

## **QA/QC of Stage and Groundwater Data for Lee County**

**Final Report**

**August 18, 2009**



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# **1. INTRODUCTION**

## **1.0. Overview**

This is a Supplemental Task Authorization under CN- 06 -12, between Lee County (County) and Stanley Consultants, Inc. (Consultant) to support the development of groundwater level and surface water stage data series that are used in support of the County's Comprehensive Study for the Density Reduction/Groundwater Resource (DR/GR) Area as well as for other planning, permitting and design purposes. Surface water stage and groundwater data are used by County staff to calibrate and verify surface/groundwater models, to assess surface and ground water especially during extreme conditions such as droughts or floods, to define current and future conditions for gauging future performance of the comprehensive plan, and for consumptive water-use permit application evaluations. The information is also used to define the wet season water table for control elevations of structures as required for ERP's.

The County's intention is to provide quality assured single time series data for the above-mentioned purposes in the County. The County provided Consultant a database that contains an extensive network including 18 rainfall gauging stations, 7 surface water stage stations and 162 groundwater monitoring wells to be reformatted in this study. Figure 1.1 and Table 1.1 show the groundwater stations in which QA/QC was performed. Figures 1.2 and 1.3 show the location of the stage and rainfall stations. For stage data, the 15-minute original data was arranged in uniform format while QA/QC was performed on daily average data only. Rainfall data was arranged and saved in uniform format without

QA/QC. The source data are available from the County and need to undergo a QA/QC process. Upon completing the generation of a single time series data for each of the listed groundwater and stage stations, the new data set will be stored, archived and uploaded in the County's database by the County.

**Table 1.1: List of Stations QA/QC'd**

Groundwater Stations													
1	20-GW1		33	46A-GW26		65	49-GW15		97	43-GW3		130	41-GW3
2	22-GW1		34	29-GW1		66	46C-GW3		98	43-GW2		131	47A-GW2
3	28-GW1		35	39-GW3		67	46C-GW6		99	47A-GW11		132	40-GW10
4	28-GW2		36	37-GW1		68	19-GW1		100	40-GW13		133	46A-GW19
5	37-GW6		37	18-GW1		69	16Y-GW1		101	46A-GW1		134	46A-GW16
6	38-GW1		38	46A-GW8		70	49-GW10		102	49L-GW2		135	17-GW1
7	38-GW2		39	46A-GW24		71	46A-GW11		103	17-GW3		136	49-GW9
8	38-GW3		40	40-GW9		72	37-GW5		104	27-GW1		137	40-GW8
9	38-GW6		41	46A-GW18		73	21-GW1		105	41-GW5		138	45-GW3
10	40-GW1		42	47A-GW4		74	46C-GW7		106	49-GW13		139	48-GW1
11	24-GW2		43	46A-GW10		75	49-GW4		107	46C-GW8		140	46A-GW23
12	40-GW3		44	46A-GW9		76	5-GW6		108	17-GW2		141	45-GW1
13	26-GW2		45	44-GW3		77	41-GW6		109	46A-GW12		142	44-GW1
14	37-GW2		46	45-GW4		78	46A-GW15		110	47A-GW7		143	5-GW4
15	37-GW3		47	47A-GW9		79	49-GW5		111	48-GW2		144	49-GW2
16	40-GW12		48	46A-GW17		80	48-GW3		112	5-GW1		145	16-GW3
17	270-GW1		49	46A-GW22		81	17-GW4		113	46A-GW14		146	45-GW2
18	21-GW2		50	42-GW2		82	39-GW4		114	49-GW7		147	43-GW4
19	37-GW4		51	40-GW6		83	38-GW4		115	5-GW8		148	5-GW2
20	40-GW11		52	16E-GW2		84	46C-GW2		116	49-GW8		149	41-GW1
21	47A-GW8		53	49-GW14		85	16-GW2		117	49-GW6		150	40-GW5
22	18-GW2		54	49-GW11		86	42-GW1		118	49-GW3		151	5-GW5
23	40-GW4		55	49-GW1		87	44-GW2		119	16E-GW1		152	42-GW3
24	40-GW7		56	47A-GW5		88	39-GW2		120	46C-GW4		153	43-GW1
25	26-GW1		57	47B-GW1		89	38-GW5		121	16-GW1		154	46A-GW6
26	39-GW1		58	46A-GW2		90	24 GW1		122	46A-GW4		155	23-GW2
27	46A-GW25		59	47A-GW6		91	46A-GW13		123	41-GW2		156	23-GW1
28	27-GW2		60	49-GW12		92	47A-GW1		124	46A-GW3		157	46B-GW2
29	46B-GW1		61	49L-GW1		93	29-GW2		125	46A-GW21		158	31-GW2
30	20-GW2		62	20- GW3		94	40-GW2		126	20A-GW1		159	RP-GW4
31	47A-GW3		63	46C-GW5		95	46A-GW5		127	41-GW4		160	31-GW1
32	46A-GW7		64	47A-GW10		96	46C-GW1		128	5-GW3		161	31-GW3
									129	46A-GW20		162	RP-GW5
<b>Stage Stations (to be arranged in 15-minute interval uniform format, QA/QC on Daily Data)</b> 10 Mile Canal, Mullock Creek, Popash Creek @ Nalle Grade, Popash Creek @ Pritchett Pkwy, Hendry Creek, Powell Creek, Telegraph Creek													
<b>Rainfall Stations (to be arranged in 15-minute interval uniform format, no QA/QC)</b> 10 Mile Canal , Burnt Store, Lovers Key, Alva Fire, Bonita Springs, Fort Myers Beach, Lakes Fairways, Gateway, Hendry, Page Field, Cecil Webb, Olga Water Plant, Lakes Park, Yellow Fever, Waste to Energy Plant, Lehigh Utilities, Cork Screw, North Reservoir													



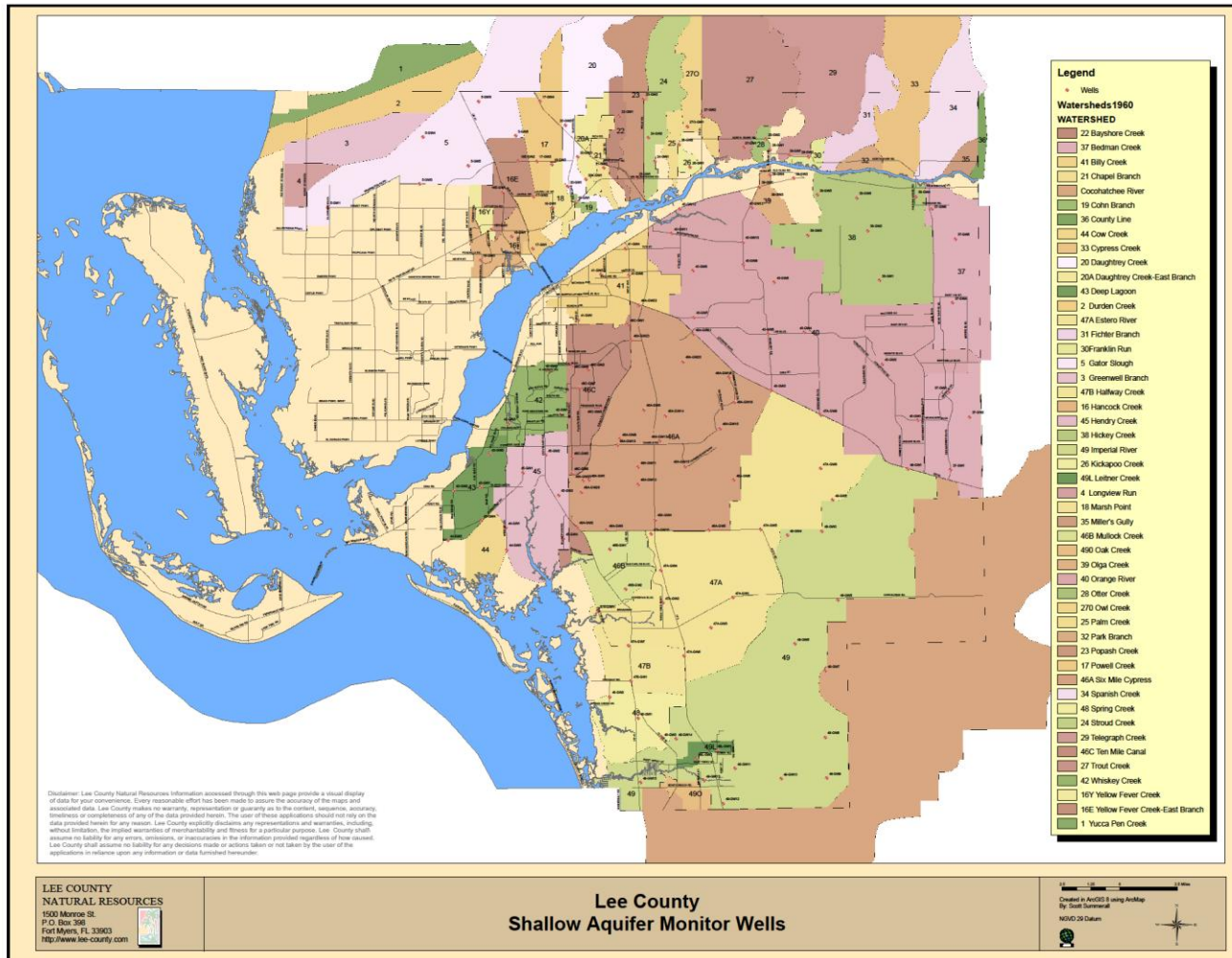
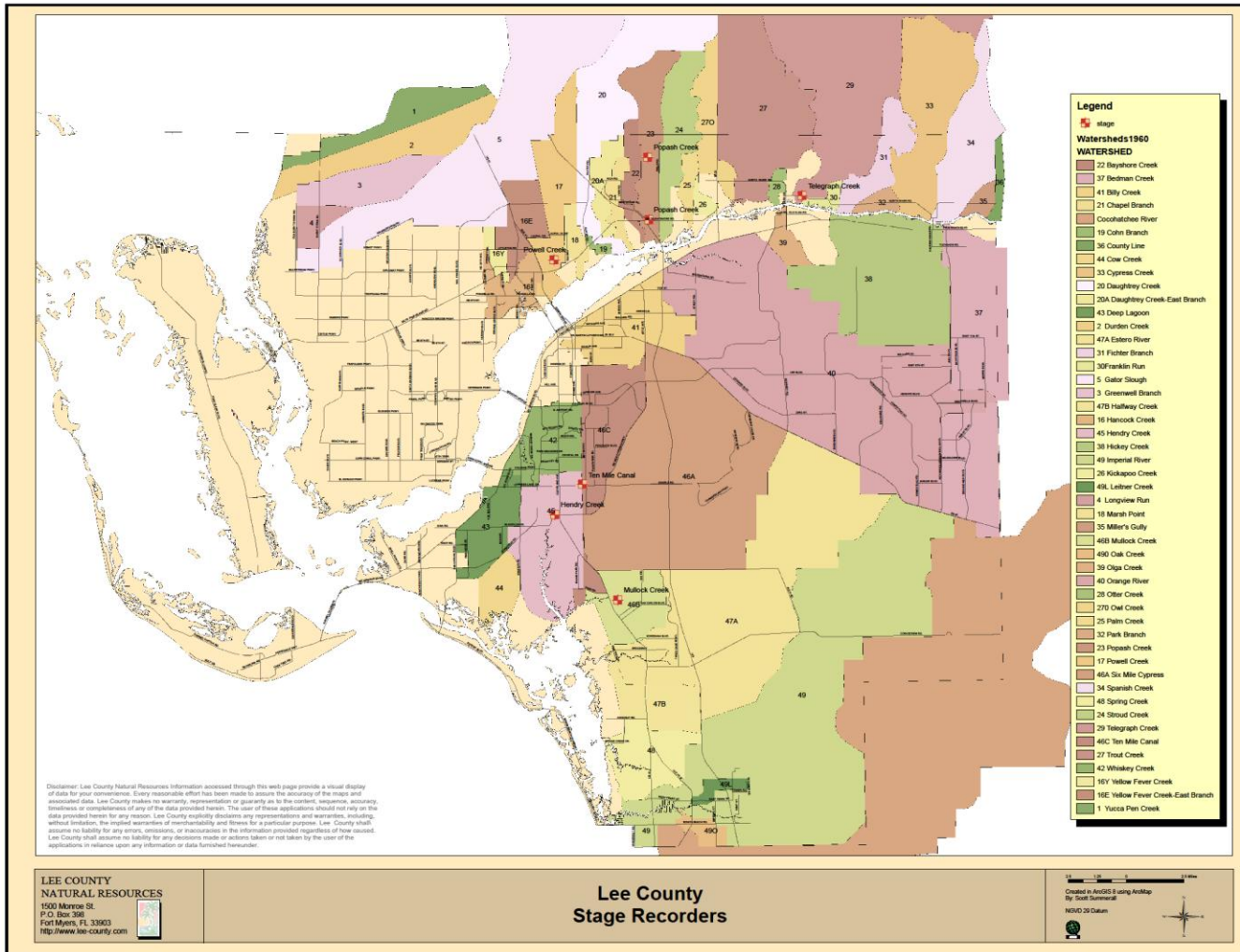


Figure 1.1: Lee County Groundwater Stations



**Figure 1.2: Lee County Stage Stations**

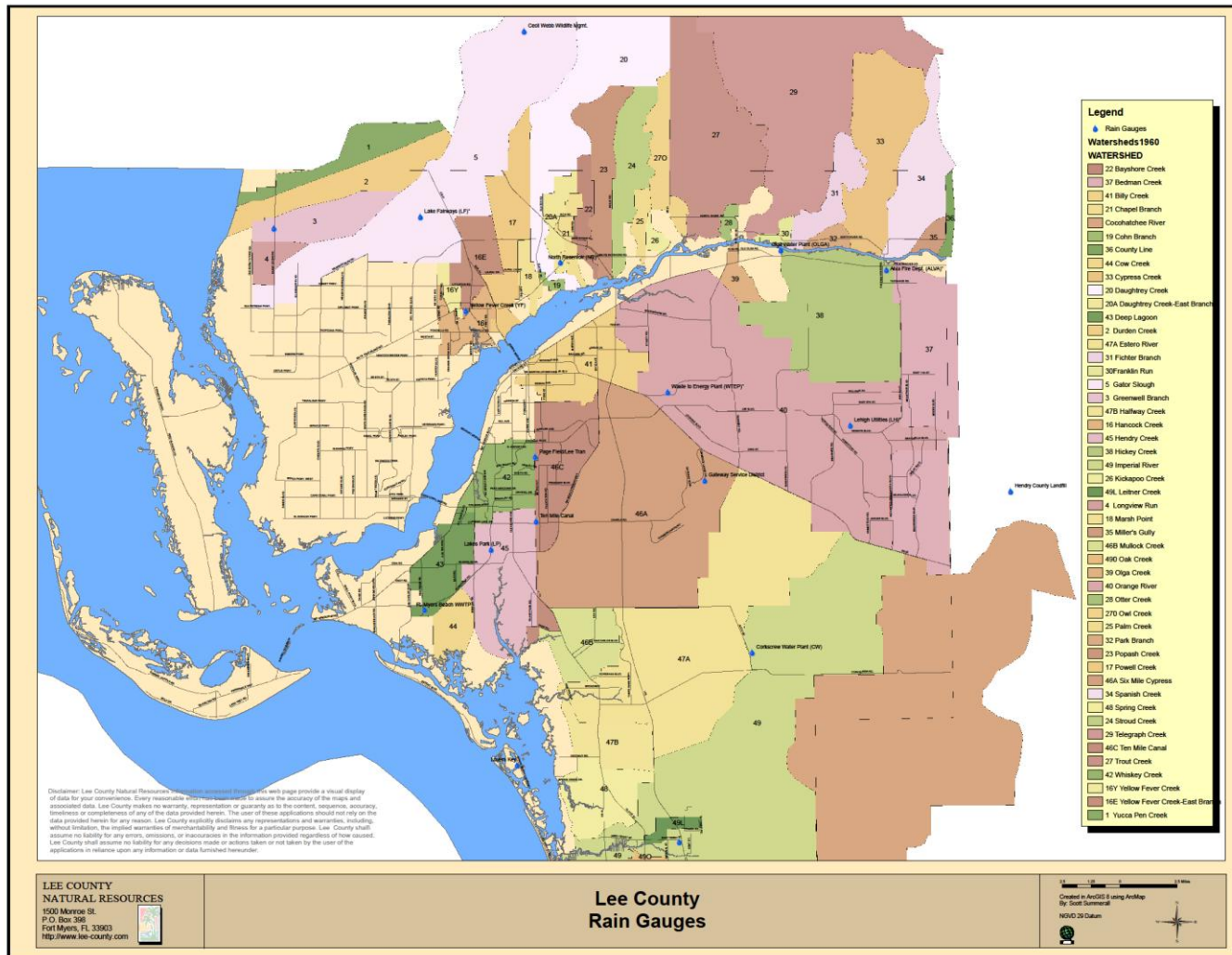


Figure 1.3: Lee County Rainfall Stations

### **1.1. Purpose**

This report is prepared to support Lee County in Stage and Groundwater data Quality Assurance and Quality Control (QA/QC). The primary purpose of this project is to provide single time series preferred data (stage and water level) to meet various legally mandated requirements. Preferred data are the “best available data” which are composed of the most appropriate combination of data available from any known source. Production of single time series preferred data is accomplished through a series of QA/QC post-processing statistical analyses.

### **1.2. Scope**

The goal of this project is to provide the baseline of quality assurance and quality control (QA/QC) of stage and groundwater time series data that are used in support of the County’s reporting and comprehensive planning process. QA/QC includes analysis of the data through performance of statistical analyses, application of statistical modeling tools, and filling missing data. The County has provided the list of stations as given in Table 1 and the raw data for the Consultant to perform QA/QC work. An overview of the QA/QC Data process is given in Figure 1.4.

## Groundwater and Stage Data QA/QC Procedures

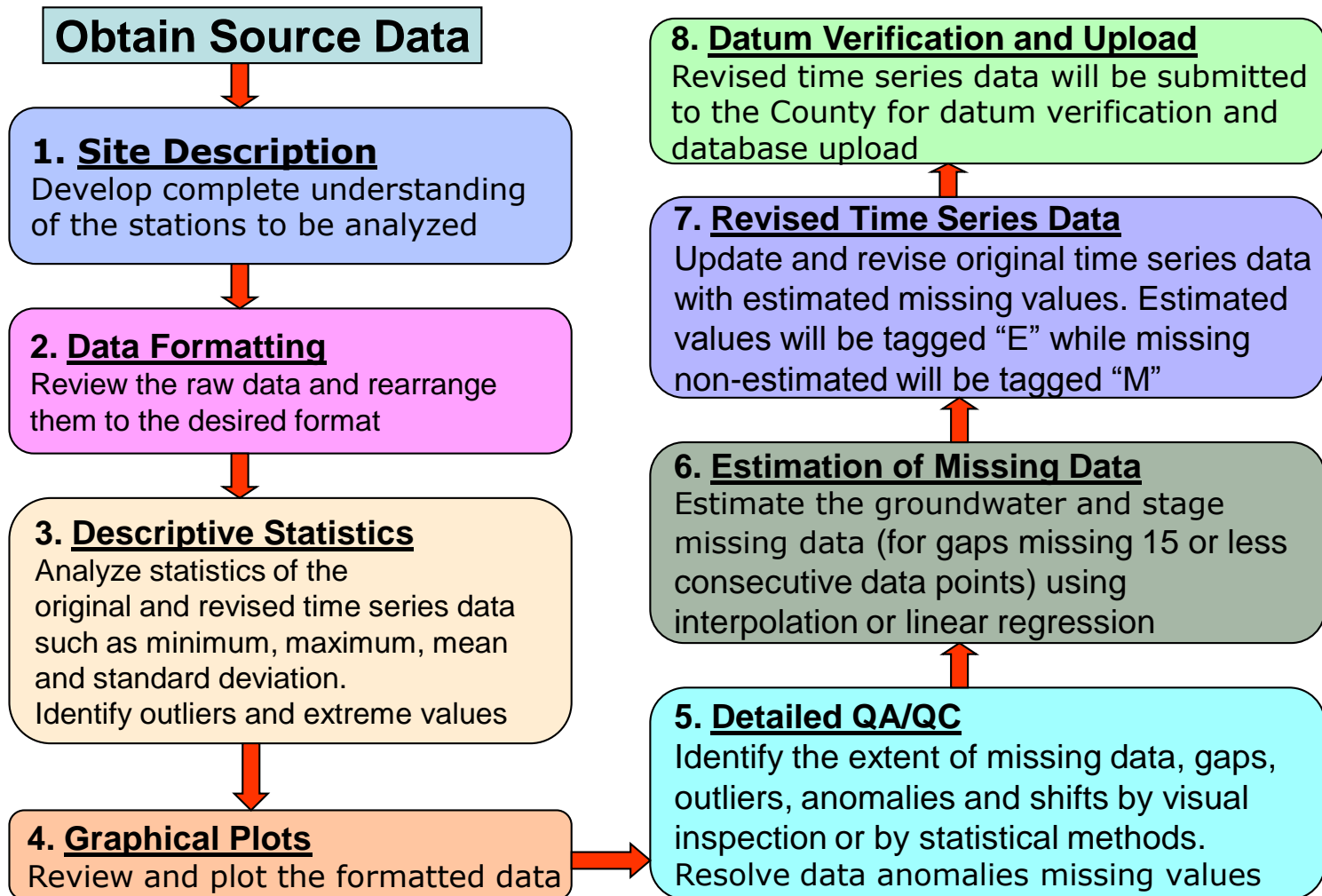


Figure 1.4: Groundwater and Stage Data QA/QC Process Flow Chart

### **1.3. Groundwater Data**

Groundwater data is defined as the groundwater level or elevation in feet relative to a surveyed reference elevation. The reference elevation is a measuring point that represents the elevation of the top of the well casing or transducer in the well relative to the location of a datum or benchmark. All groundwater levels referenced at the 162 stations are NGVD 29 datum. Groundwater levels in an unconfined aquifer reflect the elevation of the upper groundwater surface level. If the hydraulic head in the confined aquifer is above the land surface, this calculated fresh water elevation is added to the elevation of the transducer (usually placed on top of the well). Groundwater wells are constructed to accommodate various means of water level measurement.

The actual accuracy and precision of groundwater level measurements depends on the type of instrumentation used. There are several types of water level measuring devices available, but the two basic types are recording and non-recording. Recording type instruments keep track of groundwater levels at preset intervals and non-recording gauges require a field observer to read head elevation from a gauge. The reasons for groundwater level data problems and data changes are varied. The most common are datum adjustments (reference elevation changes) and instrumentation problems (missing data, equipment malfunctions, etc). Groundwater systems react similar to stage water but with much slower and less intense rates and are generally influenced by recharge to and discharge from aquifer system.

#### **1.4. Stage (Surface Water Data)**

Stage is defined as the height (elevation) of the water surface above an established datum. All stage levels referenced at the 7 stations are NGVD 29 datum. The term “stage” is also used to reference the parameters of headwater (upstream) and tailwater (downstream) water levels at water control structures in the canal. Surface water levels or stage measurements are typically made in canals, rivers, lakes, wetlands, reservoirs, estuaries and at water control structures. Stage is synonymous with water level. Surface water data are recorded in elevation relative to a standard reference and the units are feet. Surface water levels in a water body are influenced by the size of the contributing drainage basin, amount of precipitation (rainfall) in the basin, inflow from groundwater withdrawals and groundwater recharge, as well as tailwater conditions, time, etc. The actual accuracy and precision of stage level measurements depends on the type of instrumentation used.

#### **1.5. Rainfall Data**

No missing data was estimated and filled on rainfall data at the 18 stations. Consultant arranged the 15-minute interval data into uniform data format and submitted the single time series daily and monthly rainfall data as part of the report.



## 2. DATA QA/QC METHODOLOGY

### 2.0. Overview

The methodology listed in Figure 1.4 was followed in data QA/QC. Apart from site description and data formatting, the methodology consisted of descriptive statistics, graphical plots, analysis of gaps, outlier, anomalies, estimation of missing data by interpolation and linear regression and revision of the single time series data.

### 2.1. Site Description

A complete understanding of each data monitoring station and its relevant site information was developed to include:

**Groundwater:** Well ID, Watershed Name, Location, Latitude and Longitude

**Stage:** Stage Recorder, Location, Section, Township, Range, Latitude and Longitude

**Rainfall:** Rain Gauge ID, Section, Township, Range, Latitude, Longitude, and Location

### 2.2. Data Formatting

The raw data was reviewed and rearranged to the desired format. The following information was the revised data format.

**Table 2.1: Original and Revised Data Formats**

Data Source	Original Format	Revised Format	QA/QC
Stage	15-minute records	Uniformly arranged 15-minute records	NO
		Daily Time series	YES
Rainfall	15-minute records	Uniformly arranged 15-minute records	NO
Groundwater	Month-Year Matrix	Monthly/bi-monthly Time series	YES

### 2.3. Descriptive Statistics



Descriptive statistics were used to compare the original and revised time series data in terms of:

- **Mean:** Average of the data
- **Standard Deviation:** Standard deviation of the data
- **Skewness:** Skewness is a measure of symmetry of a set of data. Negative values of the skewness indicate data that are skewed to the left and positive values of the skewness indicate data that are skewed to the right.
- **Minimum:** Minimum value of the data
- **25th percentile (Q1):** Lower Quartile representing the 25th percentile
- **Median:** Median (middle value) of the data
- **75th percentile(Q3):** Upper Quartile representing the 75th percentile
- **Maximum:** Maximum value of the data
- **Lower Outlier Limit Starting Point:** The lowest value beyond which data is referred as an outlier
- **Lower Extreme Starting Point:** The lowest value limit beyond which data is referred as an extreme value
- **Upper Outlier Limit Starting Point:** The highest value limit beyond which data is referred as an outlier
- **Upper Extreme Point Starting Point:** The highest value limit beyond which data is referred as an extreme value
- **Outliers:** Number of outliers
- **Extremes:** Number of extreme values

## 2.4. Graphical Plotting

The QA/QC analysis was performed in an EXCEL spreadsheet environment. The examination of the groundwater level and stage (averaged daily) single time series data was performed through graphical plotting.

#### **2.4.1. Trend Plots**

- Gaps, overlaps and relationships were depicted from the plots.
- Data for each station was examined with respect to the trend of the adjacent vicinity stations whenever possible.
- Plot the trend line in the time series plots using a polynomial fitted line.
- For groundwater level time series data plots, the ground level elevation line was also plotted.

#### **2.4.2. Box Plots**

Box plots of time-series data for each station were generated in order to quantitatively identify outliers and extreme data values. Box plots consist of a box with the following values.

- Lower Quartile (Q1)—representing the 25th percentile of the time series data.
- Upper Quartile (Q3)—representing the 75th percentile of the time series data.
- Inter Quartile Range (QR) =  $Q3 - Q1$
- Lower Outlier Limit (LOL) =  $Q1 - 1.5 * QR$
- Lower Extreme Limit (LEL) =  $Q1 - 3.0 * QR$
- Upper Outlier Limit (UOL) =  $Q3 + 1.5 * QR$
- Upper Extreme Limit (UEL) =  $Q3 + 3.0 * QR$

### **2.5. Number of Outliers and Extreme Values**

Analysis to determine the quantitative number of outliers and extreme values as highlighted in sections 2.5.1 and 2.5.2 was performed using the following counting methodologies.

**2.5.1. Total Number of Outliers**

=sum of (LOL>data values  $\geq$ LEL **plus** UOL<data values  $\leq$  UEL)

**2.5.2. Total Number of Extremes**

= sum of (data values<LEL **plus** data values>UEL)

**2.6. Detailed QA/QC Analysis**

Quality assurance and quality control procedures emphasized the use of statistical tools such as interpolation and regression analyses to ensure that the data was as reliable as is technically possible; and to ascertain and/or improve data quality. The following considerations were taken into account in detail data QA/QC analysis.

- Review and evaluate the reference elevation from the station references provided by the County. Consultant put into consideration that, groundwater levels for monitoring wells should normally be lower than the ground surface elevation. However, groundwater levels can be higher than the ground surface elevation if the site is flooded. Analysis noted station and durations when the groundwater level was higher than the ground surface elevation.
- Examine the data for outliers. The procedure for determining and classifying data as outlier or extreme values was discussed in previous sections. The existence of outliers in the data may bias statistical results. Analysis considered the possible sources of outliers as:
  - Recording and measurement errors

- Unknown data structure
- A new phenomenon occurring in the data
- Response of the data level monitoring system to seasonal fluctuations
- Peaks in the data due to the result of extraordinary rain events, such as tropical storms and hurricanes
- Dry seasonal periods

Suspected mild or extreme outliers were examined thoroughly and reviewed by the County before a final decision was made to remove or replace them from the data set. Analysis examined sudden sharp peaks or troughs. If there was a sharp peak, the rainfall data at nearby rain gauges was checked to determine whether the peak or trough was justifiable.

## **2.7. Estimation of Missing Data Values**

After completion of examining the time series data through graphical plotting, the missing data was estimated using one of the following approaches:

- Averaging the nearby data (only for one observation missing)
- Interpolation (mostly for less than 4 observations missing)
- Linear regression using nearby stations (mostly for 15 or less consecutive observations missing and rarely for more than 15 data missing when correlation is more than 90%)

### **2.7.1. Coefficient of Correlation ( $R^2$ )**

Linear regression was used for estimating missing data of up to 15 consecutive gaps (rarely for more than 15 missing data only if  $R^2$  above 90% was justified). To determine which nearby station was more correlated with the subject station for linear regression

estimation, the coefficient of correlation ( $R^2$ ) was used as to justify well correlated data. A coefficient of correlation ( $R^2$ ) of at least 70% was considered justifiable for estimation of the missing data using the nearby stations. Coefficient of correlation is calculated as shown in the formula below;

$$R^2 = \frac{\sum_{i=1}^n (X_i - \bar{X})(Y_i - \bar{Y})}{\sqrt{\sum_{i=1}^n (X_i - \bar{X})^2 \sum_{i=1}^n (Y_i - \bar{Y})^2}}$$

Where  $R^2$  = coefficient of correlation

$X_i$ = observed data value at a particular date/month of the nearby station

$\bar{X}$  = the mean of all data considered for regression of the nearby station

$Y_i$ = observed data value at a particular date/month of the station whose missing data is determined

$\bar{Y}$  = the mean of all data considered for regression for the station whose missing data are being determined

Linear regression was developed in the following form;

$$Y = \beta * X + C$$

Where;

Y =the missing data to be determined using the nearby station data

X =data from the nearby station used to estimate the missing data

$\beta$  =the coefficient obtained from the linear regression

C =constant obtained from the linear regression

Apart from interpolations, all linear regression was performed in Excel spreadsheet. Stata software and MS Access was only used for data management, all estimations were performed in Excel.

As described above, linear regression was used for estimating missing data. The following steps as an example were used in estimating missing data by linear regression.

1. Find the range of dates with missing data from one station, let say station 46A-GW9 from Nov 1996 to Nov 1997 (Y)
2. Find nearby stations whose data are available for the range of dates in which the nearby station in subject are missing, say station 46A-GW10 (X)
3. Perform linear regression analysis between Y and X for the portion of non-missing data between the two. For station 46A-GW9 and 46A-GW10, let use data from May 1990 to Jan 1998 excluding the missing portion
4. Record the linear regression equation. For the illustrated example in using 46A-GW9 and 46A-GW10, the equation is  $Y=0.901*X +1.534$
5. Check the value of  $R^2$ . If  $R^2$  is adequate then use the equation to fit the missing data. If  $R^2$  is not adequate, then change range of data in the equation or try another nearby station as X. The trial and error exercise continues until desirable  $R^2$  is found. The nearby station which ends up with desirable  $R^2$  is chosen as X.
6. For illustration, using 46A-GW9 as Y and 46A-GW10 as resulted with  $R^2=0.85$  (considered adequate), then the equation  $Y=0.901*X +1.534$  is adopted to estimate the missing data
7. To estimate the missing data using the development equation, input the value of X (data value from the nearby station at that particular date) in the equation. The output Y after inputting X is the estimated missing data for that particular date.

Date	Estimated for 46A-GW9: $Y=0.901*X+1.534$	46A-GW10 (X)
Nov-96	15.63	15.65
Dec-96	15.32	15.30
Jan-97	14.90	14.84
Feb-97	15.12	15.08
Mar-97	14.60	14.50
Apr-97	14.18	14.04
May-97	14.49	14.38
May-97	14.10	13.95
Jun-97	14.48	14.37
Jun-97	14.97	14.91
Jul-97	15.33	15.31
Jul-97	16.95	17.11
Aug-97	16.33	16.42
Aug-97	16.00	16.05
Sep-97	15.46	15.46
Sep-97	15.18	15.14
Oct-97	15.98	16.03
Oct-97	15.47	15.47
Nov-97	15.77	15.80

8. The process continues for each of the missing data gaps.  
Some of the equations in excel format used to estimate the missing data is attached with the revised final report (Appendix D).

## 2.8. Tags

The estimated data was tagged so that they can be identified as makeup data and not the instrument or manually recorded. The missing data which was not estimated in the revised time series were also tagged. Tags were assigned in the column adjacent to the revised data as follows;

- For all missing data not estimated, the column was tagged "M" for missing
- For all estimated data, the column was tagged "E" showing the data was estimated.

### **3. GROUNDWATER QA/QC ANALYSIS RESULTS SUMMARY**

#### **3.0. Overview**

Summary of the data QA/QC findings for each station showing the location of the station, descriptive statistics of the original and revised data, identified outliers and extreme values are provided below. The graphical plots show the ground elevation, original time series data, revised time series data, trend line, lower outlier limit and upper outlier limits. The Box-plots that summarize the descriptive statistics are included in Appendix A. The final single time series data of groundwater data are included in Appendix A. Appendices and Excel Data Sheets that are submitted electronically on a CD consist of:

**Appendix A:** Excel data sheets with original and QA/QC revised groundwater and stage (daily average) single time series data for each station

**Appendix B:** MS Access data sheets with uniformly arranged 15-minute interval stage and rainfall original data for each station

**Appendix C:** Excel data sheets with daily and monthly rainfall data for each station

**Appendix D:** Linear regression equations



### 3.1. Station 5-GW1

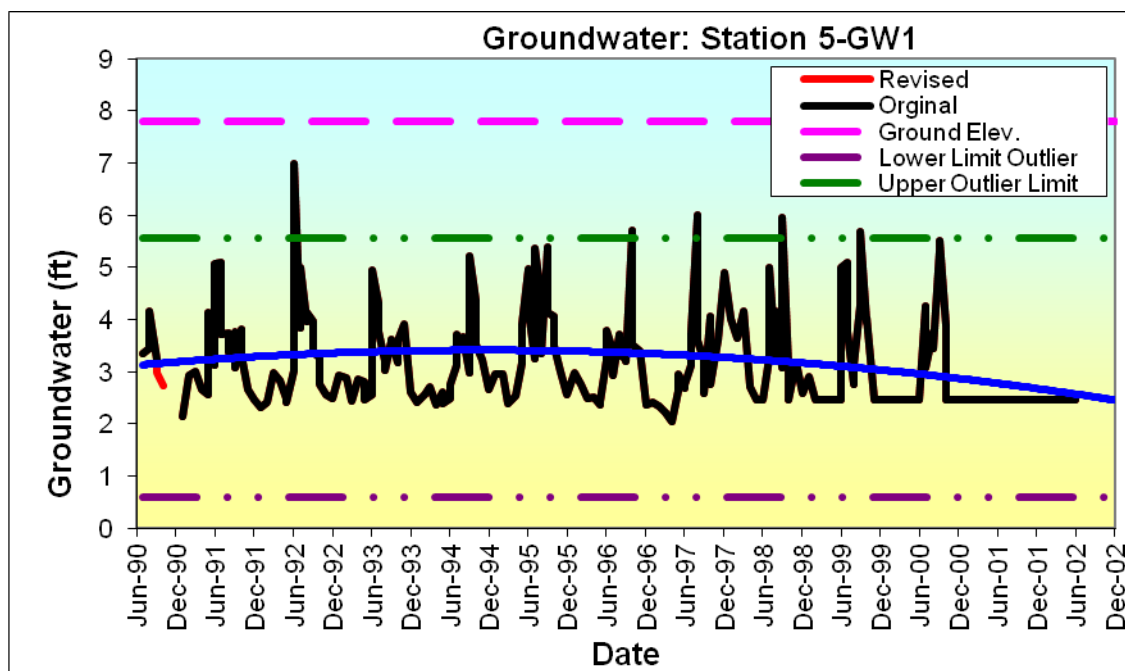
#### 3.1.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
5-GW1	Gator Slough	50 ft. south of 24th St. 300 ft. west of intersection of El Dorado & Kismet Parkway. In pine woodlands.	26 41.80'	82 01.45'

#### 3.1.2. Descriptive Statistics

	Original	Revised
Mean	3.208	3.207
Standard Deviation	0.904	0.902
Skewness	1.399	1.405
Q3	3.703	3.695
Upper Extreme Point Starting Point	7.430	7.400
Max	7.000	7.000
Upper Outlier Limit Starting Point	5.566	5.548
Median	2.960	2.970
Lower Outlier Limit Starting Point	0.596	0.607
Min	2.060	2.060
Lower Extreme Starting Point	-1.268	-1.245
Q1	2.460	2.460
Outliers	5.000	5.000
Extremes	0.00	0.00

#### 3.1.3. Time Series Plots



### 3.2. Station 5-GW2

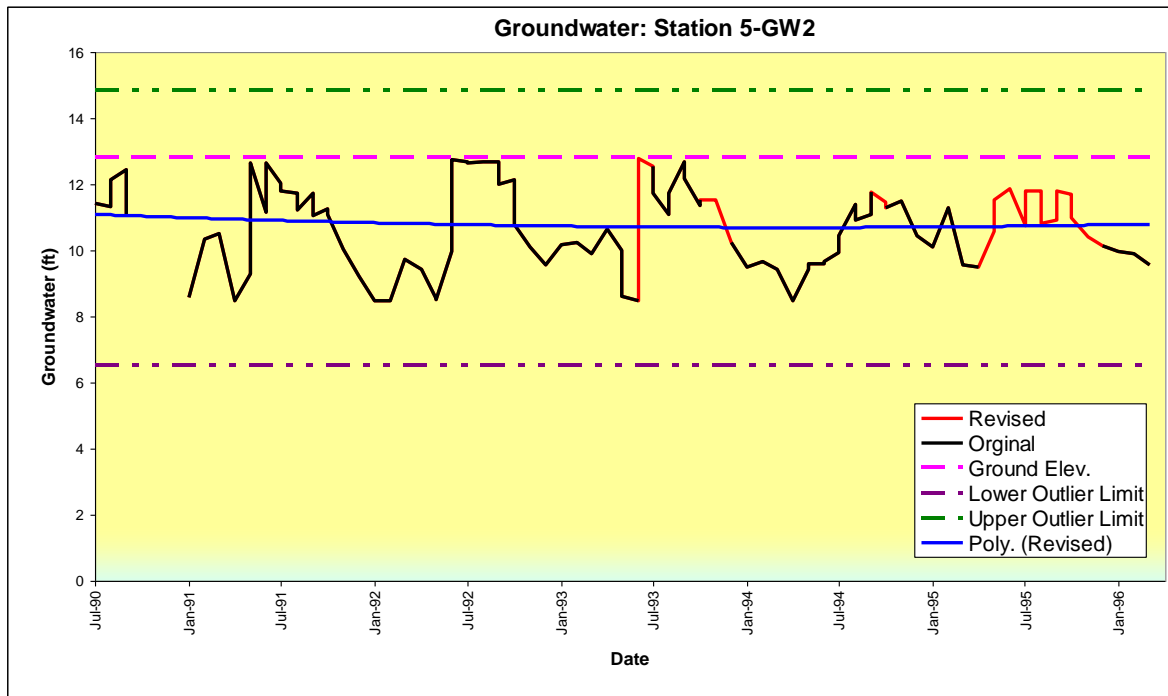
#### 3.2.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
5-GW2	Gator Slough	No data	No data	No data

#### 3.2.2. Descriptive Statistics

	Original	Revised
Mean	10.660	10.781
Standard Deviation	1.278	1.232
Skewness	-0.027	-0.212
Q3	11.720	11.730
Upper Extreme Point Starting Point	17.975	17.243
Max	12.730	12.786
Upper Outlier Limit Starting Point	14.848	14.486
Median	10.630	10.948
Lower Outlier Limit Starting Point	6.508	7.136
Min	8.460	8.460
Lower Extreme Starting Point	3.380	4.380
Q1	9.635	9.893
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.2.3. Time Series Plots



### 3.3. Station 5-GW3

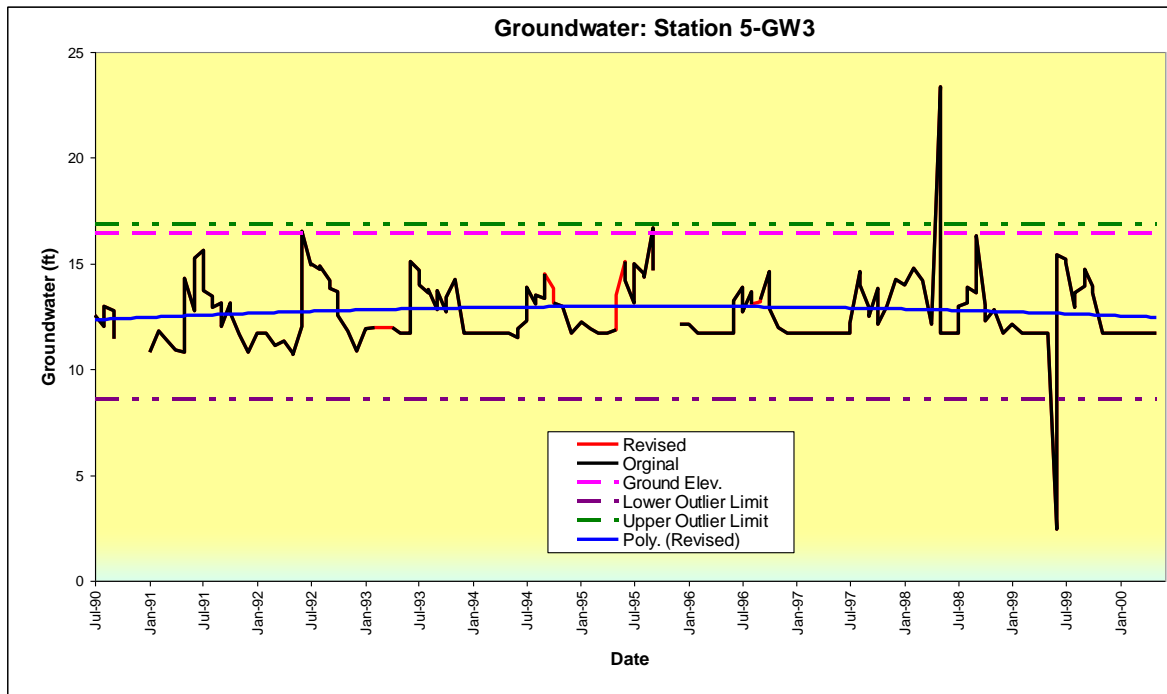
#### 3.3.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
5-GW3	Gator Slough	Well is 250 ft. West of NE 7th pl. off of Jacaranda Pkwy.	No data	No data

#### 3.3.2. Descriptive Statistics

	Original	Revised
Mean	12.779	12.787
Standard Deviation	1.747	1.731
Skewness	0.406	0.395
Q3	13.750	13.750
Upper Extreme Point Starting Point	19.960	19.960
Max	23.360	23.360
Upper Outlier Limit Starting Point	16.855	16.855
Median	12.270	12.480
Lower Outlier Limit Starting Point	8.575	8.575
Min	2.460	2.460
Lower Extreme Starting Point	5.470	5.470
Q1	11.680	11.680
Outliers	0.000	0.000
Extremes	2.00	2.00

#### 3.3.3. Time Series Plots



### 3.4. Station 5-GW4

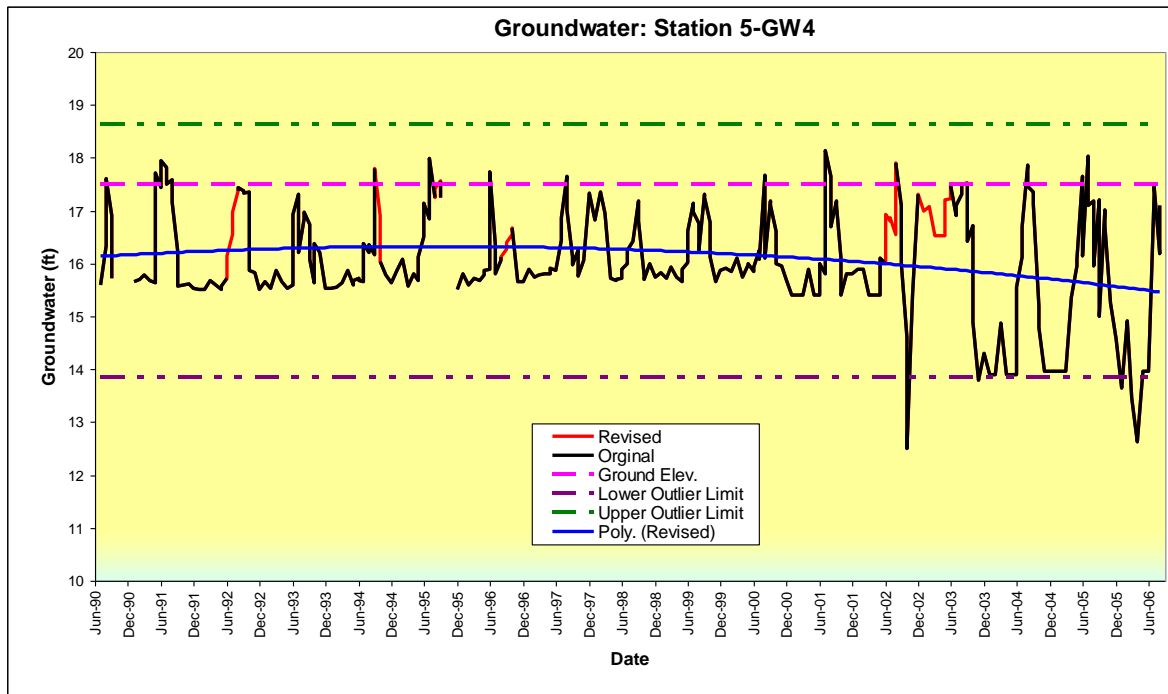
#### 3.4.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
5-GW4	Gator Slough	150 ft. north of intersection of Juanita Blvd. & Durden Pkwy. in FPL easement.	26 44.49'	81 57.41'

#### 3.4.2. Descriptive Statistics

	Original	Revised
Mean	16.055	16.102
Standard Deviation	1.005	0.990
Skewness	-0.476	-0.567
Q3	16.830	16.873
Upper Extreme Point Starting Point	20.430	20.540
Max	18.140	18.140
Upper Outlier Limit Starting Point	18.630	18.706
Median	15.900	15.985
Lower Outlier Limit Starting Point	13.830	13.816
Min	12.500	12.500
Lower Extreme Starting Point	12.030	11.983
Q1	15.630	15.650
Outliers	5.000	5.000
Extremes	0.00	0.00

#### 3.4.3. Time Series Plots



### 3.5. Station 5-GW5

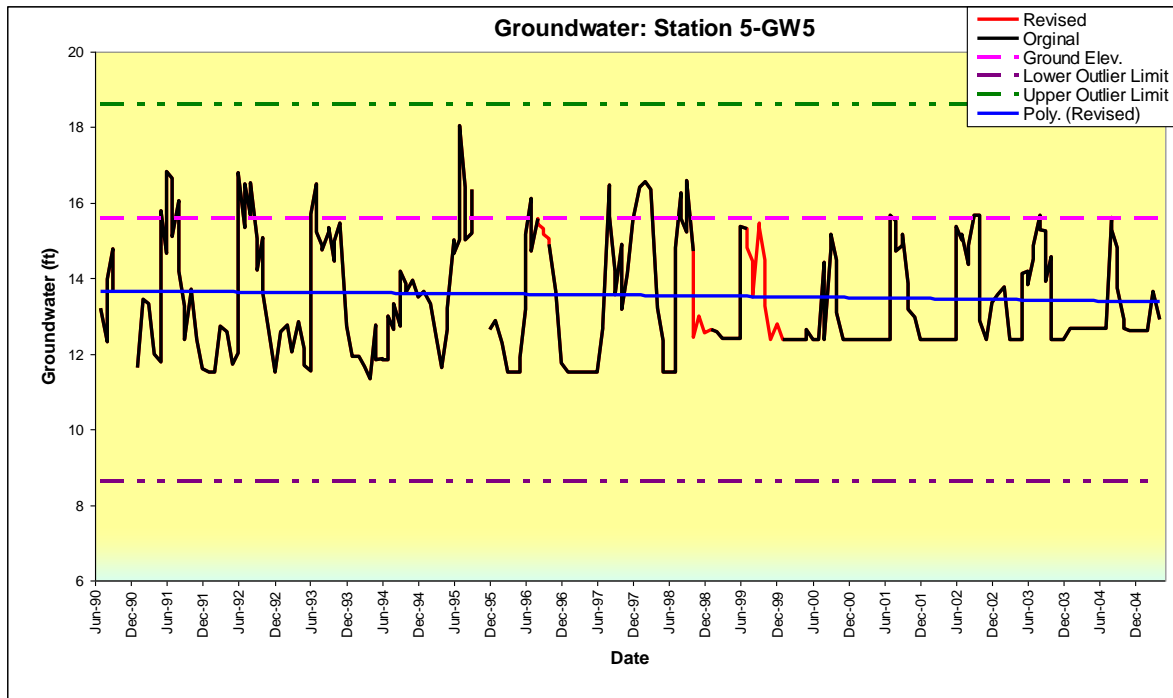
#### 3.5.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
5-GW5	Gator Slough	East of La Paloma Pkwy.	26 43.42'	81 55.47'

#### 3.5.2. Descriptive Statistics

	Original	Revised
Mean	13.50	13.54
Standard Deviation	1.52	1.50
Skewness	0.57	0.52
Q3	14.87	14.87
Upper Extreme Point Starting Point	22.36	22.37
Max	18.05	18.05
Upper Outlier Limit Starting Point	18.61	18.62
Median	12.89	13.00
Lower Outlier Limit Starting Point	8.62	8.62
Min	11.33	11.33
Lower Extreme Starting Point	4.88	4.87
Q1	12.37	12.37
Outliers	0.00	0.00
Extremes	0.00	0.00

#### 3.5.3. Time Series Plots



### 3.6. Station 5-GW6

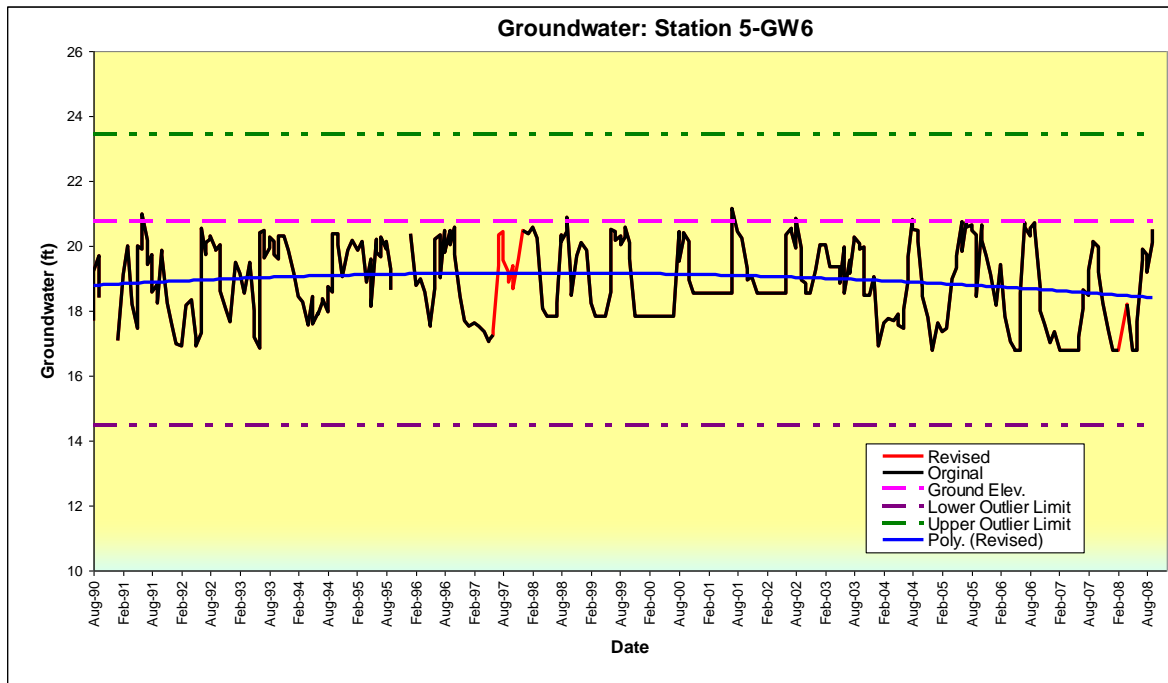
#### 3.6.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
5-GW6	Gator Slough	1.2 Miles East of Western Acres Entrance. South Rd. Eastside of dirt trail	26 44.53'	81 53.50'

#### 3.6.2. Descriptive Statistics

	Original	Revised
Mean	18.957	18.963
Standard Deviation	1.185	1.178
Skewness	-0.179	-0.191
Q3	20.080	20.058
Upper Extreme Point Starting Point	26.800	26.598
Max	21.140	21.140
Upper Outlier Limit Starting Point	23.440	23.328
Median	18.940	18.940
Lower Outlier Limit Starting Point	14.480	14.608
Min	16.780	16.780
Lower Extreme Starting Point	11.120	11.338
Q1	17.840	17.878
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.6.3. Time Series Plots



### 3.7. Station 5-GW8

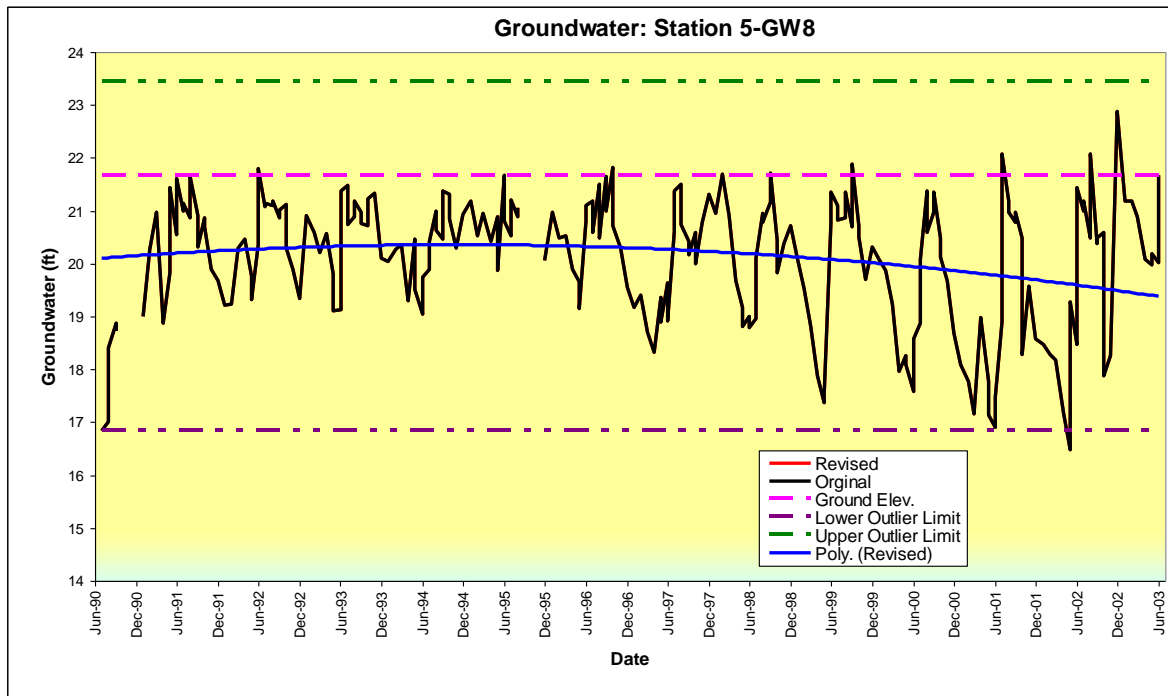
#### 3.7.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
5-GW8	Gator Slough	0.2 miles North of Lakeville Dr. 50 ft. East	26 45.82'	81 55.05'

#### 3.7.2. Descriptive Statistics

	Original	Revised
Mean	20.104	20.104
Standard Deviation	1.201	1.201
Skewness	-0.822	-0.822
Q3	20.970	20.970
Upper Extreme Point Starting Point	25.935	25.935
Max	22.880	22.880
Upper Outlier Limit Starting Point	23.453	23.453
Median	20.450	20.450
Lower Outlier Limit Starting Point	16.833	16.833
Min	16.480	16.480
Lower Extreme Starting Point	14.350	14.350
Q1	19.315	19.315
Outliers	2.000	2.000
Extremes	0.00	0.00

#### 3.7.3. Time Series Plots



### 3.8. Station 16-GW1

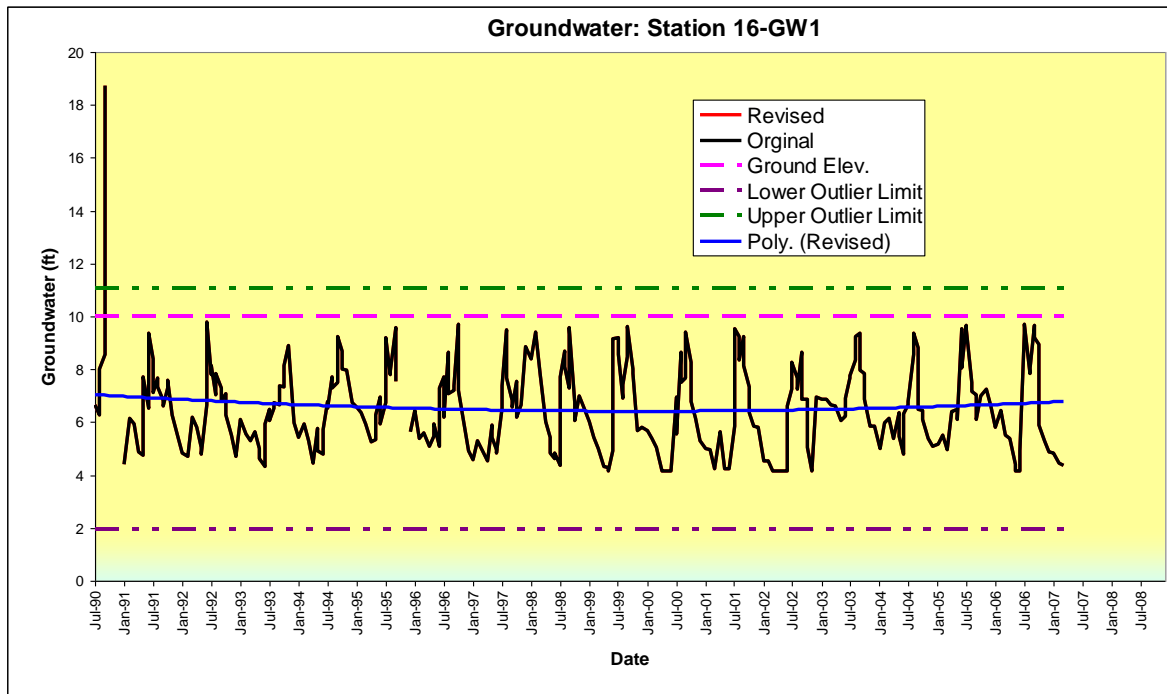
#### 3.8.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
16-GW1	Hancock Creek	50 Ft. North of W. Marianna Ave. In lot West of Church.	26 40.72'	81 53.69'

#### 3.8.2. Descriptive Statistics

	Original	Revised
Mean	6.579	6.579
Standard Deviation	1.679	1.679
Skewness	1.479	1.479
Q3	7.650	7.650
Upper Extreme Point Starting Point	14.490	14.490
Max	18.720	18.720
Upper Outlier Limit Starting Point	11.070	11.070
Median	6.490	6.490
Lower Outlier Limit Starting Point	1.950	1.950
Min	4.150	4.150
Lower Extreme Starting Point	-1.470	-1.470
Q1	5.370	5.370
Outliers	0.000	0.000
Extremes	1.00	1.00

#### 3.8.3. Time Series Plots





### 3.9. Station 16-GW2

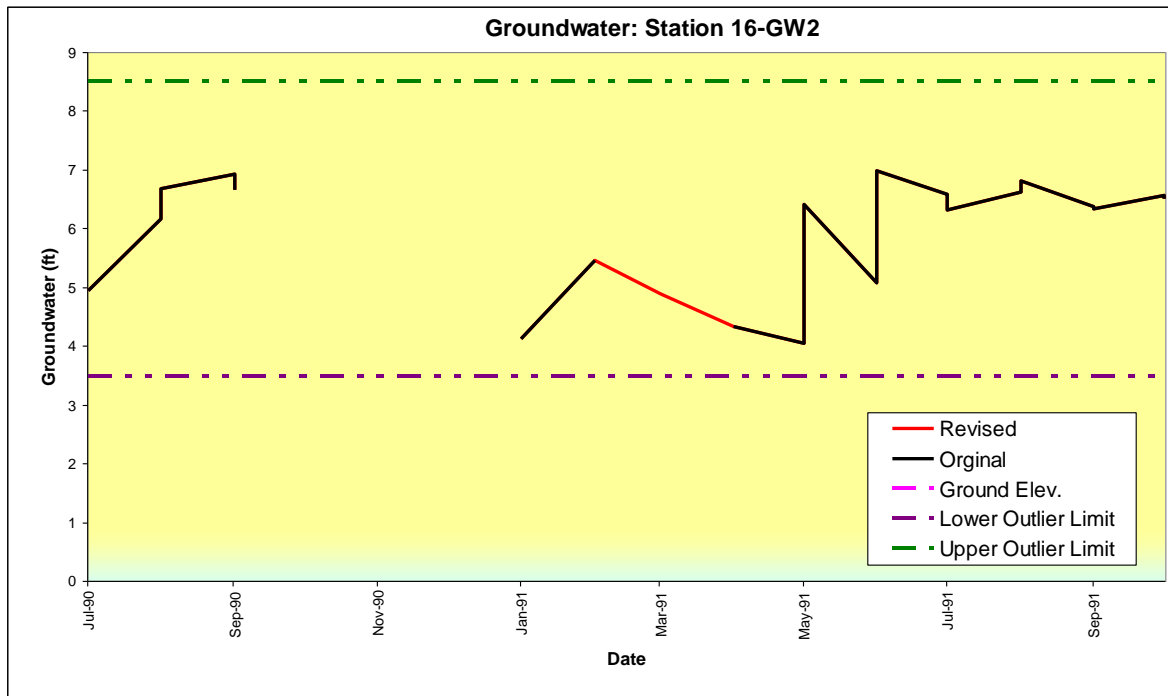
#### 3.9.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
16-GW2	No data	No data	No data	No data

#### 3.9.2. Descriptive Statistics

	Original	Revised
Mean	5.99	5.94
Standard Deviation	0.96	0.97
Skewness	-1.10	-0.92
Q3	6.62	6.61
Upper Extreme Point Starting Point	10.41	11.20
Max	6.98	6.98
Upper Outlier Limit Starting Point	8.51	8.91
Median	6.39	6.36
Lower Outlier Limit Starting Point	3.46	2.79
Min	4.05	4.05
Lower Extreme Starting Point	1.57	0.49
Q1	5.36	5.08
Outliers	0.00	0.00
Extremes	0.00	0.00

#### 3.9.3. Time Series Plots



### 3.10. Station 16-GW3

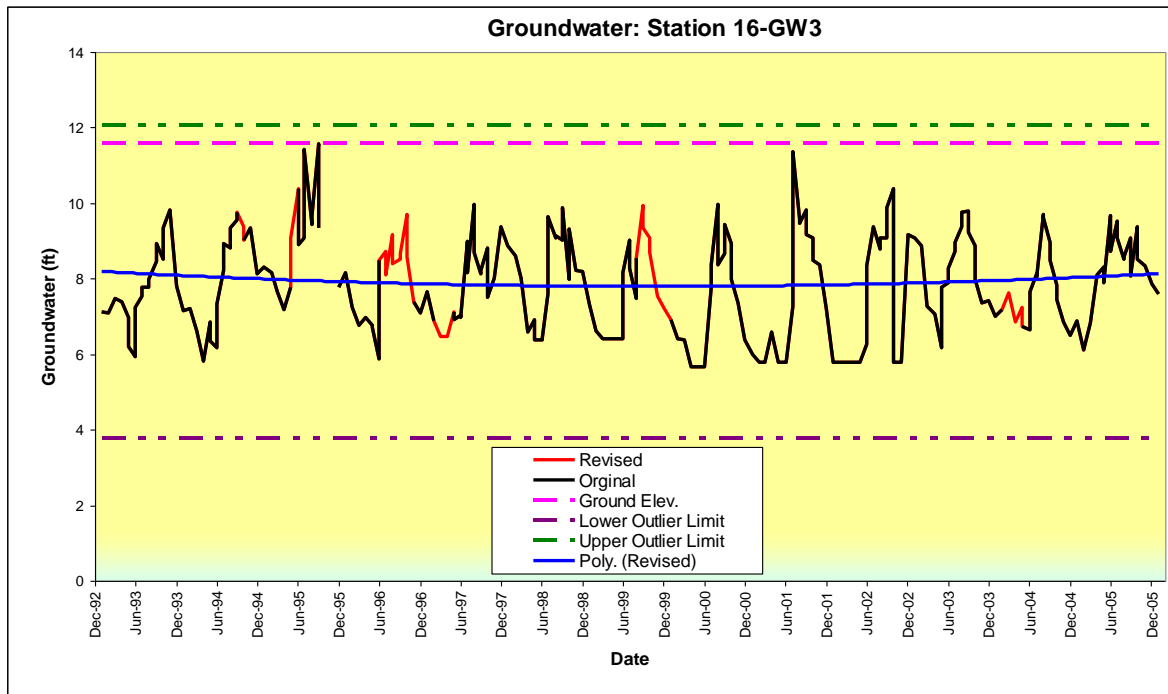
#### 3.10.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
16-GW3	Hancock Creek	West of Orange Grove Blvd. At Tropic Isles Elementary.	26 39.80'	81 54.96'

#### 3.10.2. Descriptive Statistics

	Original	Revised
Mean	7.875	7.916
Standard Deviation	1.317	1.299
Skewness	0.120	0.064
Q3	8.945	8.973
Upper Extreme Point Starting Point	15.155	15.198
Max	11.570	11.570
Upper Outlier Limit Starting Point	12.050	12.085
Median	7.970	8.005
Lower Outlier Limit Starting Point	3.770	3.785
Min	5.670	5.670
Lower Extreme Starting Point	0.665	0.672
Q1	6.875	6.898
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.10.3. Time Series Plots



### 3.11. Station 16E-GW1

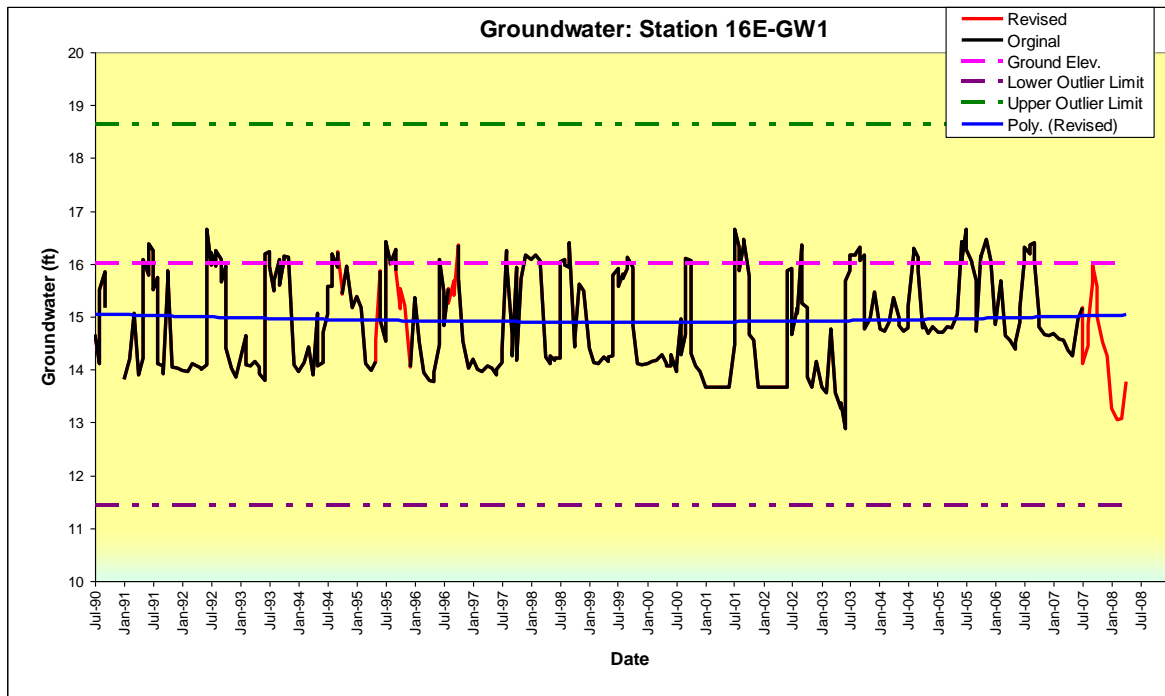
#### 3.11.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
16E-GW1	Yellow Fever Creek-East	West of US 41. Across from Shell Factory near billboard. In melaleucas.	26 42.40'	81 54.07'

#### 3.11.2. Descriptive Statistics

	Original	Revised
Mean	14.959	14.945
Standard Deviation	0.921	0.919
Skewness	0.135	0.094
Q3	15.920	15.870
Upper Extreme Point Starting Point	21.320	21.120
Max	16.660	16.660
Upper Outlier Limit Starting Point	18.620	18.495
Median	14.780	14.800
Lower Outlier Limit Starting Point	11.420	11.495
Min	12.880	12.880
Lower Extreme Starting Point	8.720	8.870
Q1	14.120	14.120
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.11.3. Time Series Plots



### 3.12. Station 16E-GW2

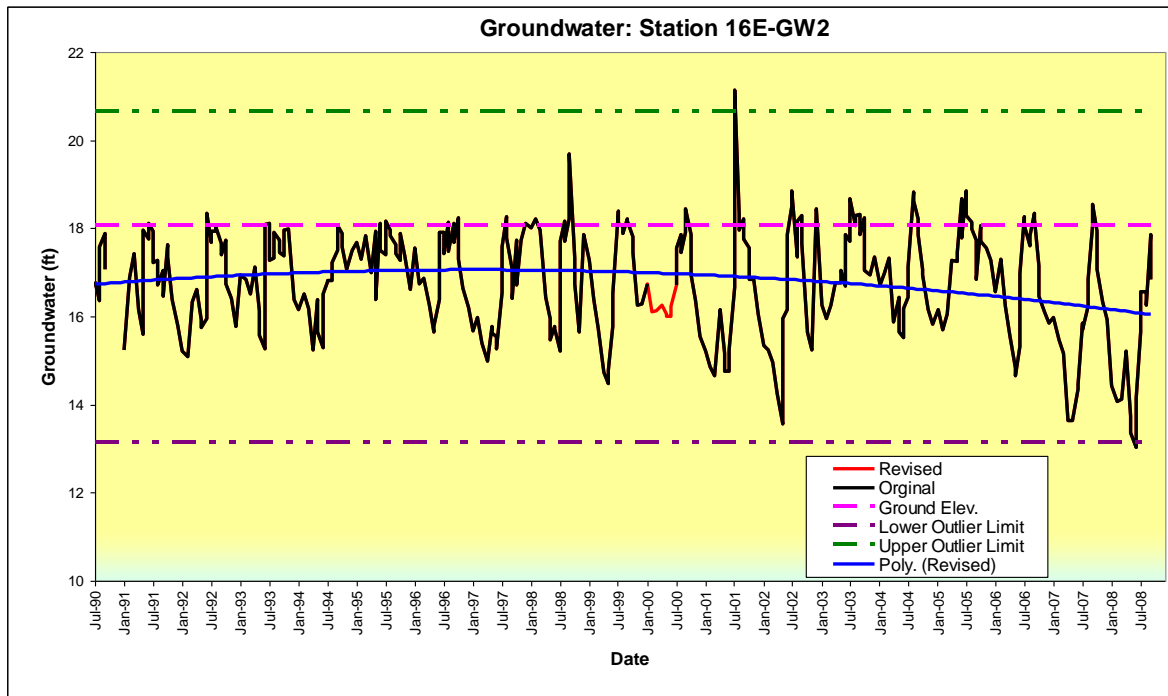
#### 3.12.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
16E-GW2	Yellow Fever Creek-East	FPL easement north of intersection US 41 & Del Prado extension.	26 43.59'	81 53.44'

#### 3.12.2. Descriptive Statistics

	Original	Revised
Mean	16.813	16.798
Standard Deviation	1.225	1.216
Skewness	-0.464	-0.430
Q3	17.838	17.820
Upper Extreme Point Starting Point	23.493	23.370
Max	21.140	21.140
Upper Outlier Limit Starting Point	20.665	20.595
Median	16.950	16.900
Lower Outlier Limit Starting Point	13.125	13.195
Min	13.020	13.020
Lower Extreme Starting Point	10.298	10.420
Q1	15.953	15.970
Outliers	2.000	2.000
Extremes	0.00	0.00

#### 3.12.3. Time Series Plots



### 3.13. Station 16Y-GW1

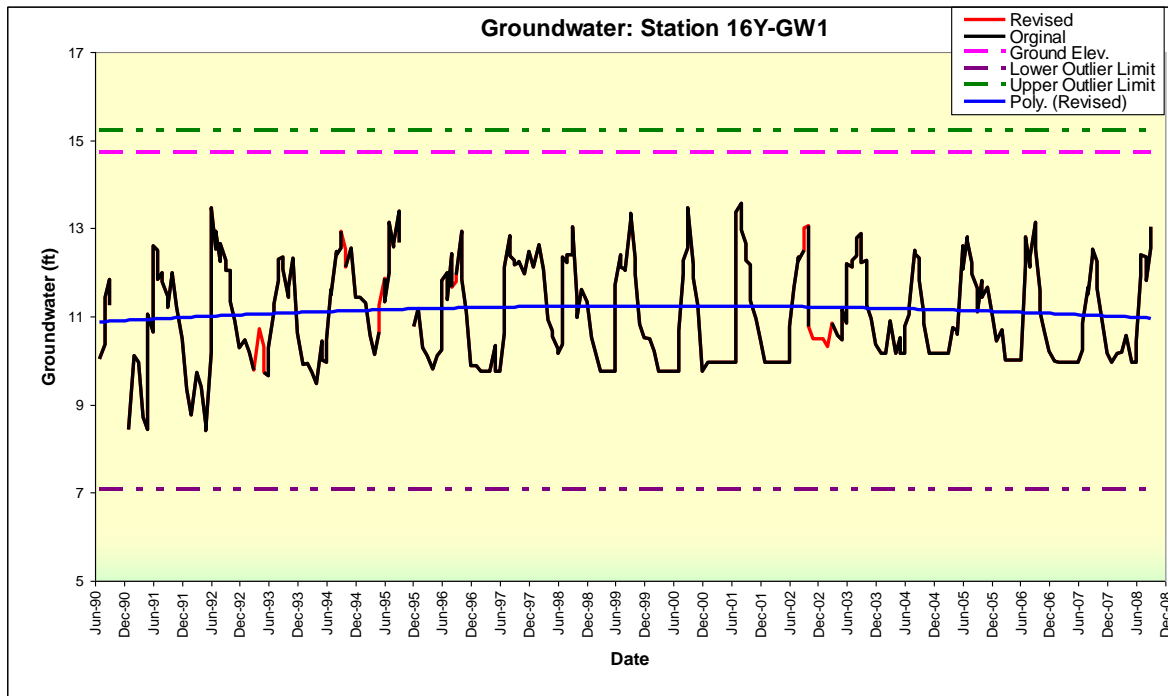
#### 3.13.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
16Y-GW1	Yellow Fever Creek	On east side of east entrance to FDOT.10 ft. east of entrance next to fence.	26 40.98'	81 54.51'

#### 3.13.2. Descriptive Statistics

	Original	Revised
Mean	11.133	11.133
Standard Deviation	1.134	1.129
Skewness	0.062	0.077
Q3	12.160	12.160
Upper Extreme Point Starting Point	18.295	18.220
Max	13.560	13.560
Upper Outlier Limit Starting Point	15.228	15.190
Median	11.075	11.065
Lower Outlier Limit Starting Point	7.048	7.110
Min	8.400	8.400
Lower Extreme Starting Point	3.980	4.080
Q1	10.115	10.140
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.13.3. Time Series Plots



### 3.14. Station 17-GW1

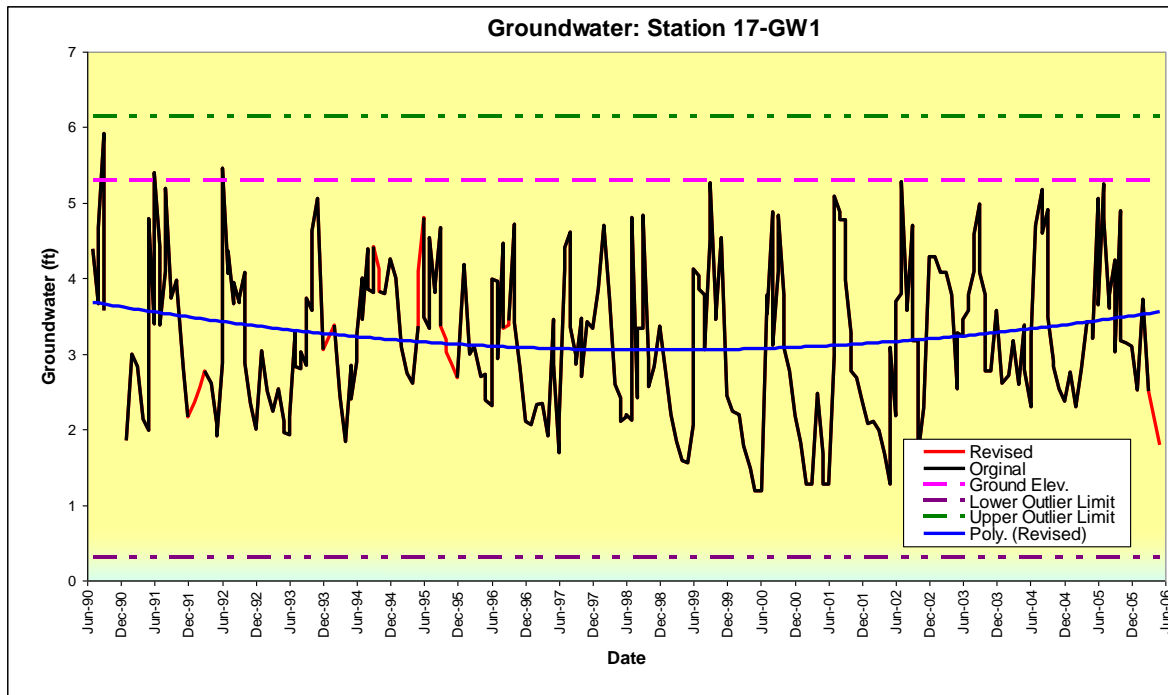
#### 3.14.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
17-GW1	Powell Creek	50 feet north of Brooks Drive, 200 feet west of Lavin Lane	26 40.25'	81 52.79'

#### 3.14.2. Descriptive Statistics

	Original	Revised
Mean	3.239	3.234
Standard Deviation	1.018	1.007
Skewness	0.106	0.117
Q3	3.945	3.935
Upper Extreme Point Starting Point	8.325	8.255
Max	5.920	5.920
Upper Outlier Limit Starting Point	6.135	6.095
Median	3.235	3.215
Lower Outlier Limit Starting Point	0.295	0.335
Min	1.180	1.180
Lower Extreme Starting Point	-1.895	-1.825
Q1	2.485	2.495
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.14.3. Time Series Plots



### 3.15. Station 17-GW2

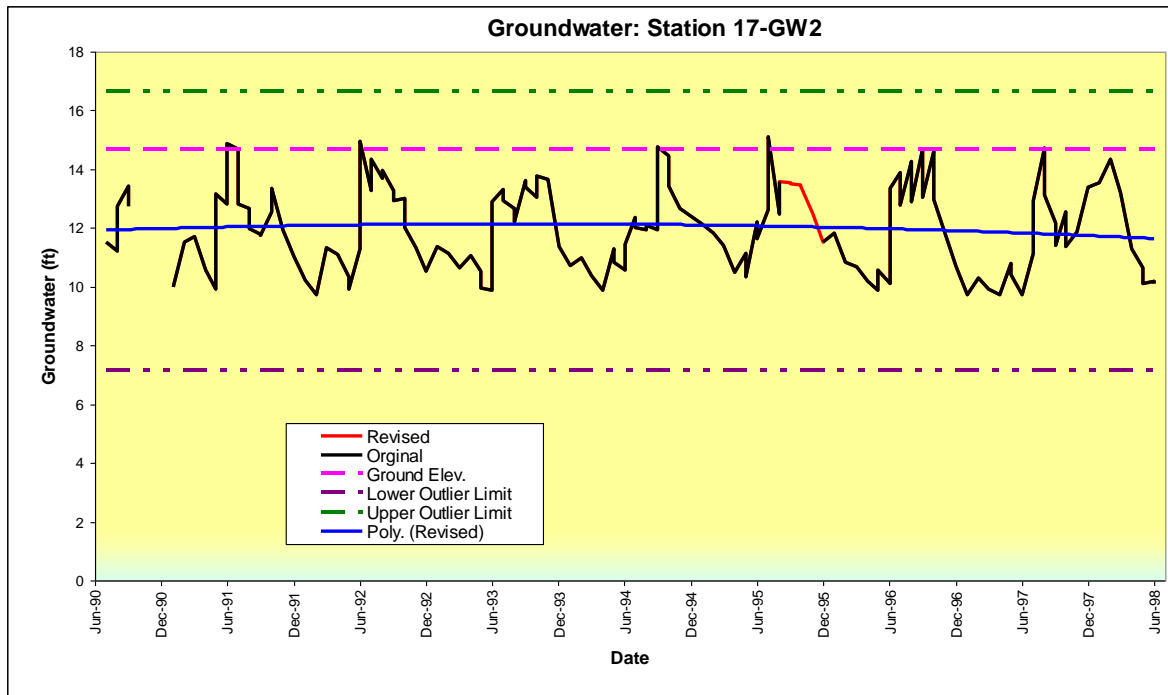
#### 3.15.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
17-GW2	Powell Creek	300 ft. South of Circle K off of Laural Lane.	No Data	No Data

#### 3.15.2. Descriptive Statistics

	Original	Revised
Mean	11.986	12.011
Standard Deviation	1.442	1.438
Skewness	0.227	0.188
Q3	13.078	13.135
Upper Extreme Point Starting Point	20.195	20.290
Max	15.120	15.120
Upper Outlier Limit Starting Point	16.636	16.713
Median	11.900	11.930
Lower Outlier Limit Starting Point	7.146	7.173
Min	9.720	9.720
Lower Extreme Starting Point	3.588	3.595
Q1	10.705	10.750
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.15.3. Time Series Plots







### 3.17. Station 17-GW4

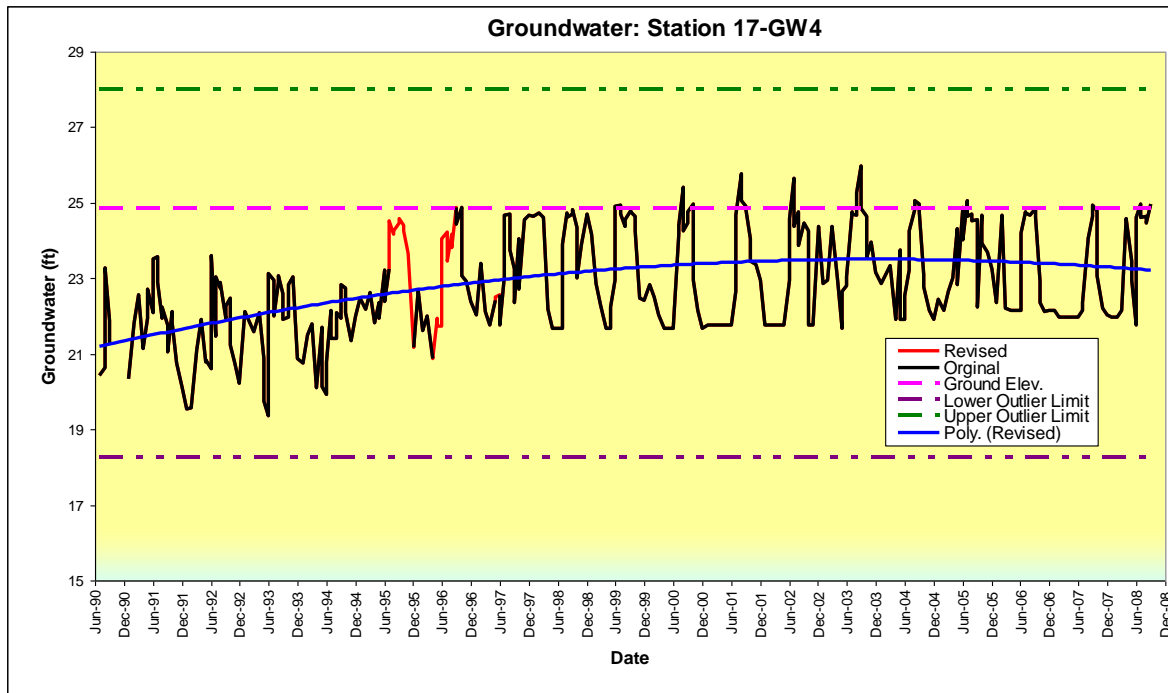
#### 3.17.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
17-GW4	Powell Creek	0.7 miles past MM 148 on I75. Next to fence.	26 45.83'	81 52.47'

#### 3.17.2. Descriptive Statistics

	Original	Revised
Mean	22.892	22.931
Standard Deviation	1.383	1.374
Skewness	0.047	-0.009
Q3	24.338	24.330
Upper Extreme Point Starting Point	31.620	31.590
Max	25.960	25.960
Upper Outlier Limit Starting Point	27.979	27.960
Median	22.670	22.750
Lower Outlier Limit Starting Point	18.269	18.280
Min	19.350	19.350
Lower Extreme Starting Point	14.628	14.650
Q1	21.910	21.910
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.17.3. Time Series Plots



