HACCP Plan

*Lamb, beef, goat, and sheep, slaughter

Barakat Slaughter House LLC
49 Needham Rd
Drummonds, TN 38023

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Drummonds, TN 38023

Food Safety Management System Modifications Record

Processes:

- Lamb, beef, goat, and sheep, slaughter

The Food Safety Management System shall be dated and signed upon initial acceptance, upon any modification, and at least annually, upon reassessment.

Modification Information

Date and Time

Version Number

Previous Version

Description of modification

HACCP Coordinator Name

HACCP Coordinator Signature

Contents

P-D-ED Establishments details

Establishment Name	Barakat Slaughter House LLC
Address	49 Needham Rd Drummonds, TN 38023
Person-in-Charge	Mark Barakat
Designated Alternates	
HACCP Coordinator	Mark Barakat
HACCP Consultant	Benjamin Cote – iQKitchen Inc. ben@iqkitchen.co

P-D-DP Description of the process

This HACCP plan covers the slaughter of lamb, beef, goat, and sheep for Barakat Slaughter House LLC.

This HACCP plan has been reviewed and approved by the Person-in-Charge and the HACCP Coordinator and will be subject to annual reassessment as well as in the event of any major change to product or process, after the identification of any new potential hazards, after the discovery that control of a critical point is ineffective or after the detection of an unanticipated problem.

Barakat Slaughter House LLC. will receive live animals from licensed producers, the animals will be slaughtered following the process designed to comply with regulatory requirements under the federal meat inspection act, FSIS Meat and Poultry Hazards and Controls Guide, and the Generic HACCP Model for Slaughter by the International Meat and Poultry HACCP Alliance.

The establishment receives non-food products and packaging materials from licensed suppliers. Suppliers that fall under USDA or FDA jurisdiction are required to provide proof of passable inspection, HACCP summary plan, or third-party inspections through the supply chain qualification process. Suppliers that fall under local jurisdiction are required to provide proof of passable inspection and/or appropriate license.

The necessary equipment will be cleaned and sanitized at the start and conclusion of each session. Products will be tagged and will be stored under temperature control.

Barakat Slaughter House LLC. follows the requirements established by Food Safety and Inspection Service (FSIS) to reduce the occurrence and number of pathogenic microorganisms in final products and avoid the incidence of foodborne illnesses associated with consumption of those products.

Code of Federal Regulations (9 CFR § 417.2)

This HACCP plan is designed to comply with 9 CFR Animals and Animal products, which requires an approved HACCP plan containing the information specified under section 417.2.

This application addresses sanitation of equipment and facility, prevention of contamination of food by employees, and training and documentation requirements surrounding the processes enclosed. All records related to activities found in this document are to be stored for a minimum of two years and to be made easily accessible upon request from a regulatory inspector.

P-D-PD Product description

Common name:	Lamb, beef, goat, and sheep whole carcass Lamb, beef, goat, and sheep variety meats (liver and heart)
Intended use:	Further processing by another establishment or Intended for cooking by the end consumer.
Length of shelf life and what temperature	Whole carcass 24 hours under refrigeration (< 36°F). 6 months frozen. Liver and heart 7 days under refrigeration (< 36°F)
Where it will be sold:	Sold wholesale
Special distribution control required:	Stored and shipped under refrigeration.

Barakat Slaughter House LLC
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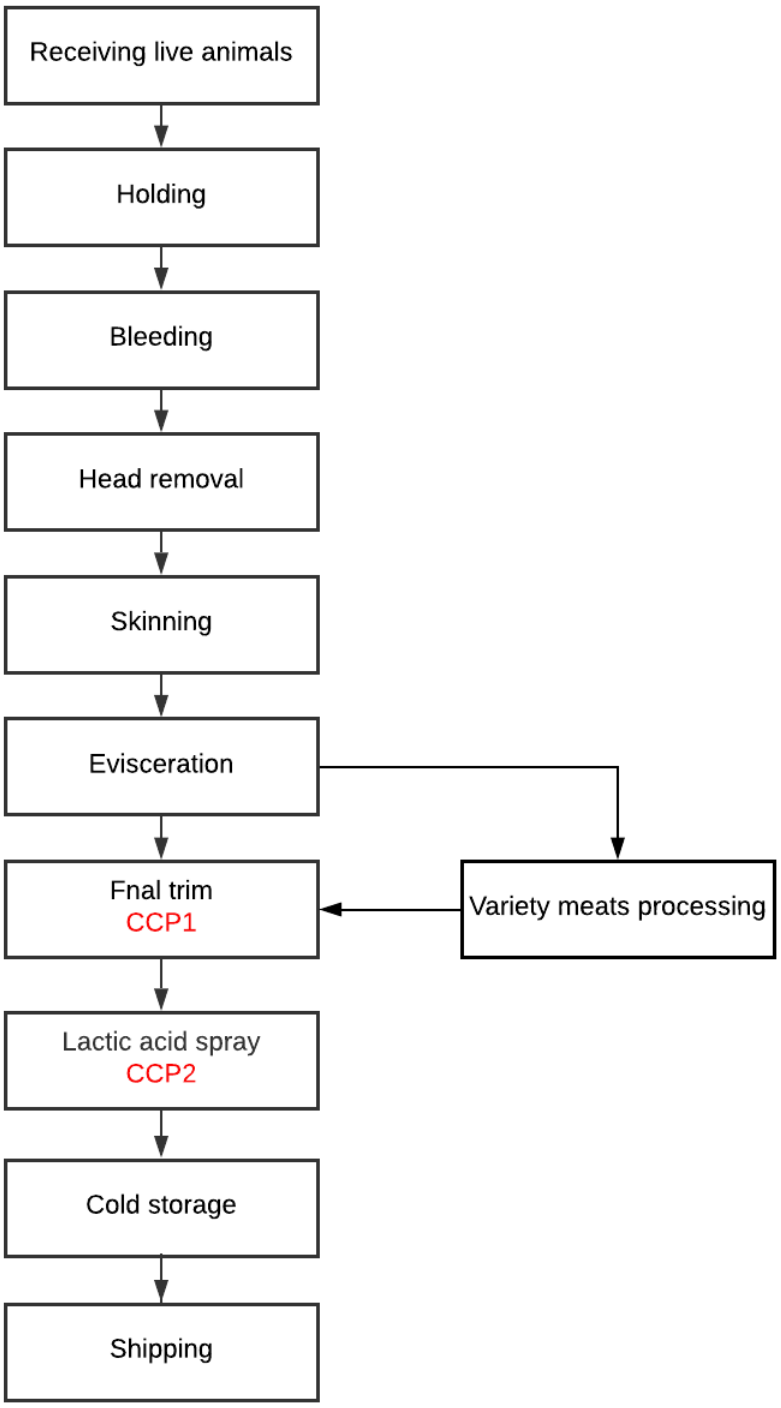
P-D-PF Process Flow



Barakat Slaughter House LLC
49 Needham Rd
Drummonds, TN 38023

P-D-HA Hazard Analysis

Lamb, goat, and sheep

RLTO: Reasonably likely to occur. CCP: Critical Control Point

Process Step	Potential Hazards (B) Biological (C) Chemical (P) Physical	Are These Hazards RLTO?	Justification	Measures to prevent, eliminate or reduce Hazards	Is This Step a CCP
Receiving live animals	(B) Pathogens (*Salmonella*) carried on hide and in the intestinal tract.	No	Purchase specification programs: Non-ambulatory animals are not accepted for slaughter.	Receiving and approved supplier list for animals GMP. Receiving and approved supplier list for animal records. Inspected Livestock Withdraw Letter	No
	(C) Contamination by non-food chemical residues (e.g., antibiotics, veterinary drugs).	No	A withdrawal letter from the animal supplier, where they ensure the animals have met all withdrawal limits for antibiotic and pesticide use is required.		
	(P) Contamination from hazardous extraneous foreign material (e.g., needles).	No	Visual observation for foreign materials during processing, an inspection of equipment during cleaning make hazard unlikely. Cleaning and Sanitizing Direct Food Contact Surfaces SSOP		
Holding	(B) Pathogens (*Salmonella*) carried on hide and in the intestinal tract.	No	Holding pens are kept clean and of adequate size and equipped to allow performance of proper ante mortem inspection Proper feed withdrawal procedures	Receiving GMP	No
	(C) Contamination by non-	No	A withdrawal letter from the		

	food chemical residues (e.g., antibiotics, drugs).		animal supplier, where they ensure the animals have met all withdraw limits for antibiotic and pesticide use is required		
	(P) Contamination from hazardous extraneous foreign material (e.g., needles).	No	Visual observation for foreign materials during processing, inspection of equipment during cleaning make hazard unlikely. Cleaning and Sanitizing Direct Food Contact Surfaces SSOP		
Bleeding	(B) Contamination by pathogens (*Salmonella*) introduced into the circulatory system of animals by the knife	No	The knife is sanitized prior to using it. Visible contamination in the neck area is avoided or trimmed off before cutting through the hide.	Sanitation SOPs; sanitary dressing procedures to minimize cross-contamination.	No
	(C) No common hazard.	NA	NA		
	(P) No common hazard.	NA	NA		
Head removal	(B) Contamination due to pathogens such as *Salmonella*	No	Hide opening and removal of shank and head may introduce pathogens onto the carcass.	Minimize contamination and cross-contamination through sanitary dressing procedures; Sanitation SOPs.	No
	(C) No common hazard.	NA	NA		
	(P) No common hazard.	NA	NA		
Skinning	(B) Contamination due to presence, and growth of pathogens (*Salmonella*).	No	External surface contact with the carcass to allow contamination is unlikely	Sanitation SOPs; sanitary dressing procedures to minimize cross-contamination. Skinning procedure SOP Zero tolerance for fecal	No
	(C) No common hazard.	NA	NA		
	(P) No common hazard.	NA	NA		

				material, ingesta, and/or milk.	
Evisceration	(B) Contamination due to the presence of, and growth of pathogens (*Salmonella*).	No	Contents of the gastrointestinal tract are a potential source of enteric pathogens. The eviscerated carcass is moved rapidly enough to the next step to prevent pathogen growth during this step.	Sanitation SOPs; sanitary dressing procedures to minimize cross-contamination. Zero tolerance for fecal material, ingesta, and/or milk.	No
	(C) No common hazard.	NA	NA		
	(P) No common hazard.	NA	NA		
Variety meats processing	(B) Contamination due to presence, and growth of pathogens (e.g., *E. coli* O157:H7, *Salmonella, STEC*).	No	Variety meats may contain pathogens and can be contaminated via tools, employees, livestock hide and gastrointestinal tract, although operational SSOP and further lactic acid spray reduces this risk.	Sanitation SOPs; sanitary dressing procedures to minimize cross-contamination. Slaughter Record	No
	(C) No common hazard.	NA	NA		
	(P) No common hazard.	NA	NA		
Final trim	(B) Contamination due to presence of pathogens by fecal contamination (*Salmonella*).	Yes	Potential identification of visible fecal contamination; should be removed as soon as possible by using physical trimming. Pathogens are known to be present on livestock carcasses and variety of meats. Removal of visible contamination is	Sanitation SOPs; sanitary dressing procedures to minimize cross-contamination. Zero tolerance for fecal material, ingesta, and/or milk.	CCP1 Final trim

			required by 9 CFR 310.18(a).		
	(C) No common hazard.	NA	NA		
	(P) No common hazard.	NA	NA		
Lactic acid spray	(B) Contamination due to presence of, and growth of pathogens (*Salmonella)*	Yes	Pathogens are known to be present on livestock carcasses and a variety of meats. Final trim reduced the likelihood of a hazard occurring. Acid spray reduces the likelihood of pathogens remaining on carcass and variety meats to an acceptable level and prevents pathogen growth during the transfer of carcass and variety meats to the chiller.	Antibacterial interventions are well-known USDA-approved intervention treatments to reduce pathogen numbers. Slaughter Record	CCP2 Lactic acid spray
Cold storage	(B) Contamination due to presence, and growth of pathogens (*Salmonella*)	No	Pathogens adequately controlled at the storage of carcass under refrigerated (< 40ºF) conditions, following SOP for final product storage, makes the growth of pathogens (if present) unlikely.	Finished product storage SOP.	No
	(P) No common hazard.	NA	NA		
	(P) No common hazard.	NA	NA		
Shipping	(B) Outgrowth of pathogens: (*Salmonella*)	No	Product is transported in clean vehicles. Pathogen contamination risk reduced due to adequate shipping temperatures.	Ensure transportation refrigeration unit functioning properly. Temperature monitoring during	No

	(C) No common hazard.	NA	NA	transportation. Shipping SOP	
	(P) No common hazard.	NA	NA		

Beef Slaughter

RLTO: Reasonably likely to occur. CCP: Critical Control Point

Process Step	Potential Hazards (B) Biological (C) Chemical (P) Physical	Are These Hazards RLTO?	Justification	Measures to prevent, eliminate or reduce Hazards	Is This Step a CCP
Receiving live animals	(B) Pathogens (*Salmonella, Escherichia coli* O157:H7, non-O157 Shiga toxin-producing *E coli*) carried on hide and in the intestinal tract.	No	Approved supplier program Non-ambulatory animals are not accepted for slaughter. SRMs are NRLTO due to removal according to further steps and Removal of SRM SOP	Receiving and approved supplier list for animals GMP. Receiving and approved supplier list for animal records. Inspected Livestock Withdraw Letter	No
	(B) Presence of prions in specified risk material SRM's (if animal has BSE)	No			
	(C) Contamination by non-food chemical residues (e.g., antibiotics, veterinary drugs).	No	A withdrawal letter from the animal supplier, where they ensure the animals have met all withdrawal limits for antibiotic and pesticide use is required.		
	(P) Contamination from hazardous extraneous foreign material (e.g., needles).	No	Visual observation for foreign materials during processing, an inspection of equipment during cleaning make hazard unlikely. Cleaning and Sanitizing Direct Food Contact Surfaces SSOP		

Holding	(B) Pathogens (*Salmonella*, *Escherichia coli* O157:H7, non-O157 Shige-toxigenic *E. coli* (STEC)) carried on hide and in the intestinal tract. (B) Presence of prions in SRM's (if the animal has BSE).	No No	Holding pens are kept clean and of adequate size and equipped to allow performance of proper ante mortem inspection Proper feed withdrawal procedures Non-ambulatory animals are not accepted for slaughter, per 9 CFR 309.3(e).	Receiving GMP	No
	(C) Contamination by non-food chemical residues (e.g., antibiotics, drugs).	No	A withdrawal letter from the animal supplier, where they ensure the animals have met all withdrawal limits for antibiotic and pesticide use is required		
	(P) Contamination from hazardous extraneous foreign material (e.g., needles).	No	Visual observation for foreign materials during processing, inspection of equipment during cleaning make hazard unlikely. Cleaning and Sanitizing Direct Food Contact Surfaces SSOP		
Bleeding	(B) Contamination by pathogens (*Salmonella, Escherichia coli* O157:H7, non-O157 Shiga-toxigenic E. coli) introduced into the circulatory system of animals by the knife	No	The knife is sanitized using. Visible contamination in the neck area is avoided or trimmed off before cutting through the hide.	Sanitation SOPs; sanitary dressing procedures to minimize cross-contamination.	No
	(C) No common hazard.	NA	NA		

