Commonly found arsenic species in human urine are AsIII (arsenite), AsV (arsenate), MMA (monomethyl arsenic acid), DMA (dimethylarsinic acid) and AB (arsenobetaine). Evidence has shown that these species vary in toxicity and have the potential to be used as biomarkers for human exposure. For human exposure assessments in areas that have naturally occurring arsenic contaminated sources, or those who live or work near contaminated environmental sites where arsenic has been used, it is important to fully understand what species of arsenic residents are being exposed to in order to grasp the risk of arsenic exposure.

Since it is difficult to determine direct human exposures, a swine model was used as a surrogate. Urine samples from these studies were analyzed using the using high-performance liquid chromatography and inductively coupled plasma mass spectrometry (LCICPMS) to quantitate arsenic species. There was a range of 64-74% DMA determined in swine urine samples for all test soils where a range of 60-75% DMA has been reported in human urine samples. This illustrates a possible correlation to human exposure. If proper measurement systems are utilized to quantify arsenic species of health concern, dosed swine can be used to assess and predict human toxicological effects of arsenic exposure.