

## **Addendum to August 2013 Feasibility Study for Mendocino County Meat Plant**

After the August, 2013 version of the Feasibility Study for the Mendocino County Meat Plant was reviewed, additional information was requested by the Mendocino County Economic Development Financing Corporation regarding the following three areas: 1) higher processing capacity; 2) wastewater treatment options; and 3) position descriptions for management and staff. They are addressed below.

### **1. Higher Processing Capacity-- Financial Impact of Adding Second Shift at the Mendocino County Meat Plant**

The Mendocino County Meat Plant (MCMP) was planned to reach full processing capacity of 30 beef equivalents a week in year 5. Additional analysis was requested to examine the financial impact of adding a second shift.

#### **a. Conditions for Having Two Shifts at the Mendocino County Meat Plant**

- i. Second shift is added in year 6 (plant is assumed to reach full processing capacity in year 5)
- ii. Assume payback of \$450,000 cash reserve at end of year 5. New community financing at 5% for the \$100,000 to purchase two used coolers, truck and miscellaneous equipment needed to operate second shift
- iii. Assume 50% increase in volume slaughtered annually  
Cattle 960 to 1440  
Hogs 510 to 765  
Lambs 675 to 1013  
Bison 60 to 90
- iv. Most operating expenses increased 50%, except that utilities (electricity, water, and sewer) usages double, but expenses increase about 90% because only variable usage charges double.
- v. USDA FSIS Inspector  
Per Fred Tancordo (email to John Harper, 11/8/13), the plant can have two 8-hour shifts with USDA-paid inspectors. However, there must be a time separation for cleanup.
- vi. Shift Schedule
  1. In the two shifts scenario, it is assumed that:
    - a. First shift operates from 7AM-3:30PM (work 8 hours, 30 minute lunch), with cleanup staff from 3PM-6PM

- b. Second shift operates from 5PM-midnight (work 6.5 hours, 30 minute dinner), with cleanup staff from 11PM to 1AM
  - 2. All slaughter is done during the first shift. The first shift also does all of the carcass handling and cutting into primals.
  - 3. The second shift does all of the cutting into retail cuts, grinding, and packaging of the retail cuts, ground product and primal cuts.
- vii. Shift Staffing in Year 6
  - 1. General Manager-present primarily during only first shift. Supervises all first shift staff and the Assistant Manager. Primary work hours: 7AM-4:30PM.
  - 2. Assistant Manager-supervises all second shift staff. Primary work hours: 4PM-1AM
  - 3. Shift 1—5 employees:
    - a. General plant manager
    - b. Butcher (does slaughter)
    - c. Butcher's assistant (assists with slaughter/does cutting/moves carcasses and cuts to and from coolers; loads trucks)
    - d. Holding pen staff/cleaner/driver
    - e. Full-time Administrative assistant/scheduler
  - 4. Shift 2—4 employees
    - a. Assistant manager/cutter
    - b. Cutter/packager
    - c. General assistant (moves primals out of cooler into packing area; moves packaged meats and primals into cooler)
    - d. Cleaner (works 3PM-6PM, 10PM-1AM)

### **b. Comparison of Financial Results**

Adding a second shift in year 6 (in an assumed \$100,000 investment in equipment) has an immediate positive financial impact. The \$100,000 of community financing obtained in year 6 to purchase additional equipment is repaid at the end of the year with the additional cash flow. Net cash flow in year 6 increases by \$60,046. The project's internal rate of return over the ten year period increases from 6.6% to 8.7%, and the payback period decreases from 9 years to 8 years.

**Financial Impact of Adding 2<sup>nd</sup> Shift in Year 6**

<b>Measure</b>	<b>With 2 Shifts</b>	<b>With 1 Shift</b>
Gross Revenues in Yr6	\$1,394,991	\$929,994
Total Cash Expenses in Yr6	\$1,051,397	\$646,446
Net Cash Flow in Yr6	\$343,594	\$283,548
<b>10 year cumulative results</b>		
Net Present Value 10% discount rate	-\$143,271	-\$354,984
Net Present Value 5% discount rate	\$497,120	\$199,772
Internal Rate of Return	8.7%	6.6%
Payback period	8 years	9 years

## 2. Additional Wastewater Treatment Options

The report submitted in August, 2013 included discussion of the MCMP's wastewater pre-treatment on pages 26 to 28. A supplier of wastewater treatment systems (Chuck Ross with Environmental Treatment Systems based in Acworth, Georgia) indicated that a pre-treatment system would cost approximately \$77,000 in parts and \$45,000 in installation costs. The equipment costs would include the necessary tanks, pumps, pipes, control panel, and design and start-up services. These start-up costs were included in the financial projection for all three options.

