

WISCONSIN PASTEURIZER BROKEN SEAL PROCESS

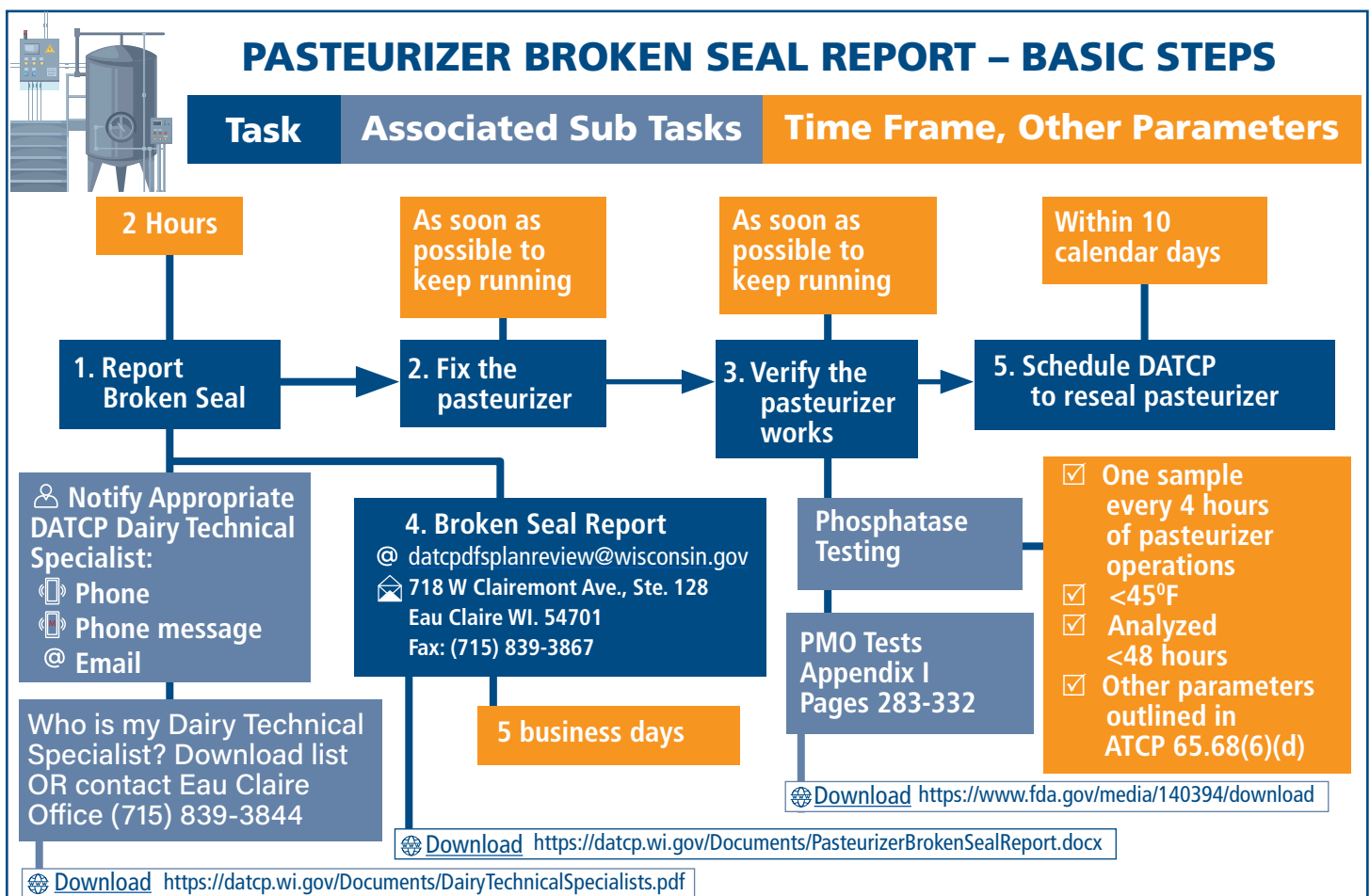
Operating and maintaining a properly functioning pasteurizer is crucial to producing high-quality and safe dairy products. In the state of Wisconsin, pasteurizers are inspected, timed and sealed by dairy technical specialists from the Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP). This helps ensure that pasteurizers are operating correctly and that several crucial parts of the system are not being tampered with.

