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 <p>agriculture, forestry & fisheries</p> <p>Department: Agriculture, Forestry and Fisheries REPUBLIC OF SOUTH AFRICA</p>	<p>DEPARTMENT OF AGRICULTURE, FORESTRY AND FISHERIES DIRECTORATE: VETERINARY PUBLIC HEALTH</p>
	<p>PROCEDURE MANUAL: MICROBIOLOGICAL MONITORING OF IMPORTED MEAT</p>
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<p>FIRST DOCUMENT</p>	<p>1 June 2009</p>
<p>APPROVED BY:</p>	<p>Director Veterinary Public Health</p>
<p>APPROVAL DATE:</p>	<p>21 October 2011</p>
<p>EFFECTIVE DATE:</p>	<p>4 November 2011</p>
<p>NO OF PAGES:</p>	<p>21</p>

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A. PURPOSE OF THIS PROCEDURE MANUAL

To lay down the necessary actions to be taken by officials during sampling and microbiological testing of imported unprocessed/raw meat* to ensure compliance with import requirements as stipulated in the relevant import permits and in legislation mentioned below.

(*As defined in the Meat Safety Act, 2000 (Act No. 40 of 2000))

B. SCOPE

This procedural manual must be implemented at all inspection sites i.e. City Deep, OR Tambo International Airport, Durban, Cape Town, Port Elizabeth and at any other site approved by the Director Veterinary Public Health.

This Procedure Manual must be read in conjunction with the Procedure Manual on the Inspection of Imported Meat. (Under revision)

LEGISLATION

Meat Safety Act, 2000 (Act No 40 of 2000) and Animal Diseases Act, 1984 (Act No 35 of 1984) and Regulations promulgated there-under. The Meat Safety Act, 2000 (Act No 40 of 2000) and Animal Diseases Act, 1984 (Act No 35 of 1984) the Regulations promulgated there-under are available on the following website: <http://www.daff.gov.za> → divisions → Food and Veterinary Services → Import/Export → Legislation

Copies of the Meat Safety Act, 2000 (Act No. 40 of 2000) and the regulations promulgated there-under can also be obtained by contacting Mr. Du Preez at tel 012 319 7628 (International tel. +27 12 319 7628), JohanDP@daff.gov.za or fax no 012 329 6892.

Copies of the Animal Diseases Act, 1984 (Act No 35 of 1984) and the regulations promulgated there-under can also be obtained by contacting Mr. Motsisi at tel 012 319 7502 (International tel. +27 12 319 7502), ThaboMo@daff.gov.za or fax no 012 329 6892.

C. PURPOSE OF BACTERIOLOGICAL TESTING

The purpose of performing bacteriological testing on imported meat is to identify specific pathogens and determine the actual bacterial load and thereby give an indication of the condition and quality of the consignment, the hygiene at slaughter and transport conditions, as well as maintenance of the cold chain.



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D. IMPORTED COMMODITIES TO BE TESTED

1. The following imported commodities may be subjected to bacteriological testing prior to release:
 - Trimmings of all species
 - Anatomically unrecognisable cuts (e.g. head meat) of all species
 - Mechanically Recovered Meat (MRM)/Mechanically Deboned Meat (MDM) of all species
 - Carcasses of all species
 - Recognizable cuts of all species
 - Offal of all species

 - Poultry
 - Carcasses
 - Portions
 - Offal
 - Skin
 - Feet
 - Mechanically Deboned Poultry (MDP)

3. If there is reason to doubt the safety of imported meat, i.e. signs of thawing or break in cold chain, the inspecting official may collect samples from any imported meat for bacteriological testing.

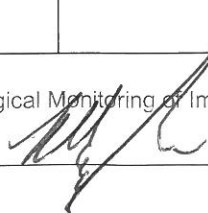
4. **Sampling frequency may be increased or decreased based on the results of previous microbiological analyses, the records for which are kept. The veterinary official at the inspection site must make a recommendation to the DVPH who will then decide, based on the trend, if sampling frequency may be decreased.**

E. ORGANISMS OF CONCERN

- **Aerobic colony count**

Table E1

Commodity	Number of samples	Allowable No. of marginally acceptable (c)	Minimum m cfu/g	Maximum M cfu/g	Test method (Most recent edition)
Trimmings (all species), MDM/MRM/MDP (all species), anatomically unrecognisable cuts, poultry skin and offal	5	3	1X10 ⁶ cfu/g	5X 10 ⁶ cfu/g	SANS/ISO 4833 or Equivalent validated methods



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(all species)					
Carcasses of all species, Anatomically recognisable cuts (all species and poultry feet	5	3	1X 10 ⁵ cfu/g	1X10 ⁶ cfu/g	SANS/ISO 4833 or Equivalent validated methods

• ***E. coli***

Table E2

Commodity	Number of samples	Allowable No. of marginally acceptable (c)	Minimum m cfu/g	Maximum M cfu/g	Test method (Most recent edition)
Trimblings (all species), MDM/MRM/MDP (all species), anatomically unrecognisable cuts, poultry skin and offal (all species)	5	3	1X10 ³ cfu/g	5X 10 ³ cfu/g	SANS/ISO 16649-2 or Equivalent validated methods
Carcasses of all species, Anatomically recognisable cuts (all species) and poultry feet	5	3	1X 10 ² cfu/g	1X10 ³ cfu/g	SANS/ISO 16649-2 or Equivalent validated methods



