

REPORTING CALCULATED VALUES

Table 1 Average Monthly (Effluent Violation)

Parameter	Units	Effluent Limitations in Permit	Use these Limitation Periods in Violation Tab	Use these Reporting Units in CIWQS	Use this Reporting Date in CIWQS
Flow	MGD	Average Monthly (AMEL)	Monthly Average (Mean)	MGD	Last Date of Month
Biochemical Oxygen Demand (BOD) (5 day @30 Deg. C)	mg/L	Average Monthly (AMEL)	Monthly Average (Mean)	mg/L	
	lbs/day			lbs/day	
BOD5 @ 20 Deg. C, Percent Removal	%	Average Monthly (AMEL)	Percent Reduction	%	
Total Suspended Solids (TSS)	mg/L	Average Monthly (AMEL)	Monthly Average (Mean)	mg/L	
	lbs/day			lbs/day	
Total Suspended Solids (TSS), Percent Removal	%	Average Monthly (AMEL)	Percent Reduction	%	
Copper, Total Recoverable	µg/L	Average Monthly (AMEL)	Monthly Average (Mean)	µg/L	
	lbs/day			lbs/day	

Average Monthly (AMEL)

The Average Monthly (AMEL) value is the sum of the highest allowable average of “daily discharges” over a calendar month. Calculated as the sum of all “daily discharges” measured during a calendar month divided by the number of “daily discharges” measured during that month.

“Daily discharges” means the “discharge of a pollutant” measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the “daily discharge” is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the “daily discharge” is calculated as the average measurement of the pollutant over the day.

For the Average Monthly (AMEL) mass loading, it is the sum of the product of the flow rate (mgd) x measured highest allowable average “daily discharge” (mg/L) x 8.34 divided by the number of “daily discharges” measured during that month.

The calculated Average Monthly (AMEL) values shall be reported on the last calendar day of the month.

Percent Removal

The percent removal for each day shall be calculated according to the following equation:

$$\text{Daily Discharge Percent Removal} = ((\text{Influent Concentration} - \text{Effluent Concentration}) / \text{Influent Concentration}) \times 100\%$$

$$\text{Average Monthly Percent Removal} = \text{Sum of Daily Discharge Percent Removals} / \text{Number of Days Percent Removal is calculated.}$$

The calculated percent removal shall be reported on the last calendar day of the month.

Significant Figures

All data should be rounded to significant figures. Laboratories should provide results to the significant figures specified in the 40 CFR Part 136 for the particular method used (usually to two significant figures).

REPORTING CALCULATED VALUES

Table 2 Average Weekly (Effluent Violation)

Parameter	Units	Effluent Limitations in Permit	Use this Limitation Period in Violation Tab	Use these Reporting Units in CIWQS	Use this Reporting Date in CIWQS
Biochemical Oxygen Demand (BOD) (5 day @30 Deg. C)	mg/L	Average Weekly (AWEL)	Weekly Average (Mean)	mg/L	The Saturday of the calendar week of sampling
	lbs/day			lbs/day	
Total Suspended Solids (TSS)	mg/L	Average Weekly (AWEL)	Weekly Average (Mean)	mg/L	
	lbs/day			lbs/day	

Average Weekly (AWEL)

The Average Weekly (AWEL) value is the highest allowable average of “daily discharges” over a calendar week, calculated as the sum of all “daily discharges” measured during a calendar week divided by the number of “daily discharges” measured during that calendar week.

“Daily discharges” means the “discharge of a pollutant” measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the “daily discharge” is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the “daily discharge” is calculated as the average measurement of the pollutant over the day.

For the Average Weekly discharge loading, it is the sum of the product of the flow rate (mgd) x calculated highest allowable value average of “daily discharges” (mg/L) x 8.34 divided by the number of “daily discharges” measure for that calendar week.

The analytical result for comparison of the Average Weekly Effluent Limitation shall be reported on the ending Saturday of the calendar weeks within the reporting month.

For the beginning of the month, If samples are collected during the calendar week in the previous month and the ending Saturday is in the Calendar Month of reporting, the discharge shall report the results of the samples collected in the previous week and report the analytical result on the ending Saturday of the Calendar Month of reporting.

For the end of the month, if the ending Saturday falls on the following month no analytical result for comparison of the AWEL is required, however, any samples collected during the last calendar week shall be reported.

