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# The Journey of Water

Huron-Kinloss Nuclear Waste Community Advisory Committee

Presented by: Jessica Perritt & Andre Vorauer

April, 2018

# Teaching Each Other

**Indigenous Knowledge (IK)**  
Dominant Theme  
*(Relationships)*

**Western Knowledge (WK)**  
Dominant Theme  
*(Repeatability)*

**IK System Understanding**  
a) General IK description  
b) Specific IK product  
c) Western understanding

**WK System Understanding**  
a) General WK description  
b) Specific WK product  
c) Indigenous understanding

**Informed Decision Making**

**Recognition**



**Understanding**

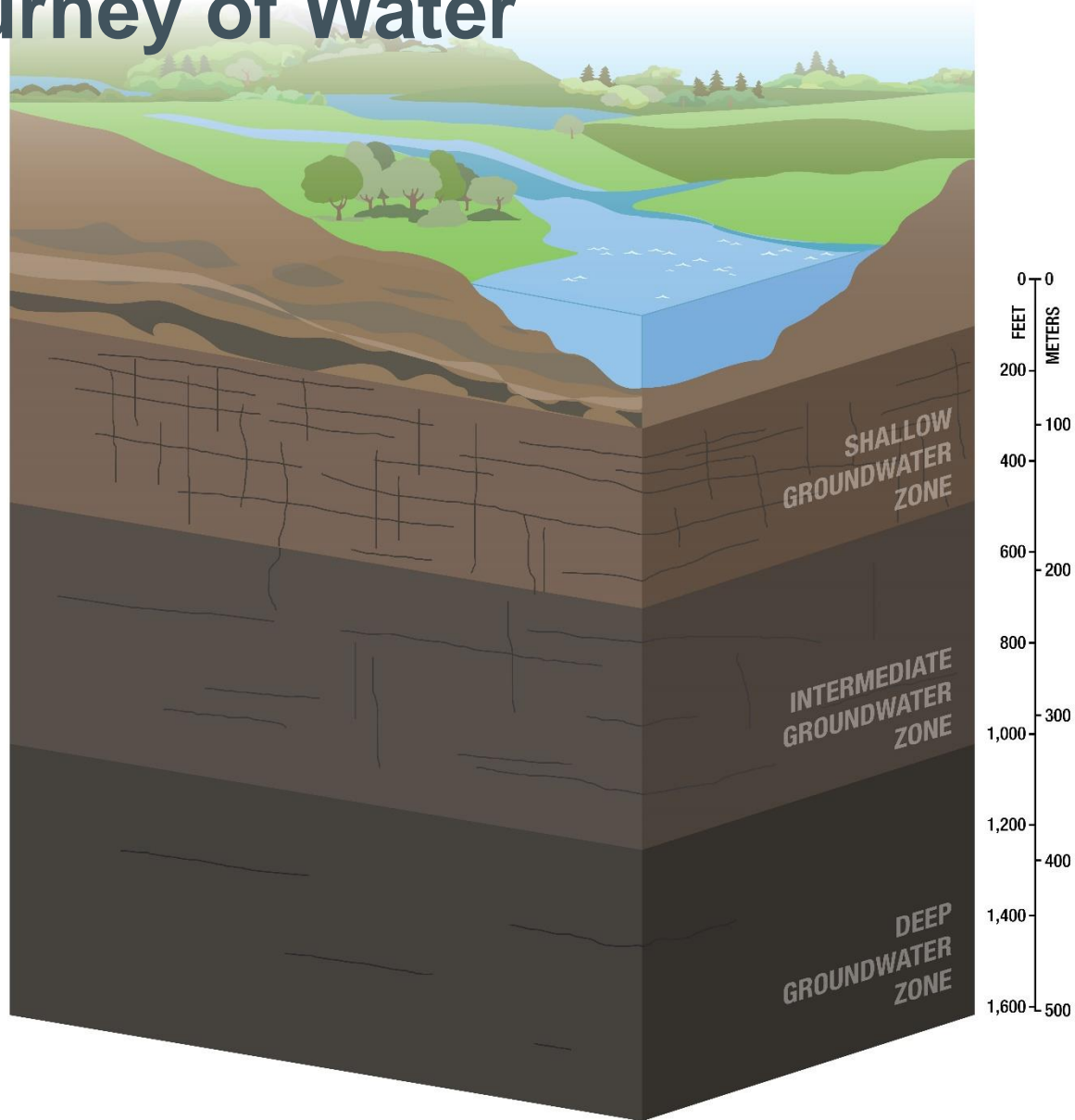


**Informed Understanding**

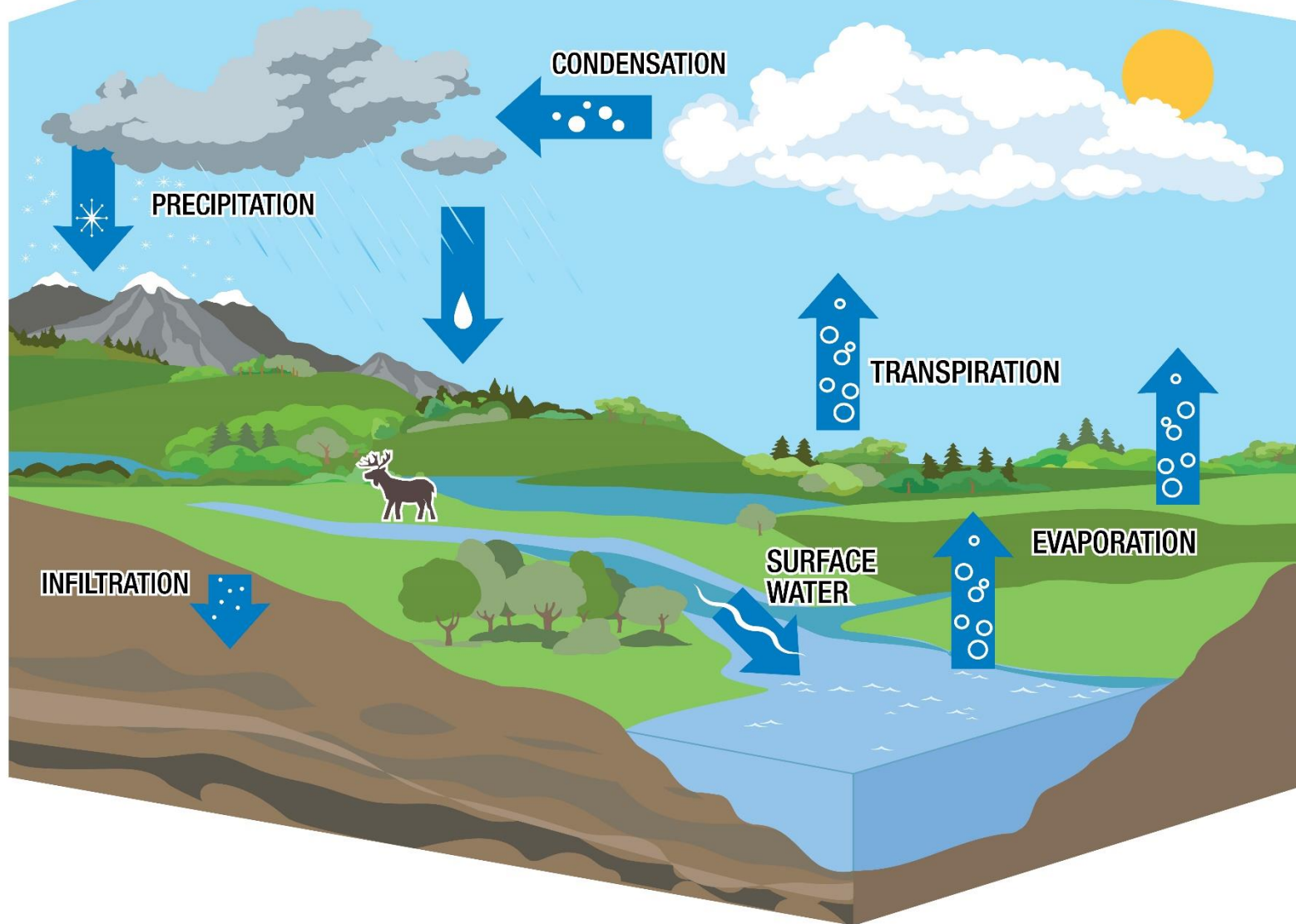


**Informed Decision Making**

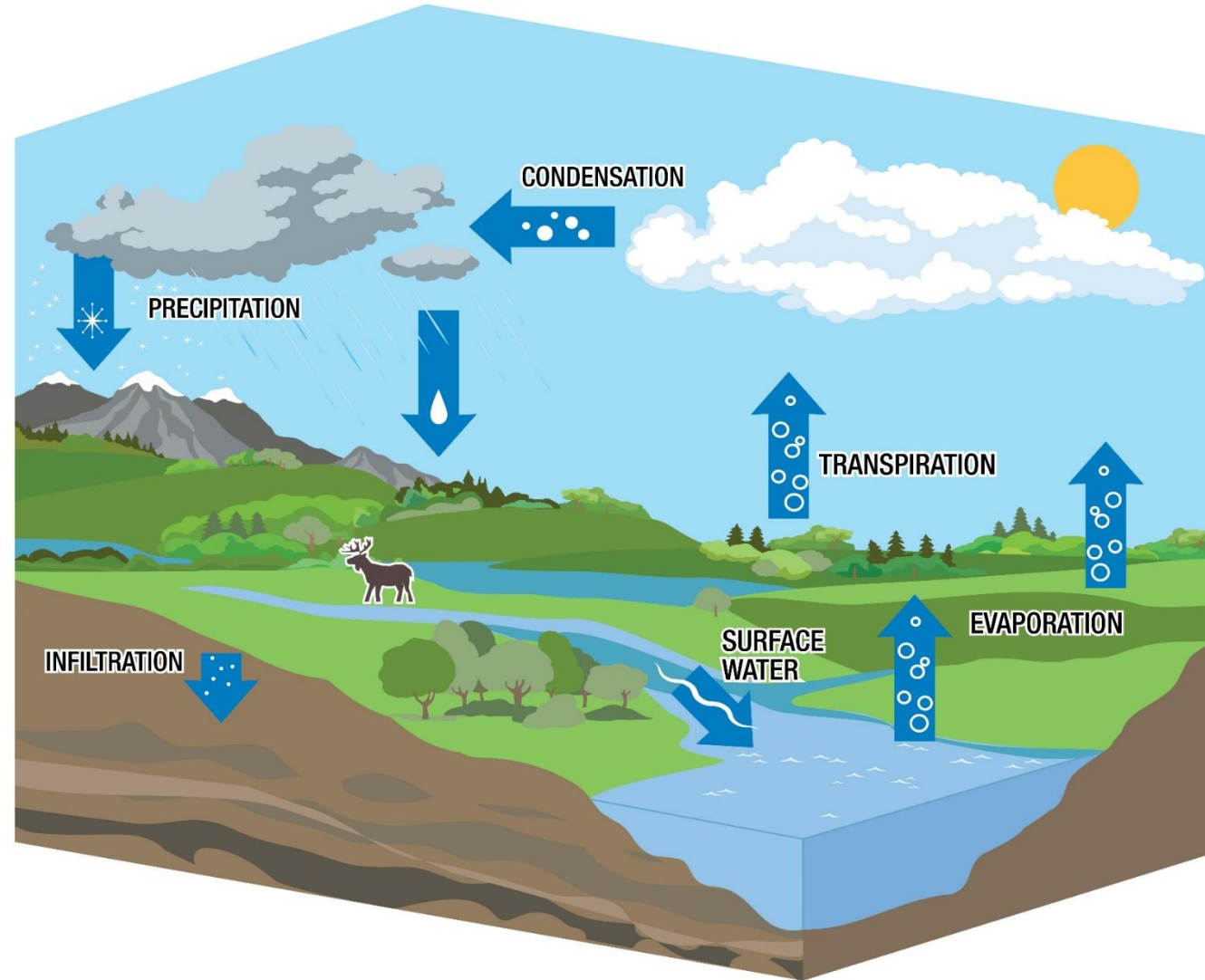
# The Journey of Water



# Water Cycle Above Ground



# Water Cycles – Life Cycles



# Taking a Closer Look at How Water Moves Above Ground

Quick Journey



Long Journey



Even Longer Journey



Even Longer Journey



# Great Lakes

Lake Superior  
191 years

Lake Huron  
22 years

Lake Ontario  
6 years

Lake Michigan  
99 years

Lake St. Clair  
7 days

Lake Erie  
2.6 years

# Water Has Memory

One way to think of memory is that it captures who we are, where we have been and what experiences we have had.

Some of the properties of a collected water sample can help reveal aspects of its origin and its journey.