### 3.18. Station 18-GW1

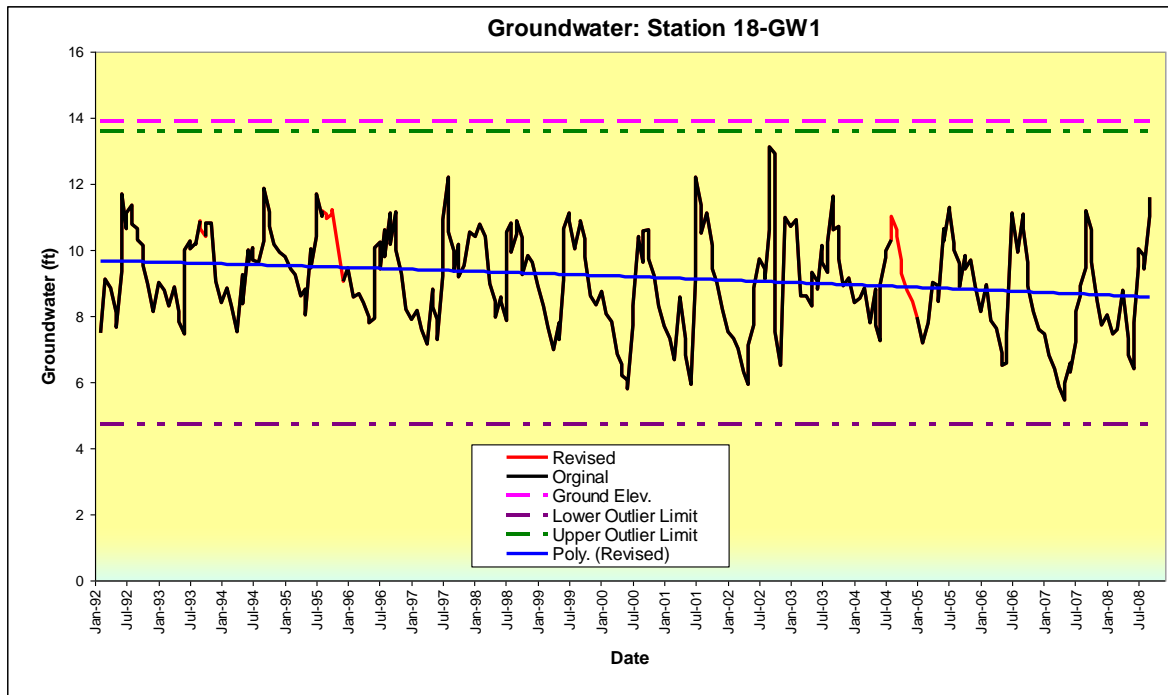
#### 3.18.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
18-GW1	Marsh Point	Between guard rail and fence. Intersection of Abby Lane and Hart Rd.	26 41.82'	85 51.97'

#### 3.18.2. Descriptive Statistics

	Original	Revised
Mean	9.137	9.172
Standard Deviation	1.476	1.470
Skewness	-0.181	-0.217
Q3	10.268	10.310
Upper Extreme Point Starting Point	16.935	16.880
Max	13.120	13.120
Upper Outlier Limit Starting Point	13.601	13.595
Median	9.215	9.250
Lower Outlier Limit Starting Point	4.711	4.835
Min	5.470	5.470
Lower Extreme Starting Point	1.378	1.550
Q1	8.045	8.120
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.18.3. Time Series Plots



### 3.19. Station 18-GW2

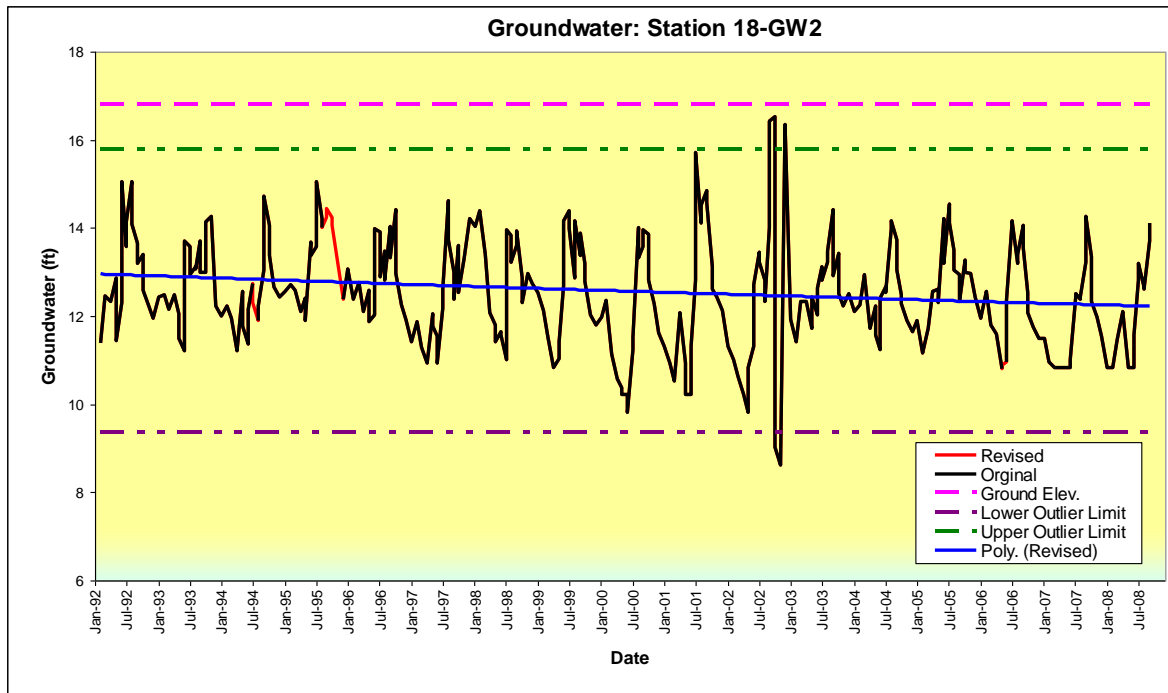
#### 3.19.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
18-GW2	Marsh Point	At power pole on north side of Tucker	26 43.44'	81 51.96'

#### 3.19.2. Descriptive Statistics

	Original	Revised
Mean	12.565	12.572
Standard Deviation	1.225	1.226
Skewness	0.120	0.110
Q3	13.383	13.390
Upper Extreme Point Starting Point	18.205	18.220
Max	16.520	16.520
Upper Outlier Limit Starting Point	15.794	15.805
Median	12.520	12.520
Lower Outlier Limit Starting Point	9.364	9.365
Min	8.620	8.620
Lower Extreme Starting Point	6.952	6.950
Q1	11.775	11.780
Outliers	5.000	5.000
Extremes	0.00	0.00

#### 3.19.3. Time Series Plots



### 3.20. Station 19-GW1

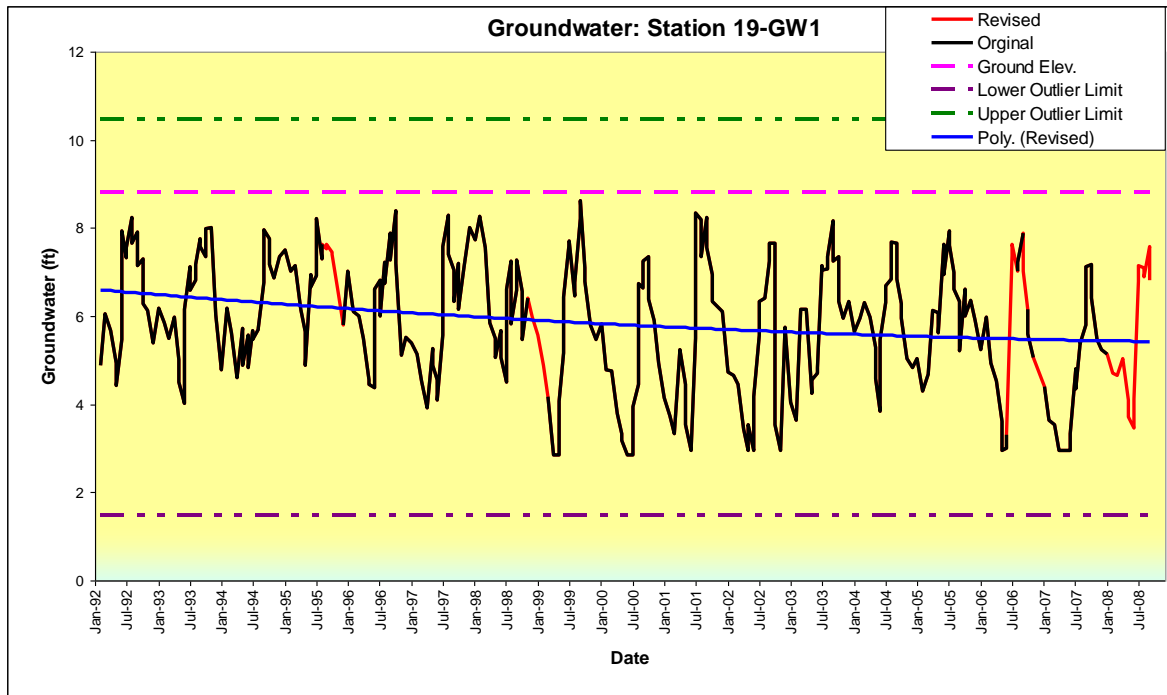
#### 3.20.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
19-GW1	Cohn Branch	At power pole north side of SR78. 0.1 miles east of Johnson Lane.	26 42.01'	81 50.96'

#### 3.20.2. Descriptive Statistics

	Original	Revised
Mean	5.854	5.868
Standard Deviation	1.450	1.449
Skewness	-0.333	-0.342
Q3	7.085	7.110
Upper Extreme Point Starting Point	13.820	13.980
Max	8.630	8.630
Upper Outlier Limit Starting Point	10.453	10.545
Median	5.980	6.000
Lower Outlier Limit Starting Point	1.473	1.385
Min	2.840	2.840
Lower Extreme Starting Point	-1.895	-2.050
Q1	4.840	4.820
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.20.3. Time Series Plots



### 3.21. Station 20-GW1

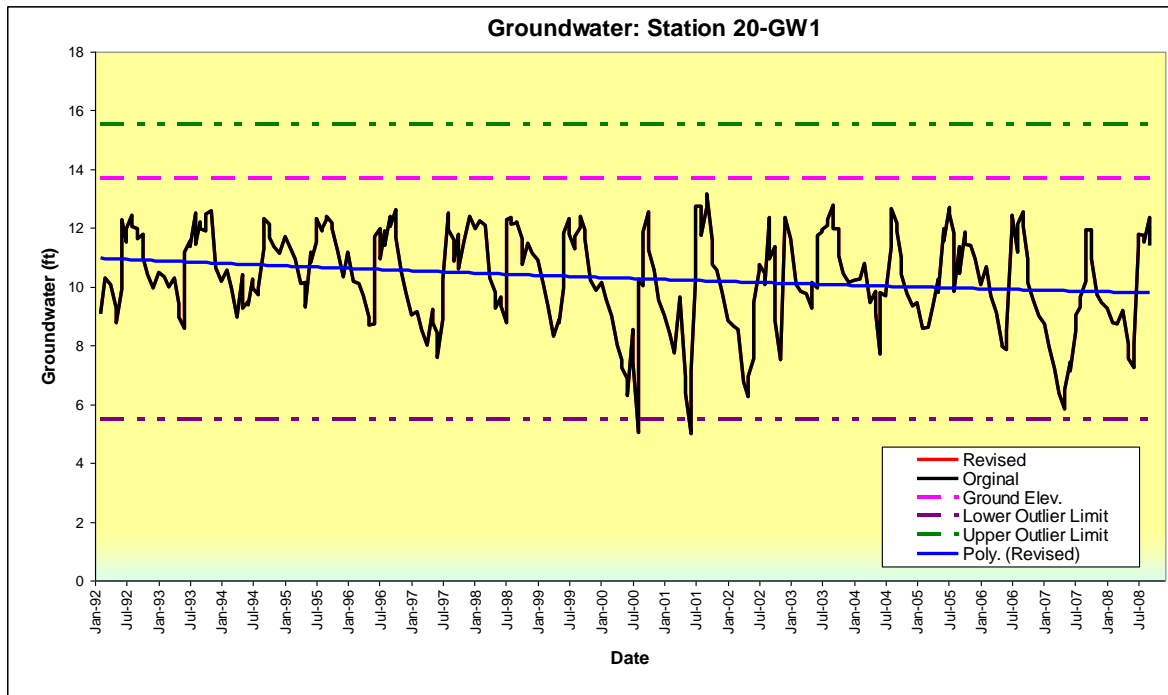
#### 3.21.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
20-GW1	Daughtrey Creek	30 feet north of Lee Coop substation on Shelby Lane.	26 42.59'	81 51.31'

#### 3.21.2. Descriptive Statistics

	Original	Revised
Mean	10.315	10.315
Standard Deviation	1.652	1.652
Skewness	-0.634	-0.634
Q3	11.770	11.770
Upper Extreme Point Starting Point	19.300	19.300
Max	13.150	13.150
Upper Outlier Limit Starting Point	15.535	15.535
Median	10.330	10.330
Lower Outlier Limit Starting Point	5.495	5.495
Min	5.000	5.000
Lower Extreme Starting Point	1.730	1.730
Q1	9.260	9.260
Outliers	2.000	2.000
Extremes	0.00	0.00

#### 3.21.3. Time Series Plots



### 3.22. Station 20-GW2

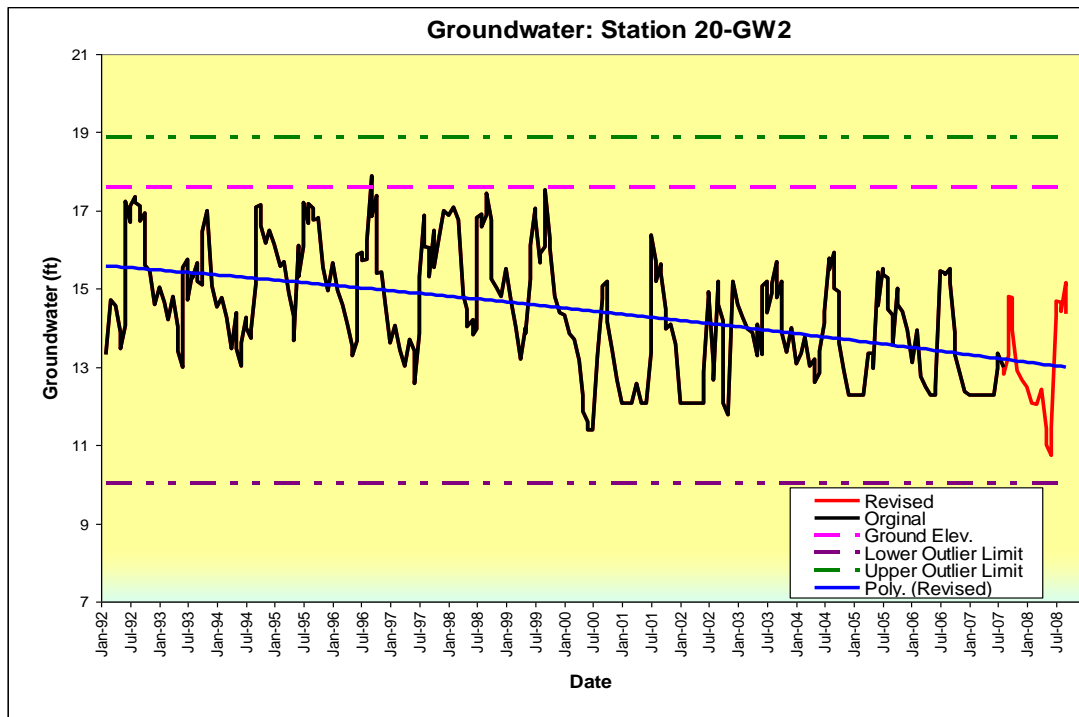
#### 3.22.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
20-GW2	Daughtrey Creek	0.2 miles east of Slater Rd. Northwest corner of property at 6710 Slater Pine Rd.	26 43.70'	81 50.85'

#### 3.22.2. Descriptive Statistics

	Original	Revised
Mean	14.482	14.390
Standard Deviation	1.544	1.569
Skewness	0.058	0.045
Q3	15.543	15.490
Upper Extreme Point Starting Point	22.164	22.120
Max	17.900	17.900
Upper Outlier Limit Starting Point	18.853	18.805
Median	14.480	14.390
Lower Outlier Limit Starting Point	10.024	9.965
Min	11.400	10.739
Lower Extreme Starting Point	6.714	6.650
Q1	13.335	13.280
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.22.3. Time Series Plots



### 3.23. Station 20-GW3

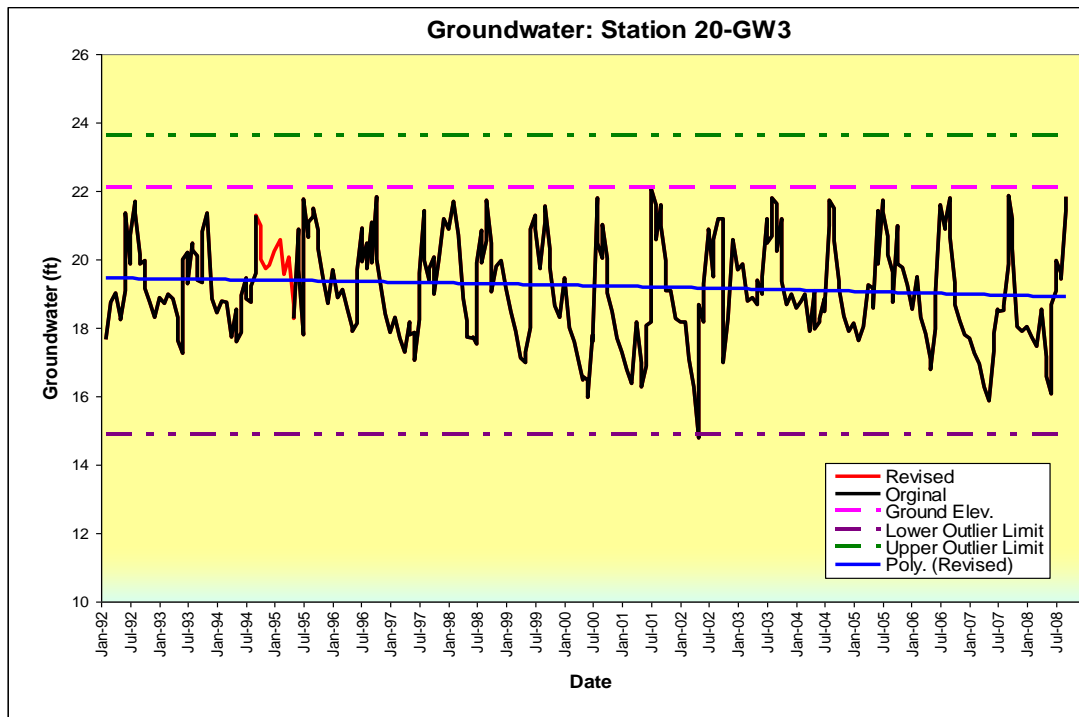
#### 3.23.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
20-GW3	Daughtrey Creek	Cul-De-Sac south end of Huber Rd	26 44.95'	81 51.42'

#### 3.23.2. Descriptive Statistics

	Original	Revised
Mean	19.192	19.215
Standard Deviation	1.484	1.472
Skewness	-0.056	-0.092
Q3	20.348	20.310
Upper Extreme Point Starting Point	26.918	26.700
Max	22.080	22.080
Upper Outlier Limit Starting Point	23.633	23.505
Median	19.080	19.100
Lower Outlier Limit Starting Point	14.873	14.985
Min	14.780	14.780
Lower Extreme Starting Point	11.588	11.790
Q1	18.158	18.180
Outliers	1.000	1.000
Extremes	0.00	0.00

#### 3.23.3. Time Series Plots



### 3.24. Station 20A-GW1

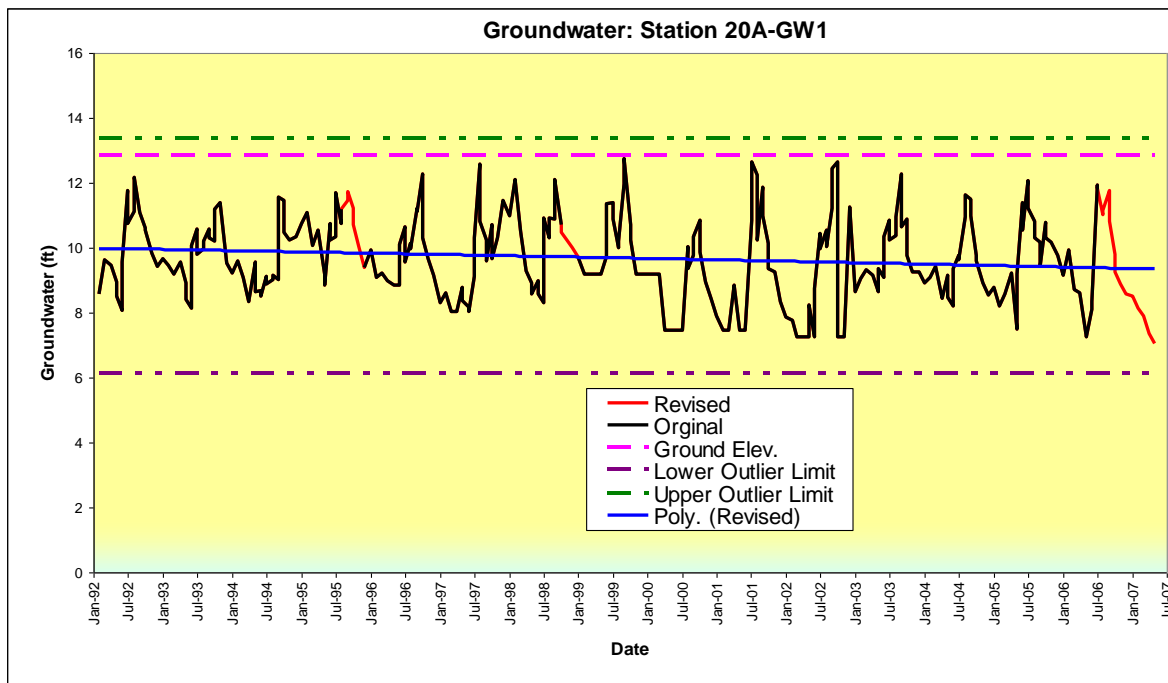
#### 3.24.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
20A-GW1	Daughtrey-East	North end of Williams Rd west of Bayshore Elem. school soccer fields	26 42.86'	81 50.55'

#### 3.24.2. Descriptive Statistics

	Original	Revised
Mean	9.687	9.675
Standard Deviation	1.299	1.315
Skewness	0.101	0.056
Q3	10.655	10.680
Upper Extreme Point Starting Point	16.070	16.275
Max	12.760	12.760
Upper Outlier Limit Starting Point	13.363	13.478
Median	9.590	9.600
Lower Outlier Limit Starting Point	6.143	6.018
Min	7.250	7.034
Lower Extreme Starting Point	3.435	3.220
Q1	8.850	8.815
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.24.3. Time Series Plots





### 3.25. Station 21-GW1

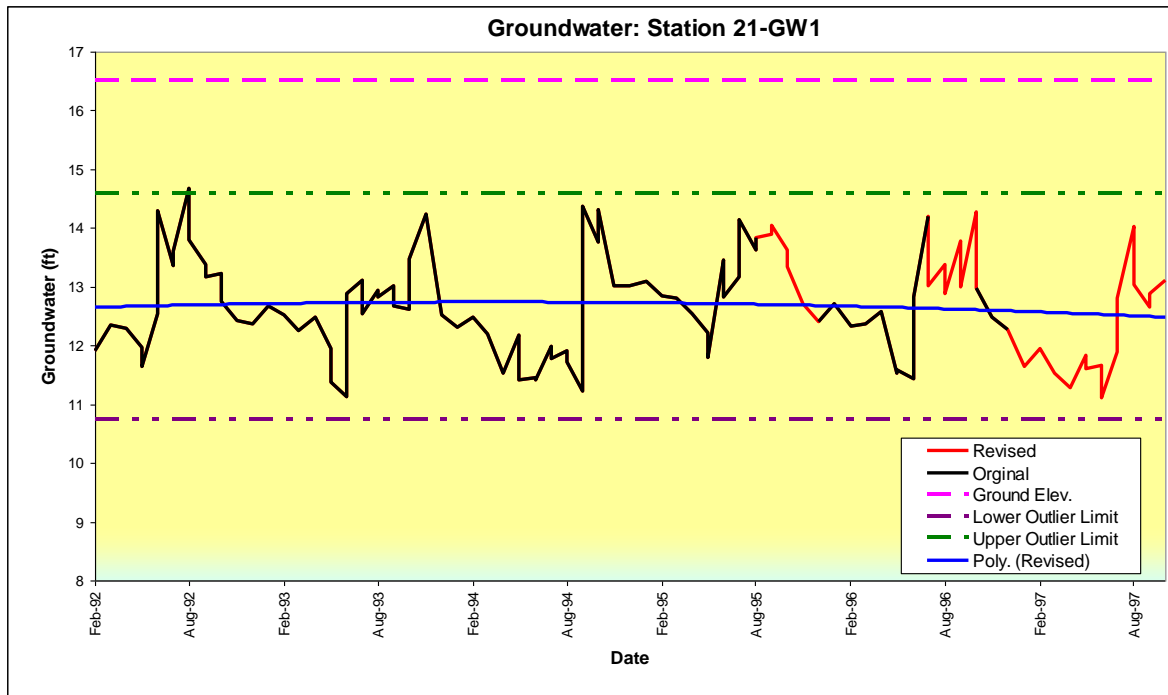
#### 3.25.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
21-GW1	No data	No data	No data	No data

#### 3.25.2. Descriptive Statistics

	Original	Revised
Mean	12.663	12.672
Standard Deviation	0.829	0.856
Skewness	0.352	0.231
Q3	13.140	13.170
Upper Extreme Point Starting Point	16.020	16.785
Max	14.670	14.670
Upper Outlier Limit Starting Point	14.580	14.978
Median	12.540	12.661
Lower Outlier Limit Starting Point	10.740	10.158
Min	11.120	11.112
Lower Extreme Starting Point	9.300	8.350
Q1	12.180	11.965
Outliers	1.000	0.000
Extremes	0.00	0.00

#### 3.25.3. Time Series Plots



### 3.26. Station 21-GW2

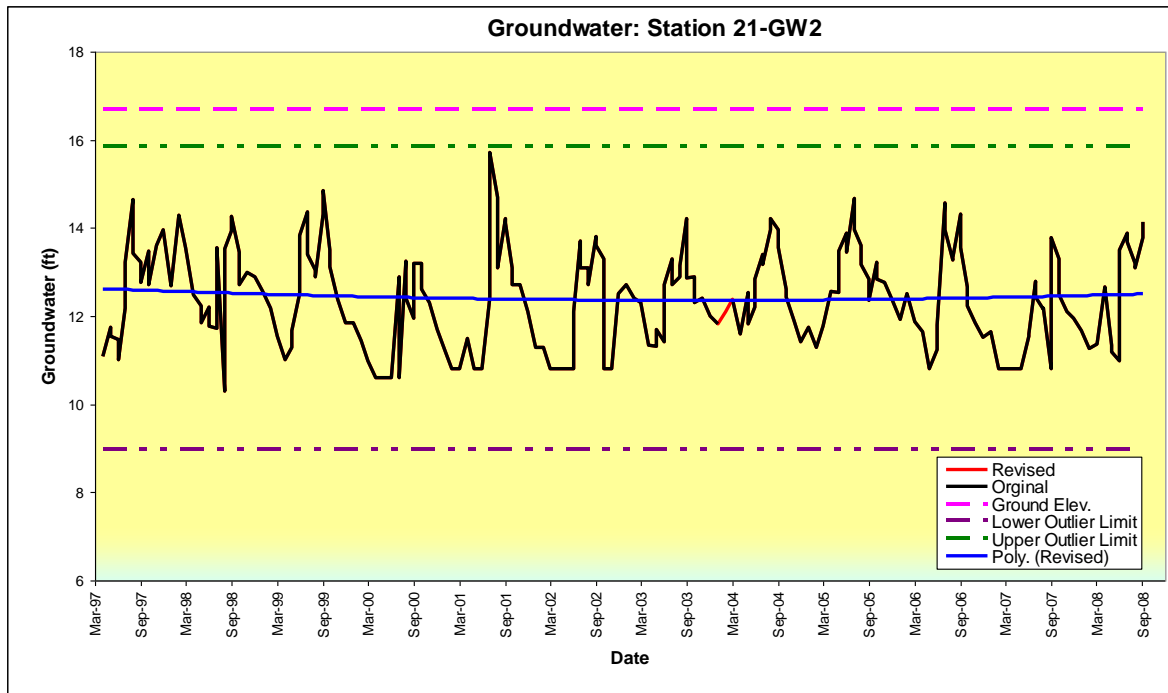
#### 3.26.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
21-GW2	Chapel Branch	End of Interstate Ct. East side cul-de-sac front of Nortech.	26 43.31'	81 49.80'

#### 3.26.2. Descriptive Statistics

	Original	Revised
Mean	12.432	12.430
Standard Deviation	1.120	1.117
Skewness	0.140	0.144
Q3	13.255	13.250
Upper Extreme Point Starting Point	18.400	18.380
Max	15.700	15.700
Upper Outlier Limit Starting Point	15.828	15.815
Median	12.465	12.440
Lower Outlier Limit Starting Point	8.968	8.975
Min	10.300	10.300
Lower Extreme Starting Point	6.395	6.410
Q1	11.540	11.540
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.26.3. Time Series Plots



### 3.27. Station 22-GW1

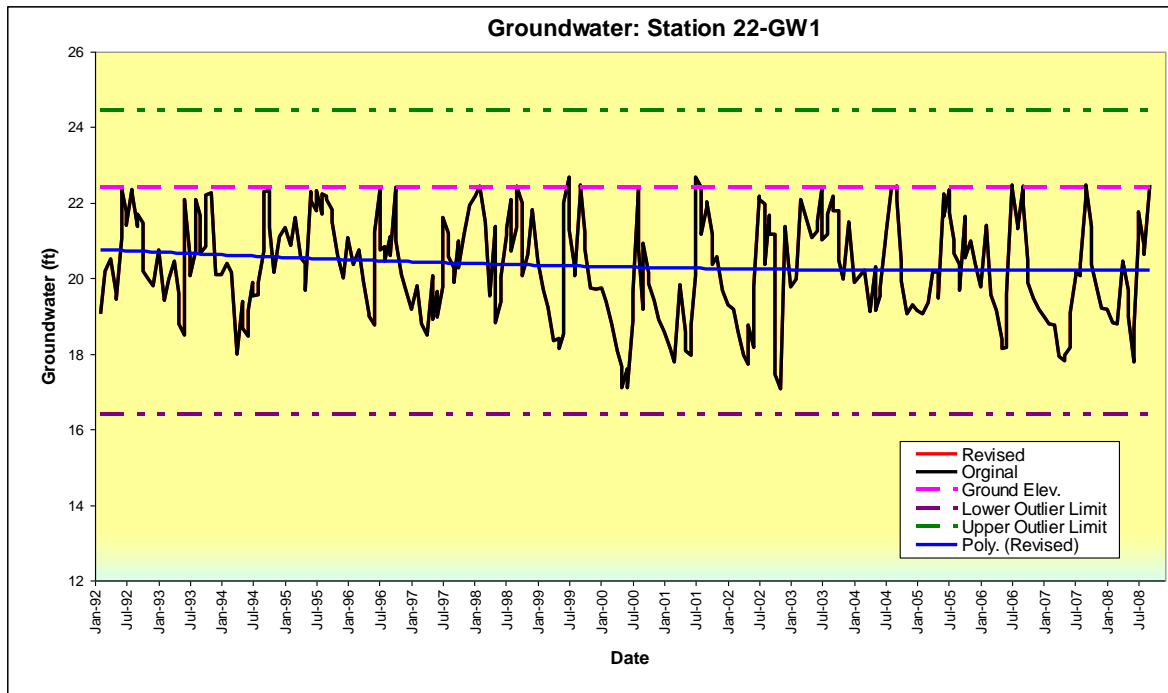
#### 3.27.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
22-GW1	Bayshore Creek	Lee County park on Malle Grade Rd.	26 45.27'	81 49.13'

#### 3.27.2. Descriptive Statistics

	Original	Revised
Mean	20.363	20.363
Standard Deviation	1.346	1.346
Skewness	-0.199	-0.199
Q3	21.410	21.410
Upper Extreme Point Starting Point	27.440	27.440
Max	22.670	22.670
Upper Outlier Limit Starting Point	24.425	24.425
Median	20.370	20.370
Lower Outlier Limit Starting Point	16.385	16.385
Min	17.070	17.070
Lower Extreme Starting Point	13.370	13.370
Q1	19.400	19.400
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.27.3. Time Series Plots



### 3.28. Station 23-GW1

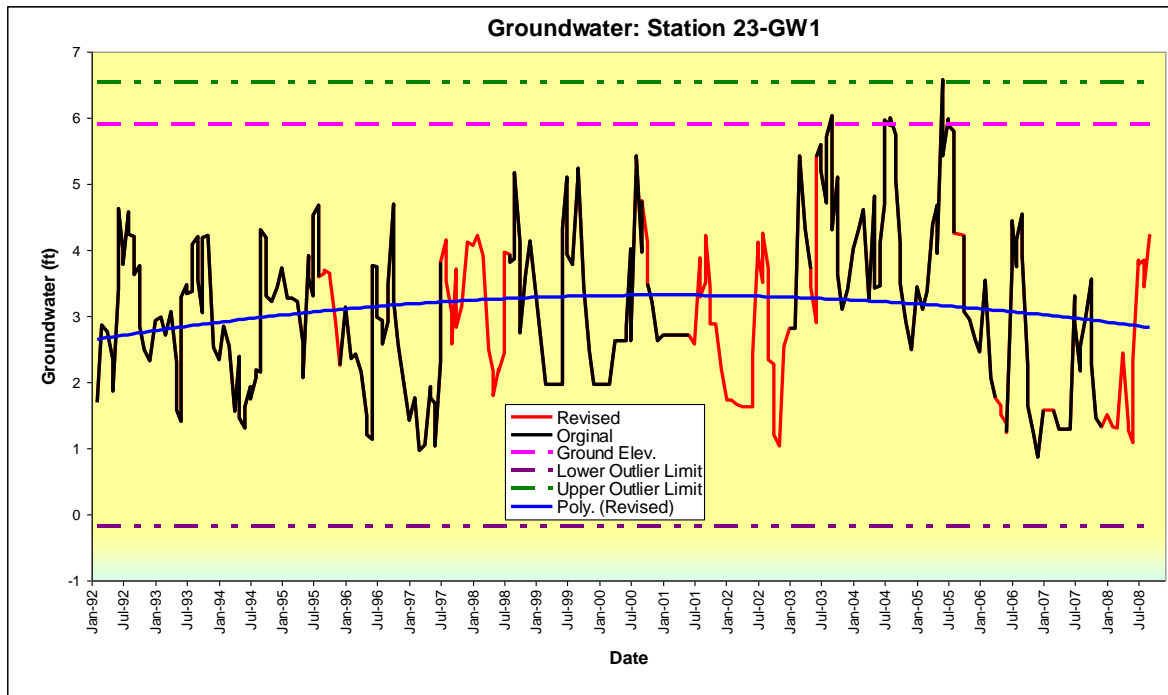
#### 3.28.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
23-GW1	Popash Creek	Northeast of Intersection of Pritchett Pkwy & SR 78.	26 42.96'	81 48.42'

#### 3.28.2. Descriptive Statistics

	Original	Revised
Mean	3.217	3.119
Standard Deviation	1.231	1.198
Skewness	0.338	0.318
Q3	4.010	3.940
Upper Extreme Point Starting Point	9.050	9.158
Max	6.580	6.580
Upper Outlier Limit Starting Point	6.530	6.549
Median	3.220	3.060
Lower Outlier Limit Starting Point	-0.190	-0.409
Min	0.870	0.870
Lower Extreme Starting Point	-2.710	-3.018
Q1	2.330	2.201
Outliers	1.000	1.000
Extremes	0.00	0.00

#### 3.28.3. Time Series Plots



### 3.29. Station 23-GW2

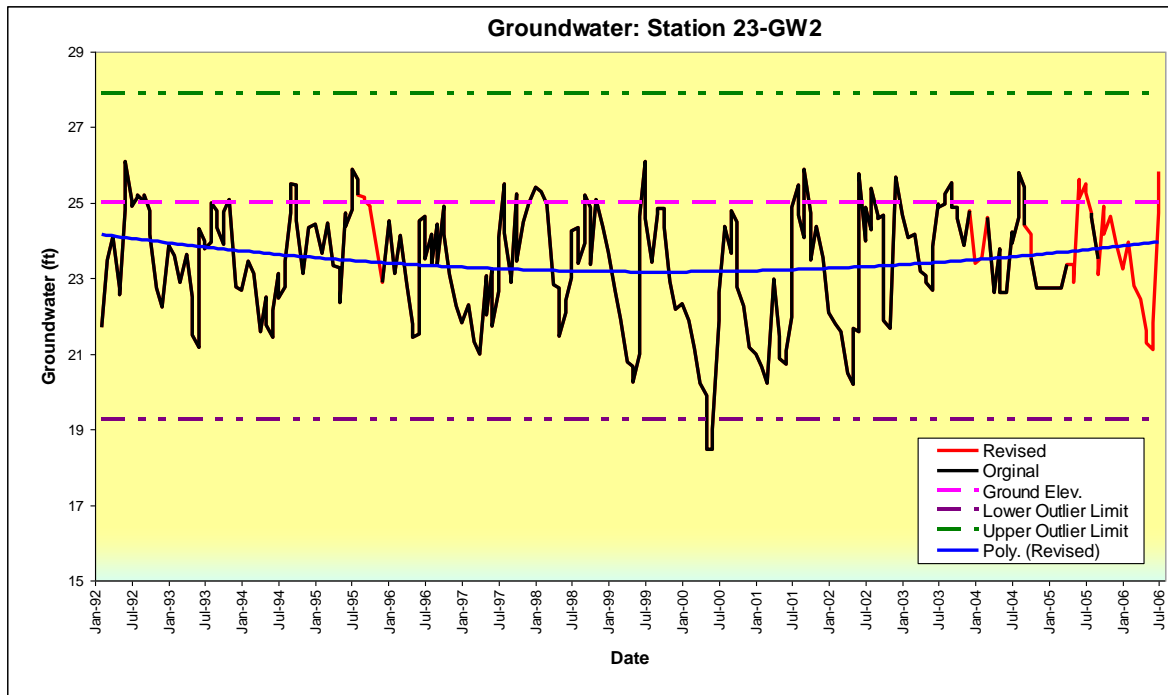
#### 3.29.1. Station Description

Well ID	Watershed Name Name	Location	Latitude	Longitude
23-GW2	Popash Creek	North end of Nalle Rd. in FPL easement.	26 45.93'	81 48.10'

#### 3.29.2. Descriptive Statistics

	Original	Revised
Mean	23.424	23.474
Standard Deviation	1.514	1.500
Skewness	-0.641	-0.644
Q3	24.665	24.690
Upper Extreme Point Starting Point	31.145	30.930
Max	26.090	26.090
Upper Outlier Limit Starting Point	27.905	27.810
Median	23.535	23.620
Lower Outlier Limit Starting Point	19.265	19.490
Min	18.460	18.460
Lower Extreme Starting Point	16.025	16.370
Q1	22.505	22.610
Outliers	3.000	3.000
Extremes	0.00	0.00

#### 3.29.3. Time Series Plots



### 3.30. Station 24-GW1

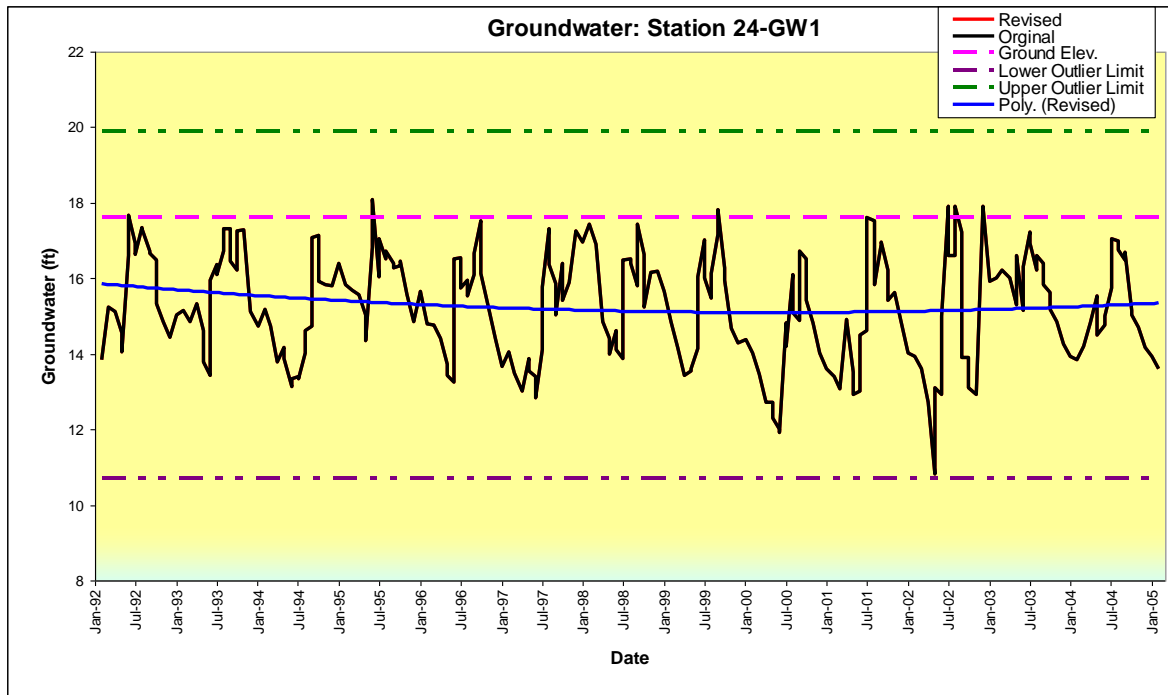
#### 3.30.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
24-GW1	Stround Creek	FPL easement West of Durrance Rd.	26 43.52'	81 47.63'

#### 3.30.2. Descriptive Statistics

	Original	Revised
Mean	15.287	15.287
Standard Deviation	1.414	1.414
Skewness	-0.242	-0.242
Q3	16.450	16.450
Upper Extreme Point Starting Point	23.335	23.335
Max	18.090	18.090
Upper Outlier Limit Starting Point	19.893	19.893
Median	15.320	15.320
Lower Outlier Limit Starting Point	10.713	10.713
Min	10.810	10.810
Lower Extreme Starting Point	7.270	7.270
Q1	14.155	14.155
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.30.3. Time Series Plots



### 3.31. Station 24-GW2

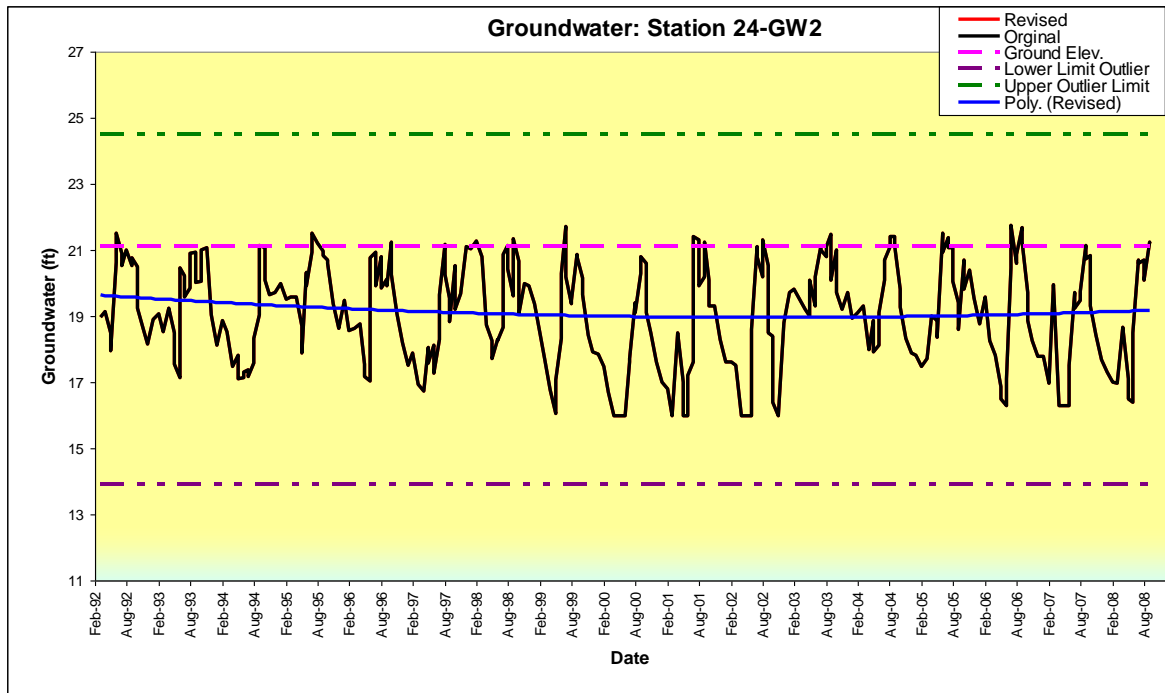
#### 3.31.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
24-GW2	stroud Creek	Intersection of Veronica and Ethel.	26 44.44'	81 47.90'

#### 3.31.2. Descriptive Statistics

	Original	Revised
Mean	19.127	19.127
Standard Deviation	1.568	1.568
Skewness	-0.313	-0.313
Q3	20.530	20.530
Upper Extreme Point Starting Point	28.458	28.458
Max	21.750	21.750
Upper Outlier Limit Starting Point	24.494	24.494
Median	19.285	19.285
Lower Outlier Limit Starting Point	13.924	13.924
Min	16.000	16.000
Lower Extreme Starting Point	9.960	9.960
Q1	17.888	17.888
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.31.3. Time Series Plots



### 3.32. Station 26-GW1

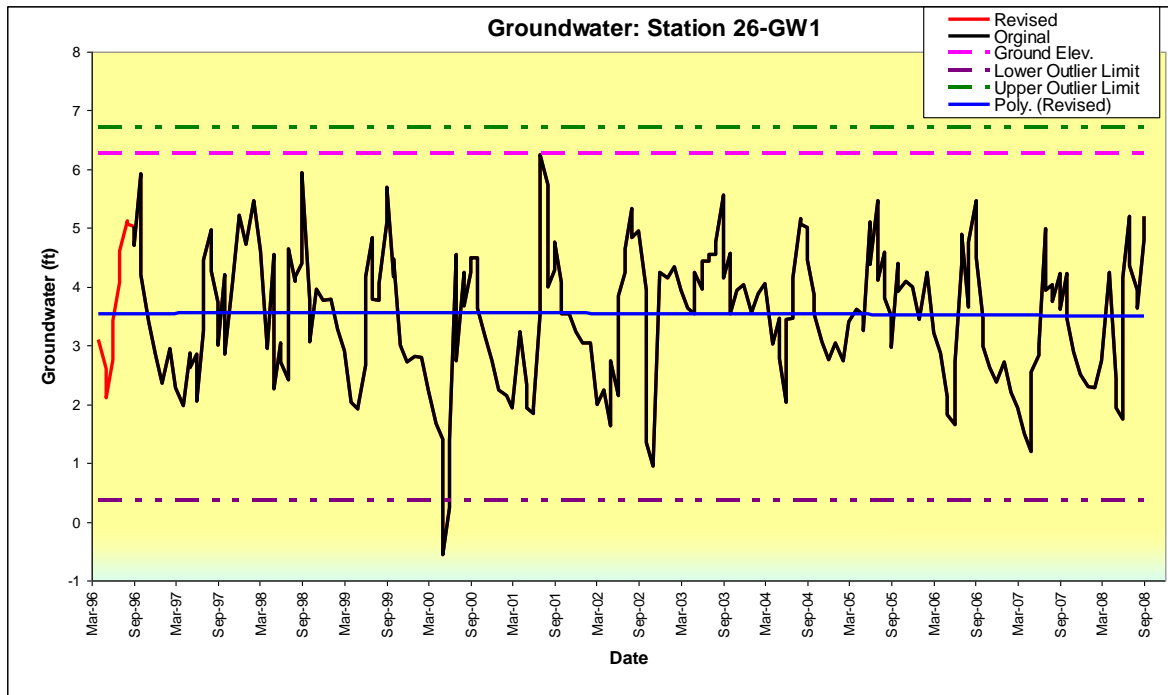
#### 3.32.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
26-GW1	Kickapoo Creek	Intersection of Deal Rd. & Palm Creek Dr.	26 43.39'	81 46.09'

#### 3.32.2. Descriptive Statistics

	Original	Revised
Mean	3.534	3.537
Standard Deviation	1.136	1.134
Skewness	-0.321	-0.314
Q3	4.328	4.345
Upper Extreme Point Starting Point	9.090	9.160
Max	6.240	6.240
Upper Outlier Limit Starting Point	6.709	6.753
Median	3.640	3.640
Lower Outlier Limit Starting Point	0.359	0.333
Min	-0.560	-0.560
Lower Extreme Starting Point	-2.023	-2.075
Q1	2.740	2.740
Outliers	2.000	2.000
Extremes	0.00	0.00

#### 3.32.3. Time Series Plots





### 3.33. Station 26-GW2

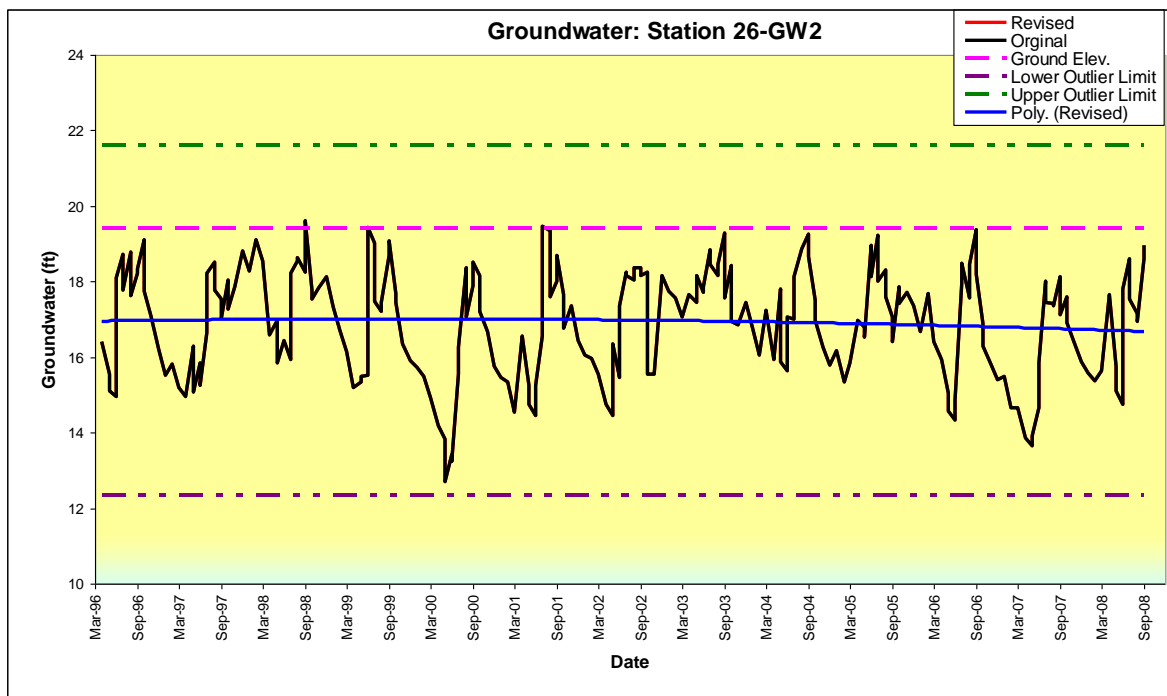
#### 3.33.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
16-GW2	Kichapoo Creek	Old Bayshore Rd, back gate of Civic Center. Active Located 15' North of shed on North side of path.	26 44.18'	81 46.60'

#### 3.33.2. Descriptive Statistics

	Original	Revised
Mean	16.923	16.923
Standard Deviation	1.439	1.439
Skewness	-0.389	-0.389
Q3	18.120	18.120
Upper Extreme Point Starting Point	25.050	25.050
Max	19.610	19.610
Upper Outlier Limit Starting Point	21.585	21.585
Median	17.120	17.120
Lower Outlier Limit Starting Point	12.345	12.345
Min	12.700	12.700
Lower Extreme Starting Point	8.880	8.880
Q1	15.810	15.810
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.33.3. Time Series Plots



### 3.34. Station 27-GW1

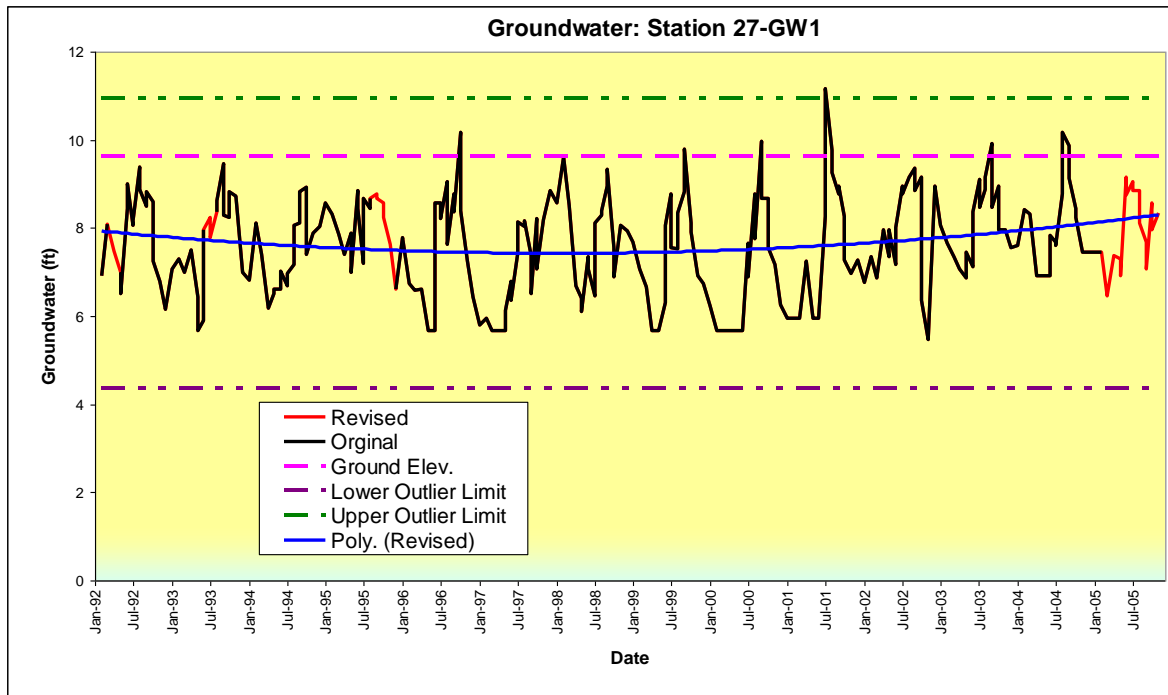
#### 3.34.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
27-GW1	Trout Creek	Cul-De-Sac south end of Serenoa Ct.	26 44.06'	81 43.86'

#### 3.34.2. Descriptive Statistics

	Original	Revised
Mean	7.629	7.668
Standard Deviation	1.148	1.125
Skewness	0.031	-0.034
Q3	8.460	8.550
Upper Extreme Point Starting Point	13.395	13.515
Max	11.160	11.160
Upper Outlier Limit Starting Point	10.928	11.033
Median	7.640	7.681
Lower Outlier Limit Starting Point	4.348	4.413
Min	5.460	5.460
Lower Extreme Starting Point	1.880	1.930
Q1	6.815	6.895
Outliers	1.000	1.000
Extremes	0.00	0.00

#### 3.34.3. Time Series Plots



### 3.35. Station 27-GW2

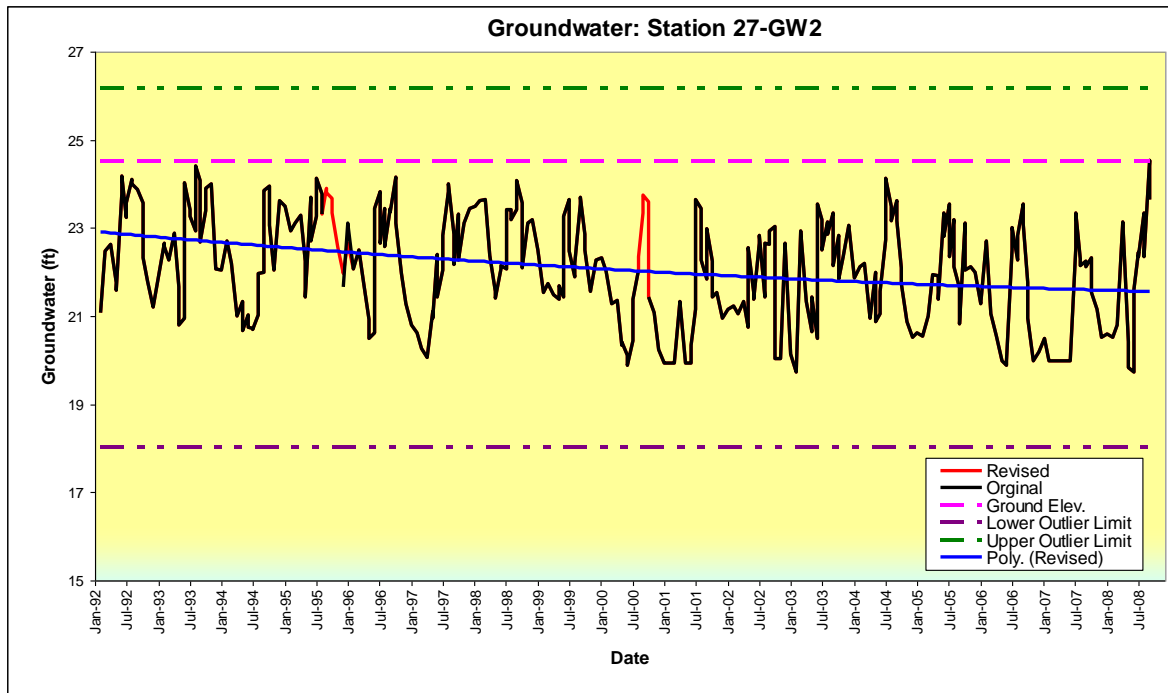
#### 3.35.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
27-GW2	Trout Creek	East side of SR 31 .9mi north of SR 78.	26 45.32'	81 45.66'

#### 3.35.2. Descriptive Statistics

	Original	Revised
Mean	22.069	22.103
Standard Deviation	1.218	1.222
Skewness	-0.149	-0.182
Q3	23.110	23.150
Upper Extreme Point Starting Point	29.200	29.180
Max	24.540	24.540
Upper Outlier Limit Starting Point	26.155	26.165
Median	22.130	22.160
Lower Outlier Limit Starting Point	18.035	18.125
Min	19.740	19.740
Lower Extreme Starting Point	14.990	15.110
Q1	21.080	21.140
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.35.3. Time Series Plots



### 3.36. Station 270-GW1

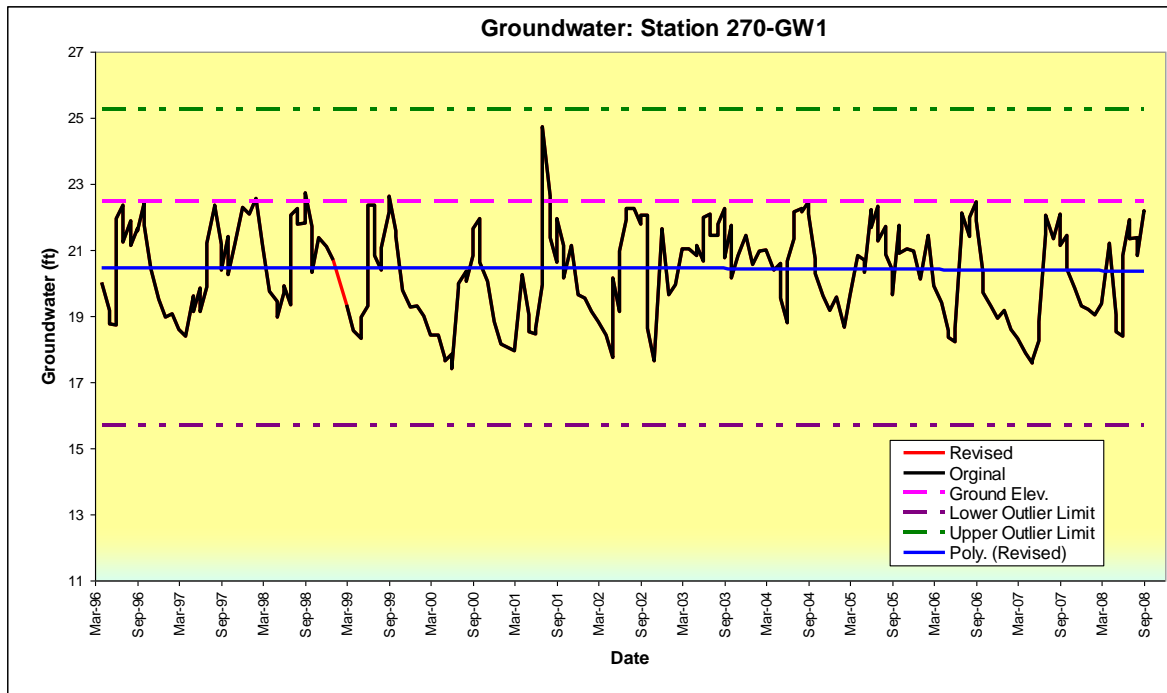
#### 3.36.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
270-GW1	Owl Creek	Empty lot north side of end of Shirley Lane.	26 44.89'	81 46.27'

#### 3.36.2. Descriptive Statistics

	Original	Revised
Mean	20.439	20.437
Standard Deviation	1.413	1.410
Skewness	-0.165	-0.161
Q3	21.655	21.650
Upper Extreme Point Starting Point	28.818	28.775
Max	24.740	24.740
Upper Outlier Limit Starting Point	25.236	25.213
Median	20.655	20.640
Lower Outlier Limit Starting Point	15.686	15.713
Min	17.390	17.390
Lower Extreme Starting Point	12.105	12.150
Q1	19.268	19.275
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.36.3. Time Series Plots



### 3.37. Station 28-GW1

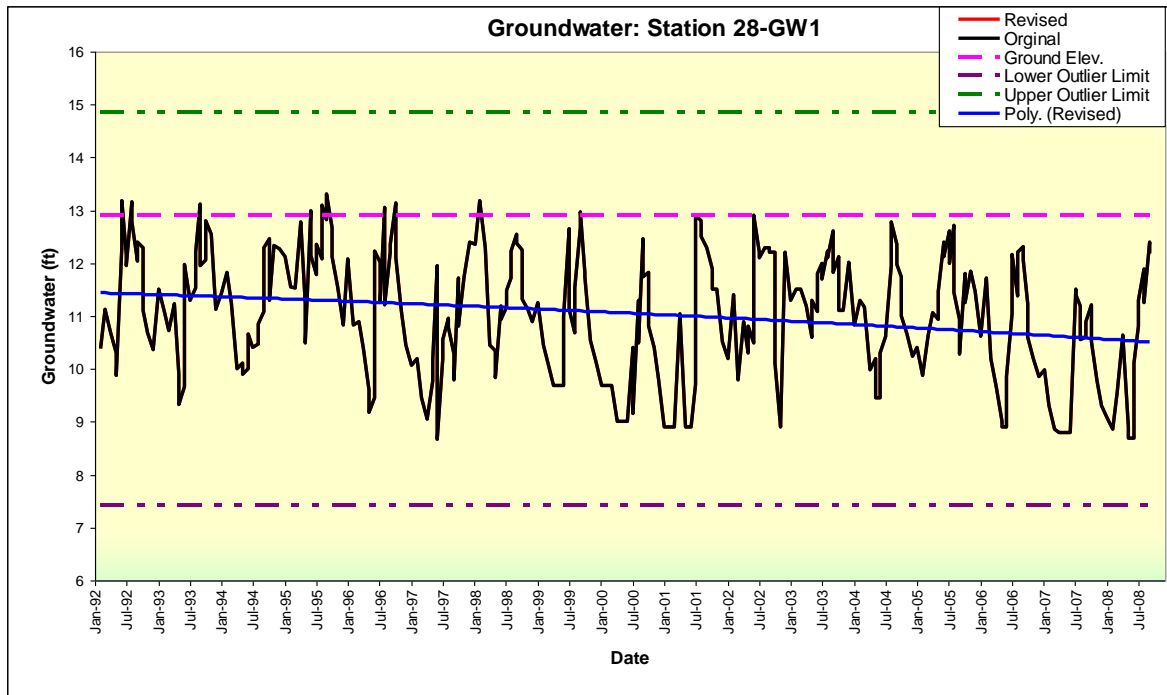
#### 3.37.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
28-GW1	Otter Creek	North side Int. Olga Dr & SR 78.	26 43.99'	81 42.95'

#### 3.37.2. Descriptive Statistics

	Original	Revised
Mean	11.029	11.029
Standard Deviation	1.179	1.179
Skewness	-0.240	-0.240
Q3	12.060	12.060
Upper Extreme Point Starting Point	17.640	17.640
Max	13.310	13.310
Upper Outlier Limit Starting Point	14.850	14.850
Median	11.130	11.130
Lower Outlier Limit Starting Point	7.410	7.410
Min	8.660	8.660
Lower Extreme Starting Point	4.620	4.620
Q1	10.200	10.200
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.37.3. Time Series Plots



### 3.38. Station 28-GW2

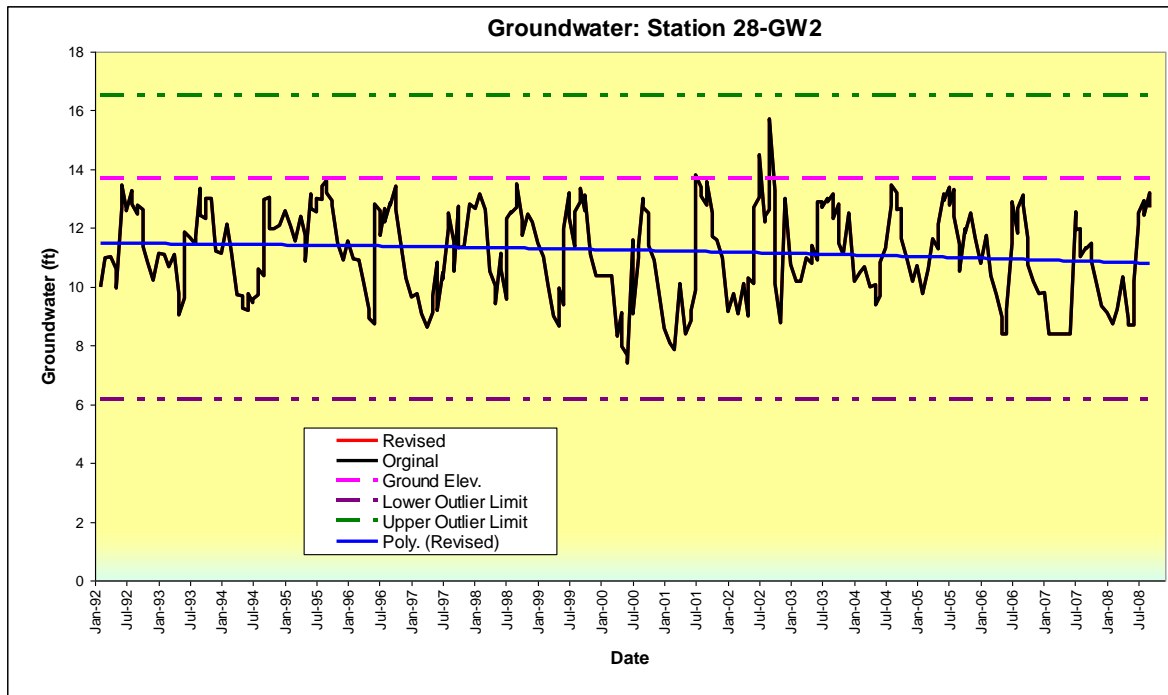
#### 3.38.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
28-GW2	Otter Creek	Northwest corner Int. SR 78 & Argo Dr.	26 44.45'	81 42.95'

#### 3.38.2. Descriptive Statistics

	Original	Revised
Mean	11.210	11.210
Standard Deviation	1.558	1.558
Skewness	-0.262	-0.262
Q3	12.620	12.620
Upper Extreme Point Starting Point	20.390	20.390
Max	15.710	15.710
Upper Outlier Limit Starting Point	16.505	16.505
Median	11.350	11.350
Lower Outlier Limit Starting Point	6.145	6.145
Min	7.390	7.390
Lower Extreme Starting Point	2.260	2.260
Q1	10.030	10.030
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.38.3. Time Series Plots



### 3.39. Station 29-GW1

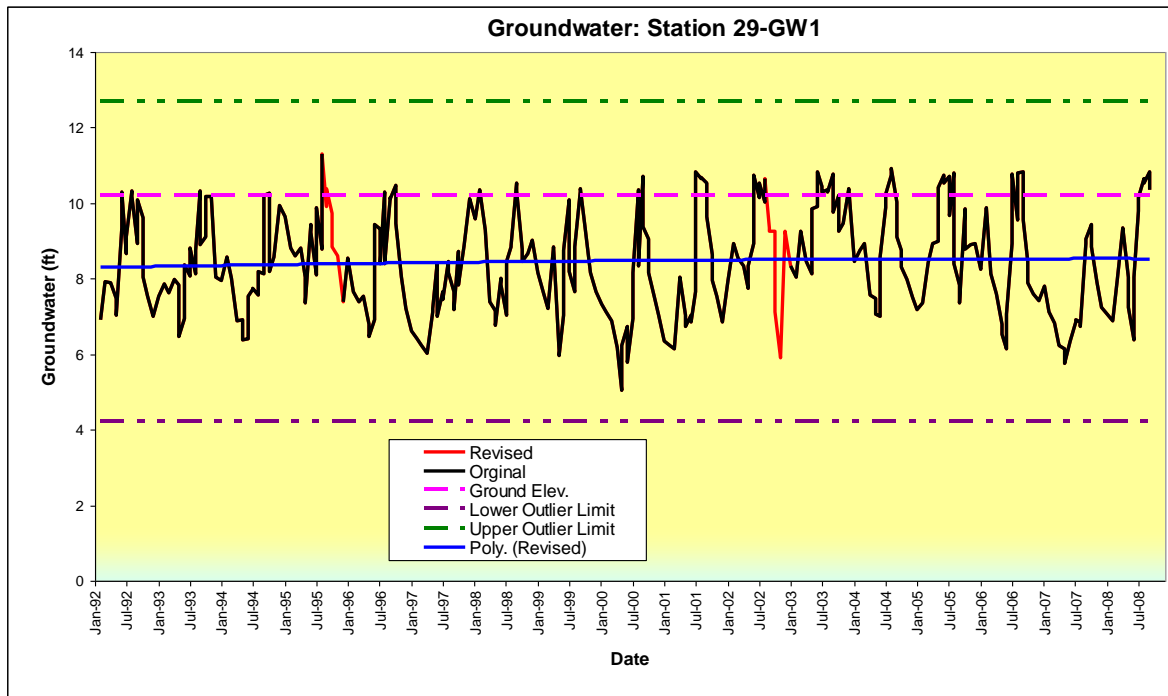
#### 3.39.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
29-GW1	Telegraph Creek	At power pole north side of SR 78 0.1 mi east of Telegraph Creek bridge.	26 43.82'	81 41.94'

#### 3.39.2. Descriptive Statistics

	Original	Revised
Mean	8.440	8.454
Standard Deviation	1.364	1.364
Skewness	0.106	0.065
Q3	9.510	9.550
Upper Extreme Point Starting Point	15.885	16.030
Max	11.290	11.290
Upper Outlier Limit Starting Point	12.698	12.790
Median	8.340	8.390
Lower Outlier Limit Starting Point	4.198	4.150
Min	5.040	5.040
Lower Extreme Starting Point	1.010	0.910
Q1	7.385	7.390
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.39.3. Time Series Plots



### 3.40. Station 29-GW2

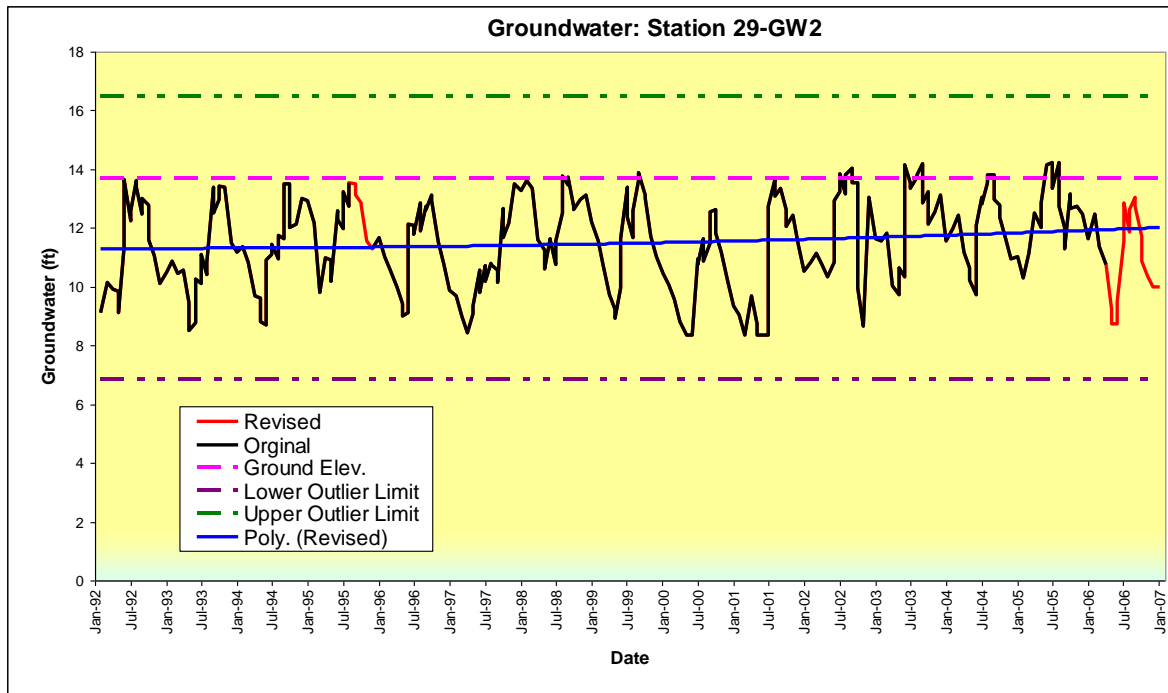
#### 3.40.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
29-GW2	Telegraph Creek	At power pole north side of SR 78 .3 mi east of Telegraph CK Lane.	26 43.71'	81 41.16'

#### 3.40.2. Descriptive Statistics

	Original	Revised
Mean	11.554	11.536
Standard Deviation	1.571	1.570
Skewness	-0.307	-0.304
Q3	12.855	12.850
Upper Extreme Point Starting Point	20.085	20.252
Max	14.240	14.240
Upper Outlier Limit Starting Point	16.470	16.551
Median	11.640	11.630
Lower Outlier Limit Starting Point	6.830	6.682
Min	8.340	8.340
Lower Extreme Starting Point	3.215	2.981
Q1	10.445	10.383
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.40.3. Time Series Plots





### 3.41. Station 31-GW1

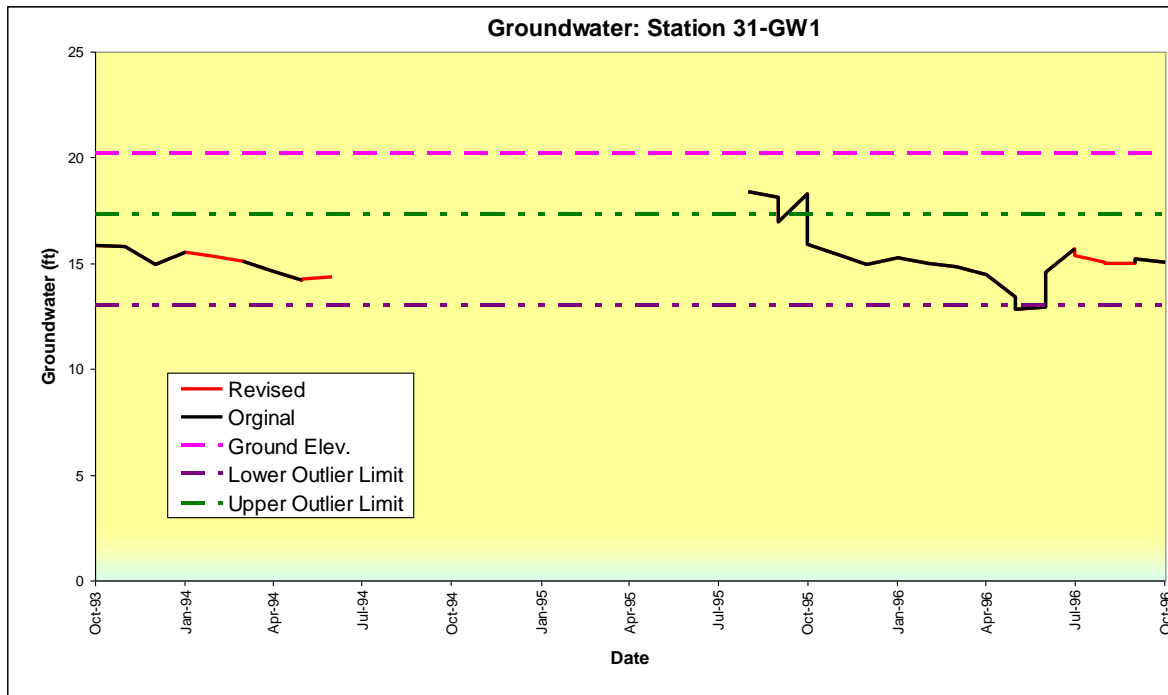
#### 3.41.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
31-GW1	No data	No data	No data	No data

#### 3.41.2. Descriptive Statistics

	Original	Revised
Mean	15.266	15.204
Standard Deviation	1.362	1.273
Skewness	0.776	0.919
Q3	15.688	15.520
Upper Extreme Point Starting Point	18.965	18.340
Max	18.400	18.400
Upper Outlier Limit Starting Point	17.326	16.930
Median	15.030	15.030
Lower Outlier Limit Starting Point	12.956	13.170
Min	12.840	12.840
Lower Extreme Starting Point	11.318	11.760
Q1	14.595	14.580
Outliers	5.000	5.000
Extremes	0.00	1.00

#### 3.41.3. Time Series Plots



### 3.42. Station 31-GW2

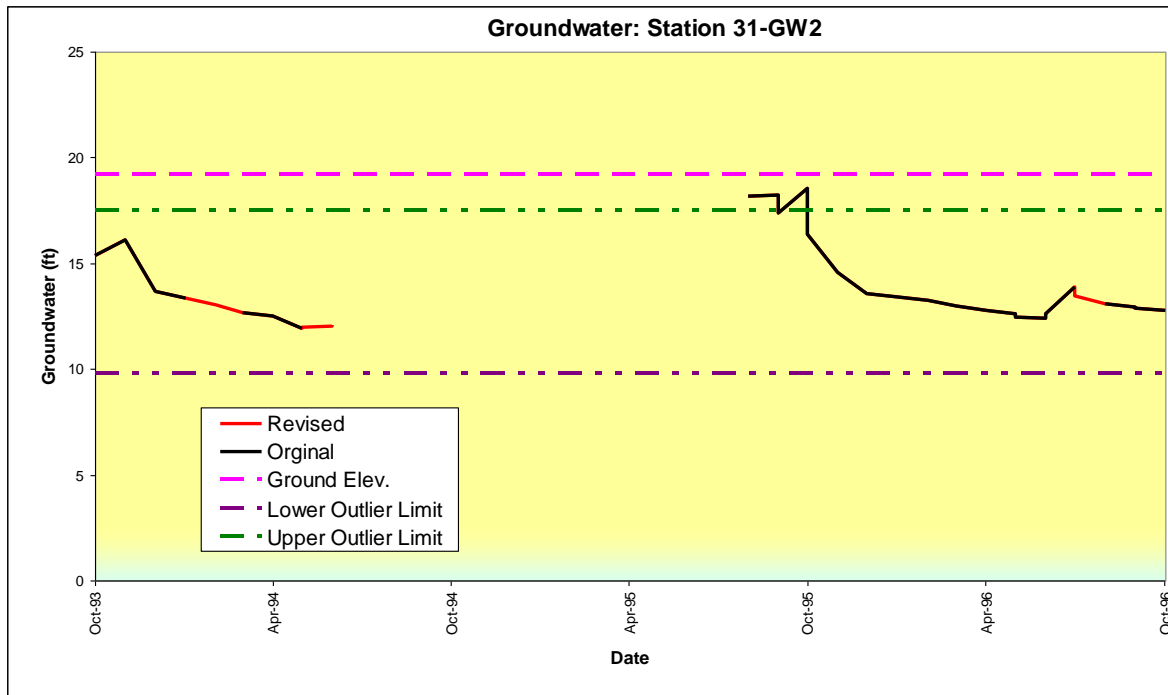
#### 3.42.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
31-GW2	No data	No data	No data	No data

#### 3.42.2. Descriptive Statistics

	Original	Revised
Mean	13.979	13.814
Standard Deviation	1.982	1.922
Skewness	1.301	1.436
Q3	14.590	13.870
Upper Extreme Point Starting Point	20.350	17.680
Max	18.530	18.530
Upper Outlier Limit Starting Point	17.470	15.775
Median	13.100	13.070
Lower Outlier Limit Starting Point	9.790	10.695
Min	11.920	11.920
Lower Extreme Starting Point	6.910	8.790
Q1	12.670	12.600
Outliers	3.000	3.000
Extremes	0.00	3.00

#### 3.42.3. Time Series Plots



### 3.43. Station 31-GW3

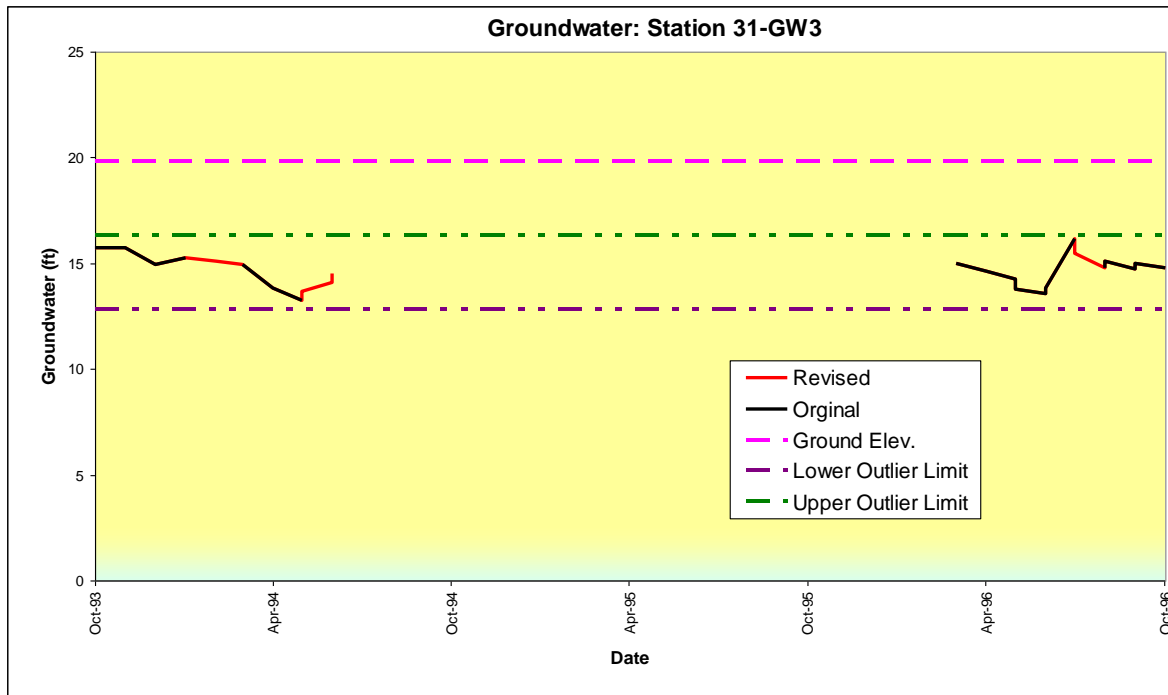
#### 3.43.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
31-GW3	No data	No data	No data	No data

#### 3.43.2. Descriptive Statistics

	Original	Revised
Mean	14.689	14.671
Standard Deviation	0.762	0.757
Skewness	-0.086	-0.072
Q3	15.023	15.079
Upper Extreme Point Starting Point	17.655	18.218
Max	16.170	16.170
Upper Outlier Limit Starting Point	16.339	16.648
Median	14.785	14.785
Lower Outlier Limit Starting Point	12.829	12.463
Min	13.240	13.240
Lower Extreme Starting Point	11.513	10.894
Q1	14.145	14.033
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.43.3. Time Series Plots



### 3.44. Station RP-GW4

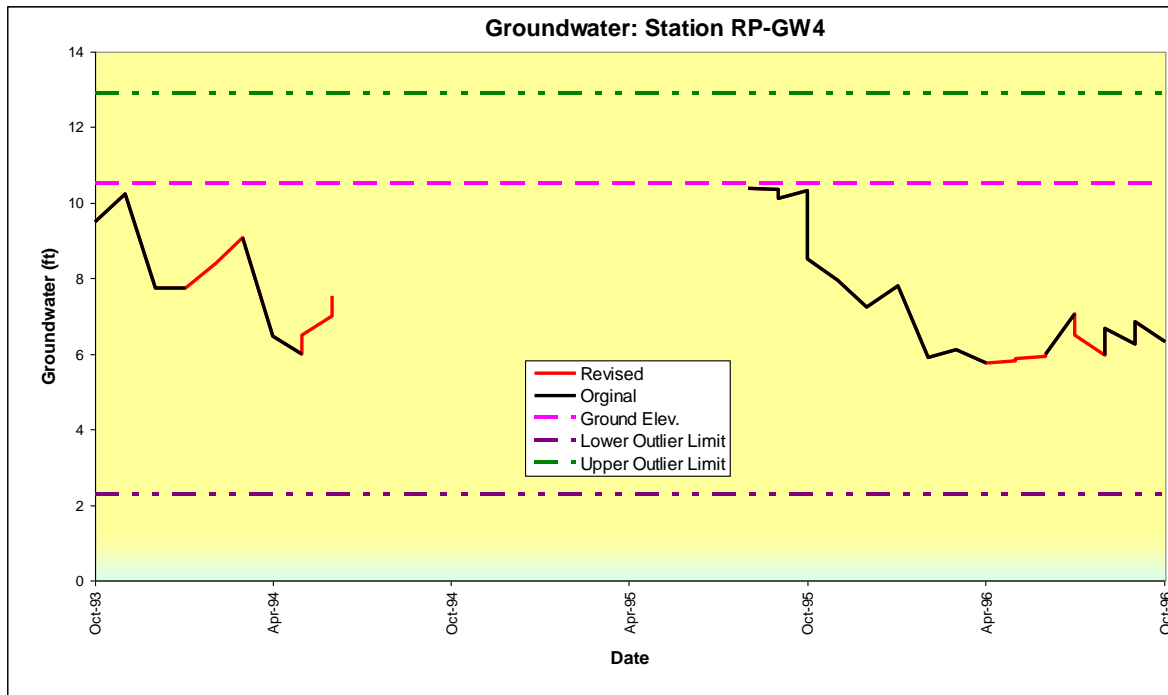
#### 3.44.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
RP-GW4	No data	No data	No data	No data

#### 3.44.2. Descriptive Statistics

	Original	Revised
Mean	7.683	7.447
Standard Deviation	1.619	1.555
Skewness	0.575	0.796
Q3	8.930	8.400
Upper Extreme Point Starting Point	16.895	15.270
Max	10.390	10.390
Upper Outlier Limit Starting Point	12.913	11.835
Median	7.380	7.013
Lower Outlier Limit Starting Point	2.293	2.675
Min	5.740	5.740
Lower Extreme Starting Point	-1.690	-0.760
Q1	6.275	6.110
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.44.3. Time Series Plots



