



Maine Department of Environmental Protection

Bureau of Land & Water Quality

O&M Newsletter

February 2008

A monthly newsletter for wastewater discharge licensees, treatment facility operators, and associated persons

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DEP's Illegal Discharge Identification Efforts Take a Big Leap Forward

DEP's water enforcement efforts took a big leap forward in 2007 when the department purchased IDEXX equipment to analyze samples for E. coli bacteria. A significant portion of the workload for DEP water enforcement staff involves complaint investigation and the conduct of sanitary surveys to detect illegal discharges such as malfunctioning septic systems. Sometimes, collection and analyses of water samples for bacteria are needed to determine if there is a discharge of sewage. The lack of in-house bacteria testing capabilities made it inconvenient and sometimes impossible for DEP water enforcement staff to collect samples for bacteria analysis. The new

equipment will enable staff to collect samples virtually statewide, run them on the date collected, and have the results available in just 24 hours.

In addition to improved bacteria analysis capability, DEP water enforcement staff are now using optical brightener pads as another means of identifying sanitary wastewater discharges. A pad (made of unbleached cotton) inside a wire mesh cage is placed in a suspicious flowage and anchored with a spike to prevent it from washing away. After several days, the pad is removed, dried and placed under UV light. If optical brighteners from laundry detergent are present, the pad will fluoresce. This method will only work if the discharge contains laundry detergent, if the detergent contains optical brighteners, and if those optical brighteners are present in high enough concentrations. This method will not work in waters where the discharge is considerably diluted.

The DEP will continue to rely on the tried and true visual and olfactory methods of detecting illegal discharges. However, the use of new and improved technologies will help us to improve our efficiency and effectiveness at cleaning up the waters of the State.

John Glowa



For Practice

1. The pressure gauge on the discharge side of a pump reads 19 psi. What is the discharge pressure head?
 - a. 55 feet
 - b. 44 feet
 - c. 33 feet
 - d. 22 feet

2. For the most accurate test results, the preferred number of colonies on the plate of a E.Coli bacteria test is
 - a. 200 - 500 colonies
 - b. 100 - 200 colonies
 - c. 20 - 80 colonies
 - d. 10 - 20 colonies

3. The loading from your primary clarifiers to your aeration basin is fairly constant and your RAS concentration is also fairly constant. If you increase the RAS pumping rate, what will the effect be on the activated sludge process?
 - a. The MLSS concentration in the aeration tank will decrease.
 - b. The F/M ratio will go up.
 - c. The OUR rate will increase.
 - d. The possibility of denitrification in the secondary clarifiers will be greater.

4. A rectangular channel is 16 inches across by 16 inches deep. If the water in the channel is 12 inches deep and moving at the rate of 4 feet per second, how much water will move through the channel in 2 hours?
 - a. 16,200 gallons
 - b. 91,000 gallons
 - c. 143,000 gallons
 - d. 288,000 gallons

Approved Training

February 26, 2008 in Lewiston, ME - Facility Management in Cold Climates – Sponsored by JETCC – Approved for 6 hours

February 27, 2008 in Augusta, ME - Wastewater Issues Briefing – Sponsored by JETCC – Approved for 6 hours

March 4, 2008 in Bangor, Falmouth, Houlton & Poland, ME - Bacteria, Viruses & Parasites – Oh My! – Sponsored by MRWA – Approved for 4 hours

March 5, 2008 in Ellsworth, ME - Pump Maintenance & Troubleshooting – Sponsored by JETCC – Approved for 6 hours

March 5, 2008 in Skowhegan, ME - QA/QC for TSS And BOD – Sponsored by MRWA – Approved for 3 hours

March 6, 2008 in Bangor, ME - QA/QC for TSS And BOD – Sponsored by MRWA – Approved for 3 hours

March 11, 2008 in Bethel, ME - QA/QC for TSS And BOD – Sponsored by MRWA – Approved for 3 hours