Significant Figures

All data should be rounded to significant figures. Laboratories should provide results to the significant figures specified in the 40 CFR Part 136 for the particular method used (usually to two significant figures).

REPORTING CALCULATED VALUES

Table 3 Instantaneous Maximum/ Instantaneous Minimum (Effluent Violation)

Parameter	Units	Effluent Limitations in Permit	Use this Limitation Period in Violation Tab	Use these Reporting Units in CIWQS	Use this Reporting Date in CIWQS
pH	Standard Units	Instantaneous Minimum	Instantaneous Minimum	SU	The day of sample collection
pH	Standard Units	Instantaneous Maximum	Instantaneous Maximum	SU	
Chlorine	mg/L	Instantaneous Maximum	Instantaneous Maximum	mg/L	

Daily Parameters

Daily monitored parameters shall be reported on the calendar day of collection.

Significant Figures

All data should be rounded to significant figures. Laboratories should provide results to the significant figures specified in the 40 CFR Part 136 for the particular method used (usually to two significant figures).

Table 4 Maximum Daily (Effluent Violation)

Parameter	Units	Effluent Limitations in Permit	Use this Limitation Period in Violation Tab	Use these Reporting Units in CIWQS	Use this Reporting Date in CIWQS
Oil and Grease, Total	mg/L	Maximum Daily (MDEL)	Daily Maximum	mg/L	The day of sample collection
	lbs/day			lbs/day	
Copper, Total Recoverable	µg/L	Maximum Daily (MDEL)	Daily Maximum	µg/L	
	lbs/day			lbs/day	

Daily Parameters

Daily monitored parameters shall be reported on the calendar day of collection

Daily Maximum Limit

The maximum allowable discharge of pollutant during a calendar day. Where daily maximum limitations are expressed in units of mass, the daily discharge is the total mass discharged over the course of the day. Where daily maximum limitations are expressed in terms of a concentration, the daily discharge is the arithmetic average measurement of the pollutant concentration derived from all measurements taken that day.

Significant Figures

All data should be rounded to significant figures. Laboratories should provide results to the significant figures specified in the 40 CFR Part 136 for the particular method used (usually to two significant figures).

REPORTING CALCULATED VALUES

Table 5 Bacteria Violations (Effluent Violation)

Parameter	Units	Effluent Limitations in Permit	Use these Limitation Periods in Violation Tab	Use these Reporting Units in CIWQS	Use this Reporting Date in CIWQS
E. Coli	MPN/100 mL	Nor shall any sample exceed the maximum allowable of a MPN of 400 per 100 mL	Single Sample Maximum	MPN/100 mL	The day of sample collection
Enterococci	MPN/100 mL	Nor shall any sample exceed the maximum allowable of a MPN of 100 per 100 mL	Single Sample Maximum	MPN/100 mL	
E. Coli	MPN/100 mL	Geometric mean shall not exceed a MPN of 126 per 100 mL	Geometric Mean of Minimum of 5 Samples in 30-Days	MPN/100 mL	Last Date of Month
Enterococci	MPN/100 mL	Geometric mean shall not exceed a MPN of 33 per 100 mL	Geometric Mean of Minimum of 5 Samples in 30-Days	MPN/100 mL	
Fecal Coliform	MPN/100 mL	Geometric mean shall not exceed a MPN of 200 per 100 mL	Geometric Mean of Minimum of 5 Samples in 30-Days	MPN/100 mL	
Fecal Coliform	%	Nor shall more than ten percent of the total samples during any 30-day period exceed a MPN of 400 per 100 mL	Not to exceed a specific limit more than once within any 30-day period	%	

Geometric Mean

If the calculated geometric mean bacterial concentrations for Enterococci, E. coli or fecal coliform exceed the 30-day geometric mean effluent limitations or if more than ten percent of the bacterial concentrations for fecal coliform exceed 400 MPN per 100 milliliters, this will represent a single violation of the water quality-based effluent limitation for bacteria and the Discharger will be considered out of compliance for the month in which the samples were collected. In cases where the calculated geometric mean bacterial concentrations for Enterococci, E. coli and/or fecal coliform exceed the 30-day geometric mean effluent limitations, Enterococci shall be noted as the violation. In cases where the calculated geometric mean bacterial concentration for Enterococci does not exceed the effluent limitations but the calculated bacterial concentrations for E. coli and/or fecal coliform exceed the effluent limitations, E. coli shall be noted as the violation. If only the calculated geometric mean for fecal coliform exceed the effluent limitations, then fecal coliform shall be noted as the violation. If the calculated geometric mean bacterial concentration for only one bacterial indicator exceeds the effluent limitation, that bacterial indicator parameter shall be noted as the violation (i.e., Enterococci, E. coli or fecal coliform).

