**Good Agricultural Practices Food Safety Plan**

**USDA Harmonized GAPs Audit**

*(Name of Farm)*

*(Owner Name and Contact Information)*

*(Signature of Person preparing this plan, date)*

**This food safety plan is prepared for: (list all crops covered in this plan)**

This plan represents this farm’s commitment to Good Agricultural Practices and food safety. Everything listed in this food safety plan is correct, to the best of our abilities.

**Field Operations and Harvesting**

**1. General Questions**

**1.1 Management Responsibility**

**Person responsible for the food safety program at this farm:**

**Name and Position: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Telephone: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Fax: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Email: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

(24 hour contact information)

**Alternative contact information:**

**Name and Position: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Telephone: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Fax: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Email: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

(24 hour contact information)

**1.2 Food Safety Plan**

1.2.1 *This food safety handbook addresses potential physical, chemical, and biological hazards. Logs and documentation are attached, to show compliance to the good agricultural practices stated in this plan. A map is attached to this plan to show location of the farm, bathrooms, wells, and other important aspects of this \_\_\_\_\_\_\_ farm.*

1.2.2 *This food safety plan is reviewed annually. This is the first year of the plan, written and implemented in 2012.*

 

**1.3 Documentation and Recordkeeping**

1.3.1 and 1.3.2 *The food safety plan includes SOPs for our farm’s tomato production. Documentation and logs are found in clipboards and attached in this binder. Other documentation will be produced when asked.*

1.3.3 *All documentation, old SOPs, and past records will be kept in this handbook written by \_\_\_\_\_\_\_\_\_\_\_\_ from the implementation of the Harmonized GAPs program initiation on this farm (in 2012). This includes the minimum two year period.*

**1.4 Worker Education and Training**

1.4.1 Prior to the tomato season each year \_\_\_\_\_\_\_\_\_\_ trains each employee working in the tomato operation. *Cornell University’s DVD on food safety covers sanitation and hygiene practices. Each employee signs as proof of participation. Attendance sheet is attached.*

1.4.2 *\_\_\_\_\_\_\_\_\_\_ the person who wrote, implemented, and oversees the food safety program at \_\_\_\_\_\_\_\_\_\_\_\_ has gone to a food safety workshop given by Maryland Cooperative Extension in Feb., 2009. We covered 6 parts of the GAPS “Audit Verification Checklist”. Our farm has been following these procedures \_\_\_\_\_\_\_\_\_\_ has job experience in implementing this food safety plan. Donna Pahl visited in 2012 and gave on-farm training in Harmonized GAPs standards.*

1.4.3 *We hire no subcontractors on this farm.*



**1.5 Microbiological Sampling and Testing**



1.5.1 *Since the beginning of our Harmonized GAPS program we have done annual water tests on our potable wells. We do not require or perform microbiological analysis of tomato fruit. All water tests are attached.* *The lab is validated and uses Good Laboratory Practices (GLP’s), which is noted on the test results.*

1.5.2 *Water is sampled by \_\_\_\_\_\_\_\_\_\_ which is a registered lab in Memphis, TN. Water testing is explained in greater detail in the “water” section.*

1.5.3 *Water testing began in 2012. Water records will be held for at least 2 years. They are attached to this plan.*

1.5.4 *\_\_\_\_\_\_\_\_\_takes the samples & ships it to A&L Labs & they do the testing for Salmonella & E. coli. Up to this point no actions have needed to be taken.*



**1.6 Traceability**

1.6.1 and 1.6.2 *To establish traceability, each year throughout the season boxes are stamped with the Julian date. To correlate the information with the outgoing invoice, I mark the same Julian date on the outgoing invoice. The name \_\_\_\_\_\_\_\_\_\_\_Farms is also labeled on the box. Invoices are kept in a separate binder, they can be shown upon request. A trace forward exercise is performed annually. Since we are growing the raw product, all of our materials are purchased from certified companies.*

*For the traceback, each of the suppliers has been contacted. The letters from the suppliers are enclosed.*



**1.7 Recall Program**

1.7.1 *The recall team consists of \_\_\_\_\_\_\_\_\_\_\_ (list two people).. The contact information for each member is listed in the plan above.*

*Last mock recall was on 6/27/12. The next one will be before the end of harvest 2013. The procedure is as follows:*

1. *On 6/27/12, I visited \_\_\_\_\_\_\_\_\_\_ (wholesale store you are selling to).*
2. *I spoke to John, the head of produce telling him we needed to do a mock recall of the last shipment of tomatoes.*
3. *Please find boxes with the date (6/26/12). This item allows us to identify potential recall products, find them, and pull back from being sold to the public.*
4. *John verified that he found 7 boxes of 6/26 (date).*
5. *Using the invoice, we were able to find the 7 boxes out of 7 shipped from that lot. Of the seventh box, 7% (by weight) of the product had been sold.*
6. *In the event of a real recall (If the product was suspect) at this point, we would pull the product off the shelf. End result, we were able to identify “bad” product by using the day it was boxed. If this were a real recall, Giant would have those tomatoes destroyed.*
7. *Giant verified in writing that the mock recall had been performed. The letter is attached.*



**1.8 Corrective Actions**

1.8.1 *The plan evolves as regulations change and more monitoring is needed as the plan changes.*

*When self-audit or auditors find corrective action needed, \_\_\_\_\_\_\_\_\_\_ will implement the change within the time period agreed upon with the auditor. The corrective actions from the Harmonized Audit on 7/17/12 have been implemented, and are documented and included in this plan.*



