A survey was conducted in the Obuasi Municipality to assess the impact of some trace metals and nutrients on mosquito breeding sites from 15 randomly selected communities. The water samples, collected fortnightly for eight months, were analyzed using spectrophotometry and other standard laboratory protocols at the AngloGold Ashanti Environmental Quality Assurance Laboratory. The results on trace metals, and nutrients did not reveal any significant pattern of attendant pollution that would influence the breeding patterns of mosquitoes. However, the trace metals ranged from 0.12±0.01mg/L - 13.42±0.01mg/L and 0.01±0.01mg/L - 0.30±0.01mg/L for Fe and Pb respectively in the waters whilst As and Zn were not detected. For the nutrients - nitrate values which were > 1 ranged from 2mg/L – > 40mg/L. Sulphate levels varied between < 20mg/L and > 200mg/L and were above the EPA Maximun Permissible Limit of 1.5 mg/L for polluted natural water bodies. There was no definite pattern in the concentrations of phosphates which varied between 0.1mg/L and 1.5mg/L in the waters. It is apparent that under rising temperature conditions of climate change, the mosquito's habitat may be highly favoured for adaptation and prolific breeding in the tropics and this further creates the opportunity for research partners to get actively involved in finding integrated control measures to counteract the life cycle of the pest. Keywords: Anglogold Ashanti, Obuasi Municipality, Traced Metal Analysis, Mosquito Breeding Waters