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M-a-98 (Revision 1)

April 14, 2020

TO: Director, Office of State Cooperative Programs
Attn: Office of State Cooperative Programs, Division of Milk Safety
Management and Staff

FROM: Milk and Milk Products Branch (HFS-316)

SUBJECT: Official *Grade "A" Pasteurized Milk Ordinance* (PMO) Regulatory Laboratory
Tests for Grade "A" Milk and Milk Products and Grade "A" Dairy Farm and Milk
Plant Water

M-a-98 was jointly developed and written by the National Conference on Interstate Milk Shipments (NCIMS) Laboratory Committee, Food and Drug Administration (FDA) Milk and Milk Products Branch (MMPB) and FDA Laboratory Proficiency and Evaluation Team (LPET). This revision to M-a-98 has been jointly developed and written by the same parties and is being issued to update the associated Tables to reflect changes that have been made in laboratory test approvals since M-a-98 was originally issued on March 1, 2013. This revision is to be updated utilizing the same procedures that FDA currently uses for the updating of M-a-85 and M-a-97. The information provided in the Tables that follow is based on the recommendations of the NCIMS Laboratory Committee.

The following Tables are provided with this M-a for a quick and easy reference:

- Table 1. Required PMO Laboratory Testing of Grade "A" Milk and Milk Products by Product Code,
- Table 2. Required PMO Laboratory Testing of Grade "A" Milk and Milk Products for Animal Drug Residues,
- Table 3. Required PMO Laboratory Testing of Grade "A" Milk and Milk Products by Microbiological or Chemical Test Methods, and
- Table 4. Required PMO Laboratory Testing of Grade "A" Dairy Farm and Milk Plant Water.

The following changes have been made from the original M-a-98:

- Table 1. Required PMO Laboratory Testing of Grade "A" Milk and Milk Products by Product Code
 - Addition of new product codes and associated testing

- Table 2. Required PMO Laboratory Testing of Grade “A” Milk and Milk Products for Animal Drug Residues

➤ Addition of the following Tests:

- ✓ Charm® ROSA® Sulf Test
- ✓ Charm® ROSA® Tetracycline SL Test
- ✓ Charm® TRIO Test (for Beta Lactams, Sulfonamides and Tetracyclines)
- ✓ Charm® BL30SEC Beta Lactam Test
- ✓ IDEXX New SNAP® Beta Lactam (addition of raw, commingled goat milk and raw, commingled camel milk-M-I-13-7)
- ✓ IDEXX SNAP® Tetracycline Test
- ✓ Neogen BetaStar® Advanced for Beta Lactams Test
- ✓ Neogen BetaStar® Advanced for Tetracyclines Test

➤ Deletion of the following Tests:

- ✓ Charm® II Cloxacillin Test
- ✓ Charm® ROSA® SL6 Test
- ✓ DSM Delvotest® SP 5 Pack
- ✓ DSM Delvotest® SP mini
- ✓ Neogen BetaStar® Plus Beta Lactam Test

- Table 3. Required PMO Laboratory Testing of Grade “A” Milk and Milk Products by Microbiological or Chemical Test Methods:

➤ Addition of the following Tests:

- ✓ 3M™ Rapid Aerobic Count (RAC)
- ✓ Charm® Peel Plate® Aerobic Count (PPAC)
- ✓ Bentley BactoCount IBC (BCC)
- ✓ Bentley BactoCount IBCm (BCMC)
- ✓ FOSS BacSomatic™
- ✓ bioMérieux TEMPO® Aerobic Count (TAC)
- ✓ Charm® Peel Plate® Coliform Count (PPCC)
- ✓ Charm® Peel Plate® Coliform Count Cultured Dairy (PPCCCD)
- ✓ Charm® Peel Plate® E Coli & Coliform (PPEC)
- ✓ Charm® Peel Plate® E Coli & Coliform Count Cultured Dairy (PPECDD)
- ✓ Charm® Peel Plate® Coliform Count High-Volume (PPCCHV)
- ✓ Charm® Peel Plate® Coliform Count Cultured Dairy High-Volume (PPCCDHV)
- ✓ Charm® Peel Plate® E Coli & Coliform High-Volume (PPECHV)
- ✓ Charm® Peel Plate® E Coli & Coliform Cultured Dairy High-Volume (PPECDDHV)
- ✓ bioMérieux TEMPO® Coliform Count (TCC)
- ✓ Bentley Somacount™ (addition of FCM and FC instruments)

- ✓ Fossomatic™ 7
 - ✓ Fossomatic™ 7 DC (for differential somatic cell counts)
 - ✓ Neogen Accupoint® Advanced Alkaline Phosphatase Test
- Table 4. Required PMO Laboratory Testing of Grade “A” Dairy Farm and Milk Plant Water:
 - Addition of the following:
 - ✓ Presence/Absence (PA) format for Multiple Tube Fermentation Technique
 - ✓ Lauryl Sulfate Tryptose (LST) Broth and Brilliant Green Lactose Bile (BGLB) media for the confirmation of total coliforms
 - ✓ EC MUG for the confirmation of *E coli* in source waters
 - ✓ Modified Colitag™

NOTE: In the past, certain testing and test methods may have been utilized by State or other NCIMS milk laboratories for some milk and/or milk products that are not listed within the Tables of this M-a. The reason for this is that in the NCIMS Laboratory Committee's review of the available scientific data the Committee was not able to identify those methods as validated tests or could not determine that these tests were validated for the specific milk matrix identified in the Tables.

Section 6-The Examination of Milk and Milk Products of the PMO makes the following statement:

“All pasteurized and ultra-pasteurized milk and/or milk products required sampling and testing to be done only when there are test methods available that are validated by FDA and accepted by the NCIMS, otherwise there would not be a requirement for sampling. Required bacterial counts, coliform counts, drug tests for Beta lactams, alkaline phosphatase and cooling temperature determinations shall be performed on Grade “A” pasteurized and ultra-pasteurized milk and/or milk products defined in this *Ordinance* only when there are validated and accepted test methodology.”

In the Tables, the wording that is being utilized equates to the terms identified below:

- “Milk” is cow milk;
- “Pasteurized” (Past.) includes Vat (Batch), High-Temperature-Short-Time (HTST) and Higher-Heat-Shorter-Time (HHST) pasteurization. (Refer to Sections 1-Definitions and 7-Standards for Grade “A” Milk and/or Milk Products of the PMO for applicable times and temperatures); and
- Ultra-pasteurized (UP) means thermally processed at or above 280°F (138°C) for at least two (2) seconds, to produce a milk and/or milk product which has an extended shelf life (ESL) under refrigerated conditions.

Directions of how to properly use the Tables that are included in this M-a are indicated below. The presence of an “X” indicates testing is required (Table 1) and a test method is valid for the milk, milk product or water type indicated (Tables 2 – 4). In Tables 2 – 4 grey boxes indicate testing is not required for the indicated product. For white boxes, the lack of an “X” indicates the method could be but has not been demonstrated to work for a given milk, milk product or water type. New “X” marks will be added as warranted.

TABLE 1: Product Codes

- Identifies the specific Grade “A” milk and/or milk product(s) under the “Product Description” column to determine which **laboratory tests have methods available that are evaluated or validated by FDA and accepted by the NCIMS** and; therefore, are required within Section 6 - The Examination of Milk and Milk Products of the PMO to be conducted in an NCIMS accredited laboratory for the specific Grade “A” milk and/or milk product(s).

Example: Refer to Table 1 to determine the testing requirements for Pasteurized Half & Half ($\frac{1}{2}$ & $\frac{1}{2}$) (Product Code #4) and which **laboratory tests have methods available that have been evaluated or validated by FDA and accepted by the NCIMS** and; therefore, are required to be used to test Pasteurized Half & Half ($\frac{1}{2}$ & $\frac{1}{2}$).

Pasteurized Half & Half ($\frac{1}{2}$ & $\frac{1}{2}$) is identified under Product Code #4. Reading across the row it identifies that **Temperature, Bacteria, Coliform, Inhibitors and ALP (Alkaline Phosphatase)** testing/analysis are required to be conducted. These test results are to be reported to the Regulatory Agency for official regulatory purposes.

➤ **Temperature²** has a footnote referenced on Page 19. Footnote 2 cites Table 1. Chemical, Physical, Bacteriological and Temperature Standards of the PMO and within that Table of the PMO the temperature standard for Grade “A” Pasteurized Milk and Milk Products is “**7°C (45°F) or less**”. The Grade “A” milk and milk product exceptions cited in Item 17p-Cooling of Milk and Milk Products of the PMO do not apply to Pasteurized Half & Half ($\frac{1}{2}$ & $\frac{1}{2}$).

➤ **Bacteria³ (Refer to Table 3)** has a footnote referenced on Page 19. Footnote 3 cites Table 1. Chemical, Physical, Bacteriological and Temperature Standards of the PMO and within that Table of the PMO the bacterial limits for Grade “A” Pasteurized Milk and Milk Products is “**Not to Exceed 20,000 per mL, or gram***. NOTE: Tested in conjunction with the drug residue/inhibitory substance test**”.

