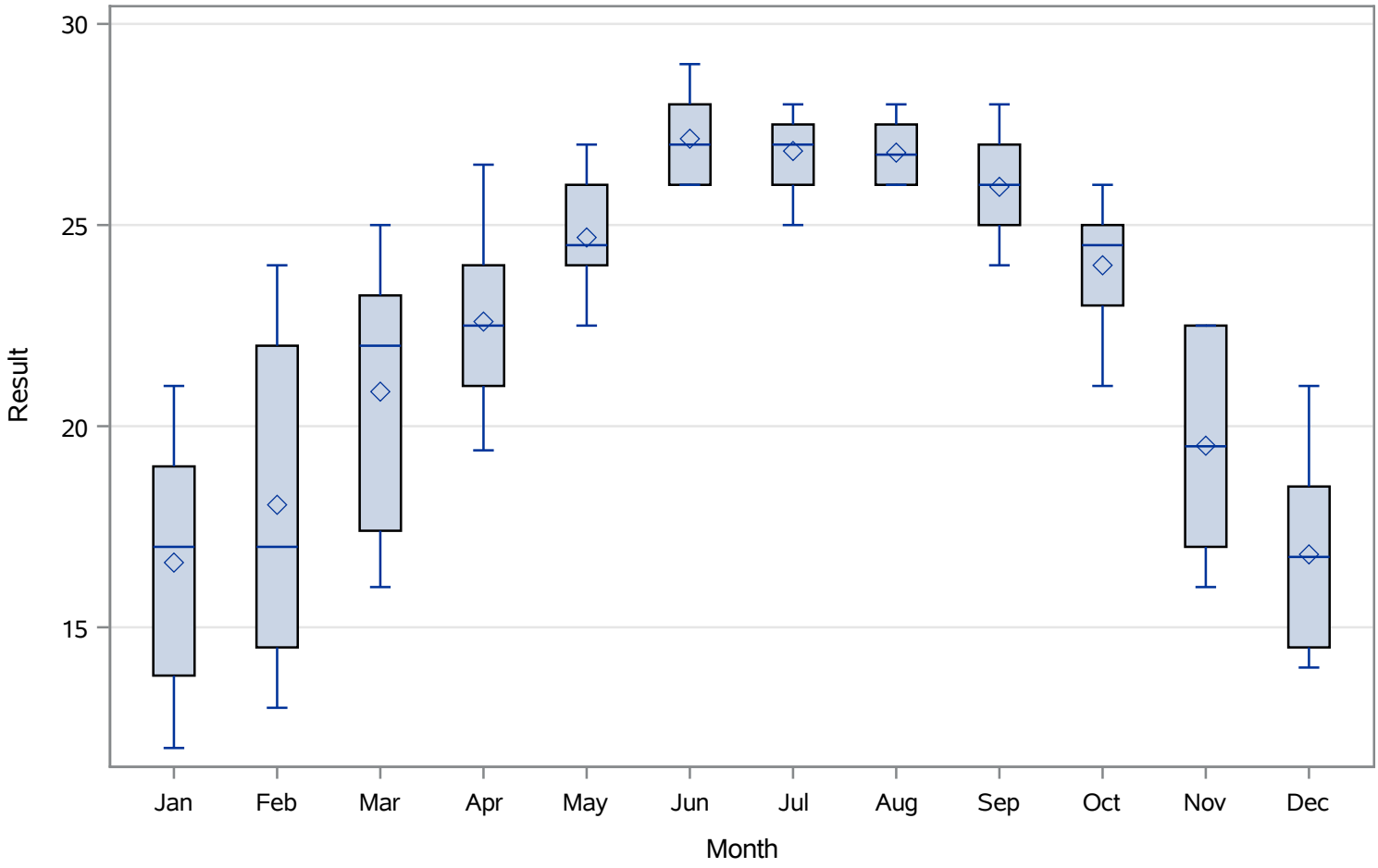


Little Manatee River

L MANATEE R BR US 301

Temperature (C°) deg C

Site ID = 21FLA 24010100

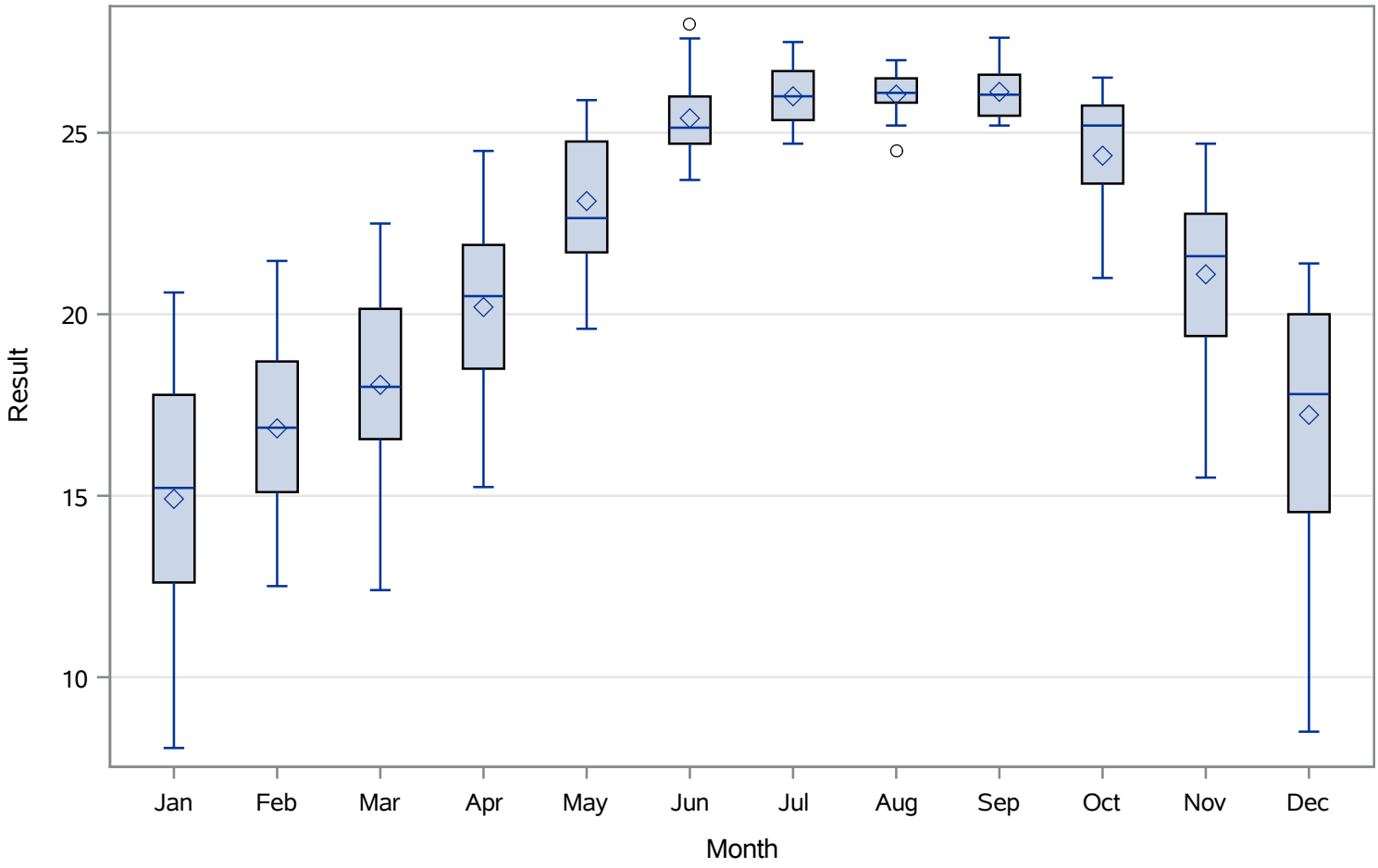


Little Manatee River

LITTLE MANATEE RIVER AT US HWY 301

Temperature (C°) deg C

Site ID = 21FLGW 3555

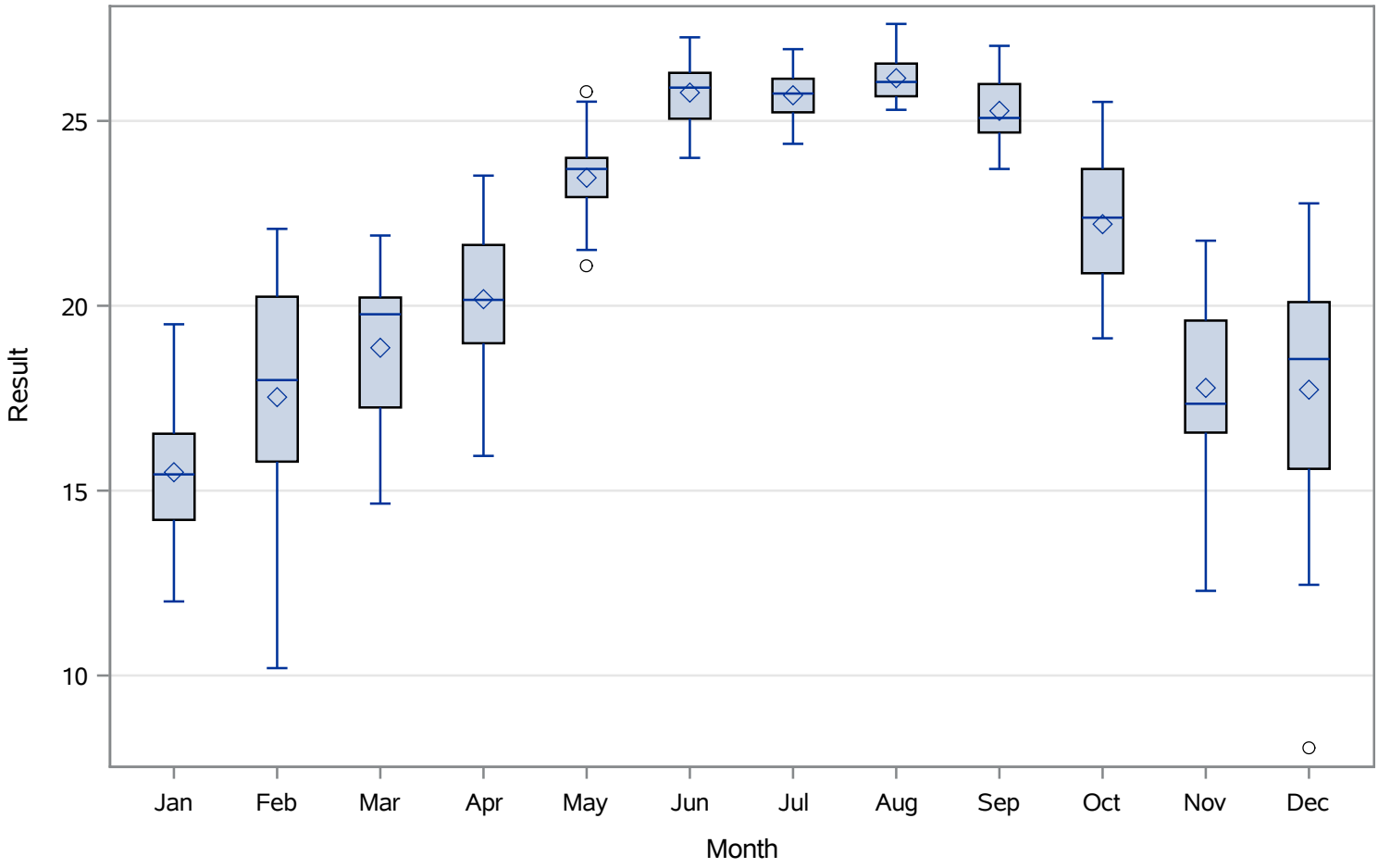


Little Manatee River

Little Manatee River at US 301 bridge

Temperature (C°) deg C

Site ID = 21FLHILL113

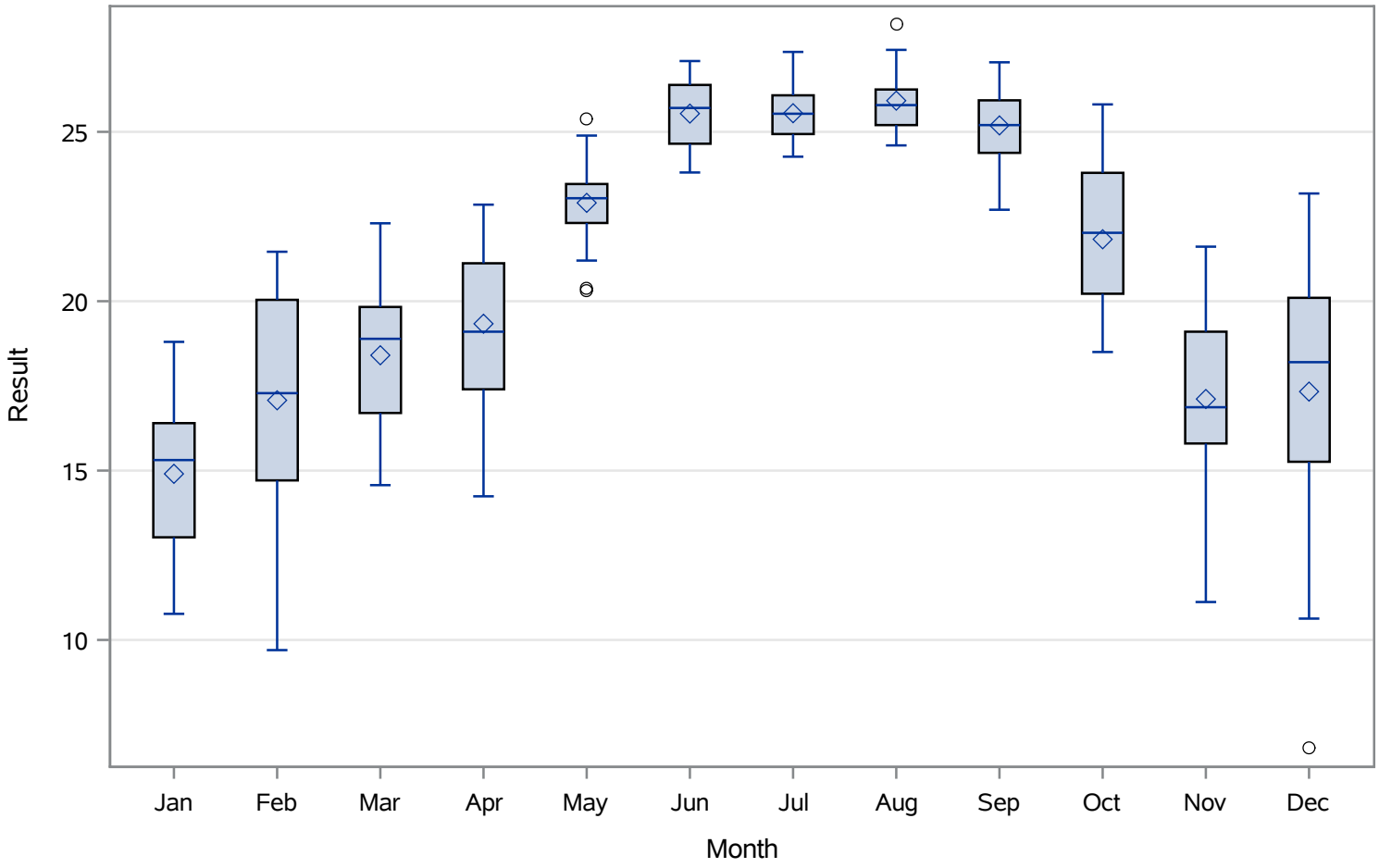


Little Manatee River

Little Manatee River at SR 674

Temperature (C°) deg C

Site ID = 21FLHILL129

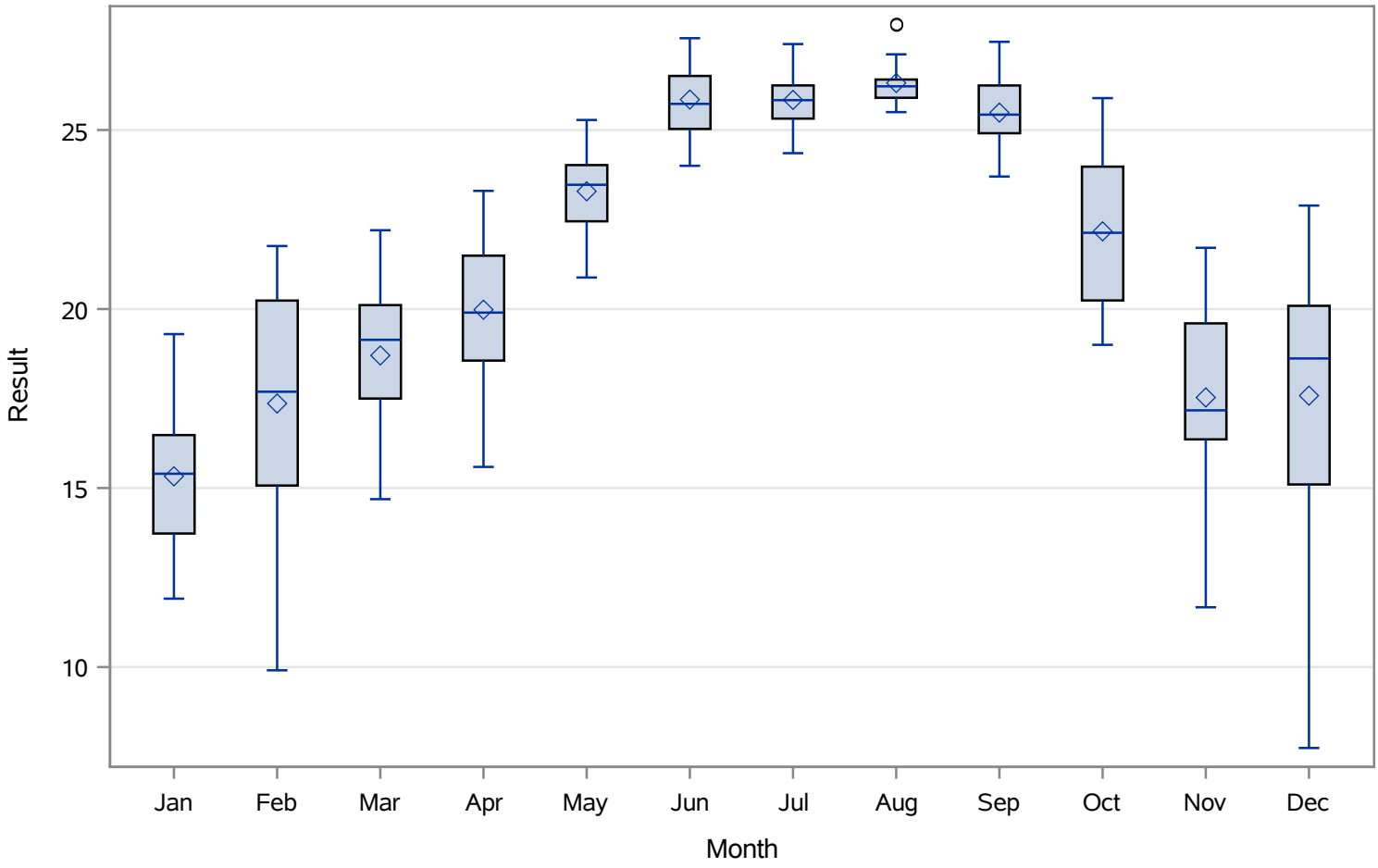


Little Manatee River

Little Manatee River at CR 579

Temperature (C°) deg C

Site ID = 21FLHILL140

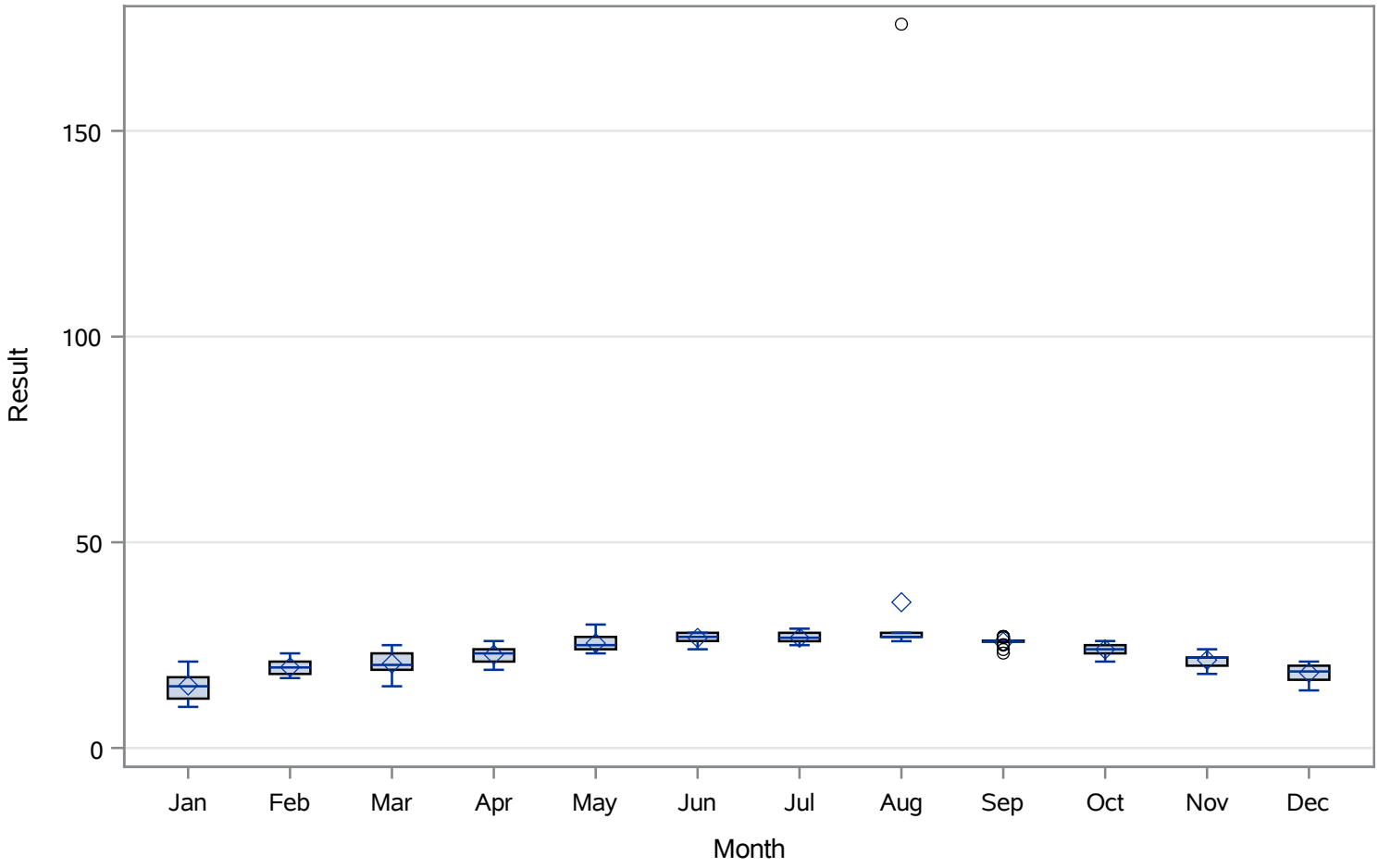


Little Manatee River

LITTLE MANATEE R AT CR579

Temperature (C°) deg C

Site ID = 21FLHILL24010013

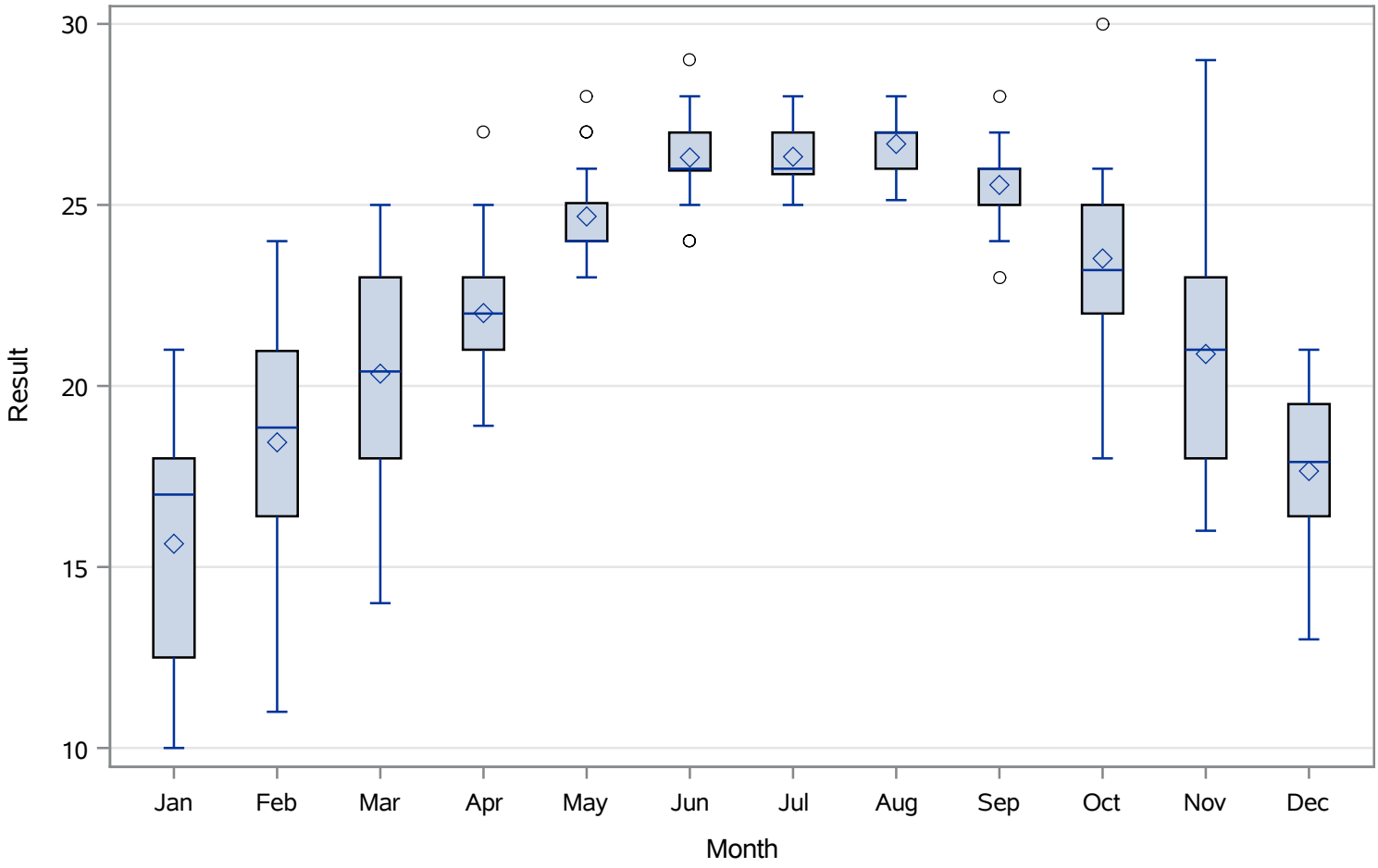


Little Manatee River

L MANATEE R BR US 301

Temperature (C°) deg C

Site ID = 21FLHILL24010100

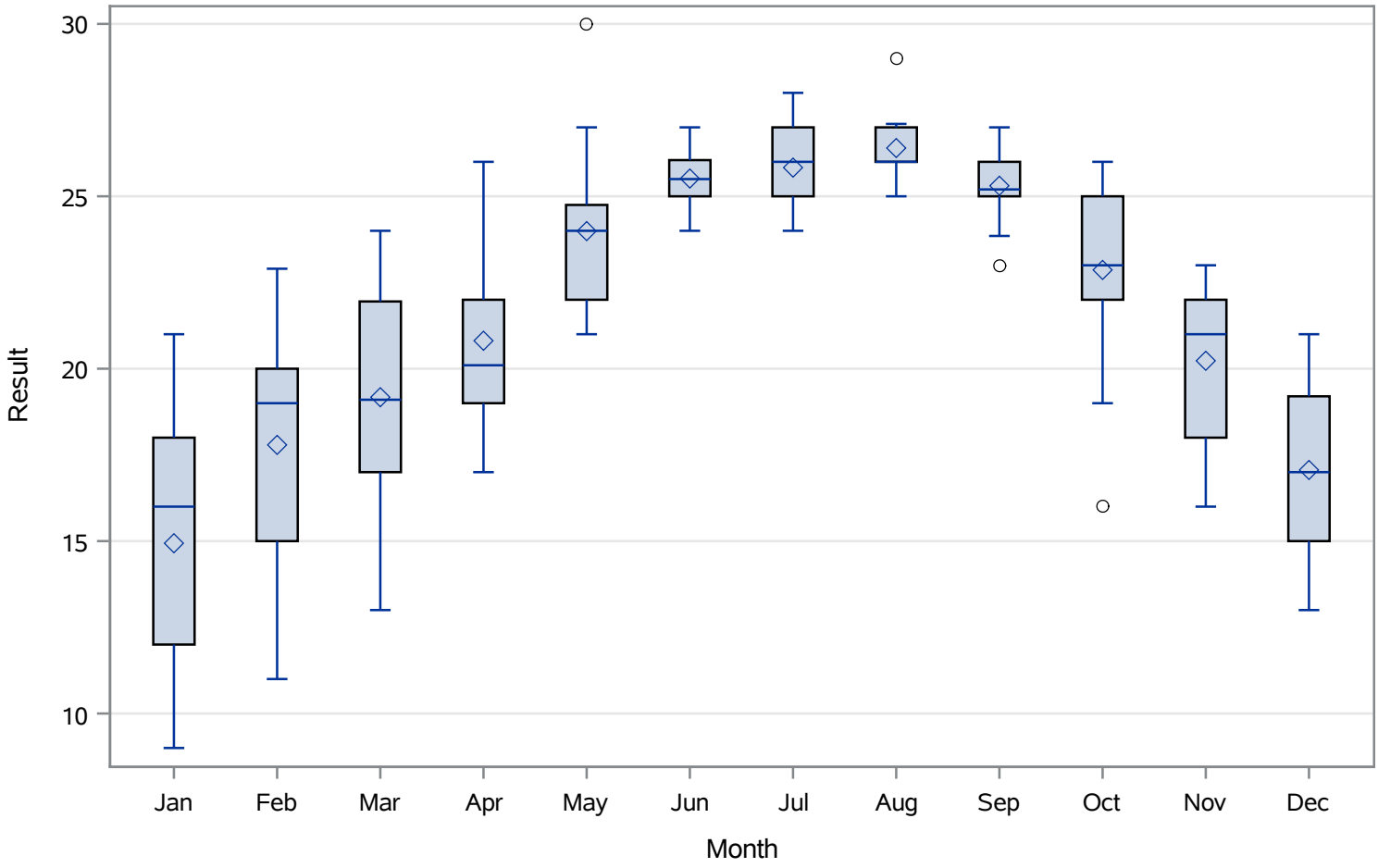


Little Manatee River

LITTLE MANATEE R AT SR #674

Temperature (C°) deg C

Site ID = 21FLHILL24010110

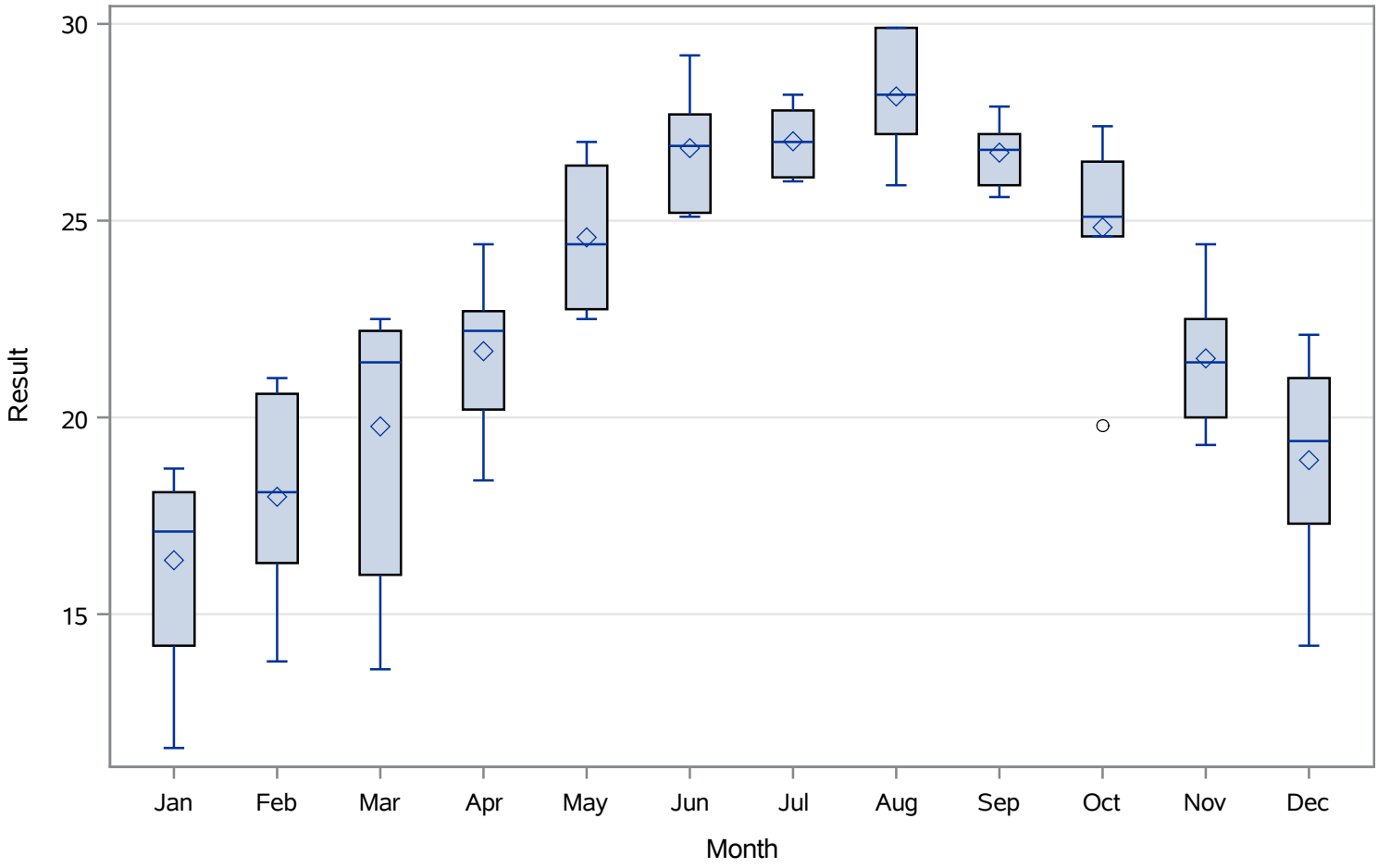


Little Manatee River

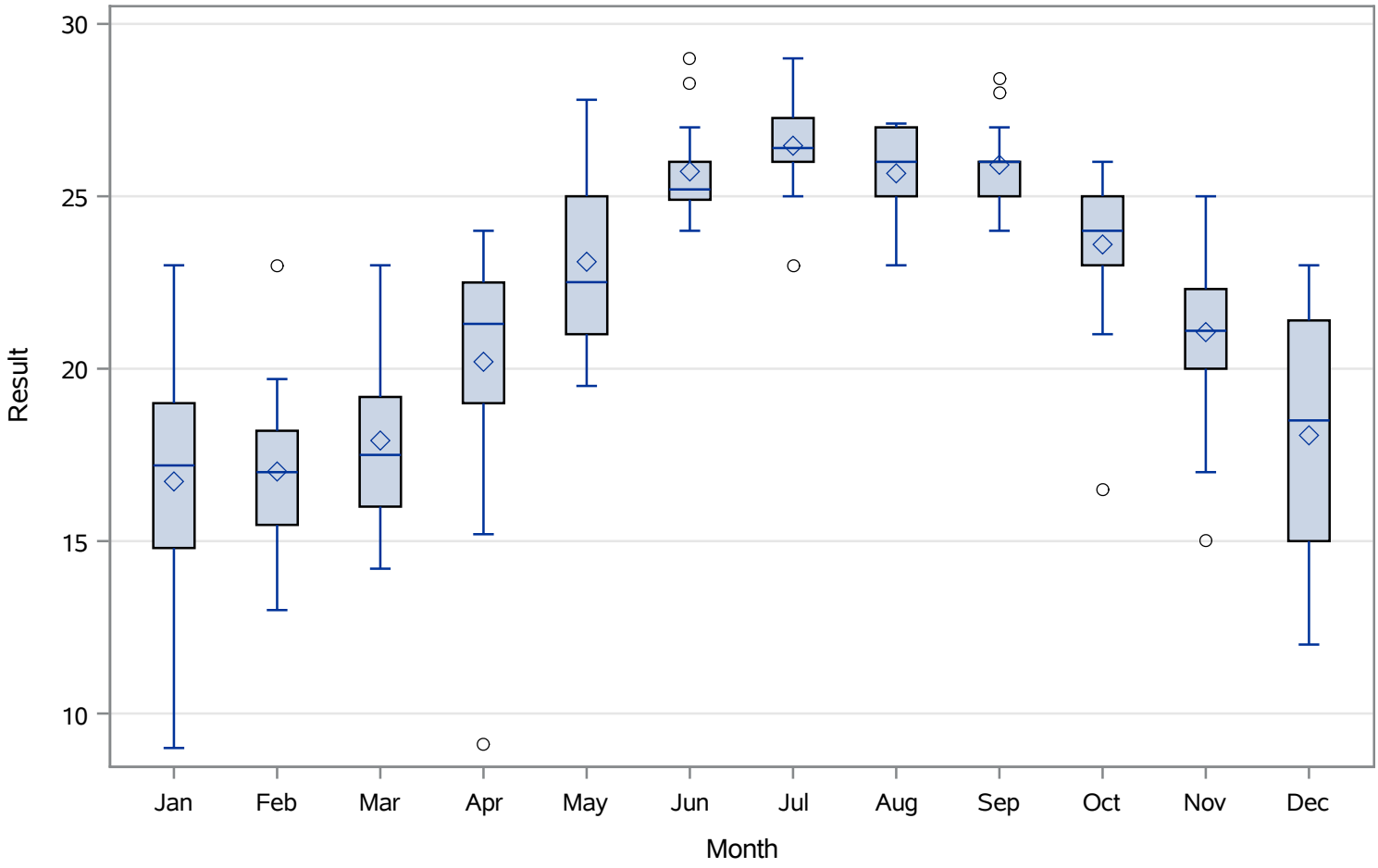
Little Manatee R. at SR674

Temperature (C°) deg C

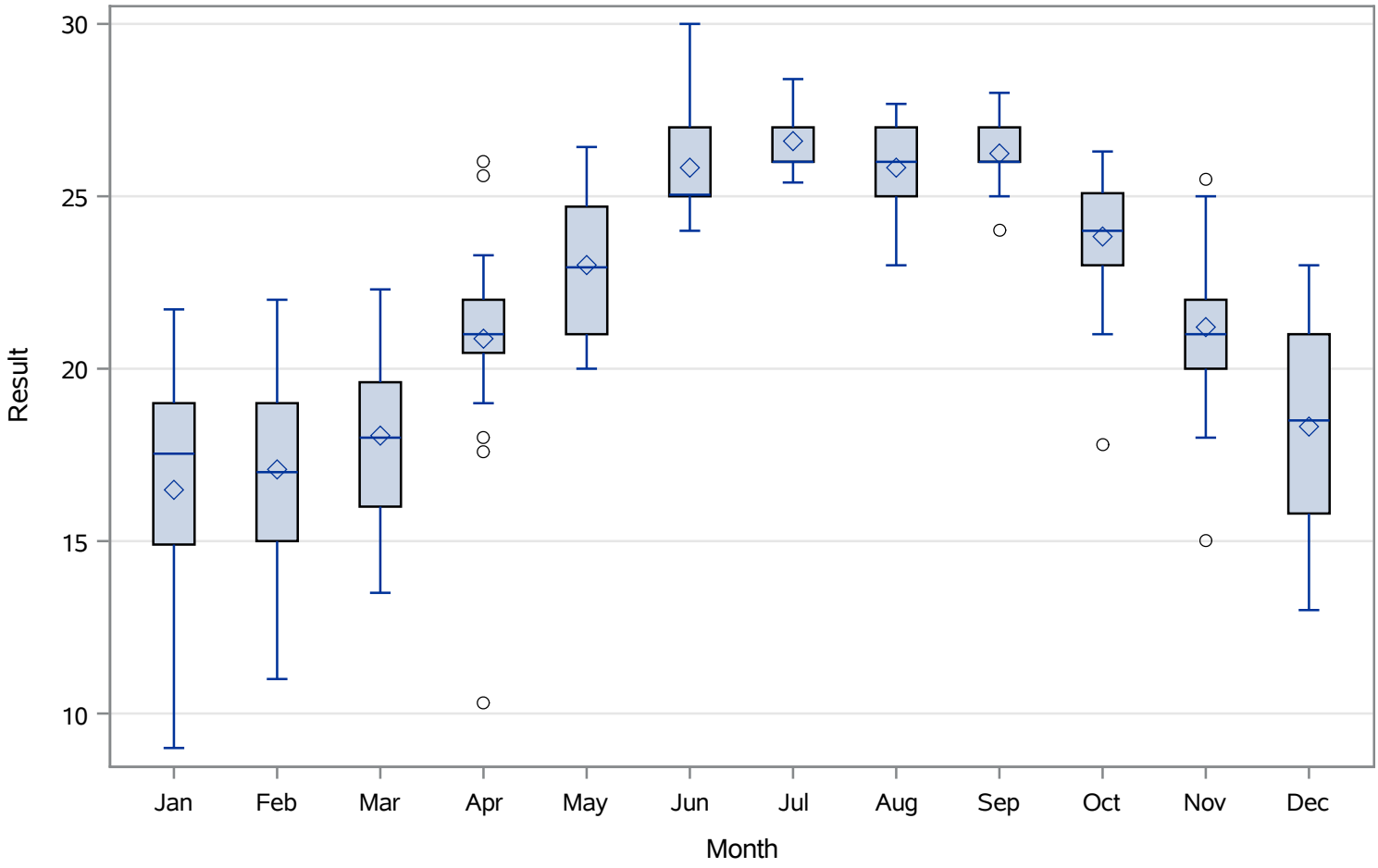
Site ID = 21FLIMCALM674



Little Manatee River
D1
Temperature (C°) deg C
Site ID = 21FLMANAD1



Little Manatee River
D3
Temperature (C°) deg C
Site ID = 21FLMANAD3

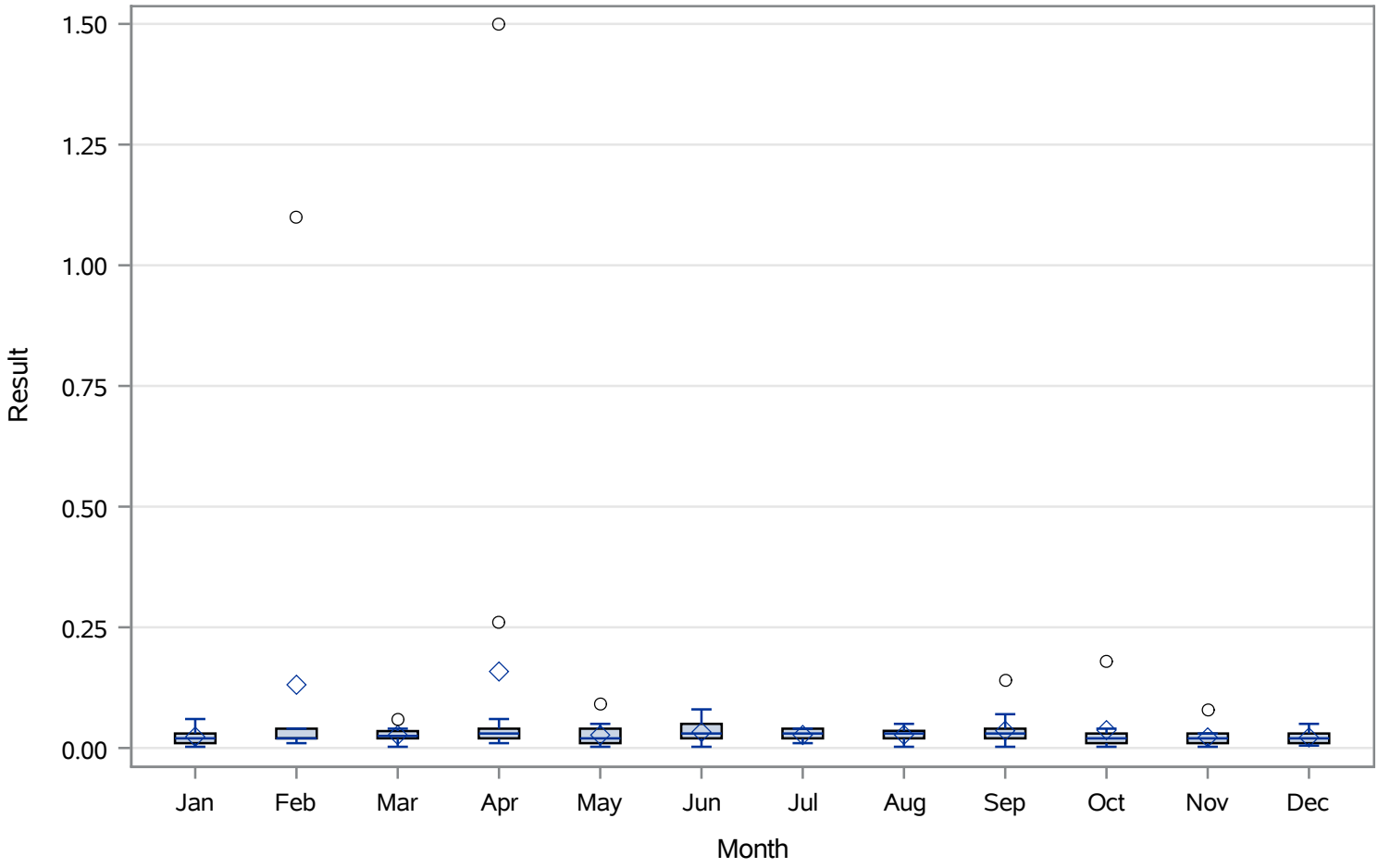


Little Manatee River

LITTLE MANATEE RIVER NEAR FT. LONESOME FL

Total Ammonia as N (mg/L) mg/L

Site ID = 112WRD 02300100

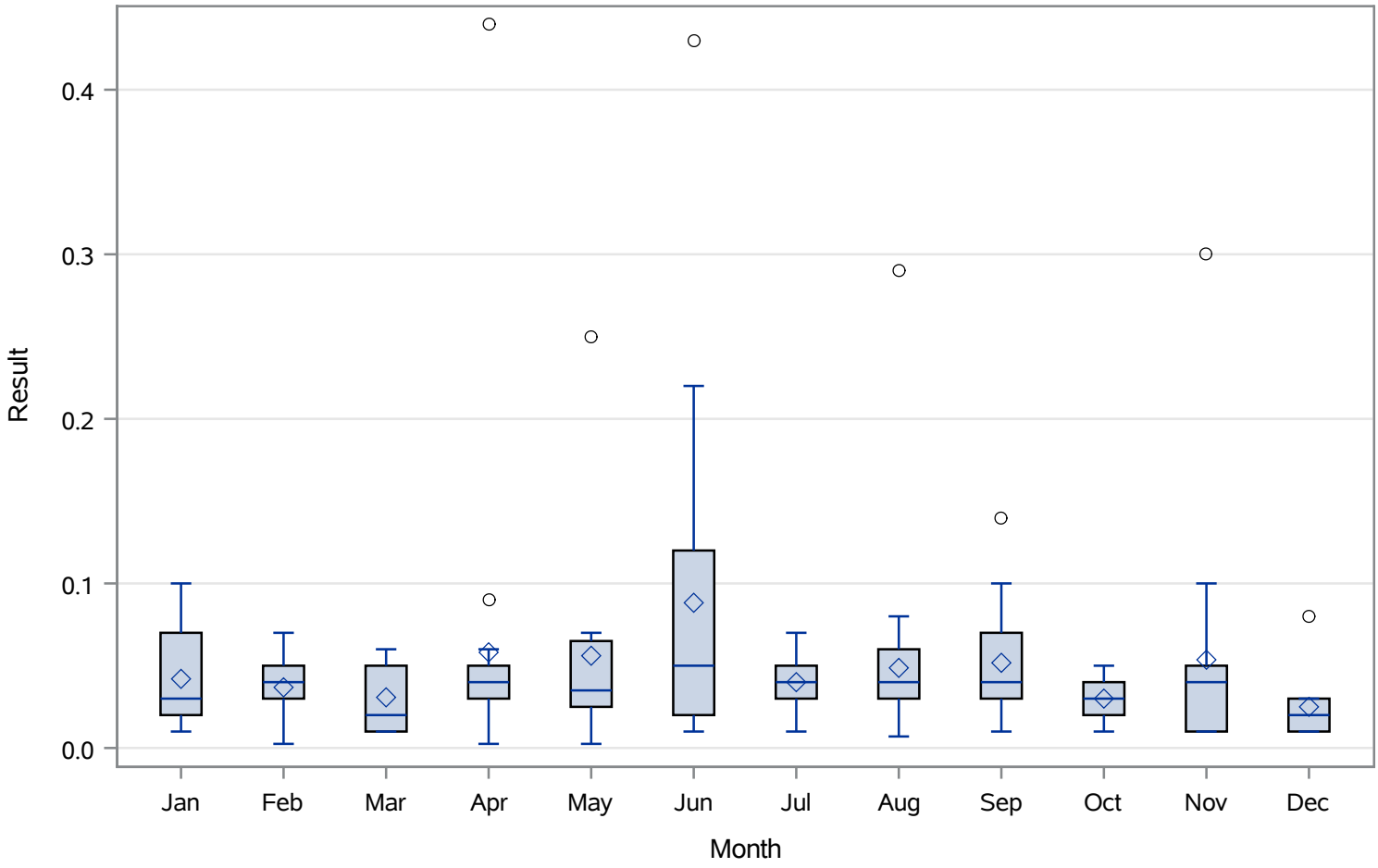


Little Manatee River

SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL

Total Ammonia as N (mg/L) mg/L

Site ID = 112WRD 02300200

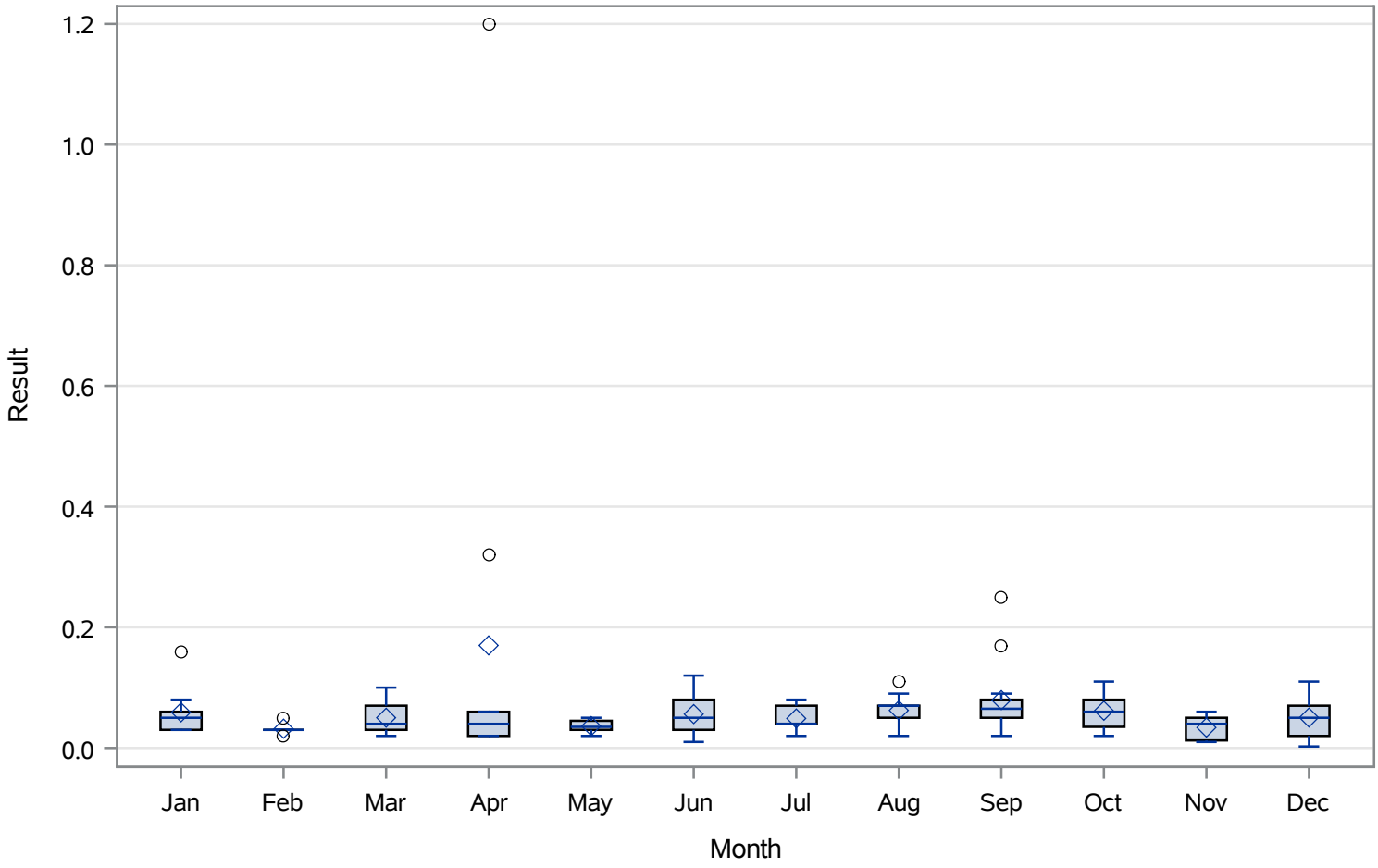


Little Manatee River

LITTLE MANATEE RIVER NEAR WIMAUMA FL

Total Ammonia as N (mg/L) mg/L

Site ID = 112WRD 02300500

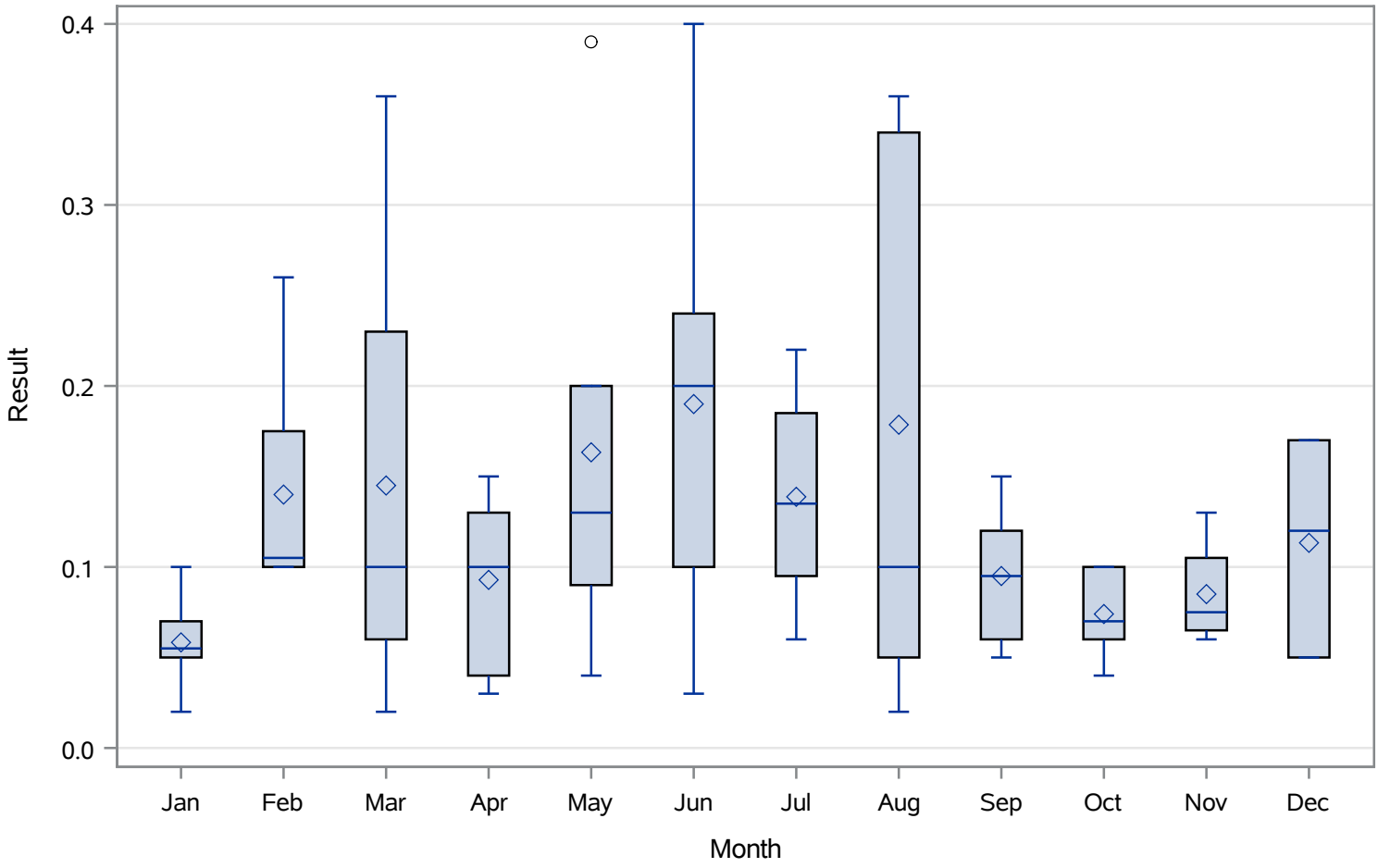


Little Manatee River

L MANATEE R BR US 301

Total Ammonia as N (mg/L) mg/L

Site ID = 21FLA 24010100

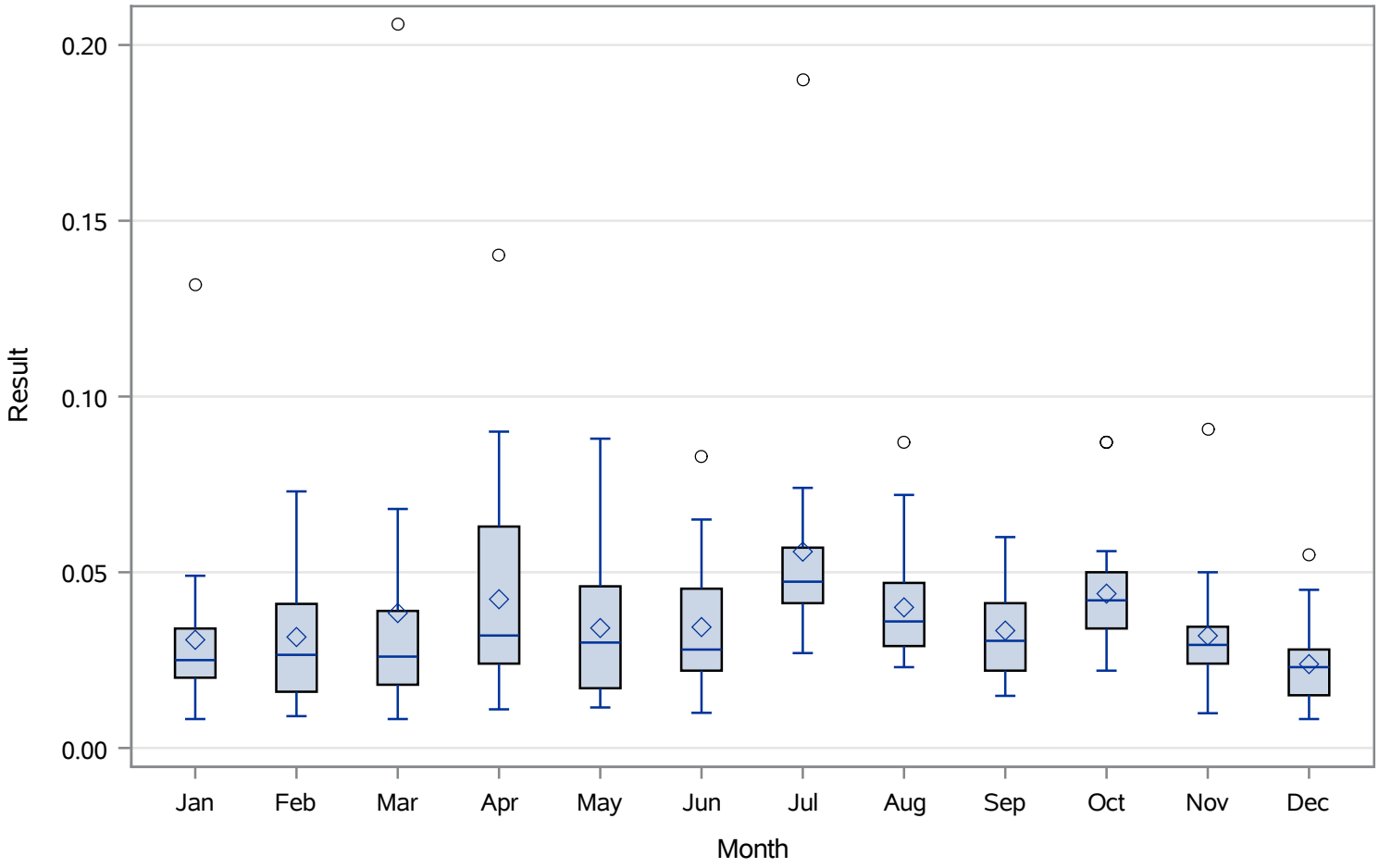


Little Manatee River

LITTLE MANATEE RIVER AT US HWY 301

Total Ammonia as N (mg/L) mg/L

Site ID = 21FLGW 3555

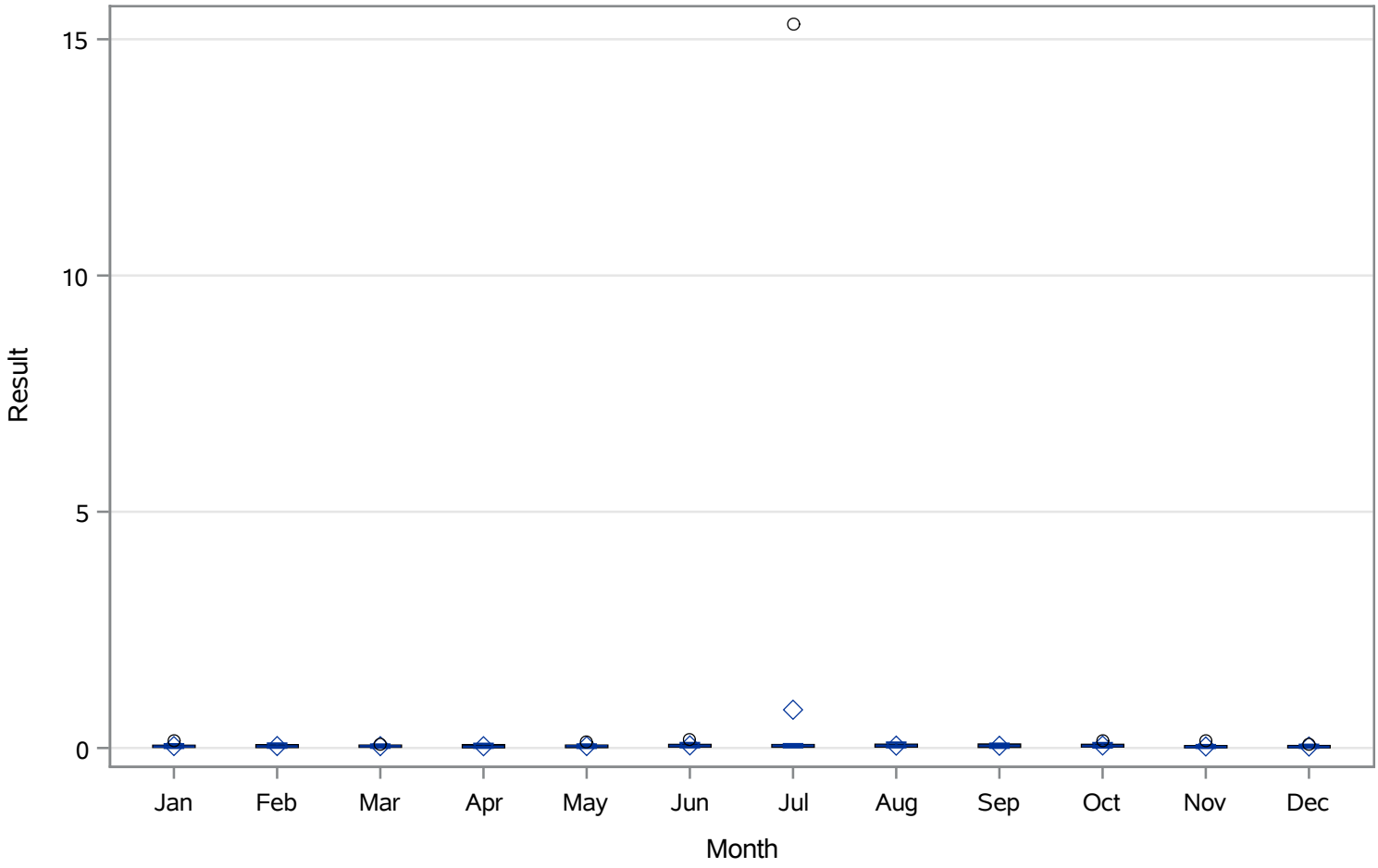


Little Manatee River

Little Manatee River at US 301 bridge

Total Ammonia as N (mg/L) mg/L

Site ID = 21FLHILL113

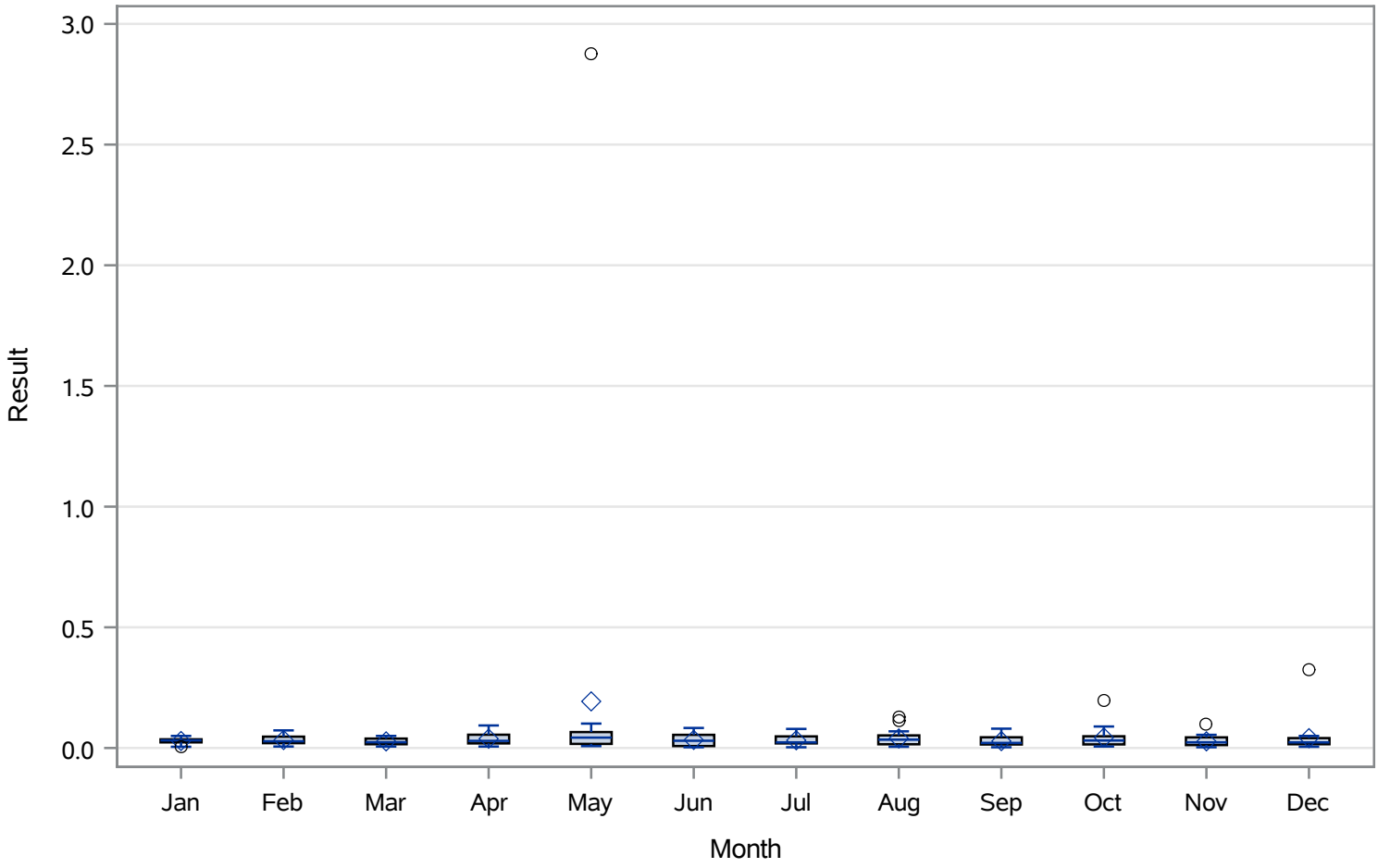


Little Manatee River

Little Manatee River at SR 674

Total Ammonia as N (mg/L) mg/L

Site ID = 21FLHILL129

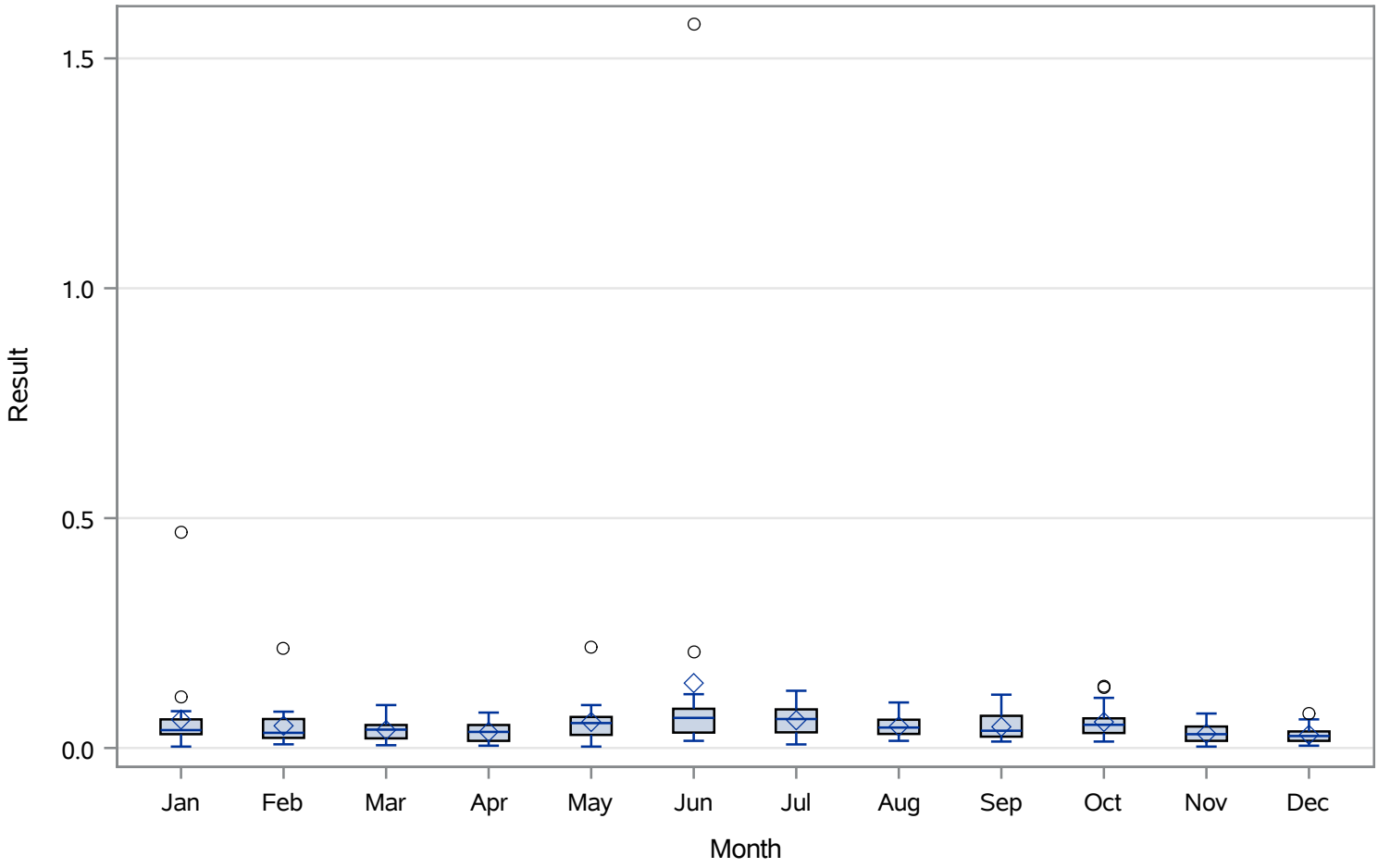


Little Manatee River

Little Manatee River at CR 579

Total Ammonia as N (mg/L) mg/L

Site ID = 21FLHILL140

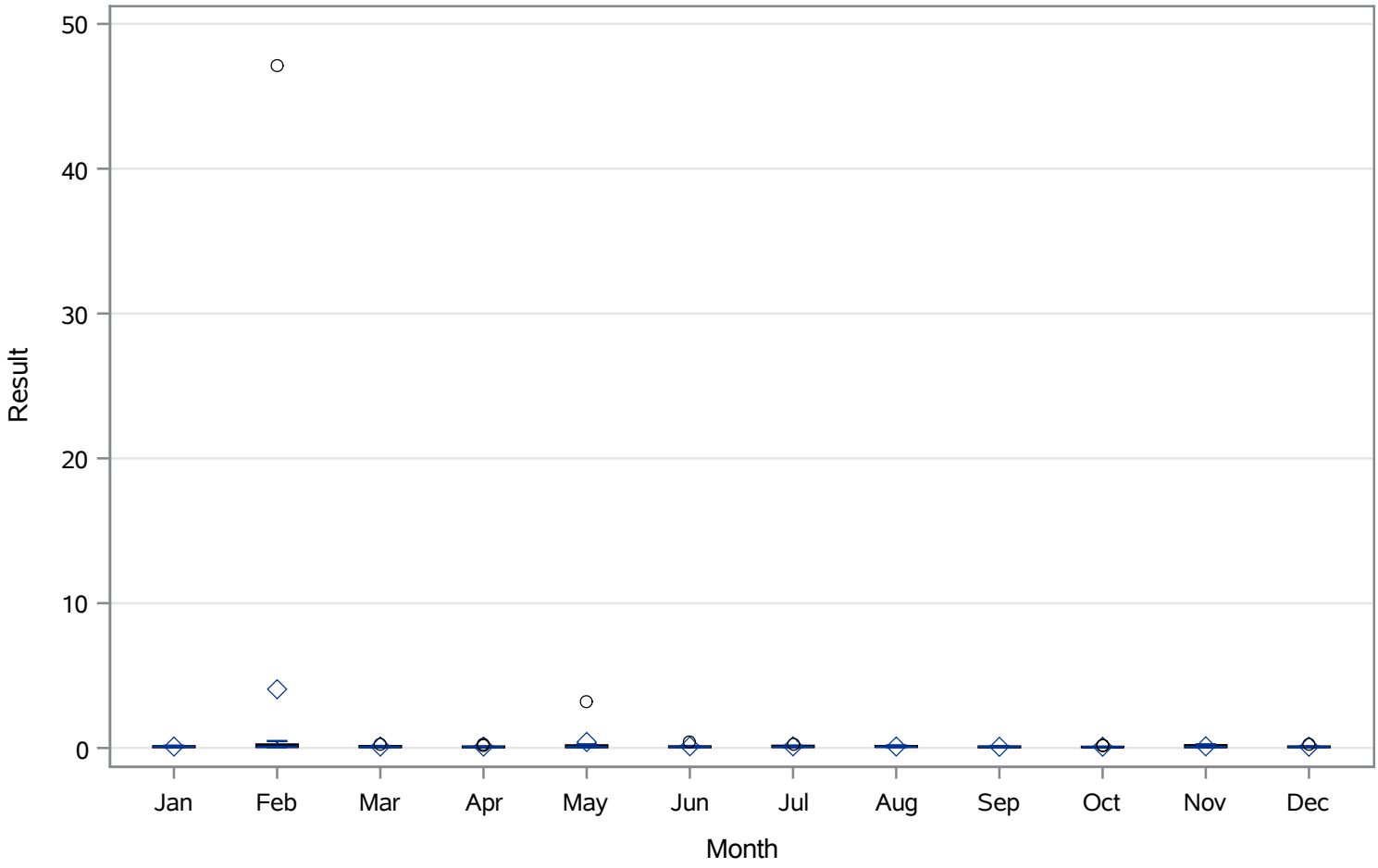


Little Manatee River

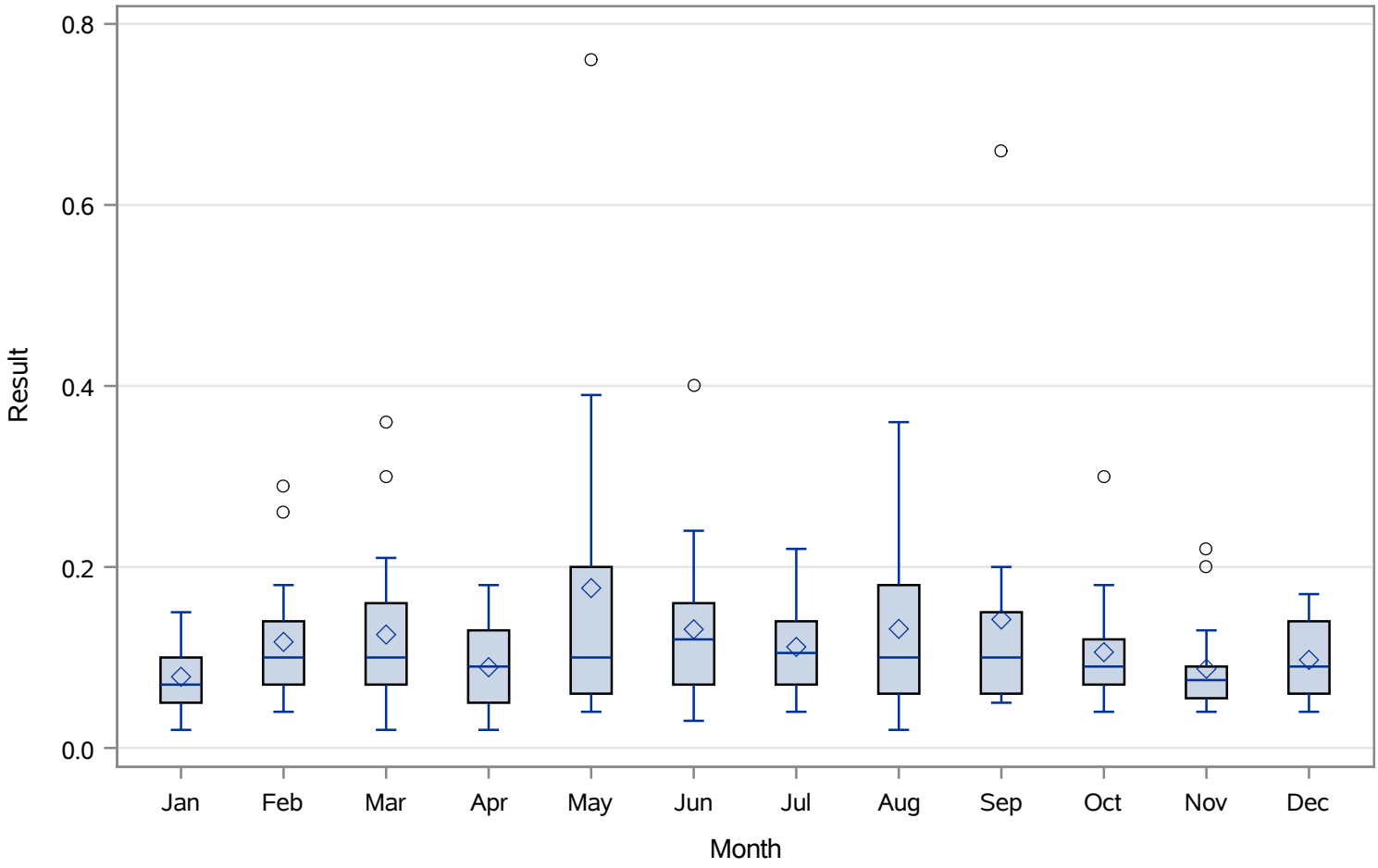
LITTLE MANATEE R AT CR579

Total Ammonia as N (mg/L) mg/L

Site ID = 21FLHILL24010013



Little Manatee River
L MANATEE R BR US 301
Total Ammonia as N (mg/L) mg/L
Site ID = 21FLHILL24010100

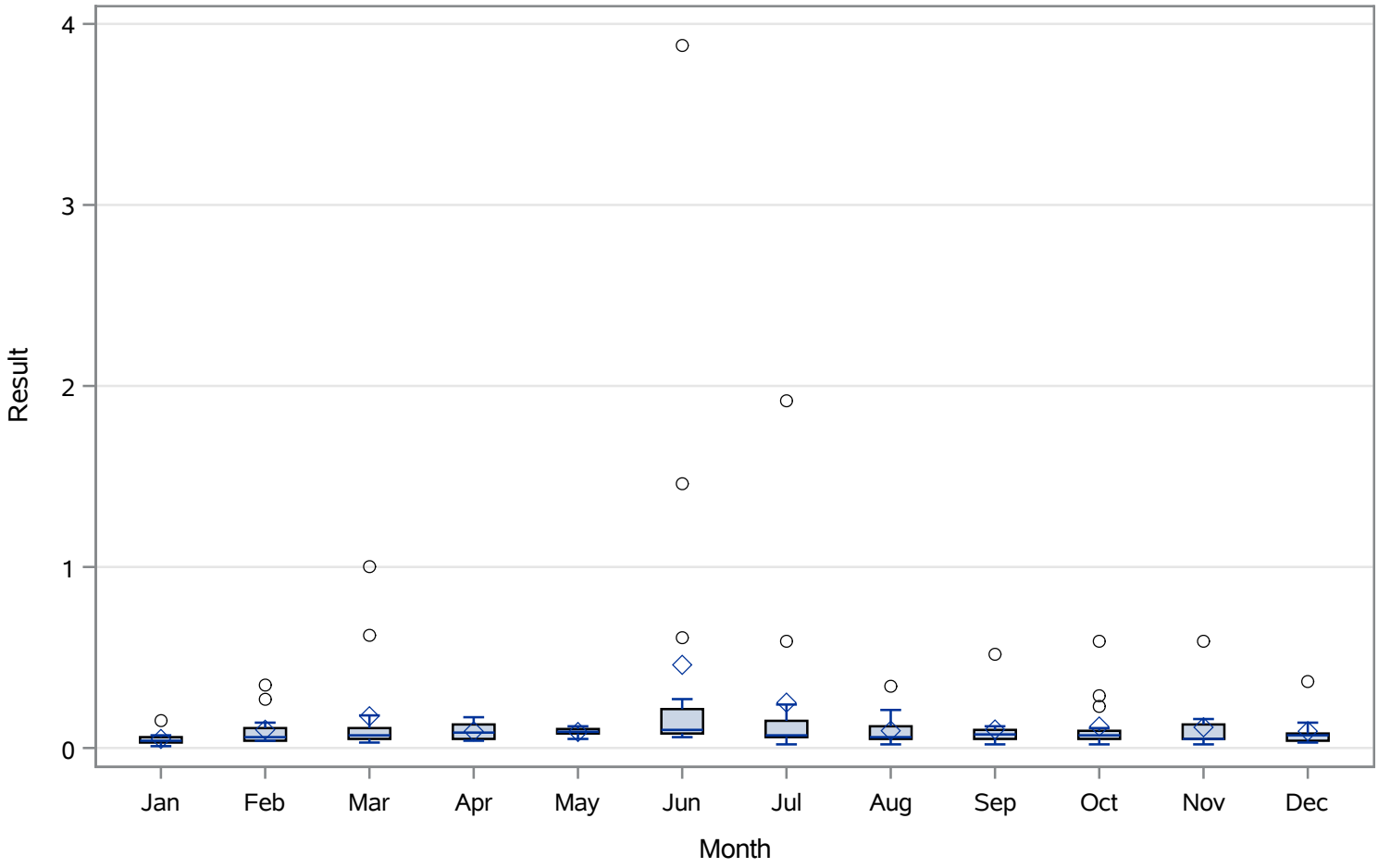


Little Manatee River

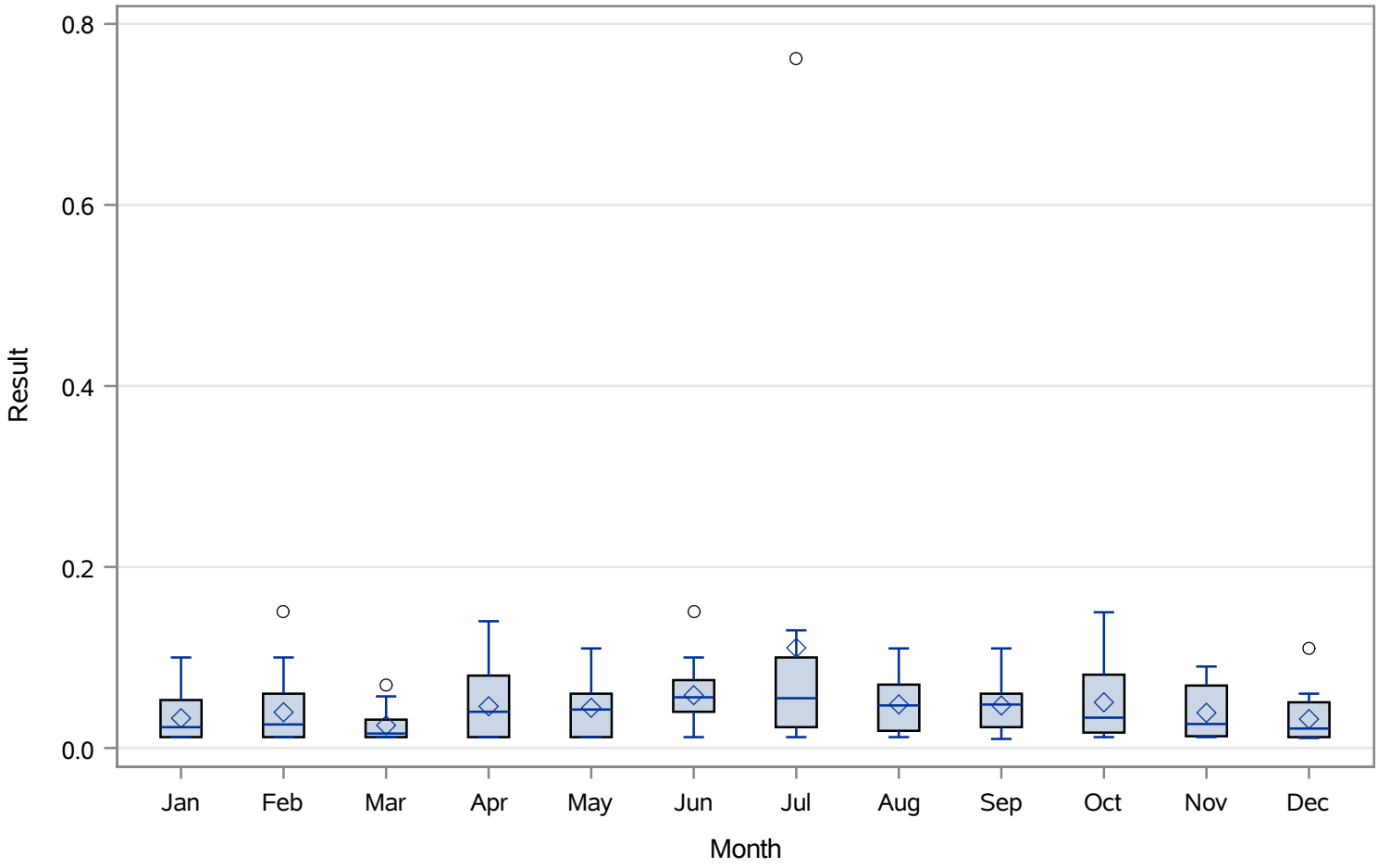
LITTLE MANATEE R AT SR #674

Total Ammonia as N (mg/L) mg/L

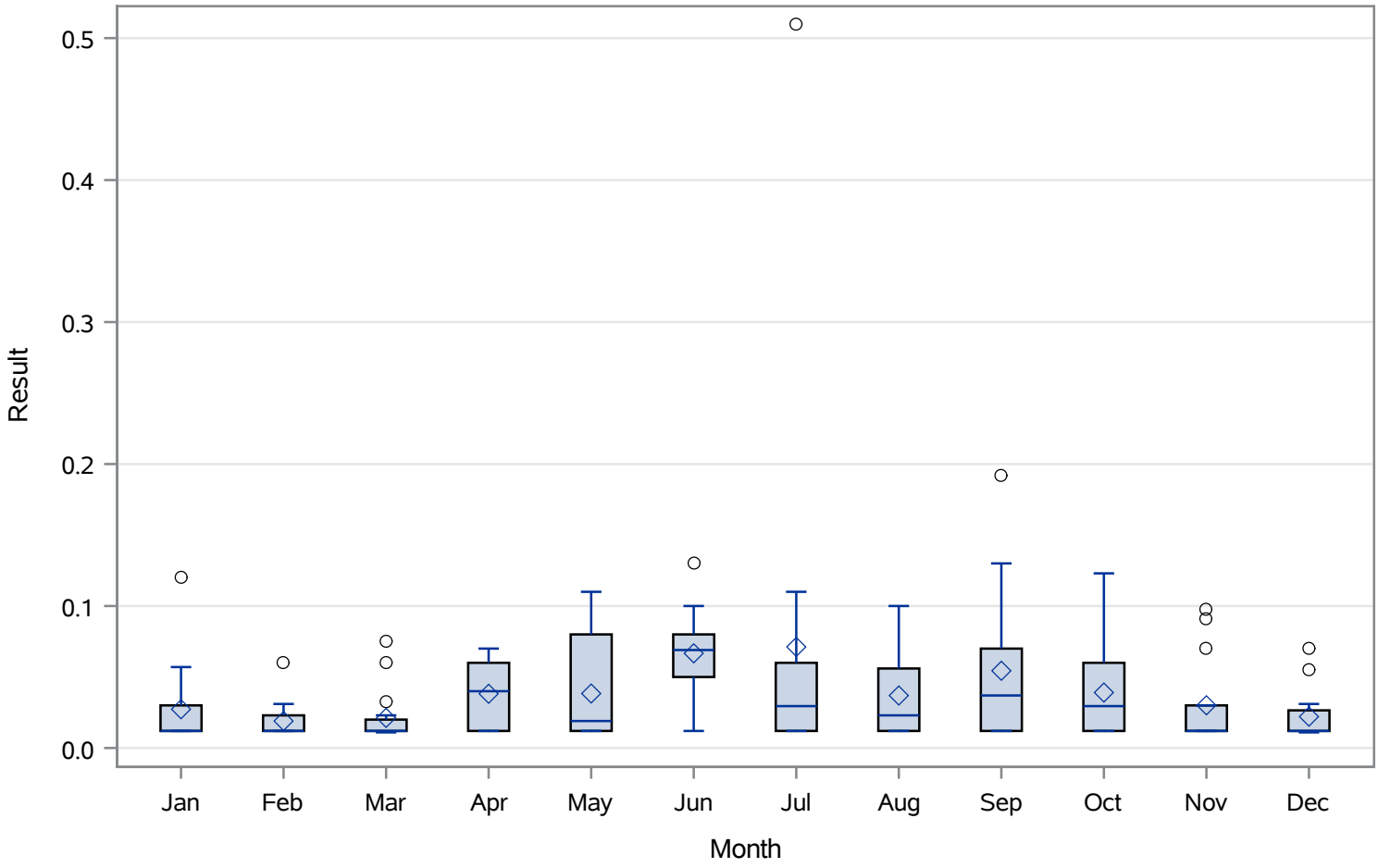
Site ID = 21FLHILL24010110



Little Manatee River
D1
Total Ammonia as N (mg/L) mg/L
Site ID = 21FLMANAD1



Little Manatee River
D3
Total Ammonia as N (mg/L) mg/L
Site ID = 21FLMANAD3

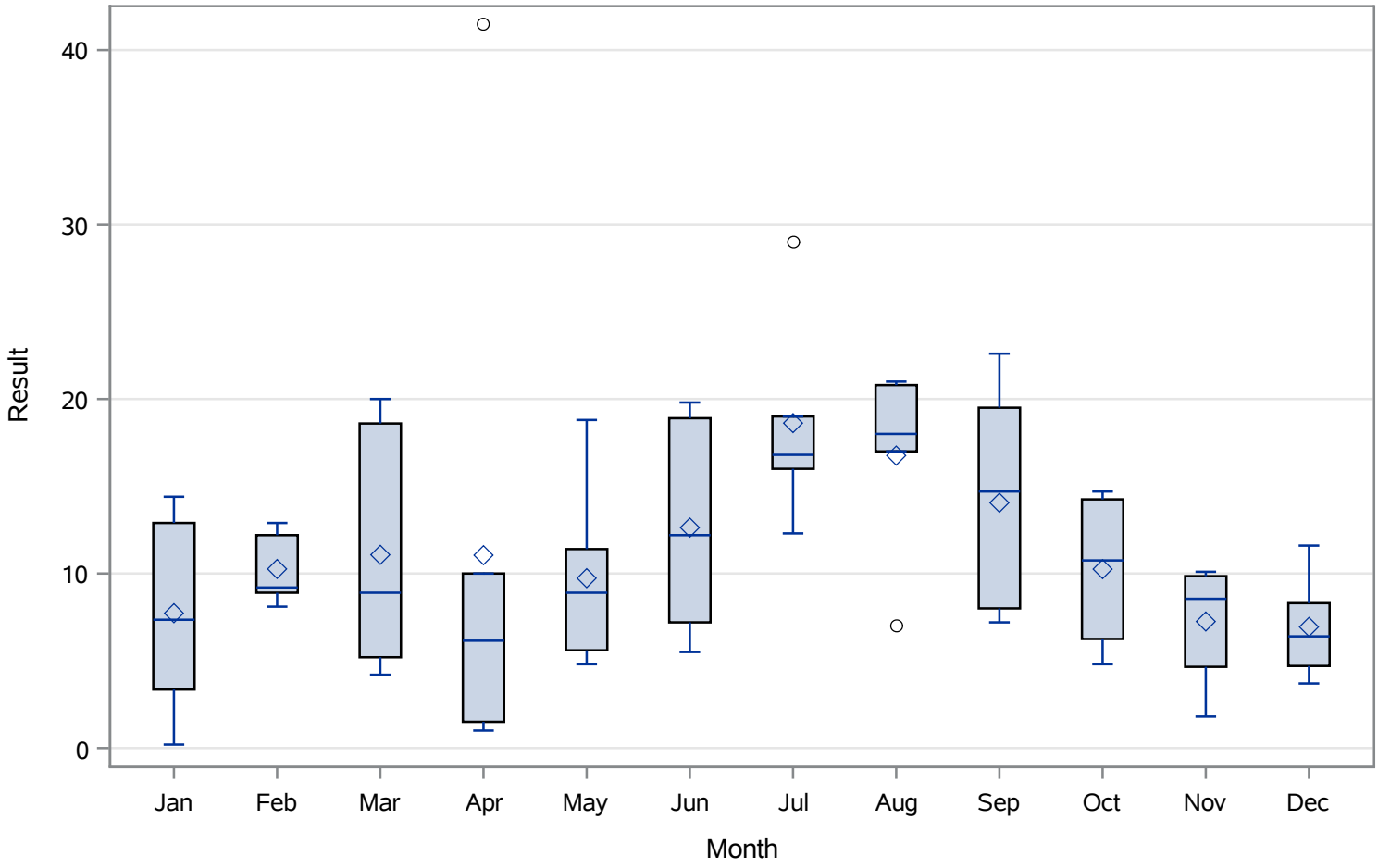


Little Manatee River

L MANATEE R BR US 301

Total Organic Carbon as C (mg/L) mg/L

Site ID = 21FLA 24010100

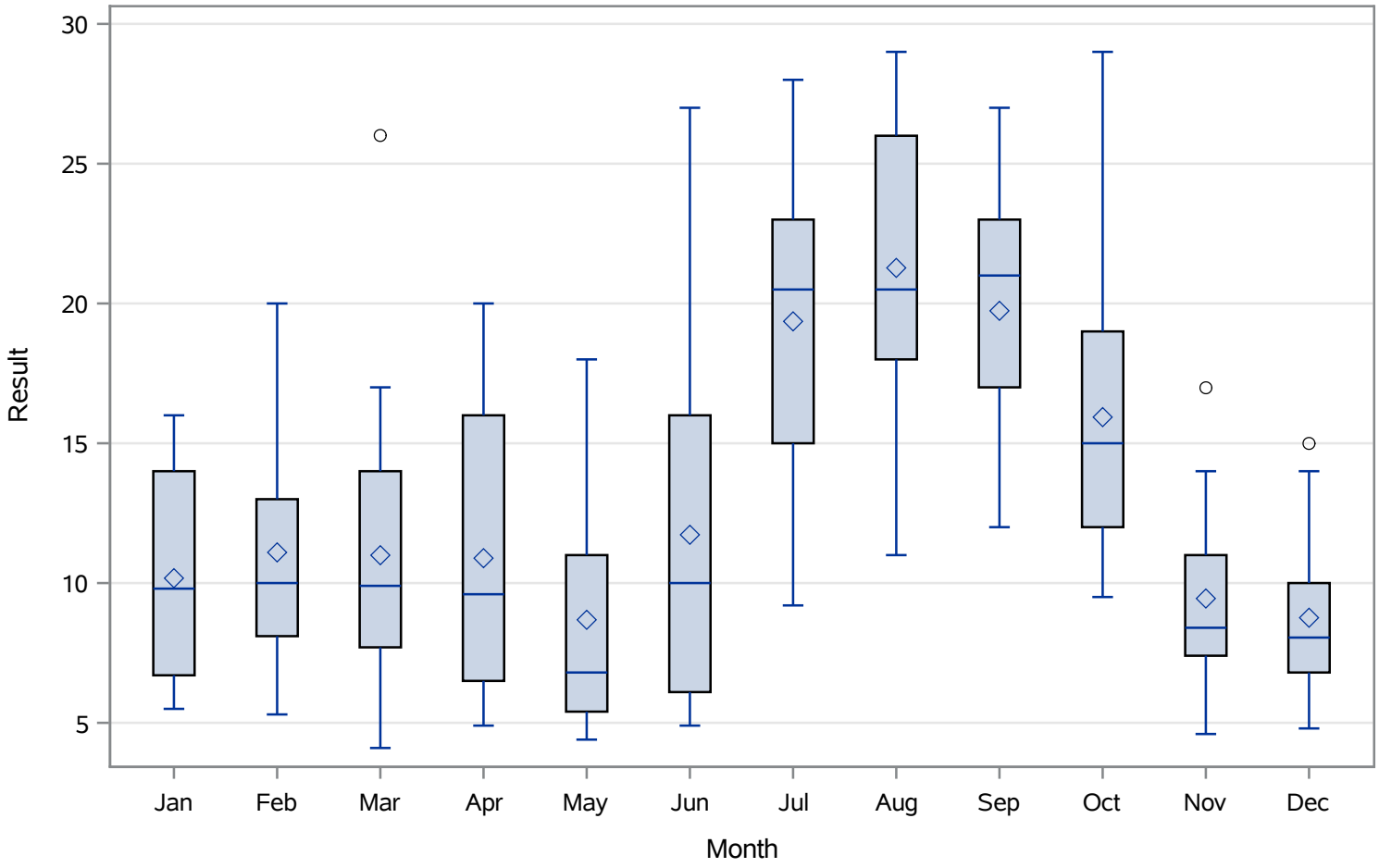


Little Manatee River

LITTLE MANATEE RIVER AT US HWY 301

Total Organic Carbon as C (mg/L) mg/L

Site ID = 21FLGW 3555

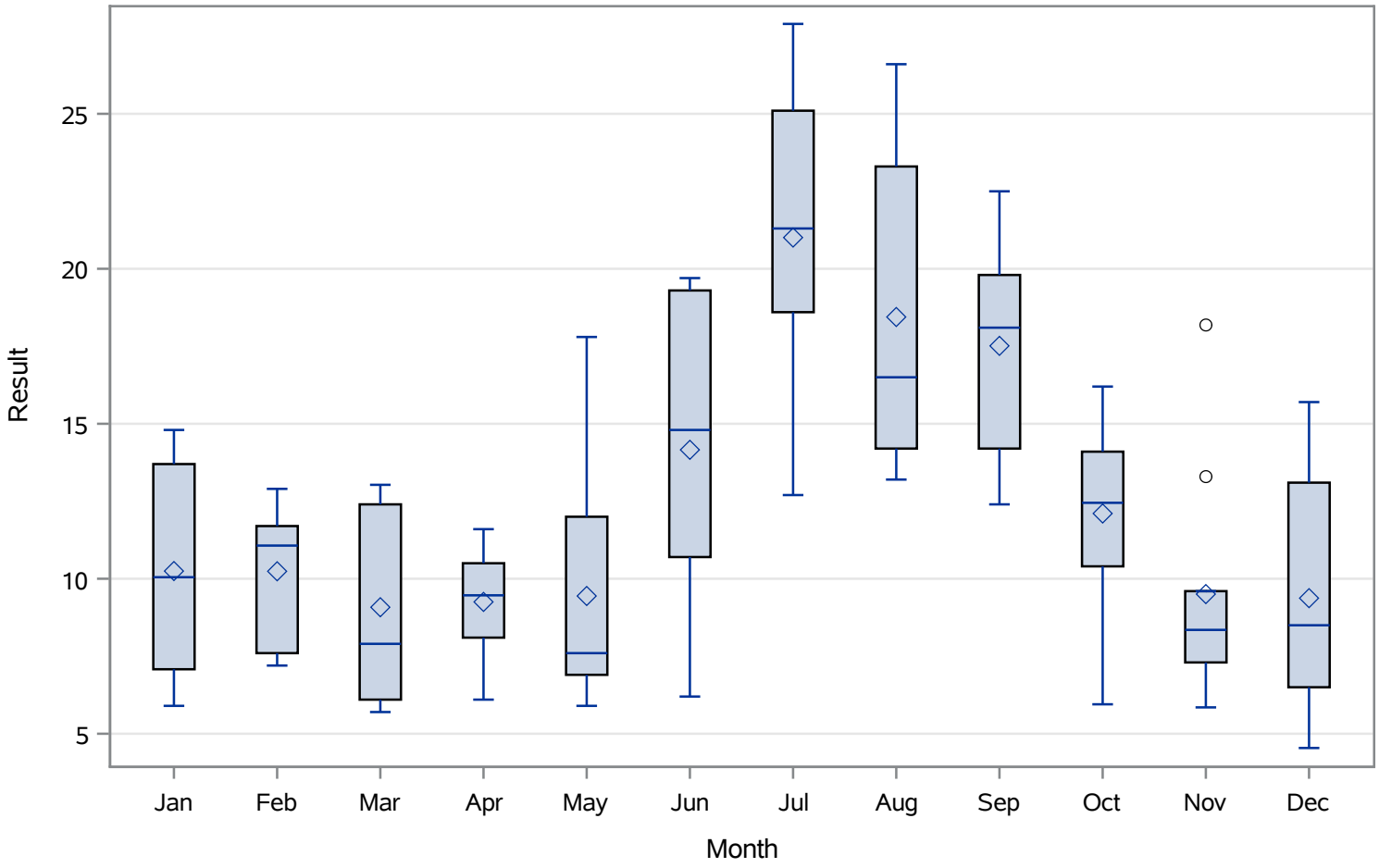


Little Manatee River

Little Manatee River at US 301 bridge

Total Organic Carbon as C (mg/L) mg/L

Site ID = 21FLHILL113

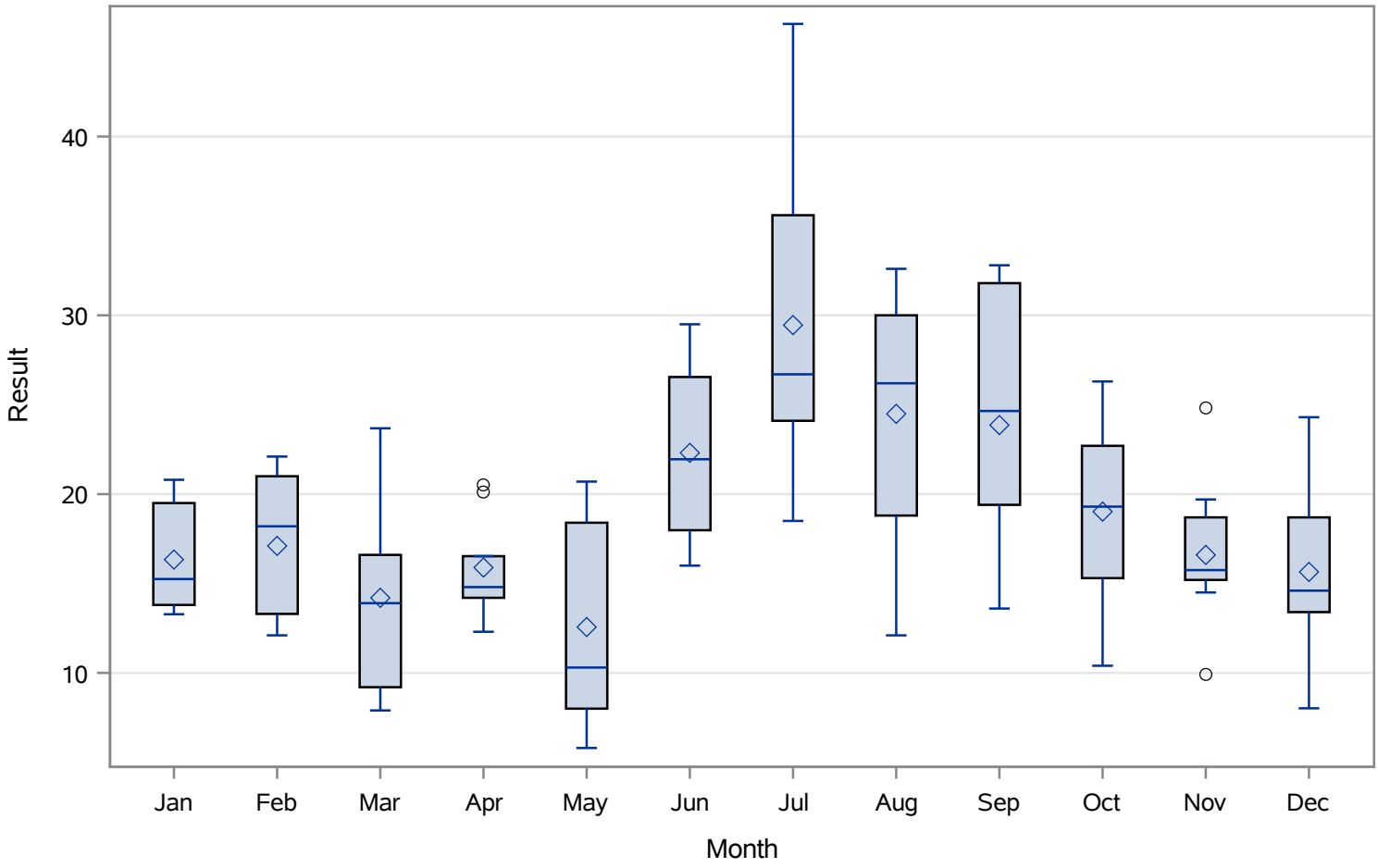


Little Manatee River

Little Manatee River at SR 674

Total Organic Carbon as C (mg/L) mg/L

Site ID = 21FLHILL129

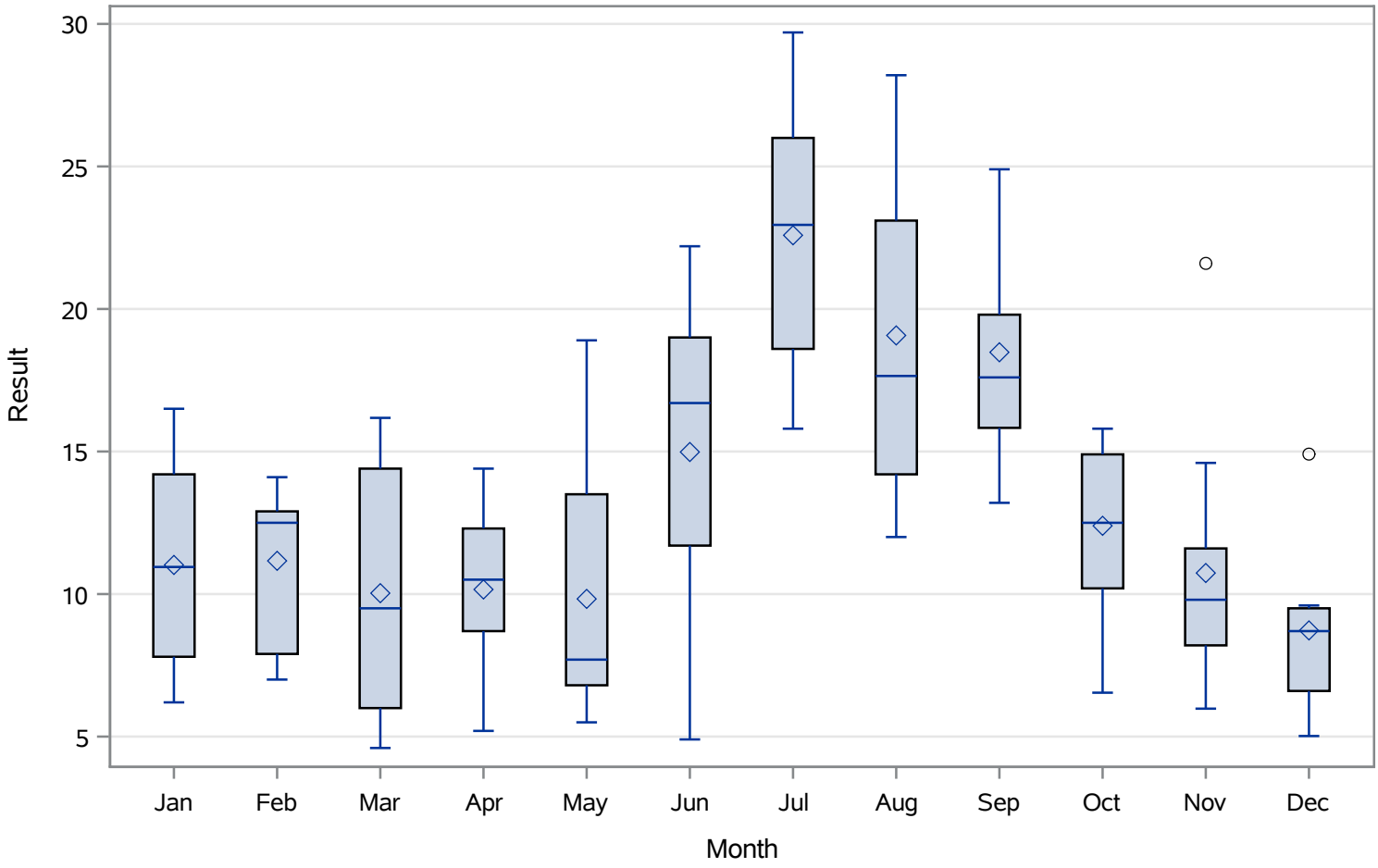


Little Manatee River

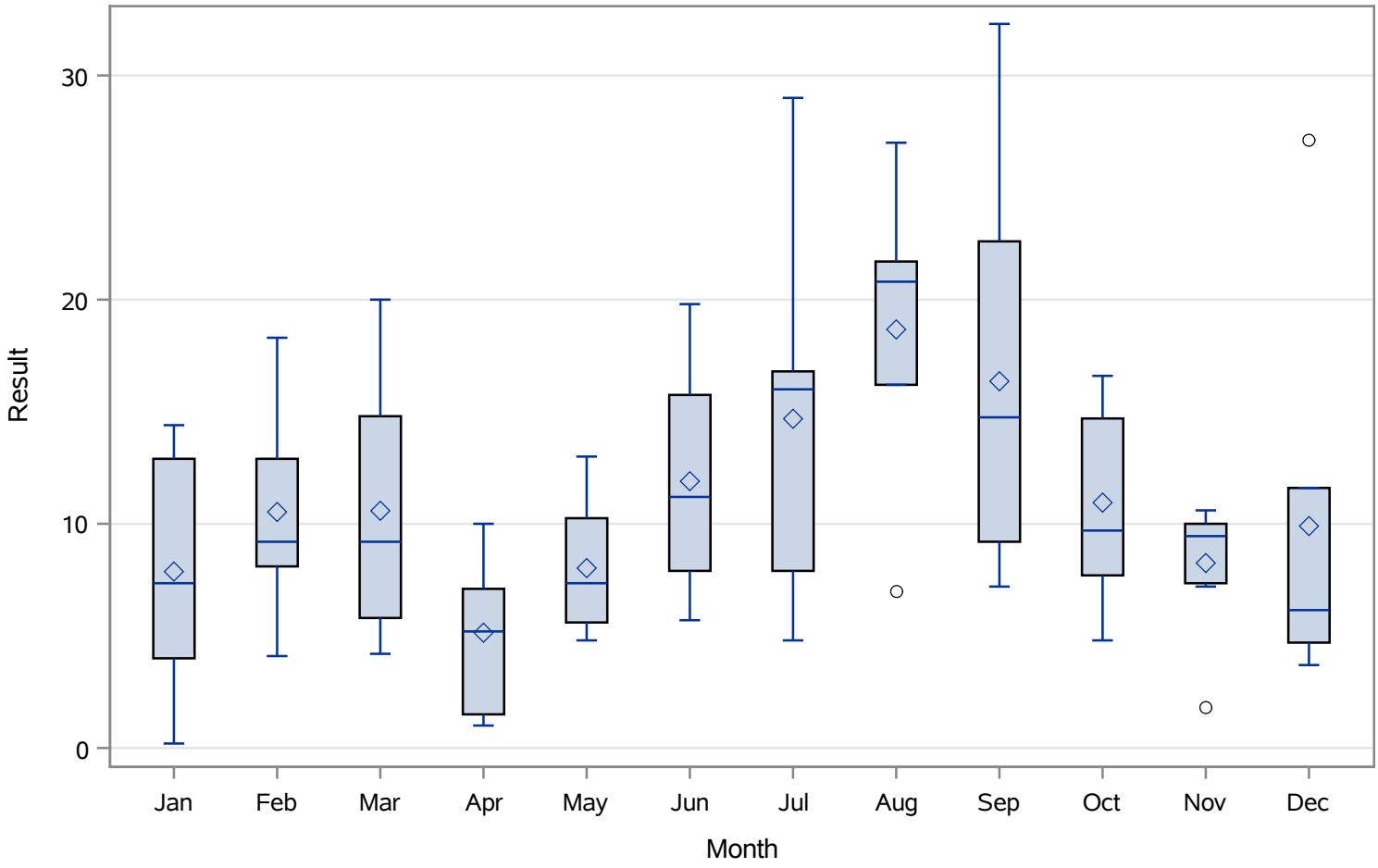
Little Manatee River at CR 579

Total Organic Carbon as C (mg/L) mg/L

Site ID = 21FLHILL140



Little Manatee River
L MANATEE R BR US 301
Total Organic Carbon as C (mg/L) mg/L
Site ID = 21FLHILL24010100

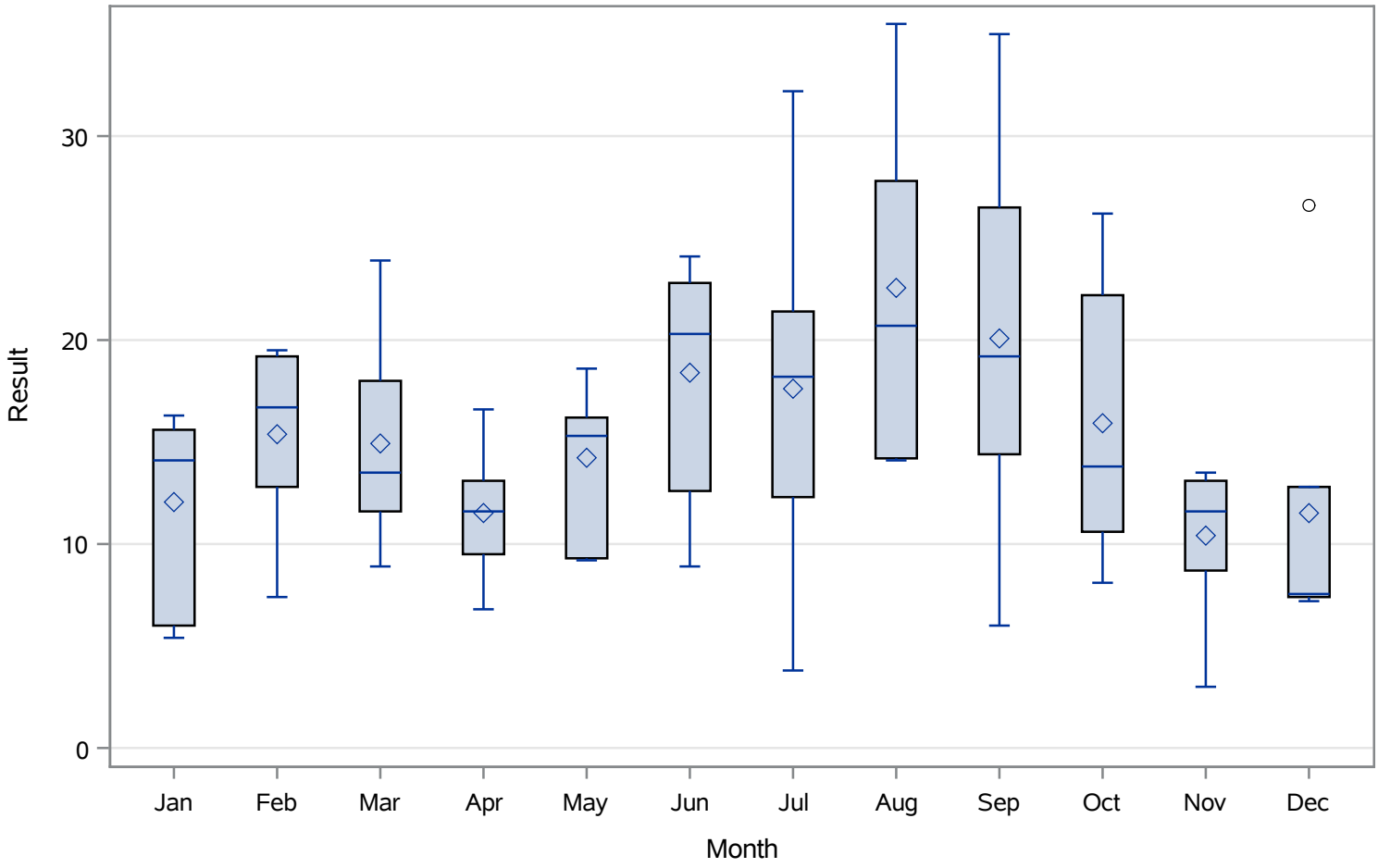


Little Manatee River

LITTLE MANATEE R AT SR #674

Total Organic Carbon as C (mg/L) mg/L

Site ID = 21FLHILL24010110

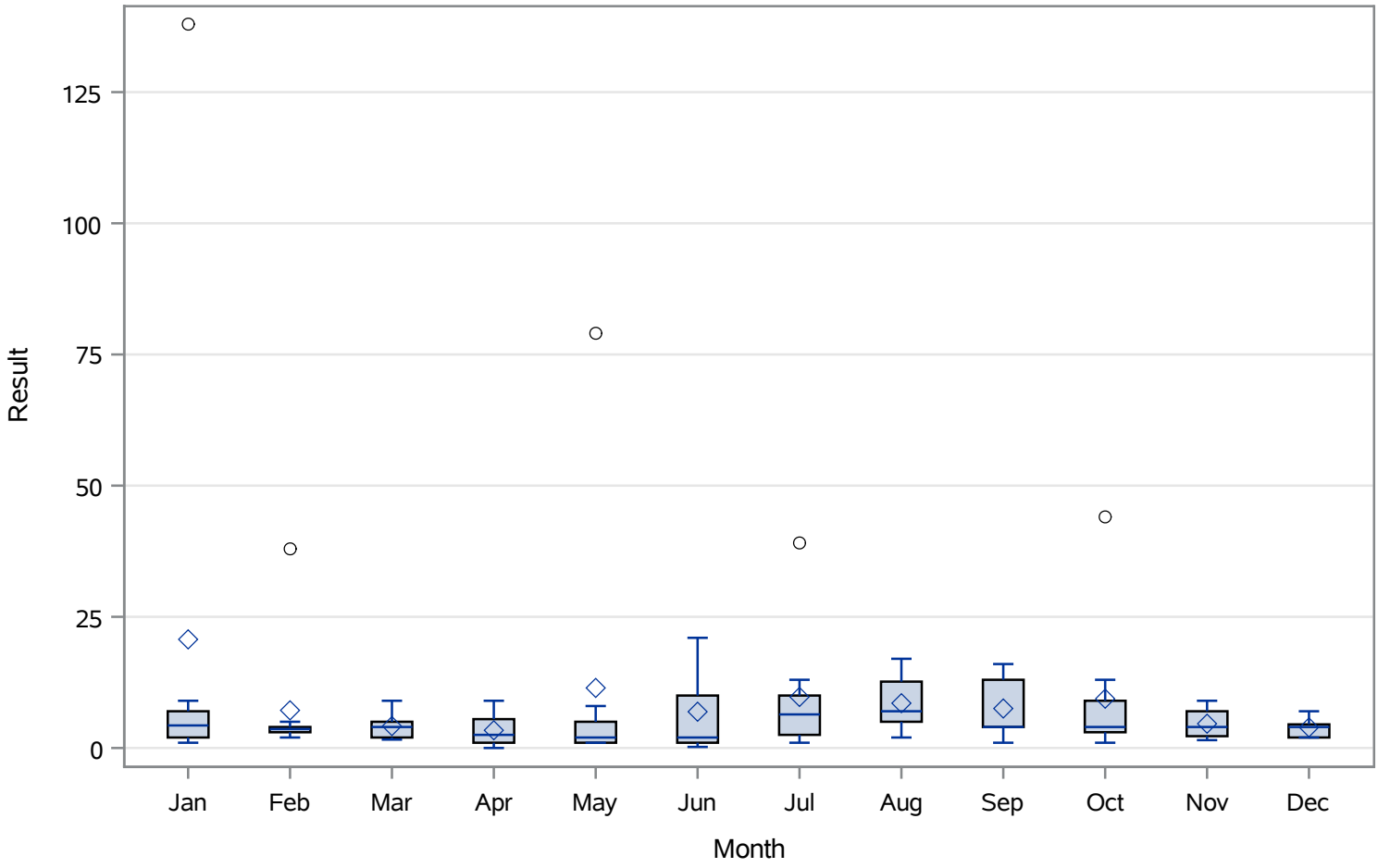


Little Manatee River

L MANATEE R BR US 301

Total Suspended Solids (TSS), mg/L mg/L

Site ID = 21FLA 24010100

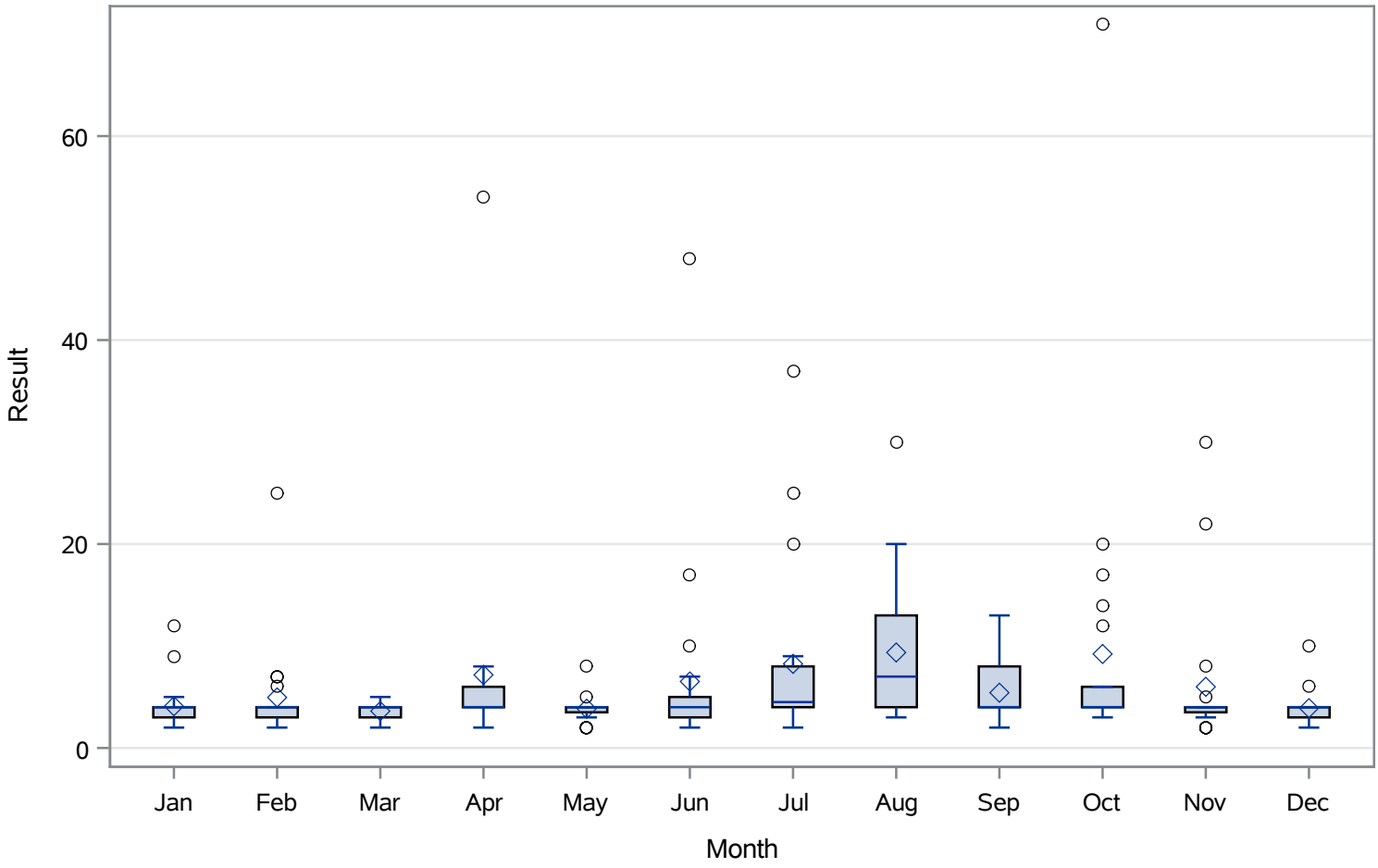


Little Manatee River

LITTLE MANATEE RIVER AT US HWY 301

Total Suspended Solids (TSS), mg/L mg/L

Site ID = 21FLGW 3555

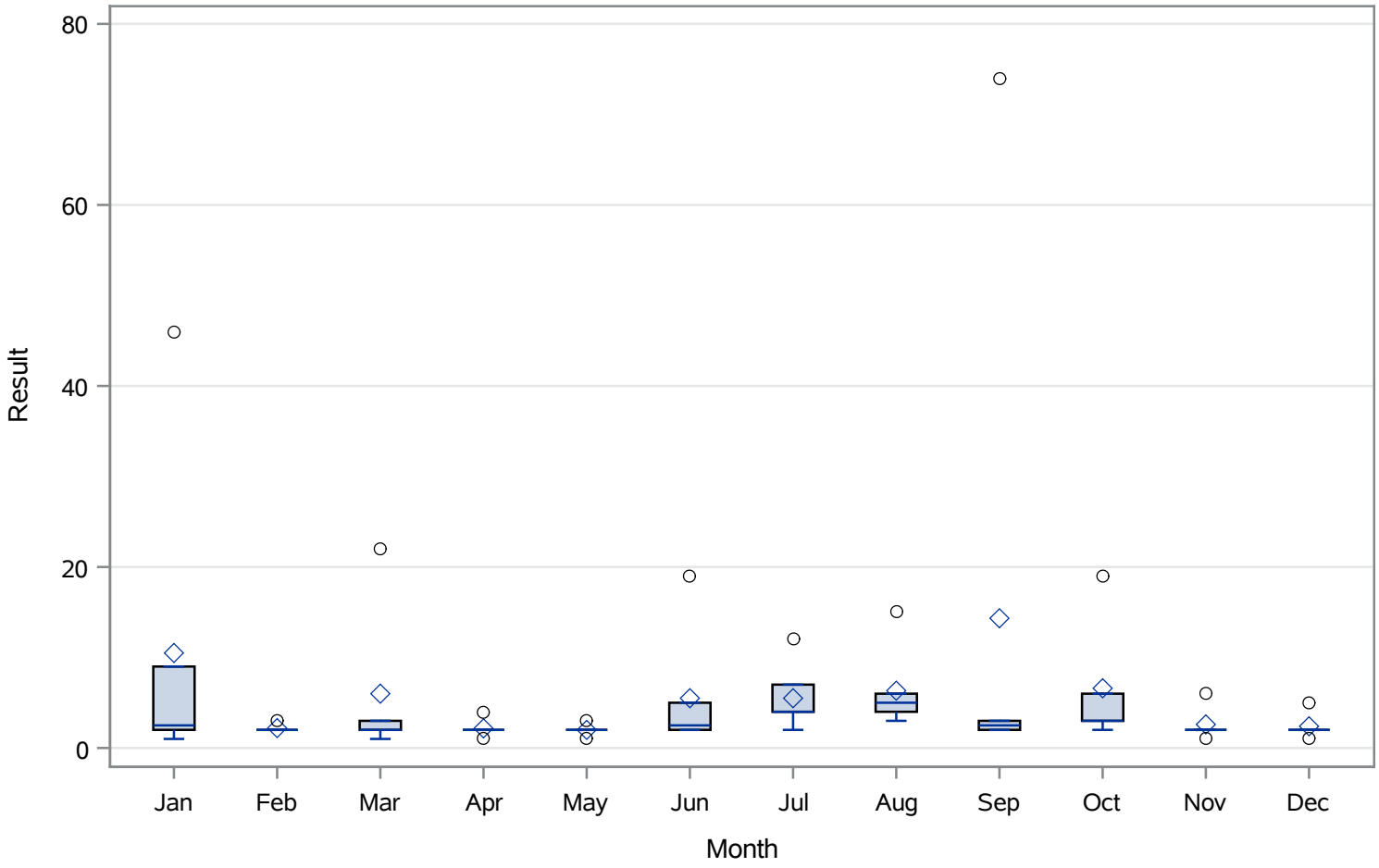


Little Manatee River

Little Manatee River at US 301 bridge

Total Suspended Solids (TSS), mg/L mg/L

Site ID = 21FLHILL113

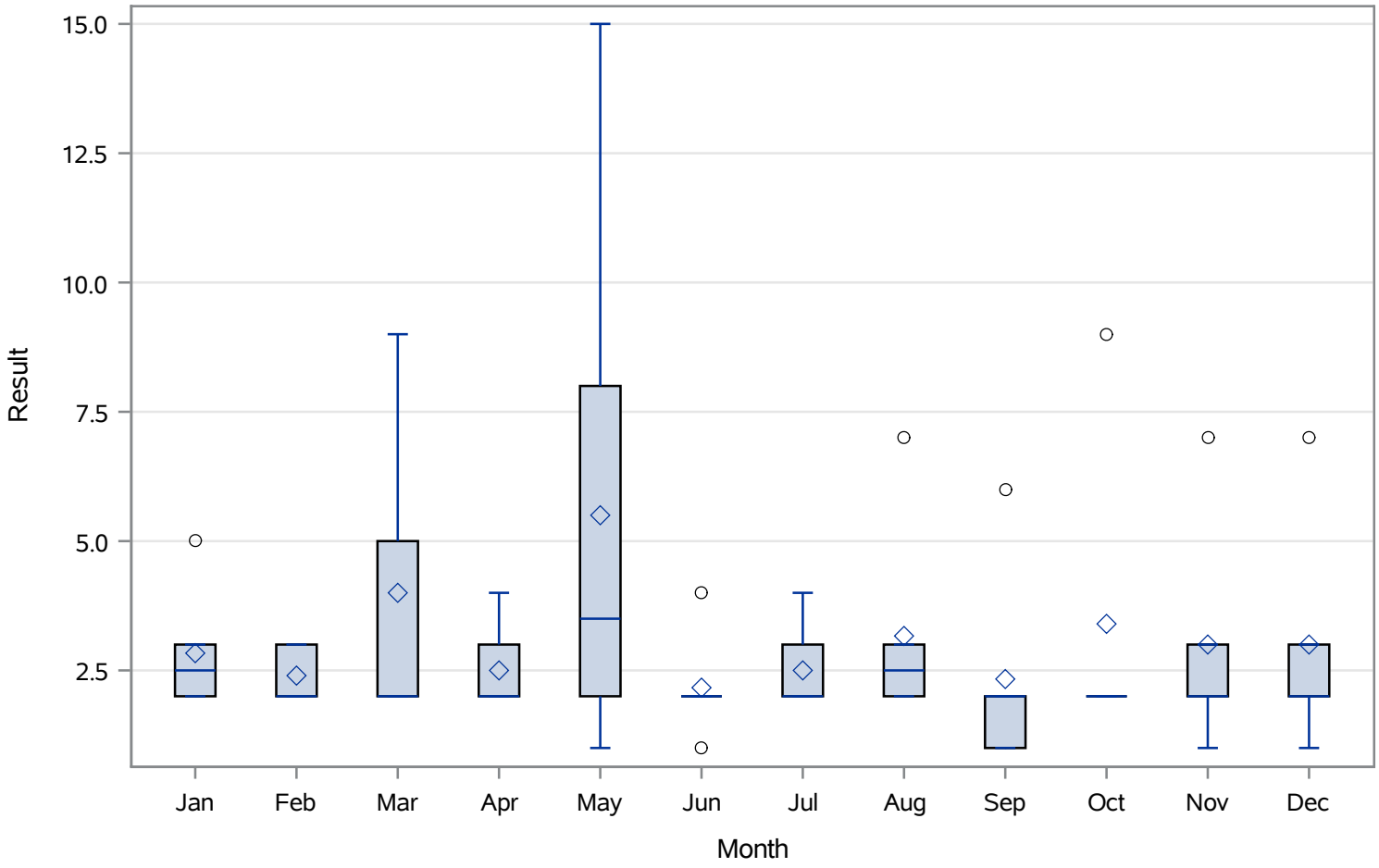


Little Manatee River

Little Manatee River at SR 674

Total Suspended Solids (TSS), mg/L mg/L

Site ID = 21FLHILL129

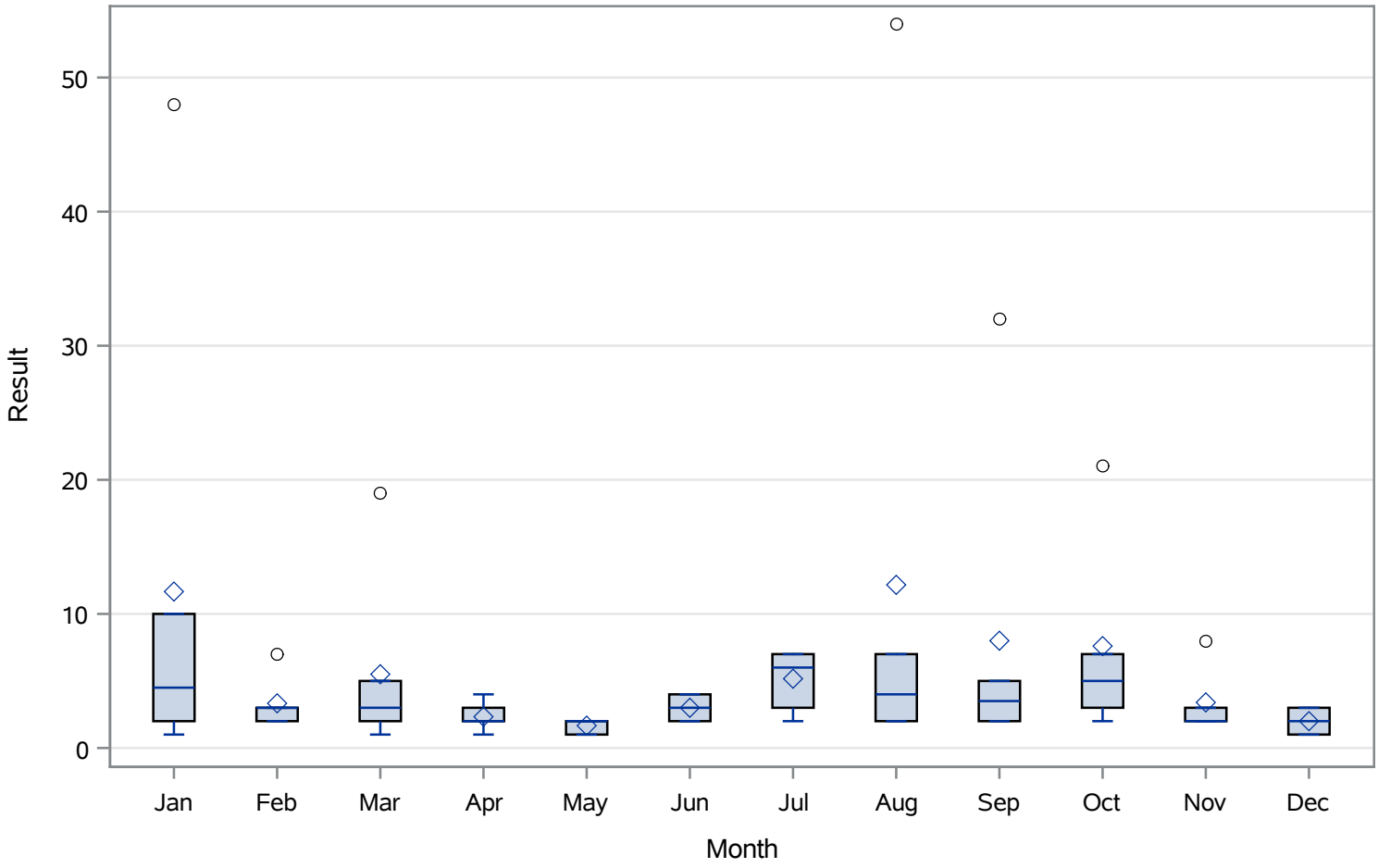


Little Manatee River

Little Manatee River at CR 579

Total Suspended Solids (TSS), mg/L mg/L

Site ID = 21FLHILL140

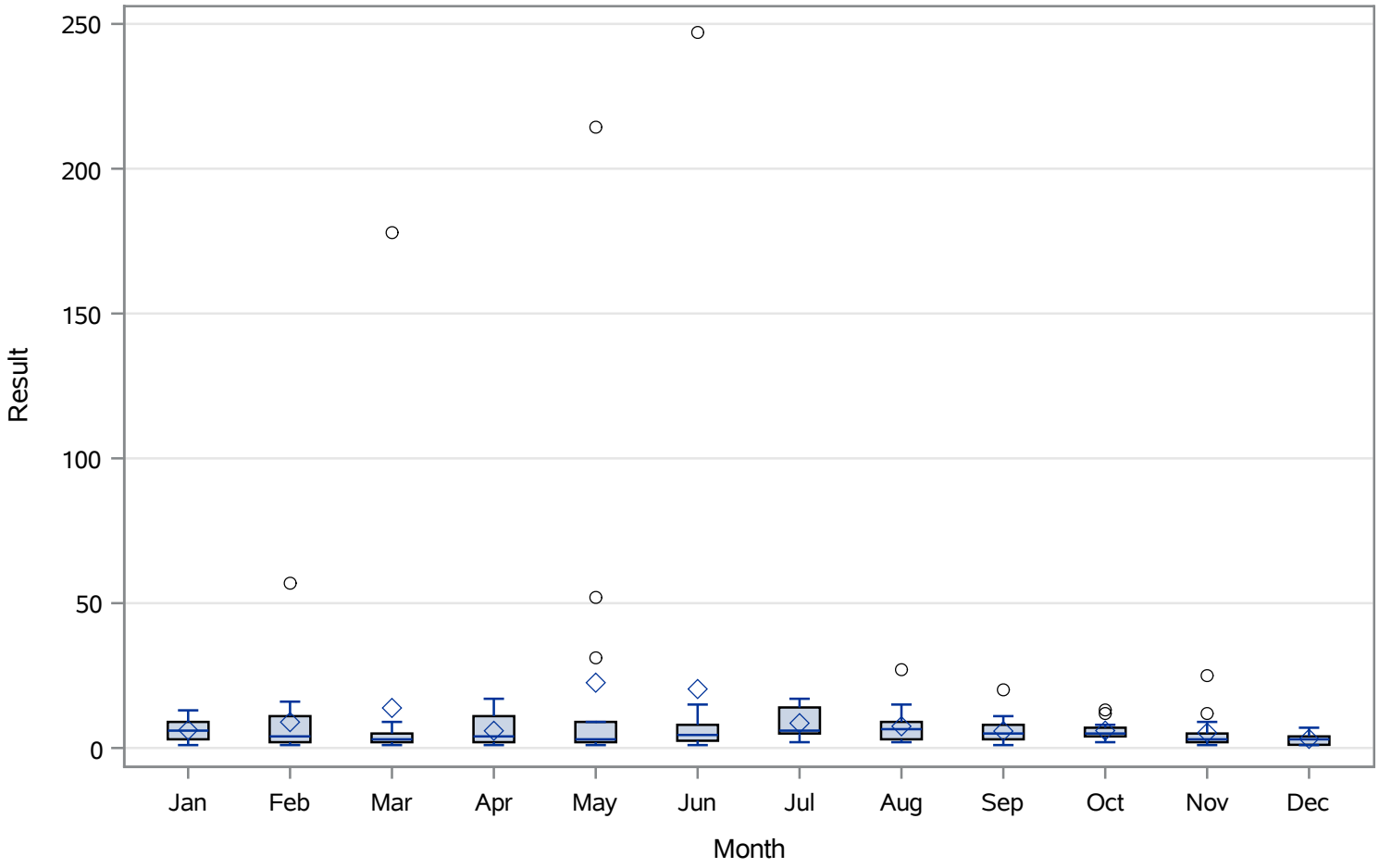


Little Manatee River

LITTLE MANATEE R AT CR579

Total Suspended Solids (TSS), mg/L mg/L

Site ID = 21FLHILL24010013

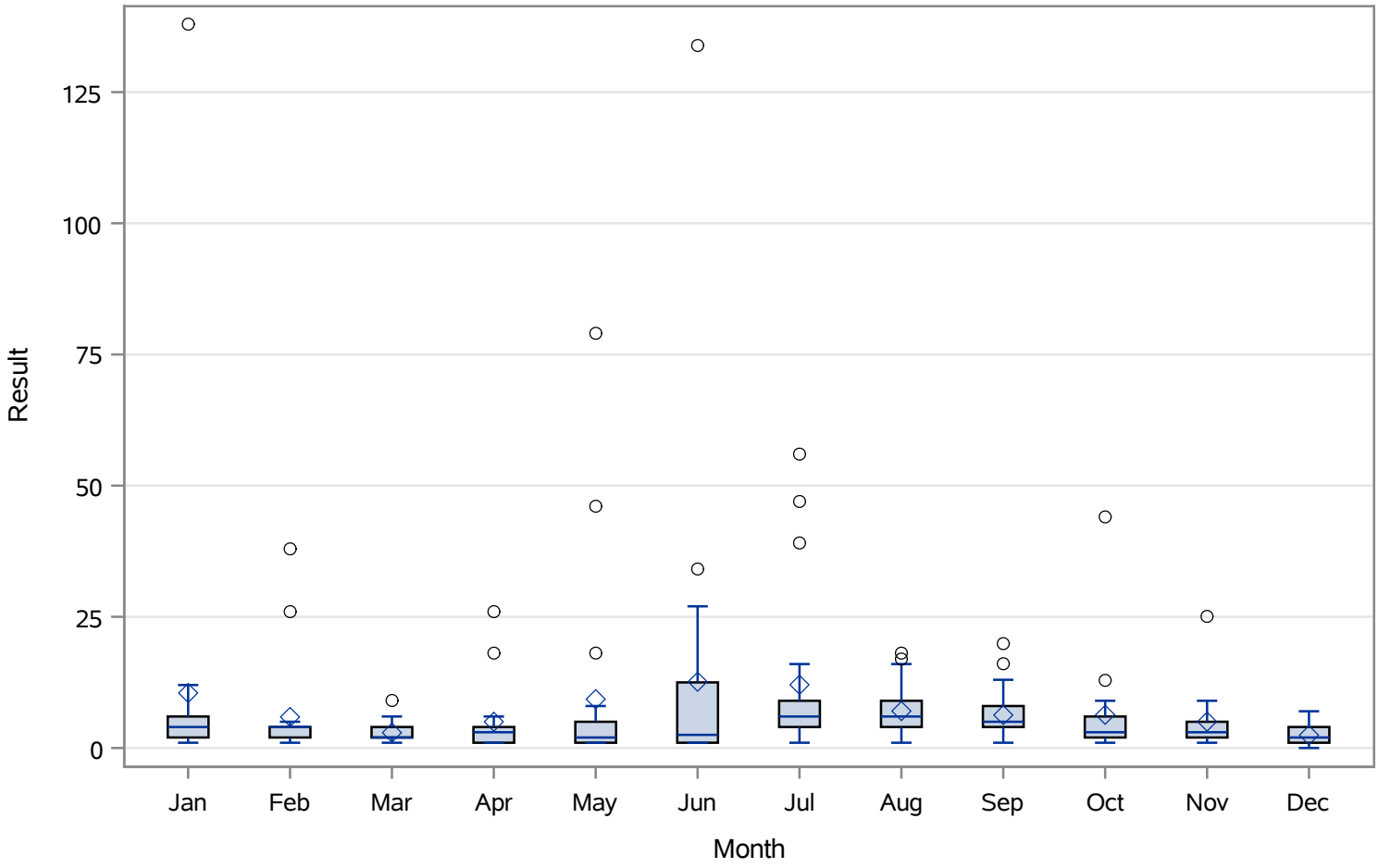


Little Manatee River

L MANATEE R BR US 301

Total Suspended Solids (TSS), mg/L mg/L

Site ID = 21FLHILL24010100

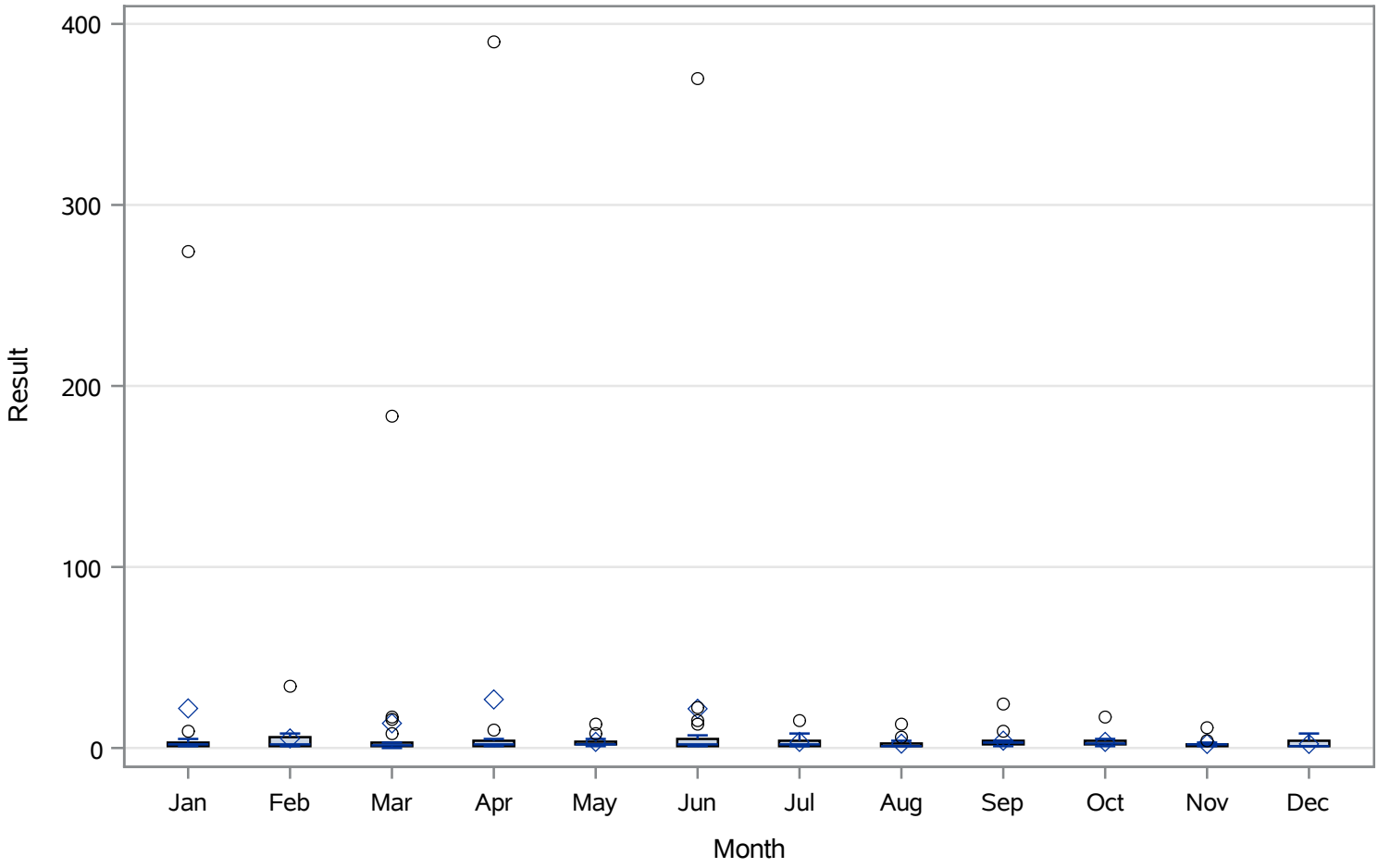


Little Manatee River

LITTLE MANATEE R AT SR #674

Total Suspended Solids (TSS), mg/L mg/L

Site ID = 21FLHILL24010110

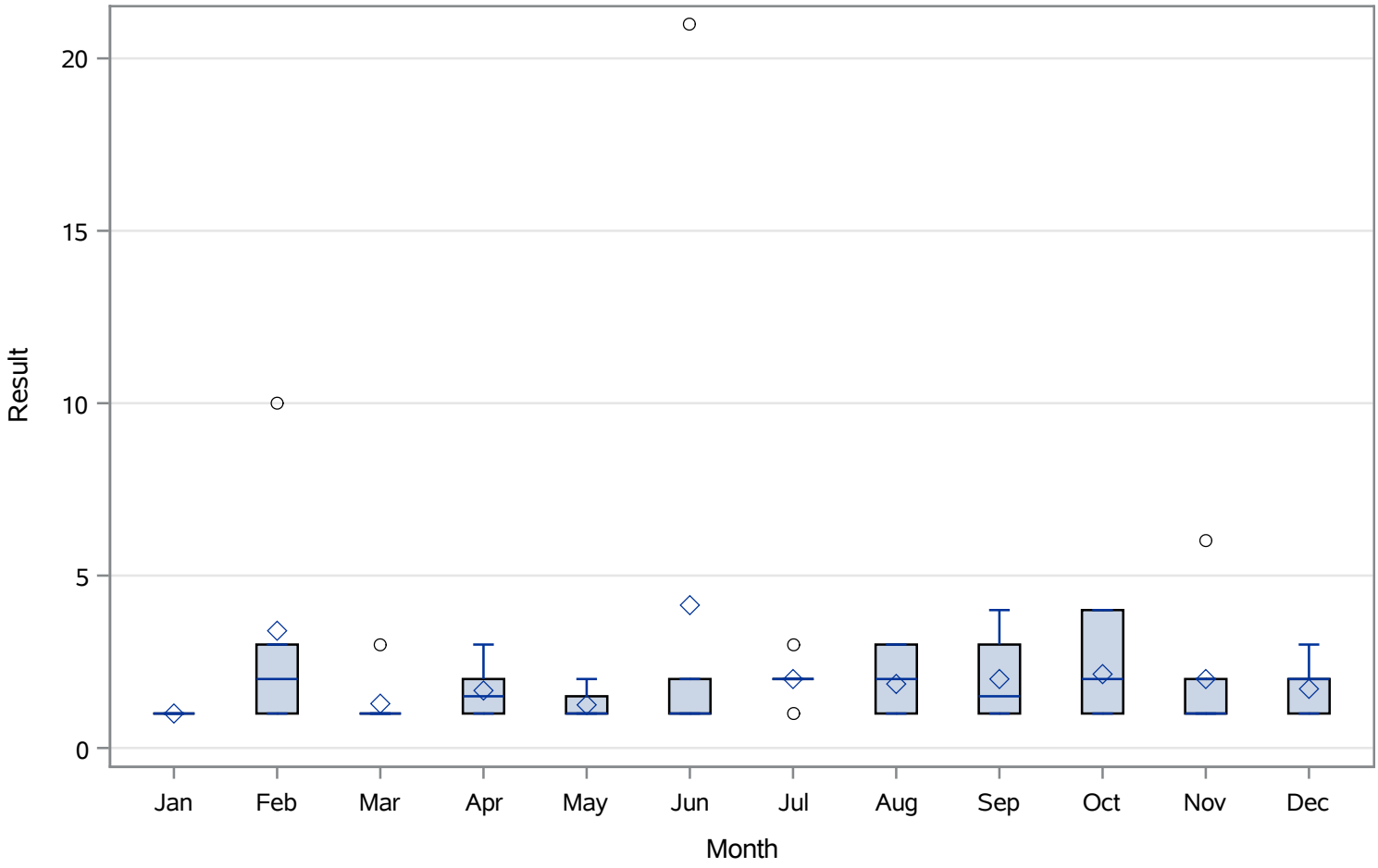


Little Manatee River

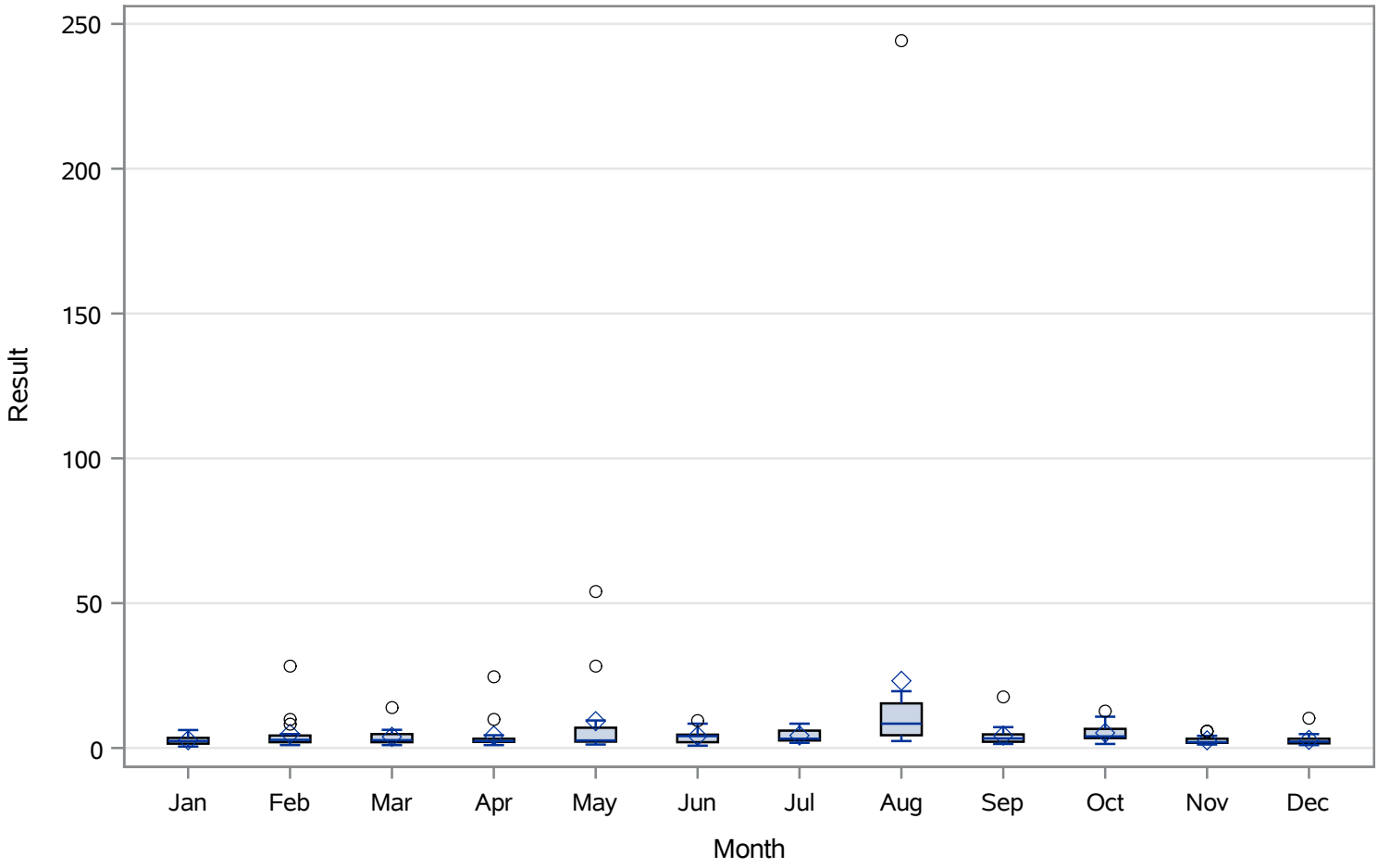
Little Manatee R. at SR674

Total Suspended Solids (TSS), mg/L mg/L

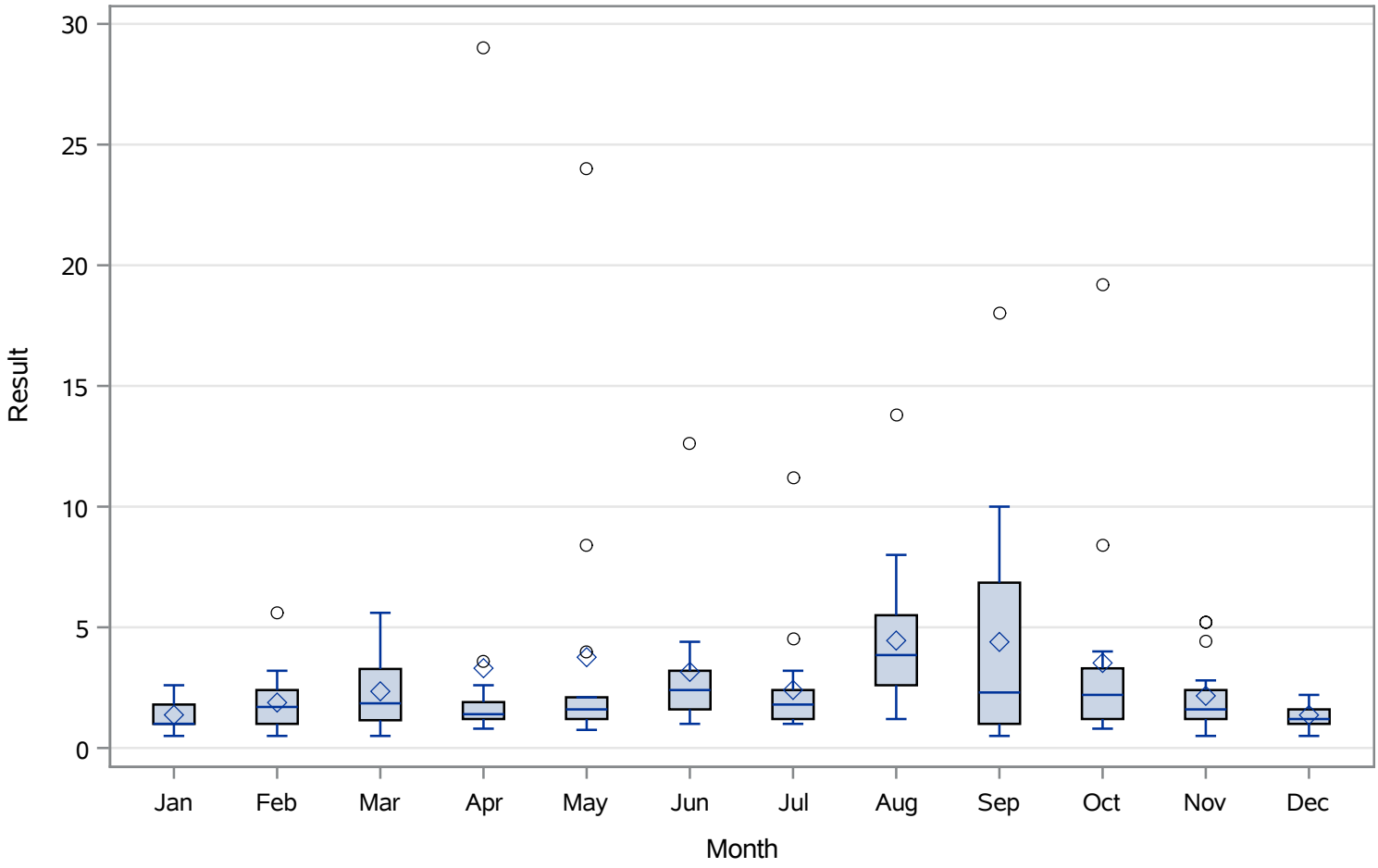
Site ID = 21FLIMCALM674



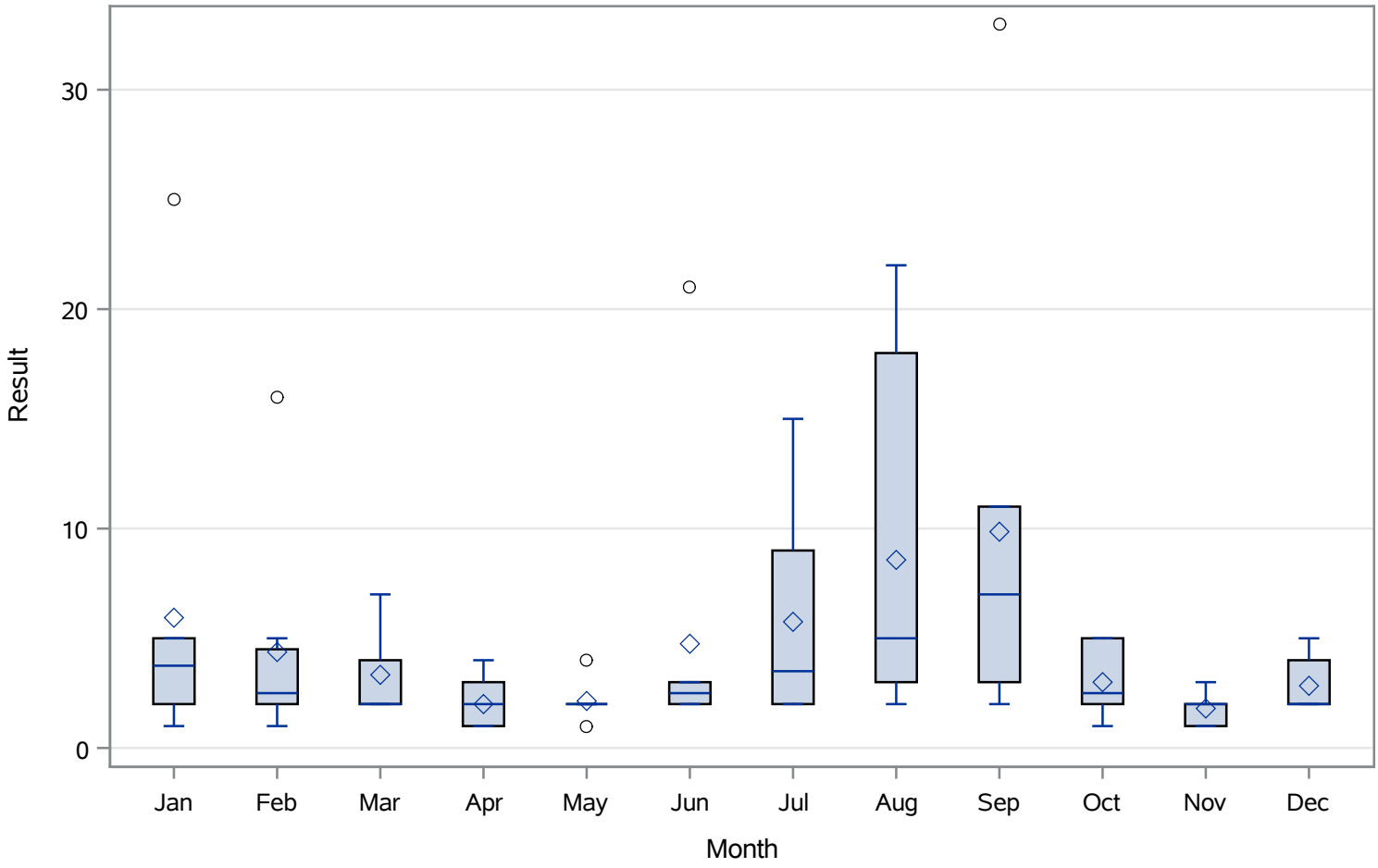
Little Manatee River
D1
Total Suspended Solids (TSS), mg/L mg/L
Site ID = 21FLMANAD1



Little Manatee River
D3
Total Suspended Solids (TSS), mg/L mg/L
Site ID = 21FLMANAD3



Little Manatee River
L MANATEE R BR US 301
Turbidity (NTU) NTU
Site ID = 21FLA 24010100

