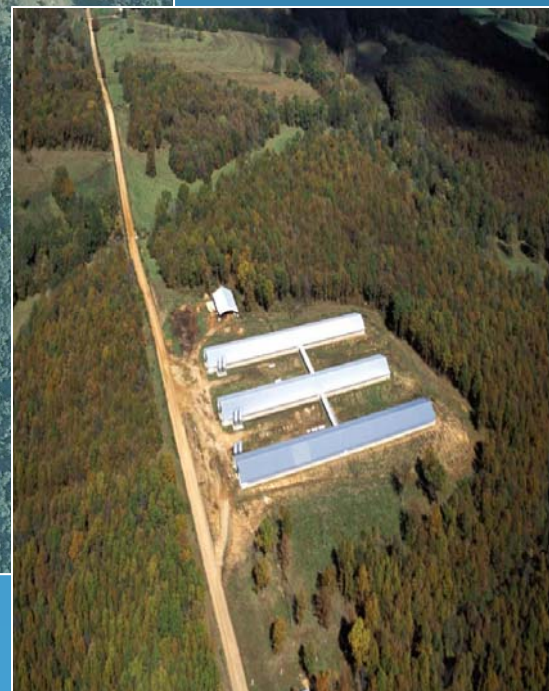
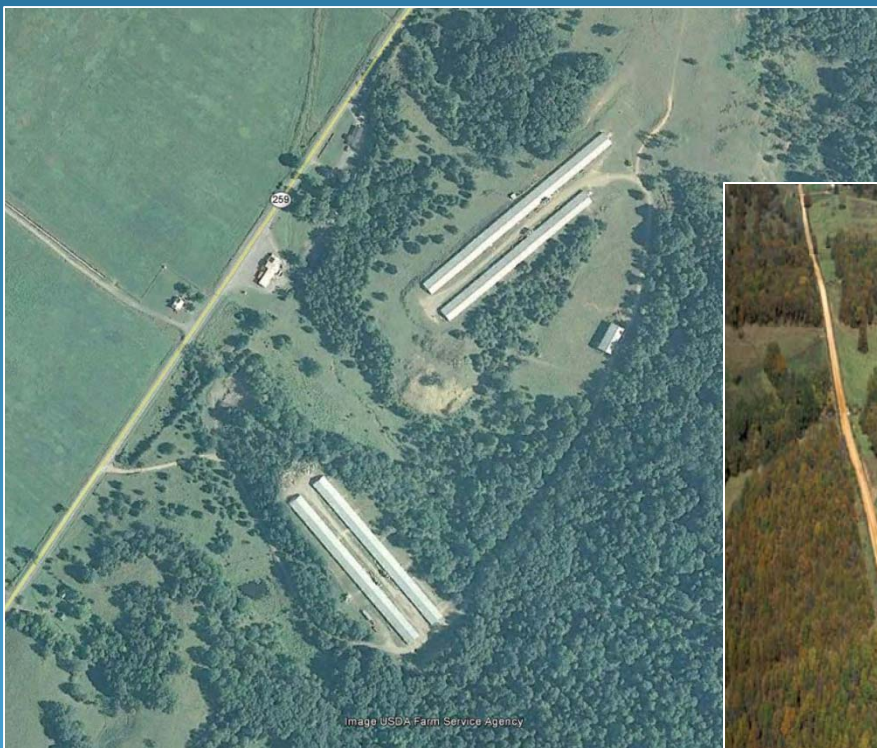


Feasibility Study and Business Plan Proposal for Poultry Growers of the Virginias to Process and Sell a Poultry Litter Product

ISSUED WITH PHASE 2 REFINEMENTS – October 16, 2014



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EXECUTIVE SUMMARY

This business plan proposal is prepared for consideration by prospective members of a cooperative of poultry growers, or other collaborative entity, that would be formed to collect, process, market, and sell their poultry litter as a value-added product. The intended customers are agricultural producers, reclamation managers, and land owners in nutrient-deficient areas desiring an economic, sustainable, and organically-produced soil amendment. The impetus of this proposal is the growing pressure on West Virginia poultry growers to reduce pollutant loads in their region where long-term application of litter on local agricultural lands has resulted in high levels of phosphorus accumulation in the soil. There is also concern that stored piles of excess litter may impact air or water quality. This proposal provides an opportunity for the growers' excess litter to be collected, processed, marketed, sold, and transported to areas where the soils are deficient in phosphorus. In such cases, the poultry litter provides needed nutrients and is anticipated to partially replace the use of chemical fertilizers.

This proposal cannot be accomplished by any single poultry grower, but it is possible, even plausible, by interested poultry growers coming together and forming an agricultural cooperative or similar collaborative entity (hereafter referred to as the "Cooperative"). A cooperative can ensure that an operation to process, store, and sell poultry litter has an ample supply of raw material, capital for start-up, structured organization, and provisions to provide a return on investment to the cooperative's members. A cooperative can also benefit its members by enabling volume purchases to reduce the price of needed supplies and offering leverage when dealing with other businesses or suppliers.

The concept offered in this business plan proposal is the processing of poultry litter through a deep stacking composting method. The deep stacking of litter causes an ensiling process to occur that heats the litter over 140 degrees Fahrenheit. This kills pathogenic organisms and weeds that might be resident in the litter. Poultry litter has many advantages over chemical fertilizers. A fundamental difference is that poultry litter is a natural byproduct of the growing of poultry and there is an abundant and stable supply of the raw material. Chemical fertilizers are subject to the price volatility from the growing demand and limited availability of the raw materials that are used to make them, such as natural gas and mined phosphate. While chemical fertilizers can provide targeted amounts of nitrogen, phosphorus, and potassium nutrients for crops and forage, they do not provide micronutrients or organic matter for the soil. Poultry litter provides these nutrients, plus carbon and the micronutrients such as calcium, magnesium, sulfur, copper, and zinc. Poultry litter is an economical and reliable soil amendment.

There appears to be a substantial market for poultry litter in nutrient deficient areas within a reasonable transporting distance. The agricultural producers that recognize the value of manure as a soil amendment have been challenged in the past by the careful timing and coordination needed to manage the availability, moisture and nutrient content, and delivery of litter. The Cooperative's operation and processing of the litter can provide the needed oversight and flexibility to ensure the availability, reliable attributes, and timely delivery of the poultry litter.

With these considerations and others outlined in this business plan proposal, it is recommended that the poultry growers of the concentrated growing areas of West Virginia (WV) and western Virginia (VA), namely the nine contiguous counties of Grant, Hardy, Hampshire, Mineral, and Pendleton (WV) and Augusta, Page, Rockingham, and Shenandoah, (VA) form an agricultural cooperative that begins the process of confirming supply, obtaining and setting up a centrally-located operation, buying equipment, and hiring employees to collect, process, market, and sell a poultry litter soil amendment product.

To guide the effort, this business plan proposal outlines the following:

- Needs and Opportunities
- Alternatives
- Business Description
- Product Description
- Operations Plan
- Facilities Plan
- Marketing Plan
- Start-up Considerations and Costs
- Financial Plan
- Appendix A: Sample Marketing Agreement and Membership Application
- Appendix B: Bio-security Measures
- Appendix C: Year Two through Five Applicable Financial Reports

NEEDS AND OPPORTUNITIES

WATER QUALITY

Deep stacking poultry litter and transporting it from the nutrient surplus areas in the poultry growing counties of West Virginia and western Virginia to nutrient deficient areas of West Virginia and nearby states can help alleviate some of West Virginia's water quality and Chesapeake Bay nutrient loading concerns. Poultry litter is made up of manure from poultry (broiler chickens and turkeys are the focus of this business plan proposal) mixed with bedding material and is a significant byproduct of the poultry growing industry. West Virginia's Phase II Chesapeake Bay Watershed Implementation Plan (WIP) noted that the Agriculture Sector (as defined by the WIP) is responsible for 49 percent of the total delivered nitrogen load and 62 percent of the total delivered phosphorous load." (Virginia's 2009 Chesapeake Bay nutrient loading reporting showed that its Agriculture sector contributed 42 percent of the total delivered nitrogen load and 38 percent of the total delivered phosphorous load.) A portion of this nutrient loading is contributed by the repeated local land application of poultry litter as a soil amendment and the resultant build-up of phosphorus in the soil that is partially lost to the environment. According to the West Virginia University Extension Service, "the majority of the phosphorus is distributed on the land in the form of manure, often at rates selected to meet the crop's nitrogen need, but exceeding the crop's phosphorus need."¹ Once the soil can no longer absorb phosphorus, excess runs off into the waterways.

Poultry growing is concentrated in five contiguous WV counties—Grant, Hampshire, Hardy, Mineral, and Pendleton—and they contain 98 percent of the state's poultry inventory. There is also a concentrated area of poultry growing in four western VA counties—Augusta, Page, Rockingham, and Shenandoah—and these are adjacent to the poultry growing counties of West Virginia. According to the United States Department of Agriculture (USDA) National Agricultural Statistics Service's 2012 Census of Agriculture (adjusted per the rate of change between 2012 and 2013), the five WV poultry growing counties, all located in the Chesapeake Bay watershed, sold 98,994,368 chicken broilers and turkeys in 2013. If

¹ Faulkner, Joshua, *How Phosphorus is Lost from Farmland*, West Virginia University Extension Service Agriculture and Natural Resources, May 2011.

broilers produce 1.7 pounds of litter per bird and turkeys 18 pounds per bird, then the broilers and turkeys of these five WV counties would have produced 119,383 tons of poultry litter in 2013.² The 2007 Census (most recent year of reporting for this statistic) indicated that 52,048 acres of cropland and pastureland in these five WV counties were treated with manure. If poultry litter from broilers and turkeys was only applied locally (within these five counties), then this would result in an application rate of 2.29 tons of poultry litter per acre. At this rate, phosphorus build-up in the soil and loss to the environment is very likely.

This concern is amplified when the one-way nutrient flow, in the form of animal feed from the Midwestern states into the Chesapeake Bay region, is considered. This flow modifies the natural nutrient cycle. The Chesapeake Bay Program estimates that 15 percent of the total nitrogen load and 36 percent of the phosphorus load entering the Bay is derived from livestock and poultry feed. This creates a huge imbalance between the amount of nutrients coming into the concentrated poultry growing areas of WV and VA as feed and the amount going out as agricultural products, such as manure soil amendments. This broken nutrient cycle can begin to be balanced if poultry litter is exported to the “Feed Crop” states. This can reduce their dependency on chemical fertilizers by replacing them, in part, with nutrients from poultry litter for the soils most in need of N, P, and K.³ This is depicted in Figure 1 below.

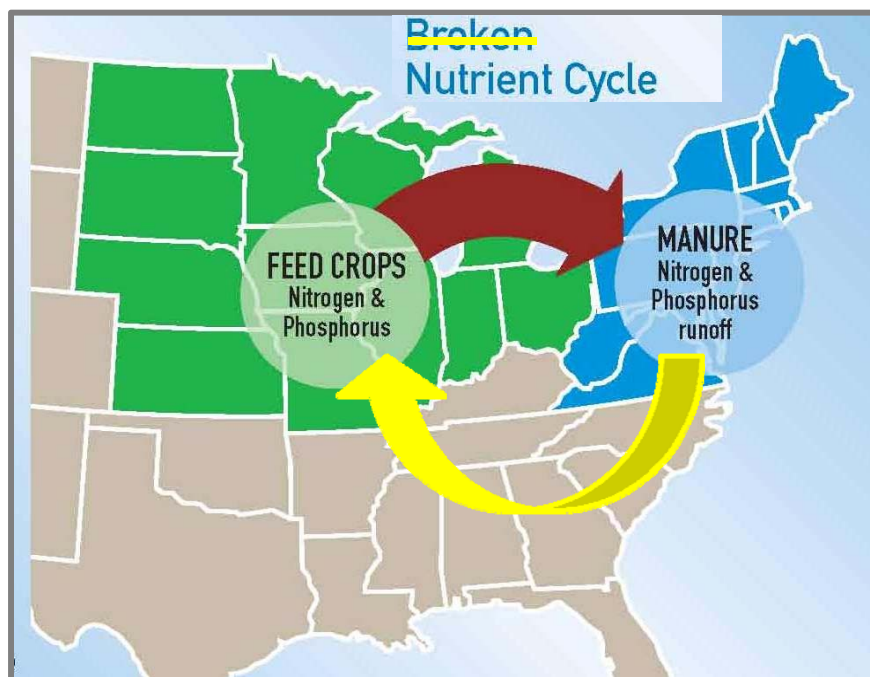


FIGURE 1

² Downstream Strategies, *Feasibility Study: Poultry Litter Composting in the Potomac Valley Conservation District, West Virginia*, January 2012.

³ Chesapeake Bay Commission, *Manure to Energy: Sustainable Solutions for the Chesapeake Bay Region*. January 2012.

One of the programs listed in the West Virginia Phase II WIP to balance the nutrient cycle and mitigate the likelihood of poultry litter being lost to the environment is the Litter Transfer Program. This program is a nutrient reducing best management practice and is intended to enable the Agricultural Sector to reach its Total Maximum Daily Load (TMDL) goals. As part of this program, USDA's Natural Resources Conservation Service is currently offering a payment rate of \$10.00 per ton to growers for each ton of litter that is transported out of the Bay watershed. Past litter transfer efforts have moved 7,000 tons out of the watershed. Phase II of West Virginia's WIP is recommending that 12,000 tons be moved out of the watershed by 2025.

While the Litter Transfer Program can move a small portion of the West Virginia's raw poultry litter out of the watershed, the Cooperative's litter operation could facilitate greater quantities being shipped to nutrient deficient areas of West Virginia and neighboring states. The litter can be transported from areas with a surplus of nutrients, thus avoiding excess build-up in the soil and resultant run off, to areas deficient in nutrients. With a cooperative managing the litter and ready to ship its product on demand, the application of the poultry litter to fields can be carefully timed to be advantageous for the soil, plants, and environment. It can be purchased and applied in quantities that meet the soil's phosphorus needs and supplemented with urea to meet its nitrogen needs. When the litter is applied to the soil, it also enhances its water retention ability, thereby reducing the likelihood of sediment entering waterways from erosion and drought conditions.

CHEMICAL FERTILIZERS

Agricultural producers that chiefly use chemical fertilizers as a soil amendment, are encountering challenges, such as:

- Price volatility
- Decreasing yields and protein values
- Drought susceptibility
- Lack of micro-nutrients

The raw materials that comprise chemical fertilizers are becoming harder to obtain and more expensive to process. Commercial nitrogen fertilizer is manufactured with natural gas, which has competing uses and demands and is often linked to the volatility of crude oil. The raw materials of potassium and phosphorus fertilizer mostly come from mines or saline lakes, and these resources are in high demand and becoming limited for agricultural use around the world. The USDA's Economic Research Services data shows that the average U.S. farm prices of selected fertilizers in the 2013 reporting cycle were two to three times what they were in 1990's. See chart, as Figure 2, below.⁴

⁴ USDA, Economic Research Service, (accessed September 2014)
[http://www.ers.usda.gov/datafiles/Fertilizer Use and Price/Fertilizer Prices/table7.xls](http://www.ers.usda.gov/datafiles/Fertilizer%20Use%20and%20Price/Fertilizer%20Prices/table7.xls) .

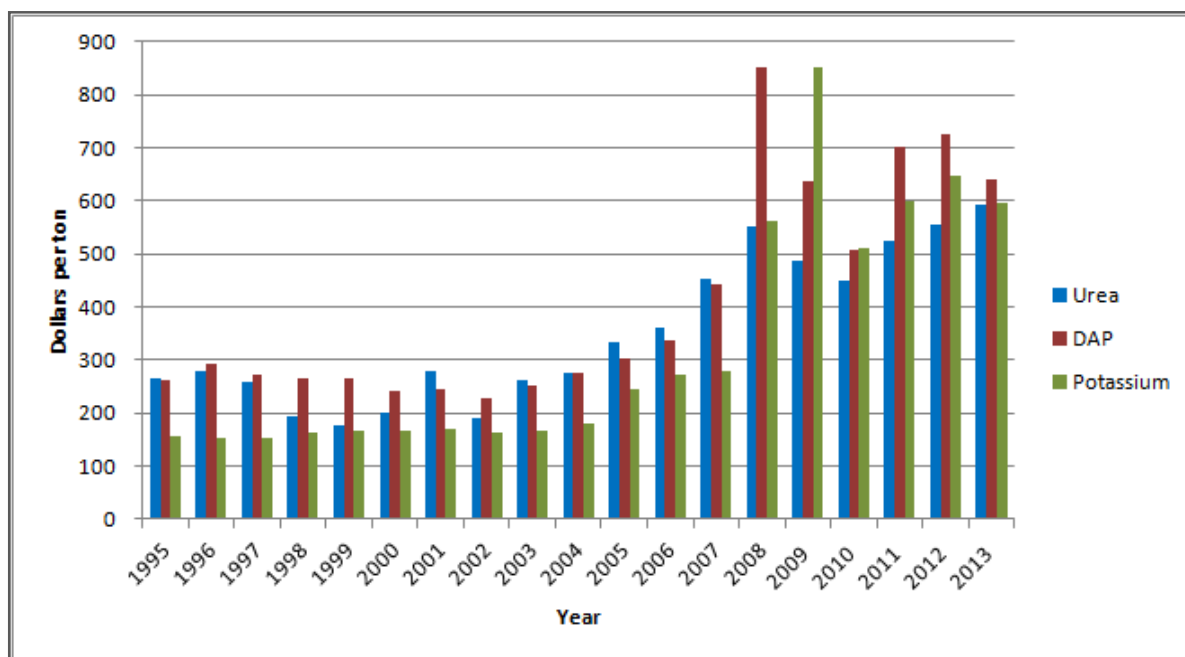


FIGURE 2

Agricultural grade phosphate fertilizers can contain impurities such as fluorides (removing the fluorides significantly increases the cost). Super-phosphate and water soluble phosphorus have been able to significantly improve yields on a variety of crops, but with decades of subsequent usage the fluoride of these fertilizer products has been found to have a soil sterilization effect. This sterilization reduces the availability of other natural and trace minerals within the soil, which are gradually depleted in the soil by the crops. Also, regular use of acidulated fertilizers generally contribute to the accumulation of acidity in the soil, which progressively increases aluminum availability and hence toxicity.

Conversely, the use of poultry litter as a supplement or alternative to chemical fertilizers can to mitigate some of these challenges. Organic fertilizers, such as poultry litter, are a more economical means of plant fertilization. Poultry growing generates this natural byproduct and creates a readily available supply, thus poultry litter is not linked to depleting supplies of raw materials nor substantially impacted by the growing demand for chemical fertilizers in other parts of the world. The price of a poultry litter product can remain relatively stable.

Also, according to the Oklahoma Cooperative Extension Service's, Division of Agricultural Sciences and Natural Resources at the Oklahoma State University, "at least 90 percent of the phosphorus and potassium in manure is considered available in the year of application, compared with commercial phosphorus and potassium fertilizers."⁵ The application and use of poultry litter as a soil amendment also has a liming effect that brings soil closer to a neutral pH level and increases both the infiltration of water and the water-holding capacity of the soil, which, in turn, enhances the retention of nutrients. This does not occur with the use of chemical fertilizers. Deep stacked poultry litter is not a replacement for the use of all chemical fertilizers, but it has consistently demonstrated its capacity to be used in conjunction with these fertilizers (on a yearly rotational basis), to improve yields through greater water

⁵ Payne, Josh., Zhang, Hailin. *Poultry Litter Nutrient Management: A Guide for Producers and Applicators*. Oklahoma Cooperative Extension Service, Division of Agricultural Sciences and Natural Resources, Oklahoma State University. Publication Reference E-1027, June 2012.

retention and nutrient absorption. These same water-retentive environments are less susceptible to run-off, including the loss of nitrogen and phosphorus.

POULTRY GROWER IMPACT

Poultry growers nationwide are feeling the economic strain associated with raising poultry for integrators in a highly concentrated marketplace. It is estimated that in the U.S. today, only four corporations (poultry integrators) control almost 60 percent of the broiler market. Meeting the integrators' increasingly burdensome contractual requirements related to the grower's operation is rapidly shrinking the grower's profit margin. Requirements for additional farm modifications, without increasing the price growers are paid, have been particularly onerous on growers who continue to generate nominal profits and often incur sizable debt to begin a poultry growing operation.

According to a West Virginia Department of Agriculture presentation in 2007, "the average cash flow on a two-house broiler operation is about \$10,000/year under average conditions. When the mortgage is paid off, cash flow rises to \$34,000/year under average conditions."⁶ The Charleston Gazette reported that 85 percent of the poultry growers surveyed ... by the West Virginia Farm Bureau said they were not happy with their pay." Further, the Gazette indicated that according to state and federal reports, the average poultry grower in Hardy County owns three chicken houses, borrowed close to \$400,000 to build and equip them, and over the next decade, most of his earnings will go to pay off those loans."⁷ While integrators control almost all of the steps of the poultry production ladder, they leave the responsibility of clean out and disposal of poultry litter largely to the growers.

With this proposed business opportunity to process and sell their litter in a cooperative manner, the poultry grower's responsibility for the byproduct of their operation can be turned into an asset. The litter can be processed into a highly desirable, value-added commodity that can be sold for a profit. As described in this business plan proposal, growers can receive payment for their contribution of raw poultry litter to the Cooperative, and they can also receive patronage refunds from the success of the operation.