Single Sample Maximum

If the bacterial concentrations for Enterococci, E. coli or fecal coliform exceed the maximum bacterial densities, this will represent a single violation of the water quality-based effluent limitation for bacteria and the Discharger will be considered out of compliance for the day in which the sample(s) were collected. In cases where individual bacterial concentrations for Enterococci, E. coli and/or fecal coliform exceed the maximum bacterial densities in the effluent limitations, Enterococci shall be noted as the violation. In cases where the individual bacterial concentration for Enterococci does not exceed the effluent limitations but the individual bacterial concentrations for E. coli and/or fecal coliform exceed the effluent limitations, E. coli shall be noted as the violation. If only the bacterial concentration for fecal coliform exceeds the effluent limitations, then fecal coliform shall be noted as the violation. If the bacterial concentration for only one bacterial indicator exceeds the effluent limitation, that bacterial indicator parameter shall be noted as the violation (i.e., Enterococci, E. coli or fecal coliform).

REPORTING CALCULATED VALUES

Table 6 Reporting Violations (Other Violation Type)

Parameter	Units	Effluent Limitations in Permit	Use these Limitation Periods in Violation Tab	Use these Limitation Period in Violation Tab	Use this Reporting Date in CIWQS
Deficient Monitoring	Not Applicable	Did not submit required data	Deficient Monitoring	Not Applicable	Last Date of Month
Late Report	Not Applicable	Report is late	Reporting-> Late Report	Not Applicable	
Deficient Reporting	Not Applicable	Did not report required data	Reporting - > Deficient Reporting	Not Applicable	
Failure to Notify	Not Applicable	Did not notify Regional Board as required in Permit	Reporting -> Failure to Notify	Not Applicable	
Water Quality – Sanitary Sewer Overflow/Spill	Not Applicable	Sanitary Sewer Overflow/Spill	Water Quality-> Sanitary Sewer Overflow/Spill	Not Applicable	

The above reporting violations shall use the last day of the month as the reporting date.

Type	Description
Deficient Monitoring	Monitoring is missing or incorrect in some way, such as sample/analysis method, location, QA/QC criteria not met, lab not ELAP-certified. Single entry for all monitoring violation. Single entry for each reporting period. For example, if sample/analysis method was not complied with for one monitoring result, one violation should be recorded. If two sample/analysis method was not complied with for two monitoring result, one violation should be recorded, etc. If one monitoring result was not completed for the reporting period, record one violation for the reporting period. If three pH monitoring results and ten flow monitoring results were not completed for the reporting period, record one violation. Use the description field to describe why the report is deficient.
Reporting – Late Report	Use this type of violation if no report is received or the report is received after due date. If and when report is received, enter the number of days late in Violation Description field. For reports submitted according to an approved pretreatment program, record late report violations as “Pretreatment” violations.
Reporting – Deficient Reporting	Incomplete report (i.e., missing signature, certification statement, laboratory identification, etc.); failure to notify per requirement (i.e., call out violation in self-monitoring report cover sheet). If the SMR calls out that monitoring was not completed, record as deficient monitoring. If the discharger does not report that monitoring is missing but it is, record as deficient reporting. If it is found that monitoring was not completed, add a deficient monitoring violation in addition to reporting violation. Record one violation for each deficient report.
Reporting – Failure to Notify	Failure to notify regional board of spill within defined period of time. As specified in the Water Code, this applies to both regulated and unregulated sites. A violation for the spill should also be recorded. Single entry for each occurrence. Note number of days they failed to notify the regional board in the description.
Water Quality – Sanitary Sewer Overflow/Spill	Discharge from collection system (except for private laterals); other spills and/or bypassing of treatment unit(s). Single entry for each spill.

