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Game Farm Depopulation and Disposal Exercise

Synopsis:

“Free-Range” and “Pasture Raised” labeled egg and poultry products are an increasing niche market with U.S. Consumers.

The farms producing these products are at higher risk for both endemic disease and foreign animal diseases (FAD) resulting from exposure to wildlife, such as Highly Pathogenic Avian Influenza (HPAI).

A raised for release game bird facility in NY was infected with *Pasteurella multocida*, (fowl cholera), an endemic, but economically significant disease for many producers causing significant increase in mortality. The game birds were raised utilizing a pasture pen management system.

A decision was made to depopulate the flock, with disposal by composting and decontamination of the outdoor pens using an extended fallow period protocol.

A multi-agency exercise was coordinated to train staff and test core capabilities in interagency cooperation, biosecurity, depopulation and disposal as part of a comprehensive Avian Influenza (AI) response plan that needs to account for these types of production systems. (Fig 1.)

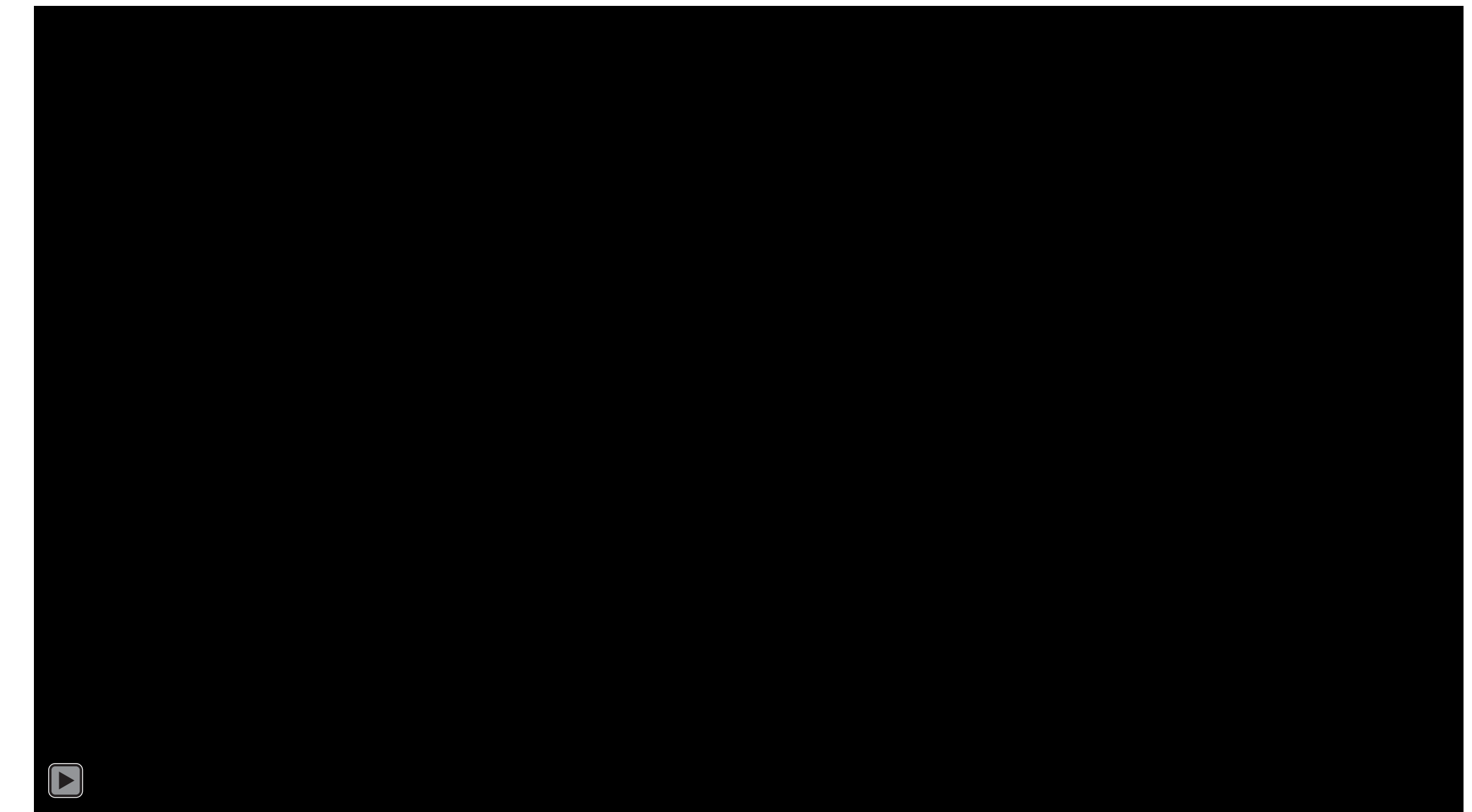


Figure 1. Educational video produced from exercise

