MOR compliance: Improving common problems

- Do Not Handwrite
  - Illegible
  - Error prone
- Use Microsoft Excel
  - Calculations are completed automatically
  - Errors easily identified and corrected
- Computer access is available to everyone
  - Administrative offices
  - Public Libraries
- Create redundancy in training
  - Valuable experience and knowledge is lost if a system fails to train replacements before staff leave
  - Ensure multiple individuals are trained to complete compliance obligations
  - If responsible party is absent, retires, or unexpectedly leaves, there should always be another individual trained and readily available to complete required duties

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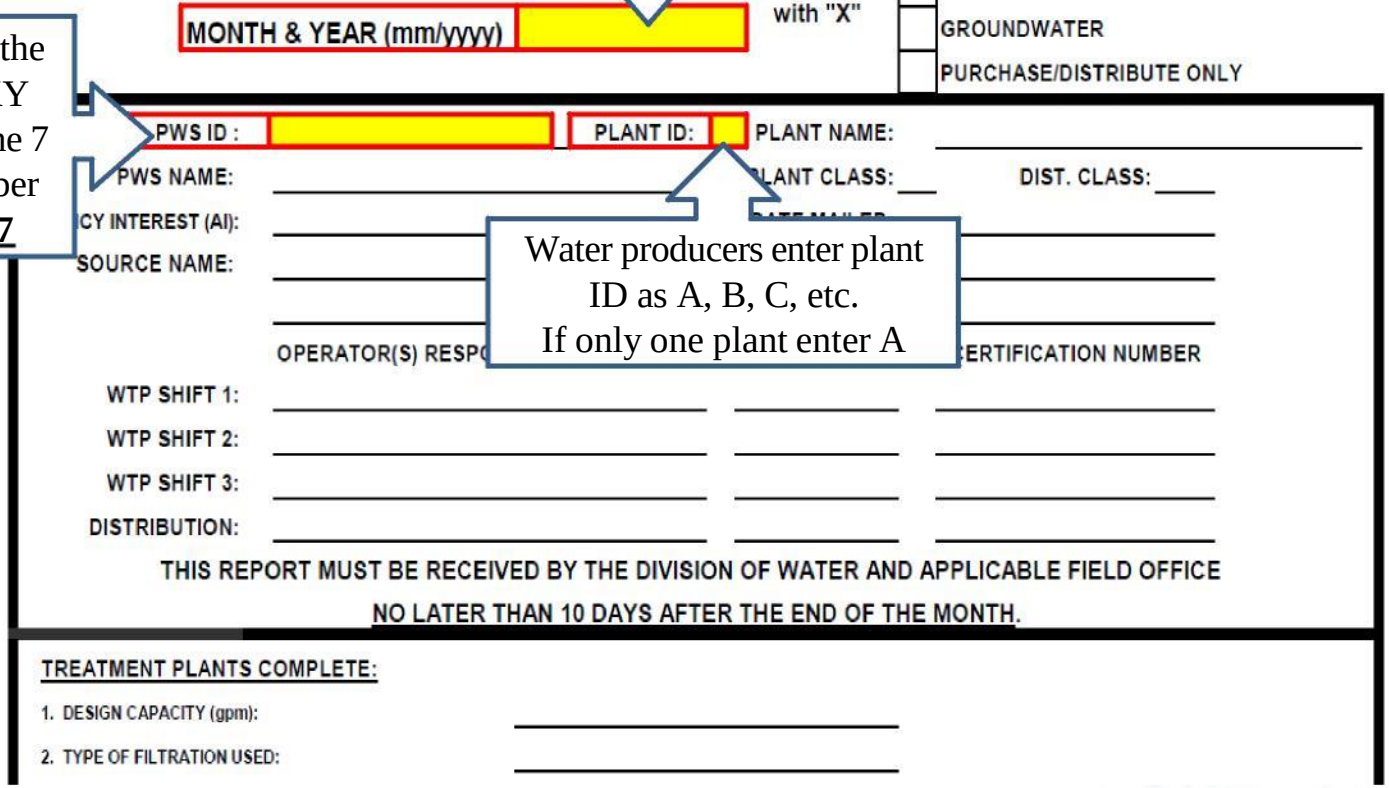
MOR compliance: Improving common problems

Enter the report date as the relevant monitoring period for the data as MM/YYYY, not the current month
(if submitting in March, the monitoring period would be February)

