Foyle – Gloucester

Environmental Permit Application

EPR Ref: UP3700PX/A001

Site Operations: Manufacturing Process & Site Infrastructure

Document Ref: Attachment B.3.8

Site Operations: Manufacturing Process and Site Infrastructure

Foyle Food Group operates a slaughtering facility on a 13,000 M^2 site located at Forest Vale Road, Forest Vale Industrial Estate, Cinderford, Gloucester, GL14 2PH, United Kingdom. Activities at the site include the slaughter of cattle and the dressing, chilling and quartering of beef carcasses, the cutting of beef and the harvesting of offal, cod fat and bones, the packing of beef, beef offal, cod fat and bones into vacuum pouches and lined cardboard boxes.

The east of the site is bounded by the B4227 main road. The south of the site is bounded by a car breakers yard, while the north is bounded by an industrial facility. The west boundary of the site is made up of a mixture of trees, hedgerows and the Cinderford Brook, beyond which is the Severn Trent Municipal Plant.

The facility has the capacity to slaughter more than 50 tonnes carcass per day.The actual tonnage of finished product produced in 2018 was 20,712 tonnes.

The site employs approximately 230 staff and is approximately 13,000 M^2 in size, with a weekly slaughter in excess of 1500 cattle from which carcase beef is processed.

The sites effluent treatment plants discharge volume for 2018 was 21,318 M^3, which equates to an average discharge of 58 M^3 per day. The 2019 annualized discharge volume, based on the first 24-week of the year, was calculated to be 28,043 M^3, which equates to an average discharge of 77 M^3 per day. The rate of treated effluent discharge is limited to 100 M^3 per day as per the site discharge licence.

All waste is segregated for removal to off-site recycling and waste facilities as appropriate.

At present, the produces the following products:

- Topside
- Silverside
- Top Rump
- Rump
- Loin
- Matured loin
- Fillets
- Stewing heel
- Stewing shin
- Briskets
- LMC
- Finest Sirloin joints
- Bola
- Chuck ribeye
- Semi LMC
- Body fat
- Bone in fore-rib
- Stewing hearts
- Stewing feathers
- Healthy eating Silver
- Steak trim
- Standard trim
- Value trim
- Knuckle
- Rolled ribs
- Chuck heart
- Boneless rib eye
- Cod Fat
- Stewing ribeye
- Stir Fry
- H/E 98vl (mince)

Appendix A details the factory process flow from Cattle inwards to final product at despatch.

Appendix B details the process flow for individual areas of the process and include the CCP's (Critical Control Points), showing where operational monitoring and controls are in place through-out the production process.

Appendix C is an illustration of the main site infrastructure.

1.0 Manufacturing Process

All production is carried out internally. This consists of the following processing techniques and unit operations as listed in the Best Available Techniques in the Food, Drink and Milk Industries (August 2006 & January 2017):

- Materials handling and storage (A.1),
- Washing (A.4),
- Cutting, slicing, chopping, mincing, pulping and pressing (B.1),
- Cooling, chilling and cold stabilisation (G.1),
- Packing and filling (H.1),
- Cleaning and disinfection (U.1),
- Energy generation and consumption (U.2),
- Water use (U.3),
- Vacuum generation (U.4),
- Refrigeration (U.5),
- Compressed air generation (U.6).

A process flow diagram showing production flow is detailed in Appendix A.

The manufacturing process is split into the following:

1.1 Intake/Lairage

Cattle scheduled for slaughter are delivered to the site by road. On arrival, the passport and FCI documentation for the animals is checked; only those animals having the necessary documentation are accepted. Documents may also include the animals' organic certification and T.B. restriction licence. The animals are then placed in livestock holding pens in the lairage. After unloading, the cattle delivery vehicles are taken to the lorry wash area for wash down before leaving the site.

The lairage includes a slatted tank for the collection of slurry, and the area is washed down daily to prevent the build-up of organic material on concrete surfaces. The site procurement procedure ensures that the number of breaks in slaughtering processing would be minimised, by ensuring that there is a constant supply of animals to the slaughter line.

1.2 Slaughter Lines

Cattle are stunned in a purpose designed stun box using a captive bolt gun. The animals are then hung by their back legs on an overhead rail system. The cattle then have the main arteries in their throats cut by trained slaughter operatives and under-go a 30-second uninterrupted bleed. The slaughter line normally only operates on weekdays (i.e. Monday to Friday), however, slaughtering may be undertaken at weekends for reasons such as casualty animals and demand.

Blood

Blood from slaughtered animals is collected by means of a dedicated collection system. The blood trough is designed to facilitate 'squeegeeing' of partially congealed blood into the blood collection system. There is no additional bleed points on the slaughter line.

Blood is then transferred from the blood trough to the blood storage tank, where it is held until it is removed off site by tanker. Citric acid is added to the blood removal system and blood is chilled to aid coagulation of the blood so that it can be used for plasma removal.

Horn and Hoof Removal

Horns and hooves are manually removed from cattle carcass using hydraulically operated cropping shears and are sent to Specified Risk Material (SRM) skips for staining with blue dye.

Hide Removal

After bleeding, cattle have the mask (eyebrows and muzzle) and ears manually removed. After removal, the mask, which is classed as SRM, is stored in dedicated storage areas and stained with blue dye before disposal.