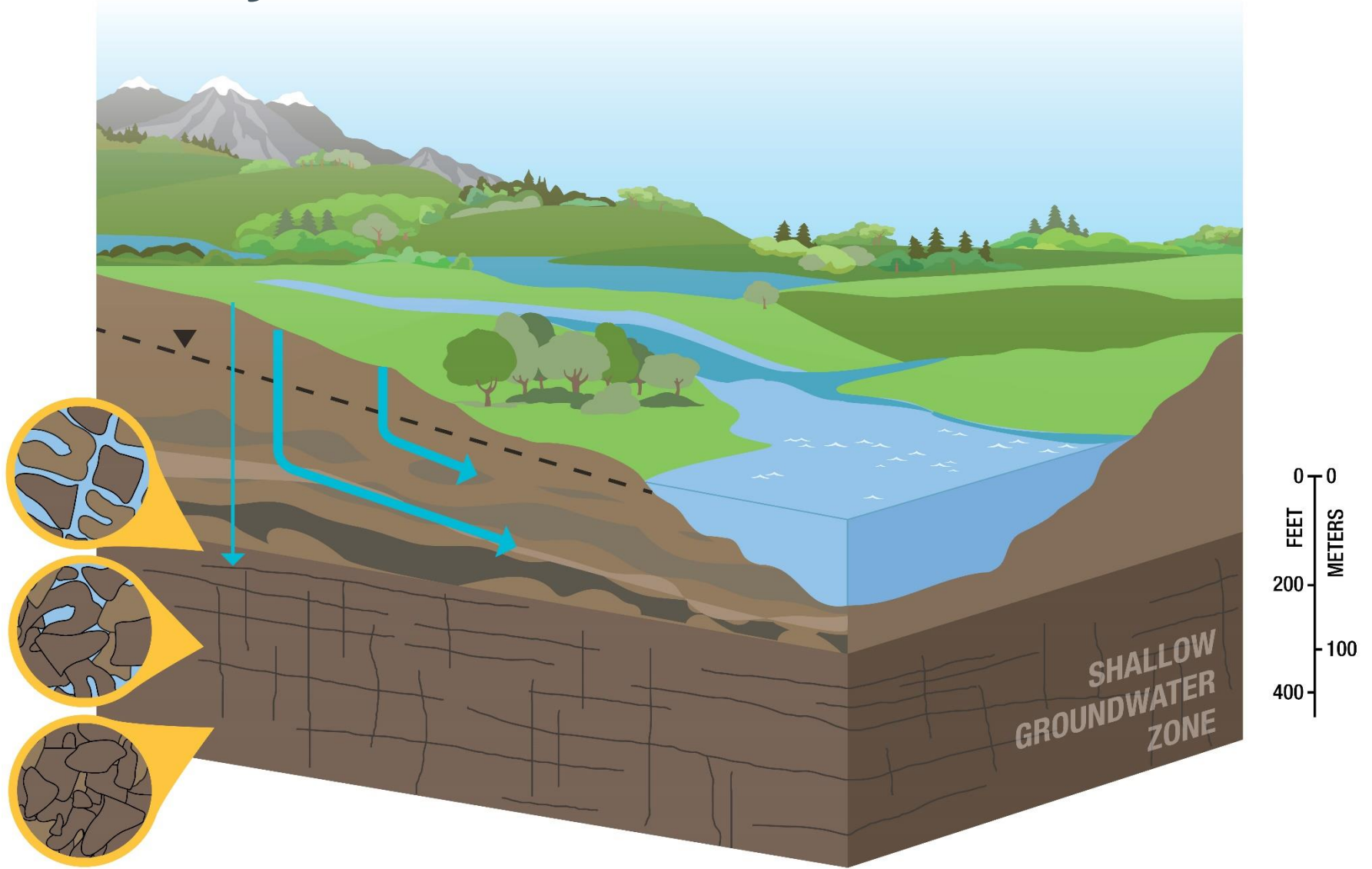
The oxygen and hydrogen atoms of water can reveal the temperature conditions under which it was exposed in the past, like if it was frozen in a glacier and then melted or if it was heated deep within the earth.

The elements that are dissolved in the water sample such as calcium, magnesium, carbonate and sulphate can reveal the type of rock that the water has contacted during its journey.