Always enter the PWSID as KY followed by the 7 digit ID number **KY1234567**

Water producers enter plant ID as A, B, C, etc.
If only one plant enter A



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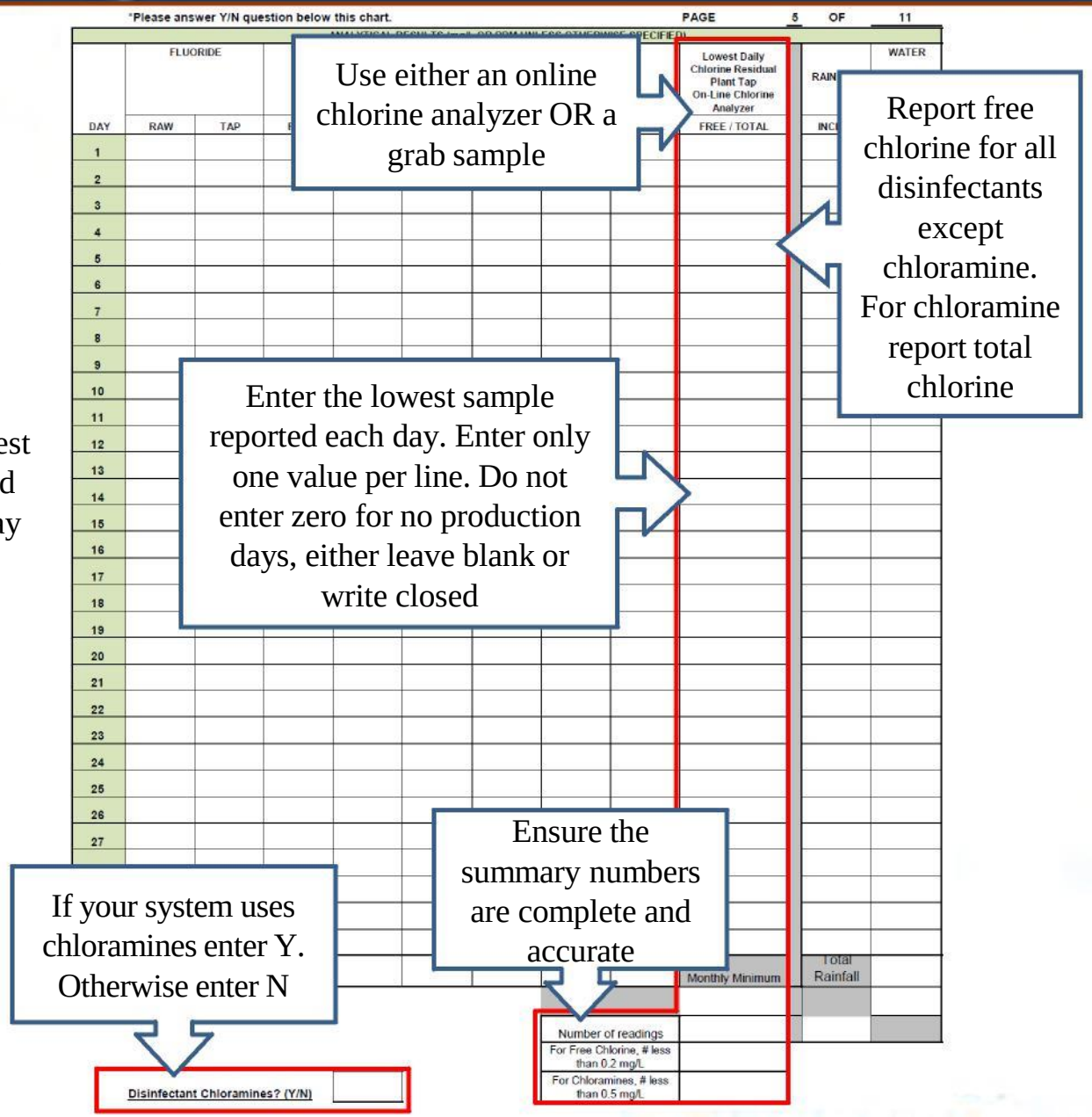
MOR Compliance

MOR page 5 Water Quality
Plant Tap/Entry Point Chlorine Residuals

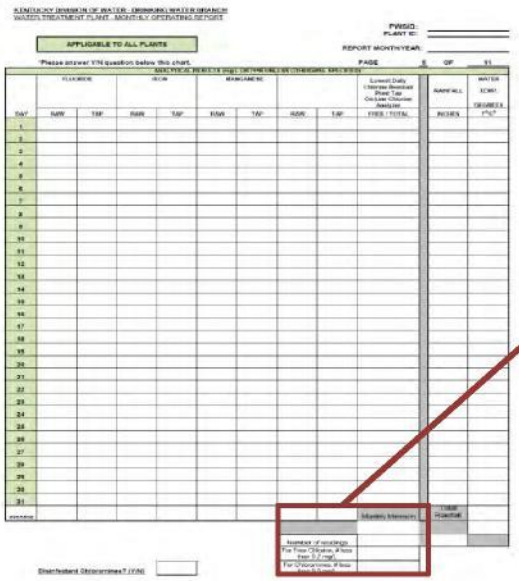
All water producers must report the lowest amount of chlorine leaving the plant and entering the distribution system everyday of plant operation



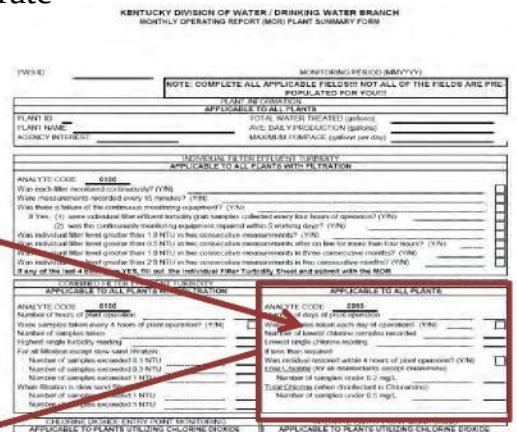
MOR Compliance

Transfer MOR page 5 data to plant summary

Compliance is primarily determined based on the summary pages.
It is imperative that the summary pages are complete and accurate