Growers are also facing increasing pressure concerning the management of their manure as some poultry growing operations may now qualify as concentrated animal feeding operations (CAFOs) under federal law and may be required to obtain a National Pollutant Discharge Elimination System (NPDES) permit that regulate the management of nutrient discharges into local streams. Fundamental to this permitting program are nutrient management plans (NMPs), which detail how much waste an operation will generate and how it will be managed to prevent nutrients from entering the waterways. Small CAFOs and farms that claim zero discharge status – even though not required to get a permit – will still need to perform most of the farm assessments and record-keeping required of permit holders to verify their status. While West Virginia is working to educate growers, this permitting requirement could cause additional economic hardship for the growers. Poultry growers can minimize this hardship by selling a significant portion of their poultry litter to the proposed Cooperative and minimize the amount of excess poultry litter stored onsite or applied to local fields.

⁶ Richmond, Christina. *Poultry Industry Overview Presentation*, West Virginia Department of Agriculture Poultry/Environmental Specialist, Updated 2006.

⁷ Ward, Ken, Jr. *Poultry System Sticks Farmers with Waste*, www.wvgazette.com, (accessed January 4, 2012).

ALTERNATIVES

RAW LITTER

Deep stacked litter has some advantages over raw litter. Among these advantages are a reduction in the loss of nutrients and minimizing bio hazards. Raw litter loses nitrogen to the atmosphere at a steady rate as it composts. This results in a loss of nutrients. When litter is deep stacked, the process enables the product to retain more of these nutrients and minimize the loss of nitrogen to the atmosphere. Raw litter stored at the poultry operation is more susceptible to the leaching of nutrients during rainfalls and other weather events than the litter that will be processed and stored at the Cooperative's facility.

Raw litter can test positive for the presence of E. coli. It also is associated with a high degree of disease-carrying nuisance vectors. Raw litter requires a long composting time to kill E. coli and disease-carrying nuisance vectors. This composting process is mostly accomplished in stacking sheds, leading to an additional expense. On the other hand, deep stacking litter heats it to over 140 degrees Fahrenheit, killing most of the E. coli and disease-carrying nuisance vectors. Once this process occurs, little or no precautions or extra measures are necessary to reduce biohazards.

Maximum nutrient benefit is only realized when raw litter is incorporated into the soil immediately or soon after application. This Immediate incorporation of raw litter is also required to minimize nitrogen loss to the air and potential run-off. Deep stacked litter does not require incorporation, thus lessening time and resources (fuel, vehicle use). Blended deep stacked litter provides more consistent particle size than raw litter and can be used in no-till applications.

PELLETIZED LITTER

Pelletized litter can be more economical to transport than bulk litter, but the processing cost for producing this pelletized product is substantial. Perdue has operated a pelletizing plant for over 10 years in Sussex County, Delaware. This plant takes raw poultry litter, screens it, dries it, and heats it to kill off pathogens. "With \$44 million invested so far, the company has yet to make money," said Steve Schwalb, vice president of environmental sustainability for Perdue Farms.⁸ The \$12 million plant opened in 2001. Perdue has invested additional funds to, among other things; upgrade the wastewater treatment at its plant. Delaware has spent at least \$500,000 to help offset the transportation costs of getting Delaware poultry litter to the recycling plant. Pelletized litter does not appear to be a practical alternative for the poultry growing areas of West Virginia and western Virginia, unless substantial capital is provided, not only for equipment and setting up the plant, but also for operating the facility.

GASIFICATION

The gasifier built by Coaltec Energy at the Josh Frye farm in West Virginia has benefits, including the nutrient rich byproduct of biochar, but two of its significant challenges are the high cost of the gasifier machine and the system's slow response time for heating of the poultry houses. The Josh Frye farm gasifier equipment is reported to have cost over a \$1 million. This is an expensive capital investment for one poultry growing operation and may not be viable for small operations. Also, after being operational for more than a year, it has been found that the conversion of biomass to heat poultry houses is relatively inefficient. There is a significant delay in feeding the gasifier and realizing the heat in the poultry houses that is generated by the system.

⁸ *The Daily Record*, "Perdue Farms now selling recycled poultry manure as fertilizer," May 10, 2011.

BUSINESS DESCRIPTION

OVERVIEW

This business plan proposal is recommending that poultry growers within the concentrated poultry growing areas of West Virginia and western Virginia (the nine counties previously cited) form an agricultural cooperative, or other collaborative entity, whose purpose is to collect, process, market, and sell a poultry litter product (a cooperative can also address other collective needs and services if its members elect to do so). Other possibilities for a collaborative entity will be discussed at the end of this section. The collaborative entity will be hereafter referred to as the “Cooperative.” The Cooperative can be a member-driven and customer-focused agricultural cooperative formed to collectively and sustainably address its members’ common poultry litter management challenges and to provide a high quality, nutrient rich soil amendment product for its customers.

The proposed location of the Cooperative’s poultry litter operation is West Virginia, so it is recommended that the cooperative be set up as a West Virginia-registered private corporation that provides the organizational construct for the collecting, processing, marketing, and selling of a poultry litter soil amendment product. The Cooperative, as proposed, will enable its poultry grower members to improve their profit margins by receiving a payment for the raw poultry litter they supply to it and through a patronage refund, as the poultry litter operation becomes profitable, as spelled out in a marketing agreement. The Cooperative’s operation will be producing a “sustainable, value-added product” that provides its customers with a nutrient rich and cost-effective soil amendment while it also provides a means for poultry growers to attain their nutrient management goals. If, at some future time, poultry integrators express interest in the Cooperative’s litter operation, the growers can entertain or reject any offers to participate in the Cooperative, or they can dissolve the Cooperative if the integrators take responsibility for all poultry waste and its environmental impacts.

MISSION AND GOALS

The Cooperative’s mission is to operate a profitable private enterprise to sustainably manage, market, and sell a value-added poultry litter soil amendment. Target markets are: western West Virginia (outside the Chesapeake Bay watershed), Ohio agricultural producers, certified organic producers, and mine reclamation managers. The Cooperative structure will afford its members with a professionally managed business enterprise that no single poultry grower can accomplish alone on the same scale or with the same impact or sustainability.

The Cooperative’s goals will be to:

- Reduce nutrient run-off into the Chesapeake Bay watershed by redirecting the use and storage of excess poultry litter.
- Educate poultry growers on the value of their poultry litter as a soil amendment, especially for use in nutrient deficient areas.
- Cultivate market opportunities and ensure sales of the litter product to sustain the operation and offer a patronage refund to poultry grower members.
- Fully develop this business model, process, and facility to produce a superior litter soil amendment product.
- Improve product usability, sustainability, and nutrient and monetary value.
- Create bargaining opportunities.

- Obtain equipment and services not otherwise individually viable.
- Reduce costs and increase income.
- Keep membership abreast of trending regulatory, legislative, product, or marketing issues and opportunities.
- Maintain consistent member education about the cooperative's practices and policies, as membership changes through retirement and/or the addition of new members, or if the geographic area of membership expands.

MEMBERSHIP AND GOVERNANCE

The Cooperative, operating as a limited liability, tax-exempt corporation that conducts its business on a cooperative basis, will be governed by both articles of incorporation and bylaws, which will prescribe the conditions for membership and other relevant policies. The Cooperative's business structure will serve the mutual benefit of its members. Unless or until other services are added to the Cooperative, voting members will be expected to provide initial financial support in the form of a membership fee (or common voting stock) to capitalize the Cooperative and to make a raw poultry litter patronage commitment (the term of the commitment will be decided by the members and included in the Bylaws). Each member will be governed by a marketing agreement and membership application that, among other terms, establishes the rights and obligations of both the cooperative and the poultry grower member and requires a onetime membership fee of \$1,500 (or other amount as determined in the organization's bylaws) payable to the Cooperative. See sample marketing agreement and membership application provided as Appendix A. Unless otherwise stipulated, the membership fee will be repaid in full to the member at the time that membership in the Cooperative is terminated. In the event that the Cooperative ceases to exist, then the membership fee repayment may be made, provided that all creditor debts and liabilities are completely satisfied.

The voting rights of the Cooperative members will be equal and no member shall have more than one vote upon each matter submitted to a vote at a meeting of the members. The property rights and interests of each member shall be unequal and shall be determined based on their raw poultry litter patronage commitment. A portion of the annual net income from the Cooperative's litter product sales can be allocated to members in proportion to their patronage. This is known as a patronage refund. The Cooperative will be managed and overseen by a Board of Directors, elected from among member poultry growers. Elections of the directors will be conducted at the Cooperative's annual membership meeting.

MEMBER BENEFITS

The Cooperative approach provides the following benefits:

- Enables members to collectively seek solutions to their common environmental and other regulatory issues, such as enabling them to address water quality reviews and regulations by removing excess poultry litter from their operation and avoiding its application to soils high in phosphorus content.
- Provides a professionally managed and controlled approach to creating a value-added product from the member's poultry litter patronage. This, in turn, provides a stronger opportunity to increase each member's income.
- Enables members to receive a competitive payment for their raw poultry litter and a patronage refund as the operation makes a profit.
- Retains the economic individuality and independence of each poultry grower member.

- Enables members to own and control, on a democratic basis, a business enterprise for procuring necessary supplies and services (inputs), and marketing their product (outputs).
- Enables members to leverage their group strength to procure financial, legal, and various other services for members.
- Strengthens the local rural economy by providing new jobs and creating new business transactions from the procurement of local goods and services.

NEXT STEPS

- Identify and support an agricultural-based organization to champion the implementation of this business plan proposal. Such an organization should possess the traits outlined in the Other Collaborative Entity section below.
- Hold meetings with potential poultry grower members to discuss common needs relative to poultry litter issues and opportunities, and specifically consider the formation of a cooperative to administer a poultry litter operation as presented in this business plan proposal. Two example opportunities to reach the poultry growers are meetings of the Contract Poultry Growers Association of the Virginias and the West Virginia Poultry Association. (Based a 2012 survey of poultry growers that were members of these organizations, almost all of the growers expressed definite or possible interest in participating in a cooperative that collects, processes, markets, and sells a poultry litter product.)
- Identify financial and legal counsel. While advice and counsel will be needed throughout all stages of the Cooperative's organization and resultant operation, it is important for prospective members to rely on business and cooperative specialists for both financial and legal advice to set-up the Cooperative. The West Virginia USDA's Rural Development Office is a logical place to start.
- Survey prospective members to identify interest and to gather information on the amount of excess litter they currently produce on an annual basis.
- Conduct a cost analysis based on the number of prospective members.
- Prepare legal papers to incorporate.
- Call a meeting of the charter members of the Cooperative to review and adopt the proposed Bylaws. Elect a Board of Directors.
- Conduct the first meeting of the Board and elect officers, assigning duties to each to implement the business plan.
- Conduct a membership drive. Secure patronage commitments, marketing agreements, and membership applications with poultry growers.
- Acquire capital and develop a loan application package.

LIMITED LIABILITY CORPORATION

If at the time of the Cooperative's formation and organization, the poultry growers decide that they need more flexibility in the structure of their organization and fewer formalities in how their entity functions, then a Limited Liability Corporation business structure should be investigated and considered.

OTHER COLLABORATIVE ENTITY

There is the possibility and opportunity that the Cooperative, a market cooperative producing and marketing a product, could be joined to or linked with a consumer cooperative that is created or exists to purchase products, such as the poultry litter soil amendment. A non-profit organization could organize and facilitate the joining of these two types of cooperatives. Ideally, the non-profit organization would:

- Possess a proven and strong working relationship with the agricultural community.
- Have a clear understanding and appreciation of agricultural business management, crop and livestock production, soil fertility, water quality, and other related issues and needs.
- Have a thorough knowledge and understanding of various grants and financing mechanisms to capitalize the Cooperative and facilitate its access to such mechanisms.
- Demonstrate a passion and willingness to achieve the goals and objectives of this business plan proposal.

PRODUCT DESCRIPTION

OVERVIEW

The Cooperative described above will sell a poultry litter soil amendment product. The product will be the outcome of a process that uses the raw litter of broiler chickens and turkeys, of a specified nutrient value and moisture content, and deep stacks it for a minimum of four weeks. Broiler and turkey litter is preferred because of their high nutrient value and relatively consistent moisture content (the moisture content of litter from layers and breeders can be too high and vary greatly). The end result is a poultry litter soil amendment that has been deep stacked to cause an ensiling process (heated to a temperature 140 degrees Fahrenheit or higher).

The poultry litter product will possess the following properties:

- Nutrient Value (lbs/ton): approximately N-60, P-60, K-60
- Micronutrients: also contains S, B, CA, Z, and Mg
- Available in bulk or one ton reusable super sack bags

NUTRIENT VALUE

The unique and attractive quality of the litter product is its nutrient value as a soil amendment. It contains vital nutrients that can enhance the soil's capacity to grow plants as cropland, pastureland, or ground cover. Poultry litter, made up of manure and bedding material, already contains significant amounts of nitrogen, phosphorous, and potassium nutrients. The deep stacking process cuts off the oxygen supply and ensiles the nutrients, preserving them with minimal loss. It also makes the ammonia of the manure less volatile and transforms it into a state that is more readily available to plant life.

PRODUCT ADVANTAGES

The Cooperative's poultry litter soil amendment product will offer the following nutrient and soil conditioning benefits:

- Is an organic product that is composed of high grade nutrient manure and bedding material.
- Slowly releases vital nutrients of nitrogen, phosphorus, and potassium into the soil:
 - The inorganic nitrogen of the litter (10-15%), ammonium and nitrate, is readily available for plant uptake.
 - The organic nitrogen of the litter (85-90%) is slowly released over the growing season as bacteria convert it to an inorganic form.
 - The phosphorus and potassium of the litter is in an inorganic form and is slowly released for long-term plant uptake.

- Contains 20 percent Carbon and the micronutrients of Sulfur, Boron, Calcium, Zinc, and Magnesium.
- Has a liming effect, bringing soil closer to a neutral pH.
- Builds soil fertility and quality by:
 - Increasing soil nutrient content
 - Increasing infiltration of water
 - Increasing water-holding capacity
 - Enhancing retention of nutrients
 - Reducing wind and water erosion
 - Promoting growth of beneficial organisms
- Has been shown to better increase crop yields and protein content than the use of commercial fertilizers.
- Is economical when compared to commercial fertilizers, depending on transportation costs.
- Super sack bags can be transported by commercial freight haulers and can be managed by typical farm equipment.
- Is available “on demand.”
- Can be spread using a manure spreader.

PRODUCT APPROVAL AND LICENSING

The poultry litter product will be marketed and sold as an organically-derived soil amendment. The Cooperative will obtain the appropriate plant nutrient permits from each target market’s state regulatory agency belonging to the Association of American Plant Food Control Officials (AAPFCO). Additionally, the Cooperative will seek to obtain the Organic Materials Review Institute’s (OMRI) “OMRI Listed® Seal” labeling certification as regulated under the National Organic Program (NOP).

SUPPLY

The poultry litter operation is wholly dependent on an adequate supply of poultry litter. Determining if there is an adequate supply of litter rests on several key factors:

- Location of broiler and turkey growing operations and numbers of birds
- Location of the Cooperative’s litter operation
- Amount of litter produced by the broilers and turkeys
- Growers’ willingness to sell their litter to the Cooperative’s litter operation

OPERATIONS AND BIRDS

As previously noted, the concentrated poultry growing areas are the WV counties of Mineral, Hampshire, Grant, Hardy, and Pendleton and VA counties of Shenandoah, Page, Rockingham, and Augusta. The best available data for an accounting of the number of chicken broiler and turkey growing operations with sales and for quantifying the annual broiler and turkey sales is the USDA National Agricultural Statistics Service’s (NASS) 2012 Census of Agriculture. This census is conducted every five years, and the 2012 Census is the most current county-level data available. Shown in the table below is the 2012 Census’ reported number of broiler and turkey operations with sales for the nine counties of the concentrated poultry growing area of West Virginia and western Virginia.

**FEASIBILITY STUDY AND BUSINESS PLAN PROPOSAL FOR POULTRY GROWERS OF THE VIRGINIAS TO
PROCESS AND SELL A POULTRY LITTER PRODUCT**

County	State	Broiler Operations with Sales	Turkey Operations with Sales
GRANT	WV	30	--
HAMPSHIRE	WV	13	--
HARDY	WV	68	15
MINERAL	WV	13	--
PENDLETON	WV	32	35
AUGUSTA	VA	48	69
PAGE	VA	71	15
ROCKINGHAM	VA	207	122
SHENANDOAH	VA	49	15

While information is not available to map these operations by address, their location can be graphically represented by a dot density map, where the number of operations are randomly scattered throughout the county in areas with agricultural land use. See the map, as Figure 3, below.

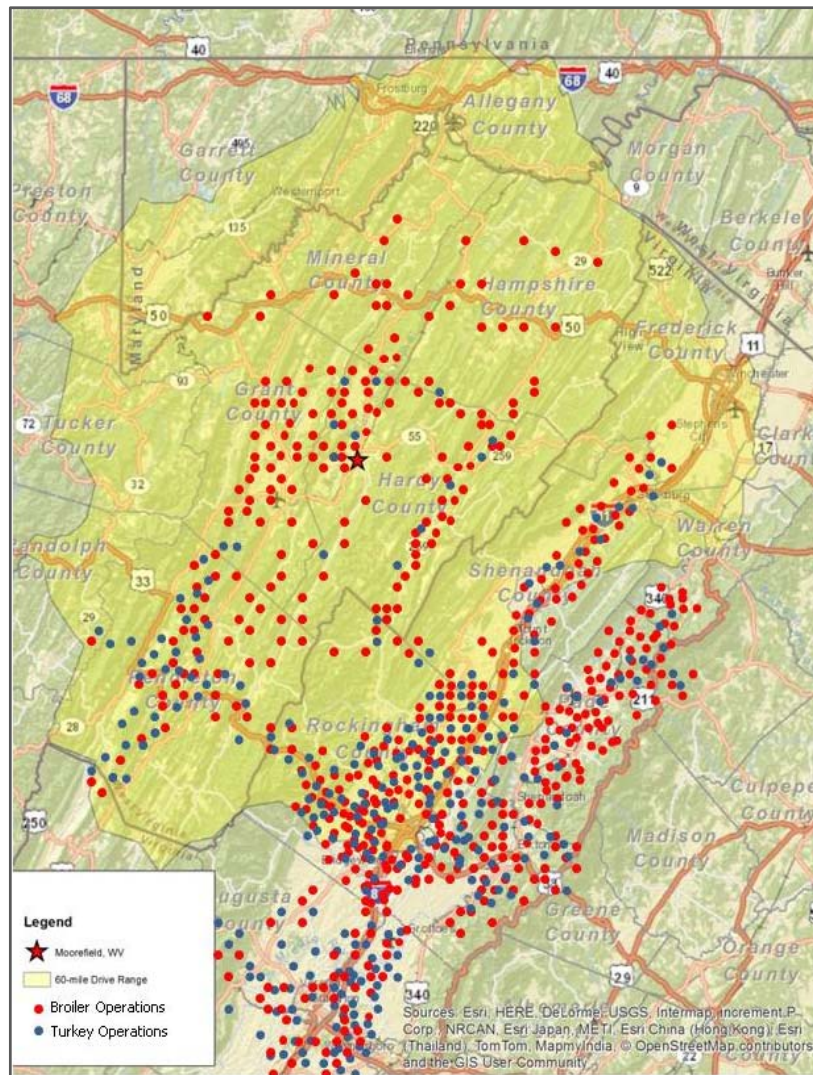


FIGURE 3

**FEASIBILITY STUDY AND BUSINESS PLAN PROPOSAL FOR POULTRY GROWERS OF THE VIRGINIAS TO
PROCESS AND SELL A POULTRY LITTER PRODUCT**

The 2012 Census also reported on the annual number of broilers and turkey sales by head for the nine counties of the concentrated poultry growing area. In addition, poultry production data is collected and reported annually at a state level (but not a county level). The rate of change of poultry production between 2012 and 2013 can be used to update the 2012 Census' broiler and turkey sales data. Between 2012 and 2013, the state data showed an increase in both West Virginia and Virginia broiler production of 1.0 percent and a reduction in both West Virginia and Virginia turkey production of 1.1 percent. The 2012 Census' county level data shown in the table below has been adjusted by the rate of change between 2012 and 2013.

County	State	Annual Broiler Sales	Annual Turkey Sales
GRANT	WV	16,647,200	
HAMPSHIRE	WV	8,851,642	
HARDY	WV	41,394,545	1,690,462
MINERAL	WV	7,239,717	
PENDLETON	WV	20,537,645	2,633,157
WV Total		94,670,749	4,323,619
AUGUSTA	VA	19,354,905	4,242,754
PAGE	VA	28,583,466	3,002,275
ROCKINGHAM	VA	87,666,815	8,021,737
SHENANDOAH	VA	23,349,251	1,087,845
VA Total		158,954,437	16,354,610
Grand Total		253,625,186	20,678,229

POULTRY LITTER OPERATION LOCATION

There are several considerations to be addressed when determining the location of the Cooperative's litter operation. The ideal location is one that is close to the source of raw material, minimizing collection costs and ensuring an adequate supply, but also one that is accessible to the highway system for ease of transporting the product and lowering shipping costs. Also factoring into the location decision is whether the Cooperative plans to develop the full operation in one location or use a phased approach in one or multiple locations. With the deep stacking process, the Cooperative's operation could function in one large full production facility or could be phased in over time by expanding the operation at one site or in multiple locations. If other technologies come online to divert the supply of litter, *e.g.*, gasification or pelletization, or if the Cooperative cannot initially secure enough patronage commitments, then a smaller facility could be purchased or built to process a lesser amount of litter. In the latter case, a second facility could be purchased or built in a different location in the concentrated poultry growing area to secure additional patronage commitments. Strategically placed locations of the operation could save the Cooperative money by reducing the time and cost associated with collection of the litter, but it would also increase operational expenses, due to the additional equipment, staffing, utilities, etc. that would be needed for nonadjacent litter processing facilities.

