

# CLEAN RESOURCES

ENVIRONMENTAL INNOVATION

WATER INNOVATION PROGRAM

## FUNDING DETAILS

### Characterization of undesirable water-soluble organics in source and drinking water using advanced analytical technology

The University of Alberta is collaborating with EPCOR to investigate unexpected occurrence of odor and off-taste drinking water in recent years. For example, EPCOR encountered unforeseen odor and off-taste complaints from Edmonton Area customers in Spring 2013 and Summer 2015, which could not be explained based on usual water quality characterization parameters. Some studies suggest small peptides, which may serve as disinfection byproduct precursors, could adversely affect odor/taste. Therefore, this study will characterize the organics in our source water and develop analytical methods to optimize treatment conditions to reduce/eliminate odor/taste problems.



**RECIPIENT:**

**University of  
Alberta**



**PARTNERS:**

**EPCOR, Sciex,  
Alberta Centre for  
Toxicology**



**TOTAL BUDGET:**

**\$1,238,000**



**AI FUNDING:**

**\$680,000**



**PROJECT DATES:**

**JANUARY 2020 –  
JUNE 2023**

## APPLICATION

Understanding the nature of organics in our source water will help optimize the treatment conditions without changing major equipment. The results of the project will provide important information of precursors and disinfection byproducts in assisting municipal water utilities (e.g., EPCOR) to optimize drinking water treatment schemes and to plan for a future monitoring strategy.



# ALBERTA INNOVATES CLEAN RESOURCES

## ENVIRONMENTAL INNOVATION

### WATER INNOVATION PROGRAM

## PROJECT GOALS

The goals of this project are to develop and apply analytical tools for comprehensive characterization of organic compounds in source water and treated water.

The key goals are:

- Develop new materials and methods for efficient capture/enrichment/removal of organics in water.
- Develop new analytical platforms and methods for the identification and quantification of organics in water and disinfection byproducts of interest.
- Apply the new analytical technologies to study Alberta source water.
- Engage partners/end users for knowledge translation.

## BENEFITS TO ALBERTA

The success of this project will provide innovative analytical technologies for determination of organics in source water and disinfection byproducts in treated water. The results of the project will enable:

- Better understanding of the background of organics in Alberta water.
- Optimization of water treatment to reduce/eliminate odor/taste compounds in drinking water.
- Better preparation for dealing with future unforeseen events.
- Enhanced capability to monitor water quality for protection of public health.
- Contribution to future policy process on water quality.



**4 Publications**



**16 Students  
Trained**



**1 Patents**

## CURRENT STATUS

**APRIL 2020**

The project is ongoing. Experimental design and sample plans are complete.