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- **Other Salmonella**
- ***S. typhi*; *S. enteritidis*; *S. typhimurium* must be absent/25g & c=0**

Table E3

Commodity	Number of samples	Allowable No. of marginally acceptable (c)	Minimum m cfu/g	Maximum M cfu/g	Test method (Most recent edition)
Trimmings (all species), MDM/MRM/MDP (all species), anatomically unrecognisable cuts, poultry skin and offal (all species)	5	3	Absent in 25g	-	SANS/ EN/ISO 6579 or Equivalent validated methods
Carcasses of all species, Anatomically recognisable cuts (all species) and poultry feet	5	3	Absent in 25g	-	SANS/ EN/ISO 6579 or Equivalent validated methods

F. APPARATUS AND MATERIALS

1. Cooler container

Appropriate size cooler container and sufficient ice bricks. Good quality insulated cooler containers (polystyrene or other types) are efficient. As a further measure to keep samples as close as possible to 0°C, ice in waterproof plastic bags can be layered inside the container and the samples placed between the layers. Samples must reach the laboratory before the temperature rises above 4°C. For chilled products, temperature must not rise above 7 °C.

2. Sample bags

Stomacher bags (80 ml or 400 ml) or sterile sample bags are recommended or a bigger size for poultry carcasses.



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3. Cotton wool

Cotton wool moistened with F919SC/plain water/F10SC must be used to clean /rinse /disinfect scalpels, forceps, chisel, bits and band saw.

4. F919SC Biofilm remover

Cotton wool moistened with F919SC Biofilm remover must be used to clean sampling equipments.

5. Water

Cotton wool moistened with water must be used to rinse sampling equipments after cleaning with F919SC.

6. F10SC Disinfectant

Cotton wool moistened with F10SC must be used to disinfect equipments after rinsing with water.

7. Scalpel

A scalpel with disposable blades to cut a triangle (two sides of it) into the plastic wrapping after disinfecting the surface with cotton wool moistened with F10SC if wrapped product is sampled. The bigger size scalpel is more convenient to use.

8. Scissors

May be used to cut straps around the boxes

9. Forceps

A standard forceps (\pm 125 mm long)

10. Electric drill or hand drill with appropriate wood bit

A variable speed electric drill with maximum speed in use of 900 r/min and a sterile wood bit of 14 mm or 16 mm diameter.

11. Sterile wood chisel

Should have 20 mm width

12. Hammer or plastic mallet

To be used with a wood chisel



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13. Rubber band

Used for securing sample bags with samples.

14. Pencil

Pencil with permanent (edible) ink for marking of the sample bags

15. Band saw

Note:

Always record:

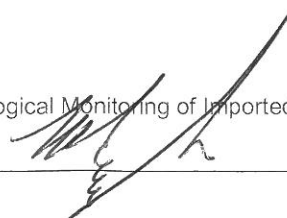
- Name of sampling official
- Port of entry
- Date of sampling
- Time (hour and minutes) of sampling,
- Container number
- Import permit number
- Country of origin
- Product sampled.
- Temperature at sampling

Due to the fact that this information will be provided on the sample submission form, which in some cases will have to accompany the lab submission form, only the date and container number need only be written on the sample bag. The completed form must be handed to the laboratory representative during sample delivery. A stamped and signed copy of this form must be retained by the sampling official for records.

14. Sterile gloves

Sample should never be touched with bare hands. A new pair of sterile gloves should be worn for each box sampled where there is direct contact with a sample. Same pair of sterile gloves may be used per container where there is no direct contact with samples.

N.B. Between 5 sets of samples collected from the same consignment, rinse clean and disinfect the equipment which comes into contact with the sample by F919SC, water then F10SC.



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G. COLLECTION OF SAMPLES

1. Only State Veterinarians, meat inspectors, environmental health officers and animal health technicians who have received the relevant training in meat examination and are employed by the Department of Agriculture, Forestry and Fisheries, Directorate Veterinary Public Health/Animal Quarantine and Inspection Services/Animal Health and authorised in terms of the above legislation may collect and handle samples for the bacteriological testing of imported meat.
2. Five (5) boxes/units must be selected randomly for sample collection from each container by the veterinary official and may not be pre-selected by any other party.
3. **One (1) sample must be taken from each box. Each sample must weigh at least 50 grams. There must be 5 samples in total from each container.**
4. During sample-collection, general principles and techniques of sampling should be adhered to. Samples must be taken in a controlled area in a cold store and kept at appropriate temperatures to avoid the deterioration thereof during transport to the laboratory. The temperature of the sample should not rise above 4⁰C and for chilled products the temperature should not rise above 7⁰c. Contamination should be avoided at all times. Samples should be collected in sterile sample bags. Sterile gloves should be worn during sample collection. Use a new pair for each consignment where there is no direct contact with a sample
5. Sampling from portions/cuts including poultry feet:

Open the packaging. Aseptically open the wrapping. Where necessary, disinfect the surface of the plastic wrapping with alcohol and use the scalpel and forceps to cut it open. Care should be taken not to let the outer surface of the plastic cover touch the product. For individually frozen portions, remove portion/s of ±50 grams, and place it/them inside a sterile sample bag, using a sterile forceps. A new pair of sterile gloves should be worn every time the sample is removed by means of hands to avoid cross contamination. Properly identify the sample as discussed under F 13. Fold and secure the sample with rubber band. Place the sample in a cooler-bag between the layers of ice. If portions in a box are difficult to separate, sample as discussed under G 8. The sample submission form must accompany the sample. Immediately after sampling the sample must be transported to the laboratory and be analysed within 36 hours of sampling.
6. Sampling from MRM/MDM/MDP, trimmings, anatomically unrecognisable cuts and poultry skin:

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Open the packaging where applicable. Aseptically open the wrapping. Using the wood chisel and a hammer cut a block of \pm 50 grams at the corner. Proceed as discussed under G 5.

7. Sampling of poultry carcasses (the laboratory will sample the neck skin):

Open the packaging. Aseptically remove a carcass from the box and place it in a sterile sample bag (even when individually packed). Close the bag and secure with an elastic band. Proceed as discussed under G 5 for sample packaging.

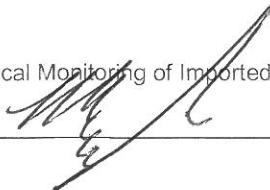
8. Sampling by means of electric/hand drill and appropriate wood bit

This method may not be used on individually frozen/loose portions and poultry carcasses. Sample frozen carcasses of other species, MDM/MRM, chicken skins and portions which are difficult to separate, using this method. Refer to VPN No 15 for sampling sites on carcasses. For this operation, set the speed of the drill at about 900 r/min. Using a forceps collect the tissue and place inside the sterile bag. The apparatus must not cause overheating or contamination of the sample. Proceed as discussed under G 5 for sample packaging.

9. Sampling by means of Band saw

This method may not be used on individually frozen/loose portions and poultry carcasses. Sample frozen carcasses of other species, MDM/MRM/MDP, chicken skins and portions which are difficult to separate, using this method. Before use the blade and stainless steel surface must be cleaned with F919SC, rinsed with water and disinfected with F10SC. The operator must wear safety goggles and sterile disposable gloves. Sample should never be touched with bare hands. A new pair of sterile gloves should be worn for each box sampled where there is direct contact with a sample. Same pair of sterile gloves may be used per container where there is no direct contact with samples. Cut off the required corner of the block of meat (50 gram) and slip it into a sterile sample bag. Close the sample bag by tying a knot or by putting a rubber band around the mouth of the bag. Ensure that the sample bag is appropriately marked as previously discussed. Proceed as discussed under G 5 for sample packaging.

NB. Sample submission forms must be obtained beforehand. The collection of the samples must be done with the necessary precautions as far as sterility is concerned and samples must be kept on ice till delivered to the laboratory. Arrangements must be made with the laboratory prior to the collection of the samples, to confirm the logistics and correct laboratory techniques used.



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H. LABORATORY REPORT

The laboratory report should contain the following details:

- Time and date of receipt of the sample at the laboratory and temperature of sample.
- Proper identification of the sample as indicated on the sample submission form.
- Confirmation that the prescribed collection method was followed in the collection of the sample. (If the sample is collected by personnel of the laboratory doing the analysis.)
- Confirmation that the correct handling procedures were followed at the laboratory.
- Date of analysis at the laboratory.
- Test method.
- Time of reading results.
- Results of the analysis.
- Range of criteria for evaluation: (See tables E1 to E3)

I. APPROVED LABORATORIES

1. The following laboratories are currently used for microbiological testing of imported meat and the list is subject to change:

Table I1

Name of laboratory	Contact person	Contact number
Stellenbosch	Dr Annelize Jonker	021 887 0324
Swift laboratory	Anza Bester	021 683 8436
Addington laboratory	Leon Taylor	031 327 6742
Onderstepoort Vet. Institute	Dr. Awoke	012 529 9382

2. Laboratories must be approved in writing by the Director Veterinary Public Health to handle samples from imported consignments. Any requests to use laboratories other than those specified above, must be sent to the Director Veterinary Public Health for approval. Requested laboratories will be subjected to an inspection visit by the relevant officials from Department of Agriculture, Forestry and Fisheries.

J. CERTIFICATE OF REJECTION GIVES THE FOLLOWING OPTIONS:

- Destruction of the consignment at an approved high hazardous landfill site, under the supervision of Directorate Veterinary Public Health and at the importers expense. This is only acceptable if there is sufficient capacity at the applicable site to handle the rejected product and with evaluation of the rejected product's disease risk. 24 hours notice must be given to the State Vet at the inspection site prior to dispatch



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- Any other method as may be approved by the National Executive Officer and / or Director Veterinary Public Health.