➤ **Coliform³ (Refer to Table 3)** has a footnote referenced on Page 19. Footnote 3 cites Table 1. Chemical, Physical, Bacteriological and Temperature Standards of the PMO and within that Table of the PMO the coliform standard for Grade “A” Pasteurized Milk and Milk Products is “**Not to Exceed 10 per mL ... NOTE: Tested in conjunction with the drug residue/inhibitory substance test**”.

➤ **Inhibitors^{3,4} (Refer to Table 2)** has footnotes referenced on Page 19. Footnote 3 cites Table 1. Chemical, Physical, Bacteriological and Temperature Standards of the PMO and within that Table of the PMO the inhibitor standard for Grade “A” Pasteurized Milk and Milk Products is **“No positive results on drug residue detection methods as referenced in Section 6-Laboratory Techniques which have been found to be acceptable for use with pasteurized milk and milk products”**. Footnote 4 cites M-a-85 (Current Revision); M-I-96-10 (Current Revision); and M-I-02-8.

NOTE: Under **Inhibitors^{3,4} (Refer to Table 2)** is X⁷. X⁷ has a footnote referenced on Page 19. Footnote 7 cites “Delvotest P 5 Pack (Visual) (M-I-99-3)”.

➤ **ALP³ (Refer to Table 3)** has a footnote referenced on Page 19. Footnote 3 cites Table 1. Chemical, Physical, Bacteriological and Temperature Standards of the PMO and within that Table of the PMO the **alkaline** phosphatase standard for Grade “A” Pasteurized Milk and Milk Products is **“Less than 350 milliunits/L for fluid products and other milk products by approved electronic phosphatase procedures”**.

- If the specific Grade “A” milk and/or milk product(s) under the “Product Description” column that you are referencing has an X in any of the columns across the page, this identifies the **laboratory tests that have methods available that have been evaluated or validated by FDA and accepted by the NCIMS** and are required to be used for the testing of the specific Grade “A” milk and/or milk product. If any of the columns with an X in them have a reference to “Refer to Table 2” or “Refer to Table 3”, please refer to the appropriate Table.

NOTE: From Table 1, it is identified that an annual vitamin assay would not be required even if vitamins would be added to the Pasteurized Half & Half (½ & ½) because this Table does not identify any **laboratory tests that have methods available that have been evaluated or validated by FDA and accepted by the NCIMS**.

TABLE 2: Animal Drug Residue Testing

- Identifies the specific Grade “A” milk and/or milk product(s) across the first row on each page of Table 2 that you are referencing to determine which **drug residue tests are available that have been evaluated or validated by FDA and accepted by the NCIMS** and; therefore, is required within Section 6 - The Examination of Milk and Milk Products of the PMO to be conducted in an NCIMS accredited laboratory for the specific Grade “A” milk and/or milk product(s).
- **Example:** The Past. ½ & ½ (Half & Half) column only has an X in the row identified as “DSM Delvotest® P 5 Pack (Visual)”. As such this Delvotest is the only **drug residue test available that has been evaluated or validated by FDA and accepted by the NCIMS** for Past. ½ & ½ (Half & Half). Therefore, this is the drug residue test that is required to be used to test Past. ½ & ½ (Half & Half) for drug residues (beta lactams).

NOTE: There have **not been any drug residue tests evaluated or validated by FDA and accepted by the NCIMS** for Ultra-Pasteurized (UP) ½ & ½ (Half & Half) (Product Code #5-04).

TABLE 3: Microbiological and Chemical Testing

- Identifies the specific Grade “A” milk and/or milk product(s) across the first row of the applicable pages of Table 3 that you are referencing to determine which **Microbiological and/or Chemical Test Method(s) (Bacterial Count, Somatic Cell Count, Coliform Count, Alkaline Phosphatase and Vitamins)** are available that **have been evaluated or validated by FDA and accepted by the NCIMS** and; therefore, are required within Section 6 - The Examination of Milk and Milk Products of the PMO to be conducted in an NCIMS accredited laboratory for the specific milk and/or milk product(s).
- **Example:** The Past./UP ½ & ½ (Half & Half) column has an X in the rows identified as “Standard Plate Count² (SPC)”, “3M™ Petrifilm™ Aerobic Count⁵ (PAC)”, “3M™ Rapid Aerobic Count (RAC)”, “Charm® Peel Plate® Aerobic Count (PPAC)” and “bioMérieux TEMPO® Aerobic Count (TAC)” as **Bacterial Count Methods available that have been evaluated or validated by FDA and accepted by the NCIMS** for Past./UP ½ & ½ (Half & Half). Therefore, any of these Bacterial Count Methods may be used to test Past./UP ½ & ½ (Half & Half) for required Bacterial Count testing.

The Past./UP ½ & ½ (Half & Half) column has an X in the rows identified as “Coliform Plate Count (CPC)”, “3M™ Petrifilm™ Coliform Count (PCC)”, “3M™ Petrifilm™ High Sensitivity Coliform Count (HSCC)”, and “Charm® Peel Plate® Coliform Count (PPCC)” or “Charm® Peel Plate® E Coli & Coliform (PPEC)”, “Charm® Peel Plate® Coliform Count High-Volume (PPCCHV)” or “Charm® Peel Plate® E Coli & Coliform High-Volume (PPECHV)” and “bioMérieux TEMPO® Coliform Count (TCC)” as the **Coliform Count Methods available that have been evaluated or validated by FDA and accepted by the NCIMS** for Past./UP ½ & ½ (Half & Half). Therefore, any of these identified Coliform Count Methods may be used to test Past./UP ½ & ½ (Half & Half) for required Coliform testing.

The Past./UP ½ & ½ (Half & Half) column has an X in the rows identified as Advanced Instruments “Fluorophos®”, Charm® “Paslite”, “Charm® Fast Alkaline Phosphatase (FAP)” and “Neogen Accupoint® Advanced Alkaline Phosphatase)” as the **Alkaline Phosphatase Methods available that have been evaluated or validated by FDA and accepted by the NCIMS** for Past. ½ & ½ (Half & Half). Therefore, any of these identified Alkaline Phosphatase Methods may be used to test Past. ½ & ½ (Half & Half) for required Alkaline Phosphatase testing.

NOTE: None of the Alkaline Phosphatase Methods have **been evaluated or validated by FDA and accepted by the NCIMS** for Ultra-Pasteurized (UP) ½ & ½ (Half & Half). Therefore, UP ½ & ½ (Half & Half) is not required to be tested under Section 6 of the PMO for Alkaline Phosphatase.

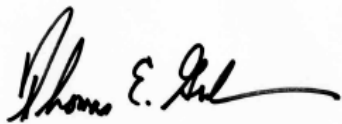
When referring to M-I-02-8, Section 6 - The Examination of Milk and Milk Products, Section 7 - Standards for Grade "A" Milk and/or Milk Products, Table 1 - Chemical, Physical, Bacteriological and Temperature Standards and Appendix N - Drug Residue Testing and Farm Surveillance of the PMO, the attached Tables shall be referenced to determine which Tests have been evaluated or validated for the specific Grade "A" milk and milk product referenced and which laboratory tests are required to be conducted in accordance with the requirements of the PMO.

NOTE: M-I-02-8 remains in "**ACTIVE**" status and if a Regulatory Agency chooses to have a Grade "A" milk or milk product tested that is not listed as having an evaluated or validated method or uses an unapproved test for "Official Regulatory" testing and the result is violative, regulatory officials shall act on the results. Appropriate action and a follow-up investigation are required to resolve the result. Use of unapproved animal drug testing methods is covered in PMO Appendix N Section VI.

Proposal 224, as passed at the 2005 NCIMS Conference, authorized FDA to issue future updates to M-a-98, which add, delete or revise these tests, without requiring a public comment period or following the protocol established in the *Procedures* document for the issuance of M-a Coded Memoranda. The issuing of future updates to this M-a will be conducted in the same manner as how updates to M-a-85 (Beta Lactam Test Methods for use Under Appendix N and Section 6 of the *Pasteurized Milk Ordinance* (PMO)) and M-a-97 (Specified Microbial Inhibitors/Preservatives Accepted By FDA For Use In The Production Of Cottage Cheese That Will Be Filled At 13°C (55°F) Or Less, Cooled To 10°C (50°F) Or Less Within Twenty-Four (24) Hours Of Filling, And Cooled To 7°C (45°F) Or Less Within Seventy-Two (72) Hours Of Filling) are being handled. Therefore, this revision to M-a-98 and future updates to this M-a, as is the current practice with M-a-85 and M-a-97, will not be incorporated into the PMO.

An electronic version of this memorandum is available for distribution to FDA Milk Specialists, Milk Regulatory/Rating/Laboratory Control Agencies, Laboratory Evaluation Officers and Milk Sanitation Rating Officers. This electronic version should be widely distributed to representatives of the dairy industry and other interested parties and will also be available on the FDA Website at <http://www.fda.gov> at a later date.