Hides are removed from cattle by means of an automated hide puller system and stored pending removal off-site for further processing or as CAT3 waste.

Head Removal

The head is manually removed from cattle carcass using hydraulically operated cropping shears and is placed on the offal line.

Trimming and Evisceration

Green offal (lungs, trachea and paunches) are collected and taken for further processing at off-site facilities.

The spleen, intestines and pancreas are classed as SRM and are stained with blue dye and sent to the relevant storage trailer.

Gut (paunch) contents is also removed at this stage and stored for collection by a contractor for land-spreading.

The respiratory, pulmonary and digestive organs are then removed and the resulting offal is sent for disposal or further processing as required.

Red offal (heart, liver and kidneys) are removed and sent to the Offal processing area.

Carcass Quartering

After the removal of offal, the cattle carcasses are split along the spine using purpose designed electric saws.

The spinal cords are then removed from the carcass using a vacuum suction system. The spinal cords are classed as SRM and are stained with blue dye and sent to the correct SRM trailer. Each side is cut, resulting in beef quarters.

Following quartering, the beef quarters are sent to the chillers.

1.3 Chilling

The beef quarters are placed in chilled storage prior to deboning. Meat is kept in chilled storage, at between 0-5°C, before being transferred to the de-boning area.

1.4 De-boning

Some beef quarters are removed from the chill, weighed, palletised and loaded into refrigerated trailers within the dispatch.

Some beef quarters are removed from the chill and directed to the boning hall. Here, various cuts are removed from the beef quarter, including Sirloin, Flank, Plates and Ribs.

The de-boned beef and cuts are all vac-packed. The product would then be weighed and inspected, before being packaged and palletised.

Finished product is kept in chilled storage before being loaded into refrigerated trailers within the dispatch.

1.5 Red Offal Processing

Further to being initially chilled, red offal is trimmed, vac-packed, labelled and weighed and sent to the chill for storage.

Contaminated offal is disposed of as either CAT1 or CAT3 waste, including the skull and tonsils.

This process can produce some waste packaging such as broken boxes, backs of labels, transit packaging for the packaging materials etc. and as these volumes are so small that they are treated as general waste.

1.6 Dispatch

The fully prepared and palletized goods are loaded onto refrigerated trailers in the loading bay. When the trailers are full, they are taken by contract haulier directly to third party storage and distribution.

An off-site contract cold storage facility is used, which is approved at group level, and BRC certificated.

1.7 Cleaning

Procedures ensure that residual material is removed from floors, water is used efficiently and employees are trained in the handling and making up of working solutions and their applications. All cleaning chemicals are kept within a secure Chemical Store.

2.0 Site Infrastructure

2.1 Building

The site consists of structures made up of three attached buildings - the main building, which was in place previous to Foyles procurement of the site in 2013, and two extension buildings constructed by Foyle- Gloucester.

The main building covers an approximate area of 3,200 M^2 and contains a number of processing and storage area, including the Boning Hall; Loading Bay; Dispatch; Offal Processing Area; Chemical Store and Chilled Storage.

The main building also contains the site reception area and management offices, with approximately 18 office personnel. There is also one canteen on-site, catering for production staff and office personnel.

There are a number of toilets for office staff and locker rooms for the production staff. All foul water goes directly to the Severn Trent sewer line, via S-2 discharge point, which is located on the Forest Vale Road to the east of the site boundary.

The second building covers an approximate area of 900 M^2 and is an annex to the main building and contains the By-Product Handling Area and the Slaughter Line.

The third building covers an approximate area of 600 M^2, is an annex to the second building and contains the cattle holding area / Lairage.

2.2 Engineering/Maintenance

The engineering department maintains and repairs all process equipment, manage the effluent system and maintain all other infrastructure of the site.

A maintenance workshop, covering an area of 85 M^2, is located within the southern yard area. This workshop also provides containment for the two on-site boilers and heat-exchanger unit.

2.3 Yard

The hardstand area of the site can be divided into the following four areas:

i. The eastern yard area located on the eastern site boundary, adjacent to the Forest Vale Road, provides containment for the staff carpark, and can hold up to 40 vehicles.

ii. The front yard area located on the north-eastern site boundary, contains the site access point for staff, visitors, contractors and cattle delivery vehicles. This area also contains a security hut adjacent to the site access point and is where the main reception area is found. Additional parking is also available in this area, which has the capacity to hold up to 35 extra vehicles.

iii. The southern yard area contains a secondary site access point that provides access for HGV's to the Dispatch, where finished product is loaded onto refrigerated trailers and goods inward such as packaging is unloaded. The southern yard area is also used to store plastic pallets, hand-trays and dolavs, while the recycling storage area contains, wood pallets, cardboard bales and a scrap metal skip. For more detail see: Attachment B.3.14 – Waste Management

The southern yard area also contains critical equipment, including; compressed air generators; refrigeration units; the vac-pack compressors; the water hut; electrical sub-station; and the maintenance workshop which contains two steam generating boilers.

iv. The rear yard area, which is entered via the front yard area, provides access to the Lairage/Intake and where cattle are delivered and processed into the factory.

This area also provides access to the animal by-product handling area, blood storage tanks, cattle lairage/intake, truck-wash, the sites effluent treatment plant and lairage sump.

2.4 Surface Water Drainage

The majority of the sites surface-water discharges to the Cinderford Brook via W-1 discharge point, after passing through an interceptor/oil separator.