### 3.45. Station RP-GW5

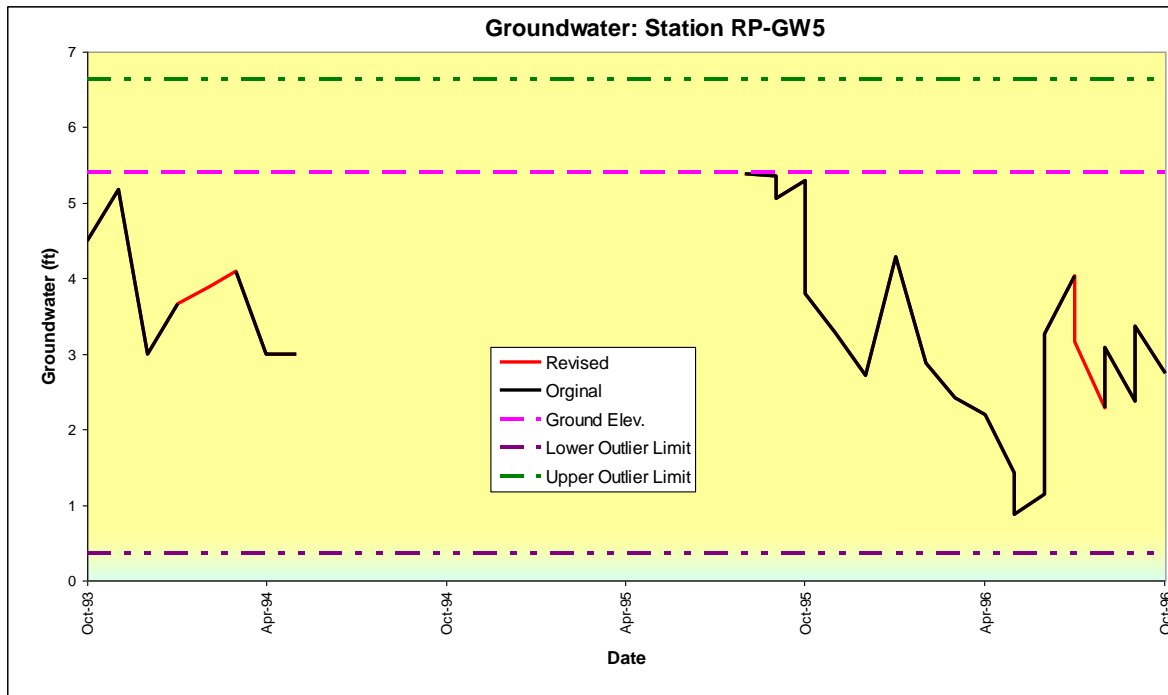
#### 3.45.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
RP-GW5	No data	No data	No data	No data

#### 3.45.2. Descriptive Statistics

	Original	Revised
Mean	3.396	3.404
Standard Deviation	1.256	1.218
Skewness	-0.063	-0.083
Q3	4.280	4.185
Upper Extreme Point Starting Point	8.990	8.550
Max	5.380	5.380
Upper Outlier Limit Starting Point	6.635	6.368
Median	3.270	3.270
Lower Outlier Limit Starting Point	0.355	0.547
Min	0.870	0.870
Lower Extreme Starting Point	-2.000	-1.635
Q1	2.710	2.730
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.45.3. Time Series Plots



### 3.46. Station 37-GW1

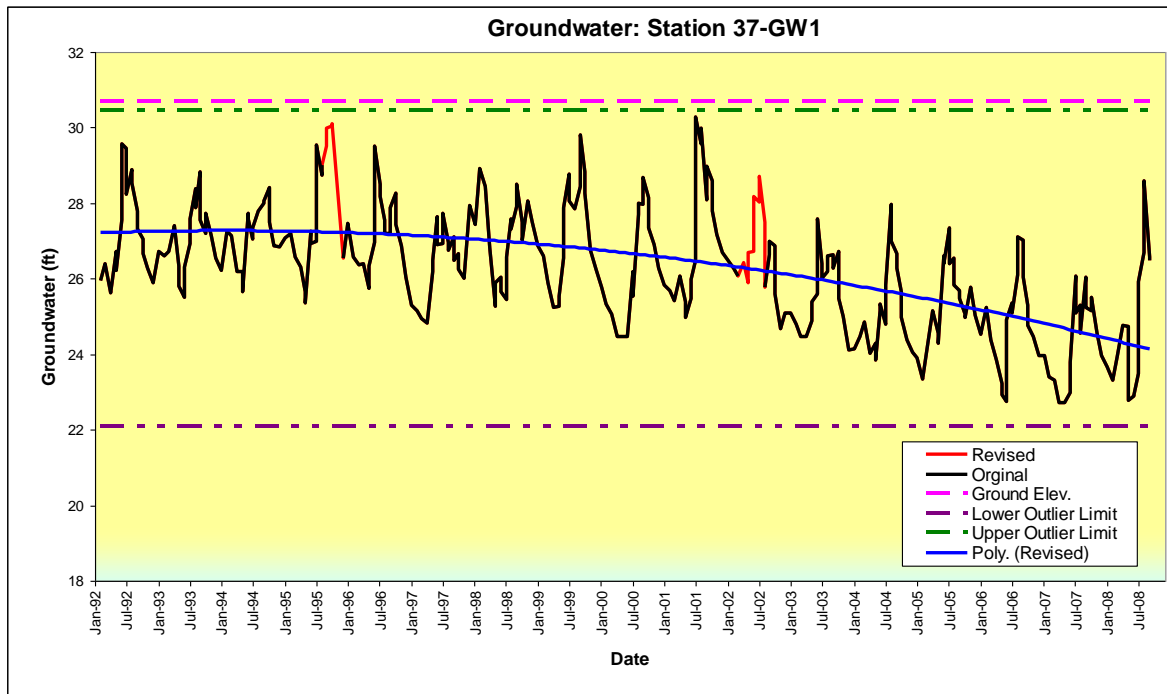
#### 3.46.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
37-GW1	Bedman Creek	Southeast corner Int. Eisenhower Blvd & Van Fleet St.	26 31.85'	81 35.18'

#### 3.46.2. Descriptive Statistics

	Original	Revised
Mean	26.283	26.339
Standard Deviation	1.577	1.592
Skewness	-0.020	-0.023
Q3	27.330	27.440
Upper Extreme Point Starting Point	33.600	33.950
Max	30.280	30.280
Upper Outlier Limit Starting Point	30.465	30.695
Median	26.325	26.390
Lower Outlier Limit Starting Point	22.105	22.015
Min	22.730	22.730
Lower Extreme Starting Point	18.970	18.760
Q1	25.240	25.270
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.46.3. Time Series Plots



### 3.47. Station 37-GW2

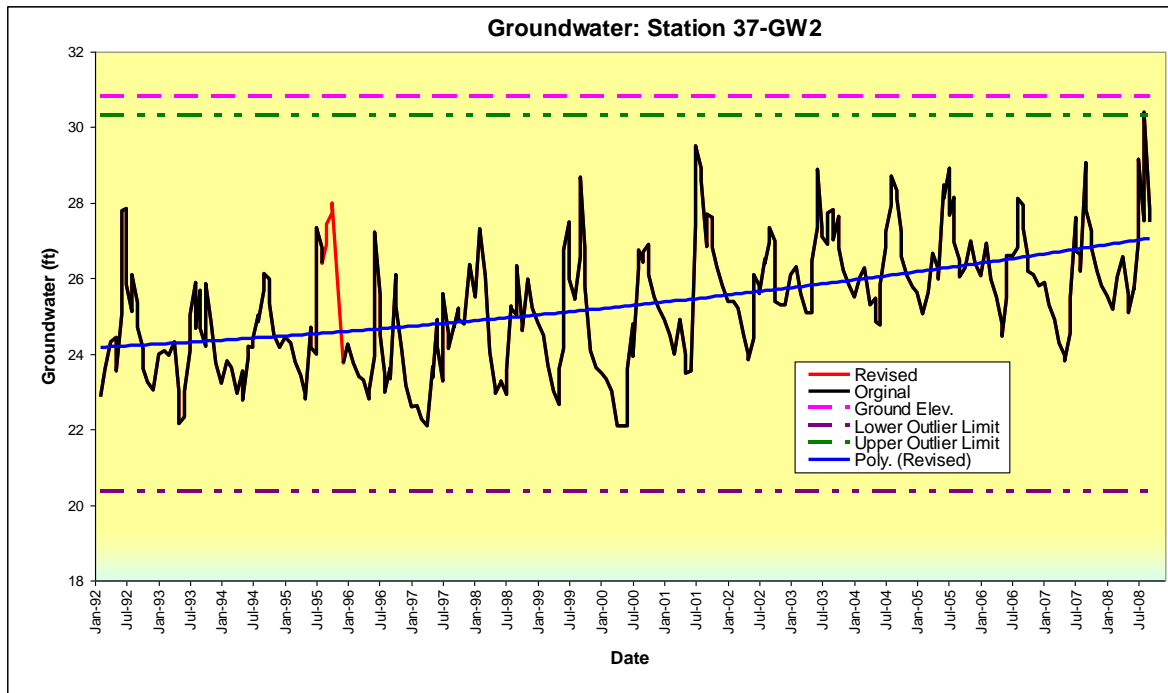
#### 3.47.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
37-GW2	Bedman Creek	Northwest corner Int. Milwaukee Blvd. & Columbus Blvd.	26 33.74'	81 34.37'

#### 3.47.2. Descriptive Statistics

	Original	Revised
Mean	25.370	25.385
Standard Deviation	1.651	1.651
Skewness	0.191	0.175
Q3	26.560	26.560
Upper Extreme Point Starting Point	34.030	34.030
Max	30.400	30.400
Upper Outlier Limit Starting Point	30.295	30.295
Median	25.400	25.400
Lower Outlier Limit Starting Point	20.335	20.335
Min	22.100	22.100
Lower Extreme Starting Point	16.600	16.600
Q1	24.070	24.070
Outliers	1.000	1.000
Extremes	0.00	0.00

#### 3.47.3. Time Series Plots



### 3.48. Station 37-GW3

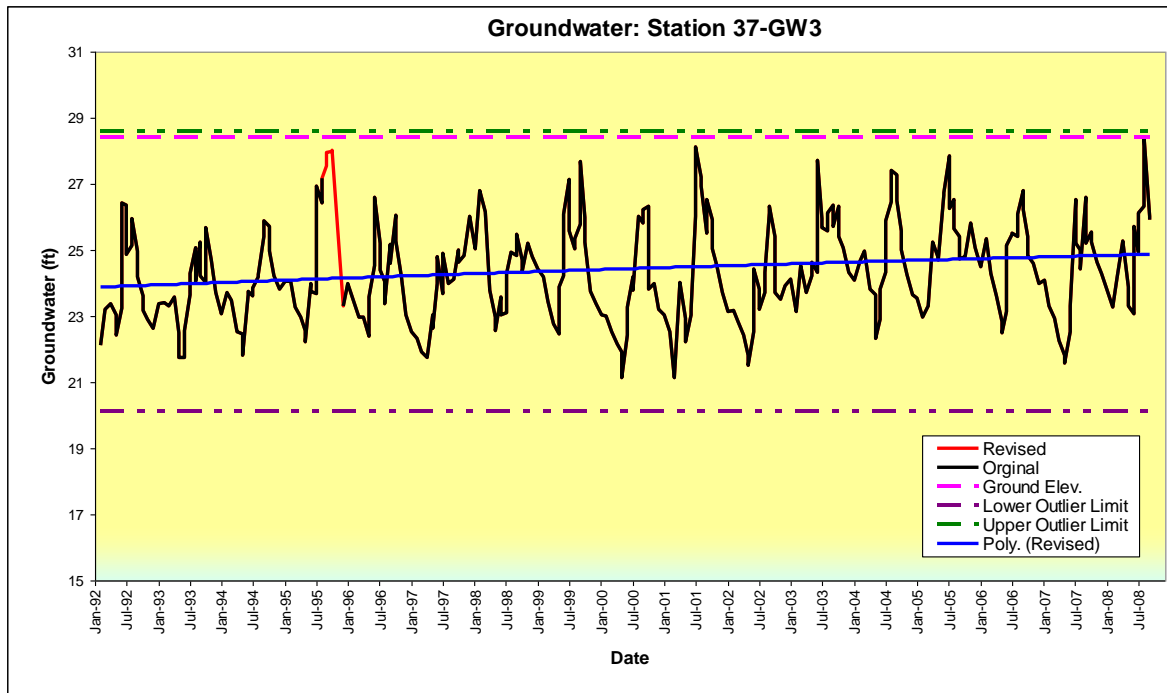
#### 3.48.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
37-GW3	Bedman Creek	Northeast corner Int. Grant Blvd. & Summa Blvd.	26 34.79'	81 35.24'

#### 3.48.2. Descriptive Statistics

	Original	Revised
Mean	24.385	24.411
Standard Deviation	1.456	1.477
Skewness	0.277	0.292
Q3	25.415	25.420
Upper Extreme Point Starting Point	31.790	31.810
Max	28.420	28.420
Upper Outlier Limit Starting Point	28.603	28.615
Median	24.225	24.230
Lower Outlier Limit Starting Point	20.103	20.095
Min	21.120	21.120
Lower Extreme Starting Point	16.915	16.900
Q1	23.290	23.290
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.48.3. Time Series Plots





### 3.49. Station 37-GW4

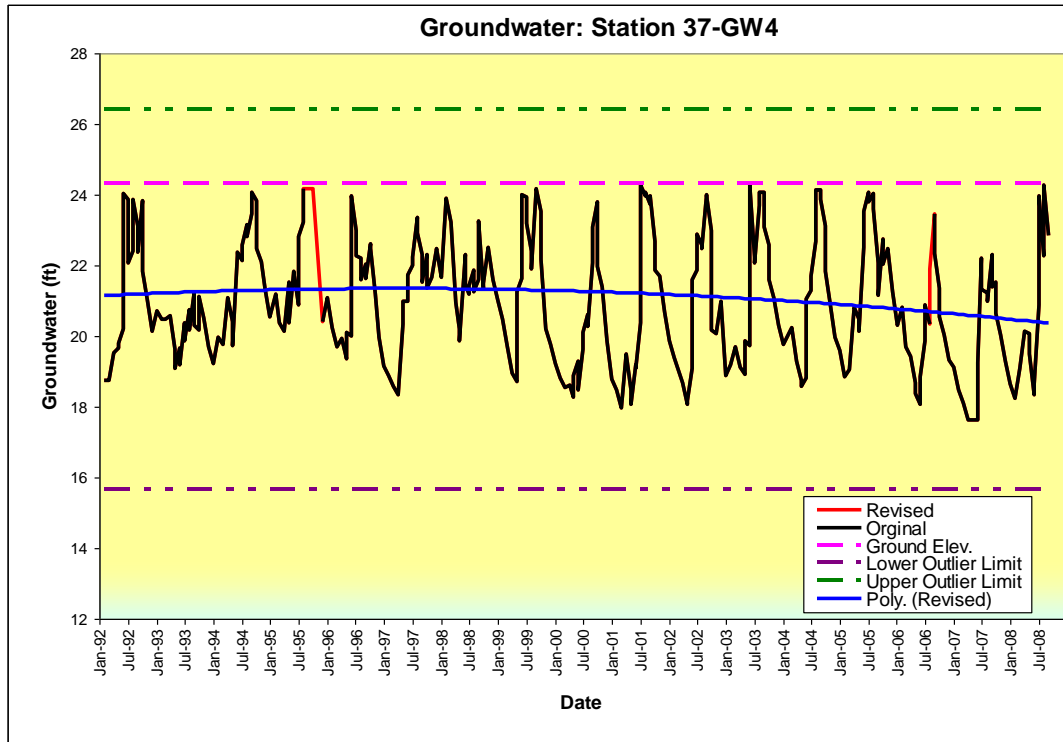
#### 3.49.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
37-GW4	Bedman Creek	Northeast corner Int. E 10th St & Truman Ave.	26 38.17'	81 35.07'

#### 3.49.2. Descriptive Statistics

	Original	Revised
Mean	21.067	21.095
Standard Deviation	1.765	1.773
Skewness	0.124	0.111
Q3	22.370	22.390
Upper Extreme Point Starting Point	30.410	30.430
Max	24.280	24.280
Upper Outlier Limit Starting Point	26.390	26.410
Median	21.020	21.040
Lower Outlier Limit Starting Point	15.670	15.690
Min	17.630	17.630
Lower Extreme Starting Point	11.650	11.670
Q1	19.690	19.710
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.49.3. Time Series Plots



### 3.50. Station 37-GW5

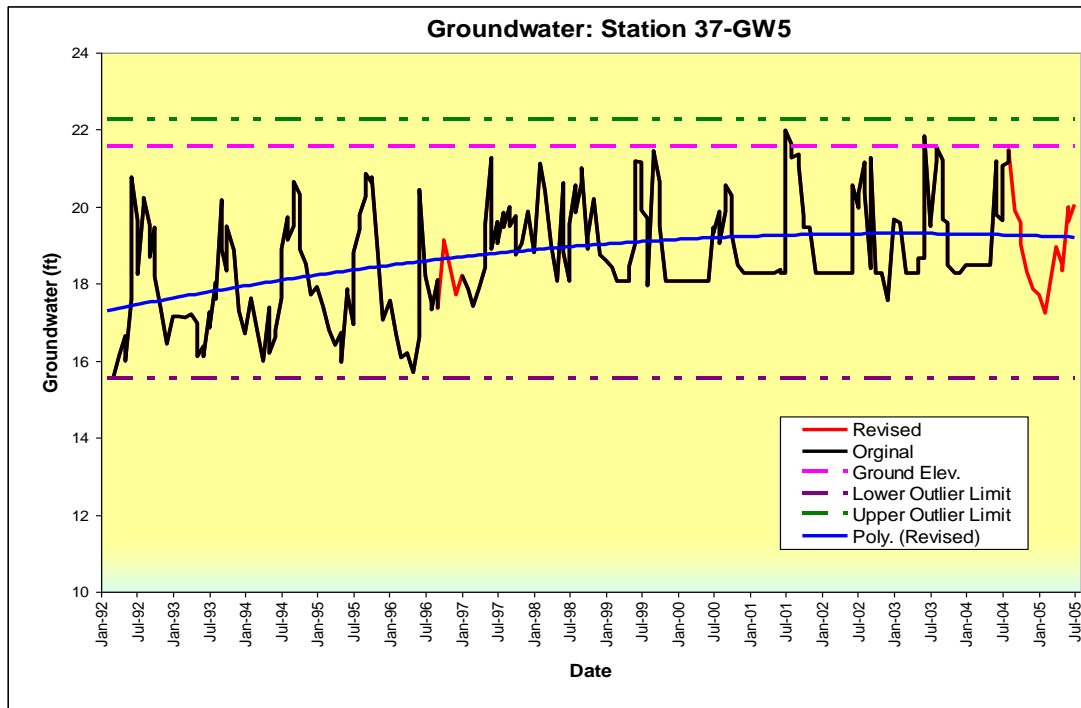
#### 3.50.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
37-GW5	Bedman Creek	Southwest corner Int. 21 St & Grant Ave.	26 40.59'	81 35.02'

#### 3.50.2. Descriptive Statistics

	Original	Revised
Mean	18.742	18.747
Standard Deviation	1.458	1.420
Skewness	0.060	0.052
Q3	19.740	19.725
Upper Extreme Point Starting Point	24.780	24.735
Max	21.970	21.970
Upper Outlier Limit Starting Point	22.260	22.230
Median	18.470	18.470
Lower Outlier Limit Starting Point	15.540	15.550
Min	15.540	15.540
Lower Extreme Starting Point	13.020	13.045
Q1	18.060	18.055
Outliers	0.000	1.000
Extremes	0.00	0.00

#### 3.50.3. Time Series Plots



### 3.51. Station 37-GW6

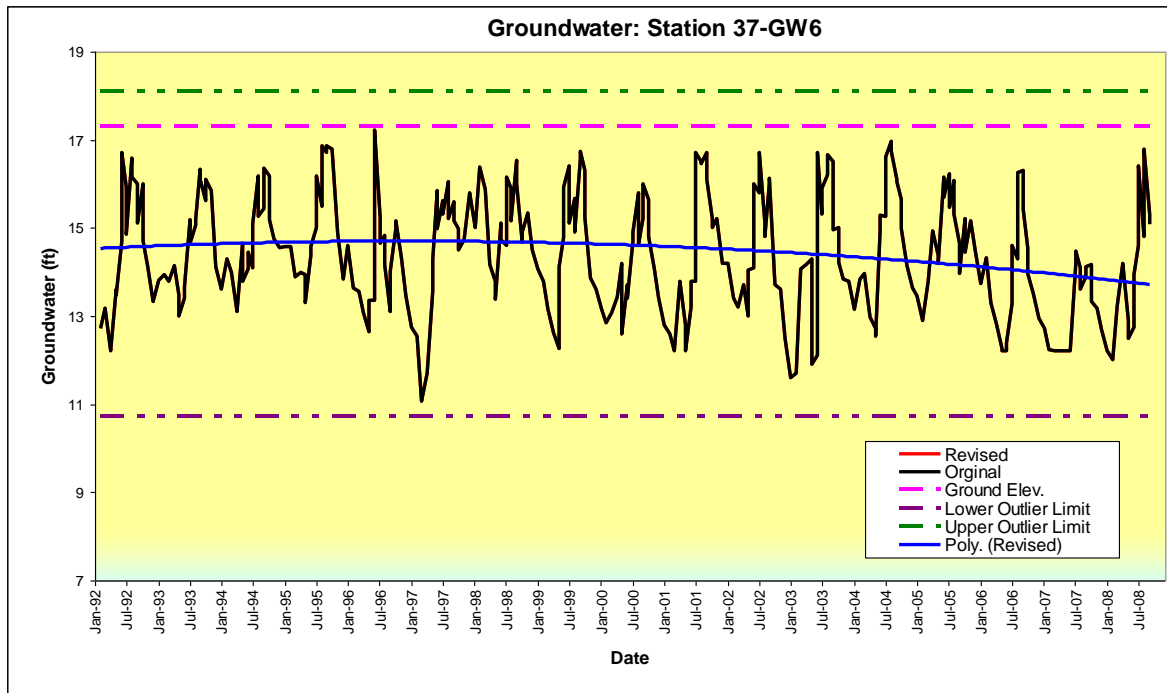
#### 3.51.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
37-GW6	Bedman Creek	At power pole west side of Edwards Dr .mi south of Tuckahoe Rd.	26 41.65'	81 35.93'

#### 3.51.2. Descriptive Statistics

	Original	Revised
Mean	14.450	14.450
Standard Deviation	1.325	1.325
Skewness	-0.035	-0.035
Q3	15.320	15.320
Upper Extreme Point Starting Point	20.840	20.840
Max	17.220	17.220
Upper Outlier Limit Starting Point	18.080	18.080
Median	14.440	14.440
Lower Outlier Limit Starting Point	10.720	10.720
Min	11.080	11.080
Lower Extreme Starting Point	7.960	7.960
Q1	13.480	13.480
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.51.3. Time Series Plots



### 3.52. Station 38-GW1

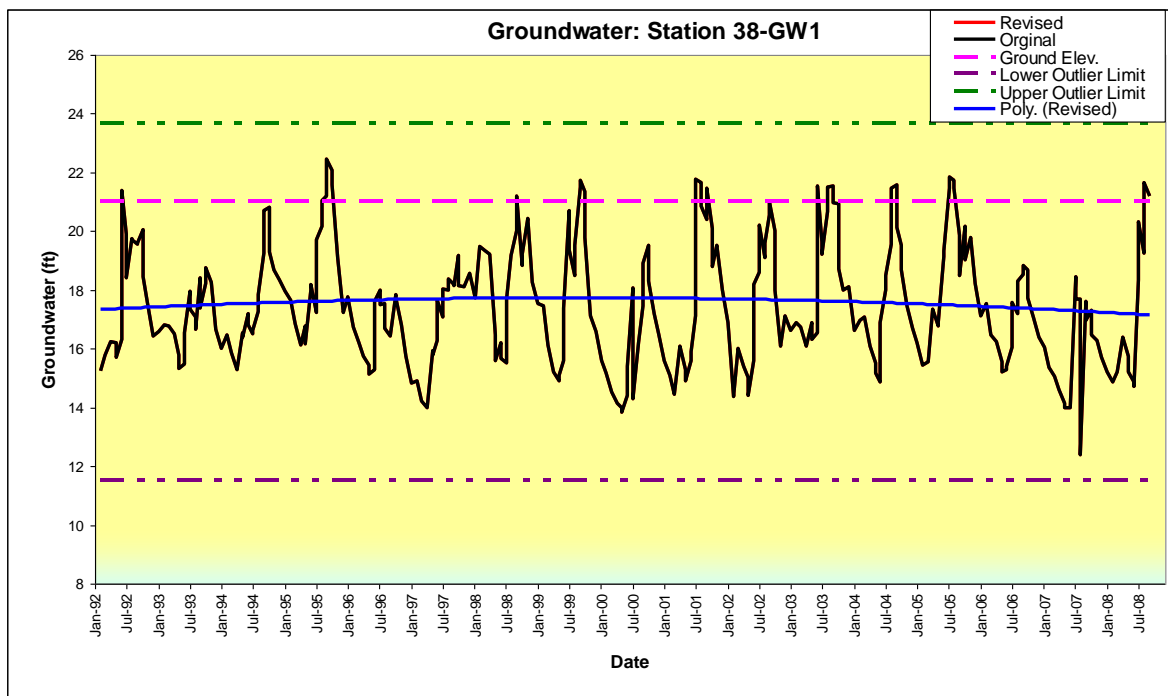
#### 3.52.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
38-GW1	Hickey Creek	First power pole south of 14th St on FPL easement between Cortez & Edison Ave.	26 39.04'	81 38.14'

#### 3.52.2. Descriptive Statistics

	Original	Revised
Mean	17.562	17.562
Standard Deviation	2.063	2.063
Skewness	0.343	0.343
Q3	19.100	19.100
Upper Extreme Point Starting Point	28.220	28.220
Max	22.450	22.450
Upper Outlier Limit Starting Point	23.660	23.660
Median	17.300	17.300
Lower Outlier Limit Starting Point	11.500	11.500
Min	12.400	12.400
Lower Extreme Starting Point	6.940	6.940
Q1	16.060	16.060
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.52.3. Time Series Plots



### 3.53. Station 38-GW2

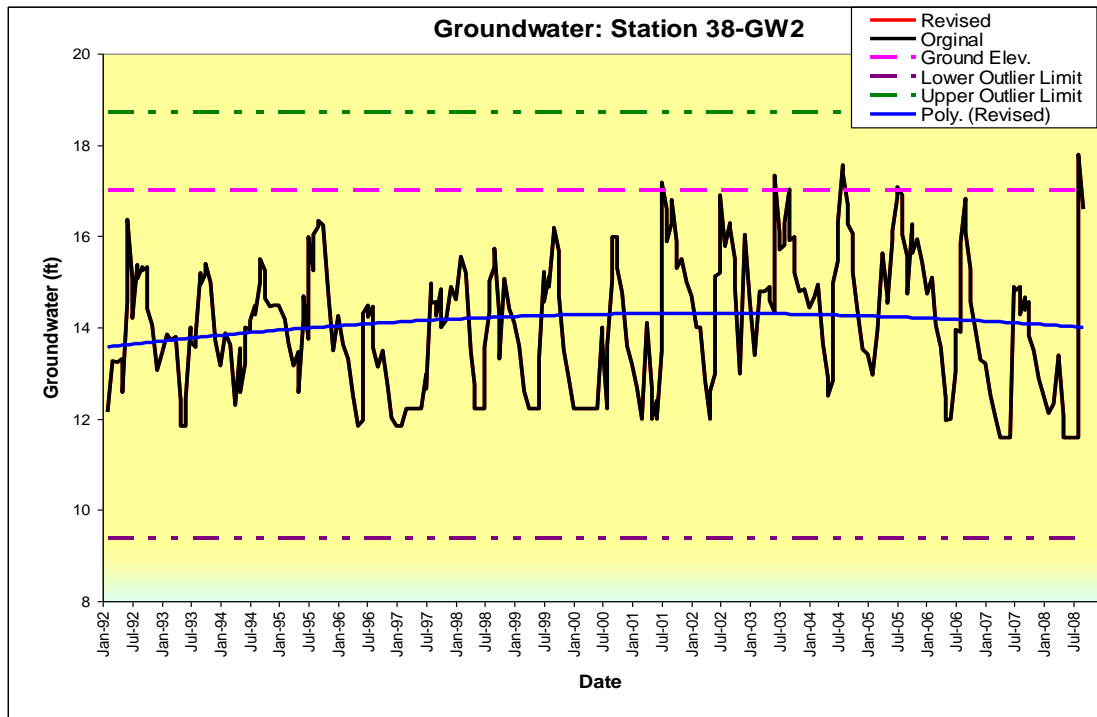
#### 3.53.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
38-GW2	Hickey Creek	2.8 mi west of Joel Blvd south east Int. Greenbriar Blvd & Rolling Dr.	26 40.93'	81 38.65'

#### 3.53.2. Descriptive Statistics

	Original	Revised
Mean	14.117	14.117
Standard Deviation	1.496	1.496
Skewness	0.107	0.107
Q3	15.200	15.200
Upper Extreme Point Starting Point	22.190	22.190
Max	17.790	17.790
Upper Outlier Limit Starting Point	18.695	18.695
Median	14.190	14.190
Lower Outlier Limit Starting Point	9.375	9.375
Min	11.590	11.590
Lower Extreme Starting Point	5.880	5.880
Q1	12.870	12.870
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.53.3. Time Series Plots



### 3.54. Station 38-GW3

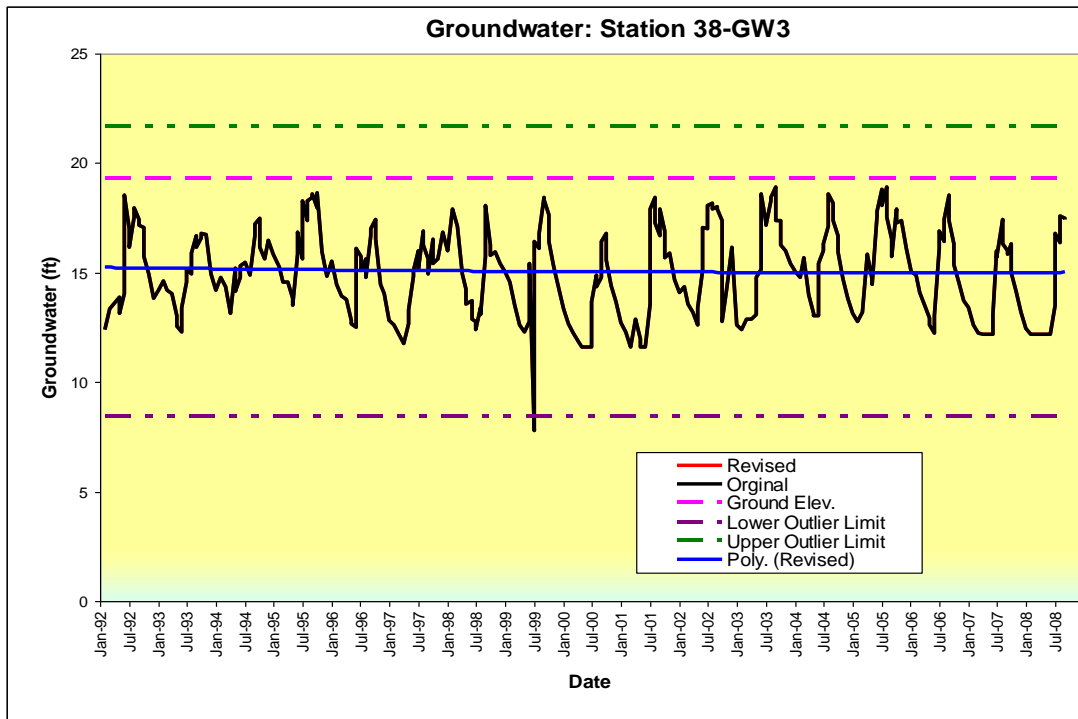
#### 3.54.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
38-GW3	Hickey Creek	Northwest corner Int. 68th St west & Ruth.	26 40.80'	81 41.18'

#### 3.54.2. Descriptive Statistics

	Original	Revised
Mean	15.067	15.067
Standard Deviation	2.022	2.022
Skewness	-0.121	-0.121
Q3	16.680	16.680
Upper Extreme Point Starting Point	26.610	26.610
Max	18.920	18.920
Upper Outlier Limit Starting Point	21.645	21.645
Median	15.110	15.110
Lower Outlier Limit Starting Point	8.405	8.405
Min	7.800	7.800
Lower Extreme Starting Point	3.440	3.440
Q1	13.370	13.370
Outliers	1.000	1.000
Extremes	0.00	0.00

#### 3.54.3. Time Series Plots



### 3.55. Station 38-GW4

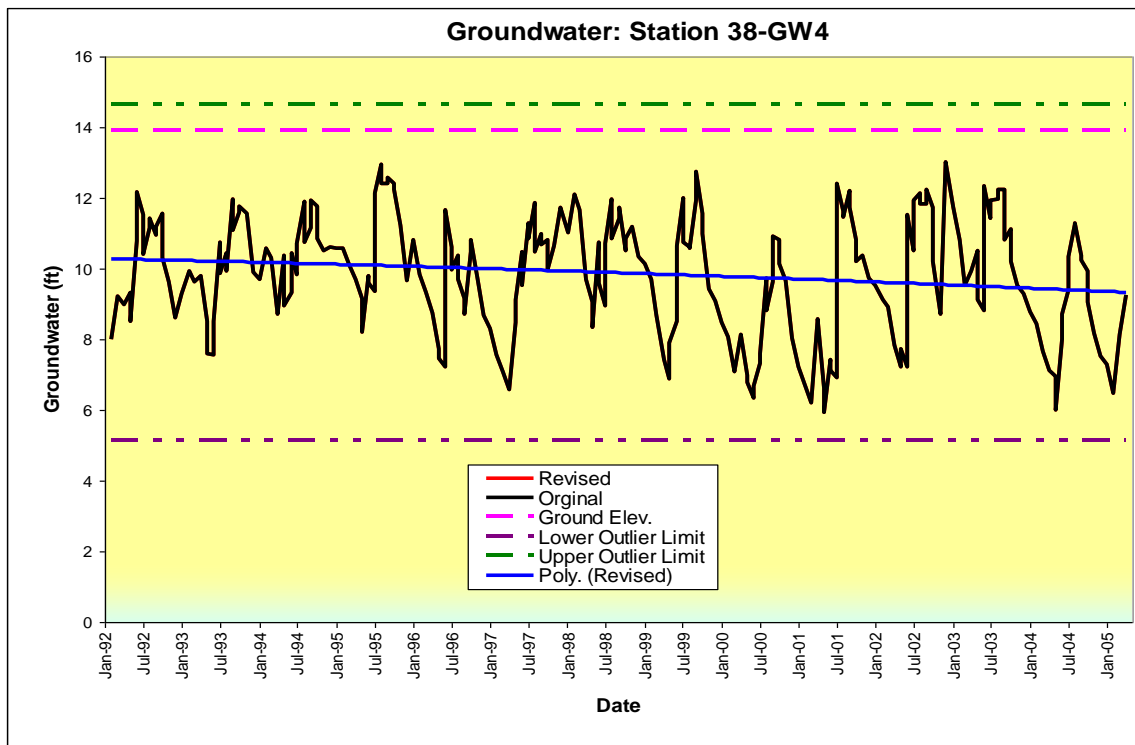
#### 3.55.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
38-GW4	Hickey Creek	.3 miles south of SR 80 250' east of Packinghouse Rd on FPL easement.	26 42.19'	81 36.60'

#### 3.55.2. Descriptive Statistics

	Original	Revised
Mean	9.858	9.858
Standard Deviation	1.647	1.647
Skewness	-0.359	-0.359
Q3	11.080	11.080
Upper Extreme Point Starting Point	18.220	18.220
Max	13.020	13.020
Upper Outlier Limit Starting Point	14.650	14.650
Median	9.980	9.980
Lower Outlier Limit Starting Point	5.130	5.130
Min	5.920	5.920
Lower Extreme Starting Point	1.560	1.560
Q1	8.700	8.700
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.55.3. Time Series Plots



### 3.56. Station 38-GW5

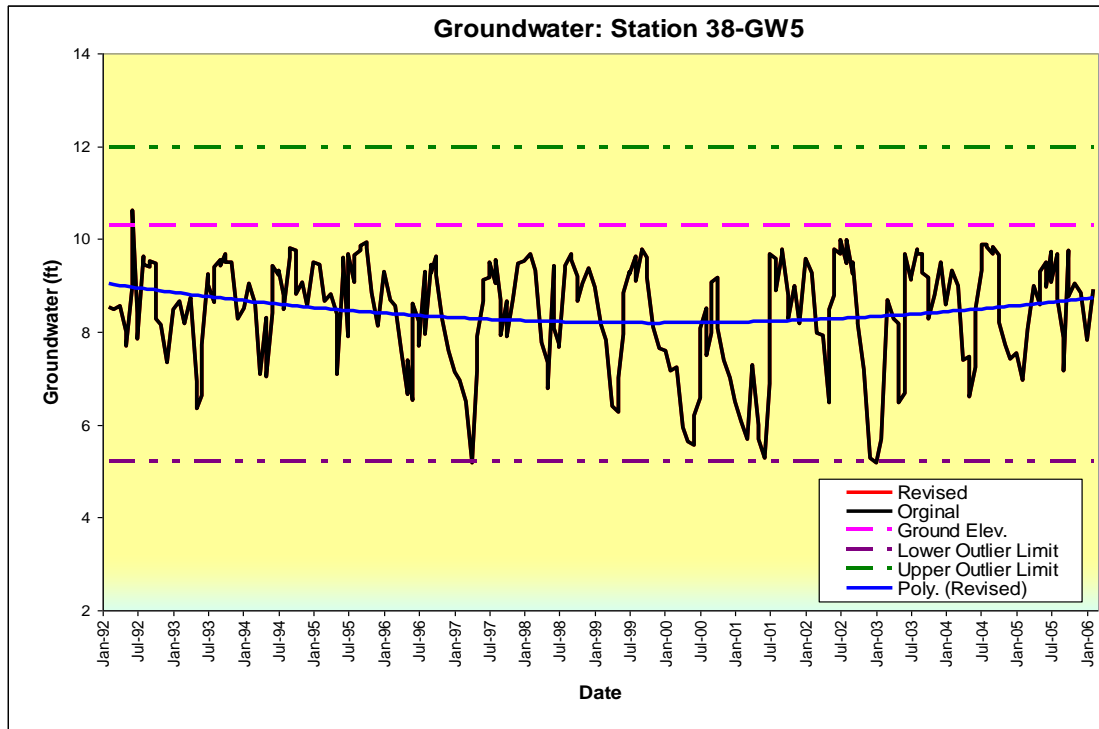
#### 3.56.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
38-GW5	Hickey Creek	North east Int. of Oak Creek Rd & Hickey Creek Rd.	26 42.26'	81 40.72'

#### 3.56.2. Descriptive Statistics

	Original	Revised
Mean	8.430	8.430
Standard Deviation	1.180	1.180
Skewness	-0.858	-0.858
Q3	9.420	9.420
Upper Extreme Point Starting Point	14.490	14.490
Max	10.620	10.620
Upper Outlier Limit Starting Point	11.955	11.955
Median	8.680	8.680
Lower Outlier Limit Starting Point	5.195	5.195
Min	5.180	5.180
Lower Extreme Starting Point	2.660	2.660
Q1	7.730	7.730
Outliers	2.000	2.000
Extremes	0.00	0.00

#### 3.56.3. Time Series Plots





### 3.57. Station 38-GW6

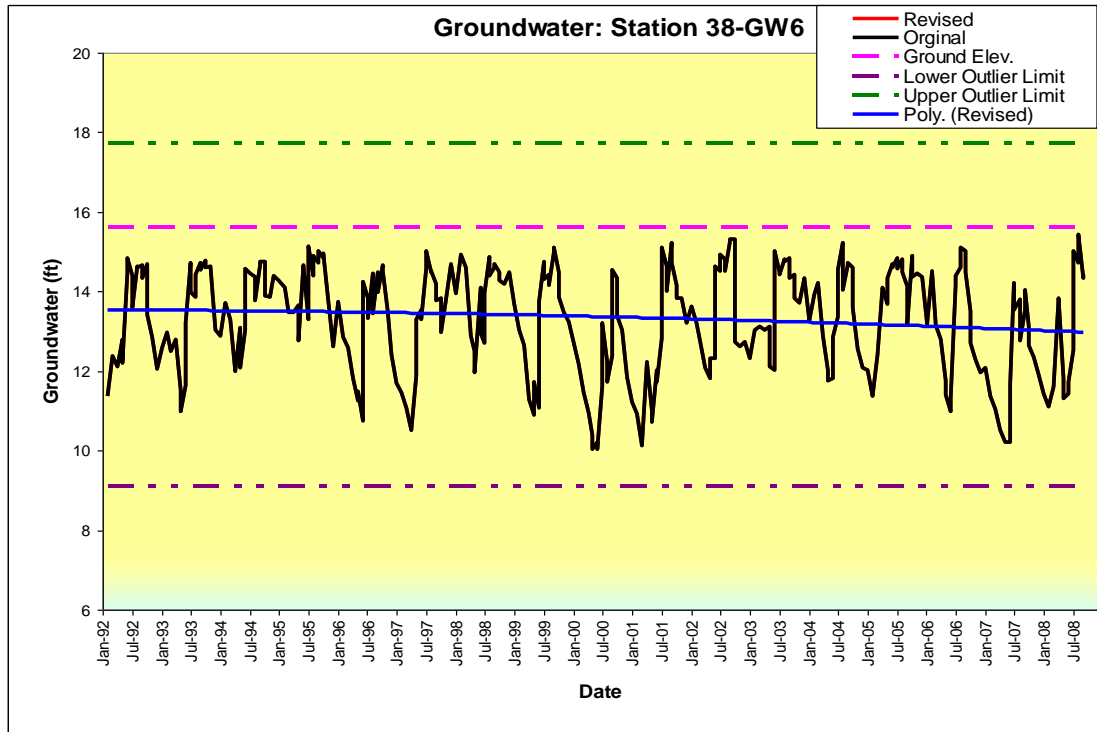
#### 3.57.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
36-GW6	Hickey Creek	0.6 miles south of SR 80 west of Bateman Rd.	26 42.17'	8139.09'

#### 3.57.2. Descriptive Statistics

	Original	Revised
Mean	13.330	13.330
Standard Deviation	1.328	1.328
Skewness	-0.565	-0.565
Q3	14.480	14.480
Upper Extreme Point Starting Point	20.960	20.960
Max	15.420	15.420
Upper Outlier Limit Starting Point	17.720	17.720
Median	13.590	13.590
Lower Outlier Limit Starting Point	9.080	9.080
Min	10.020	10.020
Lower Extreme Starting Point	5.840	5.840
Q1	12.320	12.320
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.57.3. Time Series Plots



### 3.58. Station 39-GW1

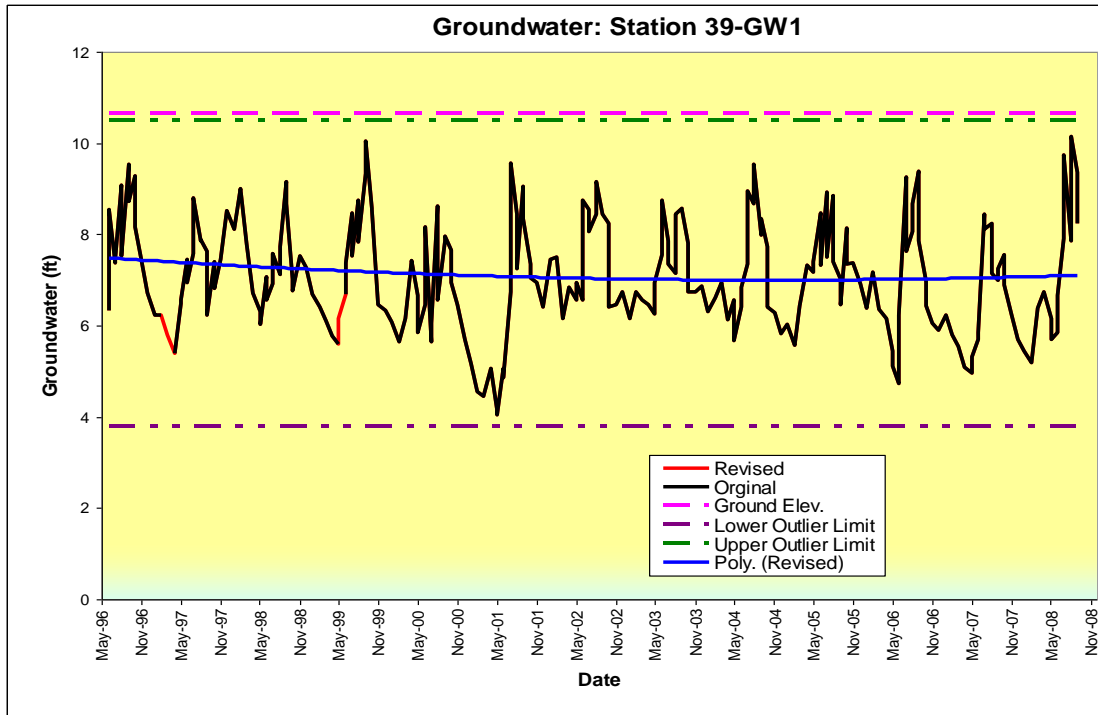
#### 3.58.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
39-GW1	Olga Creek	Southeast corner of Buckingham Rd & SR west of driveway.	26 42.57'	81 43.25'

#### 3.58.2. Descriptive Statistics

	Original	Revised
Mean	7.131	7.121
Standard Deviation	1.210	1.209
Skewness	0.095	0.111
Q3	7.983	7.968
Upper Extreme Point Starting Point	13.015	12.993
Max	10.150	10.150
Upper Outlier Limit Starting Point	10.499	10.480
Median	7.005	6.985
Lower Outlier Limit Starting Point	3.789	3.780
Min	4.050	4.050
Lower Extreme Starting Point	1.273	1.268
Q1	6.305	6.293
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.58.3. Time Series Plots



### 3.59. Station 39-GW2

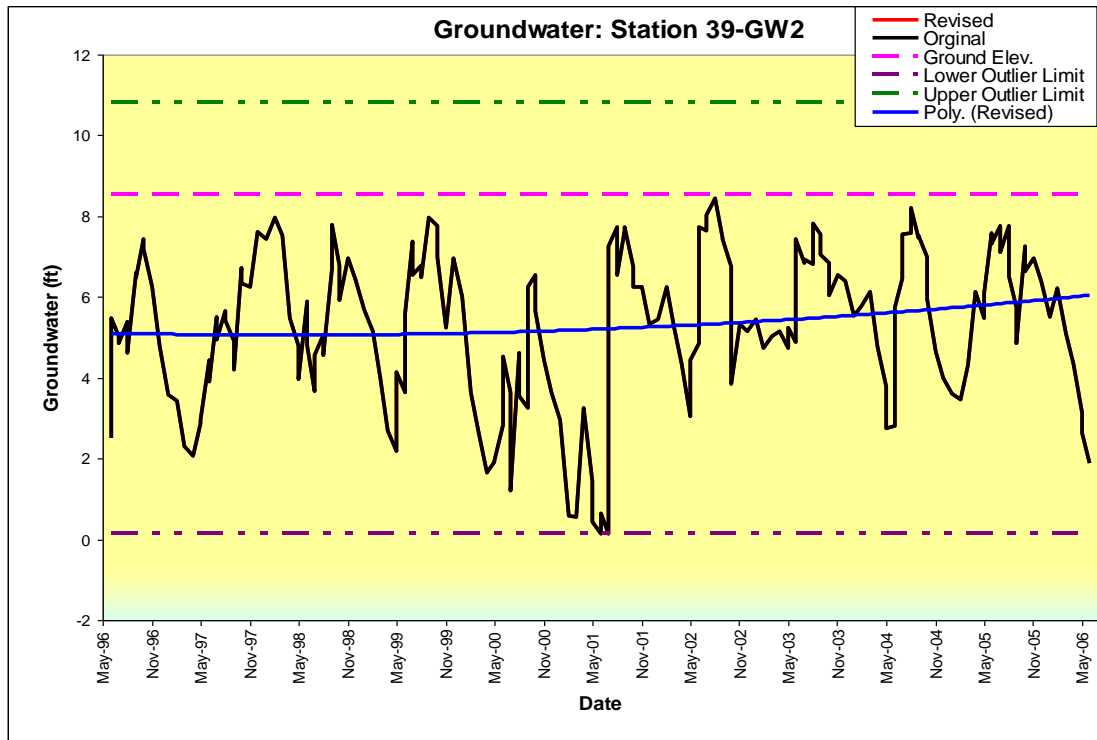
#### 3.59.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
39-GW2	Olga Creek	Olga Community Center on old Olga Rd under palm tree on south side of driveway.	26 42.90'	81 41.77'

#### 3.59.2. Descriptive Statistics

	Original	Revised
Mean	5.322	5.322
Standard Deviation	1.919	1.919
Skewness	-0.654	-0.654
Q3	6.800	6.800
Upper Extreme Point Starting Point	14.810	14.810
Max	8.450	8.450
Upper Outlier Limit Starting Point	10.805	10.805
Median	5.490	5.490
Lower Outlier Limit Starting Point	0.125	0.125
Min	0.140	0.140
Lower Extreme Starting Point	-3.880	-3.880
Q1	4.130	4.130
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.59.3. Time Series Plots



### 3.60. Station 39-GW3

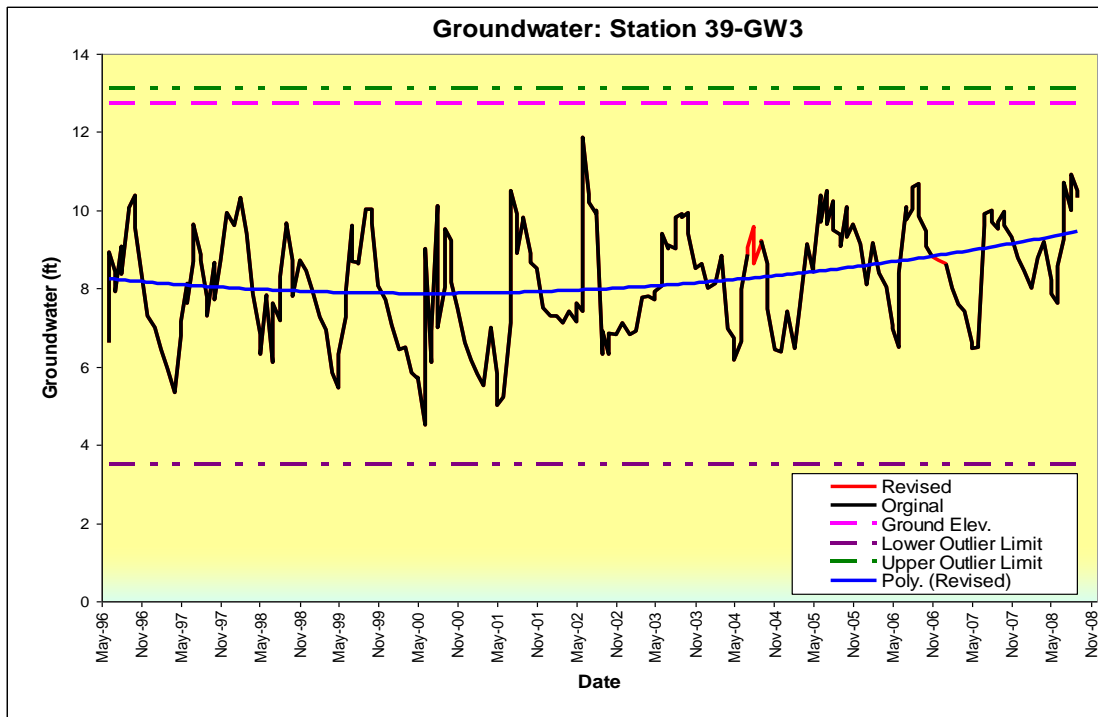
#### 3.60.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
39-GW3	Olga Creek	South side of end of Drawsy Rd at entrance to power easement.	26 42.13'	81 42.82'

#### 3.60.2. Descriptive Statistics

	Original	Revised
Mean	8.258	8.275
Standard Deviation	1.437	1.426
Skewness	-0.201	-0.231
Q3	9.515	9.513
Upper Extreme Point Starting Point	16.730	16.608
Max	11.860	11.860
Upper Outlier Limit Starting Point	13.123	13.060
Median	8.390	8.425
Lower Outlier Limit Starting Point	3.503	3.600
Min	4.510	4.510
Lower Extreme Starting Point	-0.105	0.053
Q1	7.110	7.148
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.60.3. Time Series Plots



### 3.61. Station 39-GW4

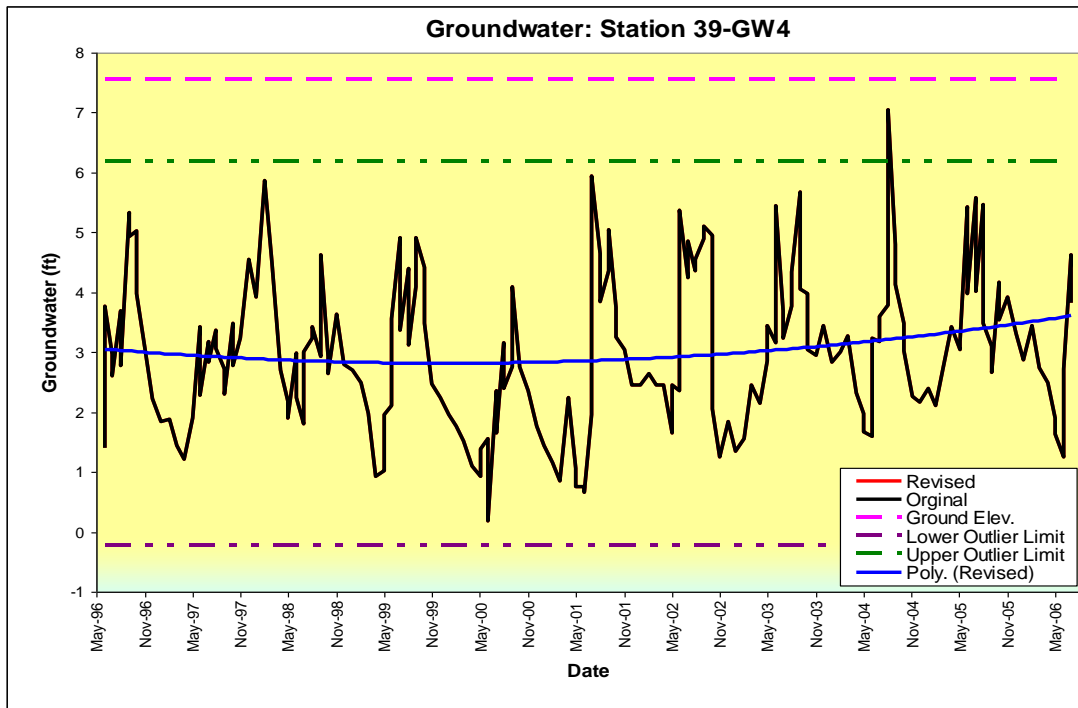
#### 3.61.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
39-GW4	Olga Creek	Northeast corner of intersection of Pine Rd and SR 80.	26 43.04'	81 42.78'

#### 3.61.2. Descriptive Statistics

	Original	Revised
Mean	3.016	3.016
Standard Deviation	1.245	1.245
Skewness	0.383	0.383
Q3	3.773	3.773
Upper Extreme Point Starting Point	8.595	8.595
Max	7.040	7.040
Upper Outlier Limit Starting Point	6.184	6.184
Median	2.940	2.940
Lower Outlier Limit Starting Point	-0.246	-0.246
Min	0.180	0.180
Lower Extreme Starting Point	-2.658	-2.658
Q1	2.165	2.165
Outliers	1.000	1.000
Extremes	0.00	0.00

#### 3.61.3. Time Series Plots



### 3.62. Station 40-GW1

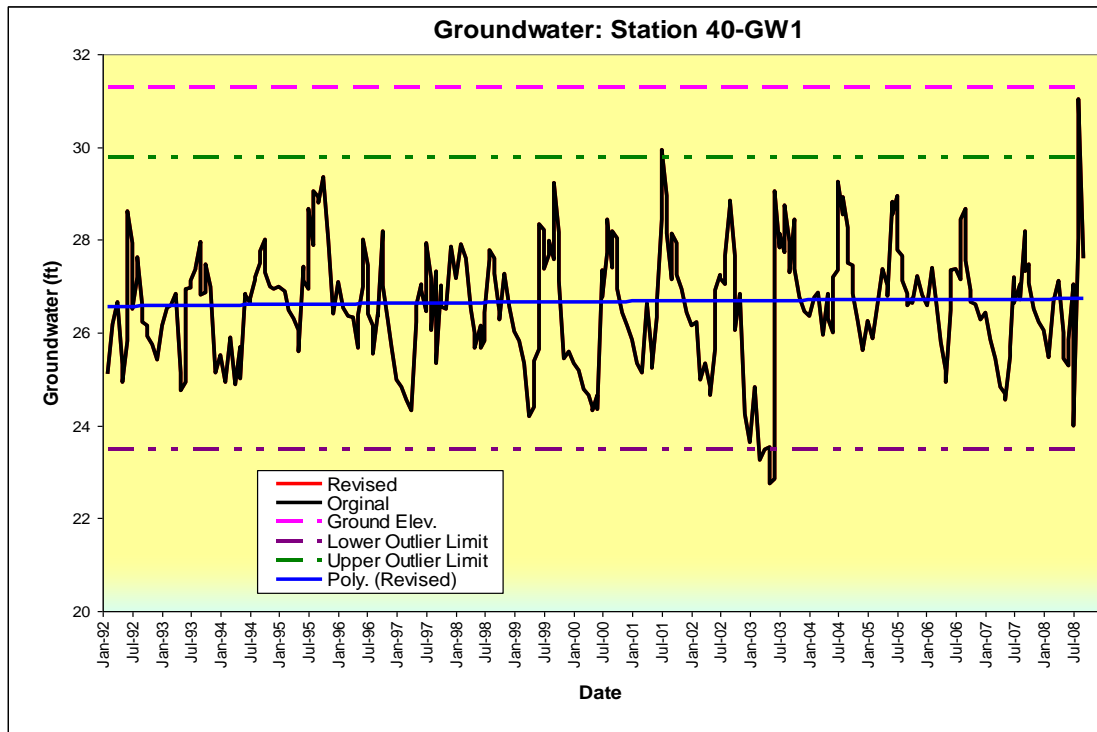
#### 3.62.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
40-GW1	Orange River	At power pole south side of Milwaukee Blvd .3 miles west of Bell Blvd.	26 33.74'	81 36.57'

#### 3.62.2. Descriptive Statistics

	Original	Revised
Mean	26.661	26.661
Standard Deviation	1.271	1.271
Skewness	-0.148	-0.148
Q3	27.410	27.410
Upper Extreme Point Starting Point	32.120	32.120
Max	31.040	31.040
Upper Outlier Limit Starting Point	29.765	29.765
Median	26.740	26.740
Lower Outlier Limit Starting Point	23.485	23.485
Min	22.740	22.740
Lower Extreme Starting Point	21.130	21.130
Q1	25.840	25.840
Outliers	5.000	5.000
Extremes	0.00	0.00

#### 3.62.3. Time Series Plots



### 3.63. Station 40-GW2

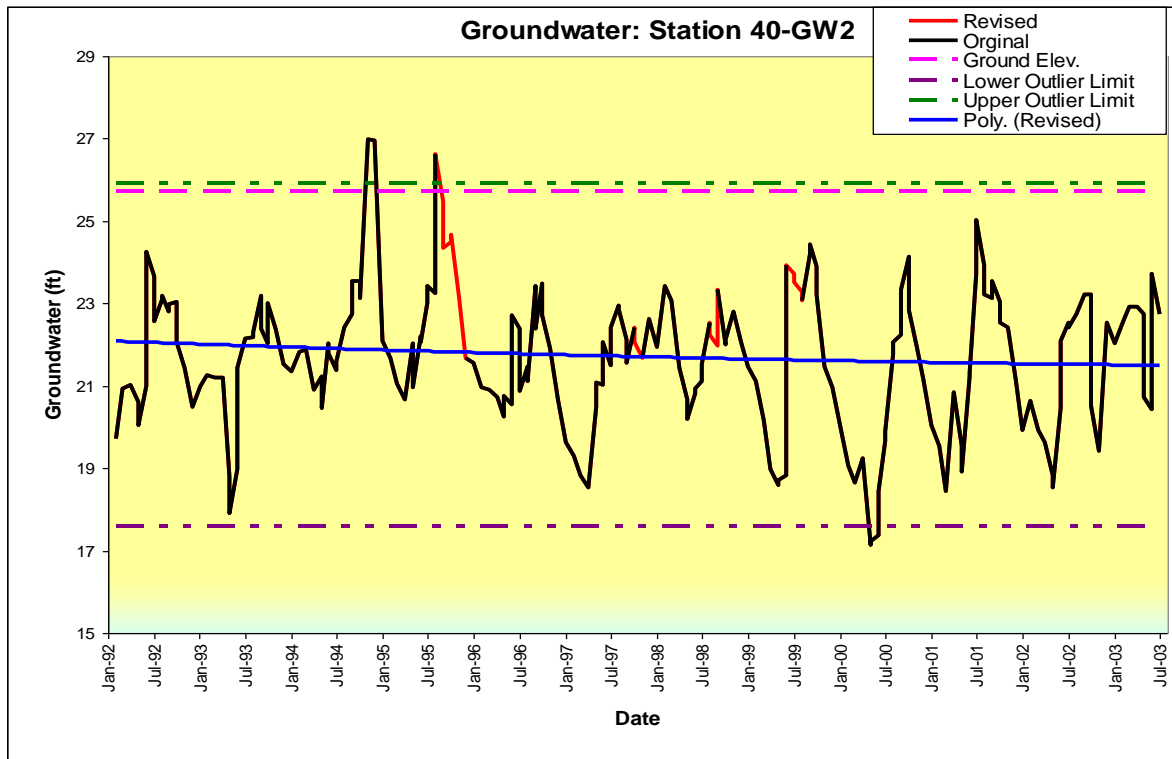
#### 3.63.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
40-GW2	Orange River	Southwest of bus turn at Lehigh middle school on Arthur Ave.	26 35.83'	81 38.03'

#### 3.63.2. Descriptive Statistics

	Original	Revised
Mean	21.663	21.736
Standard Deviation	1.689	1.702
Skewness	-0.075	-0.099
Q3	22.790	22.910
Upper Extreme Point Starting Point	29.030	29.323
Max	26.980	26.980
Upper Outlier Limit Starting Point	25.910	26.116
Median	21.830	21.960
Lower Outlier Limit Starting Point	17.590	17.566
Min	17.130	17.130
Lower Extreme Starting Point	14.470	14.360
Q1	20.710	20.773
Outliers	6.000	6.000
Extremes	0.00	0.00

#### 3.63.3. Time Series Plots



### 3.64. Station 40-GW3

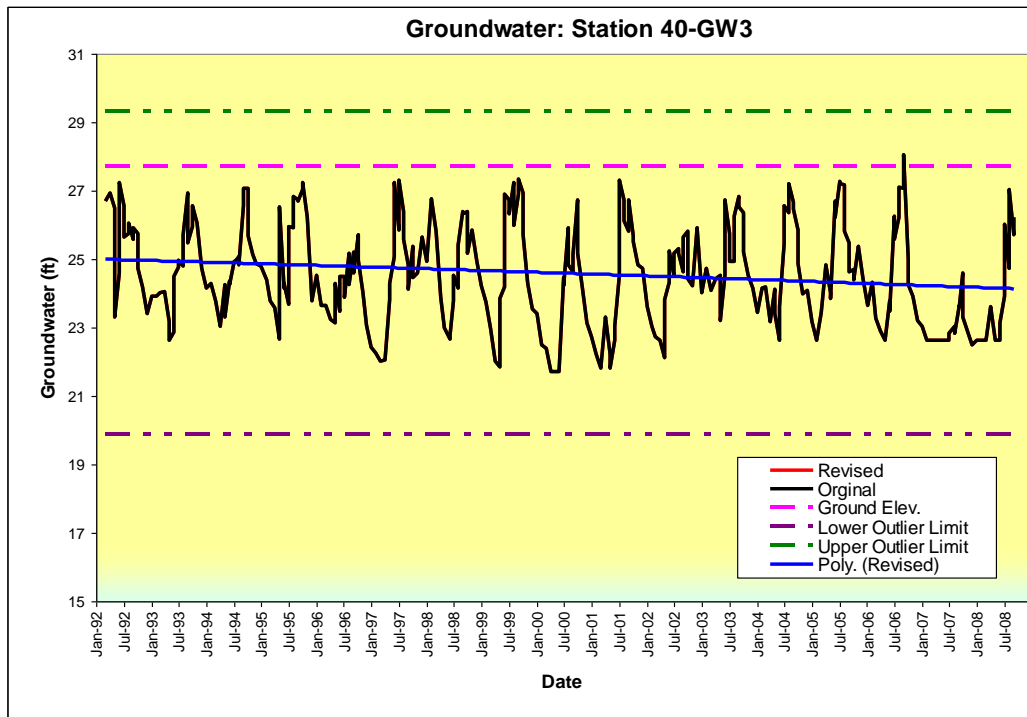
#### 3.64.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
40-GW3	Orange River	Northeast corner Int. SR 82 & Gunnery Rd.	26 34.88'	81 42.74'

#### 3.64.2. Descriptive Statistics

	Original	Revised
Mean	24.581	24.581
Standard Deviation	1.492	1.492
Skewness	0.098	0.098
Q3	25.770	25.770
Upper Extreme Point Starting Point	32.820	32.820
Max	28.060	28.060
Upper Outlier Limit Starting Point	29.295	29.295
Median	24.495	24.495
Lower Outlier Limit Starting Point	19.895	19.895
Min	21.720	21.720
Lower Extreme Starting Point	16.370	16.370
Q1	23.420	23.420
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.64.3. Time Series Plots





### 3.65. Station 40-GW4

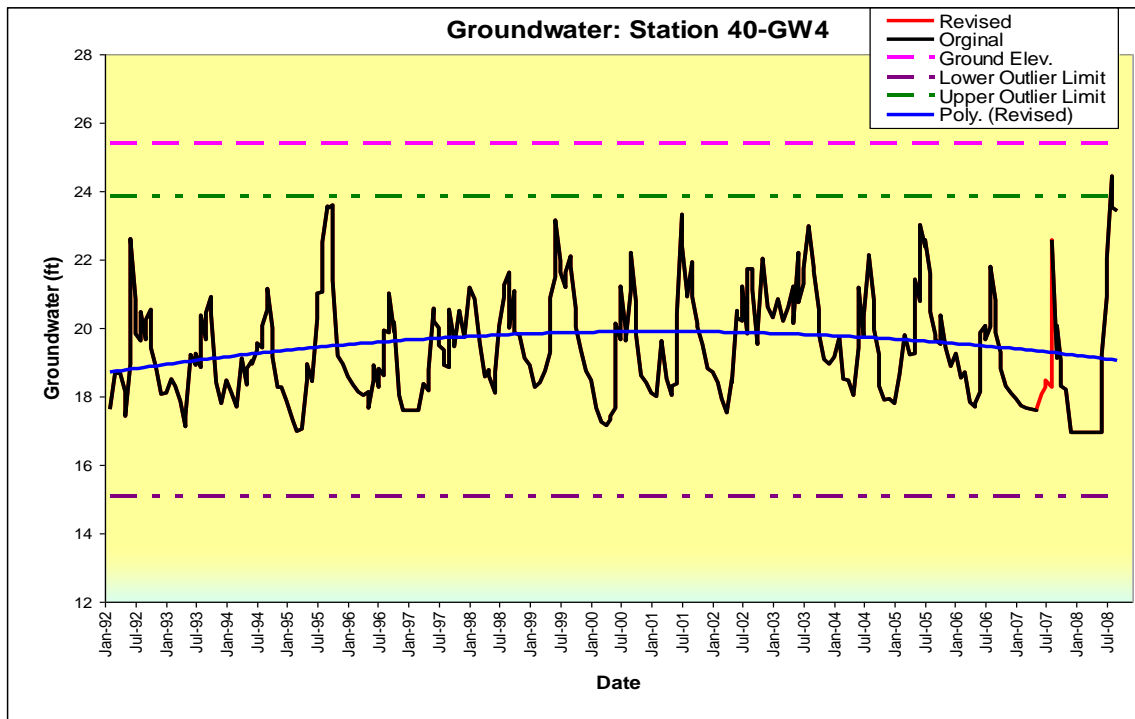
#### 3.65.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
40-GW4	Orange River	300' west of Sara Ave on Sunshine Elem. School property east side of bus return.	26 37.08'	81 41.32'

#### 3.65.2. Descriptive Statistics

	Original	Revised
Mean	19.573	19.550
Standard Deviation	1.566	1.563
Skewness	0.539	0.566
Q3	20.555	20.550
Upper Extreme Point Starting Point	27.125	27.218
Max	24.440	24.440
Upper Outlier Limit Starting Point	23.840	23.884
Median	19.420	19.355
Lower Outlier Limit Starting Point	15.080	14.994
Min	16.950	16.950
Lower Extreme Starting Point	11.795	11.660
Q1	18.365	18.328
Outliers	1.000	1.000
Extremes	0.00	0.00

#### 3.65.3. Time Series Plots



### 3.66. Station 40-GW5

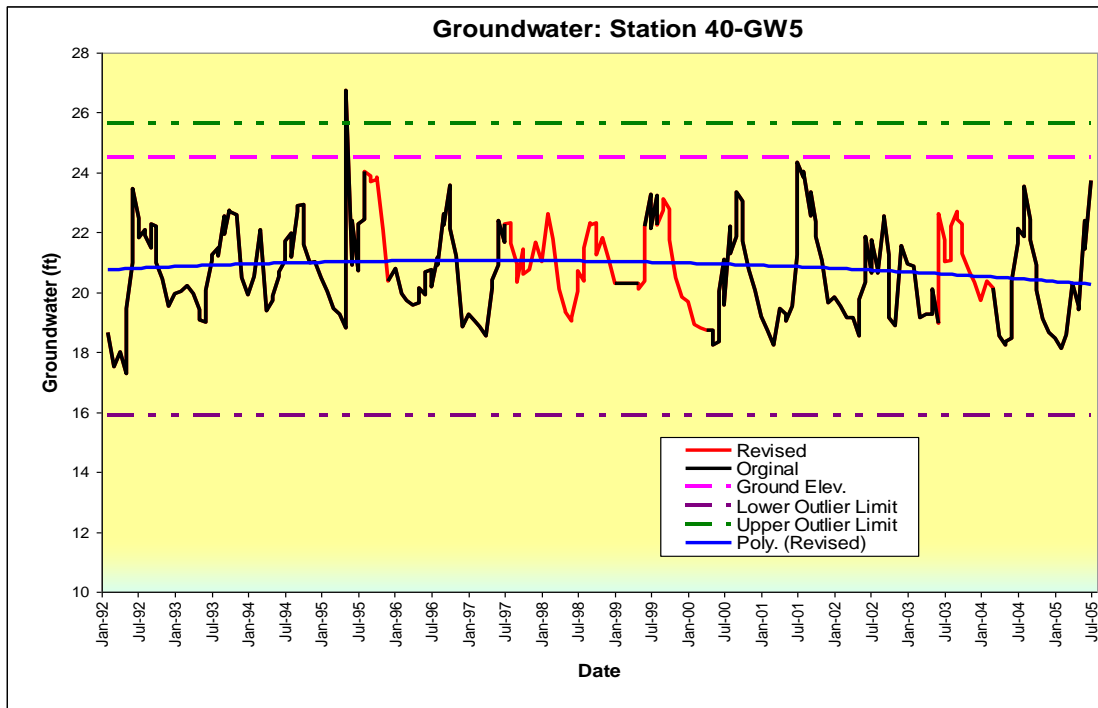
#### 3.66.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
40-GW5	Orange River	Northeast corner Int. of Gunnery Rd & Lee.	26 37.03'	81 42.85'

#### 3.66.2. Descriptive Statistics

	Original	Revised
Mean	20.768	20.859
Standard Deviation	1.601	1.539
Skewness	0.388	0.285
Q3	21.970	22.101
Upper Extreme Point Starting Point	29.290	29.420
Max	26.750	26.750
Upper Outlier Limit Starting Point	25.630	25.761
Median	20.680	20.750
Lower Outlier Limit Starting Point	15.870	16.002
Min	17.270	17.270
Lower Extreme Starting Point	12.210	12.342
Q1	19.530	19.662
Outliers	1.000	1.000
Extremes	0.00	0.00

#### 3.66.3. Time Series Plots



### 3.67. Station 40-GW6

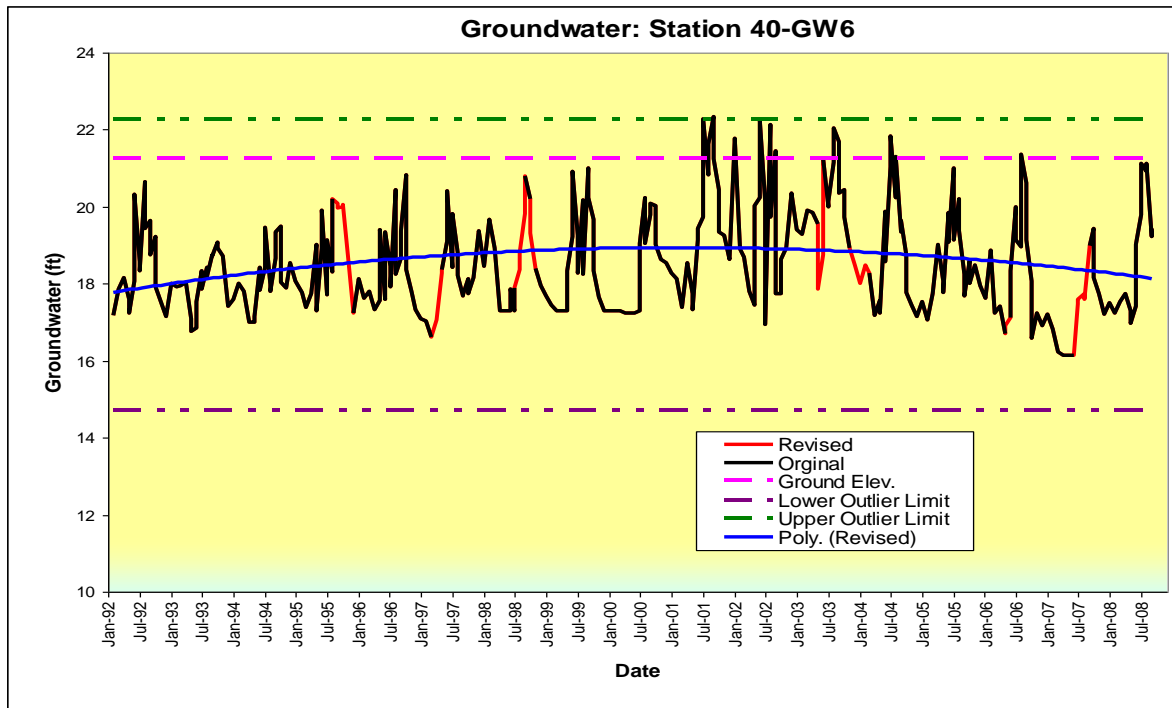
#### 3.67.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
40-GW6	Orange River	South end of Industry Ave next to LC office at west airpark.	26 38.97'	81 42.60'

#### 3.67.2. Descriptive Statistics

	Original	Revised
Mean	18.616	18.601
Standard Deviation	1.349	1.328
Skewness	0.635	0.651
Q3	19.435	19.430
Upper Extreme Point Starting Point	25.090	25.010
Max	22.340	22.340
Upper Outlier Limit Starting Point	22.263	22.220
Median	18.340	18.340
Lower Outlier Limit Starting Point	14.723	14.780
Min	16.130	16.130
Lower Extreme Starting Point	11.895	11.990
Q1	17.550	17.570
Outliers	2.000	3.000
Extremes	0.00	0.00

#### 3.67.3. Time Series Plots



### 3.68. Station 40-GW7

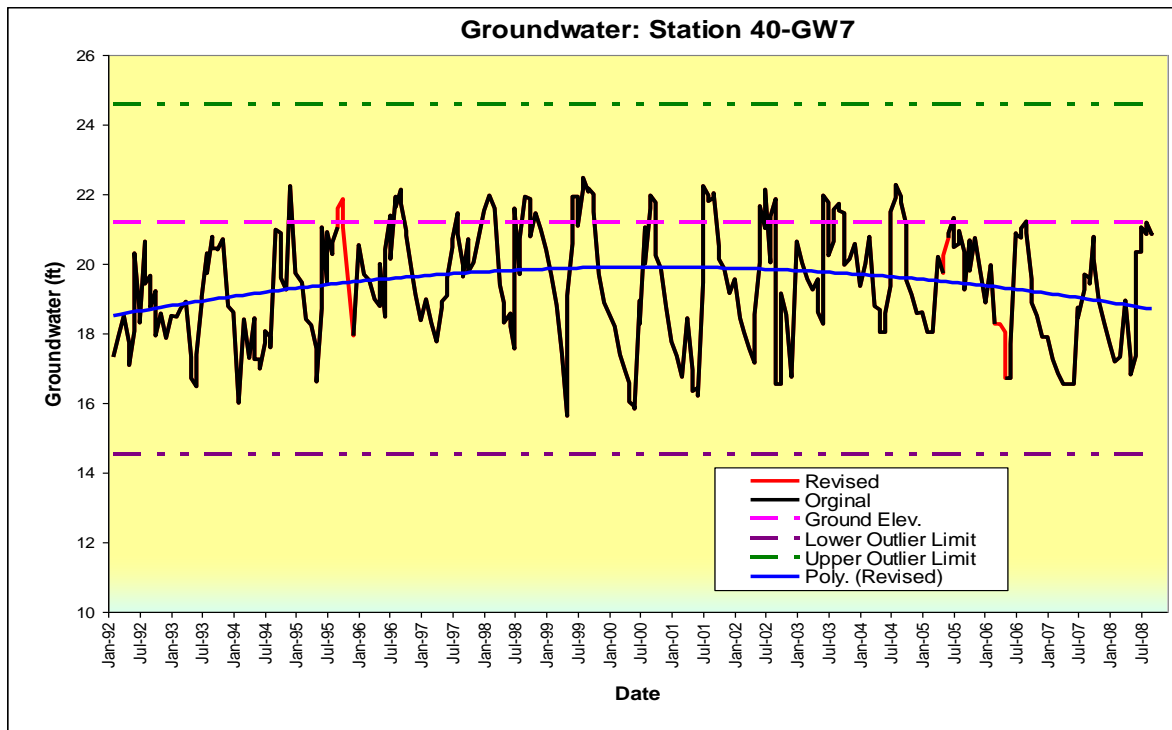
#### 3.68.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
40-GW7	Orange River	North of Buckingham Rd east side of FPL easement.	26 37.64'	81 45.99'

#### 3.68.2. Descriptive Statistics

	Original	Revised
Mean	19.454	19.463
Standard Deviation	1.661	1.659
Skewness	-0.196	-0.195
Q3	20.805	20.820
Upper Extreme Point Starting Point	28.380	28.448
Max	22.470	22.470
Upper Outlier Limit Starting Point	24.593	24.634
Median	19.550	19.550
Lower Outlier Limit Starting Point	14.493	14.463
Min	15.620	15.620
Lower Extreme Starting Point	10.705	10.649
Q1	18.280	18.277
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.68.3. Time Series Plots



### 3.69. Station 40-GW8

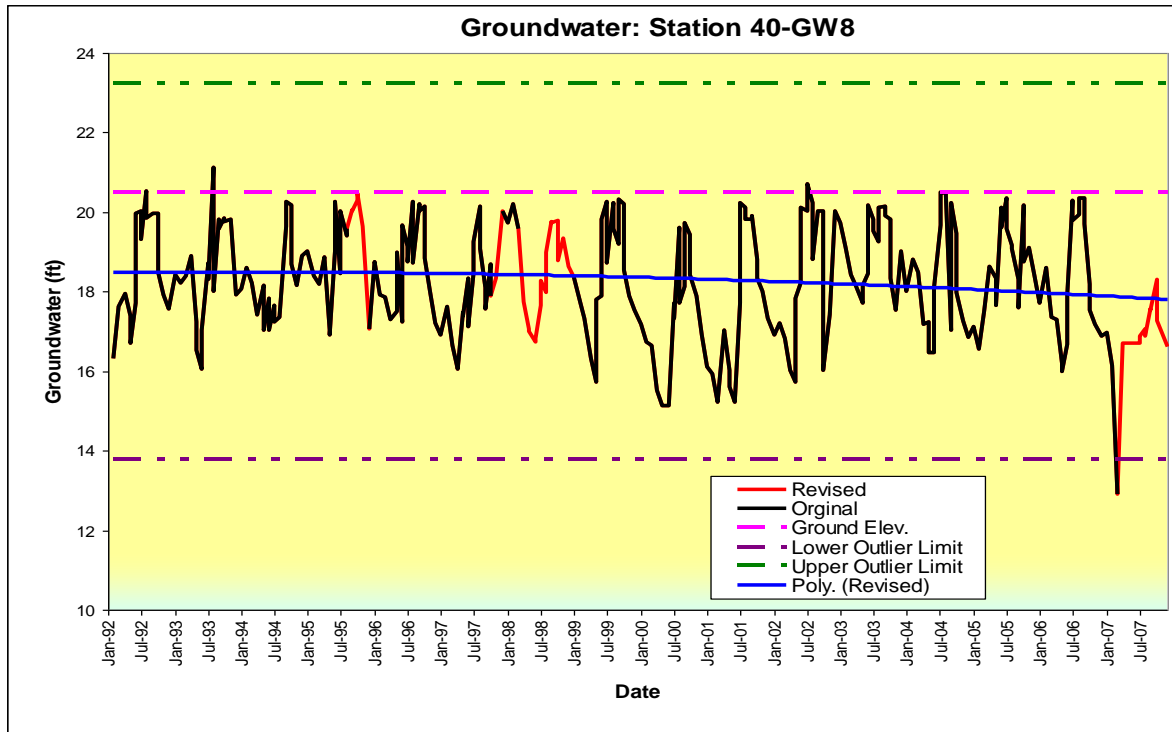
#### 3.69.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
40-GW8	Orange River	North of Lockett Rd east side of FPL easement 0.5 miles east of Staley Rd.	26 39.41'	81 46.04'

#### 3.69.2. Descriptive Statistics

	Original	Revised
Mean	18.323	18.284
Standard Deviation	1.441	1.424
Skewness	-0.406	-0.302
Q3	19.680	19.655
Upper Extreme Point Starting Point	26.760	26.915
Max	21.120	21.120
Upper Outlier Limit Starting Point	23.220	23.285
Median	18.320	18.230
Lower Outlier Limit Starting Point	13.780	13.605
Min	12.900	12.900
Lower Extreme Starting Point	10.240	9.975
Q1	17.320	17.235
Outliers	1.000	1.000
Extremes	0.00	0.00

#### 3.69.3. Time Series Plots



### 3.70. Station 40-GW9

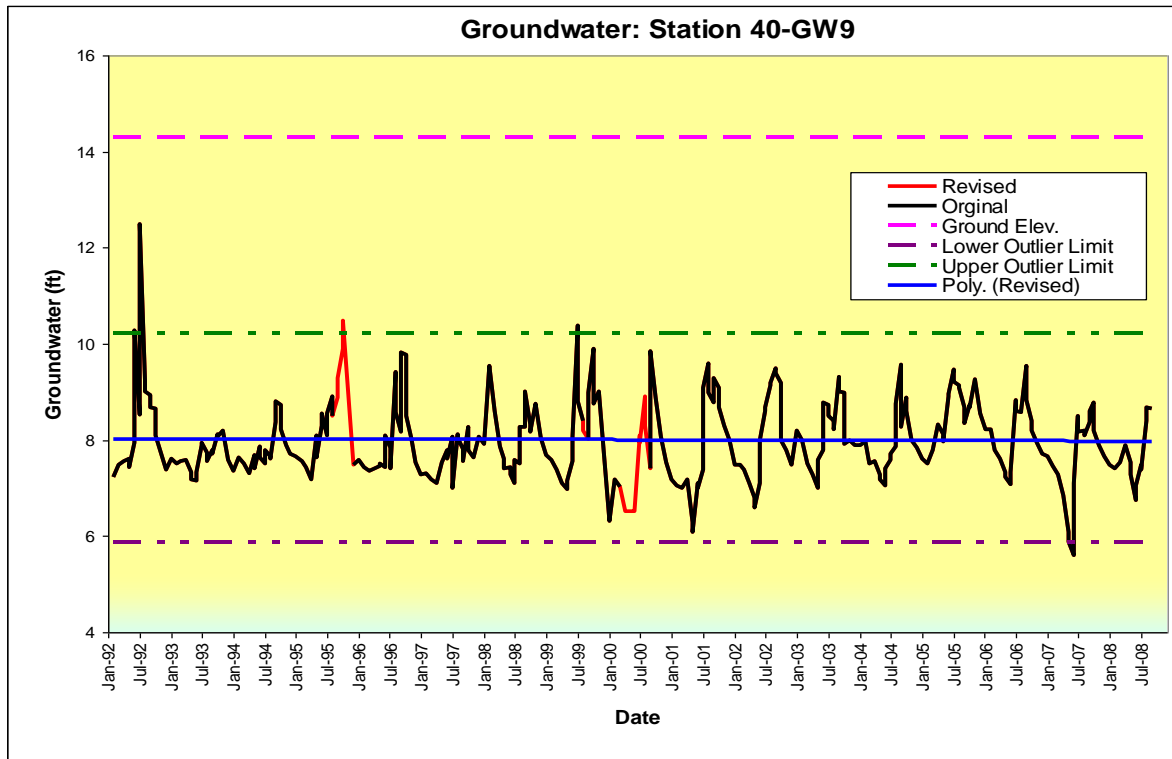
#### 3.70.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
40-GW9	Orange River	80'W of Buckingham Rd north property line of Gulf Coast Center.	26 39.61'	81 43.89'

#### 3.70.2. Descriptive Statistics

	Original	Revised
Mean	8.009	8.001
Standard Deviation	0.826	0.842
Skewness	0.843	0.745
Q3	8.573	8.580
Upper Extreme Point Starting Point	11.828	11.910
Max	12.480	12.480
Upper Outlier Limit Starting Point	10.200	10.245
Median	7.875	7.890
Lower Outlier Limit Starting Point	5.860	5.805
Min	5.590	5.590
Lower Extreme Starting Point	4.233	4.140
Q1	7.488	7.470
Outliers	4.000	4.000
Extremes	1.00	1.00

