

Cattle and Dry Cow Housing and Feeding Operation

The five existing cattle confinement barns will continue to be used for raising beef cattle but will also be used periodically for dry cows from the dairy operation. When dry cows are present, the allowable number of beef cattle will be reduced accordingly. The cattle feeding operation includes 1.5 to 2 annual average 167 to 200 day grow-out periods where young stock are brought to the facility at about 500 lbs and will leave at about 1200 lbs. Note, the growout periods for the individual herds will overlap and therefore there will be a fairly continuous number of animals on the farm throughout the year. Approximately half of the new stock can be placed directly into the barns while the remaining animals will need to be grazed on irrigated conditioning pastures for about 30-60 days. The average time for the animals on the conditioning pastures will be relative short. Once in the barns, the animals will be housed fulltime except for very brief periods where they will be moved to holding pens next to each barn (Figure 4) for barn maintenance purposes, such as bedding removal. These holding pens are covered and have 50ft x 100ft concrete floors with 1ft side walls to ensure no seepage can leave the building and to assist clean-out operations. Additional information on these barns and the bedding storage barn discussed below is provided in Appendix I.

The beef confinement barns have a center feed lane and open stacked bedding areas on the sides as shown in Figures 5 and 6. There are fans in all barns to cool the animals. The barns have concrete floors. Bedding materials for the cattle barns, such as peanuts hulls, old hay, sawdust, cropped sorghum, or old horse bedding, will be spread in the barns every day or as needed to ensure adequate moisture adsorption of manure products and a comfortable lounging environment for the animals. As shown in the barn drawings, the water troughs are located on the outside of the barns so that if overflow occurs the water will not enter the bedding material. No other fresh water use will be used for the cattle confinement barns. The water supply line will be on the outside of the building so any leakage will not come into contact with the bedding material. Between moisture evaporation and bedding material adsorption, no runoff will occur from the concrete pad. The manure/bedding materials will accumulate in the barns (under roof) until removed for delivery to the plug-flow methane digester or land applied.

A 60ft x 120ft bedding storage building was built to house the bedding materials being brought to the facility and for temporary storage of excess bedding solids from the feed barns and separated solids from the screw pressed discussed below. The covered storage building is needed to keep these materials dry prior to being spread into the feed barn to maximize moisture absorption. The placement of this building (Figure 4) near the methane power plant (generators) allows the future use of the waste heat from the biogas fueled diesel engines to be used to further dry the bedding and solids materials within these barns.

Dairy Facilities (Proposed)

There will be a new milk parlor and five freestall confinement barns built to house the 2800 mature cows (see Figure 4). The barns will be bedded with either sand or organic mulch from recycled solids. The dairy freestall barns will be flushed with recycled water from the collection pit at the end of the sand lane. The milk parlor will be flushed with fresh water. The dairy barns flush water will flow to the center travel lane and then to the north where it enters a 500' sand separation lane where sand will be removed and recycled for bedding if used. The sand lane drains into the collection pit where the effluent is either recycled back to the barns as flushwater or the excess effluent is pumped directly into the methane digester.