An extensive search of the more recent published literature (since 1980) regarding wastewater treatment options for meat plants was not very fruitful. It appears that this topic is considered to be proprietary information. Consequently, in the August, 2013 report, we stated that "...an engineering consultant experienced with California's wastewater standards should be retained soon to ensure that water usage is minimized and to design a cost-effective pre-treatment system to maximize the quality of the discharged wastewater."

The Niche Meats Processors Assistance Network (NMPAN) website includes virtually all of the information publicly available regarding wastewater treatment for small-scale meat plants: <http://www.extension.org/pages/68216/wastewater-treatment-for-meat-processors#Uyc94oV4D2k>. In its discussion of wastewater treatment options, it states:

"In general, if it is possible to connect to municipal wastewater treatment, this is often your best bet. If your plant is located within reach of these services, in the long run it will probably be worth it to pay the initial connection fees and monthly sewer costs rather than build and manage your own wastewater treatment system."

The proprietor of a recently closed meat plant, Cutting Edge Meats in Newman, California, suggested contacting Peter Haase with AcquaLogic for additional wastewater treatment information. Mr. Haase's reply is included as Attachment A to this report. A licensed physical engineer, he created the company to sell and service small wastewater and water treatment facilities for private and public clients. He noted that wastewater from small meat plants (abattoirs) contains high levels of fats, oils and greases (FOGs) and dilute protein-rich organic material that is easily biodegradable using both anaerobic and aerobic biological treatment processes. He estimated that process water from a small abattoir will typically contain a biochemical oxygen demand (BOD) ranging from 1,000 to 4,000 mg/L, total suspended solids (TSS) concentration ranging from 500 to 1,500 mg/L and FOGs concentrations ranging from 200 to 1,000 mg/L.

Given the low estimated flows from the MCMP, Mr. Haase proposed that a simple two-stage pre-treatment system be installed to remove 85 to 90 percent of the BOD, TSS and FOGs. The proposed pre-treatment scheme would employ an anaerobic baffled reactor (ABR--a more advanced septic tank design) followed by two aerobic AcquaLogic Biofilters. The AcquaLogic Biofilter is a proprietary advance filtration system that integrates both a trickling filter and

clarifier into one tank. The system would be designed as a recirculating system to provide for continuous treatment to accommodate variable flow conditions common to a small processing plant. Treated effluent would be discharged to a local municipal sanitary sewer system. Mr. Haase estimated that approximately 50% of the organic material in the wastewater is suspended or settleable material that will be retained in the ABR and the remaining 50% is soluble or dissolved material that will pass through the ABR and will be treated in the trickling filter. The preliminary cost estimate for the proposed treatment system totals \$79,000.

Another alternative is to consult with Aaron Baustad, a meat processing associate for Food & Livestock Planning, which is operated by Keith deHann in Kansas City, Missouri. Mr. Baustad designed the wastewater pre-treatment system for Belcampo Meats in Yreka, California; this smaller-scale multi-species plant opened in September, 2012. The plant uses a series of ponds to pre-treat its wastewater before releasing it into Yreka's municipal sewer system.

### 3. Position Descriptions for Management and Staff

**Position Title:** General Plant Manager/Butcher - \$60,000 to \$90,000 (not including benefits)

Manages plant's HACCP program. Monitors performance of plant's wastewater pre-treatment system. Supervises and coordinates activities of workers engaged in slaughtering, skinning, and dressing cattle, hogs, sheep and goats on killing floor of abattoir. Directs and trains workers in use of knife, air-knife, saws, and other hand tools. Supervises and coordinates activities of workers engaged in cutting carcasses into standard cuts, removing bones and trimming excess fat from cuts, and preparing special cuts for marketing: Instructs new employees in cutting carcasses and preparing special cuts. Examines cuts of meat to determine if quality standards are met. Inspects meat for specified color and texture to verify conformity to government regulations. Manages relations with customers. Has skills or performs other duties as described below.