All roof water is directed to a Grey-Water tank, where it is stored for use in the sites truck-Wash area, located within the ETP.

A small quantity of surface water from the rear yard area is treated by the sites ETP, before discharge to Severn Trent sewer line via S-1 discharge point.

Average annual rainfall for the Cinderford area is 0.64M per year. The total catchment area for this collection system, including all roof and yard areas, was determined to be approximately 12,600 M^2. Therefore, it is calculated that the site produces on average 8,064M^3 of surface-water annually.

For more detail see: Attachment B.3.3 – Emissions to Surface water

2.5 Effluent Treatment Plant (ETP)

Process effluent from the factory flows to the effluent plant where solids are removed via auger screen prior to transfer to a balance tank. Treatment chemicals (coagulant and flocculant) are added to the effluent water to pre-treat the water prior to processing through the DAF plant and discharge into the Severn Trent sewer line via S-1 located to the west of the site boundary.

Sludge from the DAF is pumped to the Lairage Sump, which is emptied daily.

The sites effluent treatment plants discharge volume for 2018 was 21,318 M^3, which equates to an average discharge of 58 M^3 per day. The 2019 annualized discharge volume, based on the first 24-week of the year, was calculated to be 28,043 M^3, which equates to an average discharge of 77 M^3 per day.

For more detail see: Attachment B.3.4 – Emissions to Sewer

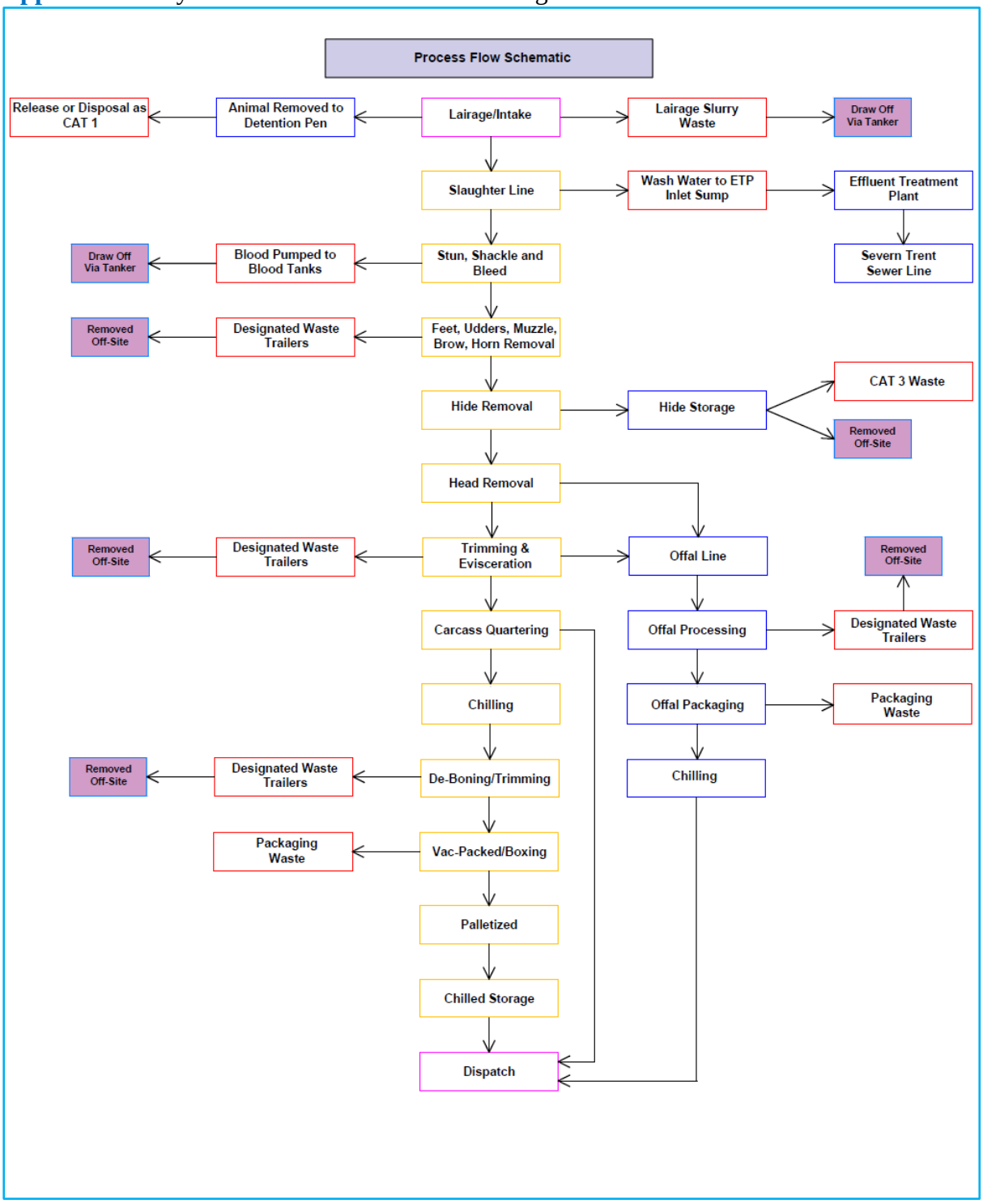
2.6 Chemical Store

Chemicals are stored in several locations on the site. These include chemicals used for cleaning production equipment, general factory cleaning purposes, engineering and water/effluent treatment. All chemicals are kept in secure locations, on suitable bunded structures, with limited access and all chemicals are kept closed when not in use.