	(P) No common hazard.	NA	NA		
Head removal	(B) Presence of prions in SRM's.	No	SOP for removal of SRM's and SSOP (for sanitation of equipment) make hazards unlikely to occur.	Minimize contamination and cross-contamination through sanitary dressing procedures; Sanitation SOPs. Procedures for the removal, segregation, and disposition of SRMs.	No
	(B) Contamination due to pathogens such as *Salmonella, E. coli* O157:H7, and STEC	No	Hide opening and removal of shank and head may introduce pathogens onto the carcass.		
	(C) No common hazard.	NA	NA		
	(P) No common hazard.	NA	NA		
Skinning	(B) Contamination due to presence, and growth of pathogens (e.g., *E. coli* O157:H7, *Salmonella,* STEC).	No	External surface contact with the carcass to allow contamination is unlikely SRM´s are not reasonably to occur due to removal according to SOP for removal of SRM	Sanitation SOPs; sanitary dressing procedures to minimize cross-contamination. Skinning procedure SOP. SRM Removal SOP Zero tolerance for fecal material, ingesta, and/or milk.	No
	Presence of SRM's.	No			
	(C) No common hazard.	NA	NA		
	(P) No common hazard.	NA	NA		
Evisceration	(B) Contamination due to the presence of, and growth of pathogens (e.g., *E. coli* O157:H7, *Salmonella, STEC*).	No	Contents of the gastrointestinal tract are a potential source of enteric pathogens. The eviscerated carcass is moved rapidly enough to the next step to prevent pathogen growth during this step.	Sanitation SOPs; sanitary dressing procedures to minimize cross-contamination. SRM Removal SOP Zero tolerance for fecal material, ingesta, and/or	No

	Presence of prions in SRM (distal ileum)	No	SRMs are not reasonably to occur due to removal according to SOP for removal of SRM	milk. Slaughter Record	
	(C) No common hazard.	NA	NA		
	(P) No common hazard.	NA	NA		
Variety meats processing	(B) Contamination due to presence, and growth of pathogens (e.g., *E. coli* O157:H7, *Salmonella, STEC*). Presence of prions in SRM (distal ileum)	No	Variety meats may contain pathogens and can be contaminated via tools, employees, livestock hide and gastrointestinal tract, although operational SSOP and further lactic acid spray reduce this risk. SRM´s are not reasonably to occur due to removal according to SOP for removal of SRM.	Sanitation SOPs; sanitary dressing procedures to minimize cross-contamination. SRM Removal SOP.. Slaughter Record	No
	(C) No common hazard.	NA	NA		
	(P) No common hazard.)	NA	NA		
Final trim	(B) Contamination due to the presence of pathogens by fecal contamination (e.g., *E. coli* O157:H7, *Salmonella, STEC*). Presence of SRM's	Yes No	Potential identification of visible fecal contamination; it should be removed as soon as possible by using physical trimming. Pathogens are known to be present on beef carcasses and variety of meats. Removal of visible contamination is required by 9 CFR 310.18(a). Removal of SRM according to	Sanitation SOPs; sanitary dressing procedures to minimize cross-contamination. SRM Removal SOP Zero tolerance for fecal material, ingesta, and/or milk. Slaughter Record	CCP1 Final trim

			SOP		
	(C) No common hazard.	NA	NA		
	(P) No common hazard.	NA	NA		
Lactic acid spray	(B) Contamination due to presence of, and growth of pathogens (e.g., *E. coli* O157:H7, *Salmonella, STEC)* Presence of prions in SRMs	Yes	Pathogens are known to be present on beef carcasses and a variety of meats. Final trim reduced the likelihood of hazard occurring. Acid spray reduces the likelihood of pathogens remaining on carcass and variety meats to an acceptable level and prevents pathogen growth during the transfer of carcass and variety meats to the chiller. Removal of SRM SOP to make presence NRLTO.	Antibacterial interventions are well-known USDA-approved intervention treatments to reduce pathogen numbers. Slaughter Record	CCP2 Lactic acid spray
	(C) No common hazard	NA	NA	NA	
	(P) No common hazard.	NA	NA	NA	
Cold storage	(B) Contamination due to presence, and growth of pathogens (e.g., *E. coli* O157:H7, *Salmonella, STEC*) Presence of SRMs	No	Pathogens adequately controlled at the storage of carcass and variety meats under refrigerated (< 40ºF) conditions, following SOP for final product storage, makes the growth of pathogens (if present) unlikely (Removal of SRM according to SOP)	Finished product storage SOP. Removal of SRM according to SOP	No

	(C) No common hazard.	NA	NA		
	(P) No common hazard.	NA	NA		
Shipping	(B) Outgrowth of pathogens: (e.g., *E. coli* O157:H7, *Salmonella, STEC*) Presence of SRMs	No	Product is transported in clean vehicles. Pathogen contamination risk reduced due to adequate shipping temperatures.	Ensure transportation refrigeration unit functioning properly. Temperature monitoring during transportation. Shipping SOP	No
	(C) No common hazard.	NA	NA		
	(P) No common hazard.	NA	NA		

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Critical Control Points

Critical Control Point	CCP1 Final trim	
Significant hazards	(B) Pathogen (e.g., *Salmonella*., *E. coli* O157:H7)	
Critical limits	Zero visible fecal material, ingesta, or milk present on carcass or variety meats.	
Monitoring	**What**	Examine carcasses and a variety of meats for visible fecal material, ingesta, or milk present.
	How	The carcass trimmer or designee will carefully perform a visual inspection of the carcass and variety of meats.
	Frequency	All carcasses slaughtered are monitored
	When	During processing days.
	Who	Carcass trimmer or designated employee.
Corrective actions	If a deviation from a critical limit occurs, the person in charge or HACCP Coordinator are responsible for corrective action protocol as stated in 9 CFR 417.3 1. The cause of the deviation will be identified and eliminated. 2. The CCP will be under control after the corrective action is taken. 3. No product that is injurious to health or otherwise adulterated as a result of the deviation will be permitted to enter commerce. 4. Measures to prevent recurrence are established	
Verification	According to 9 CFR 417.4: 1. PIC or designee alternate conducts direct observation of the monitoring activities and corrective action once per day. 2. Based on the design of the records, a record review for both CCPs will be performed once per slaughter day to control the production.	
Records	Slaughter Record. Deviation Report. All records are maintained for a minimum of 2 years.	

- International Meat and Poultry HACCP Alliance. 1996. Generic Model for Beef Slaughter.
- Model HACCP plans. Research in support of the meat industry. University of Wisconsin-Madison Center for Meat Process Validation. https://meathaccp.wisc.edu/Model_Haccp_Plans/index.html

Critical Control Point	CCP2 Lactic acid spray	
Significant hazards	(B) Contamination due to presence of, and growth of pathogens (*E. coli O157:H7, Salmonella*)	
Critical limits	Spraying of the carcass with acid consisting of a solution of 2.5-5% lactic acid at a temperature of 131°F.	
Monitoring	**What**	The spraying of each carcass, head meat, and variety of meats with lactic acid . Before starting activities, the Person in Charge informs the operator of the intervention method that will be used and oversees the operation
	How	Applied to the outer and inner surface of carcass specific to the bung, midline, neck and liver, heart, heads and variety meats. Sprayed at a pattern hitting heavy at evisceration points (midline, bung, neck, stump lines). Applied at a rate that produces run off from carcass
	When	During processing days
	Frequency	The application is monitored for each carcass, head meat, and variety of meats.
	Who	Carcass trimmer or designated employee.
Corrective actions	If a deviation from a critical limit occurs, the person in charge or HACCP Coordinator are responsible for corrective action protocol as stated in 9 CFR 417.3 1. The cause of the deviation will be identified and eliminated. 2. The CCP will be under control after the corrective action is taken. 3. No product that is injurious to health or otherwise adulterated as a result of the deviation will be permitted to enter commerce. 4. Measures to prevent recurrence are established	
Verification	According to 9 CFR 417.4: 1. PIC or designee alternate conducts direct observation of the monitoring activities and corrective action once per day. 2. Based on the design of the records, a record review for both CCPs will be performed once per slaughter day to control the production.	
Records	Slaughter Record. Deviation Report. All records are maintained for a minimum of 2 years.	

- Rodriguez, G., Acuff, G., & Castillo, A. (2004). Development of a carcass sanitizing spraying system for small and very small slaughterhouses. Report to USDA FSIS/TPDS by the Department of Animal Science, Texas A&M University.

Decision making documents

CCP 1: Final trim

This step is designed as CCP since it is the final step where we can review carcasses for contamination from viscera and mammary glands before putting them into the cooler. The focus of these activities is contamination with fecal material, ingesta, and milk.

Monitoring.

Each carcass will be examined. The carcass trimmer will carefully perform a visual inspection of each carcass and variety of meats. Zero tolerance to contamination with fecal material, ingesta, and milk is established as per FSIS Directive 6420.2

Verification

Verification activities will ensure that the parameters established are met.

- Observing monitoring activities will occur once a day to ensure the process occurs adequately. This frequency has been selected since the employees have been trained and follow our guidelines. The person in charge will conduct the direct observation.
- Records will be also reviewed at the end of the day or production activities for accuracy.
- The pre-shipment review record requires the review of all records associated with the production of that product, to ensure all critical limits were met and, if appropriate, corrective actions were taken, including the proper disposition of the product.

CCP 2: Lactic acid spray

Lactic acid treatments are well-known intervention treatments approved by the USDA to reduce the number of pathogens to an undetectable level.

We use the following alternative at this stage:

Lactic acid spray

- Use a lactic acid solution of 2.5 to 5%.
- The lactic acid solution should be heated to 131°F.
- The acid is transferred to a pumping system to be sprayed.
- We suggest to spray each carcass for a total time period of 20 seconds. Starting from the bottom, to the Highest point for 10 seconds, and coming down and spraying for 10 more seconds.

- Suggested critical limits: (1) Preparation of the lactic acid solution (2) periodic check of water temperature, and (3) documentation of application to the carcass

Monitoring.
Each carcass will be rinsed at ≥150°F after the zero-tolerance and final wash steps. Two passes shall be done over the entire carcass.
Verification
Verification activities will ensure that the parameters established are met.

- Observing monitoring activities will occur once a day to ensure the process occurs adequately. This frequency has been selected since the employees have been trained and follow our guidelines. The person in charge will conduct the direct observation.
- Records will be also reviewed at the end of the day or production activities for accuracy.
- The pre-shipment review record requires the review of all records associated with the production of that product, to ensure all critical limits were met and, if appropriate, corrective actions were taken, including the proper disposition of the product.

All information is referenced on Annex 1: References to support the processes and the support documents are part of the HACCP plan and will be kept on the establishment.

P-D-SSOP Sanitation Standard Operation Procedures

SSOP-D-CH Use, handling, and storage of chemicals

PURPOSE AND INTRODUCTION

The purpose of this SOP is to describe the procedure to be followed by all employees for the handling and storage of chemical compounds used in the establishment.

CRITERIA AND INSTRUCTIONS

- Cleaning compounds, sanitizers, and lubricants are stored separately from any food products and have updated SDS sheets that are accessible to all employees.
- Small amounts of cleaning compounds, sanitizers, and lubricants are used in receiving, processing.
- Other Food-grade and non-food-grade chemicals and lubricants are stored separately outside of receiving and processing areas and are required to have updated MSDS sheets.
- Food, food-packaging materials, and food-contact surfaces are protected from adulteration by biological, chemical, and physical contaminants.

Cleaning sanitizers:

Name	Description	Directions for use
Clorox bleach	Used as sanitizer.	Mixed with water and sprayed on ground using a deck brush and sprayed again with hot water. Concentration: 100-200 ppm.
Ecolab smartpower	Used as sanitizer.	Spray sanitizer and cleaner are used to clean all equipment and tables. Concentration: 272–700 ppm. The testing solution should be between 0.27 – 0.55 oz/gal.

FREQUENCY

This SOP will be followed by all employees when using, handling, and storing chemicals.

RESPONSIBILITIES

- All employees involved in the use, handling, and storage of chemicals are committed to this SOP.
- The person in charge is responsible for supervising the proper use, handling, and storage of the chemical.

MONITORING

- Invoices or packaging slips are checked at receiving before chemicals are stored in the food-grade chemical storage area.
- Person in Charge inspects chemical storage areas daily and inspects processing areas daily before production begins to detect improper handling or storage of chemicals.

CORRECTIVE ACTIONS

- Unapproved chemicals are returned or used in non-processing areas.
- Improperly stored chemicals are moved to the correct storage area.
- The person in charge initiates the correction of any potentially contaminating condition.
- Improper handling practices should be corrected.
- If the concentration of the sanitizer in the 3-compartment sink is not correct, the sanitizer solution should be discarded and replaced with a new mix.

VERIFICATION AND RECORD-KEEPING

- Chemical storage area, and processing area inspections and corrective actions are noted daily on the Pre-Operation Sanitation record.
- Records shall be maintained by the establishment for at least 6 months and made available to FSIS. All such records shall be maintained at the official establishment for 48 hours following completion, after which they may be maintained off-site provided such records can be made available to FSIS within 24 hours of request.

SSOP-D-CF Control flows – control of cross-contamination

PURPOSE AND INTRODUCTION

Control employee traffic patterns and airflow to prevent cross-contamination and reduce microbiological contamination levels. Maintain positive airflow from the inside to the outside of the establishment. Controlling the movement of personnel products will help prevent cross-contamination of meat.

CRITERIA AND INSTRUCTIONS

1. Establish traffic patterns to eliminate movement of personnel, meat, pallets, and refuse containers between slaughter floors.
2. Eliminate standing water, which can facilitate the spread of pathogens. Sanitizer boluses can be used to sanitize standing water continuingly

3. Tools used in the slaughterhouse are identified.
4. Before entering the slaughterhouse, employees must store their belongings in designated areas, wear clean clothes, restrain their hair and wash their hands.

RESPONSIBILITIES

Person in charge or designated employee.

MONITORING

Designated employees shall monitor traffic flows by observing and correcting improper flows throughout the shift.

