COMPRHENSIVE PLAN AMENDMENT STAFF REPORT AMENDMENT ROUND 17-D

DEO TRANSMITTAL, JULY 26, 2017

I. General Data

Project Name:	**Equestrian Waste Pilot Project Repeal**
Element:	**Future Land Use and Introduction & Administration Elements**
Project Manager:	Lisa Amara, Principal Planner
Staff Recommendation:	Staff recommends ***approval*** based on the findings and conclusions presented in this report.

II. Item Summary

Summary: This proposed amendment would revise the Future Land Use and Introduction and Administration Elements to eliminate the Equestrian Waste Recycling Pilot Project and associated changes to the Plan that were adopted in January 2017 by Ordinance 2017-005. Equestrian Waste Recycling Facilities would remain allowed within the Urban Suburban Tier in lands with an Industrial future land use designation subject to the requirements of the Unified Land Development Code.

Assessment: In response to the growing issue of equestrian waste stemming from the County's equestrian industry, the County adopted an Equestrian Waste Recycling Pilot Project in January of this year. The Pilot Project allowed up to four facilities in the Glades Tier, largely known as the Everglades Agricultural Area, to apply for an equestrian waste recycling facility. The intent of the Project was to provide additional opportunities for to manage equestrian waste in a more environmentally friendly manner than through composting and other methods. The Project was limited as a 'Pilot' specifically to ensure that the proposed facilities would meet all state and federal regulatory requirements beyond the scope of a typical future land use amendment, and to ensure that there were no negative impacts or issues created by the use. During the review of the first Pilot site, Horizon Composting, local farmers objected to the use stating that the concentration of equestrian waste composting and recycling on the site would present a food safety issue for locally grown fruits, vegetables, and leafy greens, and hinder their ability to sell their produce. As demonstrated by the farmers and discussed in this report, the introduction of equestrian waste recycling or management facilities is not compatible or appropriate within the Glades Tier. Therefore, staff recommends that the Pilot Project be repealed.

III. Hearing History

Local Planning Agency: ***Approval***, motion by Michael Peragine, seconded by Arthur Goldzweig passed in an 8-0 vote at the July 14th public hearing. The Board commented on the need to address equestrian waste, but not at the expense of food safety. Three members of the public representing the agricultural industry spoke in support citing food safety concerns. A representative for the Horizon Composting application spoke in opposition, stating the need to continue efforts and dialogue to address the issue. A letter from the Florida Fruit and Vegetable Association was submitted for the record and documents from Paul Cross representing Horizon Composting (see Exhibit 7 Correspondence).

Board of County Commissioners Transmittal Public Hearing: ***Transmit***, motion by Vice Mayor McKinlay, seconded by Commissioner Kerner passed in a 7-0 vote at the July 26th public hearing. There was minimal board discussion. One member of the public spoke in support of the Pilot Program with a request to postpone and revise rather than repeal.

State Review Agencies:

Changes Subsequent to Transmittal:

Board of County Commissioners Adoption Public Hearing:

T:\Planning\AMEND\17-D\Reports-Agendas\3-DEOTranPacket\A-1_17-D_Equestrian-Txt-Rpt.docx

IV. Intent

The intent of this amendment is to revise the Future Land Use and Introduction and Administration Elements to delete the Equestrian Waste Recycling Pilot Program and associated changes to the Plan that were adopted in January 2017 by Ordinance 2017-005. Subsequent changes to the Unified Land Development Code (ULDC), would eliminate the Program, and limit facilities that recycle or process equestrian waste, including bedding and manure, to being allowed only within the Industrial future land use designation as existing prior to the 2017 Plan amendment.

V. Background

In January 2017 by Ordinance 2017-005, the County established an Equestrian Waste Pilot Project with associated changes in the Comprehensive Plan. The intent of the Project was to allow more environmentally sensitive methods to managing equestrian waste in the Glades Tier, also known as the Everglades Agricultural Area (EAA). The Project was limited as a Pilot specifically to ensure that the facilities would meet all state and federal regulatory requirements beyond the scope of a future land use change, and to ensure that there were no negative impacts or issues created by these uses. The Project allowed up to four sites to apply for a Special Agriculture (SA) future land use designation with a concurrent zoning application so that the project would be reviewed comprehensively by all County regulatory agencies and the Board. During the Planning Commission public hearing on October 21, 2016, one member of the Planning Commission indicated that manure processing could create issues for food processing facilities located nearby. The Commission added a condition of approval to ensure that Pilot sites were not located within 1,000 feet of food processing facilities. The inclusion of the 1,000 foot separation from food processing facilities appeared to address the food safety concerns identified at the hearing. The Board of County Commissioners transmitted the amendment on October 26, 2016 and adopted the amendment on January 30, 2017. During the State review period, there were no negative issued identified by the State Review agencies.

In November 2016, the property owners for the 31.60 acre Horizon Composting (LGA 2017-012) applied for a future land use amendment to Special Agriculture (SA) with a concurrent zoning application to be the first site of the Pilot Project. The site has held an approval for a Composting Facility since 2014 with approximately 12 acres of composting windrows, a 38,536 sq.ff. storage building and a 6,172 sq.ft. accessory office, and 2 acres for ground materials storage, grinding, manure and yard trash receipt, truck load out and bio-solids curing. Prior to the approved composting operations commencing, the applicant would need to obtain permits from a variety of agencies including the Department of Environmental Protection, Health Department, South Florida Water Management District and the Building Division.

The Horizon Composting future land use application for equestrian waste recycling was recommended approval by staff provided that all regulatory requirements were met through the concurrent zoning process. The Planning Commission recommended approval on February 10th, and the Board of County Commissioners transmitted to the State on February 23rd. At the Zoning Commission for the concurrent zoning application, local farmers first expressed objection to the request. The following summarizes the subsequent events:

- April 6, 2017, Zoning Commission for the Horizon Zoning application. Local farmers objected to the proposed use stating that the concentration of equestrian waste composting and recycling could hinder their ability to sell fresh produce. The farmers stated that the facility could lead auditors that implement Good Agricultural Practices (GAP) standards could negatively impact their farms. The farmers referenced the risk of

bio-aerosol drift to crops, the risk groundwater contamination that could lead to crop contamination, and the likelihood of negative responses from auditors that could put the sale of their crops at risk to buyers with private GAP standards. Several speakers referenced that auditors would identify any farm within 1-3 miles of a composting facility as a hazard.

- April 17, 2017, Horizon Composting Meeting at PZB. On April 17th, the Planning, Zoning, and Building Department hosted a meeting with Commissioner McKinlay, local farmers, State Review agencies, County staff, Glades municipal representatives, Ag Extension and University of Florida representatives, the Horizon applicant, and area farmers and agricultural industry representatives. The purpose of the meeting was for the Horizon applicant to present more information about the proposal in response to the questions raised at the Zoning Commission meeting. The meeting was held in a 'roundtable' format, and over 35 people attended. Several additional participants were able to participate through conference call. The Horizon applicant provided additional information regarding the design, buffering, and water management aspects of the proposal. However, the farmers and food safety experts maintained that the site was not appropriate for the composting and equestrian waste use considering the adjacent farms as described at the Zoning Commission hearing.

- April 26, 2017, Board of County Commissioners (BCC) Transmittal Public Hearing for the Horizon Future Land Use Application. Area farmers again expressed objection to the proposed use. After considerable Board discussion, the applicant withdrew the proposed amendment and rezoning to allow time to reach out to the buyers to determine if there was a way to develop the site in a manner that would be acceptable. The Planning Director indicated at the hearing that staff would return to the Board in July with a significant revision or deletion of the Pilot Project based upon concerns raised at the hearing.

- June 6, 2017, BCC Meeting. Commissioner McKinlay requested two motions to prepare moratoriums for applications for facilities that compost animal or equestrian waste, or bio-solids, in the Glades Tier and to invoke a Zoning in Progress to no longer accept such applications (See **Exhibit 2**). The Board voted in favor of the two motions.

VI. Data and Analysis

This section provides examines the differences between the regulations for equestrian waste vs. agricultural production, details federal food safety regulations and private standards, summarizes foodborne and economic risks associated with the Pilot Project, and examines the proposed amendment for consistency with the Comprehensive Plan.

A. State and Federal Regulations

The intent of limiting equestrian waste recycling in the Glades Tier as a Pilot Project was to ensure that the proposed facilities would meet all regulatory agency requirements, whether local, County, South Florida Water Management District, State of Florida, or federal, prior to allowing at a broader scale. The focus of the research for the preparation of the Project was on the regulatory agencies that regulate waste and composting facilities, and water management/water quality agencies. There are no specific regulations for 'equestrian waste recycling' since the term reflects new and emerging technologies that are not specifically referenced. Such facilities often include a composting or storage component of the waste which is regulated by the State of Florida

Department of Environmental Protection (DEP) as part of their "Composting/Organics Recycling Program". The Program provides *"rulemaking, providing technical assistance on implementing the organics recycling regulations, providing information on the environmental aspects of compost production and use, and processing the source-separated organics processing facility (i.e., yard trash processing, manure blending, or vegetative waste/animal byproduct/manure composting) registration applications".* The Horizon Composting site is registered as a Source-Separated Organics Processing Facility (SOPF) by the DEP for the composting operation. The DEP's permitting and regulations are further described in this link:

http://www.dep.state.fl.us/waste/categories/solid_waste/pages/composting.htm

The agencies governing and regulating agricultural production are separate from those that regulate composting and equestrian waste. The governmental agencies that regulate the agricultural industry consist of the United States Department of Agriculture (USDA) and the Food and Drug Administration (FDA). The FDA implements the Food Safety Modernization Act (FSMA) which was put in place to protect public health by strengthening the food safety system through regulations to help prevent and track food borne illness. A background document on the FSMA is provided in **Exhibit 3** and links to key components are provided below.

- **FDA FSMA**
  https://www.fda.gov/Food/GuidanceRegulation/FSMA/default.htm

- **Produce Safety Rule**
  https://www.fda.gov/Food/GuidanceRegulation/FSMA/ucm304045.htm

- **Guidance for Industry Guide to Minimize Microbial Food Safety Hazards for Fresh Fruits and Vegetables**
  https://www.fda.gov/Food/GuidanceRegulation/GuidanceDocumentsRegulatoryInformation/ucm064574.htm

The FDA regulations reference manure as one of several conditions and practices identified as potential contributing factor for microbial contamination of produce along with agricultural water, worker health and hygiene, equipment sanitation, domestic and wild animals, and growing, harvesting, packing and holding activities. The FDA is currently developing science-based minimum standards for manure use on farms, but in the interim is referring to the USDA's Organic Regulations for Manures and Manure-Based Compost which requires a minimum of 120 days between the application of raw manure on a field prior to the harvest of a produce whose edible portion has direct contact with the soil. *"The producer must manage plant and animal materials to maintain or improve soil organic matter content in a manner that does not contribute to contamination of crops, soil, or water by plant nutrients, pathogenic organisms, heavy metals, or residues of prohibited substances" 7 CFR § 205.203(c)(2).* The USDA regulations as part of the chapter are summarized by the National Center for Appropriate Technology's A National Sustainable Agriculture Assistance Program (www.attra.ncat.org) at the following link:

- **Tipsheet: Manure in Organic Production Systems**
  https://attra.ncat.org/attra-pub/download.php?id=523

- **USDA Organic**
  https://www.usda.gov/topics/organic

As with many industries, the agricultural industry utilizes various 'best management practices' (BMPs), which vary on the type of production – nurseries, equestrian, etc. However, the modern produce industry has taken this concept to a higher and much more complicated level through what is called Good Agricultural Practices (GAP) and Good Handling Practices (GHP). The USDA GAP & GHP Auditing and Accreditation website provides the following summary. https://www.ams.usda.gov/services/auditing/gap-ghp#Listings

> *"Good Agricultural Practices (GAP) and Good Handling Practices (GHP) are voluntary audits that verify that fruits and vegetables are produced, packed, handled, and stored as safely as possible to minimize risks of microbial food safety hazards. GAP & GHP audits verify adherence to the recommendations made in the U.S. Food and Drug Administration's Guide to Minimize Microbial Food Safety Hazards for Fresh Fruits and Vegetables (pdf) and industry recognized food safety practices. In 2015, The USDA Audit Program performed audits in 50 states, Puerto Rico, and Canada, covering over 90 commodities."*

The USDA website provides links to seven different types of audits, each with their own standards and regulations. Food safety experts to prepare private audits for farmers using a series of checklists and standards established within each type of GAP.

B. Private GAP Standards

Although the above regulations may appear fairly straightforward, there is an added complexity to growing fresh fruits and vegetables well above and beyond governmental regulation through private food safety standards. Over the past twenty years, private firms and collectives have developed private food safety or GAP standards at a national and global level. As stated by the EAA farmers at the Horizon Composting zoning commission hearing, buyers can and do require that farms are audited by private food safety inspectors to ensure compliance with those standards. If a farm fails an audit, or portion of an audit, the buyer can refuse to purchase the associated produce.

One example of an enhanced GAP was prepared and managed by the California Leafy Green Products Handler Marketing Agreement (LGMA) which is a collective of member companies (called handlers) that ship and sell produce to grocery stores, restaurants, and institutions with oversight from the California Department of Food and Agriculture. The LGMA developed food safety practices to *'reduce the sources of potential contamination on farms or into* fields' through a *'mechanism for verifying through mandatory government audits that farmers follow accepted food safety practices for lettuce, spinach, and other leafy greens'.* (http://www.lgma.ca.gov/)

A particular challenge to farmers (referred to in the industry as 'suppliers') is the variety of standards across various GAPs (also called 'metrics'). Managing multiple audits and standards can be a challenge for farmers since the standards can vary significantly from one buyer to the next. The chart and document in **Exhibit 5** entitled *"Comparison of GAPs Governing the Growing and Harvesting of Fresh Produce"* provides a comparison of several of the most common GAPs and a description of the types of standards that vary between each.

During the public comments on the Horizon Composting application, several farmers and food safety experts indicated that an equestrian waste management or composting facility would be seen as a hazard to produce grown within 1 mile. Referenced in the chart is the Food Safety Leadership Council (FSLC) On-Farm Produce Standards which is particularly restrictive with regards to manure both on and off site. Whereas the federal regulations for agricultural practices generally limit governance to the particular farm in question, private standards can hold a farmer

accountable for activities that are not on land owned by the farmer. The FSLC Standards prohibit the use of any raw manure and prohibit production within a quarter mile of animal grazing and at least one mile from Concentrated Animal Feed Lots (CAFOs). Although not a CAFO, a facility centered on composting or recycling animal wastes, such as proposed in the Pilot Project, could be considered to present similar risks and attributes of a CAFO by a food safety auditor in light of the amount of manure concentrated on the site.

The development of private GAP standards has had a dynamic change upon the agricultural operations. The complexities that have resulted are well documented and discussed at length in a variety of technical articles such as those listed below:

- **Private Food Safety Standards: Their Role in Food Safety Regulation and Impact**
  www.fao.org/docrep/016/ap236e/ap236e.pdf

- **Understanding the Complexities of Private Standards in Global Agri-Food Chains**
  https://www.ids.ac.uk/files/dmfile/HensonHumphreyLeuvenOct08.pdf

- **Three Puzzles of Private Governance: GlobalGAP and the Regulation of Food Safety and Quality**
  regulation.upf.edu/utrecht-08-papers/dcasey.pdf

- **Interaction of Public and Private Standards in the Food Chain**
  www.oecd.org/tad/agricultural-trade/45013504.pdf

- **Beyond the Public-Private Divide: GlobalGAP as a Regulation Repository for Farmers**
  http://www.ijsaf.org/archive/21/2/bernardderaymond.pdf

With regards to the Pilot Project, farmers have objected to the siting of new manure facilities in the EAA since the food safety auditors using private GAP standards can consider such facilities as a risk to food safety. At the Zoning Commission and BCC transmittal hearings for the Horizon Composting application, the farmers stated that composting on close proximity to their sites with the shared waterways could result in auditors identifying this as a possible microbial hazard that could result in the failure of the farm to meet private GAP standards. This in turn could result in buyers rejecting their produce. Subsequent research indicates that this is a genuine issue and well documented. This practice is documented by the *Produce Safety Project* in their document entitled *"Composting Criteria for Animal Manure".* This 171 page document provides detailed information on the science of composting manure and potential issues on high pathogen loads that can survive for months to years and contaminate waterways and vegetables grown with these soils. In addition, Appendix F within this document provides excerpts of interviews with farmers discussing interactions with private food safety auditors. In one interview (on page 97) a farmer describes the following experience with an auditor and animal intrusion on the property:

http://www.pewtrusts.org/~/media/assets/2009/psp20issue20brief20seriespdf.pdf?la=en

"Grower tells a story of how, last year, an auditor representing a buyer said they would take crops a half-mile from domesticated animals (even though their standards require a one mile buffer), but this year on the same property they said they would not take the crops. They claimed that now they "could more accurately measure the distance." Grower added, "it is not like they invented new ways of measuring distance anytime recently." His experience has been that food safety measures from these companies are not negotiable. Grower has made some changes even before being told to do so because grower knew that there would be problems otherwise. One

time, five acres of cropland were rejected due to animal intrusion and they lost about $17,000 in one shot."

"Some auditors are "more picky than others." Auditors from processors and buyers are not consistent at all and it can depend on the market. The auditors "change their minds depending on the market." For example, grower describes how once some pigs ran through his field of lettuces when BUYER came to harvest half of it they marked off about 40 feet on all sides of the pig tracks and harvested the rest. They came back for the rest of the field the next week, but in the meantime a hurricane had hit Mexico and wiped out the crop down there. They were short on produce and cut within two feet of the same pig tracks, totally violating both their own and the standards. Grower is frustrated by these events and says, "and they say it is not market-related!" Grower describes another incident that happened to someone grower knows. BUYER came to harvest and flagged off a corner of the field where there were animal tracks and harvested the rest. Then later, for a field at the same location, they rejected 20 acres of crops because of the same tracks, just because the market had changed and was flooded (they did not need the produce). Grower explains why the growers are powerless in these situations, "there is a short list of people you can grow for and some of them own the land you farm."

C. Food Borne Illness

Farmers objecting to the Pilot Program have citing the increase risk of foodborne illness from possible contamination of manure on the site in close proximity to the production of fresh fruits and vegetables. Contamination can occur from bio-aerosol drift, seepage or runoff into the water supply used for crop irrigation, and from transportation activities. The Centers for Disease Control and Prevention indicates that 1 in 6 people contract a food borne illness each year from eating contaminated food or beverages. The Centers for Disease Control and Prevention indicate that food borne disease accounts for approximately 48 million people becoming ill, 128,000 hospitalizations, and 3,000 deaths annually. One of the deadliest outbreaks in recent years was cantaloupe contaminated with listeria that resulted in approximately 150 illnesses and more than 30 deaths. The document entitled "Understanding the Fresh Produce Safety Challenges" provided in **Exhibit 4** provides information the challenges and risks of biological contamination of produce. Fresh produce and leafy greens are particularly at risk for contamination since they are often eaten raw and there is no 'kill step' to eliminate harmful pathogens. Fresh produce is at risk for contamination from pathogens such as listeria, salmonella, norovirus, and strains of E. coli. The CDC tracks more than 250 foodborne diseases and coordinates with the FDA to warn the public of outbreaks and to trace the source of the pathogen for each outbreak. The link to the CDC Food Safety website, and a link to testimony explaining the identification and tracking steps of managing a foodborne illness outbreak is provided on the FDA link below.

- **Center for Disease and Prevention Food Safety**
  https://www.cdc.gov/foodsafety/foodborne-germs.html

- **FDA. Ensuring Food Safety: Tracking and Resolving the E. coli Spinach Outbreak**
  https://www.fda.gov/Newsevents/Testimony/ucm110926.htm

D. Economic Impacts

The farmers objecting to Pilot Project have indicated that manure recycling and composting represents both a public health risk and a risk to the County's agricultural economy. According to the County's Agricultural Extension office, with an estimated $1.41 billion in total agricultural sales for 2014-15, Palm Beach County leads the State of Florida, all counties east of the Mississippi River, and is one of the ten largest in the United States. Palm Beach County leads the nation in the production of sugarcane, fresh sweet corn, and sweet bell peppers. It leads the State in the production of rice, lettuce, radishes, Chinese vegetables, specialty leaf, and celery. The bulk of the land in the County in agricultural production is located within the Glades Tier, and accounts for nearly ½ million acres of land and represents 37% of the County's acreage.

An outbreak of foodborne illness can lead to the loss of an entire harvest if consumers turn away from a type of produce. In 2008, the FDA issued a nationwide warning to consumers linking an outbreak of salmonella to certain raw tomatoes and products containing these types of tomatoes. The warning resulted in a decreased demand for tomatoes that collapsed the tomato market, resulting in the loss of millions of dollars to Florida and Georgia tomato farmers. Eventually the source of the salmonella was traced to peppers from Mexico, but that information was of little use to the Florida farmers that lost their crops that year. See **Exhibit 5** for a publication regarding the "Costs of Foodborne Illness Outbreaks for Vegetable Producers".

E. Consistency with the Comprehensive Plan

This proposed amendment will further several provisions in the Future Land Use Element (FLUE) of the Comprehensive Plan, including the items listed below. Unrelated language is omitted for brevity.

1. FLUE, C. County Directions. *The Future Land Use Element was created and has been updated based on input from the public and other agencies through citizen advisory committees, public meetings, interdepartmental reviews, and the Board of County Commissioners. All contributed to the generation of the long-term planning directions, which provide the basis for the Goals, Objectives and Policies of the Future Land Use Element. These directions reflect the kind of community the residents of Palm Beach County desire.*

15. Agricultural and Equestrian Industries. *Support and enhance agriculture and equestrian-based industries.*

Staff Assessment: This proposed amendment will further Directive 15 by supporting and protecting the agricultural industry in the County. Although additional opportunities are needed for support the County's equestrian waste issues, locating equestrian waste facilities in the Glades Tier is not appropriate. The County will continue to work with other agencies and applicants to review and consider locations for equestrian waste management facilities within industrially designated areas of the County as currently allowed.

This amendment will support the above referenced provisions in the Comprehensive Plan and there are no inconsistencies with the policies in the Comprehensive Plan.

F. ULDC Implications

The County is putting in place the moratorium (discussed in the Background) and pursing revisions to the ULDC to eliminate the Pilot Project pursuant to this amendment.

VII. Public and Municipal Review

Intergovernmental Plan Amendment Review Committee (IPARC): Notification was sent to the County's Intergovernmental Plan Amendment Review Committee (IPARC), a clearing-house for plan amendments, on June 28, 2017. At the time of the printing of this report, no calls or written requests for information or objections to the amendment had been received.

Other Notice and Comments: Additional notification was provided to the farming community representatives that attended the Zoning Commission and BCC transmittal public hearings for the Horizon Composting site of the timeline for this amendment.

VIII. Assessment and Conclusions

In response to the growing issue of equestrian waste stemming from the County's equestrian industry, the County adopted an Equestrian Waste Recycling Pilot Project in January of this year. The Pilot Project allowed up to four facilities in the Glades Tier, largely known as the Everglades Agricultural Area, to apply for an equestrian waste recycling facility. The intent of the Project was to provide additional opportunities for to manage equestrian waste in a more environmentally friendly manner than through composting and other methods. The Project was limited as a 'Pilot' specifically to ensure that the proposed facilities would meet all state and federal regulatory requirements beyond the scope of a typical future land use amendment, and to ensure that there were no negative impacts or issues created by the use. During the review of the first Pilot site, Horizon Composting, local farmers objected to the use stating that the concentration of equestrian waste composting and recycling on the site would present a food safety issue for locally grown fruits, vegetables, and leafy greens, and hinder their ability to sell their produce. As demonstrated by the farmers and discussed in this report, the introduction of equestrian waste recycling or management facilities is not compatible or appropriate within the Glades Tier. Therefore, staff recommends that the Pilot Project be repealed.

Staff recommendation is for ***approval*** based upon the finding and conclusions presented in this report.

Exhibits

Exhibit 1

A. Introduction & Administration Element, Equestrian Waste Repeal, Definitions

REVISIONS: To delete definitions. The added text is underlined, and the deleted text ~~struck out~~.

A.1. DELETE ~~EQUESTRIAN WASTE – Equestrian Waste means manure produced by horses along with soiled bedding material. "Manure" means a solid waste composed of excreta of animals, and residual materials that have been used for bedding, sanitary or feeding purposes for such animals.~~

A.2. DELETE ~~RECYCLYING - "Recycling" means any process by which solid waste materials are recovered and reused in manufacturing, agricultural, power production, and other processes.~~

B. Future Land Use Element, Equestrian Waste Repeal Pilot Project Repeal

REVISIONS: To delete the Equestrian Waste Recycling Pilot Project in the Special Agricultural future land use designation. The added text is underlined, and the deleted text ~~struck out~~.

OBJECTIVE 2.2 Future Land Use Provisions – General

2.2.5 Agricultural

B.1. Policy 2.2.5-c: ~~**Equestrian Waste Recycling Pilot Project.** The County recognizes the importance of the equestrian industry and the need for facilities to manage the equestrian waste in a sustainable manner. Through the Equestrian Waste Recycling Pilot Project, the County may approve up to four equestrian waste recycling facilities in the Glades Tier Rural Service Area within the Special Agriculture future land use designation. By December 31, 2021, the County shall review the approved facilities and consider whether to amend the Comprehensive Plan to allow additional sites. A proposed Pilot Project site must meet the following criteria in order to be approved:~~

~~1. The site must be located in proximity to State or County roadways (SR80, SR715, CR880, Connors Highway/US98, Browns Farm Road, and US27); and~~
~~2. The proposed amendment must be reviewed and adopted with a concurrent zoning application; and~~
~~3. The site must be self contained, comply with all regulatory permits, and comply with the ULDC Article 5, Best Management Practices for Livestock Waste Received from Offsite Sources; and~~
~~4. The ULDC shall be revised to ensure that the use is not located within a minimum of 1,000 feet from food processing or packing plants.~~

B.2. REVISE Table III.C

TABLE III.C
FUTURE LAND USE DESIGNATION BY TIER

Future Land Use	FLU Category	Tier				
		Urban/Sub & Glades USA	Exurban	Rural	Ag Reserve	Glades RSA[1]
Agriculture	AP	---	---	---	---	X
	SA	X	X	X	X	---[3]
	AgR	---	---	---	X	---
	Ag Enclave	---	---	X	---	---

1. Within the rural towns of Lake Harbor and Canal Point, the following additional future land use designations shall be allowed: Residential from RR-2.5 through MR-5; CL; CL-O; IND; EDC; and INST.
2. Within the Glades Area Protection Overlay, 138.31 acres of EDC future land use designation is allowed.
3. ~~Special Agriculture future land use is allowed in the Glades Tier only for the Equestrian Waste Recycling Pilot Project described in Policy 2.2.5-c.~~

C. Future Land Use Element, Equestrian Waste Repeal, Special Agriculture

REVISIONS: To revise the Special Agriculture future land use designation to eliminate changes established with the Equestrian Waste Pilot Project. The added text is underlined, and the deleted text ~~struck-out~~.

