



2018 Energy & Water Summer Institute July 3-7, 2018

We acknowledge that our program takes place in the historical boundaries of Treaty 6 and Treaty 8 lands, and we pay our respect to the Indigenous ancestors whose footsteps have marked these lands for centuries.

Monday, July 2, 2018

Get a jump-start on getting to know each other! Out-of-town guests are welcome to check in to our fine accommodations in the Leduc area. Rooms will be same-gender, double occupancy. Inside Education staff will not be on site, so don't have any fun without us!

Day 1: Tuesday, July 3, 2018

Start Location: Leduc #1 Discovery Centre ([50399 Highway 60 South, Devon](#))

Doors open 9:00 am, registration at 9:15 am.

Come early to check out the Leduc #1 Energy Discovery Centre before the program begins.

On February 13, 1947, the employees of Imperial Oil were shocked to learn that they struck oil. It only took 134 tries to find it, and Leduc #1 changed Alberta's history. Come find out why Imperial Oil geologist Ted Link worked hard to convince the Imperial Oil board to drill one more hole, and how the discovery was 365 billion years in the making.

NOTE: Vehicles will be left in the overflow parking lot. Inside Education will cover parking costs for the duration of the week.

9:30 Welcome and Introductions

Inside Education staff join forces to kick-off our Energy and Water Summer Institute! We are so excited to be your hosts, we have a tidal wave of enthusiasm to share! We'll be joined by Adam Young from Ingenium, who will be providing engaging, classroom-ready activities throughout the program.

Hosts: Laura Pekkola, Steve McIsaac, and Jayme Nelson, Inside Education

Educator-in-Residence: Adam Young, [Ingenium](#) and Let's Talk Energy

10:30 - 10:45 Break

10:45 am - 11:15 am Energy Spotlight: Hydraulic Fracturing

Our travels across Alberta will take us away from the regions of shale gas on the Western side of the province, so JoAnne will introduce us to the sector, the process of hydraulic fracturing, and the complexities of using water to access fossil fuels.

Speaker: JoAnne Volk, Repsol

11:15 - 11:45 Alberta Innovates: Water Innovation Program

Alberta Innovates is a provincially funded corporation that focuses on delivering 21st-century solutions for the most compelling challenges facing Albertans. The [Water Innovation Program \(WIP\)](#) is a flagship program targeting the advancement of knowledge and innovation in support of the [Water for Life Strategy](#) and [Alberta's Water Research and Innovation Strategy](#). Vicki will highlight the major innovations and research projects being undertaken with, and through, Alberta Innovates.

Speaker: Vicki Lightbown, Director, Water Innovation Program

11:45 - 12:15 pm Lunch

12:15 - 12:30 All aboard the coach bus to CanmetENERGY!

12:30 - 2:15 pm CanmetENERGY Tour



CanmetENERGY is Canada's leading research and technology organization in the field of clean energy, and a division of Natural Resources Canada. Get your closed-toed shoes out for this behind-the-science tour of the [Devon Research Centre](#), which focuses on the development of cleaner fossil fuels and related environmental technologies with a focus on oil sands and heavy oil. Wear closed toed shoes please!

Host: Yanne Messi, Director, Hydrocarbon Recovery, CanmetENERGY-Devon

2:30 - 7:00 pm Travel from Devon (the town) to Devon (the company)

We'll be passing from Treaty 6 territory to Treaty 8 territory. Watch for the signs when we cross the boundary!

Our Accommodations: Devon Jackfish Lodge

This ain't no summer camp! We often hear about "camp life" in the oil sands, and we're lucky to stay at Devon's own Jackfish Lodge. The 62,000-square-foot complex is one of the best facilities in the oil sands industry! This beautiful "camp" can accommodate 880 people, each with their own room and bathroom. We'll get a tour of the athletic facilities, onsite gym, theatre, and their renowned camp menu. Please note: Devon Jackfish Lodge is a dry camp. No alcohol allowed onsite (even in your bag).