CORRECTIVE ACTIONS

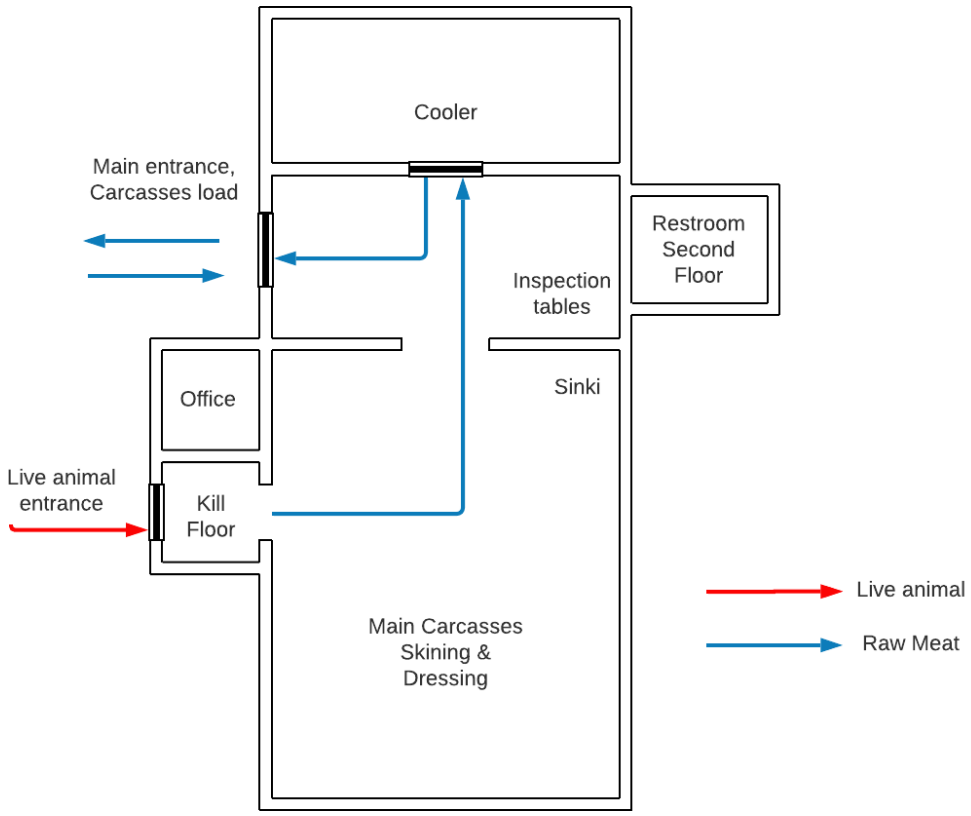
If traffic flows are improperly observed:

1. HACCP Coordinator will be immediately notified
2. Any product that was involved in the action shall be discarded.
3. HACCP Coordinator shall stop and immediately correct flows.
4. Any employees exhibiting inconsistent traffic flow practices or neglect after retraining shall be documented and disciplined following company policies.

VERIFICATION AND RECORD-KEEPING:

- Once a day the person in charge will verify the activities performed by the trained employees during a shift.
- HACCP Coordinator will review the records are maintained under 417.5(a)(3) once a week
- Records shall be maintained by the establishment for at least 2 years and made available to FSIS. All such records shall be maintained at the official establishment for 48 hours following completion, after which they may be maintained off-site provided such records can be made available to FSIS within 24 hours of request

Floor Plan


Cooler
Main entrance,
Carcasses load
Restroom
Second
Floor
Inspection
tables
Sinki
Office
Live animal
entrance
Kill
Floor
Main Carcasses
Skining &
Dressing
Live animal
Raw Meat

SSOP-D-FC Facility Cleaning and Sanitizing

Cleaning activities shall remove food residues and dirt, which are a source of contamination. Cleaning can be carried out by the separate or the combined use of physical methods, such as heat, scrubbing, turbulent flow, vacuum cleaning, etc.

Pre-Operation and Operation Inspection Records must be completed to ensure that all areas are clean and organized and that production activity can occur properly and hygienically. Cleaning activities will be performed for employees after their shift. Cleaning Records must be completed to ensure that production areas are clean and organized before, during, and at the end of the production activities.

INSTRUCTIONS

Pre-Operation Inspection. Pre-Operation Inspection Records must be completed before starting operations (operational days) to ensure that all areas are clean and organized and that production activity can occur properly and hygienically.

- There are no signs of pests in the receiving, storage, and production areas.
- Chemicals are properly stored and labeled.
- Floors, walls, windows, ceilings are clean and in good repair throughout the production areas.
- There are no glass fragments.
- All areas and hallways are clean and organized.
- Aprons, gloves, and rubber boots are available.
- The three-compartment sink is clean, the sanitizer is in the correct concentration (100-200ppm).
- All food utensils were washed rinsed and sanitized and are in place.
- All the equipment is disassembled, cleaned, and sanitized before starting production (the procedure is in SSOP-D-CE Cleaning and sanitizing Direct Food Contact Surfaces and Equipment).
- Handwashing stations provide warm water, are clean, and all the dispensers are full.
- Employees appear in good health and have no open sores, cuts, on their hands or fingers.
- Employees are not wearing jewelry, except for wedding bands and they store their belongings in a designated area.
- Employees are wearing the required uniform: Apron, gloves, and rubber boots.
- Employees properly wash their hands before starting activities.

Operation Inspection. Processing is performed under sanitary conditions to prevent direct and cross-contamination of the product.

The Person in charge or designated alternate must inspect the following activities at least once a day (operational days):

- Sanitary procedures for processing
    - Employees are to have clean and sanitized hands, gloves, knives, other hand tools, cutting boards, hairnets, and beard nets, as necessary during processing to prevent contamination of products.
    - AII equipment tables and other product contact surfaces are to be cleaned and sanitized throughout the day as needed.
    - Outer garments such as aprons and gloves are hung in designated areas when employees leave the processing area. Outer garments are maintained in a clean and sanitary manner and are changed at least daily and more often if necessary.
- Slaughterhouse
    - If more than one species is to be slaughtered, between each species, conduct a clean-up sufficient to remove all visible debris.
    - All animals will be slaughtered in a manner that will control contaminants as much as possible. At the least, this will include:
        - Employees will clean hands, arms, gloves, aprons, boots, etc., as often as necessary during the dressing process. If contamination occurs, they will clean aprons, boots, and knives with soap and water and sanitized.
        - Employees will clean and sanitize with approved sanitized, knives and other hand tools, and saws as often as necessary during the dressing process to prevent contamination of the skinned carcass.
        - Employees will clean hands, arms, gloves, aprons, rubber boots, etc., as often as necessary during the eviscerating process. If contamination occurs, they will clean aprons, boots, and knives with soap and water and sanitized.
        - If any abscess or other problem is encountered, everything that has touched the contaminated part will be cleaned and sanitized,
    - All equipment, tables and other food-contact surfaces will be cleaned and sanitized throughout the day as needed

End of the shift cleaning activities, defined as post-operational cleaning and sanitizing procedures, will occur after the shift to ensure the next shift could occur properly and hygienically.

1. Equipment is disassembled as necessary for cleaning and sanitation.
2. Equipment and surfaces on the slaughter floor will be cleaned and sanitized after the shift.
3. Tools must be washed/cleaned and sanitized after use.
4. Workstations will be cleaned and sanitized after the shift.
5. All food contact surfaces will be cleaned and sanitized after the shift.
6. Walls, floors, and ceiling will be kept free of visible debris.
7. Re-clean if the inspection after cleaning detects any non-conformity.

Cleaning activities are performed according to the Cleaning and sanitizing direct food contact surfaces SSOP and the Cleaning and sanitizing equipment SSOP

Cleaning and sanitization activities must be performed in an area after unscheduled emergency repairs or maintenance to processing equipment or the building interior (e.g., walls, ceilings, and plumbing).

Report any damage or malfunction detected during cleaning activities.

FREQUENCY

a.) Floors and walls are cleaned at the end of each production shift.
b.) Ceilings for production areas are cleaned thoroughly at least bi-annually or more often if needed. (Support for the cleaning frequency is due to extremely high ceiling heights specific to carcass coolers and kill department, whereas due to ceiling height- ceilings are at low risk from daily contamination that stems from daily production practices.)
c.) Daily cleaning and sanitizing of floor drains- specifically for production departments.
d.) Refrigeration Units clean and sanitizing at least bi-annually or more often if needed.
e.) Operation Inspection: Monitored twice daily (a.m. or p.m.) with monitoring results recorded on plants "Daily Sanitation Report."

MONITORING

1. The processing manager, sanitation manager, or responsible designee is responsible for ensuring that employee hygiene practices and product traffic patterns, sanitary product handling procedures are maintained during a production

shift. The Sanitation Manager or Processing Manager or responsible designee monitors the sanitation procedures twice during a production shift (a.m or p.m.). Results are recorded on plants identified "Daily Sanitation Report."

2. The slaughter manager is responsible for ensuring that employee hygiene practices, sanitary conditions, and cleaning procedures are maintained during a production shift. Monitoring is performed once during a production shift and results are recorded on the plant's sanitation report.

CORRECTIVE ACTIONS

- If the Person in charge finds that the facilities do not pass organoleptic inspection, the cleaning procedures and inspections are to be repeated. The Person in charge inspects the cleaning of the facilities and re-trains employees as needed. Corrective action to prevent direct product contamination or adulteration is recorded on the Pre-Operation Sanitation record.
- If during Pre-Operation inspection, a deviation is detected, the activities won't start until the deviation is corrected.
- Garbage containers must be emptied as soon as they get full.
- If after performing cleaning activities, the Person-in-Charge detects cleaning is not adequate, the Person-in-Charge will ask the employee to reclean.
- Reported damages or malfunctions must be corrected. Person-in-Charge will contact the proper contractor to fix the problem.
- The Person in charge identifies sanitation problems and stops production if necessary and notifies processing employees to take appropriate action to correct sanitation problems. If necessary, processing employees are retrained and corrective actions are recorded on the Operational inspection record.

VERIFICATION AND RECORD-KEEPING

- Once a day the person in charge will observe the cleaning activities while occur and will check the Cleaning Records
- HACCP Coordinator will review the records are maintained under 417.5(a)(3) once a week.
- Records shall be maintained on-site for at least 6 months before they can be moved off-site. Records can be made available to FSIS within 24 hours of request. Additionally, the records must be maintained by the establishment for two years.

SSOP-D-CE Cleaning and Sanitizing Direct Food Contact Surfaces and Equipment

PURPOSE AND INTRODUCTION

All food contact surfaces shall be cleaned and sanitized so that the foods would not be contaminated.

All employees involved in food preparation must be trained on this SOP. Follow all USDA and State Food Code regulations, as well as manufacturer's instructions regarding the use of chemicals for cleaning and sanitizing food contact surfaces and equipment.

CRITERIA AND INSTRUCTIONS

Slaughterhouse

1. Wash, rinse, and sanitize food contact surfaces and monitoring devices such as thermometers and inspection knives.
    a. Before each use; i.e., before operations
    b. Between uses when handling different species.
    c. Any time contamination occurs or is suspected.
2. Procedure
    a. Wash surface with detergent solution
    b. Rinse the surface with clean water
    c. Sanitize surface using a sanitizing solution mixed at a concentration specified on the manufacturer's label
    d. Place wet items in a manner to allow air drying
3. The knife used for trimming SRM material will be cleaned of any SRM material before being used on edible products.
4. Tools used in the slaughterhouse are identified, so they are not used in any other area.
5. If more than one species is to be slaughtered, between each species, conduct a clean-up sufficient to remove all visible debris.
6. All animals will be slaughtered in a manner that will control contaminants as much as possible. At the least, this will include:
7. All equipment will be disassembled, cleaned, and sanitized before starting production:
    a. Remove debris from the equipment.
    b. Rinse equipment with water to remove remaining debris.
    c. Apply an approved cleaner to equipment and clean properly.
    d. Rinse equipment with potable water.

e. Sanitize equipment with approved sanitizer (allow to dissipate and do not rinse off).
f. Reassemble equipment.

8. If a 3-compartment sink is used, set up and use the sink in the following manner:
   a. In the first compartment, wash with a clean detergent solution at or above 110 ^{o}F or at the temperature specified by the detergent manufacturer.
   b. In the second compartment, rinse with clean water.
   c. In the third compartment, sanitize with a sanitizing solution mixed at a concentration specified on the manufacturer's label. Test the chemical sanitizer concentration by using an appropriate test kit.

RESPONSIBILITIES

1. All food contact surfaces of sinks, tables, utensils, thermometers, carts (including wheels), and equipment shall be cleaned by individuals engaging in cleaning and sanitizing.
2. Person-in-charge or designated Alternate will review direct food contact surfaces to ensure that they have been properly sanitized.

MONITORING

Employees will:

1. Record the food contact surfaces cleaning activities on the End of the shift cleaning Record and Pre-Operation Sanitation record.

Person in Charge will:

1. Person in Charge will perform daily organoleptic sanitation inspection after preoperational equipment cleaning and sanitizing. The results will be recorded on the Pre-Operation Sanitation record. lf found to be acceptable, the appropriate line will be checked. lf corrective actions are needed, such actions will be documented.
2. During all hours of operation, visually and physically inspect food contact surfaces of equipment and utensils to ensure that the surfaces are clean.
3. If using a 3-compartment sink:
   i. Visually monitor to ensure the water in each compartment is clean.
   ii. Take the water temperature in the first compartment.
   iii. Test the chlorine sanitizer concentration by using an appropriate test kit, i.e. test strips or equivalent.
   iv. If using hot water to sanitize, use a calibrated thermometer to measure the water temperature.

CORRECTIVE ACTIONS

1. If the Person in Charge determines that the equipment on hand does not pass the organoleptic examination, the cleaning procedure and inspections are repeated. The Person in Charge monitors the cleaning of the equipment on hand and re-trains employees if necessary. Corrective actions are recorded on the Pre-Operation Sanitation record.
2. Retrain any employee found not following the procedures in this SOP.
3. Wash, rinse, and sanitize dirty food contact surfaces. Sanitize food contact surfaces if it is discovered that the surfaces were not properly sanitized. Discard food that comes in contact with food contact surfaces that have not been sanitized properly.
4. In a 3-compartment sink:
   - Drain and refill compartments periodically and as needed to keep the water clean.
   - Adjust the water temperature by adding hot water until the desired temperature is reached.
   - Add more sanitizer or water, as appropriate, until the proper concentration is achieved.

VERIFICATION AND RECORD-KEEPING

1. Once a day the person in charge will observe the cleaning activities while occur and will check the Pre-Operation record and End of the shift cleaning Record.
2. The Person-in-charge or Designated Alternate will review the records are maintained under 417.5(a)(3) once per week.
3. Records shall be maintained by the establishment for at least 6 months and made available to FSIS. All such records shall be maintained at the official establishment for 48 hours following completion, after which they may be maintained off-site provided such records can be made available to FSIS within 24 hours of request.

SSOP-D-PC Pest Control

PURPOSE AND INTRODUCTION

The purpose of this SOP is to outline the activities that the establishment must follow to prevent access, deny harborage and eradicate any pest infestation.

CRITERIA AND INSTRUCTIONS

A pest management firm inspects the outside and interior areas of the building and treats them as necessary with appropriate chemicals monthly. Facility grounds and interior areas are kept free of litter, waste, and other conditions that might attract pests. Outer facility

doors are kept closed. No pets are allowed in the facility. Supervisors and workers report any pest problems to the Person in Charge.

FREQUENCY
External Contractor inspects the facility every month. The Person in Charge inspects the facility's exterior and interior daily.

RESPONSIBILITIES
All areas in the establishment are subject to this program. All employees should report pests and signs of pests to the Person in Charge. The Person in Charge and HACCP Coordinator is responsible to correct any issue related to pests.