FLUA Regulation Section, 5. Agriculture, General

unaltered text omitted for brevity

C.1. The County agricultural Future Land Use Designations are depicted on the Future Land Use Atlas and include:

1. Special Agriculture (SA). The SA category shall primarily be used as a transitional agricultural classification and is utilized for more intense agricultural uses and related services. Limited commercial activities that provide a convenience to the rural or agricultural community may be permitted within this category;
2. Agricultural Production (AP). The AP category shall be applied to the Everglades Agricultural Area to protect areas for bona fide agriculture and related farming operations, particularly where conditions favor continued agricultural production. Agricultural Production uses shall be protected from encroachment of incompatible urban land uses;
3. Agricultural Reserve (AGR). The AGR category shall be applied within the Agricultural Reserve Tier, and shall limit uses to agriculture and conservation with residential development restricted to low densities.

unaltered text omitted for brevity

B.4. Special Agriculture Uses. The following land uses and intensities are allowed in areas designated Special Agriculture where permitted by the terms of the Unified Land Development Code:

1. Fruit and vegetable markets and terminals for farm products;
2. Agricultural production uses including, but not limited to, *produce packing plants*, poultry and egg production, nurseries, growing, livestock, training centers *and potting soil manufacturing*;
2. ~~Agricultural industry facilities related to the transportation, storage, recycling, or processing of agricultural products or by-products. Such uses may or may not be associated with a principal use on site. Example uses include, but are not limited to, *packing plants*, *potting soil manufacturing*, chipping and mulching of vegetation (excluding construction debris), agricultural light manufacturing, equestrian waste recycling, and transshipment;~~
3. Agriculturally related services such as feed and grain stores and farm implement sales and service and fueling areas restricted solely to agricultural activities;
4. Mining, subject to the limitations;
5. Uses and structures accessory to a permitted use; and
6. Limited residential uses as described below,
    a) farm labor quarters and camps;
    b) caretaker's quarters, such as for pump houses;
    c) dwelling quarters and farm residences for bona fide farm operations; or
    d) dwelling units allowed as alternative use ~~within the Urban/Suburban, Exurban, and Rural Tiers~~.

In order to protect existing residential uses, ~~within the Urban/Suburban, Exurban, Rural, and Agricultural Reserve Tiers,~~ intense agricultural or other similar uses in the Special Agricultural (SA) future land use designation shall be limited or restricted. Some agricultural uses and intensities will not be permitted as a right within ~~these Tiers~~ residential areas. While many agricultural uses may be permitted within residential areas, special care shall be taken to protect the existing neighborhoods. Alternative residential designations are depicted on the Future Land Use Atlas for some sites to allow these areas to convert to other uses.

Exhibit 2

Equestrian Waste Moratorium Motion

MELISSA MCKINLAY
County Commissioner
District 6
Palm Beach County
Board of County Commissioners

Governmental Center
301 North Olive Avenue, 12th Floor
West Palm Beach, FL 33401
Telephone: (561) 355-2206 Facsimile: (561) 355-4366
mmckinlay@pbcgov.org

Glades Office Complex
2976 State Road#15
Belle Glade, FL 33430
Telephone: (561) 996-4814
Facsimile: (561) 992-1038

www.pbcgov.com

"An Equal Opportunity Affirmative Action Employer"

INTEROFFICE MEMORANDUM

DATE: June 5, 2017

TO: Mayor Paulette Burdick and members of the Board of County Commissioners

FROM: Vice Mayor Melissa McKinlay

SUBJECT: June 6, 2017 BCC Meeting Commissioner Comments

At the June 6 BCC meeting, I will be requesting:

Motion to Direct Staff to Prepare a Moratorium ordinance:
Scope of Moratorium – The Moratorium would apply to applications for approval and modifications to existing approvals of facilities that compost equestrian waste or other animal waste or bio solids in the Glades Tier. The moratorium would not apply to composting of vegetative material or composting facilities with county approvals as of the date of this motion, or to accessory uses of bona fide agricultural operations.

Duration of the Moratorium – The moratorium would expire in twelve months or upon the adoption of ULDC regulations implementing the subject of the moratorium, whichever occurs first.

Motion to Invoke Zoning in Progress:
Zoning in Progress –Staff is directed beginning immediately from accepting any applications or permits for new facilities and modifications to existing approvals that compost equestrian waste or other animal waste or bio solids in the Glades Tier.

Road Impact Fees: Direct staff to research proposed modifications to Article 13 that would allow for conversion of the existing road impact fee to a countywide *transportation* impact fee that could be used for capital costs associated with all modes of transportation (pedestrian, bicycle, public transit and commercial/personal vehicle).

CC: Verdenia Baker, County Administrator
Jon Van Arnam, Deputy County Administrator
Denise Nieman, County Attorney

FSMA Facts

FDA FOOD SAFETY MODERNIZATION ACT

Background on the FDA Food Safety Modernization Act (FSMA)

About 48 million people (1 in 6 Americans) get sick, 128,000 are hospitalized, and 3,000 die each year from foodborne diseases, according to recent data from the Centers for Disease Control and Prevention. This is a significant public health burden that is largely preventable.

The FDA Food Safety Modernization Act (FSMA), signed into law by President Obama on Jan. 4, enables FDA to better protect public health by strengthening the food safety system. It enables FDA to focus more on preventing food safety problems rather than relying primarily on reacting to problems after they occur. The law also provides FDA with new enforcement authorities designed to achieve higher rates of compliance with prevention- and risk-based food safety standards and to better respond to and contain problems when they do occur. The law also gives FDA important new tools to hold imported foods to the same standards as domestic foods and directs FDA to build an integrated national food safety system in partnership with state and local authorities.

Building a new food safety system based on prevention will take time, and FDA is creating a process for getting this work done. Congress has established specific implementation dates in the legislation. Some authorities will go into effect quickly, such as FDA's new authority to order companies to recall food, and others require FDA to prepare and issue regulations and guidance documents. The funding the Agency gets each year, which affects staffing and vital operations, will also affect how quickly FDA can put this legislation into effect. FDA is committed to implementing the requirements through an open process with opportunity for input from all stakeholders.

The following are among FDA's key new authorities and mandates. Specific implementation dates specified in the law are noted in parentheses:

Prevention

For the first time, FDA will have a legislative mandate to require comprehensive, science-based preventive controls across the food supply. This mandate includes:

- **Mandatory preventive controls for food facilities**: Food facilities are required to implement a written preventive controls plan. This involves: (1) evaluating hazards that could affect food safety, (2) specifying what preventive steps, or controls, will be put in place to significantly minimize or prevent the hazards, (3) specifying how the facility will monitor these controls to ensure they are working, (4) maintaining routine records of monitoring, and (5) specifying the actions the facility will take to correct problems that arise. *(Final rule due 18 months following enactment)*
- **Mandatory produce safety standards**: FDA must establish science-based, minimum standards for the safe production and harvesting of fruits and vegetables. Those standards must consider naturally occurring hazards, as well as those that may be introduced either unintentionally or intentionally, and must address soil amendments (materials added to the soil such as compost), hygiene, packaging, temperature controls, animals in the growing area and water. *(Final regulation due about 2 years following enactment)*
- **Authority to prevent intentional contamination**: FDA must issue regulations to protect against the intentional adulteration of food, including the establishment of science-based mitigation strategies to prepare and protect the food supply chain at specific vulnerable points. *(Final rule due 18 months following enactment).*

Background on the FDA Food Safety Modernization Act (FSMA)

Inspection and Compliance

The FSMA recognizes that preventive control standards improve food safety only to the extent that producers and processors comply with them. Therefore, it will be necessary for FDA to provide oversight, ensure compliance with requirements and respond effectively when problems emerge. FSMA provides FDA with important new tools for inspection and compliance, including:

- **Mandated inspection frequency**: The FSMA establishes a mandated inspection frequency, based on risk, for food facilities and requires the frequency of inspection to increase immediately. All high-risk domestic facilities must be inspected within five years of enactment and no less than every three years thereafter. Within one year of enactment, the law directs FDA to inspect at least 600 foreign facilities and double those inspections every year for the next five years.
- **Records access**: FDA will have access to records, including industry food safety plans and the records firms will be required to keep documenting implementation of their plans.
- **Testing by accredited laboratories**: The FSMA requires certain food testing to be carried out by accredited laboratories and directs FDA to establish a program for laboratory accreditation to ensure that U.S. food testing laboratories meet high- quality standards. *(Establishment of accreditation program due 2 years after enactment)*

Response

The FSMA recognizes that FDA must have the tools to respond effectively when problems emerge despite preventive controls. New authorities include:

- **Mandatory recall**: The FSMA provides FDA with authority to issue a mandatory recall when a company fails to voluntarily recall unsafe food after being asked by the FDA.
- **Expanded administrative detention**: The FSMA provides FDA with a more flexible standard for administratively detaining products that are potentially in violation of the law (administrative detention is the procedure FDA uses to keep suspect food from being moved).
- **Suspension of registration**: FDA can suspend registration of a facility if it determines that the food poses a reasonable probability of serious adverse health consequences or death. A facility that is under suspension is prohibited from distributing food. *(Effective 6 months after enactment).*
- **Enhanced product tracing abilities**: FDA is directed to establish a system that will enhance its ability to track and trace both domestic and imported foods. In addition, FDA is directed to establish pilot projects to explore and evaluate methods to rapidly and effectively identify recipients of food to prevent or control a foodborne illness outbreak. *(Implementation of pilots due 9 months after enactment).*
- **Additional Recordkeeping for High Risk Foods**: FDA is directed to issue proposed rulemaking to establish recordkeeping requirements for facilities that manufacture, process, pack, or hold foods that the Secretary designates as high-risk foods. *(Implementation due 2 years after enactment).*

Imports

The FSMA gives FDA unprecedented authority to better ensure that imported products meet U.S. standards and are safe for U.S. consumers. New authorities include:

- **Importer accountability**: For the first time, importers have an explicit responsibility to verify that their foreign suppliers have adequate preventive controls in place to ensure that the food they produce is safe. *(Final regulation and guidance due 1 year following enactment)*
- **Third Party Certification**: FSMA establishes a program through which qualified third parties can certify that foreign food facilities comply with U.S. food safety standards. This certification

Background on the FDA Food Safety Modernization Act (FSMA)

may be used to facilitate the entry of imports. *(Establishment of a system for FDA to recognize accreditation bodies due 2 years after enactment).*

- **Certification for high risk foods**: FDA has the authority to require that high-risk imported foods be accompanied by a credible third party certification or other assurance of compliance as a condition of entry into the U.S.
- **Voluntary qualified importer program**: FDA must establish a voluntary program for importers that provides for expedited review and entry of foods from participating importers. Eligibility is limited to, among other things, importers offering food from certified facilities. *(Implementation due 18 months after enactment).*
- **Authority to deny entry**: FDA can refuse entry into the U.S. of food from a foreign facility if FDA is denied access by the facility or the country in which the facility is located.

Enhanced Partnerships

The FSMA builds a formal system of collaboration with other government agencies, both domestic and foreign. In doing so, the statute explicitly recognizes that all food safety agencies need to work together in an integrated way to achieve our public health goals. The following are examples of enhanced collaboration:

- **State and local capacity building:** FDA must develop and implement strategies to leverage and enhance the food safety and defense capacities of State and local agencies. The FSMA provides FDA with a new multi-year grant mechanism to facilitate investment in State capacity to more efficiently achieve national food safety goals.
- **Foreign capacity building:** The law directs FDA to develop a comprehensive plan to expand the capacity of foreign governments and their industries. One component of the plan is to address training of foreign governments and food producers on U.S. food safety requirements.
- **Reliance on inspections by other agencies:** FDA is explicitly authorized to rely on inspections other Federal, State and local agencies to meet its increased inspection mandate for domestic facilities. The FSMA also allows FDA to enter into interagency agreements to leverage resources with respect to the inspection of seafood facilities, both domestic and foreign, as well as seafood imports.

Additional partnerships are required to develop and implement a national agriculture and food defense strategy, to establish an integrated consortium of laboratory networks, and to improve foodborne illness surveillance.

Updated 7/12/11

foods

MDPI

Editorial

Understanding the Fresh Produce Safety Challenges

Malik Altaf Hussain * and Ravi Gooneratne

Department of Wine, Food and Molecular Biosciences, Lincoln University, Lincoln 7647, New Zealand; ravi.gooneratne@lincoln.ac.nz

* Correspondence: malik.hussain@lincoln.ac.nz; Tel.: +64-220-144-552

Received: 16 March 2017; Accepted: 19 March 2017; Published: 21 March 2017

Consumption of fresh fruits and vegetables is important for a balanced diet and healthy life-style. However, contamination of fresh produce is emerging as a major food safety challenge. In recent years, contaminated produce has been implicated in many foodborne outbreaks throughout the world. These foodborne outbreaks are not only a burden on public health but also cause heavy economic loss to the food industry [1]. A recent report by Center for Science in the Public Interest (CSPI) showed that the highest number of outbreaks was attributed to fresh produce commodity in the USA during 2002–2011 [2]. It is estimated that fresh produce causes the greatest number of illnesses and the largest average number of illnesses per outbreak.

With the push to increase consumption of fresh produce for healthy living, there is pressure on producers to focus even more on hygiene to minimize exposure to food hazards. A risk exists especially if the fresh produce is grown outdoors in the field. Fresh produce can be contaminated by physical, chemical, and biological hazards. Physical hazards could include dust, sand, wood and metal pieces. Chemical hazards include chemicals in packaging and/or pesticides used on the farm. Biological hazards include microbiological contaminants such as *Escherichia coli*, *Salmonella*, *Listeria monocytogenes* and other pathogenic microorganisms in the soil. The greatest risk is when vegetables and fruits are consumed without being washed. This is an important consideration to bear in mind by the growers of fresh produce. The worst-case scenario is when the biological/chemical contamination is not washed off the produce by both the farmer and the consumer. In many countries, there are regulations and schemes to train and educate producers. Therefore, nowadays, most farmers wash their produce and many large growers even go further to reduce hazards by implementing a complete food safety management system.

Several groups of microorganisms can colonize or contaminate fruits and vegetables at any point throughout the food supply chain. Pathogenic microorganisms such as *E. coli* O157:H7, *Salmonella*, *L. monocytogenes* and norovirus are commonly associated with contaminated fresh produce. Various types of fresh produce including cantaloupe, strawberries, mangos, leafy green vegetables, lettuce, salad mixes, sprouts, cabbage, cut celery and radishes are potential vehicles for transmission of these human pathogens. Globally, many fresh produce linked outbreaks occurred over the last few years including an outbreak of *E. coli* O157:H7 after eating contaminated packaged baby spinach in EU countries (2006); an *E. coli* outbreak due to contaminated cucumber in Germany and other EU countries (2011); an outbreak of *Cryptosporidium* infection traced to bagged salads in the UK (2012); an outbreak of *L. monocytogenes* due to contaminated prepacked salad products in the USA (2016); and a *Salmonella* outbreak linked to lettuce in pre-packaged salads in Australia (2016).

Bacterial contamination of fresh produce such as lettuce, cabbage, other leafy vegetables, root vegetables, asparagus, broccoli, and cauliflower is well known and some of it could be attributed to improper handling practices and poor storage conditions. Innovative business opportunities and product diversity that appeal to the consumer may also increase food safety risks. Cut fruits and vegetables have a higher microbial risk profile than the 'whole' produce. Therefore, it is not surprising that delicatessen salads made up of the same vegetables are more contaminated. The presence of excessive levels of bacteria suggest poor hygiene conditions. One of the problems associated with

fresh produce is that, unlike tinned or packaged foods, there is a lack of information on the shelf-life and expiration dates.

There are risks associated with fresh produce sold by street vendors. For example, potatoes exposed directly to the sun can result in solanine production and consumption of foods containing solanine can result in nausea, vomiting, diarrhea, headache, dizziness, fever and in more severe cases, hallucinations, paralysis and even death. When exposed to rain and sun at 20 °C, *Salmonella*, *E. coli* O157-H7 or *L. monocytogenes* will multiply to toxic levels in cauliflower. A comprehensive study by Farber and Peterki [3] showed that *L. monocytogenes* can survive in lettuce juice even at 4 °C. This pathogen has been identified in many ingredients of the green salads and also in pre-packed salads. *L. monocytogenes* can even grow at 12 °C on fresh blueberries stored under a controlled atmosphere [4]. Bacterial cells appear to increase by about 2–4-fold in 6 days on vegetables such as the asparagus, broccoli, and cauliflower at refrigerator temperature. However, at a refrigerated temperature of 4 °C, they do not grow well and in fact decrease in vegetables such as broccoli and cauliflower by about 0.5-fold after 14 days. Hence the most important message is to store vegetables under a controlled low temperature that not only increases shelf-life but also reduces bacterial growth considerably.

Another challenge to food scientists is the emergence of antimicrobial resistant (AMR) bacterial strains in foods [5] including fresh produce. This issue has emerged as an important and growing public health concern and an economic problem in many countries over the last two decades. So, it is necessary to understand the pathways of antimicrobial resistant pathogens contamination and act to minimize their introduction and occurrence in fresh produce. To address the AMR issue effectively, measures such as developing public, industry and government cooperation, introducing various surveillance programs, and strengthening the food safety systems are essential.

In conclusion, it is important to understand the nature of fresh produce safety challenges, contamination sources, risks to the consumer, and approaches to eliminate or reduce the level of contaminants. Scientific understanding is rapidly evolving in this important area of food safety. Two recently published articles [6,7] provide an insight into the scientific and technical importance of fresh produce safety. This Special Issue of *Foods* on 'fresh produce safety' invites manuscripts on all aspects of safe supply and consumption of fresh fruits and vegetables.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Hussain, M.A.; Dawson, C.O. Economic impact of food safety outbreaks on food businesses. *Foods* **2013**, *2*, 585–589. [CrossRef] [PubMed]
2. CSPI. A review of foodborne illness in America from 2002–2011. Center for Science in the Public Interest: Washington, DC, USA, 2014.
3. Farber, J.M.; Peterkin, P.I. *Listeria monocytogenes*, a food-borne pathogen. *Microbiol. Rev.* **1991**, *55*, 476–511. [PubMed]
4. Concha-Meyer, A.; Eifert, J.; Williams, R.; Marcy, J.; Welbaum, G. Survival of *Listeria monocytogenes* on fresh blueberries (*Vaccinium corymbosum*) stored under controlled atmosphere and ozone. *J. Food Prot.* **2014**, *77*, 832–836. [CrossRef] [PubMed]
5. Pruden, A.R.; Pei, T.; Storteboom, H.; Carlson, K.H. Antibiotic resistance genes as emerging contaminants: studies in Northern Colorado. *Environ. Sci. Technol.* **2006**, *40*, 7445–7450. [CrossRef] [PubMed]
6. Zhu, Q.; Gooneratne, R.; Hussain, M.A. *Listeria monocytogenes* in fresh produce: Outbreaks, prevalence and contamination levels. *Foods* **2017**, *6*, 21. [CrossRef] [PubMed]
7. Yukiko, W.; Gooneratne, R.; Hussain, M.A. Outbreaks and factors influencing microbiological contamination of fresh produce. *J. Sci. Food Agri.* **2016**. [CrossRef]

© 2017 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (http://creativecommons.org/licenses/by/4.0/).

EHT-027
12/13

TEXAS A&M AGRILIFE EXTENSION

Costs of Foodborne Illness Outbreaks for Vegetable Producers

Luis A. Ribera, Marco A. Palma, Mechel Paggi, Ronald Knutson, Juan Anciso, and Joseph G. Masabni*

When people become sick or die because they ate contaminated vegetables, the produce industry incurs immediate as well as long-term financial costs—sales and income drop, and the costs of complying with new food safety standards rise.

Although the costs of complying with higher food-safety standards are difficult to determine, surveys of growers in the California leafy green industry indicate that the losses caused by foodborne illness outbreaks are much higher than most expected.

Three major incidents illustrate the costs borne by U.S. produce growers and handlers after a food-related disease outbreak:

- **Spinach:** In 2006, farmers lost $12 million in U.S. spinach sales after a deadly outbreak of the bacterium *Escherichia coli* O157:H7 *(E. coli)*. People in several states became ill after eating spinach contaminated with *E. coli*. Before the outbreak was contained, 227 people had become ill; 104 had been hospitalized; 31 had developed serious complications; and three had died.
- **Cantaloupe:** Fifty people became ill with salmonella food poisoning in 2008 after eating contaminated cantaloupes from Honduras. No deaths were reported, but 14 people were hospitalized. The outbreak cost cantaloupes farmers $5.8 million in sales revenues.
- **Tomatoes:** After another salmonella outbreak later in 2008, farm-level losses in U.S. tomato sales reached $25 million. The illnesses appeared to be linked to the consumption of certain types of raw tomatoes and tomato products. However, the cause was later traced back to jalapeño and serrano peppers from Mexico. Ultimately, 1,200 cases of salmonellosis

*Associate Professor and Extension Economist; Associate Professor and Extension Economist; Director, Center for Agricultural Business, California State University–Fresno; Professor Emeritus, Texas A&M Department of Agricultural Economics; Associate Professor and Extension Vegetable Specialist; and Assistant Professor and Extension Vegetable Specialist
The Texas A&M University System

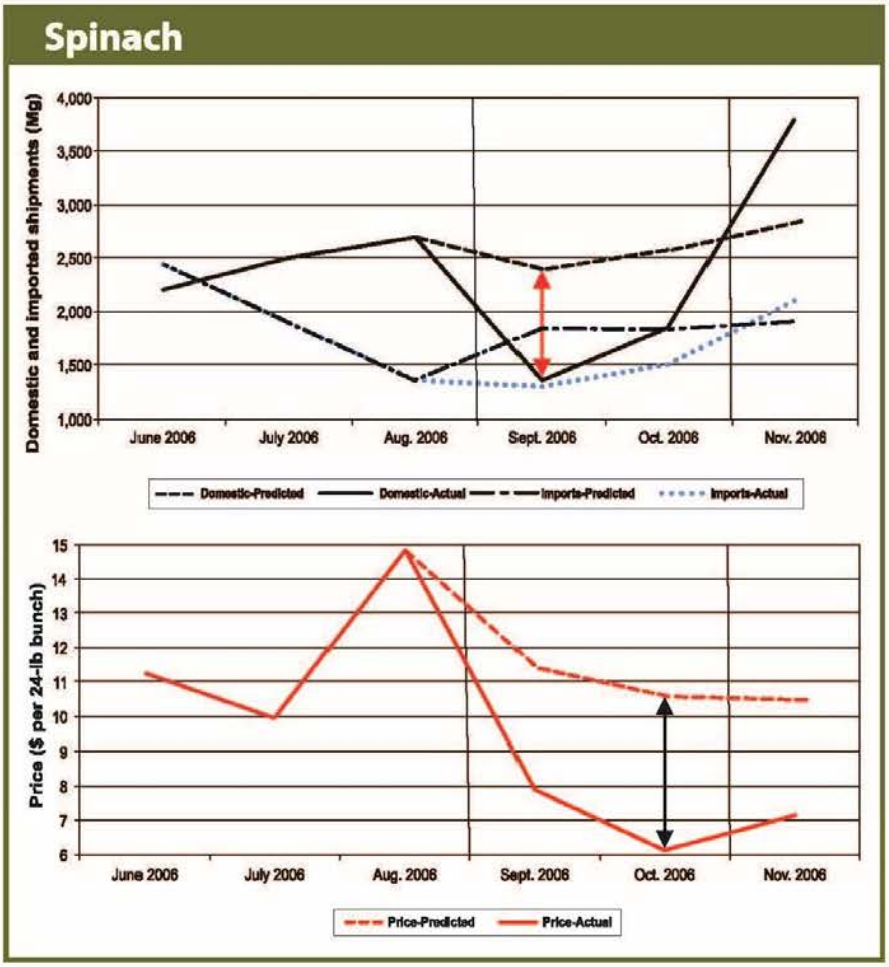


Figure 1. Monthly spinach shipments, imports, and prices from June through November 2006. Note: Vertical lines are placed at dates of interest in September (beginning date of food scare) and October 2006 (ending date of food scare).

were reported across Arizona, Colorado, Idaho, Illinois, Indiana, Kansas, New Mexico, Texas, and Utah.

In response to these incidents, governmental agencies and industry groups have redoubled their efforts to improve food safety. They have improved domestic standards as well as increased the scrutiny of imported produce.

More actions are being considered, including the creation of a new agency to handle the food-safety regulatory activities of federal agencies such as the FDA and the U.S. Department of Agriculture (USDA).

Economic losses

Once consumers learn that produce has been contaminated, they not surprisingly reduce their consumption of the affected produce. After the official notification of an incident, the produce is banned from sale until the contamination source is identified. The produce is also withdrawn from the market until the spread of illness is brought under control.

However, even after the produce is allowed back into the market, consumption levels may not rebound immediately because consumers continue to perceive a risk of illness. The reduction in sales depends on the severity of the outbreak—the number of people affected, the number of deaths, and the geographic scope.

Spinach

Immediately after the *E. coli* outbreak in August 2006 was linked to spinach, domestic

Cantaloupe

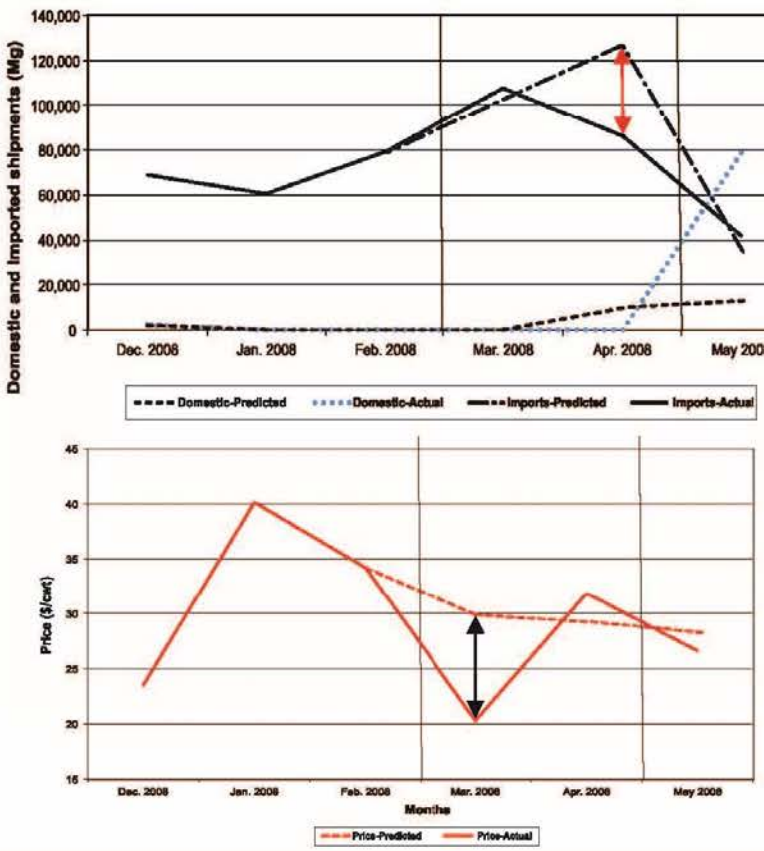


Figure 2.
Monthly shipments, imports, and prices of cantaloupes from December 2007 through July 2008. Note: Vertical lines are placed at dates of interest, March 2008 (beginning date of food scare), and April 2008 (ending date of food scare).

and imported shipments of spinach began to fall below expected levels. Domestic sales declined in September by 1,000 metric tons (MT) (red arrow, Fig. 1).

In October, farm-level prices dropped from a high of $15 in August to $6 and a drop of about $4 per 24-pound bunch compared to the price had there been no outbreak (black arrow, Fig. 1).

Despite an indication early in October that the problem was under control, consumers were still concerned about the safety of both domestic and imported spinach. Spinach sales did not rebound from both U.S. and imported sources until November. Prices returned to normal levels by December.

The farm-level loss in U.S. spinach sales was about $12 million, of which $4 million was to foreign producers of imported spinach. Retail losses topped $63 million.

Cantaloupe

Although the cantaloupe-related salmonella outbreak was reported in early January 2008, sales did not decline until April, after the source was determined to be imported cantaloupes. At that point, imports dropped by 40,537 MT (red arrow, Fig. 2). Farm-level cantaloupe prices decreased in March by $10 per hundredweight (cwt), or 30 percent (black arrow, Fig. 2).

By May, sales had rebounded for U.S. cantaloupe. Prices rebounded earlier than did shipments: Prices were back to expected levels by April. The total import losses at farm-level prices reached $23.7 million, almost all of which were sustained by Honduran imports.

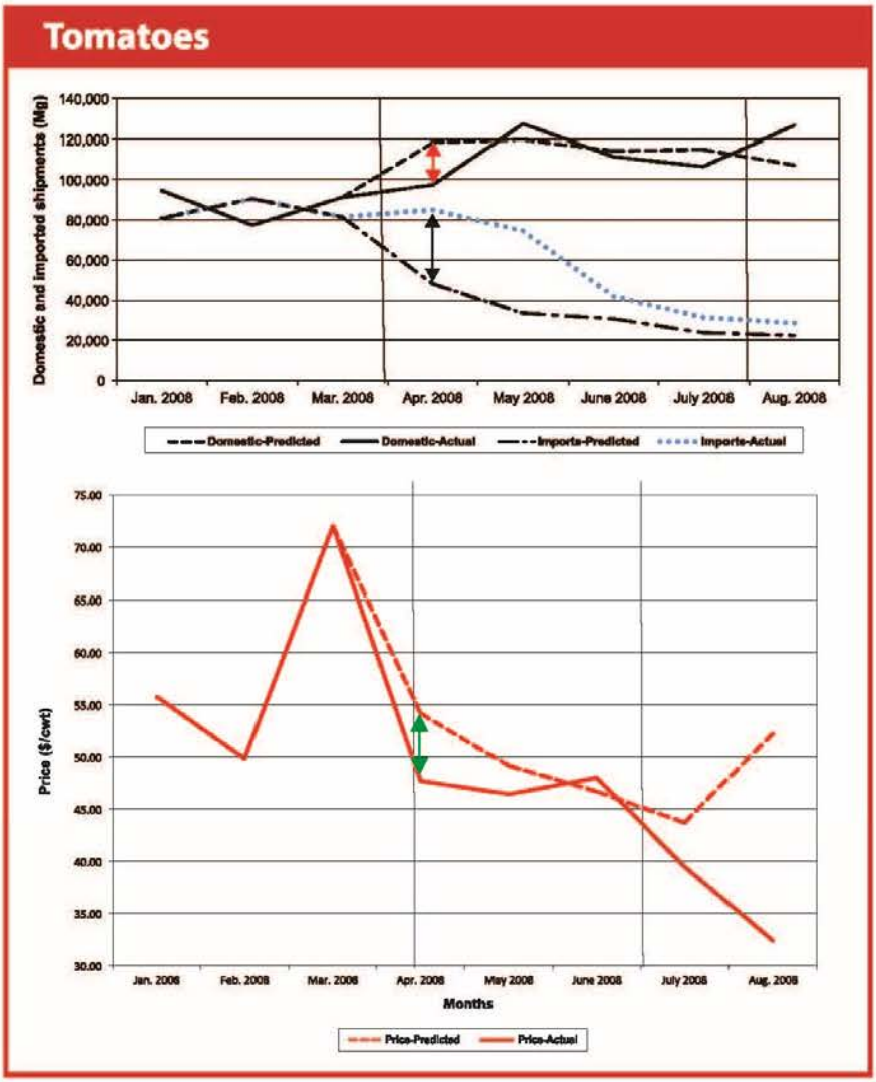


Figure 3. Monthly tomato shipments, imports, and prices from January through August 2008. Note: Vertical lines are placed at dates of interest in April (beginning date of food scare) and July 2008 (end date of food scare).

Ultimately, the outbreak cost farmers $5.8 million in revenues from U.S. cantaloupe sales; retailers lost $20.7 million.

Tomatoes

In 2008, sales declined immediately as news began to spread that contaminated tomatoes produced in Mexico and the United States may have caused salmonella food poisoning.

In April, shipments of U.S. tomatoes dropped by 20,700 million tons (red arrow, Fig. 3); imports, mainly from Canada, increased by 37,000 million tons (black arrow, Fig. 3).

Imports increased even further, to 40,900 MT, the following month as speculation shifted to Mexico as the potential source of the problem, and U.S. tomato sales rebounded. Sales of both Mexican and U.S. tomatoes continued to be lower than expected through July because the source of contamination, jalapeño peppers, was not identified until July 21, 2008.

During the outbreak, tomato prices dropped an average of $5 per cwt at farm level (green arrow, Fig. 3). Prices returned to normal levels by June. Farm-level losses in U.S. tomato sales totaled $25 million; retailers lost $89 million.

Although U.S. and Mexican producers lost revenue, those from Canada and other tomato-exporting countries profited: U.S. tomato imports increased by 96,900 MT, or $97 million at farm-level prices.

Compliance costs

Outbreaks of foodborne disease directly affect the development of public health policy. They also increase consumer fears about food safety.

Complying with higher process standards adds to the cost of doing business. To determine how to deal with the complex issue of food safety, growers should start by weighing the benefits and costs.

Benefits

Growers who adjust their operations to comply with new process standards can benefit in several ways:

- Incidents that reduce revenue are prevented.
- Product prices rise.
- Sales remain stable or increase in existing markets.
- New markets are created.
- Legal liability and insurance costs decrease.
- The farm operations become more efficient.

These benefits are uncertain and accrue over time. In contrast, compliance costs are upfront and in many cases are required to participate in a preferred market.

Costs

Information on costs is difficult to document. Many figures are producer estimates, not the result of careful economic analysis. To estimate those increased costs, surveys were sent to members of the Leafy Green Products Handler Marketing Agreement (LGMA), a voluntary initiative established in 2007 by growers, packers, and shippers in California, largely in response to the *E. coli* outbreak in spinach.

The survey respondents estimated that their annual compliance costs rose from $210,000 before the 2006 outbreak to $604,000 afterward. Compliance costs rose in three main areas:

- **Third-party audits:** Costs of third-party audits are typically reported on a perfarm or per-ranch basis. In 2008, they appeared to be $400 to $500.
- **Staffing:** Respondents reported that before the outbreak they had one trained employee overseeing food safety issues; now they have two.
- **Water testing:** The number of tests increased from 10 to 52 per month, costing a projected total of $3,657 per operation.

The survey found that losses from the foodborne illness were several times higher than the costs of complying with escalating standards to help prevent such an outbreak. After the 2006 spinach outbreak, U.S. producers lost $12 million at the farm level and $63 million at the retail level.

Texas A&M AgriLife Extension Service

AgriLifeExtension.tamu.edu

More Extension publications can be found at AgriLifeBookstore.org

Educational programs of the Texas A&M AgriLife Extension Service are open to all people without regard to race, color, sex, religion, national origin, age, disability, genetic information, or veteran status.

The Texas A&M University System, U.S. Department of Agriculture, and the County Commissioners Courts of Texas Cooperating.

Produced by Texas A&M AgriLife Communications

New

Exhibit 6
Comparison of GAPS Governing the Growing and Harvesting of Fresh Produce

COMPARISON OF GAPs GOVERNING

THE GROWING and HARVESTING OF FRESH PRODUCE*

* For an explanation of the various provisions and background on the guidelines, please refer to the *Growing and Harvesting of Fresh Produce* narrative.

PRODUCE SAFETY PROJECT

		FDA 1998 GUIDANCE	CODEX PROVISIONS	GLOBALGAP STANDARDS	FSLC STANDARDS	LEAFY GREENS GUIDE	FLORIDA TOMATO RULE
AGRICULTURAL WATER	SETS OR RECOMMENDS SPECIFIC MICROBIAL STANDARDS FOR IRRIGATION WATER	**NO** Growers may elect to test water supply using standard indicators for fecal pollution like *E. coli*	**NO**	**YES** Where treated sewage water is used, water quality complies with WHO guidelines. If water might be polluted, must comply with WHO guidelines or local standards	**YES** Generic *E. coli* standard for well and surface water. But different than Leafy Greens Guide generic *E. coli* standard	**YES** Generic *E. coli* standard for foliar and non-foliar applications (edible portion does not contact water). But different than FSLC standard	**YES** Irrigation water must meet EPA recreational water microbial standard and foliar application must meet EPA potable water microbial standard
	SPECIFIES REGULAR, PERIODIC WATER SAMPLING AND MICROBIAL TESTING	**NO** May be useful in extreme situations (e.g., polluted water source) and in assessing the effectiveness of control programs	**NO** "Where necessary" growers should have the water they use tested	**YES** Water analysis determined by risk assessment, which takes into account crop characteristics	**YES** Each water source tested within 60 days of first seasonal use. Well water and surface water tested monthly	**YES** Includes specific sampling and testing protocol	**YES** Ground water tested at least annually. Surface water tested at least quarterly
	ASSESS IMPACT OF ADJACENT LAND ON WATER QUALITY	**YES** Evaluate production area to determine if surrounding land uses pose potential for polluted runoff	**NO**	**NO**	**YES** Conduct risk assessment to review impact of use of surrounding land on water quality	**YES** Evaluate land and waterways adjacent to production fields for possible sources of pathogens	**YES** Consideration should be given to adjacent land
GROWING FIELD	CONSIDER PRIOR USE OF GROWING FIELD	**NO**	**YES** Where possible, growers should evaluate previous uses to identify potential microbial hazards and analyze for contaminants if prior uses cannot be identified	**YES** Required risk assessment must take into account site history	**YES** If field has been used for other than growing produce, shall conduct soil analysis	**YES** To degree practical, determine and document historical land uses and potential impact on food safety	**YES** Determine previous usage of land if at all possible and assess potential sources of contamination
	PROHIBITS GROWING ON FLOODED LAND	**YES** Cannot sell ready-to-eat crop that have come into contract with flood waters	**NO**	**NO**	**YES** If fields are flooded by natural causes, product–excluding tree crops and stone fruit–shall not be harvested for human consumption	**YES** No harvesting within 30 feet of flooding and conduct food-safety assessment of production block before harvest	**NO**
MANURE	PROHIBITS USE OF RAW MANURE	**NO** Applying raw manure to produce fields during growing season prior to harvest is not recommended. Where not possible to maximize time between application and harvest, raw manure should not be used	**NO** Manure, which is untreated or partially treated may be used only if appropriate corrective actions are adopted to reduce microbial contaminants	**NO** (Only prohibits use of raw human sewage sludge)	**YES** Raw or incompletely composted manure must not be used	**YES** Do not use raw manure or soil amendment that contain un-composted, incompletely composted or non-thermally treated animal manure	**NO** No raw animal manure from raw material should be used to supplement the soil.
	SETS SPECIFIC STANDARD FOR COMPOSTING MANURE	**NO**	**NO**	**NO**	**YES** Standards for generic *E. coli*, *Salmonella*, *E. coli* O157:H7: and *Shigella*	**YES** Standards for fecal coliforms, *Salmonella*, and *E. coli* O157:H7	**NO** Only properly composed manures are allowed

MANURE						
REQUIRES OR RECOMMENDS SAMPLING AND TESTING	**NO**	**NO**	**NO**	**YES** Compost monitoring plan shall outline sample collection procedures	**YES** Must have 12- point sampling plan and each lot must be tested before application	**NO**
STORE AND TREAT MANURE AWAY FROM GROWING AREA	**YES** Situate as far as practicable from fresh produce production and handling areas	**YES** Avoid locating in proximity to fresh fruit and vegetable production and secure treatment and storage areas	**NO**	**YES** Store so that it does not become potential source of contamination	**YES** Store and treat at least 400 ft from edge of of crop	**NO**
ANIMAL CONTROL						
EXCLUDES ANIMALS FROM GROWING AREAS	**YES** Exclude domestic animals during growing season. Where there are high concentrations of wildlife deter or redirect wildlife to other crops	**YES** As far as possible, exclude domestic and wild animals from growing area	**NO**	**YES** No animals of significant public health concern are permitted within the area of growing and major corrective action required if animals gain access	**YES** Do not harvest areas of fields where there is unusually heavy activity by animals or significant risk of it. If significant risk of intrusion , consider fencing and barriers.	**YES** Exclude domestic animals from tomato fields and use buffer zones to discourage movement of reptiles, amphibians, and rodents
REQUIRES SET DISTANCE FROM CAFOs	**NO**	**NO**	**NO**	**YES** One mile from end of crop row	**YES** Interim guidance of 400 feet from edge of crop	**NO**
WORKER HEALTH AND HYGIENE						
PROHIBITS SMOKING, EATING, SPITTING, GUM CHEWING IN GROWING AREAS	**NO**	**YES** Agricultural workers should refrain from behavior which could result in the contamination of food (such as smoking, spitting, and chewing gum)	**YES** Hygiene instructions include limiting smoking, eating, and drinking to certain areas	**YES** Eating, drinking, chewing gum or tobacco, candy and smoking are prohibited in the growing areas	**YES** Confine smoking, drinking, and eating to designated areas	**YES** Prohibit eating, drinking, and smoking in production areas
SPECIFIES LOCATION OF TOILETS	**YES** Within one ¼ mile walk of each laborer's place in field	**NO**[1] In close proximity to the fields	**YES** Within at least 500 meters of workers	**YES** Within ¼ mile of all workers	**NO**[2] Field sanitary facility program should address the placement of field sanitation units	**YES** Within ¼ mile of all workers
REQUIRES DESTRUCTION OF PRODUCT THAT COMES IN CONTACT WITH BLOOD OR BODILY FLUIDS	**NO**	**NO**	**NO**	**YES** Written policy must require destruction of product that comes into contact with blood or bodily fluids	**NO**[3]	**NO**
FIELD SANITATION						
SANITIZE OR DISINFECT HARVESTING EQUIPMENT AND TEST/VERIFY EFFICACY OF SANITATION	**NO** Mentions sanitation numerous times but does not require testing efficacy	**NO** Where appropriate equipment should be disinfected on a regular basis but no mention of testing efficacy	**NO** Disinfection required at least once a year but efficacy testing not required	**YES** Grower must have a sanitation plan for harvest equipment and must verify efficacy	**YES** Grower should sanitize harvest equipment and verify sanitation	**NO** Grower directed to sanitize as needed but not required to verify efficacy
DISPOSE OF DAMAGED HARVESTING CONTAINERS	**YES** Discard damaged containers that are no longer cleanable	**YES** Containers that can no longer be kept in a hygienic condition should be discarded	**NO**	**NO**	**NO**[4]	**NO**

[1] Because the Codex Provisions does not specify a particular distance for toilet location, it is characterized as a "No" under this category, even though it does generally direct growers/harvesters to place toilets "in close proximity" to the fields.
[2] Because the Leafy Greens Guide does not specify a particular distance for toilet location, it is characterized as a "No" under this category, even though it does direct growers/harvesters to address the placement of toilets.
[3] Because the Leafy Greens Guide does not specifically require that product that comes in contact with blood or bodily fluids be destroyed, it is characterized as a "No" under this category, even though it does direct growers/harvesters to have a policy on this issue.
[4] Because the Leafy Greens Guide does not specify that damaged containers must be discarded, it is characterized as a "No" under this category, even though it does direct growers/harvesters to develop a procedure for handling damaged containers.

COMPARISON OF GAPs GOVERNING

THE GROWING and HARVESTING OF FRESH PRODUCE

PRODUCE SAFETY PROJECT

Background

More than a decade ago, the Clinton Administration identified the safety of fresh produce (fruits and vegetables intended to be eaten raw) as a priority for action in its first-ever, national "Food Safety Initiative."[1] Since that time, the Food and Drug Administration (FDA), the federal agency responsible for produce safety, has followed a voluntary approach in addressing the problem, opting for guidance documents[2] and letters to growers[3] over mandatory regulations that would establish enforceable safety standards. This approach has not succeeded: during the intervening period, foodborne-illness outbreaks linked to fresh produce have persisted. According to one source, from 1990 through 2005, at least 713 foodborne-illness outbreaks have been linked to produce items.[4] In recent years, two high-profile outbreaks have captured public attention: in 2006, an *E. coli* O157:H7 outbreak, resulting in 3 deaths and nearly 200 illnesses, was traced to bagged spinach,[5] and just this past summer, *Salmonella* Saintpaul-tainted peppers (and perhaps tomatoes) made more than 1,400 people sick.[6]

In response to the continuing concern about produce safety and the federal government's failure to adopt binding regulations, grower groups, trade associations, and retailers have all put into place their own sets of guidelines and safety standards aimed at the primary safety concern, which is the microbial contamination of fresh fruits and vegetables.[7] These guidelines, generally known as "Good Agricultural Practices" (or GAPs), address issues such as water quality, manure use, worker hygiene, and animal control, all of which can be avenues for contamination. Controlling contamination at its source is critical when you are dealing with fresh produce. Thorough cooking can kill most pathogens in food; however, because fresh fruits and some vegetables are typically eaten raw, there is no intervening "kill step."

Given diminished consumer confidence in the safety of fresh produce, the burden on growers of meeting competing produce-safety standards, and the significant financial impact of foodborne-illness outbreaks on growers and retailers,[8] there is currently substantial support for FDA's adoption of mandatory produce-safety regulations.[9]

To inform the policy debate, PSP has analyzed six different sets of produce-safety standards or guidelines and produced a side-by-side comparison of select provisions. In addition to the four areas noted above, the chart also includes provisions relating to the growing and harvesting of produce that address the condition of the field as well as field sanitation.

Guidelines Compared

In comparing broad guidelines intended to apply to the entire range of fresh fruits and vegetables with commodity–specific guides (for leafy greens and tomatoes), we acknowledge that there is a certain "mixing of apples and oranges." Nevertheless, we believe this comparison is instructive. There are many different views on the approach FDA should take in drafting federal regulations governing produce safety and therefore, a consideration of all different approaches to produce safety-standards (e.g. general provisions and commodity-specific requirements) is warranted.

The following guidelines represent a wide range of "authors:" in addition to FDA, they include an international organization, a private-sector certifying body, a group of large retail buyers, a group of growers, and a state government:

- *Guide to Minimize Microbial Food Safety Hazards for Fresh Fruits and Vegetables (FDA 1998 Guidance)*: issued by FDA in 1998, it contains voluntary guidelines related to microbial food-safety hazards and good agricultural and management practices.[10]
- *Code of Hygienic Practice for Fresh Fruits and Vegetables (Codex Provisions)*: adopted in 2003 by the Codex Alimentarius Commission, a body established in 1963 by the Food and Agriculture Organization of the United Nations (FAO) and the World Health Organization (WHO) to develop food standards and guidelines.[11]
- *Food Safety Leadership Council On-Farm Produce Standards (FSLC Standards)*, issued in 2007 by a group of large retailers/customers.[12]
- *GLOBALGAP Standards*: adopted in 2007, it is a single integrated standard with modular applications for different product groups.

The standards considered in this comparison include those that apply to all farms, to all crop-based operations, and those that apply only to growers of fruits and vegetables).[13]

- *Commodity Specific Food Safety Guidelines for the Production and Harvest of Lettuce and Leafy Greens (June 13, 2008 edition)(Leafy Greens Guide)*: this is the most recent version of the standards that are followed by the growers who have signed the California Leafy Green Products Handler Marketing Agreement.[14]
- *Commodity Specific Food Safety Guidelines for the Fresh Tomato Supply Chain* (Edition 1.0) and the *Tomato Best Practices Manual (Florida Tomato Rule)*: these two documents were incorporated into the Florida Tomato Rule, which implements legislation passed in the State of Florida in 2008.[15]

Some of these provisions are mandatory (the Florida Tomato Rule and the Leafy Green Guide for those growers that enter into the agreement) while the others are voluntary. Many of the headings in the chart attempt to reflect this distinction. In places where a particular guideline does not exactly reflect a heading, an explanatory footnote is included.

Key Findings of the Comparison

A key finding of the PSP comparison is that FDA's 1998 Guidance is woefully out of date; many private standards currently include more stringent standards. Some of the important issues not addressed in the existing FDA Guidance are:

- microbial standards and a sampling and testing protocol for irrigation water;
- consideration of the prior use of a growing field;
- microbial standards and a sampling and testing protocol for manure composting;
- the proximity of growing fields to Concentrated Animal Feeding Operations ("CAFOs"); and
- prohibition of smoking, eating, or spitting in growing areas.

While FDA recently issued a notice seeking comments on how its 1998 Guide could be improved,[16] there is no deadline for issuing a revised guide.

Other key findings of the comparison include the following:

- Four of the guides (GLOBALGAP Standards, FSLC Standards, Leafy Greens Guide, and Florida Tomato Rule) include microbial standards for irrigation water and set some specific direction for regular, periodic sampling and testing.
- Three of the documents (FDA 1998 Guidance, FSLC Standards, and Leafy Greens Guide) prohibit the growing of produce on flooded land.
- Two of the standards (Codex Provisions and GLOBALGAP Standards) apparently allow the use of raw manure on growing fields
- Two of the guides (FSLC Standards and Leafy Greens Guide) include specific standards for the composting of manure and manure-containing soil amendments and set a specific sampling and testing protocol.
- Four of the documents (FDA 1998 Guidance, Codex Provisions, FSLC Standards and Leafy Greens Guide) address the need to store manure away from growing fields, but they do so in general terms and do not specify a set distance requirement.
- All of the guides, except one (GLOBALGAP Standards), contain provisions relating to animal control, but each one takes a different approach.
- Two of the standards (FSLC Standards and Leafy Greens Guide) contain a provision setting a minimum distance between growing fields and CAFOs.
- While all six guidelines address the proximity of toilets to field workers, some use very general language, while others set a specific distance (e.g., either within ¼ mile or 500 meters of all workers).
- Two of the guidelines (FSLC Standards and Leafy Greens Guide) require that growers have a policy addressing disposition of produce that has come into contact with blood or bodily fluids, with the FSLC Standards expressly requiring destruction of the product.
- While all of the guidelines state that harvesting equipment/tools should be sanitized or disinfected, only one (Leafy Greens Guide) expressly requires that the sanitation procedure be verified.
- Only two of the guidelines (FDA 1998 Guidance and Codex Provisions) include a specific provision directing that damaged harvesting containers be disposed of.

GAP Provisions Included in the Chart

AGRICULTURAL WATER

Sets or recommends specific microbial standards for irrigation water

Water is used at numerous points in the growing and harvesting of fresh produce. The likelihood of water being the source of microbial contamination depends on a number of factors: of particular importance is whether the water comes into contact with the edible portion of the produce.[17]

In order to determine whether water is suitable for use in irrigation, four of the six guidelines set specific microbial standards. Both the FSLC Standards and the Leafy Greens Guide set generic *E. coli* standards for well water and surface water (which are different). By contrast, the Florida Tomato Rule requires that irrigation water meet the U.S. Environmental Protection Agency (EPA) standard for recreational water, and that foliar application of water at the time of harvest meet the EPA standard for potable water. GLOBALGAP applies WHO guidelines to treated sewage water used by irrigation, while possibly polluted water must comply with either WHO guidelines or local standards.

Specifies regular, periodic water sampling and microbial testing

The Leafy Green Guide provides the most detailed information on the protocol to follow when sampling and testing for microbial contamination is required, setting out different procedures depending on whether the application is foliar or non-foliar, and whether or not the water comes in contact with the edible portion of the fruit. Both the FSLC Standards and the Florida Tomato Rule contain some information on microbial testing of agricultural water: the FSLC sets testing frequencies for well and surface water, while the Florida regulations simply direct that ground water be tested at least annually and surface water, at least quarterly.

Two other guidelines set more general standards: the GLOBALGAP Standards states that the frequency of a water analysis should depend on the risk assessment and the characteristics of the particular crop. The Codex Provisions simply state that "where necessary," growers should have their water tested for microbial contaminants.