	Monthly Minimum
Number of readings	
For Free Chlorine, # less than 0.2 mg/L	
For Chloramines, # less than 0.5 mg/L	



Ensure that the data corresponds between plant tap/entry point minimum chlorine residuals and the summary page

ENTRY POINT RESIDUAL DISINFECTANT CONCENTRATION
APPLICABLE TO ALL PLANTS

ANALYTE CODE 0999
Number of days of plant operation
Were samples taken each day of operation? (Y/N)
Number of lowest chlorine samples recorded
Lowest single chlorine reading
If less than required:
Was residual restored within 4 hours of plant operation? (Y/N)
Free Chlorine (for all disinfectants except chloromine):
Number of samples under 0.2 mg/L
Total Chlorine (when disinfectant is Chloramine):
Number of samples under 0.5 mg/L

Means total number of minimum chlorine samples **NOT** how many samples were at the lowest value. To be in compliance, this number should be equal to the number of days of plant operation

If using excel, cells will auto-populate from preceding data pages, **except** Y/N questions

Kentucky
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MOR Compliance

MOR page 7 Distribution

Distribution System Chlorine Residuals

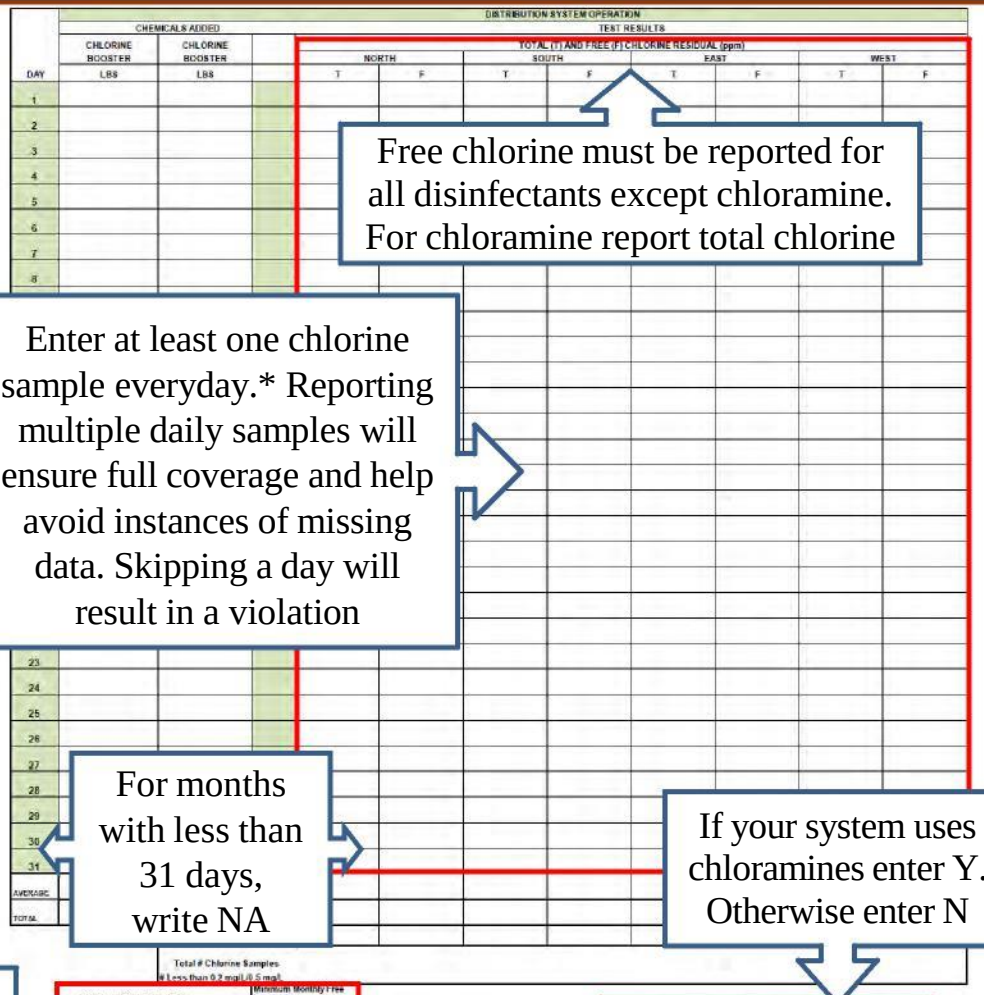
Community Systems: Must report at least one chlorine residual **everyday**

*Non-Community Systems: Must report at least one chlorine residual **everyday the system is open** and serving water to the public

A system with multiple plants will have the same distribution chlorine residuals for both plants' MORs