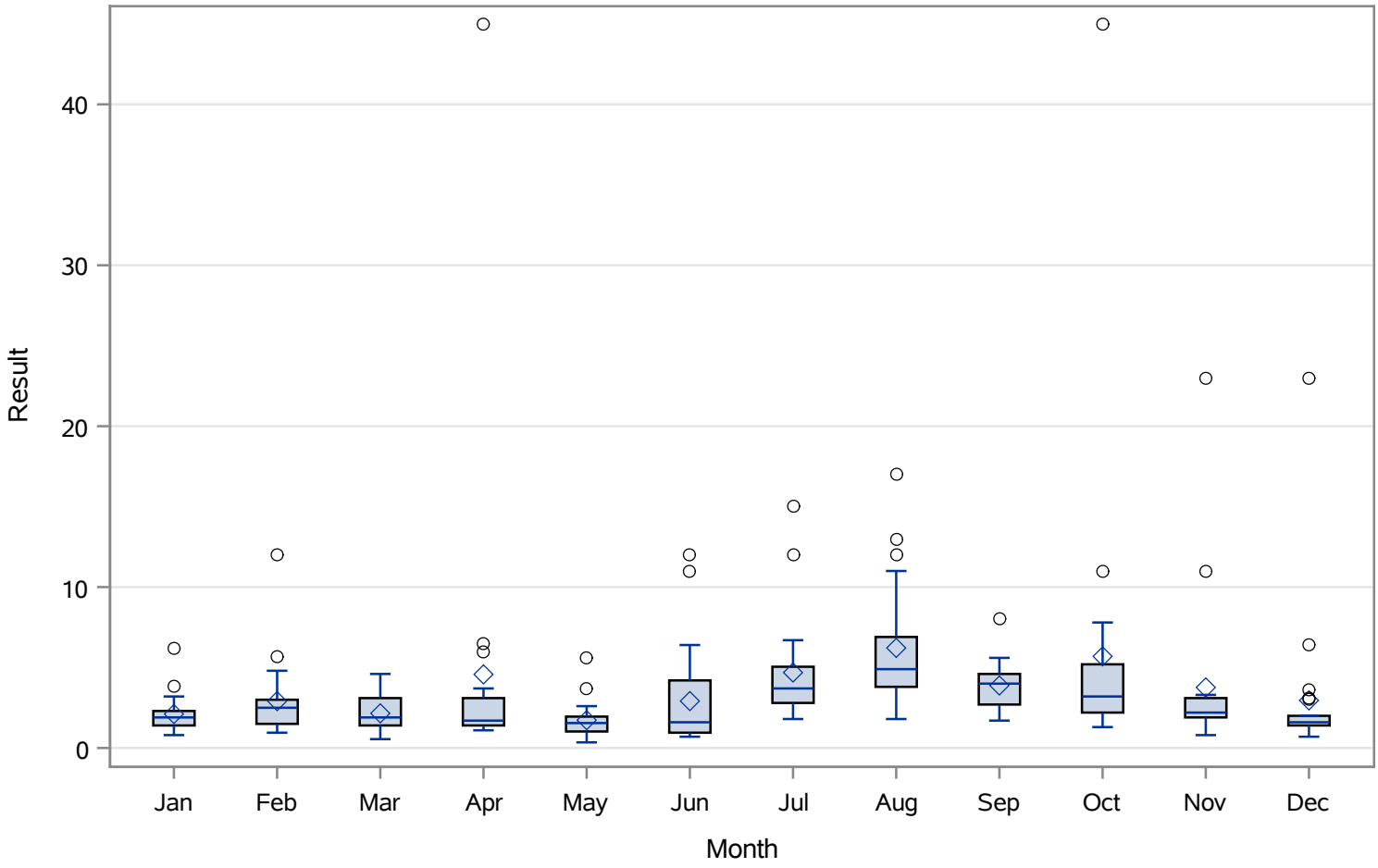


Little Manatee River

LITTLE MANATEE RIVER AT US HWY 301

Turbidity (NTU) NTU

Site ID = 21FLGW 3555

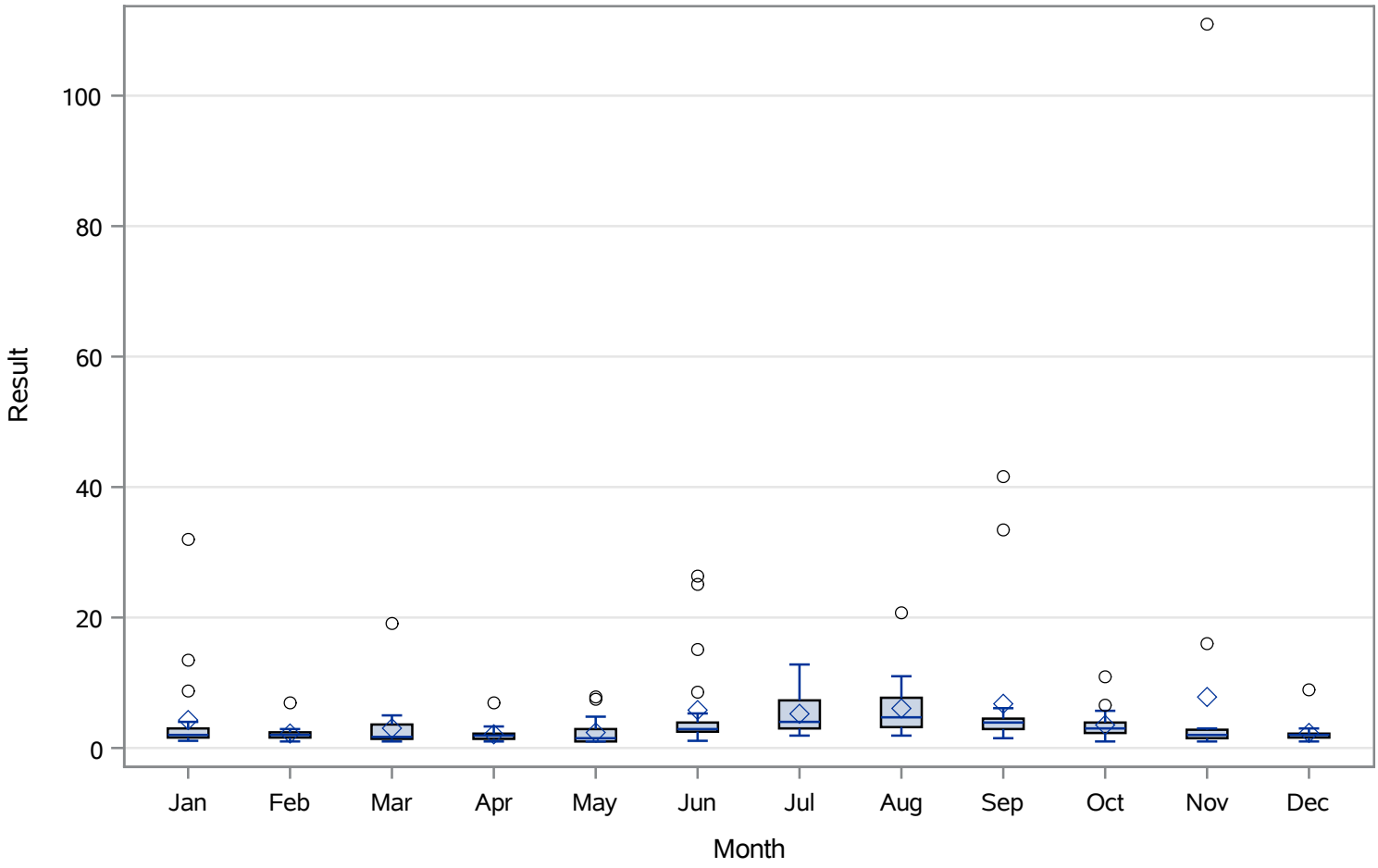


Little Manatee River

Little Manatee River at US 301 bridge

Turbidity (NTU) NTU

Site ID = 21FLHILL113

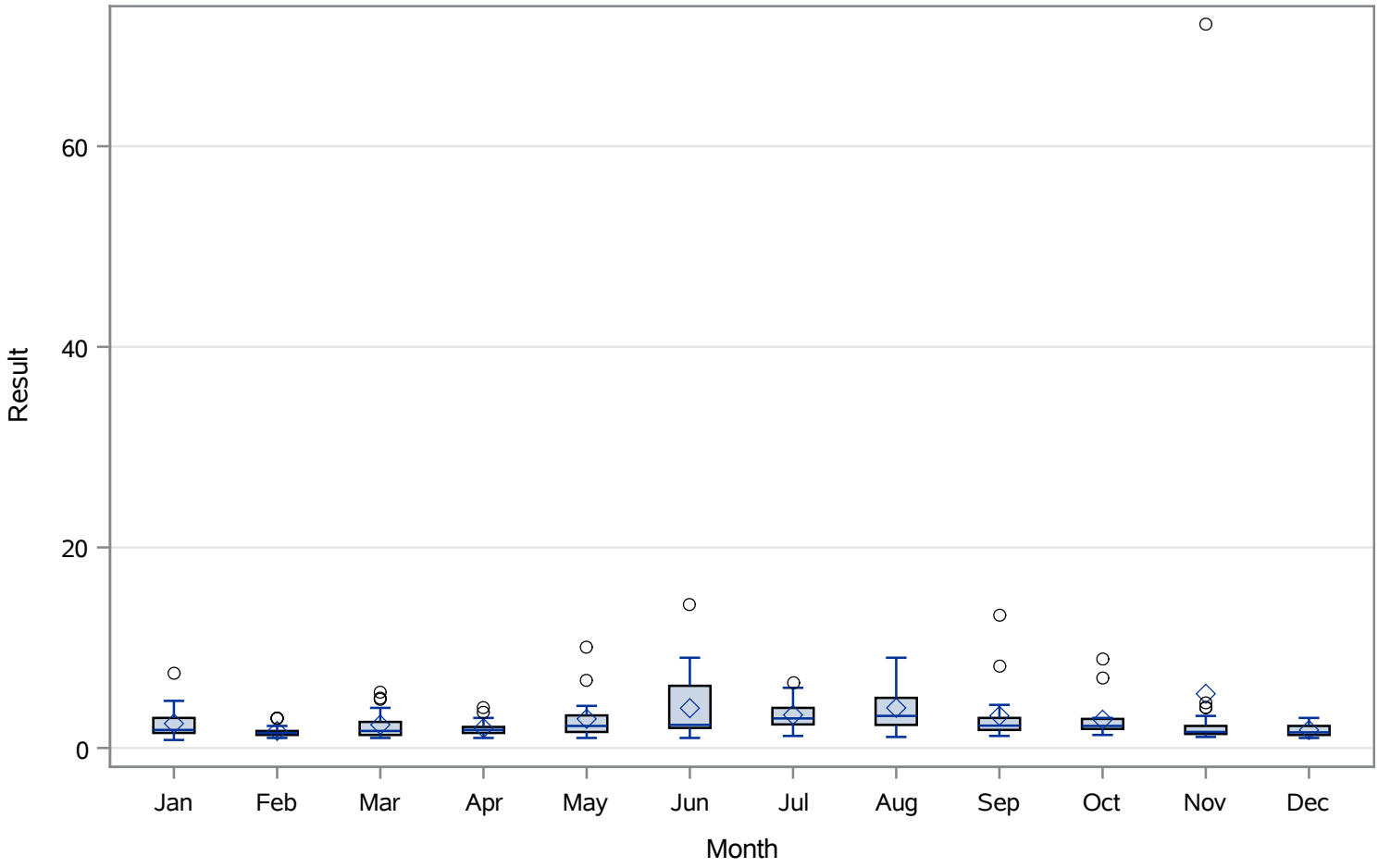


Little Manatee River

Little Manatee River at SR 674

Turbidity (NTU) NTU

Site ID = 21FLHILL129

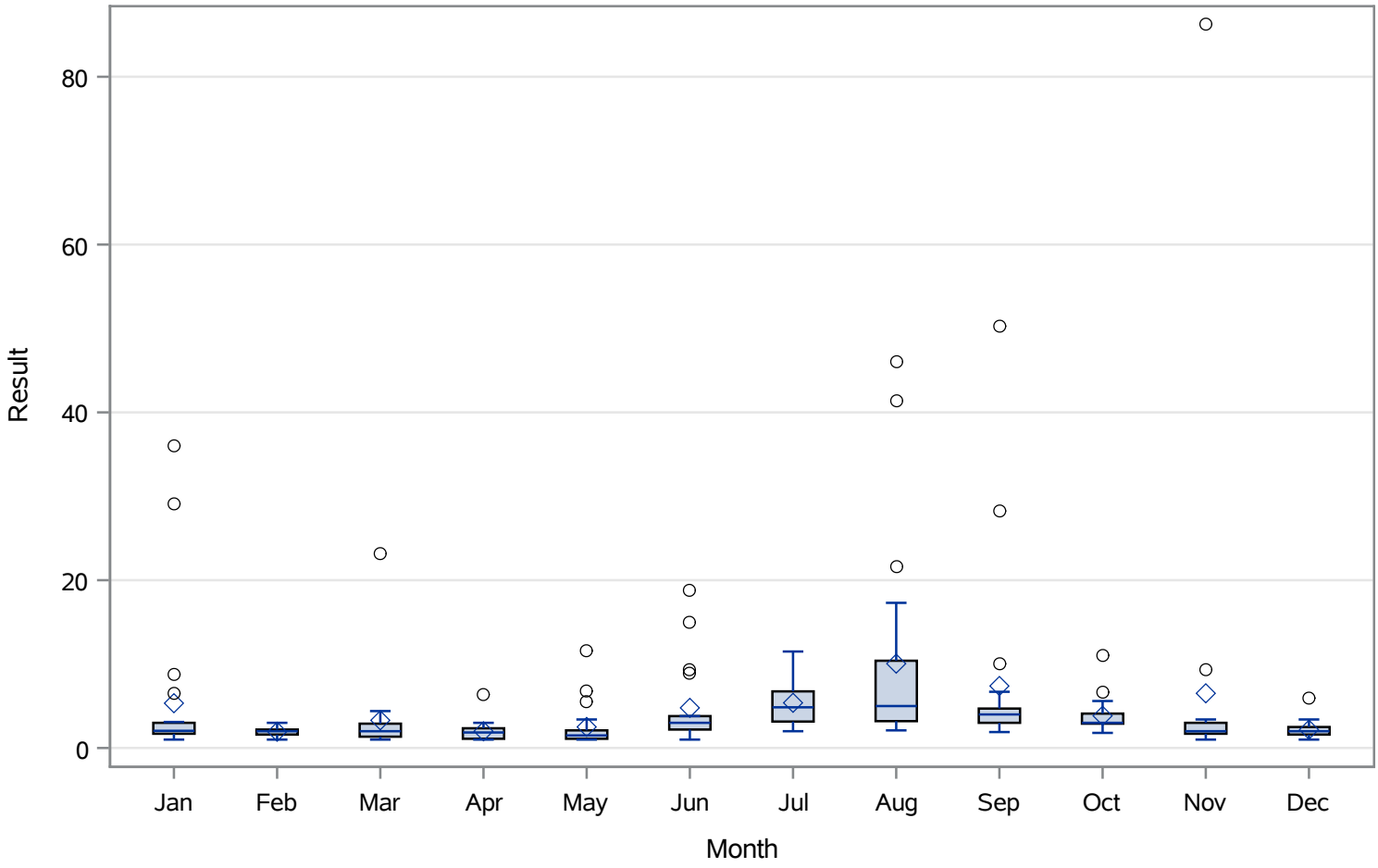


Little Manatee River

Little Manatee River at CR 579

Turbidity (NTU) NTU

Site ID = 21FLHILL140

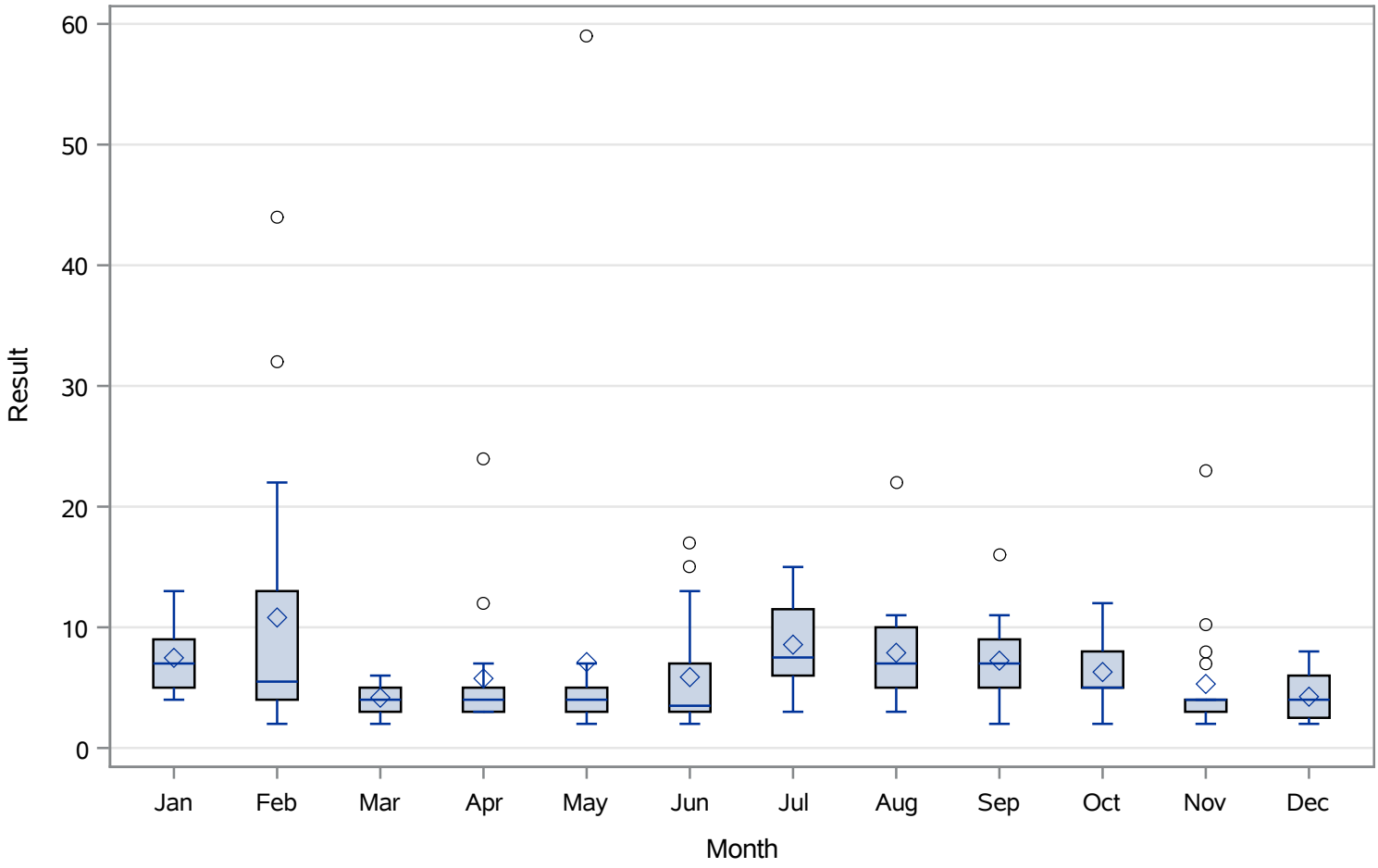


Little Manatee River

LITTLE MANATEE R AT CR579

Turbidity (NTU) NTU

Site ID = 21FLHILL24010013

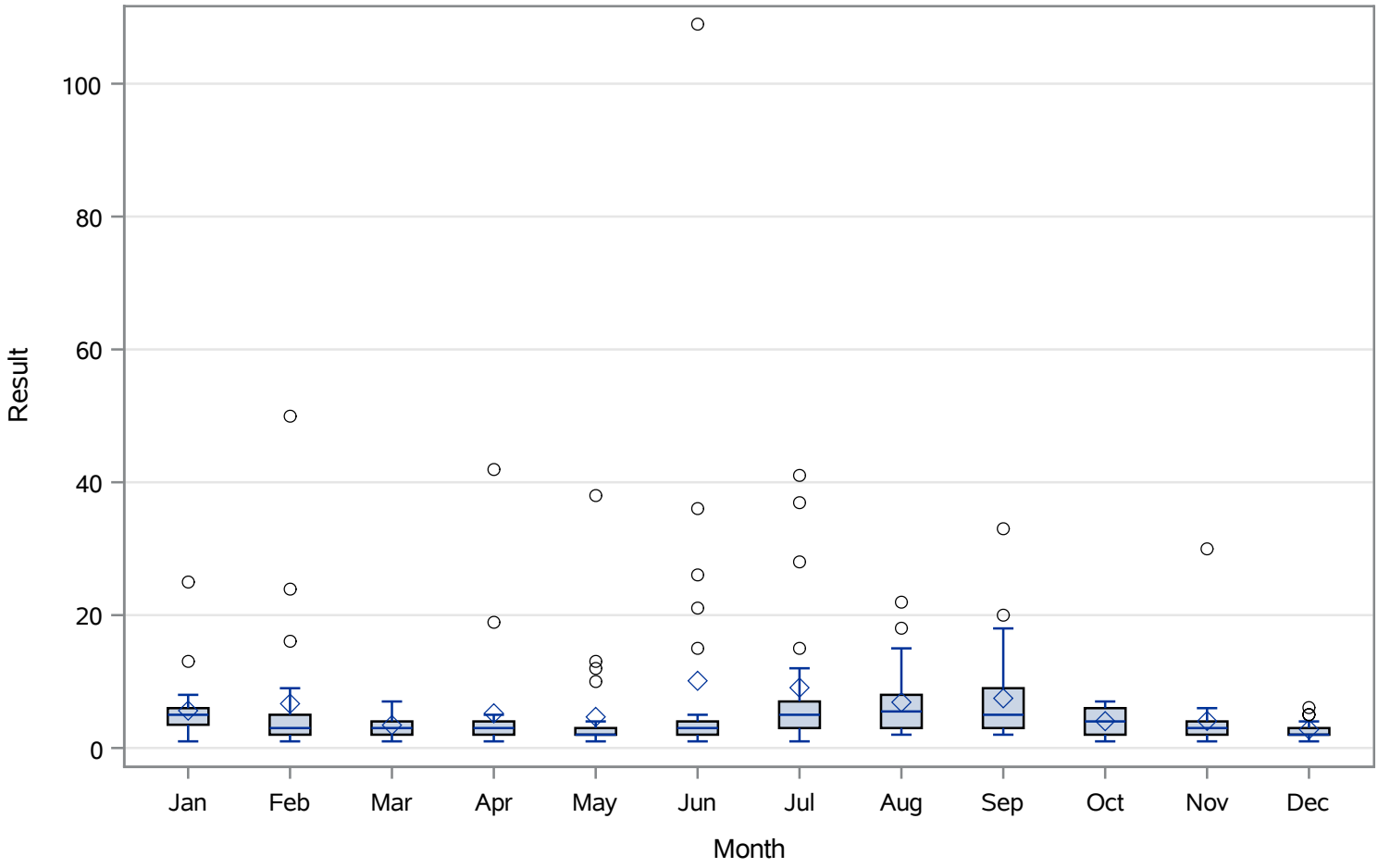


Little Manatee River

L MANATEE R BR US 301

Turbidity (NTU) NTU

Site ID = 21FLHILL24010100

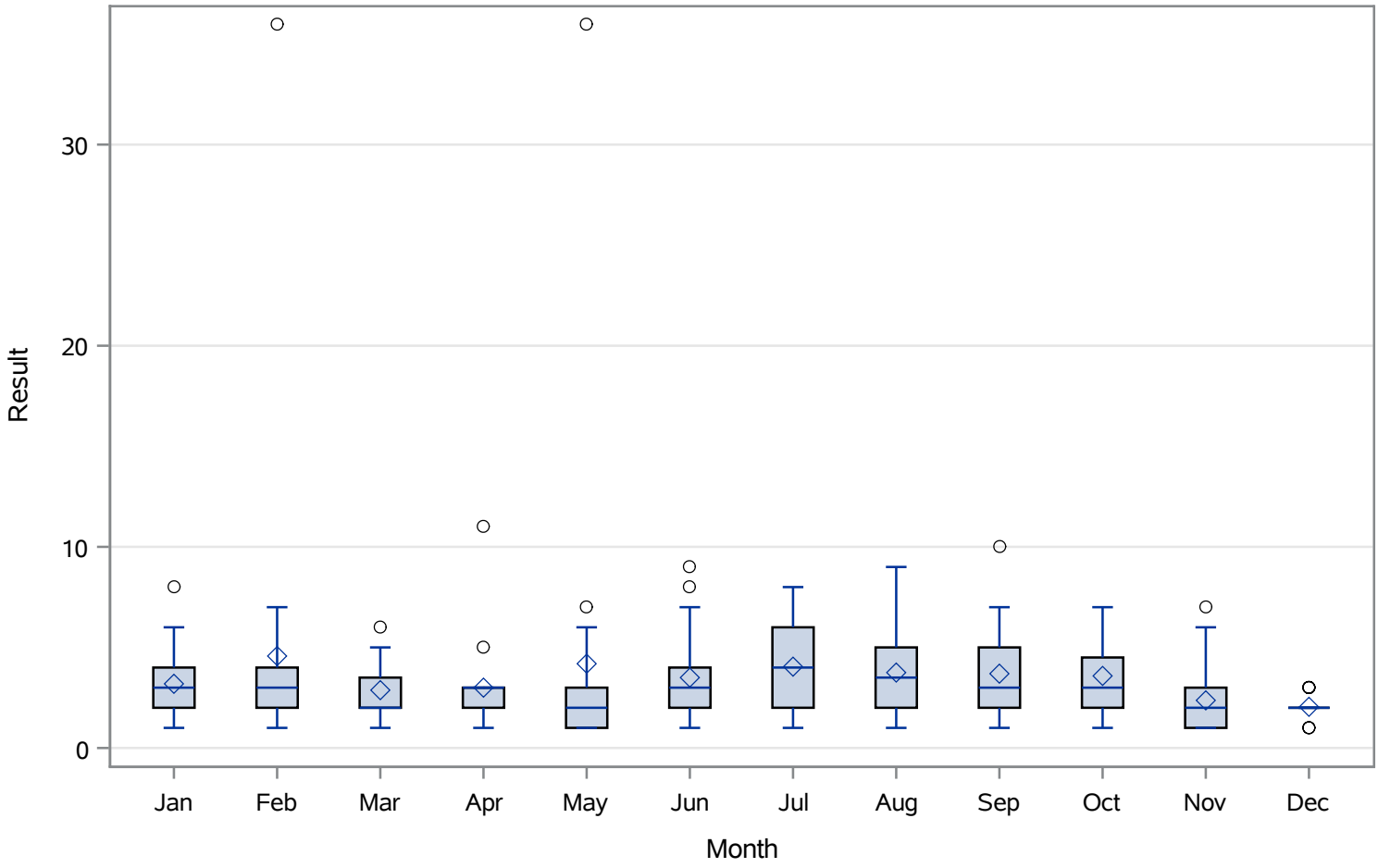


Little Manatee River

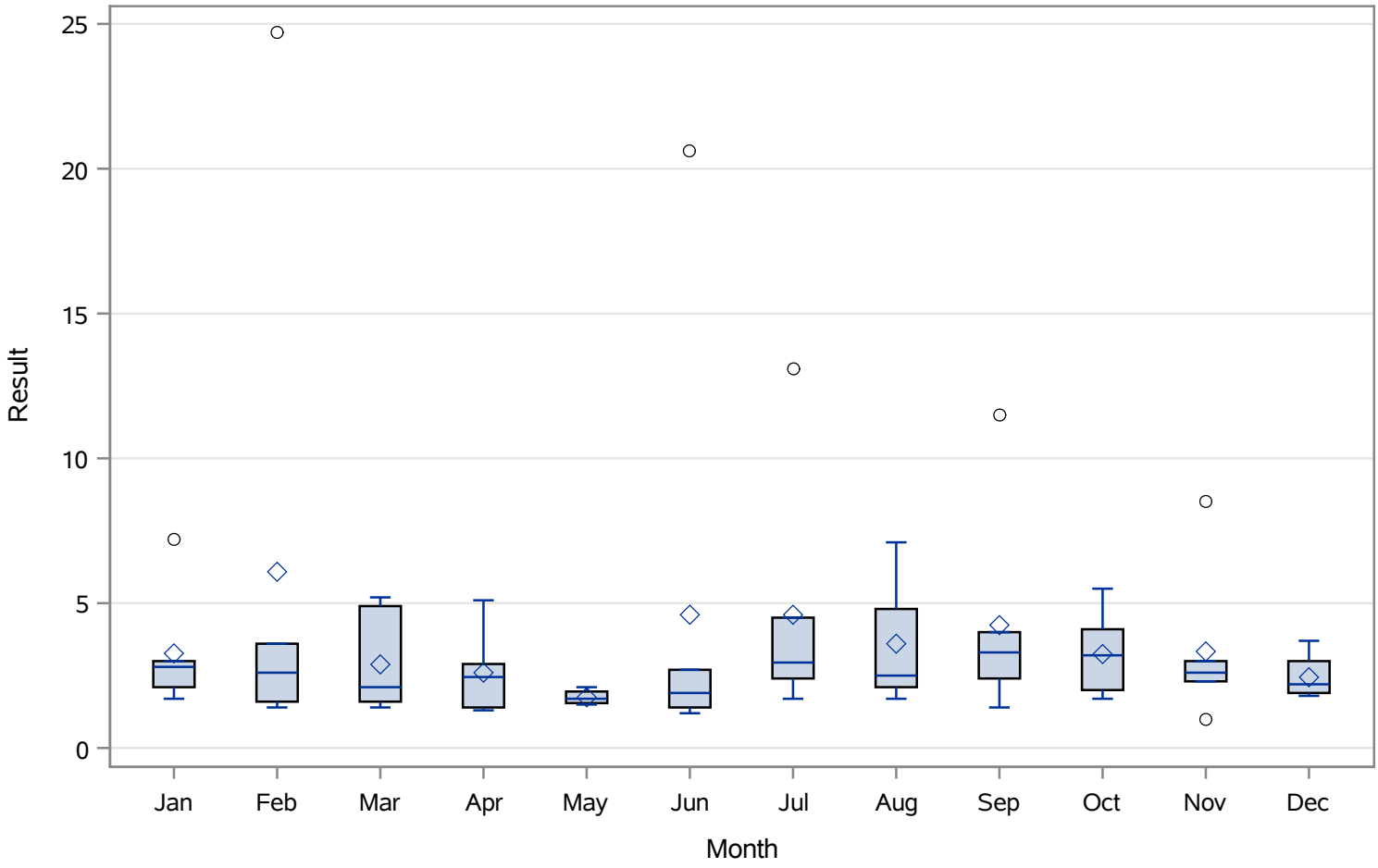
LITTLE MANATEE R AT SR #674

Turbidity (NTU) NTU

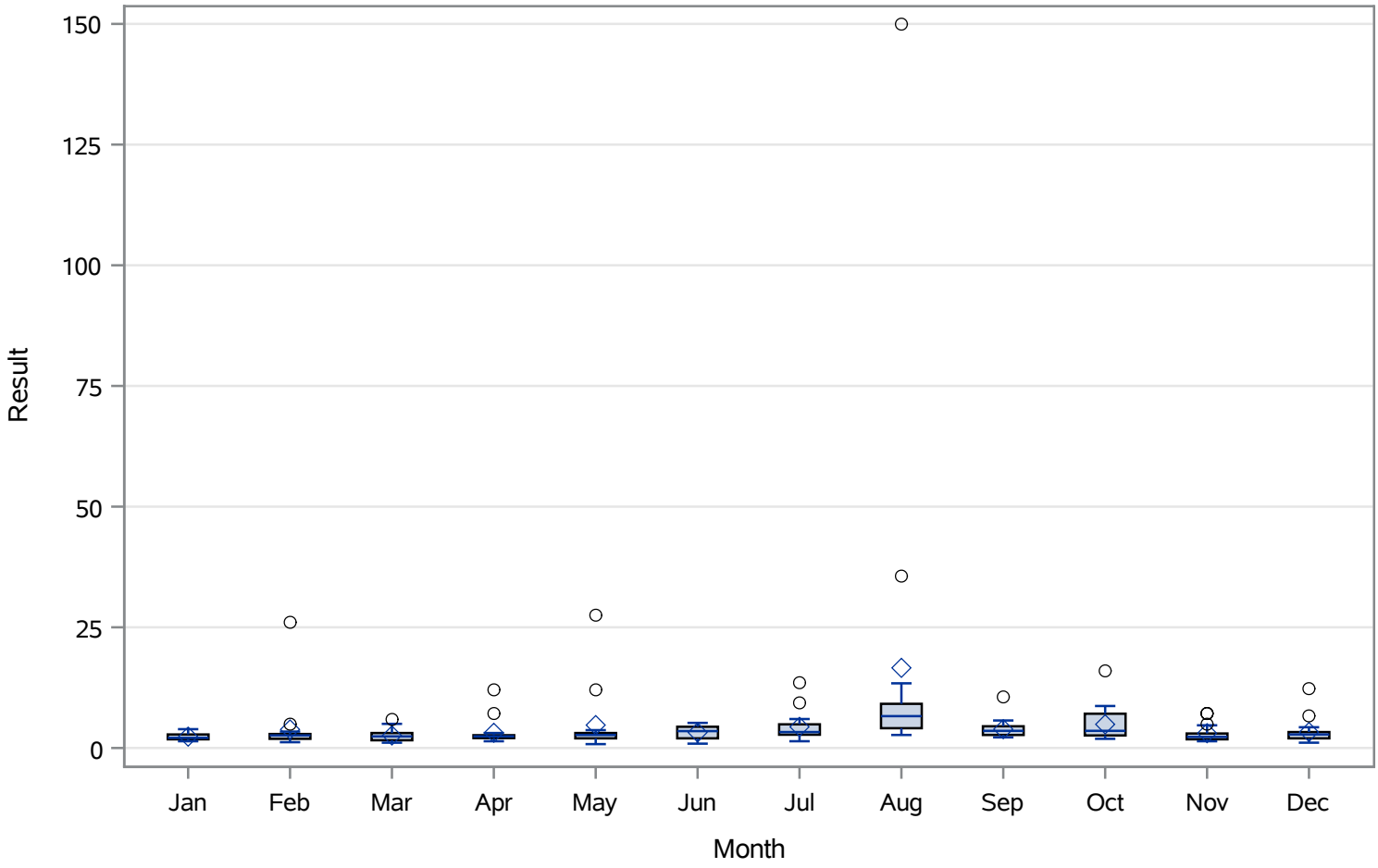
Site ID = 21FLHILL24010110



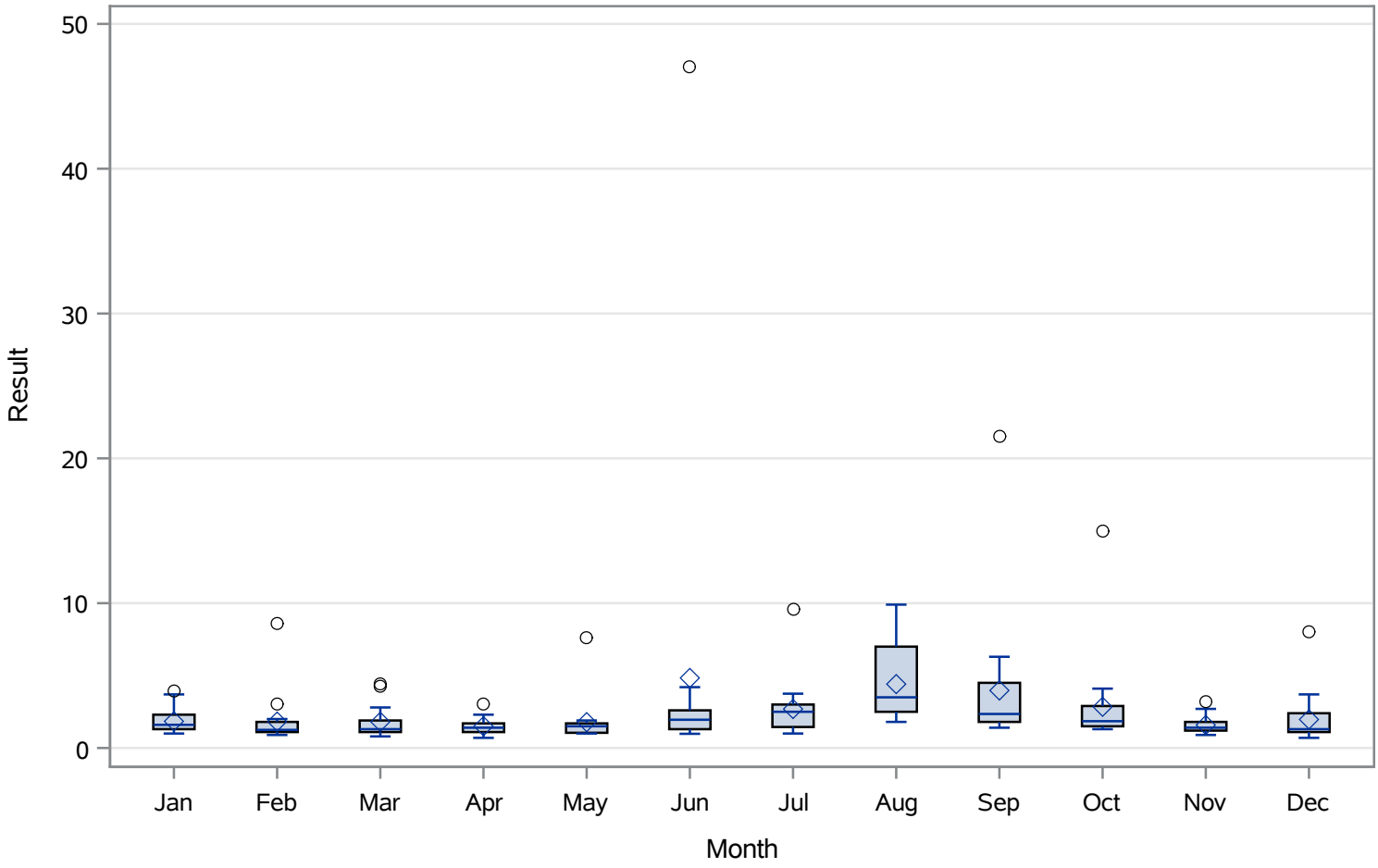
Little Manatee River
Little Manatee R. at SR674
Turbidity (NTU) NTU
Site ID = 21FLIMCALM674



Little Manatee River
D1
Turbidity (NTU) NTU
Site ID = 21FLMANAD1



Little Manatee River
D3
Turbidity (NTU) NTU
Site ID = 21FLMANAD3

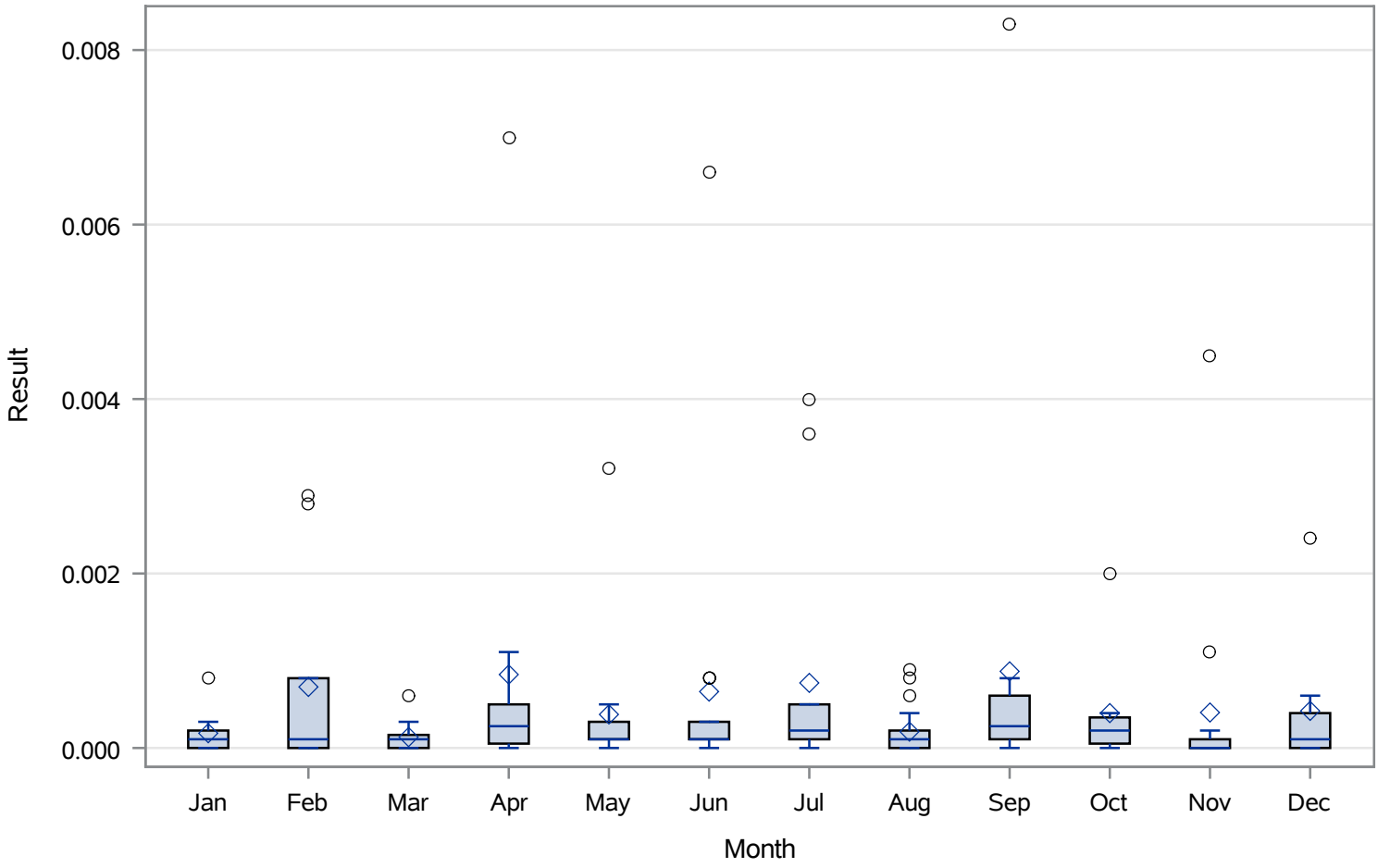


Little Manatee River

LITTLE MANATEE RIVER NEAR FT. LONESOME FL

Un-ionized Ammonia (mg/L) mg/L

Site ID = 112WRD 02300100

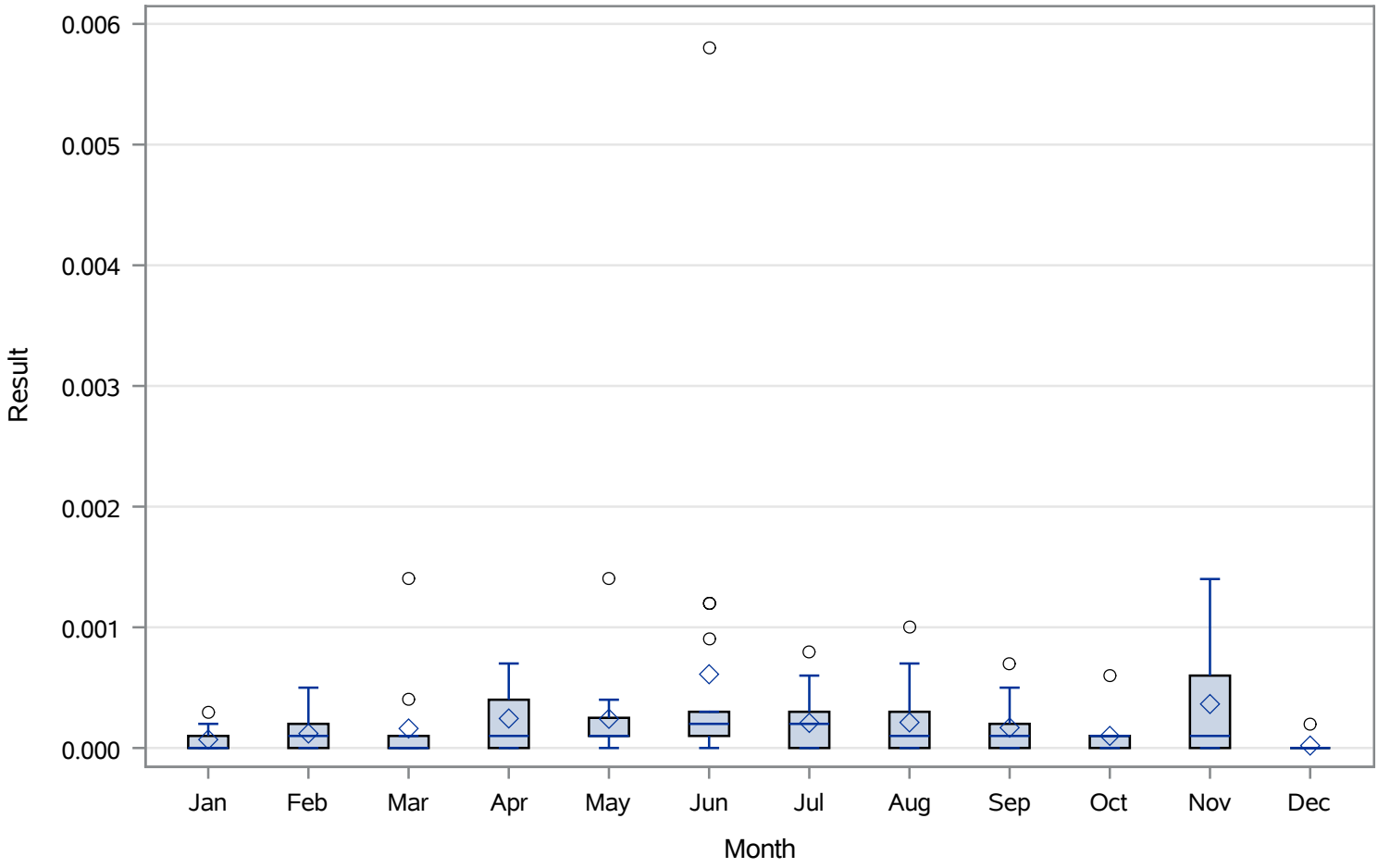


Little Manatee River

SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL

Un-ionized Ammonia (mg/L) mg/L

Site ID = 112WRD 02300200

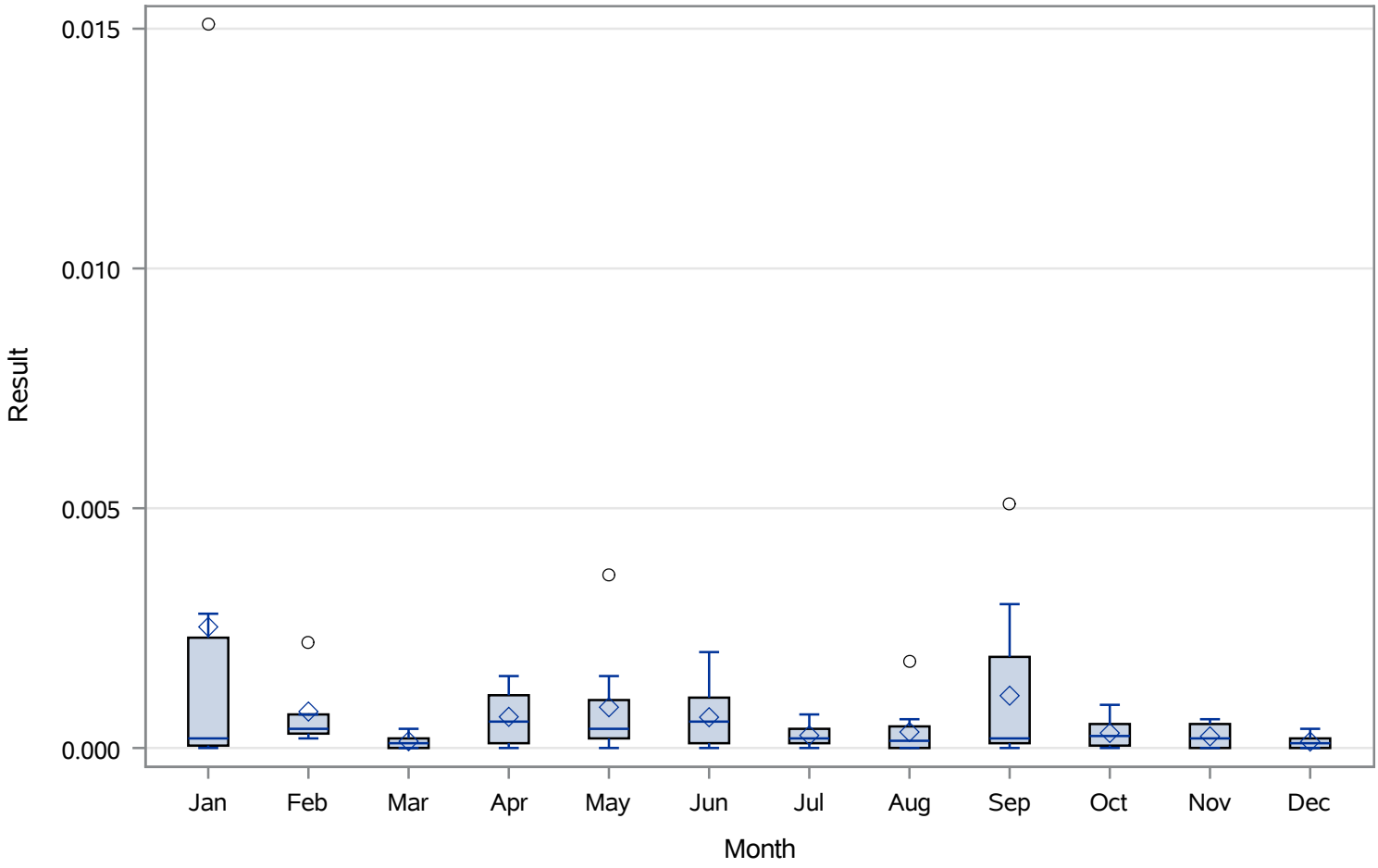


Little Manatee River

LITTLE MANATEE RIVER NEAR WIMAUMA FL

Un-ionized Ammonia (mg/L) mg/L

Site ID = 112WRD 02300500

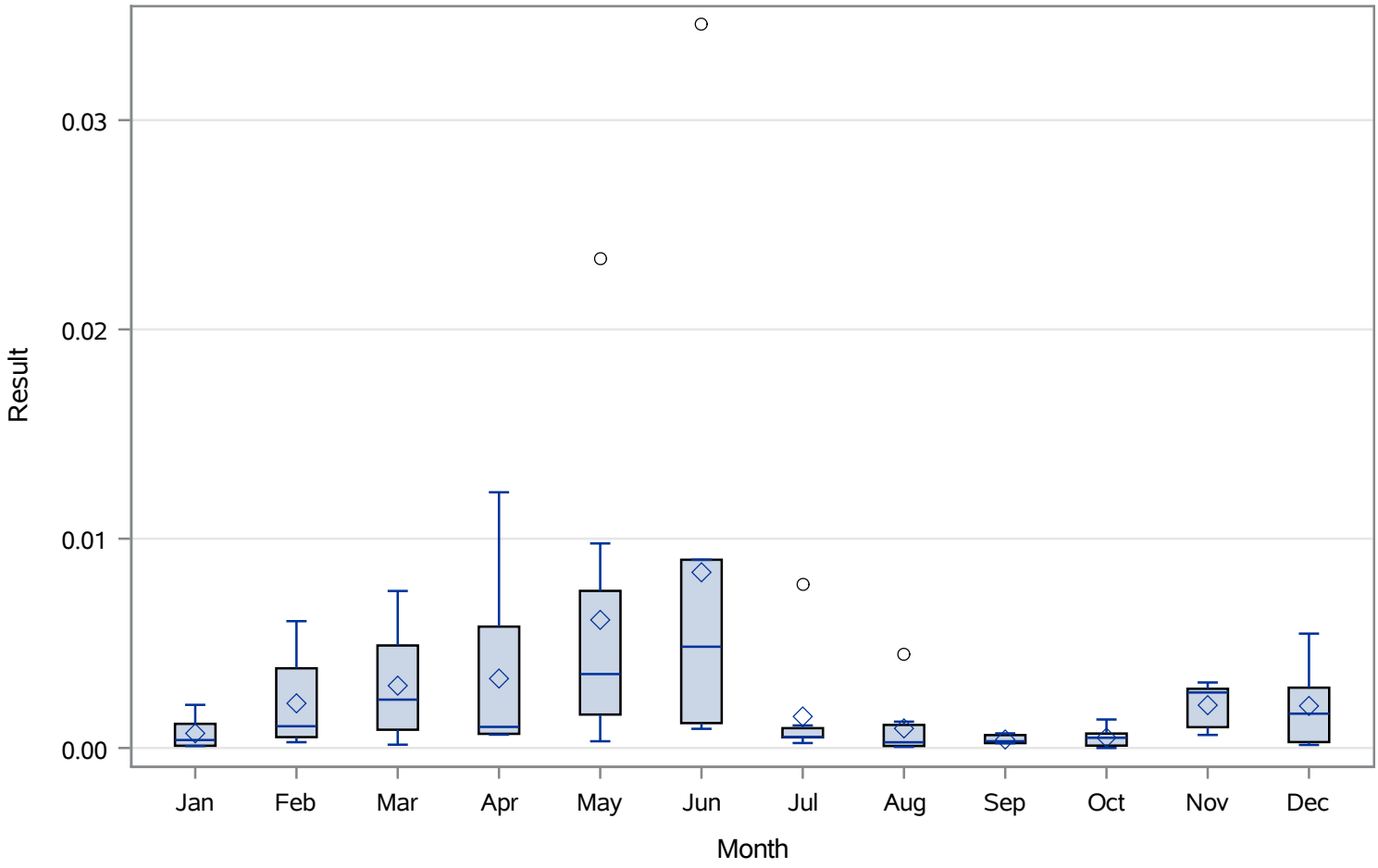


Little Manatee River

L MANATEE R BR US 301

Un-ionized Ammonia (mg/L) mg/L

Site ID = 21FLA 24010100

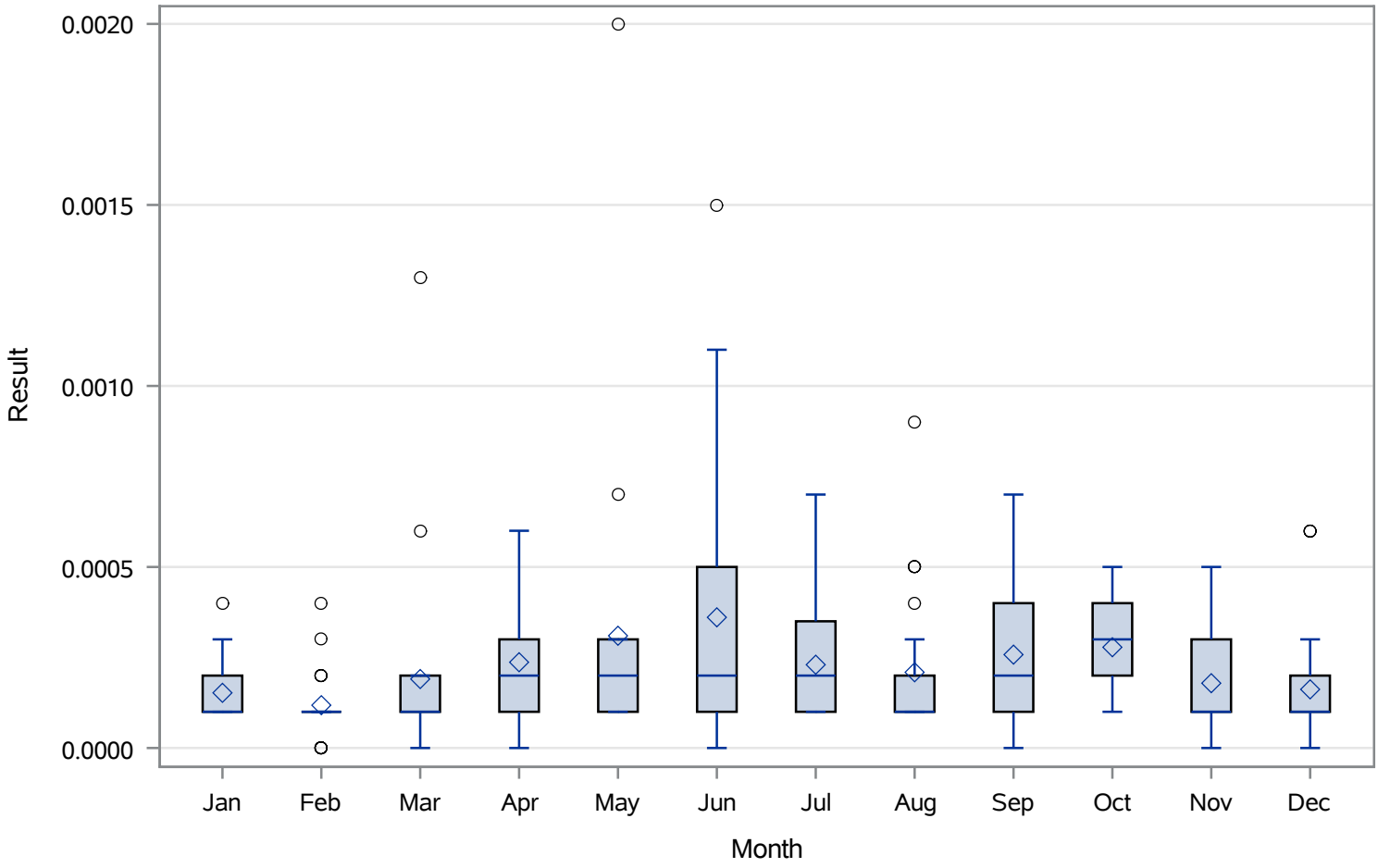


Little Manatee River

LITTLE MANATEE RIVER AT US HWY 301

Un-ionized Ammonia (mg/L) mg/L

Site ID = 21FLGW 3555

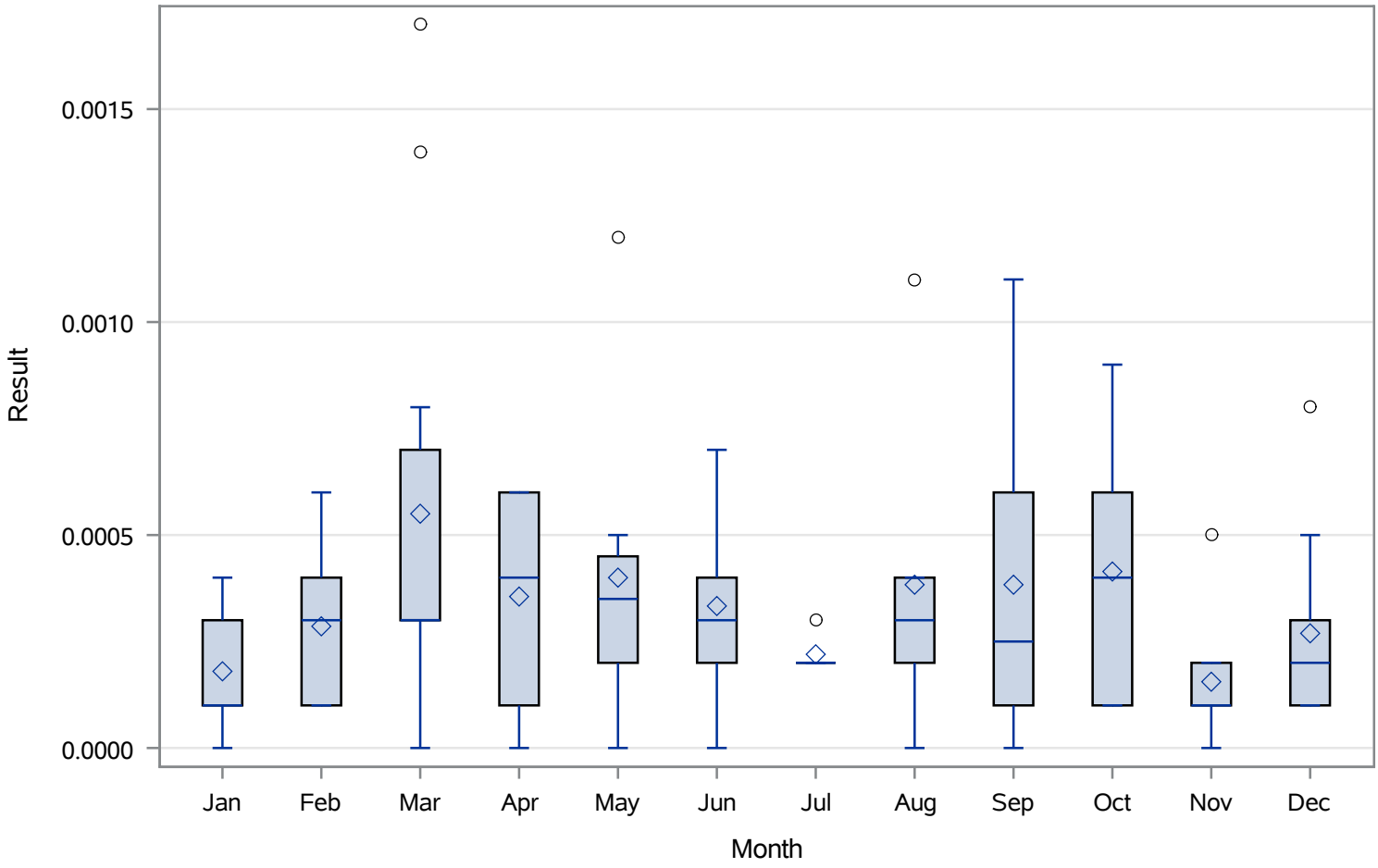


Little Manatee River

Little Manatee River at US 301 bridge

Un-ionized Ammonia (mg/L) mg/L

Site ID = 21FLHILL113

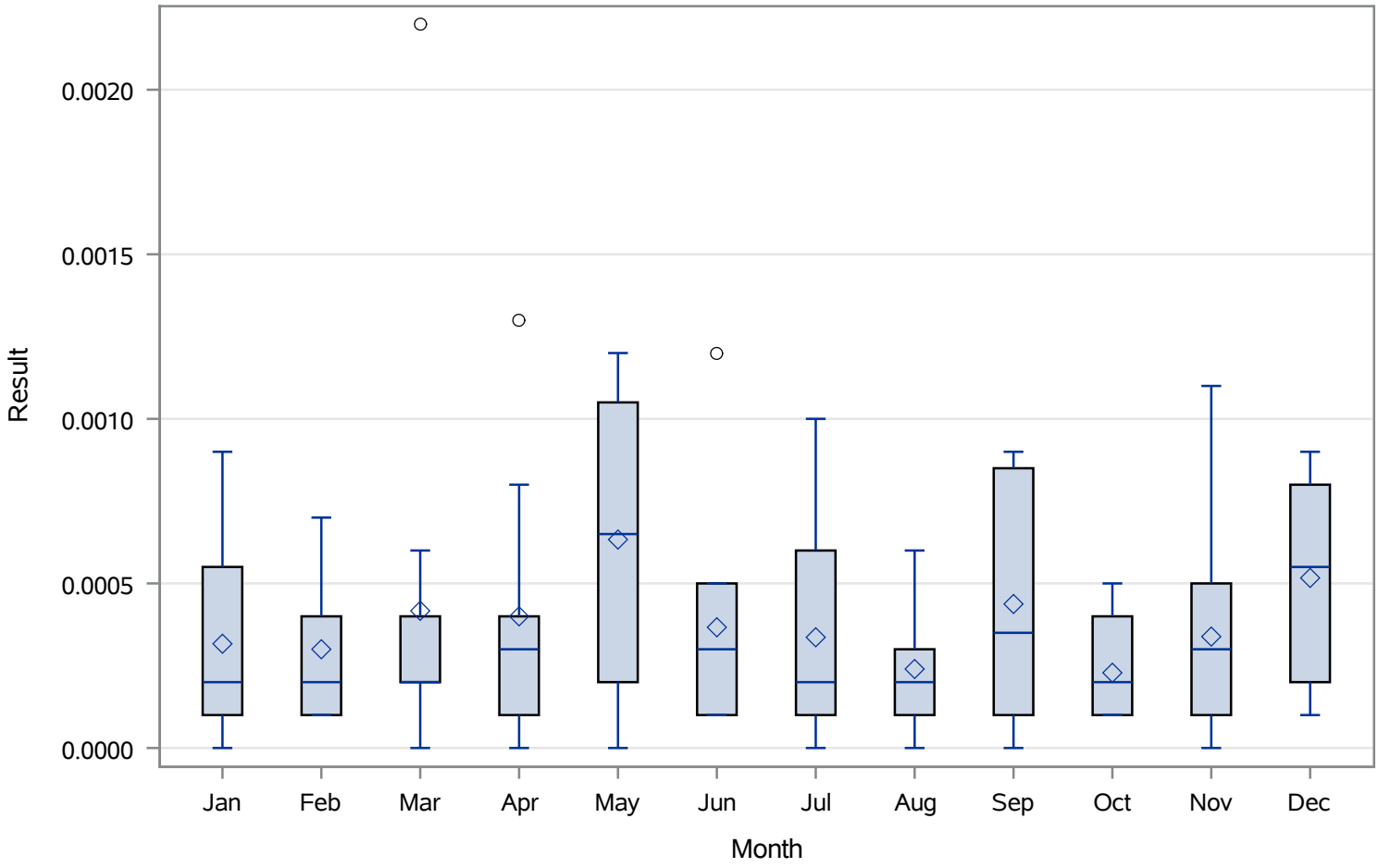


Little Manatee River

Little Manatee River at SR 674

Un-ionized Ammonia (mg/L) mg/L

Site ID = 21FLHILL129

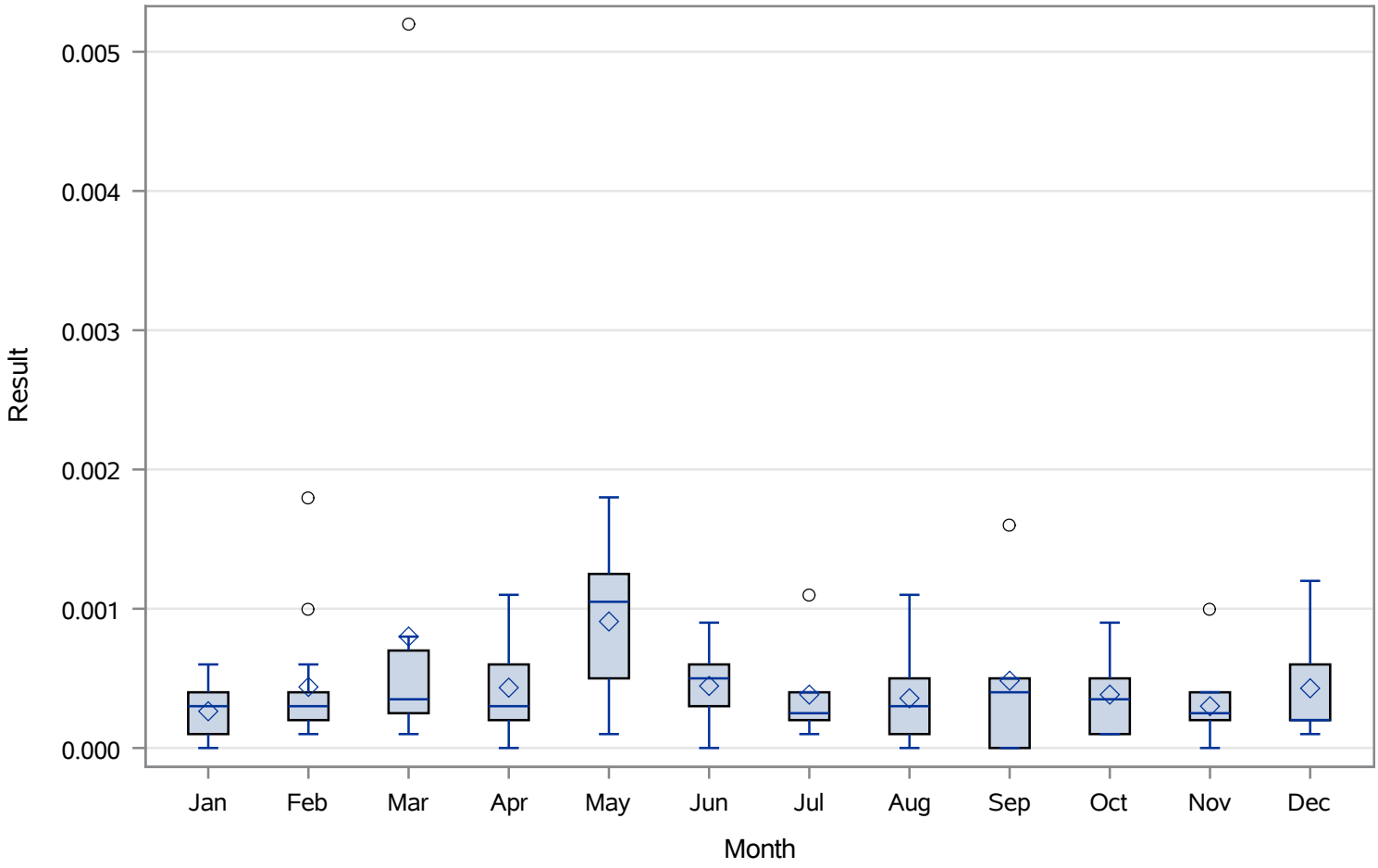


Little Manatee River

Little Manatee River at CR 579

Un-ionized Ammonia (mg/L) mg/L

Site ID = 21FLHILL140

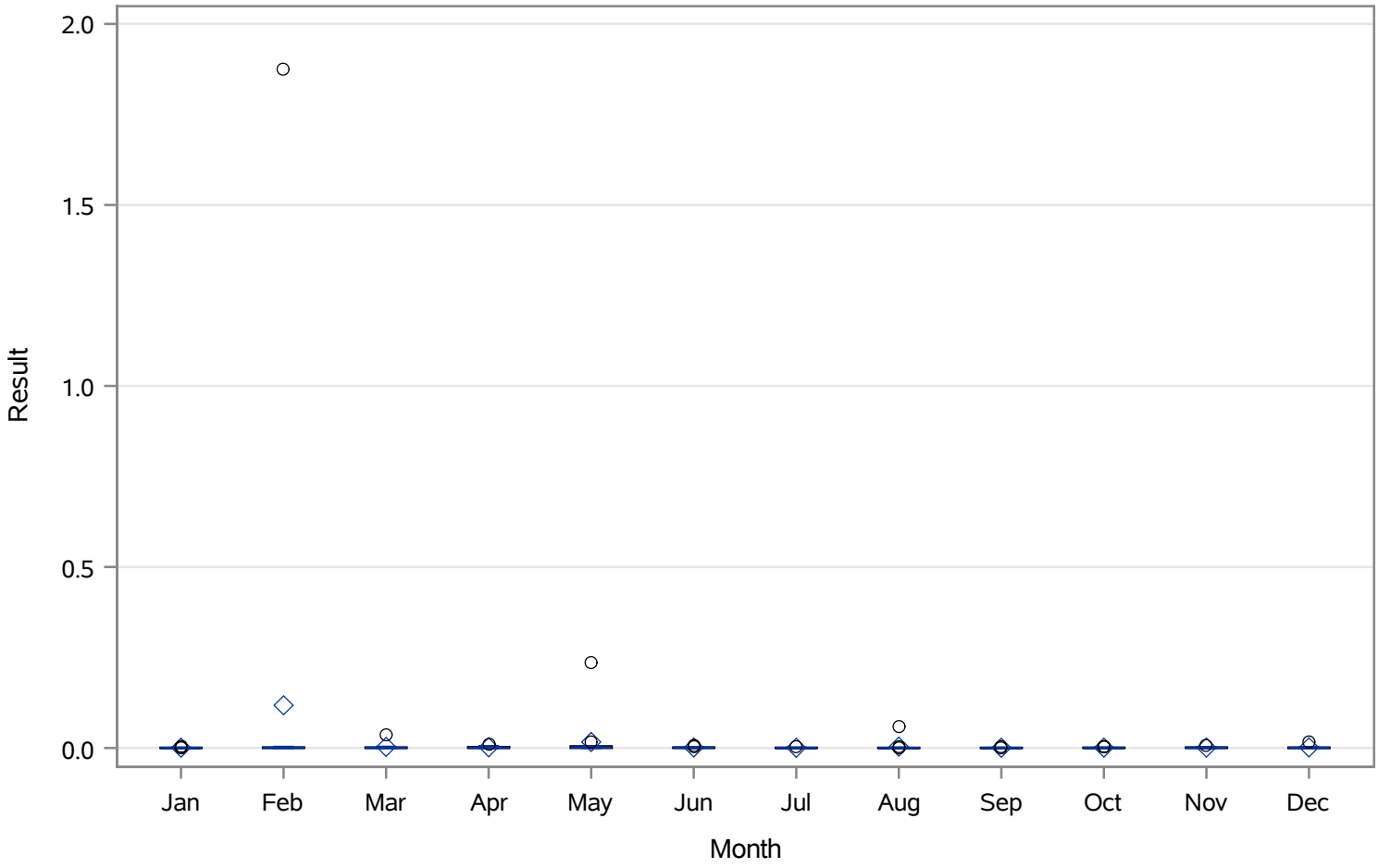


Little Manatee River

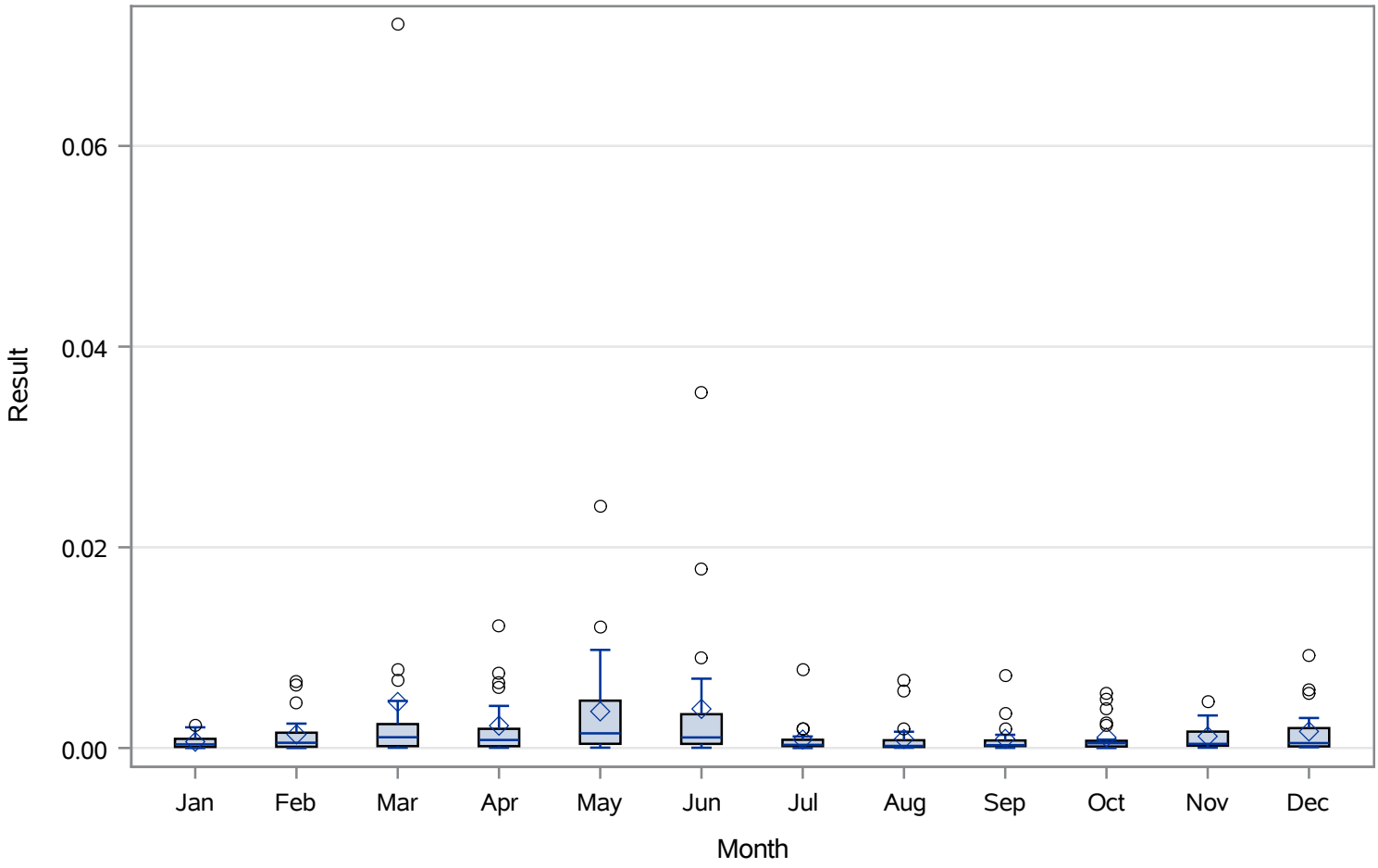
LITTLE MANATEE R AT CR579

Un-ionized Ammonia (mg/L) mg/L

Site ID = 21FLHILL24010013



Little Manatee River
L MANATEE R BR US 301
Un-ionized Ammonia (mg/L) mg/L
Site ID = 21FLHILL24010100

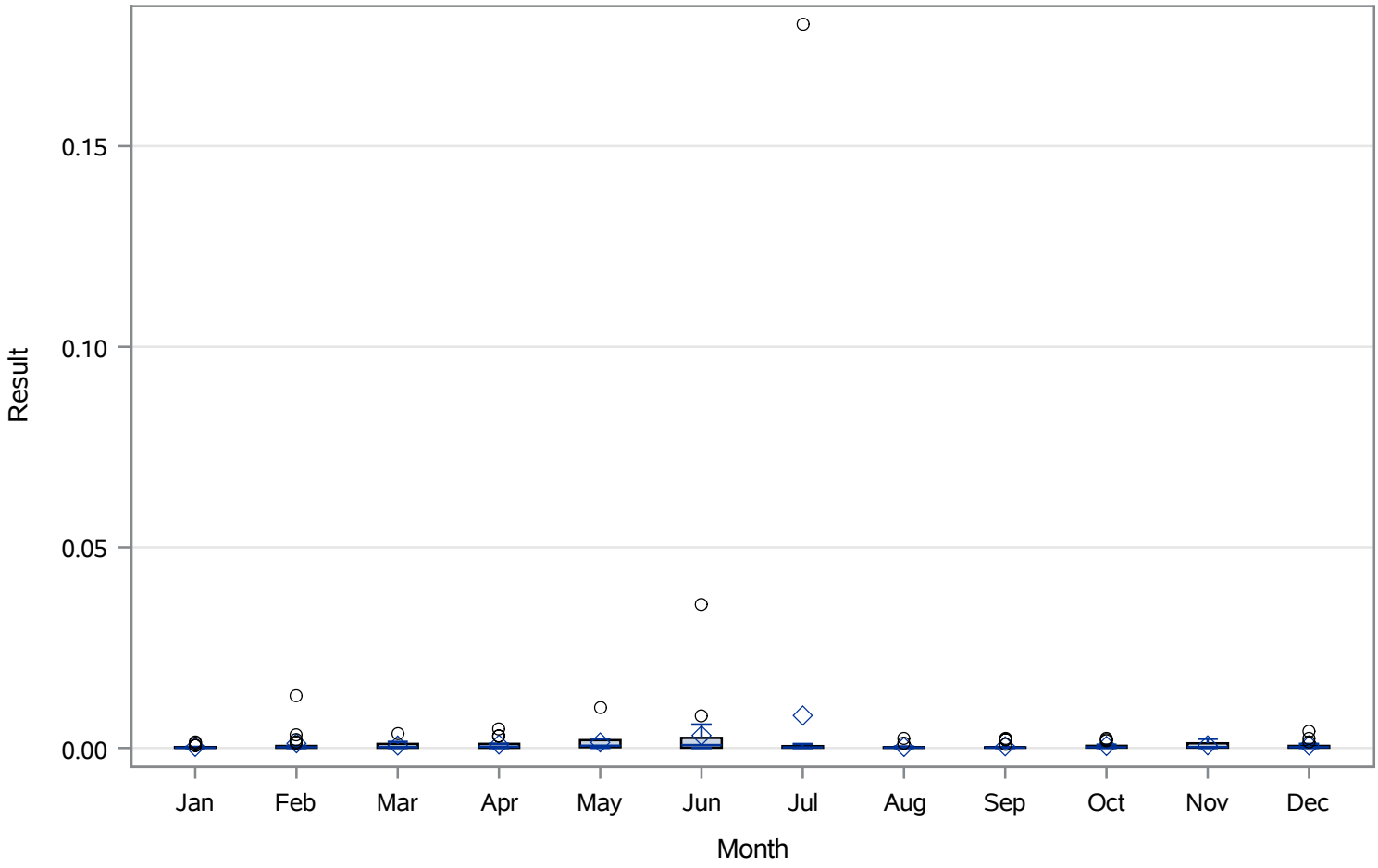


Little Manatee River

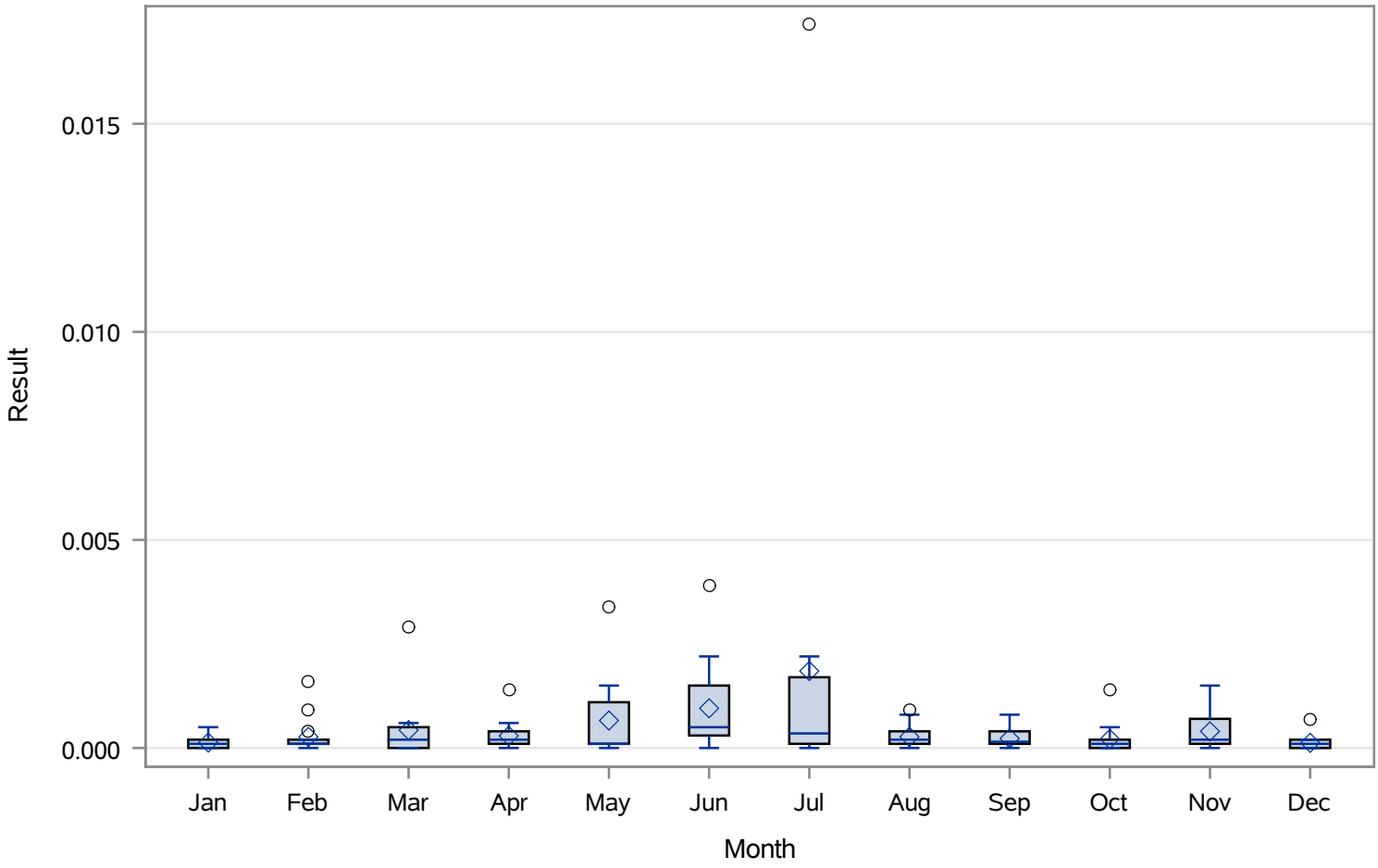
LITTLE MANATEE R AT SR #674

Un-ionized Ammonia (mg/L) mg/L

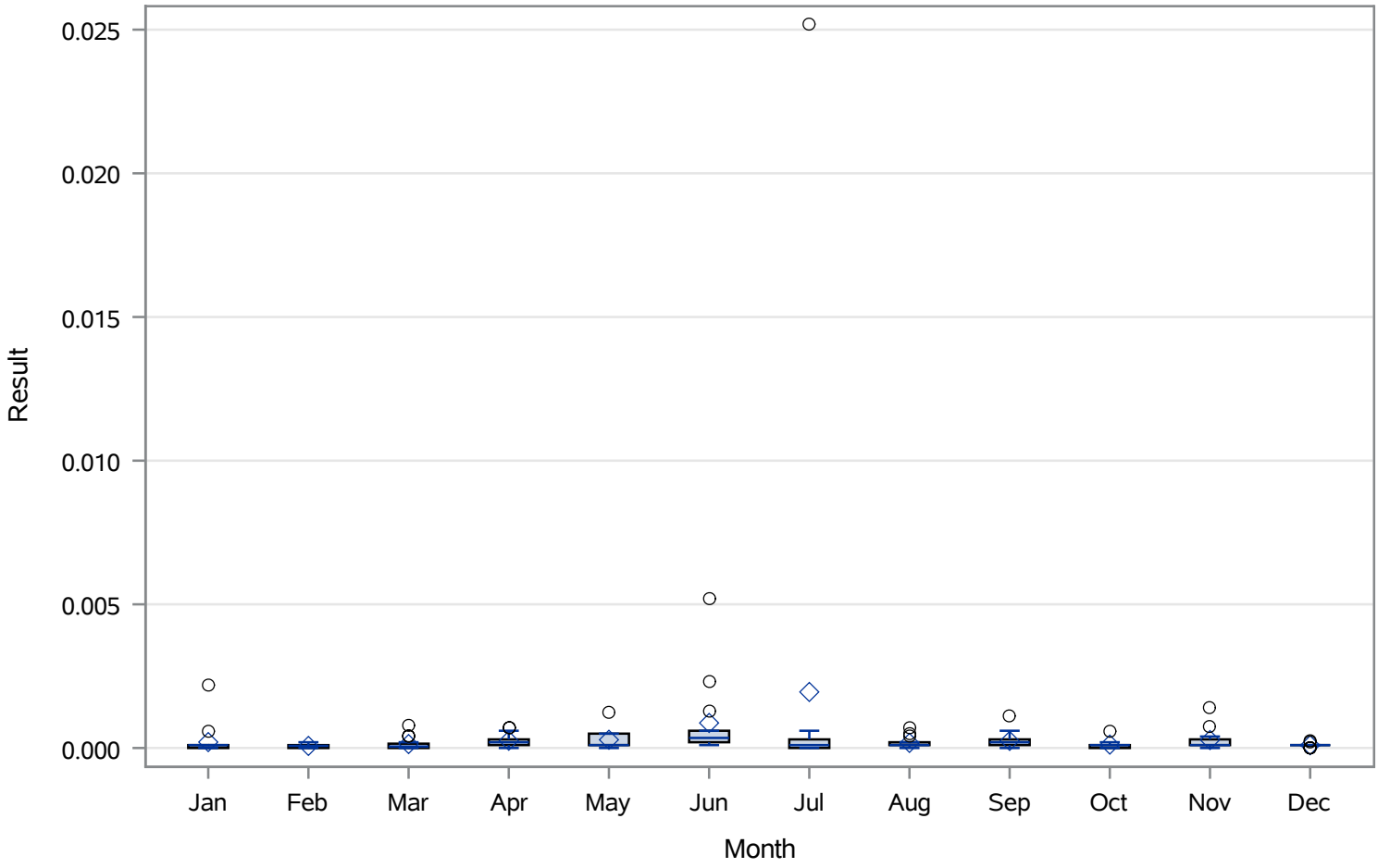
Site ID = 21FLHILL24010110



Little Manatee River
D1
Un-ionized Ammonia (mg/L) mg/L
Site ID = 21FLMANAD1



Little Manatee River
D3
Un-ionized Ammonia (mg/L) mg/L
Site ID = 21FLMANAD3

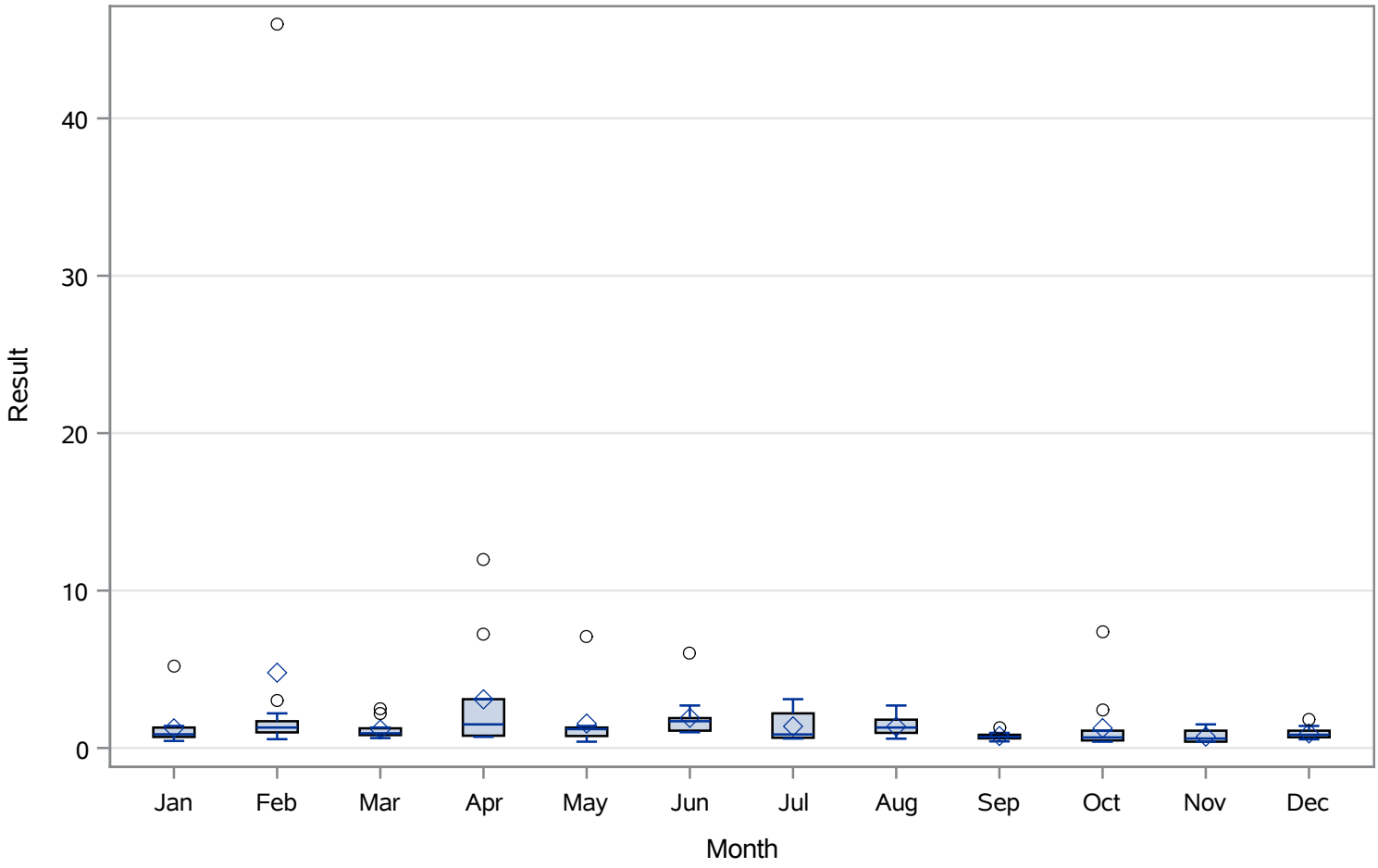


Little Manatee River

LITTLE MANATEE RIVER AT US HWY 301

Uncorr. Chlorophyll-a (µg/L) µg/L

Site ID = 21FLGW 3555

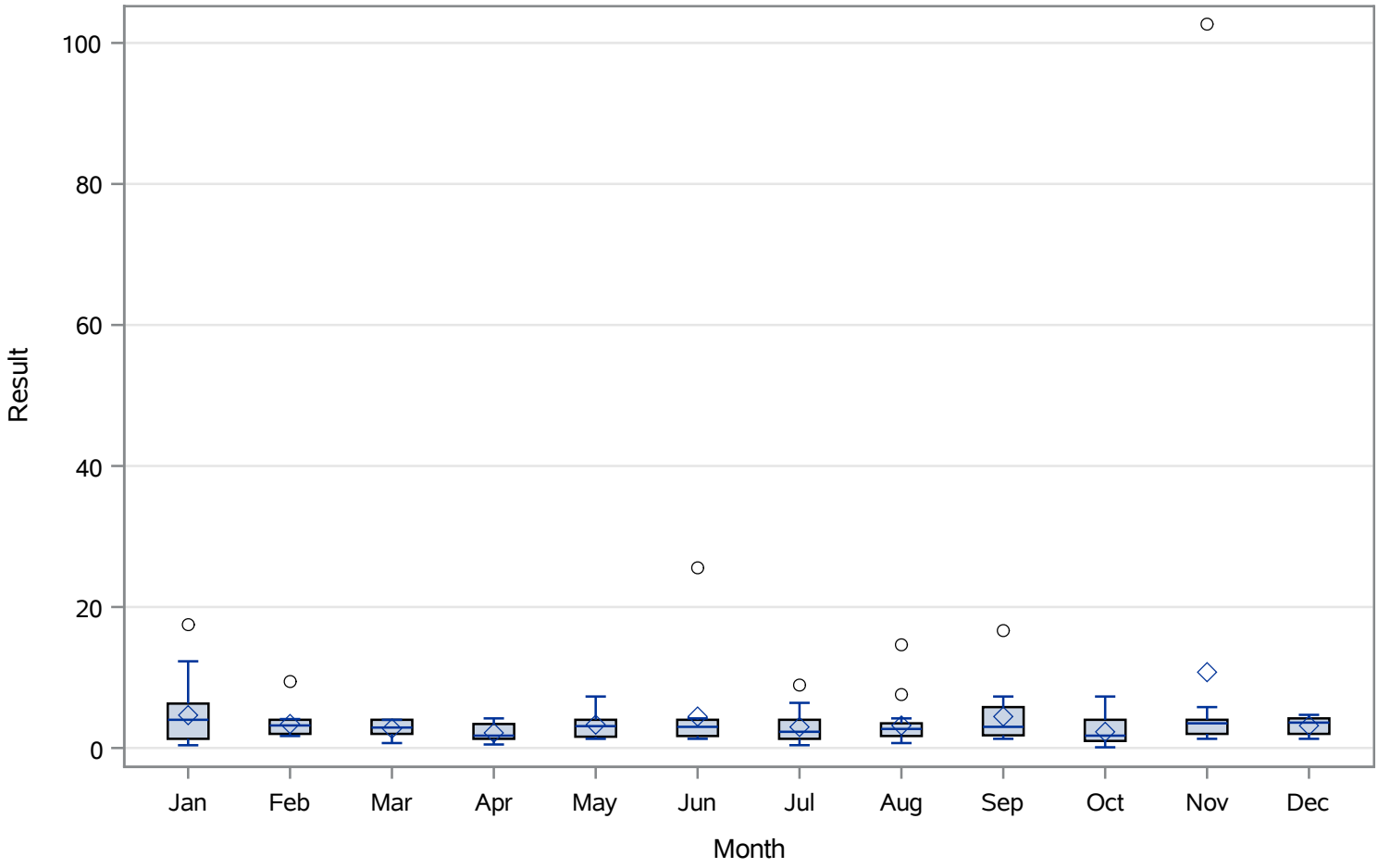


Little Manatee River

Little Manatee River at US 301 bridge

Uncorr. Chlorophyll-a (µg/L) µg/L

Site ID = 21FLHILL113

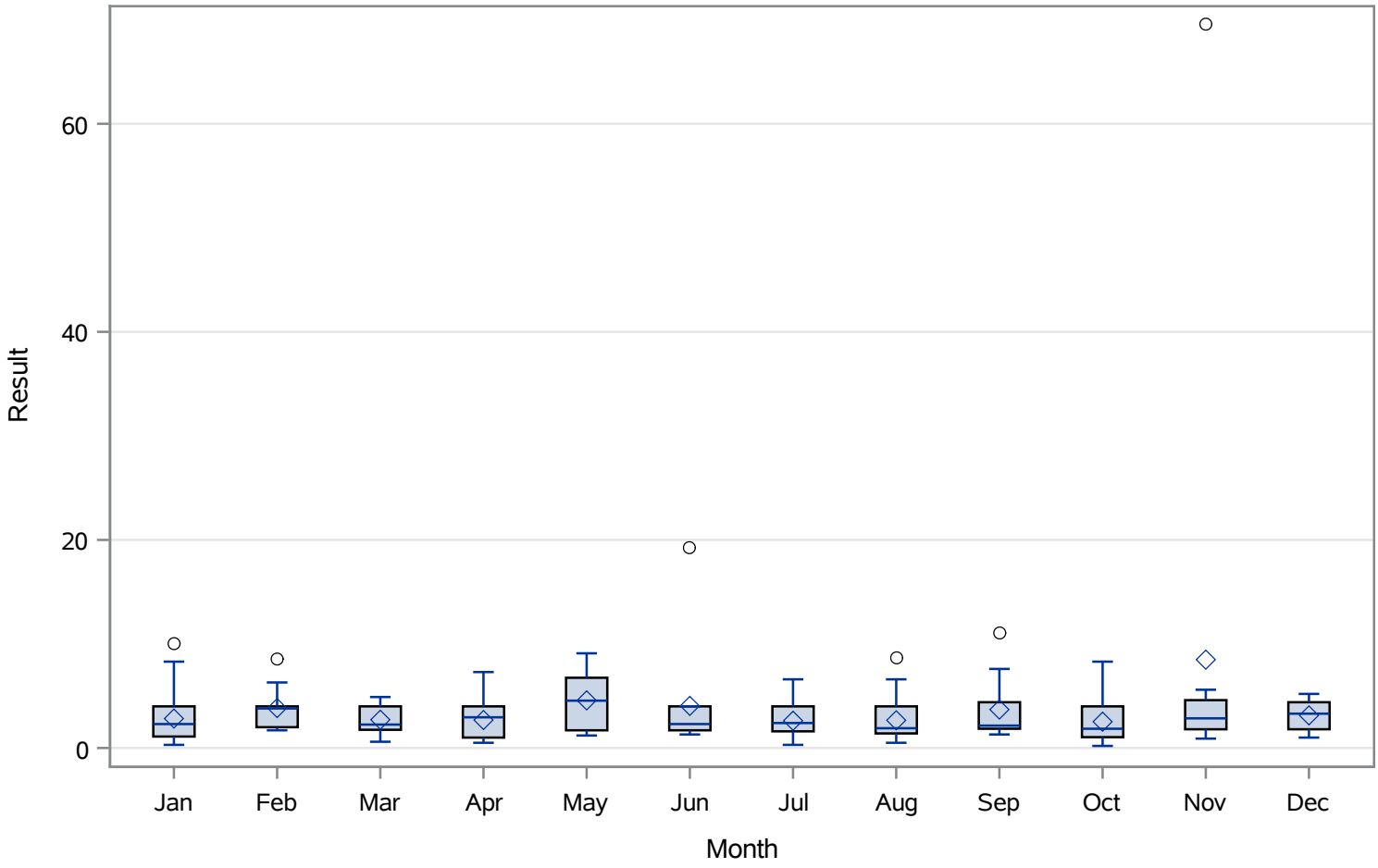


Little Manatee River

Little Manatee River at SR 674

Uncorr. Chlorophyll-a (µg/L) µg/L

Site ID = 21FLHILL129

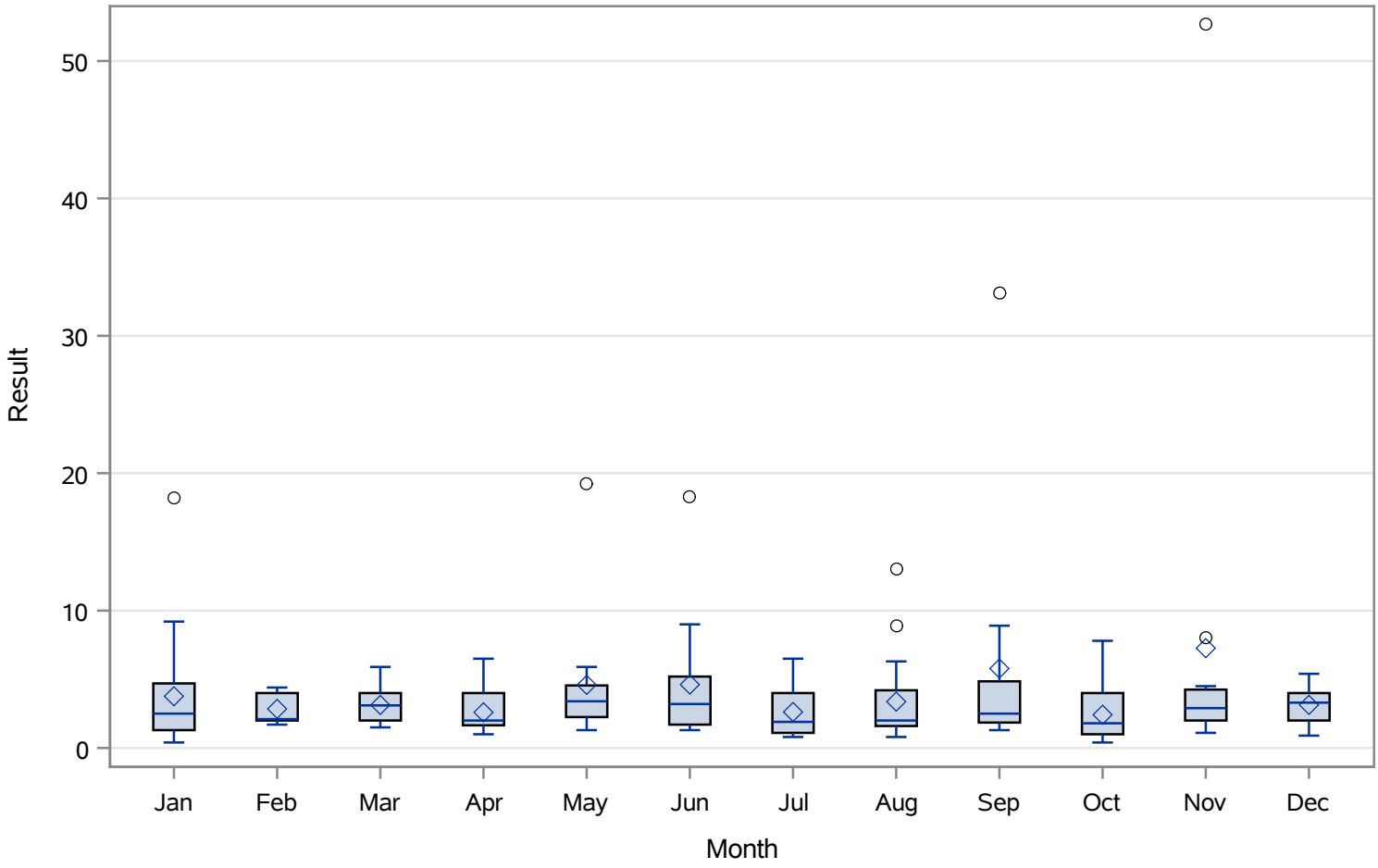


Little Manatee River

Little Manatee River at CR 579

Uncorr. Chlorophyll-a (µg/L) µg/L

Site ID = 21FLHILL140

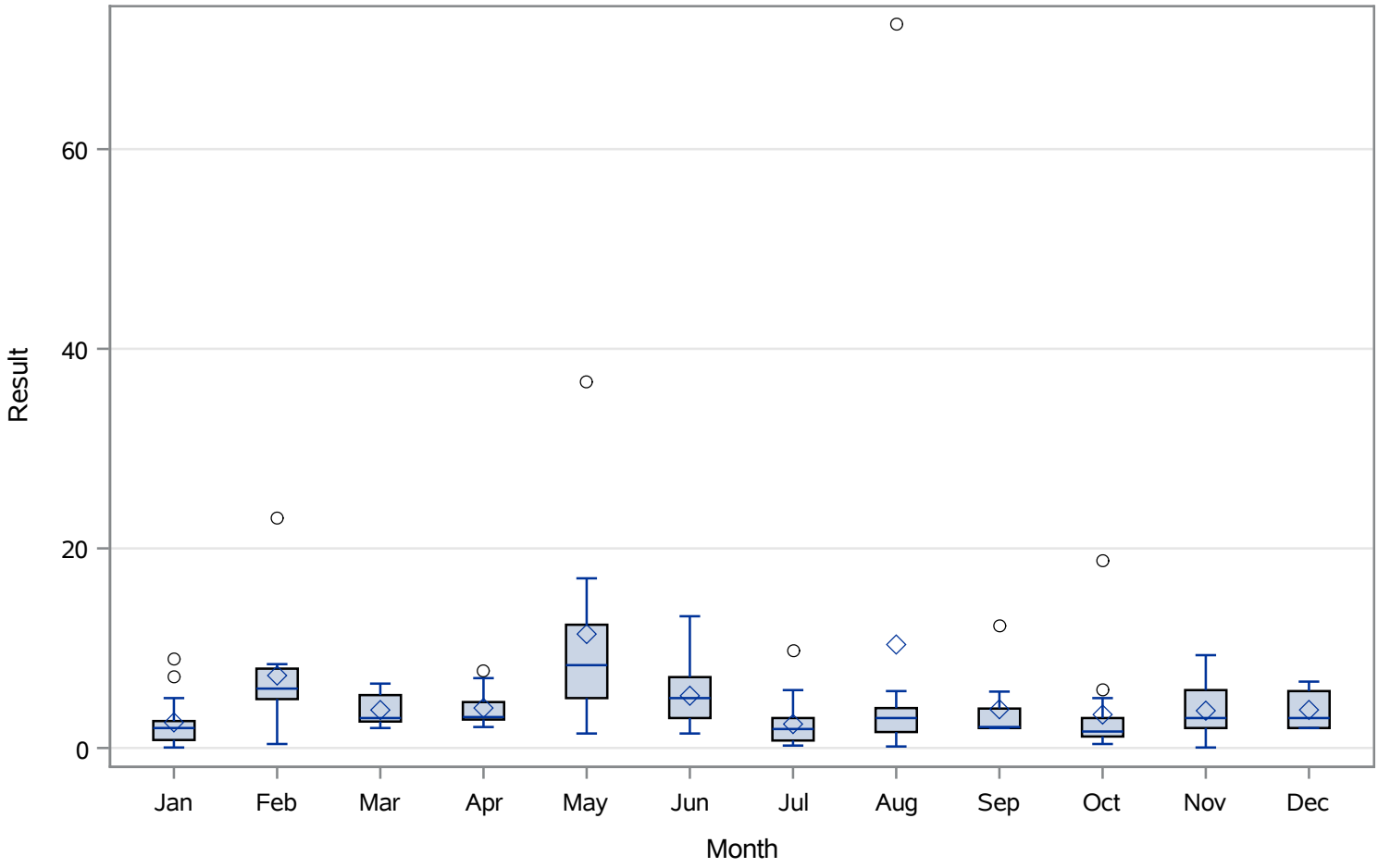


Little Manatee River

LITTLE MANATEE R AT CR579

Uncorr. Chlorophyll-a (µg/L) µg/L

Site ID = 21FLHILL24010013

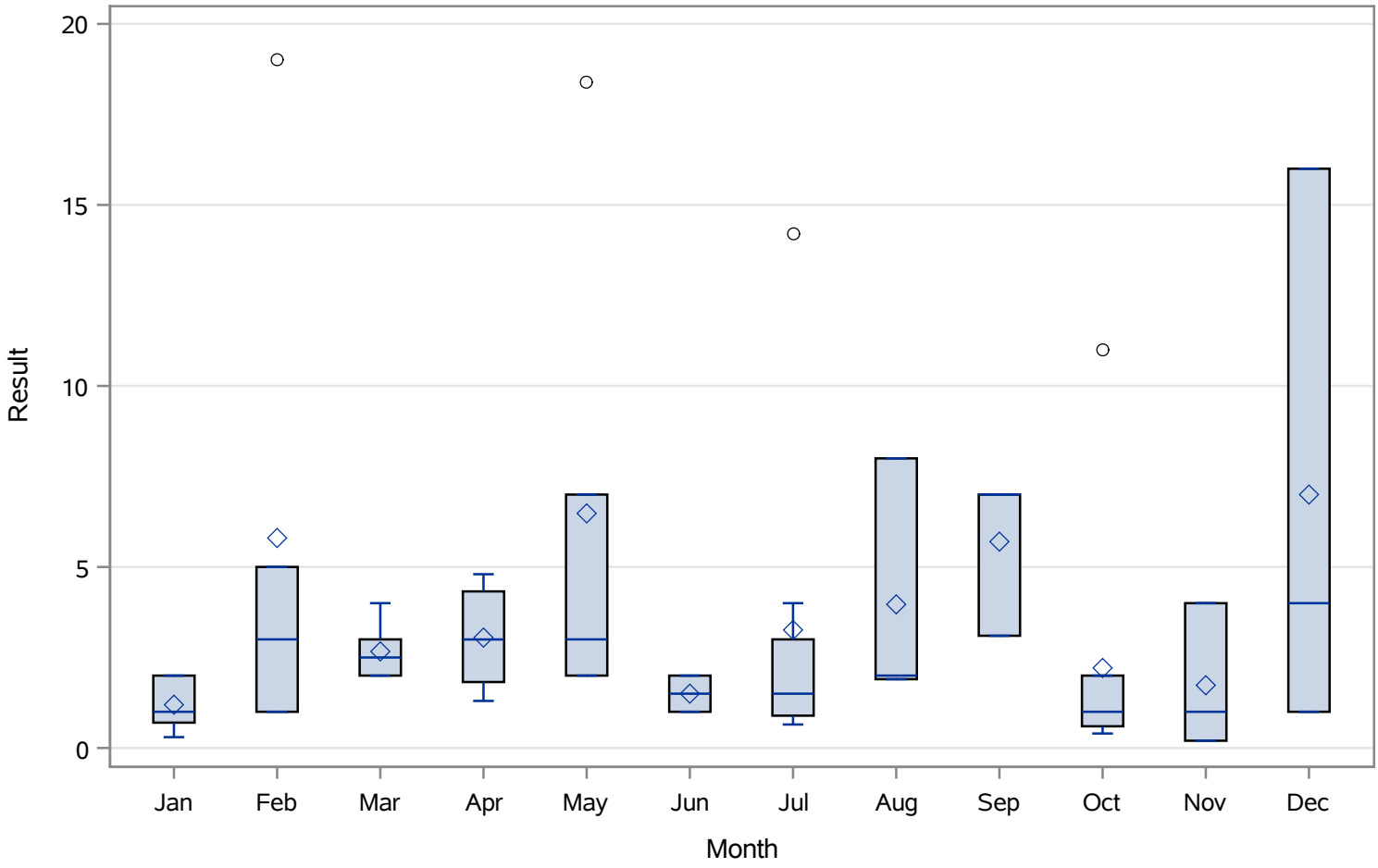


Little Manatee River

L MANATEE R BR US 301

Uncorr. Chlorophyll-a (µg/L) µg/L

Site ID = 21FLHILL24010100

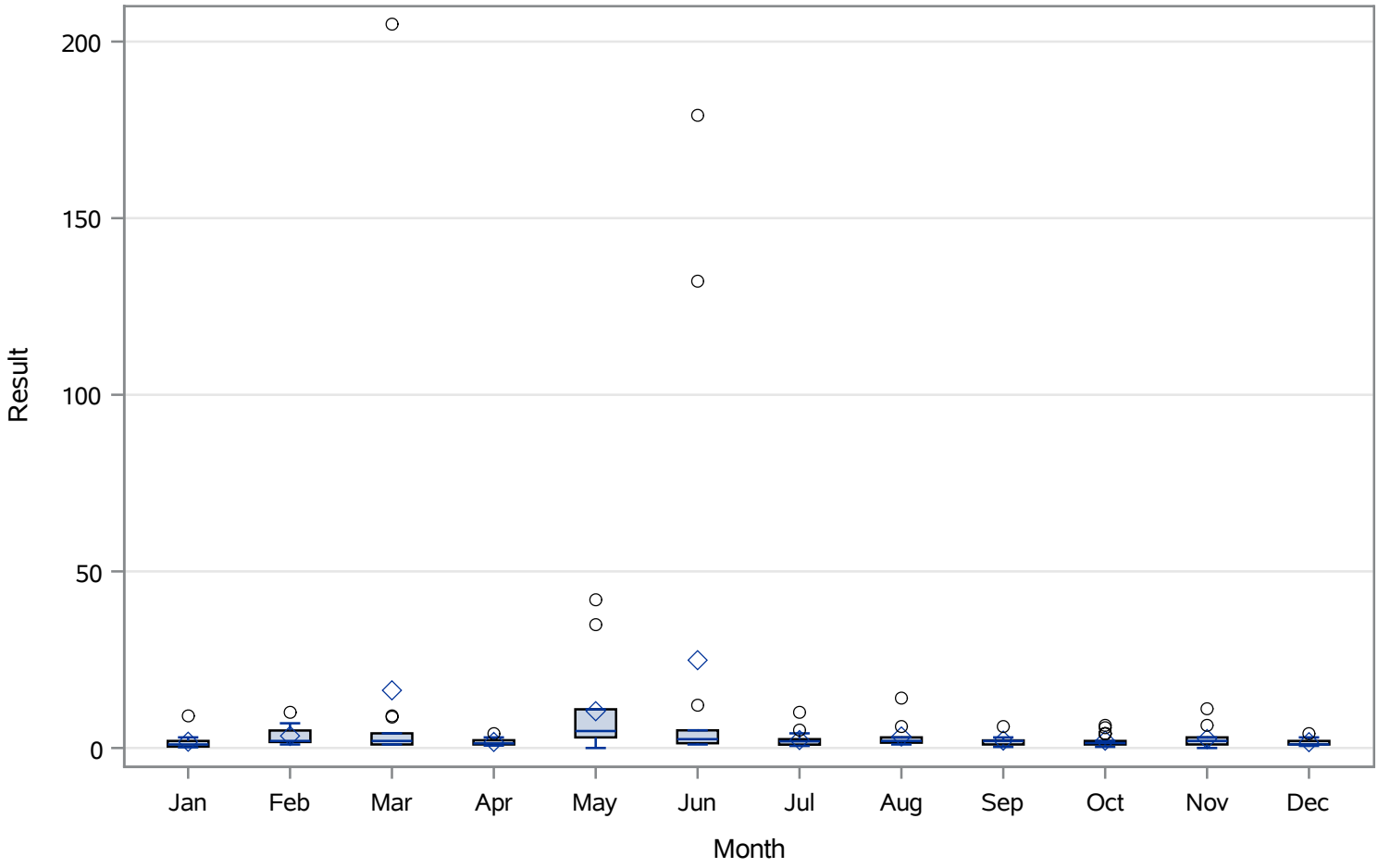


Little Manatee River

LITTLE MANATEE R AT SR #674

Uncorr. Chlorophyll-a (µg/L) µg/L

Site ID = 21FLHILL24010110

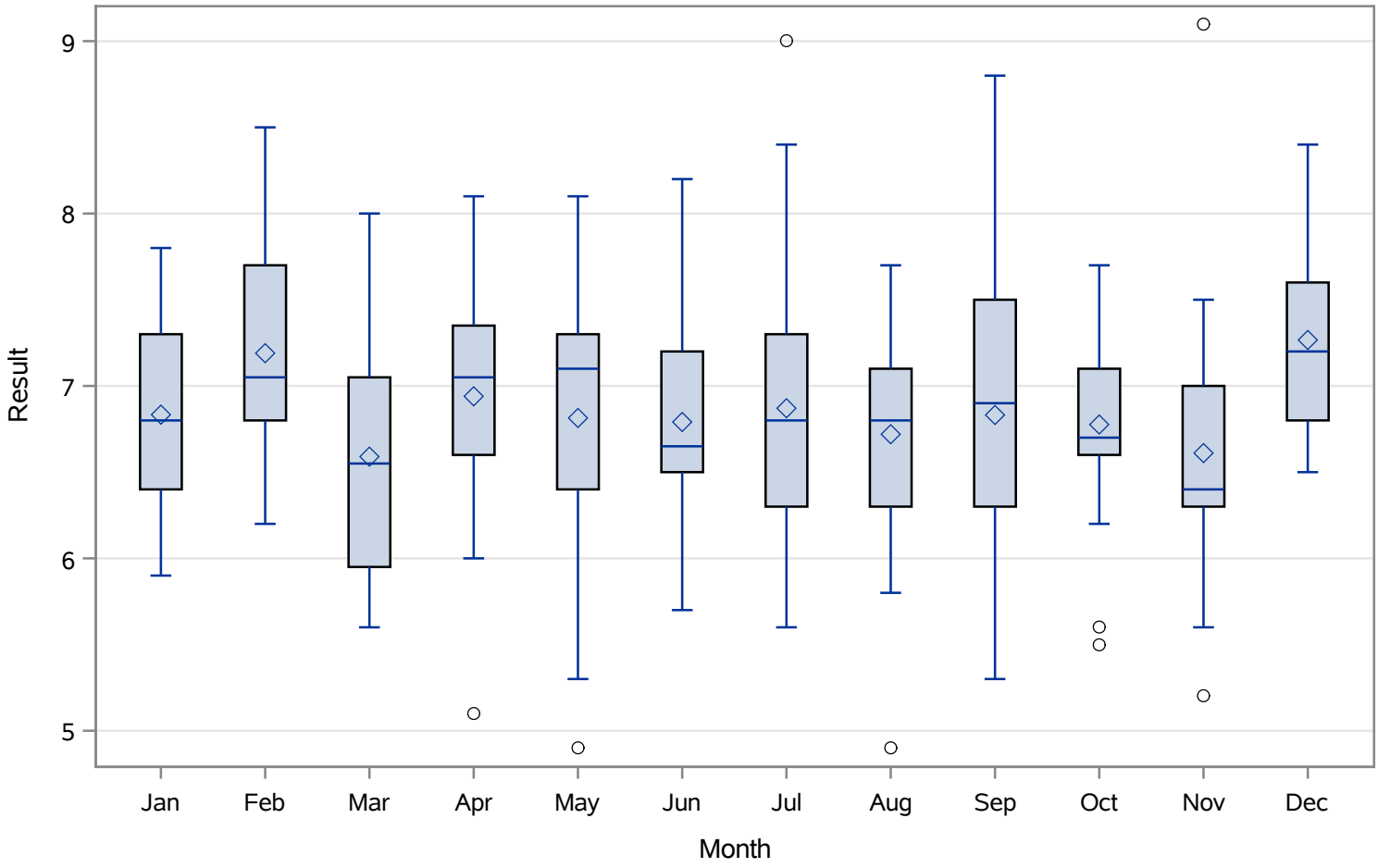


Little Manatee River

LITTLE MANATEE RIVER NEAR FT. LONESOME FL

pH (SU) SU

Site ID = 112WRD 02300100

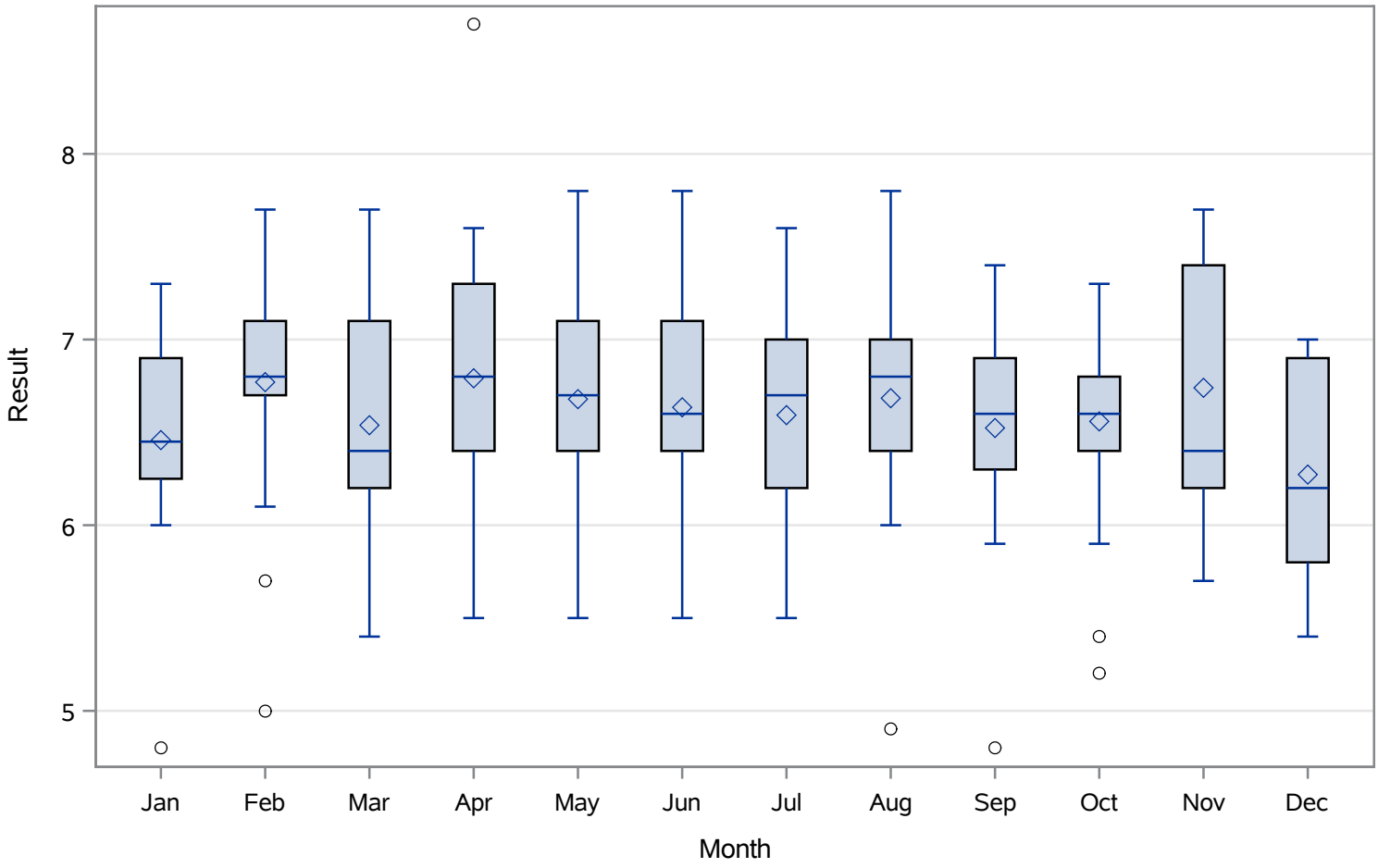


Little Manatee River

SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL

pH (SU) SU

Site ID = 112WRD 02300200

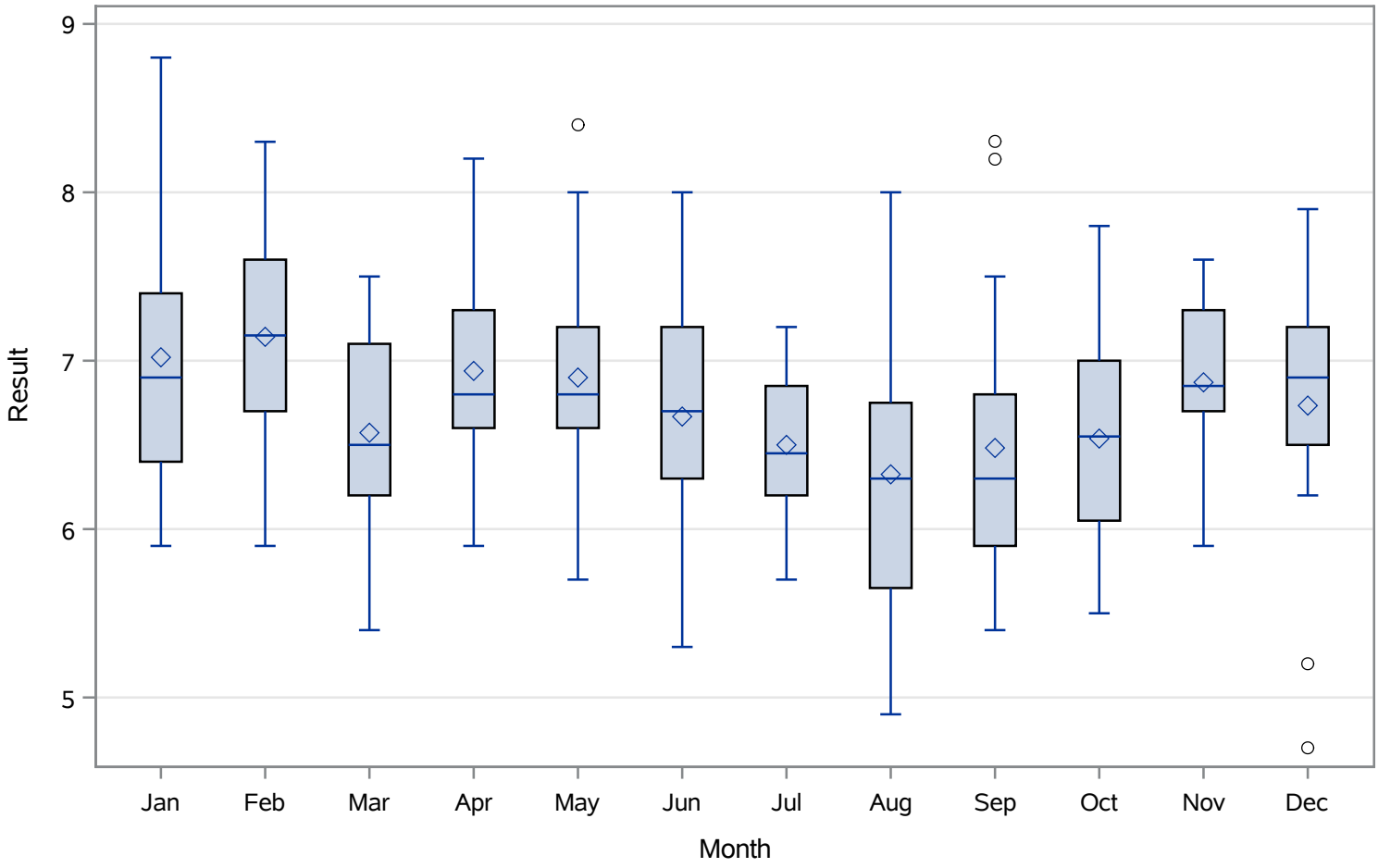


Little Manatee River

LITTLE MANATEE RIVER NEAR WIMAUMA FL

pH (SU) SU

Site ID = 112WRD 02300500

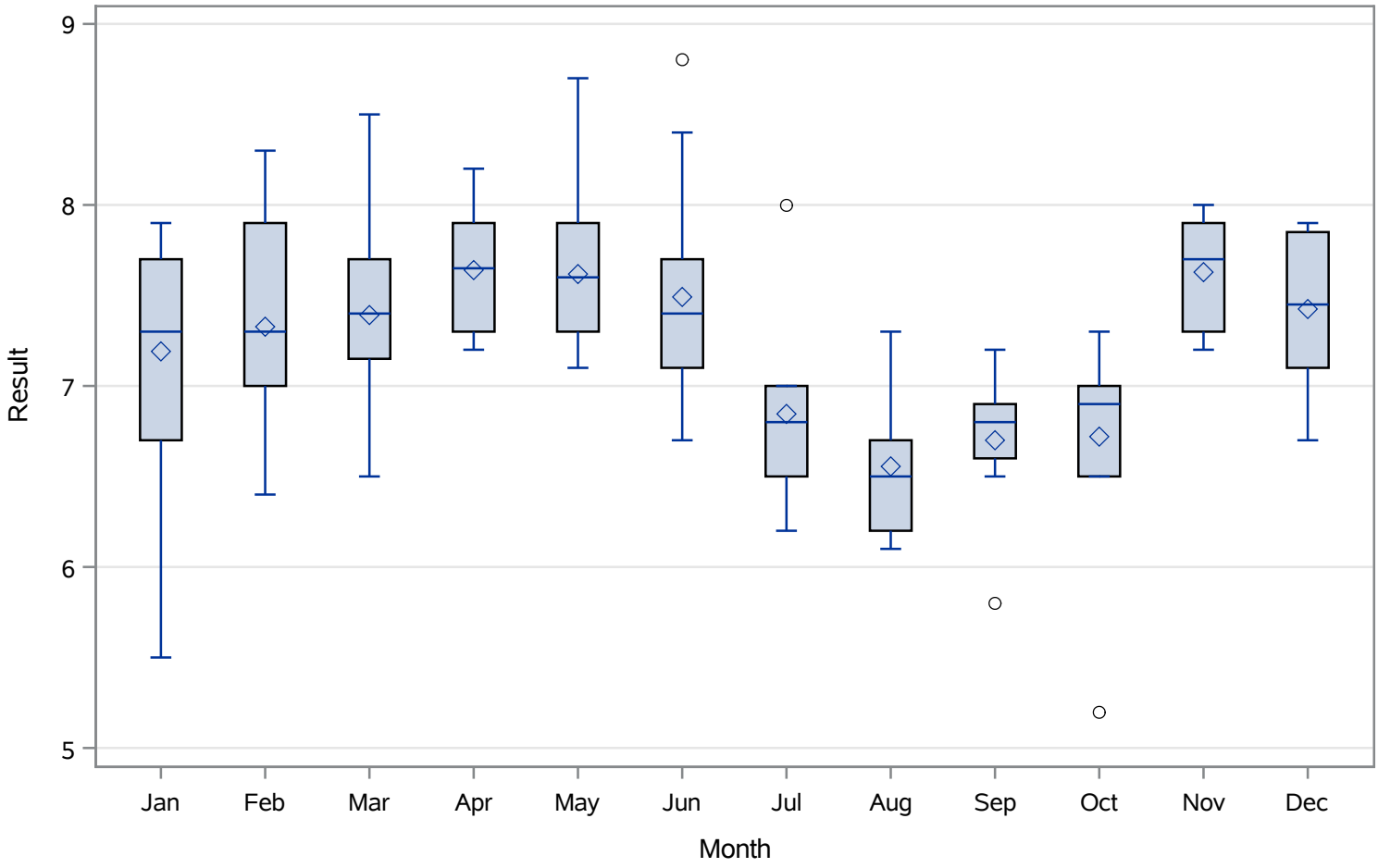


Little Manatee River

L MANATEE R BR US 301

pH (SU) SU

Site ID = 21FLA 24010100

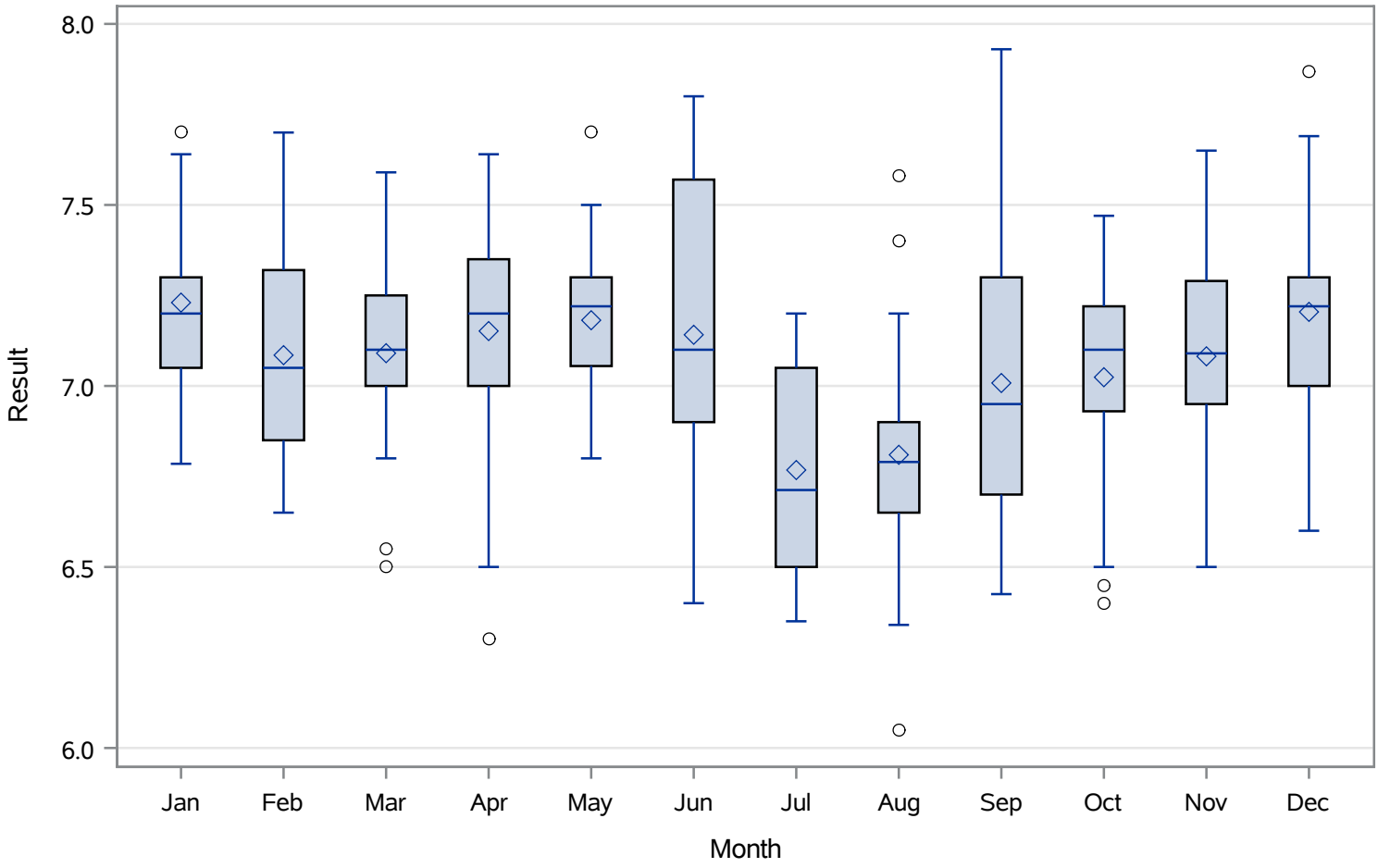


Little Manatee River

LITTLE MANATEE RIVER AT US HWY 301

pH (SU) SU

Site ID = 21FLGW 3555

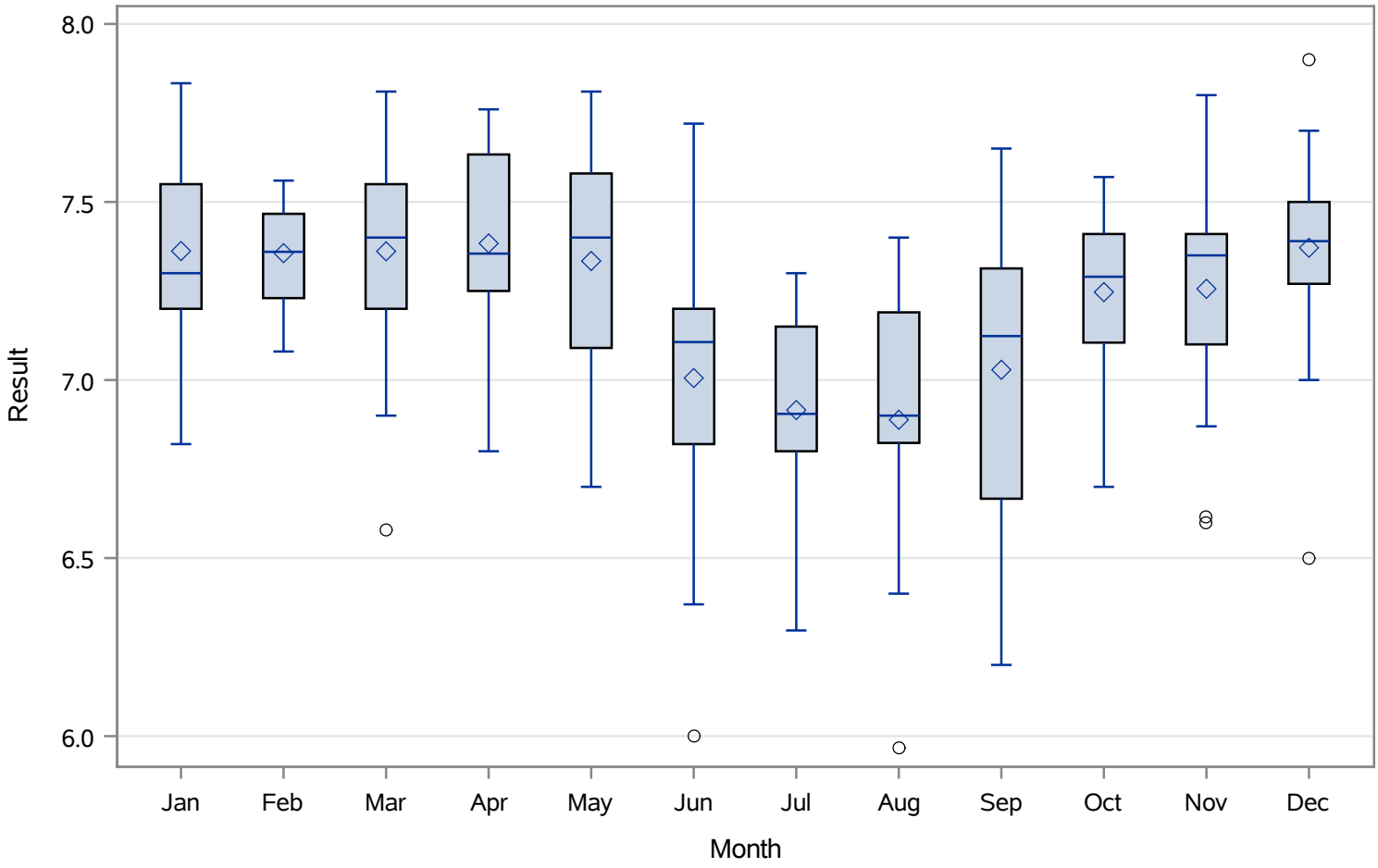


Little Manatee River

Little Manatee River at US 301 bridge

pH (SU) SU

Site ID = 21FLHILL113

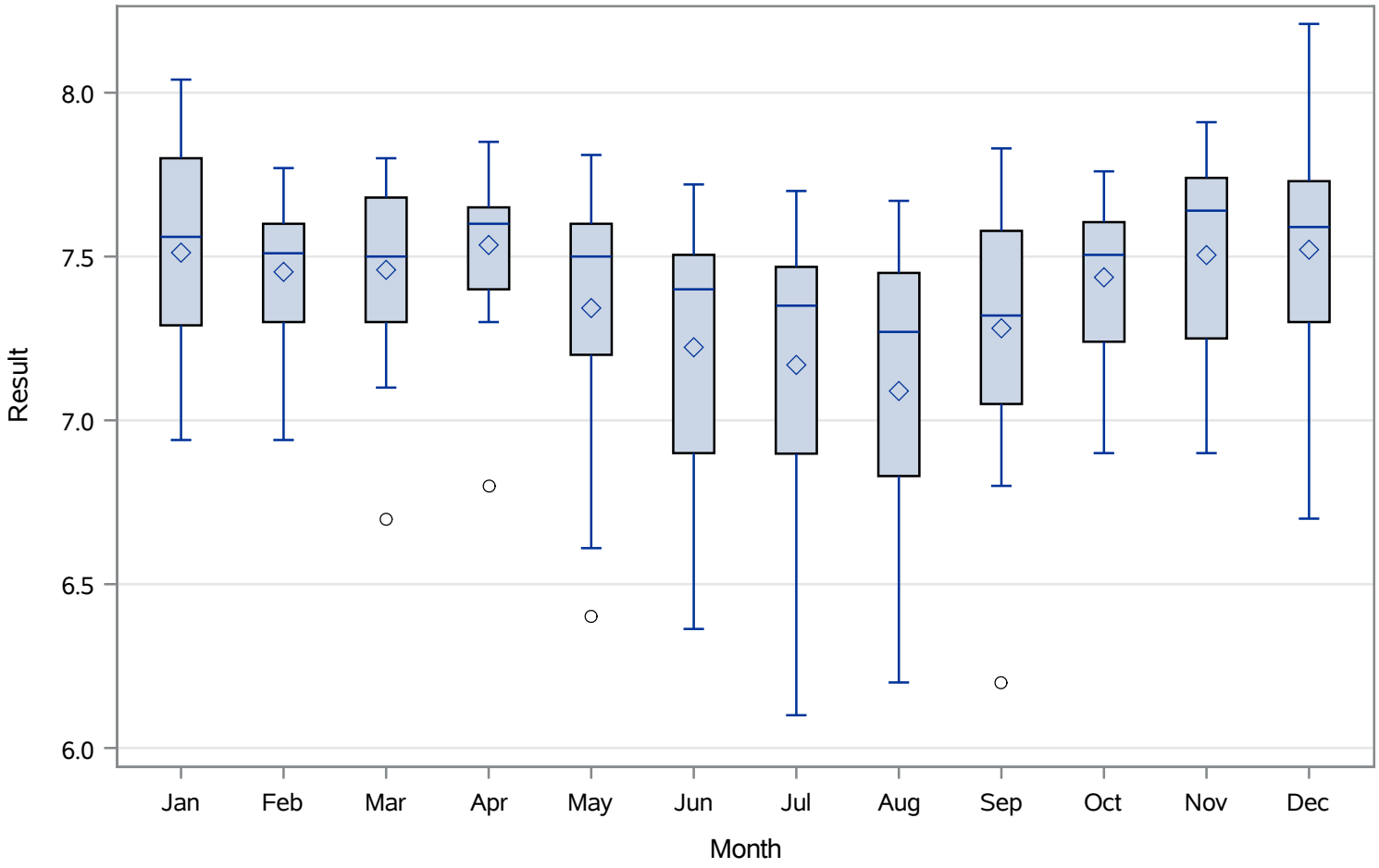


Little Manatee River

Little Manatee River at SR 674

pH (SU) SU

Site ID = 21FLHILL129

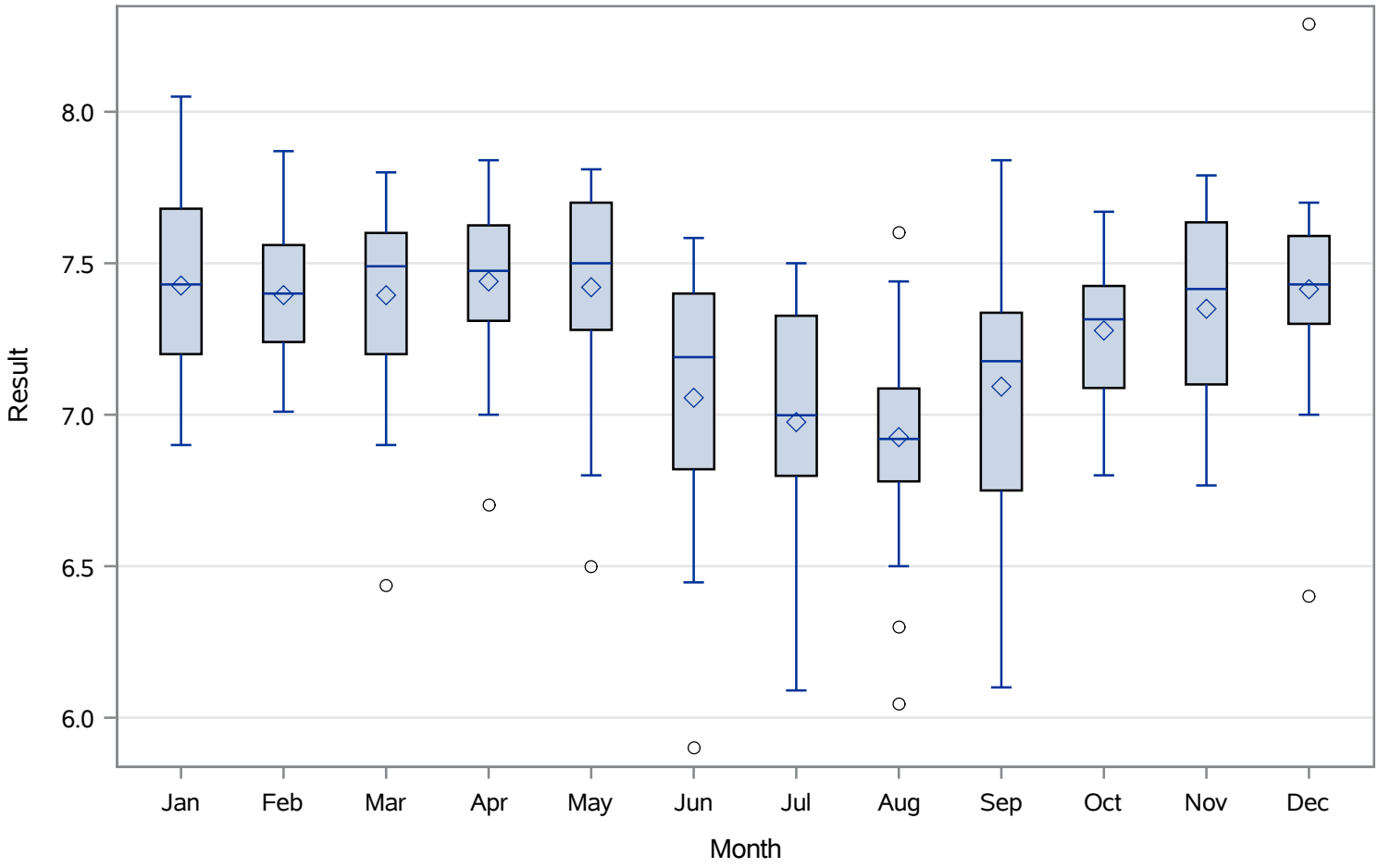


Little Manatee River

Little Manatee River at CR 579

pH (SU) SU

Site ID = 21FLHILL140

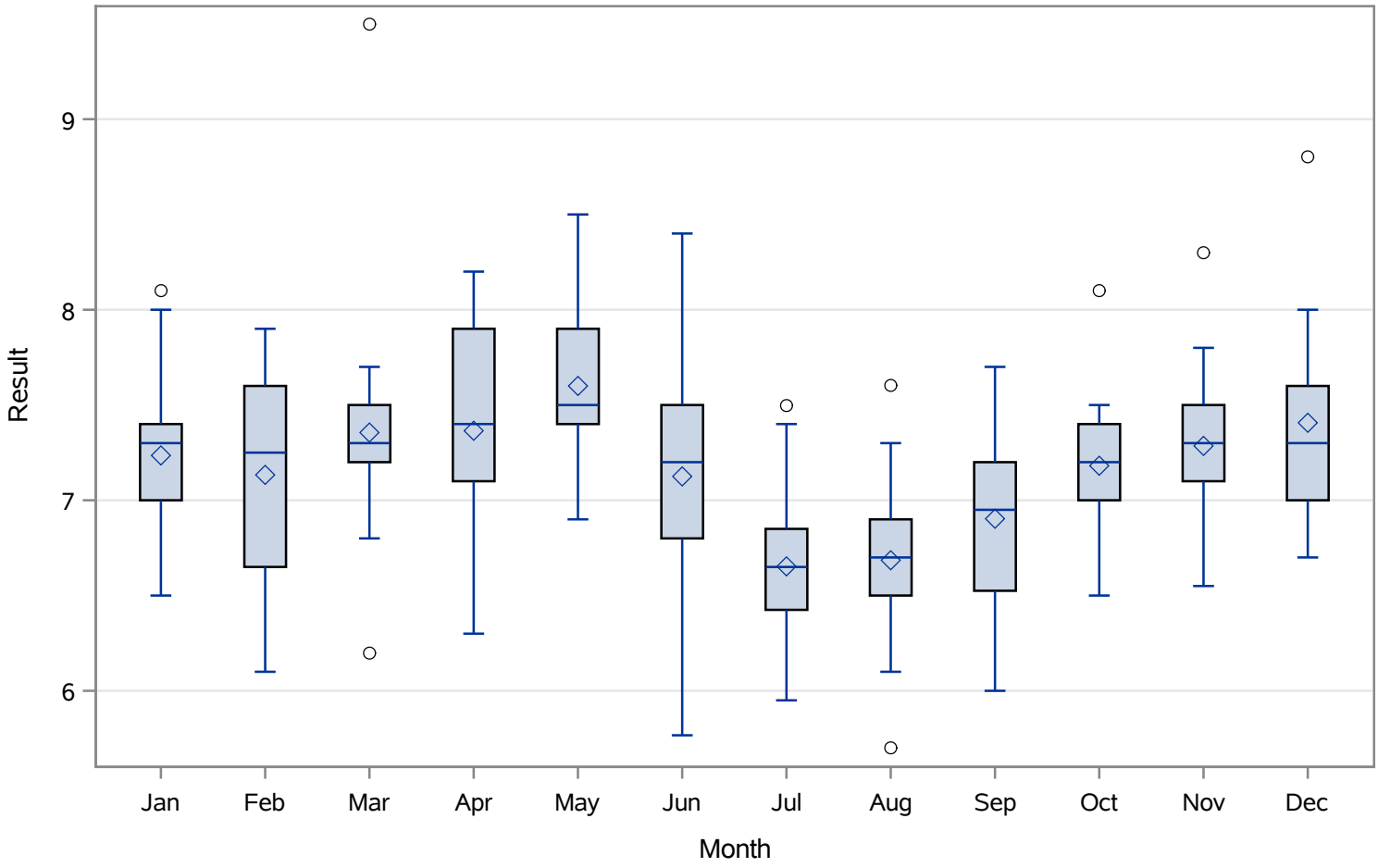


Little Manatee River

LITTLE MANATEE R AT CR579

pH (SU) SU

Site ID = 21FLHILL24010013

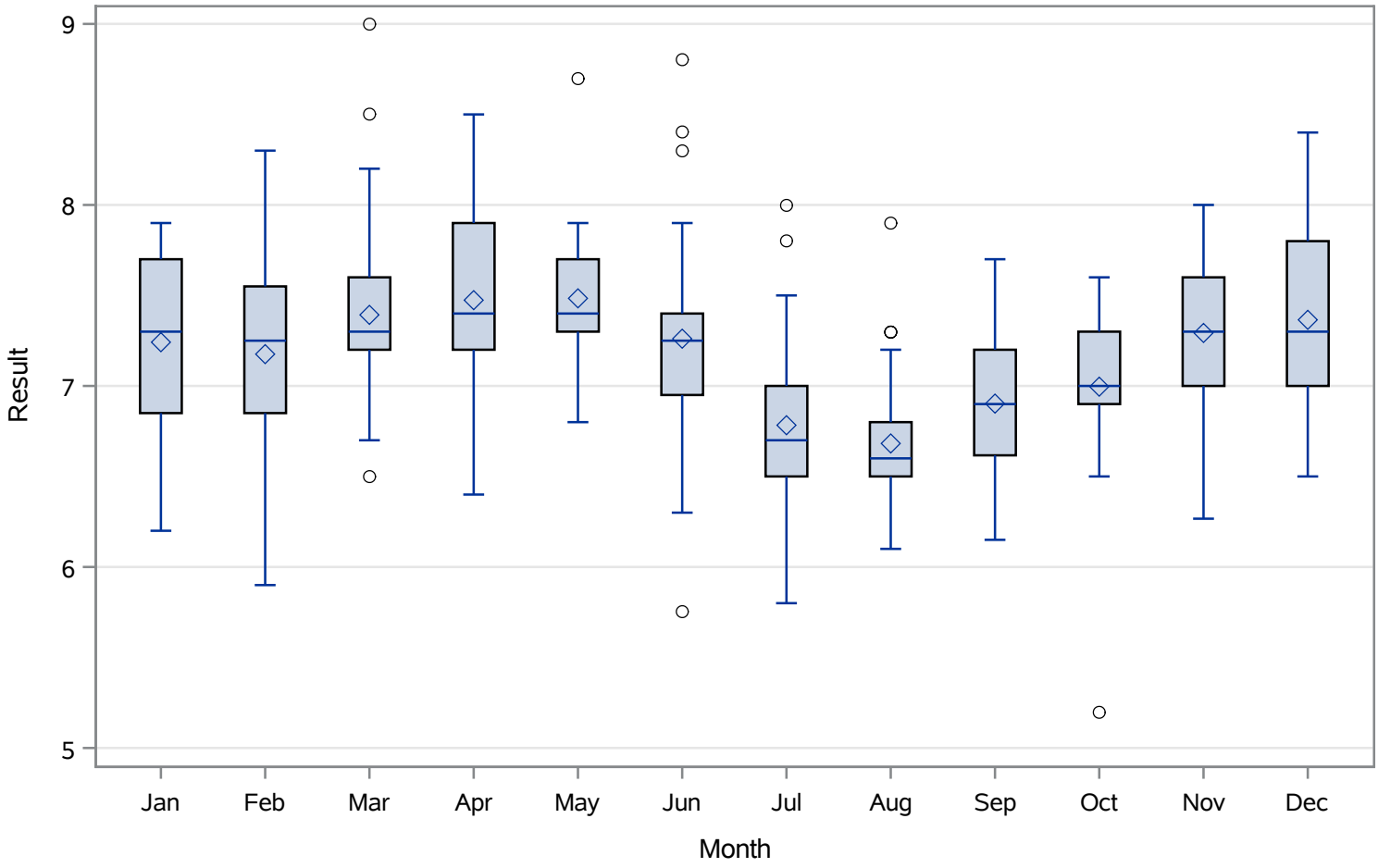


Little Manatee River

L MANATEE R BR US 301

pH (SU) SU

Site ID = 21FLHILL24010100

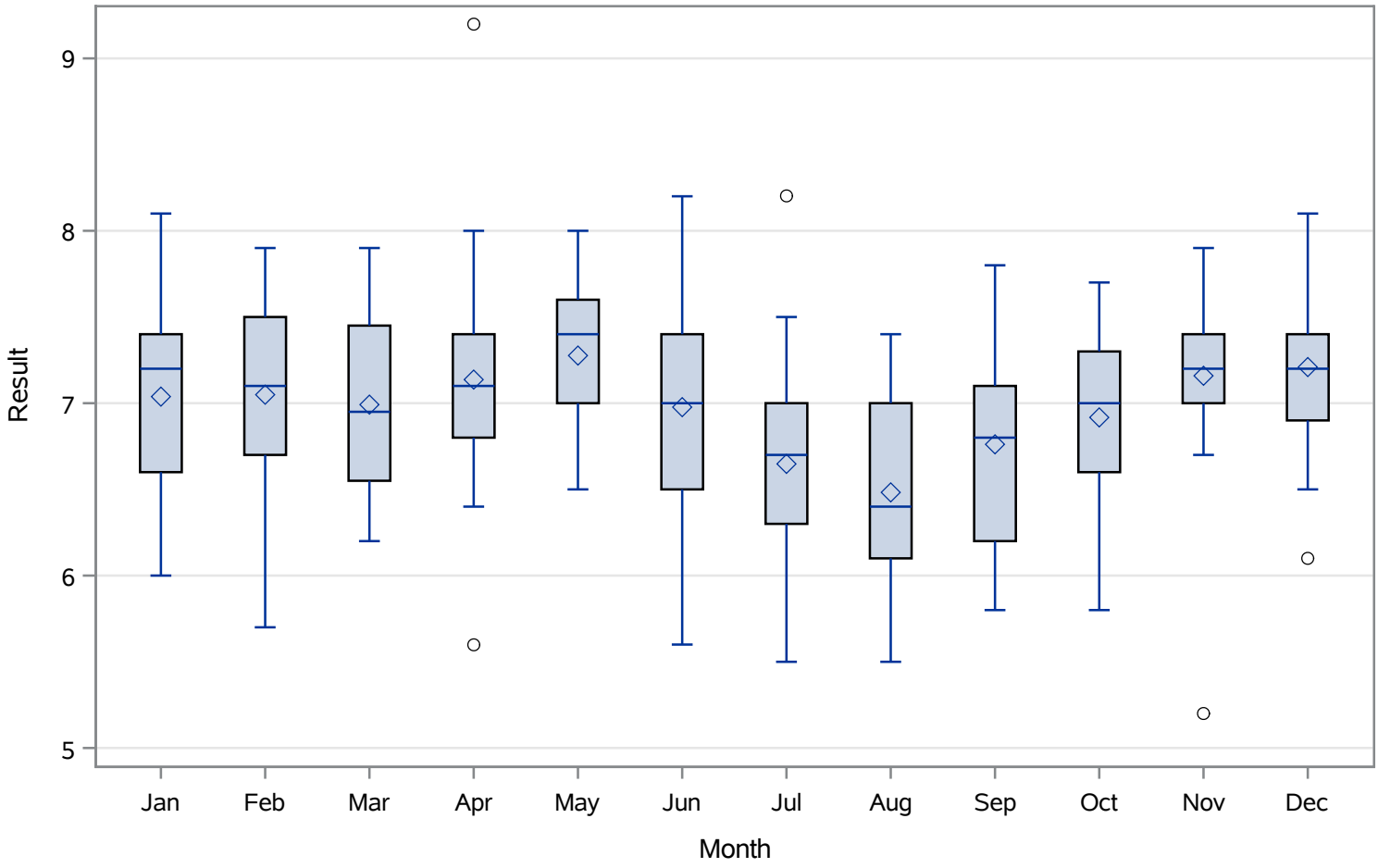


Little Manatee River

LITTLE MANATEE R AT SR #674

pH (SU) SU

Site ID = 21FLHILL24010110

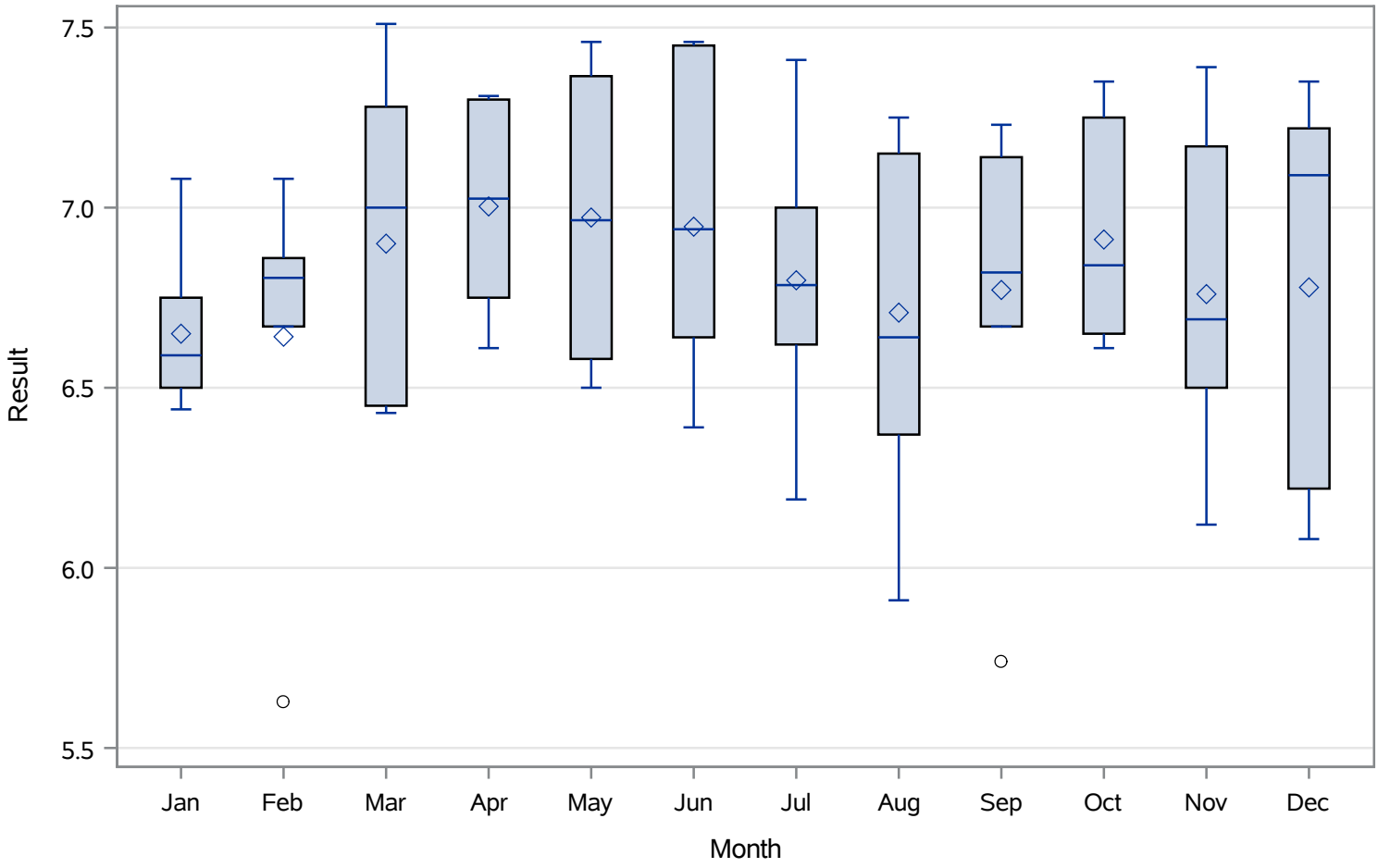


Little Manatee River

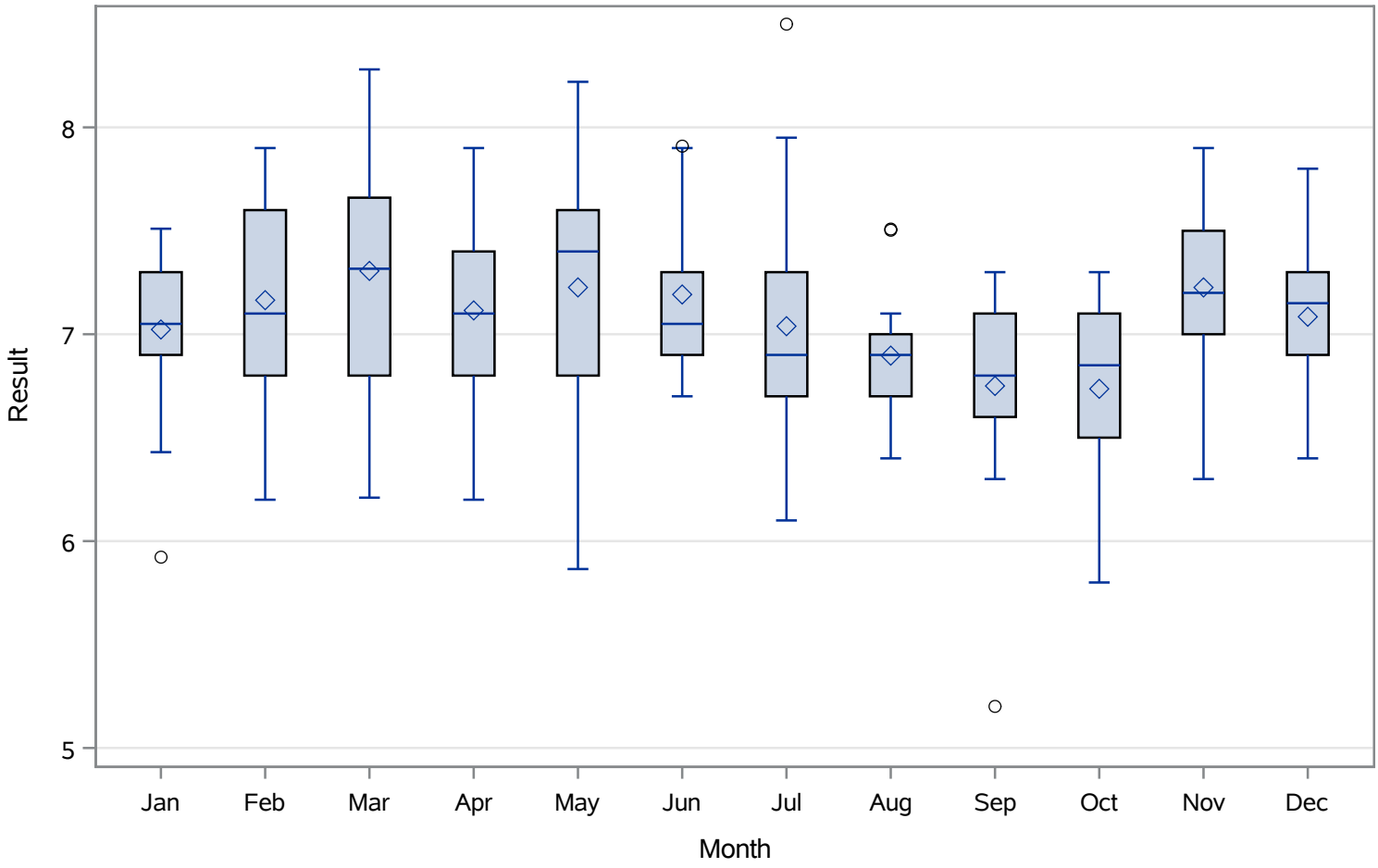
Little Manatee R. at SR674

pH (SU) SU

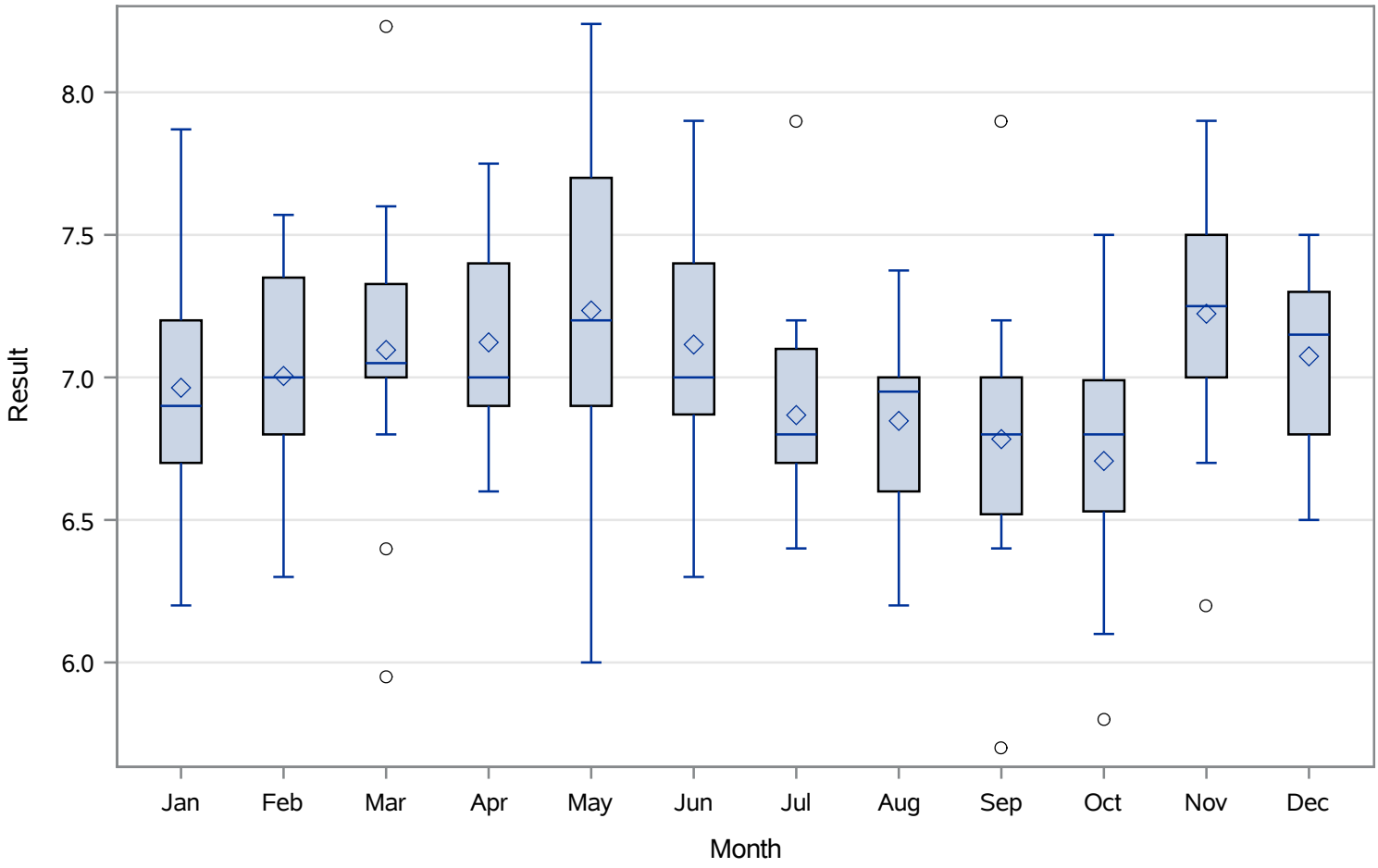
Site ID = 21FLIMCALM674



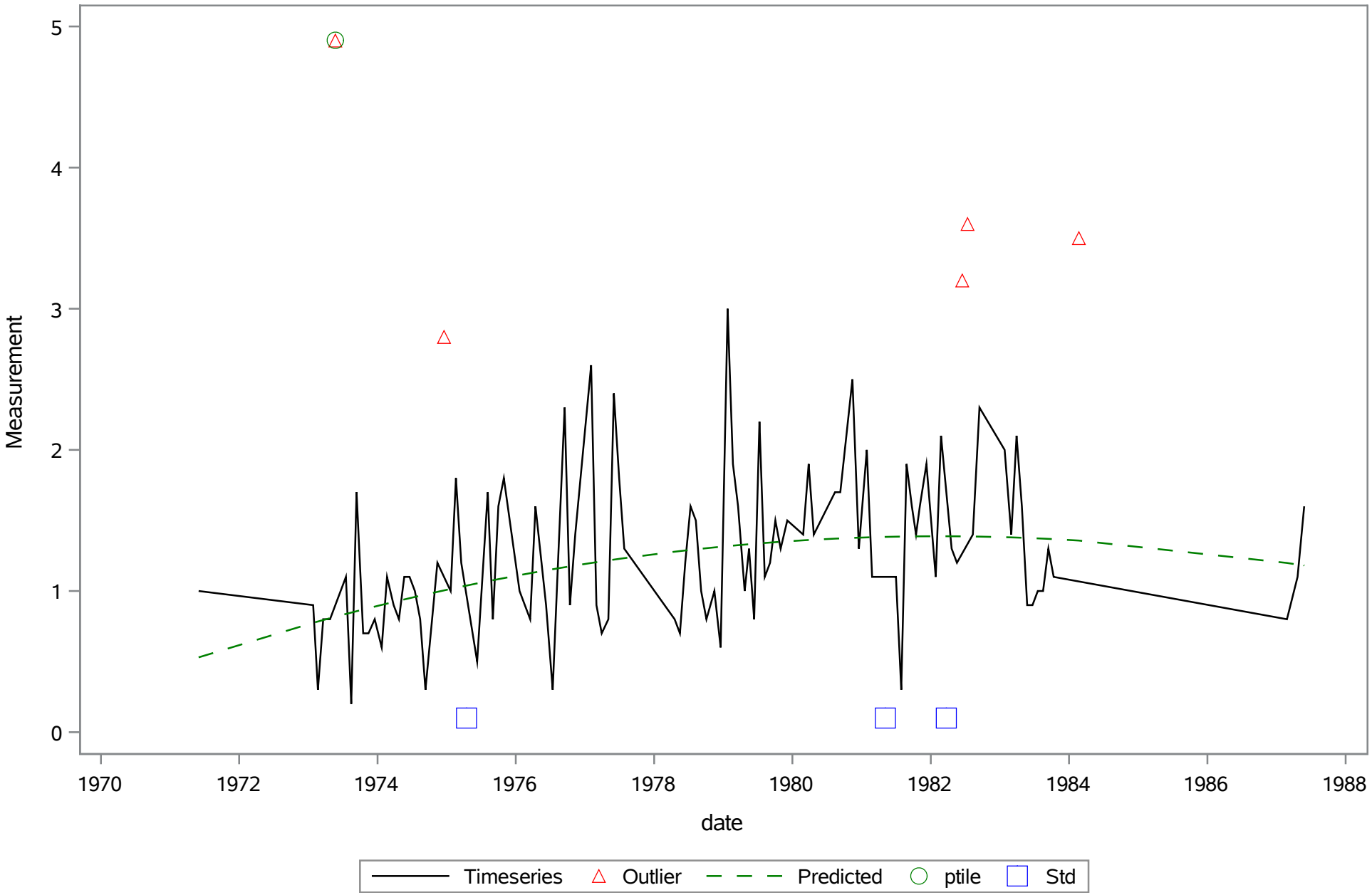
Little Manatee River
D1
pH (SU) SU
Site ID = 21FLMANAD1