Only the FDA 1998 Guidance minimizes the importance of regular microbial sampling and testing of agricultural water, stating that "[m]icrobial testing of agricultural water may be of limited usefulness." However it does continue that "appropriate microbiological testing may be useful for confirming water quality concerns in extreme situations (e.g., polluted water source) and in assessing the effectiveness of certain control programs (e.g. clean-up of well water)."[18]

Assess impact of adjacent land on water quality

Growers should evaluate the impact on their growing fields of surrounding land uses because this land could be a source of contamination, especially after a heavy rainfall.[19] Four of the six guidelines mention the need to assess the impact of adjacent land on water quality. FDA states that growers should be "aware of current and historical use of land" and that operators "should consider what affects their portion of the watershed." The FSLC Standards direct growers to conduct a risk assessment to "review surrounding land use impact on water quality," while the Leafy Greens Guide directs growers to evaluate all adjacent land and waterways for "possible sources of pathogens." In the section on water quality, the Florida Tomato Rule notes that consideration should be given to a number of factors that may have an impact on water quality, including what activities occur or conditions exist on adjacent land.

GROWING FIELD

Consider prior use of growing field

Prior use of a growing field—for example, as a landfill—may be relevant to the safety of produce being grown in it.[20] Only the FDA Guidance fails to mention consideration of the prior use of the growing field as having an impact on the safety of the fresh produce grown in it. All of the other guides mention the need to take into account prior use and the FSLC goes the farthest, specifically requiring that a soil analysis be done if the field has been used in the past for other than growing produce.

Prohibits growing on flooded land

Only three of the six guidelines prohibit the growing of produce on flooded land. FDA addressed this issue in a more recent letter to growers (in 2005),[21] not in the 1998 Guidance. The FSLC Standards exclude tree crops and stone fruit from the prohibition on harvesting produce grown on flooded fields. These standards contain the most stringent provisions, requiring that there be documented testing results prior to replanting to ensure that soil meets EPA and other regulatory standards. The Leafy Green Guide prohibits harvesting within 30 feet of flooding but notes that a risk analysis may dictate a greater buffer distance. It also states that the time interval before planting can commence following the receding of floodwaters is 60 days, provided that the soil has sufficient time to dry out, and further provides that appropriate soil testing can be used to shorten this period.

MANURE

Prohibits use of raw manure

Raw manure or incompletely treated manure can be a potent source of microbial contamination.[22] Four of the guidelines strongly recommend against or prohibit the use of raw manure or products containing raw manure; in fact the Leafy Greens Guide specifies that if raw manure has been applied to fields, a grower must wait one year prior to growing these commodities. By contrast, two of the guidelines do not prohibit the use of raw manure on growing fields. The Codex Provisions allow its use only if "appropriate corrective actions" are taken to reduce microbial contaminants, but no standards or specific actions are mentioned. GLOBALGAP does not mention raw manure and only prohibits the use of raw human sewage sludge on growing fields.

Sets specific standard for composting manure

Only two of the guides include specific standards for the composting of manure and manure-containing soil amendments. The FSLC Standards set a level for generic *E. coli* and require a negative test result for *Salmonella*, *E. coli* O157:H7, and *Shigella*, while the Leafy Greens Guide sets levels for fecal coliforms, *Salmonella* and *E. coli* O157:H7. The FDA Guidance, the Codex Provisions, and the GLOBALGAP Standards do not contain any such specifications. The Florida Tomato Rule addresses the issue in a general manner, providing that "only properly composed manures are allowed."

continued...

MANURE

...continued

Requires or recommends sampling and testing

Only the FSLC Standards and the Leafy Greens Guide set specific sampling and testing requirements; the former simply requires growers to create a compost monitoring plan that outlines sample collection procedures while the latter prescribes the sampling procedure (a 12-point sampling plan with a composite sample and the testing of each lot before it is applied to a production field).

Store and treat manure away from growing fields

This particular provision is aimed at eliminating the possibility that run-off from a manure storage area could contaminate growing fields. The FDA Guidance and the Codex Provisions address this issue, but they do so in general terms (manure storage should be situated "as far as practicable" or "avoid locating in proximity to production"). By contrast, the FSLC Standards provide that, in general, manure should be stored and treated at least 400 feet from the edge of crops.

ANIMAL CONTROL

Excludes animals from growing areas

The presence of domestic or wild animals—and in particular, their feces—in the growing fields can lead to contamination of produce.[23] Only the GLOBALGAP Standards fail to address this issue; the remaining five guidelines all contain provisions relating to animal control, but each takes a different approach. The FSLC Standards and the Leafy Greens Guide both speak in terms of animals of "significant public health concern" or of "significant risk." The FDA Guidance and the Florida Tomato Rule address domestic and wild animals separately, noting that domestic animals "should be excluded" from growing fields, and that steps should be taken (such as the creation of buffer zones) "to deter or redirect" or "discourage" wildlife (which in the Florida regulations is specified as reptiles, amphibians, and rodents.)

Requires set distance from CAFOs

Only the FSLC Standards and the Leafy Green Guide contain provisions that set a minimum distance between growing fields and Concentrated Animal Feeding Operations (or "CAFOs"), facilities that generate significant amounts of manure that may contain harmful pathogens. The FSLC Standards set the minimum distance at one mile from the end of a row of crops, while the Leafy Greens Guide sets an interim distance of 400 feet from the edge of the crop.

WORKER HEALTH AND HYGIENE

Prohibits smoking, eating, spitting, gum chewing in growing areas

Workers in the field who do not follow proper hygiene—fail to use toilet or handwashing facilities, spit in the growing area, come to work sick—can easily contaminate the produce they are handling.[24] All of the guidelines except for the FDA Guidance address this issue, with the FSLC Standards using the strongest language, providing that "eating, drinking, chewing gum/tobacco, candy, and smoking are prohibited in the growing area."

Specifies location of toilets

All six guidelines address the proper placement of toilets to ensure they are easily accessible to workers in the field, with the most general language used in the Codex Provisions (facilities should be located "in close proximity to the fields") and the Leafy Greens Guide ("field sanitary program should address the placement of field sanitation units"). The FDA 1998 Guidance, the FSLC Standards and the Florida Tomato Rule all require toilets to be within ¼ mile of all workers (which is the standard set in regulations of the U.S. Occupational Safety and Hazard Administration). GLOBALGAP sets the distance at 500 meters.

Requires destruction of product that comes in contact with blood or bodily fluids

Only the FSLC Standards require that growers destroy any produce that has come into contact with blood or bodily fluids.

FIELD SANITATION

Sanitize or disinfect harvesting equipment and test/verify efficacy of sanitation

All of the guidelines included in the chart state that harvesting equipment/tools should be sanitized or disinfected but only the Leafy Greens Guide expressly requires that the sanitation process/procedure should be verified.

Dispose of damaged harvest containers

Only the FDA Guidance and the Codex Provisions expressly state that damaged harvesting containers that are no longer "cleanable" or can no longer be kept "in a hygienic condition" should be discarded. The remaining four guidelines do not include such a specific provision.

Notes

[1] The White House, Office of the Press Secretary, Memorandum for the Secretary of Health and Human Service and the Secretary of Agriculture, Initiative to Ensure the Safety of Imported and Domestic Fruits and Vegetables (1997), available at http://www.foodsafety.gov/~dms/fs-wh2.html.

[2] *See* HHS, FDA, CFSAN, Guidance for Industry, Guide to Minimize Microbial Food Safety Hazards for Fresh Fruits and Vegetables (1998) (*FDA 1998 Guide*), available at http://www.cfsan.fda.gov/~dms/prodguid.html; HHS, FDA, Guidance for Industry, Guide to Minimize Microbial Food Safety Hazards for Fresh-Cut Fruits and Vegetables, 2008, available at http://www.cfsan.fda.gov/~dms/prodgui4.html.

[3] *See* HHS, FDA, CFSAN, Office of Plant and Dairy Foods, Letter To Firms that Grow, Pack, or Ship Fresh Lettuce and Fresh Tomatoes (2004), available at http://www.cfsan.fda.gov/~dms/prodltr.html; HHS, FDA, CFSAN, Office of Plant and Dairy Foods, Letter to California Firms that Grow, Pack, Process, or Ship Fresh and Fresh-cut Lettuce (2005), available at http://www.cfsan.fda.gov/~dms/prodltr2.html.

[4] Caroline Smith DeWaal and Farida Bhuiya, *Outbreaks by the Numbers: Fruits and Vegetables 1990-2005*, Center for Science and the Public Interest, 5, available at http://www.cspinet.org/foodsafety/IAFPPoster.pdf.

[5] *See Ongoing Multistate Outbreak of Escherichia coli serotype O157:H7 Infections Associated with Consumption of Fresh Spinach—United States, September 2006*, MMWR, 55(38); 1045-1046 (Sept. 29, 2006), available at http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5538a4.htm.

[6] *See Outbreak of Salmonella Serotype Saintpaul Infections Associated with Multiple Raw Produce Items—United States, 2008*, *MMWR*, 57(34); 929-934 (Aug. 29, 2008), available at http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5734a1.htm.

[7] A number of different pathogens—such as *E. coli* O157:H7, various strains of *Salmonella*, and Cyclospora—have been associated with fresh fruits and vegetables. For more information, *see* HHS, FDA, USDA, CFSAN, Guide to Minimize Microbial Food Safety Hazards of Fresh-cut Fruits and Vegetables, Appendix B (2008), available at http://www.cfsan.fda.gov/~dms/prodgui4.html; and FDA, CFSAN "Foodborne Pathogenic Microorganisms and Natural Toxins Handbook, Bad Bug Book" (2008), available at http://www.cfsan.fda.gov/~mow/intro.html.

[8] Estimates of the economic cost to that industry in Florida alone have been more than $100 million and in Georgia close to $14 million. Reginald L. Brown testifying before the House Committee on Energy and Commerce, Subcommittee on Oversight and Investigations, *The Recent Salmonella Outbreak: Lessons Learned and Consequences to Industry and Public Health*, 110th Cong. 2nd sess., July 31, 2008. http://energycommerce.house.gov/cmte_mtgs/110-oi-hrg.073108.Brown-Testimony.pdf; *FDA tomato alert costly to Georgia producers Southeast Farm Press*, September 4, 2008, available at http://southeastfarmpress.com/vegetables-tobacco/salmonella-warning-0905/index.html.

[9] *See, e.g. United Fresh, PMA Endorse Common Produce Safety Principles* (May 25, 2007) , available at http://www.unitedfresh.org/news/338/United_Fresh_PMA_Endorse_Common_Produce_Safety_Principles?page=338&title=United_Fresh_PMA_Endorse_Common_Produce_Safety_Principles&content_type=news.

[10] Available at http://www.cfsan.fda.gov/~dms/prodguid.html.

[11] Available at www.codexalimentarius.net/download/standards/10200/cxp_053e.pdf.

[12] Available at http://www.perishablepundit.com/DailyPundit/PunditImages/FSLC-On-FarmStandards-11-2007.pdf. Members of the FSLC included Avendra, Darden, Disney, McDonald's, Publix, and Walmart, While the FSLC Standards were criticized by growers' organizations, it is our understanding that they are being used by some third-party auditors in their auditing of produce suppliers for retailers.

[13] Available at http://www.globalgap.org/cms/front_content.php?idcat=3.

[14] Available at http://www.caleafygreens.ca.gov/members/documents/LGMAAcceptedGAPs06.13.08_001.pdf. (*Leafy Greens Guide*).

[15] Available at http://www.cfsan.fda.gov/~acrobat/tomatsup.pdf and http://www.doacs.state.fl.us/fs/TomatoBestPractices.pdf. A more recent edition of the commodity-specific guide for tomatoes has been published but, as of the date of publication, it had not been officially incorporated into the Florida regulation.

[16] *See* 73 Fed. Reg 51306 (2008) available at http://edocket.access.gpo.gov/2008/pdf/E8-20187.pdf.

[17] *FDA 1998 Guide* at 9–10.

[18] *Id.* at 12–13.

[19] *Id.* at 11.

[20] *Leafy Greens Guide* at 13.

[21] HHS, FDA, CFSAN, Office of Plant and Dairy Foods, Letter to California Firms that Grow, Pack, Process, or Ship Fresh and Fresh-cut Lettuce (2005), available at http://www.cfsan.fda.gov/~dms/prodltr2.html.

[22] *FDA 1998 Guide* at 19.

[23] *Id.* at 24.

[24] *Id.* at 26.

Exhibit 7

Correspondence

ROBERTS
ASSOCIATES

Martha R. Roberts, PhD, CFS
5268 Quail Valley Rd
Tallahassee, Florida 32309
850- 509-7282
mroberts811@msn.com

July 13, 2017

To: Whom It May Concern

FROM: Martha R. Roberts, PhD, CFS
Roberts Associates

Martha Roberts

SUBJECT: Horizon 880 Project

Within a letter signed by Paul Cross/Bob Rogers to Mayor Burdick dated July 12, 2017, along with attachments, which I only received after 5 p.m. July 13, 2017, various inaccuracies and misrepresentation of facts are made or taken out of context.

I hope that my statements and the quoted statements below will clarify our position.

The letter to Mayor Burdick quotes:

> "We have spoken to Martha Roberts from FFVA & the FFVA president and they are for an equine waste complex to move forward - but due to location and buyer contracts they ask it to be moved. We can certainly show beyond a reasonable doubt, this would not affect buyer grower relationships, but we are open to other site locations including SWA controlled property."

Furthermore, in an attached H880 Project Operating Plan under 2. Mitigating local concerns a statement is made that

> "The FFVA on further conversations explaining our process in more detail, endorses our program but support the growers if they have concerns of variance and have requested a secondary site for their support at this time June 2017."

Response: The Horizon 880 statement is not correct as written. Again, in all conversations, emails, contact with Horizon 880, FFVA has indicated that yes such a facility is needed but not within 1 mile of a current produce growing facility or rotational crop land nor anywhere within the EAA. We stood ready to review the technology with Horizon 880 and would support such a facility if located at another site that was not within the EAA or within 1 mile of a produce growing farm.

I have made it very clear in my conversations with Paul Cross of Horizon 880 and to Dr. Dave Acheson, their food safety consultant, that we are not in support of this facility at the current proposed site nor in the EAA. In conversation with Paul Cross on May 11th, I stated repeatedly that I could support the type of facility they were proposing but not at the current proposed site nor in the EAA.

To put this in context with dates:

1) Paul Cross spoke with Mike Stuart May 9th regarding his opposition to the letter on food safety concerns that Jill Dunlop, FFVA, filed with the Commission workshop

2) Paul Cross indicated his understanding of the conversation that Mr. Stuart would retract this letter.

3) Mr. Stuart told Mr. Cross in a May 11th email, "I never said I would retract the letter. What I suggested to you was that you write us with your concerns with the letter. I also offered to have you talk with our consultant on food safety issues, Dr. Martha Roberts. I will pass this along to Martha Roberts for her review and comment.

4) Mike Stuart asked that I review Mrs. Dunlop's letter again and requested if I would call Mr. Cross to discuss their project and our concerns which I did on May 11 and we spoke a little over 42 minutes in which I recorded my side of the conversation since statements had been misrepresented so many times.

5) In an email to Mr. Stuart May 11, 2017 after the call I indicated: "I said at least 10-20 times I could support the type of facility they were proposing but not at the current proposed site nor in the EAA. "

6) Again, I clearly stated we would be opposed to the facility in the current proposed location. His (Paul Cross) last comment was then we shouldn't be growing any crops in the EAA and the water was all contaminated – to which I reminded him that water samples were required to be taken by all growers and we need him to share the GPS locations of any illegal dumping so that it can be remedied.

7) Mr. Cross sent me an email stating his understanding of our call that had many errors/misunderstandings which I corrected and sent back to him. The last part of my email back to Paul Cross states

> "Yes, we ended amicably with a commitment to discuss your technologies at a future date; however, we stand opposed to such a facility in the EAA or anywhere within a mile of land on which produce is being grown or is rotational for those crops."

8) Furthermore, I reviewed Mrs. Dunlop's letter to the Commission and relayed to Mr. Stuart, FFVA,

> "I see no errors or need for change to Jill Dunlop's letter to the zoning committee. It was quite factual. Horizon may not have seen the stronger letter from you and Paul Orsenigo delivered to the Commission. The facility needs to be sited outside of the EAA to avoid definite harm to growers through rejection of product by buyers. I'll be happy to call/meet with them but they cannot provide information that would change opinion on this site. We can help the company and Commission find another site. Someone did not do due diligence on effects."

CC: Mike Stuart, FFVA
Mike Aerts, FFVA

In good faith and without prejudice.

Dear Mayor Burdick,

I request that you put into public record the attached documents including this letter, regarding the H880 FULLY COVERED, Equine waste treatment complex. Horizon880 LLC. opposes the complete deletion of the Equestrian Waste Pilot Program which is scheduled for the July 14, 2017 Planning Commission Agenda.

We believe the issue warrants further conversation and or a workshop to discuss the item and suggest a rewrite of the program to address the concerns of the agricultural industry with whom we will meet with, while providing opportunities for industry to offer solutions to the equestrian waste issues that Palm Beach County must address.

There needs to be a focused effort to review possible site locations and impacts before a complete removal of this program is put into effect.

Further conversation is warranted for the following reasons:

1. We can certainly show beyond a reasonable doubt, that our complex on CR880 would not affect buyer grower relationships. All buyers and auditing companies have variances based on dry outside dusty bio solids composting and specific to cattle feed lot operations. Covered wet manure (composting and hauling trucks) does not create extra dust. Undercover complexes like Horizon 880, utilizing wood shavings, would drastically reduce any variance as confirmed by Walmart, Fresh Express etc., the buyers, and by crop safety auditing companies per the emails and letters attached.

2. Regarding water safety, there are multiple sampling sources that indicate increased nutrient levels in the West Palm Beach Canal and area waterways. Equestrian Waste Management facilities would limit, ***not increase***, future exposure and nutrient dumping into the canal system. This would help growers pass GAP and GFSI standards.

3. Environmentally, by not disposing of horse waste carefully, we are leaching and off gassing manure and waste shavings into the atmosphere. Current inadequate dumping will affect the water systems, crop land and our protected Everglades. We can stop this practice but would need the Commission's support in order to re-write the Pilot program and not delete the opportunities.

3. We are open to moving the H880 complex operations to an alternative location, inclusive of property owned and controlled by the SWA. As stated at the Board of County Commission hearing, at which time we withdrew our application, Commissioner McKinlay stated she would help us look for other locations on record. The alternative site should potentially allow for the endorsement from the FFVA Agricultural Community which would be a "win-win" for everyone and the environment.

4. This problem is not going away, with another anticipated 200,000 tons of horse waste being improperly disposed within Palm Beach County 2018. After multiple years of research and work by PBC staff and effected parties, deleting the Equestrian Waste Pilot Program is a step backwards. Further work to reconsider the concerns of the agricultural community that have come to the forefront and re-consider the program, technology and the site location criteria is a step forward.

Deleting the program is not helping the waste problem we all face.

If we can resolve, through conversation workshops or by moving locations, the issues behind this type of enclosed facility, while providing a solution to help Palm Beach County solve the equine waste crisis, what reason would there be to stop the opportunity to move forward?

5. We should have the opportunity to communicate with the right parties and *re*-present our findings to everyone.

6. This could provide massive economic benefit to Palm Beach County by hiring local employees, the construction of new facilities, the transportation of products and the sale of finished bedding and compost material, all of which will generate tax revenue and assist in the local economy. This cannot be overlooked.

This letter is sent in good faith, while we ask you to remove the agenda item from the July 14th meeting to discuss this matter in greater detail.

Bob Rogers | Al Rogers | Paul Cross |
Horizon 880 LLC
t. 1.844.900.4880

Paul Cross / Bob Rogers

Brian Terry
Engineer Consultant
WGI

ADDITONAL VALIDATION TO CONTINUE TO MOVE FORWARD WITH THE HORIZON 880 OFFERING

1. Horse and Health

The letter from United Fresh that was submitted on record at Palm Beach County, was written in haste after a request from FFVA and is clearly discussing cattle, feed lots. Cattle slaughter houses and feed lot operations have a higher opportunity for pathogen spread. Horses being non-zoonotic to e.coli would negate any variance concerns.

2. Emails and finding from Walmart, Fresh Express and produce buyers in Florida. Including FFVA and a list of more than 50 document and people spoken to**.**

The conclusion is that a waste wood shavings re-use facility under-cover with a small amount of dried inert, non-pathogen horse buns, would not insight buyers, even from the strictest Fresh Express group.

In fact, even the redacted letter that was sent, states any variance to crops would be reviewed. The strictest Fresh Express director and safety expert states if the complex is covered and wet, then any stated variance will be reduced.

3. Location.

We have spoken to Martha Roberts from FFVA & the FFVA president and they are for an equine waste complex to move forward - but due to location and buyer contracts they ask it to be moved. We can certainly show beyond a reasonable doubt, this would not affect buyer grower relationships, but we are open to other site locations including SWA controlled property.

4. SWA Compost site

The abandoned SWA compost site has enough land to build a facility. It is close to the heart of Wellington and further away from crop lands which we would get the endorsement of the Agricultural community. If we can work with PBC / SWA to enter into a negotiation for use of property we could significantly help to address the equine waste crisis.

Finally, other sites may be applicable and need to be reviewed before a complete removal of this program is put into effect.

Letter written July 12th 2017

Horizon880 HPAB Process 2017©

HORIZON 880 LLC

Operating Business Plan

Equine Waste & Recycling Facility.

Palm Beach County. Florida

Section 1- Company Summary

Prepared By:
Paul Cross. Bob Rogers.
Al Rogers. Brian Terry

Updated – July 5th, 2017
Revision 4

Leading excellence in Bedding Recovery Technology

We are about to change the way equine bedding is handled by implementing an advanced technology process that will become an integral part of modern County standards and horse farm operations. The Result. An efficient use of resources, cost savings and reducing environmental hazards; such as illegal dumping, nutrient leaching & phosphorus overloading into our soil and water.

"reclaiming waste shavings to benefit the equine community and environment."

All rights reserved Horizon 880 © 2017

No distribution of this document is allowed without prior authorization from Horizon880 LLC Private and Confidential

Material Disclaimer

The contents of this documentation are confidential and proprietary. This is not a legally binding document or guarantee of earnings, production or results. Individual plant results will differ. All documentation remains the property of Horizon 880 and HiPoint Agro Bedding Corp and their representatives. (“the parties”)

The contents of the parties’ plan(s) in paper form or presentation format are confidential. They are distributed to authorized persons only who are registered with the Company as recipients. Distribution to unregistered recipients is a breach of confidentiality provisions agreed to prior to receipt of the Summary, Plan or Presentation.

Operational performance of the parties may vary significantly from the performance projected herein. The information herein, whether stated or implied, is for educational purposes only and is not intended to be and must not be taken alone as the basis for any investment decision relating to the financial matters of the company.

These materials have been prepared by Horizon 880 and HiPoint Agro Bedding corp. for information purposes only and are not legal advice. Readers should not act upon this information without seeking professional counsel. Every attempt has been made to assure that the information contained in this paper is accurate. Horizon 880 and HiPoint Agro Bedding corp. assumes no responsibility and disclaims any liability for any injury or damage resulting from the use or effect of any product or information specified in this paper

CONFIDENTIALITY, DISCLAIMER & PROPRIETARY INTEREST AGREEMENT

The report has been prepared for Horizon 880 by HiPoint Agro Bedding Corp. (HPAB) as contracted or requested by Horizon 880. The report has been prepared solely for information purposes, from information supplied by various sources and is being furnished through HPAB solely for the use by Horizon 880. In assessing the contents, recipients of this information memorandum acknowledge that they are relying on data provided to HPAB by the various sources. Neither HPAB or its associates, writers, researchers, nor Horizon 880 makes any representation (express or implied) as to the accuracy or completeness of this information memorandum or any other written or oral communications transmitted to the recipient in the course of its evaluation of the subject matter. In reviewing the findings and recommendations of this report, all recipients acknowledge that they are making their own decisions, that they are relying on their own due diligence and that they are not relying on any written or oral statements or representations from HPAB. This report includes in part highly confidential and proprietary information and is delivered on the express condition that such information will not be disclosed to anyone except persons in the recipient’s organization who have a need to know for purposes of evaluating the information. Any proposed actions by the recipient, which are inconsistent in any manner with the foregoing agreement will require the prior written consent of HPAB and Horizon 880.

Table of Contents

The solution is to take a vast undesirable waste stream and create a new sustainable agricultural business standard. We can change the way equine bedding is handled by implementing an advanced technology process that will become an integral part of modern County standards and horse farm operations. The Result. An efficient use of resources, cost savings and reducing environmental hazards with a product that has significant health and safety benefits over the original. 12

1. Company Overview

This Plan is designed to outline the operations of the Horizon 880 LLC (H880) recycling facility, located in Palm Beach. Florida. The plan will cover operational handling methods of wastes and recyclables accepted and handled; Weigh scale methods; site inspections; emergency preparedness; record keeping; environmental measures and environmental security. This operating plan was prepared to meet requirements regarding Waste-stream Management Facilities including Agricultural safety management for recycling to FDA state and federal rules. Due to the site being on Agricultural lands and within close proximity to raw crops we included further reasonable commercial efforts to comply with relevant FSMA & GAP FSMI Auditing systems. H880 considered all information pertaining to financial security and waste volumes within the operating plan or appended materials to be proprietary in nature.

Documentation

With have gathered over 100 documents and emails spanning some 30 plus years, regarding manure management, manure handling, food safety, crop safety, and composting operations. In addition, we include gathered buyer regulation and contract responses. We discussed with food safety and auditing professionals, established our findings through experts in their respective fields. This plan has been prepared in sections: 1) Business Summary. 2) Operational Safety. 3) De-risking Food Safety.

2. Company Background

Locally owned and operated for over 30 years, Prolime (Bob & Al Rogers) is a long-standing supplier of environmental and agricultural solutions specifically in the remediation and reuse of lime from the waterways of West Palm Beach. Prolime has recently updated it 2013 approvals for bio-solid manure composting on the H880 site to accept horse waste shavings manure (processed undercover) and yard trimmings (in windrows) removing its bio solid approval due to local agricultural concerns and the healthier environmental impact of recycling horse shavings. H880 is an environmental solution to the Horse waste bedding crisis in Florida. It will set new standards in its approach to waste reduction management practices in Florida and other locations across North America. By transporting, treating and processing horse waste undercover that would have otherwise been inadequately dumped or discharged into our local canals and/or crop lands untreated we can clean up 25% of the horse shavings crisis in the Palm Beach region. H880 implements a simple 4 step treatment process to create a viable treated product that is both environmentally friendly and reusable, derived from the horse shavings and manure waste it handles and collects. H880 feedstock comes from local haulers already on the roads in Palm Beach therefore it will not further impact the residents. Hauler safety is a priority each truck will be RFID tagged for traceability.

History of Recycled Horse Shavings

The business of drying wood shavings for bedding is not new. In fact, drying systems and separating equipment have been around for decades. Noticeably John Lundell has built drying systems for the equine and dairy industry, Trident Processes has multiple processes for drying manure as dairy bedding for reuse. In more recent years since 2010 GreenScene Agritek (GSA) has been piloting a process to recycle equine bedding on Agriculture land, obtaining an ALR variance to build on Agriculture Land next to raw crops. Over two years of pilot operation there has not been a documented concern amongst growers or residence.

Mr. Paul Cross moved from GSA in 2016. HiPoint Agro Bedding Corp (HPAB) was formed to optimize a newer more efficient route to recycling equine shavings. Horizon 880 chose HPAB as their technical advisor and automated process for their H880 closed loop cover facility in Florida.

H880 takes the waste spent horse shavings from the local barns through official haulers in covered trucks to our bio-secure Facility. The covered building is where the HPAB process routes the waste shavings through a 4-step process of separation. Drying to remove pathogens and bring moisture to 10%. An oscillating shaker removing the organic fines and dust out of reusable shavings. Then an organic essential oil chemistry is infused into the shavings ready to be bagged and distributed for reuse. What is created is clean safe pathogen free shavings for equine bedding re-use.

There is no manure or chemicals in HPAB reclaimed bedding. Lab testing is done on a continuous basis. All bedding is processed undercover. The small amount of manure buns, fines and organics (20%) are sent to covered composting vessels to cure and be rebagged for resale.

Designing A State of the Art complex in 2017

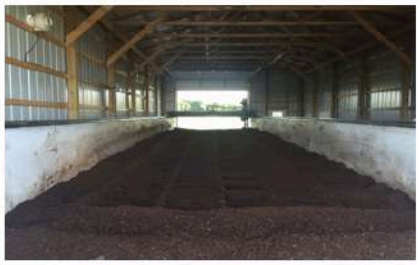
Engineered property site by WGI. Designed by HiPoint. Built & Commissioned by Amec Foster Wheeler. Facility run by Horizon880 LLC.

Horizon 880 Process designed by HPAB © 2017

Horizon 880 Process

We take waste spent horse shavings from the local barns through official haulers in covered trucks to our bio secure Facility.

The covered building processes, dries, and separates out the manure. Then with an organic oil infusion the shavings are bagged for reuse. What is created is clean safe pathogen free shavings for equine re-use.



There is no manure or chemicals in our reclaimed bedding. Lab testing is done continuously. All bedding is processed undercover. The small amount of manure buns are sent to covered composting vessel to cure and be rebagged for resale.

Spent horse manure is 80% wood shavings that can be recycled and reused

Horizon880 Equine Bedding Reclaimed & Facility Composting benefits.

- Complete system automation for safe efficient monitored operation
- 100% of processed waste bedding is covered and processed on a continuous basis
- Significantly reduces transportation costs from other site reducing greenhouse gas
- Creates a new safe environment to dispose of horse manure waste.
- Site is built like a bath tub to protect waterways with 100 year flood levels.
- Compost facility also undercover to reclaim and repurpose everything brought in
- Addresses all compliance requirements with environmental regulations

3. Florida Executive Summary

Horizon880 is about to change the way equine bedding is handled by implementing an advanced technology process that will become an integral part of modern horse farms and County operations. The Result: an efficient use of resources, cost savings and a reduction of environmental hazards; such as illegal dumping, nutrient leaching, and phosphorus overloading into our soil and water. Horizon880 has the backing of the Village of Wellington and Palm Beach County (PBC) Owners of Horizon880 LLC. are long-standing suppliers of environmental and agricultural solutions who saw the impact of this crisis of waste shavings polluting Wellington and the surrounding PBC region. Horizon880 will provide a cost-effective solution to the massive surplus of waste horse bedding in Florida while creating a sustainable business model for the local equestrian market that has been validated by early adopters and research.

There are approximately 12,000 horses in Wellington alone, creating 120,000 tons of waste bedding every year. In Palm Beach County that number rises to 200,000 tons (source PBC public record.) The annual spend for bedding and bedding removal in PBC has risen into the millions and the County agrees there is a critical need for a comprehensive environmentally responsible plan for the removal of wasted horse bedding.

PBC had allocated just four (4) potential sites with the ability to have Special Agriculture Zoning (SA) approval by mid-April. Our site on State Road 880 is the first such area with 30+ acres ready to be developed with fundamental approval April 2017 ** ref PBC public documents*

Once built, our Florida Plant will process up to 60,000 wet tons of waste annually, to produce over 2 million cubic ft. of reusable bedding from 3,000-5,000 horses. This creates over 1,000,000 new shavings bags weighing on average 35lbs at 5 cubic ft. Our compressed bedding will be reintroduced at a competitive local price. Current local bedding prices range from $5-7 dollars.

The Horizon880 plant will create upwards of $5 Million in revenues from the local community at 50%+ margin or estimated $3Million EBITDA to use back in the local community, employing 10 + staff. Our Plant will benefit from long term support from HiPoint and through the HPAB monitoring system. Horizon 880 is a shareholder and partner with HiPoint Agro Bedding Corp. to ensure long term success. The Plant facility will cost $3.5 Million USD plus land improvements and buildings, however, with the projected sales revenues of the reclaimed bedding, the payback or ROI is estimated to be less than 4 years.

The equine industry of Wellington is a very important part of the national, state and local economies. It is diverse, involving agriculture, business, sport, entertainment and recreation. It continues growing every year. Global statistics state that there are 59 million horses with 100's of regions having a high populous of horses, humans, and racetracks creating a trillion-dollar global industry. (FAOSTAT 2014)(USEF & American Horse Council)

To date, much of the horse bedding manure is being buried, compacted, composted, incinerated, or spread on crop land. However, multiple reports show the nutrient value of high wood shavings in horse manure is depleting soil nutrition - not adding to it. The lignin in wood does not breakdown quickly, creating a low-grade compost material, allowing for leaching and off gassing of the manure when left to decompose. Disposal at one of the current legal sites has found that the wood shavings have not composted down in a timely manner, and has not been as successful as hoped. We are confident that we could receive much of this feedstock at our facility as well.

The current generation of riders and horse owners understand the sustainability issues associated with ethical horse ownership. Horizon880 reclaimed shavings plant offers a methodology of environmental stewardship. Instead of discarding their bedding, they can now re-use their horse bedding with the very best in clean reuse technology. Our plant will create a new product that is healthier for horses' respiratory system and their physical health than when it was on new or other bedding types (including straw.) The small separated fibers, are carried and mixed with the manure and are processed via enclosed composting vessels creating a valuable add soil amendment. Our closed loop process "wastes nothing & gains everything." ™

Value Proposition. Project Highlights.

- Horizon880 will build this flagship facility to take in used bedding for equestrian season 2017-18
- Financial returns are excellent, quick ROI with long term viable profitability.
- Our technology companies and engineers are proven in recycling agricultural bedding recovery
- Our management team has been in the agriculture and recovery industries for over 30 years
- Current disposal methods are limited and the waste shavings can be redirected to Horizon 880
- We have the attention and support from government agencies, the horse community & haulers.
- Our site is only 18 miles from Wellington much closer than most.
- The process is viable with proven and patented technology
- Attaining to be the forerunner in recycling for the foreseeable future.
- Our processes are fully automated to reclaim the shavings from waste horse bedding efficiently
- Health and Safety ~ The bedding quality is better than the original with added health benefits

Currently most wood shavings bedding is not tested for safety. The HPAB safety protocols will be in place to perform Standardized Microbiological & Mycotoxins & Chemical Analyses of the bedding on a regular basis.

4. Market Opportunity.

Wellington creates 120,000+ tons of horse waste shavings between November and April every year. There are 8,000 Horses within an 8-mile radius with more in the Winter months. Wellington is one of the most highly populated horse regions in North America. This business plan capitalizes on taking 60,000 tons of waste shavings to the Horizon880 location, processing the bedding, then having the same farms use the reclaimed bedding in multiple cycles reducing waste, reducing environmental impact, and increasing local spending and H880 profits. Outside sales as required.

Bedding and bedding disposal across North America is a $4.5 billion plus annual industry and contributes to $39 billion direct impact to the US economy. (AHCF deloitte publication 2005.) Irrespective of Popular belief horse numbers have grown from 2010 – 2014 globally with over 10 million horses today in the USA (2014 Food and Agriculture Organization of the United Nations.)

The need for environmentally sound removal of waste horse shavings (manure) is critical. The Village of Wellington has proposed many options to solve this problem with none being acted upon. The latest of these being a single disposal site close to US Sugar 49 miles away. This creates increased transportation emissions, and fuel and disposal costs that are being passed on to horse farms and owners.

Horizon 880 follows *The Industrial Internet of Things (IIoT)* methodology. The driving philosophy behind the IIoT is that smart machines are better than humans at accurately, consistently capturing and communicating data. This data can enable Horizon880 to pick up on inefficiencies and problems sooner, saving time and money and supporting our business intelligence efforts. It has great potential for better quality control, sustainable green practices, supply chain traceability and overall supply chain efficiency.

Horse Stats in PBC	Facility Ownership	Value Proposition	PBC Initiative
28,000 + horses (PBC)	Facility can be implemented with no disruption to surrounding areas.	Environmentally sustainable	Brings a local bedding product to market
200,000 + tons of manure / year	New PBC jobs for Plant operations…	Creates new revenue channels	Solves a very long PBC problem
120,000 + visitors Jan - Apr	Plus, collections and distribution	Showcase Plant. First of its kind	Brings new jobs, revenues & opportunities
High Exposure clean-up costs	No PHD workforce required	Reduces nutrient run off leaching	Proud local PBC Florida company
Limited legal disposal sites	Long term equipment life for 20 years	Stops phosphorous overloading	Showcase Plant. First of its kind
Long term problem needs solving		Minimizes inadequate dumping sites	Chosen site is away from residents.

5. The make-up behind the manure

All manures are not created equal. In fact, manure makes up only a small percentage of what we call "horse manure" around 40% or less. The rest is wood shavings for bedding the horse in a stall. In higher end barns and equine event show grounds, horse accommodation is such, that the manure to shavings ratio is about 20% manure 80% shavings that has simply been urinated on with some fecal matter!
Straight horse manure also contains undigested hay and grass in what's commonly known as a manure bun. Therefore, manure + stall waste, is commonly referred to as "used stall waste" - "used or waste horse bedding" –or "horse stable manure." Unfortunately, it is confusing as regulatory agencies do not differentiate from manure to stall waste. However, from an environmental impact wood shavings are green waste and exempt from being labelled harmful.

Table 8. Average composition of composted horse manure (on a wet-weight basis)*

Type of Compost	Nitrogen (as N)		Phosphorus (as P_2O_5)		Potassium (as K_2O)	
	%	lbs per ton (kg per tonne)	%	lbs per ton (kg per tonne)	%	lbs per ton (kg per tonne)
Manure with sawdust	0.48	9.6(4.8)	0.20	4.0(2.0)	0.25	5.0(2.5)
Manure with straw	0.63	12.6(6.3)	0.28	5.6(2.8)	1.03	20.6(10.3)

* Composition will vary depending on the type and amount of bedding used, any additional application of nitrogen and the stage of composting.
Source: Chaw, D. (2002) Passively Aerated Bunker System for Horse Manure: Final Report. Olds College Centre for Innovation, Composting Technology Centre.

Table 3. Estimates of the nitrogen and phosphorus content in livestock manure (modified from Goolsby and others, 1999).

Livestock group	Nutrient content of manure (kilograms per day per animal)		Life cycle (number of days)
	Nitrogen	Phosphorus	
Milk cows	0.204	0.032	365
Beef cattle	0.150	0.053	365
Steers	0.150	0.048	365
Heifers	0.141	0.018	365
Slaughter cattle	0.104	0.034	170
Hogs and pigs[1]	0.027	0.012	365
Chickens and hens[1]	0.0015	0.0006	365
Pullets and broilers[1]	0.0010	0.0003	365
Tom turkeys	0.0054	0.0020	133
Hen turkeys	0.0034	0.0013	112 or 365
Sheep and lambs[1]	0.023	0.004	365
Horses and ponies	0.127	0.022	365

[1] Animals in these groups have a life cycle shorter than one year, but year-end inventories are assumed representative of year-round population.

For reference: Table 3, shows Horses are at the low end of the scale when it comes to the pollution from nutrient overloading or leaching, plus low on the composting value scale. The concern then is when there is a high horse to human populous. A stalled horse creates 9-12 tons of waste bedding per year – with 3,000,000 race horses and 9,000,000 total American horse populous, that creates +- 5,000,000 tons of manure per month – which is being inadequately disposed of all around us, due to the fact it is increasing difficult to dispose of because the lignin cellulose within wood shavings will not breakdown in a landfill creating a high C/N ratio.

University of Minnesota
http://www.extension.umn.edu/agriculture/tillage/soil-management/soil-management-series/organic-matter- management/

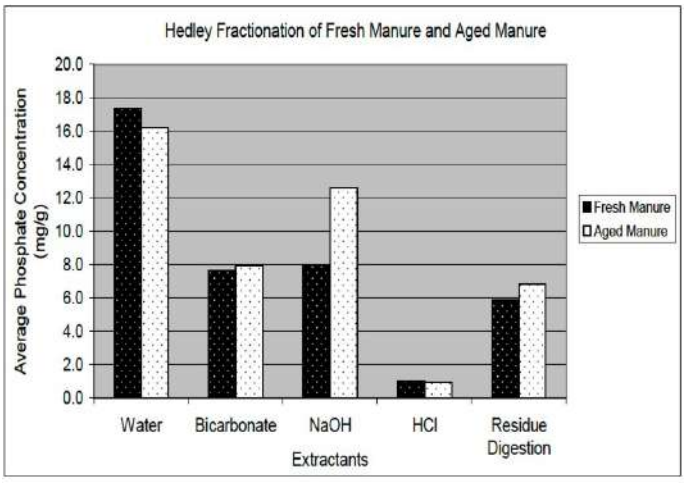
As a rule-of-thumb, materials with C:N ratios more than 30:1 will trigger temporary nitrogen deficiency. If the ratio is more than 40:1, the residue has less than 1% nitrogen, and N will be tied up (unavailable to plants) for a few weeks, or much longer in the case of low-nitrogen woody materials. Horse manure can have a ratio of 50:1 and Sawdust 100 - 400:1

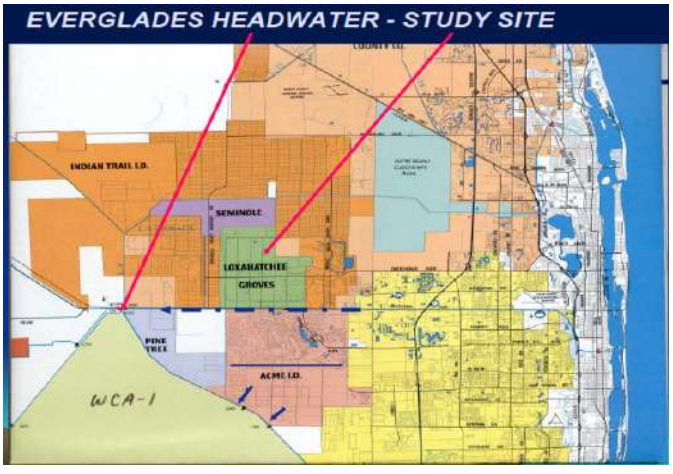
There are many industry's environmental concerns; such as contaminant leaching into waterways including phosphorus hot spots, odour control and methane off-gassing. Not to mention the smell of ammonia, dust and the black fly populations in the stables which results in poor horse and human health.

Dc. Lauda - Wellington - Loxahatchee Groves 07/24/2007

http://bcn.boulder.co.us/basin/data/NEW/info/TP.html

Proaction is cheaper and easier than reaction later. Horse manure, solid waster dumping and over fertilization is degrading our water quality. Horse manure, fresh or aged (more than 1 week) has relatively high SRP [Soluble reactive phosphorus] (H20 ~ 16 / NAHCO3 ~8 MG/G per dry DRY WT.) It appears that wise manure spreading on pasture lands can decrease SRP through plant growth and geo-complexation rxs. However large scale accumulations (like stock piling) **will** lead to high significant Phosphorus leaching into the water /land environment.





Current disposal methods include spreading on pastures and crops or composting into soil for farm and garden however, tipping fee costs are rising, and in many jurisdictions outdoor storage and landfill disposal is no longer permitted. Disposal companies are running out of disposal options!

The past options of burning or burying into landfills or stockpiling on farmland is a thing of the past in most jurisdictions. Waste horse bedding is also not well received by the agricultural community as it does not supply a lot of nutrient content due to the nitrogen capturing nature of rotting wood based manure.

Recent agricultural rule changes reduce outdoor manure storage to a maximum length of two weeks and so waiting months for the spring manure-spreading season is no longer an acceptable solution. It is becoming obvious that there are less disposal solutions available and disposal costs are rising. North American and European horse owners must go farther afield to find disposal solutions.

Waste stall bedding, left unattended, will cause methane off gassing, leaching and phosphorous hot spots leading to diseases, flies, and environmental hazards.

Without a careful process of heat & time-based drying, recycling and composting; waste horse stall manure has become each Counties disposal crisis, with very few option left.

Solution

Through recycling waste shavings into re-usable horse bedding, communities can eliminate the troubling environmental concerns of inadequate dumping, nutrient leaching and phosphorus overloading into our soil and water.

The Value Proposition

1. Environmentally sustainable solution to waste
2. Duplicable and closed loop allowing for shavings to be re-processed continuously
3. Optimizes the full value chain of waste manure and equine bedding
4. Limited legal disposal sites. Inadequate dumping practices are common.
5. Landfills refuse to take it; land application makes it difficult to compost
6. Long term problem that needs solving
7. Reduces nutrient run off, leaching and off gassing environmental hazards.
8. Reduces transportation cost and emissions from the haulers
9. Reduces emissions of shipping packaged shavings in from thousands of miles away.
10. Creates new revenue channels, local business opportunities and local in-county spending.

Conclusion

The solution is to take a vast undesirable waste stream and create a new sustainable agricultural business standard. We can change the way equine bedding is handled by implementing an advanced technology process that will become an integral part of modern County standards and horse farm operations. The Result. An efficient use of resources, cost savings and reducing environmental hazards with a product that has significant health and safety benefits over the original.

Horizon880 HPAB Process 2017©

HORIZON 880 LLC

Operating Business Plan

Equine Waste & Recycling Facility.

Palm Beach County. Florida

Section 5 - Crop Safety Location - Mitigation Plan

Prepared By:
Paul Cross. Bob Rogers.
Al Rogers. Brian Terry

Updated – July 5th, 2017
Revision 4

Leading excellence in Bedding Recovery Technology

We are about to change the way equine bedding is handled by implementing an advanced technology process that will become an integral part of modern County standards and horse farm operations. The Result. An efficient use of resources, cost savings and reducing environmental hazards; such as illegal dumping, nutrient leaching & phosphorus overloading into our soil and water.

"reclaiming waste shavings to benefit the equine community and environment."

All rights reserved Horizon 880 © 2017
No distribution of this document is allowed without prior authorization from Horizon880 LLC Private and Confidential

Material Disclaimer

The contents of this documentation are confidential and proprietary. This is not a legally binding document or guarantee of earnings, production or results. Individual plant results will differ. All documentation remains the property of Horizon 880 and HiPoint Agro Bedding Corp and their representatives. (“the parties”)

The contents of the parties’ plan(s) in paper form or presentation format are confidential. They are distributed to authorized persons only who are registered with the Company as recipients. Distribution to unregistered recipients is a breach of confidentiality provisions agreed to prior to receipt of the Summary, Plan or Presentation.

Operational performance of the parties may vary significantly from the performance projected herein. The information herein, whether stated or implied, is for educational purposes only and is not intended to be and must not be taken alone as the basis for any investment decision relating to the financial matters of the company.

These materials have been prepared by Horizon 880 and HiPoint Agro Bedding corp. for information purposes only and are not legal advice. Readers should not act upon this information without seeking professional counsel. Every attempt has been made to assure that the information contained in this paper is accurate. Horizon 880 and HiPoint Agro Bedding corp. assumes no responsibility and disclaims any liability for any injury or damage resulting from the use or effect of any product or information specified in this paper

CONFIDENTIALITY, DISCLAIMER & PROPRIETARY INTEREST AGREEMENT

The report has been prepared for Horizon 880 by HiPoint Agro Bedding Corp. (HPAB) as contracted or requested by Horizon 880. The report has been prepared solely for information purposes, from information supplied by various sources and is being furnished through HPAB solely for the use by Horizon 880. In assessing the contents, recipients of this information memorandum acknowledge that they are relying on data provided to HPAB by the various sources. Neither HPAB or its associates, writers, researchers, nor Horizon 880 makes any representation (express or implied) as to the accuracy or completeness of this information memorandum or any other written or oral communications transmitted to the recipient in the course of its evaluation of the subject matter. In reviewing the findings and recommendations of this report, all recipients acknowledge that they are making their own decisions, that they are relying on their own due diligence and that they are not relying on any written or oral statements or representations from HPAB. This report includes in part highly confidential and proprietary information and is delivered on the express condition that such information will not be disclosed to anyone except persons in the recipient’s organization who have a need to know for purposes of evaluating the information. Any proposed actions by the recipient, which are inconsistent in any manner with the foregoing agreement will require the prior written consent of HPAB and Horizon 880.

Table of Contents

Section 5. CROP SAFTEY LOCATION - MITIGATION PLAN

1. De-Risking the business location.

There has been a lot of discussion weather a Recycling facility like H880 could possibly contaminate the land via air (dust aerosols) or waterways (run off) that could affect local crop farmers. We have been in contact with a multitude of people and organizations to discuss these concerns. We have not been able to discuss in detail with the farmer in question.

It is clear to state the H880 facility does not fall under any food safety guidelines. However, being part of the Agricultural community of Florida we have created a Plan to mitigate any risk to surrounding raw crops.

Horizon 880 LLC and associates have been in discussions with grower auditing parties for buyer compliance to verify the situation in hand. Here is the background for the site, location, and setbacks.

A synopsis of the waste shavings crisis and H880 facility setbacks.

- The L13 Canal and lands are being contaminated from spent horse manure and shavings being dumped illegally and inadequately.
- By recycling the horse shavings, we can remove 50,000 + tons (25% of the 200,000 tons annually) from our canals and crop lands.
- We had a 7-0 approval (April 5th) by Palm Beach County Commissioners to go forward with H880 facility with SA (Special Ag) approval on our land.
- $1.3 Million has been spent by Horizon 880 to be prepared to build with no mention of any outside concern from the Ag community.
- On April 7th, The FFVA grower members shared a redacted letter to show a variance of 1 mile required from composting facilities.
- Although unsubstantiated and not investigated Palm Beach County Commissioners requested we withdraw the application to build entirely.
- By May 25th we had over 70 documentation and information pieces including Walmart, Public, United Fresh box buyers that states they follow GAP safety audits of which none have a 1 mile variance rules with Fresh Express, the strictest, said any facility that is undercover and uses wet waste would be considered a much lesser risk on variances.
- We are also not a composting facility. We recycle 80% spent horse shavings and compost 20% all undercover on 5 acres.

Alternative location

- We have also accepted the offer to review another site on the Palm Beach County SWA landfill site if County approvals can be expedited. *We ask for your help to review this option as we have grower endorsement of the project if we moved across to the SWA Landfill*, and it solves the Counties dilemma of not opposing the Ag grower community.

A Solution is required

- We must solve the contamination issue, everyone agrees on this.
- We have a site that was approved and seems to have been taken away without due diligence to its reasons for withdrawal. We believe we have an option to move and build elsewhere with help
- We can solve the problem on ether piece of 5-acre land both within 15 miles of Wellington. However, if we are to move we need support from Florida and WPB as we have spent extreme money and effort and County accommodation to approve the original site.
- As of June 7th, Palm Beach County still *seems* to want to remove itself from the situation for another 12 months, thus we are REQUIRE a solution on our land or alternative 5 acre parcel.
- The problem does not go away and another 200,000 tons of waste bedding will be dumped inadequately this 2017-2018 horse season from Wellington & PBC without regard for the water and land pollution.

Current Contamination in Palm Beach County

- April 17th 2017.
  - State Road 80 700 by the Canals and crop lands
    - manure dumping, spreading and contaminating. (pictures by Dr. Lauda, Paul Cross, Al Rogers)



Lack of adequate dumping sites

These FDEP Approved Disposal locations cannot handle 200,000 tons of waste horse shavings:

(1) Atlas Peat and Soil Inc., Boynton Beach FL 33472

(2) United States Sugar Corporation, Clewiston FL 33440

(3) Florida Crystals, South Bay FL 33493

(4) McGill Brighton, Okeechobee FL 34974

(5) Solid Waste Authority Palm Beach County, West Palm Beach FL 33412

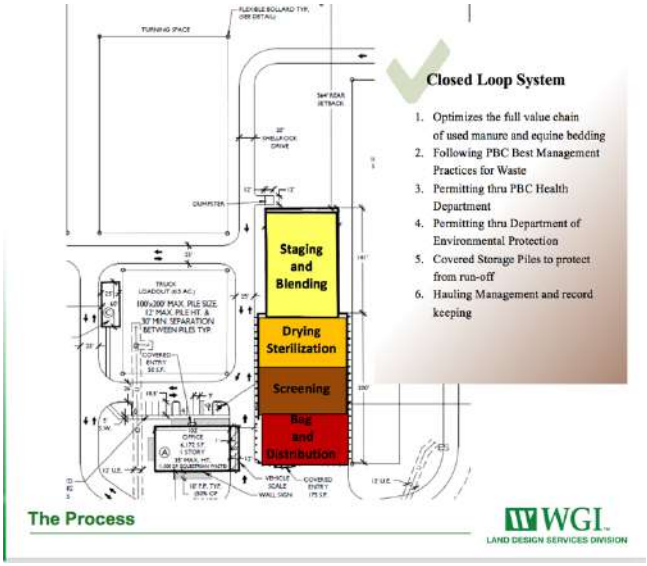
Each site is within 18 - 49 miles of Wellington creating long transportation & emissions routes.

Most are within 1 mile of raw crops and therefore Based on FFVA concerns they should be shut down.

Due to the fact the inadequate and illegal dumping near crop lands, growers should not be able to sell their raw crops to the buyers. This could become an Agricultural crisis and we have a solution.

Solution by Horizon 880

Approved solution to solve this problem in a safe environmentally sound way set out below. *(April 2017)



2. Mitigating local concerns

We have heard from a concerned standpoint, a local farmer Mr. Huntly, Florida Crystals, Kylie Larsen, Pamela (consultants for the growers) and FFVA president and associates.

The FFVA on further conversations explaining our process in more detail, endorses our program but support the growers if they have concerns of variance and have requested a secondary site for their support at this time June 2017.

We have one letter from United Fresh Jennifer McEntire, who on conversation did not have all the details when asked to write a letter for the April 7th meeting, and wrote it primarily on "general manure terms" covering cattle, dairy, pig and poultry.

We have a redacted letter that states variance can be reduced based on a case by case circumstance.

We can stand behind the statement that the chance of horse manure contamination would be insignificant over 400 ft. from any farmer due to its non-zootonic nature (Anna Quinn) – horse manure is not associated with Escherichia coli O157:H7 cross contamination to crops. The Federal Department of Agriculture (FDA) states Horse manure is not a risk to crops and humans.

Publications

We have also documented over 30 publications regarding contamination, letter and other references:

- Cornell University re: manure bedding pathogen
- Equine bio security standards
- Fecal Contamination in Florida canals
- Leafy green rules and regulations (400 ft.)
- State and Federal regulations for manure composting
- GFSI food safety guidance documentation
- GFSI food safety auditor compliance
- Primus GFS auditing checklists and guidelines
- Horses and Zoonotics (human transfer)
- Journal of food protection
- Manure management checklist for compliance
- NR GG UF HPSS Final release
- OSHA Laws regulations and analysis
- Horse health & e.coli in horses
- OTA Manure Safety
- SGL AFL FSMA White papers
- USDA buffer zones
- E. coli and other contaminates in cattle, pigs and poultry
- SOPF Regulations and local county requirements
- Anna Quinn white papers on horse health
- Journal of Food Protection, Vol.73, No.11,2010

Food Safety Auditing Groups

There has been a lot of discussion regarding possible contamination via air (dust aerosols) water (run off) that could affect local crop farmers. We have been in contact with a multitude of people and organizations to discuss these concerns. We have not been able to discuss in detail with the farmer in question.

It is clear to state the H880 facility does not fall under any food safety guidelines. However, being part of the Agricultural community of Florida we have created a Plan to mitigate any risk to surrounding raw crops.

Horizon 880 LLC and associates have been in discussions with grower auditing parties for buyer compliance to verify the situation in hand. Here is a documented list of contacts. Emails are available.

Appendix B carries more pertinent communications.

Auditing Parties reached

- The Acheson group food safety compliance
- SSP (Auditing party)
- FSMA
- Primus Lab GAP / GFS
- FSA
- GAP rule compliance
- GSMI standards
- GFSI standards
- Harmonized Standards
- FSMA rules
- Leafy green accord
- State and Federal regulations for manure composting
- USCC composting council

Buyers & Professionals

We have been in discussions with buyers and council with emails and letters from:

- Walmart: Rebecca Burnsworth Senior Food safety manger
- Walmart: Don Fox Senior Purchaser Florida
- Publix: Kim Brunson
- Publix: Michael Hewett, Director Environmental Sustainability
- United Fresh Product Association: Jennifer McEntire VP Food safety & Technology
- Fresh Express Kevin Watson. John Gurrisi Director FEX
- Planet Organics Market: Paul Clewes VP operations
- Interek: Program Director
- Palm beach county commissioners Melissa McKinlay et all.
- Florida Recycling today: Heather Armstrong Executive director
- Florida Senate: Senator Marco Rubio
- Florida Health Dept.: Kenny Wilson FDOH-PBC
- Florida Dept. Environmental Protection: Lauren O'Conner Div. of Waste Management
- Florida environmentalist: Dr. Louda
- Leafy Greens Marketing Association: April Ward
- Product Marketing Association: Bob Whitaker Chief Science Officer
- Perry Johnson Registrars Food Safety: Lauren Maloney Food safety program manager
- Integrated Waste Management Consult: Mathew Cotton President
- SGS Group GAP GSMI codes: Benjamin Warring & Theresa Almonte
- The Acheson Group: David Acheson President Lindsay Nix Director
- USDA Agricultural Research service
- Agricultural Research Service (ARS) Dr. Manan Sharma
- Environmental Microbial Food safety: Dr. Manan Sharma
- Eastern Regional Research Center Dr. Bassam Annous, Dr. Dike Ukuku
- Food safety Intervention Technologies Dr. Joshua Gurtler Dr. Elaine Berry
- Dept. of Plant sciences Davis CA: Dr. Trevor V Suslow
- Silliker labs Merieux NutriSciences: Dr. Walter Brand
- Coker Composting and Consulting: Craig Coker
- FFVA: Dr. Martha Roberts
- Aveterra composting solution: Mollie Bogardus
- US Composting Council USCC: Lorie Loder-Rossiter President
- US Composting Council: Cary Oshins Associate Director

Emails from Walmart

Stating they follow GFSI compliance and do not carry a 1 mile radius composting ban

On Wed, May 10, 2017 at 10:56 AM Becky Burnworth <Rebecca.Burnworth@walmart.com> wrote:

Paul,

Thank you for reaching out to us. I understand the situation. I can tell you that in order to provide fresh produce to Walmart and Sam's Club, all suppliers must successfully achieve and maintain certification against a GFSI-benchmarked audit Scheme at all operations which grow, pack, process, and/or store the produce that they wish to provide. There are several schemes which are formally recognized by GFSI (see www.mygfsi.com), and growers are allowed the flexibility to select which auditing Scheme best fits their operation(s). Regarding the issue below, each of these GFSI-recognized Schemes is responsible for the technical requirements within its written standards (including the applicability of industry standards like LGMA), and it is up to the technical expertise within each of the Schemes and Certification Bodies to determine whether or not a growing operation's proximity to a compost operation is a risk or hazard.

I hope this helps. If you have any questions, please don't hesitate to reach out.

Thank you,
Becky

Walmart

Rebecca Burnworth Senior Food Safety Manager II
Walmart
508 Southwest 8th Street
Bentonville, AR 72716-0275
Save money. Live better.

Correspondence from our calls with Don Fox Global Food Sourcing Florida

Paul. We purchase directly from the vegetable growers in your region of Florida. There are no variance limitations set by Walmart on crops to be purchased by Walmart. Each buyer must verify with our Food Safety team that they pass and have certification of their audit; at which time we purchase from them. There are no 1 mile radiuses on audits that I know of, the food safety team can share more information on food audit schemes.

Don Fox Sr. Director,
Global Food Sourcing at Walmart Florida
Office # 305.514.2908

Emails from Fresh Express

Having the highest standards, they have no specific variance, and state variances can be reduced on a case by case basis

FEX does not have a specific setback for this type of operation so as you can see below a site risk assessment would be required to determine the setback considering several factors as Kevin indicates below. I think and without having many of the details, due to the type of operation this is we would start at a mile distance, conduct the on-site risk assessment and then establish a buffer that we are comfortable with. Being this is/will be an enclosed facility would be a significant factor in determining the buffer distance.

Hope this helps!

John Gurrisi | Director Food Safety & Product Quality
Fresh Express Incorporated | 📞 +1-407-612-5047 | 📱 +1-321-370-8500

Horizon 880 shared the recycling principles

- *Wood fiber horse bedding gets collected after use, and brought to a bedding plant where a process of refinement, pasteurization and separation is preformed, where the manure, urine and tiny fibre fines are removed.*
- *Then the bedding is baled sent it back to the yards (stalls) again.*
- *The Bedding Plant can process between 1,500 and 3,000 horse stalls a day and can recycle 18 to 20 wet tons per day*
- *the wood fiber horse bedding can be recycled indefinitely.*

This is a sustainable initiative to combat two major global problems in the equine industry; the decreasing availability of good quality bedding material and the increasing cost of waste disposal.

From Kevin Watson: The questions we must ask are:

- how the removed manure is processed?
- where is it stored?

In my opinion we would need to visit a facility to verify the storage handling process of the waste. There are 2 issues that may be considered setbacks:

1. Handling and storage of the contaminated bedding prior to processing In the enclosed environment.
2. storage and disposal of contaminated waste that was were extracted from the bedding.
3. If it is wet waste the risk reduces greatly provided it is disposed of expediently.

We would need to know if anything is out in the open where the wind could carry particles to the growing areas and distances

Kevin Watson, FEX *(Fresh Express)* field food safety specialist.

GAP Endorsed Buyers

Large box produce buying companies endorse audits using GAP Harmonized Standards.
Some conditions may apply please check with your customer / buyer

- Ahold USA
- Avendra
- Burger King
- Castellini group
- Chiquita
- CH Robins Worldwide
- Costco
- Daren restaurants
- Delhaize America
- Del Monte
- **Fresh Express***
- HEB
- Jack in the box
- Kroger
- Markon
- McDonalds
- McEntire produce
- Meijer
- Price Chopper
- PR –act
- Publix
- Safeway
- Scnucks
- Subway
- Supervalue
- Sysco
- Taylor Farms
- US Food
- Wegmans
- Winn Dixie
- Yum

In all cases of the GAP Harmonization Institute there is no 1 mile variance from an undercover wood waste shavings facility and undercover composting facility. In fact, the only area is the Leafy Greens document that states 400ft and endorsed by the FDA and good manure practices is only 100 Ft.

*Fresh Express has the highest standards and would consider larger or reduce variances one a case by case basis. There email states if a commercial composting facility dealt with wet manure composting and recycling undercover then variances would be reduced due to the reduced risk.

Buyers may have strict regulations or contracts with stricter guidelines. All documentation conversations and regulations shows that a grower must comply with industry standards for buyers to purchase. In all incidences documentation shows variances may be reduced due to case by case circumstance, even in a redacted letter presented to Palm Beach council it has this disclaimer.

H880 Steps to ensure geographical safety

3. H880 Compliance to mitigate crop contamination

Horizon 880 LLC complies with all state or federal regulations to safety. It is clear to state the H880 facility does not fall under any food safety guidelines. However, being part of the Agricultural community of Florida we have reviewed multiple auditing checklists to further mitigate any risk to surrounding raw crops. This will include but not limited to:

PRIMUS GAP relevant compliance statements for H880

- Primus GAP audit for manure contamination is set at 400 ft.
- There will be no untreated animal manure piles
- Traceability will be kept
- Analysis of the make-up of manure sawdust compost and yard trimming available for inspection

LEAFY GREEN accord management plan

- Bio Security plan in place
- Technical advisory panel of buyers/ growers / compost & food safety experts *(Acheson group hired)*
- Traceability *(we track from farm to plant)*
- Water management plan 2.2.3.1. UF combined harmonized plan including water testing *(monthly)*
- Animal risk assessment 2.3.3 compliance
- Health Impact Assessment in Florida was reviewed for compliance
- Soil amendments 2.41 comply with test results or verification of date ie: time and temperature
- Truck wash wheels with bio security plan under UF combined harmonized plan 2.5
- All instruments used to measure temperature, pH, antimicrobial levels and/or other important devices used to monitor requirements 5.4
- Adequate signage will be listed around the facility

HACCP relevant compliance statements for H880

Basic regulatory requirements for HACCP under the new FSMA (Food Safety Modernization Act); For Fresh Produce Industries is an online, self-paced course on the HACCP System and its prerequisites.

FSM Bi relevant compliance statements for H880

- FSM Bi 17
  - Control of measuring and monitoring devices
  - The standard shall require that the organization identifies methods to assure that the calibration of these measuring and monitoring devices is traceable to a recognized standard or method. We will be monitoring moisture, heat and water quality.

- FSM Bi 21.3
  - Traceability – *(all loads will be tracked from farm to plant to farm.)*

GAP relevant compliance statements for H880

- GAP Bi 1.2 The standard shall require that procedures are in place to ensure that the producer is required to take into consideration the WHO guidelines on the safe use of waste water and excreta in agriculture as appropriate.

- GAP Bi 3. The standard shall require that there are proper treatment procedures (e.g. composting, pasteurization, heat drying, UV irradiation, alkali digestion, sun dying, management practices including appropriate delays between application of agricultural inputs and harvesting of the crop or combinations of these) that are designed to reduce or eliminate pathogens in manure, bio solids and other natural fertilizers. As a minimum, the use of untreated bio solids shall be prohibited.

- GAP Bi 8. The standard shall require that structures are located, designed and constructed to avoid the contamination of fresh fruits and vegetables and the harboring of pests such as insects, rodents and birds.

- GAP Bi 10. & 11. fresh water supply and adequate drainage available on site

- GAP Bi 19. The standard shall require that, during primary production, factice measures are taken to prevent cross-contamination of fresh fruits and vegetables by agricultural inputs or personnel who come directly or indirectly into contact with fresh fruit and vegetables

GFSI relevant compliance statements for H880

Based on the revised guide GFSI A – N we do not fall into the scope of compliance- however we feel that we can contribute the GAP compliance checklist via the following headings:

- Standard components:
    - Risk Assessment.
    - Management commitment.
    - Internal audits.
    - Facility conditions.
    - Employee hygiene.
    - Employee training.
    - Control of incoming products.
    - Traceability and recall.
    - Pest control.
    - Record keeping and documentation.

The GFSI sector and sub-sector scopes for recognition and the associated competence of auditors are as follows: A1 auditor education in UF Combined harmonized standard 2.2 AG WATER to compile with state regulations.

Horizon880 HPAB Process 2017©

HORIZON 880 LLC

Operating Business Plan

Equine Waste & Recycling Facility.

Palm Beach County. Florida

Section 6 – Disease and Horses

Prepared By:
Paul Cross. Bob Rogers.
Al Rogers. Brian Terry

Updated – July 5th, 2017
Revision 4

Leading excellence in Bedding Recovery Technology

We are about to change the way equine bedding is handled by implementing an advanced technology process that will become an integral part of modern County standards and horse farm operations. The Result. An efficient use of resources, cost savings and reducing environmental hazards; such as illegal dumping, nutrient leaching & phosphorus overloading into our soil and water.

"reclaiming waste shavings to benefit the equine community and environment."

All rights reserved Horizon 880 © 2017

No distribution of this document is allowed without prior authorization from Horizon880 LLC Private and Confidential

Material Disclaimer

The contents of this documentation are confidential and proprietary. This is not a legally binding document or guarantee of earnings, production or results. Individual plant results will differ. All documentation remains the property of Horizon 880 and HiPoint Agro Bedding Corp and their representatives. (“the parties”)

The contents of the parties’ plan(s) in paper form or presentation format are confidential. They are distributed to authorized persons only who are registered with the Company as recipients. Distribution to unregistered recipients is a breach of confidentiality provisions agreed to prior to receipt of the Summary, Plan or Presentation.

Operational performance of the parties may vary significantly from the performance projected herein. The information herein, whether stated or implied, is for educational purposes only and is not intended to be and must not be taken alone as the basis for any investment decision relating to the financial matters of the company.

These materials have been prepared by Horizon 880 and HiPoint Agro Bedding corp. for information purposes only and are not legal advice. Readers should not act upon this information without seeking professional counsel. Every attempt has been made to assure that the information contained in this paper is accurate. Horizon 880 and HiPoint Agro Bedding corp. assumes no responsibility and disclaims any liability for any injury or damage resulting from the use or effect of any product or information specified in this paper

CONFIDENTIALITY, DISCLAIMER & PROPRIETARY INTEREST AGREEMENT

The report has been prepared for Horizon 880 by HiPoint Agro Bedding Corp. (HPAB) as contracted or requested by Horizon 880. The report has been prepared solely for information purposes, from information supplied by various sources and is being furnished through HPAB solely for the use by Horizon 880. In assessing the contents, recipients of this information memorandum acknowledge that they are relying on data provided to HPAB by the various sources. Neither HPAB or its associates, writers, researchers, nor Horizon 880 makes any representation (express or implied) as to the accuracy or completeness of this information memorandum or any other written or oral communications transmitted to the recipient in the course of its evaluation of the subject matter. In reviewing the findings and recommendations of this report, all recipients acknowledge that they are making their own decisions, that they are relying on their own due diligence and that they are not relying on any written or oral statements or representations from HPAB. This report includes in part highly confidential and proprietary information and is delivered on the express condition that such information will not be disclosed to anyone except persons in the recipient’s organization who have a need to know for purposes of evaluating the information. Any proposed actions by the recipient, which are inconsistent in any manner with the foregoing agreement will require the prior written consent of HPAB and Horizon 880.

Table of Contents

SECTION 6: DISEASE & HORSES

1. Source of Contamination

Equine Disease Review (ref: EDCC website)

The Equine Disease Communication Center (EDCC) works to protect horses and the horse industry from the threat of infectious diseases in North America. The communication system is designed to seek and report real time information about disease outbreaks similar to how the Centers for Disease Control and Prevention (CDC) alerts the human population about diseases in people.

The goal of the EDCC is to alert the horse industry about disease outbreak information to help mitigate and prevent the spread of disease. Ultimately frequent and accurate information about diseases outbreaks improves horse welfare and helps to prevent negative economic impact that can result from decreased horse use due to a fear of spreading infection. As part of the National Equine Health Plan the EDCC will serve as part of the communication to help educate and promote research about endemic and foreign disease.

Working in cooperation with state animal health officials and the United State Department of Agriculture, the EDCC seeks information about current disease outbreaks from news media, social media, official state reports and veterinary practitioners. Once information is confirmed, it is immediately posted on this website and messages sent to all states and horse organizations by email. Daily updates are posted until each outbreak is contained or deemed no longer a threat.

No disease outbreaks have been reported in Florida in 2017 and none in Palm Beach In 2017 across North America only a few cases of strangles has been reported by EDCC.

Ref: http://www.equinediseasecc.org/alerts/outbreaks

USDA APHIS Mission on Disease and Biosecurity

United States Department of Agriculture. Animal and Plant Health Inspection Service

USDA Biosecurity horses link

Mission statement from USDA website. “To protect the health and value of American agriculture and natural resources.” The Animal and Plant Health Inspection Service (APHIS) has a broad mission area that includes protecting and promoting U.S. agricultural health. To protect equine health, APHIS is on the job 24 hours a day, 7 days a week working to defend America's equine population from disease. In the event that a pest or disease of concern is detected, APHIS implements emergency protocols and partners with States to quickly manage or eradicate the outbreak.

FDA stance on horse manure:

Horse manure is a solid waste excluded from federal regulation because it neither contains significant amounts of listed hazardous components, nor exhibits hazardous properties.

EPA stance on horse manure:

The Environmental Protection Agency, or EPA as it’s more commonly known, is headquartered in Washington, D.C., and is the federal agency charged with overseeing the protection of human health and the environment. Horse properties are subject to federal regulations covered in the 1972 Clean Water Act, which was designed to keep our country’s waters safe and clean. Under the Clean Water Act the EPA regulates animal feeding operations (those where animals are kept and raised in confined situations, without grazing) that can potentially discharge into U.S. waters under the National Pollutant Discharge Elimination System’s Concentrated Animal Feeding Operation (NPDES CAFO) regulations. These regulations’ purpose is to keep things such as bacteria and sediments from manure or other nutrient sources, such as feed or bedding, from running into creeks, wetlands, ditches, lakes, or other bodies of water.

Whether the EPA would regulate a large equine facility depends on how many horses are managed on the property, whether they have pasture access, and whether there is a leachate (water that extracts solutes from other matter as it passes through it) discharge off the property from manure or other nutrient sources

Natural Resource Conservation Service (NRCS)

This federal agency is a part of the USDA that works with farmers and ranchers on issues relating to wise use of the natural resources, such as crop management, irrigation, and manure management. Locate your nearest NRCS office with an Internet search using your county’s name and “NRCS.”

Conservation Districts (CDs)

These divisions of state government work with farmers and livestock owners on natural resource issues, including pasture, manure, and mud management, as well as stream restoration and erosion control. Some of the free services your CD might offer include individualized farm plans, education, technical assistance, and native tree sales. Locate your nearest CD office with an Internet search using your county's name and "conservation district."

University Extension

Your state's land grant university likely has an extension office in your county. Extension offers a wealth of information on topics ranging from pasture renovation to horse management. Extension offers many excellent educational handouts and bulletins at a low cost, as well as technical assistance and education. Locate your nearest extension office with an Internet search using the word "extension" and your county or state name.

Additional natural resource agencies to consider contacting:

- If waterways are involved (such as with flooding, permits for bridges, etc.) contact your state's Department of Ecology or Environmental Services;
- Most counties have weed control programs to help property owners identify and control noxious plants;
- State Department of Agriculture;
- State or county Department of Natural Resources.
- State or county Forest Service (might be listed under Department of Natural Resources); and
- State or national Department of Fish & Wildlife

Waste not?
Referenced by Rebecca Colnar, Article donated by the mane points horse resource center.

Does horse manure pose a significant risk to human health?

Horse manure is a solid waste **excluded** from Federal EPA solid waste regulation because it neither contains significant amounts of hazardous chemicals, nor exhibits hazardous characteristics. The chemical constituents of horse manure are not toxic to humans. Horses' digestive systems do not contain significant levels of two waterborne pathogens of great concern to human health, Cryptosporidium or *Giardia;* neither do they contain significant amounts of the bacteria *E. Coli 0157:H7* or *Salmonella*. Fungus, viruses, bacteria, and worms found in horses have never been shown to infect humans and are unlikely to be zoonotic. Finally, the reality is that there are very few horses, and even fewer number of them that frequent trails, streets, etc. People seldom encounter or handle horse manure. Meanwhile, people who do have the occasion to handle horse manure have never been infected by this intimate contact. Humans and other sources within the environment (e.g. wild animals and birds) with their overwhelming population numbers are far more likely than horses to contribute to human health risks.

AFOs and Environmental Considerations

Manure and wastewater from AFOs (Animal Feeding Operations) have the potential to contribute pollutants such as nitrogen and phosphorus, organic matter, sediments, pathogens, hormones, and antibiotics to the environment.

No major human disease has ever been accurately attributed to the intimate contact human beings have had with horses for thousands of years.

The primary chemical constituents of horse manure are about the same as harmless household and agricultural fertilizer. In fact, animal manure is a valuable agricultural amendment and has been used for millennia to help grow our food supplies. Current mushroom culture relies heavily on horse manure, while other crops have been developed with human sewage sludges in order to recycle our own prolific wastes. Thus, based on its chemical constituents, horse manure should not be considered toxic.

Equine Transmission of Disease

Recently, several credible research papers have been published which demonstrate conclusively that adult horse guts do not significantly contain either C. parvum or Giardia, the two organisms of greatest human health concern when present in water supplies.

Changing tides for Ag lands business usage

A shift has changed in Ontario Canada, where sound agricultural practices on Agricultural lands may be extended to other Ag business than farming, i.e.: Horse recycling facilities on Ag lands which will have an economic benefit to the community and region. In B.C. a 6-year temporary use permit was issued for a recycling horse shavings facility; and with over 3 years of operation no known residential issues have been brought back to council to stop the facility.

Composting Horse Manure disease concerns

(Ref: McEvoy Ranch Petaluma CA and the Marin Carbon Project Jeffery Creque Ph.D.)

- Pathogens exposed to thermophilic temperatures (>131oF) for a sufficient period of time are destroyed (e.coli, sod, weed, seed, etc.)
- Composting can reduce risks to water quality posed by horse manure
- Reduction and elimination of microbial pathogens
- Reduction of ammonia N levels
- Reduction in water soluble phosphorous
- Reduction of biological oxygen demand (BOD)
- Reduction in total soluble salts (TSS)

Horse manure alone has a C.N ratio of 25 to 35/1 optimum for composting. However, Carbonaceous bedding (like wood shavings) has a CN ratio up to 400/1 – unfavorably increasing the CN ration of stable manure compared to manure alone. This is validation of why wood shavings waste horse manure is not good for the land including the fact that the lignin in wood does not breakdown in a land applied compostable environment.

USDA NOP US EPA CIWMB documents state that pathogen kill occurs between 131 and 170 degrees F; for 3 days using an in-vessel static pile or 15 days using a turned windrow system, during which it must be turned a minimum of 5 times NOP/CIWMB. Dr. Brandi of Silliker blab concluded anything over 57 oC or 135oF will destroy pathogens and bacteria like e.coli.

Conclusion

Horse manure is a solid waste excluded from federal EPA solid waste regulation because it neither contains significant amounts of hazardous chemicals, nor exhibits hazardous characteristics. The chemical constituents of horse manure are not toxic to humans. Horse guts do not contain significant levels of the two waterborne pathogens of greatest concern to human health risk, Cryptosporidium or Giardia, neither do they contain significant amounts of the bacteria E. coli 0157:H7 or Salmonella. Fungus, viruses, bacteria and worms found in horses have never been shown to infect humans and are unlikely to be zoonotic. Finally, the reality is that there are very few horses, and even fewer numbers of them that frequent trails.

People seldom encounter or handle horse manure. People who do have occasion to handle horse manure have never been infected by this intimate contact. Humans and other sources within the environment (e.g. wild animals and birds) with their overwhelming population numbers are far more likely than horses to contribute to human health risks.

Horse manure is unlikely to spread any disease to people, including bacterial problems with e-coli which is killed in sunlight. Human and dog waste are far more likely to spread disease and parasites to humans. While it's unpleasant to find it on fields and public places, it's not very harmful.

Acknowledgments, References & Tables and quotes are the rights of their respective owners

(1) FDA On Farm Contamination.

Wood shavings 80% & Horse manure 20%make up will show very low on the possible contaminant scale.

Table 6. Possible Routes of Contamination Based on FDA Farm Investigations [57, 118]

Area	No. of Observations
Water	7
Soil amendments	2
Animals	8
Worker health and hygiene	9
Equipment and buildings	13

Table 7. Relative Likelihood of Produce Becoming Contaminated with Pathogens of Public Health Concern from Agricultural Water

	Least → Most			
Source	Public Drinking Water	Ground water	Surface water protected from runoff	Surface water unprotected from runoff
And where contamination is known to exist, the likelihood of contamination is a function of the following factors:				
Contact with commodity	Indirect contact		Direct contact	
Commodity effects	Unlikely infiltration		Susceptible to infiltration	
	Surface not conducive to adhesion		Surface conducive to adhesion	
Application timing	Early in crop growth	Late in crop growth	During harvest	Postharvest

Table 8. Relative Likelihood of Produce Becoming Contaminated with Pathogens of Public Health Concern from Soil Amendments

	Least → Most			
Type	Non-Biological (e.g., elemental)	Non-Animal Origin	Animal Origin	Human waste
And where contamination is known to exist, the likelihood of contamination is a function of the following factors:				
Treatment	Pasteurized (heat, chemical, physical)	Composted		Untreated/Raw; Partially treated; Re-contaminated
Application timing	Further from harvest		Close to harvest	
Application method	No contact with harvestable portion	Effort made to minimize contact		Contact with harvestable portion

(2) Fecal Coliform TMDL for the West Palm Beach Canal
(WBID 3238) Kristina Bridger July 2013

Developed over the past 100 years, the canal-based water management system in south Florida is one of the world's largest and most complex civil works projects. The South Florida Water Management District (SFWMD) uses over 1,300 water control structures, 64 pump stations, and 2,600 miles of canals to provide flood control, water supply, navigation, water quality improvements, and environmental management.