POWER PAUSE & RAPID REFLECTIONS

- What was your "Ah-ha!" moment for the day?
- What role does the media play in our understanding of the current challenges faced by the Oil & Gas Industry?
- Both the provincial and federal government are investing dollars and staff to develop Canada's oil sands and heavy oil resources in a sustainable and responsible way. How important is it for provincial and federal governments to invest in research and technology to develop the oilsands? Should that responsibility fall solely on the oil sand companies? Could the government resources be used more effectively in developing our energy economy?

Day 2: Wednesday, July 4, 2018

Start Location: Devon Jackfish Lodge

After breakfast, feel free to pack a few snack for the bus if you want 'em!

8:45 am - 12:00 pm Cenovus Steam Assisted Gravity Drainage Site Tour



Both Devon Energy and Cenovus Energy are integrated petroleum exploration companies that work in northern Alberta to locate and extract natural gas and oil. These friendly competitors are working together this morning to show us the details behind SAGD (pronounced “sag-dee”) extraction. We won’t give away all the secrets, but almost ___% of the oilsands reserves in Alberta must be extracted through the SAGD (or similar) process. Get your glam shot face ready for all the photos in personal protective equipment! PPE kindly supplied by Cenovus. If you have steel toed shoes, you are welcome to wear them.

12:00 pm - 1:00 pm Lunch @ Cenovus’ Christina Lake Lodge

1:00 pm - 2:30 pm On our way to Anzac!

Like many places in Alberta, Anzac has been known by many names. The first English name (that we could find) for Anzac was Willow Lake, named for the waterbody nearby (which itself was once known as Gregoire Lake). Anzac was renamed after the Australian and New Zealand Army Corps who surveyed the area during World War I for construction of the rail line to Waterways. Waterways, known now as a neighbourhood of Fort McMurray, has played an important role in transporting heavy equipment and supplies needed for the development of the oil sands and the accompanying growth of the surrounding communities.

2:30 pm - 4:00 pm Indigenous Communities of Anzac

Indigenous communities across Northern Alberta have a long history with the oilsands deposits of the area. Since the 1920s, when interest first arose to separate the oil from the sand, this region has had a front row seat to the changing relationships between industry and indigenous communities. The hamlet of Anzac was originally a Cree, Beaver, and Chipewyan community, and it shares a historical name with the Willow Lake Métis. The Keepers of the Athabasca is a cross-cultural organization that focuses on water stewardship in the area. We are joined by members of Willow Lake Métis and Fort McMurray First Nation to hear their perspectives on how oil and water mix.

*Guests: Cleo Reece - Fort McMurray First Nations and Keepers of the Athabasca
Members of the Willow Lake Métis*

4:00 pm - 4:30 pm Let’s Talk Energy with Adam Young!

The impacts of climate change are a complex conversation, and Adam will help us navigate through some of the facets of adaptation and mitigation. We’ll also discuss how visual art can play an important role in how we view and understand the impacts of climate change. [Let’s Talk Energy](#) is a program under Ingenium and offers a wealth of resources for teachers and students alike!

5:00 - 6:00 pm Dinner: Zee Bar & Grill

Our guest speakers will join us for a hearty meal from locally-renowned Zee Bar. The chefs at Zee pride themselves on fresh ingredients and dishes from scratch, and this is the destination restaurant for the area. Thankfully, they'll come to us at the Anzac Rec Centre!

6:30 - 7:00 pm Drive to Fort McMurray

Every community in the boreal region has a rich history, but we encourage you to do a little digging on [Fort McMurray](#). It has gone through its own name changes, it gave up the "city" designation, and is most known as a bedroom community for the oilsands industry. Did you know it was once served by steamboat? Or that it has fought with the federal government over census population data? Or that ~18% of the population hails from Newfoundland and Labrador?

Our Accommodations: Fort McMurray Quality Inn, double occupancy, same gender.