For purposes of preparing the Financial Plan of this business plan proposal, two scenarios are considered: one is the Cooperative's operation functioning in a single large facility that processes the full annual goal of 45,000 tons; the other is the Cooperative's operation achieving full capacity in three phases, via three buildings, at one site or in multiple locations. The phasing decision can be made based on the circumstances at the time that the Cooperative is ready to procure a facility. The initial location of the

FEASIBILITY STUDY AND BUSINESS PLAN PROPOSAL FOR POULTRY GROWERS OF THE VIRGINIAS TO PROCESS AND SELL A POULTRY LITTER PRODUCT

Cooperative's operation, whether functioning in one large facility or the first site of a phased approach will be discussed below.

Contributing to the location decision is whether geography will factor into obtaining public funding or technical assistance for the operation. For consideration of whether to locate the Cooperative's litter operation (or the first phase of the operation) in West Virginia or Virginia, it appears that there may be slightly less competition for public funding assistance for this agricultural enterprise in West Virginia, than in Virginia, since more of Virginia is within the Chesapeake Bay watershed, and the state has more demand for public funding assistance to reduce nutrient loads. Also Virginia's economy is healthier than West Virginia's, making new business opportunities and jobs more critical in West Virginia.

One proposed means of determining the location the Cooperative's litter operation was to map the operational location of the poultry growers who submitted Letters of Intent (LOI) or provided information on a Sign-In Sheet (to encourage greater participation the LOI was modified as a Sign-In Sheet), which were distributed at two different poultry grower informational meetings, one held in the fall of 2013 and the other in the summer of 2014. Once the poultry operations were mapped, their centroid was determined. Their centroid was found to be west of Route 259, halfway between Bergton and Fulks Run, VA. See map, as Figure 4, below.

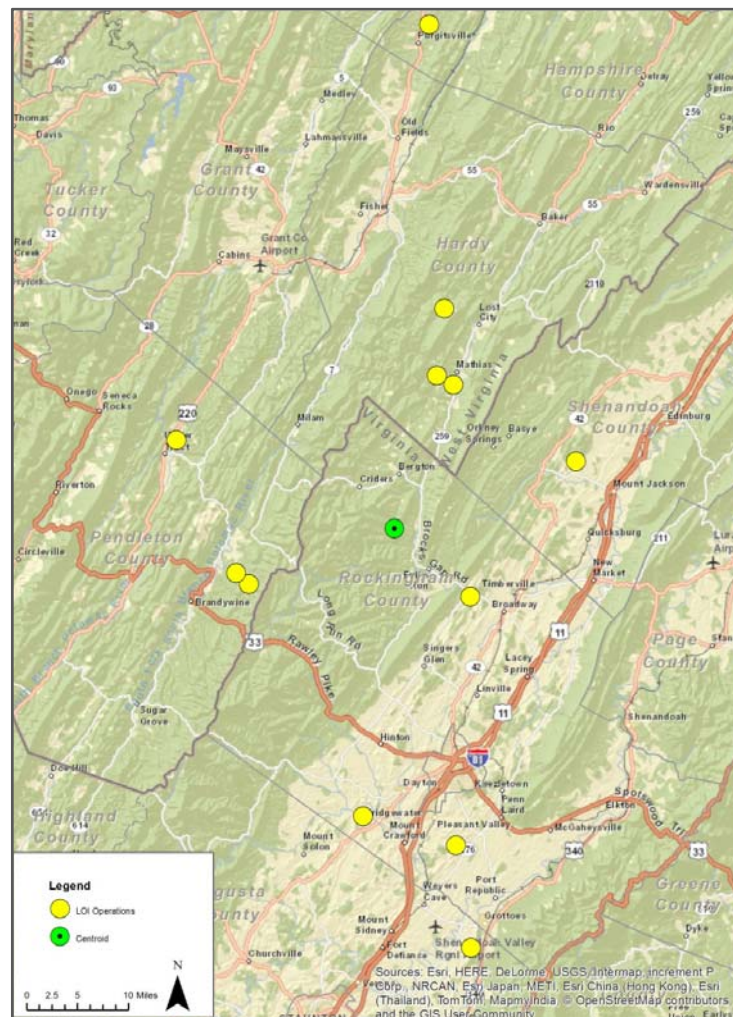


FIGURE 4

**FEASIBILITY STUDY AND BUSINESS PLAN PROPOSAL FOR POULTRY GROWERS OF THE VIRGINIAS TO
PROCESS AND SELL A POULTRY LITTER PRODUCT**

As the transporting of bulk litter has factored into the operational plan of the Cooperative, logistical considerations and the cost of shipping the bulk litter have proved to be of greater importance in locating the Cooperative's litter operation than the centroid of the supply of litter. A recommended location that would be close to the highway system and in the direction of the consumer markets is Moorefield, WV. There is a substantial amount of litter being generated in the concentrated poultry growing areas, so it will be shown that the Cooperative can obtain the annual target goal of 45,000 ton of poultry litter in a 60 mile drive range of the Moorefield area, especially if nutrient management planning reduces the amount of poultry litter that can be applied to local farmland.

Also, the Moorefield area is the approximate centroid of the West Virginia poultry growing operations. A poultry processing plant is already located there. There are also a couple of large existing warehouse buildings in the Moorefield area, if the Cooperative chooses to purchase an already developed property for its operation. If a second or third facility is needed that is closer to the Virginia poultry growing operations, then the recommended location is the Harrisonburg area, which is the approximate centroid of the poultry growing operations of western Virginia. The final location(s) of the operation will depend on the circumstances at the time that the Cooperative is ready to purchase a facility and the on availability and cost of property.

POULTRY LITTER QUANTITIES

The process for collecting raw poultry litter is discussed later in this plan, but it is being proposed that a 60 mile drive range (DR) from the Cooperative's litter operation is a reasonable range to collect the litter. The percentage of land area of each of the nine poultry growing counties that lies within the 60 mile drive range has been estimated using mapping software and is shown in the table below. This percentage is then multiplied by the annual broiler and turkey sales (provided in the previous table, from the 2012 Census' county level data adjusted by the rate of change between 2012 and 2013) to determine the number of birds producing litter. While land area is not necessarily indicative of the dispersement of poultry operations, it is the best available data, since poultry operation addresses are not available.

County	State	Annual Broiler Sales	Annual Turkey Sales	% of County in 60 Mi DR	Broiler Sales in 60 Mi DR	Turkey Sales in 60 Mi DR
GRANT	WV	16,647,200		100	16,647,200	
HAMPSHIRE	WV	8,851,642		100	8,851,642	
HARDY	WV	41,394,545	1,690,462	100	41,394,545	1,690,462
MINERAL	WV	7,239,717		100	7,239,717	
PENDLETON	WV	20,537,645	2,633,157	100	20,537,645	2,633,157
AUGUSTA	VA	19,354,905	4,242,754	5	967,745	212,138
PAGE	VA	28,583,466	3,002,275	5	1,429,173	150,114
ROCKINGHAM	VA	87,666,815	8,021,737	67	58,736,766	5,374,564
SHENANDOAH	VA	23,349,251	1,087,845	80	18,679,401	870,276
Total		253,625,186	20,678,229		174,483,834	10,930,710

The amount of litter produced by the birds located in the 60 mile drive range is determined next. Several varying reports cite the amount of litter produced by one chicken broiler and one turkey, but this business plan proposal will use the quantities cited in the recently issued Downstream Strategies report titled, *Feasibility Study: Poultry Litter Composting in the Potomac Valley Conservation District, West Virginia*.⁹ The report notes that the amount of litter generated annually by broilers is 1.7 pounds per bird and by turkeys is 18 pounds per bird.

When these quantities are applied to the estimated number of broilers and turkeys in the 60 mile drive range, then annual litter production rates are:

- Broilers: 174,483,834 heads x 1.7 lbs/head x 1/2,000 ton/lbs = **148,311 tons**
- Turkeys: 10,930,710 heads x 18 lbs/head x 1/2,000 ton/lbs = **98,376 tons**

EXCESS POULTRY LITTER

Based a 2012 survey of poultry growers that were members of either the Contract Poultry Growers Association of the Virginias or the West Virginia Poultry Association, growers considered about one-third (statistically 0.3367) of their poultry litter to be excess, that is, not needed for their own agricultural production, nor committed to another agricultural producer for local land application. So the amount of excess broiler and turkey litter within the 60 mile drive range that would be available to the poultry litter operation is:

- Broilers: 148,311 tons x 0.3367 = **49,936 tons**
- Turkeys: 98,376 tons x 0.3367 = **33,123 tons**

While these quantities add up to over 83,000 tons of available litter annually, this business plan proposal is using a conservative estimate of 45,000 tons of litter would be available for this first year of the Cooperative's litter operation, with steady increases in production for each of the following years.

OPERATIONS PLAN

OVERVIEW

The Cooperative's litter operation will begin with its employees, using its equipment, collecting and transporting the raw litter from the poultry operations to its facility. A cleanout contractor or poultry grower could also arrange for transport and drop-off of litter at the Cooperative's facility. Once the litter arrives at the Cooperative's facility, it is staged, blended, and deep stacked within the facility for at least four weeks. It is simultaneously marketed and then sold, and when ready, it is shipped in bulk or in super sack bags.

RAW LITTER COLLECTION

If the Cooperative collects the litter, then the process will begin with the poultry grower notifying the Cooperative that litter, of a quantity large enough to fill a dump truck, is available for pick-up. The Cooperative's employee(s) will drive a truck with a specialized trailer (e.g., live bottom agricultural trailer) or a dump truck towing a trailer with a frontend loader to the poultry operation. The driver(s) will follow bio-security measures and will inform the grower of his/her arrival and treat his vehicle tires with iodine.

⁹ Downstream Strategies, *Feasibility Study: Poultry Litter Composting in the Potomac Valley Conservation District, West Virginia*, January 2012.

The litter must already be cleaned out of the poultry house(s) and placed in an accessible, uncontaminated location. The Cooperative will not perform the function of cleaning out the poultry houses. The grower will load the specialized trailer or dump truck. If the grower does not have the equipment to load the trailer or dump truck, then the Cooperative's employee(s) will load it, but they will need to charge a fee for hauling and using the loading equipment and the labor associated with that service. Collection will have to be limited to the size and number of trailers brought to the poultry operation per notification by the grower of available litter. Partial loads that do not fill up a dump truck will be discouraged. The driver will return to the Cooperative's litter operation with a full load of raw poultry litter and will dump it inside the facility in a pre-determined staging area, as directed.

Careful coordination will be needed to manage the collection of the litter. Collection times will be set by appointments to maximize the drivers' time and vehicle usage and to minimize over commitment and resultant overtime or avoid downtime when the drivers and vehicles are sitting idle. This business plan proposal is proposing a collection drive range of 60 miles to be inclusive of a reasonable number of poultry operations in the nine county area. The reality though is that collection from a grower located at the outer range of this driving distance may tie up 4 hours of the driver's time in travel alone (assuming a round trip and an average travel speed of 30 miles per hour by a dump truck towing a trailer with a front-end loader over mountain and country roads).

LITTER DEEP STACKING

The litter will be processed and stored using a deep stack method in a roofed, enclosed building. Raw litter will be brought to the Cooperative's facility and staged based on its source (poultry operation), moisture content, and nutrient value. The moisture content of the litter should be between 20 to 25 percent by weight, so it is not too dry, nor too wet. The latter can lead to excessive heating. Litter from various sources, with moisture content and nutrient values that counter balance each other, will be blended with a large composter. After being blended, the litter will be placed in a designated, walled, approximately 50 foot by 50 foot section or "bin" of the facility.¹⁰ The bin will be labeled and documented as to the source (poultry operations) of the litter, date of placement and other pertinent information. The litter in the bin will be stacked as high as possible (or permitted per structural or insurance requirements) and left undisturbed for at least four weeks. This duration will permit the litter to heat to a temperature of at least 140 degrees Fahrenheit, killing the pathogens in the litter. It is important to limit the amount of oxygen in the litter to avoid overheating and resultant combustion. Limiting the oxygen can be accomplished by packing the litter with a loader or covering it with plastic sheeting. The litter can be stored in this manner for up to five years without the loss of quality.

PREPARATION AND DISTRIBUTION

The litter will be marketed for distribution in bulk (typical trailer for transporting litter can hold approximately 23 to 25 tons, depending on transportation regulations per state) and in one ton super sack bags. Availability of the product in bulk is intended for large agricultural producers, mine reclamation managers, or any other consumer desiring large quantities of litter. Availability in the product in super sack bags is for small agricultural producers, organic producers, and public or private property owners desiring to use an organic soil amendment.

¹⁰ B&D Litter Services, Process per conversation with Denny Brown, September 2014. See also <http://www.bdlitter.com>.

An electronic system will be established to receive orders and payment online. The Cooperative's staff will also receive orders by phone and enter them into the system. The customer will be responsible for the cost of shipping the litter from the Cooperative's operation to its desired destination. The Cooperative's staff will screen and develop a short list of haulers to ship the litter in bulk or bagged. Collecting quotes from several haulers can ensure competitive pricing and service.

BULK DISTRIBUTION

For bulk distribution, the Cooperative will need to plan for peak periods of demand by agricultural producers in the spring and fall. This business plan proposal is assuming that the Cooperative will not own a fleet of trucks and trailers to transport the sold litter, but can establish and recommend a list of haulers and facilitate shipping of the litter. The customer could also pick up the litter with their own vehicles or employ a trusted third party hauler. The use of live bottom [belt] agriculture trailers is recommended. The trailers should have a plastic liner or be made of stainless steel to compensate for the corrosive nature of the litter. The backhauling of another commodity before or after the litter transport is unlikely due to the difficulty of cleaning out the trailer between loads or the timing to collect another load. It is anticipated that the litter will be hauled to the field or site of its use, and, if not immediately used, will be placed on a pad and covered to avoid water runoff. The Cooperative's employees will load the haulers' trailers, collecting the litter from a pre-designated deep stacked bin(s). The hauler's truck and trailer will be weighed before and after loading to determine the weight of the litter purchased and to meet transportation regulations for weight limitations.

Transporting litter in bulk by train is unlikely unless sufficient quantity is purchased to offset the additional handling and management of the litter. To transport in bulk by train with reasonable costs, the Cooperative's operation would need to be located along a rail line, so that the litter could be loaded into the rail hopper cars without the additional expense of trucking it to the rail station. Just as importantly the customer would need a rail siding or arrange for the litter to off-loaded from the rail cars and into a hauler's trailers or dump trucks to transport it to its farm or site. It is unlikely that the litter would be permitted to be off-loaded at the rail yard to await a later pick-up, since it would need to be stored and managed to avoid runoff and loss of nutrients. Similar to the trailers that would haul the litter, the rail cars transporting the litter would need to be plastic lined or made of stainless steel. Cleanout of the rail cars between loads would be difficult and the use of water would contribute to corroding the rail cars.

BAGGED DISTRIBUTION

For bagged distribution, the Cooperative will purchase super sack or similar bags that can hold 1 to 1.25 tons of litter, open and seal at the top, and have a spout in the bottom for ease of use. The bags will be set up so that a frontend loader can fill them with litter while they sit on a pallet on a vibrating table to reduce air pockets, and then weighed. The bags will then be labeled, recorded, and sealed for shipping. The bags can be managed with a forklift or loader and easily transported by any commercial freight hauler in a box or flatbed trailer. The Cooperative can recommend a list of haulers and facilitate shipping of the bagged litter.

PERSONNEL

The Cooperative is anticipated to need the following job titles and skill sets.

- Supervisor/Marketing Representative – This individual will be in charge of the operation of the facility and its employees. The Supervisor/Marketing Representative should be thoroughly knowledgeable of the product and process. He or she will also be in charge of marketing efforts and will set up and implement a marketing plan. This individual is likely to spend a significant

amount of time out of the office introducing the product to agricultural producers, mine reclamation managers, agricultural-related associations, and water quality facilitators. Additionally, the Supervisor/Marketing Representative will oversee the financial performance of the Cooperative's litter operation and will periodically report to its Board of Directors or other management structure.

- **Master Equipment Operator** – This individual should have a working knowledge of the large composter, frontend loader, fork lift truck, scales, vibrating table, and collection trucks and trailers. The Master Equipment Operator will setup the parameters of a collection schedule that can be overseen by the drivers, as well as developing the short list of freight haulers and setting-up the parameters of product pick-up and delivery. This individual will be one of the two primary operators of the Cooperative's equipment and should be able to troubleshoot equipment and vehicle malfunctions and make minor repairs.
- **Equipment Operator** – This individual should possess the skill set to be able to operate the large composter, frontend loader, fork lift truck, scales, vibrating table, and collection trucks and trailers. This operator will move and handle the litter within the facility, mostly with the large composter and frontend loader. He/she will load bulk litter into the freight haulers' trailers. This operator will fill and manage the super sack bags.
- **Three Truck Drivers** – These individuals should possess the skill set to be able to drive a truck pulling a specialized dump trailer, or a dump truck hauling a trailer loaded with a frontend loader over rural and mountain roads, as well as major highways. They also should be able to operate a frontend loader. The drivers need to be vigilant in maintaining bio-security protocols and should be familiar with poultry house clean-out activities and management of litter at poultry operations. They should be able to coordinate the maintenance of the trucks, trailers, and loader.

EQUIPMENT

The Operations Plan includes several pieces of equipment, which are described below.

- **Large Composter** – A large composter is necessary to blend the litter from several sources. This piece of equipment is likely to be approximately 14 feet wide, on tracks. It will have a drum that can evenly blend the litter as it passes over piles from different sources and creates rows of blended material. It will have an ergonomic cab with digital controls.
- **Frontend Loader** – A frontend loader is needed manage, move, and load litter at the Cooperative's facility and a second is needed to scoop the grower's easily accessible piles of litter at their poultry operations into the specialized trailers and dump trucks for hauling it back to the Cooperative's facility. This piece of equipment will likely be a wheeled tractor with a front bucket loader attachment. It will need to have tractor stability, visibility, integrated controls, balanced front axle load, high capacity hydraulics, long reach, high lift capacities, and precise bucket handling.
- **Forklift Truck** – A forklift truck is necessary to lift and manage the super sack bags. Once the bags of litter are on pallets, the forklift truck will transport them to be loaded onto a trailer or placed in a designated storage area of the Cooperative's facility.
- **Truck Scales** – Scales are needed to weigh the collection trucks and their content to determine the weight of the raw litter. Poultry growers will be paid for their raw litter based on weight. The scales will be also be used to weight the trucks hauling the bulk litter to the customers, since the poultry litter product will also be sold by weight.

- Vibrating Table – A vibrating table, with a built-in scale, is necessary to densify and reduce air pockets as the super sack bags are being filled and to weigh them.
- Trucks and Specialized Trailers – Trucks with specialized dump trailers, *e.g.*, live bottom (belt) agriculture trailers, as well as a tandem dump truck, are needed to transport the raw litter from the poultry operations to the Cooperative’s litter operation. The trailers should be sized to carry just under the maximum weight of litter that complies with state transportation regulations. The dump truck is anticipated to have a carrying capacity of approximately 15 tons to enable flexibility in the operation.

OTHER CONSIDERATIONS

BIO-SECURITY

As previously mentioned, it will be important for the Cooperative’s litter operation to establish a set of bio-security measures and enforce them. This will be necessary whether collection of the raw litter is accomplished by the Cooperative’s workforce and equipment or by cleanout contractors that transport the raw litter to the operation. Bio-security measures can aid in the avoidance of virus and other containments being transported from one poultry operation to another. Without these measures, influenza outbreaks can be spread between poultry growing operations, resulting in significant financial impacts to growers, the industry, and ultimately the consumer. The recommended bio-security measures are those published by the WV Department of Agriculture, titled “Poultry Farm Bio-security Measures for WV Vendors.” These measures are attached as Appendix B. Highlights of these measures include:

- All vehicles entering a poultry farm must stop at the farm entrance and fill out the visitor’s log (if available).
- All vendors must disinfect their tires before entering a poultry farm. (10 minute shiny-wet saturation time)
- Personnel driving or riding in a vehicle that goes onto the farm must have protective boots and clean coveralls.
- Either rubber or plastic boots must be put on before getting out of the vehicle and disinfected before leaving operation. Boots must be worn the entire time you are on the farm. Farm employees should not ride in vendor vehicles.
- Entry into the poultry house by the vendor is strictly prohibited.
- When exiting the farm, the disposable boots should be put in receptacle provided at the entrance of the farm. Hands, rubber boots and any tools used on the farm must be washed and disinfected. Vendor must wear clean coveralls between farms.
- Vendor vehicles must be kept clean at all times. Disinfection of tires should occur before entering subsequent farms.
- All single truckloads of poultry litter must be shipped from the same farm. One dump truck load cannot be filled from multiple farms; it must come from the same operation.

REGULATIONS AND FEES

The Cooperative will obtain all required federal, state, and local permits and licenses to operate its facility. It will pay all government-related fees as they are assessed.

FACILITIES PLAN

REQUIREMENTS

To carry out the Operations Plan of this business plan proposal, the Cooperative will need a facility with the characteristics listed below.