If you would like an electronic version of this document prior to it being available on the FDA Website, please e-mail your request to Monica.Metz@fda.hhs.gov.



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TABLE 1.
REQUIRED PMO LABORATORY TESTING OF GRADE “A” MILK AND MILK PRODUCTS
BY PRODUCT CODE

(This Table will be revised and reissued as new information becomes available.)

PRODUCT CODE¹ See notes on p. 19.	PRODUCT DESCRIPTION¹	TEMPERATURE²	BACTERIA³ (REFER TO TABLE 3)	COLIFORM³ (REFER TO TABLE 3)	INHIBITORS^{3,4} (REFER TO TABLE 2)	SOMATIC CELL³ (REFER TO TABLE 3)	ALP³ (REFER TO TABLE 3)	VITAMINS⁵ (REFER TO TABLE 3)
1	Raw Cow Milk-Dairy Farm	X	X		X	X		
1	Raw, Commingled Cow Milk for Pasteurization/ Ultra-Pasteurization (UP)/Aseptic Processing & Packaging/Retort Processed after Packaging/Fermented High-Acid Shelf-Stable Processing & Packaging-Milk Plant (NOTE: Includes raw milk from a single source that is not commingled with other producer's raw milk received at a milk plant.)	X	X		X			
2	Pasteurized Milk, Reduced Fat, Lowfat or Skim	X	X	X	X ⁶		X	X

PRODUCT CODE¹ See notes on p. 19.	PRODUCT DESCRIPTION¹	TEMPERATURE²	BACTERIA³ (REFER TO TABLE 3)	COLIFORM³ (REFER TO TABLE 3)	INHIBITORS^{3,4} (REFER TO TABLE 2)	SOMATIC CELL³ (REFER TO TABLE 3)	ALP³ (REFER TO TABLE 3)	VITAMINS⁵ (REFER TO TABLE 3)
2	Pasteurized Chocolate Milk, Reduced Fat, Lowfat or Skim	X	X	X	X ⁷		X	X
2	Pasteurized Strawberry Milk, Reduced Fat, Lowfat or Skim	X	X	X			X	
2	Pasteurized Flavored Milk, Reduced Fat, Lowfat, or Skim (Other than Chocolate & Strawberry)	X	X	X				
3	Heat-Treated (May Include Reduced Fat, Lowfat, Skim or Cream)							
4	Pasteurized Half & Half, Coffee Cream, Creams	X	X	X	X ⁷		X	
4	Pasteurized Flavored Half & Half, Coffee Cream, Creams	X	X	X				
5-02	Ultra-Pasteurized Milk & Milk Products	X	X	X	X ⁶			X

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5-02	Ultra-Pasteurized Chocolate Milk	X	X	X	X ^{7,12}			X
5-02	Ultra-Pasteurized Flavored Milk Products (Other than Chocolate)	X	X	X				
5-04	Ultra-Pasteurized Half & Half, Coffee Cream, Creams	X	X	X	X ⁷			
5-09	Ultra-Pasteurized Yogurt (Including Lowfat, Skim & Flavored)	X ²		X				
5-10	Ultra-Pasteurized Sour Cream Products (Acidified & Cultured)	X ²		X				
5-18	Ultra-Pasteurized Eggnog (Including Flavored)	X		X				
5-19	Ultra-Pasteurized Lactose Reduced Milk & Milk Products (Fluid)	X	X	X				
5-20	Ultra-Pasteurized Low-Sodium Milk & Milk Products	X	X	X				

PRODUCT CODE¹ See notes on p. 19.	PRODUCT DESCRIPTION¹	TEMPERATURE²	BACTERIA³ (REFER TO TABLE 3)	COLIFORM³ (REFER TO TABLE 3)	INHIBITORS^{3,4} (REFER TO TABLE 2)	SOMATIC CELL³ (REFER TO TABLE 3)	ALP³ (REFER TO TABLE 3)	VITAMINS⁵ (REFER TO TABLE 3)
5-21	Ultra-Pasteurized Milk & Milk Products with Added Safe & Suitable Microbial Organisms (Such as <i>Lactobacillus acidophilus</i>)	X		X				
5-25	Ultra-Pasteurized Cholesterol Modified Fluid Milk Products	X		X				
6	Aseptic Milk & Milk Products (Including Flavored, All Fat Levels)							X (White & Chocolate Only)
7	Cottage Cheese (Including Lowfat, Nonfat or Dry Curd & Flavored)	X ²		X				
8	Cultured or Acidified Milk & Milk Products	X ²		X				
9	Yogurt (Including Lowfat, Skim & Flavored)	X ²		X				
10	Sour Cream Products (Acidified or Cultured, Including Flavored)	X ²		X				

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11	Whey (Liquid) (For Condensing and/or Drying)	X ¹⁵						
12	Whey (Condensed)	X		X				
13	Whey (Dry)			X				
14	Modified Whey Products (Condensed)	X		X				
14	Modified Whey Products (Dry)			X				
15	Condensed Milk & Milk Products	X		X				
16	Nonfat Dry Milk (NFDM)		X	X				
17	Buttermilk (Condensed)	X		X				
17	Buttermilk (Dry)			X				
18	Eggnog (Including Flavored)	X		X				
19	Lactose Reduced Milk & Milk Products (Fluid)	X	X	X				X

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20	Low-Sodium Milk & Milk Products	X	X	X				X
21	Milk & Milk Products with Added Safe & Suitable Microbial Organisms (Such as <i>Lactobacillus acidophilus</i>)	X		X				X
22	Dry Milk & Milk Products		X	X				
23	Anhydrous Milk Fat			X				
24	Cholesterol Modified Anhydrous Milk Fat			X				
25	Cholesterol Modified Fluid Milk Products	X		X				
26	Cream Condensed)	X		X				
26	Cream (Dry)		X	X				
27	Blended Dry Products		X	X				
28	Whey Cream	X		X				
29	Whey Cream & Cream Blends	X		X				

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30	Grade "A" Lactose (Dry)			X				
31	Raw Goat Milk-Dairy Farm	X	X		X ^{8,14}	X		
31	Raw Commingled Goat Milk for Pasteurization/UP/Aseptic Processing & Packaging/Retort Processed after Packaging/Fermented High-Acid Shelf-Stable Processing & Packaging-Milk Plant (NOTE: Includes raw milk from a single source that is not commingled with other producer's raw milk received at a milk plant.)	X	X		X ^{8,14}			
32	Pasteurized Goat Milk & Milk Products (Including Flavored)	X	X	X	X ⁷		X	
33	Cultured Goat Milk & Milk Products	X ²		X				

PRODUCT CODE¹ See notes on p. 19.	PRODUCT DESCRIPTION¹	TEMPERATURE²	BACTERIA³ (REFER TO TABLE 3)	COLIFORM³ (REFER TO TABLE 3)	INHIBITORS^{3,4} (REFER TO TABLE 2)	SOMATIC CELL³ (REFER TO TABLE 3)	ALP³ (REFER TO TABLE 3)	VITAMINS⁵ (REFER TO TABLE 3)
34	Condensed Goat Milk & Milk Products	X		X				
34	Dry Goat Milk & Milk Products		X	X				
35-02	Ultra-Pasteurized Goat Milk & Milk Products	X	X	X	X ^{7,13}			
35-04	Ultra-Pasteurized Goat Half & Half, Coffee Cream & Creams	X	X	X				
36	Aseptic Goat Milk & Milk Products							
37	Raw Sheep Milk- Dairy Farm	X	X		X ⁹	X		

PRODUCT CODE¹ See notes on p. 19.	PRODUCT DESCRIPTION¹	TEMPERATURE²	BACTERIA³ (REFER TO TABLE 3)	COLIFORM³ (REFER TO TABLE 3)	INHIBITORS^{3,4} (REFER TO TABLE 2)	SOMATIC CELL³ (REFER TO TABLE 3)	ALP³ (REFER TO TABLE 3)	VITAMINS⁵ (REFER TO TABLE 3)
37	Raw Commingled Sheep Milk for Pasteurization/UP/ Aseptic Processing & Packaging/Retort Processed after Packaging/Fermented High-Acid Shelf-Stable Processing & Packaging-Milk Plant (NOTE: Includes raw milk from a single source that is not commingled with other producer's raw milk received at a milk plant.)	X	X		X ⁹			
38	Pasteurized Sheep Milk & Milk Products	X	X	X				
39	Cultured Sheep Milk & Milk Products	X ²		X				
40	Concentrated Raw Milk Products for Pasteurization	X						
41	Concentrated Pasteurized Milk Products	X		X				