MONITORING
The Person in Charge reviews reports of pest treatment. The Person in Charge inspects the facility's exterior and interior daily.

CORRECTIVE ACTIONS
- The pest management firm is notified of any pest problem and is authorized to treat the problem. Pest treatments are more frequent if problems are identified.
- Eradication measures shall be put in place immediately by the pest management firm after evidence of infestation is reported.

Pest treatments are more frequent if problems are identified.

VERIFICATION AND RECORD-KEEPING
- Monthly reports of pest treatment are recorded and maintained. Facility inspections and corrective actions are noted daily on the Pre-Operation Sanitation record.
- Records shall be maintained on-site for at least 6 months before they can be moved off-site. Records can be made available to FSIS Inspector within 24 hours of the request. Additionally, the records must be maintained by the establishment for two years.

SSOP-D-WS Safety of the water source

INSTRUCTIONS
All water used in the facility is from a reliable city water system. The water system in the facility was designed and installed by a licensed plumbing contractor and meets current community building codes. All modifications to the plumbing system will be completed by a licensed plumbing contractor and will be inspected to ensure conformance with local

building codes. All hoses inside and outside the facility have anti-siphoning devices installed. Floors are sloped to facilitate drainage.

MONITORING

The city water district routinely monitors the water to ensure that it meets state and federal water quality standards. The Person in Charge receives and reviews annual reports of municipal water quality. If applicable, hoses are inspected quarterly for the presence of anti-siphoning devices. Product movement floors are inspected quarterly for adequate drainage.

CORRECTIVE ACTIONS

In the event of municipal water treatment failure, the facility will stop the production activities, determine when the failure occurred, and hold all products during the failure until product safety can be assured. Product will resume only when water meets state and federal water quality standards. Hoses without anti-siphoning devices will be red-tagged and will not be used until anti-siphoning devices have been installed. Floors with standing water will have the drains unplugged. If these actions are not sufficient, a plumbing or general contractor will be consulted, and corrections will be made to correct floor drainage problems.

VERIFICATION AND RECORD-KEEPING

1. The Person in Charge receives and reviews annual reports of municipal water quality.
2. Records shall be maintained by the establishment for at least 1 year. Off-site storage of records is permitted after six months, if such records can be retrieved and provided, on-site, within 24 hours of an FSIS employee's request.

P-D-GMP Good Manufacturing Practices

GMP-D-HH Personnel - Health and Hygiene Requirements

POLICY:

Barakat Slaughter House LLC is committed to ensuring the health, safety, and well-being of our employees and customers and complying with all health department regulations.

All employees are responsible for adhering to proper health and hygiene practices to prevent contamination. Proper training should be provided to each employee.

CRITERIA AND INSTRUCTIONS

Illness reports.

All employees in direct contact with equipment, utensils, food, and packaging materials, included janitorial crew, should inform if they:

- Are experiencing any of the following symptoms:
  - Diarrhea
  - Fever
  - Vomiting
  - Jaundice
  - Runny nose
  - Fever
  - Sore throat with fever
  - Persistent coughing and sneezing
  - Lesions (such as boils and infected wounds, regardless of size) containing pus on the fingers, hands, or any exposed body part.
  - Potential COVID-19 symptoms
    - Cough
    - Shortness of breath or difficulty breathing
    - Fever
    - Chills
    - Muscle pain
    - Headache
- Are diagnosed by a healthcare provider as being ill with any of the following diseases that can be transmitted through food or person-to-person by casual contact such as:
  - *Salmonella typhi*
  - *Salmonella non-typhoidal*
  - *Shigellosis*

  - *Escherichia coli*
  - Hepatitis A virus, or
  - Norovirus
  - COVID-19
- If they have been exposed to the following high-risk conditions:
  - Exposure to or suspicion of causing any confirmed outbreak involving the above illnesses
  - A member of their household is diagnosed with any of the above illnesses
  - A member of their household is attending or working in a setting that is experiencing a confirmed outbreak of the above illnesses
- Employees must also report wounds in the following conditions:
  - Wounds on the hands or wrists, unless an impermeable cover such as a finger cot or stall protects the wound and a single-use glove is worn over the impermeable cover
  - Wounds on exposed portions of the arms, unless the wound is protected by an impermeable cover
  - Wounds on other parts of the body, unless the wound is covered by a dry, durable, tight-fitting bandage.

Managing employee health

Employees experiencing, while at work in a slaughterhouse, persistent sneezing, coughing, or runny nose that is associated with discharges from the eyes, nose, or mouth, and that cannot be controlled by medication, shall not work with exposed food; clean equipment, utensils, or unwrapped single-use utensils.

Anyone who has come into contact with any of the reportable illnesses or symptoms must be excluded from work until cleared by a physician.

Employees with symptoms associated with COVID-19 should follow the CDC's and local health department's instructions. Employees at higher risk for serious illness, such as older adults and those with chronic medical conditions, should be assigned tasks that allow them to maintain a distance of six feet from other workers, customers, and visitors, or to telework if possible.

Handwashing practices

Before engaging in daily activities, including working with food, clean equipment, and utensils, employees included janitorial crew, should properly wash their hands:

- Wash your hands and that portion, if any, of their arms exposed to direct food contact with cleanser and warm water by vigorously rubbing together the surfaces

of their lathered hands and arms for at least 10 to 15 seconds. Pay particular attention to the areas underneath the fingernails and between the fingers.
- Thoroughly rinse with clean running water.
- Dry with disposable paper towels.

Employees also shall wash their hands
- After touching bare human body parts other than clean hands and clean, exposed portions of arms.
- After using the toilet/restroom facilities.
- Before entering toilet/restroom facilities must remove apron and towels from the person and hang on outside rank of the room's facility
- After caring for or handling any animal allowed in a food facility according to this part.
- After coughing, sneezing, using a handkerchief or disposable tissue, using tobacco, eating, or drinking.
- After handling soiled equipment or utensils.
- Before initially donning gloves for working with food.
- After engaging in other activities that contaminate the hands.
- Hand sinks are stocked with soap, disposable towels, and warm water (at least 100°F/38°C), and a garbage can.

Fingernails
- Employees shall keep their fingernails trimmed, filed, and maintained so the edges and surfaces are cleanable and not rough.
- False or polished nails are only allowed when covered by a single-use glove at all times when working with Food

Jewelry
- The use of bracelets and watches is prohibited while handling food. Jewelry is limited to a plain ring, such as a wedding band.

Dress code
- All employees handling food or utensils shall wear hair restraints such as hats, hair coverings, or nets which are designed and worn to effectively keep their hair (including facial hair) from contacting non-prepackaged food, clean equipment, utensils, linens, and unwrapped single-use articles.

- Employees shall wear clean outer clothing and/or uniforms to prevent contamination of food, equipment, utensils, linens, and single-use articles.

Eating and drinking

- Employees shall eat, drink, or use any form of tobacco only in designated areas where contamination of food; clean equipment, utensils, and linens; unwrapped single-use articles; or other items needing protection cannot result.
- An employee may drink from a closed beverage container if the container is handled to prevent contamination of the employee's hands, the container, food, and food-contact surfaces.

Employees practices

- Follow all health and hygiene policies and procedures of the company
- Inform your supervisor if you feel sick during the day
- Wash your hands constantly
- Avoid touching your eyes, nose, and mouth with unwashed hands
- Cover your mouth and nose with a tissue when you cough or sneeze or use the inside of your elbow. Throw used tissues in the trash and immediately wash hands
- Clean and disinfect frequently touched objects and surfaces such as workstations, keyboards, telephones, handrails, and doorknobs. Dirty surfaces can be cleaned with soap and water before disinfection.
- Avoid using other employees' phones, desks, offices, or other work tools and equipment, when possible. If necessary, clean and disinfect them before and after use.
- No employee shall commit any act that may cause the contamination or adulteration of food, food-contact surfaces, or utensils.
- Take any other necessary precautions to protect against contamination of food, food-contact surfaces, or foreign substances including, but not limited to, perspiration, hair, cosmetics, tobacco, chemicals, and medicines applied to the skin.

MONITORING:

The designated employee shall monitor handwashing by observing and correcting improper handwashing daily throughout the shift. The designated employee shall also observe Team members for symptoms. Team members exhibiting symptoms shall be excluded from working with food, clean utensils, and clean equipment.

CORRECTIVE ACTION:

If employees are observed improperly washing hands or exhibit symptoms or gastrointestinal illness:

- The HACCP Coordinator will be immediately notified
- Any product that was prepared or served by employees that do not wash their hands properly shall be discarded.
- Food products handled by employees with active symptoms or report symptoms shall be discarded.
- The HACCP Coordinator shall stop and immediately correct hand-washing mistakes.
- Employees that show active symptoms or self-report symptoms and conditions shall be excluded from working with exposed food, clean utensils, linens, and equipment.
- Any employees exhibiting inconsistent hand-washing practices or neglect to self-report illness after retraining shall be documented and disciplined following company policies.

VERIFICATION AND RECORD-KEEPING:

- Once a day the person in charge will check the Pre-Operation Sanitation record and Operation record.
- HACCP Coordinator will review the records are maintained under 417.5(a)(3) once a week.
- Records shall be maintained on-site for at least 6 months before they can be moved off-site. Records can be made available to FSIS within 24 hours of request. Additionally, the records must be maintained by the establishment for two years.

GMP-D-RA Receiving live animals

PURPOSE AND INTRODUCTION

All operations in the receiving, inspecting, transporting, and segregating of food, and other incomes shall be conducted following adequate sanitation principles. Appropriate quality control operations shall be employed to ensure that food is suitable for human consumption.

CRITERIA AND INSTRUCTIONS

1. The person who accepts animals is informed about receiving procedures.
2. All animals will be inspected by Barakat Slaughter personnel at their arrival.
3. The trailer off-loading areas should be clean and be of sound condition to prevent injury and allow for humane handling practices

4. Live animals will be unloaded into a designated holding area.
5. The area will be suitable for the particular animal.
6. Adequate room and water will be provided for any animal held for more than 30 minutes.
7. The holding area will contain adequate walking surfaces for ambulatory animals.
8. The supplier should provide an Inspected Livestock Withdraw Letter to guarantee that the animals have met all withdrawal limits for antibiotic and pesticide use.
9. Trailers should be clean.
10. Non-ambulatory disabled animals will not be accepted for slaughter.
11. Animals should be received as clean as possible; i.e., mud and fecal contamination should be minimized.
12. Pre-slaughter practices and intervention methods should be investigated and incorporated in the animals-receiving step to reduce contamination of incoming animals. These are intervention methods that remove mud and other contaminants from hides and hooves of the bovines.

MONITORING

Every time products are received; the designated employee must inspect receiving animals:

1. Reject nonambulatory animals.
2. Observe the general health of the animals.
3. Get and review the Withdraw letter.
4. Look for mud and fecal contamination.
5. Ask for pre-slaughter practices and/or intervention methods performed, if the producer does not have any, double-check the general health of the animals. If animals don't look healthy, reject them.
6. Observe the general condition of the trailer.

CORRECTIVE ACTIONS

1. Reject nonambulatory animals or animals in apparent bad health.
2. If the Withdraw letter is not included, the PIC should get it before accepting the slaughter of the animal.
3. Record the deviation and corrective action on the Receiving animal record.

VERIFICATION AND RECORD-KEEPING

a. Person in charge checks for adherence to receiving procedures and for complete Receiving Animal records while the designated employee performs the activity.

b. Records shall be maintained by the establishment for at least 6 months and made available to FSIS. All such records shall be maintained at the official establishment for 48 hours following completion, after which they may be maintained off-site provided such records can be made available to FSIS within 24 hours of request.

GMP-D-AA Approved Animal Supplier Program

Farmers/ suppliers sending animals to Barakat Slaughter House LLC are required to provide documentation on administering veterinary medicine certifying that the withdrawal periods for the veterinary medicines administered have been met, documentation such as veterinary health certificate.

MONITORING

The person in charge or designated employee makes sure that Barakat Slaughter House LLC has in file the documents/information for all the suppliers/farmers providing animals. Documentation or information includes:

- Farmer name and contact information
- Shipping permit
- License for a live transport carrier

CORRECTIVE ACTION

HACCP Coordinator will obtain and keep in a file all the missing or out-of-date documents.

VERIFICATION AND RECORD-KEEPING

- HACCP Coordinator will verify the approved animal supplier list is complete and all the documents are in the archive at least once a year or when adding or removing suppliers.
- Records shall be maintained on-site for at least 6 months before they can be moved off-site. Records can be made available to FSIS within 24 hours of request. Additionally, the records must be maintained by the establishment for two years.

GMP-D-GS General Storage

PURPOSE AND INTRODUCTION

This SOP outlines the enhanced food safety procedures to be used to reduce product risk and the associated threat of foodborne illness during the storage of goods.

CRITERIA AND INSTRUCTIONS

- General considerations
  - Maintain clean and uncluttered storage areas.
  - Keep all food items on shelves that are at least 6” above the floor and 2-inches from the wall to facilitate air circulation and proper cleaning. Do not store foods directly on the floor.

- The FIFO rule
  - Product must be stored following the FIFO rule (First-IN, First-OUT). It is a basic rule of product rotation that protects product quality and freshness.
- Temperature
  - Products must be stored at ≤36°F.
  - Cold (both refrigerated and freezer) storage areas should be clean and free from moisture or ice buildup.
  - All coolers will be maintained to hold a temperature of 36°F or lower, with daily monitoring and documentation.
  - No products will be stored on the floor.

RESPONSIBILITIES

All employees are responsible for proper storage of products in their daily activities and reporting any deviation to the Person-in-Charge.

MONITORING

- Check the temperatures of all refrigerators and freezers twice a day. Record cold storage unit temperatures on the appropriate temperature log.
- Temperature logs will be reviewed by the person in charge to make sure there are no temperature deviations and necessary corrective action was taken.

CORRECTIVE ACTIONS

If expired or damaged products are found under storage, they must be immediately discarded. Before discarding meat denature it to change the color and odor. Before discarding meat and meat products, they need to be denatured and treated, and thrown away in their identifiable bin

VERIFICATION AND RECORD-KEEPING

- Person-in-charge or designated Alternate must check for adherence to FIFO storage procedures and review the Discarded Products Record, and Cold Storage Records while performing the Pre-Operation Sanitation record
- Records shall be maintained by the establishment for at least 6 months. Off-site storage of records is permitted after six months, if such records can be retrieved and provided, on-site, within 24 hours of an FSIS employee's request

GMP-D-TD Training and Documentation

PURPOSE AND INTRODUCTION

Before implementing the processes referred to in this HACCP plan; the Person in Charge will be trained in detail on all procedures contained in this plan. Subsequently, all employees involved with activities described in this written procedure will be trained and retrained at least once per year and whenever changes are made to the HACCP plan. Besides, all new employees must be trained on this plan and any activities they will perform related to the plan before they can perform any of the functions associated with the preparation of this plan.