#### 3.70.3. Time Series Plots



### 3.71. Station 40-GW10

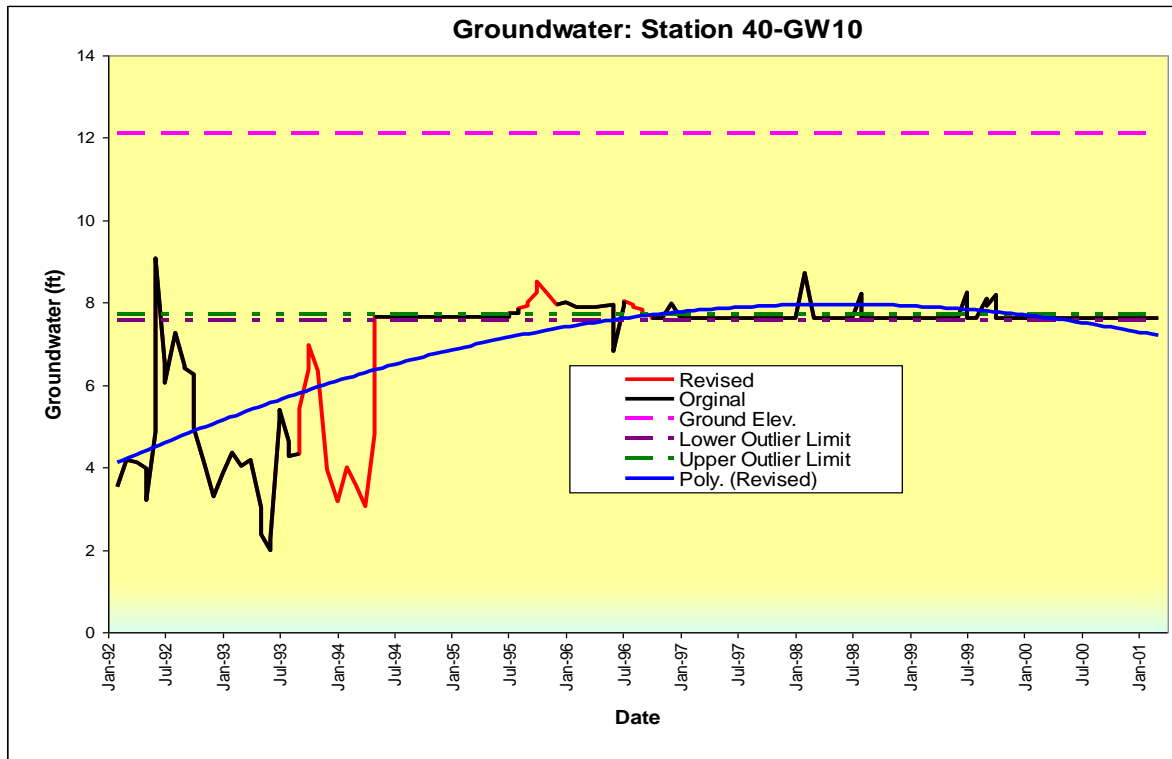
#### 3.71.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
40-GW10	Orange River	Southeast corner of Buckingham Rd. & Orange River	No data	No data

#### 3.71.2. Descriptive Statistics

	Original	Revised
Mean	7.078	6.980
Standard Deviation	1.423	1.507
Skewness	-2.022	-1.746
Q3	7.650	7.650
Upper Extreme Point Starting Point	7.770	7.770
Max	9.080	9.080
Upper Outlier Limit Starting Point	7.710	7.710
Median	7.610	7.610
Lower Outlier Limit Starting Point	7.550	7.550
Min	1.990	1.990
Lower Extreme Starting Point	7.490	7.490
Q1	7.610	7.610
Outliers	2.000	3.000
Extremes	51.00	67.00

#### 3.71.3. Time Series Plots



### 3.72. Station 40-GW11

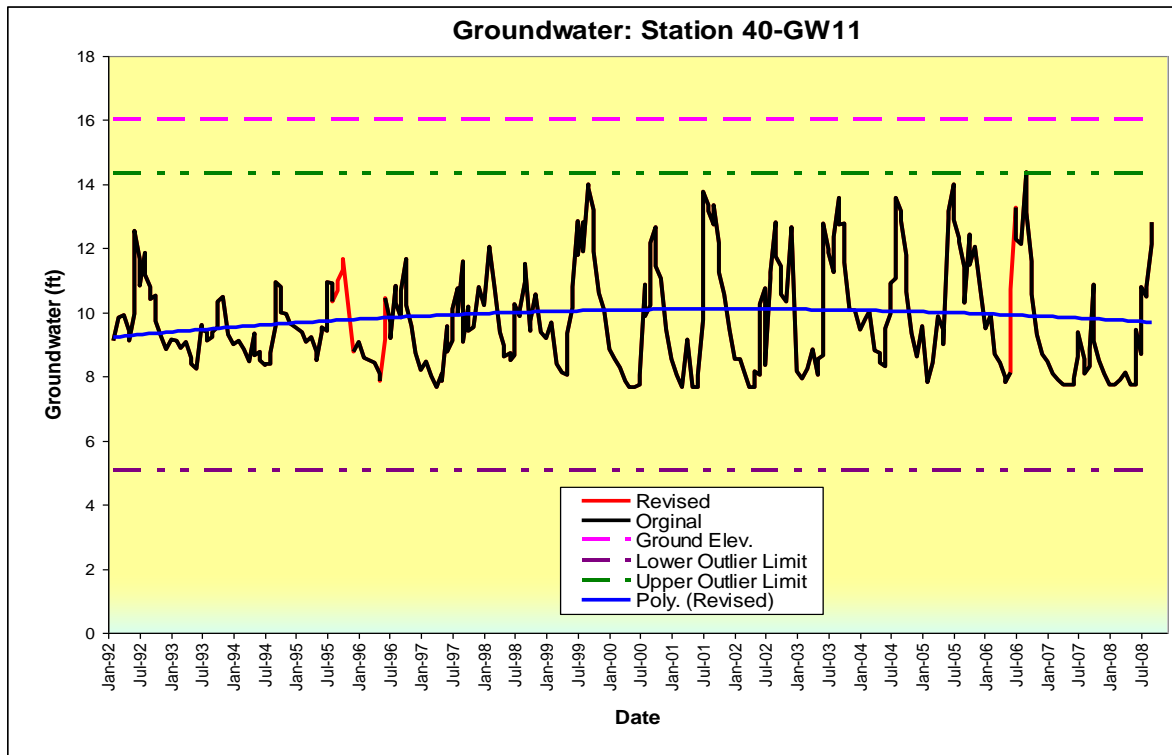
#### 3.72.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
40-GW11	Orange River	North of Orange River Blvd east side of FPL easement 0.5 miles east Staley Rd.	26 40.83'	81 46.95'

#### 3.72.2. Descriptive Statistics

	Original	Revised
Mean	9.862	9.871
Standard Deviation	1.647	1.638
Skewness	0.674	0.660
Q3	10.850	10.850
Upper Extreme Point Starting Point	17.795	17.750
Max	14.370	14.370
Upper Outlier Limit Starting Point	14.323	14.300
Median	9.465	9.480
Lower Outlier Limit Starting Point	5.063	5.100
Min	7.650	7.650
Lower Extreme Starting Point	1.590	1.650
Q1	8.535	8.550
Outliers	1.000	1.000
Extremes	0.00	0.00

#### 3.72.3. Time Series Plots





### 3.73. Station 40-GW12

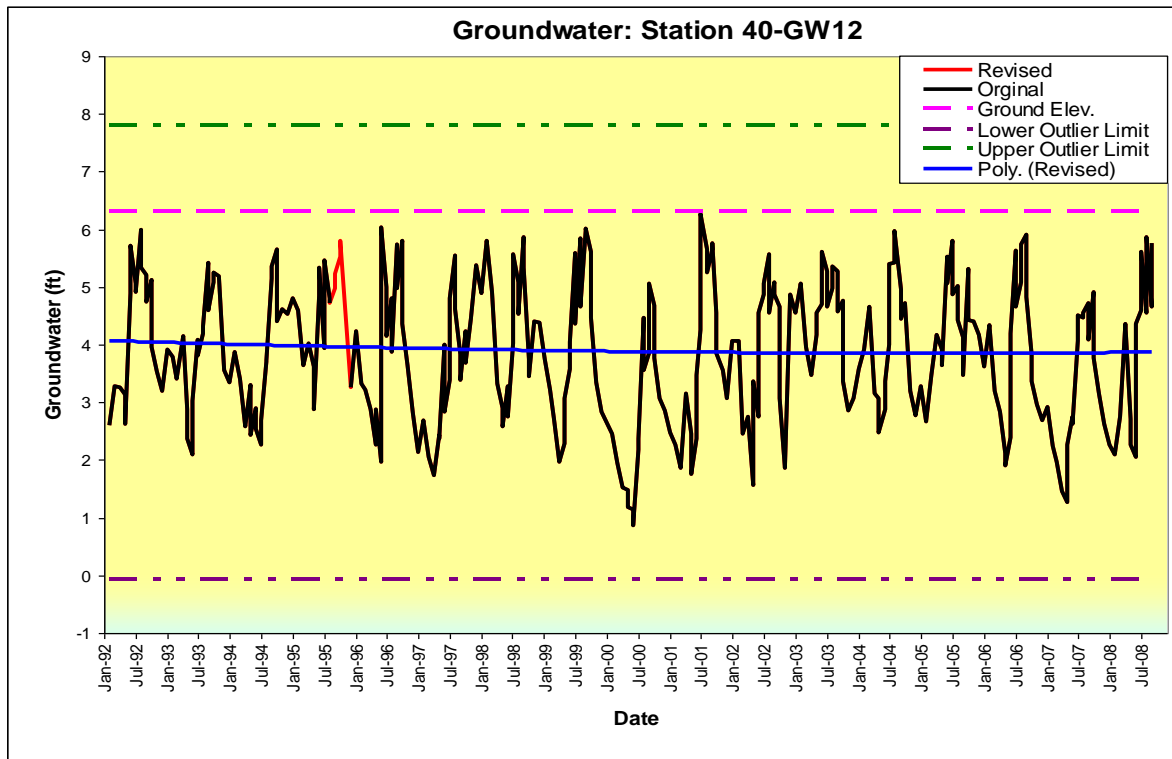
#### 3.73.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
40-GW12	Orange River	150'S of SR 80 on east property line of Division of Forestry.	26 41.75'	81 46.59'

#### 3.73.2. Descriptive Statistics

	Original	Revised
Mean	3.898	3.909
Standard Deviation	1.199	1.199
Skewness	-0.160	-0.175
Q3	4.845	4.860
Upper Extreme Point Starting Point	10.733	10.770
Max	6.260	6.260
Upper Outlier Limit Starting Point	7.789	7.815
Median	3.955	3.990
Lower Outlier Limit Starting Point	-0.061	-0.065
Min	0.860	0.860
Lower Extreme Starting Point	-3.005	-3.020
Q1	2.883	2.890
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.73.3. Time Series Plots



### 3.74. Station 40-GW13

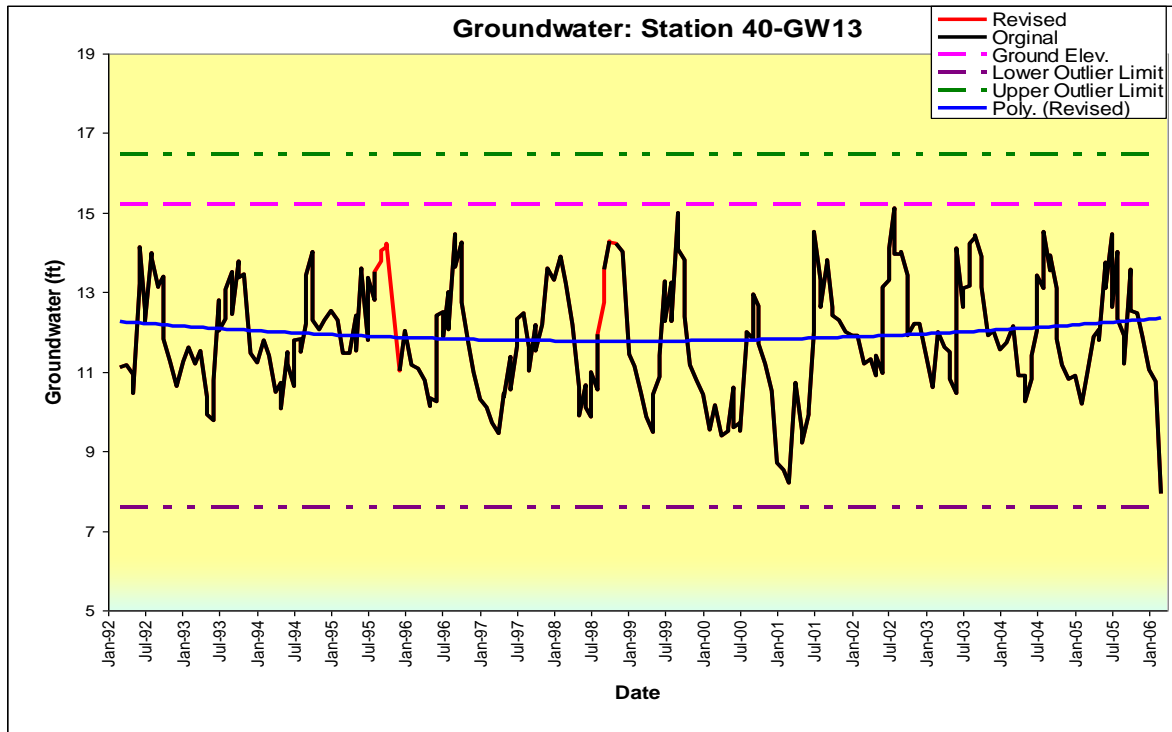
#### 3.74.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
40-GW13	Orange River	Northeast corner of bus circle at Buckingham Exceptional School on Buckingham Rd.	26 41.80'	81 43.52'

#### 3.74.2. Descriptive Statistics

	Original	Revised
Mean	11.916	11.948
Standard Deviation	1.427	1.433
Skewness	-0.051	-0.074
Q3	13.113	13.130
Upper Extreme Point Starting Point	19.758	19.790
Max	15.110	15.110
Upper Outlier Limit Starting Point	16.435	16.460
Median	11.890	11.910
Lower Outlier Limit Starting Point	7.575	7.580
Min	7.940	7.940
Lower Extreme Starting Point	4.253	4.250
Q1	10.898	10.910
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.74.3. Time Series Plots



### 3.75. Station 41-GW1

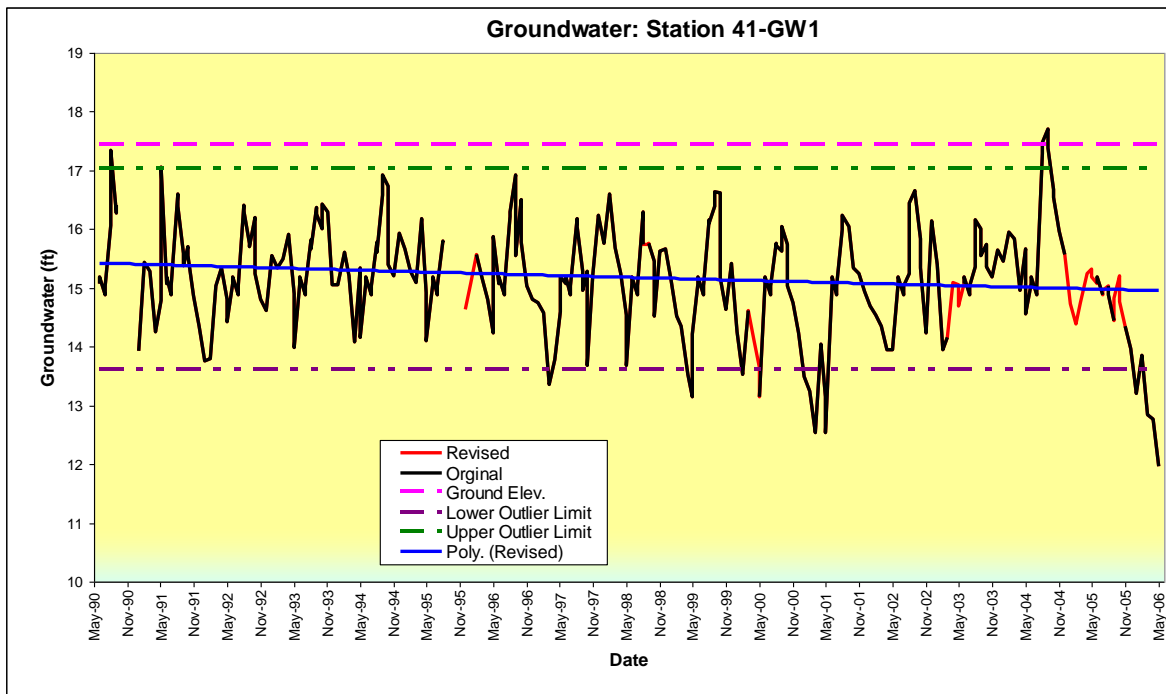
#### 3.75.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
41-GW1	Billy Creek	South of Canal St. east of Ford St. along fence in front of Lee County bus depot.	26 37.54'	81 50.87'

#### 3.75.2. Descriptive Statistics

	Original	Revised
Mean	15.199	15.179
Standard Deviation	0.912	0.896
Skewness	-0.345	-0.305
Q3	15.748	15.735
Upper Extreme Point Starting Point	18.320	18.495
Max	17.700	17.700
Upper Outlier Limit Starting Point	17.034	17.115
Median	15.180	15.175
Lower Outlier Limit Starting Point	13.604	13.435
Min	11.970	11.970
Lower Extreme Starting Point	12.318	12.055
Q1	14.890	14.815
Outliers	19.000	15.000
Extremes	1.00	1.00

#### 3.75.3. Time Series Plots



### 3.76. Station 41-GW2

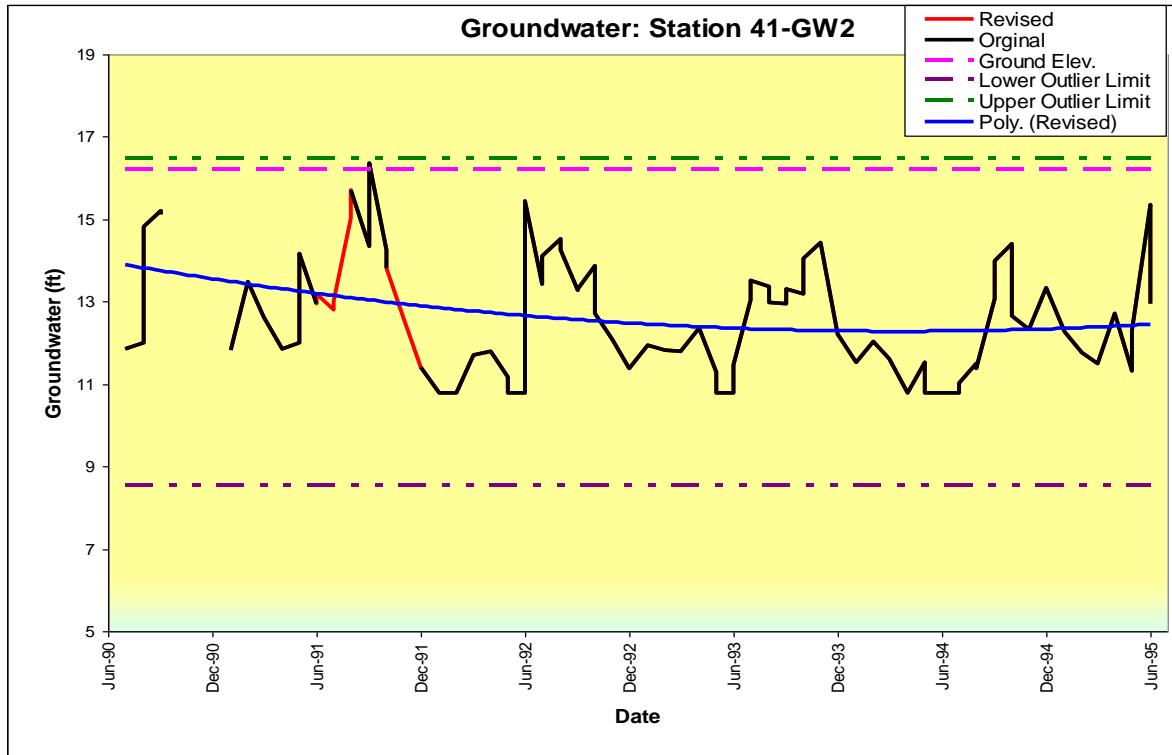
#### 3.76.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
41-GW2	No data	No data	No data	No data

#### 3.76.2. Descriptive Statistics

	Original	Revised
Mean	12.620	12.662
Standard Deviation	1.411	1.395
Skewness	0.558	0.515
Q3	13.498	13.490
Upper Extreme Point Starting Point	19.468	19.370
Max	16.370	16.370
Upper Outlier Limit Starting Point	16.483	16.430
Median	12.325	12.600
Lower Outlier Limit Starting Point	8.523	8.590
Min	10.780	10.780
Lower Extreme Starting Point	5.538	5.650
Q1	11.508	11.530
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.76.3. Time Series Plots



### 3.77. Station 41-GW3

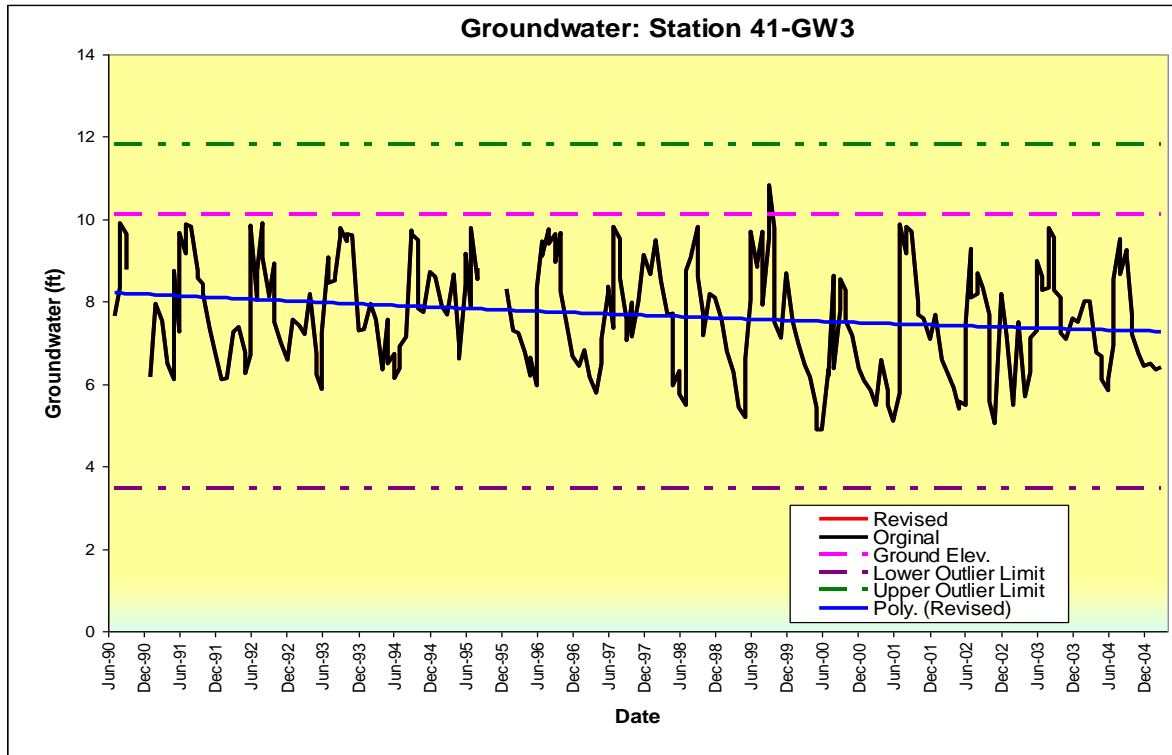
#### 3.77.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
41-GW3	Billy Creek	200' south of Pricilla Lane cul-de-sac.	26 39.25'	81 49.91'

#### 3.77.2. Descriptive Statistics

	Original	Revised
Mean	7.687	7.687
Standard Deviation	1.334	1.334
Skewness	-0.026	-0.026
Q3	8.685	8.685
Upper Extreme Point Starting Point	14.933	14.933
Max	10.840	10.840
Upper Outlier Limit Starting Point	11.809	11.809
Median	7.665	7.665
Lower Outlier Limit Starting Point	3.479	3.479
Min	4.890	4.890
Lower Extreme Starting Point	0.355	0.355
Q1	6.603	6.603
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.77.3. Time Series Plots



### 3.78. Station 41-GW4

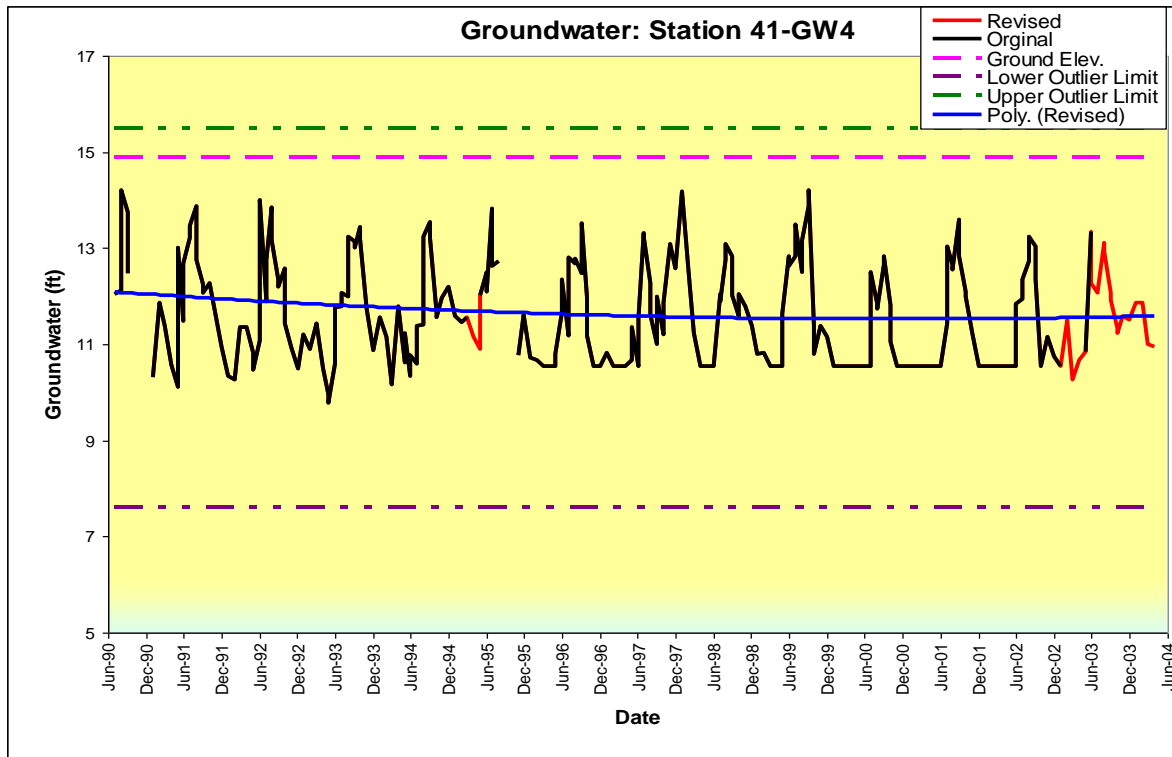
#### 3.78.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
41-GW4	Billy Creek	Behind Church at Figuera Ave & Elvas Ct under Australian Pines.	26 40.21'	81 48.88'

#### 3.78.2. Descriptive Statistics

	Original	Revised
Mean	11.668	11.664
Standard Deviation	1.068	1.042
Skewness	0.466	0.473
Q3	12.510	12.488
Upper Extreme Point Starting Point	18.420	18.218
Max	14.210	14.210
Upper Outlier Limit Starting Point	15.465	15.353
Median	11.555	11.555
Lower Outlier Limit Starting Point	7.585	7.713
Min	9.780	9.780
Lower Extreme Starting Point	4.630	4.848
Q1	10.540	10.578
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.78.3. Time Series Plots



### 3.79. Station 41-GW5

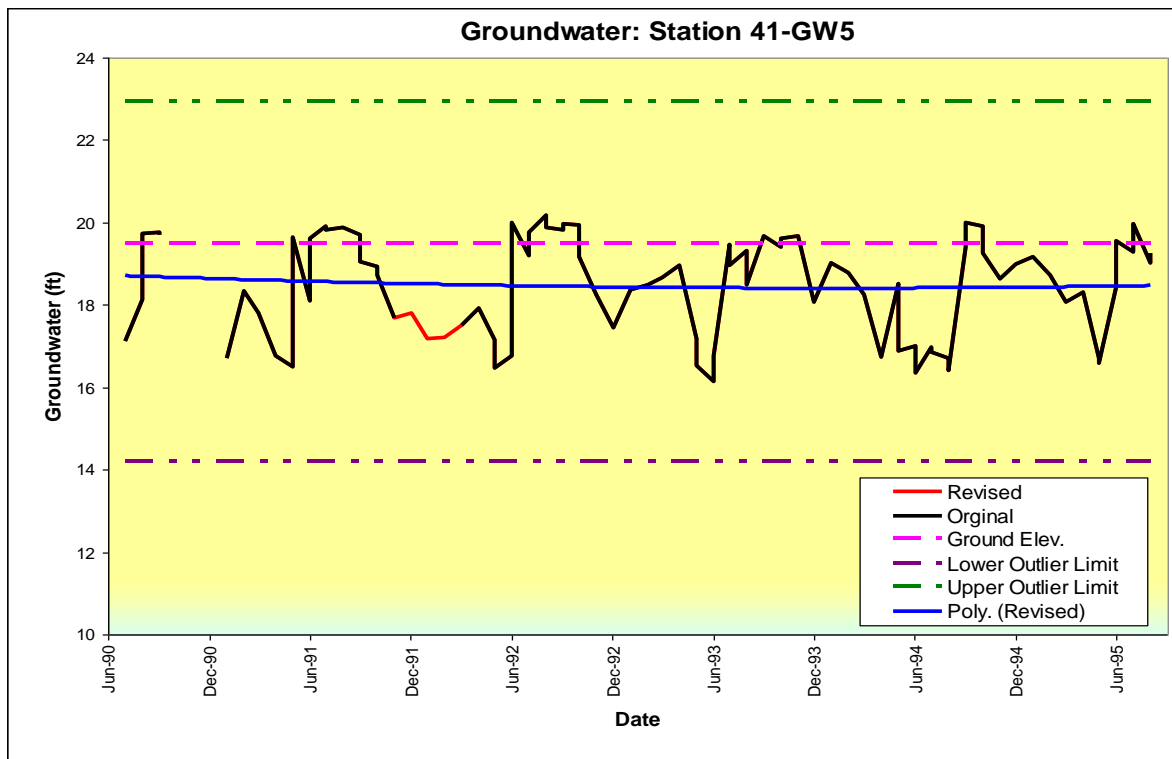
#### 3.79.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
41-GW5	No data	No data	No data	No data

#### 3.79.2. Descriptive Statistics

	Original	Revised
Mean	18.511	18.474
Standard Deviation	1.205	1.203
Skewness	-0.469	-0.393
Q3	19.643	19.620
Upper Extreme Point Starting Point	26.198	26.885
Max	20.170	20.170
Upper Outlier Limit Starting Point	22.920	23.252
Median	18.760	18.720
Lower Outlier Limit Starting Point	14.180	13.566
Min	16.140	16.140
Lower Extreme Starting Point	10.903	9.934
Q1	17.458	17.198
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.79.3. Time Series Plots



### 3.80. Station 41-GW6

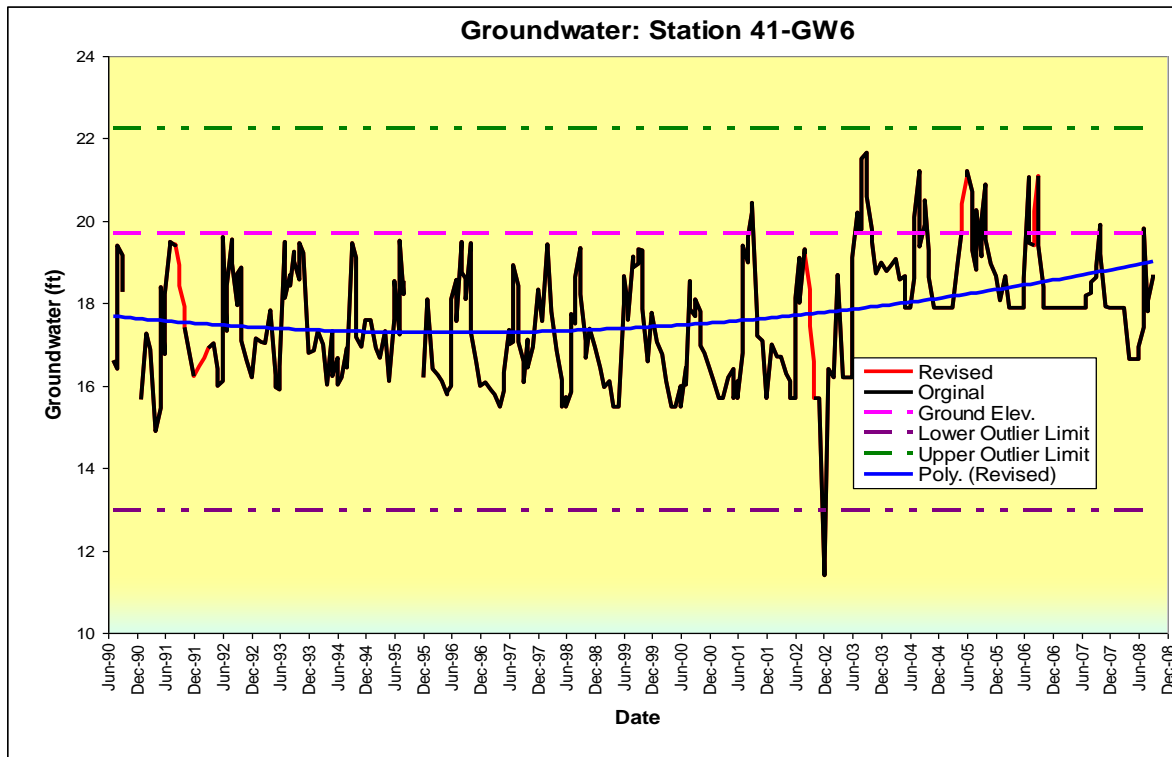
#### 3.80.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
41-GW6	Billy Creek	At power pole north of Ballard Rd west of Ortiz Ave.	26 39.26'	81 48.77'

#### 3.80.2. Descriptive Statistics

	Original	Revised
Mean	17.720	17.733
Standard Deviation	1.470	1.468
Skewness	0.058	0.063
Q3	18.778	18.795
Upper Extreme Point Starting Point	25.738	25.538
Max	21.650	21.650
Upper Outlier Limit Starting Point	22.258	22.166
Median	17.900	17.900
Lower Outlier Limit Starting Point	12.978	13.176
Min	11.390	11.390
Lower Extreme Starting Point	9.498	9.805
Q1	16.458	16.548
Outliers	1.000	1.000
Extremes	0.00	0.00

#### 3.80.3. Time Series Plots





### 3.81. Station 42-GW1

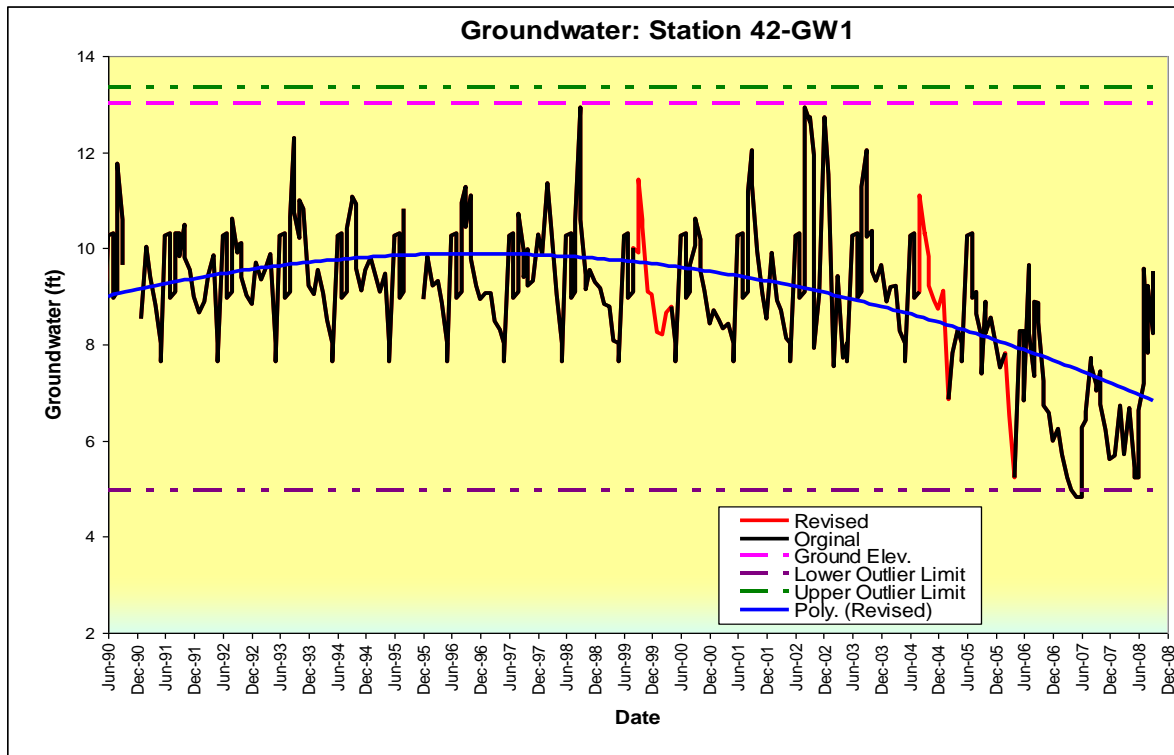
#### 3.81.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
42-GW1	Whiskey Creek	150' West of Amedicus Ln north of Crystal Dr north side of warehouse in melaleucas.	26 34.01'	81 51.66'

#### 3.81.2. Descriptive Statistics

	Original	Revised
Mean	9.079	9.098
Standard Deviation	1.491	1.477
Skewness	-0.458	-0.472
Q3	10.200	10.200
Upper Extreme Point Starting Point	16.500	16.110
Max	12.930	12.930
Upper Outlier Limit Starting Point	13.350	13.155
Median	9.100	9.100
Lower Outlier Limit Starting Point	4.950	5.275
Min	4.830	4.830
Lower Extreme Starting Point	1.800	2.320
Q1	8.100	8.230
Outliers	3.000	8.000
Extremes	0.00	0.00

#### 3.81.3. Time Series Plots



### 3.82. Station 42-GW2

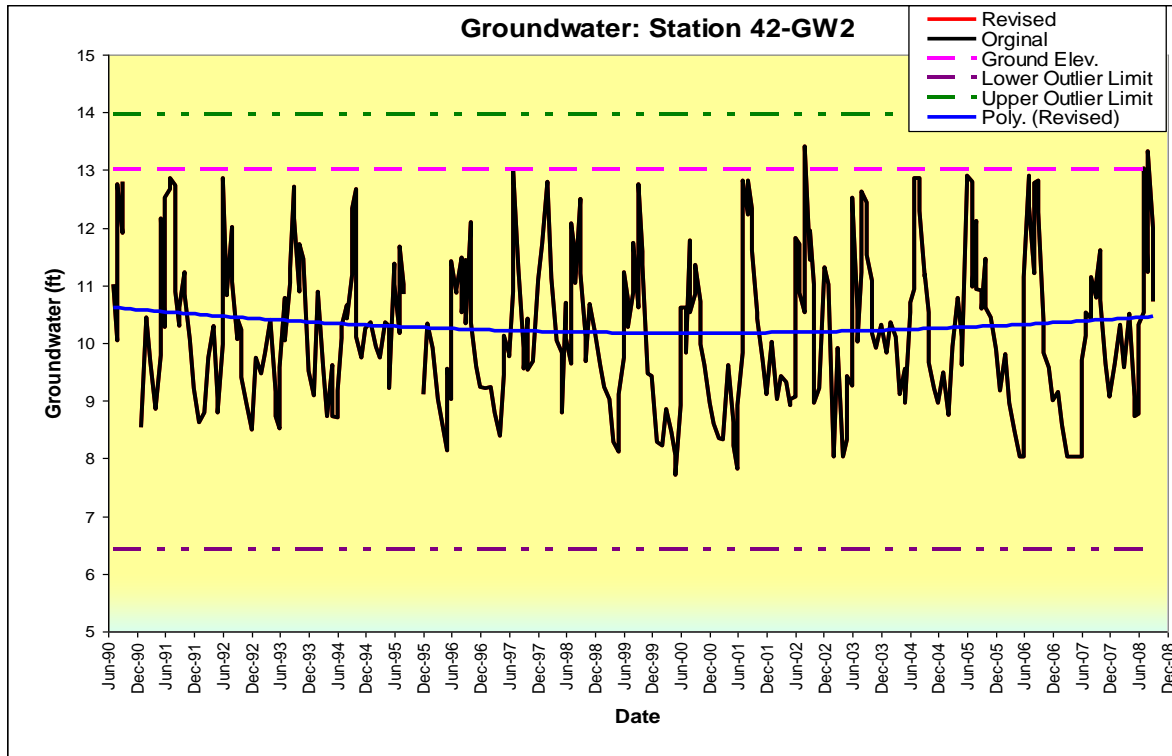
#### 3.82.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
42-GW2	Whiskey Creek	100' North of north Airport Rd west of Lee County Nursing Home under oaks.	26 35.63'	81 52.12'

#### 3.82.2. Descriptive Statistics

	Original	Revised
Mean	10.294	10.294
Standard Deviation	1.311	1.311
Skewness	0.286	0.286
Q3	11.125	11.125
Upper Extreme Point Starting Point	16.780	16.780
Max	13.420	13.420
Upper Outlier Limit Starting Point	13.953	13.953
Median	10.270	10.270
Lower Outlier Limit Starting Point	6.413	6.413
Min	7.720	7.720
Lower Extreme Starting Point	3.585	3.585
Q1	9.240	9.240
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.82.3. Time Series Plots



### 3.83. Station 42-GW3

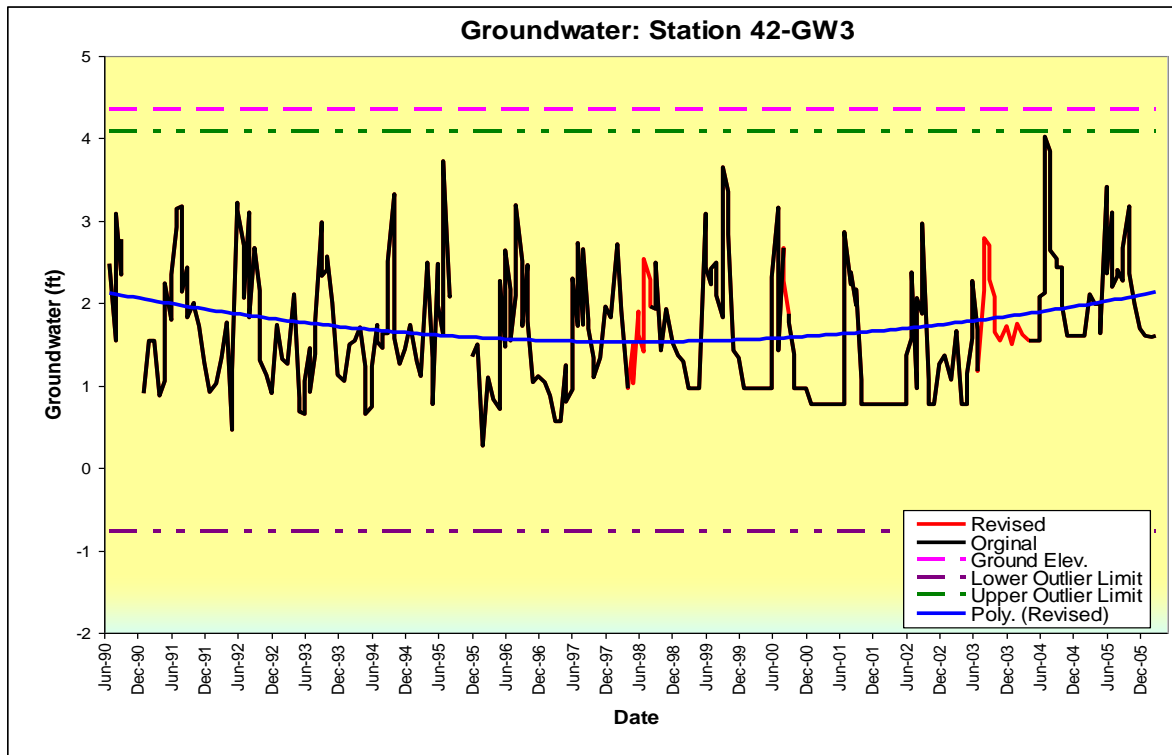
#### 3.83.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
42-GW3	Whiskey Creek	Behind Bermuda Club east side Winkler Rd. north of College Parkway in shrubs along east property line.	26 33.56'	81 53.79'

#### 3.83.2. Descriptive Statistics

	Original	Revised
Mean	1.713	1.727
Standard Deviation	0.758	0.743
Skewness	0.569	0.533
Q3	2.263	2.270
Upper Extreme Point Starting Point	5.893	5.870
Max	4.020	4.020
Upper Outlier Limit Starting Point	4.078	4.070
Median	1.600	1.620
Lower Outlier Limit Starting Point	-0.763	-0.730
Min	0.270	0.270
Lower Extreme Starting Point	-2.578	-2.530
Q1	1.053	1.070
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.83.3. Time Series Plots



### 3.84. Station 43-GW1

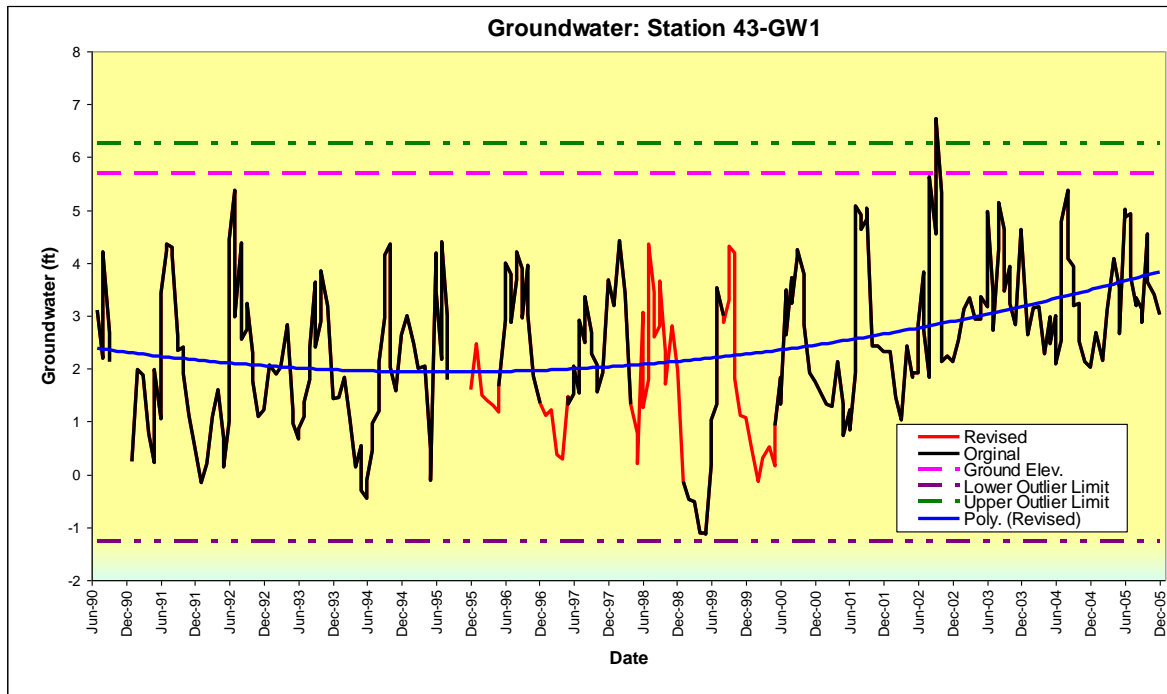
#### 3.84.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
43-GW1	Deep Lagoon	200' East of A&W Bulb Rd north turnaround on west side of Gladiolus Dr.	26 31.22'	81 55.09'

#### 3.84.2. Descriptive Statistics

	Original	Revised
Mean	2.516	2.425
Standard Deviation	1.421	1.421
Skewness	-0.051	0.020
Q3	3.430	3.350
Upper Extreme Point Starting Point	9.085	9.270
Max	6.730	6.730
Upper Outlier Limit Starting Point	6.258	6.310
Median	2.490	2.430
Lower Outlier Limit Starting Point	-1.283	-1.583
Min	-1.140	-1.140
Lower Extreme Starting Point	-4.110	-4.543
Q1	1.545	1.377
Outliers	1.000	1.000
Extremes	0.00	0.00

#### 3.84.3. Time Series Plots



### 3.85. Station 43-GW2

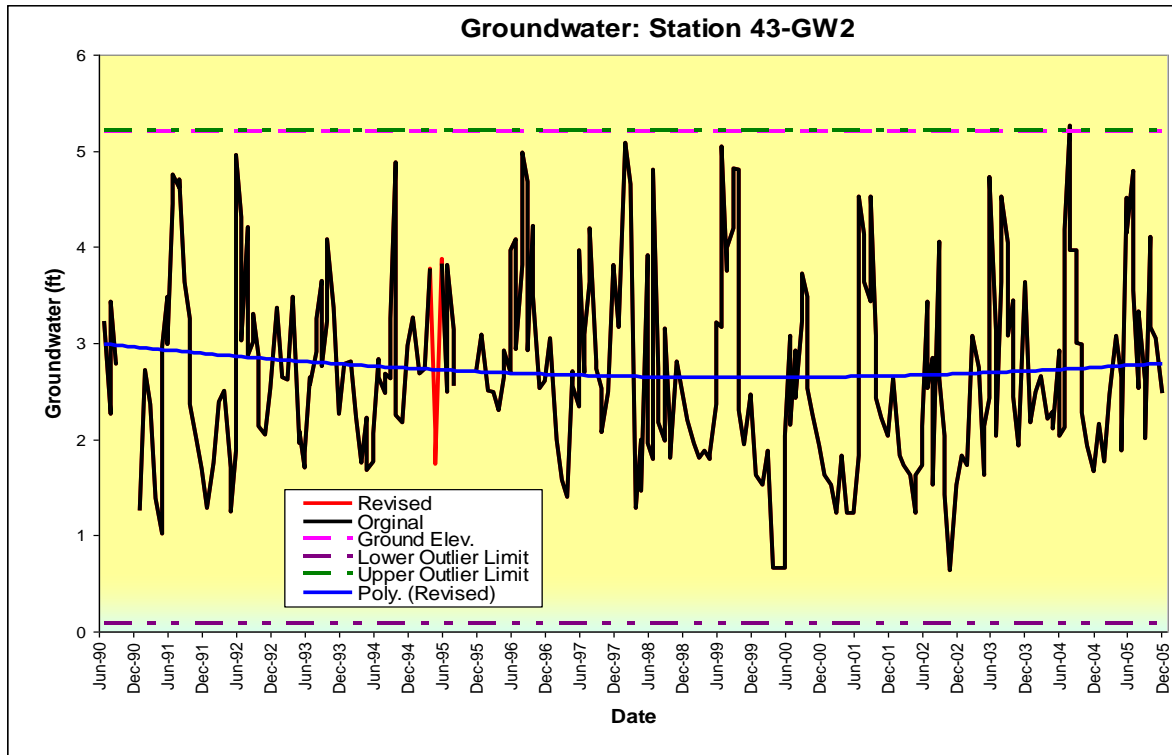
#### 3.85.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
43-GW2	Deep Lagoon	North east corner Int. Pine Ridge Rd & Gladiolus Dr.	26 31.11'	81 56.14'

#### 3.85.2. Descriptive Statistics

	Original	Revised
Mean	2.731	2.729
Standard Deviation	0.986	0.986
Skewness	0.435	0.437
Q3	3.285	3.293
Upper Extreme Point Starting Point	7.140	7.185
Max	5.260	5.260
Upper Outlier Limit Starting Point	5.213	5.239
Median	2.630	2.625
Lower Outlier Limit Starting Point	0.072	0.049
Min	0.630	0.630
Lower Extreme Starting Point	-1.855	-1.898
Q1	2.000	1.995
Outliers	1.000	1.000
Extremes	0.00	0.00

#### 3.85.3. Time Series Plots



### 3.86. Station 43-GW3

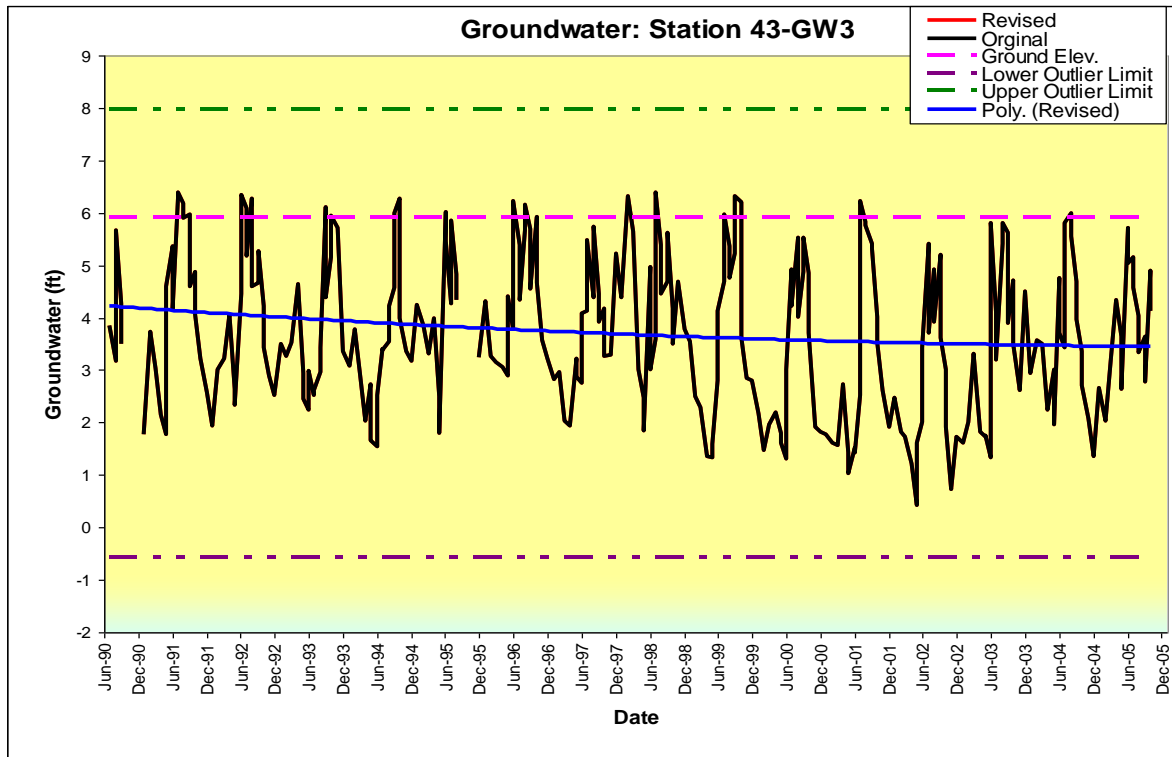
#### 3.86.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
43-GW3	Deep Lagoon	Southwest corner Lake McGregor Circle in Melaleucas.	26 32.46'	81 54.46'

#### 3.86.2. Descriptive Statistics

	Original	Revised
Mean	3.721	3.721
Standard Deviation	1.441	1.441
Skewness	0.074	0.074
Q3	4.775	4.775
Upper Extreme Point Starting Point	11.195	11.195
Max	6.400	6.400
Upper Outlier Limit Starting Point	7.985	7.985
Median	3.585	3.585
Lower Outlier Limit Starting Point	-0.575	-0.575
Min	0.420	0.420
Lower Extreme Starting Point	-3.785	-3.785
Q1	2.635	2.635
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.86.3. Time Series Plots



### 3.87. Station 43-GW4

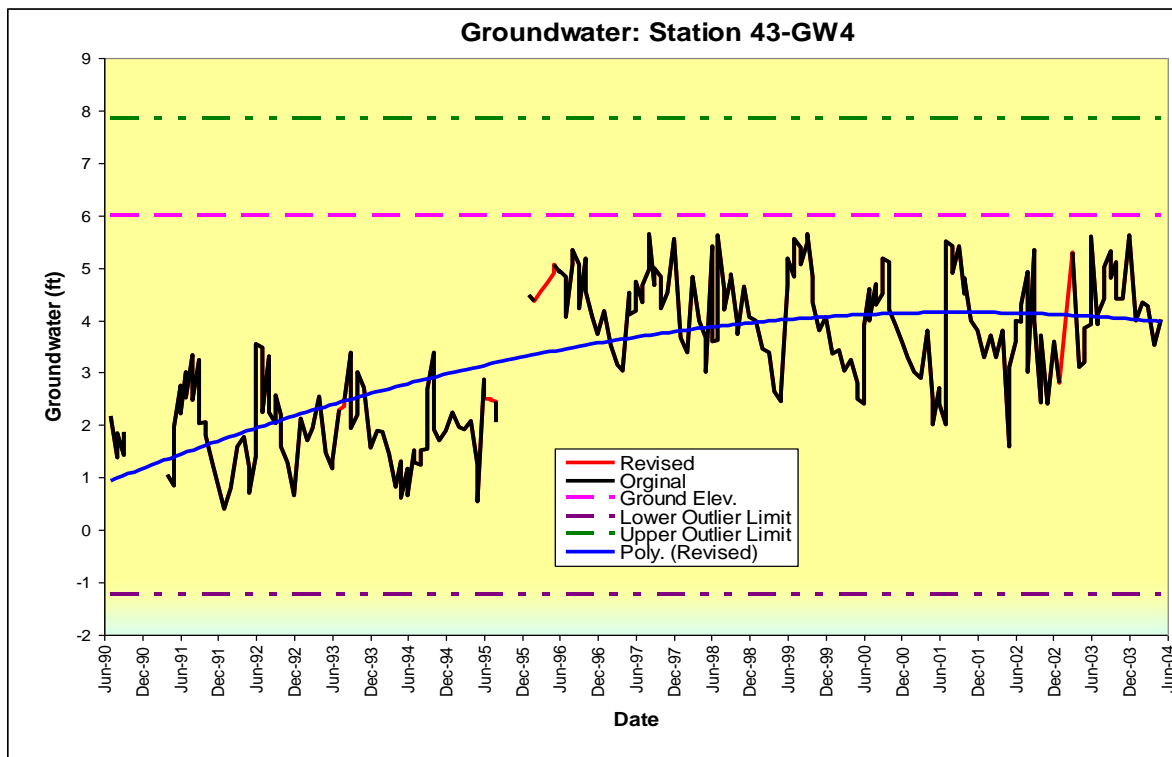
#### 3.87.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
43-GW4	Deep Lagoon	South of Summerlin Rd. from Lee County Health Park Lake on dirt trail 30S of Bike Path.	26 29.98'	81 54.98'

#### 3.87.2. Descriptive Statistics

	Original	Revised
Mean	3.315	3.325
Standard Deviation	1.378	1.371
Skewness	-0.161	-0.169
Q3	4.428	4.490
Upper Extreme Point Starting Point	11.230	11.375
Max	5.650	5.650
Upper Outlier Limit Starting Point	7.829	7.933
Median	3.440	3.460
Lower Outlier Limit Starting Point	-1.241	-1.248
Min	0.410	0.410
Lower Extreme Starting Point	-4.643	-4.690
Q1	2.160	2.195
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.87.3. Time Series Plots



### 3.88. Station 44-GW1

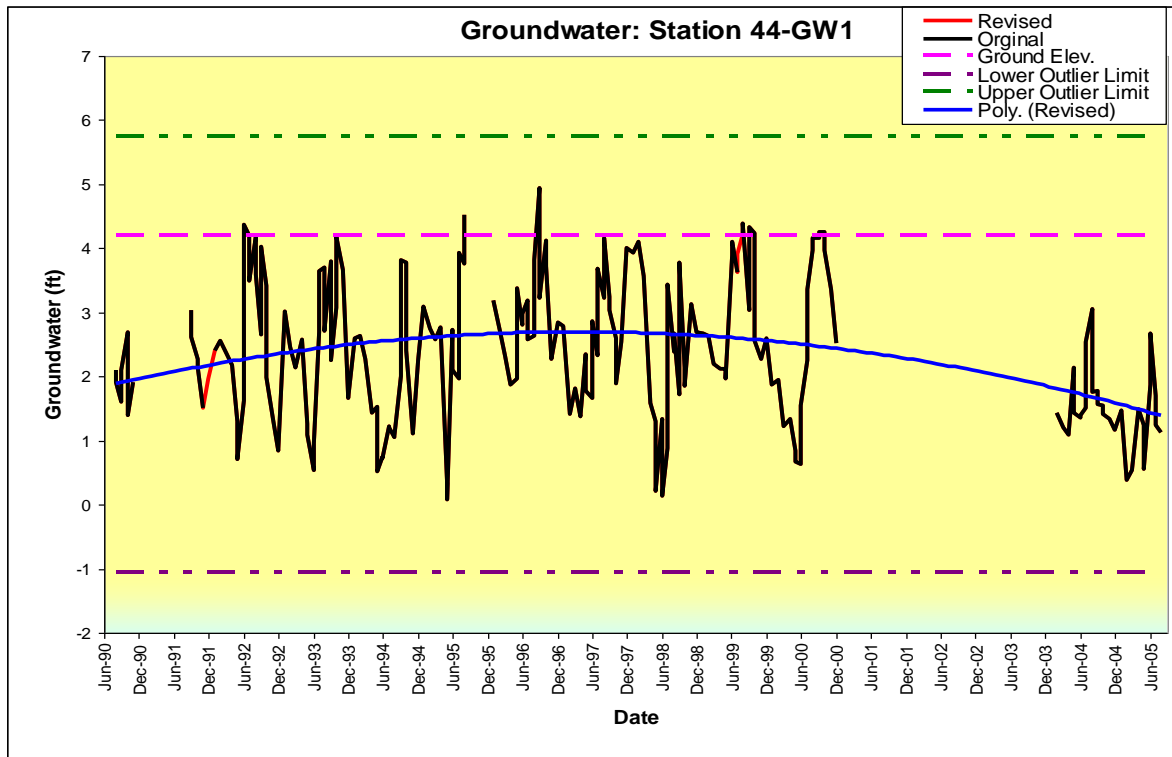
#### 3.88.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
44-GW1	Cow Creek	West side of Winkler Rd. 1.3 miles south of Summerlin Rd in Australian Pines 75' Northwest of benchmark headwall.	26 29.77'	81 53.97'

#### 3.88.2. Descriptive Statistics

	Original	Revised
Mean	2.380	2.386
Standard Deviation	1.099	1.100
Skewness	0.140	0.136
Q3	3.190	3.190
Upper Extreme Point Starting Point	8.290	8.260
Max	4.950	4.950
Upper Outlier Limit Starting Point	5.740	5.725
Median	2.300	2.300
Lower Outlier Limit Starting Point	-1.060	-1.035
Min	0.080	0.080
Lower Extreme Starting Point	-3.610	-3.570
Q1	1.490	1.500
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.88.3. Time Series Plots





### 3.89. Station 44-GW2

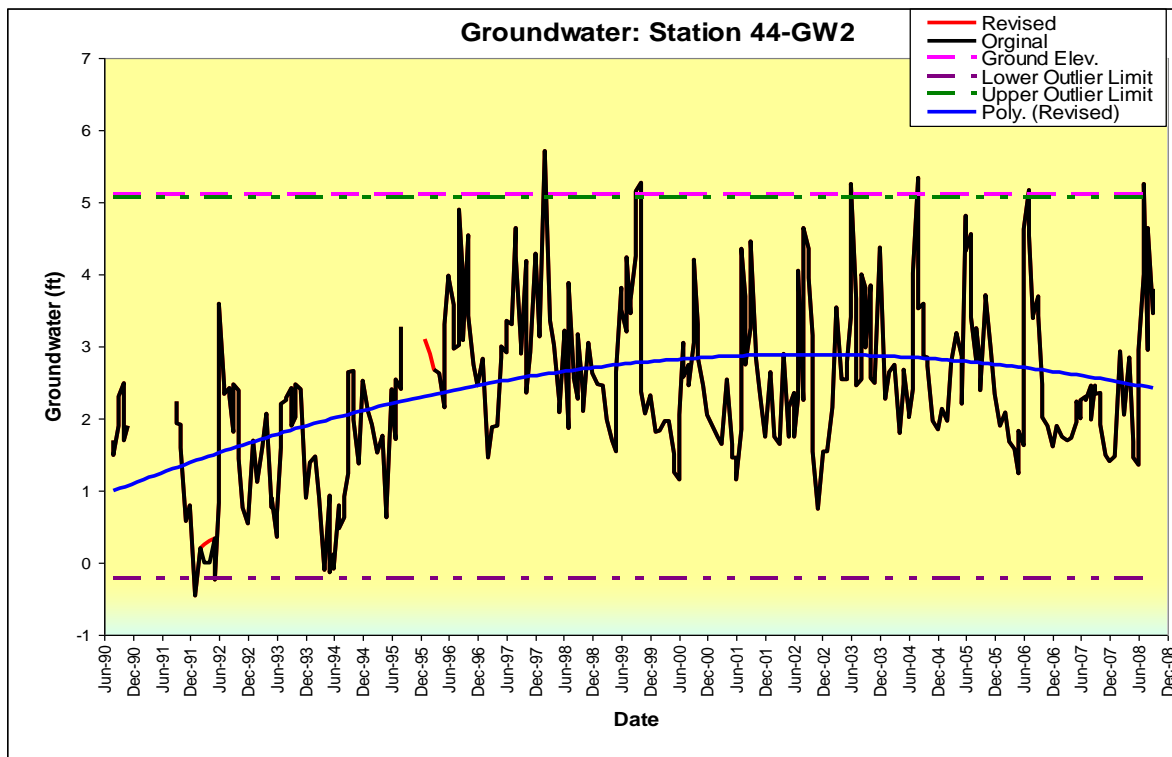
#### 3.89.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
44-GW2	Cow Creek	75 East of Stevens Blvd and Pine Ridge Rd.in FPL easement on east side of fence.	26 29.20'	81 56.38'

#### 3.89.2. Descriptive Statistics

	Original	Revised
Mean	2.477	2.464
Standard Deviation	1.104	1.113
Skewness	0.268	0.243
Q3	3.088	3.080
Upper Extreme Point Starting Point	7.048	7.070
Max	5.720	5.720
Upper Outlier Limit Starting Point	5.068	5.075
Median	2.395	2.390
Lower Outlier Limit Starting Point	-0.213	-0.245
Min	-0.450	-0.450
Lower Extreme Starting Point	-2.193	-2.240
Q1	1.768	1.750
Outliers	9.000	8.000
Extremes	0.00	0.00

#### 3.89.3. Time Series Plots



### 3.90. Station 44-GW3

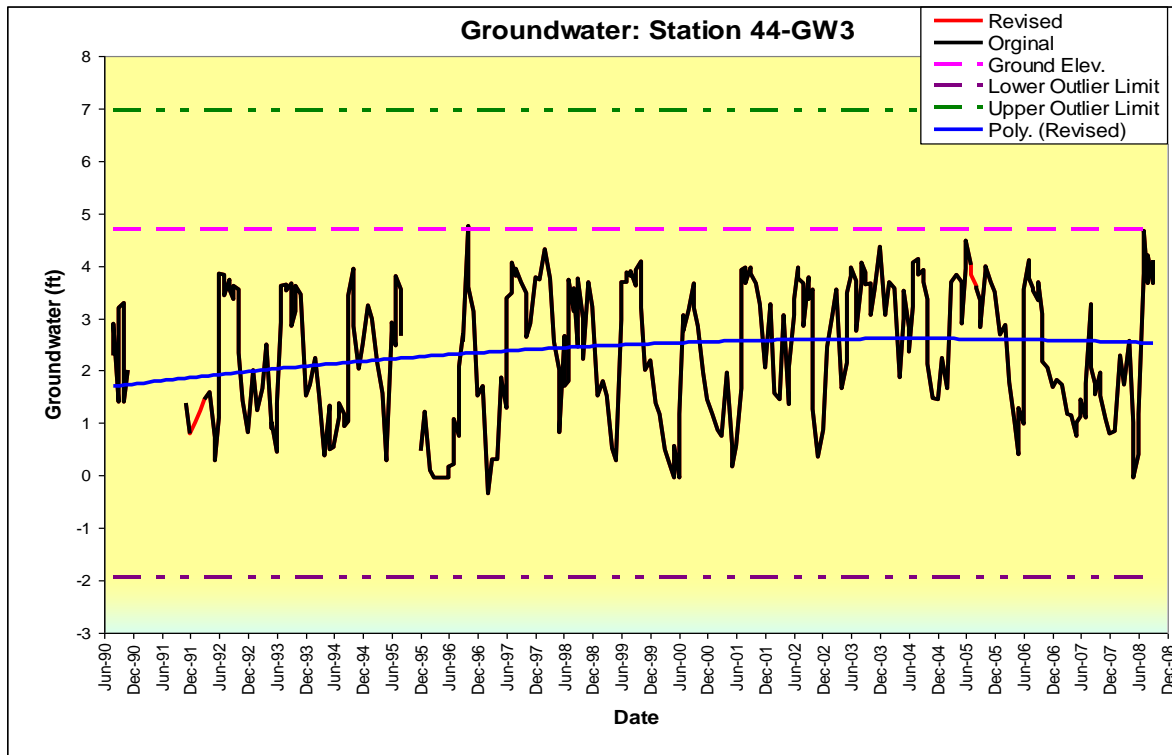
#### 3.90.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
44-GW3	Cow Creek	South end of Winkler Dr. east side at Lee County Mosquito Control entrance in palms.	26 28.86'	81 53.90'

#### 3.90.2. Descriptive Statistics

	Original	Revised
Mean	2.406	2.402
Standard Deviation	1.271	1.272
Skewness	-0.308	-0.298
Q3	3.610	3.610
Upper Extreme Point Starting Point	10.285	10.345
Max	4.750	4.750
Upper Outlier Limit Starting Point	6.948	6.978
Median	2.660	2.650
Lower Outlier Limit Starting Point	-1.953	-2.003
Min	-0.350	-0.350
Lower Extreme Starting Point	-5.290	-5.370
Q1	1.385	1.365
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.90.3. Time Series Plots



### 3.91. Station 45-GW1

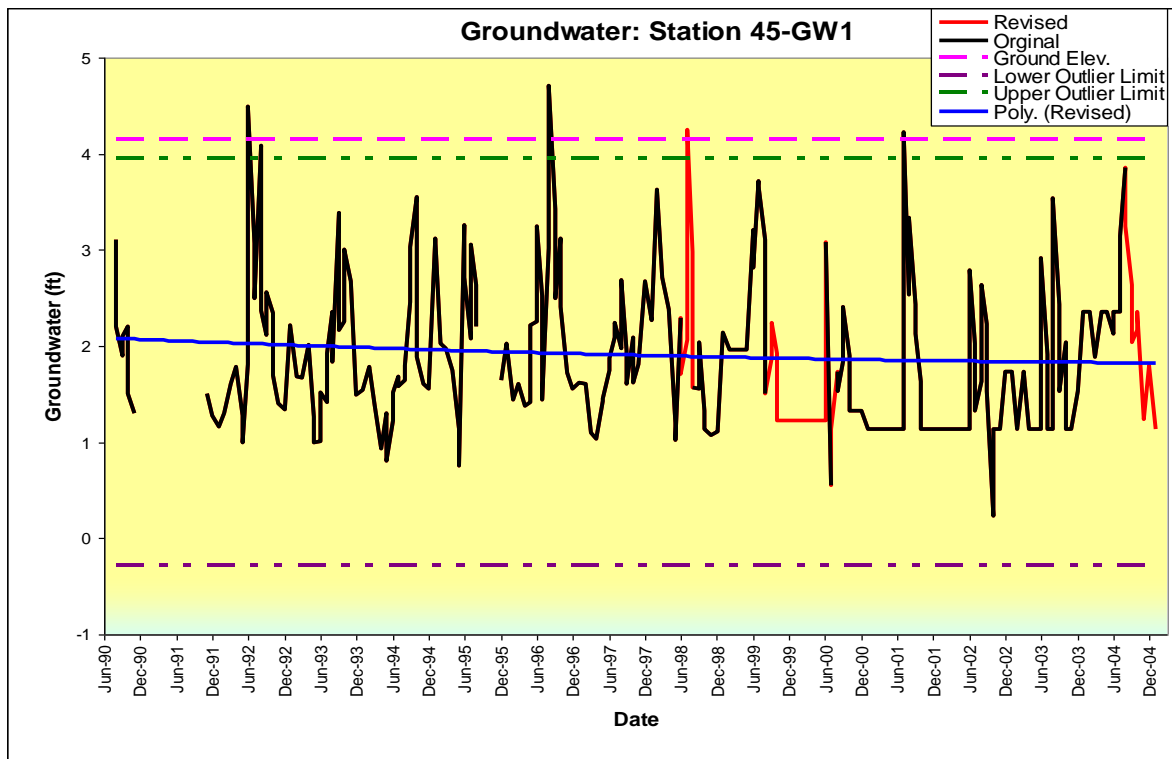
#### 3.91.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
45-GW1	Hendry Creek	East side Summerlin Rd at Int. with Lakewood Blvd just inside bike path by sign.	26 31.78'	81 53.21'

#### 3.91.2. Descriptive Statistics

	Original	Revised
Mean	1.921	1.910
Standard Deviation	0.779	0.780
Skewness	0.950	1.001
Q3	2.360	2.360
Upper Extreme Point Starting Point	5.540	5.757
Max	4.710	4.710
Upper Outlier Limit Starting Point	3.950	4.058
Median	1.750	1.740
Lower Outlier Limit Starting Point	-0.290	-0.471
Min	0.230	0.230
Lower Extreme Starting Point	-1.880	-2.169
Q1	1.300	1.228
Outliers	4.000	5.000
Extremes	0.00	0.00

#### 3.91.3. Time Series Plots



### 3.92. Station 45-GW2

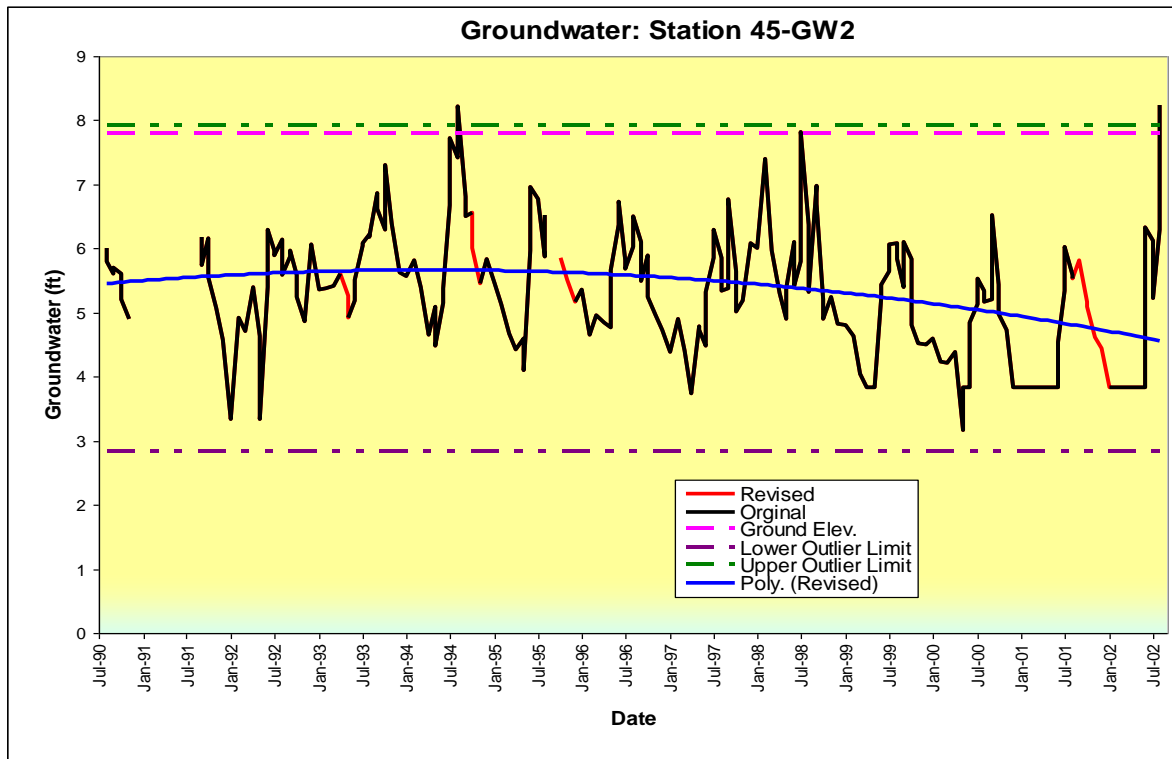
#### 3.92.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
45-GW2	Hendry Creek	Northeast corner Int. Electronic Lane & US 41 under billboard.	26 32.43'	81 52.25'

#### 3.92.2. Descriptive Statistics

	Original	Revised
Mean	5.373	5.370
Standard Deviation	0.967	0.952
Skewness	0.156	0.162
Q3	6.000	5.993
Upper Extreme Point Starting Point	9.810	9.758
Max	8.230	8.230
Upper Outlier Limit Starting Point	7.905	7.875
Median	5.390	5.385
Lower Outlier Limit Starting Point	2.825	2.855
Min	3.170	3.170
Lower Extreme Starting Point	0.920	0.973
Q1	4.730	4.738
Outliers	2.000	2.000
Extremes	0.00	0.00

#### 3.92.3. Time Series Plots



### 3.93. Station 45-GW3

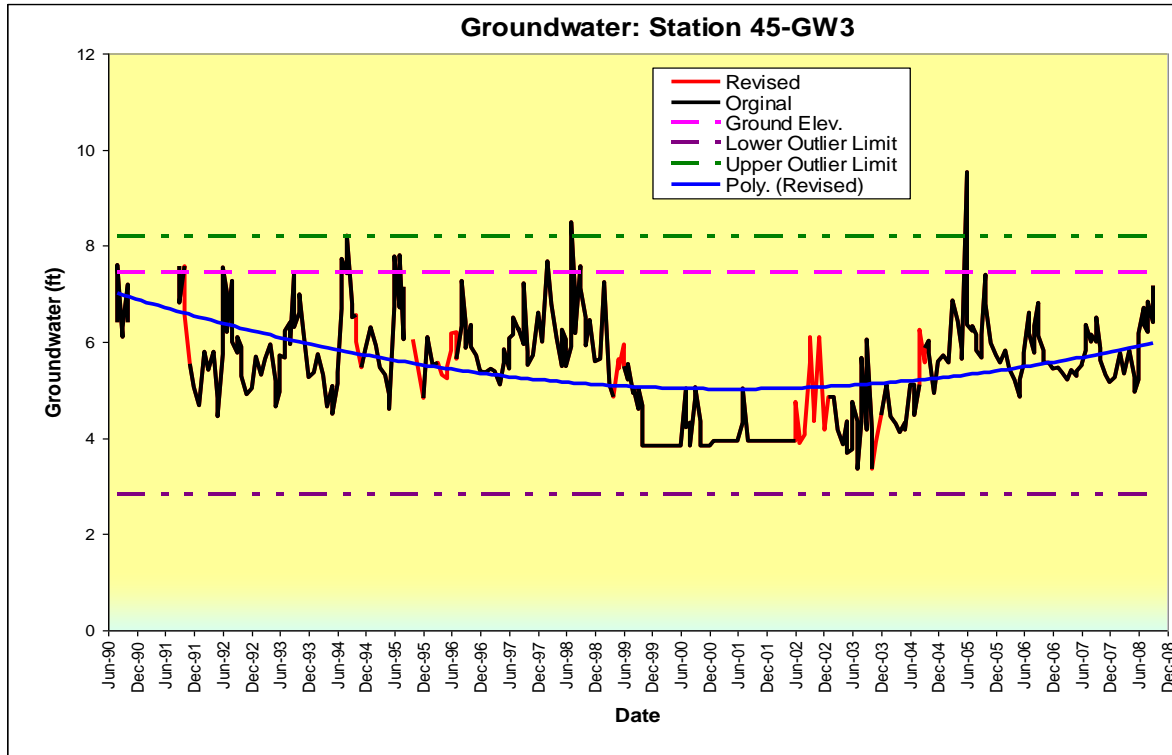
#### 3.93.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
45-GW3	Hendry Creek	East side of Briarcliff Rd. in first curve half mile from US 41.	26 30.93'	81 51.69'

#### 3.93.2. Descriptive Statistics

	Original	Revised
Mean	5.512	5.491
Standard Deviation	1.076	1.060
Skewness	0.227	0.224
Q3	6.170	6.160
Upper Extreme Point Starting Point	10.190	10.270
Max	9.530	9.530
Upper Outlier Limit Starting Point	8.180	8.215
Median	5.570	5.559
Lower Outlier Limit Starting Point	2.820	2.735
Min	3.360	3.360
Lower Extreme Starting Point	0.810	0.680
Q1	4.830	4.790
Outliers	3.000	2.000
Extremes	0.00	0.00

#### 3.93.3. Time Series Plots



### 3.94. Station 45-GW4

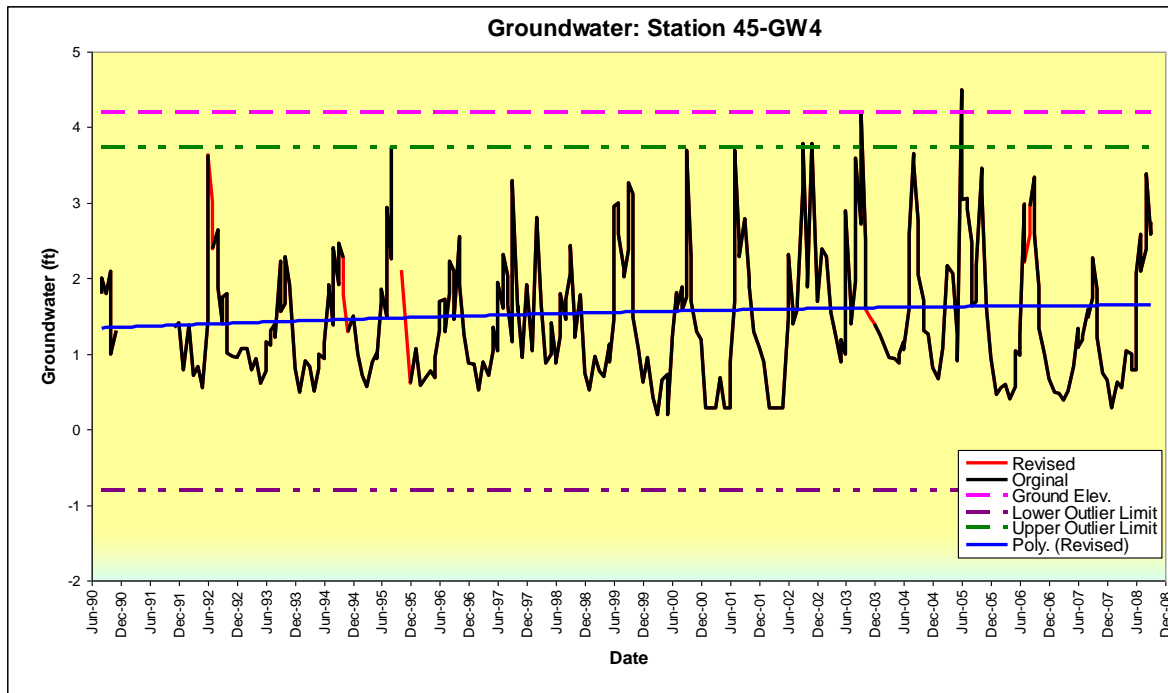
#### 3.94.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
45-GW4	Hendry Creek	West side of Island Park Blvd at FPL.	26 29.29'	81 51.53'

#### 3.94.2. Descriptive Statistics

	Original	Revised
Mean	1.534	1.543
Standard Deviation	0.859	0.858
Skewness	0.854	0.836
Q3	2.025	2.035
Upper Extreme Point Starting Point	5.430	5.448
Max	4.500	4.500
Upper Outlier Limit Starting Point	3.728	3.741
Median	1.380	1.385
Lower Outlier Limit Starting Point	-0.813	-0.809
Min	0.190	0.190
Lower Extreme Starting Point	-2.515	-2.515
Q1	0.890	0.898
Outliers	5.000	4.000
Extremes	0.00	0.00

#### 3.94.3. Time Series Plots



### 3.95. Station 46A-GW1

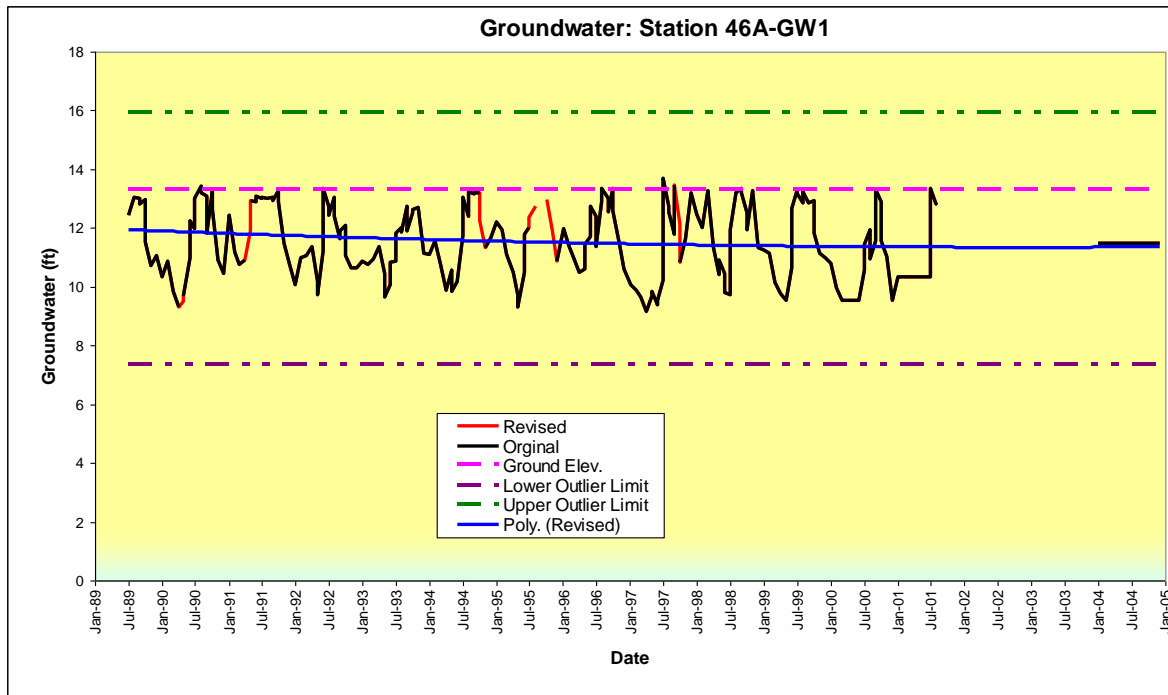
#### 3.95.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
46A-GW1	Six Mile Cypress	North end of Pebble Lane.	26 31.52'	81 50.41'

#### 3.95.2. Descriptive Statistics

	Original	Revised
Mean	11.542	11.546
Standard Deviation	1.200	1.195
Skewness	-0.079	-0.105
Q3	12.735	12.720
Upper Extreme Point Starting Point	19.170	19.110
Max	13.680	13.680
Upper Outlier Limit Starting Point	15.953	15.915
Median	11.490	11.490
Lower Outlier Limit Starting Point	7.373	7.395
Min	9.160	9.160
Lower Extreme Starting Point	4.155	4.200
Q1	10.590	10.590
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.95.3. Time Series Plots