PRODUCT CODE¹ See notes on p. 19.	PRODUCT DESCRIPTION¹	TEMPERATURE²	BACTERIA³ (REFER TO TABLE 3)	COLIFORM³ (REFER TO TABLE 3)	INHIBITORS^{3,4} (REFER TO TABLE 2)	SOMATIC CELL³ (REFER TO TABLE 3)	ALP³ (REFER TO TABLE 3)	VITAMINS⁵ (REFER TO TABLE 3)
42	Ultra-filtered Permeate from Milk	X		X				
43	Ultra-filtered Permeate from Whey	X		X				
44	Raw Water Buffalo Milk –Dairy Farm	X	X		X ¹⁰	X		
44	Raw Commingled Water Buffalo Milk for Past. /UP/Aseptic Processing & Packaging/Retort Processed after Packaging/Fermented High-Acid Shelf-Stable Processing & Packaging-Milk Plant (NOTE: Includes raw milk from a single source that is not commingled with other producer's raw milk received at a milk plant.)	X	X		X ¹⁰			
45	Pasteurized Water Buffalo Milk & Milk Products	X	X	X				

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46	Cultured Water Buffalo Milk & Milk Products	X ²		X				
47	Raw Camel Milk-Dairy Farm	X	X		X ¹¹	X		
47	Raw Camel Milk for Pasteurization/UP/Aseptic Processing & Packaging/Retort Processed after Packaging/Fermented High-Acid Shelf-Stable Processing & Packaging-Milk Plant (NOTE: Includes raw milk from a single source that is not commingled with other producer's raw milk received at a milk plant.)	X	X		X ¹¹			
48	Pasteurized Camel Milk & Milk Products	X	X	X				
49	Cultured Camel Milk & Milk Products	X ²		X				

Notes

- 1-Product Codes from the IMS List and Page 2 of Form FDA 2359i-Interstate Milk Shipper's Report.
- 2-Section 6-The Examination of Milk and Milk Products, Section 7-Standards for Grade "A" Milk and Milk Products, Table 1-Chemical, Physical, Bacteriological and Temperature Standards, and Items 18r-Raw Milk Cooling and 17p-Cooling of Milk and Milk Products of the PMO.
- 3-Section 6-The Examination of Milk and Milk Products and Section 7-Standards for Grade "A" Milk and Milk Products, Table 1-Chemical, Physical, Bacteriological and Temperature Standards of the PMO; and M-I-02-8.
- 4-M-a-85 (Current Revision); M-I-96-10 (Current Revision); and M-I-02-8.
- 5-Section 6-The Examination of Milk and Milk Products and Appendix O-Vitamin Fortification of Fluid Milk Products of the PMO.
- 6-Charm® *B. stearothermophilus* Tablet Disk Assay, Charm® II Tablet Beta Lactam Test (Competitive Assay) and Delvotest® P 5 Pack (Reader and Visual)-(M-I-98-3).
- 7-Delvotest P 5 Pack (Visual)-(M-I-99-3).
- 8-Charm® *B. stearothermophilus* Tablet Disk Assay, Charm® II Tablet Beta Lactam Test (Sequential Assay), Charm® SL Beta Lactam-(M-I-03-3), Delvotest® P 5 Pack and Delvotest® P MINI are acceptable for testing raw, commingled goat milk.
- 9-The Charm® SL Beta Lactam Test is acceptable for testing raw, commingled sheep milk-(M-I-09-7).
- 10-The Charm® SL Beta Lactam Test and Delvotest® P MINI are acceptable for testing raw, commingled water buffalo milk-(M-I-09-6).
- 11-The IDEXX New Snap® Beta Lactam Test is acceptable for testing raw, commingled camel milk (M-I-12-13).
- 12-Not applicable to Ultra-Pasteurized chocolate milk with added stabilizers.
- 13-Not applicable to Ultra-Pasteurized goat milk and milk products with added stabilizers.
- 14-The IDEXX New Snap® Beta Lactam Test is acceptable for testing raw, commingled goat milk (M-I-13-7).
- 15-Acid-type whey with a titratable acidity of 0.40% or above, or a pH of 4.6 or below is exempted from the temperature requirement.

ALP: Alkaline Phosphatase Enzyme

TABLE 2.
REQUIRED PMO LABORATORY TESTING OF GRADE “A” MILK AND MILK PRODUCTS
FOR ANIMAL DRUG RESIDUES

(This Table will be revised and reissued as new information becomes available.)

<u>BETA LACTAM SCREENING TESTS</u>	RAW COW MILK	RAW GOAT MILK	RAW SHEEP MILK	RAW WATER BUFFALO MILK	RAW CAMEL MILK	PAST./ UP WHOLE WHITE MILK	PAST./UP WHITE MILK (REDUCED FAT LEVELS)	PAST./ UP WHITE SKIM MILK	PAST./UP FLAVORED MILK (ALL FAT LEVELS)	PAST. ½ & ½ AND CREAM (ALL FAT LEVELS)	PAST./ UP GOAT MILK
CHARM® B. stearother- mophilus TABLET DISC ASSAY	X	X				X	X	X		X	
CHARM® II TABLET BETA LACTAM TEST (COMPETITIVE ASSAY)	X					X	X	X			
CHARM® II TABLET BETA LACTAM TEST (SEQUENTIAL ASSAY)	X	X									
CHARM® II TABLET BETA LACTAM TEST (QUANTITATIVE ASSAY)	X										

<u>BETA LACTAM SCREENING TESTS</u>	RAW COW MILK	RAW GOAT MILK	RAW SHEEP MILK	RAW WATER BUFFALO MILK	RAW CAMEL MILK	PAST./ UP WHOLE WHITE MILK	PAST./ UP OTHER WHITE MILK (REDUCED FAT LEVELS)	PAST./ UP WHITE SKIM MILK	PAST./ UP FLAVORED MILK (ALL FAT LEVELS)	PAST. ½ & ½ AND CREAM (ALL FAT LEVELS)	PAST./ UP GOAT MILK
CHARM® SL BETA LACTAM TEST	X	X	X	X							
CHARM® 3 SL3 BETA LACTAM TEST	X										
CHARM® FLUSLBL FLUNIXIN AND BETA LACTAM TEST	X										
CHARM® TRIO TEST ¹	X										
CHARM® BL30SEC BETA LACTAM TEST	X										
DSM DELVOTEST® P 5 PACK (READER)	X	X				X	X	X			
DSM DELVOTEST® P 5 PACK (VISUAL)	X	X				X	X	X	X [Chocolate Only]	X	X [White Only]

1 - The Charm® TRIO Test is only approved as a screening test. Completion of testing after an initial beta lactam positive is found must be with the Charm® TRIO Test. Confirmation of presumptive positives must be with the Charm® SL3 or an equivalent beta lactam test method (see M-I-96-10, latest revision). The Charm® TRIO Test may NOT be used to confirm itself or any other test.

<u>BETA LACTAM SCREENING TESTS</u>	RAW COW MILK	RAW GOAT MILK	RAW SHEEP MILK	RAW WATER BUFFALO MILK	RAW CAMEL MILK	PAST./ UP WHOLE WHITE MILK	PAST./ UP OTHER WHITE MILK (REDUCED FAT LEVELS)	PAST./ UP WHITE SKIM MILK	PAST./ UP FLAVORED MILK (ALL FAT LEVELS)	PAST. ½ & ½ AND CREAM (ALL FAT LEVELS)	PAST./ UP GOAT MILK
DSM DELVOTEST® P MINI	X	X		X		X	X				
IDEXX NEW SNAP® BETA LACTAM TEST KIT	X	X			X						
NEOGEN BETASTAR® ADVANCED BETA LACTAM TEST	X										

<u>NON-BETA LACTAM SCREENING TESTS</u>	RAW COW MILK	RAW GOAT MILK	RAW SHEEP MILK	RAW WATER BUFFALO MILK	RAW CAMEL MILK	PAST./ UP WHOLE WHITE MILK	PAST./ UP WHITE MILK (REDUCED FAT LEVELS)	PAST./ UP WHITE SKIM MILK	PAST./UP FLAVORED MILK (ALL FAT LEVELS)	PAST. ½ & ½ AND CREAM (ALL FAT LEVELS)	PAST./ UP GOAT MILK
See note on p. 25.											
<u>SULFONAMIDE SCREENING TEST</u>											
CHARM® II SULFONAMIDE DRUG TEST (COMPETITIVE)	X										
CHARM® ROSA® SULF TEST	X										
CHARM® TRIO TEST ²	X										
<u>CHLORAM- PHENICOL SCREENING TEST</u>											
CHARM® II CHLORAM- PHENICOL (CAP)	X										

2 - The Charm® TRIO Test is only approved as a screening test. Completion of testing after an initial sulfonamide positive is found must be with the Charm® TRIO Test. Confirmation of presumptive positives must be done with the Charm® ROSA SULF Test or an equivalent sulfonamide test method (see M-I-96-10, latest revision). The Charm® TRIO Test may NOT be used to confirm itself or any other test.