#### Duties & Responsibilities

##### *Operational*

- Provide leadership that promotes team effort by personnel to accomplish the highest standards for sanitation, safety, and attention to detail in meat processing
- Ensure a high level of sanitation as required by the USDA
- Implement systems to ensure proper tracking of products from live animals to finished cuts - including carcass, order, and freezer management
- Oversee daily operations to ensure a high level of efficiency, sanitation, and professionalism
- Regular testing of product to ensure food safety
- Fix/delegate any maintenance issues
- Keep all machinery and tools in clean, working order
- Keep inventory and order items to keep supplies stocked at working levels
- Ensure humane handling standards are met consistently

##### *Administrative*

- Keep a high level of customer service and public relations
- Record keeping of all FSIS documents, as well as company files and documents
- Daily bookkeeping including managing accounts receivables and payables, worker's hours, and purchase orders
- Ensure the front of the plant (offices, meeting rooms, bathrooms, outside) is clean and orderly
- Manage employees including approving raises, hiring and firings based on performance reviews
- Maintain a strong working relationship with other processors and vendors in the area
- Develop and implement new products or services to offer customers
- Create and implement a marketing strategy for services, including marketing to producers and marketing of educational opportunities for producers (in collaboration with UCCE)

- Maintain a company website
- Attend regional and national association conferences
- Represent the company at any festivals and gatherings in the region

#### Knowledge, Skills & Ability

- Extensive knowledge of FSIS regulation, including HACCP, SSOP, labeling, and quality assurance programs
- Extensive knowledge of various meat products
- Extensive knowledge of humane animal handling, stunning, and harvest procedures
- Understand where hazards in a food production process can be controlled, reduced or eliminated
- Work with a variety of knives, hand tools, power equipment and computer-operated machinery
- Possess good eye-hand coordination, common sense and safe working habits
- Be able to work with heavy machinery and heavy pieces of meat
- Possess stamina to allow for long periods of standing in a cold or hot environment
- Need good physical strength for lifting and carrying up to 50 pounds
- Possess a high standard for personal hygiene and motivate others to do the same
- Be able to give advice about alternative cuts, cooking methods, storage requirements and nutritional aspects of meat products

#### Credentials & Experience

- 3-5 years meat processing experience (inspected facility a plus)
- 3-5 years in a managerial role
- Bachelor's degree or equivalent work experience
- Food service experience a plus

**Position Title:** Butcher - \$35,000 to \$45,000 (not including benefits)

Performs slaughtering and butchering tasks in small slaughtering and meat packing establishment, using cutting tools, such as cleaver, knife, and saw: Stuns animals prior to slaughtering. Shackles hind legs of animals, such as cattle, sheep, and hogs, to raise them for slaughtering or skinning. Severs jugular vein to drain blood and facilitate slaughtering. Trims head meat and otherwise severs or removes parts of animal heads or skulls. Saws, splits, or scribes slaughtered animals to reduce carcass. Slits open, eviscerates, and trims carcasses of slaughtered animals. Cuts, trims, skins, sorts, and washes viscera of slaughtered animals to separate edible portions from offal. Washes carcasses. Wraps muslin cloth about dressed animal carcasses or sides to enhance appearance and protect meat. Shaves hog carcasses. Trims and cleans animal hides, using knife. Cuts bones from standard cuts of meat, such as

chucks, hams, loins, plates, rounds, and shanks, to prepare meat for marketing. Examines, weighs, and sorts fresh cuts. Skins sections of animals or whole animals, such as cattle, sheep, and hogs. May prepare meats for smoking. May cut and wrap meat. May salt (cure) and trim hides. Has skills or performs other duties as described below.

### Duties & Responsibilities

#### *Operational*

- Ensure a high level of sanitation as required by the USDA
- Ensure humane handling standards are met consistently
- Participates in and follows HACCP
- Carries out plans to ensure proper tracking of products from live animals to finished cuts - including carcass, order, and freezer management
- Fix/delegate any maintenance issues
- Keep all machinery and tools in clean, working order
- Assist in training of meat cutter and assist in overseeing clean-up

### Knowledge, Skills & Ability

- Extensive knowledge of FSIS regulation, including HACCP, SSOP, labeling, and quality assurance programs
- Extensive knowledge of various meat products
- Extensive knowledge of humane animal handling, stunning, and harvest procedures
- Understand where hazards in a food production process can be controlled, reduced or eliminated
- Work with a variety of knives, hand tools, power equipment and computer-operated machinery
- Possess good eye-hand coordination, common sense and safe working habits
- Be able to work with heavy machinery and heavy pieces of meat
- Possess stamina to allow for long periods of standing in a cold or hot environment
- Need good physical strength for lifting and carrying up to 50 pounds
- Possess a high standard for personal hygiene and motivate others to do the same