- Acreage: Between 8 to 10 acres are needed to carry out the Operations Plan.
- Building Size: Given that the Cooperative intends to process 45,000 tons of litter annually and demand will be cyclical, with peak demand in the spring and fall, it is assumed that the maximum amount of poultry litter to be deep stacked and stored at any one time is 22,500 tons (or 45,000,000 lbs). Given that broiler litter weighs 35.3 lbs per cubic foot (CF) (0.6 lbs per 0.017 CF),¹¹ then 1,275,000 CF of litter needs to be accommodated. If the average height that poultry litter can be stacked is 8 feet, then a building with 160,000 SF of floor area is needed.
- Floor: The building's floor should be non-permeable to contain the litter and able to withstand the constant operation of a frontend loader. A reinforced concrete floor of 6 inch depth is recommended.
- Non-combustible and non-corrosive: The building walls, columns, and underside of the roof (or ceiling) need to be non-combustible since the litter will heat up to temperatures in excess of 140 degrees Fahrenheit, so wood should not be used for the building's structural components. They also need to be non-corrosive given the corrosive nature of the litter. Metal building components that come into contact with the litter may need to be coated and/or monitored for deterioration.
- Ceiling height: The building should have a ceiling height of at least 12 feet to accommodate the stacking of the litter and operation of the frontend loader and large composter.
- Loading areas: It is recommended that a concrete pad be installed in front of the main entrance(s) to the facility to enable ease of unloading and loading and to avoid any litter being lost as stormwater runoff.

OPTIONS

The Cooperative could either purchase an already developed property with an existing building and infrastructure, or it could purchase land and build a new building that would be customized to meet the Cooperative's unique operational needs. These two options are described below.

EXISTING DEVELOPMENT

As noted above, a building with 160,000 SF of floor area is needed to carry out the Operations Plan. In September 2014, no commercial buildings of that size were found to be available in the Moorefield area. There was a 341,000 SF warehouse building in the Moorefield Industrial Park that was vacant, but it did not appear to be on the market. For reference purposes, at the same time a 159,478 SF warehouse building on 17 acres in Luray, WV was on the market for \$1,200,000.

¹¹ University of Missouri Extension, "Storing Poultry Litter," WQ212, <http://extension.missouri.edu/p/WQ212>, (accessed September 2014).

The advantages of purchasing and utilizing an existing building for the Cooperative's litter operation are:

- It typically costs less than new development that requires infrastructure development and the construction of a new building.
- The start-up period is shorter since time is not needed for land development and new construction.
- Lower capital costs translate into lower product pricing.

The disadvantages of existing development are:

- It is likely that an existing building will need repairs and/or renovation to accommodate the Cooperative's litter operation.
- A building of the targeted size, for the right price, may be difficult to find, especially in the desired location.
- If a building of the targeted size for the right price can be found, it may not be centrally located.

NEW DEVELOPMENT

Given the disadvantages of existing development, new development was explored. New development would require the purchasing of land, the installment of infrastructure, and the construction of a new building. Each is described below.

LAND

Between 8 to 10 acres are needed to carry out the Operations Plan. This acreage can accommodate a 160,000 SF building, a concrete pad at the entrance to the building for unloading and loading, employee parking, and a reasonable buffer around the operation. The property should be reasonably flat.

INFRASTRUCTURE

Public water and sewer or well and septic system are needed for employee restroom and kitchen areas, and possibly to water the raw litter before processing. An engineer will need to determine the size and configuration of the septic system and capacity of the well. Gravel areas will be needed for a driveway from the main road to the facility's concrete pad and employee parking area.

BUILDING

The Operations Plan needs to be conducted under roof and out of the weather. The facility size needs to be at least 160,000 SF, or its equivalent, such as three 55,000 SF buildings. A new fabric covered structure, with a reinforced concrete floor and six foot high reinforced concrete side walls, was considered and programmed into the Financial Plan. Fabric covered structures are already used on farms for various agricultural functions. They offer a clear span high roof structure, which is needed for the Cooperative's litter operation. A quote for a fabric covered structure was supplied by Span-Tech and used in the Financial Plan. The structure specified was 110 ft by 500 ft, with a white fabric cover, hot dipped galvanized trusses, roll-up side doors of 18 ft by 18 ft, and air ventilation system.

The advantages of developing a property and constructing a new building are:

- A new building can be adapted to the specific needs of the Cooperative's operation.
- It is easier to find vacant property in a desired location and construct a suitable building on it than to find an existing suitable building in a desired location.

The disadvantages of new property and new construction are:

- It can cost significantly more to purchase property, install infrastructure, and construct a new building than to purchase existing development.
- The start-up period is longer, since time is needed for land development and new construction.
- Higher development costs translate into higher product pricing.

EXISTING INDUSTRIAL PARKS

The Moorefield area (Hardy County) is the proposed location for the Cooperative's litter operation and the Hardy County Rural Development Authority (HCRDA) has fully developed industrial and business parks to accommodate new or existing business expansion needs. The HCRDA currently has four business/industrial parks for the Cooperative's consideration. Three of these four parks are located within the greater Moorefield area and are described as follows:

- Moorefield Industrial Park - The Moorefield Industrial Park is located in the South Branch Valley one-half mile south of Moorefield on U.S. Route 220. This land is located above the 100-year flood plain and is zoned for industrial use. The park is built-out, but it does contain the 341,000 SF warehouse building described above.
- Robert C. Byrd-Hardy County Industrial Park - The Robert C. Byrd-Hardy County Industrial Park is located on West Virginia Route 55, approximately one mile from the town of Moorefield. The total industrial tract acreage is 160, with 70 acres fully developed, located above the 100-year flood plain, and zoned for industrial use.
- Baker Business Park - The Baker Business Park is located in Baker, WV adjacent to Corridor H. This land is situated above the 100-year flood plain and is zoned for industrial/business use.

For more information, visit HCRDA's website at <http://www.hardycountywv.com/index.html>.

PHASING

For the existing and the new development, the Cooperative's litter operation could be ramped up in phases. For existing development, two or three buildings in two or three separate locations could be obtained over time. As previously noted, this would likely reduce the cost to collect the litter supply, but would increase some operational costs since staff and equipment could not be shared among separate locations. For new development, two or three new buildings could be constructed over time on the same property or in two or three separate locations. Two to three buildings in one location would lessen some operational costs, but not the cost to collect the litter. Two or three buildings in separate locations would likely reduce the cost to collect the litter supply, but would increase some operational costs that could not be shared in separate locations.

MARKETING PLAN

TARGET MARKETS

A poultry litter soil amendment product is integral to promoting a more sustainable approach to managing and improving soil health, as well as a means for the agricultural and surface mining industries to address water quality issues regulated under the Clean Water Act and other applicable laws. Three key markets are identified as targets for the Cooperative's marketing efforts. These target markets are:

- **Agricultural Producers, within a cost competitive distance**, with nutrient deficient soils that can use the poultry litter soil amendment as a supplement or alternative to their chemical fertilizer usage.
- **Certified Organic Producers** that can use the poultry litter as a superior soil amendment to increase product yields, enhance pastureland and forage production, and promote their products as being fertilized with an organic, sustainable product.
- **Mine Reclamation Managers** that need to reclaim abandoned mined lands can use the poultry litter soil amendment to enhance and restore soil conditions to their former state before the mining occurred.

Each of these markets affords the Cooperative with a strong demand potential for its poultry litter product, which would be marketed to each as an organically-derived soil amendment.

AGRICULTURAL PRODUCERS WITHIN A COST COMPETITIVE DISTANCE

It is assumed that some fraction of the agricultural producers, currently using chemical fertilizers on their crop and pasture lands, will be interested in using the poultry litter soil amendment as a supplement or replacement, if its delivered cost does not exceed the delivered cost of chemical fertilizers of an equivalent nutrient value. The following diagram, as Figure 5, illustrates this assumption.

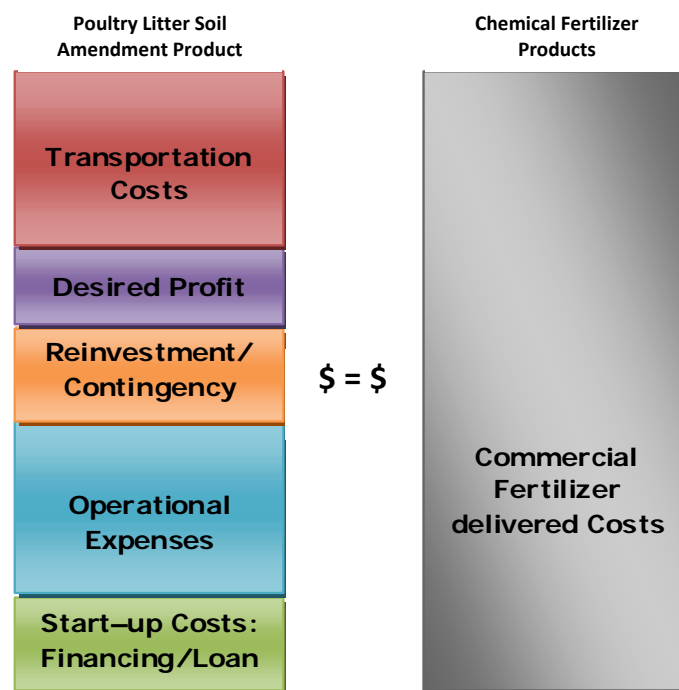


FIGURE 5

As previously noted, the cost to produce chemical fertilizers is heavily dependent on the price of gas and oil and the increasing worldwide demand for the chemicals used in the fertilizers. An upward trend in the retail price of chemical fertilizers has occurred over the past decade, but is currently stabilized or declining. To determine the cost of N-P-K chemical fertilizers products of a nutrient value equivalent to

poultry litter, the Oklahoma Litter Market's Nutrient Value Calculator was used.¹² For the poultry litter product an average nutrient composition value of 60-60-60 (N-P-K) lbs per ton was inputted into the calculator, along with the current (mid-September 2014) prices for Urea (46-0-0), Diammonium Phosphate (DAP) (18-46-0), and Potash (0-0-60), *i.e.*, \$545/ton, \$610/ton, and \$495 ton respectively, as reported by FarmFuture's Weekly Fertilizer Review for September 3, 2014,¹³ plus \$30 per chemical for transportation costs. The Calculator derived the Total Nutrient Value per Ton of Litter as \$83.09/ton. This is approximately the price that a group of Ohio farmers reported during a stakeholder meeting¹⁴ that they were willing to pay for a ton of delivered litter.

To determine the Cooperative's asking price for the poultry litter soil amendment, several factors must be considered such as the cost to buy the raw poultry litter supply, fuel the operation's vehicles, buy the super sack bags, and other operating expenses such as salaries, utilities, supplies, and taxes. These costs are not anticipated to have the volatility associated with the cost of chemical fertilizers, but are anticipated to have a steady gradual increase over time. Just as important as the Cooperative's pricing of their soil amendment product is the consideration of the cost to transport the product from the Cooperative's litter operation to the customer's farm or site, since the poultry litter product is produced in one geographic location. There is a geographical distance at which the cost to produce the poultry litter soil amendment and ship it exceeds the cost of using chemical fertilizers of equivalent nutrient value. Within this range the poultry litter soil amendment is an economical supplement or alternative to chemical fertilizers. Beyond this geographical distance the agricultural producer would be paying extra for the soil and water quality enhancement properties of the poultry litter product. As will be shown in the Financial Plan, the cost to produce a ton of the poultry litter soil amendment, sustain the Cooperative's litter operation, and market the product has been calculated to be \$34.48 per ton. So if the poultry litter soil amendment is priced at \$34.48 per ton and the equivalent nutrient value of chemical fertilizer is \$83.09, then transportation cost should not exceed \$48.61 per ton.

Hauling costs for bulk poultry litter are currently running an average of \$0.16 per ton per mile. Given this transportation cost, then the poultry litter soil amendment product can competitively be hauled a distance of 300 miles from the proposed location of the Cooperative's litter operation in the Moorefield, WV area. A 300 mile drive range from Moorefield, WV is shown in the map, as Figure 6, below. This range covers all of West Virginia, Virginia, Maryland, and Delaware, almost all of Pennsylvania, half of Ohio, and portions of Kentucky, North Carolina, and New York.

¹² Oklahoma State Extension, Oklahoma Litter Market, Fertilizer Value Calculator, www.ok-littermarket.org/calculator.asp, (accessed September 2014).

¹³ FarmFutures, <http://farmfutures.com/mdfm/Faress1/author/252/2014/9/WFertR090314.pdf>, (Accessed September 19, 2014).

¹⁴ Meeting with representatives of the Ohio Corn & Wheat Growers Association, Delaware, OH, November 21, 2013.

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FIGURE 6

OHIO AND WEST VIRGINIA AGRICULTURAL PRODUCERS

Key markets within this 300 mile drive range are the agricultural producers in Ohio and the western portions of West Virginia outside the Chesapeake Bay watershed. It is proposed that the Cooperative could sell 70 percent or 31,500 tons of its poultry litter product to the Ohio agricultural producers market alone. According to USDA Economic Research Service's 2010 Agricultural Resource Management Survey data on Farm Financial and Crop Production Practices for Ohio for "previous crop harvested," the following acreage was treated with chemical fertilizers:

Previous crop harvested	Total Acreage	Acreage within the 300 mile DR
Acres treated with N	3,485,128	1,742,564
Acres treated with P2O5	3,150,034	1,575,017
Acres treated with K2O	2,892,396	1,446,198

Given this data, if the poultry litter product was applied at an application rate of one ton (containing 60 pounds of P₂O₅ per ton) per acre, then if agricultural producers replaced chemical P₂O₅ with poultry litter for two percent of the Ohio acreage treated with this chemical, then all of the 31,500 tons (70% of the product line) would be consumed by this one market.

To test this target market supposition, meetings with representatives of the Ohio Corn & Wheat Growers Association (OCWGA) were held on August 10, 2012 and November 21, 2013, at the OCWGA's headquarters in Delaware, OH. The purpose of the meetings was to discuss the benefits of poultry litter as a soil amendment and gauge potential interest by OCWGA's producer members to supplement their commercial fertilizer application with poultry litter. OCWGA representatives expressed their concern about long-term increases in chemical fertilizer costs, which are impacting the profitability of farming operations and forcing farmers to increase their soil conservation practices and consider alternative sources of nutrients, such as poultry litter. During the second visit, they also strongly recommended the Cooperative provide a bulk litter product rather than a wrapped baled litter product (that was proposed in an earlier version of this Business Plan Proposal issued on October 12, 2012) to achieve greater efficiency in the land application process and to reduce packaging waste.

Both West Virginia poultry growers and Ohio grain producers have a unique commitment to addressing their respective water quality issues governed by the Clean Water Act. West Virginia poultry growers are challenged by the increasing need to properly manage the runoff or dispersion of the nutrients of their poultry litter, which is contributing to the Chesapeake Bay's water quality issues. Similarly, Ohio grain producers are challenged to mitigate over-application and runoff of dissolved reactive phosphorous found in both chemically and organically-derived fertilizers that are contributing to Hazardous Algae Blooms affecting Grand Lake St. Mary's, Lake Erie and other Ohio waters. The OCWGA is paying particularly close attention to the Chesapeake Bay TMDL requirements and the means by which Bay watershed farmers are effectively managing their operations to control impacts on water quality and help the agricultural sector attain its overall nutrient loading standards. Similar to chemical fertilizers, poultry litter also requires a nutrient management strategy, but unlike chemical fertilizers, it provides an unmatched benefit to cropland soils since it is organically derived and its organic matter and microorganism composition greatly enhances soil properties and water retention capabilities. The poultry litter product affords Ohio grain producers with a more sustainable solution to achieving both their production and profitability needs, while protecting Ohio's waterways through the appropriate nutrient management strategies.

A meeting was also held with the West Virginia Farm Bureau (WVFB) on August 6, 2014 to discuss potential interest by its members in the use of a poultry litter soil amendment as an alternative to chemical fertilizers. WVFB representatives believed that there would be strong interest in the use of the poultry litter product, since the soil in the western portion of the state could use the nutrient enrichment of the litter. One of the past challenges to transferring the litter westward in WV had been the lack of a reliable source of poultry litter and haulers to transport the litter. The Cooperative's litter operation would be that reliable source, and the Cooperative would strive to engage existing haulers to transport the product with regularity and encourage new haulers to take advantage of this business opportunity.

An important first step to reaching the agricultural producer target market will be for the Supervisor/Marketing Representative to focus his/her efforts on reaching out to Ohio's agricultural producers and to develop a strong relationship with the OCWGA to inform their membership of the advantages of using the poultry litter product as an alternative or supplement to chemical fertilizers and to address water quality and sustainable agricultural issues. Similarly, the Supervisor/Marketing Representative needs to work with the WVFB to reach its consumer base and inform them of the availability, advantages, and low cost of the poultry litter soil amendment compared to chemical

fertilizers. This effort can be augmented by collaborating with the West Virginia University Cooperative Extension and leveraging its extensive poultry litter management expertise.

CERTIFIED ORGANIC PRODUCERS

According to the USDA, “Organic is a labeling term that indicates that the food or other agricultural product has been produced through approved methods that integrate cultural, biological, and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity.”¹⁵

There is significant growth potential in the U.S. organic industry as identified and published by the Organic Trade Association:¹⁶

- The U.S. organic industry grew at a rate of nearly eight percent in 2010, bucking the current trend whereby “flat is the new growth” for many other segments of the economy. In 2010, the organic industry grew to over \$28.6 billion (up 9.7 percent from 2009). With 7.7 percent growth during 2010, organic food outpaced the growth of total food sales, which stagnated at only 0.6 percent. The organic industry continues to gain in total market share, climbing to 4 percent of the \$673 billion food industry in 2010.
- Mass market retailers (mainstream supermarkets, club/warehouse stores, and mass merchandisers) in 2010 sold 54 percent of organic food. Natural retailers were next, selling 39 percent of total organic food sales. Other sales occur via export, the Internet, farmers’ markets/Community Supported Agriculture, mail order, and boutique and specialty stores.

Organic producers form a strong target market for use of a poultry litter soil amendment product. A meeting with the Ohio Ecological Food and Farm Association (OEFFA) on November 22, 2014 in Columbus, OH confirmed that there is a desire to use poultry litter in organic production. According to an OEFFA case study on organic methods to maintain soil fertility, poultry litter can be used to meet optimal nitrogen needs and, in one instance, the application was approximately two tons of litter per acre.¹⁷ It is proposed that the Cooperative could sell 20 percent or 9,000 tons of its annual production directly to certified organic farm operations within its 300 mile drive range.

¹⁵ U.S. Department of Agriculture, National Organic Program, <http://www.ams.usda.gov/AMSv1.0/ams.fetchTemplateData.do?template=TemplateA&navID=NOPHomeLinkNOPOrganicStandards&rightNav1=NOPHomeLinkNOPOrganicStandards&topNav=&leftNav=&page=NOPNationalOrganicProgramHome&resultType=&acct=nop>, (Accessed August 28, 2012).

¹⁶ Organic Trade Association. Industry Statistics and Project Growth, <http://www.ota.com/organic/mt/business.html>, (Accessed August 28, 2012).

¹⁷ Ohio Ecological Food and Farm Association, <http://www.oeffa.org/fwc.php?sjt=fwc7>, (Accessed September 2014).

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According to the USDA Economic Research Service, 12,880 certified organic farms existed in the United State in 2011, comprising 5,383,119 acres of organic farmland (latest available data).¹⁸ A conservative estimate is that approximately 1,250 farms and 158,242 acres of the nation's total certified organic farms and farmland are located within the Cooperative's 300 mile drive range. See map, as Figure 7, below. If the organic producers applied the poultry litter soil amendment at a conservative rate of one ton per acre, then the Cooperative would only need to create a market for its usage on six percent of the organic farmland located within its 300 mile drive range.

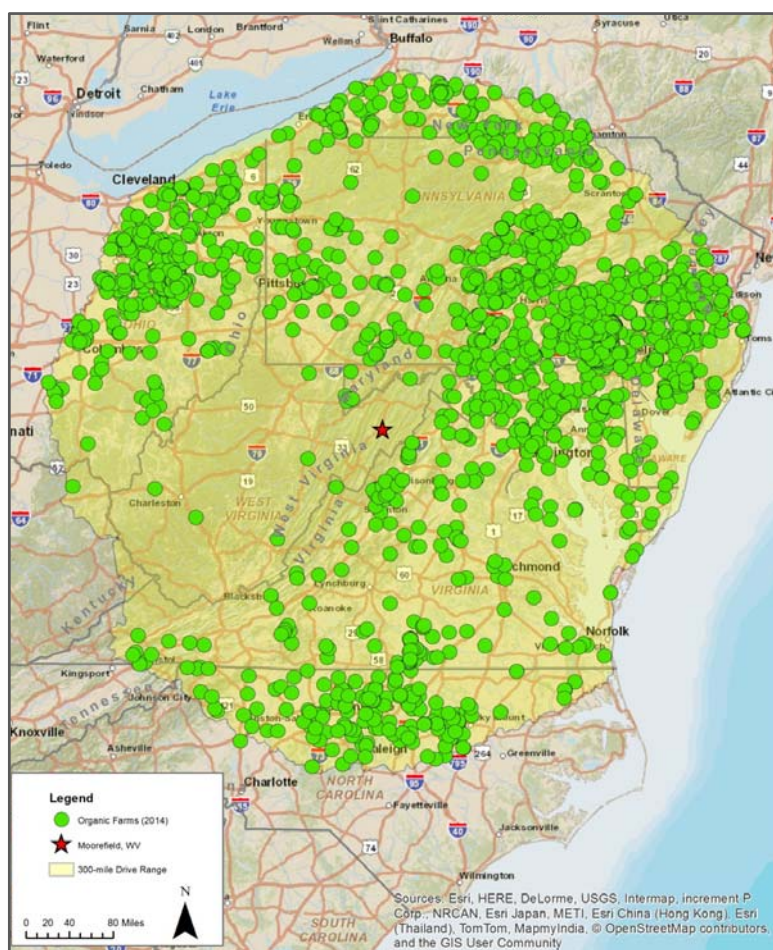


FIGURE 7

This premise is supported by the Organic Materials Review Institute's (OMRI) published list of products for approved organic production and processing, which identifies two suppliers offering a composted poultry litter-based soil amendment: Nilsen Farms (Wilton, CA) and Foster Farms (Livingston, CA). These OMRI listed suppliers are large industrial-scale poultry (both chicken and turkey) growers that collect raw litter from multiple sites at different locations, which is similar to the Cooperative's supply chain model. Foster Farms, for example, is similar to Perdue and Tyson in that it utilizes multiple hatchery and "grow-out

¹⁸ USDA, Economic Research Service, Table 2, U.S. Certified Organic Farmland Acreage, Livestock Numbers, and Farm Operations, 1992-2011, <http://www.ers.usda.gov/data-products/organic-production.aspx#25766>, (Accessed September 2014).

ranches” from which its raw litter is supplied to produce its OMRI Listed soil amendment product. The California-based OMRI listed suppliers use a time-consuming composting process to produce their poultry litter products. In contrast, the Cooperative’s poultry litter deep stacking process is simple, efficient, and the business plan proposal provides a solid platform for its success in the marketplace. The opportunity for the Cooperative to have its poultry litter product approved and listed as a soil amendment for organic production is feasible and having competition from only two suppliers, both California-based, creates a significant opportunity for demand of the product.