<u>NON-BETA LACTAM SCREENING TESTS</u>	RAW COW MILK	RAW GOAT MILK	RAW SHEEP MILK	RAW WATER BUFFALO MILK	RAW CAMEL MILK	PAST./ UP WHOLE WHITE MILK	PAST./ UP OTHER WHITE MILK (REDUCED FAT LEVELS)	PAST./ UP WHITE SKIM MILK	PAST./UP FLAVORED MILK (ALL FAT LEVELS)	PAST. ½ & ½ AND CREAM (ALL FAT LEVELS)	PAST./ UP GOAT MILK
See note on p. 25.											
<u>TETRACYCLINE SCREENING TEST</u>											
CHARM® II TETRACYCLINE (WITH DILUTION PROTOCOL)	X										
CHARM® ROSA® TETRACYCLINE SL TEST (WITH DILUTION PROTOCOL)	X										
CHARM® TRIO TEST ³	X										
IDEXX SNAP® TETRACYCLINE TEST KIT (WITH DILUTION PROTOCOL)	X										

3 - The Charm® TRIO Test is only approved as a screening test. Completion of testing after an initial tetracycline positive is found must be with the Charm® Tetracycline SL Test for tetracyclines (with dilution protocol). Confirmation of presumptive positives must be done with the Charm® Tetracycline SL Test for tetracyclines (with dilution protocol) or an equivalent tetracycline test method (see M-I-96-10, latest revision). The Charm® TRIO Test may NOT be used to confirm itself or any other test.

<u>NON-BETA LACTAM SCREENING TESTS</u>	RAW COW MILK	RAW GOAT MILK	RAW SHEEP MILK	RAW WATER BUFFALO MILK	RAW CAMEL MILK	PAST./ UP WHOLE WHITE MILK	PAST./ UP OTHER WHITE MILK (REDUCED FAT LEVELS)	PAST./ UP WHITE SKIM MILK	PAST./UP FLAVORED MILK (ALL FAT LEVELS)	PAST. ½ & ½ AND CREAM (ALL FAT LEVELS)	PAST./ UP GOAT MILK
See note below.											
NEOGEN BETASTAR® ADVANCED TETRACYCLINE TEST	X										

NOTE: One (1) year after two (2) or more drug test methods have been evaluated by FDA and accepted by the NCIMS for a particular non-Beta lactam drug or drug family, other unevaluated drug test methods for that particular non-Beta lactam or drug family are not acceptable for determining a Screening Test Positive (Confirmation) on a milk tank truck load of milk and/or raw milk supplies that has not been transported in bulk milk pickup tankers. The acceptance of evaluated drug test methods by FDA and the NCIMS for drugs other than Beta lactams does not mandate any additional screening by industry or the Regulatory Agency with the evaluated drug test method, unless it is determined by the Commissioner of FDA that a potential problem exists with other animal drug residues in the milk supply. (PMO Appendix N, Section V)

TABLE 3.
REQUIRED PMO LABORATORY TESTING OF GRADE “A” MILK AND MILK PRODUCTS
BY MICROBIOLOGICAL OR CHEMICAL TEST METHODS

(This Table will be revised and reissued as new information becomes available.)

<u>BACTERIAL COUNT METHODS</u>	RAW COW MILK	RAW GOAT MILK	RAW SHEEP MILK	RAW WATER BUFFALO MILK	RAW CAMEL MILK	PAST. WHITE MILK (ALL FAT LEVELS)	PAST. CHOCOLATE MILK (ALL FAT LEVELS)	PAST. STRAW- BERRY MILK (ALL FAT LEVELS)	PAST. OTHER FLAVORS (ALL FAT LEVELS)	PAST. LACTOSE REDUCED MILK AND LOW- SODIUM MILK	PAST./ UP ½ & ½ AND CREAM (ALL FAT LEVELS)
<u>TOTAL BACTERIA</u>											
STANDARD PLATE COUNT (SPC) (Approved For All Milk and Milk Products). <u>NOTE:</u> Acidified or Cultured Products Do Not Apply.)	X	X	X	X	X	X	X	X	X	X	X
3M™ PETRIFILM™ AEROBIC COUNT (PAC)	X	X	X	X	X	X	X	X	X	X	X
3M™ PETRIFILM™ RAPID AEROBIC COUNT (RAC)	X	X				X	X	X		X	X

<u>BACTERIAL COUNT METHODS</u>	RAW COW MILK	RAW GOAT MILK	RAW SHEEP MILK	RAW WATER BUFFALO MILK	RAW CAMEL MILK	PAST. WHITE MILK (ALL FAT LEVELS)	PAST. CHOCOLATE MILK (ALL FAT LEVELS)	PAST. STRAW- BERRY MILK (ALL FAT LEVELS)	PAST. OTHER FLAVORS (ALL FAT LEVELS)	PAST. LACTOSE REDUCED MILK AND LOW- SODIUM MILK	PAST./ UP ½ & ½ AND CREAM (ALL FAT LEVELS)
PLATE LOOP COUNT (PLC) (Raw Milk Only) (SPC, PAC or RAC)	X	X	X [SPC & PAC Only]	X [SPC & PAC Only]	X [SPC & PAC Only]						
CHARM® PEEL PLATE® AEROBIC COUNT (PPAC)	X	X	X	X	X	X	X	X		X	X
SPIRAL PLATE COUNT (SPLC) (Raw Milk Only)	X	X	X	X	X						
BENTLEY BACTOCOUNT IBC (BCC) (Raw Milk Only)	X	X**	X**	X**	X**						
BENTLEY BACTOCOUNT IBCM (BCMC) (Raw Milk Only)	X	X**	X**	X**	X**						
FOSS BACTOSCAN FC/FC+ (BSC) (Raw Milk Only)	X	X**	X**	X**	X**						

** - Matrix Comparison Required

<u>BACTERIAL COUNT METHODS</u>	RAW COW MILK	RAW GOAT MILK	RAW SHEEP MILK	RAW WATER BUFFALO MILK	RAW CAMEL MILK	PAST. WHITE MILK (ALL FAT LEVELS)	PAST. CHOCOLATE MILK (ALL FAT LEVELS)	PAST. STRAW- BERRY MILK (ALL FAT LEVELS)	PAST. OTHER FLAVORS (ALL FAT LEVELS)	PAST. LACTOSE REDUCED MILK AND LOW- SODIUM MILK	PAST./ UP ½ & ½ AND CREAM (ALL FAT LEVELS)
FOSS BACSOMATIC™ (Raw Milk Only)	X	X**	X**	X**	X**						
BIOMERIEUX TEMPO® AC- AEROBIC COUNT (TAC)	X	X	X	X	X	X	X				X
<u>COLIFORMS</u>											
COLIFORM PLATE COUNT (CPC) (Violet Red Bile- Approved for All Milk & Milk Products)						X	X	X	X	X	X
3M™ PETRIFILM™ COLIFORM COUNT (PCC)						X	X	X		X	X
3M™ PETRI- FILM™ HIGH SENSITIVITY COLIFORM COUNT (HSCC)						X	X	X		X	X

** - Matrix Comparison Required

<u>BACTERIAL COUNT METHODS</u>	RAW COW MILK	RAW GOAT MILK	RAW SHEEP MILK	RAW WATER BUFFALO MILK	RAW CAMEL MILK	PAST. WHITE MILK (ALL FAT LEVELS)	PAST. CHOCOLATE MILK (ALL FAT LEVELS)	PAST. STRAW- BERRY MILK (ALL FAT LEVELS)	PAST. OTHER FLAVORS (ALL FAT LEVELS)	PAST. LACTOSE REDUCED MILK AND LOW- SODIUM MILK	PAST./ UP ½ & ½ AND CREAM (ALL FAT LEVELS)
CHARM® PEEL PLATE® COLIFORM COUNT (PPCC)						X	X	X		X	X
CHARM® PEEL PLATE® E. COLI & COLIFORM (PPEC)						X	X	X		X	X
CHARM® PEEL PLATE® COLIFORM COUNT HIGH- VOLUME (PPCCHV)						X	X	X		X	X
CHARM® PEEL PLATE® E. COLI & COLIFORM HIGH-VOLUME (PPECHV)						X	X	X		X	X
BIOMERIEUX TEMPO® COLIFORM COUNT (TCC)						X	X				X

<u>SOMATIC CELL COUNT METHODS</u>	RAW COW MILK	RAW GOAT MILK	RAW SHEEP MILK	RAW WATER BUFFALO MILK	RAW CAMEL MILK	PAST. WHITE MILK (ALL FAT LEVELS)	PAST. CHOCOLATE MILK (ALL FAT LEVELS)	PAST. STRAW-BERRY MILK (ALL FAT LEVELS)	PAST. OTHER FLAVORS (ALL FAT LEVELS)	PAST. LACTOSE REDUCED MILK AND LOW-SODIUM MILK	PAST./UP ½ & ½ AND CREAM (ALL FAT LEVELS)
<u>DIRECT MICROSCOPIC SOMATIC CELL COUNT</u>											
DIRECT MICROSCOPIC SOMATIC CELL COUNT (DMSCC)	X	X ¹	X ¹	X	X ¹						
<u>ELECTRONIC SOMATIC CELL COUNT (ESCC)</u>											
BENTLEY SOMACOUNT 150/300/500/FCM /FC	X	X ²	X	X	X ²						
FOSSOMATIC™ 90	X	X ²	X	X	X ²						
FOSSOMATIC™ 250/300/360/ 400	X	X ²	X	X	X ²						

1 - For Goat, Sheep and Camel milk DMSCC using a Methylene Blue stain is for screening only. If count exceeds regulatory limit Goat and Camel milk must be confirmed with Pyronine Y-Methyl Green stain. Sheep milk must be confirmed with DMSCC using Pyronin Y-Methyl Green stain or ESCC.

2 – For Goat and Camel milk ESCC is for screening only. If count exceeds regulatory limit must be confirmed with Pyronine Y-Methyl Green stain.

<u>SOMATIC CELL COUNT METHODS</u>	RAW COW MILK	RAW GOAT MILK	RAW SHEEP MILK	RAW WATER BUFFALO MILK	RAW CAMEL MILK	PAST. WHITE MILK (ALL FAT LEVELS)	PAST. CHOCOLATE MILK (ALL FAT LEVELS)	PAST. STRAW-BERRY MILK (ALL FAT LEVELS)	PAST. OTHER FLAVORS (ALL FAT LEVELS)	PAST. LACTOSE REDUCED MILK AND LOW-SODIUM MILK	PAST./UP ½ & ½ AND CREAM (ALL FAT LEVELS)
FOSSOMATIC™ 5000/FC/7	X	X ²	X	X	X ²						
FOSSOMATIC™ MINOR	X	X ²	X	X	X ²						
FOSSOMATIC™ 7 DC	X										
FOSS BACSOMATIC™	X	X ²	X	X	X ²						
DELTA SOMASCOPE® MK II/SMART	X	X ²	X	X	X ²						

2 – For Goat and Camel milk ESCC is for screening only. If count exceeds regulatory limit must be confirmed with Pyronine Y-Methyl Green Stain.

<u>ALKALINE PHOSPHATASE AND VITAMINS METHODS</u>	RAW COW MILK	RAW GOAT MILK	RAW SHEEP MILK	RAW WATER BUFFALO MILK	RAW CAMEL MILK	PAST. WHITE MILK (ALL FAT LEVELS)	PAST. CHOCOLATE MILK (ALL FAT LEVELS)	PAST. STRAW- BERRY MILK (ALL FAT LEVELS)	PAST. OTHER FLAVORS (ALL FAT LEVELS)	PAST. LACTOSE REDUCED MILK AND LOW- SODIUM MILK	PAST./ UP ½ & ½ AND CREAM (ALL FAT LEVELS)
<u>ALKALINE PHOSPHATASE</u>											
ADVANCED INSTRUMENTS FLUOROPHOS®						X	X	X			X (Except UP)
CHARM® PASLITE						X	X	X			X (Except UP)
CHARM® FAST ALKALINE PHOSPHATASE (FAP)						X	X	X			X (Except UP)
NEOGEN ACCUPOINT® ADVANCED ALKALINE PHOSPHATASE						X	X	X			X (Except UP)
<u>VITAMINS</u>											
VITAMIN ANALYSIS (A, D or A & D)						X	X			X	

TABLE 3.
REQUIRED PMO LABORATORY TESTING OF GRADE “A” MILK AND MILK PRODUCTS
BY MICROBIOLOGICAL OR CHEMICAL TEST METHODS

(This Table will be revised and reissued as new information becomes available.)

(Continued with Different Matrixes of Grade “A” Milk and Milk Products Identified.)

<u>BACTERIAL COUNT METHODS</u>	ULTRA- PASTEUR- IZED MILK (UP) (ALL FAT LEVELS)	ULTRA- PASTEUR- IZED (UP) FLAVORED MILK (ALL FLAVORS AND FAT LEVELS)	ASEPTIC WHITE, CHOCOLATE AND OTHER FLAVORED MILK (ALL FAT LEVELS)	CULTURED/ ACIDIFIED MILK PRODUCTS², SOUR CREAM, COTTAGE CHEESE, YOGURT, ACIDOPHILUS MILK AND CHOLESTEROL MODIFIED FLUID MILK (ALL FAT LEVELS)	ALL DRY MILK AND MILK PRODUCTS (INCLUDING CREAM AND GOAT)	ALL WHEY AND WHEY PRODUCTS (INCLUDING FLUID, CONDENSED, DRIED AND WHEY CREAMS)	CONDENSED MILK AND MILK PRODUCTS (INCLUDING CREAM AND GOAT)	ANHYDROUS MILK FAT (INCLUDING CHOLESTEROL MODIFIED)	PAST. GOAT MILK AND MILK PRODUCTS
<u>TOTAL BACTERIA</u>									
STANDARD PLATE COUNT (SPC) (Approved for all milk and milk products. <u>NOTE:</u> Acidified or Cultured Products Do Not Apply.)	X	X			X				X

2 - Includes Goat, Sheep, Water Buffalo and Camel Cultured/Acidified Milk and Milk Products.

<u>BACTERIAL COUNT METHODS</u>	ULTRA- PASTEUR- IZED MILK (UP) (ALL FAT LEVELS)	ULTRA- PASTEUR- IZED (UP) FLAVORED MILK (ALL FLAVORS AND FAT LEVELS)	ASEPTIC WHITE, CHOCOLATE AND OTHER FLAVORED MILK (ALL FAT LEVELS)	CULTURED/ ACIDIFIED MILK PRODUCTS², SOUR CREAM, COTTAGE CHEESE, YOGURT, ACIDOPHILUS MILK AND CHOLESTEROL MODIFIED FLUID MILK (ALL FAT LEVELS)	ALL DRY MILK AND MILK PRODUCTS (INCLUDING CREAM AND GOAT)	ALL WHEY AND WHEY PRODUCTS (INCLUDING FLUID, CONDENSED, DRIED AND WHEY CREAMS)	CONDENSED MILK AND MILK PRODUCTS (INCLUDING CREAM AND GOAT)	ANHYDROUS MILK FAT (INCLUDING CHOLESTEROL MODIFIED)	PAST. GOAT MILK AND MILK PRODUCTS
3M™ PETRIFILM™ AEROBIC COUNT (PAC)		X			X				X
3M™ PETRIFILM™ RAPID AEROBIC COUNT (RAC)		X			X				X
CHARM® PEEL PLATE® AEROBIC COUNT (PPAC)	X	X [Chocolate Only]			X [Dry Milk Only]				
BIOMERIEUX TEMPO® AC- AEROBIC COUNT (TAC)	X	X [Chocolate Only]							

2 - Includes Goat, Sheep, Water Buffalo and Camel Cultured/Acidified Milk and Milk Products.

<u>BACTERIAL COUNT METHODS</u>	ULTRA- PASTEUR- IZED MILK (UP) (ALL FAT LEVELS)	ULTRA- PASTEUR- IZED (UP) FLAVORED MILK (ALL FLAVORS AND FAT LEVELS)	ASEPTIC WHITE, CHOCOLATE AND OTHER FLAVORED MILK (ALL FAT LEVELS)	CULTURED/ ACIDIFIED MILK PRODUCTS², SOUR CREAM, COTTAGE CHEESE, YOGURT, ACIDOPHILUS MILK AND CHOLESTEROL MODIFIED FLUID MILK (ALL FAT LEVELS)	ALL DRY MILK AND MILK PRODUCTS (INCLUDING CREAM AND GOAT)	ALL WHEY AND WHEY PRODUCTS (INCLUDING FLUID, CONDENSED, DRIED AND WHEY CREAMS)	CONDENSED MILK AND MILK PRODUCTS (INCLUDING CREAM AND GOAT)	ANHYDROUS MILK FAT (INCLUDING CHOLESTEROL MODIFIED)	PAST. GOAT MILK AND MILK PRODUCTS
<u>COLIFORMS</u>									
COLIFORM PLATE COUNT (Violet Red Bile- Approved for All Milk & Milk Products.)	X	X		X	X	X	X	X	X
3M™ PETRIFILM™ COLIFORM COUNT (PCC)		X		X	X	X	X	X	X
3M™ PETRI- FILM™ HIGH SENSITIVITY COLIFORM COUNT (HSCC)		X		X	X	X	X	X	X
CHARM® PEEL PLATE® COLIFORM COUNT (PPCC)	X	X [Chocolate Only]		X ³	X [Dry Milk Only]	X [Condensed Whey Only]	X [Condensed Milk Only]		

2 - Includes Goat, Sheep, Water Buffalo and Camel Cultured/Acidified Milk and Milk Products.

3 - For cultured dairy products either Charm® Peel Plate product can be used but the Cultured Dairy Peel Plate type is designed specifically to test acidified and cultured dairy products.

<u>BACTERIAL COUNT METHODS</u>	ULTRA- PASTEUR- IZED MILK (UP) (ALL FAT LEVELS)	ULTRA- PASTEUR- IZED (UP) FLAVORED MILK (ALL FLAVORS AND FAT LEVELS)	ASEPTIC WHITE, CHOCOLATE AND OTHER FLAVORED MILK (ALL FAT LEVELS)	CULTURED/ ACIDIFIED MILK PRODUCTS², SOUR CREAM, COTTAGE CHEESE, YOGURT, ACIDOPHILUS MILK AND CHOLESTEROL MODIFIED FLUID MILK (ALL FAT LEVELS)	ALL DRY MILK AND MILK PRODUCTS (INCLUDING CREAM AND GOAT)	ALL WHEY AND WHEY PRODUCTS (INCLUDING FLUID, CONDENSED, DRIED AND WHEY CREAMS)	CONDENSED MILK AND MILK PRODUCTS (INCLUDING CREAM AND GOAT)	ANHYDROUS MILK FAT (INCLUDING CHOLESTEROL MODIFIED)	PAST. GOAT MILK AND MILK PRODUCTS
CHARM® PEEL PLATE® COLIFORM COUNT CULTURED DAIRY (PPCCCD)				X ³		X [Condensed Whey Only]			
CHARM® PEEL PLATE® E. COLI & COLIFORM (PPEC)	X	X [Chocolate Only]		X ³	X [Dry Milk Only]	X [Condensed Whey Only]	X [Condensed Milk Only]		
CHARM® PEEL PLATE® E. COLI & COLIFORM CULTURED DAIRY (PPECCD)				X ³		X [Condensed Whey Only]			

2 - Includes Goat, Sheep, Water Buffalo and Camel Cultured/Acidified Milk and Milk Products.

3 - For cultured dairy products either Charm® Peel Plate product can be used but the Cultured Dairy Peel Plate type is designed specifically to test acidified and cultured dairy products.

<u>BACTERIAL COUNT METHODS</u>	ULTRA- PASTEUR- IZED MILK (UP) (ALL FAT LEVELS)	ULTRA- PASTEUR- IZED (UP) FLAVORED MILK (ALL FLAVORS AND FAT LEVELS)	ASEPTIC WHITE, CHOCOLATE AND OTHER FLAVORED MILK (ALL FAT LEVELS)	CULTURED/ ACIDIFIED MILK PRODUCTS², SOUR CREAM, COTTAGE CHEESE, YOGURT, ACIDOPHILUS MILK AND CHOLESTEROL MODIFIED FLUID MILK (ALL FAT LEVELS)	ALL DRY MILK AND MILK PRODUCTS (INCLUDING CREAM AND GOAT)	ALL WHEY AND WHEY PRODUCTS (INCLUDING FLUID, CONDENSED, DRIED AND WHEY CREAMS)	CONDENSED MILK AND MILK PRODUCTS (INCLUDING CREAM AND GOAT)	ANHYDROUS MILK FAT (INCLUDING CHOLESTEROL MODIFIED)	PAST. GOAT MILK AND MILK PRODUCTS
CHARM® PEEL PLATE® COLIFORM COUNT HIGH- VOLUME (PPCCHV)	X	X [Chocolate Only]		X ³	X [Dry Milk Only]	X [Condensed Whey Only]	X [Condensed Milk Only]		
CHARM® PEEL PLATE® COLIFORM COUNT CULTURED DAIRY HIGH- VOLUME (PPCCDHV)				X ³					
CHARM® PEEL PLATE® E. COLI & COLIFORM HIGH-VOLUME (PPECHV)	X	X [Chocolate Only]		X ³	X [Dry Milk Only]	X [Condensed Whey Only]	X [Condensed Milk Only]		

2 - Includes Goat, Sheep, Water Buffalo and Camel Cultured/Acidified Milk and Milk Products.

3 - For cultured dairy products either Charm® Peel Plate product can be used but the Cultured Dairy Peel Plate type is designed specifically to test acidified and cultured dairy products.

<u>BACTERIAL COUNT METHODS</u>	ULTRA- PASTEUR- IZED MILK (UP) (ALL FAT LEVELS)	ULTRA- PASTEUR- IZED (UP) FLAVORED MILK (ALL FLAVORS AND FAT LEVELS)	ASEPTIC WHITE, CHOCOLATE AND OTHER FLAVORED MILK (ALL FAT LEVELS)	CULTURED/ ACIDIFIED MILK PRODUCTS², SOUR CREAM, COTTAGE CHEESE, YOGURT, ACIDOPHILUS MILK AND CHOLESTEROL MODIFIED FLUID MILK (ALL FAT LEVELS)	ALL DRY MILK AND MILK PRODUCTS (INCLUDING CREAM AND GOAT)	ALL WHEY AND WHEY PRODUCTS (INCLUDING FLUID, CONDENSED, DRIED AND WHEY CREAMS)	CONDENSED MILK AND MILK PRODUCTS (INCLUDING CREAM AND GOAT)	ANHYDROUS MILK FAT (INCLUDING CHOLESTEROL MODIFIED)	PAST. GOAT MILK AND MILK PRODUCTS
CHARM® PEEL PLATE® E. COLI & COLIFORM CULTURED DAIRY HIGH- VOLUME (PPECCDHV)				X ³					
BIOMERIEUX TEMPO® COLIFORM COUNT (TCC)	X	X [Chocolate Only]		X [Yogurt Only]					

2 - Includes Goat, Sheep, Water Buffalo and Camel Cultured/Acidified Milk and Milk Products.

3 - For cultured dairy products either Charm® Peel Plate product can be used but the Cultured Dairy Peel Plate type is designed specifically to test acidified and cultured dairy products.

<u>ALKALINE PHOSPHATASE AND VITAMINS METHODS</u>	ULTRA- PASTEUR- IZED MILK (UP) (ALL FAT LEVELS)	ULTRA- PASTEUR- IZED (UP) LAVORED MILK (ALL FLAVORS AND FAT LEVELS)	ASEPTIC WHITE, CHOCOLATE AND OTHER FLAVORED MILK (ALL FAT LEVELS)	CULTURED/ ACIDIFIED MILK PRODUCTS², SOUR CREAM, COTTAGE CHEESE, YOGURT, ACIDOPHILUS MILK AND CHOLESTEROL MODIFIED FLUID MILK (ALL FAT LEVELS)	ALL DRY MILK AND MILK PRODUCTS (INCLUDING CREAM AND GOAT)	ALL WHEY AND WHEY PRODUCTS (INCLUDING FLUID, CONDENSED, DRIED AND WHEY CREAMS)	CONDENSED MILK AND MILK PRODUCTS (INCLUDING CREAM AND GOAT)	ANHYDROUS MILK FAT (INCLUDING CHOLESTEROL MODIFIED)	PAST. GOAT MILK AND MILK PRODUCTS
<u>ALKALINE PHOSPHATASE</u>									
ADVANCED INSTRUMENTS FLUOROPHOS®				X [Sour cream & Kefir Only]					X
CHARM® PASLITE									X
CHARM® FAST ALKALINE PHOSPHATASE (FAP)									X
NEOGEN ACCUPOINT® ADVANCED ALKALINE PHOSPHATASE									X

2 - Includes Goat, Sheep, Water Buffalo and Camel Cultured/Acidified Milk and Milk Products.

<u>ALKALINE PHOSPHATASE AND VITAMINS METHODS</u>	ULTRA- PASTEUR- IZED MILK (UP) (ALL FAT LEVELS)	ULTRA- PASTEUR- IZED (UP) LAVORED MILK (ALL FLAVORS AND FAT LEVELS)	ASEPTIC WHITE, CHOCOLATE AND OTHER FLAVORED MILK (ALL FAT LEVELS)	CULTURED/ ACIDIFIED MILK PRODUCTS², SOUR CREAM, COTTAGE CHEESE, YOGURT, ACIDOPHILUS MILK AND CHOLESTEROL MODIFIED FLUID MILK (ALL FAT LEVELS)	ALL DRY MILK AND MILK PRODUCTS (INCLUDING CREAM AND GOAT)	ALL WHEY AND WHEY PRODUCTS (INCLUDING FLUID, CONDENSED, DRIED AND WHEY CREAMS)	CONDENSED MILK AND MILK PRODUCTS (INCLUDING CREAM AND GOAT)	ANHYDROUS MILK FAT (INCLUDING CHOLESTEROL MODIFIED)	PAST. GOAT MILK AND MILK PRODUCTS
<u>VITAMINS</u>									
VITAMIN ANALYSIS (A, D or A & D)	X	X	X	X [Acidophilus Milk Only]					

2 - Includes Goat, Sheep, Water Buffalo and Camel Cultured/Acidified Milk and Milk Products.

TABLE 3.
REQUIRED PMO LABORATORY TESTING OF GRADE “A” MILK AND MILK PRODUCTS
BY MICROBIOLOGICAL OR CHEMICAL TEST METHODS

(This Table will be revised and reissued as new information becomes available.)

(Continued with Different Matrixes of Grade “A” Milk and Milk Products Identified.)

