The Family Cow LLC
Chambersburg, PA 17202

RAW MILK Institute
Farmer to Family - Standards & Mentoring

In Alliance With
The Mission of
Cow Share Canada

The Family Cow is a certified organic, grass based, PDA permitted raw milk dairy that is situated on 122 acres of certified organic pastures that are rotationally grazed 8 months out of the year. An additional 180 acres of organic land is farmed to grow the organic grasses needed to grass-feed the cows during the winter. The 150 milk cows are Jerseys and a few Jersey cross breeds. The Family Cow dairy is owned and operated by Edwin and Dawn Shank and their 6 children. The farm has been continuously owned and farmed by the family for 5 generations and close to 100 years.

Narrative of Grazing, Farming, Milking, Cleaning and Bottling Conditions

Item	Reference	Keep the Healthy…Healthy	Risk Reduction	GMP	SSOP	CCP
		Health of Soils, Plants, Livestock and Caretakers				
H-1	**Healthy Soils**	Soils with a diversity of microbes, fungi, insects and earthworms are foundational for healthy nutritious plant life. At The Family Cow we strictly avoid insecticides, fungicides, herbicides and chemical fertilizers that would kill or hinder full ecological function of the soil.	Maintaining a diverse microbial profile in the soil reduces the chance of pathogenic domination.	✔		
H-2	**Healthy Plants**	Grass, clovers, and herbs grow to express their full nutritional profile in a multi-species mix of vegetation. Mixing warm season grasses and cool season grasses with nitrogen fixing legumes like clovers and alfalfas produces a vibrant, high protein, high brix, high energy, nutrient dense salad bar of health-giving vegetation.	Healthy vibrant plants are less likely to be susceptible to disease.	✔		
H-3	**Healthy Cows**	Cows grazing high brix, high vitamin, high mineral content, fresh, chemical free vegetation straight from healthy soils tend to be low stress cows with well functioning immune systems. If a cow does come under stress or face a health challenge, we consult veterinarians trained in both holistic and medical approaches and who specialize in large animal health.	Cows feeding on healthy plants which grow in healthy soils have stronger immune systems which make them less likely to be reservoirs for pathogenic bacteria.	✔		
H-4	**Healthy Udders**	Udder Health of each cow is monitored twice a day to assure that only healthy milk is used. On a monthly basis, a milk sample from each individual cow is sent to a DHIA laboratory for extensive testing to assure milk quality. Cows with milk quality that does not meet our high standards are removed from the herd.	Healthy udders produce milk with very low bacteria content. Starting with super clean milk lowers risk from base one.	✔		
H-5	**Healthy Caretakers**	If those who work with the cows are ill for any reason, they are expected to take off work till their illness has passed. One or several of the cow crew who are not ill will fill in for them till they are able to return to work.	Ill employees staying home reduce the possibility of pathogenic micro-organism transfer from a person to the milk.	✔		

Item	Reference	Keep the Green...Green	Risk Reduction	GMP	SSOP	CCP
		Green Pastures for Nutrition, Comfort, Health and Hygiene				
G-1	**Green Pastures**	At The Family Cow, green pastures of multiple species of grass and clovers are intensively managed for lush, high yield grass production. The pastures are integral for food safety and nutritional values of Family Cow raw milk.	Provides conditions to optimize herd health, cleanliness, and the nutritional value of raw milk.	✔		
G-2	**Daily Moves**	The cows are moved to a new grazing paddock at a minimum of every 12 hrs. 30-40 days elapse till the cows return to re-graze. This keeps the grass from being over grazed, over manured and of sufficient height to provide a high portion of the cows diet.	Keeps the pasture from being over-used, killed and being muddy.		✔	
G-3	**Alternate Gates**	Each 100 foot paddock has one gate for entry and a separate gate to exit. This keeps cow traffic impact to a minimum in the gate area. This feature is especially useful during rainy weather to avoid muddy spots.	Cows are cleaner. Cow traffic impact on pastures is spread out to keep pastures cleaner.		✔	
G-4	**Keep Cows Off When Wet**	If rainfall has been unusually high and the pastures are unacceptably soft, the cows are kept in the barn and fed stored grass hay or grass haylage till the pastures are dry enough to avoid damage from cow traffic.	Protects soft pastures from cattle pugging which would create mud and breeding spots for insects and pathogens.		✔	
G-5	**Re-Seeding**	The grasses and clovers are re-seeded periodically to keep the pasture grass stands thick and healthy.	Assures high quality and volume grazing for the nutritional needs of the cows. Avoids mud, dirty cows, soils erosion and weed pressure.	✔		
G-6	**Movable Water Tanks**	The 200 gallon water tanks that provide for the cows drinking water while in the pasture are moved to a new location each rotation. This keeps the water tanks on grass rather than mud.	Keeps the cows cleaner by moving cow traffic to new location.		✔	

