# Collection Math Study Guide

Kentucky Division of Compliance Assistance
Certification and Licensing Branch

This study guide is intended to help students become more familiar with the variety of math equations within the Collection manual and exam.

Below is a chart of where math can be found in the training manual.

| Chapter | Name | Page | Concept |
|---|---|---|---|
| 2 | Mapping | 14 | Scale |
| 3 | Biology | 24 | Population Equivalents (not on formula sheet) |
| 4 | Collection Systems | 31 | Area/Velocity/Flow |
| 4 | Collection Systems | 34 | Slope and Grade |
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| 4 | Collection Systems | 42 | Detention Time/Flushing time |
| 4 | Collection Systems | 55 | Q = A x V |
| 5 | Pipes | 71 | Volume and conversions |
| 6 | Pumps | 84 | Time to pump out/Fill a tank (p.104) |
| 6 | Pumps | 85 | HP and KWhr |
| 6 | Pumps | 90 | Time to fill bar screen |
| 6 | Pumps | 100 | Lbs formula |
| 6 | Pumps | 110 | Costs of operation |
| 7 | I & I | 138 | % I & I |
| 11 | Operations and Rehabilitation | 188 | Various cost problems |

Work through each problem introduced in each chapter and the math questions (if any) at the end of each chapter.

## Class I & II

1. A pump station has been averaging a screenings removal of 1.8 $ft^3$ per million gallons. The average daily flow is 3.2 MGD. How many days will it take to fill a screen with a 200 $ft^3$ capacity?

A. 25 days
B. 35 days
C. 40 days
D. 45 days

2. A float is placed in a manhole. If the float travels 460 feet in 3 min 45 seconds. What is the estimated velocity in the channel in ft/sec?

A. 0.5 ft/sec
B. 1 ft/sec
C. 1.5 ft/sec
D. 2 ft/sec

3. Wastewater is pumped into a 8 inch line by a 200 gpm rated pump that is 85% efficient. What is the velocity of the wastewater in the line?

A. 1.1 ft/sec
B. 1.6 ft/sec
C. 2.0 ft/sec
D. 2.4 ft/sec

4. What is the chlorine feed rate per hour for a flow of 2.3 MGD with a dose rate of 25 mg/L?

A. 20 lbs
B. 48 lbs
C. 160 lbs
D. 480 lbs

5. If it is assumed that the average velocity of wastewater in the collection system is 2.1 feet per second, approximately, how long would it take the wastewater to reach a treatment plant from the furthest point in the system if the distance from the treatment plant to the farthest lateral is 8 miles?

A. 2 hrs
B. 4 hrs
C. 6 hrs
D. 8 hrs

6. How many pounds of TSS are received in the collection system daily, if the system flow is 56,000 gpd and the TSS concentration is 210 mg/L?

A. 9.8 lbs
B. 98 lbs
C. 980 lbs
D. 196 lbs

7. If two 125 gpm pumps are used, how long will it take to empty a rectangular tank 45 feet long by 22 feet wide containing 15 ft of water?

A. 30 minutes
B. 7.4 hrs
C. 29.6 hrs
D. 119 hrs

8. Estimate the population served if a treatment plant is processing 0.85 MGD and an average of 100 gallons per person is assumed.

A. 85 people
B. 120 people
C. 850 people
D. 8500 people

9. The flow entering the leg of a tee connection is 9 $ft^3$/sec. If the flow through one branch of the tee is 5 $ft^3$/sec, what is the flow through the other branch in gpm?

A. 808 gpm
B. 1795 gpm
C. 2244 gpm
D. 4039 gpm

10. What is the capacity of a wet well if a pump, rated at 75 gpm, requires 1 hour and 35 minutes to empty the station? Assume no inflow.

A. 952.5 $ft^3$
B. 7125 $ft^3$
C. 53295 $ft^3$
D. 757 $ft^3$

11. A 2 feet wide by 4 ft high rectangular channel has water flowing in it to a depth of 18 inches, and has an average velocity of 5 f/s. What is the approximate flow rate?

A. 15 $ft^3$/sec
B. 30 $ft^3$/sec
C. 40 $ft^3$/sec
D. 60 $ft^3$/sec

12. During construction of a pipeline that has a 2,350 foot run of 6 inch PVC pipe. The pipe is supplied in 20 foot sections. How many sections of pipe will be needed to complete the run without having excess pipe on hand?