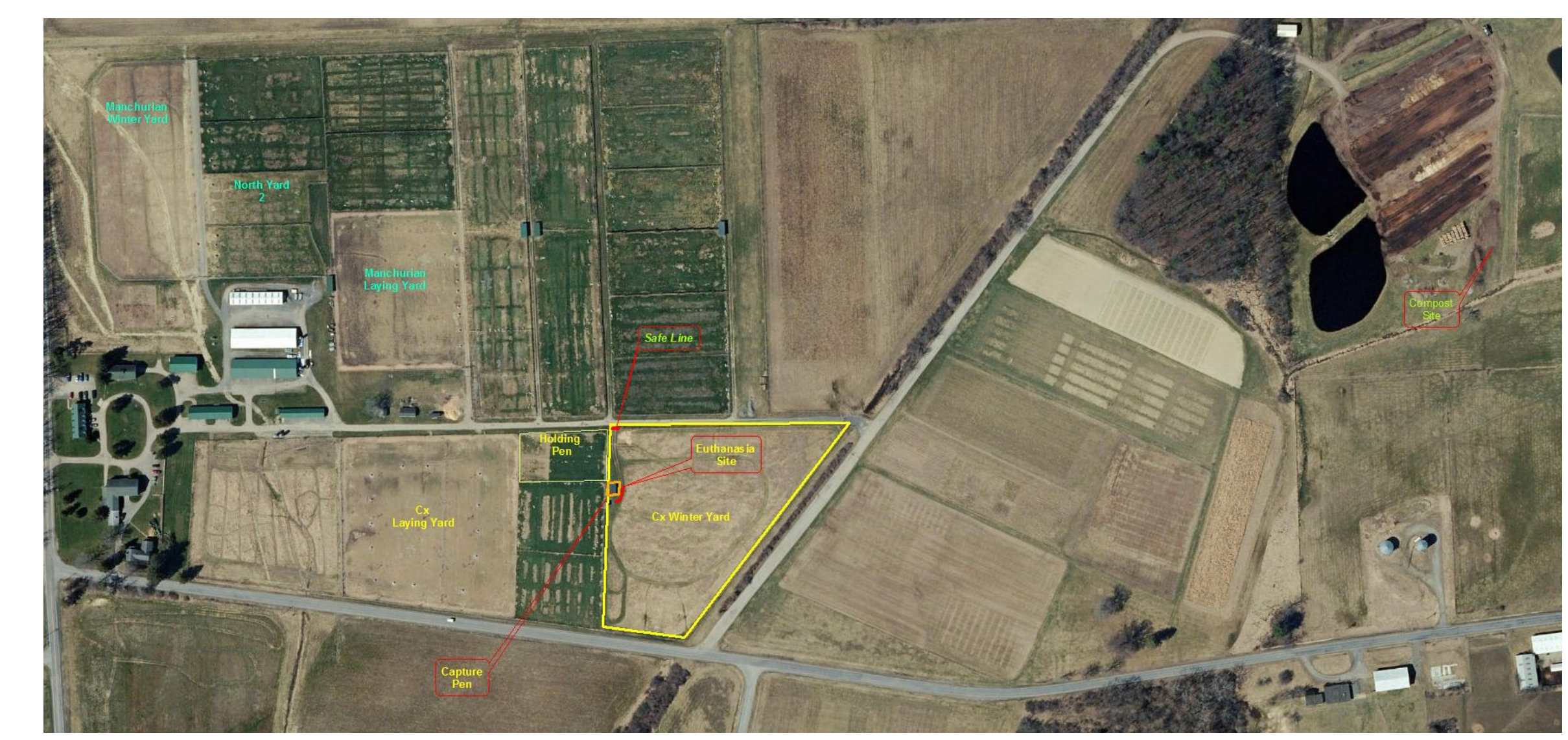


Figure 2. Aerial map of premise, flock and composting area

Decisions

Fowl cholera was diagnosed in the flock after an increase in unexpected mortality. Treatment under veterinary supervision was attempted twice. Due to poor response to treatment, the presence of a neighboring uninfected flock, concerns for animal welfare, and contamination build up in the affected pens, a decision was made to depopulate the flock.

Through pre-existing relationships, regulatory animal health officials were notified, the operation was turned into an exercise opportunity for response partners.

Six agencies and multiple divisions cooperated in a full scale depopulation, disposal and surveillance exercise.

Disposal

Birds were transported to the compost site in covered 32 gallon garbage cans in the bed of a standard pick-up truck.

Static pile composting was used for carcass disposal.
Base layer of 18-24” of wood chips
Pheasant carcasses were layered approximately 12-15” thick
Covered with an additional 12” of wood chips

This layering process was repeated until a final layer of 24” wood chips capped the entire pile. (Fig 5)