CRITERIA AND INSTRUCTIONS

Person in Charge or Designated Alternate shall be responsible for training employees working in Barakat Slaughter House LLC. before allowing them to prepare products. Retraining must be done annually:

1. Sanitation Standard Operating Procedures
    a. Use, handling, and storage of chemicals
    b. Control flows-control of cross-contamination
    c. Facility Cleaning and Sanitizing
    d. Cleaning and sanitizing direct food contact surfaces and equipment
2. Good Manufacturing Practices
    a. Personnel Health and Hygiene Requirements
    b. Receiving live animals
    c. Approved animal supplier program
    d. General storage
3. Standard Operating Procedures
    a. Procedures for BSE
    b. Removal of SRM
    c. Slaughter of animals production
    d. Thermometer calibration
    e. Skinning procedure: hide removal
    f. Finished product release and shipping
    g. Traceability requirements
4. Recall Plan
5. CCP
    a. Final trim
    b. Lactic acid spray

MONITORING

Within 14-30 days after each training seminar covering principles and/or components of this HACCP plan or HACCP plan updates, each person trained will be evaluated, following the evaluation, the employee and the Person in Charge of the training will sign-off on the Training Verification Record.

VERIFICATION AND RECORD-KEEPING

1. The person in charge ensures training of all employees
2. The HACCP Coordinator will ensure that the records are maintained under 417.5(a)(3). Records shall be maintained by the establishment for at least 6 months and made available to the inspector. All such records shall be maintained at the official establishment for 48 hours following completion, after which they may be maintained off-site provided such records can be made available to inspector within 24 hours of request.

P-D-SOP Standard Operation Procedures

SOP-D-BS Procedures for BSE

Harvesting (non-ambulatory disabled livestock)

1. Non-ambulatory disabled livestock will not be harvested following USDA/FSIS Notice 5-04. Non-ambulatory disabled livestock including animals that cannot rise from a recumbent position (downer) or that cannot walk, including but not limited to those with broken appendages, severed tendons or ligaments, nerve paralysis, fractured vertebral column, or metabolic conditions.
2. If livestock presented for ante-mortem inspection is found to be non-ambulatory disabled by the Inspector in charge, the animal will be humanely euthanized, and carcass disposed of following 9CFR309.13
3. If livestock arrive with a broken appendage, but can rise from a recumbent position and can walk, they will be presented for ante-mortem inspection and will be slaughtered with the approval of the inspector in charge.

Harvesting (determination of age)

1. Livestock age will be determined following USDA*FSIS Notice 5-04. Age will be recorded from the appropriate documentation or examination
    a. A birth record/certificate
    b. Livestock passport
    c. Some other form of identification that is presented with the animal when it arrives for slaughter, or
    d. Examination of the dentition of the animal

Harvesting (segregation by age)

1. Livestock will be segregated based on age to ensure that younger livestock (younger than 30 m of age) are harvested before the harvesting of older livestock
2. Carcasses of animals 30 m of age or older will be identified with an identification tag and the backbone will be removed in the kill floor.

Harvesting (segregation by body parts)

1. Livestock heads are condemned
2. The brain, skull, eyes, trigeminal ganglia, spinal cord, vertebral column (excluding the vertebrate of the tail, the transverse process of the thoracic and lumbar

vertebrae, and the wings of the sacrum), and the dorsal root ganglia of livestock 30 m of age and older, and the tonsils and the distal ileum of the small intestines of all animals will be identified as SRM and won't be used in the human food chain in accordance to USDA/FSIS Docket 03-0251F. These SRM will be disposed of (incineration or landfill)

3. A designated knife will be used to serve the spinal cord at the atlas joint in the removal of the head, and also for removing the spinal cord from all livestock carcasses (regardless of age).

SOP-D-RSRM Removal of SRM

The purpose of this standard operating procedure is to describe how to address potential contamination of edible materials with SRM´s before, during, and after entry into the establishment, is based on the requirements of 9CFR309.3 and 9CFR310.22 and outlines plant procedures that will reduce the risk of the BSE agent entering the human food chain.

INSTRUCTIONS:

1. Owners of not-inspected carcasses for custom processing will be required to affirm that the live animal was ambulatory at the time of slaughter and declare the animals to be either less than 30 months of age or 30 months and older before their carcass will be accepted for processing.
    a. Nonambulatory disabled livestock will not be allowed to be brought to the plant. If livestock arrive with a broken appendage but can rise from a recumbent position and can walk, they will be presented for ante-mortem inspection and will be slaughtered with the approval of the inspector in charge.
2. The age of all livestock slaughtered will be determined so that Specified Risk Materials (SRMs) can be identified for removal from the human food chain. The age of livestock will be determined according to procedures outlined in FSIS Notices 5-04 and 10 - 04 (verifiable documents and dentition).
3. Specified risk materials to be removed from the human food chain include:
    a. The tonsils and small intestine from all livestock.
    b. The brain, skull, eyes, trigeminal ganglia, spinal cord, vertebral column, (excluding the vertebrae of the tail, the transverse processes of the thoracic and lumbar vertebrae, and the wings of the sacrum), and the dorsal root ganglia of livestock 30 months of age and older.
4. The carcass and head of livestock identified to be 30 months of age or older will be identified with a red-colored weight tag affixed or the hot tag as “30 months and older”.

The 30 months of age and older livestock will be segregated from the under 30 months livestock and will be slaughtered after the younger livestock. The backbone (excluding the vertebrate of the tail, the transverse process of the thoracic and lumbar vertebrae, and the wings of the sacrum) will be removed from the slaughter floor. Heads from 30 m and older livestock will be condemned as will the distal ileum of the small intestine.

5. A knife will be used to serve the spinal cord at the atlas joint in the removal of the head, and also for removing the spinal cord from all livestock carcasses (regardless of age) before the final carcass washing.
6. The knife used for trimming SRM material will be cleaned and sanitized of any SRM material before being used on the edible product. After the removal of cheek meat (hot boned) and tongue, the skull, brain, trigeminal ganglia and tonsils will be placed in a labeled inedible container.
7. After carcass trimming, livestock 30 months of age or older will have the spinal cord removed and placed in a labeled inedible container.
8. During further processing of livestock 30 months of age or older the specified risk material portion of the vertebral column will be removed and placed in a labeled inedible container. The specified risk material portion of the vertebral column will be removed before individual steaks are cut. If a carcass 30 months of age or older leaves this establishment for further processing in another FSIS-inspected establishment, documentation will transfer with the carcass to identify the presence of SRM´s in the carcass.
9. Inspected bone-in livestock that is received must come from a source that has a program to properly identify carcasses that contain SRM´s and has documents for this purpose that are received with the carcass. Any SRM´s in such identified carcasses will be removed during further processing and placed in marked inedible containers.

MONITORING

Person in charge or designated employee oversees slaughter activities at least once a day during production days to ensure SRMs removal. The record of the activities occurs on the slaughter record.

CORRECTIVE ACTIONS

1. Any incidental contamination by SRM material will be removed by knife trimming before washing
2. The non-compliant product must be reconditioned and re-inspected to meet carcass finished product standards.
3. Retrain, discipline, or replace the employee.

VERIFICATION AND RECORD KEEPING

- The HACCP Coordinator will review the records are maintained under 417.5(a)(3) once a week.
- Records shall be maintained on-site for at least 6 months before they can be moved off-site. Records can be made available to FSIS within 24 hours of request. Additionally, the records must be maintained by the establishment for two years.

SOP-D-CMPA CMPAF's (Livestock material prohibited from the animal feed)

1. The spinal cord will be removed with a pick, before the final carcass wash.
2. The brain and spinal cords from livestock over 30 m of age or older will be stored in a disposal container that will be discarded at the landfill. The container will have appropriate lettering to distinguish it from other containers not used for SRMs.
3. Any equipment that is used to cut through or remove SRM must be cleaned and sanitized before next day use and before using on less than 30-month carcasses.

MONITORING

The designated employee will review the daily Slaughter Record and the daily record of the age of each bovine animal slaughtered before starting operations, for the subsequent removal of any Specified Risk Materials in the manner described in this SOP. Once a day, the person in charge will observe the activities while occur and will record deviations in the Slaughter Record

CORRECTIVE ACTION:

Any corrective actions taken will meet 9 CFR 417.3 (b) and will include a reassessment to determine if the newly identified SRM hazard and associated removal steps should be incorporated into the HACCP plan, Sanitation SOP, or other prerequisite programs. Corrective actions will be recorded in the corrective action log.

VERIFICATION AND RECORD-KEEPING:

HACCP Coordinator will review the records are maintained under 417.5(a)(3) once a week.
Records shall be maintained on-site for at least 6 months before they can be moved off-site. Records can be made available to FSIS within 24 hours of request. Additionally, the records must be maintained by the establishment for 2 years.

SOP-D-SR Skinning procedure: Hide Removal

This SOP describes how to conduct the skinning procedure.

INSTRUCTIONS:

1. Insert knife
2. Cut pattern mark from inside to outside, allowing only knife contact with hiding surface
3. Wash hands
4. Wash and sanitize the knife between each hide opening and before initiating skinning
5. Repeat the process for each hide opening and/or before initiating skinning
6. Prevent contamination from hide onto carcass surface
7. Prevent cross-contamination between carcasses

MONITORING

Person in charge or designated employee will directly observe at least one complete carcass dehiding procedure per day to ensure the employee skinning follows the instructions described previously and will note deviations on the Slaughter Record.

CORRECTIVE ACTION:

a. Retrain, discipline, or replace the employee.
b. The non-compliant product must be reconditioned and re-inspected to meet carcass finished product standards.

VERIFICATION AND RECORD-KEEPING:

- HACCP Coordinator will review the records are maintained under 417.5(a)(3) once a week.
- Records shall be maintained on-site for at least 6 months before they can be moved off-site. Records can be made available to FSIS within 24 hours of request. Additionally, the records must be maintained by the establishment for two years.

SOP-D-TC Thermometer calibration

PURPOSE AND INTRODUCTION

The person in Charge or Designee will calibrate the thermometers using the specifications of the manufacturer of the equipment (this will vary) or the following procedures will be implemented.

- Each thermometer will be assigned an ID number.
- Thermometers intended for measuring lower temperatures will be calibrated in ice water.
- All thermometers will be calibrated within ±2°F.
- Calibration in ice water:
    - Fill a large glass with finely crushed ice.
    - Add potable (drinkable) water to the top of the crushed ice and stir well for about 30 seconds.
    - Remove the food thermometer from the case, and hold the thermometer on the head, not the stem. Do NOT handle the stem of the thermometer with your fingers or hands.
    - Submerge the stem at least 2 inches into the ice mixture. The stem should not touch the sides or the bottom of the glass.
    - Wait at least 30 seconds or when the needle stops moving before reading.
    - If the thermometer reads 32°F, the thermometer is correctly calibrated. If not, you will need to make adjustments.
    - Record the results, using actual values, on the thermometer calibration log, along with the date and initials of the person performing the calibration procedure.

- Calibration in hot water:
    - Heat a clean container of water to a temperature range that is used for cooked product. Running clean water through the coffee maker gives a water temperature of approximately 145 F. Another option is to bring a clean container of water to a rolling boil.
    - Place the thermometer probe into the hot water, along with the certified thermometer and/or reference thermometer, for at least one minute, taking care not to let the probe contact the container.
    - If the test thermometer does not read within ±2°F of the reference thermometer, adjust accordingly. Nonadjustable thermometers will be removed from use until they have been professionally serviced. Thermometers that have been adjusted for 3 consecutive months will be replaced.
    - Record the results, using actual values, on the thermometer calibration log, along with the date and initials of the person performing the calibration procedure.

- Thermometers that cannot be easily calibrated through direct immersion in ice water can be calibrated by comparing readings with another calibrated thermometer. Thermometers that may be calibrated in this way include smokehouse probes and room temperature thermometers. When doing this, a recently calibrated thermometer will be used as the reference. Room temperature thermometers that are outside the ±2°F range will be replaced. Results will be recorded, using actual values, on the thermometer calibration log, along with the date and initials of the person performing the calibration procedure.
- Thermometers will be calibrated at a frequency dependent on production volumes, and the use of monitoring CCP values or SOP values. It is recommended to calibrate the thermometers daily, before use. Any thermometer that has been dropped or abused will be taken out of service until it has been recalibrated. Any "loose" thermometers, or thermometers that have been out of calibration for 3 consecutive months, shall be disposed of.

MONITORING

Person in Charge or Designated alternate shall perform thermometer calibration and write down the record for each device via the Thermometers Calibration Record.

CORRECTIVE ACTIONS

- Nonadjustable thermometers will be removed from use until they have been professionally serviced
- Thermometers that have been adjusted for 3 consecutive months will be replaced
- Thermometers that fail the calibration process must be discarded.
- Unidentified thermometers must be re-identified with the name or number re-affixed.
- Damaged thermometers must be removed from rotation and replaced.

VERIFICATION AND RECORD-KEEPING

Person in charge checks for adherence to thermometer calibration and verification procedures and completed Thermometer Calibration Records during verification activities.
Records shall be maintained by the establishment for at least 6months Off-site storage of records is permitted after six months, if such records can be retrieved and provided, on-site, within 24 hours of an FSIS employee's request.

SOP-D-FP Finished products storage and shipping

INSTRUCTIONS:

- All coolers will be maintained to hold a temperature of 36ºF or lower, with daily (on days of production) monitoring and documentation. Results will be recorded on the Cold storage Record.
- No products (finished or unfinished) will be stored on the floor
- The temperature of the product must be taken at least once a week. Randomly select one product (at random locations of refrigeration units) and take the temperature of the surface. Results will be recorded on the Cold storage Record.

Products shall be transported in a manner that meets the following requirements:

- Vehicles must be exclusively used for the shipment of food or the operator of the vehicle must provide documentation that effective cleaning and sanitization (if appropriate) was done after a preceding non-food delivery. Documentation shall be provided by the vehicle operator.
- Vehicles will be free of visible debris or dirt at the time of loading. A designated employee will observe the vehicle before loading and document that this requirement is met.
- All products will be loaded for shipment such that the product containers or master packages do not directly contact the floor, walls, or ceiling of the vehicle. Ready-to-eat products will never be stored below raw products. A designated employee will observe the loaded vehicle and document that these requirements are met.
- Non-shelf-stable products will be shipped under adequate refrigerated (no warmer than 41°F) storage conditions. All transportation companies used for shipment will have signed an agreement indicating how the vehicle temperature will be monitored and documented, and how the records will be provided.

RESPONSIBILITIES

Person in charge or designated employee.

MONITORING

The designated employee will:

- Check the temperature reading of the cooler.
- Check vehicles before shipping and will ensure the agreement with shipping companies is up to date.

CORRECTIVE ACTIONS

- If any deviation of the shipping procedures is noticed, the Person-In-Charge or Designated Alternate will be immediately notified.

- Any employee found not following the procedures in this SOP must be retrained.
- Any product that was improperly handled during shipping activities must be discarded.
- In case of observing any indication of cross-contamination, the product must be
- immediately discarded.
- Discard products held in the danger zone for greater than four hours during transportation.