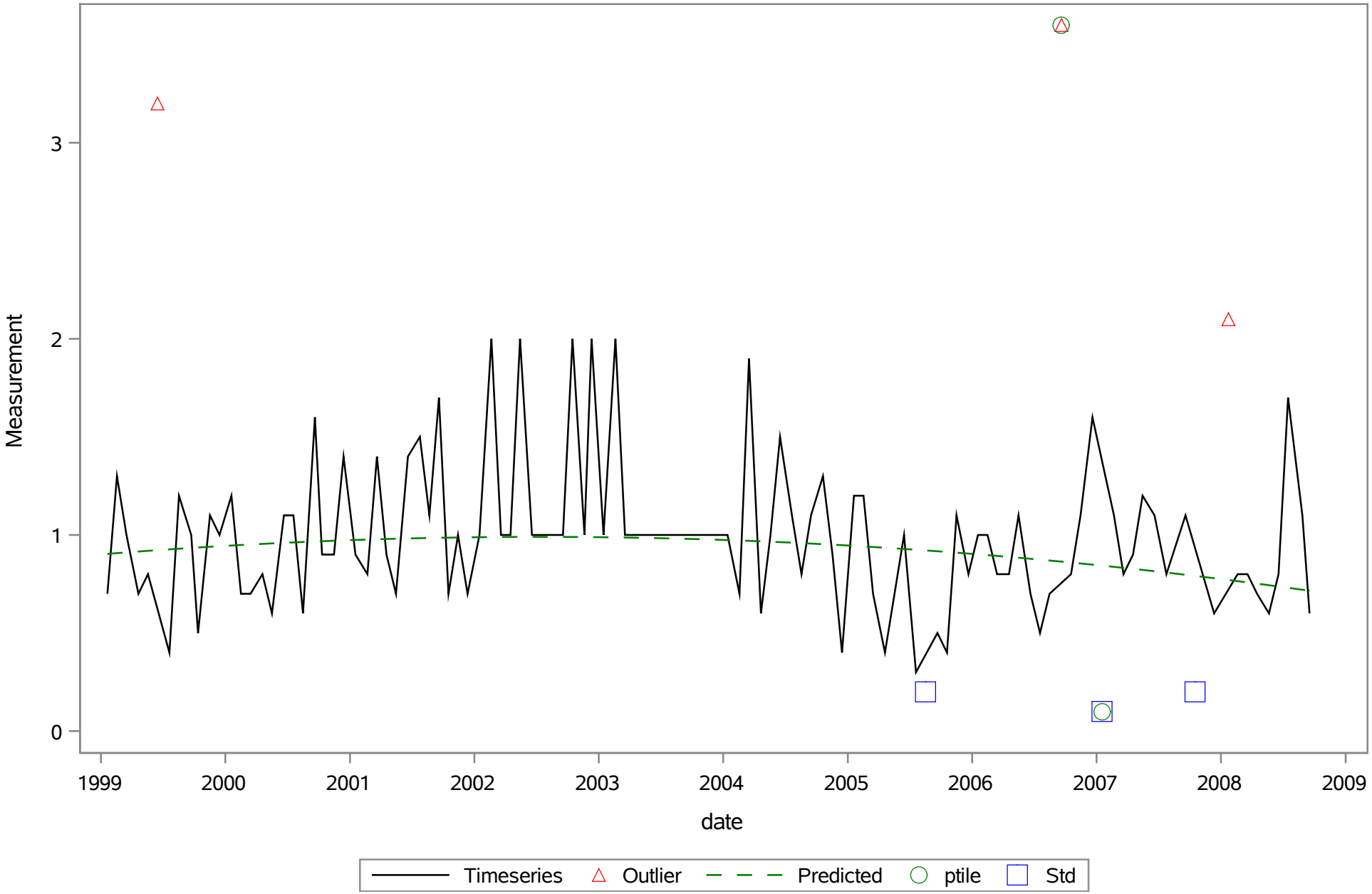
Little Manatee River
D3
pH (SU) SU
Site ID = 21FLMANAD3

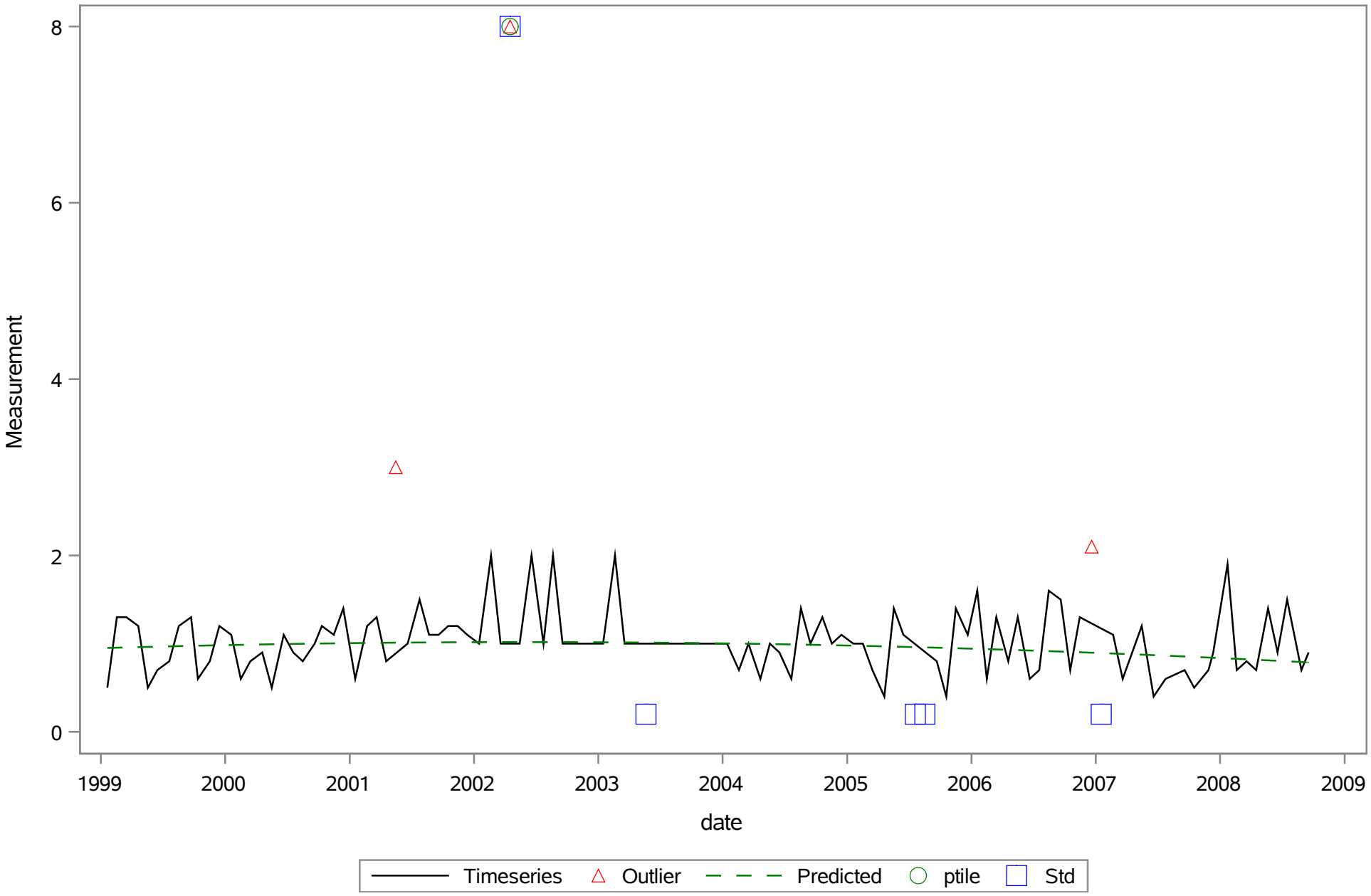


2d: IWR Time Series Plots


Little Manatee River
L MANATEE R BR US 301
BOD 5-Day (mg/L) mg/L
Site ID = 21FLA 24010100
Measurement
0
1
2
3
4
5
1970
1972
1974
1976
1978
1980
1982
1984
1986
1988
date
Timeseries
Outlier
Predicted
ptile
Std

Little Manatee River
Little Manatee River at US 301 bridge
BOD 5-Day (mg/L) mg/L
Site ID = 21FLHILL113



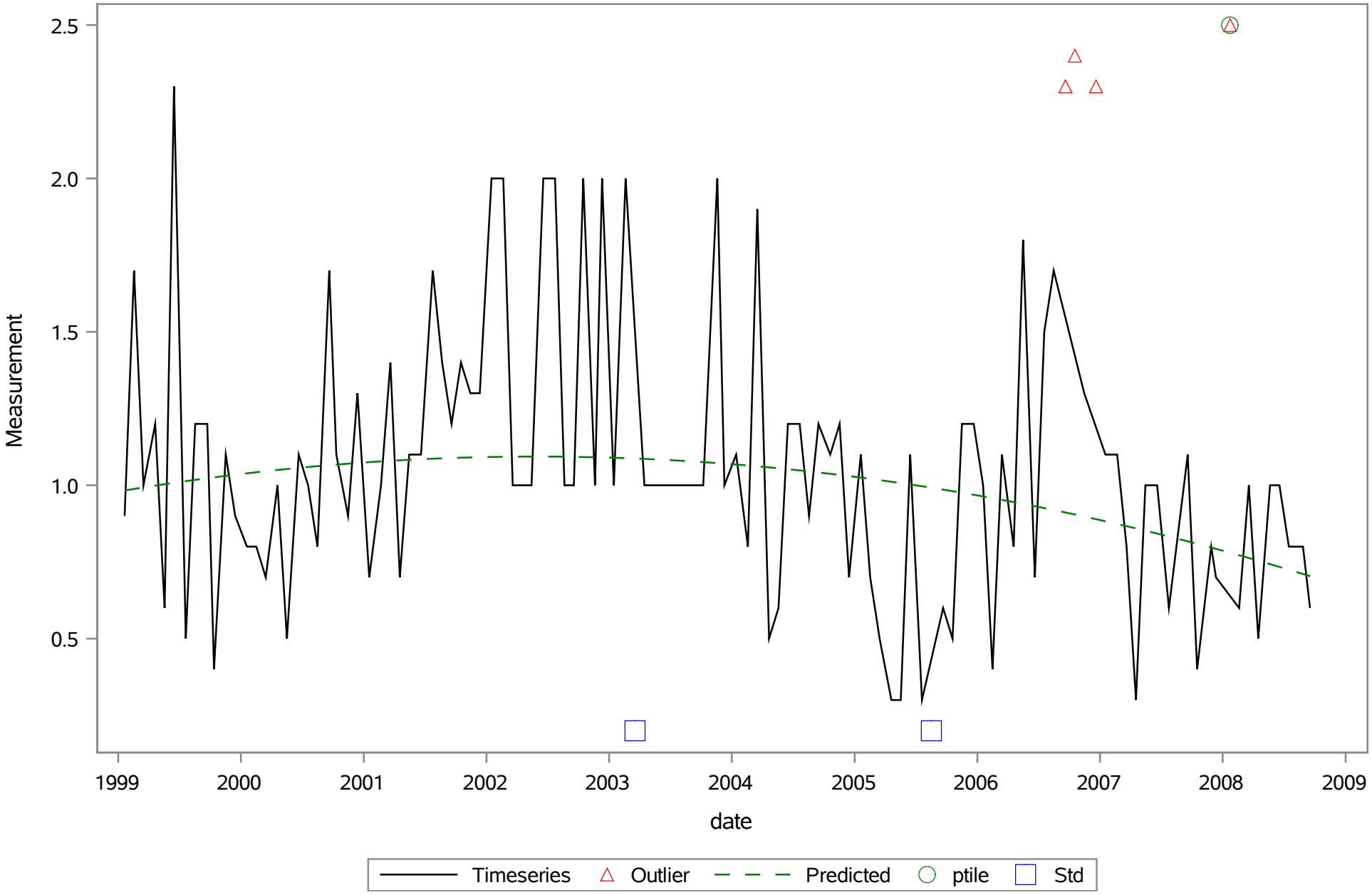

Little Manatee River
Little Manatee River at SR 674
BOD 5-Day (mg/L) mg/L
Site ID = 21FLHILL129
Measurement
0
2
4
6
8
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
date
Timeseries
Outlier
Predicted
ptile
Std

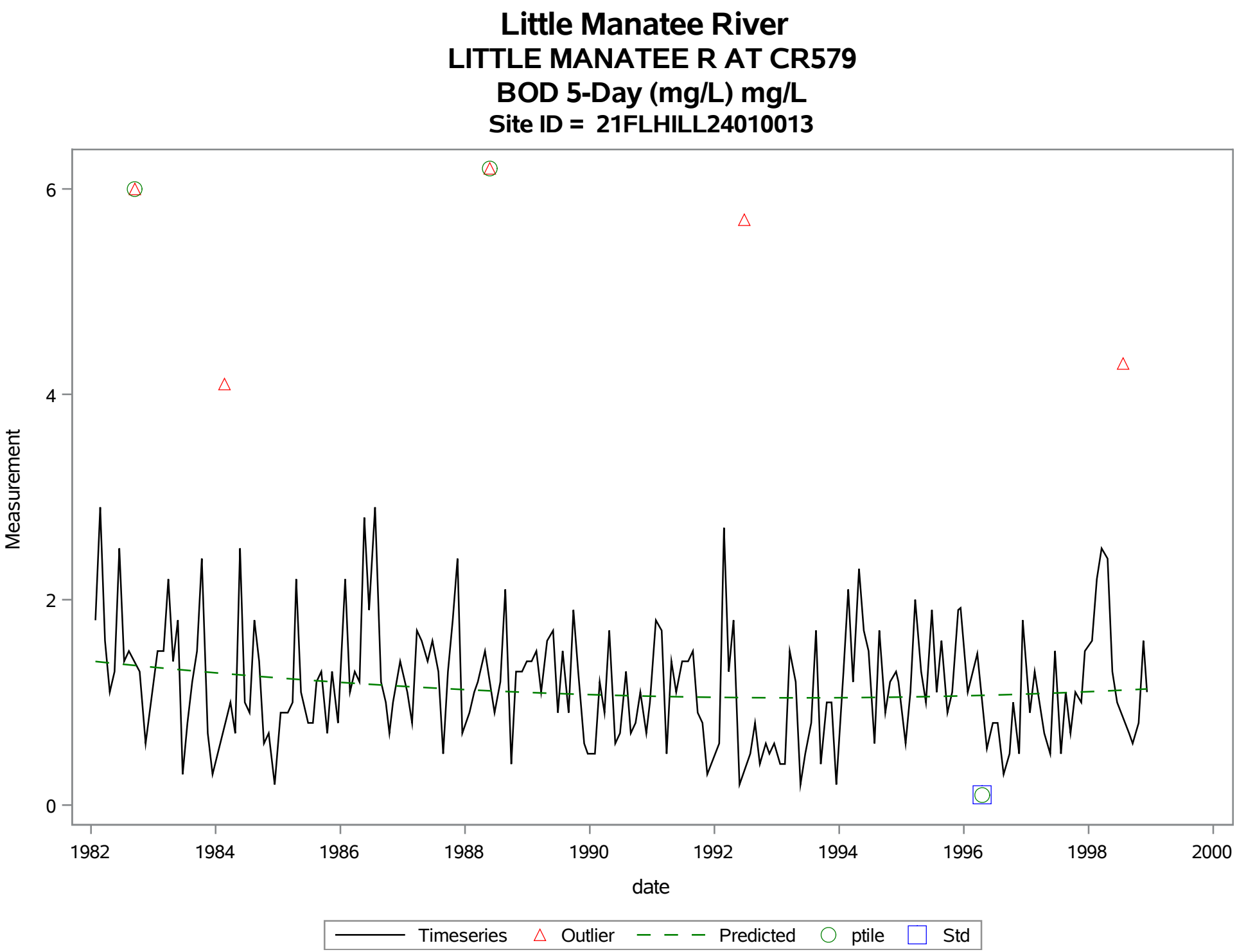
Little Manatee River

Little Manatee River at CR 579

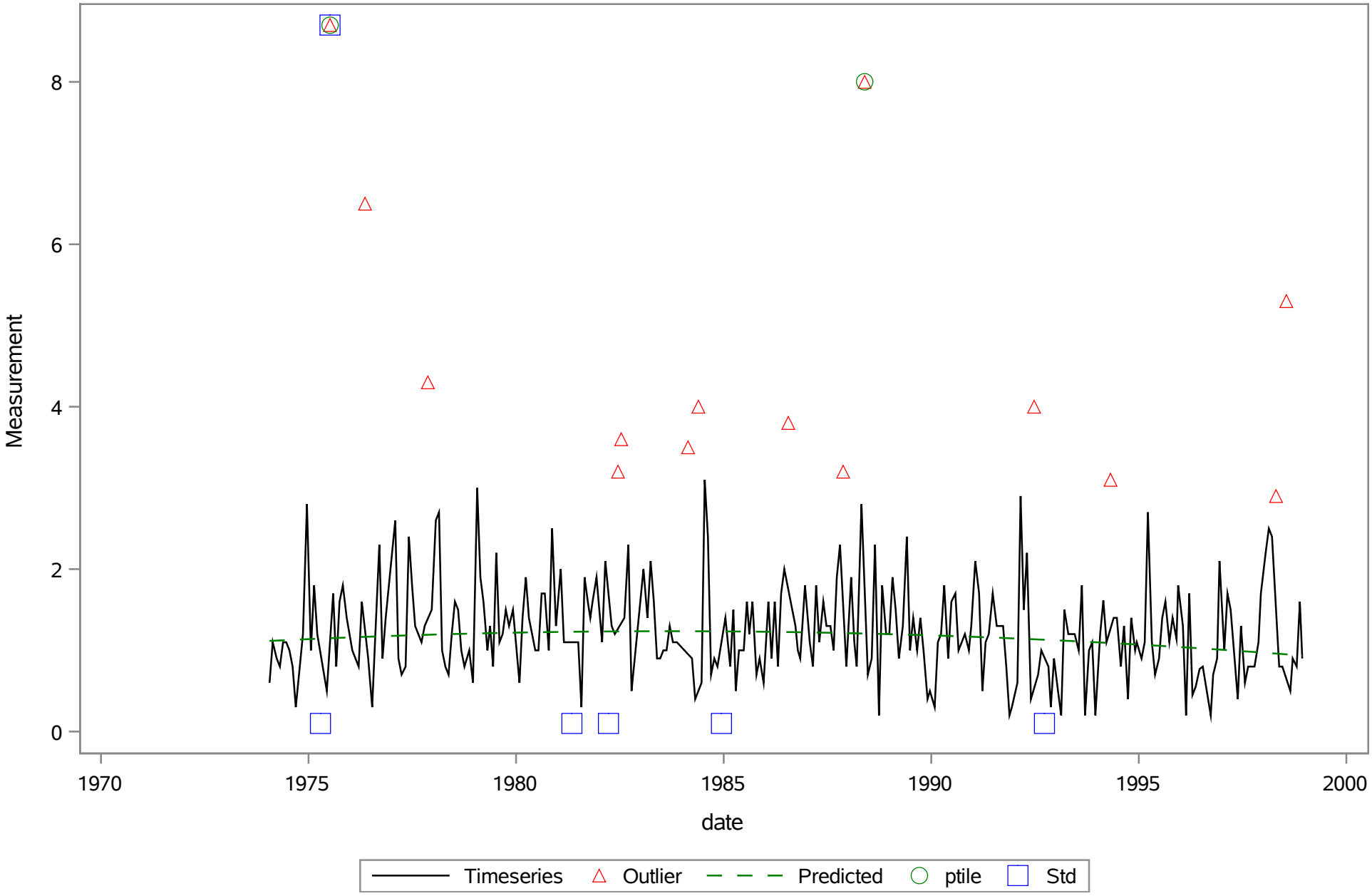
BOD 5-Day (mg/L) mg/L

Site ID = 21FLHILL140

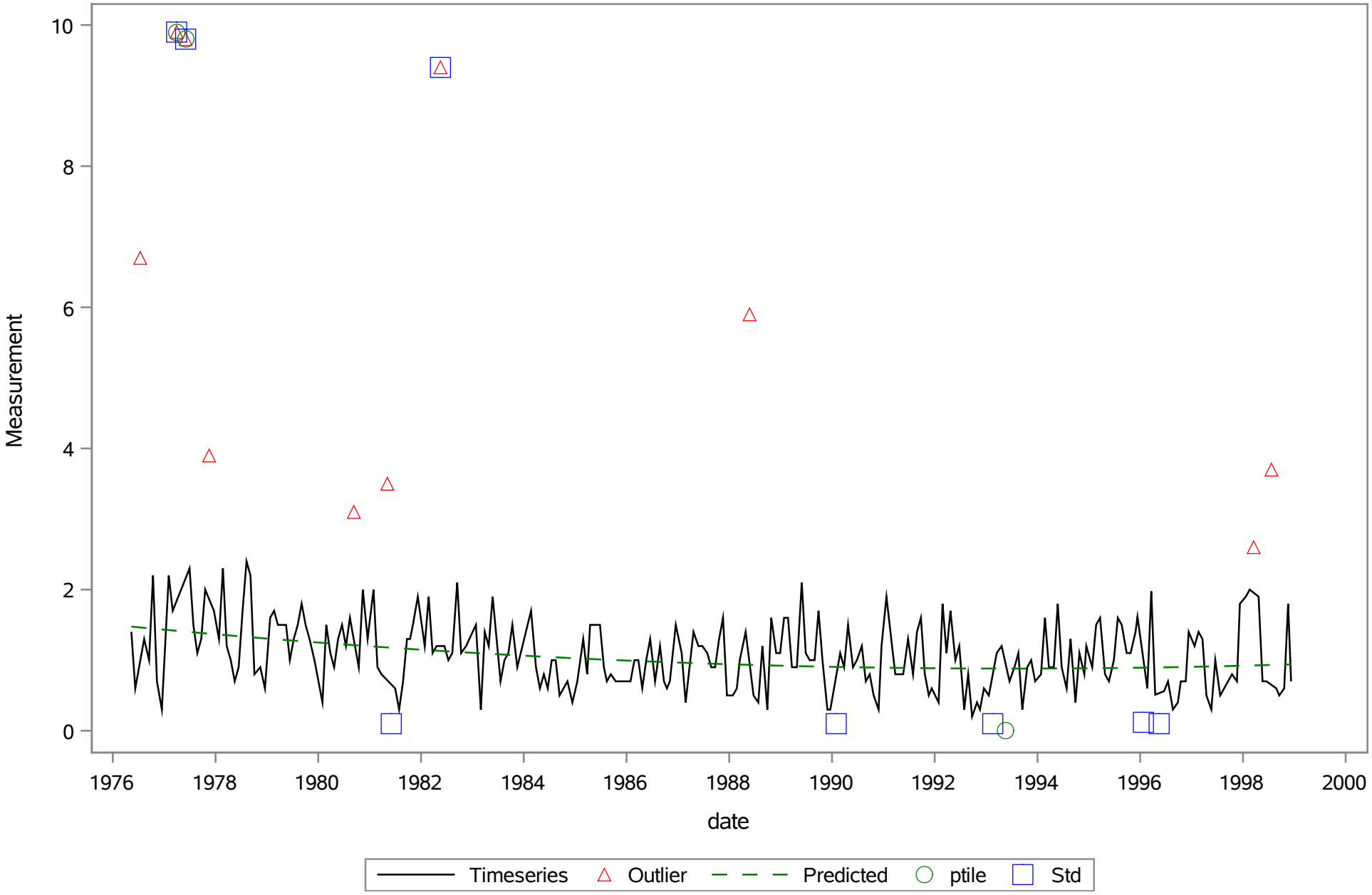


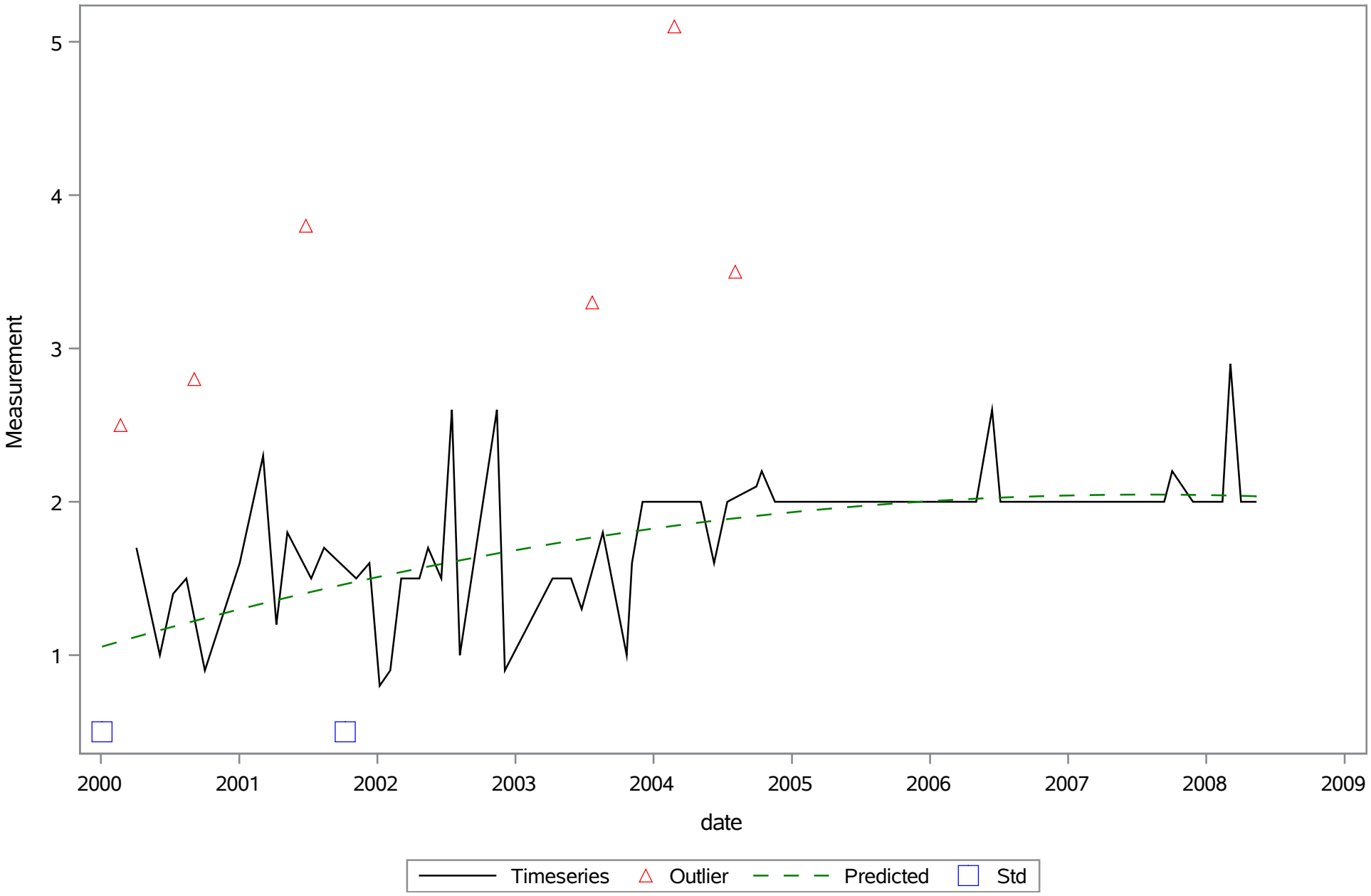

Little Manatee River
LITTLE MANATEE R AT CR579
BOD 5-Day (mg/L) mg/L
Site ID = 21FLHILL24010013
Measurement
0
2
4
6
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
date
Timeseries
Outlier
Predicted
ptile
Std

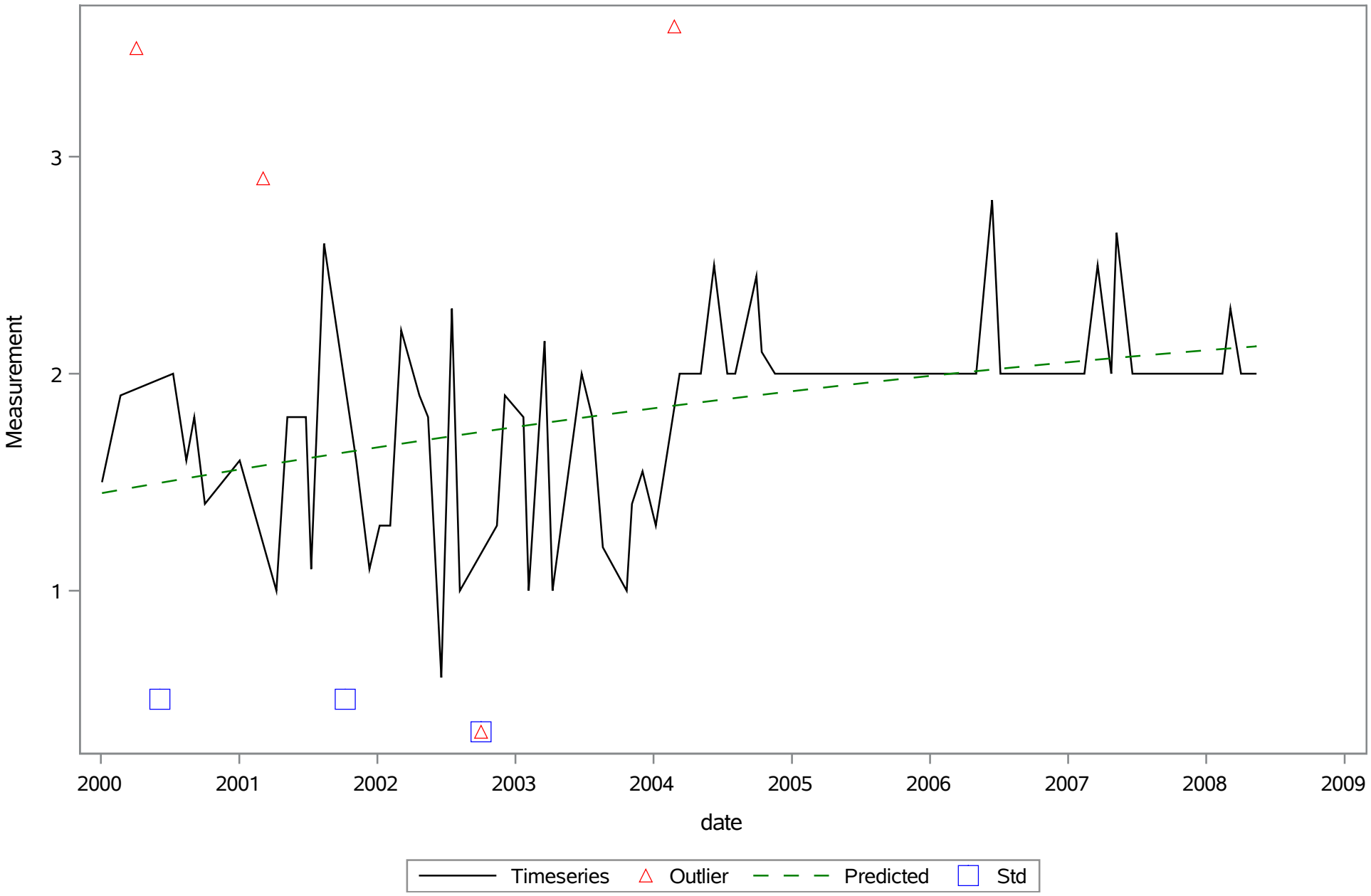
Little Manatee River
L MANATEE R BR US 301
BOD 5-Day (mg/L) mg/L
Site ID = 21FLHILL24010100



Little Manatee River
LITTLE MANATEE R AT SR #674
BOD 5-Day (mg/L) mg/L
Site ID = 21FLHILL24010110




Little Manatee River
D1
BOD 5-Day (mg/L) mg/L
Site ID = 21FLMANAD1
Measurement
5
4
3
2
1
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
date
Timeseries
Outlier
Predicted
Std

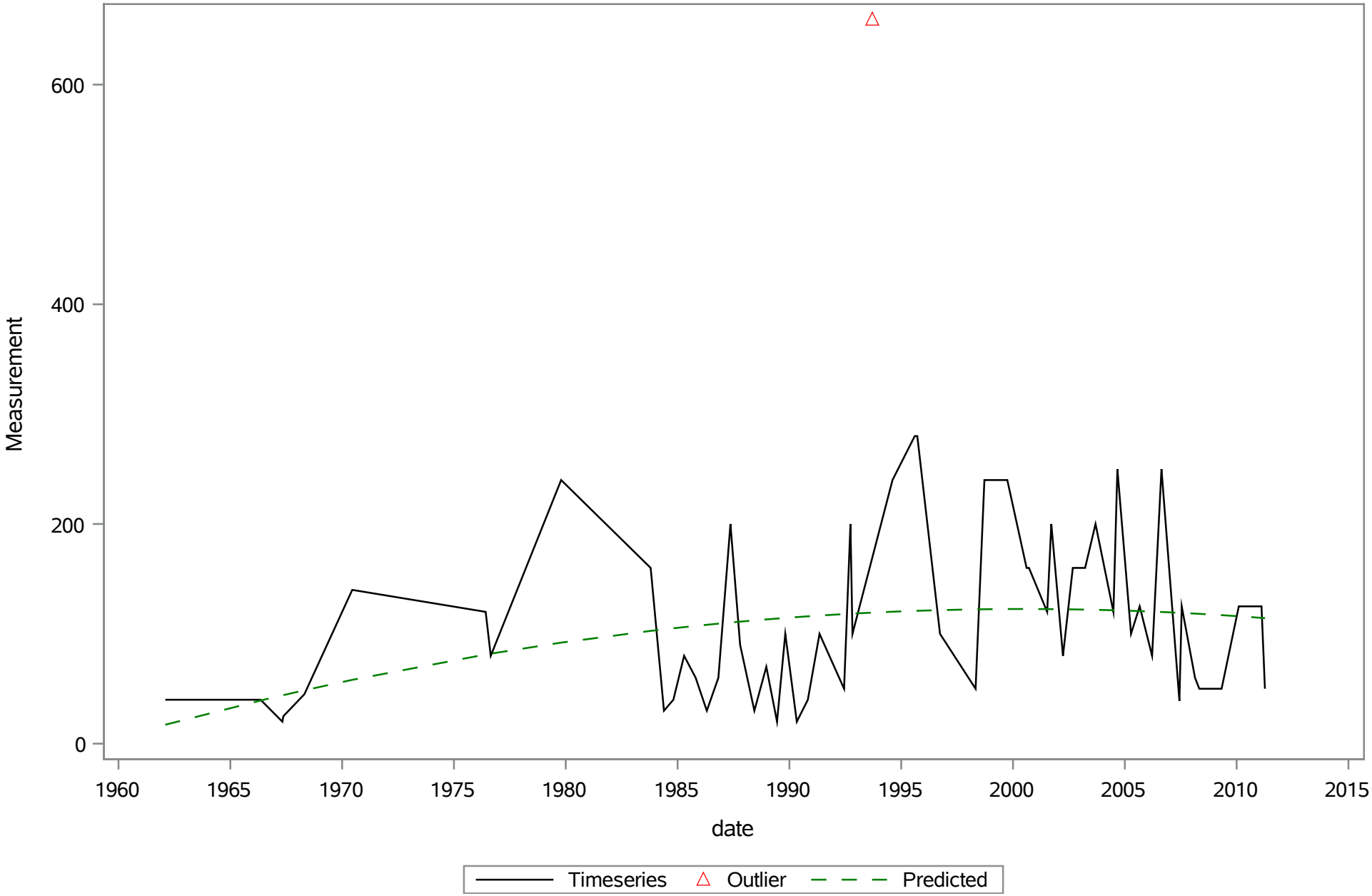

Little Manatee River
D3
BOD 5-Day (mg/L) mg/L
Site ID = 21FLMANAD3
Measurement
3
2
1
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
date
Timeseries
Outlier
Predicted
Std

Little Manatee River

SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL

Color (PCU) PCU

Site ID = 112WRD 02300200

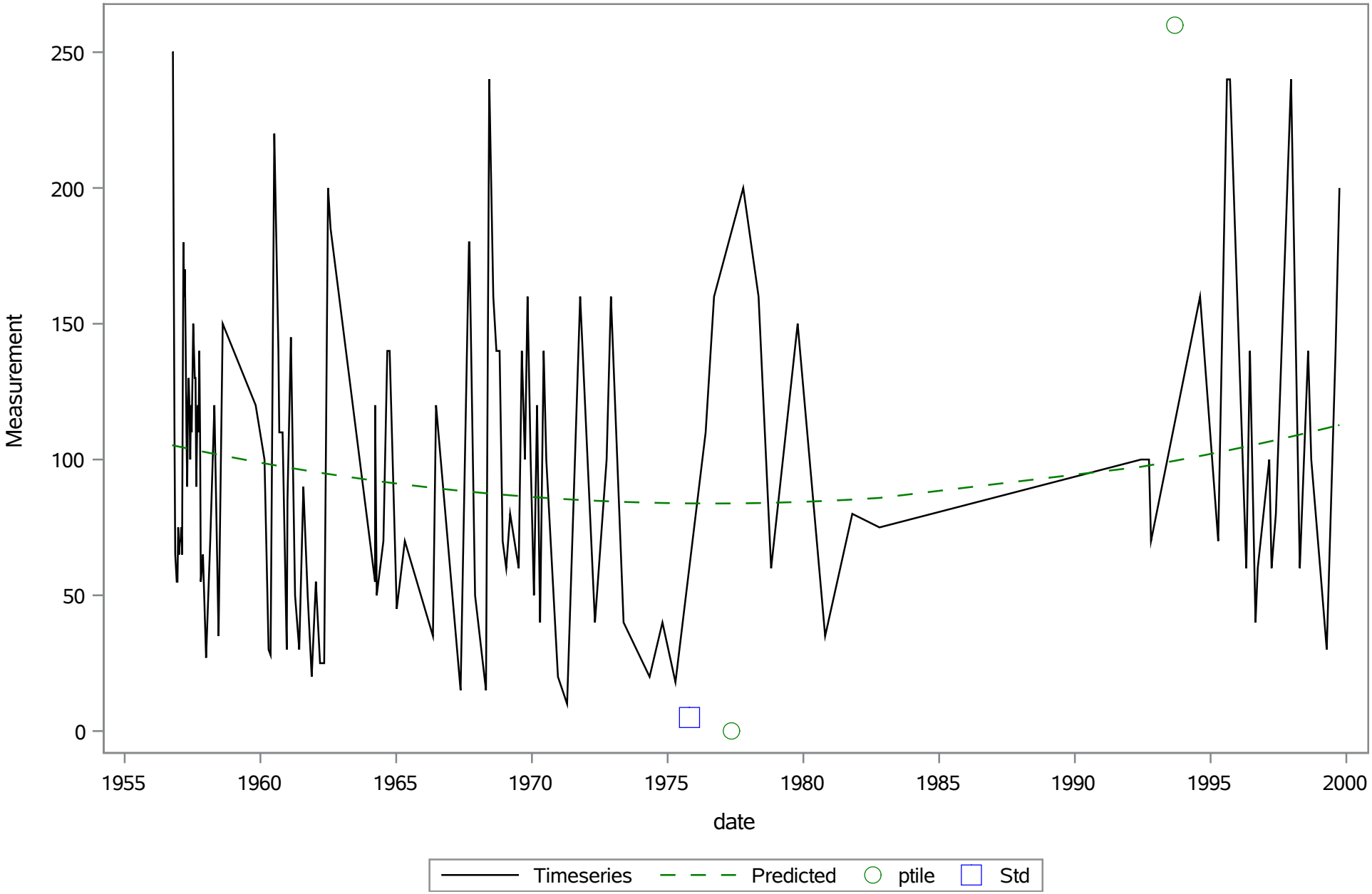


Little Manatee River

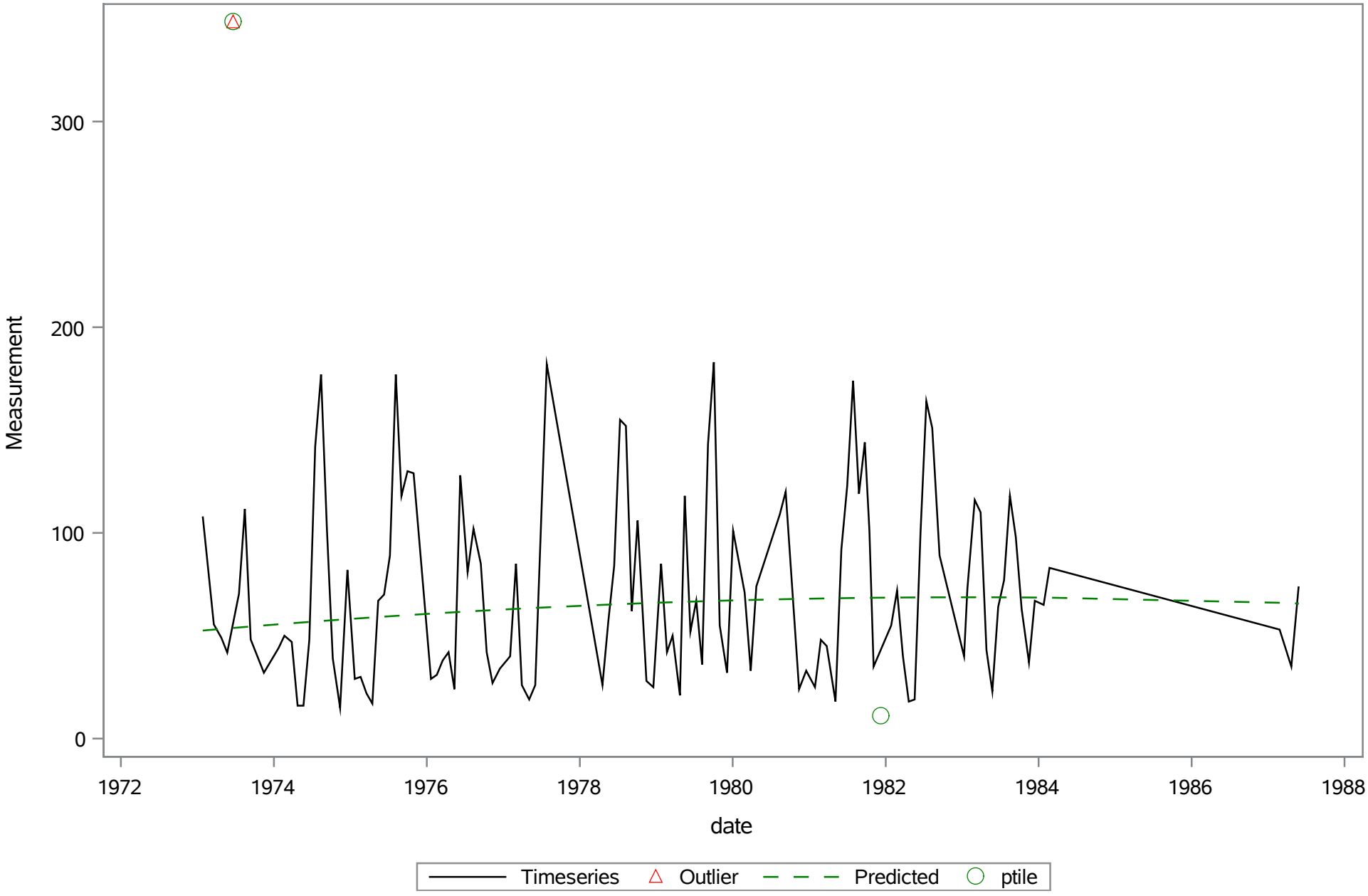
LITTLE MANATEE RIVER NEAR WIMAUMA FL

Color (PCU) PCU

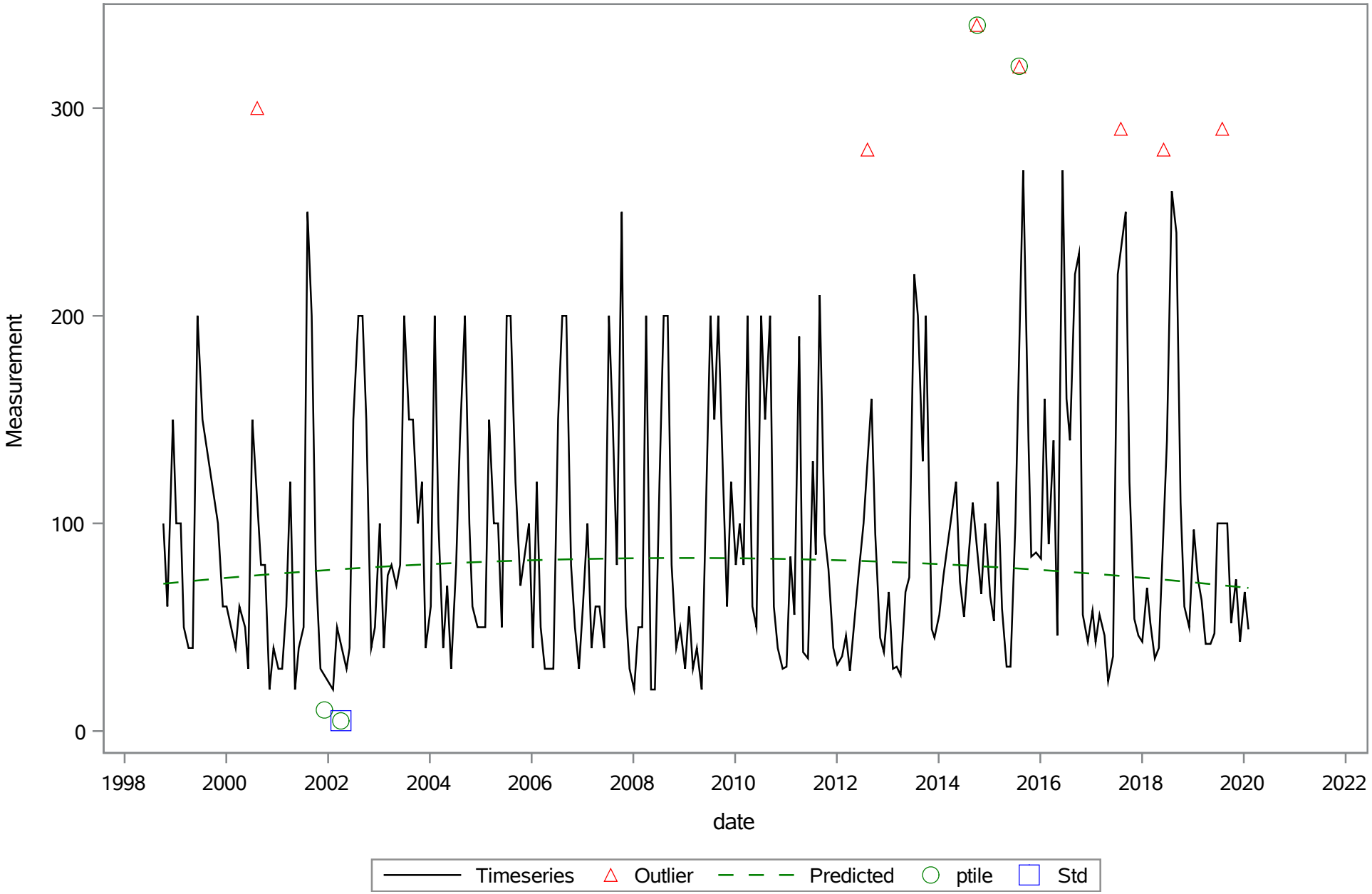
Site ID = 112WRD 02300500



Little Manatee River
L MANATEE R BR US 301
Color (PCU) PCU
Site ID = 21FLA 24010100



Little Manatee River
LITTLE MANATEE RIVER AT US HWY 301
Color (PCU) PCU
Site ID = 21FLGW 3555

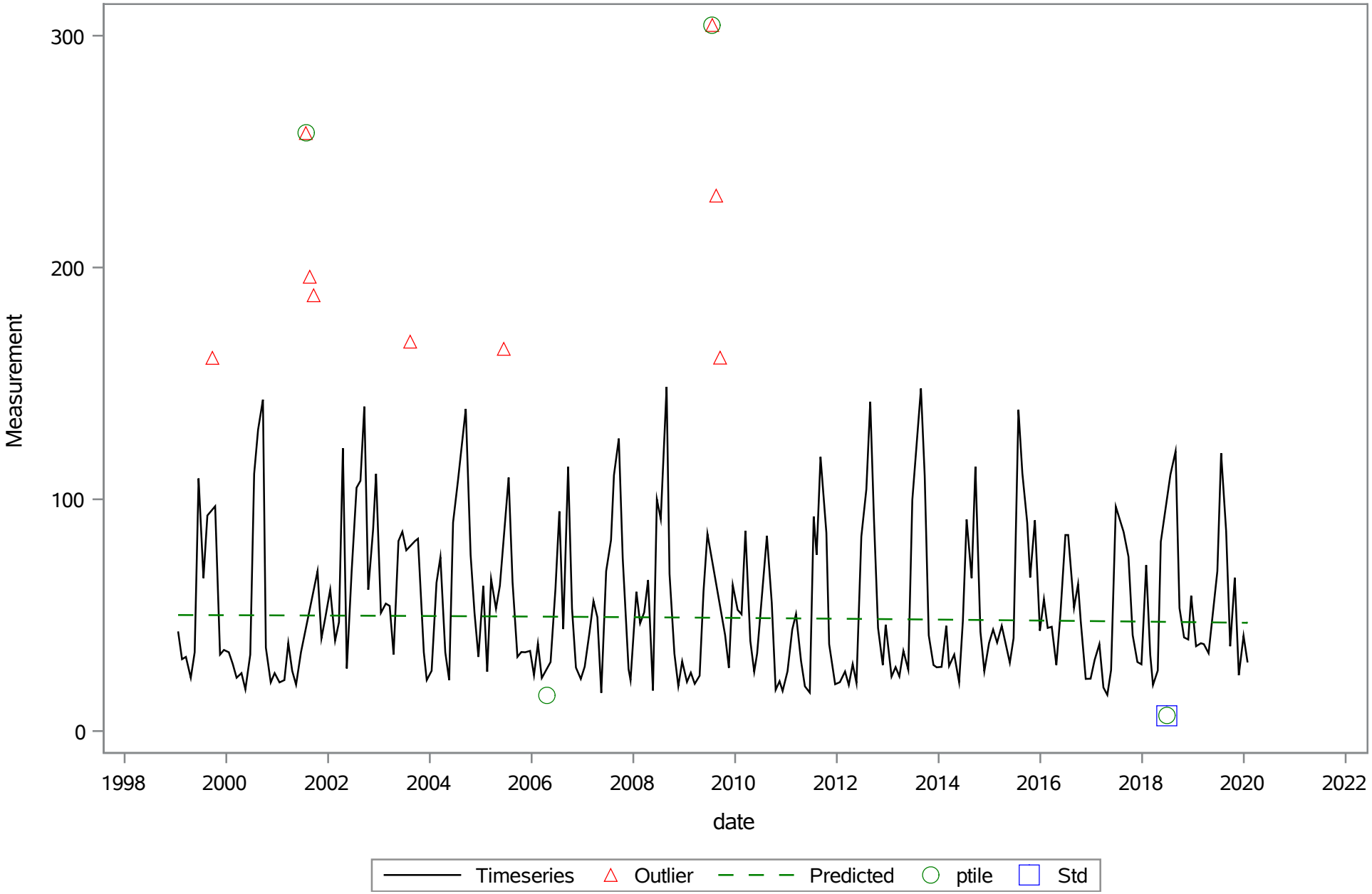


Little Manatee River

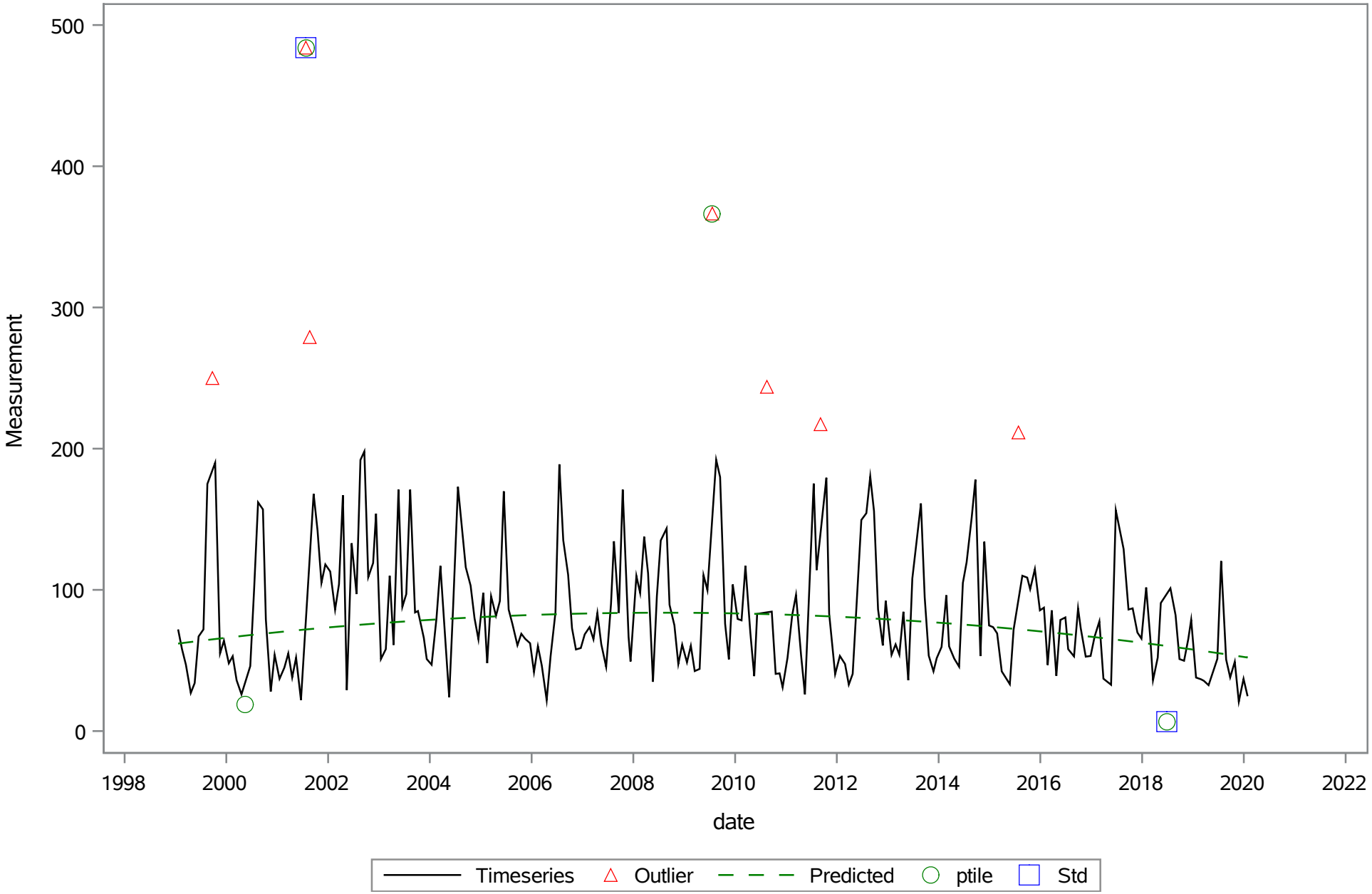
Little Manatee River at US 301 bridge

Color (PCU) PCU

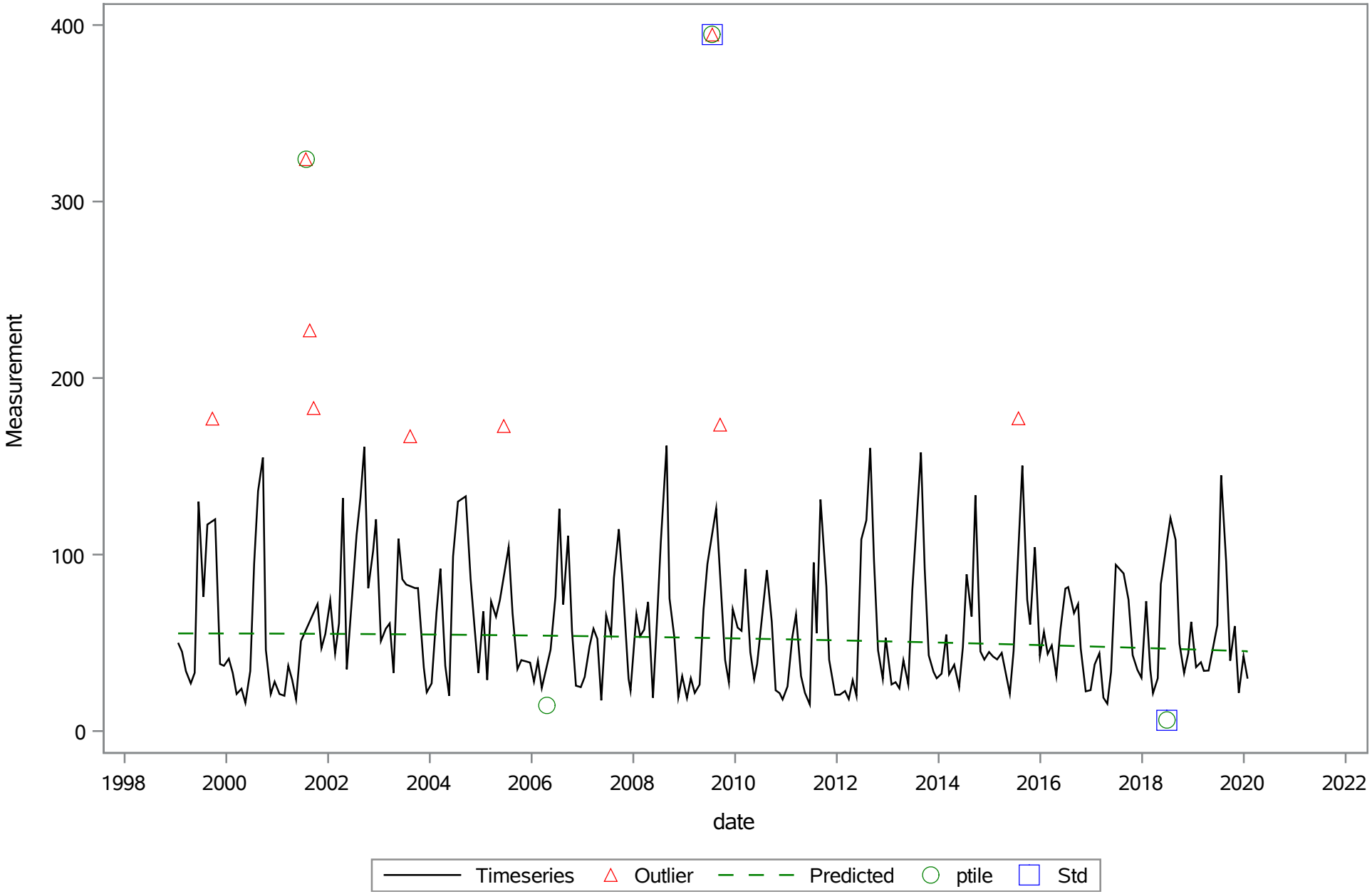
Site ID = 21FLHILL113

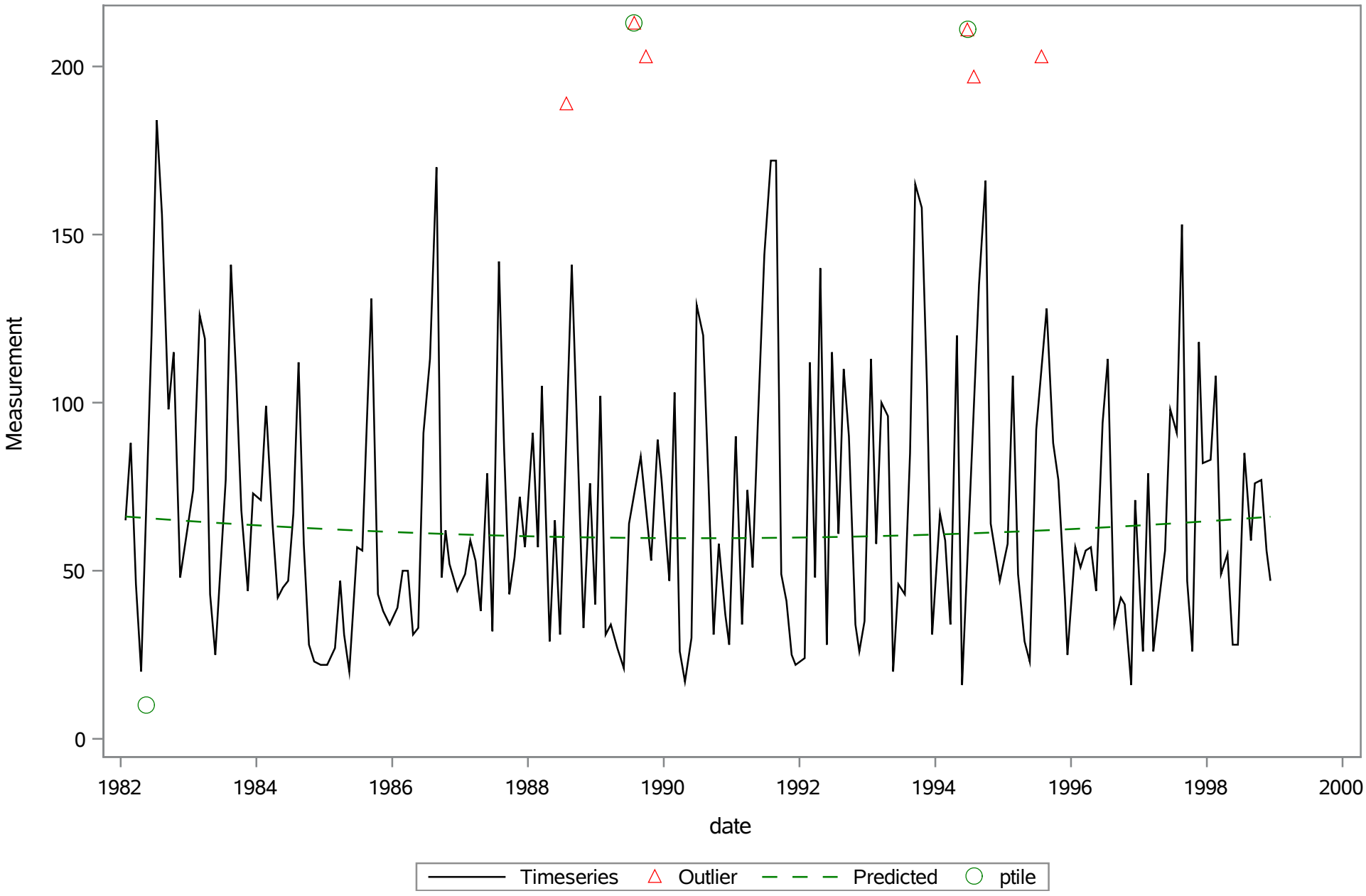


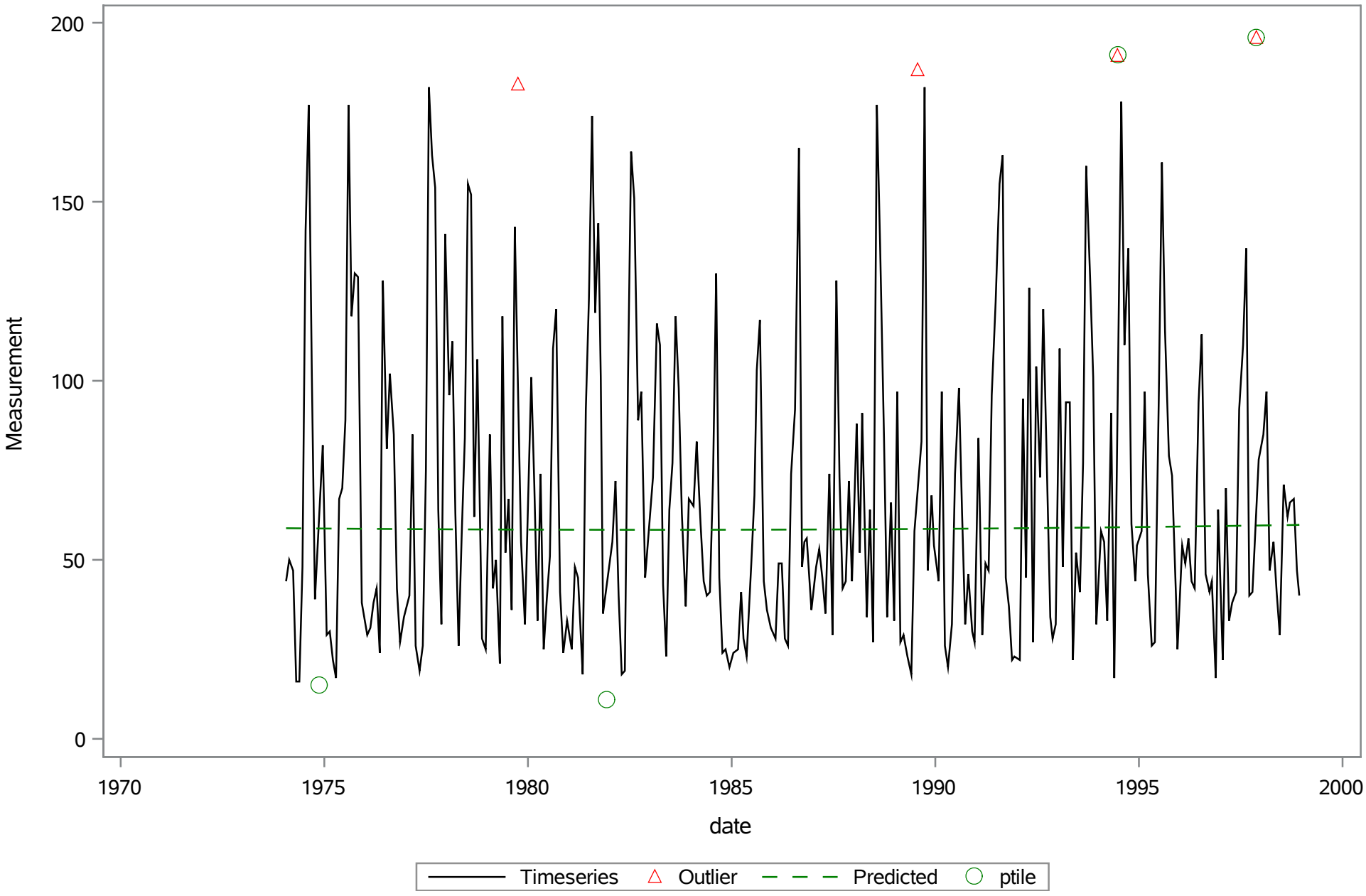
Little Manatee River
Little Manatee River at SR 674
Color (PCU) PCU
Site ID = 21FLHILL129

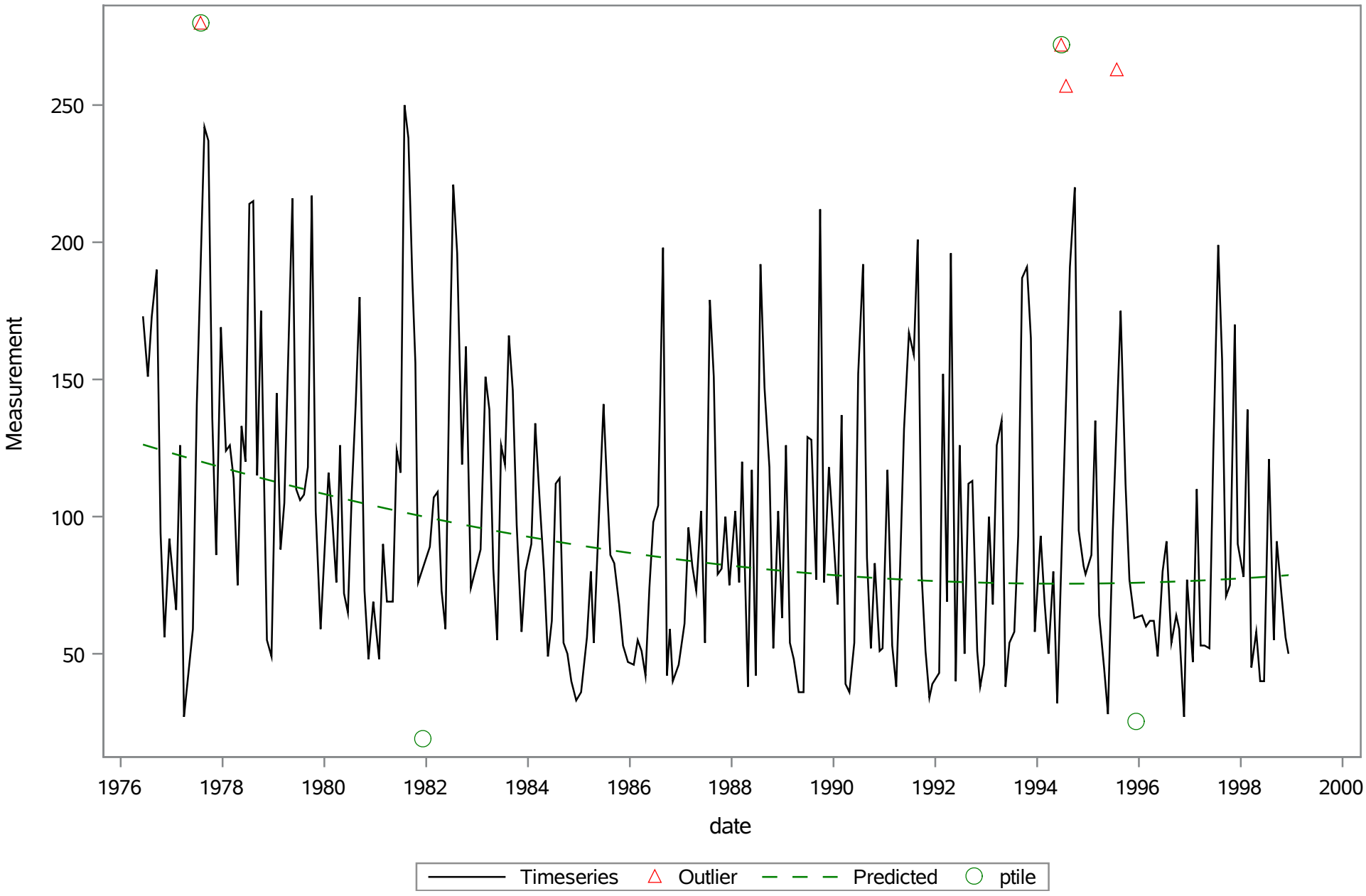


Little Manatee River
Little Manatee River at CR 579
Color (PCU) PCU
Site ID = 21FLHILL140

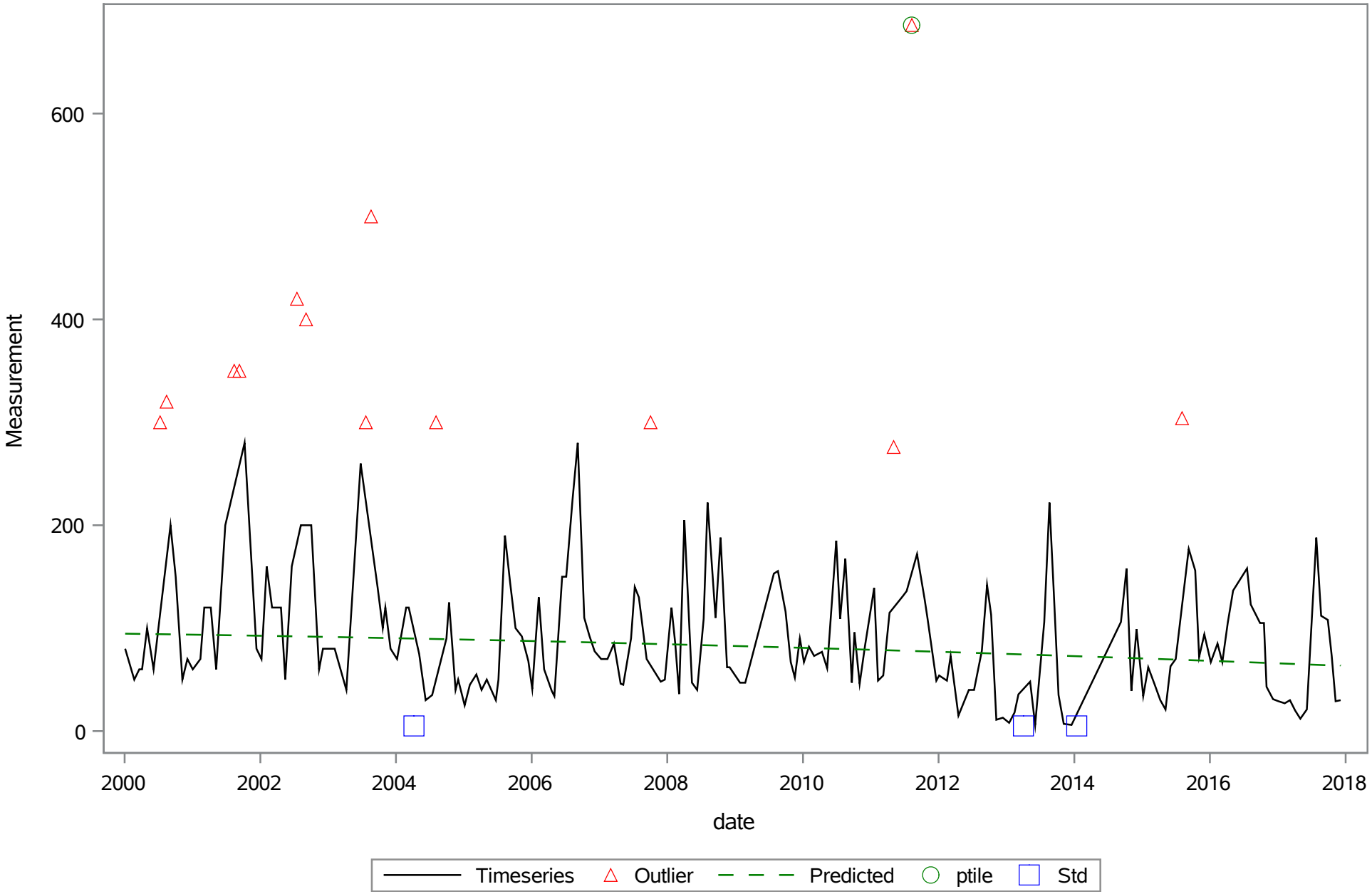



Little Manatee River
LITTLE MANATEE R AT CR579
Color (PCU) PCU
Site ID = 21FLHILL24010013
Measurement
200
150
100
50
0
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
date
Timeseries
Outlier
Predicted
ptile

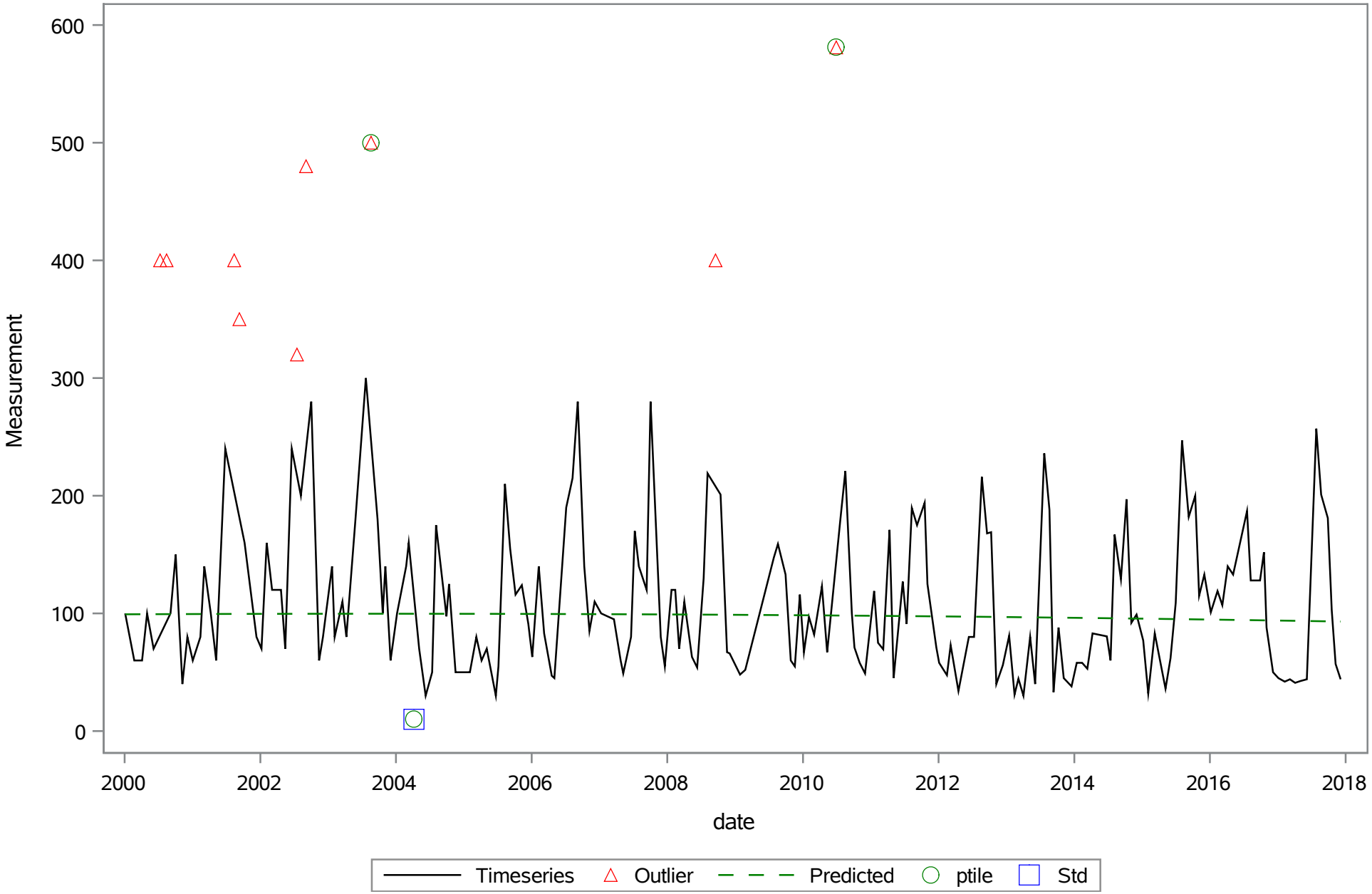

Little Manatee River
L MANATEE R BR US 301
Color (PCU) PCU
Site ID = 21FLHILL24010100
200
150
100
50
0
Measurement
1970
1975
1980
1985
1990
1995
2000
date
Timeseries
Outlier
Predicted
ptile


Little Manatee River
LITTLE MANATEE R AT SR #674
Color (PCU) PCU
Site ID = 21FLHILL24010110
Measurement
250
200
150
100
50
1976
1978
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
date
Timeseries
Outlier
Predicted
ptile

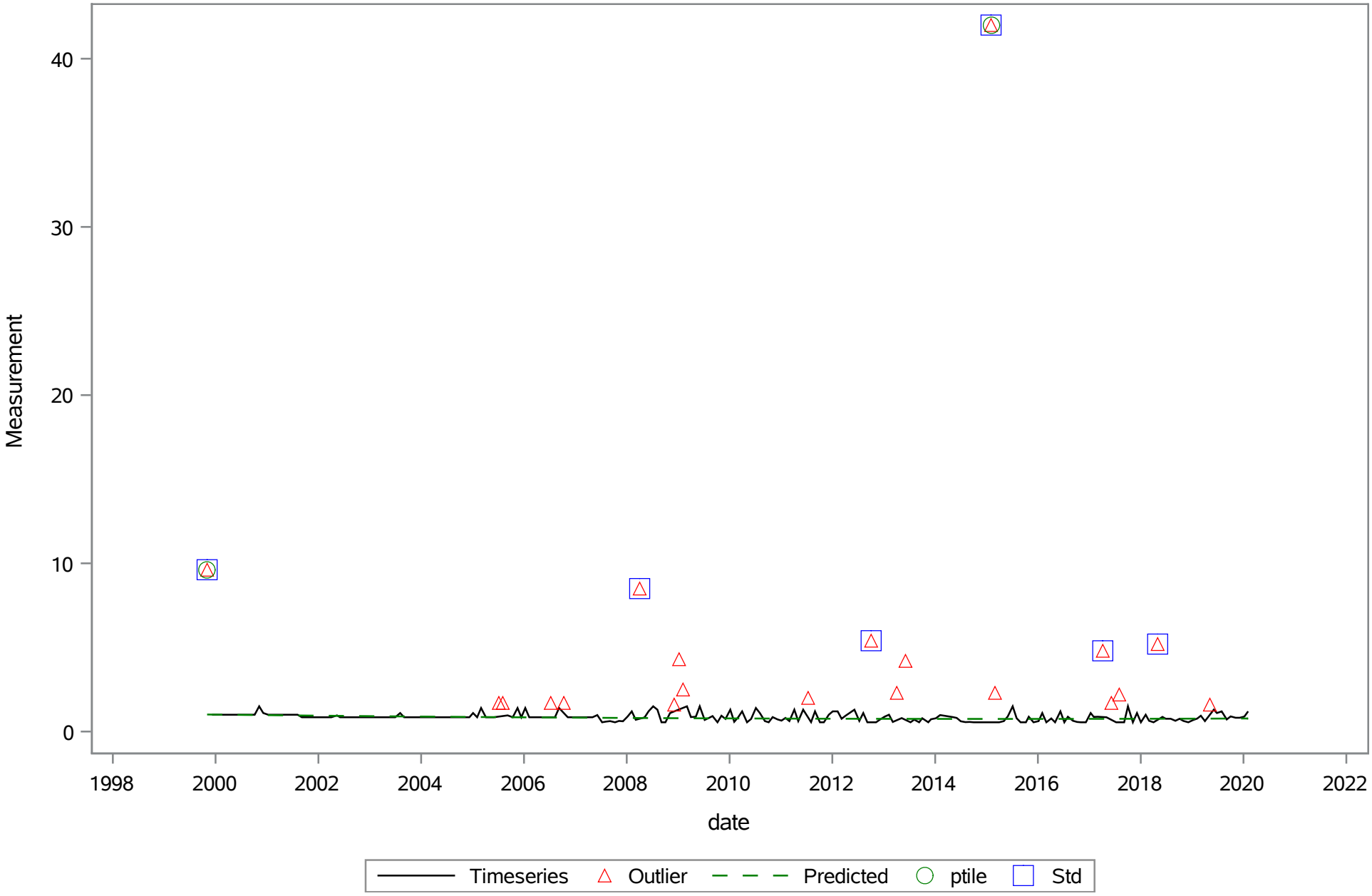
Little Manatee River
D1
Color (PCU) PCU
Site ID = 21FLMANAD1

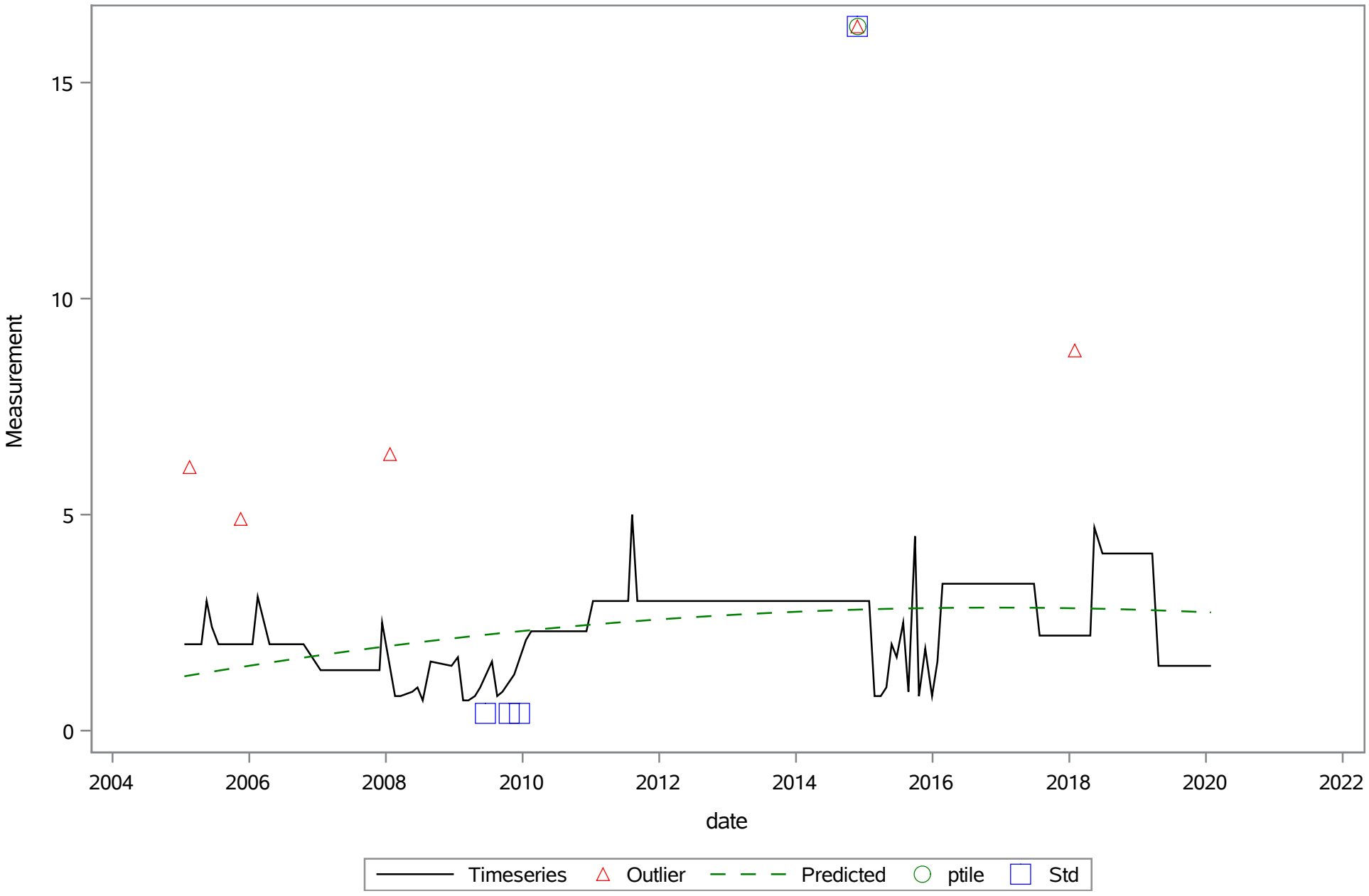


Little Manatee River
D3
Color (PCU) PCU
Site ID = 21FLMANAD3

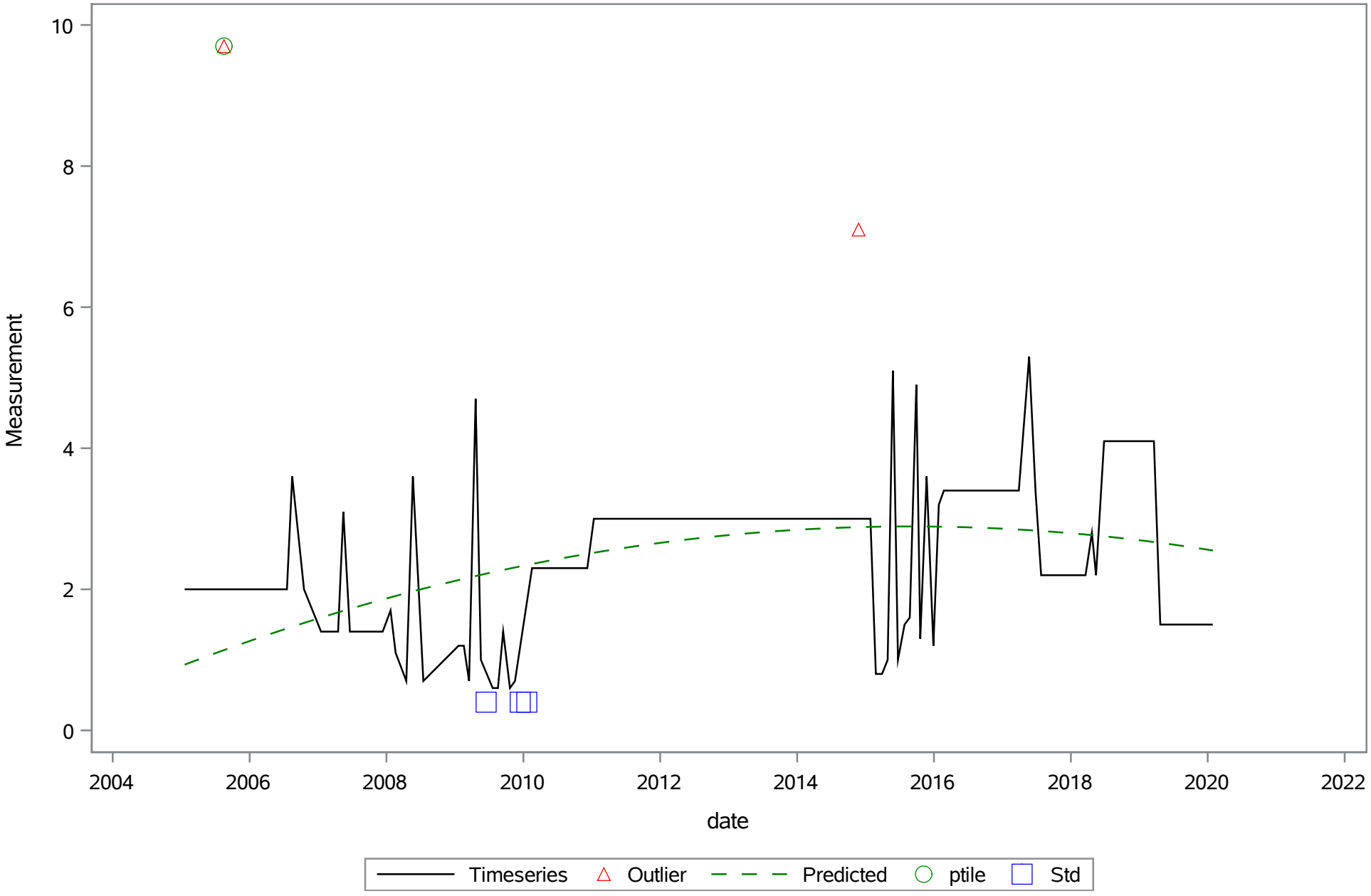


Little Manatee River
LITTLE MANATEE RIVER AT US HWY 301
Corr. Chlorophyll-a (µg/L) µg/L
Site ID = 21FLGW 3555

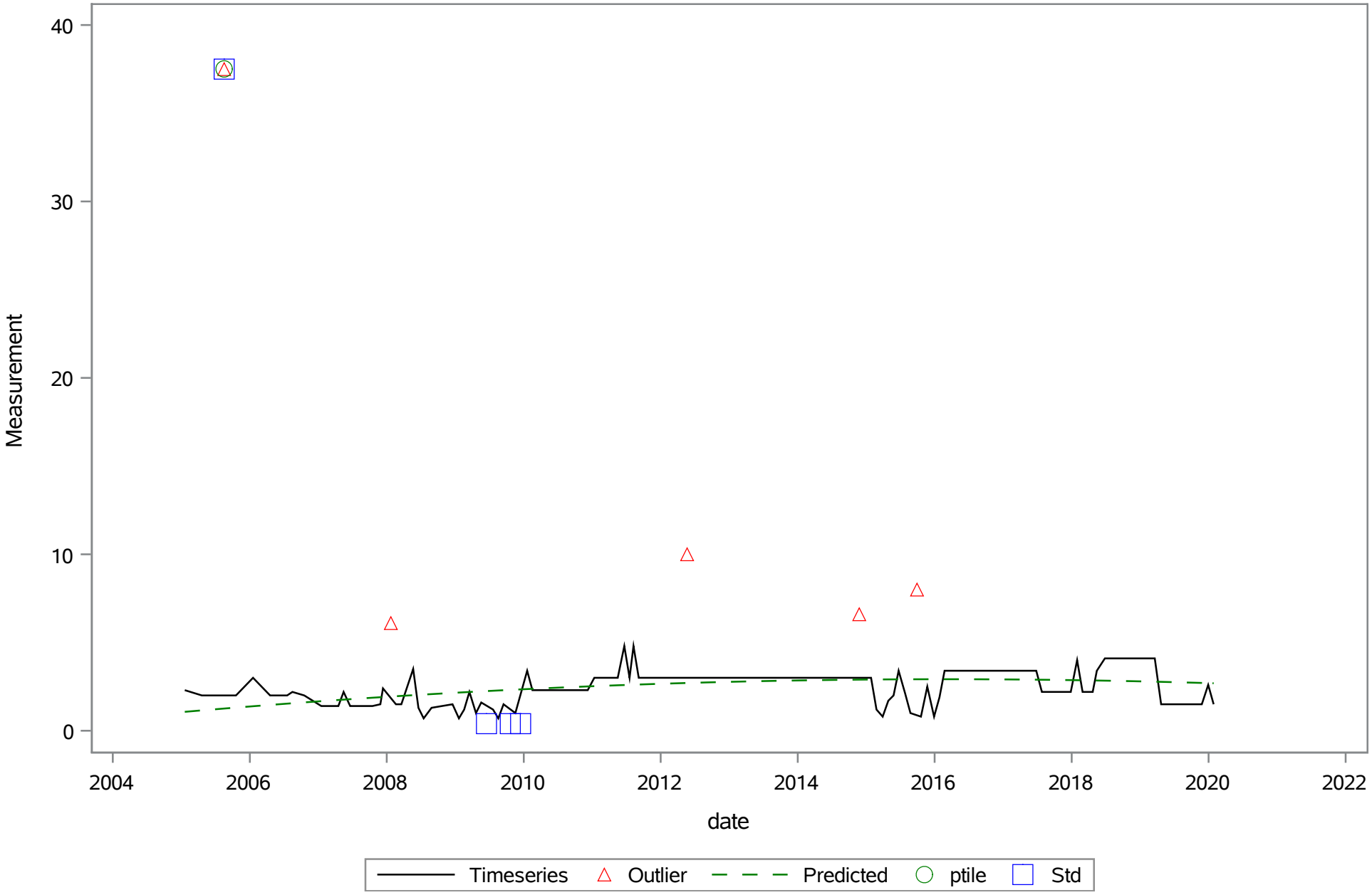



Little Manatee River
Little Manatee River at US 301 bridge
Corr. Chlorophyll-a (µg/L) µg/L
Site ID = 21FLHILL113
Measurement
15
10
5
0
2004
2006
2008
2010
2012
2014
2016
2018
2020
2022
date
Timeseries
Outlier
Predicted
ptile
Std

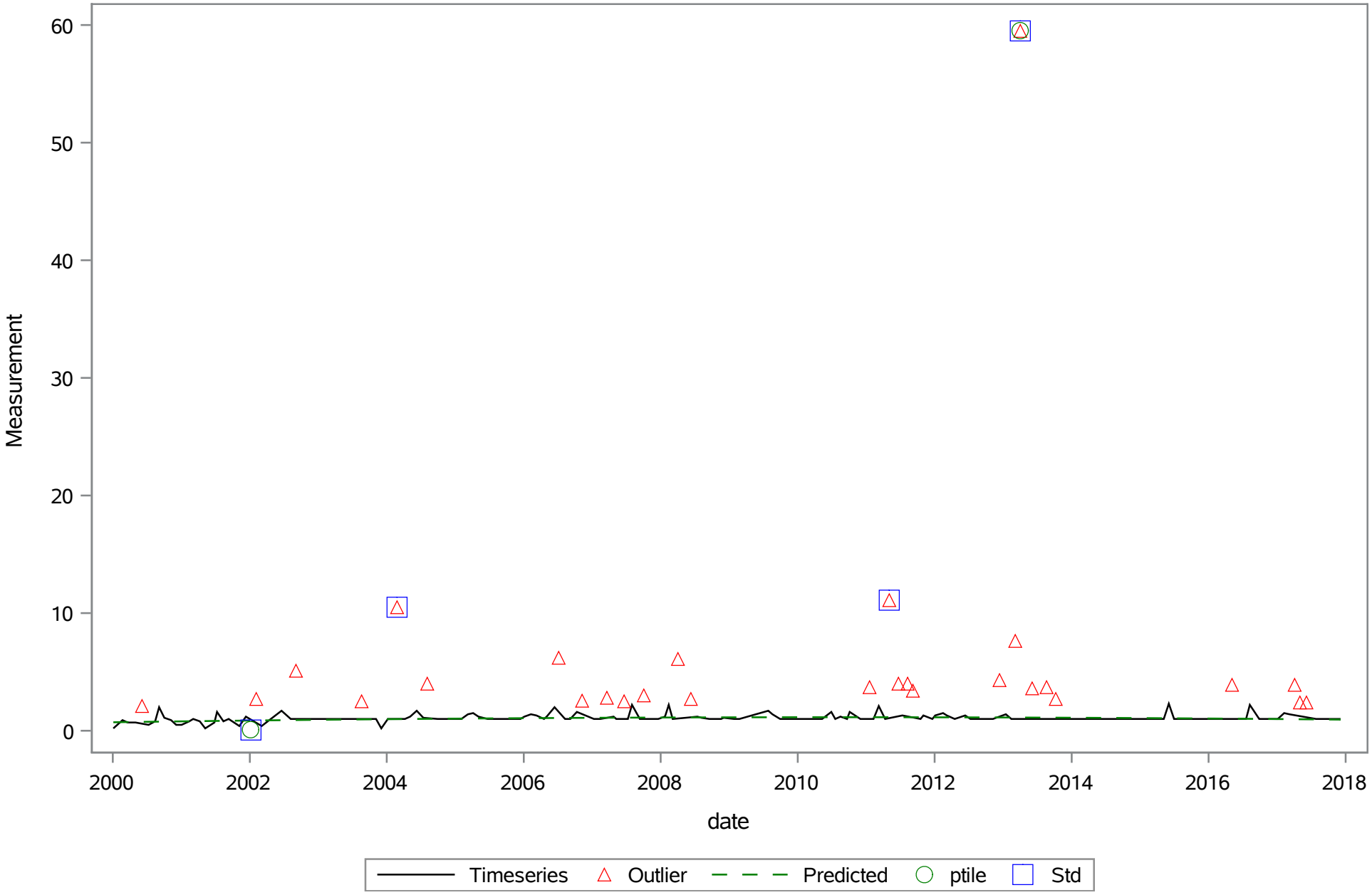
Little Manatee River
Little Manatee River at SR 674
Corr. Chlorophyll-a (µg/L) µg/L
Site ID = 21FLHILL129

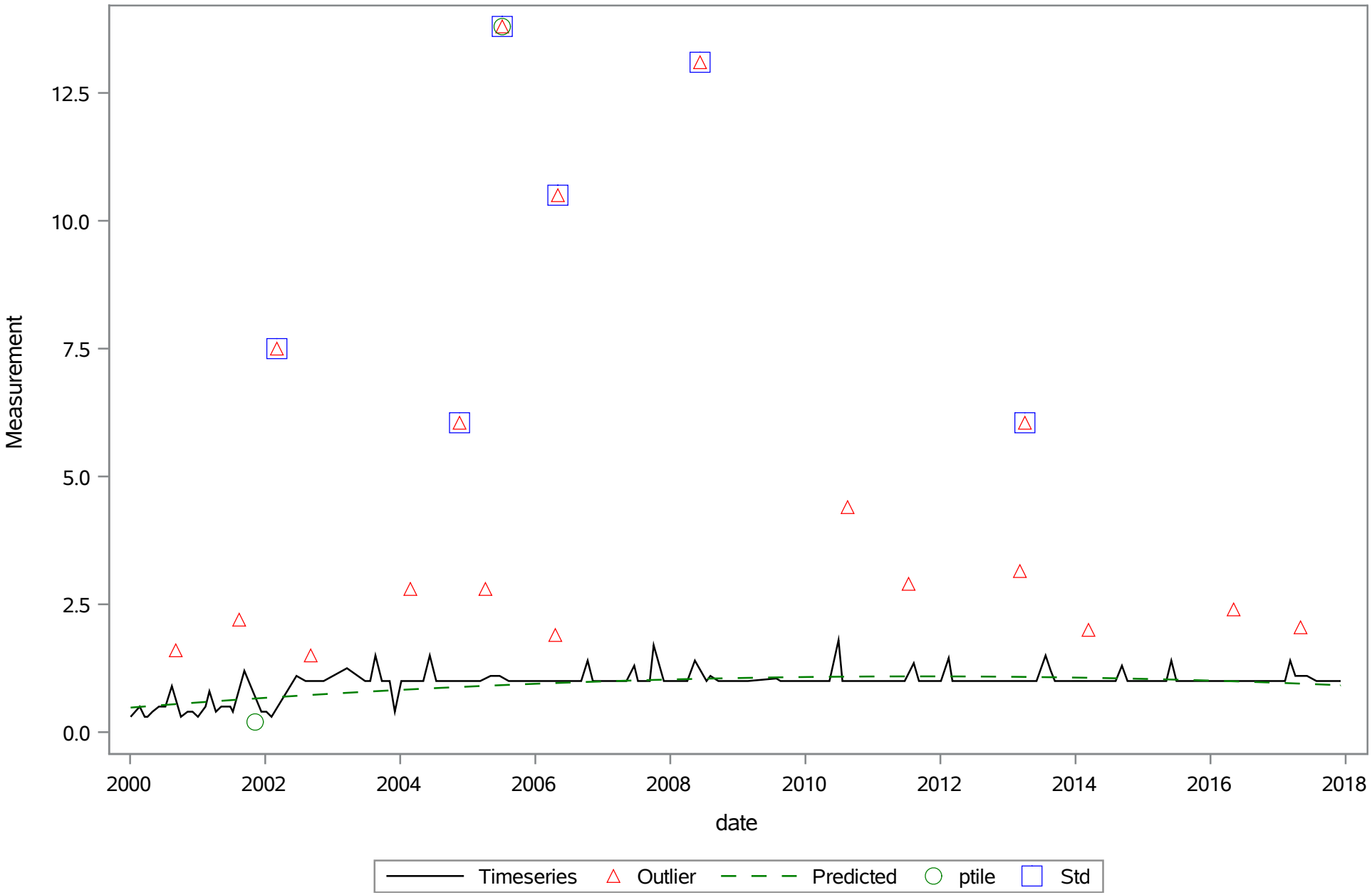


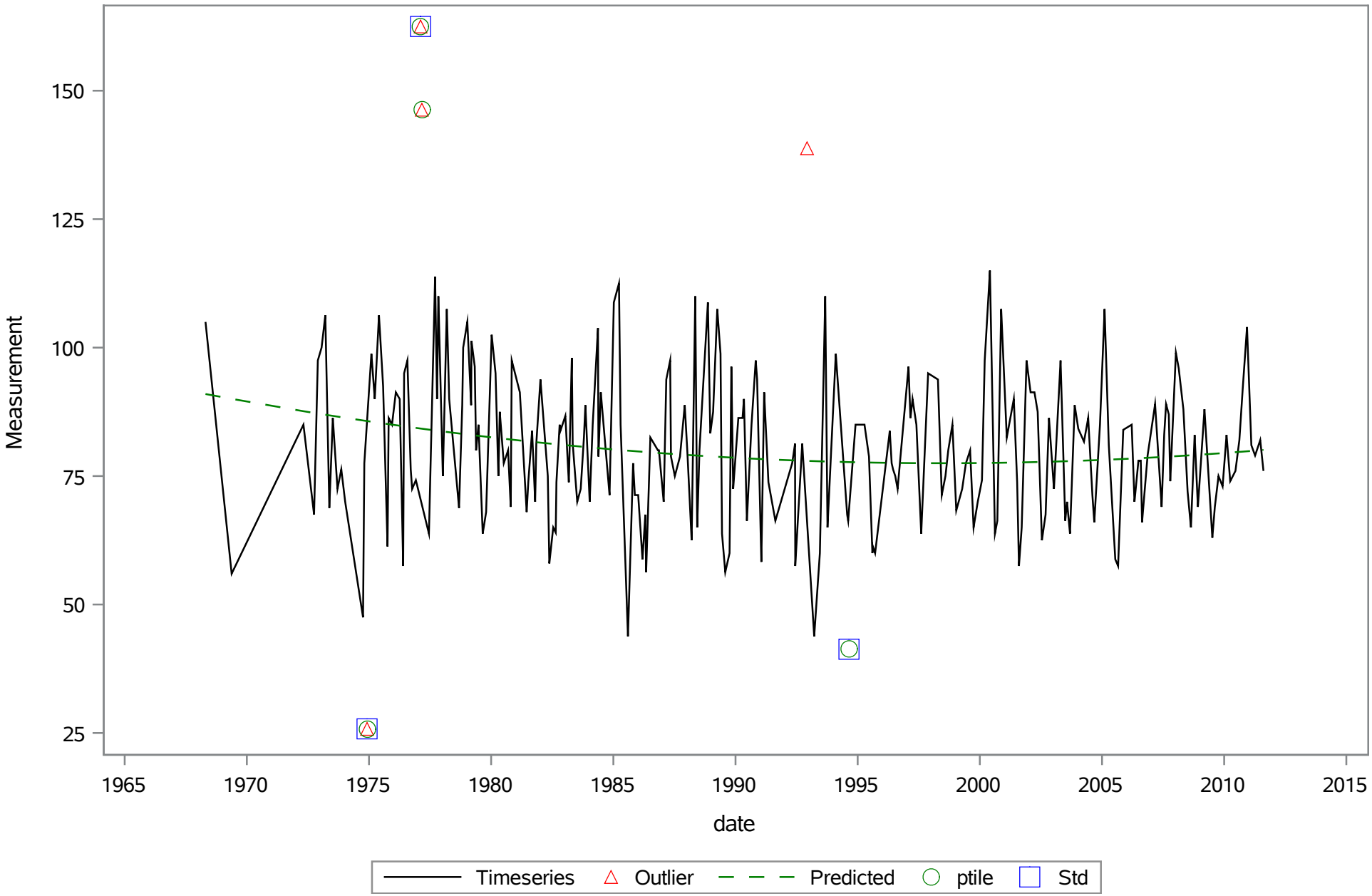
Little Manatee River
Little Manatee River at CR 579
Corr. Chlorophyll-a (µg/L) µg/L
Site ID = 21FLHILL140



Little Manatee River
D1
Corr. Chlorophyll-a (µg/L) µg/L
Site ID = 21FLMANAD1




Little Manatee River
D3
Corr. Chlorophyll-a (µg/L) µg/L
Site ID = 21FLMANAD3
Measurement
12.5
10.0
7.5
5.0
2.5
0.0
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
date
Timeseries
Outlier
Predicted
ptile
Std

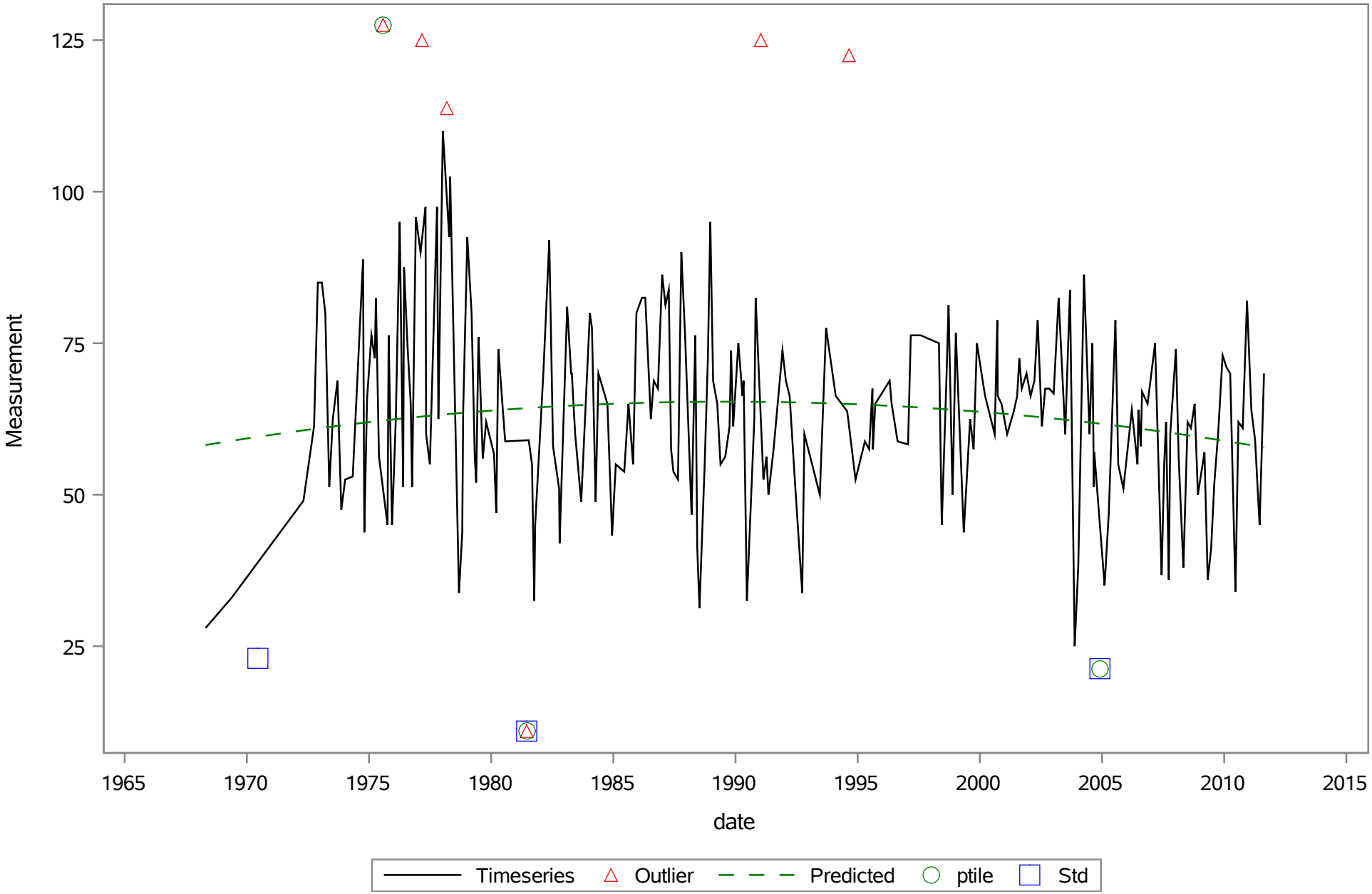

Little Manatee River
LITTLE MANATEE RIVER NEAR FT. LONESOME FL
Dissolved Oxygen (Percent Saturation) %
Site ID = 112WRD 02300100
Measurement
150
125
100
75
50
25
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
date
Timeseries
Outlier
Predicted
ptile
Std

Little Manatee River

SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL

Dissolved Oxygen (Percent Saturation) %

Site ID = 112WRD 02300200

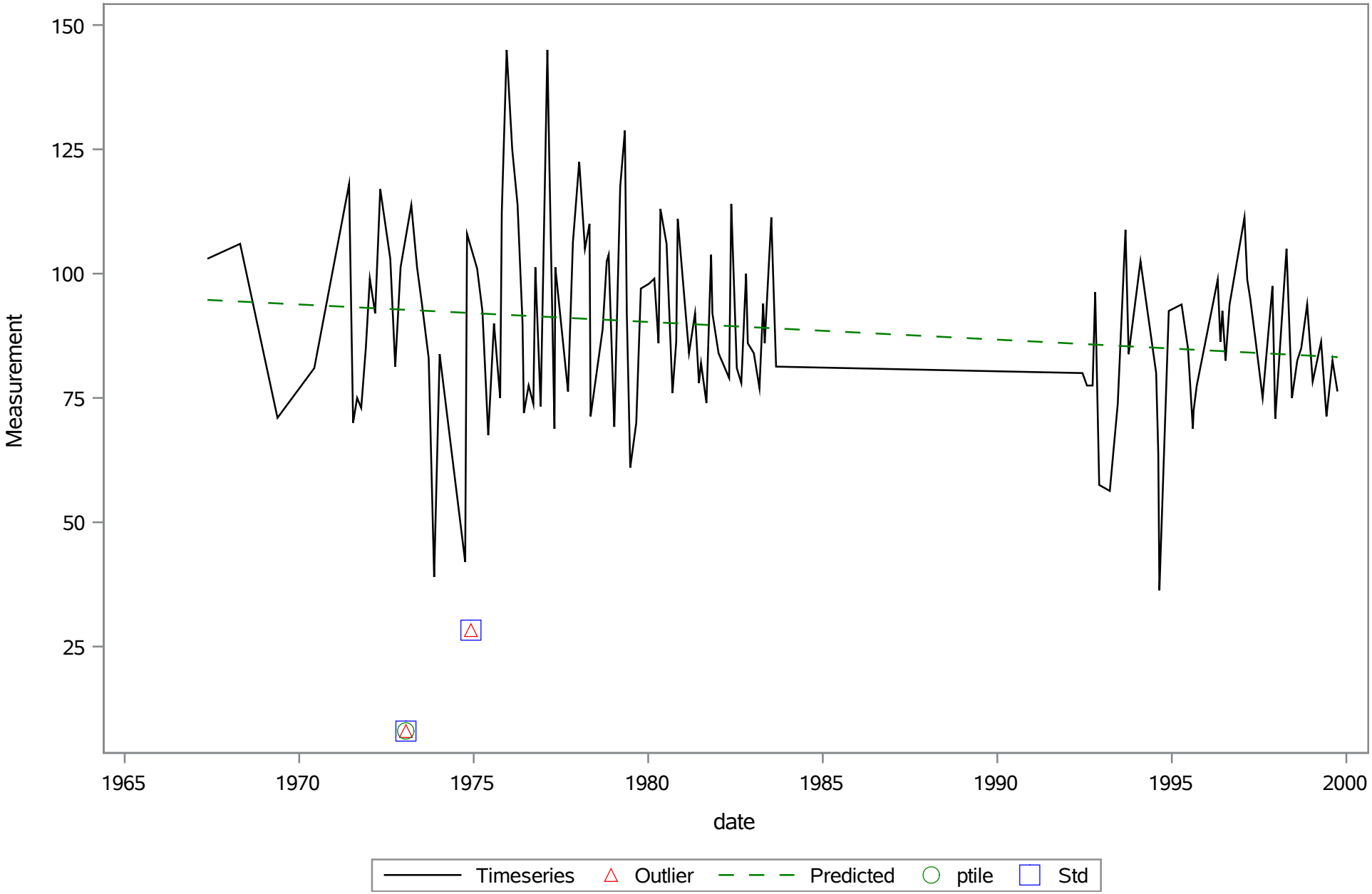


Little Manatee River

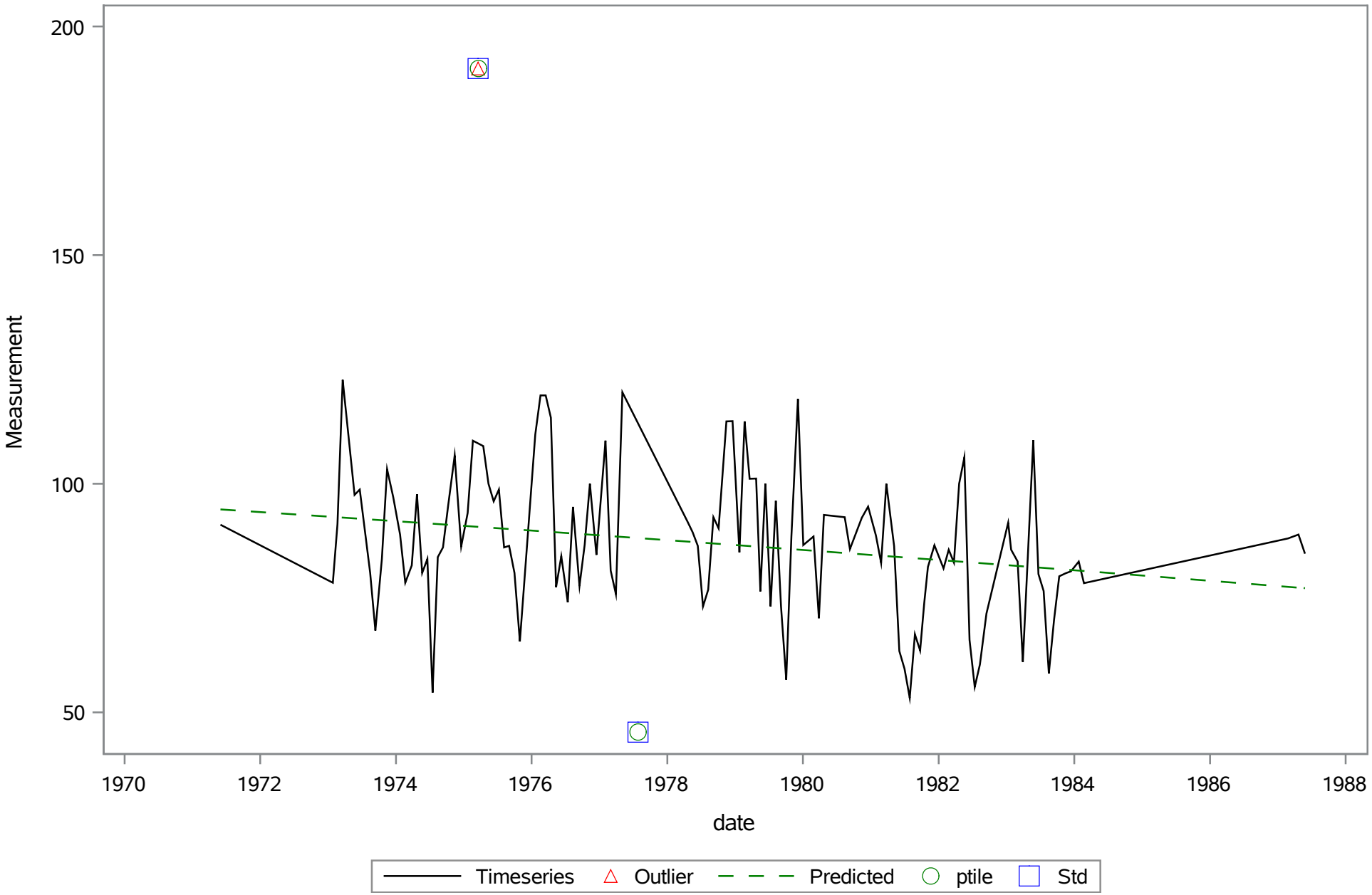
LITTLE MANATEE RIVER NEAR WIMAUMA FL

Dissolved Oxygen (Percent Saturation) %

Site ID = 112WRD 02300500



Little Manatee River
L MANATEE R BR US 301
Dissolved Oxygen (Percent Saturation) %
Site ID = 21FLA 24010100

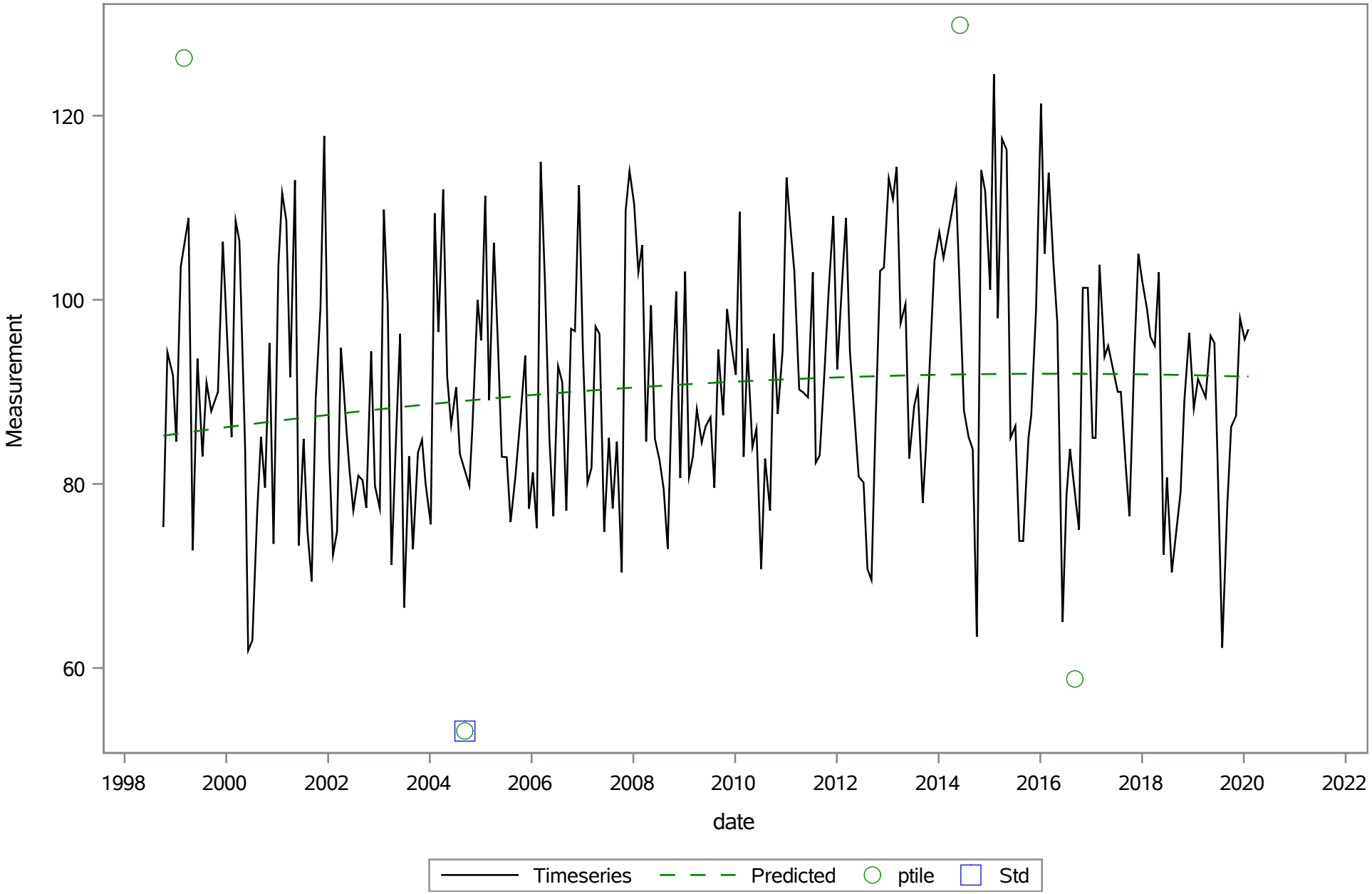


Little Manatee River

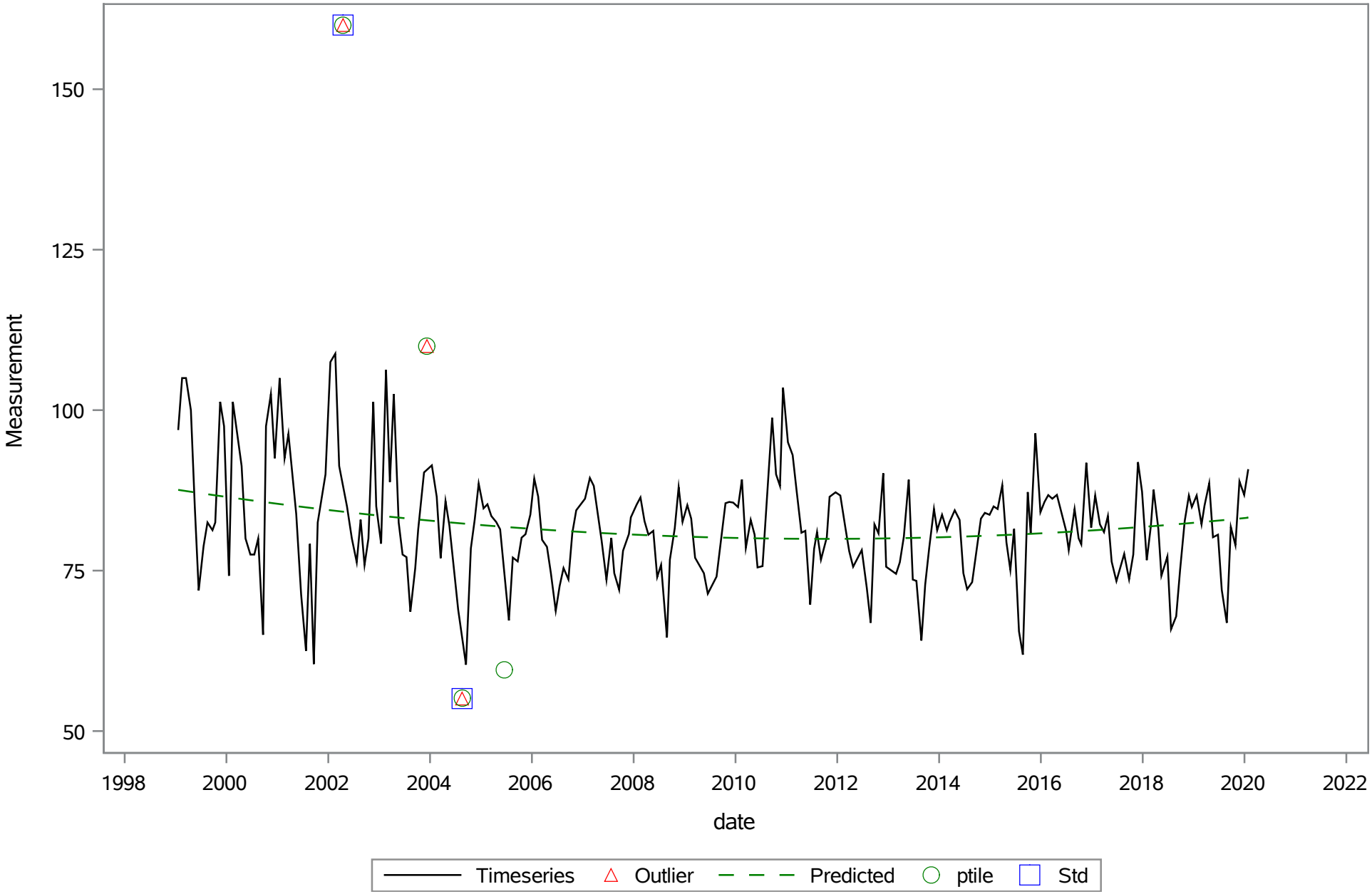
LITTLE MANATEE RIVER AT US HWY 301

Dissolved Oxygen (Percent Saturation) %

Site ID = 21FLGW 3555



Little Manatee River
Little Manatee River at US 301 bridge
Dissolved Oxygen (Percent Saturation) %
Site ID = 21FLHILL113

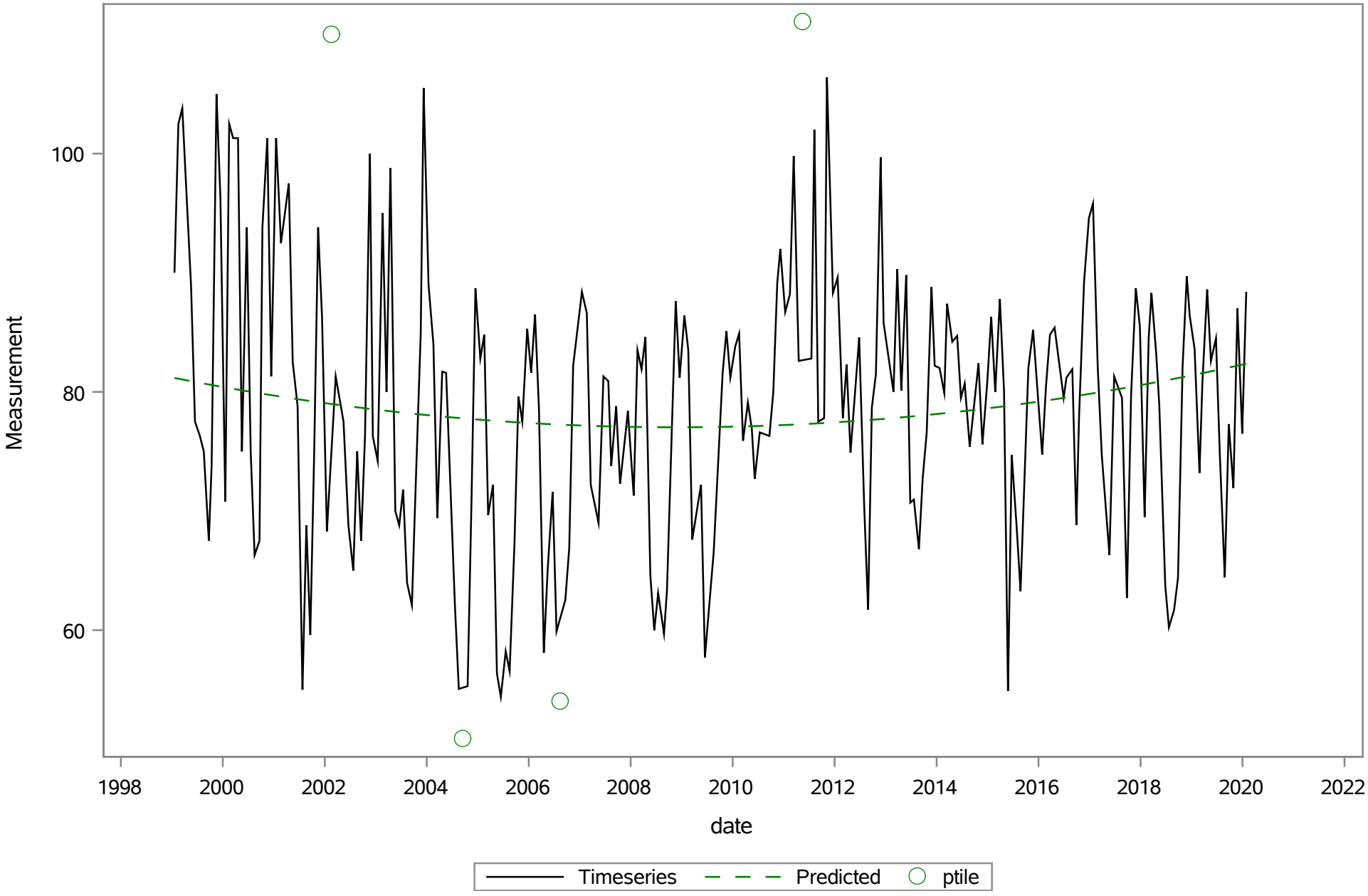


Little Manatee River

Little Manatee River at SR 674

Dissolved Oxygen (Percent Saturation) %

Site ID = 21FLHILL129

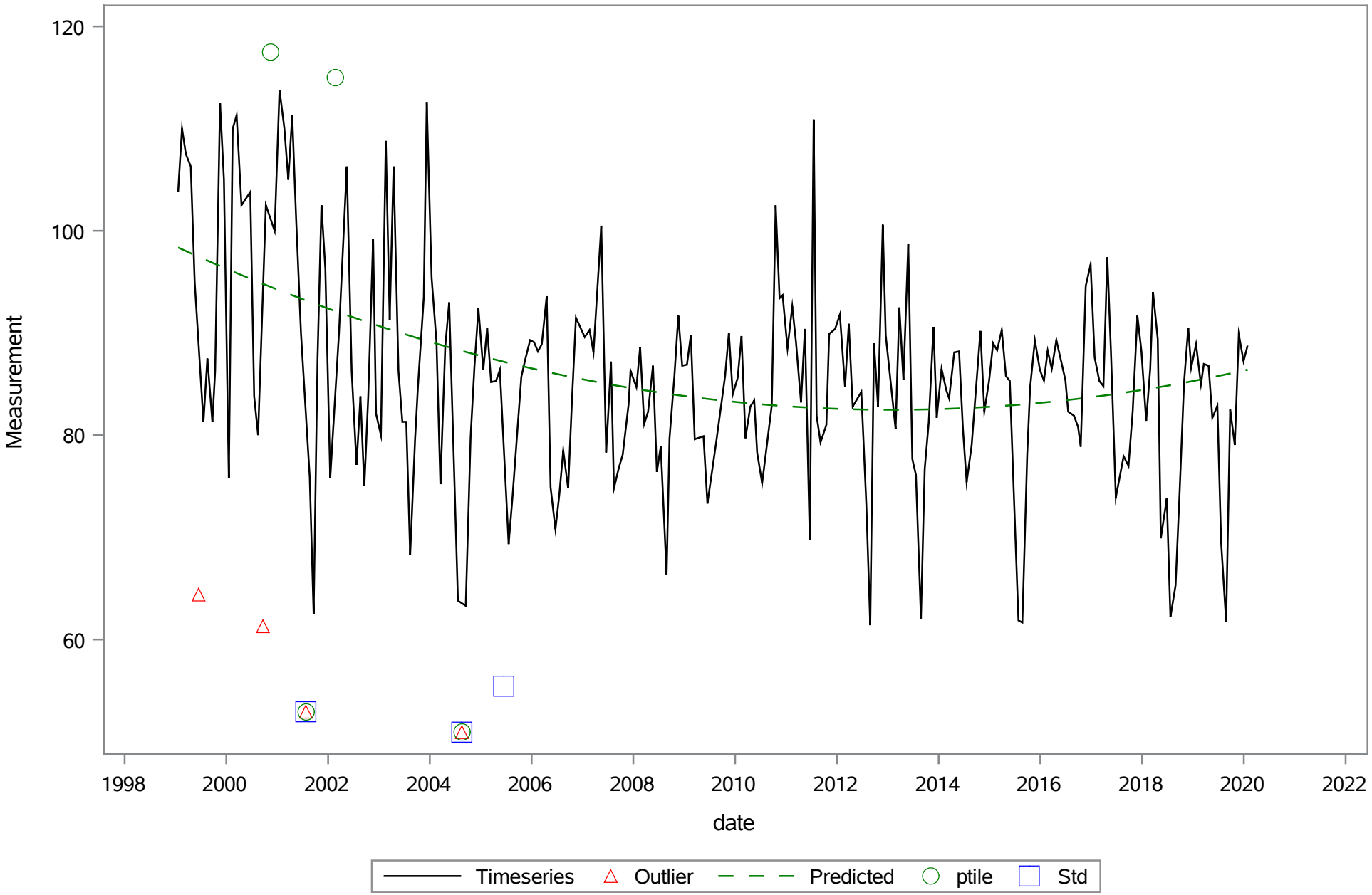


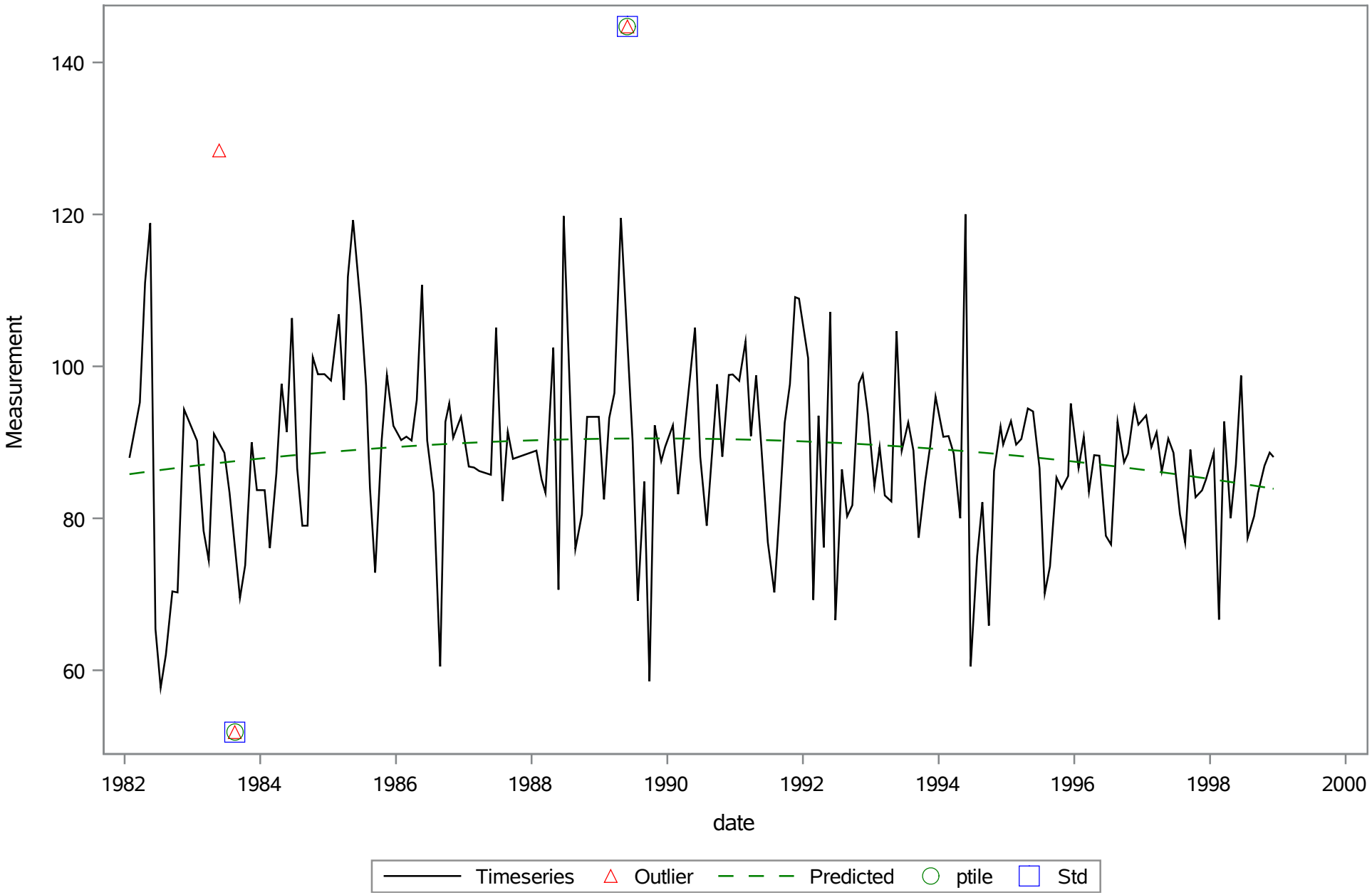
Little Manatee River

Little Manatee River at CR 579

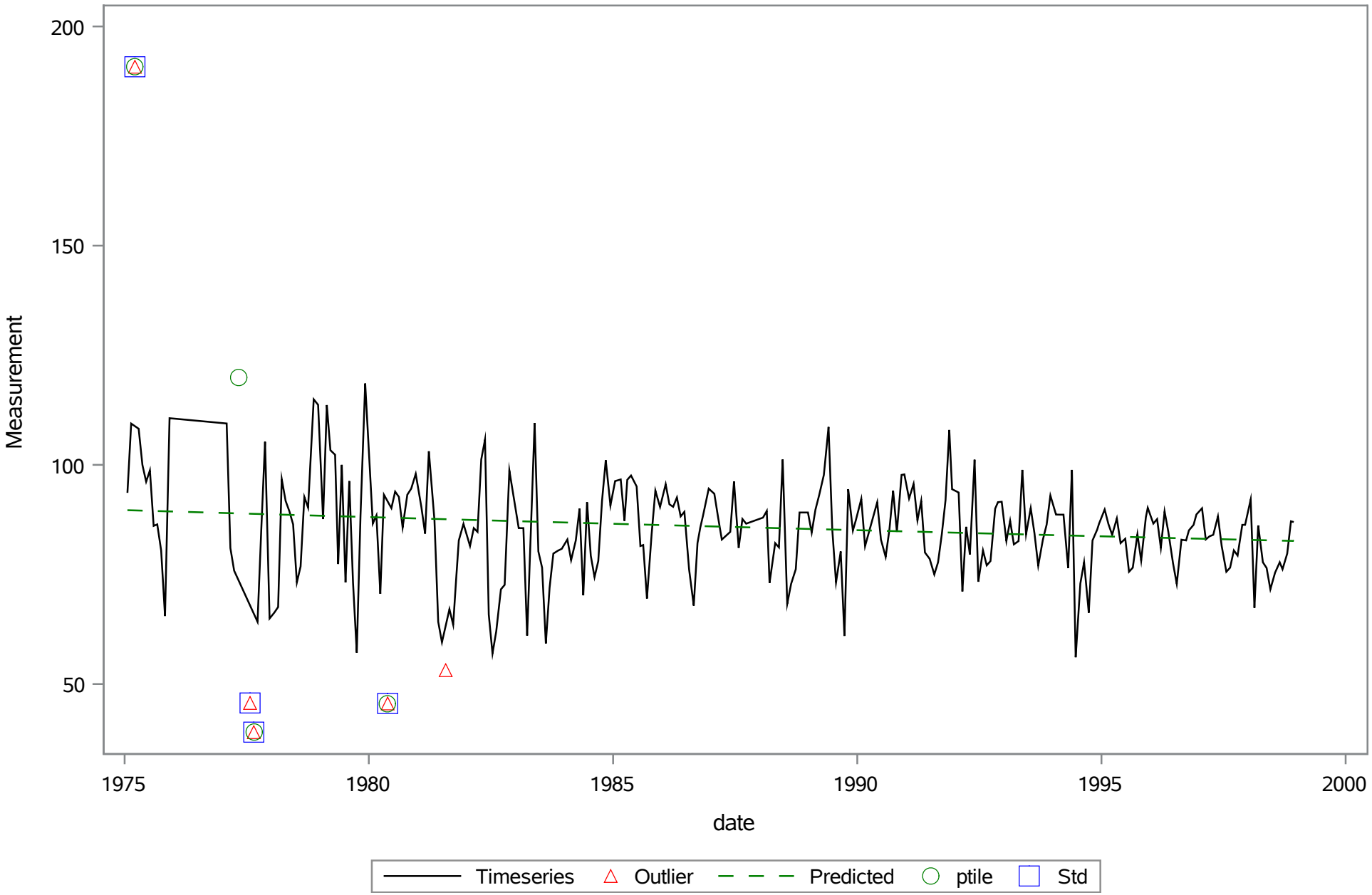
Dissolved Oxygen (Percent Saturation) %

Site ID = 21FLHILL140

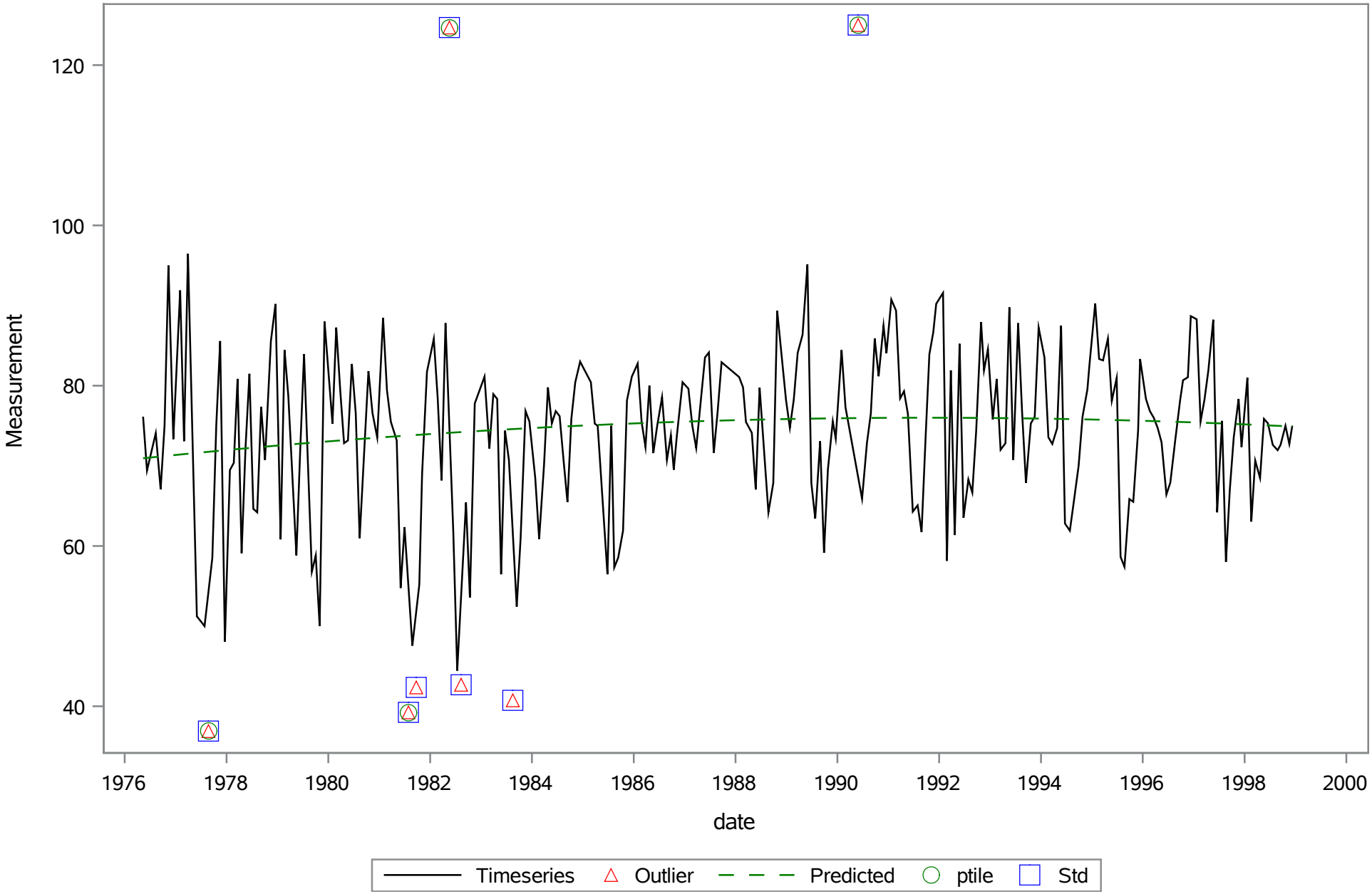



Little Manatee River
LITTLE MANATEE R AT CR579
Dissolved Oxygen (Percent Saturation) %
Site ID = 21FLHILL24010013
Measurement
140
120
100
80
60
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
date
Timeseries
Outlier
Predicted
ptile
Std

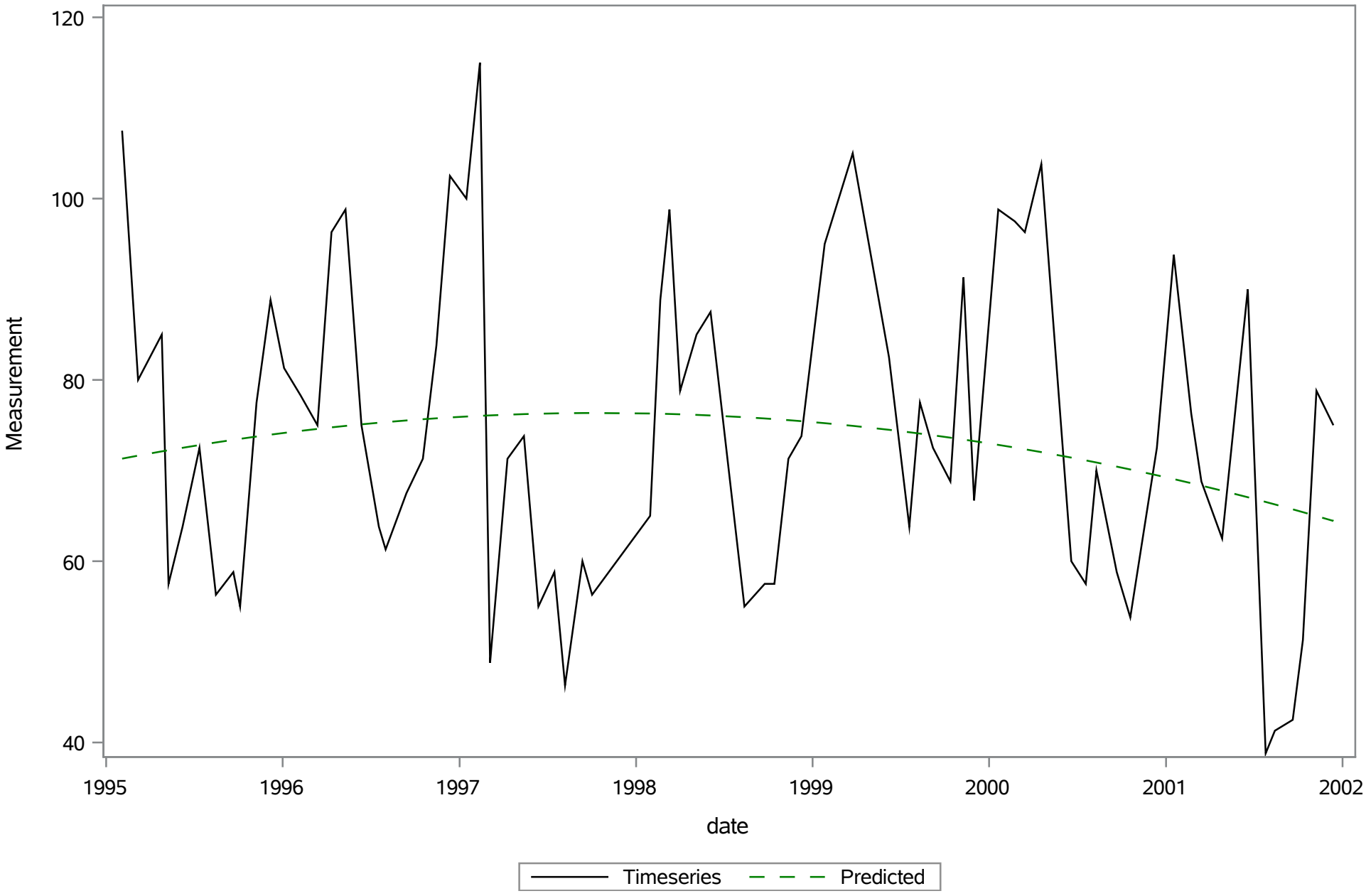
Little Manatee River
L MANATEE R BR US 301
Dissolved Oxygen (Percent Saturation) %
Site ID = 21FLHILL24010100

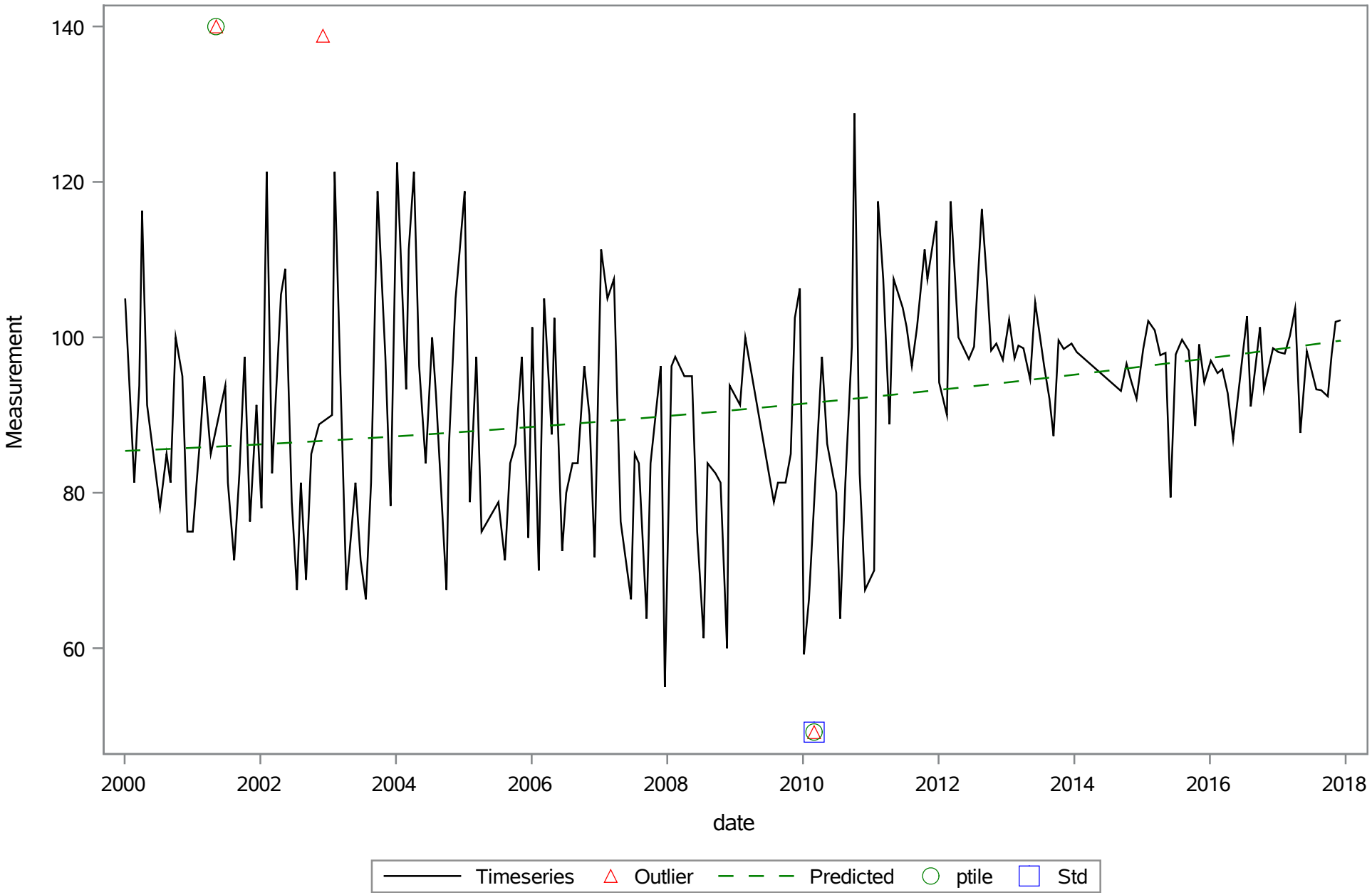


Little Manatee River
LITTLE MANATEE R AT SR #674
Dissolved Oxygen (Percent Saturation) %
Site ID = 21FLHILL24010110

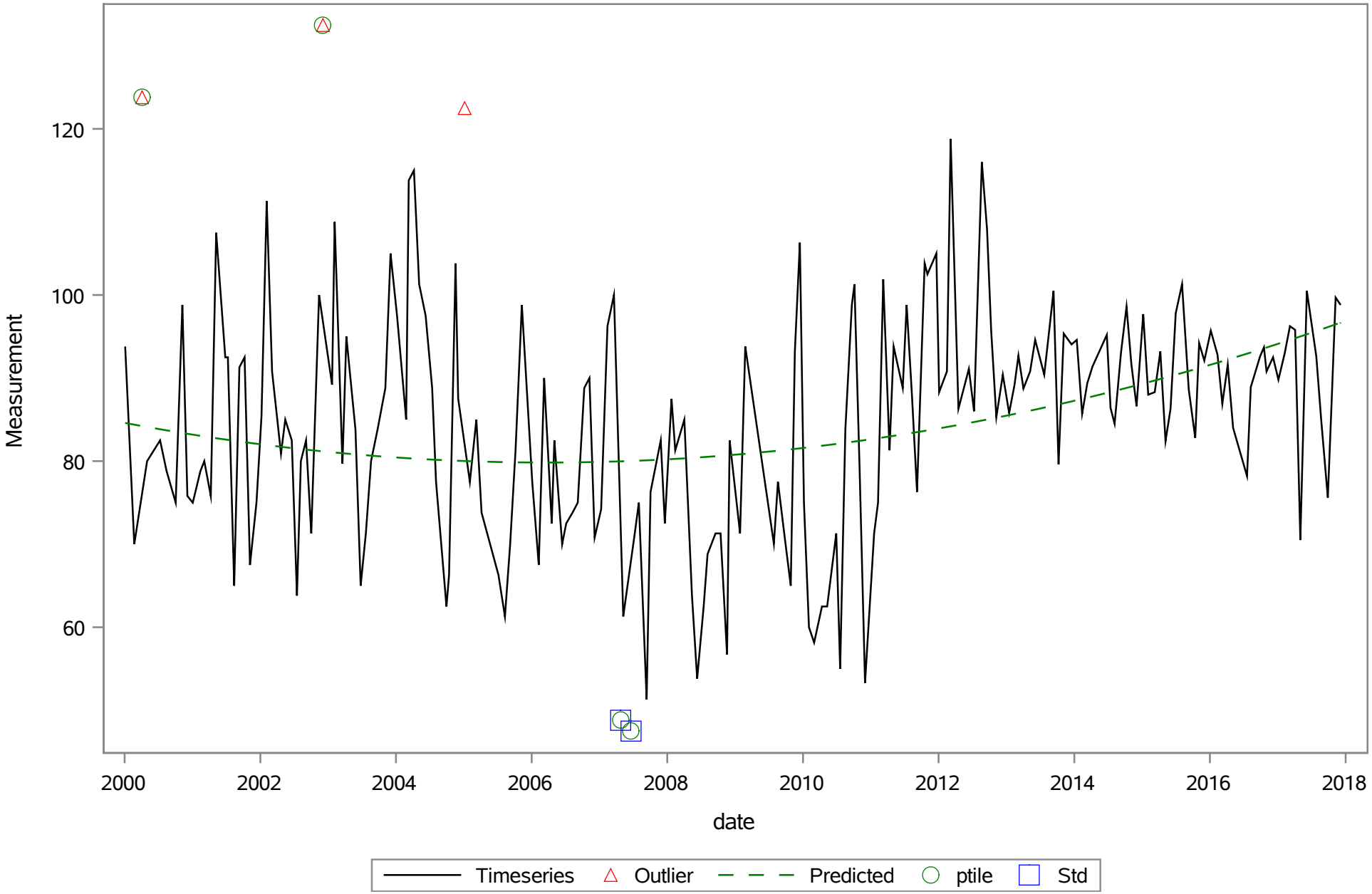


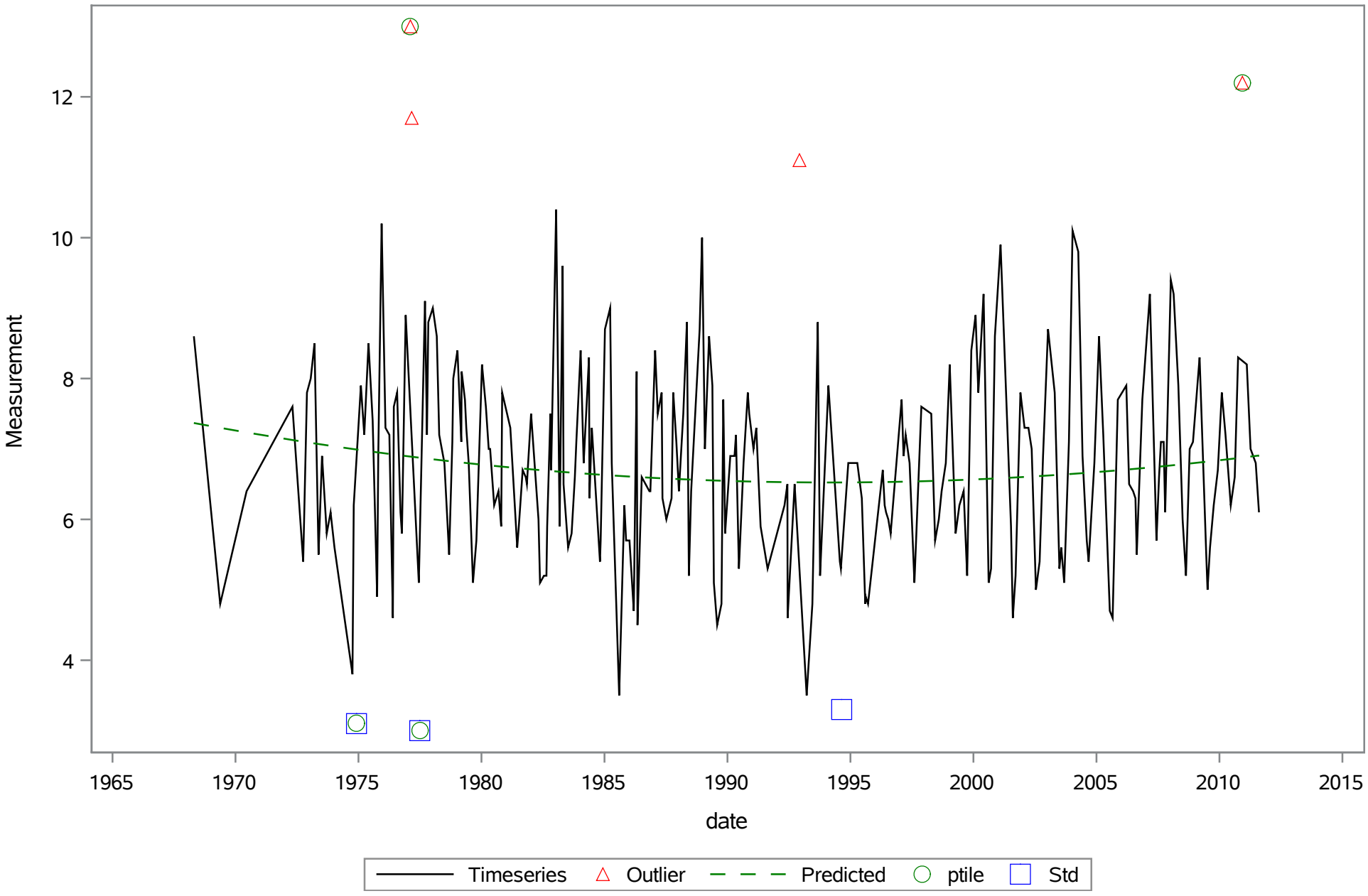
Little Manatee River
Little Manatee R. at SR674
Dissolved Oxygen (Percent Saturation) %
Site ID = 21FLIMCALM674




Little Manatee River
D1
Dissolved Oxygen (Percent Saturation) %
Site ID = 21FLMANAD1
Measurement
140
120
100
80
60
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
date
Timeseries
Outlier
Predicted
ptile
Std

Little Manatee River
D3
Dissolved Oxygen (Percent Saturation) %
Site ID = 21FLMANAD3



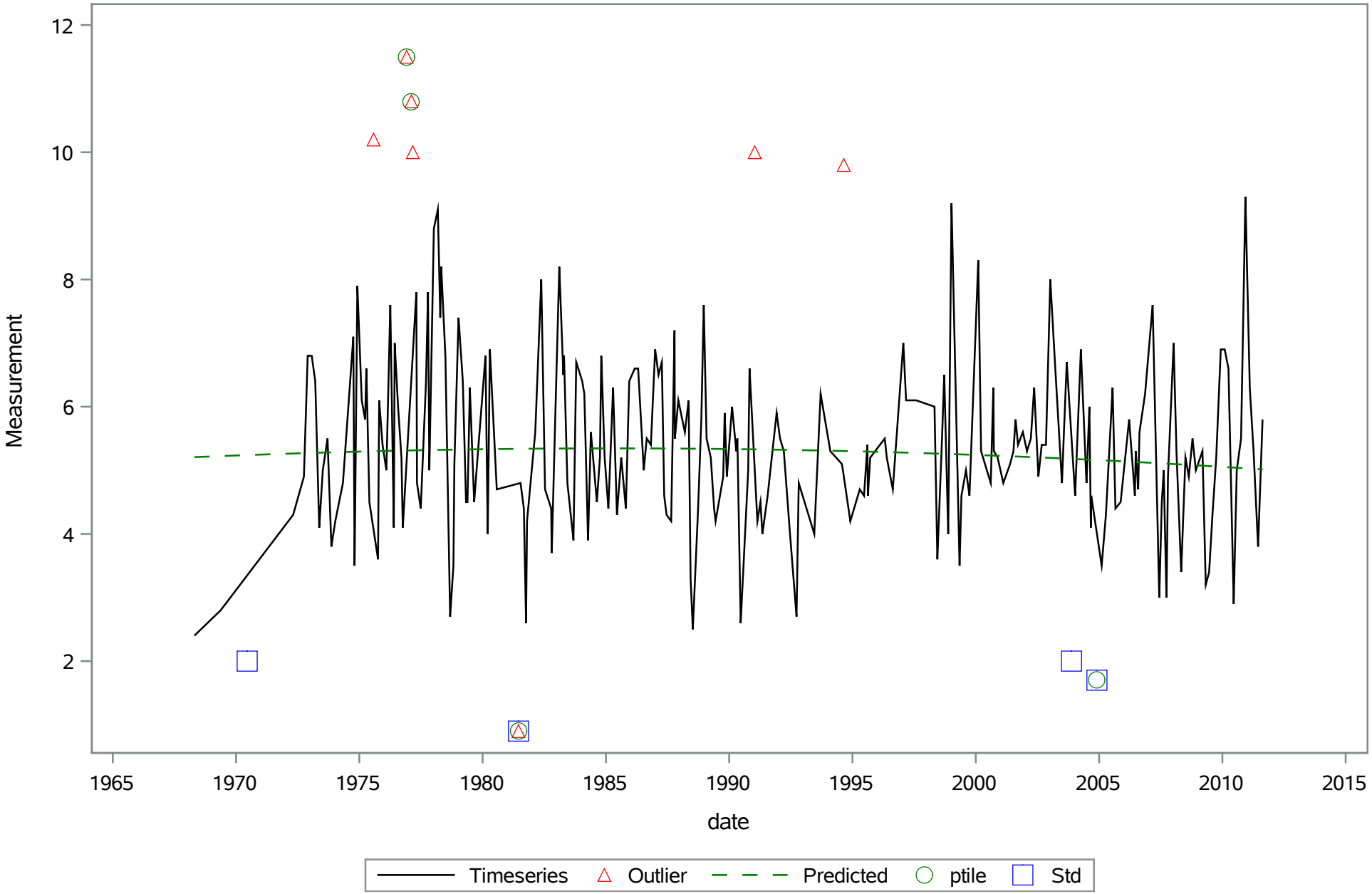

Little Manatee River
LITTLE MANATEE RIVER NEAR FT. LONESOME FL
Dissolved Oxygen (mg/L) mg/L
Site ID = 112WRD 02300100
Measurement
12
10
8
6
4
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
date
Timeseries
Outlier
Predicted
ptile
Std

Little Manatee River

SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL

Dissolved Oxygen (mg/L) mg/L

Site ID = 112WRD 02300200

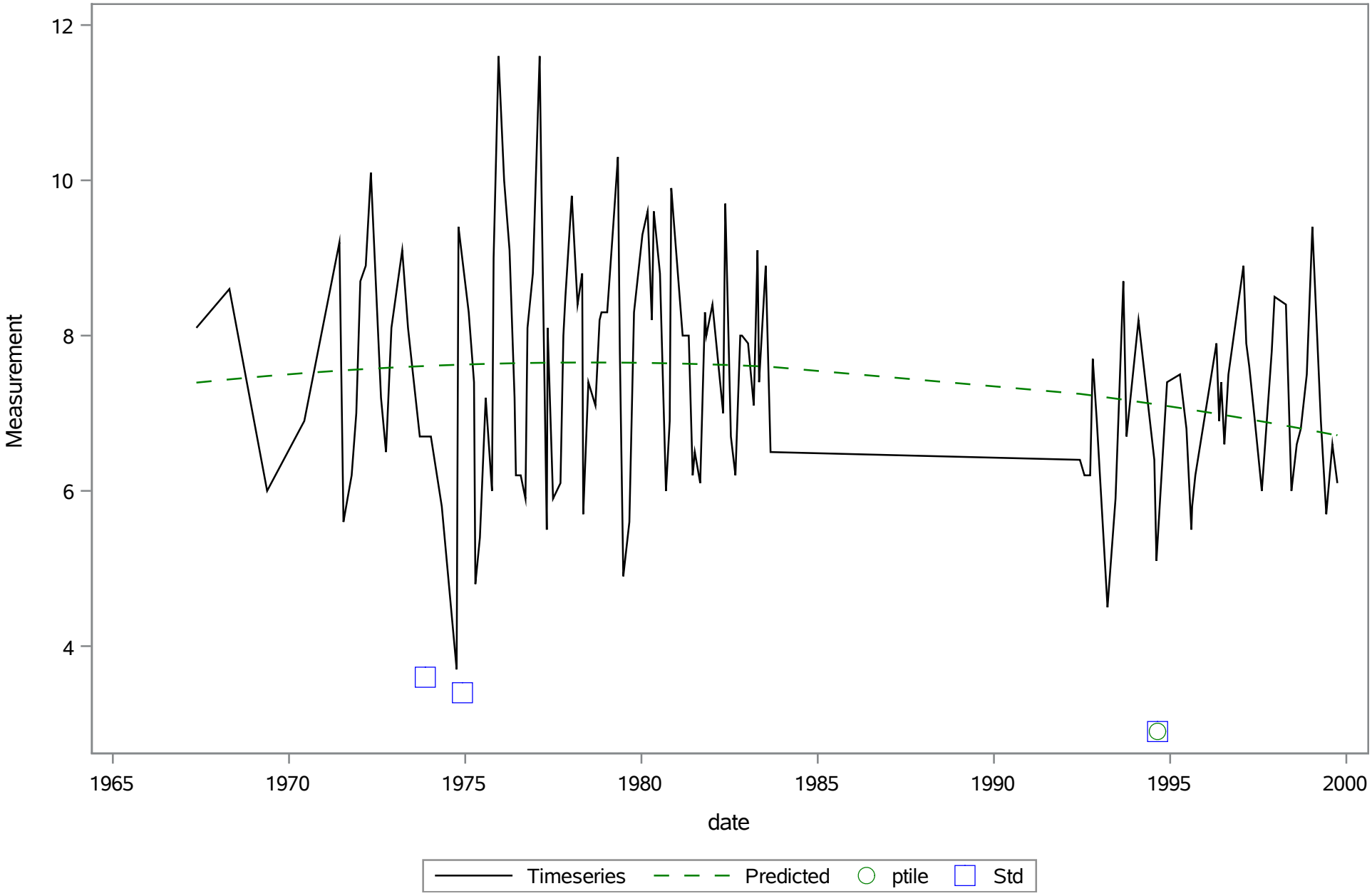


Little Manatee River

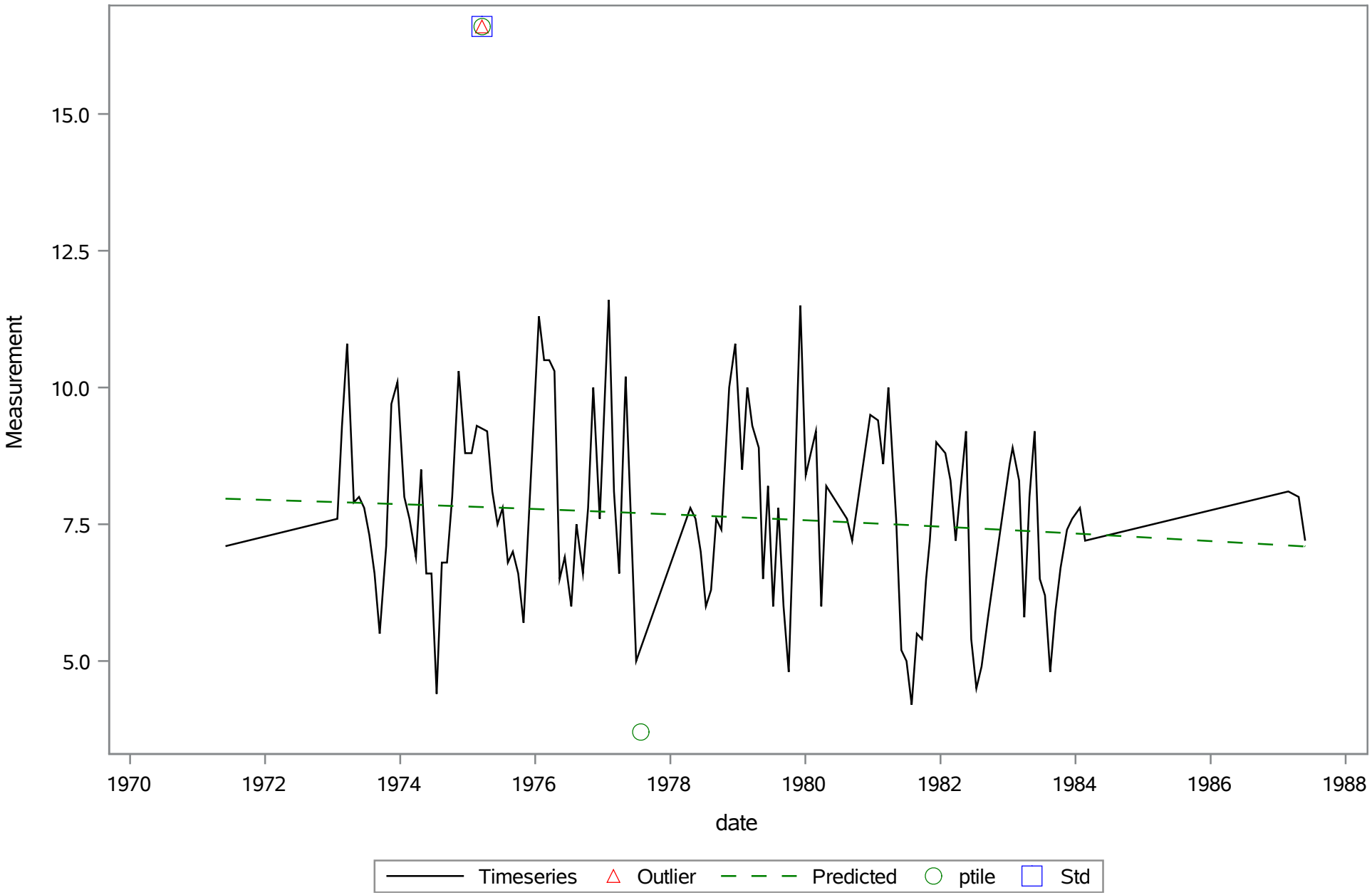
LITTLE MANATEE RIVER NEAR WIMAUMA FL

Dissolved Oxygen (mg/L) mg/L

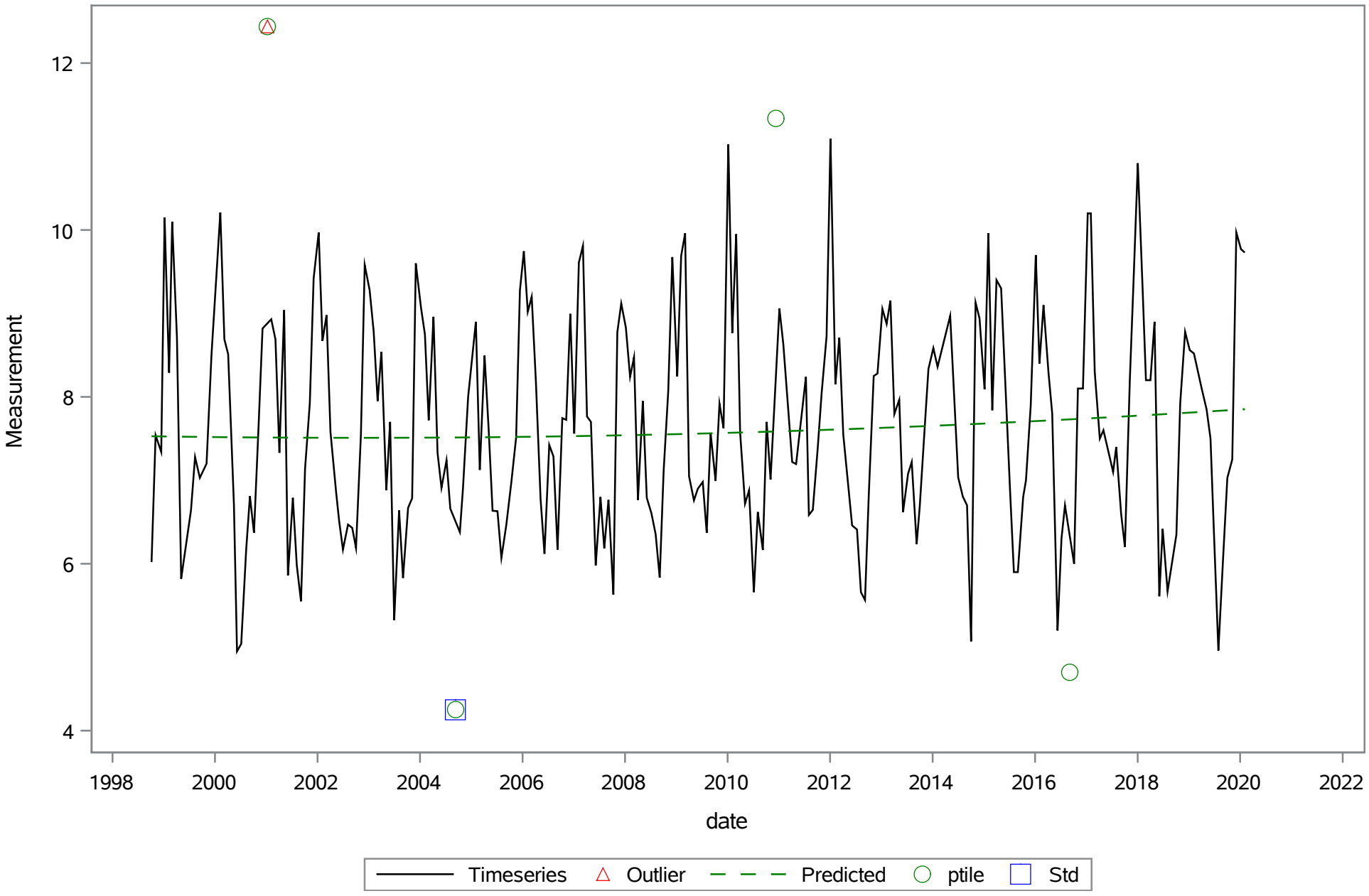
Site ID = 112WRD 02300500



Little Manatee River
L MANATEE R BR US 301
Dissolved Oxygen (mg/L) mg/L
Site ID = 21FLA 24010100



