

Isotopes Canada offers a range of services that apply to groundwater, including tracers and laboratory services. Isotopes Canada's tracers are a cost-effective service for evaluation of groundwater zones to understand hydrologic flow or contaminant flow. This includes water well operations for water injection, disposal, withdrawals, and monitoring networks. With improved understanding of the groundwater flow direction and flow velocity, our clients can optimize flow studies, water well network expansions, and water well operations. Our exclusive Isotopes Canada tracers are unaffected by geochemistry, aquifer temperatures or pressures. Custom designed tracer programs are created per the customer's needs, yielding precise quantitative information about the groundwater flow.

Our laboratory services can evaluate the age of waters through analysis of tritium levels (an isotope of hydrogen). This is valuable to understand if the water is connected to surface water sources or older aquifers.

FAQ'S

How is the tracer injected?

Injected directly into a wellhead or directly to water well – depends on site specific well installations and purpose of test.

Can the tracers identify flow direction and velocity?

Yes, depending on location of sampling points which is critical part of test design.

Will the tracers help identify contamination source?

Yes, the tracer can locate or eliminate a source.

How are samples obtained for testing?

Fluid samples are collected from water wells, production wells, separation facility, or other sample point – obtained by operator or Isotopes Canada.

What is the sample testing frequency?

Frequency depends on case by case – typically starting at higher frequency and over time moving to lower frequency.

What are samples collected in?

Sample containers need to be clean and properly labeled and can be plastic or glass. The sample volumes can be as low as 10ml to 1L.

Where are the samples processed?

The laboratory analysis is conducted at our Calgary lab.

What is the timeline for completion of testing and providing results?

From time of sample arrival to completion is approximately 5-7 business days.

Solutions

Isotopes Canada tracers help determine from point of injection to collection where water or contaminants are moving, communication time, and presence of unexpected hydrogeologic impairments.

This data contributes to critical decision-making about:

- Determining groundwater flow direction and velocity
- Assessing drilling positions for new water wells or monitoring network



- Determine contaminant flow in monitoring situations
- Evaluate communication between wells
- Assess connection to other sources
- Evaluate flow out of zone

Isotopes Canada tracers provides accurate data about injection travel time, direction and influences, while defining aquifer anomalies, heterogeneity and interconnectivity.

Workflow

- Clients provide initial data for tracer program design.
- Program design and cost proposal prepared.
- Field execution plan is finalized.
- Administer tracer injection as per plan.
- Sample protocol executed.
- Samples sent by courier to Isotopes Canada, Calgary laboratory.
- Samples are evaluated and results sent to client.

Previous Experience

- In business since 1981, completing over 500+ jobs with many repeat clients.
- Have conducted tracer programs for waterfloods for over 30 operators in Western Canada and internationally.
- Heavy Oil & Oilsands – Completed tracer programs for over 6 operators in the Cold Lake and Athabasca regions.
- Core tracing services for over 300 locations for exploration and production companies.

HSE

- Isotopes Canada has a proven track record of safe and reliable services for almost 40 years.
- Our employees and contractors meet HSE industry training requirements
- We are committed to services that ensure the safety and health of our employees, contractors, clients, and other stakeholders.
- Isotopes Canada is compliant with the Canadian Nuclear Safety Commission for our in-house tracer formulations and maintains a rigorous audit process.
- At all levels of our organization, we commit to safe operations and protection of the environment.