As artificial conveyances with large variations in flow, stage, and water turnover, canals provide less stable and predictable environments than natural stream systems. South Florida canals must convey large volumes of water during storm events. At the other extreme, during droughts and dry season operations, canals may become stagnant for long periods, with little to no water movement, and water may be absent from some canals.

The Department used the IWR to assess water quality impairments in the West Palm Beach Canal and has verified that this waterbody segment is impaired for fecal coliform bacteria based on data collected during the Cycle 2 verified period (January 1, 2004–June 30, 2011). Using the IWR methodology, this waterbody was verified impaired for fecal coliform because more than 10% of the values exceeded the Class III waterbody criterion of 400 counts per 100 milliliters (counts/100mL) for fecal coliform. **There were 7 exceedances out of 34 samples**. Table 2.1 summarizes the fecal coliform monitoring results for the Cycle 2 verified period for the West Palm Beach Canal.

Nonpoint sources of coliform are diffuse sources that cannot be identified as entering a waterbody through a discrete conveyance at a single location. These sources generally, but not always, involve accumulation of bacteria on land surfaces and wash off as a result of storm events. In the West Palm Beach Canal watershed typical nonpoint sources of coliform bacteria include:

- Wildlife
- Agricultural animals
- Onsite Sewer Treatment and Disposal Systems (septic tanks)
- Sanitary Sewer Overflow

Agriculture is a potential source of coliform delivery to streams and canals, including runoff of manure from pastureland and cropland, and direct animal access to streams. Approximately 96 percent of the total land area within WBID 3238 is designated as agricultural. With a high percentage of agricultural land use activities occurring within the WBID, it could be a potential source of pathogen loading to the West Palm Beach Canal. The predominant type of agriculture in the West Palm Beach Canal watershed is sugar cane farming. When the sugar cane is harvested, workers are provided portable restroom facilities. A potential source of fecal coliform loading to the West Palm Beach Canal is improper disposal of the portable restroom facility waste into the canal. It was noted by some local entities at the Everglades Basin TMDL Public Workshop held on Friday, August 17, 2012 that improper waste disposal may be occurring within the watershed given the high fecal coliform concentrations (count /100ml)

(3) Dr. Louda of The Florida Atlantic University

Email sent May 2017 to government council and commissioners of PBC.

Dear All;

Today I took samples in the L10 canal (26° 41'28.94"N x 80°24'10.00"W) on Connors Hwy (700). This was of a blue-green stain on the rocks along both sides of the canal (and all along L10 towards Canal Point) and the waters along the edge (see attached photos).

The "algal" streaks looked exactly like the "algal bloom" of June-July 2016. Upon examining a sample under the microscope, I confirmed the identity as *Microcystis aeruginosa.* I do not analyze algal toxins but as this is most assuredly left-over growth (still viable and growing but not in super bloom amounts yet!).

Thus, as the Horizon LLC site (26°40'46.62'N x 80°29'46.03"W) which was objected to by the farmers in that area likely water their crops directly from the canal along CR880 and that canal is immediately downstream of L10, I would suggest testing the waters in that area for the neurotoxin microcystin.

As *M. aeruginosa i*s not a nitrogen fixing cyanobacterium, its presence directly reflects high levels of nitrogen as well as phosphorus in the water. Fertilizers run off when BMPs are not working properly.

Sincerely,

Dr. J. William Louda, Research Professor
Environmental Biogeochemistry Group
Department of Chemistry and Biochemistry
and The Environmental Sciences Program
Florida Atlantic University
777 Glades Road
Boca Raton, Florida 33431 U.S.A.

(4) Journal of Food Protection.

Vol.73, No.11,2010,Pages 2089 2092 Copyright, International Association for Food Protection: Low Prevalence of Escherichia coli) 157:H7 in Horses.

Overall, the prevalence of E.coli O157:H7 in this total population of horses was 0.41% (1of 242,95% CI~0.01 to 2.28). Specifically, E.coli O157:H7 was not detected from any of the 107 horses that did not reside on premises with ruminants (0%,95%CI~0.00to3.39). E.coli O157:H7 was isolated from 0.7% (1of135,95%CI~0.02to4.06) of horses from locations that also housed ruminants. No significant difference between fecal carriage of E.coli O157:H7 in horses that were housed with or without ruminants was observed (P~0.558).

The one E. coli O157:H7–positive isolate was isolated from a carriage – road horse, was co-stabled and possible contamination with a dairy goat.

(5) Florida Dept. of Health mission

Horizon 880 LLC is empowered to endorse the mandate and mission of the FDOH with a state of the art covered complex to remove a percentage of waste shavings and manure that is being dumping in Palm Beach County to further follow their mission statement.

(6) Animal Contamination

For example, on September 14, 2006, we issued a news release alerting consumers about an outbreak of E. coli O157:H7 in multiple states and advising the public not to eat bagged fresh spinach because it had been implicated in the outbreak [88]. During the course of this outbreak, approximately 200 illnesses were reported to the CDC, including more than 30 cases of hemolytic uremic syndrome (HUS, a condition that occurs mainly in children and can result in kidney failure), more than 100 hospitalizations, and three deaths [39]. With partner agencies, we conducted a traceback investigation using product codes from bags of fresh baby spinach, collected at case households, that led to four fields that provided product for the implicated production lot of bagged fresh baby spinach. E. coli O157:H7 with a pulsed-field gel electrophoresis pattern indistinguishable from the outbreak strain was found in environmental samples, including stream water, and cattle and wild pig fecal samples collected at one of the ranches. Potential contributing factors identified during this investigation included **the presence of wild pigs in and around spinach fields** and exposure of surface waterways to cattle and wildlife feces [124]. *(not horse manure)*

Conclusion

These documents show that feed lot operations of dairy or hog cattle can cause cross contamination. Horses have a different make up, gut and transfer system and are not a threat to human health. Environmental stewardship to protect crops, food safety and human is paramount and bio security is evidentially beneficial but as stated by the FDA “Horse manure is a solid waste excluded from federal EPA solid waste regulation because it neither contains significant amounts of hazardous chemicals, nor exhibits hazardous characteristics. “

(7) Penn State University

PENNSTATE
1855
COLLEGE OF AGRICULTURAL SCIENCES
AGRICULTURAL RESEARCH AND COOPERATIVE EXTENSION

There are many exerts in this document but it is paramount that it is read as we follow their many recommendations especially note: **Horse Stall waste is typically very dry with little leachate.**

It is important to recognize that horses produce large amounts of manure that quickly accumulates! About 12 tons of manure and soiled bedding will be re-moved annually from each horse stall (housing a full-time occupant) Manure includes both the solid and liquid portions of waste. Horse manure is about 60% solids and 40% urine. On average, a horse produces 0.5 ounces of feces and 0.3 fluid ounces of urine per pound of body weight every day. A 1,000-pound horse produces about 31 pounds of feces and 2.4 gallons of urine daily, which totals around 51 pounds of total raw waste per day. Soiled bedding removed with the manure during stall cleaning may account for another 8 to 15 pounds per day of waste. The volume of soiled bedding removed equals almost twice the volume of manure removed, but varies widely depending on management practices. So for each stall, about 60 to 70 pounds of total waste material is removed daily. This results in about 12 tons of waste a year per stall with 8.5 tons being manure from a 1,000-pound horse. The density of horse manure is about 63 lb/ft3. Therefore, 51 pounds of manure would occupy about 0.81 cubic feet. the total volume of stall waste removed per day per 1,000-pound horse may be estimated as 2.4 ft3. To put all these numbers in perspective, annual stall waste from one horse would fill its 12 ft. x 12 ft. stall about 6-feet deep (assumes no settling). Plan now for handling this material!

The manure management needs of pastured horses are different than stabled horses. The field-deposited manure is beneficial as it serves as a fertilizer. Substantial amounts of manure can accumulate where horses congregate around gates, waterers, favorite shade areas, feeders, and shelter's. These areas should be cleaned weekly for better pasture management, parasite control, and to diminish fly breeding.

Time is of the essence the H880 site will collect manure from within a week of cleaning and recycle within 72 hours.

Horse manure has been considered a valuable resource rather than a "waste." Fertilizer value of the 8½ tons of manure produced annually by a 1,000-pound horse is about 102 pounds of nitrogen, 43 pounds of P_2O_5 (phosphorus pentoxide [phosphate] = 43.7% P), and 77 pounds of K_2O (potash = 83% K). The nutrient content of horse manure can also be represented as 12 lb/ton of N, 5 lb/ton of P_2O_5, and 9 lb/ton of K_2O (nutrient values for any manure vary widely so these are only guidelines)

Pests commonly associated with animal agriculture are Flies and small rodents, such as mice and rats. Flies and odors are the most common complaints, but proper manure management can virtually eliminate farm pests and odors.

The H880 site will be infused with essential oil to stop critters and with proper manure management undercover we can virtually eliminate farm pests and odors as per this document.

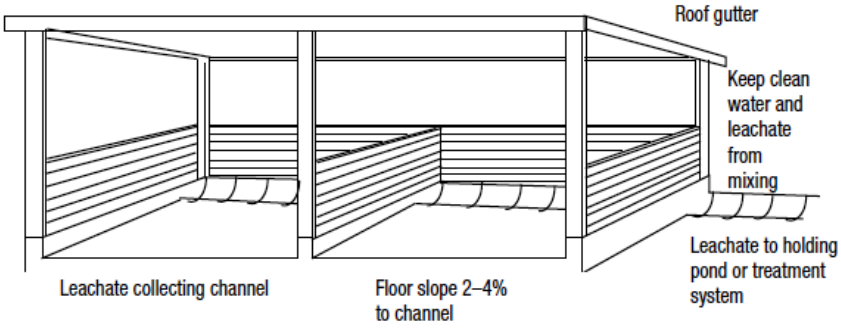
Manure Pile Runoff. Any on-site manure storage should not contribute to ground or surface water pollution. Leachate is the brownish liquid that has "leached" from the solid pile contents and drains off a waste pile bottom. Not all piles will have leachate; in fact, proper management can avoid leachate formation. **Stall waste is typically very dry with little leachate**. When water or pure manure, such as from paddock or arena cleanup, is added, some leachate may form. A covered storage area will have much less leachate than one exposed to precipitation. Prevent any pile leachate from contaminating groundwater or nearby waterways by capturing or diverting it. A concrete pad with side-walls is necessary to contain leachate from very large, uncovered piles. Leachate drainage to a treatment system such as a grassed infiltration area (see Vegetated Filter Area side-bar) is necessary to prevent runoff to geologically and socially sensitive areas. Another potential source of water pollution is from land-applied manure that is subject to surface runoff conditions or is deposited near waterways. Apply stall manure so runoff is minimized; guidelines are provided in the Direct Disposal section.

Table 3. Minimum separation distances commonly recommended for composting and manure-handling activities.

Source *On-Farm Composing Handbook*, NRAES-54.

Sensitive area	*Minimum separation distance (feet)*
Property line	50 – 100
Residence or place of business	200 – 500
Private well or other potable water source	100 – 200
Wetlands or surface water (streams, pond, lakes)	100 – 200
Subsurface drainage pipe or drainage ditch discharging to a natural water course	25
Water table (seasonal high)	2 – 5
Bedrock	2 – 5

Figure 11. Covered storage with leachate collection for wet materials.



As you can see through the University even states variances to wetlands or surface water is only 200 ft.

Additional Resources:

- Agronomy Facts 54: Pennsylvania's Nutrient Management Act (Act 38): Who Is Affected? 2007. D. Beegle. Penn State Cooperative Extension, University Park, PA.
- Livestock Waste Facilities Handbook. MWPS-18. 1985. 2nd edition. Mid West Plan Service. Iowa State University, Ames,
- On-Farm Composting Handbook. NRAES-54. 1992. R. Rynk, Editor. Natural Resources, Agriculture and Engineering Service,
- Pest Management Recommendations for Horses. P. Kaufman, D. Rutz and C. Pitts. Penn State.
- The Pennsylvania State University Agricultural and Biological Engineering
- Agricultural Engineering Building University Park

(8) **N. American Silliker labs: Letter of Pathogen removal.**

SILLIKER
a Mérieux NutriSciences Company

Dear Paul Cross:

Subject: FECAL Coliforms as an Indicator Organism

With respect to monitoring your sterilization process for horse bedding for bacterial contamination, I would like to offer the following technical justification for using Fecal Coliform bacteria as an indicator organism for testing the end product. To be an effective indicator organism, the microorganism must be a) likely to be present in significant quantities in the process feedstock, b) be at least as resistant to the heat treatment as other, less numerous species and c) be able to be tested in an accurate manner.

As the coliform group includes genera that originate in feces as well as other, non-fecal, sources they are virtually guaranteed to be present in large quantities in all sources of used horse bedding. The test methods for this group of bacteria are well characterized and known to be reliable and being thermotolerant, they should reflect the "kill rate" of other bacterial populations that may be present from time to time. Thus the absence of these bacteria will always indicate a decontamination of the product rather than an absence of the bacteria in the input material. In additional, the results will also confirm the destruction of non-fecal pathogens such as the Mycobacterium tuberculosis complex that may or may not be present in the source material.

Sincerely,

Walter Brandl
Operations Manager
Silliker JR Laboratories

Dr. Walter Brandi – verified that the heat in the recycled shavings drying process kills pathogens. The heat in undercover compost facilities will also kill pathogens.

(9) Organics Association docket response to FDA

July 2016 - Two main paragraphs from the Organic trade association introduction to the FDA request for comments on Docket FDA 2016-N-0321 Food borne Illness associated with untreated biological soil amendments of animal origin. (56-page product safety rule docket)

SINCE 1985 Organic trade association

Use Patterns of Untreated Manure on Organic Farms

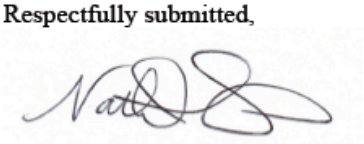
Many organic producers rely on untreated manure for crop nutrients in their organic systems. USDA's National Agricultural Statistics Service (NASS) reported in their 2014 Organic Producer Survey[2] that 8,400 of the nation's 14,048 organic farms use green or animal manures in their production systems. Over ½ of the 595 respondents to the survey conducted by UC Davis, TOC, and OTA, who indicated that they grow produce covered by the Produce Safety Rule, report using animal manure. Of those using untreated manure, approximately 2/3 follow the preharvest interval required under the USDA organic regulations of 90/120 days depending on crop contact with soil. Less than 30% of respondents report annual sales of less than $25,000 in covered produce, which indicates the vast majority of producers surveyed would be subject to the preharvest intervals included in the Produce Safety Rule.

CONCLUSION

OTA is supportive of FDA's effort to gather information on the risks that untreated biological soil amendments of animal origin pose to food safety. We appreciate FDA's willingness to listen to the unique needs of the organic sector as it promulgates rules to enforce the Food Safety Modernization Act, and we view ourselves as one of FDA's partners in ensuring America's organic food supply is safe. To accomplish this important task without overly burdening organic farmers with excessively long preharvest intervals, we encourage FDA to look at the data in the survey of organic producers and the experimental design that organic stakeholders helped to develop in order to best model actual use patterns and pathogen risks of untreated biological soil amendments of animal origin on organic farms.

On behalf of our members across the supply chain and the country, OTA thanks the FDA for the opportunity to comment. We invite FDA to reach out to us directly in order to obtain data from the comprehensive survey conducted of organic producers and to learn about the experimental model our partners have designed in the grant proposal to USDA Organic Research and Extension Initiative.

Respectfully submitted,



Nathaniel Lewis
Farm Policy Director
Organic Trade Association

cc: Laura Batcha
Executive Director/CEO
Organic Trade Association

Appendix A: November 18, 2013, OTA comments on the Proposed Produce Safety Rule – Docket No. FDA-2011-M-0921

(10) Reviewed links from GAP for compliance on the H880 Facility

Local Foods: From Farm to Food service, HRI Management, Extension, Iowa State University
http://www.extension.iastate.edu/hrim/localfoods

Foodborne Illness Education Information Center, USDA/FDA
http://peaches.nal.usda.gov/foodborne/fbindex/Produce.asp

Food Safe Program, University of California, Davis
http://foodsafe.ucdavis.edu

Good Agricultural Practices, New England Extension Food Safety Consortium
http://www.hort.uconn.edu/IPM/foodsafety/index.htm

Good Agricultural Practices, University of California
http://groups.ucanr.org/UC_GAPs/Good

Agricultural Practices Project, Cornell University
http://www.gaps.cornell.edu

Guide to Minimize Microbial Food Safety Hazards for Fresh Fruits and Vegetables, Center for Food Safety and Applied Nutrition (CFSAN), U.S. Food and Drug Administration

http://vm.cfsan.fda.gov/~dms/prodguid.html

HACCP: Hazard Analysis Critical Control Point Information Center, Iowa State University Extension
http://www.iowahaccp.iastate.edu/sections/farmfoodsafety.cfm?action=resources

ISU Extension publications-
http://www.extension.iastate.edu/pubs

On-Farm Food Safety for Fruit and Vegetable Growers, Ministry of Agriculture and Food, Ontario, Canada
http://www.gov.on.ca/OMAFRA/english/offs/growers.htm

Postharvest Technology Research and Information Center, University of California, Davis
http://postharvest.ucdavis.edu

Vegetable Research and Information Center, University of California Cooperative Extension
http://vric.ucdavis.edu

Prepared by Jason Ellis, Dan Henroid, and Catherine Strohbehn, Hotel, Restaurant, and Institution Management; and Lester Wilson, Food Science and Human Nutrition. Edited by Diane Nelson

Horizon880 HPAB Process 2017©

HORIZON 880 LLC

Operating Business Plan

Equine Waste & Recycling Facility.

Palm Beach County. Florida

Appendix – Additional Materials

Prepared By:
Paul Cross. Bob Rogers.
Al Rogers. Brian Terry

Updated – July 5th, 2017
Revision 4

Leading excellence in Bedding Recovery Technology

We are about to change the way equine bedding is handled by implementing an advanced technology process that will become an integral part of modern County standards and horse farm operations. The Result. An efficient use of resources, cost savings and reducing environmental hazards; such as illegal dumping, nutrient leaching & phosphorus overloading into our soil and water.

"reclaiming waste shavings to benefit the equine community and environment."

All rights reserved Horizon 880 © 2017

No distribution of this document is allowed without prior authorization from Horizon880 LLC Private and Confidential

Material Disclaimer

The contents of this documentation are confidential and proprietary. This is not a legally binding document or guarantee of earnings, production or results. Individual plant results will differ. All documentation remains the property of Horizon 880 and HiPoint Agro Bedding Corp and their representatives. ("the parties")

The contents of the parties' plan(s) in paper form or presentation format are confidential. They are distributed to authorized persons only who are registered with the Company as recipients. Distribution to unregistered recipients is a breach of confidentiality provisions agreed to prior to receipt of the Summary, Plan or Presentation.

Operational performance of the parties may vary significantly from the performance projected herein. The information herein, whether stated or implied, is for educational purposes only and is not intended to be and must not be taken alone as the basis for any investment decision relating to the financial matters of the company.

These materials have been prepared by Horizon 880 and HiPoint Agro Bedding corp. for information purposes only and are not legal advice. Readers should not act upon this information without seeking professional counsel. Every attempt has been made to assure that the information contained in this paper is accurate. Horizon 880 and HiPoint Agro Bedding corp. assumes no responsibility and disclaims any liability for any injury or damage resulting from the use or effect of any product or information specified in this paper

CONFIDENTIALITY, DISCLAIMER & PROPRIETARY INTEREST AGREEMENT

The report has been prepared for Horizon 880 by HiPoint Agro Bedding Corp. (HPAB) as contracted or requested by Horizon 880. The report has been prepared solely for information purposes, from information supplied by various sources and is being furnished through HPAB solely for the use by Horizon 880. In assessing the contents, recipients of this information memorandum acknowledge that they are relying on data provided to HPAB by the various sources. Neither HPAB or its associates, writers, researchers, nor Horizon 880 makes any representation (express or implied) as to the accuracy or completeness of this information memorandum or any other written or oral communications transmitted to the recipient in the course of its evaluation of the subject matter. In reviewing the findings and recommendations of this report, all recipients acknowledge that they are making their own decisions, that they are relying on their own due diligence and that they are not relying on any written or oral statements or representations from HPAB. This report includes in part highly confidential and proprietary information and is delivered on the express condition that such information will not be disclosed to anyone except persons in the recipient's organization who have a need to know for purposes of evaluating the information. Any proposed actions by the recipient, which are inconsistent in any manner with the foregoing agreement will require the prior written consent of HPAB and Horizon 880.

Emails from Walmart

Stating they follow GFSI compliance and do not carry a 1 mile radius composting ban

On Wed, May 10, 2017 at 10:56 AM Becky Burnworth <Rebecca.Burnworth@walmart.com> wrote:

Paul,

Thank you for reaching out to us. I understand the situation. I can tell you that in order to provide fresh produce to Walmart and Sam's Club, all suppliers must successfully achieve and maintain certification against a GFSI-benchmarked audit Scheme at all operations which grow, pack, process, and/or store the produce that they wish to provide. There are several schemes which are formally recognized by GFSI (see www.mygfsi.com), and growers are allowed the flexibility to select which auditing Scheme best fits their operation(s). Regarding the issue below, each of these GFSI-recognized Schemes is responsible for the technical requirements within its written standards (including the applicability of industry standards like LGMA), and it is up to the technical expertise within each of the Schemes and Certification Bodies to determine whether or not a growing operation's proximity to a compost operation is a risk or hazard.

I hope this helps. If you have any questions, please don't hesitate to reach out.

Thank you,
Becky

Walmart

Rebecca Burnworth Senior Food Safety Manager II
Walmart
508 Southwest 8th Street
Bentonville, AR 72716-0275
Save money. Live better.

Correspondence from our calls with Don Fox Global Food Sourcing Florida

Paul. We purchase directly from the vegetable growers in your region of Florida. There are no variance limitations set by Walmart on crops to be purchased by Walmart. Each buyer must verify with our Food Safety team that they pass and have certification of their audit; at which time we purchase from them. There are no 1 mile radiuses on audits that I know of, the food safety team can share more information on food audit schemes.

Don Fox Sr. Director,
Global Food Sourcing at Walmart Florida
Office # 305.514.2908

Emails from Fresh Express

Having the highest standards, they have no specific variance, and state variances can be reduced on a case by case basis

FEX does not have a specific setback for this type of operation so as you can see below a site risk assessment would be required to determine the setback considering several factors as Kevin indicates below. I think and without having many of the details, due to the type of operation this is we would start at a mile distance, conduct the on-site risk assessment and then establish a buffer that we are comfortable with. Being this is/will be an enclosed facility would be a significant factor in determining the buffer distance.

Hope this helps!

John Gurrisi | Director Food Safety & Product Quality
Fresh Express Incorporated | +1-407-612-5047 | +1-321-370-8500

Horizon 880 shared the recycling principles

- *Wood fiber horse bedding gets collected after use, and brought to a bedding plant where a process of refinement, pasteurization and separation is preformed, where the manure, urine and tiny fibre fines are removed.*
- *Then the bedding is baled sent it back to the yards (stalls) again.*
- *The Bedding Plant can process between 1,500 and 3,000 horse stalls a day and can recycle 18 to 20 wet tons per day*
- *the wood fiber horse bedding can be recycled indefinitely.*

This is a sustainable initiative to combat two major global problems in the equine industry; the decreasing availability of good quality bedding material and the increasing cost of waste disposal.

The questions we must ask are:

- how the removed manure is processed?
- where is it stored?

In my opinion we would need to visit a facility to verify the storage handling process of the waste. There are 2 issues that may be considered setbacks:

1. Handling and storage of the contaminated bedding prior to processing In the enclosed environment.
2. storage and disposal of contaminated waste that was were extracted from the bedding. If it is wet waste the risk reduces greatly provided it is disposed of expediently.

We would need to know if anything is out in the open where the wind could carry particles to the growing areas and distances

Kevin Watson, FEX *(Fresh Express)* field food safety specialist.

Where we are now…

These audit organizations, and others, are using the Harmonized Standards for GAP audits. Please click on the logos below for more information.

Audit organizations listed are for identification purposes only. The United Fresh Produce Association and the Produce GAPs Harmonization Initiative do not endorse or warrant the services of any particular entity.

Produce GAPs Harmonization Initiative

Where we are now…

These produce-buying companies, and more, endorse* audits using the Harmonized Standards

*some conditions may apply; please check with your customer/buyer

Produce GAPs Harmonization Initiative

Appendix B (1)

Bob Rogers
Horizon 880

May 11, 2017

Dear Mr. Rogers,

The Acheson Group LLC (TAG) is pleased that you have engaged our firm to provide you with a review of the Horizon 880 plant that will use HPAB process to recycle spent horse bedding in a safe and environmentally friendly way. In this letter, we would like to provide you with some initial thoughts about the value of the system from a food safety perspective.

It is our understanding that Horizon 880 is proposing to build a state of the art fully covered complex, to recycle spent horse bedding. This facility will not only have a positive impact on the environment but will also remove used and contaminated bedding from the local environment which currently poses a food safety risk.

Due to limited dump sites, the current practice in the area where the facility will be built is to improperly dump horse bedding, that is likely contaminated with manure, in piles in fields and adjacent to ditches. This current practice presents a food safety risk as dangerous microoganisms can easily leach out of the piles of bedding and manure and gain access to local water sources that could be used to irrigate fresh produce fields – thus posing a serious food safety risk.

The Horizon 880 facility will be fully enclosed and is designed to control risks from contaminated water or exposed piles of bedding and manure.