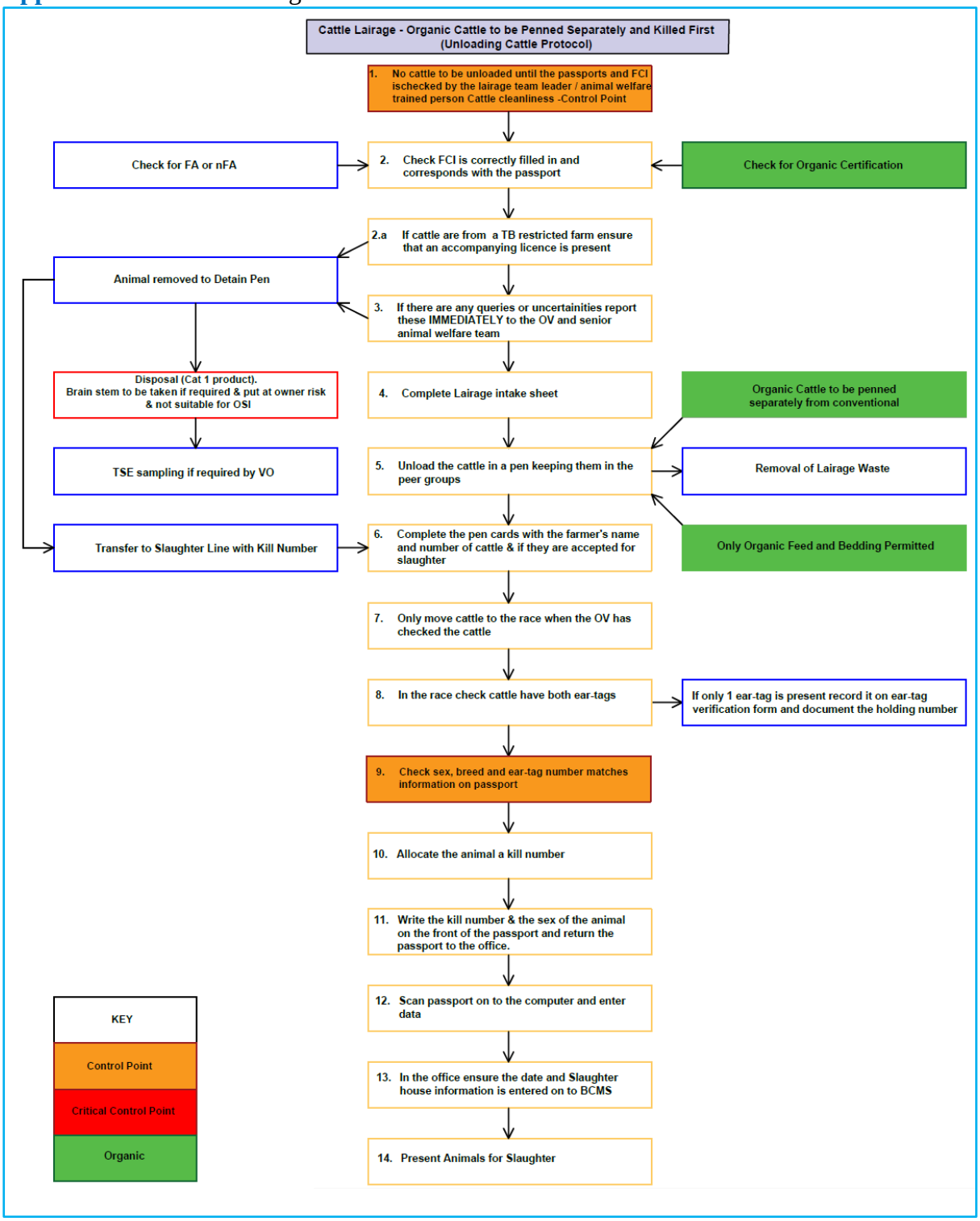
Product information and Health & Safety Data Sheets are available for all chemical products held on site. Waste fluorescent bulbs are stored in a sealed coffin within the rear yard area, while waste solvents are stored in a sealed drum. Waste engineering oil is stored in a bunded covered lockable structure adjacent to the maintenance workshop. Containers of cleaning chemical are stored within the internal Chemical Store. In use ETP chemicals are stored on portable IBC bunds, within the wastewater treatment plant compound.

For more detail see:
Attachment C.3 – Bund Integrity Assessment.
Attachment C.2.3.C – Baseline Report.