### Credentials & Experience

- 3-5 years meat processing experience (inspected facility a plus)
- Bachelor's degree or equivalent work experience
- Food service experience a plus

**Position Title:** Meat Packaging/Cutting - \$24,960 to \$28,000 (not including benefits)

Cuts and trims meat to size as ordered by customer, using hand tools and power equipment, such as grinder, cubing machine, and power saw. Shape, lace, and tie meat cuts by hand, using boning knife, skewer, and twine to form roasts. Wraps all cut meats in either paper or cryovac sealed packages. Labels packages and boxes accordingly. Boxes wrapped meats and moves them into appropriate locations in the freezer. Loads meat on delivery truck. Has additional skills or performs other duties as described below.

#### Duties & Responsibilities

- Communicating with butchers to identify orders of meat that have been cut, read cutting instructions to find customers packing preferences, and wrapping meat according to instructions
- Labeling meat according to customers request and USDA regulations using computer software
- Properly handling, storing, and organizing packaged products to ensure proper food safety handling procedures are met in accordance with HACCP & SSOP guidelines
- Organizing freezer for easy identification and location of customer orders
- Loading out customers for product pick-up including filling out and checking of all proper paperwork for shipment of USDA inspected meat products
- Keeping a clean and organized workspace in accordance with AHAC and USDA standards
- Maintaining a high level of Customer Service and Customer Relations when interacting with all customers, including over the phone
- Careful and safe use of tools and equipment during production and during cleaning
- Use correct dilutions of detergents and sanitizers to prevent residue on food, equipment and other food surfaces
- Assist in the implementation of Standard Operating Procedures in the processing room and coolers
- Communicate effectively and professionally with custom, wholesale & private label customers
- Clean equipment and rooms at the end of production (including restrooms)
- Keep the entire building and grounds in a clean and presentable manner
- Use appropriate rinses, detergents and sanitizers to prevent contamination of product, premises and equipment
- Grind, season, and stuff meat for ground meat and sausages (must lift 50 pounds)
- Assisting butchers with de-boning trim, when needed

#### Knowledge, Skills & Ability

- Have an adequate understanding in the care and handling of livestock and carcasses
- Have an adequate understanding of meat processing techniques, cuts, and packaging
- Have extensive knowledge of labeling requirements regulated by the USDA
- Be able to work well with others and willing to provide excellent customer service

- Possess a willingness to always improve your knowledge, skills and abilities
- Meticulously implement the sanitation and safety requirements for a USDA inspected facility
- Understand where hazards in a food production process can be controlled, reduced or eliminated
- Work with a variety of knives, hand tools, power equipment and computer-operated machinery safely and effectively
- Possess good eye-hand coordination, common sense & safe working habits when using tools & equipment
- Be able to assemble and operate, disassemble and clean the equipment in all departments
- Possess stamina and good physical strength for lifting and carrying
- Possess stamina to work in hot and cold environments while standing for long periods
- Possess a high standard for personal hygiene

#### Credentials & Experience

- High School Diploma or equivalent
- Proficient in computer use
- Meat processing experience a plus
- Knowledge of livestock and meat

**Position Title:** Driver/Livestock Holding Pen/Cleaner - \$24,120 to \$26,500 (not including benefits)

Assists customers unload incoming livestock to holding pen. Maintains clean water supply for livestock. Moves livestock through chutes to kill box. Cleans and sanitizes holding pen and chutes daily. Delivers processed meats to ranchers' restaurant and grocery customers in the North Bay, San Francisco and East Bay area. Delivers processed meats to ranch customers directly if needed. Assists cleaner with thorough sanitation of kill box and slaughter room floor. Other duties as assigned. Has additional skills or other duties as described below.

#### Duties & Responsibilities

- Maintaining a high level of Customer Service and Customer Relations when interacting with all customers and their restaurant and grocery customers
- Assist in receiving livestock for slaughter
- Maintain cleanliness of the live slaughter animal holding area
- Assist butcher in livestock movement prior and during slaughter.
- Careful and safe use of tools and equipment during production and during cleaning
- Communicate effectively and professionally with custom, wholesale & private label customers