K. INTERPRETATION OF RESULTS AND ACTIONS

1. All products, **EXCLUDING MDM/MRM/MDP**, tested positive for any one of: *Salmonella typhi*, *Salmonella enteritidis* or *Salmonella typhimurium* must be sent back to country of origin or condemned as prescribed. Refer to Annex 1-5.
2. **MDM/MRM/MDP**-In cases where microbiological criteria as indicated on tables E1–E3 are met, release for human consumption. Where microbiological criteria are exceeded for **aerobic colony counts, *E.coli* and *Salmonella* (all strains)**, release for heat processing. Refer to Annex1.
3. **Trimmings** - In cases where microbiological criteria as indicated on tables E1 – E3 are met, release for human consumption. Where microbiological criteria are exceeded for aerobic colony counts, *E.coli* and other *Salmonella*, release under Red Cross Permit for heat treatment (Veterinary control required) or condemn as prescribed. Refer to Annex2.
5. **Carcasses, cuts and offal excluding poultry**- In cases where microbiological criteria as indicated on table E1 – E3 are met, release for human consumption. Where microbiological criteria are exceeded for aerobic colony counts, *E.coli* and other *Salmonella*, release under Red Cross Permit for heat treatment (Veterinary control required) or condemn as prescribed. Refer to Annex3.
6. **Poultry carcasses, poultry portions, poultry feet and poultry offal, and poultry skins**- In cases where results are negative for *S. typhi*, *S.enteritidis* and *S. typhimurium*, release for human consumption. In cases where results are positive for *S. typhi*, *S.enteritidis* and/or *S. typhimurium*, sent back to country of origin or condemned as prescribed. Refer to Annex 4.
7. **Special cases which require the decision by the DVPH**- In cases where microbiological criteria as indicated on table E1 – E3 are met, release for human consumption. Where microbiological criteria are exceeded for aerobic colony counts, *E.coli* and other *Salmonella*, release for human consumption, or release under Red Cross Permit for heat treatment (Veterinary control required), sent back to country of origin or condemn as prescribed. Refer to Annex5.

E.g. results for aerobic colony count and *E.coli*:

>M allow only up to 3/5 samples or boxes. Results of 4/5 or 5/5 samples >M, (Criteria not met).

Between m and M [$>m$, but $\leq M$] allow only up to 3/5 samples or boxes. Results of 4/5 or 5/5 samples or boxes between m and M [$>m$, but $\leq M$], (Criteria not met)

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E.g. results for *Salmonella*

For all products excluding **MDM/MRM/MDP**, samples tested positive for **other *Salmonella***, allow only up to 3/5. Positive results of 4/5 or 5/5 samples or boxes, criteria are not met.

For all products excluding **MDM/MRM/MDP**, any positive sample for ***S.typhi*, *S.enteritidis*** and/or ***S. typhimurium***, send back to country of origin or condemn as prescribed.

N.B. *Salmonella* must be typed.


Where:

'm' : - A defined value separating good result from marginally acceptable result.
(Above this is marginal)

'M' : - The maximum value for marginal result. (Above this is unacceptable).

'n' : - Number of samples/boxes per consignment =5.

'c' : - Number of marginal samples [$>m$, but $\leq M$] allowed per consignment = 3 for aerobic colony count, *E.coli* and other *Salmonella*
For *S.typhi*, *S.enteritidis* and *S. typhimurium* = 0



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**agriculture,
forestry & fisheries**

Department:
Agriculture, forestry & fisheries
REPUBLIC OF SOUTH AFRICA

Directorate Veterinary Public Health

(a)

Postal address:

Telephone:

Fax:

Date:

Reference:

To :

CERTIFICATE OF REJECTION/ORDER FOR REMOVAL OF AN IMPORTED FRESH MEAT
CONSIGNMENT

We hereby inform you that the consignment described hereunder has been rejected in terms of the Meat Safety Act 2000 (Act No. 40 of 2000) and /or Animal Diseases Act 1984 (Act No. 35 of 1984). This consignment will not be allowed entry into South Africa.

Country of origin:

Plant of origin:

Description of consignment:

South African veterinary import permit number and date:

Container number(s):

Importer:

Currently stored at:

Reason(s) for rejection:

The importer has 30 days from the date of this notice to dispose of this consignment by one of the under mentioned methods:

1. Destruction, under the supervision of this Directorate and at the importers expense, of the consignment at the following approved hazardous landfill site , 24 hours notice is required prior to dispatch.
2. Any other method as may be approved by the National Executive Officer and / or Director Animal Health.

The importer has 14 days from the date of issue of this certificate to accept this decision, or to appeal to the Minister of the Department of Agriculture, Forestry and Fisheries. Should these conditions not be met, the entire consignment will be disposed of at the discretion of the National Executive Officer. All costs incurred shall be borne by the importer.