VERIFICATION AND RECORD-KEEPING

- Person in charge checks for adherence to procedures.
- The HACCP Coordinator will review the records are maintained under 417.5(a)(3) once a week.
- Records shall be maintained on-site for at least 6 months before they can be moved off-site. Records can be made available to FSIS within 24 hours of the request. Additionally, the records must be maintained by the establishment for two years.

SOP-D-TR Traceability

PURPOSE AND INTRODUCTION

The purpose of this standard operating procedure is to describe how to label finished carcass and liver and hearts to ensure food safety and traceability. Traceability is the ability to track a product one step forward and one step back.

INSTRUCTIONS:

1. Products will be identified with:
   a. Carcass and carcass quarters have ID tags and state inspection legend.
   b. Liver and heart have state inspection legend, an appropriate product label including safe handling instructions.
2. Shipping or delivery activities will be registered in the pre-shipment review record. The record will indicate the slaughter date and if all hygienic practices were met to ensure food safety, as well as the name of the customer receiving the packages.

Traceability:

1. For traceability purposes, the products will be labeled with the slaughter date.
2. In case of a recall, all the finished goods described with the same slaughter/production date must be recalled (review recall SOP) and kept on hold to

prevent their use until the investigation conducted determines if the product is safe or must be discarded.

MONITORING

Person-in-Charge will review labeling activities to ensure labels are correct and the process is occurring according to the instructions. Ensure that the slaughter date on the label is correctly listed. The register that products are properly labeled before delivery is made in the Slaughter record and the Pre-Shipment Review Record.

CORRECTIVE ACTIONS

1. Discard any damaged label.
2. Discard any incorrect label.
3. Relabel any product that is mislabeled.

VERIFICATION AND RECORD-KEEPING:

1. HACCP Coordinator will check for adherence to traceability procedures
2. The HACCP Coordinator will ensure that the records are maintained under 417.5(a)(3). Records shall be maintained by the establishment for at least 6 months and made available to inspector. All such records shall be maintained at the official establishment for 48 hours following completion, after which they may be maintained off-site provided such records can be made available to inspector within 24 hours of request.

PL-D-REC Recall Plan

Barakat Slaughter House LLC is dedicated to manufacturing the highest quality products possible. We take care to ensure that only our best leave the premises. If a product does get shipped out which is of questionable quality, the recall program, as outlined in this manual, will be put into action.

Product recall is indicated when a product could represent a health risk to the consumer. The procedures implemented should effectively remove the product from circulation to prevent its consumption. This procedure will be implemented after a customer complaint that involves a recall or after the discovery of a food safety problem.

Barakat Slaughter House LLC must promptly notify the local FSIS District Office within 24 hours of learning or determining that an adulterated or misbranded meat or meat food received by or originating from the official establishment has entered commerce if the official establishment believes or has reason to believe that this has happened. The official establishment must inform the District Office of the type, amount, origin, and destination of the adulterated or misbranded product.

Statement of Recall Plan

Barakat Slaughter House LLC maintains a recall plan which provides specific procedures and assigns roles and responsibilities when a food safety issue arises with any of our products. The recall plan follows the Recall Policy – 9 CFR Recall 418.
The plan will be activated whenever a potential recall requirement arises and includes the following elements:

1. Recall team member designations
2. Recall responsibility assignments
3. Key personnel and external contact information
4. Recall procedures
5. Communication templates

The success of the plan relies on the proper execution of plan elements and using up-to-date information.

INSTRUCTIONS
The main objectives of this recall plan are:

1. Stop the distribution and sale of the affected product.
2. Effectively notify management, customers, and regulatory authority (i.e. USDA/FSIS, FDA, DHHS) of the recall.

3. Efficiently remove the affected product from the marketplace.
4. Remove the affected product from the warehouse and/or distribution areas.
5. Dispose of the affected product.
6. Conduct a root cause analysis and report the effectiveness and outcome of the recall.
7. Implement a corrective action plan to prevent another recall.
8. Upon completion of the recall, management will conduct a post recall meeting to evaluate the recall.

Recall procedures

The recall procedure outlines the steps that Barakat Slaughter House LLC will follow to manage the recall of our products that have been determined to be unsafe and/or subject to regulatory action. The procedure includes the following elements:

1. Assignment of roles and responsibilities.
2. Evaluation of the complaint or condition.
3. Identification of implicated products.
4. Notification of affected parties.
5. Removal of affected products.

Assignment of roles and responsibilities

The recall team will be composed of:

- Recall coordinator: the coordinator has been given authority by the management of Barakat Slaughter House LLC to execute the activities related to the recall. Responsibilities of the Recall Coordinator shall include but are not limited to:
    - Maintain the documentation of all recall decisions and actions in a master recall file.
    - Initiate the formation of the recall team.
    - Activate various components within the company for priority response.
    - Make recall decisions on behalf of Barakat Slaughter House LLC .
    - Manage and coordinate the company's product recall implementation.
    - Keep management informed during all stages of the recall.

- Recall Team: the team is composed of various components of the organization. The following functions should be represented on the team (any individual may be responsible for more than one function):
    - Management (Administration)

- Recall Coordinator
- Accounting
- Consumer Affairs / Public Relations
- Customer Service
- Distribution and Supply
- Information Technology
- Legal Counsel
- Marketing
- Operations
- Production
- Purchasing
- Quality Assurance
- Sales
- Maintenance
- Records Management
- Regulatory Affairs
- Sanitation

Note: Some functions may require using outside resources.

Individual recall activities will be assigned by Barakat Slaughter House LLC in the Assigned Responsibilities Record at the beginning of the year during the HACCP plan reassessment.

Evaluation of the Complaint Condition

Complaint receipt, processing, and evaluation are the first steps in the recall process. The complaint evaluation flow chart shows the steps involved in the evaluation process and include:

- Receive the complaint: A Consumer Complaint Record should be maintained containing any product complaints the company receives. Information that should be maintained in the product complaint file is:
  - Complainant contact information.
  - Reported problem with the product.
  - Product Identification.
  - Product Storage.
  - Product purchase date and location.
  - Illness and Injury details.

- Provide the complaint to knowledgeable staff for initial evaluation. If the initial assessment indicates a recall may be necessary, the Recall Coordinator assembles the Recall Team for a full evaluation using the Recall Record. To control the Recall Process, a Recall Procedure checklist must be completed.

- Determine the potential hazard and evaluate the related safety concerns with the product.

- Determine the class of the recall, according to the level of hazard involved:

  Class I Recall - Health hazard situation in which there is a reasonable probability that consumption of the food product will cause/contribute to health problems or death.

  Class II Recall - Potential health hazard situation in which there is a remote probability of adverse health consequences from consumption of the food product.

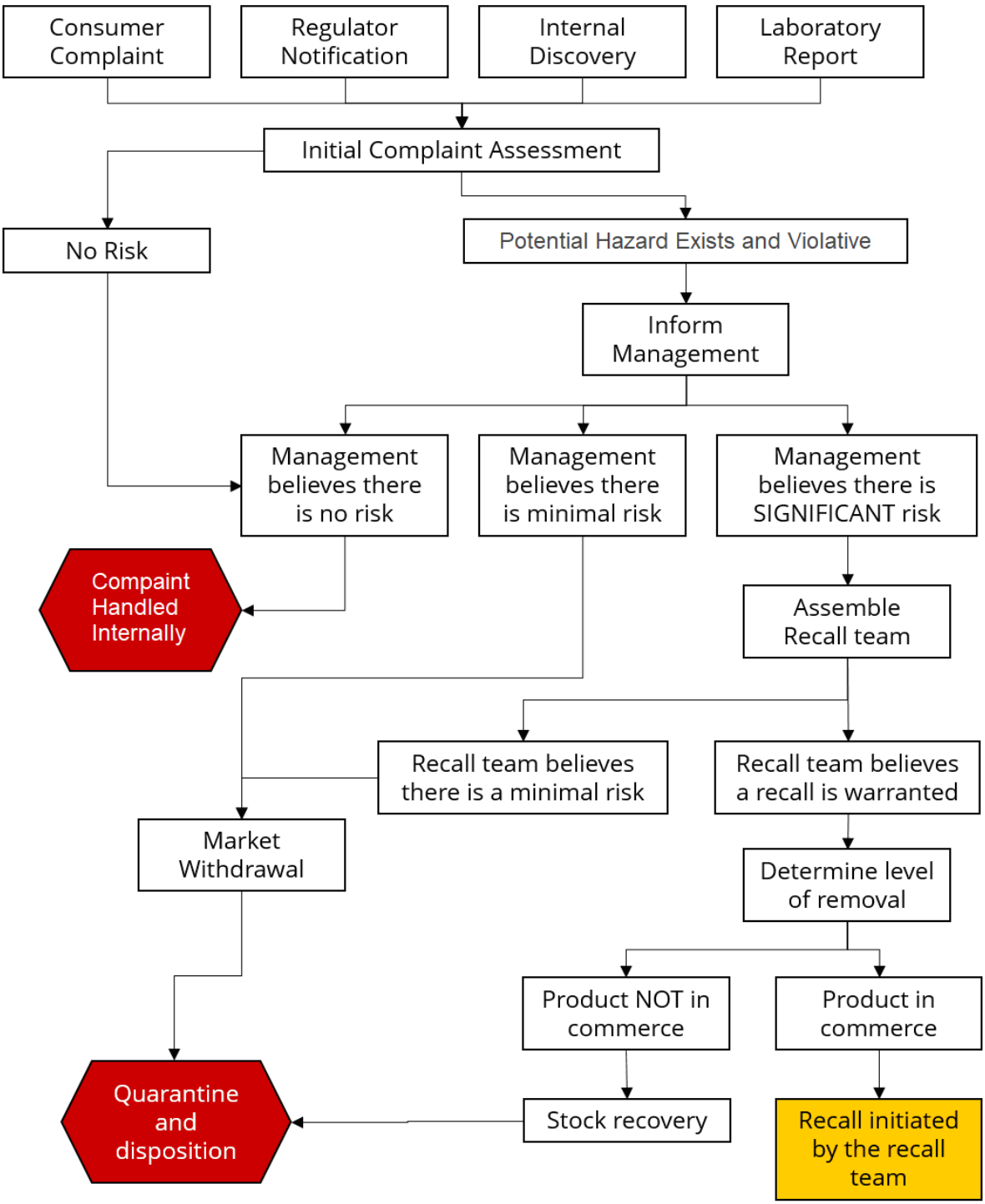
  Class III Recall - Situation in which consumption of the food product will not cause adverse health consequences.

- Determine the product removal strategy according to the threat level and market distribution/commerce.

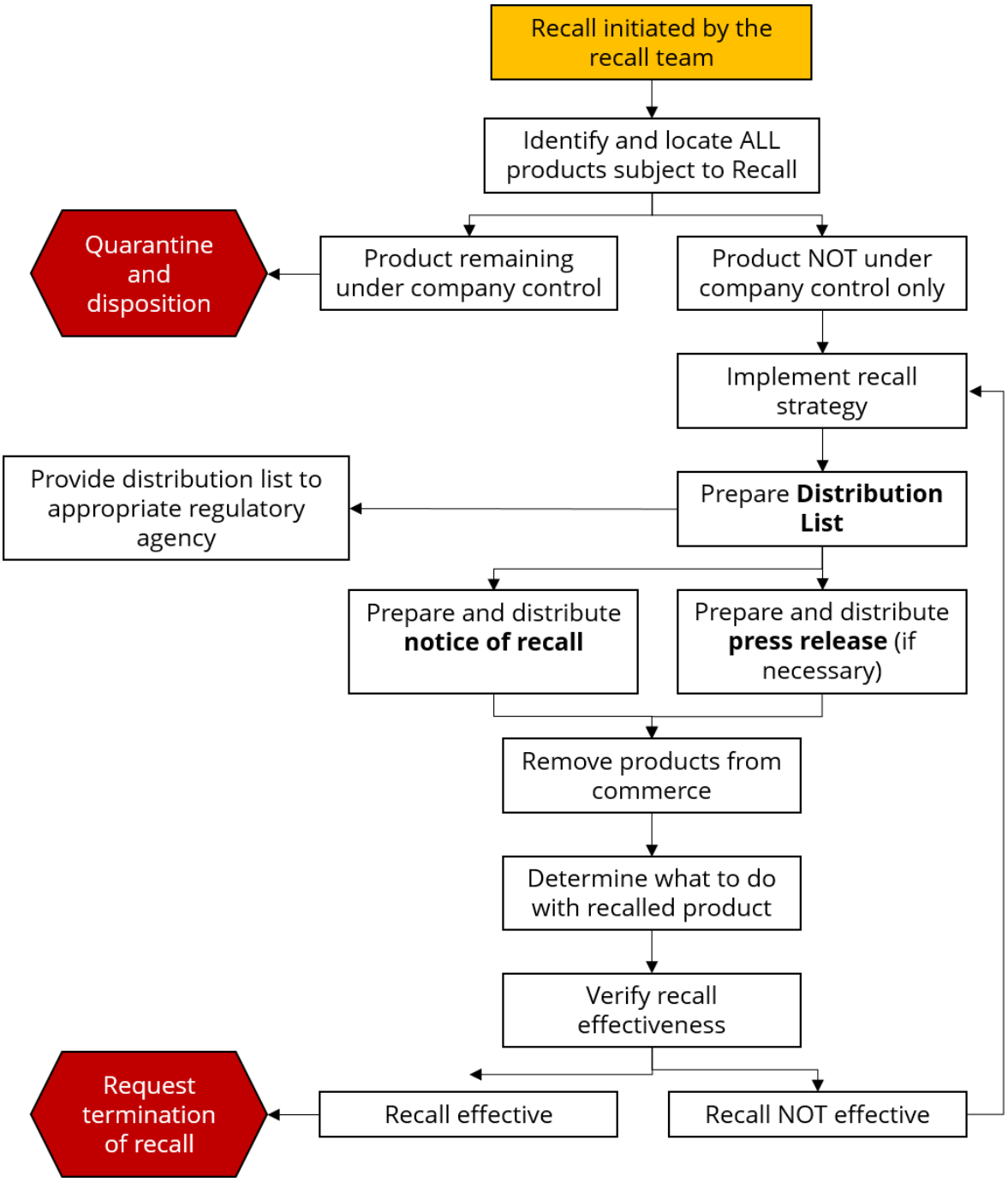
- Contact the appropriate regulatory authorities.

- Alert legal counsel, insurance, etc. as appropriate.
- Maintain in a file of all recall-related events including information such as dates, actions, communications, and decisions.

Complaint evaluation flow chart



Recall flow chart



3. Identification of Implicated Products

Is the responsibility of Barakat Slaughter House LLC to ensure the identification and quantities of all products implicated in the recall. In addition, the determination should be made if any other codes, brands, or sizes of products handled by the company are affected.