**1.9 Self-Audits**

1.9.1 *\_\_\_\_\_\_\_\_\_ has performed a self-audit of her hydroponic tomato operation by going through the Harmonized GAP checklist. It is attached in this binder.. \_\_\_\_\_\_\_\_\_will perform a self-audit before the 2013 growing season. The self-audit will be attached. The necessary corrective actions will be performed. With the knowledge learned from the 2012 Harmonized audit, the next self-audit completed will be more accurate.*



**2. Field Production**

**2.1 Field History and Assessment**

2.1.1 *This land has been owned and farmed by us since 1984. \_\_\_\_\_\_\_\_\_\_ has no municipal/commercial sewage treatment facility near. The 12.06 acres of land have been solely used as residential/ agricultural with previous owners leasing the land out for soybean tillage. As a greenhouse facility, the growing and harvest areas are enclosed, further minimizing potential contamination.*

2.1.2 *All facilities are constructed in a manner to facilitate cleaning and sanitation. The greenhouse, packinghouse and other growing facilities have been constructed for the purpose of growing tomatoes.*



**2.2 Worker Health/Hygiene and Toilet/Handwashing Facilities**

2.2.1 *Written policies are in place for worker health and hygiene. Hygiene practices follow what is stated in the Cornell DVD that every worker watches yearly. To provide a clean environment, employees are required to wash before and after work. Signage is in place to require hand washing.*

2.2.2. *All employees and visitors are instructed to follow this farm’s health and hygiene practices. English/Spanish hand-washing and hygiene signs are posted at the eating area, bathroom, and wash station to reinforce washing hands before work. Visitors visit with the foreman – at that point, they will be instructed to follow proper sanitation and hygiene practices.*

2.2.3. *Our restroom which includes a handwashing station just outside is stocked with soap and single use towels for safe hygiene. The restroom is cleaned weekly and more often if needed. Paper products are checked daily. Documentation is provided for servicing restrooms. Toilet facilities are located in the packing shed, which is not near production areas, so they do not pose a hazard to the produce.*

2.2.4 *This farm has up to 10 workers at a time (always less than 20 people), and therefore meets the OSHA rule that there is at least one bathroom per 20 workers. The bathroom is located very close (walkable distance) to the greenhouses.*

2.2.5 *Our restroom (which includes a handwashing station) is stocked with toilet paper, soap and single use towels for safe hygiene. The restroom is cleaned weekly and more often if needed (every two weeks by the sanitation company, and cleaned three days a week by us). Paper products are checked daily. Documentation is provided for servicing restrooms. The washwater source is potable, and tested for microbes annually. Results are enclosed. Since our operation is located within a small area, we do not have need for field sanitation units.*

2.2.6 *Workers follow the hygiene practices outline in the Cornell DVD. They wash their hands before work and after using the bathroom, and after sneezing/blowing their noses, taking breaks, and handling contaminated material.*

2.2.7 *English/Spanish hand-washing and hygiene signs are posted at the eating area, bathroom, and wash station to reinforce washing hands before work.*

2.2.8 *Per the Cornell DVD, I just ask that workers come to work in clean clothes suitable for harvesting tomatoes. This minimizes contamination, and no specific clothes are required for tomato harvest. Since it’s an enclosed greenhouse, we don’t want to introduce microbes – we require clean clothes.*

2.2.9 *\_\_\_\_\_\_\_\_\_\_\_ does not have a glove use policy. Gloves are not used.*

2.2.10 *Since employees are just harvesting tomatoes, there is no protective clothing required (except for pesticide application). Protective clothing used for pesticide application is stored in the fertilizer room.*

2.2.11 *Employees’ personal belongings are be kept in the break/lunch area (away from production/packing areas), so that there is no potential for contamination. The break/lunch area is upstairs. As mentioned above, the protective gear (for pesticide application) is located in the fertilizer room.*

2.2.12 *No visitors operate the line. \_\_\_\_\_\_\_\_\_\_\_\_ enforces the policy that no loose jewelry is allowed to be worn in the production areas. The employees were also taught this on the Cornell DVD.*

2.2.13 *The use of hair coverings is not required by \_\_\_\_\_\_\_\_\_ since we do not produce ready-to-eat foods.*

2.2.14 *Employees’ personal belongings will be kept in the lunch/ break area, so that potential contamination is minimized.*

2.2.15 *The smoking and eating area is designated by management for only that purpose. This area is upstairs, not near where production flow areas or packing occur. No smoking, eating, chewing gum, and drinking (non-water drinks) are to happen outside of non-designated areas. No urinating or defecating occurs in the greenhouses – only to occur in the bathroom. Smoking occurs outside.*

2.2.16 *The break area is an area designated outside of the packing area. The activities mentioned in 2.2.15 occur in the break area (upstairs). Smoking occurs outside of the facilities.*

2.2.17 *Drinking water is available to all employees. The water is purchased from Eastern Springs Water Co. An example receipt/invoice can be found in this log.*

2.2.18 *In the event of diarrheal disease or other sickness, employees are instructed to not work until recovered, and to tell the supervisor or foremen that they are sick. Workers are both told that, and the policy is covered in the Cornell GAP DVD. The farm is able to cover for the employees until the regular employee is recovered.*

2.2.19 *The Cornell DVD tells employees to seek medical attention for cuts and abrasions. Employees are instructed to seek prompt treatment for cuts and abrasions from the foreman. If someone has a cut or abrasion and returns to work, it will be washed and bandaged.*

2.2.20 *Employees are trained by the Cornell DVD and the food safety manager. In the event of blood or bodily fluids coming in contact with the tomatoes to tell the foreman immediately. The produce (tomatoes) will be thrown away and the area sanitized.*