Little Manatee River
LITTLE MANATEE RIVER AT US HWY 301
Dissolved Oxygen (mg/L) mg/L
Site ID = 21FLGW 3555

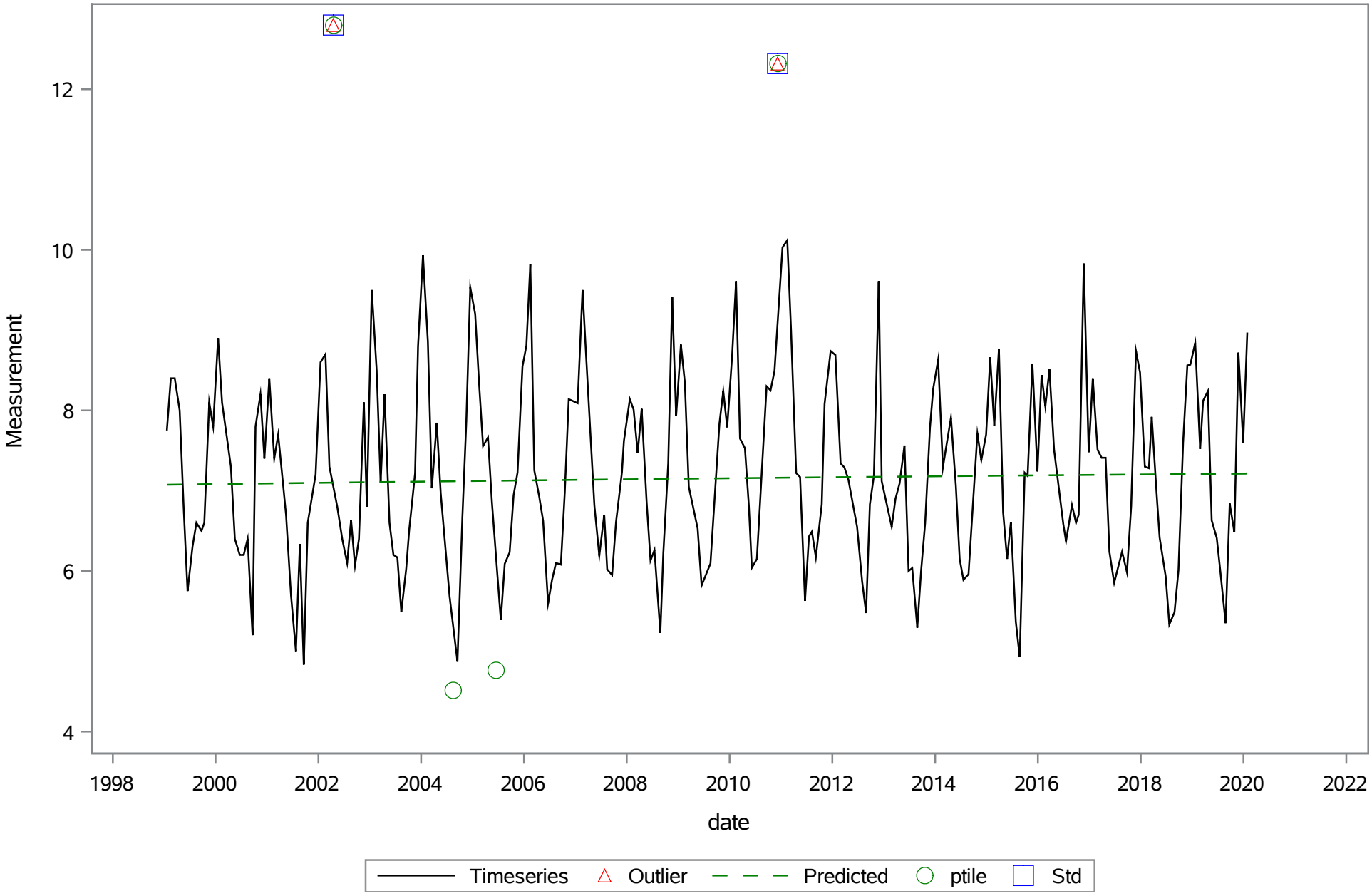


Little Manatee River

Little Manatee River at US 301 bridge

Dissolved Oxygen (mg/L) mg/L

Site ID = 21FLHILL113

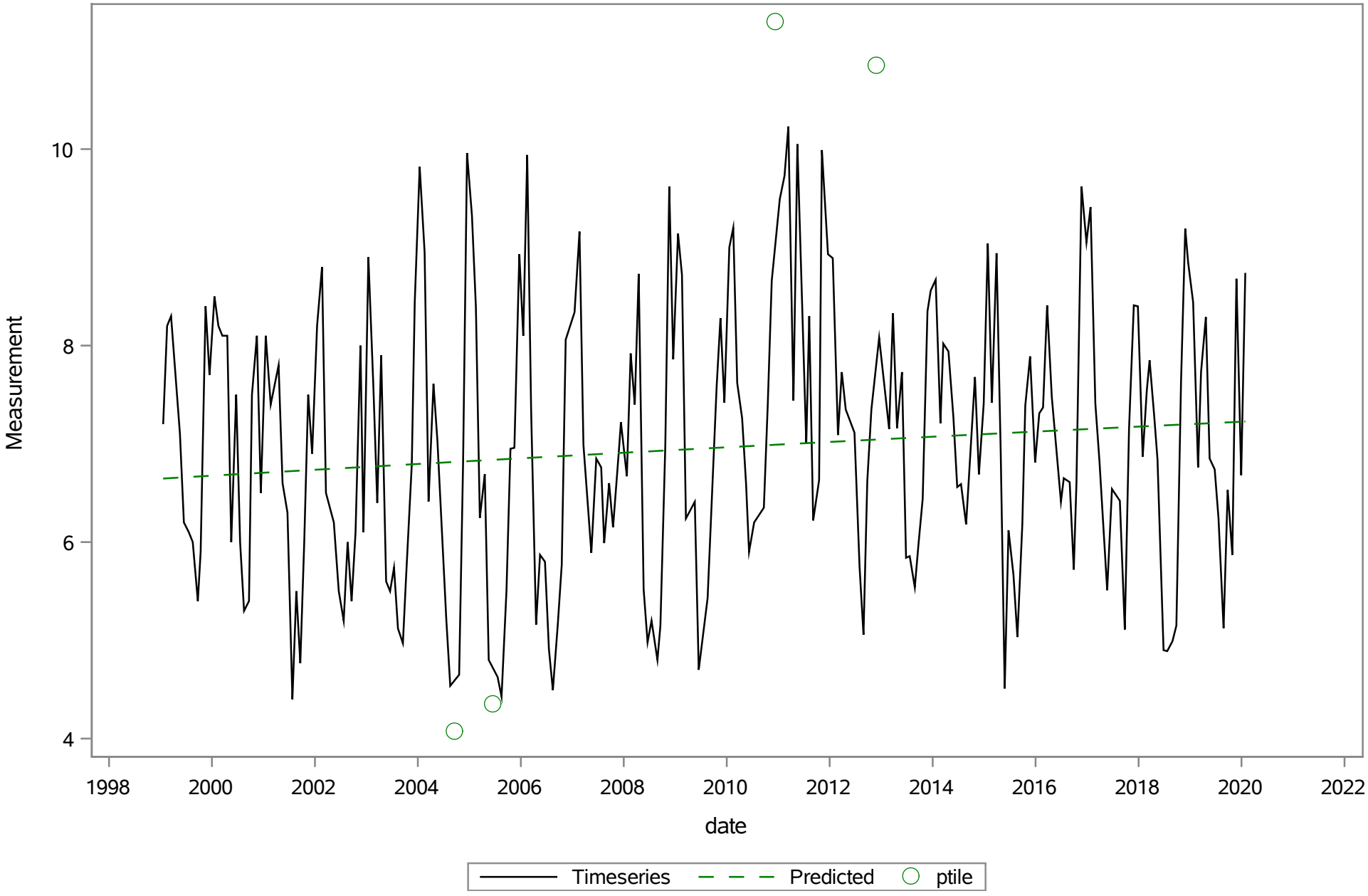


Little Manatee River

Little Manatee River at SR 674

Dissolved Oxygen (mg/L) mg/L

Site ID = 21FLHILL129

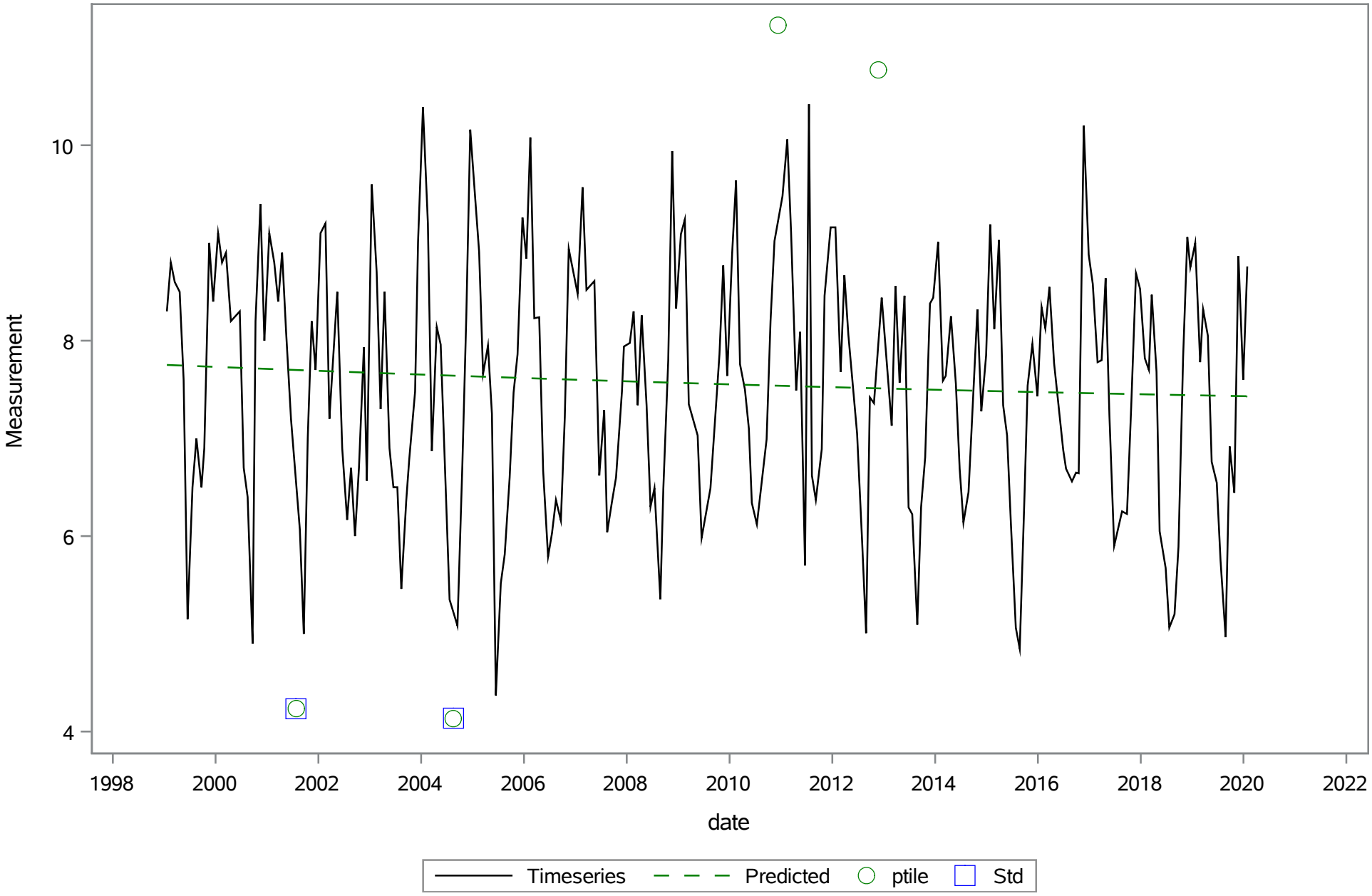


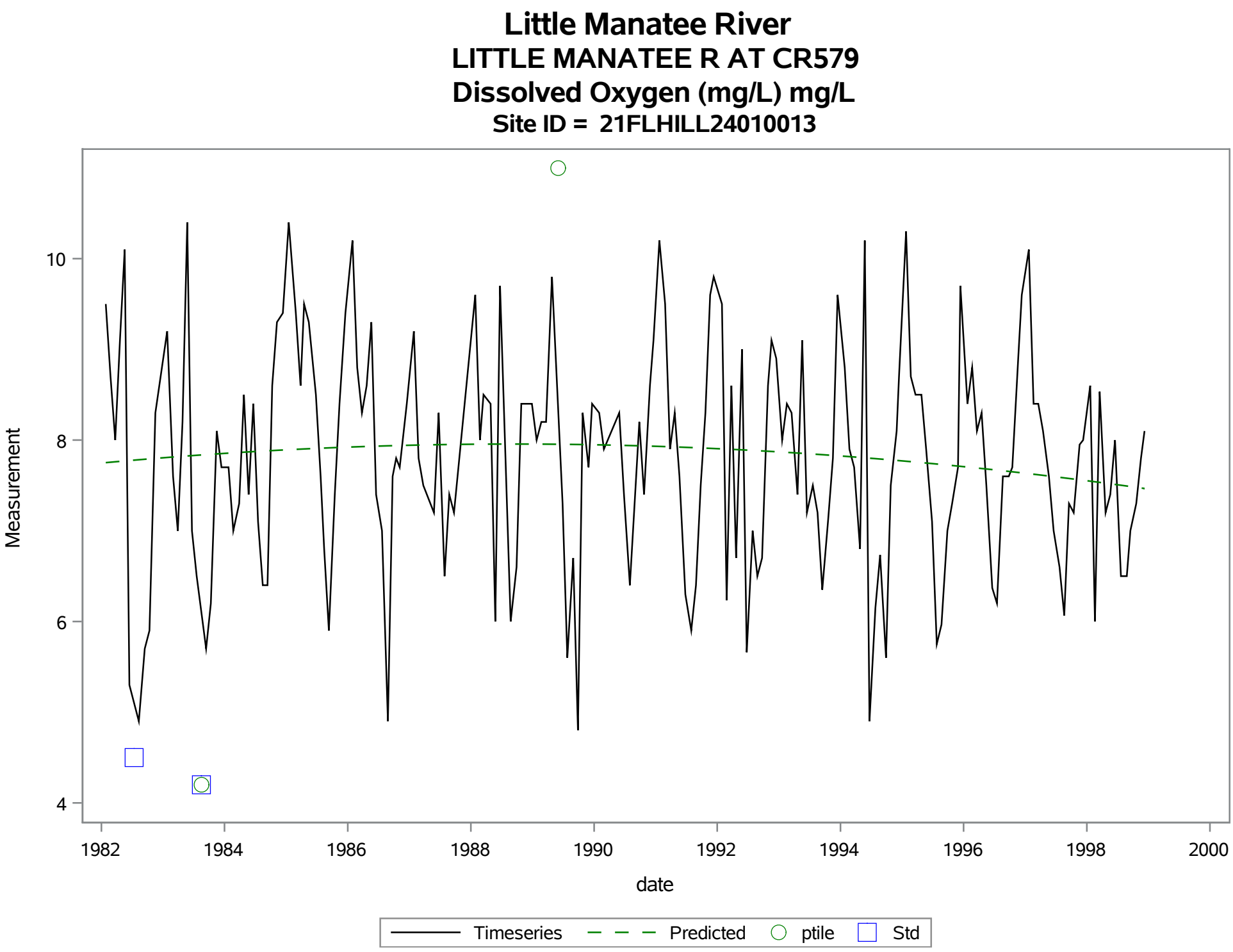
Little Manatee River

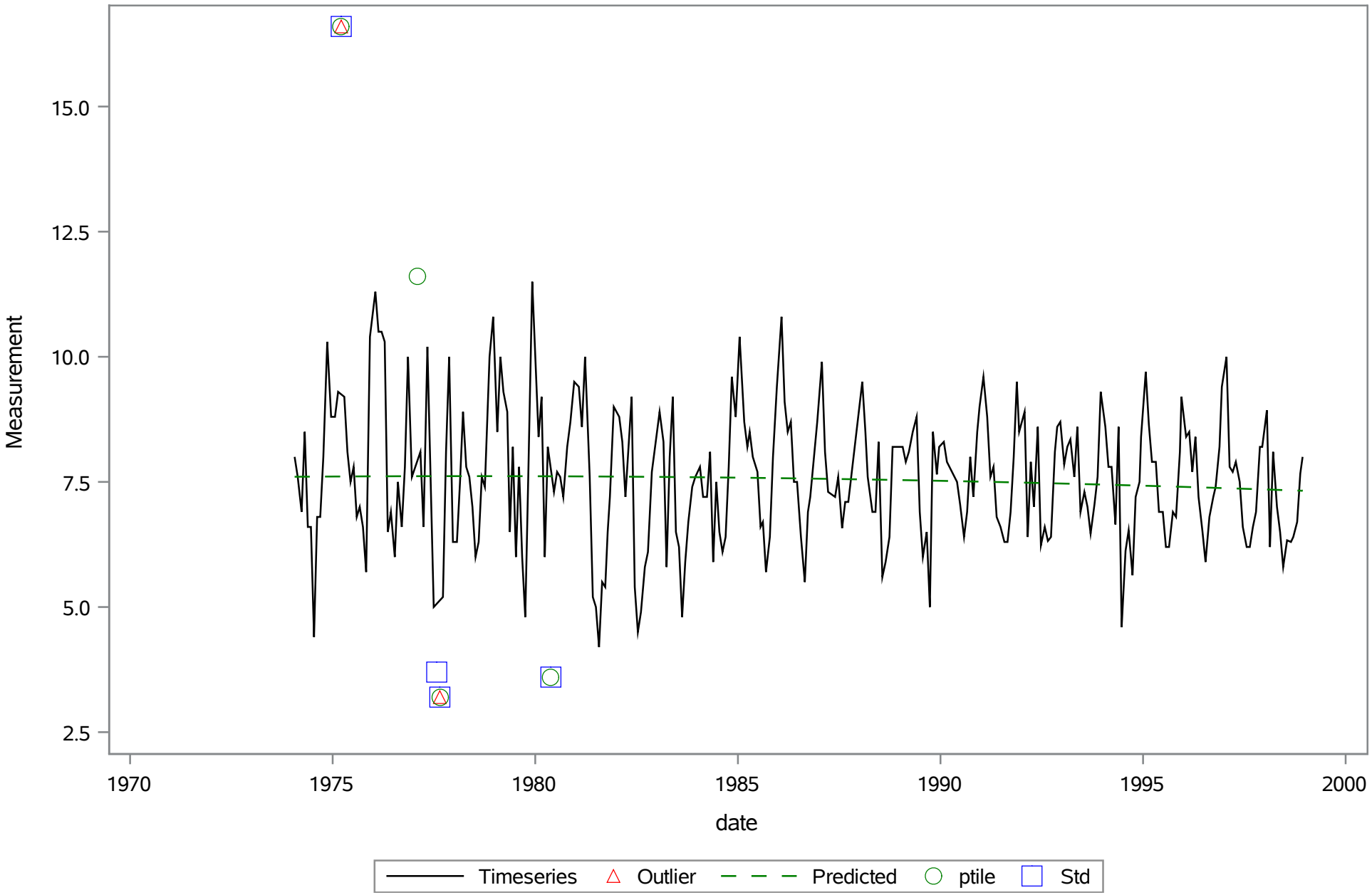
Little Manatee River at CR 579

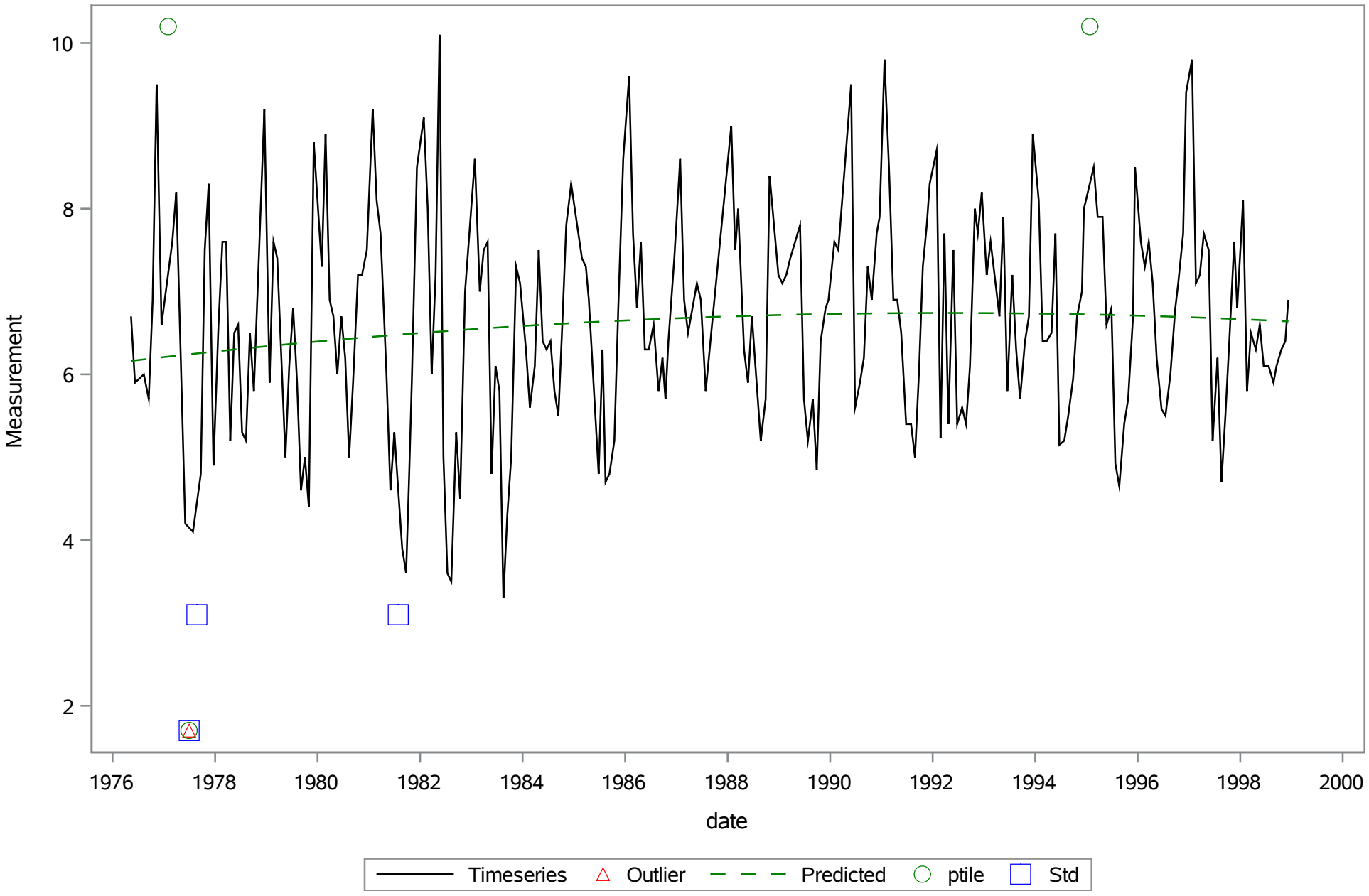
Dissolved Oxygen (mg/L) mg/L

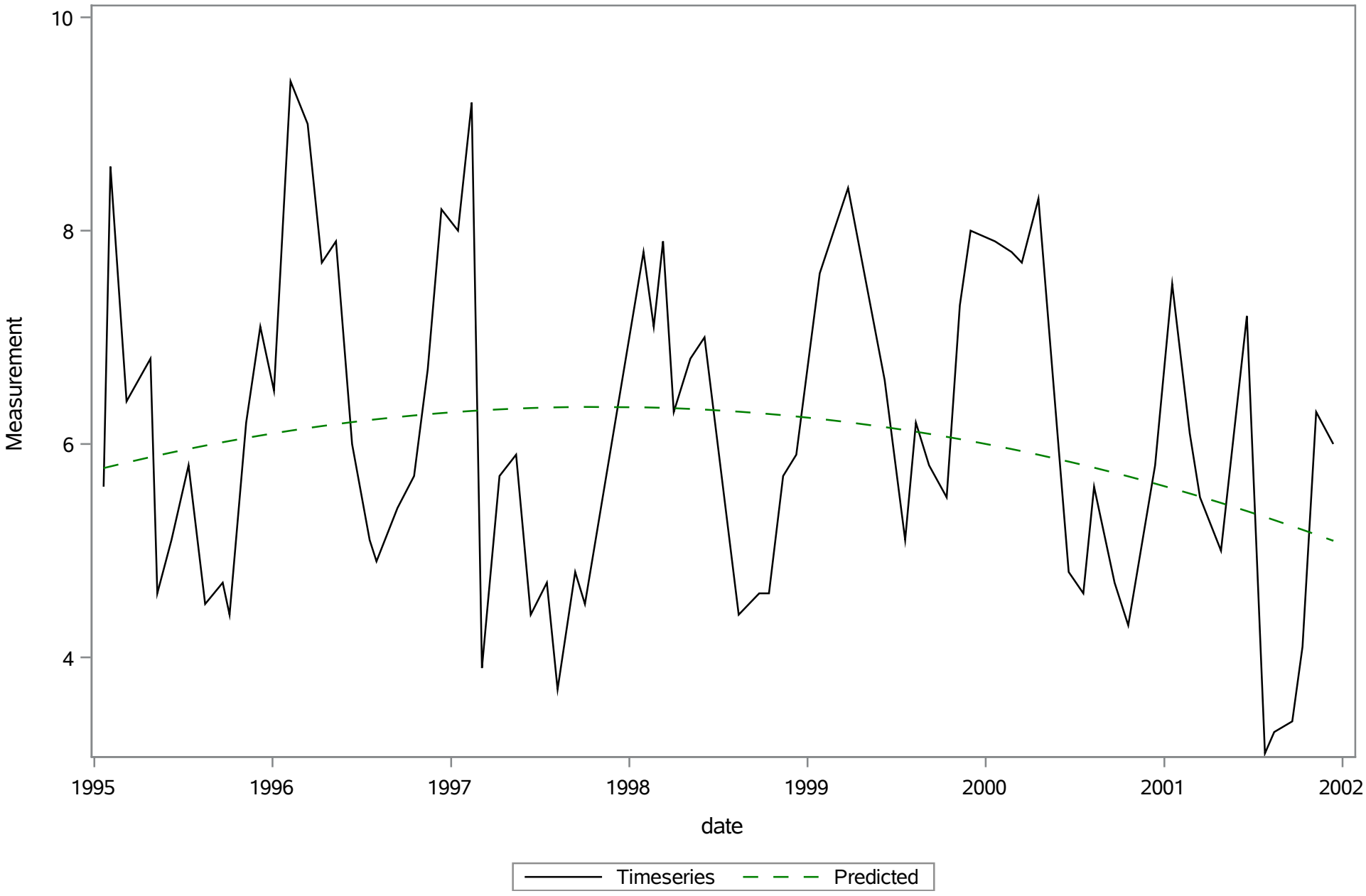
Site ID = 21FLHILL140



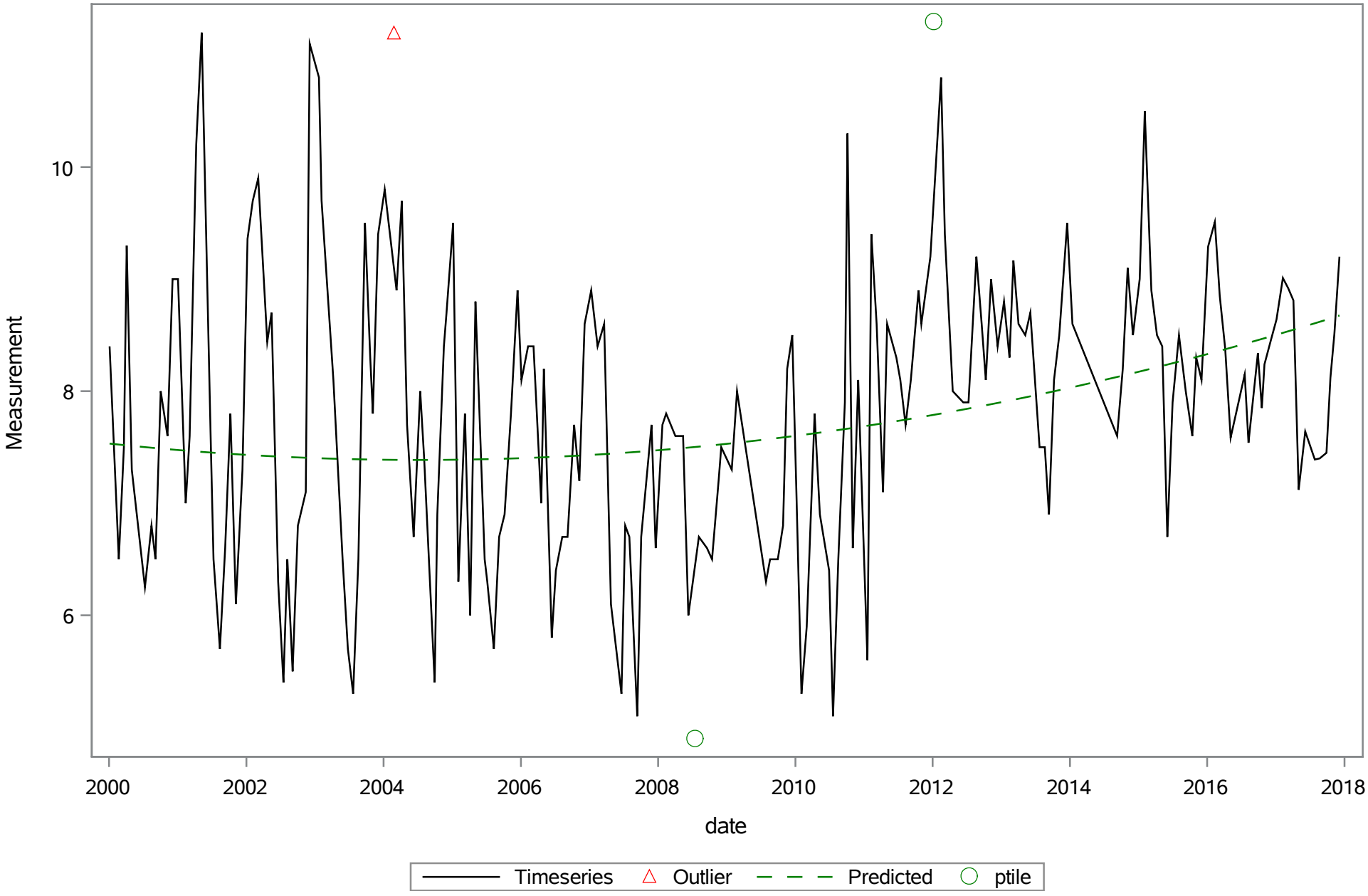

Little Manatee River
LITTLE MANATEE R AT CR579
Dissolved Oxygen (mg/L) mg/L
Site ID = 21FLHILL24010013
Measurement
10
8
6
4
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
date
Timeseries
Predicted
ptile
Std

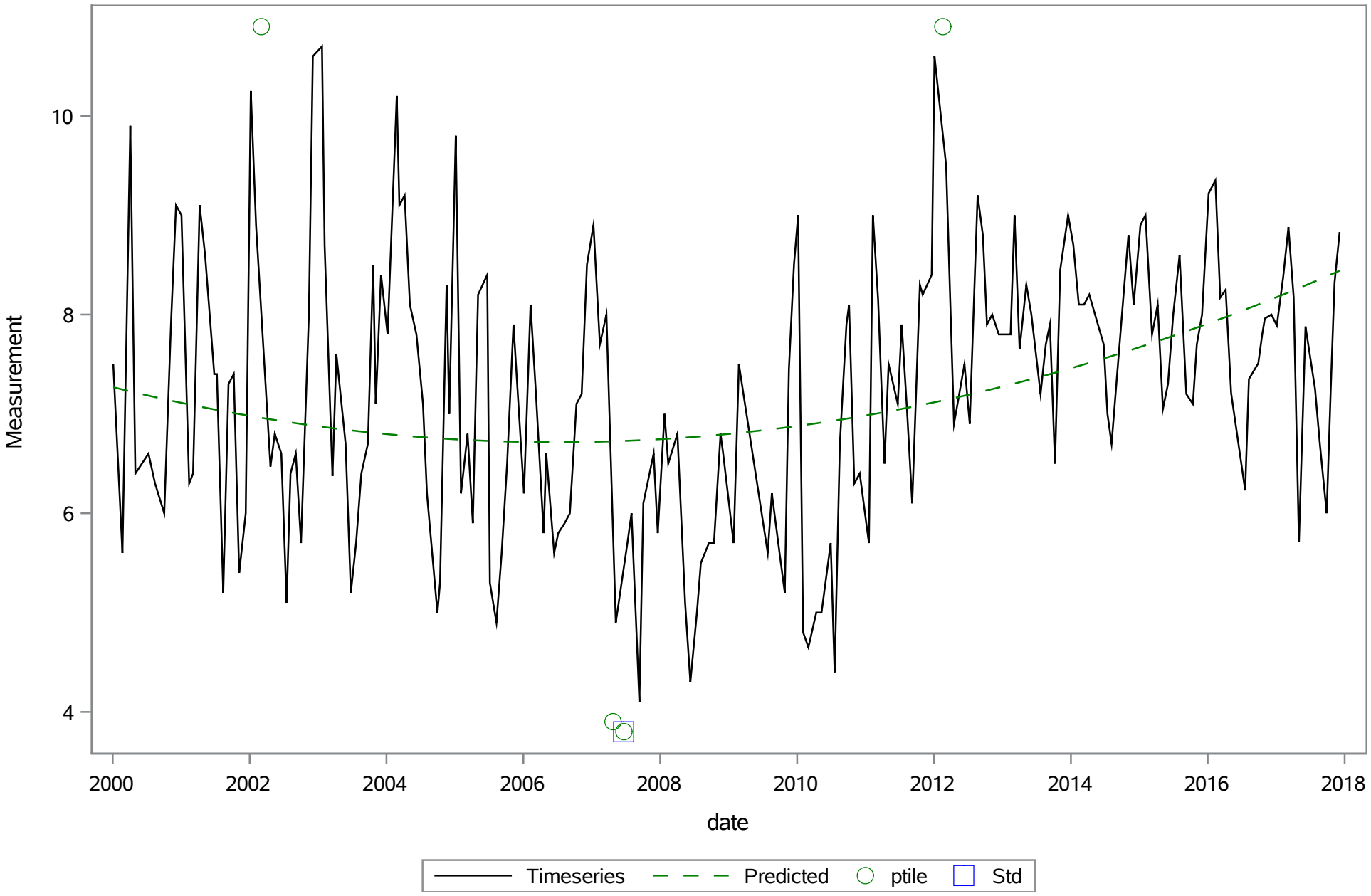

Little Manatee River
L MANATEE R BR US 301
Dissolved Oxygen (mg/L) mg/L
Site ID = 21FLHILL24010100
Measurement
15.0
12.5
10.0
7.5
5.0
2.5
1970
1975
1980
1985
1990
1995
2000
date
Timeseries
Outlier
Predicted
ptile
Std


Little Manatee River
LITTLE MANATEE R AT SR #674
Dissolved Oxygen (mg/L) mg/L
Site ID = 21FLHILL24010110
Measurement
10
8
6
4
2
1976
1978
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
date
Timeseries
Outlier
Predicted
ptile
Std

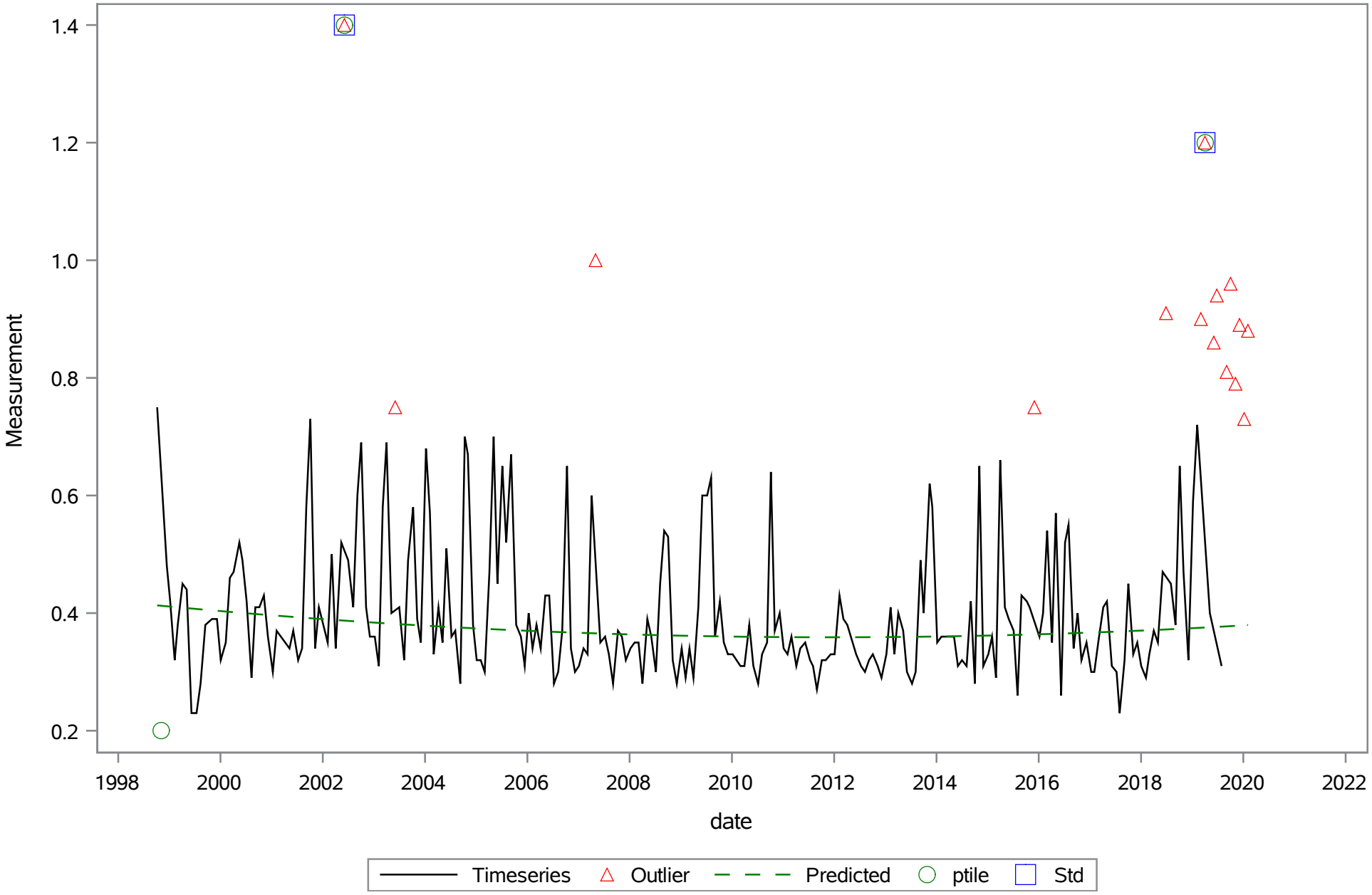

Little Manatee River
Little Manatee R. at SR674
Dissolved Oxygen (mg/L) mg/L
Site ID = 21FLIMCALM674
10
8
6
4
Measurement
1995
1996
1997
1998
1999
2000
2001
2002
date
Timeseries
Predicted

Little Manatee River
D1
Dissolved Oxygen (mg/L) mg/L
Site ID = 21FLMANAD1

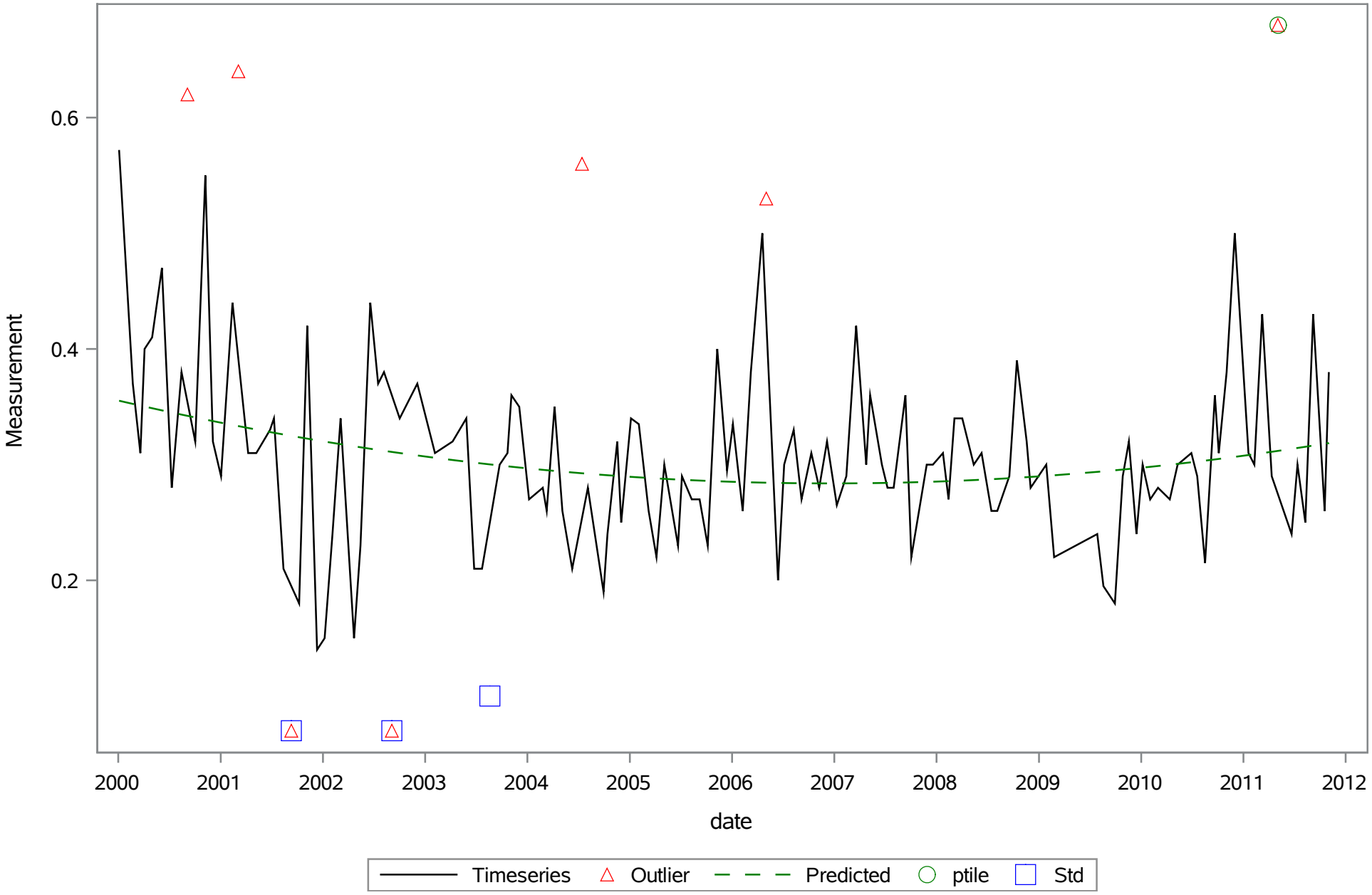


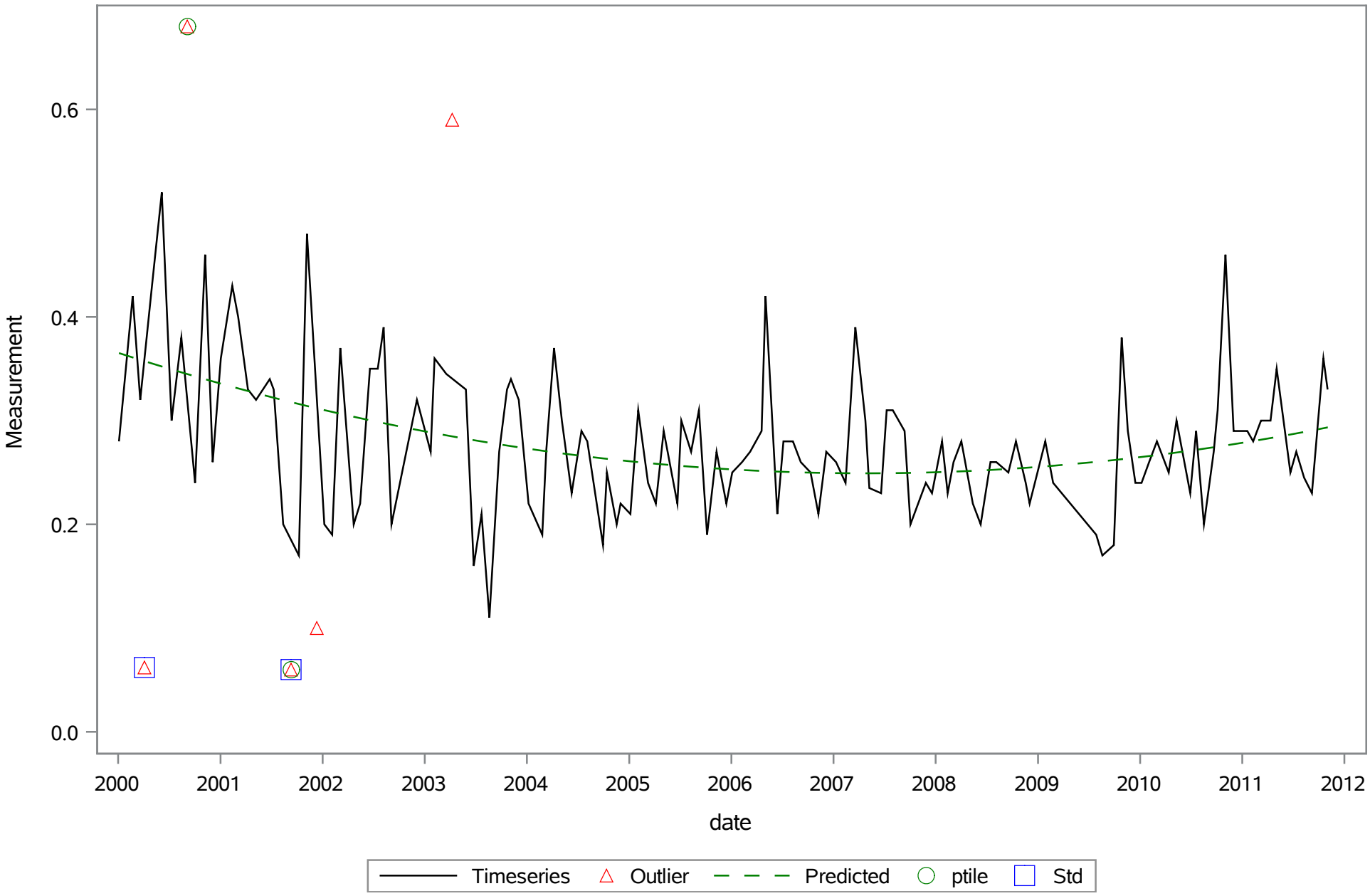

Little Manatee River
D3
Dissolved Oxygen (mg/L) mg/L
Site ID = 21FLMANAD3
Measurement
10
8
6
4
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
date
Timeseries
Predicted
ptile
Std

Little Manatee River
LITTLE MANATEE RIVER AT US HWY 301
Fluoride (mg/L) mg/L
Site ID = 21FLGW 3555



Little Manatee River
D1
Fluoride (mg/L) mg/L
Site ID = 21FLMANAD1



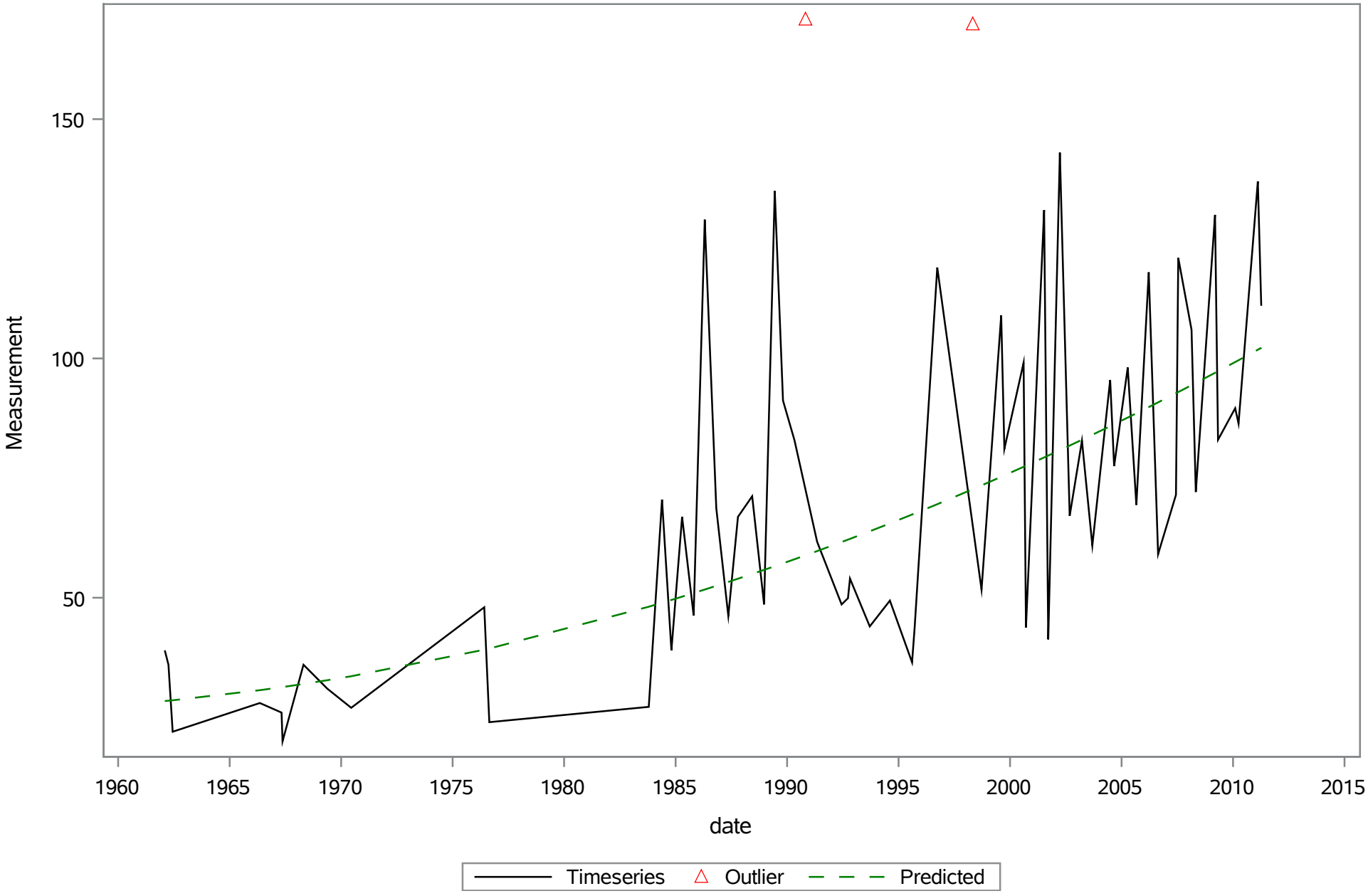

Little Manatee River
D3
Fluoride (mg/L) mg/L
Site ID = 21FLMANAD3
Measurement
0.0
0.2
0.4
0.6
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
date
Timeseries
Outlier
Predicted
ptile
Std

Little Manatee River

SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL

Hardness (mg/L) mg/L

Site ID = 112WRD 02300200

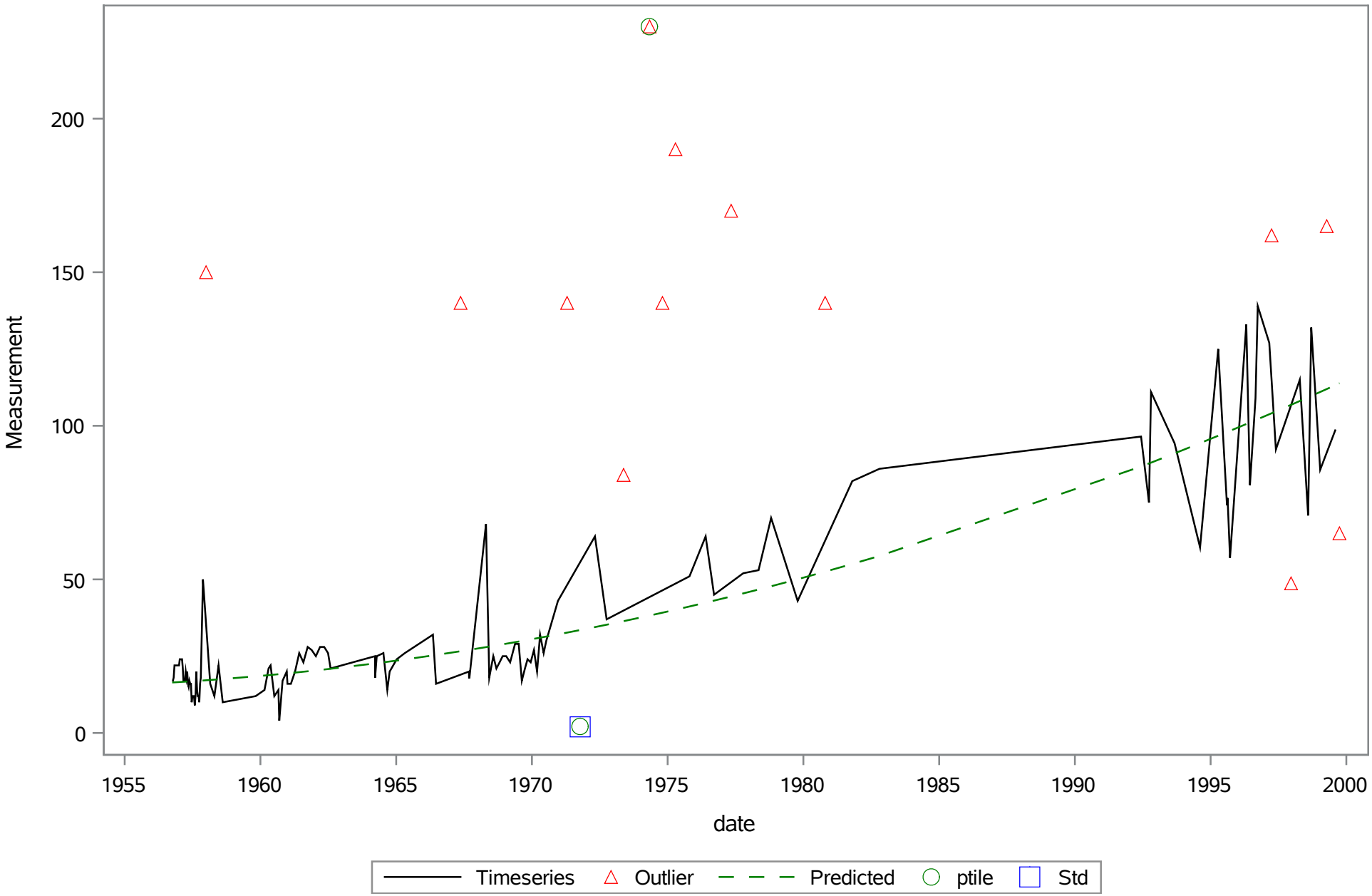


Little Manatee River

LITTLE MANATEE RIVER NEAR WIMAUMA FL

Hardness (mg/L) mg/L

Site ID = 112WRD 02300500

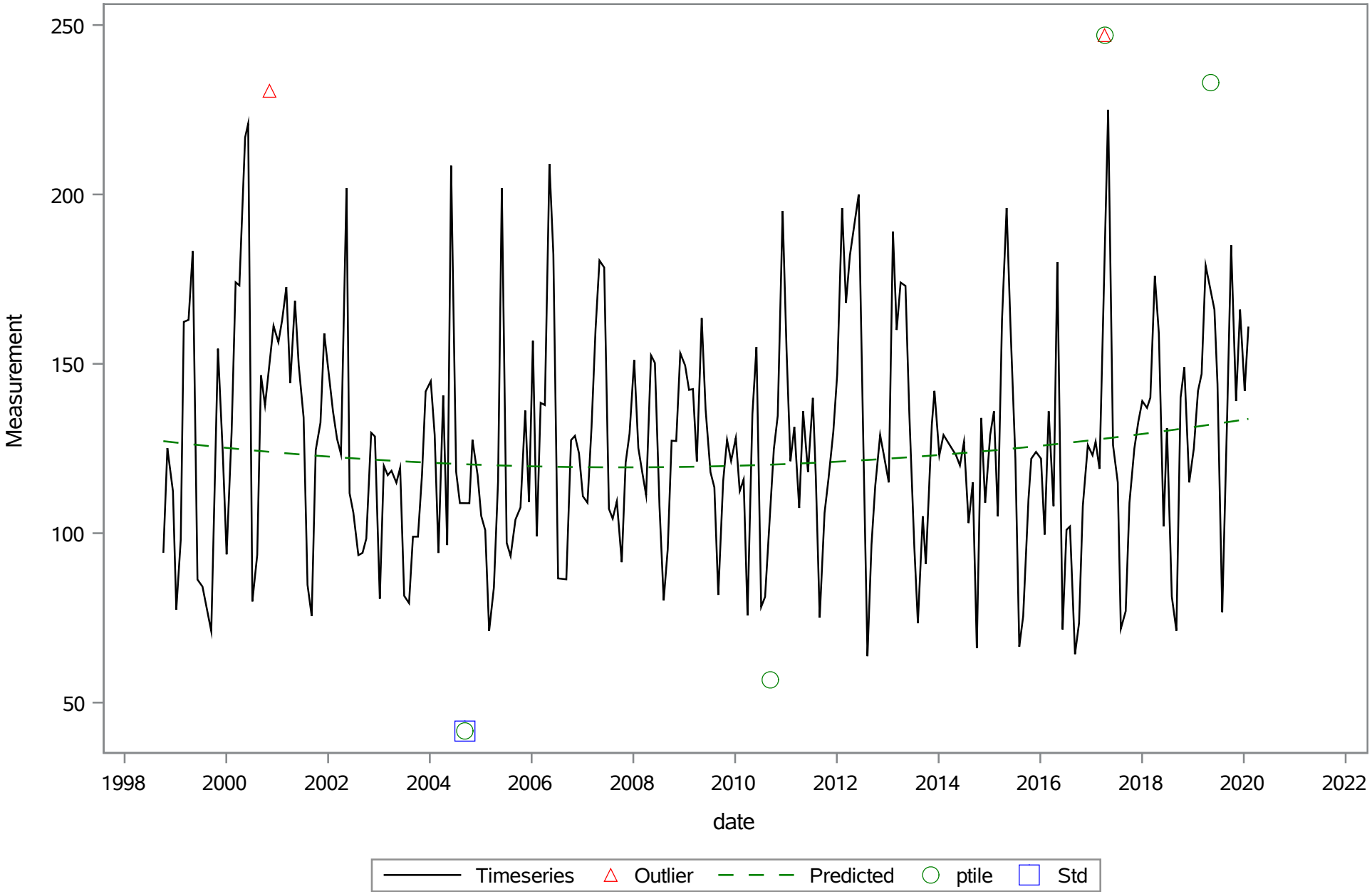


Little Manatee River

LITTLE MANATEE RIVER AT US HWY 301

Hardness (mg/L) mg/L

Site ID = 21FLGW 3555

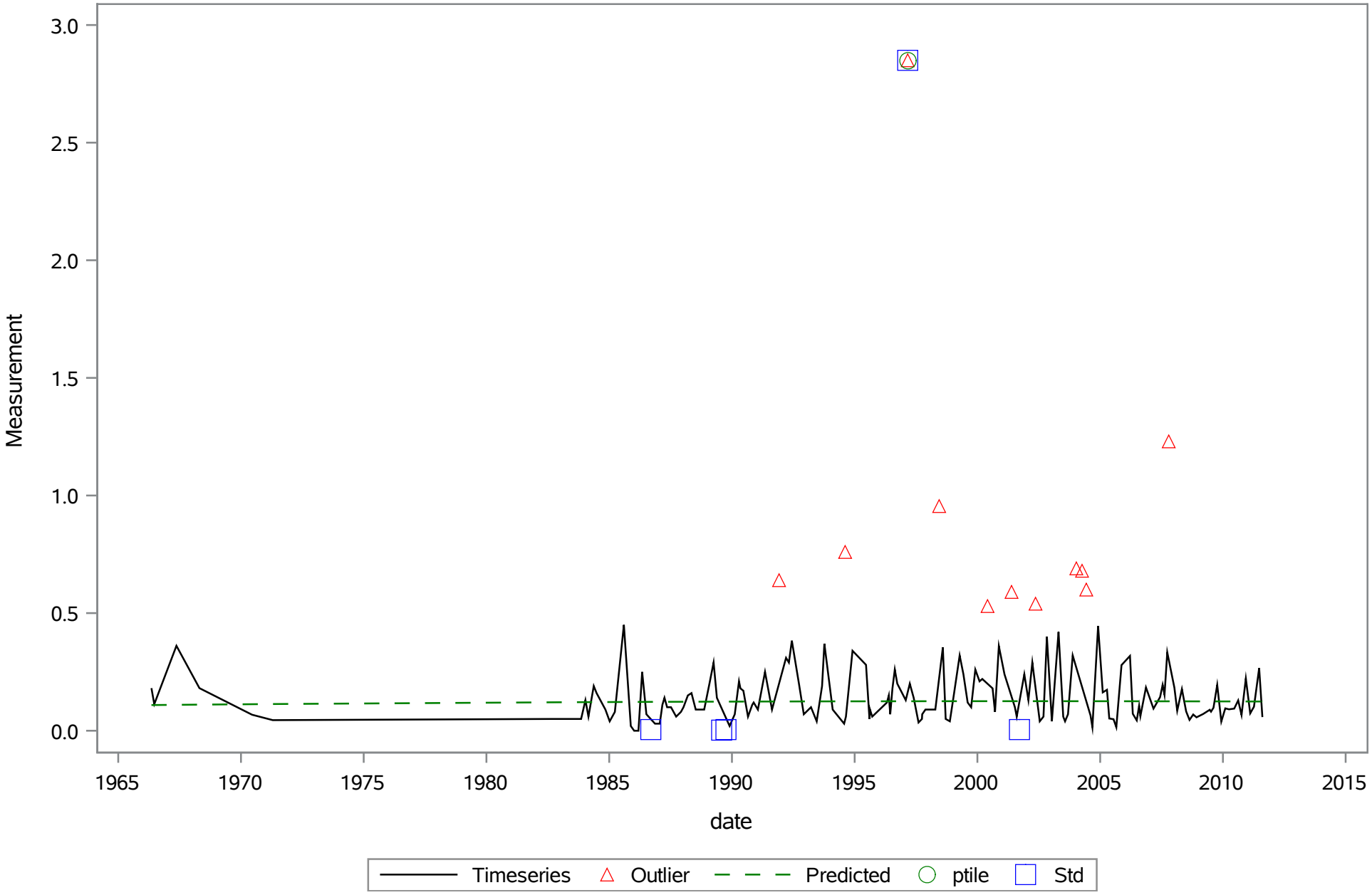


Little Manatee River

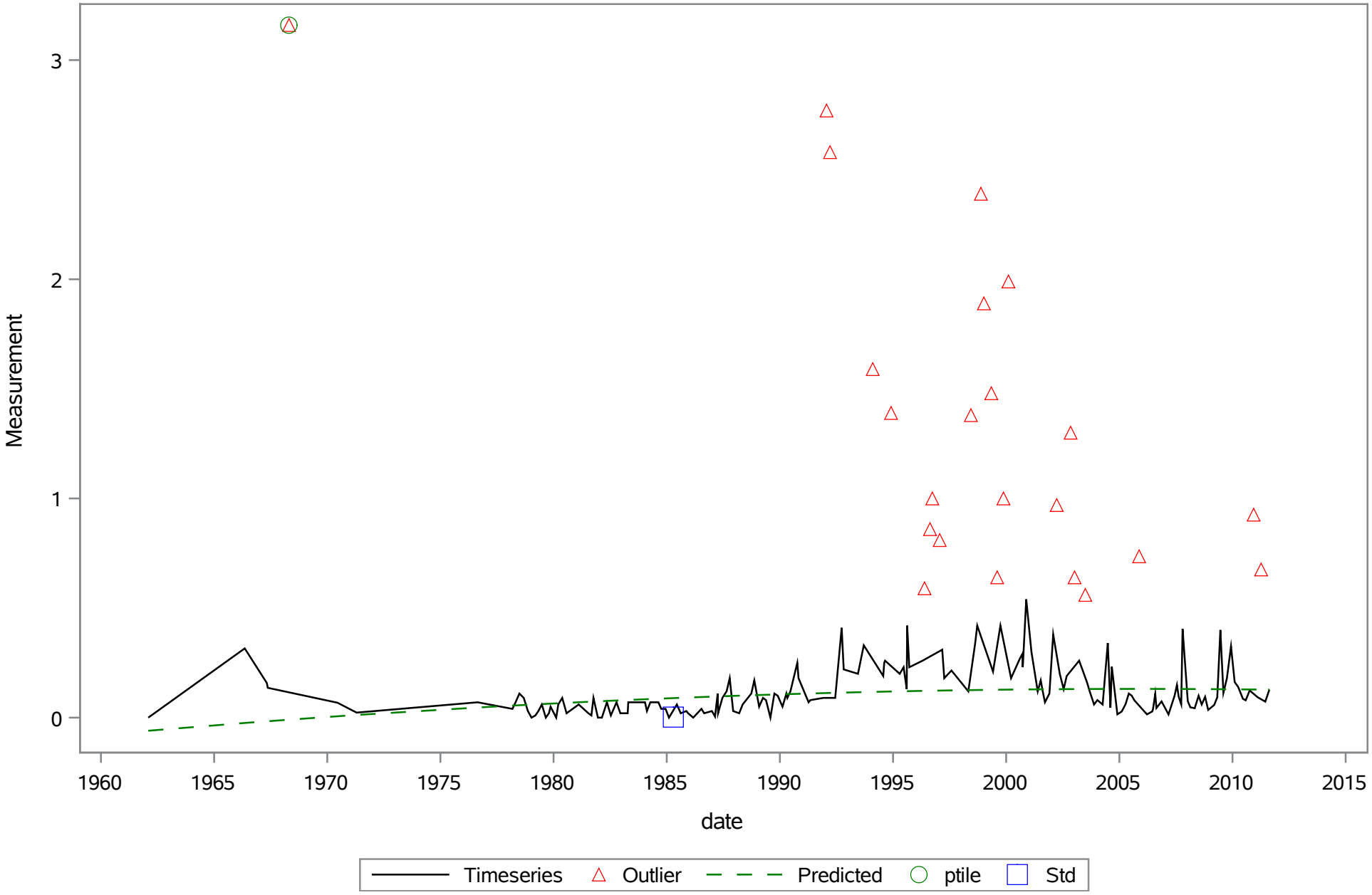
LITTLE MANATEE RIVER NEAR FT. LONESOME FL

Nitrate (mg/L) mg/L

Site ID = 112WRD 02300100



Little Manatee River
SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL
Nitrate (mg/L) mg/L
Site ID = 112WRD 02300200

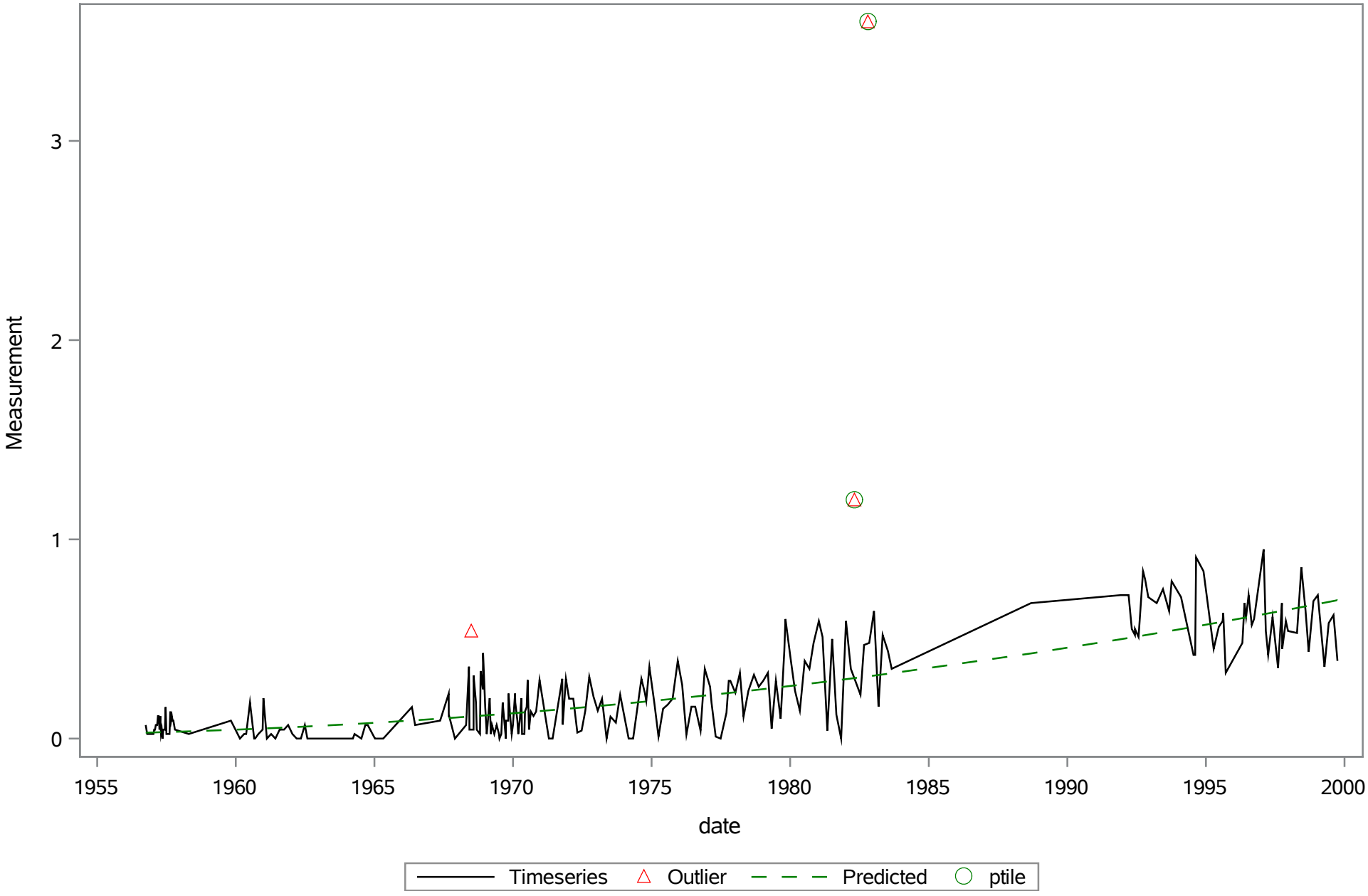


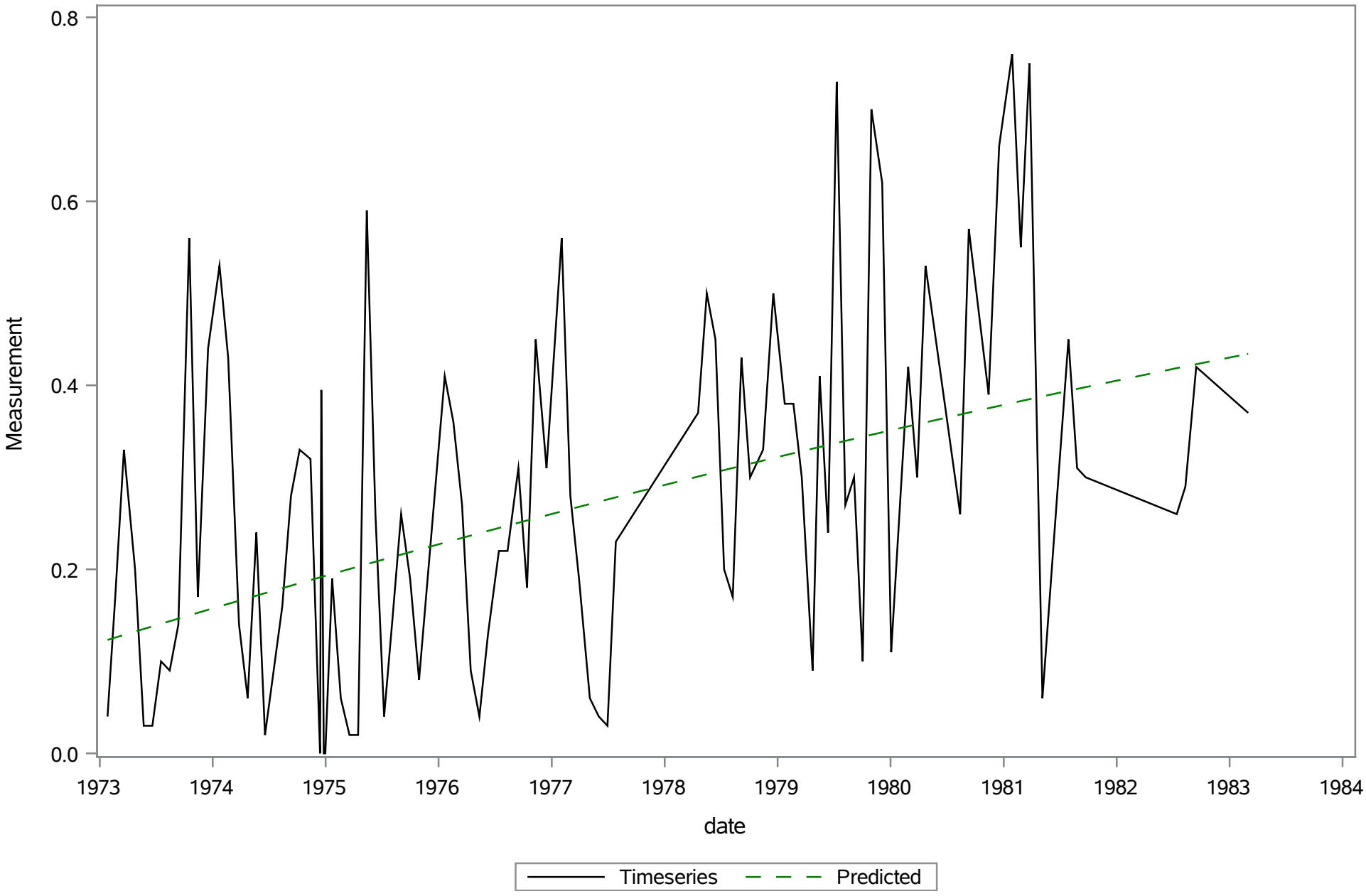
Little Manatee River

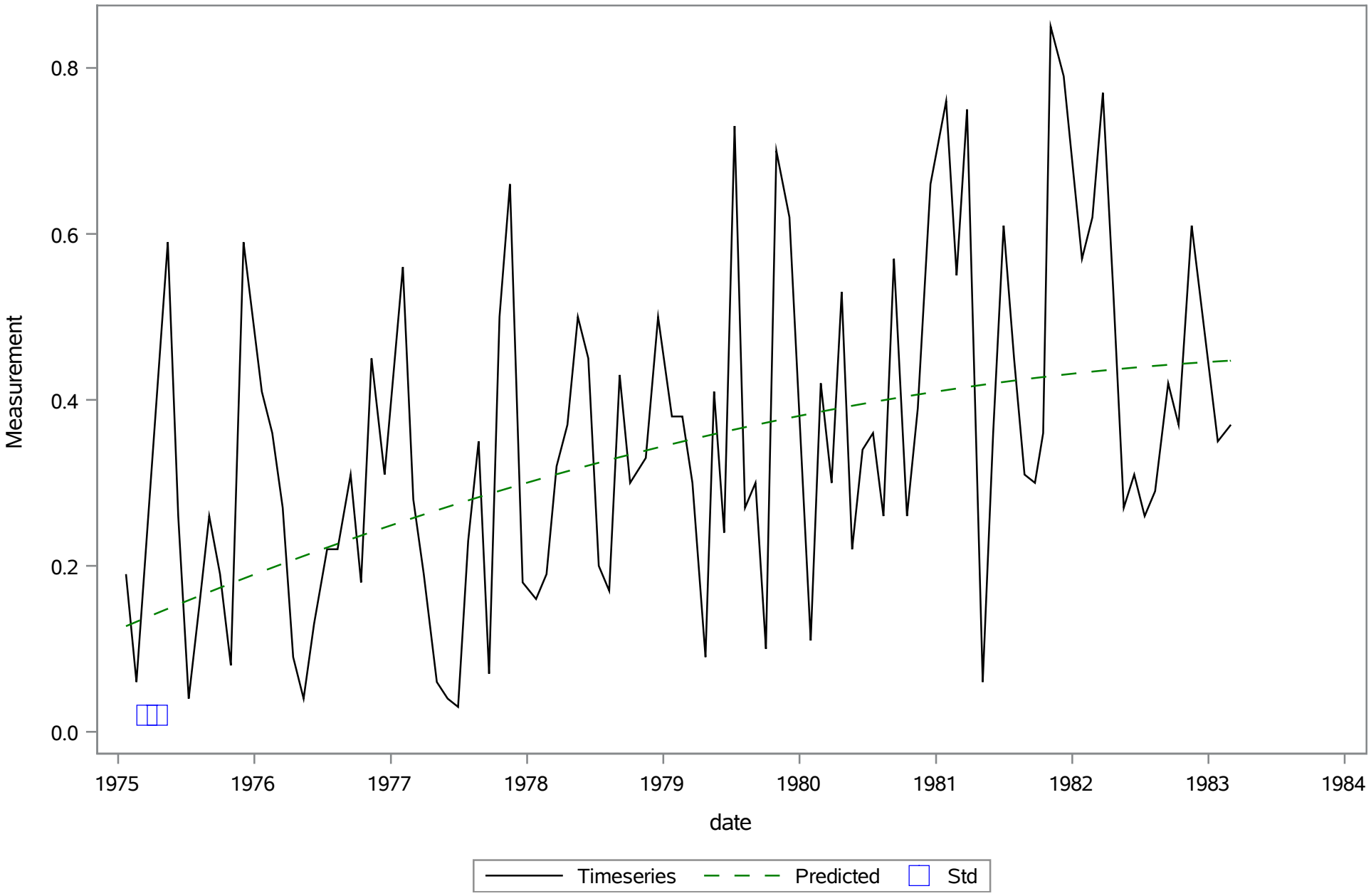
LITTLE MANATEE RIVER NEAR WIMAUMA FL

Nitrate (mg/L) mg/L

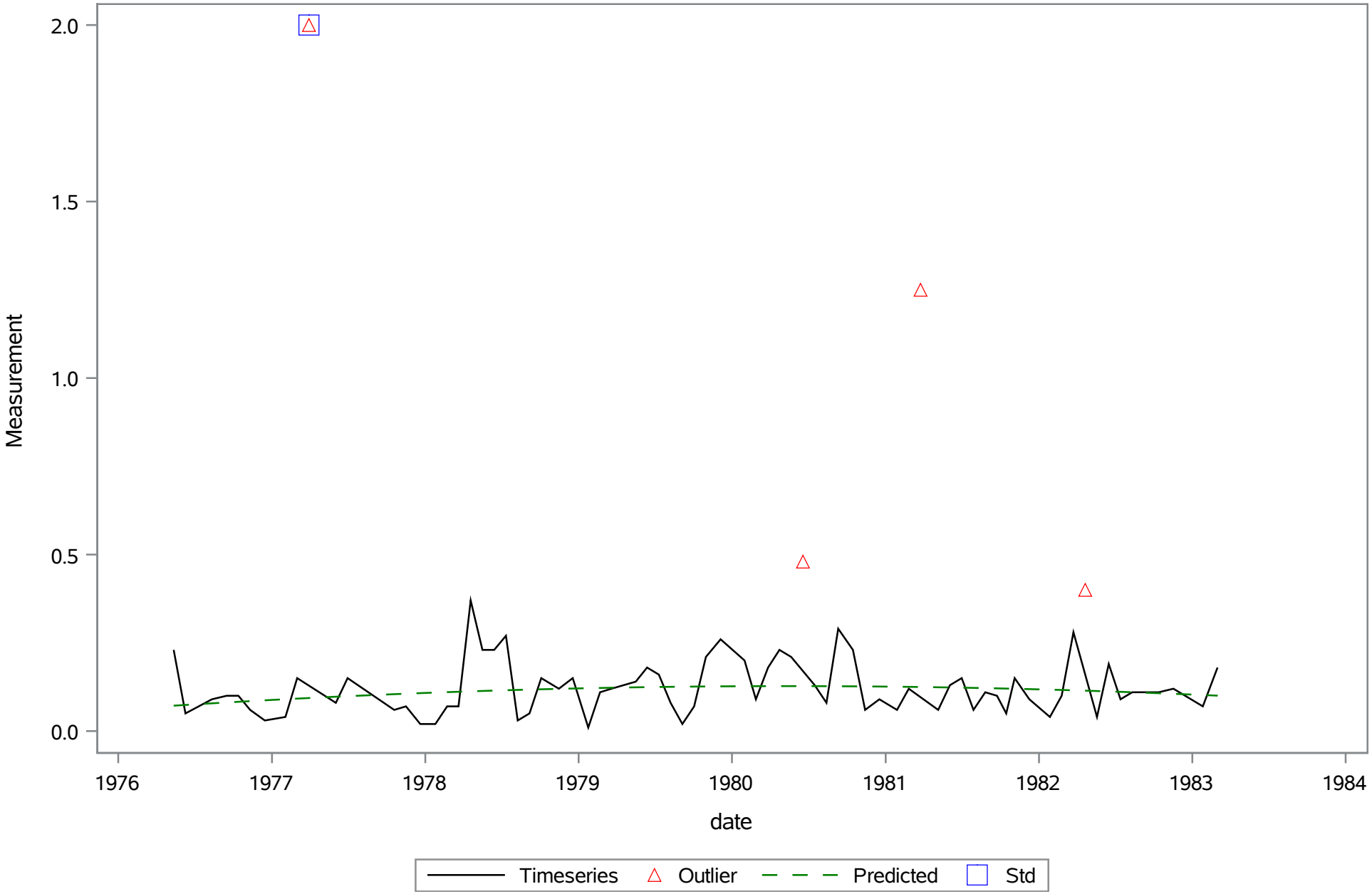
Site ID = 112WRD 02300500

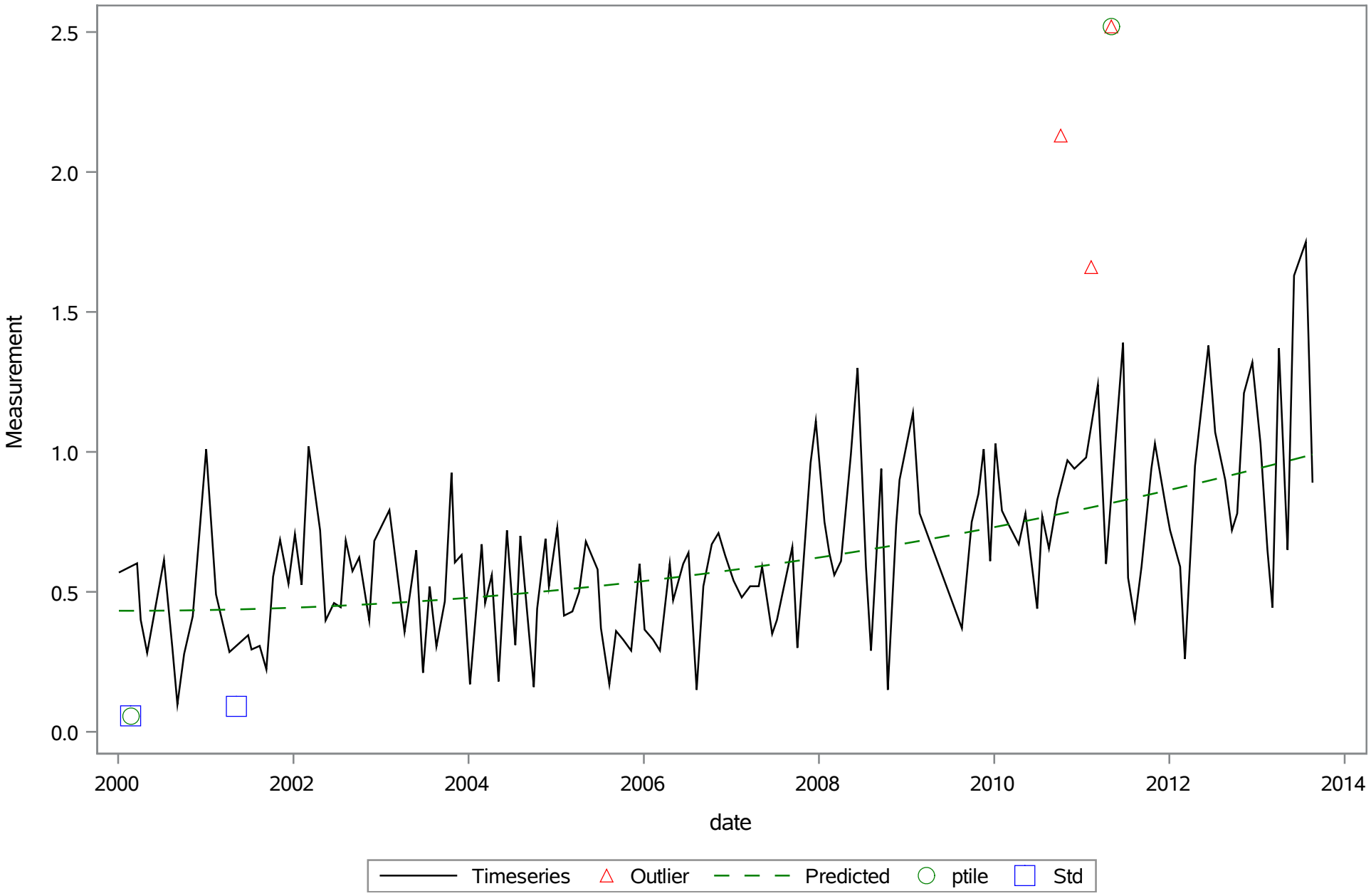


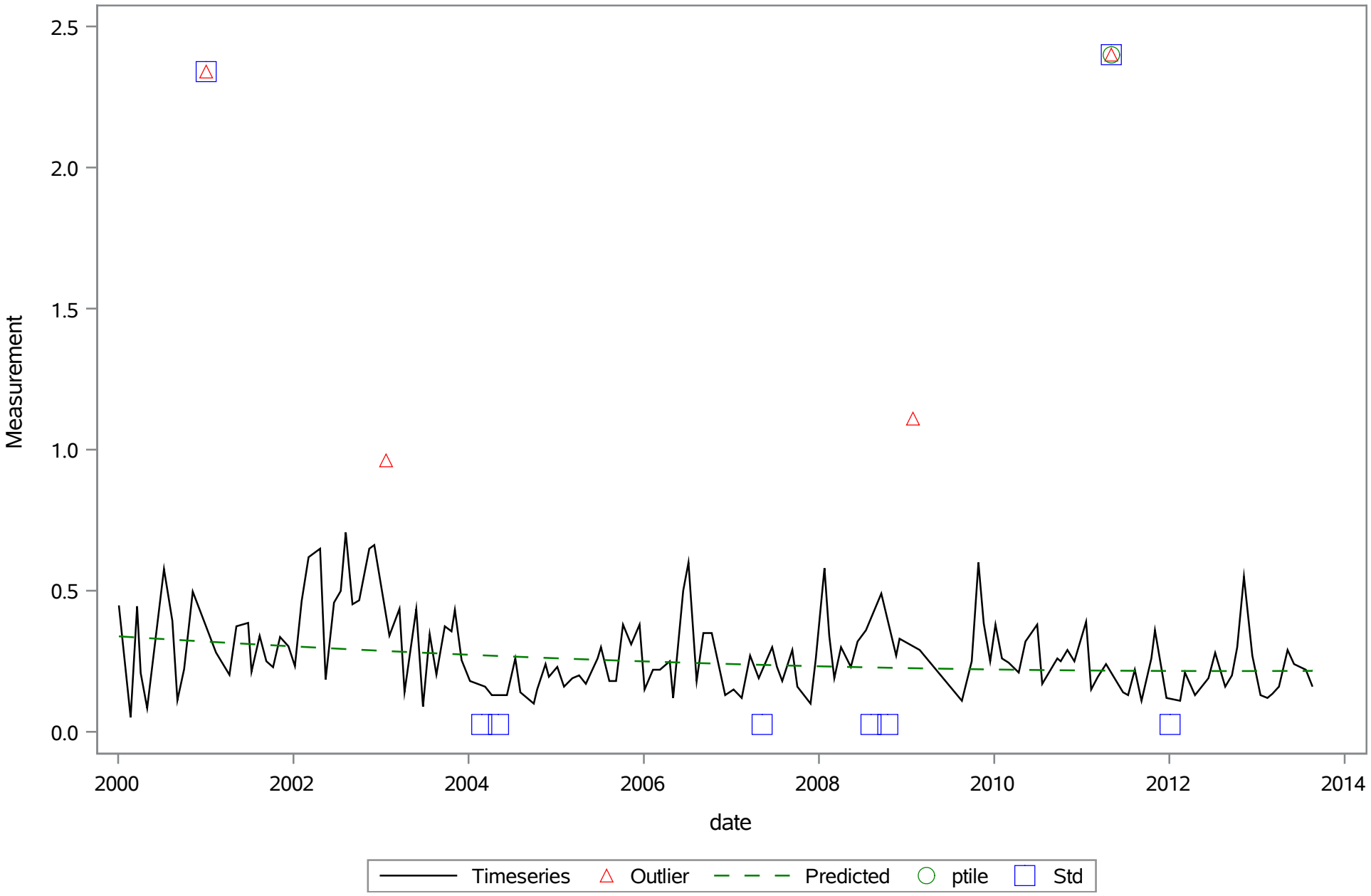

Little Manatee River
L MANATEE R BR US 301
Nitrate (mg/L) mg/L
Site ID = 21FLA 24010100
0.8
0.6
0.4
0.2
0.0
Measurement
1973
1974
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
date
Timeseries
Predicted


Little Manatee River
L MANATEE R BR US 301
Nitrate (mg/L) mg/L
Site ID = 21FLHILL24010100
Measurement
0.0
0.2
0.4
0.6
0.8
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
date
Timeseries
Predicted
Std

Little Manatee River
LITTLE MANATEE R AT SR #674
Nitrate (mg/L) mg/L
Site ID = 21FLHILL24010110




Little Manatee River
D1
Nitrate (mg/L) mg/L
Site ID = 21FLMANAD1
Measurement
2.5
2.0
1.5
1.0
0.5
0.0
2000
2002
2004
2006
2008
2010
2012
2014
date
Timeseries
Outlier
Predicted
ptile
Std

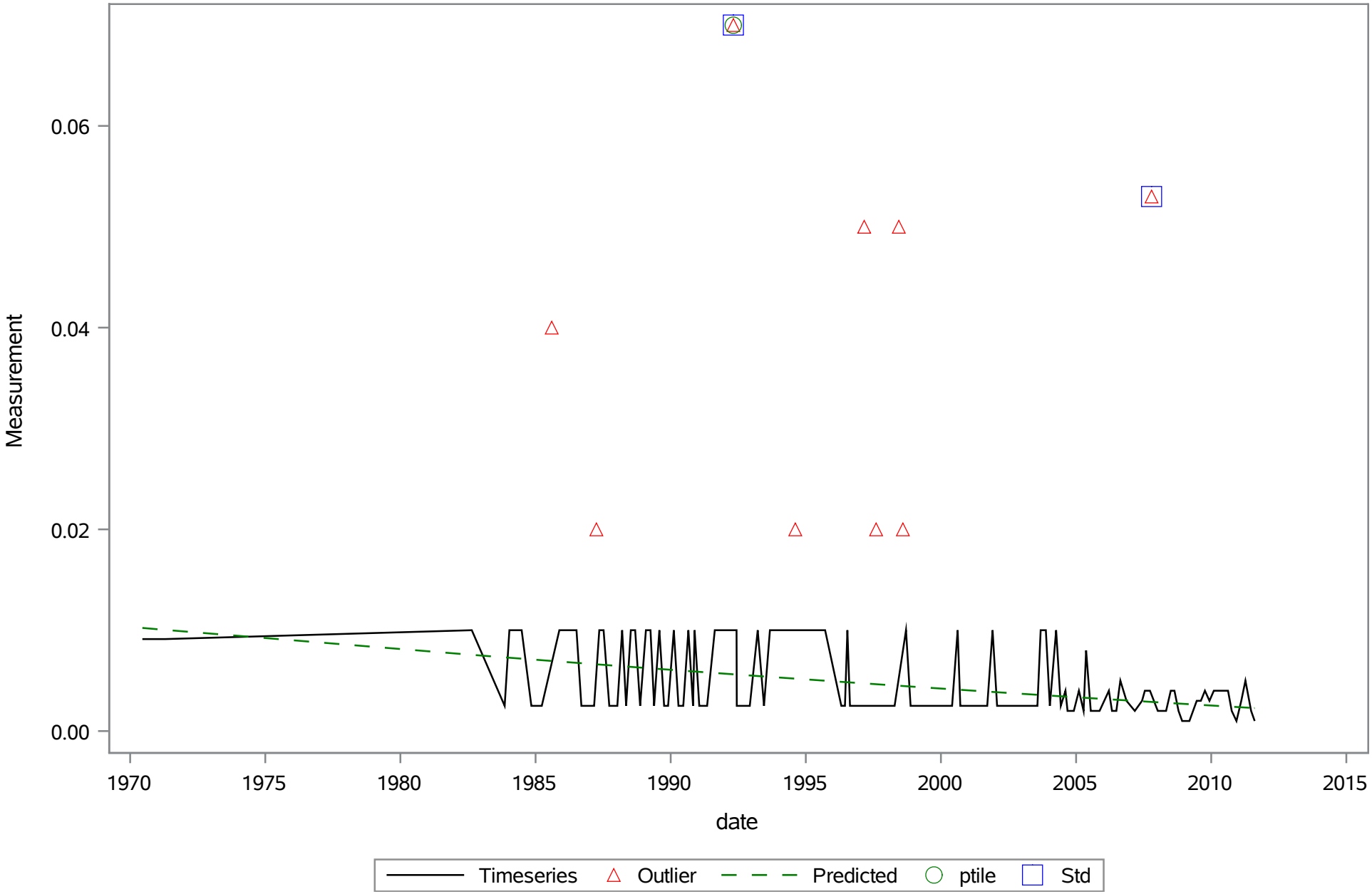

Little Manatee River
D3
Nitrate (mg/L) mg/L
Site ID = 21FLMANAD3
Measurement
2.5
2.0
1.5
1.0
0.5
0.0
2000
2002
2004
2006
2008
2010
2012
2014
date
Timeseries
Outlier
Predicted
ptile
Std

Little Manatee River

LITTLE MANATEE RIVER NEAR FT. LONESOME FL

Nitrite Nitrogen as N (mg/L) mg/L

Site ID = 112WRD 02300100

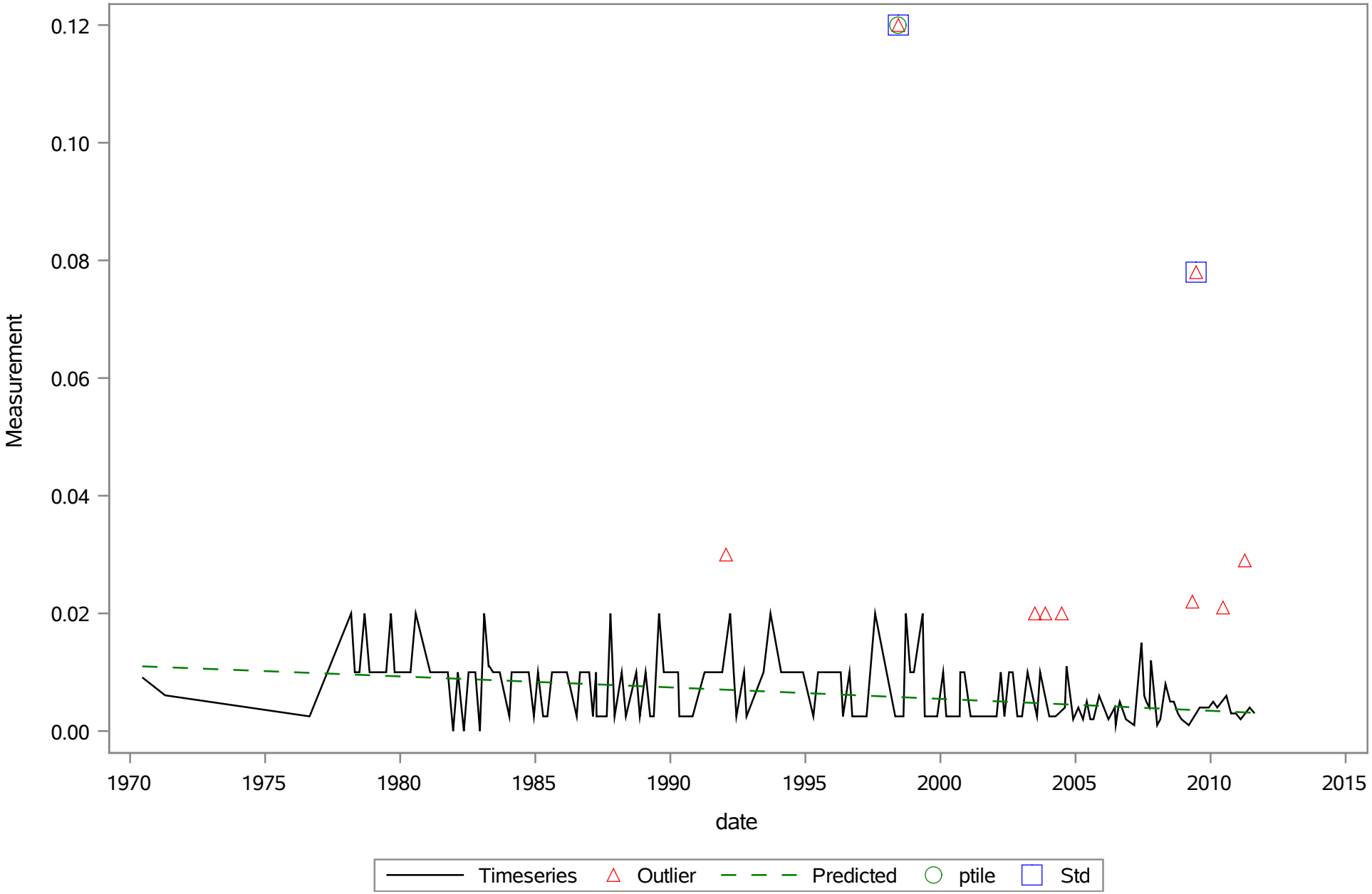


Little Manatee River

SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL

Nitrite Nitrogen as N (mg/L) mg/L

Site ID = 112WRD 02300200

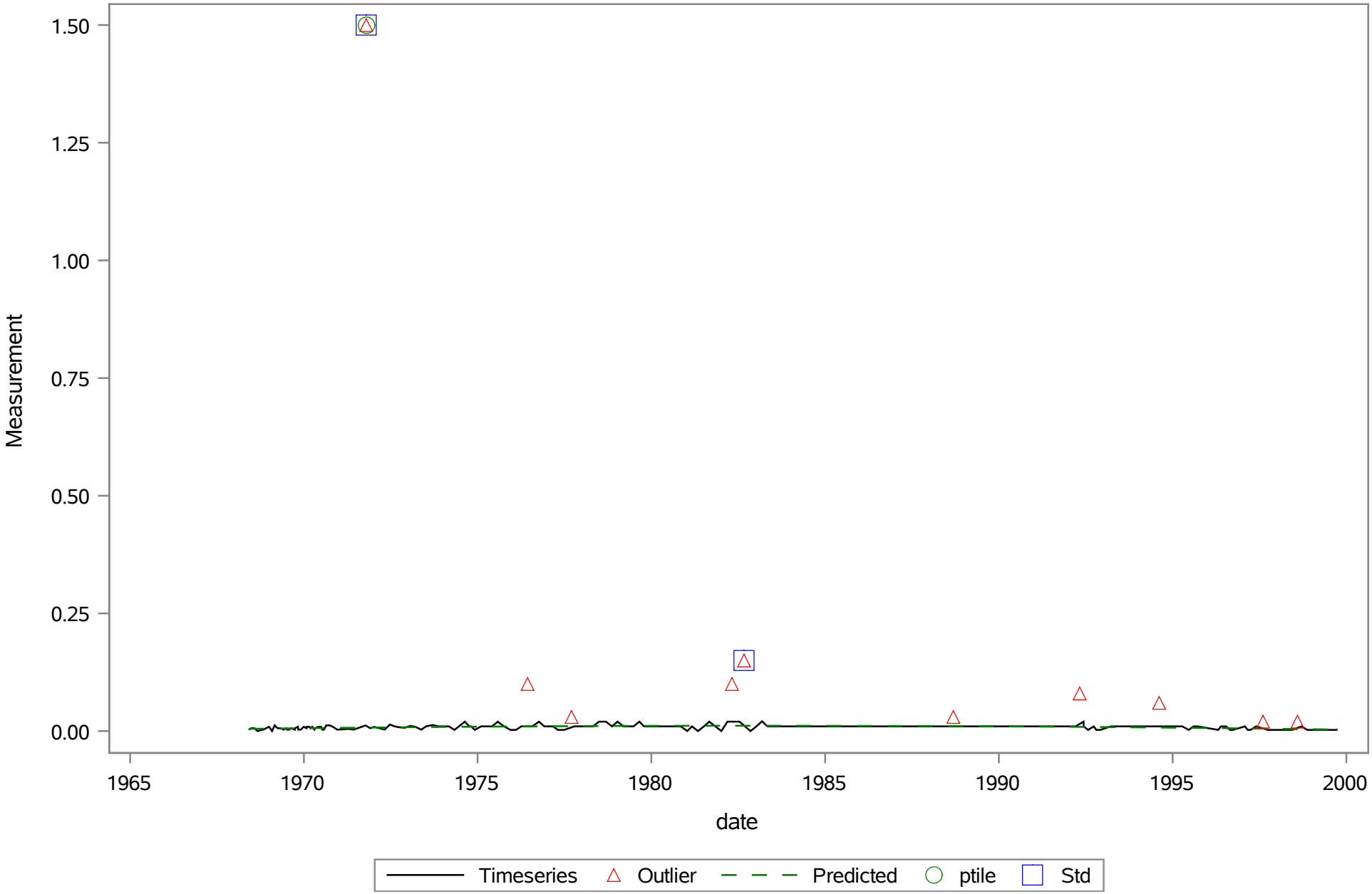


Little Manatee River

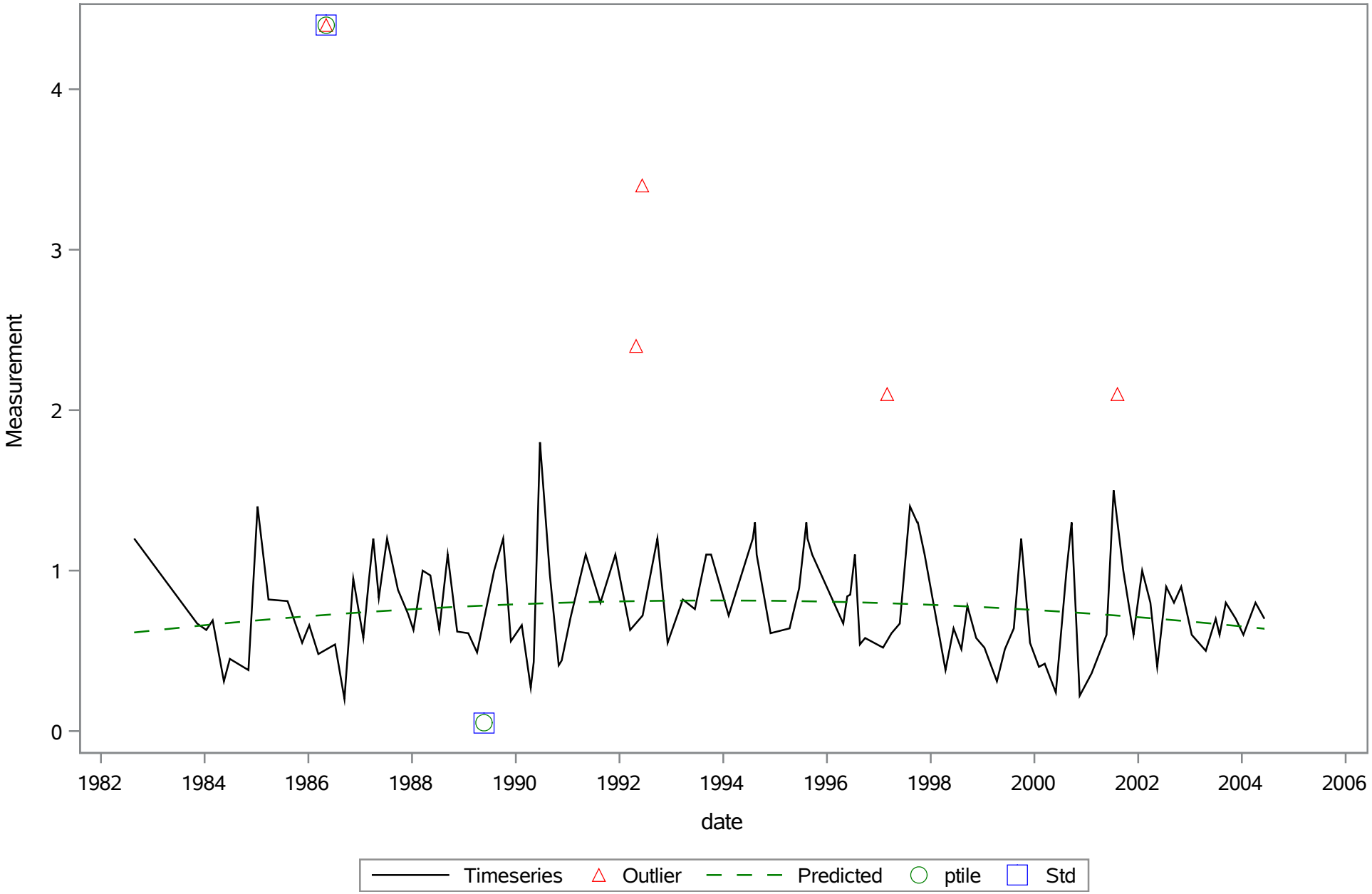
LITTLE MANATEE RIVER NEAR WIMAUMA FL

Nitrite Nitrogen as N (mg/L) mg/L

Site ID = 112WRD 02300500



Little Manatee River
LITTLE MANATEE RIVER NEAR FT. LONESOME FL
Nitrogen Kjeldahl as N (mg/L) mg/L
Site ID = 112WRD 02300100

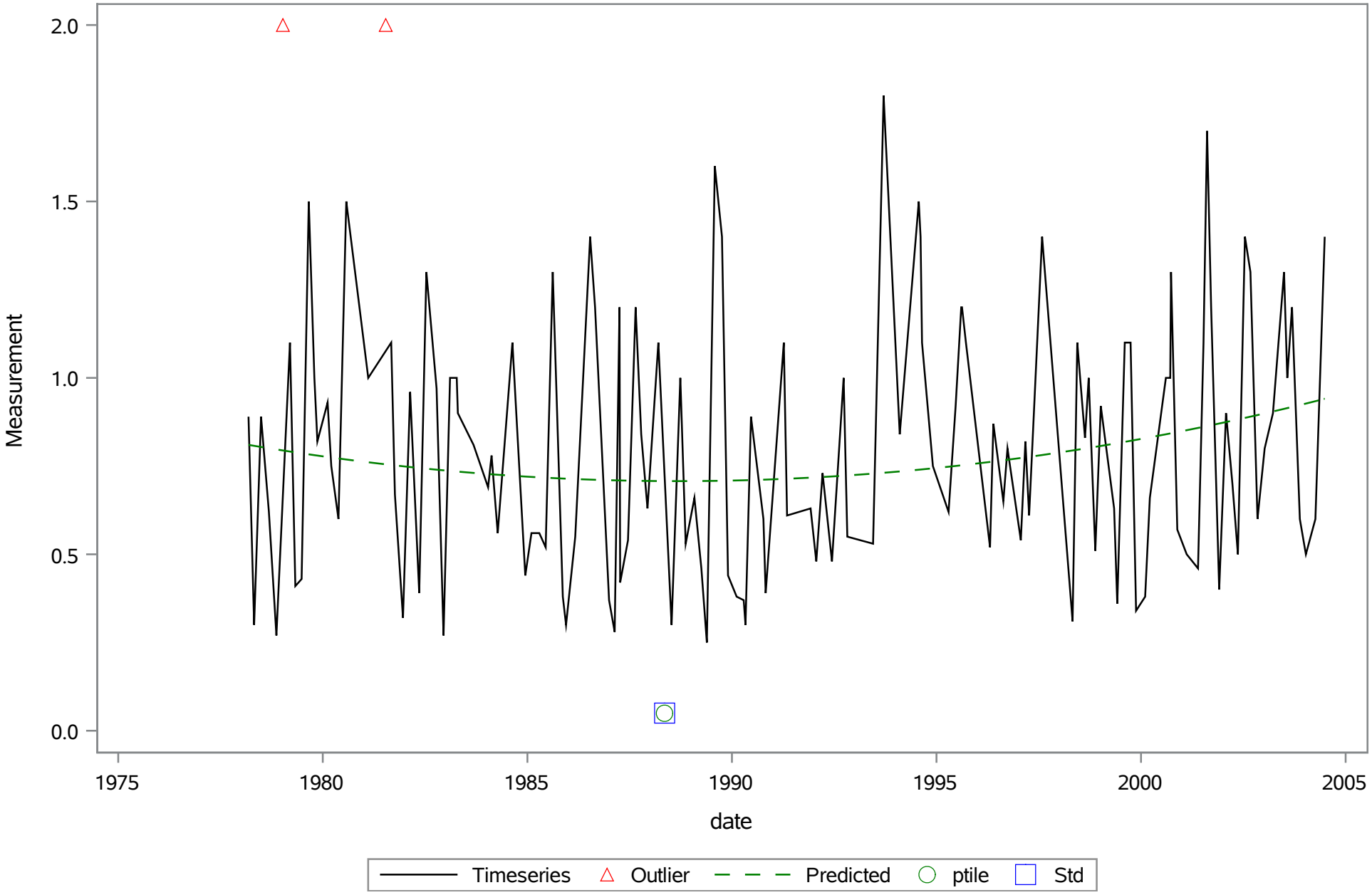


Little Manatee River

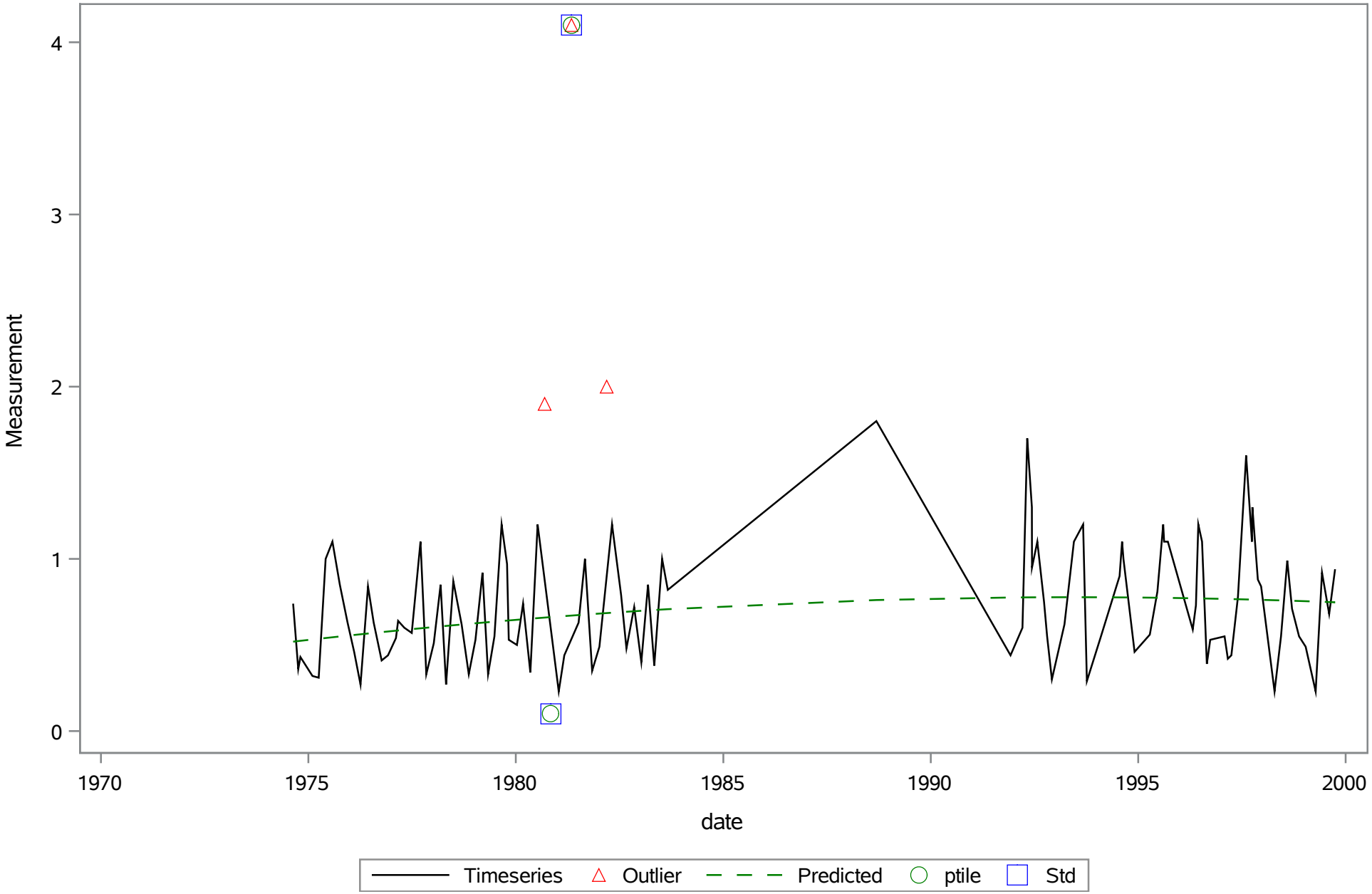
SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL

Nitrogen Kjeldahl as N (mg/L) mg/L

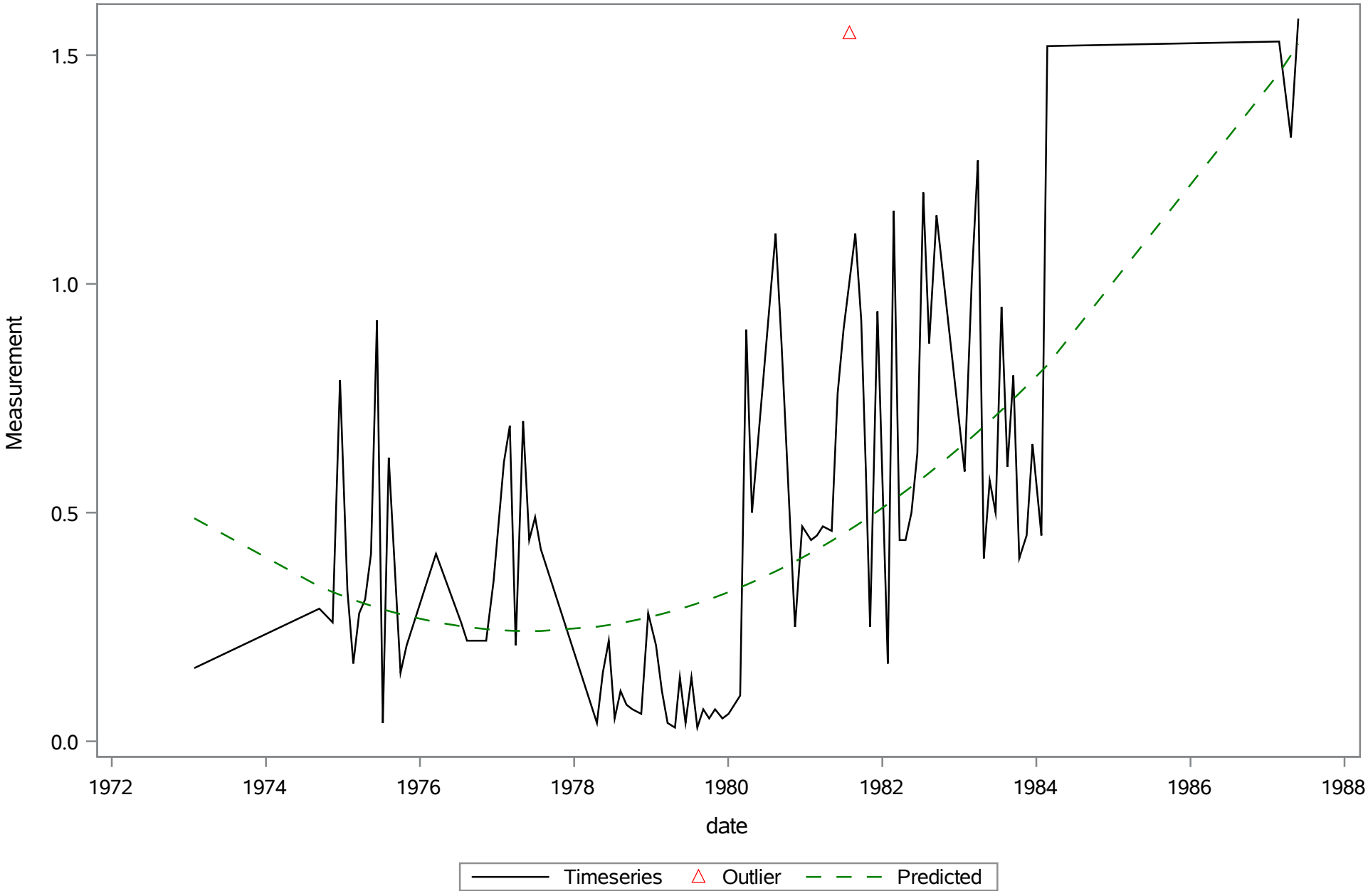
Site ID = 112WRD 02300200



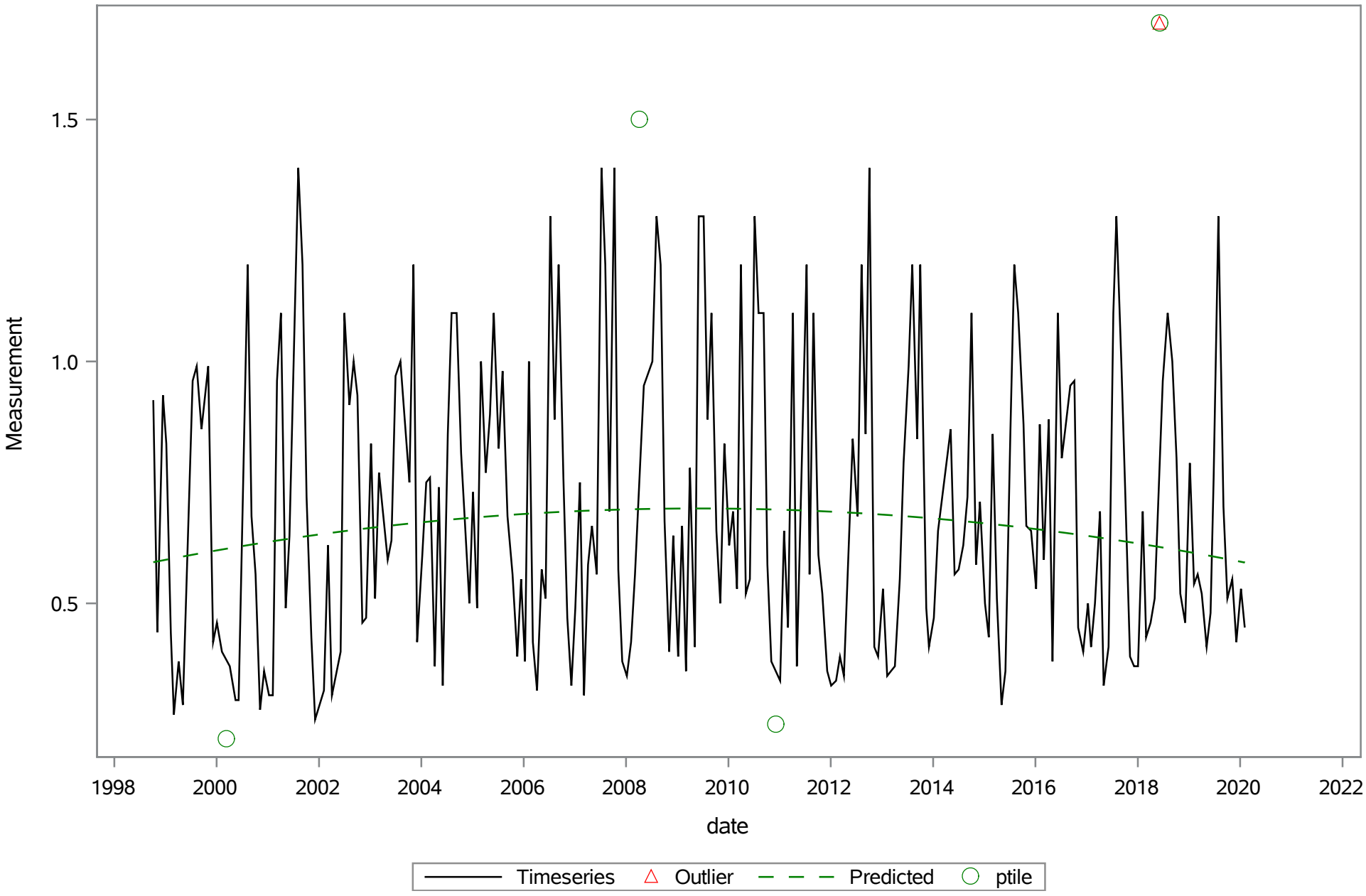
Little Manatee River
LITTLE MANATEE RIVER NEAR WIMAUMA FL
Nitrogen Kjeldahl as N (mg/L) mg/L
Site ID = 112WRD 02300500



Little Manatee River
L MANATEE R BR US 301
Nitrogen Kjeldahl as N (mg/L) mg/L
Site ID = 21FLA 24010100



Little Manatee River
LITTLE MANATEE RIVER AT US HWY 301
Nitrogen Kjeldahl as N (mg/L) mg/L
Site ID = 21FLGW 3555

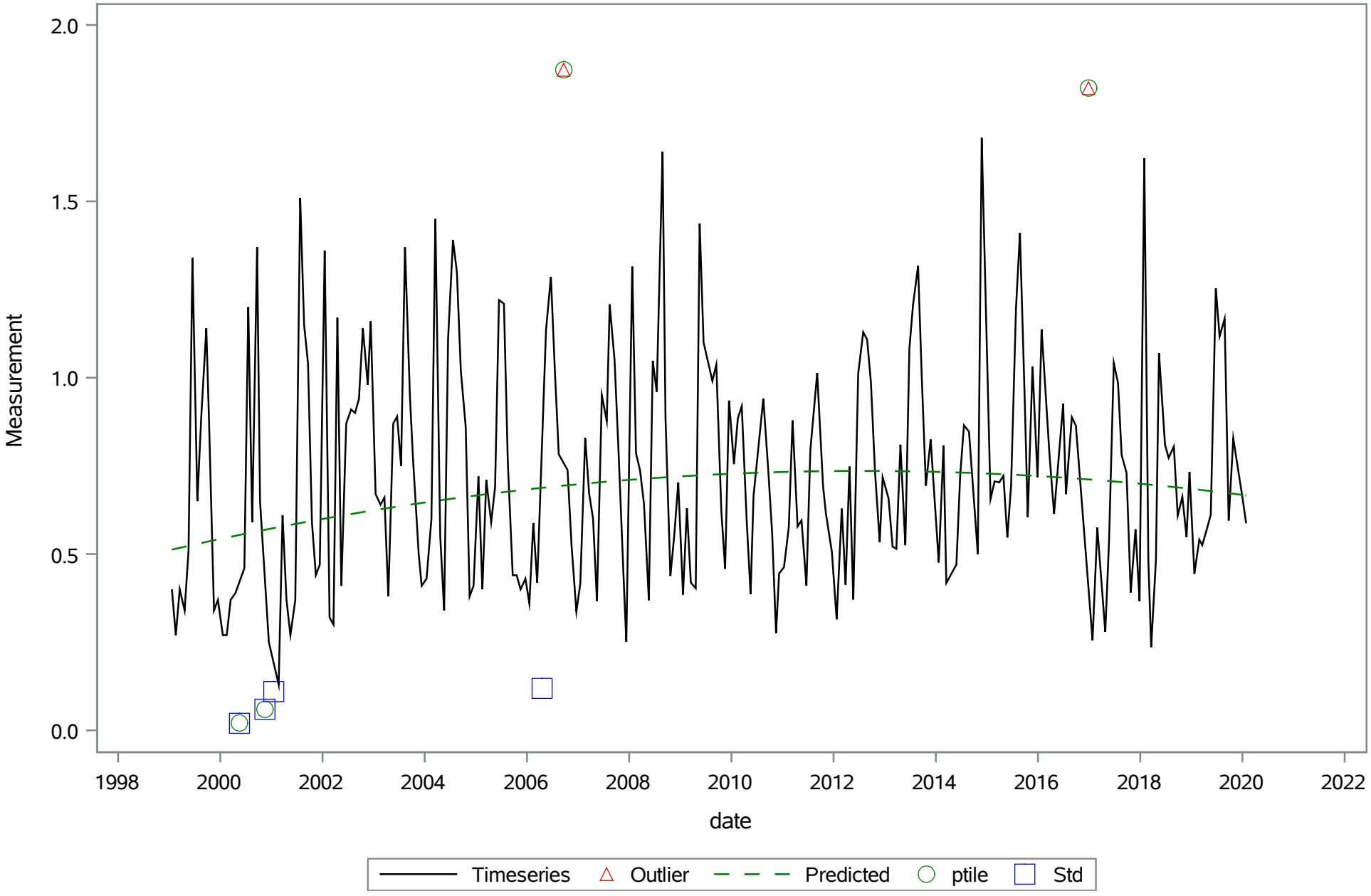


Little Manatee River

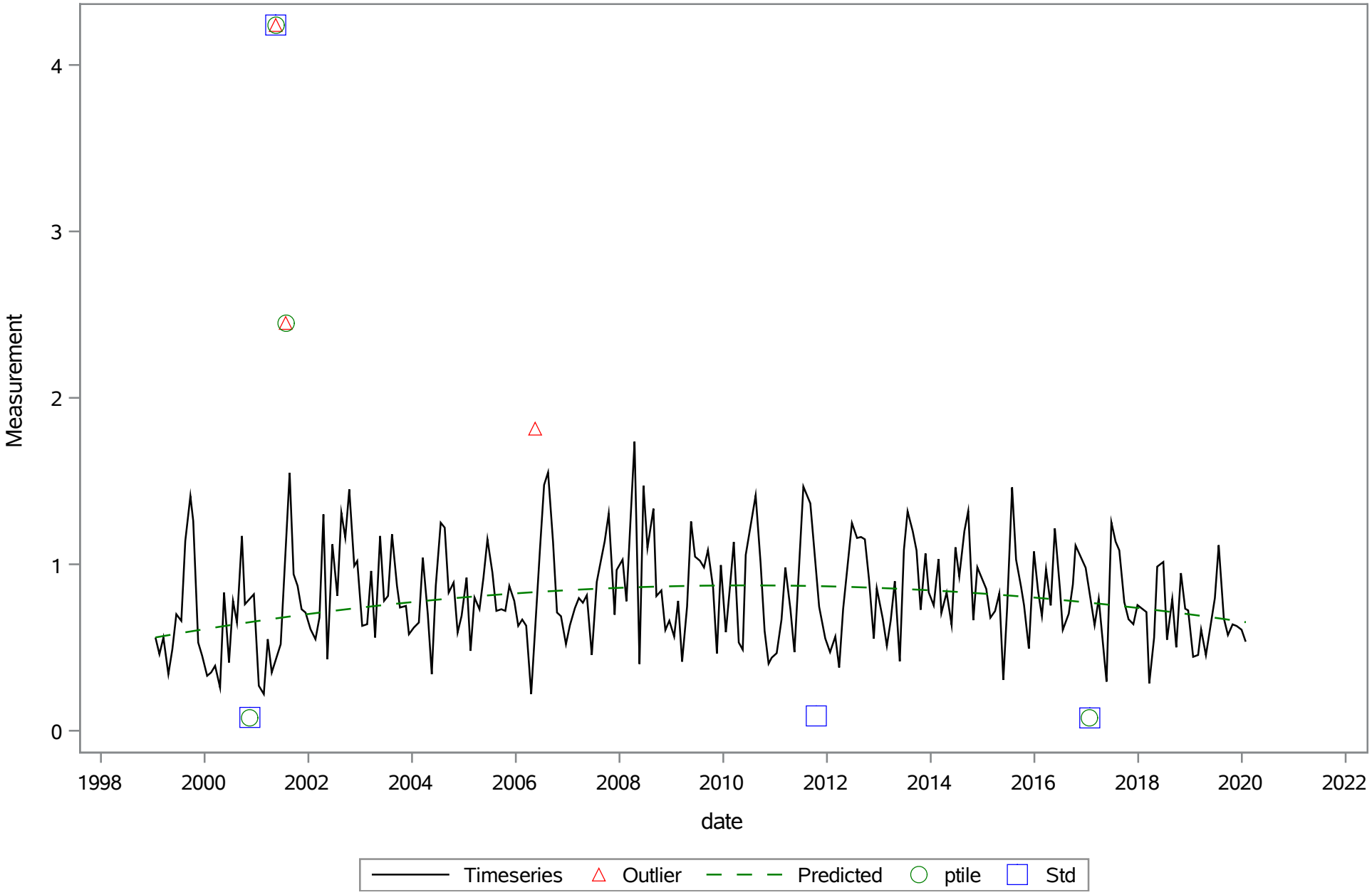
Little Manatee River at US 301 bridge

Nitrogen Kjeldahl as N (mg/L) mg/L

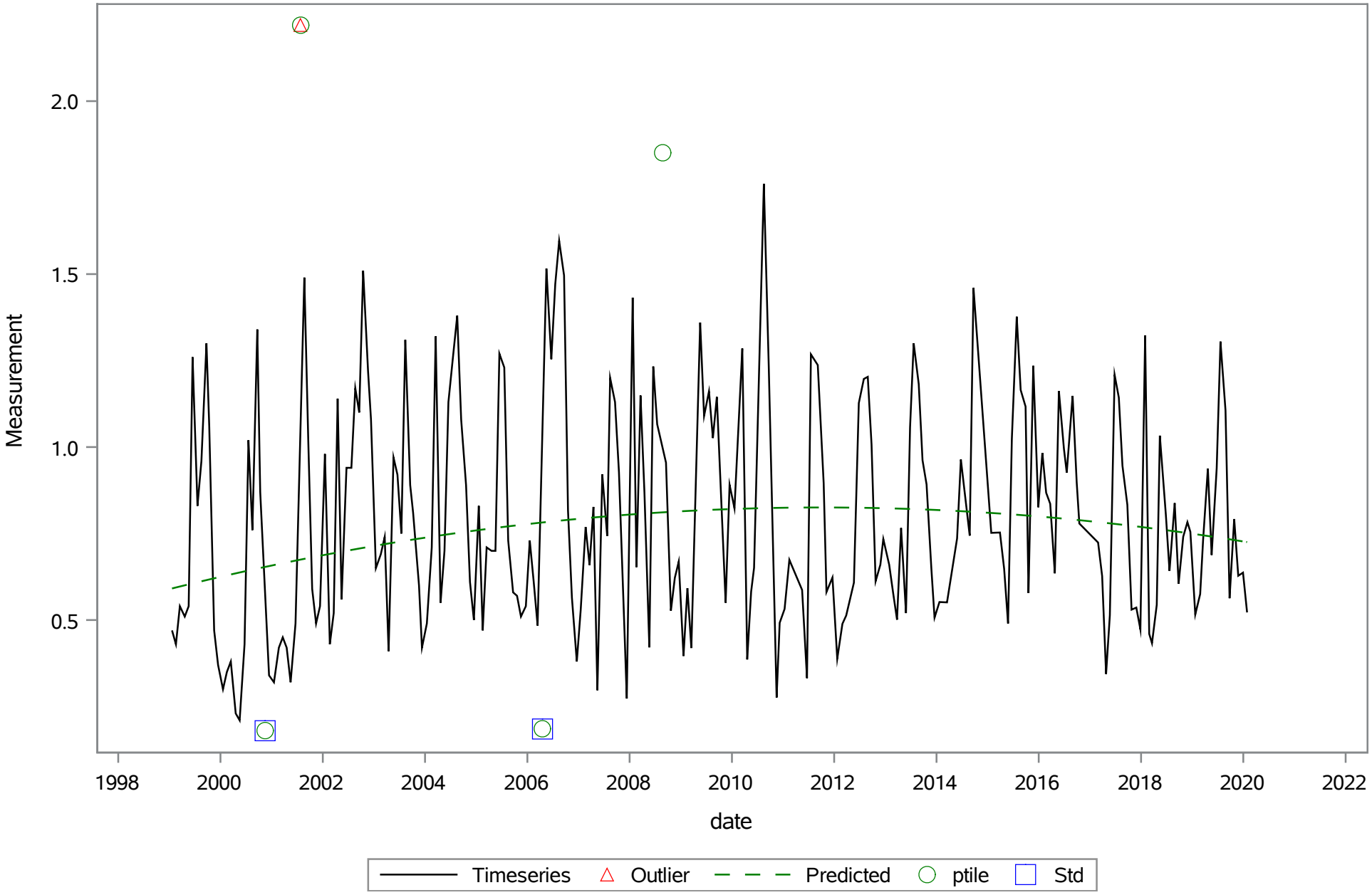
Site ID = 21FLHILL113



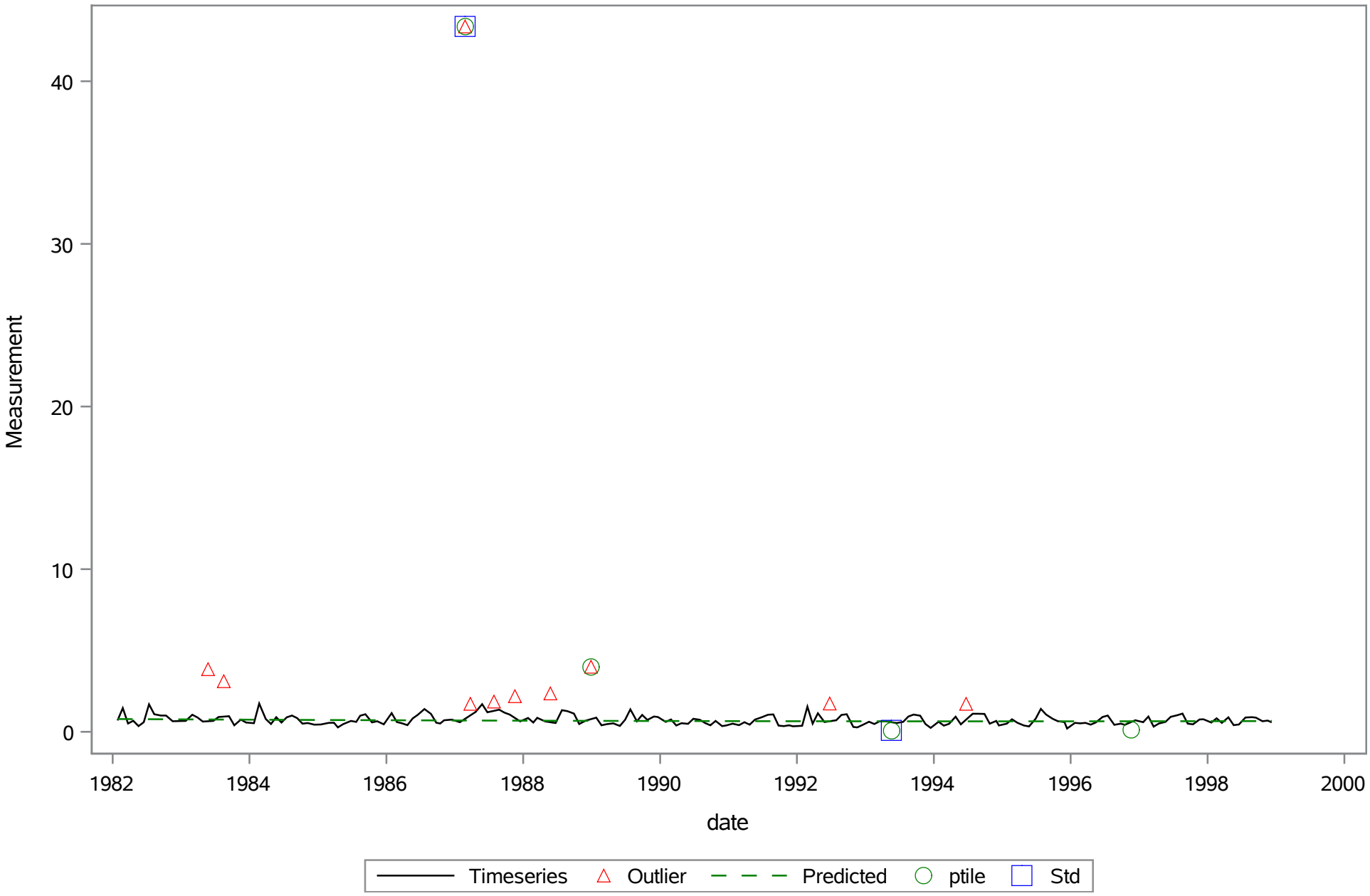
Little Manatee River
Little Manatee River at SR 674
Nitrogen Kjeldahl as N (mg/L) mg/L
Site ID = 21FLHILL129



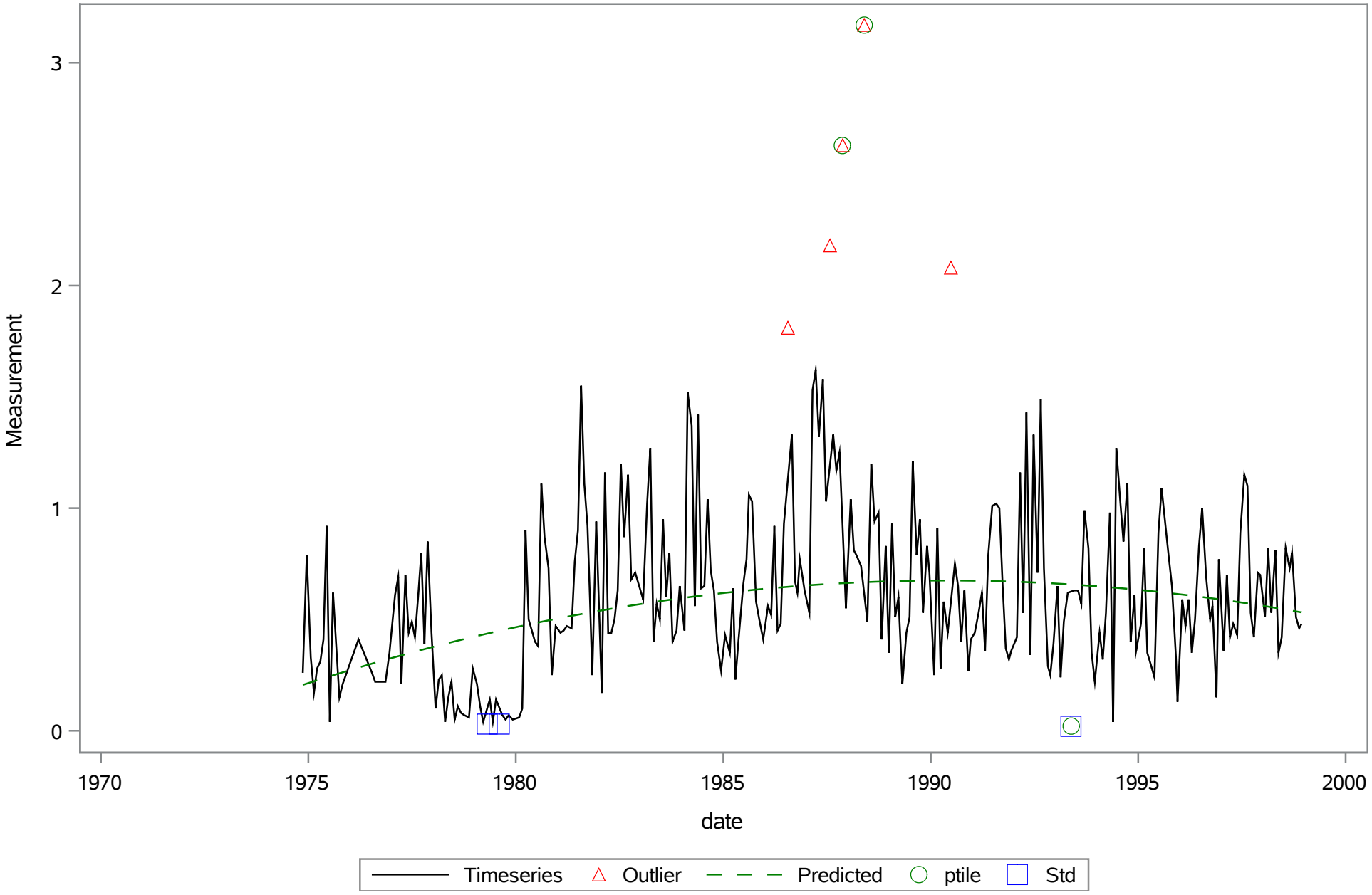
Little Manatee River
Little Manatee River at CR 579
Nitrogen Kjeldahl as N (mg/L) mg/L
Site ID = 21FLHILL140



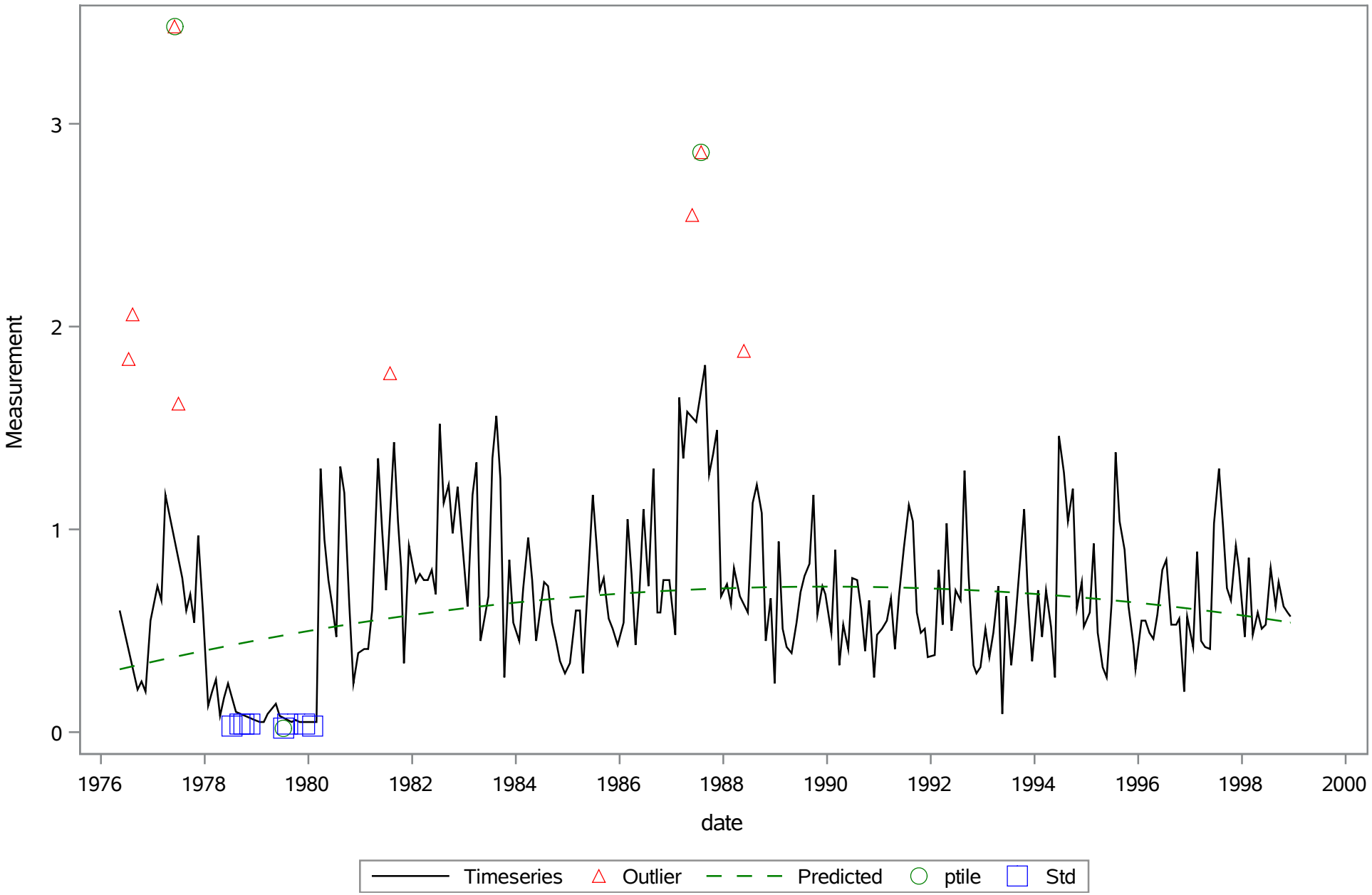
Little Manatee River
LITTLE MANATEE R AT CR579
Nitrogen Kjeldahl as N (mg/L) mg/L
Site ID = 21FLHILL24010013



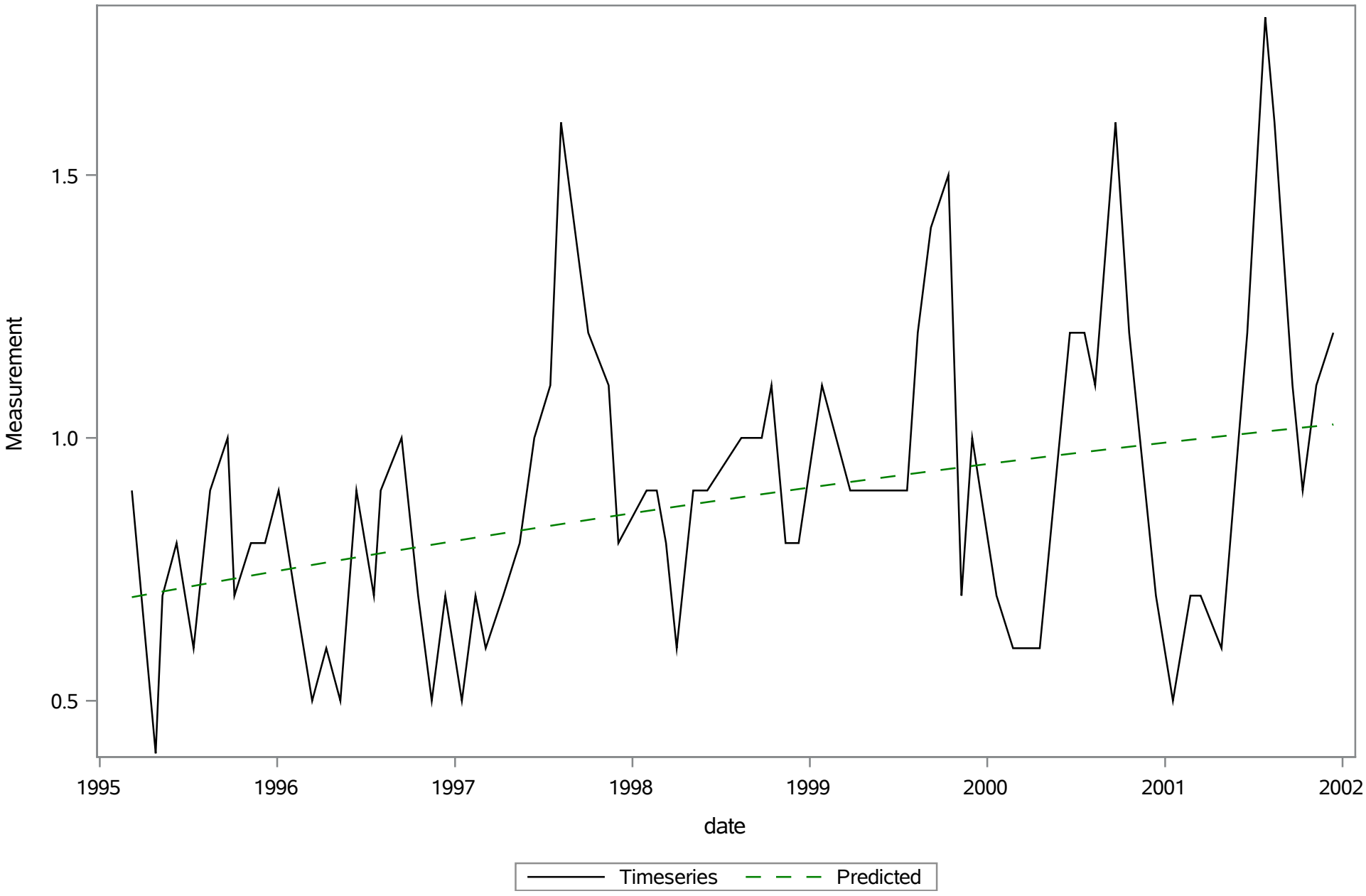
Little Manatee River
L MANATEE R BR US 301
Nitrogen Kjeldahl as N (mg/L) mg/L
Site ID = 21FLHILL24010100



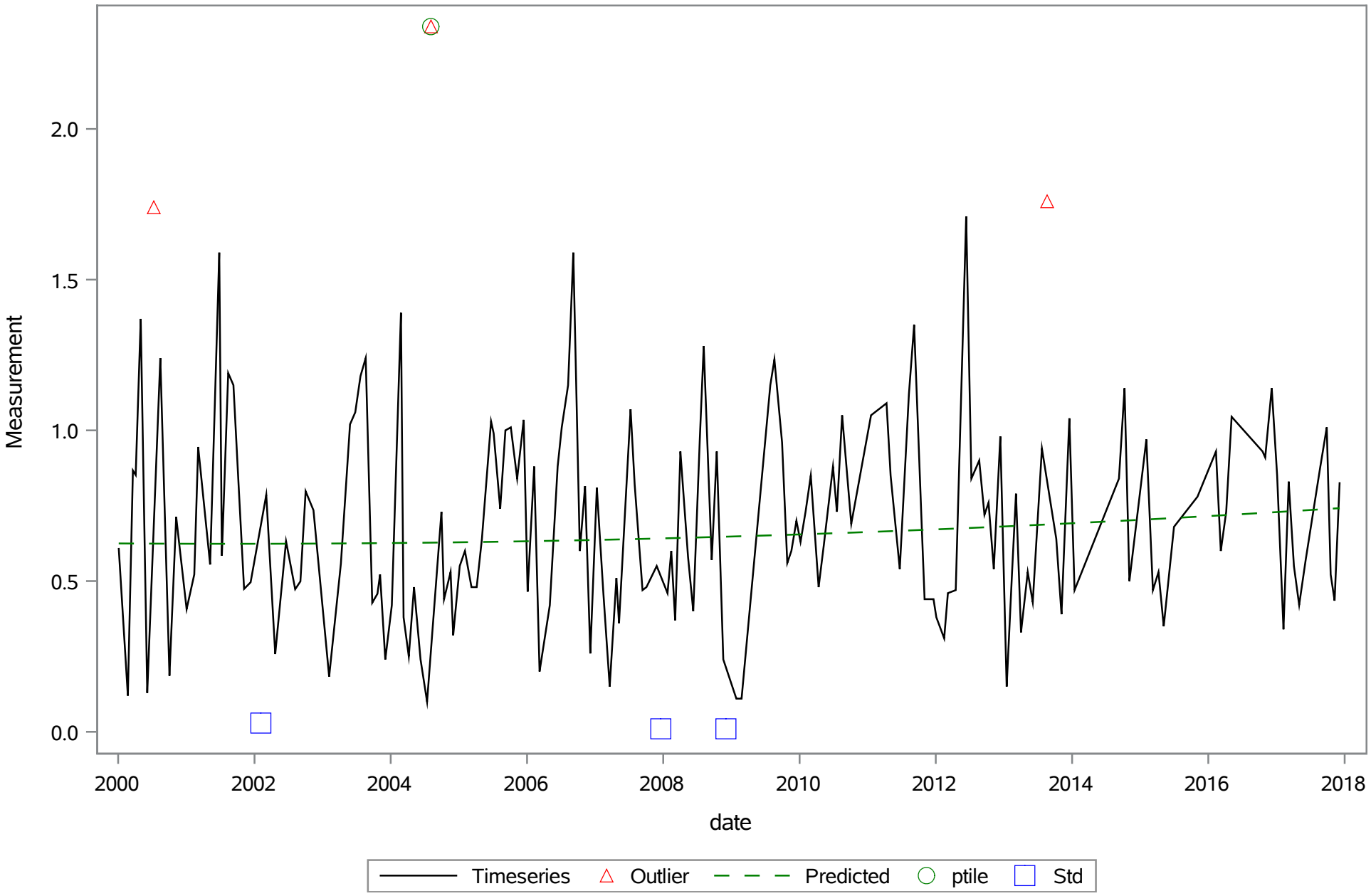
Little Manatee River
LITTLE MANATEE R AT SR #674
Nitrogen Kjeldahl as N (mg/L) mg/L
Site ID = 21FLHILL24010110



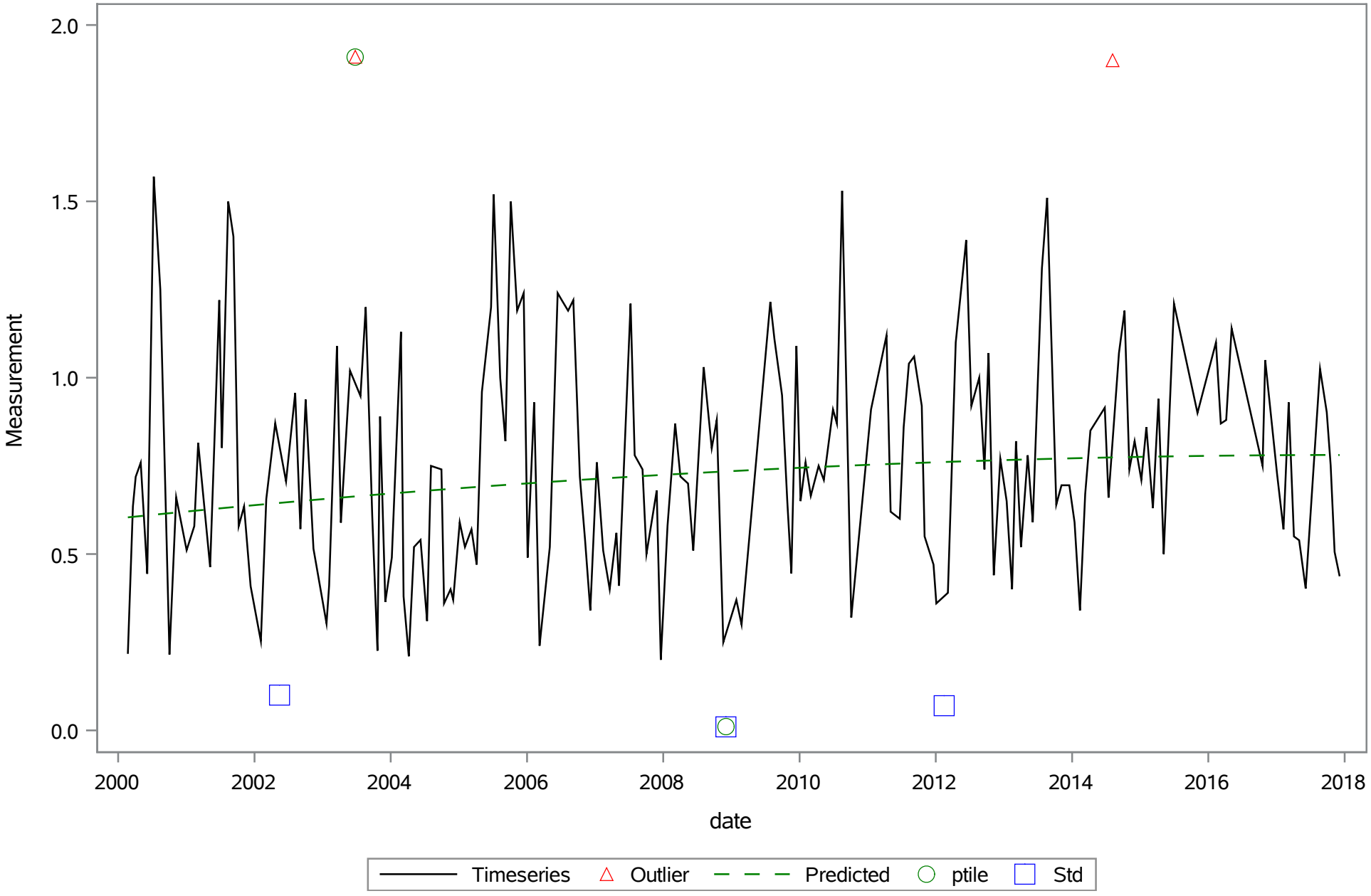
Little Manatee River
Little Manatee R. at SR674
Nitrogen Kjeldahl as N (mg/L) mg/L
Site ID = 21FLIMCALM674



Little Manatee River
D1
Nitrogen Kjeldahl as N (mg/L) mg/L
Site ID = 21FLMANAD1



Little Manatee River
D3
Nitrogen Kjeldahl as N (mg/L) mg/L
Site ID = 21FLMANAD3

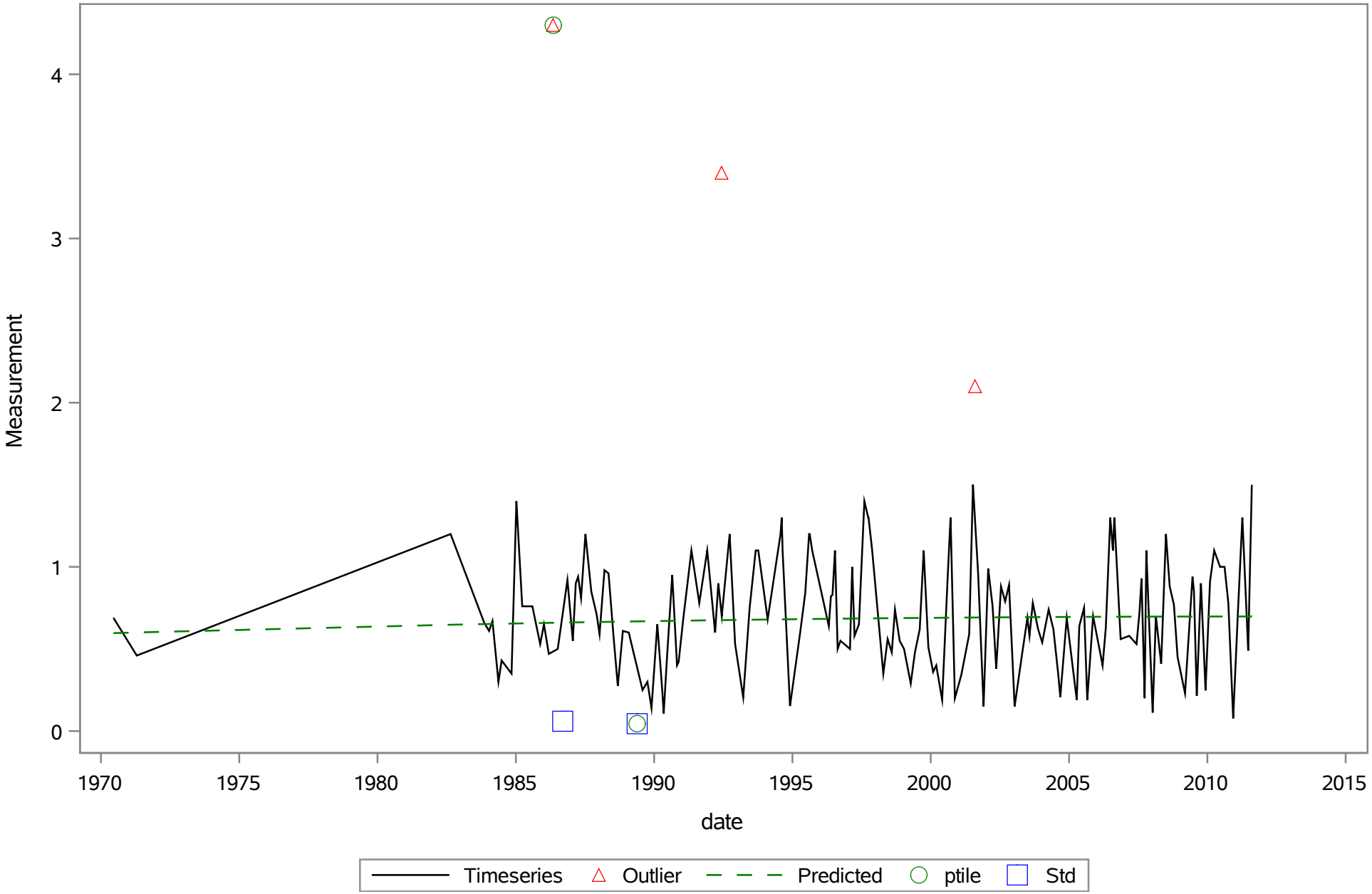


Little Manatee River

LITTLE MANATEE RIVER NEAR FT. LONESOME FL

Nitrogen Organic as N (mg/L) mg/L

Site ID = 112WRD 02300100

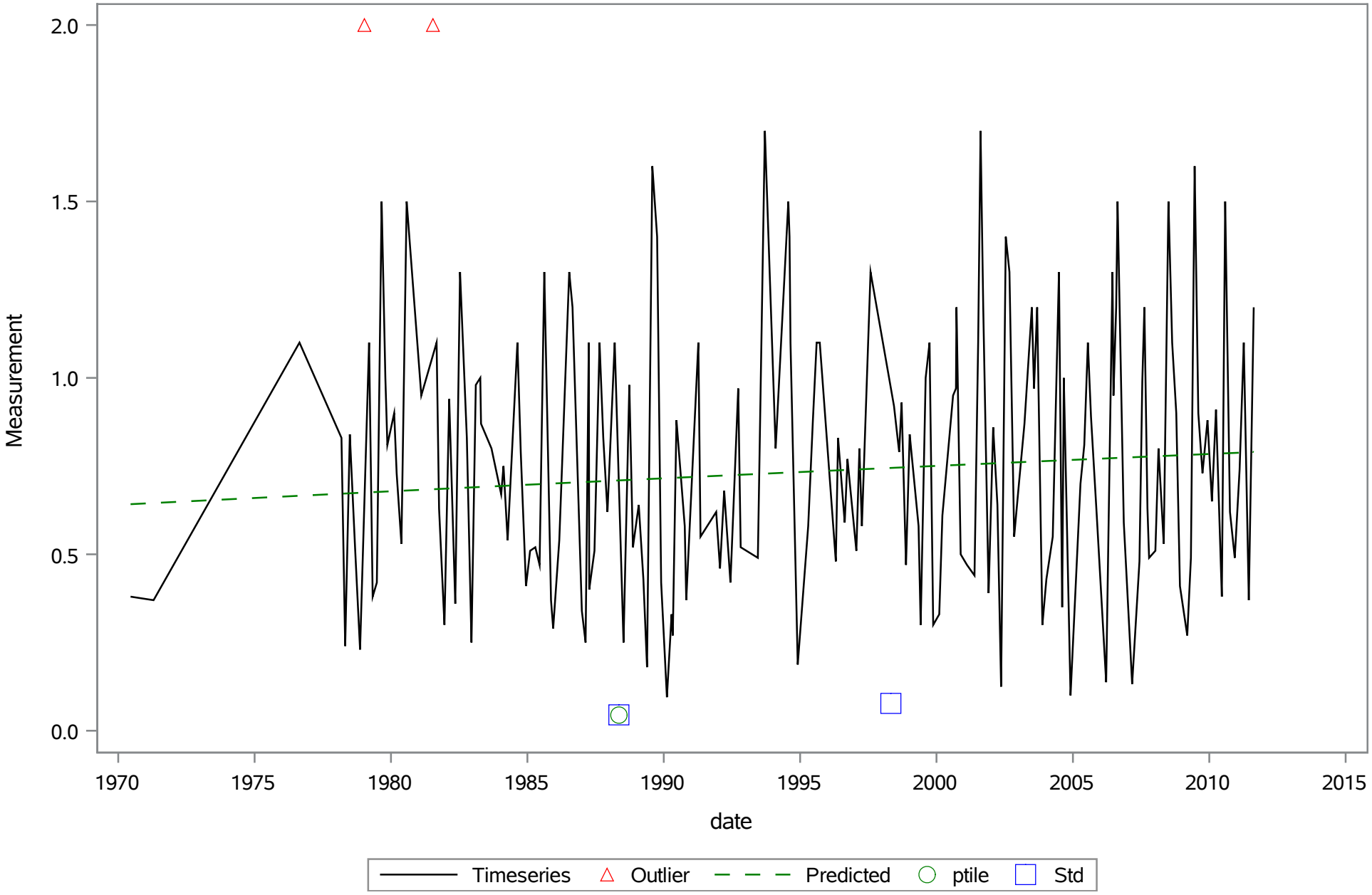


Little Manatee River

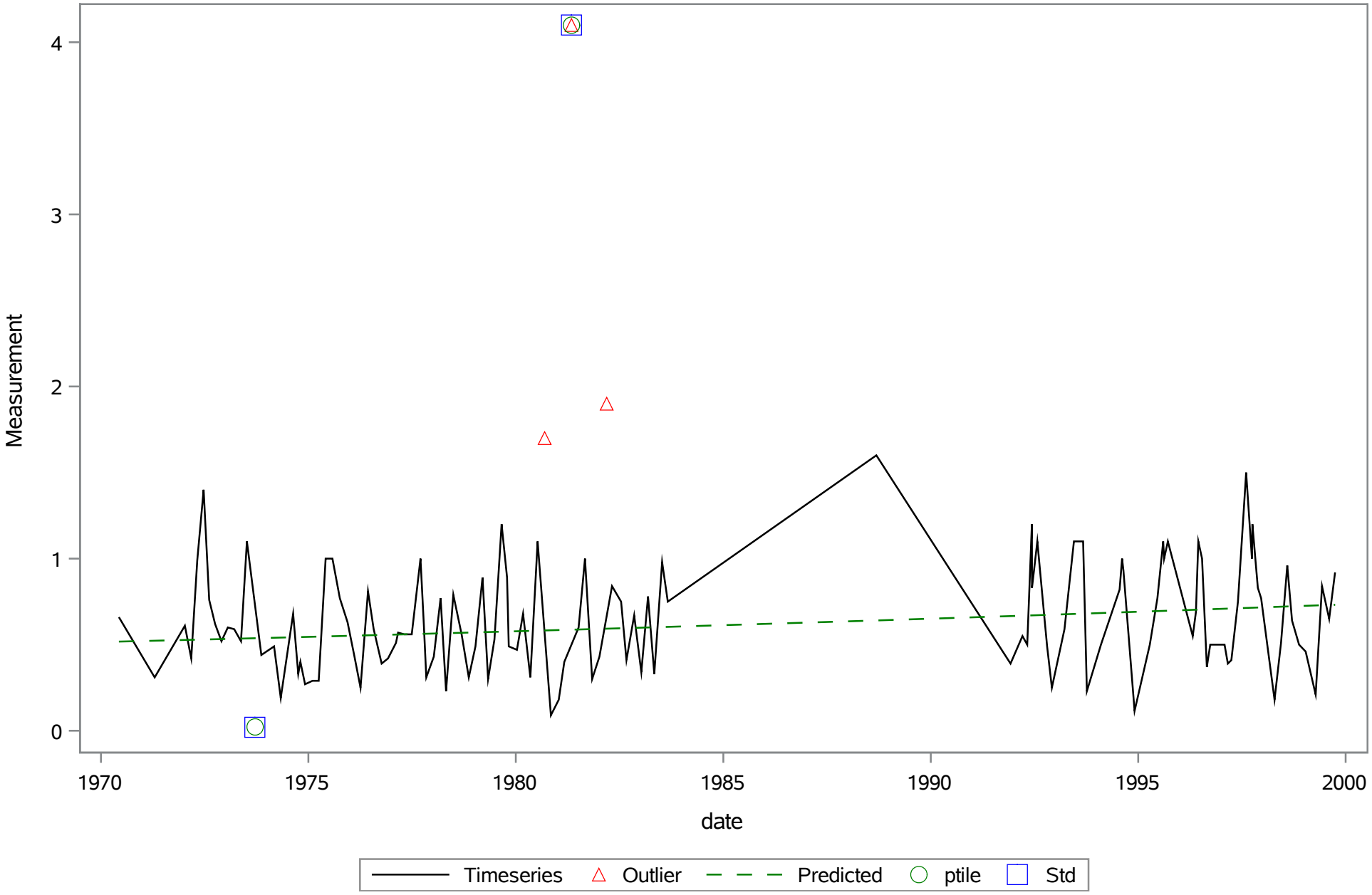
SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL

Nitrogen Organic as N (mg/L) mg/L

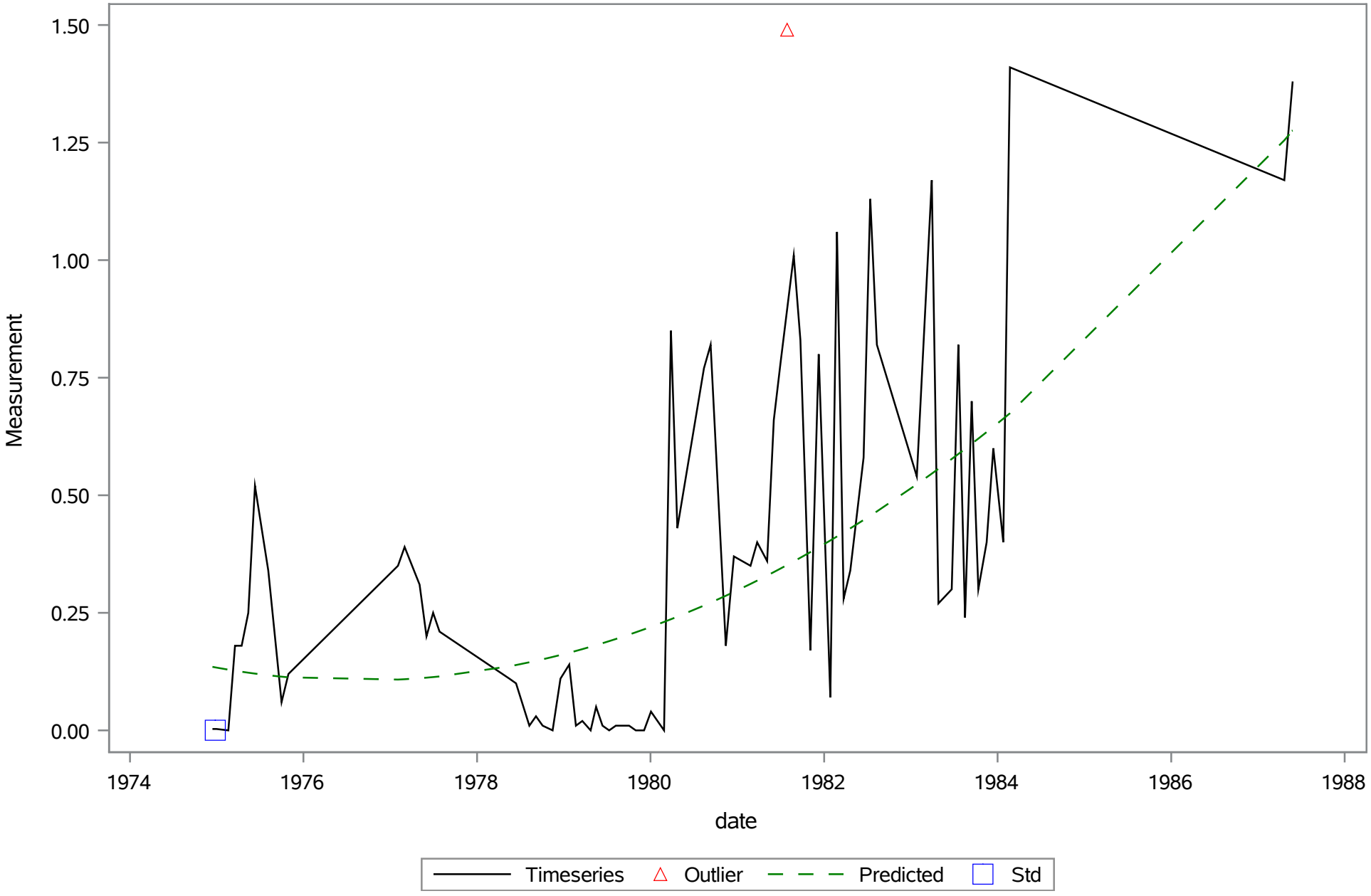
Site ID = 112WRD 02300200



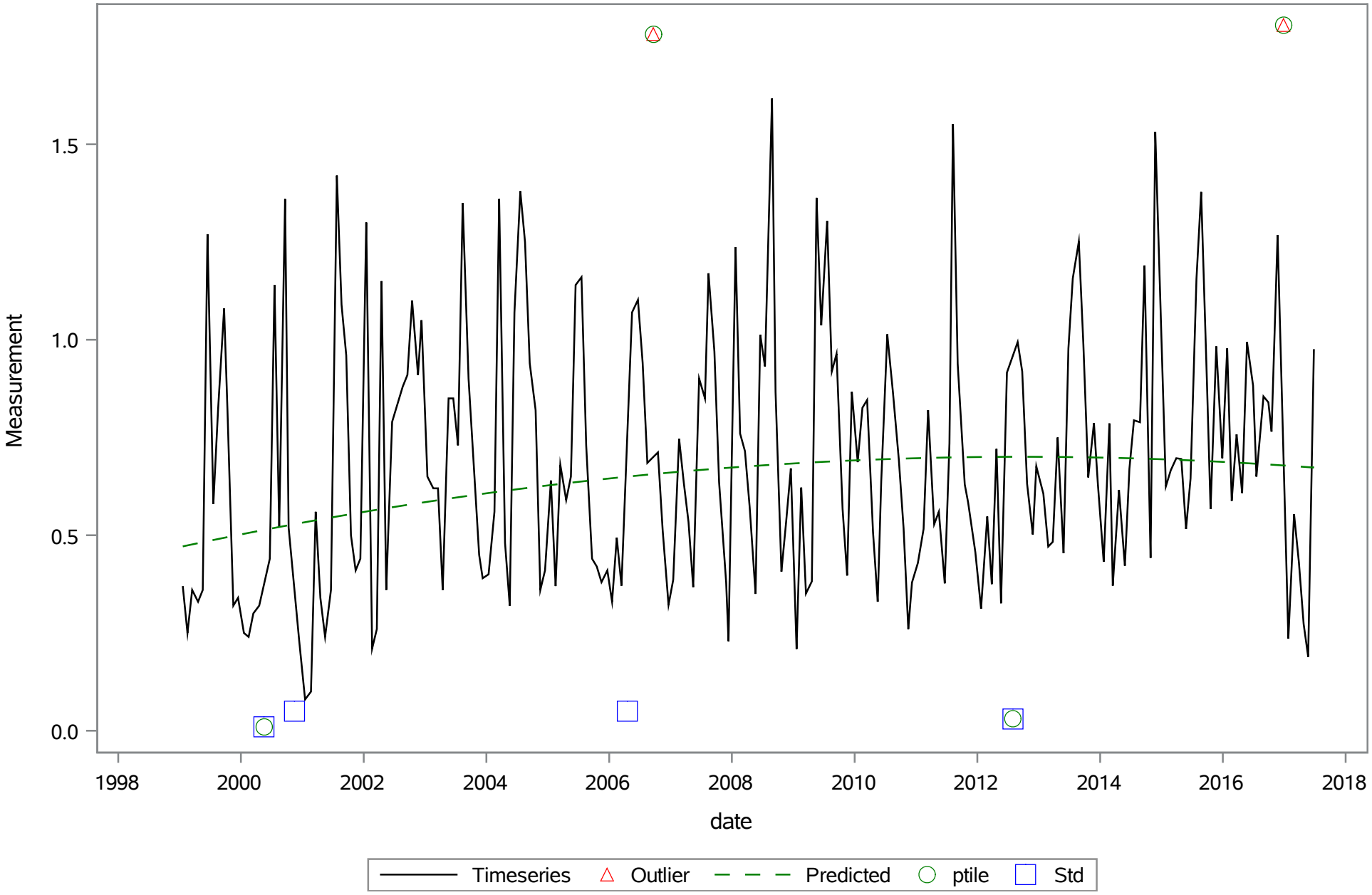
Little Manatee River
LITTLE MANATEE RIVER NEAR WIMAUMA FL
Nitrogen Organic as N (mg/L) mg/L
Site ID = 112WRD 02300500



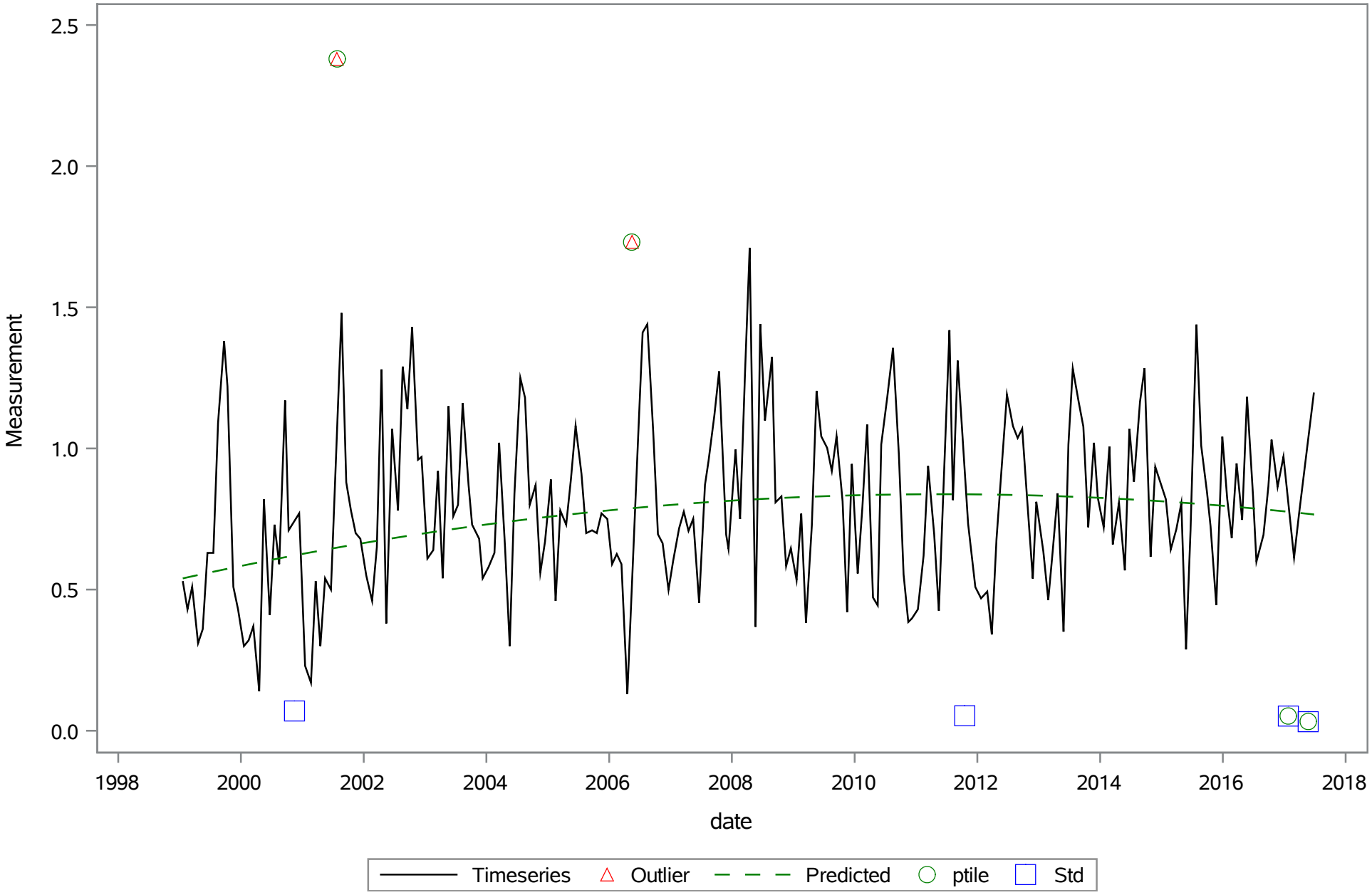
Little Manatee River
L MANATEE R BR US 301
Nitrogen Organic as N (mg/L) mg/L
Site ID = 21FLA 24010100



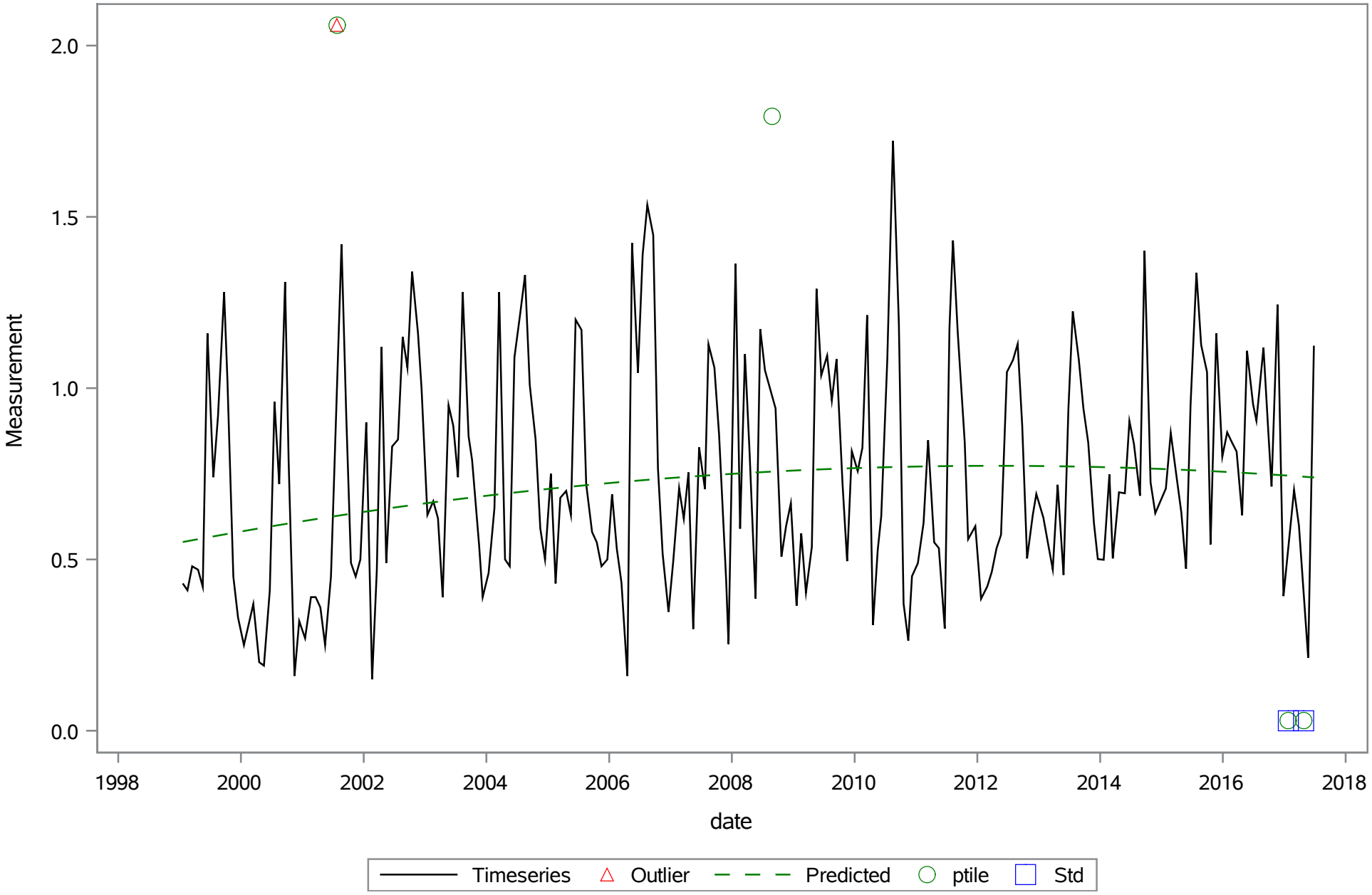
Little Manatee River
Little Manatee River at US 301 bridge
Nitrogen Organic as N (mg/L) mg/L
Site ID = 21FLHILL113



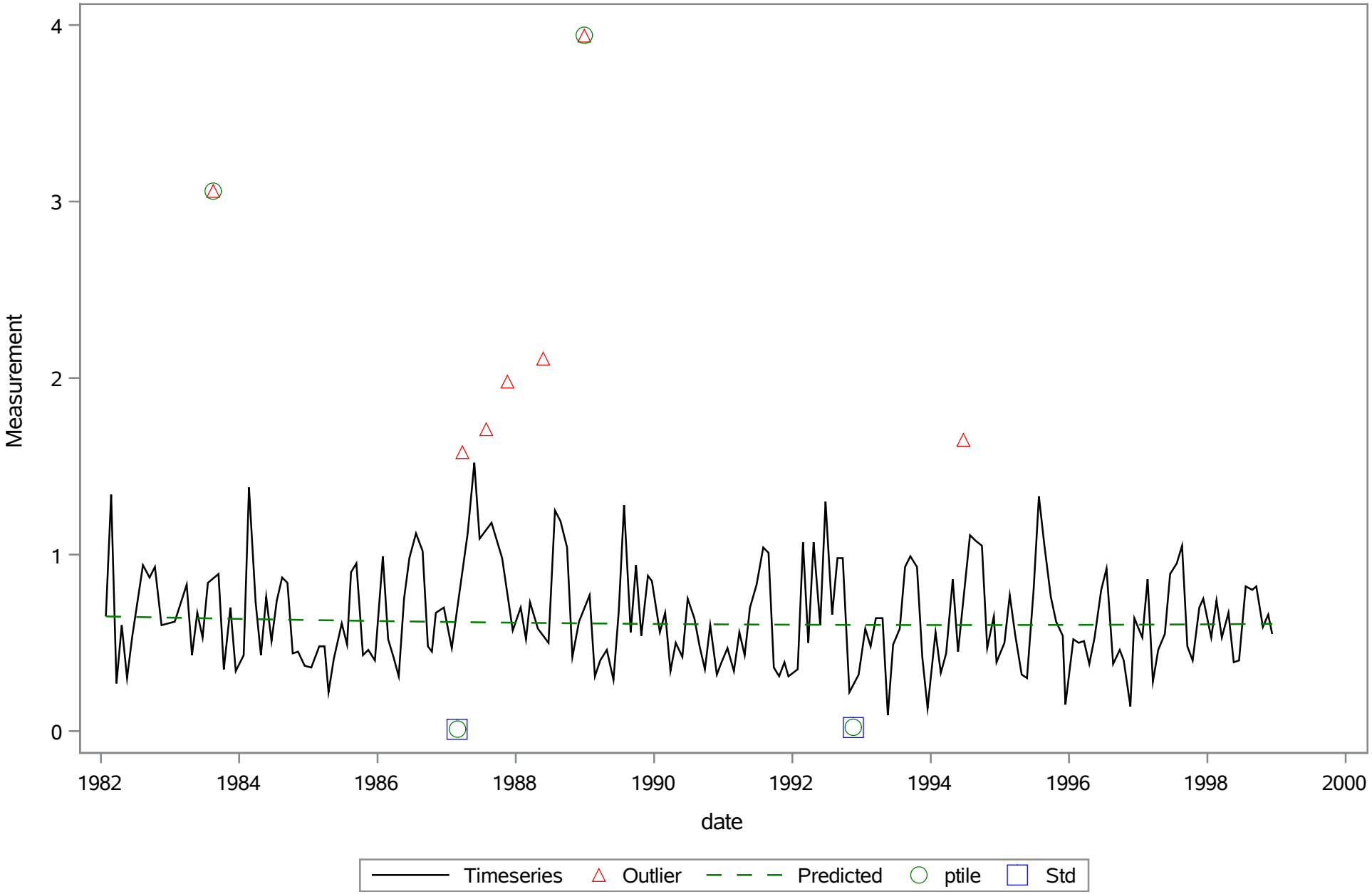
Little Manatee River
Little Manatee River at SR 674
Nitrogen Organic as N (mg/L) mg/L
Site ID = 21FLHILL129



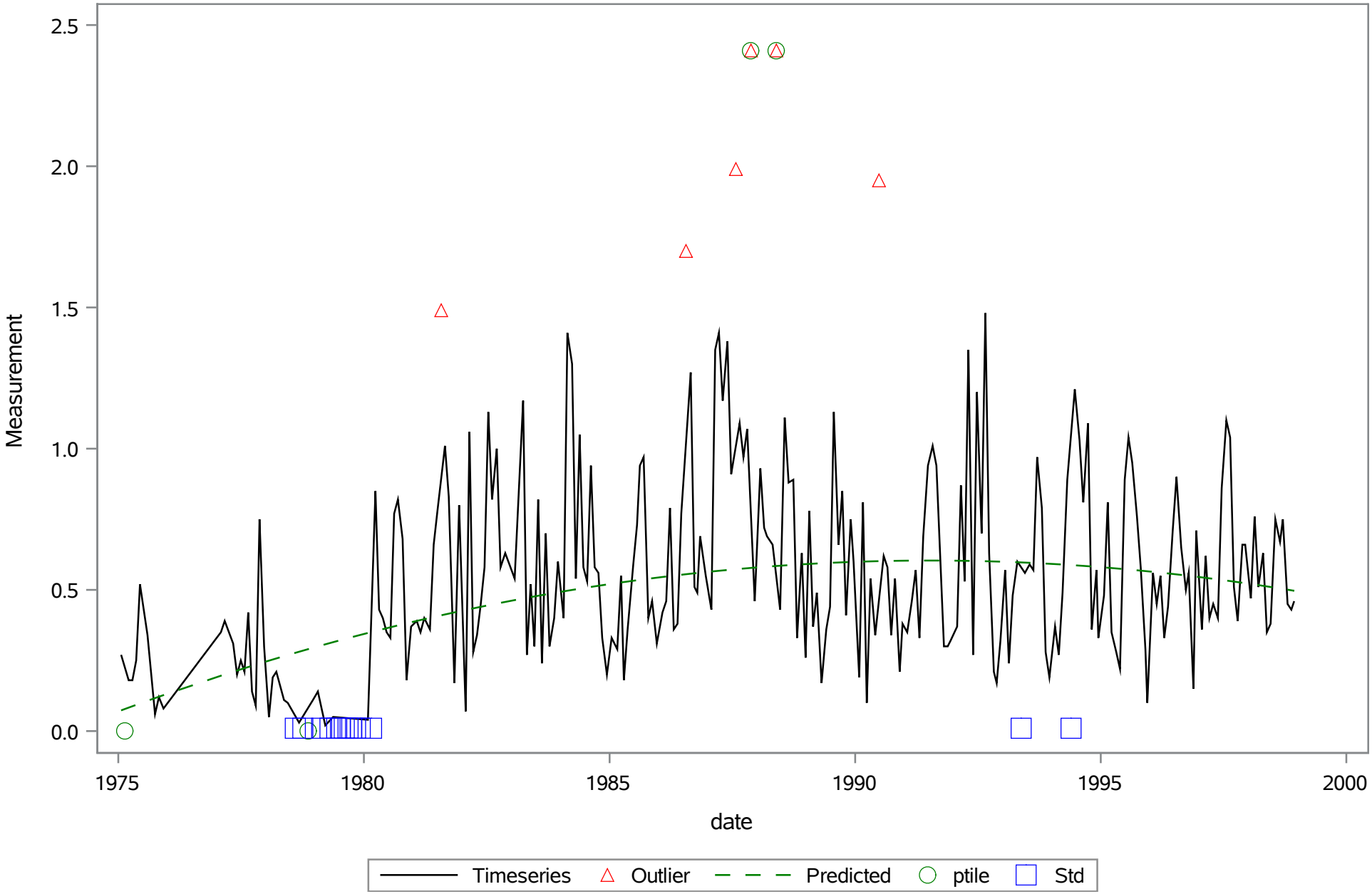
Little Manatee River
Little Manatee River at CR 579
Nitrogen Organic as N (mg/L) mg/L
Site ID = 21FLHILL140



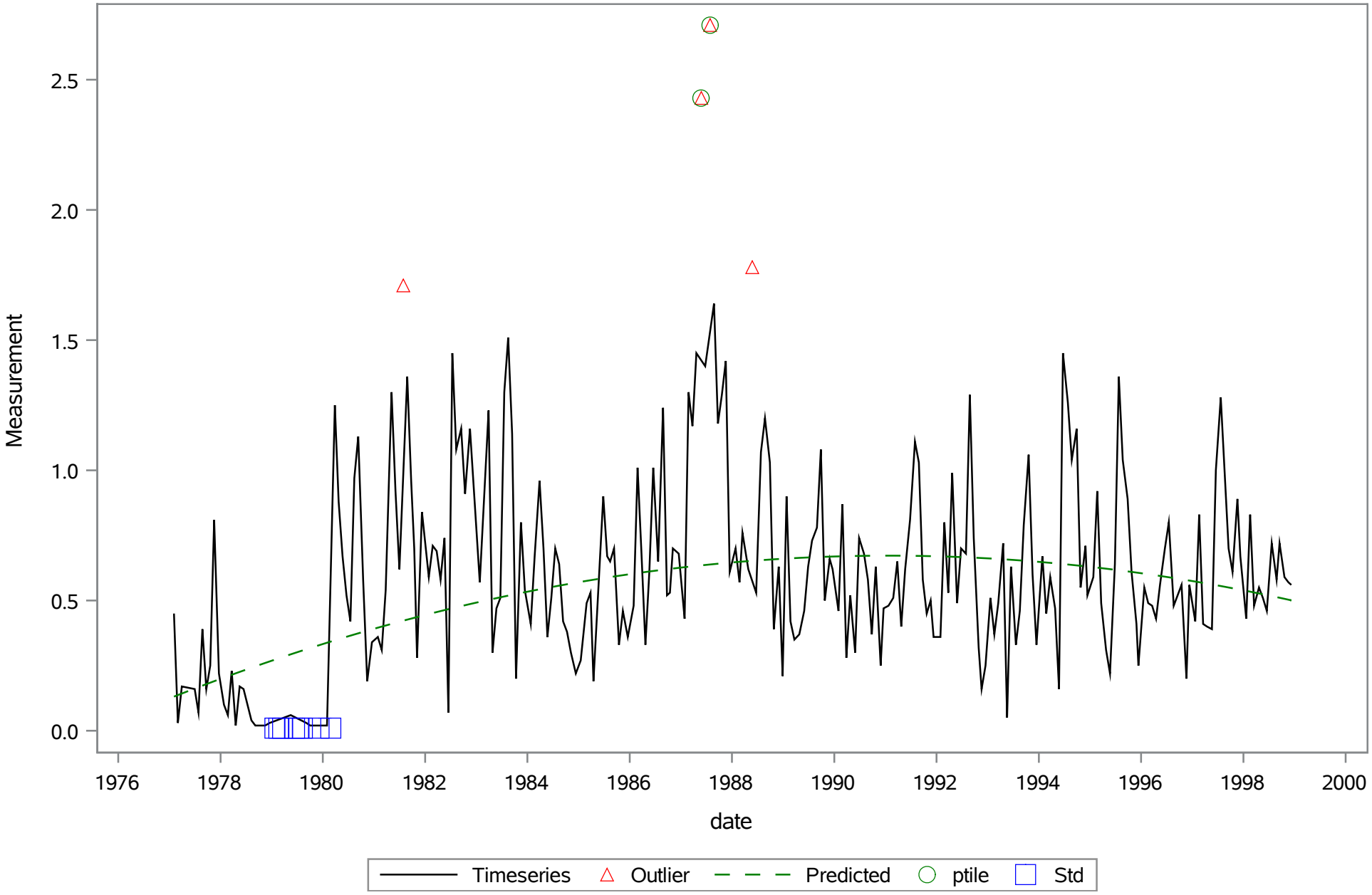
Little Manatee River
LITTLE MANATEE R AT CR579
Nitrogen Organic as N (mg/L) mg/L
Site ID = 21FLHILL24010013



Little Manatee River
L MANATEE R BR US 301
Nitrogen Organic as N (mg/L) mg/L
Site ID = 21FLHILL24010100



Little Manatee River
LITTLE MANATEE R AT SR #674
Nitrogen Organic as N (mg/L) mg/L
Site ID = 21FLHILL24010110

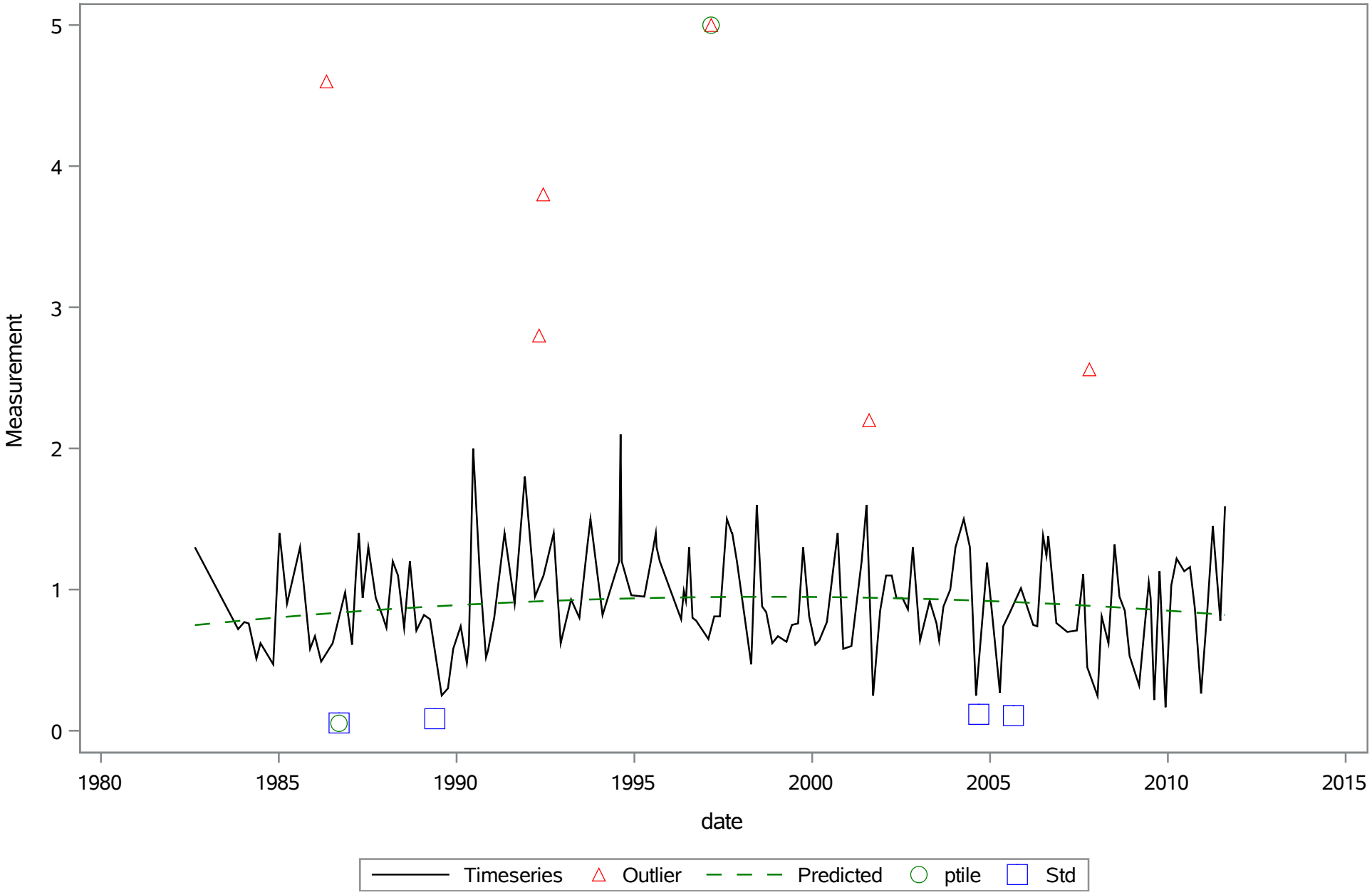


Little Manatee River

LITTLE MANATEE RIVER NEAR FT. LONESOME FL

Nitrogen Total as N (mg/L) mg/L

Site ID = 112WRD 02300100

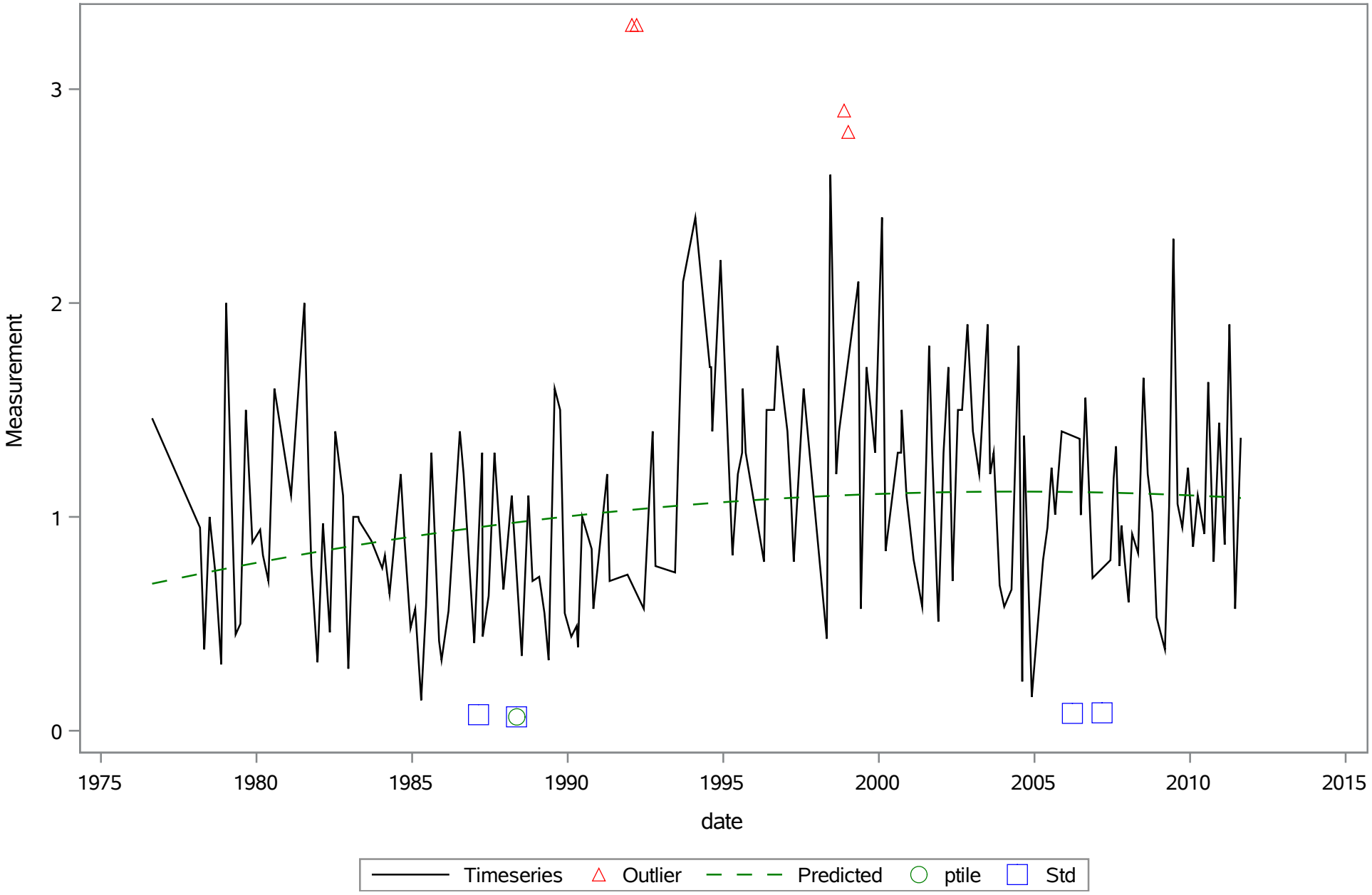


Little Manatee River

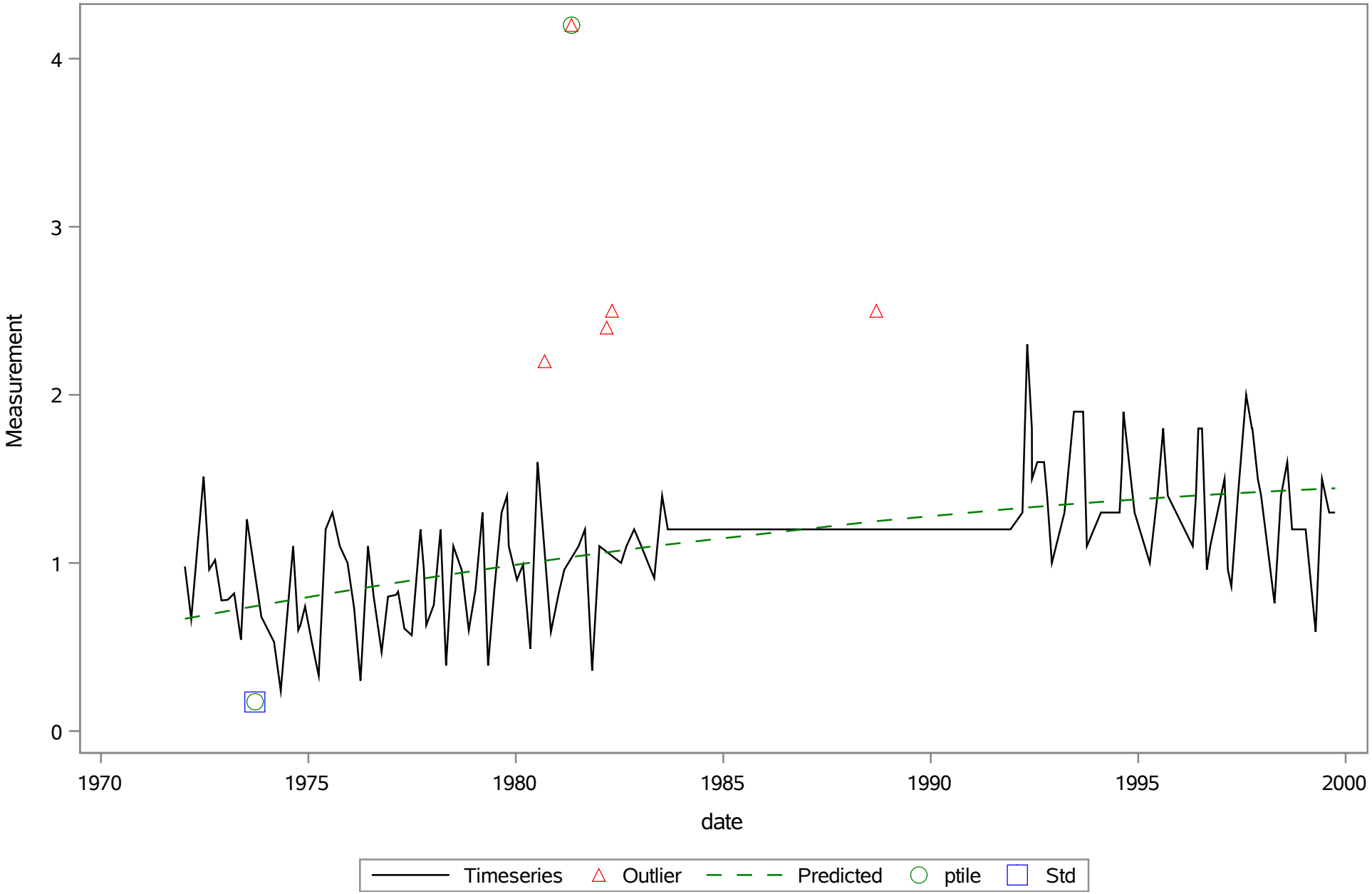
SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL

Nitrogen Total as N (mg/L) mg/L

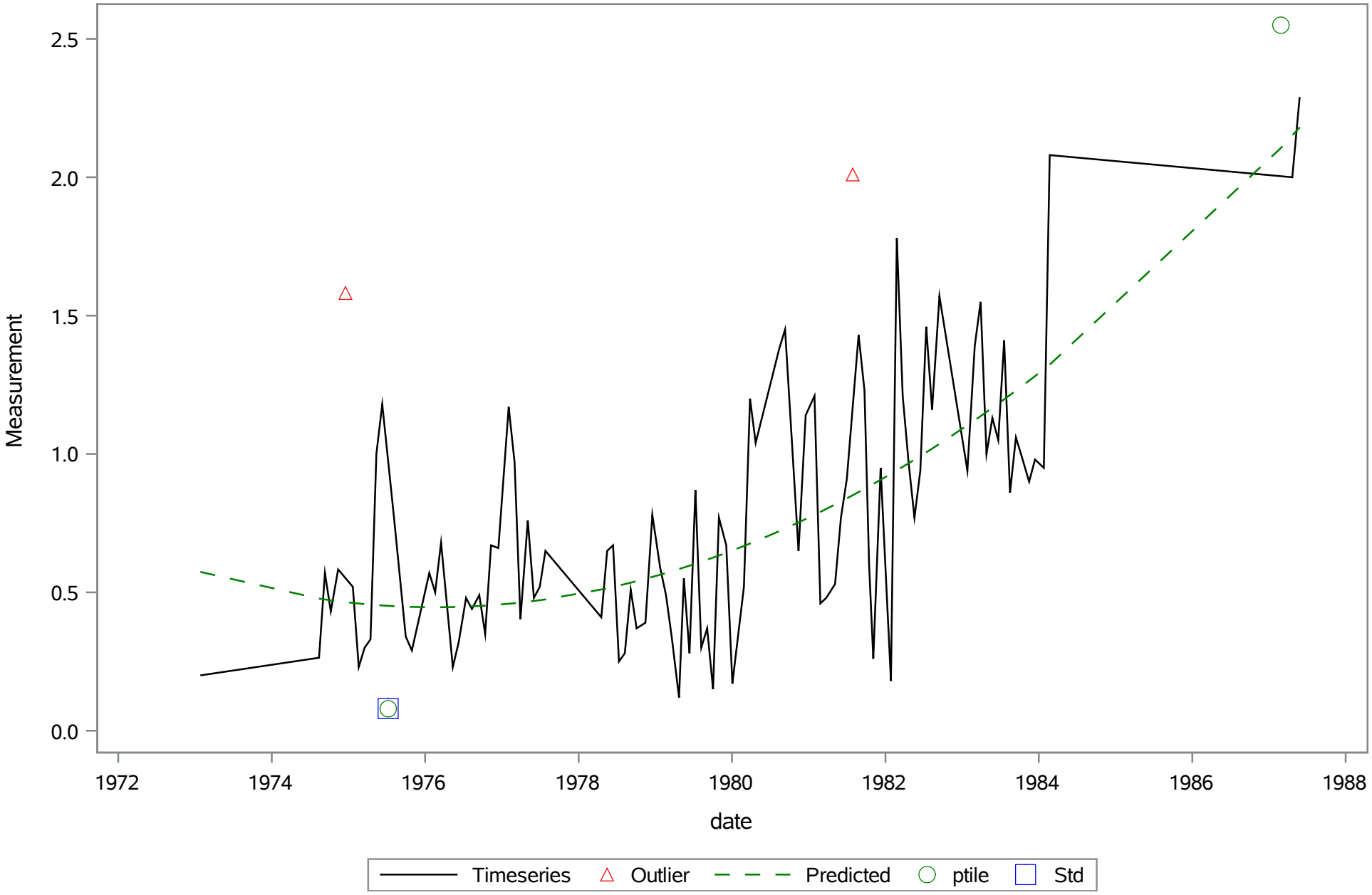
Site ID = 112WRD 02300200



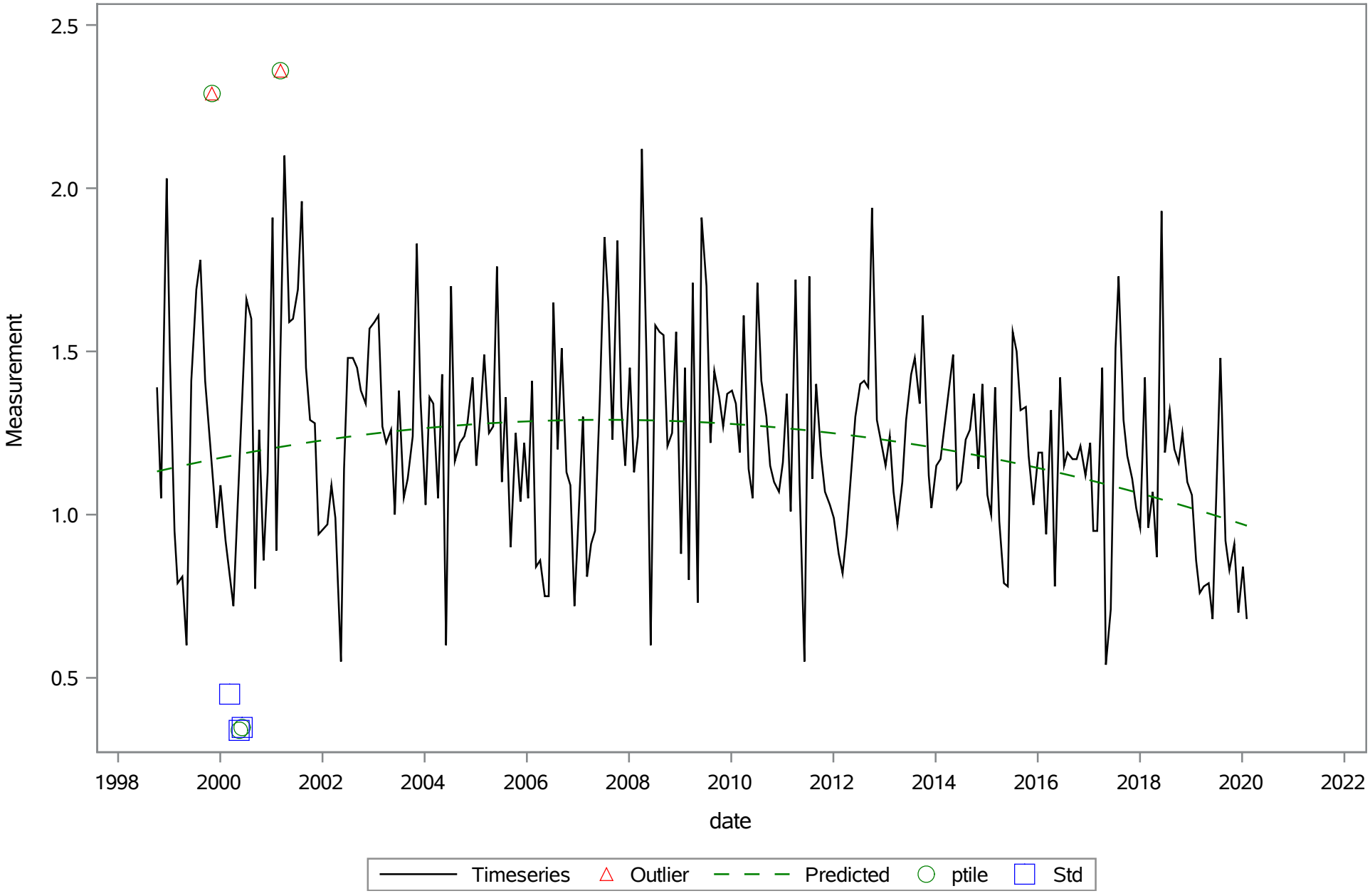
Little Manatee River
LITTLE MANATEE RIVER NEAR WIMAUMA FL
Nitrogen Total as N (mg/L) mg/L
Site ID = 112WRD 02300500



Little Manatee River
L MANATEE R BR US 301
Nitrogen Total as N (mg/L) mg/L
Site ID = 21FLA 24010100



Little Manatee River
LITTLE MANATEE RIVER AT US HWY 301
Nitrogen Total as N (mg/L) mg/L
Site ID = 21FLGW 3555

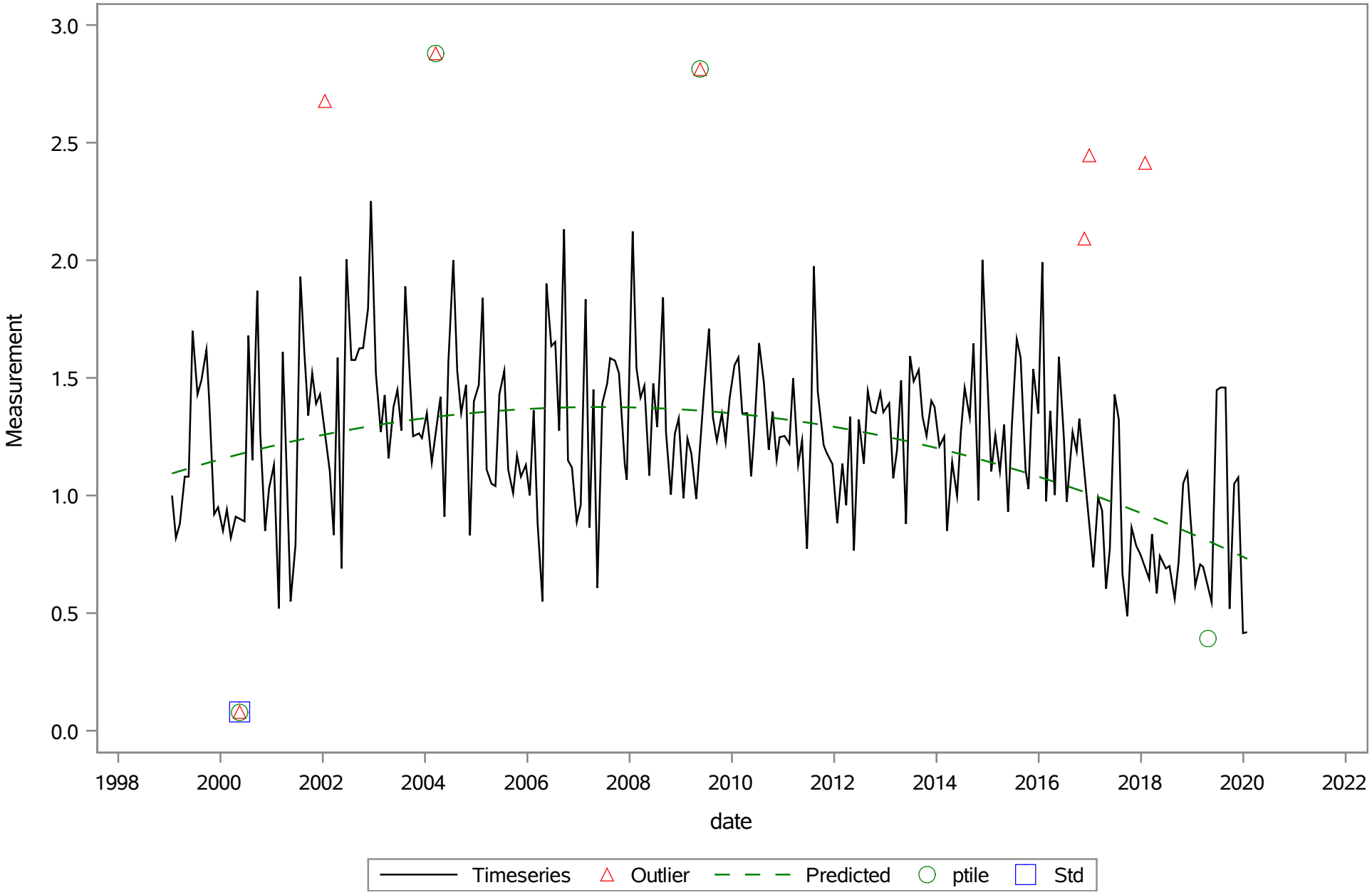


Little Manatee River

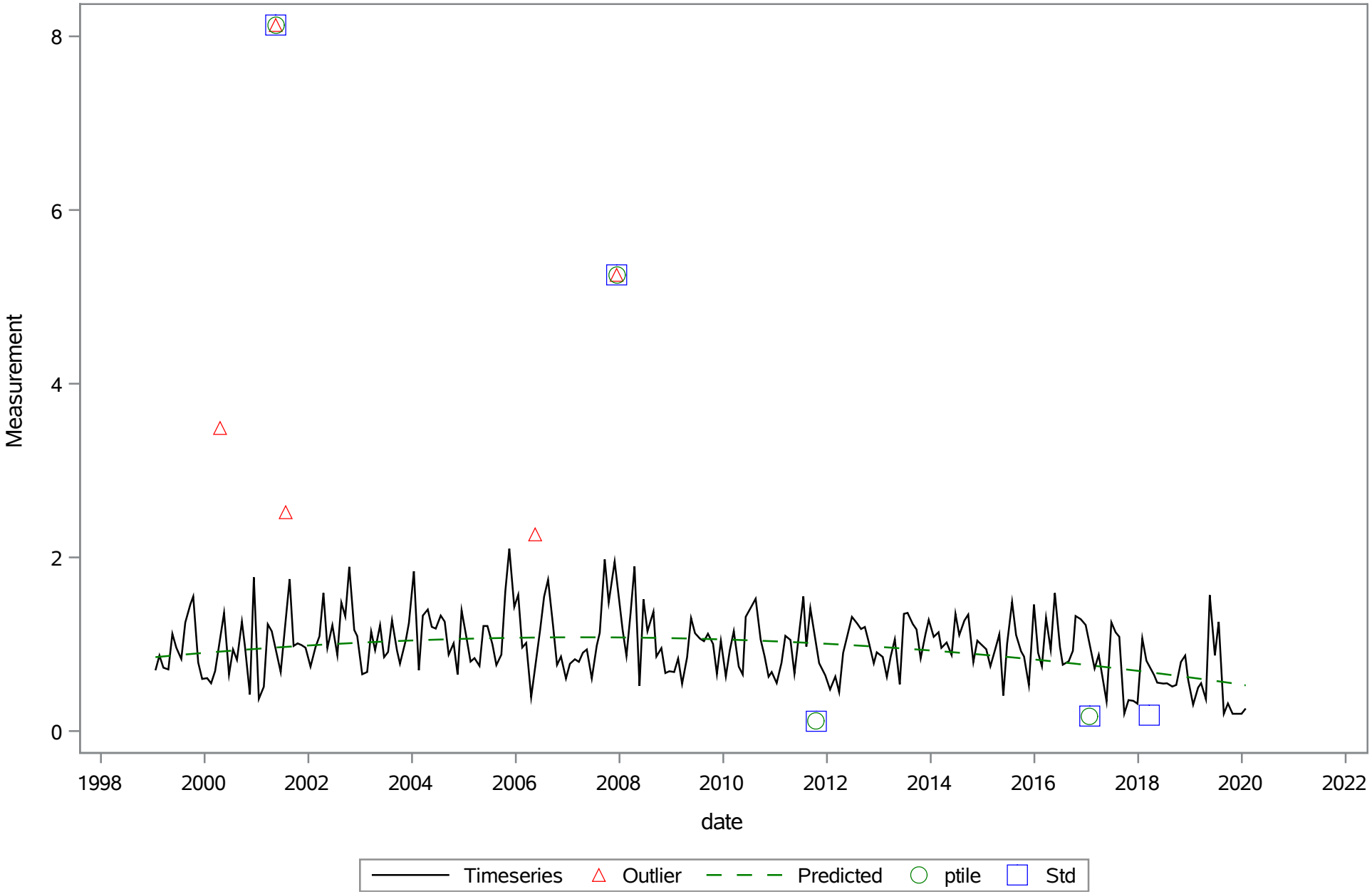
Little Manatee River at US 301 bridge

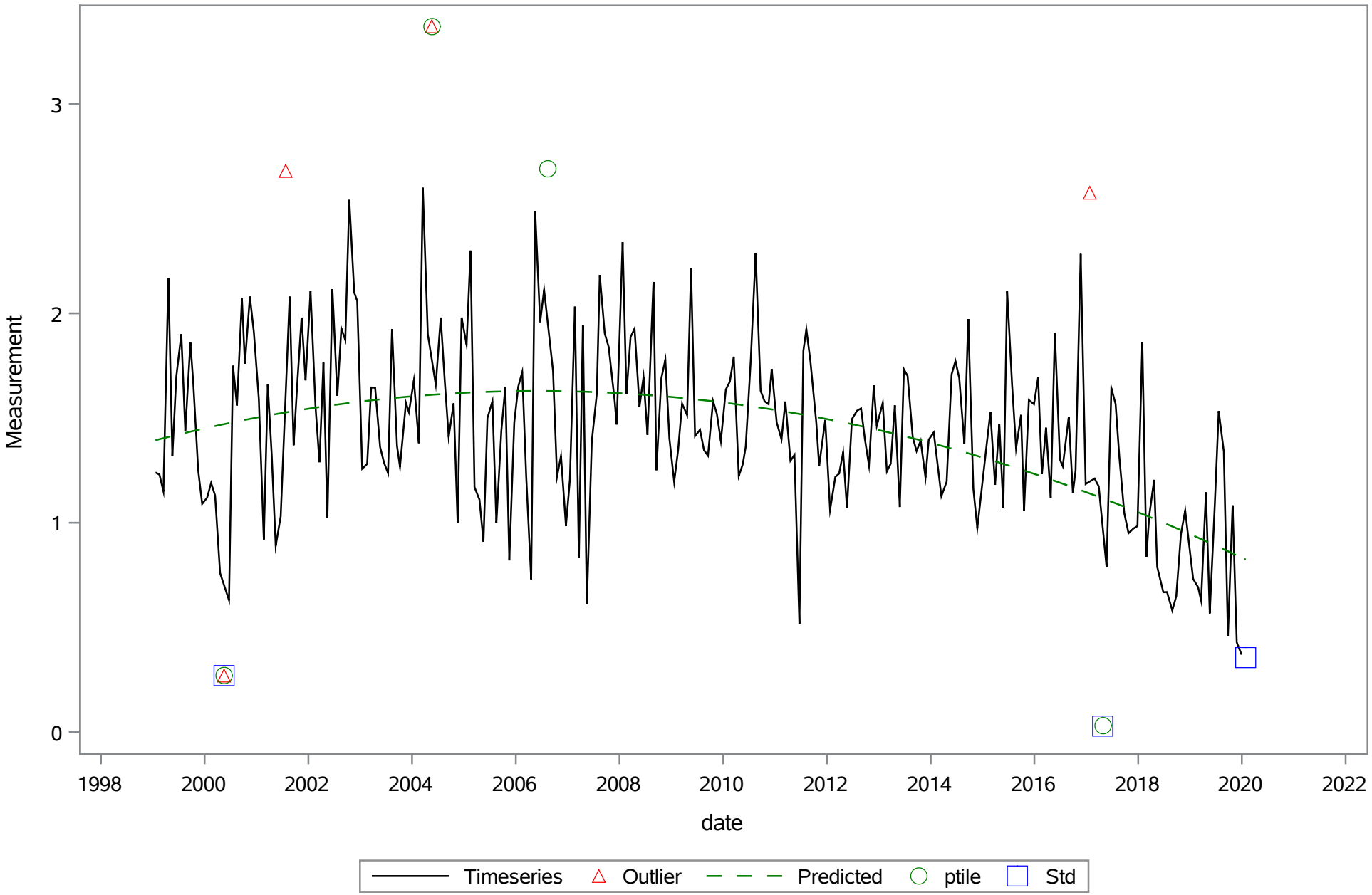
Nitrogen Total as N (mg/L) mg/L

Site ID = 21FLHILL113

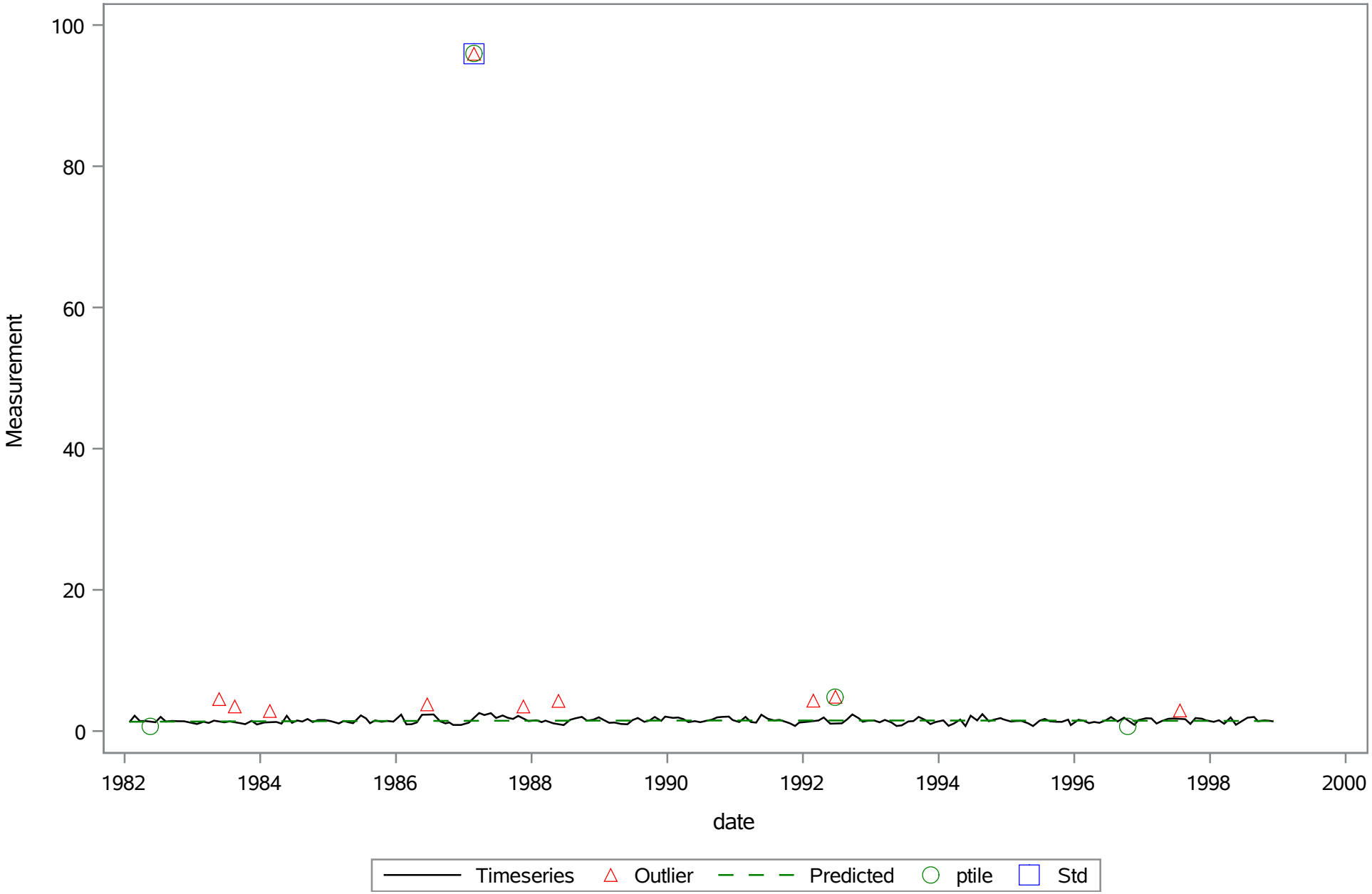


Little Manatee River
Little Manatee River at SR 674
Nitrogen Total as N (mg/L) mg/L
Site ID = 21FLHILL129

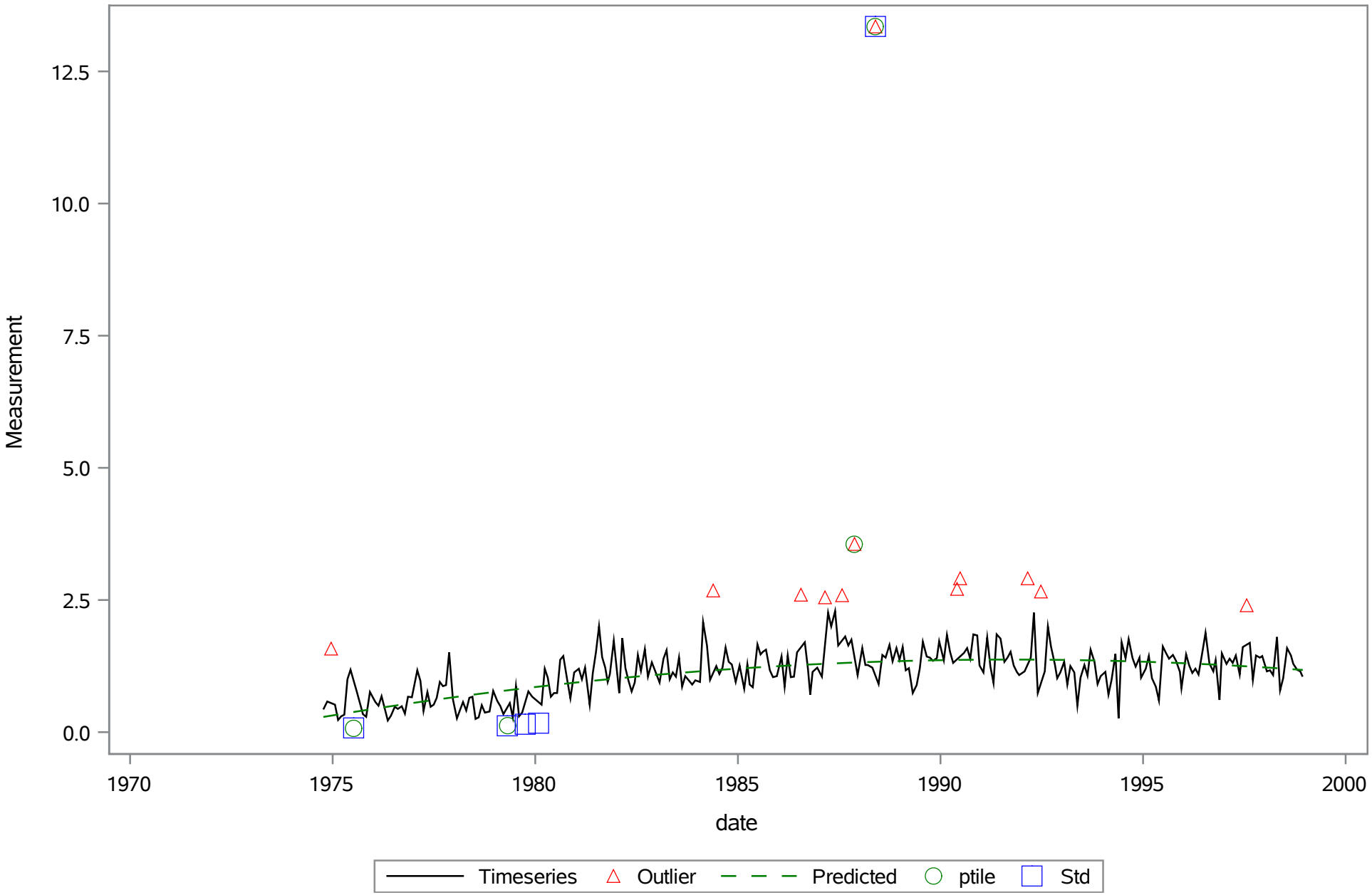



Little Manatee River
Little Manatee River at CR 579
Nitrogen Total as N (mg/L) mg/L
Site ID = 21FLHILL140
Measurement
0
1
2
3
1998
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
2022
date
Timeseries
Outlier
Predicted
ptile
Std

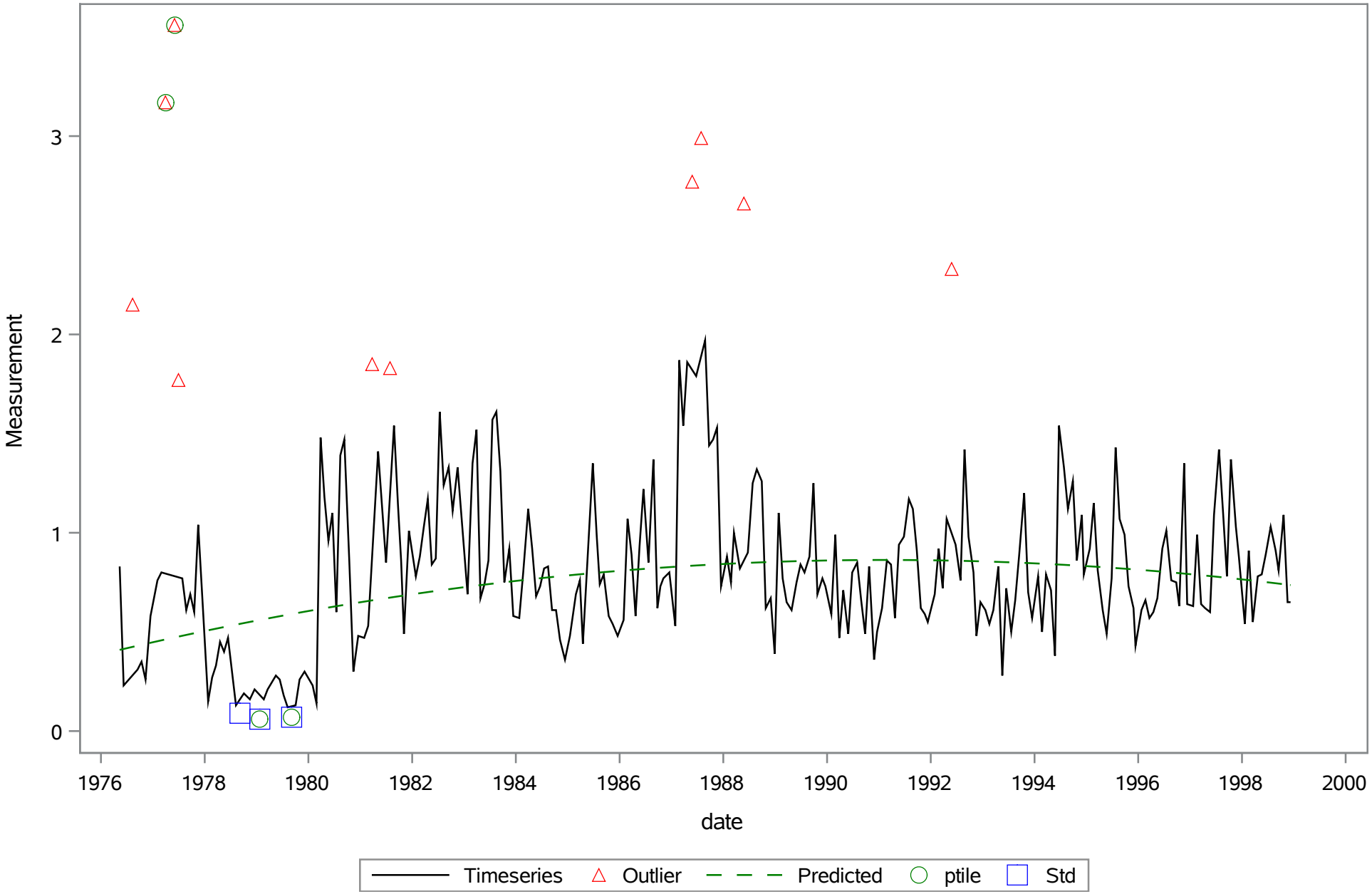
Little Manatee River
LITTLE MANATEE R AT CR579
Nitrogen Total as N (mg/L) mg/L
Site ID = 21FLHILL24010013

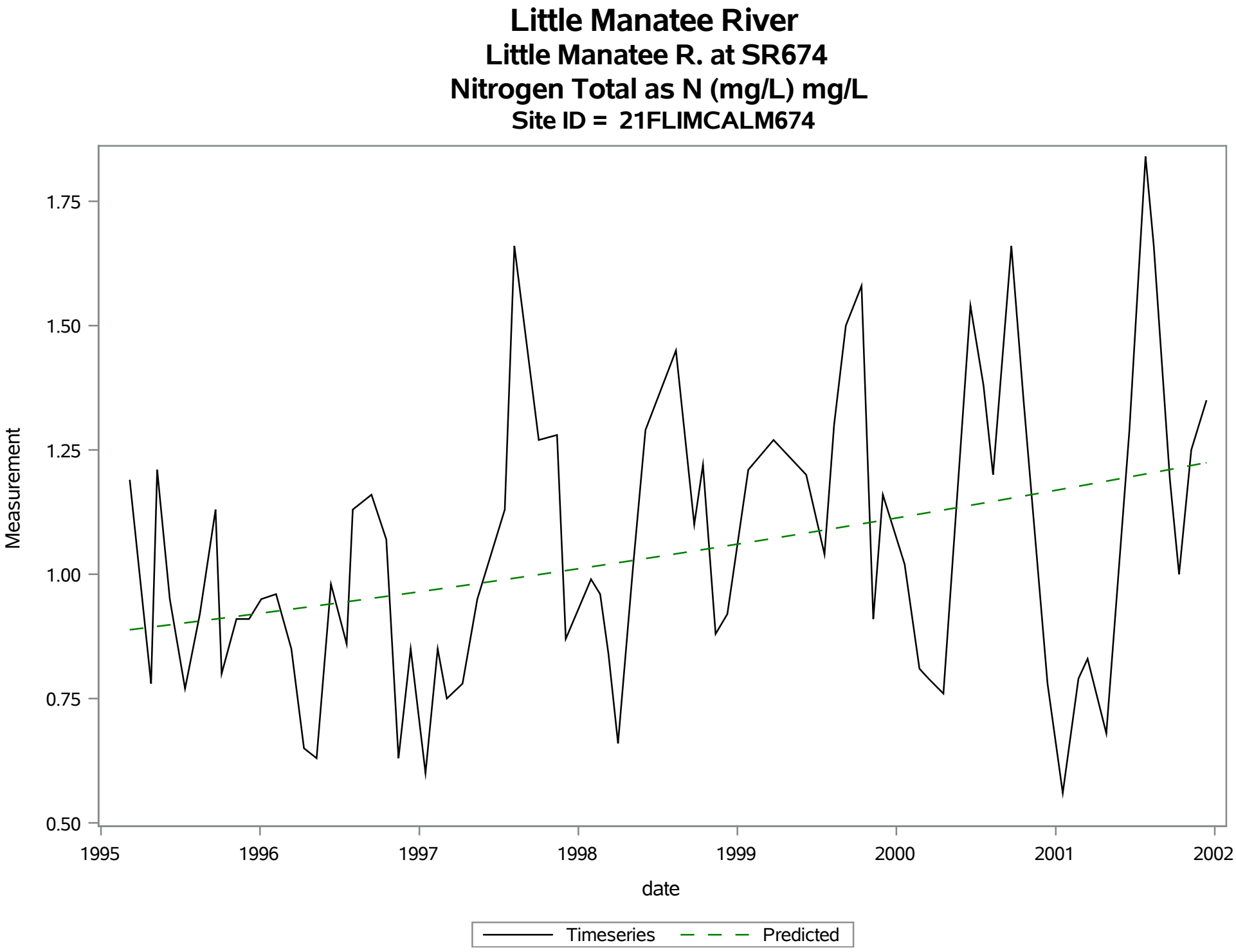


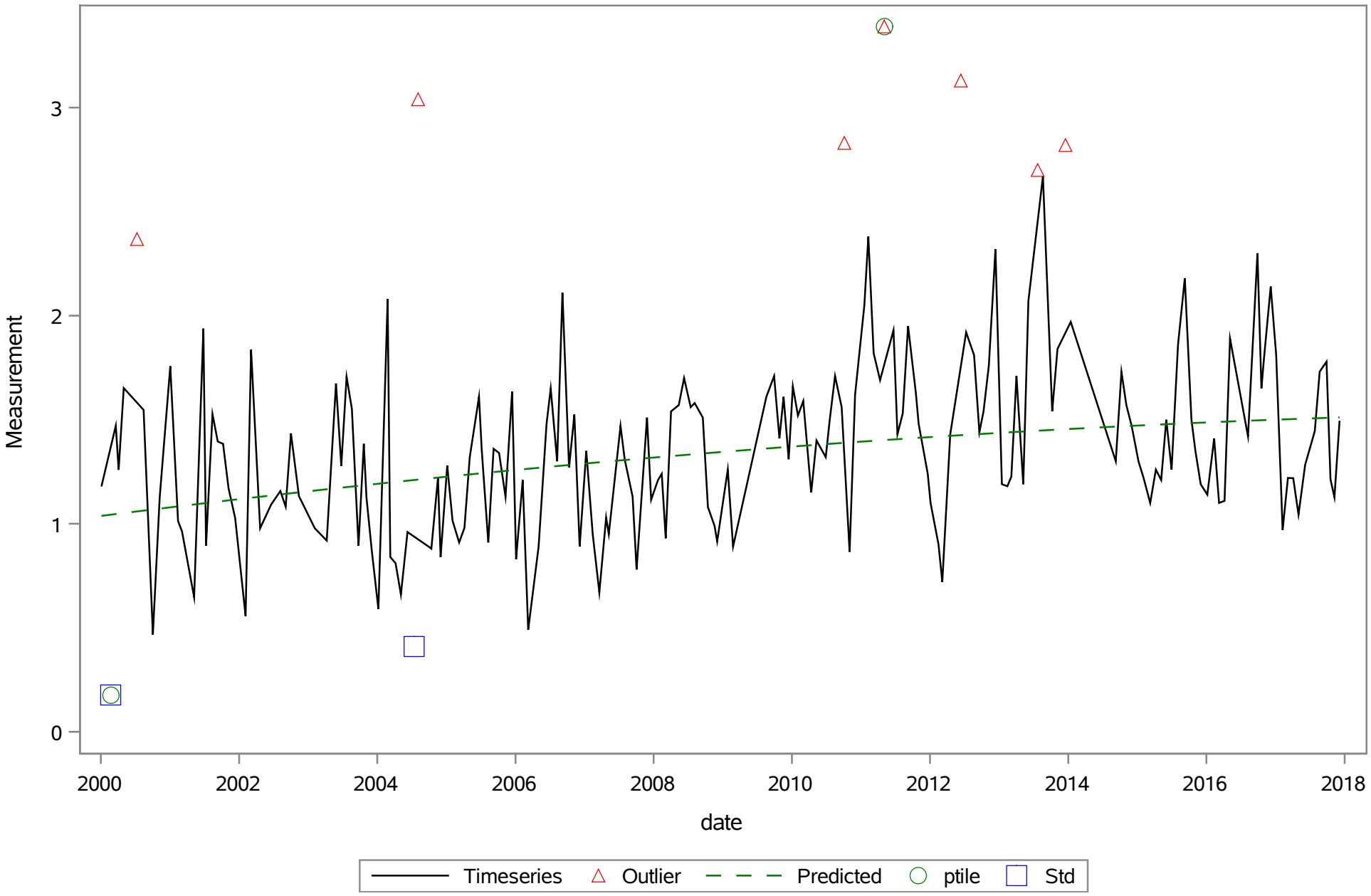
Little Manatee River
L MANATEE R BR US 301
Nitrogen Total as N (mg/L) mg/L
Site ID = 21FLHILL24010100



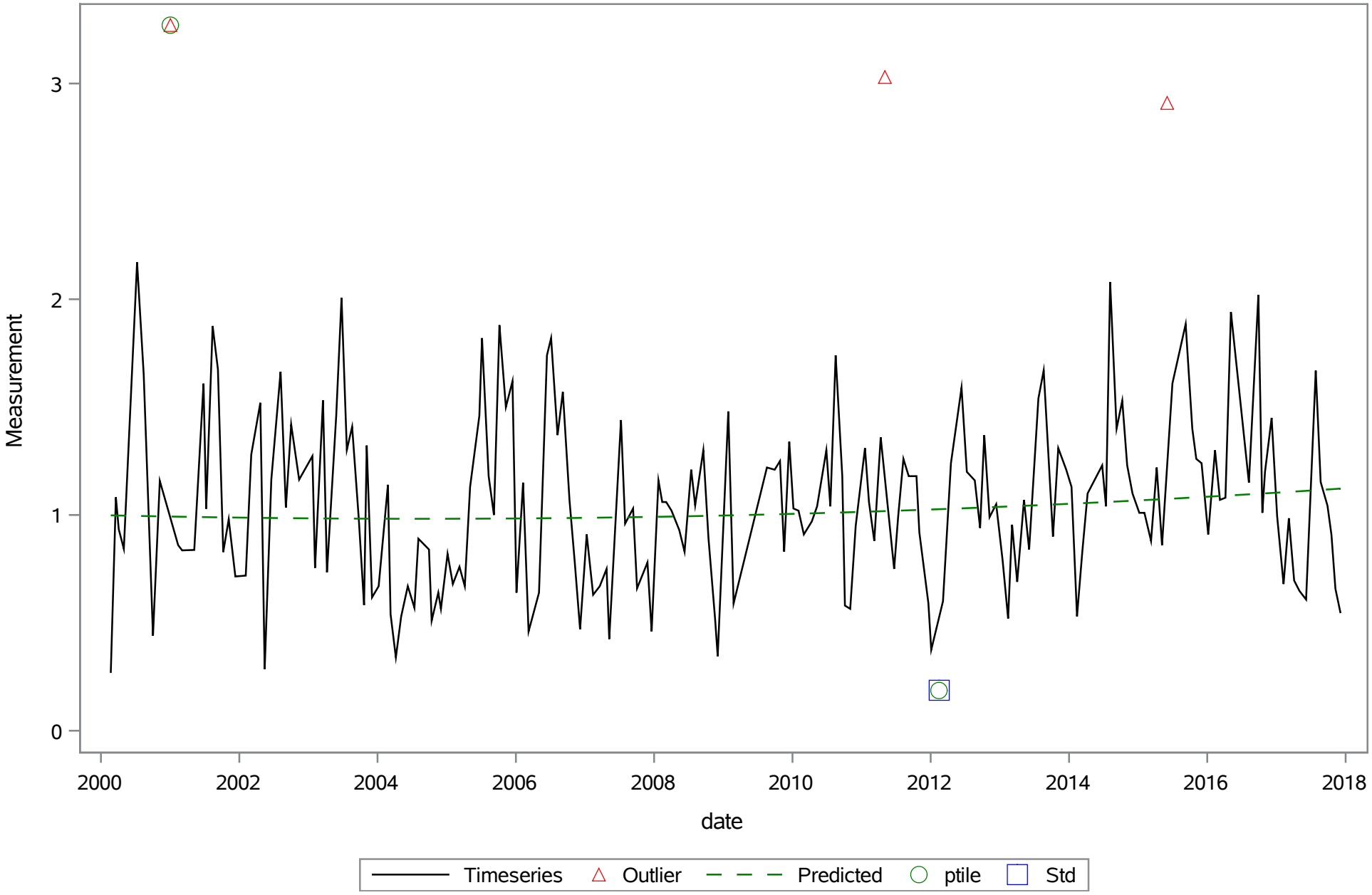
Little Manatee River
LITTLE MANATEE R AT SR #674
Nitrogen Total as N (mg/L) mg/L
Site ID = 21FLHILL24010110




Little Manatee River
Little Manatee R. at SR674
Nitrogen Total as N (mg/L) mg/L
Site ID = 21FLIMCALM674
Measurement
1.75
1.50
1.25
1.00
0.75
0.50
1995
1996
1997
1998
1999
2000
2001
2002
date
Timeseries
Predicted


Little Manatee River
D1
Nitrogen Total as N (mg/L) mg/L
Site ID = 21FLMANAD1
Measurement
0
1
2
3
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
date
Timeseries
Outlier
Predicted
ptile
Std

Little Manatee River
D3
Nitrogen Total as N (mg/L) mg/L
Site ID = 21FLMANAD3

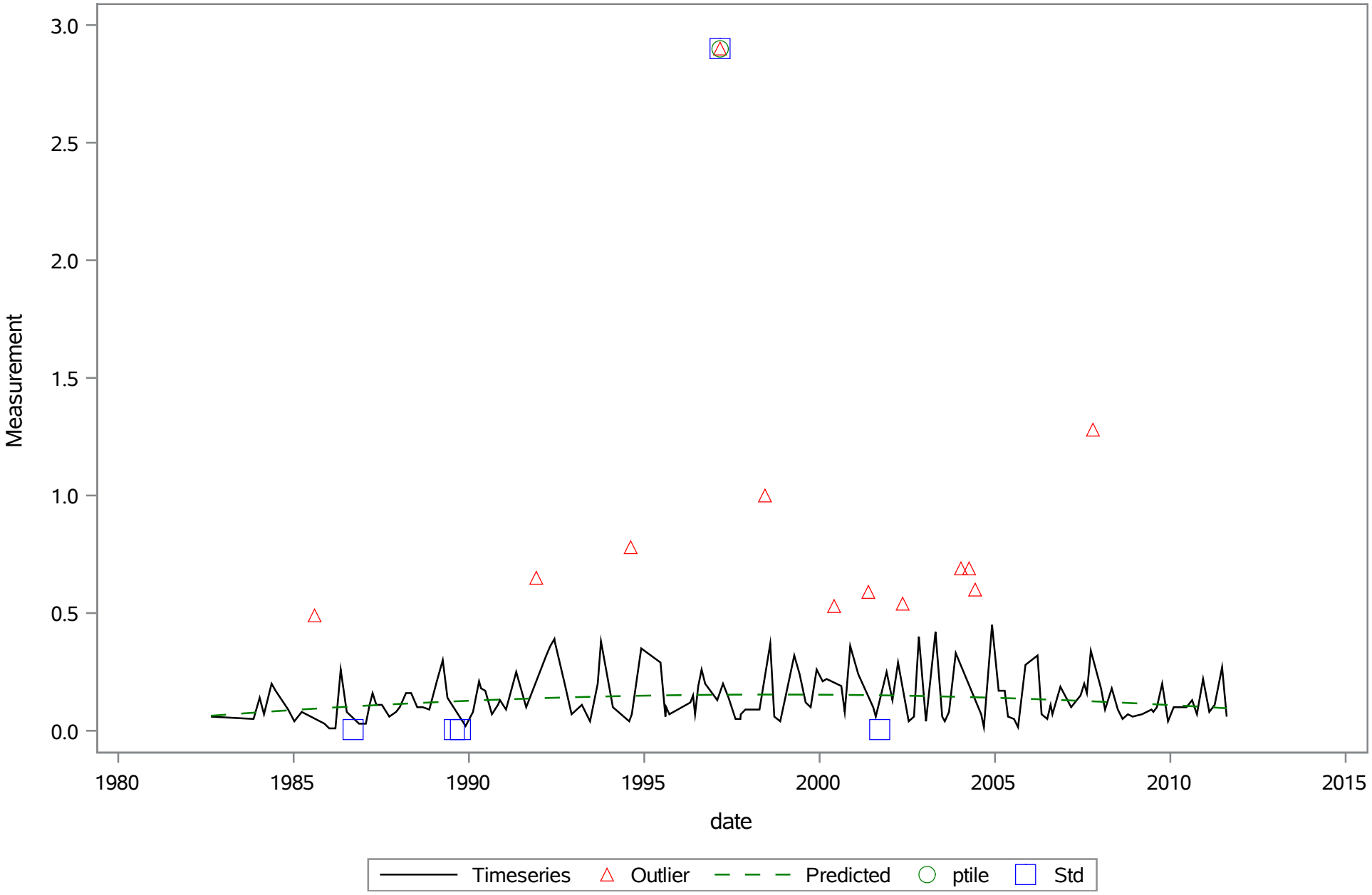


Little Manatee River

LITTLE MANATEE RIVER NEAR FT. LONESOME FL

Nutrients (Nitrate-Nitrite) mg/L

Site ID = 112WRD 02300100

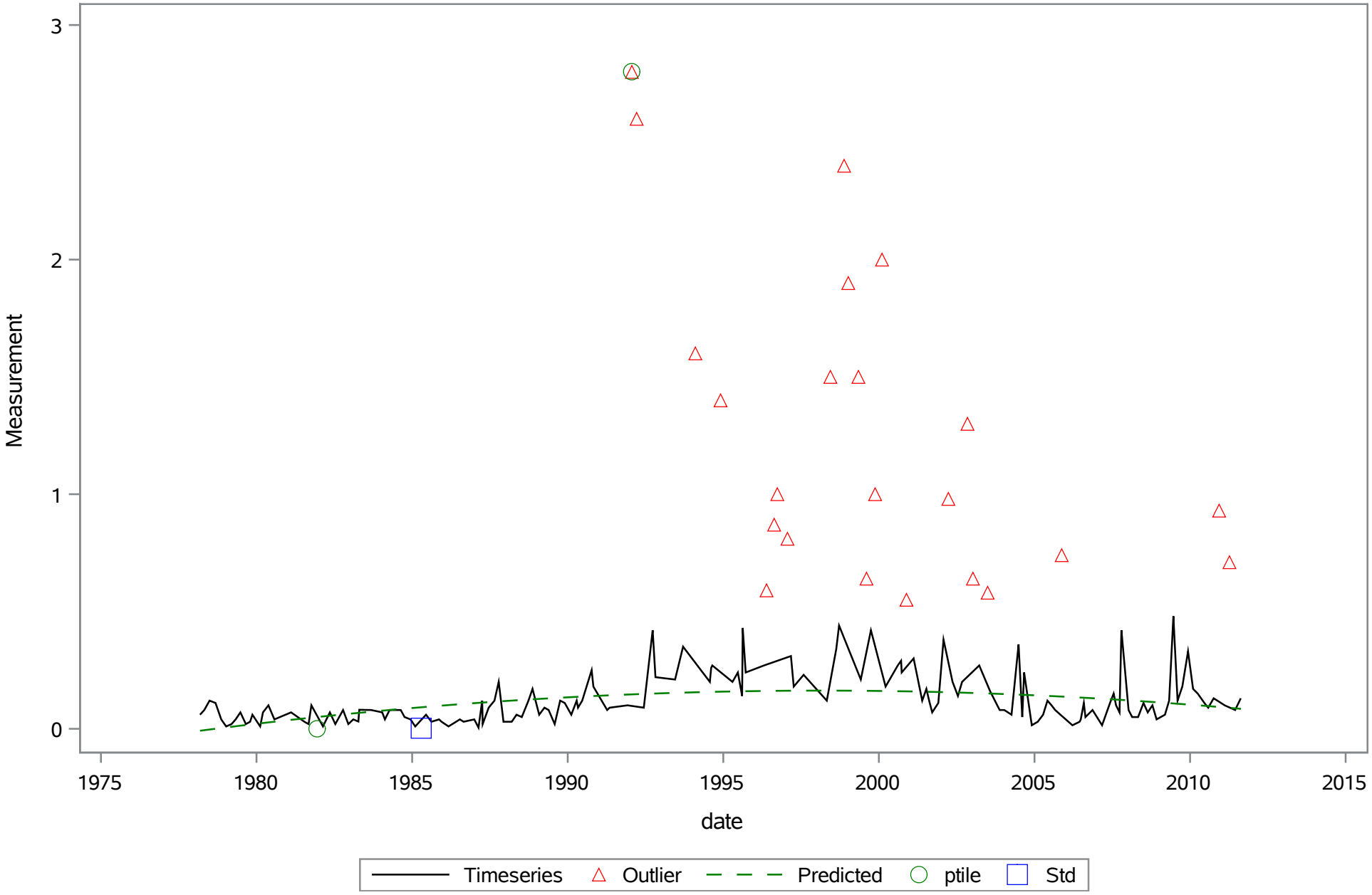


Little Manatee River

SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL

Nutrients (Nitrate-Nitrite) mg/L

Site ID = 112WRD 02300200

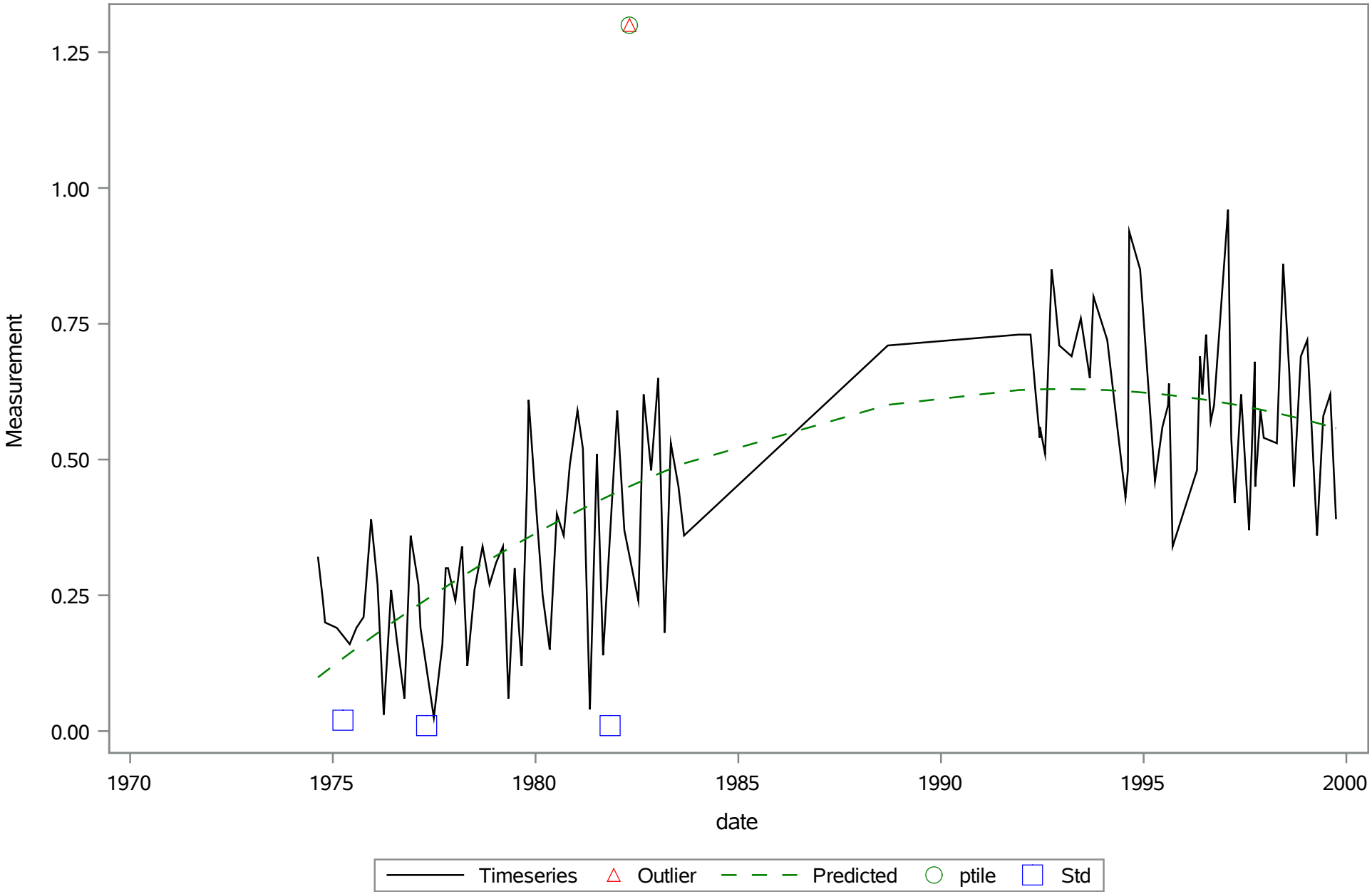


Little Manatee River

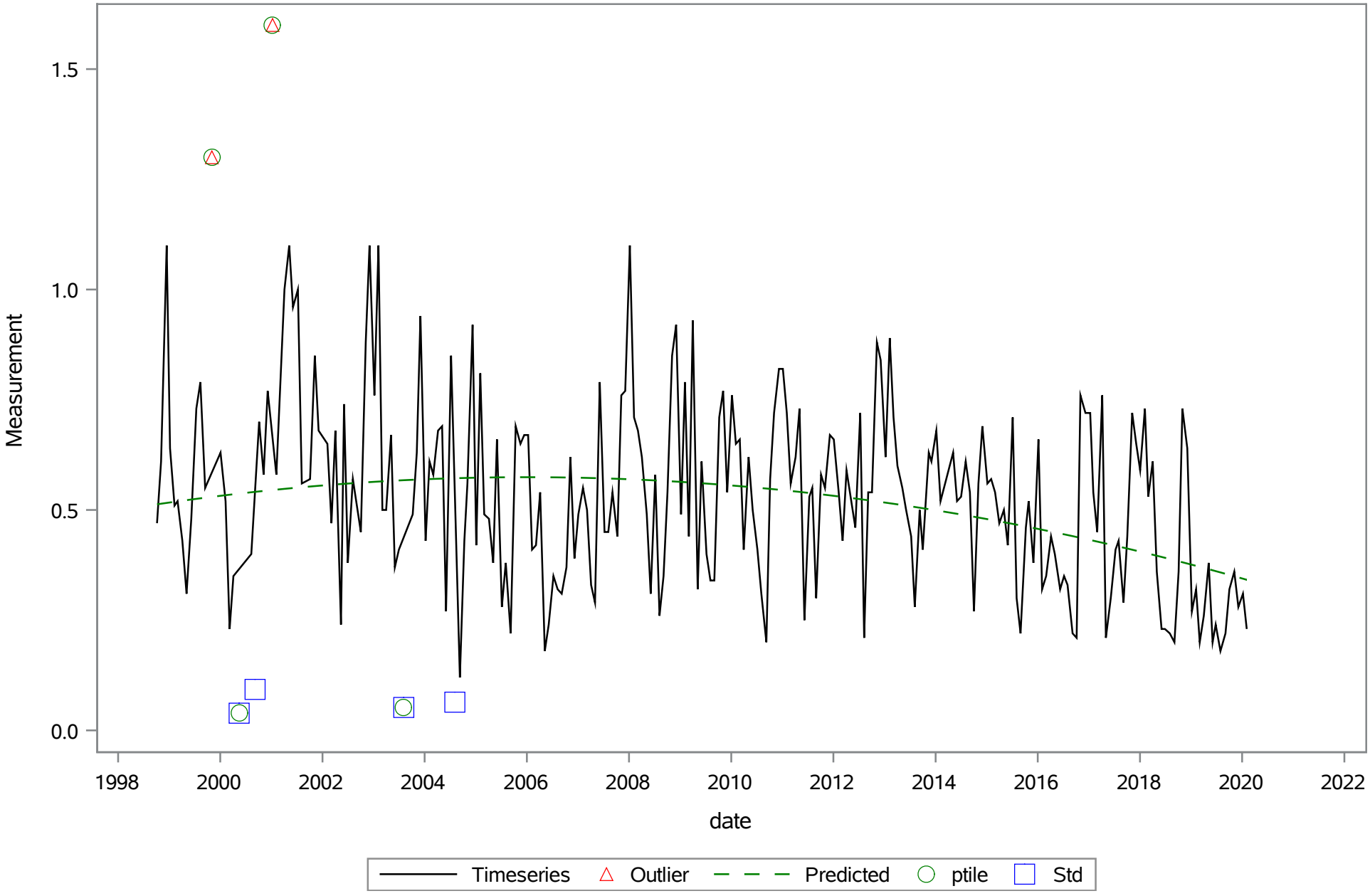
LITTLE MANATEE RIVER NEAR WIMAUMA FL

Nutrients (Nitrate-Nitrite) mg/L

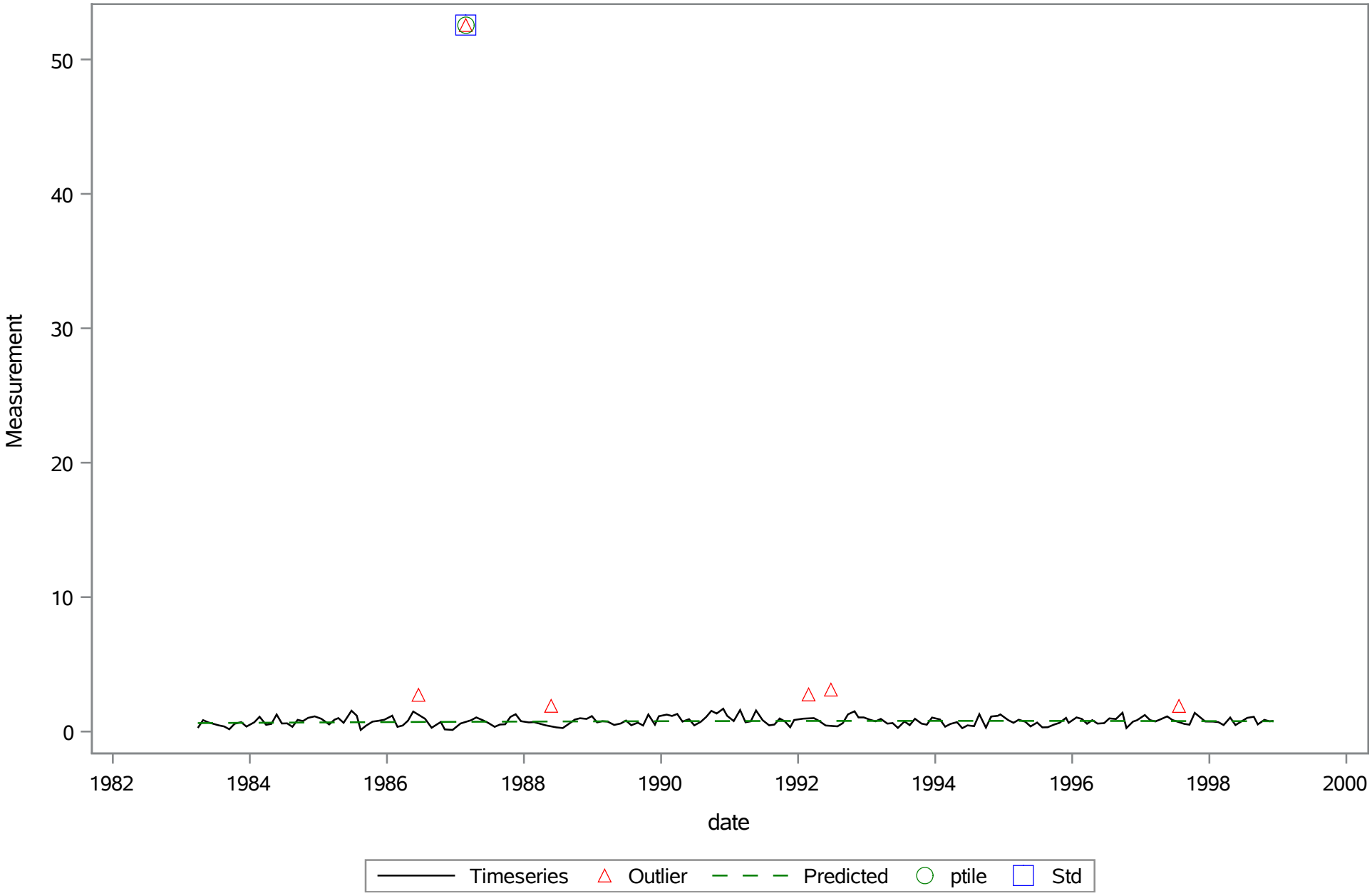
Site ID = 112WRD 02300500



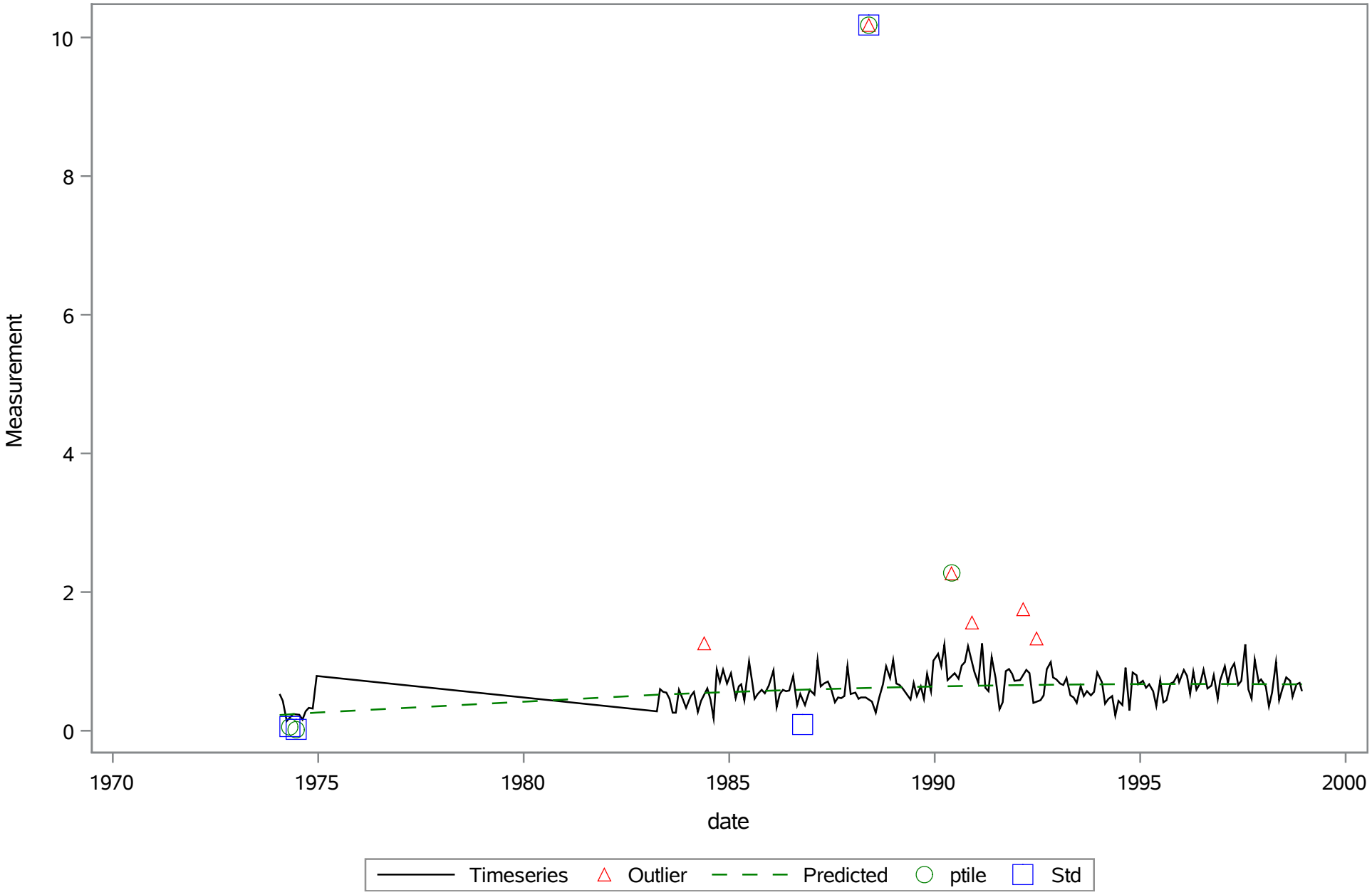
Little Manatee River
LITTLE MANATEE RIVER AT US HWY 301
Nutrients (Nitrate-Nitrite) mg/L
Site ID = 21FLGW 3555



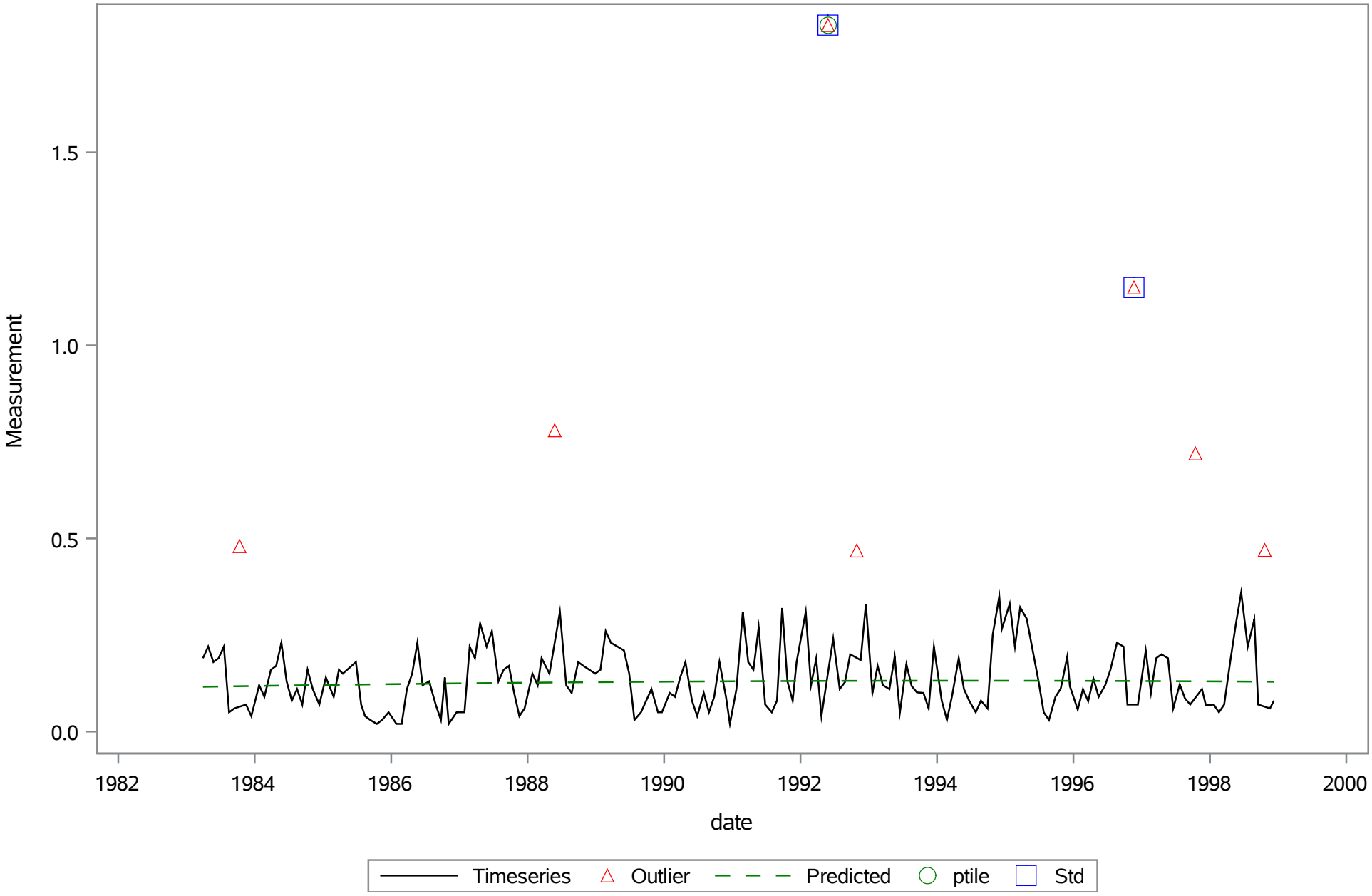
Little Manatee River
LITTLE MANATEE R AT CR579
Nutrients (Nitrate-Nitrite) mg/L
Site ID = 21FLHILL24010013

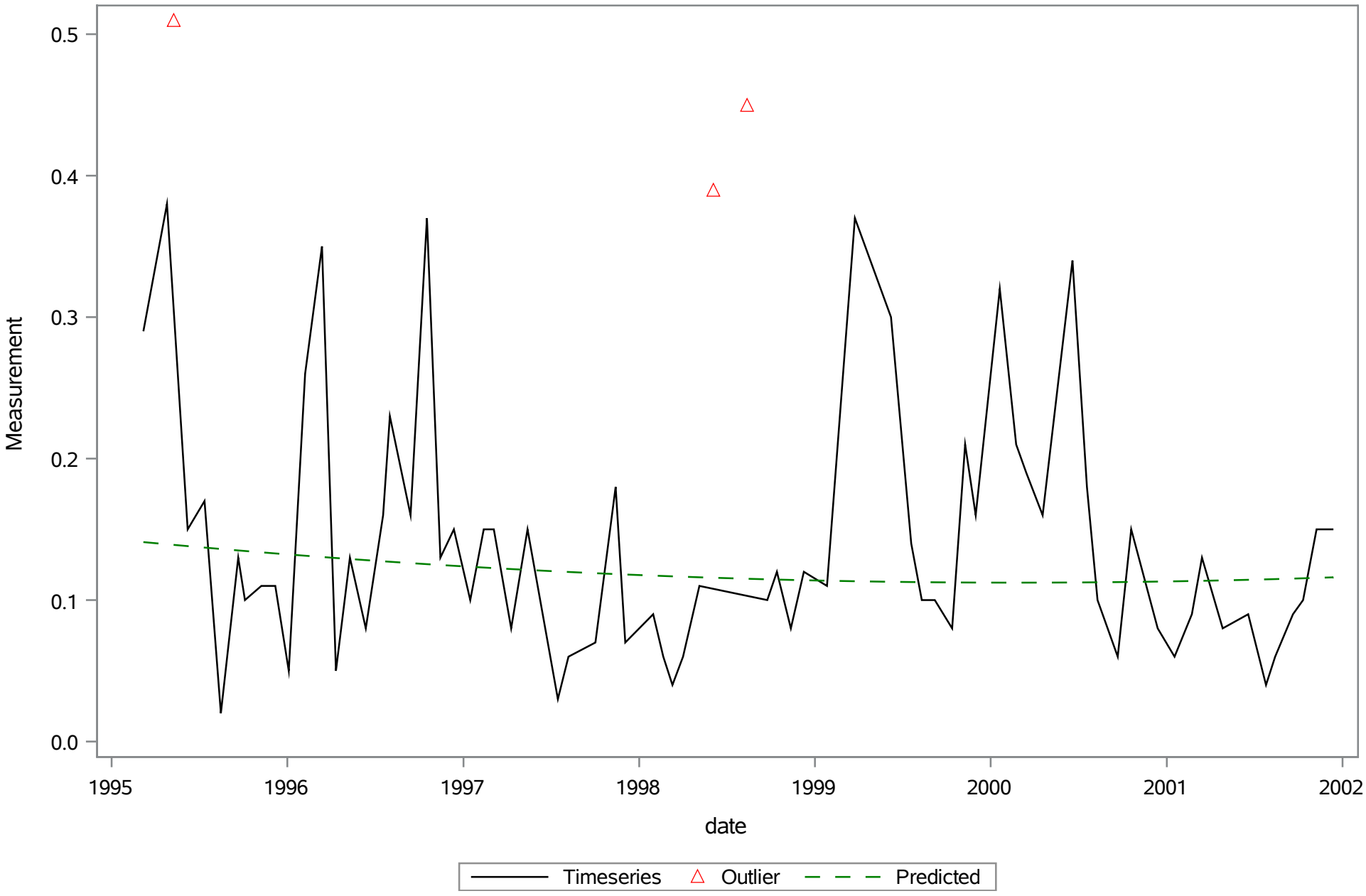


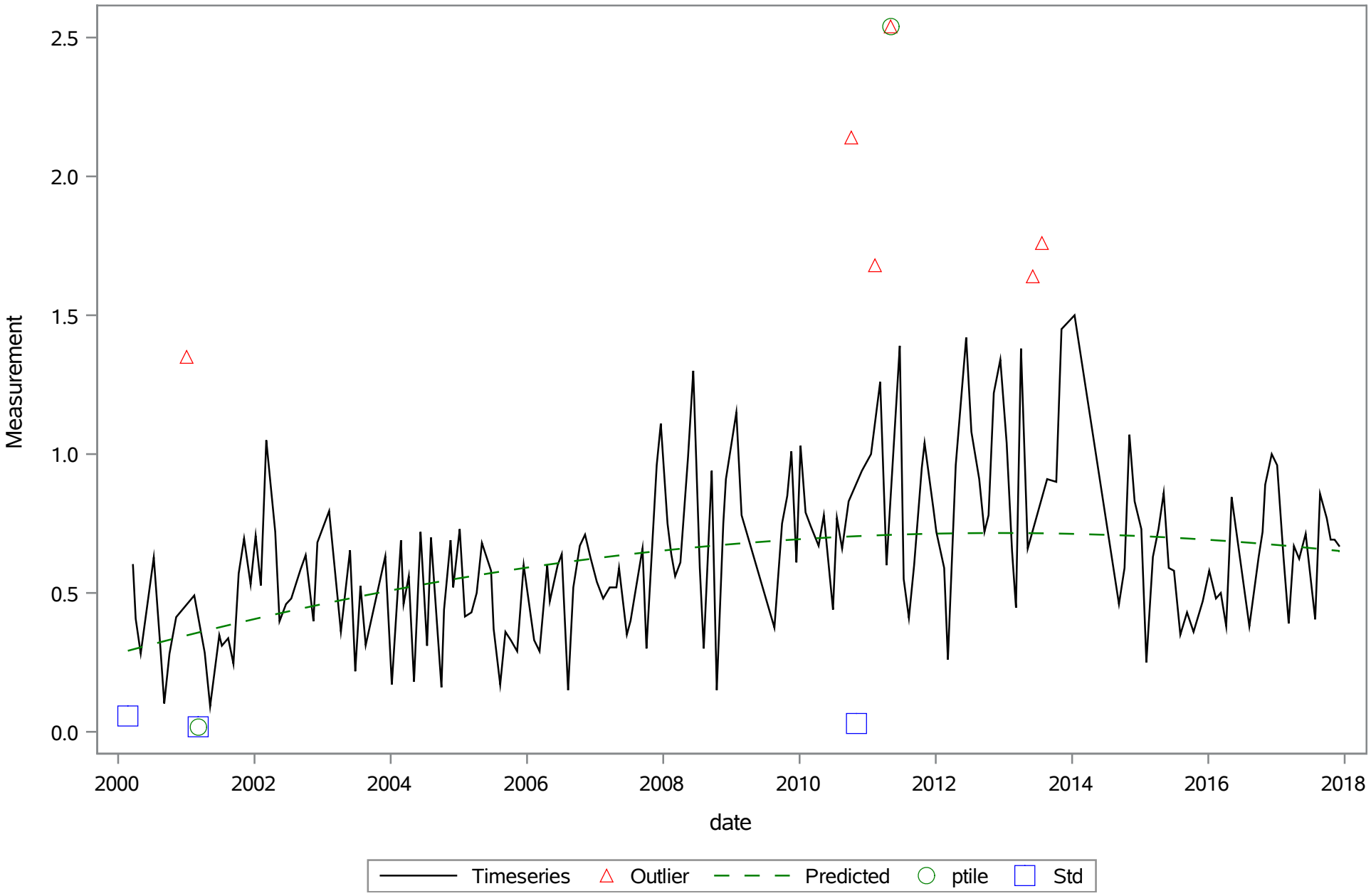
Little Manatee River
L MANATEE R BR US 301
Nutrients (Nitrate-Nitrite) mg/L
Site ID = 21FLHILL24010100



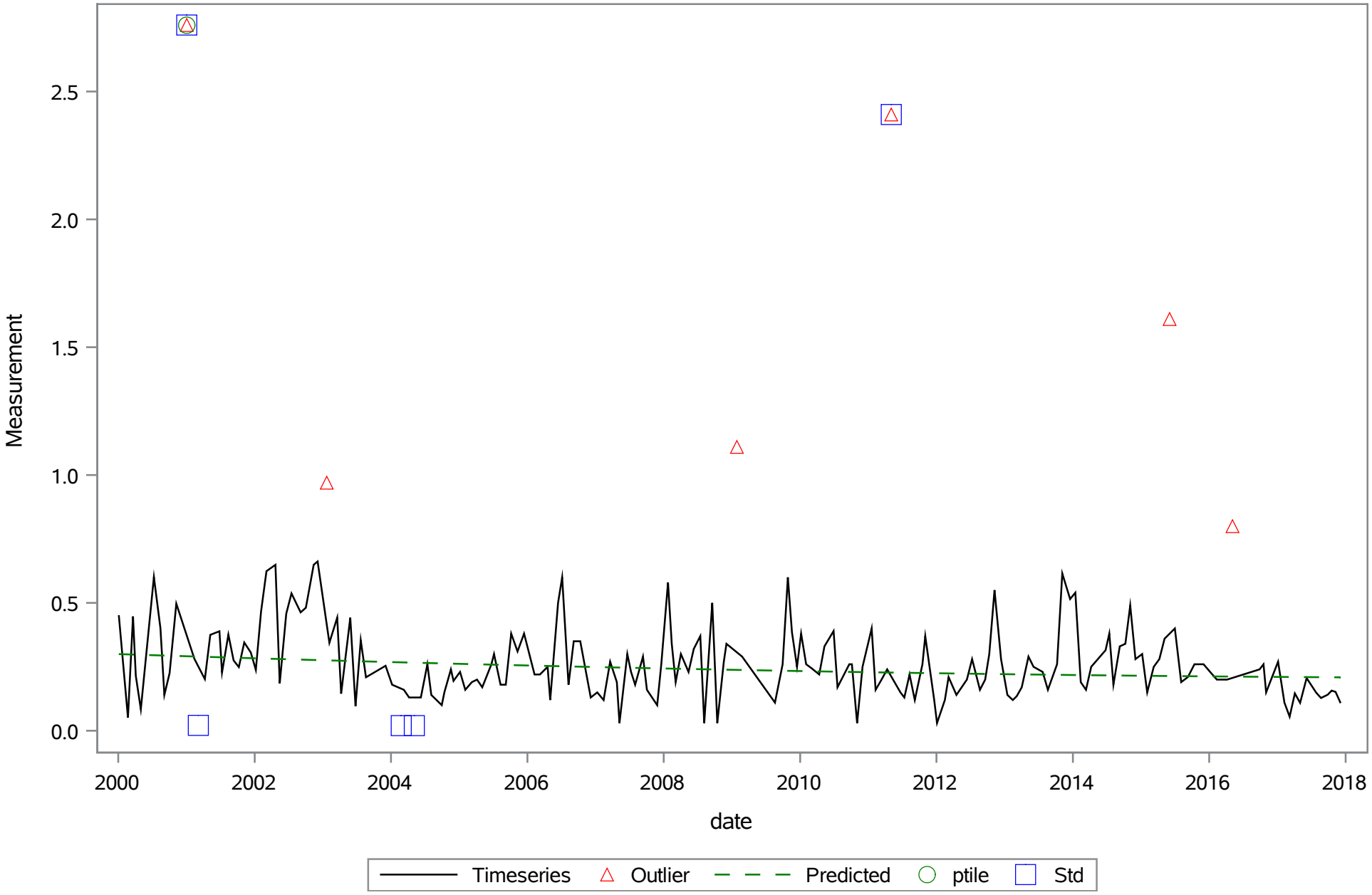
Little Manatee River
LITTLE MANATEE R AT SR #674
Nutrients (Nitrate-Nitrite) mg/L
Site ID = 21FLHILL24010110




Little Manatee River
Little Manatee R. at SR674
Nutrients (Nitrate-Nitrite) mg/L
Site ID = 21FLIMCALM674
Measurement
0.0
0.1
0.2
0.3
0.4
0.5
1995
1996
1997
1998
1999
2000
2001
2002
date
Timeseries
Outlier
Predicted


Little Manatee River
D1
Nutrients (Nitrate-Nitrite) mg/L
Site ID = 21FLMANAD1
Measurement
2.5
2.0
1.5
1.0
0.5
0.0
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
date
Timeseries
Outlier
Predicted
ptile
Std

Little Manatee River
D3
Nutrients (Nitrate-Nitrite) mg/L
Site ID = 21FLMANAD3

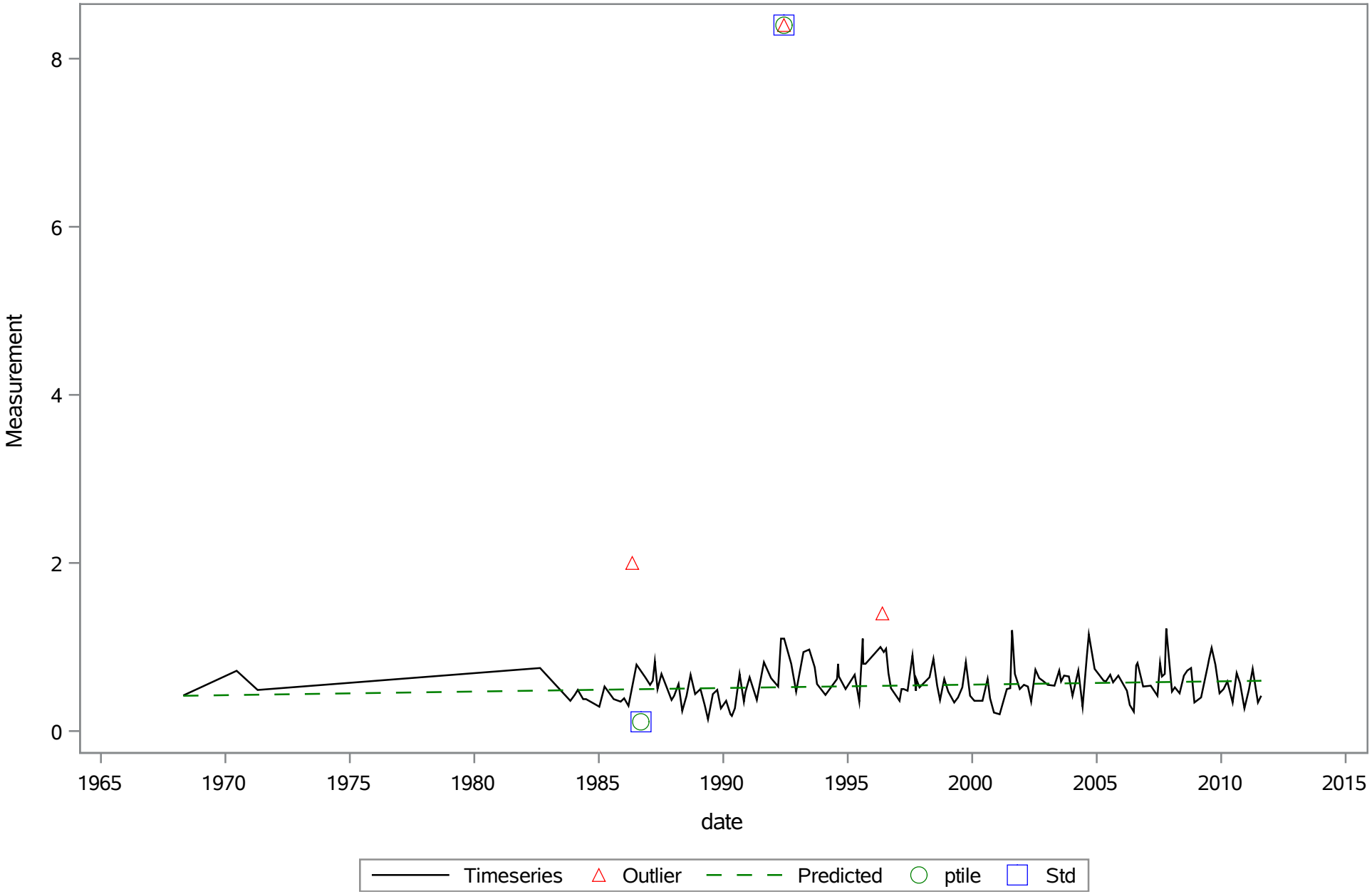


Little Manatee River

LITTLE MANATEE RIVER NEAR FT. LONESOME FL

Phosphorus Total as P (mg/L) mg/L

Site ID = 112WRD 02300100

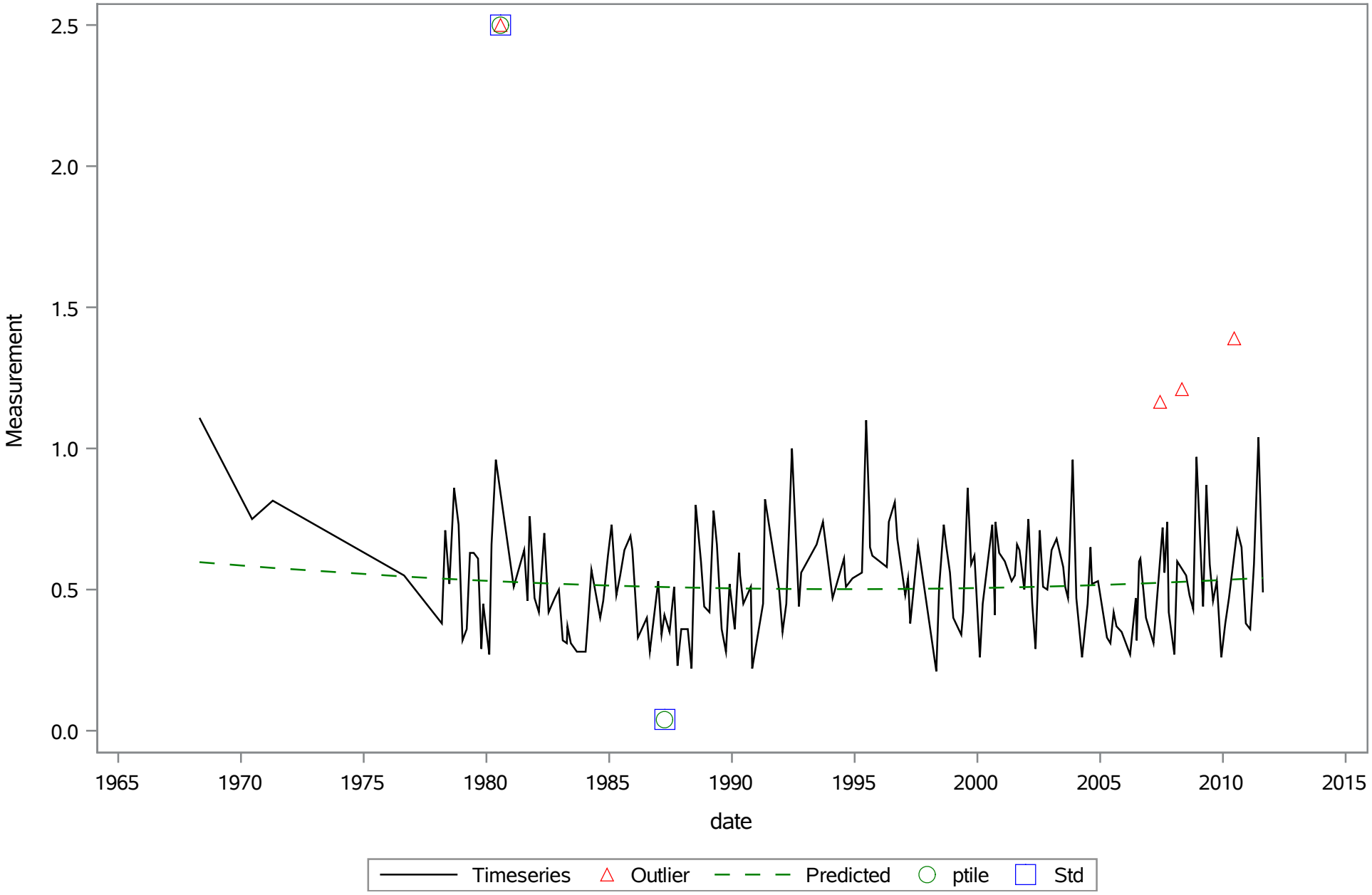


Little Manatee River

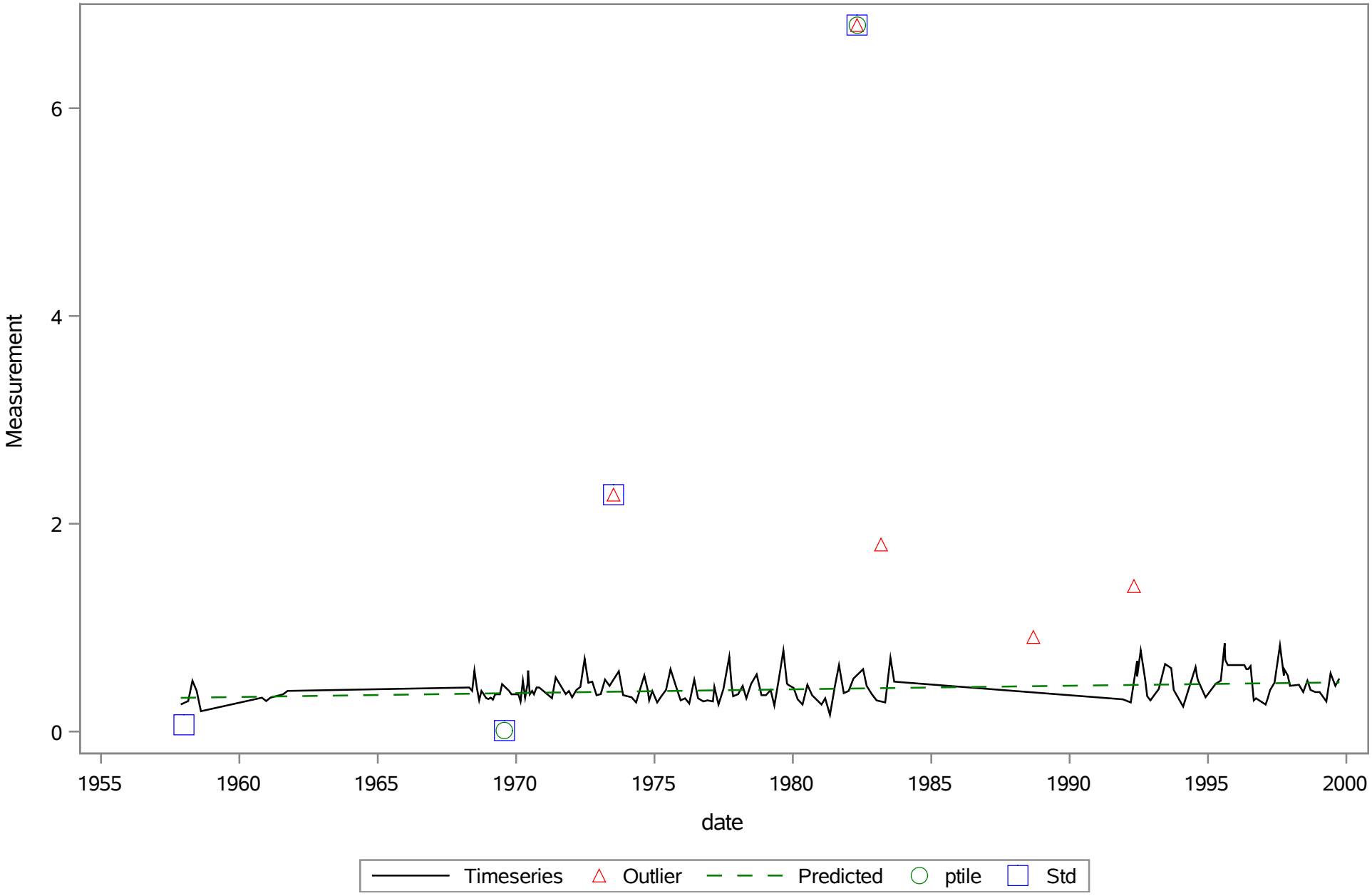
SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL

Phosphorus Total as P (mg/L) mg/L

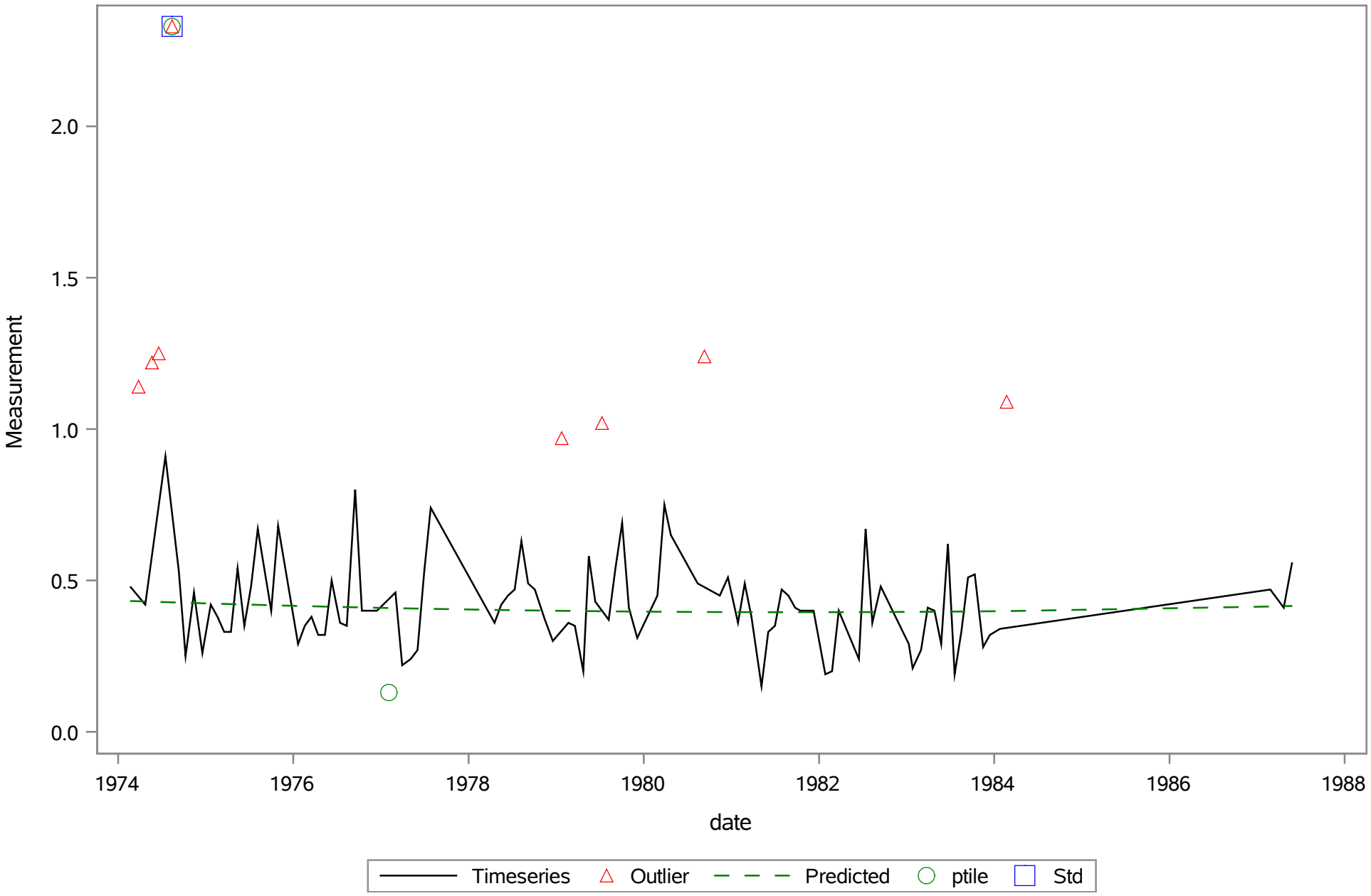
Site ID = 112WRD 02300200



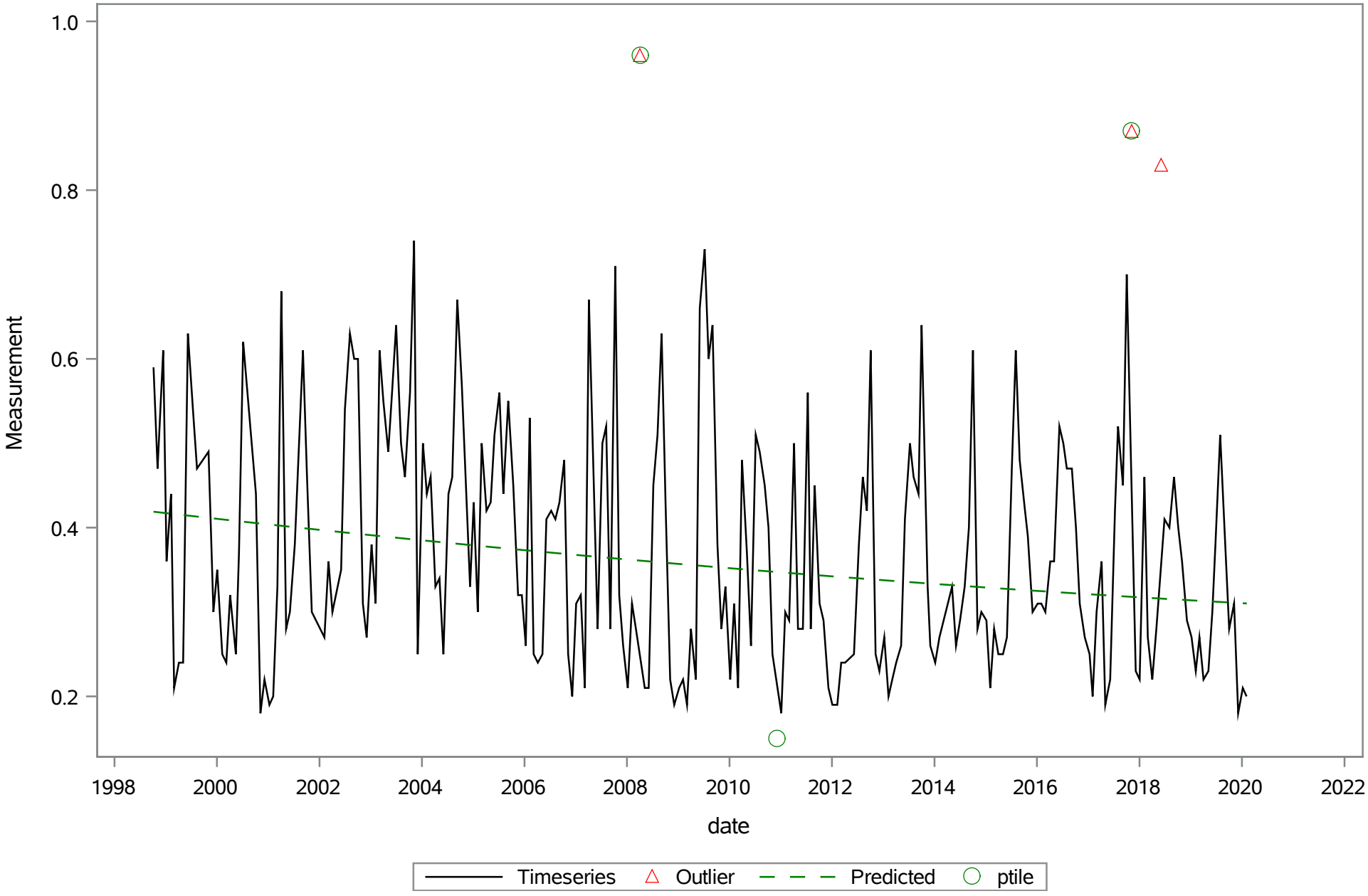
Little Manatee River
LITTLE MANATEE RIVER NEAR WIMAUMA FL
Phosphorus Total as P (mg/L) mg/L
Site ID = 112WRD 02300500



Little Manatee River
L MANATEE R BR US 301
Phosphorus Total as P (mg/L) mg/L
Site ID = 21FLA 24010100



Little Manatee River
LITTLE MANATEE RIVER AT US HWY 301
Phosphorus Total as P (mg/L) mg/L
Site ID = 21FLGW 3555

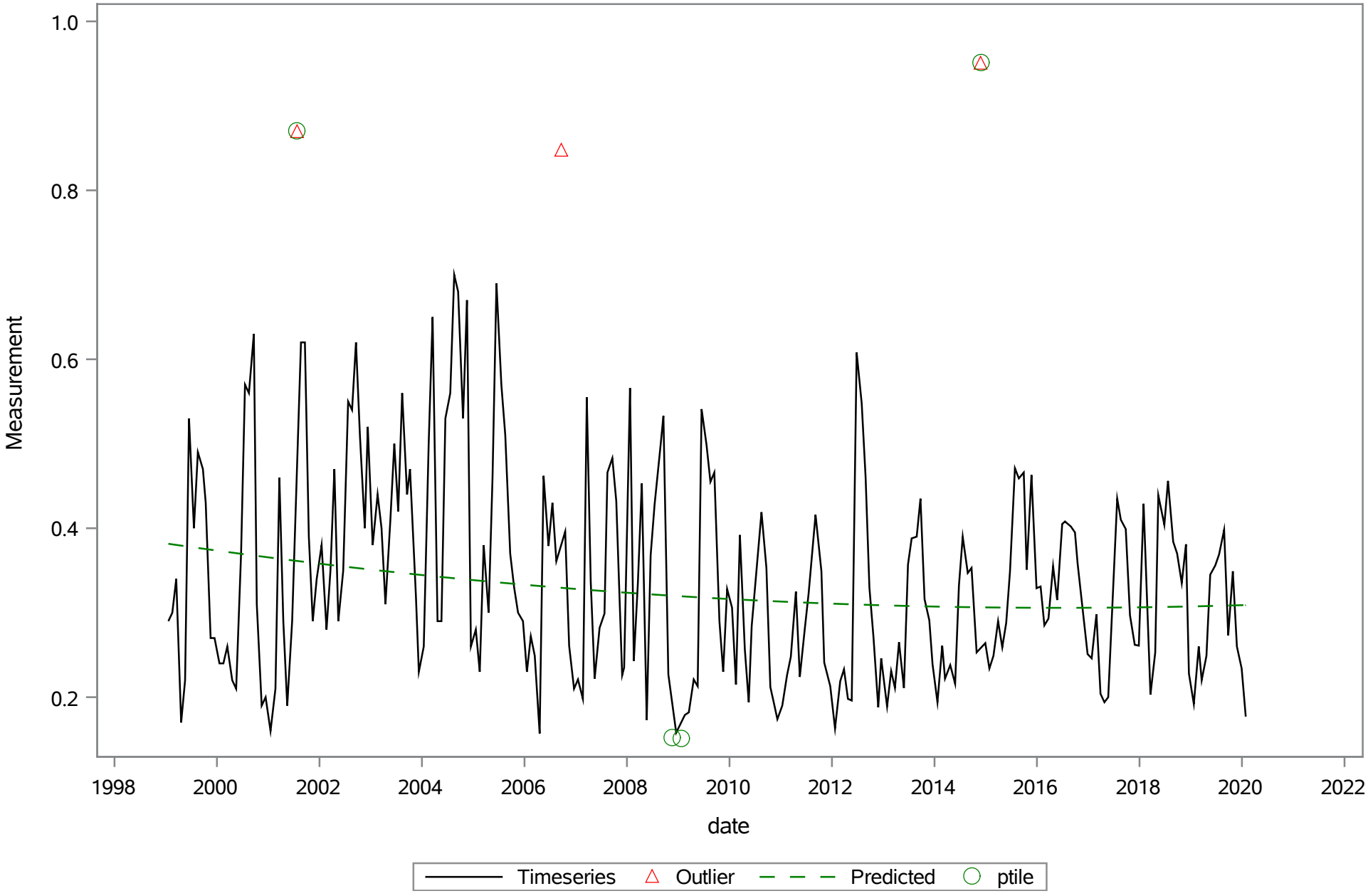


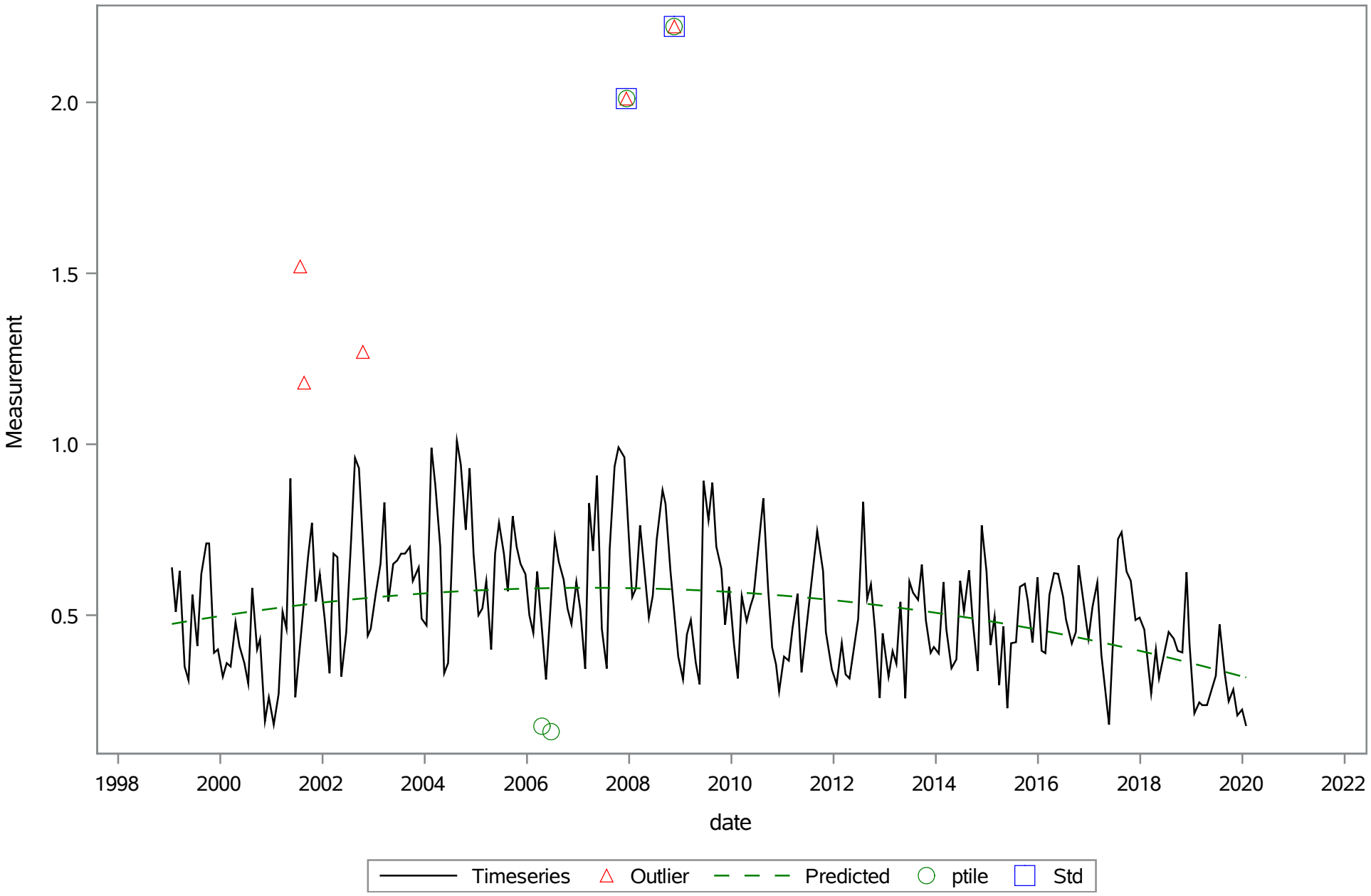
Little Manatee River

Little Manatee River at US 301 bridge

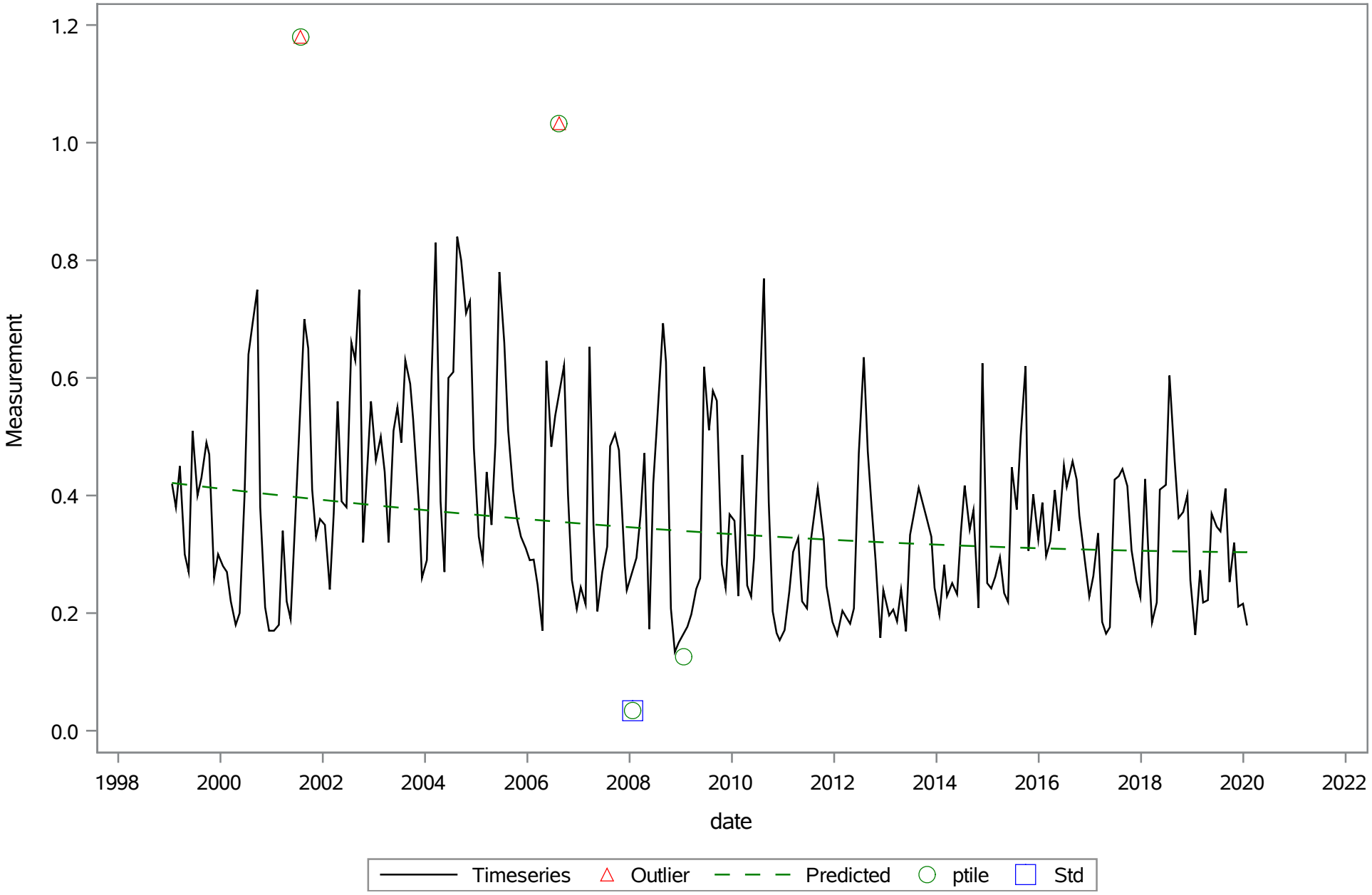
Phosphorus Total as P (mg/L) mg/L

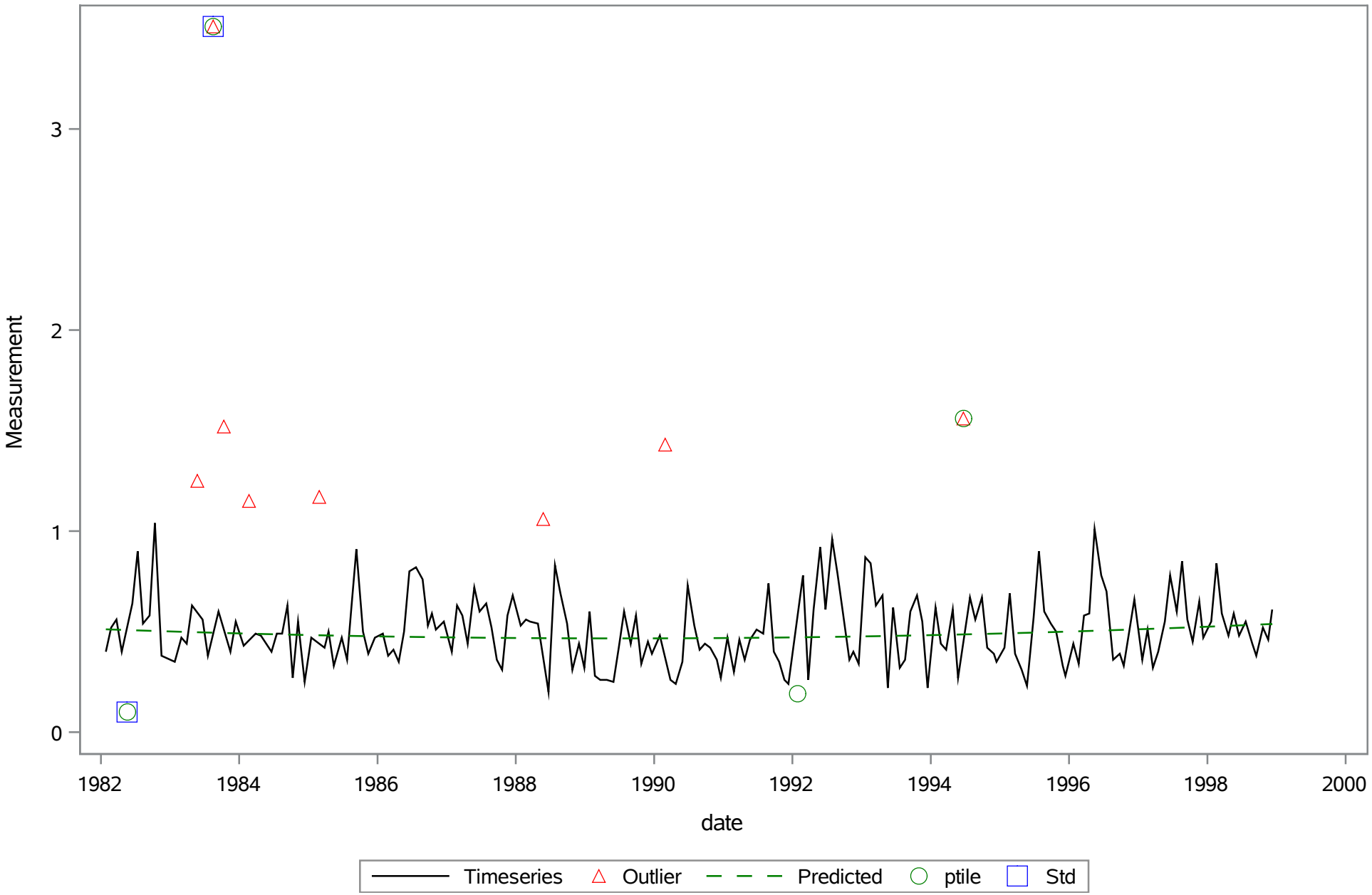
Site ID = 21FLHILL113

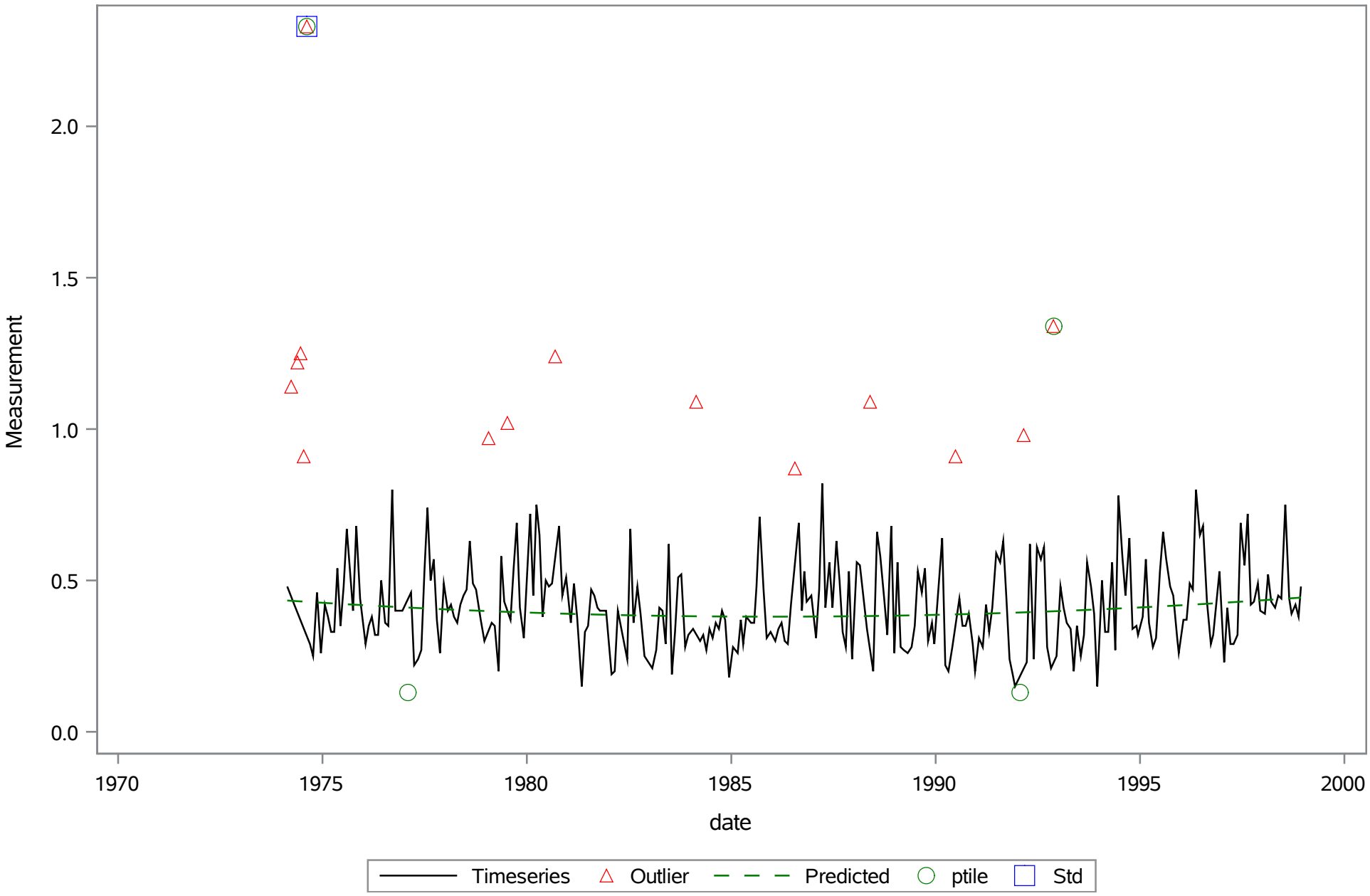



Little Manatee River
Little Manatee River at SR 674
Phosphorus Total as P (mg/L) mg/L
Site ID = 21FLHILL129
Measurement
2.0
1.5
1.0
0.5
1998
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
2022
date
Timeseries
Outlier
Predicted
ptile
Std

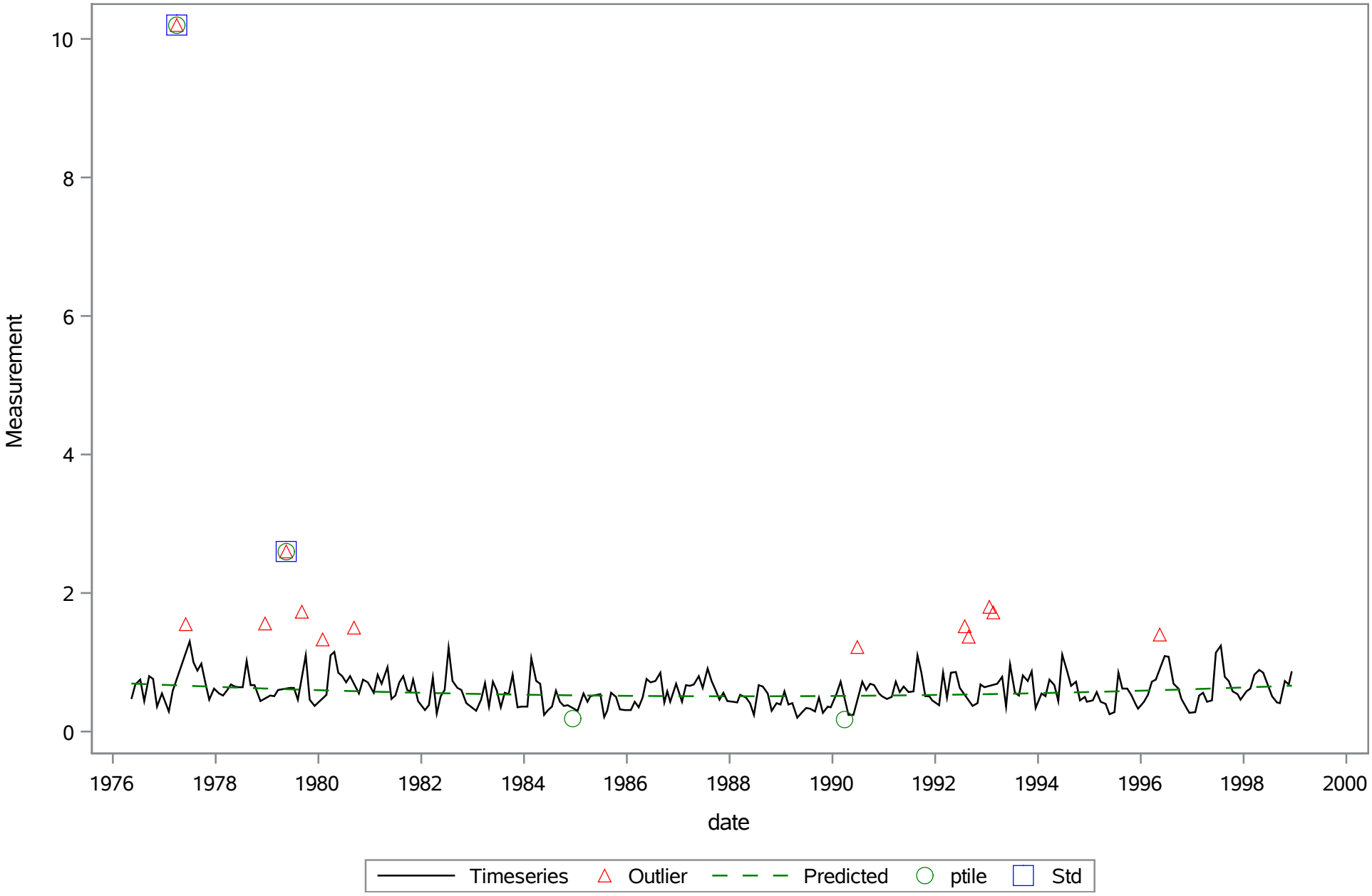
Little Manatee River
Little Manatee River at CR 579
Phosphorus Total as P (mg/L) mg/L
Site ID = 21FLHILL140

