



Joliet Alternative Water Source Study

Topic #3: Water Quality Standards

December 9, 2018

Primary and Secondary Drinking Water Quality Standards are established by the Safe Drinking Water Act. (<https://www.epa.gov/dwstandardsregulations>)

The National Primary Drinking Water Regulations (<https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations>) are legally enforceable primary standards and treatment techniques that apply to public water systems. Primary Standards protect public health by limiting the levels of contaminants in drinking water which can cause adverse health effects. Maximum Contaminant Levels (MCLs) have been established for 6 categories of contaminants: Microorganisms, Disinfectants, Disinfection Byproducts, Inorganic Chemicals, Organic Chemicals, and Radionuclides.

The following are examples of Primary Regulated Contaminants in each category:

- Microorganisms – Cryptosporidium, Total Coliform
- Disinfectants – Chlorine, Chloramines
- Disinfection Byproducts – HAA5, TTHMs
- Inorganic Chemicals – Arsenic, Nitrate, Lead Copper, Chromium, Mercury, Fluoride
- Organic Chemicals – Atrazine, Benzene, Styrene, Toluene, Xylenes
- Radionuclides – Radium 226 and Radium 228, Total Alpha

The National Secondary Drinking Water Regulations (<https://www.epa.gov/dwstandardsregulations/secondary-drinking-water-standards-guidance-nuisance-chemicals>) are non-mandatory water quality standards for 15 contaminants, which are not enforceable by EPA. These Secondary Standards are guidelines for aesthetic characteristics like taste, color and odor and do not present a health risk. The Secondary Standards include the following contaminants: Aluminum, Chloride, Color, Copper, Corrosivity, Fluoride, Foaming Agents, Iron, Manganese, Odor, pH, Silver, Sulfate, Total Dissolved Solids (TDS), and Zinc.

While the above dictates the national water quality standards, the gold standard that everyone recognizes in Northeastern Illinois is “Lake Michigan Water”. Water Quality Testing from the City of Chicago’s South Water Purification Plant and Jardine Water Purification Plant for February, April and August of 2017 can be obtained from the DuPage Water Commission website: <http://www.dpwc.org/wp-content/uploads/2018/01/2017-CCA.pdf>. When comparing water quality between multiple water sources we typically look at the following parameters (most of which fall under the Secondary Standards): pH, turbidity, hardness (calcium and magnesium), alkalinity, color, iron, manganese, fluoride and chlorine. What people do not realize is that most other water sources can be treated to achieve the same aesthetic water



quality parameters as “Lake Michigan Water”. Water quality for the 14 alternatives being evaluated during the Phase I study will be discussed in more detail as part of the Phase I report.