Dr

Place:

State Veterinarian

Stamp:

Directorate:



agriculture, forestry & fisheries

Department:
Agriculture, Forestry and Fisheries
REPUBLIC OF SOUTH AFRICA

SAMPLE SUBMISSION FORM (IMPORTED MEAT)

PART ONE TO BE COMPLETED AT SAMPLING POINT

Name of sampling official:	<input type="text"/>	Date of Sampling:	<input type="text" value="/ /20"/>
Port of Entry:	<input type="text"/>	Time of Sampling:	<input type="text" value="h"/>
Container Number:	<input type="text"/>	Import Permit number:	<input type="text"/>
Country of origin:	<input type="text"/>	Product:	<input type="text"/>
Temperature at sampling:	<input type="text"/>	Importer:	<input type="text"/>

Comment:

BACTERIA TO BE TESTED FOR: (make an cross x)

Aerobic colony count <input type="checkbox"/>	E.coli <input type="checkbox"/>	Other Salmonella <input type="checkbox"/>	S. Typhi <input type="checkbox"/>
S. Enteritidis <input type="checkbox"/>	S. Typhimurium <input type="checkbox"/>		

PART TWO TO BE COMPLETED BY THE ANALYSING LABORATORY

Date of sample delivery:	<input type="text" value="/ /20"/>	Time of sample delivery:	<input type="text" value="h"/>
Temperature of the sample at delivery:	<input type="text"/>		
Received by: (Name of laboratory representative):	<input type="text"/>		

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Designation:

Comments

Signature:

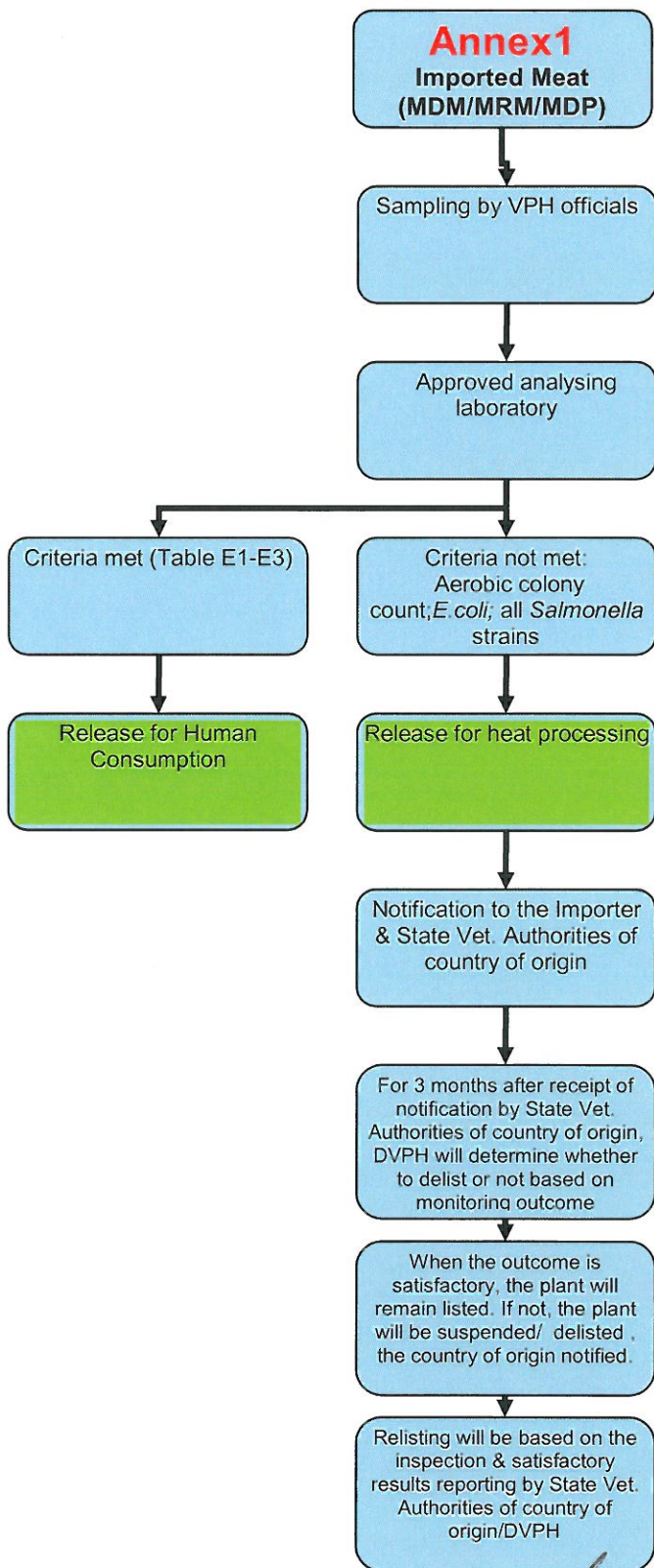
Date:

Approved by:

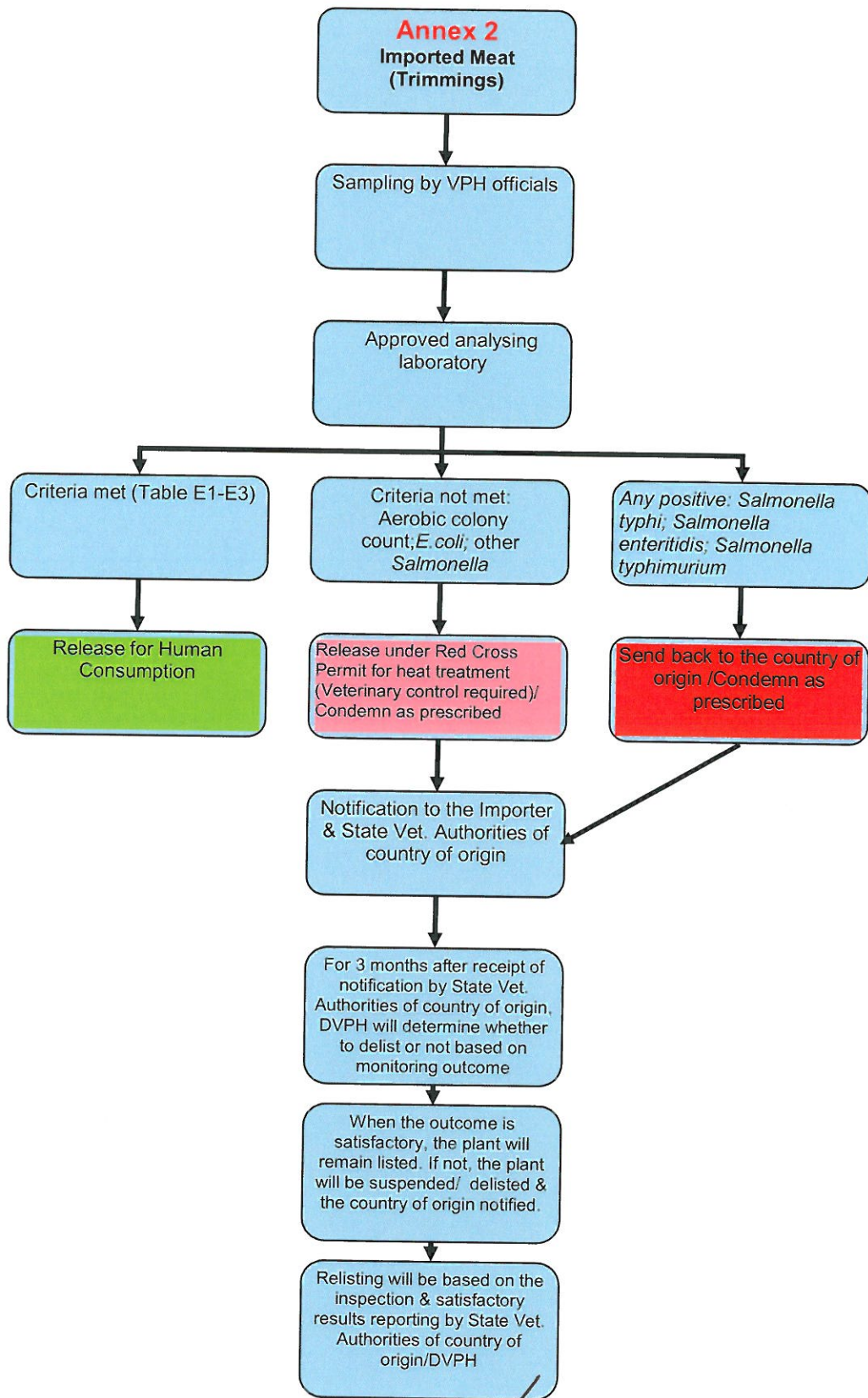
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