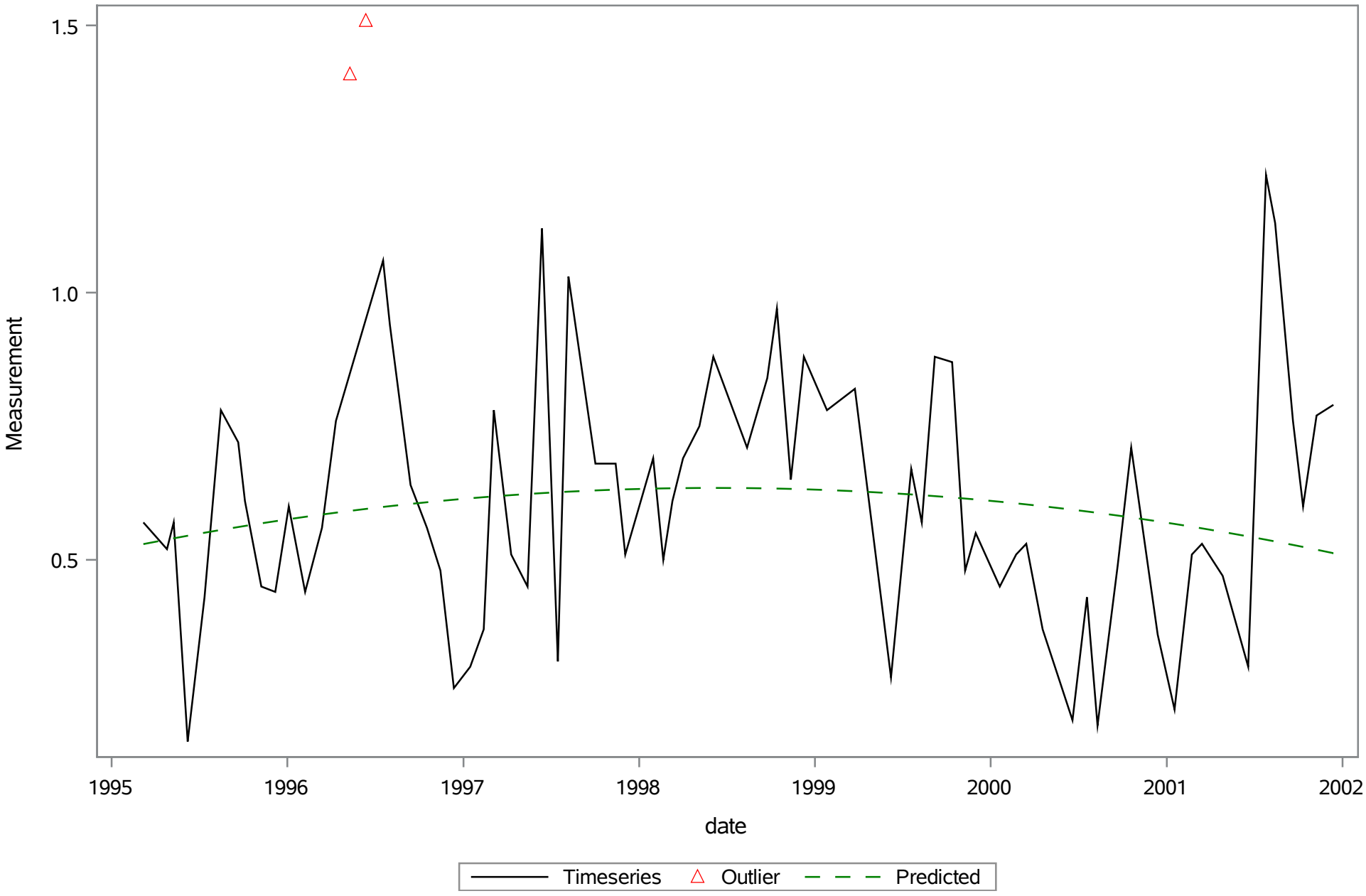


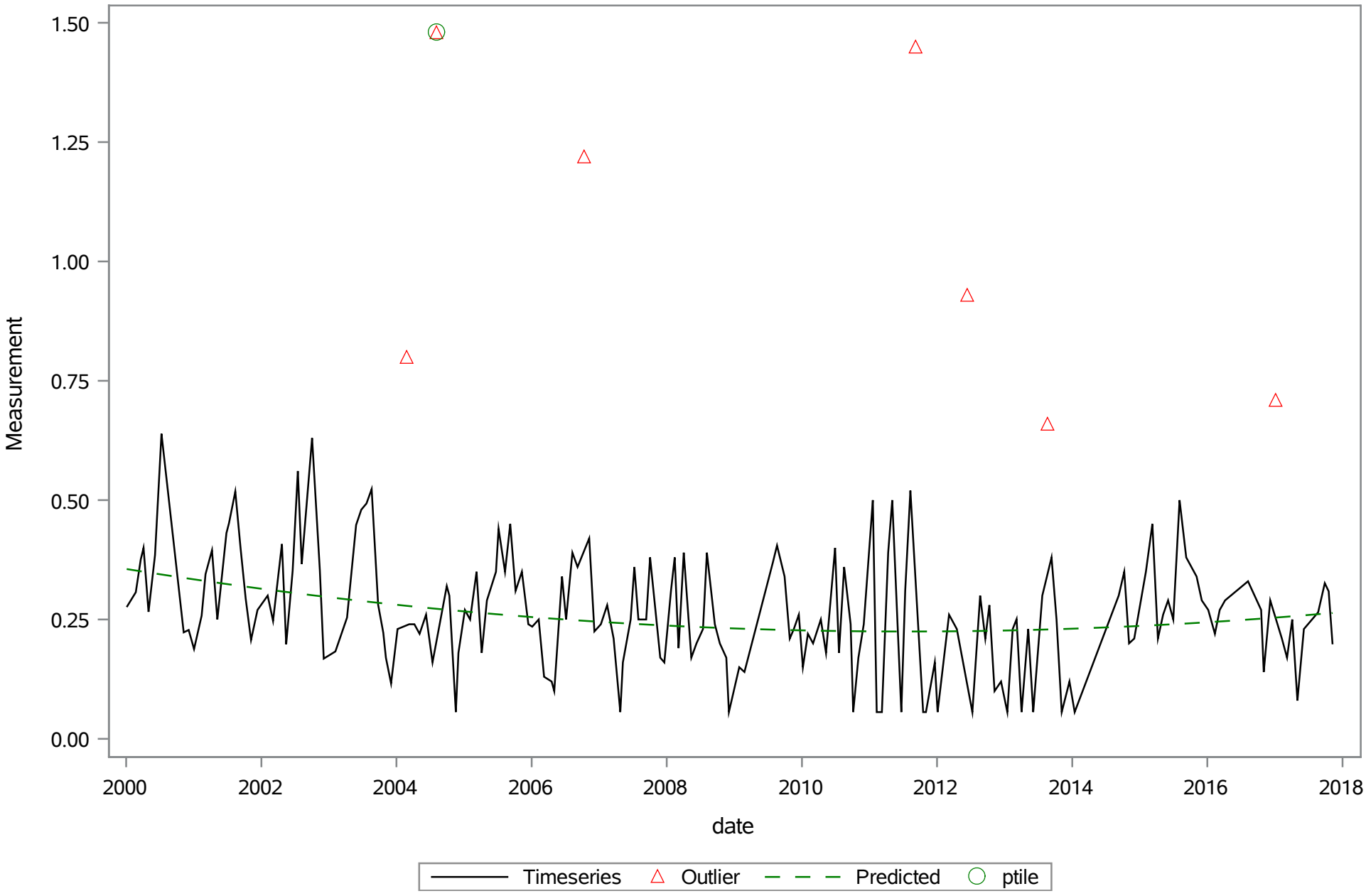

Little Manatee River
LITTLE MANATEE R AT CR579
Phosphorus Total as P (mg/L) mg/L
Site ID = 21FLHILL24010013
Measurement
0
1
2
3
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
date
Timeseries
Outlier
Predicted
ptile
Std


Little Manatee River
L MANATEE R BR US 301
Phosphorus Total as P (mg/L) mg/L
Site ID = 21FLHILL24010100
Measurement
2.0
1.5
1.0
0.5
0.0
1970
1975
1980
1985
1990
1995
2000
date
Timeseries
Outlier
Predicted
ptile
Std

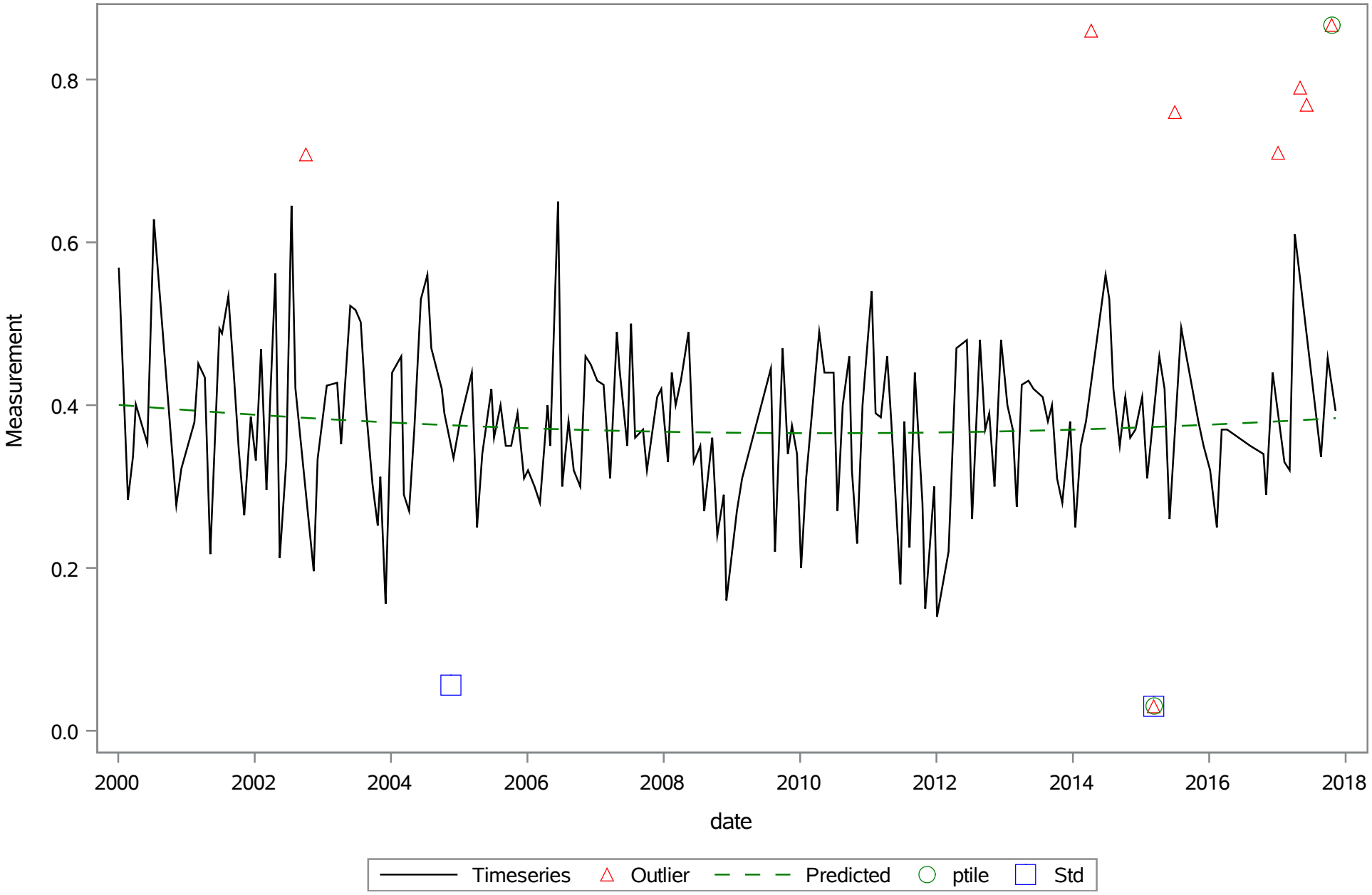
Little Manatee River
LITTLE MANATEE R AT SR #674
Phosphorus Total as P (mg/L) mg/L
Site ID = 21FLHILL24010110




Little Manatee River
Little Manatee R. at SR674
Phosphorus Total as P (mg/L) mg/L
Site ID = 21FLIMCALM674
1.5
1.0
0.5
Measurement
1995
1996
1997
1998
1999
2000
2001
2002
date
Timeseries
Outlier
Predicted


Little Manatee River
D1
Phosphorus Total as P (mg/L) mg/L
Site ID = 21FLMANAD1
Measurement
1.50
1.25
1.00
0.75
0.50
0.25
0.00
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
date
Timeseries
Outlier
Predicted
ptile

Little Manatee River
D3
Phosphorus Total as P (mg/L) mg/L
Site ID = 21FLMANAD3

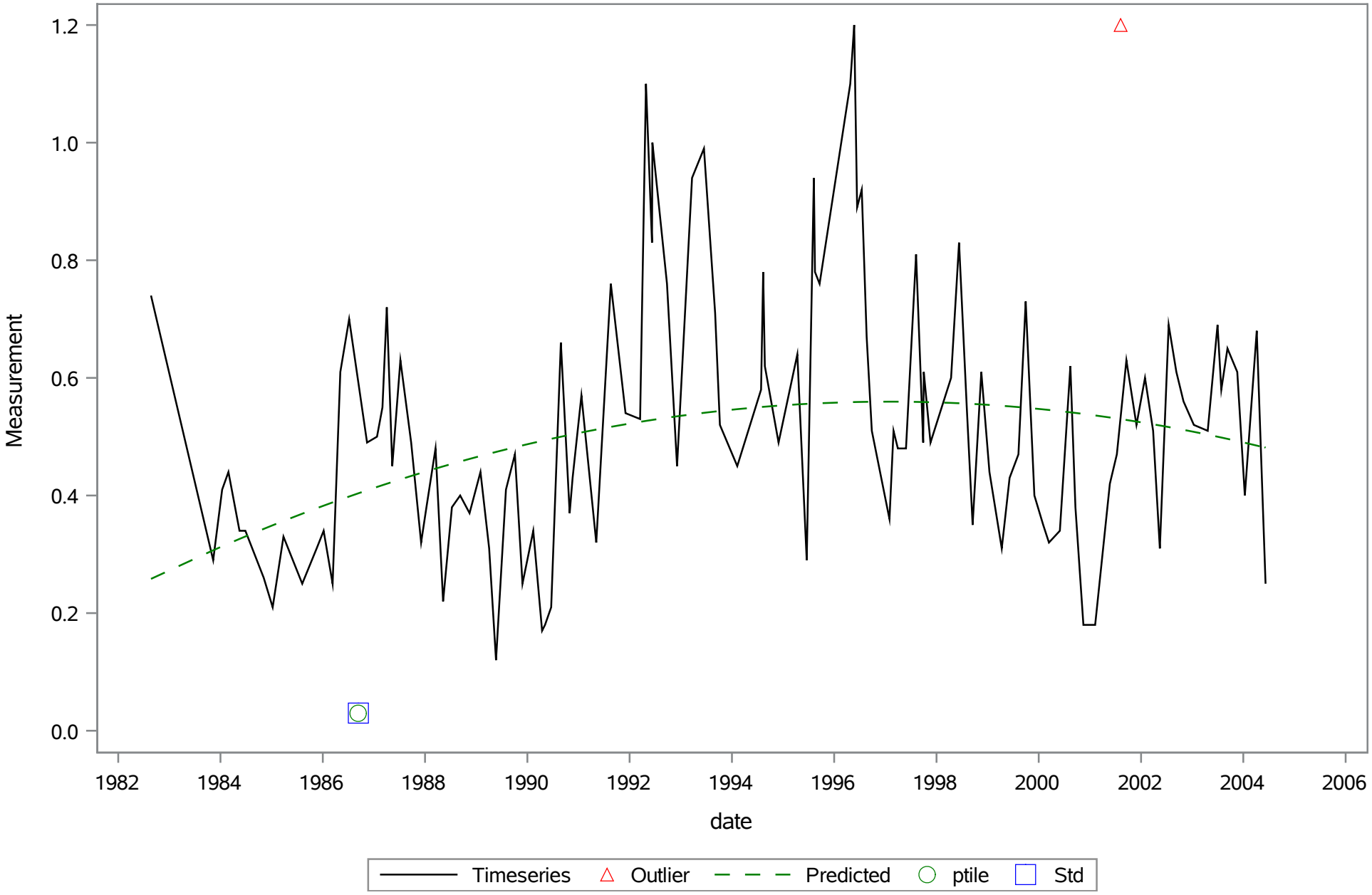


Little Manatee River

LITTLE MANATEE RIVER NEAR FT. LONESOME FL

Phosphorus in Total Orthophosphate as P (mg/L) mg/L

Site ID = 112WRD 02300100

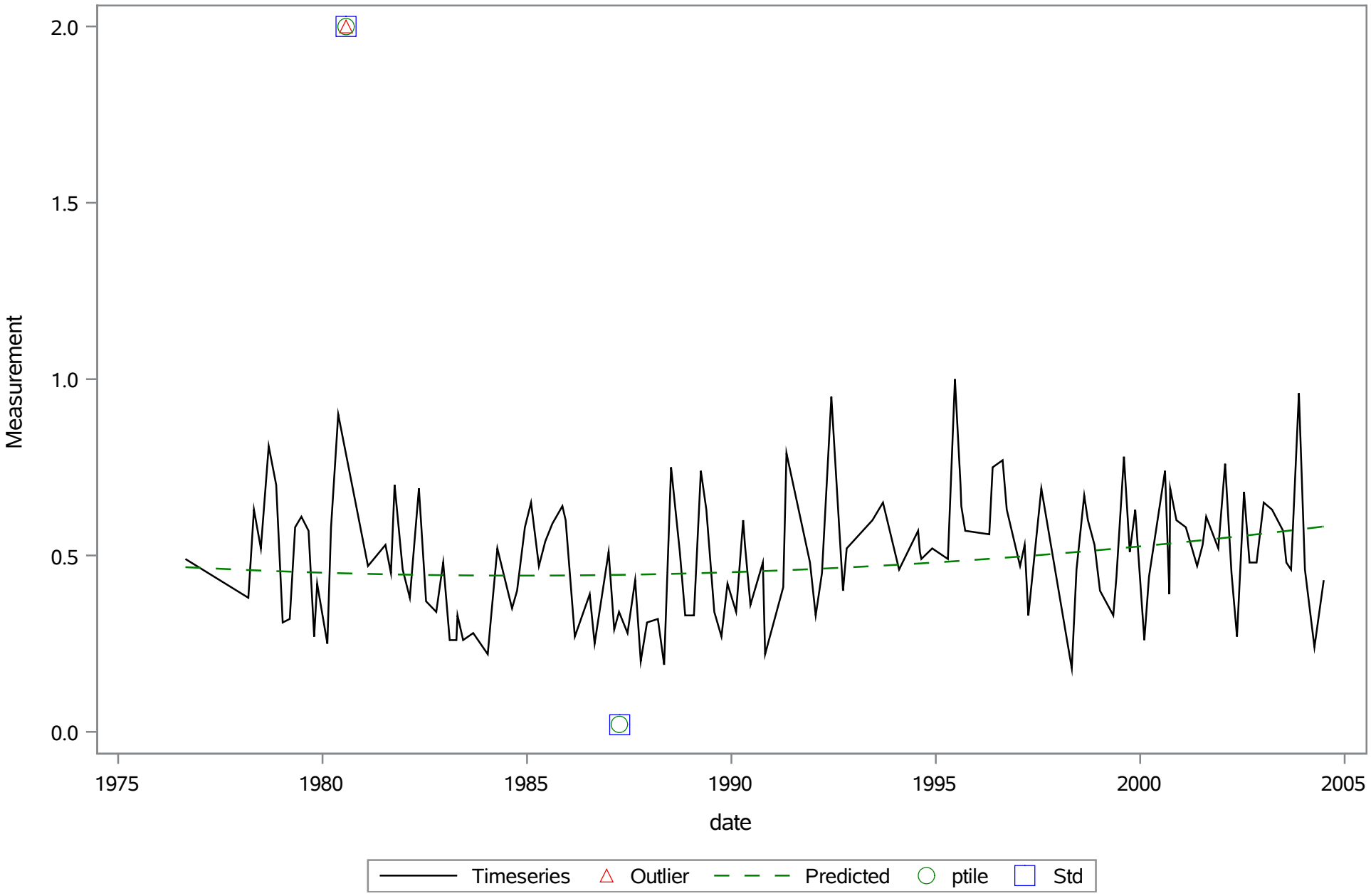


Little Manatee River

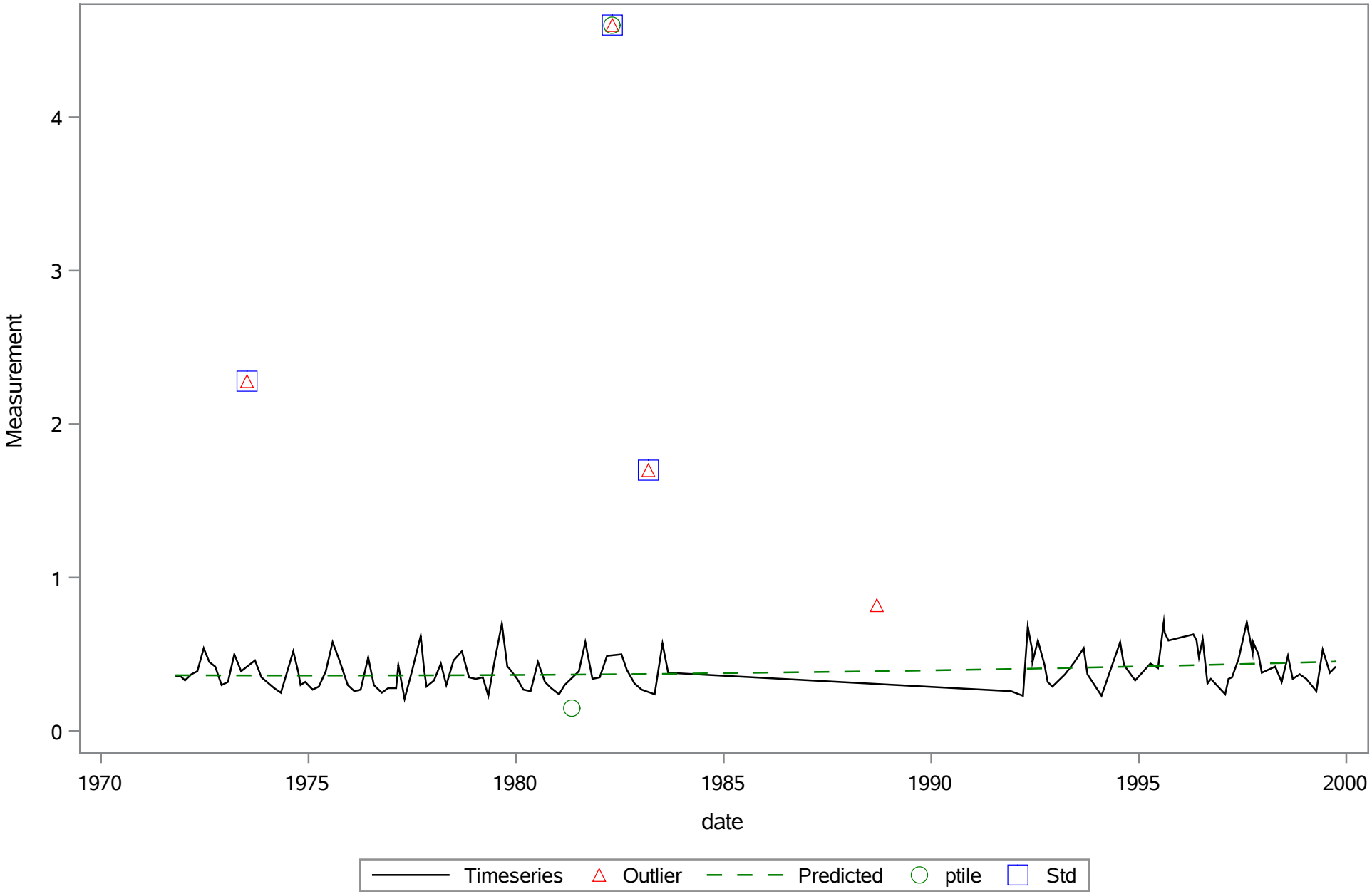
SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL

Phosphorus in Total Orthophosphate as P (mg/L) mg/L

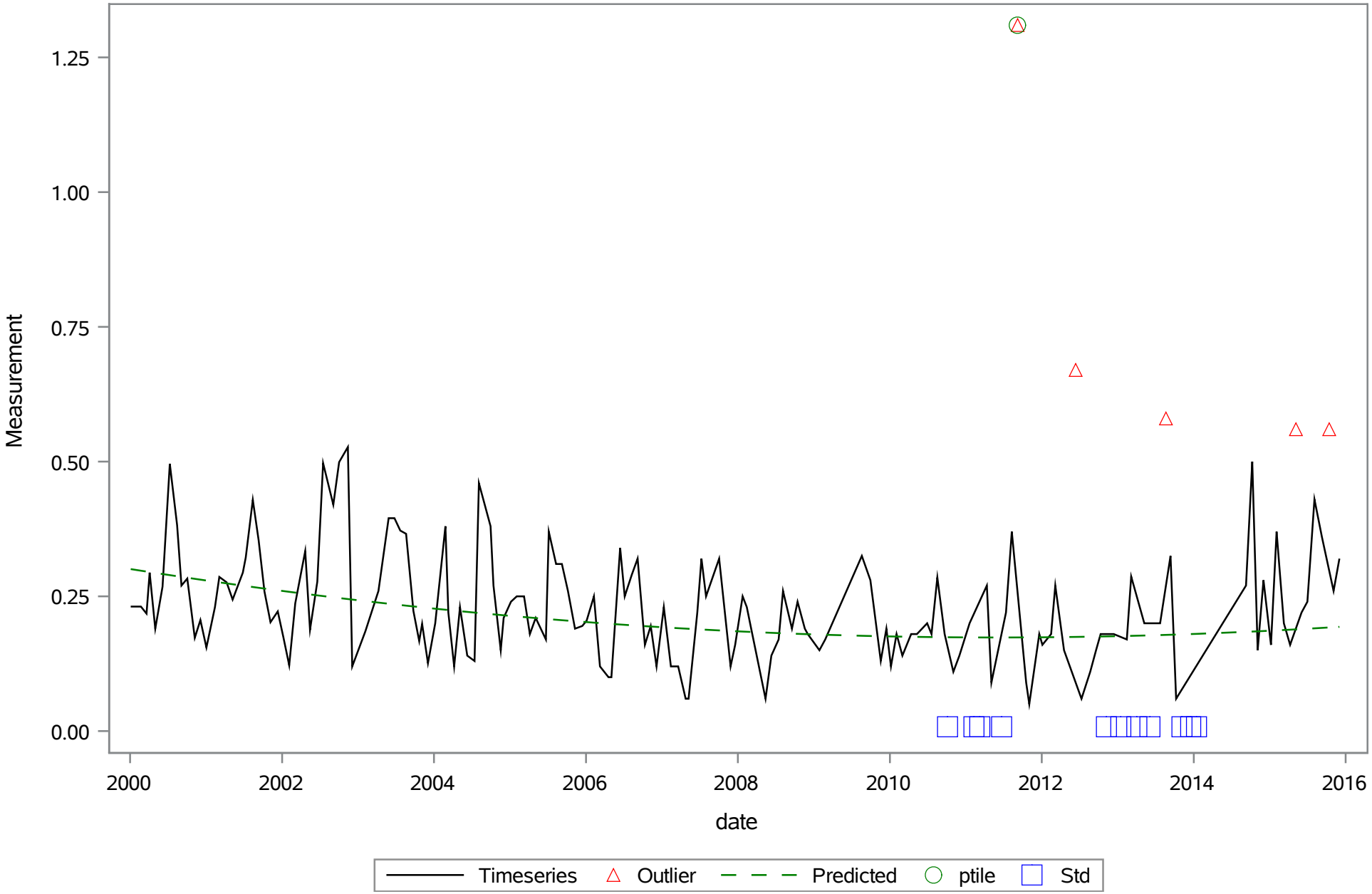
Site ID = 112WRD 02300200



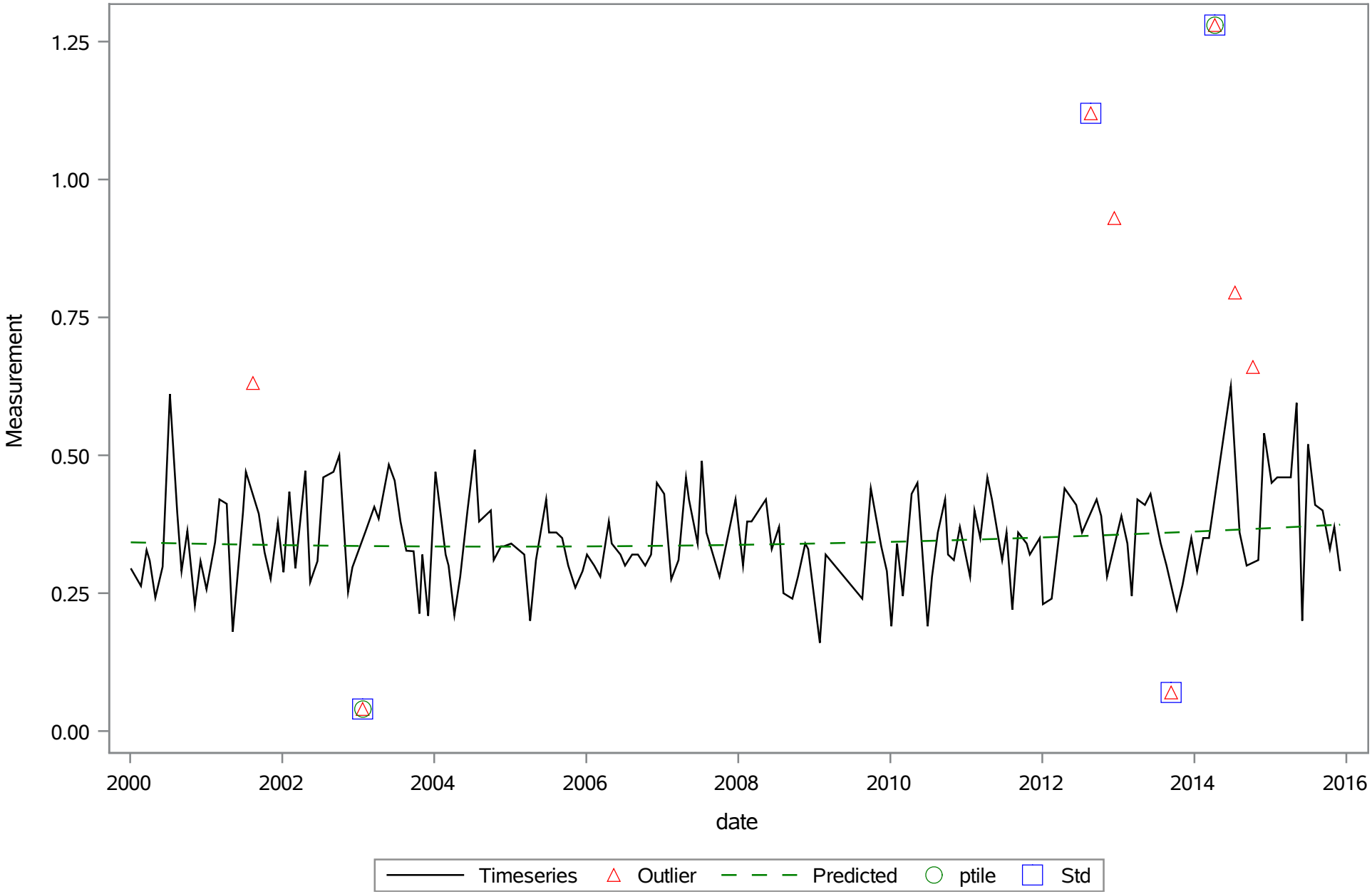
Little Manatee River
LITTLE MANATEE RIVER NEAR WIMAUMA FL
Phosphorus in Total Orthophosphate as P (mg/L) mg/L
Site ID = 112WRD 02300500



Little Manatee River
D1
Phosphorus in Total Orthophosphate as P (mg/L) mg/L
Site ID = 21FLMANAD1



Little Manatee River
D3
Phosphorus in Total Orthophosphate as P (mg/L) mg/L
Site ID = 21FLMANAD3

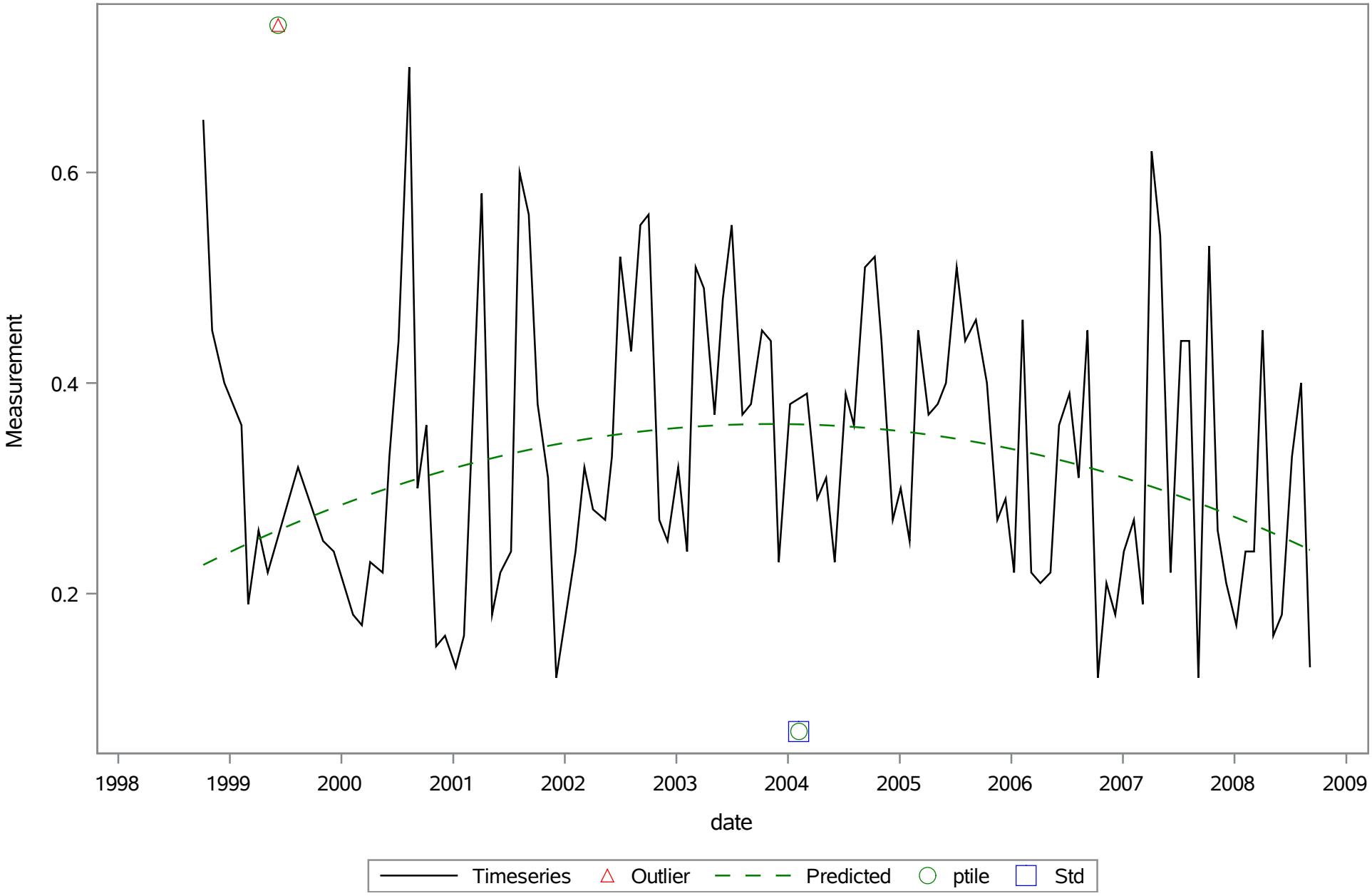


Little Manatee River

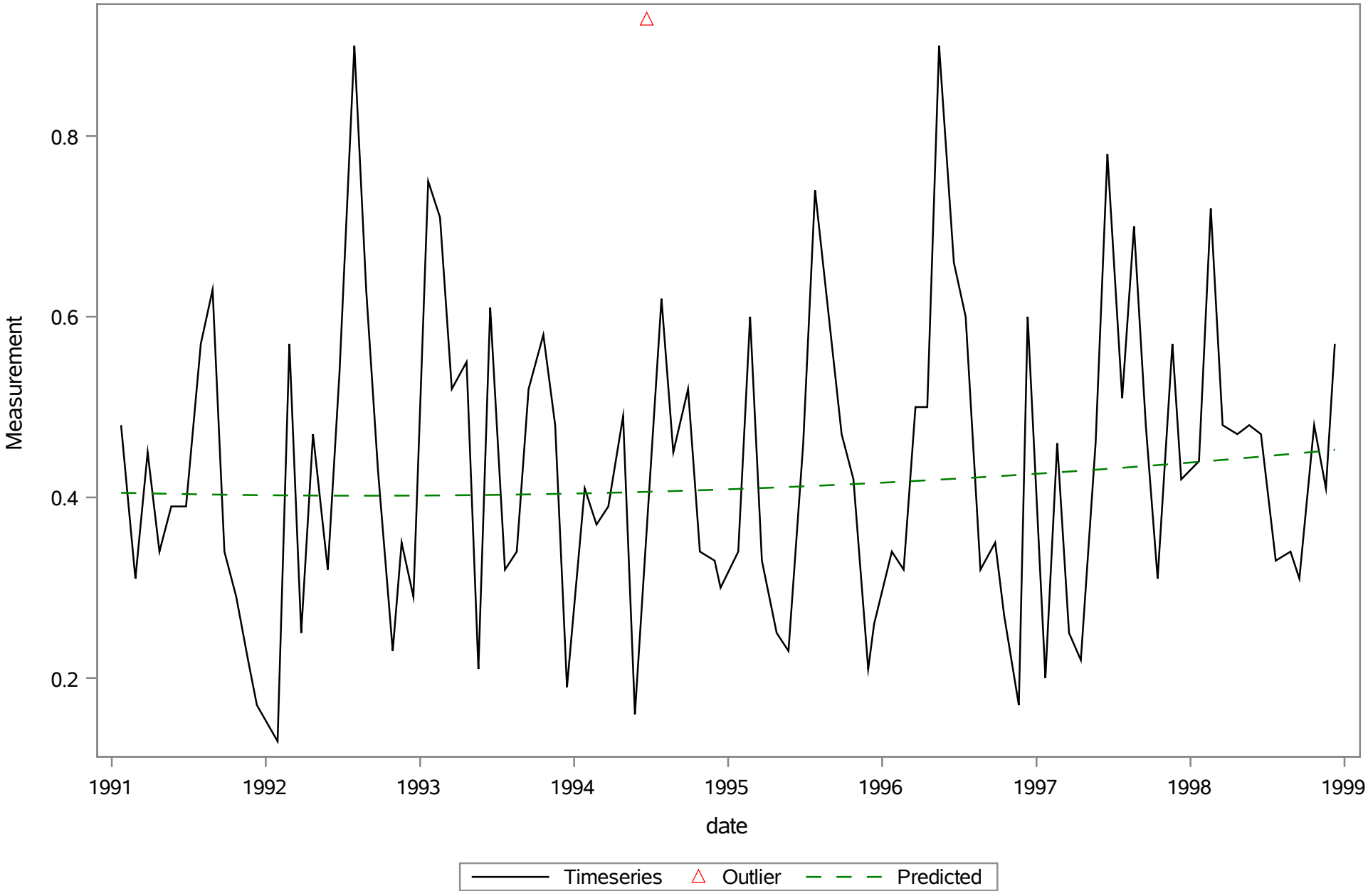
LITTLE MANATEE RIVER AT US HWY 301

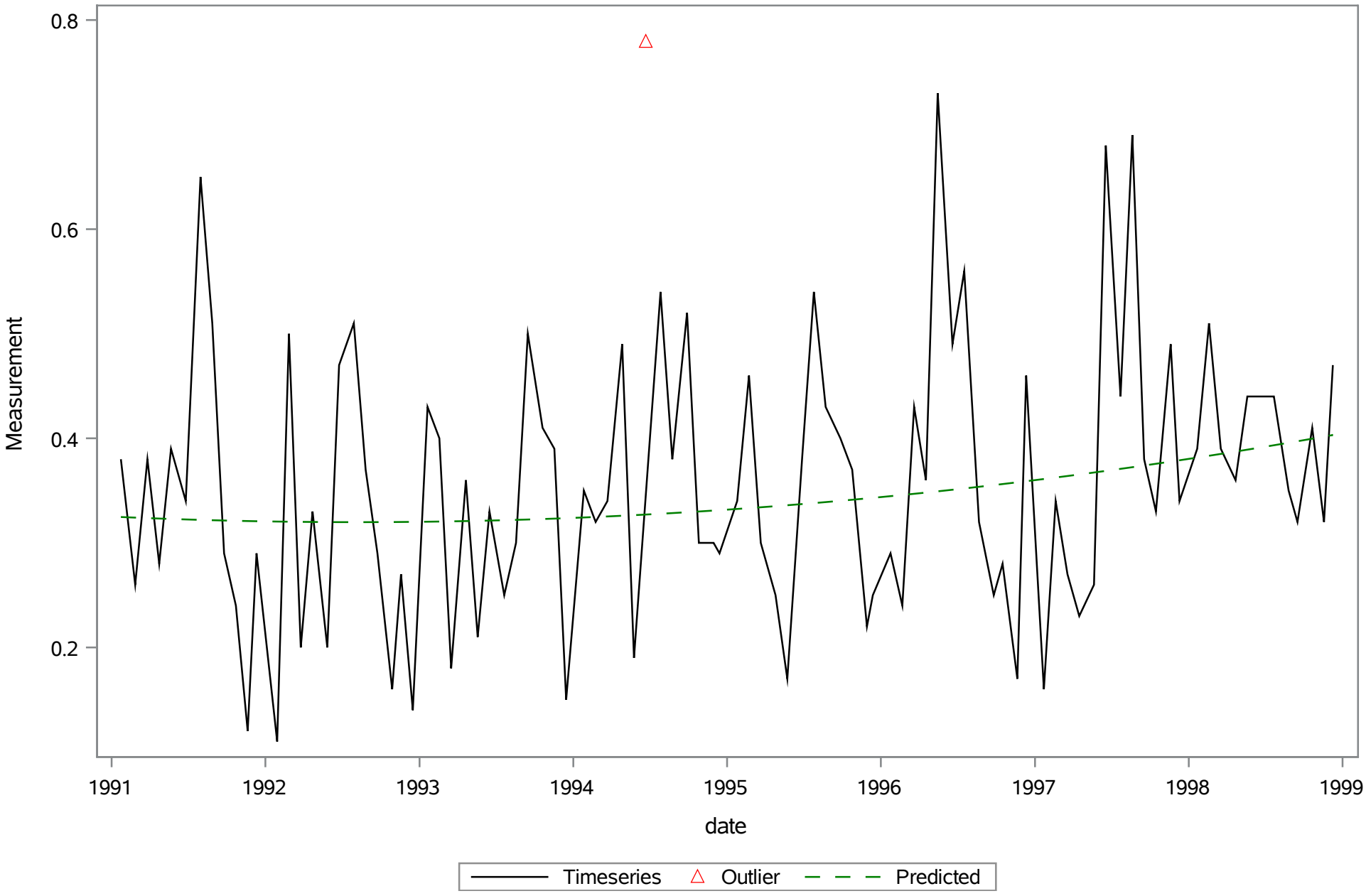
Phosphorus, Dissolved Orthophosphate as P (mg/L) mg/L

Site ID = 21FLGW 3555

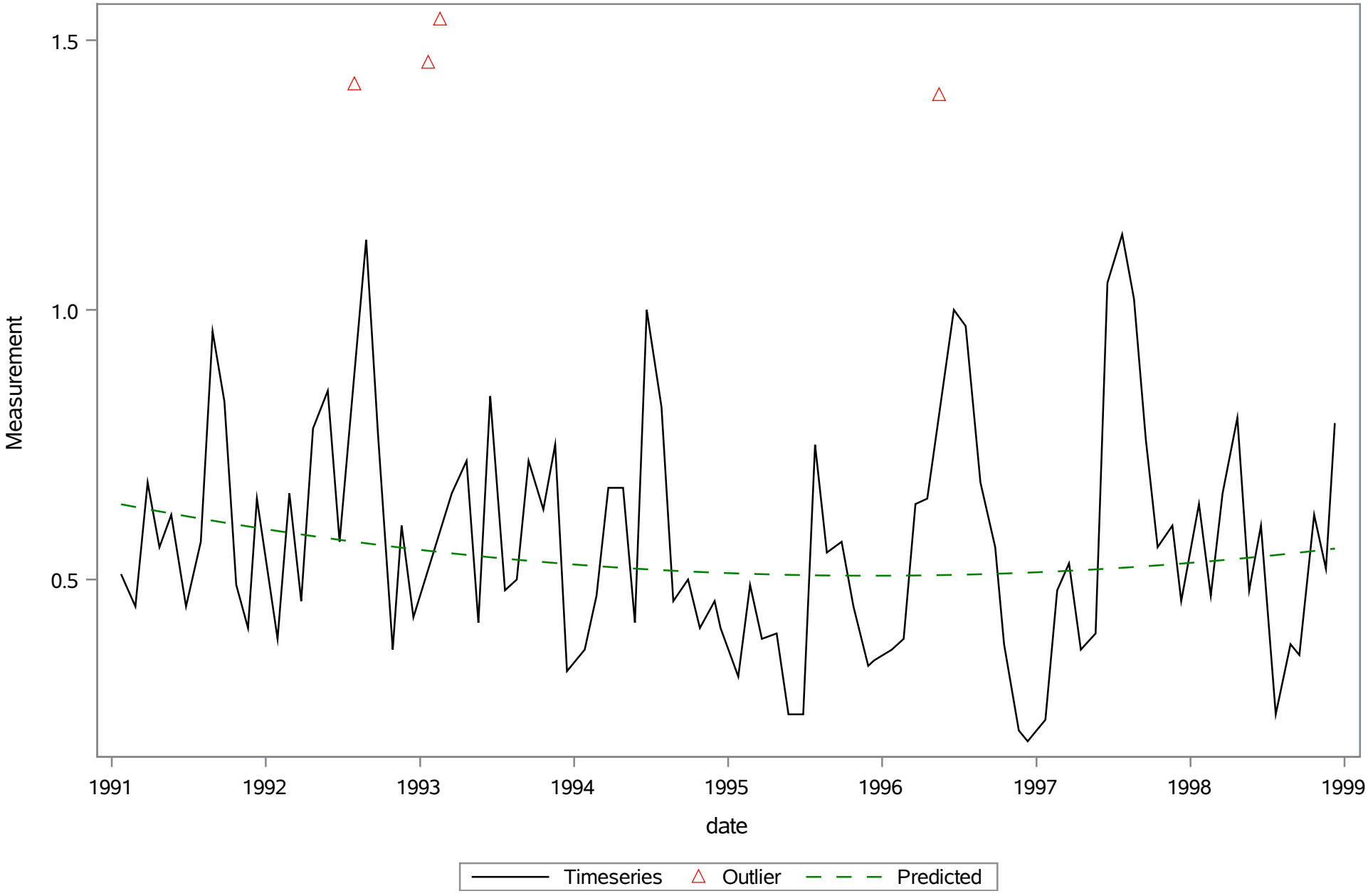


Little Manatee River
LITTLE MANATEE R AT CR579
Phosphorus, Dissolved Orthophosphate as P (mg/L) mg/L
Site ID = 21FLHILL24010013




Little Manatee River
L MANATEE R BR US 301
Phosphorus, Dissolved Orthophosphate as P (mg/L) mg/L
Site ID = 21FLHILL24010100
0.8
0.6
0.4
0.2
Measurement
1991
1992
1993
1994
1995
1996
1997
1998
1999
date
Timeseries
Outlier
Predicted

Little Manatee River
LITTLE MANATEE R AT SR #674
Phosphorus, Dissolved Orthophosphate as P (mg/L) mg/L
Site ID = 21FLHILL24010110

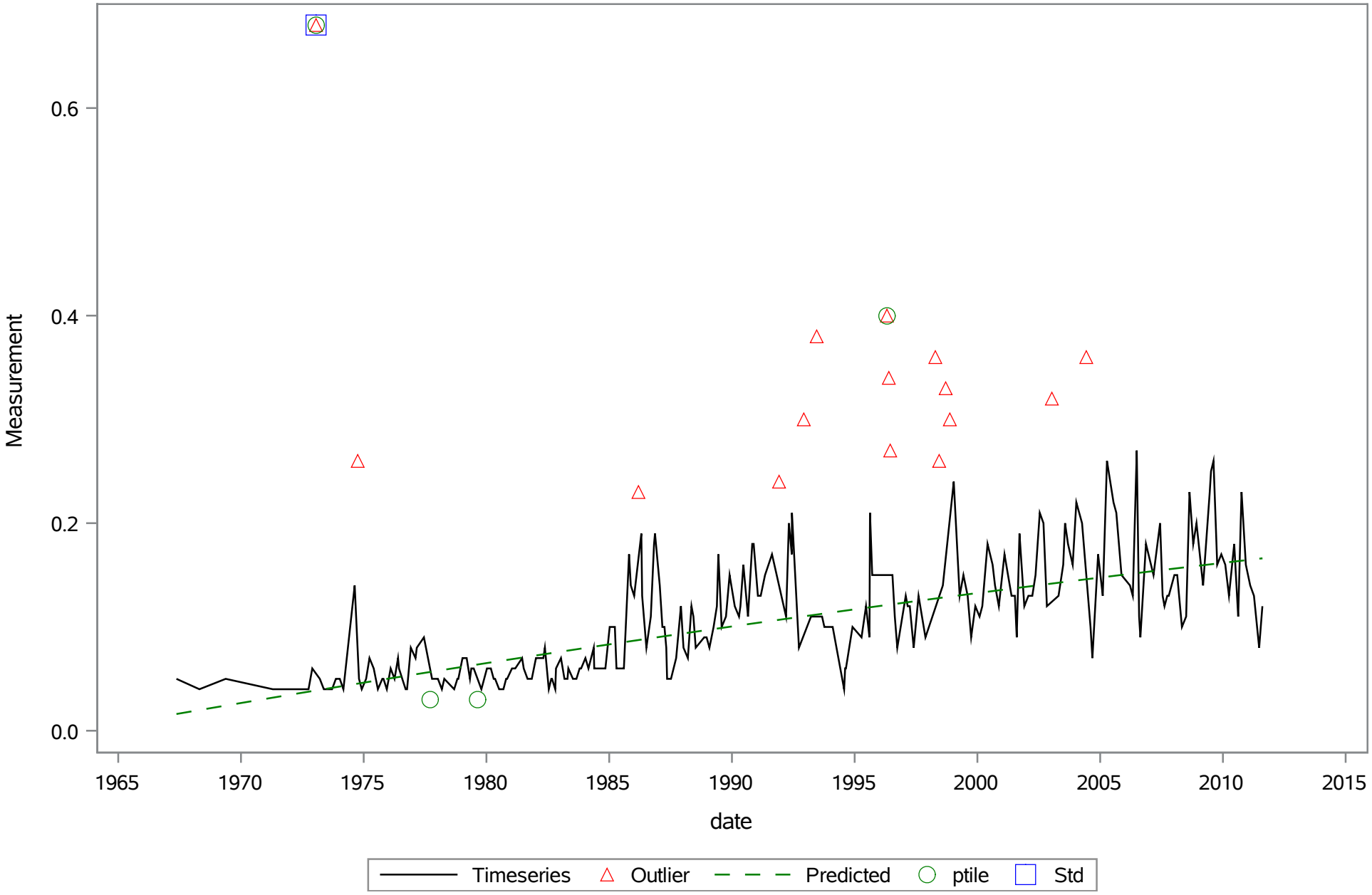


Little Manatee River

LITTLE MANATEE RIVER NEAR FT. LONESOME FL

Salinity ppt

Site ID = 112WRD 02300100

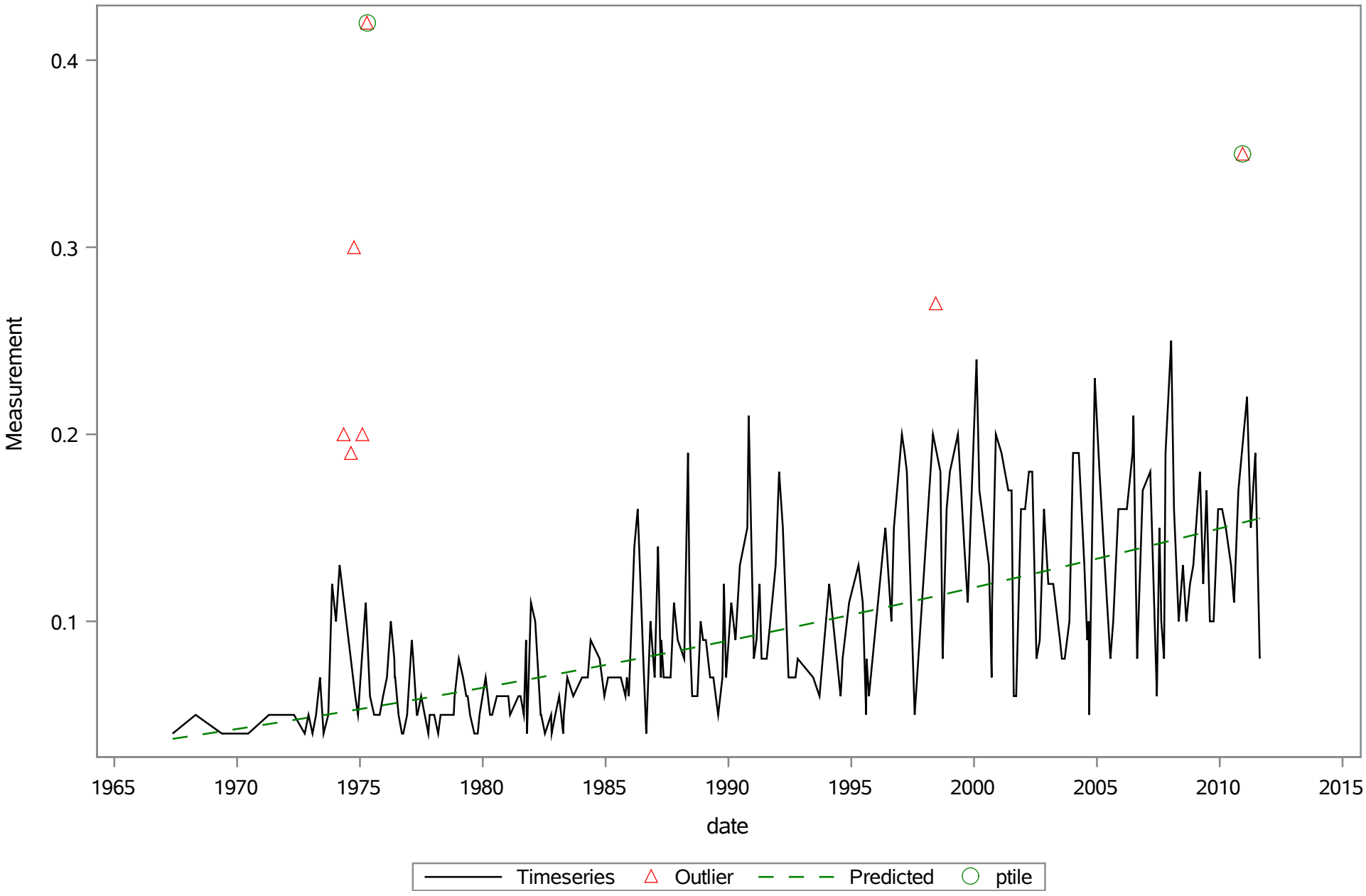


Little Manatee River

SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL

Salinity ppt

Site ID = 112WRD 02300200

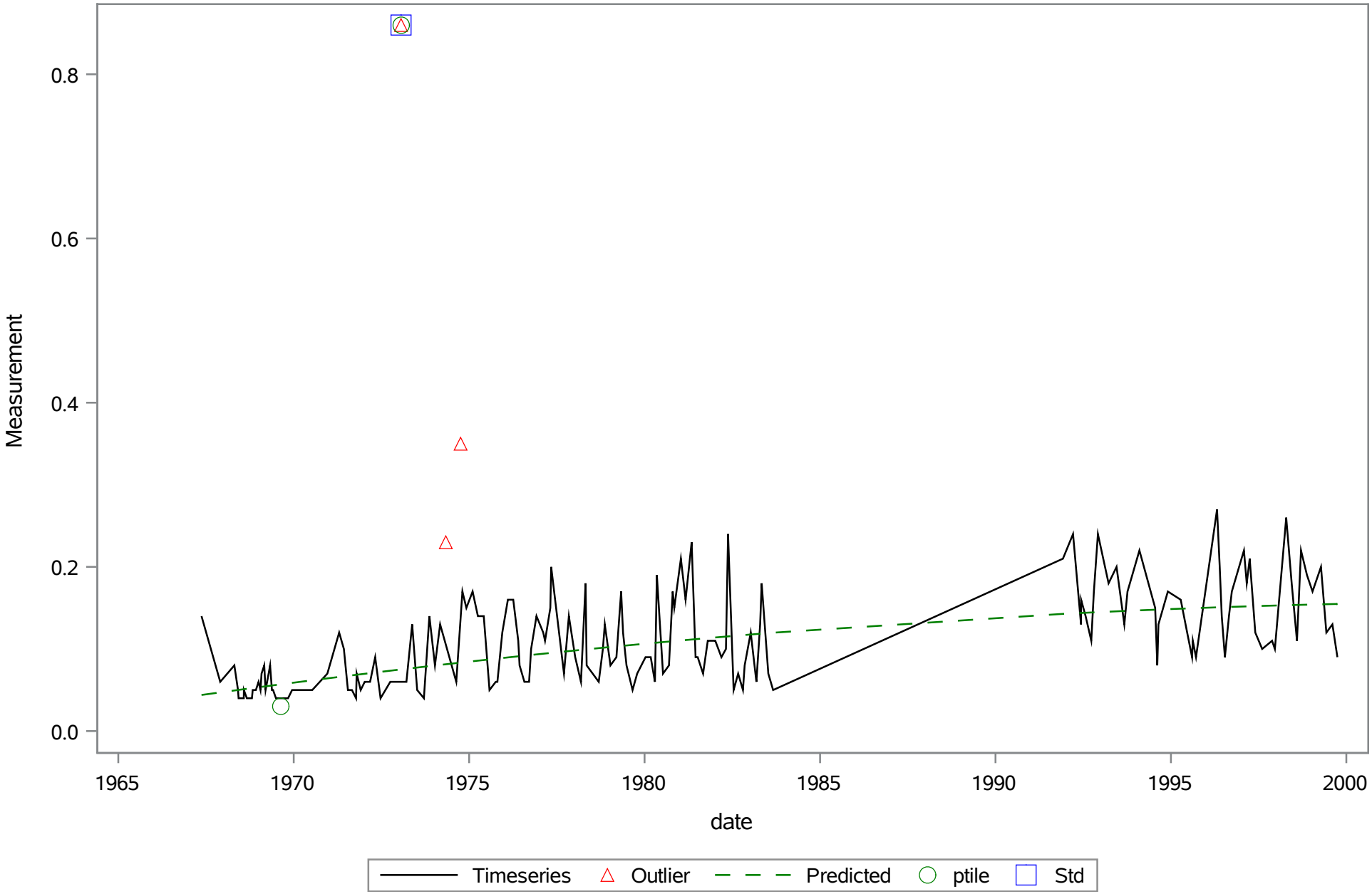


Little Manatee River

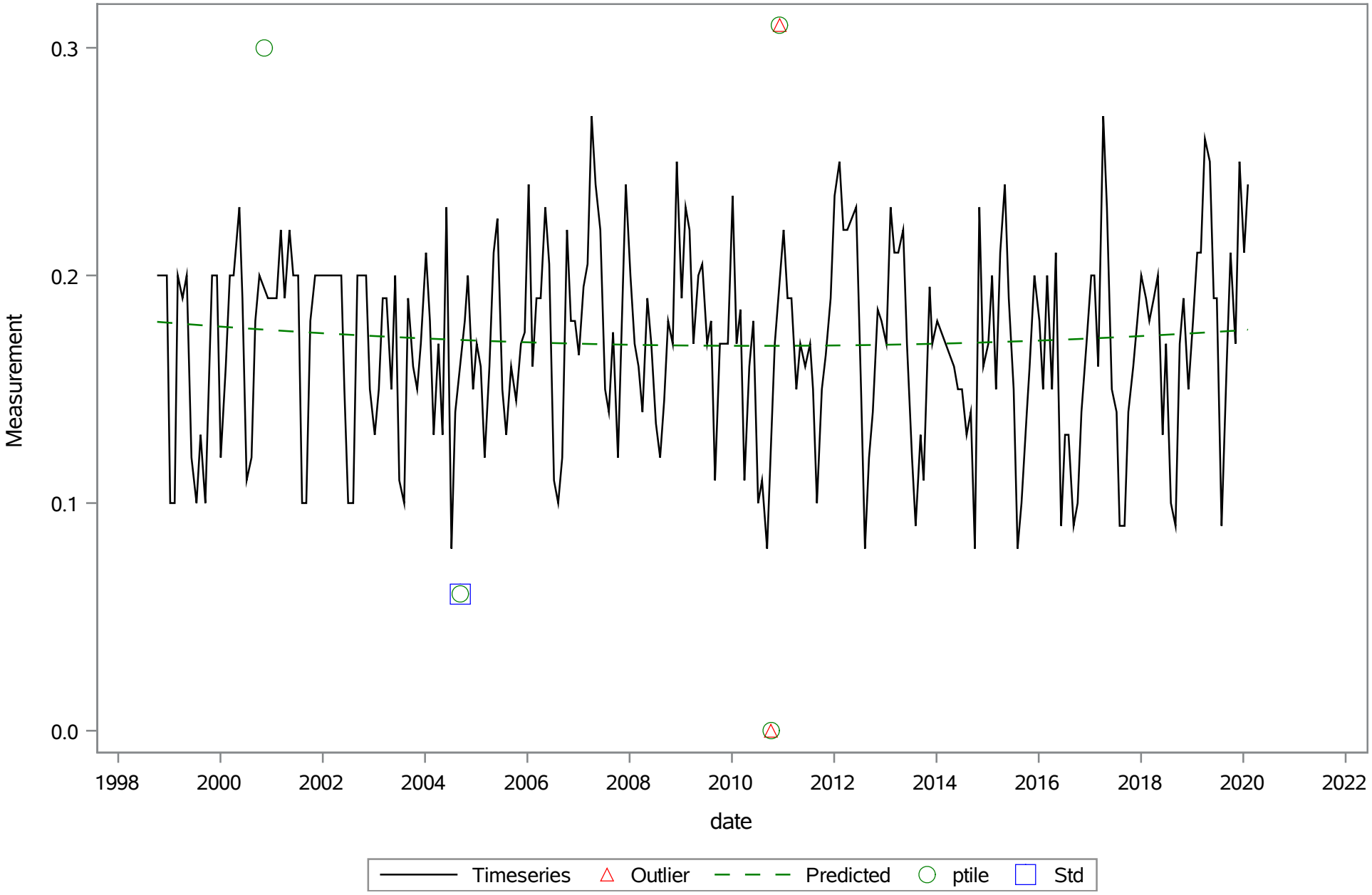
LITTLE MANATEE RIVER NEAR WIMAUMA FL

Salinity ppt

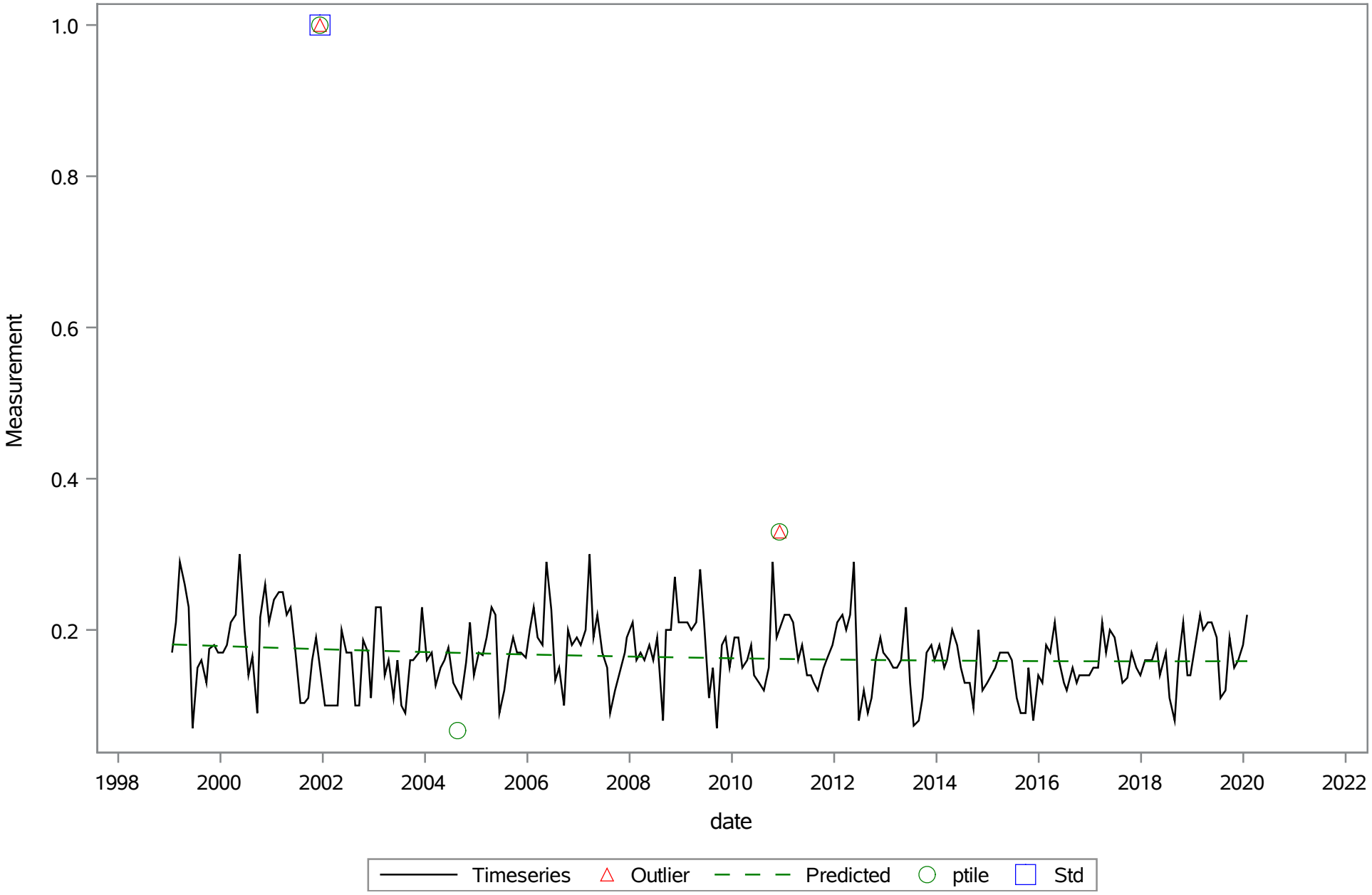
Site ID = 112WRD 02300500

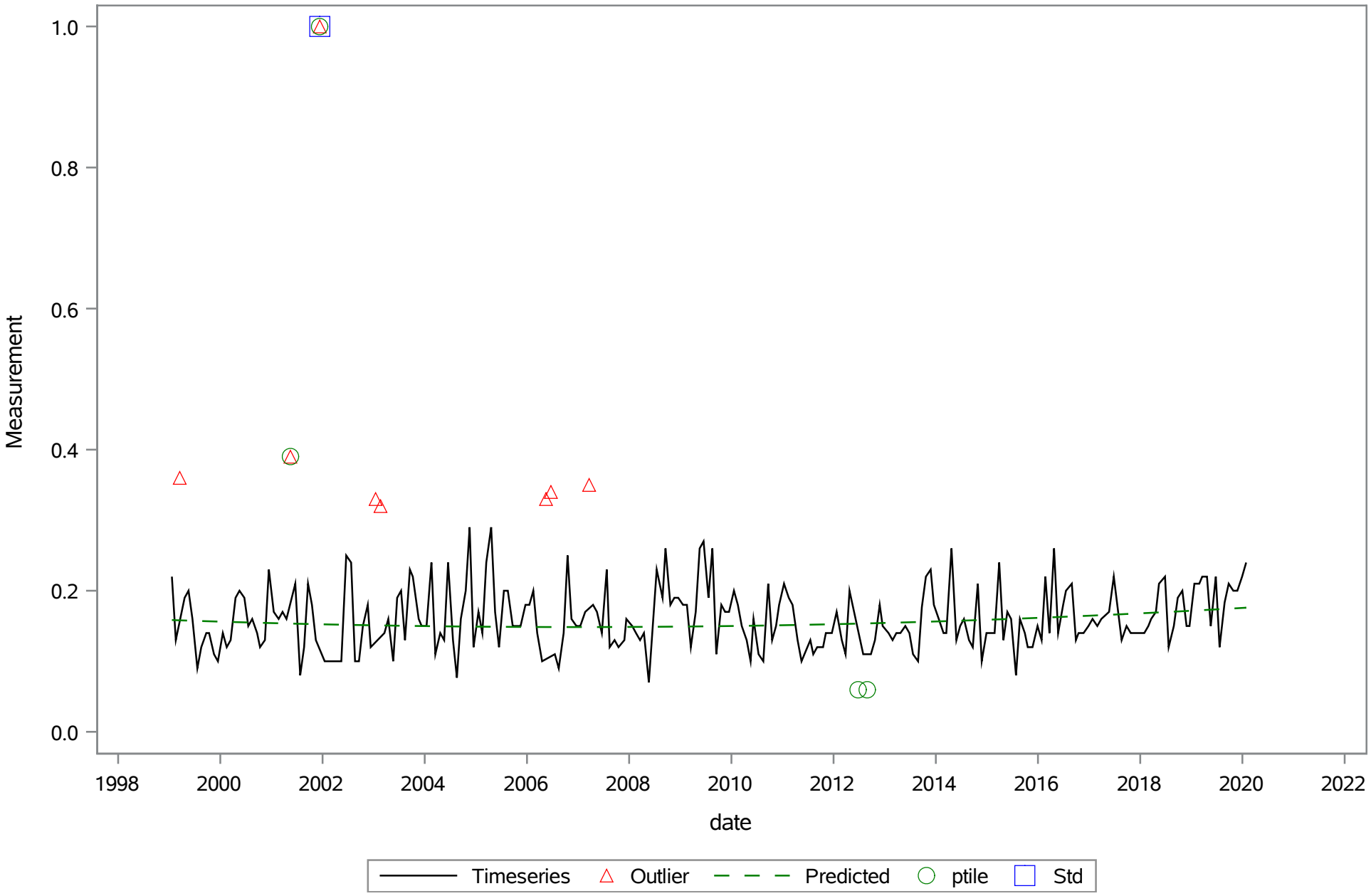


Little Manatee River
LITTLE MANATEE RIVER AT US HWY 301
Salinity ppt
Site ID = 21FLGW 3555

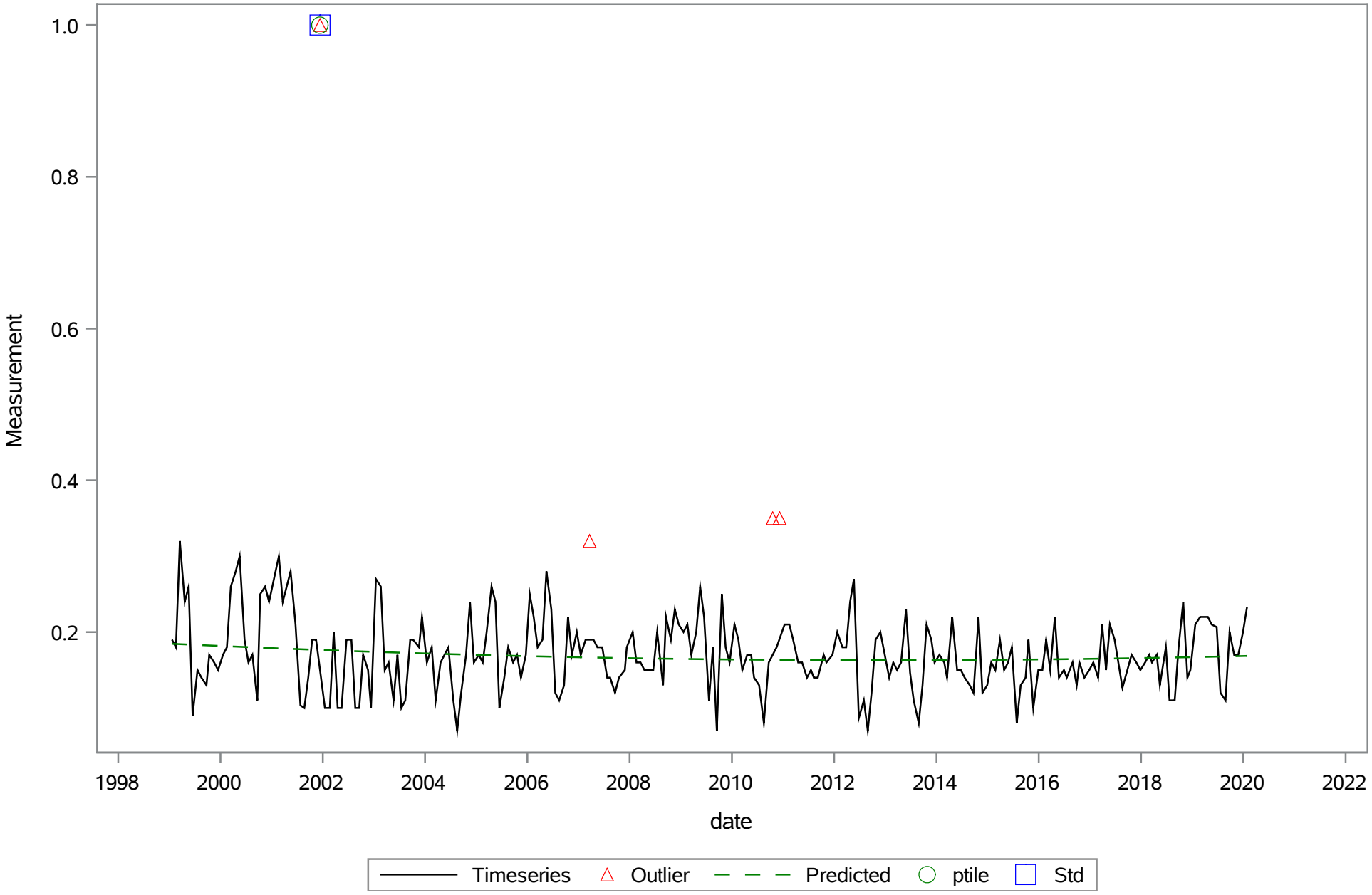


Little Manatee River
Little Manatee River at US 301 bridge
Salinity ppt
Site ID = 21FLHILL113

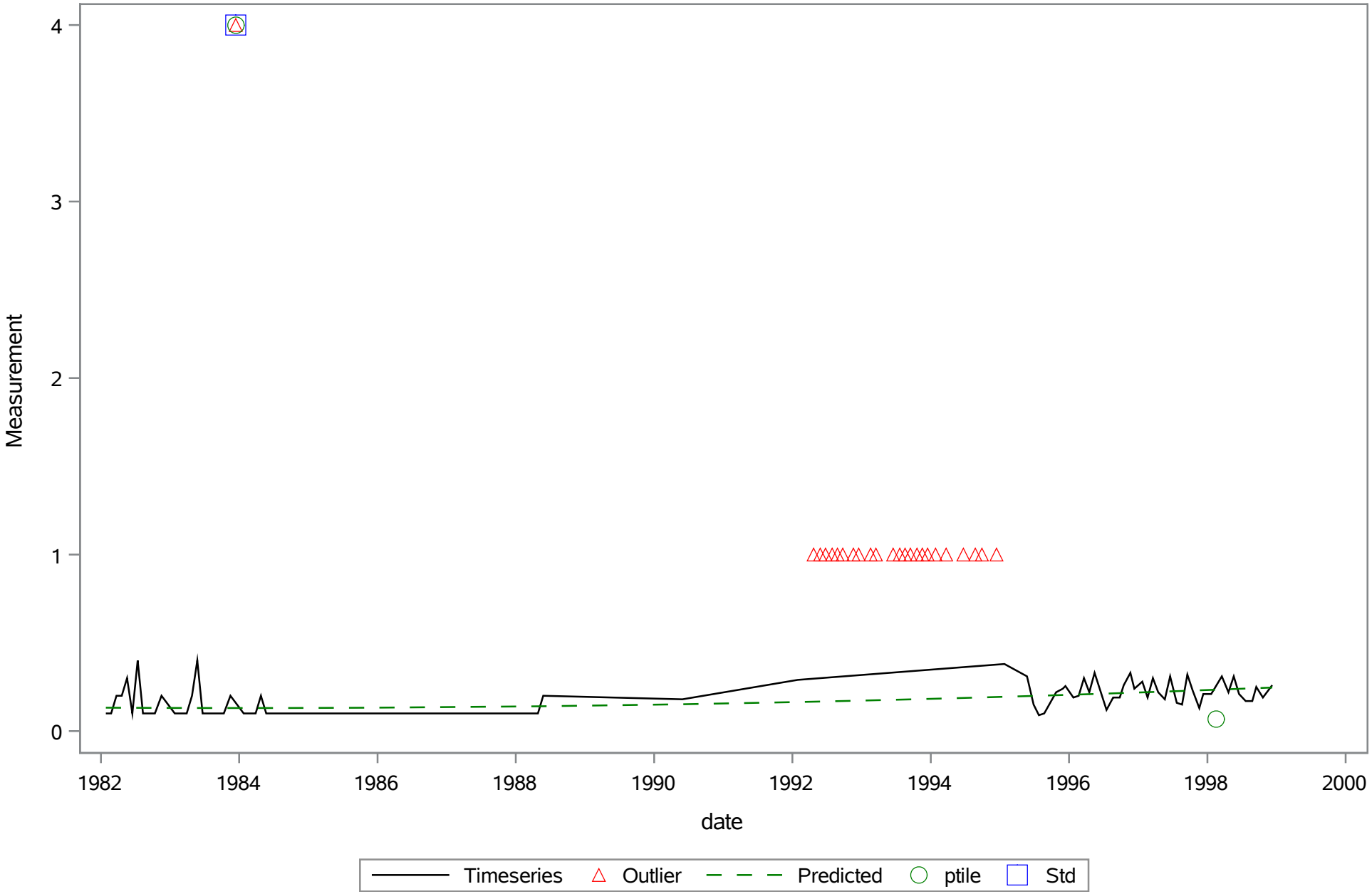


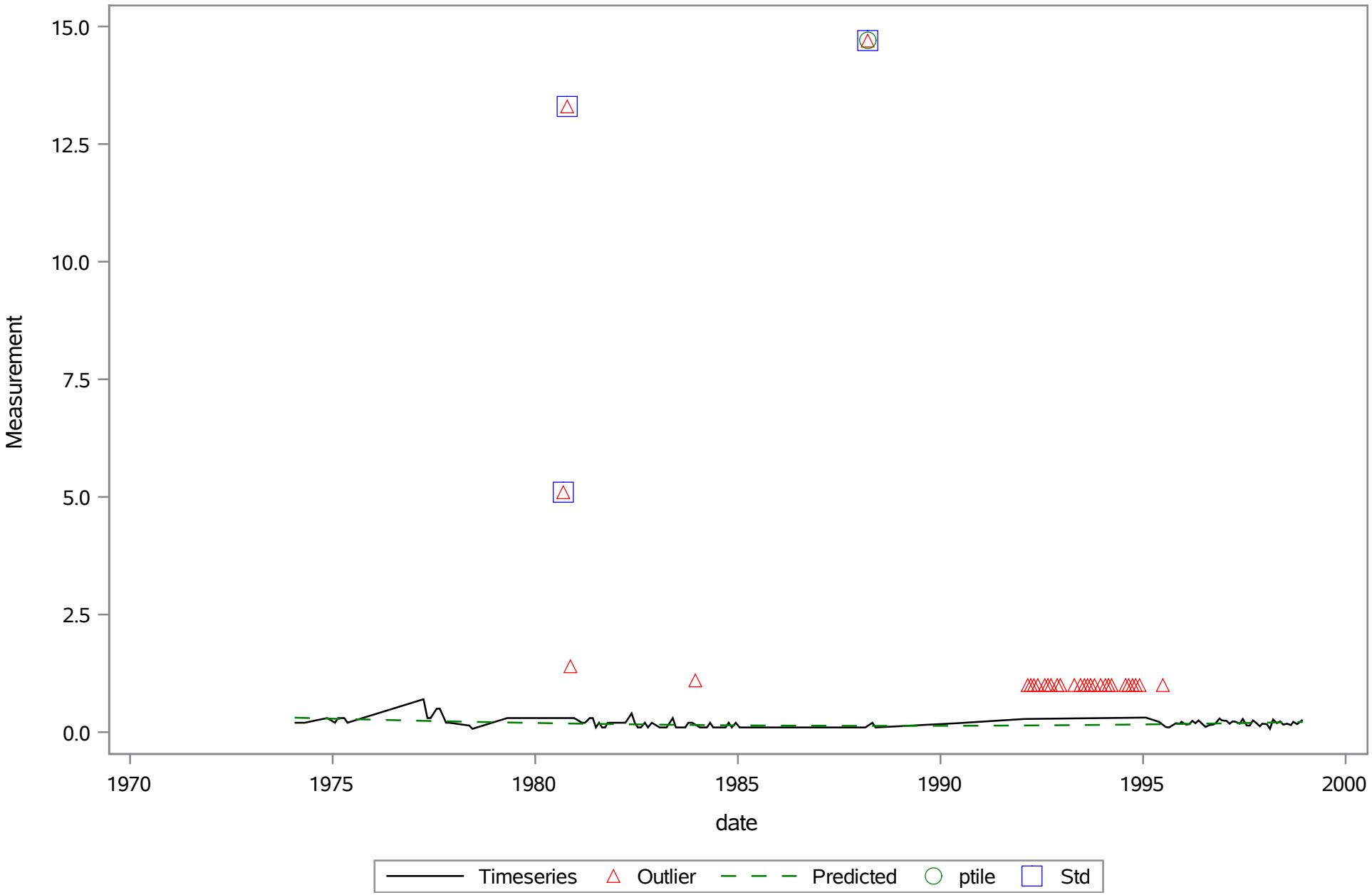

Little Manatee River
Little Manatee River at SR 674
Salinity ppt
Site ID = 21FLHILL129
Measurement
1.0
0.8
0.6
0.4
0.2
0.0
1998
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
2022
date
Timeseries
Outlier
Predicted
ptile
Std

Little Manatee River
Little Manatee River at CR 579
Salinity ppt
Site ID = 21FLHILL140

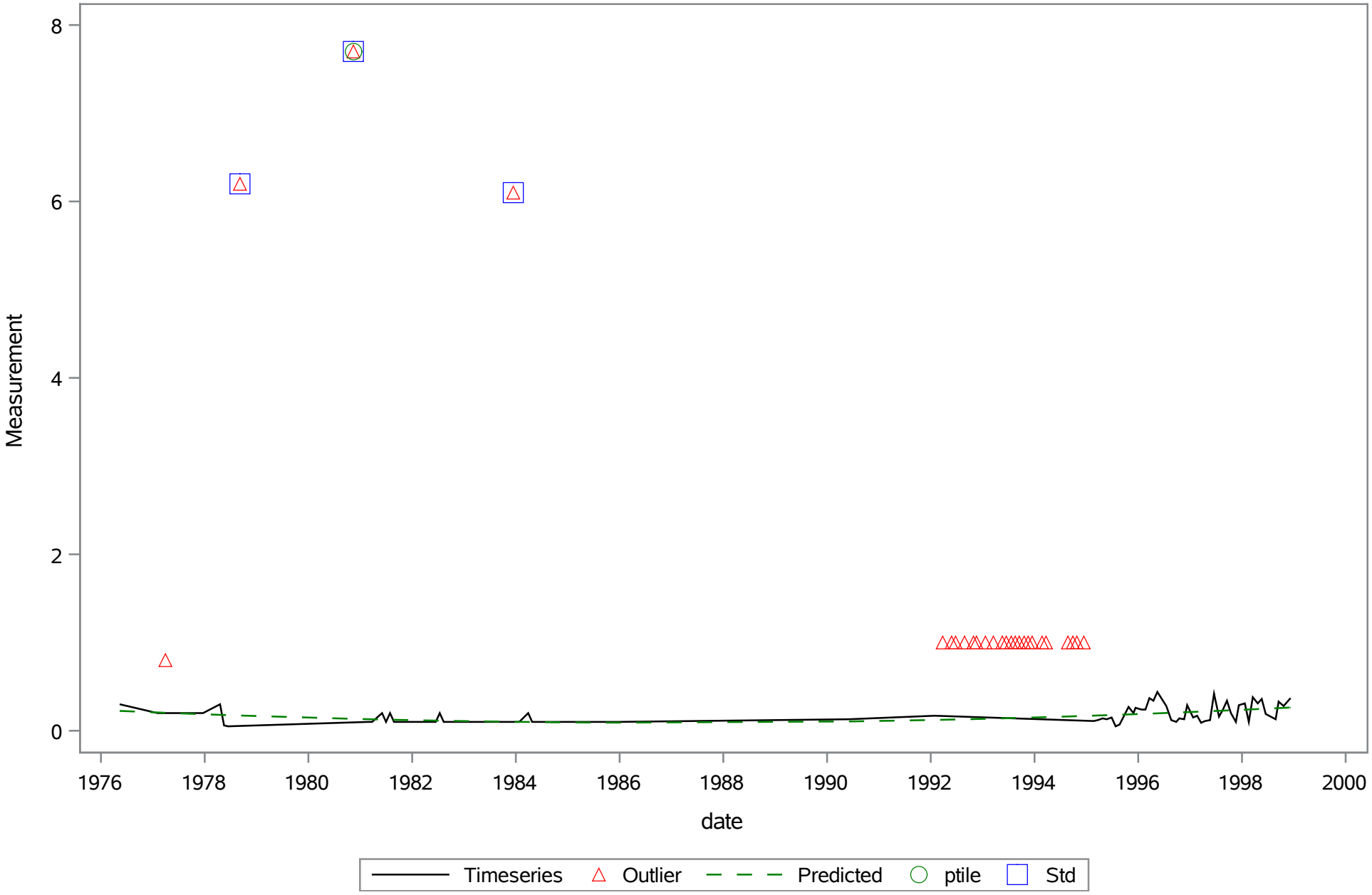


Little Manatee River
LITTLE MANATEE R AT CR579
Salinity ppt
Site ID = 21FLHILL24010013

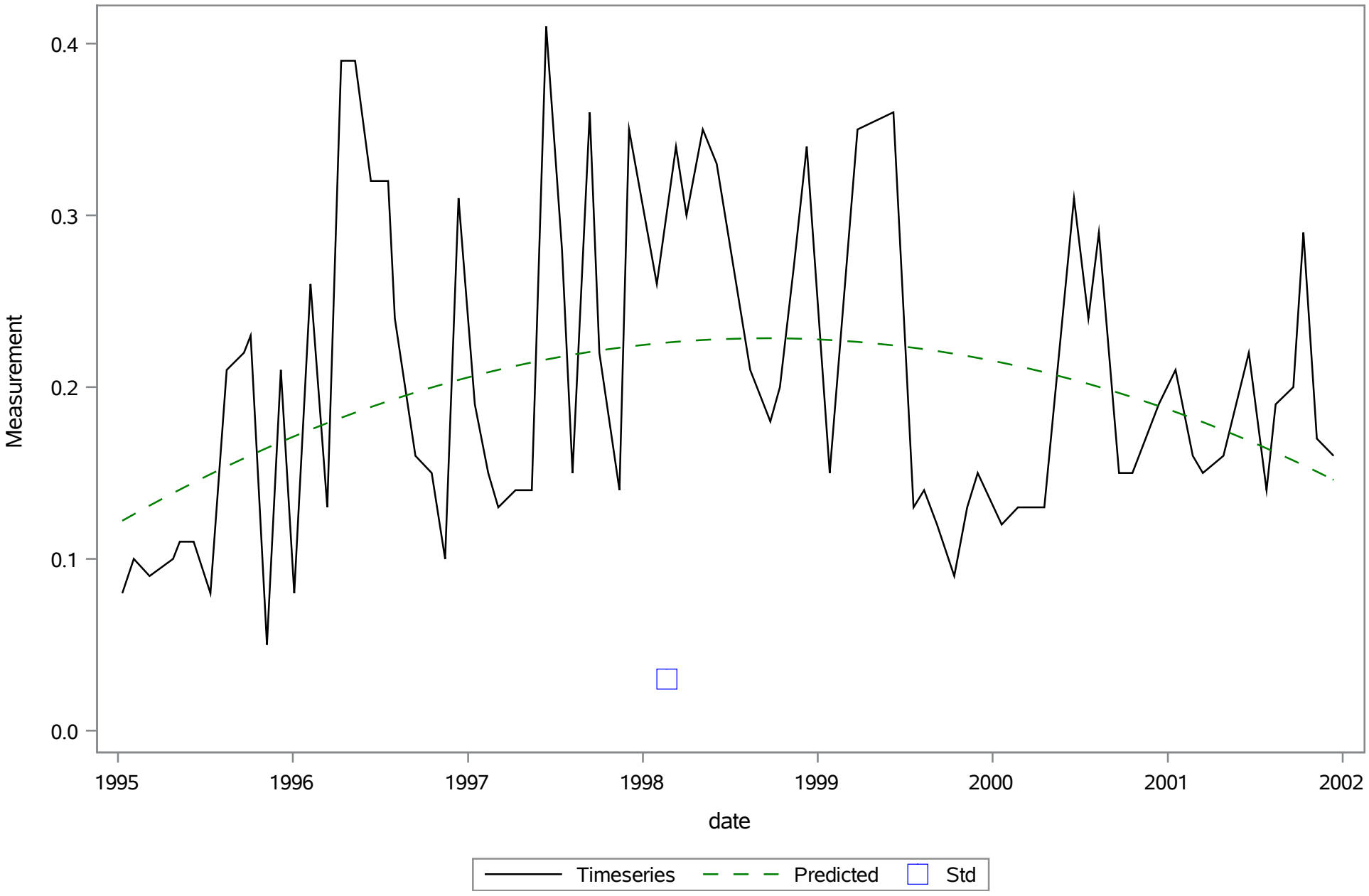


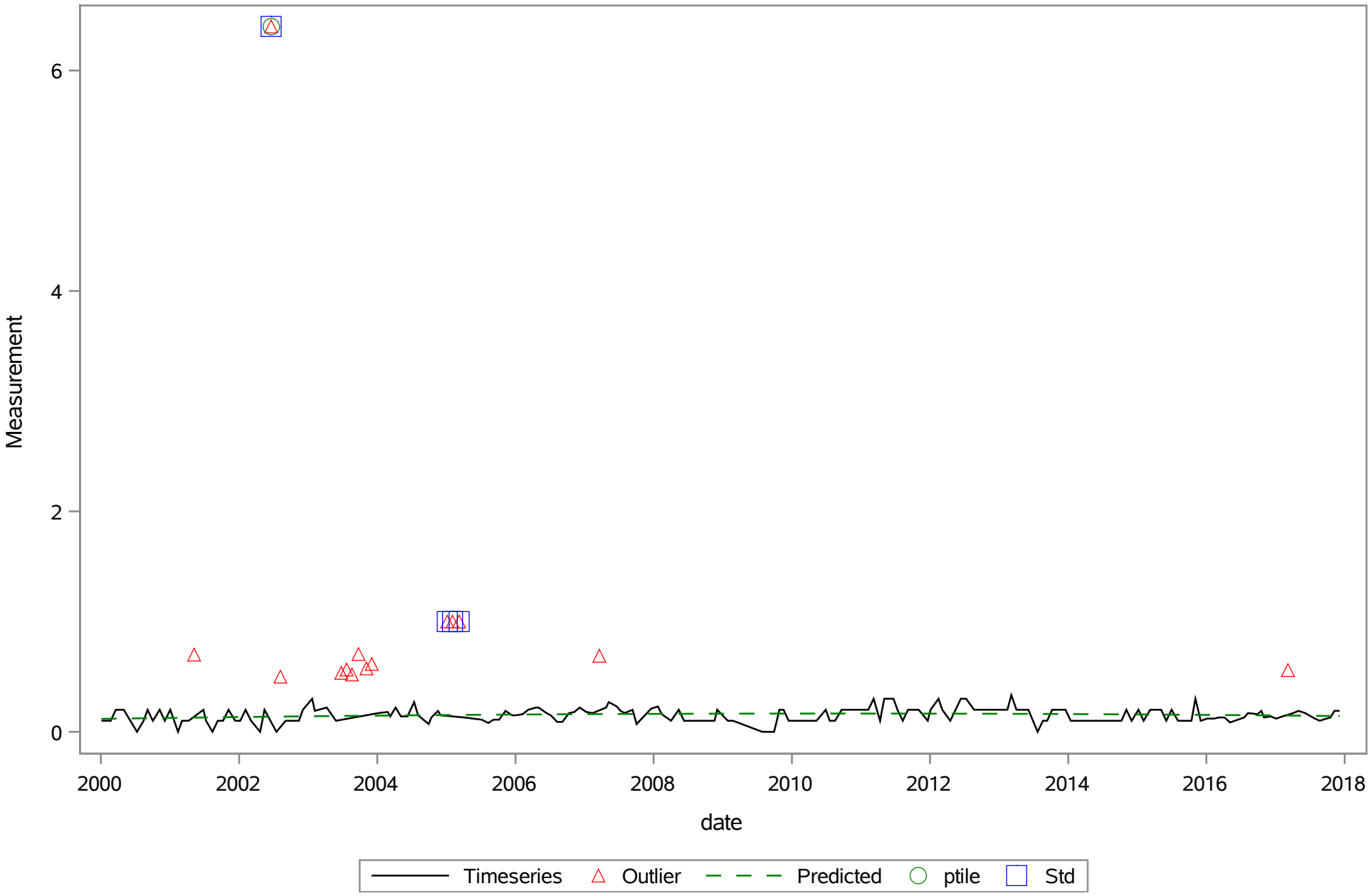

Little Manatee River
L MANATEE R BR US 301
Salinity ppt
Site ID = 21FLHILL24010100
15.0
12.5
10.0
7.5
5.0
2.5
0.0
Measurement
1970
1975
1980
1985
1990
1995
2000
date
Timeseries
Outlier
Predicted
ptile
Std

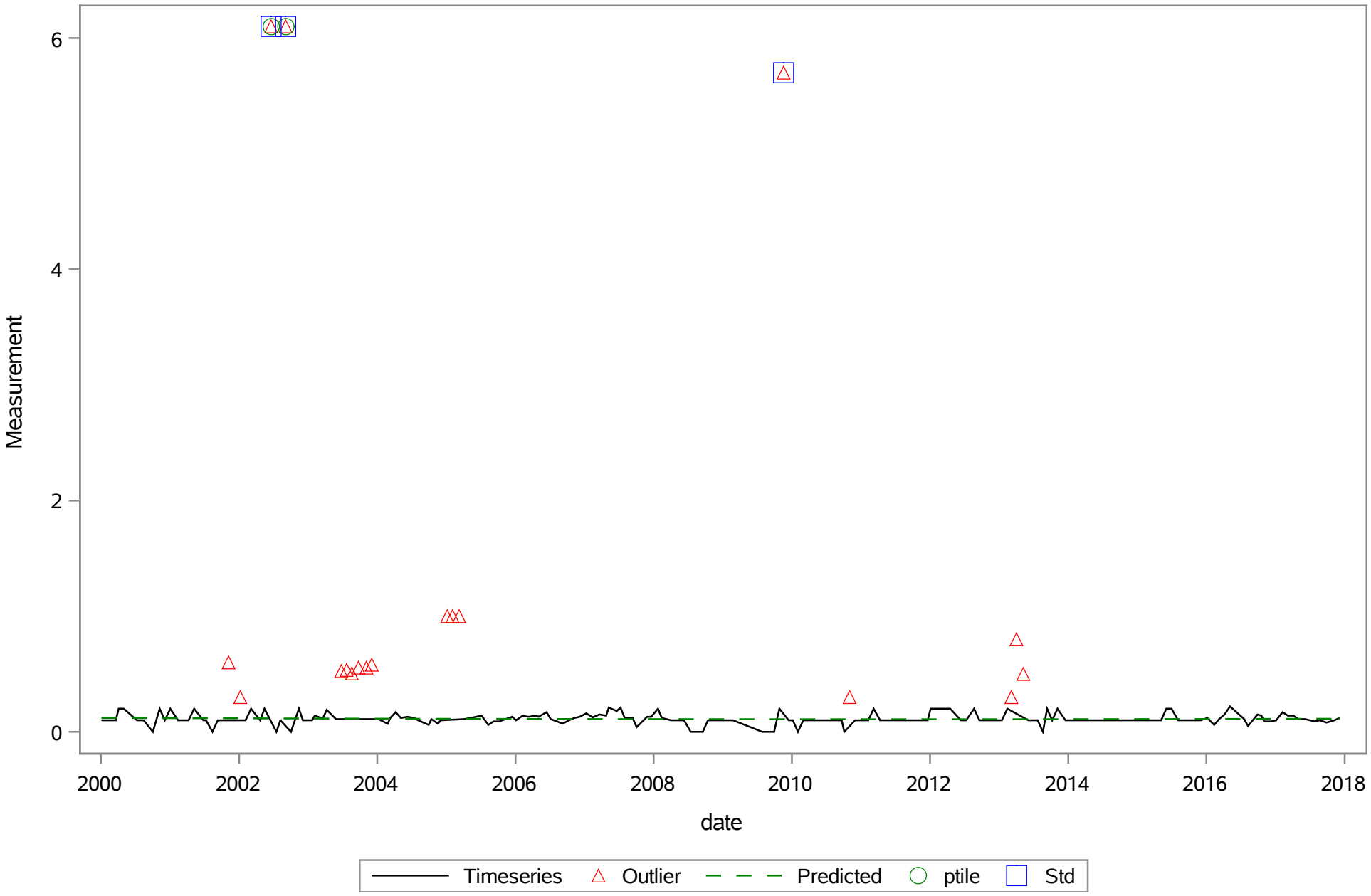
Little Manatee River
LITTLE MANATEE R AT SR #674
Salinity ppt
Site ID = 21FLHILL24010110



Little Manatee River
Little Manatee R. at SR674
Salinity ppt
Site ID = 21FLIMCALM674




Little Manatee River
D1
Salinity ppt
Site ID = 21FLMANAD1
Measurement
0
2
4
6
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
date
Timeseries
Outlier
Predicted
ptile
Std

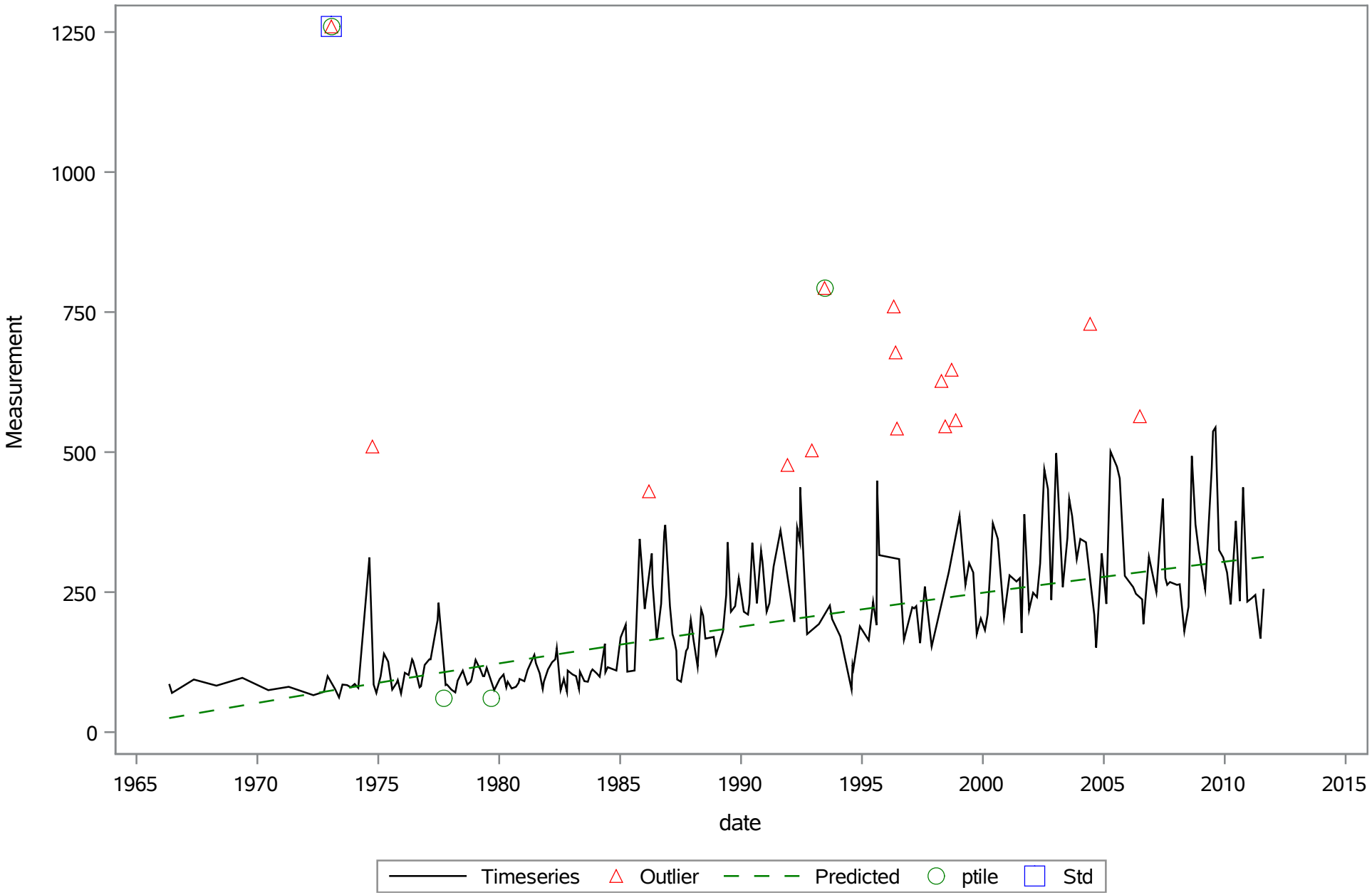

Little Manatee River
D3
Salinity ppt
Site ID = 21FLMANAD3
Measurement
6
4
2
0
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
date
Timeseries
Outlier
Predicted
ptile
Std

Little Manatee River

LITTLE MANATEE RIVER NEAR FT. LONESOME FL

Specific Conductance (µmhos/cm) µmhos/cm

Site ID = 112WRD 02300100

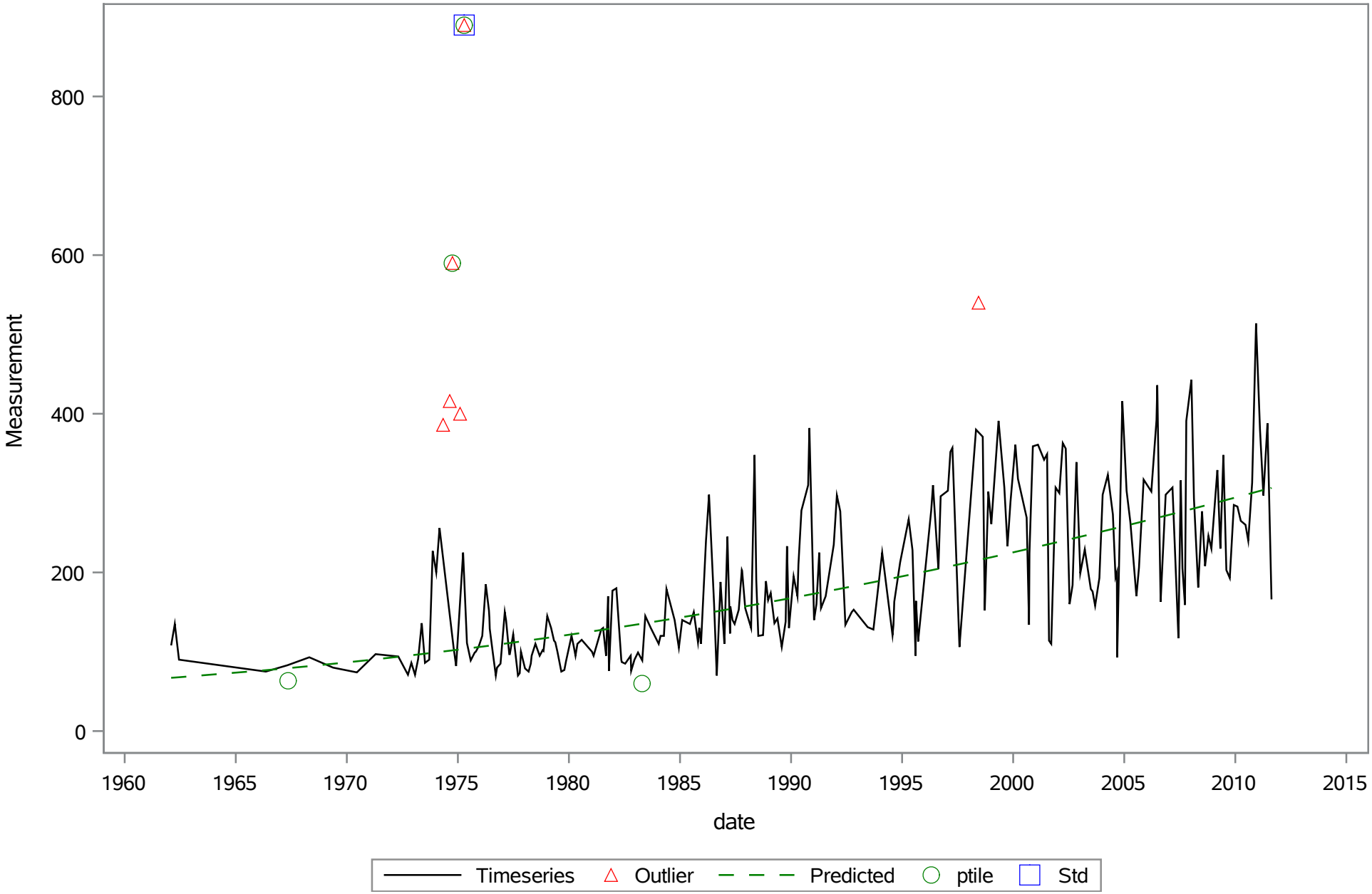


Little Manatee River

SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL

Specific Conductance (µmhos/cm) µmhos/cm

Site ID = 112WRD 02300200

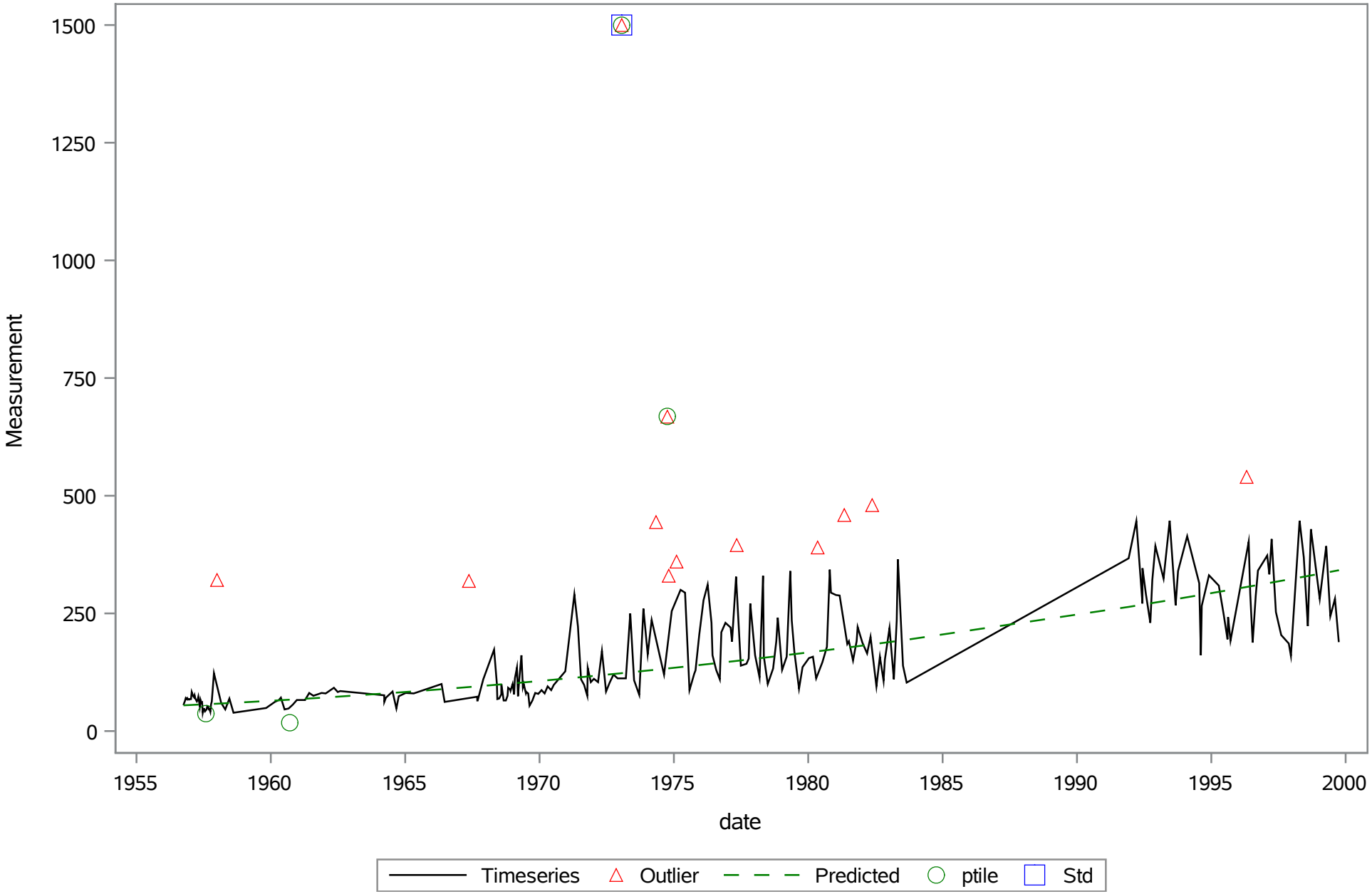


Little Manatee River

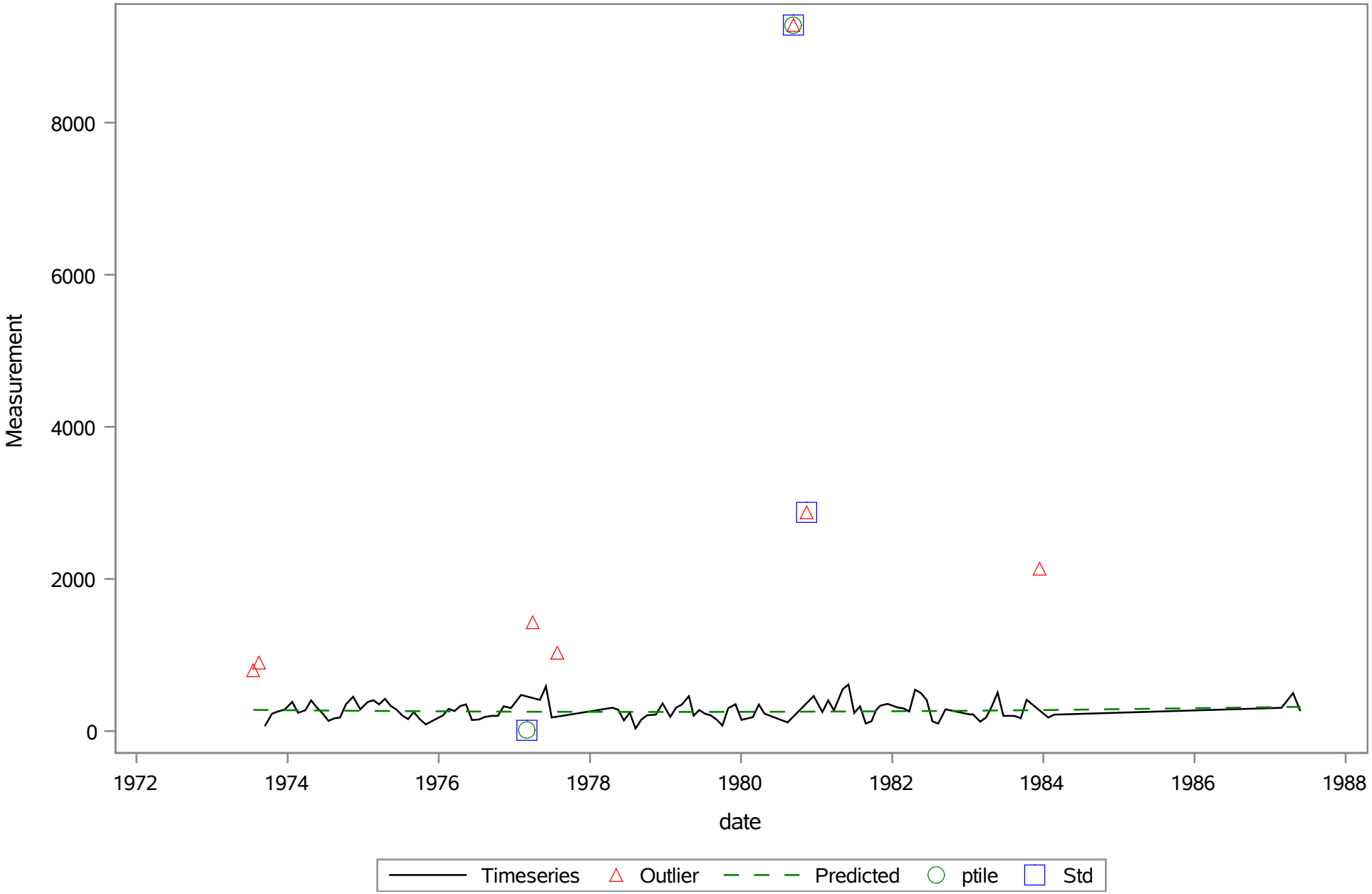
LITTLE MANATEE RIVER NEAR WIMAUMA FL

Specific Conductance (µmhos/cm) µmhos/cm

Site ID = 112WRD 02300500



Little Manatee River
L MANATEE R BR US 301
Specific Conductance (µmhos/cm) µmhos/cm
Site ID = 21FLA 24010100

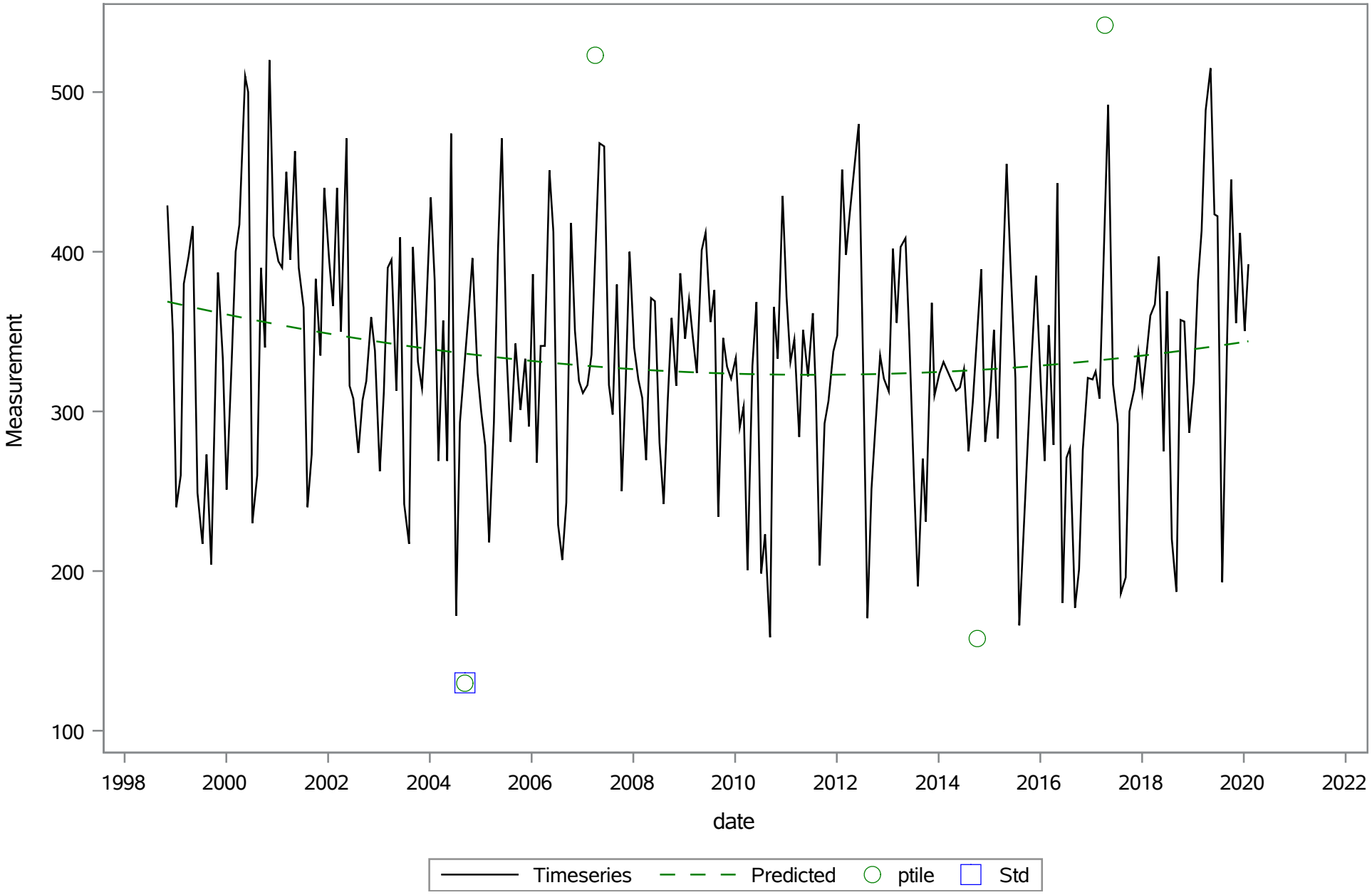


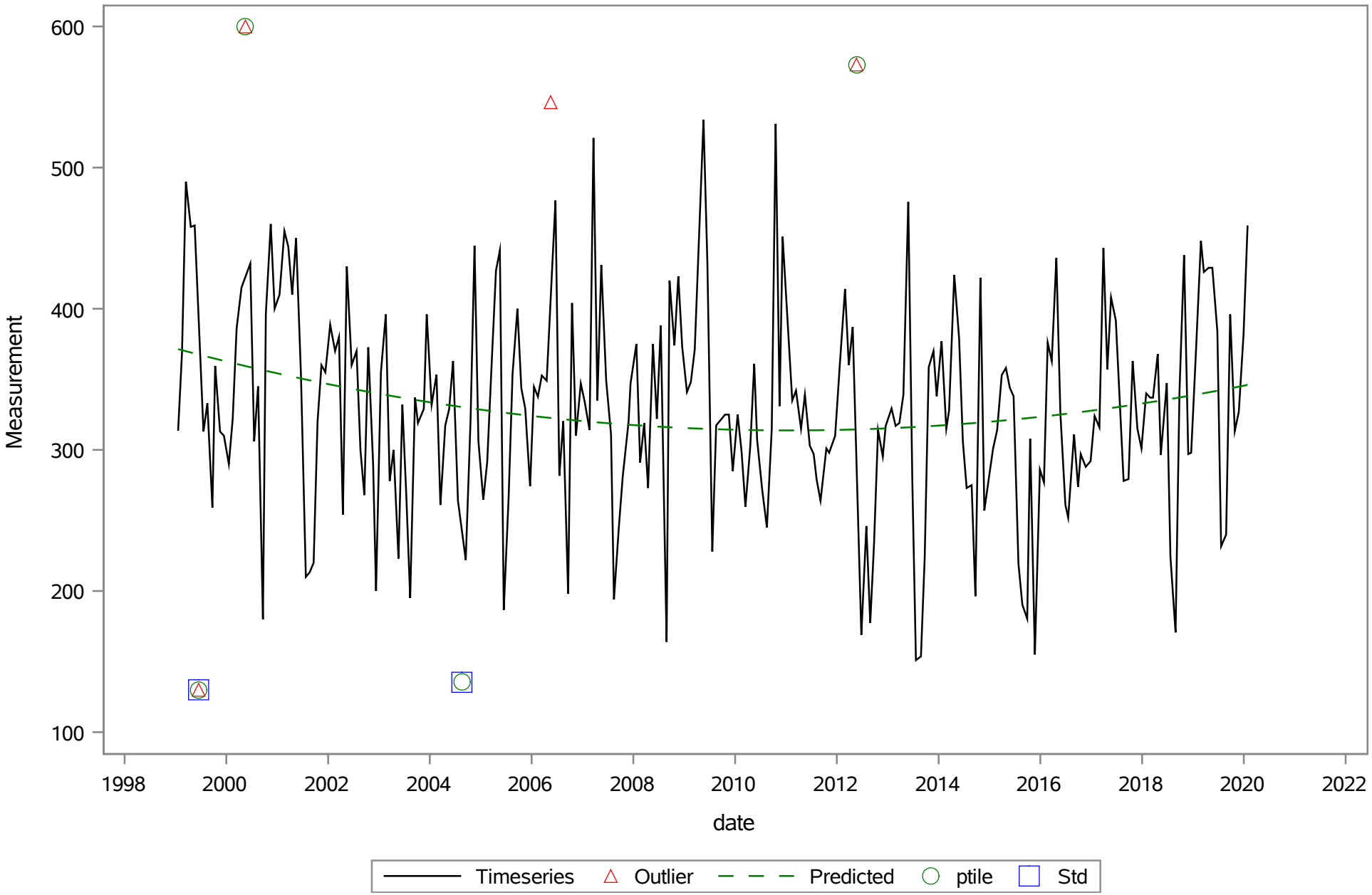
Little Manatee River

LITTLE MANATEE RIVER AT US HWY 301

Specific Conductance (µmhos/cm) µmhos/cm

Site ID = 21FLGW 3555



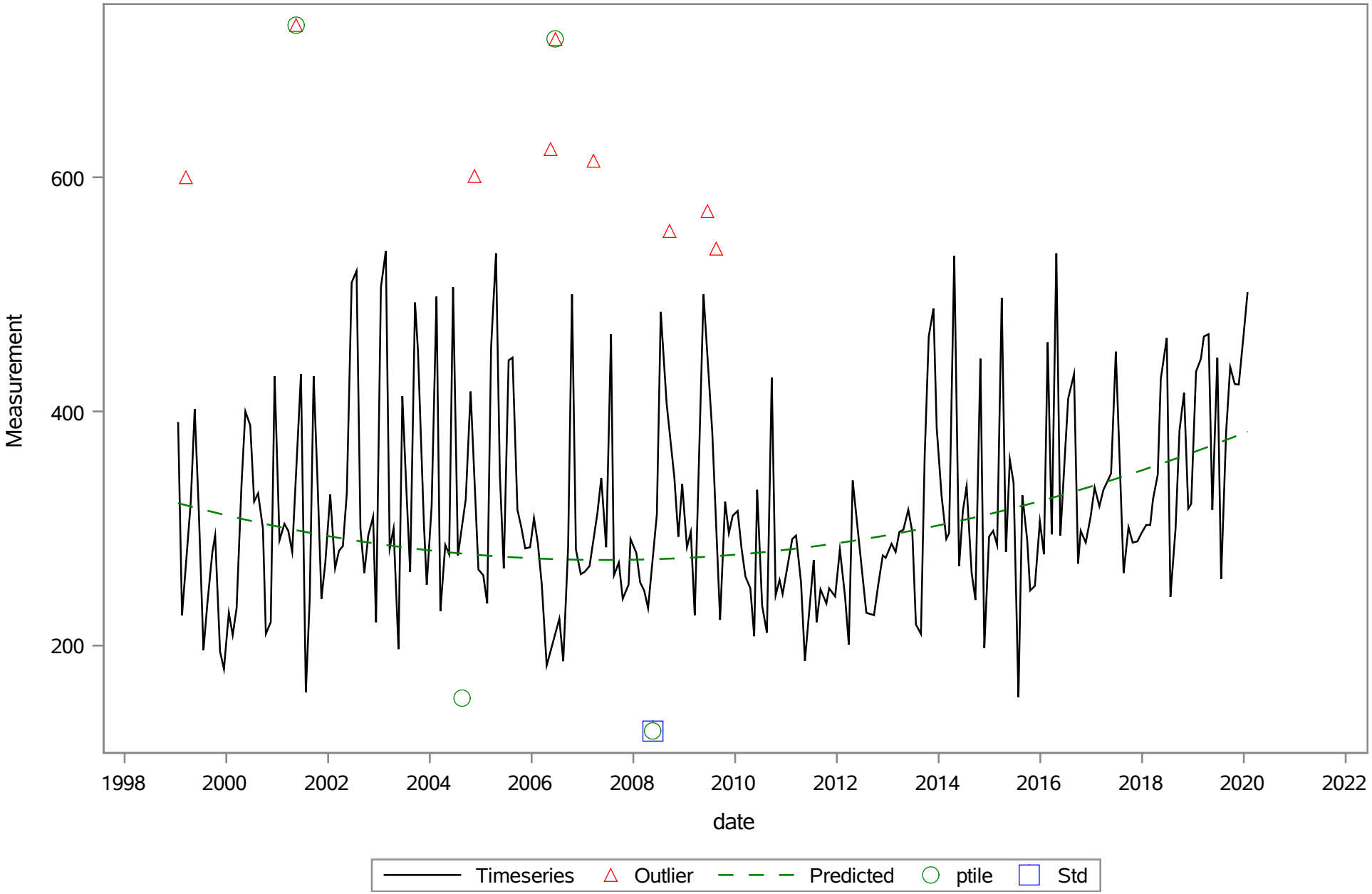

Little Manatee River
Little Manatee River at US 301 bridge
Specific Conductance (µmhos/cm) µmhos/cm
Site ID = 21FLHILL113
Measurement
600
500
400
300
200
100
1998
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
2022
date
Timeseries
Outlier
Predicted
ptile
Std

Little Manatee River

Little Manatee River at SR 674

Specific Conductance (µmhos/cm) µmhos/cm

Site ID = 21FLHILL129

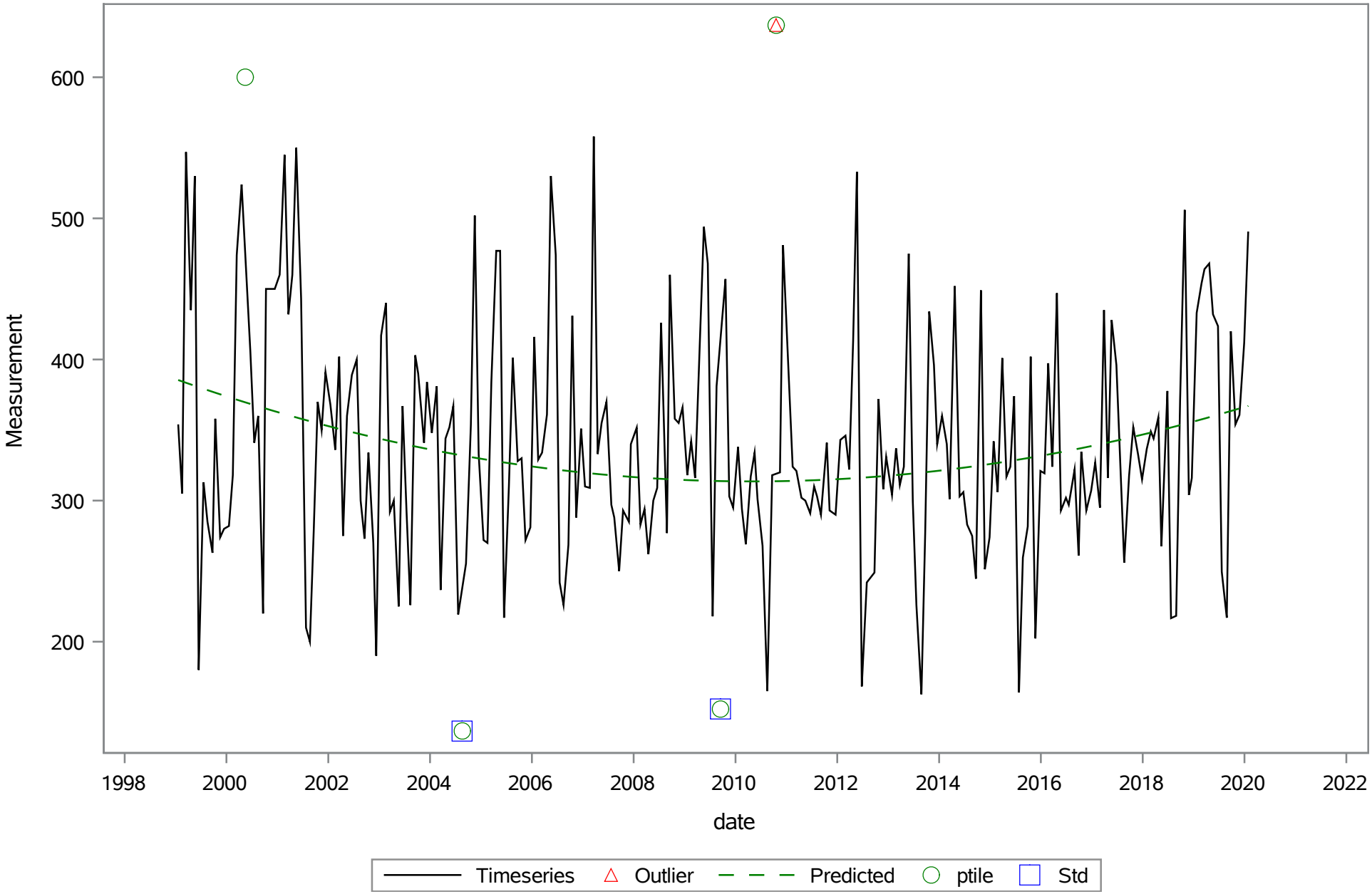


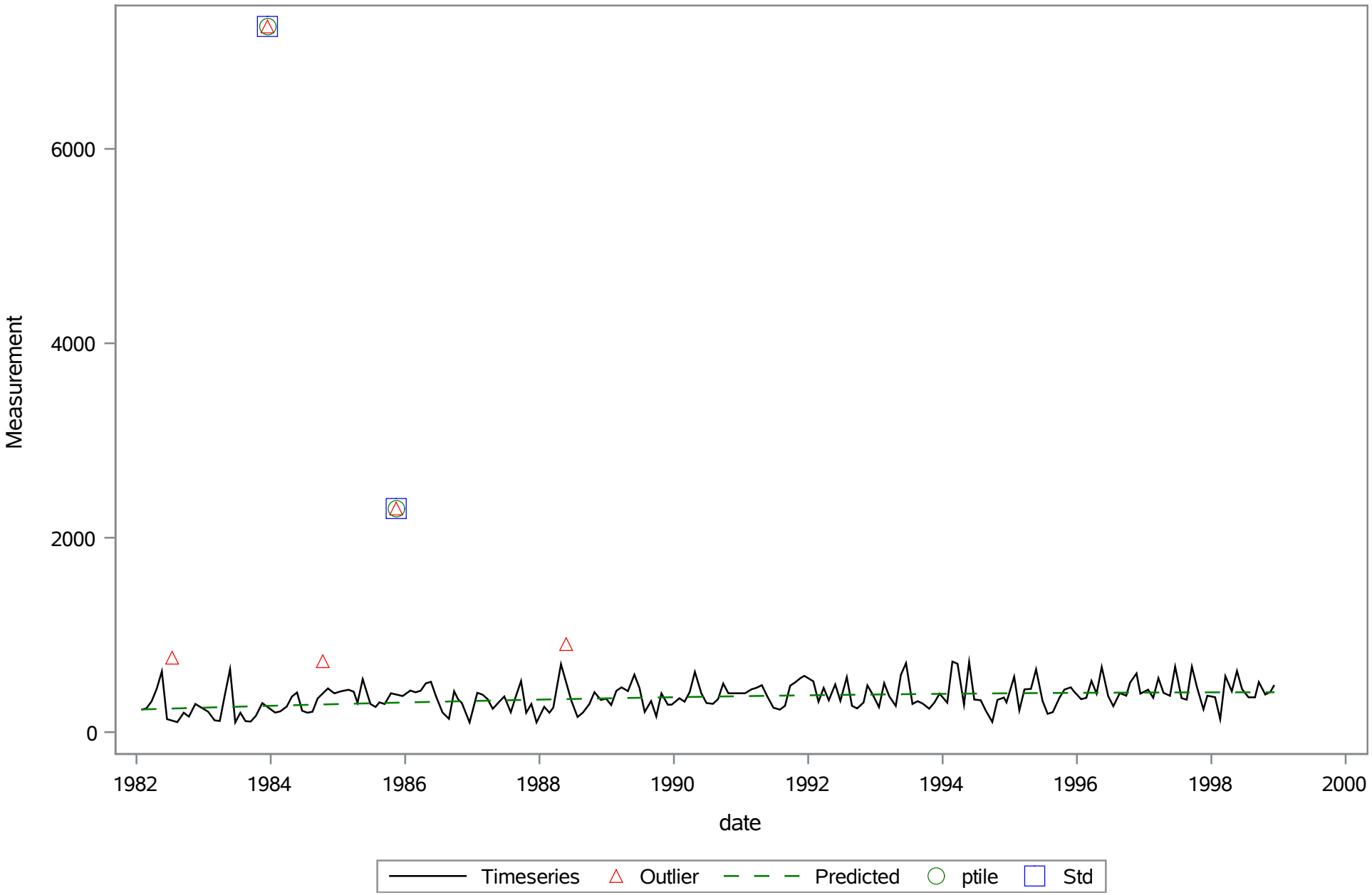
Little Manatee River

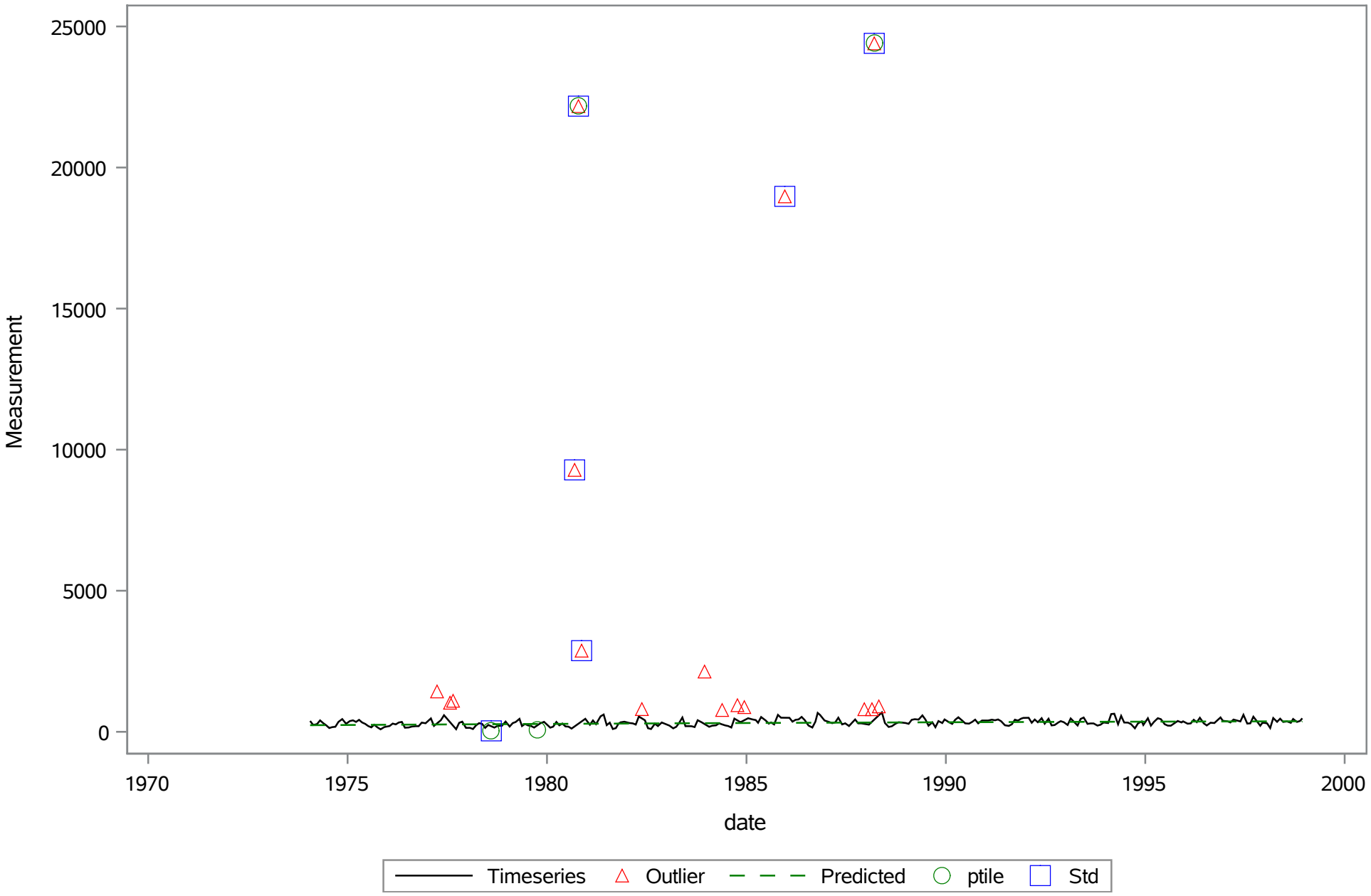
Little Manatee River at CR 579

Specific Conductance (µmhos/cm) µmhos/cm

Site ID = 21FLHILL140




Little Manatee River
LITTLE MANATEE R AT CR579
Specific Conductance (µmhos/cm) µmhos/cm
Site ID = 21FLHILL24010013
Measurement
6000
4000
2000
0
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
date
Timeseries
Outlier
Predicted
ptile
Std

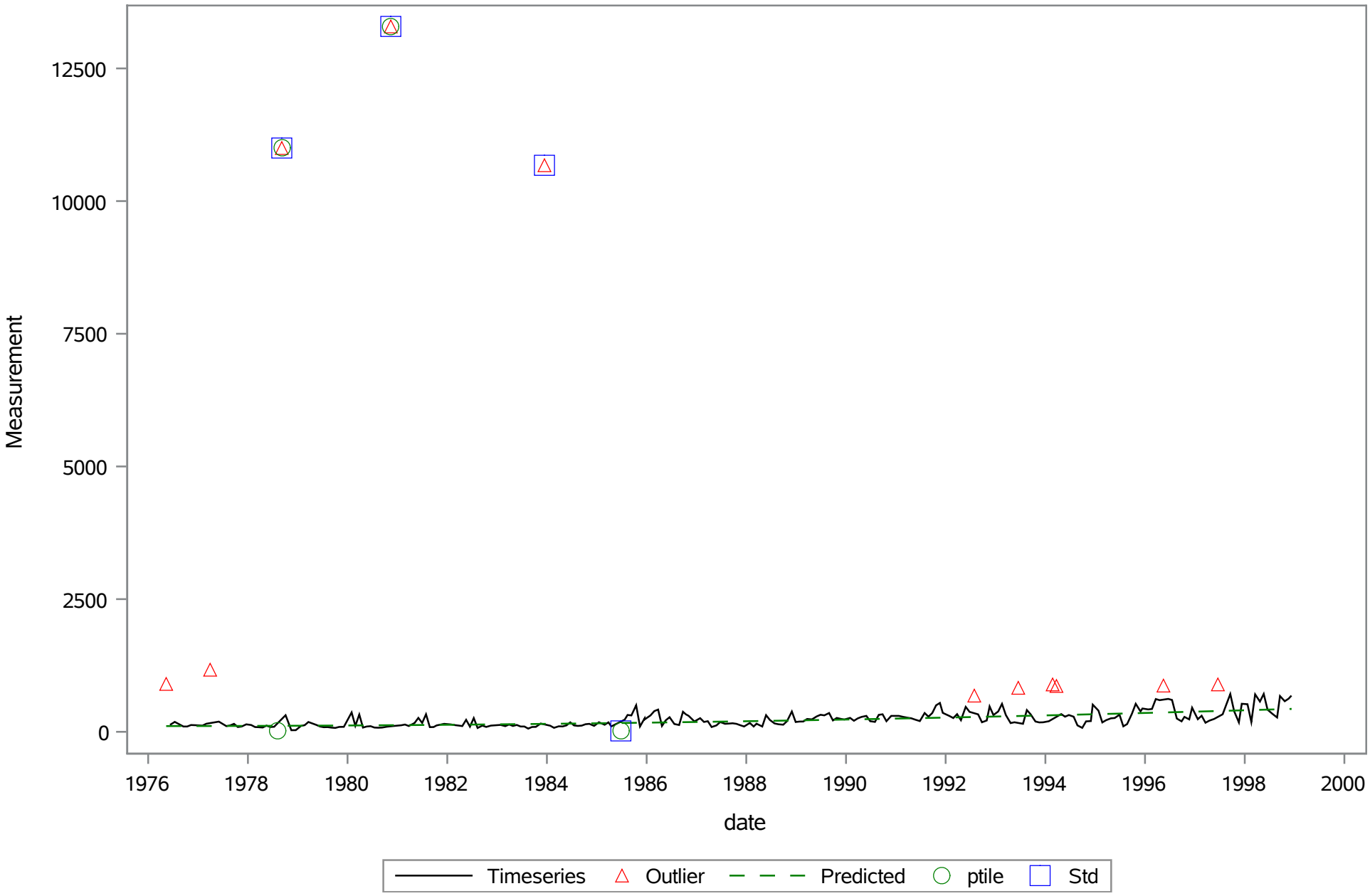

Little Manatee River
L MANATEE R BR US 301
Specific Conductance (µmhos/cm) µmhos/cm
Site ID = 21FLHILL24010100
Measurement
25000
20000
15000
10000
5000
0
1970
1975
1980
1985
1990
1995
2000
date
Timeseries
Outlier
Predicted
ptile
Std

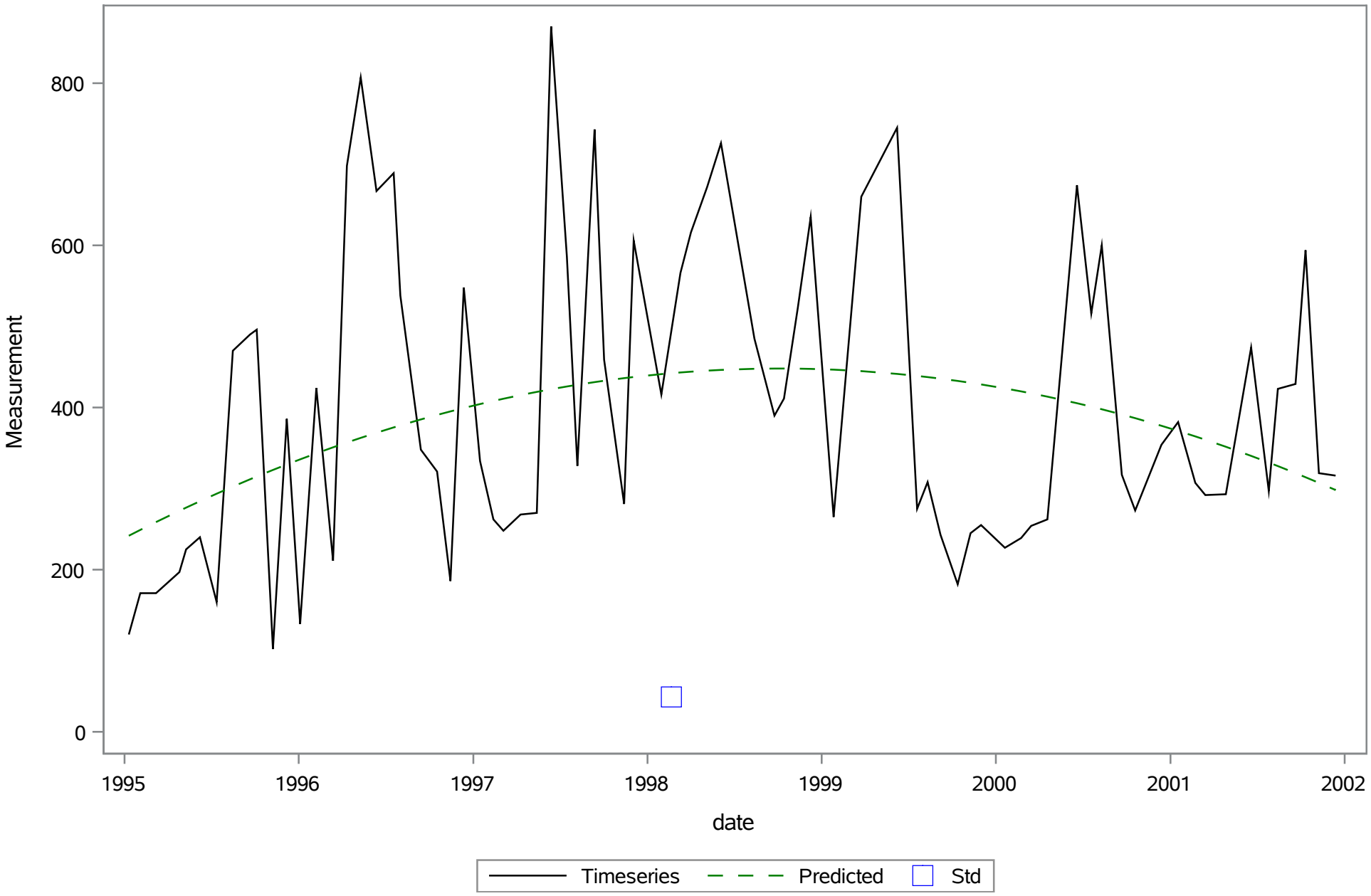
Little Manatee River

LITTLE MANATEE R AT SR #674

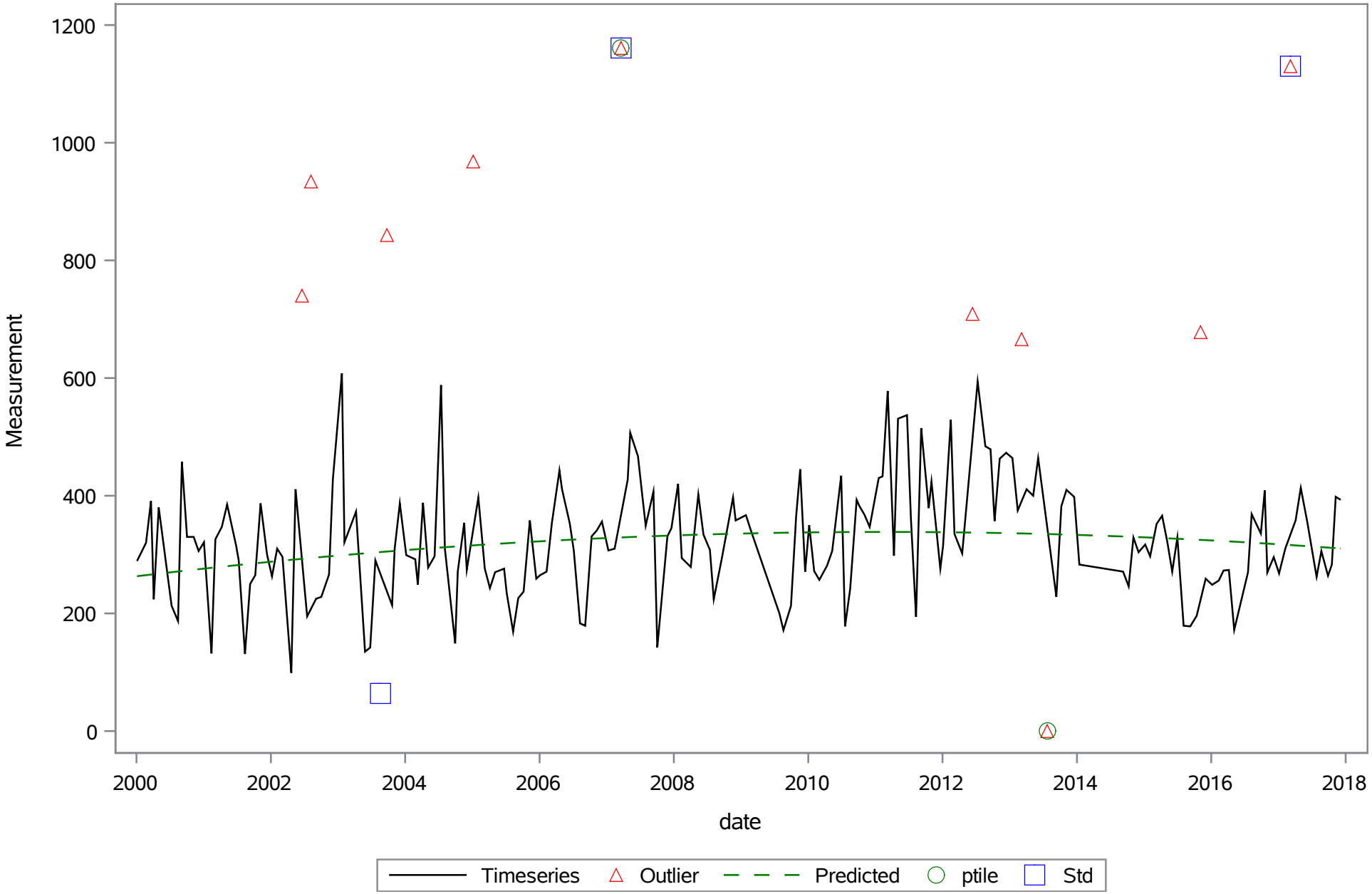
Specific Conductance (µmhos/cm) µmhos/cm

Site ID = 21FLHILL24010110

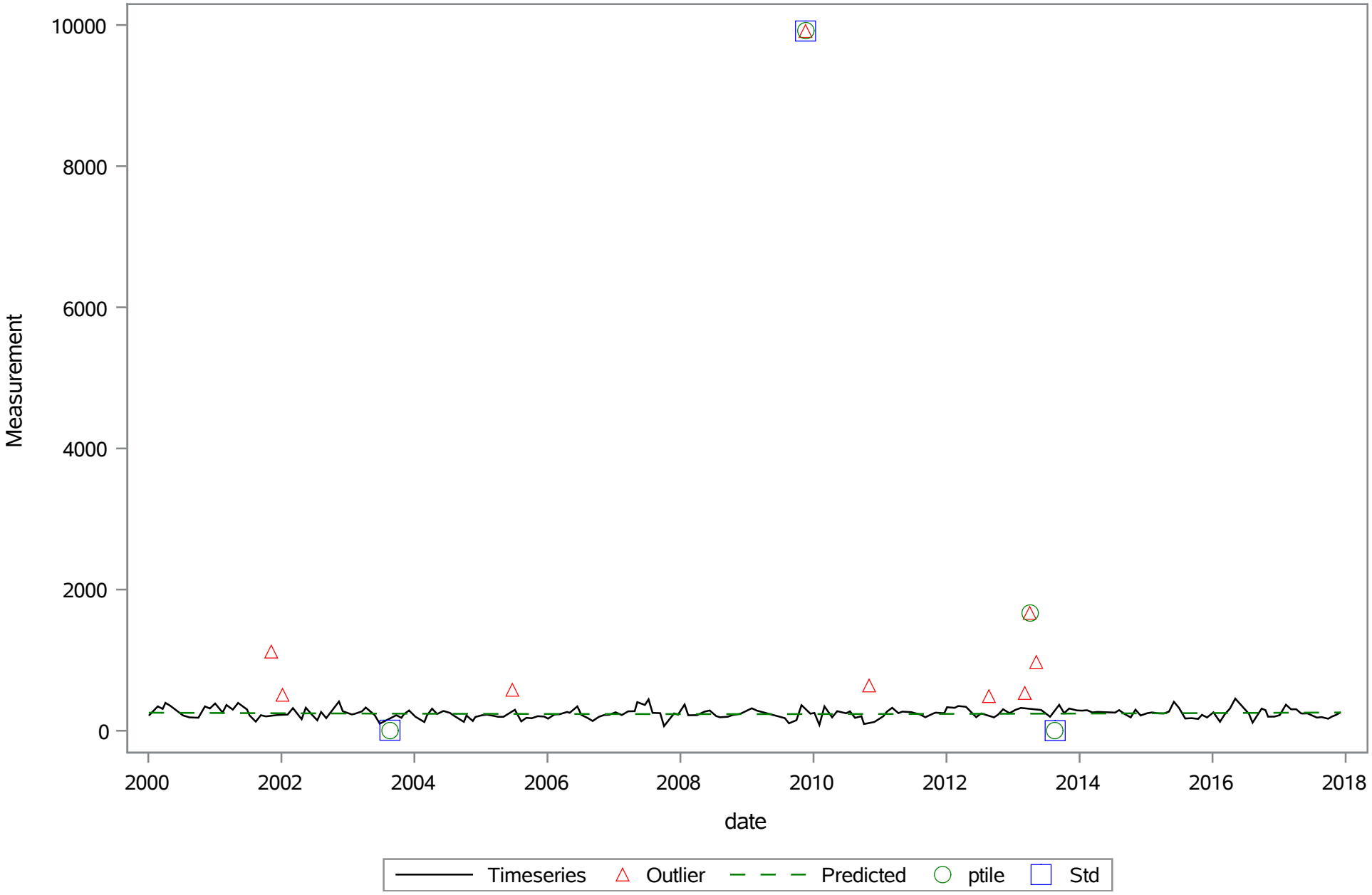



Little Manatee River
Little Manatee R. at SR674
Specific Conductance (µmhos/cm) µmhos/cm
Site ID = 21FLIMCALM674
Measurement
800
600
400
200
0
1995
1996
1997
1998
1999
2000
2001
2002
date
Timeseries
Predicted
Std

Little Manatee River
D1
Specific Conductance (µmhos/cm) µmhos/cm
Site ID = 21FLMANAD1



Little Manatee River
D3
Specific Conductance (µmhos/cm) µmhos/cm
Site ID = 21FLMANAD3

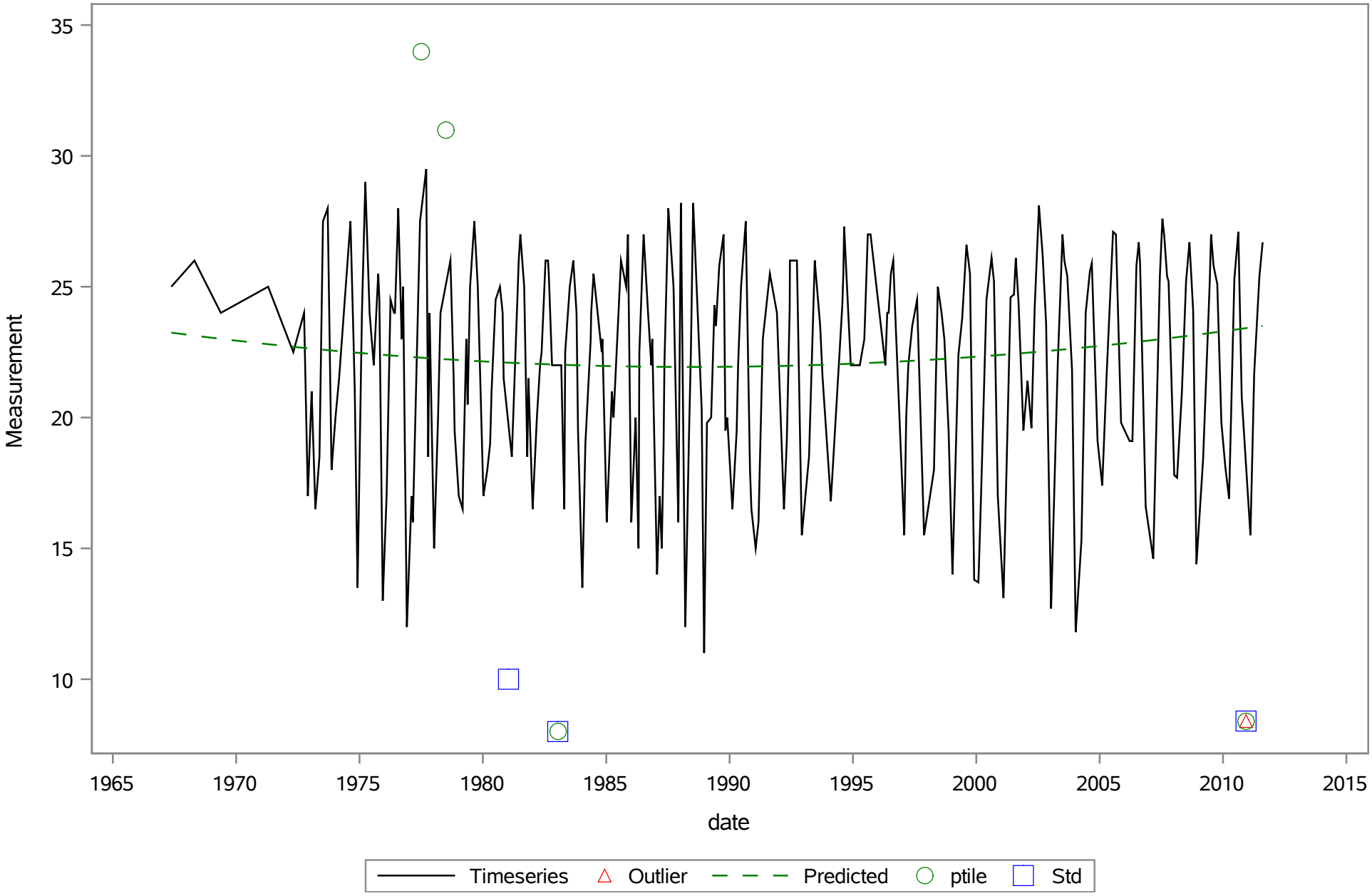


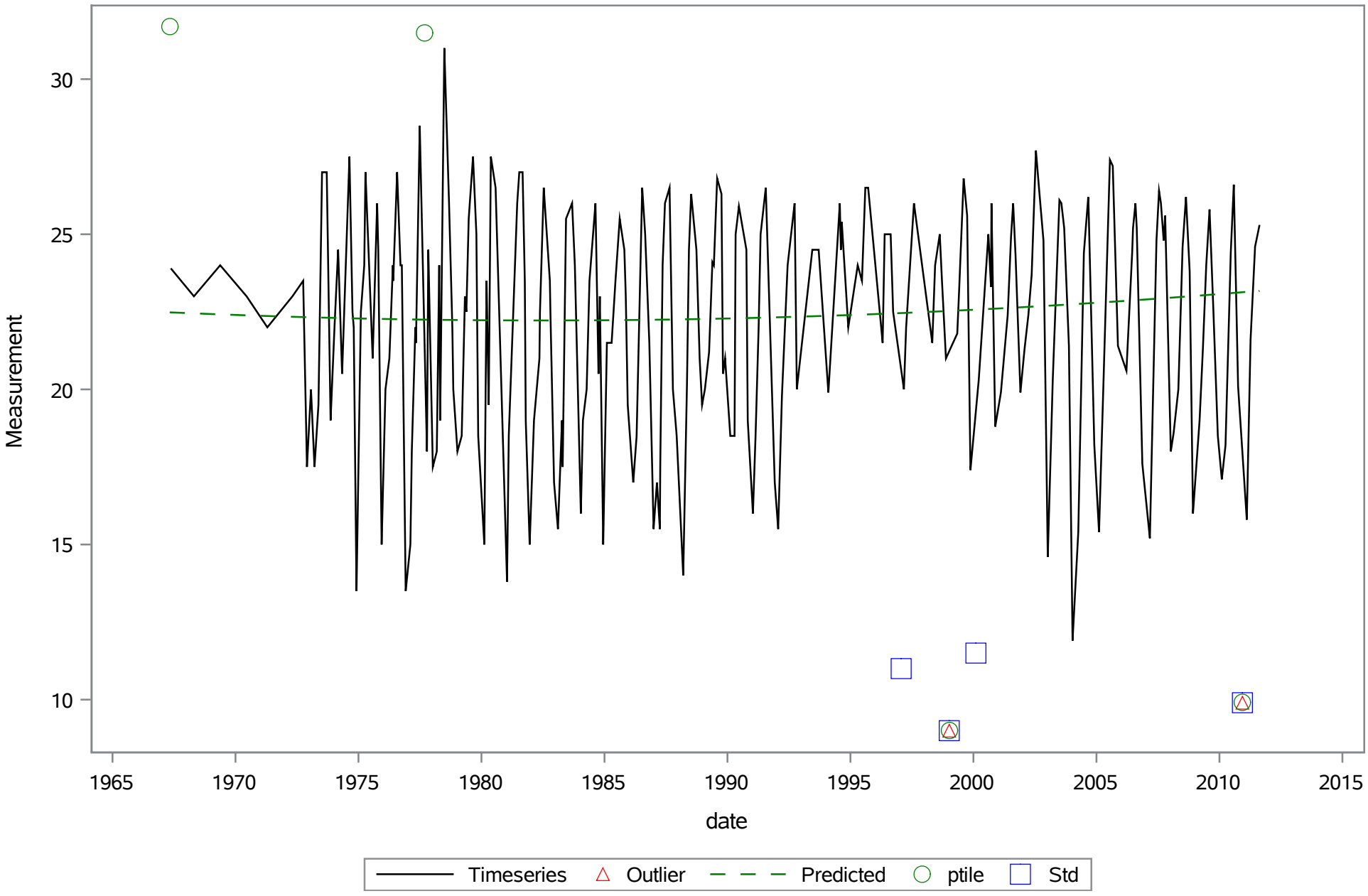
Little Manatee River

LITTLE MANATEE RIVER NEAR FT. LONESOME FL

Temperature (C°) deg C

Site ID = 112WRD 02300100



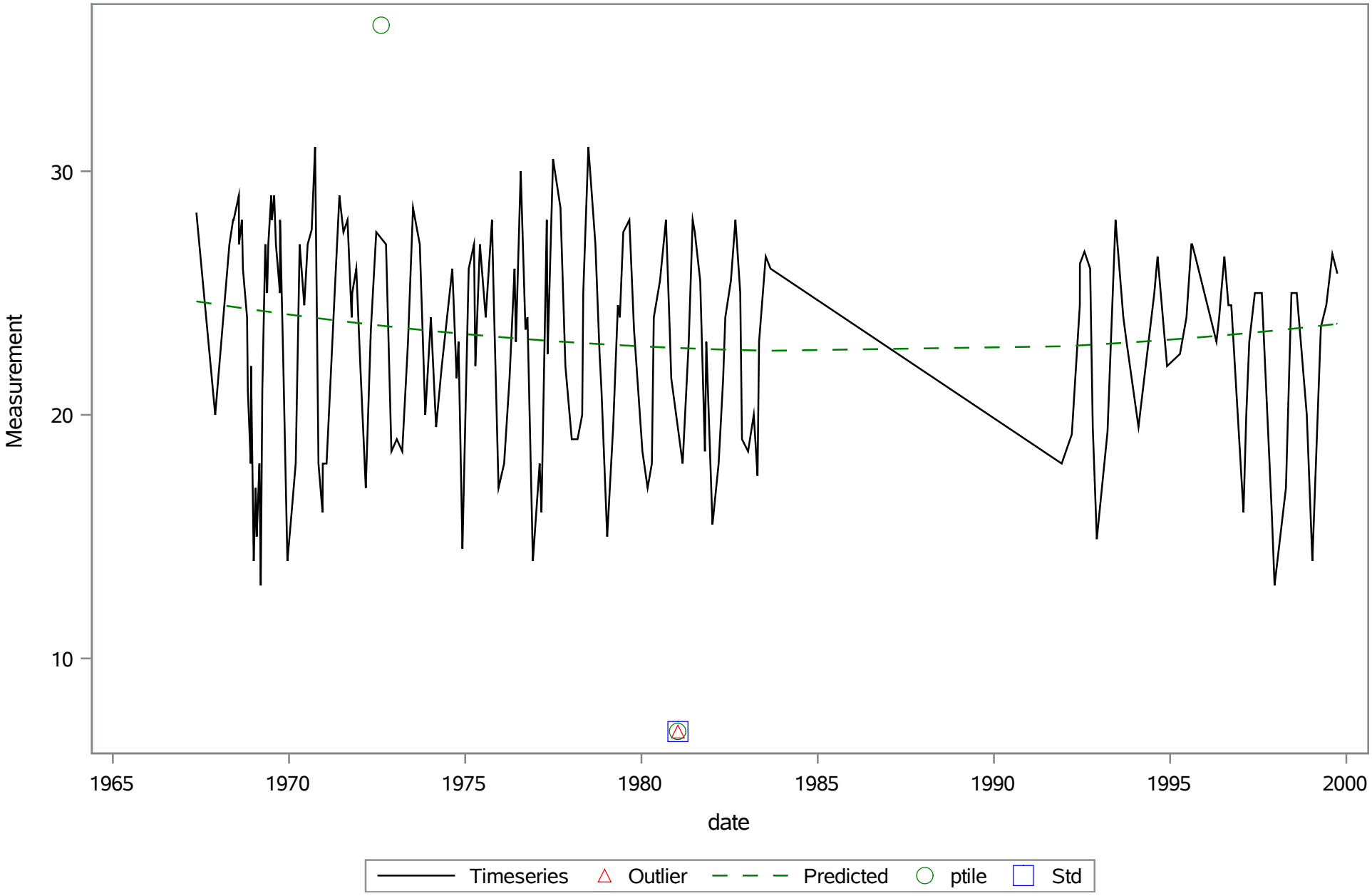

Little Manatee River
SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL
Temperature (C°) deg C
Site ID = 112WRD 02300200
Measurement
30
25
20
15
10
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
date
Timeseries
Outlier
Predicted
ptile
Std

Little Manatee River

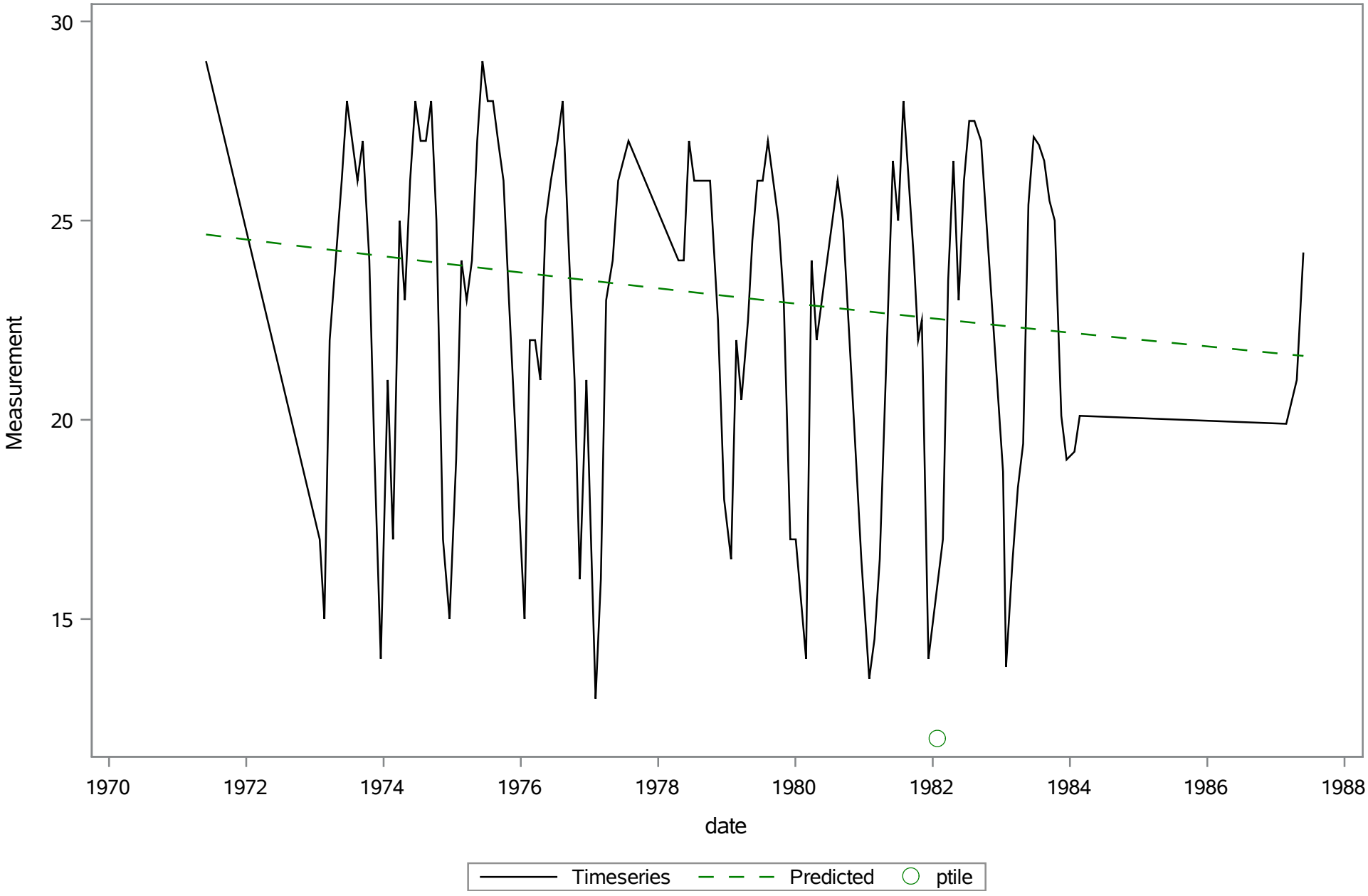
LITTLE MANATEE RIVER NEAR WIMAUMA FL

Temperature (C°) deg C

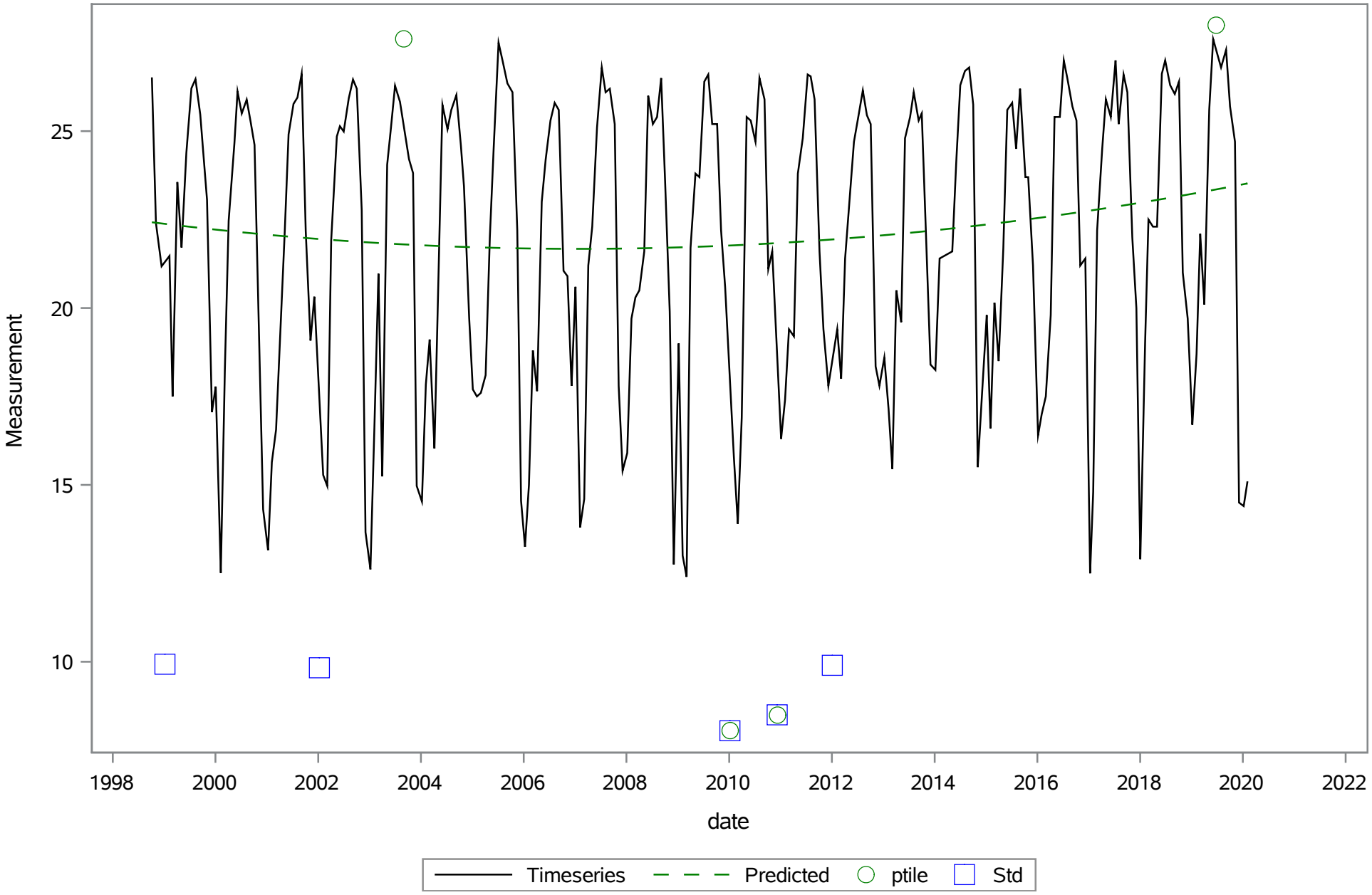
Site ID = 112WRD 02300500

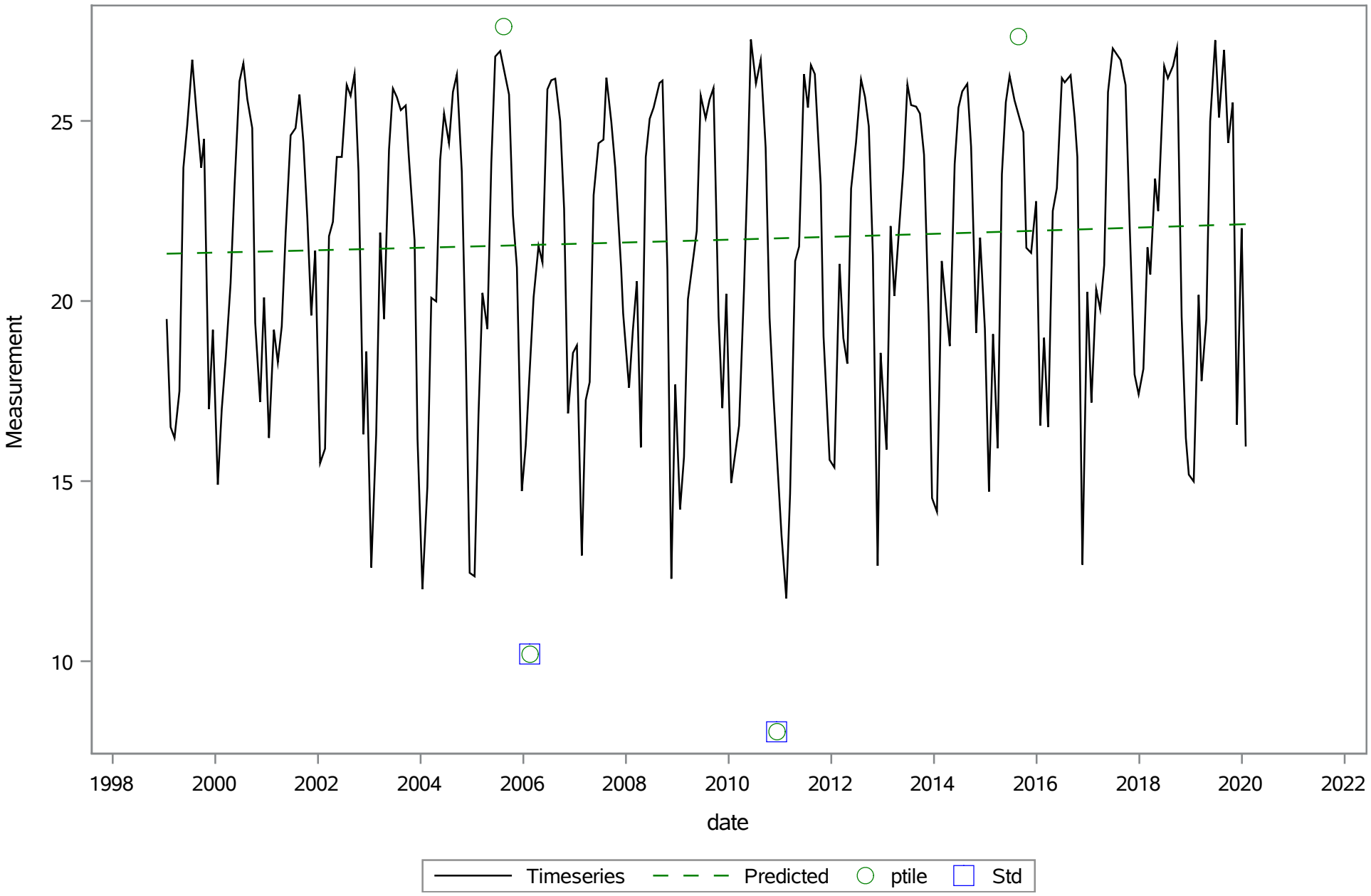


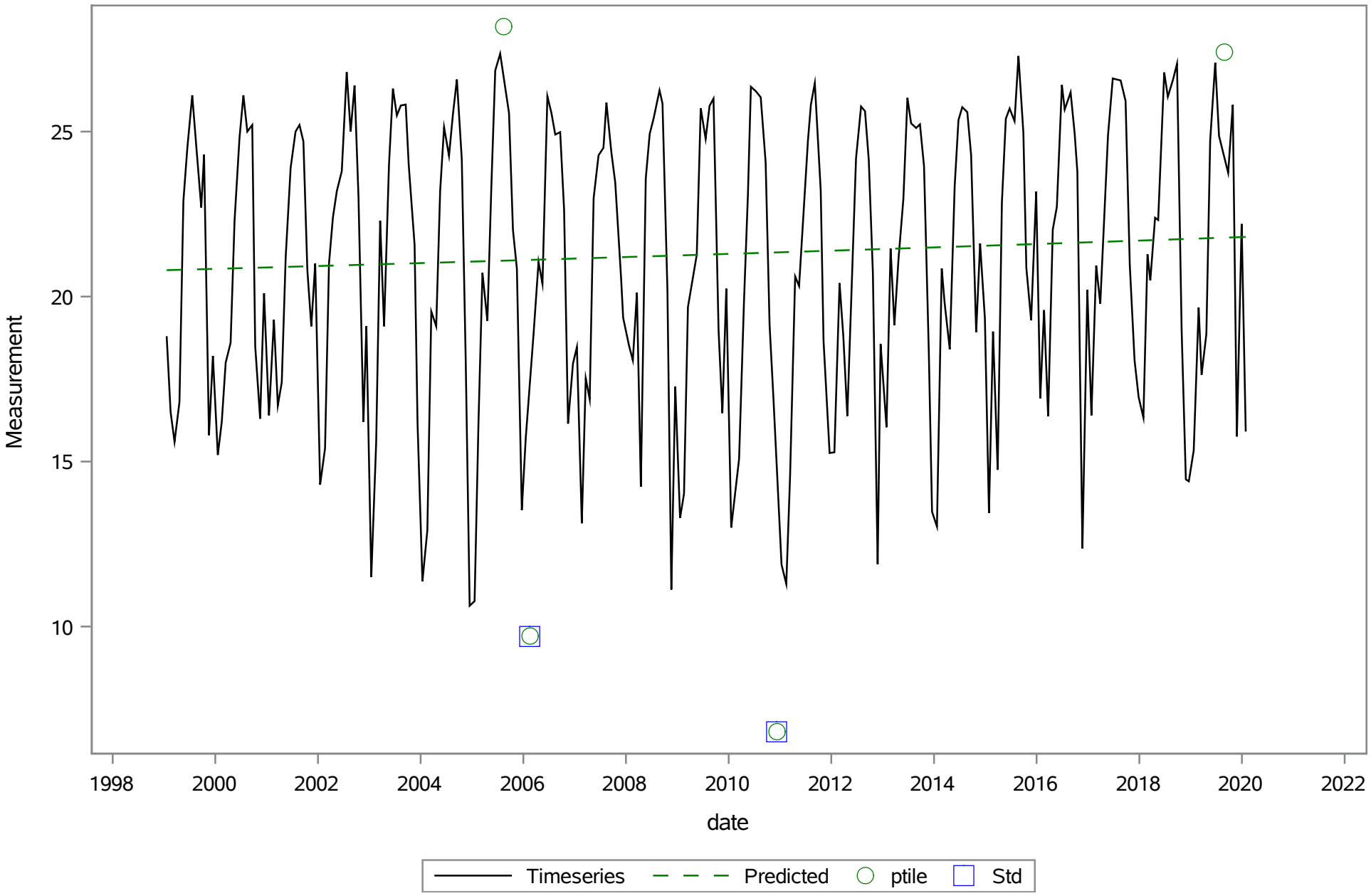
Little Manatee River
L MANATEE R BR US 301
Temperature (C°) deg C
Site ID = 21FLA 24010100



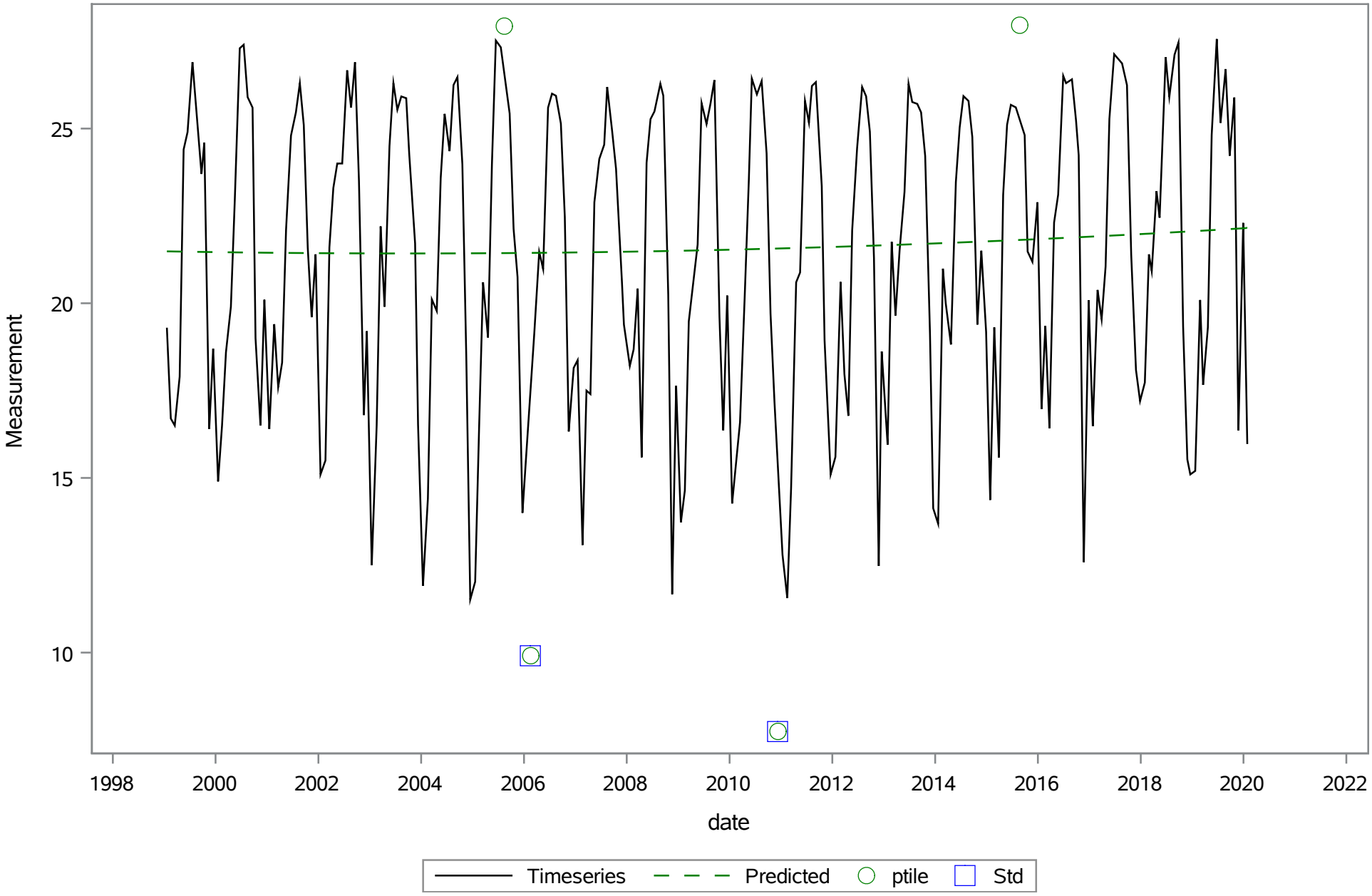
Little Manatee River
LITTLE MANATEE RIVER AT US HWY 301
Temperature (C°) deg C
Site ID = 21FLGW 3555



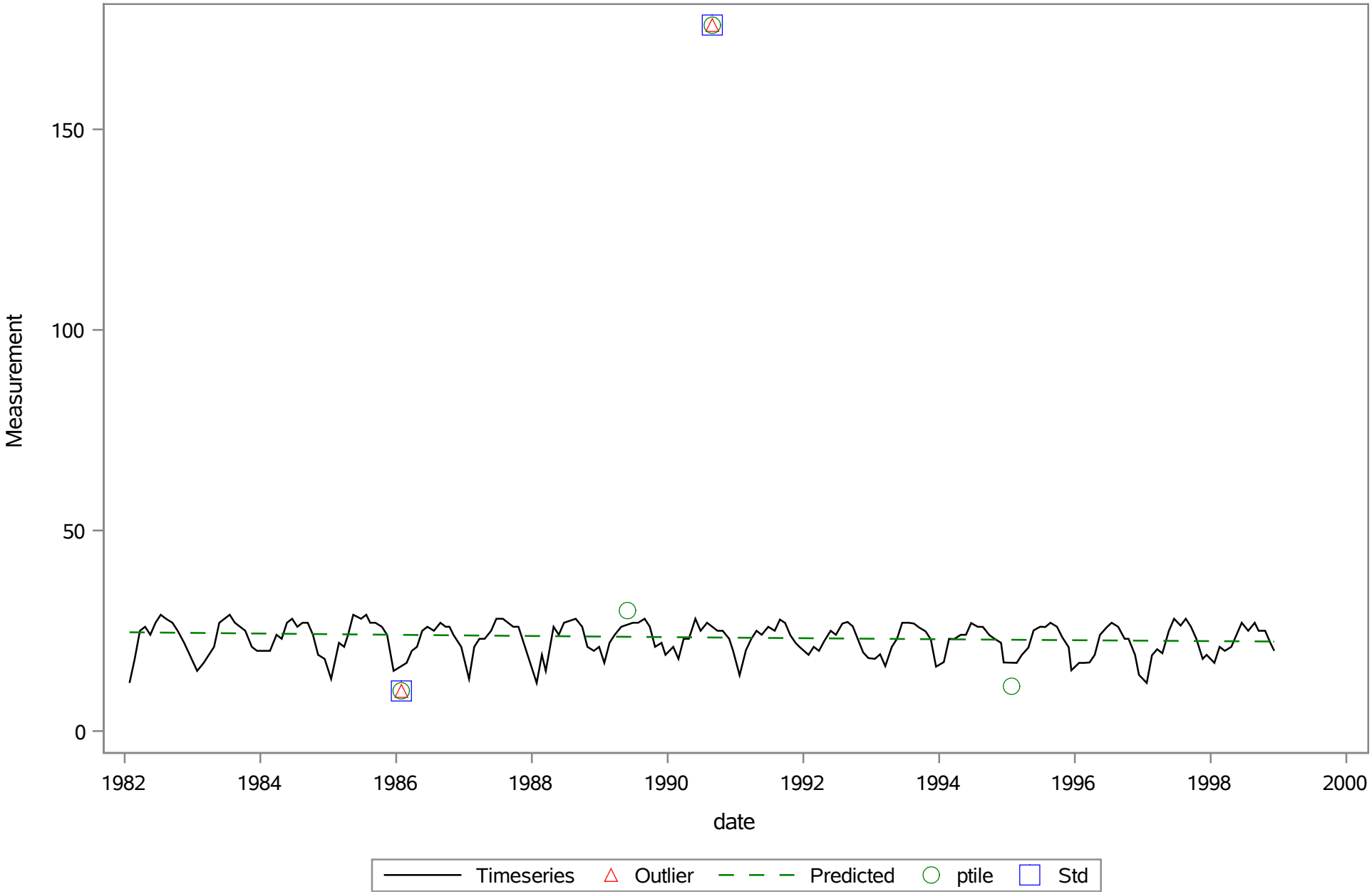

Little Manatee River
Little Manatee River at US 301 bridge
Temperature (C°) deg C
Site ID = 21FLHILL113
Measurement
25
20
15
10
1998
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
2022
date
Timeseries
Predicted
ptile
Std

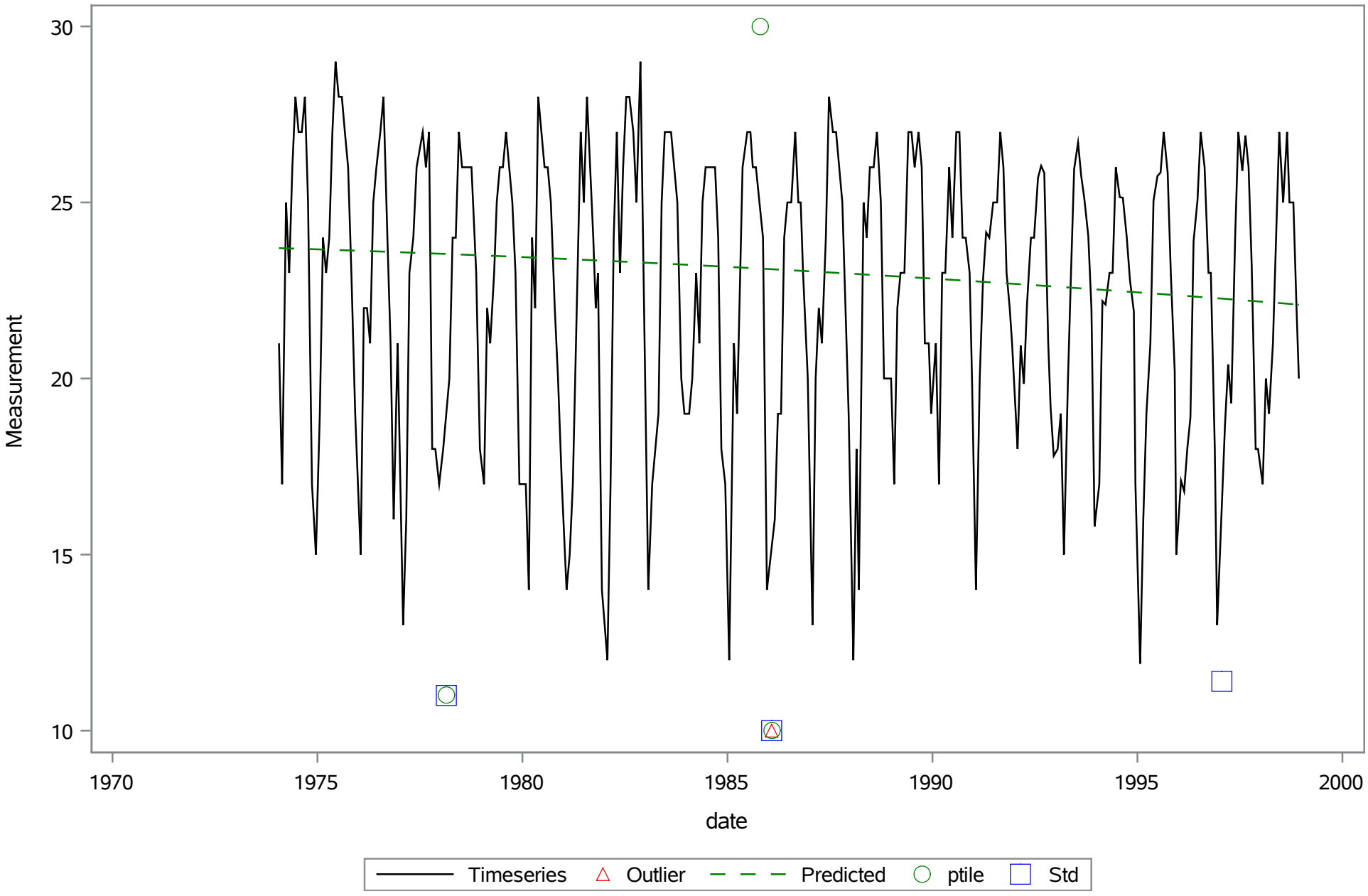

Little Manatee River
Little Manatee River at SR 674
Temperature (C°) deg C
Site ID = 21FLHILL129
Measurement
25
20
15
10
1998
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
2022
date
Timeseries
Predicted
ptile
Std

Little Manatee River
Little Manatee River at CR 579
Temperature (C°) deg C
Site ID = 21FLHILL140

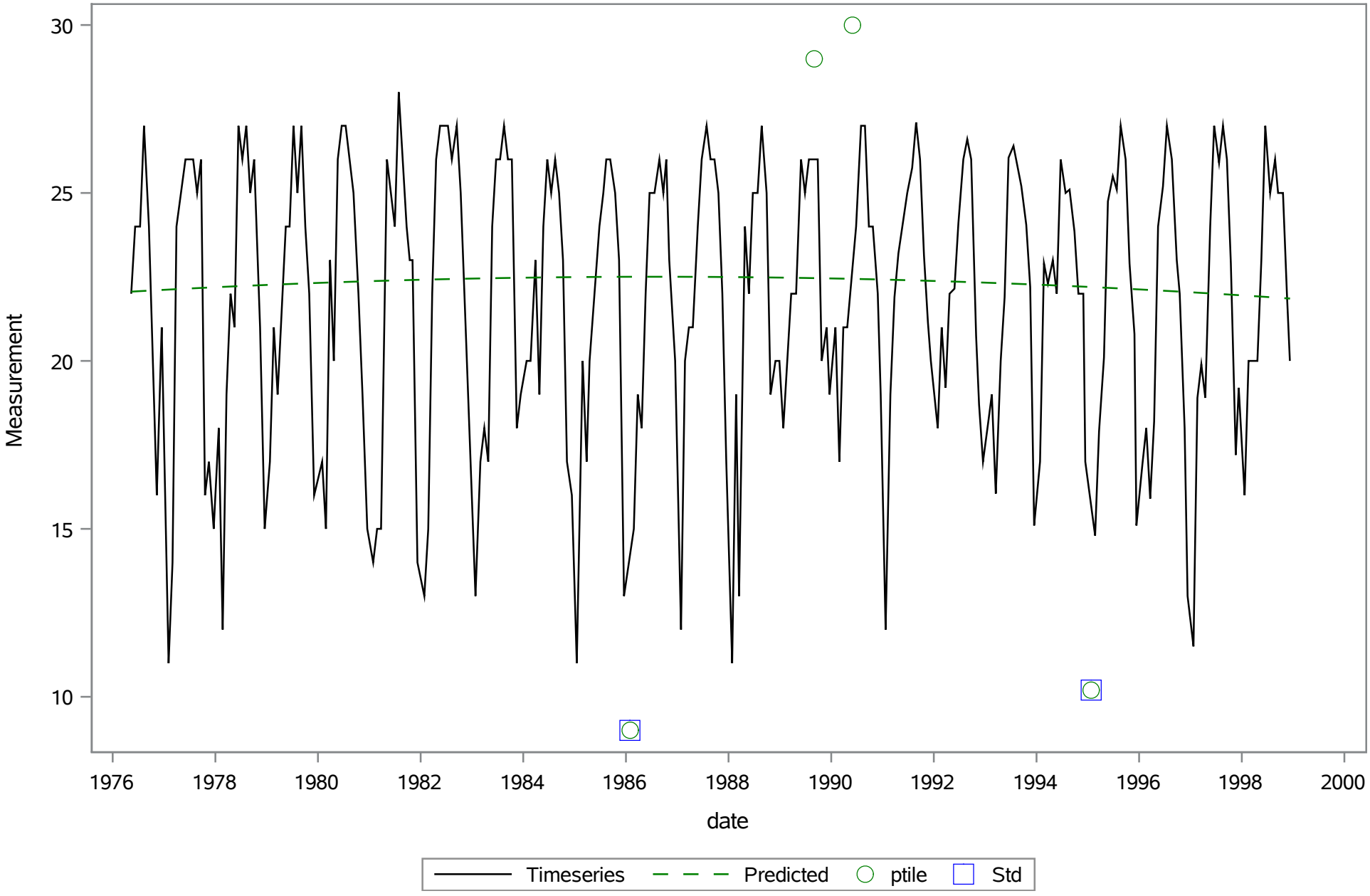


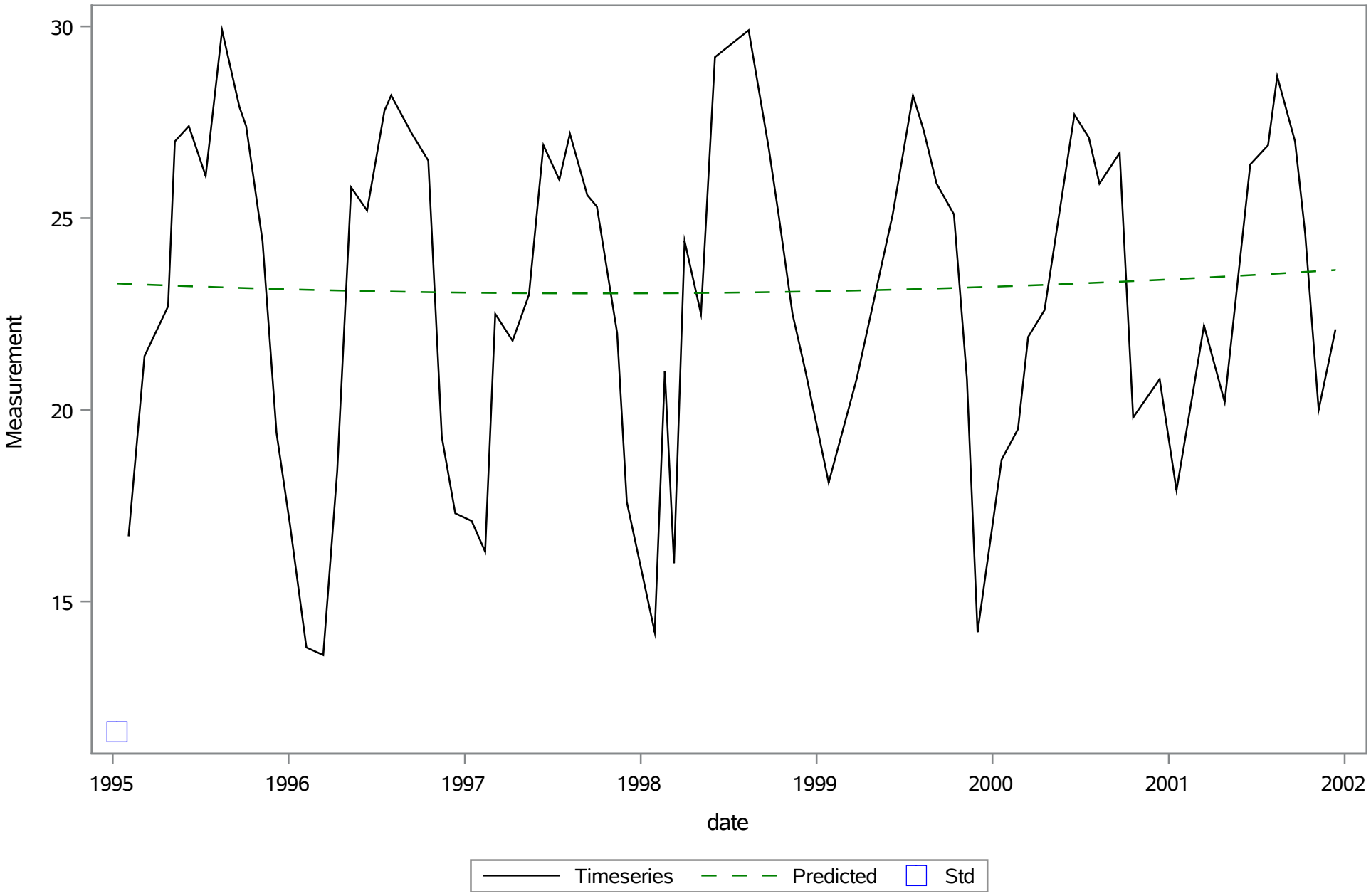
Little Manatee River
LITTLE MANATEE R AT CR579
Temperature (C°) deg C
Site ID = 21FLHILL24010013

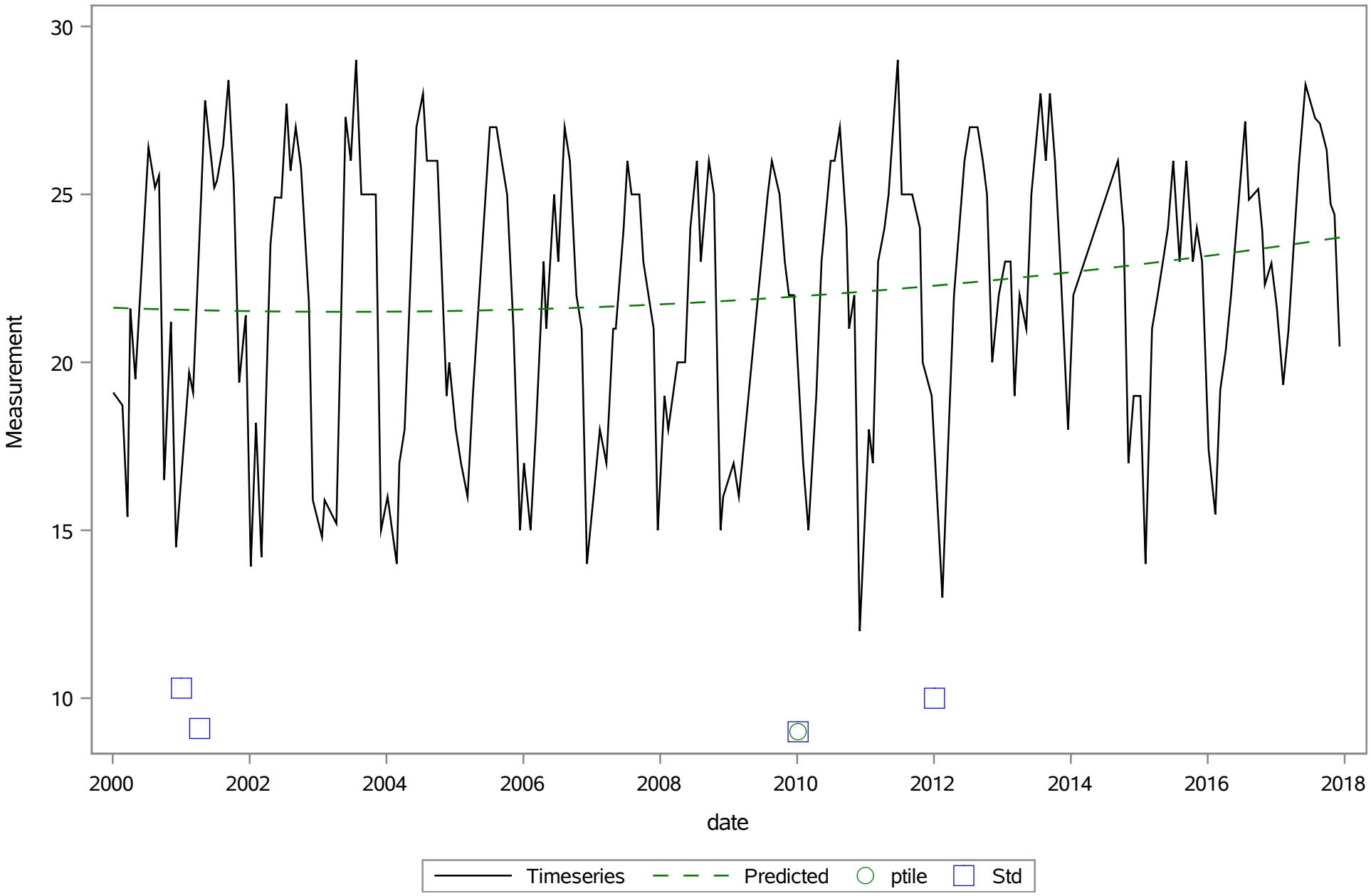


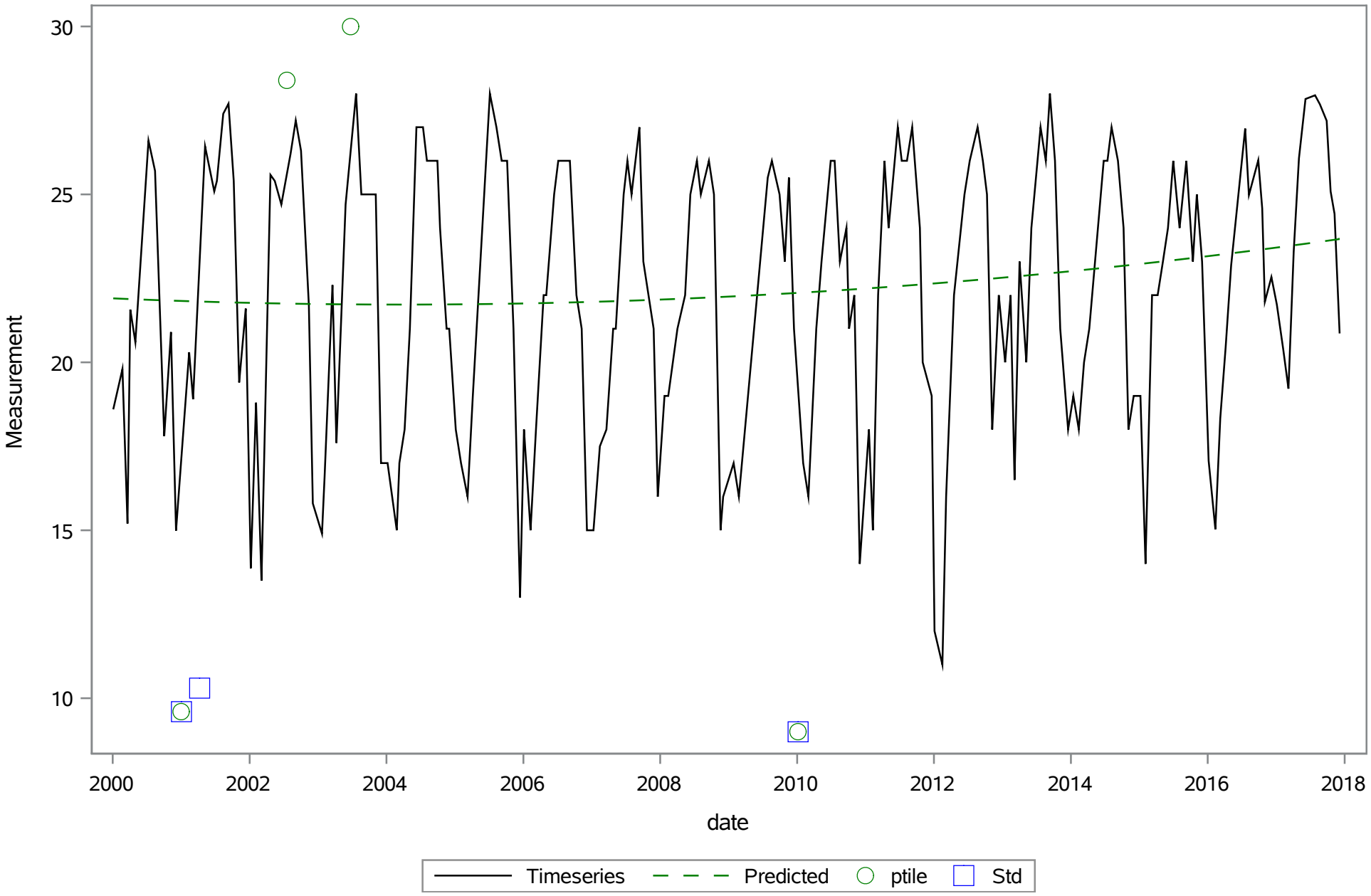

Little Manatee River
L MANATEE R BR US 301
Temperature (C°) deg C
Site ID = 21FLHILL24010100
Measurement
30
25
20
15
10
1970
1975
1980
1985
1990
1995
2000
date
Timeseries
Outlier
Predicted
ptile
Std

Little Manatee River
LITTLE MANATEE R AT SR #674
Temperature (C°) deg C
Site ID = 21FLHILL24010110




Little Manatee River
Little Manatee R. at SR674
Temperature (C°) deg C
Site ID = 21FLIMCALM674
Measurement
30
25
20
15
1995
1996
1997
1998
1999
2000
2001
2002
date
Timeseries
Predicted
Std


Little Manatee River
D1
Temperature (C°) deg C
Site ID = 21FLMANAD1
Measurement
30
25
20
15
10
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
date
Timeseries
Predicted
ptile
Std

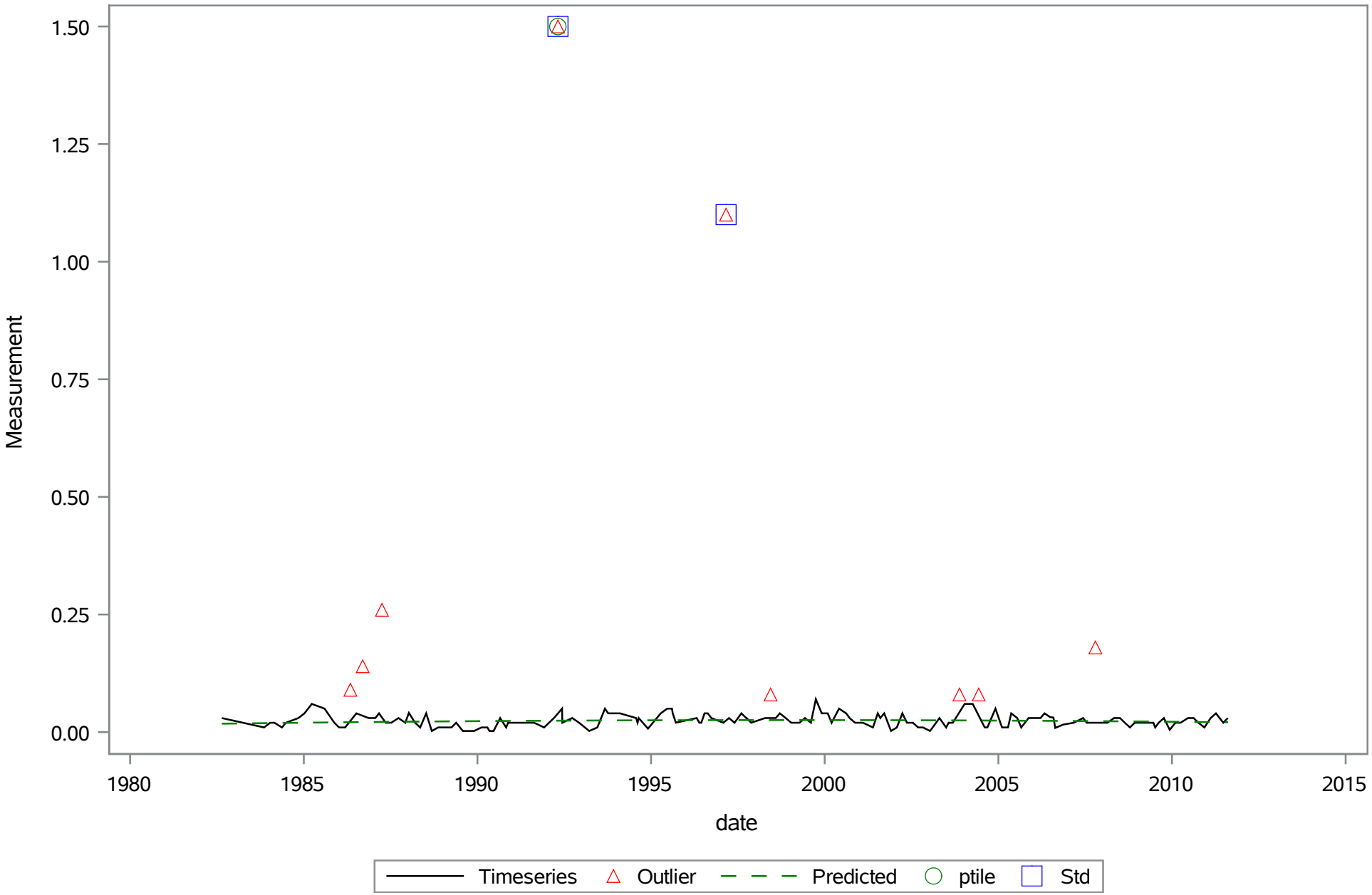

Little Manatee River
D3
Temperature (C°) deg C
Site ID = 21FLMANAD3
Measurement
30
25
20
15
10
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
date
Timeseries
Predicted
ptile
Std

Little Manatee River

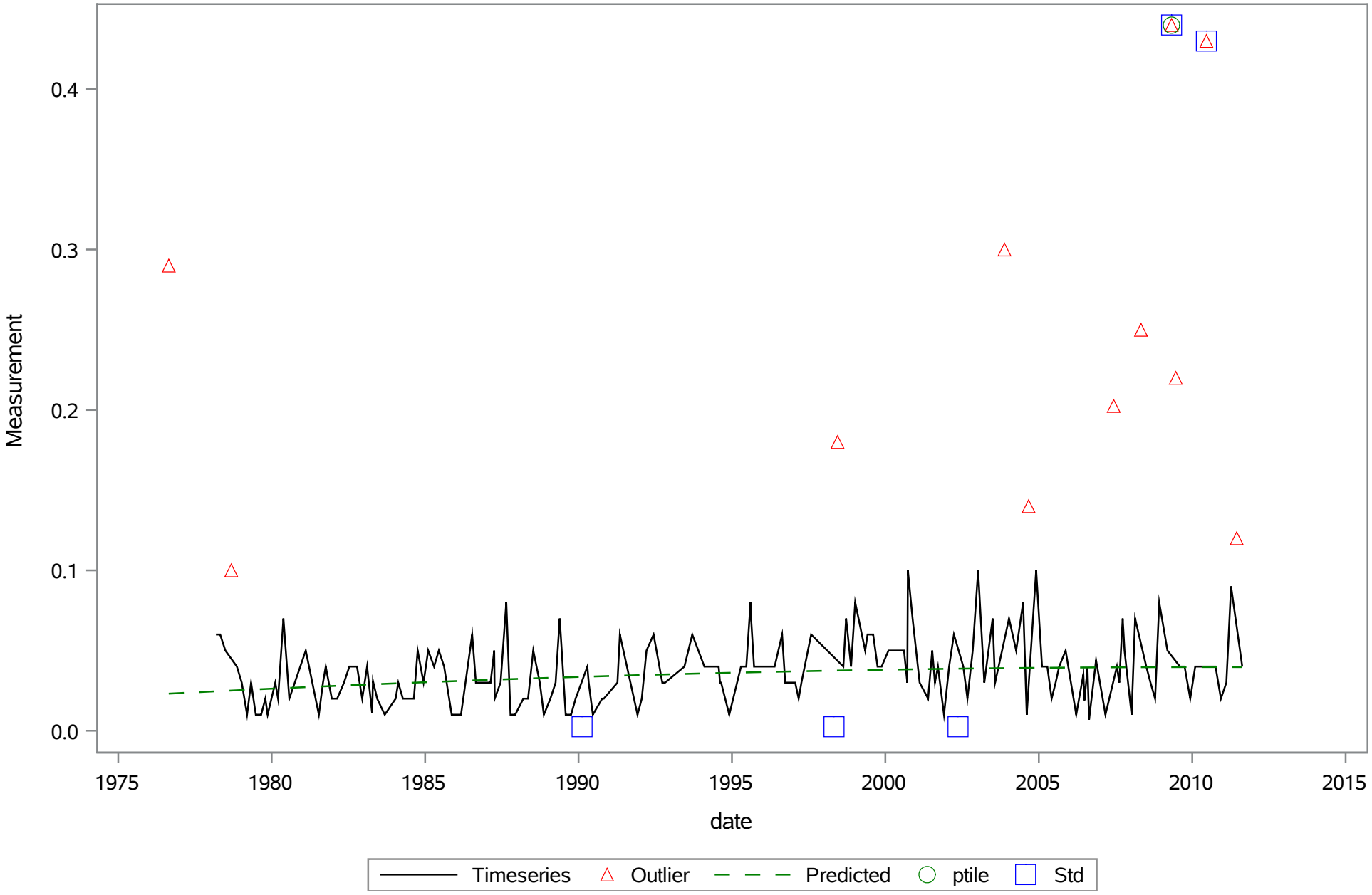
LITTLE MANATEE RIVER NEAR FT. LONESOME FL

Total Ammonia as N (mg/L) mg/L

Site ID = 112WRD 02300100



Little Manatee River
SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL
Total Ammonia as N (mg/L) mg/L
Site ID = 112WRD 02300200

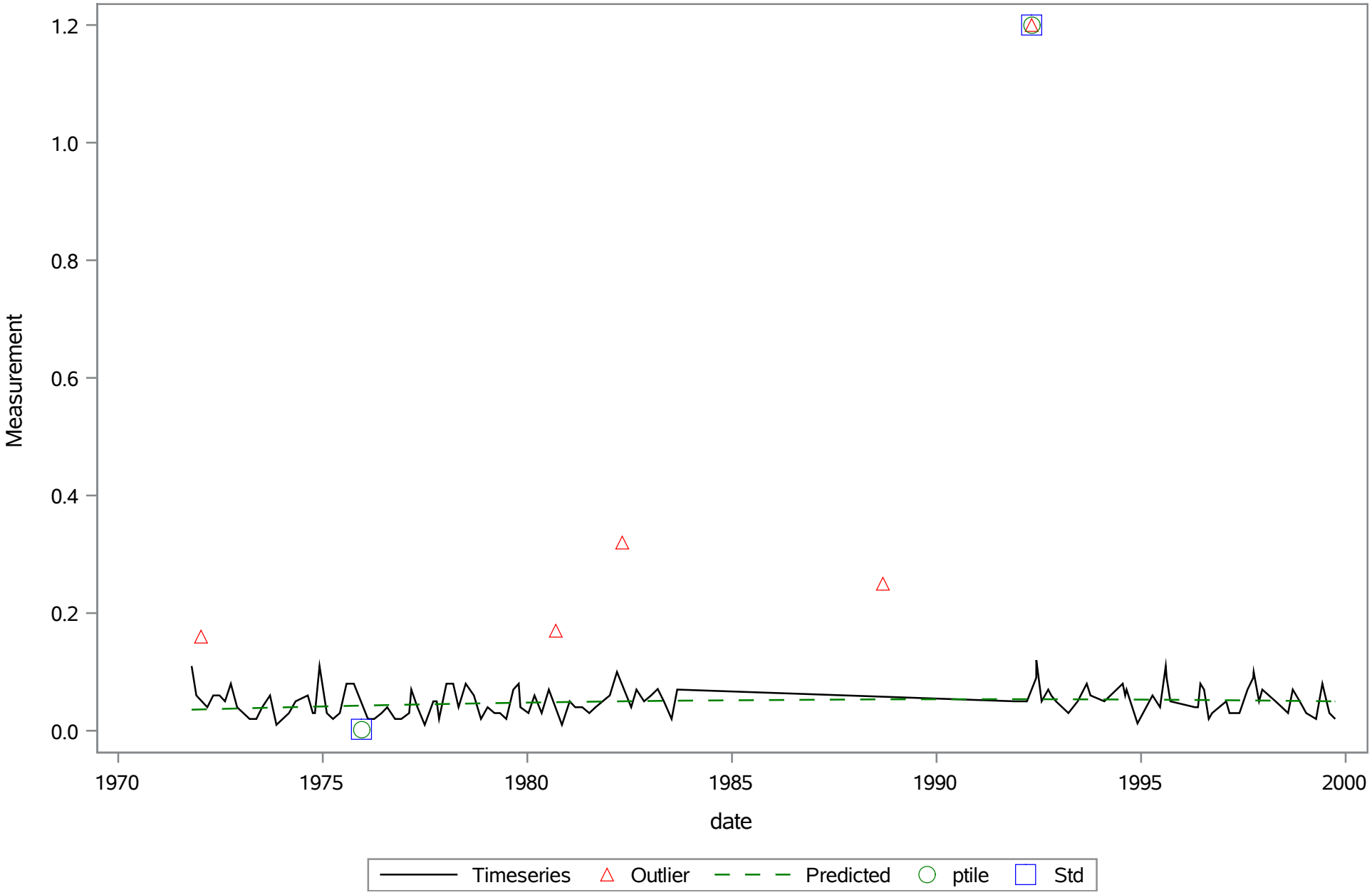


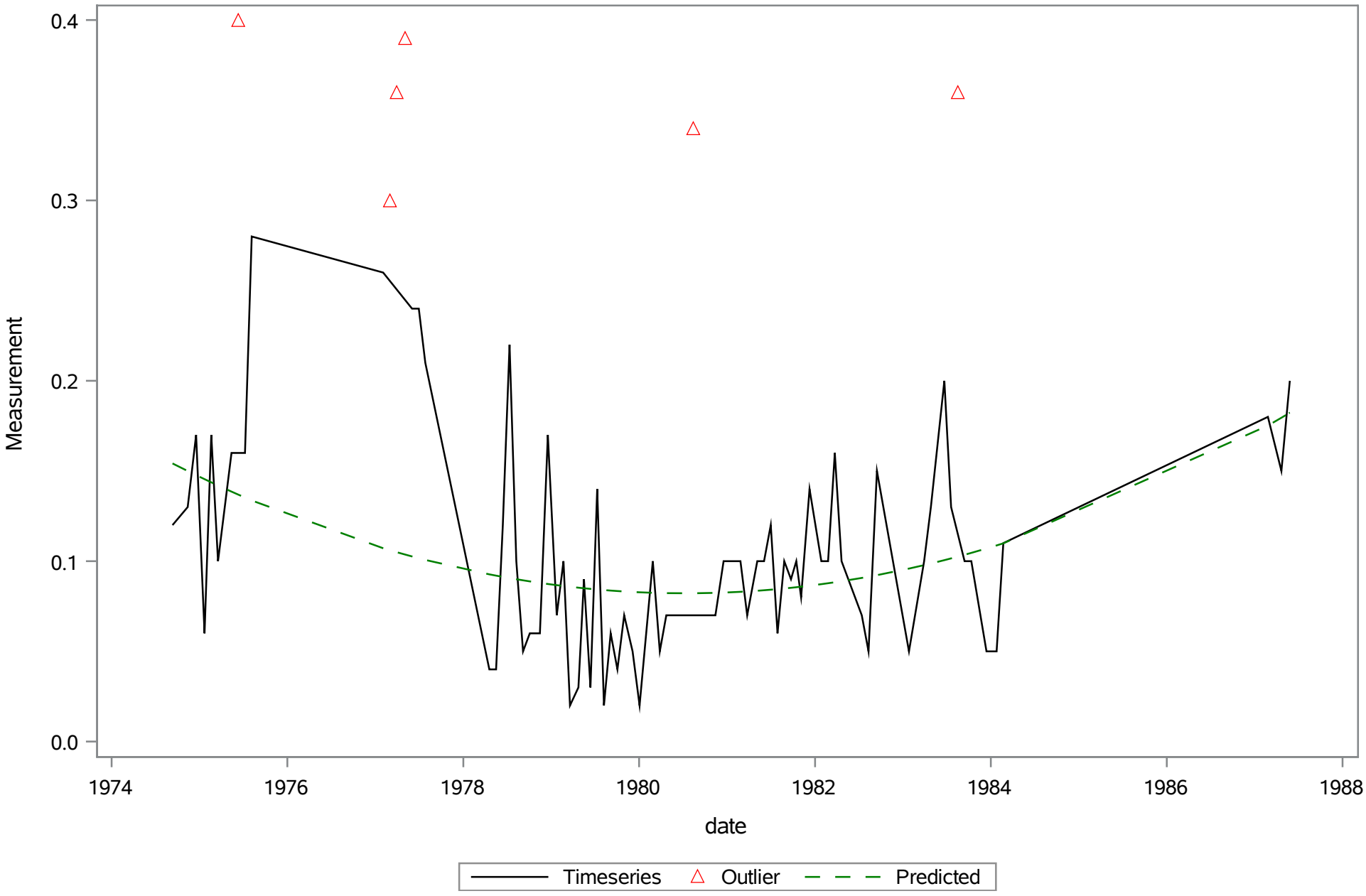
Little Manatee River

LITTLE MANATEE RIVER NEAR WIMAUMA FL

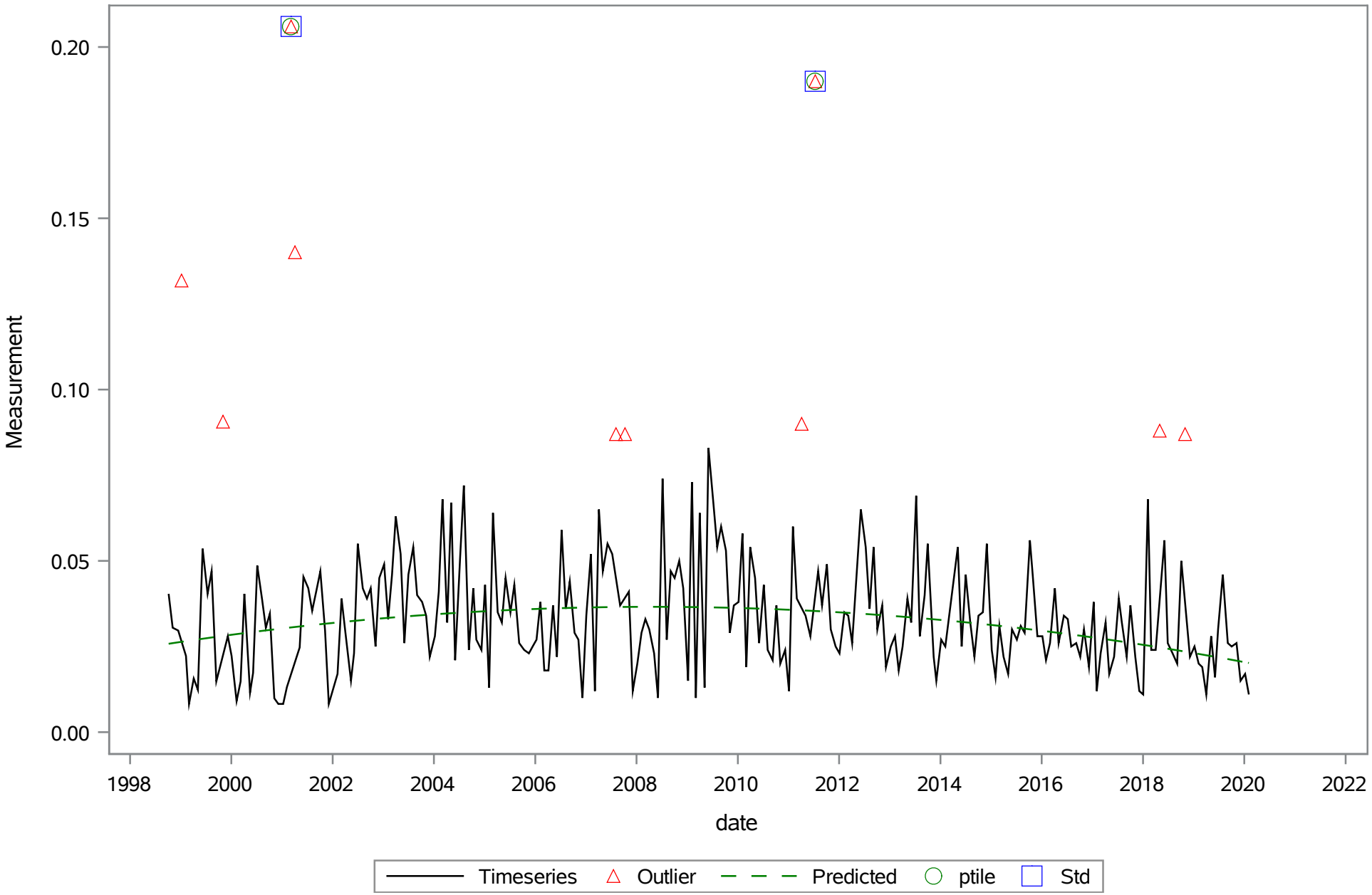
Total Ammonia as N (mg/L) mg/L

Site ID = 112WRD 02300500

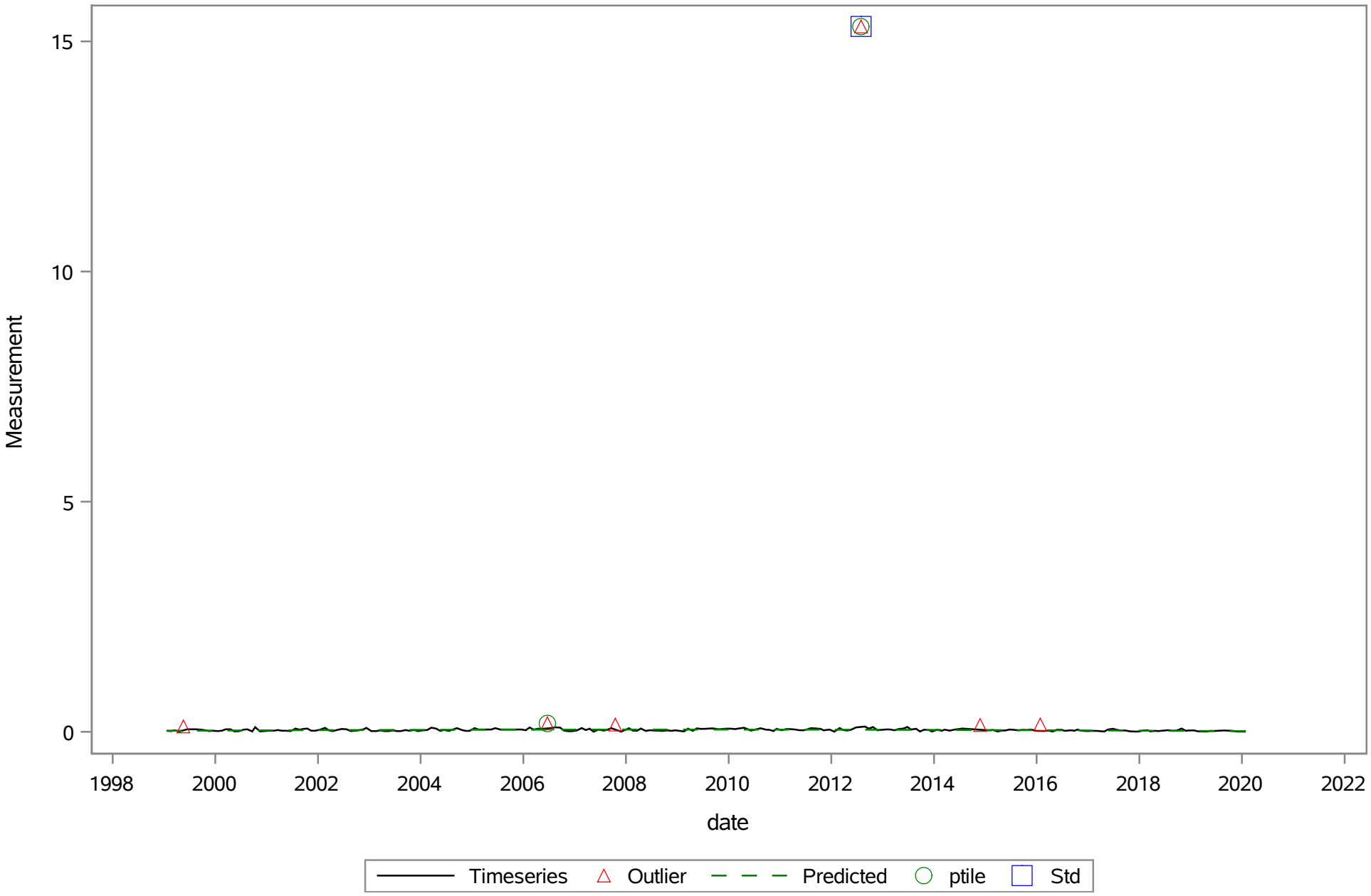



Little Manatee River
L MANATEE R BR US 301
Total Ammonia as N (mg/L) mg/L
Site ID = 21FLA 24010100
Measurement
0.4
0.3
0.2
0.1
0.0
1974
1976
1978
1980
1982
1984
1986
1988
date
Timeseries
Outlier
Predicted

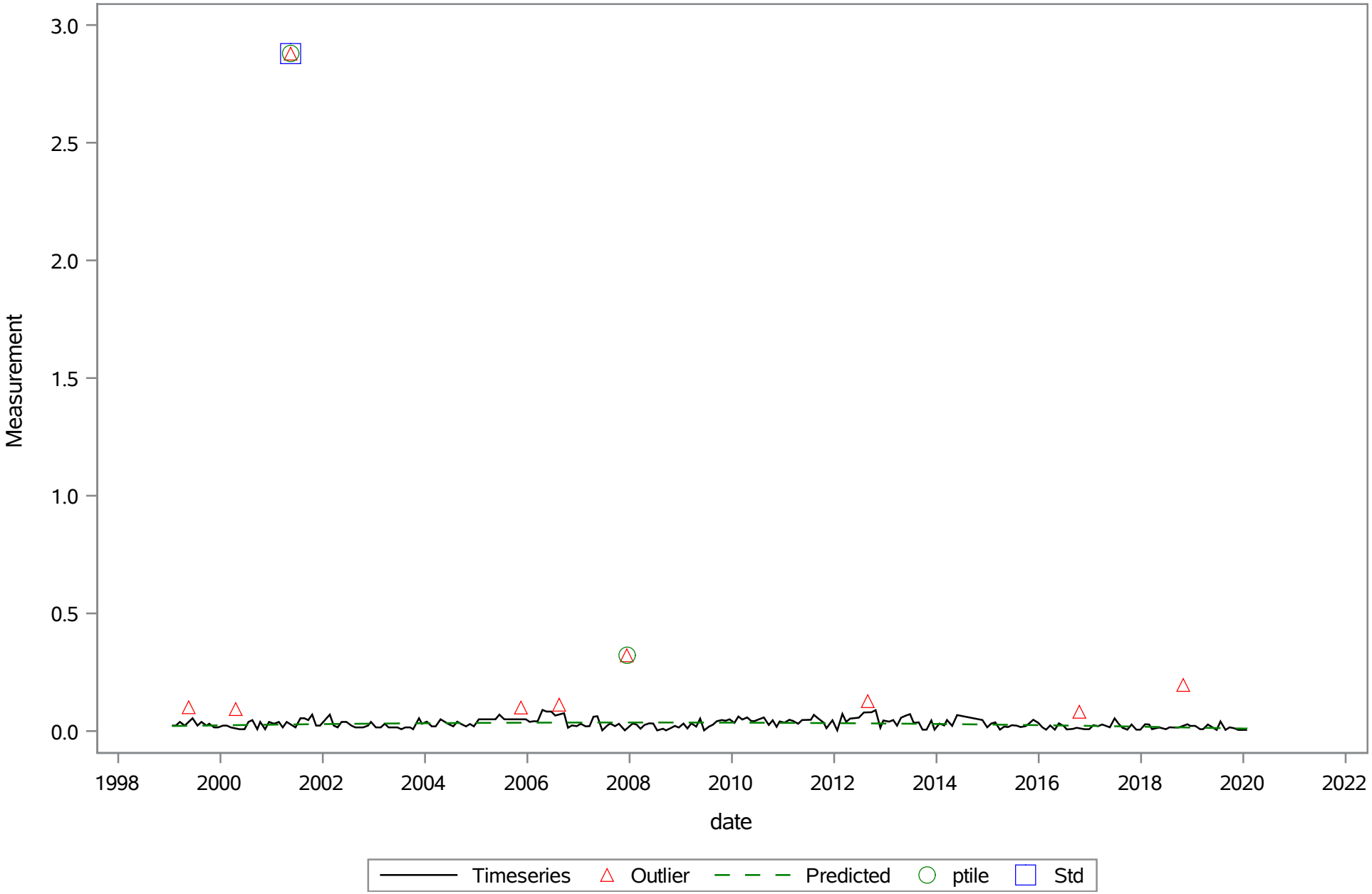
Little Manatee River
LITTLE MANATEE RIVER AT US HWY 301
Total Ammonia as N (mg/L) mg/L
Site ID = 21FLGW 3555



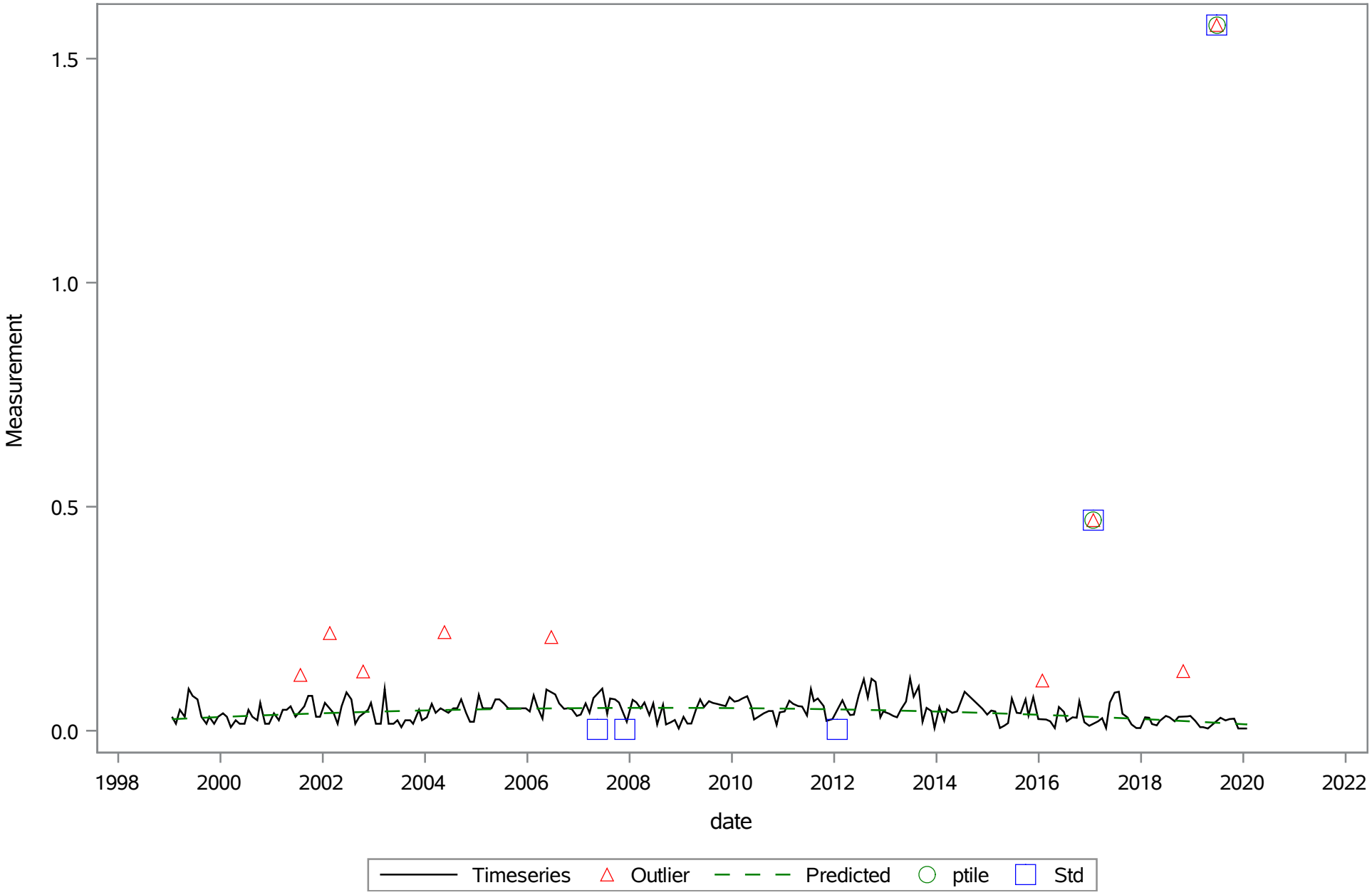
Little Manatee River
Little Manatee River at US 301 bridge
Total Ammonia as N (mg/L) mg/L
Site ID = 21FLHILL113



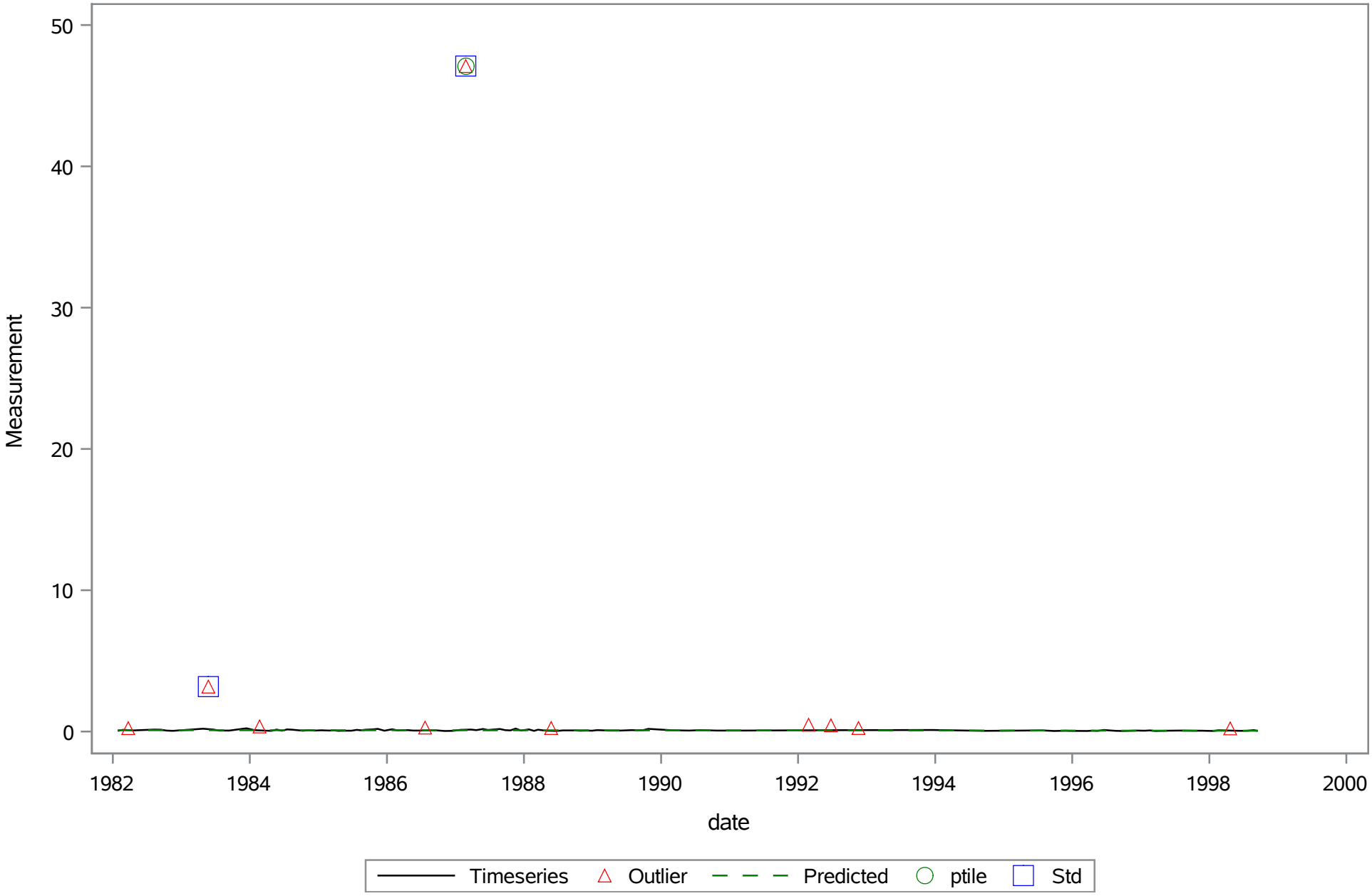
Little Manatee River
Little Manatee River at SR 674
Total Ammonia as N (mg/L) mg/L
Site ID = 21FLHILL129

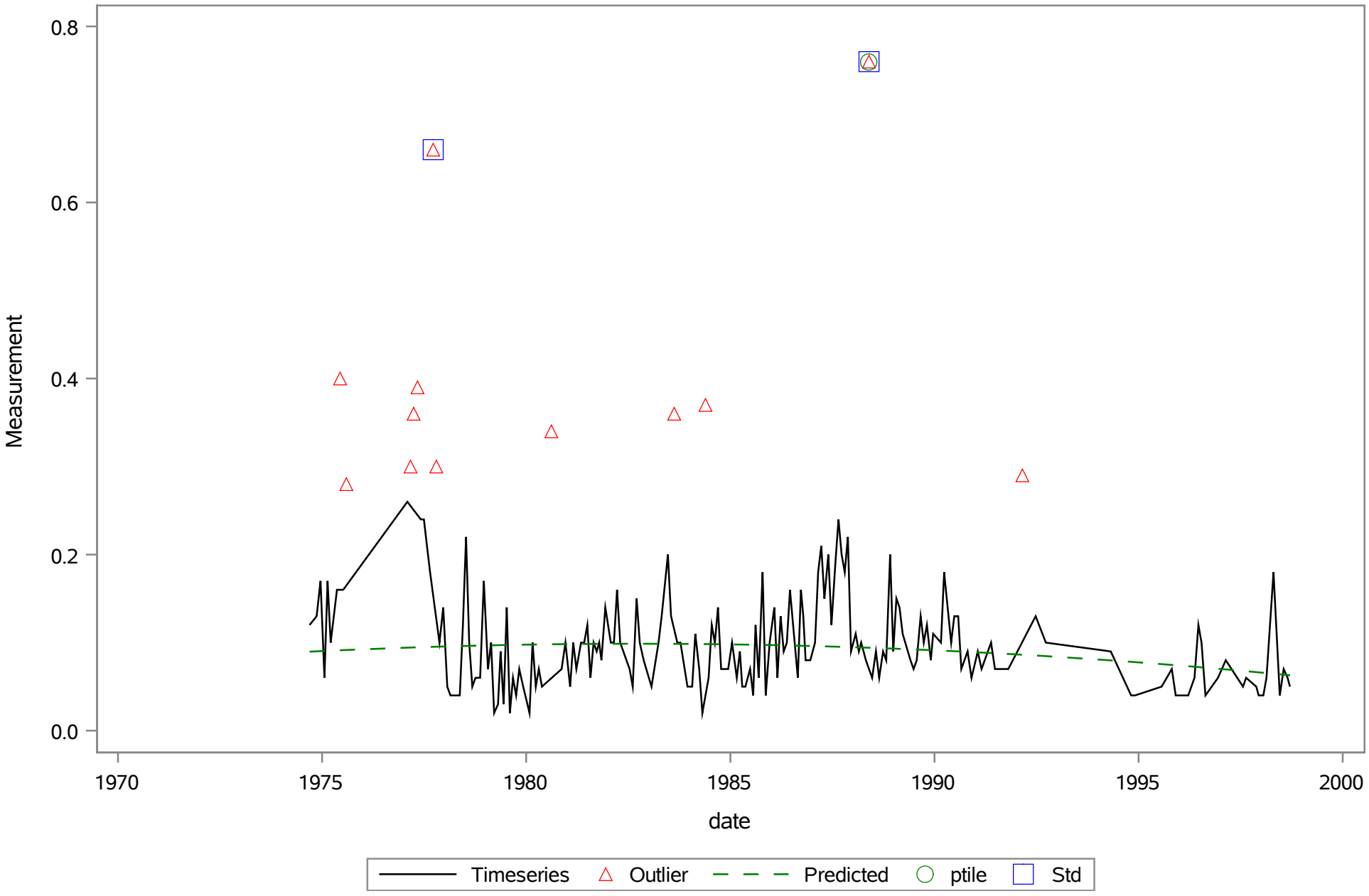


Little Manatee River
Little Manatee River at CR 579
Total Ammonia as N (mg/L) mg/L
Site ID = 21FLHILL140

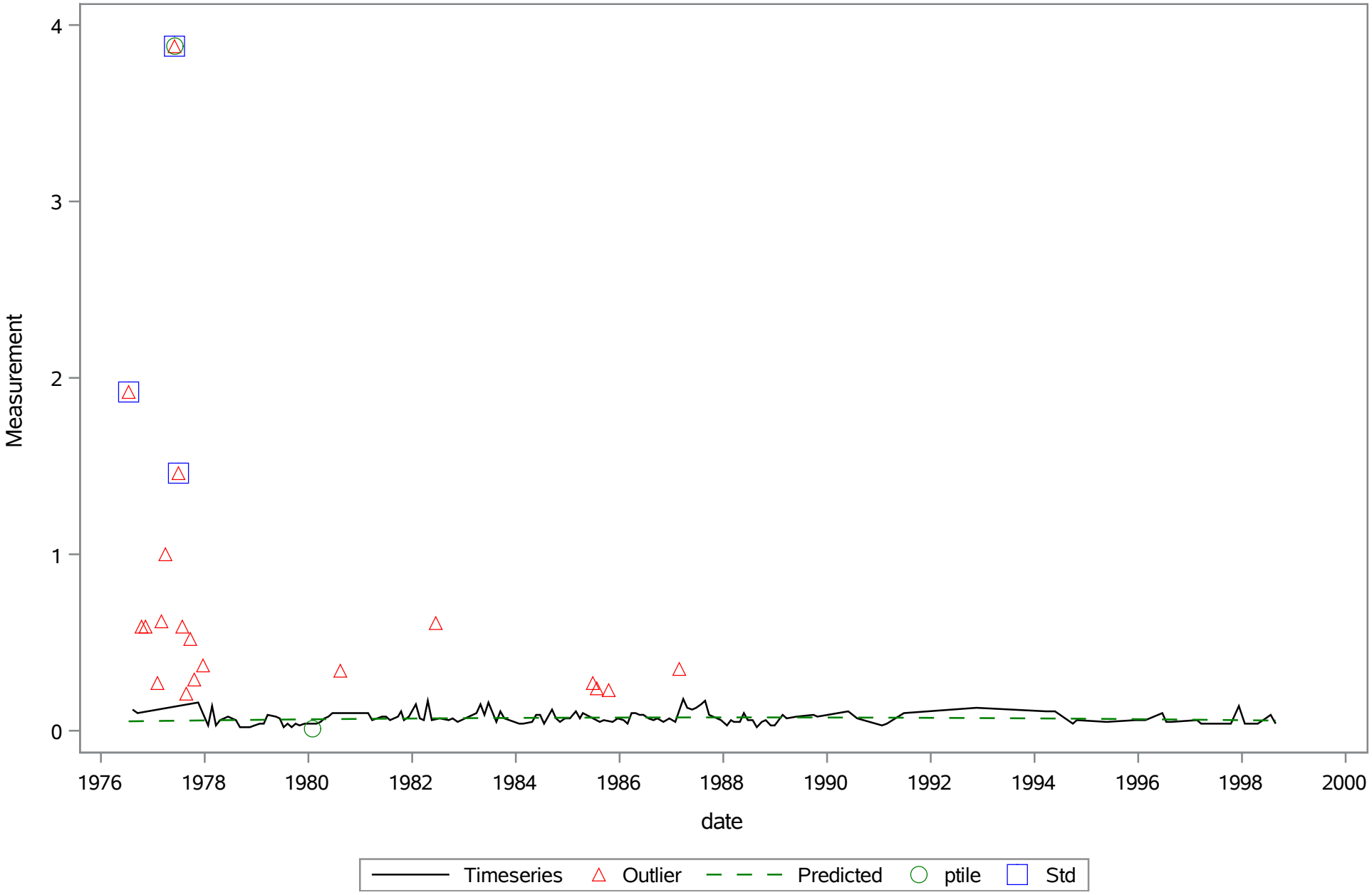


Little Manatee River
LITTLE MANATEE R AT CR579
Total Ammonia as N (mg/L) mg/L
Site ID = 21FLHILL24010013

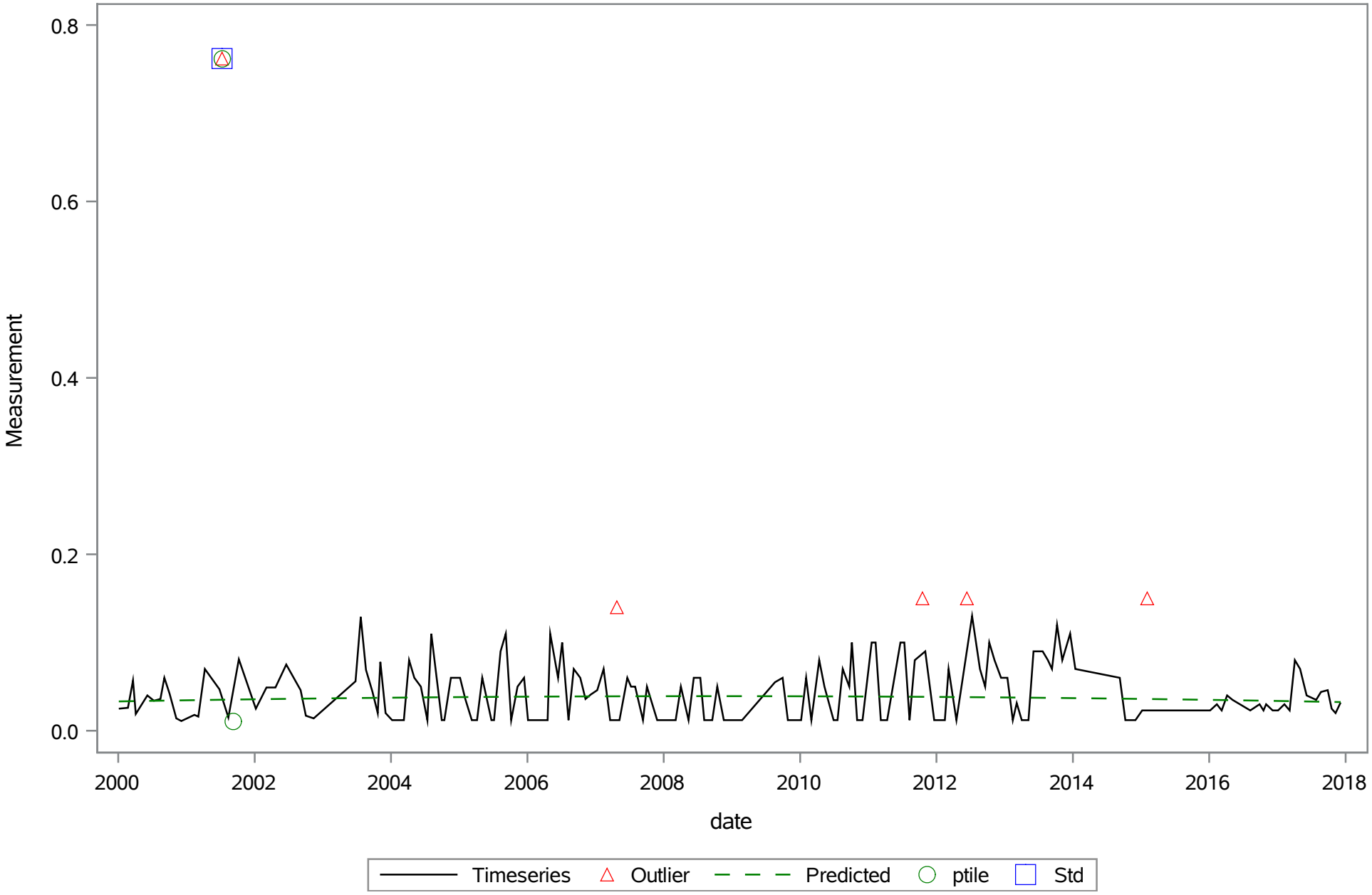



Little Manatee River
L MANATEE R BR US 301
Total Ammonia as N (mg/L) mg/L
Site ID = 21FLHILL24010100
Measurement
0.8
0.6
0.4
0.2
0.0
1970
1975
1980
1985
1990
1995
2000
date
Timeseries
Outlier
Predicted
ptile
Std

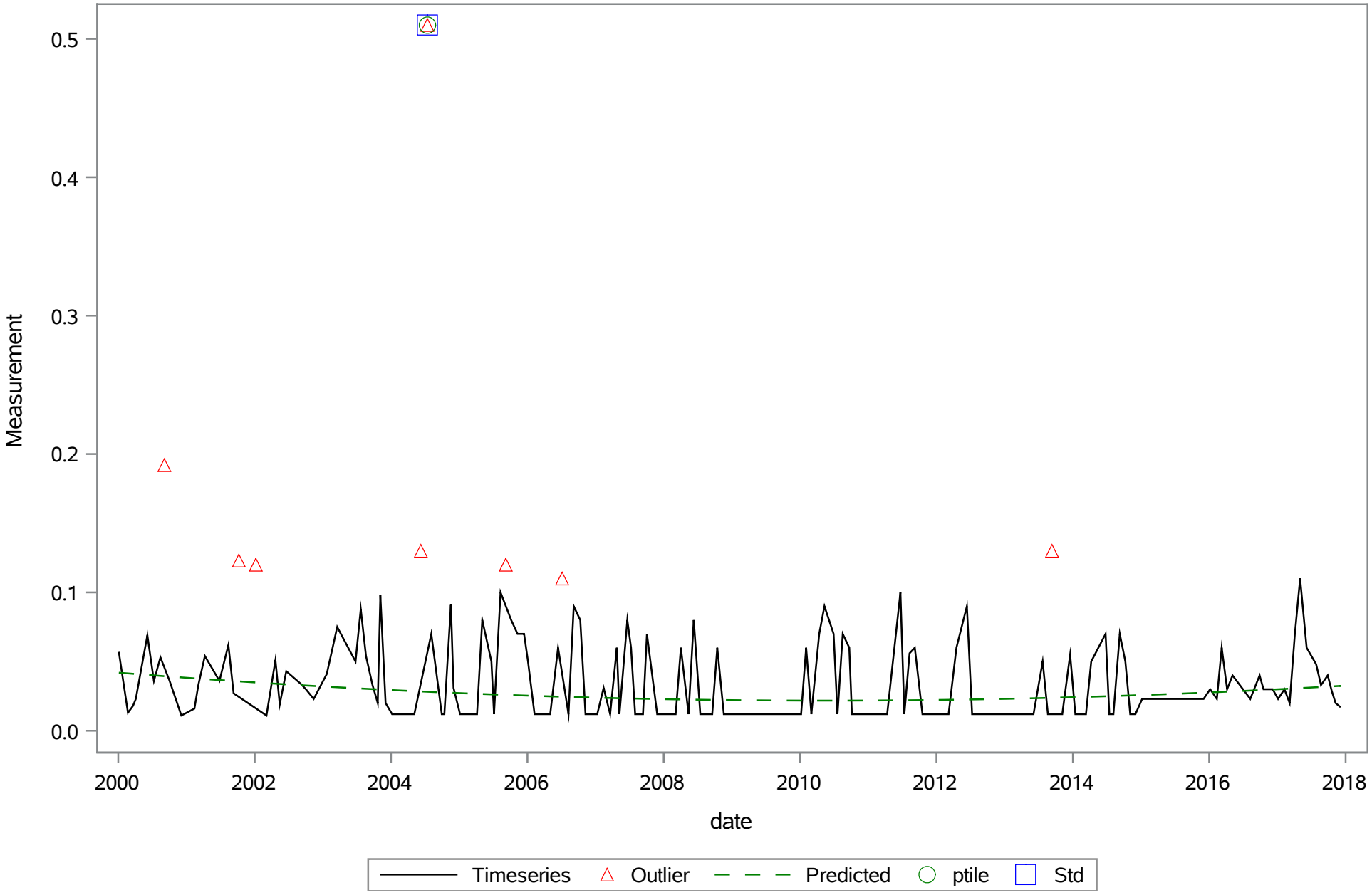
Little Manatee River
LITTLE MANATEE R AT SR #674
Total Ammonia as N (mg/L) mg/L
Site ID = 21FLHILL24010110



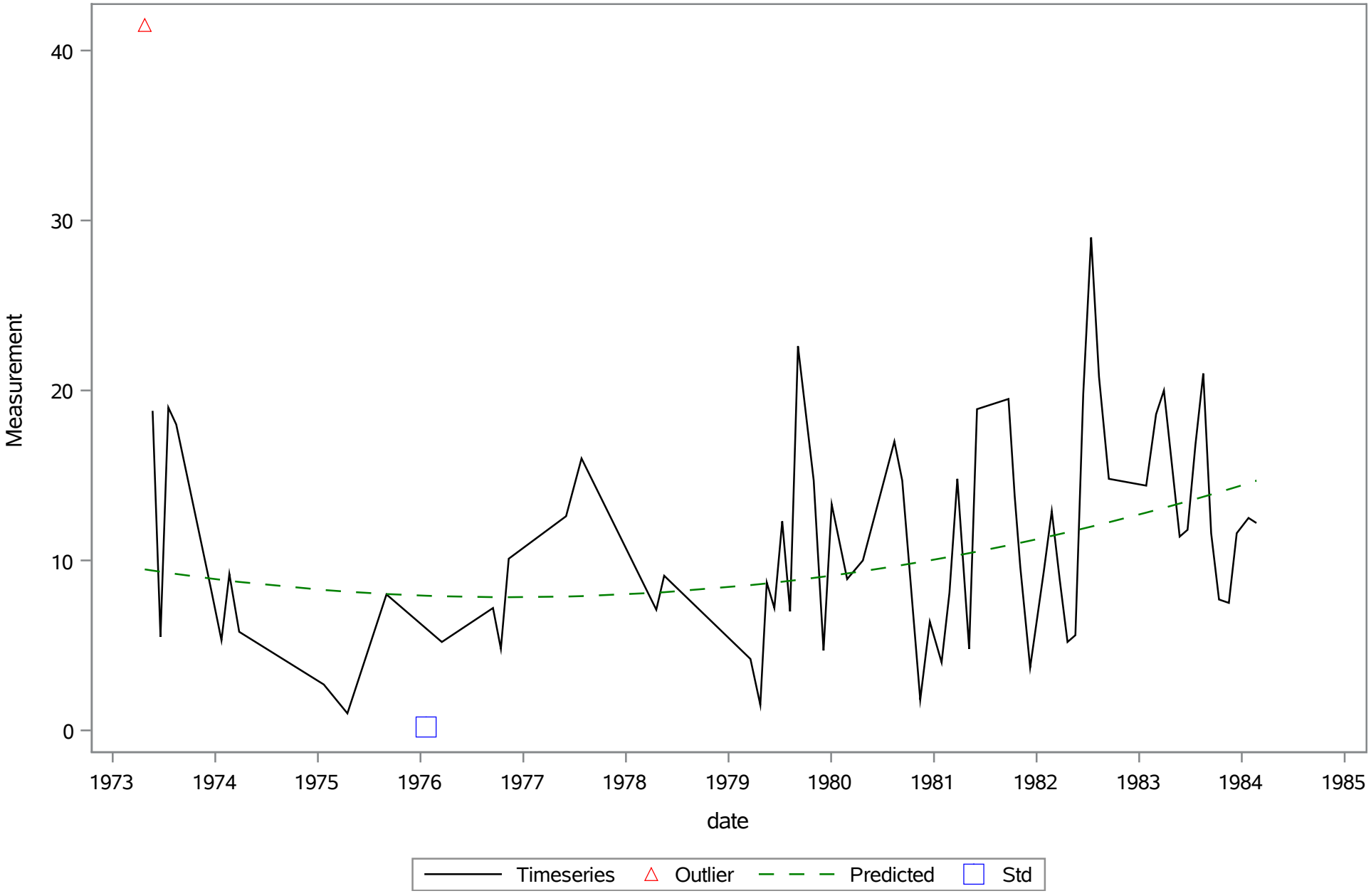
Little Manatee River
D1
Total Ammonia as N (mg/L) mg/L
Site ID = 21FLMANAD1



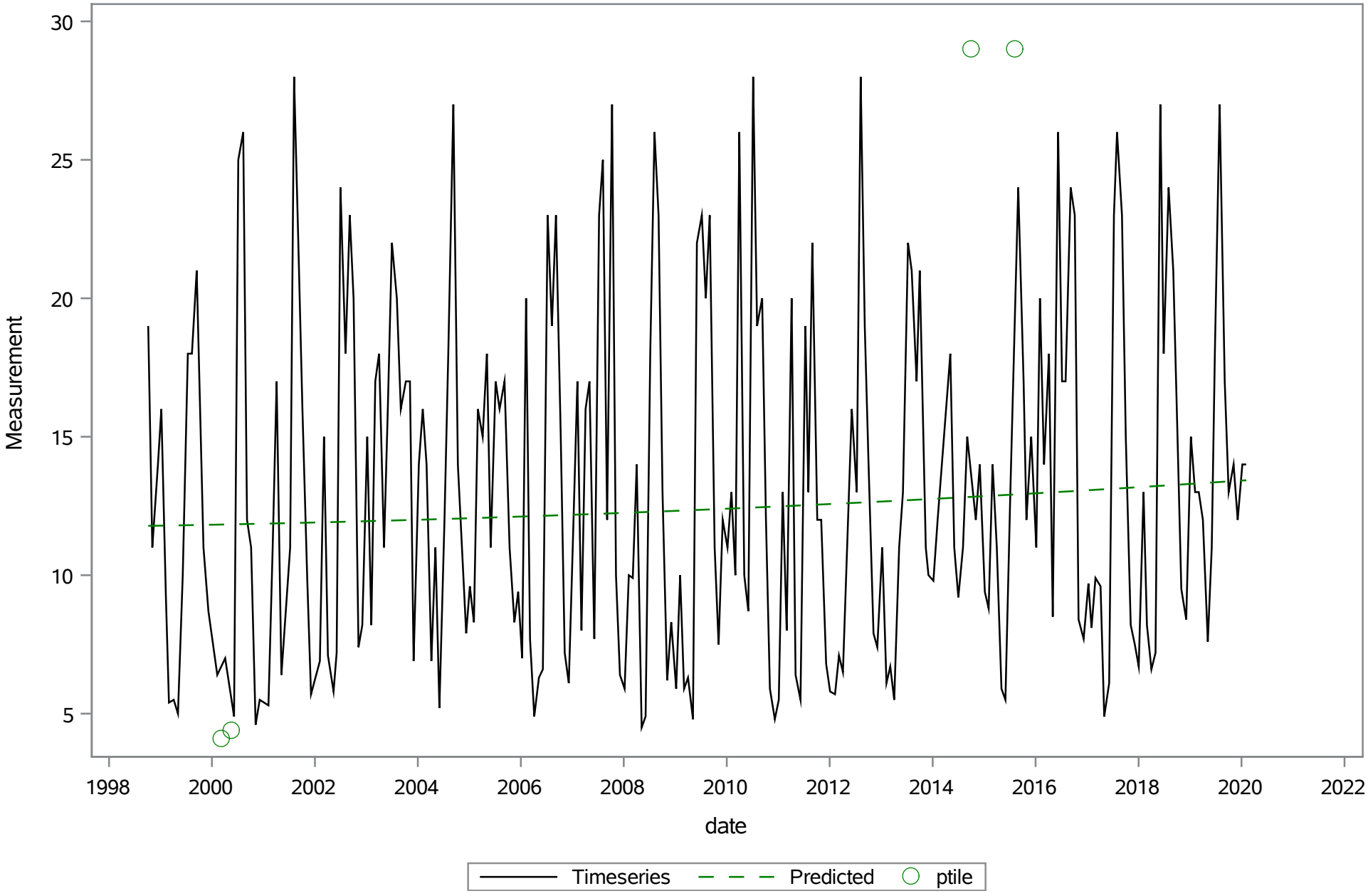
Little Manatee River
D3
Total Ammonia as N (mg/L) mg/L
Site ID = 21FLMANAD3

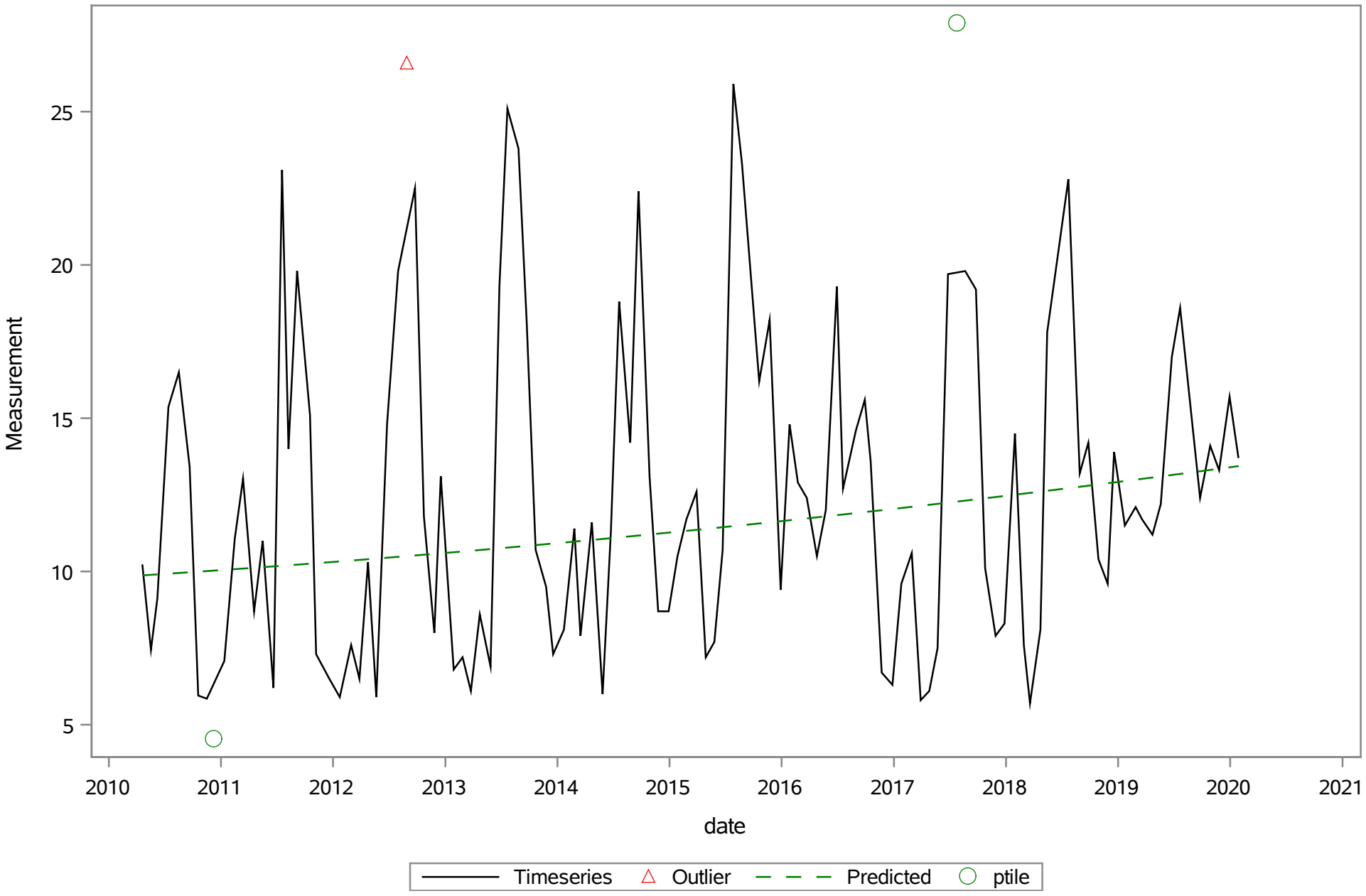


Little Manatee River
L MANATEE R BR US 301
Total Organic Carbon as C (mg/L) mg/L
Site ID = 21FLA 24010100

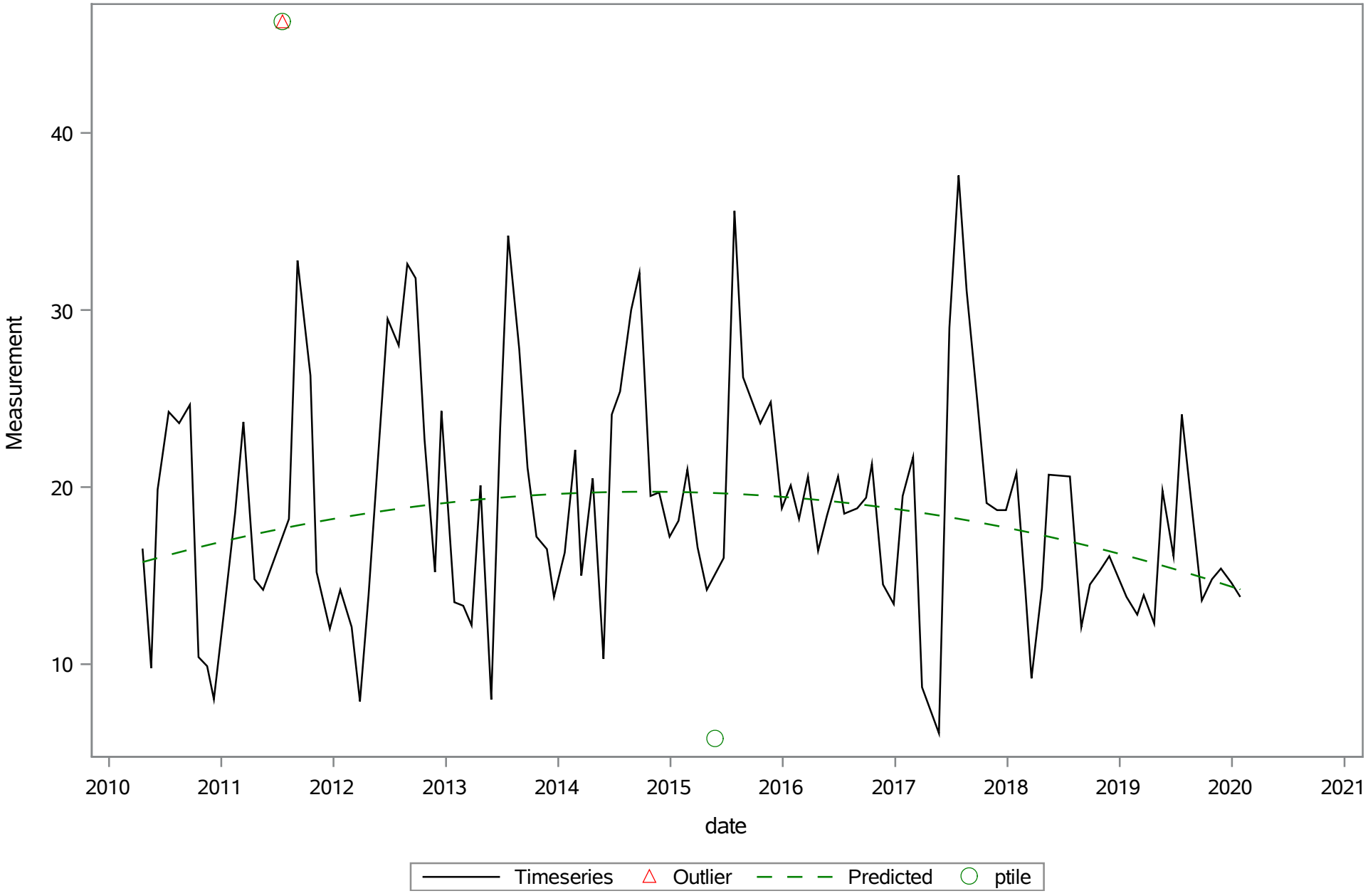


Little Manatee River
LITTLE MANATEE RIVER AT US HWY 301
Total Organic Carbon as C (mg/L) mg/L
Site ID = 21FLGW 3555

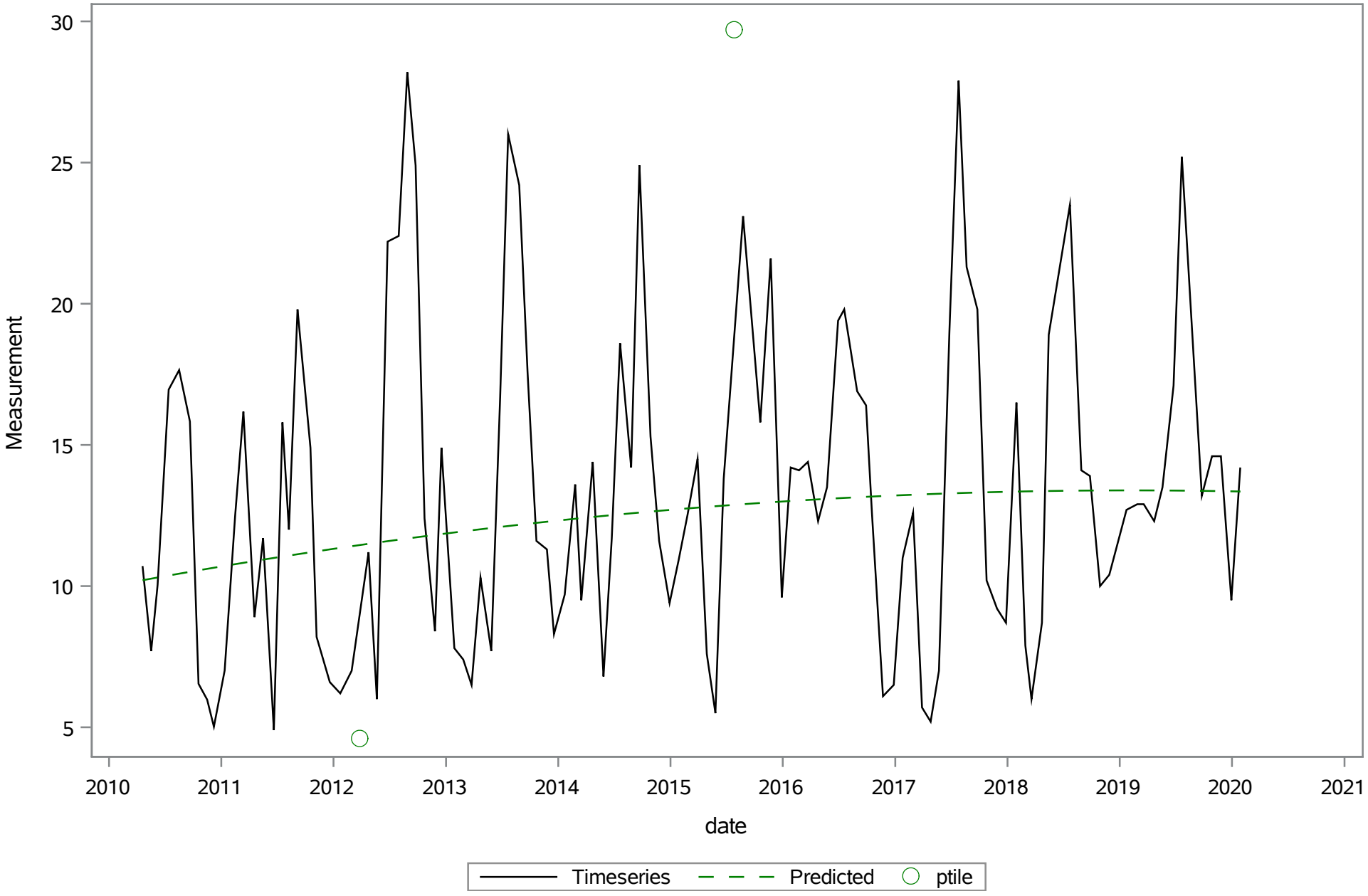



Little Manatee River
Little Manatee River at US 301 bridge
Total Organic Carbon as C (mg/L) mg/L
Site ID = 21FLHILL113
Measurement
25
20
15
10
5
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
date
Timeseries
Outlier
Predicted
ptile

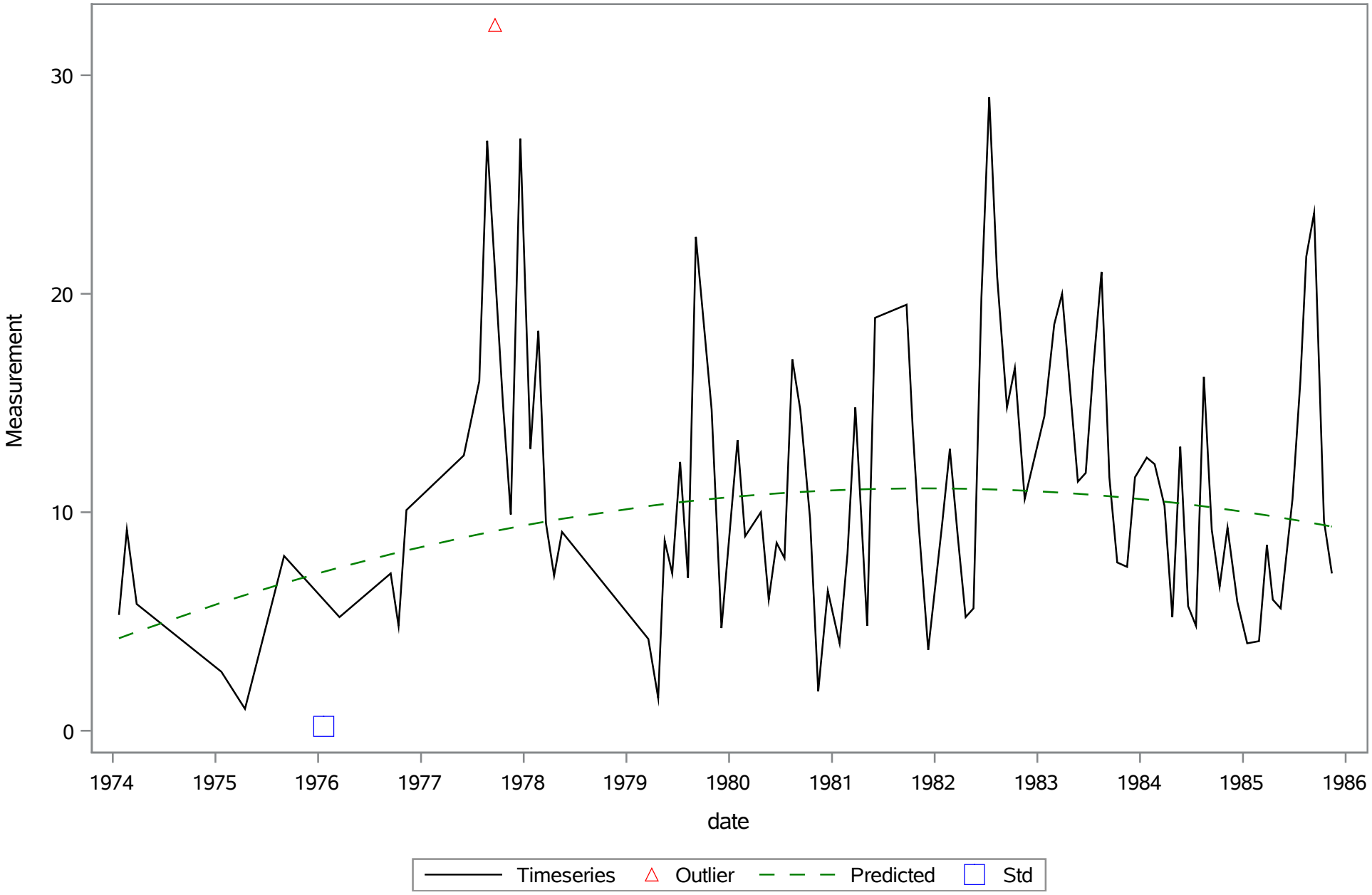
Little Manatee River
Little Manatee River at SR 674
Total Organic Carbon as C (mg/L) mg/L
Site ID = 21FLHILL129



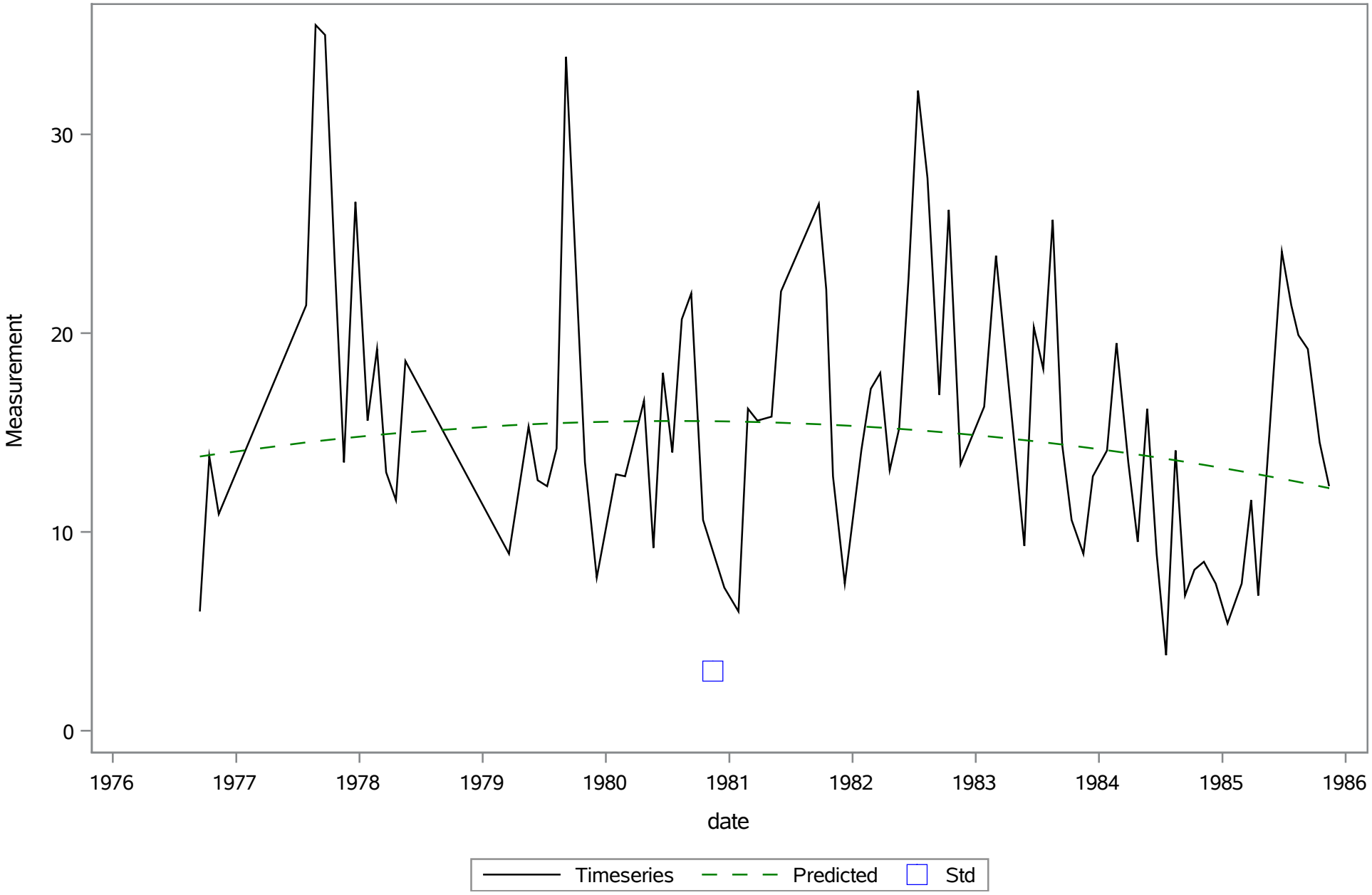
Little Manatee River
Little Manatee River at CR 579
Total Organic Carbon as C (mg/L) mg/L
Site ID = 21FLHILL140



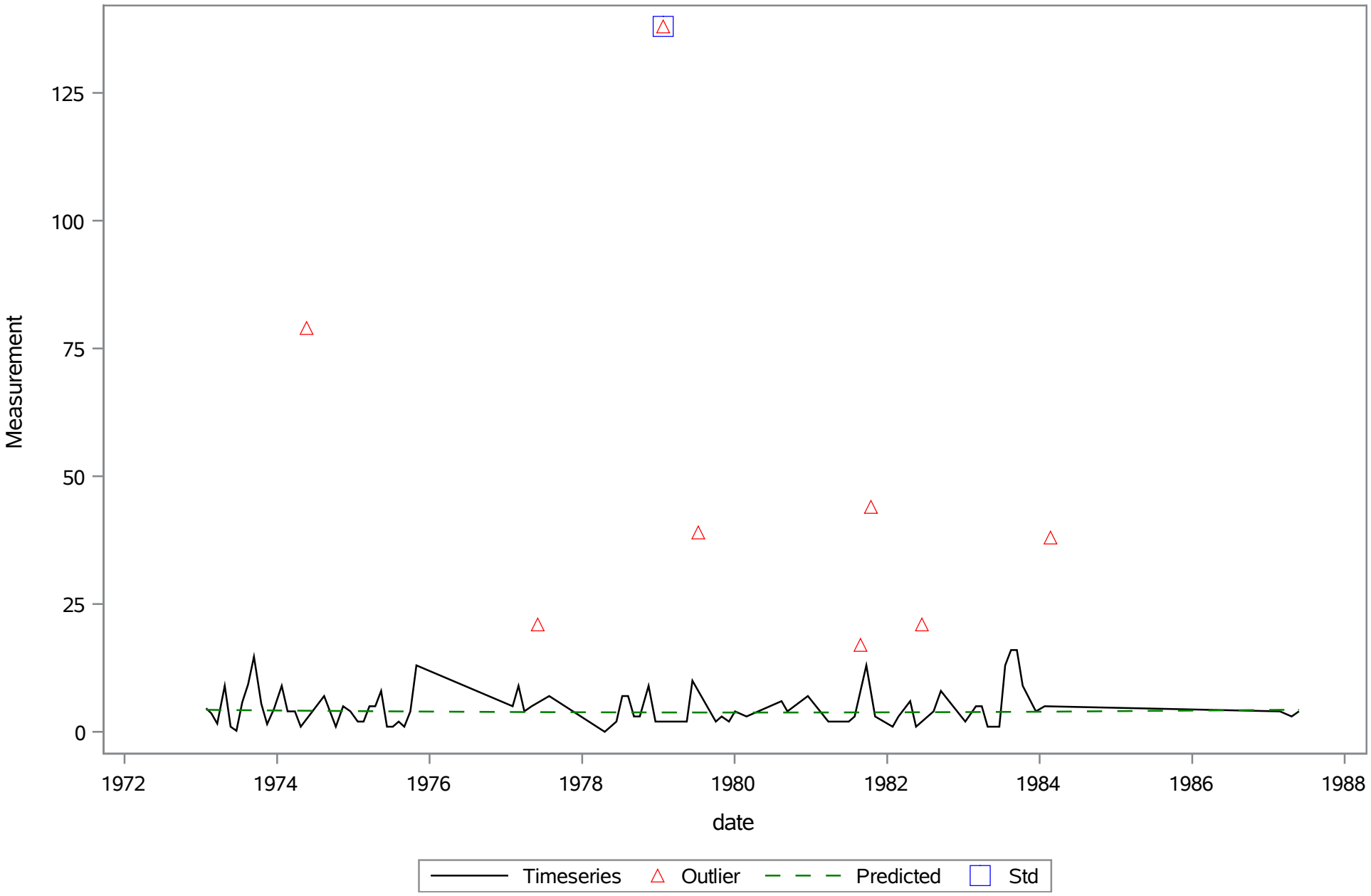
Little Manatee River
L MANATEE R BR US 301
Total Organic Carbon as C (mg/L) mg/L
Site ID = 21FLHILL24010100



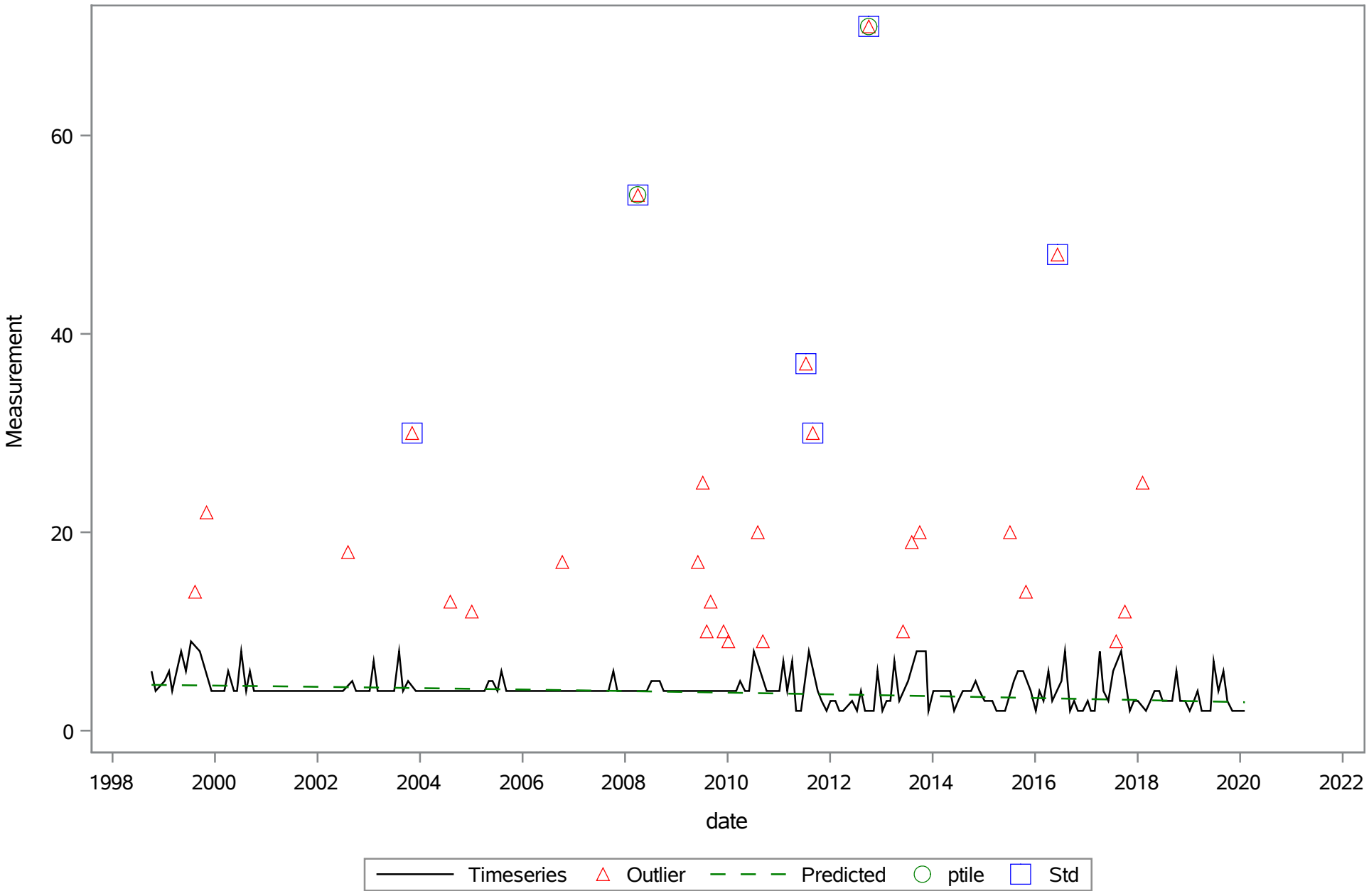
Little Manatee River
LITTLE MANATEE R AT SR #674
Total Organic Carbon as C (mg/L) mg/L
Site ID = 21FLHILL24010110



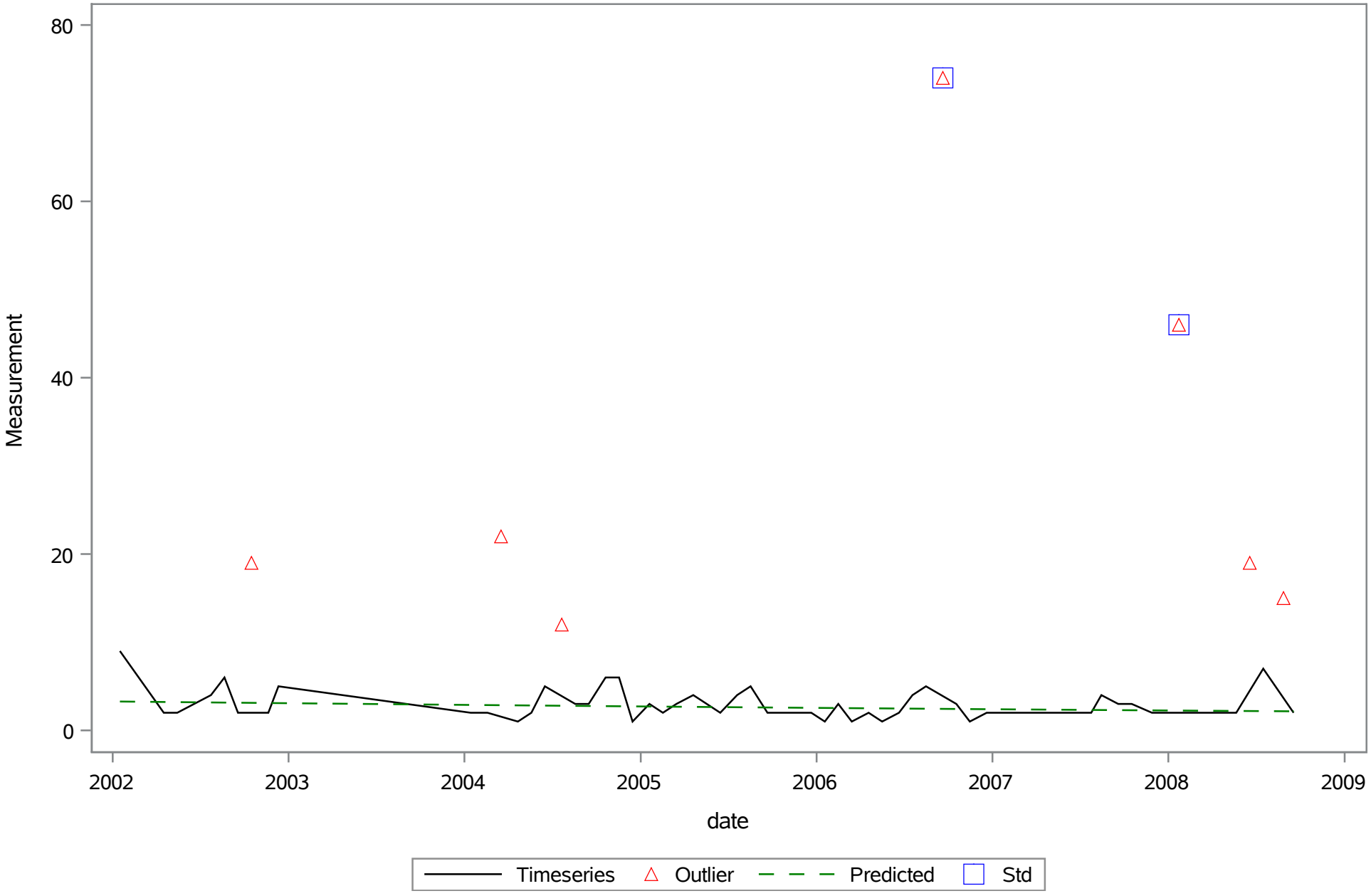
Little Manatee River
L MANATEE R BR US 301
Total Suspended Solids (TSS), mg/L mg/L
Site ID = 21FLA 24010100



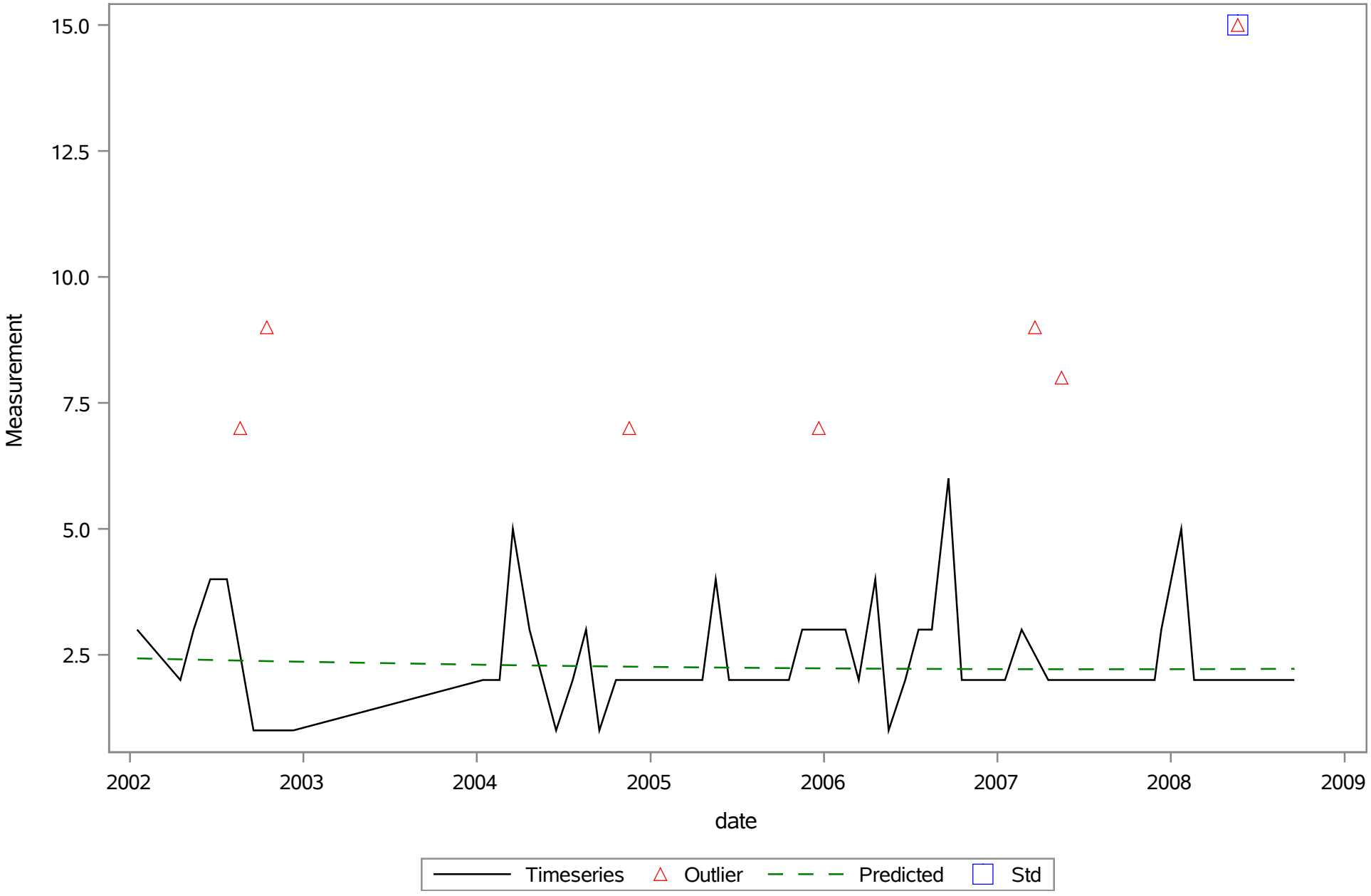
Little Manatee River
LITTLE MANATEE RIVER AT US HWY 301
Total Suspended Solids (TSS), mg/L mg/L
Site ID = 21FLGW 3555



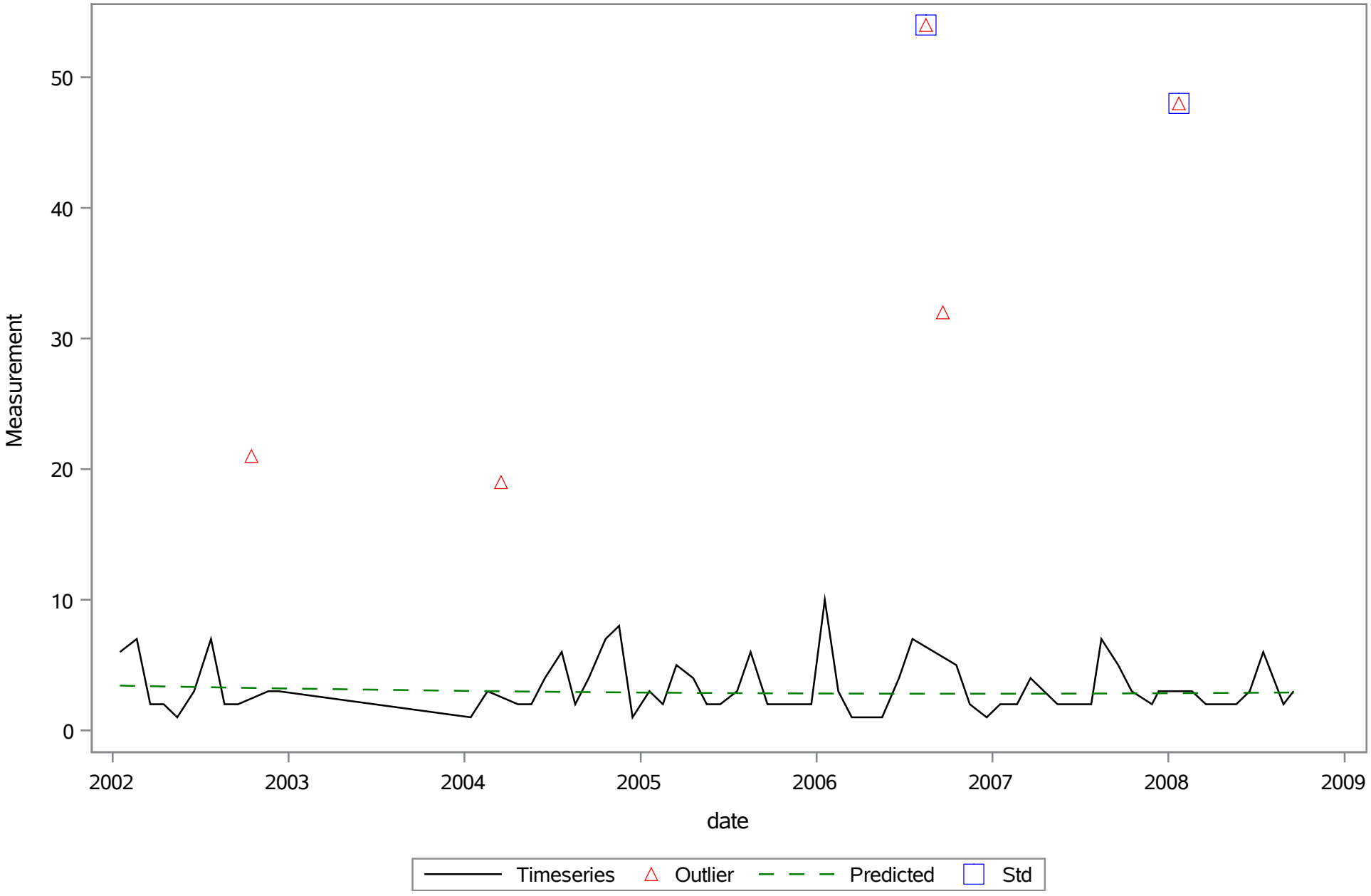
Little Manatee River
Little Manatee River at US 301 bridge
Total Suspended Solids (TSS), mg/L mg/L
Site ID = 21FLHILL113



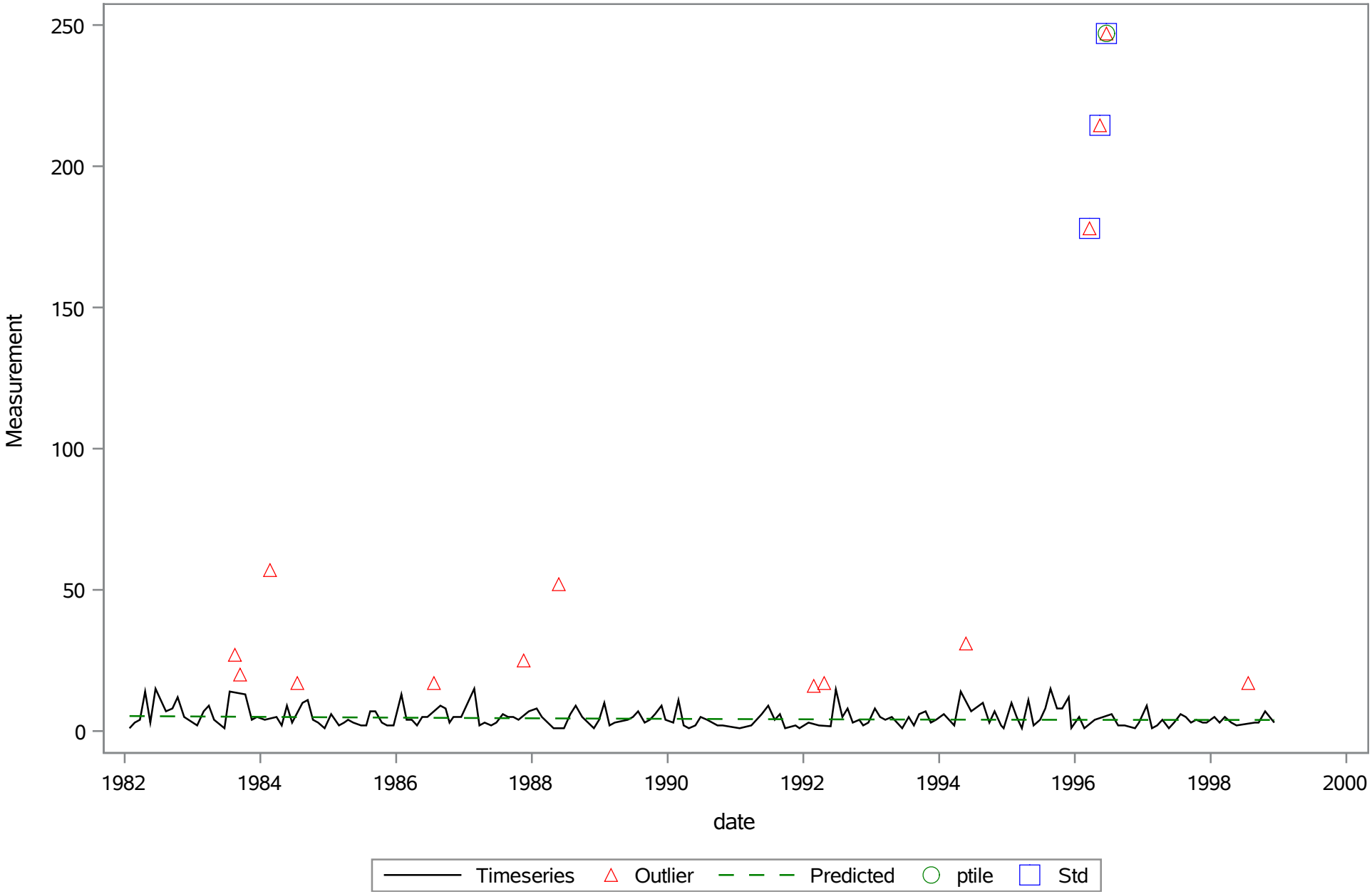
Little Manatee River
Little Manatee River at SR 674
Total Suspended Solids (TSS), mg/L mg/L
Site ID = 21FLHILL129

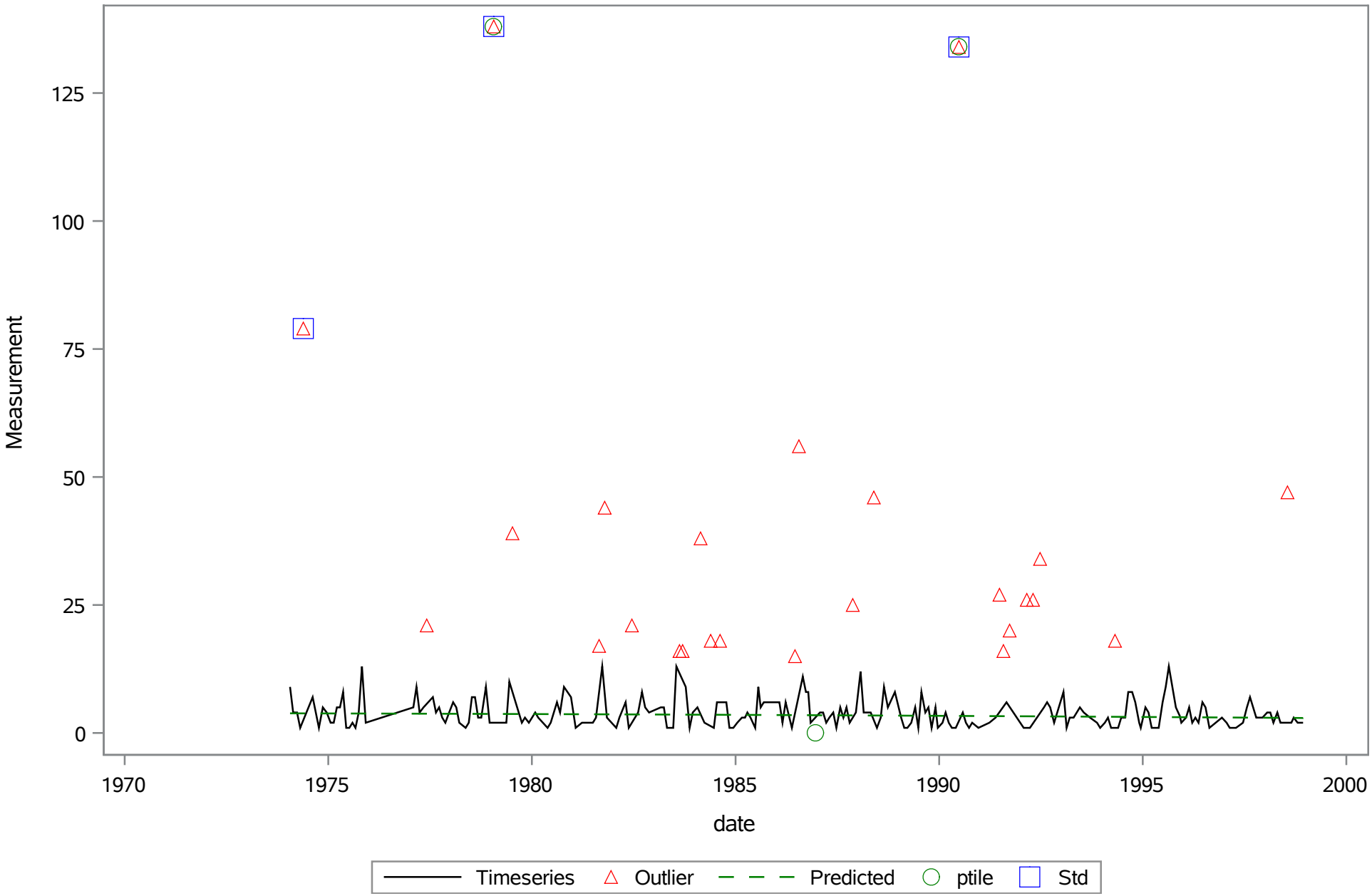


Little Manatee River
Little Manatee River at CR 579
Total Suspended Solids (TSS), mg/L mg/L
Site ID = 21FLHILL140

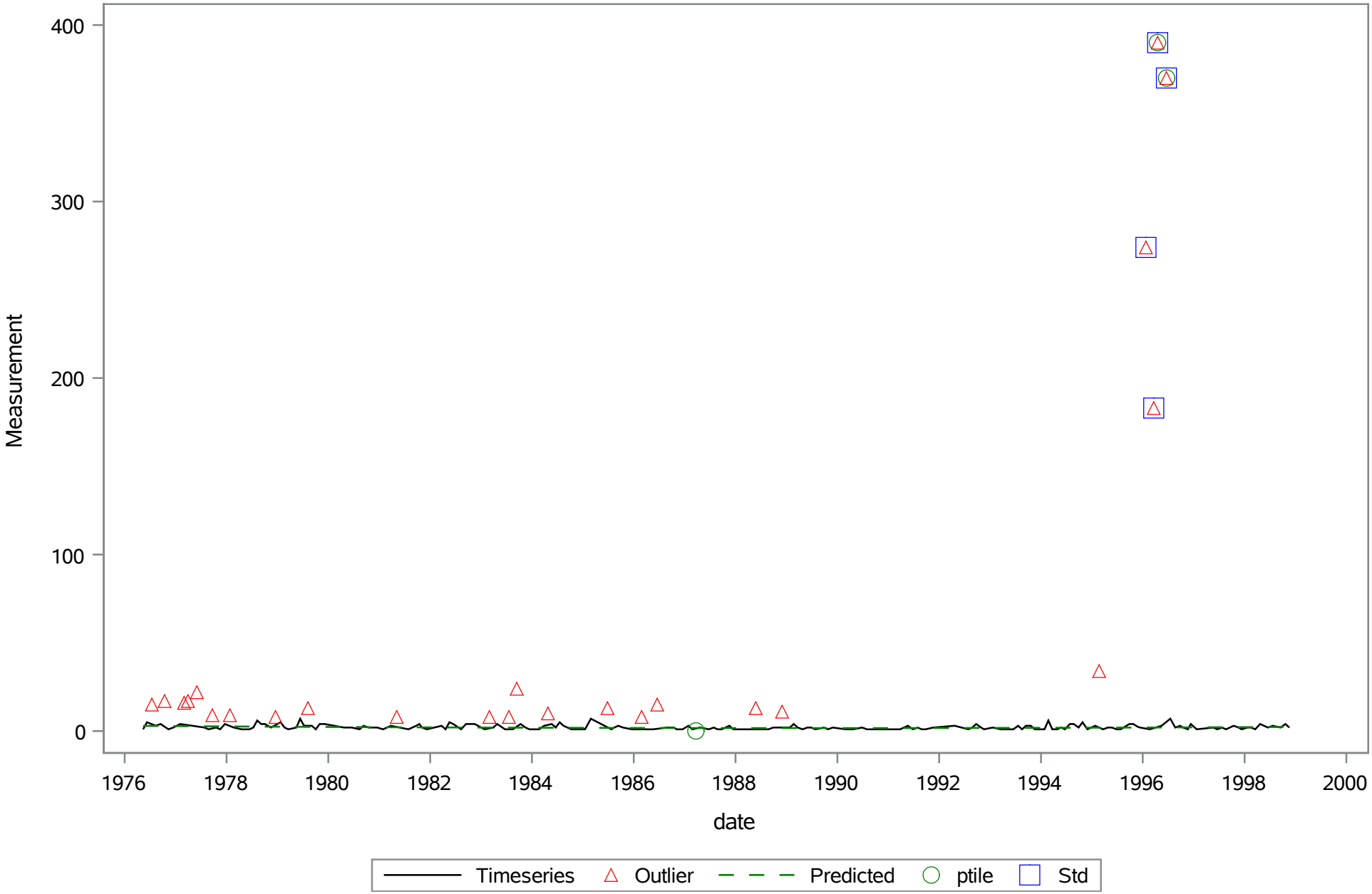


Little Manatee River
LITTLE MANATEE R AT CR579
Total Suspended Solids (TSS), mg/L mg/L
Site ID = 21FLHILL24010013

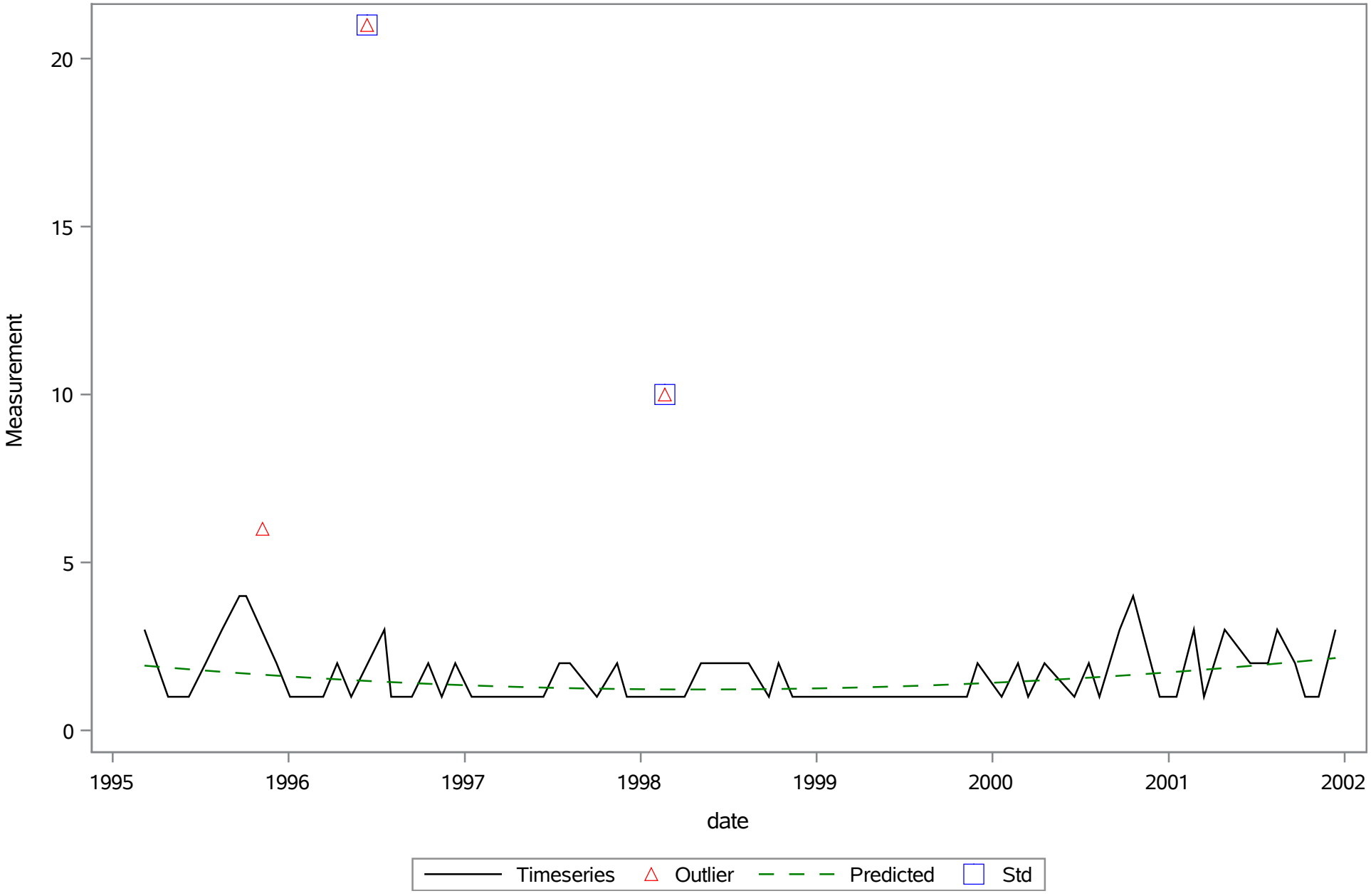


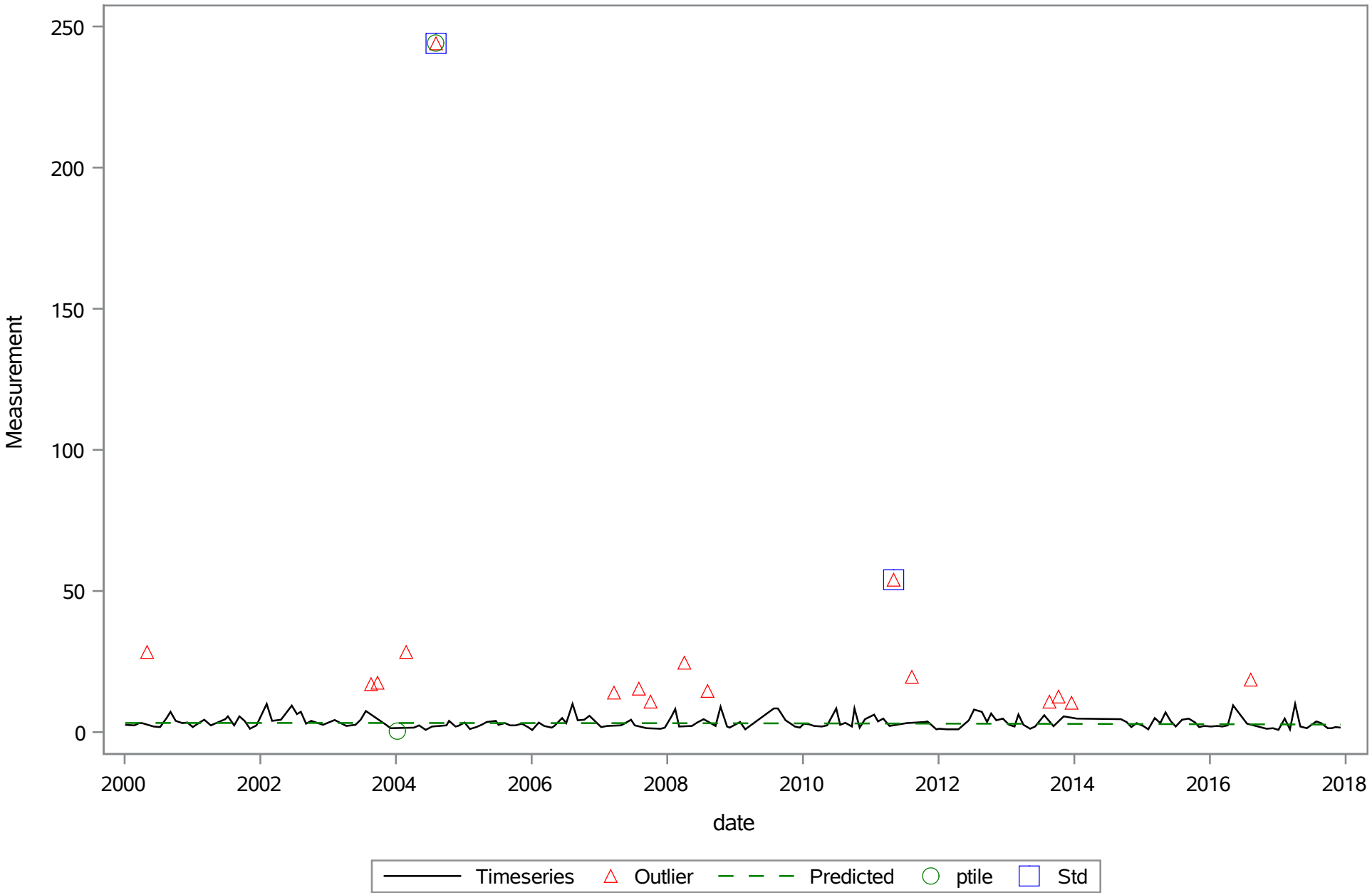

Little Manatee River
L MANATEE R BR US 301
Total Suspended Solids (TSS), mg/L mg/L
Site ID = 21FLHILL24010100
Measurement
125
100
75
50
25
0
1970
1975
1980
1985
1990
1995
2000
date
Timeseries
Outlier
Predicted
ptile
Std

Little Manatee River
LITTLE MANATEE R AT SR #674
Total Suspended Solids (TSS), mg/L mg/L
Site ID = 21FLHILL24010110

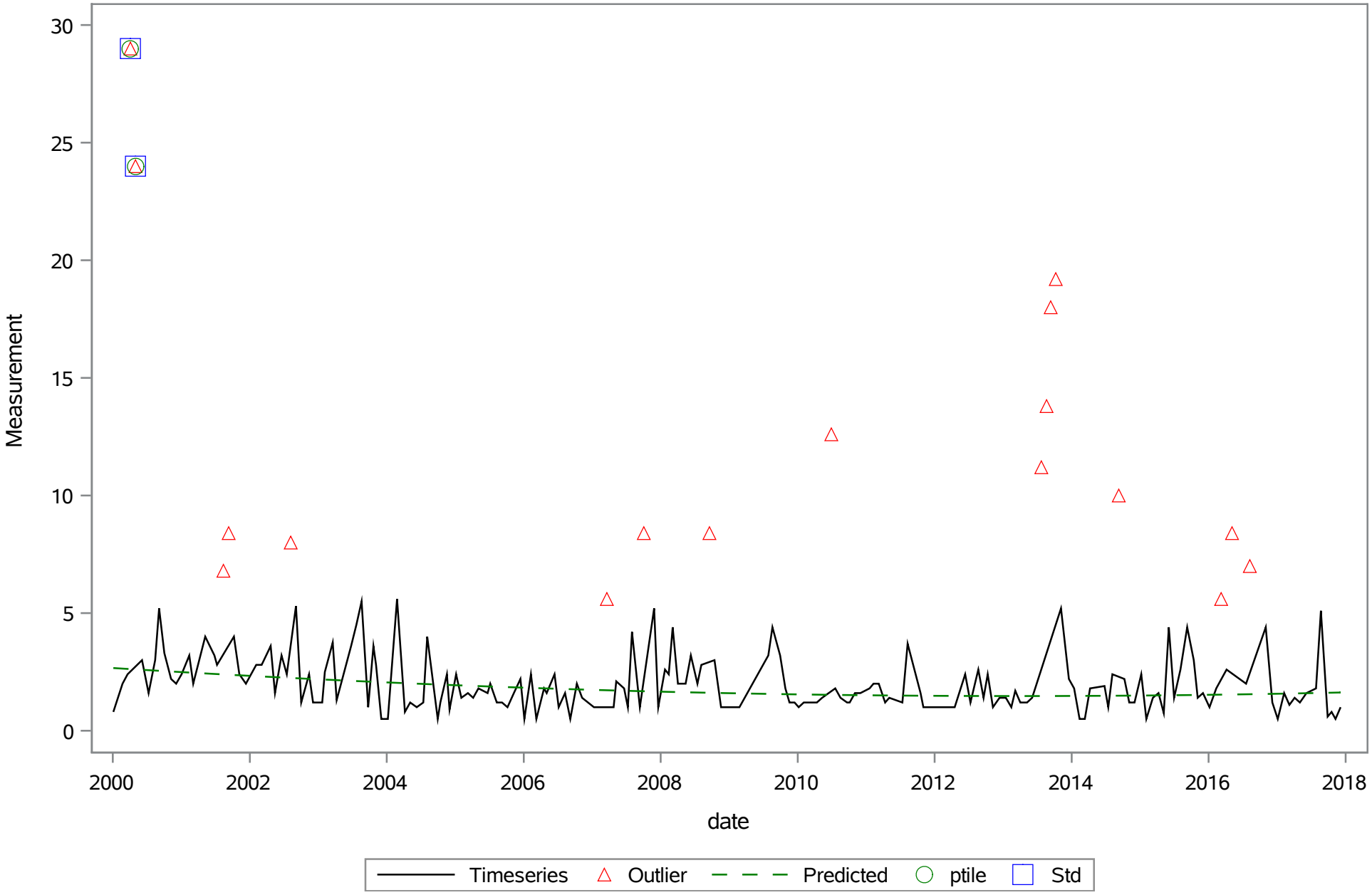


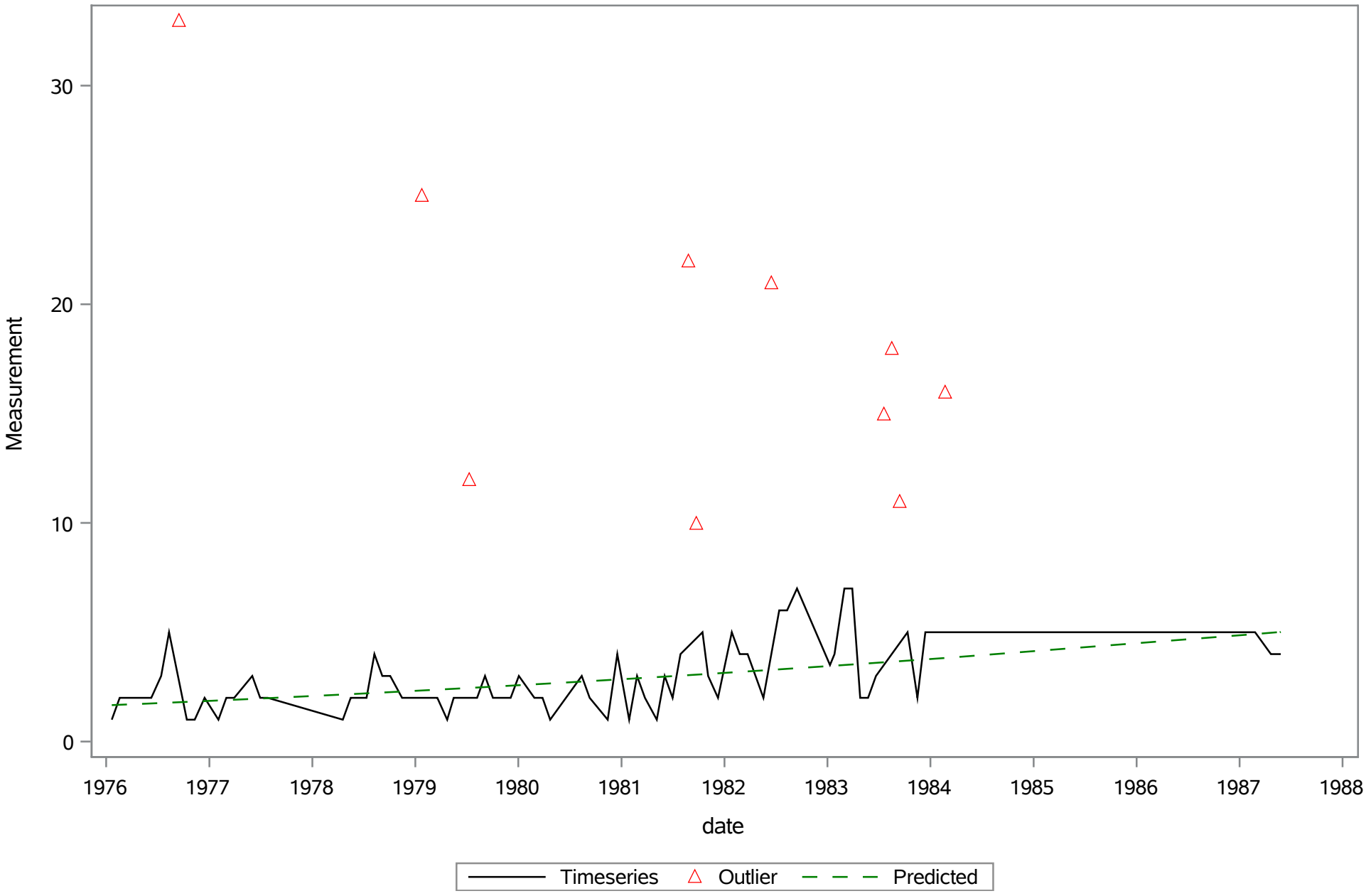
Little Manatee River
Little Manatee R. at SR674
Total Suspended Solids (TSS), mg/L mg/L
Site ID = 21FLIMCALM674



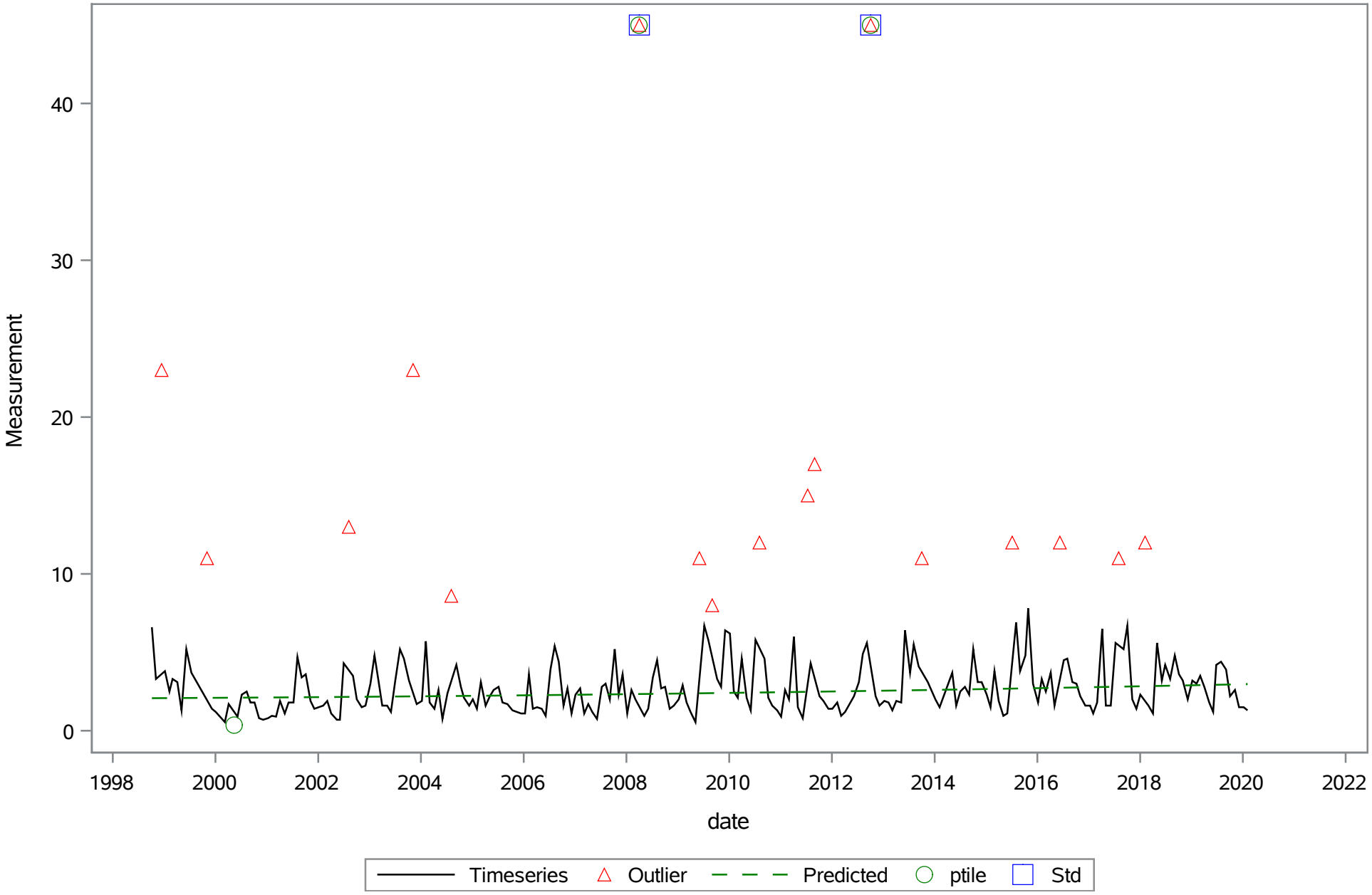

Little Manatee River
D1
Total Suspended Solids (TSS), mg/L mg/L
Site ID = 21FLMANAD1
Measurement
250
200
150
100
50
0
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
date
Timeseries
Outlier
Predicted
ptile
Std

Little Manatee River
D3
Total Suspended Solids (TSS), mg/L mg/L
Site ID = 21FLMANAD3