2.2.21 *The first aid kit is located in the boiler room.*



**2.3 Agricultural Chemicals/Plant Protection Products**

2.3.1 *Pesticides used on produce (tomatoes) are labeled for that exact produce, and are applied at the labeled rate. Records are included on an attached calendar page.*

2.3.2 *Product is not intended for export, it is sold only within the United States.*

2.3.3 *Under \_\_\_\_\_\_\_\_\_\_ direct supervision, 2 foremen are the only personnel to handle pre- and post- harvest licensed materials. The pesticide applicator’s license is attached.*

2.3.4 *Water used for chemical application is potable (from a well), and tested for microbes. Results are included in this manual. Bottled water is used for worker’s drinking water as the well water has slightly high nitrates which is OK for the general population but not good for pregnant or nursing women.*

2.3.5 *We have no chemical waste disposal on the farm. We apply chemicals, but do not dispose of them.* 

**2.4 Agricultural water**

2.4.1 Water System Description

2.4.1.1 *Map of the water system – attached.*

2.4.1.2 *All water used for irrigation, chemical application, and any other application comes from a well. All water sources are tested according to regulations, and results are included.*

2.4.1.3 A*gricultural water systems are not connected with waste transportation systems in any manner.*



 **2.4.2 Water System Risk Assessment**

2.4.2.1

*Any irrigation, chemical and postharvest applications are done with potable water from a well, and therefore is low-risk. Water for irrigation is applied through the roots (hydroponically), and thus is even lower risk. This well also the source of handwashing water for the workers, and is tested once a year. Results are enclosed. If well water counts are high, the well can be shocked with chlorine (per advice from a plumber), then the next day will be run until the chlorine smell disappears. The well is a deep well, and therefore has low risk of being contaminated. The well cap and casing is checked multiple times a year, for signs of degradation.*

*There is an attached log that will be completed twice a year that is a formal risk assessment of the irrigation system. The risk assessment is a checklist of all irrigation components.* 

**2.4.3 Water Management Plan**

2.4.3.1 *Preventative controls for water. Water quality is checked yearly for the well source. If there is a problem with E.coli from our well source, we can shock the well with chlorine to lower bacterial counts. Per advice from our plumber/ well company, we pour 2 gallons of sodium hypochlorite (bleach) down the well casing. We let that sit for a 24 hour period. Then we flush by running the system until the smell and taste is gone.*

2.4.3.2 and 2.4.3.3 *Once a season, we pull a sample from the well water and send it to A&L Laboratories. The company then tests for E. coli and salmonella using AOAC-recognized methods, and sends the results back. Results are included in this plan.* 

**2.5 Animal Control**

2.5.1 – 2.5.3 *Since tomato production is done in an enclosed greenhouse, pest control from outside pests is not a problem. A rodent monitoring program has been established for the greenhouses, based upon training materials received from University of Maryland. \_\_\_\_\_\_\_\_ will supervise the rodent control program, with the help of a professional pest monitoring company (Orkin). The agreement and rodent monitoring plan are enclosed, as is the worksheets filled out by the monitoring company. The monitoring company will make \_\_\_\_\_\_\_\_\_ aware of any potential problems. Any potential holes, entry points, or living sites will be filled with foam and steel wool, or will otherwise be addressed accordingly. The boiler room and bathrooms are treated by a pest control service 2 times are year to prevent roach activity. Records and logs are attached, as is the agreement with the pest control company.*

*So far, no mice have been sited or caught in the production or packing areas.*



**2.6 Soil Amendments**

*2.6.1 and 2.6.2 Only synthetic, commercial fertilizers and growing medium (rock wool, and standard for hydroponic tomato production) are used \_\_\_\_\_\_\_\_\_\_\_ for tomato production. As such, no manure or composted soil amendments are used. Fertilizers in our nutrient solution are applied as suggested by our nutrient management plan.*



**2.7 Vehicles, Equipment, Tools, and Utensils**

2.7.1 *The only tools used during tomato production include our carts and picking bins or tomato boxes. A list is included of every material or tool that touches the tomatoes.*

2.7.2 *The cluster cutters will be cleaned prior to use on harvest days, by the harvester. Cleaning will be done with soap and water, and sprayed with disinfectant (GreenShield).*

*All carts and tomato bins are washed and scrubbed with soap and water twice a year and are in good repair. Twice a year, the carts are fumigated in the greenhouse. The carts will be sprayed down with GreenShield disinfectant once a week (the spray bottle can be found hanging in the boiler room).*

*The picking bins will be scrubbed with soap and water twice a year. Once a month, the bins will be dipped in the GreenShield disinfectant. The picking bins are cleaned more often when necessary. A log can be found listing the cleaning schedules of the bins and carts. This is to minimize contamination of both human and plant pathogens, as greenhouse production is such an enclosed environment.*

2.7.3 No vehicles are allowed in the greenhouse (so there is no chance of leaks or spills of fuel, oil, or hydraulic fluids). If a leak were to occur, the contaminated produce will be disposed of in the dumpster.