Item	Reference	Keep the Clean...Clean	Risk Reduction	GMP	SSOP	CCP
		Cows and Barns				
CL-1	**Cow Lanes**	Cow walk lanes are raised, crowned and dry. The lanes are scraped periodically to prevent manure accumulation.	Prevents manure accumulation in cow lanes.	✔		
CL-2	**Free Access Stalls**	Free access stalls are provided for cow resting area during the non-gazing season or inclement weather. The stall beds are a 8 inch elevated platform topped with rubber filled mattresses bedded liberally with agriculture lime, saw dust or certified organic straw. The stalls are cleaned and groomed twice per day.	Keeps cows as clean as possible when in the barn.		✔	
CL-3	**Bedding Pack**	The special needs group has a bedding pack area for indoor resting. This area is bedded with fresh organic corn fodder, organic straw or wood shavings as needed.	Keeps cows as clean as possible when in the barn.	✔		
CL-4	**Alley Ways**	Concrete walkways in the barns are cleaned of manure twice daily. The bedding pack area walkways are cleaned once daily.	Clean alleyways reduce dirty cow legs.		✔	
CL-5	**Forage Storage**	Winter and supplemental forage storage is the barn and in Ag Bags . In both of these areas, the forage is protected from the elements and air to prevent mold and spoilage.	Fresh clean grass hay and grass forage keeps the cows healthy with robust immune systems.	✔		
CL-6	**Forage Feeding Area**	When in use, winter and inclement weather feeding areas are cleaned out daily to assure no moldy or stale forage.	Fresh clean grass hay and grass forage keeps the cows healthy with robust immune systems.	✔		
CL-7	**Waterers**	All pasture water tanks and barn water troughs are emptied and scrubbed clean on a weekly basis.	Freshly scrubbed waterers discourage the growth of pathogens.		✔	
CL-8	**Cows Curried**	Cow tails and flanks and legs are curried on an as needed basis to keep hair coats clean.	Clean cow tails and flanks make clean, safe milking easier.	✔		
CL-9	**Tail Hair Trimmed**	Tail hairs are trimmed as needed to keep hair short to avoid possible contamination of clean udders during the milking.	Short tail hairs cannot reach the cows teats to possibly contaminate them.	✔		
CL-10	**Udder Hair Trimmed**	Udder hair is kept short via periodic clipping or singeing. Short hair on the udder is a prerequisite to clean udders and clean milk.	Short udder hair aids in hygienic udder preparation and makes sanitary milking possible.	✔		
CL-11	**Cows Total Body Wash**	Cows are showered twice a day during the heat of the summer. They are brushed and total body washed with a high volume, low pressure water hose and shampoo periodically.	Cool, clean cows make for more hygienic milking.	✔		

Item	Reference	Keep the Clean...Clean	Risk Reduction	GMP	SSOP	CCP
		Udder Preparation and Milking				
CL-12	**Fresh Clothes Daily**	Milkers are required to wear a new set of freshly laundered clothes every day.	Reduce chance of environmental contamination.		✔	
CL-13	**Milkers Utility Pouch**	The utility pouches that are worn to carry wash cloths and udder prep disinfectant during milking are washed twice per day.	Reduce chance of environmental contamination.		✔	
CL-14	**Clean Gloves**	The milking crew is required to wear single use latex gloves at all times when working with the milking equipment or milking. The gloves are put on at the start of the milking and discarded at the end of each milking.	Reduces possibility of bacteria hiding in skin crevices and being transferred from cow to cow.		✔	
CL-15	**Dip Teats with Disinfect**	Each teat of each cow is dipped with an organic approved disinfectant specially formulated for udder sanitization.	Reduces load of environmental bacteria and loosens dirt for easy cleaning.		✔	
CL-16	**First Sanitizing Wash**	A freshly laundered, micro-fiber wash cloth soaked with a warm, mild disinfectant solution is used to clean the entire bottom of the udder. Not just the teats but the entire area between the teats and around the teats is cleaned.	Reduces the possibility of bacteria on nearby areas of the udder from accidentally entering the milker unit.		✔	
CL-17	**Strip Each Teat**	Several squirts of milk is hand milked from each teat and observed for any signs of poor quality milk.	Detects possible poor quality milk before a cow is milked.		✔	
CL-17b	**In case of low quality milk**	If a cow is found with inferior quality milk, she is milked into a separate pail, the milker flushed with water and the cow is moved to the TLC group for special care until her milk is OK.	Keeps inferior quality milk out of the raw milk supply. Gives the cow the care she needs to recover.		✔	
CL-18	**Second Sanitizing Wash**	The udder is again washed with a second disinfectant cloth in the same manner as the first time. Again washing not only the teats but also the whole bottom of the udder.	Further reduces risk of environmental bacteria. Re-cleans teats after being handled during pre-striping.		✔	
CL-19	**Third Sanitizing Wash**	This third sanitizing step with a third wash cloth focus only on the teats and teat ends. The milker is careful to sanitize the far teats first and the near teats last to avoid possible recontamination of the near teats with a sleeve or arm while sanitizing the far teats.	Surgically cleans the teat end and teat since this is the only part that actually enters the milker unit. Teat end focus is critical to avoid bacterial colonizing the milk duct.		✔	
CL-20	**Carefully Apply Milking Unit**	The clean milker unit is carefully applied with an emphasis to avoid touching any part of the cow except the teats with the milker unit.	Lessens chance of environmental contamination.		✔	
CL-21	**Post Dip**	When the cow is finished milking, the unit is removed and the cow's teats are coated with a disinfectant solution to prevent bacterial contamination of her teat canal and subsequently her udder and milk between milking's. The disinfectant also contains skin conditioner to keep her teat skin health and soft and easily cleanable.	Provides a twice-a-day guard against bacterial colonization of the cows teat skin and udder. Keeps teat skin soft and healthy.		✔	

