Appendix A

Procedures for Metering Milk at the Plant

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APPENDIX A

A. METERING PROCEDURES

I. Application by a Processor for Authorization to Purchase Milk Using the Plant Meter

a) Processors must apply to DFO for receiving system authorization if they wish to use their meter for the purpose of purchasing milk based on the volumes received at the plant.

b) Application for authorization should be made to the local Regional Marketing Officer.

c) Processors wishing to purchase their milk using the plant meter must ensure that application is made to DFO at least six months prior to the program entry date of the first day of the month in any given year. The six-month lead-time will provide a period of introduction to the program for the plant, and an opportunity to ensure that all necessary approvals and authorizations are in place.

II. Requirements for Authorization for Metering Milk at the Plant

a) For the purposes of purchasing milk based on volumes measured at the plant, both pressure (Type A) and vacuum (Type E) air eliminator milk receiving systems will be allowed.

b) The meter calibration tolerance must be within +/-0.25%. (Weights and Measures Regulations, Industry Canada).

c) The system must continue to measure volumes within the +/-0.25% tolerance on subsequent inspections and verifications.

d) Those processors that do not have milk-receiving systems approved by Measurement Canada will be required to purchase their supplies of milk based on information obtained by means of Milk Collection Reports.

III. Milk Receiving Area Requirements

a) A pressure air elimination milk receiving system or a vacuum air elimination milk receiving system, which must be approved by Measurement Canada, Industry Canada.

b) Have the controls for the milk receiving system kept in a secure location, accessible to the Receiver and Bulk Tank Milk Grader/Driver but secured so that only the Receiver can operate them through the use of a key lock or pass code. This will ensure that the plant's established unloading procedure of priming the air eliminator prior to the first load of the day, or pumping dry each load, is maintained throughout the day.
Have the inlet to the air eliminator more than four inches, and preferably twelve inches, below the tank truck outlet. This can be achieved by placing the air eliminator in a pit with adequate drainage.

d) Have a printer installed on the meter, or in the system, that will print three copies of the required information for each load received. (Name and number of plant, date and time, MCR volume, metered volume)

e) The procedures for unloading the milk from the tank truck must be posted in the milk receiving area.

f) Milk receiving areas shall be such to ensure full drainage of tank trucks.

g) The milk receiving system shall be in an enclosed area to prevent the freezing of the system.

h) Plants must demonstrate that any flushing of milk from the tanker, following the reception of milk, is carried out on a separate independent receiving line, not connected to the meter.

IV. Operational Procedures

1. Bulk Tank Milk Grader/Driver

a) On arrival at the plant, the Bulk Tank Milk Grader/Driver shall report and indicate in the comments section on the electronic Milk Collection Report, any incident, which may have affected the quantity of milk delivered.

b) The Bulk Tank Milk Grader/Driver shall adhere to the posted procedures during the unloading of the tank truck.

c) The Bulk Tank Milk Grader/Driver shall ensure that the tanker hatch is open prior to the milk receiving system being connected to the tank truck.

d) The Bulk Tank Milk Grader/Driver shall check to see that the plant meter has been zeroed before commencing to unload the tanker.

e) The Bulk Tank Milk Grader/Driver shall be responsible for opening the valve to begin unloading the milk, after clearance from the Receiver, and ensure that proper unloading procedures are started.

f) The Bulk Tank Milk Grader/Driver shall be responsible for all equipment and its operation on the truck side of the truck valve.

g) The Bulk Tank Milk Grader/Driver shall visually inspect the interior of the tank to ensure that it is empty and that the hose has been drained to the meter, prior to the printing of the meter ticket and any flushing of the tanker.
h) After the unloading of the milk, the Bulk Tank Milk Grader/Driver shall sign the electronic Milk Collection Report (after the volume has been noted on the Milk Collection Report) and the printed meter ticket. The Bulk Tank Milk Grader/Driver shall keep the driver's copy of both the Milk Collection Report and the meter ticket.