This hotel has a 24-hour Fitness Centre, 24-hour Business Centre and two on-site restaurants (did someone say billiards tournament?). Our morning will start with a full complimentary hot breakfast.

POWER PAUSE & RAPID REFLECTIONS

- What was your "Ah-ha!" moment for the day?
- How does the cultural history of this area affect how we develop natural resources in the area?
- Are land rights and treaty claims in the area influencing economic prosperity?
- Consider the complexity of the relationship between oil and gas development and indigenous communities. On one hand, the oil and gas companies have employed many people from the local communities, and brought services (eg. towns, roads, schools) to the region. On the other, the traditional lands of the indigenous communities of the area have been impacted. We are all Treaty people, so do all Albertans have the responsibility to ensure companies are working to the highest capacity in terms of social license and environmental impact?

Day 3: Thursday July 5, 2018

Start Location: Fort McMurray Quality Inn

8:00 am - 11:30 am Suncor Tour: Oil Sands Mining



Suncor was once known as the Great Canadian Oil Sands, a subsidiary of the American company Sun Oil. Since 1995, Suncor has been an independent public company who has acquired Petro-Canada and Canadian Oil Sands in the past ten years. We'll spend the first part of the morning on the Suncor site, where we'll get a chance to see heavy haulers, tailings ponds and extraction plants. The second half will be looking at reclamation efforts, including Crane Lake, a popular nature trail network and bird sanctuary. **Wear closed toe shoes, long sleeves, and long pants. Government ID is required to access the Suncor complex. Please have it on hand when you board the bus.**

Hosts: Suncor Energy Steepbank Mine staff

11:30 Arrival at Oil Sands Discovery Centre (OSDC)

For more than 30 years, the OSDC has presented the history, science, and technology of Alberta's Oil Sands while offering a broad range of science programming through special events, summer camps, and school field trips. Get energized by exploring the Centre as we prepare for lunch!

12:00 pm - 1:00 pm Lunch

1:00 pm - 2:30 pm Cumulative Effects Panel

We've now seen both SAGD and mining efforts for the oilsands, but they aren't the only things happening up here. Traditional and treaty lands, forestry, natural gas, recreation and tourism all must find a balance. Add in the environmental services of wetlands, wildlife and species at risk, and a healthy functioning watershed: it's a lot of moving parts!

"[Cumulative effects](#) are changes to the environment that are caused by a human action in combination with other past, present and future human actions" (Government of Canada)

Guests: Queenie Gray, Alberta Parks; Sithara Fernando - Wildlife biologist, Bear Scare; Eber Araujo - Fort McKay Sustainability

2:30 pm - 3:30 pm Let's Talk Energy with Adam Young

Graphs, charts, and diagrams tend to dominate science-based discussions around climate change. Adam will help us figure out how to interpret the data to help our students (and friends!) understand climate science. Then, we'll get our family involved with a science themed game of based-on-but-not-actually *Family Feud!*

3:45 - 5:45 Back down the road to Devon Jackfish Lodge

6:30 Supper at Devon Jackfish Lodge

We said this wasn't a summer camp, but..."Second verse, same as the first!" We knew you'd love staying at Jackfish Lodge so much you'd want to come back! Now choose between 24/7 cookies or the gym...?

POWER PAUSE AND RAPID REFLECTIONS

- What was your "Ah-ha!" moment for the day?
- How can we value water, it's ecological significance and the services it provides in a manner that can be compared to the economic value of industries in Alberta, such as the oil and gas industry? How do we tie together environmental value and economic value?
- Can cumulative effects be positive? In what ways is industry minimizing negative effects/possibly having positive effects on water?
- What is the importance of our individual contributions to cumulative effects in our watersheds?