Item	Reference	Keep the Clean...Clean	Risk Reduction	GMP	SSOP	CCP
		Wash Cycle for Milking System, Milk Tank and Jug Filler				
CL-22	**Soft Water**	Soft water is required in order to keep milking equipment clean. Without soft water the detergents are ineffective. PH strips are used weekly to check and monitor the effectiveness of the water softener.	Aids the effectiveness of the detergent which is important to clean equipment.			✔
CL-23	**Water Tests**	Well water from two wells on our organic farm is used to wash all of our milking and bottling system. The water is 3rd party lab tested 6 times a year to verify it's purity. Two of those 6 lab tests are conducted by the PDA as part of our raw milk permitting requirements.	Defends against possible contamination from the water sources.			✔
CL-24	**Warm Rinse**	After the milking, a warm water rinse is the first cleaning step. The water must not exceed 130 degrees or the milk proteins can start to bind (bake) tight to the equipment. Neither is it to be <120 degrees or the rinse is ineffective. Electronically monitored, recorded and alarmed by ProAct.	Removes 98% of the milk residue from the stainless steel surfaces. Takes into account the nature of milk fats and proteins.			✔
CL-25	**Hot Detergent Cycle**	After the warm rinse, the system is washed with a hot temperature detergent cycle. The temperature during this cycle is to be a maximum of 170 and not to be <140 at discharge. Electronically monitored, recorded and alarmed by ProAct.	Standard cleaning method for milking systems to eliminate bio-film build up and contamination.			✔
CL-26	**Cold Acid Rinse**	Following the hot detergent is a cold temperature acid rinse. This mild acid solution stays on the equipment surfaces till it is rinsed off just before the next milking. The acidic PH prohibits bacterial growth. Electronically monitored, recorded and alarmed by ProAct.	Standard dairy acid rinse for milking systems to eliminate milk stone and bacterial growth between milkings.			✔
CL-27	**Sanitize Cycle**	An hour before the next milking, the acidic solution is rinsed off with a cold water mild chlorine solution. Electronically monitored, recorded and alarmed by ProAct.	Prevents acid contamination of milk and pre-sanitizes the milking system right prior to milking.			✔
CL-28	**Fresh Water Rinse Cycle**	The sanitize cycle is followed by a fresh cold well water cycle. Electronically monitored, recorded and alarmed by ProAct.	Removes chlorine residual.			✔
CL-29	**Slug Speed**	For all of the wash cycles, the air injector is carefully tuned to assure maximum scrubbing-action slug of wash water to fully, forcefully clean the entire diameter of the stainless steel milk line. Electronically monitored, recorded and alarmed by ProAct.	Assures proper full diameter cleaning of entire milk line.			✔
CL-30	**Super Wash**	In addition to the above, the entire milking system, the refrigerated milk storage tank and the bottle filler are "super washed" weekly to assure ultimate cleanliness.	Reduces possibility of seemingly small cleaning problems growing larger over time.	✔		
CL-31	**Hoses and Gaskets Changed**	The milker units are disassembled, gaskets and hoses changed on a schedule that is 4 to 5 times more frequent than dairy industry recommendations. These extremes are practiced since The Family Cow raw milk is direct for human consumption and not milk on it's way to be pasteurized.	Just one more step to minimize risk to assure low risk raw milk	✔		

Item	Reference	Keep the Clean...Clean	Risk Reduction	GMP	SSOP	CCP
		Empty Jug and Cap Storage and Labeling				
CL-32	**Unlabeled Jug Storage**	New sleeves of empty unlabeled jugs are stored in a dry, clean, climate controlled location that is rodent, bird and insect free. The jugs are stored in their original plastic bag.	Keeps jugs sterile until use.		✔	
CL-33	**New Jug Cap Storage**	New caps are stored in a plastic bag inside their original box. They are kept in the same location with the new jugs.	Keeps caps sterile until use.		✔	
CL-34	**Bio Security for Labelers**	Persons labeling jugs must always have fresh clean clothes. Jugs are labeled first thing in the morning. Under no conditions will persons label jugs after tending livestock.	Reduces possibility of cross contamination from other types of work.		✔	
CL-35	**Clean Hands and Arms**	Those labeling jugs are required to wash hands and arms from the elbow down with soap and warm water and dry well.	Good personal hygiene is assured to work with sterile jugs.		✔	
CL-36	**Clean Table**	The labeling table is washed with a mild disinfectant solution prior to every labeling period.	Hygienic work area is enforced to work with sterile jugs.		✔	
CL-37	**Dropped Jug Policy**	Any jug that falls on the floor during the labeling process is discarded.	Jugs that contact the floor are no longer deemed sterile or usable.		✔	
CL-38	**Labeled Jug Storage**	As each sleeve of jugs is labeled, they are returned to their original plastic bag and closed tightly with a twisty tie. The labeled jug bags are stored on plastic pallets near the bottle filler waiting to be filled.	Reduces risk of jug contamination because sterile jugs are returned to the sterile bag and resealed.		✔	

Item	Reference	Keep the Clean...Clean	Risk Reduction	GMP	SSOP	CCP
		Raw Milk Bottle Filling				
CL-39	**Clean Clothes**	The bottling team wears fresh clean set of clothes. Milk is bottled first thing in the morning.	Reduces possibility of cross contamination from yesterday's work.		✔	
CL-40	**Special Bottling Crew**	Persons who milk the cows and tend calves do not bottle milk. There is a special separate crew responsible to bottle milk.	Reduces possibility of contamination from farm livestock environment.		✔	
CL-41	**White Lab Coats**	The bottling personnel are provided with and required to wear freshly laundered white lab coats. These coats are not worn except when bottling milk and are laundered between each use.	Covers items worn like belts, cell phone cases and Leatherman holders which likely are not sterile.		✔	
CL-42	**White Boots**	Food service grade white boots are required for bottling crew. This assures that footwear worn around livestock are not worn in the bottling area. The white boots are likewise never worn into livestock areas.	Prevents cross contamination.		✔	
CL-43	**Keep Clean from Office to Bottling Room**	After donning lab coats and white boots, the bottling crew walk from the office to the bottling area via the elevated deck.	Assures that farm driveway dirt is not carried into the bottling area.		✔	
CL-44	**Gloves**	The bottler personnel are required to wear disposable nitrile gloves.	Prevents bacterial contamination from hands and allows easy cleaning.		✔	
CL-46	**Carefulness With Milk Crates**	The filler operator does not handle the milk crates. The crates could be a potential contamination source since they are clean but not sterilized. The person working the end of the line crating the milk after the jug is sealed is responsible for all crate movement. Since the jugs are now sealed there is no longer a possibility of contamination.	Prevents contamination of milk while filling jugs.		✔	
CL-47	**Cap less jugs**	Occasionally a jug misses it's cap at the capper and goes through the jug rinser open. If that happens, the jug is hand capped and put into a special red "Shank crate" as a reject jug. The Shank family uses the reject milk.	Assures that sub-standard milk is directed for family use.		✔	
CL-48	**Clorox Rinse For Gloves**	A bucket of chlorine solution for hand wash is kept on hand while bottling. This enables an operator to re-sanitize his hands if he briefly has to work with something that is not as clean as the rest of the bottling area.	Assures clean hands at all times.		✔	
CL-49	**Dirty Lab Coats**	After the bottling is finished, the used lab coats are hung on a special rack designated for the coats waiting to be laundered.	Reduces risk of accidentally wearing a lab coat that was not freshly laundered.		✔	

