

## THE USE OF A CORN GRAIN YIELD MONITOR TO EVALUATE SOIL QUALITY OF RECLAIMED PRIME FARMLAND<sup>1</sup>

Richard I. Barnhisel<sup>2</sup>

During the past few years, target yields for corn have been measured with a plot combine equipped with a yield monitor. The primary goal was to determine productivity for phase III bond release and provide statistical data that may be needed for this process. At the same time grain yield data was being generated that could be used to create maps. It was obvious that in some plots there were significant differences in the yields in different parts of these plots. After harvesting, areas within these plots were samples to determine why the yields were greater or smaller. Such parameters as actual topsoil thickness as well as overall soil thickness, soil fertility, and soil density was determined. Topographic differences were also observed such as small depressions that could pond water and could possibly produce nitrogen losses, thus affecting grain yield.

Several of the above factors seemed to be responsible for yield depressions. Although it was not possible to replicate such a study, there were several trends that could be attributed to the lower yields in some plots or portions of a plot. The three most frequent attributing factors were the presence of a small depression that is believed to have caused denitrification and the presence of compacted zone and areas of thinner topsoil. Actual soil N levels were never measured but the appearance of the corn crop indicated that N was likely lower in these areas based on corn height and color of the fodder. Soil fertility did not directly seem to be affecting corn yield as in most cases adequate P and K was found and the pHs were within an acceptable range.

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<sup>2</sup>Richard Barnhisel is a Professor in the Agronomy Department, University of Kentucky, Lexington KY, 40546.