<u>BACTERIAL COUNT METHODS</u>	ULTRA- PASTEURIZED (UP) GOAT MILK	PAST. SHEEP MILK AND MILK PRODUCTS	CONCENTRATED PASTEURIZED MILK PRODUCTS/ ULTRA-FILTERED PERMEATE FROM MILK	CONCENTRATED RAW MILK PRODUCTS	ULTRA- FILTERED PERMEATE FROM WHEY	PAST. WATER BUFFALO MILK AND MILK PRODUCTS	PAST. CAMEL MILK AND MILK PRODUCTS	PAST. / UP EGG NOG (ALL FLAVORS AND FAT LEVELS)
<u>TOTAL BACTERIA</u>								
STANDARD PLATE COUNT (SPC) (Approved for all Milk and Milk products.)	X	X	X	X		X	X	
3M™ PETRIFILM AEROBIC COUNT (PAC)	X	X	X	X		X	X	
3M™ PETRIFILM™ RAPID AEROBIC COUNT (RAC)	X							

<u>BACTERIAL COUNT METHODS</u>	ULTRA- PASTEURIZED (UP) GOAT MILK	PAST. SHEEP MILK AND MILK PRODUCTS	CONCENTRATED PASTEURIZED MILK PRODUCTS/ ULTRA-FILTERED PERMEATE FROM MILK	CONCENTRATED RAW MILK PRODUCTS	ULTRA- FILTERED PERMEATE FROM WHEY	PAST. WATER BUFFALO MILK AND MILK PRODUCTS	PAST. CAMEL MILK AND MILK PRODUCTS	PAST. / UP EGG NOG (ALL FLAVORS AND FAT LEVELS)
CHARM® PEEL PLATE® AEROBIC COUNT (PPAC)								
BIOMERIEUX TEMPO® AC- AEROBIC COUNT (TAC)								
<u>COLIFORMS</u>								
COLIFORM PLATE COUNT (Violet Red Bile- Approved for All Products.)	X	X	X		X	X	X	X
3M™ PETRIFILM™ COLIFORM COUNT (PCC)	X	X	X		X			X
3M™ PETRIFILM™ HIGH SENSITIVITY COLIFORM COUNT (HSCC)	X	X	X		X			X

<u>BACTERIAL COUNT METHODS</u>	ULTRA- PASTEURIZED (UP) GOAT MILK	PAST. SHEEP MILK AND MILK PRODUCTS	CONCENTRATED PASTEURIZED MILK PRODUCTS/ ULTRA-FILTERED PERMEATE FROM MILK	CONCENTRATED RAW MILK PRODUCTS	ULTRA- FILTERED PERMEATE FROM WHEY	PAST. WATER BUFFALO MILK AND MILK PRODUCTS	PAST. CAMEL MILK AND MILK PRODUCTS	PAST. / UP EGG NOG (ALL FLAVORS AND FAT LEVELS)
CHARM® PEEL PLATE® COLIFORM COUNT (PPCC)								X
CHARM® PEEL PLATE® E. COLI & COLIFORM COUNT (PPEC)								X
CHARM® PEEL PLATE® COLIFORM COUNT HIGH- VOLUME (PPCCHV)								X
CHARM® PEEL PLATE® E. COLI & COLIFORM HIGH-VOLUME (PPECHV)								X
BIOMERIEUX TEMPO® COLIFORM COUNT (TCC)								X

<u>ALKALINE PHOSPHATASE AND VITAMINS METHODS</u>	ULTRA- PASTEURIZED (UP) GOAT MILK	PAST. SHEEP MILK AND MILK PRODUCTS	CONCENTRATED PASTEURIZED MILK PRODUCTS/ ULTRA-FILTERED PERMEATE FROM MILK	CONCENTRATED RAW MILK PRODUCTS	ULTRA- FILTERED PERMEATE FROM WHEY	PAST. WATER BUFFALO MILK AND MILK PRODUCTS	PAST. CAMEL MILK AND MILK PRODUCTS	PAST. / UP EGG NOG (ALL FLAVORS AND FAT LEVELS)
<u>ALKALINE PHOSPHATASE</u>								
ADVANCED INSTRUMENTS FLUOROPHOS®								
CHARM® PASLITE								
CHARM® FAST ALKALINE PHOSPHATASE (FAP)								
NEOGEN ACCUPOINT® ADVANCED ALKALINE PHOSPHATASE								
<u>VITAMINS</u>								
VITAMIN ANALYSIS (A, D or A & D)								

TABLE 4.
REQUIRED PMO LABORATORY TESTING OF GRADE “A” DAIRY FARM AND MILK PLANT WATER

(This Table will be revised and reissued as new information becomes available.)

<u>DAIRY WATER METHODS</u>	INDIVIDUAL WATER SUPPLY / SYSTEM (PRIVATE WELL; SPRING; SURFACE WATER; HAULED WATER)	RECLAIMED WATER-PLANT (CATEGORY 1)	PASTEURIZED EQUIVALENT WATER	RECIRCULATED COOLING WATER-SINGLE-SERVICE¹ (WATER BATH)	RECIRCULATED COOLING WATER¹ (SWEET WATER, CHILL WATER)	RECIRCULATED COOLING WATER¹ (PROPYLENE GLYCOL)	RECLAIMED WATER-PLANT¹ (CATEGORY 2-WATER COLLECTED/STORED)	RECLAIMED WATER-FARM¹
<u>TOTAL COLIFORMS ONLY</u>								
MOST PROBABLE NUMBER (MPN) MULTIPLE TUBE FERMENTATION (MTF) ¹ MEDIA: LST, BGLB				X	X	X	X	X
PRESENCE/ABSENCE (PA) MULTIPLE TUBE FERMENTATION (MTF) ¹ MEDIA: LST, BGLB				X	X	X	X	X
MEMBRANE FILTRATION (MF) ¹ MEDIA: m-Endo (Broth or Agar), LST, BGLB				X	X	X	X	X

1-Testing for recirculated or category 2/farm reclaimed water is for total coliforms only. DO NOT test or report these water types for E. coli.

<u>DAIRY WATER METHODS</u>	INDIVIDUAL WATER SUPPLY / SYSTEM² (PRIVATE WELL; SPRING; SURFACE WATER; HAULED WATER)	RECLAIMED WATER-PLANT² (CATEGORY 1)	PASTEURIZED EQUIVALENT WATER²	RECIRCULATED COOLING WATER-SINGLE-SERVICE (WATER BATH)	RECIRCULATED COOLING WATER (SWEET WATER, CHILL WATER)	RECIRCULATED COOLING WATER (PROPYLENE GLYCOL)	RECLAIMED WATER-PLANT (CATEGORY 2-WATER COLLECTED/STORED)	RECLAIMED WATER-FARM
<u>TOTAL COLIFORMS AND E COLI</u>								
MOST PROBABLE NUMBER (MPN) MULTIPLE TUBE FERMENTATION (MTF) ² MEDIA: LST, BGLB, EC MUG	X	X	X					
PRESENCE/ABSENCE (PA) MULTIPLE TUBE FERMENTATION (MTF) ² MEDIA: LST, BGLB, EC MUG	X	X	X					
MEMBRANE FILTRATION (MF) ² MEDIA: m-Endo (Broth or Agar), LST, BGLB, EC MUG	X	X	X					

2-Test results that indicate positive for Total Coliforms must be subjected to testing for E. coli using EC MUG and require the use of an UV lamp to demonstrate fluorescence. If testing for E coli is not performed DO NOT report as E coli not found.

<u>DAIRY WATER METHODS</u>	INDIVIDUAL WATER SUPPLY / SYSTEM³ (PRIVATE WELL; SPRING; SURFACE WATER; HAULED WATER)	RECLAIMED WATER-PLANT³ (CATEGORY 1)	PASTEURIZED EQUIVALENT WATER³	RECIRCULATED COOLING WATER-SINGLE-SERVICE (WATER BATH)	RECIRCULATED COOLING WATER (SWEET WATER, CHILL WATER)	RECIRCULATED COOLING WATER (PROPYLENE GLYCOL)	RECLAIMED WATER-PLANT (CATEGORY 2-WATER COLLECTED/STORED)	RE-CLAIMED WATER-FARM
<u>TOTAL COLIFORMS AND E COLI</u>								
MPN ENZYME SUBSTRATE ³ COLILERT®-18, COLILERT®-24 & COLISURE, E*COLITE, MODIFIED COLITAG™	X	X	X					
PA ENZYME SUBSTRATE ³ COLILERT®-18, COLILERT®-24 & COLISURE, E*COLITE, MODIFIED COLITAG™	X	X	X					
<u>TOTAL BACTERIA</u>								
HETERO-TROPHIC PLATE COUNT (HPC) MEDIA: SPC AGAR	X	X	X	X	X	X	X	X

3-Determination of E coli in source waters found to contain coliforms when using Colilert®-18, Colilert®-24, Colisure, E*Colite or modified Colitag™ require the use of an UV lamp to demonstrate fluorescence. If testing for E coli is not performed/read, DO NOT report as E coli not found.