Day 4: Friday, July 6, 2018

Start Location: Devon Jackfish Lodge

Bus rolls out at 8:00 am

8:00 am - 9:15 am Allons à Lac La Biche (*that means “let’s go to Lac La Biche”*)

[Lac La Biche](#) is a French translation of a Cree phrase for “Lake of the Elk” and is a shining jewel in the boreal forest. The quaint hamlet boasts a proud French, Cree and Métis history - and is on the historical voyageur route that linked the Athabaskan region to Hudson Bay. The beautiful Lakeland region is home to 150 lakes, and Lac La Biche happens to be one of the largest water bodies in Alberta.

9:30 am - 12:00 pm Groundwater Measuring and Monitoring with Portage College



Portage College is renowned for its excellent Natural Resources Technology diploma program. Students learn about the importance of cooperative planning and management of environmental resources with communities and organizations while using industry standard equipment and software in a hands-on learning environment. We’ll put our work boots on and head to the Lac La Biche landfill, where piezometers and water quality testing sites abound. Please wear robust closed toe shoes and long pants. Waterproof shoes may be helpful, but not necessary.

Host: Al Bertschi, Program Coordinator and Instructor

Lunch on the move

12:30 - 2:30 pm Watershed Moments: Science & Outreach



A watershed is an area of land that drains into a single lake or river. A watershed moment is a turning point that changes everything. The creation of Watershed Planning and Advisory Councils ([WPAC](#) – pronounced “double-u pack”) was intended to do just that. These non-profit organizations are faced with the tidal task of bringing water stakeholders together to research, report, and create a management plan for the watershed. Athabasca Watershed Council will show off some of the ways they are building watershed moments for the people who live, work, and play in the Athabasca watershed. Please wear appropriate outdoor gear.

Host: Athabasca Watershed Council

3:00 pm - 4:30 pm The Role of Parks: Winston Churchill Provincial Park



The provincial park named after Winston Churchill may seem small, but like the man himself, it takes up quite a presence. Nestled in the middle of Lac La Biche, we’ll get into the weeds of park management in a watershed context...while visibly in the middle of Lac La Biche.

Weather permitting, we hope to stay and enjoy a relaxing break at the Day Use area of the provincial park. The park provides habitat for more than 230 bird species including, so bring your binoculars! Canoe rentals are also available in the park, but they are first-come-first serve. We hope to secure a few canoes for folks to head out on to the water, so bring sunscreen, a hat, and a towel in case you decide to test out the water! Please wear appropriate outdoor gear.

6:30 pm - 7:30 pm Supper

Our Accommodations: Canalta Hotel, double occupancy, same gender.

Same roommates! Bring your bathing suit to take advantage of the indoor pool, waterslide, hot tub, and steam room. There is also a fitness facility...but the warm buttery smell of Canalta's signature complimentary popcorn might tempt you. Breakfast is a deluxe continental.

POWER PAUSE AND RAPID REFLECTIONS

- What was your "Ah-ha!" moment for the day?
- How can a connection to our watershed be fostered for ourselves? Our students? The public? What is the value of this connection?
- Scientific knowledge and information can help inform us about the world around us. How do we make water-related scientific knowledge accessible to everyone?
- We all live in a watershed. Which one are you in? What issues/highlights from the watershed tour today are relevant in your home-watershed?

Day 5: Saturday July 7, 2018

Start Location: Canalta Hotel in Lac La Biche

Wheels up 8:45 am to Portage College campus

9:00 am - 11:30 Education Workshop: Creating Your Own Watershed Moments

Ingenium and Inside Education will join forces this morning to help you sift through the sands of knowledge that have been gathering throughout the past five days. We'll sort through the stakeholder perspectives, wash away the rhetoric, and channel our energy into helping each other turn this PD program into something tangible for your classroom next year!

Hosts: Inside Education Staff and Adam Young, Ingenium

11:30 am: Lunch

Rolling out at 12:00 pm

Estimated arrival time to Leduc #1 Discovery Centre is 3:00 pm. Have a wonderful summer!

A energetic thank you to our partners, without whom this program could not be possible:

