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**Routine Calculations Report  
In Support of Task 6 of AP-114**

**WIPP-11 February 2005 Pumping Test Observation Well Data  
Processing - Summary of Files**

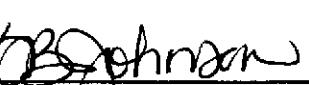
**(AP-114: Analysis Plan for Evaluation and Recalibration of Culebra  
Transmissivity Fields, ERMS# 537208)**

**WBS 1.4.2.3**

**Report Date: June 13, 2006**

**Authors:**

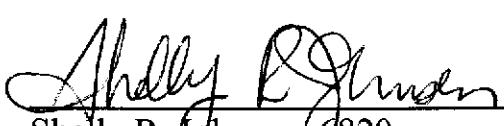
  
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## **WIPP-11 February 2005 Pumping Test Observation Well Data Processing – Summary of Files**

The following sections describe the pre-processing, including corrections for barometric and earth tides and detrending when necessary, that was performed on the observation well data from the WIPP-11 pumping test performed in February 2005. The sections are separated by well, except the calculation of freshwater heads section and the computer codes for the macros used at the end of the document which are applicable to all of the wells.

During detrending, basic slope calculations were performed in Excel. For each dataset, a linear regression was applied to each trendline.

Each of the well sections below refers to specific data files that were created for each observation well data set. These data sets have been compiled into one data file called WIPP-11 Compiled Response Well Data.xls.

### **H-6b**

What follows describes the process used to remove barometric and earthtide effects from miniTroll pressure head files collected at H-6b between 10/14/2004 and 10/4/2005. The removal was done using BETCO version 1.0 qualified as per NP 19-1.

The miniTroll data file processed was SN17353 2004-10-14 112016 H-6b(C3).bin located on the WIPPDATA computer in Carlsbad, NM.

1. The miniTroll was exported from WinSitu 4.x to Microsoft EXCEL Office 2003. A pre-processing macro was run to arrange the columns and add a column to the data recording the original \*.bin file for each record. The macro also reduces the data to a new worksheet (PSIOUT) in the workbook that contains just two columns. Column A is the decimal DateTime column, Column B is the PSI column. The macro is attached. The pre-processed excel files were saved as H-6b(C3).xls.
2. The first 3 records of H-6b(C3).xls were deleted since they were not representative of the pressure at the installed depth. These records were recorded during Troll installation in the well.
3. A worksheet called WL H-6b(C3) was created in the H-6b(C3).xls file. The DecimalDay column was copied from the PSI worksheet along with the corresponding PSI column. This worksheet was saved as WL H-6b(C3).csv.
4. A barometric pressure record was obtained for the corresponding time period to H-6b between 9/10/2004 and 1/5/2006. This record was obtained from a series of barometric pressure records compiled from various locations at the WIPP site to form a continuous record. This record along with its documentation was submitted to records in record package #542309. Records for the period above were saved as a \*.csv file with two columns: DecimalDay and Barometric Pressure. This file was saved as BP compilation between 9-10-2004 and 1-5-2006.csv

5. Qualified acquired software TSOFT was used to create a synthetic earth tide potential record overlapping the period corresponding to the pressure head record in the file H-6b between 9/10/2004 and 1/5/2006. An earth tide timeseries was created at 15-minute intervals for the WIPP Modeling Domain Center latitude, longitude, and elevation. The time series was saved to ET WIPP Model Domain 09-01-04 to 1-5-06.csv.
  6. MatchRecords written in C++, source attached, was used to match pressure head records from WL H-6b(C3).csv to Barometric Pressure records from BP compilation between 9-10-2004 and 1-5-2006.csv and then earth tide records from ET WIPP Model Domain 09-01-04 to 1-5-06.csv. The utility uses a simple search algorithm to find the closest barometric and earthtide observation to the pressure head measurement time. Its output is a \*.csv file with six columns, pressure head observation time, pressure head, barometric observation time, barometric pressure, earth tide observation time, and earth tide acceleration. The file of matched pressure head, barometric observations, and earth tide observations was saved as WLBPET H-6b(C3).csv.
  7. WLBPET H-6b(C3).csv was opened in EXCEL and saved as excel file WLBPET H-6b(C3).xls.
  8. WLBPET H-6b(C3).xls was saved as WLBPET H-6b(C3) Filtered.xls. WLBPET H-6b(C3) Filtered.xls was filtered to remove observations that were off 1-hour intervals. These off interval observations are caused by the event driven sampling in the miniTroll memory gauges. If the delta pressure changes by 0.1psi or greater the miniTroll will record an observation regardless of the time. The default sampling interval is 1-hour. To filter the off interval data a column is added to the sheet as column G. The column is named filter. The filter column consists of the formula:
- $G*=\text{IF}(\text{MINUTE}(A*)=\text{default sampling minute}, 1, 0)$
- This places a 1 in the cell G\* for on interval records, and a 0 for off interval records. All the records were sorted on the filtered column using the ascending method. All records with a 0 value in the filtered column were deleted. The new filtered file was saved as WLBPET H-6b(C3) Filtered.xls.
9. WLBPET H-6b(C3) Filtered.xls was loaded as input into BETCO 1.0. Column A was the DATETIME column, column B was the pressure head column, column C was the matched barometric pressure time, column D was the barometric pressure column, column E was the matched earth tide time, column F was the earth tide potential column. The barometric and earthtide removal was conducted using a max response time of 18 records (18 hours) and a difference interval of one record. The corrected pressure head data was saved as two additional columns in the file WLBPET H-6b(C3) Corrected.xls
  10. The corrected pressure head records are highlighted in yellow in WLBPET H-6b(C3) Corrected.xls and on worksheet H-6b in WIPP-11 Compiled Response Well Data.xls.

### **Detrending**

1. A new chart was added to WLBPET H-6b(C3) Corrected.xls named PSI corrected. The chart is a scatter plot of the corrected data from columns H and I in worksheet WLBPET H-6b(C3).
2. A new series was added to the chart to plot just the pretest data that reflects an upward trend in water levels prior to drawdown from the WIPP-11 Feb. 2005 pumping test. This includes records 1-276 in the worksheet.
3. A linear trendline was added to the chart reflecting the best fit line to the pre-test water level trend. The equation for this line is displayed on the chart. The slope of the line was +0.0091 PSI/Day.
4. A column was added to the WLBPET H-6b(C3) Corrected.xls workbook in worksheet WLBPET H-6b(C3) Corrected. The column was added as column J. Each cell in the column calculated the Elapsed Day of record since the first record by the formula:  $J*=H*-\$H\$2$
5. Column K was added to calculate the correction variable to detrend each pressure record given the upward trend of 0.00328 PSI/day. The formula used was  $K*=J* \times 0.00328$
6. Column L was added to calculate the detrended pressure. The formula used was  $L*=I*-K*$ . The detrended column is highlighted in magenta. The detrended pressure records were added as a series to the chart PSI Corrected.

### **SNL-1**

What follows describes the process used to remove barometric and earthtide effects from miniTroll pressure head files collected at SNL-1 between 12/14/05 and 3/3/05. The removal was done using BETCO version 1.0 qualified as per NP 19-1.

The miniTroll pressure head data files processed are ...\\SN13590 2004-12-14 122547 SNL-1(C3).bin and ...\\SN13590 2005-02-15 144024 SNL-1(C4).bin, located on the WIPPDATA computer in Carlsbad, NM.

1. The miniTroll files were exported from WinSitu 4.x to Microsoft EXCEL Office 2003. A pre-processing macro was run to arrange the columns and add a column to the data recording the original \*.bin file for each record. The macro also reduces the data to a new worksheet (PSIOUT) in the workbook that contains just two columns. Column A is the decimal DateTime column, Column B is the PSI column. The macro is attached.
2. The pre-processed Troll files were compiled in one larger file with both the ...\\SN13590 2004-12-14 122547 SNL-1(C3).bin and ...\\SN13590 2005-02-15 144024 SNL-1(C4).bin data. The compilation file was saved as SNL-1 12-14-04 to 3-3-05.xls. The PSIOUT worksheet from SNL-1 12-14-04 to 3-3-05.xls was saved as a \*.csv file named SNL-1 WL 12-14-04 to 3-3-05.csv.
3. A barometric pressure record was obtained for the corresponding time period to SNL-1 12-14-04 to 3-3-05.xls. This record was obtained from ...\\SN11209 2005-01-18 152436 H-9c(BAR05).bin. The file ...\\SN11209 2005-01-18 152436 H-9c(BAR05).bin was reduced to two columns A for DATETIME (DECIMAL

- DAY) and B for Barometric Pressure (PSI) this sheet was saved to H-9BARO 1-18-05 1-03-06.csv.
4. Qualified acquired software TSOFT was used to create a synthetic earth tide potential record overlapping the period corresponding to the pressure head record in the file SNL-1 12-14-04 to 3-3-05.xls. An earth tide timeseries was created at 10 minute intervals for the SNL-1 latitude, longitude, and elevation. The time series was saved to SNL-1 ET 01-01-05 to 12-31-05.csv.
  5. MatchRecords written in C++, source attached, was used to match pressure head records from SNL-1 WL 12-14-04 to 3-3-05.csv to Barometric Pressure records from H-9BARO 1-18-05 1-03-06.csv and then earth tide records from SNL-1 ET 01-01-05 to 12-31-05.csv. The utility uses a simple search algorithm to find the closest barometric and earthtide observation to the pressure head measurement time. Its output is a \*.csv file with six columns, pressure head observation time, pressure head, barometric observation time, barometric pressure, earth tide observation time, and earth tide acceleration. The file of matched pressure head, barometric observations, and earth tide observations was saved as SNL-1 WLBPET 12-14-04 to 3-3-05.csv.
  6. All records prior to 1/18/05 16:17 were deleted from SNL-1 WLBPET 12-14-04 to 3-3-05.csv. The records were filtered to remove any records that were not on 25:00 or 40:00 minutes after the hour. This filtered data set was saved as SNL-1 WLBPET 1-18-05 to 3-3-05.xls
  7. SNL-1 WLBPET 1-18-05 to 3-3-05.xls was loaded as input into validated code BETCO version 1.0 and corrected using a memory value, m, of 12 measurements, and a time differencing interval of one measurement. The output was saved as two additional columns to SNL-1 WLBPET 1-18-05 to 3-3-05.xls named BAROcorrectTime and Corrected-Pressure.
  8. This file was saved as SNL-1 WLBPET 1-18-05 to 3-3-05 Corrected.xls and the data were copied to worksheet SNL-1 in WIPP-11 Compiled Response Well Data.xls.

### Detrending

1. A new chart was added to SNL-1 WLBPET 1-18-05 to 3-3-05 Corrected.xls named PSI corrected. The chart is a scatter plot of the corrected data from columns H and I in worksheet SNL-1 WLBPET 12-14-04 to 3-3-05.
2. A new series was added to the chart to plot just the pretest data that reflects an upward trend in water levels prior to drawdown from the WIPP-11 Feb. 2005 pumping test. This includes records 1-276 in the worksheet.
3. A linear trendline was added to the chart reflecting the best fit line to the pre-test water level trend. The equation for this line is displayed on the chart. The slope of the line was +0.0091 PSI/Day.
4. A column was added to the SNL-1 WLBPET 1-18-05 to 3-3-05 Corrected.xls workbook in worksheet SNL-1 WLBPET 12-14-04 to 3-3-05. The column was added as column J. Each cell in the column calculated the Elapsed Day of record since the first record by the formula:  $J*=H*-\$H\$2$

5. Column K was added to calculate the correction variable to detrend each pressure record given the upward trend of 0.0091 PSI/day. The formula used was  $K^*=J^*x$  0.0091
6. Column L was added to calculate the detrended pressure. The formula used was  $L^*=I^*-K^*$ . The detrended column is highlighted in magenta.
7. The detrended pressure records were added as a series to the chart PSI Corrected.

### **SNL-2**

What follows describes the process used to remove barometric and earthtide effects from miniTroll pressure head files collected at SNL-2 between 1/25/05 and 7/27/05. The removal was done using BETCO version 1.0 qualified as per NP 19-1.

The miniTroll data files processed are SN13562 2005-01-25 093319 SNL-2(C13).bin and SN13562 2005-02-28 140000 SNL-2(C14).bin located on the WIPPDATA computer in Carlsbad, NM.

1. The miniTroll Files were exported from WinSitu 4.x to Microsoft EXCEL Office 2003. A pre-processing macro was run to arrange the columns and add a column to the data recording the original \*.bin file for each record. The macro also reduces the data to a new worksheet (PSIOUT) in the workbook that contains just two columns. Column A is the decimal DateTime column, Column B is the PSI column. The macro is attached. The pre-processed excel files were saved to two excel files SNL-2(C13).xls and SNL-2(C14).xls, respectively.
2. The pressure records from SNL-2(C14).xls were added to the end of SNL-2(C13).xls and the larger period of data was saved to SNL-2(C13-C14 compilation).xls
3. The PSI worksheet in SNL-2(C13-C14 Compilation).xls was copied to a new worksheet in the same file called PSI shifted.
4. A new Column was added to the PSI shifted worksheet called PSI shifted.
5. An offset in the pressure data exists at the break between the C13 Troll file and C14 Troll file. The offset was calculated at 9.557 PSI by subtracting the last pressure head measurement from the C13 file from the first stable measurement from the C14 file at 2/28/05 17:00:00 hours. All pressure records from the C13 file were copied to the PSI shifted column. The PSI column for the C14 records was filled with a formula to shift the C14 pressure records to the C13 records. The formula is:  $E^*=D^*-9.557$
6. A worksheet called WL SNL-2(C13-C14 Compilation) was created in the SNL-2(C13-C14 compilation).xls file. The DecimalDay column was copied from the PSI SHIFTED worksheet along with the corresponding PSI SHIFTED column. This worksheet was saved as WL SNL-2(C13-C14 compilation).csv.
7. A barometric pressure record was obtained for the corresponding time period to SNL-2 between 9/10/2004 and 1/5/2006. This record was obtained from a series of barometric pressure records compiled from various locations at the WIPP site to form a continuous record. This record along with its documentation was submitted to records in record package #542309. Records for the period above

- were saved as a \*.csv file with two columns: DecimalDay and Barometric Pressure. This file was saved as BP compilation between 9-10-2004 and 1-5-2006.csv
8. Qualified acquired software TSOFT was used to create a synthetic earth tide potential record overlapping the period corresponding to the pressure head record in the file SNL-2 between 9/10/2004 and 1/5/2006. An earth tide timeseries was created at 15-minute intervals for the WIPP Modeling Domain Center latitude, longitude, and elevation. The time series was saved to ET WIPP Model Domain 09-01-04 to 1-5-06.csv.
  9. MatchRecords written in C++, source attached, was used to match pressure head records from WL SNL-2 (C13-C14 compilation).csv to Barometric Pressure records from BP compilation between 9-10-2004 and 1-5-2006.csv and then earth tide records from ET WIPP Model Domain 09-01-04 to 1-5-06.csv. The utility uses a simple search algorithm to find the closest barometric and earthtide observation to the pressure head measurement time. Its output is a \*.csv file with six columns, pressure head observation time, pressure head, barometric observation time, barometric pressure, earth tide observation time, and earth tide acceleration. The file of matched pressure head, barometric observations, and earth tide observations was saved as WLBPET SNL-2(C13-C14 compilation).csv.
  10. WLBPET SNL-2(C13-C14 compilation).csv was opened in EXCEL and saved as an excel file to WLBPET SNL-2(C13-C14 compilation).xls.
  11. WLBPET SNL-2(C13-C14 compilation).xls was filtered to remove observations that were off 1-hour intervals. These off interval observations are caused by the event driven sampling in the miniTroll memory gauges. If the delta pressure changes by 0.1psi or greater the miniTroll will record an observation regardless of the time. The default sampling interval is 1-hour. To filter the off interval data a column is added to the sheet as column G. The column is named filter and consists of the formula:
- $G^* = IF(MINUTE(A^*) = \text{default sampling minute}, 1, 0)$
- This places a 1 in the cell G\* for on interval records, and a 0 for off interval records. All the records were sorted on the filtered column using the ascending method. All records with a 0 value in the filtered column were deleted. The new filtered file was saved as WLBPET SNL-2(C13-C14 compilation) Filtered.xls
12. WLBPET SNL-2(C13-C14 compilation) Filtered.xls was loaded as input into BETCO 1.0. Column A was the DATETIME column, column B was the pressure head column, column C was the matched barometric pressure time, column D was the barometric pressure column, column E was the matched earth tide time, column F was the earth tide potential column. The barometric and earthtide removal was conducted using a max response time of 7 records (7 hours) and a difference interval of one record. The corrected pressure head data was saved as two additional columns in the file WLBPET SNL-2(C13-C14 compilation) Corrected.xls.
  13. The corrected pressure head records are highlighted in yellow in SNL-2(C13-C14 compilation) Corrected.xls and the data were copied to worksheet SNL-2 in WIPP-11 Compiled Response Well Data.xls.

# Information<sup>7</sup> Only

### **SNL-3**

What follows describes the process used to remove barometric and earthtide effects from miniTroll pressure head files collected at SNL-3 between 5-3-04 and 1-5-06. The removal was done using BETCO version 1.0 qualified as per NP 19-1.

The miniTroll data files processed are SN11028 2004-05-03 111511 SNL-3(C2).bin and SN11028 2005-04-13 140000 SNL-3(C3).bin located on the WIPPDATA computer in Carlsbad, NM.

1. The miniTroll files were exported from WinSitu 4.x to Microsoft EXCEL Office 2003. A pre-processing macro was run to arrange the columns and add a column to the data recording the original \*.bin file for each record. The macro also reduces the data to a new worksheet (PSIOUT) in the workbook that contains just two columns. Column A is the decimal datetime column, Column B is the PSI column. The macro is attached. The pre-processed excel files were saved to two excel files SNL-3(C2).xls and SNL-3(C3).xls, respectively.
2. The pressure records from SNL-3(C2).xls were added to the end of SNL-3(C3).xls and the larger period of data was saved to SNL-3(C2-C3 compilation).xls
3. A worksheet called PSI OUT was created in the SNL-3(C2-C3 compilation).xls file. The DecimalDay column was copied from the PSI worksheet along with the corresponding PSI column. This worksheet was saved as SNL-3 WL 5-3-04 to 1-5-06.csv
4. A barometric pressure record was obtained for the corresponding time period to SNL-3 WL 5-3-04 to 1-5-06.csv. This record was obtained from a series of barometric pressure records compiled from various locations at the WIPP site to form a continuous record. This record along with its documentation was submitted to records in record package ERMS# 542309. Records for the period above were saved as a \*.csv file with two columns: DecimalDay and Barometric Pressure. This file was saved as SNL-3 BARO 9-10-04 to 1-3-06.csv
5. Qualified acquired software TSOFT was used to create a synthetic earth tide potential record overlapping the period corresponding to the pressure head record in the file SNL-3 WL 5-3-04 to 1-5-06.csv. An earth tide timeseries was created at 15-minute intervals for the WIPP Modeling Domain Center latitude, longitude, and elevation. The time series was saved to SNL-3 ET 1-1-04 to 6-7-06.csv.
6. MatchRecords written in C++, source attached, was used to match pressure head records from SNL-3 WL 5-3-04 to 1-5-06.csv to Barometric Pressure records from SNL-3 BARO 9-10-04 to 1-3-06.csv and then earth tide records from SNL-3 ET 1-1-04 to 6-7-06.csv. The utility uses a simple search algorithm to find the closest barometric and earthtide observation to the pressure head measurement time. Its output is a \*.csv file with six columns, pressure head observation time, pressure head, barometric observation time, barometric pressure, earth tide observation time, and earth tide acceleration. The file of matched pressure head, barometric observations, and earth tide observations was saved as SNL-3 WLBPET 5-3-04 to 1-5-06.csv
7. SNL-3 WLBPET 5-3-04 to 1-5-06.csv was opened in EXCEL and saved as an excel file to SNL-3 WLBPET 5-3-04 to 1-5-06.xls.

8. SNL-3 WLBPET 5-3-04 to 1-5-06.xls was loaded as input into BETCO 1.0. Column A was the DATETIME column, column B was the pressure head column, column C was the matched barometric pressure time, column D was the barometric pressure column, column E was the matched earth tide time, column F was the earth tide potential column. The barometric and earthtide removal was conducted using a max response time of 12 records (12 hours) and a difference interval of one record. The corrected pressure head data was saved as two additional columns in the file SNL-3 WLBPET 5-3-04 to 1-5-06 Corrected.xls.
9. The corrected pressure head records are highlighted in yellow on the SNL-3 WLBPET 5-3-04 to 1-5-06.xls and the data were copied to worksheet SNL-3 in WIPP-11 Compiled Response Well Data.xls.

### **Detrending**

1. In file SNL-3 WLBPET 5-3-04 to 1-5-06 Corrected.xls a trend series was added for the portion of the corrected pressure ranging from decimal days since 38271 to 38333 1/1/1900 00:00:00 in the PSI CORRECTED sheet.
2. A trendline was fit to the above series with the equation  $y=0.0091x-268.76$  with an  $R^2$  value of 0.9846.
3. The slope between the last point prior to pumping in WIPP-11 and the last point the dataset was used to obtain another trend slope. This slope was calculated as 0.004045 PSI/Day by the formula:
  - Slope= PSI(2)-PSI(1)/DATETIME(2)-DATETIME(1)
  - Slope=  $(80.54-79.1777)/(38385.1355-38721.96)$
4. A column was added to the SNL-3 WLBPET 5-3-04 to 1-5-06 Corrected.xls workbook in worksheet SNL-3 WLBPET 5-3-04 to 1-5-06. The column was added at column J. Each cell in the column calculated the elapsed day of record since the first record by the formula:  $J*=H*-\$H\$2$
5. Column K was added to calculate the correction variable to detrend each pressure record given the upward trend of 0.004045 PSI/day (Calculated in step 3). The formula used was  $K*=J* \times 0.004045$
6. Column L was added to calculate the detrended pressure. The formula used was  $L*=I*-K*$ . The detrended column is highlighted in magenta.
7. The detrended pressure records were added as a series to the chart PSI Corrected.

### **SNL-5**

What follows describes the process used to remove barometric and earthtide effects from miniTroll pressure head files collected at SNL-5 between 9/10/2004 and 1/5/2006. The removal was done using BETCO version 1.0 qualified as per NP 19-1.

The miniTroll data files processed are ...\\SN04558 2004-09-10 134143 SNL-5(C3).bin and ...\\SN11306 2005-04-01 140000 SNL-5(C4).bin located on the WIPPDATA computer in Carlsbad, NM.

1. The miniTroll Files were exported from WinSitu 4.x to Microsoft EXCEL Office 2003. A pre-processing macro was run to arrange the columns and add a column to the data recording the original \*.bin file for each record. The macro also

- reduces the data to a new worksheet (PSIOUT) in the workbook that contains just two columns. Column A is the decimal DateTime column, Column B is the PSI column. The macro is attached. The pre-processed excel files were saved to two excel files ...\\SN04558 2004-09-10 134143 SNL-5(C3).xls and ...\\SN11306 2005-04-01 140000 SNL-5(C4).xls.
2. The pressure records from ...\\SN11306 2005-04-01 140000 SNL-5(C4).xls were added to the end of ....\\SN04558 2004-09-10 134143 SNL-5(C3).xls and the larger period of data was saved to SNL-5(C3-C4 compilation).xls
  3. A worksheet called PSI out was created in the SNL-5(C3-C4 compilation).xls file. The DecimalDay column was copied from the PSI worksheet along with the corresponding pressure. This worksheet was saved as WL SNL-5(C3-C4 compilation).csv.
  4. A barometric pressure record was obtained for the corresponding time period to SNL-5 between 9/10/2004 and 1/5/2006. This record was obtained from a series of barometric pressure records compiled from various locations at the WIPP site to form a continuous record. This record along with its documentation was submitted to records in record package #542309. Records for the period above were saved as a \*.csv file with two columns: DecimalDay and Barometric Pressure. This file was saved as BP compilation between 9-10-2004 and 1-5-2006.csv
  5. Qualified acquired software TSOFT was used to create a synthetic earth tide potential record overlapping the period corresponding to the pressure head record in the file SNL-5 between 9/10/2004 and 1/5/2006. An earth tide timeseries was created at 15-minute intervals for the WIPP Modeling Domain Center latitude, longitude, and elevation. The time series was saved to ET WIPP Model Domain 09-01-04 to 1-5-06.csv.
  6. MatchRecords written in C++, source attached, was used to match pressure head records from WL SNL-5(C3-C4 compilation).csv to Barometric Pressure records from BP compilation between 9-10-2004 and 1-5-2006.csv and then earth tide records from ET WIPP Model Domain 09-01-04 to 1-5-06.csv. The utility uses a simple search algorithm to find the closest barometric and earth tide observation to the pressure head measurement time. Its output is a \*.csv file with six columns, pressure head observation time, pressure head, barometric observation time, barometric pressure, earth tide observation time, and earth tide acceleration. The file of matched pressure head, barometric observations, and earth tide observations was saved as WLBPET SNL-5(C3-C4 compilation).csv.
  7. WLBPET SNL-5(C3-C4 compilation).csv was opened in Excel and saved as an Excel file to WLBPET SNL-5(C3-C4 compilation).xls.
  8. WLBPET SNL-5(C3-C4 compilation).xls was filtered to remove observations that were off 1-hour intervals. These off interval observations are caused by the event driven sampling in the miniTroll memory gauges. If the delta pressure changes by 0.1psi or greater the miniTroll will record an observation regardless of the time. The default sampling interval is 1-hour. To filter the off interval data a column is added to the sheet as column G. The column is named filter. The filter column consists of the formula:

$G^* = IF(MINUTE(A^*) = \text{default sampling minute}, 1, 0)$

- This places a 1 in the cell G\* for on interval records, and a 0 for off interval records. All the records were sorted on the filtered column using the ascending method. All records with a 0 value in the filtered column were deleted. The new filtered file was saved as WLPET SNL-5(C3-C4 compilation) Filtered.xls
9. WLPET SNL-5(C3-C4 compilation) Filtered.xls was loaded as input into BETCO 1.0. Column A was the DATETIME column, column B was the pressure head column, column C was the matched barometric pressure time, column D was the barometric pressure column, column E was the matched earth tide time, column F was the earth tide potential column. The barometric and earthtide removal was conducted using a max response time of 7 records (7 hours) and a difference interval of one record. The corrected pressure head data was saved as two additional columns in the file WLPET SNL-5(C3-C4 compilation) Filtered.xls. WLPET SNL-5(C3-C4 compilation) Filtered.xls was also saved as WLPET SNL-5(C3-C4 compilation) Corrected.xls.
  10. The Corrected pressure head was graphed in WLPET SNL-5(C3-C4 compilation) Corrected.xls and placed in a new chart called Corrected Raw Data.
  11. An offset was identified at 1/18/05 14:41-hours. The corrected data was copied to a new worksheet called WLPET SNL-5(C3-C4) Shifted. This offset is coincident with the change from one barometric record to another. The change in location or Troll often causes a shift in the barometric record due to differences in elevation or Troll intercept.
  12. The corrected values from column I of WLPET SNL-5(C3-C4) Shifted were copied to column J. 0.14 PSI was subtracted from each observation in column J after 1/18/05 14:41 to correct for the offset.
  13. The records in worksheet WLPET SNL-5(C3-C4) Shifted located in workbook WLPET SNL-5(C3-C4 compilation) Corrected.xls represent the barometric and earth tide corrected data for SNL-5. The DATETIME column is Column H and the Pressure head column is column J.
  14. The corrected pressure head records are highlighted in yellow on the SNL-5 WLPET(C3-C4 compilation) Corrected.xls and the data were copied to worksheet SNL-5 in WIPP-11 Compiled Response Well Data.xls.

### **Detrending**

1. In WLPET SNL-5(C3-C4 Compilation) Corrected.xls the slope between the last point prior to pumping in WIPP-11 and the last point in the dataset was used to obtain a trend slope. This slope was calculated as 0.004301 PSI/day by the formula:
  - Slope= PSI(2)-PSI(1)/DATETIME(2)-DATETIME(1)
  - Slope=(62.5465-61.1096)/(38718.9167-38384.8623)
2. A column was added to the WLPET SNL-5(C3-C4 Compilation) Corrected.xls workbook in worksheet WLPET SNL-5(C3-C4) Shifted. The column was added as column K. Each cell in the column calculated the elapsed day of record since the first record by the formula:  $K*=H*-\$H\$2$
3. Column L was added to calculate the correction variable to detrend each pressure record given the upward trend of 0.004301 PSI/day. The formula used was  $L*=K* \times 0.004301$

4. Column M was added to calculate the detrended pressure. The formula used was  $M^*=J^*-L^*$ . The detrended column is highlighted in magenta.
5. The detrended pressure records were added as a series to the chart Corrected Shifted.

### SNL-9

What follows describes the process used to remove barometric and earthtide effects from miniTroll pressure head files collected at SNL-9 between 12/21/04 and 1/03/06. The removal was done using BETCO version 1.0 qualified as per NP 19-1.

The miniTroll data file processed is ...\\SN17621 2004-12-21 130313 SNL-9(C10).bin, located on the WIPPDATA computer in Carlsbad, NM.

1. The miniTroll File was exported from WinSitu 4.x to Microsoft EXCEL Office 2003. A pre-processing macro was run to arrange the columns and add a column to the data recording the original \*.bin file for each record. The macro also reduces the data to a new worksheet (PSIOUT) in the workbook that contains just two columns. Column A is the decimal DateTime column, Column B is the PSI column. The macro is attached.
2. The pre-processed Troll file was saved as SNL-9 12-21-04 to 1-3-06.xls. The PSIOUT worksheet from SNL-9 12-21-04 to 1-3-06.xls was saved as a \*.csv file named SNL-9 WL 12-21-04 to 1-3-06.csv.
3. A barometric pressure record was obtained for the corresponding time period to SNL-9 12-21-04 to 1-3-06.xls. This record was obtained from ...\\SN11209 2005-01-18 152436 H-9c(BARO5).bin. The file ...\\SN11209 2005-01-18 152436 H-9c(BARO5).bin was reduced to two columns A for DATETIME (DECIMAL DAYS) and B for Barometric Pressure (PSI) this sheet was saved to H-9BARO 1-18-05 1-03-06.csv.
4. Qualified acquired software TSOFT was used to create a synthetic earth tide potential record overlapping the period corresponding to the pressure head record in the file WIPP-30 12-22-04 to 4-6-05.xls. An earth tide timeseries was created at 10 minute intervals for the SNL-9 latitude, longitude, and elevation. The time series was saved to SNL-9 ET 01-01-05 to 12-31-05.csv.
5. MatchRecords written in C++, source attached, was used to match pressure head records from SNL-9 WL 12-21-04 to 1-3-06.csv to Barometric Pressure records from H-9BARO 1-18-05 1-03-06.csv and then earth tide records from SNL-9 ET 01-01-05 to 12-31-05.csv. The utility uses a simple search algorithm to find the closest barometric and earthtide observation to the pressure head measurement time. Its output is a \*.csv file with six columns, pressure head observation time, pressure head, barometric observation time, barometric pressure, earth tide observation time, and earth tide acceleration. The file of matched pressure head, barometric observations, and earth tide observations was saved as SNL-9 WLBPET 12-21-04 to 1-3-06.csv.
6. All records prior to 1/18/05 16:17 were deleted from SNL-9 WLBPET 12-21-04 to 8-22-05.csv to remove transients related to prior sampling in the well. The records were filtered to remove any records that were not on 03:00 minutes after

- the hour. This filtered data set was saved as SNL-9 WLBPET 1-18-05 to 8-22-05.xls
7. SNL-9 WLBPET 1-18-05 to 8-22-05.xls was loaded as input into validated code BETCO version 1.0 and corrected using a memory value, m, of 12 measurements, and a time differencing interval of one measurement. The output was saved as two additional columns to SNL-9 WLBPET 1-18-05 to 8-22-05.xls named BAROcorrectTime and Corrected-Pressure.
  8. The corrected pressure head records are highlighted in yellow on the SNL-9 WLBPET 1-18-05 to 8-22-05.xls and the data were copied to worksheet SNL-9 in WIPP-11 Compiled Response Well Data.xls.

### **WIPP-12**

What follows describes the process used to remove barometric and earthtide effects from miniTroll pressure head files collected at WIPP-12 between 1/26/2005 and 6/02/2005. The removal was done using BETCO version 1.0 qualified as per NP 19-1.

The miniTroll data file processed was SN17333 2005-01-26 110831 WIPP-12(C).bin located on the WIPPDATA computer in Carlsbad, NM.

1. The miniTroll was exported from WinSitu 4.x to Microsoft EXCEL Office 2003. A pre-processing macro was run to arrange the columns and add a column to the data recording the original \*.bin file for each record. The macro also reduces the data to a new worksheet (PSIOUT) in the workbook that contains just two columns. Column A is the decimal DateTime column, Column B is the PSI column. The macro is attached. The pre-processed excel files were saved as WIPP-12(C).xls
2. The first 2 record(s) of WIPP-12(C).xls were deleted since they are not representative of the pressure at the installed depth. The record(s) were recorded during Troll installation in the well.
3. A worksheet called WL WIPP-12(C) was created in the WIPP-12(C).xls file. The DecimalDay column was copied from the PSI worksheet along with the corresponding PSI column. This worksheet was saved as WL WIPP-12(C).csv.
4. A barometric pressure record was obtained for the corresponding time period to WIPP-12 between 1/26/2005 and 6/02/2005. This record was obtained from a series of barometric pressure records compiled from various locations at the WIPP site to form a continuous record. This record along with its documentation was submitted to records in record package #542309. Records for the period above were saved as a \*.csv file with two columns: DecimalDay and Barometric Pressure. This file was saved as BP compilation between 9-10-2004 and 1-5-2006.csv
5. Qualified acquired software TSOFT was used to create a synthetic earth tide potential record overlapping the period corresponding to the pressure head record in the file WIPP-12 between 1/26/2005 and 6/02/2005. An earth tide timeseries was created at 15-minute intervals for the WIPP Modeling Domain Center latitude, longitude, and elevation. The time series was saved to ET WIPP Model Domain 09-01-04 to 1-5-06.csv.

6. MatchRecords written in C++, source attached, was used to match pressure head records from WL WIPP-12(C).csv to Barometric Pressure records from BP compilation between 9-10-2004 and 1-5-2006.csv and then earth tide records from ET WIPP Model Domain 09-01-04 to 1-5-06.csv. The utility uses a simple search algorithm to find the closest barometric and earthtide observation to the pressure head measurement time. Its output is a \*.csv file with six columns, pressure head observation time, pressure head, barometric observation time, barometric pressure, earth tide observation time, and earth tide acceleration. The file of matched pressure head, barometric observations, and earth tide observations was saved as WLBPET WIPP-12(C).csv.
7. WLBPET WIPP-12(C).csv was opened in EXCEL and saved as an excel file to WLBPET WIPP-12(C).xls.
8. WLBPET WIPP-12(C).xls was saved as WLBPET WIPP-12(C) Filtered.xls. WLBPET WIPP-12(C).Filtered.xls was filtered to remove observations that were off 1-hour intervals. These off interval observations are caused by the event driven sampling in the miniTroll memory gauges. If the delta pressure changes by 0.1psi or greater the miniTroll will record an observation regardless of the time. The default sampling interval is 1-hour. To filter the off interval data a column is added to the sheet as column G. The column is named filter. The filter column consists of the formula:  

$$G^* = IF(MINUTE(A^*) = \text{default sampling minute}, 1, 0)$$

This places a 1 in the cell G\* for on interval records, and a 0 for off interval records. All the records were sorted on the filtered column using the ascending method. All records with a 0 value in the filtered column were deleted. The new filtered file was saved as WLBPET WIPP-12(C) Filtered.xls.
9. WLBPET WIPP-12(C) Filtered.xls was loaded as input into BETCO 1.0. Column A was the DATETIME column, column B was the pressure head column, column C was the matched barometric pressure time, column D was the barometric pressure column, column E was the matched earth tide time, column F was the earth tide potential column. The barometric and earthtide removal was conducted using a max response time of 10 records (10 hours) and a difference interval of one record. The corrected pressure head data was saved as two additional columns in the file WLBPET WIPP-12(C) Corrected.xls. The step response for the WIPP-12 data set was almost a constant zero which indicates that the well/aquifer system has no barometric response regardless of time. As such the correction is minimal and probably unnecessary
10. The Corrected pressure head records are highlighted in yellow in WLBPET WIPP-12(C) Corrected.xls and the data were copied to worksheet WIPP-12 in WIPP-11 Compiled Response Well Data.xls.

### **Detrending**

1. A new chart was added to WLBPET WIPP-12(C) Corrected.xls named Corrected. The chart is a scatter plot of the corrected data from columns H and I in worksheet WLBPET WIPP-12(C).

2. A new series was added to the chart to plot just the pretest data that reflects an upward trend in water levels prior to drawdown from the WIPP-11 Feb. 2005 pumping test. This includes records 62-150 in the worksheet.
3. A linear Trendline was added to the chart reflecting the best fit line to the pre-test water level trend. The equation for this line is displayed on the chart. The slope of the line was +0.0119 PSI/Day.
4. A column was added to the WLBPET WIPP-12(C) Corrected workbook in worksheet WLBPET WIPP-12(C). The column was added at column J. Each cell in the column calculated the detrended pressure by using formula:  $J^* = (0.0119 \times (H^*\$H\$2))$ , given the upward trend of 0.0119 PSI/day.

### WIPP-13

What follows describes the process used to remove barometric and earthtide effects from miniTroll pressure head files collected at WIPP-13 between 10/14/2004 and 7/19/2005. The removal was done using BETCO version 1.0 qualified as per NP 19-1.

The miniTroll data file processed was SN17310 2004-10-14 145956 WIPP-13(C2).bin located on the WIPPDATA computer in Carlsbad, NM.

1. The miniTroll was exported from WinSitu 4.x to Microsoft EXCEL Office 2003. A pre-processing macro was run to arrange the columns and add a column to the data recording the original \*.bin file for each record. The macro also reduces the data to a new worksheet (PSIOUT) in the workbook that contains just two columns. Column A is the decimal DateTime column, Column B is the PSI column. The macro is attached. The pre-processed excel files were saved WIPP-13(C2).xls.
2. The first record of WIPP-13(C2).xls was deleted since it is not representative of the pressure at the installed depth. The record was recorded during Troll installation in the well.
3. A worksheet called WL WIPP-13(C2) was created in the WIPP-13(C2).xls file. The DecimalDay column was copied from the PSI worksheet along with the corresponding PSI column. This worksheet was saved as WL WIPP-13(C2).csv.
4. A barometric pressure record was obtained for the corresponding time period to WIPP-13 between 10/14/2004 and 7/19/2005. This record was obtained from a series of barometric pressure records compiled from various locations at the WIPP site to form a continuous record. This record along with its documentation was submitted to records in record package #542309. Records for the period above were saved as a \*.csv file with two columns: DecimalDay and Barometric Pressure. This file was saved as BP compilation between 9-10-2004 and 1-5-2006.csv
5. Qualified acquired software TSOFT was used to create a synthetic earth tide potential record overlapping the period corresponding to the pressure head record in the file WIPP-13 between 10/14/2004 and 7/19/2005. An earth tide timeseries was created at 15-minute intervals for the WIPP Modeling Domain Center latitude, longitude, and elevation. The time series was saved to ET WIPP Model Domain 09-01-04 to 1-5-06.csv.

6. MatchRecords written in C++, source attached, was used to match pressure head records from WL WIPP-13(C2).csv to Barometric Pressure records from BP compilation between 9-10-2004 and 1-5-2006.csv and then earth tide records from ET WIPP Model Domain 09-01-04 to 1-5-06.csv. The utility uses a simple search algorithm to find the closest barometric and earthtide observation to the pressure head measurement time. Its output is a \*.csv file with six columns, pressure head observation time, pressure head, barometric observation time, barometric pressure, earth tide observation time, and earth tide acceleration. The file of matched pressure head, barometric observations, and earth tide observations was saved as WLBPET WIPP-13(C2).csv.
7. WLBPET WIPP-13(C2).csv was opened in EXCEL and saved as an excel file to WLBPET WIPP-13(C2).xls.
8. WLBPET WIPP-13(C2).xls was saved as WLBPET WIPP-13(C2) Filtered.xls. WLBPET WIPP-13(C2) Filtered.xls was filtered to remove observations that were off 1-hour intervals. These off interval observations are caused by the event driven sampling in the miniTroll memory gauges. If the delta pressure changes by 0.1psi or greater the miniTroll will record an observation regardless of the time. The default sampling interval is 1-hour. To filter the off interval data a column is added to the sheet as column G. The column is named filter. The filter column consists of the formula:

$$G^* = IF(MINUTE(A^*) = \text{default sampling minute}, 1, 0)$$

This places a 1 in the cell G\* for on interval records, and a 0 for off interval records. All the records were sorted on the filtered column using the ascending method. All records with a 0 value in the filtered column were deleted. The new filtered file was saved as WLBPET WIPP-13(C2) Filtered.xls.

9. WLBPET WIPP-13(C2) Filtered.xls was loaded as input into BETCO 1.0. Column A was the DATETIME column, column B was the pressure head column, column C was the matched barometric pressure time, column D was the barometric pressure column, column E was the matched earth tide time, column F was the earth tide potential column. The barometric and earthtide removal was conducted using a max response time of 18 records (18 hours) and a difference interval of one record. The corrected pressure head data was saved as two additional columns in the file WLBPET WIPP-13(C2) Corrected.xls
10. The Corrected pressure head records are highlighted in yellow in WLBPET WIPP-13(C2) Corrected.xls and the data were copied to worksheet WIPP-13 in WIPP-11 Compiled Response Well Data.xls.

### **Detrending**

1. In WLBPET WIPP-13(C2) Corrected.xls the slope between the last point prior to pumping in WIPP-13 and the last point the dataset was used to obtain another trend slope. This slope was calculated as 0.003084 PSI/Day by the formula:
  - Slope = PSI(2)-PSI(1)/DATETIME(2)-DATETIME(1)
  - Slope = (136.9229-136.402153)/(38552.2916-38383.458)
2. A column was added to the WLBPET WIPP-13(C2) Corrected.xls workbook in worksheet WLBPET WIPP-13(C2). The column was added at column J. Each

- cell in the column calculated the Elapsed Day of record since the first record by the formula:  $J^* = H^* - \$H\$2$
3. Column K was added to calculate the correction variable to detrend each pressure record given the upward trend of 0.003084 PSI/day. The formula used was  $K^* = J^* \times 0.003084$
  4. Column L was added to calculate the detrended pressure. The formula used was  $L^* = I^* - K^*$ . The detrended column is highlighted in magenta.
  5. The detrended pressure records were added as a series to the chart PSI Corrected.

### **WIPP-30**

What follows describes the process used to remove barometric and earthtide effects from miniTroll pressure head files collected at WIPP-30 between 12/22/04 and 4/06/05. The removal was done using BETCO version 1.0 qualified as per NP 19-1.

The miniTroll data file processed is ...\\SN13475 2004-12-22 121738 WIPP-30 (C2 WQ1).bin, located on the WIPPDATA computer in Carlsbad, NM.

1. The miniTroll File was exported from WinSitu 4.x to Microsoft EXCEL Office 2003. A pre-processing macro was run to arrange the columns and add a column to the data recording the original \*.bin file for each record. The macro also reduces the data to a new worksheet (PSIOUT) in the workbook that contains just two columns. Column A is the decimal DateTime column, Column B is the PSI column. The macro is attached.
2. The pre-processed Troll file was saved as WIPP-30 12-22-04 to 4-6-05.xls. The PSIOUT worksheet from WIPP-30 12-22-04 to 4-6-05.xls was saved as a \*.csv file named WIPP-30WL 12-22-04 to 4-6-05.csv.
3. A barometric pressure record was obtained for the corresponding time period to WIPP-30 12-22-04 to 4-6-05.xls. This record was obtained from ...\\SN11209 2005-01-18 152436 H-9c(BARO5).bin. The file ...\\SN11209 2005-01-18 152436 H-9c(BARO5).bin was reduced to two columns A for DATETIME (DECIMAL DAYS) and B for Barometric Pressure (PSI) this sheet was saved to H-9BARO 1-18-05 1-03-06.csv.
4. Qualified acquired software TSOFT was used to create a synthetic earth tide potential record overlapping the period corresponding to the pressure head record in the file WIPP-30 12-22-04 to 4-6-05.xls. An earth tide timeseries was created at 10 minute intervals for the WIPP-30 latitude, longitude, and elevation. The time series was saved to WIPP-30 ET 01-01-05 to 12-31-05.csv.
5. MatchRecords written in C++, source attached, was used to match pressure head records from WIPP-30WL 12-22-04 to 4-6-05.csv to Barometric Pressure records from H-9BARO 1-18-05 1-03-06.csv and then earth tide records from WIPP-30 ET 01-01-05 to 12-31-05.csv. The utility uses a simple search algorithm to find the closest barometric and earthtide observation to the pressure head measurement time. Its output is a \*.csv file with six columns, pressure head observation time, pressure head, barometric observation time, barometric pressure, earth tide observation time, and earth tide acceleration. The file of matched pressure head,

- barometric observations, and earth tide observations was saved as WIPP-30WLBPET 12-22-04 to 4-6-05.csv.
6. All records prior to 1/18/05 16:17 were deleted from WIPP-30WLBPET 12-22-04 to 4-6-05.csv to remove transients related to prior sampling in the well. The records were filtered to remove any records that were not on 17:00 minutes after the hour. This filtered data set was saved as WIPP-30WLBPET 1-18-05 to 4-6-05.xls
  7. WIPP-30WLBPET 1-18-05 to 4-6-05.xls was loaded as input into validated code BETCO version 1.0 and corrected using a memory value, m, of 12 measurements, and a time differencing interval of one measurement. The output was saved as two additional columns to WIPP-30WLBPET 1-18-04 to 4-6-05.xls named BAROcorrectTime and Corrected-Pressure.
  8. The corrected pressure head records are highlighted in yellow on the WIPP-30 WLBPET 1-18-05 to 4-6-05.xls and the data were copied to worksheet WIPP-30 in WIPP-11 Compiled Response Well Data.xls.

#### **Detrending**

1. In file WIPP-30WLBPET 1-18-05 to 4-6-05 Corrected.xls a trend series was added for the portion of the corrected pressure ranging from decimal days 38371.23 to 38384.3877 since 1/1/1900 00:00:00 in the PSI CORRECTED sheet.
2. A trendline was fit to the above series with the equation  $y=0.012x-345.99$  with an  $R^2$  value of 0.9829
3. A column was added to the WIPP-30WLBPET 1-18-05 to 4-6-05 Corrected.xls workbook in worksheet WIPP-30WLBPET 1-18-05 to 4-6-05. The column was added at column J. Each cell in the column calculated the Elapsed Day of record since the first record by the formula:  $J*=H*-\$H\$2$
4. Column K was added to calculate the correction variable to detrend each pressure record given the upward trend of 0.0012 PSI/day. The formula used was  $K*=J* \times 0.012$
5. Column L was added to calculate the detrended pressure. The formula used was  $L*=I*-K*$ . The detrended column is highlighted in magenta.
6. The detrended pressure records were added as a series to the chart PSI Corrected.

#### **WQSP-1**

What follows describes the process used to remove barometric and earthtide effects from miniTroll pressure head files collected at WQSP-1 between 1/26/2005 and 4/05/2005. The removal was done using BETCO version 1.0 qualified as per NP 19-1.

The miniTroll data file processed was SN18823 2005-01-26 081815 WQSP-1(C).bin located on the WIPPDATA computer in Carlsbad, NM.

1. The miniTroll was exported from WinSitu 4.x to Microsoft EXCEL Office 2003. A pre-processing macro was run to arrange the columns and add a column to the data recording the original \*.bin file for each record. The macro also reduces the data to a new worksheet (PSIOUT) in the workbook that contains just two columns. Column A is the decimal DateTime column, Column B is the PSI

- column. The macro is attached. The pre-processed excel files were saved WQSP-1(C).xls
2. The first 2 record(s) of WQSP-1(C).xls were deleted since they are not representative of the pressure at the installed depth. The record(s) were recorded during Troll installation in the well.
  3. A worksheet called WL WQSP-1(C) was created in the WQSP-1(C).xls file. The DecimalDay column was copied from the PSI worksheet along with the corresponding PSI column. This worksheet was saved as WL WQSP-1(C).csv.
  4. A barometric pressure record was obtained for the corresponding time period to WQSP-1 between 1/26/2005 and 4/05/2005. This record was obtained from a series of barometric pressure records compiled from various locations at the WIPP site to form a continuous record. This record along with its documentation was submitted to records in record package #542309. Records for the period above were saved as a \*.csv file with two columns: DecimalDay and Barometric Pressure. This file was saved as BP compilation between 9-10-2004 and 1-5-2006.csv
  5. Qualified acquired software TSOFT was used to create a synthetic earth tide potential record overlapping the period corresponding to the pressure head record in the file WQSP-1 between 1/26/2005 and 4/05/2005. An earth tide timeseries was created at 15-minute intervals for the WIPP Modeling Domain Center latitude, longitude, and elevation. The time series was saved to ET WIPP Model Domain 09-01-04 to 1-5-06.csv.
  6. MatchRecords written in C++, source attached, was used to match pressure head records from WL WQSP-1(C).csv to Barometric Pressure records from BP compilation between 9-10-2004 and 1-5-2006.csv and then earth tide records from ET WIPP Model Domain 09-01-04 to 1-5-06.csv. The utility uses a simple search algorithm to find the closest barometric and earthtide observation to the pressure head measurement time. Its output is a \*.csv file with six columns, pressure head observation time, pressure head, barometric observation time, barometric pressure, earth tide observation time, and earth tide acceleration. The file of matched pressure head, barometric observations, and earth tide observations was saved as WLBPET WQSP-1(C).csv.
  7. WLBPET WQSP-1(C).csv was opened in EXCEL and saved as an excel file to WLBPET WQSP-1(C).xls.
  8. WLBPET WQSP-1(C).xls was saved as WLBPET WQSP-1(C) Filtered.xls. WLBPET WQSP-1(C).Filtered.xls was filtered to remove observations that were off 1-hour intervals. These off interval observations are caused by the event driven sampling in the miniTroll memory gauges. If the delta pressure changes by 0.1psi or greater the miniTroll will record an observation regardless of the time. The default sampling interval is 1-hour. To filter the off interval data a column is added to the sheet as column G. The column is named filter. The filter column consists of the formula:

$G^* = IF(MINUTE(A^*) = \text{default sampling minute}, 1, 0)$

This places a 1 in the cell G\* for on interval records, and a 0 for off interval records. All the records were sorted on the filtered column using the ascending

- method. All records with a 0 value in the filtered column were deleted. The new filtered file was saved as WLBPET WQSP-1(C) Filtered.xls.
9. WLBPET WQSP-1(C) Filtered.xls was loaded as input into BETCO 1.0. Column A was the DATETIME column, column B was the pressure head column, column C was the matched barometric pressure time, column D was the barometric pressure column, column E was the matched earth tide time, column F was the earth tide potential column. The barometric and earthtide removal was conducted using a max response time of 6 records (6 hours) and a difference interval of one record. The corrected pressure head data was saved as two additional columns in the file WLBPET WQSP-1(C) Corrected.xls
  10. The Corrected pressure head records are highlighted in yellow in WLBPET WQSP-1(C) Corrected.xls and the data were copied to worksheet WQSP-1 in WIPP-11 Compiled Response Well Data.xls.

### **Detrending**

1. In file WLBPET WQSP-1(C) CORRECTED.xls a trend series was added for the portion of the corrected pressure ranging from decimal days since 38378.846 to 38383.346 1/1/1900 00:00:00 in the PSI CORRECTED sheet.
2. A trendline was fit to the above series with the equation  $y=0.0136x-437.97$  with an  $R^2$  value of 0.9529.
3. A column was added to the WLBPET WQSP-1(C) CORRECTED.xls workbook in worksheet SNL WLBPET WQSP-1(C). The column was added at column J. Each cell in the column calculated the Elapsed Day of record since the first record by the formula:  $J*=H*-\$H\$2$
4. Column K was added to calculate the correction variable to detrend each pressure record given the upward trend of 0.0136 PSI/day. The formula used was  $K*=J* \times 0.0136$
5. Column L was added to calculate the detrended pressure. The formula used was  $L*=I*-K*$ . The detrended column is highlighted in magenta.
6. The detrended pressure records were added as a series to the chart PSI Corrected.

### **WQSP-2**

What follows describes the process used to remove barometric and earthtide effects from miniTroll pressure head files collected at WQSP-2 between 1/26/2005 and 4/5/2005. The removal was done using BETCO version 1.0 qualified as per NP 19-1.

The miniTroll data file processed was SN18778 2005-01-26 085442 WQSP-2(C).bin located on the WIPPDATA computer in Carlsbad, NM.

1. The miniTroll was exported from WinSitu 4.x to Microsoft EXCEL Office 2003. A pre-processing macro was run to arrange the columns and add a column to the data recording the original \*.bin file for each record. The macro also reduces the data to a new worksheet (PSIOUT) in the workbook that contains just two columns. Column A is the decimal DateTime column, Column B is the PSI column. The macro is attached. The pre-processed excel files were saved WQSP-2(C).xls

2. The first 3 record(s) of WQSP-2(C).xls were deleted since they are not representative of the pressure at the installed depth. The record(s) were recorded during Troll installation in the well.
3. A worksheet called WL WQSP-2(C) was created in the WQSP-2(C).xls file. The DecimalDay column was copied from the PSI worksheet along with the corresponding PSI column. This worksheet was saved as WL WQSP-2(C).csv.
4. A barometric pressure record was obtained for the corresponding time period to WQSP-2 between 1/26/2005 and 4/5/2005. This record was obtained from a series of barometric pressure records compiled from various locations at the WIPP site to form a continuous record. This record along with its documentation was submitted to records in record package #542309. Records for the period above were saved as a \*.csv file with two columns: DecimalDay and Barometric Pressure. This file was saved as BP compilation between 9-10-2004 and 1-5-2006.csv
5. Qualified acquired software TSOFT was used to create a synthetic earth tide potential record overlapping the period corresponding to the pressure head record in the file WQSP-2 between 1/26/2005 and 4/5/2005. An earth tide timeseries was created at 15-minute intervals for the WIPP Modeling Domain Center latitude, longitude, and elevation. The time series was saved to ET WIPP Model Domain 09-01-04 to 1-5-06.csv.
6. MatchRecords written in C++, source attached, was used to match pressure head records from WL WQSP-2(C).csv to Barometric Pressure records from BP compilation between 9-10-2004 and 1-5-2006.csv and then earth tide records from ET WIPP Model Domain 09-01-04 to 1-5-06.csv. The utility uses a simple search algorithm to find the closest barometric and earthtide observation to the pressure head measurement time. Its output is a \*.csv file with six columns, pressure head observation time, pressure head, barometric observation time, barometric pressure, earth tide observation time, and earth tide acceleration. The file of matched pressure head, barometric observations, and earth tide observations was saved as WLBPET WQSP-2(C).csv.
7. WLBPET WQSP-2(C).csv was opened in EXCEL and saved as an excel file to WLBPET WQSP-2(C).xls.
8. WLBPET WQSP-2(C).xls was saved as WLBPET WQSP-2(C) Filtered.xls. WLBPET WQSP-2(C).Filtered.xls was filtered to remove observations that were off 1-hour intervals. These off interval observations are caused by the event driven sampling in the miniTroll memory gauges. If the delta pressure changes by 0.1psi or greater the miniTroll will record an observation regardless of the time. The default sampling interval is 1-hour. To filter the off interval data a column is added to the sheet as column G. The column is named filter. The filter column consists of the formula:

$G^* = IF(MINUTE(A^*) = \text{default sampling minute}, 1, 0)$

This places a 1 in the cell G\* for on interval records, and a 0 for off interval records. All the records were sorted on the filtered column using the ascending method. All records with a 0 value in the filtered column were deleted. The new filtered file was saved as WLBPET WQSP-2(C) Filtered.xls.

9. WLBPET WQSP-2(C) Filtered.xls was loaded as input into BETCO 1.0. Column A was the DATETIME column, column B was the pressure head column, column C was the matched barometric pressure time, column D was the barometric pressure column, column E was the matched earth tide time, column F was the earth tide potential column. The barometric and earthtide removal was conducted using a max response time of 10 records (10 hours) and a difference interval of one record. The corrected pressure head data was saved as two additional columns in the file WLBPET WQSP-2(C) Corrected.xls. The step response for the WQSP-2 data set was almost a constant zero which indicates that the well/aquifer system has no barometric response regardless of time. As such the correction is minimal and probably unnecessary
10. The Corrected pressure head records are highlighted in yellow in WLBPET WQSP-2(C) Corrected.xls and the data were copied to worksheet WQSP-2 in WIPP-11 Compiled Response Well Data.xls.

#### **Detrending**

1. In file WLBPET WQSP-2(C) CORRECTED.xls a trend series was added for the portion of the corrected pressure ranging from decimal days 38378.846 to 38383.346 since 1/1/1900 00:00:00 in the PSI CORRECTED sheet.
2. A trendline was fit to the above series with the equation  $y=0.0132x-417.65$  with an  $R^2$  value of 0.9252.
3. A column was added to the WLBPET WQSP-2(C) CORRECTED.xls workbook in worksheet WLBPET WQSP-2(C). The column was added at column J. Each cell in the column calculated the Elapsed Day of record since the first record by the formula:  $J*=H*-\$H\$2$
4. Column K was added to calculate the correction variable to detrend each pressure record given the upward trend of 0.0132 PSI/day. The formula used was  $K*=J* \times 0.0132$
5. Column L was added to calculate the detrended pressure. The formula used was  $L*=I*-K*$ . The detrended column is highlighted in magenta.
6. The detrended pressure records were added as a series to the chart PSI Corrected.

#### **WQSP-3**

What follows describes the process used to remove barometric and earthtide effects from miniTroll pressure head files collected at WQSP-3 between 1/26/2005 and 4/19/2005. The removal was done using BETCO version 1.0 qualified as per NP 19-1.

The miniTroll data file processed was SN18758 2005-01-26 093254 WQSP-3(C).bin located on the WIPPDATA computer in Carlsbad, NM.

1. The miniTroll was exported from WinSitu 4.x to Microsoft EXCEL Office 2003. A pre-processing macro was run to arrange the columns and add a column to the data recording the original \*.bin file for each record. The macro also reduces the data to a new worksheet (PSIOUT) in the workbook that contains just two columns. Column A is the decimal DateTime column, Column B is the PSI

- column. The macro is attached. The pre-processed excel files were saved WQSP-3(C).xls
2. The first 4 record(s) of WQSP-3(C).xls were deleted since they are not representative of the pressure at the installed depth. The record(s) were recorded during Troll installation in the well.
  3. A worksheet called WL WQSP-3(C) was created in the WQSP-3(C).xls file. The DecimalDay column was copied from the PSI worksheet along with the corresponding PSI column. This worksheet was saved as WL WQSP-3(C).csv.
  4. A barometric pressure record was obtained for the corresponding time period to WQSP-3 between 1/26/2005 and 4/19/2005. This record was obtained from a series of barometric pressure records compiled from various locations at the WIPP site to form a continuous record. This record along with its documentation was submitted to records in record package #542309. Records for the period above were saved as a \*.csv file with two columns: DecimalDay and Barometric Pressure. This file was saved as BP compilation between 9-10-2004 and 1-5-2006.csv
  5. Qualified acquired software TSOFT was used to create a synthetic earth tide potential record overlapping the period corresponding to the pressure head record in the file WQSP-3 between 1/26/2005 and 4/19/2005. An earth tide timeseries was created at 15-minute intervals for the WIPP Modeling Domain Center latitude, longitude, and elevation. The time series was saved to ET WIPP Model Domain 09-01-04 to 1-5-06.csv.
  6. MatchRecords written in C++, source attached, was used to match pressure head records from WL WQSP-3(C).csv to Barometric Pressure records from BP compilation between 9-10-2004 and 1-5-2006.csv and then earth tide records from ET WIPP Model Domain 09-01-04 to 1-5-06.csv. The utility uses a simple search algorithm to find the closest barometric and earthtide observation to the pressure head measurement time. Its output is a \*.csv file with six columns, pressure head observation time, pressure head, barometric observation time, barometric pressure, earth tide observation time, and earth tide acceleration. The file of matched pressure head, barometric observations, and earth tide observations was saved as WLBPET WQSP-3(C).csv.
  7. WLBPET WQSP-3(C).csv was opened in EXCEL and saved as an excel file to WLBPET WQSP-3(C).xls.
  8. WLBPET WQSP-3(C).xls was saved as WLBPET WQSP-3(C) Filtered.xls. WLBPET WQSP-3(C).Filtered.xls was filtered to remove observations that were off 1-hour intervals. These off interval observations are caused by the event driven sampling in the miniTroll memory gauges. If the delta pressure changes by 0.1psi or greater the miniTroll will record an observation regardless of the time. The default sampling interval is 1-hour. To filter the off interval data a column is added to the sheet as column G. The column is named filter. The filter column consists of the formula:

$G^* = IF(MINUTE(A^*) = \text{default sampling minute}, 1, 0)$

This places a 1 in the cell G\* for on interval records, and a 0 for off interval records. All the records were sorted on the filtered column using the ascending

- method. All records with a 0 value in the filtered column were deleted. The new filtered file was saved as WLPET WQSP-3(C) Filtered.xls.
9. WLPET WQSP-3(C) Filtered.xls was loaded as input into BETCO 1.0. Column A was the DATETIME column, column B was the pressure head column, column C was the matched barometric pressure time, column D was the barometric pressure column, column E was the matched earth tide time, column F was the earth tide potential column. The barometric and earthtide removal was conducted using a max response time of 23 records (23 hours) and a difference interval of one record. The corrected pressure head data was saved as two additional columns in the file WLPET WQSP-3(C) Corrected.xls. The step response for the WQSP-3 data set was almost a constant zero which indicates that the well/aquifer system has no barometric response regardless of time. As such the correction is minimal and probably unnecessary
  10. The Corrected pressure head records are highlighted in yellow in WLPET WQSP-3(C) Corrected.xls and the data were copied to worksheet WQSP-3 in WIPP-11 Compiled Response Well Data.xls.

### **Detrending**

1. In file WLPET WQSP-3(C) CORRECTED.xls a trend series was added for the portion of the corrected pressure ranging from decimal days 38379.65 to 38385.9 since 1/1/1900 00:00:00 in the PSI CORRECTED sheet.
2. A trendline was fit to the above series with the equation  $y=0.015x-483.93$  with an  $R^2$  value of 0.9771.
3. A column was added to the WLPET WQSP-3(C) CORRECTED.xls workbook in worksheet WLPET WQSP-3(C). The column was added at column J. Each cell in the column calculated the Elapsed Day of record since the first record by the formula:  $J*=H*-\$H\$2$
4. Column K was added to calculate the correction variable to detrend each pressure record given the upward trend of 0.015 PSI/day. The formula used was  $K*=J* \times 0.015$
5. Column L was added to calculate the detrended pressure. The formula used was  $L*=I*-K*$ . The detrended column is highlighted in magenta.
6. The detrended pressure records were added as a series to the chart PSI Corrected.

### **Calculation of Freshwater Heads (for all observation wells)**

The changes in meters of freshwater head for each observation well were calculated in file WIPP-11 Compiled Response Well Data.xls using the following procedure:

- Column N calculates the feet of freshwater head using the pressure data. This was done by multiplying the data that were corrected for barometric and earth tides, and detrended where applicable, by 2.31 (conversion factor used to convert pressure to feet of water) to derive the approximate feet of freshwater above the Troll. (Formula = pressure \* 2.31).

- Column O calculates the meters of freshwater head by multiplying the feet of fresh water head in Column N by .3048 (conversion factor used to convert feet to meters) (Formula = Column N \* .3048)
- Column P calculates the change in freshwater head in meters by subtracting each of the values in column O from the value in column O at 02/01/05 12:48 (or the first time recorded immediately after), the start of the WIPP-11 pumping test (Formula = Column O – Column O at 02/01/05 12:48).

## Troll Processing Macro

```
Private Sub ProcessRAW_Click()

Dim FileName As String
Dim lRealLastRow As Long
    Range("A1").Select
    On Error Resume Next
    lRealLastRow = Cells.Find("*", Range("A1"), xlFormulas, , xlByRows, _
        xlPrevious).Row

    lRealLastRow = lRealLastRow - 1

Sheets(1).Select
Sheets(1).Name = "PSI"

HashRow = Cells.Find("-----", Range("A1"), xlFormulas, , xlByRows, _
    xlPrevious).Row

'Paste for Sec to Minutes

ActiveWindow.SmallScroll Down:=15
Rows(HashRow & ":" & HashRow).Select
Selection.Delete Shift:=xlUp
Range("F" & HashRow).Select
ActiveCell.FormulaR1C1 = "=RC[-3]/60"
Range("F" & HashRow).Select
Selection.Copy
Range("F" & HashRow & ":F" & lRealLastRow).Select
ActiveSheet.Paste

Range("F" & HashRow).Select
Range(Selection, Selection.End(xlDown)).Select
Application.CutCopyMode = False
Selection.Copy
Selection.End(xlUp).Select
Range("C" & HashRow).Select
Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _ :=False, Transpose:=False

'Add Bin File name to fields

Range("C" & HashRow - 1).Select
Application.CutCopyMode = False
ActiveCell.FormulaR1C1 = " ET (days)"
```

```

Columns("F:F").Select
Selection.ClearContents
Range("F" & HashRow - 1).Select
ActiveCell.FormulaR1C1 = "BINFILE"
Range("B4").Select
Selection.Copy
Range("F" & HashRow).Select
ActiveSheet.Paste
Range("F" & HashRow).Select
Selection.Copy
Range("E" & HashRow).Select
Selection.End(xlDown).Select
Range("F" & lRealLastRow).Select
Range(Selection, Selection.End(xlUp)).Select
ActiveSheet.Paste

```

'Delete Temp Field

```

Columns("D:D").Select
Selection.Delete Shift:=xlToLeft

FileName = Range("B4").Value

Range("C" & HashRow).Select
ActiveCell.FormulaR1C1 = "=RC[-2]+RC[-1]"
Range("C" & HashRow).Select
Selection.AutoFill Destination:=Range("C" & HashRow & ":C" & lRealLastRow)
Range("C" & HashRow & ":C" & lRealLastRow).Select
Selection.NumberFormat = "0.000"
Range("C" & HashRow - 1).Select
ActiveCell.FormulaR1C1 = " ET (Days)"
Range("C" & HashRow).Select

Range("F" & HashRow - 1).Select
ActiveCell.FormulaR1C1 = "Time Elapsed (MIN)"
Range("F" & HashRow).Select
ActiveCell.FormulaR1C1 = "0"
Range("F" & HashRow + 1).Select
ActiveCell.FormulaR1C1 = "=((RC[-3]-R41C3)*1440"
Range("F" & HashRow + 1).Select
Selection.AutoFill Destination:=Range("F" & (HashRow + 1) & ":F" & lRealLastRow)

Range("C" & (HashRow - 1) & ":D" & lRealLastRow).Select
Selection.Copy
Sheets.Add

```

```
Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _  
:=False, Transpose:=False  
Sheets("Sheet1").Select  
Sheets("Sheet1").Name = "PSIOUT"  
Rows("1:1").Select  
Application.CutCopyMode = False  
Selection.Delete Shift:=xlUp
```

'Chart

```
Range("C" & (HashRow - 1) & "39:D" & lRealLastRow).Select  
Charts.Add  
ActiveChart.ChartType = xlXYScatter  
ActiveChart.SetSourceData Source:=Sheets("PSI").Range("C" & (HashRow - 1) &  
":D" & lRealLastRow), PlotBy _  
:=xlColumns  
ActiveChart.Location Where:=xlLocationAsNewSheet
```

With ActiveChart

```
.HasTitle = True  
.ChartTitle.Characters.Text = "PSI for " & FileName  
.Axes(xlCategory, xlPrimary).HasTitle = True  
.Axes(xlCategory, xlPrimary).AxisTitle.Characters.Text = "Time Elapsed(min)"  
.Axes(xlValue, xlPrimary).HasTitle = True  
.Axes(xlValue, xlPrimary).AxisTitle.Characters.Text = "PSI"
```

End With

```
Charts(1).Select  
Charts(1).Name = "PSI Chart"
```

End Sub

Source Code for MatchRecords routine sorting algorithm...

```
//-----  
  
#include <vcl.h>  
#pragma hdrstop  
  
#include "Unit1.h"  
#include <fstream.h>  
#include <string.h>  
#include <iostream.h>  
#include <iomanip.h>  
#include <stdio.h>  
#include <stdlib.h>  
#include <math.h>  
//-----  
#pragma package(smart_init)  
#pragma resource "*.*.dfm"  
TMatchRecords *MatchRecords;  
//-----  
__fastcall TMatchRecords::TMatchRecords(TComponent* Owner)  
    : TForm(Owner)  
{  
}  
//-----  
AnsiString filename;  
  
double *dataWLTime;  
double *dataWL;  
double *dataBPTime;  
double *dataBP;  
double *dataETTime;  
double *dataET;  
  
double *matchBPTime;  
double *matchBP;  
double *matchETTime;  
double *matchET;  
  
int wlrecords;  
int bprecords;  
int etrecords;  
  
//-----  
void __fastcall TMatchRecords::PheadClick(TObject *Sender)
```

```

{

char * str;
filename = NULL;
if(OpenDialog1->Execute()){      //open dialog to select raw data file CSV format
    filename = OpenDialog1->FileName;//get filename from the dialog
    str = filename.c_str();      //converts AnsiString filename to char array

if(filename == NULL){
    MessageDlg("No file selected!!!!", mtWarning, TMsgDlgButtons() << mbOK, 0);
}
else{

//ReadIn Pressure Head Arrays from *.csv file

ifstream file; //instan file stream as file to read in CSV data

file.open(str); //opens file selected in file open dialog

int lineCounter = 0; //counter for lines in raw file
char str1[300]; //char array for line counter loop
while (!file.eof()) //loop to count records in raw data file
{
    file.getline(str1,300);
    lineCounter++;
}

String t1= lineCounter-1;

file.clear();
file.seekg(0, ios::beg);

char wltime[20];
char wl[20];



wlrecords = lineCounter-2;

dataWLTime= new double[wlrecords]; //array to hold time values of raw file
dataWL= new double[wlrecords]; //array to hold Water.L values of raw file

for(int i=0; i<wlrecords;i++)
{

```

```

        file.getline(wltime, 20, ','); //read thru pipe
        file.getline(wl, 20); //read thru pipe
        dataWLTime[i]= atof(wltime);
        dataWL[i]= atof(wl);
    }

    file.clear();
    file.close();
    filename=NULL;

}

}

//-----
void __fastcall TMatchRecords::BaroClick(TObject *Sender)
{
    char * str;
    filename = NULL;
    if(OpenDialog1->Execute()) { //open dialog to select raw data file CSV format
        filename = OpenDialog1->FileName;//get filename from the dialog
        str = filename.c_str (); //converts AnsiString filename to char array

        if(filename == NULL){
            MessageDlg("No file selected!!!!", mtWarning, TMsgDlgButtons() << mbOK, 0);
        }
        else{
//ReadIn Baro Arrays from *.csv file

            ifstream file; //instan file stream as file to read in CSV data

            file.open(str); //opens file selected in file open dialog

            int lineCounter = 0; //counter for lines in raw file
            char str1[300]; //char array for line counter loop
            while (!file.eof()) //loop to count records in raw data file
            {
                file.getline(str1,300);
                lineCounter++;
            }

            file.clear();

```

```

file.seekg(0, ios::beg);

char bptime[20];
char bp[20];

bprecords = lineCounter-2;

dataBPTime= new double[bprecords]; //array to hold BPtime values of raw file
dataBP= new double[bprecords]; //array to hold BP values of raw file

for(int i=0; i<bprecords;i++)
{
    file.getline(bptime, 20, ','); //read thru pipe
    file.getline(bp, 20); //read thru pipe
    dataBPTime[i]= atof(bptime);
    dataBP[i]= atof(bp);
}

file.clear();
file.close();
filename=NULL;
}
}

}

//-----
void __fastcall TMatchRecords::EarthTClick(TObject *Sender)
{
char * str;
filename = NULL;
if(OpenDialog1->Execute()){ //open dialog to select raw data file CSV format
    filename = OpenDialog1->FileName;//get filename from the dialog
    str = filename.c_str (); //converts AnsiString filename to char array

    if(filename == NULL){
        MessageDlg("No file selected!!!!", mtWarning, TMsgDlgButtons() << mbOK, 0);
    }
    else{
//ReadIn Earth Tide Arrays from *.csv file

        ifstream file; //instan file stream as file to read in CSV data

        file.open(str); //opens file selected in file open dialog

        int lineCounter = 0; //counter for lines in raw file
        char str1[300]; //char array for line counter loop
        while (!file.eof()) //loop to count records in raw data file

```

```

    {
        file.getline(str1,300);
        lineCounter++;
    }

    file.clear();
    file.seekg(0, ios::beg);

    char ettime[20];
    char et[20];

    etrecords = lineCounter-2;

    dataETTime= new double[etrecords]; //array to hold ETtime values of raw file
    dataET= new double[etrecords]; //array to hold ET values of raw file

    for(int i=0; i<etrecords;i++)
    {
        file.getline(ettime, 20, ','); //read thru pipe
        file.getline(et, 20); //read thru pipe
        dataETTime[i]= atof(ettime);
        dataET[i]= atof(et);
    }

    file.clear();
    file.close();
    filename=NULL;
}
}

//-----
void __fastcall TMatchRecords::ExecuteClick(TObject *Sender)
{
    double matchCri=999990.9;
    double test;

    matchBPTime= new double[wlrecords];
    matchBP= new double[wlrecords];
    matchETTime= new double[wlrecords];
    matchET= new double[wlrecords];

    for(int i=0; i<wlrecords; i++){
        matchCri=999999.9;
        for(int j=0; j<bprecords; j++){
            test=fabs(dataWLTime[i]-dataBPTime[j]);

```

```

        if(test<matchCri){
            matchBPTime[i]=dataBPTime[j];
            matchBP[i]=dataBP[j];
            matchCri=test;
        }
    }

matchCri=999999.9;
for(int k=0, k<bprecords; k++){
    test=fabs(dataWLTime[i]-dataETTime[k]);
    if(test<matchCri){
        matchETTime[i]=dataETTime[k];
        matchET[i]=dataET[k];
        matchCri=test;
    }
}
}

//-----
void __fastcall TMatchRecords::SaveClick(TObject *Sender)
{
if(SaveDialog1->Execute()){ //open dialog to save data file CSV format
    filename = SaveDialog1->FileName; //get filename from the dialog
    char * str = filename.c_str(); //converts AnsiString filename to char array
    double temp;

    if(filename.IsEmpty()){
        MessageDlg("No file selected!!!", mtWarning, TMsgDlgButtons() << mbOK, 0);
    }
    else{

        ofstream fout(str, ios::out);
        fout << fixed;
        fout << "Time,WL,MatchedBP-Time,Matched-BP,MatchET-Time,Matched-
ET" << "\n";
        for(int i=0; i<wlrecords; i++){ //write data
            fout << dataWLTime[i] << "," << dataWL[i] << "," << matchBPTime[i] <<
            "," << matchBP[i] << "," << matchETTime[i] << "," << matchET[i] <<"\n";
        }
        fout.clear();
        fout.close();
    }
}
}

//-----

```

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Time	WL	MatchedBP-Time	Matched-BP	MatchET-Time	Matched-ET	Filter	BARO	Correct-Time	Corrected-Pressure	deltaT	Detrend	Variable	Detrended Pressure	Freshwater (ft of H2O)	Meters of H2O Change in Meters
2	10/14/04 12:20	70.125	38274.51446	12.875	38274.51042	586.938434	1	38274.51407	70.125	0	0	70.125		161.98875	49.374171	-0.701505838
3	10/14/04 13:20	70.147	38274.55612	12.864	38274.55208	66.950089	1	38274.55574	70.125	0.04167	0.000136678	70.12485332		161.9884343	49.37407477	-0.701602071
4	10/14/04 14:20	70.175	38274.59779	12.855	38274.59375	-531.522898	1	38274.59741	70.125	0.08334	0.000273355	70.12472684		161.9881185	49.37397853	-0.701698304
5	10/14/04 15:20	70.199	38274.63946	12.848	38274.63542	-1072.45783	1	38274.63907	70.125	0.125	0.00041	70.12458		161.9878029	49.37388232	-0.701794514
6	10/14/04 16:20	70.22	38274.68112	12.839	38274.67708	-1432.215908	1	38274.68074	70.125	0.16667	0.000546678	70.12445332		161.9874872	49.37378609	-0.701890747
7	10/14/04 17:20	70.22	38274.72279	12.839	38274.71875	-1528.965926	1	38274.72241	70.125	0.20834	0.000683355	70.12401684		161.9871714	49.37368986	-0.70198698
8	10/14/04 18:20	70.22	38274.76446	12.842	38274.76042	-1341.703277	1	38274.76407	70.125	0.25	0.00082	70.12418		161.9868558	49.37359365	-0.70208319
9	10/14/04 19:20	70.206	38274.80612	12.848	38274.80208	-914.650775	1	38274.80574	70.125	0.29167	0.000956678	70.12404332		161.9865401	49.37349741	-0.702179423
10	10/14/04 20:20	70.197	38274.84779	12.855	38274.84375	-346.214499	1	38274.84741	70.125	0.33334	0.001093355	70.12390604		161.9862243	49.37340118	-0.702275658
11	10/14/04 21:20	70.177	38274.88946	12.853	38274.88542	234.845209	1	38274.88907	70.125	0.375	0.00123	70.12397		161.9859087	49.37330497	-0.702371866
12	10/14/04 22:20	70.168	38274.93112	12.849	38274.92708	700.468789	1	38274.93074	70.125	0.41667	0.001366678	70.12383332		161.9855593	49.37320874	-0.702468099
13	10/14/04 23:20	70.161	38274.97279	12.84	38274.96875	954.281772	1	38274.97241	70.125	0.45834	0.001503355	70.12349664		161.9852772	49.37311251	-0.702564332
14	10/15/04 0:20	70.161	38275.01446	12.84	38275.01042	955.016707	1	38275.01407	70.125	0.5	0.00164	70.12336		161.9849616	49.3730163	-0.702660542
15	10/15/04 1:20	70.175	38275.05612	12.839	38275.05208	726.375591	1	38275.05574	70.125	0.54167	0.001776678	70.12222332		161.9846459	49.37292006	-0.702757575
16	10/15/04 2:20	70.19	38275.09779	12.833	38275.09375	350.377209	1	38275.09741	70.125	0.58334	0.001913355	70.12208604		161.9843301	49.37282383	-0.702853008
17	10/15/04 3:20	70.205	38275.13946	12.833	38275.13542	-54.688748	1	38275.13907	70.125	0.625	0.00205	70.12295		161.9840145	49.37272762	-0.702949218
18	10/15/04 4:20	70.227	38275.18112	12.832	38275.17708	-366.358982	1	38275.18074	70.125	0.66667	0.002186678	70.12281332		161.9836988	49.37263139	-0.703045451
19	10/15/04 5:20	70.234	38275.22279	12.836	38275.21875	-491.729788	1	38275.22241	70.125	0.70834	0.002323355	70.12257554		161.983383	49.37253515	-0.703141684
20	10/15/04 6:20	70.249	38275.26446	12.838	38275.26042	-393.376883	1	38275.26407	70.125	0.75	0.00246	70.12254		161.9830674	49.37243894	-0.703237894
21	10/15/04 7:20	70.249	38275.30612	12.846	38275.30208	-100.01769	1	38275.30574	70.25261851	0.79167	0.002596678	70.25002183		162.2775504	49.46219737	-0.613479468
22	10/15/04 8:20	70.242	38275.34779	12.844	38275.34375	301.344813	1	38275.34741	70.25152199	0.83334	0.002733355	70.24870883		162.2747017	49.46132909	-0.614347747
23	10/15/04 9:20	70.242	38275.38946	12.835	38275.38542	689.575445	1	38275.38607	70.25662343	0.875	0.00287	70.25575343		162.2861704	49.46482474	-0.610852085
24	10/15/04 10:20	70.234	38275.43112	12.825	38275.42708	942.887303	1	38275.43074	70.25342946	0.91667	0.00306678	70.25042378		162.2784766	49.46247968	-0.613197162
25	10/15/04 11:20	70.242	38275.47279	12.811	38275.46875	972.141126	1	38275.47241	70.26162768	0.95834	0.003143355	70.25848433		162.2970888	49.46815571	-0.607521125
26	10/15/04 12:20	70.249	38275.51446	12.789	38275.51042	744.867341	1	38275.51407	70.25965102	1	0.00328	70.25637102		162.2922171	49.46666776	-0.609009078
27	10/15/04 13:20	70.264	38275.55612	12.771	38275.55208	293.929633	1	38275.55574	70.26153627	1.04167	0.003416678	70.2581196		162.2962563	49.46789891	-0.607777928
28	10/15/04 14:20	70.266	38275.59779	12.765	38275.59375	-290.787864	1	38275.59741	70.27162024	1.08334	0.003553355	70.25805666		162.3192345	49.47490268	-0.600774158
29	10/15/04 15:20	70.293	38275.63946	12.756	38275.63542	-884.804078	1	38275.63907	70.26310748	1.125	0.00369	70.25841748		162.2992544	49.46881273	-0.606864105
30	10/15/04 16:20	70.308	38275.68112	12.751	38275.67708	-1359.389786	1	38275.68074	70.26445111	1.16667	0.003826678	70.26062443		162.3020424	49.46966253	-0.606014303
31	10/15/04 17:20	70.323	38275.72279	12.752	38275.71875	-1612.15552	1	38275.72241	70.27246423	1.20834	0.003963355	70.26880007		162.320237	49.47520824	-0.600468594
32	10/15/04 18:20	70.315	38275.76446	12.759	38275.76042	-1590.61189	1	38275.76407	70.2874537	1.25	0.0041	70.2633527		162.3083471	49.47158418	-0.604092657
33	10/15/04 19:20	70.301	38275.80612	12.766	38275.80208	-1303.45103	1	38275.80574	70.26408324	1.29167	0.004236678	70.25994686		162.3002456	49.46911485	-0.606516991
34	10/15/04 20:20	70.286	38275.84779	12.775	38275.84375	-817.324725	1	38275.84741	70.26658846	1.33334	0.004373355	70.26231311		162.3057123	49.47078111	-0.604895734
35	10/15/04 21:20	70.264	38275.88946	12.782	38275.88542	-240.231985	1	38275.88907	70.26512691	1.375	0.00451	70.26061891		162.3020251	49.46965724	-0.606019597
36	10/15/04 22:20	70.256	38275.93112	12.782	38275.92708	304.412273	1	38275.93074	70.27454842	1.41667	0.004646678	70.2690174		162.323473	49.47619458	-0.599482258
37	10/15/04 23:20	70.242	38275.97279	12.781	38275.96875	706.938797	1	38275.97241	70.27359535	1.45834	0.004783355	70.26881199		162.3209557	49.4754273	-0.600249539
38	10/16/04 0:20	70.234	38276.01446	12.784	38276.01042	897.011758	1	38276.01407	70.274494829	1.5	0.00492	70.26887429		162.3227166	49.47596402	-0.599712814
39	10/16/04 1:20	70.227	38276.05612	12.792	38276.05208	859.558468	1	38276.05574	70.27224056	1.54167	0.005056678	70.26714788		162.3171118	49.47425562	-0.601421218
40	10/16/04 2:20	70.227	38276.09779	12.795	38276.09375	637.03073	1	38276.09741	70.26730641	1.58334	0.005193355	70.26211306		162.3054812	49.474071066	-0.604961679
41	10/16/04 3:20	70.234	38276.13946	12.807	38276.13542	317.109934	1	38276.13907	70.26772323	1.625	0.00533	70.26230333		162.3061284	49.47090793	-0.604768911
42	10/16/04 4:20	70.242	38276.18112	12.835	38276.17708	8.593152	1	38276.18074	70.27581423	1.66667	0.005466678	70.27014755		162.3240408	49.47638765	-0.599309188
43	10/16/04 5:20	70.234	38276.22279	12.858	38276.21875	-188.550235	1	38276.22241	70.26861856	1.70834	0.005603355	70.26101521		162.3029451	49.46993768	-0.605739161
44	10/16/04 6:20	70.242	38276.26446	12.875	38276.26042	-210.982589	1	38276.26407	70.27388521	1.75	0.00574	70.26704521		162.3189534	49.47481701	-0.60065983
45	10/16/04 7:20	70.249	38276.30612	12.88	38276.30208	-49.883244	1	38276.30574	70.27880096	1.79167	0.005876678	70.27292428		162.3304551	49.47832271	-0.597354125
46	10/16/04 8:20	70.242	38276.34779	12.883	38276.34375	246.346914	1	38276.34741	70.27426747	1.83334	0.006013355	70.26912542		162.319667	49.4750345	-0.600642333
47	10/16/04 9:20	70.242	38276.38946	12.885	38276.38542	585.524036	1	38276.38907	70.28091577	1.875	0.00615	70.27478577		162.3347089	49.47961928	-0.596057555
48	10/16/04 10:20	70.242	38276.43112	12.874	38276.42708	857.48031	1	38276.43074	70.28231543	1.91667	0.006286678	70.27002875		162.3376264	49.48050853	-0.595168305
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## H-6b Formulas

	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P		
1	Time	VWL	MatchedBP-Time	Matched-BP	MatchET-Time	Matched-ET	Filter	BAROCorrect-Time	Corrected-Pressure	deltaT	Detrend	Variable	Distressed	Precipitation	Freshwater (ft of H2O)	Meters of H2O	Change in Meters
2	38274.51407	70 125	38274.51446	12 875	38274.51042	586 938434	=IF(MINUTE(A2)=20,1,0)	38274.51407	70.125	=H2-\$H\$2	=J2*	0.00328	#2-K2	=L2*2.31	=N2*0.3048	=O2-\$0\$2642	
3	38274.55574	70 147	38274.55612	12 864	38274.55208	66 950088	=IF(MINUTE(A3)=20,1,0)	38274.55574	70.125	=H3-\$H\$2	=J3*	0.00328	#3-K3	=L3*2.31	=N3*0.3048	=O3-\$0\$2642	
4	38274.59741	70 175	38274.59779	12 855	38274.59375	-531 522898	=IF(MINUTE(A4)=20,1,0)	38274.59741	70.125	=H4-\$H\$2	=J4*	0.00328	#4-K4	=L4*2.31	=N4*0.3048	=O4-\$0\$2642	
5	38274.63907	70 199	38274.63946	12 848	38274.63542	-1072 45783	=IF(MINUTE(A5)=20,1,0)	38274.63907	70.125	=H5-\$H\$2	=J5*	0.00328	#5-K5	=L5*2.31	=N5*0.3048	=O5-\$0\$2642	
6	38274.68074	70 22	38274.68112	12 839	38274.67708	-1432 215908	=IF(MINUTE(A6)=20,1,0)	38274.68074	70.125	=H6-\$H\$2	=J6*	0.00328	#6-K6	=L6*2.31	=N6*0.3048	=O6-\$0\$2642	
7	38274.72241	70.22	38274.72279	12 839	38274.71875	-1528 965926	=IF(MINUTE(A7)=20,1,0)	38274.72241	70.125	=H7-\$H\$2	=J7*	0.00328	#7-K7	=L7*2.31	=N7*0.3048	=O7-\$0\$2642	
8	38274.76407	70.22	38274.76446	12 842	38274.76042	-1341 703277	=IF(MINUTE(A8)=20,1,0)	38274.76407	70.125	=H8-\$H\$2	=J8*	0.00328	#8-K8	=L8*2.31	=N8*0.3048	=O8-\$0\$2642	
9	38274.80574	70 206	38274.80612	12 848	38274.80208	-914 650775	=IF(MINUTE(A9)=20,1,0)	38274.80574	70.125	=H9-\$H\$2	=J9*	0.00328	#9-K9	=L9*2.31	=N9*0.3048	=O9-\$0\$2642	
10	38274.84741	70.197	38274.84779	12 855	38274.84375	-346 214499	=IF(MINUTE(A10)=20,1,0)	38274.84741	70.125	=H10-\$H\$2	=J10*	0.00328	#10-K10	=L10*2.31	=N10*0.3048	=O10-\$0\$2642	
11	38274.88907	70.177	38274.88946	12 853	38274.88542	234 845209	=IF(MINUTE(A11)=20,1,0)	38274.88907	70.125	=H11-\$H\$2	=J11*	0.00328	#11-K11	=L11*2.31	=N11*0.3048	=O11-\$0\$2642	
12	38274.93074	70.168	38274.93112	12 849	38274.92708	700 468789	=IF(MINUTE(A12)=20,1,0)	38274.93074	70.125	=H12-\$H\$2	=J12*	0.00328	#12-K12	=L12*2.31	=N12*0.3048	=O12-\$0\$2642	
13	38274.97241	70 161	38274.97279	12 84	38274.96875	954 281772	=IF(MINUTE(A13)=20,1,0)	38274.97241	70.125	=H13-\$H\$2	=J13*	0.00328	#13-K13	=L13*2.31	=N13*0.3048	=O13-\$0\$2642	
14	38275.01407	70 161	38275.01446	12 84	38275.01042	955 016707	=IF(MINUTE(A14)=20,1,0)	38275.01407	70.125	=H14-\$H\$2	=J14*	0.00328	#14-K14	=L14*2.31	=N14*0.3048	=O14-\$0\$2642	
15	38275.05574	70.175	38275.05612	12 839	38275.05208	726 375591	=IF(MINUTE(A15)=20,1,0)	38275.05574	70.125	=H15-\$H\$2	=J15*	0.00328	#15-K15	=L15*2.31	=N15*0.3048	=O15-\$0\$2642	
16	38275.09741	70 19	38275.09779	12 833	38275.09375	350 377209	=IF(MINUTE(A16)=20,1,0)	38275.09741	70.125	=H16-\$H\$2	=J16*	0.00328	#16-K16	=L16*2.31	=N16*0.3048	=O16-\$0\$2642	
17	38275.13907	70 205	38275.13946	12 833	38275.13542	-54 686748	=IF(MINUTE(A17)=20,1,0)	38275.13907	70.125	=H17-\$H\$2	=J17*	0.00328	#17-K17	=L17*2.31	=N17*0.3048	=O17-\$0\$2642	
18	38275.18074	70.227	38275.18112	12 832	38275.17708	-366 358982	=IF(MINUTE(A18)=20,1,0)	38275.18074	70.125	=H18-\$H\$2	=J18*	0.00328	#18-K18	=L18*2.31	=N18*0.3048	=O18-\$0\$2642	
19	38275.22241	70.234	38275.22279	12 836	38275.21875	-491 729788	=IF(MINUTE(A19)=20,1,0)	38275.22241	70.125	=H19-\$H\$2	=J19*	0.00328	#19-K19	=L19*2.31	=N19*0.3048	=O19-\$0\$2642	
20	38275.26407	70 249	38275.26446	12 838	38275.26042	-393 376883	=IF(MINUTE(A20)=20,1,0)	38275.26407	70.125	=H20-\$H\$2	=J20*	0.00328	#20-K20	=L20*2.31	=N20*0.3048	=O20-\$0\$2642	
21	38275.30574	70 249	38275.30612	12 846	38275.30208	-100 01769	=IF(MINUTE(A21)=20,1,0)	38275.30574	70.2526185083328	=H21-\$H\$2	=J21*	0.00328	#21-K21	=L21*2.31	=N21*0.3048	=O21-\$0\$2642	
22	38275.34741	70 242	38275.34779	12 844	38275.34375	301 344813	=IF(MINUTE(A22)=20,1,0)	38275.34741	70.2515219880447	=H22-\$H\$2	=J22*	0.00328	#22-K22	=L22*2.31	=N22*0.3048	=O22-\$0\$2642	
23	38275.38907	70 242	38275.38946	12 835	38275.38542	689 5755445	=IF(MINUTE(A23)=20,1,0)	38275.38907	70.2566234263915	=H23-\$H\$2	=J23*	0.00328	#23-K23	=L23*2.31	=N23*0.3048	=O23-\$0\$2642	
24	38275.43074	70 234	38275.43112	12 825	38275.42708	942 887303	=IF(MINUTE(A24)=20,1,0)	38275.43074	70.2534284599498	=H24-\$H\$2	=J24*	0.00328	#24-K24	=L24*2.31	=N24*0.3048	=O24-\$0\$2642	
25	38275.47241	70 242	38275.47279	12 811	38275.46875	972 141126	=IF(MINUTE(A25)=20,1,0)	38275.47241	70.2616276823706	=H25-\$H\$2	=J25*	0.00328	#25-K25	=L25*2.31	=N25*0.3048	=O25-\$0\$2642	
26	38275.51407	70 249	38275.51446	12 789	38275.51042	744 867341	=IF(MINUTE(A26)=20,1,0)	38275.51407	70.2596510212473	=H26-\$H\$2	=J26*	0.00328	#26-K26	=L26*2.31	=N26*0.3048	=O26-\$0\$2642	
27	38275.55574	70 264	38275.55612	12 771	38275.55208	293 929633	=IF(MINUTE(A27)=20,1,0)	38275.55574	70.2615362728091	=H27-\$H\$2	=J27*	0.00328	#27-K27	=L27*2.31	=N27*0.3048	=O27-\$0\$2642	
28	38275.59741	70 286	38275.59779	12 765	38275.59375	-290 787864	=IF(MINUTE(A28)=20,1,0)	38275.59741	70.2716202443095	=H28-\$H\$2	=J28*	0.00328	#28-K28	=L28*2.31	=N28*0.3048	=O28-\$0\$2642	
29	38275.63907	70 293	38275.63946	12 756	38275.63542	-884 804078	=IF(MINUTE(A29)=20,1,0)	38275.63907	70.2831074776521	=H29-\$H\$2	=J29*	0.00328	#29-K29	=L29*2.31	=N29*0.3048	=O29-\$0\$2642	
30	38275.68074	70 308	38275.68112	12 751	38275.67708	-1359 389786	=IF(MINUTE(A30)=20,1,0)	38275.68074	70.2644511082924	=H30-\$H\$2	=J30*	0.00328	#30-K30	=L30*2.31	=N30*0.3048	=O30-\$0\$2642	
31	38275.72241	70 323	38275.72279	12 752	38275.71875	-1612 15552	=IF(MINUTE(A31)=20,1,0)	38275.72241	70.274642295344	=H31-\$H\$2	=J31*	0.00328	#31-K31	=L31*2.31	=N31*0.3048	=O31-\$0\$2642	
32	38275.76407	70 315	38275.76446	12 759	38275.76042	-1590 61189	=IF(MINUTE(A32)=20,1,0)	38275.76407	70.2674537014847	=H32-\$H\$2	=J32*	0.00328	#32-K32	=L32*2.31	=N32*0.3048	=O32-\$0\$2642	
33	38275.80574	70 301	38275.80612	12 766	38275.80208	-1303 45103	=IF(MINUTE(A33)=20,1,0)	38275.80574	70.2640832405598	=H33-\$H\$2	=J33*	0.00328	#33-K33	=L33*2.31	=N33*0.3048	=O33-\$0\$2642	
34	38275.84741	70 286	38275.84779	12 775	38275.84375	-817 324725	=IF(MINUTE(A34)=20,1,0)	38275.84741	70.2665864638748	=H34-\$H\$2	=J34*	0.00328	#34-K34	=L34*2.31	=N34*0.3048	=O34-\$0\$2642	
35	38275.88907	70 264	38275.88946	12 782	38275.88542	-240 231985	=IF(MINUTE(A35)=20,1,0)	38275.88907	70.2651269127138	=H35-\$H\$2	=J35*	0.00328	#35-K35	=L35*2.31	=N35*0.3048	=O35-\$0\$2642	
36	38275.93074	70 256	38275.93112	12 782	38275.92708	304 412273	=IF(MINUTE(A36)=20,1,0)	38275.93074	70.2745484215863	=H36-\$H\$2	=J36*	0.00328	#36-K36	=L36*2.31	=N36*0.3048	=O36-\$0\$2642	
37	38275.97241	70 242	38275.97279	12 781	38275.96875	706 938797	=IF(MINUTE(A37)=20,1,0)	38275.97241	70.2735953486987	=H37-\$H\$2	=J37*	0.00328	#37-K37	=L37*2.31	=N37*0.3048	=O37-\$0\$2642	
38	38276.01407	70 234	38276.01446	12 784	38276.01042	897 01758	=IF(MINUTE(A38)=20,1,0)	38276.01407	70.2744942912788	=H38-\$H\$2	=J38*	0.00328	#38-K38	=L38*2.31	=N38*0.3048	=O38-\$0\$2642	
39	38276.05574	70 227	38276.05612	12 792	38276.05208	859 558468	=IF(MINUTE(A39)=20,1,0)	38276.05574	70.2722045822874	=H39-\$H\$2	=J39*	0.00328	#39-K39	=L39*2.31	=N39*0.3048	=O39-\$0\$2642	
40	38276.09741	70 227	38276.09779	12 795	38276.09375	637 03037	=IF(MINUTE(A40)=20,1,0)	38276.09741	70.2673064133239	=H40-\$H\$2	=J40*	0.00328	#40-K40	=L40*2.31	=N40*0.3048	=O40-\$0\$2642	
41	38276.13907	70 234	38276.13946	12 807	38276.13542	317 109934	=IF(MINUTE(A41)=20,1,0)	38276.13907	70.287723232984	=H41-\$H\$2	=J41*	0.00328	#41-K41	=L41*2.31	=N41*0.3048	=O41-\$0\$2642	
42	38276.18074	70 242	38276.18112	12 835	38276.17708	8 593152	=IF(MINUTE(A42)=20,1,0)	38276.18074	70.275614228905	=H42-\$H\$2	=J42*	0.00328	#42-K42	=L42*2.31	=N42*0.3048	=O42-\$0\$2642	
43	38276.22241	70 234	38276.22279	12 858	38276.21875	-188 550235	=IF(MINUTE(A43)=20,1,0)	38276.22241	70.266618584012	=H43-\$H\$2	=J43*	0.00328	#43-K43	=L43*2.31	=N43*0.3048	=O43-\$0\$2642	
44	38276.26407	70 242	38276.26446	12 875	38276.26042	-210 982589	=IF(MINUTE(A44)=20,1,0)	38276.26407	70.2736852113709	=H44-\$H\$2	=J44*	0.00328	#44-K44	=L44*2.31	=N44*0.3048	=O44-\$0\$2642	
45	38276.30574	70 249	38276.30612	12 88	38276.30208	-49 883244	=IF(MINUTE(A45)=20,1,0)	38276.30574	70.278800981172	=H45-\$H\$2	=J45*	0.00328	#45-K45	=L45*2.31	=N45*0.3048	=O45-\$0\$2642	
46	38276.34741	70 242	38276.34779	12 883	38276.34375	246 346914	=IF(MINUTE(A46)=20,1,0)	38276.34741	70.2742674720072	=H46-\$H\$2	=J46*	0.00328	#46-K46	=L46*2.31	=N46*0.3048	=O46-\$0\$2642	
47	38276.38907	70 242	38276.38946	12 885	38276.38542	585 524036	=IF(MINUTE(A47)=20,1,0)	38276.38907	70.2809157715196	=H47-\$H\$2	=J47*	0.00328	#47-K47	=L47*2.31	=N47*0.3048	=O47-\$0\$2642	
48	38276.43074	70 242	38276.43112	12 874	38276.42708	857 48031	=IF(MINUTE(A48)=20,1,0)	38276.43074	70.2823154310478	=H48-\$H\$2	=J48*	0.00328	#48-K48</				

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
1	Time	WL	Matched-BP-Time	Matched-BP	Match-ET-Time	Matched-ET		BARO	Correct-Time	Corrected-Pressure	ElapsedDays	Detrend	Correction	De-Trended P3	Freshwater (ft of H2O)	Meters of H2O	Change in Meters
2	1/18/05 16:25	28.815	38370.68	13.137	38370.6875	201.383781	38370.68457	28.815	0	0	28.815			66.56265	20.28829572	-0.008252702	
3	1/18/05 17:25	28.806	38370.73	13.143	38370.72917	230.023771	38370.72624	28.815	0.04167	0.000379197	28.8141424761			66.56177405	20.28802873	-0.00851969	
4	1/18/05 18:25	28.797	38370.77	13.143	38370.77083	298.704368	38370.76791	28.815	0.08334	0.000758394	28.81308625			66.56089811	20.28776174	-0.008786678	
5	1/18/05 19:25	28.787	38370.81	13.143	38370.8125	393.450486	38370.80957	28.815	0.125	0.0011375	28.81308625			66.56002238	20.28749482	-0.009053602	
6	1/18/05 20:25	28.797	38370.85	13.149	38370.85417	486.329518	38370.85124	28.815	0.16667	0.001516697	28.81308625			66.55914643	20.28722783	-0.00932059	
7	1/18/05 21:25	28.797	38370.89	13.151	38370.89583	541.48969	38370.89291	28.815	0.20834	0.001895894	28.81310431			66.55827048	20.28696084	-0.009587578	
8	1/18/05 22:25	28.796	38370.93	13.152	38370.9375	524.302177	38370.93457	28.815	0.25	0.002275	28.812725			66.55739475	20.28669392	-0.009854502	
9	1/18/05 23:25	28.806	38370.98	13.146	38370.97917	411.560009	38370.97624	28.815	0.29167	0.002654197	28.81239451			66.5565188	20.28642693	-0.01012149	
10	1/19/05 0:25	28.815	38371.02	13.144	38371.02083	199.938038	38371.01791	28.815	0.33334	0.003033394	28.81198851			66.55564286	20.28615994	-0.010388478	
11	1/19/05 1:25	28.824	38371.06	13.139	38371.0625	-90.04429	38371.05957	28.815	0.375	0.0034125	28.8115675			66.55476713	20.28589302	-0.010655402	
12	1/19/05 2:25	28.834	38371.1	13.141	38371.10417	-416.295534	38371.10124	28.815	0.41667	0.003791697	28.81120803			66.55389118	20.28562603	-0.01092239	
13	1/19/05 3:25	28.834	38371.14	13.138	38371.14583	-723.596692	38371.14291	28.815	0.45834	0.004170894	28.81082911			66.55301523	20.28535904	-0.011189378	
14	1/19/05 4:25	28.825	38371.18	13.143	38371.1875	-956.166151	38371.18457	28.815	0.5	0.00455	28.8101046			66.5521395	20.28509212	-0.011456302	
15	1/19/05 5:25	28.834	38371.23	13.145	38371.22917	-1070.882732	38371.22624	28.83743576	0.54167	0.004929197	28.832505655			66.60309016	20.30062188	0.00407346	
16	1/19/05 6:25	28.825	38371.27	13.157	38371.27083	-1047.44449	38371.26791	28.83730863	0.58334	0.005308394	28.83200024			66.60192055	20.30026538	0.003716963	
17	1/19/05 7:25	28.815	38371.31	13.169	38371.3125	-892.731254	38371.30957	28.83698514	0.625	0.0056875	28.83130754			66.60032064	20.28977773	0.00322931	
18	1/19/05 8:25	28.805	38371.35	13.176	38371.35417	-638.458158	38371.35124	28.83379976	0.66667	0.006066697	28.82773308			66.59206338	20.29726092	0.000712495	
19	1/19/05 9:25	28.796	38371.39	13.181	38371.39583	-333.137842	38371.39291	28.82761941	0.70834	0.006445894	28.82117352			66.57681083	20.29264242	-0.003906	
20	1/19/05 10:25	28.806	38371.43	13.18	38371.4375	-30.751296	38371.43457	28.83697757	0.75	0.006825	28.82015257			66.59765243	20.29896446	0.002416039	
21	1/19/05 11:25	28.806	38371.48	13.173	38371.47917	220.964145	38371.47624	28.83071277	0.79167	0.007204197	28.82150587			66.58230481	20.2942865	-0.002261917	
22	1/19/05 12:25	28.824	38371.52	13.154	38371.52083	390.001064	38371.51791	28.83461335	0.83334	0.007583394	28.82037391			66.5940197	20.2978572	0.001308782	
23	1/19/05 13:25	28.833	38371.56	13.141	38371.5625	465.534859	38371.55957	28.83426111	0.875	0.0079625	28.82023581			66.58874978	20.29625093	-0.000297489	
24	1/19/05 14:25	28.834	38371.6	13.139	38371.60417	458.508125	38371.60124	28.83438315	0.91667	0.008341697	28.820204145			66.58815575	20.29606987	-0.000478551	
25	1/19/05 15:25	28.834	38371.64	13.138	38371.64583	397.449784	38371.64291	28.83709631	0.95834	0.008720894	28.82007542			66.59354722	20.29771319	0.00116477	
26	1/19/05 16:25	28.834	38371.68	13.13	38371.6875	320.465327	38371.68457	28.83842308	1	0.0091	28.82032305			66.5973631	20.29838043	0.001832007	
27	1/19/05 17:25	28.834	38371.73	13.129	38371.72917	265.041864	38371.72624	28.8428535	1.04167	0.009479197	28.81337743			66.60509463	20.30123284	0.004684421	
28	1/19/05 18:25	28.815	38371.77	13.133	38371.77083	257.834378	38371.76791	28.83206748	1.08334	0.009858394	28.82220905			66.57930299	20.29337155	-0.00317687	
29	1/19/05 19:25	28.815	38371.81	13.138	38371.8125	306.811001	38371.80957	28.83979684	1.125	0.0102375	28.81955914			66.59628162	20.29854664	0.001998215	
30	1/19/05 20:25	28.815	38371.85	13.14	38371.85417	397.881941	38371.85124	28.84313771	1.16667	0.010516697	28.819520101			66.60312353	20.30063205	0.00408363	
31	1/19/05 21:25	28.815	38371.89	13.143	38371.89583	497.321561	38371.89291	28.84447575	1.20834	0.010995894	28.81934798			66.60533848	20.30130717	0.004758746	
32	1/19/05 22:25	28.815	38371.93	13.145	38371.9375	559.963028	38371.93457	28.84228528	1.25	0.011375	28.81939102			66.59940275	20.29949796	0.002949536	
33	1/19/05 23:25	28.825	38371.98	13.138	38371.97917	541.547436	38371.97624	28.84336588	1.29167	0.011754197	28.81811663			66.60102299	20.29999181	0.003443384	
34	1/20/05 0:25	28.833	38372.02	13.123	38372.02083	412.182156	38372.01791	28.83529012	1.33334	0.012133394	28.81231507			66.58149204	20.29403877	-0.002509649	
35	1/20/05 1:25	28.853	38372.06	13.115	38372.0625	167.126304	38372.05957	28.84166046	1.375	0.0125125	28.82914798			66.59533178	20.29825713	0.001708705	
36	1/20/05 2:25	28.872	38372.1	13.102	38372.10417	-168.521241	38372.10124	28.84665962	1.41667	0.012891697	28.83371772			66.60600389	20.30150999	0.004961565	
37	1/20/05 3:25	28.881	38372.14	13.095	38372.14583	-543.133239	38372.14291	28.84598438	1.45834	0.013270894	28.83271248			66.60356816	20.30076758	0.004219154	
38	1/20/05 4:25	28.889	38372.18	13.088	38372.1875	-889.45939	38372.18457	28.84862168	1.5	0.01365	28.83207108			66.60878457	20.30235754	0.005809116	
39	1/20/05 5:25	28.889	38372.23	13.091	38372.22917	-1140.37604	38372.22624	28.85016998	1.54167	0.014029197	28.83184071			66.61148502	20.30318069	0.0066832268	
40	1/20/05 6:25	28.881	38372.27	13.096	38372.27083	-1245.184091	38372.26791	28.84662339	1.58334	0.014408394	28.83221491			66.60241664	20.30041659	0.003868169	
41	1/20/05 7:25	28.88	38372.31	13.103	38372.3125	-1181.970329	38372.30957	28.85325348	1.625	0.0147875	28.83084659			66.61685642	20.30481784	0.008269415	
42	1/20/05 8:25	28.872	38372.35	13.106	38372.35417	-962.758472	38372.35124	28.85046188	1.66667	0.015166697	28.83228518			66.60953187	20.30258531	0.006036891	
43	1/20/05 9:25	28.872	38372.39	13.115	38372.39583	-630.308613	38372.39291	28.85673354	1.70834	0.015545894	28.83111265			66.62314347	20.30674313	0.010185708	
44	1/20/05 10:25	28.862	38372.43	13.113	38372.4375	-247.717519	38372.43457	28.84631738	1.75	0.015925	28.83031230			66.59820639	20.29913331	0.002584886	
45	1/20/05 11:25	28.872	38372.48	13.102	38372.47917	116.278299	38372.47624	28.84816291	1.79167	0.016304197	28.83186711			66.60159363	20.30016574	0.003617315	
46	1/20/05 12:25	28.889	38372.52	13.082	38372.52083	402.589538	38372.51791	28.85011431	1.83334	0.016683394	28.83143091			66.60522541	20.30127271	0.004724283	
47	1/20/05 13:25	28.89	38372.56	13.065	38372.5625	574.113953	38372.55957	28.84579086	1.875	0.0170625	28.83227335			66.59436225	20.29798169	0.001413289	
48	1/20/05 14:25	28.908	38372.6	13.057	38372.60417	622.508502	38372.60124	28.84542751	1.91667	0.017441697	28.83270081			66.59264722	20.29743887	0.000890445	
49	1/20/05 15:25	28.89	38372.64	13.055	38372.64583	568.115276	38372.64291	28.84685362	1.95834	0.017820894	28.83191327			66.57219661	20.29120553	-0.005342896	

## SNL-1 Formulas

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Time	WL	MatchedBP-Time	Matched-BP	MatchET-Time	Matched-ET	BAROCorrect-Time	Corrected-Pressure	ElapsedDays	DetrendCorrection	Un-Trended PSF	Freshwater (ft of H2O)	Meters of H2O	Change in Meters		
2	38370.68457	28.815	38370.68	13.137	38370.6875	201.383781	38370.68457	28.815	0	=J2*0.0091	=H2-K2	=L2*2.31	=N2*0.3048	=O2-\$O\$335		
3	38370.72624	28.806	38370.73	13.143	38370.729167	230.023771	38370.72624	28.815	=H3-\$H\$2	=J3*0.0091	=H3-K3	=L3*2.31	=N3*0.3048	=O3-\$O\$335		
4	38370.76791	28.797	38370.77	13.143	38370.770833	298.704368	38370.76791	28.815	=H4-\$H\$2	=J4*0.0091	=H4-K4	=L4*2.31	=N4*0.3048	=O4-\$O\$335		
5	38370.80957	28.787	38370.81	13.143	38370.8125	393.460486	38370.80957	28.815	=H5-\$H\$2	=J5*0.0091	=H5-K5	=L5*2.31	=N5*0.3048	=O5-\$O\$335		
6	38370.85124	28.797	38370.85	13.149	38370.854167	486.329518	38370.85124	28.815	=H6-\$H\$2	=J6*0.0091	=H6-K6	=L6*2.31	=N6*0.3048	=O6-\$O\$335		
7	38370.89291	28.797	38370.89	13.151	38370.895833	541.48969	38370.89291	28.815	=H7-\$H\$2	=J7*0.0091	=H7-K7	=L7*2.31	=N7*0.3048	=O7-\$O\$335		
8	38370.93457	28.796	38370.93	13.152	38370.9375	524.302177	38370.93457	28.815	=H8-\$H\$2	=J8*0.0091	=H8-K8	=L8*2.31	=N8*0.3048	=O8-\$O\$335		
9	38370.97624	28.806	38370.98	13.146	38370.979167	411.560009	38370.97624	28.815	=H9-\$H\$2	=J9*0.0091	=H9-K9	=L9*2.31	=N9*0.3048	=O9-\$O\$335		
10	38371.01791	28.815	38371.02	13.144	38371.020833	199.938038	38371.01791	28.815	=H10-\$H\$2	=J10*0.0091	=H10-K10	=L10*2.31	=N10*0.3048	=O10-\$O\$335		
11	38371.05957	28.824	38371.06	13.139	38371.0625	-90.04429	38371.05957	28.815	=H11-\$H\$2	=J11*0.0091	=H11-K11	=L11*2.31	=N11*0.3048	=O11-\$O\$335		
12	38371.10124	28.834	38371.1	13.141	38371.104167	-416.295534	38371.10124	28.815	=H12-\$H\$2	=J12*0.0091	=H12-K12	=L12*2.31	=N12*0.3048	=O12-\$O\$335		
13	38371.14291	28.834	38371.14	13.138	38371.145833	-723.596692	38371.14291	28.815	=H13-\$H\$2	=J13*0.0091	=H13-K13	=L13*2.31	=N13*0.3048	=O13-\$O\$335		
14	38371.18457	28.825	38371.18	13.143	38371.1875	-956.166151	38371.18457	28.815	=H14-\$H\$2	=J14*0.0091	=H14-K14	=L14*2.31	=N14*0.3048	=O14-\$O\$335		
15	38371.22624	28.834	38371.23	13.145	38371.229167	-1070.882732	38371.22624	28.8374357617881	=H15-\$H\$2	=J15*0.0091	=H15-K15	=L15*2.31	=N15*0.3048	=O15-\$O\$335		
16	38371.26791	28.825	38371.27	13.157	38371.270833	-1047.444449	38371.26791	28.8373086332406	=H16-\$H\$2	=J16*0.0091	=H16-K16	=L16*2.31	=N16*0.3048	=O16-\$O\$335		
17	38371.30957	28.815	38371.31	13.169	38371.3125	-892.731254	38371.30957	28.838095137404	=H17-\$H\$2	=J17*0.0091	=H17-K17	=L17*2.31	=N17*0.3048	=O17-\$O\$335		
18	38371.35124	28.805	38371.35	13.176	38371.351467	-638.458158	38371.35124	28.8337997598435	=H18-\$H\$2	=J18*0.0091	=H18-K18	=L18*2.31	=N18*0.3048	=O18-\$O\$335		
19	38371.39291	28.796	38371.39	13.181	38371.395833	-333.137842	38371.39291	28.8276194147235	=H19-\$H\$2	=J19*0.0091	=H19-K19	=L19*2.31	=N19*0.3048	=O19-\$O\$335		
20	38371.43457	28.806	38371.43	13.18	38371.4375	-30.751296	38371.43457	28.8369775671707	=H20-\$H\$2	=J20*0.0091	=H20-K20	=L20*2.31	=N20*0.3048	=O20-\$O\$335		
21	38371.47624	28.806	38371.48	13.173	38371.479167	220.964145	38371.47624	28.8307127709287	=H21-\$H\$2	=J21*0.0091	=H21-K21	=L21*2.31	=N21*0.3048	=O21-\$O\$335		
22	38371.51791	28.824	38371.52	13.154	38371.520833	390.001064	38371.51791	28.8361633503592	=H22-\$H\$2	=J22*0.0091	=H22-K22	=L22*2.31	=N22*0.3048	=O22-\$O\$335		
23	38371.55957	28.833	38371.56	13.141	38371.5625	465.534859	38371.55957	28.8342611058	=H23-\$H\$2	=J23*0.0091	=H23-K23	=L23*2.31	=N23*0.3048	=O23-\$O\$335		
24	38371.60124	28.834	38371.6	13.139	38371.604167	458.508125	38371.60124	28.8343831454351	=H24-\$H\$2	=J24*0.0091	=H24-K24	=L24*2.31	=N24*0.3048	=O24-\$O\$335		
25	38371.64291	28.834	38371.64	13.138	38371.645833	397.449784	38371.64291	28.83709613302	=H25-\$H\$2	=J25*0.0091	=H25-K25	=L25*2.31	=N25*0.3048	=O25-\$O\$335		
26	38371.68457	28.834	38371.68	13.13	38371.6875	320.465327	38371.68457	28.8384230798126	=H26-\$H\$2	=J26*0.0091	=H26-K26	=L26*2.31	=N26*0.3048	=O26-\$O\$335		
27	38371.72624	28.834	38371.73	13.129	38371.729167	265.041864	38371.72624	28.8428534955846	=H27-\$H\$2	=J27*0.0091	=H27-K27	=L27*2.31	=N27*0.3048	=O27-\$O\$335		
28	38371.76791	28.815	38371.77	13.133	38371.770833	257.834378	38371.76791	28.8320674813629	=H28-\$H\$2	=J28*0.0091	=H28-K28	=L28*2.31	=N28*0.3048	=O28-\$O\$335		
29	38371.80957	28.815	38371.81	13.138	38371.8125	306.811001	38371.80957	28.839796641683	=H29-\$H\$2	=J29*0.0091	=H29-K29	=L29*2.31	=N29*0.3048	=O29-\$O\$335		
30	38371.85124	28.815	38371.85	13.14	38371.854167	397.881941	38371.85124	28.8431377054507	=H30-\$H\$2	=J30*0.0091	=H30-K30	=L30*2.31	=N30*0.3048	=O30-\$O\$335		
31	38371.89291	28.815	38371.89	13.143	38371.895833	497.321561	38371.89291	28.8444757546158	=H31-\$H\$2	=J31*0.0091	=H31-K31	=L31*2.31	=N31*0.3048	=O31-\$O\$335		
32	38371.93457	28.815	38371.93	13.145	38371.9375	559.983028	38371.93457	28.8422852802323	=H32-\$H\$2	=J32*0.0091	=H32-K32	=L32*2.31	=N32*0.3048	=O32-\$O\$335		
33	38371.97624	28.825	38371.98	13.138	38371.979167	541.547436	38371.97624	28.843656788903	=H33-\$H\$2	=J33*0.0091	=H33-K33	=L33*2.31	=N33*0.3048	=O33-\$O\$335		
34	38372.01791	28.833	38372.02	13.123	38372.020833	412.182156	38372.01791	28.8352901207329	=H34-\$H\$2	=J34*0.0091	=H34-K34	=L34*2.31	=N34*0.3048	=O34-\$O\$335		
35	38372.05957	28.853	38372.06	13.115	38372.0625	167.126304	38372.05957	28.8416604687846	=H35-\$H\$2	=J35*0.0091	=H35-K35	=L35*2.31	=N35*0.3048	=O35-\$O\$335		
36	38372.10124	28.872	38372.1	13.102	38372.104167	-168.521241	38372.10124	28.8468598616482	=H36-\$H\$2	=J36*0.0091	=H36-K36	=L36*2.31	=N36*0.3048	=O36-\$O\$335		
37	38372.14291	28.881	38372.14	13.095	38372.145833	-543.133239	38372.14291	28.84598438189	=H37-\$H\$2	=J37*0.0091	=H37-K37	=L37*2.31	=N37*0.3048	=O37-\$O\$335		
38	38372.18457	28.89	38372.18	13.088	38372.1875	-889.45939	38372.18457	28.8488216763893	=H38-\$H\$2	=J38*0.0091	=H38-K38	=L38*2.31	=N38*0.3048	=O38-\$O\$335		
39	38372.22624	28.89	38372.23	13.091	38372.229167	-1140.37604	38372.22624	28.8501899778828	=H39-\$H\$2	=J39*0.0091	=H39-K39	=L39*2.31	=N39*0.3048	=O39-\$O\$335		
40	38372.26791	28.881	38372.27	13.096	38372.270833	-1245.184091	38372.26791	28.8486233878877	=H40-\$H\$2	=J40*0.0091	=H40-K40	=L40*2.31	=N40*0.3048	=O40-\$O\$335		
41	38372.30957	28.88	38372.31	13.103	38372.3125	-1181.970329	38372.30957	28.8532534835598	=H41-\$H\$2	=J41*0.0091	=H41-K41	=L41*2.31	=N41*0.3048	=O41-\$O\$335		
42	38372.35124	28.872	38372.35	13.106	38372.354167	-962.758742	38372.35124	28.8504618768425	=H42-\$H\$2	=J42*0.0091	=H42-K42	=L42*2.31	=N42*0.3048	=O42-\$O\$335		
43	38372.39291	28.872	38372.39	13.115	38372.395833	-630.308613	38372.39291	28.8567335433069	=H43-\$H\$2	=J43*0.0091	=H43-K43	=L43*2.31	=N43*0.3048	=O43-\$O\$335		
44	38372.43457	28.862	38372.43	13.113	38372.4375	-247.717519	38372.43457	28.8483173763754	=H44-\$H\$2	=J44*0.0091	=H44-K44	=L44*2.31	=N44*0.3048	=O44-\$O\$335		
45	38372.47624	28.872	38372.48	13.102	38372.479167	116.278299	38372.47624	28.848182909276	=H45-\$H\$2	=J45*0.0091	=H45-K45	=L45*2.31	=N45*0.3048	=O45-\$O\$335		
46	38372.51791	28.89	38372.52	13.082	38372.50833	402.589538	38372.51791	28.8501140377887	=H46-\$H\$2	=J46*0.0091	=H46-K46	=L46*2.31	=N46*0.3048	=O46-\$O\$335		
47	38372.55957	28.9	38372.56	13.065	38372.5625	574.113953	38372.55957	28.8457908561173	=H47-\$H\$2	=J47*0.0091	=H47-K47	=L47*2.31	=N47*0.3048	=O47-\$O\$335		
48	38372.60124	28.908	38372.6	13.057	38372.604167	622.508502	38372.60124	28.8454275061386	=H48-\$H\$2	=J48*0.0091	=H48-K48	=L48*2.31	=N48*0.3048	=O48-\$O\$335		
49	38372.64291	28.9	38372.64	13.055	38372.645833	568.115276	38372.64291	28.8369536243028	=H49-\$H\$2	=J49*0.0091	=H49-K49	=L49*2.31	=N49*0.3048	=O49-\$O\$335		
50	38372.68457	28.909	38372.68	13.054	38372.6875	453.239863	38372.68457	28.8491574832778	=H50-\$H\$2	=J50*0.0091	=H50-K50	=L50*2.31	=N50*0.3048	=O50-\$O\$335		
51	38372.72624	28.9	38372.73	13.053	38372.729167	330.364153	38372.72624	28.846042556763	=H51-\$H\$2	=J51*0.0091	=H51-K51	=L51*2.31	=N51*0.3048	=O51-\$O\$335		
52	38372.76791	28.889	38372.77	13.054	38372.770833	247.971271	38372.76791	28.8424954049422	=H52-\$H\$2	=J52*0.0091	=H52-K52	=L52*2.31	=N52*0.3048	=O52-\$O\$335		
53	38372.80957	28.89	38372.81	13.057	38372.8125	237.28168	38372.80957	28.8526								

SNL-2

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Time	WL	MatchedBP-Time	Matched-BP	MatchET-Time	Matched-ET	FILTER	BARO	Correct-Time	Corrected-Pressure				Freshwater (ft of H2O)	Meters of H2O	Change in Meters
2	1/25/05 10:03	87.1	38377.42333	13.056	38377.41667	850.922846	1	38377.41897	87.1		201.201	61.3260648	-0.143975533			
3	1/25/05 11:03	87.118	38377.465	13.044	38377.45833	809.988041	1	38377.46064	87.1		201.201	61.3260648	-0.143975533			
4	1/25/05 12:03	87.138	38377.50667	13.026	38377.5	563.580892	1	38377.5023	87.1		201.201	61.3260648	-0.143975533			
5	1/25/05 13:03	87.165	38377.54833	13.012	38377.54167	134.908942	1	38377.54397	87.1		201.201	61.3260648	-0.143975533			
6	1/25/05 14:03	87.183	38377.59	13.002	38377.58333	-403.275338	1	38377.58564	87.1		201.201	61.3260648	-0.143975533			
7	1/25/05 15:03	87.203	38377.63167	12.995	38377.625	-944.394372	1	38377.6273	87.1		201.201	61.3260648	-0.143975533			
8	1/25/05 16:03	87.212	38377.67333	12.998	38377.66667	-1373.436534	1	38377.68897	87.1		201.201	61.3260648	-0.143975533			
9	1/25/05 17:03	87.221	38377.715	12.999	38377.70833	-1595.628317	1	38377.71064	87.1		201.201	61.3260648	-0.143975533			
10	1/25/05 18:03	87.23	38377.75667	13.008	38377.75	-1560.746227	1	38377.7523	87.1		201.201	61.3260648	-0.143975533			
11	1/25/05 19:03	87.222	38377.79833	13.016	38377.79167	-1276.327811	1	38377.79397	87.1		201.201	61.3260648	-0.143975533			
12	1/25/05 20:03	87.213	38377.84	13.022	38377.83333	-805.985979	1	38377.83564	87.1		201.201	61.3260648	-0.143975533			
13	1/25/05 21:03	87.215	38377.88167	13.027	38377.875	-253.199433	1	38377.8773	87.1		201.201	61.3260648	-0.143975533			
14	1/25/05 22:03	87.206	38377.92333	13.033	38377.91667	264.946165	1	38377.91897	87.1		201.201	61.3260648	-0.143975533			
15	1/25/05 23:03	87.196	38377.965	13.035	38377.95833	646.851322	1	38377.96064	87.20497751		201.443498	61.3999782	-0.070062128			
16	1/26/05 0:03	87.196	38378.00667	13.036	38378	830.548793	1	38378.0023	87.2098442		201.4547401	61.40340478	-0.066635553			
17	1/26/05 1:03	87.196	38378.04833	13.042	38378.04167	806.783453	1	38378.04397	87.21393379		201.4641871	61.40628422	-0.063756115			
18	1/26/05 2:03	87.216	38378.09	13.036	38378.08333	618.143045	1	38378.08564	87.223636868		201.4929118	61.41503947	-0.055000865			
19	1/26/05 3:03	87.224	38378.13167	13.029	38378.125	345.116734	1	38378.1273	87.221717		201.4821663	61.41176428	-0.058276057			
20	1/26/05 4:03	87.234	38378.17333	13.033	38378.16667	83.195064	1	38378.16897	87.22431445		201.4881664	61.41359311	-0.056447224			
21	1/26/05 5:03	87.253	38378.215	13.037	38378.20833	-82.904554	1	38378.21064	87.23720943		201.5179538	61.42267231	-0.047368019			
22	1/26/05 6:03	87.253	38378.25667	13.046	38378.25	-101.41641	1	38378.2523	87.23800385		201.5151689	61.42182348	-0.048216851			
23	1/26/05 7:03	87.253	38378.29833	13.052	38378.29167	33.237032	1	38378.29397	87.23656126		201.5164565	61.42221595	-0.047824387			
24	1/26/05 8:03	87.253	38378.34	13.063	38378.33333	279.224038	1	38378.33564	87.24401067		201.5336646	61.42746098	-0.042579349			
25	1/26/05 9:03	87.245	38378.38167	13.068	38378.375	558.289463	1	38378.3773	87.2496464		201.5312483	61.42672449	-0.043315847			
26	1/26/05 10:03	87.245	38378.42333	13.071	38378.41667	776.264521	1	38378.41897	87.25007393		201.5476708	61.43173005	-0.038310283			
27	1/26/05 11:03	87.236	38378.465	13.07	38378.45833	848.145149	1	38378.46064	87.24585745		201.5374687	61.42862046	-0.041419871			
28	1/26/05 12:03	87.245	38378.50667	13.052	38378.5	721.593789	1	38378.5023	87.24649767		201.5394096	61.42921205	-0.040828278			
29	1/26/05 13:03	87.254	38378.54833	13.04	38378.54167	392.89928	1	38378.54397	87.24728548		201.5412295	61.42976674	-0.040273594			
30	1/26/05 14:03	87.263	38378.59	13.035	38378.58333	-88.979662	1	38378.58564	87.25075709		201.5492489	61.43221106	-0.037829273			
31	1/26/05 15:03	87.272	38378.63167	13.035	38378.625	-631.899234	1	38378.6273	87.25609838		201.5615873	61.4359718	-0.034068534			
32	1/26/05 16:03	87.283	38378.67333	13.037	38378.66667	-1121.756365	1	38378.66897	87.26382232		201.5794295	61.44141013	-0.028630207			
33	1/26/05 17:03	87.283	38378.715	13.042	38378.70833	-1450.430462	1	38378.71064	87.26359459		201.5789035	61.44124979	-0.028790545			
34	1/26/05 18:03	87.274	38378.75667	13.054	38378.75	-1543.26218	1	38378.7523	87.26124435		201.5734745	61.43959501	-0.03044532			
35	1/26/05 19:03	87.283	38378.79833	13.046	38378.79167	-1378.601878	1	38378.79397	87.2672019		201.5872364	61.44378965	-0.02625068			
36	1/26/05 20:03	87.274	38378.84	13.051	38378.83333	-993.848319	1	38378.83564	87.26495526		201.5820467	61.44220782	-0.027825153			
37	1/26/05 21:03	87.264	38378.88167	13.059	38378.875	-476.069445	1	38378.8773	87.26741831		201.5877363	61.44394202	-0.026098309			
38	1/26/05 22:03	87.246	38378.92333	13.066	38378.91667	60.31664	1	38378.91897	87.26291701		201.5773383	61.44077271	-0.029267621			
39	1/26/05 23:03	87.246	38378.965	13.059	38378.95833	502.620348	1	38378.96064	87.26622965		201.5849905	61.4431051	-0.026935234			
40	1/27/05 0:03	87.255	38379.00667	13.044	38379	767.719931	1	38379.0023	87.27029038		201.5943708	61.44596421	-0.024076122			
41	1/27/05 1:03	87.257	38379.04833	13.04	38379.04167	821.256632	1	38379.04397	87.27020384		201.5941709	61.44580328	-0.024137052			
42	1/27/05 2:03	87.266	38379.09	13.039	38379.08333	683.475992	1	38379.08564	87.27588887		201.6072571	61.44989196	-0.020148374			
43	1/27/05 3:03	87.275	38379.13167	13.038	38379.125	420.834269	1	38379.1273	87.27781998		201.6125958	61.45151919	-0.018521146			
44	1/27/05 4:03	87.275	38379.17333	13.039	38379.16667	126.250731	1	38379.16897	87.27039711		201.5946173	61.44603936	-0.024000973			
45	1/27/05 5:03	87.284	38379.215	13.039	38379.20833	-106.422022	1	38379.21064	87.27087712		201.5957261	61.44637733	-0.023663006			
46	1/27/05 6:03	87.293	38379.25667	13.036	38379.25	-207.064692	1	38379.2523	87.2701754		201.5941052	61.44588325	-0.024157079			
47	1/27/05 7:03	87.304	38379.29833	13.037	38379.29167	-147.05034	1	38379.29397	87.27670024		201.6091776	61.45047732	-0.019563016			
48	1/27/05 8:03	87.293	38379.34	13.044	38379.33333	54.001703	1	38379.33564	87.26867042		201.590698	61.44484474	-0.025195589			
49	1/27/05 9:03	87.295	38379.38167	13.053	38379.375	333.831042	1	38379.3773	87.277892571		201.6143184	61.45204425	-0.017996088			
50	1/27/05 10:03	87.285	38379.42333	13.055	38379.41667	603.945483	1	38379.41897	87.27535843		201.6060768	61.44953257	-0.020507767			
51	1/27/05 11:03	87.284	38379.465	13.051	38379.45833	772.804567	1	38379.46064	87.27762058		201.6113035	61.45112531	-0.018915026			
52	1/27/05 12:03	87.285	38379.50667	13.036	38379.5	770.186627	1	38379.5023	87.27363334		201.602093	61.44831795	-0.021722385			
53	1/27/05 13:03	87.295	38379.54833	13.019	38379.54167	566.799028	1	38379.54397	87.27404954		201.6031584	61.44864267	-0.021397659			
54	1/27/05 14:03	87.295	38379.59	13.014	38379.58333	184.141667	1	38379.58564	87.26949178		201.5952526	61.44540193	-0.024638406			
55	1/27/05 15:03	87.304	38379.63167	13.016	38379.625	-308.240813	1	38379.6273	87.27711208		201.6101289	61.45076729	-0.019273045			
56	1/27/05 16:03	87.313	38379.67333	13.009	38379.66667	-808.027709	1	38379.66897	87.27769141		201.6114671	61.45117519	-0.018865147			
57	1/27/05 17:03	87.313	38379.715	13.025	38379.70833	-1204.614799	1	38379.71064	87.28352482		201.62494					

## SNL-2 Formulas

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Time	WL	MatchedBP-Time	Matched-BP	MatchET-Time	Matched-ET	FILTER	BAROCorrect-Time	Corrected-Pressure					Freshwater (ft of H2O)	Meters of H2O	Change in Meters
2	38377.4189699999	87.1	38377.42333	13.056	38377.41667	850.922846	=IF(MINUTE(A2)=3,1,0)	38377.4189699999	87.1					=I2*2.31	=N2*0.3048	=O2-\$O\$172
3	38377.46064	87.118	38377.465	13.044	38377.45833	809.988041	=IF(MINUTE(A3)=3,1,0)	38377.46064	87.1					=I3*2.31	=N3*0.3048	=O3-\$O\$172
4	38377.5023	87.138	38377.50667	13.026	38377.5	563.580892	=IF(MINUTE(A4)=3,1,0)	38377.5023	87.1					=I4*2.31	=N4*0.3048	=O4-\$O\$172
5	38377.5439699999	87.165	38377.54833	13.012	38377.54167	134.908942	=IF(MINUTE(A5)=3,1,0)	38377.5439699999	87.1					=I5*2.31	=N5*0.3048	=O5-\$O\$172
6	38377.58564	87.183	38377.59	13.002	38377.58333	-403.275338	=IF(MINUTE(A6)=3,1,0)	38377.58564	87.1					=I6*2.31	=N6*0.3048	=O6-\$O\$172
7	38377.6273	87.203	38377.63167	12.995	38377.625	-944.394372	=IF(MINUTE(A7)=3,1,0)	38377.6273	87.1					=I7*2.31	=N7*0.3048	=O7-\$O\$172
8	38377.6689699999	87.212	38377.67333	12.998	38377.66667	-1373.436534	=IF(MINUTE(A8)=3,1,0)	38377.6689699999	87.1					=I8*2.31	=N8*0.3048	=O8-\$O\$172
9	38377.71064	87.221	38377.715	12.999	38377.70833	-1595.628317	=IF(MINUTE(A9)=3,1,0)	38377.71064	87.1					=I9*2.31	=N9*0.3048	=O9-\$O\$172
10	38377.7523	87.23	38377.75667	13.008	38377.75	-1560.746227	=IF(MINUTE(A10)=3,1,0)	38377.7523	87.1					=I10*2.31	=N10*0.3048	=O10-\$O\$172
11	38377.7939699999	87.222	38377.79833	13.016	38377.79167	-1276.327811	=IF(MINUTE(A11)=3,1,0)	38377.7939699999	87.1					=I11*2.31	=N11*0.3048	=O11-\$O\$172
12	38377.83564	87.213	38377.84	13.022	38377.83333	-805.985979	=IF(MINUTE(A12)=3,1,0)	38377.83564	87.1					=I12*2.31	=N12*0.3048	=O12-\$O\$172
13	38377.8773	87.215	38377.88167	13.027	38377.875	-253.199433	=IF(MINUTE(A13)=3,1,0)	38377.8773	87.1					=I13*2.31	=N13*0.3048	=O13-\$O\$172
14	38377.9189699999	87.206	38377.92333	13.033	38377.91667	264.945165	=IF(MINUTE(A14)=3,1,0)	38377.9189699999	87.1					=I14*2.31	=N14*0.3048	=O14-\$O\$172
15	38377.96064	87.196	38377.965	13.035	38377.95833	646.851322	=IF(MINUTE(A15)=3,1,0)	38377.96064	87.2049775098901					=I15*2.31	=N15*0.3048	=O15-\$O\$172
16	38378.0023	87.196	38378.00667	13.036	38378	830.548793	=IF(MINUTE(A16)=3,1,0)	38378.0023	87.2086441967786					=I16*2.31	=N16*0.3048	=O16-\$O\$172
17	38378.0439699999	87.196	38378.04833	13.042	38378.04167	806.783453	=IF(MINUTE(A17)=3,1,0)	38378.0439699999	87.213933794479					=I17*2.31	=N17*0.3048	=O17-\$O\$172
18	38378.08564	87.216	38378.09	13.036	38378.08333	618.143045	=IF(MINUTE(A18)=3,1,0)	38378.08564	87.2263686756306					=I18*2.31	=N18*0.3048	=O18-\$O\$172
19	38378.1273	87.224	38378.13167	13.029	38378.125	345.116734	=IF(MINUTE(A19)=3,1,0)	38378.1273	87.2217169951413					=I19*2.31	=N19*0.3048	=O19-\$O\$172
20	38378.1689699999	87.234	38378.17333	13.033	38378.16667	83.195064	=IF(MINUTE(A20)=3,1,0)	38378.1689699999	87.224314457086					=I20*2.31	=N20*0.3048	=O20-\$O\$172
21	38378.21064	87.253	38378.215	13.037	38378.20833	-82.904554	=IF(MINUTE(A21)=3,1,0)	38378.21064	87.2372094304868					=I21*2.31	=N21*0.3048	=O21-\$O\$172
22	38378.2523	87.253	38378.25667	13.046	38378.25	-101.41641	=IF(MINUTE(A22)=3,1,0)	38378.2523	87.2380038544879					=I22*2.31	=N22*0.3048	=O22-\$O\$172
23	38378.2939699999	87.253	38378.29833	13.052	38378.29167	33.237032	=IF(MINUTE(A23)=3,1,0)	38378.2939699999	87.236581262848					=I23*2.31	=N23*0.3048	=O23-\$O\$172
24	38378.33564	87.253	38378.34	13.063	38378.33333	279.224038	=IF(MINUTE(A24)=3,1,0)	38378.33564	87.2440106696825					=I24*2.31	=N24*0.3048	=O24-\$O\$172
25	38378.3773	87.245	38378.38167	13.068	38378.375	558.289463	=IF(MINUTE(A25)=3,1,0)	38378.3773	87.2429646379195					=I25*2.31	=N25*0.3048	=O25-\$O\$172
26	38378.4189699999	87.245	38378.42333	13.071	38378.41667	776.264521	=IF(MINUTE(A26)=3,1,0)	38378.4189699999	87.2500739251254					=I26*2.31	=N26*0.3048	=O26-\$O\$172
27	38378.46064	87.236	38378.465	13.07	38378.45833	848.145149	=IF(MINUTE(A27)=3,1,0)	38378.46064	87.245657449326					=I27*2.31	=N27*0.3048	=O27-\$O\$172
28	38378.5023	87.245	38378.50667	13.052	38378.5	721.593789	=IF(MINUTE(A28)=3,1,0)	38378.5023	87.2464976745135					=I28*2.31	=N28*0.3048	=O28-\$O\$172
29	38378.5439699999	87.254	38378.54833	13.04	38378.54167	392.89928	=IF(MINUTE(A29)=3,1,0)	38378.5439699999	87.247285480477					=I29*2.31	=N29*0.3048	=O29-\$O\$172
30	38378.58564	87.263	38378.59	13.035	38378.58333	-88.979662	=IF(MINUTE(A30)=3,1,0)	38378.58564	87.2507570925937					=I30*2.31	=N30*0.3048	=O30-\$O\$172
31	38378.6273	87.272	38378.63167	13.035	38378.625	-631.899234	=IF(MINUTE(A31)=3,1,0)	38378.6273	87.25809838442					=I31*2.31	=N31*0.3048	=O31-\$O\$172
32	38378.6689699999	87.283	38378.67333	13.037	38378.66667	-1121.756365	=IF(MINUTE(A32)=3,1,0)	38378.6689699999	87.2638223150099					=I32*2.31	=N32*0.3048	=O32-\$O\$172
33	38378.71064	87.283	38378.715	13.042	38378.70833	-1450.430462	=IF(MINUTE(A33)=3,1,0)	38378.71064	87.263594590521					=I33*2.31	=N33*0.3048	=O33-\$O\$172
34	38378.7523	87.274	38378.75667	13.054	38378.75	-1543.262118	=IF(MINUTE(A34)=3,1,0)	38378.7523	87.2612443512841					=I34*2.31	=N34*0.3048	=O34-\$O\$172
35	38378.7939699999	87.283	38378.79833	13.046	38378.79167	-1378.601878	=IF(MINUTE(A35)=3,1,0)	38378.7939699999	87.267201902303					=I35*2.31	=N35*0.3048	=O35-\$O\$172
36	38378.83564	87.274	38378.84	13.051	38378.83333	-993.848319	=IF(MINUTE(A36)=3,1,0)	38378.83564	87.2649552618679					=I36*2.31	=N36*0.3048	=O36-\$O\$172
37	38378.8773	87.264	38378.88167	13.059	38378.875	-476.069445	=IF(MINUTE(A37)=3,1,0)	38378.8773	87.2674183111261					=I37*2.31	=N37*0.3048	=O37-\$O\$172
38	38378.9189699999	87.246	38378.92333	13.066	38378.91667	60.31664	=IF(MINUTE(A38)=3,1,0)	38378.9189699999	87.2629170098665					=I38*2.31	=N38*0.3048	=O38-\$O\$172
39	38378.96064	87.246	38378.965	13.059	38378.95833	502.620348	=IF(MINUTE(A39)=3,1,0)	38378.96064	87.2682290459941					=I39*2.31	=N39*0.3048	=O39-\$O\$172
40	38379.0023	87.255	38379.00667	13.044	38379	767.719931	=IF(MINUTE(A40)=3,1,0)	38379.0023	87.272030770067					=I40*2.31	=N40*0.3048	=O40-\$O\$172
41	38379.0439699999	87.257	38379.04833	13.04	38379.04167	821.256632	=IF(MINUTE(A41)=3,1,0)	38379.0439699999	87.27202036398406					=I41*2.31	=N41*0.3048	=O41-\$O\$172
42	38379.08564	87.266	38379.09	13.039	38379.08333	683.475992	=IF(MINUTE(A42)=3,1,0)	38379.08564	87.275868867322					=I42*2.31	=N42*0.3048	=O42-\$O\$172
43	38379.1273	87.275	38379.13167	13.038	38379.125	420.834269	=IF(MINUTE(A43)=3,1,0)	38379.1273	87.2781798623485					=I43*2.31	=N43*0.3048	=O43-\$O\$172
44	38379.1689699999	87.275	38379.17333	13.039	38379.16667	126.250731	=IF(MINUTE(A44)=3,1,0)	38379.1689699999	87.2703971090693					=I44*2.31	=N44*0.3048	=O44-\$O\$172
45	38379.21064	87.284	38379.215	13.039	38379.20833	-106.422022	=IF(MINUTE(A45)=3,1,0)	38379.21064	87.2708771167942					=I45*2.31	=N45*0.3048	=O45-\$O\$172
46	38379.2523	87.293	38379.25667	13.036	38379.25	-207.064692	=IF(MINUTE(A46)=3,1,0)	38379.2523	87.2701753955699					=I46*2.31	=N46*0.3048	=O46-\$O\$172
47	38379.2939699999	87.304	38379.29833	13.037	38379.29167	-147.05034	=IF(MINUTE(A47)=3,1,0)	38379.2939699999	87.2767002381477					=I47*2.31	=N47*0.3048	=O47-\$O\$172
48	38379.33564	87.293	38379.34	13.044	38379.33333	54.001703	=IF(MINUTE(A48)=3,1,0)	38379.33564	87.2687004240732					=I48*2.31	=N48*0.3048	=O48-\$O\$172
49	38379.3773	87.295	38379.38167	13.053	38379.375	333.831042	=IF(MINUTE(A49)=3,1,0)	38379.3773	87.2788257100878					=I49*2.31	=N49*0.3048	=O49-\$O\$172
50	38379.4189699999	87.285	38379.42333	13.055	38379.41667	603.945483	=IF(MINUTE(A50)=3,1,0)	38379.4189699999	87.2725358428997					=I50*2.31	=N50*0.3048	=O50-\$O\$172
51	38379.46064	87.284	38379.465	13.051	38379.45833	772.804567	=IF(MINUTE(A51)=3,1,0)	38379.46064	87.2776205632584					=I51*2.31	=N51*0.3048	=O51-\$O\$172
52	38379.5023	87.285	38379.50667	13.036	38379.5	770.186627	=IF(MINUTE(A52)=3,1,0)	38379.5023	87.2736333353894					=I52*2.31	=N52*0.3048	=O52-\$O\$172
53	38379.5439699999	87.295	38379.54833	13.019	38379.54167	566.799028	=IF(MINUTE(A53)=3,1,0)	38379.5439699999	87.274094536588					=I53*2.31	=N53*0.3048	=O53-\$O\$172
54	38379.58564	87.295	38379.59	13.014	38379.58333	184.141667	=IF(MINUTE(A54)=3,1,0)	38379.5								

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Time	WL	MatchedBP-Time	Matched-BP	MatchET-Time	Matched-ET	BAROCorrect-Time	Corrected-Pressure	Elapsed Day	Detrend	Variable	Detrended	Freshwater (ft of H2O)	Meters of H2O Change in Meters		
2	9/10/2004 10:15	77.847	38240.44	13.127	38240.43056	330.257911	38240.42721	77.847	0	0	77.847	179.82657	54.81113854	-0.553421506		
3	9/10/2004 11:15	77.856	38240.47	13.117	38240.47222	495.081683	38240.46888	77.847	0.04167	0.000168555	77.84683144	179.8261806	54.81101986	-0.553401684		
4	9/10/2004 12:15	77.875	38240.51	13.107	38240.51389	566.469265	38240.51054	77.847	0.08333	0.00033707	77.84686293	179.8257914	54.81090121	-0.553658833		
5	9/10/2004 13:15	77.883	38240.55	13.098	38240.55556	493.243583	38240.55221	77.847	0.125	0.000505625	77.84645438	179.825402	54.81078253	-0.553777511		
6	9/10/2004 14:15	77.901	38240.59	13.09	38240.59722	260.296272	38240.59388	77.847	0.16667	0.00067418	77.84632882	179.8250126	54.81066385	-0.553896188		
7	9/10/2004 15:15	77.911	38240.64	13.085	38240.63889	-104.069398	38240.63554	77.847	0.20833	0.000842695	77.84615701	179.8246234	54.8105452	-0.554014837		
8	9/10/2004 16:15	77.921	38240.68	13.084	38240.68058	-532.49157	38240.67721	77.847	0.25	0.00101125	77.84608877	179.824234	54.81042653	-0.554133515		
9	9/10/2004 17:15	77.921	38240.72	13.087	38240.72222	-934.041721	38240.71888	77.847	0.29187	0.001179805	77.84581010	179.8238447	54.81030785	-0.554252193		
10	9/10/2004 18:15	77.921	38240.76	13.09	38240.76389	-1216.987877	38240.76054	77.847	0.33333	0.00134832	77.84565168	179.8234554	54.8101892	-0.554370842		
11	9/10/2004 19:15	77.901	38240.8	13.098	38240.80556	-1312.650231	38240.80221	77.847	0.375	0.001516875	77.84548313	179.823066	54.81007052	-0.55448952		
12	9/10/2004 20:15	77.893	38240.84	13.105	38240.84722	-1193.682359	38240.84388	77.847	0.41667	0.00168543	77.84531457	179.8226767	54.80995184	-0.554608197		
13	9/10/2004 21:15	77.893	38240.89	13.105	38240.88889	-881.663254	38240.88554	77.847	0.45833	0.001853945	77.84519680	179.8222874	54.8098332	-0.554726846		
14	9/10/2004 22:15	77.893	38240.93	13.104	38240.93056	-441.972954	38240.92721	77.847	0.5	0.0020225	77.8449775	179.821898	54.80971452	-0.554845524		
15	9/10/2004 23:15	77.884	38240.97	13.102	38240.97222	32.481316	38240.96888	77.88390221	0.54167	0.002191055	77.88171115	179.9067528	54.83557824	-0.528981801		
16	9/11/2004 0:15	77.884	38241.01	13.101	38241.01389	444.156463	38241.01054	77.88280887	0.58333	0.00235957	77.8804400	179.9038379	54.83468979	-0.529870256		
17	9/11/2004 1:15	77.902	38241.05	13.099	38241.05556	714.330847	38241.05221	77.8822743	0.625	0.002528125	77.88059031	179.9390654	54.84542713	-0.519132908		
18	9/11/2004 2:15	77.902	38241.09	13.101	38241.09722	801.262822	38241.09388	77.8969882	0.66667	0.00269668	77.88420151	179.9358134	54.84443592	-0.520124118		
19	9/11/2004 3:15	77.911	38241.14	13.093	38241.13889	708.810835	38241.13554	77.89994145	0.70833	0.002885195	77.89707825	179.9422461	54.84639663	-0.518163417		
20	9/11/2004 4:15	77.919	38241.18	13.09	38241.18056	483.757121	38241.17721	77.90364285	0.75	0.00303375	77.9000891	179.950407	54.84888406	-0.515675983		
21	9/11/2004 5:15	77.91	38241.22	13.102	38241.22222	202.76575	38241.21888	77.89975277	0.79167	0.003202305	77.898655047	179.9410316	54.8462642	-0.51833618		
22	9/11/2004 6:15	77.893	38241.26	13.109	38241.26389	-47.755981	38241.26054	77.88842522	0.83333	0.00337082	77.8865054	179.9144757	54.83793218	-0.526627857		
23	9/11/2004 7:15	77.875	38241.3	13.114	38241.30556	-194.050003	38241.30221	77.87584981	0.875	0.003539375	77.87211040	179.8845751	54.82881849	-0.535741553		
24	9/11/2004 8:15	77.856	38241.34	13.118	38241.34722	-194.273513	38241.34388	77.86168663	0.91667	0.00370793	77.86079807	179.8519539	54.81887555	-0.545684493		
25	9/11/2004 9:15	77.847	38241.39	13.119	38241.38889	-49.877955	38241.38554	77.85553641	0.95833	0.003876445	77.85165887	179.8373345	54.81441956	-0.550140478		
26	9/11/2004 10:15	77.847	38241.43	13.117	38241.43056	193.948592	38241.42721	77.85598608	1	0.004045	77.85184101	179.8379839	54.81461749	-0.549942552		
27	9/11/2004 11:15	77.856	38241.47	13.105	38241.47222	459.307597	38241.46888	77.85872726	1.04167	0.004213555	77.85451371	179.8439267	54.81642885	-0.548131195		
28	9/11/2004 12:15	77.875	38241.51	13.094	38241.51389	655.788842	38241.51054	77.88691663	1.08333	0.00438207	77.88647842	179.8676517	54.82366024	-0.540899802		
29	9/11/2004 13:15	77.893	38241.55	13.086	38241.55556	705.048385	38241.55221	77.87882358	1.125	0.004550625	77.87427295	179.8895705	54.83034109	-0.534218948		
30	9/11/2004 14:15	77.911	38241.59	13.075	38241.59722	563.472386	38241.59388	77.88626034	1.16667	0.00471918	77.88154116	179.9063601	54.83545855	-0.529101488		
31	9/11/2004 15:15	77.93	38241.64	13.065	38241.63889	236.661813	38241.63554	77.89396318	1.20833	0.004887695	77.89075349	179.9237644	54.84001238	-0.52379666		
32	9/11/2004 16:15	77.939	38241.68	13.062	38241.68056	-218.759606	38241.67721	77.89689207	1.25	0.005056265	77.890103582	179.9301407	54.8427069	-0.521853147		
33	9/11/2004 17:15	77.939	38241.72	13.063	38241.72222	-707.274046	38241.71888	77.8961878	1.29167	0.005224805	77.89096289	179.9281245	54.84209235	-0.522467691		
34	9/11/2004 18:15	77.939	38241.76	13.065	38241.76389	-1117.879057	38241.76054	77.89791486	1.33333	0.00539332	77.89252154	179.9317248	54.84318971	-0.521370333		
35	9/11/2004 19:15	77.93	38241.8	13.07	38241.80556	-1352.689669	38241.80221	77.89390367	1.375	0.005561875	77.89220695	179.8402468	-0.524313243			
36	9/11/2004 20:15	77.921	38241.84	13.079	38241.84722	-1352.857696	38241.84388	77.89373994	1.41667	0.00573043	77.89081051	179.921302	54.84001284	-0.524547201		
37	9/11/2004 21:15	77.901	38241.89	13.084	38241.88889	-1114.494018	38241.88554	77.88151308	1.45833	0.005898945	77.87565141	179.8926687	54.83128541	-0.533274636		
38	9/11/2004 22:15	77.893	38241.93	13.088	38241.93056	-690.099025	38241.92721	77.87990601	1.5	0.0060675	77.87380851	179.888567	54.83003521	-0.534524831		
39	9/11/2004 23:15	77.893	38241.97	13.084	38241.97222	-175.184299	38241.96888	77.8805076	1.54167	0.006236055	77.87427158	179.8895673	54.8303401	-0.534219337		
40	9/12/2004 0:15	77.902	38242.02	13.085	38242.01389	316.062502	38242.01054	77.89058381	1.58333	0.00640457	77.88417924	179.912454	54.83731599	-0.527244049		
41	9/12/2004 1:15	77.911	38242.05	13.086	38242.05556	679.352143	38242.05221	77.90002445	1.625	0.006573125	77.88345130	179.9338726	54.84384436	-0.520715684		
42	9/12/2004 2:15	77.921	38242.09	13.082	38242.09722	485.847384	38242.09388	77.90843195	1.66667	0.00674168	77.89006927	179.9482845	54.84823712	-0.516322919		
43	9/12/2004 3:15	77.921	38242.14	13.083	38242.13889	796.541189	38242.13554	77.90413592	1.70833	0.006910195	77.891720572	179.9425914	54.84650187	-0.518058177		
44	9/12/2004 4:15	77.921	38242.18	13.085	38242.18056	567.579951	38242.17721	77.90364849	1.75	0.00707875	77.89046774	179.9406405	54.84596818	-0.518591866		
45	9/12/2004 5:15	77.921	38242.22	13.088	38242.22222	236.947441	38242.21888	77.90412898	1.79167	0.007247305	77.89068167	179.9417967	54.84625962	-0.518300419		
46	9/12/2004 6:15	77.911	38242.26	13.093	38242.26389	-95.108959	38242.26054	77.898689928	1.83333	0.00741582	77.89548348	179.9247068	54.84105063	-0.523509411		
47	9/12/2004 7:15	77.893	38242.3	13.095	38242.30556	-332.312681	38242.30221	77.88137968	1.875	0.007584375	77.88737553	179.8884672	54.8300479	-0.534555254		
48	9/12/2004 8:15	77.875	38242.34	13.1	38242.34722	-407.080471	38242.34388	77.86784346	1.91667	0.00775293	77.88030903	179.8568091	54.82035542	-0.54420462		
49	9/12/2004 9:15	77.875	38242.39	13.103	38242.38889	-298.046906	38242.38554	77.87156817	1.95833	0.007921445	77.885364673	179.8650239	54.8228939	-0.541700746		
50	9/12/2004 10:15	77.865	38242.43	13.094	38242.43056	-36.066337	38242.42721	77.85811423	2	0.00809	77.85024242	179.833556	54.81326786	-0.551292183		
51	9/12/2004 11:15	77.875	38242.46	13.084	38242.47222	303.010497	38242.46888									

## SNL-3 Formulas

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
1	Time	WL	MatchedBP-Time	Matched-BP	MatchET-Time	Matched-ET		BAROCorrect-Time	Corrected-Pressure	Elapsed	Day	Deflrend	Variable				
2	38240 42721	77 847	38240 44	13 127	38240 43056	330 257911		38240 42721	77 847	=H2-\$H\$2	=J2*0 004045				Freshwater (ft of H2O)	Meters of H2O	Change in Meters
3	38240 46888	77 856	38240 47	13 117	38240 47222	495 081683		38240 46888	77 847	=H3-\$H\$2	=J3*0 004045				=L2*2 31	=N2*0 3048	=O2-\$0\$3505
4	38240 51054	77 875	38240 51	13 107	38240 51389	566 469265		38240 51054	77 847	=H4-\$H\$2	=J4*0 004045				=L3*2 31	=N3*0 3048	=O3-\$0\$3505
5	38240 55221	77 883	38240 55	13 098	38240 55556	493 243583		38240 55221	77 847	=H5-\$H\$2	=J5*0 004045				=L4*2 31	=N4*0 3048	=O4-\$0\$3505
6	38240 59388	77 901	38240 59	13 09	38240 59722	260 296272		38240 59388	77 847	=H6-\$H\$2	=J6*0 004045				=L5*2 31	=N5*0 3048	=O5-\$0\$3505
7	38240 63554	77 911	38240 64	13 085	38240 63889	-104 069398		38240 63554	77 847	=H7-\$H\$2	=J7*0 004045				=L6*2 31	=N6*0 3048	=O6-\$0\$3505
8	38240 67721	77 921	38240 68	13 084	38240 68056	-532 49157		38240 67721	77 847	=H8-\$H\$2	=J8*0 004045				=L7*2 31	=N7*0 3048	=O7-\$0\$3505
9	38240 71888	77 921	38240 72	13 087	38240 72222	-934 041721		38240 71888	77 847	=H9-\$H\$2	=J9*0 004045				=L8*2 31	=N8*0 3048	=O8-\$0\$3505
10	38240 76054	77 921	38240 76	13 09	38240 76389	-1216 987877		38240 76054	77 847	=H10-\$H\$2	=J10*0 004045				=L9*2 31	=N9*0 3048	=O9-\$0\$3505
11	38240 80221	77 901	38240 8	13 098	38240 80556	-1312 650231		38240 80221	77 847	=H11-\$H\$2	=J11*0 004045				=L10*2 31	=N10*0 3048	=O10-\$0\$3505
12	38240 84388	77 893	38240 84	13 105	38240 84722	-1193 682359		38240 84388	77 847	=H12-\$H\$2	=J12*0 004045				=L11*2 31	=N11*0 3048	=O11-\$0\$3505
13	38240 88554	77 893	38240 89	13 105	38240 88889	-881 663254		38240 88564	77 847	=H13-\$H\$2	=J13*0 004045				=L12*2 31	=N12*0 3048	=O12-\$0\$3505
14	38240 92721	77 893	38240 93	13 104	38240 93056	-441 972954		38240 92721	77 847	=H14-\$H\$2	=J14*0 004045				=L13*2 31	=N13*0 3048	=O13-\$0\$3505
15	38240 96888	77 884	38240 97	13 102	38240 97222	32 481316		38240 96888	77 8839022068143	=H15-\$H\$2	=J15*0 004045				=L14*2 31	=N14*0 3048	=O14-\$0\$3505
16	38241 01054	77 884	38241 01	13 101	38241 01389	444 156463		38241 01054	77 882808690387	=H16-\$H\$2	=J16*0 004045				=L15*2 31	=N15*0 3048	=O15-\$0\$3505
17	38241 05221	77 902	38241 05	13 099	38241 05556	714 330847		38241 05221	77 89822743225449	=H17-\$H\$2	=J17*0 004045				=L16*2 31	=N16*0 3048	=O16-\$0\$3505
18	38241 09388	77 902	38241 09	13 101	38241 09722	801 262822		38241 09388	77 8969881950826	=H18-\$H\$2	=J18*0 004045				=L17*2 31	=N17*0 3048	=O17-\$0\$3505
19	38241 13554	77 911	38241 14	13 093	38241 13889	708 810835		38241 13554	77 8998414485857	=H19-\$H\$2	=J19*0 004045				=L18*2 31	=N18*0 3048	=O18-\$0\$3505
20	38241 17721	77 919	38241 18	13 09	38241 18056	483 757121		38241 17721	77 9036428485302	=H20-\$H\$2	=J20*0 004045				=L19*2 31	=N19*0 3048	=O19-\$0\$3505
21	38241 21888	77 91	38241 22	13 102	38241 22222	202 76575		38241 21888	77 8997527702264	=H21-\$H\$2	=J21*0 004045				=L20*2 31	=N20*0 3048	=O20-\$0\$3505
22	38241 26054	77 893	38241 26	13 109	38241 26389	-47 755981		38241 26054	77 8884252229404	=H22-\$H\$2	=J22*0 004045				=L21*2 31	=N21*0 3048	=O21-\$0\$3505
23	38241 30221	77 875	38241 3	13 114	38241 30556	-194 050003		38241 30221	77 8756498052638	=H23-\$H\$2	=J23*0 004045				=L22*2 31	=N22*0 3048	=O22-\$0\$3505
24	38241 34388	77 856	38241 34	13 118	38241 34722	-194 273513		38241 34388	77 8619868317921	=H24-\$H\$2	=J24*0 004045				=L23*2 31	=N23*0 3048	=O23-\$0\$3505
25	38241 38554	77 847	38241 39	13 119	38241 38889	-49 877955		38241 38554	77 8555364137806	=H25-\$H\$2	=J25*0 004045				=L24*2 31	=N24*0 3048	=O24-\$0\$3505
26	38241 42721	77 847	38241 43	13 117	38241 43056	193 498592		38241 42721	77 855988078916	=H26-\$H\$2	=J26*0 004045				=L25*2 31	=N25*0 3048	=O25-\$0\$3505
27	38241 46888	77 856	38241 47	13 105	38241 47222	459 307597		38241 46888	77 858727818939	=H27-\$H\$2	=J27*0 004045				=L26*2 31	=N26*0 3048	=O26-\$0\$3505
28	38241 51054	77 875	38241 51	13 094	38241 51389	655 788842		38241 51054	77 8691663584644	=H28-\$H\$2	=J28*0 004045				=L27*2 31	=N27*0 3048	=O27-\$0\$3505
29	38241 55221	77 893	38241 55	13 086	38241 55556	705 048385		38241 55221	77 8788235770111	=H29-\$H\$2	=J29*0 004045				=L28*2 31	=N28*0 3048	=O28-\$0\$3505
30	38241 59388	77 911	38241 59	13 075	38241 59722	563 472386		38241 59388	77 8882603432771	=H30-\$H\$2	=J30*0 004045				=L29*2 31	=N29*0 3048	=O29-\$0\$3505
31	38241 63554	77 93	38241 64	13 065	38241 63889	236 661813		38241 63554	77 8939631822517	=H31-\$H\$2	=J31*0 004045				=L30*2 31	=N30*0 3048	=O30-\$0\$3505
32	38241 67721	77 939	38241 68	13 062	38241 68056	-218 759606		38241 67721	77 8986920652589	=H32-\$H\$2	=J32*0 004045				=L31*2 31	=N31*0 3048	=O31-\$0\$3505
33	38241 71888	77 939	38241 72	13 063	38241 72222	-707 270405		38241 71888	77 8986187798358	=H33-\$H\$2	=J33*0 004045				=L32*2 31	=N32*0 3048	=O32-\$0\$3505
34	38241 76054	77 939	38241 76	13 065	38241 76389	-1117 879057		38241 76054	77 8979148843731	=H34-\$H\$2	=J34*0 004045				=L33*2 31	=N33*0 3048	=O33-\$0\$3505
35	38241 80221	77 93	38241 8	13 07	38241 80556	-1352 689669		38241 80221	77 8939036714022	=H35-\$H\$2	=J35*0 004045				=L34*2 31	=N34*0 3048	=O34-\$0\$3505
36	38241 84388	77 921	38241 84	13 079	38241 84722	-1352 857696		38241 84388	77 8937399417264	=H36-\$H\$2	=J36*0 004045				=L35*2 31	=N35*0 3048	=O35-\$0\$3505
37	38241 88554	77 901	38241 89	13 084	38241 88889	-1114 494018		38241 88554	77 89815130813462	=H37-\$H\$2	=J37*0 004045				=L36*2 31	=N36*0 3048	=O36-\$0\$3505
38	38241 92721	77 893	38241 93	13 088	38241 93056	-690 090925		38241 92721	77 8979060122571	=H38-\$H\$2	=J38*0 004045				=L37*2 31	=N37*0 3048	=O37-\$0\$3505
39	38241 96888	77 893	38241 97	13 084	38241 97222	-175 184299		38241 96888	77 8980507802063	=H39-\$H\$2	=J39*0 004045				=L38*2 31	=N38*0 3048	=O38-\$0\$3505
40	38242 01054	77 902	38242 02	13 085	38242 01389	316 062502		38242 01054	77 8905838105368	=H40-\$H\$2	=J40*0 004045				=L39*2 31	=N39*0 3048	=O39-\$0\$3505
41	38242 05221	77 911	38242 05	13 086	38242 05556	679 352143		38242 05221	77 89039024519862	=H41-\$H\$2	=J41*0 004045				=L40*2 31	=N40*0 3048	=O40-\$0\$3505
42	38242 09388	77 921	38242 09	13 082	38242 09722	845 578384		38242 09388	77 8904319509188	=H42-\$H\$2	=J42*0 004045				=L41*2 31	=N41*0 3048	=O41-\$0\$3505
43	38242 13554	77 921	38242 14	13 083	38242 13889	796 541189		38242 13554	77 89041358184234	=H43-\$H\$2	=J43*0 004045				=L42*2 31	=N42*0 3048	=O42-\$0\$3505
44	38242 17721	77 921	38242 18	13 085	38242 18056	567 579951		38242 17721	77 8935464868361	=H44-\$H\$2	=J44*0 004045				=L43*2 31	=N43*0 3048	=O43-\$0\$3505
45	38242 21888	77 921	38242 22	13 088	38242 22222	236 947441		38242 21888	77 9041286796517	=H45-\$H\$2	=J45*0 004045				=L44*2 31	=N44*0 3048	=O44-\$0\$3505
46	38242 26054	77 911	38242 26	13 093	38242 26389	-95 108959		38242 26054	77 8968992807052	=H46-\$H\$2	=J46*0 004045				=L45*2 31	=N45*0 3048	=O45-\$0\$3505
47	38242 30221	77 893	38242 3	13 095	38242 30556	-332 312681		38242 30221	77 8813798793051	=H47-\$H\$2	=J47*0 004045				=L46*2 31	=N46*0 3048	=O46-\$0\$3505
48	38242 34388	77 875	38242 34	13 1	38242 34722	-407 080471		38242 34388	77 8878434620211	=H48-\$H\$2	=J48*0 004045				=L47*2 31	=N47*0 3048	=O47-\$0\$3505
49	38242 38554	77 875	38242 39	13 103	38242 38889	-298 046906		38242 38554	77 8715681709574	=H49-\$H\$2	=J49*0 004045				=L48*2 31	=N48*0 3048	=O48-\$0\$3505
50	38242 42721	77 865	38242 43	13 094	38242 43056	-36 066337		38242 42721	77 8581142281799	=H50-\$H\$2	=J50*0 004045				=L49*2 31	=N49*0 3048	=O49-\$0\$3505
51	38242 46888	77 875	38242 46	13 084	38242 47222	303 010497		38242 46888	77 8612130807511	=H51-\$H\$2	=J51*0 004045				=L50*2 31	=N50*0 3048	=O50-\$0\$3505
52	38242 51054	77 884	38242 51	13 071	38242 51389	617 3803		38242 51054	77 8607218439208	=H52-\$							

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
1	Time	WL	MatchedBP-Time	Matched-BP	MatchET-Time	Matched-ET	Filter	BARO	Correct-Time	Corrected-Pressure	Corrected-Pressure	Shifted	ElapsedDays	DetrendVariable	DetrendedPsi	Freshwater (ft of H2O)	Meters of H2O Change in Meters
2	9/10/04 13:41	59.54	38240.56654	12.9	38240.57292	96.981711	1	38240.57064	59.54	59.54	0	0	59.54	137.5374	41.92139952	-0.680056248	
3	9/10/04 14:41	59.537	38240.60821	12.892	38240.61458	-25.964714	1	38240.6123	59.54	59.54	0.04166	0.00017918	59.53692023	137.5369861	41.92127336	-0.680182406	
4	9/10/04 15:41	59.548	38240.64987	12.888	38240.65625	-37.208988	1	38240.65397	59.54	59.54	0.08333	0.000358402	59.53704118	137.5365721	41.92114717	-0.680308595	
5	9/10/04 16:41	59.553	38240.69154	12.89	38240.69792	62.722858	1	38240.69564	59.54	59.54	0.125	0.000537625	59.53846236	137.5361581	41.92102098	-0.680434783	
6	9/10/04 17:41	59.553	38240.73321	12.892	38240.73958	237.500072	1	38240.7373	59.54	59.54	0.16666	0.000716805	59.53928232	137.5357442	41.92089483	-0.680560942	
7	9/10/04 18:41	59.545	38240.77487	12.897	38240.78125	423.851351	1	38240.77897	59.54	59.54	0.20833	0.000896027	59.53910397	137.5353302	41.92076864	-0.68068713	
8	9/10/04 19:41	59.534	38240.81654	12.907	38240.82292	548.295779	1	38240.82064	59.54	59.54	0.25	0.00107525	59.53902470	137.5349162	41.92064245	-0.680813139	
9	9/10/04 20:41	59.521	38240.85821	12.91	38240.86458	547.742515	1	38240.8623	59.54	59.54	0.29166	0.00125443	59.53874567	137.5345023	41.92051829	-0.680939477	
10	9/10/04 21:41	59.519	38240.89987	12.913	38240.90625	388.555315	1	38240.90397	59.54	59.54	0.33333	0.001436562	59.53856538	137.5340883	41.92030901	-0.681065665	
11	9/10/04 22:41	59.519	38240.94154	12.908	38240.94792	78.644254	1	38240.94584	59.54	59.54	0.375	0.001612875	59.53838718	137.5336743	41.92026391	-0.681191854	
12	9/10/04 23:41	59.519	38240.98321	12.906	38240.98958	-331.303846	1	38240.9873	59.51672109	59.51672109	0.41666	0.001792055	59.51492800	137.4794861	41.90374735	-0.687708417	
13	9/11/04 0:41	59.524	38241.02487	12.905	38241.03125	-758.479018	1	38241.02897	59.51691215	59.51691215	0.45833	0.001971277	59.51494267	137.4795134	41.90375569	-0.697700082	
14	9/11/04 1:41	59.529	38241.06654	12.903	38241.07292	-1108.085421	1	38241.07064	59.51527067	59.51527067	0.5	0.0021505	59.514312017	137.4753076	41.90247375	-0.689892016	
15	9/11/04 2:41	59.537	38241.10821	12.903	38241.11458	-1297.644654	1	38241.1123	59.5179706	59.5179706	0.54166	0.00232968	59.51554092	137.48111305	41.90424858	-0.697207184	
16	9/11/04 3:41	59.545	38241.14987	12.898	38241.15625	-1278.73589	1	38241.15397	59.51994331	59.51994331	0.58333	0.002508902	59.51743441	137.4852735	41.90551136	-0.69594441	
17	9/11/04 4:41	59.543	38241.19154	12.898	38241.19792	-1050.07189	1	38241.19584	59.51923875	59.51923875	0.625	0.002686125	59.51553063	137.483232	41.9048891	-0.695656666	
18	9/11/04 5:41	59.532	38241.23321	12.906	38241.23958	-658.30095	1	38241.2373	59.51747227	59.51747227	0.66666	0.002867305	59.51400497	137.4787375	41.90351918	-0.697936586	
19	9/11/04 6:41	59.516	38241.27487	12.917	38241.28125	-186.446615	1	38241.27897	59.51681922	59.51681922	0.70833	0.003046527	59.51377359	137.4768149	41.90293319	-0.698522582	
20	9/11/04 7:41	59.503	38241.31654	12.92	38241.32292	266.70102	1	38241.32064	59.51771565	59.51771565	0.75	0.00322575	59.51444889	137.4784717	41.90343816	-0.698017605	
21	9/11/04 8:41	59.489	38241.35821	12.922	38241.36458	610.860303	1	38241.3623	59.51590402	59.51590402	0.79166	0.00340493	59.51499909	137.4738729	41.90203646	-0.699419309	
22	9/11/04 9:41	59.479	38241.39987	12.926	38241.40625	784.615632	1	38241.40397	59.5157907	59.5157907	0.83333	0.003584152	59.5120454	137.4731971	41.90183048	-0.699625288	
23	9/11/04 10:41	59.482	38241.44154	12.919	38241.44792	770.89688	1	38241.44564	59.51839957	59.51839957	0.875	0.003763375	59.51463882	137.4788099	41.90354117	-0.697914597	
24	9/11/04 11:41	59.489	38241.48321	12.906	38241.48958	597.595803	1	38241.4873	59.51474844	59.51474844	0.91666	0.003942555	59.51205529	137.4898616	41.90084429	-0.700611476	
25	9/11/04 12:41	59.508	38241.52487	12.896	38241.53125	330.015525	1	38241.52897	59.51835037	59.51835037	0.94121777	0.004121777	59.51422189	137.4778861	41.90325184	-0.698201586	
26	9/11/04 13:41	59.527	38241.56654	12.886	38241.57292	53.220322	1	38241.57064	59.51898401	59.51898401	1	0.004301	59.51405301	137.4789178	41.90357413	-0.697816136	
27	9/11/04 14:41	59.545	38241.60821	12.877	38241.61458	-150.068852	1	38241.6123	59.51823139	59.51823139	1.04166	0.00448018	59.51375121	137.4767653	41.90291806	-0.698537706	
28	9/11/04 15:41	59.564	38241.64987	12.87	38241.65625	-220.940502	1	38241.65397	59.52137206	59.52137206	1.08333	0.0046859402	59.51571206	137.4836062	41.90500318	-0.696452583	
29	9/11/04 16:41	59.572	38241.69154	12.869	38241.69792	-139.908286	1	38241.69564	59.52088744	59.52088744	1.125	0.004838625	59.51804062	137.4820728	41.90453578	-0.696919968	
30	9/11/04 17:41	59.572	38241.73321	12.87	38241.73958	67.321221	1	38241.7373	59.51928992	59.51928992	1.16666	0.005017805	59.51422212	137.4779686	41.90328483	-0.698170943	
31	9/11/04 18:41	59.567	38241.77487	12.872	38241.78125	335.668782	1	38241.77897	59.51845534	59.51845534	1.20833	0.005197027	59.51326531	137.4756267	41.90257102	-0.69884752	
32	9/11/04 19:41	59.553	38241.81654	12.879	38241.82292	577.174861	1	38241.82064	59.51490772	59.51490772	1.25	0.00537625	59.51303142	137.4670177	41.89994699	-0.701508775	
33	9/11/04 20:41	59.54	38241.85821	12.887	38241.86458	704.359252	1	38241.8623	59.51523256	59.51523256	1.29166	0.00555543	59.50977113	137.4673542	41.90004955	-0.701406216	
34	9/11/04 21:41	59.532	38241.89987	12.891	38241.90625	854.709753	1	38241.90397	59.51816783	59.51816783	1.33333	0.005734652	59.51403111	137.4737205	41.90199005	-0.69946572	
35	9/11/04 22:41	59.524	38241.94154	12.889	38241.94792	409.75879	1	38241.94564	59.51530852	59.51530852	1.375	0.005913875	59.50826460	137.4667018	41.89985088	-0.701605108	
36	9/11/04 23:41	59.524	38241.98321	12.889	38241.98958	3.20125	1	38241.9873	59.51562256	59.51562256	1.41666	0.006093055	59.50949195	137.4670131	41.89994561	-0.701510161	
37	9/12/04 0:41	59.532	38242.02487	12.887	38242.03125	-484.872674	1	38242.02897	59.51904731	59.51904731	1.45833	0.006272277	59.51277504	137.4745103	41.90223075	-0.699225019	
38	9/12/04 1:41	59.545	38242.06654	12.886	38242.07292	-948.80398	1	38242.07064	59.51987307	59.51987307	1.5	0.0064515	59.51321657	137.4755418	41.90254515	-0.698910616	
39	9/12/04 2:41	59.548	38242.10821	12.886	38242.11458	-1274.596472	1	38242.1123	59.51997702	59.51997702	1.54166	0.006830688	59.513134034	137.4758353	41.90263333	-0.698822772	
40	9/12/04 3:41	59.553	38242.14987	12.887	38242.15625	-1388.208917	1	38242.15397	59.51968018	59.51968018	1.58333	0.006809902	59.51270726	137.4747303	41.90229779	-0.699157975	
41	9/12/04 4:41	59.558	38242.19154	12.888	38242.19792	-1256.989103	1	38242.19564	59.52137198	59.52137198	1.625	0.006989125	59.51430200	137.4782244	41.90336279	-0.698092974	
42	9/12/04 5:41	59.548	38242.23321	12.893	38242.23958	-908.178036	1	38242.2373	59.51899727	59.51899727	1.66666	0.007166305	59.513129297	137.4723249	41.90156463	-0.699891135	
43	9/12/04 6:41	59.54	38242.27487	12.897	38242.28125	-420.131001	1	38242.27897	59.52147785	59.52147785	1.70833	0.007347527	59.51313032	137.477641	41.90138499	-0.698820778	
44	9/12/04 7:41	59.527	38242.31654	12.901	38242.32292	97.725198	1	38242.32004	59.52234665	59.52234665	1.75	0.00752675	59.51411919	137.479234	41.90367052	-0.697785251	
45	9/12/04 8:41	59.505	38242.35821	12.906	38242.36458	532.557976	1	38242.3623	59.51565662	59.51565662	1.79166	0.00770593	59.50795569	137.4633661	41.89883398	-0.702261784	
46	9/12/04 9:41	59.497	38242.39987	12.905	38242.40625	795.957864	1	38242.40397	59.5182875	59.5182875	1.83333	0.007885152	59.51				

## SNL-5 Formulas

	A	B	C	D	E	G	H	J	K	L	M	N	O	P		
1	Time	WL	MatchedBP-Time	Matched-BP	MatchET-Time	Matched-ET	Filter	BAROCorrect-Time	Corrected-Pressure	Shifted	ElapsedDays	ElapsedVariable	Bottom	Freshwater (ft of H2O)	Meters of H2O	Change in Meters
2	38240.57084	59.54	38240.56654	12.9	38240.57292	96.981711	=IF(MINUTE(A2)=41,1,0)	38240.67064	59.54	=H2-\$H\$2	=K2*0.004301	=J1-L1	=M2*2,31	=N2*0.3048	=O2-S0\$3457	
3	38240.6123	59.537	38240.60821	12.892	38240.61458	-25.984714	=IF(MINUTE(A2)=41,1,0)	38240.6123	59.54	=H3-\$H\$2	=K3*0.004301	=J1-L1	=M3*2,31	=N3*0.3048	=O3-S0\$3457	
4	38240.65397	59.548	38240.64987	12.888	38240.65625	-37.208988	=IF(MINUTE(A4)=41,1,0)	38240.65397	59.54	=H4-\$H\$2	=K4*0.004301	=J1-L1	=M4*2,31	=N4*0.3048	=O4-S0\$3457	
5	38240.69584	59.553	38240.69154	12.89	38240.69792	62.722656	=IF(MINUTE(A5)=41,1,0)	38240.69584	59.54	=H5-\$H\$2	=K5*0.004301	=J1-L1	=M5*2,31	=N5*0.3048	=O5-S0\$3457	
6	38240.7373	59.553	38240.73321	12.892	38240.73958	237.500072	=IF(MINUTE(A6)=41,1,0)	38240.7373	59.54	=H6-\$H\$2	=K6*0.004301	=J1-L1	=M6*2,31	=N6*0.3048	=O6-S0\$3457	
7	38240.77897	59.545	38240.77487	12.897	38240.78125	423.851351	=IF(MINUTE(A7)=41,1,0)	38240.77897	59.54	=H7-\$H\$2	=K7*0.004301	=J1-L1	=M7*2,31	=N7*0.3048	=O7-S0\$3457	
8	38240.82084	59.534	38240.81654	12.907	38240.82292	548.295779	=IF(MINUTE(A8)=41,1,0)	38240.82084	59.54	=H8-\$H\$2	=K8*0.004301	=J1-L1	=M8*2,31	=N8*0.3048	=O8-S0\$3457	
9	38240.8623	59.521	38240.85821	12.91	38240.86458	547.742515	=IF(MINUTE(A9)=41,1,0)	38240.8623	59.54	=H9-\$H\$2	=K9*0.004301	=J1-L1	=M9*2,31	=N9*0.3048	=O9-S0\$3457	
10	38240.90397	59.519	38240.89987	12.913	38240.90625	388.555315	=IF(MINUTE(A10)=41,1,0)	38240.90397	59.54	=H10-\$H\$2	=K10*0.004301	=J1-L1	=M10*2,31	=N10*0.3048	=O10-S0\$3457	
11	38240.94564	59.519	38240.94154	12.908	38240.94792	78.644254	=IF(MINUTE(A11)=41,1,0)	38240.94564	59.54	=H11-\$H\$2	=K11*0.004301	=J1-L1	=M11*2,31	=N11*0.3048	=O11-S0\$3457	
12	38240.9873	59.519	38240.98321	12.906	38240.98958	-331.303846	=IF(MINUTE(A12)=41,1,0)	38240.98973	59.5167210852992	=H12-\$H\$2	=K12*0.004301	=J1-L1	=M12*2,31	=N12*0.3048	=O12-S0\$3457	
13	38241.02897	59.524	38241.02487	12.905	38241.03125	-758.479016	=IF(MINUTE(A13)=41,1,0)	38241.02897	59.5169121452931	=H13-\$H\$2	=K13*0.004301	=J1-L1	=M13*2,31	=N13*0.3048	=O13-S0\$3457	
14	38241.07064	59.529	38241.06654	12.903	38241.07292	-1108.085421	=IF(MINUTE(A14)=41,1,0)	38241.07064	59.5152706671127	=H14-\$H\$2	=K14*0.004301	=J1-L1	=M14*2,31	=N14*0.3048	=O14-S0\$3457	
15	38241.1123	59.533	38241.10821	12.903	38241.11458	-1297.644654	=IF(MINUTE(A15)=41,1,0)	38241.1123	59.5179706001351	=H15-\$H\$2	=K15*0.004301	=J1-L1	=M15*2,31	=N15*0.3048	=O15-S0\$3457	
16	38241.15397	59.545	38241.14987	12.896	38241.15625	-1278.73589	=IF(MINUTE(A16)=41,1,0)	38241.15397	59.5199433116253	=H16-\$H\$2	=K16*0.004301	=J1-L1	=M16*2,31	=N16*0.3048	=O16-S0\$3457	
17	38241.19564	59.543	38241.19154	12.898	38241.19792	-1050.07189	=IF(MINUTE(A17)=41,1,0)	38241.19564	59.5192387547734	=H17-\$H\$2	=K17*0.004301	=J1-L1	=M17*2,31	=N17*0.3048	=O17-S0\$3457	
18	38241.2373	59.532	38241.23321	12.906	38241.23958	-658.30095	=IF(MINUTE(A18)=41,1,0)	38241.2373	59.5174722711245	=H18-\$H\$2	=K18*0.004301	=J1-L1	=M18*2,31	=N18*0.3048	=O18-S0\$3457	
19	38241.27897	59.516	38241.27487	12.917	38241.28125	-186.446615	=IF(MINUTE(A19)=41,1,0)	38241.27897	59.5168192176034	=H19-\$H\$2	=K19*0.004301	=J1-L1	=M19*2,31	=N19*0.3048	=O19-S0\$3457	
20	38241.32064	59.503	38241.31654	12.92	38241.32292	288.70102	=IF(MINUTE(A20)=41,1,0)	38241.32084	59.51771568471799	=H20-\$H\$2	=K20*0.004301	=J1-L1	=M20*2,31	=N20*0.3048	=O20-S0\$3457	
21	38241.3623	59.489	38241.35821	12.922	38241.36458	610.660303	=IF(MINUTE(A21)=41,1,0)	38241.3623	59.5159040188904	=H21-\$H\$2	=K21*0.004301	=J1-L1	=M21*2,31	=N21*0.3048	=O21-S0\$3457	
22	38241.40397	59.479	38241.39987	12.926	38241.40625	784.615832	=IF(MINUTE(A22)=41,1,0)	38241.40397	59.515790695136	=H22-\$H\$2	=K22*0.004301	=J1-L1	=M22*2,31	=N22*0.3048	=O22-S0\$3457	
23	38241.44564	59.482	38241.44154	12.919	38241.44792	770.89688	=IF(MINUTE(A23)=41,1,0)	38241.44564	59.518399571953	=H23-\$H\$2	=K23*0.004301	=J1-L1	=M23*2,31	=N23*0.3048	=O23-S0\$3457	
24	38241.4873	59.489	38241.48321	12.906	38241.48958	597.595803	=IF(MINUTE(A24)=41,1,0)	38241.4873	59.5147484367065	=H24-\$H\$2	=K24*0.004301	=J1-L1	=M24*2,31	=N24*0.3048	=O24-S0\$3457	
25	38241.52897	59.508	38241.52487	12.896	38241.53125	330.015525	=IF(MINUTE(A25)=41,1,0)	38241.52897	59.518350370637	=H25-\$H\$2	=K25*0.004301	=J1-L1	=M25*2,31	=N25*0.3048	=O25-S0\$3457	
26	38241.57064	59.527	38241.56654	12.886	38241.57292	532.22032	=IF(MINUTE(A26)=41,1,0)	38241.57064	59.5189840114417	=H26-\$H\$2	=K26*0.004301	=J1-L1	=M26*2,31	=N26*0.3048	=O26-S0\$3457	
27	38241.6123	59.545	38241.60821	12.877	38241.61458	-150.068852	=IF(MINUTE(A27)=41,1,0)	38241.6123	59.5182313891135	=H27-\$H\$2	=K27*0.004301	=J1-L1	=M27*2,31	=N27*0.3048	=O27-S0\$3457	
28	38241.65397	59.556	38241.64987	12.87	38241.65625	-220.940502	=IF(MINUTE(A28)=41,1,0)	38241.65397	59.5123720646203	=H28-\$H\$2	=K28*0.004301	=J1-L1	=M28*2,31	=N28*0.3048	=O28-S0\$3457	
29	38241.69564	59.572	38241.69154	12.869	38241.69792	-139.906286	=IF(MINUTE(A29)=41,1,0)	38241.69564	59.5208874429981	=H29-\$H\$2	=K29*0.004301	=J1-L1	=M29*2,31	=N29*0.3048	=O29-S0\$3457	
30	38241.7373	59.572	38241.73321	12.87	38241.73958	67.321221	=IF(MINUTE(A30)=41,1,0)	38241.7373	59.5192899201791	=H30-\$H\$2	=K30*0.004301	=J1-L1	=M30*2,31	=N30*0.3048	=O30-S0\$3457	
31	38241.77897	59.567	38241.77487	12.872	38241.78125	335.668782	=IF(MINUTE(A31)=41,1,0)	38241.77897	59.518455335373	=H31-\$H\$2	=K31*0.004301	=J1-L1	=M31*2,31	=N31*0.3048	=O31-S0\$3457	
32	38241.82064	59.553	38241.81654	12.879	38241.82292	577.174661	=IF(MINUTE(A32)=41,1,0)	38241.82064	59.5149077196034	=H32-\$H\$2	=K32*0.004301	=J1-L1	=M32*2,31	=N32*0.3048	=O32-S0\$3457	
33	38241.8623	59.54	38241.85821	12.887	38241.86458	704.359252	=IF(MINUTE(A33)=41,1,0)	38241.8623	59.5152325603358	=H33-\$H\$2	=K33*0.004301	=J1-L1	=M33*2,31	=N33*0.3048	=O33-S0\$3457	
34	38241.90397	59.533	38241.89987	12.891	38241.90625	654.709753	=IF(MINUTE(A34)=41,1,0)	38241.90397	59.5181678255398	=H34-\$H\$2	=K34*0.004301	=J1-L1	=M34*2,31	=N34*0.3048	=O34-S0\$3457	
35	38241.94564	59.524	38241.94154	12.889	38241.94792	409.75879	=IF(MINUTE(A35)=41,1,0)	38241.94564	59.5153085237777	=H35-\$H\$2	=K35*0.004301	=J1-L1	=M35*2,31	=N35*0.3048	=O35-S0\$3457	
36	38241.9873	59.524	38241.98321	12.889	38241.98958	3.20125	=IF(MINUTE(A36)=41,1,0)	38241.9873	59.516225549999	=H36-\$H\$2	=K36*0.004301	=J1-L1	=M36*2,31	=N36*0.3048	=O36-S0\$3457	
37	38242.02897	59.532	38242.02487	12.887	38242.03125	-484.672674	=IF(MINUTE(A37)=41,1,0)	38242.02897	59.519047312638	=H37-\$H\$2	=K37*0.004301	=J1-L1	=M37*2,31	=N37*0.3048	=O37-S0\$3457	
38	38242.07064	59.54	38242.06654	12.886	38242.07292	-946.60398	=IF(MINUTE(A38)=41,1,0)	38242.07064	59.5198730740383	=H38-\$H\$2	=K38*0.004301	=J1-L1	=M38*2,31	=N38*0.3048	=O38-S0\$3457	
39	38242.1123	59.548	38242.10821	12.886	38242.11458	-1274.598472	=IF(MINUTE(A39)=41,1,0)	38242.1123	59.5199770165639	=H39-\$H\$2	=K39*0.004301	=J1-L1	=M39*2,31	=N39*0.3048	=O39-S0\$3457	
40	38242.15397	59.553	38242.14987	12.887	38242.15625	-1388.208917	=IF(MINUTE(A40)=41,1,0)	38242.15397	59.5198801585088	=H40-\$H\$2	=K40*0.004301	=J1-L1	=M40*2,31	=N40*0.3048	=O40-S0\$3457	
41	38242.19564	59.555	38242.19154	12.888	38242.19792	-1256.989103	=IF(MINUTE(A41)=41,1,0)	38242.19564	59.521371977854	=H41-\$H\$2	=K41*0.004301	=J1-L1	=M41*2,31	=N41*0.3048	=O41-S0\$3457	
42	38242.2373	59.548	38242.23321	12.893	38242.23958	-908.178036	=IF(MINUTE(A42)=41,1,0)	38242.2373	59.518997271145	=H42-\$H\$2	=K42*0.004301	=J1-L1	=M42*2,31	=N42*0.3048	=O42-S0\$3457	
43	38242.27897	59.54	38242.27487	12.897	38242.28125	-420.131001	=IF(MINUTE(A43)=41,1,0)	38242.27897	59.5214778497295	=H43-\$H\$2	=K43*0.004301	=J1-L1	=M43*2,31	=N43*0.3048	=O43-S0\$3457	
44	38242.32064	59.552	38242.31654	12.901	38242.32292	97.725198	=IF(MINUTE(A44)=41,1,0)	38242.32064	59.522346854382	=H44-\$H\$2	=K44*0.004301	=J1-L1	=M44*2,31	=N44*0.3048	=O44-S0\$3457	
45	38242.3623	59.505	38242.35821	12.906	38242.36458	532.557976	=IF(MINUTE(A45)=41,1,0)	38242.3623	59.5158500179944	=H45-\$H\$2	=K45*0.004301	=J1-L1	=M45*2,31	=N45*0.3048	=O45-S0\$3457	
46	38242.40397	59.497	38242.39987	12.905	38242.40625	795.957884	=IF(MINUTE(A46)=41,1,0)	38242.40397	59.5183287542962	=H46-\$H\$2	=K46*0.004301	=J1-L1	=M46*2,31	=N46*0.3048	=O46-S0\$3457	
47	38242.44564	59.497	38242.44154	12.895	38242.44792	844.813841	=IF(MINUTE(A47)=41,1,0)	38242.44564	59.5193234041611	=H47-\$H\$2	=K47*0.004301	=J1-L1	=M47*2,31	=N47*0.3048	=O47-S0\$3457	
48	38242.4873	59.505	38242.48321	12.893	38242.48658	690.282027	=IF(MINUTE(A48)=41,1,0)	38242.48658	59.5198280903148	=H48-\$H\$2	=K48*0.004301	=J1-L1	=M48*2,31	=N48*0.3048	=O48-S0\$3457	
49	38242.52897	59.521	38242.52487	12.899	38242.53125	383.094443	=IF(MINUTE(A49)=41,									

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	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Time	WL	MatchedBP-Time	Matched-BP	MatchET-Time	Matched-ET		BAROCorrect-Time	Corrected-Pressure					Freshwater (ft of H2O)	Meters of H2O	Change in Meters
2	1/18/05 16:03	93.093	38370.67	13.139	38370.66687	202.053513		38370.6689	93.093					215.04483	65.54566418	-0.075150109
3	1/18/05 17:03	93.078	38370.72	13.146	38370.70833	210.453489		38370.71057	93.093					215.04483	65.54566418	-0.075150109
4	1/18/05 18:03	93.071	38370.75	13.142	38370.79167	344.289977		38370.75223	93.093					215.04483	65.54566418	-0.075150109
5	1/18/05 19:03	93.063	38370.79	13.142	38370.79167	344.289977		38370.7939	93.093					215.04483	65.54566418	-0.075150109
6	1/18/05 20:03	93.063	38370.84	13.15	38370.83333	442.274387		38370.83557	93.093					215.04483	65.54566418	-0.075150109
7	1/18/05 21:03	93.063	38370.88	13.153	38370.875	520.938143		38370.87723	93.093					215.04483	65.54566418	-0.075150109
8	1/18/05 22:03	93.071	38370.92	13.15	38370.91687	543.772453		38370.9189	93.093					215.04483	65.54566418	-0.075150109
9	1/18/05 23:03	93.078	38370.97	13.147	38370.95833	480.623478		38370.96057	93.093					215.04483	65.54566418	-0.075150109
10	1/19/05 0:03	93.086	38371	13.145	38371	317.391256		38371.00223	93.093					215.04483	65.54566418	-0.075150109
11	1/19/05 1:03	93.101	38371.04	13.141	38371.04167	62.544963		38371.0439	93.093					215.04483	65.54566418	-0.075150109
12	1/19/05 2:03	93.101	38371.09	13.141	38371.08333	-251.914403		38371.08557	93.093					215.04483	65.54566418	-0.075150109
13	1/19/05 3:03	93.101	38371.13	13.14	38371.125	-575.949304		38371.12723	93.093					215.04483	65.54566418	-0.075150109
14	1/19/05 4:03	93.101	38371.17	13.141	38371.16687	-852.357023		38371.1689	93.093					215.04483	65.54566418	-0.075150109
15	1/19/05 5:03	93.108	38371.22	13.145	38371.20833	-1030.143591		38371.21057	93.11164946					215.0879103	65.55879505	-0.062019244
16	1/19/05 6:03	93.093	38371.25	13.15	38371.25	-1076.644722		38371.25223	93.10244428					215.0666462	65.55231378	-0.068500517
17	1/19/05 7:03	93.093	38371.29	13.163	38371.29167	-985.025902		38371.2939	93.11284333					215.0902061	65.55949481	-0.061319479
18	1/19/05 8:03	93.078	38371.34	13.175	38371.33333	-775.277601		38371.33557	93.10783853					215.078645	65.555971	-0.064843292
19	1/19/05 9:03	93.078	38371.38	13.181	38371.375	-488.79083		38371.37723	93.11343797					215.0920417	65.56005432	-0.060759976
20	1/19/05 10:03	93.078	38371.42	13.18	38371.41687	-178.320465		38371.4189	93.11337225					215.0918899	65.56000804	-0.060806252
21	1/19/05 11:03	93.078	38371.47	13.178	38371.45833	103.895131		38371.46057	93.11041251					215.0850529	65.55792413	-0.062890166
22	1/19/05 12:03	93.093	38371.5	13.165	38371.5	317.021749		38371.50223	93.11596816					215.0978865	65.56183579	-0.058978501
23	1/19/05 13:03	93.108	38371.54	13.147	38371.54167	439.254924		38371.5439	93.11824946					215.1031562	65.56344202	-0.057372273
24	1/19/05 14:03	93.116	38371.59	13.139	38371.58333	470.892178		38371.58557	93.12006303					215.1073918	65.56473302	-0.056081269
25	1/19/05 15:03	93.116	38371.63	13.137	38371.625	432.462102		38371.62723	93.12035584					215.108022	65.5649251	-0.055889188
26	1/19/05 16:03	93.108	38371.67	13.133	38371.66687	358.465489		38371.6689	93.11511108					215.0959066	65.56123232	-0.059581975
27	1/19/05 17:03	93.108	38371.72	13.128	38371.70833	288.029343		38371.71057	93.11947632					215.1059949	65.56430725	-0.056507042
28	1/19/05 18:03	93.093	38371.75	13.131	38371.75	254.409368		38371.75223	93.11337811					215.0919034	65.56001217	-0.060802125
29	1/19/05 19:03	93.086	38371.79	13.134	38371.79167	275.661803		38371.7939	93.11527204					215.0962784	65.56134566	-0.059468635
30	1/19/05 20:03	93.078	38371.84	13.14	38371.83333	348.802374		38371.83557	93.1159766					215.0979059	65.56184173	-0.058972562
31	1/19/05 21:03	93.078	38371.88	13.141	38371.875	449.241026		38371.87723	93.11929866					215.1055799	65.564818076	-0.056633537
32	1/19/05 22:03	93.078	38371.92	13.144	38371.91687	536.190787		38371.9189	93.11895728					215.1047913	65.5639404	-0.056873896
33	1/19/05 23:03	93.086	38371.97	13.14	38371.95833	563.241207		38371.96057	93.11984723					215.1084741	65.564567	-0.056247295
34	1/20/05 0:03	93.101	38372	13.13	38372	491.710852		38372.00223	93.12144563					215.1105394	65.56569241	-0.055121881
35	1/20/05 1:03	93.116	38372.04	13.12	38372.04167	303.2482		38372.0439	93.12097352					215.1094488	65.56536	-0.05545429
36	1/20/05 2:03	93.138	38372.09	13.105	38372.08333	7.926384		38372.08557	93.12481964					215.1183334	65.56806801	-0.05274628
37	1/20/05 3:03	93.146	38372.13	13.095	38372.125	-354.964056		38372.12723	93.119078					215.1050702	65.56402539	-0.056788905
38	1/20/05 4:03	93.153	38372.17	13.091	38372.16687	-724.230112		38372.1689	93.11912059					215.1051686	65.56405538	-0.056758917
39	1/20/05 5:03	93.153	38372.22	13.089	38372.20833	-1030.571573		38372.21057	93.11684334					215.0999081	65.56245199	-0.058362301
40	1/20/05 6:03	93.153	38372.25	13.092	38372.25	-1213.1888		38372.25223	93.1203169					215.107932	65.56489768	-0.05591661
41	1/20/05 7:03	93.146	38372.29	13.102	38372.29187	-1234.826612		38372.2939	93.12260583					215.1132195	65.56650929	-0.054305001
42	1/20/05 8:03	93.146	38372.34	13.103	38372.33333	-1089.81965		38372.33557	93.12849154					215.1268154	65.57065335	-0.050160944
43	1/20/05 9:03	93.138	38372.38	13.112	38372.375	-807.061394		38372.37723	93.12887534					215.12724	65.57078276	-0.05003153
44	1/20/05 10:03	93.131	38372.42	13.116	38372.41687	-440.931316		38372.4189	93.12614674					215.121399	65.56900241	-0.051811885
45	1/20/05 11:03	93.138	38372.47	13.107	38372.45833	-59.309333		38372.46057	93.12804337					215.1257802	65.5703378	-0.050474693
46	1/20/05 12:03	93.153	38372.5	13.093	38372.5	272.089938		38372.50223	93.13239047					215.135822	65.57339854	-0.04741575
47	1/20/05 13:03	93.168	38372.54	13.074	38372.54167	503.929234		38372.5439	93.13286738					215.1369237	65.57373433	-0.047079961
48	1/20/05 14:03	93.175	38372.59	13.059	38372.58333	613.054585		38372.58557	93.12775211					215.1251074	65.57013273	-0.050681563
49	1/20/05 15:03	93.175	38372.63	13.055	38372.625	605.912058		38372.62723	93.12398887					215.1164143	65.56748308	-0.053331214
50	1/20/05 16:03	93.176	38372.67	13.056	38372.66687	515.034079		38372.6689	93.12827394					215.1263128	65.57050014	-0.050314153
51	1/20/05 17:03	93.175	38372.72	13.054	38372.70833	389.509834		38372.71057	93.13273565					215.1366194	65.57364158	-0.047172712
52	1/20/05 18:03	93.175	38372.75	13.054	38372.75	281.617325		38372.75223	93.14121582					215.1562085	65.57961237	-0.041201927
53	1/20/05 19:03	93.161	38372.79	13.054	38372.79167	232.676115		38372.7939	93.13702143					215.1465195	65.57665915	-0.044155147
54	1/20/05 20:03	93.153	38372.84	13.057	38372.83333	261.498189		38372.83657	93.13879266					215.150611	65.57790625	-0.042908046
55	1/20/05 21:03	93.138	38372.88	13.056	38372.875	358.429107		38372.87723	93.12877308					215.1274658	65.57085158	-0.04962711
56	1/20/05 22:03	93.146	38372.92	13.055	38372.91687	486.846608		38372.9189	93.13733756					215.1472498	65.57688173	-0.043932564
57	1/20/05 23:03	93.153	38372.97	13.049	38372.95833	592.252313		38372.96057	93.13769733					215.1480808	65.57713504	-0.043679255
58	1/21/0															

## SNL-9 Formulas

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Time	WL	MatchedBP-Time	Matched-BP	MatchET-Time	Matched-ET		BARO	Correct-Time	Corrected-Pressure				Freshwater (ft of H2O)	Meters of H2O	Change in Meters
2	38370.6689	93.093	38370.67	13.139	38370.66667	202.053513	38370.6689	93.093						=I2*2.31	=N2*0.3048	=O2-\$O\$334
3	38370.71057	93.078	38370.72	13.146	38370.708333	210.453489	38370.71057	93.093						=I3*2.31	=N3*0.3048	=O3-\$O\$334
4	38370.75223	93.071	38370.75	13.142	38370.75	259.861445	38370.75223	93.093						=I4*2.31	=N4*0.3048	=O4-\$O\$334
5	38370.7939	93.063	38370.79	13.142	38370.791667	344.289977	38370.7939	93.093						=I5*2.31	=N5*0.3048	=O5-\$O\$334
6	38370.83557	93.063	38370.84	13.15	38370.833333	442.274387	38370.83557	93.093						=I6*2.31	=N6*0.3048	=O6-\$O\$334
7	38370.87723	93.063	38370.88	13.153	38370.875	520.938143	38370.87723	93.093						=I7*2.31	=N7*0.3048	=O7-\$O\$334
8	38370.9189	93.071	38370.92	13.15	38370.916667	543.772453	38370.9189	93.093						=I8*2.31	=N8*0.3048	=O8-\$O\$334
9	38370.96057	93.078	38370.97	13.147	38370.958333	480.623478	38370.96057	93.093						=I9*2.31	=N9*0.3048	=O9-\$O\$334
10	38371.00223	93.086	38371	13.145	38371	317.391256	38371.00223	93.093						=I10*2.31	=N10*0.3048	=O10-\$O\$334
11	38371.0439	93.101	38371.04	13.141	38371.041667	62.544963	38371.0439	93.093						=I11*2.31	=N11*0.3048	=O11-\$O\$334
12	38371.08557	93.101	38371.09	13.141	38371.083333	-251.914403	38371.08557	93.093						=I12*2.31	=N12*0.3048	=O12-\$O\$334
13	38371.12723	93.101	38371.13	13.14	38371.125	-575.949304	38371.12723	93.093						=I13*2.31	=N13*0.3048	=O13-\$O\$334
14	38371.1689	93.101	38371.17	13.141	38371.166667	-852.357023	38371.1689	93.093						=I14*2.31	=N14*0.3048	=O14-\$O\$334
15	38371.21057	93.108	38371.22	13.145	38371.208333	-1030.143591	38371.21057	93.1116494647923						=I15*2.31	=N15*0.3048	=O15-\$O\$334
16	38371.25223	93.093	38371.25	13.15	38371.25	-1076.644722	38371.25223	93.1024442624547						=I16*2.31	=N16*0.3048	=O16-\$O\$334
17	38371.2939	93.093	38371.29	13.163	38371.291667	-985.025902	38371.2939	93.1126433252641						=I17*2.31	=N17*0.3048	=O17-\$O\$334
18	38371.33557	93.078	38371.34	13.175	38371.333333	-775.277601	38371.33557	93.107638534767						=I18*2.31	=N18*0.3048	=O18-\$O\$334
19	38371.37723	93.078	38371.38	13.181	38371.375	-488.79083	38371.37723	93.1134379737198						=I19*2.31	=N19*0.3048	=O19-\$O\$334
20	38371.4189	93.078	38371.42	13.18	38371.416667	-178.320465	38371.4189	93.1133722493981						=I20*2.31	=N20*0.3048	=O20-\$O\$334
21	38371.46057	93.078	38371.47	13.178	38371.458333	103.896131	38371.46057	93.1104125142669						=I21*2.31	=N21*0.3048	=O21-\$O\$334
22	38371.50223	93.093	38371.5	13.165	38371.5	317.021749	38371.50223	93.1159681617464						=I22*2.31	=N22*0.3048	=O22-\$O\$334
23	38371.5439	93.108	38371.54	13.147	38371.541667	439.254924	38371.5439	93.1182494514037						=I23*2.31	=N23*0.3048	=O23-\$O\$334
24	38371.58557	93.116	38371.59	13.139	38371.583333	470.892178	38371.58557	93.1200830338443						=I24*2.31	=N24*0.3048	=O24-\$O\$334
25	38371.62723	93.116	38371.63	13.137	38371.625	432.462102	38371.62723	93.1203558421088						=I25*2.31	=N25*0.3048	=O25-\$O\$334
26	38371.6689	93.108	38371.67	13.133	38371.666667	358.465489	38371.6689	93.1151110624436						=I26*2.31	=N26*0.3048	=O26-\$O\$334
27	38371.71057	93.108	38371.72	13.128	38371.708333	288.029343	38371.71057	93.1194783187669						=I27*2.31	=N27*0.3048	=O27-\$O\$334
28	38371.75223	93.093	38371.75	13.131	38371.75	254.409368	38371.75223	93.113378111288						=I28*2.31	=N28*0.3048	=O28-\$O\$334
29	38371.7939	93.086	38371.79	13.134	38371.791667	275.661803	38371.7939	93.1152720357814						=I29*2.31	=N29*0.3048	=O29-\$O\$334
30	38371.83557	93.078	38371.84	13.14	38371.833333	348.802374	38371.83557	93.1159765079766						=I30*2.31	=N30*0.3048	=O30-\$O\$334
31	38371.87723	93.078	38371.88	13.141	38371.875	449.241026	38371.87723	93.119298660647						=I31*2.31	=N31*0.3048	=O31-\$O\$334
32	38371.9189	93.078	38371.92	13.144	38371.916667	536.190787	38371.9189	93.1189572838148						=I32*2.31	=N32*0.3048	=O32-\$O\$334
33	38371.96057	93.086	38371.97	13.14	38371.958333	563.241207	38371.96057	93.1198472314543						=I33*2.31	=N33*0.3048	=O33-\$O\$334
34	38372.00223	93.101	38372	13.13	38372	491.710852	38372.00223	93.1214456313244						=I34*2.31	=N34*0.3048	=O34-\$O\$334
35	38372.0439	93.116	38372.04	13.12	38372.041667	303.2482	38372.0439	93.1209735187971						=I35*2.31	=N35*0.3048	=O35-\$O\$334
36	38372.08557	93.138	38372.09	13.105	38372.083333	7.926384	38372.08557	93.1248196424789						=I36*2.31	=N36*0.3048	=O36-\$O\$334
37	38372.12723	93.146	38372.13	13.095	38372.125	-354.964056	38372.12723	93.1190779955692						=I37*2.31	=N37*0.3048	=O37-\$O\$334
38	38372.1689	93.153	38372.17	13.091	38372.166667	-724.230112	38372.1689	93.1181205867135						=I38*2.31	=N38*0.3048	=O38-\$O\$334
39	38372.21057	93.153	38372.22	13.089	38372.208333	-1030.571573	38372.21057	93.1168433371518						=I39*2.31	=N39*0.3048	=O39-\$O\$334
40	38372.25223	93.153	38372.25	13.092	38372.25	-1213.1888	38372.25223	93.1203168961787						=I40*2.31	=N40*0.3048	=O40-\$O\$334
41	38372.2939	93.146	38372.29	13.102	38372.291667	-1234.626612	38372.2939	93.1226058286901						=I41*2.31	=N41*0.3048	=O41-\$O\$334
42	38372.33557	93.146	38372.34	13.103	38372.333333	-1089.81965	38372.33557	93.1284915353589						=I42*2.31	=N42*0.3048	=O42-\$O\$334
43	38372.37723	93.138	38372.38	13.112	38372.375	-807.061394	38372.37723	93.1286753403185						=I43*2.31	=N43*0.3048	=O43-\$O\$334
44	38372.4189	93.131	38372.42	13.116	38372.416667	-440.931316	38372.4189	93.1261467422396						=I44*2.31	=N44*0.3048	=O44-\$O\$334
45	38372.46057	93.138	38372.47	13.107	38372.458333	-59.309333	38372.46057	93.1280433687503						=I45*2.31	=N45*0.3048	=O45-\$O\$334
46	38372.50223	93.153	38372.5	13.093	38372.5	272.089938	38372.50223	93.1323904712992						=I46*2.31	=N46*0.3048	=O46-\$O\$334
47	38372.5439	93.168	38372.54	13.074	38372.541667	503.929234	38372.5439	93.1328673849601						=I47*2.31	=N47*0.3048	=O47-\$O\$334
48	38372.58557	93.175	38372.59	13.059	38372.583333	613.054585	38372.58557	93.1277521130745						=I48*2.31	=N48*0.3048	=O48-\$O\$334
49	38372.62723	93.175	38372.63	13.055	38372.625	605.912058	38372.62723	93.1239888748231						=I49*2.31	=N49*0.3048	=O49-\$O\$334
50	38372.66889	93.176	38372.67	13.056	38372.666667	515.0534079	38372.66889	93.1282739360806						=I50*2.31	=N50*0.3048	=O50-\$O\$334
51	38372.71057	93.175	38372.72	13.054	38372.708333	389.509834	38372.71057	93.132735653123						=I51*2.31	=N51*0.3048	=O51-\$O\$334
52	38372.75223	93.175	38372.75	13.054	38372.75	281.617325	38372.75223	93.1412158222754						=I52*2.31	=N52*0.3048	=O52-\$O\$334
53	38372.7939	93.161	38372.79	13.054	38372.791667	232.676115	38372.7939	93.1370214315974						=I53*2.31	=N53*0.3048	=O53-\$O\$334
54	38372.83557	93.153	38372.84	13.057	38372.833333	261.498189	38372.83557	93.1387926595164						=I54*2.31	=N54*0.3048	=O54-\$O\$334
55	38372.87723	93.138	38372.88	13.056	38372.875	358.429107	38372.87723	93.1287730812585						=I55*2.31	=N55*0.3048	=O55-\$O\$334
56	38372.9189	93.146	38372.92	13.055	38372.916667	486.846608	38372.9189	93.1373375607884						=I56*2.31	=N56*0.3048	=O56-\$O\$334
57	38372.96057	93.153	38372.97	13.049	38372.958333	592.252313	38372.96057	93.1376973298967						=I57*2.31	=N57*0.3048	=O57-\$O\$334
58	38373.00223	93.161	38373	13.045	38373	617.089844	38373.00223	93.1356799392						=I58*2.31	=N58*0.3048	=O58-\$O\$334
59	38373.0439	93.175	38373.04	13.041	38373.041667	517.658551	38373.0439	93.1372497091116	</td							

## WIPP-12

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Time	WL	MatchedBP-Time	Matched-BP	MatchET-Time	Matched-ET	FILTER	BARO	Correct-Time	Corrected-Pressure	Detrended	Corrected	Pressure	Freshwater (ft of H2O)	Meters of H2O	Change in Meters
2	1/26/05 12:08	77.046	38378.50667	13.052	38378.51042	657.333274	1	38378.50591	77.046	77.046				177.97626	54.24716405	-0.041275866
3	1/26/05 13:08	77.054	38378.54833	13.04	38378.55208	283.801421	1	38378.54758	77.046	77.04580413				177.9751145	54.24681491	-0.041625004
4	1/26/05 14:08	77.07	38378.59	13.035	38378.59375	-223.270741	1	38378.58925	77.046	77.04500825				177.9739691	54.24646577	-0.041974142
5	1/26/05 15:08	77.078	38378.63167	13.035	38378.63542	-763.889563	1	38378.63091	77.046	77.0446125				177.9728239	54.24611672	-0.042323197
6	1/26/05 16:08	77.078	38378.67333	13.037	38378.67708	-1222.713671	1	38378.67258	77.046	77.04401663				177.9716784	54.24576758	-0.042672335
7	1/26/05 17:08	77.094	38378.715	13.042	38378.71875	-1497.600718	1	38378.71425	77.046	77.04332075				177.9705329	54.24541844	-0.043021473
8	1/26/05 18:08	77.086	38378.75667	13.054	38378.76042	-1525.766743	1	38378.75591	77.046	77.043025				177.9693878	54.24506939	-0.043370527
9	1/26/05 19:08	77.094	38378.79833	13.046	38378.80208	-1300.361155	1	38378.79758	77.046	77.04252913				177.9682423	54.24472025	-0.043719666
10	1/26/05 20:08	77.093	38378.84	13.051	38378.84375	-872.660328	1	38378.83925	77.046	77.04203325				177.9670968	54.24437111	-0.044068804
11	1/26/05 21:08	77.093	38378.88167	13.059	38378.88542	-339.053952	1	38378.88091	77.046	77.04153775				177.9659516	54.24402206	-0.044417858
12	1/26/05 22:08	77.093	38378.92333	13.066	38378.92708	183.653521	1	38378.92258	77.046	77.04104183				177.9648062	54.24367292	-0.044766997
13	1/26/05 23:08	77.093	38378.965	13.059	38378.96875	587.780173	1	38378.96425	77.0634286	77.06797435				178.0732207	54.27671768	-0.011722229
14	1/27/05 0:08	77.093	38379.00667	13.044	38379.01042	801.064013	1	38379.00591	77.09313291	77.08716291				178.0713925	54.27616044	-0.012279472
15	1/27/05 1:08	77.103	38379.04833	13.04	38379.05208	802.821823	1	38379.04758	77.10326087	77.0868113				178.0936426	54.28294228	-0.005497637
16	1/27/05 2:08	77.103	38379.09	13.039	38379.09375	626.157238	1	38379.08925	77.10317983	77.08623888				178.09231	54.28253608	-0.005903835
17	1/27/05 3:08	77.103	38379.13167	13.038	38379.13542	346.329102	1	38379.13091	77.10315258	77.08671505				178.0911018	54.28216784	-0.006272077
18	1/27/05 4:08	77.103	38379.17333	13.039	38379.17708	58.964256	1	38379.17258	77.10409392	77.08610564				178.0921309	54.28248149	-0.005958428
19	1/27/05 5:08	77.101	38379.215	13.039	38379.21875	-145.883069	1	38379.21425	77.10181414	77.09338445				178.0857191	54.28052719	-0.007912728
20	1/27/05 6:08	77.101	38379.25667	13.036	38379.26042	-207.180923	1	38379.25591	77.10182166	77.09309666				178.0845913	54.28018342	-0.008258489
21	1/27/05 7:08	77.103	38379.29833	13.037	38379.30208	-108.213225	1	38379.29758	77.10358138	77.09414051				178.0874646	54.2810592	-0.007380711
22	1/27/05 8:08	77.101	38379.34	13.044	38379.34375	119.744865	1	38379.33925	77.10157353	77.09186578				178.0817272	54.27931044	-0.009129475
23	1/27/05 9:08	77.101	38379.38167	13.053	38379.38542	405.987277	1	38379.38091	77.10162097	77.09120847				178.0806916	54.27899457	-0.00945127
24	1/27/05 10:08	77.101	38379.42333	13.055	38379.42708	658.93725	1	38379.42258	77.10145008	77.09054171				178.0791513	54.27852533	-0.009914584
25	1/27/05 11:08	77.109	38379.465	13.051	38379.46875	790.186674	1	38379.46425	77.10952251	77.09811838				178.0966532	54.28385989	-0.004580025
26	1/27/05 12:08	77.101	38379.50667	13.036	38379.51042	738.215729	1	38379.50591	77.10164523	77.09874523				178.0773115	54.27796454	-0.010475378
27	1/27/05 13:08	77.111	38379.54833	13.019	38379.55208	485.969448	1	38379.54758	77.11135779	77.09886191				178.098602	54.28445389	-0.003986019
28	1/27/05 14:08	77.109	38379.59	13.014	38379.59375	67.732086	1	38379.58925	77.1090942	77.09620245				178.0922277	54.28251099	-0.005928922
29	1/27/05 15:08	77.111	38379.63167	13.016	38379.63542	-436.885741	1	38379.63091	77.111090422	77.09751672				178.0952636	54.28343635	-0.00500356
30	1/27/05 16:08	77.111	38379.67333	13.009	38379.67708	-920.951056	1	38379.67258	77.11090408	77.09752971				178.0941178	54.28303712	-0.005352797
31	1/27/05 17:08	77.109	38379.715	13.025	38379.71875	-1276.154044	1	38379.71425	77.10885544	77.09427519				178.0877778	54.28115474	-0.007285178
32	1/27/05 18:08	77.109	38379.75667	13.03	38379.76042	-1420.232878	1	38379.75591	77.10874542	77.09387042				178.0868407	54.28086904	-0.007570875
33	1/27/05 19:08	77.117	38379.79833	13.033	38379.80208	-1318.554453	1	38379.79758	77.11865184	77.10119097				178.1037511	54.28602334	-0.002416569
34	1/27/05 20:08	77.109	38379.84	13.029	38379.84375	-993.719757	1	38379.83925	77.10893751	77.09307075				178.0849935	54.28030601	-0.008133908
35	1/27/05 21:08	77.117	38379.88167	13.027	38379.88542	-520.196615	1	38379.88091	77.11848121	77.10012871				178.1012973	54.28527542	-0.003164491
36	1/27/05 22:08	77.117	38379.92333	13.034	38379.92708	-5.22399	1	38379.92258	77.11673272	77.09067435				178.1007097	54.28506933	-0.003343583
37	1/27/05 23:08	77.119	38379.965	13.032	38379.96875	438.757972	1	38379.96425	77.11828131	77.10002709				178.1031415	54.28583753	-0.002602382
38	1/28/05 0:08	77.119	38380.00667	13.03	38380.01042	722.46367	1	38380.00591	77.11824455	77.10030455				178.1019114	54.2854626	-0.002977312
39	1/28/05 1:08	77.119	38380.04833	13.03	38380.05208	801.156379	1	38380.04758	77.11877677	77.10043039				178.1019954	54.28548819	-0.002951726
40	1/28/05 2:08	77.119	38380.09	13.026	38380.09375	683.588674	1	38380.08925	77.11818182	77.09830997				178.0994751	54.28472001	-0.00371199
41	1/28/05 3:08	77.135	38380.13167	13.026	38380.13542	426.710882	1	38380.13091	77.13488485	77.11554735				178.1369144	54.2961315	0.00769159
42	1/28/05 4:08	77.125	38380.17333	13.022	38380.17708	118.296562	1	38380.17258	77.12513685	77.10530348				178.1132514	54.28891881	0.0004749
43	1/28/05 5:08	77.117	38380.215	13.023	38380.21875	-147.371414	1	38380.21425	77.1173646	77.09703535				178.0941517	54.28309743	-0.005342488
44	1/28/05 6:08	77.127	38380.25667	13.027	38380.26042	-294.235516	1	38380.25591	77.12741557	77.10890067				178.1162242	54.28982514	0.00138523
45	1/28/05 7:08	77.127	38380.29833	13.029	38380.30208	-283.470651	1	38380.29758	77.12685438	77.10553351				178.1137624	54.28908088	0.000640961
46	1/28/05 8:08	77.127	38380.34	13.033	38380.34375	-122.404324	1	38380.33925	77.12703956	77.10522261				178.1130647	54.28886212	0.000422207
47	1/28/05 9:08	77.127	38380.38167	13.034	38380.38542	138.384874	1	38380.38091	77.12889582	77.10458332				178.1115875	54.28841186	-2.80502E-05
48	1/28/05 10:08	77.127	38380.42333	13.036	38380.42708	418.717383	1	38380.42258	77.12681414	77.10400577				178.1102533	54.28800521	-0.000434699
49	1/28/05 11:08	77.125	38380.465	13.03	38380.46875	629.736031	1	38380.46425	77.12512201	77.10117777				178.105199	54.28648467	-0.001975244
50	1/28/05 12:08	77.135	38380.50667	13.015	38380.51042	697.068103	1	38380.50591	77.13491427	77.11111427				178.126674	54.29301022	0.004570308
51	1/28/05 13:08	77.135	38380.54833	13	38380.55208	580.720594	1	38380.54758	77.13494543	77.11064935				178.1256005	54.29268302	0.004243109
52	1/28/05 14:08	77.135	38380.58	12.994	38380.59375	286.874245	1	38380.58925	77.13441606	77.10962431				178.1232322	54.29196116	0.003521247
53	1/28/05 15:08															

## WIPP-12 Formulas

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Time	WL	MatchedBP-Time	Matched-BP	MatchET-Time	Matched-ET	FILTER	BAROCorrect-Time	Corrected-Pressure	Extended Corrected Pressure				Freshwater (ft of H2O)	Meters of H2O	Change in Meters
2	38378 50591	77 046	38378 50667	13 052	38378 51042	657 333274	=IF(MINUTE(A2)=8,1,0)	38378.50591	77.046	=((0.0119*(H2-SH12)))	=J2*2.31	=N2*0 3048	=O2-\$O\$146			
3	38378 54758	77 054	38378 54833	13 04	38378 55208	283 801421	=IF(MINUTE(A3)=8,1,0)	38378.54758	77.046	=((0.0119*(H3-SH12)))	=J3*2 31	=N3*0 3048	=O3-\$O\$146			
4	38378 58925	77 07	38378 59	13 035	38378 59375	-223 270741	=IF(MINUTE(A4)=8,1,0)	38378.58925	77.046	=((0.0119*(H4-SH12)))	=J4*2.31	=N4*0 3048	=O4-\$O\$146			
5	38378 63091	77 078	38378 63167	13 035	38378 63542	-763 889563	=IF(MINUTE(A5)=8,1,0)	38378.63091	77.046	=((0.0119*(H5-SH12)))	=J5*2 31	=N5*0 3048	=O5-\$O\$146			
6	38378 67258	77 078	38378 67333	13 037	38378 67708	-1222 713671	=IF(MINUTE(A6)=8,1,0)	38378.67258	77.046	=((0.0119*(H6-SH12)))	=J6*2 31	=N6*0 3048	=O6-\$O\$146			
7	38378 71425	77 094	38378 715	13 042	38378 71875	-1497 600718	=IF(MINUTE(A7)=8,1,0)	38378.71425	77.046	=((0.0119*(H7-SH12)))	=J7*2.31	=N7*0 3048	=O7-\$O\$146			
8	38378 75591	77 098	38378 75667	13 054	38378 76042	-1525 766743	=IF(MINUTE(A8)=8,1,0)	38378.75591	77.046	=((0.0119*(H8-SH12)))	=J8*2.31	=N8*0 3048	=O8-\$O\$146			
9	38378 79758	77 094	38378 79833	13 046	38378 80208	-1300 361155	=IF(MINUTE(A9)=8,1,0)	38378.79758	77.046	=((0.0119*(H9-SH12)))	=J9*2.31	=N9*0 3048	=O9-\$O\$146			
10	38378 83925	77 093	38378 84	13 051	38378 84375	-872 660328	=IF(MINUTE(A10)=8,1,0)	38378.83925	77.046	=((0.0119*(H10-SH12)))	=J10*2.31	=N10*0 3048	=O10-\$O\$146			
11	38378 88091	77 093	38378 88167	13 059	38378 88542	-339 053952	=IF(MINUTE(A11)=8,1,0)	38378.88091	77.046	=((0.0119*(H11-SH12)))	=J11*2.31	=N11*0 3048	=O11-\$O\$146			
12	38378 92258	77 093	38378 92333	13 066	38378 92708	183 653521	=IF(MINUTE(A12)=8,1,0)	38378.92258	77.046	=((0.0119*(H12-SH12)))	=J12*2.31	=N12*0 3048	=O12-\$O\$146			
13	38378 96425	77 093	38378 965	13 059	38378 96875	587 780173	=IF(MINUTE(A13)=8,1,0)	38378.96425	77.0934285965849	=((0.0119*(H13-SH12)))	=J13*2.31	=N13*0 3048	=O13-\$O\$146			
14	38379 00591	77 093	38379 00667	13 044	38379 01042	801 064013	=IF(MINUTE(A14)=8,1,0)	38379.00591	77.0931329110212	=((0.0119*(H14-SH12)))	=J14*2.31	=N14*0 3048	=O14-\$O\$146			
15	38379 04758	77 103	38379 04833	13 04	38379 05208	802 812823	=IF(MINUTE(A15)=8,1,0)	38379.04758	77.1032606689254	=((0.0119*(H15-SH12)))	=J15*2.31	=N15*0 3048	=O15-\$O\$146			
16	38379 08925	77 103	38379 09	13 039	38379 09375	626 152328	=IF(MINUTE(A16)=8,1,0)	38379.08925	77.1031798273627	=((0.0119*(H16-SH12)))	=J16*2.31	=N16*0 3048	=O16-\$O\$146			
17	38379 13091	77 103	38379 13167	13 038	38379 13542	346 329102	=IF(MINUTE(A17)=8,1,0)	38379.13091	77.1031526761444	=((0.0119*(H17-SH12)))	=J17*2.31	=N17*0 3048	=O17-\$O\$146			
18	38379 17258	77 103	38379 17333	13 039	38379 17708	58 964256	=IF(MINUTE(A18)=8,1,0)	38379.17258	77.1040939175244	=((0.0119*(H18-SH12)))	=J18*2.31	=N18*0 3048	=O18-\$O\$146			
19	38379 21425	77 101	38379 215	13 039	38379 21875	-145 883069	=IF(MINUTE(A19)=8,1,0)	38379.21425	77.1018141436688	=((0.0119*(H19-SH12)))	=J19*2.31	=N19*0 3048	=O19-\$O\$146			
20	38379 25591	77 101	38379 25667	13 036	38379 26042	-207 180923	=IF(MINUTE(A20)=8,1,0)	38379.25591	77.1018216618058	=((0.0119*(H20-SH12)))	=J20*2.31	=N20*0 3048	=O20-\$O\$146			
21	38379 29758	77 103	38379 29833	13 037	38379 30208	-108 213225	=IF(MINUTE(A21)=8,1,0)	38379.29758	77.1035613813471	=((0.0119*(H21-SH12)))	=J21*2.31	=N21*0 3048	=O21-\$O\$146			
22	38379 33925	77 101	38379 34	13 044	38379 34375	119 744685	=IF(MINUTE(A22)=8,1,0)	38379.33925	77.1015735262251	=((0.0119*(H22-SH12)))	=J22*2.31	=N22*0 3048	=O22-\$O\$146			
23	38379 38091	77 101	38379 38167	13 053	38379 38542	405 987277	=IF(MINUTE(A23)=8,1,0)	38379.38091	77.1016209659382	=((0.0119*(H23-SH12)))	=J23*2.31	=N23*0 3048	=O23-\$O\$146			
24	38379 42258	77 101	38379 42333	13 055	38379 42708	658 93725	=IF(MINUTE(A24)=8,1,0)	38379.42258	77.1014500803736	=((0.0119*(H24-SH12)))	=J24*2.31	=N24*0 3048	=O24-\$O\$146			
25	38379 46425	77 109	38379 465	13 051	38379 46875	790 186674	=IF(MINUTE(A25)=8,1,0)	38379.46425	77.1095225054732	=((0.0119*(H25-SH12)))	=J25*2.31	=N25*0 3048	=O25-\$O\$146			
26	38379 50591	77 101	38379 50667	13 036	38379 51042	738 215729	=IF(MINUTE(A26)=8,1,0)	38379.50691	77.1016452251106	=((0.0119*(H26-SH12)))	=J26*2.31	=N26*0 3048	=O26-\$O\$146			
27	38379 54758	77 111	38379 54833	13 019	38379 55208	485 969448	=IF(MINUTE(A27)=8,1,0)	38379.54758	77.1113577851887	=((0.0119*(H27-SH12)))	=J27*2.31	=N27*0 3048	=O27-\$O\$146			
28	38379 58925	77 109	38379 59	13 014	38379 59375	67 732086	=IF(MINUTE(A28)=8,1,0)	38379.58925	77.1090941980721	=((0.0119*(H28-SH12)))	=J28*2.31	=N28*0 3048	=O28-\$O\$146			
29	38379 63091	77 111	38379 63167	13 016	38379 63542	-436 885741	=IF(MINUTE(A29)=8,1,0)	38379.63091	77.1109042218753	=((0.0119*(H29-SH12)))	=J29*2.31	=N29*0 3048	=O29-\$O\$146			
30	38379 67258	77 111	38379 67333	13 009	38379 67708	-920 951056	=IF(MINUTE(A30)=8,1,0)	38379.67258	77.1109040818333	=((0.0119*(H30-SH12)))	=J30*2.31	=N30*0 3048	=O30-\$O\$146			
31	38379 71425	77 109	38379 715	13 025	38379 71875	-1276 154044	=IF(MINUTE(A31)=8,1,0)	38379.71425	77.1086554382211	=((0.0119*(H31-SH12)))	=J31*2.31	=N31*0 3048	=O31-\$O\$146			
32	38379 75591	77 109	38379 75667	13 03	38379 76042	-1420 232878	=IF(MINUTE(A32)=8,1,0)	38379.75591	77.108745422866	=((0.0119*(H32-SH12)))	=J32*2.31	=N32*0 3048	=O32-\$O\$146			
33	38379 79758	77 111	38379 79833	13 033	38379 80208	-1318 5544453	=IF(MINUTE(A33)=8,1,0)	38379.79758	77.1165818385867	=((0.0119*(H33-SH12)))	=J33*2.31	=N33*0 3048	=O33-\$O\$146			
34	38379 83925	77 109	38379 84	13 029	38379 84375	-993 719757	=IF(MINUTE(A34)=8,1,0)	38379.83925	77.1089375061768	=((0.0119*(H34-SH12)))	=J34*2.31	=N34*0 3048	=O34-\$O\$146			
35	38379 88091	77 111	38379 88167	13 027	38379 88542	-520 196615	=IF(MINUTE(A35)=8,1,0)	38379.88091	77.1164912088009	=((0.0119*(H35-SH12)))	=J35*2.31	=N35*0 3048	=O35-\$O\$146			
36	38379 92258	77 111	38379 92333	13 034	38379 92708	-5 22399	=IF(MINUTE(A36)=8,1,0)	38379.92258	77.1167327225657	=((0.0119*(H36-SH12)))	=J36*2.31	=N36*0 3048	=O36-\$O\$146			
37	38379 96425	77 111	38379 965	13 032	38379 96875	438 757972	=IF(MINUTE(A37)=8,1,0)	38379.96425	77.116821305828	=((0.0119*(H37-SH12)))	=J37*2.31	=N37*0 3048	=O37-\$O\$146			
38	38380 00591	77 111	38380 00667	13 03	38380 01042	722 46367	=IF(MINUTE(A38)=8,1,0)	38380.00591	77.116244554956	=((0.0119*(H38-SH12)))	=J38*2.31	=N38*0 3048	=O38-\$O\$146			
39	38380 04758	77 111	38380 04833	13 03	38380 05208	801 1563739	=IF(MINUTE(A39)=8,1,0)	38380.04758	77.11677868162	=((0.0119*(H39-SH12)))	=J39*2.31	=N39*0 3048	=O39-\$O\$146			
40	38380 08925	77 111	38380 09	13 026	38380 09375	683 588674	=IF(MINUTE(A40)=8,1,0)	38380.08925	77.1181816209075	=((0.0119*(H40-SH12)))	=J40*2.31	=N40*0 3048	=O40-\$O\$146			
41	38380 13091	77 113	38380 13167	13 026	38380 13542	426 710882	=IF(MINUTE(A41)=8,1,0)	38380.13091	77.13488484521224	=((0.0119*(H41-SH12)))	=J41*2.31	=N41*0 3048	=O41-\$O\$146			
42	38380 17258	77 125	38380 17333	13 022	38380 17708	118 296562	=IF(MINUTE(A42)=8,1,0)	38380.17258	77.1251368491076	=((0.0119*(H42-SH12)))	=J42*2.31	=N42*0 3048	=O42-\$O\$146			
43	38380 21425	77 111	38380 215	13 023	38380 21875	-147 371414	=IF(MINUTE(A43)=8,1,0)	38380.21425	77.1173645966449	=((0.0119*(H43-SH12)))	=J43*2.31	=N43*0 3048	=O43-\$O\$146			
44	38380 25591	77 127	38380 25667	13 027	38380 26042	-294 235516	=IF(MINUTE(A44)=8,1,0)	38380.25591	77.1274155727465	=((0.0119*(H44-SH12)))	=J44*2.31	=N44*0 3048	=O44-\$O\$146			
45	38380 29758	77 127	38380 29833	13 029	38380 30208	-283 470651	=IF(MINUTE(A45)=8,1,0)	38380.29758	77.1288543789135	=((0.0119*(H45-SH12)))	=J45*2.31	=N45*0 3048	=O45-\$O\$146			
46	38380 33925	77 127	38380 3304	13 033	38380 34375	-122 404324	=IF(MINUTE(A46)=8,1,0)	38380.33925	77.1270395594818	=((0.0119*(H46-SH12)))	=J46*2.31	=N46*0 3048	=O46-\$O\$146			
47	38380 38091	77 127	38380 38167	13 034	38380 38542	138 384874	=IF(MINUTE(A47)=8,1,0)	38380.38091	77.1286958239287	=((0.0119*(H47-SH12)))	=J47*2.31	=N47*0 3048	=O47-\$O\$146			
48	38380 42258	77 127	38380 42333	13 036	38380 42708	418 717383	=IF(MINUTE(A48)=8,1,0)	38380.42258	77.1268141426531	=((0.0119*(H48-SH12)))	=J48*2.31	=N48*0 3048	=O48-\$O\$146			
49	38380 46425	77 125	38380 465	13 03	38380 46875	829 7360031	=IF(MINUTE(A49)=8,1,0)	38380.46425	77.1251220148996	=((0.0119*(H49-SH12)))	=J49*2.31	=N49*0 3048	=O49-\$O\$146			
50	38380 50591	77 135	38380 50667	13 015	38380 51042	697 068103	=IF(MINUTE(A50)=8,1,0)	38380.50591	77.1349142666031	=((0.0119*(H50-SH12)))	=J50*2.31	=N50*0 3048	=O50-\$O\$146			
51	38380 54758	77 135	38380 54833	13	38380 55208	580 720594	=IF(MINUTE(A51)=8,1,0)	38380.54758	77.1349454258958	=((0.0119*(H51-SH12)))	=J51*2.31	=N51*0 3048	=O51-\$O\$146			
52	38380 58925	77 135	38380 59	12 994	38380 59375	286 874245	=IF(MINUTE(A52)=8,1,0)	38380.58925	77.1344160552647	=((0.0119*(H52-SH12)))	=J52*2.31	=N52*0 3048	=O52-\$O\$146			
53	38380 63091	77 127	38380 63167	12 995	38380 63542	-131 551454	=IF(MINUTE(A53)=8,1,0)									

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Time	WL	MatchedBP-Time	Matched-BP	MatchET-Time	Matched-ET	FILTER	BARO	Correct-Time	Corrected-Pressure	ElapsedDay	DetrendVariable	UnbinnedPCH	Freshwater (ft of H2O)	Meters of H2O	Change in Meters
2	10/14/04 15:59	135.1	38274.67071	12.841	38274.66667	-1364.677171	1	38274.66662	135.1	0	0	130.1		312.081	95.1222868	-0.575006138
3	10/14/04 16:59	135.129	38274.71237	12.839	38274.70833	-1531.720848	1	38274.70829	135.1	0.04167	0.000128526	136.0998718		312.0807031	95.12219831	-0.575096632
4	10/14/04 17:59	135.152	38274.75404	12.842	38274.75	-1413.789574	1	38274.74995	135.1	0.08333	0.000257021	136.0997743		312.0804063	95.12210783	-0.575187104
5	10/14/04 18:59	135.146	38274.79571	12.848	38274.79167	-1039.251026	1	38274.79162	135.1	0.125	0.000385548	136.0998143		312.0801094	95.12201734	-0.575277598
6	10/14/04 19:59	135.13	38274.83737	12.853	38274.83333	-494.776013	1	38274.83329	135.1	0.16667	0.000514074	136.0994959		312.0798125	95.12192685	-0.575368091
7	10/14/04 20:59	135.115	38274.87904	12.856	38274.875	95.718231	1	38274.87495	135.1	0.20833	0.000642569	136.0993574		312.0795157	95.12183637	-0.575458563
8	10/14/04 21:59	135.1	38274.92071	12.849	38274.91667	600.9596962	1	38274.91662	135.1	0.25	0.000771095	136.0992269		312.0792188	95.12174588	-0.575549057
9	10/14/04 22:59	135.092	38274.96237	12.843	38274.95833	914.033308	1	38274.95829	135.1	0.29167	0.000899621	136.0991004		312.0789219	95.12165539	-0.575639551
10	10/14/04 23:59	135.1	38275.00404	12.84	38275	978.370086	1	38274.99995	135.1	0.33333	0.001028116	136.0998718		312.0786251	95.12156492	-0.575730023
11	10/15/04 0:59	135.1	38275.04571	12.841	38275.04167	801.391096	1	38275.04162	135.1	0.375	0.001156643	136.0998454		312.0783282	95.12147442	-0.575820516
12	10/15/04 1:59	135.115	38275.08737	12.837	38275.08333	452.061753	1	38275.08329	135.1	0.41667	0.001285169	136.0997148		312.0780313	95.12138393	-0.57591101
13	10/15/04 2:59	135.129	38275.12904	12.833	38275.125	42.349114	1	38275.12495	135.1	0.45833	0.001413664	136.0995963		312.0777344	95.12129346	-0.576001482
14	10/15/04 3:59	135.152	38275.17071	12.833	38275.16667	-303.070338	1	38275.16662	135.1	0.5	0.00154219	136.0994578		312.0774375	95.12120296	-0.576091976
15	10/15/04 4:59	135.167	38275.21237	12.836	38275.20833	-481.011783	1	38275.20829	135.1532506	0.54167	0.001670716	136.1515799		312.2001495	95.15860558	-0.538689359
16	10/15/04 5:59	135.183	38275.25404	12.836	38275.25	-438.490492	1	38275.24995	135.1589824	0.58333	0.001799211	136.15157632		312.2130932	95.162255062	-0.534744118
17	10/15/04 6:59	135.183	38275.29571	12.844	38275.29167	-187.697667	1	38275.29162	135.1600784	0.625	0.001927738	136.1601907		312.215328	95.16323199	-0.53406295
18	10/15/04 7:59	135.183	38275.33737	12.847	38275.33333	197.21914	1	38275.33329	135.1659432	0.66667	0.002056264	136.1638563		312.2285788	95.16727063	-0.530024108
19	10/15/04 8:59	135.176	38275.37904	12.837	38275.375	600.730313	1	38275.37495	135.1625278	0.70833	0.002184759	136.160343		312.2203924	95.16477559	-0.532519343
20	10/15/04 9:59	135.167	38275.42071	12.826	38275.41667	897.913842	1	38275.41662	135.1580032	0.75	0.002313285	136.1586000		312.2096437	95.16149939	-0.535795546
21	10/15/04 10:59	135.167	38275.46237	12.814	38275.45833	988.7195663	1	38275.45829	135.1601864	0.79167	0.002441811	136.1577445		312.2143899	95.16294604	-0.5343489
22	10/15/04 11:59	135.176	38275.50404	12.795	38275.5	825.033974	1	38275.49995	135.1630184	0.83333	0.002570306	136.1604481		312.2206351	95.16484957	-0.532445368
23	10/15/04 12:59	135.19	38275.54571	12.775	38275.54167	423.520643	1	38275.54162	135.1648409	0.875	0.002689833	136.1619421		312.2240862	95.16590146	-0.531393475
24	10/15/04 13:59	135.206	38275.58737	12.768	38275.58333	-138.55443	1	38275.58329	135.1701455	0.91667	0.002827359	136.1673181		312.2365049	95.1696867	-0.527608238
25	10/15/04 14:59	135.229	38275.62904	12.757	38275.625	-742.69699	1	38275.62495	135.1771717	0.95833	0.002955854	136.1742143		312.2524347	95.1745421	-0.522752835
26	10/15/04 15:59	135.244	38275.67071	12.751	38275.66667	-1258.247747	1	38275.66662	135.1780222	1	0.00308438	136.1780370		312.2541063	95.1750516	-0.522243336
27	10/15/04 16:59	135.251	38275.71237	12.751	38275.70833	-1573.639099	1	38275.70829	135.1770251	1.04167	0.003212906	136.178122		312.2515062	95.17425909	-0.523035851
28	10/15/04 17:59	135.251	38275.75404	12.756	38275.75	-1622.305786	1	38275.74995	135.1774852	1.08333	0.003341401	136.1771238		312.2522261	95.1744785	-0.522816437
29	10/15/04 18:59	135.244	38275.79571	12.763	38275.79167	-1397.373695	1	38275.79162	135.1792592	1.125	0.003469928	136.1770892		312.2560732	95.1765511	-0.521643841
30	10/15/04 19:59	135.229	38275.83737	12.772	38275.83333	-952.0884046	1	38275.83329	135.1811197	1.16667	0.003598454	136.1773212		312.2600741	95.17687057	-0.520424367
31	10/15/04 20:59	135.213	38275.87904	12.777	38275.875	-386.271883	1	38275.87495	135.1841637	1.20833	0.003726949	136.1804268		312.266809	95.17892337	-0.518371566
32	10/15/04 21:59	135.191	38275.92071	12.784	38275.91667	177.791431	1	38275.91662	135.1830817	1.25	0.003855475	136.1792252		312.2640126	95.17870105	-0.519223893
33	10/15/04 22:59	135.176	38275.96237	12.781	38275.95833	624.342831	1	38275.95829	135.1811107	1.29167	0.003984001	136.1771257		312.2591626	95.17659277	-0.52070217
34	10/15/04 23:59	135.175	38276.00404	12.783	38276	871.253586	1	38276.00995	135.1901996	1.33333	0.004112496	136.1880671		312.2798612	95.18290168	-0.514393254
35	10/16/04 0:59	135.161	38276.04571	12.786	38276.04167	888.847289	1	38276.04162	135.1802777	1.375	0.004241023	136.1800367		312.2566448	95.17582534	-0.521469595
36	10/16/04 1:59	135.168	38276.08737	12.796	38276.08333	705.796813	1	38276.08329	135.188242	1.41667	0.004369549	136.1830725		312.2747454	95.18134241	-0.515952525
37	10/16/04 2:59	135.168	38276.12904	12.805	38276.125	400.356445	1	38276.12495	135.1831282	1.45833	0.004498044	136.1786303		312.2626357	95.17765137	-0.519643573
38	10/16/04 3:59	135.183	38276.17071	12.828	38276.16667	78.750622	1	38276.16662	135.1989484	1.5	0.00462657	136.1823198		312.2942588	95.1872901	-0.510004843
39	10/16/04 4:59	135.167	38276.21237	12.858	38276.20833	-154.0113	1	38276.20829	135.1836302	1.54167	0.004750596	136.1778751		312.2632014	95.1778238	-0.514971142
40	10/16/04 5:59	135.183	38276.25404	12.873	38276.25	-223.252226	1	38276.24995	135.198806	1.58333	0.004883591	136.1917224		312.2928789	95.18686946	-0.510425475
41	10/16/04 6:59	135.183	38276.29571	12.88	38276.29167	-105.62205	1	38276.29162	135.1938744	1.625	0.005012118	136.1886823		312.286272	95.18485569	-0.512439245
42	10/16/04 7:59	135.184	38276.33737	12.882	38276.33333	164.124848	1	38276.33329	135.1949576	1.66867	0.005140644	136.1886617		312.2884772	95.18552784	-0.511767094
43	10/16/04 8:59	135.184	38276.37904	12.886	38276.375	502.709105	1	38276.37495	135.2011264	1.70833	0.005269139	136.1900573		312.3024303	95.18978074	-0.507514195
44	10/16/04 9:59	135.183	38276.42071	12.875	38276.41667	801.620764	1	38276.41662	135.2011854	1.75	0.005397665	136.1957679		312.3022236	95.18971774	-0.507577193
45	10/16/04 10:59	135.184	38276.46237	12.86	38276.45833	957.449216	1	38276.45829	135.2008405	1.79167	0.005526191	136.1903143		312.3011761	95.18939847	-0.507896471
46	10/16/04 11:59	135.184	38276.50404	12.845	38276.5	900.625032	1	38276.49995	135.1970334	1.83333	0.0055654686	136.1913789		312.2920849	95.1862748	-0.510667455
47	10/16/04 12:59	135.199	38276.54571	12.83	38276.54167	614.675849	1	38276.54162	135.2042055	1.875	0.005783213	136.1904223		312.3083556	95.19158678	-0.505708155
48	10/16/04 13:59	135.206	38276.58737	12.814	38276.58333	141.109005	1	38276.58329	135.1981728	1.91667	0.005					

## WIPP-13 Formulas

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Time	WL	MatchedBP-Time	Matched-BP	MatchET-Time	Matched-ET	FILTER	BAROCorrect-Time	Corrected-Pressure	ElapsedDay	DetrendVariable	UnwindVariables	Freshwater (ft of H2O)	Meters of H2O	Change in Meters
2	38274 66662	135 1	38274 67071	12 841	38274 66667	-1364 677171	=IF(MINUTE(A2)=59,1,0)	38274.66662	135.1	=H2-\$H\$2	=J2*0.00308438	H2-K2	=L2*2.31	=N2*0.3048	=O2-\$O\$2638
3	38274 70823	135 129	38274 71237	12 839	38274 70833	-1531 720848	=IF(MINUTE(A3)=59,1,0)	38274.70829	135.1	=H3-\$H\$2	=J3*0.00308438	H3-K3	=L3*2.31	=N3*0.3048	=O3-\$O\$2638
4	38274 74995	135 152	38274 75404	12 842	38274.75	-1413 789574	=IF(MINUTE(A4)=59,1,0)	38274.74995	135.1	=H4-\$H\$2	=J4*0.00308438	H4-K4	=L4*2.31	=N4*0.3048	=O4-\$O\$2638
5	38274 79162	135 146	38274 79571	12 848	38274.79167	-1039 251026	=IF(MINUTE(A5)=59,1,0)	38274.79162	135.1	=H5-\$H\$2	=J5*0.00308438	H5-K5	=L5*2.31	=N5*0.3048	=O5-\$O\$2638
6	38274 83329	135 13	38274 83737	12 853	38274 83333	-494 776013	=IF(MINUTE(A6)=59,1,0)	38274.83329	135.1	=H6-\$H\$2	=J6*0.00308438	H6-K6	=L6*2.31	=N6*0.3048	=O6-\$O\$2638
7	38274 87495	135 115	38274 87904	12 856	38274 875	95 718231	=IF(MINUTE(A7)=59,1,0)	38274.87495	135.1	=H7-\$H\$2	=J7*0.00308438	H7-K7	=L7*2.31	=N7*0.3048	=O7-\$O\$2638
8	38274 91662	135 1	38274 92071	12 849	38274 91667	600 956962	=IF(MINUTE(A8)=59,1,0)	38274.91662	135.1	=H8-\$H\$2	=J8*0.00308438	H8-K8	=L8*2.31	=N8*0.3048	=O8-\$O\$2638
9	38274 95829	135 092	38274 96237	12 843	38274 95833	914 033308	=IF(MINUTE(A9)=59,1,0)	38274.95829	135.1	=H9-\$H\$2	=J9*0.00308438	H9-K9	=L9*2.31	=N9*0.3048	=O9-\$O\$2638
10	38274 99995	135 1	38275 00404	12 84	38275	978 370086	=IF(MINUTE(A10)=59,1,0)	38274.99995	135.1	=H10-\$H\$2	=J10*0.00308438	H10-K10	=L10*2.31	=N10*0.3048	=O10-\$O\$2638
11	38275 04162	135 151	38275 04571	12 841	38275 04167	801 391096	=IF(MINUTE(A11)=59,1,0)	38275.04162	135.1	=H11-\$H\$2	=J11*0.00308438	H11-K11	=L11*2.31	=N11*0.3048	=O11-\$O\$2638
12	38275 08329	135 115	38275 08737	12 837	38275 08333	452 061753	=IF(MINUTE(A12)=59,1,0)	38275.08329	135.1	=H12-\$H\$2	=J12*0.00308438	H12-K12	=L12*2.31	=N12*0.3048	=O12-\$O\$2638
13	38275 12495	135 129	38275 12927	12 833	38275 125	42 349114	=IF(MINUTE(A13)=59,1,0)	38275.12495	135.1	=H13-\$H\$2	=J13*0.00308438	H13-K13	=L13*2.31	=N13*0.3048	=O13-\$O\$2638
14	38275 16662	135 152	38275 17071	12 833	38275 16667	-303 070338	=IF(MINUTE(A14)=59,1,0)	38275.16662	135.1	=H14-\$H\$2	=J14*0.00308438	H14-K14	=L14*2.31	=N14*0.3048	=O14-\$O\$2638
15	38275 20829	135 167	38275 21237	12 836	38275 20833	-481 011783	=IF(MINUTE(A15)=59,1,0)	38275.20829	135.15250602059	=H15-\$H\$2	=J15*0.00308438	H15-K15	=L15*2.31	=N15*0.3048	=O15-\$O\$2638
16	38275 24995	135 183	38275 25404	12 836	38275 245	-438 490492	=IF(MINUTE(A16)=59,1,0)	38275.24995	135.158982432774	=H16-\$H\$2	=J16*0.00308438	H16-K16	=L16*2.31	=N16*0.3048	=O16-\$O\$2638
17	38275 29162	135 183	38275 29571	12 844	38275 29167	-187 6597667	=IF(MINUTE(A17)=59,1,0)	38275.29162	135.1600784047063	=H17-\$H\$2	=J17*0.00308438	H17-K17	=L17*2.31	=N17*0.3048	=O17-\$O\$2638
18	38275 33329	135 183	38275 33737	12 847	38275 33333	197 21914	=IF(MINUTE(A18)=59,1,0)	38275.33329	135.165943206868	=H18-\$H\$2	=J18*0.00308438	H18-K18	=L18*2.31	=N18*0.3048	=O18-\$O\$2638
19	38275 37495	135 176	38275 37904	12 837	38275 375	600 730313	=IF(MINUTE(A19)=59,1,0)	38275.37495	135.165257778656	=H19-\$H\$2	=J19*0.00308438	H19-K19	=L19*2.31	=N19*0.3048	=O19-\$O\$2638
20	38275 41662	135 167	38275 42071	12 826	38275 41667	897 913842	=IF(MINUTE(A20)=59,1,0)	38275.41662	135.150081380077	=H20-\$H\$2	=J20*0.00308438	H20-K20	=L20*2.31	=N20*0.3048	=O20-\$O\$2638
21	38275.45829	135 167	38275 46237	12 814	38275 45833	988 719563	=IF(MINUTE(A21)=59,1,0)	38275.45829	135.160186351788	=H21-\$H\$2	=J21*0.00308438	H21-K21	=L21*2.31	=N21*0.3048	=O21-\$O\$2638
22	38275.49995	135 176	38275 50404	12 795	38275 5	825 033974	=IF(MINUTE(A22)=59,1,0)	38275.49995	135.163018390126	=H22-\$H\$2	=J22*0.00308438	H22-K22	=L22*2.31	=N22*0.3048	=O22-\$O\$2638
23	38275.54162	135 151	38275 54571	12 775	38275 54167	423 520643	=IF(MINUTE(A23)=59,1,0)	38275.54162	135.164640869262	=H23-\$H\$2	=J23*0.00308438	H23-K23	=L23*2.31	=N23*0.3048	=O23-\$O\$2638
24	38275.58329	135 206	38275 58737	12 768	38275 58333	-138 55443	=IF(MINUTE(A24)=59,1,0)	38275.58329	135.170145506922	=H24-\$H\$2	=J24*0.00308438	H24-K24	=L24*2.31	=N24*0.3048	=O24-\$O\$2638
25	38275.62495	135 229	38275 62904	12 757	38275 625	-742 59699	=IF(MINUTE(A25)=59,1,0)	38275.62495	135.171710019877	=H25-\$H\$2	=J25*0.00308438	H25-K25	=L25*2.31	=N25*0.3048	=O25-\$O\$2638
26	38275.66662	135 244	38275 67071	12 751	38275 66667	-1258 247747	=IF(MINUTE(A26)=59,1,0)	38275.66662	135.178022175091	=H26-\$H\$2	=J26*0.00308438	H26-K26	=L26*2.31	=N26*0.3048	=O26-\$O\$2638
27	38275.70829	135 251	38275.71237	12 751	38275 70833	-1573 639099	=IF(MINUTE(A27)=59,1,0)	38275.70829	135.177025109015	=H27-\$H\$2	=J27*0.00308438	H27-K27	=L27*2.31	=N27*0.3048	=O27-\$O\$2638
28	38275.74995	135 251	38275.75404	12 756	38275 5	-1622 305786	=IF(MINUTE(A28)=59,1,0)	38275.74995	135.177465234886	=H28-\$H\$2	=J28*0.00308438	H28-K28	=L28*2.31	=N28*0.3048	=O28-\$O\$2638
29	38275.79162	135 244	38275 79571	12 763	38275 79167	-1397 373695	=IF(MINUTE(A29)=59,1,0)	38275.79162	135.179256171328	=H29-\$H\$2	=J29*0.00308438	H29-K29	=L29*2.31	=N29*0.3048	=O29-\$O\$2638
30	38275.83329	135 229	38275 83737	12 772	38275 83333	-952 088406	=IF(MINUTE(A30)=59,1,0)	38275.83329	135.181119886838	=H30-\$H\$2	=J30*0.00308438	H30-K30	=L30*2.31	=N30*0.3048	=O30-\$O\$2638
31	38275.87495	135 213	38275 87904	12 777	38275 875	-388 217883	=IF(MINUTE(A31)=59,1,0)	38275.87495	135.184163723198	=H31-\$H\$2	=J31*0.00308438	H31-K31	=L31*2.31	=N31*0.3048	=O31-\$O\$2638
32	38275.91662	135 191	38275 92071	12 784	38275 91667	177 791431	=IF(MINUTE(A32)=59,1,0)	38275.91662	135.183081717531	=H32-\$H\$2	=J32*0.00308438	H32-K32	=L32*2.31	=N32*0.3048	=O32-\$O\$2638
33	38275.95829	135 176	38275 96237	12 781	38275 95833	624 342831	=IF(MINUTE(A33)=59,1,0)	38275.95829	135.181110678493	=H33-\$H\$2	=J33*0.00308438	H33-K33	=L33*2.31	=N33*0.3048	=O33-\$O\$2638
34	38275.99995	135 175	38275 38276	12 783	38276	871 253586	=IF(MINUTE(A34)=59,1,0)	38275.99995	135.190199582885	=H34-\$H\$2	=J34*0.00308438	H34-K34	=L34*2.31	=N34*0.3048	=O34-\$O\$2638
35	38276 04162	135 161	38276 04571	12 786	38276 04167	888 847289	=IF(MINUTE(A35)=59,1,0)	38276.04162	135.19027743802	=H35-\$H\$2	=J35*0.00308438	H35-K35	=L35*2.31	=N35*0.3048	=O35-\$O\$2638
36	38276.08329	135 168	38276 08737	12 796	38276 08333	705 796813	=IF(MINUTE(A36)=59,1,0)	38276.08329	135.188242037801	=H36-\$H\$2	=J36*0.00308438	H36-K36	=L36*2.31	=N36*0.3048	=O36-\$O\$2638
37	38276 12495	135 168	38276 12927	12 805	38276 125	400 356445	=IF(MINUTE(A37)=59,1,0)	38276.12495	135.183126222902	=H37-\$H\$2	=J37*0.00308438	H37-K37	=L37*2.31	=N37*0.3048	=O37-\$O\$2638
38	38276 16662	135 183	38276 17071	12 828	38276 16667	78 75062	=IF(MINUTE(A38)=59,1,0)	38276.16662	135.1984946410494	=H38-\$H\$2	=J38*0.00308438	H38-K38	=L38*2.31	=N38*0.3048	=O38-\$O\$2638
39	38276 20829	135 167	38276 21237	12 858	38276 20833	-154 0113	=IF(MINUTE(A39)=59,1,0)	38276.20829	135.198330174312	=H39-\$H\$2	=J39*0.00308438	H39-K39	=L39*2.31	=N39*0.3048	=O39-\$O\$2638
40	38276.24995	135 183	38276 25404	12 873	38276 25226	-223 252226	=IF(MINUTE(A40)=59,1,0)	38276.24995	135.196606023211	=H40-\$H\$2	=J40*0.00308438	H40-K40	=L40*2.31	=N40*0.3048	=O40-\$O\$2638
41	38276.29162	135 183	38276 29571	12 88	38276 29167	-105 62205	=IF(MINUTE(A41)=59,1,0)	38276.29162	135.193874437114	=H41-\$H\$2	=J41*0.00308438	H41-K41	=L41*2.31	=N41*0.3048	=O41-\$O\$2638
42	38276.33329	135 184	38276 33737	12 882	38276 33333	164 124848	=IF(MINUTE(A42)=59,1,0)	38276.33329	135.194957804469	=H42-\$H\$2	=J42*0.00308438	H42-K42	=L42*2.31	=N42*0.3048	=O42-\$O\$2638
43	38276.37495	135 184	38276 37904	12 886	38276 373	502 709105	=IF(MINUTE(A43)=59,1,0)	38276.37495	135.201126339487	=H43-\$H\$2	=J43*0.00308438	H43-K43	=L43*2.31	=N43*0.3048	=O43-\$O\$2638
44	38276.41662	135 184	38276 42071	12 875	38276 41667	801 620764	=IF(MINUTE(A44)=59,1,0)	38276.41662	135.201185445282	=H44-\$H\$2	=J44*0.00308438	H44-K44	=L44*2.31	=N44*0.3048	=O44-\$O\$2638
45	38276.45829	135 184	38276 46237	12 86	38276 45833	957 449216	=IF(MINUTE(A45)=59,1,0)	38276.45829	135.200804050798	=H45-\$H\$2	=J45*0.00308438	H45-K45	=L45*2.31	=N45*0.3048	=O45-\$O\$2638
46	38276.49995	135 184	38276 50404	12 845	38276 5	900 625032	=IF(MINUTE(A46)=59,1,0)	38276.49995	135.197033439478	=H46-\$H\$2	=J46*0.00308438	H46-K46	=L46*2.31	=N46*0.3048	=O46-\$O\$2638
47	38276.54162	135 199	38276 54571	12 833	38276 54167	614 675849	=IF(MINUTE(A47)=59,1,0)	38276.54162	135.204205644999	=H47-\$H\$2	=J47*0.00308438	H47-K47	=L47*2.31	=N47*0.3048	=O47-\$O\$2638
48	38276.58329	135 206	38276 58737	12 814	38276 58333	141 109005	=IF(MINUTE(A48)=59,1,0)	38276.58329	135.198172817144	=H48-\$H\$2	=J48*0.00308438	H48-K48</			

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	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Time	WL	MatchedBP-Time	Matched-BP	MatchET-Time	Matched-ET	BARO	Correct-Time	Corrected-Pressure	ElapsedDays	DetrendVariable	Detrended-PS	Freshwater (ft of H2O)	Meters of H2O	Change in Meters	
2	1/18/2005 16:17	113.049	38370.68	13.137	38370.68056	200.589615	38370.67891	113.049	0	0	113.049	261.14319	79.59644431	-0.007476492		
3	1/18/2005 17:17	113.04	38370.72	13.146	38370.72222	222.326908	38370.72059	113.049	0.04167	0.00050004	113.0495	261.1420349	79.59609224	-0.007828564		
4	1/18/2005 18:17	113.031	38370.76	13.143	38370.76389	284.875981	38370.76225	113.049	0.08334	0.00100008	113.0479099	261.1408798	79.59574017	-0.008180636		
5	1/18/2005 19:17	113.022	38370.8	13.14	38370.80556	376.894788	38370.80391	113.049	0.125	0.0015	113.0475	261.139725	79.59538818	-0.008532624		
6	1/18/2005 20:17	113.022	38370.85	13.149	38370.84722	472.461343	38370.84558	113.049	0.16667	0.00200004	113.047	261.1385699	79.59503611	-0.00884696		
7	1/18/2005 21:17	113.022	38370.89	13.151	38370.88889	536.472932	38370.88725	113.049	0.20834	0.00250008	113.0464999	261.1374148	79.59468404	-0.009236768		
8	1/18/2005 22:17	113.022	38370.93	13.152	38370.93056	533.385027	38370.92891	113.049	0.25	0.003	113.046	261.13626	79.59433205	-0.009588756		
9	1/18/2005 23:17	113.031	38370.97	13.147	38370.97222	437.415759	38370.97058	113.049	0.29167	0.00350004	113.0455	261.1351049	79.59397998	-0.009940828		
10	1/19/2005 0:17	113.049	38371.01	13.146	38371.01389	241.500257	38371.01225	113.049	0.33334	0.00400008	113.0448989	261.1339498	79.5938279	-0.0102929		
11	1/19/2005 1:17	113.058	38371.05	13.139	38371.05556	-37.836914	38371.05391	113.049	0.375	0.0045	113.0445	261.132795	79.59327592	-0.010644888		
12	1/19/2005 2:17	113.057	38371.1	13.141	38371.09722	-361.664578	38371.09558	113.049	0.41667	0.00500004	113.044	261.1316399	79.59292384	-0.01099696		
13	1/19/2005 3:17	113.067	38371.14	13.138	38371.13889	-676.152616	38371.13725	113.049	0.45834	0.00550008	113.0434999	261.1304848	79.59257177	-0.011349032		
14	1/19/2005 4:17	113.067	38371.18	13.143	38371.18056	-924.664647	38371.17891	113.049	0.5	0.006	113.043	261.12933	79.59221978	-0.01170102		
15	1/19/2005 5:17	113.058	38371.22	13.145	38371.22222	-1061.139234	38371.22058	113.0609294	0.54167	0.00650004	113.0544294	261.1557318	79.6026706	-0.003653739		
16	1/19/2005 6:17	113.058	38371.26	13.154	38371.26389	-1060.989517	38371.26225	113.0680684	0.58334	0.00700008	113.0610883	261.1710679	79.60494149	0.001020685		
17	1/19/2005 7:17	113.04	38371.3	13.164	38371.30556	-926.549806	38371.30391	113.0600382	0.625	0.0075	113.0525382	261.1513633	79.59893554	-0.004985261		
18	1/19/2005 8:17	113.031	38371.35	13.176	38371.34722	-685.824859	38371.34558	113.0596714	0.66687	0.00800004	113.05187713	261.1493808	79.59832516	-0.005595644		
19	1/19/2005 9:17	113.031	38371.39	13.181	38371.38889	-385.261178	38371.38725	113.0643275	0.70834	0.00850008	113.0558274	261.1589613	79.60125142	-0.002669386		
20	1/19/2005 10:17	113.04	38371.43	13.18	38371.43056	-78.78694	38371.42891	113.0711681	0.75	0.009	113.0621881	261.1736038	79.60571442	0.001793619		
21	1/19/2005 11:17	113.04	38371.47	13.178	38371.47222	184.1336	38371.47058	113.0768688	0.79187	0.00950004	113.0681888	261.1644161	79.60291403	-0.00106775		
22	1/19/2005 12:17	113.058	38371.51	13.159	38371.51389	368.308156	38371.51225	113.0713304	0.83334	0.01000008	113.0613303	261.171673	79.60512594	0.00120514		
23	1/19/2005 13:17	113.075	38371.55	13.142	38371.55556	459.226081	38371.55391	113.0753705	0.875	0.0105	113.06468705	261.1798509	79.60761855	0.003897744		
24	1/19/2005 14:17	113.075	38371.6	13.139	38371.59722	464.371163	38371.59558	113.0726037	0.91667	0.01100004	113.0616037	261.1723045	79.60531842	0.001397619		
25	1/19/2005 15:17	113.075	38371.64	13.138	38371.63889	409.811011	38371.63725	113.0743062	0.95834	0.01150008	113.0628081	261.1750821	79.60616501	0.00224421		
26	1/19/2005 16:17	113.067	38371.68	13.13	38371.68056	332.728613	38371.67891	113.0686915	1	0.012	113.0549815	261.1570072	79.6065581	-0.003264997		
27	1/19/2005 17:17	113.067	38371.72	13.128	38371.72222	271.452231	38371.72058	113.0724703	1.04167	0.01250004	113.05989702	261.1685313	79.60416833	0.00247523		
28	1/19/2005 18:17	113.049	38371.76	13.132	38371.76389	255.080402	38371.76225	113.065436	1.08334	0.01300008	113.0524059	261.151127	79.59886352	-0.005057285		
29	1/19/2005 19:17	113.04	38371.8	13.135	38371.80556	295.072964	38371.80391	113.065047	1.125	0.0135	113.0515457	261.1490735	79.59823761	-0.005683198		
30	1/19/2005 20:17	113.04	38371.85	13.14	38371.84722	381.012654	38371.84558	113.0726708	1.16667	0.01400004	113.0586707	261.1655294	79.60325335	-0.000667451		
31	1/19/2005 21:17	113.04	38371.89	13.143	38371.88889	482.021994	38371.88725	113.0776434	1.20834	0.01450008	113.0631433	261.175861	79.60640243	0.002481629		
32	1/19/2005 22:17	113.04	38371.93	13.145	38371.93056	554.06444	38371.92891	113.0779396	1.25	0.015	113.0629398	261.1753905	79.60625901	0.002338209		
33	1/19/2005 23:17	113.049	38371.97	13.14	38371.97222	551.779809	38371.97058	113.0780603	1.29187	0.01550004	113.0626603	261.1745143	79.60599195	0.002071141		
34	1/20/2005 0:17	113.067	38372.01	13.128	38372.01389	442.012503	38372.01225	113.0806787	1.33334	0.01600008	113.0646750	261.1794076	79.60748343	0.003562629		
35	1/20/2005 1:17	113.084	38372.05	13.119	38372.05556	215.30507	38372.05391	113.0836277	1.375	0.0165	113.0657177	261.1850649	79.60920779	0.005286991		
36	1/20/2005 2:17	113.103	38372.1	13.102	38372.09722	-108.211425	38372.09558	113.0837975	1.41667	0.01700004	113.0667975	261.1843022	79.608697532	0.005054512		
37	1/20/2005 3:17	113.111	38372.14	13.095	38372.13889	-480.75632	38372.13725	113.080042	1.45834	0.01750008	113.0625041	261.1743845	79.60595241	0.002031605		
38	1/20/2005 4:17	113.12	38372.18	13.088	38372.18056	-836.672328	38372.17891	113.0811477	1.5	0.018	113.0631477	261.1758713	79.60640557	0.002484765		
39	1/20/2005 5:17	113.129	38372.22	13.089	38372.22222	-1107.639379	38372.22058	113.0895601	1.54167	0.01850004	113.071700	261.1941487	79.61197651	0.008055706		
40	1/20/2005 6:17	113.12	38372.26	13.093	38372.26389	-1239.206072	38372.26225	113.0853747	1.58334	0.01900008	113.0663747	261.1832524	79.60867759	0.004756791		
41	1/20/2005 7:17	113.12	38372.3	13.105	38372.30556	-1204.082213	38372.30391	113.0873655	1.625	0.0195	113.0678655	261.1867894	79.60972731	0.005806505		
42	1/20/2005 8:17	113.111	38372.35	13.106	38372.34722	-1008.634739	38372.34558	113.0921844	1.66667	0.02000004	113.0721843	261.1967458	79.61267812	0.008847316		
43	1/20/2005 9:17	113.102	38372.39	13.115	38372.38889	-691.057472	38372.38725	113.0900171	1.70834	0.02050008	113.0688870	261.1909398	79.61099844	0.007077636		
44	1/20/2005 10:17	113.102	38372.43	13.113	38372.43056	-312.006493	38372.42891	113.0904454	1.75	0.021	113.0654454	261.1904189	79.61083968	0.006918879		
45	1/20/2005 11:17	113.111	38372.47	13.107	38372.47222	59.629048	38372.47058	113.0935409	1.79167	0.02150004	113.0720403	261.1964144	79.61266712	0.008746312		
46	1/20/2005 12:17	113.12	38372.51	13.087	38372.51389	362.176652	38372.51225	113.0860426	1.83334	0.02200008	113.0660423	261.1825582	79.60844374	0.004522932		
47	1/20/2005 13:17	113.138	38372.55	13.069	38372.55556	554.225252	38372.55391	113.0903121	1.875	0.0225	113.06878121	261.1866459	79.60968966	0.005768857		
48	1/20/2005 14:17	113.146	38372.6	13.057	38372.59722	622.4534	38372.59558	113.0881199	1.91667	0.02300004	113.0681199	261.1827368	79.60849818	0.004577381		
49	1/20/2005 15:17	113.155	38372.64	13.055	38372.63889	582.722262	38372.63725	113.0954001	1.95834	0.02350008	113.07171043	261.1980891	79.61256796	0.008647158		
50	1/20/2005 16:17	113.155	38372.68	13.054	38372.68056	474.386854	38372.67891	113.0991045	2	0.024	113.0731042	261.2034914	79.61482417	0.010903369		
51	1/20/2005 17:17	113.138	38372.72	13.054	38372.72222	349.191864	38372.72058	113.0989194	2.04167	0.024						

## WIPP-30 Formulas

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Time	VWL	MatchedBP-Time	Matched-BP	MatchET-Time	Matched-ET	BARO	Correct-Time	Corrected-Pressure	ElapsedDays	DefrandVariable	DefrandedPSI	Freshwater (ft of H2O)	Meters of H2O	Change in Meters	
2	38370.67891	113.049	38370.68	13.137	38370.680556	200.589615	38370.67891	113.049	=H2-\$H\$2	=J2*0.012	=L2-K2	=L2*2.31	=N2*0.3048	=O2-\$0\$334		
3	38370.72058	113.04	38370.72	13.146	38370.72222	222.326908	38370.72058	113.049	=H3-\$H\$2	=J3*0.012	=L3-K3	=L3*2.31	=N3*0.3048	=O3-\$0\$334		
4	38370.76225	113.031	38370.76	13.143	38370.763889	284.875981	38370.76225	113.049	=H4-\$H\$2	=J4*0.012	=L4-K4	=L4*2.31	=N4*0.3048	=O4-\$0\$334		
5	38370.80391	113.022	38370.8	13.14	38370.805556	376.884788	38370.80391	113.049	=H5-\$H\$2	=J5*0.012	=L5-K5	=L5*2.31	=N5*0.3048	=O5-\$0\$334		
6	38370.84558	113.022	38370.85	13.149	38370.847222	472.461343	38370.84558	113.049	=H6-\$H\$2	=J6*0.012	=L6-K6	=L6*2.31	=N6*0.3048	=O6-\$0\$334		
7	38370.88725	113.022	38370.89	13.151	38370.888889	536.472932	38370.88725	113.049	=H7-\$H\$2	=J7*0.012	=L7-K7	=L7*2.31	=N7*0.3048	=O7-\$0\$334		
8	38370.92891	113.022	38370.93	13.152	38370.930556	533.385027	38370.92891	113.049	=H8-\$H\$2	=J8*0.012	=L8-K8	=L8*2.31	=N8*0.3048	=O8-\$0\$334		
9	38370.97058	113.031	38370.97	13.147	38370.972222	437.415759	38370.97058	113.049	=H9-\$H\$2	=J9*0.012	=L9-K9	=L9*2.31	=N9*0.3048	=O9-\$0\$334		
10	38371.01225	113.049	38371.01	13.146	38371.013889	241.500257	38371.01225	113.049	=H10-\$H\$2	=J10*0.012	=L10-K10	=L10*2.31	=N10*0.3048	=O10-\$0\$334		
11	38371.05391	113.058	38371.05	13.139	38371.055556	-37.836914	38371.05391	113.049	=H11-\$H\$2	=J11*0.012	=L11-K11	=L11*2.31	=N11*0.3048	=O11-\$0\$334		
12	38371.09558	113.057	38371.1	13.141	38371.097222	-361.664578	38371.09558	113.049	=H12-\$H\$2	=J12*0.012	=L12-K12	=L12*2.31	=N12*0.3048	=O12-\$0\$334		
13	38371.13725	113.067	38371.14	13.138	38371.138889	-676.152616	38371.13725	113.049	=H13-\$H\$2	=J13*0.012	=L13-K13	=L13*2.31	=N13*0.3048	=O13-\$0\$334		
14	38371.17891	113.067	38371.18	13.143	38371.180556	-924.664647	38371.17891	113.049	=H14-\$H\$2	=J14*0.012	=L14-K14	=L14*2.31	=N14*0.3048	=O14-\$0\$334		
15	38371.22058	113.058	38371.22	13.145	38371.222222	-1061.139234	38371.22058	113.060929408031	=H15-\$H\$2	=J15*0.012	=L15-K15	=L15*2.31	=N15*0.3048	=O15-\$0\$334		
16	38371.26225	113.058	38371.26	13.154	38371.263889	-1060.989517	38371.26225	113.068068424473	=H16-\$H\$2	=J16*0.012	=L16-K16	=L16*2.31	=N16*0.3048	=O16-\$0\$334		
17	38371.30391	113.04	38371.3	13.164	38371.305556	-926.549806	38371.30391	113.060038238298	=H17-\$H\$2	=J17*0.012	=L17-K17	=L17*2.31	=N17*0.3048	=O17-\$0\$334		
18	38371.34558	113.031	38371.35	13.176	38371.347222	-685.824859	38371.34558	113.058671364693	=H18-\$H\$2	=J18*0.012	=L18-K18	=L18*2.31	=N18*0.3048	=O18-\$0\$334		
19	38371.38725	113.031	38371.39	13.181	38371.388889	-385.261178	38371.38725	113.064327501833	=H19-\$H\$2	=J19*0.012	=L19-K19	=L19*2.31	=N19*0.3048	=O19-\$0\$334		
20	38371.42891	113.04	38371.43	13.18	38371.430556	-78.766994	38371.42891	113.071166125899	=H20-\$H\$2	=J20*0.012	=L20-K20	=L20*2.31	=N20*0.3048	=O20-\$0\$334		
21	38371.47058	113.04	38371.47	13.178	38371.472222	184.1336	38371.47058	113.06768883055	=H21-\$H\$2	=J21*0.012	=L21-K21	=L21*2.31	=N21*0.3048	=O21-\$0\$334		
22	38371.51225	113.058	38371.51	13.159	38371.513889	368.308156	38371.51225	113.071330401773	=H22-\$H\$2	=J22*0.012	=L22-K22	=L22*2.31	=N22*0.3048	=O22-\$0\$334		
23	38371.55391	113.075	38371.55	13.142	38371.555556	459.280801	38371.55391	113.075370510784	=H23-\$H\$2	=J23*0.012	=L23-K23	=L23*2.31	=N23*0.3048	=O23-\$0\$334		
24	38371.59558	113.075	38371.6	13.139	38371.597222	464.371163	38371.59558	113.072803735849	=H24-\$H\$2	=J24*0.012	=L24-K24	=L24*2.31	=N24*0.3048	=O24-\$0\$334		
25	38371.63725	113.075	38371.64	13.138	38371.638889	409.811011	38371.63725	113.074306169526	=H25-\$H\$2	=J25*0.012	=L25-K25	=L25*2.31	=N25*0.3048	=O25-\$0\$334		
26	38371.67891	113.067	38371.68	13.13	38371.680556	332.728613	38371.67891	113.066981489842	=H26-\$H\$2	=J26*0.012	=L26-K26	=L26*2.31	=N26*0.3048	=O26-\$0\$334		
27	38371.72058	113.067	38371.72	13.128	38371.722222	271.452231	38371.72058	113.072470280887	=H27-\$H\$2	=J27*0.012	=L27-K27	=L27*2.31	=N27*0.3048	=O27-\$0\$334		
28	38371.76225	113.049	38371.76	13.132	38371.763889	255.080402	38371.76225	113.065436024123	=H28-\$H\$2	=J28*0.012	=L28-K28	=L28*2.31	=N28*0.3048	=O28-\$0\$334		
29	38371.80391	113.04	38371.8	13.135	38371.805556	295.072964	38371.80391	113.065046877598	=H29-\$H\$2	=J29*0.012	=L29-K29	=L29*2.31	=N29*0.3048	=O29-\$0\$334		
30	38371.84558	113.04	38371.85	13.14	38371.847222	381.012654	38371.84558	113.072870763917	=H30-\$H\$2	=J30*0.012	=L30-K30	=L30*2.31	=N30*0.3048	=O30-\$0\$334		
31	38371.88725	113.04	38371.89	13.143	38371.888889	482.021994	38371.88725	113.077643386911	=H31-\$H\$2	=J31*0.012	=L31-K31	=L31*2.31	=N31*0.3048	=O31-\$0\$334		
32	38371.92891	113.04	38371.93	13.145	38371.930556	554.06444	38371.92891	113.077939594034	=H32-\$H\$2	=J32*0.012	=L32-K32	=L32*2.31	=N32*0.3048	=O32-\$0\$334		
33	38371.97058	113.049	38371.97	13.14	38371.972222	551.779809	38371.97058	113.078063024207	=H33-\$H\$2	=J33*0.012	=L33-K33	=L33*2.31	=N33*0.3048	=O33-\$0\$334		
34	38372.01225	113.067	38372.01	13.128	38372.013889	442.012503	38372.01225	113.0806786889194	=H34-\$H\$2	=J34*0.012	=L34-K34	=L34*2.31	=N34*0.3048	=O34-\$0\$334		
35	38372.05391	113.084	38372.05	13.119	38372.055556	215.30507	38372.05391	113.083627681002	=H35-\$H\$2	=J35*0.012	=L35-K35	=L35*2.31	=N35*0.3048	=O35-\$0\$334		
36	38372.09558	113.103	38372.1	13.102	38372.097222	-108.211425	38372.09558	113.083797538601	=H36-\$H\$2	=J36*0.012	=L36-K36	=L36*2.31	=N36*0.3048	=O36-\$0\$334		
37	38372.13725	113.111	38372.14	13.095	38372.138889	-480.75632	38372.13725	113.080004212107	=H37-\$H\$2	=J37*0.012	=L37-K37	=L37*2.31	=N37*0.3048	=O37-\$0\$334		
38	38372.17891	113.12	38372.18	13.088	38372.180556	-836.672328	38372.17891	113.081147744581	=H38-\$H\$2	=J38*0.012	=L38-K38	=L38*2.31	=N38*0.3048	=O38-\$0\$334		
39	38372.22058	113.129	38372.22	13.089	38372.222222	-1107.639379	38372.22058	113.0895660063367	=H39-\$H\$2	=J39*0.012	=L39-K39	=L39*2.31	=N39*0.3048	=O39-\$0\$334		
40	38372.26225	113.12	38372.26	13.093	38372.263889	-1239.206072	38372.26225	113.085374730301	=H40-\$H\$2	=J40*0.012	=L40-K40	=L40*2.31	=N40*0.3048	=O40-\$0\$334		
41	38372.30391	113.112	38372.3	13.105	38372.305556	-1204.028223	38372.30391	113.087365534505	=H41-\$H\$2	=J41*0.012	=L41-K41	=L41*2.31	=N41*0.3048	=O41-\$0\$334		
42	38372.34558	113.111	38372.35	13.106	38372.347222	-1008.634739	38372.34558	113.092184368496	=H42-\$H\$2	=J42*0.012	=L42-K42	=L42*2.31	=N42*0.3048	=O42-\$0\$334		
43	38372.38725	113.102	38372.39	13.115	38372.388889	-691.057472	38372.38725	113.090170973784	=H43-\$H\$2	=J43*0.012	=L43-K43	=L43*2.31	=N43*0.3048	=O43-\$0\$334		
44	38372.42891	113.102	38372.43	13.113	38372.430556	-312.006493	38372.42891	113.090445414287	=H44-\$H\$2	=J44*0.012	=L44-K44	=L44*2.31	=N44*0.3048	=O44-\$0\$334		
45	38372.47058	113.111	38372.47	13.107	38372.472222	59.629048	38372.47058	113.093540915314	=H45-\$H\$2	=J45*0.012	=L45-K45	=L45*2.31	=N45*0.3048	=O45-\$0\$334		
46	38372.51225	113.12	38372.51	13.087	38372.513889	362.176652	38372.51225	113.098042585437	=H46-\$H\$2	=J46*0.012	=L46-K46	=L46*2.31	=N46*0.3048	=O46-\$0\$334		
47	38372.55391	113.138	38372.55	13.069	38372.555556	554.225252	38372.55391	113.090312064433	=H47-\$H\$2	=J47*0.012	=L47-K47	=L47*2.31	=N47*0.3048	=O47-\$0\$334		
48	38372.59558	113.146	38372.6	13.057	38372.597222	622.4534	38372.59558	113.088119878586	=H48-\$H\$2	=J48*0.012	=L48-K48	=L48*2.31	=N48*0.3048	=O48-\$0\$334		
49	38372.63725	113.155	38372.64	13.056	38372.638889	582.722262	38372.63725	113.095400129629	=H49-\$H\$2	=J49*0.012	=L49-K49	=L49*2.31	=N49*0.3048	=O49-\$0\$334		
50	38372.67891	113.155	38372.68	13.054	38372.680556	474.386854	38372.67891	113.099104493813	=H50-\$H\$2	=J50*0.012	=L50-K50	=L50*2.31	=N50*0.3048	=O50-\$0\$334		
51	38372.72058	113.138	38372.72	13.054	38372.722222	349.191864	38372.72058	113.089019444579	=H51-\$H\$2	=J51*0.012	=L51-K51	=L51*2.31	=N51*0.3048	=O51-\$0\$334		
52	38372.76225	113.129	38372.76	13.054	38372.763889	257.275101	38372.76225	113.089524688708	=H52-\$H\$2	=J52*0.012	=L52-K52	=L52*2.31	=N52*0.3048	=O52-\$0\$334		
53	38372.80391	113.12	38372.8	13.056	38372.805556	233.514605	38372.80391	113.0904463885388	=H53-\$H\$2	=J53*0.012	=L53-K53	=L53*2.31	=N53*0.3048	=O53-\$0\$334		
54	38372.84558	113.12	38372.85	1												

## WQSP-1

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
1	Time	WL	Matched-BP-Time	Matched-BP	Match-ET-Time	Matched-ET	FILTER	BARO	Correct-Time	Corrected-Pressure	ElapsedDay	Detrend	Variable	DetrendedFor	Freshwater (ft of H2O)	Meters of H2O	Change in Meters
2	1/26/05 9:18	84.742	38378.39208	13.068	38378.38542	622.184266	1	38378.36767	84.742	0	0	0	84.742	195.75402	59.6658253	0.133831092	
3	1/26/05 10:18	84.742	38378.43375	13.07	38378.42708	810.691923	1	38378.42934	84.742	0.04167	0.000566712	0	84.74143329	195.7527108	59.66542628	0.133432077	
4	1/26/05 11:18	84.735	38378.47542	13.067	38378.46875	836.164495	1	38378.47101	84.742	0.08334	0.001133424	0	84.74088658	195.7514018	59.66502727	0.133033062	
5	1/26/05 12:18	84.742	38378.51708	13.049	38378.51042	657.333274	1	38378.51267	84.742	0.125	0.0017	0	84.7403	195.750093	59.66462835	0.132634143	
6	1/26/05 13:18	84.757	38378.55875	13.04	38378.55208	283.801421	1	38378.55434	84.742	0.16667	0.002266712	0	84.73973029	195.7467839	59.66422933	0.132235127	
7	1/26/05 14:18	84.763	38378.60042	13.037	38378.59375	-223.270741	1	38378.59601	84.742	0.20834	0.002833424	0	84.73918658	195.7474748	59.66386302	0.1318636112	
8	1/26/05 15:18	84.763	38378.64208	13.036	38378.63542	-763.889563	1	38378.63767	84.742	0.25	0.0034	0	84.73870806	195.746166	59.6634314	0.131437193	
9	1/26/05 16:18	84.778	38378.68375	13.037	38378.67708	-1222.713671	1	38378.67934	84.76939572	0.29167	0.003966712	0	84.7685429	195.808141	59.68232138	0.150327172	
10	1/26/05 17:18	84.778	38378.72542	13.046	38378.71875	-1497.600718	1	38378.72101	84.76739932	0.33334	0.004533424	0	84.76685559	195.8022202	59.68051672	0.148522519	
11	1/26/05 18:18	84.772	38378.76708	13.054	38378.76042	-1525.766743	1	38378.76287	84.7653037	0.375	0.0051	0	84.76020037	195.7960706	59.6786423	0.1466481	
12	1/26/05 19:18	84.778	38378.80875	13.052	38378.80208	-1300.361155	1	38378.80434	84.77779847	0.41667	0.005666712	0	84.77213175	195.8236244	59.6870407	0.155046499	
13	1/26/05 20:18	84.765	38378.85042	13.054	38378.84375	-872.660328	1	38378.84801	84.77318777	0.45834	0.006233424	0	84.76895434	195.8116645	59.68339535	0.151401146	
14	1/26/05 21:18	84.741	38378.89208	13.063	38378.88542	-339.053852	1	38378.88767	84.76620998	0.5	0.0068	0	84.76140990	195.7988571	59.67949163	0.147497427	
15	1/26/05 22:18	84.727	38378.93375	13.063	38378.92708	183.653521	1	38378.92934	84.77142097	0.54167	0.007366712	0	84.76045435	195.8049653	59.68135343	0.149359227	
16	1/26/05 23:18	84.72	38378.97542	13.056	38378.96875	587.780173	1	38378.97101	84.77458588	0.58334	0.007933424	0	84.75855255	195.8109674	59.68318286	0.15118866	
17	1/27/05 0:18	84.721	38379.01708	13.041	38379.01042	801.064013	1	38379.01287	84.77579858	0.625	0.0085	0	84.76729888	195.8124551	59.68363632	0.151642112	
18	1/27/05 1:18	84.72	38379.05875	13.041	38379.05208	802.821823	1	38379.05434	84.7733807	0.66667	0.009066712	0	84.76431389	195.8055565	59.68153631	0.149542106	
19	1/27/05 2:18	84.727	38379.10042	13.037	38379.09375	626.157238	1	38379.09601	84.77326853	0.70834	0.009633424	0	84.76063511	195.8039971	59.68105832	0.149064113	
20	1/27/05 3:18	84.744	38379.14208	13.037	38379.13542	346.329102	1	38379.13787	84.77798331	0.75	0.0102	0	84.76778331	195.8135794	59.68397901	0.151984809	
21	1/27/05 4:18	84.748	38379.18375	13.04	38379.17708	58.964256	1	38379.17934	84.7700134	0.79167	0.010766712	0	84.75924699	195.7938599	59.67796848	0.14597428	
22	1/27/05 5:18	84.774	38379.22542	13.037	38379.21875	-145.883069	1	38379.22101	84.78114281	0.83334	0.011333424	0	84.77000038	195.8182597	59.68540555	0.153411345	
23	1/27/05 6:18	84.788	38379.26708	13.037	38379.26042	-207.180923	1	38379.26287	84.78134238	0.875	0.0119	0	84.76944238	195.8174119	59.68514715	0.153152943	
24	1/27/05 7:18	84.787	38379.30875	13.04	38379.30208	-108.213225	1	38379.30434	84.77741478	0.91667	0.012466712	0	84.76814805	195.80703	59.6818274	0.14998854	
25	1/27/05 8:18	84.778	38379.35042	13.046	38379.34375	119.744865	1	38379.34601	84.77084992	0.95834	0.013033424	0	84.7578165	195.7905561	59.6769615	0.1449673	
26	1/27/05 9:18	84.772	38379.39208	13.051	38379.38542	405.987277	1	38379.38767	84.77272684	1.04167	0.014166712	0	84.75630004	195.793715	59.67792434	0.145930138	
27	1/27/05 10:18	84.763	38379.43375	13.051	38379.42708	658.93725	1	38379.42934	84.77246867	1.04167	0.014166712	0	84.75700014	195.7916731	59.67730196	0.145037758	
28	1/27/05 11:18	84.756	38379.47542	13.048	38379.46875	790.186674	1	38379.47101	84.77253956	1.08334	0.014733424	0	84.75695421	195.7905322	59.67695421	0.144960002	
29	1/27/05 12:18	84.763	38379.51708	13.033	38379.51042	738.215729	1	38379.51287	84.77805765	1.125	0.0153	0	84.76257685	195.8019702	59.68040501	0.148446304	
30	1/27/05 13:18	84.771	38379.55875	13.016	38379.55208	485.969448	1	38379.55434	84.77803021	1.16667	0.015866712	0	84.76070355	195.7973637	59.67903645	0.147042248	
31	1/27/05 14:18	84.781	38379.60042	13.011	38379.59375	67.732086	1	38379.59601	84.77791675	1.20834	0.018433424	0	84.75848333	195.7990265	59.67954327	0.147549068	
32	1/27/05 15:18	84.787	38379.64208	13.015	38379.63542	-436.885741	1	38379.63787	84.77772304	1.25	0.017	0	84.75802004	195.7972702	59.67900797	0.147013761	
33	1/27/05 16:18	84.793	38379.68375	13.015	38379.67708	-920.951056	1	38379.67934	84.77546091	1.29167	0.017566712	0	84.75780442	195.7907356	59.67701621	0.145022007	
34	1/27/05 17:18	84.795	38379.72542	13.029	38379.71875	-1276.154044	1	38379.72101	84.77622435	1.33334	0.018133424	0	84.75600003	195.79119	59.67715473	0.145160522	
35	1/27/05 18:18	84.802	38379.76708	13.032	38379.76042	-1420.232878	1	38379.76287	84.78329392	1.375	0.0187	0	84.75450082	195.806212	59.6817334	0.1497392	
36	1/27/05 19:18	84.796	38379.80875	13.033	38379.80208	-1318.554453	1	38379.80434	84.77836436	1.41667	0.019266712	0	84.75309765	195.7935156	59.67786354	0.145869341	
37	1/27/05 20:18	84.787	38379.85042	13.028	38379.84375	-993.719757	1	38379.84601	84.7737097	1.45834	0.019833424	0	84.7518728	195.7814542	59.6741872	0.142193035	
38	1/27/05 21:18	84.786	38379.89208	13.026	38379.88542	-520.196615	1	38379.88767	84.78145293	1.5	0.0204	0	84.75105203	195.7980323	59.678924024	0.147246031	
39	1/27/05 22:18	84.765	38379.93375	13.032	38379.92708	-522.9399	1	38379.92934	84.77717835	1.54167	0.020966712	0	84.750221164	195.78019702	59.680404051	0.1480446304	
40	1/27/05 23:18	84.757	38379.97542	13.034	38379.96875	438.757972	1	38379.97101	84.78541907	1.58334	0.021533424	0	84.75085654	195.8045758	59.68123472	0.149240511	
41	1/28/05 0:18	84.75	38380.01708	13.028	38380.01042	722.46367	1	38380.01267	84.78682008	1.625	0.0221	0	84.75082008	195.8067344	59.68189264	0.149898436	
42	1/28/05 1:18	84.742	38380.05875	13.028	38380.05208	801.156379	1	38380.05434	84.78325374	1.66667	0.022666712	0	84.75080703	195.7979656	59.6789122	0.146917997	
43	1/28/05 2:18	84.745	38380.10042	13.026	38380.09375	683.588674	1	38380.09601	84.7882809	1.70934	0.023233424	0	84.750804047	195.8087547	59.68250843	0.150514224	
44	1/28/05 3:18	84.745	38380.14208	13.025	38380.13542	426.710882	1	38380.13787	84.77990616	1.75	0.0238	0	84.7508001018	195.78686052	59.67575727	0.143763071	
45	1/28/05 4:18	84.771	38380.18375	13.022	38380.17708	118.296582	1	38380.17934	84.78728183	1.79167	0.024366712	0	84.75091512	195.8023339	59.68055138	0.148557174	
46	1/28/05 5:18	84.787	38380.22542	13.024	38380.21875	-147.371414	1	38380.22101	84.790005	1.83334	0.024933424	0	84.75087158	195.8073153	59.68206972	0.150075512	
47	1/28/05 6:18	84.795	38380.26708	13.027	38380.26042	-294.235516	1	38380.26287	84.78794866	1.875	0.0255	0	84.75084486	195.8012569	59.68022309	0.148228891	
48	1/28/05 7:18	84.802	38380.30875	13.03	38380.30208	-283.470561	1	38380.30434									

## WQSP-1 Formulas

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Time	WL	MatchedBP-Time	Matched-BP	MatchET-Time	Matched-ET	FILTER	BAROCorrect-Time	Corrected-Pressure	ElapsedDay	DetrendVariable	DetrendedPSI	Freshwater (ft of H2O)	Meters of H2O	Change in Meters	
2	38378.38767	84.742	38378.39208	13.068	38378.38542	622.184266	=IF(MINUTE(A2)=18,1,0)	38378.38767	84.742	=H2-\$H\$2	=J2*0.0136	=K2-K2	=L2*2.31	=N2*0.3048	=O2-\$O\$149	
3	38378.42934	84.742	38378.43375	13.07	38378.42708	810.691923	=IF(MINUTE(A3)=18,1,0)	38378.42934	84.742	=H3-\$H\$2	=J3*0.0136	=K3-K3	=L3*2.31	=N3*0.3048	=O3-\$O\$149	
4	38378.47101	84.735	38378.47542	13.067	38378.46875	836.164495	=IF(MINUTE(A4)=18,1,0)	38378.47101	84.742	=H4-\$H\$2	=J4*0.0136	=K4-K4	=L4*2.31	=N4*0.3048	=O4-\$O\$149	
5	38378.51267	84.742	38378.51708	13.049	38378.51042	657.333274	=IF(MINUTE(A5)=18,1,0)	38378.51267	84.742	=H5-\$H\$2	=J5*0.0136	=K5-K5	=L5*2.31	=N5*0.3048	=O5-\$O\$149	
6	38378.55434	84.757	38378.55875	13.04	38378.55208	263.801421	=IF(MINUTE(A6)=18,1,0)	38378.55434	84.742	=H6-\$H\$2	=J6*0.0136	=K6-K6	=L6*2.31	=N6*0.3048	=O6-\$O\$149	
7	38378.59601	84.763	38378.60042	13.037	38378.59375	-223.270741	=IF(MINUTE(A7)=18,1,0)	38378.59601	84.742	=H7-\$H\$2	=J7*0.0136	=K7-K7	=L7*2.31	=N7*0.3048	=O7-\$O\$149	
8	38378.63767	84.763	38378.64208	13.036	38378.63542	-763.889563	=IF(MINUTE(A8)=18,1,0)	38378.63767	84.742	=H8-\$H\$2	=J8*0.0136	=K8-K8	=L8*2.31	=N8*0.3048	=O8-\$O\$149	
9	38378.67934	84.778	38378.68375	13.037	38378.67708	-1222.713671	=IF(MINUTE(A9)=18,1,0)	38378.67934	84.742	=H9-\$H\$2	=J9*0.0136	=K9-K9	=L9*2.31	=N9*0.3048	=O9-\$O\$149	
10	38378.72101	84.778	38378.72542	13.046	38378.71875	-1497.600718	=IF(MINUTE(A10)=18,1,0)	38378.72101	84.7673993205001	=H10-\$H\$2	=J10*0.0136	=K10-K10	=L10*2.31	=N10*0.3048	=O10-\$O\$149	
11	38378.76267	84.772	38378.76708	13.054	38378.76042	-1525.766743	=IF(MINUTE(A11)=18,1,0)	38378.76267	84.765303702025	=H11-\$H\$2	=J11*0.0136	=K11-K11	=L11*2.31	=N11*0.3048	=O11-\$O\$149	
12	38378.80434	84.78	38378.80875	13.052	38378.80208	-1300.361155	=IF(MINUTE(A12)=18,1,0)	38378.80434	84.7777984667871	=H12-\$H\$2	=J12*0.0136	=K12-K12	=L12*2.31	=N12*0.3048	=O12-\$O\$149	
13	38378.84601	84.765	38378.85042	13.054	38378.84375	-872.660328	=IF(MINUTE(A13)=18,1,0)	38378.84601	84.7731877682502	=H13-\$H\$2	=J13*0.0136	=K13-K13	=L13*2.31	=N13*0.3048	=O13-\$O\$149	
14	38378.88767	84.741	38378.89208	13.063	38378.88542	-339.053952	=IF(MINUTE(A14)=18,1,0)	38378.88767	84.7682099817216	=H14-\$H\$2	=J14*0.0136	=K14-K14	=L14*2.31	=N14*0.3048	=O14-\$O\$149	
15	38378.92934	84.727	38378.93375	13.063	38378.92708	183.653521	=IF(MINUTE(A15)=18,1,0)	38378.92934	84.7714209653029	=H15-\$H\$2	=J15*0.0136	=K15-K15	=L15*2.31	=N15*0.3048	=O15-\$O\$149	
16	38378.97101	84.72	38378.97542	13.056	38378.96875	587.780173	=IF(MINUTE(A16)=18,1,0)	38378.97101	84.7745859782706	=H16-\$H\$2	=J16*0.0136	=K16-K16	=L16*2.31	=N16*0.3048	=O16-\$O\$149	
17	38379.01267	84.721	38379.01708	13.041	38379.01042	801.064013	=IF(MINUTE(A17)=18,1,0)	38379.01267	84.7757965825734	=H17-\$H\$2	=J17*0.0136	=K17-K17	=L17*2.31	=N17*0.3048	=O17-\$O\$149	
18	38379.05434	84.72	38379.05875	13.041	38379.05208	802.821823	=IF(MINUTE(A18)=18,1,0)	38379.05434	84.7733807034198	=H18-\$H\$2	=J18*0.0136	=K18-K18	=L18*2.31	=N18*0.3048	=O18-\$O\$149	
19	38379.09601	84.727	38379.10042	13.037	38379.09375	626.157238	=IF(MINUTE(A19)=18,1,0)	38379.09601	84.7732685340087	=H19-\$H\$2	=J19*0.0136	=K19-K19	=L19*2.31	=N19*0.3048	=O19-\$O\$149	
20	38379.13767	84.744	38379.14208	13.037	38379.13542	346.329120	=IF(MINUTE(A20)=18,1,0)	38379.13767	84.7779833071292	=H20-\$H\$2	=J20*0.0136	=K20-K20	=L20*2.31	=N20*0.3048	=O20-\$O\$149	
21	38379.17934	84.748	38379.18375	13.04	38379.17708	58.964256	=IF(MINUTE(A21)=18,1,0)	38379.17934	84.7700134025689	=H21-\$H\$2	=J21*0.0136	=K21-K21	=L21*2.31	=N21*0.3048	=O21-\$O\$149	
22	38379.22101	84.774	38379.22542	13.037	38379.21875	-145.863609	=IF(MINUTE(A22)=18,1,0)	38379.22101	84.7811428069413	=H22-\$H\$2	=J22*0.0136	=K22-K22	=L22*2.31	=N22*0.3048	=O22-\$O\$149	
23	38379.26267	84.786	38379.26708	13.037	38379.26042	-207.180923	=IF(MINUTE(A23)=18,1,0)	38379.26267	84.781342380965	=H23-\$H\$2	=J23*0.0136	=K23-K23	=L23*2.31	=N23*0.3048	=O23-\$O\$149	
24	38379.30434	84.787	38379.30875	13.04	38379.30208	-108.213225	=IF(MINUTE(A24)=18,1,0)	38379.30434	84.777414764239	=H24-\$H\$2	=J24*0.0136	=K24-K24	=L24*2.31	=N24*0.3048	=O24-\$O\$149	
25	38379.34601	84.778	38379.35042	13.046	38379.34375	119.744865	=IF(MINUTE(A25)=18,1,0)	38379.34601	84.7708499245155	=H25-\$H\$2	=J25*0.0136	=K25-K25	=L25*2.31	=N25*0.3048	=O25-\$O\$149	
26	38379.38767	84.772	38379.39208	13.051	38379.38542	405.987277	=IF(MINUTE(A26)=18,1,0)	38379.38767	84.7727839966468	=H26-\$H\$2	=J26*0.0136	=K26-K26	=L26*2.31	=N26*0.3048	=O26-\$O\$149	
27	38379.42934	84.763	38379.43375	13.051	38379.42708	658.93725	=IF(MINUTE(A27)=18,1,0)	38379.42934	84.7724867562539	=H27-\$H\$2	=J27*0.0136	=K27-K27	=L27*2.31	=N27*0.3048	=O27-\$O\$149	
28	38379.47101	84.756	38379.47542	13.048	38379.46875	790.186674	=IF(MINUTE(A28)=18,1,0)	38379.47101	84.7725385591061	=H28-\$H\$2	=J28*0.0136	=K28-K28	=L28*2.31	=N28*0.3048	=O28-\$O\$149	
29	38379.51267	84.763	38379.51708	13.033	38379.51042	738.215729	=IF(MINUTE(A29)=18,1,0)	38379.51267	84.7780576497138	=H29-\$H\$2	=J29*0.0136	=K29-K29	=L29*2.31	=N29*0.3048	=O29-\$O\$149	
30	38379.55434	84.771	38379.55875	13.016	38379.55208	485.969448	=IF(MINUTE(A30)=18,1,0)	38379.55434	84.7766302132374	=H30-\$H\$2	=J30*0.0136	=K30-K30	=L30*2.31	=N30*0.3048	=O30-\$O\$149	
31	38379.59601	84.781	38379.60042	13.011	38379.59375	67.732086	=IF(MINUTE(A31)=18,1,0)	38379.59601	84.7779176505985	=H31-\$H\$2	=J31*0.0136	=K31-K31	=L31*2.31	=N31*0.3048	=O31-\$O\$149	
32	38379.63767	84.787	38379.64208	13.015	38379.63542	-436.885741	=IF(MINUTE(A32)=18,1,0)	38379.63767	84.7777230421374	=H32-\$H\$2	=J32*0.0136	=K32-K32	=L32*2.31	=N32*0.3048	=O32-\$O\$149	
33	38379.67934	84.793	38379.68375	13.015	38379.67708	-920.951056	=IF(MINUTE(A33)=18,1,0)	38379.67934	84.7754609107598	=H33-\$H\$2	=J33*0.0136	=K33-K33	=L33*2.31	=N33*0.3048	=O33-\$O\$149	
34	38379.72101	84.795	38379.72542	13.029	38379.71708	-1276.154044	=IF(MINUTE(A34)=18,1,0)	38379.72101	84.7762243521032	=H34-\$H\$2	=J34*0.0136	=K34-K34	=L34*2.31	=N34*0.3048	=O34-\$O\$149	
35	38379.76267	84.802	38379.76708	13.032	38379.76042	-1420.232878	=IF(MINUTE(A35)=18,1,0)	38379.76267	84.7832939201972	=H35-\$H\$2	=J35*0.0136	=K35-K35	=L35*2.31	=N35*0.3048	=O35-\$O\$149	
36	38379.80434	84.796	38379.80875	13.033	38379.80208	-1318.554453	=IF(MINUTE(A36)=18,1,0)	38379.80434	84.7763643600428	=H36-\$H\$2	=J36*0.0136	=K36-K36	=L36*2.31	=N36*0.3048	=O36-\$O\$149	
37	38379.84601	84.787	38379.85042	13.028	38379.84375	-993.719757	=IF(MINUTE(A37)=18,1,0)	38379.84601	84.7737096990113	=H37-\$H\$2	=J37*0.0136	=K37-K37	=L37*2.31	=N37*0.3048	=O37-\$O\$149	
38	38379.88767	84.786	38379.89208	13.026	38379.88542	-520.196615	=IF(MINUTE(A38)=18,1,0)	38379.88767	84.7871452926574	=H38-\$H\$2	=J38*0.0136	=K38-K38	=L38*2.31	=N38*0.3048	=O38-\$O\$149	
39	38379.92934	84.765	38379.93375	13.032	38379.92708	-5.22399	=IF(MINUTE(A39)=18,1,0)	38379.92934	84.7771783499758	=H39-\$H\$2	=J39*0.0136	=K39-K39	=L39*2.31	=N39*0.3048	=O39-\$O\$149	
40	38379.97101	84.757	38379.97542	13.034	38379.96875	438.7357972	=IF(MINUTE(A40)=18,1,0)	38379.97101	84.7854190769375	=H40-\$H\$2	=J40*0.0136	=K40-K40	=L40*2.31	=N40*0.3048	=O40-\$O\$149	
41	38380.01267	84.75	38380.01708	13.028	38380.01042	722.46367	=IF(MINUTE(A41)=18,1,0)	38380.01267	84.7889200788094	=H41-\$H\$2	=J41*0.0136	=K41-K41	=L41*2.31	=N41*0.3048	=O41-\$O\$149	
42	38380.05434	84.742	38380.05875	13.028	38380.05208	801.156379	=IF(MINUTE(A42)=18,1,0)	38380.05434	84.7832537425093	=H42-\$H\$2	=J42*0.0136	=K42-K42	=L42*2.31	=N42*0.3048	=O42-\$O\$149	
43	38380.09601	84.75	38380.10042	13.026	38380.09375	683.586674	=IF(MINUTE(A43)=18,1,0)	38380.09601	84.7889280928326	=H43-\$H\$2	=J43*0.0136	=K43-K43	=L43*2.31	=N43*0.3048	=O43-\$O\$149	
44	38380.13767	84.75	38380.14208	13.025	38380.13542	426.710882	=IF(MINUTE(A44)=18,1,0)	38380.13767	84.779905161144	=H44-\$H\$2	=J44*0.0136	=K44-K44	=L44*2.31	=N44*0.3048	=O44-\$O\$149	
45	38380.17934	84.771	38380.18375	13.022	38380.17708	118.296562	=IF(MINUTE(A45)=18,1,0)	38380.17934	84.7872818281859	=H45-\$H\$2	=J45*0.0136	=K45-K45	=L45*2.31	=N45*0.3048	=O45-\$O\$149	
46	38380.22101	84.787	38380.22542	13.024	38380.21875	-147.371414	=IF(MINUTE(A46)=18,1,0)	38380.22101	84.7900049996903	=H46-\$H\$2	=J46*0.0136	=K46-K46	=L46*2.31	=N46*0.3048	=O46-\$O\$149	
47	38380.26267	84.795	38380.26708	13.027	38380.26042	-294.235516	=IF(MINUTE(A47)=18,1,0)	38380.26267	84.7879486627029	=H47-\$H\$2	=J47*0.0136	=K47-K47	=L47*2.31	=N47*0.3048	=O47-\$O\$149	
48	38380.30434	84.802	38380.30875	13.023	38380.30208	-283.470651	=IF(MINUTE(A48)=18,1,0)	38380.30434	84.7885076285183	=H48-\$H\$2	=J48*0.0136	=K48-K48	=L48*2.31	=N48*0.3048	=O48-\$O\$149	

## WQSP-2

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Time	VWL	MatchedBP-Time	Matched-BP	MatchET-Time	Matched-ET	FILTER	BARO	Correct-Time	Corrected-Pressure	ElapsedDays	Detrend	Variable	Measured	Freshwater (ft of H2O)	Meters of H2O Change in Meters
2	1/26/05 9:54	88.03	38378.41292	13.067	38378.41667	776.264521	1	38378.41299	88.03	0	0	88.03		203 3493	61.98086664	0.148489273
3	1/26/05 10:54	88.031	38378.45458	13.069	38378.45833	846.145149	1	38378.45465	88.03	0.04166	0.000549912	88.02945009		203 3480297	61.98047945	0.148102086
4	1/26/05 11:54	88.037	38378.49625	13.057	38378.5	721.593789	1	38378.49632	88.03	0.08333	0.001099956	88.02890000		203 3467591	61.98009217	0.147714807
5	1/26/05 12:54	88.046	38378.53792	13.044	38378.54167	392.89928	1	38378.53799	88.03	0.125	0.00165	88.02835		203 3454885	61.97970489	0.147327528
6	1/26/05 13:54	88.054	38378.57958	13.034	38378.58333	-88.979662	1	38378.57965	88.03	0.16666	0.002199912	88.02780009		203 3442182	61.97931771	0.146940341
7	1/26/05 14:54	88.069	38378.62125	13.034	38378.625	-631.899234	1	38378.62132	88.03	0.20833	0.002749956	88.02728004		203.3429476	61.97893043	0.146553062
8	1/26/05 15:54	88.076	38378.66292	13.035	38378.66667	-1121.756365	1	38378.66299	88.03	0.25	0.0033	88.02857		203.341677	61.97854315	0.146165783
9	1/26/05 16:54	88.082	38378.70458	13.041	38378.70833	-1450.430462	1	38378.70465	88.07853962	0.29166	0.003849912	88.07408897		203.4525332	62.01233212	0.179954758
10	1/26/05 17:54	88.082	38378.74625	13.052	38378.75	-1543.26218	1	38378.74632	88.08264969	0.33333	0.004399956	88.07824977		203 4607569	62.0148387	0.182461329
11	1/26/05 18:54	88.089	38378.78792	13.044	38378.79167	-1378.601878	1	38378.78799	88.08830677	0.375	0.00495	88.08395077		203.4725541	62.0184345	0.186057134
12	1/26/05 19:54	88.075	38378.82958	13.053	38378.83333	-993.848319	1	38378.82985	88.08733965	0.41666	0.005499912	88.08193674		203.4694098	62.01736638	0.184969009
13	1/26/05 20:54	88.059	38378.87125	13.059	38378.875	-476.089445	1	38378.87132	88.08805987	0.45833	0.006049956	88.08200981		203.4694429	62.0174862	0.185108828
14	1/26/05 21:54	88.032	38378.91292	13.068	38378.91667	60.31664	1	38378.91299	88.08205339	0.5	0.0066	88.07545339		203.4542973	62.01286983	0.180492462
15	1/26/05 22:54	88.024	38378.95458	13.059	38378.95833	502.620348	1	38378.95465	88.08532233	0.54166	0.007149912	88.07817242		203.4605783	62.01478426	0.182406896
16	1/26/05 23:54	88.024	38378.99625	13.045	38379	767.719931	1	38378.99632	88.08792674	0.58333	0.007889958	88.08022870		203.4653239	62.01623071	0.183853347
17	1/27/05 0:54	88.031	38379.03792	13.04	38379.04167	821.256632	1	38379.03799	88.08955942	0.625	0.00825	88.0873442		203.4817651	62.021242	0.188864634
18	1/27/05 1:54	88.023	38379.07958	13.041	38379.08333	683.475992	1	38379.07965	88.0841916	0.66666	0.008799912	88.07515616		203.4541548	62.01282638	0.180449015
19	1/27/05 2:54	88.037	38379.12125	13.037	38379.125	420.834289	1	38379.12132	88.08867639	0.70833	0.009349956	88.07732642		203.4586241	62.01418861	0.181811247
20	1/27/05 3:54	88.052	38379.16292	13.04	38379.16667	126.250731	1	38379.16299	88.09027358	0.75	0.0099	88.08037559		203.465663	62.01633408	0.183956714
21	1/27/05 4:54	88.067	38379.20458	13.04	38379.20833	-106.422022	1	38379.20465	88.09124962	0.79166	0.010449912	88.08079971		203.4666473	62.01663411	0.18425674
22	1/27/05 5:54	88.08	38379.24625	13.036	38379.25	-207.084692	1	38379.24632	88.08913504	0.83333	0.010999956	88.07815508		203.464092	62.01475797	0.182380607
23	1/27/05 6:54	88.083	38379.28792	13.035	38379.29167	-147.05034	1	38379.28799	88.08247274	0.875	0.01155	88.07922274		203.4438315	62.00978955	0.177302483
24	1/27/05 7:54	88.091	38379.32958	13.045	38379.33333	54.001703	1	38379.32965	88.09236363	0.91666	0.012099912	88.080201372		203.4654092	62.01625672	0.183879352
25	1/27/05 8:54	88.076	38379.37125	13.049	38379.375	333.631042	1	38379.37132	88.08228953	0.95833	0.012649956	88.08833957		203.4408674	62.00877639	0.176399019
26	1/27/05 9:54	88.074	38379.41292	13.054	38379.41667	603.945483	1	38379.41299	88.09013588	1	0.0132	88.07835581		203.4577218	62.01391362	0.181536248
27	1/27/05 10:54	88.058	38379.45458	13.051	38379.45833	772.804567	1	38379.45465	88.08126131	1.04166	0.013749912	88.0675114		203.4359513	62.00727797	0.174900598
28	1/27/05 11:54	88.06	38379.49625	13.04	38379.5	770.186627	1	38379.49632	88.08353263	1.08333	0.014299956	88.08222667		203.4399275	62.00848989	0.176112527
29	1/27/05 12:54	88.067	38379.53792	13.025	38379.54167	566.799028	1	38379.53799	88.0840887	1.125	0.01485	88.0882387		203.4399414	62.00849414	0.176116772
30	1/27/05 13:54	88.075	38379.57958	13.014	38379.58333	184.141667	1	38379.57965	88.08224952	1.16666	0.015399912	88.08844981		203.4344226	62.00681201	0.17443464
31	1/27/05 14:54	88.082	38379.62125	13.016	38379.625	-308.240813	1	38379.62132	88.08299585	1.20833	0.015949956	88.0870457		203.4348756	62.00695007	0.174572703
32	1/27/05 15:54	88.088	38379.66292	13.009	38379.66667	-808.027709	1	38379.66299	88.07831434	1.25	0.0165	88.0881434		203.4181711	62.00185856	0.169481189
33	1/27/05 16:54	88.095	38379.70458	13.025	38379.70833	-1204.614799	1	38379.70465	88.08424445	1.29166	0.017049912	88.08717454		203.4351732	62.00704079	0.174683419
34	1/27/05 17:54	88.109	38379.74625	13.022	38379.75	-1406.855237	1	38379.74832	88.09239242	1.33333	0.017599956	88.07472446		203.4527706	62.01240448	0.180027109
35	1/27/05 18:54	88.102	38379.78792	13.03	38379.79167	-1366.759324	1	38379.78799	88.08912634	1.375	0.01815	88.07057034		203.4439553	62.00971759	0.177340219
36	1/27/05 19:54	88.102	38379.82958	13.029	38379.83333	-1092.524889	1	38379.82965	88.0940164	1.41666	0.018699912	88.07531849		203.4539811	62.01277344	0.180396068
37	1/27/05 20:54	88.095	38379.87125	13.029	38379.875	-646.969547	1	38379.87132	88.09606368	1.45833	0.019249956	88.07621373		203.4574397	62.01382762	0.181450257
38	1/27/05 21:54	88.08	38379.91292	13.031	38379.91667	-131.513481	1	38379.91299	88.09576971	1.5	0.0198	88.07596971		203.4554949	62.01323336	0.180855996
39	1/27/05 22:54	88.067	38379.95458	13.033	38379.95833	339.934896	1	38379.95465	88.09826015	1.54166	0.020349912	88.07701024		203.4599727	62.01459966	0.182222997
40	1/27/05 23:54	88.058	38379.99625	13.031	38380	669.905467	1	38379.99832	88.10122195	1.58333	0.020899956	88.080322		203.4655438	62.01629775	0.183920387
41	1/28/05 0:54	88.05	38380.03792	13.031	38380.04167	801.137806	1	38380.03799	88.10127925	1.625	0.02145	88.07962925		203.4644056	62.01595081	0.183573446
42	1/28/05 1:54	88.044	38380.07958	13.027	38380.08333	728.960511	1	38380.07965	88.09447429	1.66666	0.021999912	88.07247438		203.4474158	62.01077234	0.178394975
43	1/28/05 2:54	88.06	38380.12125	13.026	38380.125	499.501234	1	38380.12132	88.10421487	1.70833	0.022549958	88.07205442		203.4686464	62.01274329	0.184865922
44	1/28/05 3:54	88.068	38380.16292	13.023	38380.16667	194.943276	1	38380.16299	88.09961619	1.75	0.0231	88.07651619		203.4567524	62.01361813	0.181240763
45	1/28/05 4:54	88.089	38380.20458	13.021	38380.20833	-89.641654	1	38380.20465	88.10554817	1.79166	0.023649912	88.08218962		203.469185	62.01740758	0.185030213
46	1/28/05 5:54	88.097	38380.24625	13.024	38380.25	-271.54177	1	38380.24832	88.10182892	1.83333	0.024189956	88.07702007		203.4593229	62.01440162	0.182024258
47	1/28/05 6:54	88.102	38380.28792	13.027	38380.29167	-301.342051	1	38380.28799	88.09829995	1.875	0.02475	88.07354995		203.4499004	62.01152694	0.179152268
48	1/28/05 7:54	88.111	38380.32958	13.032	38380.33333	-174.639387	1	38380.32965	88.10502420	1.91666	0.025299912	88.07621435		203.4641632	62.01587696	0.183499589
49	1/28/05 8:54	88.11	38380.37125	13.												

## WQSP-2 Formulas

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Time	WL	MatchedBP-Time	Matched-BP	MatchET-Time	Matched-ET	FILTER	BAROCorrect-Time	Corrected-Pressure	ElapsedDays	DetrendVariable	DetrendedP	Freshwater (ft of H20)	Meters of H20	Change in Meters	
2	38378.41299	88.03	38378.41292	13.067	38378.41667	776.264521	=IF(MINUTE(A2)=54,1,0)	38378.41299	88.03	=H2-\$H\$2	=J2*0.0132	H2-K2	=L2*2.31	=N2*0.3048	=O2-\$O\$148	
3	38378.45465	88.031	38378.45458	13.069	38378.45833	848.145149	=IF(MINUTE(A3)=54,1,0)	38378.45465	88.03	=H3-\$H\$2	=J3*0.0132	H3-K3	=L3*2.31	=N3*0.3048	=O3-\$O\$148	
4	38378.49632	88.037	38378.49625	13.057	38378.5	721.593789	=IF(MINUTE(A4)=54,1,0)	38378.49632	88.03	=H4-\$H\$2	=J4*0.0132	H4-K4	=L4*2.31	=N4*0.3048	=O4-\$O\$148	
5	38378.53799	88.046	38378.53792	13.044	38378.54167	392.89928	=IF(MINUTE(A5)=54,1,0)	38378.53799	88.03	=H5-\$H\$2	=J5*0.0132	H5-K5	=L5*2.31	=N5*0.3048	=O5-\$O\$148	
6	38378.57965	88.054	38378.57958	13.034	38378.58333	-88.979662	=IF(MINUTE(A6)=54,1,0)	38378.57965	88.03	=H6-\$H\$2	=J6*0.0132	H6-K6	=L6*2.31	=N6*0.3048	=O6-\$O\$148	
7	38378.62132	88.069	38378.62125	13.034	38378.625	-631.899234	=IF(MINUTE(A7)=54,1,0)	38378.62132	88.03	=H7-\$H\$2	=J7*0.0132	H7-K7	=L7*2.31	=N7*0.3048	=O7-\$O\$148	
8	38378.66299	88.076	38378.66292	13.035	38378.66667	-1121.756365	=IF(MINUTE(A8)=54,1,0)	38378.66299	88.03	=H8-\$H\$2	=J8*0.0132	H8-K8	=L8*2.31	=N8*0.3048	=O8-\$O\$148	
9	38378.70465	88.082	38378.70458	13.041	38378.70833	-1450.430462	=IF(MINUTE(A9)=54,1,0)	38378.70465	88.0785396168179	=H9-\$H\$2	=J9*0.0132	H9-K9	=L9*2.31	=N9*0.3048	=O9-\$O\$148	
10	38378.74632	88.082	38378.74625	13.052	38378.75	-1543.26218	=IF(MINUTE(A10)=54,1,0)	38378.74632	88.0826496863735	=H10-\$H\$2	=J10*0.0132	H10-K10	=L10*2.31	=N10*0.3048	=O10-\$O\$148	
11	38378.78799	88.089	38378.78792	13.044	38378.79167	-1378.601878	=IF(MINUTE(A11)=54,1,0)	38378.78799	88.0883067795827	=H11-\$H\$2	=J11*0.0132	H11-K11	=L11*2.31	=N11*0.3048	=O11-\$O\$148	
12	38378.82965	88.075	38378.82958	13.053	38378.83333	-993.848319	=IF(MINUTE(A12)=54,1,0)	38378.82965	88.0873396480745	=H12-\$H\$2	=J12*0.0132	H12-K12	=L12*2.31	=N12*0.3048	=O12-\$O\$148	
13	38378.87132	88.059	38378.87125	13.059	38378.875	-476.069445	=IF(MINUTE(A13)=54,1,0)	38378.87132	88.0880590681938	=H13-\$H\$2	=J13*0.0132	H13-K13	=L13*2.31	=N13*0.3048	=O13-\$O\$148	
14	38378.91299	88.032	38378.91292	13.068	38378.91667	60.31664	=IF(MINUTE(A14)=54,1,0)	38378.91299	88.082053393163	=H14-\$H\$2	=J14*0.0132	H14-K14	=L14*2.31	=N14*0.3048	=O14-\$O\$148	
15	38378.95465	88.024	38378.95458	13.059	38378.95833	502.620348	=IF(MINUTE(A15)=54,1,0)	38378.95465	88.085322332995	=H15-\$H\$2	=J15*0.0132	H15-K15	=L15*2.31	=N15*0.3048	=O15-\$O\$148	
16	38378.99632	88.024	38378.99625	13.045	38379	767.719931	=IF(MINUTE(A16)=54,1,0)	38378.99632	88.0879267378843	=H16-\$H\$2	=J16*0.0132	H16-K16	=L16*2.31	=N16*0.3048	=O16-\$O\$148	
17	38379.03799	88.031	38379.03792	13.04	38379.04167	821.255632	=IF(MINUTE(A17)=54,1,0)	38379.03799	88.0955941976597	=H17-\$H\$2	=J17*0.0132	H17-K17	=L17*2.31	=N17*0.3048	=O17-\$O\$148	
18	38379.07965	88.023	38379.07958	13.041	38379.08333	683.475992	=IF(MINUTE(A18)=54,1,0)	38379.07965	88.0841915988962	=H18-\$H\$2	=J18*0.0132	H18-K18	=L18*2.31	=N18*0.3048	=O18-\$O\$148	
19	38379.12132	88.037	38379.12125	13.037	38379.125	420.834269	=IF(MINUTE(A19)=54,1,0)	38379.12132	88.0866763897992	=H19-\$H\$2	=J19*0.0132	H19-K19	=L19*2.31	=N19*0.3048	=O19-\$O\$148	
20	38379.16299	88.052	38379.16292	13.04	38379.16667	126.250731	=IF(MINUTE(A20)=54,1,0)	38379.16299	88.0902735910503	=H20-\$H\$2	=J20*0.0132	H20-K20	=L20*2.31	=N20*0.3048	=O20-\$O\$148	
21	38379.20465	88.067	38379.20458	13.04	38379.20833	-106.422022	=IF(MINUTE(A21)=54,1,0)	38379.20465	88.0912496236925	=H21-\$H\$2	=J21*0.0132	H21-K21	=L21*2.31	=N21*0.3048	=O21-\$O\$148	
22	38379.24632	88.08	38379.24625	13.036	38379.25	-207.064692	=IF(MINUTE(A22)=54,1,0)	38379.24832	88.0891350386308	=H22-\$H\$2	=J22*0.0132	H22-K22	=L22*2.31	=N22*0.3048	=O22-\$O\$148	
23	38379.28799	88.083	38379.28792	13.035	38379.29167	-147.050534	=IF(MINUTE(A23)=54,1,0)	38379.28799	88.0824727396075	=H23-\$H\$2	=J23*0.0132	H23-K23	=L23*2.31	=N23*0.3048	=O23-\$O\$148	
24	38379.32965	88.091	38379.32958	13.045	38379.33333	54.001703	=IF(MINUTE(A24)=54,1,0)	38379.32965	88.092363627893	=H24-\$H\$2	=J24*0.0132	H24-K24	=L24*2.31	=N24*0.3048	=O24-\$O\$148	
25	38379.37132	88.076	38379.37125	13.049	38379.375	333.831042	=IF(MINUTE(A25)=54,1,0)	38379.37132	88.082289526849	=H25-\$H\$2	=J25*0.0132	H25-K25	=L25*2.31	=N25*0.3048	=O25-\$O\$148	
26	38379.41299	88.074	38379.41292	13.054	38379.41667	603.945483	=IF(MINUTE(A26)=54,1,0)	38379.41299	88.0901358588187	=H26-\$H\$2	=J26*0.0132	H26-K26	=L26*2.31	=N26*0.3048	=O26-\$O\$148	
27	38379.45465	88.058	38379.45458	13.051	38379.45833	772.804567	=IF(MINUTE(A27)=54,1,0)	38379.45465	88.0812613097556	=H27-\$H\$2	=J27*0.0132	H27-K27	=L27*2.31	=N27*0.3048	=O27-\$O\$148	
28	38379.49632	88.06	38379.49625	13.04	38379.5	770.186627	=IF(MINUTE(A28)=54,1,0)	38379.49632	88.0835326282161	=H28-\$H\$2	=J28*0.0132	H28-K28	=L28*2.31	=N28*0.3048	=O28-\$O\$148	
29	38379.53799	88.067	38379.53792	13.025	38379.54167	566.799028	=IF(MINUTE(A29)=54,1,0)	38379.53799	88.0840867018746	=H29-\$H\$2	=J29*0.0132	H29-K29	=L29*2.31	=N29*0.3048	=O29-\$O\$148	
30	38379.57965	88.075	38379.57958	13.014	38379.58333	184.141667	=IF(MINUTE(A30)=54,1,0)	38379.57965	88.0822495207093	=H30-\$H\$2	=J30*0.0132	H30-K30	=L30*2.31	=N30*0.3048	=O30-\$O\$148	
31	38379.62132	88.082	38379.62125	13.016	38379.625	-308.2040813	=IF(MINUTE(A31)=54,1,0)	38379.62132	88.082995650248	=H31-\$H\$2	=J31*0.0132	H31-K31	=L31*2.31	=N31*0.3048	=O31-\$O\$148	
32	38379.66299	88.088	38379.66292	13.009	38379.66667	-808.027709	=IF(MINUTE(A32)=54,1,0)	38379.66299	88.0763143357988	=H32-\$H\$2	=J32*0.0132	H32-K32	=L32*2.31	=N32*0.3048	=O32-\$O\$148	
33	38379.70465	88.095	38379.70458	13.025	38379.70833	-1204.614799	=IF(MINUTE(A33)=54,1,0)	38379.70465	88.08422444939849	=H33-\$H\$2	=J33*0.0132	H33-K33	=L33*2.31	=N33*0.3048	=O33-\$O\$148	
34	38379.74632	88.109	38379.74625	13.022	38379.75	-1406.855237	=IF(MINUTE(A34)=54,1,0)	38379.74632	88.08923924189166	=H34-\$H\$2	=J34*0.0132	H34-K34	=L34*2.31	=N34*0.3048	=O34-\$O\$148	
35	38379.78799	88.102	38379.78792	13.03	38379.79167	-1366.759324	=IF(MINUTE(A35)=54,1,0)	38379.78799	88.08912633533718	=H35-\$H\$2	=J35*0.0132	H35-K35	=L35*2.31	=N35*0.3048	=O35-\$O\$148	
36	38379.82965	88.102	38379.82958	13.029	38379.83333	-1092.524889	=IF(MINUTE(A36)=54,1,0)	38379.82965	88.0840163998853	=H36-\$H\$2	=J36*0.0132	H36-K36	=L36*2.31	=N36*0.3048	=O36-\$O\$148	
37	38379.87132	88.095	38379.87125	13.029	38379.875	-646.969547	=IF(MINUTE(A37)=54,1,0)	38379.87132	88.0906363687048	=H37-\$H\$2	=J37*0.0132	H37-K37	=L37*2.31	=N37*0.3048	=O37-\$O\$148	
38	38379.91299	88.08	38379.91292	13.031	38379.91667	-131.5131481	=IF(MINUTE(A38)=54,1,0)	38379.91299	88.0957697130202	=H38-\$H\$2	=J38*0.0132	H38-K38	=L38*2.31	=N38*0.3048	=O38-\$O\$148	
39	38379.95465	88.067	38379.95458	13.033	38379.95833	339.934896	=IF(MINUTE(A39)=54,1,0)	38379.95465	88.098260150162	=H39-\$H\$2	=J39*0.0132	H39-K39	=L39*2.31	=N39*0.3048	=O39-\$O\$148	
40	38379.99632	88.058	38379.99625	13.031	38380	669.950467	=IF(MINUTE(A40)=54,1,0)	38379.99632	88.1012219528928	=H40-\$H\$2	=J40*0.0132	H40-K40	=L40*2.31	=N40*0.3048	=O40-\$O\$148	
41	38380.03799	88.05	38380.03792	13.031	38380.04167	801.137806	=IF(MINUTE(A41)=54,1,0)	38380.03799	88.1012729450095	=H41-\$H\$2	=J41*0.0132	H41-K41	=L41*2.31	=N41*0.3048	=O41-\$O\$148	
42	38380.07965	88.044	38380.07958	13.027	38380.08333	728.960511	=IF(MINUTE(A42)=54,1,0)	38380.07965	88.094474292294	=H42-\$H\$2	=J42*0.0132	H42-K42	=L42*2.31	=N42*0.3048	=O42-\$O\$148	
43	38380.12132	88.06	38380.12125	13.026	38380.125	499.501234	=IF(MINUTE(A43)=54,1,0)	38380.12132	88.1042148737274	=H43-\$H\$2	=J43*0.0132	H43-K43	=L43*2.31	=N43*0.3048	=O43-\$O\$148	
44	38380.16299	88.068	38380.16292	13.023	38380.16667	194.943276	=IF(MINUTE(A44)=54,1,0)	38380.16299	88.0986161877256	=H44-\$H\$2	=J44*0.0132	H44-K44	=L44*2.31	=N44*0.3048	=O44-\$O\$148	
45	38380.20465	88.089	38380.20458	13.021	38380.20833	-89.641654	=IF(MINUTE(A45)=54,1,0)	38380.20465	88.1055481693631	=H45-\$H\$2	=J45*0.0132	H45-K45	=L45*2.31	=N45*0.3048	=O45-\$O\$148	
46	38380.24632	88.097	38380.24625	13.024	38380.25	-271.54177	=IF(MINUTE(A46)=54,1,0)	38380.24632	88.101828821563	=H46-\$H\$2	=J46*0.0132	H46-K46	=L46*2.31	=N46*0.3048	=O46-\$O\$148	
47	38380.28799	88.102	38380.28792	13.027	38380.29167	-301.342051	=IF(MINUTE(A47)=54,1,0)	38380.28799	88.0982999472318	=H47-\$H\$2	=J47*0.0132	H47-K47	=L47*2.31	=N47*0.3048	=O47-\$O\$148	
48	38380.32965	88.111	38380.32958	13.032	38380.33333	-174.639387	=IF(MINUTE(A48)=54,1,0)	38380.32965	88.1050242595469	=H48-\$H\$2	=J48*0.0132	H48-K48	=L48*2.31	=N48*0.3048	=O48-\$O\$148	
49	38380.37132	88.111	38380.37125	13.033	38380.375	67.897257										

## WQSP-3

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
1	Time	WL	MatchedBP-Time	Matched-BP	MatchET-Time	Matched-ET	FILTER	BARO	Correct-Time	Corrected-Pressure	ElapsedDays	Detrend	Variable	DetrendedPsi	Freshwater (ft of H2O)	Meters of H2O	Change in Meters
2	1/26/05 11:32	90.688	38378.48583	13.061	38378.47917	811.158056	1	38378.48118	90.688	0	0	90.688		209.48928	63 85233254	0.21685791	
3	1/26/05 12:32	90.651	38378.5275	13.046	38378.52083	580.643264	1	38378.52285	90.688	0.04167	0.00062505	90.688737495		209.4878361	63.85189245	0.21641782	
4	1/26/05 13:32	90.614	38378.56917	13.037	38378.5625	166.160449	1	38378.56451	90.688	0.08333	0.00124995	90.68875005		209.4863926	63.85145247	0.215977836	
5	1/26/05 14:32	90.582	38378.61083	13.035	38378.60417	-359.736864	1	38378.60618	90.688	0.125	0.001875	90.6886120		209.4849488	63.85101238	0.215537745	
6	1/26/05 15:32	90.552	38378.6625	13.037	38378.64583	-890.701721	1	38378.64785	90.688	0.16667	0.00250005	90.68848800		209.4835049	63.85057229	0.215097855	
7	1/26/05 16:32	90.536	38378.69417	13.039	38378.6875	-1311.976332	1	38378.68951	90.688	0.20833	0.00312495	90.688457505		209.4820614	63.8501323	0.214657671	
8	1/26/05 17:32	90.516	38378.73583	13.049	38378.72917	-1529.068153	1	38378.73118	90.688	0.25	0.00375	90.6884240		209.4808175	63.84969221	0.21421758	
9	1/26/05 18:32	90.499	38378.7775	13.044	38378.77083	-1492.129039	1	38378.77285	90.688	0.29167	0.00437505	90.688362495		209.4791736	63.84925212	0.21377749	
10	1/26/05 19:32	90.492	38378.81917	13.054	38378.8125	-1209.24885	1	38378.81451	90.688	0.33333	0.00499995	90.688300005		209.4777301	63.84881214	0.213337506	
11	1/26/05 20:32	90.478	38378.86083	13.059	38378.85417	-744.750325	1	38378.85616	90.688	0.375	0.005625	90.6882375		209.4762863	63.84837205	0.212887415	
12	1/26/05 21:32	90.465	38378.9025	13.068	38378.89583	-202.766391	1	38378.89785	90.688	0.41667	0.00625005	90.688174995		209.4748424	63.84793196	0.212457325	
13	1/26/05 22:32	90.449	38378.94417	13.062	38378.9375	299.399317	1	38378.93951	90.688	0.45833	0.00687495	90.688112505		209.4733989	63.84749197	0.212017341	
14	1/26/05 23:32	90.431	38378.98583	13.05	38378.97917	660.751107	1	38378.98118	90.688	0.5	0.0075	90.68808		209.471955	63.84705188	0.21157725	
15	1/27/05 0:32	90.418	38379.0275	13.04	38379.02083	820.915835	1	38379.02285	90.688	0.54167	0.00812505	90.687987495		209.4705111	63.84661179	0.21113716	
16	1/27/05 1:32	90.41	38379.06917	13.042	38379.0625	773.023025	1	38379.08451	90.688	0.58333	0.00874995	90.687925005		209.4690676	63.84617181	0.210697176	
17	1/27/05 2:32	90.401	38379.11083	13.036	38379.10417	562.288583	1	38379.10618	90.688	0.625	0.009375	90.6878823		209.4676238	63.84573172	0.210257085	
18	1/27/05 3:32	90.394	38379.1525	13.039	38379.14583	271.381806	1	38379.14785	90.688	0.66667	0.01000005	90.687799985		209.4661799	63.84529163	0.209816995	
19	1/27/05 4:32	90.394	38379.19417	13.04	38379.1875	-3.017699	1	38379.18951	90.688	0.70833	0.01062495	90.687737505		209.4647364	63.84485164	0.209377011	
20	1/27/05 5:32	90.393	38379.23583	13.037	38379.22917	-176.148139	1	38379.23118	90.688	0.75	0.01125	90.687675		209.4632925	63.84441155	0.20893692	
21	1/27/05 6:32	90.403	38379.2775	13.036	38379.27083	-197.038082	1	38379.27285	90.688	0.79167	0.01187505	90.687612405		209.4618486	63.84397146	0.20849683	
22	1/27/05 7:32	90.395	38379.31917	13.045	38379.3125	-81.115028	1	38379.31451	90.688	0.83333	0.01249995	90.687550005		209.4604051	63.84353148	0.208056846	
23	1/27/05 8:32	90.403	38379.36083	13.049	38379.35417	189.236352	1	38379.35618	90.688	0.875	0.013125	90.6874875		209.4589613	63.84309139	0.207616755	
24	1/27/05 9:32	90.403	38379.4025	13.05	38379.39583	476.04706	1	38379.39785	90.688	0.91667	0.01375005	90.687424995		209.4575174	63.8426513	0.207178665	
25	1/27/05 10:32	90.396	38379.44417	13.05	38379.4375	706.187373	1	38379.43851	90.688	0.95833	0.01437485	90.687302505		209.4560739	63.84221131	0.206738681	
26	1/27/05 11:32	90.394	38379.48583	13.042	38379.47917	795.893286	1	38379.48118	90.39552026	1	0.015	90.39502025		208.7790018	63.63583975	0.000365118	
27	1/27/05 12:32	90.388	38379.5275	13.029	38379.52083	693.468357	1	38379.52285	90.390097	1.04167	0.01562505	90.397447195		208.7650302	63.6315812	-0.003893429	
28	1/27/05 13:32	90.395	38379.56917	13.014	38379.5625	394.536083	1	38379.56451	90.39733416	1.08333	0.01624995	90.398108421		208.7803045	63.63623682	0.000762185	
29	1/27/05 14:32	90.394	38379.61083	13.014	38379.60417	-54.215036	1	38379.60618	90.39495809	1.125	0.016875	90.39508300		208.7733719	63.63412377	-0.001350868	
30	1/27/05 15:32	90.395	38379.6525	13.012	38379.64583	-564.253906	1	38379.64785	90.39390421	1.16667	0.01750005	90.394041410		208.7694936	63.63294165	-0.00253298	
31	1/27/05 16:32	90.403	38379.69417	13.018	38379.6875	-1025.689451	1	38379.68951	90.39841543	1.20833	0.01812495	90.398520045		208.7788471	63.63567796	0.000203328	
32	1/27/05 17:32	90.403	38379.73583	13.021	38379.72917	-1334.257456	1	38379.73118	90.39532566	1.25	0.01875	90.395375585		208.7698899	63.63306243	-0.002412207	
33	1/27/05 18:32	90.411	38379.7775	13.031	38379.77083	-1417.961172	1	38379.77285	90.40014199	1.29167	0.01937505	90.398076094		208.7795716	63.63601343	0.0005388	
34	1/27/05 19:32	90.411	38379.81917	13.031	38379.8125	-1256.139825	1	38379.81451	90.39824015	1.33333	0.01999995	90.3982402402		208.7737349	63.63423439	-0.001240249	
35	1/27/05 20:32	90.409	38379.86083	13.028	38379.85417	-885.455888	1	38379.85618	90.39487925	1.375	0.020625	90.394825425		208.7645273	63.63142793	-0.004046705	
36	1/27/05 21:32	90.411	38379.9025	13.031	38379.89583	-390.807187	1	38379.89785	90.39804299	1.41667	0.02125005	90.397679254		208.7703917	63.63312539	-0.002259244	
37	1/27/05 22:32	90.409	38379.94417	13.033	38379.9375	116.510817	1	38379.93951	90.39899872	1.45833	0.02187495	90.397712177		208.7711513	63.63344691	-0.0022072721	
38	1/27/05 23:32	90.403	38379.98583	13.033	38379.97917	527.337872	1	38379.98118	90.39843843	1.5	0.0225	90.397503843		208.7684178	63.63261374	-0.002860896	
39	1/28/05 0:32	90.395	38380.0275	13.032	38380.02083	761.937838	1	38380.02285	90.39728734	1.54167	0.02312505	90.397418229		208.7643149	63.63136318	-0.004111452	
40	1/28/05 1:32	90.387	38380.06917	13.028	38380.0625	788.665273	1	38380.06451	90.39503589	1.58333	0.02374995	90.395128574		208.7576701	63.62933783	-0.0061368	
41	1/28/05 2:32	90.38	38380.11083	13.028	38380.10417	629.354864	1	38380.10618	90.39174292	1.625	0.024375	90.391857502		208.7486199	63.62657934	-0.008895293	
42	1/28/05 3:32	90.394	38380.1525	13.025	38380.14583	350.667487	1	38380.14785	90.40702589	1.66667	0.02500005	90.398202504		208.7824792	63.63689987	0.001425032	
43	1/28/05 4:32	90.386	38380.19417	13.022	38380.1875	44.41435	1	38380.18951	90.39719803	1.70833	0.02625	90.397157108		208.7583292	63.62953874	-0.005935895	
44	1/28/05 5:32	90.394	38380.23583	13.026	38380.22917	-197.487389	1	38380.23118	90.40110958	1.75	0.02625	90.397455585		208.7589256	63.63185412	-0.003620516	
45	1/28/05 6:32	90.394	38380.2775	13.027	38380.27083	-306.844223	1	38380.27285	90.39648395	1.79167	0.02687505	90.396866005		208.7537966	63.62815719	-0.007317442	
46	1/28/05 7:32	90.408	38380.31917	13.03	38380.3125	-255.987081	1	38380.31451	90.40569398	1.83333	0.02749995	90.397819403		208.7736282	63.63420188	-0.001272753	
47	1/28/05 8:32	90.409	38380.36083	13.034	38380.35417	-63.787221	1	38380.35618	90.40360091	1.875	0.028125	90.3975475R1		208.7673493	63.63228808	-0.003186553	
48	1/28/05 9:32	90.411	38380.4025	13.037	38380.39583	210.137803	1	38380.39785	90.4037201	1.91667	0.02875005	90.397497005		208.7661808	63.63193191	-0.003542719	
49	1/28/05 10:32	90.411	38380.44417	13.035	38380.4375	481.2962											

## WQSP-3 Formulas

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Time	WL	MatchedBP-Time	Matched-BP	MatchET-Time	Matched-ET	FILTER	BAROCorrect-Time	Corrected-Pressure	ElapsedDays	DetrendVariable	UnadjustedPsi	Freshwater (ft of H2O)	Meters of H2O	Change in Meters	
2	38378.48118	90.688	38378.48583	13.061	38378.47917	811.158056	=IF(MINUTE(A2)=32,1,0)	38378.48118	90.688	=H2-\$H\$2	=J2*0.015	=K2-K2	=L2*2.31	=N2*0.3048	=O2-\$O\$147	
3	38378.52285	90.651	38378.5275	13.046	38378.52083	580.643264	=IF(MINUTE(A3)=32,1,0)	38378.52285	90.688	=H3-\$H\$2	=J3*0.015	=K3-K3	=L3*2.31	=N3*0.3048	=O3-\$O\$147	
4	38378.56451	90.614	38378.56917	13.037	38378.5625	166.160449	=IF(MINUTE(A4)=32,1,0)	38378.56451	90.688	=H4-\$H\$2	=J4*0.015	=K4-K4	=L4*2.31	=N4*0.3048	=O4-\$O\$147	
5	38378.60618	90.582	38378.61083	13.035	38378.60417	-359.736864	=IF(MINUTE(A5)=32,1,0)	38378.60618	90.688	=H5-\$H\$2	=J5*0.015	=K5-K5	=L5*2.31	=N5*0.3048	=O5-\$O\$147	
6	38378.64785	90.552	38378.6525	13.037	38378.64583	-899.701721	=IF(MINUTE(A6)=32,1,0)	38378.64785	90.688	=H6-\$H\$2	=J6*0.015	=K6-K6	=L6*2.31	=N6*0.3048	=O6-\$O\$147	
7	38378.68951	90.536	38378.69417	13.039	38378.6875	-1311.976332	=IF(MINUTE(A7)=32,1,0)	38378.68951	90.688	=H7-\$H\$2	=J7*0.015	=K7-K7	=L7*2.31	=N7*0.3048	=O7-\$O\$147	
8	38378.73118	90.516	38378.73583	13.049	38378.72917	-1529.068153	=IF(MINUTE(A8)=32,1,0)	38378.73118	90.688	=H8-\$H\$2	=J8*0.015	=K8-K8	=L8*2.31	=N8*0.3048	=O8-\$O\$147	
9	38378.77285	90.499	38378.7775	13.044	38378.77083	-1492.129039	=IF(MINUTE(A9)=32,1,0)	38378.77285	90.688	=H9-\$H\$2	=J9*0.015	=K9-K9	=L9*2.31	=N9*0.3048	=O9-\$O\$147	
10	38378.81451	90.492	38378.81917	13.054	38378.8125	-1209.24885	=IF(MINUTE(A10)=32,1,0)	38378.81451	90.688	=H10-\$H\$2	=J10*0.015	=K10-K10	=L10*2.31	=N10*0.3048	=O10-\$O\$147	
11	38378.85618	90.478	38378.86083	13.059	38378.85417	-744.750325	=IF(MINUTE(A11)=32,1,0)	38378.85618	90.688	=H11-\$H\$2	=J11*0.015	=K11-K11	=L11*2.31	=N11*0.3048	=O11-\$O\$147	
12	38378.89785	90.465	38378.9025	13.068	38378.89583	-202.766391	=IF(MINUTE(A12)=32,1,0)	38378.89785	90.688	=H12-\$H\$2	=J12*0.015	=K12-K12	=L12*2.31	=N12*0.3048	=O12-\$O\$147	
13	38378.93951	90.449	38378.94417	13.062	38378.9375	299.399317	=IF(MINUTE(A13)=32,1,0)	38378.93951	90.688	=H13-\$H\$2	=J13*0.015	=K13-K13	=L13*2.31	=N13*0.3048	=O13-\$O\$147	
14	38378.98118	90.431	38378.98583	13.05	38378.97917	660.751107	=IF(MINUTE(A14)=32,1,0)	38378.98118	90.688	=H14-\$H\$2	=J14*0.015	=K14-K14	=L14*2.31	=N14*0.3048	=O14-\$O\$147	
15	38379.02285	90.418	38379.0275	13.04	38379.02083	820.915835	=IF(MINUTE(A15)=32,1,0)	38379.02285	90.688	=H15-\$H\$2	=J15*0.015	=K15-K15	=L15*2.31	=N15*0.3048	=O15-\$O\$147	
16	38379.06451	90.41	38379.06917	13.042	38379.0625	773.023025	=IF(MINUTE(A16)=32,1,0)	38379.06451	90.688	=H16-\$H\$2	=J16*0.015	=K16-K16	=L16*2.31	=N16*0.3048	=O16-\$O\$147	
17	38379.10618	90.401	38379.11083	13.036	38379.10417	562.288583	=IF(MINUTE(A17)=32,1,0)	38379.10618	90.688	=H17-\$H\$2	=J17*0.015	=K17-K17	=L17*2.31	=N17*0.3048	=O17-\$O\$147	
18	38379.14785	90.394	38379.1525	13.039	38379.14583	271.381806	=IF(MINUTE(A18)=32,1,0)	38379.14785	90.688	=H18-\$H\$2	=J18*0.015	=K18-K18	=L18*2.31	=N18*0.3048	=O18-\$O\$147	
19	38379.18951	90.394	38379.19417	13.04	38379.1875	-3.017699	=IF(MINUTE(A19)=32,1,0)	38379.18951	90.688	=H19-\$H\$2	=J19*0.015	=K19-K19	=L19*2.31	=N19*0.3048	=O19-\$O\$147	
20	38379.23118	90.393	38379.23583	13.037	38379.22917	-176.148139	=IF(MINUTE(A20)=32,1,0)	38379.23118	90.688	=H20-\$H\$2	=J20*0.015	=K20-K20	=L20*2.31	=N20*0.3048	=O20-\$O\$147	
21	38379.27285	90.403	38379.2775	13.036	38379.27083	-197.038082	=IF(MINUTE(A21)=32,1,0)	38379.27285	90.688	=H21-\$H\$2	=J21*0.015	=K21-K21	=L21*2.31	=N21*0.3048	=O21-\$O\$147	
22	38379.31451	90.395	38379.31917	13.045	38379.3125	-61.115028	=IF(MINUTE(A22)=32,1,0)	38379.31451	90.688	=H22-\$H\$2	=J22*0.015	=K22-K22	=L22*2.31	=N22*0.3048	=O22-\$O\$147	
23	38379.35618	90.403	38379.36083	13.049	38379.35417	189.236352	=IF(MINUTE(A23)=32,1,0)	38379.35618	90.688	=H23-\$H\$2	=J23*0.015	=K23-K23	=L23*2.31	=N23*0.3048	=O23-\$O\$147	
24	38379.39785	90.403	38379.4025	13.05	38379.39583	476.04706	=IF(MINUTE(A24)=32,1,0)	38379.39785	90.688	=H24-\$H\$2	=J24*0.015	=K24-K24	=L24*2.31	=N24*0.3048	=O24-\$O\$147	
25	38379.43951	90.396	38379.44417	13.055	38379.4375	706.187373	=IF(MINUTE(A25)=32,1,0)	38379.43951	90.688	=H25-\$H\$2	=J25*0.015	=K25-K25	=L25*2.31	=N25*0.3048	=O25-\$O\$147	
26	38379.48118	90.394	38379.48583	13.042	38379.47917	795.893286	=IF(MINUTE(A26)=32,1,0)	38379.48118	90.3955202640146	=H26-\$H\$2	=J26*0.015	=K26-K26	=L26*2.31	=N26*0.3048	=O26-\$O\$147	
27	38379.52285	90.388	38379.5275	13.029	38379.52083	693.468357	=IF(MINUTE(A27)=32,1,0)	38379.52285	90.390096975168	=H27-\$H\$2	=J27*0.015	=K27-K27	=L27*2.31	=N27*0.3048	=O27-\$O\$147	
28	38379.56451	90.395	38379.56917	13.014	38379.5625	394.536083	=IF(MINUTE(A28)=32,1,0)	38379.56451	90.397341596911	=H28-\$H\$2	=J28*0.015	=K28-K28	=L28*2.31	=N28*0.3048	=O28-\$O\$147	
29	38379.60618	90.394	38379.61083	13.014	38379.60417	-54.215036	=IF(MINUTE(A29)=32,1,0)	38379.60618	90.3949580880159	=H29-\$H\$2	=J29*0.015	=K29-K29	=L29*2.31	=N29*0.3048	=O29-\$O\$147	
30	38379.64785	90.395	38379.6525	13.012	38379.64583	-564.253906	=IF(MINUTE(A30)=32,1,0)	38379.64785	90.3935042114934	=H30-\$H\$2	=J30*0.015	=K30-K30	=L30*2.31	=N30*0.3048	=O30-\$O\$147	
31	38379.68951	90.403	38379.69417	13.018	38379.6875	-1025.689451	=IF(MINUTE(A31)=32,1,0)	38379.68951	90.3984154269062	=H31-\$H\$2	=J31*0.015	=K31-K31	=L31*2.31	=N31*0.3048	=O31-\$O\$147	
32	38379.73118	90.403	38379.73583	13.021	38379.72917	-1334.257456	=IF(MINUTE(A32)=32,1,0)	38379.73118	90.39352569394914	=H32-\$H\$2	=J32*0.015	=K32-K32	=L32*2.31	=N32*0.3048	=O32-\$O\$147	
33	38379.77285	90.411	38379.7775	13.031	38379.77083	-1417.961172	=IF(MINUTE(A33)=32,1,0)	38379.77285	90.4001419908487	=H33-\$H\$2	=J33*0.015	=K33-K33	=L33*2.31	=N33*0.3048	=O33-\$O\$147	
34	38379.81451	90.411	38379.81917	13.031	38379.8125	-1256.139825	=IF(MINUTE(A34)=32,1,0)	38379.81451	90.3982401469199	=H34-\$H\$2	=J34*0.015	=K34-K34	=L34*2.31	=N34*0.3048	=O34-\$O\$147	
35	38379.85618	90.409	38379.86083	13.028	38379.85417	-885.455886	=IF(MINUTE(A35)=32,1,0)	38379.85618	90.3948792538784	=H35-\$H\$2	=J35*0.015	=K35-K35	=L35*2.31	=N35*0.3048	=O35-\$O\$147	
36	38379.89785	90.411	38379.9025	13.031	38379.89583	-394.807187	=IF(MINUTE(A36)=32,1,0)	38379.89785	90.3980429935519	=H36-\$H\$2	=J36*0.015	=K36-K36	=L36*2.31	=N36*0.3048	=O36-\$O\$147	
37	38379.93951	90.409	38379.94417	13.033	38379.9375	116.510817	=IF(MINUTE(A37)=32,1,0)	38379.93951	90.3989671963636	=H37-\$H\$2	=J37*0.015	=K37-K37	=L37*2.31	=N37*0.3048	=O37-\$O\$147	
38	38379.98118	90.403	38379.98583	13.033	38379.97917	527.337872	=IF(MINUTE(A38)=32,1,0)	38379.98118	90.3984384300428	=H38-\$H\$2	=J38*0.015	=K38-K38	=L38*2.31	=N38*0.3048	=O38-\$O\$147	
39	38380.02285	90.395	38380.0275	13.032	38380.02083	761.973838	=IF(MINUTE(A39)=32,1,0)	38380.02285	90.397273445694	=H39-\$H\$2	=J39*0.015	=K39-K39	=L39*2.31	=N39*0.3048	=O39-\$O\$147	
40	38380.06451	90.387	38380.06917	13.028	38380.0625	788.665273	=IF(MINUTE(A40)=32,1,0)	38380.06451	90.3950356895534	=H40-\$H\$2	=J40*0.015	=K40-K40	=L40*2.31	=N40*0.3048	=O40-\$O\$147	
41	38380.10618	90.388	38380.11083	13.028	38380.10417	629.354864	=IF(MINUTE(A41)=32,1,0)	38380.10618	90.391742915306	=H41-\$H\$2	=J41*0.015	=K41-K41	=L41*2.31	=N41*0.3048	=O41-\$O\$147	
42	38380.14785	90.394	38380.1525	13.025	38380.14583	350.667487	=IF(MINUTE(A42)=32,1,0)	38380.14785	90.407025852728	=H42-\$H\$2	=J42*0.015	=K42-K42	=L42*2.31	=N42*0.3048	=O42-\$O\$147	
43	38380.18951	90.386	38380.19417	13.022	38380.1875	44.41435	=IF(MINUTE(A43)=32,1,0)	38380.18951	90.3971960304236	=H43-\$H\$2	=J43*0.015	=K43-K43	=L43*2.31	=N43*0.3048	=O43-\$O\$147	
44	38380.23118	90.394	38380.23583	13.026	38380.22917	-197.487389	=IF(MINUTE(A44)=32,1,0)	38380.23118	90.4011095594137	=H44-\$H\$2	=J44*0.015	=K44-K44	=L44*2.31	=N44*0.3048	=O44-\$O\$147	
45	38380.27285	90.394	38380.2775	13.027	38380.27083	-306.844223	=IF(MINUTE(A45)=32,1,0)	38380.27285	90.39648395046168	=H45-\$H\$2	=J45*0.015	=K45-K45	=L45*2.31	=N45*0.3048	=O45-\$O\$147	
46	38380.31451	90.408	38380.31917	13.03	38380.3125	-255.987081	=IF(MINUTE(A46)=32,1,0)	38380.31451	90.4056939828661	=H46-\$H\$2	=J46*0.015	=K46-K46	=L46*2.31	=N46*0.3048	=O46-\$O\$147	
47	38380.35618	90.409	38380.36083	13.034	38380.35417	-63.787221	=IF(MINUTE(A47)=32,1,0)	38380.35618	90.4036009068965	=H47-\$H\$2	=J47*0.015	=K47-K47	=L47*2.31	=N47*0.3048	=O47-\$O\$147	
48	38380.39785	90.411	38380.4025	13.037	38380.39583	210.137803	=IF(MINUTE(A48)=32,1,0)	38380.39785	90.4037201025226	=H48-\$H\$2	=J48*0.015	=K48-K48	=L48*2.31	=N48*0.3048	=O48-\$O\$147	
49	38380.43951	90.411	38380.44417	13.035	38380.4375	481.29629	=IF(MINUTE(A49)=32,1,0)	38380.43951	90.4038372543878	=H49-\$H\$2	=J49*0.015	=K49-K49	=L49*2.31	=N49*0.3048	=O49-\$O\$147	
50	38380.48118	90.411	38380.48583	13.025	38380.47917	6										