Pasteurizing is one of the most critical food safety processes in a dairy operation, as it is a staple Critical Control Point in HACCP plans and Process Preventive Control in Food Safety Plans. The operation of this equipment and verification that it has not been tampered with is critical to food safety. Seals are placed at critical parts of the pasteurizer to ensure that the plant can't intervene and push more product through or reduce the temperature or adjust the holding time to increase throughput or save on power.

Like any piece of equipment, pasteurizers do occasionally need unscheduled or unexpected maintenance or emergency repairs. It's never convenient when a dairy plant's pasteurizer breaks down – an entire plant or line of production can come to a halt. For most manufacturing sites, this occurs seldomly, so remembering typical protocol can be an exercise of “shaking off the rust” since last time you performed the activity.

Currently, a majority of the first-time submissions of the broken seal report forms are incorrect. These get corrected with help from the DATCP Dairy Plant Technical Specialists. It would increase efficiency to have a standard operating procedure (SOP) assigning steps and individuals responsible for each step. The Dairy Food Safety Alliance webpage (<https://www.wischeesemakersassn.org/food-safety>) has several free SOP templates that will be updated soon to include a Broken Seal SOP template (it is also a great resource for artisan cheesemakers).

Another important point is that DATCP is not responsible for fixing pasteurizers. DATCP's responsibility is to verify that the pasteurizer is working properly. Therefore, before DATCP comes to the plant to reseal a pasteurizer, the plant needs to already have fixed the pasteurizer and conducted the various tests to ensure that it is working properly.



To assist with the process of properly reporting a pasteurizer broken seal we've created this reference sheet. It includes links to key documents and contacts. It may be helpful to print out these documents and contacts and place them in the plant. For more information, you can also refer to Wisconsin Administrative Code ATCP 65.68(6) https://docs.legis.wisconsin.gov/code/admin_code/atcp/055/65/iv/68/6

Within 2 Hours Notify DATCP

Plant must notify DATCP within 2 hours when the dairy plant breaks a seal.

Notify your Dairy Technical Specialist within 2 hours by phone, phone message or email. | Find Your Dairy Plant Technical Specialist: <https://datcp.wi.gov/Documents/DairyTechnicalSpecialists.pdf>

Within 5 Business Days Complete and Submit Pasteurizer Broken Seal Report to DATCP

Fill out the Pasteurizer Broken Seal Report: <https://datcp.wi.gov/Documents/PasteurizerBrokenSealReport.docx>

Send completed Pasteurizer Broken Seal Report to DATCP Eau Claire office:

DATCP Eau Claire office:

Wisconsin Department of Agriculture, Trade and Consumer Protection

Division of Food and Recreational Safety

718 W Clairemont Ave., Ste. 128, Eau Claire WI 54701

Phone: (715) 839-3844 | Email: datcpdfsplanreview@wisconsin.gov | Fax: (715) 839-3867

Fill out the top portion of the pasteurizer broken seal report

Fill out all the relevant information. If you don't know when the seal broke, put the time of discovery. When putting the reason for the broken seal, make sure it is succinct and describes a good summary of why the seal was broken.

PASTEURIZER BROKEN SEAL REPORT

Wis. Adm. Code § ATCP 65.68(6)(a)

PLANT INFORMATION		
PLANT NAME:		TODAY'S DATE:
ADDRESS:	COUNTY:	TOWNSHIP:
PASTEURIZER ID:	Plant 55-	LIC. -D1
DATE SEAL BROKEN:	TIME SEAL BROKEN:	BROKEN SEAL LOCATION(S) AND SEAL NUMBER(S):
REASON FOR BROKEN SEAL(S):		
NAME OF PERSON CONDUCTING VERIFICATION:	DATE VERIFICATIONS COMPLETED:	TIME VERIFICATIONS COMPLETED:

Pasteurizer System Verification Tests

Before resuming operation of the pasteurizer, the pasteurizer system must be verified that it is repaired and functioning properly. Each line in the Broken Seal Report references the PMO test that should be used to verify as well as values to record. Pasteurizer Milk Ordinance - <https://www.fda.gov/media/140394/download>

For example: If the Safety Thermal Limit Recorder (STLR) is what is having issues, verification should be complete to show the problem has been resolved prior to DATCP arrival: The associated test is outlined below.