A. 110
B. 118
C. 125
D. 130

13 What is the grade that has a 3 foot rise in 450 feet?

A. 0.15% grade.
B. 0.3% grade.
C. 0.45% grade.
D. 0.66% grade.

14. A lift station is 10 feet by 15 feet and a depth of 40 feet. If the depth of water is now is at 18 feet. How many additional gallons can the lift station hold before it overflows?

A. 20,196 gallons
B. 24,684 gallons
C. 44,880 gallons
D. 65,076 gallons

15. Chlorine is used in the system for "freshening". If the chlorine demand is 6.3 mg/L and the desired residual is 1.6 mg/L. The flow through the system is 7.6 MGD. How many pound of chlorine are to be used a day?

A. 21 lbs
B. 102 lbs
C. 400 lbs
D. 500 lbs

16. A 22 feet deep lift station has a diameter of 13 feet, the influent flow causes the water level to rise 4.5 ft in 16 minutes. With pump one running to empty the lift station the water level rises 3 foot in 16 minutes. What is the pump rate of the pump in gpm? The pump rate is equal to the influent rate minus the rise rate.

A. 93 gpm
B. 186 gpm
C. 280 gpm
D. 1,488 gpm

17. What is the capacity of a wet well if the pump, rated at 0.5 $ft^3/s$, requires 2 hours 20 minutes to empty the station? Assume no other inflow or outflow.

A. 4,200 gallons
B. 31,416 gallons
C. 42,000 gallons
D. 63,360 gallons

18. A new manhole has been installed 450 feet from an existing manhole. How far would this new manhole be located from the old one on a map with a scale of 1 inch equals 50 feet?

A. 6 inches
B. 8 inches
C. 9 inches
D. 10 inches

19. If the average lbs of TSS in the influent per month was 2100 lbs/day and the average daily flow was 875,000 gpd what would be the average TSS concentration coming into the plant per day?

A. 36 mg/L
B. 71 mg/L
C. 143 mg/L
D. 287 mg/L

20. During a survey the elevation of upper pipe was 35 ft above sea level. The slope over a run of 1500 ft was calculated to be 2%. What would be elevation of the lower pipe?

A. 5 ft
B. 30 ft
C. 40 ft
D. 65 ft

**Bonus question**

21. You have lost your tape measure and you have to determine the diameter of an old sewer pipe to find the best match for replacement. You measure the flow, with a rubber duck and a stopwatch as 3 ft/sec. Using a 5 gallon bucket you have determined the flow to be 600 gpm (you have a lot of buckets). What is the best estimate of the diameter of the pipe?

A. 6 inches
B. 8 inches
C. 9 inches
D. 10 inches

# Answer Key

1. B
2. D
3. A
4. A
5. C
6. B
7. B
8. D
9. B
10. A
11. A
12. B
13. D
14. B
15. D
16. A
17. B
18. C
19. D
20. A
21. C

## Class III & IV

22. The interior of a 12 inch pipe is uniformly coated with a 1/2 inch thick layer of FOG. If the velocity of water flowing through this pipe was calculated at 2.4 ft/s, what would be the flow in gpm in the FOG coated pipe?

A. 448.8 gpm
B. 709 gpm
C. 775.5 gpm
D. 845.5 gpm

23. What is the detention time in an interceptor sewer 1 and ⅓ of a mile long and 36 inches in diameter if the average flow is 0.9 MGD?

A. 4.6 hrs
B. 7.2 hrs
C. 9.88 hrs
D. 11.5 hrs

24. Two 65 hp pumps operate a lift station. The lift station run 16 hours per day. The power in this municipality is charged at a rate of 15 cents per kWhr. What is the cost per day for running the pumps?

A. $131.85
B. $158.87
C. $210.75
D. $232.75

25. The invert elevations for a sewer line at adjacent manholes is 475 feet apart are 215.5 ft and 209.8 ft. What is the percent slope or grade of this section of line?

A. 1.2%
B. 1.5%
C. 2.0%
D. 2.5%

26. Your town has been receiving complaints about odors in your sewer system. To correct the problem, you have been instructed to use chlorine for odor control. The recommended feed concentration is 9 mg/L and your daily flow is 55 gpm. How much must you budget per year for chlorine if the cost is $1.01 per pound?