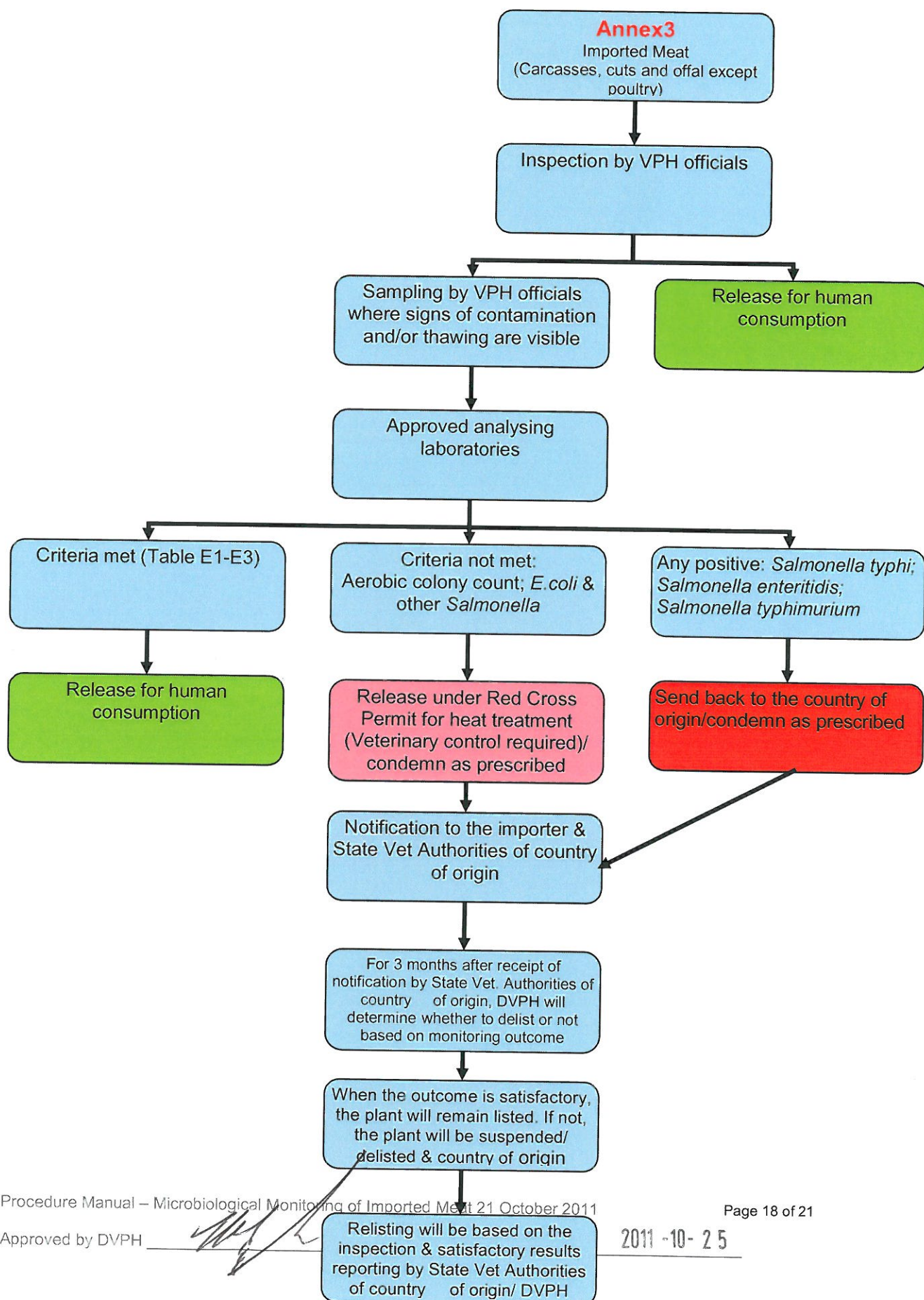
3 Copies - Importers copy / Laboratory copy / Veterinary copy