### Knowledge, Skills & Ability

- Have an adequate understanding in the care and handling of livestock and carcasses
- Have extensive knowledge in the humane slaughter process of livestock
- Skilled in humane treatment of cattle, sheep, goats and hogs
- Patient and caring in working with animals
- Excellent driving record
- Possess good eye-hand coordination, common sense & safe working habits when using tools & equipment
- Be able to work well with others and willing to provide excellent customer service
- Possess a willingness to always improve your knowledge, skills and abilities
- Meticulously implement the sanitation and safety requirements for a USDA inspected facility
- Understand where hazards in a food production process can be controlled, reduced or eliminated
- Be able to assemble and operate, disassemble and clean the equipment in all departments
- Possess stamina and good physical strength for lifting and carrying
- Possess stamina to work in hot and cold environments while standing for long periods
- Possess a high standard for personal hygiene

### Credentials & Experience

- High School Diploma or equivalent
- Class I and II driver's license
- Meat processing experience a plus
- Knowledge of livestock and meat products

**Position Title:** Cleaner - \$24,000 (not including benefits) (works 3 pm-6 pm, 10 pm-1 am)

Assist other workers in plant clean-up. Including rooms, floors, machinery and knives, holding pens, coolers and restrooms. Must use correct dilutions of detergents and sanitizes for both traditional meat processing and organic meat processing. Cleans trolleys used to move animal carcasses along overhead rail, in vats or tanks filled with solution: Turns water and steam valves to fill and heat cleaning vats or tanks. Dumps caustic soda and detergents into tank and stirs mixture with paddle. Pushes rack of trolleys to tank and lowers each trolley into solution, or immerses rack into solution, using hoist. Removes trolleys from solution and rinses them in hot water spray. Cleans and sterilizes machinery, utensils, and equipment. Turns valves to drain machines or tanks and disconnects pipes, using wrenches. Sprays machines, tanks, and conveyors with water to loosen and remove dirt or other foreign matter. Scrubs machines, tanks, tables, pans, bowls, compartments, and conveyors, using brushes, rags, cleaning preparations, and diluted acids. Rinses articles with water, and dries them with compressed air.

Scrubs floors and walls, using brushes, rags, and diluted acids. Connects hoses and lines to pump and starts pump to circulate cleaning and sterilizing solution through hoses and lines. Scrubs interior of disconnected pipes, valves, spigots, gauges, and meters, using spiral brushes. Mixes cleaning solutions and diluted acids, according to formula. Draws off samples of cleaning solutions from mixing tanks for laboratory analysis. Has additional skills or other duties as described below.

#### Duties & Responsibilities

- Keeping a clean and organized workspace in accordance with AHAC and USDA standards
- Careful and safe use of tools and equipment during production and during cleaning
- Use correct dilutions of detergents and sanitizers to prevent residue on food, equipment and other food surfaces
- Clean equipment and rooms at the end of production (including restrooms)
- Keep the entire building and grounds in a clean and presentable manner
- Use appropriate rinses, detergents and sanitizers to prevent contamination of product, premises and equipment

#### Knowledge, Skills & Ability

- Possess good eye-hand coordination, common sense and safe working habits
- Be able to work with heavy machinery
- Possess stamina to allow for long periods of standing in a cold or hot wet environment
- Need good physical strength for lifting and carrying up to 50 pounds
- Possess a high standard for personal hygiene

#### Credentials & Experience

- High School Diploma or equivalent
- Meat processing experience a plus
- Knowledge of livestock and meat a plus

**Position Title:** Administrative assistant/scheduler – \$30,000 to \$40,000 (not including benefits)

Assisting with any duties related to administrative functions, dispatch, fleet, and sales at meat harvest and processing plant; any reasonable task that may be requested. Training will be provided in support of duties and responsibilities; however, the suitable candidate must obtain the capability to learn and grow in the position; completing the tasks assigned accurately and effectively, and in accordance with internal working procedures. Has additional skills or other duties as described below.

#### Knowledge, Skills & Ability

- Ability to cope with workload pressure and preparedness to work long hours
- Computer literacy (MS Word, Excel and PowerPoint)
- Excellent phone skills and attention to details
- General knowledge of a USDA inspected meat harvest and processing plant desired
- Proven finance, planning, organizational and marketing management skills
- Ability to interface effectively with internal and external clients and suppliers
- An assertive assistant, a strong team player and an excellent people motivator
- Ability to work in a changing environment
- Self-motivation

#### Duties & Responsibilities

- With the Manager, ensure the efficient and cost effective running of the plant
- Process customer orders, billing, payroll, purchasing and other office duties
- Managing the timely and accurate delivery of customer products
- Assist the Manager with his/her administrative duties including record-keeping and filing
- Assist in ensuring compliance with all legislation and procedures regulating USDA inspected operations
- Undertaking any other clerical duties as may be required

#### Credentials & Experience

- High School Diploma or equivalent
- Proficient in computer use
- Meat processing experience a plus
- Knowledge of livestock and meat

**Position Title:** Butcher Assistant - \$33,000 (not including benefits) *Optional 2<sup>nd</sup> Shift only*

Assisting the Butcher by work in slaughtering and meat packing performing precision functions involving the preparation of meat. Work may include specialized slaughtering tasks, cutting standard or premium cuts of meat for marketing, making sausage, or wrapping meats. Has additional skills or other duties as described below.

Duties & Responsibilities

- Keeping a clean and organized workspace in accordance with AHAC and USDA standards
- Cut, trim, skin, sort, and wash viscera of slaughtered animals to separate edible portions from offal
- Slaughter animals in accordance with humane practices
- Slit open, eviscerate, and trim carcasses of slaughtered animals
- Perform a few of the many cuts needed to process a carcass
- Remove bones, and cut meat into standard cuts in preparation for marketing
- Sever jugular veins to drain blood and facilitate slaughtering
- Wash carcasses in preparation for further processing or packaging
- Trim, clean, and/or cure animal hides
- Shackle hind legs of animals to raise them for slaughtering or skinning
- Skin sections of animals or whole animals
- Trim head meat, and sever or remove parts of animals' heads or skulls
- Saw, split, or scribe carcasses into smaller portions to facilitate handling
- Grind meat into hamburger, and into trimmings used to prepare sausages, luncheon meats, and other meat products
- Stun animals prior to slaughtering
- Wrap dressed carcasses and/or meat cuts

Knowledge, Skills & Ability

- Have an adequate understanding in the care and handling of livestock and carcasses
- Have an adequate understanding of meat processing techniques, cuts, and packaging
- Have extensive knowledge of labeling requirements regulated by the USDA
- Be able to work well with others and willing to provide excellent customer service
- Possess a willingness to always improve your knowledge, skills and abilities
- Meticulously implement the sanitation and safety requirements for a USDA inspected facility
- Understand where hazards in a food production process can be controlled, reduced or eliminated
- Work with a variety of knives, hand tools, power equipment and computer-operated machinery safely and effectively
  - Possess good eye-hand coordination, common sense & safe working habits when using tools & equipment

- Be able to assemble and operate, disassemble and clean the equipment in all departments
- Possess stamina and good physical strength for lifting and carrying
- Possess stamina to work in hot and cold environments while standing for long periods
- Possess a high standard for personal hygiene

#### Credentials & Experience

- 1-3 years meat processing experience (inspected facility a plus)
- Bachelor's degree or equivalent work experience
- Food service experience a plus

**Position Title:** Assistant Plant Manager/Butcher - \$60,000 (not including benefits) ***Optional 2<sup>nd</sup> Shift only***

Supervises and coordinates activities of workers engaged in cutting carcasses into standard cuts, removing bones and trimming excess fat from cuts, and preparing special cuts for marketing. Directs and trains workers in use of knife, air-knife, saws, and other hand tools. Instructs new employees in cutting carcasses and preparing special cuts. Examines cuts of meat to determine if quality standards are met. Inspects meat for specified color and texture to verify conformity to government regulations. Has skills or performs other duties as described below.

#### Duties & Responsibilities

##### *Operational*

- Provide leadership that promotes team effort by personnel to accomplish the highest standards for sanitation, safety, and attention to detail in meat processing
- Ensure a high level of sanitation as required by the USDA
- Implement systems to ensure proper tracking of products from live animals to finished cuts - including carcass, order, and freezer management
- Oversee daily operations to ensure a high level of efficiency, sanitation, and professionalism
- Regular testing of product to ensure food safety
- Fix/delegate any maintenance issues
- Keep all machinery and tools in clean, working order
- Keep inventory and order items to keep supplies stocked at working levels
- Ensure humane handling standards are met consistently

##### *Administrative*

- Keep a high level of customer service and public relations

- Record keeping of all FSIS documents, as well as company files and documents
- Daily bookkeeping including managing accounts receivables and payables, worker's hours, and purchase orders
- Ensure the front of the plant (offices, meeting rooms, bathrooms, outside) is clean and orderly
- Manage employees including approving raises, hiring and firings based on performance reviews
- Maintain a strong working relationship with other processors and vendors in the area
- Develop and implement new products or services to offer customers
- Create and implement a marketing strategy for services, including marketing to producers and marketing of educational opportunities for producers (in collaboration with UCCE)
- Maintain a company website
- Attend regional and national association conferences
- Represent the company at any festivals and gatherings in the region

#### Knowledge, Skills & Ability

- Extensive knowledge of FSIS regulation, including HACCP, SSOP, labeling, and quality assurance programs
- Extensive knowledge of various meat products
- Extensive knowledge of humane animal handling, stunning, and harvest procedures
- Understand where hazards in a food production process can be controlled, reduced or eliminated
- Work with a variety of knives, hand tools, power equipment and computer-operated machinery
- Possess good eye-hand coordination, common sense and safe working habits
- Be able to work with heavy machinery and heavy pieces of meat
- Possess stamina to allow for long periods of standing in a cold or hot environment
- Need good physical strength for lifting and carrying up to 50 pounds
- Possess a high standard for personal hygiene and motivate others to do the same
- Be able to give advice about alternative cuts, cooking methods, storage requirements and nutritional aspects of meat products

#### Credentials & Experience

- 3-5 years meat processing experience (inspected facility a plus)
- 3-5 years in a managerial role
- Bachelor's degree or equivalent work experience
- Food service experience a plus

**Position Title:** General Assistant - \$28,000 (not including benefits) *Optional 2<sup>nd</sup> Shift only*

The General Assistant works in slaughtering and meat packing and may perform precision functions involving the preparation of meat. The assistant helps move animals in preparation of slaughter, moves animals along the rail to the cooler and back to the butcher. The assistant will help with clean-up and will move packaged meat, hides and offal to storage and may assist in moving product to delivery trucks. Work may include specialized slaughtering tasks, cutting standard or premium cuts of meat for marketing, making sausage, or wrapping meats. Has additional skills or other duties as described below.

#### Duties & Responsibilities

- Assist in receiving livestock for slaughter
- Maintain cleanliness of the live slaughter animal holding area
- Assist butcher in livestock movement prior and during slaughter
- Careful and safe use of tools and equipment during production and during cleaning
- Assist meat cutter/packager, driver/cleaner, and cleaner in the performance of their job duties

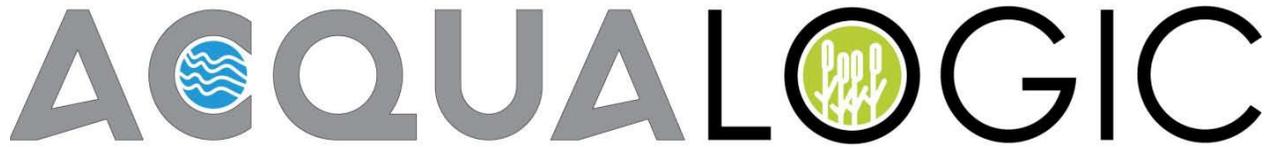
#### Knowledge, Skills & Ability

- Have an adequate understanding in the care and handling of livestock and carcasses
- Have an adequate understanding of meat processing techniques, cuts, and packaging
- Be able to work well with others and willing to provide excellent customer service
- Possess a willingness to always improve your knowledge, skills and abilities
- Work with a variety of knives, hand tools, power equipment and computer-operated machinery safely and effectively
- Possess good eye-hand coordination, common sense & safe working habits when using tools & equipment
- Be able to assemble and operate, disassemble and clean the equipment in all departments
- Possess stamina and good physical strength for lifting and carrying
- Possess stamina to work in hot and cold environments while standing for long periods
- Possess a high standard for personal hygiene

#### Credentials & Experience

- High School Diploma or equivalent
- Meat processing experience a plus
- Knowledge of livestock and meat

ATTACHMENT A



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December 17, 2013

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Subject: **Wastewater Pre-treatment System for Small Abattoir in Mendocino County**

Dear Shermain:

Pursuant to your request I have prepared this brief letter to introduce my wastewater treatment company and to propose a simple treatment system for a small abattoir currently being planned in Mendocino County. I understand that the proposed facility is expected to generate between 1,000 to 3,000 gallons per day of process wastewater primarily from the washing of equipment and work areas in the small slaughterhouse and processing plant and that the facility will be required to meet local pre-treat requirements if it is connected to the towns sanitary sewer system.

To briefly restate my experience and qualifications as a wastewater engineer. I have been working professionally in the field of wastewater treatment for over 28 years. Early in my career I worked for the California Regional Water Quality Control Board inspecting and permitting both domestic and industrial wastewater treatment and disposal facilities in the Central Valley of California. After leaving my state job I worked internationally in Honduras, Central America from 1990 through 1994 on a variety of water and wastewater projects. In 1994, I opened a civil and environmental engineering company, called Fall Creek Engineering in Santa Cruz, California, serving both public and private clients, including several food processing plants such as Alpine Meats in Lodi, California, Gilroy Foods in Modesto and numerous wineries throughout the Central California. Around 2005, I started a water and wastewater service division under my engineering company to service several of the systems we designed for our Clients. In 2010, we decided to create a new company called Acqualogic, Inc. to sell and service small wastewater and water treatment facilities for private and public clients. Several of our wastewater systems that have been installed treat high strength wastewater that is comparable to the wastewater that would be generated from a small abattoir. Based on our hands-on-experience I would like to propose a relatively simple, reliable, low-energy, and cost effective solution to your client.

Typical abattoir wastewater contains high levels of fats, oils and greases (FOGs) and dilute protein rich organic material that is easily biodegradable using both anaerobic and aerobic biological treatment processes. Typical process water from a small abattoir will contain a biochemical oxygen demand (BOD) ranging from 1,000 to 4,000 mg/L, total suspended solids concentration ranging from 500 to 1,500 mg/L and FOGs concentrations ranging from 200 to 1,000 mg/L.

Given the low estimated flows from the small abattoir, Acqualogic would propose that a simple two-stage pre-treatment system be installed to remove 85 to 90 percent of the BOD, TSS and FOGs. The proposed pre-treatment scheme would employ an anaerobic baffled reactor (ABR) (a more advanced septic tank design) followed by two aerobic AcquaLogic Biofilters. The AcquaLogic Biofilter is a proprietary advance filtration system that integrates both a trickling filter and clarifier into one tank. The system would be designed as a recirculating system to provide for continuous treatment to accommodate variable flow conditions common to a small processing plant. Treated effluent would be discharged to a local municipal sanitary sewer system.

ABRs and trickling filters have been used successfully to treat wastewater from meat packing plants and slaughterhouses.<sup>1,2,3,4</sup> A properly designed and sized ABR is used to reduce the high organic load in the wastewater, which can potentially overload the biofilters. The biofilters are used to remove the soluble or dissolved organic material contained in the water. I estimate that approximately 50% of the organic material in the wastewater is suspended or settleable material that will be retained in the ABR and the remaining 50% is soluble or dissolved material that will pass through the ABR and will be treated in the trickling filter.

I have prepared a preliminary cost estimate for the proposed treatment system described above. The estimate includes the costs for the equipment, materials, sales taxes, shipping and labor costs for the installation. The costs are summarized below and also include a 10% contingency.

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<sup>1</sup> A.J. Steffen. *Waste Disposal in the Meat Industry (A Comprehensive Review of Practice in the United States)*, Purdue University, Lafayette, Indiana

<sup>2</sup> US EPA. 1982. *Technical Development Document for the Final Effluent Limitations Guidelines and Standards for the Meat and Poultry Products*. (EPA-821-R-04-011)

<sup>3</sup> L. Cardosa-Vigueros et al., *Biofiltration for Treatment Sewage Water of Mexican Southeast Communities* (including slaughterhouse wastewater). Mexican Institute of Water Technology, Campeche, Mexico

<sup>4</sup> R.S. Gaur et al., 2007. *Treatment of Turkey Processing Wastewater with Sand and Sand-Textile Bioreactors*. 11<sup>th</sup> Individual and Small Community Sewage Systems Conference. Warwick, Rhode Island

Item	Quantity	Material Costs	Labor Costs	Total Costs
3,000 ABR Tank	2	3500	1500	\$10,000
AQL Biofilter Tank	2	14000	1500	\$31,000
Pumps	4	1000	750	\$7,000
Pump Controller	1	8500	1250	\$9,750
Plumbing Allowance	1	3000	2000	\$5,000
Electrical Allowance	1	1500	1500	\$3,000
Subtotal				\$65,750
Sales Taxes				\$2,712
Shipping				\$2,500
Contingency (10%)				\$6,575
<b>Total Estimated Costs</b>				<b>\$77,537</b>

I would be happy to discuss this project with you or your client further if they proceed with their plans.

Thank you for the opportunity to present this brief project summary and preliminary estimate. Please feel free to contact me if you have any questions or require any additional information.

Sincerely,

PETER HAASE, M.S., P.E.  
 CEO/CTO  
 AcquaLogic, Inc.