March 11, 2008 in Dover-Foxcroft, Jay, Lubec & Waterville, ME - Bacteria, Viruses & Parasites – Oh My! – Sponsored by MRWA – Approved for 4 hours

March 11, 2008 in Fairfield, ME - QA/QC of Laboratory Instruments with review of General Lab QA/AC Practices – Sponsored by JETCC – Approved for 6 hours

March 13, 2008 in Sabattus, ME - QA/QC for TSS And BOD – Sponsored by MRWA – Approved for 3 hours

March 13, 2008 in Wiscasset, ME - Road Opening - The Permit Process– Sponsored by MRWA – Approved for 4 Safety hours

March 19, 2008 in Kennebunkport, ME - Why & Where to Consider Low Pressure Sewers – Sponsored by JETCC – Approved for 6 hours

March 20, 2008 in Biddeford, ME - QA/QC for TSS And BOD – Sponsored by MRWA – Approved for 3 hours

March 20, 2008 in Brewer, ME - Why & Where to Consider Low Pressure Sewers – Sponsored by JETCC – Approved for 6 hours

March 25, 2008 in Jay, ME - Mapping for O&M, Capitol Improvements & Transition to GIS – Sponsored by JETCC – Approved for 6 hours

March 26, 2008 in Presque Isle, ME - QA/QC for TSS And BOD – Sponsored by MRWA – Approved for 3 hours

March 31 & April 1, 2008 in Portland, ME - Reducing Energy Costs - Sponsored by Efficiency Maine – Approved for 16 hours

April 10, 2008 in South Portland, ME - Everyday Labware with BOD Review – Sponsored by JETCC – Approved for 6 hours

April 15, 2008 in Yarmouth, ME - Math Review – Approved for 6 hours – Sponsored by JETCC – Approved for 6 hours

April 17, 2008 in Bangor, ME - Everyday Labware with BOD Review – Sponsored by JETCC – Approved for 6 hours

May 22, 2008 in Orono, ME - Advanced Microsoft Excel – Sponsored by JETCC – Approved for 6 hours

Note: Efficiency Maine is a program of the Maine Public Utilities Commission - 18 State House Station, Augusta, ME 04333-0018 Tel: 207-287-8350

JETCC stands for Joint Environmental Training Coordinating Committee – PO Box 487 – Scarborough, ME 04070-0487 – Tel (207) 253-8020

MRWA stands for Maine Rural Water Association - 14 Maine Street, Box 36 - Brunswick, ME 04011 – Tel (207) 729-6569

NEIWPC stands for New England Interstate Water Pollution Control Commission – 116 John St. – Lowell, MA 01852-1124 – Tel (978) 323-7929

Operator Certification Renewals

Certified Operators who have even numbered certificates will be due for renewal by March 1, 2008. Those operators will receive their renewal notices in early January. To renew your certificate, you need to show proof of at least 18 hours of approved training and pay the renewal fee of \$75.00. If you are due to renew in 2008 and do not have enough training and cannot take the required 18 hours before March 1, 2008, submit your renewal form and renewal fee before March 1st. Include a letter stating when you will be taking the training to meet the 18-hour requirement. If we do not hear from you by March 1, 2008, your certification will become inactive. If you are the operator in responsible charge of your treatment facility, it will be illegal for you to sign the DMR or Form 49 until you reactivate your certificate.

Dick Darling

Answers to For Practice:

1. b $1 \text{ psi} = 2.31 \text{ feet of water}$ $19 * 2.31 = 43.89$ which round up to 44 feet of water

2. c According to Standard Methods, the preferred number of colonies is 20-80 on a plate. This number is enough to assure that the count is reasonable and yet not too many to chance many multiple bacteria growing together to form a single colony.

3. c The Concentration of mixed liquor (MLSS) in the aeration tank will increase because more sludge will be returned to the aeration tank. The F/M ratio will decrease because the food (loading from the primary clarifiers) remains constant. The OUR rate will go down because there are more bugs to use the oxygen. The possibility of denitrification in the secondary clarifiers will decrease because more sludge is being withdrawn, giving a shorter detention time in the clarifiers.

