



# GROUNDWATER QUALITY ANALYSIS REPORT

## *Prey Veng - Kanhchriech - Tnaot (67D)*



Tnaot is located in the district of Kanhchriech. The population of this commune is approximately 4990 (2004). Groundwater sample collection occurred in October 2007 and consisted of the sampling of 20 tube wells throughout the commune. The attached figure presents the location of Tnaot within Prey Veng as well as groundwater sample locations and exceedances of health-impacting contaminants (when applicable).

### **Groundwater Quality Rating**

The groundwater quality rating for Tnaot is 67D. Therefore, the general safety of deep aquifer groundwater is satisfactory and the aesthetic quality of the water is satisfactory, according to the contaminants measured and samples collected. The following two sections describe all major health and aesthetic contaminants that exceeded drinking water standards in at least one sample within the commune.

### **Contaminants of Potential Concern – Health**

Fluoride - Elevated concentrations of Fluoride were observed within the commune. The estimated probability of encountering unacceptable concentrations of Fluoride (>1.5 mg/L) in tube wells is 41%, based on the observed data. At concentrations greater than 1.5 mg/L, Fluoride can cause dental fluorosis and at concentrations greater than 4 mg/L, skeletal fluorosis can occur.

### **Contaminants of Potential Concern – Aesthetic**

Iron - Elevated concentrations of Iron were observed within the commune. The estimated probability of encountering potentially unacceptable concentrations of Iron (>1 mg/L) in tube wells is 33%, based on the observed data. At elevated concentrations, Iron causes water to be cloudy and unpleasant to drink. An odor may also be encountered at high concentrations. Iron can also stain laundry, food (can cause discoloration of cooked rice), and leave deposits. Aeration allows oxygen to enter the water and react with Iron to form a compound which is insoluble in water. The newly formed solids will slowly settle to the bottom or can be removed more rapidly by filtration. Performing these procedures may reduce the concentration of Iron in water but follow-up testing is recommended to ensure water quality standards are met.

Hardness - Elevated levels of Hardness were observed within the commune. The estimated probability of encountering potentially unacceptable levels of Hardness (>500 mg/L) in tube wells is 5%, based on the observed data. Elevated hardness levels impact the effectiveness of soaps and detergents and can cause scaling on pipes and pans. Contrary to common belief, there is no relationship between consumption of hard water and urinary tract problems and kidney stones.