An important first step in reaching this target market is to engage OMRI and have the poultry litter soil amendment product reviewed and tested in order to receive the “OMRI Listed® Seal” for ultimate inclusion on the OMRI Products List. Compared to other OMRI Listed products (both synthetic and non-synthetic), poultry litter does not require a complicated manufacturing process and raw litter serves as the single ingredient for the poultry litter product. OMRI testing is conducted on the finished product and not on the individual raw litter supply. The process for OMRI product review and certification is straightforward and fully explained through its website. The cost of the certification process is dependent on the company’s total gross sales for the past year and on the type of product to be reviewed. Once achieved, the Cooperative would then have permission to utilize the “OMRI Listed® Seal” on its poultry litter product and would receive national and international recognition by certified organic producers as an approved soil amendment.

MINE RECLAMATION MANAGERS

Mine reclamation activities within Appalachia can serve as a target market for the Cooperative to sell its poultry litter product. The value of using poultry litter as a soil amendment for the reclamation of mined lands is well-documented in research studies published by a number of professional entities including the Conservation Fund,¹⁹ Pennsylvania Environmental Council (PEC) and Penn State University (PSU),²⁰ Alabama Agricultural Experiment Station (AAES),²¹ and West Virginia University Extension (see footnote citations). The PEC/PSU and AAES studies, for example, applied significant quantities (e.g., 10 – 20 tons per acre) of poultry litter to establish a suitable soil medium for the successful revegetation and reforestation of abandoned surface mines in Pennsylvania and Alabama, respectively.

In a conversation with a US Office of Surface Mining (OSM) representative, she cautioned that there is substantial regulation associated with permitting and reclamation plans if trying to encourage the use of a poultry litter soil amendment for active mines. Poultry litter’s use is not familiar to most mine operators and permit reviewers, and it would likely be challenged. She advised that best opportunity for overcoming this lack of familiarity and demonstrating the value of poultry litter as a soil amendment would be to encourage researchers to submit a project to OSM’s National Technology Transfer Team Applied Science Program. She strongly suggested that the better opportunity for poultry litter soil amendment usage is by abandoned mine reclamation managers in West Virginia and nearby states. The

¹⁹ Scott Van de Mark and Dr. Richard Stehouwer, “Converting Poultry Manure from Waste to Resource: Using Manure and Paper Mill Waste to Reclaim Abandoned Mine Lands in Pennsylvania,” in *A Sustainable Chesapeake: Better Models for Conservation*, ed. David G. Burke and Joel E. Dunn, The Conservation Fund, 2010.

²⁰ Scott Van de Mark, *Excess Manures for Mine Reclamation and Biofuel Production Report*, Pennsylvania Environmental Council, September 29, 2011.

²¹ Jeff L. Sibley, William A. Dozier, Jr., James O. Donald, David G. Himelrick, John H. Wilhoit, and E. S. Lyle, Jr., “Poultry Litter Looks Promising in Surface Mine Land Reclamation,” *Highlights of Agricultural Research* 43, 2 (Summer 1996), <http://www.aaes.auburn.edu/comm/pubs/highlightsonline/summer96/litter.htm>, (ACCESSED AUGUST 23, 2012).

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Cooperative should set a goal of selling 10 percent or 4,500 tons of its poultry litter product to this target market.

According to OSM's Abandoned Mine Land Inventory System (e-AMLIS)²², there exists approximately 138,000 acres of abandoned mine land located within the 300 mile drive range as shown on the map, as Figure 8, below.

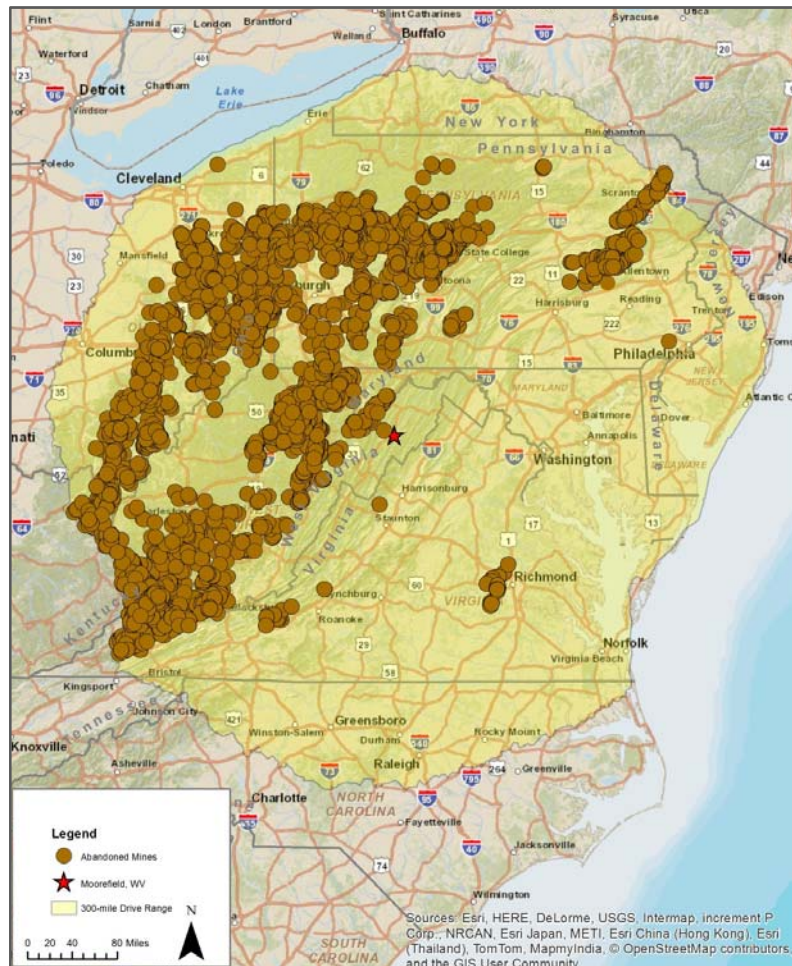


FIGURE 8

Discussions with state mining and reclamation representatives from Pennsylvania and West Virginia suggests that poultry litter has the potential to supplement or replace the use of commercial fertilizers (typically a 10-20-20 blend) and pulverized lime currently being used in the mine land reclamation process. They noted that the benefits of poultry litter's use will need to be sufficiently justified, since their most important factors for choosing a soil amendment are performance and cost. The Cooperative, with possible assistance via university research and demonstration projects, will need to demonstrate the superior performance and reasonable cost of using poultry litter soil amendment as a partial replacement for chemical fertilizers. Pennsylvania's Abandoned Mine Reclamation Program managers have already

²² US Office of Surface Mining, Abandoned Mine Land Inventory System (e-AMLIS), <http://amlis.osmre.gov/Default.aspx>, (Accessed September 2014).

used alternative soil amendments, including poultry litter. For example, mulches (e.g., paper) are used in addition to lime and fertilizer to increase soil fertility and achieve optimal vegetation coverage. Pennsylvania's use of alternative soil amendments increases the opportunity for the Cooperative to directly market its poultry litter product to mine reclamation managers.

PROMOTIONAL STRATEGY

The Cooperative's promotion strategy for the three target markets previously described will entail the following communications approaches, which the Supervisor/Marketing Representative will implement and continuously monitor their effectiveness.

WEBSITE

The Cooperative should develop and maintain a dynamic and interactive website that will serve as a publicly accessible site for information that can educate potential customers about benefits and uses of the poultry litter product, supply the Cooperative's business philosophy and management, and provide detailed information about the product, including how to purchase it and coordinate its shipping. Fact sheets on the poultry litter soil amendment product will be posted and contact information for the Supervisor/Marketing Representative will be made readily available. The intent will be to make online product information, ordering, and shipping information readily available to the customer and online payment as easy as possible.

IN-PERSON SITE VISITS

To develop strong relationships with potential customers (i.e., farmers helping farmers, etc.) in the target markets, the Supervisor/Marketing Representative should conduct in-person sales meetings. Time spent meeting and educating agricultural producers, organic producers, and surface mine managers will be invaluable.

DIRECT ADVERTISING

Direct mail advertising should be another strategy to market, brand, and sell the poultry litter product. One-page fact and specifications sheets on the Cooperative's poultry litter soil amendment product should be published in both hard copy and electronic format for mass distribution at trade shows, sales meetings, educational seminars, and on the website.

TRADE ORGANIZATION MEMBERSHIP

The Cooperative should become a member of select organizations representing the interests of its target market. The Cooperative should also actively participate in these organizations' annual trade shows and conferences to educate and disseminate information on its product to target audiences.

START-UP CONSIDERATIONS AND COSTS

SUGGESTED TIMELINE

The following timeline is proposed for consideration and looks at the option of purchasing an already developed property with an existing building. If the Cooperative elects to construct a new building, an additional year should be added for installing new infrastructure, designing the new structure, obtaining permits, and constructing the new building.

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- 11/01/14 – 04/30/15 Identify and support a project champion and hold additional meetings with poultry growers to discuss commitment, priorities, and collaborative entity structure
- 11/01/14 – 04/30/15 Engage legal counsel to set up the collaborative entity structure
- 11/01/14 – 04/30/15 Explore grant and loan financing
- 11/01/14 – 10/31/15 Research existing development and building options
- 05/01/15 – 10/31/15 Establish the Cooperative or other collaborative entity, obtain patronage commitments and membership fees
- 05/01/15 – 10/31/15 Obtain grant and loan financing
- 11/01/15 – 01/31/16 Purchase existing development with suitable building for the Cooperative's litter operation
- 11/01/15 – 02/29/16 Hire Supervisor/Marketing Representative, who begins the marketing efforts and sets up the Cooperative's operation
- 01/31/16 – 02/29/16 Hire Master Equipment Operator and then remaining employees
- 03/01/16 Begin collecting and processing the litter

ESTABLISH COOPERATIVE AND OBTAIN FINANCING

The steps to establish the Cooperative have been previously discussed. As it is being established, those forming the Cooperative should investigate grant and loan financing opportunities. Several grant and financing opportunities are outlined later in this Financial Plan. Understanding financing opportunities is critical to making decisions and proceeding with the next steps of starting up the Cooperative's litter operation. It will be important for the Cooperative's principals to meet with USDA and other potential funding agency officials to educate them on the Cooperative's litter operation and its goals and benefits. Once the Cooperative is established, obtain patronage commitments for the litter supply and collect membership fees from the new poultry grower members.

PURCHASE PROPERTY

Also, once the Cooperative is established, every effort should be directed towards obtaining grants and loans. As this effort is underway, available property for the litter operation should be scouted with a local realtor(s). It would be advantageous to find an existing warehouse-type building that is available for sale and reuse in the target location of the vicinity of Moorefield, WV. If the Cooperative elects to purchase land and construct a new building, its principals should look for land of the size previously discussed (8 to 10 acres) and at a reasonable price. The site should be near a roadway that has capacity for trucks and trailers. If public utilities are not located within a reasonable distance of the site, then the site should be able to perk so a septic system can be installed. Once adequate grant and loan financing is obtained, purchase the property.

HIRE STAFF

Once the existing development is purchased or as the real estate transaction is being processed, the Cooperative should proceed with advertising, interviewing, and hiring the position of Supervisor/Marketing Representative. This person will need some time to develop a website and marketing materials and to begin to cultivate customers. They can also help to determine if any renovations are needed for an existing building and can supervise the setting up of the operation. When there is reasonable assurance that the Cooperative can become fully operational in approximately one to two months, then the Cooperative should advertise, interview, and hire the remaining staff positions.

OTHER START-UP REQUIREMENTS

LEGAL/ADMINISTRATIVE

The Cooperative is anticipated to incur various legal fees and administrative costs during the start-up of the operation. The legal fees will be associated with setting up the Cooperative's incorporation documents and implementing them. Legal fees may also be incurred to help the Cooperative navigate any regulations associated with selling the poultry litter product in West Virginia and other states.

Administrative costs will include registering to do business with the WV Secretary of State's Office and registration with the WV Tax Department. These registrations will be among the Supervisor/Marketing Representative's many duties.

ZONING AND REGULATIONS

The assumption is that the Cooperative litter operation will be located in Hardy County, WV, so if the Cooperative chooses new development, it will need to adhere to the following county regulations related to land development and new construction:

- Improvement Location Permit Ordinance – zoning ordinance approval by the County Planner and the Planning Commission.
- Subdivision and Land Develop Ordinance – if applicable

It is likely that the operation will be located outside Hardy County's public sewer district, so the property development will include drilling a well and constructing an individual sewer system. To construct these utility features, the Cooperative will need to adhere to the regulations associated with:

- Individual and on-site sewage systems, titled, Title 64, Series 47, Sewage Treatment and Collection System Design Standards
- Water wells, titled, Title 64, Series 19, Water Well Regulations

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START-UP COSTS

Most of the start-up costs are outlined below for the scenario of existing development with an existing building. They include the property and building costs, equipment costs, supplies, and administrative and marketing costs. Operating capital and financing costs are shown in the Financial Plan.

Property and Building	Costs
Existing building	\$1,125,000
Land	\$60,000
Infrastructure	\$15,000
Subtotal	\$1,200,000
Equipment and Vehicles	Costs
Large Composter	\$135,000
Front Loader	\$45,000
Forklift Truck	\$30,000
Truck Scales & Vibrating Table	\$40,000
Washer Unit	\$50,000
Front Loader	\$45,000
Loader Trailer	\$15,000
Two Trucks to haul Specialized Trailers	\$100,000
Two (Specialized) Live Bottom Ag Trailers	\$50,000
One 15-ton Tandem Dump Truck	\$50,000
Subtotal	\$560,000
Supplies/Administrative/Marketing	Costs
Plastic Pallets	\$1,000
Legal Fees	\$5,000
Licenses	\$500
Salaries during Start-up Period	\$59,459
Computers/Office Supplies	\$2,000
Office Furniture	\$2,000
Marketing Materials	\$2,000
Website Development	\$2,500
Subtotal	\$74,459

FEASIBILITY STUDY AND BUSINESS PLAN PROPOSAL FOR POULTRY GROWERS OF THE VIRGINIAS TO PROCESS AND SELL A POULTRY LITTER PRODUCT

FINANCIAL PLAN

The Financial Plan reports provided here are for Year One of the Cooperative's litter operation. Years Two to Five of applicable financial reports are included as Appendix C.

START-UP COSTS

Here is the big picture of the start-up costs that were previously discussed. A portion of the Cooperative membership fees, assumed to total \$270,000, are used for the 20 percent down payment for the mortgage and vehicle loans. The remainder of the membership fees and a USDA Rural Development Value-Added Producer Grant for \$270,000 comprise the operating capital.

Required Start-Up Funds	Amount	Totals	Depreciation	Notes
Fixed Assets				
Real Estate-Land	\$ 75,000			land + infrastructure
Buildings	1,125,000		30.00 years	building + accessories + delivery + assembly + foundation + fit-out
Leasehold Improvements	-		7.00 years	
Equipment	106,000		10.00 years	scales + vibrating table + trailer + wash unit
Furniture and Fixtures	2,000		5.00 years	office furniture
Vehicles	456,000		5.00 years	large compostor + forklift + 2 trucks & trailers + dump truck + 2 front loader
Other Fixed Assets	3,000		5.00 years	pallets + computers/office equipment
Total Fixed Assets		<u>1,765,000</u>		
Operating Capital				
Pre-Opening Salaries and Wages	69,469			salaries before opening
Prepaid Insurance Premiums	-			
Inventory	-			
Legal and Accounting Fees	5,000			legal
Rent Deposits	-			
Utility Deposits	-			
Supplies	-			
Advertising and Promotions	4,500			marketing materials + website development
Licenses	500			licenses
Other Initial Start-Up Costs	-			
Working Capital (Cash On Hand)	225,541			
Total Operating Capital		<u>295,000</u>		
Total Required Funds		<u><u>\$ 2,060,000</u></u>		

Sources of Funding	Amount	Totals	Loan Rate	Term in Months	Monthly Payments
Owner's Equity	13.11%	270,000			
Outside Investors	34.95%	720,000			
Additional Loans or Debt					Assuming 180 members @ \$1,500 per member \$450,000 equipment & vehicle grant + \$270,000 grant
Commercial Loan	0.00%	-	5.25%	120.00	\$0.00 Balance of Equipment after grant
Commercial Mortgage	46.60%	960,000	5.25%	360.00	\$5,301.16 80% of Real Estate-Land and Buildings
Credit Card Debt	0.00%	-	0.00%	60.00	\$0.00
Vehicle Loans	5.34%	110,000	5.25%	60.00	\$2,088.46 Vehicles cost after deducting grant; interest rate @ prime + 1.0%
Other Bank Debt	0.00%	-	0.00%	60.00	\$0.00 Furniture and Fixtures and Other Fixed Assets; interest rate @ prime + 1.0%
Total Sources of Funding	100.00%	<u><u>\$ 2,060,000</u></u>			<u><u>\$7,389.61</u></u>

FINANCING START-UP COSTS

COOPERATIVE MEMBER BUY-IN

As previously noted, the Cooperative will collect a membership fee from each of its voting poultry grower members. This income is anticipated to sum to \$270,000 (180 members contributing \$1,500 each). The best uses of this capital is as down payment for loans and match for grants and should only be used if it will leverage the attainment of additional funding.

GRANTS

Since just over \$2 million is needed for the start-up costs and Cooperative membership fees need to be kept at a reasonable rate, the Cooperative must seek grants and loans to start-up and begin its operation. The most desirable form of financing is grants. All grants described below should be pursued, but for purposes of this business plan proposal, it is assumed that the Cooperative is most likely to receive a USDA Rural Development Program – Value-Added Producer Working Capital Grant for \$270,000 (the amount of match funding that the Cooperative has on-hand) and a National Fish & Wildlife Foundation Chesapeake Bay Stewardship Fund – Innovative Nutrient and Sediment Reduction Grant for \$450,000 for assistance in purchasing the needed equipment and vehicles.

National Fish & Wildlife Foundation Chesapeake Bay Stewardship Fund – Innovative Nutrient and Sediment Reduction Grants: \$200,000 to \$500,000

The National Fish and Wildlife Foundation awards Chesapeake Bay Innovative Nutrient and Sediment Reduction Grants of between \$200,000 and \$500,000 each to demonstrate innovative approaches to accelerate adoption of the most cost effective and sustainable nutrient and sediment pollution load reductions to the Chesapeake Bay and its tributaries. The fund seeks to invest in innovative methods and new technologies that hold the promise to drive down costs, expand the effectiveness of restoration practices, and accelerate the pace of recovery. Listed as one of the fund's priority funding strategies is "Find market-based solutions to resolve challenges associated with managing manure in regions with phosphorous-saturated soils."

USDA Rural Development Program Value-added Producer Grants: Working Capital Grant with a 1:1 Match

The primary objective of the Value-Added Producer Grant (VAPG) program is to help agricultural producers enter into value-added activities related to the processing and/or marketing of bio-based, value-added products. Generating new products, creating and expanding marketing opportunities, and increasing producer income are the end-goals of this program. Among program priorities are farmer or rancher cooperatives. Eligible working capital expenses include processing costs, marketing and advertising expenses, and some inventory and salary expenses directly related to the value-added project. Grant funds cannot be used to purchase property or construct facilities, or to purchase equipment. Grants are awarded on a competitive basis and have 1:1 match requirements.

USDA Natural Resources Conservation Services (NRCS) – Financial Assistance: up to \$450,000

NRCS offers voluntary programs to eligible landowners and agricultural producers to provide financial and technical assistance to help manage natural resources in a sustainable manner. Through these programs the agency approves contracts to provide financial assistance to help plan and implement conservation practices that address natural resource concerns or opportunities to help save energy, improve soil, water, plant, air, animal and related resources on agricultural lands and non-industrial private forest land. Listed below are two NRCS financial assistance programs that might help support the start-up and/or

operation of the Cooperative's litter operation. For more information, those setting up and overseeing the Cooperative's litter operation should visit their local USDA Service Center.