SIGNIFICANT FIGURES

Significant Figures

1. All nonzero digits are significant.
2. Zeros between nonzero digits are significant (e.g., 1.005 mg has four significant figures)
3. Zeros to the left of the first nonzero digits in a number are not significant (0.05 mg has one significant figure)
4. When a number ends in zeros to the right of a decimal point, they are significant (0.00500 has three significant figures)
5. When a number ends in zeros that are not to the right of a decimal point, you cannot tell if they are significant (e.g., 10300 kg).
6. Only measurements have a limited number of significant figures. Given values, constants, etc. are assumed to have an infinite number of significant figures.

Addition and Subtraction

The last digit retained is set by the first “doubtful digit” (i.e., the last significant digit which is farthest to the left in the column of numbers).

$$\begin{array}{r} 37.24 \\ +10.3 \\ \hline 47.54 \end{array} \text{ round to } \mathbf{47.5}$$

$$\begin{array}{r} 7003 \\ 21.2 \\ + 130.00 \\ \hline 7154.20 \end{array} \text{ round to } \mathbf{7154}$$

Multiplication and Division

The number of significant figures in the answer equals that of the quantity that has the smallest number of significant figures.

Combined Operations

There is mixed guidance in the way of rules on combined operations. For this course, we round only after the completion of all operations.

Rounding

When rounding, look at the digit following the digit that is to be the last one in the result:

1. If that digit is less than 5, drop it and all figures to the right of it.
2. If that digit is greater than 5, increase by 1 the number to be rounded (the preceding digit) and drop everything after it.
3. If it is 5, round so that the preceding digit will be even (keeping in mind that zero is considered an even number when rounding off).

Example – Round the following to three significant figures:

$$7.43378 \quad \text{rounds to } 7.43$$

$$5.12821 \quad \text{rounds to } 5.13$$

$$2.40568 \quad \text{rounds to } 2.40$$

$$8.93532 \quad \text{rounds to } 8.94$$

CIWQS REFERENCE DOCUMENTS

Link to Log-In - <http://ciwqs.waterboards.ca.gov/>

CIWQS HELP CENTER – NPDES

Link to Web Site -

http://www.waterboards.ca.gov/water_issues/programs/ciwqs/chc_npdes.shtml

Link to Regional Water Board Web Site -

http://www.waterboards.ca.gov/coloradriver/water_issues/programs/ciwqs_esmr/index.shtml

Support for the National Pollutant Discharge Elimination System

CIWQS Registration Forms

[Legally Responsible Official](#)

[Data Submitter](#)

eSMR2 Presentations and Helpful Information

[Workshop Presentation](#) - The presentation given in our training class

[User Guide](#) - User guide for the web portion of your submittal

[Submittal Checklist](#) - Bulleted list of steps to help you through your first couple submittals

[Common Errors](#) - A list of the most common errors that you may receive when uploading a CDF, EDF, or PET export file and how to resolve them

[Business Rules](#) - Several guidelines on how to enter information

[User Group webpage](#) - Find out the latest progress in eSMR development

[Frequently Asked Questions](#) - The most common questions we hear and their answers

PET Tool / CIWQS Data Format Installer

[Data Types](#) - Guidelines on how Data Types should be used in the Permittee Entry Template (PET) Tool

Optional Tools

Pivot - Review your uploaded monitoring data in an easy to read format prior to certifying and submitting.

(“Save” the Excel file to your computer before installing).

[Instructions](#) | [Excel 2003](#)

[Instructions](#) | [Excel 2007](#)

Limit - Use after the Pivot Tool to compare your permit limits to your monitoring data. You must populate the limits in the Limit tool.

[Instructions](#) | [Excel 2003](#)

[Instructions](#) | [Excel 2007](#)

[Additional NPDES Information](#)

Questions or Comments about NPDES?

Please email the [CIWQS Help Center](#) or phone 866-79-CIWQS (24977)

Regional Board Contacts are:

John Carmona – jcarmona@waterboards.ca.gov or phone (760) 340-4521

Jose Figueroa-Acevedo – jfigueroa-acevedo@waterboards.ca.gov or phone (760) 352-1464

State Board Contacts are:

CIWQS Help Center – ciwqs@waterboards.ca.gov or phone 866-792-4977

Rassam Zarghami – Rzarghami@waterboards.ca.gov or phone (916) 341-5516 or fax (916) 341-5463