### 3.96. Station 46A-GW2

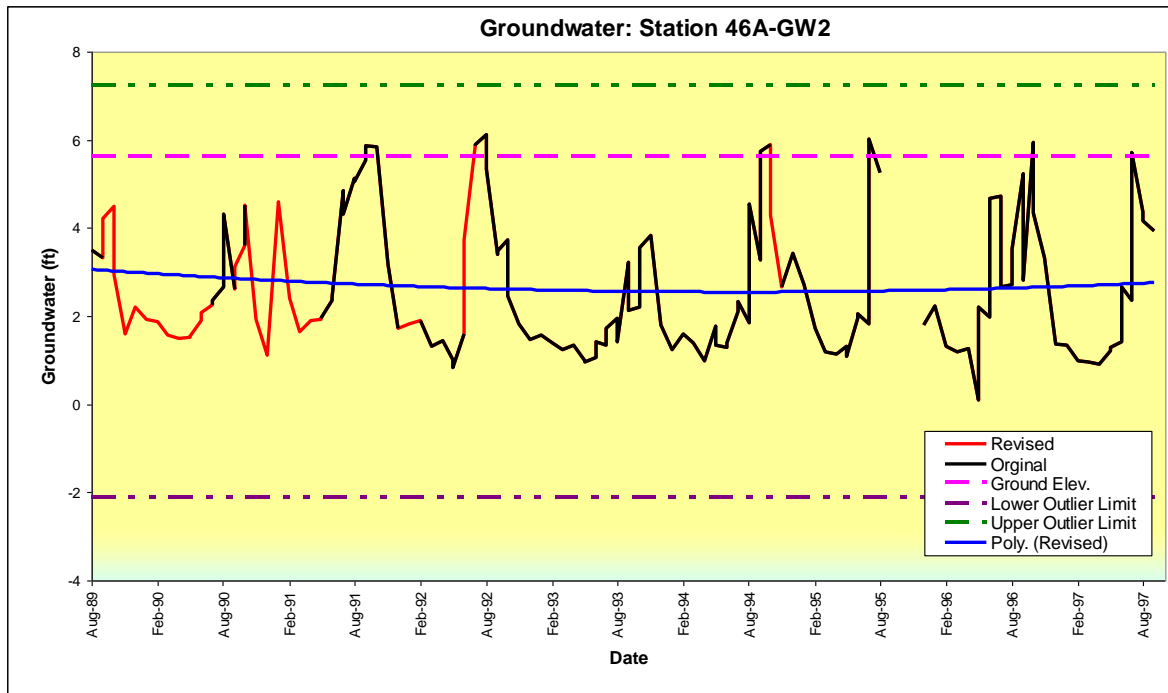
#### 3.96.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
46A-GW2	Six Mile Cypress	North of Alico Rd. on U.S. 41 East of Great American outdoor Store.	No data	No data

#### 3.96.2. Descriptive Statistics

	Original	Revised
Mean	2.731	2.681
Standard Deviation	1.593	1.523
Skewness	0.751	0.819
Q3	3.730	3.639
Upper Extreme Point Starting Point	10.750	10.228
Max	6.110	6.110
Upper Outlier Limit Starting Point	7.240	6.933
Median	2.210	2.115
Lower Outlier Limit Starting Point	-2.120	-1.852
Min	0.090	0.090
Lower Extreme Starting Point	-5.630	-5.146
Q1	1.390	1.443
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.96.3. Time Series Plots





### 3.97. Station 46A-GW3

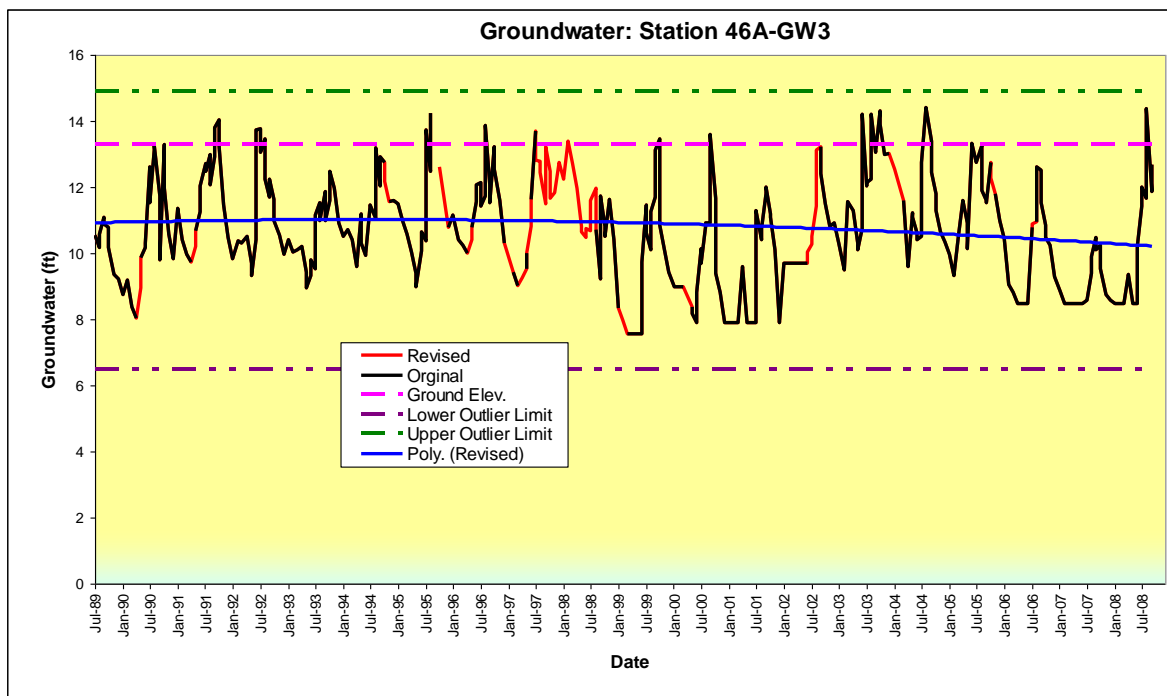
#### 3.97.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
46A-GW3	Six Mile Cypress	North east corner FPL substation north of Alico Rd. mile east of US 41 easement.	26 29.77'	81 49.67'

#### 3.97.2. Descriptive Statistics

	Original	Revised
Mean	10.737	10.802
Standard Deviation	1.634	1.612
Skewness	0.149	0.070
Q3	11.735	11.906
Upper Extreme Point Starting Point	18.043	18.524
Max	14.410	14.410
Upper Outlier Limit Starting Point	14.889	15.215
Median	10.635	10.750
Lower Outlier Limit Starting Point	6.479	6.391
Min	7.570	7.570
Lower Extreme Starting Point	3.325	3.082
Q1	9.633	9.700
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.97.3. Time Series Plots



### 3.98. Station 46A-GW4

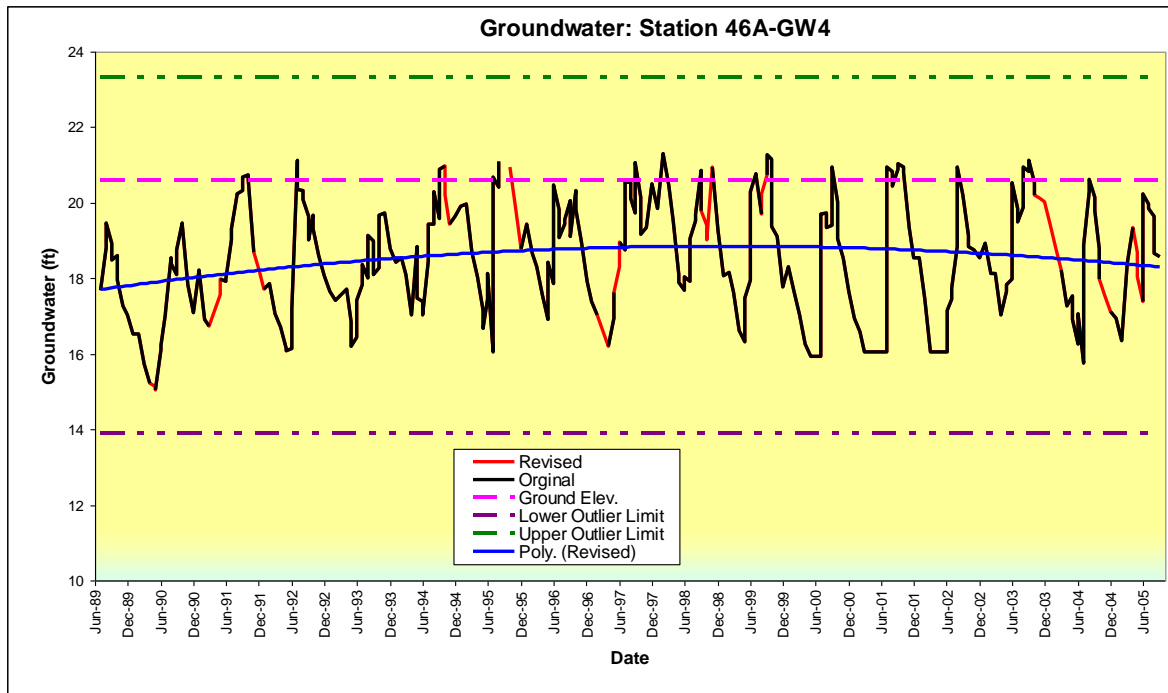
#### 3.98.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
46A-GW4	Six Mile Cypress	East side of I-75 mile north of Alico Rd at FPL easement.	26 29.99'	81 47.65'

#### 3.98.2. Descriptive Statistics

	Original	Revised
Mean	18.550	18.546
Standard Deviation	1.541	1.531
Skewness	-0.117	-0.140
Q3	19.790	19.788
Upper Extreme Point Starting Point	26.870	26.853
Max	21.290	21.290
Upper Outlier Limit Starting Point	23.330	23.320
Median	18.560	18.565
Lower Outlier Limit Starting Point	13.890	13.900
Min	15.040	15.040
Lower Extreme Starting Point	10.350	10.368
Q1	17.430	17.433
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.98.3. Time Series Plots



### 3.99. Station 46A-GW5

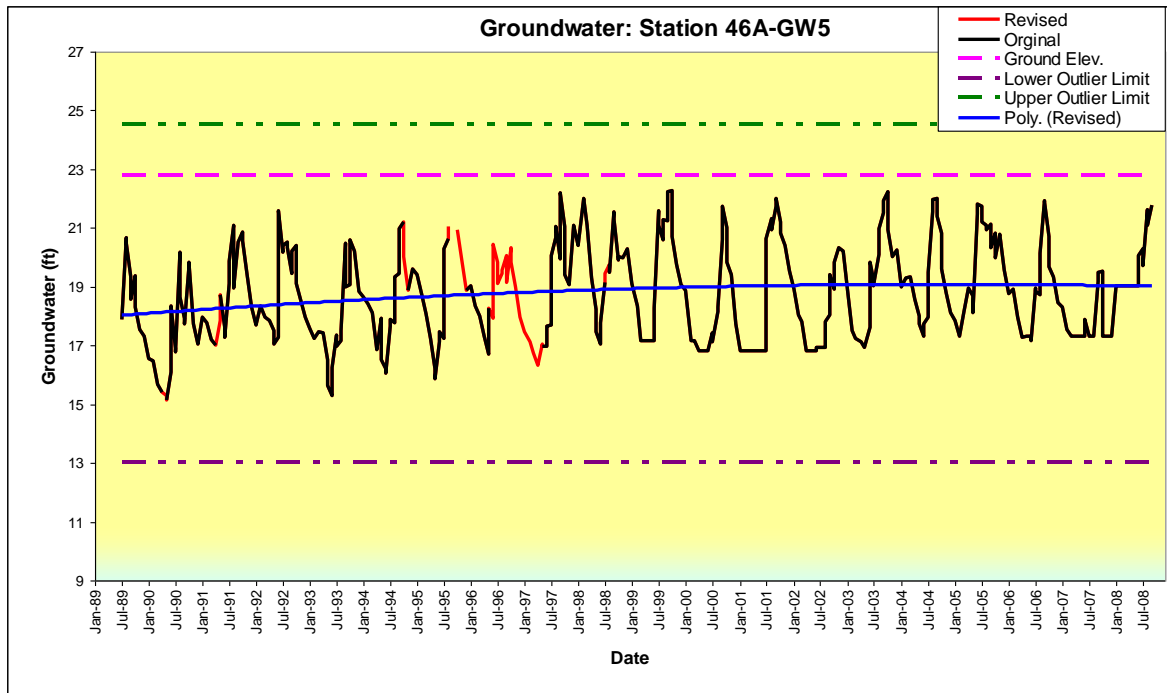
#### 3.99.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
46A-GW5	Six Mile Cypress	East side FPL easement 300'W of Airport Haul Rd.	26 29.63'	81 45.38'

#### 3.99.2. Descriptive Statistics

	Original	Revised
Mean	18.794	18.797
Standard Deviation	1.663	1.654
Skewness	0.249	0.203
Q3	20.195	20.140
Upper Extreme Point Starting Point	28.820	28.600
Max	22.270	22.270
Upper Outlier Limit Starting Point	24.508	24.370
Median	18.740	18.800
Lower Outlier Limit Starting Point	13.008	13.090
Min	15.150	15.150
Lower Extreme Starting Point	8.695	8.860
Q1	17.320	17.320
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.99.3. Time Series Plots



### 3.100. Station 46A-GW6

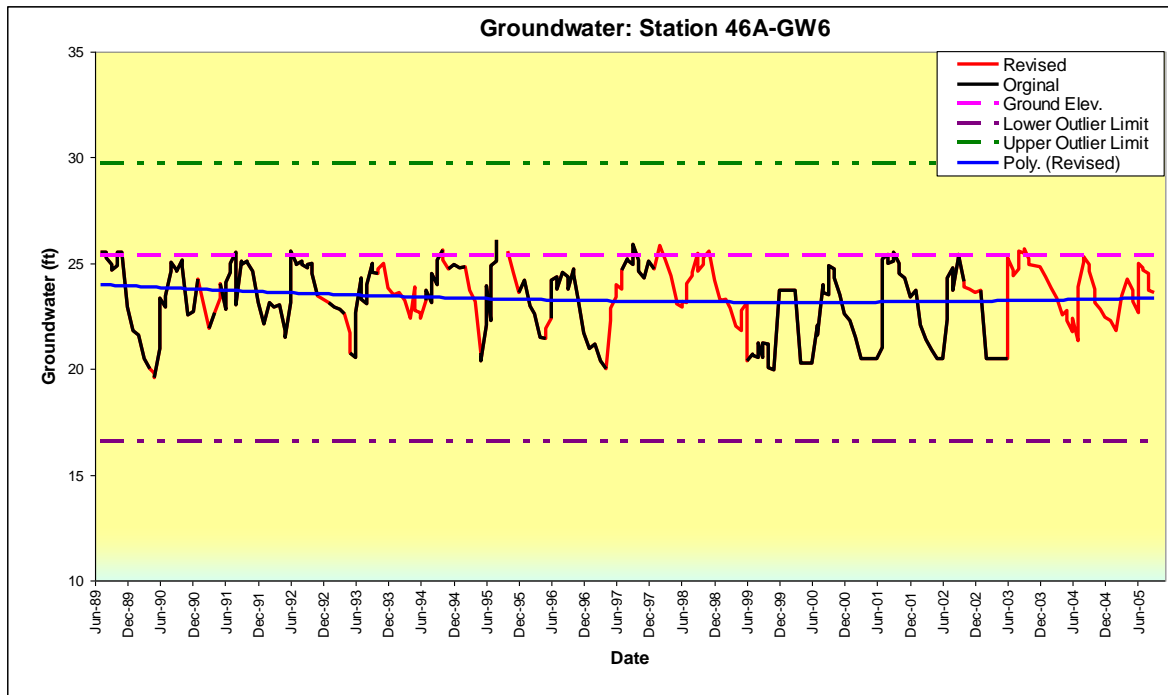
#### 3.100.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
46A-GW6	Six Mile Cypress	Airport Haul Rd. North of Alico Rd at FPL easement 10th power pole.	26 31.49'	81 44.31'

#### 3.100.2. Descriptive Statistics

	Original	Revised
Mean	23.188	23.363
Standard Deviation	1.790	1.627
Skewness	-0.417	-0.560
Q3	24.785	24.718
Upper Extreme Point Starting Point	34.625	31.927
Max	26.110	26.110
Upper Outlier Limit Starting Point	29.705	28.322
Median	23.650	23.700
Lower Outlier Limit Starting Point	16.585	18.709
Min	19.610	19.610
Lower Extreme Starting Point	11.665	15.105
Q1	21.505	22.314
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.100.3. Time Series Plots



### 3.101. Station 46A-GW7

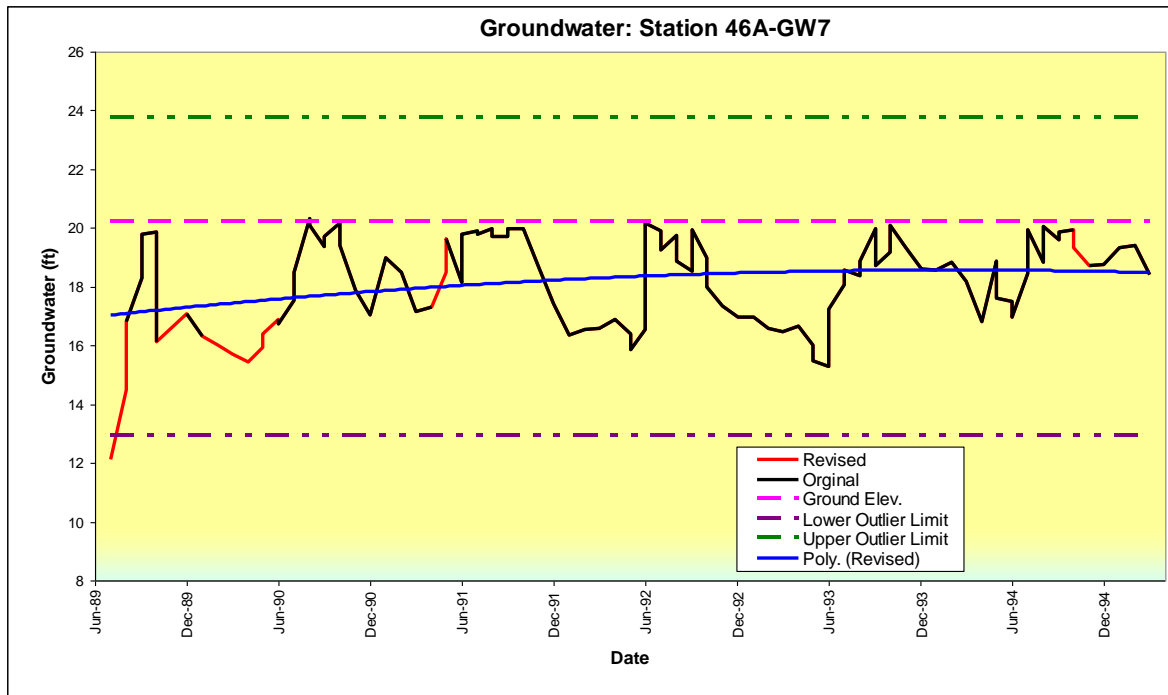
#### 3.101.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
46A-GW7	No data	No data	No data	No data

#### 3.101.2. Descriptive Statistics

	Original	Revised
Mean	18.273	18.143
Standard Deviation	1.526	1.586
Skewness	-0.905	-0.759
Q3	19.698	19.640
Upper Extreme Point Starting Point	27.820	27.860
Max	20.300	20.300
Upper Outlier Limit Starting Point	23.759	23.750
Median	18.580	18.480
Lower Outlier Limit Starting Point	12.929	12.790
Min	12.120	12.120
Lower Extreme Starting Point	8.868	8.680
Q1	16.990	16.900
Outliers	1.000	1.000
Extremes	0.00	0.00

#### 3.101.3. Time Series Plots



### 3.102. Station 46A-GW8

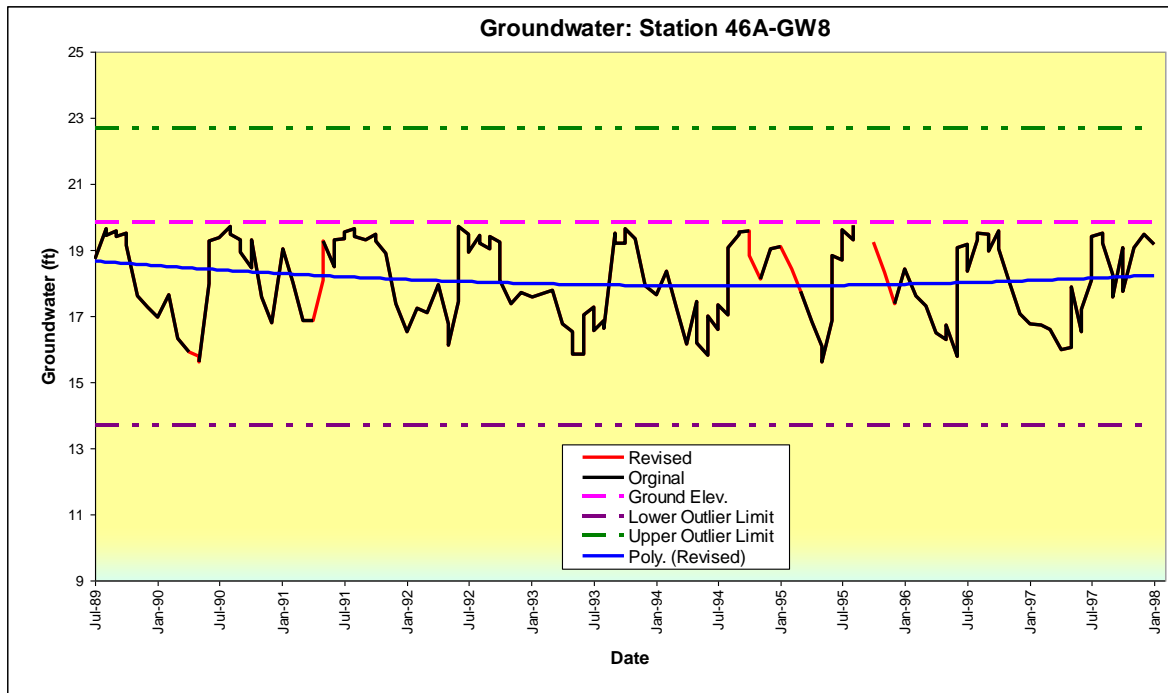
#### 3.102.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
46A-GW8	Six Mile Cypress	No data	No data	No data

#### 3.102.2. Descriptive Statistics

	Original	Revised
Mean	18.116	18.108
Standard Deviation	1.245	1.240
Skewness	-0.346	-0.364
Q3	19.290	19.290
Upper Extreme Point Starting Point	26.010	26.010
Max	19.760	19.760
Upper Outlier Limit Starting Point	22.650	22.650
Median	18.190	18.260
Lower Outlier Limit Starting Point	13.690	13.690
Min	15.600	15.600
Lower Extreme Starting Point	10.330	10.330
Q1	17.050	17.050
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.102.3. Time Series Plots



### 3.103. Station 46A-GW9

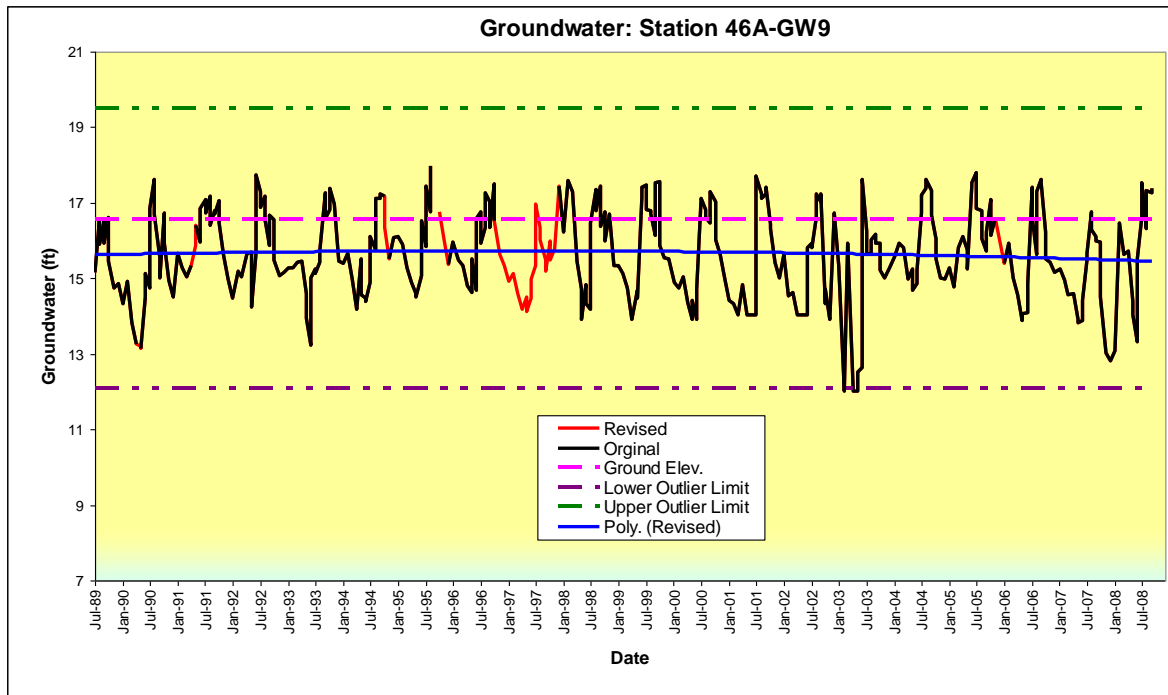
#### 3.103.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
46A-GW9	Six Mile Cypress	At power pole at bend mi north of Daniels Pkwy on Shire Lane.	No data	No data

#### 3.103.2. Descriptive Statistics

	Original	Revised
Mean	15.681	15.656
Standard Deviation	1.210	1.191
Skewness	-0.349	-0.321
Q3	16.700	16.620
Upper Extreme Point Starting Point	22.250	21.930
Max	17.980	17.980
Upper Outlier Limit Starting Point	19.475	19.275
Median	15.650	15.641
Lower Outlier Limit Starting Point	12.075	12.195
Min	12.020	12.020
Lower Extreme Starting Point	9.300	9.540
Q1	14.850	14.850
Outliers	3.000	3.000
Extremes	0.00	0.00

#### 3.103.3. Time Series Plots



### 3.104. Station 46A-GW10

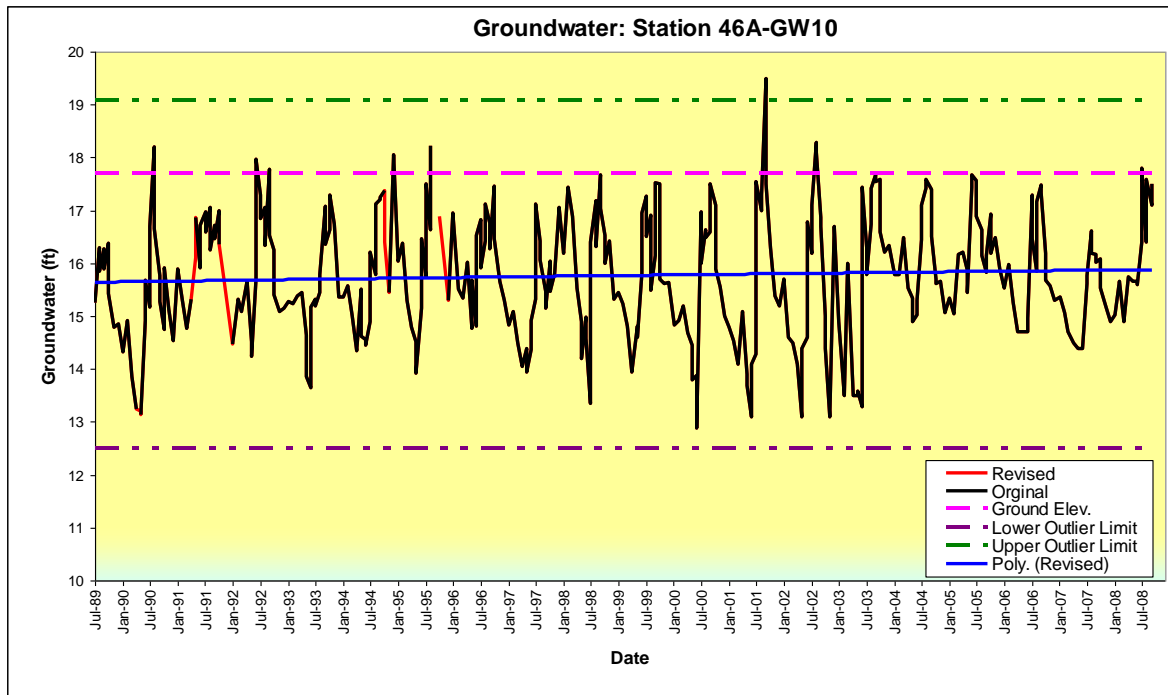
#### 3.104.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
46A-GW10	Six Mile Cypress	South east corner Int. of Daniels Pkwy & Freshman Lane.	26 32.79'	81 49.22'

#### 3.104.2. Descriptive Statistics

	Original	Revised
Mean	15.771	15.765
Standard Deviation	1.146	1.146
Skewness	-0.020	-0.037
Q3	16.598	16.590
Upper Extreme Point Starting Point	21.525	21.465
Max	19.490	19.490
Upper Outlier Limit Starting Point	19.061	19.028
Median	15.690	15.695
Lower Outlier Limit Starting Point	12.491	12.528
Min	12.890	12.890
Lower Extreme Starting Point	10.028	10.090
Q1	14.955	14.965
Outliers	1.000	1.000
Extremes	0.00	0.00

#### 3.104.3. Time Series Plots





### 3.105. Station 46A-GW11

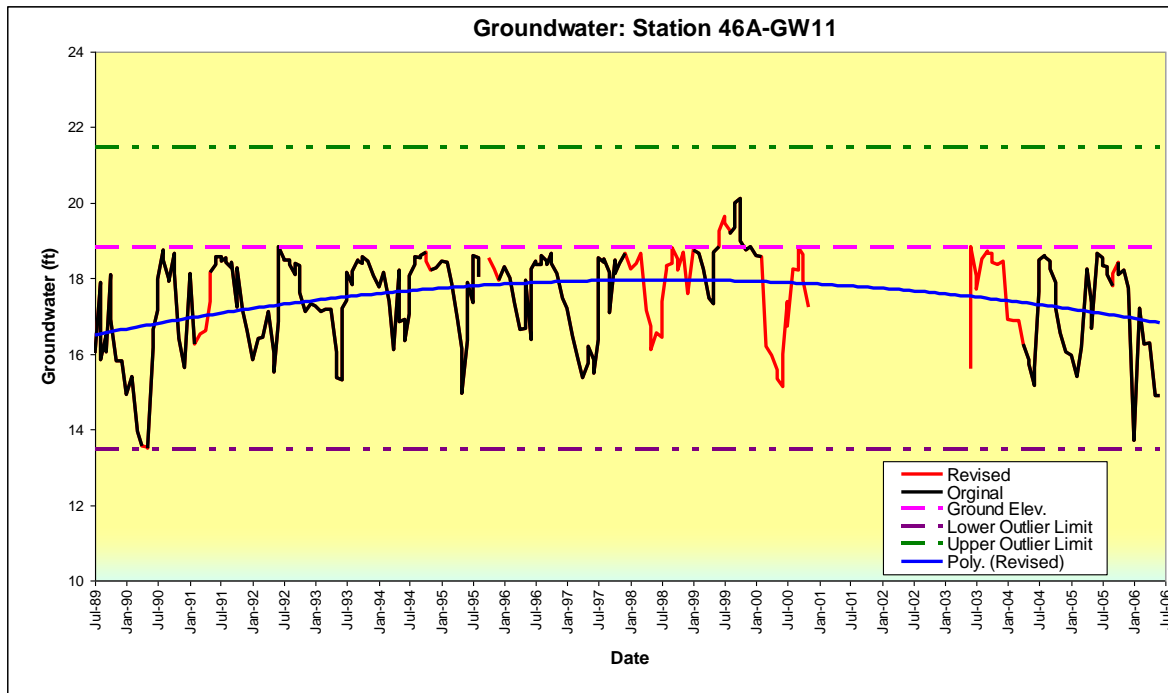
#### 3.105.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
46A-GW11	Six Mile Cypress	On the East side of Fiddlesticks Rd. 0.5 miles north of Fiddlesticks gate house.	No data	No data

#### 3.105.2. Descriptive Statistics

	Original	Revised
Mean	17.462	17.485
Standard Deviation	1.275	1.260
Skewness	-0.818	-0.848
Q3	18.448	18.460
Upper Extreme Point Starting Point	24.425	24.163
Max	20.100	20.100
Upper Outlier Limit Starting Point	21.436	21.311
Median	17.965	17.980
Lower Outlier Limit Starting Point	13.466	13.707
Min	13.490	13.490
Lower Extreme Starting Point	10.478	10.856
Q1	16.455	16.559
Outliers	0.000	3.000
Extremes	0.00	0.00

#### 3.105.3. Time Series Plots



### 3.106. Station 46A-GW12

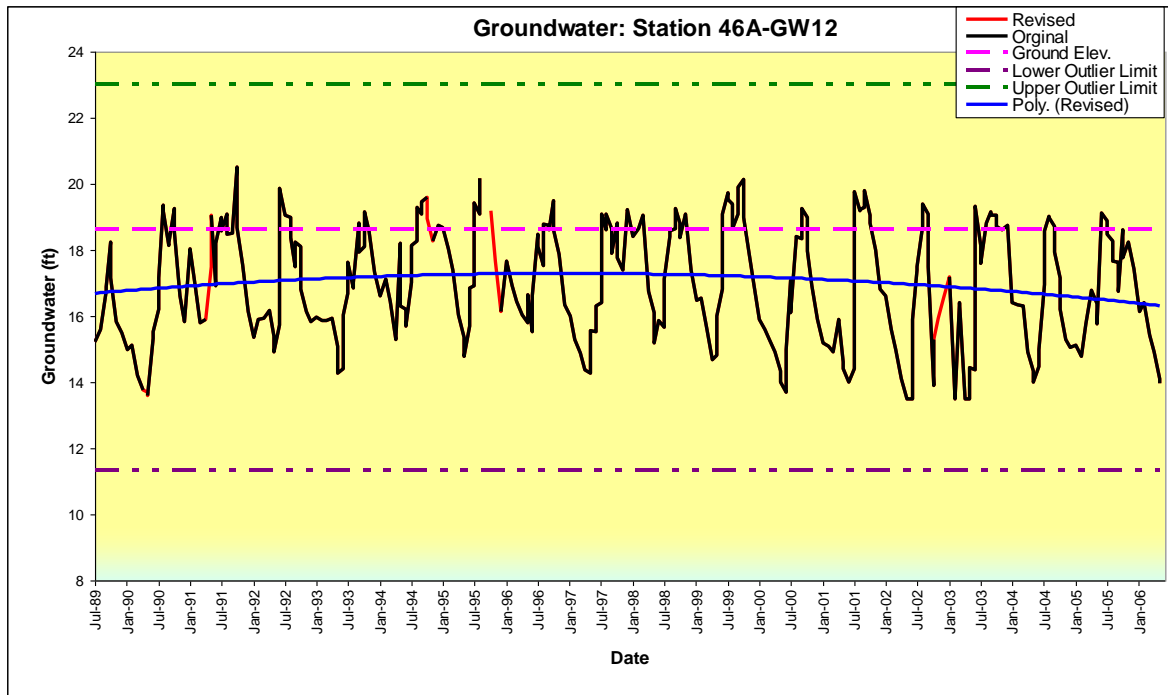
#### 3.106.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
46A-GW12	Six Mile Cypress	First left inside Fiddlesticks at edge of wetland.	26 31.33'	81 48.35'

#### 3.106.2. Descriptive Statistics

	Original	Revised
Mean		
Standard Deviation		
Skewness		
Q3		
Upper Extreme Point Starting Point		
Max		
Upper Outlier Limit Starting Point		
Median		
Lower Outlier Limit Starting Point		
Min		
Lower Extreme Starting Point		
Q1		
Outliers		
Extremes		

#### 3.106.3. Time Series Plots



### 3.107. Station 46A-GW13

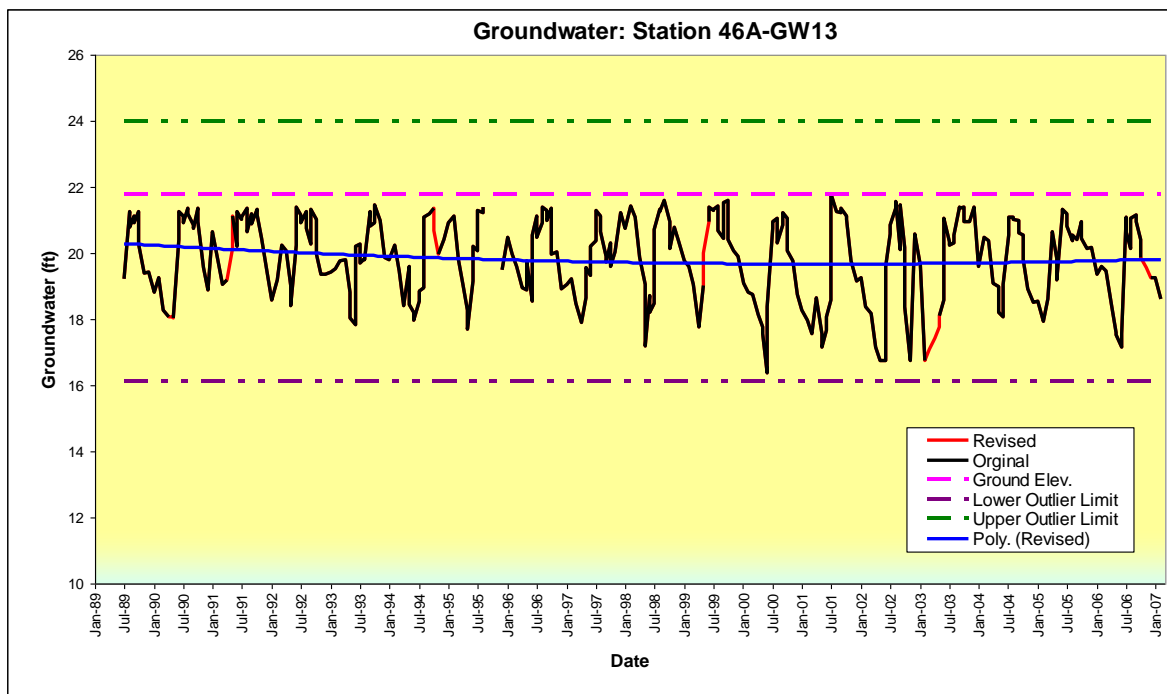
#### 3.107.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
46A-GW13	Six Mile Cypress	Northeast intersection I-75 & Daniels Pkwy east side rest area drive mi north of Daniels along fence.	26 32.90'	81 47.40'

#### 3.107.2. Descriptive Statistics

	Original	Revised
Mean	19.911	19.884
Standard Deviation	1.239	1.253
Skewness	-0.651	-0.636
Q3	21.010	20.993
Upper Extreme Point Starting Point	26.898	26.888
Max	21.810	21.810
Upper Outlier Limit Starting Point	23.954	23.940
Median	20.185	20.143
Lower Outlier Limit Starting Point	16.104	16.080
Min	16.370	16.370
Lower Extreme Starting Point	13.160	13.133
Q1	19.048	19.028
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.107.3. Time Series Plots



### 3.108. Station 46A-GW14

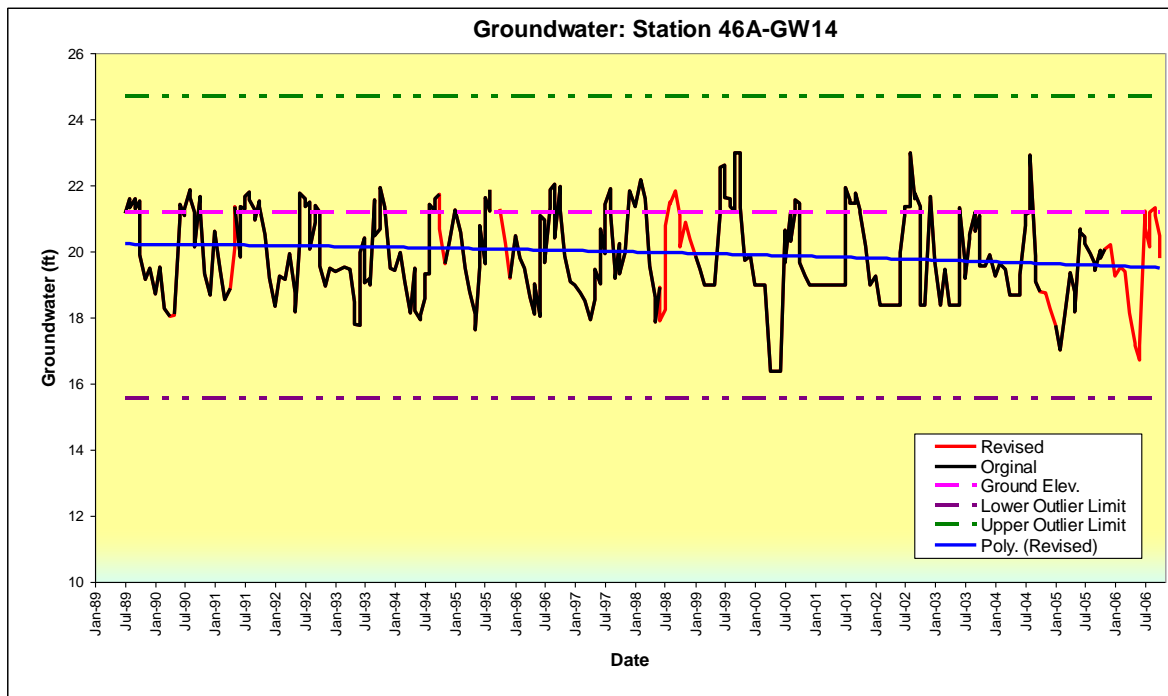
#### 3.108.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
46A-GW14	Six Mile Cypress	North end of Treeline Ave east side.	26 33.93'	81 47.20'

#### 3.108.2. Descriptive Statistics

	Original	Revised
Mean	19.954	19.936
Standard Deviation	1.361	1.376
Skewness	-0.099	-0.170
Q3	21.270	21.214
Upper Extreme Point Starting Point	28.110	27.888
Max	22.990	22.990
Upper Outlier Limit Starting Point	24.690	24.551
Median	19.750	19.840
Lower Outlier Limit Starting Point	15.570	15.653
Min	16.370	16.370
Lower Extreme Starting Point	12.150	12.317
Q1	18.990	18.990
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.108.3. Time Series Plots



### 3.109. Station 46A-GW15

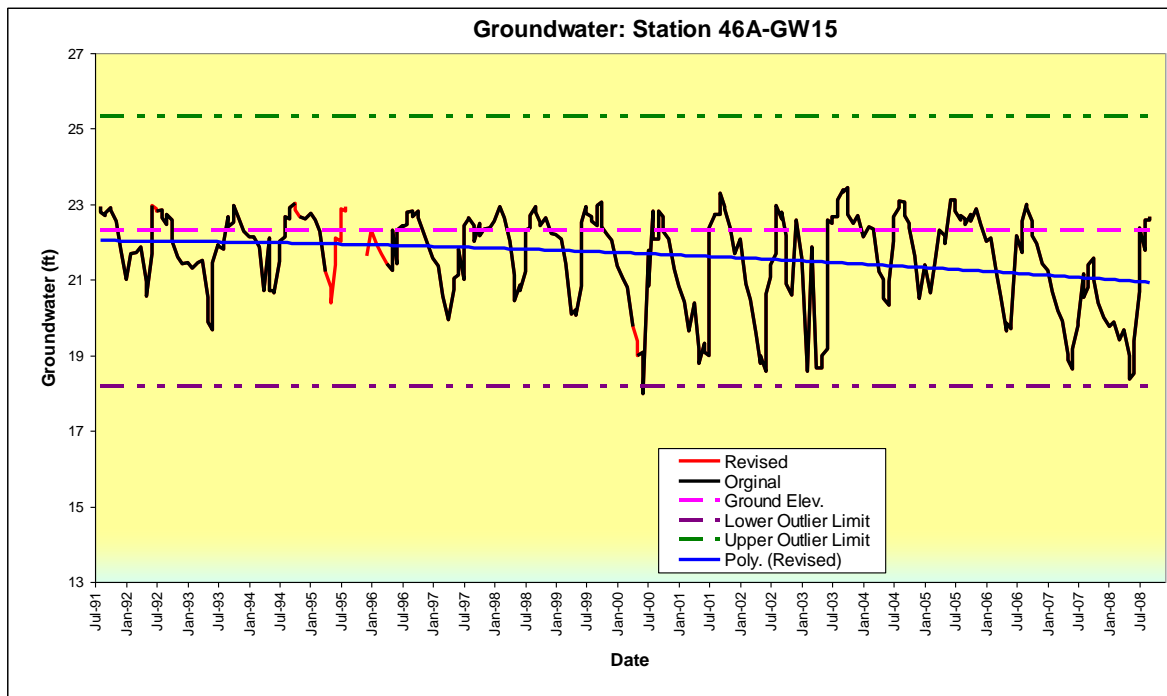
#### 3.109.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
46A-GW15	Six Mile Cypress	South side of Chamberlin Pkwy on the way to the airport.	26 32.02'	81 46.37'

#### 3.109.2. Descriptive Statistics

	Original	Revised
Mean	21.615	21.627
Standard Deviation	1.244	1.235
Skewness	-0.911	-0.922
Q3	22.618	22.620
Upper Extreme Point Starting Point	27.980	27.990
Max	23.430	23.430
Upper Outlier Limit Starting Point	25.299	25.305
Median	22.035	22.030
Lower Outlier Limit Starting Point	18.149	18.145
Min	17.980	17.980
Lower Extreme Starting Point	15.468	15.460
Q1	20.830	20.830
Outliers	1.000	1.000
Extremes	0.00	0.00

#### 3.109.3. Time Series Plots



### 3.110. Station 46A-GW16

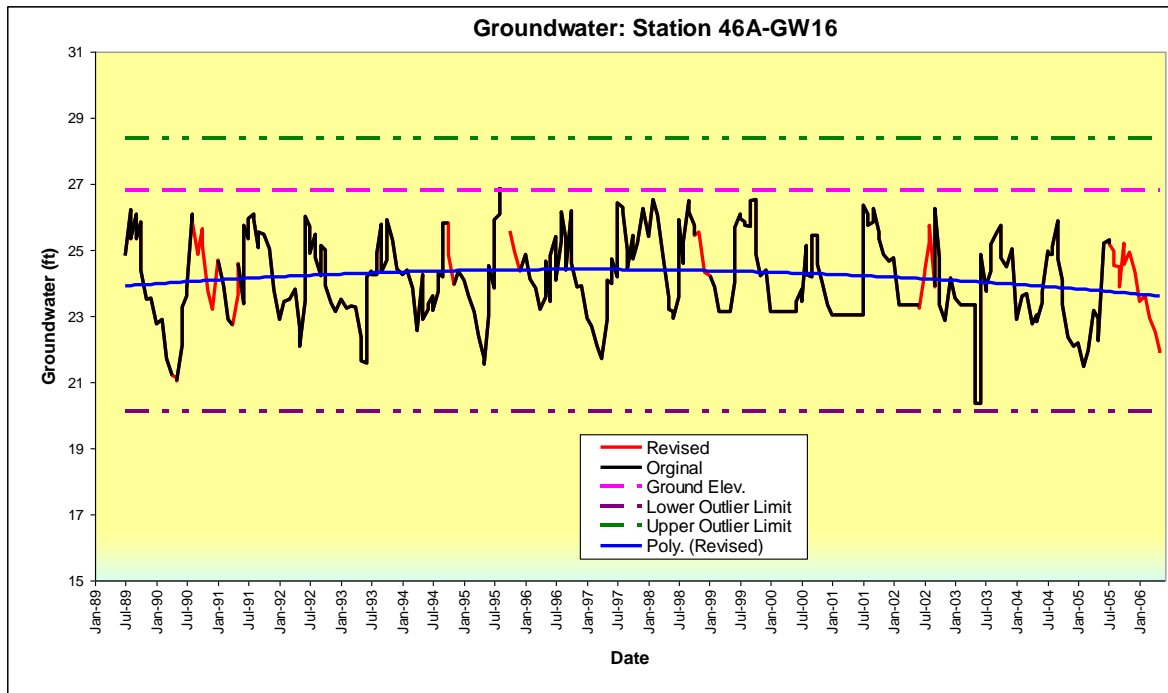
#### 3.110.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
46A-GW16	Six Mile Cypress	North of Fuel Farm Rd Int. with Daniels Rd exit.	26 33.43'	81 44.90'

#### 3.110.2. Descriptive Statistics

	Original	Revised
Mean	24.186	24.186
Standard Deviation	1.287	1.274
Skewness	-0.169	-0.225
Q3	25.255	25.191
Upper Extreme Point Starting Point	31.428	31.006
Max	26.900	26.900
Upper Outlier Limit Starting Point	28.341	28.098
Median	24.160	24.205
Lower Outlier Limit Starting Point	20.111	20.345
Min	20.350	20.350
Lower Extreme Starting Point	17.025	17.438
Q1	23.198	23.253
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.110.3. Time Series Plots



### 3.111. Station 46A-GW17

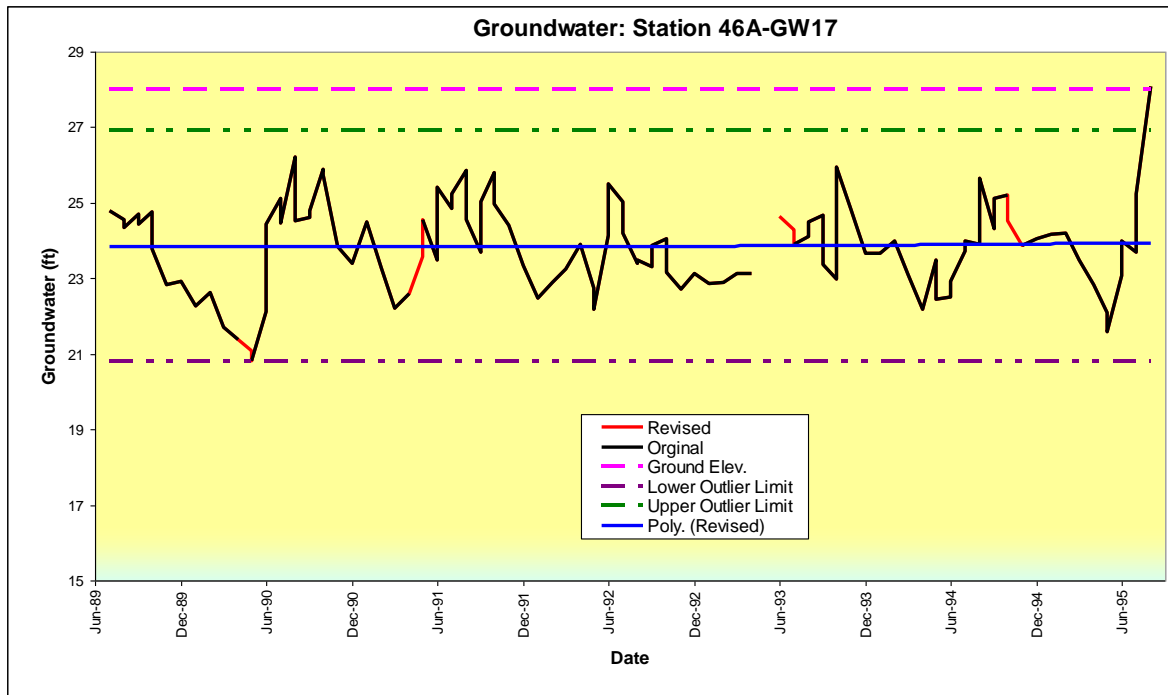
#### 3.111.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
46A-GW17	No data	No data	No data	No data

#### 3.111.2. Descriptive Statistics

	Original	Revised
Mean	23.876	23.857
Standard Deviation	1.187	1.198
Skewness	0.242	0.157
Q3	24.620	24.580
Upper Extreme Point Starting Point	29.225	29.065
Max	28.090	28.090
Upper Outlier Limit Starting Point	26.923	26.823
Median	23.890	23.890
Lower Outlier Limit Starting Point	20.783	20.843
Min	20.820	20.820
Lower Extreme Starting Point	18.480	18.600
Q1	23.085	23.085
Outliers	1.000	2.000
Extremes	0.00	0.00

#### 3.111.3. Time Series Plots



### 3.112. Station 46A-GW18

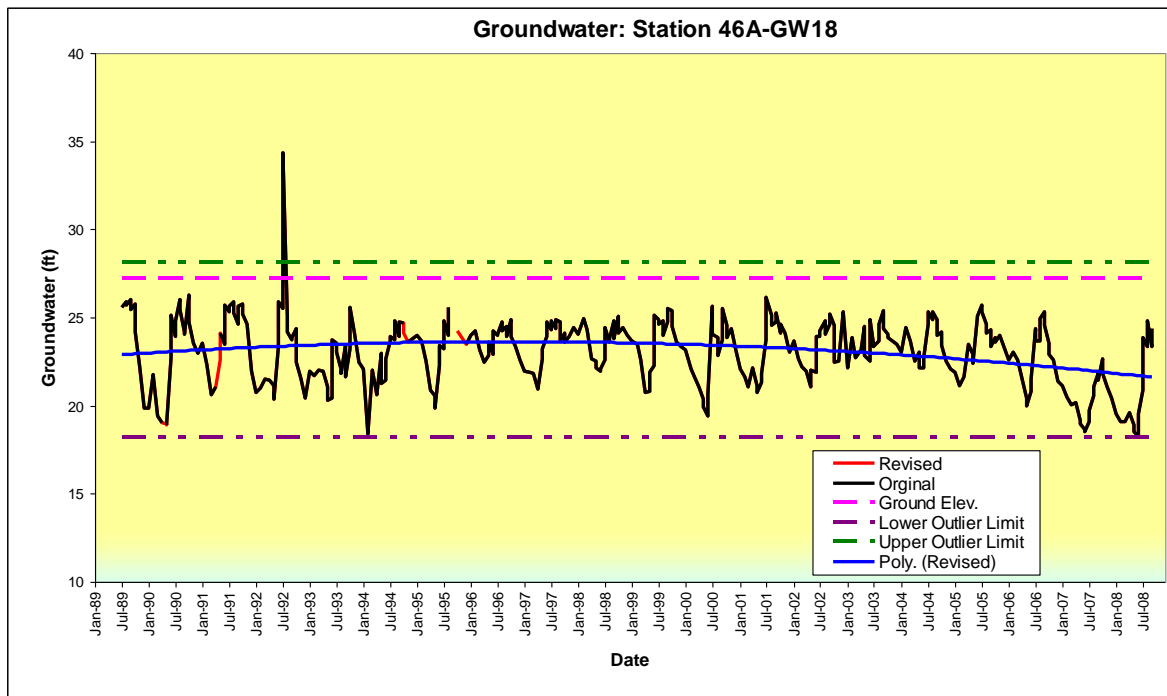
#### 3.112.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
46A-GW18	Six Mile Cypress	East of Commerce Lakes Blvd south side of Gateway services entrance.	26 34.45'	81 44.29'

#### 3.112.2. Descriptive Statistics

	Original	Revised
Mean	23.109	23.101
Standard Deviation	1.882	1.885
Skewness	0.076	0.058
Q3	24.413	24.380
Upper Extreme Point Starting Point	31.868	31.738
Max	34.340	34.340
Upper Outlier Limit Starting Point	28.140	28.059
Median	23.505	23.505
Lower Outlier Limit Starting Point	18.200	18.249
Min	18.290	18.290
Lower Extreme Starting Point	14.473	14.570
Q1	21.928	21.928
Outliers	0.000	0.000
Extremes	1.00	1.00

#### 3.112.3. Time Series Plots





### 3.113. Station 46A-GW19

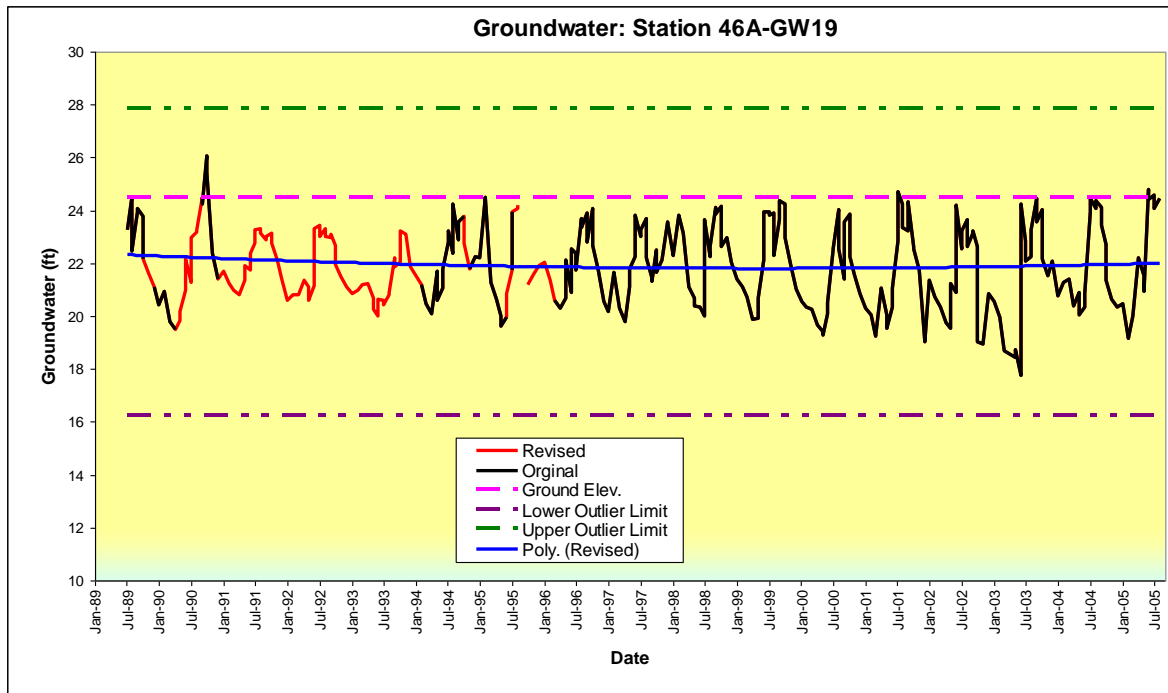
#### 3.113.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
46A-GW19	Six Mile Cypress	30'W of Commerce Lakes Dr mi south of Immokalee Rd (LM 2057).	26 35.37'	81 44.48'

#### 3.113.2. Descriptive Statistics

	Original	Revised
Mean	21.971	21.933
Standard Deviation	1.670	1.536
Skewness	-0.051	0.004
Q3	23.485	23.191
Upper Extreme Point Starting Point	32.170	30.498
Max	26.040	26.040
Upper Outlier Limit Starting Point	27.828	26.844
Median	22.090	21.872
Lower Outlier Limit Starting Point	16.248	17.101
Min	17.740	17.740
Lower Extreme Starting Point	11.905	13.448
Q1	20.590	20.755
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.113.3. Time Series Plots



### 3.114. Station 46A-GW20

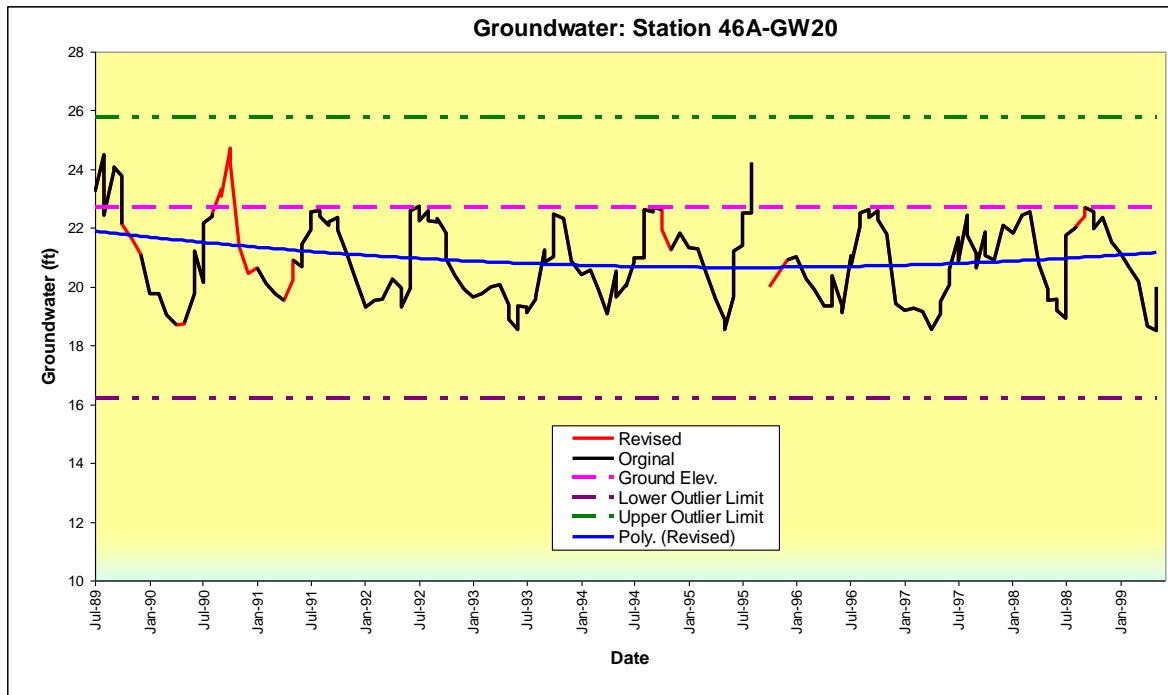
#### 3.114.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
46A-GW20	Six Mile Cypress	Inside the Gulf Cost Landfill off of Immokalee Rd.	No data	No data

#### 3.114.2. Descriptive Statistics

	Original	Revised
Mean	20.911	20.977
Standard Deviation	1.375	1.420
Skewness	0.211	0.258
Q3	22.155	22.198
Upper Extreme Point Starting Point	29.340	29.473
Max	24.480	24.734
Upper Outlier Limit Starting Point	25.748	25.835
Median	20.875	20.910
Lower Outlier Limit Starting Point	16.168	16.135
Min	18.520	18.520
Lower Extreme Starting Point	12.575	12.498
Q1	19.760	19.773
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.114.3. Time Series Plots



### 3.115. Station 46A-GW21

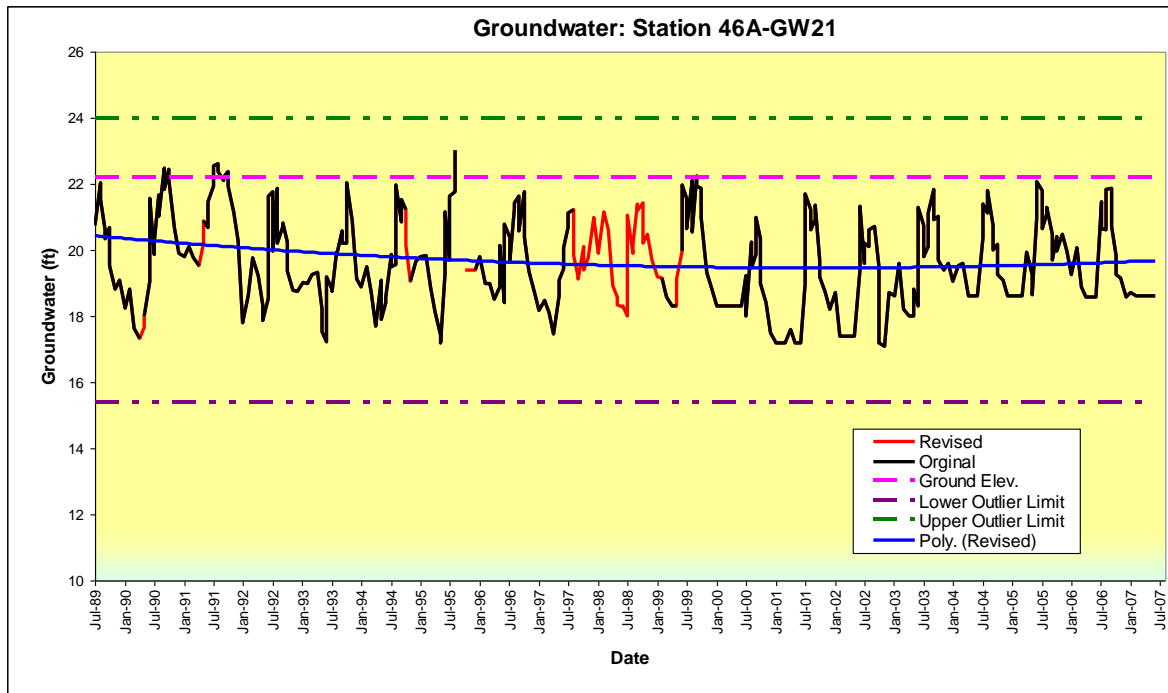
#### 3.115.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
46A-GW21	Six Mile Cypress	FPL easement south of intersection of Immokalee Rd. and Lee Blvd	No data	No data

#### 3.115.2. Descriptive Statistics

	Original	Revised
Mean	19.696	19.699
Standard Deviation	1.399	1.367
Skewness	0.177	0.162
Q3	20.740	20.705
Upper Extreme Point Starting Point	27.160	27.020
Max	23.030	23.030
Upper Outlier Limit Starting Point	23.950	23.863
Median	19.570	19.605
Lower Outlier Limit Starting Point	15.390	15.443
Min	17.100	17.100
Lower Extreme Starting Point	12.180	12.285
Q1	18.600	18.600
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.115.3. Time Series Plots



### 3.116. Station 46A-GW22

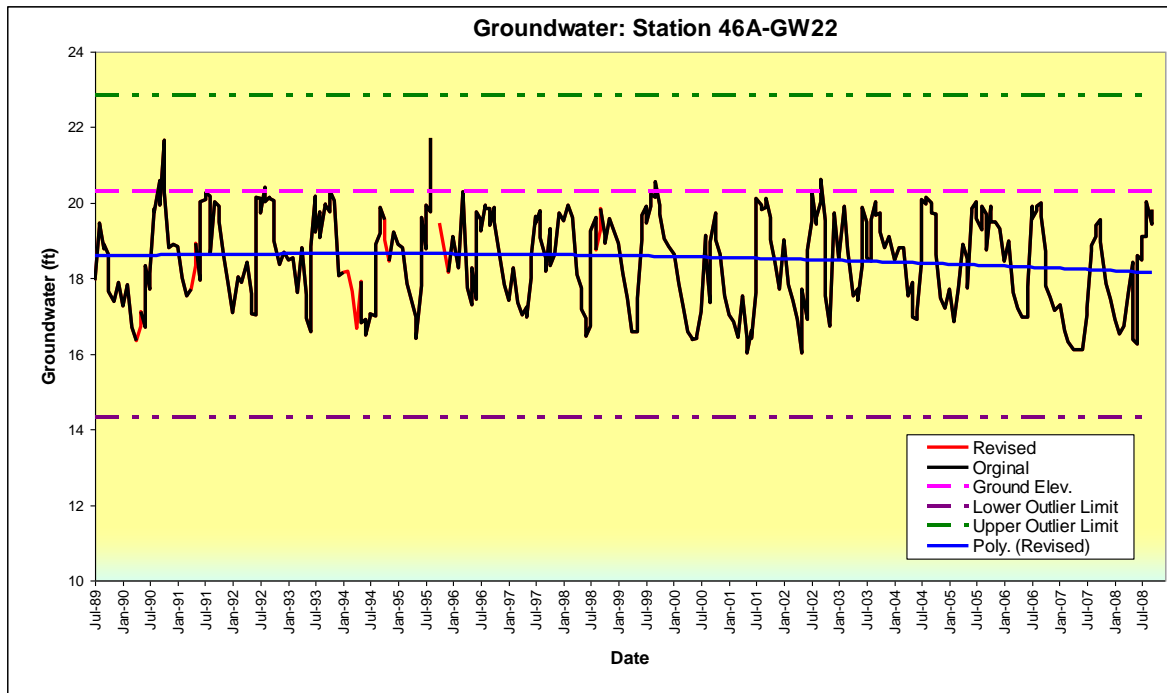
#### 3.116.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
46A-GW22	Six Mile Cypress	Southwest Int. MLK Blvd & I-75 in front of fence near telephone box	26 38.13'	81 48.34'

#### 3.116.2. Descriptive Statistics

	Original	Revised
Mean	18.531	18.520
Standard Deviation	1.239	1.234
Skewness	-0.200	-0.191
Q3	19.643	19.620
Upper Extreme Point Starting Point	26.063	25.973
Max	21.710	21.710
Upper Outlier Limit Starting Point	22.853	22.796
Median	18.705	18.670
Lower Outlier Limit Starting Point	14.293	14.326
Min	16.020	16.020
Lower Extreme Starting Point	11.083	11.150
Q1	17.503	17.503
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.116.3. Time Series Plots



### 3.117. Station 46A-GW23

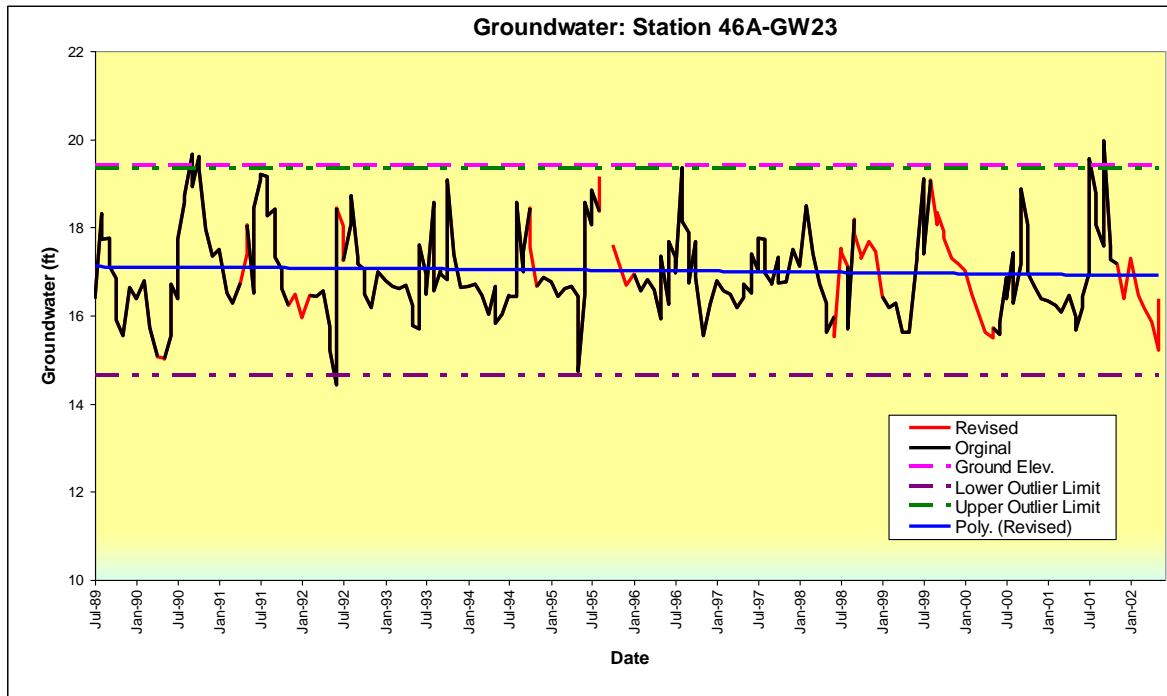
#### 3.117.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
46A-GW23	Six Mile Cypress	Northeast corner Int. Colonial Blvd & Ortiz Ave edge of Braz Pepper	26 36.81'	81 48.65'

#### 3.117.2. Descriptive Statistics

	Original	Revised
Mean	17.034	17.017
Standard Deviation	1.053	1.041
Skewness	0.564	0.491
Q3	17.570	17.575
Upper Extreme Point Starting Point	21.103	21.139
Max	19.970	19.970
Upper Outlier Limit Starting Point	19.336	19.357
Median	16.785	16.805
Lower Outlier Limit Starting Point	14.626	14.605
Min	14.420	14.420
Lower Extreme Starting Point	12.860	12.824
Q1	16.393	16.387
Outliers	6.000	5.000
Extremes	0.00	0.00

#### 3.117.3. Time Series Plots



### 3.118. Station 46A-GW24

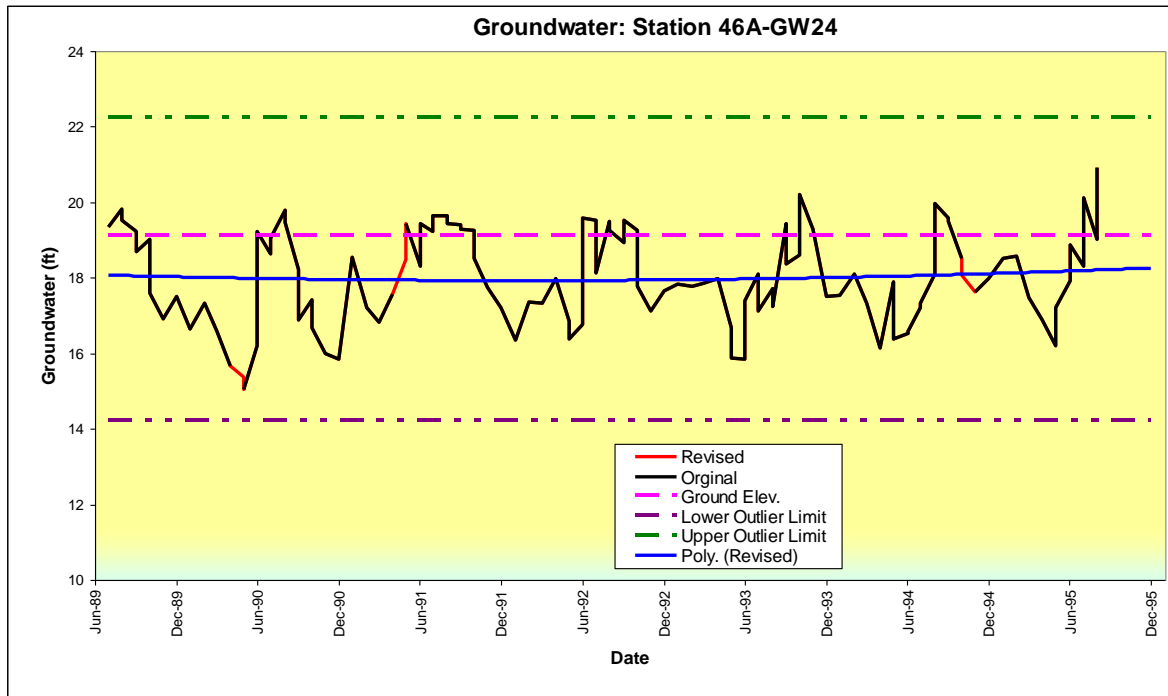
#### 3.118.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
46A-GW24	No data	No data	No data	No data

#### 3.118.2. Descriptive Statistics

	Original	Revised
Mean	18.024	18.004
Standard Deviation	1.230	1.240
Skewness	-0.056	-0.096
Q3	19.230	19.230
Upper Extreme Point Starting Point	25.260	25.268
Max	20.920	20.920
Upper Outlier Limit Starting Point	22.245	22.249
Median	17.920	17.950
Lower Outlier Limit Starting Point	14.205	14.199
Min	15.040	15.040
Lower Extreme Starting Point	11.190	11.180
Q1	17.220	17.218
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.118.3. Time Series Plots



### 3.119. Station 46A-GW25

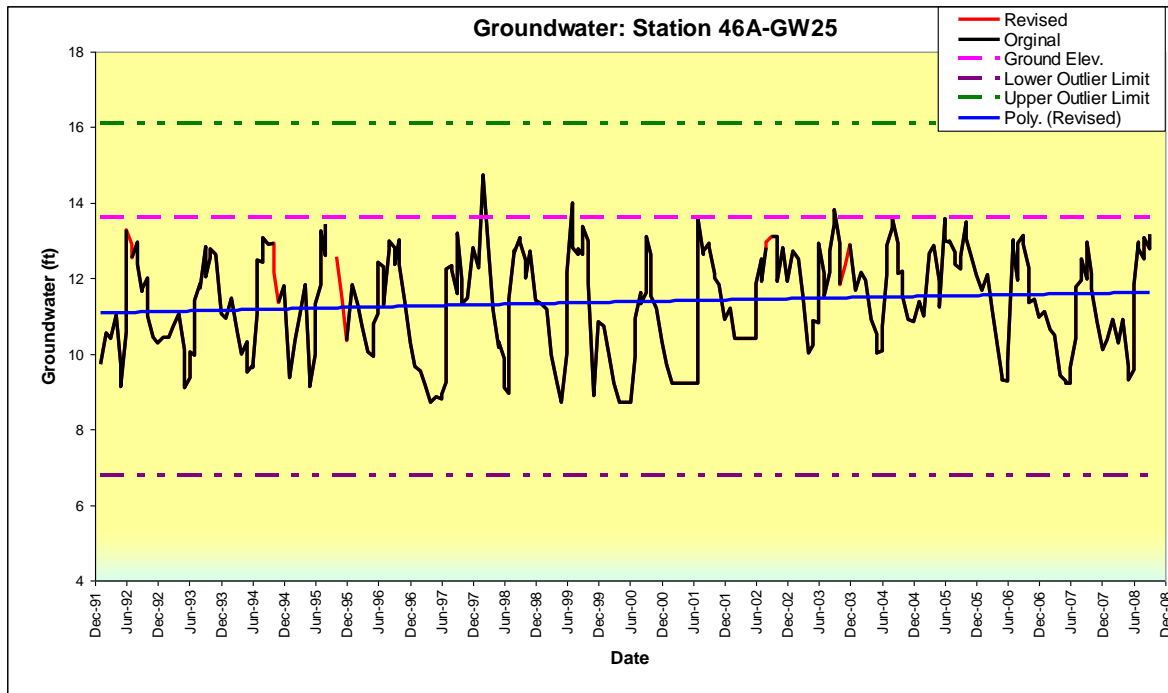
#### 3.119.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
46A-GW25	Six Mile Cypress	North end of Shamrock Dr. east side.	26 31.47'	81 50.66'

#### 3.119.2. Descriptive Statistics

	Original	Revised
Mean	11.354	11.371
Standard Deviation	1.389	1.385
Skewness	-0.241	-0.264
Q3	12.620	12.625
Upper Extreme Point Starting Point	19.610	19.585
Max	14.740	14.740
Upper Outlier Limit Starting Point	16.115	16.105
Median	11.500	11.520
Lower Outlier Limit Starting Point	6.795	6.825
Min	8.720	8.720
Lower Extreme Starting Point	3.300	3.345
Q1	10.290	10.305
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.119.3. Time Series Plots



### 3.120. Station 46A-GW26

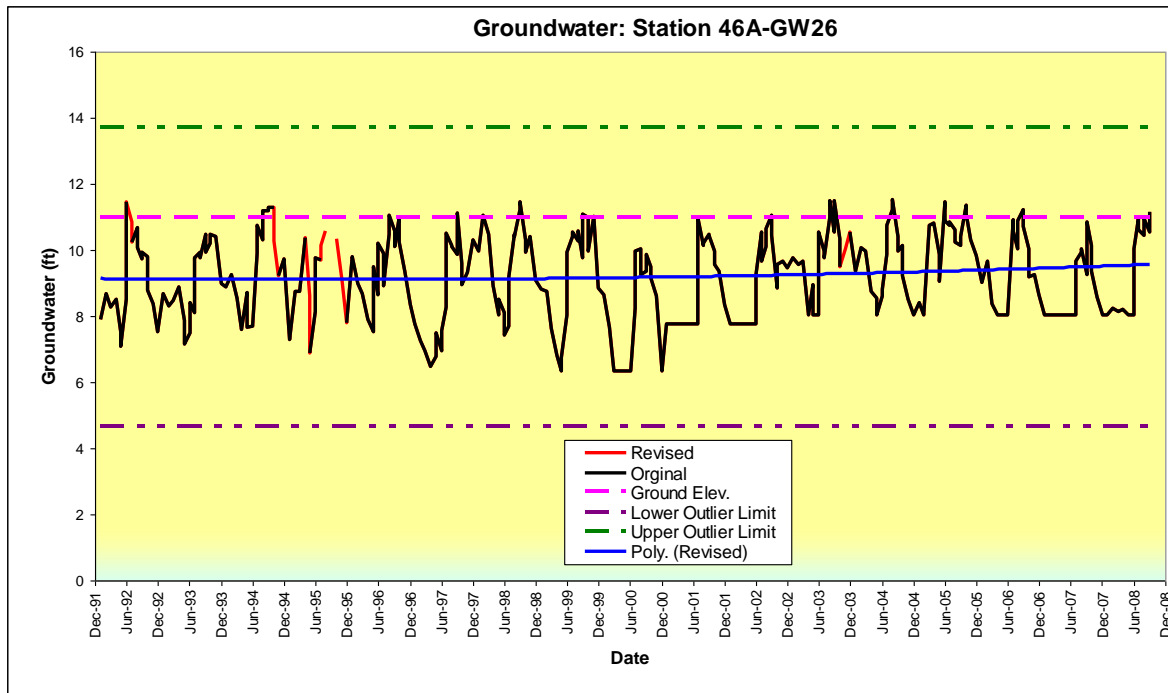
#### 3.120.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
46A-GW26	Six Mile Cypress	South side of Briarcliff Rd east of Briarcliff Lane.	26 31.03'	81 50.78'

#### 3.120.2. Descriptive Statistics

	Original	Revised
Mean	9.216	9.229
Standard Deviation	1.305	1.299
Skewness	-0.220	-0.237
Q3	10.310	10.305
Upper Extreme Point Starting Point	17.090	17.070
Max	11.510	11.510
Upper Outlier Limit Starting Point	13.700	13.688
Median	9.350	9.350
Lower Outlier Limit Starting Point	4.660	4.668
Min	6.350	6.350
Lower Extreme Starting Point	1.270	1.285
Q1	8.050	8.050
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.120.3. Time Series Plots





### 3.121. Station 46B-GW1

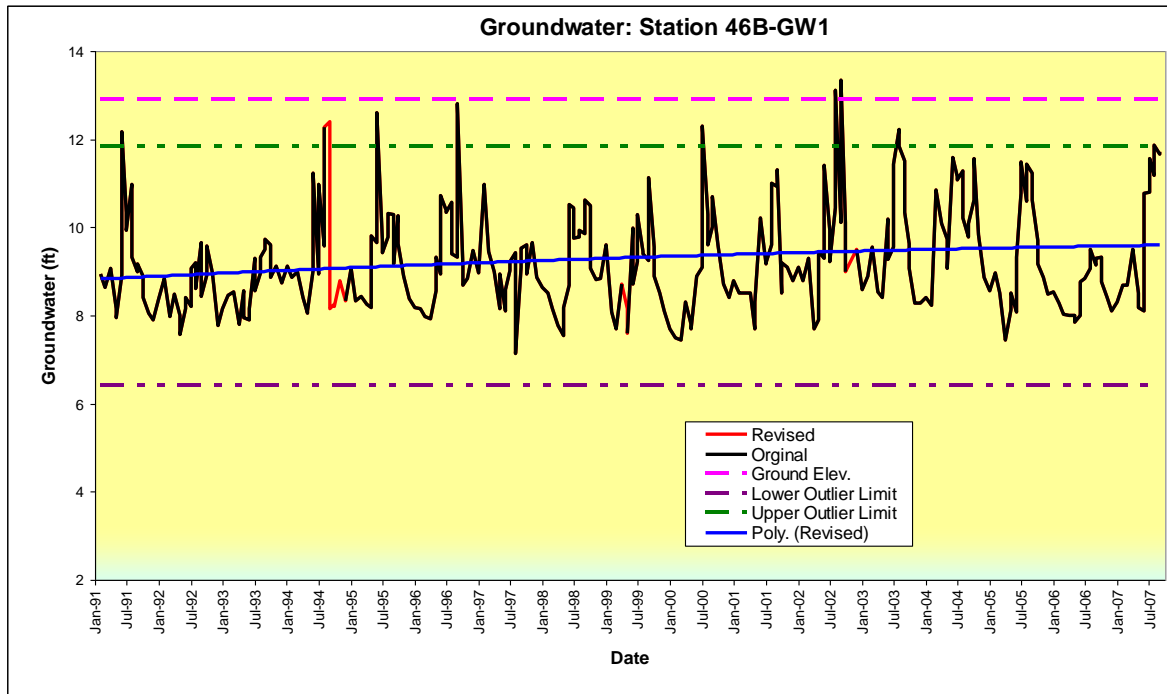
#### 3.121.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
46B-GW1	Mullock Creek	San Carlos Park Golf Course north of Constitution Circle edge of club parking in melaleucas.	26 28.88'	81 49.58'

#### 3.121.2. Descriptive Statistics

	Original	Revised
Mean	9.286	9.280
Standard Deviation	1.159	1.166
Skewness	0.938	0.966
Q3	9.805	9.790
Upper Extreme Point Starting Point	13.885	13.930
Max	13.350	13.350
Upper Outlier Limit Starting Point	11.845	11.860
Median	9.070	9.060
Lower Outlier Limit Starting Point	6.405	6.340
Min	7.130	7.130
Lower Extreme Starting Point	4.365	4.270
Q1	8.445	8.410
Outliers	10.000	9.000
Extremes	0.00	0.00

#### 3.121.3. Time Series Plots



### 3.122. Station 46B-GW2

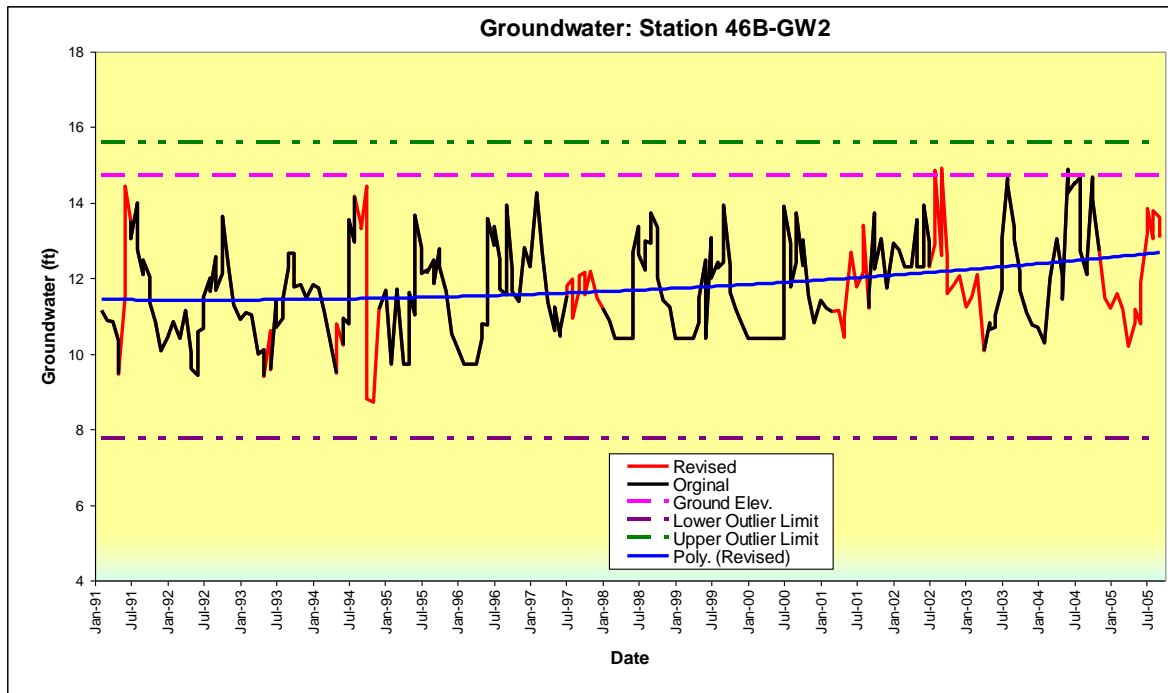
#### 3.122.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
46B-GW2	Mullock Creek	The Vines 150"N of Vintage Trace Circle east side of RR tracks.	26 27.39'	81 48.93'