If a system purchases both chlorine and chloramine within the same month,

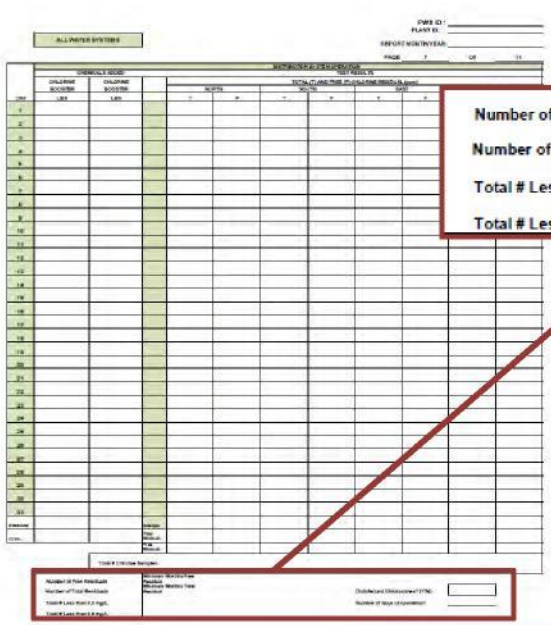
report total chlorine for all samples



MOR Compliance

Transfer MOR page 7 data to distribution summary

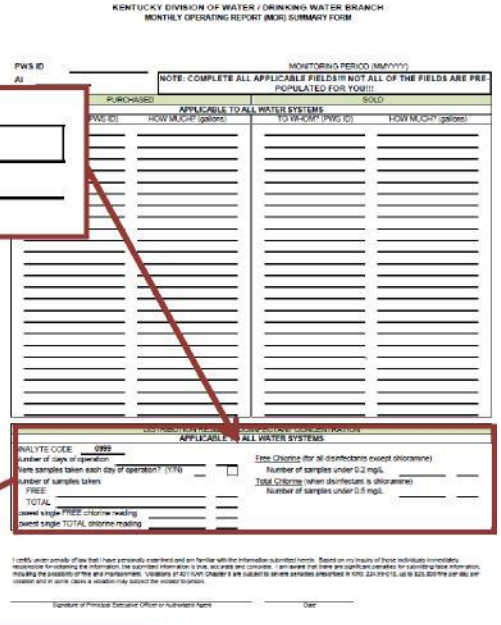
Compliance is primarily determined based on the summary pages.
It is imperative that the summary pages are complete and accurate



Number of Free Residuals
Number of Total Residuals
Total # Less than 0.2 mg/L
Total # Less than 0.5 mg/L

Minimum Monthly Free Residual
Minimum Monthly Total Residual

Disinfectant Chloramines? (Y/N)
Number of days of operation?



Ensure that the data corresponds between distribution chlorine residuals and the summary page

DISTRIBUTION RESIDUAL DISINFECTANT CONCENTRATION
APPLICABLE TO ALL WATER SYSTEMS

ANALYTE CODE 0999
Number of days of operation
Were samples taken each day of operation? (Y/N)
Number of samples taken:
FREE
TOTAL
Lowest single FREE chlorine reading
Lowest single TOTAL chlorine reading

Free Chlorine (for all disinfectants except chloramine)
Number of samples under 0.2 mg/L
Total Chlorine (when disinfectant is chloramine)
Number of samples under 0.5 mg/L

If using excel, cells will auto-populate from preceding data pages, **except** Y/N questions

Kentucky
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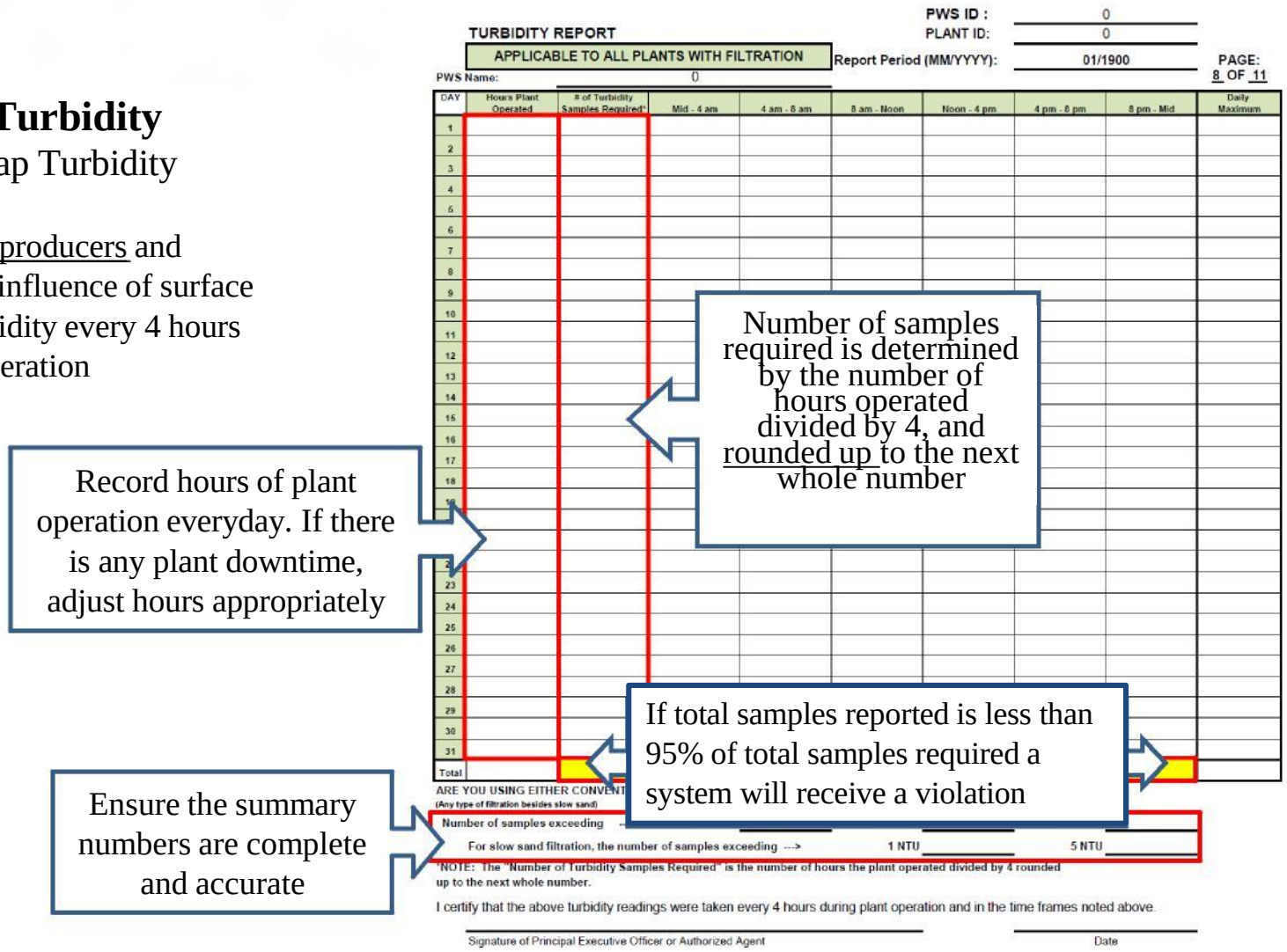
MOR Compliance

MOR page 8 Turbidity Report Plant Tap Turbidity Readings

All surface water producers and groundwater under the influence of surface water must report turbidity every 4 hours of plant operation



Number of samples required is determined by the number of hours operated divided by 4, and rounded up to the next whole number

Record hours of plant operation everyday. If there is any plant downtime, adjust hours appropriately

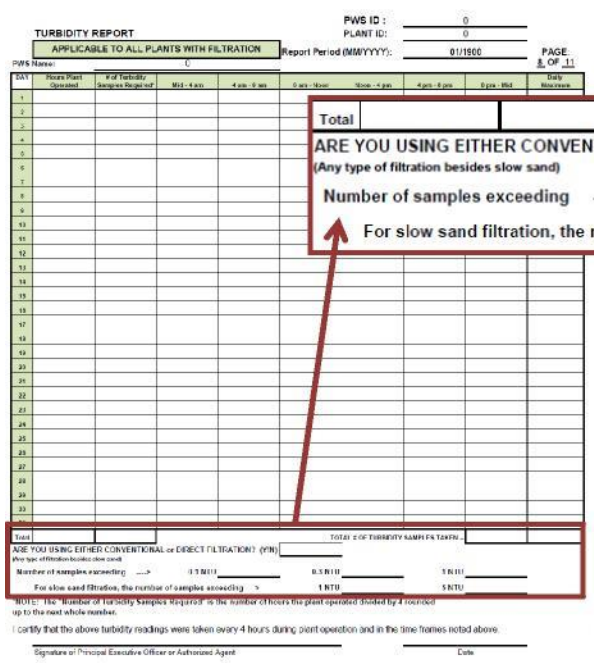
If total samples reported is less than 95% of total samples required a system will receive a violation

Ensure the summary numbers are complete and accurate

MOR Compliance

Transfer MOR page 8 data to plant summary

Compliance is primarily determined based on the summary pages.
It is imperative that the summary pages are complete and accurate


TURBIDITY REPORT

APPLICABLE TO ALL PLANTS WITH FILTRATION

PWS ID :

PLANT ID:

Report Period (MM/YYYY):

PWS Name:

PAGE 8 OF 11

Total

ARE YOU USING EITHER CONVENTIONAL or DIRECT FILTRATION? (Y/N)

(Any type of filtration besides slow sand)

TOTAL # OF TURBIDITY SAMPLES TAKEN --

Number of samples exceeding ----> 0.1 NTU 0.3 NTU 1 NTU

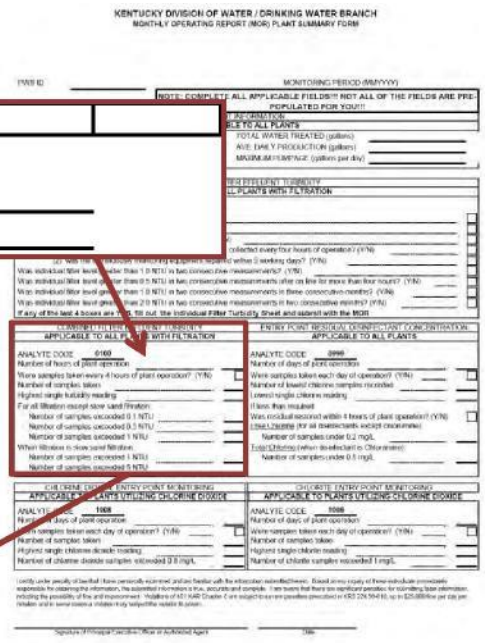
For slow sand filtration, the number of samples exceeding ---> 1 NTU 5 NTU

NOTE: The "Number of Turbidity Samples Required" is the number of hours the plant operated divided by 4 rounded up to the next whole number.

I certify that the above turbidity readings were taken every 4 hours during plant operation and in the time frames noted above.

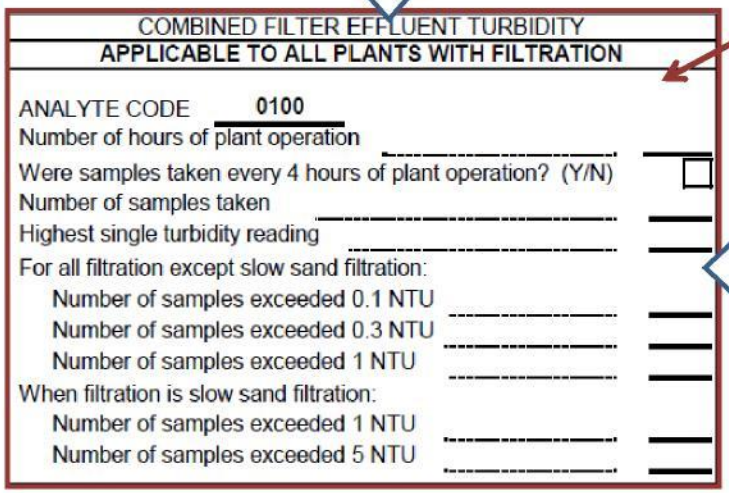
Signature of Principal Executive Officer or Authorized Agent

Date


KENTUCKY DIVISION OF WATER / DRINKING WATER BRANCH

MONTHLY OPERATING REPORT (MOR) PLANT SUMMARY FORM

Ensure that the data corresponds between turbidity report and the summary page


COMBINED FILTER EFFLUENT TURBIDITY

APPLICABLE TO ALL PLANTS WITH FILTRATION

ANALYTE CODE 0100

Number of hours of plant operation

Were samples taken every 4 hours of plant operation? (Y/N)

Number of samples taken

Highest single turbidity reading

For all filtration except slow sand filtration:

Number of samples exceeded 0.1 NTU

Number of samples exceeded 0.3 NTU

Number of samples exceeded 1 NTU

When filtration is slow sand filtration:

Number of samples exceeded 1 NTU

Number of samples exceeded 5 NTU

If using excel, cells will auto-populate from preceding data pages, **except** Y/N questions

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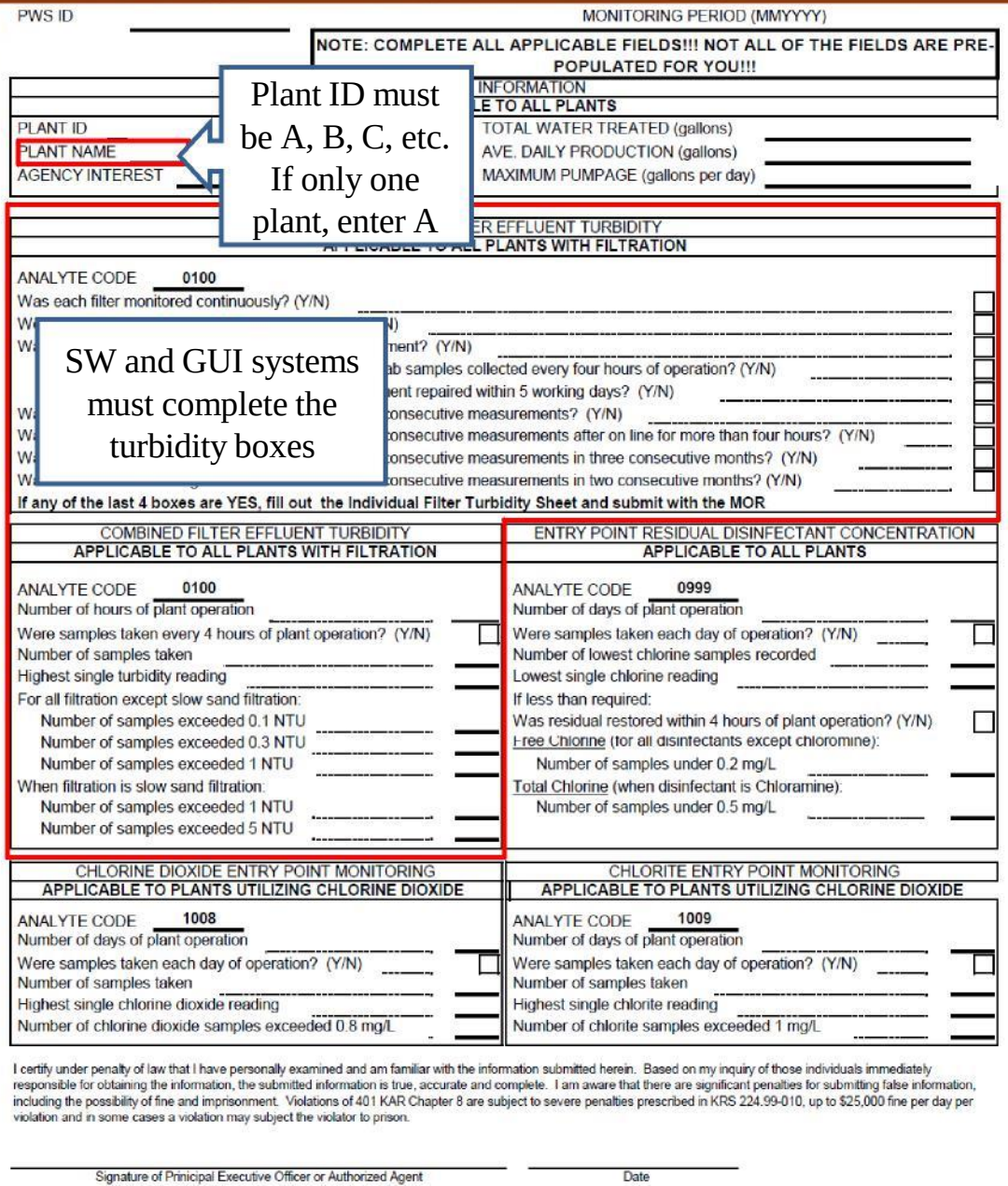
MOR Compliance



PWS ID

MONITORING PERIOD (MMYYYY)

NOTE: COMPLETE ALL APPLICABLE FIELDS!!! NOT ALL OF THE FIELDS ARE PRE-POPULATED FOR YOU!!!

Plant ID must be A, B, C, etc. If only one plant, enter A

INFORMATION
LE TO ALL PLANTS

PLANT ID
PLANT NAME
AGENCY INTEREST

TOTAL WATER TREATED (gallons)
AVE. DAILY PRODUCTION (gallons)
MAXIMUM PUMPAGE (gallons per day)

ER EFFLUENT TURBIDITY
L PLANTS WITH FILTRATION

SW and GUI systems must complete the turbidity boxes

ANALYTE CODE 0100
Was each filter monitored continuously? (Y/N)
ment? (Y/N)
ab samples collected every four hours of operation? (Y/N)
ent repaired within 5 working days? (Y/N)
consecutive measurements? (Y/N)
consecutive measurements after on line for more than four hours? (Y/N)
consecutive measurements in three consecutive months? (Y/N)
consecutive measurements in two consecutive months? (Y/N)
If any of the last 4 boxes are YES, fill out the Individual Filter Turbidity Sheet and submit with the MOR

COMBINED FILTER EFFLUENT TURBIDITY
APPLICABLE TO ALL PLANTS WITH FILTRATION

ANALYTE CODE 0100
Number of hours of plant operation
Were samples taken every 4 hours of plant operation? (Y/N)
Number of samples taken
Highest single turbidity reading
For all filtration except slow sand filtration:
Number of samples exceeded 0.1 NTU
Number of samples exceeded 0.3 NTU
Number of samples exceeded 1 NTU
When filtration is slow sand filtration:
Number of samples exceeded 1 NTU
Number of samples exceeded 5 NTU

ENTRY POINT RESIDUAL DISINFECTANT CONCENTRATION
APPLICABLE TO ALL PLANTS

ANALYTE CODE 0999
Number of days of plant operation
Were samples taken each day of operation? (Y/N)
Number of lowest chlorine samples recorded
Lowest single chlorine reading
If less than required:
Was residual restored within 4 hours of plant operation? (Y/N)
Free Chlorine (for all disinfectants except chloromine):
Number of samples under 0.2 mg/L
Total Chlorine (when disinfectant is Chloramine):
Number of samples under 0.5 mg/L

CHLORINE DIOXIDE ENTRY POINT MONITORING
APPLICABLE TO PLANTS UTILIZING CHLORINE DIOXIDE

ANALYTE CODE 1008
Number of days of plant operation
Were samples taken each day of operation? (Y/N)
Number of samples taken
Highest single chlorine dioxide reading
Number of chlorine dioxide samples exceeded 0.8 mg/L

CHLORITE ENTRY POINT MONITORING
APPLICABLE TO PLANTS UTILIZING CHLORINE DIOXIDE

ANALYTE CODE 1009
Number of days of plant operation
Were samples taken each day of operation? (Y/N)
Number of samples taken
Highest single chlorite reading
Number of chlorite samples exceeded 1 mg/L

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein. Based on my inquiry of those individuals immediately responsible for obtaining the information, the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. Violations of 401 KAR Chapter 8 are subject to severe penalties prescribed in KRS 224.99-010, up to $25,000 fine per day per violation and in some cases a violation may subject the violator to prison.

Signature of Prinicipal Executive Officer or Authorized Agent

Date

Plant Summary

<u>All water producers</u> must complete the plant summary

If using excel, cells will auto-populate from preceding data pages, **<u>except</u>** Y/N questions

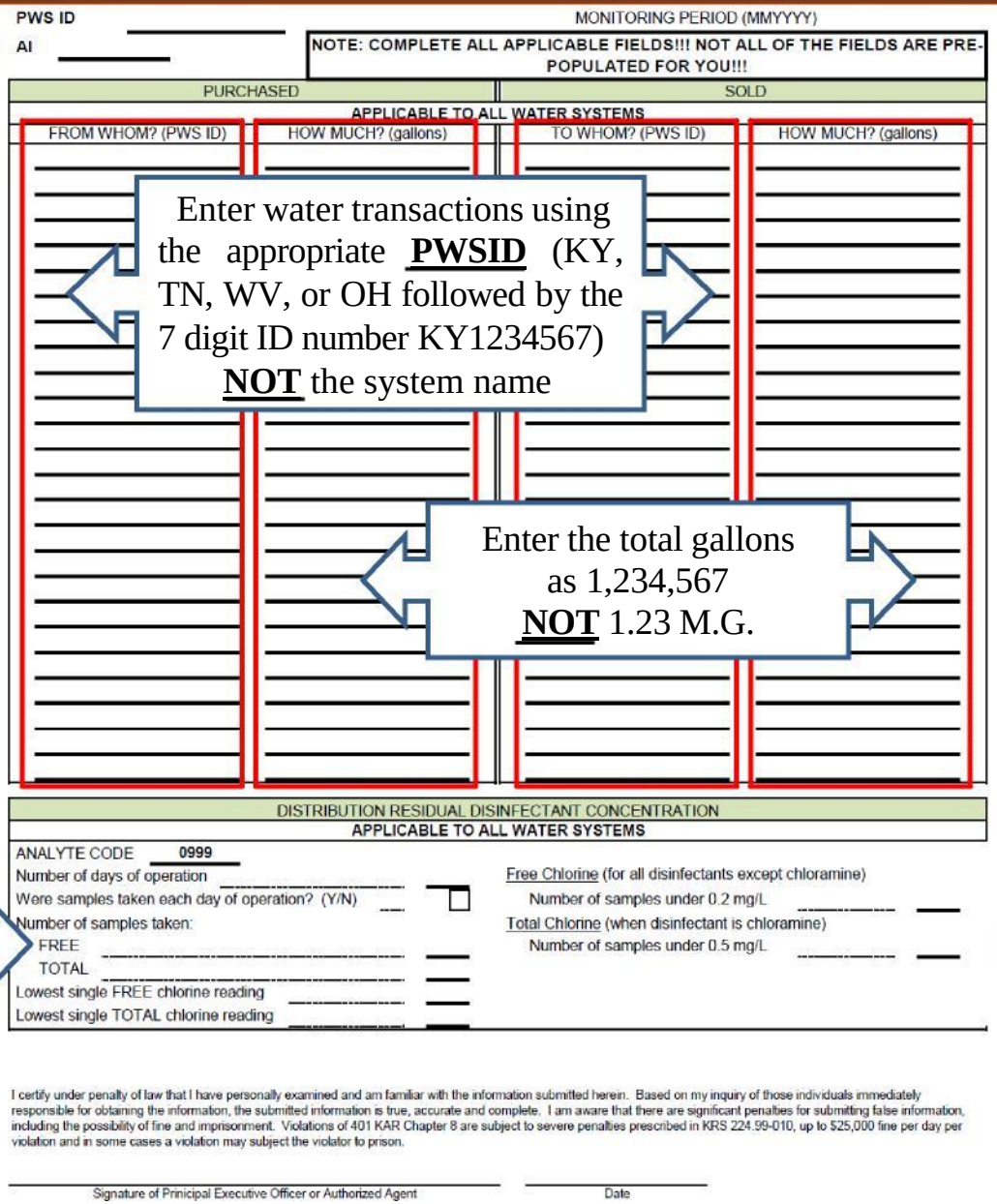
Once all data is complete and accurate, sign and date

Kentucky UNBRIDLED SPIRIT

MOR Compliance

Distribution Summary

- All systems must complete the distribution summary
- Once all data is complete and accurate, sign and date



Ensure the summary data is complete and accurate, as previously described

MOR Compliance: Final reminders

- Review all data before signing and dating the MOR

- Your signature acknowledges that all data within the MOR is true, accurate, and complete

- The MOR must arrive to the DOW within 10 days after the monitoring period

- Mail certified to guarantee delivery. A failure to submit violation will not be rescinded unless the water system has proof of delivery (certified mail receipt)

- Mail to:

  Division of Water
  Drinking Water Branch 3rd Floor
  300 Sower Blvd
  Frankfort, KY 40601
  Attn: MOR DWB

- If any errors are found after submitting to the state, notify the compliance officer immediately and send a correction

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