4. d $16 \text{ in} \times 12 \text{ in} = 192 \text{ sq. in} = 1.33 \text{ sq.ft}$
 $1.33 \text{ sq.ft} \times 4 \text{ ft./sec.} = 5.33 \text{ cu. ft./sec.}$
 $5.33 \text{ cu. ft./sec.} \times 2 \text{ hr.} \times 60 \text{ min./hr.} \times 60 \text{ sec./min.} = 38,400 \text{ cu. ft.}$
 $38,400 \text{ cu. ft.} \times 7.5 \text{ gal./cu.ft.} = 288,000 \text{ gal}$



New DMR Format

Part of the implementation of the Electronic Discharge Monitoring Report (eDMR) system will include a minor change to the paper DMR form. You will probably remember back a few years when we changed from the multi-part DMRs to the single, laser printed DMRs we use now. The new DMRs will also be laser printed, but will have a slightly different format.

The current DMRs have two columns for Quantity Limits and three columns for Concentration Limits. The new format will have three columns for Quantity Limits and three columns for Concentration Limits. If you are required to report monthly average, weekly average and daily maximum quantities for BOD and TSS, you can report them on one line of the new DMR rather than on two lines as you have to do with the current DMR format. The pictures on the following page show the old and new DMR formats.

Your limits will not change and the parameters you are required to report will not change. The only thing different is where you put the numbers. You should expect to see the new DMR format when you receive the March DMRs.

This is an example of the **Present** DMR Format

PERMITTEE NAME/ADDRESS (Include Facility Name, Location # & Division) NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) DISCHARGE MONITORING REPORT (DMR)

Name: BREWER, CITY OF
Address: 80 N. MAIN STREET
CITY HALL
Facility: BREWER
Location: BREWER WWTF
ATTN: KENNETH LOCKE

ME 04412
ME 04412

PERMIT NUMBER: MED100072
DISCHARGE NUMBER: 001 A
MONITORING PERIOD: FROM 07/10/01 TO 07/10/31

MAJOR (SUBR. BA) F - FINAL
SECONDARY EFFLUENT
TREATED WASTEWATERS CGT
*** NO DISCHARGE | 0 | ***

PARAMETER	SAMPLE MEASUREMENT	QUANTITY OR LOADING			Quality or Concentration			UNITS	NO. OF ANALYSIS	SAMPLE TYPE
		AVERAGE	MAXIMUM	(26)	MINIMUM	AVERAGE	MAXIMUM			
BOD, 5-DAY (20 DEG. C) 00310 W 0 0 SEE COMMENTS BELOW	PERMIT REQUIREMENT	1947	*****	(26)	*****	*****	*****	*****	*****	WEEK-COMP24 DAYS
BOD, 5-DAY (20 DEG. C) 00310 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	1298	REPORT DAILY MX	(26)	30	45	50	DAILY MX	MG/L	WEEK-COMP24 DAYS
PH	PERMIT REQUIREMENT	*****	*****	*****	6.0	*****	9.0	*****	*****	DAILY GRAB
EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	*****	*****	*****	MINIMUM	*****	MAXIMUM	*****	*****	*****
SOLIDS, TOTAL SUSPENDED 00530 W 0 0 SEE COMMENTS BELOW	PERMIT REQUIREMENT	1947	*****	(26)	*****	*****	*****	*****	*****	WEEK-COMP24 DAYS
SOLIDS, TOTAL SUSPENDED 00530 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	1298	REPORT DAILY MX	(26)	30	45	50	DAILY MX	MG/L	WEEK-COMP24 DAYS
SOLIDS, SETTLEABLE 00545 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	0.3	DAILY MX	ML/L	DAILY GRAB
FLOW, IN CONDUIT OR THRU TREATMENT PLANT 50050 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	5.19	*****	*****	*****	*****	*****	*****	*****	CONTINUOUS

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER: _____ TELEPHONE: _____ DATE: _____