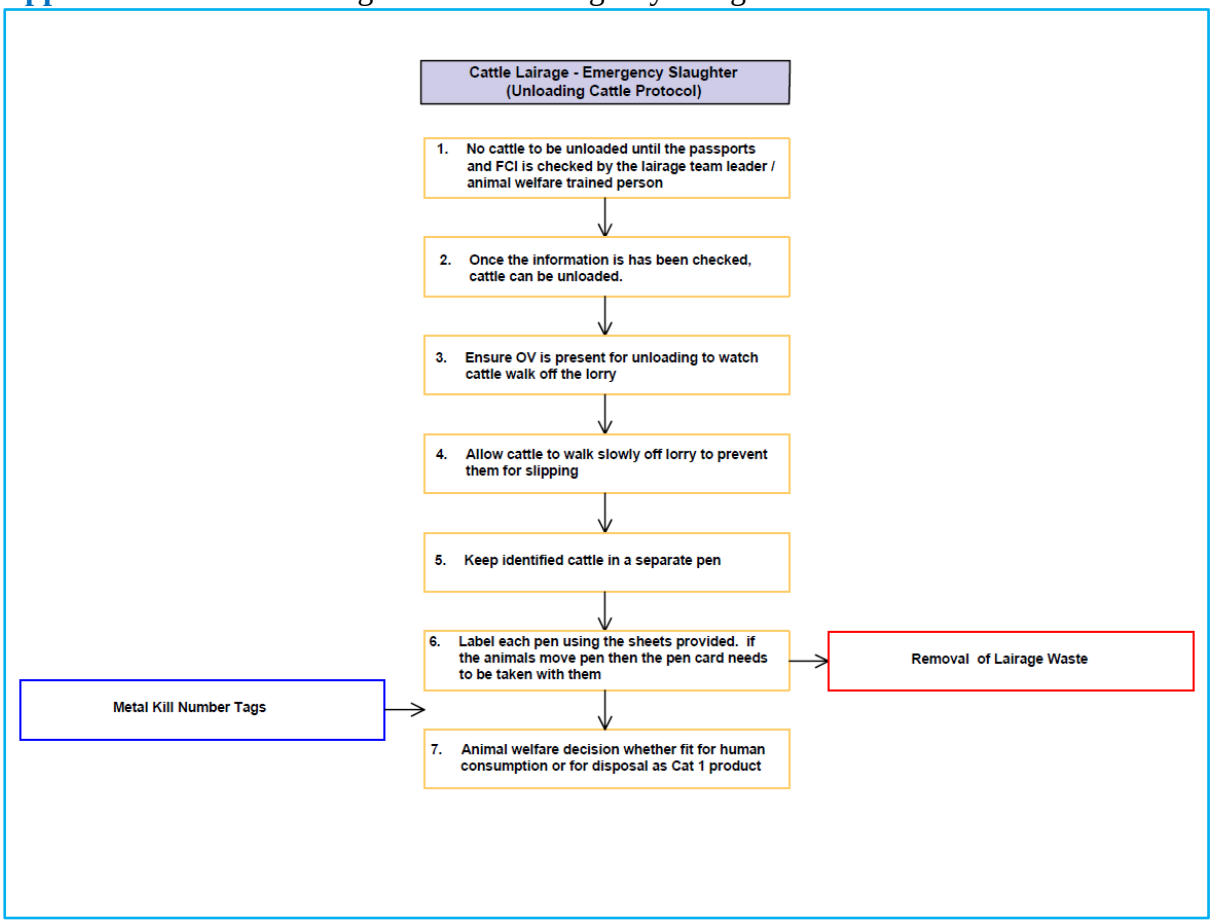
Appendix A: Foyle – Gloucester Process Flow Diagram