2. Plant Milk and Cream Grader (Receiver)

a) The person responsible for the milk receiving system (Receiver) shall be licensed as a Plant Milk and Cream Grader by the Ontario Ministry of Agriculture, Food and Rural Affairs. The Receiver shall be either a licensed Plant Milk and Cream Grader or an apprentice Plant Milk and Cream Grader.

b) The Receiver shall have overall responsibility of the plant's equipment, in particular, responsibility for the equipment and its operation on the plant side of the truck valve.

c) The Receiver shall adhere to the posted procedures during the unloading of the tank truck.

d) The Receiver shall grade the milk in each tanker prior to commencing the unloading procedure.

e) The Receiver shall leave the tanker hatch open after grading.

f) The Receiver shall ensure that the receiving system is properly hooked up (and tightened with a wrench) and that the valve is opened to start the unloading procedure.

g) The Receiver shall ensure that the meter's register has been zeroed prior to the tanker hose being connected.

h) The Receiver shall ensure that when the milk receiving system is empty, it is primed prior to each tanker being unloaded and that the prime volume is included in the metered volume on both the Milk Collection Report and the meter ticket or, alternatively, ensure that the air eliminator is drained to a low level after each tanker delivery. This section applies specifically to the vacuum air eliminator receiving system.

i) The receiver shall be present for the start and finish of each load reception and the Receiver shall be responsible for the milk receiving area while the tanker is being unloaded and be readily available during the unloading procedure.

j) The Receiver shall sign the Milk Collection Report and the printed meter ticket and retain the plant copies of each.
k) The Receiver shall ensure that the tank is fully unloaded and empty prior to the printing of the meter tickets, any flushing of the tanker and the disconnecting of the hose.

l) The Receiver shall ensure that the tanker has been properly unhooked from the plant receiving system after it has been unloaded and the meter ticket printed.

m) The Receiver shall ensure that any incident at the plant that might affect the metered volume is recorded on the plant meter log and on the Milk Collection Report comments and that, DFO's Regional Marketing Office is made aware of any such incidents or problems.

3. Processor

The processor shall:

a) Arrange for a licensed Plant Milk and Cream Grader to be responsible for the operation of the meter.

b) Ensure that the metering system is, at all times operated in accordance with the manufacturer's recommendations and Measurement Canada approved procedures.

c) Ensure that the metering system is maintained in good working condition at all times and that maintenance is carried out in strict accordance with manufacturer's detailed instructions.

d) Inform DFO of any problems or irregularities with the milk receiving system on the same day as the problem or irregularity occurs and within seven days by written notice.

e) Inform DFO of any mechanical repairs, changes or major maintenance to the milk receiving system on the same day as such matters take place.

f) Maintain an up-to-date log of all repairs and maintenance performed on the milk receiving system.

g) Ensure that the milk receiving system is inspected and approved by Measurement Canada or a company registered with Measurement Canada upon installation or after any modifications to the system and thereafter by either the manufacturer, Measurement Canada or a company registered with Measurement Canada at a frequency in accordance with Section V (a).

h) Not make any adjustments to the meter(s).
4. Dairy Farmers of Ontario (DFO)

a) DFO shall keep records of the differences between the Milk Collection Reports and the printed meter tickets for all plants and all tank trucks.

b) Following notification to the appropriate plant personnel, DFO shall have the right to be present at any inspection by Measurement Canada or the equipment manufacturer. Similarly, with notification, DFO appointed representatives shall be allowed access to the milk receiving systems at all times during normal working hours, or as may otherwise be agreed to, for the purposes of inspecting or observing receiving system operations and/or the log book.