Barakat Slaughter House LLC will complete the Distribution List Record as part of the Identification process including:

- Accounts/Customers:
  - Account name (consignees) that received the recalled product(s)
  - Account addresses
  - Contact names
  - Contact telephone numbers
  - Type of account (e.g., manufacturer, distributor, retailer)

Additional information relating to product information includes:

- Product:
  - Amount of product received/shipped
  - Product ship date(s)
  - Amount of product returned
  - Amount of product consumed

Notification of Affected Parties

Notifications during a recall must be performed promptly and should include the appropriate regulatory agencies, product distribution chain, and consumers when necessary. Recall notices are typically used to notify regulatory agencies and those businesses in the distribution chain. Press releases are oriented to consumers but may be used to notify any affected party.

- Regulatory Agencies should be notified at the earliest opportunity after the decision is made to conduct a recall (Recall Submission to FSIS Record).
    - Subsequent to the initial notification, the regulatory authority should be kept updated throughout the recall process.
- Distribution Chain contacts will be notified by a written recall notice (Recall Letter).
    - Confirm receipt of the Notice of Recall with all accounts. A copy of all account communications should be maintained and recorded on the Notification Record.
- Consumers should be notified by the most effective method available. If appropriate, a press release can be used to notify consumers.
    - Issuance of a press release should be the highest priority and should be issued promptly.
    - The local FSIS District Recall Coordinator should be consulted before the issuance of a press release whenever possible.

Removal of Affected Product

The procedure for product removal can be divided into five components including removal, control and disposition of affected product, recall effectiveness, and recall termination.

Removal

All reasonable efforts must be made to remove affected products from distribution/commerce.

- Products in distribution/commerce should be detained and segregated by the customer until Barakat Slaughter House LLC completes the recall investigation to determine the product disposition. Barakat Slaughter House LLC will inform the decision and how to proceed (Recall Letter).
- Products that are still under the control of Barakat Slaughter House LLC (e.g. inventory located onsite, in transit, in off-site storage, and in offsite distribution) should be detained and segregated.
- All quantities and identification codes shall be documented via the Recalled Product Receiving Record to assist in the reconciliation of product volumes.

Control of Recalled Product

When Barakat Slaughter House LLC chooses to retain recalled products, steps must be taken to prevent possible affected product redistribution.

- All affected products returned will be marked; NOT FOR SALE or DISTRIBUTION and stored in an area separate from other food products.
- All quantities, identification codes, and disposition shall be documented via the Recalled Product Receiving Record.

Product Disposition

The final disposition of the recovered product must be determined. The final disposition must be reviewed and approved by the regulatory agency. Options include:

- Destruction: Products determined to be unsafe for human consumption may be destroyed or denatured and disposed of by appropriate means.
- Recondition – Products may be altered/reworked to remove the safety risk. For example: Relabeling a product to include an allergen omitted from the original label.

All quantities, identification codes, and disposition shall be documented.

Recall Effectiveness

Barakat Slaughter House LLC is responsible for determining the effectiveness of a recall event. Recall Effectiveness Checks verify that all consignees have been notified and have taken the appropriate action. Steps include:

- Verifying that all consignees have received the notification by comparing the Distribution List Record with the Notification Record.
- Verifying that consignees have taken appropriate action.
- If any consignee response is less than 100%, the recall should be deemed ineffective and the recall strategy should be reassessed. Certain circumstances (e.g. amount of product actually returned vs. expected, the potential for consumption, shelf-life, etc.) may also require a reassessment of the recall strategy.

All verifications shall be documented.

Termination of a recall

Termination of the recall may be considered after all reasonable efforts have been made to remove the affected products from distribution/commerce, including reconciliation, recall effectiveness, and disposition.

Termination of the recall may be requested by submitting a written request to the regulatory authorities.

FD-D-FD Food Defense Plan

Food defense is the effort to protect food from acts of intentional adulteration intended to cause wide-scale public health harm. The mitigation activities described in this plan include measures to reduce or eliminate the possibility that an intentional adulteration event would occur.

FD-R-FD Food Defense Team (FDT)

The contact information including phone number, email address, and other after-hours contact information of all committee members should be confirmed and updated as often as necessary to assure accuracy.

Food defense team			
Contact information	Position	Responsible for	Signature
Mark Barakat	HACCP Coordinator	Food defense team leader	
		Food defense team member	

Vulnerability assessment

1. List of products and processes
    a. Products: Described in section “Product Description”
    b. Processes: Described in the section “Flow processes”

Process	Vulnerability
Receiving	• Unapproved Suppliers • General condition of products • Consistency between orders and received products • Delivery vehicle looked
Storage	• Unauthorized access of people or products • Adulteration of ingredients or packaging materials
Processing	• Unauthorized access of people or products • Adulteration of process
Packaging	• Unauthorized access of people or products • Adulteration of products or packaging materials
Shipping	• Protection of the packages on shipping (vehicle locked)

2. dentification of vulnerable steps

Actionable process steps

Process	Required actions
Receiving	• Measures to select suppliers • Measures to ensure control of the received ingredients and materials
Storage	• Measures to control the access to the production area • Measures to prevent intentional adulteration of ingredients and packaging materials
Processing	• Measures to control the access to the processing area • Measures to prevent intentional adulteration of products during processing activities
Packaging	• Measures to control the access to the production area • Measures to prevent intentional adulteration of finished goods and packaging materials
Shipping	• Measures to protect packages on shipping

Mitigation activities

1. Outside Security Measures. These measures will prevent unauthorized access by people, or entry of unapproved materials to the facility.
   a. Physical security
      i. Entrances are secured, locks are installed, and operating
      ii. Outside lighting is present to deter unauthorized activities
      iii. Other access points such as windows and vents are secured
      iv. Security cameras are installed

   b. Receiving security
      i. Suppliers are pre-approved
      ii. Deliveries are programed. Delivery time negotiated with the supplier allows for items to be inspected for potential tampering.
      iii. Incoming and outgoing vehicles are examined for suspicious activity
      iv. Loading and unloading activities are scheduled and/or monitored
      v. Loading dock access is controlled
      vi. Incoming shipments are secured with locks or seals
      vii. Outgoing shipments are locked or sealed
      viii. Security cameras are installed

c. Mail Handling Security
    i. Mail is handled away from food including ingredients and packaged food product
    ii. Employees who handle mail are aware of the proper handling of suspicious mail and U.S. Postal Service guidelines.

2. Inside Security Measures. These measures will protect the product from intentional contamination throughout the production process.
    a. General Inside Security
        i. Suspicious packages are reported to the person in charge
        ii. Restricted areas of the establishment are identified
        iii. Previously unattended materials are checked before use
        iv. Unexpected changes in inventory (product or equipment) are reported to appropriate personnel
    b. Processing Area
        i. Security cameras are installed
        ii. Locks on the refrigerator and freezer.
        iii. Records ensure traceability for one step backward, one step forward, or both
        iv. Employees register their shift
        v. Employees works in groups, no employees are working alone
        vi. The person in charge oversees all the activities in the facility and is aware of:
            - Unsecured areas
            - Unescorted visitors
            - Unusual behavior
            - Abnormal changes in equipment, materials, and ingredients
    c. Storage Area
        i. Stock rotation (first in, first out) is practiced
        ii. Labels and packaging materials are controlled to prevent theft and misuse
3. Personnel Security Measures. These measures will ensure that only authorized personnel are in the facility at any time.
    a. Employee Security
        i. Employees have restrictions on what they can bring in or take from the facility (for example, cameras)
        ii. Background or reference checks are conducted for new hires

b. Non-employee Security (Example: visitors, contractors, guests, customers, truck drivers)
    i. A method to recognize or identify employees in the facility is in place
    ii. Visitors register their entrance and are escorted by one member of the personnel
    iii. Visitors have restrictions on what they can bring in or take from the facility
    iv. Visitors are restricted to appropriate areas
c. Security Training
    i. Employees are trained to report suspicious activities or unusual observations

4. Incident Response Security Measures. These measures will ensure that the company responds quickly to a product contamination threat or event using planned measures
    a. Investigating Security Concerns
        i. Customer comments are investigated
        ii. Reporting unusual activities is encouraged

    b. Other Plan Security
        i. A product recall plan is maintained and periodically reviewed
        ii. Key personnel are trained in product recall procedures

PL-EC Program to control generic or Biotype I *Escherichia coli* and *E. coli* O157:H7

Sampling method

1. Excision
   Aseptically cutting a surface section from the lamb carcass and sending the tissue sample for laboratory analysis. It's a destructive method of sampling. Barakat Slaughter House LLC will prefer this method for *E. coli* O157:H7 determination
2. Sponging
   Aseptically swabbing the surface of the lamb carcass with a sterile sponge and sending the sponge to the laboratory for analysis. It's a non-destructive method of sampling. Barakat Slaughter House LLC will prefer this method for generic *E. coli* determination.

Selection of carcasses

- Lamb samples are collected after they have been in the cooler for a minimum of 12 hours.
- Samples are to be taken randomly. To assure unbiased sampling of carcasses, the following procedure will be used:
  - Count the carcasses in the cooler
  - Multiply the number of carcasses times 2 to get the total # of sides
  - Write numbers 1,2,3 etc. on pieces of paper for the total number of sides.
  - Randomly select one piece of paper for *E. coli* sample
  - Count to that number starting at the entrance of the cooler and counting each side and sample that carcass side
  - If the carcass side selected is not accessible for sampling, then it will be railed out to make it accessible.

Program to Control *Escherichia coli*, generic or Biotype I

Barakat Slaughter House LLC slaughters lamb as the main product. Generic, or Biotype I, *Escherichia coli* presence in carcasses is tested to evaluate the hygiene of the plant's slaughter and dressing procedures. If high levels of generic *E. coli* are detected, then the processor is to adjust the slaughter/dressing process so that it is more sanitary.

The requirement in 9CFR, 310.25 Process Control Verification for Microbial Contamination of Carcasses is that *E. coli* samples are collected on carcasses for 13 weeks,

starting June 1 and continuing until 13 weeks data is collected and have met the performance criteria.

Preparation

a. Before beginning sample collection, assemble sampling supplies, such as sterile gloves, sterile sampling solutions, hand soap, and sanitizing solution. Sample collection shall be conducted by a trained designated employee.
b. Sterile sampling solutions, such as Butterfield's phosphate diluent (BPD) or buffered peptone water (BPW), can be stored at room temperature; however, at least the day before sample collection, check such solutions for cloudiness and do not use solutions that are cloudy or turbid or that contain particulate matter. Place the number of containers of sampling solution that will be needed for the next day's sampling in the refrigerator.
c. To obtain the most accurate results, samples should be analyzed as soon after collection as possible.
    a. Samples should be refrigerated and then shipped refrigerated (use gel packs); on the same day they were collected.
    b. A sample should arrive at the laboratory and be analyzed no later than the day after it is collected.
d. It is necessary to use aseptic sampling techniques and clean, sanitized equipment and supplies. Sanitize the sample work area surfaces.
e. Before sampling, thoroughly wash and scrub hands to the mid-forearm. Use antibacterial hand soap. Put on new sterile gloves before taking a sample.
f. Mark each sampling bag with the following information before collecting samples:
    a. Establishment number
    b. Name of the person collecting the sample
    c. Date and time of sample collection
    d. Type of test and species sampled: ECC – E. coli in Carcass

Sampling procedures

a. A sterile (non-latex, non-bactericidal) sampling sponge, which is usually provided by the laboratory, will be used to sample all sites on the carcass. The sites are for livestock: flank, brisket, and rump (for hide-on calves: inside the flank, inside the brisket, and the rump).
b. It is important to sponge the areas in the order of least to most heavily contaminate in order, to avoid spreading any contamination (flank, brisket, and rump).
c. Steps to sponge:
    a. While holding the sponge bag at the top corner by the wire closure, tear off the clear, perforated strip at the top of the bag. Open the bag
    b. Remove the cap from the sterile BPD/BPW bottle, being careful not to touch the bottle opening. Do not contaminate the lid.
    c. Carefully pour the entire contents of the sterile BPD/BPW bottle (25ml) into the sponge bag to moisten the sponge.
    d. Close the top of the bag by pressing the wire closures together. Use hand pressure from the outside of the bag and carefully massage the sponge until it is fully hydrated (moistened).
    e. Carefully remove the moistened sponge from the bag with the thumb and fingers (index and middle) of your sampling hand.
    f. With the other hand, wipe the sponge over the enclosed sampling area (10 cm x 10 cm*) for a total of approximately 10 times in the vertical and 10 times in the horizontal directions. The pressure for sponging would be as if you were removing dried blood from the carcass; however, the pressure should not be so great as to crumble or destroy the sponge.
        i. Repeat this in the brisket area using the same side of the sponge used for the flank.
        ii. Repeat this in the rump area using the side of the sponge opposite that used for the flank and brisket
    g. After sponging the brisket and rump areas, carefully place the sponge back in the sponge sample bag, taking care not to touch the sponge to the outside of the sample bag.
    h. Press wire closures of the sponge bag together, expel excess air, then fold down the top edge of the bag 3 or 4 times. Secure the bag by folding the attached wire tie back against the bag. Place the closed sponge bag into the second bag and close the second bag securely
d. When a carcass is tested, each carcass will be considered a lot.

*A template for 100 cm^2 sampling area can be used, if so, immerse the sampling template in an approved sanitizing solution for at least 1-2 minutes. Just before sponging the first sample site on the carcass, retrieve the sampling template from the sanitizing solution. Shake excess solution from the template and let dry, then protect the portion of the template that will contact the carcass from contamination.

Sampling frequency

Sampling frequency for *E. coli* testing is determined by production volume. A very low volume establishment (not more than 6,000 heads per year) such Barakat Slaughter House LLC will sample lamb (the predominant species in the establishment) once per week, until at least 13 test results have been obtained. Barakat Slaughter House LLC will repeat the same sampling regime once per year.

Criteria for evaluation of test results

There are no enforceable regulatory standards for an acceptable level of generic *E. coli*. The simplest approach to interpreting the results is to use the 80th and 98th percentile values suggested by USDA as boundaries for marginal (at or above 80th percentile but below 98th percentile) and unacceptable (at or above 98th percentile). These values are shown in the table below.

Class of Product	Unacceptable value (at or above 98th percentile)	Marginal value (at or above 80th percentile but below 98th percentile)	No. of marginal samples allowed out of 13
Livestock carcasses (sponge sample)	3.1 CFU/cm^2	0 CFU/cm^2 (or detection limit)	3

For the last 13 samples, check, and if any had a result greater than the 98th percentile value, corrective action in slaughter/dressing procedures must be taken and documented. Possible corrective actions include adding an intervention treatment, slowing down the line speed, re-training employees, or requiring more frequent knife/saw sterilization.

If more than 3 results are in the marginal range, corrective action must be taken and documented. Also, if 3 or fewer results are in the marginal range, but the results show an increasing trend, corrective action must be taken.