#### 3.122.2. Descriptive Statistics

	Original	Revised
Mean	11.752	11.810
Standard Deviation	1.280	1.289
Skewness	0.356	0.293
Q3	12.660	12.683
Upper Extreme Point Starting Point	18.540	18.273
Max	14.900	14.920
Upper Outlier Limit Starting Point	15.600	15.478
Median	11.650	11.696
Lower Outlier Limit Starting Point	7.760	8.025
Min	9.390	8.710
Lower Extreme Starting Point	4.820	5.230
Q1	10.700	10.820
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.122.3. Time Series Plots



### 3.123. Station 46C-GW1

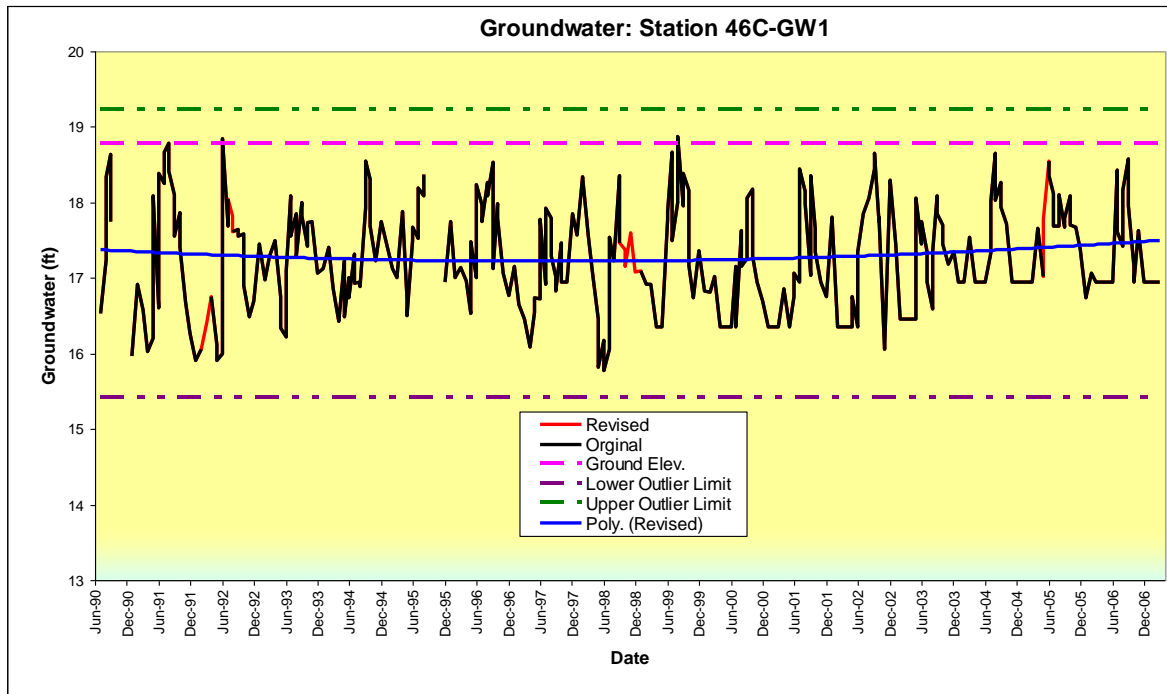
#### 3.123.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
46C-GW1	Ten Mile Canal	Eastwood Golf Course 100'W of Ortiz north side Vince Smith Dr (maintenance entrance).	26 37.38'	81 48.81'

#### 3.123.2. Descriptive Statistics

	Original	Revised
Mean	17.294	17.295
Standard Deviation	0.694	0.689
Skewness	0.079	0.072
Q3	17.800	17.795
Upper Extreme Point Starting Point	20.665	20.615
Max	18.880	18.880
Upper Outlier Limit Starting Point	19.233	19.205
Median	17.240	17.240
Lower Outlier Limit Starting Point	15.413	15.445
Min	15.780	15.780
Lower Extreme Starting Point	13.980	14.035
Q1	16.845	16.855
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.123.3. Time Series Plots



### 3.124. Station 46C-GW2

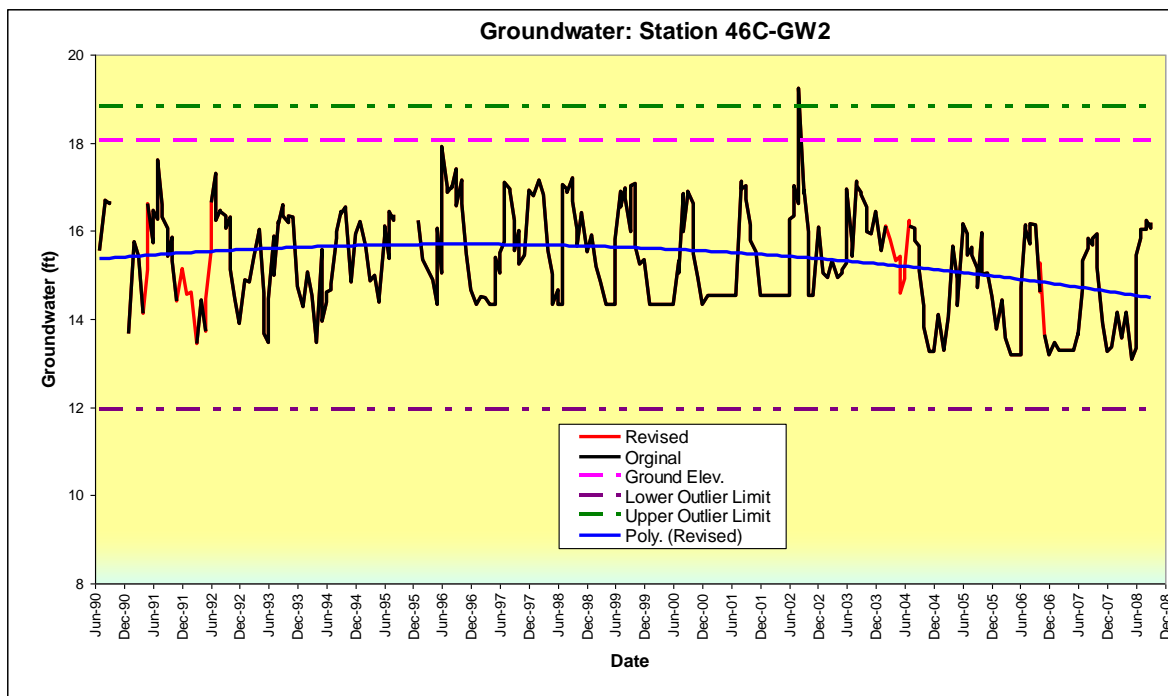
#### 3.124.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
46C-GW2	Ten Mile Canal	West side of Charter Glades entrance Rd south west corner of property, north side of fence.	26 35.68'	81 50.47'

#### 3.124.2. Descriptive Statistics

	Original	Revised
Mean	15.391	15.381
Standard Deviation	1.137	1.118
Skewness	-0.073	-0.050
Q3	16.250	16.240
Upper Extreme Point Starting Point	21.410	21.370
Max	19.230	19.230
Upper Outlier Limit Starting Point	18.830	18.805
Median	15.460	15.430
Lower Outlier Limit Starting Point	11.950	11.965
Min	13.090	13.090
Lower Extreme Starting Point	9.370	9.400
Q1	14.530	14.530
Outliers	1.000	1.000
Extremes	0.00	0.00

#### 3.124.3. Time Series Plots



### 3.125. Station 46C-GW3

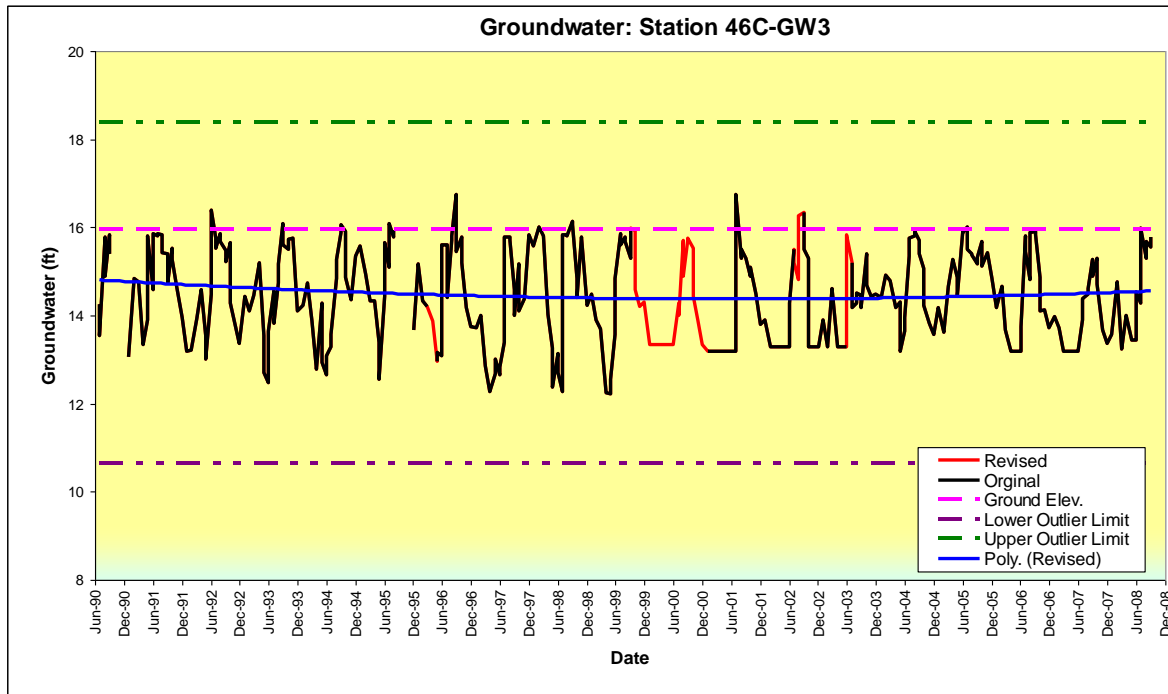
#### 3.125.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
46C-GW3	Ten Mile Canal	West of six mile cypress Pkwy. on Penzance Rd. 2nd Fire Hydrant on North side of the road. across Coralwood apts.	No data	No data

#### 3.125.2. Descriptive Statistics

	Original	Revised
Mean	14.487	14.482
Standard Deviation	1.066	1.060
Skewness	-0.109	-0.074
Q3	15.475	15.480
Upper Extreme Point Starting Point	21.273	21.600
Max	16.750	16.750
Upper Outlier Limit Starting Point	18.374	18.540
Median	14.490	14.460
Lower Outlier Limit Starting Point	10.644	10.380
Min	12.220	12.220
Lower Extreme Starting Point	7.745	7.320
Q1	13.543	13.440
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.125.3. Time Series Plots



### 3.126. Station 46C-GW4

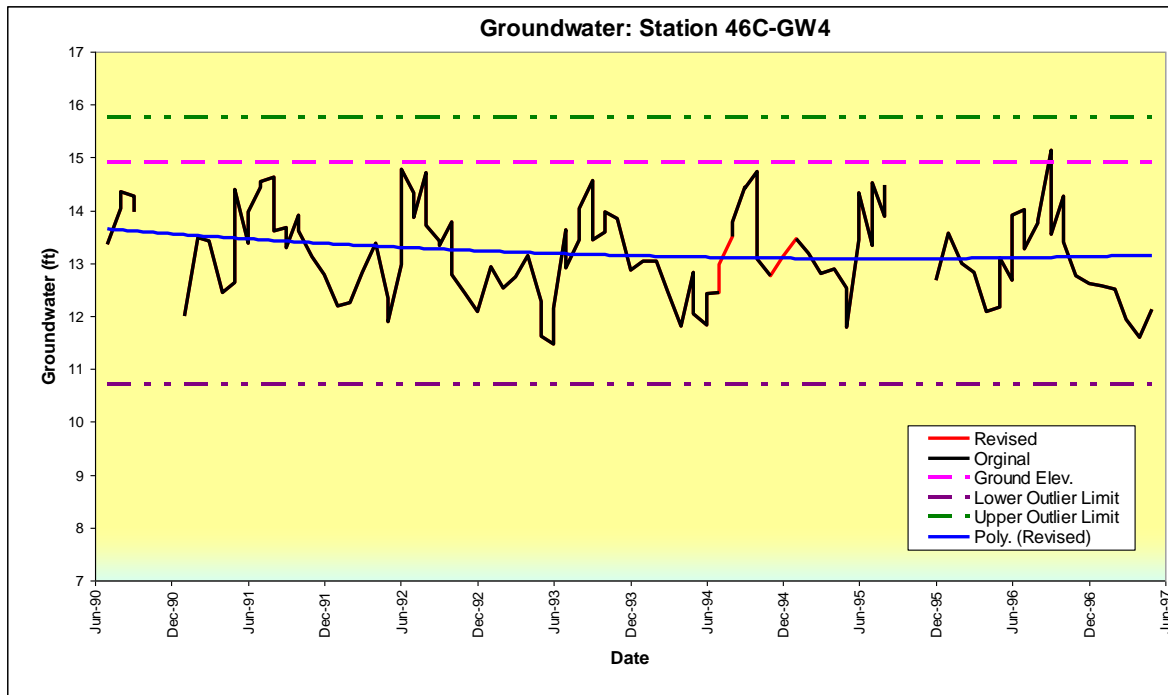
#### 3.126.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
46C-GW4	No data	No data	No data	No data

#### 3.126.2. Descriptive Statistics

	Original	Revised
Mean	13.227	13.224
Standard Deviation	0.847	0.840
Skewness	0.017	0.029
Q3	13.855	13.850
Upper Extreme Point Starting Point	17.635	17.570
Max	15.140	15.140
Upper Outlier Limit Starting Point	15.745	15.710
Median	13.290	13.270
Lower Outlier Limit Starting Point	10.705	10.750
Min	11.460	11.460
Lower Extreme Starting Point	8.815	8.890
Q1	12.595	12.610
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.126.3. Time Series Plots



### 3.127. Station 46C-GW5

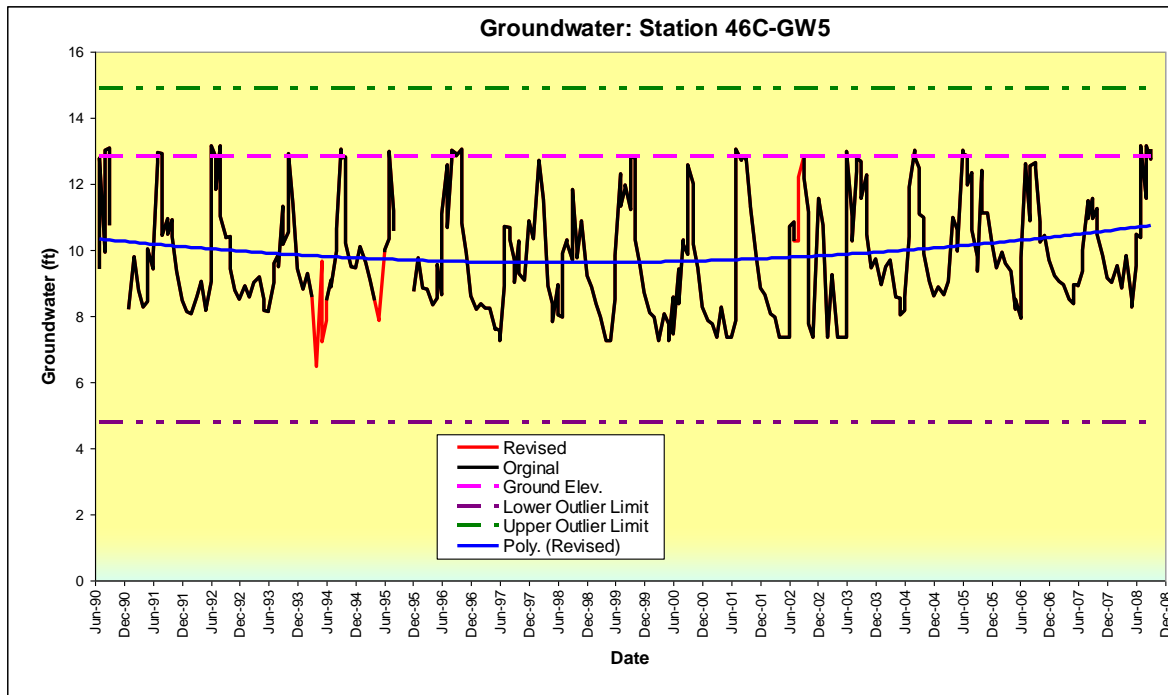
#### 3.127.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
46C-GW5	Ten Mile Canal	East side of Metro Pkwy-south of Gulf Hosp.	26 32.11'	81 51.04

#### 3.127.2. Descriptive Statistics

	Original	Revised
Mean	9.965	9.933
Standard Deviation	1.711	1.724
Skewness	0.360	0.351
Q3	11.100	11.090
Upper Extreme Point Starting Point	18.690	18.740
Max	13.160	13.160
Upper Outlier Limit Starting Point	14.895	14.915
Median	9.770	9.740
Lower Outlier Limit Starting Point	4.775	4.715
Min	7.260	6.478
Lower Extreme Starting Point	0.980	0.890
Q1	8.570	8.540
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.127.3. Time Series Plots



### 3.128. Station 46C-GW6

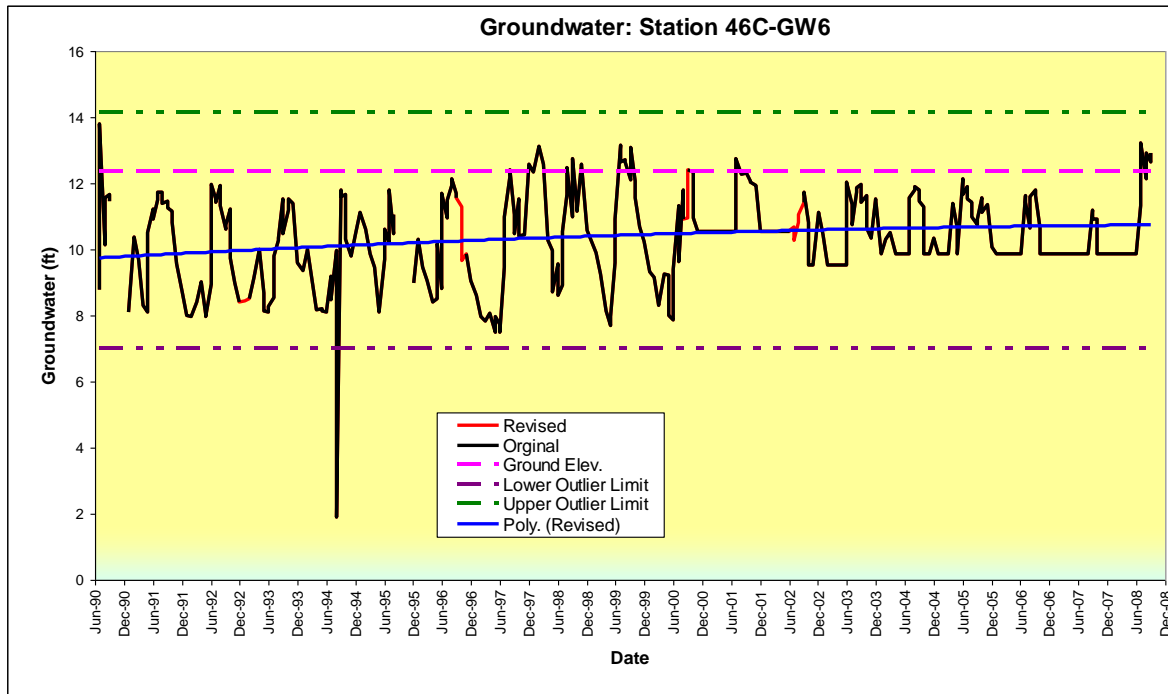
#### 3.128.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
46C-GW6	Ten Mile Canal	North east Int. Metro Pkwy & Six Mile Cypress Pkwy 5' south of for sale sign.	26 31.74'	81 51.11'

#### 3.128.2. Descriptive Statistics

	Original	Revised
Mean	10.377	10.378
Standard Deviation	1.397	1.384
Skewness	-0.758	-0.767
Q3	11.450	11.440
Upper Extreme Point Starting Point	16.798	16.720
Max	13.790	13.790
Upper Outlier Limit Starting Point	14.124	14.080
Median	10.460	10.460
Lower Outlier Limit Starting Point	6.994	7.040
Min	1.910	1.910
Lower Extreme Starting Point	4.320	4.400
Q1	9.668	9.680
Outliers	0.000	0.000
Extremes	1.00	1.00

#### 3.128.3. Time Series Plots





### 3.129. Station 46C-GW7

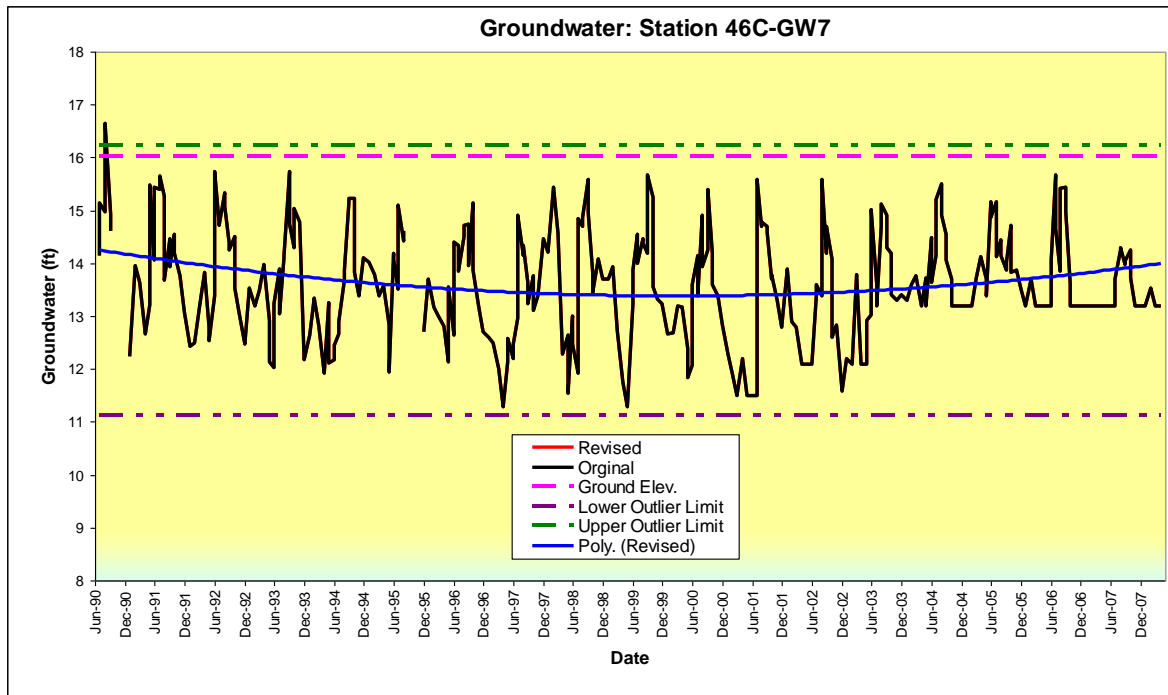
#### 3.129.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
46C-GW7	Ten Mile Canal	North side Idlewild St & Plantation Rd east side of FPL easement.	26 34.98'	81 50.85'

#### 3.129.2. Descriptive Statistics

	Original	Revised
Mean	13.625	13.625
Standard Deviation	1.036	1.036
Skewness	0.002	0.002
Q3	14.310	14.310
Upper Extreme Point Starting Point	18.150	18.150
Max	16.650	16.650
Upper Outlier Limit Starting Point	16.230	16.230
Median	13.600	13.600
Lower Outlier Limit Starting Point	11.110	11.110
Min	11.290	11.290
Lower Extreme Starting Point	9.190	9.190
Q1	13.030	13.030
Outliers	1.000	1.000
Extremes	0.00	0.00

#### 3.129.3. Time Series Plots



### 3.130. Station 46C-GW8

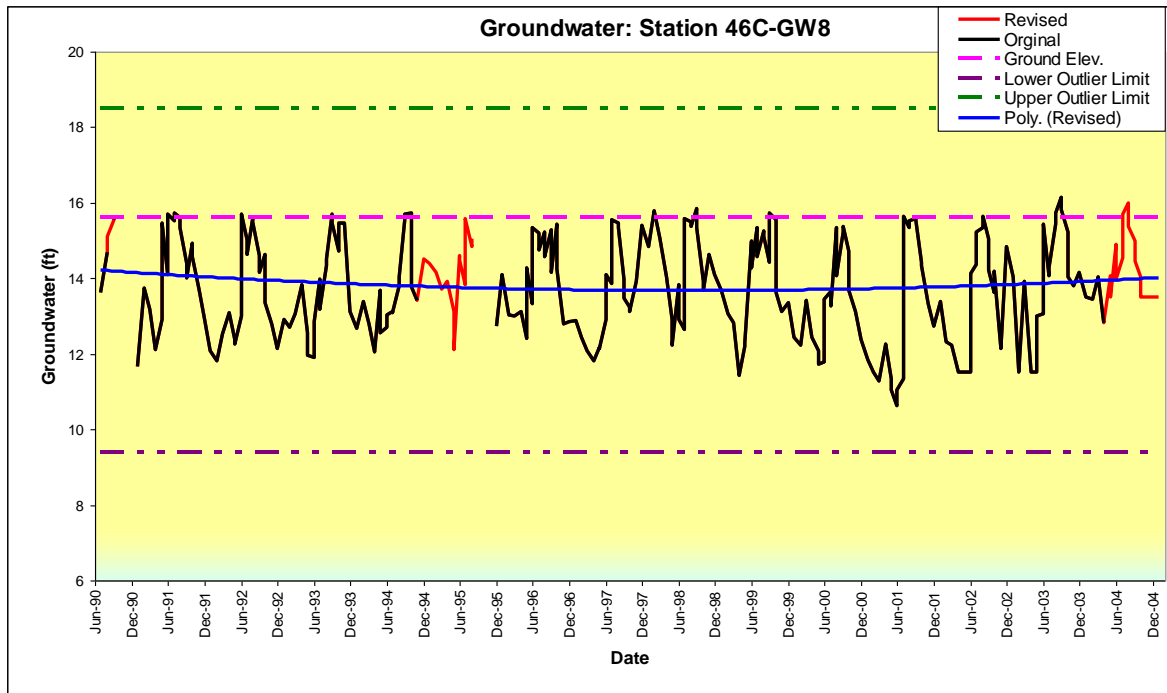
#### 3.130.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
46C-GW8	Ten Mile Canal	South side of Colonial 22'W of Int. Colonial and Metro.	26 35.84'	81 51.14'

#### 3.130.2. Descriptive Statistics

	Original	Revised
Mean	13.760	13.823
Standard Deviation	1.337	1.302
Skewness	-0.120	-0.196
Q3	15.068	15.010
Upper Extreme Point Starting Point	21.900	21.430
Max	16.140	16.140
Upper Outlier Limit Starting Point	18.484	18.220
Median	13.785	13.909
Lower Outlier Limit Starting Point	9.374	9.660
Min	10.630	10.630
Lower Extreme Starting Point	5.958	6.450
Q1	12.790	12.870
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.130.3. Time Series Plots



### 3.131. Station 47A-GW1

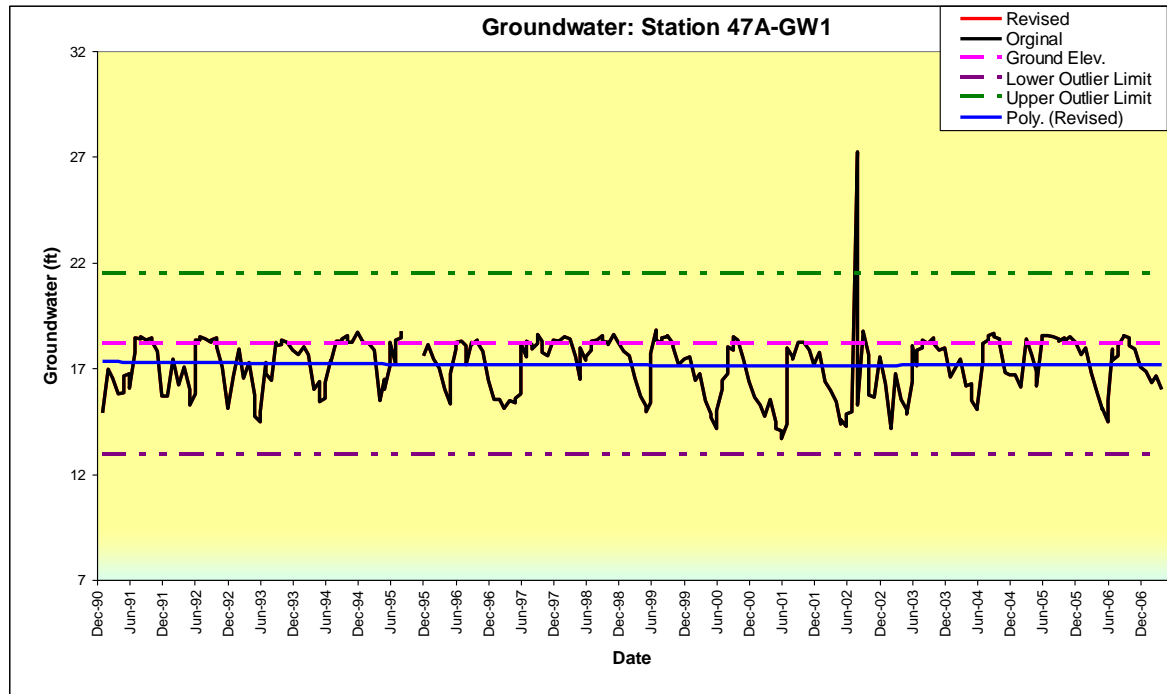
#### 3.131.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
47A-GW1	Estero River	South side of Corkscrew Rd 2.3 miles east of I-75 south side of fence.	26 26.94'	81 44.39'

#### 3.131.2. Descriptive Statistics

	Original	Revised
Mean	17.181	17.181
Standard Deviation	1.428	1.428
Skewness	0.618	0.618
Q3	18.270	18.270
Upper Extreme Point Starting Point	24.675	24.675
Max	27.210	27.210
Upper Outlier Limit Starting Point	21.473	21.473
Median	17.610	17.610
Lower Outlier Limit Starting Point	12.933	12.933
Min	13.650	13.650
Lower Extreme Starting Point	9.730	9.730
Q1	16.135	16.135
Outliers	0.000	0.000
Extremes	1.00	1.00

#### 3.131.3. Time Series Plots



### 3.132. Station 47A-GW2

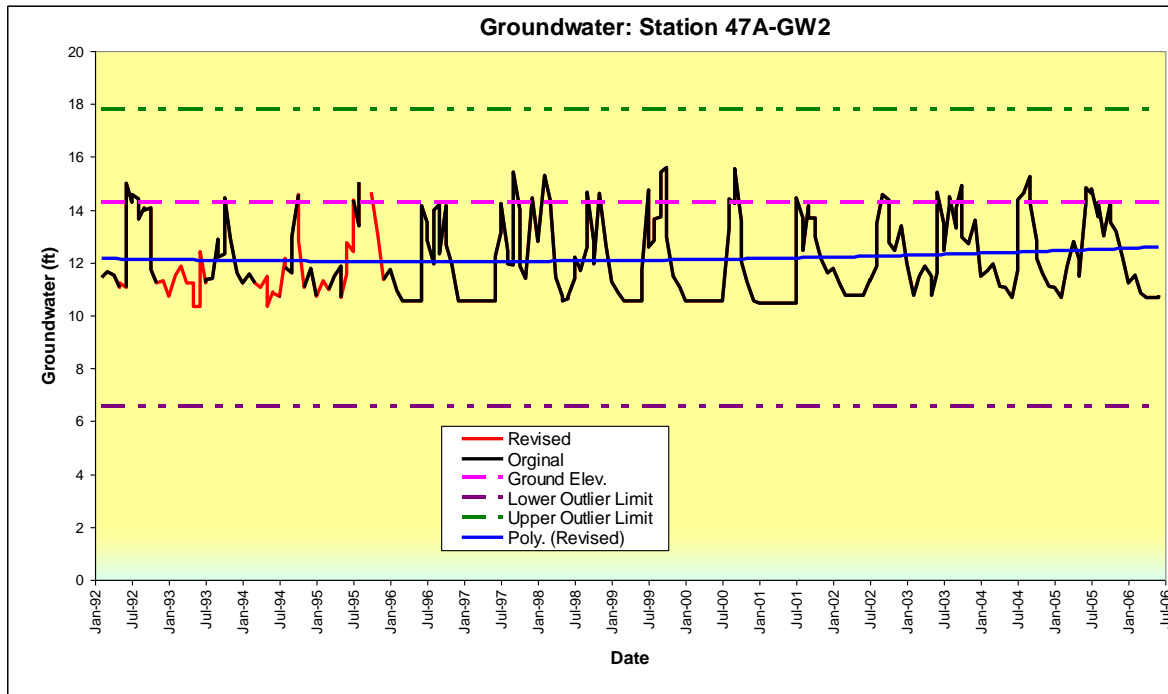
#### 3.132.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
47A-GW2	Estero River	East side of Three Oaks Pkwy north of Corkscrew Rd between box culverts.	26 26.75'	81 47.30'

#### 3.132.2. Descriptive Statistics

	Original	Revised
Mean	12.232	12.179
Standard Deviation	1.503	1.472
Skewness	0.530	0.591
Q3	13.580	13.395
Upper Extreme Point Starting Point	22.010	21.270
Max	15.580	15.580
Upper Outlier Limit Starting Point	17.795	17.333
Median	11.770	11.730
Lower Outlier Limit Starting Point	6.555	6.833
Min	10.470	10.339
Lower Extreme Starting Point	2.340	2.895
Q1	10.770	10.770
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.132.3. Time Series Plots



### 3.133. Station 47A-GW3

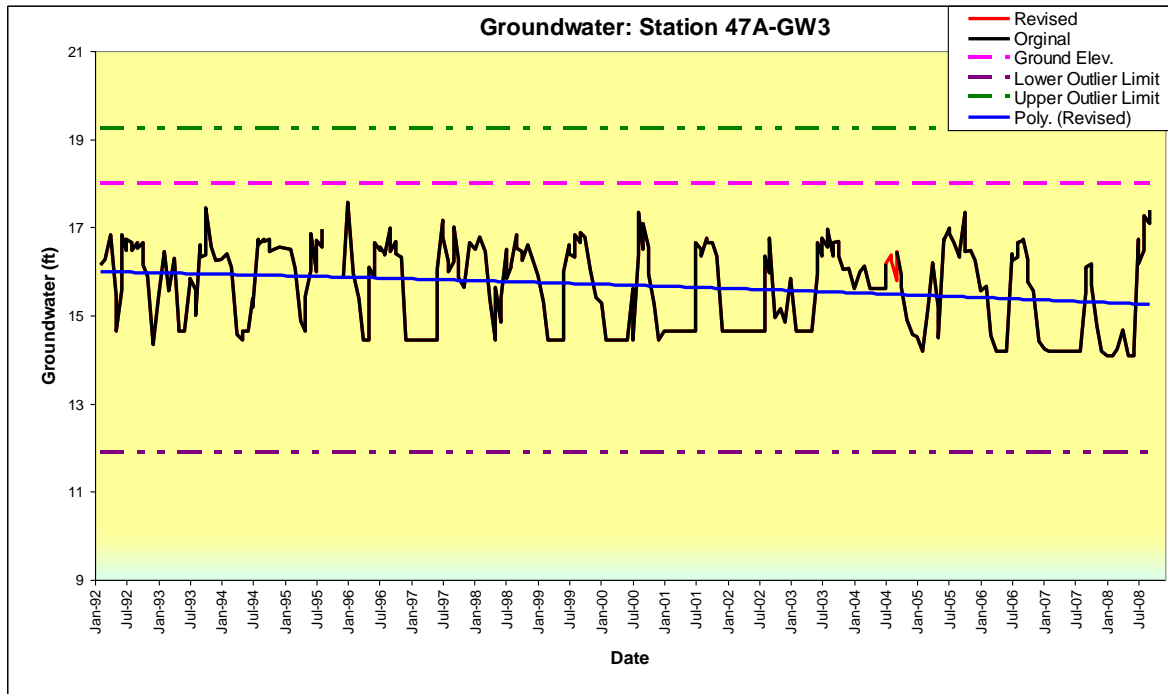
#### 3.133.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
47A-GW3	Estero River	East side of FPL easement west of Wildcat Runs maintenance entrance.	26 25.88'	81 45.30'

#### 3.133.2. Descriptive Statistics

	Original	Revised
Mean	15.657	15.662
Standard Deviation	0.963	0.960
Skewness	-0.190	-0.203
Q3	16.490	16.490
Upper Extreme Point Starting Point	22.010	22.010
Max	17.560	17.560
Upper Outlier Limit Starting Point	19.250	19.250
Median	15.910	15.910
Lower Outlier Limit Starting Point	11.890	11.890
Min	14.080	14.080
Lower Extreme Starting Point	9.130	9.130
Q1	14.650	14.650
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.133.3. Time Series Plots



### 3.134. Station 47A-GW4

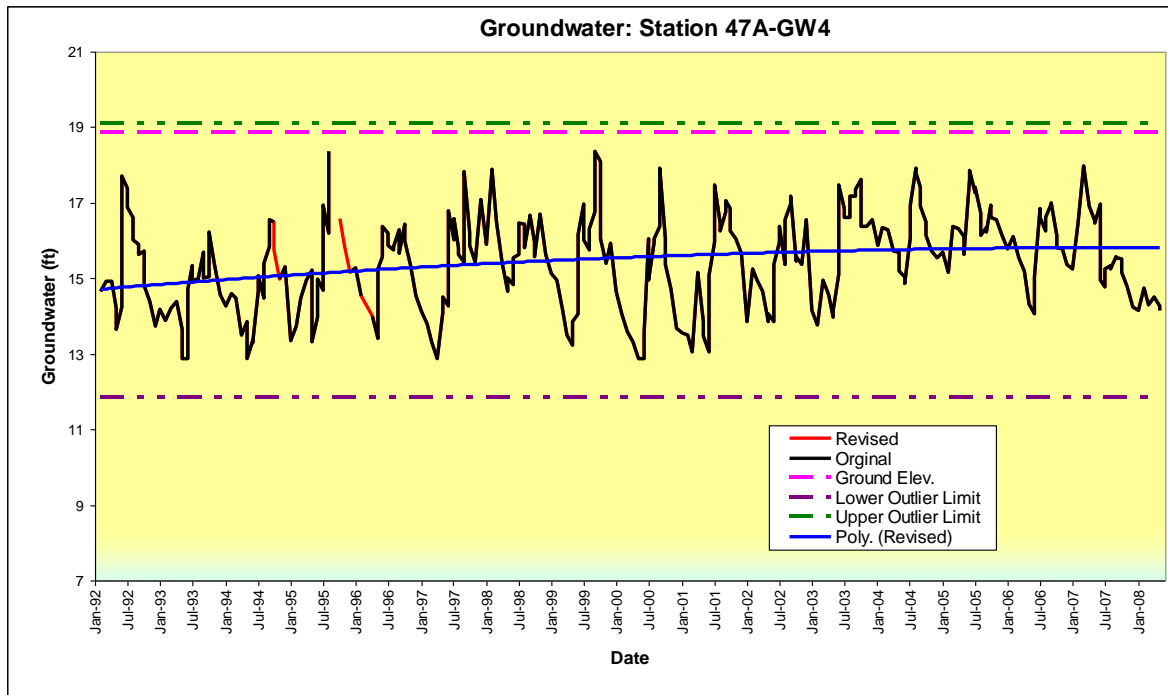
#### 3.134.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
47A-GW4	Estero River	West side of I-75 south of Alico Rd at mile marker 126.	26 28.05'	81 47.40'

#### 3.134.2. Descriptive Statistics

	Original	Revised
Mean	15.460	15.459
Standard Deviation	1.240	1.236
Skewness	-0.082	-0.081
Q3	16.365	16.360
Upper Extreme Point Starting Point	21.810	21.805
Max	18.360	18.360
Upper Outlier Limit Starting Point	19.088	19.083
Median	15.540	15.545
Lower Outlier Limit Starting Point	11.828	11.823
Min	12.860	12.860
Lower Extreme Starting Point	9.105	9.100
Q1	14.550	14.545
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.134.3. Time Series Plots



### 3.135. Station 47A-GW5

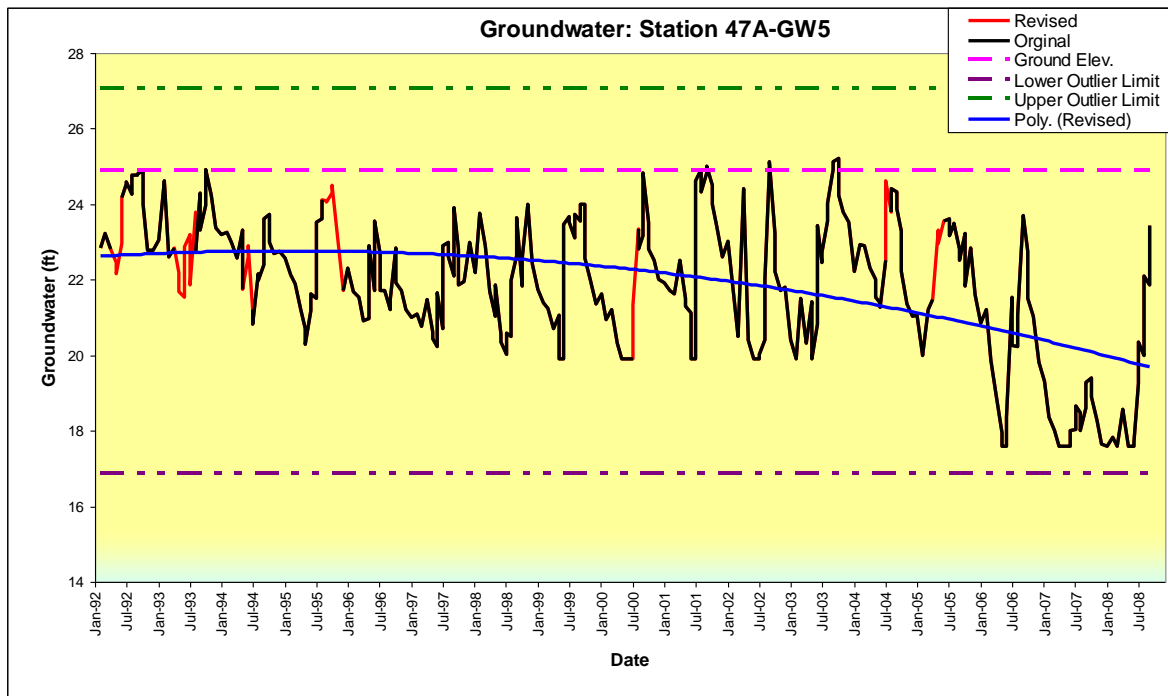
#### 3.135.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
47A-GW5	Estero River	At power pole south side of Alico Rd across from Harper Bros. Entrance.	26 29.59'	81 43.22'

#### 3.135.2. Descriptive Statistics

	Original	Revised
Mean	21.821	21.902
Standard Deviation	1.886	1.864
Skewness	-0.488	-0.550
Q3	23.240	23.317
Upper Extreme Point Starting Point	30.890	30.806
Max	25.200	25.200
Upper Outlier Limit Starting Point	27.065	27.061
Median	21.880	22.010
Lower Outlier Limit Starting Point	16.865	17.075
Min	17.600	17.600
Lower Extreme Starting Point	13.040	13.330
Q1	20.690	20.820
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.135.3. Time Series Plots



### 3.136. Station 47A-GW6

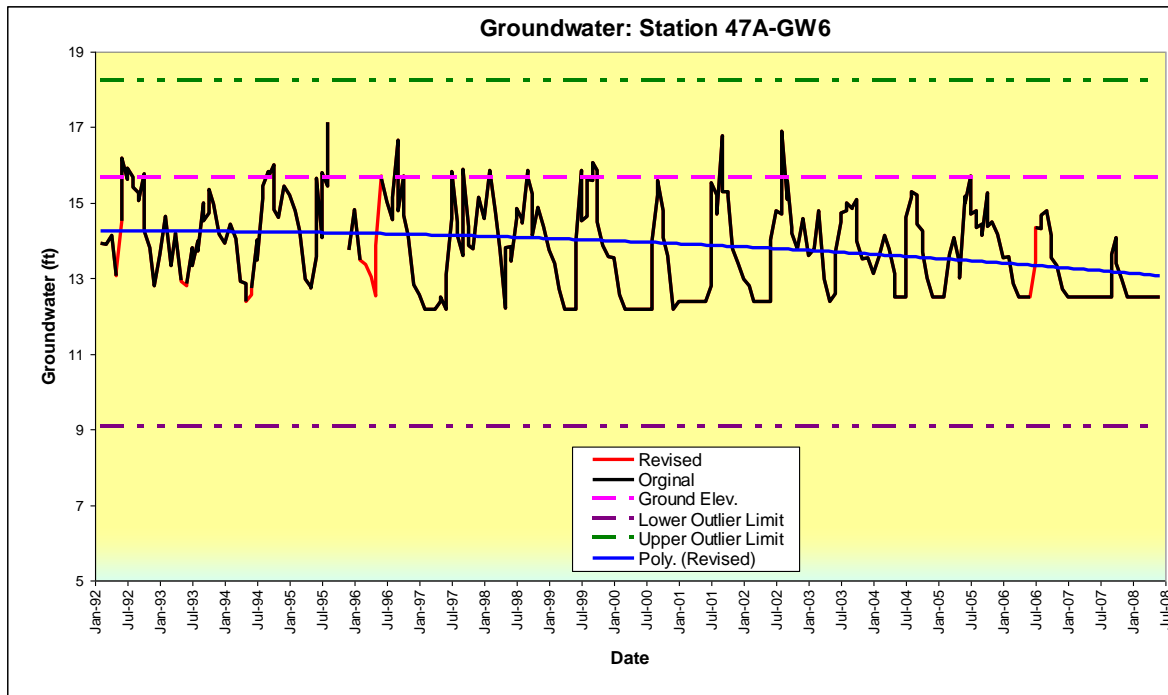
#### 3.136.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
47A-GW6	Estero River	West side of I-75 south of Corkscrew Rd at mile marker 122.	26 24.70'	81 46.45'

#### 3.136.2. Descriptive Statistics

	Original	Revised
Mean	13.887	13.862
Standard Deviation	1.207	1.198
Skewness	0.214	0.258
Q3	14.790	14.790
Upper Extreme Point Starting Point	21.660	21.499
Max	17.140	17.140
Upper Outlier Limit Starting Point	18.225	18.144
Median	13.890	13.835
Lower Outlier Limit Starting Point	9.065	9.199
Min	12.190	12.190
Lower Extreme Starting Point	5.630	5.845
Q1	12.500	12.554
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.136.3. Time Series Plots





### 3.137. Station 47A-GW7

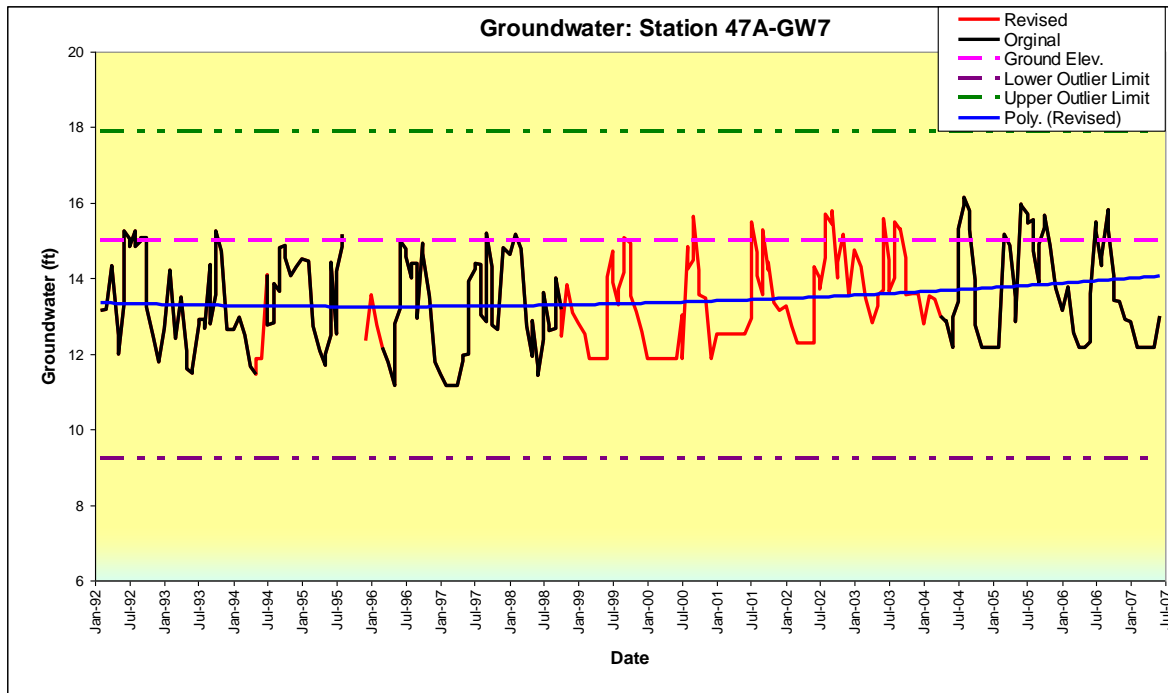
#### 3.137.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
47A-GW7	No data	No data	No data	No data

#### 3.137.2. Descriptive Statistics

	Original	Revised
Mean	13.485	13.461
Standard Deviation	1.295	1.243
Skewness	0.163	0.207
Q3	14.640	14.475
Upper Extreme Point Starting Point	21.120	20.429
Max	16.140	16.140
Upper Outlier Limit Starting Point	17.880	17.452
Median	13.220	13.371
Lower Outlier Limit Starting Point	9.240	9.513
Min	11.160	11.160
Lower Extreme Starting Point	6.000	6.536
Q1	12.480	12.490
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.137.3. Time Series Plots



### 3.138. Station 47A-GW8

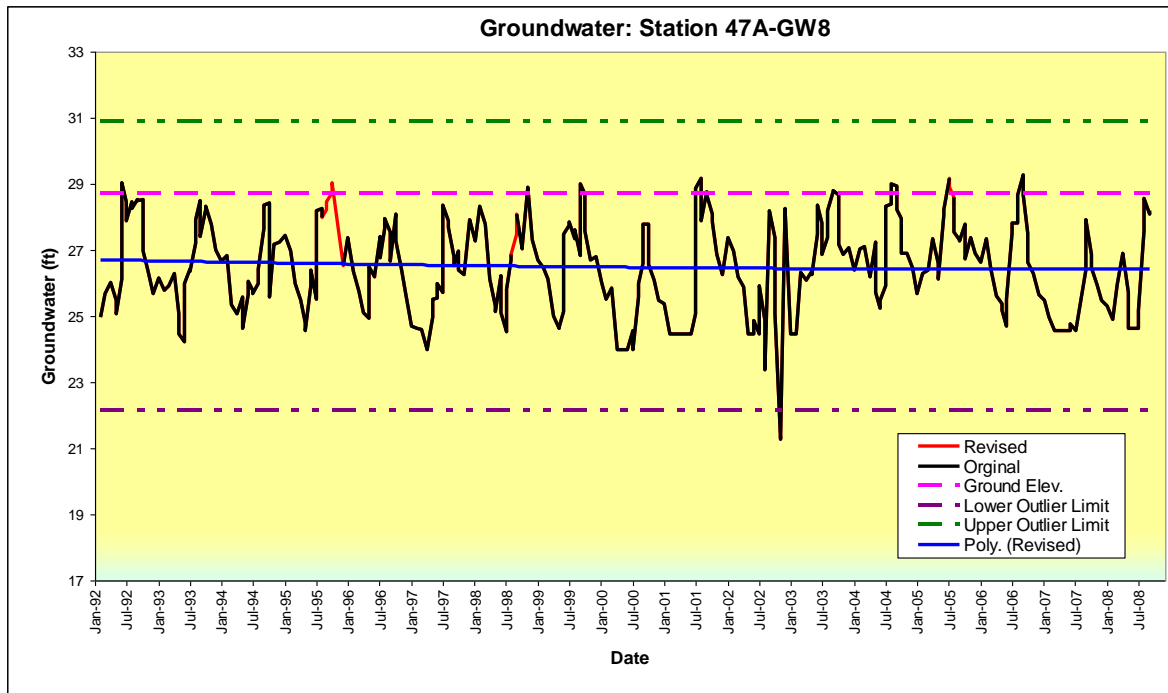
#### 3.138.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
47A-GW8	Estero River	U.S. 41 and Willams Rd. 200 ft. West of 41 on willams Rd.	No data	No data

#### 3.138.2. Descriptive Statistics

	Original	Revised
Mean	26.474	26.503
Standard Deviation	1.413	1.421
Skewness	-0.114	-0.132
Q3	27.625	27.680
Upper Extreme Point Starting Point	34.188	34.310
Max	29.270	29.270
Upper Outlier Limit Starting Point	30.906	30.995
Median	26.430	26.440
Lower Outlier Limit Starting Point	22.156	22.155
Min	21.270	21.270
Lower Extreme Starting Point	18.875	18.840
Q1	25.438	25.470
Outliers	1.000	1.000
Extremes	0.00	0.00

#### 3.138.3. Time Series Plots



### 3.139. Station 47A-GW9

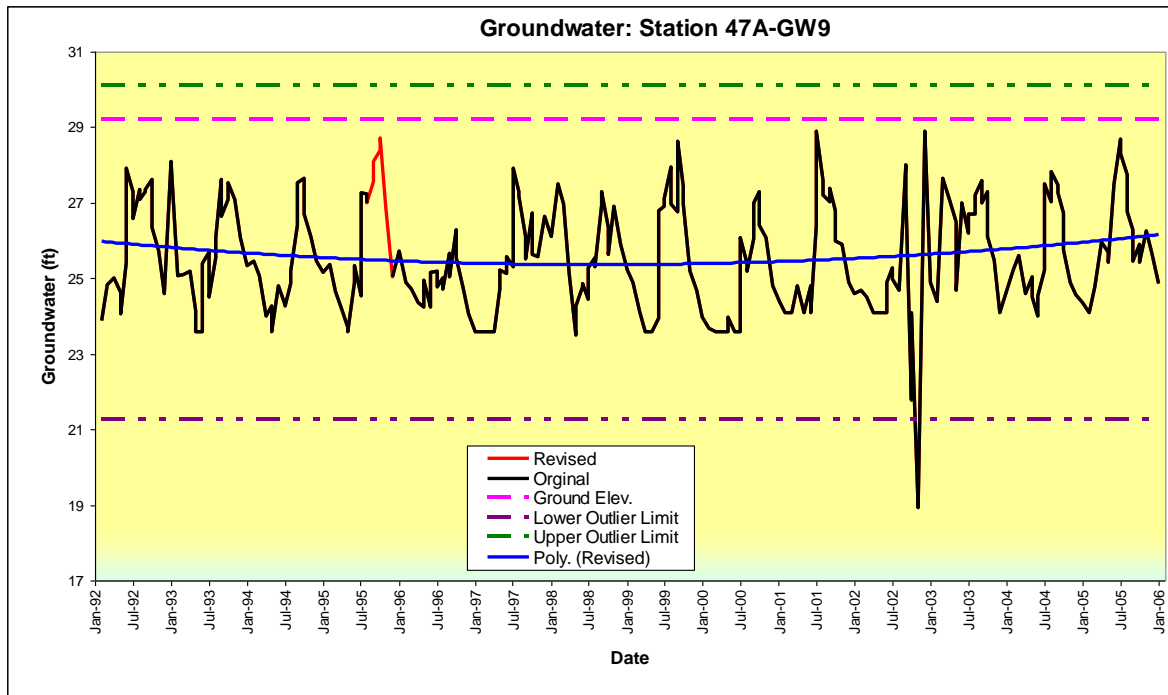
#### 3.139.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
47A-GW9	Estero River	South west corner Int SR 82 & Green Meadows Rd.	26 33.93'	81 40.66'

#### 3.139.2. Descriptive Statistics

	Original	Revised
Mean	25.575	25.600
Standard Deviation	1.430	1.440
Skewness	-0.114	-0.117
Q3	26.790	26.895
Upper Extreme Point Starting Point	33.420	33.818
Max	28.890	28.890
Upper Outlier Limit Starting Point	30.105	30.356
Median	25.340	25.380
Lower Outlier Limit Starting Point	21.265	21.126
Min	18.940	18.940
Lower Extreme Starting Point	17.950	17.665
Q1	24.580	24.588
Outliers	1.000	1.000
Extremes	0.00	0.00

#### 3.139.3. Time Series Plots



### 3.140. Station 47A-GW10

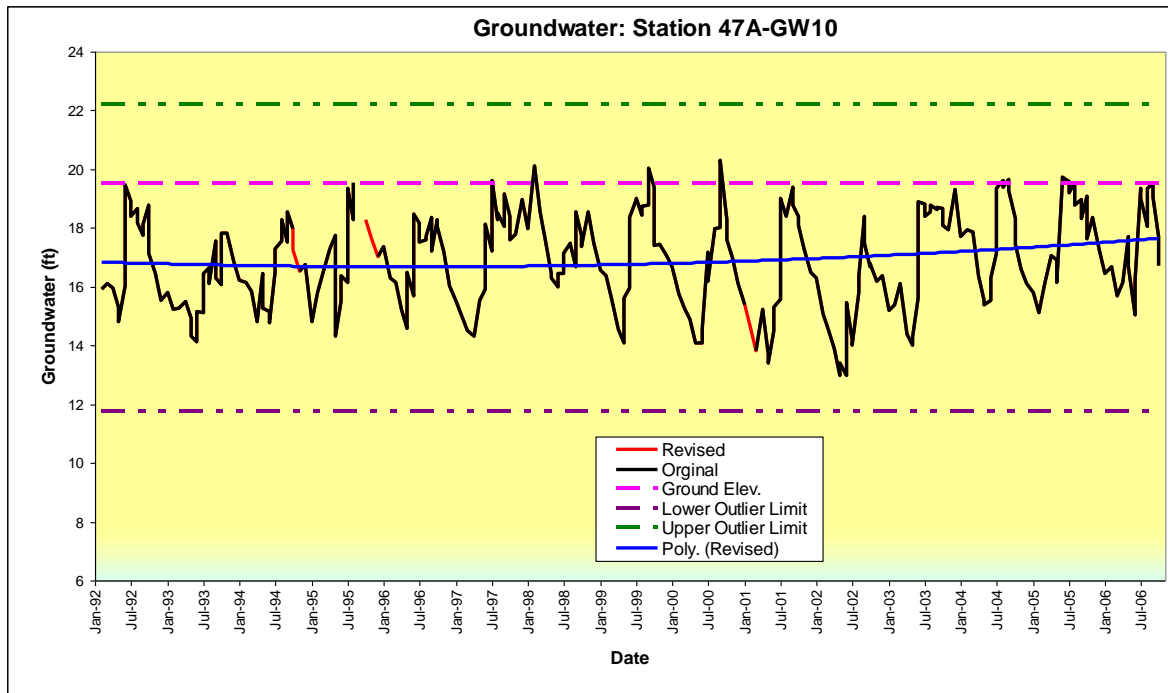
#### 3.140.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
47A-GW10	Estero River	East side of south on ramp to I-75 from Alico Rd along fence.	26 29.43'	81 47.82'

#### 3.140.2. Descriptive Statistics

	Original	Revised
Mean	16.931	16.926
Standard Deviation	1.633	1.630
Skewness	-0.158	-0.159
Q3	18.290	18.290
Upper Extreme Point Starting Point	26.120	26.120
Max	20.290	20.290
Upper Outlier Limit Starting Point	22.205	22.205
Median	16.990	17.010
Lower Outlier Limit Starting Point	11.765	11.765
Min	12.990	12.990
Lower Extreme Starting Point	7.850	7.850
Q1	15.680	15.680
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.140.3. Time Series Plots



### 3.141. Station 47A-GW11

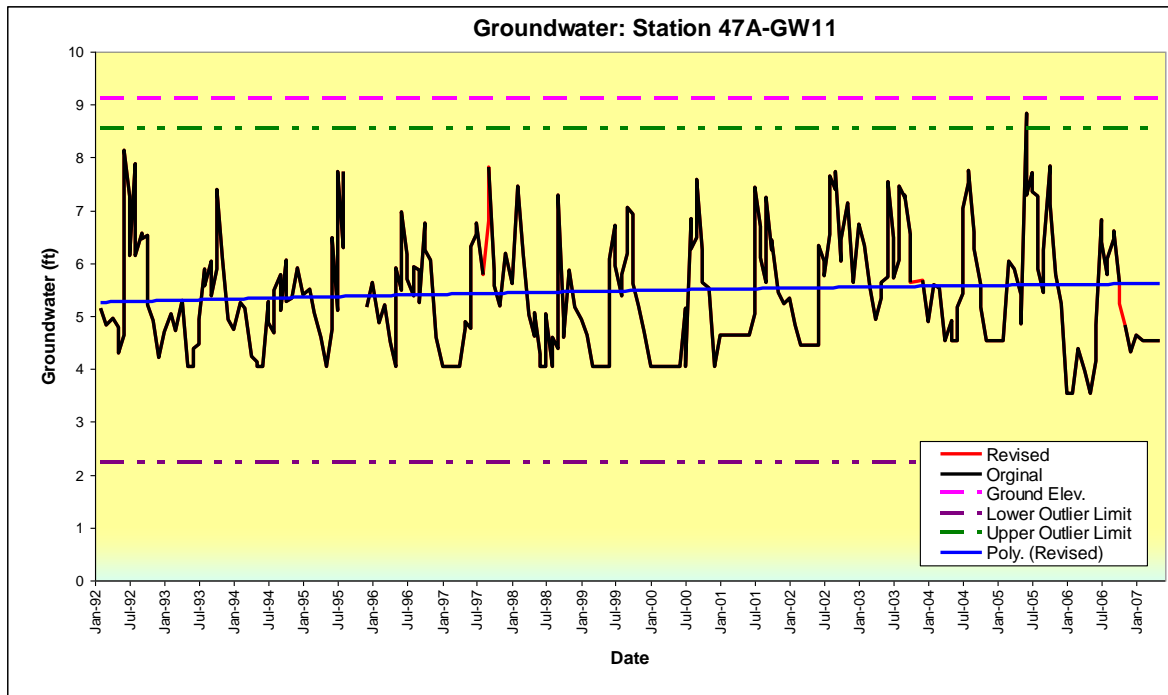
#### 3.141.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
47A-GW11	Estero River	North side of Broadway at FPL easement 1.4 miles west of US 41.	26 26.53'	81 50.06'

#### 3.141.2. Descriptive Statistics

	Original	Revised
Mean	5.460	5.465
Standard Deviation	1.097	1.094
Skewness	0.512	0.504
Q3	6.170	6.175
Upper Extreme Point Starting Point	10.910	10.930
Max	8.830	8.830
Upper Outlier Limit Starting Point	8.540	8.553
Median	5.340	5.340
Lower Outlier Limit Starting Point	2.220	2.213
Min	3.540	3.540
Lower Extreme Starting Point	-0.150	-0.165
Q1	4.590	4.590
Outliers	1.000	1.000
Extremes	0.00	0.00

#### 3.141.3. Time Series Plots



### 3.142. Station 47B-GW1

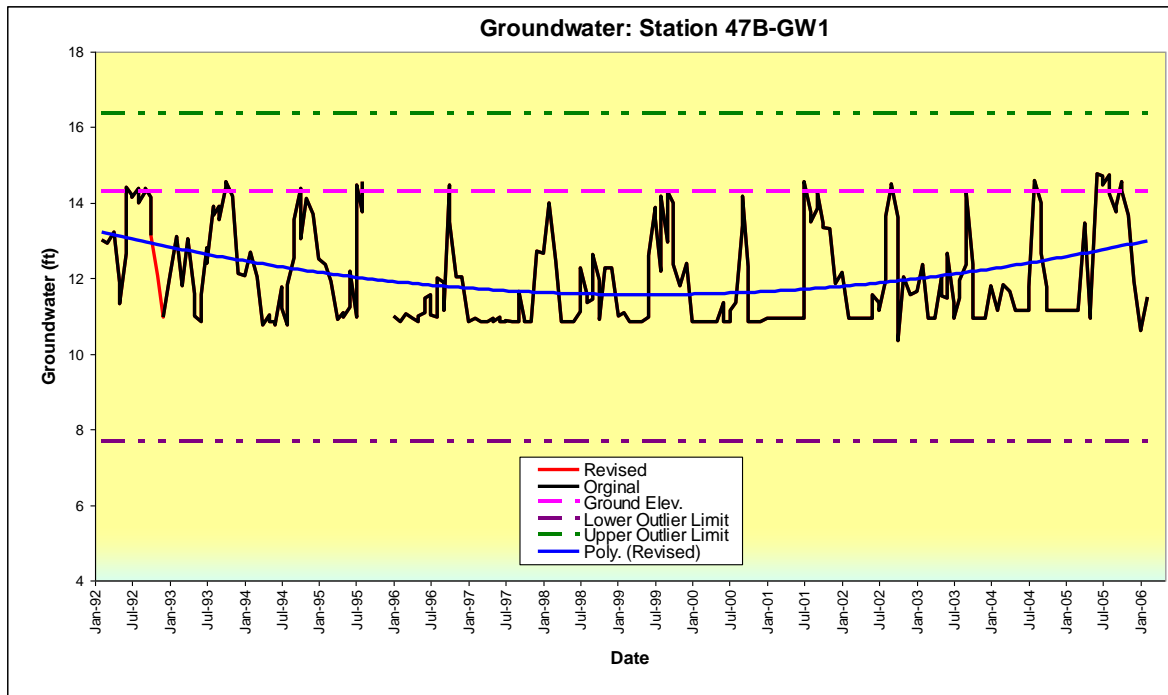
#### 3.142.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
47B-GW1	Halfway Creek	Northwest corner Int. Coconut Rd & US 41	26 23.93'	81 48.70'

#### 3.142.2. Descriptive Statistics

	Original	Revised
Mean	12.087	12.087
Standard Deviation	1.291	1.288
Skewness	0.720	0.722
Q3	13.123	13.115
Upper Extreme Point Starting Point	19.640	19.610
Max	14.770	14.770
Upper Outlier Limit Starting Point	16.381	16.363
Median	11.575	11.590
Lower Outlier Limit Starting Point	7.691	7.703
Min	10.350	10.350
Lower Extreme Starting Point	4.433	4.455
Q1	10.950	10.950
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.142.3. Time Series Plots



### 3.143. Station 48-GW1

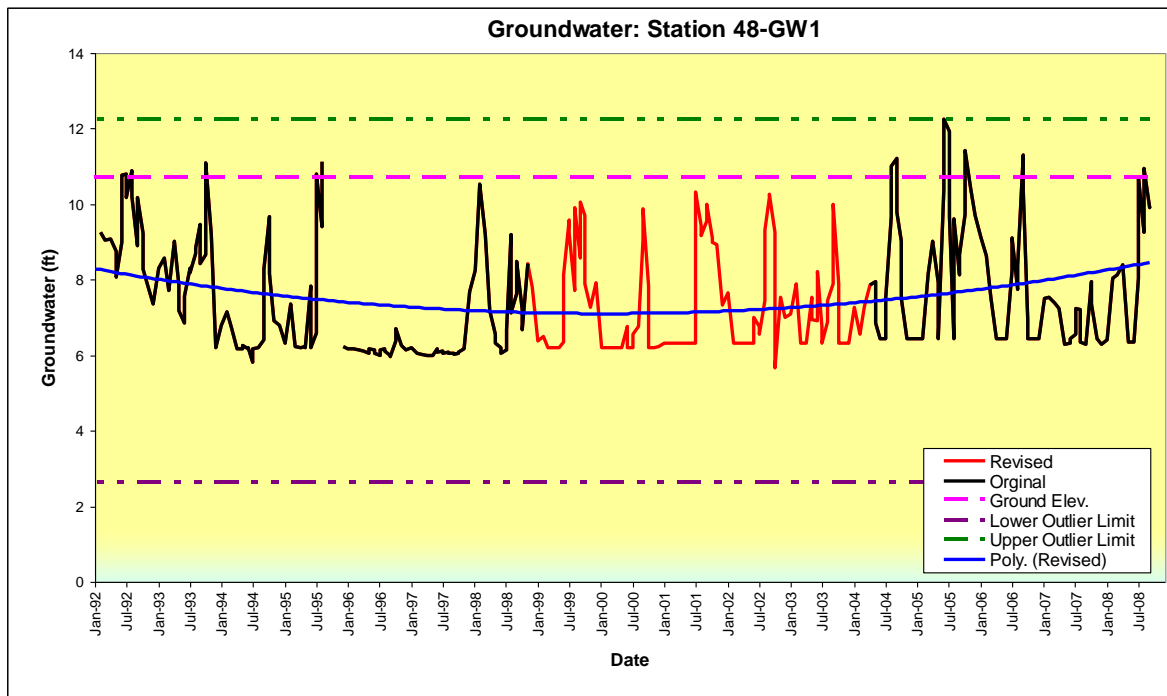
#### 3.143.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
48-GW1	Spring Creek	U.S. 41 North of Spring Creek Elem. School and at the end of Tiberwilder.	No data	No data

#### 3.143.2. Descriptive Statistics

	Original	Revised
Mean	7.608	7.530
Standard Deviation	1.590	1.511
Skewness	0.894	0.936
Q3	8.658	8.561
Upper Extreme Point Starting Point	15.865	15.293
Max	12.240	12.240
Upper Outlier Limit Starting Point	12.261	11.927
Median	7.135	6.904
Lower Outlier Limit Starting Point	2.651	2.951
Min	5.800	5.653
Lower Extreme Starting Point	-0.953	-0.415
Q1	6.255	6.317
Outliers	0.000	1.000
Extremes	0.00	0.00

#### 3.143.3. Time Series Plots



### 3.144. Station 48-GW2

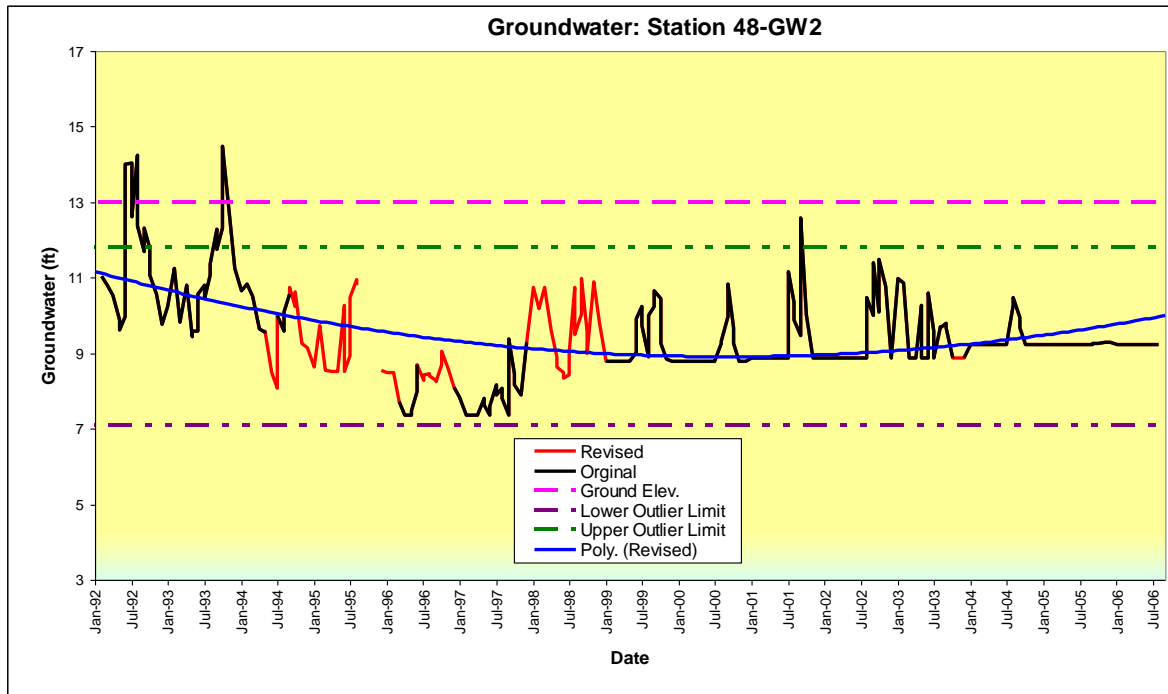
#### 3.144.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
48-GW2	Spring Creek	West side of Spring Creek Rd .8 mi south of Coconut Rd 125'SW of Pelican Landing Entrance.	26 23.29'	81 49.57'

#### 3.144.2. Descriptive Statistics

	Original	Revised
Mean	9.549	9.490
Standard Deviation	1.255	1.202
Skewness	1.278	1.280
Q3	10.045	10.062
Upper Extreme Point Starting Point	13.570	13.931
Max	14.470	14.470
Upper Outlier Limit Starting Point	11.808	11.996
Median	9.220	9.220
Lower Outlier Limit Starting Point	7.108	6.838
Min	7.350	7.350
Lower Extreme Starting Point	5.345	4.904
Q1	8.870	8.773
Outliers	7.000	7.000
Extremes	4.00	4.00

#### 3.144.3. Time Series Plots





### 3.145. Station 48-GW3

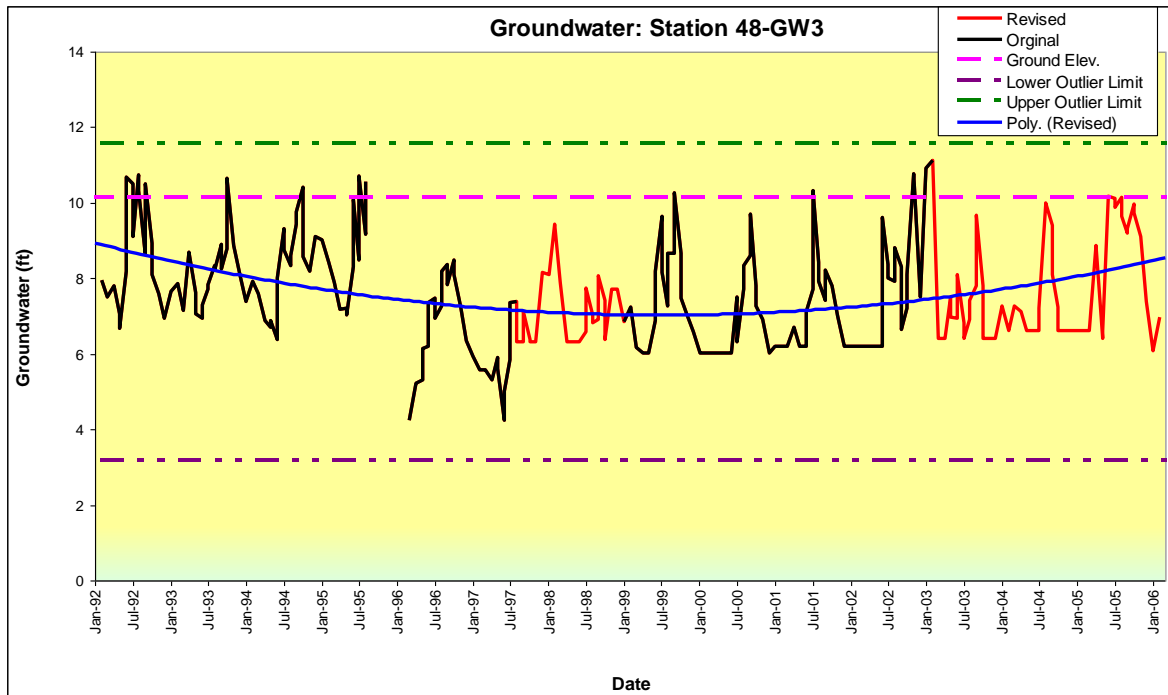
#### 3.145.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
48-GW3	Spring Creek	30' of Int of Old 41 and Cockleshell NE corner of intersection.	26 21.70'	81 47.42'

#### 3.145.2. Descriptive Statistics

	Original	Revised
Mean	7.629	7.591
Standard Deviation	1.439	1.385
Skewness	0.375	0.531
Q3	8.425	8.350
Upper Extreme Point Starting Point	14.718	14.145
Max	11.110	11.110
Upper Outlier Limit Starting Point	11.571	11.247
Median	7.550	7.380
Lower Outlier Limit Starting Point	3.181	3.521
Min	4.230	4.230
Lower Extreme Starting Point	0.035	0.623
Q1	6.328	6.418
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.145.3. Time Series Plots



### 3.146. Station 49-GW1

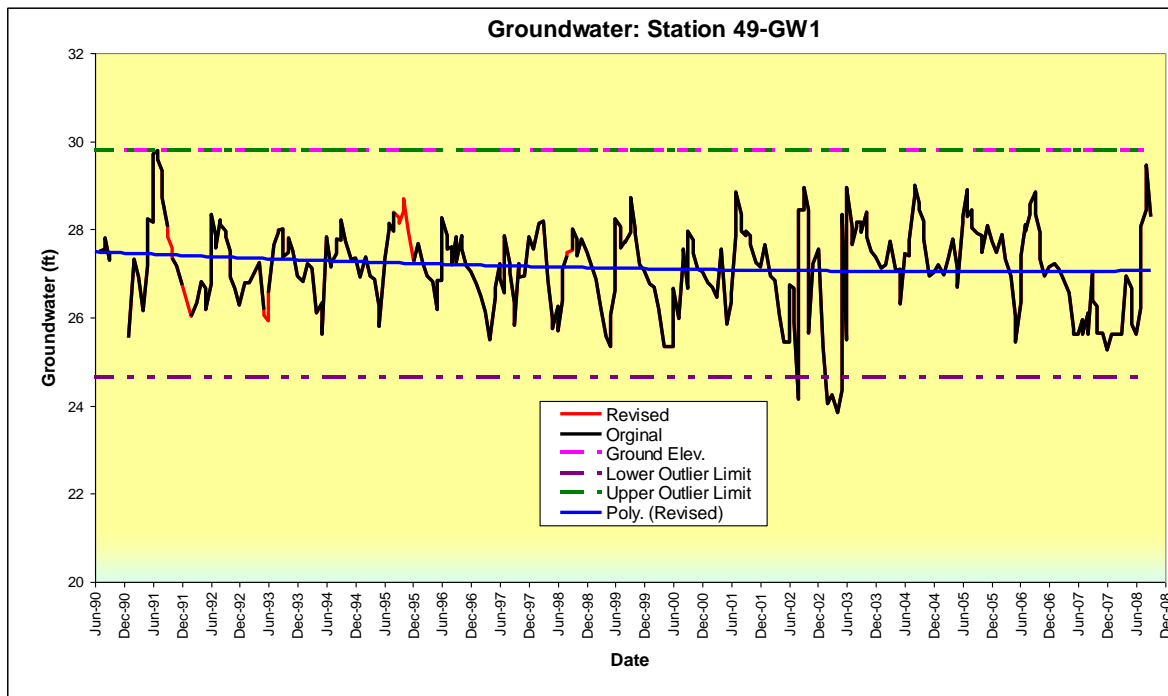
#### 3.146.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
49-GW1	Imperial River	South side SR 82 east of Homestead Rd between double farm entrance.	26 31.88'	81 36.97'

#### 3.146.2. Descriptive Statistics

	Original	Revised
Mean	27.158	27.163
Standard Deviation	1.004	1.002
Skewness	-0.404	-0.407
Q3	27.850	27.850
Upper Extreme Point Starting Point	31.705	31.750
Max	29.800	29.800
Upper Outlier Limit Starting Point	29.778	29.800
Median	27.235	27.240
Lower Outlier Limit Starting Point	24.638	24.600
Min	23.850	23.850
Lower Extreme Starting Point	22.710	22.650
Q1	26.565	26.550
Outliers	6.000	5.000
Extremes	0.00	0.00

#### 3.146.3. Time Series Plots



### 3.147. Station 49-GW2

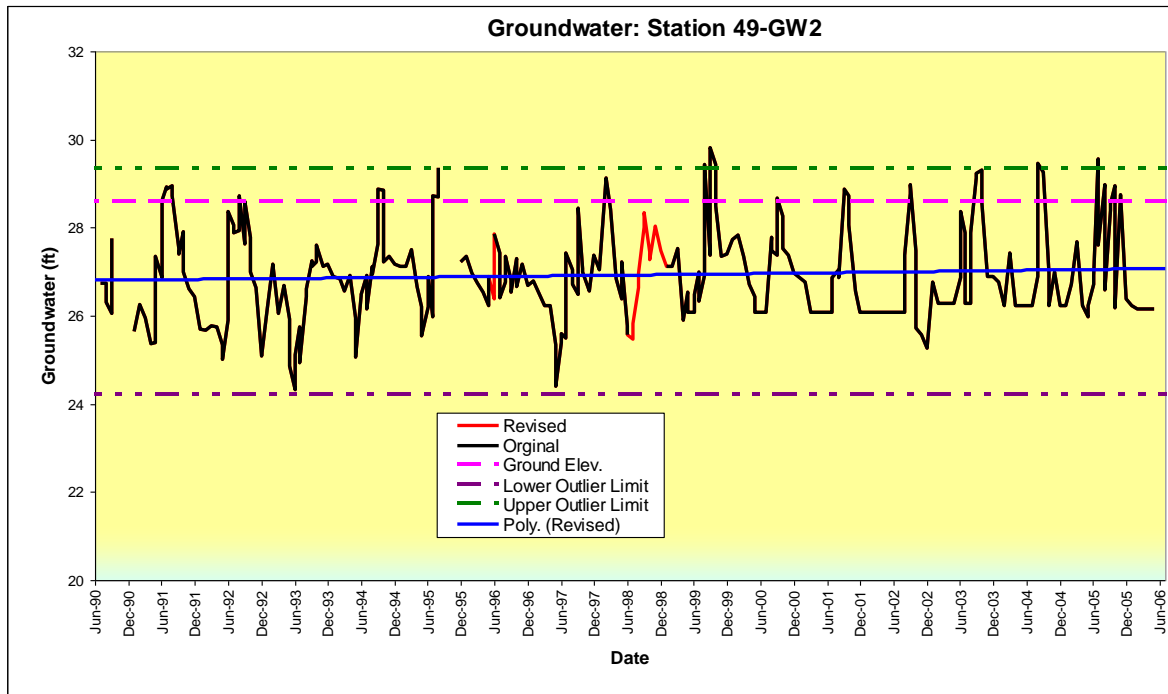
#### 3.147.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
49-GW2	Imperial River	Harper Bros. Property north side of dirt road 0.5 mile east of Green Meadows 1.2 mile north of Alico Rd.	26 30.73'	81 40.20'

#### 3.147.2. Descriptive Statistics

	Original	Revised
Mean	26.923	26.930
Standard Deviation	1.075	1.068
Skewness	0.591	0.564
Q3	27.420	27.449
Upper Extreme Point Starting Point	31.260	31.329
Max	29.820	29.820
Upper Outlier Limit Starting Point	29.340	29.389
Median	26.770	26.770
Lower Outlier Limit Starting Point	24.220	24.215
Min	24.320	24.320
Lower Extreme Starting Point	22.300	22.274
Q1	26.140	26.155
Outliers	6.000	5.000
Extremes	0.00	0.00

#### 3.147.3. Time Series Plots



### 3.148. Station 49-GW3

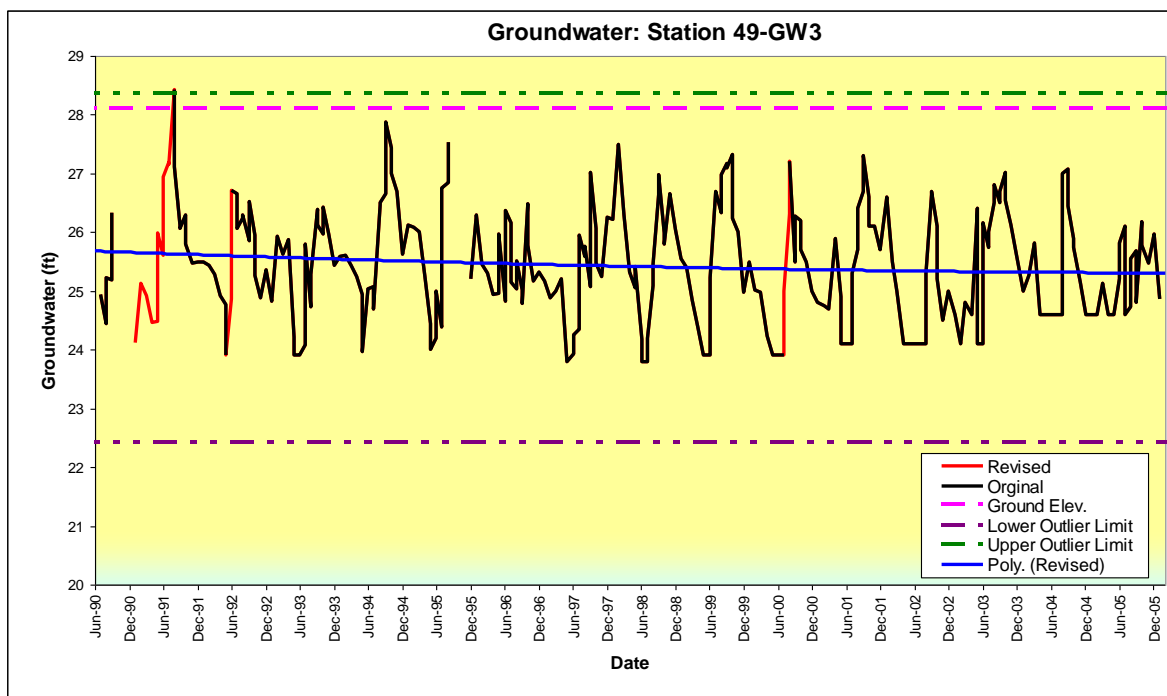
#### 3.148.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
49-GW3	Imperial River	Harper Bros. Property west side of Green Meadows 350'S of Alico Rd.	26 29.52'	81 40.61'

#### 3.148.2. Descriptive Statistics

	Original	Revised
Mean	25.426	25.437
Standard Deviation	0.965	0.967
Skewness	0.226	0.234
Q3	26.130	26.130
Upper Extreme Point Starting Point	30.585	30.435
Max	28.420	28.420
Upper Outlier Limit Starting Point	28.358	28.283
Median	25.390	25.390
Lower Outlier Limit Starting Point	22.418	22.543
Min	23.800	23.800
Lower Extreme Starting Point	20.190	20.390
Q1	24.645	24.695
Outliers	1.000	1.000
Extremes	0.00	0.00

#### 3.148.3. Time Series Plots



### 3.149. Station 49-GW4

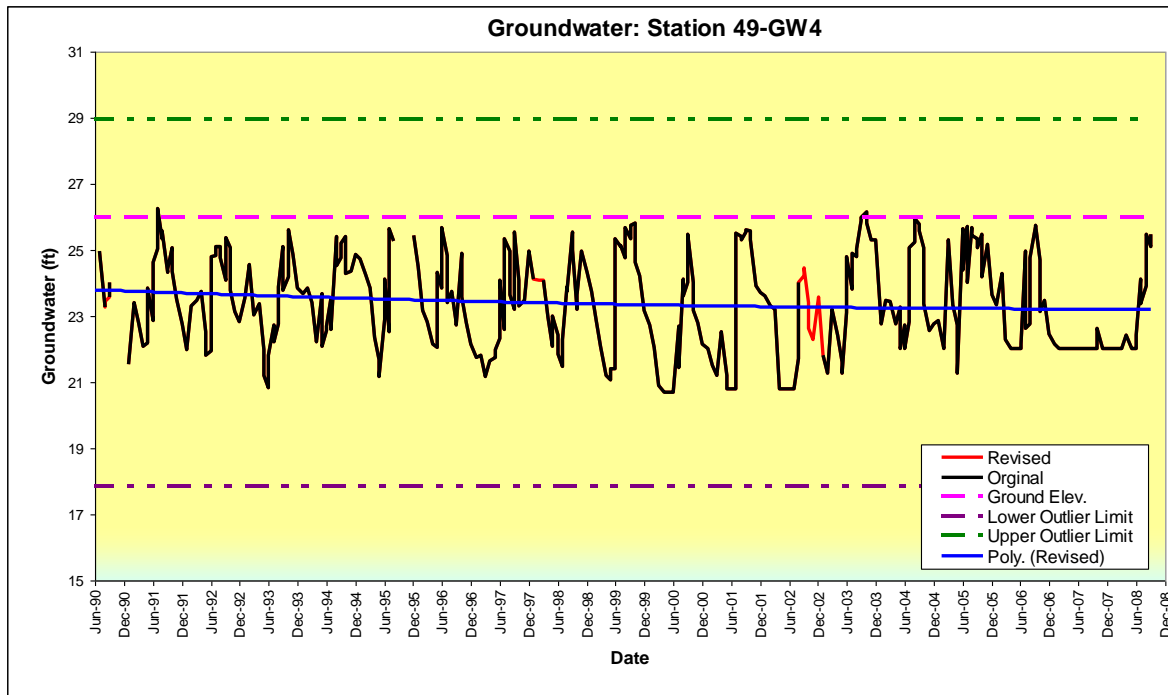
#### 3.149.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
49-GW4	Imperial River	60' South of Mallard Rd 1 mile east of Corkscrew.	26 29.39'	81 42.08'

#### 3.149.2. Descriptive Statistics

	Original	Revised
Mean	23.390	23.393
Standard Deviation	1.481	1.466
Skewness	0.023	0.017
Q3	24.775	24.760
Upper Extreme Point Starting Point	33.070	32.905
Max	26.260	26.260
Upper Outlier Limit Starting Point	28.923	28.833
Median	23.360	23.380
Lower Outlier Limit Starting Point	17.863	17.973
Min	20.710	20.710
Lower Extreme Starting Point	13.715	13.900
Q1	22.010	22.045
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.149.3. Time Series Plots



### 3.150. Station 49-GW5

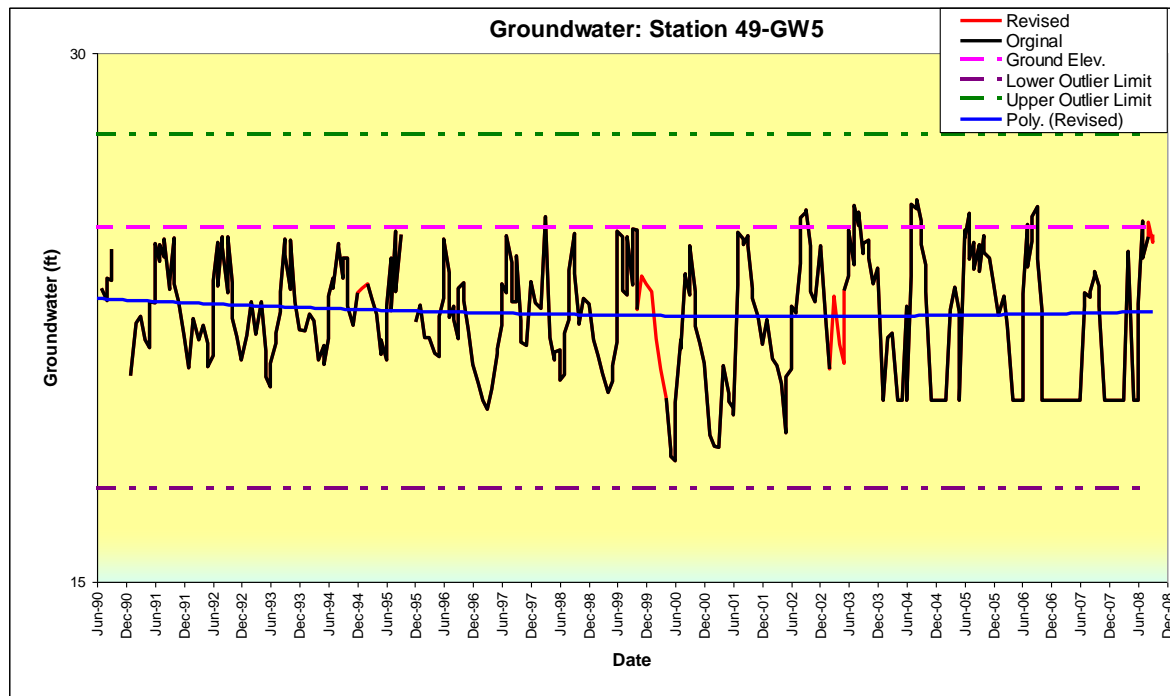
#### 3.150.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
49-GW5	Imperial River	2.5 miles east of Corkscrew / Alico Rd. 500'S of Corkscrew 100' West of Nautilus Group Rd.	26 26.92'	81 39.97'

#### 3.150.2. Descriptive Statistics

	Original	Revised
Mean	22.633	22.651
Standard Deviation	1.680	1.671
Skewness	-0.239	-0.246
Q3	23.920	23.920
Upper Extreme Point Starting Point	31.450	31.420
Max	25.830	25.830
Upper Outlier Limit Starting Point	27.685	27.670
Median	22.830	22.830
Lower Outlier Limit Starting Point	17.645	17.670
Min	18.430	18.430
Lower Extreme Starting Point	13.880	13.920
Q1	21.410	21.420
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.150.3. Time Series Plots



### 3.151. Station 49-GW6

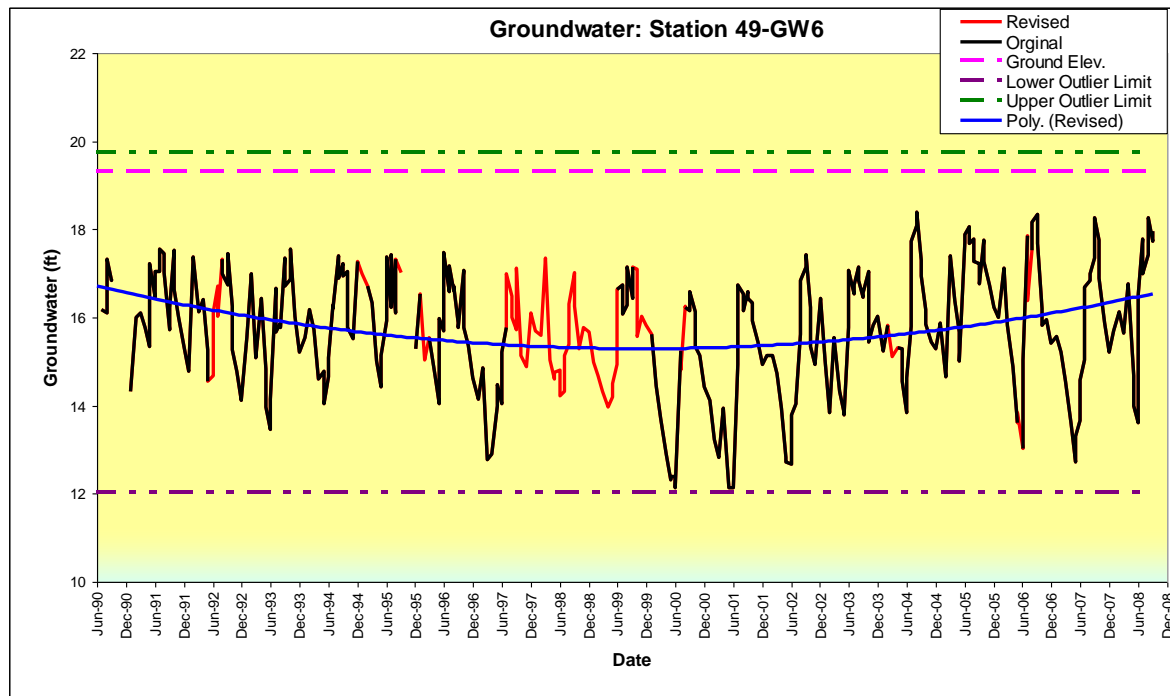
#### 3.151.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
49-GW6	Imperial River	Six L Farm 1.9 miles south of Corkscrew Rd. 2.1 miles west along field 6 by power pole.	26 25.27'	81 41.76'

#### 3.151.2. Descriptive Statistics

	Original	Revised
Mean	15.770	15.729
Standard Deviation	1.420	1.364
Skewness	-0.581	-0.502
Q3	16.853	16.760
Upper Extreme Point Starting Point	22.620	22.413
Max	18.390	18.390
Upper Outlier Limit Starting Point	19.736	19.587
Median	15.940	15.830
Lower Outlier Limit Starting Point	12.046	12.049
Min	12.130	12.130
Lower Extreme Starting Point	9.163	9.222
Q1	14.930	14.876
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.151.3. Time Series Plots



### 3.152. Station 49-GW7

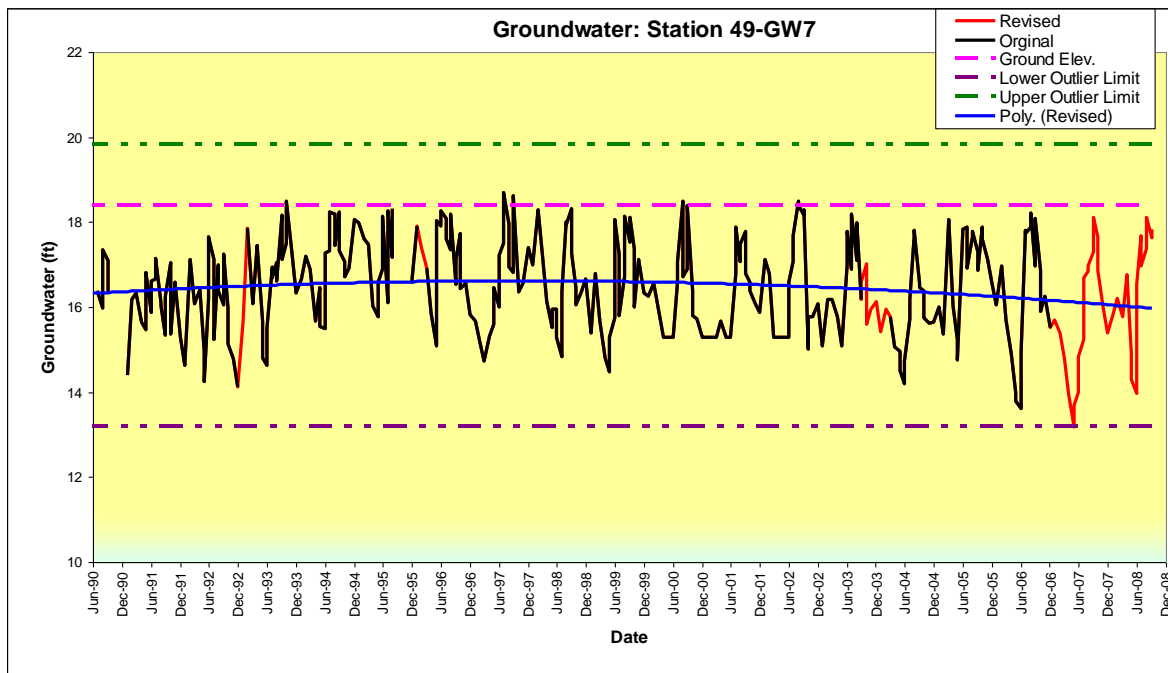
#### 3.152.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
49-GW7	Imperial River	Six L. Farm 1.9 miles south of Corkscrew Rd 1.2 miles east 1.2 miles south along ditch.	26 24.26'	81 40.48'

#### 3.152.2. Descriptive Statistics

	Original	Revised
Mean	16.502	16.444
Standard Deviation	1.105	1.138
Skewness	-0.084	-0.178
Q3	17.325	17.302
Upper Extreme Point Starting Point	22.290	22.280
Max	18.690	18.690
Upper Outlier Limit Starting Point	19.808	19.791
Median	16.540	16.465
Lower Outlier Limit Starting Point	13.188	13.154
Min	13.600	13.187
Lower Extreme Starting Point	10.705	10.665
Q1	15.670	15.643
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.152.3. Time Series Plots





### 3.153. Station 49-GW8

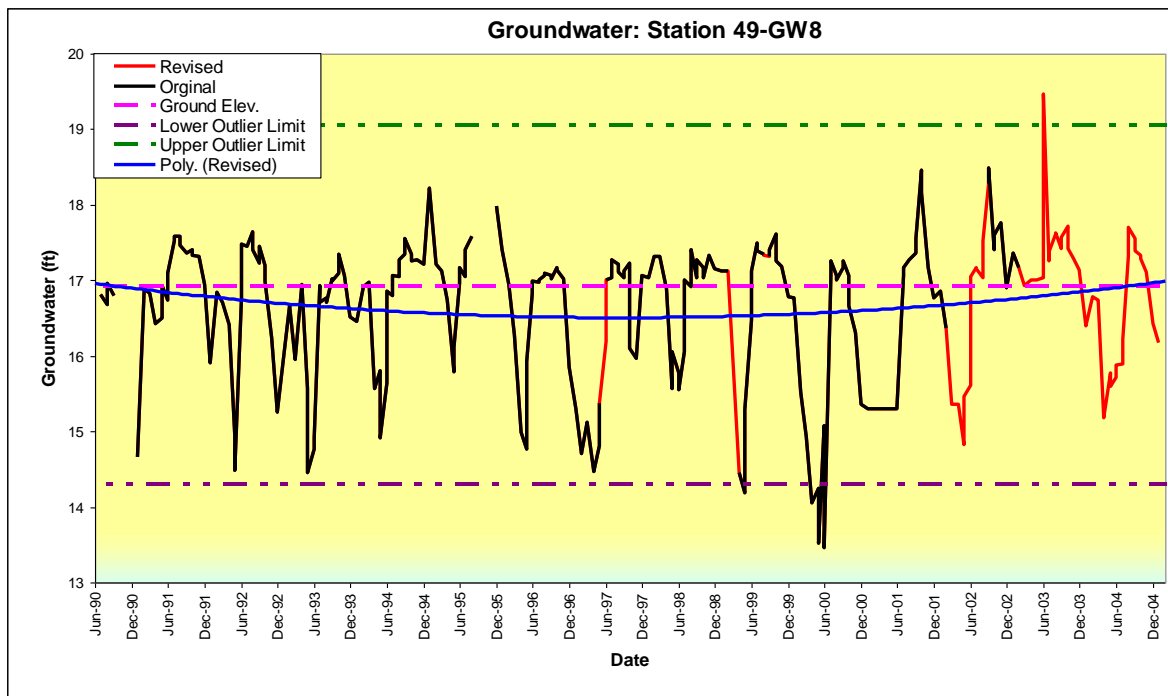
#### 3.153.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
49-GW8	Imperial River	Poor Mans Pass 2 miles north of Bonita Beach Rd 100' North of Sand Rd Int.	26 21.68'	81 40.45'

#### 3.153.2. Descriptive Statistics

	Original	Revised
Mean	16.635	16.656
Standard Deviation	0.985	0.950
Skewness	-0.938	-0.945
Q3	17.260	17.270
Upper Extreme Point Starting Point	20.830	20.810
Max	19.460	19.460
Upper Outlier Limit Starting Point	19.045	19.040
Median	16.995	17.000
Lower Outlier Limit Starting Point	14.285	14.320
Min	13.460	13.460
Lower Extreme Starting Point	12.500	12.550
Q1	16.070	16.090
Outliers	6.000	6.000
Extremes	0.00	0.00

#### 3.153.3. Time Series Plots



### 3.154. Station 49-GW9

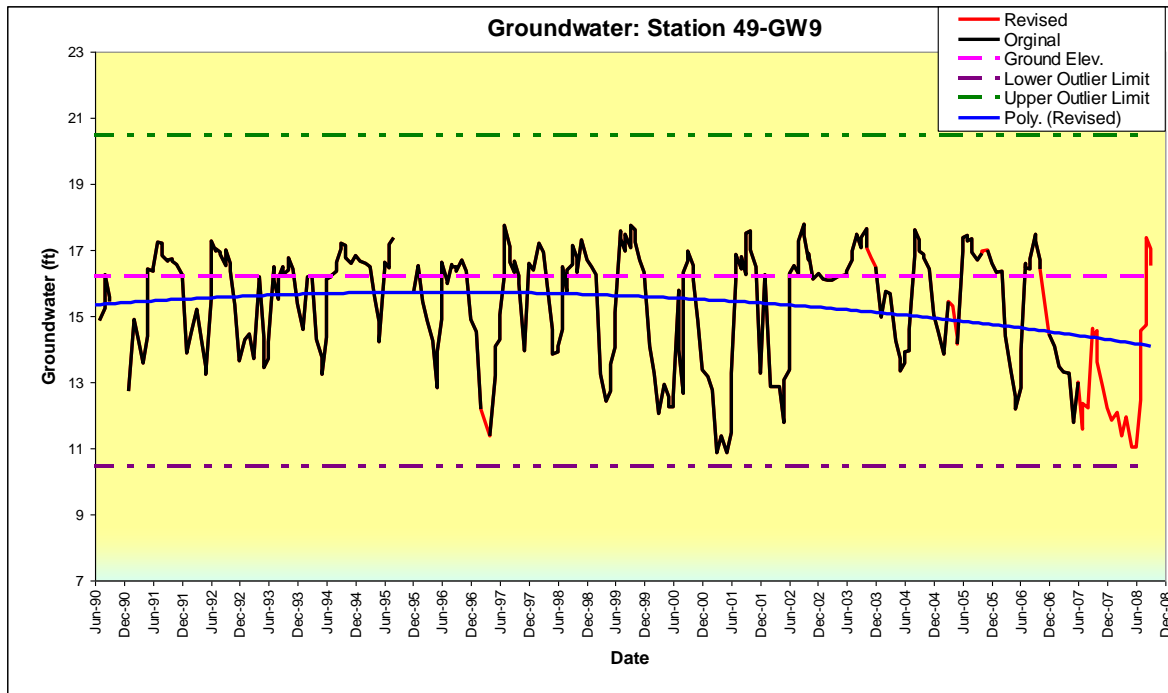
#### 3.154.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
49-GW9	Imperial River	Poor Mans Pass 0.3 mile north of Bonita Beach Rd 30'E of Rd.	26 20.17'	81 40.45'

#### 3.154.2. Descriptive Statistics

	Original	Revised
Mean	15.484	15.301
Standard Deviation	1.661	1.791
Skewness	-0.802	-0.726
Q3	16.700	16.690
Upper Extreme Point Starting Point	24.200	24.925
Max	17.770	17.770
Upper Outlier Limit Starting Point	20.450	20.808
Median	16.240	16.180
Lower Outlier Limit Starting Point	10.450	9.828
Min	10.870	10.870
Lower Extreme Starting Point	6.700	5.710
Q1	14.200	13.945
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.154.3. Time Series Plots



### 3.155. Station 49-GW10

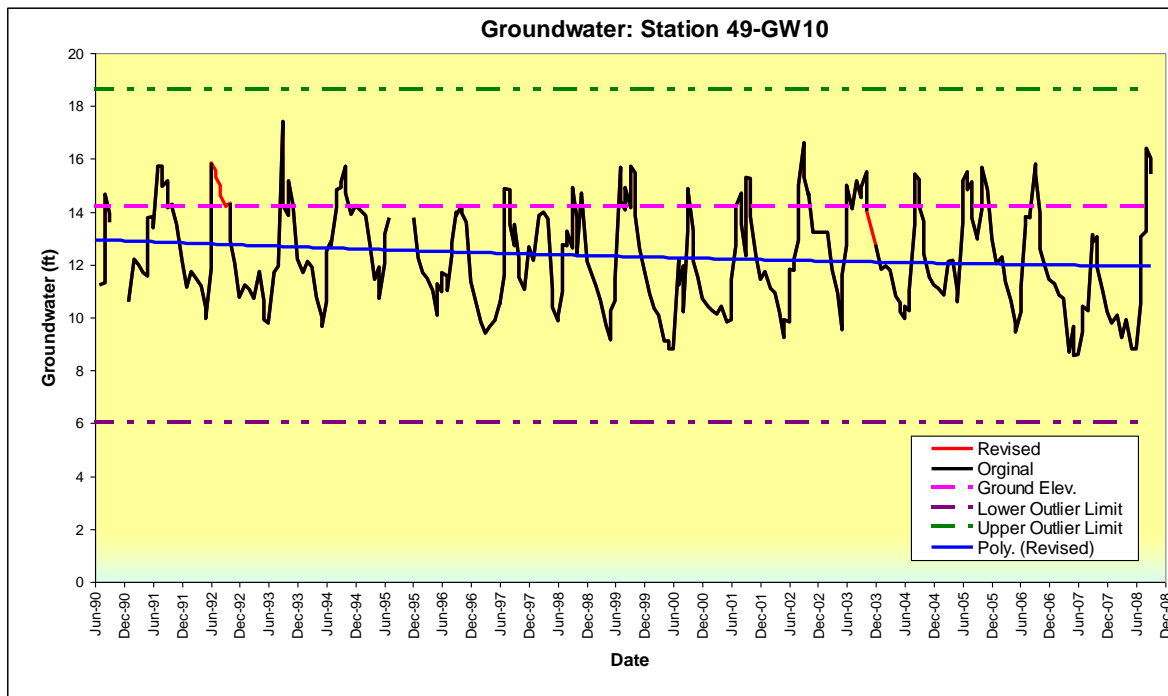
#### 3.155.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
49-GW10	Imperial River	East of I-75 0.3 miles north of Bonita Beach Rd. 250' East of unnamed dirt Rd.	26 20.16'	81 42.37'

#### 3.155.2. Descriptive Statistics

	Original	Revised
Mean	12.297	12.333
Standard Deviation	1.948	1.957
Skewness	0.149	0.123
Q3	13.873	13.920
Upper Extreme Point Starting Point	23.308	23.460
Max	17.420	17.420
Upper Outlier Limit Starting Point	18.590	18.690
Median	12.085	12.110
Lower Outlier Limit Starting Point	6.010	5.970
Min	8.570	8.570
Lower Extreme Starting Point	1.293	1.200
Q1	10.728	10.740
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.155.3. Time Series Plots



### 3.156. Station 49-GW11

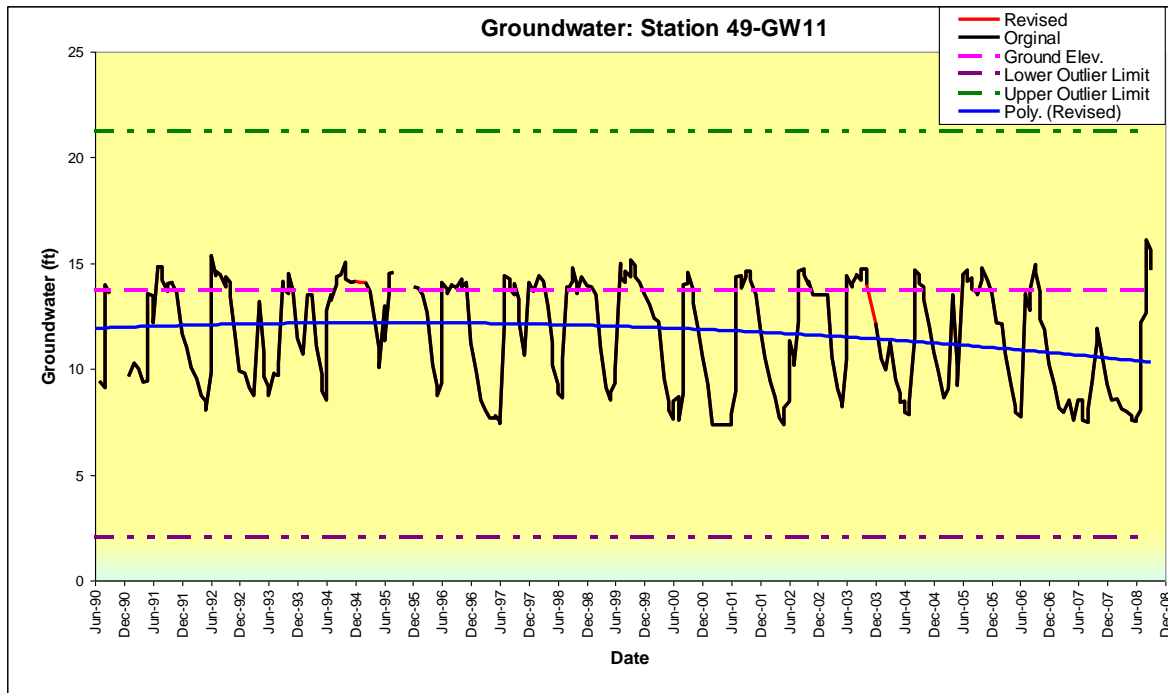
#### 3.156.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
49-GW11	Imperial River	250' East of Bonita Grande Rd 60' North of Growers.	26 20.57'	81 44.32'

#### 3.156.2. Descriptive Statistics

	Original	Revised
Mean	11.677	11.689
Standard Deviation	2.556	2.553
Skewness	-0.290	-0.300
Q3	14.040	14.045
Upper Extreme Point Starting Point	28.470	28.475
Max	16.100	16.100
Upper Outlier Limit Starting Point	21.255	21.260
Median	12.260	12.270
Lower Outlier Limit Starting Point	2.015	2.020
Min	7.360	7.360
Lower Extreme Starting Point	-5.200	-5.195
Q1	9.230	9.235
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.156.3. Time Series Plots



### 3.157. Station 49-GW12

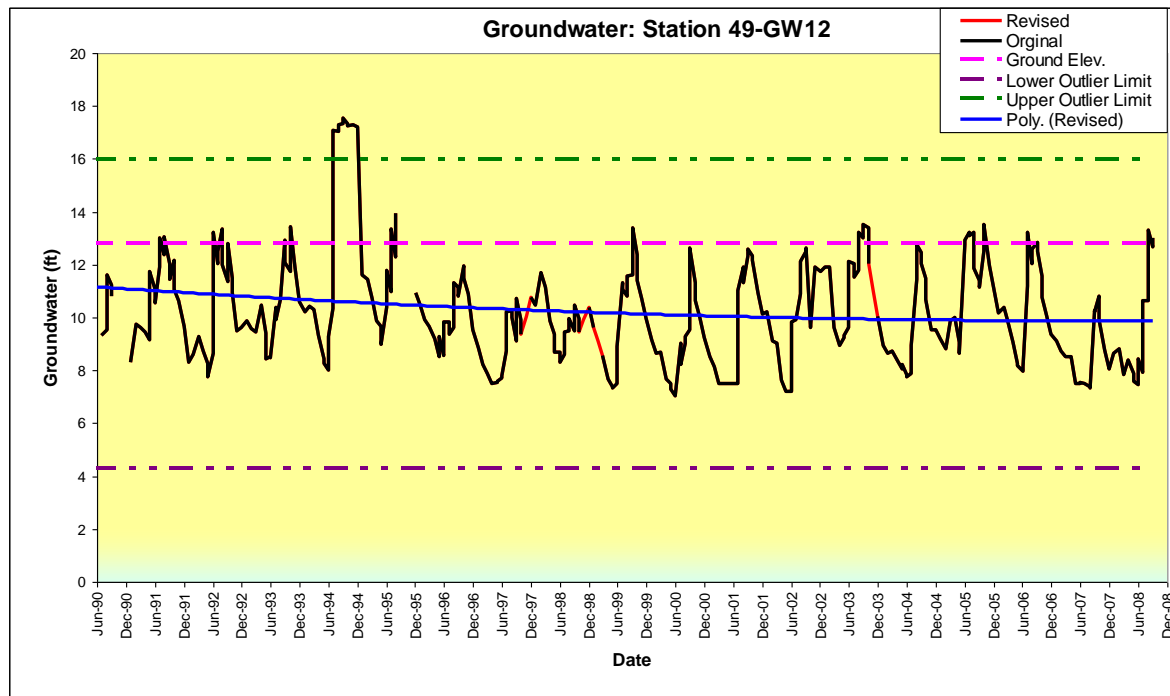
#### 3.157.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
49-GW12	Imperial River	0.7 mile south of Bonita Beach Rd 50' West of Hunters Ridge entrance drive.	26 19.23'	81 44.80'

#### 3.157.2. Descriptive Statistics

	Original	Revised
Mean	10.258	10.255
Standard Deviation	2.090	2.079
Skewness	1.000	1.007
Q3	11.585	11.558
Upper Extreme Point Starting Point	20.353	20.198
Max	17.550	17.550
Upper Outlier Limit Starting Point	15.969	15.878
Median	9.915	9.920
Lower Outlier Limit Starting Point	4.279	4.358
Min	7.020	7.020
Lower Extreme Starting Point	-0.105	0.037
Q1	8.663	8.678
Outliers	9.000	9.000
Extremes	0.00	0.00

#### 3.157.3. Time Series Plots



### 3.158. Station 49-GW13

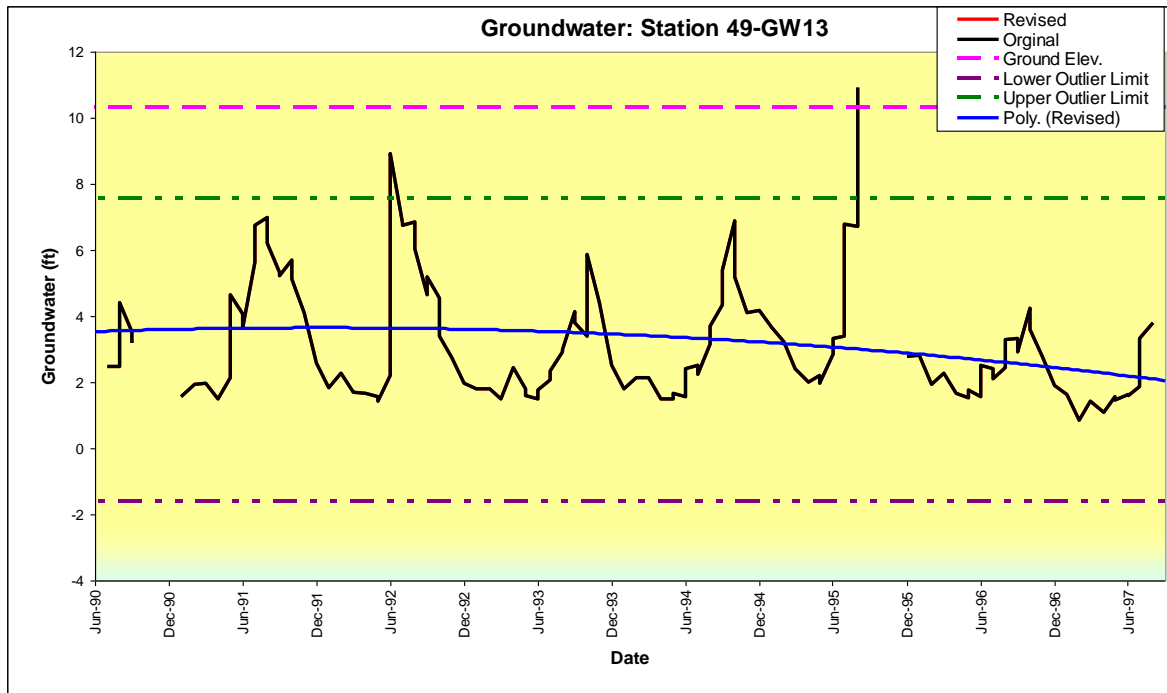
#### 3.158.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
49-GW13	Imperial River	North of Bonita Beach Rd. and East of old 41 off of Dean st.	No data	No data

#### 3.158.2. Descriptive Statistics

	Original	Revised
Mean	3.225	3.225
Standard Deviation	1.817	1.817
Skewness	1.424	1.424
Q3	4.110	4.110
Upper Extreme Point Starting Point	10.980	10.980
Max	10.930	10.930
Upper Outlier Limit Starting Point	7.545	7.545
Median	2.520	2.520
Lower Outlier Limit Starting Point	-1.615	-1.615
Min	0.840	0.840
Lower Extreme Starting Point	-5.050	-5.050
Q1	1.820	1.820
Outliers	2.000	2.000
Extremes	0.00	0.00

#### 3.158.3. Time Series Plots



### 3.159. Station 49-GW14

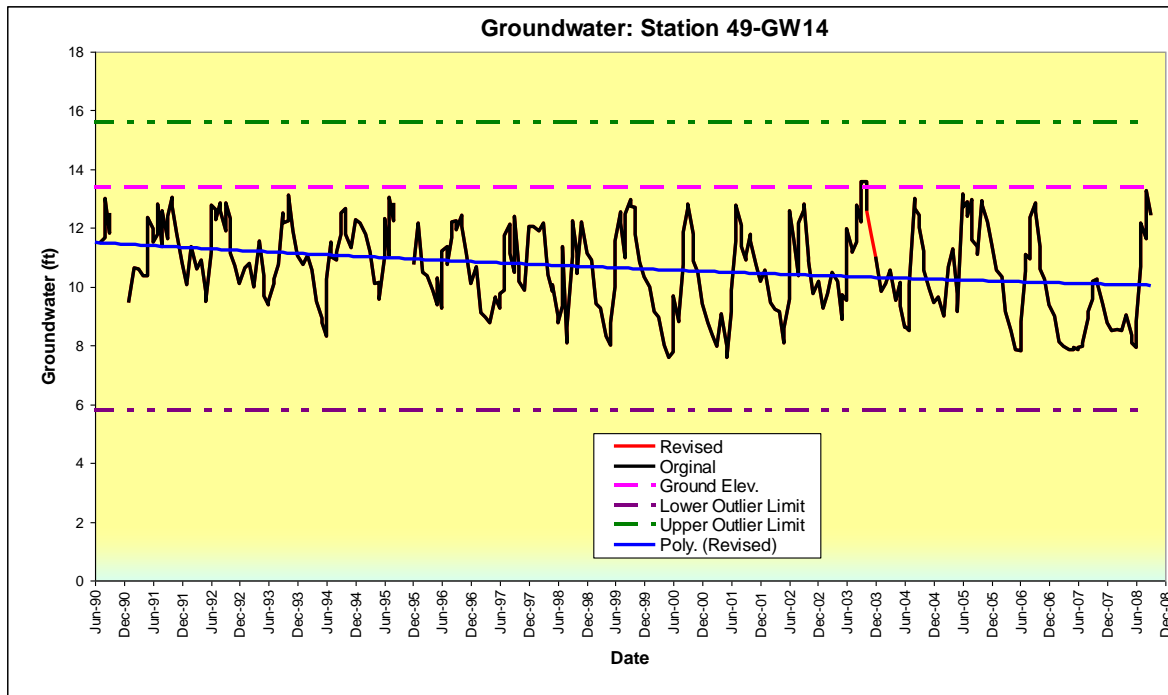
#### 3.159.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
49-GW14	Imperial River	40' North of Shangrila Rd 0.5 Mile east of US 41.	26 21.62'	81 46.80'

#### 3.159.2. Descriptive Statistics

	Original	Revised
Mean	10.654	10.658
Standard Deviation	1.502	1.501
Skewness	-0.183	-0.189
Q3	11.930	11.920
Upper Extreme Point Starting Point	19.295	19.248
Max	13.570	13.570
Upper Outlier Limit Starting Point	15.613	15.584
Median	10.750	10.755
Lower Outlier Limit Starting Point	5.793	5.814
Min	7.570	7.570
Lower Extreme Starting Point	2.110	2.150
Q1	9.475	9.478
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.159.3. Time Series Plots



### 3.160. Station 49-GW15

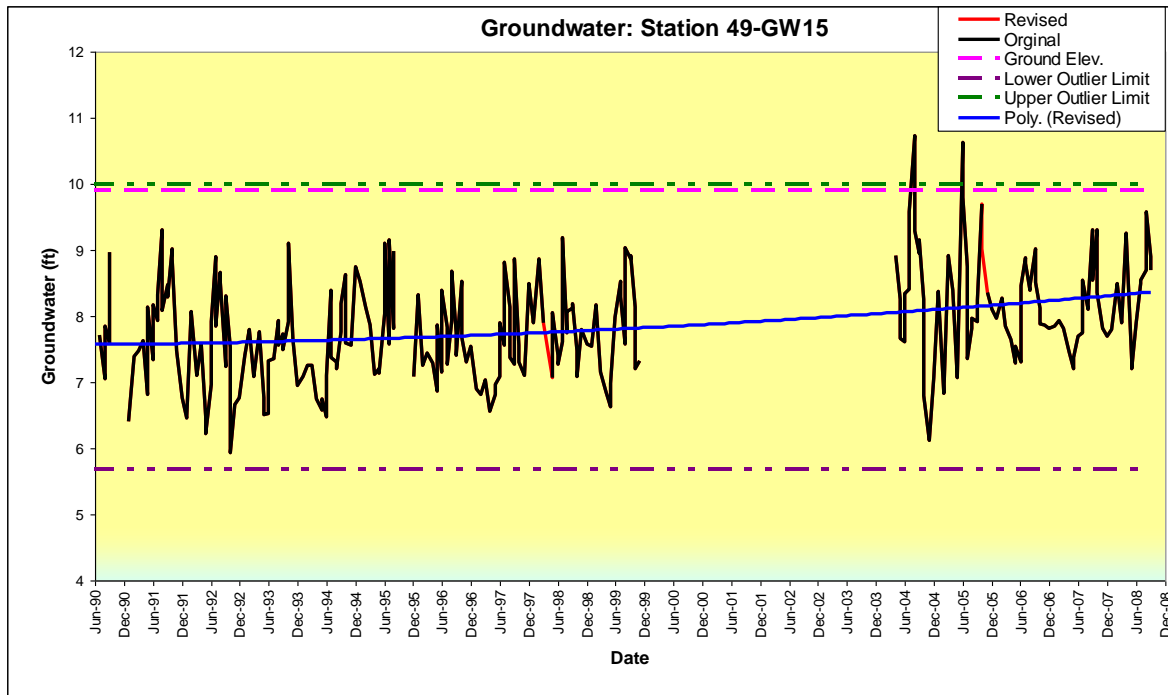
#### 3.160.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
49-GW15	Imperial River	At the end of cul-de-sac on Tamara Ct.	No data	No data

#### 3.160.2. Descriptive Statistics

	Original	Revised
Mean	7.848	7.852
Standard Deviation	0.794	0.795
Skewness	0.473	0.468
Q3	8.368	8.375
Upper Extreme Point Starting Point	11.600	11.630
Max	10.730	10.730
Upper Outlier Limit Starting Point	9.984	10.003
Median	7.815	7.815
Lower Outlier Limit Starting Point	5.674	5.663
Min	5.940	5.940
Lower Extreme Starting Point	4.058	4.035
Q1	7.290	7.290
Outliers	2.000	2.000
Extremes	0.00	0.00

#### 3.160.3. Time Series Plots





### 3.161. Station 49L-GW1

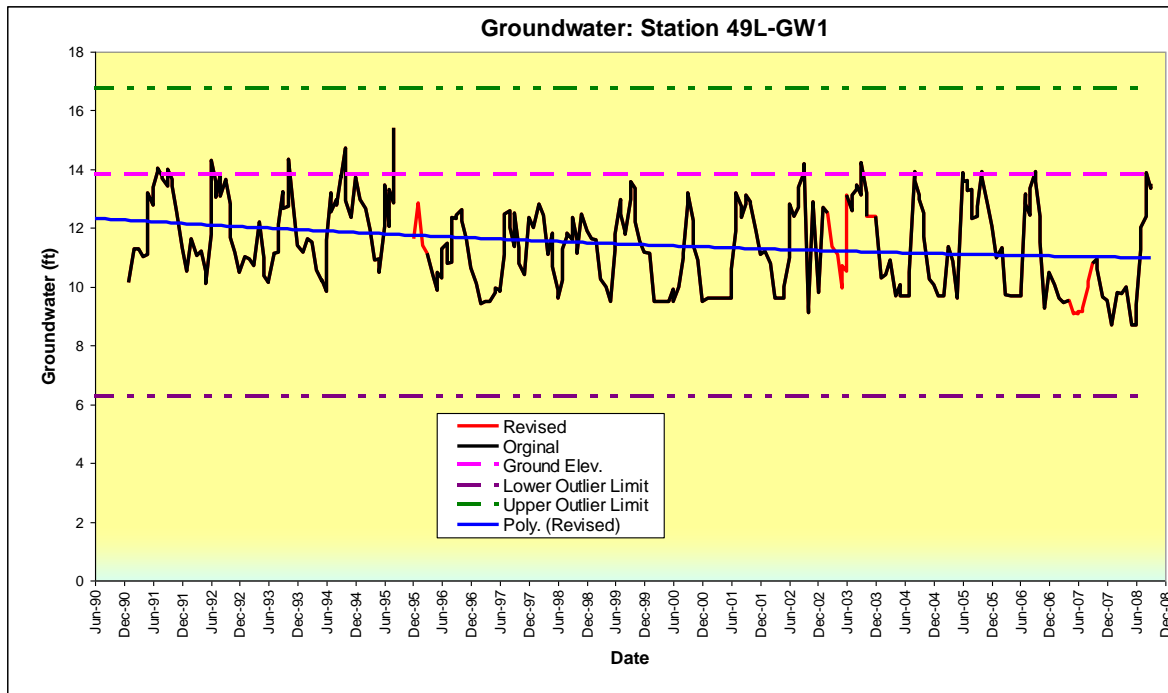
#### 3.161.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
49L-GW1	Leitner Creek	200' South of Int. Tower Rd & Morton Ave outside fence.	26 21.25'	81 45.05'

#### 3.161.2. Descriptive Statistics

	Original	Revised
Mean	11.548	11.486
Standard Deviation	1.478	1.486
Skewness	0.074	0.103
Q3	12.800	12.775
Upper Extreme Point Starting Point	20.645	20.800
Max	15.410	15.410
Upper Outlier Limit Starting Point	16.723	16.788
Median	11.495	11.370
Lower Outlier Limit Starting Point	6.263	6.088
Min	8.700	8.700
Lower Extreme Starting Point	2.340	2.075
Q1	10.185	10.100
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.161.3. Time Series Plots



### 3.162. Station 49L-GW2

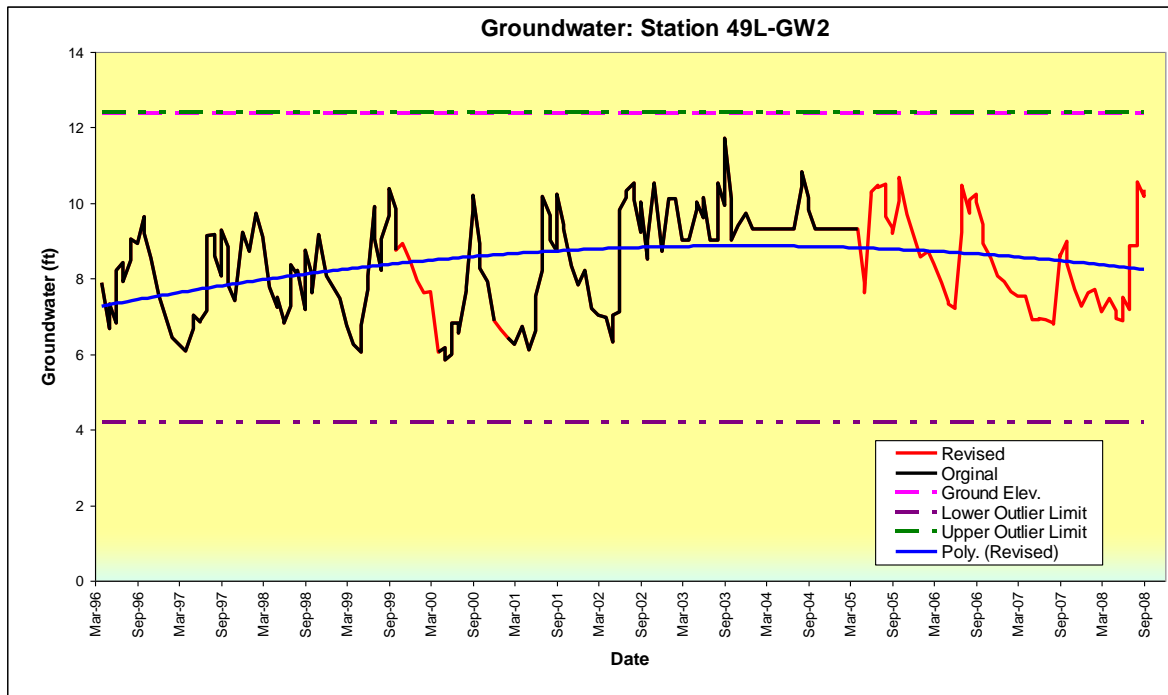
#### 3.162.1. Station Description

Well ID	Watershed Name	Location	Latitude	Longitude
49L-GW2	Leitner Creek	Piva Ct (north of East Terry St.) cul-de-sac.	No data	No data

#### 3.162.2. Descriptive Statistics

	Original	Revised
Mean	8.456	8.446
Standard Deviation	1.314	1.292
Skewness	-0.220	-0.061
Q3	9.320	9.320
Upper Extreme Point Starting Point	15.470	15.330
Max	11.720	11.720
Upper Outlier Limit Starting Point	12.395	12.325
Median	8.740	8.565
Lower Outlier Limit Starting Point	4.195	4.311
Min	5.840	5.840
Lower Extreme Starting Point	1.120	1.306
Q1	7.270	7.317
Outliers	0.000	0.000
Extremes	0.00	0.00

#### 3.162.3. Time Series Plots



## **4. RAINFALL AND STAGE DATA FORMATING**

### **4.0. Overview**

The data reformatting effort covered rainfall data for 18 locations and stage data for 7 locations as described in Table 4.1. The period covered for each location varies widely. Data collection started at some locations as early as 1991. Data collection continues today at all locations. The converted data includes rainfall data thru early July 2009 at all locations and stage data thru October 2008 for most locations. Data collection at each location was not always continuous due to equipment or other failures. Additionally, there are some gaps in the data introduced by procedures used to handle the data.

The target of the reformatting of rainfall and stage data was to have a database that can be easily queried and analyzed with modern database tools and methods. Microsoft Access program code was developed to convert the bulk of the data supplied in spreadsheet format and store it in the database. Procedures have been established to review the conversion results and resolve exceptions that are not handled by the code.

As part of this effort, queries were created to summarize data into daily and monthly totals. The number of records included in each total has been counted to help identify days or months where log coverage is not complete.

### **4.1. Conversion Process**

In general, data has been downloaded from recording devices at each site, then imported by manual operation into spreadsheets and formatted into worksheets, each containing one month of data. The formats vary according to the output generated by the recording devices and also from

the vagaries of the operators and methods employed when importing and formatting the data. This collection of spreadsheet files is the source of the data included in the conversion effort. A fairly simple database table structure was created in Microsoft Access 2003 to store both the rainfall and stage data at all locations. Using a single table helps ensure consistency in the data and simplifies the construction of queries that extract data for analysis. Other tables were added to help with the management of the conversion process and quality control.

The different formats were reviewed and routines were developed in Visual Basic for each general format to read the data in the spreadsheet and store the data in the database. As the conversion effort progressed, these routines were enhanced to handle as many of the variations in each format as practical. Many individually unique situations were introduced by the manual process of formatting the data into worksheets. Rather than attempt to deal with each of these special situations in the conversion routine, the spreadsheet data was modified or corrected as needed so the conversion routine would produce the proper results in the database. After making these modifications, the conversion routine was executed again, replacing the results of the previous execution. Fixing an error uncovered other errors; the conversion routine was run iteratively until either no problem was detected or as much data was recovered as possible.

In few cases, data in a spreadsheet source file was formatted very similar to another format, but varied only in the column where the data was found. Rather than create another reformatting routine, the columns in the source spreadsheet were swapped so that the data could be processed the same as the other more common format. An Excel macro

was recorded for the swap operation and used to apply the same swap to all the worksheets in the workbook.

To avoid the effort of creating program code to determine the format of the data, the content of each source file was manually reviewed and the data was segregated by format into separate files. The format type for each of these "single format" files was entered into the table. When a file was submitted for conversion, the format was determined from the table and the data was fed to the appropriate conversion routine.

Table 4.1: Period of Coverage by Rainfall and Stage Stations

<b>Location</b>	<b>Earliest Record</b>	<b>Latest Record</b>	<b>Data Type</b>
10 Mile Canal	01/01/2003	07/10/2009	Rainfall
Alva Fire	11/21/1997	07/10/2009	Rainfall
Bonita Springs	09/04/1991	07/10/2009	Rainfall
Burnt Store	10/01/2005	07/10/2009	Rainfall
Cecil Webb	02/01/1992	07/10/2009	Rainfall
Cork Screw	11/06/1997	07/10/2009	Rainfall
Fort Myers Beach	09/01/2000	07/06/2009	Rainfall
Gateway	06/07/2000	07/10/2009	Rainfall
Hendry	04/27/1998	07/10/2009	Rainfall
Lakes Fairways	09/04/1991	07/10/2009	Rainfall
Lakes Park	09/01/1994	07/07/2009	Rainfall
Lehigh Utilities	02/01/1992	07/10/2009	Rainfall
Lovers Key	08/11/2004	07/10/2009	Rainfall
North Reservoir	02/01/1992	07/10/2009	Rainfall
Olga Water Plant	05/09/1996	07/10/2009	Rainfall
Page Field	02/01/1992	07/10/2009	Rainfall
Waste to Energy Plant	10/06/1997	07/10/2009	Rainfall
Yellow Fever	10/16/1998	07/10/2009	Rainfall
10 Mile Canal	07/01/1996	10/01/2008	Water Level
Hendry Creek	10/01/1996	10/01/2008	Water Level
Mullock Creek	10/07/1998	07/31/2008	Water Level
Popash Creek @ Nalle Grade	05/09/2000	09/30/2008	Water Level
Popash Creek @ Pritchett Pkwy	10/08/1998	10/02/2008	Water Level
Powell Creek	10/17/1996	10/01/2008	Water Level
Telegraph Creek	11/04/2000	10/01/2008	Water Level

## **4.2. Source Formats**

Rainfall data was collected by three types of devices with very different output formats. The earliest data was collected by a device that logged each "tip" of accumulator. No name could be determined for that type of device, so the format is generically identified as the "rain gauge" format. In the mid-1990s, these devices were replaced by Stevens Axsys data loggers as the old devices failed. These devices were in turn replaced by Campbell CR500 series devices starting in the late 1990s. Three separate subroutines were created to convert these rainfall formats.

Stage data has been extensively manipulated and has the widest variety of formats. Some is similar to the Axsys format used for the rainfall, but most data has been tabulated into timestamp-value pairs. The positions and formats of the timestamp and value columns vary, but generally, except for the Axsys format, these stage data formats have a separate row for each timestamp-value pair. Four subroutines were created to convert the stage data.

The following paragraphs describe the assumptions made when reading each format.

### **4.2.1. "Tipping" rain gauge**

A log record is generated when 100<sup>th</sup> of an inch of rainfall has accumulated. Rainfall is deemed to have occurred during the period when the log record was generated, even if part of the accumulation occurred in prior periods. The timestamp marks the start of the minute in which the log record was generated. For example a log record generated at 15:18:47 will have a timestamp of 15:18. Log records with timestamps that coincide with a 15-minute boundary are included in the following 15-

minute period. For example, rainfall logged with a timestamp of 10:15 will be included in the period ending at 10:30. Log records have been arranged into blocks of serpentine columns. Each block may have a varying number of rows and columns. Sometimes blocks are separated with a blank line. If not, the block boundary is determined by jumps in dates, timestamps or accumulator values.

#### **4.2.2. Stevens Axsys**

Timestamps are inserted into the log at least daily at midnight, and also at other times when the logger is accessed for maintenance (correcting the time or resetting the accumulator). Typically, data is collected in 15-minute intervals, resulting in blocks of numbers arranged in 16 rows by 6 columns representing the data for a single day. There are some logs that were generated on a 5-minute or 30 minute interval.

The first number in the block is the current accumulator reading at the first interval boundary following the timestamp. If the timestamp coincides with an boundary, then that is the time assigned to the first number in the block. Each successive value (read left to right and then down) represents the accumulator reading at the end of the next interval boundary. The interval boundaries are determined from the time of day, not the timestamp. For example, if the timestamp is 15:24 and the interval is 15 minutes, the first value is the reading at 15:30, NOT 15:39 (15 minutes after 15:24). Rainfall during a period is determined as the differences in the accumulator values at the period boundaries.

For purposes of calculating rainfall, the first reading in a workbook (the .XLS file where this data has originated) is assumed to have zero rainfall. If the accumulator has been reset during a period, the rainfall for the

period is assumed to be zero. Rainfall can not be negative. If the accumulator value decreases, zero rainfall is calculated. Subsequent increases in the accumulator are recorded as rainfall.

#### **4.2.3. Campbell CR500**

Log records are generated at a set interval, with a separate record for each reading. The timestamp is provided for each reading in a combination of columns that separately store the year, month & day, and time of day. The value associated is the rainfall for the period ending at the time specified by the timestamp, not an accumulator reading. The date information as supplied had numerous issues, see "Campbell Date Conversions" later in this section.

A variation of this format included the rain data in column F instead column E. Only a couple of files had this format, so they were converted to the standard Campbell format by swapping columns E and F.

#### **4.2.4. Stage Axsys**

This is a format similar to the Stevens Axsys format with the data in blocks with six columns, however, the data has undergone additional manual formatting, requiring a different conversion subroutine. The date has been supplied as a 6-digit number found in column A. Data starts in column B. Year is inferred from the columns for hundred-thousands and ten-thousands. For example 990424 is 4/21/1999. The year is implied if those digits are not present: 1024 is 10/24/2000, and 11024 is 10/24/2001. No interval value has been supplied, so a 15-minute interval has been assumed. All other comments from the logger appear to have been removed. The value is the gauge reading at the time indicated by the timestamp.



#### **4.2.5. *ColumnB, ColumnH, ColumnI***

These formats are essentially variations of the Campbell format, with the value of the gauge reading found in the column indicated by the format title. For example, the gauge reading is found in Column H for stage data in the "ColumnH" format. Date information as supplied for stage had already been edited and stored as a single column. These dates have been accepted at face value and no effort has been made to resolve any of the previous date conversion issues that were exhibited in the Campbell CR500 format rainfall data.

#### **4.2.6. *Column C, Column F***

A few rain data files already had date and time consolidated into one column. These two formats differed only in that one had rain data in column C and the other had rain data in column F. The column F formats were converted to column C formats by moving column F to the left of column C, becoming the new column C.

### **4.3. Conversion Routines**

A conversion routine was coded for each major format type. An attempt was made to handle most of the common variations that occurred in the format and to flag data that was not handled or did not appear to follow the normal pattern found in the data. The routines were designed to be run iteratively. Exceptions could be handled either by fixing the source data manually or by enhancing the conversion routine and re-running the conversion. The decision to fix code or data was driven mostly by the quantity of occurrences and level of effort to enhance the code, and guessing which would be quicker.

A couple of Access macros were created to start the conversion routines. Both bring up a file selection dialog. The spreadsheet file(s) are highlighted, and when the OK button is clicked, the list is processed. One macro is called "SetupFiles", which, for each file, creates a record in the DataFileControl table and runs an Access form "GetFileData" so the format and type of data for that file can be specified. The other macro is "LoadData", which will convert the files in the selected list. If a control record for the file does not exist, one will be created and the GetFileData form is presented to collect setup information. Otherwise, it will process the files without further user intervention. The macros and conversion routines were created only to perform the conversions required in the context of this project and are not intended to be used to convert any additional log data.

#### **4.4. Quality Control**

Patterns exist in log data that make it possible to detect issues in the data. For example, accumulators should increase over time. In the "rain gauge" format, accumulators should increment by .01 inch. Value columns should contain numeric data. To a limited extent, the conversion routine can identify problems when an unexpected condition occurs. When that happens, a load error is logged in the DataLoadErrors table and the cell or row in the spreadsheet where the issue was detected will be highlighted and commented with the same message sent to DataLoadErrors. The table works as a checklist that identifies where the error can be found (file, worksheet, row and column), and the spreadsheet provides that context in which the error occurred. The error log, comments, and highlight are removed as the beginning of each file conversion, so any log records, comments, or highlights that exist are the result of the most recent conversion attempt.

Sometimes, a problem has been addressed by modifying the spreadsheet file. To facilitate a review of these changes, the workbook has been “shared” and set to keep change history for 9999 days (a little over 27 years). To view the changes, use change tracking to highlight the changes. The highlights must be enabled each time the spreadsheet is opened. Other problems can be detected after conversion using some rudimentary review and statistical analysis. For example, one 15-minute period showed 503 inches of rain. This jumped right out when monthly totals were plotted. Also, maximum and minimum values for timestamps were compiled for each file, and several dates were found to be well outside the expected range for the file.

#### **4.5. Major Issues**

Two major issues came up during the conversion. Both are procedural issues, one with the operation of the logging devices and the other with the handling of the data after it has been downloaded.

##### ***4.5.1. Campbell Date Conversions***

Data downloaded from the Campbell devices identify the date with two fields: year and day number. The day number has been imported as a date, and in conjunction with the either of the two date systems in Excel, this day number gets interpreted as if it occurred during a leap year, usually resulting in the appearance February 29<sup>th</sup>. Evidence in the spreadsheets indicates efforts (by those who were originally putting the data into the spreadsheets) to work around this issue were many and varied, and unsuccessful. It appears that some of the workarounds may have resulted the loss of data (usually a whole day) for days occurring near month boundaries. During the conversion to the Access database, a considerable amount of effort was expended to determine the original day

number supplied by the logging device and use that with the year to formulate the correct date. (That formula in Excel is DATE( <year>, 1, <daynumber> ). For example, DATE( 2005, 1, 60 ) returns the date 3/1/2005, DATE( 2004, 1, 60 ) returns the date 2/29/2004. )

#### ***4.5.2. Daylight Savings Time***

There is an operational procedure that calls for changing the clocks on the logging devices between Daylight Savings Time and Standard Time. The time shifts cause a gap in timestamps in the spring and an overlap in the fall. The overlaps are generally an hour, with a sequence of 4 records (sometimes 3 or 5) where the timestamps are the same as the previous records, but the measured values are different. Data integrity constraints specified in the database prevent duplicate entries in time stamps for a given location, so there is log data from the overlap that was not added to the database because a record with the same timestamp already existed. The overlaps occur mostly in late October and early November which is consistent the time change and a process where the clocks on the loggers are adjusted manually. Occasionally, there is other data present that indicates an interaction with the logging device, such as an accumulator reset, a notation made by the logging device, or a reset in a generated data ID number. (A lot of these indications have been edited out of the spreadsheets.). The gaps are harder to locate since they get lost among the other gaps that occur because of device malfunctions and some data handling issues.

Ideally, the blocks of data recorded when the device clock was set to Daylight Savings Time should be rolled back an hour to remove the gap and overlap and keep the time stamps in the same time system. The clock changes were done manually and at various times following the

official time change. A review of the data would be needed to determine the start and end of each of these blocks, for each location, for each year. Data that was prevented from being added during the initial conversion would need to be recovered from the spreadsheet and entered manually. For the earliest rain gauge format where timestamps are generated only during rainfall events, it is not likely that one can determine when the time shift occurred. Due to the magnitude of the effort and the minimal impact on daily and monthly totals or averages, the gap and overlap issue remains unresolved.

Time adjustments can cause similar problems if the change is larger than desired recording interval. The clocks should be monitored frequently enough to keep time adjustments down to a minute or two, and the timing of the adjustments should be made so that the adjustment does not cross an interval boundary, causing an overlap or gap in the timestamps recorded. Devices with clocks that do not keep accurate time should be fixed or replaced.

## **5. STAGE DATA QA/QC ANALYSIS SUMMARY**

### **5.0 Overview**

Summary of the stage data QA/QC findings for each station showing the location of the station, descriptive statistics of the original and revised data, identified outliers and extreme values are provided below. The graphical plots show the original time series data, revised time series data, trend line, lower outlier limit and upper outlier limits. The Box-plots that summarize the descriptive statistics are included in Appendix A. As for groundwater, the final single time series data for stage data are also included in Appendix A. The uniformly averaged 15-minute interval stage original data for each station are given in Appendix B.

## 5.1 Station Ten Mile Canal

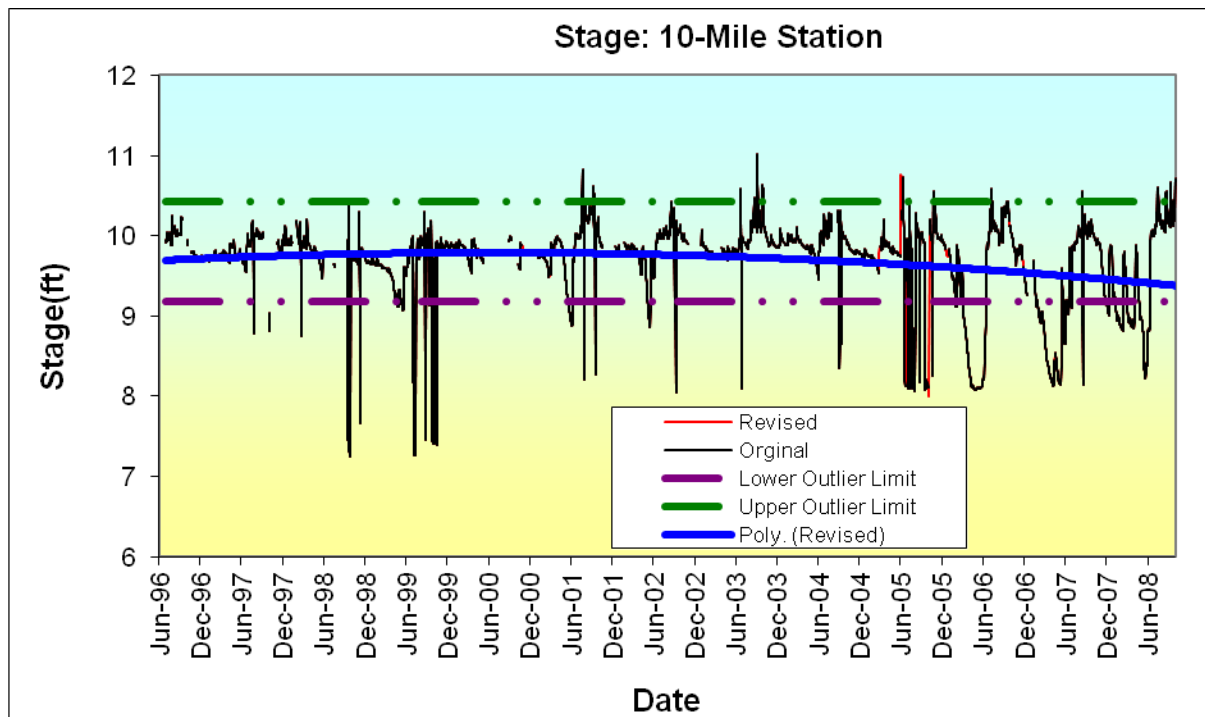
### 5.1.1 Station Description

Recorder	Location	Section	Township	Range	Latitude	Longitude
Ten Mile Canal	North side of Daniels between Metro and 41. 200 ft. North of the Daniels Parkway weir.	24	45	24	26 32.83'	81 51.31'

### 5.1.2 Descriptive Statistics

	Original	Revised
Mean	9.675	9.676
Standard Deviation	0.526	0.528
Skewness	-1.866	-1.848
Q3	9.960	9.960
Upper Extreme Point Starting Point	10.890	10.890
Max	11.020	11.020
Upper Outlier Limit Starting Point	10.425	10.425
Median	9.830	9.830
Lower Outlier Limit Starting Point	9.185	9.185
Min	7.250	7.250
Lower Extreme Starting Point	8.720	8.720
Q1	9.650	9.650
Outliers	324.000	330.000
Extremes	276.00	281.00

### 5.1.3 Time Series Plots



## 5.2 Station Hendry Creek

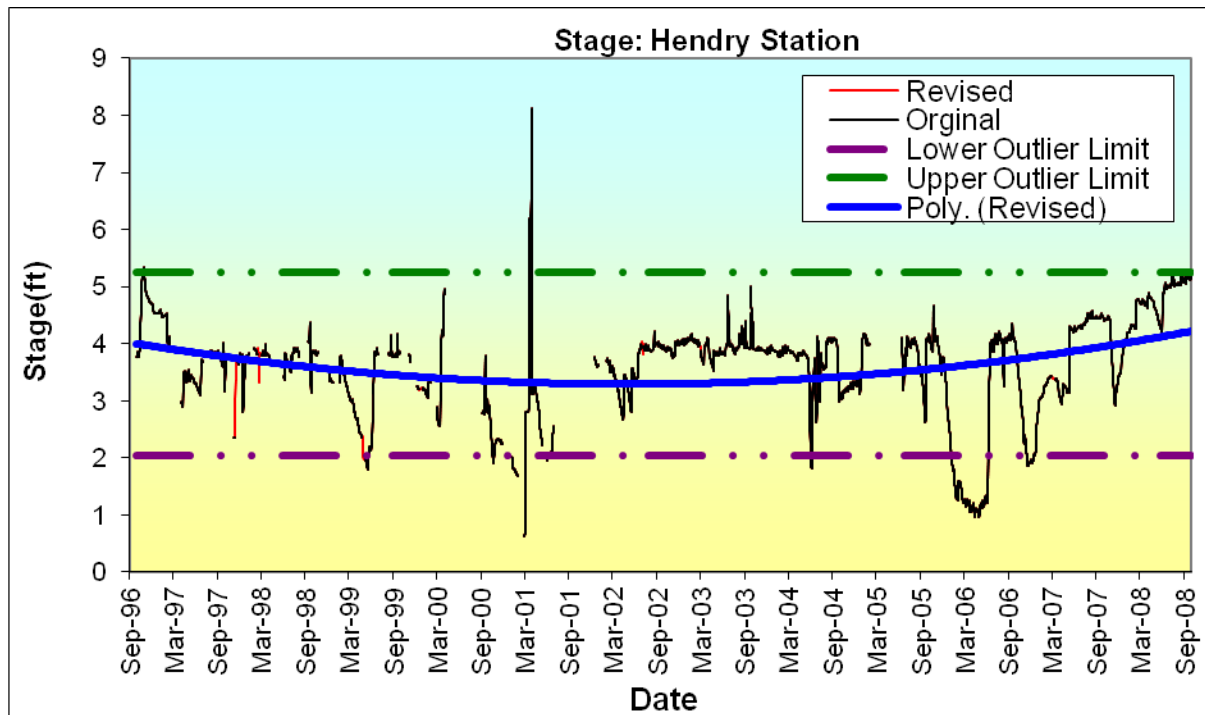
### 5.2.1 Station Description

Recorder	Location	Section	Township	Range	Latitude	Longitude
Hendry Creek	Lakes Park, 41 and Gladiolus, recorder on right before park entrance.	26	45	24	26 31.68'	81 52.50'

### 5.2.2 Descriptive Statistics

	Original	Revised
Mean	3.598	3.591
Standard Deviation	0.873	0.871
Skewness	-0.790	-0.780
Q3	4.040	4.040
Upper Extreme Point Starting Point	6.440	6.470
Max	8.130	8.130
Upper Outlier Limit Starting Point	5.240	5.255
Median	3.810	3.810
Lower Outlier Limit Starting Point	2.040	2.015
Min	0.630	0.630
Lower Extreme Starting Point	0.840	0.800
Q1	3.240	3.230
Outliers	270.000	272.000
Extremes	7.00	7.00

### 5.2.3 Time Series Plots





### 5.3 Station Mullock Creek

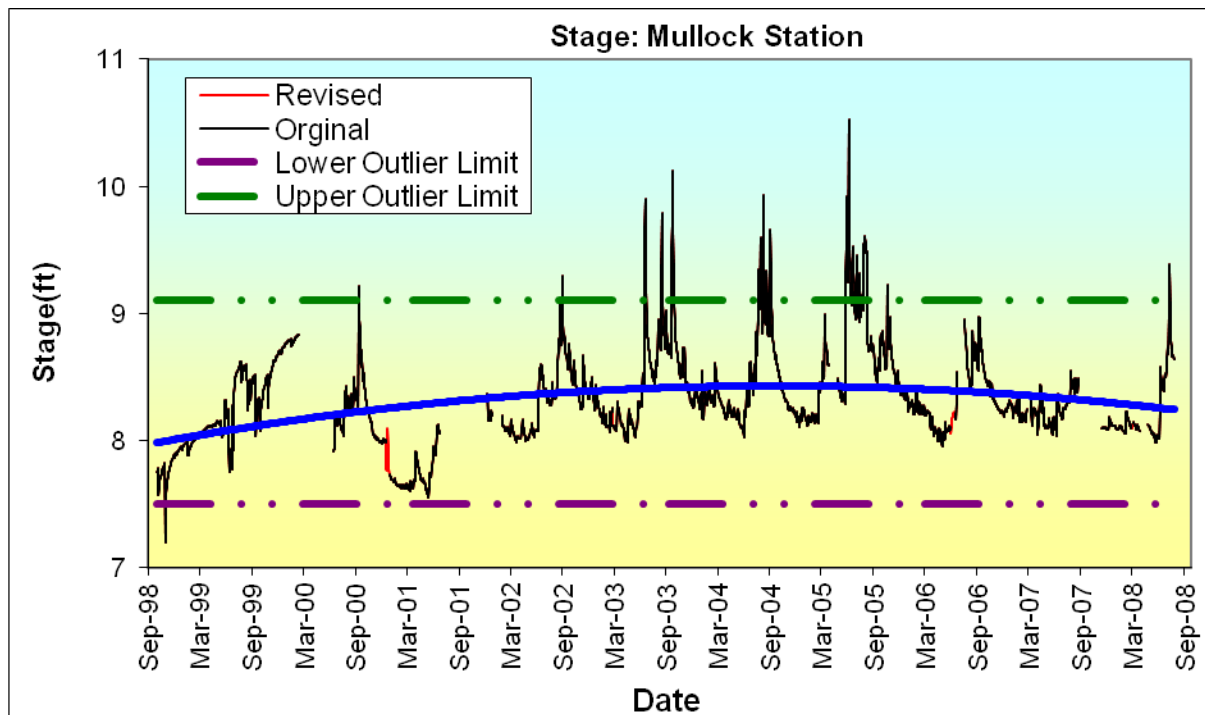
#### 5.3.1 Station Description

Recorder	Location	Section	Township	Range	Latitude	Longitude
Mullock Creek	41 turn East onto Constitution Blvd then south on Constitution Cir, recorder on side of bridge.	17	46	25	26 28.39'	81 49.84'

#### 5.3.2 Descriptive Statistics

	Original	Revised
Mean	7.819	7.817
Standard Deviation	0.361	0.360
Skewness	0.982	0.990
Q3	8.000	8.000
Upper Extreme Point Starting Point	9.200	9.209
Max	10.030	10.030
Upper Outlier Limit Starting Point	8.600	8.604
Median	7.760	7.760
Lower Outlier Limit Starting Point	7.000	6.993
Min	6.700	6.700
Lower Extreme Starting Point	6.400	6.389
Q1	7.600	7.597
Outliers	89.000	89.000
Extremes	10.00	10.00

#### 5.3.3 Time Series Plots



## 5.4 Station Popash Creek @ Pritchett

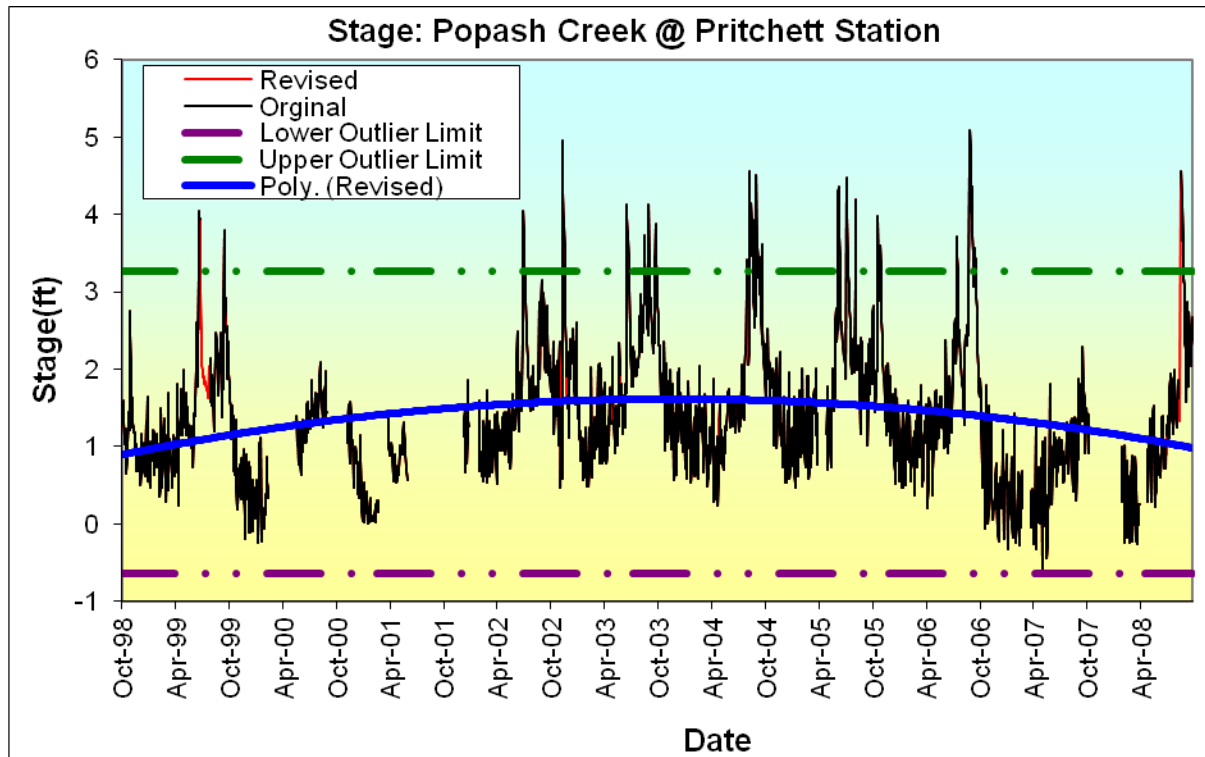
### 5.4.1 Station Description

Recorder	Location	Section	Township	Range	Latitude	Longitude
Popash Creek @ Pritchard Pkwy	East of I-75 on, turn left onto Leetana, on side of bridge.	22	43	25	26 42.95'	81 48.52'

### 5.4.2 Descriptive Statistics

	Original	Revised
Mean	1.382	1.395
Standard Deviation	0.859	0.861
Skewness	0.950	0.936
Q3	1.795	1.820
Upper Extreme Point Starting Point	4.720	4.820
Max	5.080	5.080
Upper Outlier Limit Starting Point	3.258	3.320
Median	1.260	1.270
Lower Outlier Limit Starting Point	-0.643	-0.680
Min	-0.600	-0.600
Lower Extreme Starting Point	-2.105	-2.180
Q1	0.820	0.820
Outliers	117.000	117.000
Extremes	5.00	3.00

### 5.4.3 Time Series Plots



## 5.5 Station Powell Creek

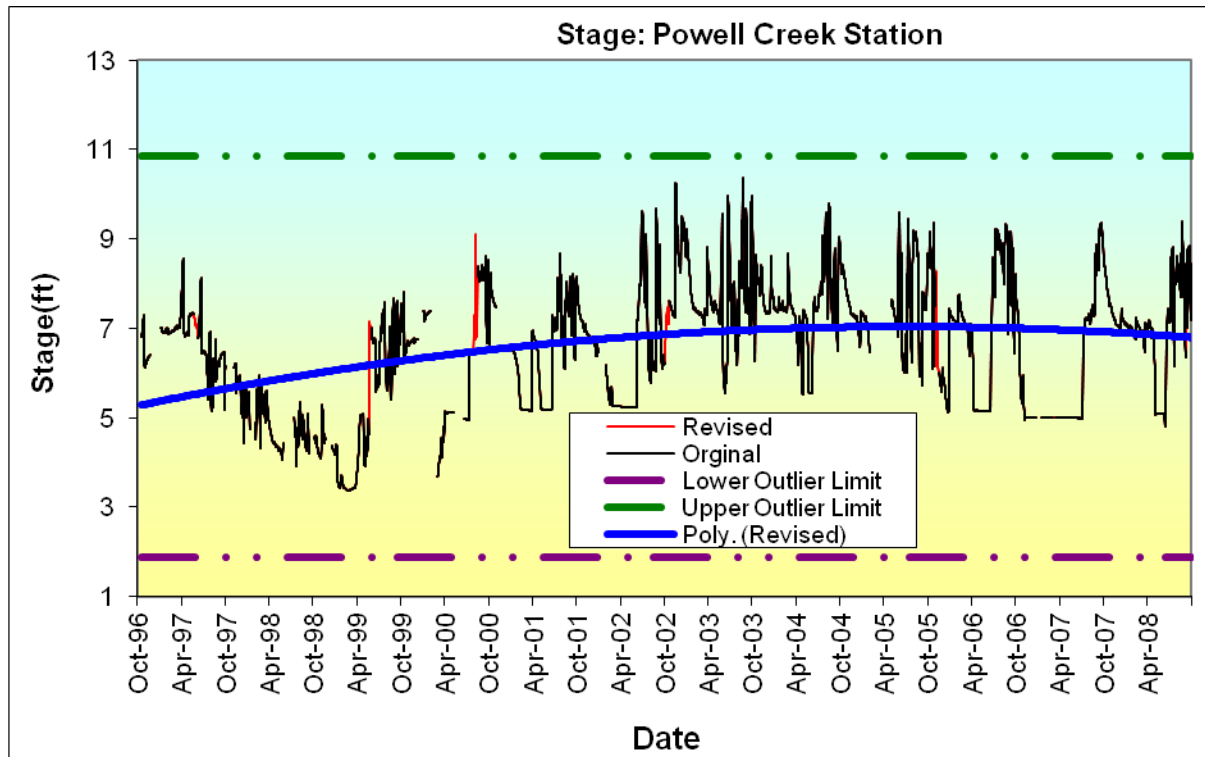
### 5.5.1 Station Description

Recorder	Location	Section	Township	Range	Latitude	Longitude
Powell Creek	Bayshore Rd turn north onto Evalena to end of public rd.	35	44	24	26 41.42'	81 52.48'

### 5.5.2 Descriptive Statistics

	Original	Revised
Mean	6.625	6.624
Standard Deviation	1.383	1.375
Skewness	-0.145	-0.157
Q3	7.490	7.470
Upper Extreme Point Starting Point	14.210	14.130
Max	10.380	10.380
Upper Outlier Limit Starting Point	10.850	10.800
Median	6.920	6.920
Lower Outlier Limit Starting Point	1.890	1.920
Min	3.360	3.360
Lower Extreme Starting Point	-1.470	-1.410
Q1	5.250	5.250
Outliers	0.000	0.000
Extremes	0.00	0.00

### 5.5.3 Time Series Plots



## 5.6 Station Popash Creek @ Nalle Grade

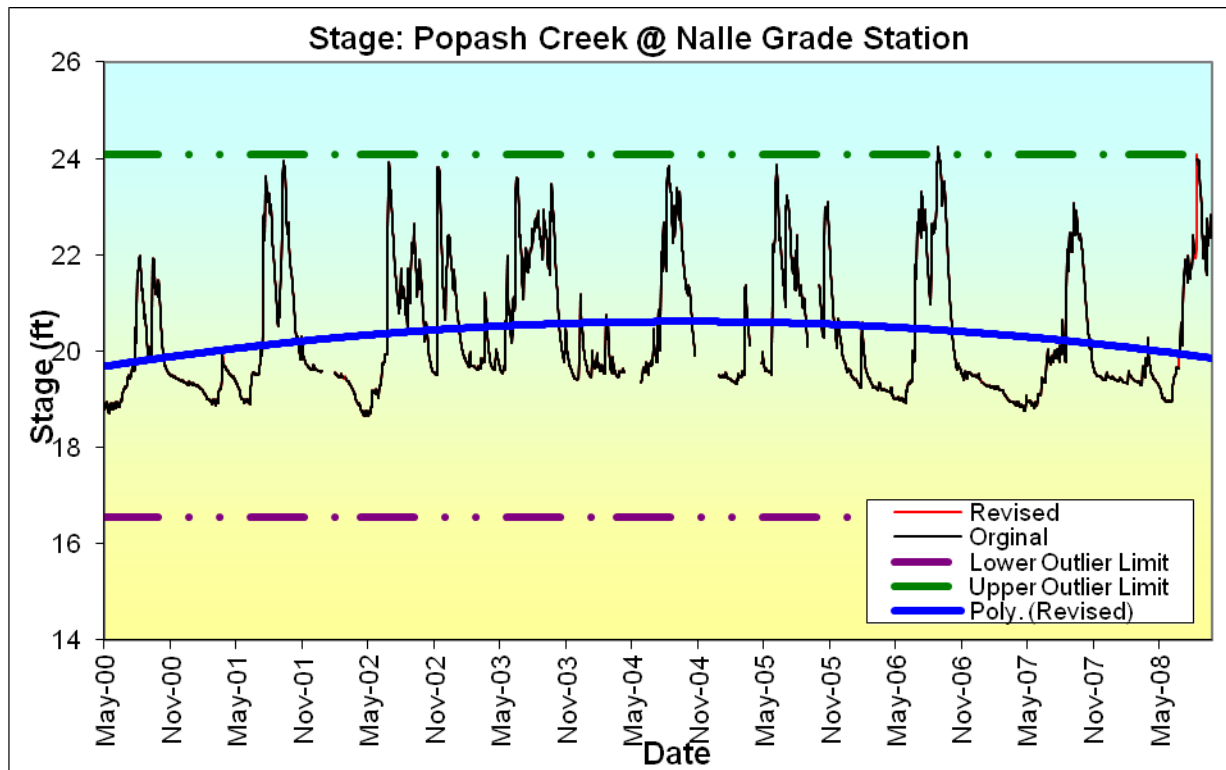
### 5.6.1 Station Description

Recorder	Location	Section	Township	Range	Latitude	Longitude
Popash Creek @ Nalle Grade	Popash Cr @ Nalle Grade Rd.	4	43	25	26 45.11'	81 48.28'

### 5.6.2 Descriptive Statistics

	Original	Revised
Mean	20.316	20.316
Standard Deviation	1.324	1.325
Skewness	1.015	1.019
Q3	21.260	21.260
Upper Extreme Point Starting Point	26.900	26.900
Max	24.250	24.250
Upper Outlier Limit Starting Point	24.080	24.080
Median	19.690	19.690
Lower Outlier Limit Starting Point	16.560	16.560
Min	18.654	18.654
Lower Extreme Starting Point	13.740	13.740
Q1	19.380	19.380
Outliers	3.000	3.000
Extremes	0.00	0.00

### 5.6.3 Time Series Plots



## 5.7 Station Telegraph Creek

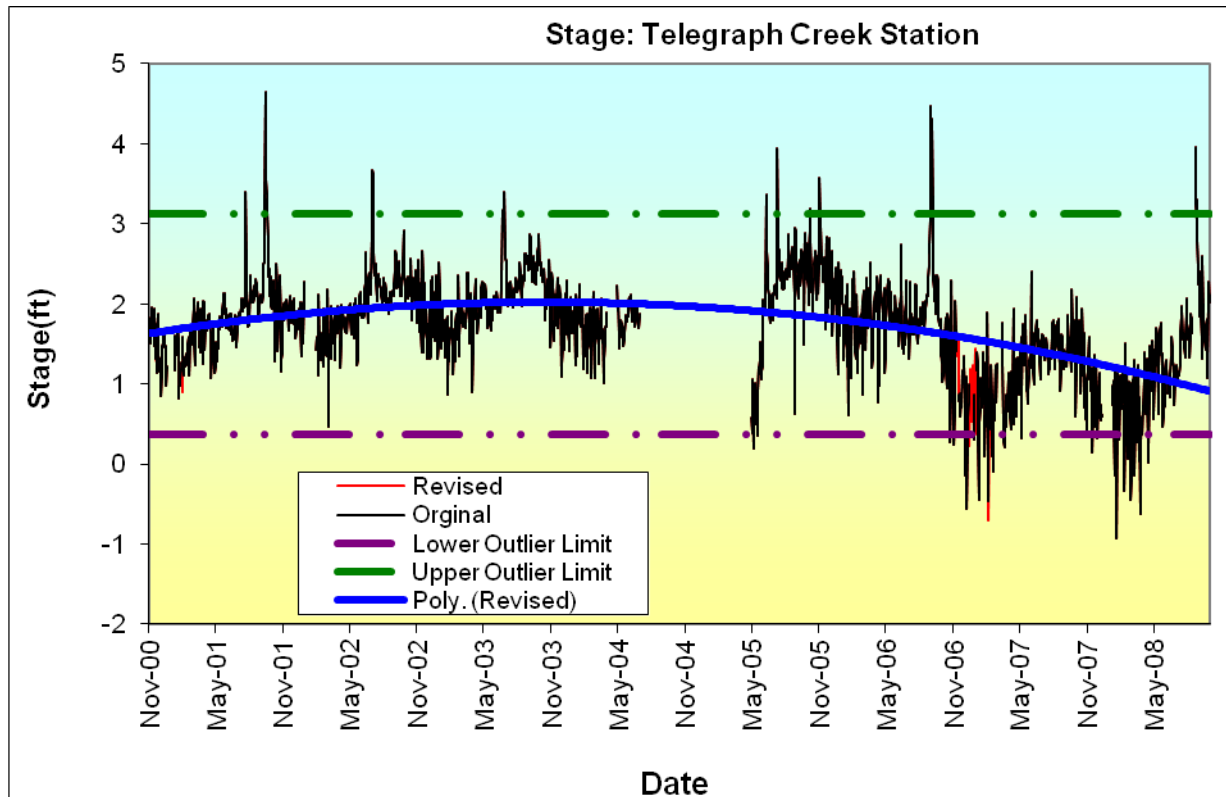
### 5.7.1 Station Description

Recorder	Location	Section	Township	Range	Latitude	Longitude
Telegraph Creek	Telegraph Cr. @ N. River Rd.	15	43	26	26 43.30'	81 42.47'

### 5.7.2 Descriptive Statistics

	Original	Revised
Mean	1.726	1.716
Standard Deviation	0.601	0.605
Skewness	-0.199	-0.204
Q3	2.090	2.080
Upper Extreme Point Starting Point	4.160	4.210
Max	4.640	4.640
Upper Outlier Limit Starting Point	3.125	3.145
Median	1.780	1.770
Lower Outlier Limit Starting Point	0.365	0.305
Min	-0.920	-0.920
Lower Extreme Starting Point	-0.670	-0.760
Q1	1.400	1.370
Outliers	77.000	72.000
Extremes	4.00	4.00

### 5.7.3 Time Series Plots



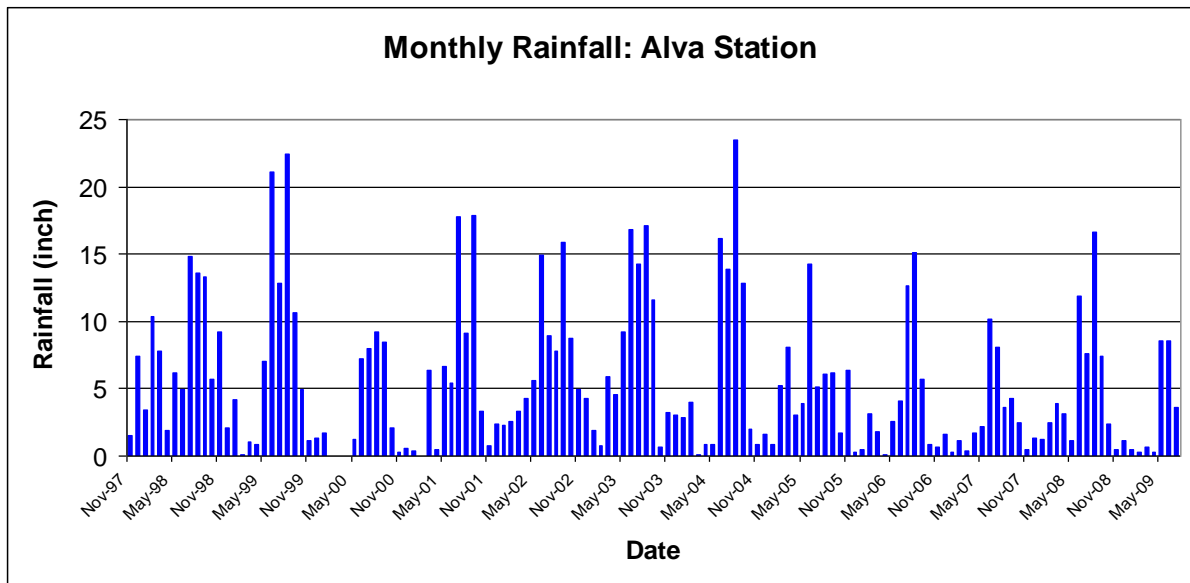
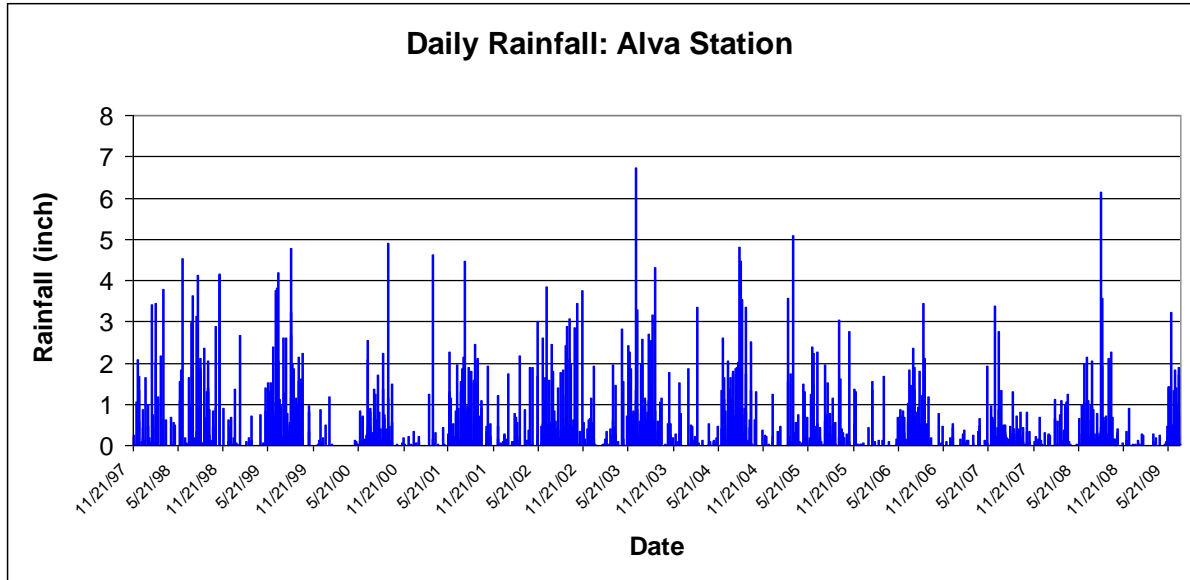
## **6. DAILY AND MONTHLY RAINFALL DATA PLOTS**

### **6.0 Overview**

This section summarizes and plots the daily and monthly rainfall single time series data for each station showing the location of a rainfall monitoring site. Daily and monthly rainfall data are the summation of 15-minute interval data for the whole day and month respectively. It should be noted that periods in the plots which do not show any rainfall data can indicate data was missing (not recorded) or there was no rainfall completely (recorded as zero in the original time series data). The arranged 15-minute interval rainfall original data in MS Access (Appendix B) and the daily and monthly rainfall data (Appendix C) are submitted with this report in a separate data CD.