A. $218.6
B. $2,186
C. $1,521.8
D. $450.66

27. The wet well at a lift station receives a flow of 260 gpm. The wet well is 12 ft by 15 feet. How many minutes will it take to raise the water level 4 ft 6 inches in the wet well?

A. 2.34 min
B. 5.3 min
C. 23.3 min
D. 30 min

28. The distance between two manholes on a map is measured as 9/16 of an inch. Scale for the map is 1 inch equals 100 feet. What is the actual distance between the manholes?

A. 16.75 ft
B. 45.5 ft
C. 56.25 ft
D. 61.3 ft

29. The average flow to your facility is 7.2 MGD. When you receive a 4 inch rain your flow increases to 11.6 MGD. What is the percentage of inflow and infiltration?

A. 62%
B. 161%
C. 201%
D. 261%

30. If the slope of a sewer pipe is 0.5% for a length of 1,000 feet and then changes to 0.25% for an additional 1,600 feet. If the elevation of the upper end of the pipe was 250 ft what would be the elevation of the pipe at the end of the pipe run?

A. 241 ft
B. 245.5 ft
C. 250 ft
D. 259 ft

31. You have three lift stations. #1 has a 8 hp motor and runs for 20 minutes per hour. #2 has a 14 hp pump and it runs 40 minutes per hour. #3 has a 26 hp pump that runs 50 minutes every 2 hours. What is the yearly electrical cost to operate these three stations if each kilowatt hour cost $0.09?

A. $4,401
B. $4,705
C. $10,017
D. $13,428

32. A plant has an average daily flow of 1.25 MGD with an average daily influent BOD of 270 mg/L. If this facility removes 88% of the BOD, how many pounds of BOD are removed in a non-leap year?

A. 2,814 lbs
B. 90,409 lbs
C. 123,260 lbs
D. 904,098 lbs

33. Chlorine is being fed at two lift stations for odor control. At LS #1, 7 mg/l are being fed to a flow of 800,000 GPD and at LS # 2, 8.9 mg/l is being fed to a flow of 1.3 MGD. The cost of chlorine is $0.75 per pound. What is the yearly cost of chlorine for these two lift stations?

A. $12,784
B. $13,632
C. $26,417
D. $39,201

34. In a 18 foot diameter wet well, with no pumps running, the water level rose 6 feet in 24 minutes. When one pump is in operation the water level rose 18 inches in the same time. What is the pump rate in gallons per minute?

A. 356 gpm
B. 454 gpm
C. 475 gpm
D. 594.5 gpm

35. If the daily flow going to the treatment plant is 8.6 MGD, what is the velocity in ft/sec through a 30-inch main carrying the effluent?

A. 2.1 f/s
B. 2.7 ft/s
C. 1.75 f/s
D. 4.1 f/s

There are a number of construction cost problems in the level III and IV exams. For examples of what you might be asked refer to pages 196 -202 and 214 -216 in the Collection manual.

## Answer Key

22. B
23. C
24. D
25. A
26. B
27. C
28. C
29. B
30. A
31. D
32. D
33. D
34. A
35. B

# Class I & II Solved Equations

1. First calculate the amount of screenings removed each day –
   1.8 $ft^3$ per million gallons x 3.2 MGD = 5.76 $ft^3$ per day

   Next divide the screens capacity by the screenings removed each day to get number of days –

   200 $ft^3$ ÷ 5.76 $ft^3$ /day = 34.72 or 35 days

2. First determine the number of seconds in 3 minutes and 45 seconds –
   3 x 60 seconds / minute = 180 seconds + 45 seconds = 225 seconds

   Divide distance traveled by the number of seconds –
   460 feet ÷ 225 seconds = 2.04 or 2 feet/second

3. Formula used: *V=Q/A. Flow must be in $ft^3$ /sec and area must be in $ft.^2$*
   First calculate the area of the 8 inch pipe –
   0.785 x (8/12) x 8/12) = .785 x 0.66 x 0.66 = 0.34 $ft.^2$

   Next convert Flow to $ft^3$/sec – 200 gpm ÷ 448.8 gpm/$ft^3$/sec = 0.45 $ft^3$/sec

   Now use the equation – V=Q/A - 0.45 $ft^3$ /sec ÷ 0.34 $ft^2$ = 1.32 ft/sec

   Account for the fact that the pump is only
   85% efficient – 1.32 ft/sec x 0.85 = 1.13 or 1.1 ft/sec