2.7.4 *There is no glass or brittle plastic in the production/growing area. All packing room lights are sealed in plastic casings. There is no other glass on the production area. If glass or brittle plastic should break, all equipment, produce, or areas that may be contaminated will be cleaned thoroughly.*

2.7.5 *Equipment cleaning and sanitizing are done outside of the greenhouse and packing areas, on a concrete pad. This minimizes contamination to the growing and packing areas.*

2.7.6 *No water tanks are used in our tomato production.* 

**3. Harvesting**

**3.1 Preharvest assessment**

*The plastic picking bins, cluster cutters, and carts are cleaned regularly. As discussed in 2.7.2, the cluster cutters are cleaned with soap and water on harvest days (before use). The carts are scrubbed with soap and water twice a year, and disinfected weekly. The picking bins are scrubbed with soap and water twice a year, and disinfected monthly. Greenhouses are fumigated twice a year with Dibrom (Naled), a common greenhouse fumigant. This kills off bugs. The entire greenhouse is then pressure-washed (including the ceiling), and Green Shield is spread over all surfaces.*

*Tomatoes are started as seeds in the seeding greenhouse, and transplanted into the production houses. They are raised in blocks of rock wool. Once tomatoes are ripe, they are picked by hand into the plastic bins. Bins are set on carts and transported into the packing room. Bins are stacked on pallets on one side of the packing room, and are sorted on the table and packed into boxes. The packed boxes are stacked on pallets in the other side of the packing room. Since all of these processes occur inside the greenhouse or packing area, there is little likelihood of contamination.*

*Cluster and cherry tomatoes are harvested directly into their boxes, and then are taken to the packing room for weighing.* 

**3.2 Water/Ice**

3.2.1, 3.2.2, 3.2.3, 3.3.4, and 3.2.5

*No water or ice is applied to finished product (tomatoes). For quality reasons, tomatoes are not stored in refrigeration or ice.*



**3.3 Containers, Bins, and Packaging Materials**

3.3.1 and 3.3.2 *Boxes and bins for harvesting are stored in the packingroom. All harvesting containers are clean, intact and free of any foreign materials.*

3.3.3 and 3.3.4 *The solid construction of the bins is suitable for tomatoes. It allows them to be stacked on pallets for transportation. Pallets and harvest bins are not used for uses other than their intent.*

**3.4 Field Packaging and Handling**

3.4.1 *After harvesting by hand, employees hand grade the tomatoes to expel the culls into discard bins. The tomatoes are then graded for size and quality. This process ensures that only high quality tomatoes are packed.*

3.4.2 *If a tomato falls on the floor and is damaged it is discarded. We have a concrete floor in the packing area. The floor is cleaned daily, therefore the product is acceptable for sale. Since the tomatoes are hand harvested, drops in the greenhouse are rare, and are inspected for damage to skin.*

3.4.3 *After harvesting by hand, employees hand grade the tomatoes to expel the culls into discard bins. Physical hazards are looked for and discarded (part of the hand-picking and grading operation).The tomatoes are then graded for size and quality. This process ensures that only high quality tomatoes are packed.*

3.4.4 *Clothes and cleaning materials are not used to clean the tomatoes.*

3.4.5 *The bins and boxes used for tomato harvest are appropriate for their use. No other packaging is used.*

3.4.6 *Bins and boxes used in harvesting and packaging are stored in the (enclosed) packing shed, to prevent contamination.*

3.4.7 *The cluster and cherry tomatoes are boxed in the greenhouse. As a hydroponic growing operation, there is no soil – the tomatoes are individually planted in soilless potting mix. Boxes and packing materials are placed on pallets or carts, so they do not touch the ground.*

**3.5 Postharvest Handling and Storage**

3.5.1 *Care is taken to prevent damaged product, as we would not be able to sell damaged product. Tomatoes are palletized and shrink-wrapped, then carefully loaded. When we palletize our tomato boxes, we are careful to keep the boxes within the dimension of the pallet. Then we shrink wrap, which keeps the chances of damage low since overhang is not a big issue. Loading the product has very little chance of damage, as the lift truck operator is careful.*

*The cluster cutters will be cleaned prior to use on harvest days, by the harvester. Cleaning will be done with soap and water, and sprayed with disinfectant (GreenShield).*

*All carts and tomato bins are washed and scrubbed with soap and water twice a year and are in good repair. Twice a year, the carts are fumigated in the greenhouse. The carts will be sprayed down with GreenShield disinfectant once a week (the spray bottle can be found hanging in the boiler room).*

*The picking bins will be scrubbed with soap and water twice a year. Once a month, the bins will be dipped in the GreenShield disinfectant. The picking bins are cleaned more often when necessary. A log can be found listing the cleaning schedules of the bins and carts. This is to minimize contamination of both human and plant pathogens, as greenhouse production is such an enclosed environment.*

*Due to the construction of the picking bins, they must be nested inside each other for storage. They are stacked within each other, and stored on pallets in the packing room so they do not come in contact with the floor. The plastic bins are an industry standard for the hydroponic tomato industry, and care will be taken to keep them clean (with the cleaning and sanitization schedule above).*

3.5.2 *Tomato boxes are generally used new. In the few cases that boxes are reused, any leftover physical debris is removed. Any bins and carts used are also in good repair.*

3.5.3 *Chemicals are stored in a separate, enclosed location, away from harvested produce.*

**4. Transportation (Field to Storage/Packinghouse)**

**4.1 Equipment Sanitation and Maintenance**

4.1.1 *Tomatoes are transported to stores in a straight truck (6-wheeled box truck), and 2 cargo vans. Tomatoes are mostly palletized in the straight truck. Boxes going into the cargo vans are stacked. Trucks and vans are swept out, and twice a year they’re cleaned with soap and water. Tomatoes are not refrigerated. We try to keep them between 55 and 66 degrees for quality. If it gets too warm, we run air-conditioning, and if it is too cool, we run heat to maintain quality and shelf-life.*

4.1.2 *Care is taken to prevent damaged product, as we would not be able to sell damaged product. Tomatoes are palletized and shrink-wrapped, then carefully loaded. When we palletize our tomato bags, we are careful to keep the bags within the dimension of the pallet. Then we shrink wrap, which keeps the chances of damage low since overhang is not a big issue. Loading the product has very little chance of damage, as the fork lift operator is careful. If tomato boxes are stacked in the truck, care is also taken when loading and unloading.*