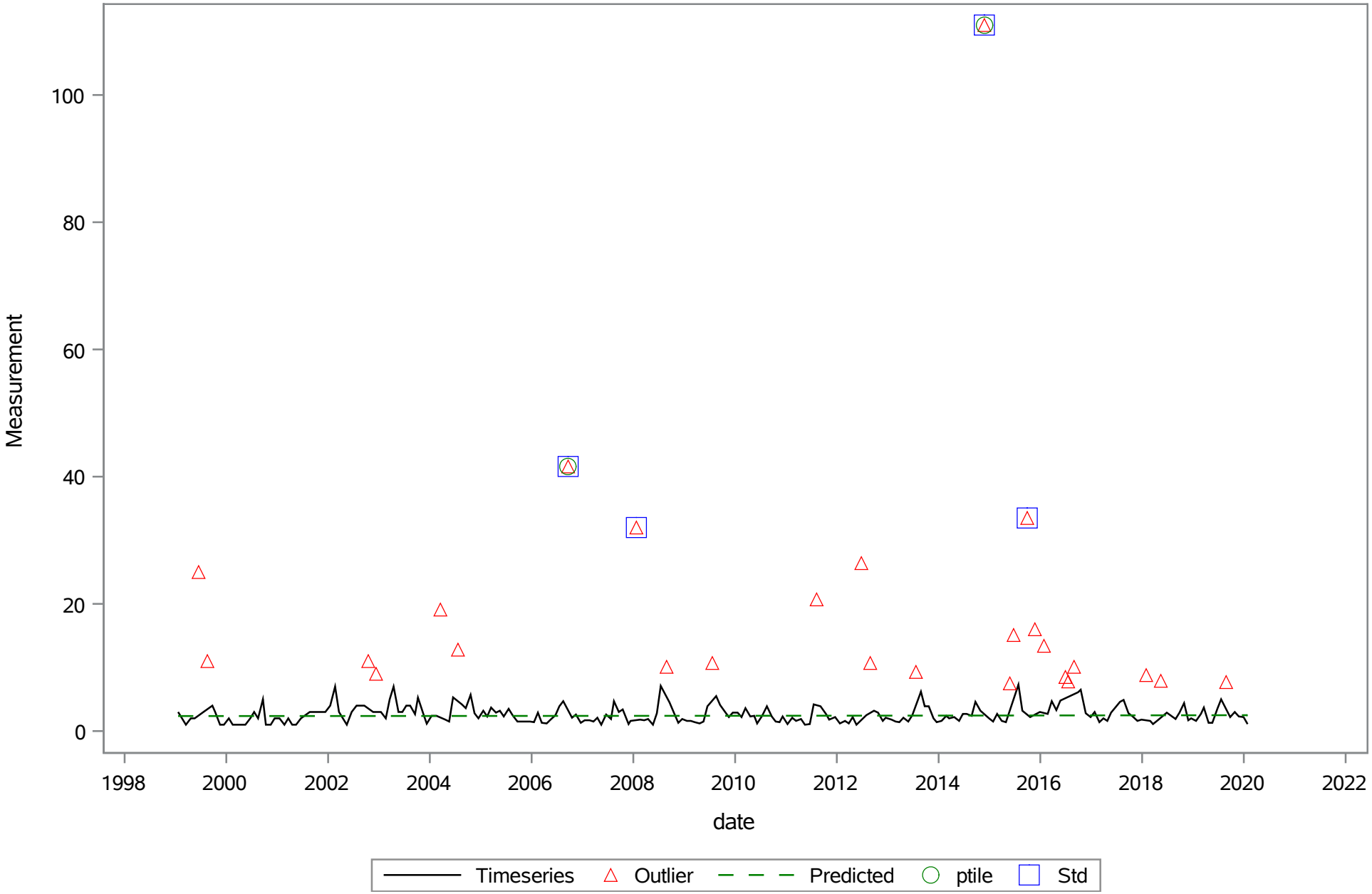


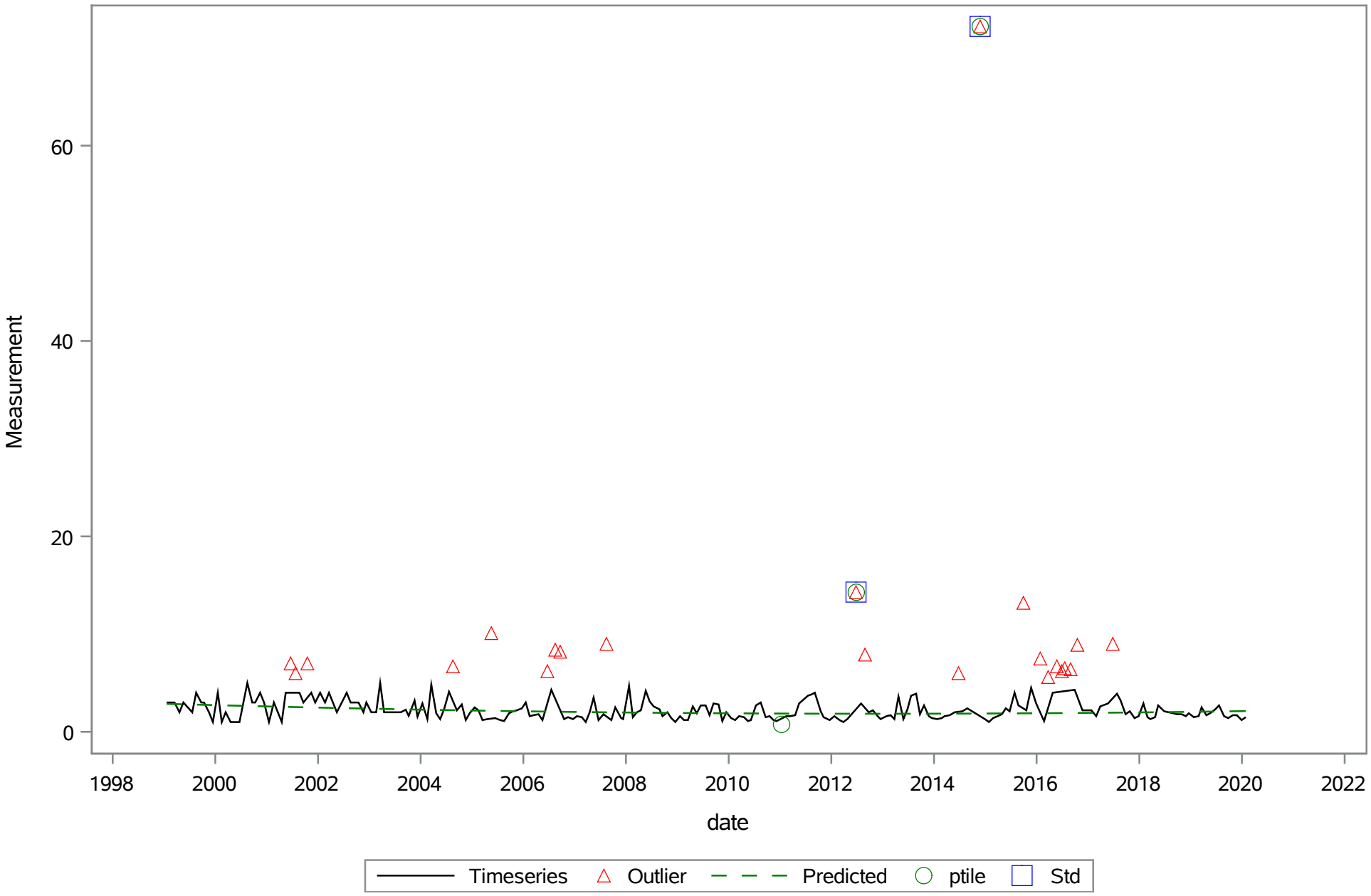

Little Manatee River
L MANATEE R BR US 301
Turbidity (NTU) NTU
Site ID = 21FLA 24010100
Measurement
30
20
10
0
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
1987
1988
date
Timeseries
Outlier
Predicted

Little Manatee River
LITTLE MANATEE RIVER AT US HWY 301
Turbidity (NTU) NTU
Site ID = 21FLGW 3555

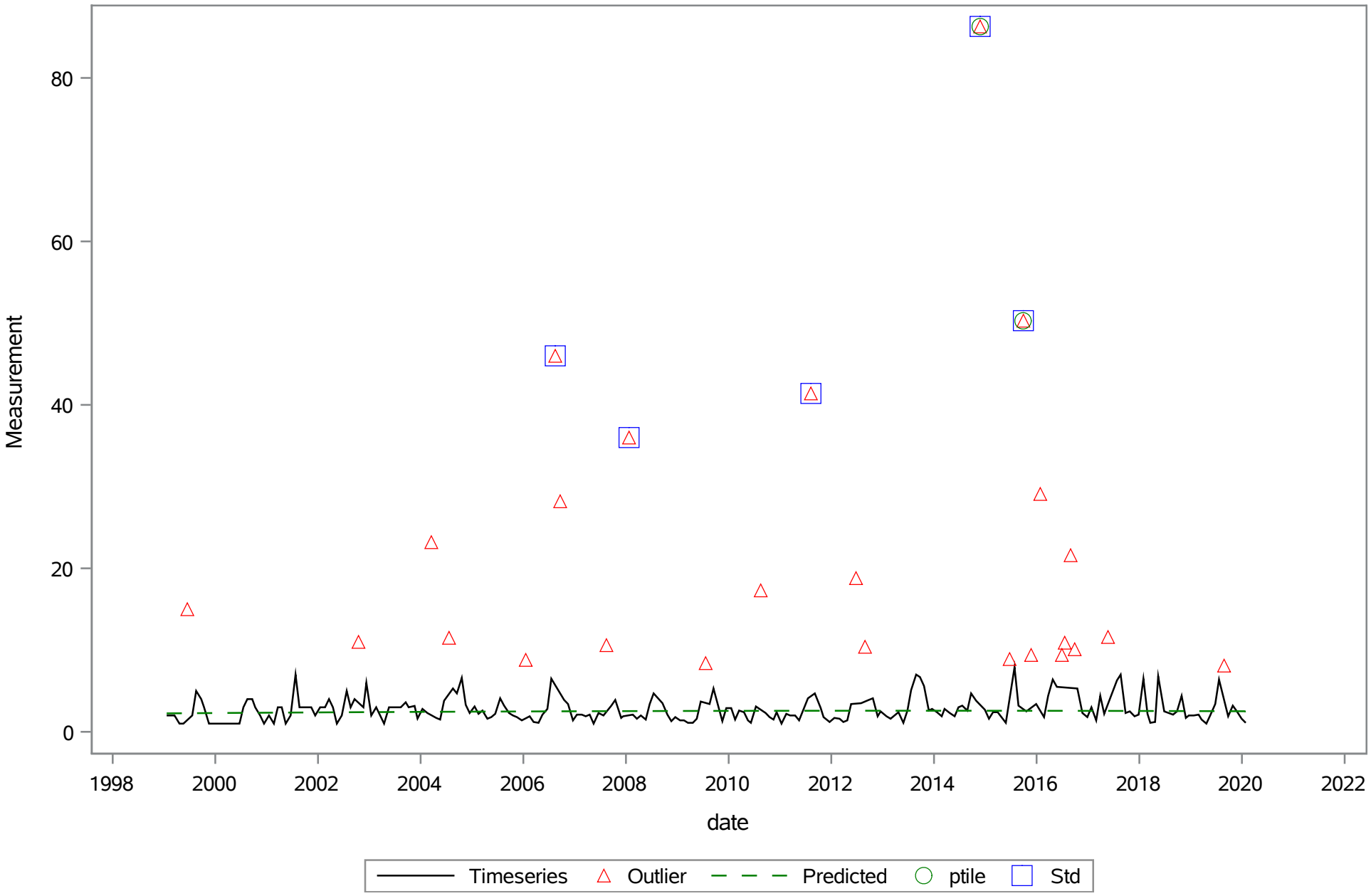


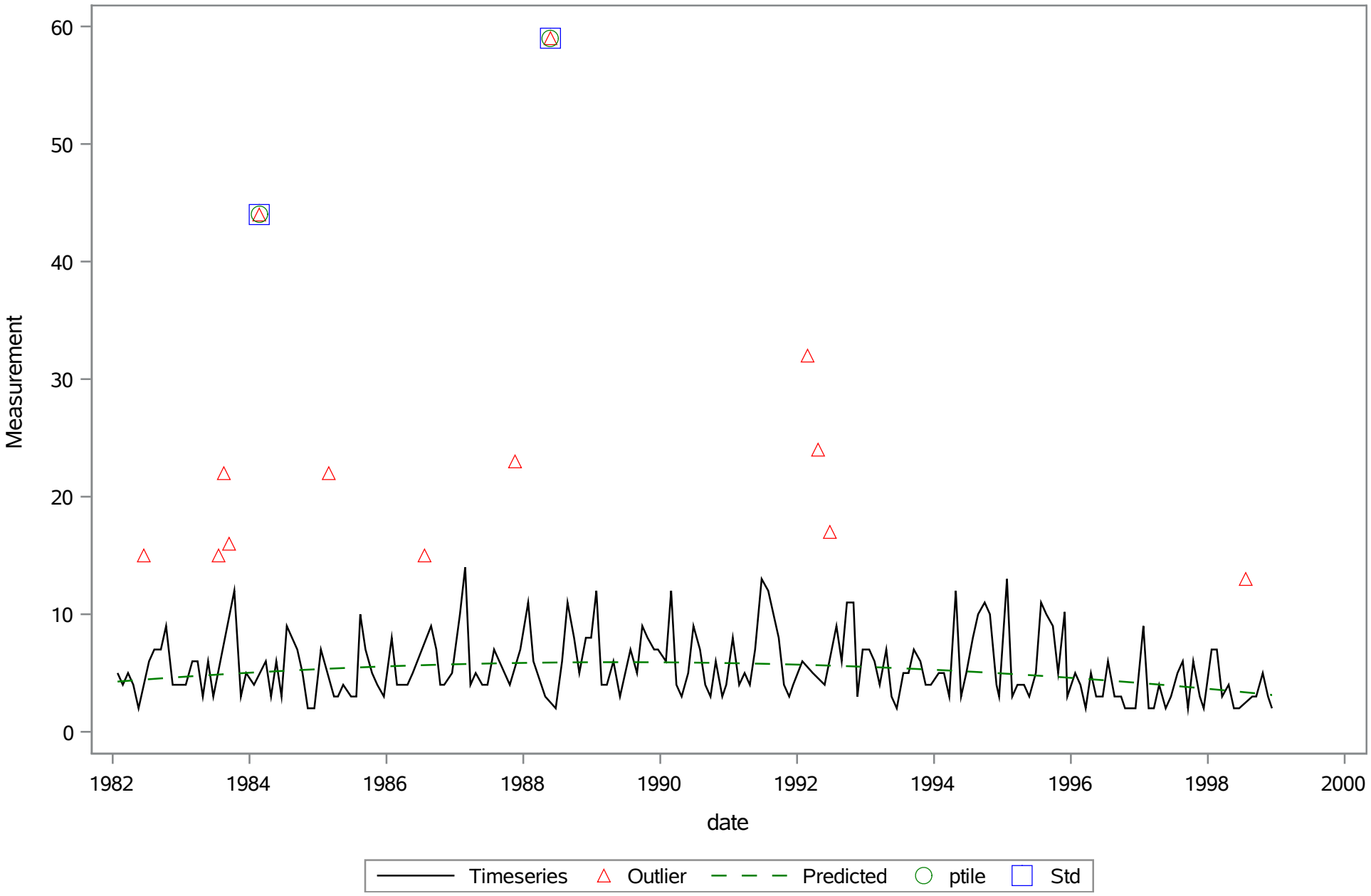
Little Manatee River
Little Manatee River at US 301 bridge
Turbidity (NTU) NTU
Site ID = 21FLHILL113

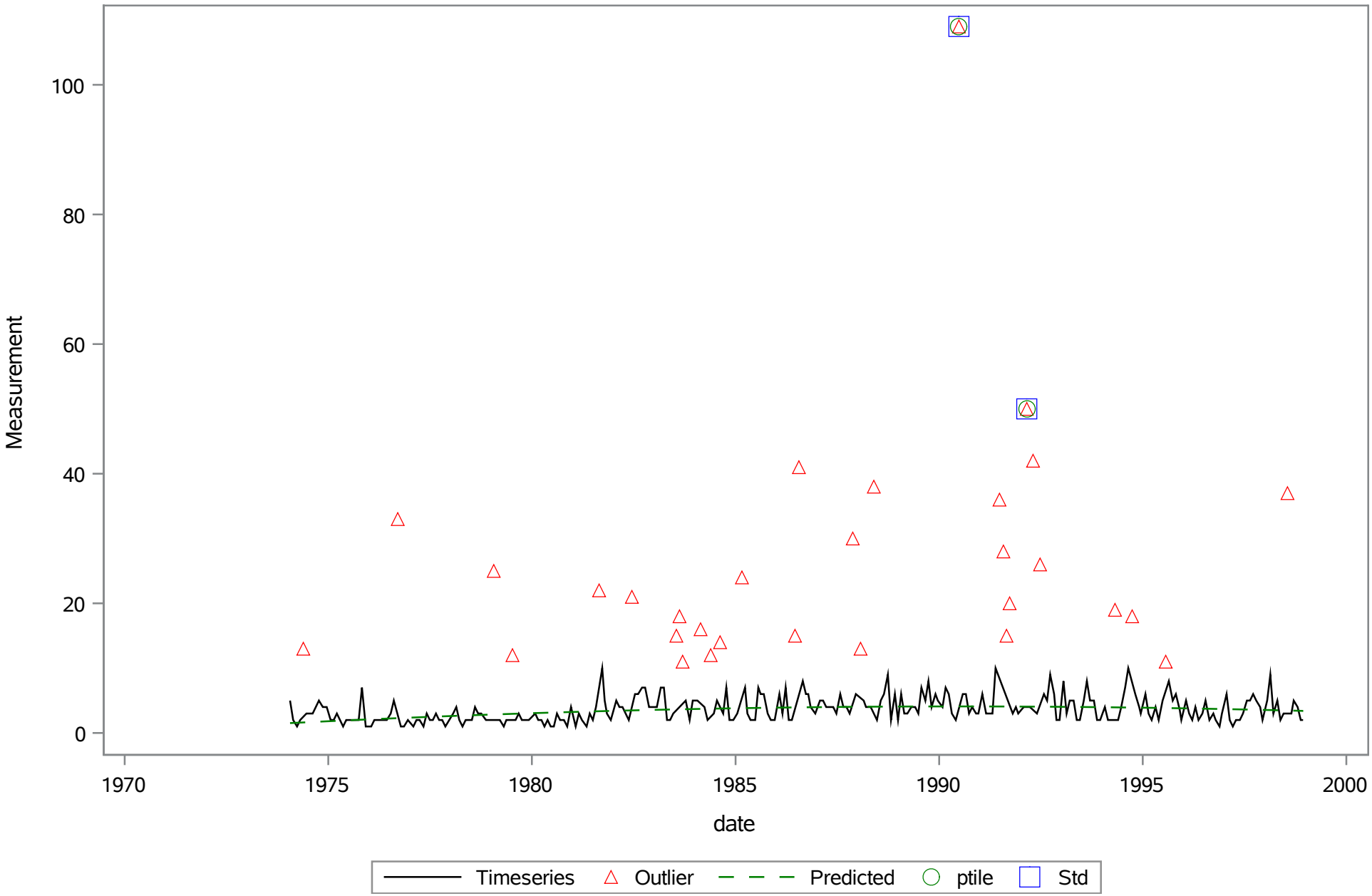



Little Manatee River
Little Manatee River at SR 674
Turbidity (NTU) NTU
Site ID = 21FLHILL129
Measurement
0
20
40
60
1998
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
2022
date
Timeseries
Outlier
Predicted
ptile
Std

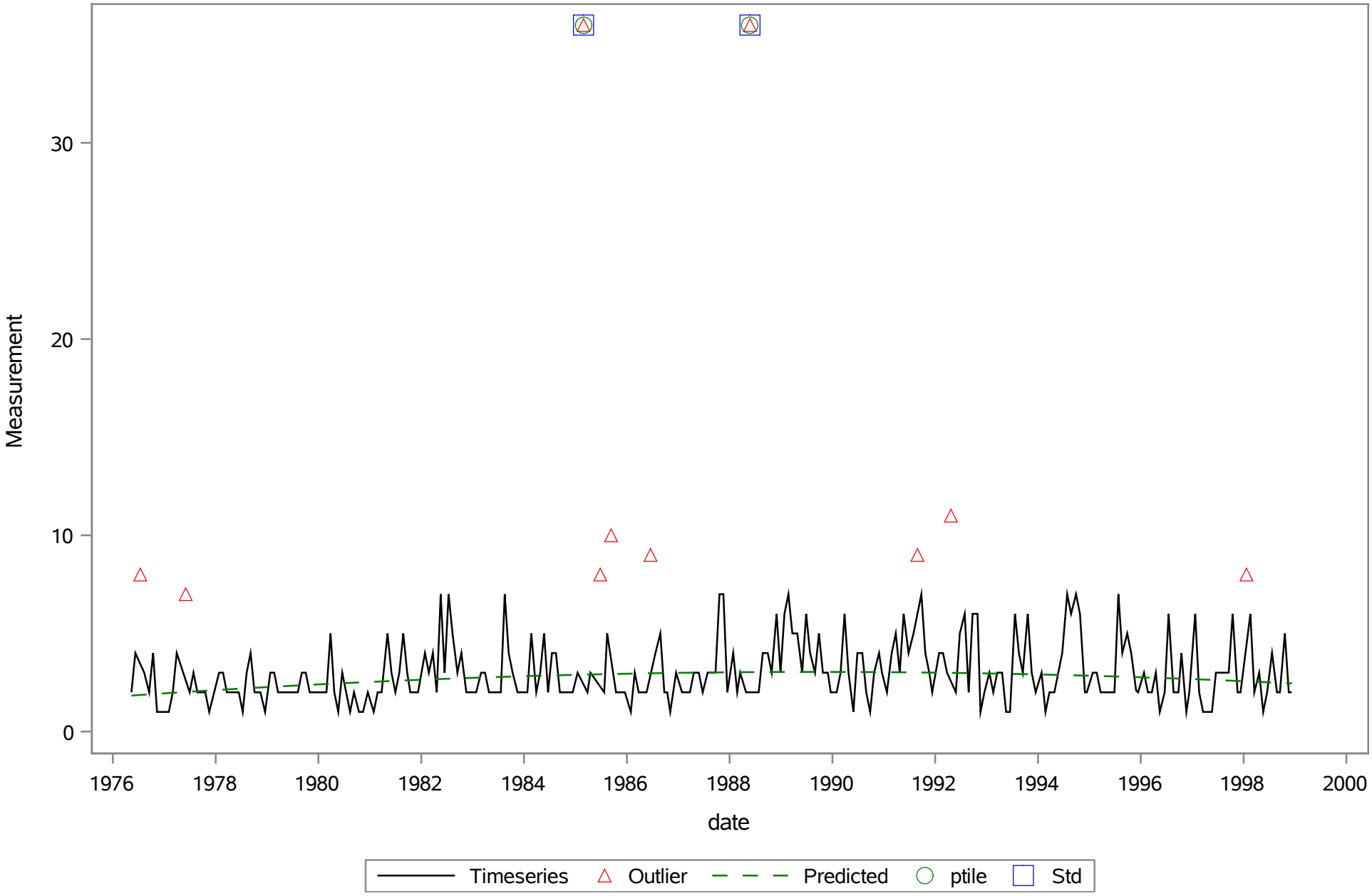
Little Manatee River
Little Manatee River at CR 579
Turbidity (NTU) NTU
Site ID = 21FLHILL140

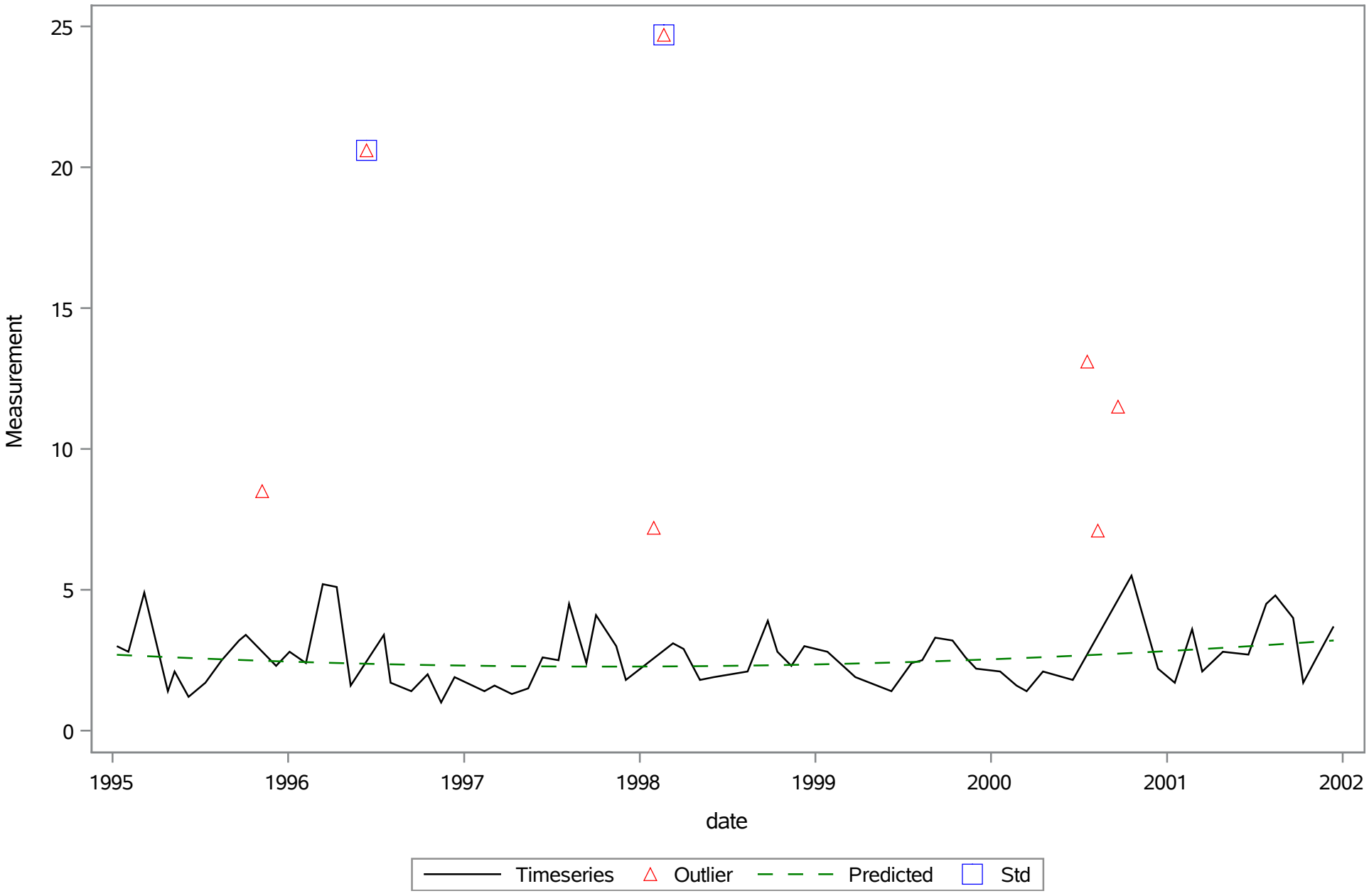


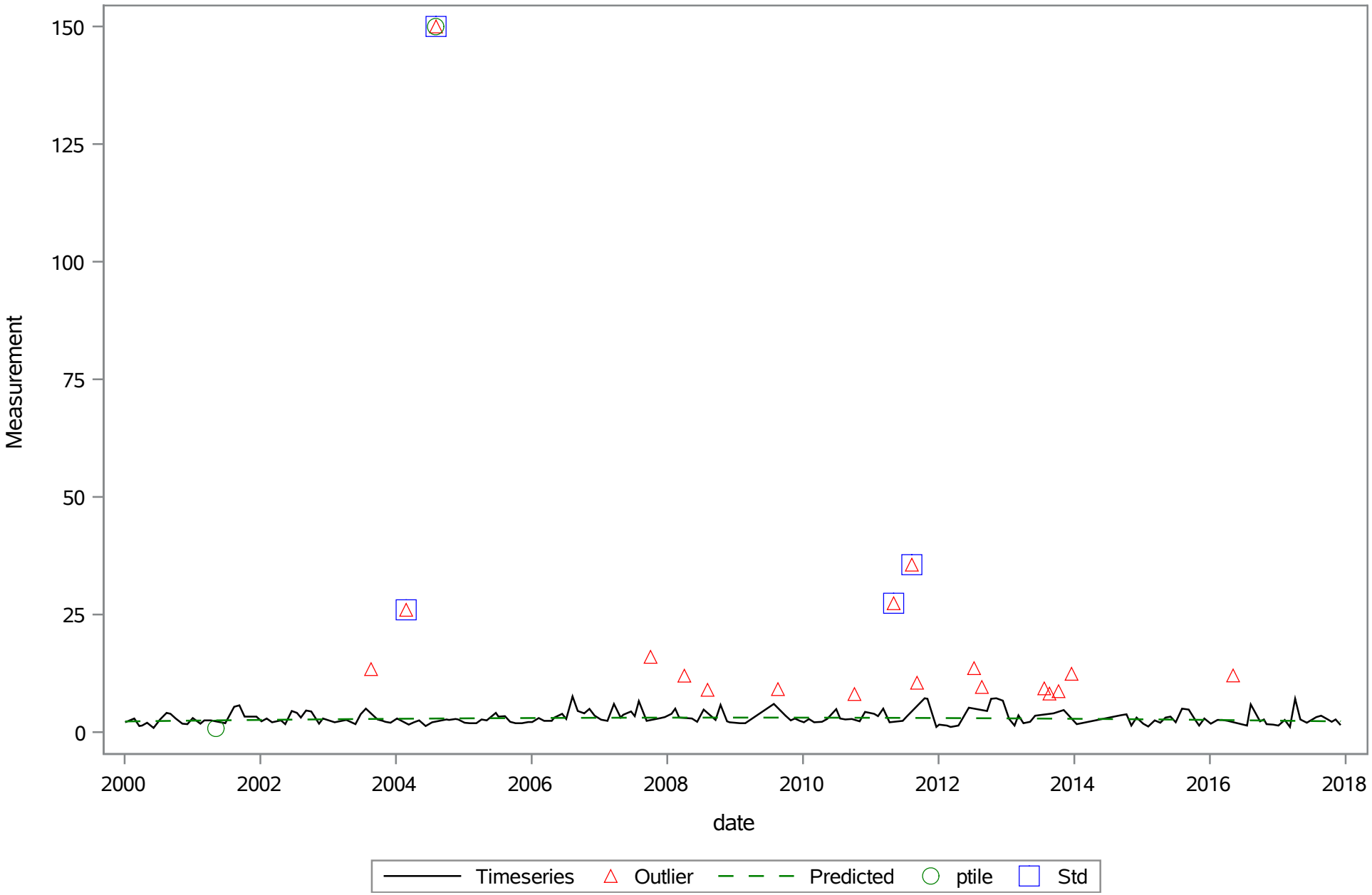

Little Manatee River
LITTLE MANATEE R AT CR579
Turbidity (NTU) NTU
Site ID = 21FLHILL24010013
Measurement
60
50
40
30
20
10
0
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
date
Timeseries
Outlier
Predicted
ptile
Std

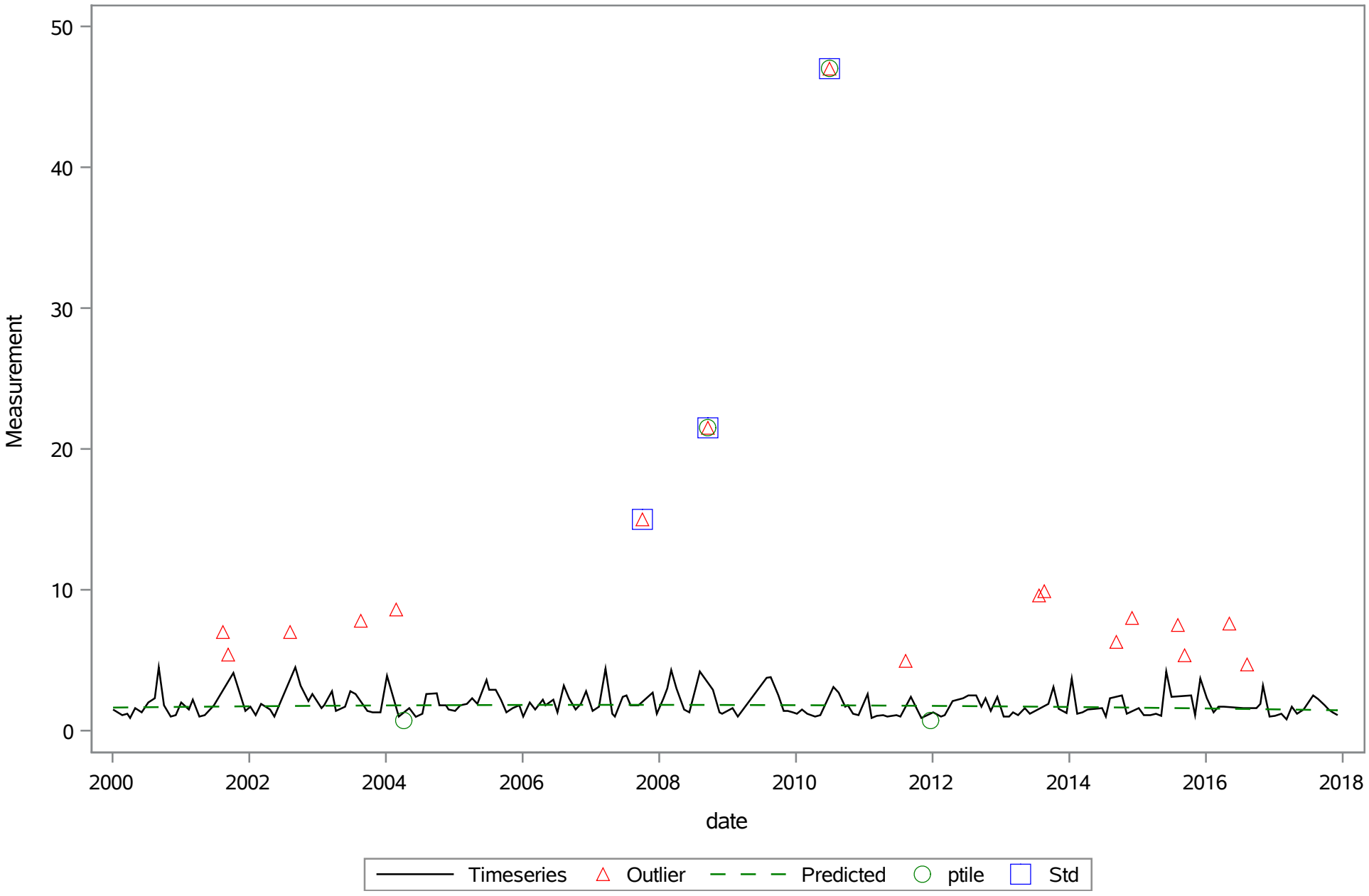

Little Manatee River
L MANATEE R BR US 301
Turbidity (NTU) NTU
Site ID = 21FLHILL24010100
Measurement
100
80
60
40
20
0
1970
1975
1980
1985
1990
1995
2000
date
Timeseries
Outlier
Predicted
ptile
Std

Little Manatee River
LITTLE MANATEE R AT SR #674
Turbidity (NTU) NTU
Site ID = 21FLHILL24010110




Little Manatee River
Little Manatee R. at SR674
Turbidity (NTU) NTU
Site ID = 21FLIMCALM674
Measurement
25
20
15
10
5
0
1995
1996
1997
1998
1999
2000
2001
2002
date
Timeseries
Outlier
Predicted
Std


Little Manatee River
D1
Turbidity (NTU) NTU
Site ID = 21FLMANAD1
Measurement
150
125
100
75
50
25
0
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
date
Timeseries
Outlier
Predicted
ptile
Std

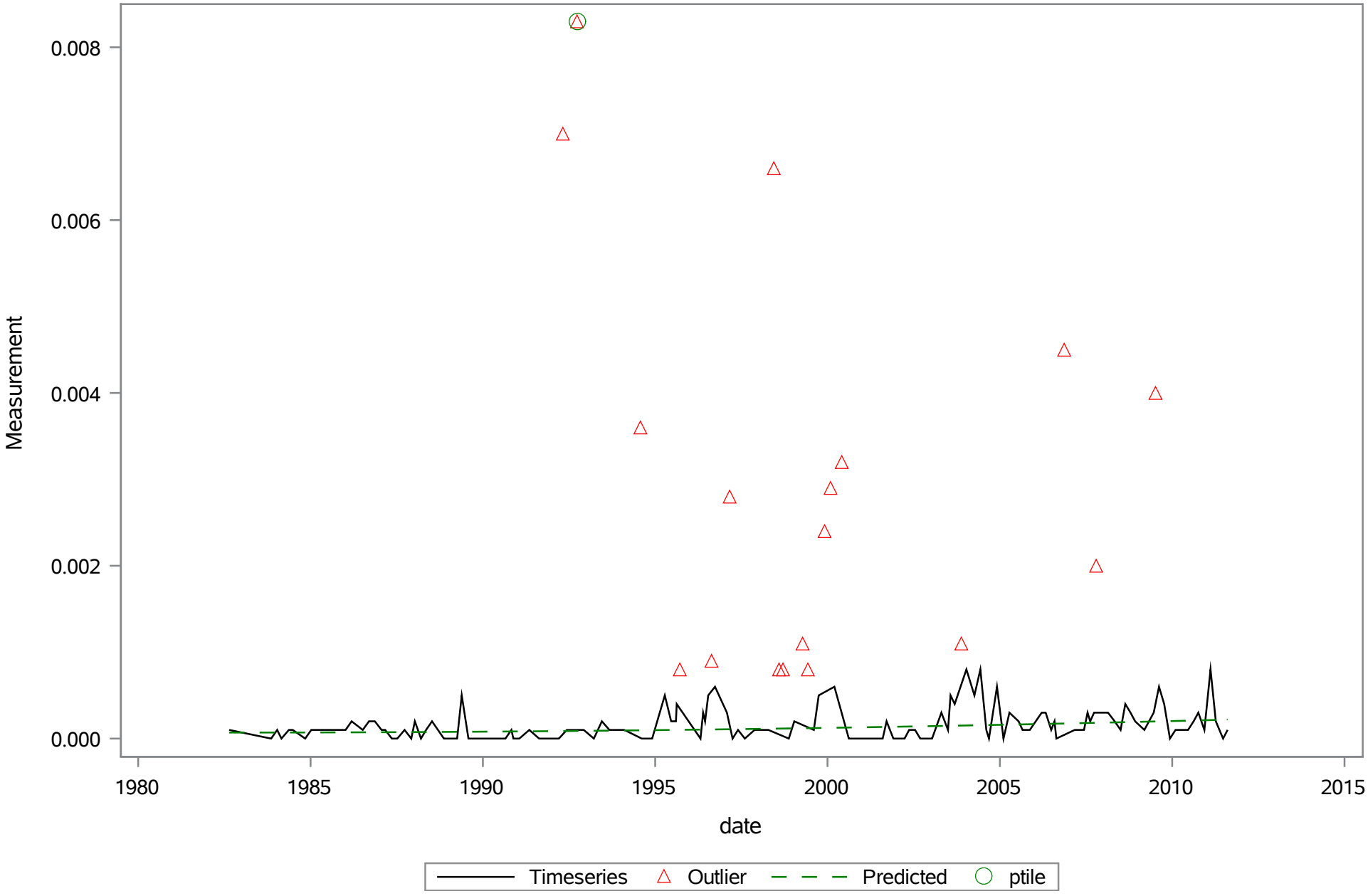

Little Manatee River
D3
Turbidity (NTU) NTU
Site ID = 21FLMANAD3
Measurement
50
40
30
20
10
0
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
date
Timeseries
Outlier
Predicted
ptile
Std

Little Manatee River

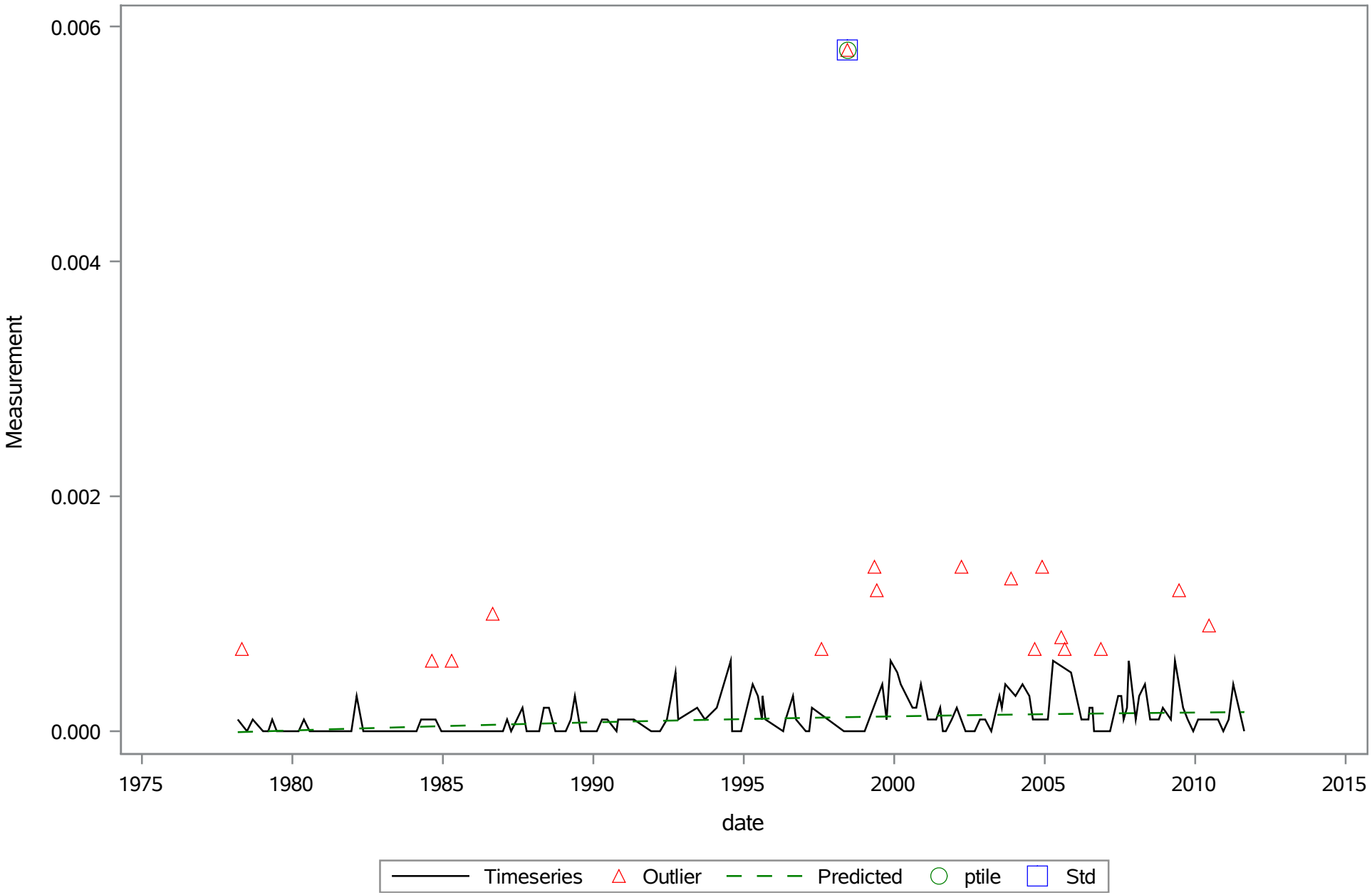
LITTLE MANATEE RIVER NEAR FT. LONESOME FL

Un-ionized Ammonia (mg/L) mg/L

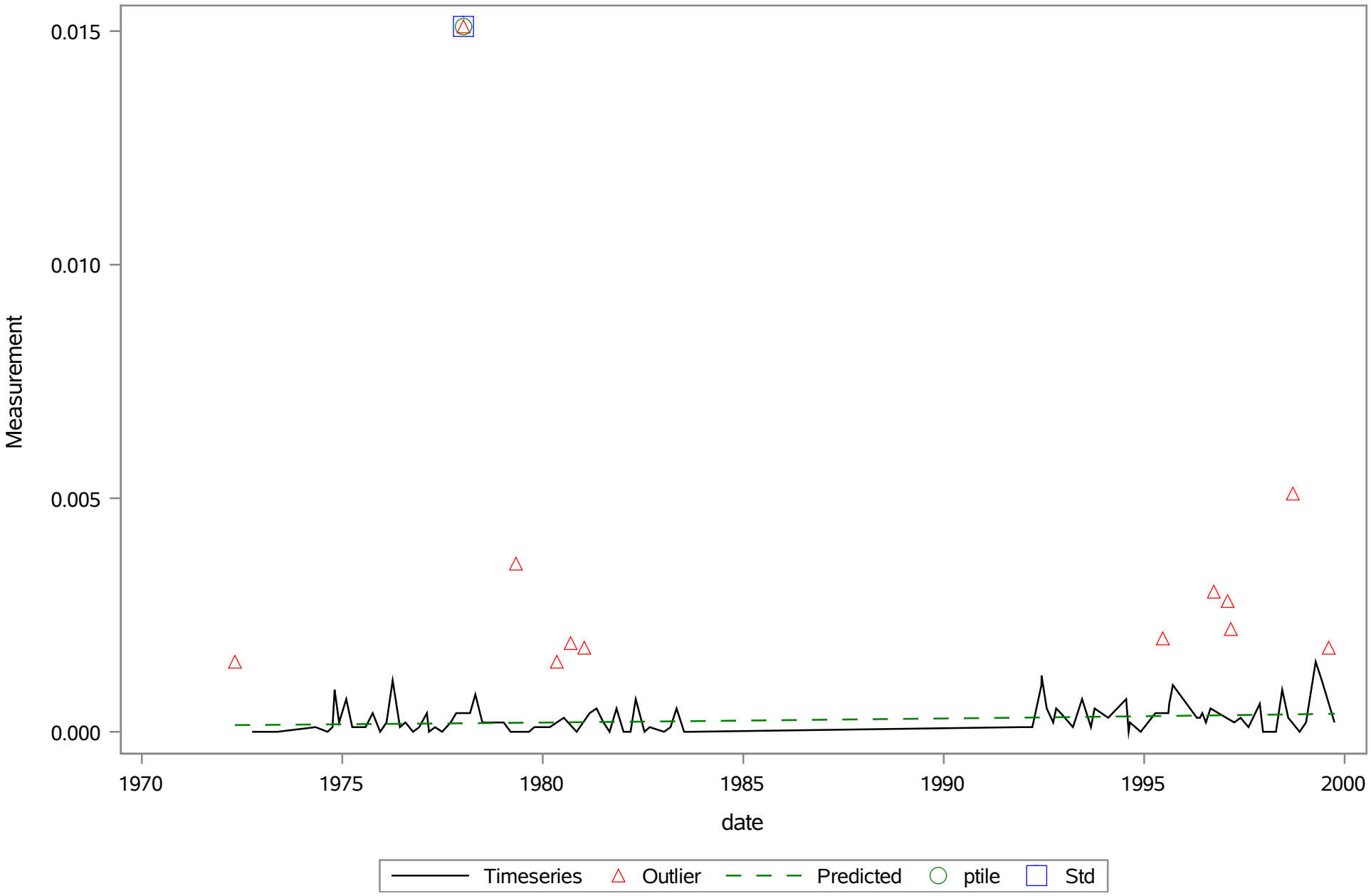
Site ID = 112WRD 02300100

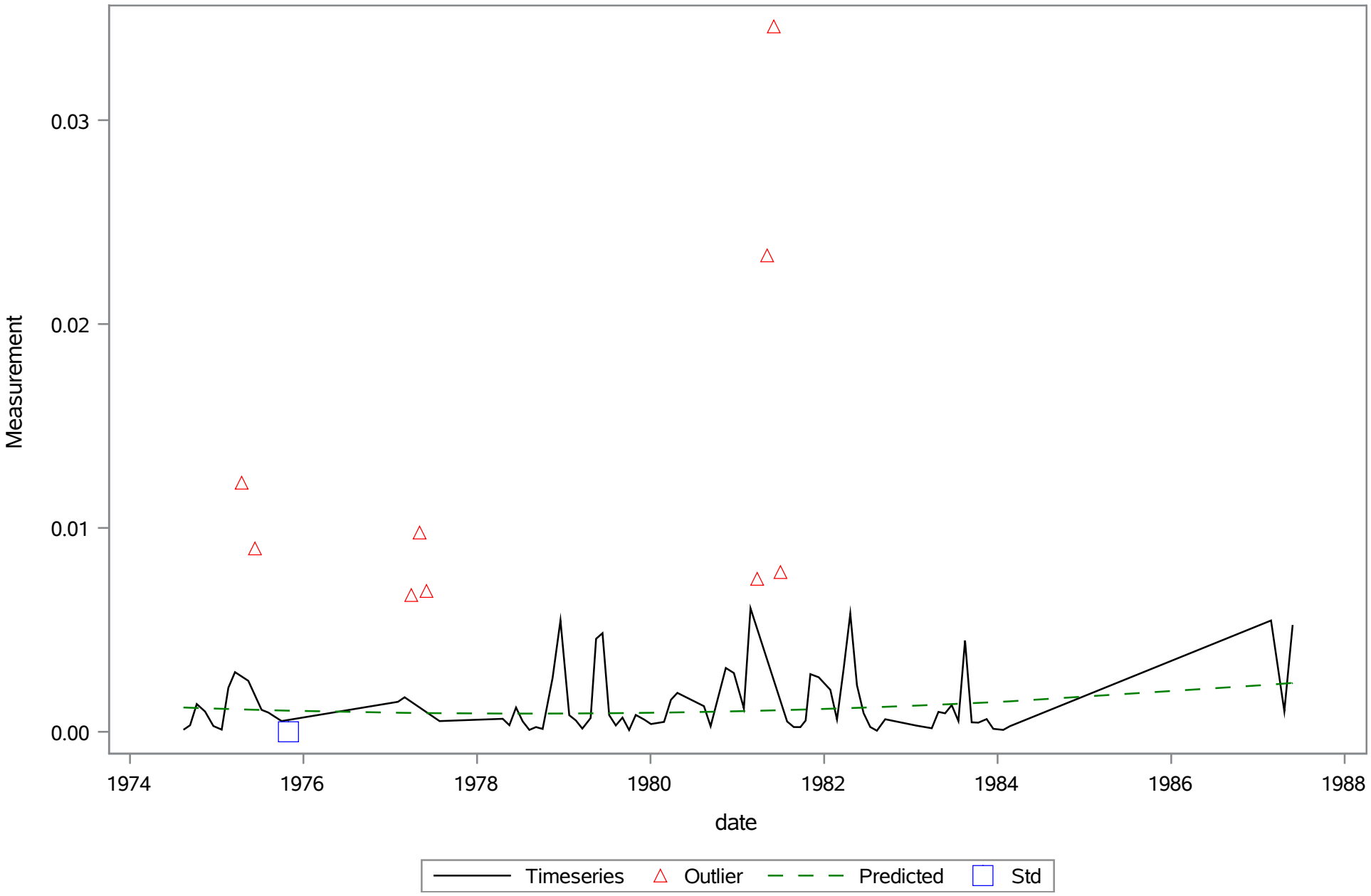


Little Manatee River
SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL
Un-ionized Ammonia (mg/L) mg/L
Site ID = 112WRD 02300200

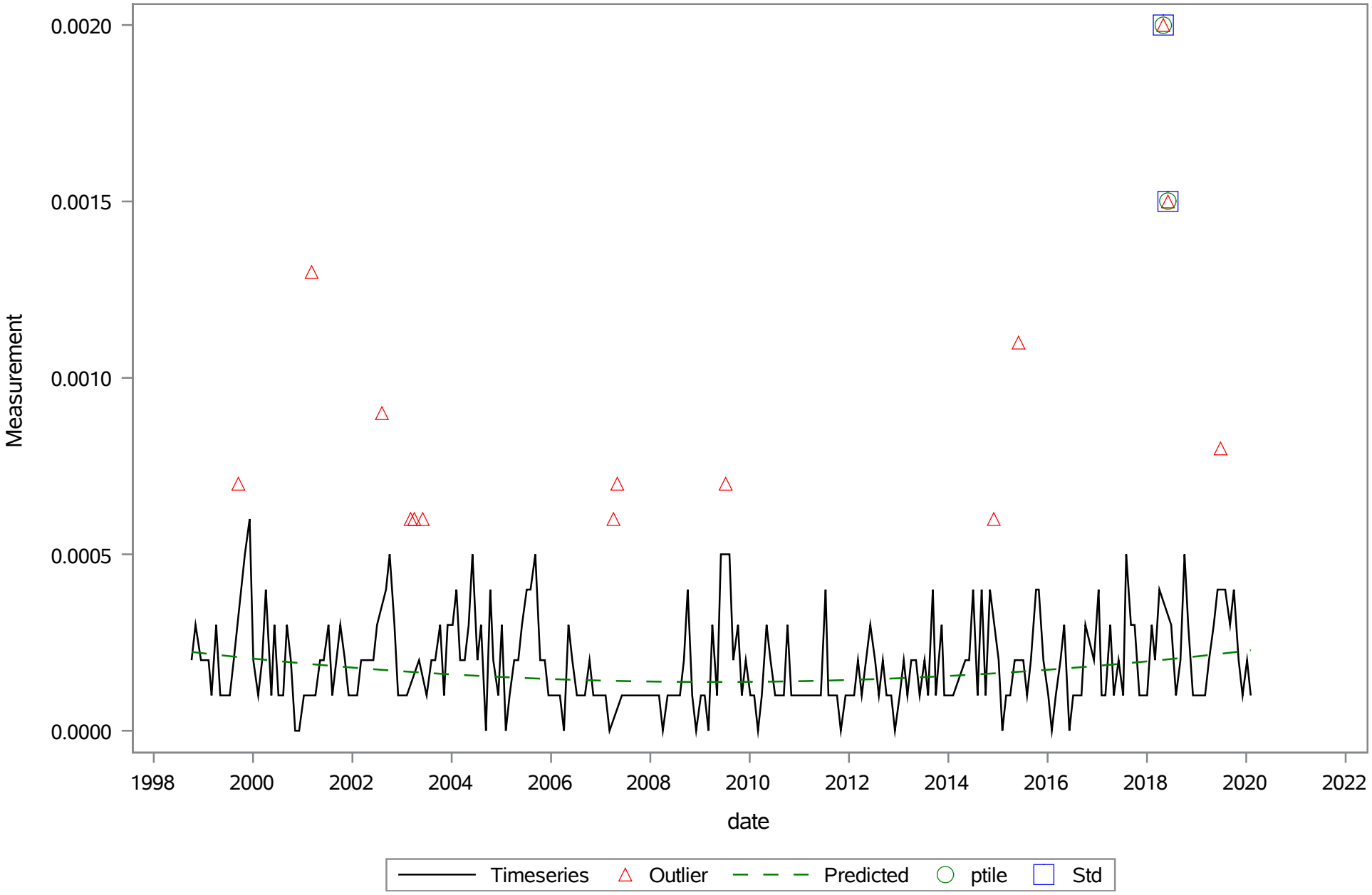


Little Manatee River
LITTLE MANATEE RIVER NEAR WIMAUMA FL
Un-ionized Ammonia (mg/L) mg/L
Site ID = 112WRD 02300500

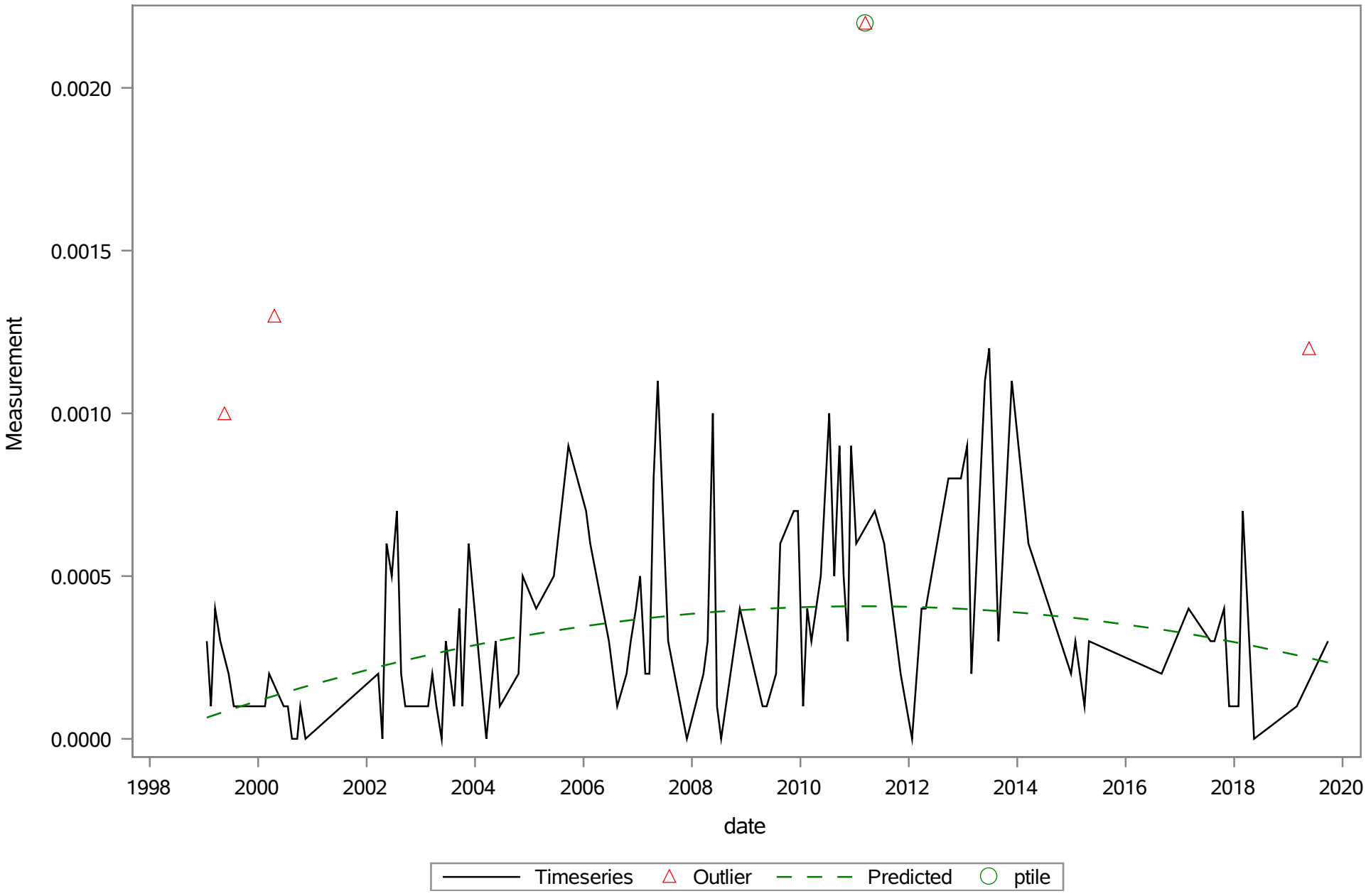



Little Manatee River
L MANATEE R BR US 301
Un-ionized Ammonia (mg/L) mg/L
Site ID = 21FLA 24010100
Measurement
0.03
0.02
0.01
0.00
1974
1976
1978
1980
1982
1984
1986
1988
date
Timeseries
Outlier
Predicted
Std

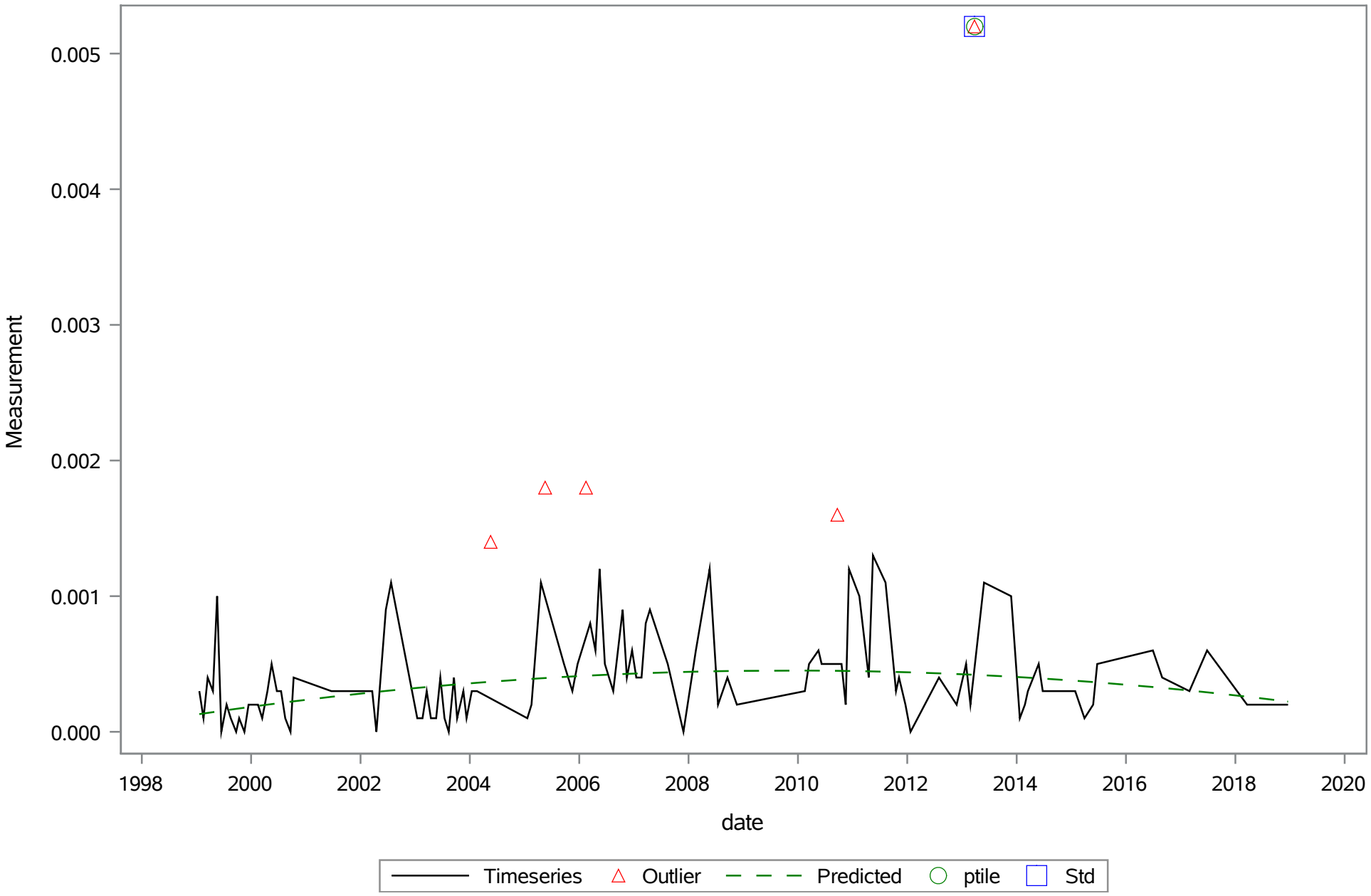
Little Manatee River
LITTLE MANATEE RIVER AT US HWY 301
Un-ionized Ammonia (mg/L) mg/L
Site ID = 21FLGW 3555



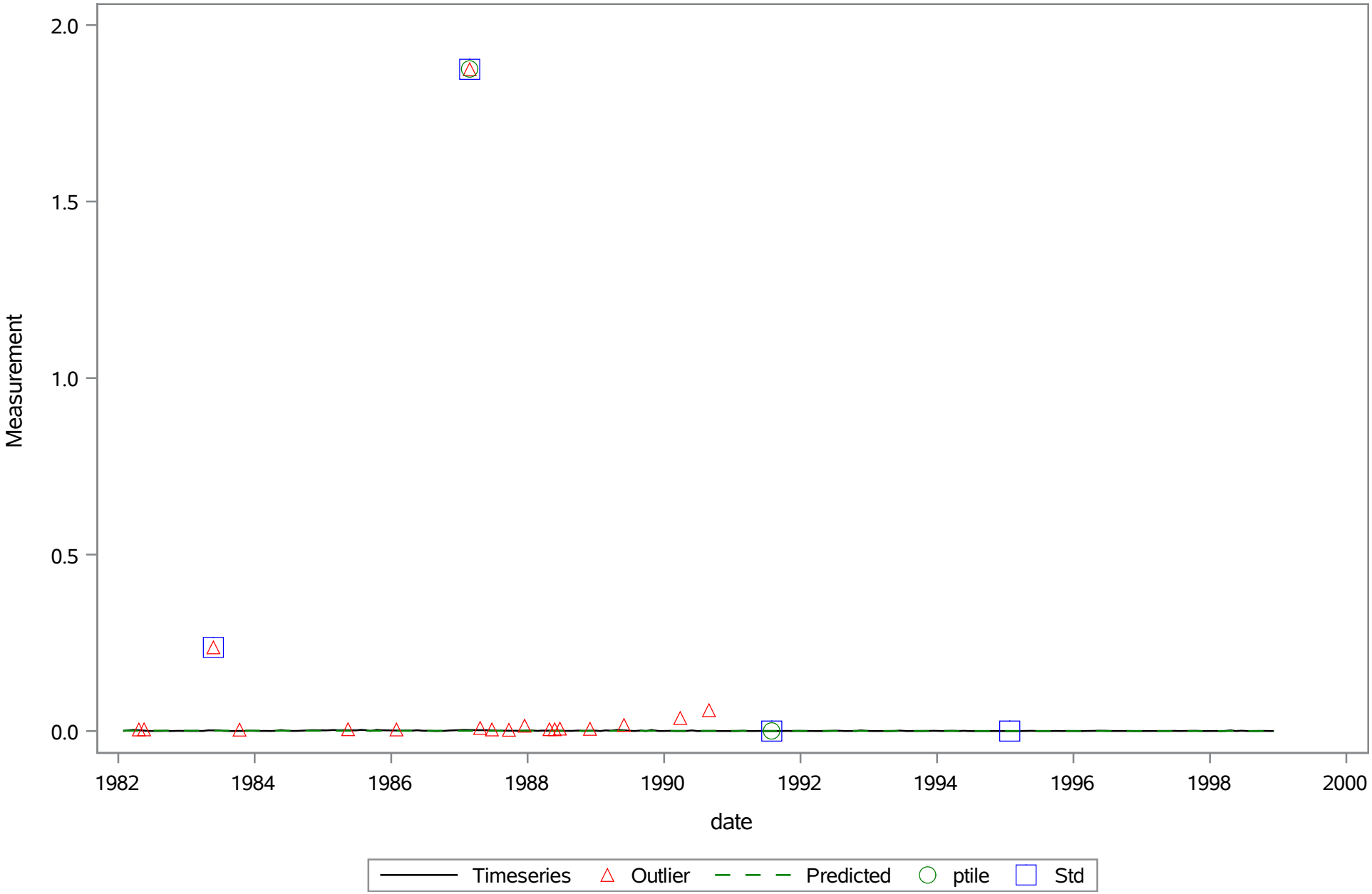
Little Manatee River
Little Manatee River at US 301 bridge
Un-ionized Ammonia (mg/L) mg/L
Site ID = 21FLHILL113
Measurement
0.0015
0.0010
0.0005
0.0000
1998
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
date
Timeseries
Outlier
Predicted
ptile

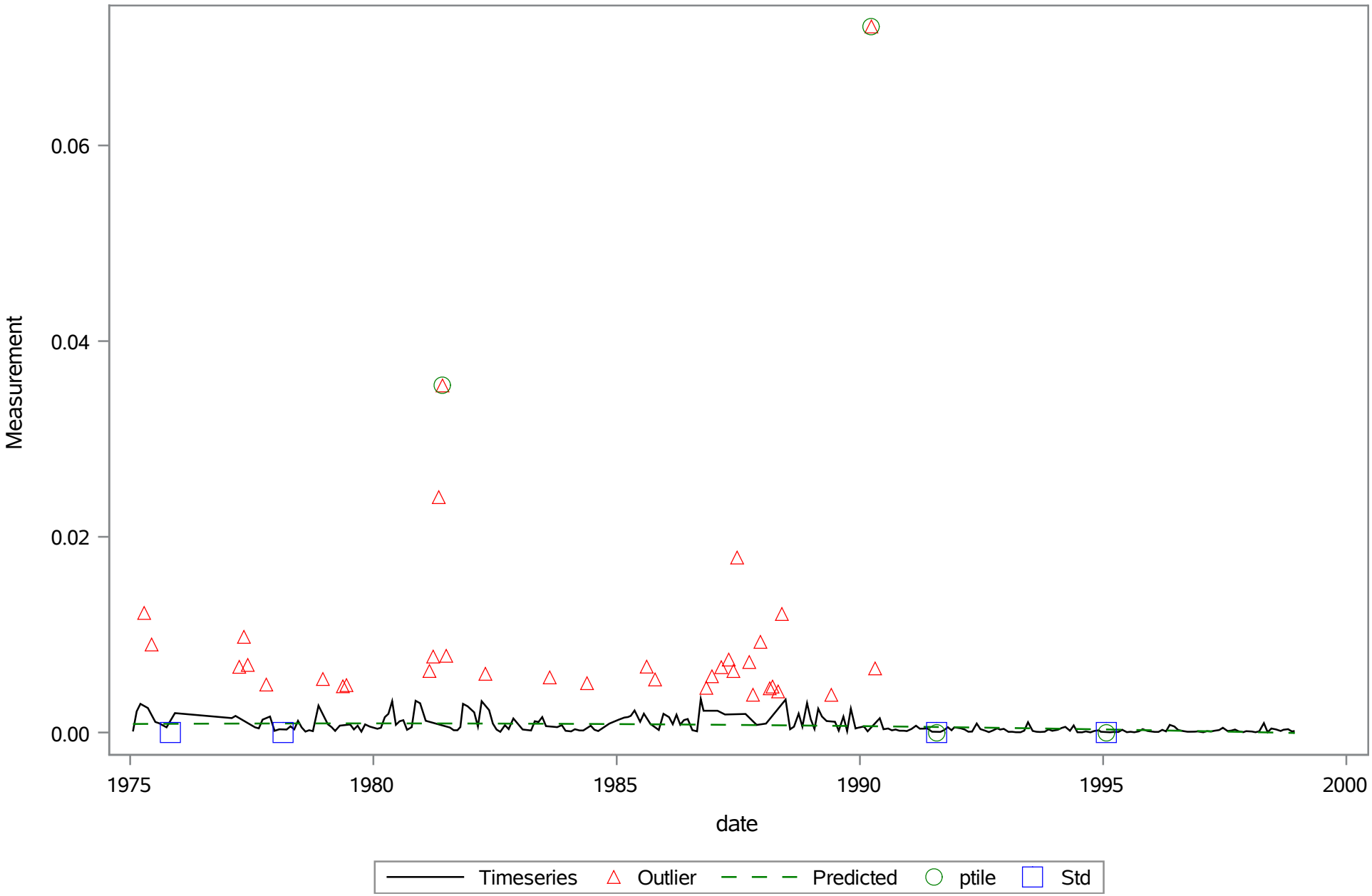

Little Manatee River
Little Manatee River at SR 674
Un-ionized Ammonia (mg/L) mg/L
Site ID = 21FLHILL129
Measurement
0.0020
0.0015
0.0010
0.0005
0.0000
1998
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
date
Timeseries
Outlier
Predicted
ptile

Little Manatee River
Little Manatee River at CR 579
Un-ionized Ammonia (mg/L) mg/L
Site ID = 21FLHILL140

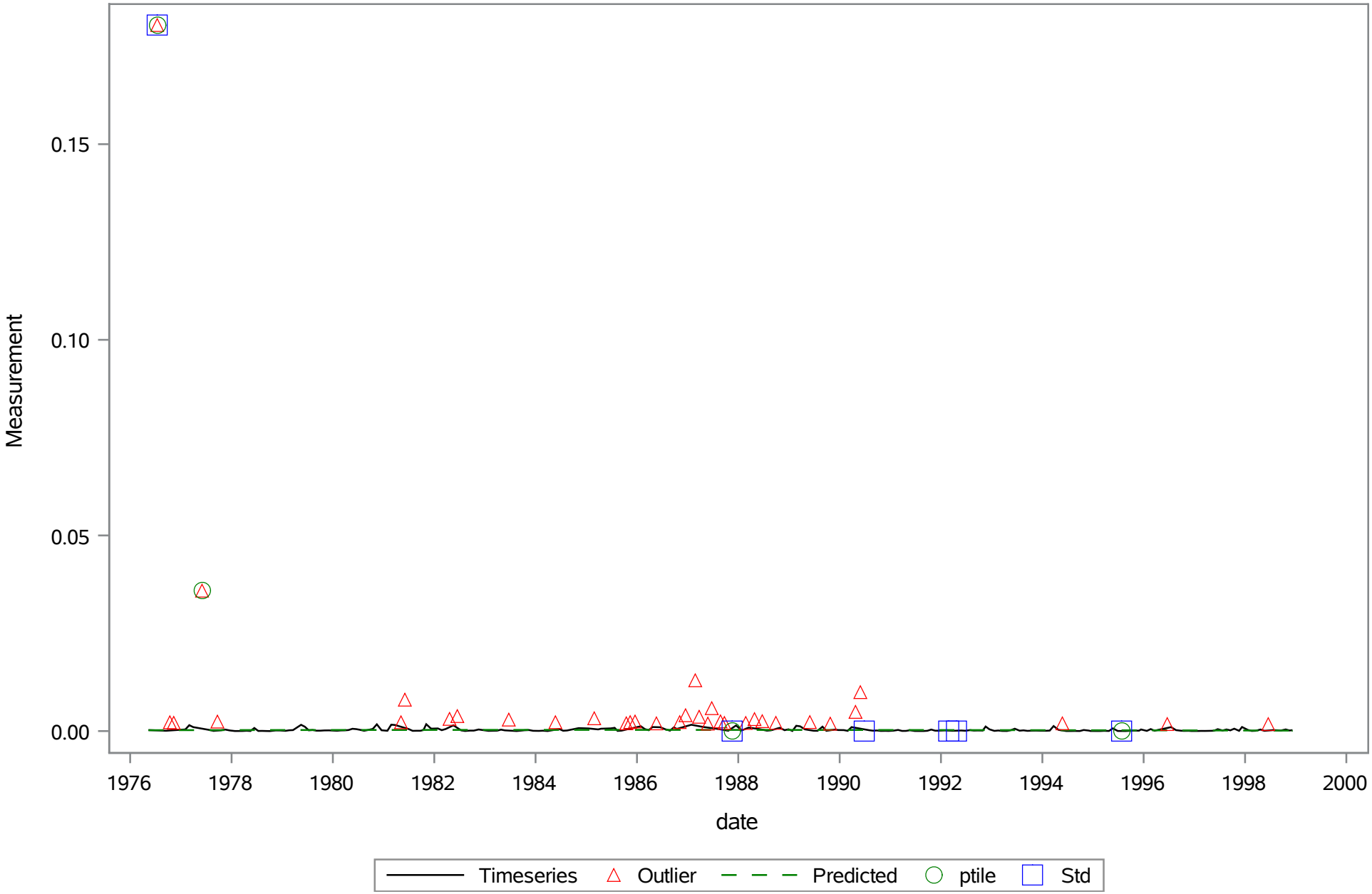


Little Manatee River
LITTLE MANATEE R AT CR579
Un-ionized Ammonia (mg/L) mg/L
Site ID = 21FLHILL24010013

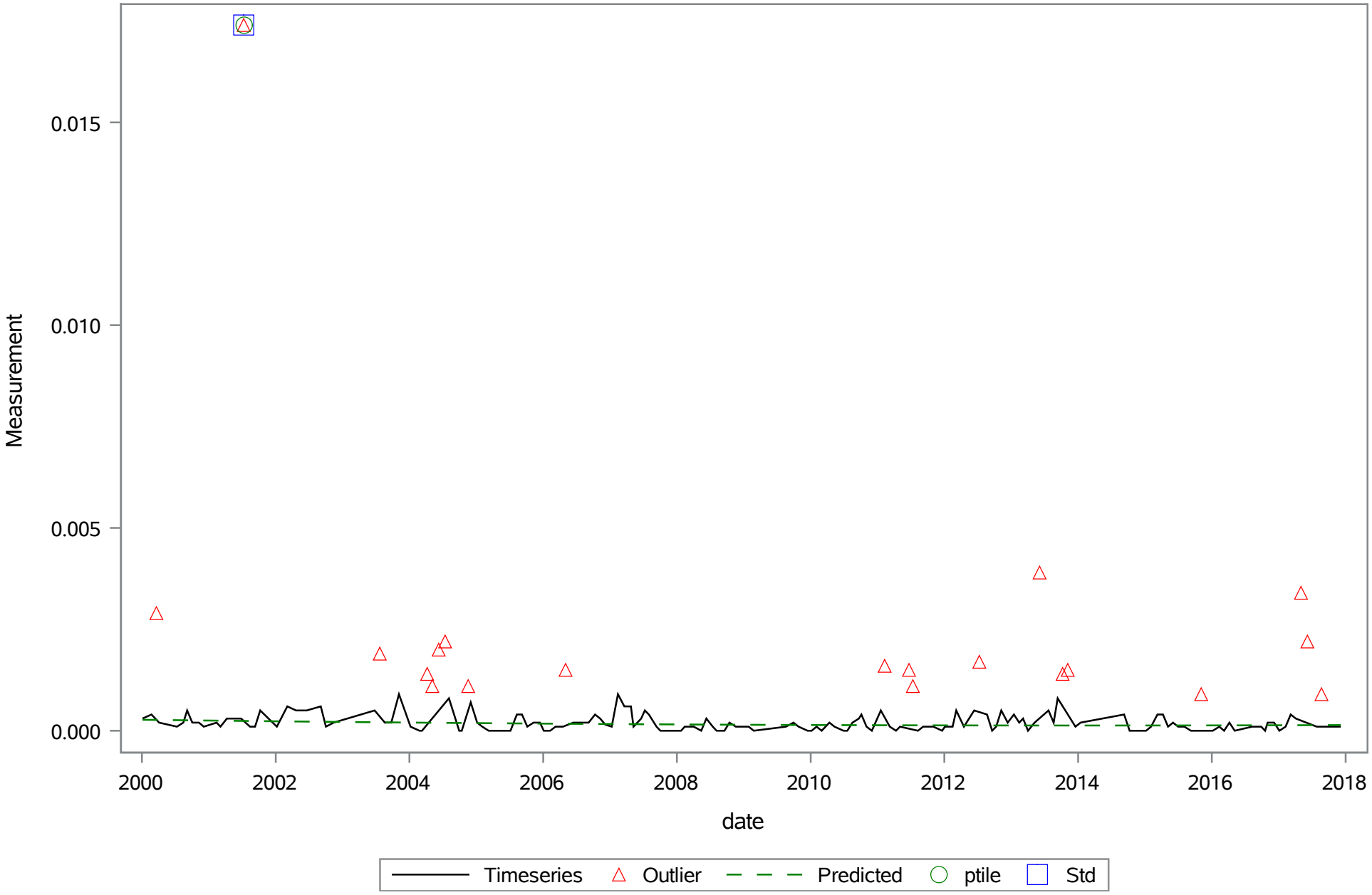



Little Manatee River
L MANATEE R BR US 301
Un-ionized Ammonia (mg/L) mg/L
Site ID = 21FLHILL24010100
Measurement
0.06
0.04
0.02
0.00
1975
1980
1985
1990
1995
2000
date
Timeseries
Outlier
Predicted
ptile
Std

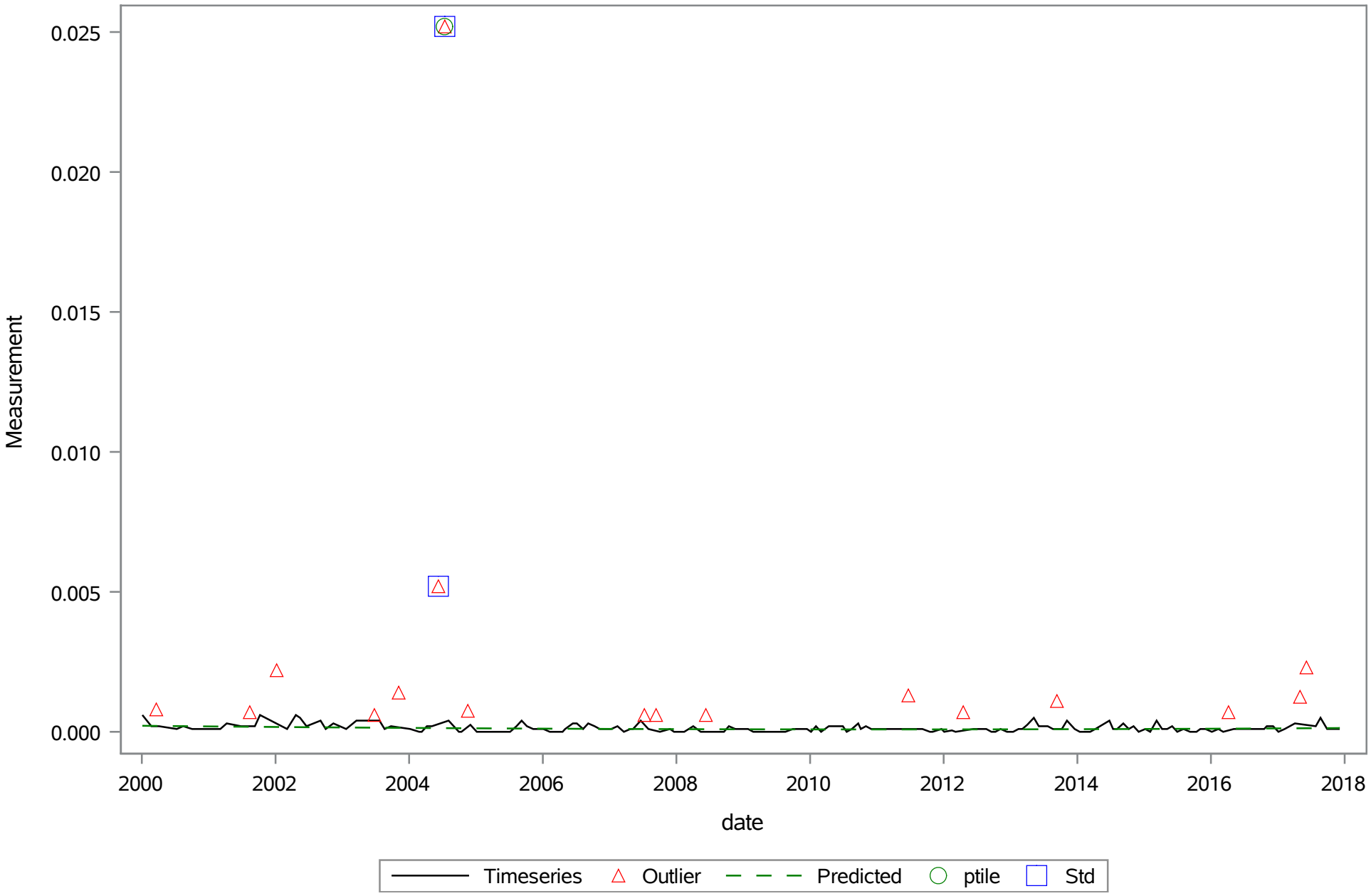
Little Manatee River
LITTLE MANATEE R AT SR #674
Un-ionized Ammonia (mg/L) mg/L
Site ID = 21FLHILL24010110



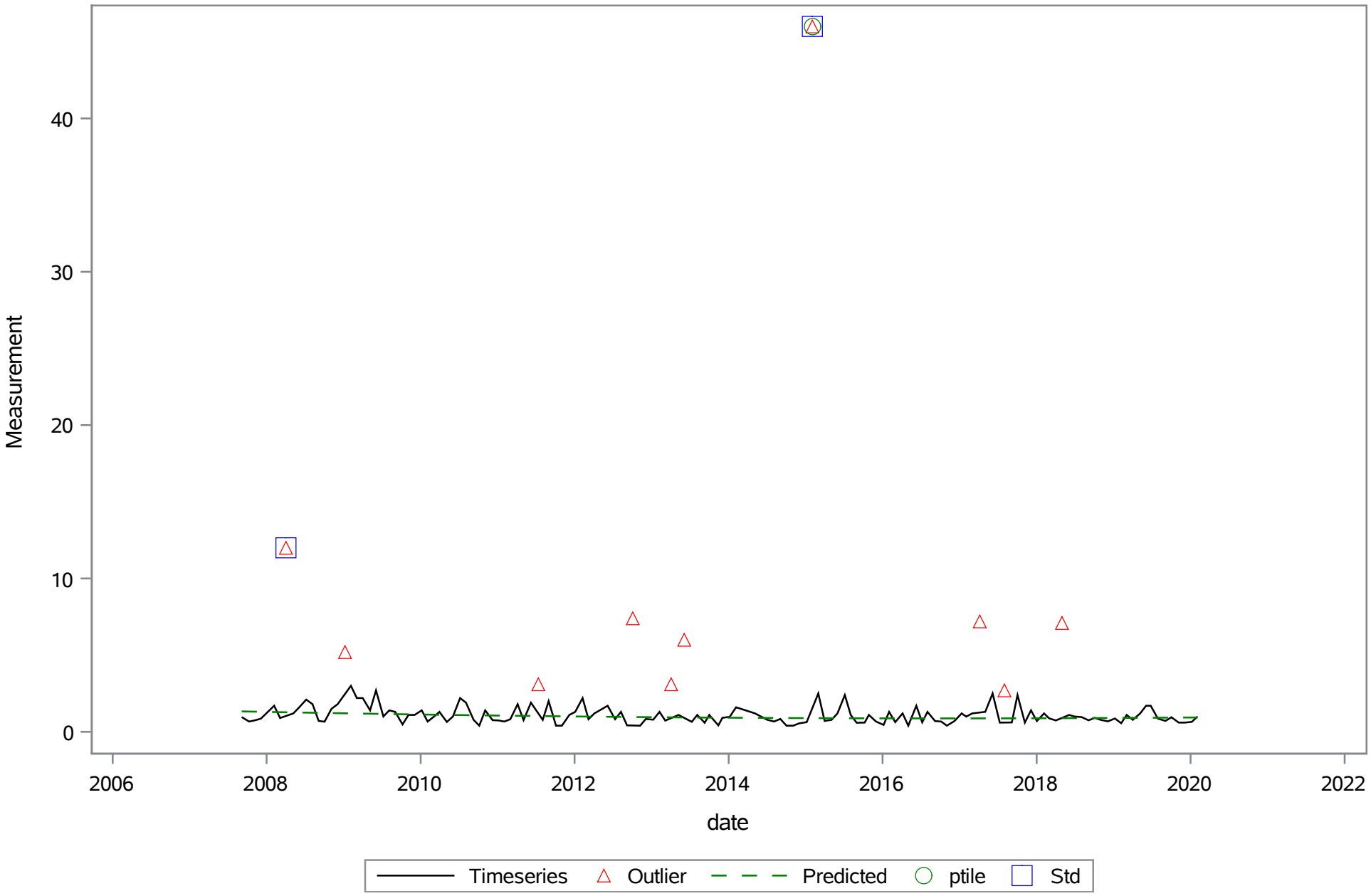
Little Manatee River
D1
Un-ionized Ammonia (mg/L) mg/L
Site ID = 21FLMANAD1



Little Manatee River
D3
Un-ionized Ammonia (mg/L) mg/L
Site ID = 21FLMANAD3



Little Manatee River
LITTLE MANATEE RIVER AT US HWY 301
Uncorr. Chlorophyll-a (µg/L) µg/L
Site ID = 21FLGW 3555

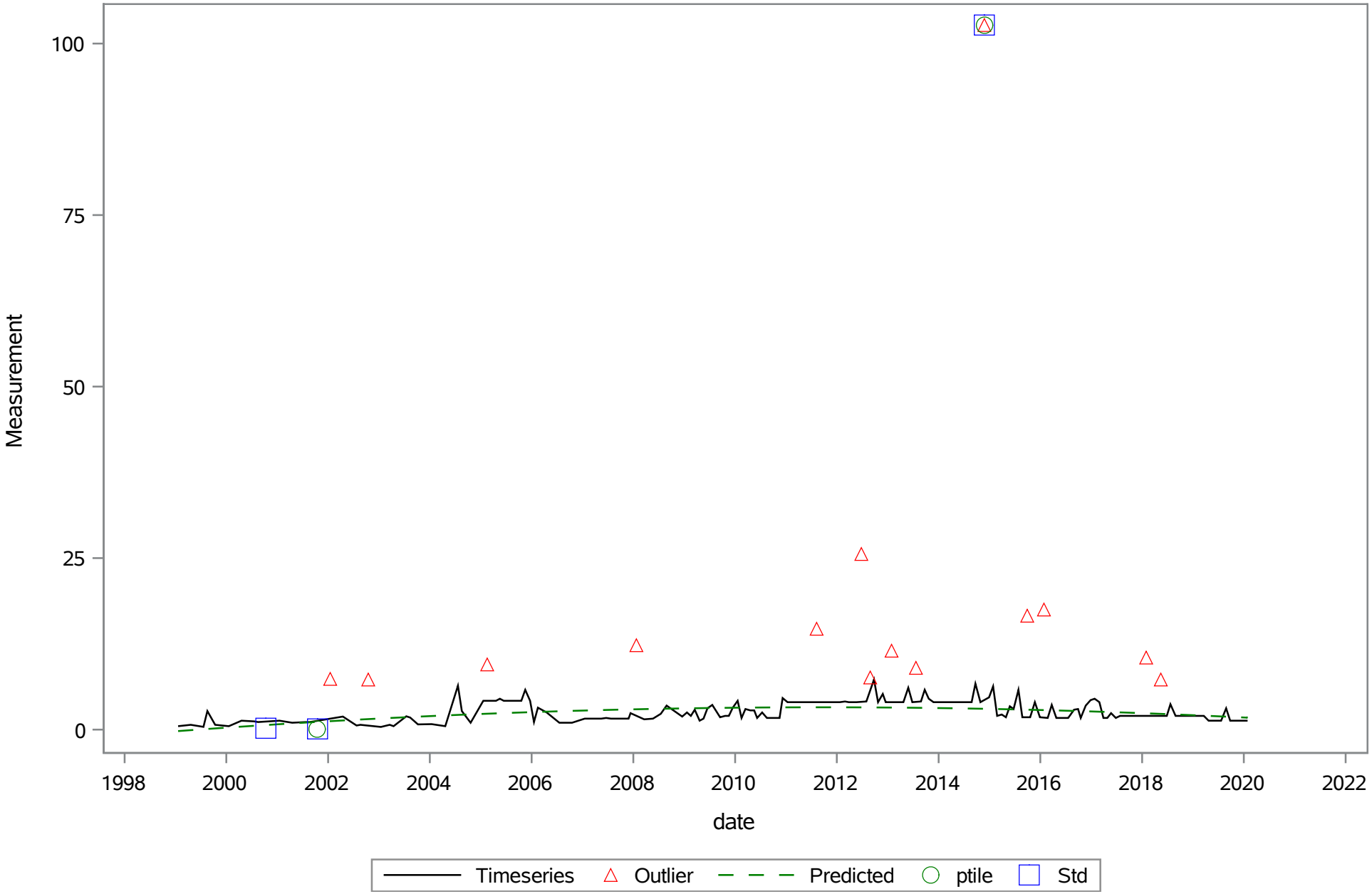


Little Manatee River

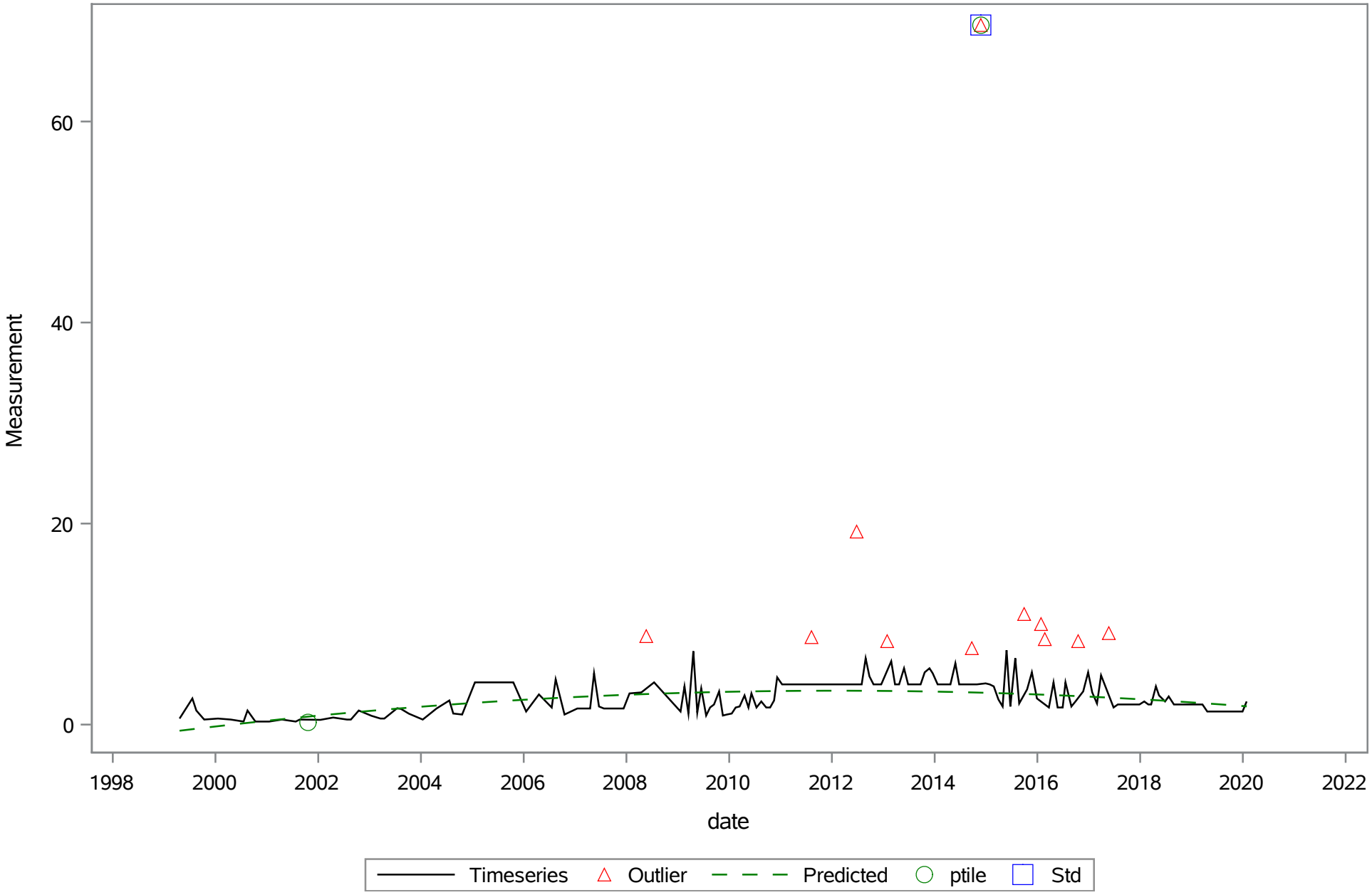
Little Manatee River at US 301 bridge

Uncorr. Chlorophyll-a (µg/L) µg/L

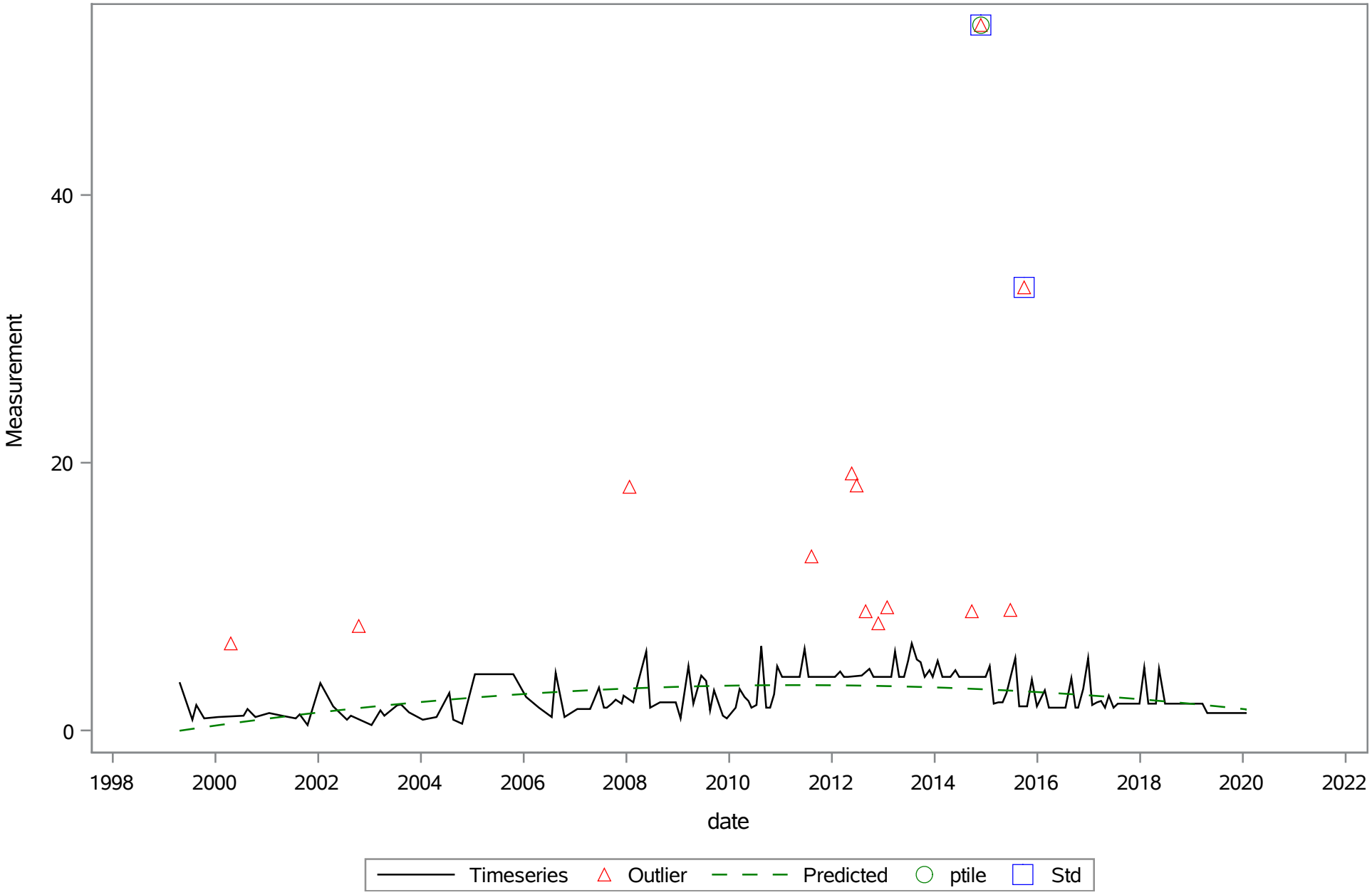
Site ID = 21FLHILL113



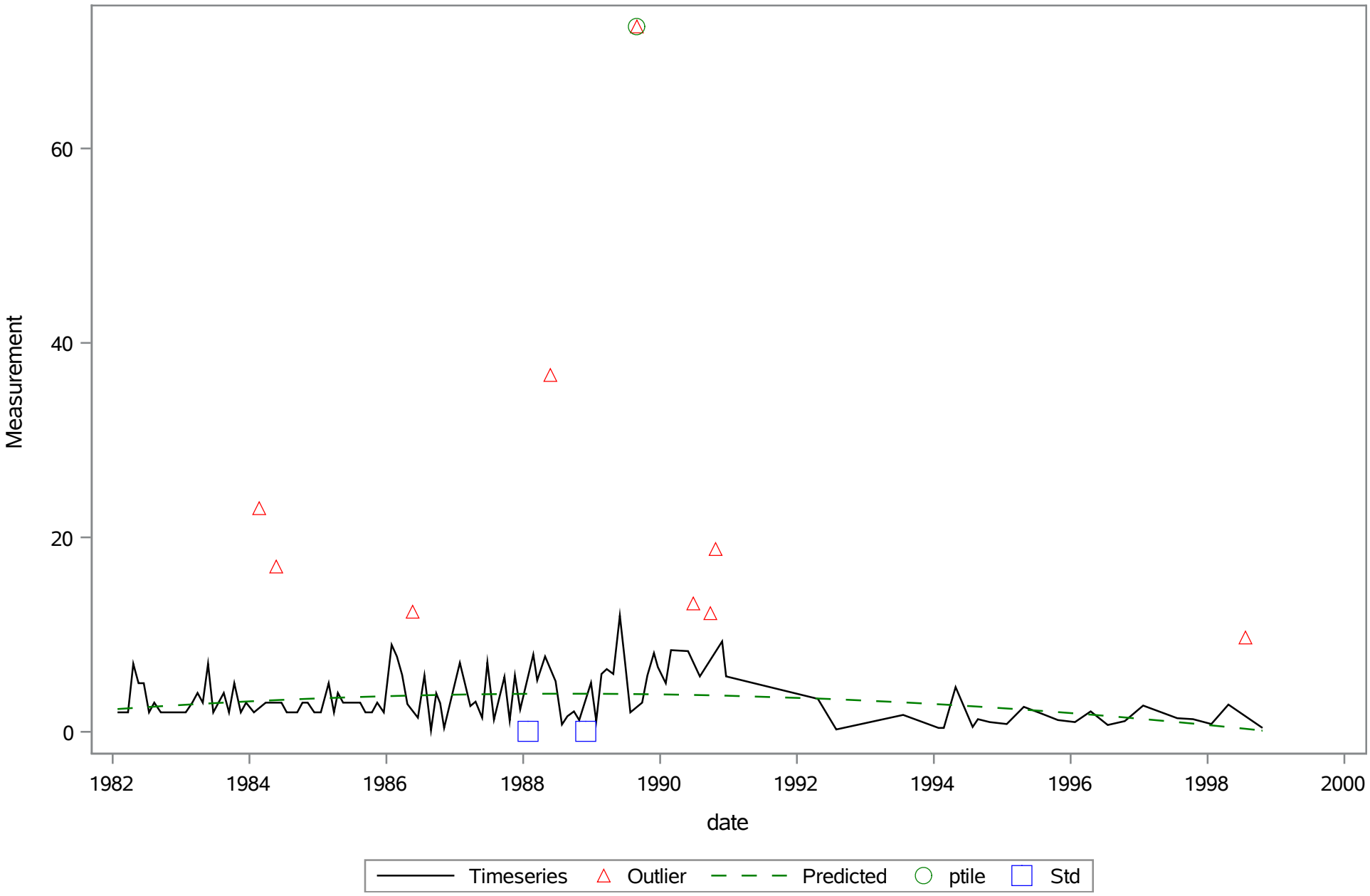
Little Manatee River
Little Manatee River at SR 674
Uncorr. Chlorophyll-a (µg/L) µg/L
Site ID = 21FLHILL129

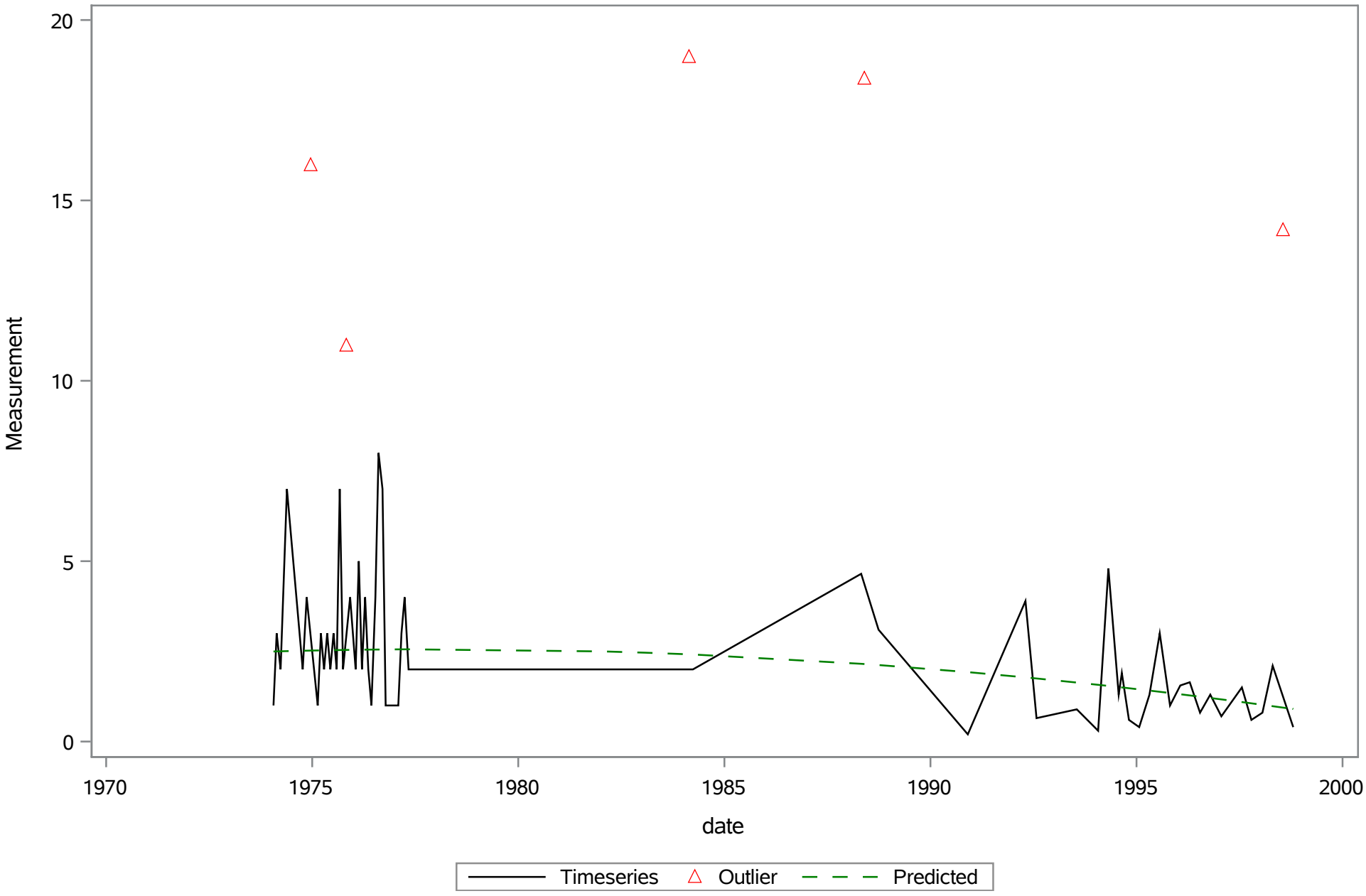


Little Manatee River
Little Manatee River at CR 579
Uncorr. Chlorophyll-a (µg/L) µg/L
Site ID = 21FLHILL140

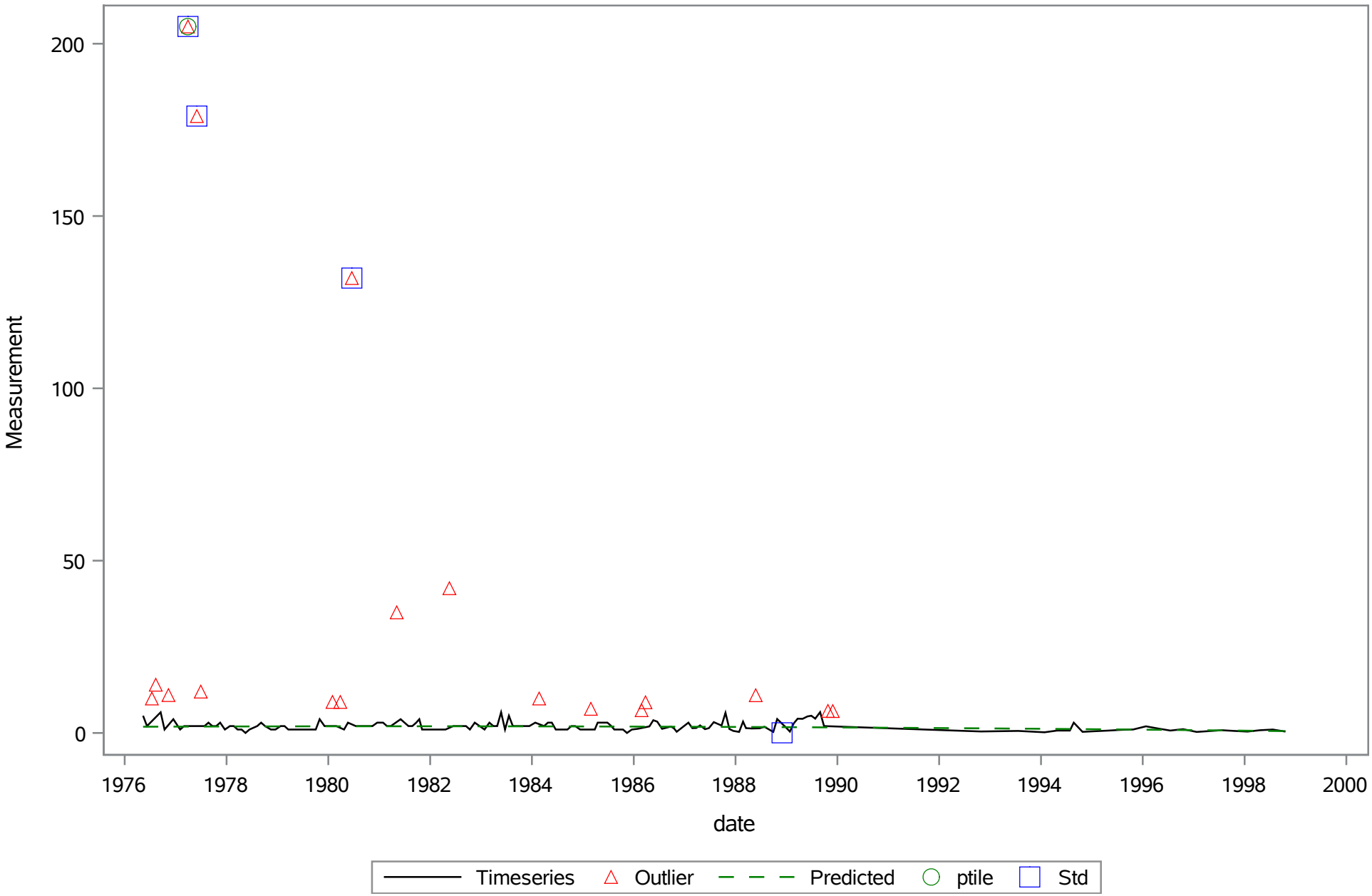


Little Manatee River
LITTLE MANATEE R AT CR579
Uncorr. Chlorophyll-a (µg/L) µg/L
Site ID = 21FLHILL24010013




Little Manatee River
L MANATEE R BR US 301
Uncorr. Chlorophyll-a (µg/L) µg/L
Site ID = 21FLHILL24010100
Measurement
20
15
10
5
0
1970
1975
1980
1985
1990
1995
2000
date
Timeseries
Outlier
Predicted

Little Manatee River
LITTLE MANATEE R AT SR #674
Uncorr. Chlorophyll-a (µg/L) µg/L
Site ID = 21FLHILL24010110

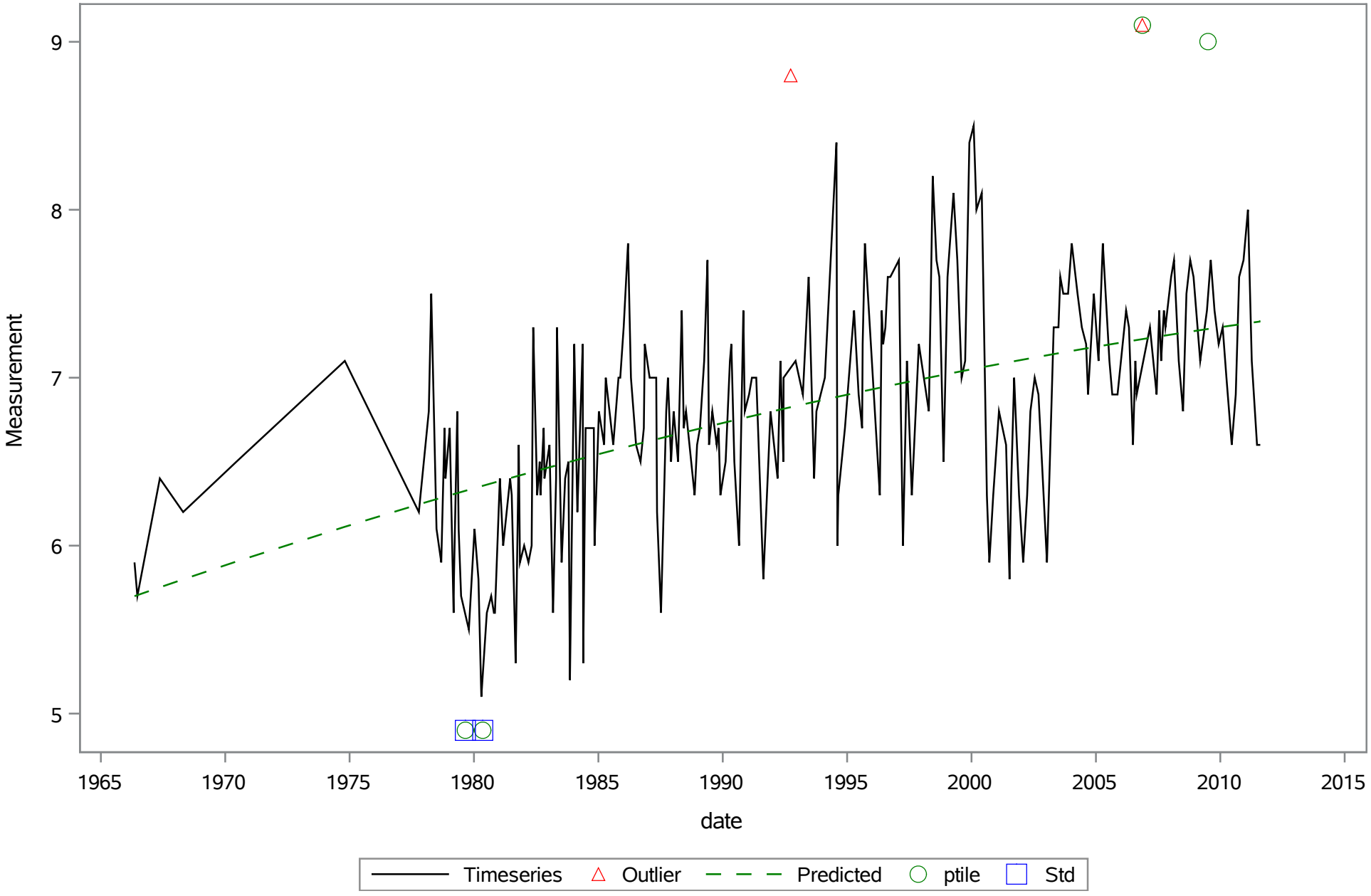


Little Manatee River

LITTLE MANATEE RIVER NEAR FT. LONESOME FL

pH (SU) SU

Site ID = 112WRD 02300100

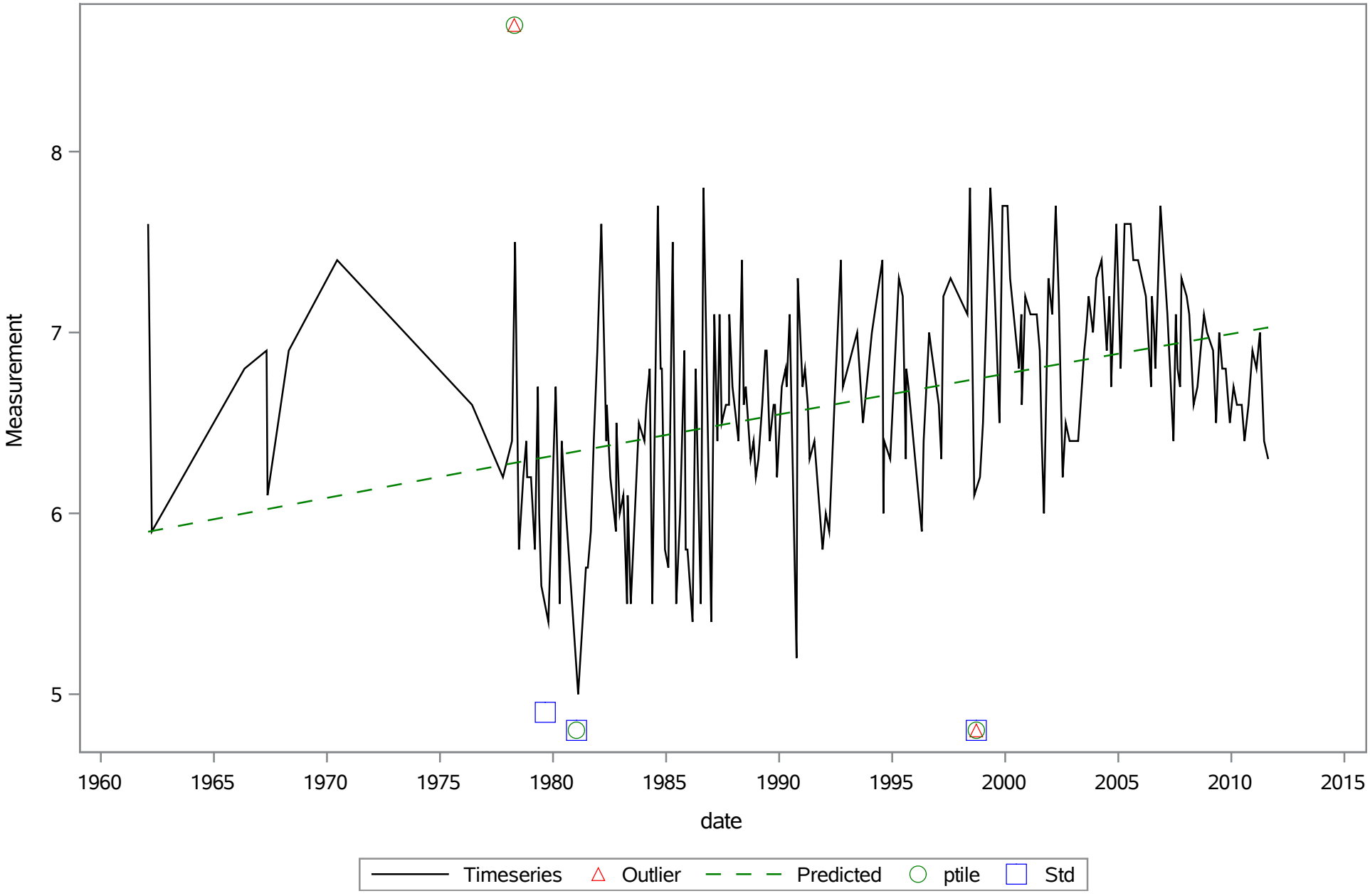


Little Manatee River

SOUTH FORK LITTLE MANATEE RIVER NEAR DUETTE FL

pH (SU) SU

Site ID = 112WRD 02300200

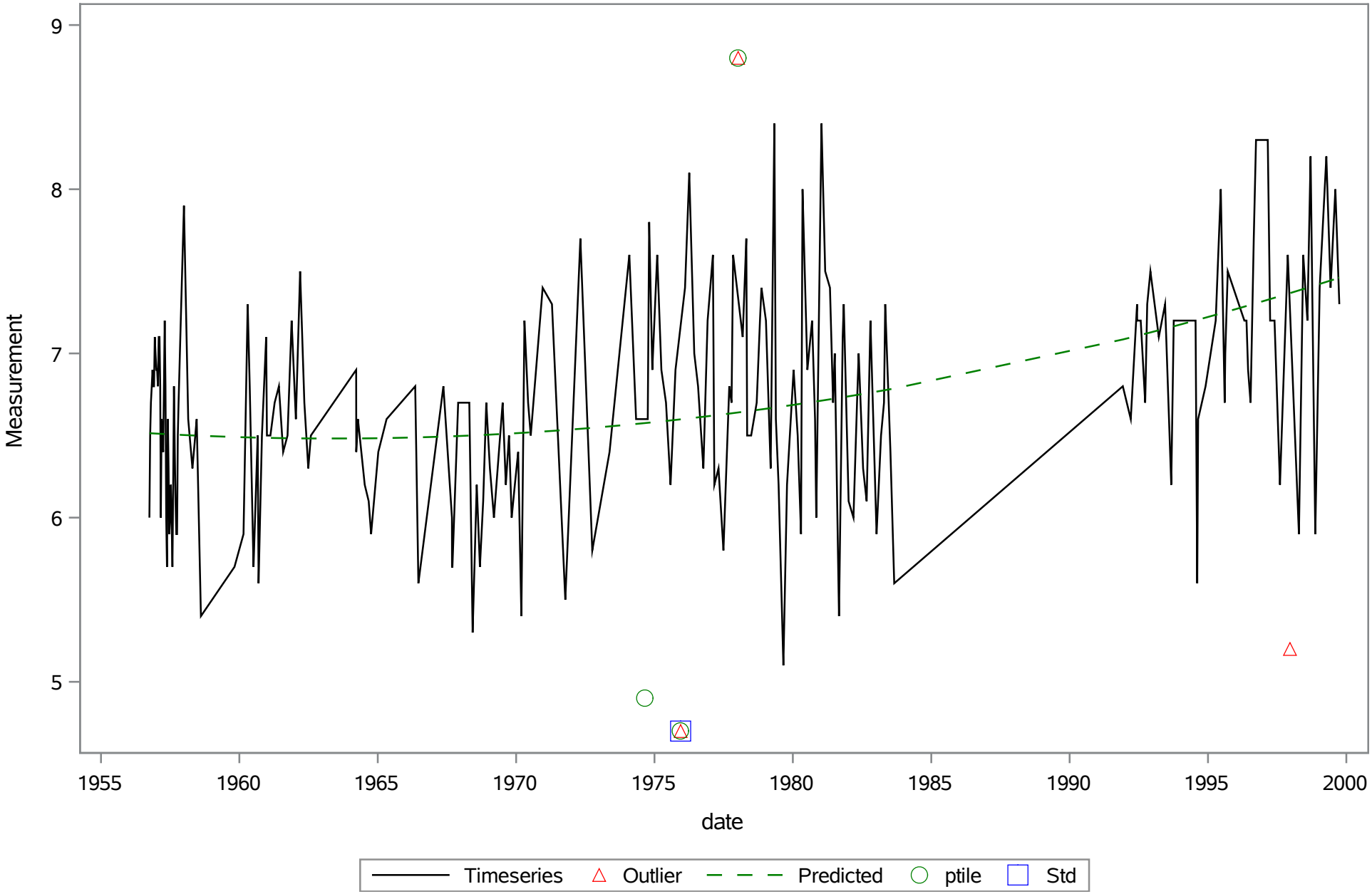


Little Manatee River

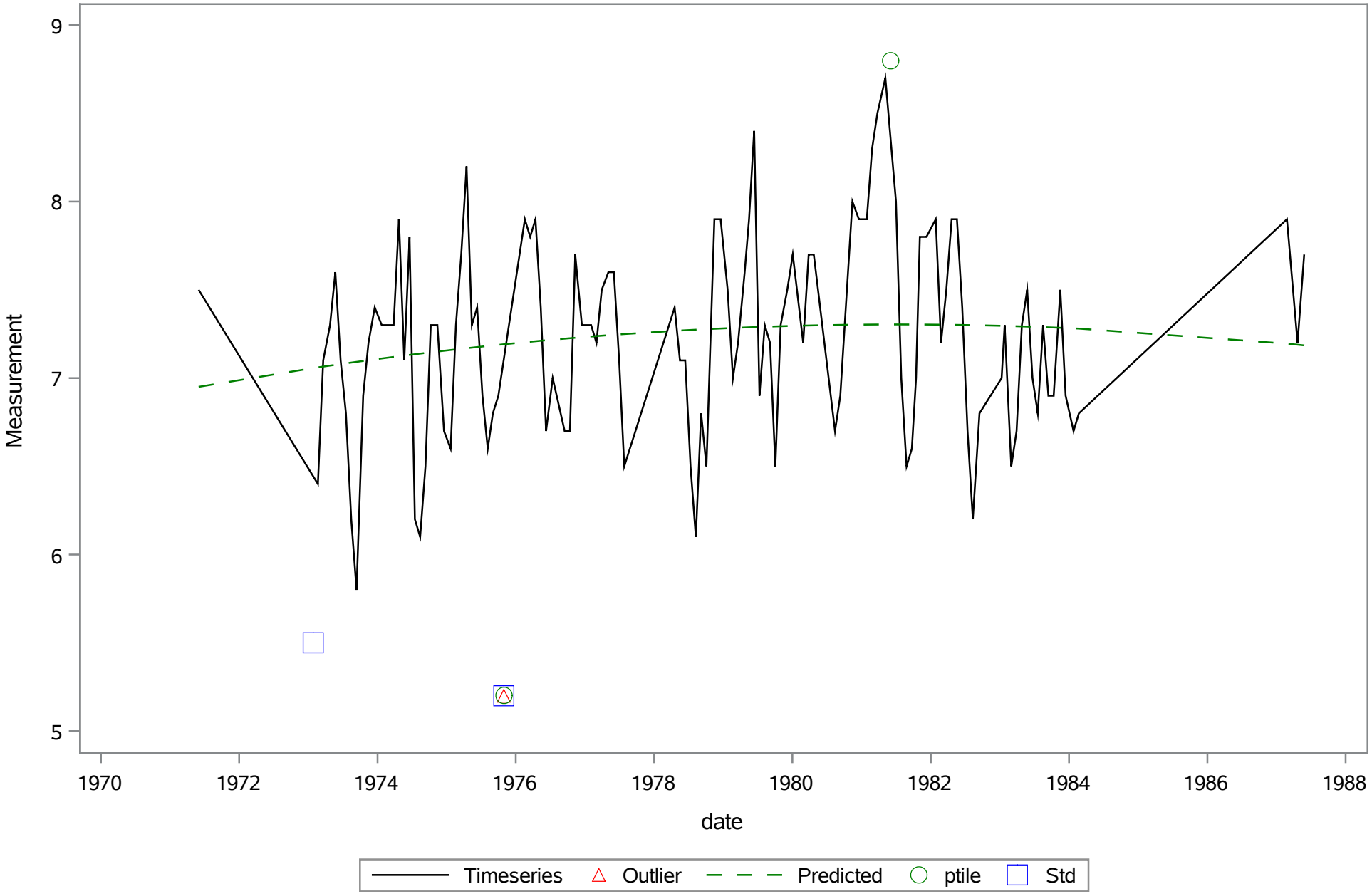
LITTLE MANATEE RIVER NEAR WIMAUMA FL

pH (SU) SU

Site ID = 112WRD 02300500



Little Manatee River
L MANATEE R BR US 301
pH (SU) SU
Site ID = 21FLA 24010100

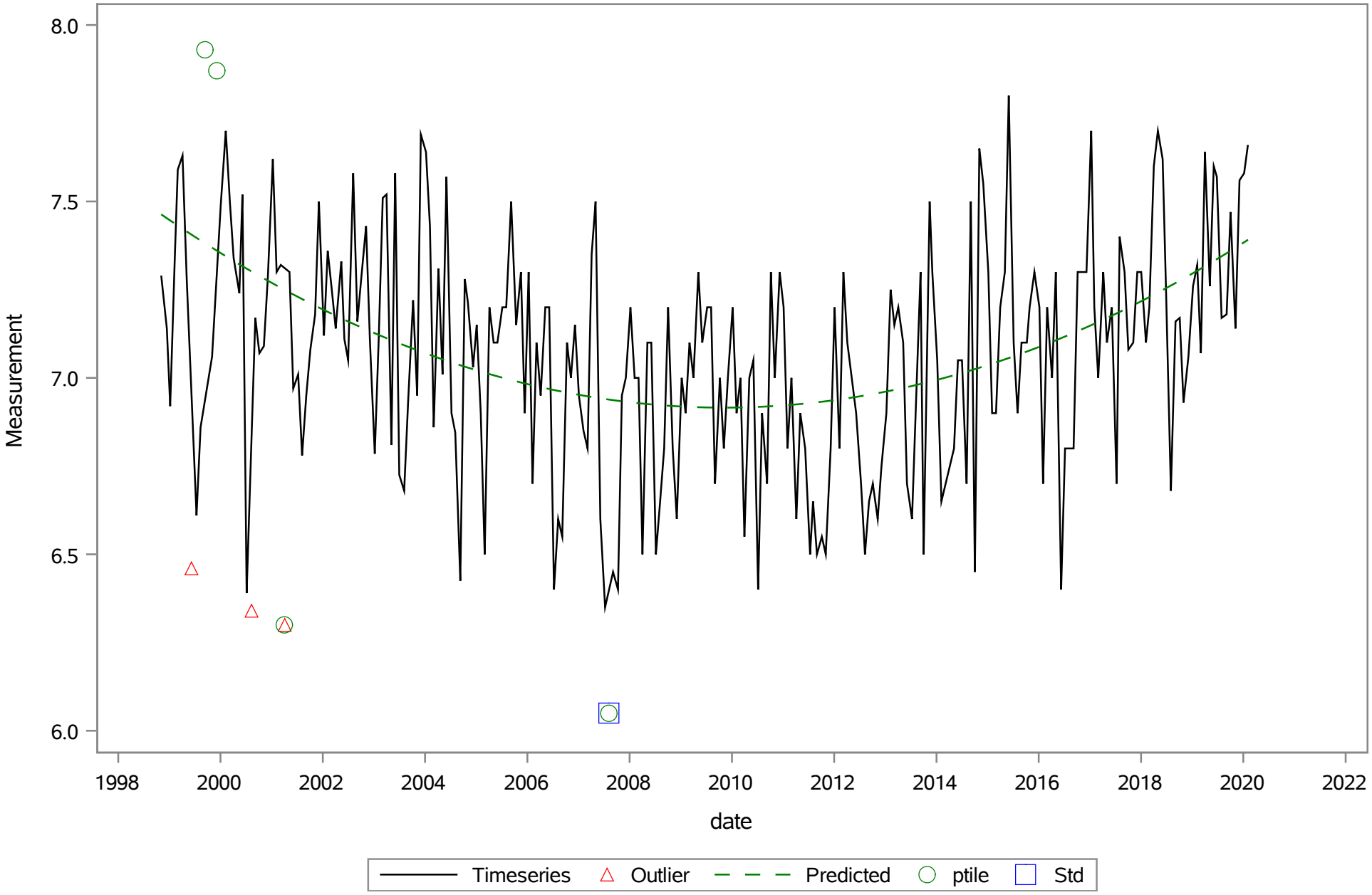


Little Manatee River

LITTLE MANATEE RIVER AT US HWY 301

pH (SU) SU

Site ID = 21FLGW 3555

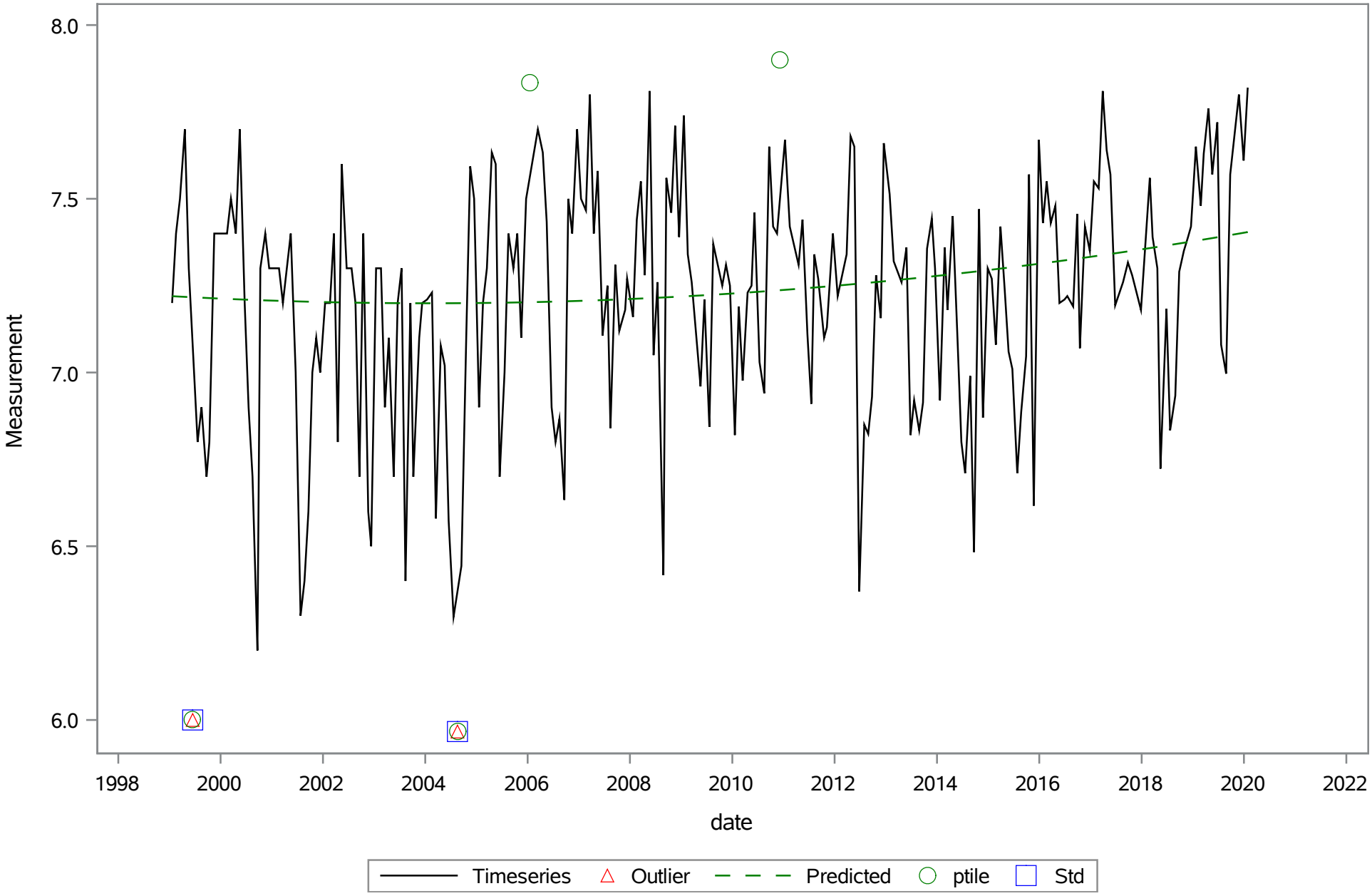


Little Manatee River

Little Manatee River at US 301 bridge

pH (SU) SU

Site ID = 21FLHILL113

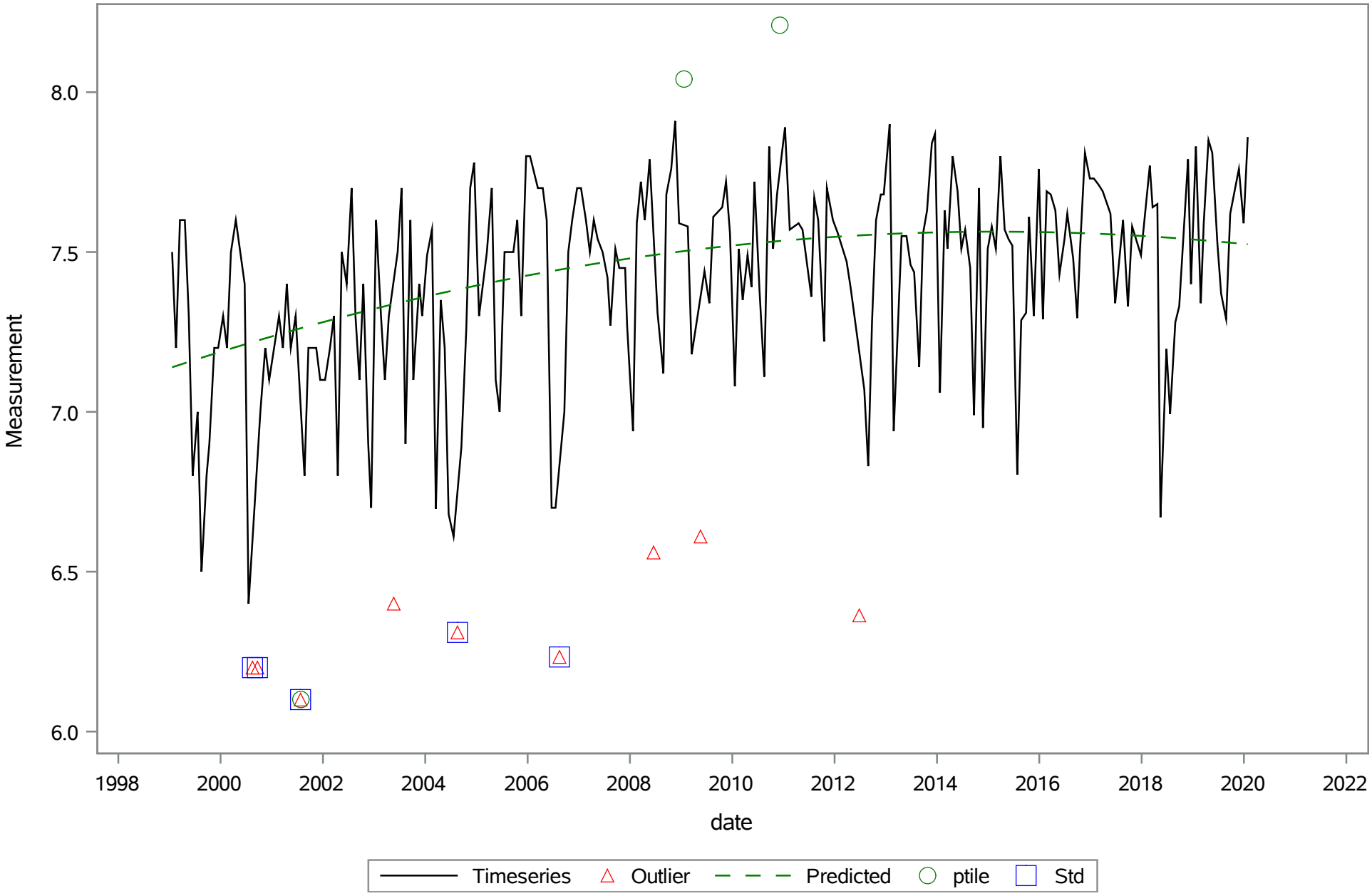


Little Manatee River

Little Manatee River at SR 674

pH (SU) SU

Site ID = 21FLHILL129

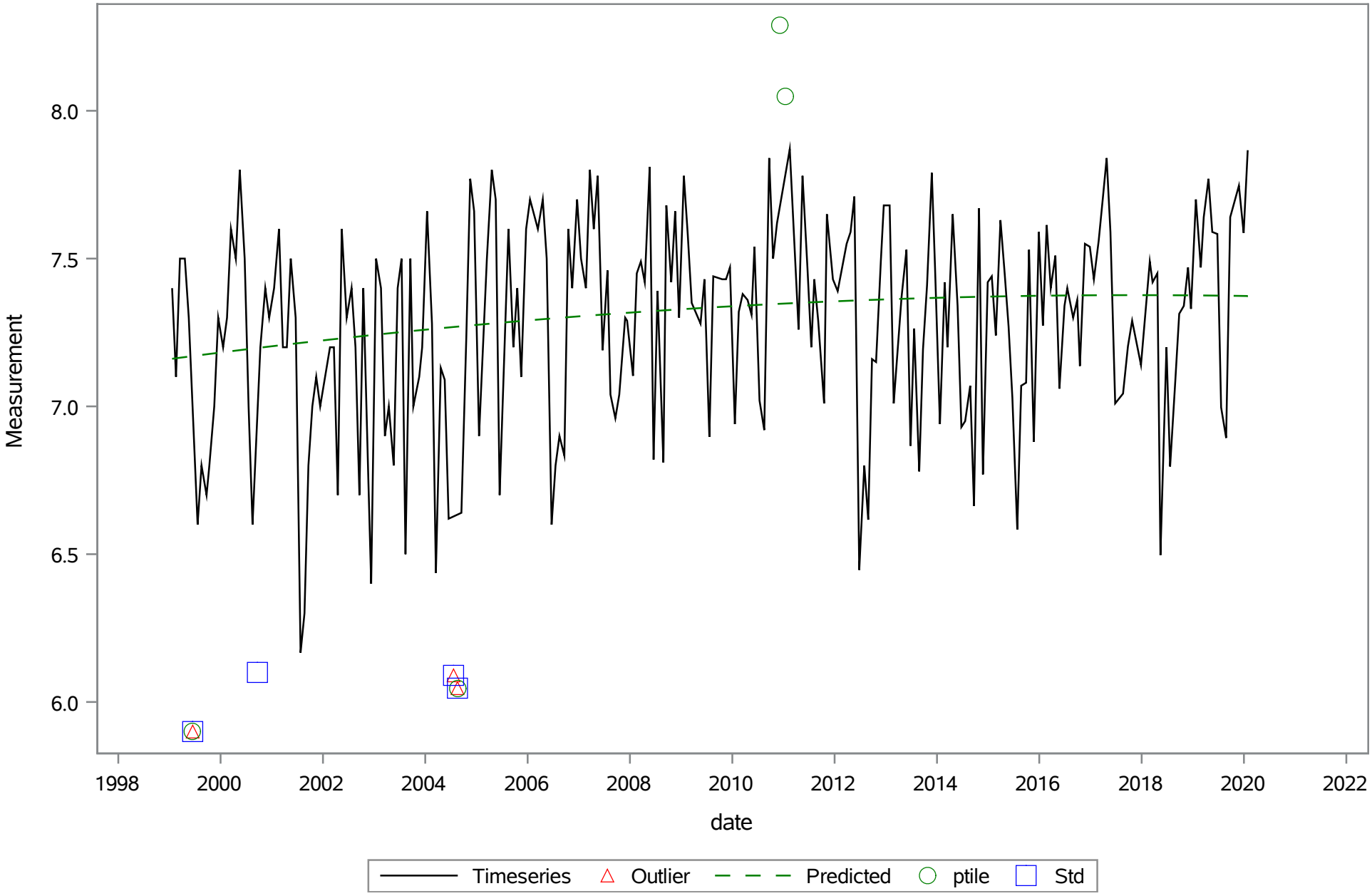


Little Manatee River

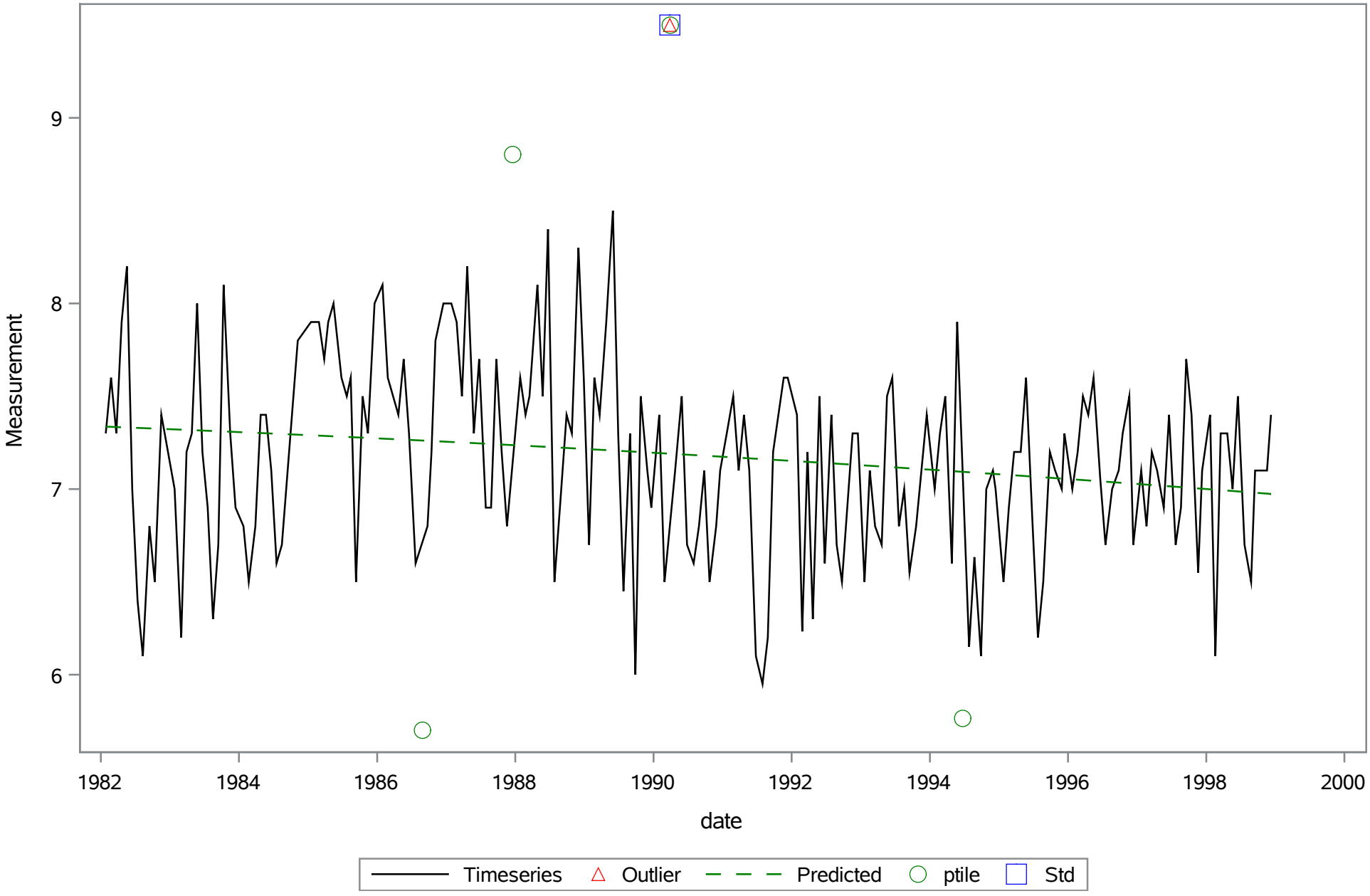
Little Manatee River at CR 579

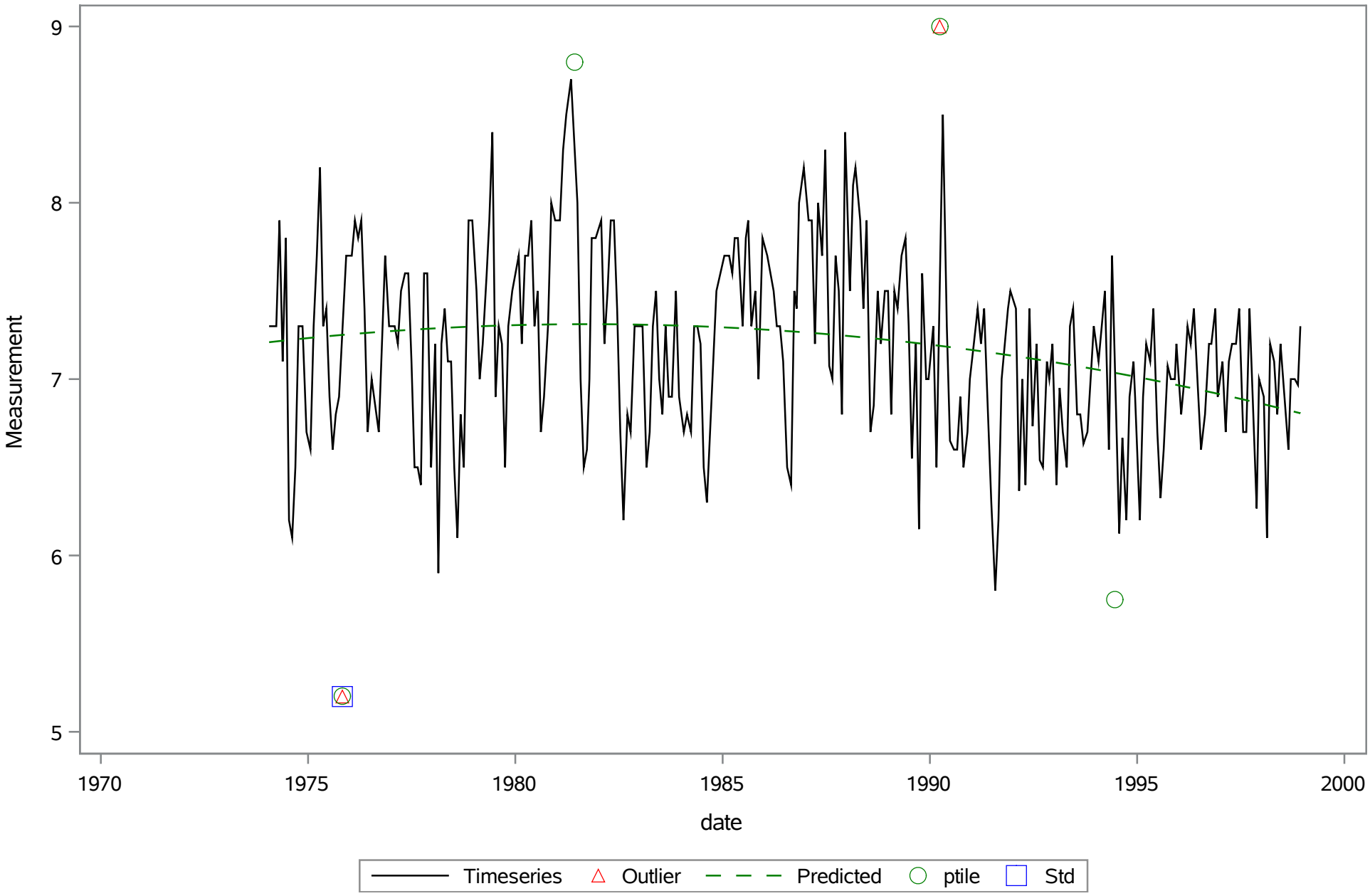
pH (SU) SU

Site ID = 21FLHILL140

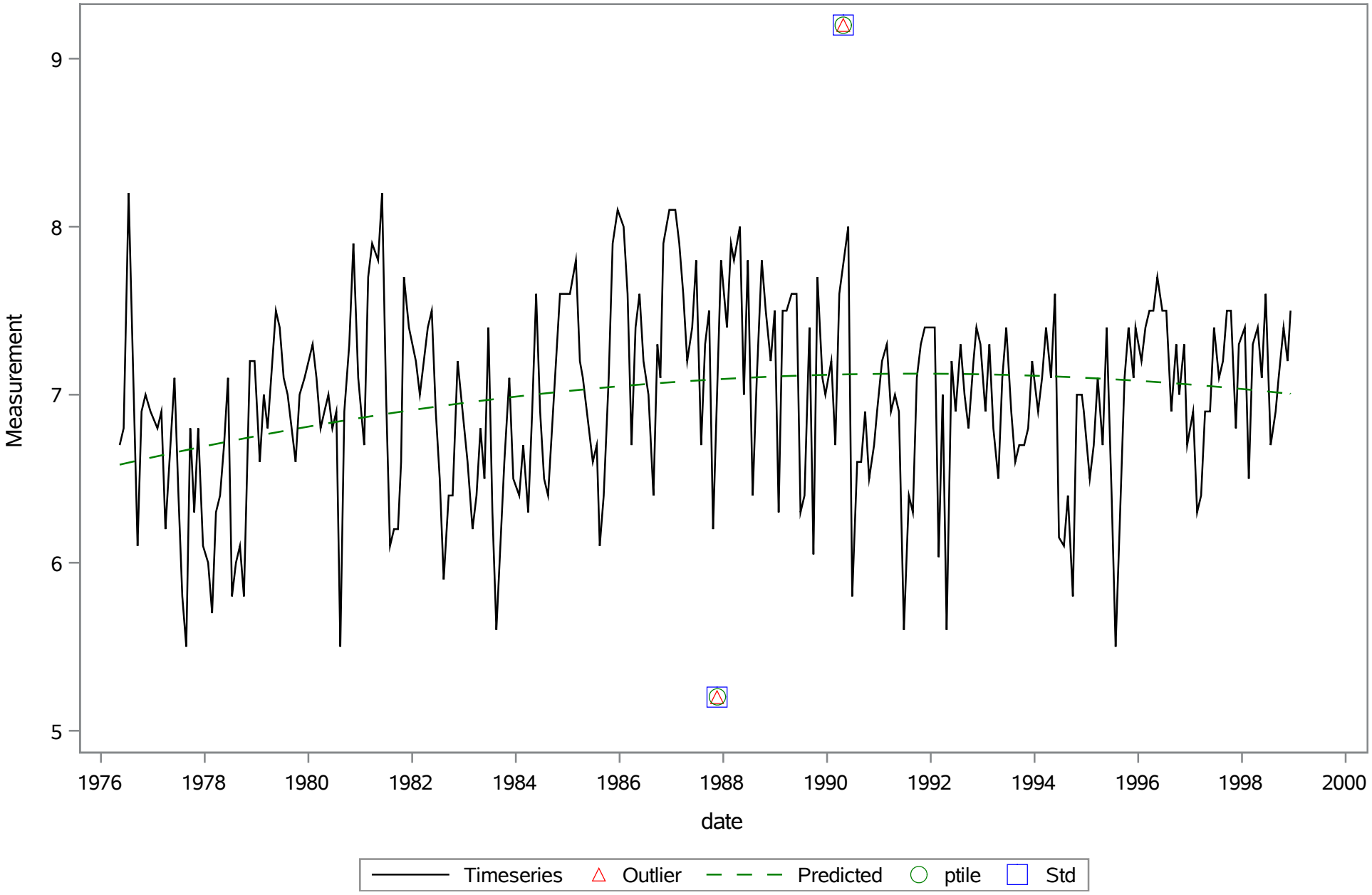


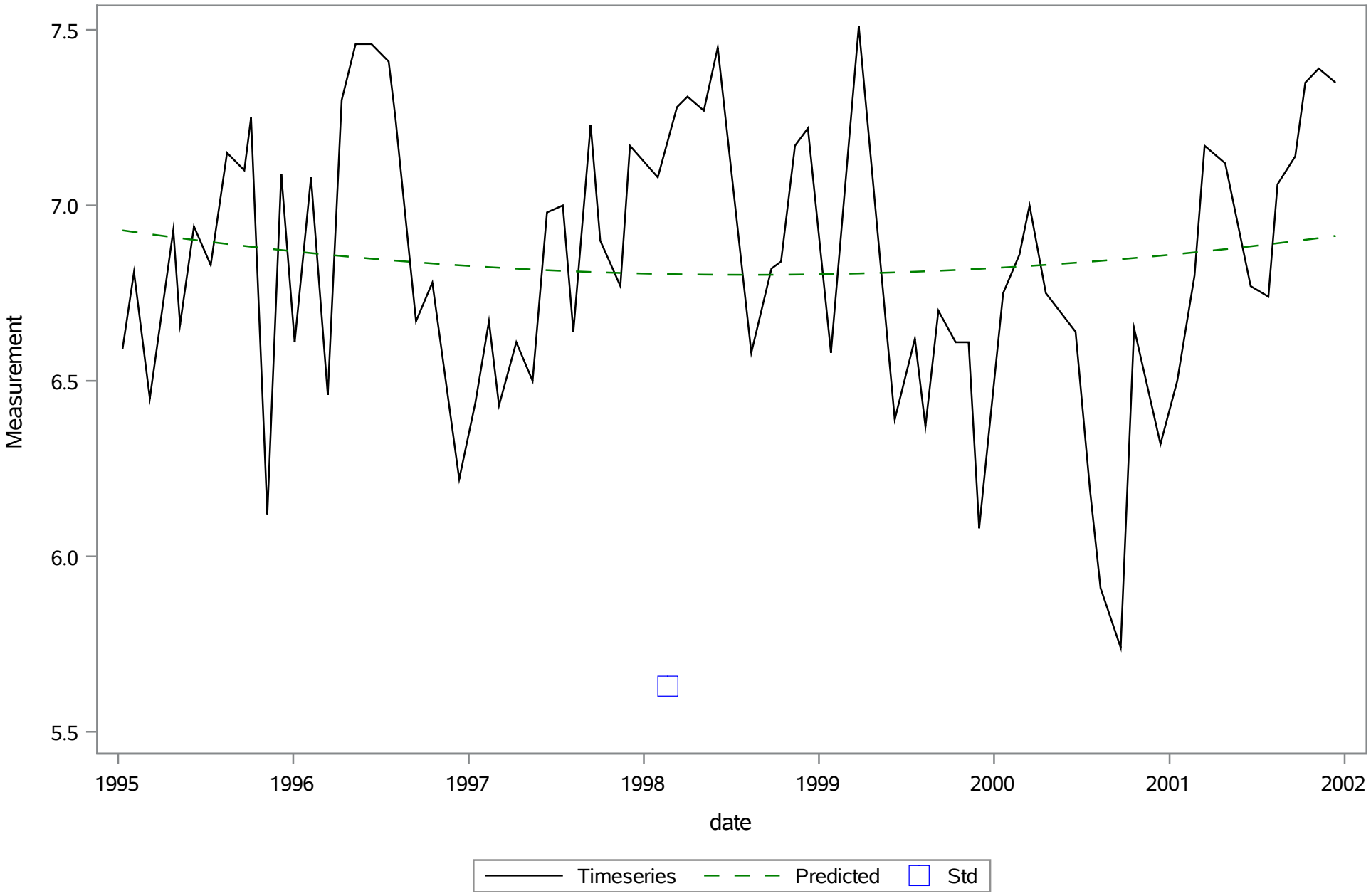
Little Manatee River
LITTLE MANATEE R AT CR579
pH (SU) SU
Site ID = 21FLHILL24010013

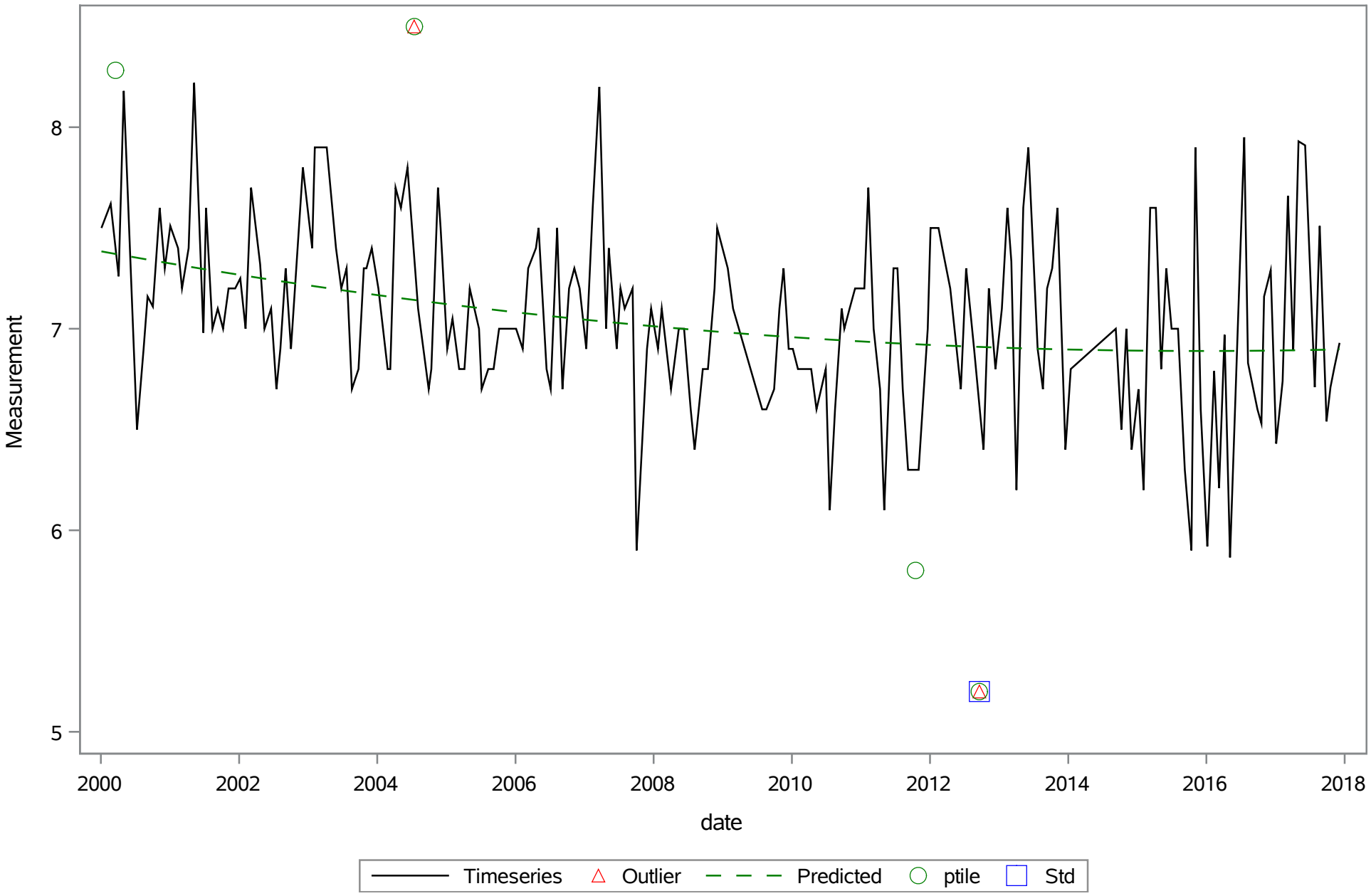


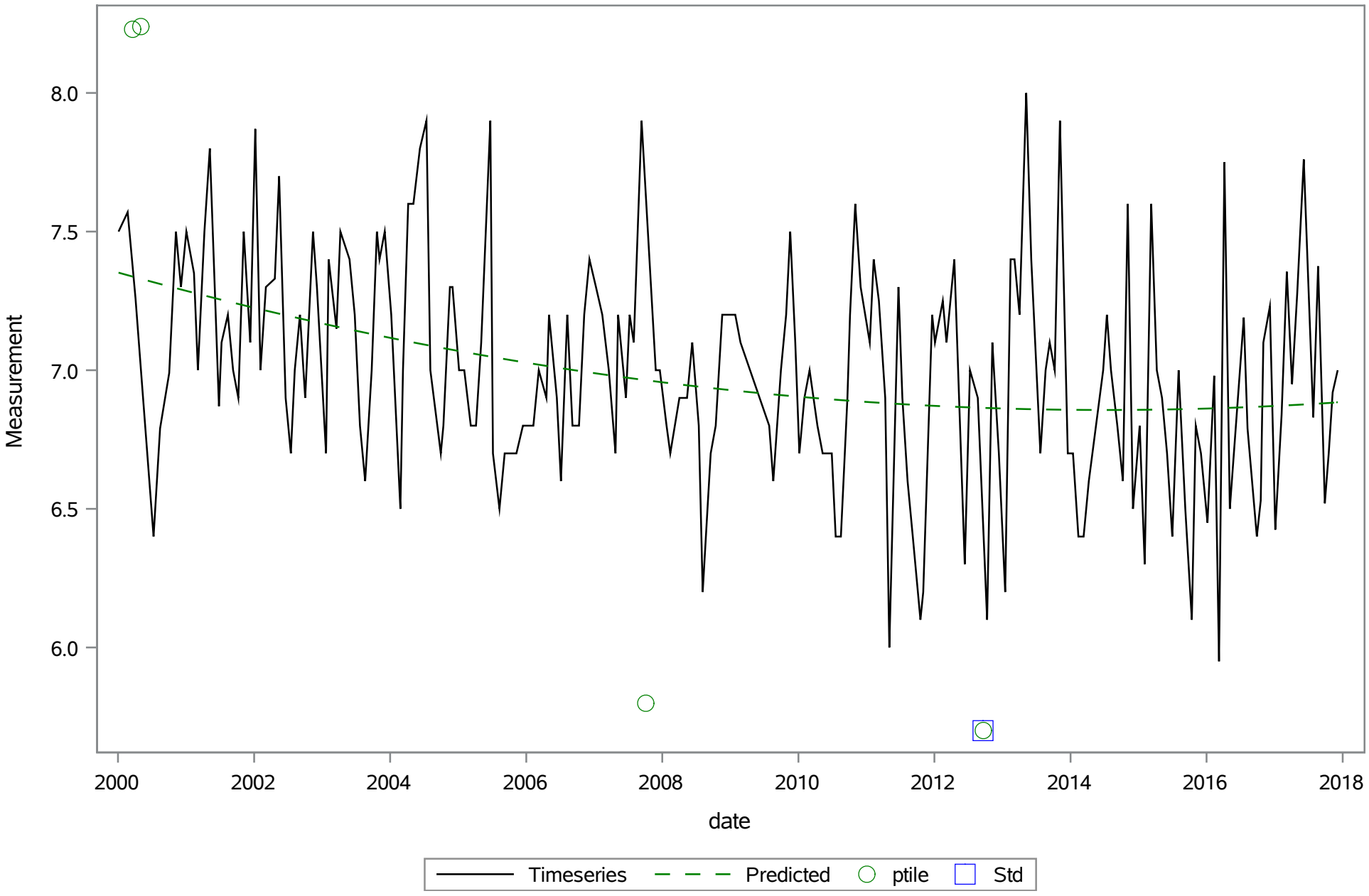

Little Manatee River
L MANATEE R BR US 301
pH (SU) SU
Site ID = 21FLHILL24010100
Measurement
9
8
7
6
5
1970
1975
1980
1985
1990
1995
2000
date
Timeseries
Outlier
Predicted
ptile
Std

Little Manatee River
LITTLE MANATEE R AT SR #674
pH (SU) SU
Site ID = 21FLHILL24010110




Little Manatee River
Little Manatee R. at SR674
pH (SU) SU
Site ID = 21FLIMCALM674
Measurement
7.5
7.0
6.5
6.0
5.5
1995
1996
1997
1998
1999
2000
2001
2002
date
Timeseries
Predicted
Std


Little Manatee River
D1
pH (SU) SU
Site ID = 21FLMANAD1
Measurement
8
7
6
5
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
date
Timeseries
Outlier
Predicted
ptile
Std


Little Manatee River
D3
pH (SU) SU
Site ID = 21FLMANAD3
Measurement
8.0
7.5
7.0
6.5
6.0
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
date
Timeseries
Predicted
ptile
Std

2e: Manatee County log log linear regression

Linear Regression Results for Manatee County Stations in the South Fork of the Little Manatee River

Parameter	Site Name	Nobs	Month Pval	Flow Slope	Flow Pval	R2	Result
BOD 5-Day (mg/L)	D1	82	0.4338	0.065694	0.1347	0.159648	0
BOD 5-Day (mg/L)	D3	85	0.1214	0.042715	0.3558	0.195666	0
Color (PCU)	D1	190	0.0354	0.454190	<.0001	0.501009	1
Color (PCU)	D3	197	0.0075	0.337375	<.0001	0.549575	1
Corr. Chlorophyll-a (µg/L)	D1	181	0.1154	0.014595	0.8093	0.095331	0
Corr. Chlorophyll-a (µg/L)	D3	189	0.1411	-0.020483	0.6690	0.084854	0
Dissolved Oxygen (Percent Saturation)	D1	189	0.5081	-0.035240	0.0201	0.101811	-1
Dissolved Oxygen (Percent Saturation)	D3	195	0.4232	-0.006385	0.6865	0.066502	0
Dissolved Oxygen (mg/L)	D1	192	<.0001	-0.024597	0.0663	0.302693	0
Dissolved Oxygen (mg/L)	D3	198	<.0001	0.000425	0.9799	0.204997	0
Fluoride (mg/L)	D1	127	0.3387	-0.123949	0.0003	0.269659	-1
Fluoride (mg/L)	D3	128	0.1834	-0.097039	0.0014	0.229600	-1
Nitrate (mg/L)	D1	145	0.8311	-0.163578	0.0028	0.138749	-1
Nitrate (mg/L)	D3	147	0.5617	0.004814	0.9467	0.068674	0
Nitrogen Kjeldahl as N (mg/L)	D1	165	0.2349	0.275195	<.0001	0.271317	1
Nitrogen Kjeldahl as N (mg/L)	D3	176	0.0121	0.210817	<.0001	0.300545	1
Nitrogen Total as N (mg/L)	D1	181	0.2461	0.058097	0.0642	0.133728	0
Nitrogen Total as N (mg/L)	D3	189	0.0408	0.173678	<.0001	0.278755	1
Nutrients (Nitrate-Nitrite)	D1	181	0.4250	-0.130790	0.0212	0.110526	-1
Nutrients (Nitrate-Nitrite)	D3	188	0.0982	0.075035	0.2495	0.092249	0
Phosphorus Total as P (mg/L)	D1	182	0.7355	0.284863	<.0001	0.301080	1
Phosphorus Total as P (mg/L)	D3	187	0.0053	0.012710	0.7057	0.142610	0
Phosphorus in Total Orthophosphate as P (mg/L)	D1	164	0.7477	0.440925	<.0001	0.243725	1
Phosphorus in Total Orthophosphate as P (mg/L)	D3	170	0.0536	-0.008723	0.8045	0.113705	0
Salinity	D1	181	0.1262	-0.040548	0.4545	0.106002	0
Salinity	D3	182	0.4845	0.014512	0.8289	0.060740	0
Specific Conductance (µmhos/cm)	D1	189	0.2492	-0.174459	<.0001	0.246904	-1
Specific Conductance (µmhos/cm)	D3	197	0.1695	-0.187544	0.0005	0.232035	-1
Temperature (C°)	D1	189	<.0001	-0.010660	0.4358	0.602277	0
Temperature (C°)	D3	196	<.0001	-0.004679	0.7092	0.638632	0
Total Ammonia as N (mg/L)	D1	176	0.1024	0.044888	0.5609	0.111718	0
Total Ammonia as N (mg/L)	D3	182	0.0006	0.060270	0.3894	0.184746	0
Total Suspended Solids (TSS), mg/L	D1	182	0.0322	0.313565	<.0001	0.322260	1
Total Suspended Solids (TSS), mg/L	D3	191	0.2046	0.249646	<.0001	0.251136	1
Turbidity (NTU)	D1	190	0.0539	0.280876	<.0001	0.349371	1
Turbidity (NTU)	D3	197	0.5732	0.322550	<.0001	0.403440	1
Un-ionized Ammonia (mg/L)	D1	132	0.0072	-0.168087	0.1293	0.194225	0

Linear Regression Results for Manatee County Stations in the South Fork of the Little Manatee River

Parameter	Site Name	Nobs	Month Pval	Flow Slope	Flow Pval	R2	Result
Un-ionized Ammonia (mg/L)	D3	134	0.0010	-0.233358	0.0108	0.236099	-1
pH (SU)	D1	192	0.1477	-0.023554	<.0001	0.200337	-1
pH (SU)	D3	199	0.1953	-0.020219	<.0001	0.205552	-1

/**
** JANICKI ENVIRONMENTAL
**
** Project : Little Manatee River MFL
**
** Date : July 2020
**
** Description : Database of water quality and flow
** data from various sources
**
** Database : LMR_Database.accdb
**
**/

-- Tables

EPC_LMR Water quality data from Hillsborough County
EPC data set for Stations 112,113 , 129, 140, 180, 181,and 182
on the Little Manatee River.

LMR_UpStr301_IWR59 Water quality data from the IWR database (Run 59).
These water quality stations are above US-301
on the Little Manatee River and include EPC, USGS and other entitiy data collections.

USGS_02300100 USGS Streamflow station 02300100
LITTLE MANATEE RIVER NEAR FT. LONESOME FL
Has daily Discharge, gage height, and Water
surface elevation starting February 1964.

USGS_02300300 USGS Streamflow station 02300300
SOUTH FORK LITTLE MANATEE RIVER NEAR WIMAUMA FL
Has daily Discharge, gage height, rainfall, and Water
surface elevation starting October 1987.

USGS_02300500 USGS Streamflow station 02300500
LITTLE MANATEE RIVER AT US 301 NEAR WIMAUMA, FL
Has daily Discharge, gage height, rainfall,
Specific Conductance, and Water surface elevation
starting April 1939.