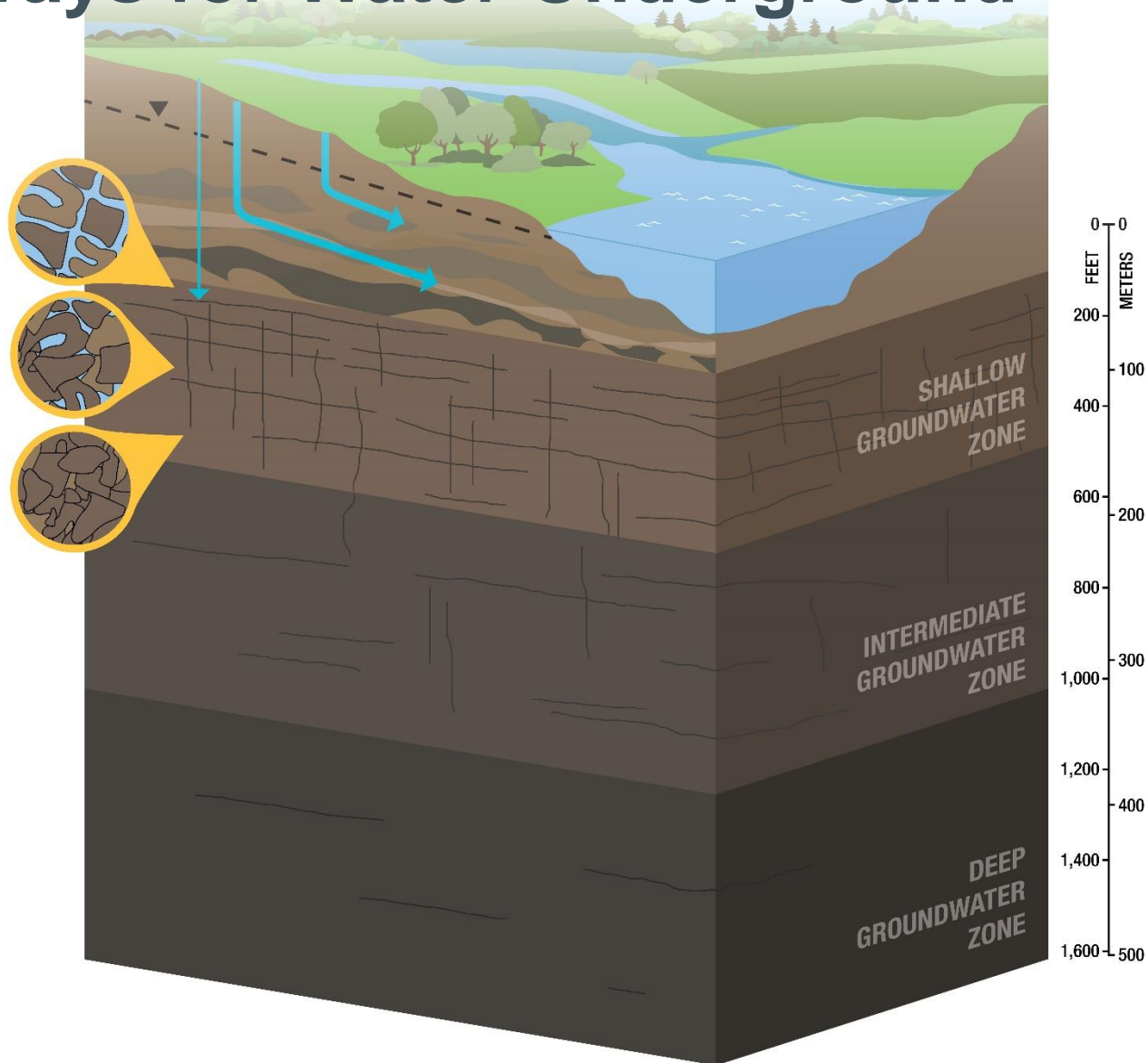




# Water Cycle Below Ground



# Pathways for Water Underground



# Examples of Age Dating



HOME BLOG TSHIRT SHOES PILLOW

Home > News > Archaeologists Dig Up An 800-Year-Old Nat

## Archaeologists Dig Up A Native American Pot. What Inside Is Changing History



Posted by **Indigenous American** on May 14, 2017

In 2008, on a dig in the First Nation's Menominee Reservation in Wisconsin, archaeologists made a discovery: a tiny clay pot.

Though it might not have seemed very impressive at first glimpse, the pot is 800 years old.

And inside that pot? Something that changes how we're looking at extinction, preservation, and food storage, as well as how humans have influenced the planet in their time on it.



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## Two-billion-year-old water found in Ontario

Air Date: Dec 15, 2016 5:58 PM ET



Two-billion-year-old water found in Ontario  
CBC News Toronto



Two-billion-year-old water found in Ontario 0:14

University of Toronto geoscientists have discovered two-billion-year-old water in a mine in Timmins, Ont., the oldest in the world.