4.1.3 *Trash is loaded into a dumpster, which is placed away from the packinghouse to prevent contamination (physical and microbial).*



**Harmonized GAPs audit: Post-Farm Gate**

1.1.1 and 1.1.2

*I, have received GAPs training Feb.of 2009 by MD Cooperative extension, which taught me to prepare and implement our food safety plan. Our workers received training via the University of Cornell DVD. We are now working toward Harmonized Standards.*

*In the event that \_\_\_\_\_\_\_\_ cannot perform her tasks \_\_\_\_\_\_\_\_\_can take over said task.*

*\_\_\_\_\_\_\_has a guideline in her handbook of a food safety plan. Numerous clipboards for daily jobs are in the production work area. .\_\_\_\_\_\_\_\_\_\_ is our full time manager & owner of the greenhouse tomato operation, she is also manager of the herb & edible flower operation.*

1.1.3 *We have a disciplinary policy for any employees who repeatedly violate food safety policies and procedures. Disciplinary actions are as follows:*

*1. Verbal warning to employee.*

*2. Written warning into record.*

*3. One Day suspension.*

**1.2 Food Safety Plan**

1.2.1 *This food safety handbook addresses potential physical, chemical, and biological hazards. Logs and documentation are attached, to show compliance to the good agricultural practices stated in this plan. A map is attached to this plan to show location of the farm, bathrooms, wells, and other important aspects of this \_\_\_\_\_\_\_ farm.*

1.2.2 *This food safety plan is reviewed annually. This is the first year of the plan, written and implemented in 2012.* 

**1.3 Raw Material Sourcing**

1.3.1 and 1.3.2 *As the producer of tomatoes, we have standard suppliers for our seed, chemicals, and other supplies. The list, which includes alternate suppliers, is attached. Since we are producing the raw product (tomatoes), we have no GAP-certified suppliers – all of our materials come from certified manufacturers.*

*A list of approved suppliers is attached.*

*The tomatoes packed in this facility are also grown here, under Harmonized GAPs standards. The 2012 Harmonized certification is pending.* 

**1.4 Documentation and Recordkeeping**

1.4.1 and 1.4.2 *The food safety plan includes SOPs for our farm’s hydroponic tomato production. Documentation and logs are found in clipboards and attached in this binder. Other documentation will be produced when asked.*

1.4.3 *All documentation, old SOPs, and past records will be kept in this handbook written by \_\_\_\_\_\_\_\_ from the implementation of the Harmonized GAPs program initiation on this farm (in 2012). This includes the minimum two year period.*

**1.5 Worker Education and Training**

1.5.1 *Prior to the tomato season each year, \_\_\_\_\_\_\_ trains each employee working in the tomato operation. Cornell University’s DVD on food safety covers sanitation and hygiene practices. Each employee signs as proof of participation. Attendance sheet is attached.*

1.5.2 *\_\_\_\_\_\_\_\_ , the person who wrote, implemented, and oversees the food safety program at \_\_\_\_\_\_\_\_ has gone to a food safety workshop given by Maryland Cooperative Extension in Feb., 2009. We covered 6 parts of the GAPS “Audit Verification Checklist”. Our farm has been following these procedures. \_\_\_\_\_\_\_\_\_ has job experience in implementing this food safety plan. Donna Pahl visited in 2012 and gave on-farm training in Harmonized GAPs standards.* 

**1.6 Traceability**

1.6.1 and 1.6.2 *To establish traceability, each year throughout the season boxes are stamped with the Julian date. To correlate the information with the outgoing invoice, I mark the same Julian date on the outgoing invoice. The name \_\_\_\_\_\_\_\_ Farms is also labeled on the box. Invoices are kept in a separate binder, they can be shown upon request. A trace forward exercise is performed annually. Since we are growing the raw product, all of our materials are purchased from certified companies.*

*For the traceback, each of the suppliers has been contacted. The letters from the suppliers are enclosed.* 

**1.7 Recall Program**

1.7.1 *The recall team consists of\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (two people). The contact information for each member is listed in the plan above.*

*Last mock recall was on 6/27/12. The next one will be before the end of harvest 2013. The procedure is as follows:*

1. *On 6/27/12, I visited Giant 194 of Annapolis, MD.*
2. *I spoke to John, the head of produce telling him we needed to do a mock recall of the last shipment of tomatoes.*
3. *Please find boxes with the date (6/26/12). This item allows us to identify potential recall products, find them, and pull back from being sold to the public.*
4. *John verified that he found 7 boxes of 6/26 (date).*
5. *Using the invoice, we were able to find the 7 boxes out of 7 shipped from that lot. Of the seventh box, 7% (by weight) of the product had been sold.*
6. *In the event of a real recall (If the product was suspect) at this point, we would pull the product off the shelf. End result, we were able to identify “bad” product by using the day it was boxed. If this were a real recall, Giant would have those tomatoes destroyed.*
7. *Giant verified in writing that the mock recall had been performed. The letter is attached.*



**1.8 Corrective Actions**

1.8.1 *The plan evolves as regulations change and more monitoring is needed as the plan changes.*

*When self-audit or auditors find corrective action needed, \_\_\_\_\_\_\_\_\_\_ will implement the change within 8.5 weeks. The corrective actions from the Harmonized Audit on 7/17/12 have been implemented, and are documented and included in this plan.*



**1.9 Self-Audits**

1.9.1 *\_\_\_\_\_\_\_\_ has performed a self-audit of her hydroponic tomato operation by going through the Harmonized GAP checklist developed by Penn State extension. It is attached. \_\_\_\_\_\_\_\_ will perform a self-audit before the 2013 growing season. The self-audit will be attached. The necessary corrective actions will be performed. With the knowledge learned from the 2012 Harmonized audit, the next self-audit completed will be more accurate.* 

**1.10 Agricultural Chemicals/Plant Protection Products**

1.10.1 *Pesticides used on produce (tomatoes) are labeled for that exact produce, and are applied at the labeled rate. Records are included on an attached calendar page.*

1.10.2 *Product is not intended for export, it is sold only within the United States.*

1.10.3 *Under \_\_\_\_\_\_\_\_\_\_ direct supervision, 2 foremen are the only personnel to handle pre- and post- harvest licensed materials. The pesticide applicator’s license is attached.*

**1.11 Water/Ice**

1.11.1 to 1.11.3 *No water or ice is used in any post-harvest steps in the tomato production – it would result in lower quality produce.*

1.11.4 *Although no water is used in postharvest production, the sewage system has capacity to handle the operation’s peak flows, and does not cause contamination.*

1.11.5 and 1.11.6 *No water is re-used in this system.*

1.11.7 to 1.11.9 *No water or ice is used in the post-harvest stages, and that practice is not expected to change*

**1.12 Containers, Bins**

1.12.1 *Tomatoes are packed in cardboard boxes suitable for their use. Boxes and bins for harvesting are stored in the packingroom. All harvesting containers are clean, intact and free of any foreign materials. The solid construction of the bins is suitable for tomatoes. It allows them to be stacked on pallets for transportation, to minimize contamination. Pallets and harvest bins are not used for uses other than their intent.*

1.12.2 *Tomato boxes are stack on pallets in the packing room before use and after they’ve been filled.*

1.12.3 *Any produce-contact surfaces are clean and free of foreign materials. Boxes are maintained to reduce contamination.*

1.12.4 and 1.12.5 *The solid construction of the box is suitable for tomatoes. It allows it to be stacked on pallets for transportation. No boxes or other tomato packing equipment are used for non-produce purposes. Any boxes and bins that are no longer fit for use are disposed of.*

1.12.6 *Pallets are inspected prior to use. If any are dirty, they are rinsed with potable water. They are washed and sprayed twice a year.*

**1.13 Facility, Equipment, Tools**

1.13.1 *Packinghouse area is for tomato packing only and is sufficiently constructed for tomato packing and grading. The sorting tables and packinghouse is cleaned three times a week (after every time that packing occurs). The table is wiped off with potable water.*

1.13.2 *The packingroom is cleaned three times a week by sweeping. Twice a year, the floor and walls are washed down with water and sprayed with disinfectant (GreenShield). The drains are sprayed down with water and disinfectant as well, twice a year. The ceilings will be sprayed down with water twice a year. The packingroom doesn’t normally get dirty. The schedule is also included in the packinghouse cleaning schedule.*

1.13.3 to 1.13.5 *The sanitation chemical that we use, Green Shield, is a quaternary ammonia product that is approved for use on food products. The label is attached. The packinghouse area and supplies are maintained so that potential contamination is minimized. The tomatoes come from the plastic picking bins into the boxes, so that they do not contact many other surfaces.*

1.13.6 *Lighting in the packinghouse is sufficient and enables cleaning and repairs. We have guards on the glass, so that if it were to break, it will not shatter on the produce.*

1.13.7 *The temperature of the insulated storage area is kept (by thermostat) at between 55 and 80 degrees to promote quality and shelf life.*

*If the temperature drops below 55 degrees, chilling injury on tomatoes can result. This may result in cracking of the fruit and a decrease in fruit quality and shelf life – these can increase potential for food-borne pathogens to enter fruit. If the temperature of the insulated storage area drops below 55 degrees, the door to the packing room is opened and the heater in the packing room warms the storage area.*

*If the temperature rises to over 80 degrees, tomatoes will ripen more rapidly, have a decreased shelf life, and lose quality. Higher temperatures may increase reproductive rates of any potential bacteria, as well as promoting spoilage. If the temperature of the insulated storage area increases above 80 degrees, the air conditioner will be run in the storage area to decrease the temperature.*

1.13.8 *The air conditioner in the packing room has a condensation hose that drains outside the storage area. When in use (only in June and July), it is checked daily for debris and cleanliness.*

1.13.9 *The pallet jacks (1 power jack and 2 manual) are serviced once a year by Eastern Lift trucks. They are maintained to prevent contamination. They are stored in the packingroom or boiler room (an enclosed area).*

1.13.10 *Waste containers and the dumpster are located away from produce handling areas. The containers primarily store used paper products. They are emptied when necessary.*

1.13.11 *Production areas and packinghouse are free of litter. Due to the slope of the ramp to the loading dock, water collects when it rains. To decrease potential contamination from the standing water, a pump is used to remove the water each time it rains. The vegetation around the greenhouses is mowed twice a year, or more often when necessary – this is part of the rodent control program, so that debris around the greenhouses does not attract rodents.*



**1.14 Storage**

1.14.1 to 1.14.6

*Boxes are stored in the box bay of the packingshed, an area that is inside (the box room), and in the 2 storage trucks (also enclosed). The cherry tomato containers are on a shelf in the boiler room, on pallets. The box inserts are stored on a shelf in the packingroom. These areas are all protected from contamination. Chemicals are stored away from production and product-storage areas. Shatterproof light bulbs have been installed over any product flow zones or the box storage areas. The box room is swept each time a new shipment of boxes arrives, approximately 6 times per year. In the box room, the boxes stored off to one side, so they are kept away from the air conditioning drain. Although boxes are kept close to the wall, care is taken so they do not become dirty. Boxes are loaded on pallets, so they do not touch the floor.*

**1.15 Waste Materials**

1.15.1 *Waste materials are removed from produce handling areas, so that it does not become a source of contamination. Culled tomatoes are thrown in the dumpster or to the sheep.*

**1.16 Outside Grounds**

1.16.1 *The outside grounds are kept reasonably clean, and equipment and vehicle is stored outside of the building perimeters (to avoid pest problems). No pest problems have been sighted.*

**1.17 Glass Control**

1.17.1 *All glass fixtures and bulbs are covered by plastic casing, so that breakage is not an issue. If for some reason glass or plastic does break, the shards will be picked up and discarded. Any affected produce will be disposed of in the dumpster.*

**1.18 Leaks/Lubrication**

1.18.1 *No lubricants are required on any of the equipment.*

**1.19 Equipment and Utensil Construction**

1.19.1 *Packinghouse area is for tomato packing only and is sufficiently constructed for tomato packing and grading. The sorting tables and packinghouse is cleaned three times a week (after every time that packing occurs). The table is covered with hard, nonporous surface that can be cleaned with soap and water. No other equipment or utensils are used in tomato packing*.

1.19.2 and 1.19.3 *All equipment and packing tables are installed away from walls, thus allowing access to all areas for cleaning. There are no catwalks above the produce flow zones. .*

**1.20 Temporary Repairs**

1.20.1 *Any temporary repairs do not create potential sources of contamination. Since we don’t have any mechanical harvesting equipment (it is all hand-picked), we do not have foreseeable repairs.*

**1.21 Worker Health/Hygiene and Toilet/Handwashing Facilities**

1.21.1 *Our restroom which includes a handwashing station just outside is stocked with soap and single use towels for safe hygiene. The restroom is cleaned weekly and more often if needed. Paper products are checked daily. Documentation is provided for servicing restrooms. Toilet facilities are located in the packing shed, which is not near production areas, so they do not pose a hazard to the produce.*

1.21.2 *This farm has up to 9 workers at a time (always less than 20 people) working at one time, and therefore meets the OSHA rule that there is at least one bathroom per 20 workers. The bathroom is located very close (walkable distance) to the greenhouses.*

1.21.3 *Toilet tissues are to be disposed of in the toilet (per signage), and are not to be placed on the floor or trash cans.*

1.21.4 *Our restroom (which includes a handwashing station) is stocked with toilet paper, soap and single use towels for safe hygiene. The restroom is cleaned weekly and more often if needed (every two weeks by the sanitation company, every three days by us). Paper products are checked daily. Documentation is provided for servicing restrooms. The washwater source is potable, and tested for microbes annually. Results are enclosed. Since our operation is located within a small area, we do not have need for field sanitation units.*

1.21.5 *English/Spanish hand-washing and hygiene signs are posted at the eating area, bathroom, and wash station to reinforce washing hands before work.*

1.21.6 *Workers and visitors follow the hygiene practices outline in the Cornell DVD. They wash their hands before work and after using the bathroom, and after sneezing/blowing their noses, taking breaks, and handling contaminated material.*

1.21.7 *All employees and visitors are instructed to follow this farm’s health and hygiene practices. English/Spanish hand-washing and hygiene signs are posted at the eating area, bathroom, and wash station to reinforce washing hands before work. Visitors visit with the foreman – at that point, they will be instructed to follow proper sanitation and hygiene practices. Visitors are not required to wear protective clothing, because they will not be applying fertilizers or chemicals, nor will they be allowed to enter production areas after chemicals have been applied.*

1.21.8 *In the event of diarrheal disease or other sickness, employees are instructed to not work until recovered, and to tell the supervisor (Jennifer) or foremen that they are sick. Workers are both told that, and the policy is covered in the Cornell GAP DVD. The farm is able to cover for the employees until the regular employee is recovered.*

1.21.9 *The Cornell DVD tells employees to seek medical attention for cuts and abrasions. Ridgely Hummingbird Farms, Inc. employees are instructed to seek prompt treatment for cuts and abrasions from the foreman. If someone has a cut or abrasion and returns to work, it will be washed and bandaged.*

1.21.10 *The first aid kit is located in the boiler room.*

1.21.11 *An area designated by management is the smoking and eating area. This area is upstairs, and not near where production or packing occur. No smoking, eating, chewing gum, and drinking (non-water drinks) are to happen outside of non-designated areas. No urinating or defecating occurs in the greenhouses – only to occur in the bathroom. Smoking occurs outside.*

1.21.12 *Workers follow the hygiene practices outline in the Cornell DVD. They wash their hands before work and after using the bathroom, and after sneezing/blowing their noses, taking breaks, and handling contaminated material.*

1.21.13 *\_\_\_\_\_\_\_ does not have a glove use policy. Gloves are not required, but provided for worker comfort (on a voluntary basis)*

1.21.14 *Per the Cornell DVD, I just ask that workers come to work in clean clothes suitable for harvesting tomatoes. This minimizes contamination, and no specific clothes are required for tomato harvest. Since it’s an enclosed hydroponic system, we don’t want to introduce microbes – we require clean clothes.*

1.21.15 *Since employees are just harvesting tomatoes, there is no protective clothing required. Protective clothing for pesticide applicator is stored in the fertilizer room.*

1.21.16 *The use of hair coverings is not required by \_\_\_\_\_\_\_\_\_\_\_\_ since we do not produce ready-to-eat foods*

1.21.17 *No visitors operate the line. \_\_\_\_\_\_\_\_\_\_enforces the policy that no loose jewelry is allowed to be worn in the production areas. The employees were also taught this on the Cornell DVD.*

1.21.18 *Employees’ personal belongings are be kept in the break/lunch area (away from production/packing areas), so that there is no potential for contamination.*

1.21.19 *The break area is a designated outside of the packing area. The activities mentioned in 2.2.15 (pre-harvest section) occur in the break area. Smoking occurs outside.*

**1.22 Temperature control**

1.22.1

*The temperature of the insulated storage area is kept (by thermostat) at between 55 and 80 degrees to promote quality and shelf life.*

*If the temperature drops below 55 degrees, chilling injury on tomatoes can result. This may result in cracking of the fruit and a decrease in fruit quality and shelf life – these can increase potential for food-borne pathogens to enter fruit. If the temperature of the insulated storage area drops below 55 degrees, the door to the packing room is opened and the heater in the packing room warms the storage area.*

*If the temperature rises to over 80 degrees, tomatoes will ripen more rapidly, have a decreased shelf life, and lose quality. Higher temperatures may increase reproductive rates of any potential bacteria, as well as promoting spoilage. If the temperature of the insulated storage area increases above 80 degrees, the air conditioner will be run in the storage area to decrease the temperature.*

**1.23 Packing and Handling**

1.23.1 *There is no need for an allergen control program for tomatoes.*

1.23.2 *Since we are developing a raw product (tomatoes), there is no approval required for packaging and labeling restrictions. All packaging is standard for this crop.*

**1.24 Animal and Pest Control**

1.24.1

*Since tomato production is done in an enclosed greenhouse, pest control from outside pests is not a problem. A rodent monitoring program has been established for the greenhouses, based upon training materials received from University of Maryland. Jennifer Sturmer will supervise the rodent control program, with the help of a professional pest monitoring company (Orkin). The agreement and rodent monitoring plan are enclosed. Any potential holes, entry points, or living sites will be filled with foam and steel wool, or will otherwise be addressed accordingly.*

*So far, no mice have been sited or caught in the production or packing areas.*

*Since tomato production is done in an enclosed greenhouse, pest control from outside pests is not a problem. Mice are only occasionally problem in the greenhouses during seeding (they eat tomato seed). They are not a problem in the packinghouse and growing houses. A professional pest control company (Orkin) is hired to conduct the rodent monitoring, through observation and the use of live rodent traps. The boiler room and bathrooms are treated by a pest control service 2 times are year to prevent roach activity. Records and logs are attached, as is the agreement with the pest control company.*

*The boiler room and bathrooms are treated by a pest control service 2 times a year to prevent roach activity. Records and logs are attached.*

1.24.2 *Domestic animals are prohibited from the packing house, cooling, and storage facilities. The packinghouse is enclosed, thus restricting access to wild animals.*

1.24.3 *No poison bait traps are placed out in the packinghouse.*



**1.25 Microbiological Sampling/Testing: See pre-farm gate.**

**2. Packinghouse**

2.1 *Produce is not washed. Tomatoes are only picked and packed.*

2.2 *No dump tanks are used. Debris is removed daily from packing areas (if any debris exists).*

2.3 *We do not use wash water or dump tanks on the tomatoes.*

 2.4 and 2.5 *No wash water antimicrobial is used. Therefore, there is no need for temperature, pH and antimicrobial measurements.*

2.6 *We do not use foreign material control devices.*

**3. Transportation**

**3.1 Temperature control**

3.1.1, 3.1.3, and 3.1.4 *The temperature of the transportation (box truck or van) is kept between 55 and 80 degrees to promote quality and shelf life. On the box truck, the reefer is set at 60 degrees F in the winter, and 70 degrees F in the summer.*

*If the temperature drops below 55 degrees, chilling injury on tomatoes can result. This may result in cracking of the fruit and a decrease in fruit quality and shelf life – these can increase potential for food-borne pathogens to enter fruit. If the temperature of the insulated storage area drops below 55 degrees, the door to the packing room is opened and the heater in the packing room warms the storage area.*

*If the temperature rises to over 80 degrees, tomatoes will ripen more rapidly, have a decreased shelf life, and lose quality. Higher temperatures may increase reproductive rates of any potential bacteria, as well as promoting spoilage. If the temperature of the insulated storage area increases above 80 degrees, the air conditioner will be run in the storage area to decrease the temperature.*

3.1.2 *Tomatoes are not pre-cooled, because they would lose their quality.*



**3.2 Equipment Sanitation and Maintenance**

3.2.1 *Tomatoes are transported to stores in a straight truck (6-wheeled box truck), and 2 cargo vans. Tomatoes are mostly palletized in the straight truck. Boxes going into the cargo vans are stacked. Trucks and vans are swept out, and twice a year they’re cleaned with soap and water. Tomatoes are not refrigerated. We try to keep them between 55 and 66 degrees for quality. If it gets too warm, we run air-conditioning, and if it is too cool, we run heat to maintain quality and shelf-life.*

3.2.2 *Care is taken to prevent damaged product, as we would not be able to sell damaged product. Tomatoes are palletized and shrink-wrapped, then carefully loaded. When we palletize our tomato bags, we are careful to keep the bags within the dimension of the pallet. Then we shrink wrap, which keeps the chances of damage low since overhang is not a big issue. Loading the product has very little chance of damage, as the fork lift operator is careful. If tomato boxes are stacked in the truck, care is also taken when loading and unloading.*

3.2.3 *Trash is loaded into a dumpster, which is placed away from the packinghouse to prevent contamination (physical and microbial).*