Item	Reference	Keep the Hot…Hot	Risk Reduction	GMP	SSOP	CCP
		Hot Water to Wash Milking System, Tank and Bottle Filler				
HT-1	**Milking System Start Wash Temperature**	Water temperature is >170 at the start of the detergent wash cycle for the milking system to ensure a proper wash. Electronically monitored, recorded and alarmed by ProAct.	Totally removing the milk fats and proteins reduce risk of residuals and bacterial growth.			✔
HT-2	**Milking System End Wash Temperature**	Water temperature is >120 at the end of the detergent wash cycle for the milking system. If the temp were to drop lower than this the milk fats would start to re-adhere. Electronically monitored, recorded and alarmed by ProAct.	Keeping the fats in suspension to be washed away reduces possible bacterial contamination and biofilms			✔
HT-3	**Sufficient Volume for Milking System Wash**	The water heaters have plenty of water heating capacity to wash the milking system simultaneously with the milk tank and bottle filler. Electronically monitored, recorded and alarmed by ProAct.	Assures that no matter when and at what time the equipment is being washed that there is enough hot water for all.			✔
HT-4	**Milk Tank Start Wash Temperature**	Water temperature is >170 at the start of the detergent wash cycle for the milking system to ensure a proper wash. Electronically monitored, recorded and alarmed by ProAct.	Totally removing the milk fats and proteins reduce risk of residuals and bacterial growth.			✔
HT-5	**Milk Tank End Wash Temperature**	Water temperature is >120 at the end of the detergent wash cycle for the milk tank. Electronically monitored, recorded and alarmed by ProAct.	Keeping the fats in suspension to be washed away reduces possible bacterial contamination and biofilms.			✔
HT-6	**Sufficient Volume for Tank Wash**	The water heaters have plenty of water heating capacity to wash the milk tank simultaneously with the milking system and bottle filler. Electronically monitored, recorded and alarmed by ProAct.	Assures that no matter when and at what time the equipment is being washed that there is enough hot water for all.			✔
HT-7	**Bottle Filler Start Wash Temperature**	Water temperature is >170 at the start of the detergent wash cycle for the milking system to ensure a proper wash. Electronically monitored, recorded and alarmed by ProAct.	Totally removing the milk fats and proteins reduce risk of residuals and bacterial growth.			✔
HT-8	**Bottle Filler End Wash Temperature**	Water temperature is >120 at the end of the detergent wash cycle for the bottle filler. Electronically monitored, recorded and alarmed by ProAct.	Keeping the fats in suspension to be washed away reduces possible bacterial contamination and biofilms.			✔
HT-9	**Sufficient Capacity for Bottle Filler Wash**	The water heaters have plenty of water heating capacity to wash the bottle filler simultaneously with the milking system and the milk tank. Electronically monitored, recorded and alarmed by ProAct.	Assures that no matter when and at what time the equipment is being washed, there is enough hot water for all.			✔

Item	Reference	Keep the Cold... Cold	Risk Reduction	GMP	SSOP	CCP
		Cold Chain from Cow to Consumer				
CO-1	**Plate Cooler**	Within 2-3 minutes of leaving the cow, the milk passes through a well water plate cooler. At this stage the milk is rapidly chilled to <65 degrees down from cow body temperature of 101 degrees. Electronically monitored, recorded and alarmed by ProAct.	Rapidly cooled milk provides little opportunity for bacterial growth and also makes the best flavor.			✔
CO-2	**Milk Tank**	From there the milk flows into a refrigerated milk tank where it is quickly further chilled to <40 degrees. The milk reaches <40 degrees within 10 minutes of leaving the cow. Electronically monitored, recorded and alarmed by ProAct.	Rapidly cooled milk provides little opportunity for bacterial growth.			✔
CO-3	**Blend Temperature**	Once the milk from one milking is cold, it's important that it not be warmed too much when warmer milk is added at the next milking. The Family Cow protocol does not allow the blend temperature of the milk to go above 42 degrees. Electronically monitored, recorded and alarmed by ProAct.	Milk kept cold provides little opportunity for bacterial growth.			✔
CO-4	**Extra Cold Tank Setting**	The milk tank temperature is set at 34 degrees (as cold as possible without freezing) instead of the normal 38-40 for milk going to be pasteurized. This is done explicitly because The Family Cow specializes in raw milk for direct consumption.	Reduces speed for bacterial growth in stored milk.	✔		
CO-5	**Bottler**	Care is taken to assure that the 34 degree milk passes through the bottle filler and into the waiting jugs at a sufficient speed that the milk does not warm to >40 degrees even in the hottest of weather.	Assures that the cold chain is not broken.	✔		
CO-6	**Air Conditioned Bottler Room**	The bottler room is air conditioned.	Reduce risk of cold chain compromise. Creates positive pressure to keep flies and dust out.	✔		
CO-7	**Rapidly Into Walk-in Cooler**	Once the bottles are filled, the milk is crated and moved rapidly into the walk-in refrigerator. The distance from the end of the bottle filler line and the walk-in refrigerator is <15 feet.	Reduce risk of cold chain compromise.	✔		
CO-8	**Walk-in Refrigerator Temperature**	The walk-in refrigerator is set at <36 degrees.	Milk kept cold provides little opportunity for bacterial growth.	✔		
CO-9	**Store Display Refrigerator**	The store display refrigerator where the milk is kept is adjusted to <36 degrees. The temperature is checked routinely by the PDA food facility inspector.	Milk kept cold provides little opportunity for bacterial growth.	✔		
CO-10	**Care While Packing**	When packing milk into ice chests for delivery to drop points, care is taken to ensure that milk en-route to an ice chest is not in the warm more time than absolutely necessary.	Milk kept cold provides little opportunity for bacterial growth.	✔		
CO-11	**Adequate Ice in Ice Chests**	Ice chests are packed adequately with ice. When the customer takes delivery of the milk several hours later, the ice chest still contains un-melted ice. Spot checks of the inside ice chest temperature at drop points verifies that the milk stays well below 40 degrees.	Assures that the cold chain is not broken.	✔		