V. Meter Inspections and Verifications

a) Inspections and verifications of the proper calibration of a receiving system shall be performed by either Measurement Canada or by the manufacturer using an approved Proving Device. Such verification of the plant's milk receiving system shall take place at least once per year for plants receiving up to 40 million litres of milk annually and twice per year for plants receiving in excess of 40 million litres per year. DFO shall arrange for the meter verifications at the specified frequencies.

b) The milk receiving system shall be approved, and the processor able to purchase volume based on the plant's meter reading, when the calibration falls within a tolerance of +/-0.25% (Weights and Measures Regulations, Industry Canada).

c) The inspection and/or verification procedures shall include a physical inspection of the entire receiving system, or any part thereof, including such items as piping, controls, filters and storage tanks, as well as the observation of normal operating procedures. During the trial period, a calibration shall be conducted prior to the physical inspection with a further calibration to follow the physical inspection, if required.

d) At any inspection where the equipment manufacturer is present with the Prover, calibration changes shall be made so that the calibration is as close to zero as possible. (Weights and Measures Regulations, Industry Canada).

e) DFO appointed personnel shall have the right to be present at all scheduled metering system calibrations, verifications and certifications whether or not to exercise that right is at DFO’s discretion. In the course of the inspection and/or verification of a plant receiving system, the processor shall make available to DFO staff all plant records which pertain to the daily operation and maintenance of the receiving equipment including meter inspection documentation.

f) At the time of calibration (recalibration) of a system, security seals shall be properly replaced at the end of the procedure.
VI. **Maintenance Considerations**

a) The processor and the meter manufacturer must ensure that the system is functioning properly and that the meter has been correctly installed and calibrated. Responsibility for calibration adjustment lies with the meter manufacturer or his authorized agent and/or Measurement Canada, Industry Canada. DFO and the processor may not make any adjustment to the meter. However, when adjustments are made to the meter by authorized personnel, DFO is to receive notification of any such changes within 24 hours. In all cases where verbal notice is given, a written notice, from both the processor and manufacturer, shall be delivered within seven (7) normal working days.

b) Engineering changes to the receiving system, which alter the dynamics of milk movement through the meter, as approved by Measurement Canada, will require that the system's accuracy be verified, either by the manufacturer's or the federal government's Prover.

Note: Engineering changes refer to items such as, but not limited to:

- Changes in storage silo placement or configuration
- Booster pumps being added/removed downstream of the receiving system
- Relocation of the receiving system
- Replacement of system components with equipment, the capacity of which falls outside of parameters approved by Measurement Canada (e.g. faster or slower pumps, variable frequency drives)

VII. **Investigative Procedures**

a) The processor shall inform DFO's Regional Marketing Office of any shortages of milk on any load where the shortage is greater than 1 per cent of the volume recorded on the Milk Collection Report for the load. For any such shortages, the Receiver shall inform the management and make an immediate check of the unloading procedures and the receiving system.

b) On being informed of a shortage under Section VII (a), the Regional Marketing Office will carry out an investigation which shall involve the transporter and the producers associated with the load in question.

c) The Board has the right to request additional inspections by Measurement Canada or the equipment manufacturer if it is felt there is a problem.

d) The processor shall pay any costs of inspections that DFO requests where it is found that the milk receiving system is outside the allowable tolerance of +/- 0.25% (Weights and Measures Regulations, Industry Canada).
e) DFO shall pay any costs of inspections that it requests where the milk receiving system is found to be within the allowable calibration tolerance of +/-0.25% (Weights and Measures Regulations, Industry Canada).

VIII. **Suspension of Right to Purchase Milk on the Basis of the Plant Meter**

a) Should there be any spillage at the plant, on the plant side of the truck valve; the volume as recorded on the Milk Collection Report shall be used for payment purposes, for that particular load.

b) If at any time the calibration error exceeds the Measurement Canada tolerance of +/-0.25%, only Milk Collection Report totals shall be accepted until the system is returned to the proper tolerance level. The Milk Collection Reports will be utilized retroactively from the time it was determined that the variation exceeded +/-0.25% until the system is recertified.

c) Any alteration of the installation or replacement of a major component in the milk receiving system shall result in the immediate withdrawal of DFO's authorization, until such time as recalibration occurs. The Milk Collection Report will form the basis of processor payment in this instance.

