Department of Environmental Protection

Bureau of Land & Water Quality Aug. 1999

Fall 1999 Exam

The fall 1999 Wastewater Operator Certification Exam will be given Wednesday -- November 17, 1999 in the usual locations, South Portland, Bangor and Presque Isle. Application ***must*** be submitted to us by October 1, 1999. Applications can be obtained by contacting Leslie Rucker at 287-9031 or by writing to Wastewater Operator Certification Program, Maine Department of Environmental Protection, 17 State House Station, Augusta, ME 04333-0017.

UPCOMING TRAINING COURSES

August 18, 1999 in Presque Isle, ME, Mercury Detection, Reduction and Clean Sampling Techniques – approved for 6.0 hours – sponsored by JETCC (207) 767-2539.
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August 25, 1999 in Portland, ME, Mercury Detection, Reduction and Clean Sampling Techniques – approved for 6.0 hours – sponsored by sponsored by JETCC (207) 767-2539.
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August 31, 1999 in Brewer, ME, Mercury Detection, Reduction and Clean Sampling Techniques – approved for 6.0 hours – sponsored by sponsored by JETCC (207) 767-2539.
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September 14, 1999 in Presque Isle, ME, Electric Utility Deregulation, What does it mean to you? – approved for 6.0 hours, sponsored by JETCC (207) 767-2539.
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September 15, 1999 in Madawaska, ME, Respiratory Protection – New Final Rule – approved for 3.5 hours, sponsored by Maine Rural Water (207) 729-6569.
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September 29, 1999 in West Rockport, ME, Respiratory Protection – New Final Rule – approved for 3.5 hours, sponsored by Maine Rural Water (207) 729-6569.
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September 29, 1999 in Presque Isle, ME, Pump Application, Selection and Maintenance – approved for 6 hours, sponsored by Maine Rural Water (207) 729-6569.

September 30, 1999 in Howland, ME, Pump Application, Selection and Maintenance – approved for 6 hours, sponsored by Maine Rural Water (207) 729-6569.
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October 15, 1999 in Old Orchard Beach, ME, Pump Application, Selection and Maintenance – approved for 6 hours, sponsored by Maine Rural Water (207) 729-6569.
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October 20, 1999 in Bingham, ME, Respiratory Protection – New Final Rule – approved for 3.5 hours, sponsored by Maine Rural Water (207) 729-6569.
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November 3, 1999 in Old Orchard Beach, ME, Respiratory Protection – New Final Rule – approved for 3.5 hours, sponsored by Maine Rural Water (207) 729-6569.
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November 4, 1999 in Skowhegan, ME, Pump Application, Selection and Maintenance – approved for 6 hours, sponsored by Maine Rural Water (207) 729-6569.

For Practice

1. The unit of electrical potential is
   a. The coulomb
   b. The volt
   c. The amp
   d. The watt

2. The aeration basins of a conventional activated sludge treatment system have a total volume of 400,000 gallons and the MLSS concentration in that tank is 3,700 mg/L. The secondary clarifiers have a total volume of 265,000 gallons and an average sludge concentration of 6,300 mg/L. The return sludge concentration is 8,500 mg/L. If the operator wants to maintain a 12 day MCRT, approximately how many gallons of sludge should be wasted?
   a. 44,200 gallons
   b. 39,700 gallons
   c. 30,900 gallons
   d. 24,500 gallons

3. Which of the following should always contain a hazard and operability study?
   a. The O&M Manual
   b. The annual budget
   c. A DEP inspector's report
   d. An emergency plan.

4. The most difficult types of solids to remove in a conventional secondary treatment plant are:
   a. Inorganic suspended solids
   b. Organic suspended solids
   c. Inorganic dissolved solids
   d. Organic dissolved solids

Bacteriological QA Sample Pilot Study Follow-up.

Thanks to all of you who participated in the recent QA sample pilot study involving the analysis for fecal coliform or for E. coli. Apparently the sample delivery reached everyone on time. If you have not already, please report your results back to Environmental Resource Associates [ERA] using the form provided with the sample. ERA will inform you of your results. Please inform me of any difficulties or recommendations you have regarding the QA samples, so that I can relay this information on to ERA and to other potential providers so that this information can be used to improve these QA samples. The DEP will also be copied the results. On our end, with the help of statistical analysis by ERA, we will try to determine if these types of samples are quantitatively reliable for future use in verifying the accuracy of these types of tests. Perhaps they will prove to be a useful tool in insuring the ongoing accuracy of this important DMR report data without having to resort to the complication of a lab certification program or to some other more intensive review of lab procedures. We will inform you of our determination.

No matter your results on this pilot, there will be no formal follow-up action required of you and no corrective action letters need to be sent in. However, if the determination turns out to be that these samples are valid for this purpose and your results are outside the acceptable range, you should review your procedures on your own.

Again, thanks for taking the time from your busy schedules to do this. I am sure that a few of the samples arrived later in the day causing you additional work. Please do not forget to send in your results report form to ERA so that this study can be completed.

[*David Dodge*]

Latest on EPA DMR QA Study #19

The latest EPA information I have received now indicates that the list of NIST approved QA sample provider laboratories probably will not be ready until late October at the earliest. Previous reports predicted it would be ready in September. The EPA is currently drafting a letter with new directions and a revised schedule. This should be sent to participating facilities sometime in the near future. Participants <u>do not need to do anything regarding ordering the chemistry type QA samples until they receive the approved lab list and the new directions.</u>

The <u>wet test</u> directions and schedule remain the same as in the original May 17, 1999 EPA package.

These are to:

- Inform your toxicity lab to order the wet test QA samples for you by June 14, 1999.
- Get your toxicity lab wet test QA sample results by September 10, 1999.
- Report these wet tests results to the EPA on the appropriate form[s] provided in the May 17 package by October 18, 1999.

No matter the delay in this program, participants need to save the May 17 package. The forms therein will eventually be needed to report your chemistry QA Study #19 sample results.

If you need further assistance, please call me at 287-7659.

David Dodge

Answers to *For Practice:*

1. d. The unit used to designate electrical potential is the Volt.

2. c. MCRT = Total Sludge(in pounds)/Total sludge removed from the system (wasted + effluent TSS)
For this example, assume the effluent TSS is negligible compared to the amount of sludge wasted so:
MCRT = Total Sludge(lbs) / Wasted Sludge(lbs).
Manipulating the equation to get the unknown (Sludge wasted) as the answer, we get: Sludge Wasted(lbs) = Total Sludge(lbs) / MCRT.
Plugging in the numbers we get:
Sludge Wasted (lbs) = (0.4 MG X 3,700 mg/L X 8.34 + 0.265

MG X 6,300 mg/L X 8.34) / 12 days
Sludge Wasted (lbs) = 2,189 lbs/day
If the concentration of the waste sludge is 8,500 mg/L, the total gallons of sludge wasted is:
Sludge Wasted (gal) = 2,189 lbs/day / (8,500 mg/L X 8.34) = 0.03088 MG = 30,900 gallons/day.

3. d. The hazards and operability study determines which units in the plant are susceptible to different hazards (such as flooding, earthquake, hurricanes, etc.) and how the loss of those units will affect the operability of the facility as a whole. This study is an important part of any emergency plan.

4. c. Organic dissolved solids and organic suspended solids are absorbed and adsorbed by the microbes in a secondary treatment system and removed when those microbes settles out of the effluent. Suspended inorganic solids usually settle very quickly and are also removed from the effluent. Inorganic dissolved solids are not readily taken up but microbes and do not settle out of the effluent and, therefore, are more likely to pass through a conventional biological treatment system without being removed.