Horse manure has generally been considered to be less risky as a source of human infections than manure from other livestock. As noted in the publication by Adda Quin the pathogens of primary concern in horse manure are waterborne microorganisms that usually follow ingestion pathways into the body. Of particular concern are the waterborne pathogens *Cryptosporidium parvum* and *Giardia duodenalis*, because they have very low thresholds of infectious dose. [Does horse manure pose a significant risk to human health? http://www.bayequest.com/static/pdf/manure.pdf]

©2017 All Rights Reserved

When manure is improperly dumped into piles on the side of a field or in ditches it has a significant likelihood of getting into the water supply, being picked up by wild animals, birds, flies etc. and transfer to locally grown fresh produce. This obviously creates a risk to the local produce growers. As noted above one of the main risks to humans from horse manure are pathogens that spread via contaminated water. Thus, controlling that risk is very important and the current practice of random dumping of spent horse bedding appears to increase the likelihood of waterborne transmission of human pathogens from horse manure to fresh produce.

The only sound approach to managing food safety risks with regard to spent bedding and manure is to manage it in a central and well controlled facility that is built for that very purpose, such as the Horizon 880 facility.

Questions have arisen around how far the Horizon 880 facility needs to be from produce fields. Food safety guidelines published by the California Leafy Green Products Handler Marketing Agreement propose an interim guidance distance of 400 ft (120 m) between composting operations (manure or animal products) and crops. One of the reasons this agreement was put into place was to control the food safety risks from handling of spent bedding and manure. The science to support a precise distance of 400 ft is lacking but there is no science that we are aware of to support the distance of 1 mile.

As a result of the increased food safety risks linked to fresh produce, new Federal laws were created in 2011 called the Food Safety Modernization Act (FSMA) granting sweeping new regulatory authorities to the US Food and Drug Administration. One of the new authorities granted to FDA was to develop new rules regarding risks linked to fresh produce.

The new produce regulations will start coming into effect in the near future and one of the requirements for produce farmers will be to ensure they are controlling food safety risks in the water they use as well as from wild animals. The dumping of manure near produce operations will likely create a risk that the FDA will expect are controlled in some way by the produce growers.

Well-run and state of the art facilities designed to recycle spent bedding can go a long way to control risks associated with contaminated animal bedding. It is our intent to work with you and the Horizon 880 team to use our expertise to assist you in developing a state of the art composting program that will be designed to control food safety risks.

One of the factors to control the food safety risks is to contain any risks from spent bedding within the recycling facility. This is much more important than any arbitrary distance between a recycling operation and a fresh produce field. TAG will assess every aspect of the Horizon 880 operation from a food safety perspective, including how essential components in the composting process are managed: oxygen, proper aeration/turning of piles, moisture, proper Carbon: Nitrogen ratio, temperature control/monitoring, pest control, fly management, traffic flow of equipment and people, infrastructure construction/design that helps reduce nutrient

©2017 All Rights Reserved

losses due to leaching and makes the piles easy to turn. The goal is to ensure that any food safety risks from the recycling process are well controlled on a continuous basis.

In summary, The Acheson Group has a lot of food safety expertise to assist Horizon 880 in developing and running a state of the art horse bedding recycling operation, and we are happy to work with you on this endeavor. From a food safety perspective, a well-run recycling operation is going to significantly reduce food safety risks from spent horse bedding compared to the current practice of random and improper dumping of spent bedding which is much more likely to contaminate the local water supply.

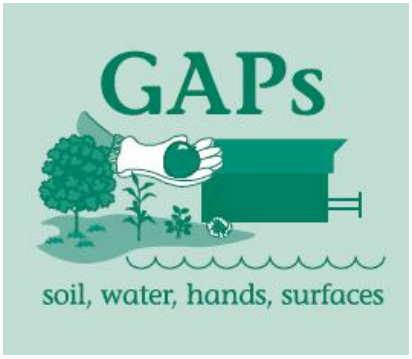
We look forward to working with you on this important project

Sincerely

David W K Acheson MD
President and CEO

Anabelle Morales PhD
Director of Food Safety

©2017 All Rights Reserved



(13) *Reviewed links from GAP for compliance on the H880 Facility*

Local Foods: From Farm to Food service, HRI Management, Extension, Iowa State University
http://www.extension.iastate.edu/hrim/localfoods

Foodborne Illness Education Information Center, USDA/FDA
http://peaches.nal.usda.gov/foodborne/fbindex/Produce.asp

Food Safe Program, University of California, Davis
http://foodsafe.ucdavis.edu

Good Agricultural Practices, New England Extension Food Safety Consortium
http://www.hort.uconn.edu/IPM/foodsafety/index.htm

Good Agricultural Practices, University of California
http://groups.ucanr.org/UC_GAPs/Good

Agricultural Practices Project, Cornell University
http://www.gaps.cornell.edu

Guide to Minimize Microbial Food Safety Hazards for Fresh Fruits and Vegetables, Center for Food Safety and Applied Nutrition (CFSAN), U.S. Food and Drug Administration

http://vm.cfsan.fda.gov/~dms/prodguid.html

HACCP: Hazard Analysis Critical Control Point Information Center, Iowa State University Extension
http://www.iowahaccp.iastate.edu/sections/farmfoodsafety.cfm?action=resources

ISU Extension publications-
http://www.extension.iastate.edu/pubs

On-Farm Food Safety for Fruit and Vegetable Growers, Ministry of Agriculture and Food, Ontario, Canada
http://www.gov.on.ca/OMAFRA/english/offs/growers.htm

Postharvest Technology Research and Information Center, University of California, Davis
http://postharvest.ucdavis.edu

Vegetable Research and Information Center, University of California Cooperative Extension
http://vric.ucdavis.edu

Prepared by Jason Ellis, Dan Henroid, and Catherine Strohbehn, Hotel, Restaurant, and Institution Management; and Lester Wilson, Food Science and Human Nutrition. Edited by Diane Nelson

Appendix B (4)

AVETERRA

April 15, 2017

To Whom it May Concern:

I understand there is concern among local vegetable farmers about contaminated run-off from a proposed Aveterra compost yard. Please allow me to explain why I do not believe this poses a significant risk.

Any Aveterra compost yard will be constructed to meet all regulatory requirements and eliminate run-off from both raw and composted manure. The raw materials and finished compost will be stored on a concrete slab and all leachate will be collected and managed on-site. No leachate, contaminated or otherwise, will leave the site. This will eliminate the risk of contaminated run-off impacting neighboring farms or waterways.

Aveterra systems meet all industry and regulatory standards for pathogen reduction in compost. All compost will reach a minimum temperature of 131°F in order to kill any pathogens or parasites that may be present in the manure. The United States Department of Agriculture regulates the use of compost and manure on Certified Organic Crops. While there are significant restrictions on the use of *uncomposted* manure, the USDA places no restrictions on the use of *composted* manure on vegetable crops. This illustrates the safety of properly composted manure (i.e. temperatures ≥ 131°F).

And finally, the risk of bacterial or parasitic contamination from horse manure is negligible. According to the British Horse Society "horse guts to not contain significant levels of the two pathogens of greatest concern to human health [Giardia and Cryptosporidium], neither do they contain significant amounts of the bacteria E. coli 0517 or Salmonella." In addition, the Centers for Disease Control does not consider horse manure a significant source of E. coli 0517 infection in humans.

Thank you for your consideration, and please do not hesitate to contact me if I can be of assistance by phone or email: (206) 930-3732 or cyoungqu@uwyo.edu

Regards,

Caitlin Youngquist

Caitlin Youngquist, PhD
Chief Scientist

Appendix B (5)

R. Alexander Associates, Inc.

1212 Eastham Drive *Office (919) 367-8350 Fax 367-8351*
Apex, NC 27502 *e-mail: alexassoc@earthlink.net*

April 14, 2017

Paul Cross and Robert Rogers
Aveterra
P.O. Box 10544
Bainbridge Island, WA 98110

Re: Horse manure and human pathogens

Paul and Robert,

As per our conversation earlier in the week, I understand that some Florida farmers are concerned about the idea of developing a horse manure composting facility in their region. I would assume that these concerns are related to the enactment of the Food and Drug Administration's (FDA) Food Safety Modernization Act (FSMA) and how it deals with reducing the potential risk of contaminating fresh vegetables with pathogenic organisms. Although I understand the concerns of the farmers, it should be noted that within the FSMA it actually promotes the use of composting as a means to destroy potential pathogens in 'manure'. *FSMA: Stabilized Compost: Microbial standards that set limits on detectable amounts of bacteria (including Listeria monocytogenes, Salmonella spp., fecal coliforms, and E. coli 0157:H7) have been established for processes used to treat biological soil amendments, including manure. The rule includes two examples of scientifically valid composting methods that meet those standards.* I have also been in communication with one of the USDA's lead researchers who contributed to the development of FSMA and she stated that composting was deemed to be one of the solutions for the large-scale using of animal manures in agriculture.

That stated, I understand that

1. incoming (untreated) feedstocks will be stored in a controlled and enclosed area,
2. a fully enclosed composting technology will be used to produce the compost, and
3. all finished compost will be tested to assure pathogen destruction before sale.

These indoor composting systems allow for strict temperature control and monitoring, which maximizes pathogen destruction when operated properly. All of these factors substantially reduce any chance of contaminating raw vegetables with pathogens. Further, please note the conclusions of a study completed by EnviroHorse (Adda Quinn in March 1998, updated in R.3 October 20010: *Horse manure is a solid waste excluded from federal EPA solid waste regulation because it neither contains significant amounts of hazardous chemicals, nor exhibits hazardous characteristics. The chemical constituents of horse manure are not toxic to humans. Horse guts do not contain significant levels of the two waterborne pathogens of greatest concern to human health risk, Cryptosporidium or Giardia, neither do they contain significant amounts of the bacteria E. coli 0157:H7 or Salmonella. Fungus, viruses, bacteria and worms found in horses have never been shown to infect humans and are unlikely to be zoonotic. …… People seldom encounter or handle horse manure. People who do have occasion to handle horse manure have never been infected by this intimate contact. ……*

Dear Mr. Rogers.

The drying system uses within the HPAB process uses "thermodynamics" to sterilize the bedding. The molecular structure of the ammonia (urine) changes under heat ("gasses off") and is released with the heat which will be in the condensate. It is also important to note that we capture the moisture instead of sending it out a stack. The condensate will be condensed water. We can use additional UV light RO or carbon filtration to produce potable water as you so see fit.

The material in the dryer will be treated with the time and temperature requirements to meet Class A Biosolids. This means pathogen free and that it meets the EPA standards. The process temp will be approximately 350F for a period of approximately 8-12 minutes. Gryphon provides this data through Trend Monitoring on an ongoing basis.

This is important when processing things like chicken litter with high ammonia and Gryphon has installed dryers for drying chicken manure, and successfully at waste water treatment plants.

On the other note, the released air stream will be "air" that has passed through the condenser's filters (49 micron) and the condenser coils. It has been reduced to ~100F, which makes it drop the water out (as condensate).

Gryphon systems are built to be environmentally sound, use 40% less energy than other dryers and do not require air permits or in most regions a permit for water discharge either.

Tid also added the P&ID model and a separate PowerPoint of a third-party buyer with the information from Pottstown.

You can contact Tid Griffin at any time with the information co-ordinates below.

Tid Griffin
President, CEO

GRYPHON
environmental, LLC

GRYPHON Environmental, LLC
2920 Fairview Drive
Owensboro, KY 42303

*THIS IS NOT AN OFFER OR SOLICITATION TO BUY / SELL SECURITIES. This document is for accredited investors only.
*Forward thinking statements. Numbers are estimates, and not a guarantee of earnings. Material presented is for informational purposes only, and should not be seen as an offer, or solicitation of an offer, to buy or sell securities either generally or in any state or province or other jurisdiction where the offer is not permitted. This document is confidential. A full disclaimer is on the last page of this document.

Manure Management Monitoring Checklist

Final Rule: Mandatory Reporting of Greenhouse Gases

United States Environmental Protection Agency

NOTE: EPA will not be implementing subpart JJ of Part 98 using funds provided in its FY2010 appropriations or Continuing Appropriations Act, 2011 (Public Law 111-242), due to a Congressional restriction prohibiting the expenditure of funds for this purpose.

What Must Be Monitored?

For estimating emissions from all manure management system components except anaerobic digesters, measure these parameters …

Static animal populations (e.g., dairy cows, laying hens, breeding pigs):

- ☐ Annual animal inventory

Growing animal populations (e.g., beef cows, veal, market pigs, broilers, turkeys):

Average annual animal population by animal type, estimated by monitoring:

- ☐ Average number of days each animal is kept at the facility
- ☐ Number of animals produced annually

Manure management system component use:

- ☐ Fraction of manure by weight for each animal type managed in each system component

For anaerobic digesters, measure these parameters…

Methane flow to digester combustion device:

- ☐ Daily average volumetric flow rate to digester (cubic feet feet/minute)
- ☐ Pressure at which flow is measured for each operating day (atm)
- ☐ Daily average methane concentration of digester gas (percent, wet basis)
- ☐ Number of digester operating days per year (days/yr)
- ☐ Temperature at which flow is measured for each operating day (°R)

Methane destruction at digesters:

- ☐ Number of operating hours of combustion device

10 Tips to Survive a CAFO Inspection

CAFO owners need to be prepared for an EPA visit and inspection. CAFO inspections tend to be very comprehensive and cover all aspects of a facility's operation, including walk-throughs of production and land application areas, record review, and the collection of samples. Here are 10 tips to ensure that your facility is in compliance before EPA walks through your door.

	Yes	No
Are you discharging? Answering this question is one of the primary purposes of an inspection. Make sure to evaluate your facility to determine if runoff from your facility is reaching streams or rivers. See EPA's Implementation Guidance on CAFO Regulations to determine if you need to seek permit coverage.	❑	❑
Is your facility medium-sized? Even if it is, if it conveys runoff from the production area through a manmade ditch, flushing system, or other manmade device, permit coverage is required. Consult the Types of CAFOs table to determine the size of your operation.	❑	❑
Are you counting your animals correctly? CAFO size must be determined by counting species in open lots together with similar species in confinement.	❑	❑
Are you complying with your permit's requirements?	❑	❑
Have you expanded beyond the capacity listed in your current permit without authorization?	❑	❑
Are you controlling runoff from feed storage areas? CAFOs are required to control runoff from all production areas.	❑	❑
Are you controlling runoff from manure and/or bedding stockpiles? Even if these stockpiles are located outside of a facility's footprint, they are still considered part of a facility's production area.	❑	❑
Are your lagoon berms free of trees, maintained with proper erosion features, and are following pump-down level requirements?	❑	❑
Are your records complete and accurate? Check the Recordkeeping and Reporting Guidance for CAFOs to review requirements.	❑	❑
Are records maintained for land application of manure solids and liquids, and is an NMP or manure management plan being followed?	❑	❑

©2010 BLR®—Business & Legal Resources

DESIGNING A RECYCLING PROGRAM

The following information about designing a recycling program, recycling programs for office buildings, and conducting a waste audit was developed by the Pennsylvania Department of Environmental Protection.

A well-designed recycling program complies with the law, reduces waste, and saves natural resources. Source reduction combined with recycling can further reduce waste. Elements of a successful recycling program include:

❑ **Top-level management support.** The success of a recycling program hinges on the endorsement of senior management. Their positive support promotes a similar attitude among the establishment's employees and customers. Also, recycling programs often require initial outlays of capital. Management approval of a recycling budget ensures that resources are available when needed.

❑ **Recycling coordinator.** A coordinator should be appointed to manage the entire recycling program. The person selected should be genuinely interested in recycling and able to interface with personnel at all organization levels. It is advisable to incorporate recycling responsibilities into the employee's overall job description.

❑ **Recycling task force.** A task force should be formed to help the coordinator initiate the program. It may become a permanent advisory body to ensure continued program development. For best results, choose task force representatives from the departments that will be most affected by the recycling program, such as human resources. It is also a good idea to include a spokesperson for employees.

❑ **Knowledge of wastestream.** The coordinator should assess the amount of recyclables in the organization's wastestream, and where they originate. This assessment is known as a "waste audit.' The waste audit should focus on offices, cafeterias, lounges, rest rooms, vending machine areas, boiler rooms, maintenance areas, storage areas, and other locations where trash originates. For example, if the audit reveals that yard debris composes a large percentage of the wastestream, the task force should consider the feasibility of including on-site composting as part of the recycling program.

❑ **Markets for recyclables.** The recycling program will generate materials that can be used by producers of recycled products, known as end-users. It is the job of the recycling coordinator to decide how to get recyclables to the market place. Recyclables may be marketed directly to an end-user if agreement can be reached on the amount, quality, and regularity of the shipments. Otherwise, it will be necessary to negotiate with intermediaries—such as waste haulers or recyclers—to collect and market recyclables. The coordinator should discuss recycling strategies with waste haulers, recyclers, and end-users long before adopting a final plan for the recycling program.

❑ **Internal collection.** Whether the organization is housed in a number of buildings or in one building, it will be necessary to design a method for collecting recyclables. The main thrust in developing an internal collection system should be convenience. Key considerations include:

—**Containers.** Recycling container options range from reused corrugated boxes to a wide variety of commercially available bins. Consider where containers are to be placed, the quantity needed, size, shape, color, and identification (e.g., labels, decals, or posters) that informs employees and customers what to put in and what to leave out. Check with the local fire marshal regarding fire code compliance.

—**Storage.** The central storage area should be clean, dry, and free of fire hazards. If located outside, consider using covered storage bins to preserve material quality and prevent litter.

—**Collection personnel.** Collecting recyclables and taking them to the central storage area is usually the responsibility of custodial staff. If recyclables must be delivered to a market, delivery personnel must be designated. A printed operations schedule is helpful to collection and delivery personnel.

—**Materials preparation.** Many end-users require special preparation of materials for efficient transportation and/or incorporation into their manufacturing processes. Preparation techniques include crushing, bundling, and baling. A paper recycling container is located in each cubicle in DEP headquarters. Containers for recycling cans and bottles are located near the snack bar.

Copyright © 2011 Business & Legal Reports, Inc.
1-55645-002-8/90/$.50+$.50 071 (FNA)

❑ **Education and promotion.** A sustained program is imperative to:

—Tell employees and customers about recycling policies, procedures, and goals.

—Encourage participation.

—Stress that recyclables must be kept free of contaminants that can diminish their market value.

—Publicize program successes to maintain ongoing participation.

—Convey this information through the usual channels, which include staff meetings, orientation meetings for new employees, newsletters, fliers, and posters.

❑ **Evaluation.** The coordinator should monitor the program to ensure its effectiveness and efficiency. Sources of information include:

—Maintenance staff, for input regarding improper handling and contamination of materials; accounting staff, regarding waste management costs

—Employees and customers, for suggestions concerning convenience

—Safety staff regarding possible storage violations

—Waste hauler or recycler, for information on the amount of waste generated and materials recycled, and the percentage of waste reduced through recycling.

❑ **Procurement policies.** Purchasing products that are made from or packaged in recycled materials creates a demand for the materials generated by a recycling program. One way to achieve this is through revising bid specifications, which give a price preference for items containing post-consumer materials.

Office Buildings

To set up a successful recycling program in an office building, it is important to determine what kind of program will work in the facility. First, analyze the options. For example, would a mixed paper program be preferable to a white paper/newspaper/cardboard program? Knowing the facility will help determine which program is best.

As much as 93 percent of all office waste is paper, most of it recyclable. Recycling of high-grade office paper is required in commercial establishments in some states. Consider the following facts about office paper:

- 77 percent of paper waste generated in offices is recyclable.
- Typical business offices generate about 1.5 pounds of waste paper per employee each day. Financial businesses generate more than 2 pounds per employee daily.
- Nearly half of typical office paper waste is high-grade office paper.
- It is possible to achieve significant reduction in the cost of buying office paper by reducing paper use and reusing paper where possible.
- Eliminating office paper from a facility's waste may reduce the waste bill by as much as 50 percent.
- Recycling 1 ton of paper typically saves about 6.7 cubic yards of landfill space.
- A cubic yard of stacked office paper weighs about 380 pounds.
- Cost savings may be estimated by multiplying the tons recycled by 6.7 times the cost per cubic yard for waste disposal (if by volume) or by cost per ton (if by weight).
- Commercial and residential paper waste accounts for more than 40 percent of waste being landfilled.
- Eliminating this paper from the wastestream would nearly double the lives of current landfills.

Almost all types of paper used in the office can be recycled. It can be separated into various grades ranging from high to low. High-grade papers generally include, but are not limited to, white computer paper, bond, letterhead, and ledger. Lower grades may include mixed grades, file stock, ground wood papers, newsprint, and colored paper. Mixed paper is generally considered ow grade even if it contains high-grade paper. Easily identifiable high-grade papers (such as computer printout paper) should be kept separate, if possible, to take advantage of its higher market value.

Copyright © 2011 Business & Legal Reports, Inc.
1-55645-002-8/90/$.50+$.50 071 (FNA)

Steps for Successful Recycling

❑ Set up appropriate recycling programs in administrative offices, food service areas, and public areas. It is best to concentrate on areas that produce significant amounts of particular materials.

❑ Walk through the facility noting what type of waste is discarded in each area. A walk-through will help determine which types of bins are needed. Typical programs are likely to involve some of the following:

—Offices—paper, corrugated paper or cardboard, cans, bottles.

—Food service areas—glass, metal cans, plastic containers, corrugated paper, cardboard (make sure food waste is separated or that it goes down the garbage disposal).

—Public areas—newspaper, magazines, bottles, cans.

❑ In placing bins, make sure that they achieve a balance between convenience and cluster. Bins should be close enough to where the waste is discarded so the people will use them, but not so widespread that people will trip over them. It is a good idea to talk to people who work in a particular area to determine exactly where bins should be placed.

❑ Make sure that bins in public areas are well-marked. It is best to choose bins with specialized openings, such as a hole for cans or a slot for newspapers, for these areas. Inform employees about proper recycling procedures. Issue a memo, throw a kick-off party, and explain any separation procedures when distributing bins.

❑ Set up a log book or a receipt system to record the volume of recyclables leaving the premises. This will ensure proper compensation for materials and allow for appropriate action if volumes decrease.

❑ Include recycling information in orientation materials for new employees. Explain the overall recycling program to janitors, and use them as the program's eyes and ears. Have them report any areas with major contamination problems, and follow up with improved recycling education in these areas.

❑ After policies have been established, train janitorial staff by showing them what to do with new bins, how to collect waste separately, and where to bring separated materials. For a 24-hour operation, plan pick-ups as appropriate to avoid problems with overflowing bins. Be sure that grounds crews know to keep yard waste separate from other waste.

❑ Ask the waste hauler for advice about keeping recyclables and wet waste separate. Depending on the company's trucks and equipment, the hauler may provide separate containers for trash and recyclables.

❑ Remind employees to keep food waste out of recycling containers and trash. Food waste should go down the garbage disposal or be handled separately from trash and recyclables.

Conducting a Waste Audit

The waste audit is one of the first steps in starting a recycling program. Elements of a good waste audit include:

❑ **Composition of the wastestream.** The first step in the audit process is to look at what materials are currently being disposed of and in what quantities. In developing the program concentrate on the high-volume materials (in retail, it would be cardboard, and with offices, it would be paper). Also look at high-value materials such as toner cartridges and aluminum cans.

❑ **Determine weight/volume.** Look at the weight and volume of the materials currently disposed of that could be recycled. Restaurants and bars generate large quantities of glass and are often charged a surcharge for collection due to the weight. Retailers generate large volumes of cardboard that can quickly fill Dumpsters. If the establishment generates a high volume of cardboard it may pay to look at baling the material; this can also help increase the marketability of the cardboard.

❑ **Sources of waste.** Look at overall operation and determine where the waste is being generated and if this material can be: reduced (e.g., make two-sided copies), reused (e.g., reuse packing material), or recycled (e.g., collect and recycle office paper).

❑ **Collection system.** Always locate collection containers where the recyclables are being generated. The easier it is to recycle, the higher the participation rate will be. Clearly mark all collection containers and make it as hard as possible to contaminate the recyclables. For example, use lids with only a hole in the top for the collection of aluminum cans. Locating the recycling containers near trash cans can cut down on contamination.

❑ **Current and projected costs.** The main reason for starting a recycling program is to reduce waste collection costs. After implementing your recycling program, you need to conduct a second waste audit to see if your program has significantly reduced the amount of waste generated. If it has, you may want to reduce your collection schedule or sizes of your containers, which will save you money.

Copyright © 2011 Business & Legal Reports, Inc.

1-55645-002-8/90/$.50+$.50 071 (FNA)

Connected people helping us with our enquires

Tom Karst National Editor of Packers Journal & Farm Journal – interested to discuss this issue with us Friday

Melissa Heinrich – Past Walmart connected us with Mr. Frank Yannas to Walmart response below

Craig Carlson CEO of Carlson Produce Consulting had not heard of 1 mile connected us with Mike Stuart FFVA president

John Toner V – Global Fresh Produce United Fresh – email sent with VP to ask question of any UF special requirements.

Paul Clewes VP operations Planet Organic Market ex VP of Save on Foods – overweatea group.

Michael Hewett, Director of Environmental & Sustainability Program Publix.com

Brenda – Safety Manager Food and waste water Publix - I have spoken to awaiting call back

Pete Santiago – Sourcing Mgr Walmart – Linked In no contact yet

John Newell – Windset Farms California Emailed

Mollie Bogardus – Aveterra composting solutions

April Ward & Scott at LGMA (Leafy Greens management Association)

T**heresa Almonte & Benjamin Waring** of S.G.S. Food safety audits

Heather Armstrong Executive Director Florida Recycling today

Mathew Cotton: Integrated Waste Management Consulting, LLC

Lauren Maloney: Food Safety Program Administrative Manager: Perry Johnson Registrars Food Safety, Inc.

Rebecca Burnworth Senior Food Safety Manager II Walmart

T**he Achesongroup. David Aceson Lindsay Nix:** Food safety experts GAP GSSI Standards Scientists Risk Mitigation experts

Craig S. Coker ¦Coker Composting & Consulting

Brain Terry WGI

Mike O Dell Village of Wellington

Sally – PBC Commissioners office

Robert Diffenderfer <rdiffenderfer@llw-law.com> Environmental lawyer Florida WPB

Kenny Wilson Environmental Consultant Kenny.wilson@flhealth.gov

FFVA: Florida Fruit and Veg Assoc - **Mike Stuart**: President / **Martha Tucker** Scientist / **Jill Dunlop** who sent letter

William McClounie President AgriFood Capital Corp:

Tid Griffin Gryphon Environmental Drying System

Food Safety supervisor for Costco

Lauren O'Connor - Florida Department of Environmental Protection

U.S. Senator Marco Rubio – letter sent awaiting response