Major components are considered to be: Meter; Air Eliminator; Check Valve; Pump Controls; Pump; Throttling Valve; electronic control systems.

d) Measurement Canada does not recognize the meter as approved if a seal has been broken and, therefore, if at any time following the meter verification, seal(s) are discovered to have been broken or removed, the system no longer complies with Measurement Canada approval. The Milk Collection Reports will be utilized from the time it was determined that the seal was broken or removed until it has been fixed or replaced and the system recalibrated.

e) In the event that a milk meter or any part of the system or the installation thereof does not meet the standards and tolerances of Measurement Canada, Industry Canada, or as a result of the information obtained through routine checks by the manufacturer which indicate that the milk meter is measuring in excess of the allowed tolerance of +/-0.25%, DFO will only recognize the farm bulk tank reading, for the purpose of trade, as of the date the problem is identified.

f) If in any month, the variation between the MCR's and plant meter readings vary by more than 0.2% from the previous three-month average, DFO has the right to conduct an investigation. During the period of investigation, the ability to purchase milk according to the meter readings will be suspended and MCR's will be substituted.
g) If after any investigation of any situation where DFO has suspended the processor's right to purchase milk on the basis of the plant meter, (ie. purchases made based on Milk Collection Reports) and it is found that the cause of the problem is not the milk receiving system, the plant billing will be adjusted retroactively, to the date the processor's right was suspended, for the difference between the Milk Collection Report and the plant meter reading.

h) Notices of suspension of authorization of a metering system may be delivered verbally by a DFO representative or in letter form. In all cases where verbal notice is given, such notice shall be confirmed in writing.

IX. **Brushing**

a) If during the course of a calibration a variance greater than 0.1% is found, as compared to that meter’s previous calibration; the meter shall be brushed out of place. If a calibration shift greater than or equal to 0.1% occurs as a result of brushing then that meter shall be placed on the brushing program outlined below. A red tag shall also be affixed to or near the meter stating that the meter is only legal for trade if it has been cleaned out of place in the last seven days.

This condition is being implemented in recognition of the possibility that regular or intermittent coatings can affect the accuracy of magnetic meters used in this application. Brushing the meter(s) manually will ensure a consistent level of cleanliness under which normal measuring of raw milk receipts is performed. All calibration checks and calibration adjustments of these meters will be also performed under clean/brushed conditions to ensure that the calibration adjustments best reflect normal operating conditions.

b) **Brushing Procedures**

1. It is recommended that regular brushing of the meter be performed by trained plant personnel, when the metering system is empty and just prior to regular cleaning in place (CIP). If this recommendation is followed, the meter can be left in place. The connections just above the meter need only be removed to allow brushing from the top of the meter. This should ensure minimal disruption to the meter wiring connections etc.

2. Rinse with warm water and inspect the meter prior to brushing. Take note of and report any unusual findings prior to proceeding. If a visible coating is present, try to obtain a sample for testing.

3. The brushing should still be performed using a nylon bristle pipe brush corresponding to the meter size and using normal cleaning detergent. The brush should be run through the meter’s flow tube 10 times with a twisting motion.

4. After the brushing, rinse with warm water and inspect the meter again to ensure that it is clean. Reconnect the piping. Resume normal operations.
5. Record every date that your meter(s) are brushed and any unusual observations in your metering logbook.

X. Records

a) All records relating to metering of raw milk shall be submitted to DFO on forms prescribed by DFO and in accordance with specified procedures. All record keeping and related procedures shall be subject to DFO confirmation.

b) The processor shall send any required forms to DFO’s Regional Marketing Office within 2 days of the end of the week to which the report refers.

c) The plant must keep in a log book all the documents relating to all visits made by Measurement Canada and the manufacturer for verification, repairs, modifications or calibration and the plant milk and cream grader must note in the logbook all parts replaced. All activity related to meter maintenance must be recorded in the logbook.

d) The plant shall report any repairs, alterations or adjustments to Measurement Canada. The plant shall also report any repairs, alterations or adjustments to DFO.

e) All records pertaining to meter system operation and the log book will be available for inspection by DFO appointed personnel at all times during normal working hours, or as may be otherwise agreed to.