Conservation Innovation Grants (CIG) is a voluntary program intended to stimulate the development and adoption of innovative conservation approaches and technologies while leveraging the Federal investment in environmental enhancement and protection, in conjunction with agricultural production. CIG is a vehicle to stimulate the adoption of conservation approaches or technologies that have been studied sufficiently to indicate a likelihood of success, and are likely candidates for eventual technology transfer. CIG will fund projects targeting innovative on-the ground conservation, including pilot projects and field demonstrations. Proposed projects must conform to the description of innovative conservation projects or activities published in the funding notice. CIG funds are subject to the \$300,000 payment limitation.

The Environmental Quality Incentives Program (EQIP) is a voluntary program that provides financial and technical assistance to agricultural producers through contracts up to a maximum term of ten years in length. These contracts provide financial assistance to help plan and implement conservation practices that address natural resource concerns and for opportunities to improve soil, water, plant, animal, air and related resources on agricultural land and non-industrial private forestland. In addition, a purpose of EQIP is to help producers meet Federal, State, Tribal and local environmental regulations. Payment limitations are set at \$450,000. It may be possible for a group of eligible producers may each submit a joint application, if they have the exact same resource concern, practices, etc. that landowners share in common. The Cooperative should discuss the applicability of this program with the NRCS.

Appalachian Regional Commission

The Appalachian Regional Commission (ARC) is a regional economic development agency that represents a partnership of federal, state, and local government. Established by an act of Congress in 1965, ARC is composed of the governors of the 13 Appalachian states and a federal co-chair, who is appointed by the president. Local participation is provided through multi-county local development districts. ARC funds projects that address the four goals identified in the Commission's strategic plan:

- Increase job opportunities and per capita income in Appalachia to reach parity with the nation.
- Strengthen the capacity of the people of Appalachia to compete in the global economy.
- Develop and improve Appalachia's infrastructure to make the Region economically competitive.
- Build the Appalachian Development Highway System to reduce Appalachia's isolation.

Each year, ARC provides funding for several hundred projects in the Appalachian Region, in categories such as business development, education and job training, telecommunications, infrastructure, community development, housing, and transportation. These projects create thousands of new jobs, improve local water and sewer systems, increase school readiness, expand access to health care, assist local communities with strategic planning, and provide technical and managerial assistance to emerging businesses. Grants range from \$50,000 - \$500,000, and a match is usually required.

Among the types of ARC grants are: Start-Up Grant (also known as "seed money") that fund start-up costs, rather than ongoing expenses; Project Grants that fund a specific program or project; Operating Grants that fund the cost of an ongoing program; Restricted Grants that fund a specific part of a program or project; Challenge Grants that match funds raised through other sources; and In-kind Grants that provide contributions other than a direct cash grant. All proposals should begin by setting up a meeting with the director/staff of the Local Development District where the project will be located.

Pew Charitable Trusts / Pew Environmental Group

A private philanthropic trust, Pew's Environmental Group has extensive coverage and research devoted to the reduction of nutrient run-off into the Chesapeake Bay as a result of poultry production in the Delmarva region. Pew's focus is on scientific research. Direct grants to the Cooperative are unlikely; however, funding may be channeled through the Cooperative Extension Service.

Blue Moon Fund

Blue Moon Fund is a private philanthropic foundation that makes grants to nonprofit organizations (including cooperatives). Grant applications are by invitation only, but inquiries are entertained online. Blue Moon Fund provided funding for the January 2012 feasibility study conducted by Downstream Strategies titled, *Poultry Litter Compositing in the Potomac Valley Conservation District, West Virginia*.

LOANS

The Cooperative will need to finance the remainder of the start-up costs, not covered by grants, with a loan(s). It appears that a USDA Rural Development Business and Industry Guaranteed Loan (maximum percent of guarantee is 80 percent) may be the best loan financing instrument available, given the risks associated with this type of business. It has favorable terms compared to a conventional commercial loan, especially relative to loan duration and collateral requirements. Descriptions of this loan instrument and one other are provided below.

USDA Rural Development Program: Business and Industry (B&I) Guaranteed Loans: Maximum Percentage of Guarantee is 80 Percent for Loans of \$5 Million or less

The USDA Rural Development B&I Guaranteed Loan Program aims to improve, develop, or finance business, industry, and employment, and to improve the economic and environmental climate in rural communities. Borrowers can include cooperative organizations, corporations, partnerships, or other legal entity organized and operated on a profit or nonprofit basis. A borrower must be engaged in or proposing to engage in a business that will: provide employment; improve the economic or environmental climate; promote the conservation, development, and use of water for aquaculture; or reduce reliance on nonrenewable energy resources. B&I loans are available in rural areas, which include all areas other than cities or towns of more than 50,000 people and the contiguous and adjacent urbanized area of such cities or towns.

B&I loans may be used for business and industrial acquisitions if the loan will, among other things, provide expanded job opportunities; purchase and develop land, easements, rights-of-way, buildings, or facilities; or purchase equipment, leasehold improvements, machinery, supplies, or inventory.

The percentage of guarantee, up to the maximum allowed, is a matter of negotiation between the lender and the agency. The maximum percentage of guarantee is 80 percent for loans of \$5 million or less, 70 percent for loans between \$5 and \$10 million, and 60 percent for loans exceeding \$10 million. The maximum repayment for loans on real estate will not exceed 30 years; machinery and equipment repayment period will not exceed the useful life of the machinery and equipment purchased with loan funds or 15 years, whichever is less; and working capital repayment will not exceed 7 years.

Interest rates will be negotiated between the lender and the applicant and may be either fixed or variable, as long as it is a legal rate. Interest rates are subject to USDA review and approval. The variable interest rate may be adjusted at different intervals during the term of the loan, but the adjustments may not be more often than quarterly. Collateral must have documented value and the discounted collateral value will normally be at least equal to the loan amount. Lenders will discount collateral consistent with

sound loan-to-value policy. An annual renewal fee – a specified percentage – is established by Rural Development and is published in the Federal Register. It is paid once yearly and is required to maintain the enforceability of the guarantee as to the lender. The rate will be the rate in effect at the time the loan is obligated, and will remain in effect for the life of the loan. Applications are submitted to the USDA Rural Development State Office.

Farm Bureau Bank Equipment Loans

The Farm Bureau Bank provides competitive loan rates for new and used equipment. Up to 90 percent financing is available for new equipment and 85 percent for used equipment. Information on the loan program is available at <https://www.farmbureaubank.com/EquipmentLoans>.

PRODUCT PRICING

Various considerations and assumptions have gone into the pricing of the poultry litter soil amendment product. They include start-up costs, financing activities, and annual product costs and expenses. They also include three scenarios where the Cooperative purchases: 1) an already developed property with an existing building; 2) vacant land and constructs three 55,000 SF fabric covered structures, adjacent to each other on one parcel; or 3) vacant land and constructs one of the three 55,000 SF fabric covered structures, while the other two structures are phased in over time. These considerations, assumptions, and scenarios are shown in the spreadsheet on the following page. Two chief objectives of this pricing strategy are 1) to ensure that a net income is realized each year so that a portion of it can be returned to the Cooperative members as a patronage refund; and 2) to keep the price of the product competitive with that of chemical fertilizers within a sizeable drive range of the Cooperative's litter operation.

FINANCIAL REPORTS

The following reports for Year One of the Cooperative's litter operation in existing development and a five year summary are included after the product pricing spreadsheet:

- Operational Costs – Salaries and Wages
- Operational Costs – Fixed Operating Expenses
- Projected Sales Forecast – Year One
- Projected Income Statement – Year One
- Projected Cash Flow Statement – Year One
- Projected Cash Flow Statement – Assumptions of Cash Receipts and Disbursements
- Projected Balance Sheet – Year One
- Breakeven Analysis
- Business Ratios
- Year End Summaries – Five Years

CONCLUDING REMARKS

Given the assumptions that have been built into the business plan proposal and after review of this Financial Plan, it can be concluded that if the Cooperative, or other collaborative entity, is formed and able to obtain technical support and financial assistance through grants and loans, then it has been demonstrated that it has the opportunity to maintain a positive cash flow, increase net income over time, offer patronage refunds to members, provide an alternative to local land application of the litter, and provide a value-added, sustainable, economical product to agricultural and organic producers and mine reclamation managers within a reasonable distance of the operation.

FEASIBILITY STUDY AND BUSINESS PLAN PROPOSAL FOR POULTRY GROWERS OF THE VIRGINIAS TO PROCESS AND SELL A POULTRY LITTER PRODUCT

		Scenario Estimates			Notes and Assumptions
Start-up Costs		Existing Building	3 New Bldgs: Full Build Out	Phased 1st New Bldg: Year 1	
Property	Land	\$60,000	\$60,000	\$60,000	Based on market research
	Infrastructure	\$15,000	\$15,000	\$15,000	Water and sewer hook-ups; driveway and parking
Building	Existing or New Building	\$1,125,000	\$2,844,165	\$948,055	Example existing bldg, 160,000 SF warehouse, Luray, VA
	Offices and Restrooms	\$0	\$10,000	\$10,000	Office, bathrooms, breakroom
	Subtotal	\$1,200,000	\$2,929,165	\$1,033,055	
Equipment					
COOP Facility	Front Loader	\$45,000	\$45,000	\$45,000	Used, heavy duty
	Truck Scales & Vibrating Table	\$40,000	\$40,000	\$40,000	Used, truck scales
	Truck Wash Unit	\$50,000	\$50,000	\$50,000	
	Forklift Truck	\$30,000	\$30,000	\$30,000	Used, heavy duty
Collection	Large Composter	\$135,000	\$135,000	\$135,000	New
	Front Loader	\$45,000	\$45,000	\$0	Used, heavy duty
	Loader Trailer	\$15,000	\$15,000	\$0	Used
	Two Trucks to haul Specialized Trailers	\$100,000	\$100,000	\$50,000	Used
	Two (Specialized) Live Botton Ag Trailers	\$50,000	\$50,000	\$25,000	Used
	One 15-ton Tandem Dump Truck	\$50,000	\$50,000	\$0	Used
	Subtotal	\$560,000	\$560,000	\$375,000	
Supplies/Administrative/Office Set-up/Marketing					
	Plastic Pallets for Super Sacks	\$1,000	\$1,000	\$1,000	
	Legal Fees	\$5,000	\$5,000	\$5,000	
	Licenses	\$500	\$500	\$500	
	Salaries during Start-up Period	\$59,459	\$59,459	\$18,793	
	Computers/Office Supplies	\$2,000	\$2,000	\$2,000	
	Office Furniture	\$2,000	\$2,000	\$2,000	
	Marketing Materials	\$2,000	\$2,000	\$2,000	
	Website Development	\$2,500	\$2,500	\$2,500	
	Subtotal	\$74,459	\$74,459	\$33,793	
Financing Activities					
Equity					
COOP Investor:	Assuming 180 members @ \$1,500 per member	\$270,000	\$270,000	\$270,000	
Grants					
USDA Grant	Assuming a Value-Added Grant for Set-up costs	\$270,000	\$270,000	\$270,000	
Bay Grant	Assuming a Grant for Equipment & Vehicles	\$450,000	\$450,000	\$275,000	
Loans	Assuming a USDA B&I Guaranteed Loans				
	Vehicles Annual Payment	\$25,061	\$25,061	\$0	Financing of \$110,000 with a 5 yr loan @ 5.25%
	Building/Mortgage Annual Payment	\$63,614	\$154,749	\$54,234	Financing of 80% with a 30 yr loan @ 5.25%
	Loans Subtotal	\$88,675	\$179,811	\$54,234	
Annual Product Cost					
Payroll	including salaries, benefits, and taxes				
	Supervisor/Marketing Representative	\$96,100	\$96,100	\$32,033	
	Master Equipment Operator	\$49,969	\$49,969	\$16,656	
	Equipment Operator	\$36,966	\$36,966	\$0	
	Truck driver - litter collection	\$36,966	\$36,966	\$36,966	
	Truck driver - litter collection	\$36,966	\$36,966	\$0	
	Truck driver - litter collection	\$36,966	\$36,966	\$0	
	Subtotal	\$293,932	\$293,932	\$85,655	
Fuel, Supplies, and Other					
Variable	Equipment Fuel	\$145,625	\$145,625	\$48,542	Incl. daily trips of 240 miles, 250 days, 8 mpg. at \$4.25/gal
	Super Sacks	\$70,773	\$70,773	\$23,591	
	Utilities (incl. electricity, water, sewer)	\$45,000	\$45,000	\$15,000	
	Payment for Litter Supply @\$15/ton	\$675,000	\$675,000	\$225,000	Assuming a supply of 45,000 tons
Fixed	Equipment Maintenance/Parts	\$13,000	\$13,000	\$13,000	
	Insurance	\$25,000	\$25,000	\$25,000	
	Office Supplies/Equipment	\$2,000	\$2,000	\$2,000	
	Telecommunications/Website	\$3,600	\$3,600	\$3,600	
	Property Taxes	\$12,000	\$29,300	\$10,300	
	Miscellaneous	\$10,000	\$10,000	\$10,000	
	Subtotal	\$1,001,998	\$1,019,298	\$376,033	
Other Expenses					
	Interest	\$55,381	\$127,541	\$42,693	
	Taxes	\$16,373	\$16,686	\$10,399	
	Depreciation	\$140,000	\$225,208	\$78,602	
	Amortization	\$23,153	\$23,153	\$9,598	
	Subtotal	\$234,907	\$392,588	\$141,292	
Product Cost Subtotal		\$1,530,838	\$1,705,818	\$602,980	
Targeted First Year Net Income					
	Subtotal	\$20,662	\$20,662	\$20,662	
Grandtotal		\$1,551,500	\$1,726,481	\$623,642	
Pricing of Product per ton		\$34.48	\$38.37	\$41.58	
	Production Output (tons)	45,000	45,000	15,000	

FEASIBILITY STUDY AND BUSINESS PLAN PROPOSAL FOR POULTRY GROWERS OF THE VIRGINIAS TO PROCESS AND SELL A POULTRY LITTER PRODUCT

OPERATIONAL COSTS – SALARIES AND WAGES

**Poultry Growers Cooperative - Poultry Litter Soil Amendment Production
Salaries and Wages**

Salaries and Related Expenses	#	Assumptions	Wage Base	Monthly	Year One	Year Two	Year Three	Year Four	Year Five
Percent Change						3.00%	3.00%	3.00%	3.00%
Salaries and Wages									
Owner's Compensation	0			\$ -	-	-	-	-	-
Salaries	6			18,674	224,089	230,812	237,736	244,868	252,214
Total Salaries and Wages	6			18,674	224,089	230,812	237,736	244,868	252,214
Payroll Taxes and Benefits									
Social Security		6.20%	\$ 102,000	1,158	13,894	14,310	14,740	15,182	15,637
Medicare		1.45%		271	3,249	3,347	3,447	3,551	3,657
Federal Unemployment Tax (FUTA)		0.80%	\$ 7,000	28	336	336	336	336	336
State Unemployment Tax (SUTA)		2.70%	\$ 12,000	162	1,944	1,944	1,944	1,944	1,944
Employee Pension Programs		5.00%		934	11,204	11,204	11,204	11,204	11,204
Worker's Compensation		0.00%		-	-	-	-	-	-
Employee Health Insurance		10.00%		1,867	22,409	23,081	23,774	24,487	25,221
Other Employee Benefit Programs		7.50%		1,401	16,807	17,311	17,830	18,365	18,916
Total Payroll Taxes and Benefits				5,820	69,843	71,534	73,275	75,069	76,916
Total Salaries and Related Expenses				24,494	293,932	302,345	311,011	319,937	329,131

FEASIBILITY STUDY AND BUSINESS PLAN PROPOSAL FOR POULTRY GROWERS OF THE VIRGINIAS TO PROCESS AND SELL A POULTRY LITTER PRODUCT

OPERATIONAL COSTS – FIXED OPERATING EXPENSES

Poultry Growers Cooperative - Poultry Litter Soil Amendment Production Fixed Operating Expenses

Fixed Operating Expenses	Monthly	Year One	Year Two	Year Three	Year Four	Year Five	Notes
Percent Change			3.00%	3.00%	3.00%	3.00%	
Expenses							
Advertising	\$ -	-	-	-	-	-	
Car and Truck Expenses	1,083	13,000	13,390	13,792	14,205	14,632	equipment maintenance = \$13,000 / 12 months
Bank & Merchant Fees	-	-	-	-	-	-	
Contract Labor	-	-	-	-	-	-	
Conferences & Seminars	-	-	-	-	-	-	
Customer Discounts and Refunds	-	-	-	-	-	-	
Dues and Subscriptions	-	-	-	-	-	-	
Miscellaneous	833	10,000	10,300	10,609	10,927	11,255	miscellaneous = \$10,000 / 12 months
Insurance (Liability and Property)	2,083	25,000	25,750	26,523	27,318	28,138	insurance = \$25,000 / 12 months
Licenses/Fees/Permits	-	-	-	-	-	-	
Legal and Professional Fees	-	-	-	-	-	-	
Office Expenses & Supplies	167	2,000	2,060	2,122	2,185	2,251	office supplies = \$2,000 / 12 months
Postage and Delivery	-	-	-	-	-	-	
Rent (on business property)	-	-	-	-	-	-	
Rent of Vehicles and Equipment	-	-	-	-	-	-	
Sales & Marketing	-	-	-	-	-	-	
Taxes-Other	1,000	12,000	12,360	12,731	13,113	13,506	taxes-other = \$12,000 / 12 months
Telephone and Communications	300	3,600	3,708	3,819	3,934	4,052	telecommunications = \$3,600 / 12 months
Travel	-	-	-	-	-	-	
Utilities	-	-	-	-	-	-	
Total Expenses	5,467	65,600	67,568	69,595	71,683	73,833	
Other Expenses							
Depreciation	11,667	140,000	140,000	140,000	140,000	140,000	
Interest							
Commercial Loan	-	-	-	-	-	-	
Commercial Mortgage	4,173	50,077	49,349	48,582	47,774	46,980	
Line of Credit	-	-	-	-	-	-	
Credit Card Debt	-	-	-	-	-	-	
Vehicle Loans	442	5,304	4,241	3,122	1,942	698	
Other Bank Debt	-	-	-	-	-	-	
Total Other Expenses	16,282	195,381	193,591	191,704	189,716	187,678	
Total Fixed Operating Expenses	21,748	260,981	261,159	261,299	261,398	261,512	

FEASIBILITY STUDY AND BUSINESS PLAN PROPOSAL FOR POULTRY GROWERS OF THE VIRGINIAS TO PROCESS AND SELL A POULTRY LITTER PRODUCT

PROJECTED SALES FORECAST

Poultry Growers Cooperative - Poultry Litter Soil Amendment Production Projected Sales Forecast

Products and Services	Assumptions	%	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Totals
Litter Product															
Price Per Unit	\$ 34.48	100.00%													
Variable Cost Per Unit	\$ 20.81	60.35%													
Gross Margin Per Unit	\$ 13.67	39.65%													
Projected Unit Sales															
Seasonality Factor			5.00%	13.30%	13.40%	13.30%	5.00%	5.00%	5.00%	10.00%	10.00%	10.00%	5.00%	5.00%	100.00%
Year One			2,250	5,985	6,030	5,985	2,250	2,250	2,250	4,500	4,500	4,500	2,250	2,250	45,000
Year Two Growth	5.00%		2,363	6,284	6,332	6,284	2,363	2,363	2,363	4,725	4,725	4,725	2,363	2,363	47,250
Year Three Growth	5.00%		2,481	6,598	6,648	6,598	2,481	2,481	2,481	4,961	4,961	4,961	2,481	2,481	49,613
Year Four Growth	5.00%		2,605	6,928	6,980	6,928	2,605	2,605	2,605	5,209	5,209	5,209	2,605	2,605	52,093
Year Five Growth	5.00%		2,735	7,275	7,330	7,275	2,735	2,735	2,735	5,470	5,470	5,470	2,735	2,735	54,698
Overhead Exp Allocation	100.00%														
Year 1 Breakeven Summary															
Projected Revenue	\$ 1,551,500														
Variable Costs	936,398														
Gross Margin	615,102														
Overhead Expenses	554,913														
Profit	60,189	3.88%													
Breakeven Sales Revenue			\$ 1,399,683.68												
Breakeven Sales Units			40,597												
			1,491,311												
			\$ 1,781,109												
			289,798												
Year 1 Variable Cost Calculation															
Equipment Fuel	\$ 145,625														
Super Saks	\$ 70,773														
Utilities	\$ 45,000														
Litter Supply Payment	\$ 675,000														
Total Variable Costs	\$ 936,398														
Total Production 45,000 tons (units)															
Variable Cost per Unit \$ 20.81 per unit															

FEASIBILITY STUDY AND BUSINESS PLAN PROPOSAL FOR POULTRY GROWERS OF THE VIRGINIAS TO PROCESS AND SELL A POULTRY LITTER PRODUCT

