SECTION 6: OPERATION AND MAINTENANCE

This section addresses the operation and maintenance of the waste management system, conservation practices, soil testing, manure testing, and equipment calibration.

General

Operation and maintenance of structural, non-structural, and land treatment measures requires effort and expenditures throughout the life of the practice to maintain safe conditions and assure proper functioning. Operation includes the administration, management, and performance of non-maintenance actions needed to keep a completed practice safe and functioning as planned. Maintenance includes work to prevent deterioration of practices, repairing damage, or replacement of the practice if one or more components fail. Listed below is the operation and maintenance for the structural, non-structural, and land treatment measures for this cattle feeding and dairy operation.

Manure and Wastewater Management in Confinement Barns and Methane Digester

The most critical management activity for the cattle feeding operation is the proper management of the stacked bedding packs in the barns so that no runoff will occur from them. The confinement barns have concrete floors. Bedding materials, such as peanuts hulls, old hay, sawdust, or old horse bedding, must be spread in the barns every few days to ensure adequate moisture adsorption of manure products and to provide a comfortable lounging environment for the animals. Between moisture evaporation and bedding material adsorption, no runoff of manure products should occur off the concrete pad. It is anticipated that the initial layer of bedding material will be spread just after cleanout and before the animals are brought back into the barn. Additional bedding will likely be blown in from the outer edges of the barn or from the feed lane on an as needed basis. Periodical grading of the stacked bed with a power rake may be needed to level the bed.

The manure/bedding materials will accumulate in the barns (under roof) until removed and land applied or possibly periodically delivered to the methane digester. All of the wastewater from the dairy confinement barns will be delivered to the methane digester. The effluent from the irrigation pond that receives the effluent from the digester will be sprayed on about 2195 acres of surrounding farmland while the screened and settled solids will be spread on about 1889 acres of surrounding farmland. There is adequate storage in the barns to handle the accumulated manure/bedding materials for an entire grow-out period if needed, but cleanouts will be done about weekly to improve the performance of the methane digester. The manure/bedding materials will be cleaned out of the barns by front-end loaders and placed directly into spreader for land application or may periodically be delivered, via truck or wagon, to the reception pit of the methane digester where it is mixed with water and chopped to form ~12% solids slurry before being pumped into a 2.7 million gallon, spirally-mixed, plug-flow, and temperature-controlled methane digester. The manure/bedding materials will be representatively sampled and tested for nitrogen and phosphorus content as it is being added to the digester's reception pit. The effluent from the dairy barns will also be periodically tested for nutrients and solids content. The operation and maintenance of the methane digester and its associated electricity generation facility has been provided to the farmer as a independent document by the DVO, Inc. the constructor that built the bio-energy facility. The operation of the digester will not influence the waste handling procedures described in the plan and therefore are not included.