TYPED OR PRINTED: _____ SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT: _____ AREA CODE: _____ NUMBER: _____ YEAR: _____ MO: _____ DAY: _____

COMMENTS AND EXPLANATION OF ANY VIOLATION (Reference all attachments here)
FOR PARAMETER 50008 ENTER 1 FOR TESTING WAS DONE AND 0 FOR TESTING NOTDONE

This is an example of the New DMR Format



MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM (MEPDES)
DISCHARGE MONITORING REPORT (DMR)

PERMITTEE NAME/ADDRESS (Include Facility Name, Location & Distance)

Name BREVER WUTF
Address 80 W MAIN ST
BREVER, ME 04412

ME0100072		0014	
PERMIT NUMBER		DISCHARGE NUMBER	
MONITORING PERIOD			
YEAR	MO	DAY	YEAR
2007	10	01	2007
FROM		TO	
2007 10 01		2007 10 31	

Major (E/RO)

CLARISSA TRASKO

Facility BREVER WUTF
Location BREVER, ME 04412
ATTN: Kenneth Locke

FROM 2007 10 01 TO 2007 10 31

*** NO DISCHARGE ***

PARAMETER		QUANTITY OR LOADING				UNITS	QUALITY OR CONCENTRATION			UNITS	NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		MINIMUM	AVERAGE	MAXIMUM	REPORT DAILY MAX		MINIMUM	AVERAGE	MAXIMUM				
BOD, 5-DAY (20 DEG. C) 00310 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT					26				19			
	PERMIT REQUIREMENT	1296 MO AVG	1947 WEEKLY AVG	REPORT DAILY MAX			30 MO AVG	45 WEEKLY AVG	50 DAILY MAX	MG/L		WEEK-DAYS	COMP24
PH 00400 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	*****	*****	*****						12			
	PERMIT REQUIREMENT	*****	*****	*****			6 MINIMUM	*****	9 MAXIMUM	UJ		DAILY	GRAB
SOLIDS, TOTAL SUSPENDED 00530 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT					26				19			
	PERMIT REQUIREMENT	1296 MO AVG	1947 WEEKLY AVG	REPORT DAILY MAX			30 MO AVG	45 WEEKLY AVG	50 DAILY MAX	MG/L		WEEK-DAYS	COMP24
SOLIDS, SETTLE-BLE 00545 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	*****	*****	*****						25			
	PERMIT REQUIREMENT	*****	*****	*****			*****	*****	0.3 DAILY MAX	ML/L		DAILY	GRAB
FLOW, IN CONDUIT OR THRU TREATMENT PLANT 50050 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	*****		*****		03	*****	*****	*****				
	PERMIT REQUIREMENT	*****	5.19 MO AVG	*****		MGAL/DAY	*****	*****	*****			CONTINUOUS	RECORD
BOD, 5-DAY PERCENT REMOVAL S1010 K 0 0 PERCENT REMOVAL	SAMPLE MEASUREMENT	*****	*****	*****						23			
	PERMIT REQUIREMENT	*****	*****	*****			85 DAILY MIN	*****	*****	PERCENT		ONCE / MONTH	CALC'D
SOLIDS, SUSPENDED PERCENT REMOVAL S1011 K 0 0 PERCENT REMOVAL	SAMPLE MEASUREMENT	*****	*****	*****						23			
	PERMIT REQUIREMENT	*****	*****	*****			85 DAILY MIN	*****	*****	PERCENT		ONCE / MONTH	CALC'D
NAME/TITLE PRINCIPAL EXECUTIVE OFFICER		I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person(s) who manage this system or those persons directly responsible for gathering the information the information submitted, to the best of my knowledge and belief, is accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.				TELEPHONE		DATE					
TYPED OR PRINTED						SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		AREA CODE	NUMBER	YEAR	MO	DAY	
COMMENTS AND EXPLANATION OF ANY VIOLATION (reference to comment is here)													
FOR PARAMETER 50008 ENTER 1 FOR TESTING WAS DONE AND 0 FOR TESTING NOT DONE													