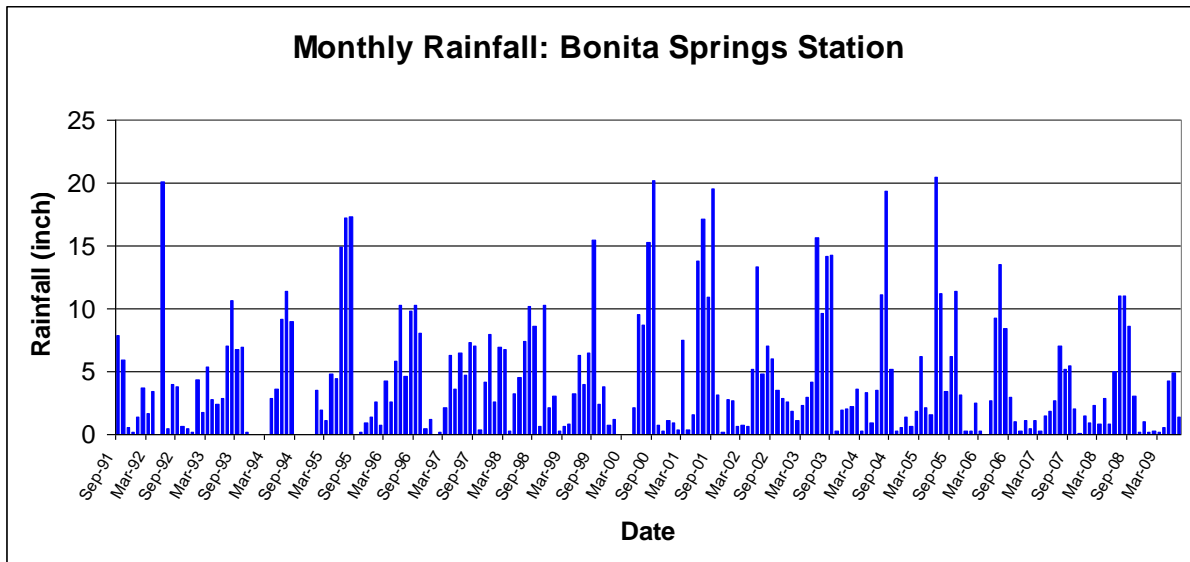
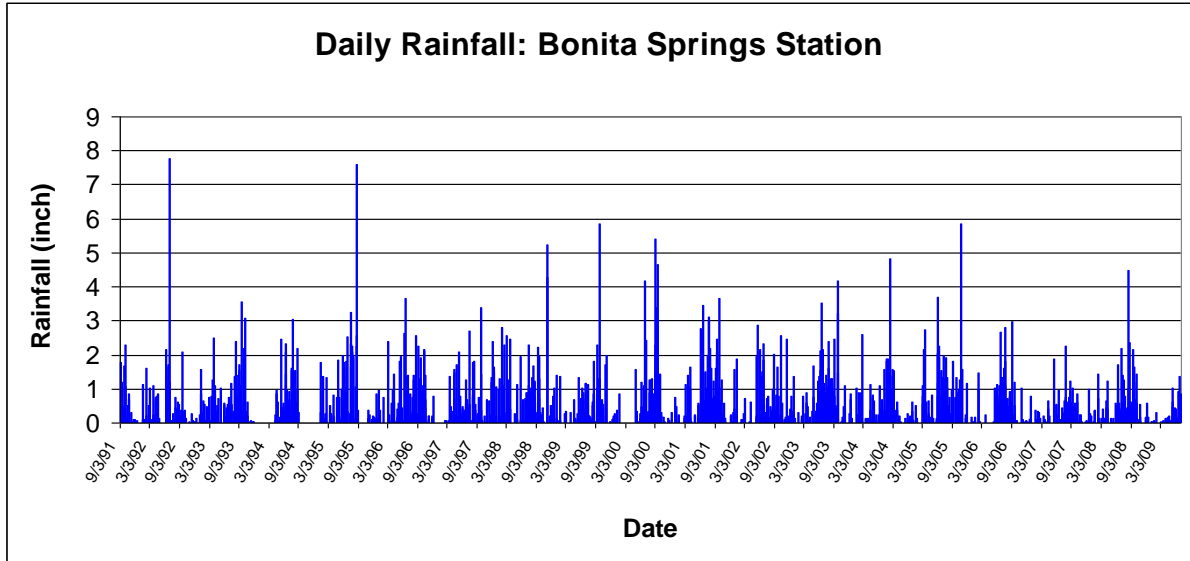
## 6.1 Alva Station

<i>Rain Gauge ID</i>	<i>Latitude</i>	<i>Longitude</i>	<i>Current Make</i>	<i>Location</i>
ALVA (Alva Fire Department)	26 42' 22.98	81 36' 30.05	Campbell	SR 78 To Styles Rd, Alva Fire Department.



## 6.2 Bonita Springs Station

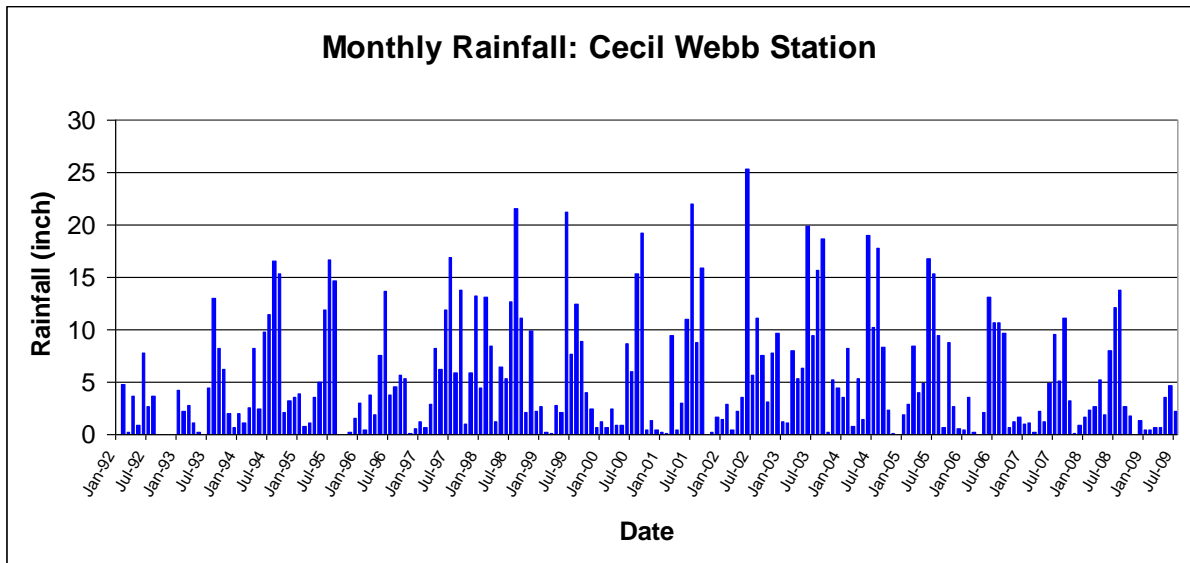
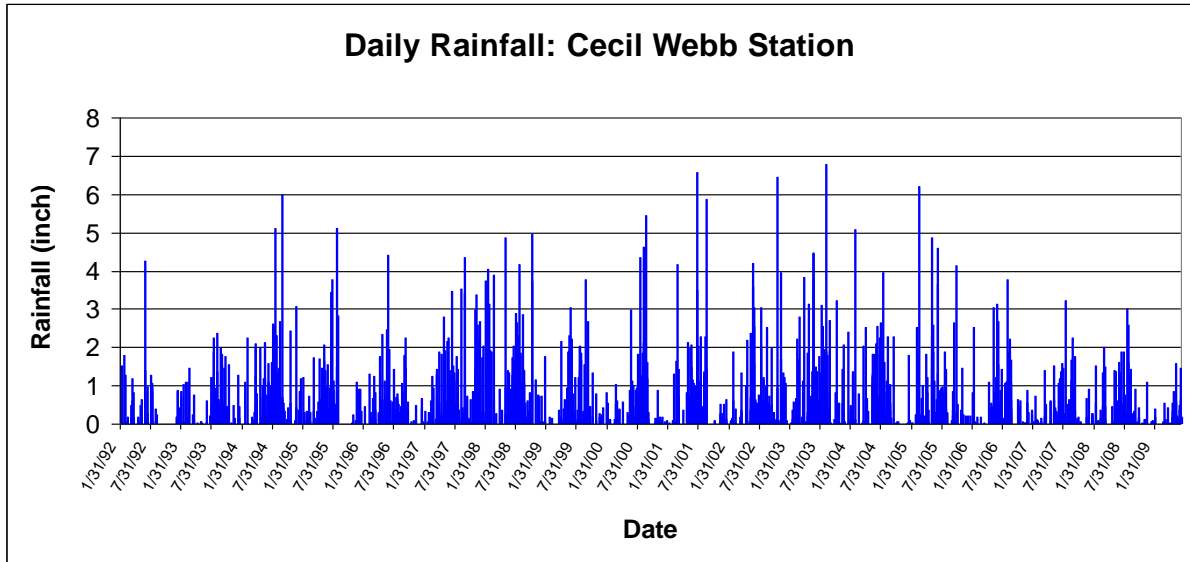
<i>Rain Gauge ID</i>	<i>Latitude</i>	<i>Longitude</i>	<i>Current Make</i>	<i>Location</i>
BS (Bonita Springs Utilities)	26 20' 39.30	81 45' 17.47	Campbell	E. Terry St, Bonita Spring Utilities.





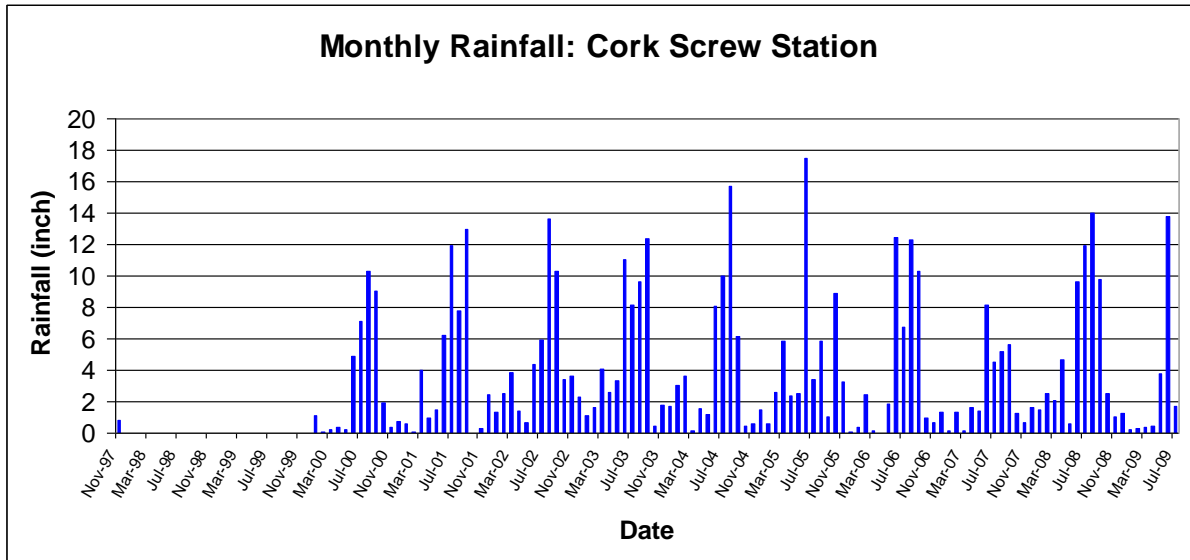
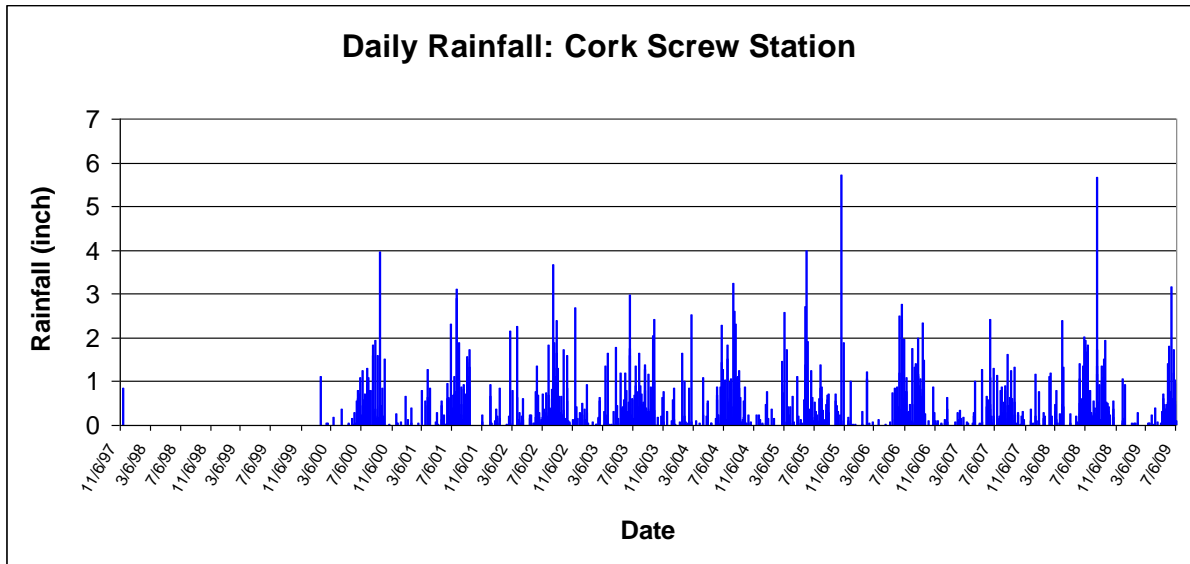
### 6.3 Cecil Webb Station

<b>Rain Gauge ID</b>	<b>Latitude</b>	<b>Longitude</b>	<b>Current Make</b>	<b>Location</b>
Cecil(Cecil Web Wildlife MGMT)	26 51' 30.87	81 57' 46.25	Campbell	Cecil Web Wildlife MGMT, West side of lane to rangers house.



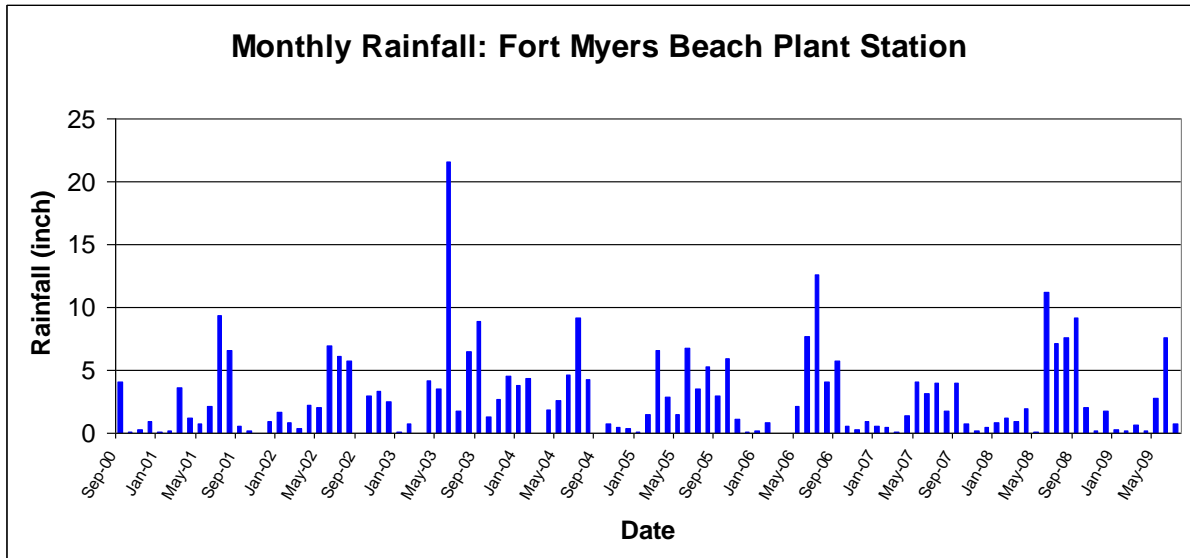
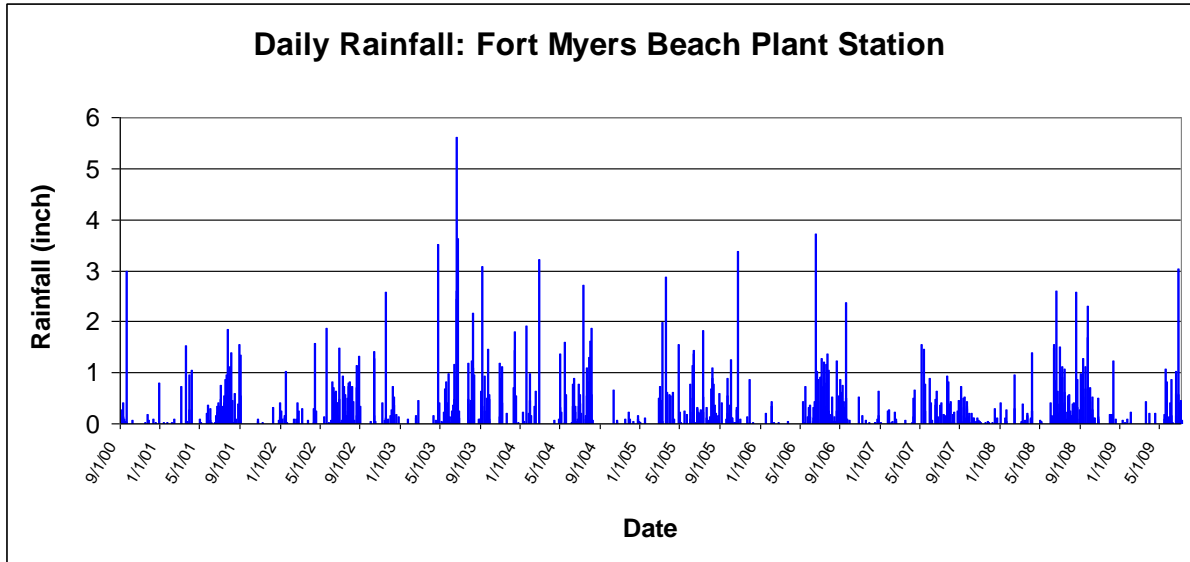
## 6.4 Cork Screw Water Plant Station

Rain Gauge ID	Latitude	Longitude	Current Make	Location
CW (Corkscrew Water Plant)	26 27' 51.15	81 42' 12.14	Campbell	Alico Rd, Corkscrew Water Plant.



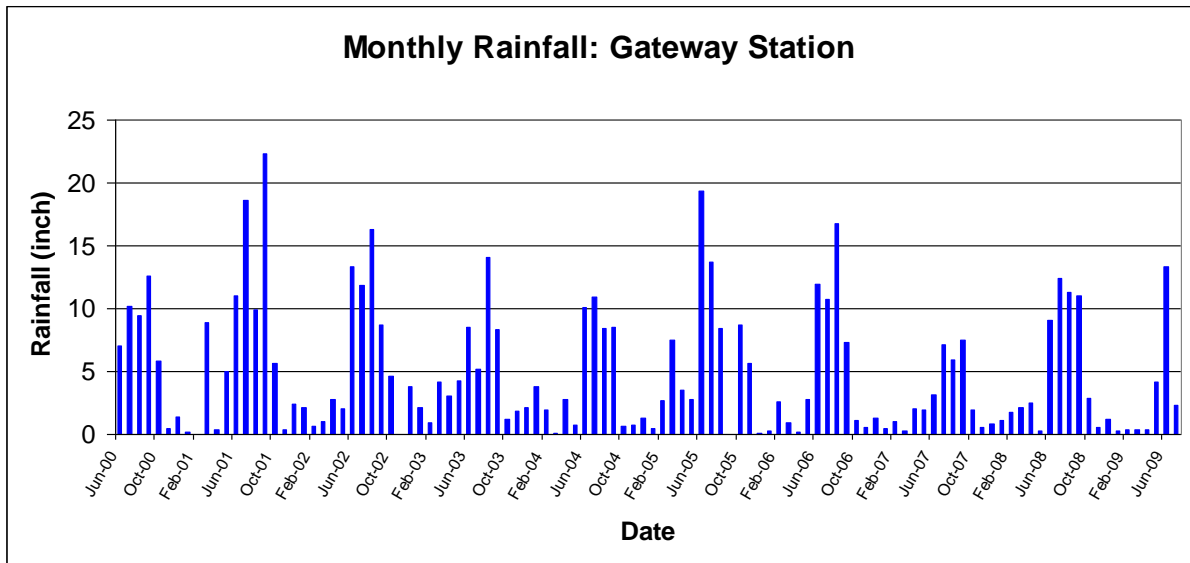
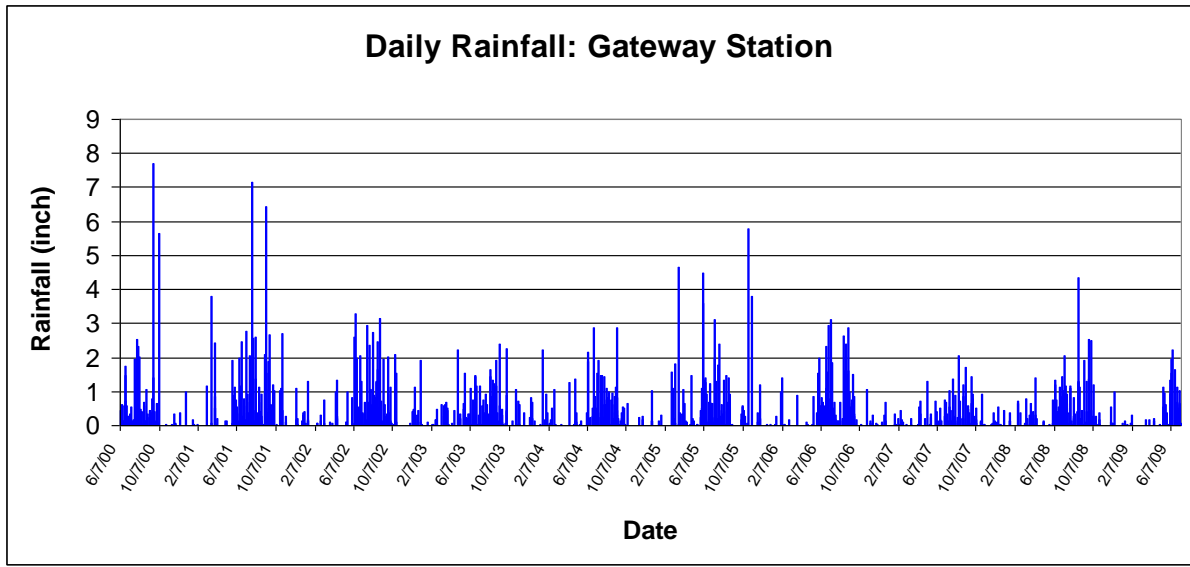
## 6.5 Fort Myers Beach Plant Station

<b>Rain Gauge ID</b>	<b>Latitude</b>	<b>Longitude</b>	<b>Current Make</b>	<b>Location</b>
FMB(Fort Myers Beach Plant)	26 29' 28.68	81 56' 00.77	Campbell	Fort Myers Beach Plant, Pine Rd. Between Summerlin and San Carlos Blvd.



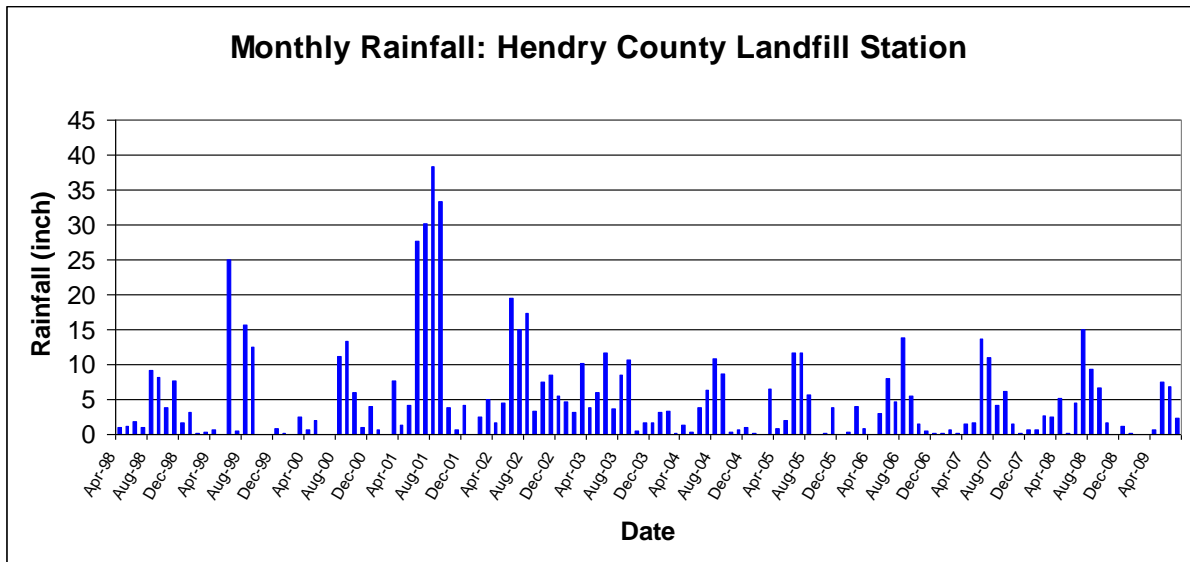
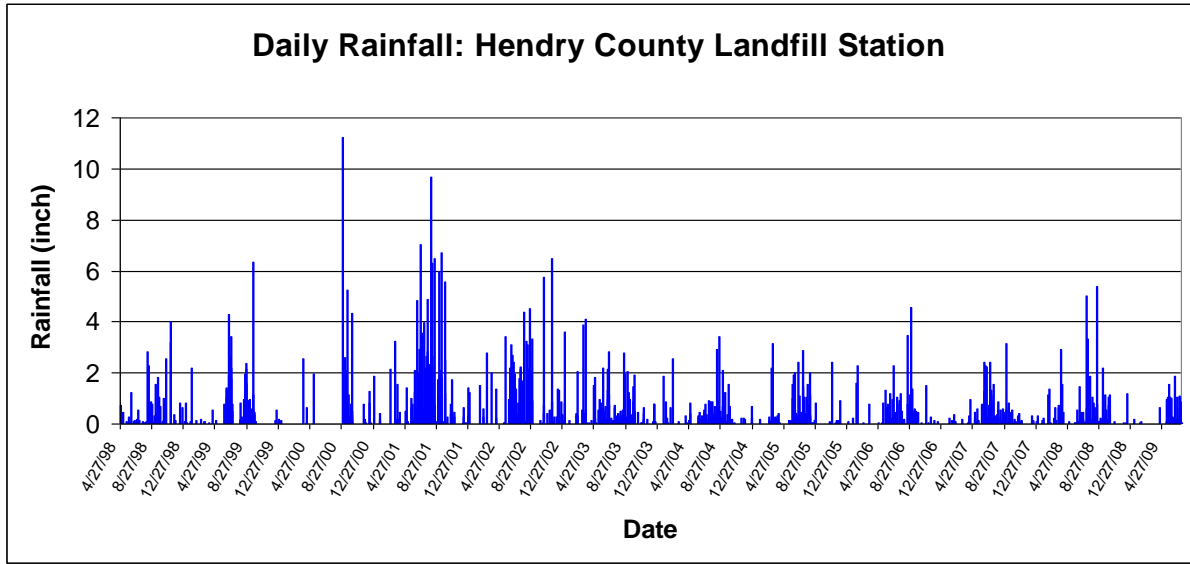
## 6.6 Gateway Station

<b>Rain Gauge ID</b>	<b>Latitude</b>	<b>Longitude</b>	<b>Current Make</b>	<b>Location</b>
Gateway	26 34' 23.65	81 44' 11.65	Campbell	Gateway Service District East of Commerce Dr.



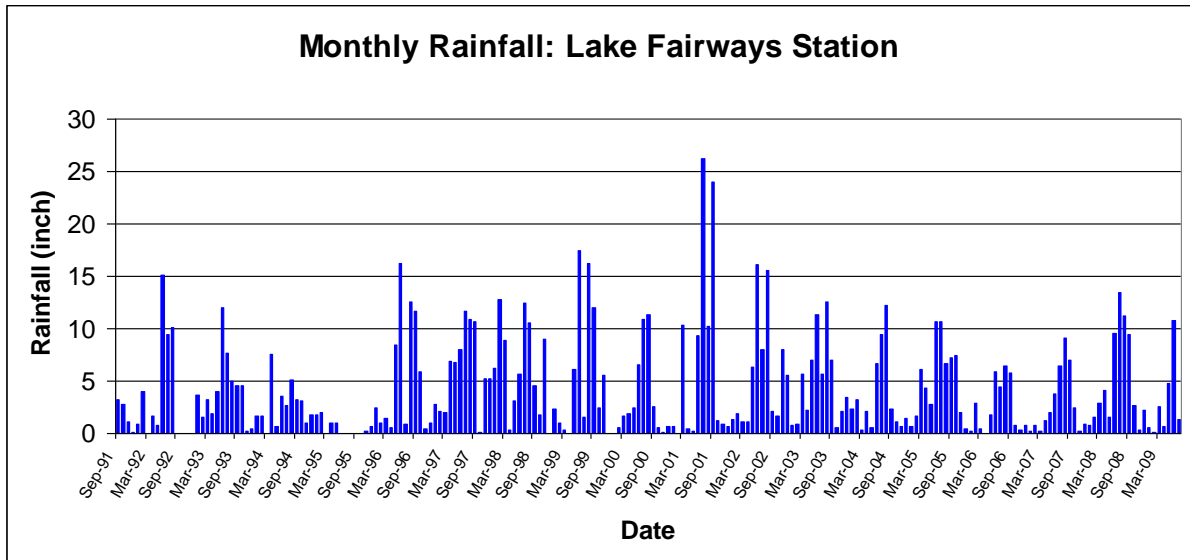
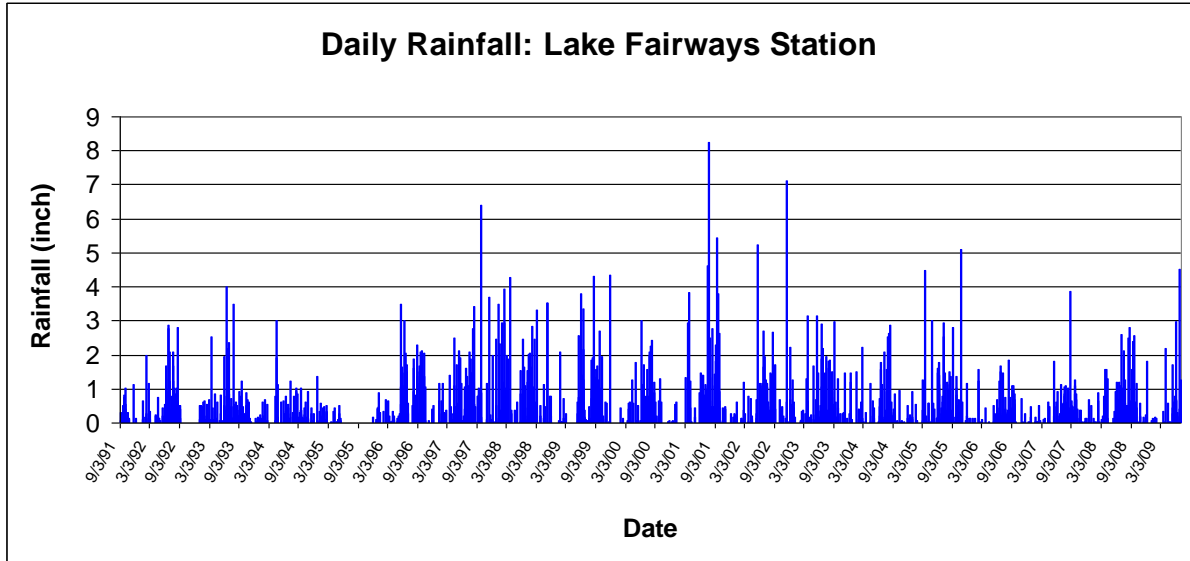
## 6.7 Hendry County Landfill Station

<b>Rain Gauge ID</b>	<b>Latitude</b>	<b>Longitude</b>	<b>Current Make</b>	<b>Location</b>
Hendry (Hendry County Landfill)	26 33' 55.60	81 31' 17.10	Campbell	Hendry County Landfill @ pump station on hill.



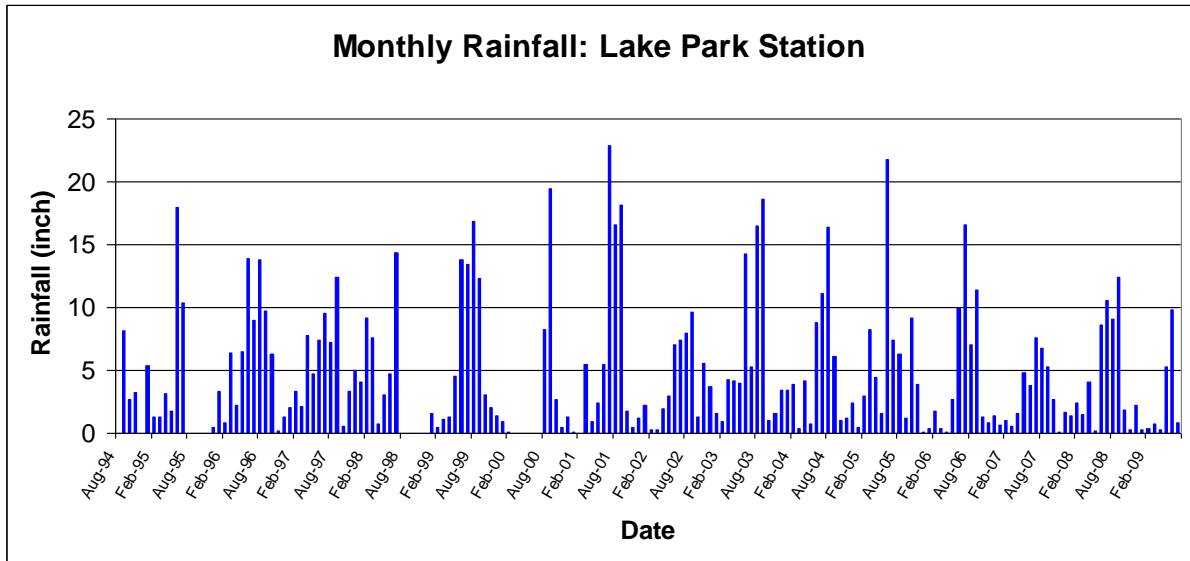
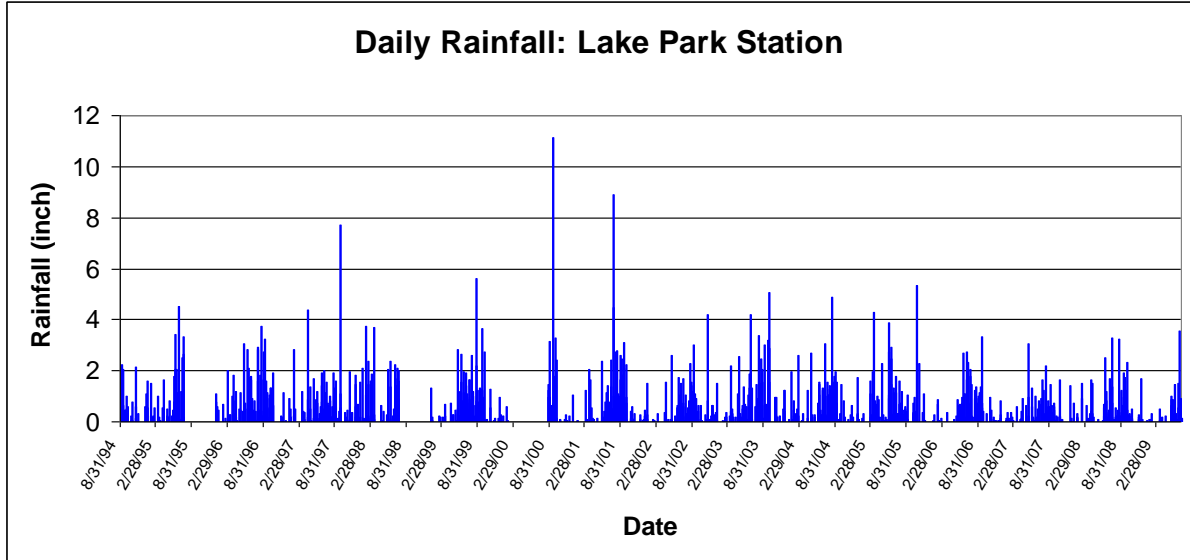
## 6.8 Lakes Fairways Station

<b>Rain Gauge ID</b>	<b>Latitude</b>	<b>Longitude</b>	<b>Current Make</b>	<b>Location</b>
LF (Lake Fairways)	26 44' 26.32	81 56' 10.48	Campbell	US 41 N, Lake Fairways maintenance building.



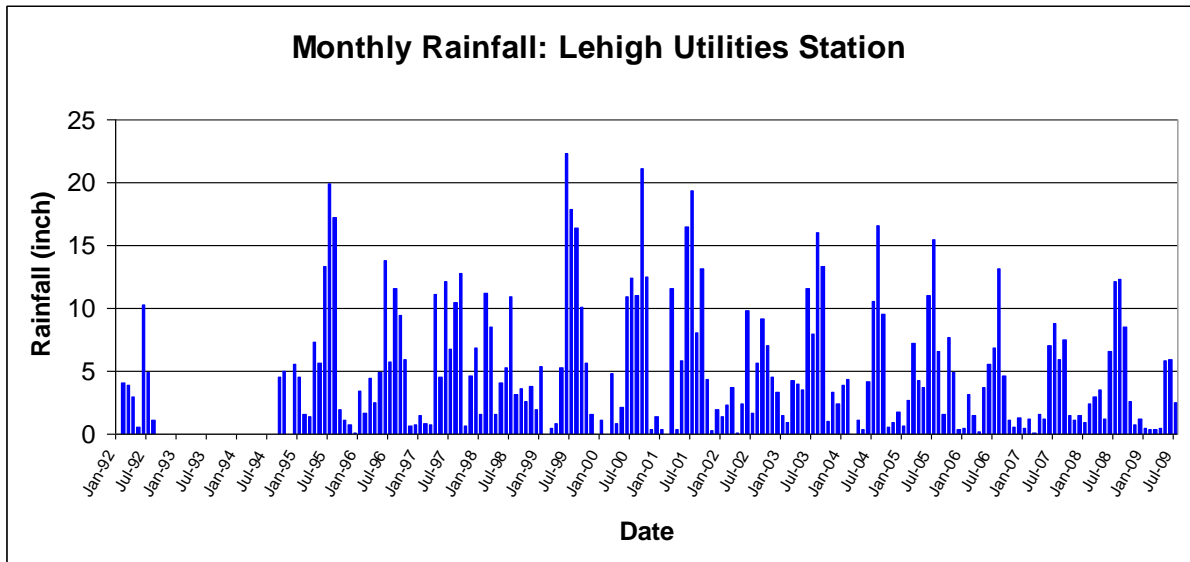
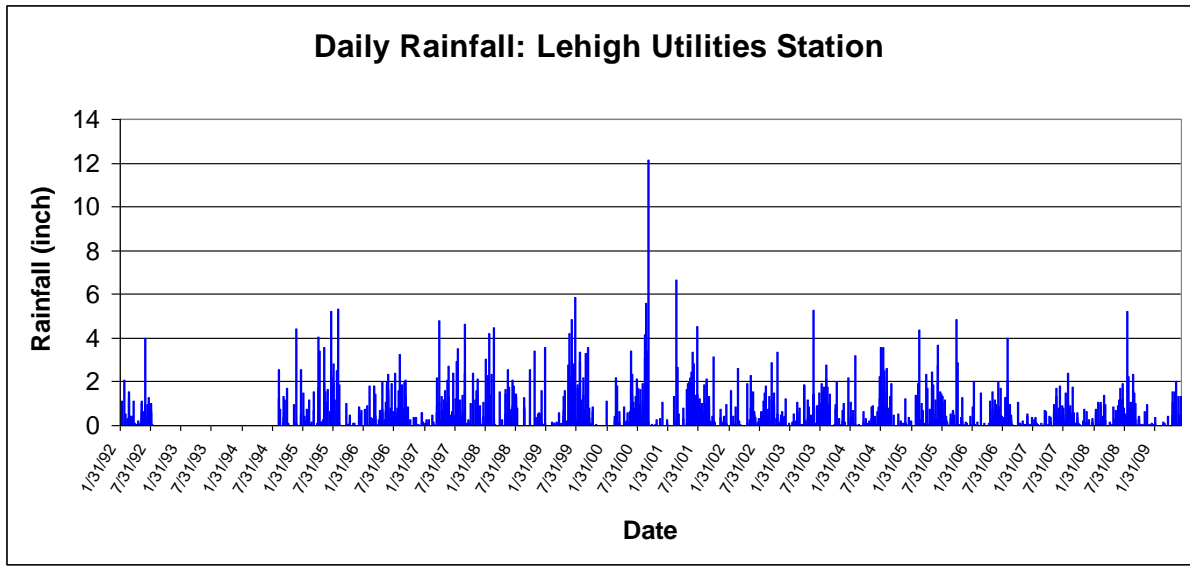
## 6.9 Lakes Park Station

<i>Rain Gauge ID</i>	<i>Latitude</i>	<i>Longitude</i>	<i>Current Make</i>	<i>Location</i>
LP (Lakes Park)	26 31' 47.15	81 53' 12.12	Campbell	Summerlin Rd, Lakes Park.



## 6.10 Lehigh Utilities Station

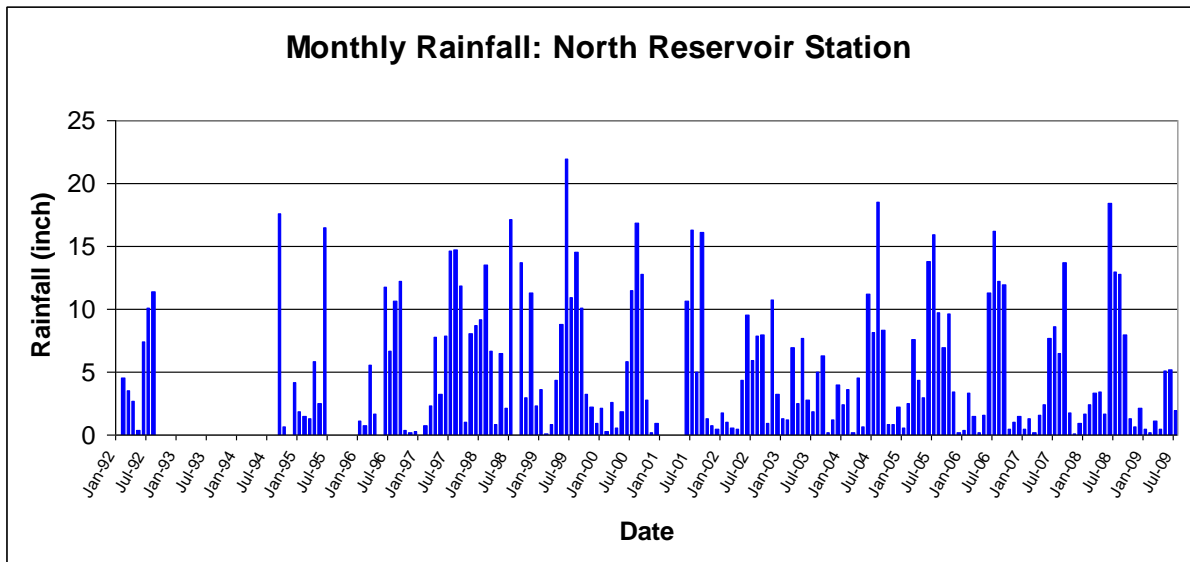
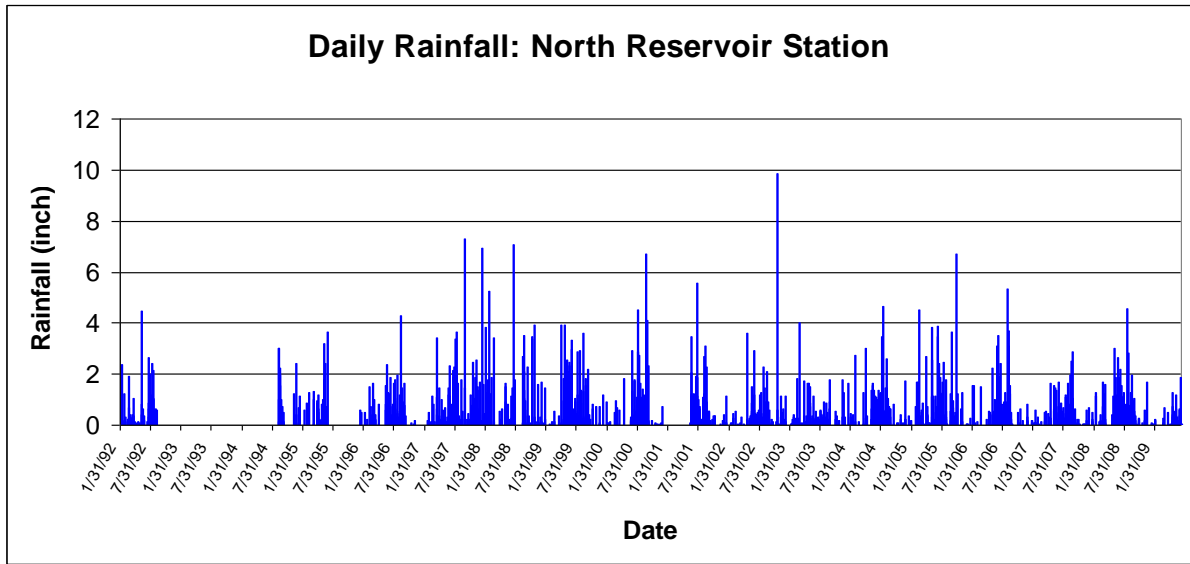
<b>Rain Gauge ID</b>	<b>Latitude</b>	<b>Longitude</b>	<b>Current Make</b>	<b>Location</b>
LH (Lehigh Utilities)	26 36' 28.03	81 38' 02.25	Campbell	Lee Rd. to Coolidge Ave, Lehigh Utilities.





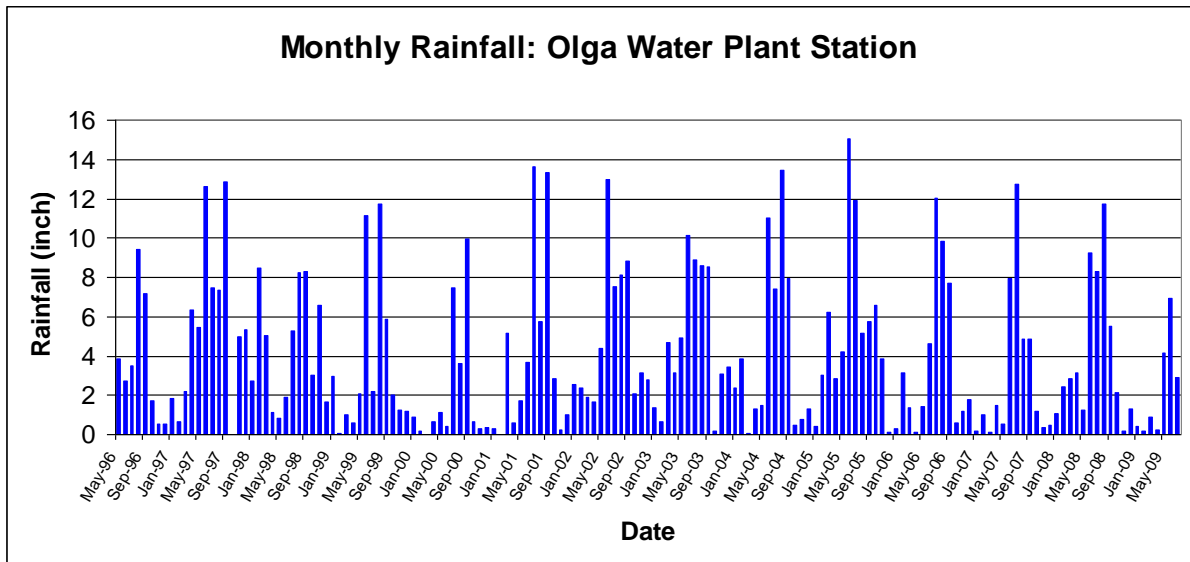
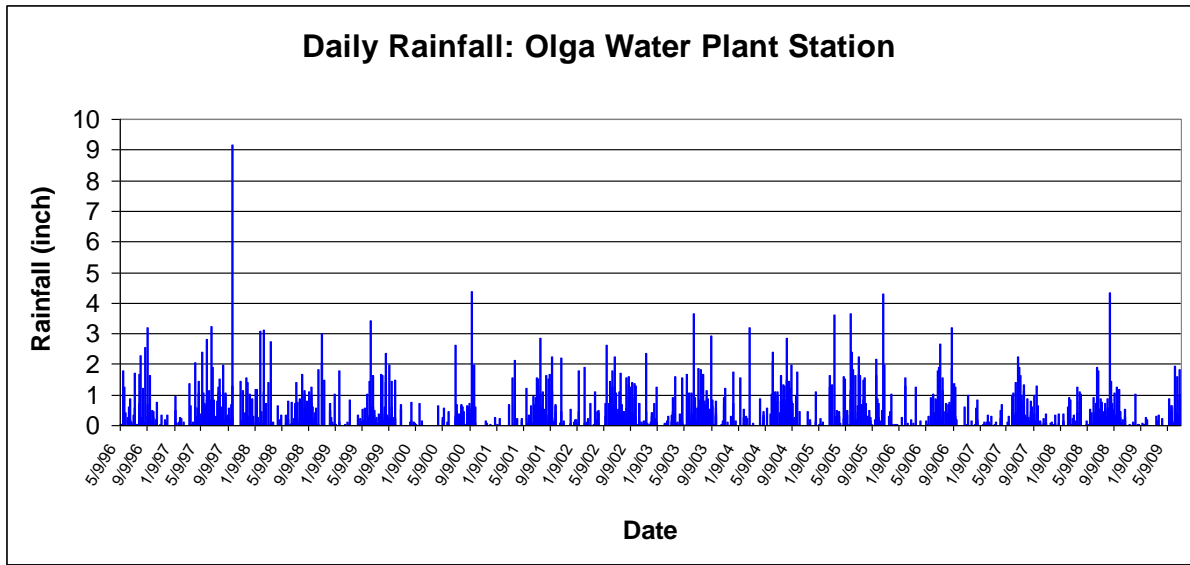
## 6.11 North Reservoir Station

<b>Rain Gauge ID</b>	<b>Latitude</b>	<b>Longitude</b>	<b>Current Make</b>	<b>Location</b>
NR (North Reservoir)	26 42' 41.29	81 50' 16.05	Campbell	Bayshore & Samville Rd, Lee County North Res.



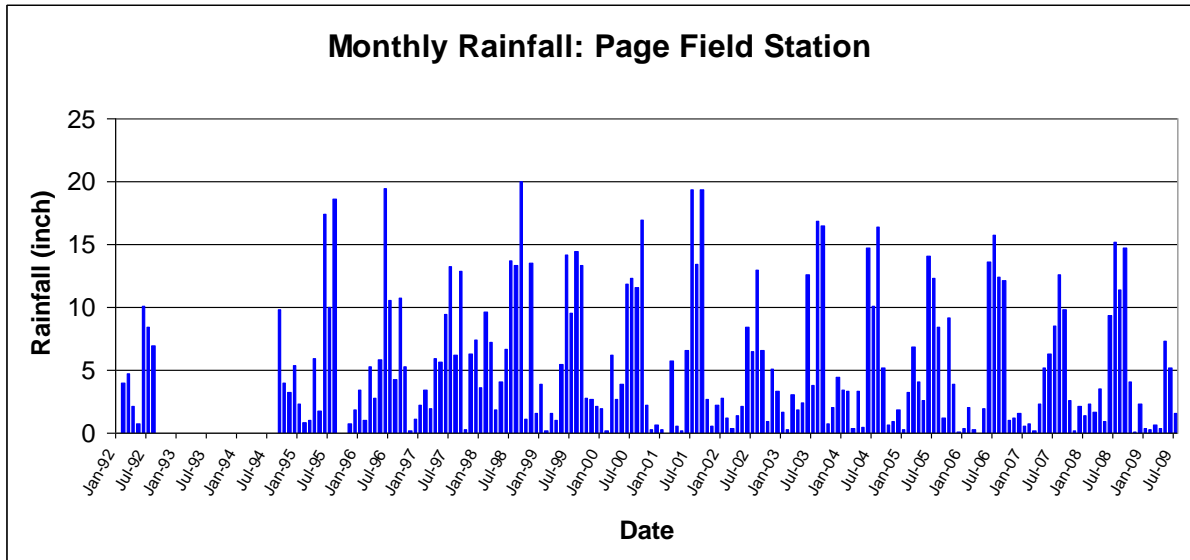
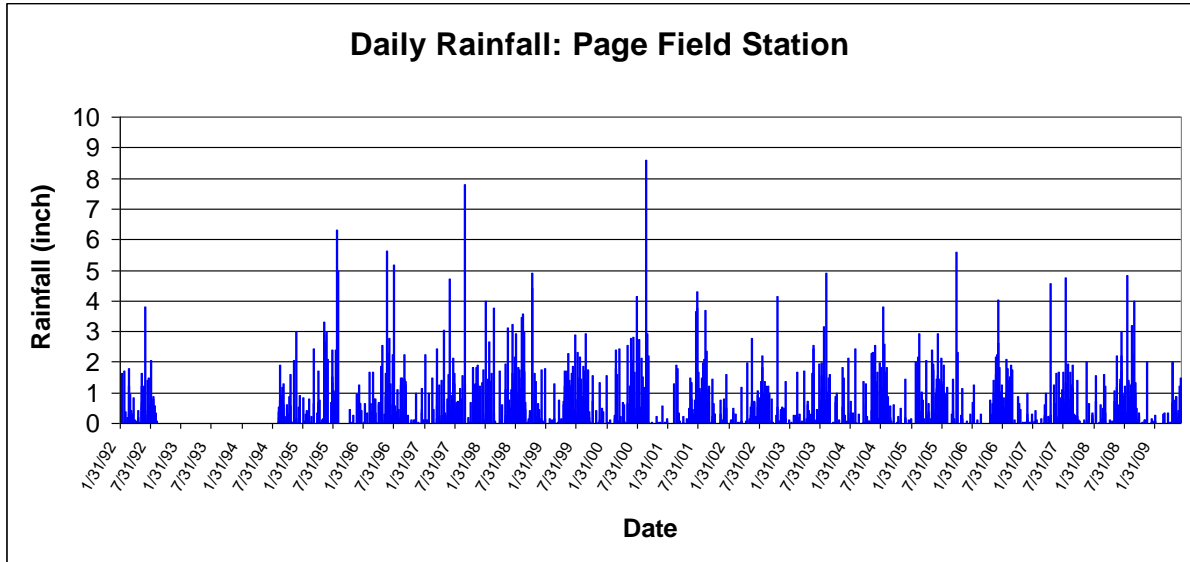
## 6.12 Olga Water Plant Station

<b>Rain Gauge ID</b>	<b>Latitude</b>	<b>Longitude</b>	<b>Current Make</b>	<b>Location</b>
OLGA (Olga Water Plant)	26 43' 08.11	81 40' 57.53	Campbell	SR 78 to Werner Dr, Olga Water Plant.



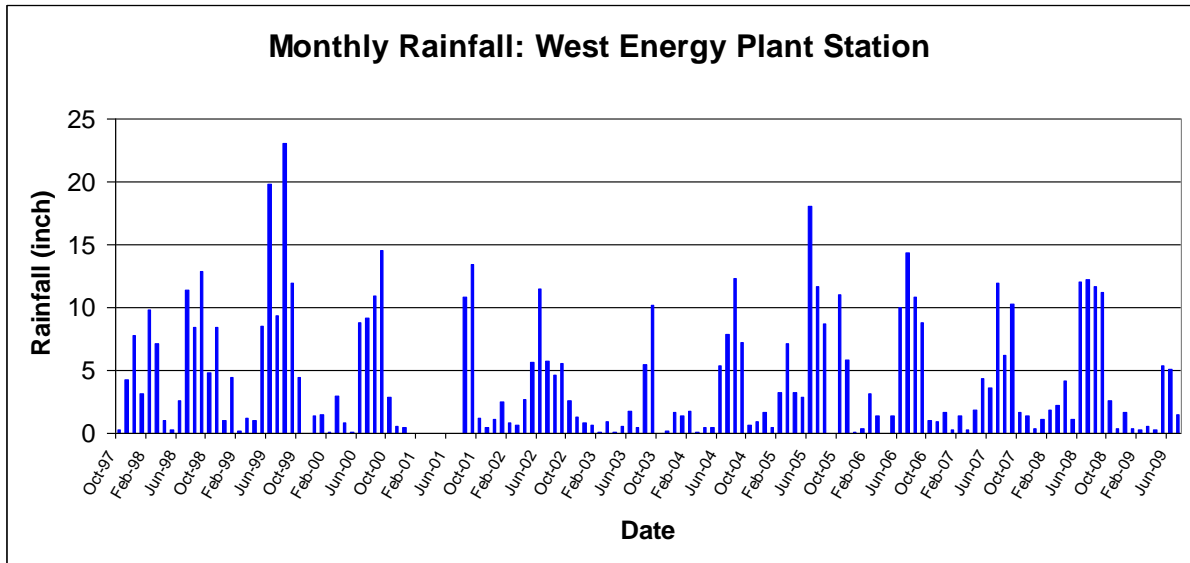
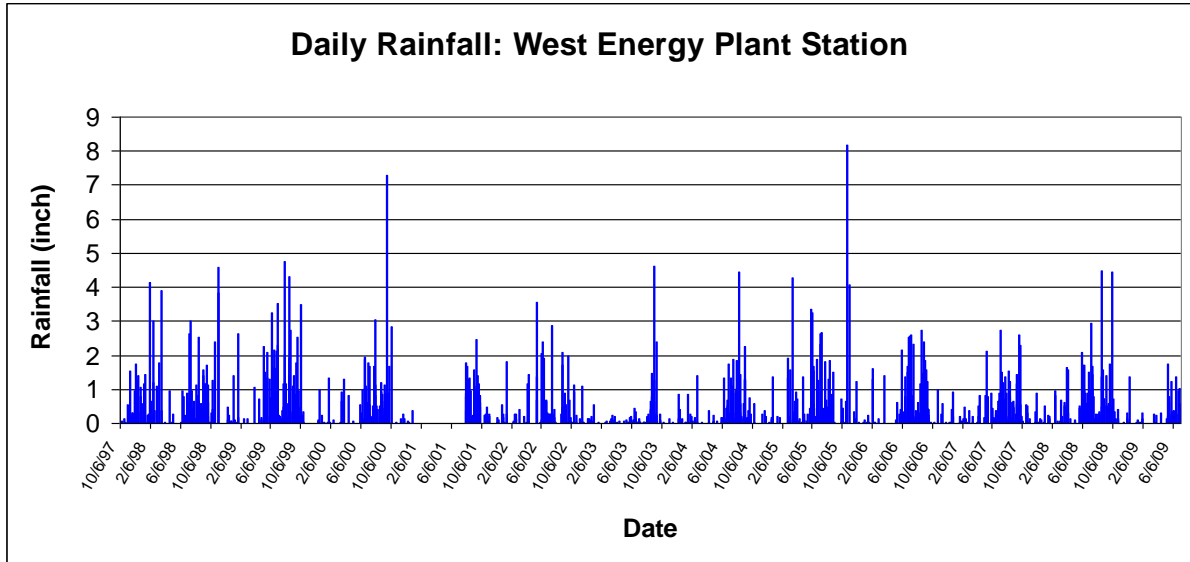
### 6.13 Page Field Station

<b>Rain Gauge ID</b>	<b>Latitude</b>	<b>Longitude</b>	<b>Current Make</b>	<b>Location</b>
PAGE (Page Field/Lee Tran)	26 35' 17.42	81 51' 20.58	Campbell	Metro Pkwy to Idlewild, Lee Tran.



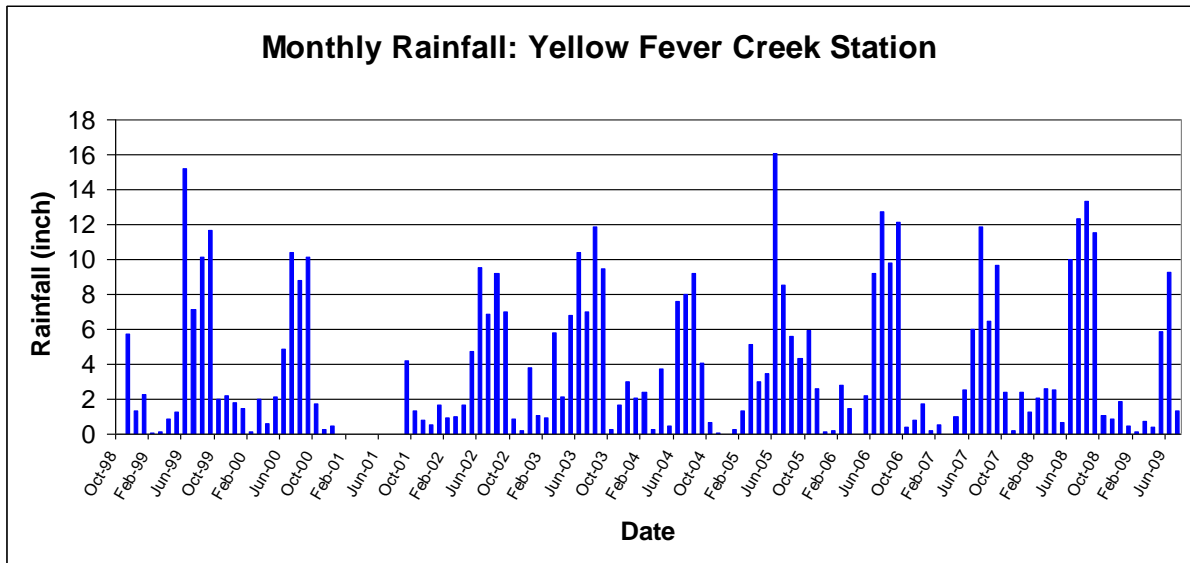
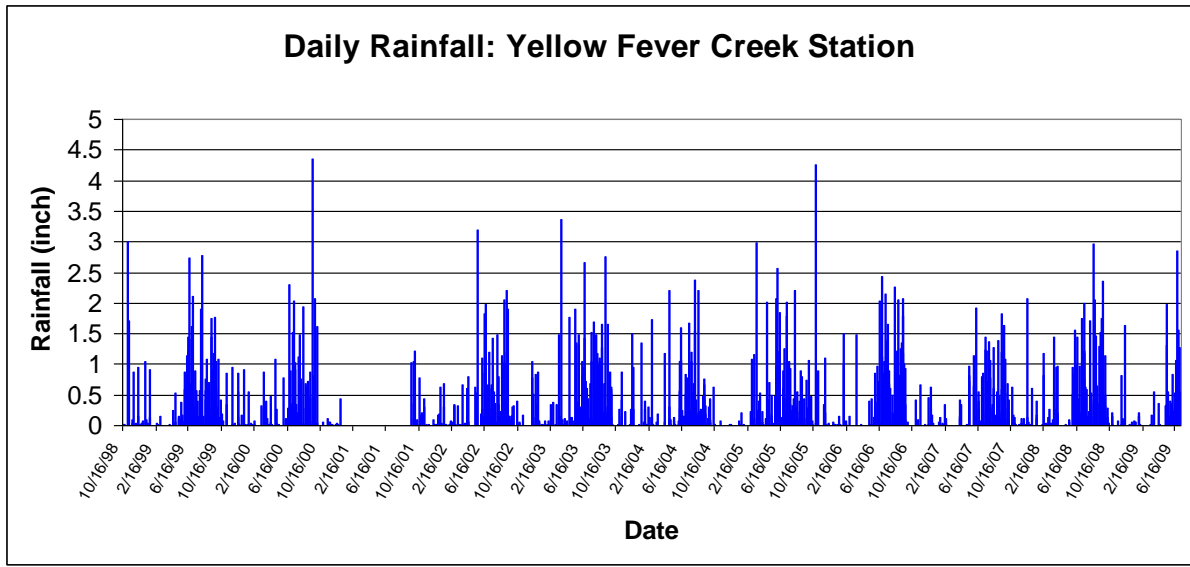
## 6.14 Waste to Energy Plant Station

<i>Rain Gauge ID</i>	<i>Latitude</i>	<i>Longitude</i>	<i>Current Make</i>	<i>Location</i>
WTEP (Waste to Energy Plant)	26 37' 45.74	81 45' 44.70	Campbell	Buckingham Rd, Waste to Energy Plant.



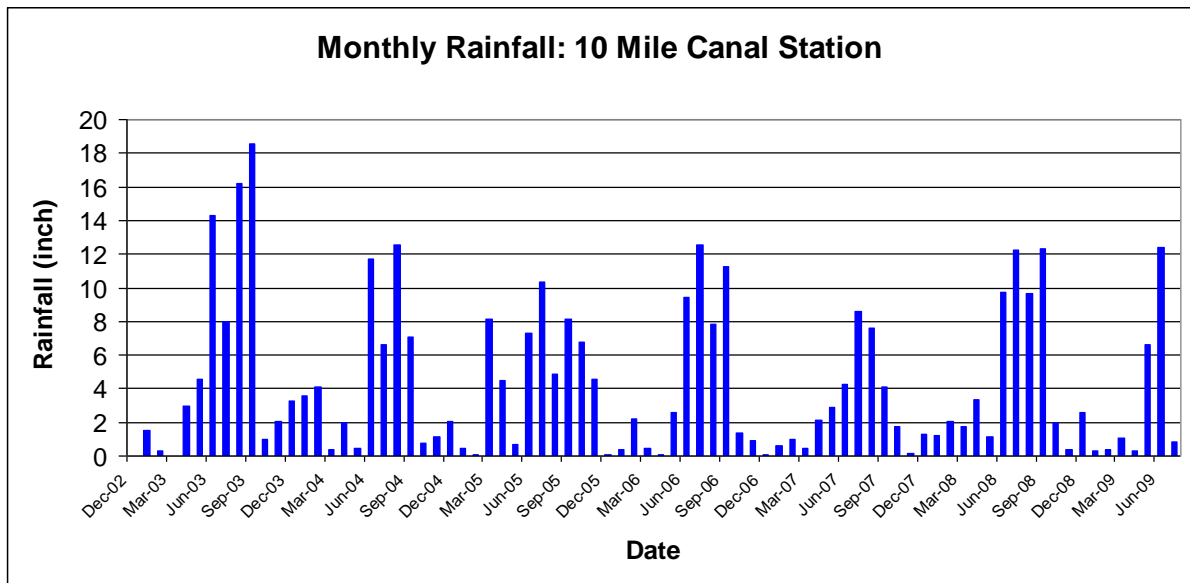
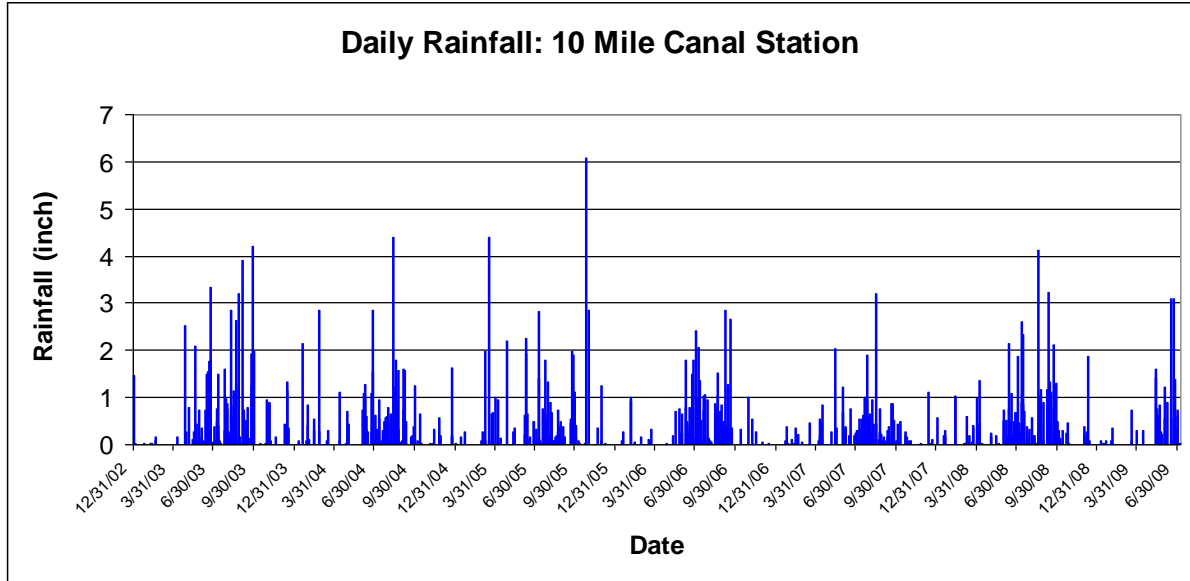
## 6.15 Yellow Fever Creek Station

<i>Rain Gauge ID</i>	<i>Latitude</i>	<i>Longitude</i>	<i>Current Make</i>	<i>Location</i>
YF (Yellow Fever Creek)	26 40' 51.73	81 54' 15.73	Campbell	Herron Rd. & Pine Island Rd, North Ft. Myers.



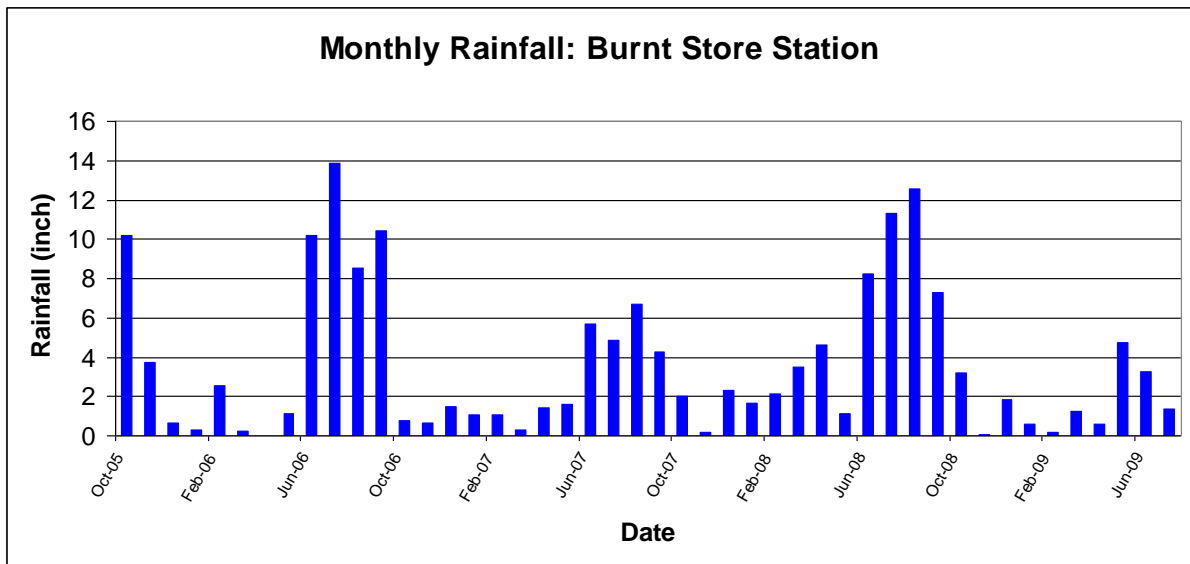
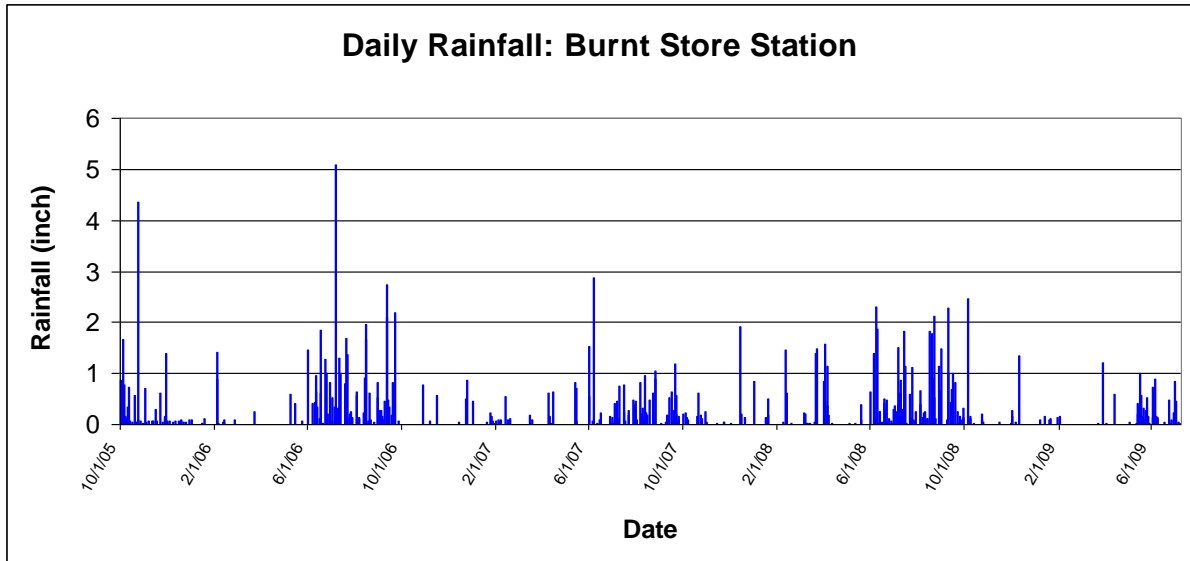
## 6.16 10 Mile Canal

<i>Rain Gauge ID</i>	<i>Latitude</i>	<i>Longitude</i>	<i>Current Make</i>	<i>Location</i>
Ten Mile Canal	26 32' 50.70 81 51' 18.62	26 32' 50.70 81 51' 18.62	Campbell North side of Daniels	Between Metro and 41.



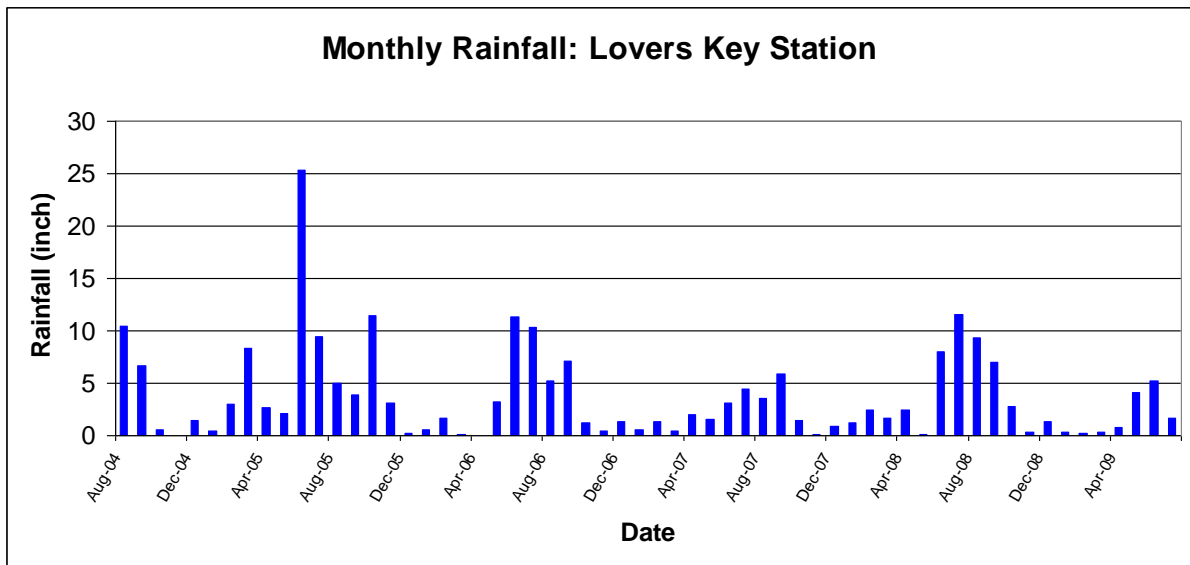
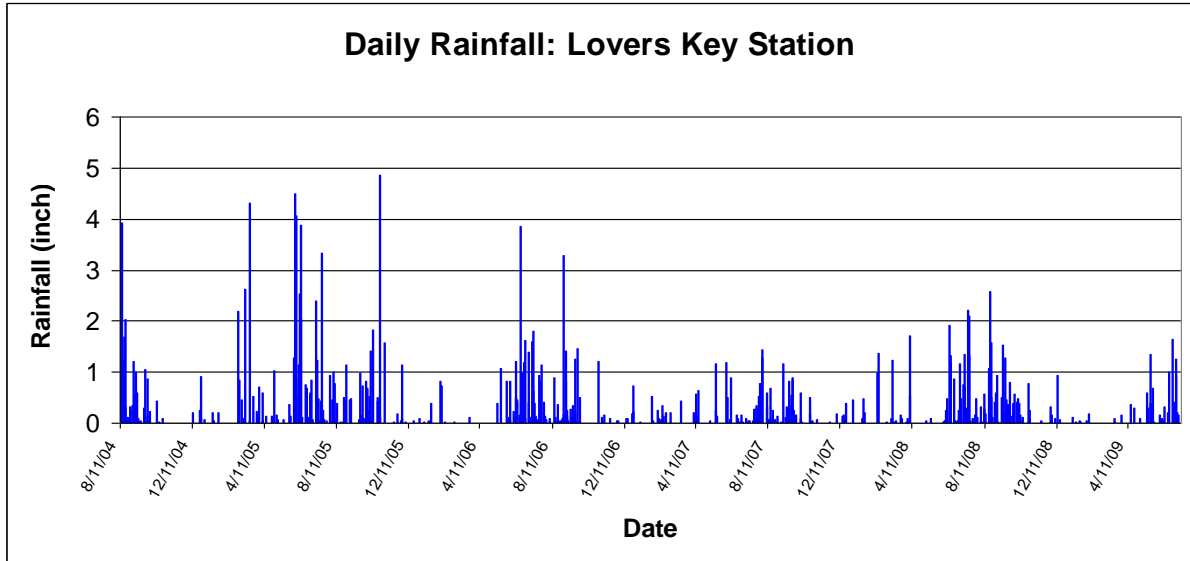
### 6.17 Burnt Store Fire

<i>Rain Gauge ID</i>	<i>Latitude</i>	<i>Longitude</i>	<i>Current Make</i>	<i>Location</i>
Burnt Store Fire			Campbell	Fire Station #7 on Burnt Store Rd.



### 6.18 Lover's Key

<i>Rain Gauge ID</i>	<i>Latitude</i>	<i>Longitude</i>	<i>Current Make</i>	<i>Location</i>
Lover's Key	26 23' 07.0 81 51' 54.0	26 23' 07.0 81 51' 54.0	Campbell	Lover's Key State Recreation Area





## **7. CONCLUSIONS AND RECOMMENDATIONS**

The County provided Consultant a database that contains an extensive data set collected at 18 rainfall gauging stations, 7 surface water stage stations and 162 groundwater monitoring wells. This data was reformatted based on discussion with the County. Generation of single time series groundwater and stage data was accomplished through a series of QA/QC post-processing statistical analyses. For stage data, the 15-minute original data was arranged in uniform format while QA/QC was performed on daily average data. For rainfall data, the 15-minute original data was arranged and saved in uniform format to produce the single time series daily and monthly rainfall data. Upon completion of generating a single time series data for each of the listed groundwater and stage station, the new data set will be stored, archived and uploaded in the County's database by County.

The land reference elevation's accuracy is crucial to the QA/QC of these groundwater stations. The water level data from these groundwater sites are only as accurate as the reference elevations that they are based on. The reference elevations are typically stored in the field and set by the data collector. Therefore the field notes, worksheets, photographs, activation, deactivation sheets can provide very useful information. County should plan to perform a complete review of all available field documentation to determine the reference elevation.

Any new or changes in the existing reference elevations through field survey are supposed to be registered in the County's database. The database will also have the date and whether it is an assumed elevation. These are all critical pieces in determining the accuracy of the reference elevation.

If a reference elevation has changed at any point in the life of a station, a datum adjustment should be performed on any data existing prior to the date of the new reference elevation. A datum adjustment adds or subtracts the difference of the new and old reference elevations so that all of the data is at the same datum. Any datum adjustments should be recorded in the County's database. These datum adjustments must also be reviewed to understand the reference elevation history for each station. The County's database documents each datum adjustment, the period of record adjusted and the date and amount of adjustment.

Also, the County staff's experience can be utilized to add credibility to the reference elevations. The County staff may discuss in determining the accuracy of the reference elevations. This includes any field technicians, survey crews, data processors, or engineers that might be able to provide knowledge and/ or documentation to validate the reference elevations.

The data is then reviewed for any anomalies in the reference elevations. Any unexplained shifts in the water level trends must be investigated. Specifically, changes in data recorders are typical times when errors in datum show up. Any dates when physical changes have occurred at the site like recorder modernization, new construction, etc. are thoroughly reviewed for possible datum anomalies. Datum adjustments from reference elevation changes and instrumentation problems may occur in the following stations:

5-GW3 through 5-GW5, 5-GW8, 16E-GW1, 16E-GW2, 17-GW4, 23-GW1, 23-GW2, 24-GW2, 27-GW1, 28-GW2, 29-GW2, 38-GW1, 38-GW2, 40-GW5 through 40-GW8, 41-GW3, 41-GW5, 41-GW6, 43-GW1 through 43-GW3, 44-GW1, 44-GW2, 45-GW3,

46A-GW4, 46A-GW9, 46A-GW10, 46A-GW12, 46A-GW14, 46A-GW15, 46A-GW18, 46A-GW24, 46A-GW25, 46A-GW26, 46C-GW2, 46C-GW3, 47A-GW1, 47A-GW2, 47A-GW6, 47A-GW7, 47A-GW10, 48-GW1, 48-GW2, 49-GW2, 49-GW5, 49-GW8 through 49-GW12, 49-GW15 and 49L-GW1.

Recommendations on rainfall data collection are summarized in the following.

- Do not change the logging devices back and forth between Daylight Savings and Standard time. Use GMT consistently and avoid problems with duplicate or missing records in the database and to make it clear that the timestamp is for data collection. Weather data is timestamped in GMT, so a time translation would not be necessary to correlate the data.
- Check and correct the time as often as needed to keep the amount of correction to a minimum. When making a time correction, make the correction during a period so the correction does not cross the period boundary. The best scenario is if the device automatically gets the time updates, but checking is needed for the device to be sure the automatic updates are happening.
- Automate the process to load data directly from the logger device. If auditing is needed, store the raw data downloaded from the device in a text file. Avoid manual reformatting of the data downloaded from the logger. If you can get the data in real time, you can be alerted when problems occur with devices and minimize the number of periods with no data.
- Automate the process of generating charts so the new data could be incorporated into an analysis as soon as it is available in the database. Also charts could easily be refreshed if existing data gets revised or corrected for any reason.

- Enhance the database to identify data that has been modified from the raw value provided by the logging device and provide space for comments regarding the data, logging device, or data collection events. In other words, include information on the data: how it was collected, when, why it was changed, etc.
- Identify a rainfall period by its start time. It will allow standard date functions to be used to summarize the data by hour, day, month, etc. Currently, all data is timestamped with the time at the end of a period. For example, midnight is the start of the next day, and when summarizing, an adjustment is required to get the rainfall for the period with this timestamp to be included in the previous day.

## **8. APPENDICES**

Appendices A to D are attached in separate files in a CD

### **8.1. Appendix A**

Excel data sheets with original and QA/QC revised groundwater and stage (daily average) single time series data for each station.

### **8.2. Appendix B**

MS Access data sheets with uniformly arranged 15-minute interval stage and rainfall original data for each station

### **8.3. Appendix C**

Excel data sheets with daily and monthly rainfall data for each station

### **8.4. Appendix D**

Linear regression equations