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## ROCKY MOUNTAIN NEWS



Weather

Severe weather

Alliston  
Burlington  
Dundalk  
Haliburton  
Kawartha  
Waterloo  
Muskoka  
Orangeville  
Pickering  
Richmond Hill  
Toronto  
Walkerton

Tuesday



20°C

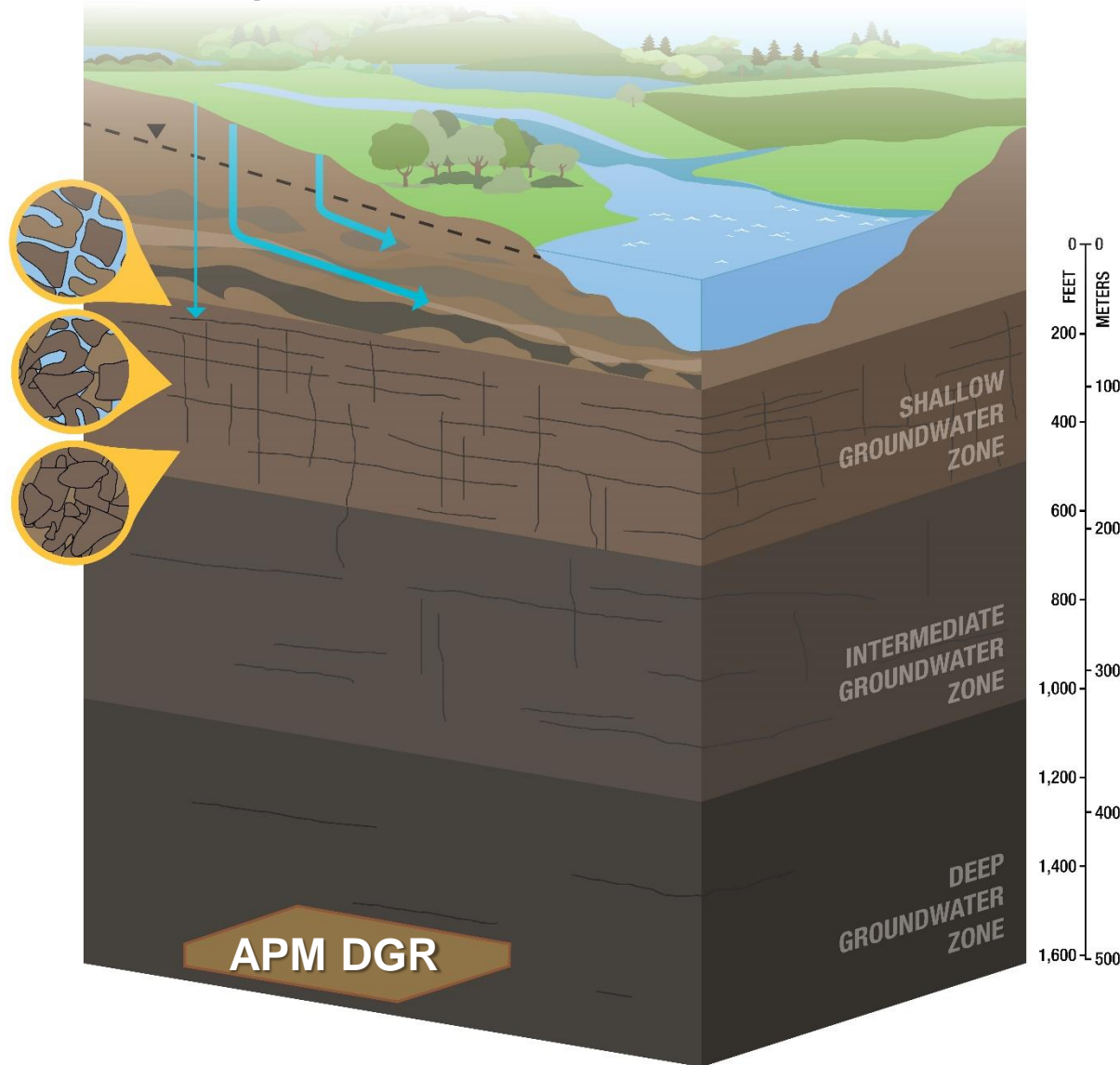
More Weather

## Heiltsuk oral history is older than

Researchers are backing up Heiltsuk oral history

Researchers with the Hakai Institute are backing up Heiltsuk oral history

# Safety Criteria that Guide Site Selection



- Low groundwater movement at repository depth
- Favourable chemical composition of water at repository depth
- Resists changes from earthquakes and ice ages

# Discussion & Questions?

## What's next?