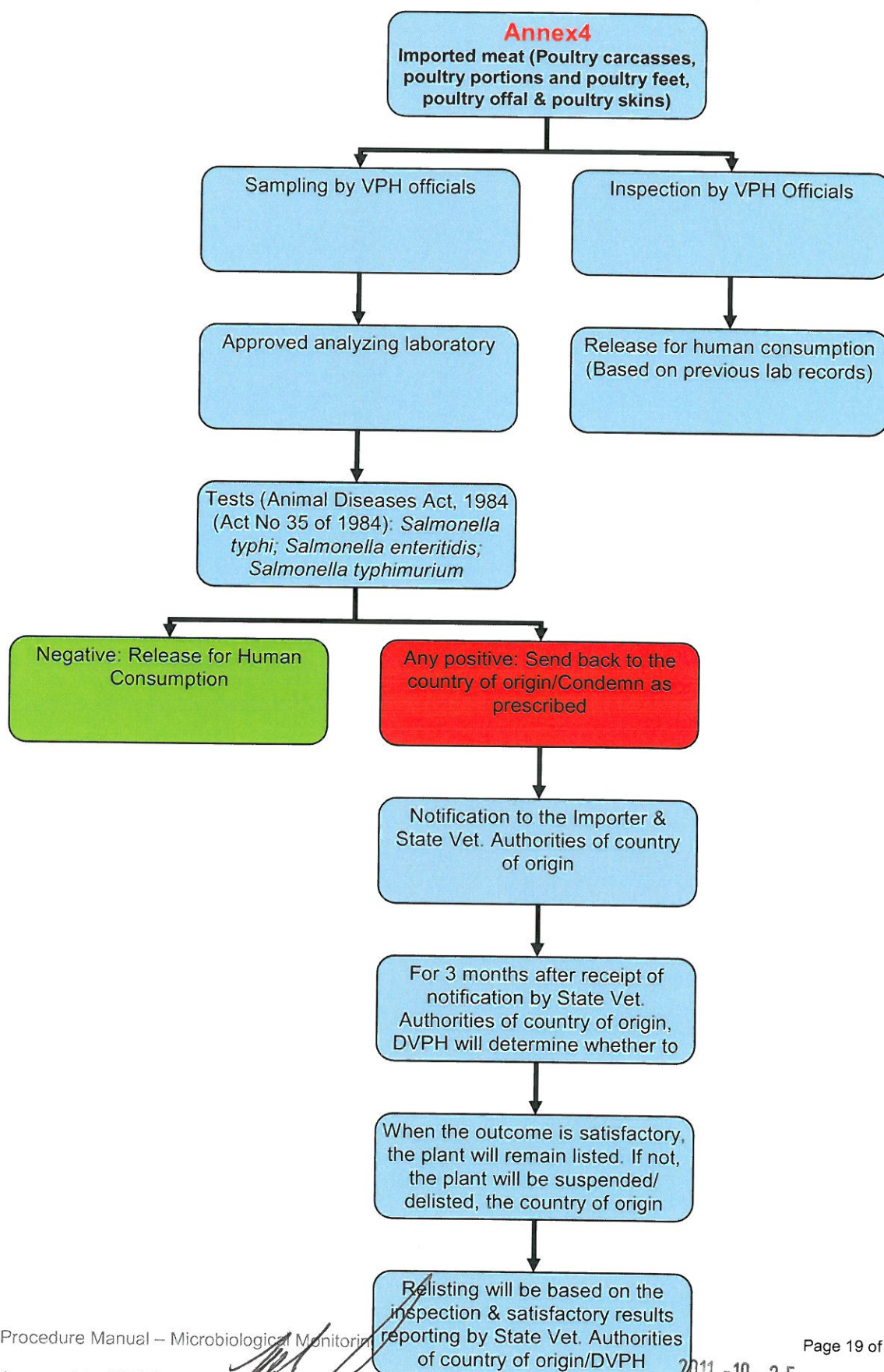


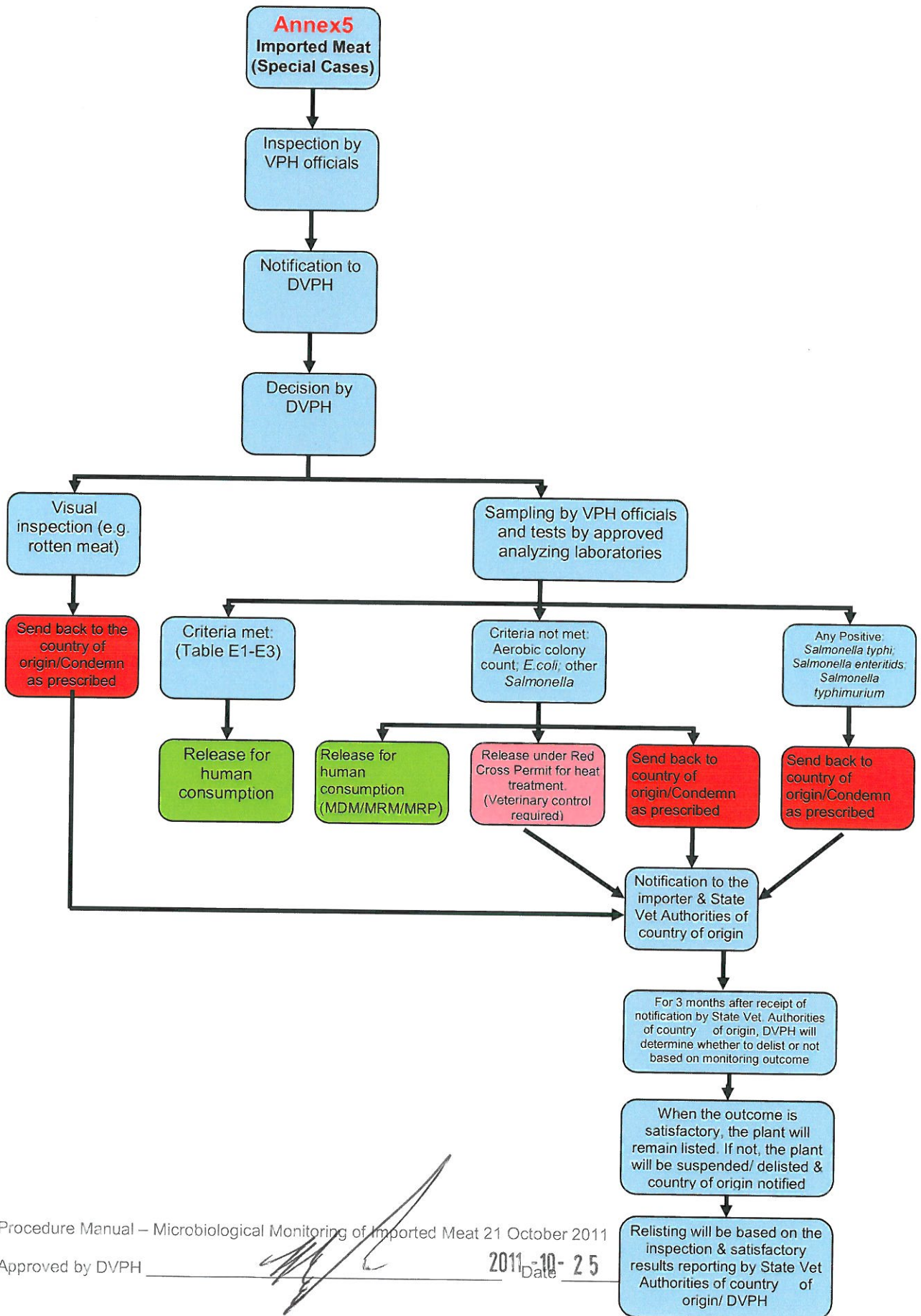


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