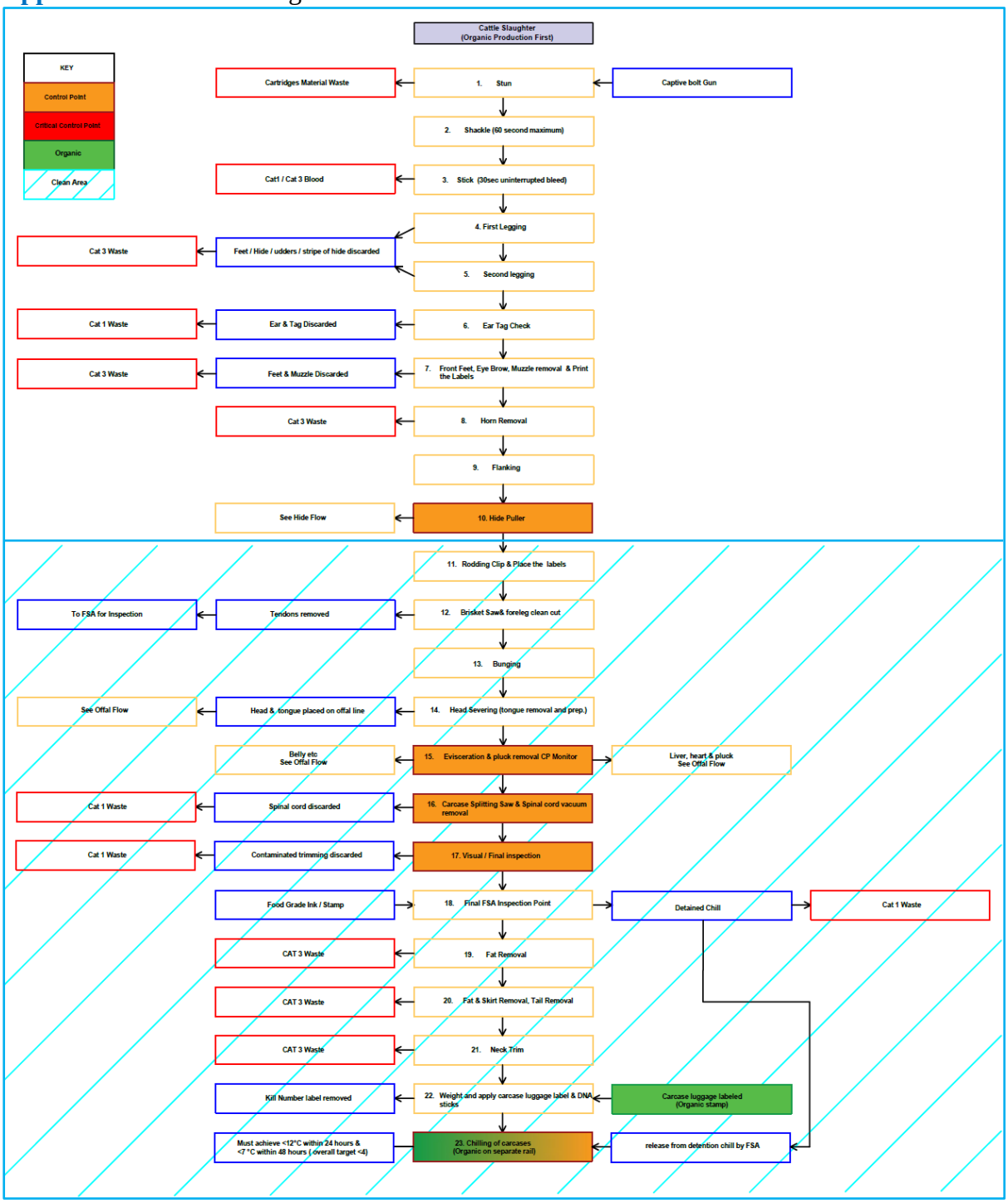
Appendix B.1: Cattle Lairage/In-take



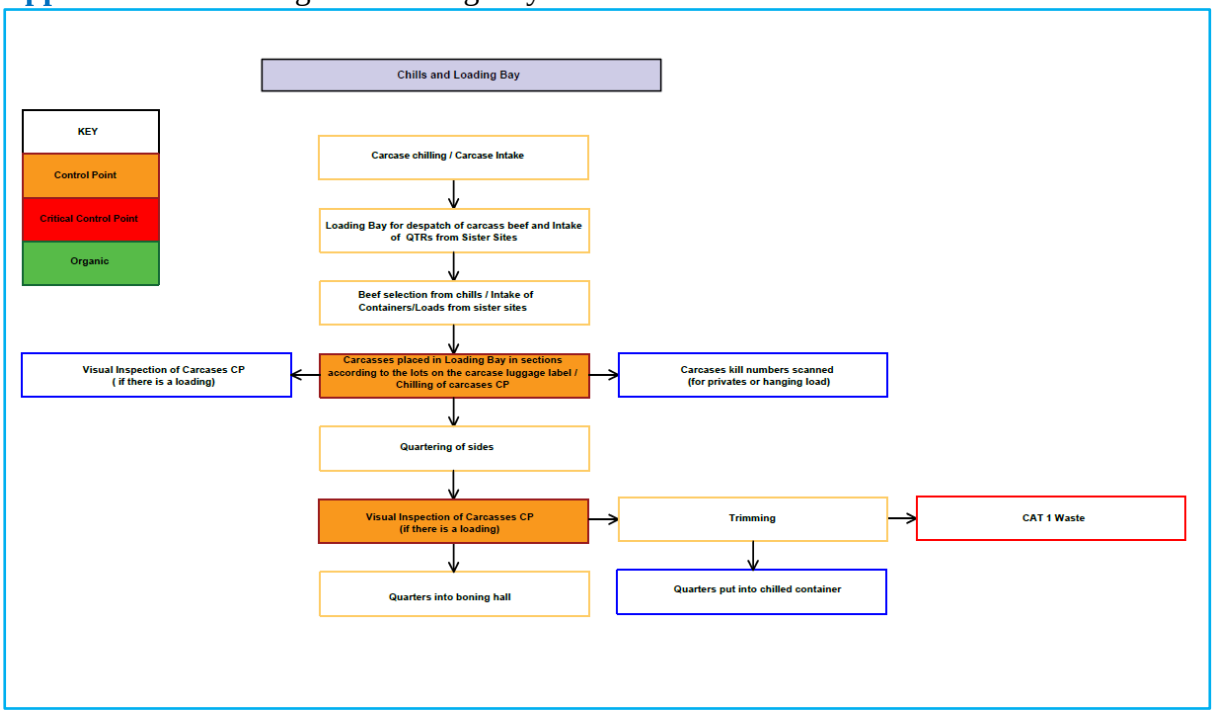
Appendix B.2: Cattle Lairage/In-take – Emergency Slaughter



