Search for $X \rightarrow J/\psi \omega$ in the $B$ decays, $B \rightarrow X K$ ERIC ECKHART, Colorado State University, BABAR COLLABORATION — There is still much uncertainty as to the nature of the $X(3872)$ observed by Belle in 2003. It may possibly be a charmonium state, a bound state of charmed mesons or a hybrid state of gluons and charm quarks. The decay $X \rightarrow J/\psi \omega$ might be a favored decay if the $X(3872)$ is actually a bound state of two charmed mesons. We report a search for $X(3872) \rightarrow J/\psi \omega$ in $B \rightarrow X K$ decays using 205 $fb^{-1}$ collected on the $\Upsilon(4S)$ resonance by the BaBar detector at the PEP-II asymmetric e+e- storage ring.