Item	Reference	Monitor Measure and Record	Risk Reduction	GMP	SSOP	CCP
		Verify that all Critical Control Points are Controlled				
MR-1	**ProAct ~ 24/7 Monitoring and Alert System**	A computer based, state-of-the-art monitoring system called to ProAct is used to constantly verify that our critical control points are under control. The Family Cow may be the only raw milk dairy in the US with the level of intense computer monitoring and recording that is provided by ProAct.	Drastically reduces the chance of equipment failure causing contamination or adulteration.	✔		
MR-2	**More than 60 Critical Control Points Monitored**	ProAct monitors over 60 critical control point limits. For example: Milk cooling, cooling speeds, blend temperatures, all milking system and milk tank and bottle filler wash cycles, detergent strengths high/low, acid strengths high/lows, wash water temperatures highs/lows and more are all monitored by this system.	With 60 control points now monitored and new ones being added every year, the risk of equipment failure going un-noticed continues to go down.	✔		
MR-3	**Web Based**	ProAct is web based. The Family Cow farmers can monitor the dairy's food safety system from anywhere at anytime.	Keeps food safety at Family Cow managers fingertips.	✔		
MR-4	**Alerts Are Not Missed**	If any of the 60 control point limits are crossed an instant alert is fired to 4 smartphones and multiple computers on and off farm. Three of the top farmers receive the alerts, plus service technicians from the ProAct company.	Assures that all critical points are in control constantly.	✔		
MR-5	**Audible and Visual Alert**	Audible and visual on-farm alarms also are set off if some of the more critical control point limits, like milk tank temperature, are crossed.	Raises awareness of those in the immediate area to fix a serious problem promptly.	✔		
MR-6	**Equipment Technician on Call**	ProAct has technicians on call 24/7 for if a critical piece of milk quality equipment needs attention.	Reduces chance of failed equipment not receiving attention promptly.	✔		
MR-7	**ProAct Records Data**	ProAct records all of the data that is gathered and converts it to graph form so historic trends can be easily studied.	These highly detailed graphs help to solve food safety issues faster.	✔		
MR-8	**Milk Filter Evaluation**	The primary milk filter from every milking is evaluated for cleanliness by the parlor manager. An A/B/C score is given to each filter. This data is entered into a daily spreadsheet at the barn office.	The score is effective to constantly asses the carefulness of the milking crew and bring accountability.			✔
MR-9	**Visual Checks for Unit Wash**	Each milker unit is visually checked twice a day during the wash cycle to verify that the wash water is properly circulating in each one. This data is entered in the daily spreadsheet at the barn computer.	Assures that an individual malfunctioning wash unit does not cause contamination.			✔
MR-10	**Visual Checks for Damaged liners**	Each milker unit is visually checked twice a day for damaged liners or other rubber parts. Parts are replaced if found damaged. This verification data is also entered in the daily spreadsheet.	Assures that a broken liner does not allow contamination.			✔
MR-11	**Visual Checks for Unit Air Inlet**	Each milker unit is visually checked twice per day to assure that the air inlets are intact and clean in the milker inflations. This verification is entered in the daily barn spreadsheet.	Assures that a missing air inlet does not allow bacterial contamination.			✔
MR-12	**Visual Checks for Tank Temperature**	As an extra precaution the milking crew visually reads and records the milk tank temperature and enters that data into the barn spreadsheet.	Assures that the milk is indeed cold. Bacteria multiply quickly in warm milk.			✔