PL-CE Program to Control *Escherichia coli* O157:H7 in Livestock

The following steps are taken during livestock slaughter to control *E. coli* O157:H7 contamination:

- An attempt to slaughter relatively clean livestock will be made.
- After slaughter, but before State/Federal inspection, the carcasses are trimmed to remove any visible contamination. This step is a CCP for trim zero tolerance for fecal material, ingesta, and/or milk.
- After inspection personnel performs their final inspection of the carcass, the carcasses are rinsed with warm water for at least 2 minutes (nozzle is generally no more than one foot from the carcass surface).
- The carcasses are rolled into the carcass chilling cooler to allow excess water to drip from the carcass for at least five minutes.
- Since Barakat Slaughter House LLC is slaughtering and trimming livestock, the N60 method will be used. The N60 method is used for sampling MT 60 - Livestock Manufacturing Trimmings that are Sampled from Lamb Slaughtered at the Establishment.

Sampling frequency

This *E. coli* O157:H7 testing program will verify the establishment's multiple intervention strategies are properly working. One sample will be tested for *E. coli* O157:H7 contamination quarterly (at least once every 3rd month - 4 times annually) plus 1 additional sample collected during the 2nd and 3rd (warmer) quarters for a total of 6 samples per year. A carcass is randomly selected. E. coli O157:H7 samples are randomly selected from anyone carcass available in the cooler. When a livestock carcass is tested, each carcass will be considered a lot. An analytical unit or sample test portion is 325 g. When testing livestock carcasses, Barakat Slaughter House LLC will hold the livestock carcass until the sample results are known.

Preparation

a. The N60 method will be used.
b. Supplies for sampling:
    a. A plastic caddy
    b. Sharp boning knife
    c. Hook
    d. Sterile gloves
    e. Sterile sampling bag

c. To obtain the most accurate results, samples should be analyzed as soon after collection as possible.
    a. Samples should be refrigerated and then shipped refrigerated (use gel packs); on the same day they were collected.
    b. A sample should arrive at the laboratory and be analyzed no later than the day after it is collected.
d. It is necessary to use aseptic sampling techniques and clean, sanitized equipment and supplies. Sanitize the sample work area surfaces.
e. Before sampling, thoroughly wash and scrub hands to the mid forearm. Use antibacterial hand soap. Put on new sterile gloves before taking the sample.
f. Mark each sampling bag with the following information before collecting samples:
    a. Establishment number
    b. Name of the person collecting the sample
    c. Date and time of sample collection
    d. Type of test and species sampled: ECC – E. coli Livestock Carcass.

Sampling procedures

- Randomly collect samples from one specific carcass in one specific production lot.
- Sanitize materials before collecting the samples
- Use sterile gloves and handle all sanitized surfaces to prevent cross-contamination of these surfaces
- Select samples by using the N60 method of sample collection and collect 60 individual pieces of raw lamb manufacturing trimmings
- Cut off a slice of the surface that is approximately 3 inches long by 1 inch wide and 1/8 inch thick from each of the 60 pieces.
- Lightly scoring the surface in 2 parallel cuts approximately 1 inch apart and 3-4 inches long may facilitate obtaining the appropriately sized sample piece.
- The priority is to collect samples from pieces of product taken from the original external surface of the lamb carcass (this is the outside surface of the carcass when it is first dehided).

(approximately 1 inch X 3 inches)

- Collect and place the sample slices in the sterile whirlpak sample bag. Ensure that 60 pieces are collected.
    - NOTE: 60 pieces that are 3 inches long by 1 inch wide and 1/8 inch thick should make the sample weigh approximately ¾ lb.

- Aseptically collect an additional 1 1/4 pounds (approximately) of available smaller pieces of lamb manufacturing trimmings from the same specific production lot. No need to cut or trim the pieces. Emphasize collecting pieces with as much surface area as possible. Place this product in a second whirlpak sample bag, making sure that the product is representative of the lot. Do not need to cut the pieces in any particular dimension, no need to count the pieces. The total weight of the 2 bags of samples should still be approximately 2 pounds.

Criteria for evaluation of test results

E. coli O157:H7 acceptable value is NEGATIVE (no *E. coli* O157:H7 detected). If positives are detected, report to the FSIS and initiate corrective actions such as segregate and destroy a lot of lamb.

Responsibilities

- The HACCP Coordinator is responsible for scheduling the analysis and make sure the samples are sent to the laboratory as per schedule.
- The HACCP Coordinator is responsible for receiving and reviewing the results. Results are recorded in the Escherichia coli generic or Biotype I in lamb carcass results record and the *Escherichia coli* O157:H7 in livestock results record to easily detect trends.

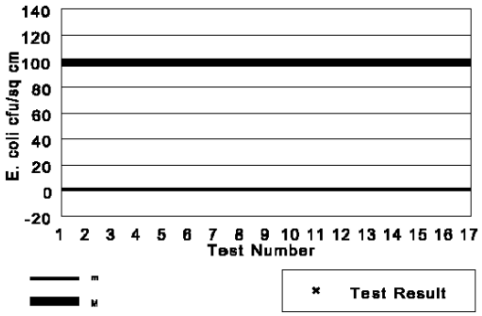
Statistical Process control

E. coli testing would serve to verify process control.

Specific techniques of statistical process control include the time plot, which charts measurements over time; this is the first technique to use with data collected over time and analyzed for patterns.

Further development is the control chart, which plots data over time but also displays an upper control limit for specific measurements, and a centerline, above and below which there is an equal number of sample results (the centerline is in effect a median average). A sample result above the upper control limit would indicate the likely

presence of a special cause of variation that should be addressed. Results within control limits indicate simply that the process is in control.



Test #	Date	Time Collected	Test Result (cfu/cm²)	Result unacceptable?	Result marginal?	Number marginal or unacceptable in last 13	Pass/Fail ?
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							

Positives

If a sample tests positive for E. coli O157:H7:

- Proper disposition of affected products. All affected product lots must be further processed to destroy the pathogen (e.g. cooking, irradiation), or the product could be destroyed. This could be done onsite or at another inspected establishment, renderer, or landfill. Disposition of the product must be documented in the Discarded record which must be accompanied by all the documents proving the movement and/or destruction
    - Records identifying the official establishment, renderer, or landfill operation that received positive product
    - Any movement of products that tested positive for E. coli O157:H7 should be under-documented company control (such as company seals) to safeguard the products. If such product is going to another official establishment, it may also move under FSIS control (e.g., under USDA seal or accompanied by FSIS form 7350-1).
    - Records showing that the positive product received proper disposition, including documentation from the official establishment, renderer or landfill operation where disposition occurred, showing that the product received proper disposition

Annex 1. Legal References

Lactic acid spray

Reference: Rodriguez G., Acuff G.R., Castillo. A. 2004. Development of a carcass sanitizing spraying system for small and very small slaughterhouses. Final report to FSIS/TPDS

Lactic acid rinses in combination with water wash, trimming and hot water reached reductions from 4.2 to 5.0 log CFU of *E. coli* O157:H7 /cm^2. Lactic acid is frequently used for beef carcass decontamination. Its ability to reduce pathogens or another organism of fecal origin has been studied extensively showing that lactic acid has a strong antibacterial effect. Besides the antimicrobial effect, the studies reviewed show that the use of lactic acid as a meat sanitizer does not have a significant impact on sensory and/or physic-chemical characteristics.

Table 4. Effect of lactic acid spray using the Sanitizing spraying system on the ability of a small beef and a small pork slaughterhouse to meet current *E. coli* FSIS standards

	No. carcasses sampled	Mean *E. coli* cfu/cm^{2a}		No. carcasses between m and M^b	
		Control^c	Sprayed	Control^c	Sprayed
Beef	24	150	0.5	16	1
Pork	24	3	<0.2	0	0

[a] For each carcass, the *E. coli* count represents the average count from the rump, clod and brisket regions in beef or the jowl, ham and belly regions in pork, an area of 100 cm^2 from each region was sampled using a sponge to follow the FSIS method.

[b] The FSIS standards stipulates N = 13, c = 3, m = not detectable, M = 100 cfu/cm^2 for beef carcasses and N = 13, c = 3, m = 10 cfu/cm^2, M = 10,000 cfu/cm^2 for pork carcasses.

[c] Control carcasses were sampled after trimming and washing, immediately before chilling

Zero Tolerance

FSIS DIRECTIVE 6420.2 Revision 2. 2019. VERIFICATION OF PROCEDURES FOR CONTROLLING FECAL MATERIAL, INGESTA, AND MILK IN LIVESTOCK SLAUGHTER OPERATIONS

FSIS enforces a "zero tolerance" standard for visible fecal material, ingesta, or milk on carcasses and parts at the time of inspection.
One approach that FSIS takes to minimize the occurrence of pathogens on meat is to verify that feces, ingesta, and milk do not contaminate livestock carcasses and parts, or if they do, that they are properly removed.

Cold storage temperatures

According to the hazard analysis, the potential hazard at cold storage is the presence and growth of *Salmonella sp*. To control that hazard, the meat will be received and stored at ≤41°F. The temperature of the coolers will be monitored to ensure it is under ≤41°F. Some studies have shown that the minimum growth temperature for these organisms is approximately 6-7°C (42.8 – 44.6 °F).

Reference Tompkin, R.B. 1996. The significance of the time-temperature to the growth of foodborne pathogens during refrigeration at 40-50°F. Presented during the Joint FSIS/FDA Conference on Time/Temperature. November 18, Washington, DC.

Minimum growth temperatures for selected foodborne pathogens

	Minimum growth temperatures	
	°C	°F
Salmonellae	7	44.6
Pathogenic *E. coli*	7-8	44.6-46.4
L. monocytogenes	-0.4	31.3
Y. enterocolitica	-1.3	29.7
Campylobacter jejuni	32	89.6
Staphylococcus aureus	7	44.6
Bacillus cereus		
psychrotrophic strains	4	39.2
Clostridium perfringens	12	53.6
Clostridium botulinum		

nonproteolytic	3.3	38
proteolytic	10	50

Chilling

Reference: FSIS Guidance for Minimizing the Risk of Escherichia coli O157:H7 and Salmonella in Beef Slaughter Operations. 2002.

Measures to control the holding temperature of the carcass after the final wash or after any CCP designed to reduce pathogenic organisms on carcasses should be in place.

- Control of the temperature will ensure that the reduction in microbial load effected by the CCP will be maintained. In addition, to retain the log reduction in microbial load as a result of the CCP and to prevent re-contamination, other sanitation control methods should be used.
- All carcasses need to begin chilling within 1 hour from bleed-out. All variety meats need to begin chilling within 1 hour after removal from the carcass.
- Refrigeration parameters should be defined, established, and recorded so that carcasses reach a temperature of 40 °F or less within 24 hours and maintained on all products.
- Carcass temperature should be taken and recorded daily from 5 randomly spaced locations, usually 1 mm under fascia on the inside round.
- To prevent cross-contamination and to allow efficient air circulation, cooler storage rails must be placed at least two feet from refrigeration equipment, walls, columns, and other fixed parts; traffic or header rails during transport, at least 3 feet from the walls. Sides of beef should be placed in the chiller so that there is no contact between them to allow efficient air circulation. Condensation should be prevented or minimized.
- Finished product storage areas should not exceed 40 °F.
- Aged beef should be held no longer than 7 days at a temperature not exceeding 40 °F.
- Carcasses for hot boning (deboned before chilling) should be transported to the boning areas directly from the slaughter department. The boning room environmental temperature should remain at 50 °F (10 °C) or lower, and boning should not be delayed.
    - Raw materials should be placed under refrigeration until the product can enter the flow of operations.

- Within one hour after the first cut is made, the product should be placed under refrigeration or cooked.
- The temperature at the center of the product placed under refrigeration should reach 40 °F (4.5 °C) or lower.
- At a minimum, work areas and knives, and other equipment used for boning should be cleaned and disinfected during each break or after each instance of contamination.
- Temperatures maintained during the boning operation should be monitored and recorded.

Reference: Hudson A. J., Olsen L., Cook R. 2011. Standardization of parameters for pathogen control in food: Minimum growth temperatures of foodborne pathogens and recommended chiller temperatures. http://www.mpi.govt.nz/news-and-resources/publications/

A summary of the minimum growth temperatures on food for *Listeria monocytogenes, Yersinia enterocolitica*, *Salmonella,* shiga toxin-producing *Escherichia coli* (STEC), *Staphylococcus aureus, Campylobacter,* and *Clostridium perfringens* is shown in Table 1.

Table 1. Minimum Recorded Growth Temperatures of Pathogens on Foods

Pathogen	Minimum growth temperature (°C)
Campylobacter jejuni	25[1]
Staphylococcus aureus	6.7[1]
Salmonella	6.7
STEC	6
Clostridium perfringens	12.8
Listeria monocytogenes	-1.5
Yersinia enterocolitica	-1.5

[1] A caution regarding these data is given under Tables 3 and 4.

It was concluded that of the species considered, *Listeria monocytogenes* and *Yersinia enterocolitica* are those which can grow at the lowest temperatures. Both species have been recorded as growing at 0°C (32 °F) or less in several peer-reviewed papers. It is clear, therefore, that no storage temperature other than one which would freeze food is sufficiently low to prevent the growth of these two species, although the rate of growth is slowed at low temperatures.

Salmonella, STEC, and *S. aureus* have similar low-temperature growth characteristics and the growth of these organisms would be prevented by sufficiently low temperatures. In the case of *S. aureus,* the temperature limit for growth is not the same as for toxin production. With some exceptions in the literature, the minimum growth temperature for these three organisms is approximately 6-7°C (42.8 – 44.6 °F), but toxin production by *S. aureus* has not been shown below 10°C (50 °F).

Reference: FDA Food Code 2017. Specifications for Receiving. 3-202.11 Temperature.

A. Except as specified in (B) of this section, refrigerated, TIME/TEMPERATURE CONTROL FOR SAFETY FOOD shall be at a temperature of 5oC (41oF) or below when received

Thermometers calibration

Reference: Flores, N.C. and Boyle E.A.E. Thermometer Calibration Guide Kansas State University Agricultural Experiment Station and Cooperative Extension Service. https://bookstore.ksre.ksu.edu/pubs/MF2440.pdf

It is recommended that process or product temperature monitoring equipment be calibrated daily, before use. New equipment must be calibrated upon receipt and before putting into service. Also, thermometers that have been dropped on the floor or used frequently must be calibrated more often.

E coli program references

- University of Wisconsin-Madison Center for Meat Process Validation. Interpreting Results of Testing Carcasses for Generic (Biotype I) E. coli. https://meathaccp.wisc.edu/Model_Haccp_Plans/assets/beef/Beef_Monitoring%20Guidance.pdf
- University of Wisconsin-Madison Center for Meat Process Validation. Pre-Requisite Program to Control ESCHERICHIA COLI O157:H7 in Beef https://meathaccp.wisc.edu/Model_Haccp_Plans/assets/beef/Pre-requisite_Program_to_Control_Ecoli_O157H7_Data_Table.pdf
- FSIS Compliance Guideline for Minimizing the Risk of Shiga Toxin-Producing Escherichia coli (STEC) in Raw Beef (including Veal) Processing Operations 2017 Compliance Guideline

- FSIS Compliance Guideline for Establishments Sampling Beef Trimmings for Shiga Toxin-Producing Escherichia coli (STEC) Organisms or Virulence Markers. August 2014