4. Formula used: *lb = mg/L x 8.34 x MGD*
   No conversions needed so lb = 25 mg/L x 8.34 x 2.3 MGD = 479.6 lbs per day

   To get pounds per hour divide by number of hours in a day – 24
   479.6 ÷ 24 = 19.98 or 20 lbs per hour

5. First find the number of feet in 8 miles
   8 x 5280 ft/mile = 42,249 feet

   Now divide the number of feet by the average velocity in ft/sec to get time in seconds
   42,249 feet ÷ 2.1 ft/sec = 20,114 seconds

   Convert seconds to hours = 60 seconds per min and 60 minutes per hour
   60 x 60 = 3,600 sec/hr
   20,114 sec ÷ 3,600 sec/hr = 5.58 or 6 hours

6. Formulas used: *lb = mg/l x 8.34 x MGD*
   First convert flow into MGD – 56,000 gal /1,000,000 = 0.056 MGD
   210 mg/L x 8.34 x 0.056 MGD = 98.07 or 98 pounds per day

7. First calculate the volume of water in the tank in gallons -
   45 ft x 22 ft x 15 ft = 14,580 $ft^3$ x 7.48 gal/$ft^3$ = 111,078 gallons

   Calculate the total pumping capacity –
   125 gpm x 2 pumps = 250 gpm

   Divide total volume by pumping capacity –
   110,078 ÷ 250 gpm = 444.3 minutes

   Convert to hours –
   444.3 ÷ 60 min/hr = 7.4 hours

8. Convert MGD to gallons per day –
   0.85 MGD x 1,000,000 = 850,000 gallons per day

   Divide gallons by the use per person per day –
   850,000 gallons ÷ 100 gal/person = 8,500 people

9. First calculate the flow through the second branch –
   9 $ft^3$/sec – 5 $ft^3$/sec = 4 $ft^3$/sec

   Convert the flow to gpm –
   4 $ft^3$/sec x 448.8 gpm/$ft^3$/sec = 1,795.2 or 1,795 gpm

10. First calculate the tanks volume in gallons and number of minutes pumped–
    1 hour = 60 minutes + 35 minutes = 95 minutes
    75 gpm x 95 minutes = 7,125 gallons pumped

    Convert gallons to $ft^3$-
    7,125 gal ÷ 7.48 gal/$ft^3$ = 952.5 $ft^3$

11. Formula used: $Q=A \times V$
    First calculate area. Channel is 2 feet wide and water is 18 inches deep so
    A = 2 ft x (18 inches /12 in/foot) = 2ft x 1.5 feet = 3 $ft^2$

    Velocity is given as 5 ft/sec, so fill in equation –
    Q = 3 $ft^2$ x 5 ft/sec = 15 $ft^3$/sec

12. Divide the run needed by the length of a section–
    2,350 ÷ 20 ft/section = 117.5 or 118 sections must be purchased

13. Grade = rise ÷ run x 100
    3 ÷ 450 = 0.0066 x 100 = 0.66%

14. Calculate the volume of the tank in gallons –
    10 x 15 x 40 = 6,000 $ft^3$ x 7.48 gal/$ft^3$ = 44,880 gallons

    Calculate the volume of water currently in the tank –
    10 x 15 x 18 = 2,700 $ft^3$ x 7.48 gal/$ft^3$ = 20,196 gallons

    Subtract current volume from total volume to get additional gallons –
    X 44,880 – 20,196 = 24,684 additional gallons can be placed in the lift station before it overflows

15. Dosage = Demand + Residual
    Calculate the dosage
    Dosage = Demand (6.3 mg/L) = Residual (1.6 mg/L) = 7.9 mg/L

    Now calculate pounds –
    7.9 mg/L x 8.34 x 7.6 MGD = 500.7 or 500 pounds per day

16. First calculate the influent rise rate-
    0.785 x 13 ft x 13 ft x 4.5 ft = 596.99 $ft^3$ x 7.48 gal/$ft^3$ = 4,465.49 gallons
    4,465.49 gallons ÷ 16 minutes = 279.09 or 279 gpm

    Calculate the rise rate with the pump running–
    0.785 x 13 ft x 13 ft x 3 ft = 398.0 $ft^3$ x 7.48 gal/$ft^3$ = 2,977.04 gal
    2,977.04 ÷ 16 minutes = 186.05 or 186 gpm

    Pump rate = influent rate – rise rate = 279 gpm – 186 gpm = 93 gpm

17. First convert the pump flow to gpm –
    0.5 $ft^3/s$ x 448.8 $gpm/ft^3/s$ = 224.4 gpm

    Convert time to empty tank into minutes –
    2 hours x 60 min/hr = 120 min + 20 min = 140 min

    Calculate wet well volume –
    140 min x 224.4 gpm = 31,416 gallons

18. 1 inch = 50 ft.
    Divide distance between manholes by the map scale –
    450 ft ÷ 50ft/in = 9 inches

19. Calculate concentration by mg/l = pounds ÷ (8.34 x Flow, MGD)
    Convert flow to MGD –
    875,000 ÷ 1,000,000 = 0.875 MGD

    Now calculate mg/L
    2100 ÷ (8.34 x 0.875) = 2100 ÷ 7.30 = 287.67 or 287 mg/l

20. Change in Elevation = Slope x Run
    Slope is 2% so to use it in the equation divide slope by 100 – 2% ÷ 100 = 0.02
    Calculate change in elevation – 0.02 x 1500 = 30 feet
    Calculate elevation of the lower pipe = 35 = 30 = 5 ft.

21. Bonus Question – Not on Exam
    Convert flow to $ft^3$ /sec = 600 ÷ 448.8 = 1.34 $ft^3/s$
    Calculate area = A = Q/V = 1.34 ÷ 3 = 0.45
    Divide 0.45 by 0.785 to diameter in feet squared = 0.569
    Take the square root of 0.569 - √0.569= 0.754 x 12 in/foot =9 inches

# Class III & IV Solved Equations

22. First calculate new diameter of pipe –
    12 in – 1 in = 11 inches
    (1/2 inch of FOG uniformly coating the pipe reduces pipe diameter by 1 inch.)
    11in / 12 in/foot = 0.92 feet

    Area of pipe = 0.785 x 0.92 x 0.92 = 0.66 $ft^2$

    Q = 2.4 ft/s x 0.66 $ft^2$ = 1.58 $ft^3$/3
    Convert to gpm – 1.58 x 448.8 gpm/$ft^3$/s = 709.1 or 709 gpm

23. Calculate volume of sewer –
    1 and 1/3 miles = 1.33 miles so length is 1.33 x 5280 feet = 7,022.4 feet

    36 inch diameter pipe = 36/13 =3 feet diameter

    Volume in gallons = 0.785 x 3 x 3 x 7,022.4 = 49,613.26 $ft^3$ x 7.48 = 371,107.18 gallons

    Convert flow to gpm – 0.9 MGD x 694.5 gpm/MGD = 625 gpm

    Detention time = volume in gal ÷ Flow in gpm = 371,107.18 ÷ 625.05 = 593.72 minutes

    Convert to hours by dividing by 60 – 593.71 ÷ 60 = 9.89 hours

24. First calculate kW used for pumps – 2 x 65 hp x 0.746 = 96.98 kW

    Next calculate kW Hours = 96.98 kW x 16 hours = 1,551.68 kW hours

    Now calculate cost – 1,551.68 x $0.15 = $232.75

25. First calculate the rise for the pipe
    Rise = 215.5 – 209.8 = 5.7 ft
    Slope = rise ÷ run = 5.7 ÷ 475 = 0.012 x 100 = 1.2%

26. First convert the flow from gpm to MGD- 55gpm ÷ 694.5 = 0.079 MGD

    Now calculate pounds per day – 9 mg/L x 8.34 X 0.079 MGD = 5.92 pounds per day

    Calculate the ponds per year – 5.92 pounds per day x 365 days/ year = 2,164.35 pounds per year

    Calculate the cost – 2.164.35 x $1.01 per pound = $2,186.00 per year

27. Calculate the volume of water that will be added to the tank and 6 inches into feet 6/12 = 0.5–
    12 ft x 15 ft x 4.5 ft = 810 $ft^3$ x 7.48 gal/$ft^3$ = 6,058.8 gallons

    Divide the gallons by the flow rate to get minutes –
    6,058.8 gal ÷ 260 gpm = 23.3 minutes

28. First convert 9/16 to a decimal – 9 ÷ 16 = 0.5625
    Then multiply the feet per inch by the decimal to get the feet–
    100 x .5625 = 56.25 feet

29. Can be calculate using either gallons or MGD as shown as long as both numbers are in the same unit -
    11.6 ÷ 7.2 = 1.611 x 100 = 161.1 or 161%
    11,600,000 ÷ 7,200,000 = 1.611 x 100 = 161.1 or 161%

30. Change % into decimal –
    0.5% ÷ 100 = 0.005 and 0.25% ÷ 100 = 0.0025

    Calculate change in elevation for first run –
    0.005 x 1000 ft = 5 feet

    Calculate the change in elevation for the second pipe –
    0.0025 x 1600 ft = 4 ft

    Add the changes together and subtract from the starting elevation –
    5 ft + 4 ft = 9 ft
    250ft – 9 ft = 241 ft

31. Calculate the cost per year for each pump and add them together –

**Pump 1 –** 8hp x 0.746 = 5.97 kW
20 minutes per hour = 20 min x 24 hours = 280 min ÷ 60 min/hr
= 8 hours per day
8 hours per day x 365 days per year = 2,920 hours per year
2,920 x 5.97 kW = 17,432.4 kWhrs per year
17, 432.4 kWhrs x $0.09/kWhr = $1,568.92/year

**Pump 2 –** 14 hp x 0.746 = 10.44 kW
40 minutes per hour = 40 min x 24 hours = 960 min ÷ 60 min/hr
= 16 hours per day
16 hours/day x 365 days/yr = 5,840 hours/yr
5,840 x 10.44 kW = 60,969.6 kWhrs
60,969.6 kWhrs x $0.09/kWhr = $5,487.26 per year

**Pump 3 –** 26 hp x 0.746 = 19.40 kW
50 minutes every 2 hours or 25 minutes per hour x 24 hours
= 600 min ÷ 60 min/hr = 10 hrs/day
10 hrs per day x 365 days per year = 3,650 hrs/yr
19.40 kW x 3,650 hrs = 70,810 kWhrs
70,810 kWhrs x $0.09/kWhr = $6,372.90 per year

Total cost /year = $1,568.92 + $5,487.26 + $6,372.90 = $13,429.08

32. Calculate pounds of BOD per day –
270 x 8.34 x 1.25 = 2,814.75 pounds per day

Calculate pounds removed per day –
2,814.75 x 0.88 = 2,476.98 pounds removed each day

Calculate pounds removed per year –
2,476.98 x 365 days per year = 904,097.7 or 904,908 pounds removed per year

33. Calculate the pounds of chlorine per day and per year for each lift station and then add the pounds per year together to calculate the cost

**Lift Station #1 –**

7 mg/L x 8.34 x 0.80 MGD = 46.70 pounds per day x 365 days/yr = 17,046.96 pounds/year

**Lift Station #2 –**

8.9 mg/L x 8.34 x 1.3 MGD = 96.49 pounds per day x 365 days/yr = 35,220.24 pounds/yr

**Total –**

17,046.96 pounds + 35,220.24 pounds = 52,267.20 pounds x $0.75/pound = $39,200.2 /year

34. Calculate the influent rate with no pump –
0.785 x 18 ft x 18 ft x 6 ft = 1,526.0 $ft^3$ x 7.48 $gal/ft^3$ =
11,414.48 gallons / 24 min = 476 gpm

Calculate the rate with one pump running –
0.785 x 18 ft x 18 ft x 1.5 ft = 381.5 $ft^3$ x 7.48 $gal/ft^3$ =
2,853.69 gallons / 24 min = 119 gpm

Subtract to find the pump rate – 476 gpm – 119 gpm = 356 gpm

35. Convert flow from MDG to $ft^3/s$ –
8.6 MGD x 1.55$ft^3/s$/MGD = 13.33 $ft^3/s$

Convert the pipe diameter from inches to feet –
30 in / 12in/ft = 2.5 ft

Use V = Q / A to calculate velocity
V = 13.33 ÷ (0.785 x 2.5 x 2.5) = 13.33 ÷ 4.91 = 2.71 or 2.7 ft/s

## Questions or Concerns?

The Kentucky Operator Certification Program provides training and issues certifications to ensure that individuals engaged in performing many of Kentucky's critical environmental activities are qualified and capable to perform their duties. DCA staff are available to provide on-site assistance and training.

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