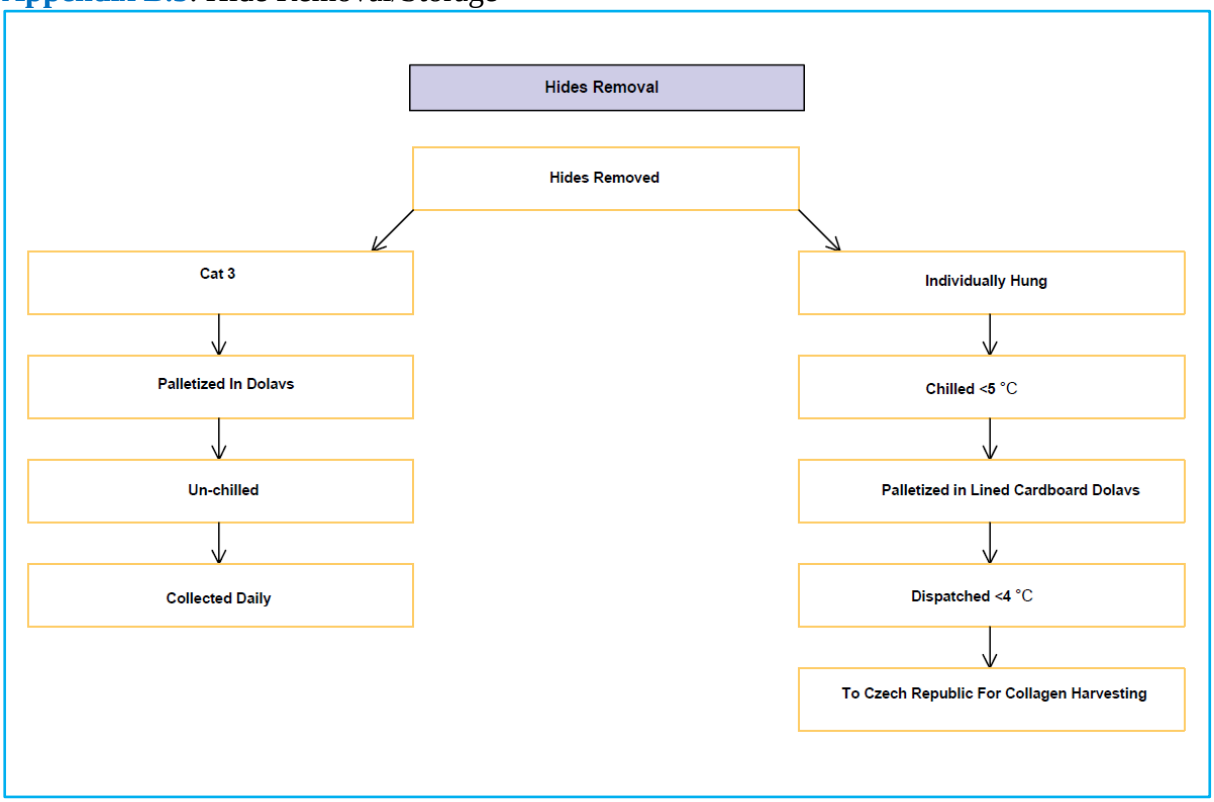
Appendix B.3: Cattle Slaughter



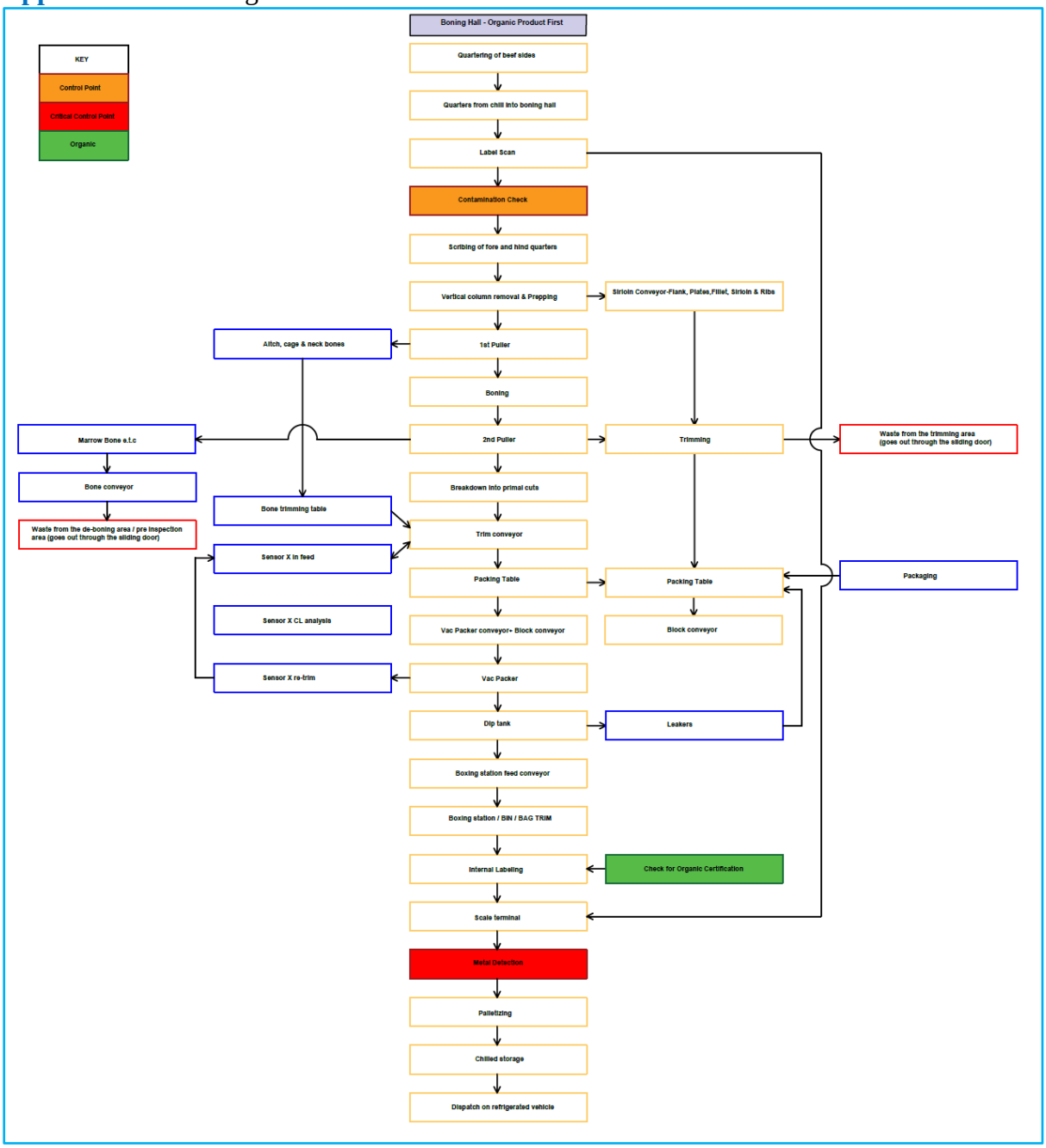
Appendix B.4: Chilling and Loading-Bay



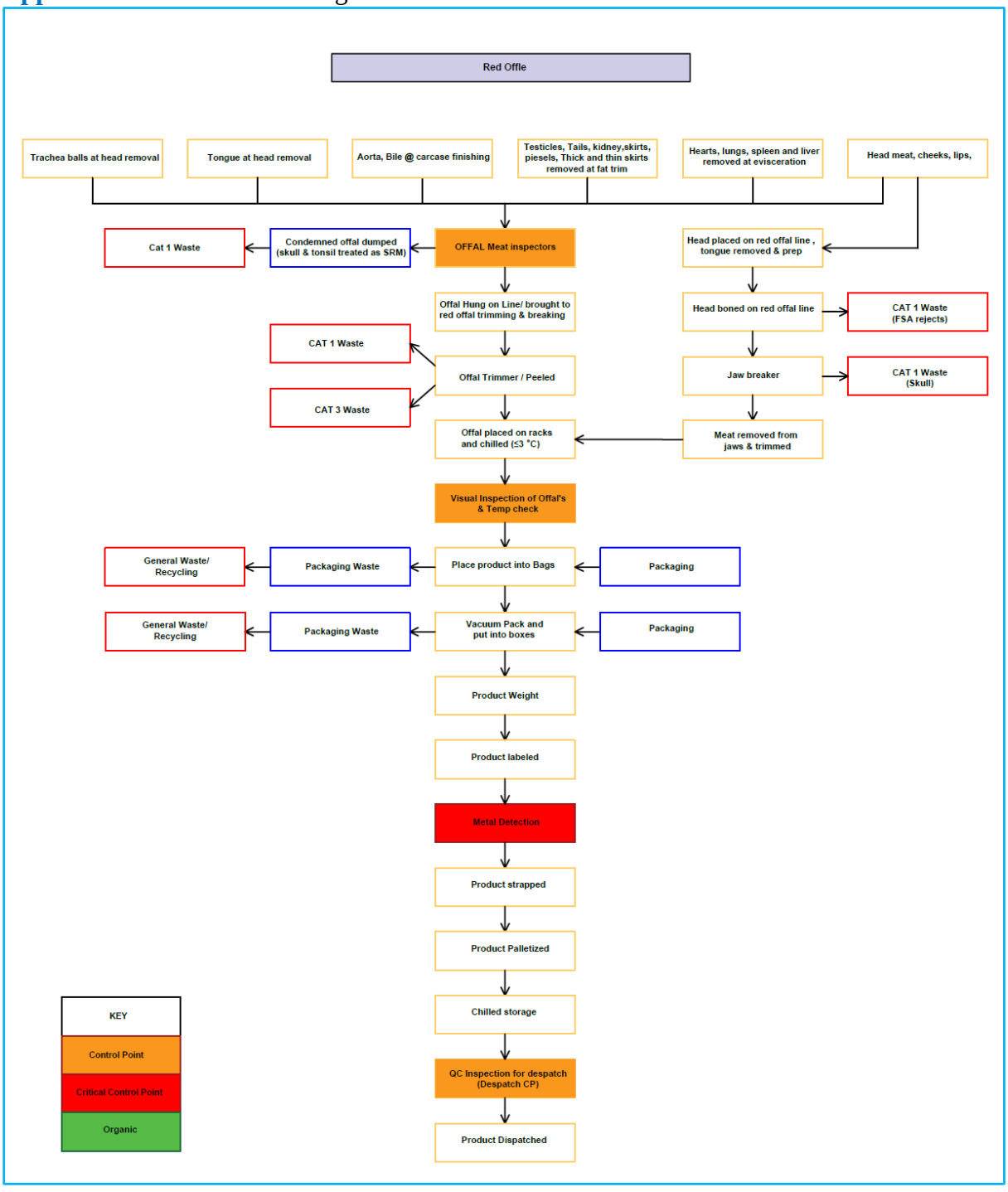
Appendix B.5: Hide Removal/Storage



Appendix B.6: Boning Hall



Appendix B.7: Offal Processing



Site Operations: Manufacturing & Infrastructure

Foyle, Cinderford, Gloucester, UK

Appendix C: Site Infrastructure Map