



Project Team:

Britt D. Bassett, PE,
BCEE Project Manager



Bassett Engineering
1440 Broad Street
Montoursville, PA 17754
www.bassetteng.com
Phone: 570-368-2131
info@bassetteng.com

Nicholas Meats, LLC

Greene Township

Clinton County

Bassett Engineering Inc.

Bassett Engineering (BE) provided civil and environmental engineering services for Nicholas Meats including surveying, land development, environmental permitting, waste treatment feasibility, and environmental site assessments. Nicholas has expanded the plant multiple times over the years. A major plant expansion included expanding the usable part of the plant site by several acres and adding hundreds of parking spaces. BE designed site grading, stormwater collection, detention and infiltration, domestic waste storage, drives, parking, and other facilities.

The Codigestion Feasibility Study determined the cost effectiveness of treating waste onsite to the point where the water could be reused in the plant, plus the feasibility of cogeneration using biogas.

Waste Treatment: Wastewater from the meat packing process was proposed to be treated with a membrane bioreactor (MBR), denitrification filter, ozone and reverse osmosis to make it clean enough to be reused throughout the packing plant. Digested residuals would be dewatered so they could be stored through the winter, land applied, and potentially sold.

Cogeneration: Meat packing plant waste, residuals from the wastewater treatment processes, and potentially food waste from external sources, would be fed to a thermophilic anaerobic digester. Piston would engines burn digester gas to drive electricity generators. Electricity would be used in the meat packing plant, with excess sold back to the grid. Waste heat from the exhaust and engine water jackets would be used to heat the digester plus water used in the meat packing plant.

Stormwater management consisted of diverting off-site runoff; separate collection, detention and infiltration of industrial stormwater and roof runoff, interception and diversion of groundwater from karst topography, and filling of sink-holes. discharging to a surface pond that discharges to an adjacent creek. Parking lot accommodates single-loop tractor-trailer traffic through the building, plus single-axle vehicle and truck parking.

Sewage Facilities: Increase in employment caused flows to exceed OLDS capacity. Designed and permitted wastewater holding tanks.

BE obtained approvals including:

- DEP Permits (in conjunction with Clinton County Conservation District and US Army Corps of Engineers)
- Chapter 102 NPDES Permit for Stormwater Discharge Associated with Construction Activities
- Chapter 102 Industrial NPDES Permit for Stormwater Discharge Associated with Industrial Activities
- Chapter 105 Joint Permit for Water Obstruction and Encroachment
- Component 2 Sewage Facilities Planning Module
- PennDOT Highway Occupancy Permit for entrance to new employee parking lot
- Greene Township: Land Development Plan and Sewage Facilities Planning Module

Bassett Engineering Inc.