PROJECTED INCOME STATEMENT – YEAR ONE

	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Totals
Income													
Litter Product	77,575	206,349	207,901	206,349	77,575	77,575	77,575	155,150	155,150	155,150	77,575	77,575	1,551,500
Product/Service B	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Income	77,575	206,349	207,901	206,349	77,575	77,575	77,575	155,150	155,150	155,150	77,575	77,575	1,551,500
Cost of Sales													
Litter Product	46,820	124,541	125,477	124,541	46,820	46,820	46,820	93,640	93,640	93,640	46,820	46,820	936,398
Product/Service B	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Cost of Sales	46,820	124,541	125,477	124,541	46,820	46,820	46,820	93,640	93,640	93,640	46,820	46,820	936,398
Gross Margin	30,755	81,809	82,424	81,809	30,755	30,755	30,755	61,510	61,510	61,510	30,755	30,755	615,102
Salaries and Wages													
Owner's Compensation	-	-	-	-	-	-	-	-	-	-	-	-	-
Salaries	18,674	18,674	18,674	18,674	18,674	18,674	18,674	18,674	18,674	18,674	18,674	18,674	224,089
Full-Time Employees	-	-	-	-	-	-	-	-	-	-	-	-	-
Part-Time Employees	-	-	-	-	-	-	-	-	-	-	-	-	-
Independent Contractors	-	-	-	-	-	-	-	-	-	-	-	-	-
Payroll Taxes and Benefits	5,820	5,820	5,820	5,820	5,820	5,820	5,820	5,820	5,820	5,820	5,820	5,820	69,843
Total Salary and Wages	24,494	24,494	24,494	24,494	24,494	24,494	24,494	24,494	24,494	24,494	24,494	24,494	293,932
Fixed Business Expenses													
Advertising	-	-	-	-	-	-	-	-	-	-	-	-	-
Car and Truck Expenses	1,083	1,083	1,083	1,083	1,083	1,083	1,083	1,083	1,083	1,083	1,083	1,083	13,000
Bank & Merchant Fees	-	-	-	-	-	-	-	-	-	-	-	-	-
Contract Labor	-	-	-	-	-	-	-	-	-	-	-	-	-
Conferences & Seminars	-	-	-	-	-	-	-	-	-	-	-	-	-
Customer Discounts and Refunds	-	-	-	-	-	-	-	-	-	-	-	-	-
Dues and Subscriptions	-	-	-	-	-	-	-	-	-	-	-	-	-
Miscellaneous	833	833	833	833	833	833	833	833	833	833	833	833	10,000
Insurance (Liability and Property)	2,083	2,083	2,083	2,083	2,083	2,083	2,083	2,083	2,083	2,083	2,083	2,083	25,000
Licenses/Fees/Permits	-	-	-	-	-	-	-	-	-	-	-	-	-
Legal and Professional Fees	-	-	-	-	-	-	-	-	-	-	-	-	-
Office Expenses & Supplies	167	167	167	167	167	167	167	167	167	167	167	167	2,000
Postage and Delivery	-	-	-	-	-	-	-	-	-	-	-	-	-
Rent (on business property)	-	-	-	-	-	-	-	-	-	-	-	-	-
Rent of Vehicles and Equipment	-	-	-	-	-	-	-	-	-	-	-	-	-
Sales & Marketing	-	-	-	-	-	-	-	-	-	-	-	-	-
Taxes-Other	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	12,000
Telephone and Communications	300	300	300	300	300	300	300	300	300	300	300	300	3,600
Travel	-	-	-	-	-	-	-	-	-	-	-	-	-
Utilities	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Fixed Business Expenses	5,467	5,467	5,467	5,467	5,467	5,467	5,467	5,467	5,467	5,467	5,467	5,467	65,600
Other Expenses													
Amortized Start-up Expenses	1,929	1,929	1,929	1,929	1,929	1,929	1,929	1,929	1,929	1,929	1,929	1,929	23,153
Depreciation	11,667	11,667	11,667	11,667	11,667	11,667	11,667	11,667	11,667	11,667	11,667	11,667	140,000
Interest	-	-	-	-	-	-	-	-	-	-	-	-	-
Commercial Loan	-	-	-	-	-	-	-	-	-	-	-	-	-
Commercial Mortgage	4,200	4,195	4,190	4,185	4,181	4,176	4,171	4,166	4,161	4,156	4,151	4,146	50,077
Line of Credit	-	-	-	-	-	-	-	-	-	-	-	-	-
Credit Card Debt	-	-	-	-	-	-	-	-	-	-	-	-	-
Vehicle Loans	481	474	467	460	453	446	439	431	424	417	410	402	5,304
Other Bank Debt	-	-	-	-	-	-	-	-	-	-	-	-	-
Taxes	-	5,228	9,151	8,999	(3,763)	(3,762)	(3,761)	3,929	3,930	3,932	(3,756)	(3,755)	16,373
Total Other Expenses	18,277	23,494	27,405	27,240	14,466	14,455	14,445	22,122	22,111	22,100	14,401	14,389	234,907
Net Income	(17,483)	28,354	25,058	24,607	(13,672)	(13,661)	(13,651)	9,427	9,438	9,449	(13,607)	(13,595)	20,662

**FEASIBILITY STUDY AND BUSINESS PLAN PROPOSAL FOR POULTRY GROWERS OF THE VIRGINIAS TO PROCESS AND SELL A POULTRY LITTER
PRODUCT**

PROJECTED CASH FLOW STATEMENT – YEAR ONE

	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Totals
Beginning Cash Balance	225,541	195,673	193,741	211,092	255,860	288,052	292,860	286,265	287,152	299,455	323,615	340,292	
Cash Inflows													
Income from Sales	54,302	144,445	145,531	144,445	54,302	54,302	54,302	108,605	108,605	108,605	54,302	54,302	1,086,050
Accounts Receivable	-	15,515	49,027	62,215	62,060	36,150	23,272	23,272	38,787	46,545	46,545	31,030	434,420
Total Cash Inflows	54,302	159,960	194,558	206,660	116,362	90,452	77,575	131,877	147,392	155,150	100,847	85,332	1,520,470
Cash Outflows													
Investing Activities													
New Fixed Assets Purchases	-	-	-	-	-	-	-	-	-	-	-	-	-
Inventory Addition to Bal.Shee	-	-	-	-	-	-	-	-	-	-	-	-	-
Cost of Sales	46,820	124,541	125,477	124,541	46,820	46,820	46,820	93,640	93,640	93,640	46,820	46,820	936,398
Operating Activities													
Salaries and Wages	24,494	24,494	24,494	24,494	24,494	24,494	24,494	24,494	24,494	24,494	24,494	24,494	293,932
Fixed Business Expenses	5,467	5,467	5,467	5,467	5,467	5,467	5,467	5,467	5,467	5,467	5,467	5,467	65,600
Taxes	-	-	14,380	-	-	1,473	-	-	4,099	-	-	(3,579)	16,373
Financing Activities													
Loan Payments	7,390	7,390	7,390	7,390	7,390	7,390	7,390	7,390	7,390	7,390	7,390	7,390	88,675
Line of Credit Interest	-	-	-	-	-	-	-	-	-	-	-	-	-
Line of Credit Repayments	-	-	-	-	-	-	-	-	-	-	-	-	-
Dividends Paid	-	-	-	-	-	-	-	-	-	-	-	10,331	10,331
Total Cash Outflows	84,171	161,892	177,208	161,892	84,171	85,644	84,171	130,990	135,089	130,990	84,171	90,923	1,411,310
Cash Flow	(29,868)	(1,932)	17,350	44,768	32,192	4,808	(6,596)	887	12,303	24,160	16,677	(5,590)	109,160
Operating Cash Balance	195,673	193,741	211,092	255,860	288,052	292,860	286,265	287,152	299,455	323,615	340,292	334,701	
Line of Credit Drawdowns	-	-	-	-	-	-	-	-	-	-	-	-	-
Ending Cash Balance	195,673	193,741	211,092	255,860	288,052	292,860	286,265	287,152	299,455	323,615	340,292	334,701	
Line of Credit Balance	-	-	-	-	-	-	-	-	-	-	-	-	-

**FEASIBILITY STUDY AND BUSINESS PLAN PROPOSAL FOR POULTRY GROWERS OF THE VIRGINIAS TO PROCESS AND SELL A POULTRY LITTER
PRODUCT**

PROJECTED CASH FLOW STATEMENT – ASSUMPTIONS OF CASH RECEIPTS AND DISBURSEMENTS

Accounts Receivable Collections

Percent of Collections

0 to 30 days	70.00%
31 to 60 days	20.00%
More than 60 days	10.00%
Total Collections Percentage	100.00%

Accounts Payable Disbursements

Number of Days to Pay Suppliers

0 to 30 days	100.00%
31 to 60 days	0.00%
More than 60 days	0.00%
Total Disbursements Percentage	100.00%

Line of Credit Assumptions

Desired Minimum Cash Balance	\$	-
Line of Credit Interest Rate		8.00%

Income Tax Assumptions

Effective Income Tax Rate	25.00%
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Amortization of Start-Up Expenses

Amortization Period in Years	3.00
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**FEASIBILITY STUDY AND BUSINESS PLAN PROPOSAL FOR POULTRY GROWERS OF THE VIRGINIAS TO PROCESS AND SELL A POULTRY LITTER
PRODUCT**

PROJECTED BALANCE SHEET – YEAR ONE

	<u>Base Period</u>	<u>End of Year One</u>
Assets		
Current Assets		
Cash	225,541	334,701
Accounts Receivable	-	31,030
Inventory	-	-
Prepaid Expenses	69,459	46,306
Other Current	-	-
Total Current Assets	<u>295,000</u>	<u>412,037</u>
Fixed Assets		
Real Estate-Land	75,000	75,000
Buildings	1,125,000	1,125,000
Leasehold Improvements	-	-
Equipment	105,000	105,000
Furniture and Fixtures	2,000	2,000
Vehicles	455,000	455,000
Other Fixed Assets	3,000	3,000
Total Fixed Assets	<u>1,765,000</u>	<u>1,765,000</u>
Less: Accumulated Depreciation	-	140,000
Total Assets	<u><u>2,059,999</u></u>	<u><u>2,037,036</u></u>
 Liabilities and Owner's Equity		
Liabilities		
Accounts Payable	-	-
Loan Payable	-	-
Mortgage Payable	960,000	946,463
Credit Card Debt	-	-
Vehicle Loans	110,000	90,243
Other Bank Debt	-	-
Line of Credit Balance	-	-
Total Liabilities	<u>1,070,000</u>	<u>1,036,706</u>
Owner's Equity		
Common Stock	990,000	990,000
Retained Earnings	-	20,662
Dividends Dispersed	-	10,331
Total Owner's Equity	<u>990,000</u>	<u>1,000,331</u>
Total Liabilities and Owner's Equity	<u><u>2,060,000</u></u>	<u><u>2,037,037</u></u>

**FEASIBILITY STUDY AND BUSINESS PLAN PROPOSAL FOR POULTRY GROWERS OF THE VIRGINIAS TO PROCESS AND SELL A POULTRY LITTER
PRODUCT**

BREAK-EVEN ANALYSIS

Breakeven Analysis	Dollars	Percent
Annual Sales Revenue	\$ 1,551,500	100.00%
Cost of Sales	936,398	60.35%
Gross Margin	<u>615,102</u>	<u>39.65%</u>
 Salaries and Wages	293,932	
Fixed Operating Expenses	<u>260,981</u>	
Total Fixed Business Expenses	554,913	
 Breakeven Sales Calculation	<u>554,913</u>	
	39.65%	
 Breakeven Sales in Dollars	<u><u>\$ 1,399,684</u></u>	

**FEASIBILITY STUDY AND BUSINESS PLAN PROPOSAL FOR POULTRY GROWERS OF THE VIRGINIAS TO PROCESS AND SELL A POULTRY LITTER
PRODUCT**

BUSINESS RATIOS

Ratio	Year One	Year Two	Year Three
Liquidity			
Current Ratio	0.4	0.5	0.7
Quick Ratio	0.4	0.5	0.7
Safety			
Debt to Equity Ratio	1.0	1.0	0.9
Debt to Coverage Ratio	0.2	0.2	0.3
Profitability			
Sales Growth	0.0%	9.2%	9.2%
COGS to Sales	60.4%	59.8%	59.2%
Gross Profit Margin	39.6%	40.2%	40.8%
SG&A to Sales	23.2%	21.8%	20.6%
Net Profit Margin	1.3%	3.8%	6.1%
Return on Equity	2.1%	6.2%	10.4%
Return on Assets	1.0%	3.2%	5.5%
Owner's Compensation to Sales	0.0%	0.0%	0.0%
Efficiency			
Days in Receivables	7.2	7.2	7.2
Accounts Receivable Turnover	50.0	50.0	50.0
Days in Inventory	0.0	0.0	0.0
Inventory Turnover	0.0	0.0	0.0
Sales to Total Assets	0.8	0.8	0.9

FEASIBILITY STUDY AND BUSINESS PLAN PROPOSAL FOR POULTRY GROWERS OF THE VIRGINIAS TO PROCESS AND SELL A POULTRY LITTER PRODUCT

YEAR END SUMMARY – FIVE YEARS

	<u>Year One</u>	%	<u>Year Two</u>	%	<u>Year Three</u>	%	<u>Year Four</u>	%	<u>Year Five</u>	%
Income										
Litter Product	1,551,500		1,694,238		1,850,108		2,020,318		2,206,187	
Product/Service B	-		-		-		-		-	
Total Income	1,551,500	100.00%	1,694,238	100.00%	1,850,108	100.00%	2,020,318	100.00%	2,206,187	100.00%
Cost of Sales										
Litter Product	936,398		1,012,714		1,095,251		1,184,514		1,281,051	
Product/Service B	-		-		-		-		-	
Total Cost of Sales	936,398	60.35%	1,012,714	59.77%	1,095,251	59.20%	1,184,514	58.63%	1,281,051	58.07%
Gross Margin	615,102	39.65%	681,524	40.23%	754,857	40.80%	835,804	41.37%	925,136	41.93%
Total Salary and Wages	293,932	18.95%	302,345	17.85%	311,011	16.81%	319,937	15.84%	329,131	14.92%
Fixed Business Expenses										
Advertising	-		-		-		-		-	
Car and Truck Expenses	13,000		13,390		13,792		14,205		14,632	
Bank & Merchant Fees	-		-		-		-		-	
Contract Labor	-		-		-		-		-	
Conferences & Seminars	-		-		-		-		-	
Customer Discounts and Refunds	-		-		-		-		-	
Dues and Subscriptions	-		-		-		-		-	
Miscellaneous	10,000		10,300		10,609		10,927		11,255	
Insurance (Liability and Property)	25,000		25,750		26,523		27,318		28,138	
Licenses/Fees/Permits	-		-		-		-		-	
Legal and Professional Fees	-		-		-		-		-	
Office Expenses & Supplies	2,000		2,060		2,122		2,185		2,251	
Postage and Delivery	-		-		-		-		-	
Rent (on business property)	-		-		-		-		-	
Rent of Vehicles and Equipment	-		-		-		-		-	
Sales & Marketing	-		-		-		-		-	
Taxes-Other	12,000		12,360		12,731		13,113		13,506	
Telephone and Communications	3,600		3,708		3,819		3,934		4,052	
Travel	-		-		-		-		-	
Utilities	-		-		-		-		-	
Total Fixed Business Expenses	65,600	4.23%	67,568	3.99%	69,595	3.76%	71,683	3.55%	73,833	3.35%
Operating Income (before Other Expenses)	255,570	16.47%	311,610	18.39%	374,251	20.23%	444,184	21.99%	522,172	23.67%
[EBITDA]										
Other Expenses										
Amortized Start-up Expenses	23,153		23,153		23,153		-		-	
Depreciation	140,000		140,000		140,000		140,000		140,000	
Interest										
Commercial Loan	-		-		-		-		-	
Commercial Mortgage	50,077		49,349		48,582		47,774		46,980	
Line of Credit	-		-		-		-		-	
Credit Card Debt	-		-		-		-		-	
Vehicle Loans	5,304		4,241		3,122		1,942		698	
Other Bank Debt	-		-		-		-		-	
Taxes	16,373		30,565		46,417		36,783		40,418	
Total Other Expenses	234,907	15.14%	247,309	14.60%	261,274	14.12%	226,499	11.21%	228,096	10.34%
Net Income	20,662	1.33%	64,301	3.80%	112,977	6.11%	217,685	10.77%	294,075	13.33%

APPENDIX A: SAMPLE MARKETING AGREEMENT AND MEMBERSHIP APPLICATION

The sample language and background information provided below has been excerpted from the “Sample Legal Documents for Cooperative: Cooperative Information Report Number 40,” available at USDA’s Rural Development website: [http://www.rurdev.usda.gov/rbs/pub/cir40/cir40rpt.htm#Marketing Agreement](http://www.rurdev.usda.gov/rbs/pub/cir40/cir40rpt.htm#Marketing%20Agreement).

PATRONAGE COMMITMENT

BACKGROUND

Most cooperatives, especially those involved in marketing agricultural commodities, need a minimum level of product to be successful and the best possible projections of anticipated volumes to plan effectively. Their organizational agreements should spell out the extent of the prospective members' commitment for a defined volume of product. Sample language is provided.

SAMPLE LANGUAGE

Defined Volume. Producer agrees to sign a marketing agreement to commit _____ [tons] of [poultry litter], generated by Producer, to the cooperative for direct marketing, processing, or other disposition as the cooperative sees fit.

MARKETING AGREEMENT

BACKGROUND

Cooperatives that market farm products and other goods of their members will usually want a separate contract with each member establishing the terms upon which they will conduct their business transactions. This contract is commonly called a marketing agreement.

The marketing agreement builds on the patronage commitments. It is a unique contract in that, because the members own and control the cooperative, the members are entering into a contract with themselves. But it is more accurate to picture the agreement as a contract between each individual member and the membership as a whole.

An important key to making the system work is for everyone to remember that the cooperative is democratically controlled by the members. No individual member has a right to unilaterally cancel or change the marketing agreement, and the leadership should not insist on arrangements that are contrary to the wishes of a majority of the membership.

While the basic content of the articles and bylaws is standardized throughout the cooperative community, the substantive provisions of the marketing agreement are influenced by the custom and trade of the market for the commodity covered by the agreement. Thus the sample language may need substantial modification to meet member needs.

As with the articles and bylaws, the terms of the marketing agreement are binding until changed, but they are not etched in stone. The association--represented by its officers and directors--and the members are free to adopt an approach to any issue different than the approach set out in the organization agreement or in previously adopted marketing agreements.

**FEASIBILITY STUDY AND BUSINESS PLAN PROPOSAL FOR POULTRY GROWERS OF THE VIRGINIAS TO
PROCESS AND SELL A POULTRY LITTER PRODUCT**

SAMPLE LANGUAGE

THIS AGREEMENT, made as of this ____ day of ____ 20__, by and between_____, herein referred to as "Producer," and _____, an agricultural cooperative having an office at _____, herein referred to as "Association".

RECITALS

A. Association is an agricultural cooperative organized under the laws of the State of [West Virginia].

B. Producer is a member of the Association who produces [poultry litter].

C. Producer has contributed a membership fee to the Association in the sum of [\$1,500] as specified in Producer's membership application, receipt of which is acknowledged as an equity investment in the Association. This entitles Producer to all the benefits of membership in the Association as long as Producer complies with the articles of incorporation and bylaws of the Association and the provisions of this agreement.

In consideration of the mutual covenants and obligations contained herein, the parties agree as follows:

Section 1. [Annual sale of [poultry litter]]. Association agrees to buy and Producer agrees to sell to Association____ (number) [tons] of [poultry litter] as defined by USDA standards and generated by Producer. This agreement is intended by the parties to pass an absolute title to____ (number) [tons] of [poultry litter] generated by Producer as soon as they have a potential existence but such [poultry litter] shall be at the risk of Producer until delivery.

MEMBERSHIP APPLICATION

BACKGROUND

When a person applies for membership in a cooperative, it is a good idea to have a simple document that ties the loose ends together and, when approved, serves as official notice that the applicant is a bona fide member of the association. If the articles, bylaws, and marketing agreement are well drafted, this need be little more than a summary of the commitments made. Applicant certifies that the requirements of membership have been met, and the appropriate cooperative officers, usually the president and secretary, acknowledge board approval of the applicant.

SAMPLE LANGUAGE

Applicant's Statement. I hereby apply for membership in_____ and agree to abide by the articles of incorporation and bylaws of the association, now and hereafter in effect, copies of which have been presented to me for inspection. I certify that I am a producer of [poultry litter], have tendered the membership fee, have signed a marketing agreement, and met such other qualifications for membership as have been explained to me.

After my membership shall have been in effect for ____ year(s) from the date of its acceptance by the association, either party may terminate it by notifying the other party in writing of this intention between____ (date) and____ (date) of any year. If neither of the parties to this agreement so notifies the other, it is mutually agreed that this shall constitute conclusive evidence that the parties have renewed this agreement for another year.

Date, _____ 20__.

Applicant's: name _____

Applicant's signature _____

APPENDIX B: BIO-SECURITY MEASURES

State of West Virginia
DEPARTMENT OF AGRICULTURE
Gus R. Douglass, Commissioner

Janet L. Fisher
Deputy Commissioner

Steve Hannah
Deputy Commissioner

POULTRY FARM BIO-SECURITY MEASURES FOR WV VENDORS

All farms are bio-secured areas and traffic is being kept to a minimum. All visits to transport litter from the farm must be coordinated with the appropriate grower/producer and the following outlined steps should be followed at all times.