Item	Reference	The Family Cow Raw Milk Laboratory	Risk Reduction	GMP	SSOP	CCP
		Every lot of Raw Milk pre-consumptive tested to reduce risk in real time.				
LB-1	**"Trust But Verify"**	The Family Cow pioneers raw milk safety with an on-farm laboratory. This gives the Family Cow the unique ability to test every lot of milk before it is sold. The Family Cow expertise, GMP, SSOP and CCP monitoring ProAct does produce safe raw milk; the lab simply scientifically verifies that the milk is consistently safe.	Assures that every single lot of milk sold meets the industry sanitary standards.			✔
LB-2	**Pre-Consumptive Post-Consumptive**	Every lot of Family Cow raw milk is testing in real time... before the customer has a chance to purchase and consume it. All of PDA test results are post-consumptive...reported days after the customer has already purchased and drank the milk.	Pre-consumptive testing is the only kind of testing that actually lowers real time risk.			✔
LB-3	**Coliform Testing**	A sample container of raw milk is randomly taken from the bottler line every time raw milk is bottled. This sample is tested for coliform bacteria in The Family Cow on-farm laboratory. PA standards for raw and pasteurized milk both is <10cfu coliform/ml. The cap date of that lot is recorded and the milk is held and not released for sale until it has cleared the lab tests.	Assures that each lot of the Family Cow raw milk falls within the Coliform standards for low risk foods as defined by USA food safety experts.			✔
LB-4	**APC Testing (aka SPC)**	A sample container of raw milk is randomly pulled from the bottler line every time raw milk is bottled. The sample is tested for Aerobic Plate Count bacteria in The Family Cow on-farm laboratory. PA standards for raw and pasteurized milk both is <20,000cfu APC/ml. The cap date of the lot is recorded and the milk is held and not released for sale until it has cleared the APC tests.	Assures that each lot of the Family Cow raw milk falls within the APC standards for low risk foods as defined by USA food safety experts.			✔
LB-5	**Divert Sub-Standard Raw Milk**	In the event that the raw milk laboratory returns test results that are sub-standard for raw drinking milk, The Family Cow diverts the milk to an organic pasteurization company or diverts it to some other processor. Sub-standard milk is not sold as raw milk.	Diverting the milk assures that sub-standard raw milk is never delivered to Family Cow customers.			✔
LB-6	**Raise the Bar on Expected Norms**	Lab testing every single bottling lot raises Family Cow food safety awareness to a whole new level and establishes new norms. The Family Cow has learned that Coliforms usually are <2cfu/ml and APC is usually <1000cfu/ml.	New norms mean The Family Cow takes action to correct a "problem" when bacteria count is still less than half of the USA accepted standard for low risk foods.	✔		
LB-7	**Catch the Unexpected**	Equipment can fail, humans can error, accidents can happen. Intentional sabotage by a deranged individual or organization is scary but not unheard of. Lab testing the final retail ready raw milk and holding off sale till all has been cleared only makes sense.	Trust but Laboratory Verify to reduce risk as far as humanly possible says it all.	✔		
LB-7	**Posting Results**	Current Coliform and SPC bacteria counts are posted at the RAWMI and the Your Family Farmer website on a weekly basis.	High levels of transparency with our families about The Family Cow raw milk hygiene or the lack thereof gives the customer the ultimate power of informed choice.	✔		

PA Dept. of AG Required and Conducted Testing , Regulation and Inspections for our PA Raw Milk Permit						
Item	**Reference**	**Narrative of Conditions**	**Risk Reduction**	**GMP**	**SSOP**	**CCP**
PT-1	**Bovine Tuberculosis**	The Family Cow herd is tested annually for Bovine Tuberculosis by a licensed veterinarian. The Family Cow cows have always been 100% negative.	Verifies a healthy TB free herd.			✔
PT-2	**Brucellosis**	The Family Cow herd is blood tested annually for Bovine Brucellosis by a licensed veterinarian. The Family Cow cows have always been 100% negative. (PA as a whole is a Brucellosis free state.)	Verifies a healthy, Brucellosis free herd.			✔
PT-3	**E.coli-O157:H7**	Random sample taken from final packaged bottle - zero tolerance.	Pathogen surveillance to reduce risk of foodborne illness.			✔
PT-4	**Listeria Monocytogenes**	Random sample taken from final packaged bottle - zero tolerance.	Pathogen surveillance to reduce risk of foodborne illness.			✔
PT-5	**Salmonella**	Random sample taken from final packaged bottle - zero tolerance.	Pathogen surveillance to reduce risk of foodborne illness.			✔
PT-6	**Campylobacter**	Random sample taken from final packaged bottle. - zero tolerance.	Assists Family Cow management to reduce risk of foodborne illness.			✔
PT-7	**SPC**	This Standard Plate Count bacteria test is not a pathogen test, but is more of an indicator test for general hygiene. PA raw milk standards require us to be 5 X cleaner than milk going for pasteurization. (sample taken bi-weekly from final packaged bottle)	Hygiene surveillance aids management decisions to reduce bacteria counts and subsequently corresponding foodborne illness risks.			✔
PT-8	**Coliform**	This count must be <10 coliform/ml. This is the same standard that public drinking water, bottled spring water, or any other for-sale-to-the-public drink must pass. (sample taken bi-weekly from final packaged bottle)	Aids management decisions to reduce bacteria counts and subsequently corresponding foodborne illness risks.			✔
PT-9	**SCC**	Somatic Cell Count is another indicator test which is reflective of the health and well-being of the cows and the strength of their immune system. (sample taken bi-weekly from final packaged bottle)	Assists management in decisions relating to udder health and immunity management practices.			✔
PT-10	**Inspected Facilities**	The milk barn is inspected for Grade A pasteurized milk standards. The milking barn and bottling facilities are also inspected by PDA for raw milk sales. All facilities and conditions should be properly maintained to achieve a high farm score. All deviations from the farm score should be quickly addressed and brought into compliance.	Maintains high standards for milk barn, prevents degrades and achieves high farm score.			✔
PT-11	**Water Tests**	PDA samples and tests the wells on our organic farm 2 times per year for coliform (Zero tolerance)	Defends against possible contamination from the water sources.			✔
PT-12	**Warning Label and Signs**	Every container of Family Cow raw milk has a PDA required warning on the label which explains the potential risks of consuming raw products. There is also a sign posted in our store bearing the same raw product warning message.	Reduces the possibility of a customer choosing raw milk without educated knowledge of it's relative risk.			✔
PT-13	**Recalls**	In the event of a recall, The Family Cow will work closely with PA Department of Ag. officials and adhere to the recall requirements issued by the PDA. We will notify all customers to recall product and work with the PDA to resolve the issue.	Reduces risk of customer illness by recalling product quickly.			

Additional Herd Health and General Risk Reduction						
Item	**Reference**	**Narrative of Conditions**	**Risk Reduction**	**GMP**	**SSOP**	**CCP**
AD-1	**Supplemental Nutrition**	During the winter months or in summer drought, high quality organic grass hay and haylage and possibly some oats or barley are fed when supplemental nutrition is required based on the expert advice of a professional dairy nutritionist. Cows are never fed corn, soy, soymeal or cotton seed.	Aids cows in digesting food, milk production and high body condition.	✔		
AD-2	**Mineral Supplements**	The cows grass based diets are supplemented with certified organic minerals, free-choice Redmond Salt and Thorvin Kelp.	A professional balance of essential vitamins and minerals is advantageous to general herd health.	✔		
AD-3	**Tender Loving Care (TLC) Management**	A Tender Loving Care (TLC) group is maintained for all cows which have recently given birth, have mastitis or are weak in some way. TLC cows are fed a dairy nutritionist balanced ration to maintain and help regain health and strength.	Reduce risk of contaminated milk getting milked into the milk line for human consumption.	✔		
AD-4	**Illness Treatment and Prevention**	Cow illnesses or injury such as hardware disease, lameness or mastitis should be reported to Dairy Manager immediately and properly handled. The cow should be moved to the TLC group immediately. When possible, treatment should be administered to return the cow to health.	Maintaining a healthy herd that is well cared for and managed is always a plus for food safety.	✔		
AD-6	**Foot Health Care**	Cows should receive a preventative hoof trimming at each dry off. Cows with clinical hoof problems are treated with copper sulfate and a fresh bandage wrap and placed in the TLC group to recover.	Aid cows with mobility, access to feed and prevent lameness.	✔		
AD-7	**Fresh Cows**	Cows that have recently given birth are milked into stainless steel pails to collect colostrum for their new born calves. Cows that do not fully deliver their placenta after calving will stay in the TLC group until the placenta has been delivered.	Reduce risk of contaminated milk getting milked into the milk line for human consumption and properly care for fresh cows.	✔		
AD-8	**Calves**	Calves are raised in a clean, dry and sheltered environment. Adequate water, feed and care are provided. Calves are inspected daily for pink eye, pneumonia, diarrhea and other illness.	Reduce risk of cross contamination and raise healthy calves.	✔		
AD-9	**Breeding**	Cows are bull bred exclusively. Adequate bulls are kept with the herd to ensure optimal pregnancy breed back. Bulls are culled when they are lame, sick, no longer breeding, too large for breeding, or if they show aggression to people.	Ensure quick breed-back of open cows to maintain herd viability and milk quality.	✔		
AD-10	**Poultry**	The Family Cow farm also seasonally includes pastured laying hens, pastured broiler chickens and pastured turkeys. No poultry are allowed into the barns or milking area at any time and much carefulness is emphasized to assure no cross contamination via personnel and equipment.	Prevent cross contamination.	✔		
AD-11	**Species Selection**	Careful thought is given any time new species of animals are introduced onto the farm to be cautious of potential cross contamination issues.	Prevent cross contamination.	✔		