The game of Seepage, first described by Clarke, et al. in 2009, is played by two players, Sludge, $S$, and Green, $G$, on a directed acyclic graph with a single source and several sinks. $S$ and $G$ alternately claim vertices of the graph, which subsequently cannot be claimed by the opponent. Sludge begins by claiming, or 'contaminating', the source. Afterwards, in sequence, $G$ can claim, or 'protect', any vertex on the graph, while $S$ can contaminate any vertex adjacent to an already contaminated vertex. $S$ is said to win if any sink is contaminated; otherwise, $G$ wins. The generalized version of this game allows $G$ to claim multiple vertices each turn. The green number of a graph $H$, $gr(H)$, is defined to be the minimum $k$ such that $G$ can guarantee victory with at most $k$ moves on each turn. Graphs are called green – win if $gr(H) = 1$, sludge – win if $gr(H) > 1$ and $k – green – win$ if $gr(H) = k$. In their paper, Clarke, et al. characterized green-win and $k$-green-win rooted trees $T$, providing a polynomial time algorithm for determining if $gr(T) = k$. We introduce a more generalized algorithm that determines if $gr(H) = k$ for any directed acyclic graph, as well as methods to reduce the number of vertices and edges of a graph without changing the green number. (Received September 20, 2016)