LINES OF EVIDENCE LINKING POULTRY WASTE TO ENVIRONMENTAL CONTAMINATION

#1 Technical literature on characteristics of poultry waste, including bacterial composition demonstrating presence of *E. coli, Salmonella, Campylobacter* and fecal indicator organisms at high concentrations in birds and litter

#2 Very large quantities of poultry waste are applied to selected IRW land in a focused time period during the year

#3 Very high levels of the same or similar bacteria (including enterococcus, E. coli, fecal coliforms) are found in samples of poultry waste, Edge of Field water, and nearby surface water

#4 Numerous "Edge of Field" water samples show bacterial counts in water which are similar to water samples reported during spills of raw sewage

#5 Mass of fecal matter from poultry generated in IRW constitutes very significant proportion (nearly half) of total bacterial loading. Coupled with pattern of application in large quantities, over relatively small areas, within limited annual time span, serves to emphasize poultry contribution. This distribution is quite different than pattern for cattle, in ways that make it much more significant as fecal bacterial source

#6 Many water samples exhibit very high bacterial levels in association with additional indicators of poultry waste. Principal Component Analysis (PCA) as conducted by Dr. Roger Olsen, results in clear conclusion of a "poultry fingerprint" defined by suite of common substances occurring in poultry waste found throughout the IRW.

#7 Bacterial source tracking study, as reported by Dr. Valerie Harwood, provides an excellent "marker effect", by which unique biochemical characteristics of specific poultry bacteria are isolated and used to evaluate source of bacteria in local water. Those markers have been identified in a wide variety of samples throughout the IRW.

PLAINTIFF'S EXHIBIT J