SAFETY THERMAL LIMIT RECORDER (STLR)		
<input checked="" type="checkbox"/> YES	Verify programming of electronic recorder per the FDA's M-b approval for the device, maintain documentation for review	
<input checked="" type="checkbox"/> YES	Verify time accuracy of electronic recorder over a 30 minute time span, PMO Test 3, document on chart as appropriate	
166.6 Indicator	166.0 Recorder	Compare temperature with indicating thermometer and adjust as necessary, PMO Test 4
162.0 CUT-IN	161.4 CUT-OUT	Verify cut-in and cut-out temperatures are above legal pasteurization temperatures PMO Test 10
STLR RTD		
166.6 Indicator	166.0 Recorder	Compare temperature with indicating thermometer and adjust as necessary, PMO Test 4
3.71 Seconds	Thermometric Response – Time temperature rise from 12°F below cut-in to cut-in, with water bath 7°F above cut-in, PMO Test 8	

The part of the pasteurizer that is having the issue will determine which tests you will use to verify if the pasteurizer is functional. For example, if you had an electrical power outage that affected the frequency for the booster pump, you would:

1. Make sure to verify the programming works.
2. Confirm that it stops when it is supposed to and that there is no pressure cross-over during a Manual Divert.
3. Make sure the booster pump stops when the timing pump is disabled.

Phosphatase Testing

It is required that samples be taken to test for Alkaline Phosphatase (ALP) to verify that pasteurization was achieved. This native enzyme in milk will denature when proper pasteurization is achieved. It is important that this sample is:

1. Sampled correctly
 - a. Correct location: Directly from the outlet of the pasteurizer
 - b. Sanitarily: Contamination may lead to high ALP values
 - c. Correct frequency: Once every 4 hours that the pasteurizer is operating
 - d. Appropriate Sample Matrix:
 - i. Fluid White Milk
 1. Whole Milk
 2. Low-fat milk/reduced fat milk
 3. Fat-free milk
 - ii. Cream
2. Stored properly: below 45°F
3. Tested in a timely manner – within 48 hours
4. Tested by competent and approved individuals
 - a. Grade A - performed at a certified laboratory approved by ATCP 77 or PMO
 - b. Grade B - performed at a certified laboratory approved by ATCP 77 or PMO or trained by the test kit manufacturer.

The specification for this test is <350 milli-units.

It is critical that these are sampled by individuals that are properly trained. This enzyme is very finicky, and will reactivate (Rankin et al 2010). If there are positive results for Alkaline Phosphatase (> 350 milli units), there is little a plant can do to confirm these values once there are no viable milk samples. Ensure that you keep records on hand for your Dairy Technical Specialist to review and for DATCP/FDA to review in the future.

Within 10 Calendar Days schedule an appointment with your Dairy Technical specialist to reseal the pasteurization system.

Make sure that when the Broken Seal Report is submitted that there is documentation that the issue is remedied and when the DATCP representative arrives, they find that the equipment ready to time and seal. The main responsibility of the state is to verify that the pasteurizer is working properly, and not to fix the problem.

Pasteurizer Broken Seal Process Recap/Takeaways

- Pasteurizer seals are critical to the validity of pasteurization and ensuring the system has not been tampered with and is operating correctly.
- If a pasteurizer seal is broken, notify DATCP as soon as possible (maximum 2 hours) after the pasteurizer seal is broken or discovered to be broken.
- Verify the pasteurizer is working as soon as possible by conducting relevant PMO tests and phosphatase testing.
- Complete the Pasteurizer Broken Seal Report and submit it to DATCP within 5 business days of broken seal.
- Schedule DATCP to reseal pasteurizer within 10 calendar days after the seal is broken. Remember: pasteurizer must be fixed and necessary tests and samples must be conducted before DATCP arrives to reseal the pasteurizer.

References:

S. A. Rankin, A. Titel, W. Lee, D. S. Banavara, and A. Lopez-Hernandez. 2010. *The application of alkaline phosphatase assays for the validation of milk product pasteurization.* J. Dairy Sci. 93: 5538-5551.

Wisconsin Department of Agriculture, Trade and Consumer Protection. *Pasteurizer Broken Seal Report.* Revised 5/20. Accessed at datcp.wi.gov.