- ❖ All vehicles entering a poultry farm must stop at the farm entrance and fill out the visitor's log (if available).
- ❖ All vendors must disinfect their tires before entering. The acceptable disinfectants are the following: Virkon-S, Quaternary Ammonia (Quat), and Phenols. Poultry growers will be responsible for providing disinfectant. (10 minute shiny-wet saturation time)
- ❖ Personnel driving or riding in a vehicle that goes onto the farm must have protective boots and clean coveralls. Either rubber or plastic boots must be put on before getting out of the vehicle and disinfected before leaving operation. Boots must be worn the entire time you are on the farm. Farm employees should not ride in vendor vehicles.
- ❖ Entry into the poultry house by the vendor is **strictly prohibited** by the grower and the poultry companies.
- ❖ When exiting the farm, the disposable boots should be put in receptacle provided at the entrance of the farm. Hands, rubber boots and any tools used on the farm must be washed and disinfected. Vendor must wear clean coveralls between farms.
- ❖ Vendor vehicles must be kept clean at all times. A complete spray down (carwash) and disinfection of tires should occur before entering subsequent farms.
- ❖ All single truck loads of poultry litter must be shipped from the same farm. In other words, one load cannot be filled from multiple farms; it must come from the same operation.
- ❖ Visits to multiple farms within the same day are discouraged.
- ❖ West Virginia State Law requires that **all loads be covered** during transportation.
- ❖ Vendors who are also poultry producers are discouraged from entering onto other poultry operations.
- ❖ Transportation vehicles must be constructed and equipped to prevent the contents from dropping, sifting, leaking or other wise escaping while traveling on public roads.
- ❖ All non-composted animal carcasses are prohibited from transport.

- ❖ It is recommended that the poultry litter be composted before being transported (3 days at 140 degrees F).
- ❖ Additional biosecurity measures may be established by the State Veterinarian.

This information is being provided to you through the West Virginia Department of Agriculture in cooperation with the West Virginia Conservation Agency. It is suggested that you integrate these procedures into your litter transportation program. Any questions should be directed to the West Virginia Department of Agriculture's Poultry Specialist at 304.538.2397.

PROPER VEHICLE CLEANING & DISINFECTION PROCEDURES

To help prevent the spread of disease via transportation, The West Virginia Department of Agriculture has adopted the following procedures for vehicle cleansing and disinfecting. Vendors traveling from farm to farm **MUST** properly disinfect and clean their vehicles to prevent the spread and transmission of disease.

Removal of Debris

- ❖ Enclosed trailer only, scrape and brush the sidewalls, floor and tail lift of the vehicle.
- ❖ Remove any deposits of mud, shavings, etc from the wheels, wheel arches, mudguards and exposed chassis.

Cleansing and Rinsing

- ❖ Using an approved disinfectant at the proper dilution rate, soak all surfaces of the vehicle allowing at least 10 minutes contact time for it to penetrate and loosen dirt prior to disinfections (10 minute shiny-wet saturation time).

Disinfecting

- ❖ Disinfect all vehicle surfaces inside and out using an approved disinfectant at a dilution rate
- ❖ Outside, start at the top and work down each side and over the trailer, paying particular attention to the wheels, wheel arches mudguards and underside of vehicle. Inside ensure that the ceiling, sidewalls and floor of the vehicle are disinfected thoroughly finishing the procedure on the tailgate
- ❖ Disinfect all vehicle equipment and belly box.
- ❖ 10 minute shiny-wet saturation time on all surfaces

Cab Disinfecting

- ❖ Remove all removable items e.g. mats and boots from the vehicle cab and brush any debris or mud into a bucket or dustpan. Dispose of the cab waste into a refuse sack.
- ❖ Wash the cab floor, mats and vehicle pedals with approved disinfectant allowing 10 minutes for it to penetrate and loosen dirt.
- ❖ Using a clean cloth soaked in approved disinfectant wipe the cab floor, mats and foot pedals

Finally

- ❖ Park the vehicle on a slope to drain and dry.
- ❖ Once the vehicle is removed from the wash area, wash down the concrete surface with approved disinfectant at the proper dilution rate making sure no muck or debris remains.
- ❖ Disinfect overalls and boots with approved disinfectant.

This information is being provided to you through the West Virginia Department of Agriculture in cooperation with the West Virginia Conservation Agency. It is suggested that you integrate these procedures into your litter transportation program. Any questions should be directed to the West Virginia Department of Agriculture's Poultry Specialist at 304.538.2397.

APPENDIX C: YEAR TWO THROUGH FIVE APPLICABLE FINANCIAL REPORTS

**Poultry Growers Cooperative - Poultry Litter Soil Amendment Production
Projected Income Statement - Year Two**

[illegible]

Poultry Growers Cooperative - Poultry Litter Soil Amendment Production
Projected Income Statement - Year Two

	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Totals
Utilities	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Fixed Business Expenses	5,631	5,631	5,631	5,631	5,631	5,631	5,631	5,631	5,631	5,631	5,631	5,631	67,568
Other Expenses													
Amortized Start-up Expenses	1,929	1,929	1,929	1,929	1,929	1,929	1,929	1,929	1,929	1,929	1,929	1,929	23,153
Depreciation	11,667	11,667	11,667	11,667	11,667	11,667	11,667	11,667	11,667	11,667	11,667	11,667	140,000
Interest													
Commercial Loan	-	-	-	-	-	-	-	-	-	-	-	-	-
Commercial Mortgage	4,141	4,136	4,131	4,125	4,120	4,115	4,110	4,105	4,100	4,094	4,089	4,084	49,349
Line of Credit	-	-	-	-	-	-	-	-	-	-	-	-	-
Credit Card Debt	-	-	-	-	-	-	-	-	-	-	-	-	-
Vehicle Loans	395	387	380	372	365	357	350	342	335	327	319	311	4,241
Other Bank Debt	-	-	-	-	-	-	-	-	-	-	-	-	-
Taxes	-	7,864	11,175	11,006	(3,134)	(3,133)	(3,132)	5,389	5,390	5,391	(3,126)	(3,125)	30,565
Total Other Expenses	18,132	25,983	29,282	29,100	14,947	14,936	14,924	23,432	23,420	23,409	14,878	14,866	247,309
Net Income	(14,882)	33,833	31,216	30,716	(11,697)	(11,686)	(11,674)	13,894	13,906	13,918	(11,628)	(11,616)	64,301

**Poultry Growers Cooperative - Poultry Litter Soil Amendment Production
Projected Cash Flow Statement - Year Two**

[illegible]

Poultry Growers Cooperative - Poultry Litter Soil Amendment Production
Balance Sheet - Year Two

	<u>End of Year One</u>	<u>End of Year Two</u>
Assets		
Current Assets		
Cash	334,701	492,065
Accounts Receivable	31,030	33,885
Inventory	-	-
Prepaid Expenses	46,306	23,153
Other Current	-	-
Total Current Assets	<u>412,037</u>	<u>549,103</u>
Fixed Assets		
Real Estate-Land	75,000	75,000
Buildings	1,125,000	1,125,000
Leasehold Improvements	-	-
Equipment	105,000	105,000
Furniture and Fixtures	2,000	2,000
Vehicles	455,000	455,000
Other Fixed Assets	3,000	3,000
Total Fixed Assets	<u>1,765,000</u>	<u>1,765,000</u>
Less: Accumulated Depreciation	140,000	280,000
Total Assets	<u><u>2,037,036</u></u>	<u><u>2,034,103</u></u>
Liabilities and Owner's Equity		
Liabilities		
Accounts Payable	-	-
Notes Payable	-	-
Mortgage Payable	946,463	932,199
Credit Card Debt	-	-
Vehicle Loans	90,243	69,423
Other Bank Debt	-	-
Line of Credit Balance	-	-
Total Liabilities	<u>1,036,706</u>	<u>1,001,622</u>
Owner's Equity		
Common Stock	990,000	990,000
Retained Earnings	20,662	84,964
Dividends Dispersed	10,331	42,482
Total Owner's Equity	<u>1,000,331</u>	<u>1,032,482</u>
Total Liabilities and Owner's Equity	<u><u>2,037,037</u></u>	<u><u>2,034,103</u></u>

Does Not Balance

Statement Balances

**Poultry Growers Cooperative - Poultry Litter Soil Amendment Production
Projected Income Statement - Year Three**

	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Totals
Income													
Litter Product	92,505	246,064	247,914	246,064	92,505	92,505	92,505	185,011	185,011	185,011	92,505	92,505	1,850,108
Product/Service B	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Income	92,505	246,064	247,914	246,064	92,505	92,505	92,505	185,011	185,011	185,011	92,505	92,505	1,850,108
Cost of Sales													
Litter Product	54,763	145,668	146,764	145,668	54,763	54,763	54,763	109,525	109,525	109,525	54,763	54,763	1,095,251
Product/Service B	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Cost of Sales	54,763	145,668	146,764	145,668	54,763	54,763	54,763	109,525	109,525	109,525	54,763	54,763	1,095,251
Gross Margin	37,743	100,396	101,151	100,396	37,743	37,743	37,743	75,486	75,486	75,486	37,743	37,743	754,857
Salaries and Wages													
Owner's Compensation	-	-	-	-	-	-	-	-	-	-	-	-	-
Salaries	19,811	19,811	19,811	19,811	19,811	19,811	19,811	19,811	19,811	19,811	19,811	19,811	237,736
Full-Time Employees	-	-	-	-	-	-	-	-	-	-	-	-	-
Part-Time Employees	-	-	-	-	-	-	-	-	-	-	-	-	-
Independent Contractors	-	-	-	-	-	-	-	-	-	-	-	-	-
Payroll Taxes and Benefits	6,106	6,106	6,106	6,106	6,106	6,106	6,106	6,106	6,106	6,106	6,106	6,106	73,275
Total Salary and Wages	25,918	25,918	25,918	25,918	25,918	25,918	25,918	25,918	25,918	25,918	25,918	25,918	311,011
Fixed Business Expenses													
Advertising	-	-	-	-	-	-	-	-	-	-	-	-	-
Car and Truck Expenses	1,149	1,149	1,149	1,149	1,149	1,149	1,149	1,149	1,149	1,149	1,149	1,149	13,792
Bank & Merchant Fees	-	-	-	-	-	-	-	-	-	-	-	-	-
Contract Labor	-	-	-	-	-	-	-	-	-	-	-	-	-
Conferences & Seminars	-	-	-	-	-	-	-	-	-	-	-	-	-
Customer Discounts and Refunds	-	-	-	-	-	-	-	-	-	-	-	-	-
Dues and Subscriptions	-	-	-	-	-	-	-	-	-	-	-	-	-
Miscellaneous	884	884	884	884	884	884	884	884	884	884	884	884	10,609
Insurance (Liability and Property)	2,210	2,210	2,210	2,210	2,210	2,210	2,210	2,210	2,210	2,210	2,210	2,210	26,523
Licenses/Fees/Permits	-	-	-	-	-	-	-	-	-	-	-	-	-
Legal and Professional Fees	-	-	-	-	-	-	-	-	-	-	-	-	-
Office Expenses & Supplies	177	177	177	177	177	177	177	177	177	177	177	177	2,122
Postage and Delivery	-	-	-	-	-	-	-	-	-	-	-	-	-
Rent (on business property)	-	-	-	-	-	-	-	-	-	-	-	-	-
Rent of Vehicles and Equipment	-	-	-	-	-	-	-	-	-	-	-	-	-
Sales & Marketing	-	-	-	-	-	-	-	-	-	-	-	-	-
Taxes-Other	1,061	1,061	1,061	1,061	1,061	1,061	1,061	1,061	1,061	1,061	1,061	1,061	12,731
Telephone and Communications	318	318	318	318	318	318	318	318	318	318	318	318	3,819
Travel	-	-	-	-	-	-	-	-	-	-	-	-	-

Poultry Growers Cooperative - Poultry Litter Soil Amendment Production
Projected Income Statement - Year Three

	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Totals
Utilities	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Fixed Business Expenses	5,800	5,800	5,800	5,800	5,800	5,800	5,800	5,800	5,800	5,800	5,800	5,800	69,595
Other Expenses													
Amortized Start-up Expenses	1,929	1,929	1,929	1,929	1,929	1,929	1,929	1,929	1,929	1,929	1,929	1,929	23,153
Depreciation	11,667	11,667	11,667	11,667	11,667	11,667	11,667	11,667	11,667	11,667	11,667	11,667	140,000
Interest													
Commercial Loan	-	-	-	-	-	-	-	-	-	-	-	-	-
Commercial Mortgage	4,078	4,073	4,068	4,062	4,057	4,051	4,046	4,040	4,035	4,029	4,024	4,018	48,582
Line of Credit	-	-	-	-	-	-	-	-	-	-	-	-	-
Credit Card Debt	-	-	-	-	-	-	-	-	-	-	-	-	-
Vehicle Loans	304	296	288	280	272	264	256	248	240	232	224	216	3,122
Other Bank Debt	-	-	-	-	-	-	-	-	-	-	-	-	-
Taxes	-	10,805	13,425	13,237	(2,424)	(2,423)	(2,422)	7,015	7,017	7,018	(2,416)	(2,415)	46,417
Total Other Expenses	17,978	28,770	31,377	31,176	15,501	15,489	15,477	24,900	24,888	24,876	15,428	15,415	261,274
Net Income	(11,952)	39,909	38,057	37,503	(9,475)	(9,463)	(9,451)	18,868	18,881	18,893	(9,402)	(9,390)	112,977

**Poultry Growers Cooperative - Poultry Litter Soil Amendment Production
Projected Cash Flow Statement - Year Three**

[illegible]

Poultry Growers Cooperative - Poultry Litter Soil Amendment Production
Balance Sheet - Year Three

	<u>End of Year Two</u>	<u>End of Year Three</u>
Assets		
Current Assets		
Cash	492,065	671,618
Accounts Receivable	33,885	37,002
Inventory	-	-
Prepaid Expenses	23,153	(0)
Other Current	-	-
Total Current Assets	<u>549,103</u>	<u>708,620</u>
Fixed Assets		
Real Estate-Land	75,000	75,000
Buildings	1,125,000	1,125,000
Leasehold Improvements	-	-
Equipment	105,000	105,000
Furniture and Fixtures	2,000	2,000
Vehicles	455,000	455,000
Other Fixed Assets	3,000	3,000
Total Fixed Assets	<u>1,765,000</u>	<u>1,765,000</u>
Less: Accumulated Depreciation	280,000	420,000
Total Assets	<u><u>2,034,103</u></u>	<u><u>2,053,620</u></u>
Liabilities and Owner's Equity		
Liabilities		
Accounts Payable	-	-
Notes Payable	-	-
Mortgage Payable	932,199	917,167
Credit Card Debt	-	-
Vehicle Loans	69,423	47,483
Other Bank Debt	-	-
Line of Credit Balance	-	-
Total Liabilities	<u>1,001,622</u>	<u>964,650</u>
Owner's Equity		
Common Stock	990,000	990,000
Retained Earnings	84,964	197,941
Dividends Dispersed	42,482	98,970
Total Owner's Equity	<u>1,032,482</u>	<u>1,088,970</u>
Total Liabilities and Owner's Equity	<u><u>2,034,103</u></u>	<u><u>2,053,620</u></u>

Statement Balances

Statement Balances

**Poultry Growers Cooperative - Poultry Litter Soil Amendment Production
Projected Income Statement - Year Four**

[illegible]

Utilities	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Fixed Business Expenses	5,974	5,974	5,974	5,974	5,974	5,974	5,974	5,974	5,974	5,974	5,974	5,974	71,683
Other Expenses													
Amortized Start-up Expenses	-	-	-	-	-	-	-	-	-	-	-	-	-
Depreciation	11,667	11,667	11,667	11,667	11,667	11,667	11,667	11,667	11,667	11,667	11,667	11,667	140,000
Interest													
Commercial Loan	-	-	-	-	-	-	-	-	-	-	-	-	-
Commercial Mortgage	4,013	4,007	4,001	3,996	3,990	3,984	3,978	3,973	3,967	3,961	3,955	3,949	47,774
Line of Credit	-	-	-	-	-	-	-	-	-	-	-	-	-
Credit Card Debt	-	-	-	-	-	-	-	-	-	-	-	-	-
Vehicle Loans	208	200	191	183	175	166	158	149	141	132	124	115	1,942
Other Bank Debt	-	-	-	-	-	-	-	-	-	-	-	-	-
Taxes	-	14,082	11,175	11,006	(3,134)	(3,133)	(3,132)	5,389	5,390	5,391	(3,126)	(3,125)	36,783
Total Other Expenses	15,887	29,955	27,034	26,851	12,697	12,684	12,671	21,177	21,164	21,151	12,619	12,606	226,499
Net Income	(6,732)	48,571	52,328	51,676	(3,542)	(3,529)	(3,516)	29,768	29,781	29,794	(3,464)	(3,451)	217,685

**Poultry Growers Cooperative - Poultry Litter Soil Amendment Production
Projected Cash Flow Statement - Year Four**

[illegible]

Poultry Growers Cooperative - Poultry Litter Soil Amendment Production
Balance Sheet - Year Four

	<u>End of Year Three</u>	<u>End of Year Four</u>
Assets		
Current Assets		
Cash	671,618	878,097
Accounts Receivable	37,002	40,406
Inventory	-	-
Prepaid Expenses	(1)	-
Other Current	-	-
Total Current Assets	<u>708,619</u>	<u>918,503</u>
Fixed Assets		
Real Estate-Land	75,000	75,000
Buildings	1,125,000	1,125,000
Leasehold Improvements	-	-
Equipment	105,000	105,000
Furniture and Fixtures	2,000	2,000
Vehicles	455,000	455,000
Other Fixed Assets	3,000	3,000
Total Fixed Assets	<u>1,765,000</u>	<u>1,765,000</u>
Less: Accumulated Depreciation	420,000	560,000
Total Assets	<u><u>2,053,619</u></u>	<u><u>2,123,502</u></u>
 Liabilities and Owner's Equity		
Liabilities		
Accounts Payable	-	-
Notes Payable	-	-
Mortgage Payable	917,167	901,327
Credit Card Debt	-	-
Vehicle Loans	47,483	24,363
Other Bank Debt	-	-
Line of Credit Balance	-	-
Total Liabilities	<u>964,650</u>	<u>925,690</u>
Owner's Equity		
Common Stock	990,000	990,000
Retained Earnings	197,941	415,626
Dividends Dispersed	98,970	207,813
Total Owner's Equity	<u>1,088,970</u>	<u>1,197,813</u>
Total Liabilities and Owner's Equity	<u><u>2,053,620</u></u>	<u><u>2,123,503</u></u>
	Does Not Balance	Does Not Balance

**Poultry Growers Cooperative - Poultry Litter Soil Amendment Production
Projected Income Statement - Year Five**

[illegible]

Utilities	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Fixed Business Expenses	6,153	6,153	6,153	6,153	6,153	6,153	6,153	6,153	6,153	6,153	6,153	6,153	73,833
Other Expenses													
Amortized Start-up Expenses	-	-	-	-	-	-	-	-	-	-	-	-	-
Depreciation	11,667	11,667	11,667	11,667	11,667	11,667	11,667	11,667	11,667	11,667	11,667	11,667	140,000
Interest													
Commercial Loan	-	-	-	-	-	-	-	-	-	-	-	-	-
Commercial Mortgage	3,943	3,996	3,931	3,925	3,919	3,913	3,907	3,901	3,895	3,889	3,883	3,877	46,980
Line of Credit	-	-	-	-	-	-	-	-	-	-	-	-	-
Credit Card Debt	-	-	-	-	-	-	-	-	-	-	-	-	-
Vehicle Loans	107	98	89	80	72	63	54	45	36	27	18	9	698
Other Bank Debt	-	-	-	-	-	-	-	-	-	-	-	-	-
Taxes	-	17,717	11,175	11,006	(3,134)	(3,133)	(3,132)	5,389	5,390	5,391	(3,126)	(3,125)	40,418
Total Other Expenses	15,717	33,477	26,862	26,679	12,523	12,510	12,496	21,002	20,988	20,974	12,441	12,427	228,096
Net Income	(3,040)	55,986	63,525	62,784	153	167	180	37,932	37,945	37,959	235	249	294,075

**Poultry Growers Cooperative - Poultry Litter Soil Amendment Production
Projected Cash Flow Statement - Year Five**

[illegible]

Poultry Growers Cooperative - Poultry Litter Soil Amendment Production
Balance Sheet - Year Five

	<u>End of Year Four</u>	<u>End of Year Five</u>
Assets		
Current Assets		
Cash	878,097	1,120,420
Accounts Receivable	40,406	44,124
Inventory	-	-
Prepaid Expenses	-	-
Other Current	-	-
Total Current Assets	<u>918,503</u>	<u>1,164,544</u>
Fixed Assets		
Real Estate-Land	75,000	75,000
Buildings	1,125,000	1,125,000
Leasehold Improvements	-	-
Equipment	105,000	105,000
Furniture and Fixtures	2,000	2,000
Vehicles	455,000	455,000
Other Fixed Assets	3,000	3,000
Total Fixed Assets	<u>1,765,000</u>	<u>1,765,000</u>
Less: Accumulated Depreciation	560,000	700,000
Total Assets	<u><u>2,123,502</u></u>	<u><u>2,229,543</u></u>
 Liabilities and Owner's Equity		
Liabilities		
Accounts Payable	-	-
Notes Payable	-	-
Mortgage Payable	901,327	884,635
Credit Card Debt	-	-
Vehicle Loans	24,363	0
Other Bank Debt	-	-
Line of Credit Balance	-	-
Total Liabilities	<u>925,690</u>	<u>884,635</u>
Owner's Equity		
Common Stock	990,000	990,000
Retained Earnings	415,626	709,701
Dividends Dispersed	207,813	354,851
Total Owner's Equity	<u>1,197,813</u>	<u>1,344,851</u>
Total Liabilities and Owner's Equity	<u><u>2,123,503</u></u>	<u><u>2,229,485</u></u>
	Does Not Balance	Does Not Balance