During the process, multiple pheasants were placed in mesh bags with strings extending to the outside of the pile so they could be exhumed to monitor for the presence of *P. multocida*.
Carcasses removed and tested at 6, 9, and 14 days (Fig 6)

Temperatures within the pile exceeded 140 degrees soon after 24hrs of capping.

Exhumed samples tested for *P. multocida* were all negative.

Exercise Organization

Participants
NYS Department of Agriculture and Markets (AGM),
NYS Department of Environmental Conservation (DEC),
Cornell Animal Health Diagnostic Lab (AHDL),
Cornell Waste Management Institute (CWMI),
USDA-APHIS – Veterinary Services (VS),
USDA-APHIS- Wildlife Services (WS)

Capabilities
Interagency communication and coordination
Biosecurity
Personnel Safety and Health
Humane Bird Capture and Handling
Humane Euthanasia
Transportation
Compost pile construction
Compost pile monitoring
Disease surveillance

Depopulation (Fig 3.) (Fig 4.)
Two primary methods of euthanasia were used for depopulation, Carbon dioxide (CO₂), and Turkey Euthanasia Device (TED).

Two additional methods of euthanasia were demonstrated, for training purposes, cervical dislocation and foam.

A total of 1,801 birds, 204 roosters and 1597 hens were euthanized.
Multiple safe- guards were put in place to monitor for complete humane euthanasia.

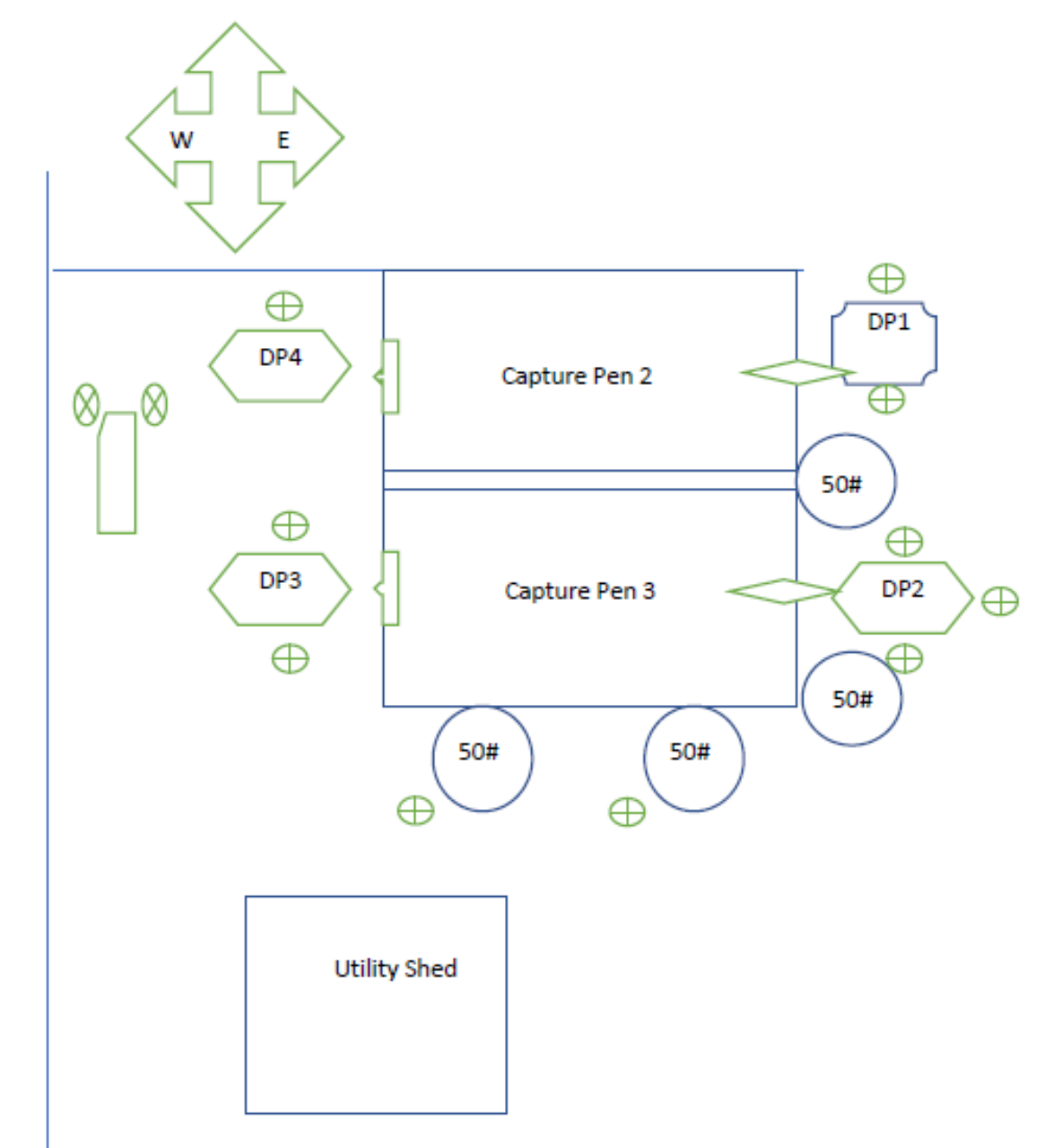


Figure 3. Schematic of depopulation teams (DP) and large CO₂ tanks (50#).



Figure 4. Picture of depopulation activities.



Figure 5. Transport of carcasses and placement on compost pile.



Figure 6. Carcass identified for future pathogen sampling.

- Outcome:**
- Composting was effective for both carcass disposal and pathogen reduction/elimination.
 - Depopulation efforts were successful in preventing the spread to a biologically separate neighboring game bird flock.
 - Despite aggressive intervention and biosecurity protocols, birds raised on the same ground in the next year, also became infected with *P. multocida*.
 - This raises concerns about the efficacy of a fallow period for landscape decontamination, pathogen persistence, and the potential for continued transmission between wildlife and raised animals.